

**Zenith distances observed with the mural circle, at the Royal Observatory, Cape of Good Hope, and the calculation of the geocentric South Polar distances.**

**Contributors**

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A

ROYAL OBSERVATORY OF CAPTAIN  
CAPE OF GOOD HOPE



Supp. 60094/e

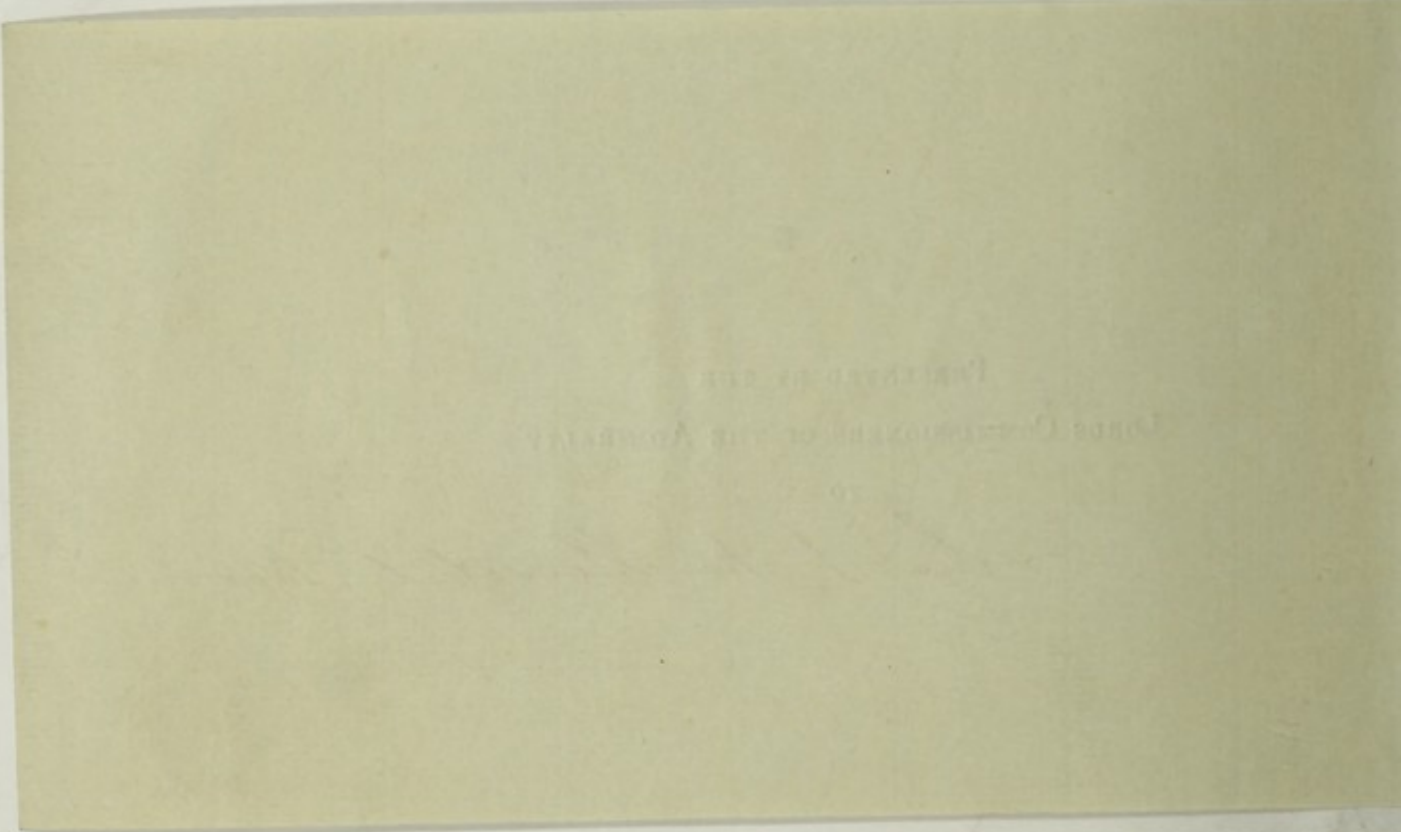
CAPE TOWN, Royal Observatory

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TO

*Sir J. W. Herschel, Bart*

*& — & — &*

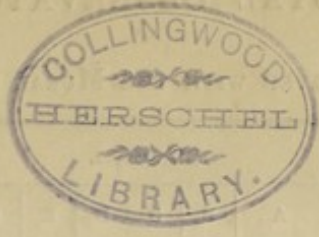








12896



# ZENITH DISTANCES

OBSERVED WITH THE MURAL CIRCLE,

AT THE

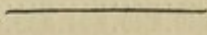
ROYAL OBSERVATORY, CAPE OF GOOD HOPE,

AND THE

CALCULATION

OF THE

GEOCENTRIC SOUTH POLAR DISTANCES.



1837.





ROYAL OBSERVATORY,

ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			h m s	h m s	h m s	h m s	h m s	h m s				
☉ 8 Jan.		σ Octantis SP.....	17 6.0	22.5	53.3	4.2	12.0	58.0	5 5 6		269 17 05.62	T.M.
	673	α Leporis M.R....	3 53.1	4.3	6.9	41.4	15.0	26.0	18.336	+1 03.89	130 4 57.26	T.M.
	673	α Leporis .....	3 12.8	10.8	0.8	26.7	10.0	16.7			342 3 12.77	T.M.
	699	α Columbæ.....	50 18.0	14.0	2.9	26.9	4.2	17.3			325 50 13.34	T.M.
	1915	(a) ε Scorpïi .....	0 51.0	43.2	35.0	58.2	35.7	48.0		+0.75	326 00 45.04	T.M.
☽ 9 Jan.		σ Octantis SP.....	17 07.9	19.8	53.5	2.8	10.9	58.7	5 5 30		269 17 5.22	T.M.
	673	α Leporis M.R....	4 02.8	10.0	13.2	49.0	19.7	35.9	18.516	+56.69	130 4 57.36	T.M.
	673	α Leporis .....	3 13.2	10.6	1.4	26.0	10.2	18.1			342 3 13.05	T.M.
	699	α Columbæ.....	50 18.4	14.0	0.7	28.4	2.5	18.4			325 50 13.69	T.M.
		(b) σ Octantis SP.....	17 08.4	19.3	1.4	54.7	18.1	51.6	5 5 10		269 17 5.20	T.M.
♁ 10 Jan.	699	α Columbæ.....	50 6.1	22.8	56.3	31.0	7.3	10.4			325 50 12.28	T.M.
	1915	ε Scorpïi .....	0 43.4	46.0	32.3	44.8	62.0	52.0			326 00 45.61	T.M.
		σ Octantis SP.....	17 07.3	20.9	4.2	54.0	21.6	49.1	5 9 10		269 17 5.40	T.M.
♃ 11 Jan.	699	α Columbæ.....	50 8.5	21.7	59.1	30.0	8.1	10.5		-0.42	325 50 12.94	T.M.
		σ Octantis SP.....	17 07.1	15.7	5.8	46.1	20.3	51.5	5 6 30		269 17 3.95	T.M.
♁ 23 Jan.		σ Octantis SP.....	17 07.1	15.7	5.8	46.1	20.3	51.5	5 6 30		269 17 3.95	T.M.
		σ Octantis SP.....	17 6.0	15.1	5.2	45.6	20.3	51.3	5 9 30		269 17 3.05	T.M.
♁ 24 Jan.	699	α Columbæ.....	50 2.8	20.0	56.9	26.7	9.0	13.9		-0.50	325 50 11.51	T.M.
		(c) δ S. L.....	24 2.0	58.3	7.7	51.2	53.0	35.0			18 24 33.72	T.M.
		* (z) M.....							20.523	-24.04	18 24 9.68	T.M.
	1206	η Leonis .....	31 39.5	38.8	48.2	30.0	32.8	11.8			17 32 13.12	T.M.
	1915	ε Scorpïi .....	0 40.8	52.3	32.8	59.4	41.5	49.4			326 00 45.89	T.M.
♃ 25 Jan.	2741	Fomalhaut .....	30 41.2	54.9	33.8	6.0	44.0	55.3			329 30 49.15	T.M.
		σ Octantis SP.....	17 06.4	11.7	4.8	41.3	19.1	49.4	5 6 40		269 17 1.66	T.M.
	699	α Columbæ.....	50 4.6	18.0	57.2	23.7	7.3	12.9		-0.10	325 50 10.59	T.M.
		♃ S. L.....	26 50.0	41.7	56.0	36.8	37.9	22.3			17 27 20.36	T.M.
		* (u).....	36 33.2	36.0	44.0	23.3	31.0	5.3	26.317	-4 17.00	18 37 8.42	T.M.
♃ 26 Jan.		(d) δ N. L. M.....									18 32 51.29	T.M.
		♃ N. L.....	30 54.5	54.8	2.2	46.8	46.2	28.1			17 30 38.65	T.M.
		δ S. L.....	40 6.1	9.3	16.1	58.6	2.8	40.8			18 40 42.15	T.M.
		* (x).....							9.638	+6 53.61	18 47 35.76	T.M.
	1206	η Leonis .....	31 40.4	39.8	48.3	31.9	32.8	13.9			17 32 14.12	T.M.
♁ 27 Jan.	699	α Columbæ.....	50 04.7	19.6	59.1	23.8	9.5	12.2			325 50 11.45	T.M.
		♃ S. L.....	31 43.2	37.8	46.1	35.1	28.4	19.1			17 32 14.54	T.M.
		* (w).....	50 22.1	23.5	30.1	14.9	15.2	58.8			18 50 57.26	T.M.
		δ N. L. M.....							22.670	-1 50.37	18 49 6.89	T.M.
	1206	η Leonis .....	31 43.4	40.8	49.8	34.5	33.0	16.7			17 32 15.96	T.M.
♁ 28 Jan.	699	α Columbæ.....	50 55.9	10.0	49.0	15.0	1.0	3.7			325 50 12.39	T.M.
		* (p).....	58 34.8	32.1	40.0	25.7	23.5	10.8			18 59 7.09	T.M.
		δ S. L. M.....							23.122	-2 08.54	18 56 58.92	T.M.
	1206	η Leonis .....	31 42.0	41.0	49.0	33.5	33.0	16.8			17 32 15.47	T.M.
♁ 31 Jan.	1915	ε Scorpïi.....	0 38.0	54.6	32.6	59.1	42.5	46.9			326 00 45.48	T.M.
♃ 1 Feb.	1915	ε Scorpïi.....	0 37.2	54.5	33.8	57.5	45.4	45.0			326 00 45.44	T.M.
	797	β Canis Maj. M.R.	0 49.0	0.0	9.0	30.5	17.1	23.1	19.467	+18.42	130 00 59.36	T.M.
	797	β Canis Majoris...	6 48.9	7.0	38.5	21.7	58.0	11.8			342 07 10.96	T.M.

Molyneux slow, January 8<sup>th</sup>, 8<sup>s</sup>.—9<sup>th</sup>, 8<sup>s</sup>.—10<sup>th</sup>, 8<sup>s</sup>.—11<sup>th</sup>, 9<sup>s</sup>.—23<sup>rd</sup>, 13<sup>s</sup>.—24<sup>th</sup>, 13<sup>s</sup>.—25<sup>th</sup>, 13<sup>s</sup>.—26<sup>th</sup>, 14<sup>s</sup>.—27<sup>th</sup>, 14<sup>s</sup>.—28<sup>th</sup>, 14<sup>s</sup>.—31<sup>st</sup>, 14<sup>s</sup>.

- (a) Observed at the 5<sup>th</sup> Wire.
- (b) The cover of the front Y was screwed tighter. The readings are changed.
- (c) Fair observation.
- (d) Limb is badly defined.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.		Parallax.		Microm. for opposite Limb.	Semi- diameter.		Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.												
#	o	'	"	Inch.	o	o	o	'	"	'	"	r	'	"	o	'	"		
5.02	-56	47	00.91	30.139	69.	63.		1	26.84						-0	44	31.00		σ Octantis SP.
	15	59	09.27	.131	69.	63.			16.30						72	03	22.32	673	α Leporis R.
	15	59	06.24												72	03	19.29	673	α Leporis.
	-0	13	53.19	.131	69.	63.			0.23						55	50	03.33	699	α Columbæ.
	-0	03	21.49						0.05						56	00	35.21	1915	ε Scorpii.
5.21	-56	47	01.31	30.157	68.5	63.6		1	26.80						-0	44	31.36		σ Octantis SP.
	15	59	09.17	.154	68.8	63.5			16.30						72	03	22.22	673	α Leporis R.
	15	59	06.52												72	03	19.57	673	α Leporis.
	-0	13	52.84	.154	68.8	63.5			0.23						55	50	03.68	699	α Columbæ.
	-56	47	01.33	30.165	68.2	62.2		1	27.06						-0	44	31.64		σ Octantis SP.
	-0	13	54.25					0.23						55	50	02.27	699	α Columbæ.	
	-0	03	20.92					0.05						56	00	35.78	1915	ε Scorpii.	
	-56	47	01.13	30.145	67.5	62.0		1	27.04					-0	44	31.42		σ Octantis SP.	
	-0	13	53.59					0.23						55	50	02.93	699	α Columbæ.	
	-56	47	02.58	30.054				1	26.78					-0	44	32.61		σ Octantis SP.	
	-56	47	03.48	30.032	70.0	66.3		1	25.98					-0	44	32.71		σ Octantis SP.	
	-0	13	55.02					0.23						55	50	01.50	699	α Columbæ.	
	52	20	26.19	29.991	69.5	66.0		1	12.97	9.81		6.43	108	25	32.53			♁	
	52	20	03.15					1	12.93				108	25	12.83			* (z)	
	51	28	06.59					1	10.61				107	33	13.95	1206		η Leonis.	
	-0	03	20.64					0.05					56	00	36.06	1915		ε Scorpii.	
	3	26	42.62	30.017	71.0	66.0		3.40					59	30	42.77	2741		Fomalhaut.	
	-56	47	04.87					1	25.98					-0	44	34.10		σ Octantis SP.	
	-0	13	55.94					0.23						55	50	00.58	699	α Columbæ.	
	51	23	13.83	.018	69.4	62.4		1	11.04	1.54	18.917	20.27	107	28	40.35			♁	
	52	33	01.89	.018	69.0	62.3		1	14.09				108	38	12.73			* (u)	
	52	28	44.76					1	13.89	9.87		6.45	108	33	39.08			♁	
	51	26	32.12	30.089	69.0	64.7		1	11.06	1.54		22.94	107	31	15.45			♁	
	52	36	35.62	.088	68.8	63.4		1	14.27	9.91		6.48	108	41	33.24			♁	
	52	43	29.23					1	14.57				108	48	40.55			* (x)	
	51	28	07.59	.075	68.8	63.4		1	11.27				107	33	15.61	1206		η Leonis.	
	-0	13	55.08					0.23					55	50	01.44	699		α Columbæ.	
	51	28	08.01	30.009	70.0	68.5		1	10.42	1.54	18.893	20.75	107	33	34.39			♁	
	52	46	50.73	30.009	70.0	68.2		1	13.84				108	52	01.32			* (w)	
	52	45	00.36					1	13.77	9.97		6.50	108	49	54.41			♁	
	51	28	09.43					1	10.46				107	33	16.64	1206		η Leonis.	
	-0	13	54.14					0.23					55	50	02.38	699		α Columbæ.	
	52	55	0.56	29.930	70.8	67.8		1	14.06				109	00	11.37			* (p)	
	52	52	52.39					1	13.96	10.01		6.51	108	57	59.60			♁	
	51	28	08.94	29.930	70.2	67.8		1	10.33				107	33	16.02	1206		η Leonis.	
	-0	03	21.05					0.05					56	00	35.65	1915		ε Scorpii.	
	-0	03	21.09					0.05					56	00	35.61	1915		ε Scorpii.	
5.16	16	03	07.17	29.985	71.0	66.0			16.23				72	07	20.15	797		β Canis Maj. R.	
	16	03	04.43										72	07	17.41	797		β Canis Majoris.	

Coincidence of Micrometer Wire with fixed Wire, = 19".926, from Jan. 8<sup>th</sup> to Jan. 10<sup>th</sup>. From Jan. 10<sup>th</sup>, = 19".925.  
 One revolution = 40".207.  
 Correction for Runs = -5".30.  
 Adopted Zenith Point = 326°. 04'. 06".53. Assumed Co-latitude = 56°. 03'. 56".75.  
 In order to get a well balanced Mean of the Zenith Points, ν Argus A.S.C. 829 was transferred from the Zenith group into the Southern one, as there were very few Stars in the latter, and as ν Argus was close to its boundary.



ROYAL OBSERVATORY,

ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			' "	" "	" "	" "	" "	" "					
♀ 3 Feb.	673 673 699 1070 1070 1206	σ Octantis SP.....	17	04.5	14.9	07.5	41.0	24.2	46.5	5 8 30	-0.23	269 17 2.52	T.M.
		α Leporis M.R....	4	2.1	9.8	22.2	40.6	29.4	35.0	18.455	+59.10	130 05 01.19	T.M.
		α Leporis.....	2	58.7	16.0	48.4	30.1	7.8	20.3			342 03 10.03	T.M.
		(a) α Columbæ.....	50	01.4	18.0	57.7	20.8	9.2	9.2		+0.74	325 50 10.10	T.M.
		(b) α Piscis Naut. M.R.	43	59.2	1.4	20.2	34.7	22.0	32.5	19.506	+16.85	144 44 14.42	T.M.
		α Piscis Naut.....	23	50.8	8.2	47.5	11.6	59.3	1.3			327 23 59.68	T.M.
		ϒ S.L.....	48	25.0	14.0	24.0	15.7	4.1	1.9			17 48 53.42	T.M.
		* (k).....	43	56.2	49.8	59.0	45.2	39.9	31.8			19 44 26.19	T.M.
		♁ N.L. M.....								19.067	+34.50	19 45 0.69	T.M.
		η Leonis.....	31	42.0	34.9	43.6	33.1	24.5	19.2			17 32 12.48	T.M.
♄ 4 Feb.	2110	ε Sagittarii.....	32	44.6	2.9	43.5	6.8	52.8	53.0			325 32 53.41	T.M.
☉ 5 Feb.	2741 699	(c) Fomalhaut.....	30	40.5	59.5	38.2	4.8	51.1	52.0			329 30 50.87	T.M.
		α Columbæ.....	50	0.8	19.2	57.8	20.9	10.1	7.4			325 50 9.34	T.M.
		Α Octantis.....	38	47.0	58.0	53.5	23.2	6.2	30.7	8 38 00		271 38 45.75	T.M.
		ϒ N.L.....	53	50.2	43.2	49.0	42.0	31.0	27.0			17 54 19.63	T.M.
		* (n).....	8	38.8	35.9	42.0	30.7	24.6	16.2			20 9 10.63	T.M.
		♁ N.L.....	59	44.0	40.9	47.1	35.1	31.1	19.4			20 0 15.34	T.M.
		ε Sagittarii.....	32	45.0	2.2	43.1	5.6	54.6	51.6			325 32 53.13	T.M.
♃ 6 Feb.	699 869 869 915 915 961 961 990 990 1066 2110	α Columbæ.....	50	0.2	19.9	56.9	21.4	10.0	8.0			325 50 9.37	T.M.
		(b) ε Canis Maj. M.R.	53	12.0	25.5	36.0	55.6	42.3	48.0	19.630	+11.86	140 53 27.84	T.M.
		ε Canis Majoris....	14	34.9	51.2	27.7	56.2	44.0	46.4			331 14 43.16	T.M.
		η Canis Maj. M.R.	7	9.1	21.0	35.4	51.9	40.0	45.5	19.457	+18.82	141 7 31.53	T.M.
		η Canis Majoris...	0	30.0	48.5	23.3	53.9	40.0	42.6			331 00 40.20	T.M.
		ξ Argus M.R.....	35	21.7	33.8	44.1	4.4	53.1	54.6	19.764	+9.29	136 55 33.98	T.M.
		ξ Argus.....	32	30.0	49.0	21.7	59.4	39.2	46.1			335 32 41.03	T.M.
		ζ Argus M.R.....	40	45.0	52.4	11.7	22.8	15.2	24.6	19.900	+1.00	151 40 49.23	T.M.
		ζ Argus.....	27	20.0	33.5	14.4	34.2	25.0	20.8			320 27 24.47	T.M.
		δ Cancri.....	43	24.5	16.4	25.0	13.7	7.0	0.0			18 43 53.73	T.M.
		ϒ S.L.....	55	29.0	22.8	28.8	19.2	12.3	4.3			17 55 59.22	T.M.
		* (n).....	8	38.2	33.6	41.5	27.9	21.2	13.4			20 09 8.56	T.M.
		♁ S.L. M.....								22.504	-1 43.07	20 07 24.86	T.M.
ε Sagittarii.....	32	46.2	2.2	43.0	5.8	52.9	53.3			325 32 53.38	T.M.		
♁ 7 Feb.	673 673 699 734 734 797 797 829 829 869 869 903 903 1003 1003 1066	σ Octantis SP....	17	2.5	13.1	3.8	39.0	21.5	44.4	5 6 00		269 17 0.36	T.M.
		α Leporis M.R....	4	1.5	13.5	21.4	42.7	31.2	36.8	18.471	+58.46	130 5 1.87	T.M.
		α Leporis.....	3	0.2	18.0	48.2	31.9	9.6	21.7			342 3 11.41	T.M.
		α Columbæ.....	50	2.1	19.0	56.3	21.8	9.0	10.0	5 33 32		325 50 9.69	T.M.
		α Orionis M.R....	45	48.2	55.0	13.9	3.6	31.5	3.2	18.612	+57.50	104 46 33.41	T.M.
		α Orionis.....	21	12.1	58.1	7.0	3.6	43.3	51.4			7 21 38.33	T.M.
		β Canis Maj. M.R.	1	16.8	36.1	39.0	3.0	51.3	52.7	20.204	-11.27	130 1 11.26	T.M.
		β Canis Majoris...	6	50.1	9.1	39.6	22.5	59.6	12.2			342 7 2.18	T.M.
		ν Argus M.R.....	11	26.2	35.7	57.9	4.7	4.2	7.1	20.153	-9.17	155 11 22.90	T.M.
		ν Argus.....	56	44.6	1.9	42.2	58.1	53.4	49.0			316 56 51.48	T.M.
		ε Canis Maj. M.R.	53	9.0	25.8	34.5	55.4	42.1	47.0	19.583	+13.75	140 53 27.94	T.M.
		ε Canis Majoris...	14	36.7	50.1	28.6	55.9	43.3	49.0			331 14 43.94	T.M.
		π Argus M.R.....	56	32.6	45.8	59.8	17.5	16.1	14.0		-2.00	148 56 36.80	T.M.
		π Argus.....	11	31.6	47.5	26.9	49.1	38.6	38.2			323 11 38.58	T.M.
		B Octantis SP....	34	39.0	50.0	40.0	15.9	55.6	22.0	7 42 4		269 34 36.26	T.M.
		γ <sup>2</sup> Argus M.R....	59	37.7	40.2	7.2	10.2	12.0	17.1	20.338	-16.61	158 59 22.98	T.M.
		γ <sup>2</sup> Argus.....	8	46.2	0.5	39.7	59.0	48.8	48.0			313 8 49.99	T.M.
δ Cancri.....	43	20.7	18.9	24.7	11.8	9.1	56.3			18 43 52.88	T.M.		
ϒ S.L.....	57	44.0	42.0	47.2	35.2	32.3	19.5			17 58 16.11	T.M.		

Molyneux slow, February 5<sup>th</sup>, 17<sup>h</sup>.—7<sup>th</sup>, 17<sup>h</sup>.

- (a) Observed at the 5<sup>th</sup> Wire.
- (b) Observed on the Meridian.
- (c) Rainy and cloudy both last night and to-night at the transit of Mars.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
#	o	'	"	Inch.	o	o	o	'	"	r	'	"	o	'	"	
5.61	-56	47	04.01	30.070	71.0	61.6		1	26.84				-0	44	34.10	$\sigma$ Octantis SP.
	15	59	05.34						16.33				72	03	18.42	$\alpha$ Leporis R.
	15	59	03.50						0.23				72	03	16.58	$\alpha$ Leporis.
7.05	-0	13	56.43						0.23				55	50	00.09	$\alpha$ Columbæ.
	1	19	52.11	.010	69.6	59.0			1.32				57	23	50.18	$\alpha$ Piscis Naut. R.
	1	19	53.15						1.32				57	23	51.22	$\alpha$ Piscis Naut.
	51	44	46.89	.010	69.6	59.0		1	12.41	1.55	18.860	21.42	107	50	15.92	$\Upsilon$
	53	40	19.66	30.004	68.0	58.5		1	17.71				109	45	34.12	* (k)
	53	40	54.16					1	17.73	10.22		6.57	109	45	51.85	$\delta$
	51	28	05.95	29.997	67.2	58.1		1	11.82				107	33	14.52	$\eta$ Leonis.
	-0	31	13.12						.51				55	32	43.12	$\epsilon$ Sagittarii.
	3	26	44.34	30.264	59.1	70.8			3.40				59	30	44.49	Fomalhaut.
	-0	13	57.19						0.23				55	49	59.33	$\alpha$ Columbæ.
	-54	25	20.78	.217	67.5	61.5		1	19.86				1	37	16.11	$A$ Octantis.
	1	12	7.6	.190	67.2	61.4		1	12.76	1.55	20.971	21.03	107	55	00.03	$\Upsilon$
	54	05	04.10					1	18.93				110	10	19.78	* (n)
	53	56	08.81	30.190	66.8	61.5		1	18.50	10.26		6.58	110	01	07.22	$\delta$
	-0	31	13.40						0.51				55	32	42.84	$\epsilon$ Sagittarii.
5.50	-0	13	57.16						0.23				55	49	59.36	$\alpha$ Columbæ.
	5	10	38.69	29.943	69.4	71.3			5.07				61	14	40.51	$\epsilon$ Canis Maj. R.
	5	10	36.63						5.07				61	14	38.45	$\epsilon$ Canis Majoris.
5.87	4	56	35.00	29.940	69.5	71.4			4.82				61	00	36.57	$\eta$ Canis Maj. R.
	4	56	33.67						4.82				61	00	35.24	$\eta$ Canis Majoris.
7.51	9	28	32.55	29.934	69.5	70.8			9.31				65	32	38.61	$\xi$ Argus R.
	9	28	34.50						9.31				65	32	40.56	$\xi$ Argus.
6.85	-5	36	42.70	29.934	69.5	70.0			5.50				50	27	08.55	$\zeta$ Argus R.
	-5	36	42.06						5.50				50	27	09.19	$\zeta$ Argus.
	52	39	47.20	29.933	69.4	71.2		1	12.94				108	44	56.89	$\delta$ Cancr.
	51	51	52.69	29.933	69.4	71.2		1	10.87	1.55	18.884	20.93	107	57	19.69	$\Upsilon$
	54	05	02.03	29.928	69.2	68.5		1	17.20				110	10	15.98	* (n)
	54	03	18.33					1	17.11	10.27		6.58	110	08	28.50	$\delta$
6.64	-0	31	13.15						0.51				55	32	43.09	$\epsilon$ Sagittarii.
	-56	47	06.17	29.775	71.2	68.2		1	24.93				-0	44	34.35	$\sigma$ Octantis SP.
	15	59	04.66	29.775	71.2	68.1			15.98				72	03	17.39	$\alpha$ Leporis R.
5.87	15	59	04.88						0.23				72	03	17.61	$\alpha$ Leporis.
	-0	13	56.84						0.23				55	49	59.68	$\alpha$ Columbæ.
	41	17	33.12	29.775	71.0	67.8			48.98				97	22	18.85	$\alpha$ Orionis R.
6.72	41	17	31.80						48.98				97	22	17.53	$\alpha$ Orionis.
	16	02	55.27	29.777	71.0	67.8			16.09				72	07	08.11	$\beta$ Canis Maj. R.
	16	02	55.65						16.09				72	07	08.49	$\beta$ Canis Majoris.
7.19	-9	07	16.37	29.780	71.0	67.8			8.96				46	56	31.42	$\nu$ Argus R.
	-9	07	15.05						8.96				46	56	32.74	$\nu$ Argus.
5.94	5	10	38.59	29.774	71.0	67.5			5.06				61	14	40.40	$\epsilon$ Canis Maj. R.
	5	10	37.41						5.06				61	14	39.22	$\epsilon$ Canis Majoris.
7.69	-2	52	30.27	29.774	71.0	67.5			2.81				53	11	23.67	$\pi$ Argus R.
	-2	52	27.95						2.81				53	11	25.99	$\pi$ Argus.
	-56	29	30.27	29.774	70.5	67.5		1	24.11				-0	26	57.63	$B$ Octantis SP.
6.49	-12	55	16.45	29.780	70.5	67.2			12.82				43	08	27.48	$\gamma^2$ Argus R.
	-12	55	16.54						12.82				43	08	27.39	$\gamma^2$ Argus.
	52	39	46.35	29.781	70.6	66.3		1	13.23				108	44	56.33	$\delta$ Cancr.
	51	54	09.58	29.782	70.2	65.4		1	11.39	1.55	18.881	20.99	107	59	37.16	$\Upsilon$

Coincidence of Micrometer Wire with fixed Wire, 19<sup>o</sup>25 One revolution = 40<sup>o</sup>.207  
 Correction for Runs = -5<sup>o</sup>.30  
 Adopted Zenith Point = 326<sup>o</sup> 04'. 06<sup>o</sup>.53  
 Assumed Co-latitude = 56<sup>o</sup>. 03'. 56<sup>o</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			<i>l</i>	<i>h</i>	<i>m</i>	<i>s</i>	<i>ss</i>	<i>ss</i>					
♄ 7 Feb.	2110	♄ N.L.....	14	20.0	20.8	26.2	11.4	9.6	57.4	14.401	+3 42.10	20 14 53.36	T.M.
		* (r).....	.....	.....	.....	.....	.....	.....	.....			20 18 35.46	T.M.
		ε Sagittarii.....	32	47.5	1.8	42.7	7.0	52.3	55.5			325 32 53.95	T.M.
♃ 8 Feb.	673 673 699 732 746 797 797 829 829 838 903 903 928 928 990 990 1066 1092	σ Octantis SP.....	17	01.8	14.0	1.9	41.0	19.7	45.6	5 05 43		269 17 0.31	T.M.
		α Leporis M.R....	4	14.8	30.9	34.6	1.6	44.8	53.0	18.882	+41.94	130 5 0.62	T.M.
		α Leporis.....	2	58.9	18.2	47.2	32.0	9.0	21.0			342 3 10.86	T.M.
		α Columbæ.....	50	2.1	18.0	55.9	21.0	7.9	11.0			325 50 9.29	T.M.
		β Columbæ.....	9	56.0	15.2	51.8	17.4	3.7	4.8			324 10 3.93	T.M.
		γ Columbæ.....	41	40.4	58.9	34.4	60.3	47.3	48.3			324 41 47.95	T.M.
		β Canis Maj. M.R.	1	22.2	43.9	44.7	13.1	57.3	59.8	20.389	-18.66	130 1 10.87	T.M.
		β Canis Majoris...	6	49.8	9.9	39.0	23.8	59.8	13.1			342 7 2.20	T.M.
		ν Argus M.R.....	11	51.5	5.2	22.8	34.0	32.1	33.8	20.820	-35.98	155 11 23.28	T.M.
		ν Argus.....	56	45.2	1.7	40.5	0.2	51.5	49.8			316 56 51.43	T.M.
		Sirius.....	29	46.1	4.2	30.4	17.9	52.0	6.5			343 29 54.96	T.M.
		π Argus M.R.....	56	51.4	1.8	17.2	34.7	22.7	32.1	20.447	-20.99	148 56 35.10	T.M.
		π Argus.....	11	30.9	46.2	25.0	50.0	36.3	38.8			323 11 37.79	T.M.
		(a) σ Argus M.R.....	5	12.4	26.6	45.4	55.4	53.7	54.8	18.335	+1 03.93	155 6 25.25	T.M.
		σ Argus.....	1	41.2	56.9	35.8	56.6	45.1	46.9			317 1 47.77	T.M.
		β Octantis SP....	34	42.7	47.5	41.0	16.1	53.9	24.8	7 37 00		269 34 37.58	T.M.
		ζ Argus M.R.....	40	45.5	4.8	16.8	31.8	26.2	29.4	20.053	-5.15	151 40 50.21	T.M.
		ζ Argus.....	27	20.0	33.4	12.4	35.5	22.8	24.5			320 27 24.58	T.M.
		δ Cancri.....	43	19.6	20.0	25.1	11.8	11.3	55.2			18 43 53.13	T.M.
		ε Ursæ Majoris....	33	43.0	43.0	2.0	2.2	46.0	52.4			48 34 10.69	T.M.
		ϒ S.L.....	0	1.2	2.7	8.0	53.4	54.2	36.0			18 00 35.81	T.M.
		(b) δ S.L.....	21	6.2	8.8	18.5	58.1	3.3	40.5			20 21 42.26	T.M.
		♃ 9 Feb.	582 611 673 673 699 735 829 838 838 869 869 903 903 928 928 1003 1003 1066 1141 2110	ζ Aurigæ.....	46	16.4	21.5	38.2	42.9	26.2	31.0		
Capella M.....	44			2.9	2.2	25.6	22.1	6.8	12.9	19.444	+19.34	45 44 50.61	T.M.
σ Octantis SP.....	17			5.8	13.0	7.0	40.3	21.3	48.5	5 6 30		269 17 2.28	T.M.
α Leporis M.R....	4			30.4	45.1	51.0	16.1	1.4	6.0	19.222	+28.26	130 5 2.01	T.M.
α Leporis.....	2			58.9	18.4	47.3	32.2	8.9	21.2			342 3 10.96	T.M.
α Columbæ.....	50			2.0	18.3	56.0	22.4	7.0	11.1			325 50 9.44	T.M.
β Aurigæ.....	50			33.5	34.9	55.5	54.9	40.0	45.0	5 47 30		44 51 3.78	T.M.
ν Argus M.....	56			21.9	40.0	17.6	39.1	29.6	28.0	19.376	+22.07	316 56 51.17	T.M.
(a) Sirius M.R.....	37			7.1	24.0	26.5	52.2	37.1	43.0	18.312	+1 04.85	128 38 15.91	T.M.
Sirius.....	29			41.4	2.5	29.5	15.8	50.7	5.0			343 29 53.62	T.M.
ε Canis Maj. M.R.	53			21.5	33.2	43.9	6.5	49.1	0.2			140 53 27.50	T.M.
ε Canis Majoris...	14			37.2	49.7	28.1	57.0	42.1	50.0			331 14 43.78	T.M.
π Argus M.R.....	56			31.0	48.9	0.0	20.0	8.5	13.2	20.042	-4.70	148 56 34.89	T.M.
π Argus.....	11			32.1	45.2	26.8	49.2	36.7	38.7			323 11 38.04	T.M.
(d) σ Argus M.R.....	5			7.8	24.2	41.0	53.1	49.2	50.6	18.190	+1 09.76	155 6 27.08	T.M.
σ Argus.....	1			41.4	57.9	36.7	57.8	45.5	47.2			317 1 47.71	T.M.
γ <sup>2</sup> Argus M.R....	58			35.4	44.0	7.8	11.9	14.4	15.7	18.848	+43.31	158 59 23.87	T.M.
γ <sup>2</sup> Argus.....	8			48.5	0.0	41.4	0.2	49.0	49.5			313 8 51.05	T.M.
δ Cancri.....	43			23.1	14.9	26.0	10.2	8.0	56.6			18 43 52.43	T.M.
(c) ϒ N.L.....	3			4.9	57.0	7.5	52.3	48.7	39.0			18 3 34.08	T.M.
* Leonis.....	27			32.9	33.0	43.7	22.6	26.6	7.3			20 28 7.12	T.M.
♄ N.L. M.....	.....			.....	.....	.....	.....	.....	.....	18.921	+40.37	20 28 47.49	T.M.
ε Sagittarii.....	32			49.4	0.8	43.8	6.3	52.1	56.4			325 32 54.28	T.M.
(c) ♀'s center.....	1	6.5	23.0	57.6	36.0	14.9	26.4			+0.82 339 1 17.99	T.M.		
♀ 10 Feb	673 673 699	α Leporis M.R....	4	49.9	10.1	10.7	38.8	23.0	26.2	19.774	+6.07	130 5 1.26	T.M.
		α Leporis.....	3	0.2	14.9	47.4	30.0	7.2	21.7			342 3 10.04	T.M.
		α Columbæ.....	50	1.8	17.3	55.8	21.9	7.4	11.1	5 33 30		325 50 9.19	T.M.

Molyneux slow, February 8<sup>th</sup>, 17<sup>s</sup>.—9<sup>th</sup>, 18<sup>s</sup>.—10<sup>th</sup>, 19<sup>s</sup>.

- (a) Observed on the Meridian. Sirius on the 9<sup>th</sup>, an indifferent observation. The 7<sup>th</sup> and 8<sup>th</sup> were very fine observing nights.
- (b) Occasionally clouds float from the South: one of these obscured the Star of comparison with Mars at the transit.
- (c) Observed at the 5<sup>th</sup> Wire.
- (d) Double.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. ASC	NAME OF STAR or PLANET.
			Attach.	Out.	Wet Bulb.							
#	° ' "	Inch.	°	'	"	' "	' "	"	' "	° ' "		
	54 10 46.83	29.782	70.2	65.4		1 17.54	10.28		6.57	110 15 44.27		δ
	54 14 28.93					1 17.69				110 19 43.37		* (r)
	-0 31 12.58	29.900	70.0	70.0		0.51				55 32 43.66	2110	ε Sagittarii.
	-56 47 06.22	29.951	71.9	69.2		1 25.27				-0 44 34.74		σ Octantis SP.
5.74	15 59 05.91	29.948	72.0	68.8						72 03 18.70	673	α Leporis R.
	15 59 04.33					16.04				72 03 17.12	673	α Leporis.
	-0 13 57.24	29.950	72.0	68.8		0.23				55 49 59.28	699	α Columbæ.
	-1 54 02.60	29.952	72.0	68.8		1.86				54 09 52.29	732	β Columbæ.
	-1 22 18.58	29.954	72.0	68.8		1.34				54 41 36.83	746	γ Columbæ.
6.54	16 02 55.66	29.963	72.0	68.6						72 07 08.57	797	β Canis Maj. R.
	16 02 55.67					16.16				72 07 08.58	797	β Canis Majoris.
7.36	-9 07 16.75	29 966	72.0	68.6						46 56 31.00	829	ν Argus R.
	-9 07 15.10					9.00				46 56 32.65	829	ν Argus.
	17 25 48.43	29.972	71.6	68.5		17.61				73 30 02.79	838	Sirius.
6.45	-2 52 28.57	29.974	71.6	68.2						53 11 25.36	903	π Argus R.
	-2 52 28.74					2.82				53 11 25.19	903	π Argus.
6.51	-9 02 18.72	29.976	71.5	68.0						47 01 29.10	928	σ Argus R.
	-9 02 18.76					8.93				47 01 29.06	928	σ Argus.
	-56 29 28.95	29.976	71.0	66.8		1 24.78				-0 26 56.98		B Octantis SP.
7.40	-5 36 43.68	29.981	71.2	68.0						50 27 07.55	990	ζ Argus R.
	-5 36 41.95					5.52				50 27 09.28	990	ζ Argus.
	52 39 46.60	29.988	71.2	67.9		1 13.52				108 44 56.87	1066	δ Cancræ.
	82 30 04.16	29.988	71.2	67.9		6 41.22				138 40 42.13	1092	ε Ursæ Majoris.
	51 56 29.28	29.997	71.0	67.5		1 11.71	1.55	18.892	20.77	108 01 56.96		ϖ
	54 17 35.73	29.997	71.0	67.5		1 18.09	10.28		6.56	110 22 46.85		δ
	74 42 42.51	30.055	69.8	64.6		3 19.98				130 49 59.24	582	ζ Aurigæ.
	79 40 44.08	.051	69.7	64.6		5 00.69				135 49 41.52	611	Capella.
	-56 47 04.25	.051	69.6	64.6		1 26.32				-0 44 33.82		σ Octantis SP.
6.49	15 59 04.52	.043	69.4	64.5						72 03 17.50	673	α Leporis R.
	15 59 04.43					16.23				72 03 17.41	673	α Leporis.
	-0 13 57.09	.043	69.4	64.5		0.23				55 49 59.43	699	α Columbæ.
	76 46 57.25	.043	69.2	64.4		4 37.56				134 55 31.56	735	β Aurigæ.
	-9 07 15.36	.044	69.2	64.4		9.10				46 56 32.29	829	ν Argus.
4.77	17 25 50.62	.045	69.2	64.3						73 30 05.15	838	Sirius R.
	17 25 47.09					17.78				73 30 01.62	838	Sirius.
5.64	5 10 39.03	.045	69.2	64.3						61 14 40.92	869	ε Canis Maj. R.
	5 10 37.25					5.14				61 14 39.14	869	ε Canis Majoris.
6.47	-2 52 28.36	.045	69.2	64.3						53 11 25.55	903	π Argus R.
	-2 52 28.49					2.84				53 11 25.42	903	π Argus.
7.40	-9 02 20.55	.046	69.2	64.3						47 01 27.18	928	σ Argus R.
	-9 02 18.82					9.02				47 01 28.91	928	σ Argus.
7.46	-12 55 17.34	.048	69.2	64.5						43 08 26.41	1003	γ <sup>2</sup> Argus R.
	-12 55 15.48					13.00				43 08 28.27	1003	γ <sup>2</sup> Argus.
	52 39 45.90	.044	69.2	65.4		1 14.01				108 44 56.66	1066	δ Cancræ.
	51 59 27.55	.041	69.0	65.6		1 12.23	1.55	20.974	21.09	108 04 13.89		ϖ
	54 24 00.59	.041	69.0	65.6		1 18.81				110 29 16.15	1141	* Leonis.
	54 24 40.96					1 18.83	10.28		6.55	110 29 39.71		δ
	-0 31 12.25	.017	70.0	70.2		0.51				55 32 43.99	2110	ε Sagittarii.
	12 57 11.46	.014	70.2	77.9		12.70	1.28			69 01 19.63		♀
5.65	15 59 05.27	30.010	71.4	68.2						72 03 18.12	673	α Leporis R.
	15 59 03.51					16.10				72 03 16.36	673	α Leporis.
	-0 13 57.34					0.23				55 49 59.18	699	α Columbæ.

Coincidence of Micrometer Wire with fixed Wire, = 19°.925 One revolution = 40".207  
 Correction for Runs = -5".30  
 Adopted Zenith Point = 326°. 04'. 06".53  
 Assumed Co-latitude = 56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			l #	#	#	#	#	#					
♀ 10 Feb.	735	β Aurigæ.....	50	39.8	42.0	1.4	1.4	45.8	51.3	5 47 30.2		44 51 10.07	T.M.
	869	ε Canis Maj. M.R.	53	8.8	19.2	28.4	53.3	34.2	47.4	19.490	+17.49	140 53 28.20	T.M.
	869	ε Canis Majoris ...	14	38.2	48.4	28.8	56.6	42.0	50.3			331 14 43.81	T.M.
	903	π Argus M.R.....	56	46.1	2.2	13.5	34.2	21.7	29.0	20.369	-17.85	148 56 36.05	T.M.
	903	π Argus .....	11	31.0	46.8	25.3	50.9	36.5	38.8			323 11 38.13	T.M.
	928	σ Argus M.R.....	5	44.2	56.5	17.0	25.1	24.7	26.1	19.039	+35.62	155 6 27.45	T.M.
	928	σ Argus .....	1	42.3	57.0	36.7	57.9	46.1	47.7			317 1 47.90	T.M.
		B Octantis SP....	34	42.2	47.6	41.0	15.5	53.8	24.1	7 43 00		269 34 36.55	T.M.
		ε Ursæ Majoris....	33	43.2	38.4	0.2	59.5	42.1	52.2			48 34 8.53	T.M.
		ζ S. L.....	4	35.1	30.5	37.2	23.4	20.2	7.8			18 5 4.81	T.M.
		(a) δ S. L.....	34	38.9	39.3	47.0	28.2	30.4	12.1			20 35 11.74	T.M.
		* (o) .....	42	22.0	23.0	30.8	12.0	16.7	56.8			20 42 56.35	T.M.
		φ's center .....	13	16.8	31.2	7.0	44.6	24.5	36.0			339 13 26.06	T.M.
	♁ 11 Feb.		σ Octantis SP....	17	4.0	14.8	3.9	42.0	21.0	47.4	5 5 20		269 17 1.81
673		(b) α Leporis M.R....	4	47.5	7.0	8.5	36.5	20.0	24.0	19.685	+9.65	130 5 2.68	T.M.
673		α Leporis .....	2	58.8	77.7	48.0	91.8	68.3	80.7			342 3 10.69	T.M.
699		α Columbæ.....	5	3.8	15.9	56.9	20.4	6.4	11.1			325 50 9.05	T.M.
735		β Aurigæ .....	50	37.3	41.0	0.8	0.8	44.8	49.7			44 51 08.86	T.M.
797		β Canis Maj. M.R.	1	1.1	20.0	22.5	49.1	34.3	38.4	19.815	+4.42	130 1 11.41	T.M.
797		β Canis Majoris...	6	50.2	6.7	39.2	21.2	58.0	12.0			342 7 1.23	T.M.
838		Sirius M.R.....	37	49.0	8.0	10.0	34.8	21.0	23.2	19.340	+23.52	128 38 16.98	T.M.
838		Sirius .....	29	44.8	3.8	31.2	16.7	52.1	5.6			343 29 55.16	T.M.
869		ε Canis Maj. M.R.	53	51.6	4.3	14.2	39.4	20.2	30.2	20.589	-26.70	140 53 28.65	T.M.
869		ε Canis Majoris....	14	36.0	49.6	27.9	58.2	42.7	50.9			331 14 43.98	T.M.
903		π Argus M.R.....	56	35.1	53.8	4.4	24.1	12.9	17.6	20.114	-7.60	148 56 36.53	T.M.
903		π Argus .....	11	30.1	46.4	25.4	48.8	36.4	37.2			323 11 37.30	T.M.
928		(c) σ Argus R. ....	6	23.8	32.2	55.1	3.4	0.0	5.4		-0.28	155 6 29.43	T.M.
928		σ Argus.....	1	40.1	56.4	35.3	56.5	44.8	46.1			317 1 46.51	T.M.
1003		(c) γ <sup>2</sup> Argus R.....	59	22.8	29.5	54.0	59.0	0.6	2.2		-0.50	158 59 26.42	T.M.
1003		γ <sup>2</sup> Argus.....	8	45.6	58.8	38.3	58.0	46.6	47.0			313 8 48.67	T.M.
1066		δ Cancrī .....	43	21.8	15.4	25.0	9.8	8.9	57.0			18 43 52.28	T.M.
1092		ε Ursæ Majoris....	33	38.5	34.1	56.3	55.0	38.5	47.2			48 34 4.21	T.M.
	ζ N. L.....	7	28.8	26.2	34.1	17.2	19.0	1.1			18 8 0.54	T.M.	
	(d) δ S. L.....	41	2.7	6.2	14.2	53.1	1.0	37.1	{ 9 22 27 }	+37.15	20 41 38.75	T.M.	
	* (o)? M.....								{ 19.001 }		20 42 15.90	T.M.	
☉ 12 Feb.	2398	(b) α Pavonis M.R...	23	44.2	45.0	20.9	7.6	26.9	17.8	21.493	-1 03.04	169 22 43.35	T.M.
	2398	α Pavonis .....	45	29.2	42.3	28.1	33.6	35.5	28.8			302 45 34.03	T.M.
	699	α Columbæ.....	50	3.8	17.4	3.0	16.8	14.0	5.0	5 33 30.4		325 50 9.97	T.M.
	1066	δ Cancrī .....	43	18.5	20.0	34.0	0.7	20.1	45.0			18 43 52.85	T.M.
		(e) δ S. L.....	47	14.1	19.8	32.0	0.8	19.9	42.6			20 47 51.02	T.M.
		* (m) M.....								17.387	+1 42.04	20 49 33.11	T.M.
♃ 13 Feb.	673	α Leporis M.R....	4	16.2	35.9	43.9	59.2	55.2	49.1	18.945	+41.01	130 5 3.11	T.M.
	673	(e) α Leporis .....	3	00.2	16.9	55.0	25.2	14.8	15.3			342 3 11.04	T.M.
	699	α Columbæ.....	50	01.6	17.2	1.5	15.6	12.8	4.3			325 50 8.81	T.M.
	712	μ <sup>1</sup> Columbæ.....	6	18.2	36.7	10.1	46.4	31.2	34.8			345 6 29.30	T.M.
	732	β Columbæ.....	9	55.3	12.9	57.2	9.6	7.4	58.0			324 9 52.53	T.M.
	746	γ Columbæ.....	41	40.4	58.0	39.9	54.0	51.2	42.0			324 41 47.26	T.M.
	797	β Canis Maj. M.R.	1	38.6	59.0	5.1	22.6	17.3	11.5	20.740	-32.77	130 1 12.22	T.M.
	797	β Canis Majoris...	6	49.9	6.7	46.5	15.2	3.9	6.0			342 7 1.38	T.M.
	829	ν Argus M.R.....	11	15.4	28.0	52.0	52.2	59.8	52.7			155 11 22.82	T.M.
	829	ν Argus .....	56	44.2	59.1	44.2	54.6	54.6	44.4			316 56 49.85	T.M.
	838	Sirius .....	29	42.0	2.2	36.0	10.0	57.7	58.2			343 29 53.48	T.M.

Molyneux slow, February 12<sup>th</sup>, 19<sup>th</sup>.—13<sup>th</sup>, 19<sup>th</sup>.

- (a) A beautiful observing night.      (b) Observed on the Meridian.      (c) Observed at the fixed Wire nearly.
- (d) Mars beautifully defined and steady. The \* (o)? observed with Mars is of the 7<sup>th</sup> magnitude, and follows one of the 9<sup>th</sup> magnitude. The latter was observed last night with Mars, and seems, by the Clock, to be the Star intended for comparison.
- (e) A violent Wind, "Black South-Easter." Bad images.      (f) Moved the Circle in Azimuth.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. A S C	NAME OF STAR or PLANET.
			Attach.	Out.	Wet Bulb.							
#	° ' "	Inch.	°	°	°	' "	' "	"	' "	° ' "		
6.01	78 47 03.54	30.010	71.0	68.1		4 35.22				134 55 35.51	537	$\beta$ Aurigæ.
	5 10 38.33					5.09				61 14 40.17	869	$\epsilon$ Canis Maj. R.
7.09	5 10 37.28	.007	71.0	68.8						61 14 39.12	869	$\epsilon$ Canis Majoris.
	-2 52 29.52	.007	71.2	68.8		2.82				53 11 24.41	903	$\pi$ Argus R.
7.68	-2 52 28.40									53 11 25.53	903	$\pi$ Argus.
	-9 02 20.92	.010	71.0	68.8		8.93				47 01 26.90	928	$\sigma$ Argus R.
	-9 02 18.63									47 01 29.19	928	$\sigma$ Argus.
	-56 29 29.98	.010	71.0	68.8		1 24.57				-0 26 57.80		B Octantis.
	82 30 02.00	.010	70.8	67.7		6 41.99				138 40 40.74	1092	$\epsilon$ Ursæ Majoris.
	52 00 58.28	.010	70.8	67.7		1 11.91	1.55	18.892	20.77	108 06 26.16		$\Upsilon$
	54 31 05.21	.012	70.6	67.4		1 18.79	10.28		6.55	110 36 17.02		$\delta$
	54 38 49.82	.012	70.6	67.4		1 19.16				110 44 05.73		* (o)
	13 09 19.53	.148	71.2	73.4		13.07	1.30			69 13 28.05		$\zeta$
6.68	-56 47 05.32	30.172	70.0	76.7		1 24.70				-0 44 33.27		$\sigma$ Octantis SP.
	15 59 04.45	.164	70.2	66.5		16.24				72 03 17.44	673	$\alpha$ Leporis R.
6.32	15 59 03.56					0.23				72 03 16.55	673	$\alpha$ Leporis.
	-0 13 58.08	.164	70.2	66.5		4 35.64				55 49 58.44	699	$\alpha$ Columbæ.
6.07	78 47 01.73	.170	70.3	66.4		16.30				134 55 34.12	735	$\beta$ Aurigæ.
	16 02 55.72	.168	70.3	66.8						72 07 08.77	797	$\beta$ Canis Maj. R.
6.32	16 02 54.10					17.80				72 07 07.15	797	$\beta$ Canis Majoris.
	17 25 50.15	.166	70.5	66.3						73 30 04.70	838	Sirius R.
6.32	17 25 48.03					5.14				73 30 02.58	838	Sirius.
	5 10 38.48	.166	70.5	66.2						61 14 40.37	869	$\epsilon$ Canis Maj. R.
6.92	5 10 36.85	.166	70.5	66.1		2.85				61 14 38.74	869	$\epsilon$ Canis Majoris.
	-2 52 29.40					9.04				53 11 24.50	903	$\pi$ Argus R.
7.97	-2 52 29.83	.164	70.2	66.0		13.00				53 11 24.07	903	$\pi$ Argus.
	-9 02 22.30									47 01 25.41	928	$\sigma$ Argus R.
7.55	-9 02 20.62	.164	70.2	66.5		1 14.30				47 01 27.09	928	$\sigma$ Argus.
	-12 55 19.29					6 45.89				43 08 24.46	1003	$\gamma^{\circ}$ Argus R.
8.69	-12 55 18.46	.167	70.2	65.5		1 12.80	1.55	20.968	20.97	43 08 25.29	1003	$\gamma^{\circ}$ Argus.
	52 39 45.15	.167	70.2	65.5		1 19.87	10.28		6.53	108 44 56.20	1066	$\delta$ Cancri.
7.08	52 29 57.08	.167	70.2	65.5		1 19.91				138 40 39.72	1092	$\epsilon$ Ursæ Majoris.
	52 03 53.43	.167	69.0	65.0						108 08 40.44		$\Upsilon$
6.80	54 37 31.62	.164	69.8	65.0		24.00				110 42 44.49		$\delta$
	54 38 08.77									110 43 25.43		* (k) ?
8.69	-23 18 36.22	30.120	71.0	75.0		0.23				32 44 56.53	2398	$\alpha$ Pavonis R.
	-23 18 33.10					1 13.81				32 44 59.65	2398	$\alpha$ Pavonis.
7.08	-0 13 57.16	.080	70.5	67.5		1 19.54	10.27			55 49 59.36	699	$\alpha$ Columbæ.
	52 39 45.72	30.070	70.2	67.4		1 19.66				108 44 56.28	1066	$\delta$ Cancri.
7.08	54 43 43.89									110 48 56.43		$\delta$
	54 45 25.98									110 50 42.39		* (m)
6.80	15 59 04.02	29.993	71.8	67.4		16.12				72 03 16.89	673	$\alpha$ Leporis R.
	15 59 03.91					0.23				72 03 16.78	673	$\alpha$ Leporis.
6.34	-0 13 58.32	29.993	71.6	67.4		19.41				55 49 58.20	699	$\alpha$ Columbæ.
	19 02 22.17	29.993	71.2	67.4		1.52				75 06 38.33	712	$\mu^1$ Columbæ.
6.80	-1 54 14.60	29.994	71.2	67.4		1.35				54 09 40.63	732	$\beta$ Columbæ.
	-1 22 19.87	29.998	71.2	67.4						54 41 35.53	746	$\gamma$ Columbæ.
6.34	16 02 54.91	30.000	71.2	67.0		16.20				72 07 07.86	797	$\beta$ Canis Maj. R.
	16 02 54.25	.002	71.2	66.8		9.05				72 07 07.20	797	$\beta$ Canis Majoris.
6.34	-9 07 15.69									46 56 32.01	829	$\nu$ Argus R.
	-9 07 17.28									46 56 30.42	829	$\nu$ Argus.
	17 25 46.35	30.002	71.2	66.8		17.69				73 30 00.79	838	Sirius.

Coincidence of Micrometer Wire with fixed Wire, =19°.925. One revolution =40".207

Correction for Runs =-".5.30

Adopted Zenith Point =326°. 04'. 06".53 to Feb. 11<sup>th</sup>, at noon. From Feb. 11<sup>th</sup>, =326°. 04'. 07".13

Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			<i>t</i> #	#	#	#	#	#					
♂ 14 Feb.	31	α Phœnicis.....	48	35.0	42.2	34.2	37.7	39.3	33.0	20.340 5 6 33 19.865 18.960 21.010 19.243 19.192 19.616 19.391 15.978	-16.69  +2.14 +38.80 -43.62 +27.42 +29.47 +12.42 +21.47 +2 38.70	316 48 36.25	T.M.
	611	Capella.....	44	39.4	44.0	8.0	55.6	54.1	44.7			45 44 53.36	T.M.
		σ Octantis SP.....	17	5.6	10.4	10.0	34.1	24.7	42.0			269 17 0.77	T.M.
		δ N. L.....	59	32.0	36.0	49.1	7.8	40.2	51.9			28 00 6.15	T.M.
	699	α Columbæ.....	50	3.8	15.0	2.7	14.2	12.1	5.9			325 50 8.93	T.M.
	722	C Tauri.....	32	1.8	5.6	19.1	39.0	7.9	21.4			27 32 35.33	T.M.
	735	β Aurigæ.....	50	40.2	41.2	8.2	55.8	51.2	46.4			44 51 10.29	T.M.
	775	η Geminorum.....	31	7.0	10.8	22.4	48.1	11.6	31.2			22 31 41.55	T.M.
	797	β Canis Maj. M.R.	1	3.8	22.0	29.9	47.0	41.6	36.0			130 1 11.60	T.M.
	797	β Canis Majoris...	6	49.8	6.3	44.9	14.7	4.0	5.0			342 7 0.79	T.M.
	829	ν Argus M.R.....	10	38.2	48.5	15.1	13.5	21.8	14.2			155 11 23.61	T.M.
	829	ν Argus.....	56	43.1	59.6	44.9	54.2	55.3	43.5			316 56 50.05	T.M.
	838	(a) Sirius.....	29	45.7	59.0	37.0	8.2	56.9	59.0			343 29 54.60	T.M.
	869	(b) ε Canis Maj. M.R.	54	6.5	23.4	34.3	51.0	43.3	41.2			140 53 28.31	T.M.
	869	ε Canis Majoris...	14	38.1	46.0	34.3	49.2	47.3	43.8			331 14 42.88	T.M.
	903	(b) π Argus M.R.....	56	2.0	16.1	35.1	42.9	41.1	38.0			148 56 36.41	T.M.
	903	π Argus.....	11	31.6	42.7	31.0	41.9	40.0	31.4			323 11 36.35	T.M.
	928	(c) σ Argus M.R.....	5	11.9	23.7	49.2	48.2	55.5	48.8			155 6 28.56	T.M.
	928	σ Argus.....	1	43.2	54.9	42.8	50.2	51.1	41.9			317 1 47.31	T.M.
	961	ξ Argus M.R.....	35	12.8	36.6	43.0	0.6	56.7	45.0			136 35 35.27	T.M.
	961	ξ Argus.....	32	28.8	45.8	26.0	51.5	42.6	39.1			335 32 37.99	T.M.
	990	ζ Argus M.R.....	40	22.6	37.1	56.7	0.5	4.0	0.0			151 40 51.53	T.M.
	990	ζ Argus.....	27	20.5	28.0	16.8	26.5	24.4	17.9			320 27 22.17	T.M.
	1003	γ <sup>2</sup> Argus.....	8	47.9	55.3	45.1	50.0	52.0	42.3			313 8 48.08	T.M.
	1060	γ Cancri.....	1	17.0	17.0	33.8	57.0	19.9	40.0			22 1 50.45	T.M.
		π N. L.....	14	1.1	58.5	12.0	42.6	58.8	29.3			18 14 32.91	T.M.
		(d) δ S. L.....	59	0.0	1.5	15.4	42.0	2.0	27.8			20 59 33.97	T.M.
		* (i) M.....										21 02 12.67	T.M.
♄ 15 Feb.	611	Capella M.....	43	49.0	49.4	17.1	1.2	0.8	52.6	18.971	+38.37	45 44 55.95	T.M.
		σ Octantis SP.....	17	5.0	9.9	8.2	34.3	24.0	43.1	5 6 48		269 17 0.39	T.M.
	673	α Leporis M.R.....	5	51.9	15.0	18.7	36.3	35.5	23.8	21.310	-55.69	130 5 3.95	T.M.
	673	α Leporis.....	2	58.0	15.4	53.0	23.2	13.6	14.1			342 3 9.36	T.M.
	699	α Columbæ.....	50	2.9	15.1	1.5	15.0	12.0	5.7			326 50 8.67	T.M.
	722	C Tauri.....	32	0.0	7.9	21.0	37.2	12.7	18.8			27 32 35.80	T.M.
	775	η Geminorum.....	31	6.6	13.0	23.4	48.8	15.0	30.8			22 31 42.62	T.M.
		δ N. L.....	46	10.0	21.0	34.6	46.4	24.3	30.9			28 46 47.55	T.M.
	831	ε Geminorum.....	15	14.0	21.9	35.0	55.8	26.2	38.1			25 15 51.68	T.M.
	881	τ Geminorum.....	28	6.5	16.0	29.4	42.2	19.2	24.2			30 28 42.25	T.M.
	903	π Argus M.R.....	55	53.2	8.1	25.4	34.7	33.6	30.0	19.020	+36.39	148 56 36.83	T.M.
	903	π Argus.....	11	29.0	44.5	28.8	41.7	40.0	30.6			323 11 35.69	T.M.
	1060	γ Cancri.....	1	15.0	16.1	30.8	56.5	16.5	39.6			22 1 48.75	T.M.
	1092	ι Ursæ Majoris....	33	5.0	2.1	28.2	16.4	12.8	7.8			48 34 7.80	T.M.
		δ N. L. M.....	5	33.8	36.0	51.1	15.6	37.2	0.5	21.150	-49.25	21 4 12.62	T.M.
	* (h).....	12	4.5	4.6	20.2	43.9	6.1	29.5			21 12 37.65	T.M.	
♃ 16 Feb.	611	Capella M.....	44	27.8	26.0	55.0	39.3	37.1	32.0	19.972	+1.89	45 44 53.44	T.M.
		σ Octantis SP.....	17	5.0	12.0	10.8	35.2	25.9	41.8	5 6 30		269 17 1.42	T.M.
	673	α Leporis M.R.....	5	46.0	5.8	12.9	29.6	25.3	18.0	21.112	-47.73	130 5 4.66	T.M.
	673	α Leporis.....	2	59.3	15.0	54.9	23.7	13.3	14.3			342 3 9.89	T.M.
	699	α Columbæ.....	50	1.9	15.0	0.2	13.7	11.1	4.8			325 50 7.76	T.M.
	712	μ <sup>1</sup> Columbæ.....	6	18.0	35.6	10.2	45.8	30.4	34.4			345 6 28.80	T.M.
	732	β Columbæ.....	9	56.3	13.6	57.8	10.5	7.5	58.2			324 10 3.09	T.M.
	746	γ Columbæ.....	41	40.9	58.5	40.1	55.1	52.1	43.3			324 41 48.00	T.M.

Molyneux slow, February 15<sup>th</sup>, 21<sup>a</sup>.—16<sup>th</sup>, 21<sup>a</sup>.

- (a) Observed at the 5<sup>th</sup> Wire.
- (b) Observed on the Meridian.
- (c) The S. E. Wind is very violent; the Mercury in the Barometer is oscillating.
- (d) The observation of Mars not satisfactory, the Limb too woolly.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"	
	-9	15	30.88	30.029	73.2	77.4		9.01				46	48	16.86	31	$\alpha$ Phœnicis.
	79	40	46.23	.023	72.6	72.5		4 55.76				135	49	38.74	611	Capella.
	-56	47	06.36	.038	72.8	72.5		1 24.98				-0	44	34.59		$\sigma$ Octantis SP.
	61	55	59.02	.033	73.1	72.4		1 44.20	45 52.52		14 49.25	116	58	58.20		$\delta$
	-0	13	58.20	.033	72.6	72.2		0.23				55	49	58.32	699	$\alpha$ Columbæ.
	61	28	28.20	.034	72.6	72.2		1 42.28				117	34	07.23	722	$C$ Tauri.
	78	47	03.16	.040	72.6	72.2		4 33.22				134	55	33.13	735	$\beta$ Aurigæ.
	56	27	34.42	.041	72.5	71.8		1 24.07				112	32	55.24	775	$\eta$ Geminorum.
6.20	16	02	55.53	.041	72.4	71.6		16.08				72	07	08.36	797	$\beta$ Canis Maj. R.
	16	02	53.66									72	07	06.49	797	$\beta$ Canis Majoris.
6.83	-9	07	16.48	.050	72.4	71.4		8.97				46	56	31.30	829	$\nu$ Argus R.
	-9	07	17.48									46	56	30.30	829	$\nu$ Argus.
	17	25	47.47	.048	72.4	71.3		17.56				73	30	01.78	838	Sirius.
5.60	5	10	38.82	.050	72.4	71.2		5.07				61	14	40.64	869	$\epsilon$ Canis Maj. R.
	5	10	35.75									61	14	37.57	869	$\epsilon$ Canis Majoris.
6.38	-2	52	29.28	.050	72.3	71.2		2.81				53	11	24.66	903	$\pi$ Argus R.
	-2	52	30.78									53	11	23.16	903	$\pi$ Argus.
7.94	-9	02	21.43	.049	72.2	71.4		8.90				47	01	26.42	928	$\sigma$ Argus R.
	-9	02	19.82									47	01	28.03	928	$\sigma$ Argus.
6.63	9	28	31.86	.040	72.2	71.0		9.33				65	32	37.94	961	$\xi$ Argus R.
	9	28	30.86									65	32	36.94	961	$\xi$ Argus.
6.85	-5	36	44.40	.036	72.2	71.0		5.50				50	27	06.85	990	$\zeta$ Argus R.
	-5	36	44.96									50	27	06.29	990	$\zeta$ Argus.
	-12	55	19.05	.038	72.0	70.4		12.85				43	08	24.85	1003	$\gamma^2$ Argus.
	55	57	43.32	.046	72.0	70.0		1 22.79				112	03	02.86	1060	$\gamma$ Cancri.
	52	10	25.78	.045	72.0	70.0		1 12.09	1.55 21.000		21.61	108	15	11.46		$\eta$
	54	55	26.84	30.042	72.0	70.0		1 19.66	10.24		6.49	111	00	39.50		$\delta$
	54	58	05.54					1 19.80				111	03	22.05		* (i)
	79	40	48.82	29.946	75.2	73.0		4 54.67				135	49	40.24	611	Capella.
	-56	47	06.74	29.946	75.2	72.8		1 24.65				-0	44	34.64		$\sigma$ Octantis SP.
6.66	15	59	03.18	29.963	75.0	71.8		15.95				72	03	15.88	673	$\alpha$ Leporis R.
	15	59	02.23									72	03	14.93	673	$\alpha$ Leporis.
	-0	13	58.46	29.963	75.0	71.8		0.23				55	49	58.06	699	$\alpha^1$ Columbæ.
	61	28	28.67	29.963	74.5	71.2		1 42.21				117	34	07.63	722	$C$ Tauri.
	56	27	35.49	29.965	74.0	71.1		1 23.95				112	32	56.19	775	$\eta$ Geminorum.
	62	42	40.42	29.971	73.5	71.0		1 47.71	45 59.20		14 44.90	117	45	40.78		$\delta$
	59	11	44.55	29.977	73.2	71.0		1 33.33				115	17	14.63	831	$\epsilon$ Geminorum.
	64	24	35.12	29.977	73.2	71.0		1 55.98				120	30	27.85	881	$\tau$ Geminorum.
6.26	-2	52	29.70	29.977	73.5	71.0		2.81				53	11	24.24	903	$\pi$ Argus R.
	-2	52	31.44									53	11	22.50	903	$\pi$ Argus.
	55	57	41.62	30.080	73.8	70.8		1 22.77				112	03	01.14	1066	$\gamma$ Cancri.
	82	30	00.67	.080	73.6	70.5		6 40.28				138	40	37.70	1092	$\epsilon$ Ursæ Majoris.
	55	00	05.49	.080	73.5	70.5		1 19.91	10.21		6.47	111	05	05.47		$\delta$
	55	08	30.52	30.080	73.5	70.5		1 20.31				111	13	47.58		* (h)
	79	40	46.31	29.998	72.0	65.8		4 59.44				135	49	42.50	611	Capella.
	-56	47	05.71	29.998	71.5	65.2		1 26.04				-0	44	35.00		$\sigma$ Octantis SP.
7.28	15	59	02.47	29.992	71.8	65.0		16.18				72	03	15.40	673	$\alpha$ Leporis R.
	15	59	02.76									72	03	15.69	673	$\alpha$ Leporis.
	-0	13	59.37	29.992	71.8	65.0		0.23				55	49	57.15	699	$\alpha$ Columbæ.
	19	02	21.67	29.992	71.8	65.9		19.50				75	06	37.92	712	$\mu^1$ Columbæ.
	-1	54	04.04	29.990	71.6	65.9		1.88				54	09	50.83	732	$\beta$ Columbæ.
	-1	22	19.13	29.990	71.3	64.6		1.36				54	41	36.26	746	$\gamma$ Columbæ.

Coincidence of Micrometer Wire with fixed Wire, =19<sup>s</sup>.925 One revolution =40<sup>''</sup>.207  
 Correction for Runs =-5<sup>''</sup>.30  
 Adopted Zenith Point =326°. 04'. 07<sup>''</sup>.13  
 Assumed Co-latitude =56°. 03'. 56<sup>''</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			' "	" "	" "	" "	" "	" "						
☿ 16 Feb.	797	β Canis Maj. M.R.	0 54.2	14.8	21.1	39.0	34.0	26.6	19.658	+10.74	130 1 11.81	T.M.		
	797	β Canis Majoris...	6 50.0	4.3	45.2	13.2	2.6	5.9			342 7 0.21	T.M.		
	831	ε Geminorum.....	15 14.1	17.1	35.0	52.0	22.9	37.0			25 15 49.53	T.M.		
	881	τ Geminorum.....	28 6.0	8.9	28.6	36.0	15.7	20.5			30 28 38.62	T.M.		
	(a)	♃ N.L.....	10 1.1	6.1	22.8	35.6	11.8	19.0			28 10 35.96	T.M.		
	*	.....	.....	.....	.....	.....	.....	.....			28 13 14.50	T.M.		
	948	β Geminorum.....	22 43.1	46.7	5.0	17.0	54.3	0.2			28 23 17.13	T.M.		
	963	φ Geminorum.....	8 53.3	54.5	14.0	27.2	1.3	11.3			27 9 26.14	T.M.		
	1003	γ <sup>c</sup> Argus M.R.....	58 42.8	51.8	20.9	17.0	27.1	19.1			158 59 26.96	T.M.		
	1003	γ <sup>e</sup> Argus.....	8 45.1	57.0	44.6	52.0	51.5	41.2			313 8 48.19	T.M.		
	2398	(b) α Pavonis SP.....	35 28.4	15.0	21.5	53.3	37.2	14.8			-1.73	237 35 16.59	T.M.	
	1060	γ Cancrī.....	1 15.7	13.9	32.2	55.6	15.2	40.2			22 1 48.48	T.M.		
	1092	ε Ursæ Majoris.....	33 44.1	41.2	9.0	55.7	51.4	47.2			48 34 10.69	T.M.		
		♃ S.L.....	17 29.2	26.1	42.8	10.0	27.8	54.7			18 18 1.23	T.M.		
		♃ S.L.....	9 43.1	44.8	1.0	24.0	45.0	9.0			21 10 16.89	T.M.		
		*(h).....	.....	.....	.....	.....	.....	.....			16.471	+2 18.88	21 12 35.77	T.M.
♃ 18 Feb.	611	Capella M.....	43 55.8	53.0	24.0	7.8	5.8	0.0	19.251	+27.10	45 44 50.72	T.M.		
		σ Octantis SP.....	17 6.5	13.7	13.0	36.0	28.5	43.0			5 6 13	269 17 3.08	T.M.	
	673	α Leporis M.R.....	6 20.2	37.9	47.8	2.0	57.9	51.2			21.912	-1 19.89	130 5 5.64	T.M.
	673	α Leporis.....	3 0.0	15.0	56.0	23.8	14.1	15.0			342 3 10.46	T.M.		
	699	α Columbæ.....	50 3.3	16.0	3.1	15.8	12.6	5.4			325 50 9.34	T.M.		
	735	β Aurigæ.....	50 37.2	40.2	5.8	54.4	50.8	43.3			44 51 8.42	T.M.		
	829	ν Argus M.R.....	11 41.9	51.9	19.3	17.9	24.6	18.7			20.481	-22.35	155 11 26.10	T.M.
	829	ν Argus.....	56 46.0	56.5	46.7	52.3	52.5	44.4			316 56 49.68	T.M.		
	838	(c) Sirius.....	29 44.0	58.0	37.0	6.7	54.1	58.2			+0.34	343 29 53.34	T.M.	
	903	π Argus M.R.....	56 31.0	49.0	5.6	15.8	12.9	8.2			148 56 39.91	T.M.		
	903	π Argus.....	11 28.8	44.3	29.9	42.8	40.0	30.8			323 11 36.04	T.M.		
	928	σ Argus M.R.....	5 40.5	51.0	18.0	16.4	23.8	17.2			18.872	+42.34	155 6 29.74	T.M.
	928	σ Argus.....	1 38.0	55.2	40.4	50.3	49.7	38.4			317 1 46.29	T.M.		
		B Octantis SP.....	34 41.1	46.4	48.0	9.0	0.5	17.0			269 34 36.18	T.M.		
	990	ζ Argus M.R.....	40 57.1	8.3	30.8	33.5	36.3	34.0			20.153	-9.17	151 40 53.72	T.M.
	990	ζ Argus.....	27 17.3	30.5	17.1	28.0	26.3	16.0			320 27 22.35	T.M.		
1060	γ Cancrī.....	1 13.5	14.3	30.0	56.4	14.3	39.0	22 1 47.60	T.M.					
	*(e).....	18 44.2	43.4	58.4	26.6	41.9	12.5	21 19 17.07	T.M.					
	(d) ♂ S.L. M.....	.....	.....	.....	.....	.....	.....	18.952	+39.12	21 19 56.19	T.M.			
☉ 19 Feb.	2110	ε Sagittarii.....	32 45.0	3.9	46.9	3.1	58.6	50.0			325 32 54.06	T.M.		
		♀'s center.....	29 29.4	43.8	23.5	52.3	41.3	43.0			341 29 28.09	T.M.		
♃ 20 Feb.	611	Capella.....	44 18.4	21.1	44.0	38.0	25.9	27.9	19.383	-21.79	45 44 48.36	T.M.		
		σ Octantis SP.....	17 4.0	15.5	14.2	35.0	30.2	40.0			5 9 35	-0.30	269 17 2.48	T.M.
	699	α Columbæ.....	50 1.6	15.0	2.2	14.1	12.5	3.9			325 50 8.20	T.M.		
	735	β Aurigæ.....	50 34.5	38.6	0.6	55.0	45.5	44.2			44 51 6.20	T.M.		
	829	ν Argus M.R.....	10 59.3	6.0	36.5	31.0	39.5	34.4			155 11 25.77	T.M.		
	829	ν Argus.....	56 42.2	59.2	47.2	51.4	57.0	40.9			316 56 49.60	T.M.		
	928	σ Argus M.R.....	5 17.8	23.3	54.8	49.4	58.0	52.3			18.220	+1 08.55	155 6 30.80	T.M.
	928	σ Argus.....	1 40.2	52.1	43.9	46.4	50.0	37.4			317 1 44.96	T.M.		
	990	ζ Argus M.R.....	40 26.0	35.2	59.5	0.8	4.0	2.6			19.373	+22.19	151 40 53.20	T.M.
	990	ζ Argus.....	27 17.0	29.5	17.9	25.6	26.8	14.4			320 27 21.69	T.M.		
	1003	γ <sup>2</sup> Argus.....	8 45.7	57.1	48.8	47.4	56.0	37.1			313 8 47.99	T.M.		
	1060	.....	1 15.7	13.1	25.2	1.0	8.2	45.1			22 1 47.72	T.M.		
	♃ N.L.....	26 11.0	7.7	20.0	58.8	2.8	43.8	18 26 53.68	T.M.					
	♃ S.L.....	27 57.8	58.9	11.7	44.0	55.9	28.0	21 28 32.08	T.M.					
	*(g) M.....	.....	.....	.....	.....	.....	.....	19.891	+1.37	21 28 33.45	T.M.			

Molyneux slow, February 16<sup>th</sup>, 21<sup>st</sup>.—18<sup>th</sup>, 27<sup>th</sup>.—20<sup>th</sup>, 28<sup>th</sup>.

- (a) Moon's disc woolly, a small Star emerged from the bright Limb. The observed \* followed about 4<sup>m</sup>. but I did not look at the Clock.
- (b) Scarcely visible, bisected at the 5<sup>th</sup> Wire, clouds to the South.
- (c) Observed at the 5<sup>th</sup> Wire.
- (d) A very fine observation. Good definition.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. ASC	NAME OF STAR or PLANET.
			Attach.	Out.	Wet Bulb.							
#	° ' "	Inch.	°	°	°	' "	' "	"	' "	° ' "		
6.01	16 02 55.32	29.991	71.2	64.0		16.27				72 07 08.34	797	$\beta$ Canis Maj. R.
	16 02 53.08									72 07 06.10	797	$\beta$ Canis Majoris.
	59 11 42.40	29.981	71.0	64.2		1 34.56				115 17 13.71	831	$\epsilon$ Geminorum.
	64 24 31.49	29.987	70.8	65.0		1 57.36				120 30 25.60	831	$\tau$ Geminorum.
	62 06 28.83	29.982	70.5	66.3		1 46.02	47 37.03		14 43.01	117 9 51.56		$\delta$
	62 09 07.37					1 46.21				118 14 50.33		*
	62 19 10.00	29.985	70.5	66.0		1 46.90				118 24 53.65	948	$\beta$ Geminorum.
	61 05 19.01	29.988	70.5	66.0		1 41.18				117 10 56.94	963	$\phi$ Geminorum.
	-12 55 19.83	29.985	70.5	66.0						43 08 23.98	1003	$\gamma^2$ Argus R.
	-12 55 18.94									43 08 24.87	1003	$\gamma^2$ Argus.
7.58	-88 28 50.54	29.980	70.6	66.5							2398	$\alpha$ Pavonis SP.
	55 57 41.35	29.982	70.8			1 23.07				112 03 01.17	1060	$\gamma$ Cancri.
	82 30 03.56		70.6	66.6		6 42.17				138 40 42.48	1092	$\epsilon$ Ursæ Majoris.
	52 13 54.10	29.983	70.5	66.8		1 12.52	1.55 18.871		21.19	108 19 23.01		$\pi$
	55 6 09.76	29.982	70.2	66.7		1 20.54	10.19		6.45	111 11 23.31		$\delta$
	55 8 28.64					1 20.65				111 13 46.04		*(h)
	79 40 43.59	30.031	70.0	64.8		5 00.36				135 49 40.70	611	Capella.
	-56 47 04.05	.042	69.0	64.2		1 26.36				-0 44 33.66		$\sigma$ Octantis SP.
	15 59 01.49	.040	69.4	64.0						72 03 14.49	673	$\alpha$ Leporis R.
	15 59 03.33									72 03 16.33	673	$\alpha$ Leporis.
8.05	-0 13 57.79					0.23				55 49 58.73	699	$\alpha$ Columbæ.
	78 47 01.29	.038	68.4	63.8		4 37.23				134 55 35.27	735	$\beta$ Aurigæ.
7.89	-9 07 18.97	.050	69.0							46 56 28.66	829	$\nu$ Argus R.
	-9 07 17.45					9.12				46 56 30.18	829	$\nu$ Argus.
7.98	17 25 46.21		68.8	63.6		17.82				73 30 00.78	838	Sirius.
	-2 52 32.78	.055	68.5	63.4						53 11 21.12	903	$\pi$ Argus R.
8.02	-2 52 31.09					2.85				53 11 22.81	903	$\pi$ Argus.
	-9 02 22.61	.054		63.3						47 01 25.10	928	$\sigma$ Argus R.
8.04	-9 02 20.84					9.04				47 01 26.87	928	$\sigma$ Argus.
	-56 29 30.95	.053	68.2	63.2		1 25.61				-0 26 59 81		B Octantis SP.
8.04	-5 36 46 59					5.59				50 27 04.57	990	$\zeta$ Argus R.
	-5 36 44.78									50 27 06.38	990	$\zeta$ Argus.
7.69	55 57 40.47			63.0		1 23.95				112 03 01.17	1060	$\gamma$ Cancri.
	55 15 09.94	30.051	68.0			1 21.76				111 20 28.45		*(e)
7.88	55 15 49.06					1 21.80	10.14		6.40	111 21 03.87		$\delta$
	-0 31 13.07	30.151	67.0	66.0		0.51				55 32 43.17	2110	$\epsilon$ Sagittarii.
7.45	15 25 20.96	30.149	68.1	67.8		15.54	1.49			71 29 31.76		$\phi$
	79 40 41.23	30.143	67.5	61.0		5 03.79				135 49 41.77	611	Capella.
7.88	-56 47 04.65	.143	67.5	61.0		1 27.18				-0 44 35.08		$\sigma$ Octantis SP.
	-0 13 58.93					0.23				55 49 57.59	699	$\alpha$ Columbæ.
7.69	78 46 59 07	.131	67.2			4 40.25				134 55 36.07	735	$\beta$ Aurigæ.
	-9 07 18.64	.134		60.6						46 56 28.91	829	$\nu$ Argus R.
7.88	-9 07 17.53					9.20				46 56 30.02	829	$\nu$ Argus.
	-9 02 23.67	.135		60.5						47 01 23.98	928	$\sigma$ Argus R.
7.45	-9 02 22.17					9.10				47 01 25 48	928	$\sigma$ Argus.
	-5 36 46.07		67.0	60.6						50 27 05.06	990	$\zeta$ Argus R.
7.45	-5 36 45.44					5.62				50 27 05.69	990	$\zeta$ Argus.
	-12 55 19.14					13.14				43 08 24.47	1003	$\gamma^2$ Argus.
7.45	55 57 40.59			60.2		1 24.63				112 03 01.97	1060	$\gamma$ Cancri.
	52 22 46.55					1 14.21	1.55 20.974		21.09	108 27 34.87		$\pi$
7.45	55 24 24.95	30.136	66.2	60.2		1 22.92	10.07		6.34	111 29 40.89		$\delta$
	55 24 26.32					1 22.92				111 29 45.99		*(g)

Coincidence of Micrometer Wire with fixed Wire, = 19°.925 One revolution = 40".207  
 Correction for Runs = -5".30  
 Adopted Zenith Point = 326°. 04'. 07" 13  
 Assumed Co-latitude = 56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			<i>l</i>	<i>g</i>	<i>g</i>	<i>g</i>	<i>g</i>	<i>g</i>					
D 20 Feb.	1152	$\theta$ Ursæ Majoris...	12	58.3	54.9	17.2	12.8	59.0	3.0			52 13 23.59	T.M.
	1219	$\lambda$ Ursæ Majoris...	38	55.4	58.0	21.0	15.2	4.0	4.3			43 39 25.53	T.M.
	2110	$\epsilon$ Sagittarii .....	32	45.5	3.9	49.1	2.2	0.2	48.9			325 32 54.45	T.M.
		$\varphi$ 's center .....	47	23.0	42.7	19.8	50.0	38.0	38.3			341 47 34.83	T.M.
J 21 Feb.	699	$\alpha$ Columbæ .....	50	0.2	17.7	1.2	14.6	13.2	3.0			325 50 8.30	T.M.
	712	$\mu^1$ Columbæ R. ....	1	46.3	50.2	9.8	16.4	16.0	11.6			127 01 44.73	T.M.
	732	$\beta$ Columbæ .....	9	54.3	11.5	57.7	7.6	7.3	56.3			324 10 01.56	T.M.
	746	$\gamma$ Columbæ .....	41	40.0	56.6	41.2	52.0	51.9	40.8			324 41 46.76	T.M.
	797	$\beta$ Canis Maj. M.R.	0	36.7	49.3	3.8	13.9	11.1	6.6	19.092	+33.49	130 01 13.24	T.M.
	797	$\beta$ Canis Majoris...	6	49.0	5.5	45.8	14.0	3.2	4.4			342 7 00.33	T.M.
	838	Sirius M. R. ....	36	56.0	6.6	21.0	29.9	29.1	23.0	17.905	+1 21.21	128 38 18.11	T.M.
	838	Sirius .....	29	42.6	1.8	35.5	7.9	57.2	57.5			343 29 53.22	T.M.
	869	(a) $\epsilon$ Canis Maj. M.R.	53	1.7	13.7	31.4	40.6	36.8	33.5	19.307	+24.85	140 53 31.37	T.M.
	869	$\epsilon$ Canis Majoris...	14	34.7	47.8	34.4	48.9	48.0	41.6			331 14 42.33	T.M.
	883	$\delta$ Canis Majoris...	51	28.4	43.2	25.8	48.1	40.3	37.2			333 51 36.88	T.M.
	915	$\eta$ Canis Maj. M.R.	6	56.4	14.2	28.5	40.7	35.0	30.8	19.110	+32.77	141 7 35.97	T.M.
	915	$\eta$ Canis Majoris...	0	29.0	46.1	28.8	46.7	43.0	37.0			331 00 38.91	T.M.
		$B$ Octantis SP. ....	34	41.0	45.4	49.6	5.3	1.0	14.2			269 34 35.26	T.M.
	1003	$\gamma^2$ Argus M.R. ....	58	37.0	41.3	14.4	5.7	18.2	11.5	18.740	+47.65	158 59 28.03	T.M.
	1003	$\gamma^2$ Argus .....	8	45.3	56.3	50.0	46.0	57.0	36.0			313 8 48.06	T.M.
	1060	$\gamma$ Cancræ .....	1	17.9	13.0	25.9	2.7	7.1	48.3			22 1 48.82	T.M.
		$A$ Octantis .....	38	40.8	51.6	53.2	11.2	6.3	19.0	8 40 30	+2.01	271 38 31.73	T.M.
		$\alpha$ N. L. ....	28	7.3	0.6	13.0	53.3	55.0	40.3			18 28 47.57	T.M.
		$\beta$ N. L. ....	32	7.5	4.2	17.0	52.9	0.7	40.0			21 32 39.90	T.M.
		* ( $f$ ) M. ....								18.998	+37.27	21 33 17.17	T.M.
	1223	Arg. in Velis. ....	41	13.5	27.7	18.1	20.4	27.0	10.1			318 41 19.23	T.M.
	1310	$\chi$ Leonis .....	11	45.0	30.0	44.8	31.8	21.8	16.3			8 12 11.23	T.M.
1338	$\epsilon$ Leonis .....	24	14.9	4.4	18.0	1.5	56.4	47.3			11 24 42.91	T.M.	
	$\delta$ S. L. ....	57	50.5	35.2	51.9	36.4	27.8	21.8			7 58 16.68	T.M.	
1376	$\beta$ Virginis .....	39	59.6	32.6	54.4	38.8	24.8	29.9			2 40 19.08	T.M.	
1392	$\alpha$ Virginis .....	37	2.8	40.0	1.7	43.2	35.3	32.8			9 37 25.53	T.M.	
	(b) $\alpha$ Octantis SP. ....	17	59.5	10.1	10.3	28.9	26.4	34.1	12 15 30		269 17 57.29	T.M.	
	$\varphi$ 's center .....	5	49.2	9.0	46.1	16.5	5.0	5.0			342 6 1.62	T.M.	
2623	$\alpha$ Gruis .....	15	28.9	39.6	33.0	26.1	37.5	20.9			312 15 30.60	T.M.	
K 22 Feb.	699	$\alpha$ Columbæ .....	5	0.0	16.1	2.1	13.3	13.0	1.4			325 50 07.63	T.M.
	1060	$\gamma$ Cancræ .....	1	15.0	16.8	26.6	2.0	12.2	45.0			22 1 49.27	T.M.
		* ( $d$ ) .....	37	55.6	54.8	3.5	42.7	48.1	27.5			21 38 28.07	T.M.
		(c) $\delta$ S. L. ....								23.474	2 22.69	21 36 05.56	T.M.
		(d) $\delta$ S. L. ....	1	5.8	41.0	59.7	46.9	31.1	36.8			2 1 26.62	T.M.
	1465	$\gamma$ Virginis .....	25	49.9	23.0	42.9	30.8	12.7	18.9			0 26 9.49	T.M.
1491	$\delta$ Virginis .....	15	56.1	36.5	54.1	42.1	27.4	28.8			4 16 20.59	T.M.	
L 23 Feb.	699	$\alpha$ Columbæ .....	50	0.0	16.8	2.2	12.5	14.4	0.8			325 50 7.76	T.M.
	735	$\beta$ Aurigæ .....	50	43.2	45.8	6.0	3.9	50.9	53.7			44 51 13.70	T.M.
	797	$\beta$ Canis Maj. M.R.	0	54.2	9.7	21.4	33.4	31.6	24.8	19.561	+14.64	130 1 13.27	T.M.
	797	$\beta$ Canis Majoris...	6	49.0	5.1	44.8	12.9	3.1	4.1			342 6 59.87	T.M.
	829	$\nu$ Argus M.R. ....	11	48.0	51.2	23.1	17.0	26.2	22.5	20.524	-24.08	155 11 26.64	T.M.
	829	$\nu$ Argus .....	56	46.4	56.9	48.8	48.9	57.2	41.3			316 56 49.87	T.M.
	838	(e) Sirius .....	29	44.2	59.5	35.8	7.2	55.0	58.2		+0.34	343 29 52.79	T.M.
	903	$\pi$ Argus M.R. ....	55	34.6	43.0	6.1	11.9	9.2	10.1	18.415	+1 00.71	148 56 39.53	T.M.
	903	$\pi$ Argus .....	11	28.1	43.4	31.2	40.0	42.2	28.4			323 11 35.47	T.M.
	928	$\sigma$ Argus M.R. ....	5	40.3	44.8	16.0	11.0	19.5	15.1	18.762	+46.76	155 06 30.80	T.M.
928	$\sigma$ Argus .....	1	39.0	52.5	42.0	44.4	45.1	235.5			317 01 44.07	T.M.	

Molyneux slow, February 21<sup>st</sup>, 27<sup>th</sup>.

- (a) Bisected on the Meridian.
- (b) This has been a beautiful observing night.
- (c) Very bad image.
- (d) Unsteady.
- (e) Bisected at the 5<sup>th</sup> Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	o	'	"	Inch.	o	o	o	'	"	r	'	"	o	'	"			
	86	09	16.46	30.134	66.2	60.1										1152	$\theta$ Ursæ Majoris.	
	77	35	18.40	.132		60.0		4	14.44				133	43	29.59	1219	$\lambda$ Ursæ Majoris.	
	-0	31	12.68	30.149	66.5	59.5			0.51				55	32	43.56	2110	$\epsilon$ Sagittarii.	
	15	43	27.70		67.5	68.0		15.91		1.51			71	47	38.85		$\zeta$	
	-0	13	58.90	30.145	68.7	64.3			0.23				55	49	57.62	699	$\alpha$ Columbæ.	
	19	02	22.47	.148	68.2	64.0			19.64				75	06	38.86	712	$\mu^1$ Columbæ.	
	-1	54	05.64		68.0				1.89				54	09	49.22	732	$\beta$ Columbæ.	
	-1	22	20.44						1.37				54	41	34.94	746	$\gamma$ Columbæ.	
6.79	16	02	53.96			63.6			16.39				72	07	07.10	797	$\beta$ Canis Maj. R.	
	16	02	53.13										72	07	06.27	797	$\beta$ Canis Majoris.	
5.67	17	25	49.09	.150	67.8				17.89				73	30	03.73	838	Sirius R.	
	71	25	46.02										73	30	00.66	838	Sirius.	
6.85	5	10	35.83	.156	67.5	63.2			5.16				61	14	37.74	869	$\epsilon$ Canis Maj. R.	
	5	10	35.13										61	14	37.04	869	$\epsilon$ Canis Majoris.	
	7	47	29.68			63.3			7.80				63	41	34.23	883	$\delta$ Canis Majoris.	
7.44	4	56	31.23	.158	67.4	63.5			4.93				61	00	32.91	915	$\eta$ Canis Maj. R.	
	4	56	31.71										61	00	33.39	915	$\eta$ Canis Majoris.	
	-56	29	31.94	.160	67.2	64.0		1	27.79				-0	27	02.98		$B$ Octantis SP.	
8.05	-12	55	20.83	.162	67.1	64.0			13.07				43	08	22.85	1003	$\gamma^2$ Argus R.	
	-12	55	19.14										43	08	24.54	1003	$\gamma^2$ Argus.	
	55	57	41.62	.160	67.4			1	24.10				112	03	02.47	1060	$\gamma$ Cancri.	
	-54	25	35.47	.162				1	19.45				1	37	01.83		$A$ Octantis.	
	52	24	40.37	.169				1	13.84	1.54	20.946	20.53	109	29	28.89		$\zeta$	
	55	28	32.70	.176	67.5	63.9		1	22.66	10.04		6.31	111	33	35.76		$\delta$	
	55	29	09.97					1	22.70				111	34	29.42		$*$ ( $f$ )	
	-7	22	47.97	.170	67.5	63.6			7.38				48	41	01.40	1223	Arg. in Velis.	
	42	8	4.03	.172	67.4	62.9			51.60				98	12	52.38	1310	$\chi$ Leonis.	
	45	20	35.71	.167	67.0	62.8			57.73				101	25	30.19	1338	$\epsilon$ Leonis.	
	41	54	09.48	.166				51.19	36	35.26		14	59.52	97	37	21.68		$\mathcal{D}$
	36	36	11.88	.163	66.8	62.6			42.39				92	40	51.02	1376	$\beta$ Virginis.	
	43	33	18.33			62.4			54.28				99	38	09.36	1392	$\sigma$ Virginis.	
	-56	46	09.91	.160	66.6	62.4		1	26.98				-0	43	40.14		$\sigma$ Octantis SP.	
	16	01	54.42	.221	68.5	73.5			16.11	1.53			72	06	05.75		$\zeta$	
	-13	48	36.60	30.220	69.2	74.5			13.75				42	15	06.40	2623	$\alpha$ Gruis.	
	-0	13	59.57	30.180	69.2	66.4			0.23				55	49	56.95	699	$\alpha$ Columbæ.	
	55	57	42.07	.185	68.8	67.5		1	23.60				112	03	02.42	1060	$\gamma$ Cancri.	
	55	34	20.87	.184	68.3	65.2		1	22.01				111	39	39.63		$*$ ( $d$ )	
	55	31	58.36					1	22.64	9.99		6.27	111	37	14.03		$\delta$	
	35	57	19.42	.134	68.1	65.0			41.17	32	23.42	15	6.53	91	44	40.44		$\mathcal{D}$
	34	22	02.29	30.132	68.2	65.4			38.79				90	26	37.83	1465	$\gamma$ Virginis.	
	38	12	13.39						44.64				94	16	54.78	1491	$\delta$ Virginis.	
	-0	13	59.44	30.121	71.0	69.0			0.23				55	49	57.08	699	$\alpha$ Columbæ.	
	78	47	06.50	.121	71.0	69.1		4	35.78				134	55	39.03	735	$\beta$ Aurigæ.	
6.57	16	02	53.93			69.5			16.19				72	07	06.87	797	$\beta$ Canis Maj. R.	
	16	02	52.67										72	07	05.61	797	$\beta$ Canis Majoris.	
8.26	-9	07	19.44			70.6			9.02				46	56	28.29	829	$\nu$ Argus R.	
	-9	07	17.33										46	56	30.40	829	$\nu$ Argus.	
	17	25	45.59			71.0			17.62				73	29	59.96	838	Sirius.	
7.50	-2	52	32.33		70.5	70.0			2.76				53	11	21.66	903	$\pi$ Argus R.	
	-2	52	31.73										53	11	22.26	903	$\pi$ Argus.	
7.44	-9	02	23.60	30.128	70.4	69.4			8.95				47	01	24.20	928	$\sigma$ Argus R.	
	-9	02	23.13										47	01	24.67	928	$\sigma$ Argus.	

Coincidence of Micrometer Wire with fixed Wire, =19<sup>o</sup>925 One revolution =40<sup>o</sup>.207  
 Correction for Runs =-5<sup>o</sup>.30  
 Adopted Zenith Point =326<sup>o</sup> 04'. 07<sup>o</sup>.13 to Dec. 21<sup>st</sup>, at Noon. From Dec. 21<sup>st</sup>, =326<sup>o</sup>. 04'. 07<sup>o</sup>.20  
 Assumed Co-latitude =56<sup>o</sup>. 03'. 56<sup>o</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			l	g	g	g	g	g					
23 Feb.	1060	B Octantis SP....	34	35.2	46.8	43.2	5.0	59.4	11.9	7 40.40		269 34 32.77	T.M.
		γ Cancri.....	1	20.1	15.0	26.5	3.6	9.8	51.0			22 1 50.67	T.M.
		* (b).....	45	57.2	53.5	4.1	42.8	47.4	29.0			21 46 28.73	T.M.
		♂ N.L.....	39	9.1	4.1	14.8	52.9	57.0	40.0			21 39 38.82	T.M.
		θ Ursæ Majoris....	13	16.1	12.4	32.3	31.5	15.5	22.0			52 13 40.97	T.M.
		(a) Arg. in Velis M.R.	26	54.6	56.8	26.9	25.5	28.8	28.2			153 26 56.45	T.M.
		Arg. in Velis.....	41	16.8	25.8	21.1	16.8	28.0	9.2			318 41 19.66	T.M.
		τ Octantis SP....	24	11.8	17.0	19.0	38.4	35.5	47.3	11 59 30		268 24 7.97	T.M.
		χ Ursæ Majoris....	33	56.4	54.7	15.8	12.5	58.0	4.9			48 34 22.94	T.M.
		ο Octantis SP....	18	00.2	7.5	9.1	27.1	24.0	35.0	0 14 00		269 17 56.62	T.M.
		γ Virginis.....	25	51.0	20.1	42.0	29.8	10.0	21.2			359 26 8.81	T.M.
		δ Virginis.....	15	59.2	33.1	55.7	40.6	26.5	30.8			4 16 20.74	T.M.
		♃ S.L.....	54	12.0	36.8	2.3	47.9	27.0	40.0			355 54 26.88	T.M.
		1533 Spica.....	40	56.5	15.2	46.8	27.0	7.9	19.5			349 41 8.62	T.M.
		24 Feb.	1060	.....	1	19.1	16.0	26.1	5.0	9.4	51.2		-0.45
* (b).....	45			58.5	54.0	5.0	43.2	48.1	29.8			21 46 29.50	T.M.
♂ S.L. M.....										25.808	-3 56.54	21 42 32.96	T.M.
25 Feb.	797	β Canis Maj. M.R.	0	50.8	3.5	17.1	28.5	26.0	21.0	19.441	+19.46	130 1 13.40	T.M.
		β Canis Majoris...	6	47.8	6.1	43.7	13.8	3.7	3.5			342 6 59.78	T.M.
		ν Argus M.....	55	36.0	50.0	41.5	40.1	50.0	31.0	18.272	+1 06.46	316 56 47.77	T.M.
		838 Sirius M.R.....	38	57.5	11.2	21.5	34.0	30.6	26.0	20.930	-40.41	128 38 18.66	T.M.
		(b) 838 Sirius.....	29	44.0	1.2	36.6	9.0	57.4	59.5		+1.00	343 29 54.75	T.M.
		ε Canis Maj. M.R.	53	27.0	38.5	54.8	5.8	0.5	0.0	19.873	+2.09	140 53 31.96	T.M.
		ε Canis Majoris...	14	35.0	45.1	32.1	48.0	46.2	42.4			331 14 41.24	T.M.
		η Canis Maj. M.R.	7	6.9	26.4	37.2	53.0	45.2	42.7	19.382	+21.83	141 7 36.05	T.M.
		η Canis Majoris...	0	30.2	41.9	27.0	43.8	40.1	36.7			331 0 37.11	T.M.
		B Octantis SP....	34	38.5	44.4	46.3	4.0	59.0	13.0	7 43 10		269 34 33.39	T.M.
		γ Cancri.....	1	15.2	13.2	23.0	2.0	7.2	47.1			22 1 47.63	T.M.
		* (b).....	45	57.0	54.8	5.9	43.8	48.0	29.0			21 46 29.48	T.M.
		♂ N.L. M.....								21.382	-58.58	21 45 30.90	T.M.
		1152 θ Ursæ Majoris....	13	15.1	14.4	32.0	33.0	17.0	22.1			52 13 41.60	T.M.
		C Octantis SP....	48	45.0	7.8	5.1	26.8	24.5	32.3			266 48 42.91	T.M.
		1219 λ Ursæ Majoris....	39	3.5	5.0	25.0	23.6	9.1	14.4			43 39 32.62	T.M.
		τ Octantis SP....	24	12.2	18.1	20.5	38.5	36.0	47.2	11 00 15		268 24 7.68	T.M.
		χ Ursæ Majoris....	33	53.9	55.3	13.7	13.8	58.8	3.4			48 34 22.37	T.M.
1378 β Hyd. et Crat....	59	57.8	10.2	0.2	7.2	9.9	58.7			327 00 3.11	T.M.		
ο Octantis SP....	17	56.2	8.1	4.9	28.9	22.0	33.8	12 16 45		269 17 55.12	T.M.		
1473 β Crucis M.R.....	54	15.9	21.0	56.3	40.0	5.0	47.5	18.444	+59.55	170 55 19.29	T.M.		
1473 β Crucis.....	12	49.8	8.4	0.3	46.3	9.7	40.0			301 12 55.66	T.M.		
1492 12 Canum Ven....	8	21.5	28.5	45.1	47.0	33.5	34.0			39 8 54.23	T.M.		
Companion M.....								20.269	-13.87	39 8 40.36	T.M.		
1533 Spica M.R.....	26	19.8	24.9	44.3	47.8	51.7	45.0	18.770	+46.44	122 27 4.92	T.M.		
1533 Spica.....	40	55.7	17.2	46.0	28.3	9.4	18.8			349 41 9.22	T.M.		
26 Feb.	699	α Columbæ.....	49	59.0	16.5	0.8	12.5	13.8	1.0			325 50 7.25	T.M.
27 Feb.	2741	(c) Fomalhaut.....	30	45.4	3.1	48.5	3.7	2.8	51.0			329 30 56.23	T.M.
		(d)											

(a) Bisected on the Meridian. (b) Leaving the field. (c) Bisected at the 5<sup>th</sup> Wire.

(d) After the Transit of Fomalhaut, the error of the Meridian Wire in Collimation was corrected by means of the 3½ feet Telescope, with its Micrometer placed in the South chase on Y's as a Collimator, together with the North Meridian Mark. The Circle Object Glass being removed for the purpose.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	o	'	''	Inch.	o	o	o	'	''	''	'	''	o	'	''			
8.06	-56	29	34.43	30.128	70.4	69.0		1	24.86				-0	27	02.54	B Octantis SP.		
	55	57	43.47	.120	70.6	70.0		1	23.03				112	03	03.25	γ Cancri.		
	55	42	21.53		70.8	71.0		1	22.07				111	47	40.35	* (b)		
	55	35	31.62					1	21.74	9.95		6.24	111	40	33.92	δ		
	86	09	33.77		70.5	70.0										1152	θ Ursæ Majoris.	
	-7	22	49.25	.115	69.8	66.8								48	41	00.19	1223	Arg. in Velis R.
	-7	22	47.54						7.31					48	41	01.90	1223	Arg. in Velis.
	-57	39	59.23	.105	69.8	66.4		1	29.12					-1	37	31.60	τ Octantis SP.	
	82	30	15.74	.094	69.6	66.3		6	44.26					138	40	56.75	1370	χ Ursæ Majoris.
	-56	46	10.58		69.2	66.0		1	26.16					-0	43	39.99	o Octantis SP.	
	33	22	01.61	.086	69.4	66.2			37.23					89	26	35.59	γ Virginis.	
	38	12	13.54	.085					44.49					94	16	54.78	ε Virginis.	
	29	50	19.68	.081					32.43	27 39.45		15 14.51		85	42	23.92	δ	
	23	37	01.42	30.078					24.73					79	41	22.90	1533	Spica.
	55	57	43.15	30.057	71.2	69.0		1	22.99				112	03	02.89	1070	....	
	55	42	22.30	.057	71.0	69.0		1	22.20				111	47	41.28	* (b)		
	55	38	25.76					1	21.99	9.91		6.20	111	43	40.79	δ		
6.59	16	02	53.80	30.041	71.1	66.5			16.24				72	07	06.79	797	β Canis Maj. R.	
	16	02	52.58										72	07	05.57	797	β Canis Majoris.	
	-9	07	19.43						9.06				46	56	28.26	829	ν Argus.	
6.71	17	25	48.54	.049	70.8				17.72				73	30	03.01	838	Sirius R.	
	17	25	47.55										73	30	02.02	838	Sirius.	
6.60	5	10	35.24	.046	70.5	66.4			5.12				61	14	37.11	869	ε Canis Maj. R.	
	5	10	34.04										61	14	35.91	869	ε Canis Majoris.	
6.58	4	56	31.15	.045	70.2	66.3			4.88				61	00	32.78	915	η Canis Maj. R.	
	4	56	29.91										61	00	31.54	915	η Canis Majoris.	
	-56	29	33.81	.048	70.0	66.5		1	25.06				-0	27	02.12	1060	B Octantis SP.	
	55	57	40.43	.046	69.5	66.4		1	23.39				112	03	00.57	1060	γ Cancri.	
	55	42	22.28	.048	69.0			1	22.60				111	47	41.63	* (b)		
	55	41	23.70					1	22.54	9.84		6.17	111	46	26.98	δ		
	86	09	34.40		69.2	66.2										1152	θ Ursæ Majoris.	
	-59	15	24.29	.055	69.6	66.0		1	34.70				3	13	02.24	1152	C Octantis SP.	
	77	35	25.42	.050	70.0	66.0		4	10.72				133	43	32.89	1219	λ Ursæ Majoris.	
	-57	39	59.52	.040	69.9	66.0		1	28.99				-1	37	31.76	τ Octantis SP.		
	82	30	15.17					6	43.66				138	40	55.58	1370	χ Ursæ Majoris.	
	0	55	55.91						0.91				55	07	59.93	1378	β Hydr. et Crat.	
	-56	46	12.08					1	26.02				-0	43	41.35	o Octantis SP.		
7.48	-24	51	12.09	.031	70.0	65.9			26.22				31	12	18.44	1473	β Crucis R.	
	-24	51	11.54										31	12	18.99	1473	β Crucis.	
	73	04	47.03		69.5	66.0		3	03.28				129	11	47.06	1492	12 Canum Ven.	
	73	04	33.16					3	03.24				129	11	33.15	1492	Companion.	
7.07	23	37	02.28						24.69				79	41	23.72	1533	Spica R.	
	23	37	02.02										79	41	23.46	1533	Spica.	
	-0	13	59.95	30.058	71.5	66.2			0.23				55	49	56.57	699	α Columbae.	
	3	26	49.03	30.081	72.0	76.0			3.34				59	30	49.12	2741	Fomalhaut.	

Coincidence of Micrometer Wire with fixed Wire, = 19<sup>c</sup>.925 to Feb. 26<sup>th</sup>. From Feb. 26<sup>th</sup>, = 19<sup>c</sup>.922  
 One revolution = 40<sup>''</sup>.207  
 Correction for Runs = -5<sup>''</sup>.30 to Feb. 27<sup>th</sup>, at 23<sup>h</sup> S. T. From Feb. 27<sup>th</sup>, at 23<sup>h</sup> S. T. = -2<sup>''</sup>.9  
 Adopted Zenith Point = 326°. 04'. 07<sup>''</sup>.20  
 Assumed Co-latitude = 56°. 03'. 56<sup>''</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.			Initials of Observer.							
			A	B	C	D	E	F													
			l #	#	#	#	#	#			l #	o	l #								
D 27 Feb.	611	Capella.....	44	27.2	31.6	51.9	45.0	35.2	34.8												
	699	$\alpha$ Columbæ.....	50	1.3	17.1	59.7	16.9	11.4	6.0												
	1060	$\gamma$ Cancrî.....	1	28.0	04.3	43.4	43.1	05.6	29.2												
		* (b).....	46	7.0	44.1	23.2	23.3	45.2	10.9												
		$\delta$ N.L. M.....									19.441	+3	49.82	21	48	15.02				T.M.	
	1114	(a) $\lambda$ Argus.....	13	46.0	34.8	57.5	15.0	42.3	10.1												
	1152	(a) $\theta$ Ursæ Majoris....	13	16.8	59.7	42.4	06.3	08.1	56.4												
		C Octantis SP....	49	05.0	59.7	21.5	08.0	21.8	14.2	9	57	20									
	1281	$\eta$ Argus R. ....	55	21.0	10.0	09.0	20.2	59.0	26.3		16.999	+2	06.97	170	57	21.64					
	1281	$\eta$ Argus.....	11	01.0	58.1	18.5	24.2	07.6	21.2												
		$\tau$ Octantis SP....	24	21.9	08.9	37.4	18.9	32.2	28.5	10	57	50									
	2398	$\alpha$ Pavonis.....	45	45.0	34.8	02.8	04.2	49.2	03.0												
	E 28 Feb.	699	$\alpha$ Columbæ.....	50	11.5	06.2	19.4	51.7	11.2	44.1											
		735	$\beta$ Aurigæ.....	50	50.5	37.4	22.7	43.	49.0	33.7											
		838	(b) Sirius M.R.....	37	46.6	35.3	17.7	47.1	05.4	42.7	19	069	+43.88	128	38	16.09					
838		Sirius.....	29	55.4	50.0	34.5	47.7	54.3	41.3												
869		$\epsilon$ Canis Maj. M.R.	52	54.1	48.3	32.0	2.9	17.	57.0	19	012	+46.18	140	53	30.53						
869		$\epsilon$ Canis Majoris...	14	45.5	38.8	51.6	28.8	46.5	23.1												
903		$\pi$ Argus M.R.....	55	52.0	42.2	31.4	58.4	15.3	58.0	18	792	+55.06	148	56	37.66						
903		$\pi$ Argus.....	11	37.7	37.1	47.4	22.0	41.1	10.2												
1060		$\gamma$ Cancrî.....	1	26.4	06.0	46.2	40.5	10.0	27.2												
		* (d).....	56	48.4	27.2	07.5	02.7	31.4	49.1												
		$\delta$ S.L. M.....									27.689	-5	03.80	21	52	03.70					
		C Octantis SP....	49	7.9	01.0	24.7	09.9	24.5	17.4	9	59	24									
1219		(a) $\lambda$ Ursæ Majoris....	39	10.0	54.9	41.9	00.8	06.8	52.0												
		(c) $\tau$ Octantis SP. R..	44	26.9	41.0	27.6	29.9	13.6	0.0	11	0	40	+0.34	203	44	03.09					
		$\tau$ Octantis SP.....	24	33.2	22.1	45.0	36.4	42.7	44.9	11	7	10	-3.53	268	24	13.40					
8 1 March.	1060	$\gamma$ Cancrî.....	1	23.5	07.0	50.1	34.3	15.9	18.0												
9 2 March.	699	$\alpha$ Columbæ.....	50	12.1	05.0	19.4	54.2	07.2	46.4												
	712	$\mu^1$ Columbæ.....	6	31.5	24.0	29.0	24.8	25.0	18.5												
	732	$\beta$ Columbæ.....	10	06.8	3.0	14.8	51.0	03.1	41.8												
	746	$\gamma$ Columbæ.....	45	50.8	47.0	57.1	34.0	46.3	24.2												
	797	$\beta$ Canis Maj. M.R.	0	51.8	58.1	29.0	10.5	21.6	57.6	19	537	+25.01	130	01	12.66						
	797	$\beta$ Canis Majoris...	6	60.0	57.8	62.8	56.0	60.4	48.0												
	838	Sirius M.R.....	37	20.1	20.4	53.2	33.5	43.9	23.4	18	518	+1	06.11	128	38	17.97					
	838	Sirius.....	29	56.8	49.9	56.1	49.0	53.6	42.0												
	869	$\epsilon$ Canis Maj. M.R.	52	60.0	64.8	39.9	78.8	29.6	67.6	19	261	+36.14	140	53	32.04						
	869	$\epsilon$ Canis Majoris....	14	46.1	38.9	50.2	32.9	43.0	27.2												
	883	$\delta$ Canis Majoris...	51	36.7	34.8	41.1	31.2	36.1	20.2												
	928	$\sigma$ Argus M.R.....	5	28.9	24.5	16.1	38.2	2.8	37.2	18	532	+1	05.54	155	06	29.83					
	928	$\sigma$ Argus.....	1	47.0	45.5	56.0	31.8	43.8	22.0												
		B Octantis SP....	34	46.1	39.2	60.0	52.2	53.8	59.0	7	43	00									
	1003	$\gamma^2$ Argus M.R.....	59	21.2	15.0	08.6	27.8	57.0	29.4	19	810	+14.00	158	59	29.78						
1003	$\gamma^2$ Argus.....	8	53.0	48.5	58.0	34.5	45.5	25.0													
1060	$\gamma$ Cancrî.....	1	24.0	06.1	53.0	33.1	16.5	17.3													
	* (a) M.....									26.981	-4	35.25	21	57	09.57						
	$\delta$ S.L. M.....									29.821	-6	29.80	21	55	15.02						
	C Octantis SP....	49	07.2	59.1	20.2	12.4	17.2	19.7	9	56	20										
	$\epsilon$ Sagittarii.....	32	57.3	57.2	65.2	47.4	57.3	35.0													
9 3 March.	699	$\alpha$ Columbæ.....	50	11.3	07.1	19.0	57.9	08.2	48.0												
	735	$\beta$ Aurigæ.....	50	56.0	37.0	34.0	38.8	56.7	31.4												
	829	$\nu$ Argus M.R.....	10	52.3	53.0	41.5	64.8	31.6	62.2	19	278	+35.44	155	11	25.99						
	829	$\nu$ Argus.....	56	51.2	52.1	59.2	37.9	50.2	27.2												

Molyneux slow, March 1<sup>st</sup>, 28<sup>s</sup>.

- (a) Observed at the 5<sup>th</sup> Wire.
- (b) Observed on the Meridian.
- (c) Nearly invisible from dense fog.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"		
6.89	79	40	50.47	30.070	72.1	68.5		4	58.59			135	49	45.81	611	Capella.	
	-0	13	56.90						0.23			55	49	59.62	699	α Columbæ.	
	55	57	39.81	30.067	69.6	65.5		1	23.57			112	03	00.13	1060	γ Cancri.	
	55	40	19.58	.071	69.0	65.8		1	22.66			111	45	38.99		* (b)	
	55	44	09.40					1	22.85	9.71		111	49	13.20		δ	
	-8	50	31.40	.071	69.0	65.8			8.80		6.09	47	13	16.55	1114	λ Argus.	
	86	09	25.66	.070	69.	66.									1152	θ Ursæ Majoris.	
	-59	15	14.29	.070	69.2	66.4		1	34.69			-3	12	52.23		C Octantis SP.	
	-24	53	16.02	.061	69.4	66.8			26.19			31	10	14.54	1281	η Argus R.	
	-24	53	13.50									31	09	17.06	1281	η Argus.	
3.25	-57	40	01.38	.060	70.	66.8		1	29.11			-1	37	33.74		τ Octantis SP.	
	-23	18	32.51	29.991	71.	74.			23.94			32	45	00.30	2398	α Pavonis.	
	-0	14	01.61	29.954	74.4	72.3			0.23			55	49	54.91	699	α Columbæ.	
	78	47	03.64	29.956	74.	71.8		4	32.43			134	55	32.82	735	β Aurigæ.	
	17	25	49.53	29.961	73.3	69.			17.59			73	30	03.87	838	Sirius R.	
	17	25	44.80									73	29	59.14	838	Sirius.	
	5	10	35.09	29.963	73.	68.6			5.08			61	14	36.92	869	ε Canis Maj. R.	
	5	10	33.58									61	14	35.41	869	ε Canis Majoris.	
	-2	52	32.04	29.963	73.	68.4			2.81			53	11	21.90	903	π Argus R.	
	-2	52	32.98									53	11	20.96	903	π Argus.	
8.25	55	57	40.26	29.967	70.2	65.		1	23.39			112	03	00.40	1060	γ Cancri.	
	55	53	01.90	29.967	69.8	64.		1	23.30			111	58	21.95		* (d)	
	55	47	58.08					1	23.05	9.66		111	53	14.27		δ	
	-59	15	12.20	29.967	70.2	63.4		1	34.88			-3	12	50.33		C Octantis SP.	
	73	35	20.84	29.968	70.5	62.4		3	10.08			129	42	27.67	1219	λ Ursæ Majoris.	
	-57	39	57.47	29.976	70.0	61.8		1	29.50			-1	37	30.22		τ Octantis SP. R.	
	-57	39	52.22									-1	37	24.97		τ Octantis SP.	
	55	57	39.01	30.120	74.2	65.		1	23.77			112	02	59.53	1060	γ Cancri.	
	-0	14	01.57	30.242	69.8	62.2			0.23			55	49	54.95	699	α Columbæ.	
	19	02	19.71	30.240	69.8	62.1			19.77			75	06	36.23	712	μ <sup>1</sup> Columbæ.	
5.17	-1	54	05.54	.238	69.5	62.			1.90			54	09	49.31	732	β Columbæ.	
	-1	22	22.56	.238	69.	62.			1.37			54	41	32.82	746	γ Columbæ.	
	16	02	52.96	.226	69.	61.8			16.49			72	07	06.20	797	β Canis Maj. R.	
	16	02	52.06									72	07	05.30	797	β Canis Majoris.	
	17	25	47.65	.236	69.	62.			18.00			73	30	02.40	838	Sirius R.	
	17	25	45.48									73	30	00.23	338	Sirius.	
	5	10	33.58	.236	68.	62.			5.19			61	14	35.52	869	ε Canis Maj. R.	
	5	10	32.92									61	14	34.86	869	ε Canis Majoris.	
	7	47	27.58	.235	68.	62.		1	18.43			63	52	42.76	883	δ Canis Majoris.	
	-9	02	24.21	.248	69.	62.			9.12			47	01	23.42	928	σ Argus R.	
6.90	-9	02	24.49								47	01	13.14	928	σ Argus.		
	-56	29	34.33	.248	67.5	61.5		1	26.48			-0	27	04.06		B Octantis SP.	
	-12	55	24.16	.248	68.	61.2			13.17			43	08	19.42	1003	γ <sup>2</sup> Argus R.	
	-12	55	21.60									43	08	21.98	1003	γ <sup>2</sup> Argus.	
	55	57	39.20	.255	68.	60.8		1	24.87			112	03	00.82	1060	γ Cancri.	
	55	53	03.95					1	24.63			111	58	25.33		* (a) M.	
	55	51	09.40					1	24.53	9.53		111	56	27.12		δ	
	-59	15	13.38	.249	67.5	60.5		1	36.34			-3	12	52.97		C Octantis SP.	
	-0	31	12.67	30.205	67.5	63.2			0.51			55	32	43.57	2110	ε Sagittarii.	
	6.20	-0	14	00.60	.130	69.2	66.8			0.23			55	49	55.92	699	α Columbæ.
78		47	06.37	.130	69.2	66.8		4	37.06			134	55	40.18	735	β Aurigæ.	
-9		07	20.15	30.128	69.4	67.			9.03			46	56	27.52	829	ν Argus R.	
-9		07	19.44									46	56	28.23	829	ν Argus.	

Coincidence of Micrometer Wire with fixed Wire, =20°.157 to March 3<sup>rd</sup>. From March 3<sup>rd</sup>, =20°.151  
 One revolution =40<sup>g</sup>.207 up to Feb. 28<sup>th</sup>. From Feb. 28<sup>th</sup>, =40<sup>g</sup>.335  
 Correction for Runs =2<sup>g</sup>.9  
 Adopted Zenith Point =326°. 04'. 05<sup>g</sup>.62 up to March 3<sup>rd</sup> at noon. From March 3<sup>rd</sup> at noon =326°. 04'. 05<sup>g</sup>.84  
 Assumed Co-latitude =56°. 03'. 56<sup>g</sup>.75



## ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.				
			A	B	C	D	E	F								
			' "	" "	" "	" "	" "	" "								
♀ 3 March.	903	π Argus R.....	56	43.6	40.	34.1	55.	11.6	52.			148	56	39.21	T.M.	
	928	σ Argus M.R.....	6	13.2	12.3	3.	24.2	50.	23.1	19.653	+20.32	155	6	30.89	T.M.	
	928	σ Argus.....	1	47.3	47.	55.4	33.3	44.5	23.1			317	1	41.88	T.M.	
		B Octantis SP....	34	45.8	38.3	59.4	50.8	54.8	57.8			269	34	30.69	T.M.	
	1003	γ <sup>2</sup> Argus M.R.....	59	42.9	32.	30.	46.	14.9	49.9	20.285	-5.16	158	59	30.03	T.M.	
	1003	γ <sup>2</sup> Argus.....	8	52.1	48.	57.1	34.4	45.	23.4			313	8	43.27	T.M.	
	1060	γ Cancri.....	1	25.1	67.8	53.9	35.8	78.	19.7			22	01	46.54	T.M.	
		* (a) M.....								26.998	-4 35.93	21	57	10.61	T.M.	
		♂ N.L. M.....								27.710	-5 04.65	21	56	41.89	T.M.	
		τ Octantis SP....	24	18.4	9.	30.1	24.2	27.2	31.2	10 59 00		268	24	2.94	T.M.	
		ο Octantis SP....	17	63.3	62.	79.2	13.	78.	15.9	12 14 30		269	17	51.61	T.M.	
	1492	12 Canum Ven....	8	37.1	81.3	7.4	25.	99.8	14.1			39	8	54.83	T.M.	
	1533	Spica M.R.....	26	47.0	40.5	15.2	56.9	6.4	51.4	19.442	+28.60	122	27	4.51	T.M.	
	1533	Spica.....	41	10.2	3.9	7.2	5.	5.1	2.			349	41	5.66	T.M.	
	♂ 4 March.	699	α Columbæ.....	50	12.8	8.4	18.4	58.	9.8	48.5			325	50	5.97	T.M.
1060		γ Cancri.....	1	30.0	73.1	57.6	40.	83.4	23.8			22	01	51.14	T.M.	
		* (a) M.....								27.018	-4 36.98	21	57	14.16	T.M.	
		♂ S.L. M.....								26.650	-4 22.14	21	57	29.00	T.M.	
		τ Octantis SP....	24	18.0	8.	29.1	22.2	26.6	30.8	11 04 10	-1.47	268	24	0.58	T.M.	
		ο Octantis SP....	17	62.5	58.6	73.8	11.2	73.2	17.1	12 14 30		269	17	49.12	T.M.	
1463		..... M.R.	11	11.0	7.5	3.2	14.	52.8	16.	19.377	+31.22	160	11	38.21	T.M.	
1463		.....	56	44.2	42.	47.7	26.8	36.2	19.1			311	56	36.16	T.M.	
1492		12 Canum Ven....	8	38.8	80.1	75.5	22.2	100.6	13.1			39	8	54.66	T.M.	
		Companion M.....								20.500	-14.08	39	8	40.58	T.M.	
1527		ε Centauri MR....	59	17.9	19.2	58.6	34.5	51.2	27.	20.440	-11.66	147	58	52.47	T.M.	
1527		ε Centauri.....	9	13.7	12.2	20.2	0.3	11.	50.1			324	9	17.85	T.M.	
♂ 6 March.			(a) ♂ S.L.....	58	16.9	57.1	46.2	22.	70.8	7.2			21	58	36.34	T.M.
			* (a) M.....								22.329	-1 27.85	21	57	8.49	T.M.
			♀.....	48	21.9	14.9	21.5	15.6	20.3	11.5			346	48	17.29	T.M.
♂ 7 March.	611	Capella.....	44	38.0	75.5	75.5	17.5	92.8	11.			45	44	51.24	T.M.	
	699	(b) α Columbæ.....	50	13.2	7.8	19.	58.	8.9	50.2	+0.20		325	50	6.37	T.M.	
	797	(c) β Canis Maj. M.R.	0	40.1	42.9	11.	61.0	3.4	50.8	19.220	+37.55	130	1	12.37	T.M.	
	797	β Canis Majoris...	6	62.0	57.2	64.6	55.2	61.8	49.6			342	6	58.58	T.M.	
	838	Sirius M. R. ....	37	64.1	63.	32.2	80.	23.4	71.4	19.577	+23.15	128	38	18.20	T.M.	
	838	Sirius.....	29	55.	51.	56.3	48.6	53.7	41.9			343	29	50.96	T.M.	
	869	ε Canis Maj. M.R.	52	40.5	43.	16.2	61.4	5.0	51.5	18.750	+56.51	140	53	32.03	T.M.	
	869	ε Canis Majoris....	14	44.4	40.8	48.	35.	42.9	27.7			331	14	39.95	T.M.	
		(d) B Octantis SP....	34	45.2	41.	57.	54.2	52.3	0.6	7 43 00		269	34	31.19	T.M.	
	1003	γ <sup>2</sup> Argus M.R.....	59	31.1	26.1	21.9	34.	8.2	36.2	20.060	+3.67	158	59	29.19	T.M.	
	1003	γ <sup>2</sup> Argus.....	8	55.4	46.5	57.1	34.4	42.7	27.3			313	8	43.85	T.M.	
	1060	γ Cancri.....	1	26.4	67.4	60.2	29.5	83.9	15.			22	1	46.90	T.M.	
		♂ N.L. M.....								24.278	-2 46 46	21	59	0.44	T.M.	
		* (a) M.....								27.006	-4 36 50	21	57	10.40	T.M.	
	1114	(c) λ Argus M.R.....	54	16.6	11.3	6.5	21.9	53.5	23.4	19.495	+26.46	154	54	38.22	T.M.	
	1114	λ Argus.....	13	41.2	33.8	44.9	22.3	31.2	16.			317	13	32.29	T.M.	
	1152	θ Ursæ Majoris...	13	23.8	58.8	56.2	0.	77.2	53.4			52	13	34.53	T.M.	
		C Octantis SP....	48	65.0	59.8	76.2	14.2	75.7	20.3	9 58 10		266	48	51.39	T.M.	
	1219	λ Ursæ Majoris...	38	74.2	113.4	114.7	53.1	135.3	106.6			43	39	39.10	T.M.	
1130	μ Ursæ Majoris...	14	67.2	10.9	109.4	47.	131.8	40.5			42	15	24.11	T.M.		
	τ Octantis SP....	24	18.5	11.	29.5	26.	27.8	33.5	10 59 15		268	24	3.98	T.M.		
1370	χ Ursæ Majoris....	33	64.8	101.8	100.8	42.8	22.2	36.4			28	34	17.71	T.M.		
1379	(d) γ Ursæ Majoris....	17	7.5	41.2	40.1	43.7	59.4	37.8			54	17	18.06	T.M.		

Molyneux slow, March 4<sup>th</sup>, 28<sup>s</sup>.—6<sup>th</sup>, 29<sup>s</sup>.—7<sup>th</sup>, 30<sup>s</sup>.

- (a) An undefined torch, may be erroneous 3' or 4': no definition. Stars unfavourable.  
 (b) Observed at the 4<sup>th</sup> Wire.  
 (c) Observed on the Meridian.  
 (d) A mere blotch seen through a cloud.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	o	i	"	Inch.	o	o	o	i	"	r	i	"	o	i	"		
6.39	-2	52	33.37	30.128	69.2	67.0		2.84					53	11	20.54	903	$\pi$ Argus.
	-9	02	25.05			66.6		9.02					47	01	22.68	928	$\sigma$ Argus R.
	-9	02	23.96										47	01	23.77	928	$\sigma$ Argus.
6.65	-56	29	35.15	.131	68.4	66.0		1 25.39					-0	27	03.79		B Octantis SP.
	-12	55	24.19		68.5			13.00					43	08	19.56	1003	$\gamma^2$ Argus R.
	-12	55	22.57										43	08	21.18	1003	$\gamma^2$ Argus.
	55	57	40.70	.128	68.6	65.0		1 23.85					112	03	01.30	1060	$\gamma$ Cancri.
	55	53	04.77					1 23.62					111	58	25.14		* (a) M.
	55	52	36.05	.127		64.5		1 23.65	9.47		5.90		111	57	41.08		$\delta$
	-57	40	02.90	.108	69.0	66.9		1 29.04						-1	37	35.19	
5.09	-56	46	14.23	.085	68.5	66.2		1 26.12					-0	43	43.60		$\sigma$ Octantis SP.
	73	04	48.99	.070	68.5	66.5		3 03.37					129	11	49.11	1492	12 Canum Ven.
	23	37	01.33	30.060	68.5	67.5		24.66					79	41	22.74	1533	Spica R.
	23	36	59.82										79	41	21.23	1533	Spica.
	-0	13	59.87										55	49	56.65	699	$\alpha$ Columbæ.
	55	57	45.30					1 21.49					112	03	03.54	1060	$\gamma$ Cancri.
	55	53	08.32	29.943	73.0	78.8		1 20.93					111	58	26.00		* (a) M.
7.19	55	53	23.16				1 20.95	9.40		5.90			111	58	37.36		$\delta$
	-57	40	05.26				1 26.60						-1	37	35.11		$\tau$ Octantis SP.
	-56	46	16.72	29.892	71.6	71.8		1 24.65					-0	43	45.62		$\sigma$ Octantis SP.
	-14	07	32.37			69.4		14.09					41	56	10.29	1463	.... R.
	-14	07	29.68										41	56	12.98	1463	....
	73	04	48.82	29.986	71.0	68.6		3 02.09					129	11	47.66	1492	12 Canum Ven.
	73	04	34.74					3 02.02					129	11	33.51		Companion.
5.16	-1	54	46.63	29.980	71.0	68.0		1.88					54	09	08.24	1527	$\epsilon$ Centauri R.
	-1	54	47.99										54	09	06.88	1527	$\epsilon$ Centauri.
	55	54	30.50	30.165	71.0	67.8		1 23.31	9.27		5.80		111	59	47.09		$\delta$
5.48	55	53	02.65				1 23.24						111	58	22.64		* (a) M.
	20	44	11.45	30.215	72.0	73.7		21.20	1.89				76	48	27.51		$\eta$
	79	40	45.40	30.197	71.2	66.4		5 01.07					135	49	43.22	611	Capella.
4.58	-0	13	59.47										55	49	57.05	699	$\alpha$ Columbæ.
	16	02	53.47	.188	70.2	65.0		16.37					72	07	06.59	797	$\beta$ Canis Maj. R.
	16	02	52.74										72	07	05.86	797	$\beta$ Canis Majoris.
4.58	17	25	47.64			64.8		17.86					73	30	02.25	838	Sirius R.
	17	25	45.12										73	29	59.73	838	Sirius.
5.99	5	10	33.81	.187	70.0	65.0		5.15					61	14	35.71	869	$\epsilon$ Canis Majoris.
	5	10	34.11										61	14	36.01	869	$\epsilon$ Canis Majoris.
6.52	-56	29	34.65	.187	70.0	65.0		1 23.73					-0	27	01.63		B Octantis SP.
	-12	55	23.35	.191		64.8		11.38					43	08	22.02	1003	$\gamma^2$ Argus.
	-12	55	21.99										43	08	23.38	1003	$\gamma^2$ Argus.
	55	57	41.06		69.5	64.2		1 24.14					112	03	01.95	1060	$\gamma$ Cancri.
5.26	55	54	54.60			64.0		1 24.02	9.20		5.80		112	0	0.37		$\delta$
	55	53	04.56					1 23.93					111	58	25.24		* (a) M.
	-8	50	32.38	.187	69.0			8.87					47	13	15.50	1114	$\lambda$ Argus R.
	-8	50	33.55										47	13	14.33	1114	$\lambda$ Argus.
	86	09	28.69	.185												1152	$\theta$ Ursæ Majoris.
	-59	15	14.45	.181				1 35.48					-3	12	53.18		C Octantis SP.
	77	35	33.26					4 12.52					133	43	42.53	1219	$\lambda$ Ursæ Majoris
	76	11	18.27					3 47.33					132	19	02.35	1130	$\mu$ Ursæ Majoris.
	-57	40	01.86			63.6		1 29.82					-1	37	34.93		$\tau$ Octantis SP.
	82	30	11.87	30.171	69.3	63.5		6 47.31					138	40	55.93	1370	$\chi$ Ursæ Majoris.
88	13	12.22													1379	$\gamma$ Ursæ Majoris.	

Coincidence of Micrometer Wire with fixed Wire, =20".151 One revolution =40".335  
 Correction for Runs =-2".9  
 Adopted Zenith Point =326°. 04'. 05".84  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			l #	#	#	#	#	#					
♄ 7 March	27	β Hydri SP.....	13	13.8	2.5	20.3	20.1	19.5	31.	12 16 39		258 12 47.59	T.M.
	2110	ε Sagittarii.....	32	60.5	55.4	67.1	47.	55.8	37.2			325 32 53.54	T.M.
	2398	(a) α Pavonis.....	45	44.6	40.	62.2	11.	48.5	7.9			302 45 36.05	T.M.
		φ's center.....	12	52.	52.	52.1	52.6	55.	45.6			347 12 51.26	T.M.
♃ 9 March		ο Octantis SP. R..	50	42.9	1.2	46.8	46.3	35.4	14.8	12 08 36		202 50 23.66	T.M.
		ο Octantis SP.....	17	64.	57.	78.5	8.	75.2	15.	12 14 33		269 17 49.35	T.M.
	1471	..... M.R.	18	44.8	23.2	40.6	24.	28.7	38.7	17.580	+1 43.74	179 19 16.15	T.M.
	1471	.....	48	11.2	0.8	25.8	26.8	11.	31.8			292 48 58.09	T.M.
	1492	(b) 12 Canum Ven....	8	31.	81.	66.9	25.	96.1	12.5			39 08 51.71	T.M.
	1527	ε Centauri MR....	59	12.9	7.5	51.4	24.7	40.4	21.1	20.160	-0.32	147 58 54.43	T.M.
	1527	ε Centauri.....	9	10.7	11.	20.9	57.6	12.5	16.4			324 09 16.29	T.M.
		φ's center.....	3	7.	0.4	3.4	3.2	4.8	56.9			348 03 02.33	T.M.
♀ 10 March		⊙ S.L. M.....	41	38.2	45.2	37.	44.3	41.3	36.3	24.477	-2 54.45	355 38 46.17	T.M.
		⊙ N.L.....	10	55.4	59.	51.2	60.	55.4	53.8			356 10 55.37	T.M.
	699	α Columbæ.....	50	12.	6.4	18.1	55.	9.	47.			325 50 04.58	T.M.
	712	μ Columbæ.....	6	30.6	26.	29.	26.	27.2	19.			345 06 26.16	T.M.
	735	β Aurigæ.....	50	53.1	36.1	28.5	40.2	53.1	32.2			45 50 40.46	T.M.
	838	Sirius M. R. ....	37	20.2	28.	56.8	35.8	51.9	23.	18.590	+1 03.00	128 38 18.29	T.M.
	838	Sirius.....	29	53.7	53.2	53.9	51.	54.9	42.			343 29 51.33	T.M.
	869	ε Canis Maj. M.R.	52	55.2	56.	33.	71.1	21.9	62.	19.087	+42.96	140 53 32.30	T.M.
	869	ε Canis Majoris....	14	46.9	37.7	51.3	28.9	43.8	25.7			331 14 39.21	T.M.
	883	(a) δ Canis Maj. M...	51	31.	36.1	38.1	29.6	37.4	15.1	20.071	+3.27	333 51 34.85	T.M.
	903	π Argus M.R.....	56	39.3	41.	22.5	55.6	11.6	49.2	20.070	+3.31	148 56 39.48	T.M.
	903	π Argus.....	11	39.1	34.	47.2	22.2	37.1	13.1			323 11 32.19	T.M.
	915	η Canis Majoris...	0	37.3	35.1	42.9	26.3	38.2	18.8			331 00 33.05	T.M.
	928	(a) σ Argus.....	1	45.8	45.	54.5	29.	44.7	19.2		+1.02	317 01 40.56	T.M.
		B Octantis SP....	34	44.2	34.9	58.8	46.1	53.2	54.	7 45 00		269 34 48.01	T.M.
	1003	γ <sup>2</sup> Argus M.R.....	59	49.	40.7	34.	53.1	21.7	58.	20.437	-11.50	158 59 30.49	T.M.
	1003	γ <sup>2</sup> Argus.....	8	50.5	47.5	56.9	30.4	45.8	20.3			313 08 41.85	T.M.
	1060	γ Cancri.....	1	27.5	70.8	53.9	39.	78.7	22.8			22 01 48.61	T.M.
		(c) δ S.L. M.....								25.722	-3 44.67	21 58 03.94	T.M.
		* (a) M.....								27.016	-4 36.86	21 57 11.75	T.M.
	1152	(a) θ Ursæ Majoris....	13	23.1	60.2	52.9	3.2	74.7	56.0		-1.50	52 13 33.17	T.M.
		C Octantis SP.....	48	69.4	51.3	81.4	4.9	75.4	18.	9 57 30		266 48 49.70	T.M.
1219	λ Ursæ Majoris....	39	14.2	57.6	51.	58.6	73.4	51.4			43 39 30.60	T.M.	
	τ Octantis SP.....	24	21.1	7.2	30.9	22.5	26.3	33.3	10 59 30		268 24 03.16	T.M.	
27	β Hydri SP.....	12	71.9	59.3	78.	17.	77.8	28.4	12 16 37.5		258 12 55.04	T.M.	
	(a) φ's center.....	28	41.2	38.7	39.	38.6	40.3	33.9		-0.57	348 28 37.70	T.M.	
⊙ 12 March		(d) ⊙ N.L. M.....	59	25.2	27.3	23.4	27.1	27.	21.	22.192	-1 22.28	356 58 2.13	T.M.
		⊙ S.L.....	25	48.5	53.9	47.8	53.4	53.7	45.2			356 25 49.37	T.M.
	611	Capella.....	44	37.1	76.2	74.8	17.3	97.8	10.2			45 44 51.77	T.M.
	673	α Leporis M.R....	4	59.4	61.6	30.6	80.	21.6	68.5	19.906	+9.92	130 05 02.87	T.M.
	673	α Leporis.....	3	11.2	9.4	14.2	7.1	13.	59.1			342 03 09.37	T.M.
	699	α Columbæ.....	50	12.9	7.1	18.	57.3	78.	49.1			325 50 05.37	T.M.
	1060	γ Cancri.....	1	24.2	72.8	56.8	34.8	84.4	16.7			22 01 48.11	T.M.
		δ S.L. M.....								28.158	-5 22.92	21 56 25.19	T.M.
		* (a) M.....								27.000	-4 36.21	21 57 11.90	T.M.
		(e) φ's center.....	20	41.5	40.2	39.7	40.2	41.	32.8			349 20 39.17	T.M.
2741	(e) Fomalhaut.....	30	60.	56.4	66.8	50.5	59.	40.			329 30 55.35	T.M.	
♃ 13 March		⊙ S.L. M.....	49	40.2	53.4	41.	50.	50.5	38.5	20.562	-16.54	356 49 29.02	T.M.
		⊙ N.L.....	21	31.4	44.8	33.1	41.3	41.1	31.5			357 21 36.69	T.M.
	611	Capella.....	44	43.8	82.	80.2	23.6	100.2	15.			45 44 57.00	T.M.

Molyneux slow, March 9<sup>th</sup>, 30<sup>s</sup>.—10<sup>th</sup>, 31<sup>s</sup>.—12<sup>th</sup>, 33<sup>s</sup>.

- (a) Observed at the 5<sup>th</sup> Wire.
- (b) Observed at the 4<sup>th</sup> Wire.
- (c) Very steady, and good observations. Excellent observing night.
- (d) First observation at the 4<sup>th</sup> Wire; the 2<sup>nd</sup> one space beyond the 5<sup>th</sup>. Reductions for Dec. and curvature = -0<sup>s</sup>.34 and -0<sup>s</sup>.97 respectively.
- (e) Very unsteady: bad observations.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	°	°	"	"	"	'	"	°	'	"		
	-67	51	18.25	30.171	69.3	63.5		2	19.10				-11	49	40.60	27	β Hydri S.P.
	-0	31	12.30	.138	69.0	66.5			0.51				55	32	43.94	2110	ε Sagittarii.
	-23	18	29.81	.130	70.0	71.6			24.15				32	45	02.79	2398	α Pavonis.
	21	08	45.42	.138	71.0	75.1			21.55	1.92			77	13	1.80		♀
6.51	-56	46	17.82	30.049	68.8	64.0		1	26.37				-0	43	47.44		ο Octantis SP.
	-56	46	16.49										-0	43	46.11		ο Octantis SP.
7.12	-33	15	10.31	.045	68.5	63.5			37.22				22	48	09.22	1471	.... R.
	-33	15	07.75										22	48	11.78	1471	....
	73	04	45.87	.035	68.5	63.6		3	04.16				129	11	46.78	1492	ε Canum Ven.
5.36	-1	54	48.59		69.0	64.0			1.90				54	09	06.26	1527	ε Centauri R.
	-1	54	49.55										54	09	05.30	1527	ε Centauri.
	21	58	56.49	.045	71.0	76.9			22.30	1.98			78	3	13.56		♀
	29	34	40.33	30.042	71.2	79.0			31.29	4.23			85	55	10.94		⊙
	30	6	49.53						31.97	4.30	16	6.80	85	55	7.15		⊙
	-0	14	01.26	.023	72.5	69.0			0.23				55	49	55.26	699	α Columbæ.
	19	02	20.32						19.37				75	06	36.44	712	μ Columbæ.
4.81	79	46	34.62			68.6		5	00.78				135	55	32.15	735	β Aurigæ.
	17	25	47.55		71.0	67.0			17.70				73	30	02.00	838	Sirius R.
	17	25	45.49										73	29	59.94	838	Sirius.
5.76	5	10	33.54			66.8			5.11				61	14	35.40	869	ε Canis Maj. R.
	5	10	33.37										61	14	35.23	869	ε Canis Majoris.
	7	47	29.01	.025	71.0	66.7			7.71				63	51	33.47	883	δ Canis Majoris.
5.84	-2	52	33.64	.030		66.5			2.83				53	11	20.28	903	π Argus R.
	-2	52	33.65										53	11	20.27	903	π Argus.
	4	56	27.21						4.88				61	00	28.84	915	η Canis Majoris.
	-9	02	25.28	.033		66.9			8.97				47	01	22.50	928	σ Argus.
	-56	29	17.83	.032	70.3	66.8		1	24.93				-0	26	46.01		B Octantis SP.
6.17	-12	55	24.65						12.94				43	08	19.16	1003	γ <sup>2</sup> Argus R.
	-12	55	23.99										43	08	19.82	1003	γ <sup>2</sup> Argus.
	55	57	42.77			66.3		1	23.35				112	03	02.87	1060	γ Cancri.
	55	53	58.10			66.0		1	23.21	8.98		5.60	111	59	14.68		δ
	55	53	05.91					1	23.18				111	58	25.84		* (α) M.
	86	09	27.33	30.030	70.0	64.2										1152	θ Ursæ Majoris.
	-59	15	16.14	.033	70.0	63.9		1	35.04				-3	12	54.43		C Octantis SP.
	77	35	24.76					4	11.60				133	43	32.11	1219	λ Ursæ Majoris.
	-57	40	02.68	.029	69.0	63.5		1	29.36				-1	37	35.29		τ Octantis SP.
	-67	51	10.80	.000		63.5		2	18.32				-11	49	32.37	27	β Hydri SP.
	22	24	31.86	.028	70.5	69.0			23.15	2.02			78	29	49.74		♀
	30	53	56.29	30.068	71.2	72.6			33.42	4.40			86	42	15.86		⊙
	30	21	43.53						32.71	4.33	16	6.20	86	42	15.86		⊙
6.12	79	40	45.93	.069	71.0	68.0		4	58.85				135	49	41.53	611	Capella.
	15	59	02.97			67.8			16.14				72	03	15.86	673	α Leporis R.
	15	59	03.53						0.23				72	03	16.42	673	α Leporis.
	-0	14	00.47			67.5							55	49	56.05	699	α Columbæ.
	55	57	42.27	.092	70.5	67.2		1	23.37				112	03	02.39	1060	γ Cancri.
	55	52	19.35	.092	70.5	67.0		1	22.37	8.84		5.50	111	57	35.13		δ
	55	53	06.06					1	23.18				111	58	25.99		* (α) M.
	23	16	33.33	.091	72.0	80.8			23.68	2.08			79	21	51.68		♀
	3	26	49.51	.091	72.0	81.2			3.31				59	30	49.57	2741	Fomalhaut.
	30	45	22.71	30.137	72.2	82.8			32.68	4.38			87	5	53.76		⊙
	31	17	30.38						33.37	4.45	16	6.00	87	5	50.05		⊙
	79	40	50.69	.103	73.1	77.4		4	53.77				135	49	41.21	611	Capella.

Coincidence of Micrometer Wire with fixed Wire, =20°.151 to March 9<sup>th</sup>. From March 9<sup>th</sup>, =20°.152  
 One revolution =40<sup>h</sup>.335  
 Correction for Runs =-2<sup>h</sup>.9  
 Adopted Zenith Point =326°. 04'. 05<sup>h</sup>.84 to March 13<sup>th</sup>, at Noon. From March 13<sup>th</sup>, =326°. 04'. 06<sup>h</sup>.31  
 Assumed Co-latitude =56°. 03'. 56<sup>h</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.			Initials of Observer.	
			A	B	C	D	E	F			°	'	"		
			°	'	"	°	'	"							
<div style="display: flex; justify-content: space-between;"> <span>°</span> <span>′</span> <span>″</span> <span>°</span> <span>′</span> <span>″</span> <span>°</span> <span>′</span> <span>″</span> </div>															
<div style="display: flex; justify-content: space-between;"> <span>h.</span> <span>m.</span> <span>s.</span> </div>															
<div style="display: flex; justify-content: space-between;"> <span>°</span> <span>′</span> <span>″</span> <span>°</span> <span>′</span> <span>″</span> </div>															
D 13 March	673	α Leporis M.R....	5 45.6	53.2	16.	70.7	11.9	56.2	21.093	-37.96	130	5	3.86	T.M.	
	673	α Leporis .....	3 10.1	8.0	13.2	5.8	13.3	57.7			342	3	8.10	T.M.	
	699	α Columbæ .....	50 13.6	7.	18.9	57.8	8.9	49.			325	50	5.86	T.M.	
	712	μ <sup>1</sup> Columbæ .....	6 32.6	25.5	30.8	25.2	28.8	18.			345	6	26.68	T.M.	
	735	β Aurigæ .....	50 54.6	100.8	94.5	40.	121.0	29.9			44	51	13.35	T.M.	
	838	Sirius M.R.....	38 12.1	16.2	42.	31.	36.	20.4	19.847		+12.30	128	38	17.94	T.M.
	838	Sirius .....	29 54.4	52.	54.6	48.7	55.1	41.			343	29	51.85	T.M.	
	869	ε Canis Maj. M.R.	52 26.	29.9	2.7	47.	52.1	37.2	18.412		+1 10.18	140	53	31.83	T.M.
	869	ε Canis Majoris ...	14 45.2	38.3	47.	32.	41.7	26.8			331	14	38.66	T.M.	
	903	π Argus M.R.....	56 53.	59.3	37.3	72.1	29.1	63.1	20.420		-10.81	148	56	41.12	T.M.
	903	π Argus.....	11 39.1	33.	44.4	23.3	34.9	14.3			323	11	31.56	T.M.	
	915	η Canis Majoris ...	0 39.	34.	42.	27.4	36.7	20.8			331	0	33.27	T.M.	
	928	σ Argus.....	1 46.9	42.	52.1	30.	40.2	21.6			317	1	38.64	T.M.	
		B Octantis SP....	34 38.	39.	50.9	50.6	51.2	53.	7 46 00			269	34	26.69	T.M.
	1003	γ <sup>c</sup> Argus M.R.....	59 34.	24.8	21.8	36.1	9.2	40.	20.020		+5.32	158	59	32.24	T.M.
	1003	γ <sup>c</sup> Argus.....	8 51.	45.	52.3	32.7	41.	23.6			313	8	40.88	T.M.	
		γ Cancri.....	1 27.1	74.9	59.8	36.3	87.8	17.7			22	1	50.42	T.M.	
		♂ N.L. M.....	.....	.....	.....	.....	.....	.....	29.571		-6 19.82	21	55	30.60	T.M.
		* (a) M.....	.....	.....	.....	.....	.....	.....	27.036		-4 37.67	21	57	12.75	T.M.
	1114	λ Argus M.R.....	54 8.5	7.9	57.1	17.7	47.4	17.4	19.282		+35.09	154	54	40.38	T.M.
1114	(a) λ Argus.....	13 39.3	37.2	44.1	23.	33.9	14.1		+1.52	317	13	33.13	T.M.		
1152	θ Ursæ Majoris....	13 34.3	71.5	66.4	11.9	89.3	5.			52	13	46.04	T.M.		
	* Octantis SP....	49 6.	51.9	25.	3.2	10.4	19.1	9 57 30		266	48	59.72	T.M.		
1219	λ Ursæ Majoris...	39 17.	57.4	55.6	56.9	77.5	50.6			43	39	32.07	T.M.		
1230	μ Ursæ Majoris....	15 6.3	48.4	46.1	48.4	69.1	42.			42	15	23.34	T.M.		
	τ Octantis SP.....	24 18.	4.	27.8	19.	25.	29.4	10 59 08		268	24	0.15	T.M.		
♁ 14 March		⊙ N.L. M.....	45 61.8	69.6	62.4	67.9	69.	59.9	21.390	-49.94	357	45	15.41	T.M.	
		⊙ S. L.....	13 5.	11.8	3.2	10.6	10.	2.			357	13	6.44	T.M.	
	528	Aldebaran.....	9 22.	60.1	46.4	34.	68.	17.7			16	9	40.92	T.M.	
	673	α Leporis.....	3 11.7	5.7	14.2	4.	10.8	58.			342	3	7.10	T.M.	
	699	α Columbæ.....	50 13.	7.9	17.8	57.9	8.9	48.8			325	50	5.71	T.M.	
	746	γ Columbæ.....	41 51.2	46.5	55.9	34.2	45.	26.			324	41	42.97	T.M.	
	831	ε Geminorum .....	15 28.	73.	62.	32.	90.4	17.9			25	15	50.47	T.M.	
	869	ε Canis Maj. M.R.	52 54.4	60.2	31.2	17.	23.2	66.2	19.113		+41.91	140	53	33.06	T.M.
	869	ε Canis Majoris....	14 46.1	38.0	48.5	32.3	42.5	27.0			331	14	39.23	T.M.	
	♃ 16 March		(b) ⊙ S. L.....	0 21.3	28.2	23.6	26.7	28.3	19.5				358	00	24.54
2741		(a) Fomalhaut.....	30 60.2	59.4	68.3	53.2	59.0	41.7		+0.65	329	30	57.36	T.M.	
♀ 17 March		⊙ S. L. M.....	24 21.0	25.8	20.8	24.7	25.0	18.8	20.589	-17.63	358	24	5.00	T.M.	
		⊙ N. L.....	56 8.6	18.5	10.4	15.5	17.2	7.9			358	56	12.53	T.M.	
	869	ε Canis Maj. M.R.	53 42.8	50.2	19.9	6.6	11.0	53.1	20.310		-6.37	140	53	33.18	T.M.
	869	ε Canis Majoris....	14 44.	40.1	47.4	34.	42.1	26.1			331	14	39.11	T.M.	
	903	π Argus M.R.....	55 41.	47.8	26.7	61.2	16.2	51.2	18.646		+1 00.76	148	56	41.07	T.M.
	903	π Argus.....	11 38.4	34.7	45.8	24.9	35.4	15.2			323	11	32.46	T.M.	
		B Octantis SP....	34 49.6	37.3	62.8	50.1	55.2	59.5	7 50 48		-0.45	269	34	31.54	T.M.
	1230	μ Ursæ Majoris....	15 5.9	48.	45.1	48.9	68.9	40.			42	15	22.75	T.M.	
		τ Octantis SP.....	24 22.9	4.5	36.	16.5	28.7	28.8	11 2 30			268	24	1.85	T.M.
	27	β Hydri SP.....	13 14.	58.9	22.5	13.5	20.2	26.1	12 17 35			258	12	55.59	T.M.
2329	Altair .....	27 27.3	40.1	33.5	35.7	40.6	27.5		8	25	34.07	T.M.			
2741	Fomalhaut.....	30 63.	59.	71.	53.	62.1	42.		329	30	58.26	T.M.			

Molyneux fast, March 17<sup>th</sup>, 27<sup>th</sup>.

- (a) Observed at the 5<sup>th</sup> Wire.
- (b) Cloudy weather and bad definition: good observations cannot be procured.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. A S C	NAME OF STAR or PLANET.
			Attach.	Out.	Wet Bulb.							
#	° ' "	Inch.	°	°	°	' "	' "	"	' "	° ' "		
5.98	15 59 02.55	30.103	73.1	76.9		15.88				72 03 15.18	673	$\alpha$ Leporis R.
	15 59 1.69									72 03 14.32	673	$\alpha$ Leporis.
	-0 14 0 55		73.0	76.5		0.23				55 49 55.97	699	$\alpha$ Columbæ.
	19 2 20.27	.104		75.5		19.19				75 06 36.21	712	$\mu^1$ Columbæ.
	78 47 6.94			75.2		4 32.43				134 55 36.12	735	$\beta$ Aurigæ.
4.90	17 25 48.47	.097		74.0						73 30 02.73	838	Sirius R.
	17 25 45.44					17.51				73 29 59.70	838	Sirius.
5.25	5 10 34.58	.102	73.0	74.5		5.05				61 14 36.38	869	$\epsilon$ Canis Maj. R.
	5 10 32.25									61 14 34.05	869	$\epsilon$ Canis Majoris.
6.34	-2 52 34.71	.102	73.	74.2		2.80				53 11 19.24	903	$\pi$ Argus R.
	-2 52 34.85									53 11 19.10	903	$\pi$ Argus.
6.56	4 56 26.86	.102	73.	74.0		4.82				61 00 28.43	915	$\eta$ Canis Majoris.
	-9 2 27.77	.102	73.	74.		8.87				47 01 20.11	928	$\sigma$ Argus.
6.76	-56 29 39.72	.102	73.	74.		1 24.01				-0 27 06.98		$B$ Octantis SP.
	-12 55 25.83	.102	73.	74.		12.79				43 08 18.13	1003	$\gamma^2$ Argus R.
	-12 55 25.53									43 08 18.43	1003	$\gamma^2$ Argus.
	55 57 44.01	.102	72.5	73.5		1 22.40				112 03 03.16	1060	$\gamma$ Cancri.
	55 51 24.19					1 22.08	8.76		5.50	111 56 28.76		$\delta$
6.15	55 53 6.34					1 22.16				111 58 25.25		* (a) M.
	-8 50 33.97	.103		72.0		8.71				47 13 14.07	1114	$\lambda$ Argus R.
	-8 50 33.28									47 13 14.76	1114	$\lambda$ Argus.
	86 9 39.63	.102		70.2							1152	$\theta$ Ursæ Majoris.
	-59 15 6.69	.100	71.5	68.0		1 34.48				-3 12 44.42		* Octantis SP.
	77 35 25.66		71.0	67.5		4 10.40				133 43 32.81	1219	$\lambda$ Ursæ Majoris
	76 11 16.93			67.2		3 45.27				132 18 58.95	1230	$\mu$ Ursæ Majoris.
	-57 40 6.26			66.8		1 29.03				-1 37 38.54		$\tau$ Octantis SP.
	31 41 9.00	30.000	72.5	84.0		33.66	4.50		16 5.70	87 29 29.21		$\odot$
	31 09 0.03					32.97	4.43			87 29 31.02		$\odot$
6.15	50 5 34.51	29.929	73.5	85.0		1 04.83				106 10 36.09	528	Aldebaran.
	15 59 0 69	29.926		75.0		15.88				72 03 13.32	673	$\alpha$ Leporis.
	-0 14 0 70	29.922	73.0	74.0		0.22				55 49 55.83	699	$\alpha$ Columbæ.
	-1 22 23.44			72.2		1.33				54 41 31.98	746	$\gamma$ Columbæ.
	59 11 44.06			69.8		1 33.37				115 17 14.18	831	$\epsilon$ Geminorum.
	5 10 33.35	29.922	72.5	69.0		5.07				61 14 35.17	869	$\epsilon$ Canis Maj. R.
	5 10 32.82									61 14 34.64	869	$\epsilon$ Canis Majoris.
	31 56 18.13	30.220	69.0	64.0		35.56	4.53			88 16 51.11		$\odot$
	3 26 50.95	30.363	67.2	65.8		3.52				59 30 51.22	2741	Fomalhaut.
	6.15	32 19 58.59	30.357	67.8	66.2		36.12	4.58		16 4.90	88 40 31.78	
32 52 6.12						36.87	4.65			88 40 23.97		$\odot$
5 10 33.23		.320	67.0	60.3		5.22				61 14 35.20	869	$\epsilon$ Canis Maj. R.
6.77	5 10 32.70									61 14 34.67	869	$\epsilon$ Canis Majoris.
	-2 52 34.66			60.4		2.90				53 11 19.19	903	$\pi$ Argus R.
	-2 52 33.95									53 11 20.10	903	$\pi$ Argus.
	-56 29 34.87	.329	66.3	60.0		1 26.96				-0 27 05.08		$B$ Octantis SP.
	76 11 16.34	.324	66.0	59.0		3 50.76				132 19 3.85	1230	$\mu$ Ursæ Majoris.
	-57 40 4 56	.316	65.5	58.6		1 31.14				-1 37 38.95		$\tau$ Octantis SP.
	-67 51 10 82	.307	64.4	58.3		2 21.18				-11 49 35.25	27	$\beta$ Hydri SP.
	42 21 27.66	.295	65.2	60.0		52.99				98 26 17.40	2329	Altair.
3 26 51.85	30.312	67.0	68.4		3.42				59 30 52.02	2741	Fomalhaut.	

Coincidence of Micrometer Wire with fixed Wire, =20°.152 One revolution =40".335  
 Correction for Runs =-2".90  
 Adopted Zenith Point =326°. 04'. 06".41  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			l #	#	#	#	#	#						
18 March		☉ N.L. M.....	19 4.	12.1	3.1	9.9	8.7	4.	19.007	+46.18	359 19 53.12	T.M.		
		☉ S.L.....	47 44.8	53.9	44.0	51.3	50.0	45.9			358 47 47.69	T.M.		
	611	Capella.....	44 34.2	74.6	70.8	17.5	90.7	70.			45 44 49.17	T.M.		
	673	α Leporis M.R....	4 41.8	52.9	19.2	63.4	15.6	48.	19.540		+24.68	130 5 4.00	T.M.	
	699	α Columbæ.....	50 11.3	11.1	19.4	59.	10.8	48.1				325 50 6.61	T.M.	
	734	α Orionis M.R....	46 21.6	9.	53.9	9.8	49.2	10.	19.350		+32.35	104 46 37.96	T.M.	
	734	α Orionis.....	21 26.1	40.1	33.	32.4	40.4	26.2				7 21 32.76	T.M.	
	838	Sirius M.R.....	38 9.	12.6	44.	23.	36.	11.2	19.710		+17.83	128 38 19.83	T.M.	
	838	Sirius.....	29 53.9	53.	55.1	51.	55.4	41.6				343 29 51.54	T.M.	
	869	ε Canis Maj. M.R.	53 37.9	42.4	18.4	56.	8.3	44.6				140 53 33.66	T.M.	
	869	ε Canis Majoris ...	14 44.4	39.8	50.	32.4	43.4	25.				331 14 39.33	T.M.	
	903	π Argus M.R.....	56 55.6	57.7	40.2	12.	27.1	65.1	20.456		-12.26	148 56 40.30	T.M.	
	903	π Argus.....	11 38.	35.5	45.9	23.9	36.4	12.7				323 11 32.13	T.M.	
	928	σ Argus M.R.....	6 6.2	0.2	53.	14.1	38.4	15.5	19.343		+32.63	155 6 33.48	T.M.	
	928	σ Argus.....	1 46.	45.4	55.4	31.	42.8	20.4				317 1 40.29	T.M.	
		B Octantis SP....	34 44.5	36.4	59.5	48.6	53.2	55.3	7 46 00			269 34 39.14	T.M.	
	1003	γ <sup>2</sup> Argus M.R....	59 25.0	15.6	11.6	28.8	57.7	33.	19.776		+15.17	158 59 33.07	T.M.	
	1003	γ <sup>2</sup> Argus.....	8 50.9	46.9	58.8	30.8	47.	20.2				313 8 42.38	T.M.	
	1060	γ Cancri.....	1 27.5	70.1	52.4	40.9	75.2	25.0				22 1 48.35	T.M.	
		♂ S.L.....	46 4.4	45.7	28.2	16.8	51.9	2.8				21 46 24.83	T.M.	
		* (b) M.....							20.080		+2.90	21 46 21.93	T.M.	
	1130	γ Cancri.....	22 8.5	49.3	31.9	22.6	56.4	6.3				18 22 28.93	T.M.	
		(a) δ N.L.....	43 4.	48.6	39.2	19.7	55.1	4.3				20 43 28.15	T.M.	
	1197	π Leonis.....	48 26.	49.5	37.2	39.	51.6	29.3				8 48 38.42	T.M.	
	1209	Regulus.....	44 31.2	54.4	43.6	40.	58.	32.8				12 44 42.88	T.M.	
	2329	Altair M.R.....	41 51.2	37.2	28.5	36.3	22.6	35.	18.650		+1 00.58	103 42 35.66	T.M.	
	2329	Altair.....	25 25.9	43.6	34.4	35.7	43.8	26.9				8 25 34.89	T.M.	
		♀'s center.....	3 19.8	16.5	17.2	17.	17.1	13.2				352 3 16.44	T.M.	
19 March		☉ S.L. M.....	11 33.6	49.	36.9	45.3	45.1	34.6	20.381	-9.20	359 11 31.75	T.M.		
		☉ N.L.....	43 31.6	40.	31.	37.8	40.4	30.6			359 43 34.53	T.M.		
	611	Capella.....	44 44.2	26.8	20.4	28.2	42.	20.8				45 44 59.92	T.M.	
	673	α Leporis M.R....	4 34.4	43.	10.2	57.8	7.8	41.	19.361		+31.91	130 5 3.47	T.M.	
	673	α Leporis.....	3 8.9	9.9	11.	8.8	13.1	58.				342 3 8.36	T.M.	
	699	α Columbæ.....	50 13.9	8.1	20.4	57.9	9.3	48.				325 50 6 26	T.M.	
	734	α Orionis M.R....	46 31.9	19.2	5.	18.	1.9	18.6	19.608		+21.94	104 46 37.79	T.M.	
	734	α Orionis.....	21 25.9	43.6	33.2	35.2	43.2	28.				7 21 34.58	T.M.	
	1060	γ Cancri.....	1 26.7	73.8	54.8	40.6	81.	23.				22 1 49.81	T.M.	
		(b) ♂ N.L.....	43 54.1	101.0	81.5	68.8	118.1	53.				21 44 19.01	T.M.	
		* (b) M.....							16.887		+2 11.69	21 46 30.70	T.M.	
	1197	π Leonis.....	48 25.9	52.9	36.6	41.	56.	31.				8 48 40.22	T.M.	
	1209	Regulus.....	44 30.6	66.2	46.2	48.2	66.8	35.4				12 44 48.44	T.M.	
		δ N.L.....	59 56.1	95.	76.8	74.7	96.	58.8				16 0 15.75	T.M.	
	1279	k Leonis.....	1 56.4	94.	75.6	72.	96.1	57.				15 2 14.97	T.M.	
	1303	c Leonis.....	57 38.6	63.1	47.4	52.	63.3	41.				6 57 50.63	T.M.	
	2329	Altair M.R.....	42 41.	25.5	17.	26.2	10.2	25.	19.903		+10.04	103 42 33.96	T.M.	
	2329	Altair.....	25 27.	44.6	34.9	36.7	44.3	28.6				8 25 35.84	T.M.	
		(c) ♀'s center.....	31 15.2	14.8	12.7	14.8	14.7	9.1				352 31 13.00	T.M.	
	20 March		☉ N.L. M.....	6 35.2	49.8	38.6	46.3	45.1	37.4		19.330	+33.15	0 7 15.42	T.M.
			☉ S.L.....	35 3.8	18.9	4.5	15.	15.7	6.0				359 35 10.27	T.M.
		699	α Columbæ.....	50 11.6	9.8	18.	58.9	10.4	49.				325 50 6.27	T.M.
		734	α Orionis.....	21 25.2	45.	30.5	39.	43.	30.9				7 21 35.45	T.M.

Molyneux fast, March 18<sup>th</sup>, 26<sup>th</sup>.—19<sup>th</sup>, 26<sup>th</sup>.—20<sup>th</sup>, 26<sup>th</sup>.

- (a) Limb woolly and tremulous.
- (b) Mars an undefined mass of light: the observation may be erroneous 3'.
- (c) Observed at the 5<sup>th</sup> Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
	#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"	
5.36	33	15	46.91	30.311	67.5	69.6		37.13	4.70		16	4.70	89	4	11.19		⊙
	32	43	41.28					36.38	4.63				89	4	14.48		⊙
	79	40	42.76	.248	68.0	65.0		5	2.46				135	49	41.97	611	Capella.
	15	59	2.41	.248	68.0	64.2			16.35				72	03	15.51	673	α Leporis.
	-0	13	59.80	.248	67.5	64.0			0.23				55	49	56.72	699	α Columbæ.
	41	17	28.45	.248	67.2	63.3							97	22	15.40	734	α Orionis R.
	41	17	26.35						50.20				97	22	13.30	734	α Orionis.
	17	25	46.58	.252	67.0	62.6							73	30	01.32	838	Sirius R.
	17	25	45.13						17.99				73	29	59.87	838	Sirius.
	5.69	5	10	32.75	.258	67.0	62.8			5.19			61	14	34.69	869	ε Canis Maj .R.
6.50	5	10	32.92									61	14	34.86	869	ε Canis Majoris.	
6.22	-2	52	33.89	.258	67.0	63.0			2.88			53	11	19.98	903	π Argus R.	
	-2	52	34.28									53	11	19.59	903	π Argus.	
6.89	-9	2	27.07	.264	67.0	62.5			9.12			47	01	20.56	928	σ Argus R.	
	-9	2	26.12									47	01	21.51	928	σ Argus.	
	-56	29	27.27					1	26.34			-0	26	56.76		B Octantis SP.	
7.73	-12	55	26.66	.264	66.8	62.5			13.15			43	08	16.94	1003	γ <sup>2</sup> Argus R.	
	-12	55	24.03									43	08	19.57	1003	γ <sup>2</sup> Argus.	
	55	57	41.94	.267	67.0	63.0		1	24.57			112	03	03.26	1060	γ Cancr.	
	55	42	18.42					1	22.20	8.39		111	47	34.18		♂	
	55	42	15.52					1	22.20		5.20	111	47	34.47		* (b) M.	
	52	18	22.52	.268	66.5	64.0		1	13.84			108	23	33.11	1130	γ Cancr.	
	54	39	21.74					1	20.42	44	14.09	109	45	35.54		♃	
	42	44	32.01						52.78			98	49	21.54	1197	π Leonis.	
	46	40	36.47	.265	66.5	64.0		1	00.53			102	45	33.75	1209	Regulus.	
5.28	42	21	30.75	.214	65.8	65.6			51.83			98	26	19.33	2329	Altair R.	
	42	21	28.48									98	26	17.06	2329	Altair.	
	25	59	10.03	30.195	67.3	76.0			27.17	2.28		82	3	31.67		♀	
	33	7	25.34	30.181	68.0	77.4			36.25	4.68		89	27	58.06		⊙	
	33	39	28.12						36.99	4.75		89	27	52.71		⊙	
5.92	79	40	53.51	.136	69.0	71.8		4	57.42			135	49	47.68	611	Capella.	
	15	59	2.94			70.0			16.12			72	03	15.81	673	α Leporis R.	
	15	59	1.95									72	03	14.82	673	α Leporis.	
	-0	14	0.15	.136	68.5	69.5			0.23			55	49	56.37	699	α Columbæ.	
6.19	41	17	28.62			69.0			49.46			97	22	14.83	734	α Orionis R.	
	41	17	28.17									97	22	15.38	734	α Orionis.	
	55	57	43.40	.135	68.0	70.0		1	23.08			112	03	03.23	1060	γ Cancr.	
	55	40	12.60	.138		70.0		1	22.18	8.32		111	45	18.01		♂	
	55	42	24.29					1	22.29		5.20	111	47	43.33		* (b) M.	
	42	44	33.81	.132	68.0	68.0			52.13			98	49	22.69	1197	π Leonis.	
	46	40	42.03	.130	68.0	68.0			59.80			102	45	38.58	1209	Regulus.	
	49	56	9.34	.128	68.0	68.5		1	6.97	41	43.43	105	4	35.27		♃	
	48	58	8.56					1	04.72			105	03	10.03	1279	k Leonis.	
	40	53	44.22	.130	68.0	69.0			48.77			96	58	29.74	1303	c Leonis.	
4.90	42	21	32.45	.064	66.5	67.0			51.42			98	26	20.62	2329	Altair R.	
	42	21	29.43									98	26	17.60	2329	Altair.	
	26	27	6.59	30.031	68.8	86.0			27.08	2.32		82	32	28.05		♀	
	34	3	9.01	30.001	69.8	89.0			36.53	4.79		89	51	33.40		⊙	
	33	31	3.86			70.6	78.3		35.80	4.73		89	51	35.78		⊙	
	-0	14	0.14	29.997	70.6	78.3			0.23			55	49	56.38	699	α Columbæ.	
	41	17	29.04	29.997	70.6	79.0			48.33			97	22	14.12	734	α Orionis.	

Coincidence of Micrometer Wire with fixed Wire, =20°.152 One revolution =40°335  
 Correction for Runs =2°.9  
 Adopted Zenith Point =326°. 04', 06", 41  
 Assumed Co-latitude =56°. 03', 56", 75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.			Initials of Observer.
			A	B	C	D	E	F			° ' "			
			h m s	h m s	h m s	h m s	h m s	h m s			h m s	h m s	h m s	
D 20 March	928	σ Argus M.R.....	5 37.4	32.2	23.7	46.2	10.6	47.6	18.586	+1 03.16	155 6 35.80	T.M.		
	928	σ Argus .....	1 43.2	45.2	50.9	29.4	42.9	18.5			317 1 38.47	T.M.		
		B Octantis SP....	34 42.5	32.2	60.1	42.	53.5	50.6	7 46 30		269 34 36.39	T.M.		
		γ Cancri.....	1 30.	77.8	56.1	44.7	84.6	26.5			22 01 53.10	T.M.		
		δ S.L.....	41 12.2	60.7	38.	28.9	66.1	12.4			21 41 36.22	T.M.		
		* (c) L.....							27.733	-5 05.78	21 36 30.44	T.M.		
		λ Argus M.R.....	54 16.9	5.2	0.4	20.7	45.6	26.1	19.317	+33.68	154 54 42.15	T.M.		
		λ Argus.....	13 37.	37.7	46.3	19.8	38.	10.			317 13 31.41	T.M.		
		α Hydræ M.R....	6 13.9	6.8	44.8	16.2	35.5	15.	20.324	-6.94	120 5 54.87	T.M.		
		α Hydræ.....	2 17.	15.2	15.3	15.3	17.9	12.2			352 2 15.38	T.M.		
		C Octantis SP....	48 58.2	48.7	72.	0.	71.8	9.3	9 58 38		266 48 42.98	T.M.		
		η Argus MR. ....	57 46.1	31.2	35.	39.9	23.	50.2	20.322	-6.86	170 57 30.01	T.M.		
		η Argus.....	10 55.	50.5	70.2	19.6	56.	19.			301 10 45.43	T.M.		
		τ Oct. SP. M.R...	44 10.2	31.3	13.3	18.2	3.9	46.	{ 19.520	+25.49	203 44 16.25	T.M.		
		τ Octantis SP....	24 13.	1.1	27.	12.7	24.2	22.4	{ 10 56 40	+0.65	268 23 56.30	T.M.		
		δ N.L.....	34 39.2	68.5	48.4	55.1	67.2	44.1	10 59 10	-0.65	10 34 53.28	T.M.		
		β Virginis.....	27 39.	29.1	14.1	29.6	10.5	28.7	19.429	+29.16	109 27 54.05	T.M.		
		β Virginis.....	40 11.	26.4	12.9	20.6	23.6	14.4			2 40 18.12	T.M.		
		ο Oct. SP. M.R...	50 22.	43.2	22.7	32.1	12.	0.8	{ 12 16 00		202 50 27.22	T.M.		
		ο Octantis SP....	17 60.9	54.4	75.	5.7	73.	13.3	{ 19.530	+25.09	269 17 46.78	T.M.		
	Altair M.R.....	41 42.	27.6	19.1	26.9	13.	25.2	12 17 00		18.478	+1 06.43	103 42 32.06	T.M.	
	Altair.....	25 27.1	42.	34.9	35.5	44.3	29.			8 25 35.27	T.M.			
	♀'s center.....	59 24.	19.8	20.5	20.9	20.6	17.9			352 59 20.21	T.M.			
δ 21 March		⊙ S. L. M.....	58 36.	44.8	36.	42.	43.2	36.	19.897	+10.29	359 58 49.96	T.M.		
		⊙ N. L. ....	30 50.	62.3	51.2	58.6	60.9	50.3			0 30 55.11	T.M.		
		α Leporis M.R....	4 50.1	47.6	24.1	59.8	16.	53.	19.599	+22.31	130 5 3.25	T.M.		
		α Leporis .....	3 10.1	9.1	14.	7.4	14.2	59.1			342 3 9.06	T.M.		
		α Columbæ.....	50 11.8	9.	19.4	56.4	11.9	47.8			325 50 6.04	T.M.		
		α Orionis M.R....	46 38.	22.	15.5	17.2	12.3	19.2	19.771	+15.37	104 46 35.94	T.M.		
		α Orionis.....	21 25.	44.9	31.	37.	44.7	29.3			7 21 35.04	T.M.		
		Canopus M. R....	44 47.2	28.8	30.	40.	15.9	51.2	20.290	-5.57	164 44 29.14	T.M.		
		Canopus.....	23 56.	51.5	69.1	25.	59.2	19.2			307 23 46.66	T.M.		
		Sirius M.R.....	38 34.	32.	8.2	41.9	58.4	35.2	20.230	-3.15	128 38 21.07	T.M.		
		Sirius.....	29 54.	51.5	55.4	48.7	53.8	42.			343 29 50.77	T.M.		
		B Oct. SP. M.R..	35 49.3	5.2	48.4	53.4	34.2	24.9	22.670	-1 41.56	202 33 34.32	T.M.		
		B Octantis SP....	34 45.1	39.8	62.5	48.2	59.	56.6			269 34 41.42	T.M.		
		♀'s center.....	27 39.	42.	34.2	43.5	37.5	37.5			353 27 38.70	T.M.		
	♀ 22 March	(a)	⊙ N.L. M.....	54 33.7	43.2	32.	44.2	39.3	37.	20.220	-2.74	0 54 35.05	T.M.	
(b)		⊙ S.L.....	22 25.2	38.	24.2	37.	34.2	29.8			0 22 30.39	T.M.		
699		α Columbæ.....	10 12.3	8.6	19.6	56.5	11.2	47.			325 50 5.86	T.M.		
734		α Orionis M.R....	45 16.	1.	54.	55.	49.	57.9	18.714	+58.01	104 46 36.89	T.M.		
734	α Orionis.....	21 22.7	45.6	29.8	37.4	44.5	28.4			7 21 34.46	T.M.			
♀ 23 March		♀'s center.....	23 44.8	51.8	43.	46.1	53.2	44.2			354 23 46.82	T.M.		
♀ 24 March		⊙ S.L. M.....	9 46.4	58.8	45.1	59.2	53.2	50.	20.358	-8.31	1 9 43.72	T.M.		
		⊙ N.L.....	41 41.3	57.7	40.2	56.	50.5	48.2			1 41 48.80	T.M.		
	673	α Leporis.....	5 41.1	48.1	17.1	61.3	13.2	47.1	20.974	-33.16	130 5 4.38	T.M.		
	673	α Leporis .....	3 11.7	8.3	14.	7.2	12.	59.5			342 3 8.86	T.M.		
	699	α Columbæ.....	50 12.6	10.8	23.6	16.5	55.5	44.6			325 50 7.26	T.M.		
	734	(a) α Orionis M.R....	46 52.3	39.1	31.5	32.2	29.	33.2	20.085	-2.70	104 46 38.76	T.M.		
734	α Orionis.....	21 21.8	44.	29.	35.	43.1	26.4			7 21 32.98	T.M.			

Molyneux fast, March 21<sup>st</sup>, 27<sup>th</sup>.—22<sup>nd</sup>, 27<sup>th</sup>.—24<sup>th</sup>, 26<sup>th</sup>.

- (a) Observed on the Meridian.
- (b) Observed at the 5<sup>th</sup> Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec of appa- rent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. ASC	NAME OF STAR or PLANET.
			Attach.	Out.	Wet Bulb.							
#	° ' "	Inch.	°	°	°	' "	' "	"	' "	° ' "		
7.14	-9 2 29.39	29.980	71.2	78.3						47 01 18.59	928	σ Argus R.
	-9 2 27.94					8.77				47 01 20.04	928	σ Argus.
	-56 29 30.02	29.976	73.0	79.4		1 22.80				-0 26 56.07		B Octantis SP.
	55 57 46.69	29.970	71.2	77.8		1 21.40				112 03 04.84	1060	γ Cancri.
	55 37 29.81			78.2		1 20.32	8.23		5.10	111 42 43.75		δ
55 32 24.03					1 20.06				111 37 40.84		* (c) L.	
6.78	-8 50 35.74	29.962	71.2	78.5						47 13 12.45	1114	λ Argus R.
	-8 50 35.00					8.56				47 13 13.19	1114	λ Argus.
5.13	25 58 11.54	29.957	71.0	77.0						82 02 35.16	1147	α Hydræ.
	25 58 8.97					26.87				82 02 32.59	1147	α Hydræ.
7.72	-59 15 23.43		71.5	74.0						-3 12 59.57		C Octantis SP.
	-24 53 23.60	29.957	71.5	74.0		1 32.99				31 10 07.41	1281	η Argus R.
6.28	-24 53 20.98					25.74				31 10 10.03	1281	η Argus.
	-57 40 9.84		70.5	71.0						-1 37 41.01		τ Octantis SP. R.
6.09	-57 40 10.11					1 27.92				-1 37 41.28		τ Octantis SP.
	44 30 46.87			70.5		54.87	38 28.79		15 0.94	99 42 8.76		δ
7.00	36 36 12.36		70.0	69.4		41.57				92 40 50.68	1376	β Virginis.
	36 36 11.71									92 40 50.03	1376	β Virginis.
3.67	-56 46 20.81		69.0	66.0		1 25.78				-0 43 49.84		ο Octantis SP. R.
	-56 46 19.63									-0 43 48.66		ο Octantis SP.
6.16	42 21 34.35	29.960	69.0	69.0		51.05				98 26 22.15	2329	Altair R.
	42 21 28.86					27.87	2.35			98 26 16.66	2329	Altair.
5.49	26 55 13.80	29.965	71.0	80.0						82 59 36.07		♀
	33 54 43.55	29.967	71.0	84.9		36.56	4.77		16 3.80	90 15 15.89		⊙
7.90	34 26 48.70					37.30	4.84			90 15 14.11		⊙
	15 59 3.16	29.952	72.4	77.0		15.81				72 03 15.72	673	α Leporis R.
5.92	15 59 2.65					0.22				72 03 15.21	673	α Leporis.
	-0 14 0.37	29.955	72.2	77.0		48.55				55 49 56.16	699	α Columbæ.
7.87	41 17 30.47	29.968	72.2	75.8						97 22 15.77	734	α Orionis R.
	41 17 28.63									97 22 14.93	734	α Orionis.
5.68	-18 40 22.73	29.975	72.0	73.0		18.79				37 23 15.23	807	Canopus R.
	-18 40 19.75									37 23 18.21	807	Canopus.
6.62	17 25 45.34	29.981	71.6	71.3		17.53				73 29 59.62	838	Sirius R.
	17 25 44.36									73 29 58.64	838	Sirius.
5.87	-56 29 27.91	30.007	68.0	62.6		1 25.58				-0 26 56.74		B Octantis SP.
	-56 29 24.99					29.20	2.39			-0 26 53.82		B Octantis SP.
6.16	27 23 32.29	30.081	70.0	68.0						83 27 55.85		♀
	34 50 28.64	30.080	70.6	71.9		38.93	4.89		16 3.60	90 38 55.83		⊙
5.87	34 18 23.98					38.16	4.82			90 38 57.67		⊙
	-0 14 0.55	.060	71.0	69.2						55 49 55.97	699	α Columbæ.
6.62	41 17 29.52	.058	71.3	69.2		49.31				97 22 15.58	734	α Orionis R.
	41 17 28.05									97 22 14.11	734	α Orionis.
5.87	28 19 40.41	30.185	68.8	69.4		30.40	2.45			84 24 5.11		♀
	35 5 36.85	30.188	69.8	69.4		39.62	4.92		16 3.00	91 26 11.30		⊙
5.87	35 37 41.93					40.41	4.98			91 26 11.11		⊙
	15 59 2.49	.152	69.0	64.3		16.29				72 03 15.53	673	α Leporis.
5.87	15 59 1.99									72 03 15.03	673	α Leporis.
	-0 13 59.61	30.152		65.0						55 49 56.91	699	α Columbæ.
5.87	41 17 28.11			64.3						97 22 14.80	734	α Orionis
	41 17 26.11					49.94				97 22 12.80	734	α Orionis.

Coincidence of Micrometer Wire with fixed Wire, =20°.152 One revolution =40°.335  
 Correction for Runs =-2°.9  
 Adopted Zenith Point =326°. 04'. 06".41 to March 24<sup>th</sup>. From March 24<sup>th</sup>, =326°. 04'. 06".87  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			1	2	3	4	5	6					
☿ 24 March	807	Canopus M. R....	43	28.2	9.0	13.2	21.5	56.1	32.2	18.356	+1 24.44	164 44 28.46	T.M.
	807	Canopus.....	23	56.2	50.8	73.	22.	61.6	16.			307 23 46.61	T.M.
	838	Sirius M.R.....	38	36.5	23.2	10.4	36.2	53.6	34.1	20.163	-0.40	128 38 21.27	T.M.
	838	Sirius.....	29	53.	54.3	57.	49.9	55.5	40.6			343 29 51.59	T.M.
	883	δ Canis Maj. M.R.	16	52.6	52.7	31.	66.5	21.9	58.	20.295	-5.73	138 16 40.67	T.M.
	883	δ Canis Majoris...	51	36.2	34.2	45.	27.	39.5	16.9			333 51 33.52	T.M.
	915	η Canis Maj. M.R.	6	35.4	30.8	15.8	45.4	59.8	39.1	18.333	+1 13.37	141 7 40.35	T.M.
	915	η Canis Majoris...	0	39.3	34.	48.	22.9	40.3	17.			331 00 34.13	T.M.
	2398	(a) B Octantis SP....	34	47.1	36.3	66.7	46.	59.	53.2	7 56 30	-1.35	269 34 27.94	T.M.
		α Pavonis SP.....	35	49.6	16.9	48.6	47.	41.7	9.5	8 13 12		237 35 25.51	T.M.
		A Octantis.....	38	47.1	40.7	70.8	46.7	64.3	56.1	8 34 10		271 38 43.92	T.M.
	1114	ϛ S. L.....	5	2.1	43.1	17.9	24.	40.5	10.			19 05 22.90	T.M.
	1114	λ Argus M.R.....	53	21.	4.2	5.	20.9	45.5	28.1	17.848	+1 32.93	154 54 43.12	T.M.
	1114	λ Argus.....	13	38.1	35.	54.6	11.9	41.9	3.2			317 13 30.72	T.M.
	1230	μ Ursæ Majoris...	15	8.	51.4	38.8	0.7	62.2	53.			42 15 25.64	T.M.
		τ Octantis SP.....	24	17.8	4.	37.1	11.8	31.6	21.9	11 00 10		268 23 59.31	T.M.
	1370	χ Ursæ Majoris...	34	6.6	49.	34.7	58.7	58.2	50.			48 34 22.74	T.M.
	1378	β Hyd. et Crat....	0	2.2	56.3	15.7	42.4	2.2	35.3			326 59 55.21	T.M.
	1329	Altair.....	25	25.	41.7	28.8	39.	38.8	30.			8 25 33.83	T.M.
		φ's center.....	53	35.	40.	30.9	41.5	34.8	35.2			354 53 36.38	T.M.
♃ 25 March	(b) ☉ N.L. M.....	4	43.8	54.	41.9	53.	50.1	47.2	19.341	+32.71	2 5 20.58	T.M.	
	(c) ☉ S. L.....	33	12.0	26.6	12.	25.3	20.3	18.			1 33 17.89	T.M.	
		B Octantis SP....	34	49.	32.1	68.2	38.	60.	51.	7 47 30		269 34 29.29	T.M.
	1003	γ <sup>2</sup> Argus M.R....	59	38.	17.1	22.9	32.1	4.	43.4	19.946	+8.31	158 59 33.82	T.M.
	1003	γ <sup>2</sup> Argus.....	8	51.1	44.2	66.1	20.2	53.5	12.8			313 8 41.27	T.M.
		A Octantis.....	38	48.1	35.2	70.9	41.6	62.	55.			271 38 31.79	T.M.
		ϛ N. L.....	6	10.	47.8	23.5	29.5	46.8	16.9			19 6 28.93	T.M.
	1114	λ Argus M.R.....	53	22.	65.	4.8	21.4	46.4	30.	17.869	+1 32.09	154 54 42.96	T.M.
	1114	λ Argus.....	13	37.4	34.5	52.9	10.6	41.4	2.4			317 13 29.81	T.M.
	1152	θ Ursæ Majoris...	13	38.3	76.1	59.8	26.2	82.6	19.			54 13 49.96	T.M.
	1219	λ Ursæ Majoris...	39	17.1	60.	45.2	9.	67.6	2.2			43 39 33.08	T.M.
	1230	μ Ursæ Majoris...	15	10.	54.5	40.1	3.4	64.1	55.5			42 15 27.89	T.M.
		τ Octantis SP....	24	14.	0.6	32.	7.5	28.4	18.2	11 00 10		268 23 56.41	T.M.
	1370	(d) χ Ursæ Majoris...	34	18.	59.	44.2	8.4	67.3	2.		-2.78	48 34 29.93	T.M.
	1378	β Hydræ et Crat...	0	2.	58.5	16.1	42.	4.8	34.5			326 59 55.85	T.M.
	27	β Hydri SP.....	13	9.	53.5	20.9	5.6	18.6	19.4	12 17 35.5		258 12 50.80	T.M.
	1492	12 Canum Ven....	8	37.5	82.6	64.1	35.	90.5	25.	20.454	-12.18	39 8 55.40	T.M.
		Companion.....										39 8 43.22	T.M.
	1527	ι Centauri MR....	58	45.4	37.	26.	53.	13.6	51.	19.379	+31.18	147 59 8.26	T.M.
	1527	ι Centauri.....	9	7.9	7.4	23.8	48.2	15.	38.2			324 9 3.23	T.M.
1562	ι Centauri M.R....	21	13.	4.3	52.9	20.	35.7	15.6	19.959	+7.78	144 21 11.95	T.M.	
1562	ι Centauri.....	46	65.0	65.2	78.2	50.	69.8	4.2			327 47 0.91	T.M.	
2741	α Piscis Australis..	30	62.1	61.5	75.3	50.9	69.1	39.6			329 30 59.65	T.M.	
	φ's center.....	51	33.	35.9	28.7	39.	31.1	32.			352 51 33.13	T.M.	
	φ's center.....	22	30.2	36.6	25.4	39.4	32.9	30.8			355 22 32.31	T.M.	
☉ 26 March	(e) ☉ S.L. M.....	56	45.4	62.	45.3	60.2	54.5	52.8	20.254	-4.11	1 56 49.47	T.M.	
	☉ N.L.....	28	45.1	61.	42.3	60.	53.	52.1			2 28 51.48	T.M.	
	673	α Leporis M.R....	4	29.1	15.9	2.5	30.6	49.7	28.	18.946	+48.64	130 5 3.82	T.M.
	673	α Leporis.....	3	11.	9.7	12.8	8.6	13.5	59.7			342 3 9.30	T.M.
	699	α Columbæ.....	50	12.	9.9	23.6	54.6	15.	44.3			325 50 6.56	T.M.
	734	α Orionis.....	46	35.8	26.5	17.	18.2	15.4	17.	19.762	+15.73	104 46 37.37	T.M.
	734	α Orionis.....	27	23.	51.5	31.3	41.1	48.1	29.4			7 21 37.12	T.M.
	2398	α Pavonis.....	34	73.	44.	73.8	11.5	70.7	33.5	8 13 14		237 34 50.61	T.M.

Molyneux fast, March 25<sup>th</sup>, 25<sup>th</sup>.—26<sup>th</sup>, 26<sup>th</sup>.

- (a) By a subsequent observation, it appears that Microscope D should be 36' instead of 46'.
- (b) Observed on the Meridian.
- (c) Observed on the 5<sup>th</sup> Wire.
- (d) Observed one space beyond the 5<sup>th</sup> Wire.
- (e) The Outside Thermometer placed in an open glass tube, covered with tin foil, to guard against reflected heat from the ground, or the neighbouring walls.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet. Bulb.										
#	°	'	"	Inch.	°	°	°	'	"	r	'	"	°	'	"		
7.54	-18	40	21.59	30.153	69.0	63.8		19.25					37	23	15.91	807	Canopus R.
	-18	40	20.26										37	23	17.24	807	Canopus.
6.43	17	25	45.60	.152		63.2		17.91					73	30	00.26	838	Sirius R.
	17	25	44.72										73	29	59.38	838	Sirius.
7.10	7	47	26.20	.153	67.5	63.2		7.80					63	51	30.75	883	δ Canis Maj. R.
	7	47	26.65										63	51	31.20	883	δ Canis Majoris.
7.24	4	56	26.52	.155	67.5	63.0		4.93					61	00	28.20	915	η Canis Maj. R.
	4	56	27.26										61	00	28.94	915	η Canis Majoris.
	-56	29	38.93	.168	67.0	62.9		1 26.02					-0	27	08.20		β Octantis SP.
	-88	28	41.36	.171		62.8										2398	α Pavonis SP.
	-54	25	22.95	.180				1 19.69					1	37	14.11		α Octantis SP.
	53	1	16.03	.177				1 15.71	1.45	19.202	19.16	109	6	46.20			γ Octantis SP.
6.92	-8	50	36.25	.171				8.89					47	13	11.61	1114	λ Argus R.
	-8	50	36.15										47	13	11.71	1114	λ Argus.
	76	11	18.77	.156				3 47.71					132	19	3.23	1230	μ Ursæ Majoris.
	-57	40	7.56			62.7		1 29.93					-1	37	40.74		τ Octantis SP.
	82	30	15.87			62.0		6 48.00					138	41	0.62	1370	χ Ursæ Majoris.
	0	55	48.34					0.93					56	59	46.02	1378	β Hydr. et Crat.
	42	21	26.96	.123	67.0	63.9		51.82					98	26	15.53	1329	Altair.
	28	49	29.51	30.121	68.6	73.4		30.74	2.49				84	53	54.51		♀
	36	1	13.71	30.115	69.0	74.3		40.53	5.03				91	49	43.26		☉
	35	29	11.02					39.74	4.96		16	2.70	91	49	45.25		☉
7.55	-56	29	37.58	.058	63.5	64.8		1 25.37					-0	27	06.20		β Octantis SP.
	-12	55	26.95	.058		64.6		13.01					43	08	16.79	1003	γ <sup>2</sup> Argus R.
	-12	55	25.60										43	08	18.14	1003	γ <sup>2</sup> Argus.
	-54	25	35.08		69.0	66.0		1 18.87					1	37	02.80		α Octantis.
6.39	53	2	22.06			65.8		1 14.87	1.45	21.141	19.95	109	7	12.28			γ Octantis.
	-8	50	36.09	.061		66.4		8.79					47	13	11.87	1114	λ Argus R.
	-8	50	37.06										47	13	10.90	1114	λ Argus.
	88	9	43.09			65.2										1152	θ Ursæ Majoris.
	77	35	26.21	.062	68.5	63.2		4 12.23					133	43	35.19	1219	λ Ursæ Majoris
	76	11	21.02					3 46.81					132	19	4.58	1230	μ Ursæ Majoris.
	-57	40	10.46	.059	68.0	65.0		1 29.25					-1	37	42.96		τ Octantis SP.
	82	30	23.06	.053		68.0		6 42.41					138	41	2.22	1370	χ Ursæ Majoris.
	0	55	48.98					0.91					56	59	46.64	1378	β Hydr. et Crat.
	-67	51	16.07	.048		66.0		2 17.87					-11	49	37.19	27	β Hydri SP.
	73	4	48.53	.040		63.8		3 4.15					129	11	49.43	1492	12 Canum Ven.
	73	4	36.35					3 4.15					129	11	37.25		Companion.
5.75	-1	55	1.39	.034		64.0		1.90					54	08	53.46	1527	ι Centauri R.
	-1	55	3.64										54	08	51.21	1527	ι Centauri
6.43	1	42	54.92	.026		63.4		1.70					57	46	53.37	1562	ι Centauri R.
	1	42	54.04										57	46	52.49	1562	ι Centauri.
	3	26	52.78	.038	69.0	75.0		3.35					59	30	52.88	2741	α Piscis Australis.
	26	47	26.26	.034		77.5		27.91	3.11				82	51	47.81		♁
	29	18	25.44	30.030		78.0		30.99	2.52				85	22	50.66		♀
	35	52	42.60	30.010	69.5	79.5	69.7	39.79	5.01				92	13	16.53		☉
6.56	36	24	44.61					40.58	5.07		16	2.40	92	13	14.47		☉
	15	59	3.05	29.982	71.0	75.8		15.86					72	03	15.66	673	α Leporis R.
	15	59	2.43										72	03	15.04	673	α Leporis.
	-0	14	0.31					0.22					55	49	56.22	699	α Columbæ.
7.25	41	17	29.50	29.981		73.0		48.83					97	22	15.08	734	α Orionis.
	41	17	30.25										97	22	15.83	734	α Orionis.
	-88	29	16.26	29.986	69.5	66.5										2398	α Pavonis.

Coincidence of Micrometer Wire with fixed Wire, =20".152 One revolution =40".335  
 Correction for Runs =-2".9  
 Adopted Zenith Point =326°. 04'. 06".87  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			l #	#	#	#	#	#				
☉ 26 March	27	(a) δ N.L. M.....	24 37.1	74.3	52.7	53.2	74.3	42.2	23.124	-1 59.88	21 22 55.47	T.M.
		β Hydri SP.....	13 12.2	57.3	23.2	8.5	21.6	23.0	12 17 34		258 12 54.02	T.M.
☽ 27 March		(b) ☉ S. L.....	20 12.	27.6	11.	24.5	21.	17.	0 25 40	-1.27	2 20 17.55	T.M.
♁ 28 March	928	σ Argus M.R.....	5 38.2	23.6	23.2	38.9	5.2	45.6	18.522	+1 05.75	155 6 34.54	T.M.
	928	σ Argus.....	1 46.8	42.8	60.8	23.2	48.6	15.7			317 1 39.77	T.M.
	961	(d) ξ Argus M.R.....	35 43.8	35.9	19.1	52.	6.7	45.2	20.042	+4.44	136 35 38.17	T.M.
	991	(c) ξ Argus.....	32 35.	35.1	41.5	27.8	39.5	17.5			335 32 33.00	T.M.
		B Octantis SP.....	34 49.3	31.7	68.3	37.9	59.	50.6	7 51 30		269 34 28.94	T.M.
	1003	γ <sup>2</sup> Argus M.R.....	59 43.5	25.	29.2	39.9	10.5	49.5	20.083	+2.78	158 59 34.96	T.M.
	1003	γ <sup>2</sup> Argus.....	8 51.9	41.	65.	18.9	50.8	12.7			313 8 40.00	T.M.
	2398	(e) α Pavonis SP.....	35 30.8	57.8	29.3	27.3	23.8	50.2	8 13 12		237 35 6.52	T.M.
		(h) ♃ N.L. M.....	7 40.5	80.	55.4	59.7	80.	46.7	20.988	-33.72	19 7 26.37	T.M.
		♁ N.L.....	14 57.9	103.4	76.2	79.5	100.7	66.			21 15 20.59	T.M.
	1114	(d) λ Argus M.R.....	54 26.4	16.8	11.7	30.1	56.2	34.4	19.531	+25.04	154 54 43.58	T.M.
	1114	(c) λ Argus.....	13 37.0	34.	52.1	10.6	41.7	3.			317 13 29.67	T.M.
	1152	(c) θ Ursæ Majoris....	13 26.8	65.6	50.7	15.2	72.1	8.		-1.44	52 13 37.94	T.M.
	1219	λ Ursæ Majoris....	39 15.	58.6	44.4	7.	66.3	0.2			43 39 31.49	T.M.
	1230	μ Ursæ Majoris....	15 6.7	51.7	38.	0.1	61.7	52.1			42 15 25.01	T.M.
		τ Octantis SP.....	24 16.	58.7	33.	7.2	26.6	20.2	11 00 17		268 23 56.57	T.M.
	1370	χ Ursæ Majoris....	34 4.6	51.	32.3	59.1	59.2	48.5			48 34 22.02	T.M.
	1378	β Hydræ et Crat...	0 1.2	56.2	14.9	41.5	2.7	34.4			326 59 54.68	T.M.
	27	β Hydri SP.....	12 65.3	56.4	79.	6.1	79.9	17.5	12 17 32.5		258 12 50.43	T.M.
	1492	12 Canum Ven....	8 37.8	88.2	67.	38.5	94.6	27.			39 8 58.47	T.M.
		Companion.....							20.485	-13.43	39 8 45.04	T.M.
	1527	(c) ε Centauri.....	9 9.	2.9	22.1	45.8	10.6	38.2			324 9 01.03	T.M.
	1542	d Centauri.....	26 32.2	21.6	46.	3.9	33.	57.7			321 26 22.27	T.M.
	1550	ζ Virginis.....	13 35.2	49.1	35.8	46.6	44.5	40.5			0 13 41.59	T.M.
		(f) η.....	19 22.	33.2	22.	32.	29.	25.4			358 19 26.84	T.M.
		σ Octantis.....	46 15.9	7.	37.5	15.5	32.	23.5	17 24 30	+11.39	270 46 13.19	T.M.
	2039	h Sagittarii.....	14 17.4	19.6	28.7	8.3	26.	58.2			332 14 15.96	T.M.
	2079	γ <sup>2</sup> Sagittarii.....	34 57.	58.3	71.8	45.4	65.8	.34			329 34 54.91	T.M.
	♃ N.L.....	20 30.	31.4	41.3	20.8	38.2	9.8			332 20 28.53	T.M.	
2180	σ Sagittarii.....	30 24.	28.6	36.2	17.5	33.	3.5			333 30 23.76	T.M.	
2196	ζ Sagittarii.....	53 44.	43.6	57.2	30.9	51.	20.			329 53 40.76	T.M.	
2398	α Pavonis.....	45 51.3	46.1	71.7	12.	61.	9.9	8 13 5		302 45 41.93	T.M.	
2741	Fomalhaut.....	31 1.9	2.7	17.5	50.	11.	38.2			329 31 0.12	T.M.	
	φ's center.....	50 3.6	14.	0.	16.8	8.9	6.1			356 50 8.22	T.M.	
♁ 29 March		(g) ♃ N.L. M.....	7 34.4	75.8	48.	57.5	73.7	43.	20.574	-16.82	19 7 38.33	T.M.
		δ's center.....	10 51.6	95.4	66.5	73.2	92.8	59.7			21 11 11.41	T.M.
	1223	Arg. in Velis M.R.	27 6.2	46.4	46.4	5.8	24.5	12.5	19.831	+13.15	153 27 6.32	T.M.
	1223	Arg. in Velis.....	41 19.	11.	34.1	48.8	22.1	43.			318 41 9.84	T.M.
	1370	χ Ursæ Majoris....	34 8.	48.4	34.	58.	57.9	52.			48 34 22.63	T.M.
	1378	β Hydræ et Crat...	59 60.2	55.	74.8	39.8	63.1	34.			326 59 54.01	T.M.
	27	β Hydri.....	12 67.2	51.4	78.3	2.8	76.8	16.8	12 17 31		258 12 48.61	T.M.
	1492	Canum Ven.....	8 38.2	84.8	64.1	37.4	91.	27.4			39 8 56.77	T.M.
		Companion.....							20.470	-12.62	39 8 44.15	T.M.
	1527	ε Centauri M.R....	59 24.4	16.1	4.1	31.9	52.1	30.1	20.290	-5.36	147 59 10.49	T.M.
	1527	ε Centauri.....	9 8.2	7.8	24.	47.	15.9	37.2			324 9 3.17	T.M.
	1550	ζ Virginis.....	13 35.2	50.2	35.6	47.1	45.2	40.1			0 13 41.87	T.M.
	1562	ε Centauri.....	46 64.3	62.	80.	44.9	70.4	38.5			327 46 59.82	T.M.
		η.....	27 7.8	20.	7.5	18.2	15.	12.			358 27 13.20	T.M.
2741	Fomalhaut.....	30 64.	61.7	81.	48.8	70.8	38.8			329 31 0.75	T.M.	

Molyneux fast, March 28<sup>th</sup>, 23<sup>rd</sup>.—29<sup>th</sup>, 20<sup>th</sup>.

- (a) Celestial objects beautifully defined to-night. The Mic<sup>r</sup>. Wire made to touch both limbs in succession.
- (b) Observed beyond the 5<sup>th</sup> Wire.
- (c) Observed at the 5<sup>th</sup> Wire.
- (d) Observed on the Meridian.
- (e) Faint and refulous.
- (f) Very indistinct, through a cloud. The definition has been excellent to-night.
- (g) Woolly.
- (h) The Circle clamped, and the Micrometer Wire brought successively to the N. and S. Limbs.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	o	'	"	Inch.	o	o	o	'	"	r	'	"	o	'	"			
	55	18	48.60	29.988	69.5	66.5	62.5	1	21.22	7.79	23.378	5.12	111	23	53.66	27	δ Hydri SP.	
	-67	51	12.85	29.994	69.0	60.3	58.2	2	19.12				-11	49	35.22			
	36	16	10.68	30.087	69.5	70.8	66.0		41.13	5.06		16 2.20	92	36	45.70		⊙	
7.16	-9	02	27.67	30.134	69.5	65.6			9.03				47	1	20.05	928	σ Argus R.	
	-9	02	27.10										47	1	20.62	928	σ Argus.	
5.59	9	28	28.70	.130		65.5	62.8		9.47				65	32	34.92	961	ξ Argus R.	
	9	28	26.13										65	32	32.35	961	ξ Argus.	
	-56	29	37.93				62.7	1	25.45				-0	27	6.63		B Octantis SP.	
7.48	-12	55	28.09			65.4			13.02				43	8	15.64	1003	γ <sup>2</sup> Argus R.	
	-12	55	26.87										43	8	16.86	1003	γ <sup>2</sup> Argus.	
	-88	29	0.35				63.0									2398	α Pavonis SP.	
	53	3	19.50	.132	69.0	65.5	63.0	1	15.28	1.43	21.941	19.22	109	8	11.88		ζ	
	55	11	13.72						1	21.40	7.64	20.412	5.25	111	16	19.43		δ
6.63	-8	50	36.71	.129	68.5	65.4							47	13	11.21	1114	λ Argus R.	
	-8	50	37.20										47	13	10.72	1114	λ Argus.	
	86	9	31.07	.125		65.0	63.4									1152	θ Ursæ Majoris.	
	77	35	24.62		68.0	64.0	62.0	4	12.38				133	43	33.75	1219	λ Ursæ Majoris	
	76	11	18.14	.126			62.0	3	46.93				132	19	1.82	1230	μ Ursæ Majoris.	
	-57	40	10.30			63.8	61.6	1	29.65				-1	37	43.20		τ Octantis SP.	
	82	30	15.15	.116		63.6	61.3	6	46.75				138	40	58.65	1370	χ Ursæ Majoris.	
	0	55	47.81						0.93				56	59	45.49	1378	β Hydr. et Crat.	
	-67	51	16.44	.092	68.0	63.0	61.5	2	18.88				-11	49	38.57	27	β Hydri SP.	
	73	4	51.60	.088		63.2	61.5	3	4.66				129	11	53.01	1492	12 Canum Ven.	
	73	4	38.17					3	4.66				129	11	39.58		Companion.	
	-1	54	55.84	.086	68.0	63.5	61.5		1.91				54	8	49.00	1527	ι Centauri.	
	-4	37	44.60		68.0	63.8							51	26	7.55	1542	d Centauri.	
	34	9	34.72	.085	68.0	63.8	62.0		38.55				90	14	10.02	1550	ζ Virginis.	
	32	15	19.97	.083	68.0	63.3	61.5		35.88	2.03			88	19	50.57		⋈	
	-55	17	53.68	.054	68.0	59.5	59.5	1	22.47				0	45	40.60		σ Octantis.	
	6	10	9.09						6.19				62	14	12.03	2039	h Sagittarii.	
	3	30	48.04			59.4			3.51				59	34	48.30	2079	γ <sup>2</sup> Sagittarii.	
	6	16	21.66			58.0			6.31	6 15.11		16 3.52	61	58	6.09		D	
	7	26	16.89	.056		57.3			7.51				63	30	21.15	2180	σ Sagittarii.	
	3	49	33.89			57.4			3.84				59	53	34.48	2196	ζ Sagittarii.	
	-23	18	24.94	.076		61.6	61.0		24.58				32	45	7.23	2398	α Pavonis.	
	3	26	53.25	.070	69.0	71.6	66.2		3.38				59	30	53.38	2741	Fomalhaut.	
	30	46	1.35	30.062	69.0	76.0	68.0		33.03	2.62			86	50	28.51		♀	
	53	3	31.46	30.044	70.0	66.3	65.2	1	14.95	1.43	21.514	18.96	109	8	22.77		ζ	
	55	7	4.54						1	20.81	7.57		111	12	14.53		δ	
8.08	-7	22	59.45	.048	69.0	66.0	65.0		7.32				48	40	49.98	1223	Arg. in Velis R.	
	-7	22	57.03										48	40	52.40	1223	Arg. in Velis.	
	83	30	15.76	.041		65.5	64.0	6	44.16				138	40	56.67	1370	χ Ursæ Majoris.	
	0	55	47.14						0.92				56	59	44.81	1378	β Hydr. et Crat.	
	-67	51	18.26	.044		65.4		2	18.01				-11	49	39.52	27	β Hydri.	
	73	4	49.90	.036	69.0	65.0		3	3.69				129	11	50.34	1492	Canum Venat.	
	73	4	37.28					3	3.69				129	11	37.72		Companion.	
6.83	-1	55	3.62		68.5	65.0			1.90				54	8	51.23	1527	ι Centauri R.	
	-1	55	3.70										54	8	51.15	1527	ι Centauri.	
	34	9	35.00	.040		64.9			38.41				90	14	10.16	1550	ζ Virginis.	
	1	42	52.95						1.70				57	46	51.40	1562	i Centauri.	
	32	23	6.33	.037		64.6			35.92	2.05			88	27	36.95		⋈	
	3	26	53.88	30.081	70.0	73.0	68.5		3.37				59	30	54.00	2741	Fomalhaut.	

Coincidence of Micrometer Wire with fixed Wire, = 20°.152 up to March 29<sup>th</sup>. From March 29<sup>th</sup>, = 20°.057  
 One revolution = 40".335  
 Correction for Runs = -2".9  
 Adopted Zenith Point = 326°. 04'. 06".87  
 Assumed Co-latitude = 56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			l #	#	#	#	#	#					
♄ 30 March	699	α Columbae.....	50	11.8	10.7	25.7	51.3	17.8	41.3			325 50 6.42	T.M.
		B Octantis SP....	34	48.0	28.4	67.1	33.4	58.1	46.4	7 47 40		269 34 26.48	T.M.
	1003	γ <sup>2</sup> Argus M.R....	59	37.8	9.8	17.1	28.6	55.2	41.7	19.830	+13.19	158 59 34.14	T.M.
	1003	γ <sup>2</sup> Argus.....	8	52.7	41.2	67.1	16.2	53.5	9.8			313 8 40.04	T.M.
		A Octantis.....	38	42.5	36.9	67.1	40.3	62.5	49.0	8 34 20		271 38 29.38	T.M.
		ϖ S. L.....	6	51.2	89.9	63.8	72.7	89.8	58.3			19 7 10.74	T.M.
	1114	λ Argus M.R....	54	11.9	53.0	52.4	10.1	33.9	19.0	19.049	+44.69	154 54 44.48	T.M.
	1114	λ Argus.....	13	38.0	33.2	55.0	8.0	43.0	0.2			317 13 29.51	T.M.
	1152	θ Ursæ Majoris...	13	41.0	80.7	62.9	30.5	87.0	21.8			52 13 53.60	T.M.
	1219	λ Ursæ Majoris...	39	17.7	61.3	45.0	10.8	68.4	2.5			43 39 33.84	T.M.
	1230	μ Ursæ Majoris...	15	13.8	58.3	43.0	7.3	68.8	58.6			42 15 31.58	T.M.
		τ Octantis SP....	24	13.0	59.3	30.8	69.0	27.6	16.4	11 01 30	-0.12	268 23 55.16	T.M.
	1370	χ Ursæ Majoris...	34	10.6	53.1	38.0	1.4	62.1	53.4			48 34 25.91	T.M.
	1378	β Hydræ et Crat...	59	57.8	58.4	71.9	42.5	63.9	32.1			326 59 53.96	T.M.
	27	β Hydri SP.....	12	67.1	54.1	79.3	5.0	79.0	17.0	12 20 10	-3.46	258 12 46.52	T.M.
	1492	12 Canum Ven....	8	39.3	86.4	66.2	38.0	93.9	27.2			39 8 58.12	T.M.
		Companion.....								20.508	-14.20	39 8 43.92	T.M.
	1527	ε Centauri M.R....	59	51.0	38.8	30.4	55.6	15.2	54.7	20.899	-29.93	147 59 10.37	T.M.
	1527	ε Centauri.....	9	6.0	7.0	21.9	47.8	13.7	36.4			324 9 1.94	T.M.
	1542	d Centauri.....	26	30.2	23.6	44.5	4.7	33.6	56.0			321 26 21.97	T.M.
	1550	ζ Virginis.....	13	35.2	51.2	34.2	49.0	44.7	41.0			0 13 42.19	T.M.
	1562	i Centauri.....	46	63.0	64.6	77.9	48.1	70.1	38.0			327 47 0.08	T.M.
	1579	k Centauri.....	48	64.0	65.4	78.8	49.4	71.0	39.7			327 49 1.00	T.M.
		Companion.....								20.233	-3.07	327 48 57.93	T.M.
		‡.....	34	56.3	70.0	54.1	70.0	63.3	61.0			358 35 1.97	T.M.
		z Octantis.....	33	68.4	59.1	86.5	7.5	78.9	19.5	14 16 04		272 33 52.94	T.M.
	2741	Fomalhaut.....	30	64.1	61.8	72.0	55.7	65.2	45.1			329 31 0.55	T.M.
	♀'s center.....	48	58.6	62.4	55.8	63.1	60.6	58.6			357 48 59.47	T.M.	
♀ 31 March	(a) 699	⊙ N. L. M.....	26	41.0	58.3	46.7	53.0	58.7	44.0	21.892	-1 10.26	4 25 39.48	T.M.
		⊙ S. L.....	53	36.7	49.0	36.6	44.3	49.9	34.9			3 53 41.19	T.M.
		α Columbae.....	50	14.6	9.2	20.2	59.0	11.7	49.5			325 50 7.36	T.M.
		B Octantis SP....	34	43.0	36.1	57.9	46.2	55.0	54.0	7 48 05		269 34 28.27	T.M.
		A Octantis.....	38	40.8	39.1	59.0	49.0	56.4	55.8	8 38 30		271 38 30.66	T.M.
		(c) ♂ S. L.....	2	14.5	58.3	42.1	25.1	9.0	12.3			21 2 26.65	T.M.
	1114	λ Argus M.R....	53	12.1	11.8	59.0	24.3	48.5	24.2	17.791	+1 35.19	154 54 44.59	T.M.
	1114	λ Argus.....	13	35.1	34.9	41.8	19.6	32.6	10.2			317 13 28.97	T.M.
	1152	θ Ursæ Majoris...	13	20.0	56.4	49.8	0.5	11.5	54.0			52 13 31.69	T.M.
	1219	λ Ursæ Majoris...	39	19.3	2.1	56.8	3.2	19.7	55.8			43 39 35.71	T.M.
	1230	μ Ursæ Majoris...	15	12.8	56.6	51.4	57.3	14.9	48.9			42 15 30.25	T.M.
		τ Octantis SP....	24	12.1	0.0	24.2	13.1	21.1	23.0	11 00 23		268 23 55.20	T.M.
	1370	χ Ursæ Majoris...	34	9.7	50.2	43.3	52.6	7.0	44.8			48 34 24.18	T.M.
	1378	β Hydræ et Crat...	59	58.4	57.8	7.5	47.0	57.2	37.3			326 59 53.73	T.M.
	27	β Hydri SP. M...	12	44.0	32.3	52.7	47.7	52.5	58.8	{ 19.675 12 17 26	+19.16	258 12 46.89	T.M.
	1443	α Centauri.....	51	56.2	53.7	3.1	40.1	54.2	31.9			321 51 49.69	T.M.
	1492	12 Canum Ven....	8	37.5	24.0	14.1	25.9	41.7	15.5			39 8 56.07	T.M.
		Companion.....								20.510	-14.52	39 8 41.55	T.M.
	1527	ε Centauri M.R....	59	33.0	39.8	15.9	54.0	10.1	45.1	20.720	-22.99	147 59 9.39	T.M.
	1527	ε Centauri.....	9	5.8	83.0	15.1	55.0	7.9	43.4			324 9 1.40	T.M.
	1542	d Centauri.....	26	27.1	26.1	35.8	13.2	25.5	2.1			321 26 21.50	T.M.
	1550	(b) ζ Virginis.....	13	36.1	48.2	37.1	44.4	45.0	38.2			0 13 41.14	T.M.
	1562	i Centauri.....	47	3.4	2.9	13.0	51.9	3.3	44.0			327 46 59.56	T.M.
	1580	k Centauri.....	52	52.9	52.1	59.0	44.6	53.9	32.4			328 52 48.88	T.M.
		Companion.....								20.532	-15.41	328 52 33.47	T.M.

(a) The spots on the Solar disc continue numerically undiminished.  
 (b) Observed at the 5<sup>th</sup> Wire.  
 (c) The Mean of the Microscopes appears too little by 10".



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.		Microm. for opposite Limb.	Semi-diameter.		Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.											
#	o	i	''	Inch.	o	o	o	i	''	r	i	''	o	i	''			
7.09	-0	14	0.45	30.054	70.0	69.7							55	49	56.07	699	$\alpha$ Columbae.	
	-56	29	40.39	30.045	70.0	68.2	67.0	1	24.77				-0	27	8.41		$B$ Octantis SP.	
	-12	55	27.27	.048	70.0	68.4							43	8	16.57	1003	$\gamma^2$ Argus R.	
	-12	55	26.83						12.91				43	8	17.01	1003	$\gamma^2$ Argus.	
	-54	25	37.49	.061	70.0	68.3		1	18.53				1	37	0.73		$A$ Octantis.	
7.00	53	3	3.87	.063	69.5	68.3		1	14.69	1.43	19.202	19.26	109	8	33.14		$\pi$	
	-8	50	37.61	.067	69.5	68.3			8.76				47	13	10.38	1114	$\lambda$ Argus R.	
	-8	50	37.36										47	13	10.63	1114	$\lambda$ Argus.	
	86	9	46.73	.067	69.5	68.3										1152	$\theta$ Ursae Majoris.	
	77	35	26.97	.067	69.5	68.3	67.0	4	9.76				133	43	33.48	1219	$\lambda$ Ursae Majoris.	
6.16	76	11	24.71	.067	69.5	68.3		3	44.59				132	19	6.05	1230	$\mu$ Ursae Majoris.	
	-57	40	11.71	.065	69.5	68.0		1	28.74				-1	37	43.70		$\tau$ Octantis SP.	
	82	30	19.04	.061	69.5	66.5		6	41.30				138	40	57.09	1370	$\chi$ Ursae Majoris.	
	0	55	47.09	.061	69.5	66.5			0.92				56	59	44.76	1378	$\beta$ Hydrae et Crat.	
	-67	51	20.35	.061	69.5	66.2		2	17.87				-11	49	41.47	27	$\beta$ Hydri SP.	
	73	4	51.25	.062	69.5	65.3		3	3.78				129	11	51.78	1492	12 Canum Ven.	
	73	4	37.05					3	3.75				129	11	37.55		Companion.	
	-1	55	3.50	.063	70.0	65.2	64.0		1.90				54	8	51.35	1527	$\epsilon$ Centauri R.	
	-1	55	4.93										54	8	49.92	1527	$\epsilon$ Centauri.	
	-4	37	44.90	.065	70.0	65.2			4.59				51	26	7.26	1542	$d$ Centauri.	
	34	9	35.32	.067	70.0	65.1			38.42				90	14	10.49	1550	$\zeta$ Virginis.	
	1	42	53.21	.067	70.0	64.9			1.70				57	46	51.66	1562	$i$ Centauri.	
	1	44	54.13	.068	70.0	64.5			1.73				57	48	52.61	1579	$k$ Centauri.	
	1	44	51.06										57	48	49.54		Companion.	
	32	30	55.10	.065	70.0	64.5	63.7		36.14	2.06			88	35	25.93		$\ddagger$	
-53	30	13.93	.061	70.0	64.4		1	16.49				2	32	26.33		$z$ Octantis.		
3	26	53.68	.084	70.0	69.0	68.0		3.39				59	30	53.82	2741	Fomalhaut.		
31	44	52.60	30.082	70.0	72.4	68.0		34.58	2.69			87	49	21.24		$\phi$		
6.78	38	21	32.61	30.067	70.5	75.0	70.0	43.98	5.30			16	1.00	94	10	7.04		$\odot$
	37	49	34.32					43.14	5.24					94	10	9.97		$\odot$
	-0	13	59.51					0.23						55	49	57.01	699	$\alpha$ Columbae.
	-56	29	38.60	.127	70.5	65.8	64.0	1	25.39				-0	27	7.24		$B$ Octantis SP.	
	-54	25	36.21	.126	70.5	65.0	64.0	1	19.19				1	37	1.35		$A$ Octantis.	
	54	58	19.78	.123	70.0	64.8		1	20.82	7.43	19.889	5.27	111	3	35.19		$\delta$	
	-8	50	37.72	.122	70.0	64.5			8.84				47	13	10.19	1114	$\lambda$ Argus R.	
	-8	50	37.90										47	13	10.01	1114	$\lambda$ Argus.	
	86	9	24.82	.120	70.0	64.3										1152	$\theta$ Ursae Majoris.	
	77	35	28.84	.120	70.0	64.2		4	12.22				133	43	37.81	1219	$\lambda$ Ursae Majoris.	
	76	11	23.38	.120	70.0	64.2		3	46.78				132	19	6.91	1230	$\mu$ Ursae Majoris.	
	-57	40	11.67	.120	69.5	64.8		1	29.50				1	37	44.42		$\tau$ Octantis SP.	
	82	30	17.31	.115	69.5	64.4		6	46.05				138	41	0.11	1370	$\chi$ Ursae Majoris.	
	0	55	46.86	.115	69.5	64.4			0.92				56	59	44.53	1378	$\beta$ Hydrae et Crat.	
	-67	51	19.98	.113	69.0	64.6	64.0	2	18.54				-11	49	41.77	27	$\beta$ Hydri SP.	
5.40	-4	12	17.18	.112	69.0	64.6		4.18				51	51	35.39	1443	$\alpha$ Centauri.		
	73	4	49.20	.110	69.0	64.0		3	4.49			129	11	50.44	1492	12 Canum Ven.		
	73	4	34.68					3	4.47			129	11	35.90		Companion.		
	-1	55	2.52	.114	69.0	64.1		1.90				54	8	52.33	1527	$\epsilon$ Centauri R.		
	-1	55	5.47									54	8	49.38	1527	$\epsilon$ Centauri.		
	-4	37	45.37	.114	69.0	64.0		4.61				51	26	6.77	1542	$d$ Centauri.		
	34	9	34.27	.114	69.0	63.8	62.0	38.58					90	14	9.60	1550	$\zeta$ Virginis.	
	1	42	52.69	.119	69.0	62.6		1.71					57	46	51.15	1562	$i$ Centauri.	
	2	48	42.01	30.117	69.0	62.2			2.80				58	52	41.56	1580	$k$ Centauri.	
	2	48	26.60										58	52	26.15		Companion.	

Coincidence of Micrometer Wire with fixed Wire, March 29<sup>th</sup> and 30<sup>th</sup>, =20<sup>r</sup>.157 March 31<sup>st</sup>, =20<sup>r</sup>.150  
 One revolution =40<sup>r</sup>.335  
 Correction for Runs =-2<sup>r</sup>.9  
 Adopted Zenith Point =326°. 04'. 06<sup>r</sup>.87  
 Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			l #	# #	# #	# #	# #	# #					
☾ 31 March		(a) † .....	42	47.0	55.0	46.0	54.0	50.0	49.7			358 42 50.01	T.M.
☽ 1 April		☉ S.L. M.....	16	28.5	45.0	31.7	43.0	42.9	32.9	19.781	+14.88	4 16 52.40	T.M.
		☉ N.L.....	48	42.3	57.9	42.0	56.9	55.0	48.1			4 48 49.73	T.M.
	673	α Leporis.....	3	11.6	9.4	14.8	8.2	14.2	59.4			342 3 9.66	T.M.
	699	α Columbæ.....	50	13.5	10.6	21.0	58.9	11.1	49.7			325 50 7.46	T.M.
	734	α Orionis M.R....	46	24.1	9.5	55.3	12.0	50.2	13.0	19.419	+29.48	104 46 36.85	T.M.
	734	α Orionis.....	21	27.0	45.1	35.1	36.1	46.1	28.0			7 21 35.94	T.M.
		B Octantis SP....	34	40.2	37.0	56.0	47.2	53.8	53.0	7 47 15		269 34 27.44	T.M.
	1003	γ <sup>2</sup> Argus M.R....	59	44.0	43.1	35.1	52.0	26.3	53.0	20.312	-6.49	158 59 37.98	T.M.
	1003	γ <sup>2</sup> Argus.....	8	45.2	47.4	49.8	31.7	41.5	19.6			313 8 39.16	T.M.
	1070	α Pisc. Naut.....	23	54.0	51.6	0.1	41.3	52.0	33.8			327 23 48.43	T.M.
		ϒ S.L.....	6	59.0	43.8	27.5	11.0	55.7	54.5			19 7 21.70	T.M.
	1114	λ Argus M.R.....	54	24.5	22.2	14.4	52.8	3.2	33.4	19.578	+23.07	154 54 44.12	T.M.
	1114	λ Argus.....	13	34.8	36.4	40.8	22.4	32.0	12.2			317 13 29.71	T.M.
	1152	θ Ursæ Majoris...	13	32.7	9.4	3.7	11.9	26.1	5.3			52 13 44.47	T.M.
	1219	(b) λ Ursæ Majoris...	39	21.1	4.4	59.6	3.2	22.1	56.1		-2.50	43 39 34.83	T.M.
	1230	μ Ursæ Majoris...	15	12.0	56.2	51.8	55.6	16.3	47.1			42 15 29.80	T.M.
		τ Octantis SP....	24	12.0	58.6	22.4	13.2	19.7	23.6			268 23 54.54	T.M.
	1370	χ Ursæ Majoris...	34	9.1	49.0	45.2	49.1	7.7	42.8			48 34 23.40	T.M.
	1378	β Hydræ et Crat...	59	57.7	57.9	5.4	47.4	56.7	37.7			326 59 53.33	T.M.
	27	β Hydræ.....	13	2.1	53.7	9.1	10.0	10.3	19.7	12 18 27	-0.40	258 12 46.81	T.M.
1492	12 Canum Ven....	8	40.6	26.0	19.0	27.8	45.4	17.8			39 8 59.05	T.M.	
	Companion M....								20.468	-12.83	39 8 46.22	T.M.	
1527	ι Centauri MR....	58	46.5	50.9	28.5	5.4	21.2	57.2	19.530	+25.01	147 59 9.37	T.M.	
1527	ι Centauri.....	9	6.6	8.1	14.5	55.8	7.0	44.4			324 9 2.55	T.M.	
1534	(c) ζ Ursæ Majoris...	20	41.1	77.0	71.9	20.3	39.1	114.7			55 20 52.59	T.M.	
1550	.....	13	38.7	49.0	39.7	45.0	46.7	39.8			0 13 42.79	T.M.	
1562	i Centauri.....	47	3.7	3.7	12.3	53.2	3.0	44.4			327 46 59.85	T.M.	
1579	k Centauri.....	49	5.4	3.4	14.0	53.8	3.7	46.7			327 49 0.79	T.M.	
	Companion M....								20.239	-3.59	327 48 57.20	T.M.	
	* preceding.....	50	51.5	1.0	52.2	59.3	58.5	54.0			358 50 56.00	T.M.	
	* sf.....								20.423	-11.01	358 50 44.98	T.M.	
	† .....								20.500	-14.12	358 50 41.88	T.M.	
2398	(d) α Pavonis.....	45	50.3	48.3	57.0	27.0	46.1	24.0			+1.73 302 45 43.78	T.M.	
2741	(e) Fomalhaut.....	31	2.4	4.9	11.0	57.2	6.0	45.1			+0.17 329 31 1.17	T.M.	
	ϕ's center M....	58	33.5	40.0	33.5	41.6	38.2	33.4	24.660	-3 1.91	357 55 34.73	T.M.	
	ϕ's center.....	48	6.1	18.0	6.9	16.0	16.5	8.0			358 48 11.61	T.M.	
27	β Hydræ.....	50	62.0	52.3	84.3	2.2	73.7	8.7	0 17 17		281 50 47.12	T.M.	
☉ 2 April		(f) ☉ N.L. M.....	11	41.0	57.8	44.8	55.2	56.0	47.5	20.050	+4.03	5 11 54.23	T.M.
		(d) ☉ S.L.....	39	47.8	6.4	48.2	2.8	1.5	54.9		-0.80	4 39 55.66	T.M.
☽ 5 April		B Octantis SP....	34	47.7	35.1	7.5	42.0	58.3	51.2	7 48 0		269 34 29.87	T.M.
	1003	γ <sup>2</sup> Argus M.R....	58	37.9	19.0	22.2	33.0	4.6	41.9	18.442	+1 8.89	158 59 34.68	T.M.
	1003	γ <sup>2</sup> Argus.....	8	51.0	42.0	2.9	19.2	49.0	12.8			313 8 39.44	T.M.
		ϒ N.L. M.....	7	27.0	40.2	60.2	42.0	62.2	30.9			19 7 43.48	T.M.
		δ N.L.....	38	36.8	71.9	52.9	52.2	73.9	42.2			20 36 54.80	T.M.
	1114	λ <sup>2</sup> Argus M.R....	53	45.2	28.9	30.0	44.0	9.7	51.4	18.400	+1 10.59	154 54 44.72	T.M.
	1114	λ <sup>2</sup> Argus.....	13	36.4	32.3	51.2	8.9	39.1	1.2			317 13 28.13	T.M.
	1152	θ Ursæ Majoris...	13	9.0	49.0	32.7	58.0	57.3	49.2			52 13 22.20	T.M.
	C Oct. SP. M.R..	19	25.2	40.5	21.0	34.8	9.2	5.8	19.440	+28.64	205 19 31.11	T.M.	
	C Octantis SP....	48	58.9	55.0	17.1	2.1	16.7	8.1	9 58 0	+0.11	266 48 45.85	T.M.	
1219	λ Ursæ Majoris...	39	14.0	58.0	44.0	5.8	7.2	57.9	9 59 50	-0.11	43 39 30.72	T.M.	

Molyneux fast, April 1<sup>st</sup>, 19<sup>th</sup>.—2<sup>nd</sup>, 18<sup>th</sup>.—5<sup>th</sup>, 19<sup>th</sup>.

- (a) Faint.
- (b) Leaving the field.
- (c) A faint refulous blotch.
- (d) Observed at the 5<sup>th</sup> Wire.
- (e) Observed at the 4<sup>th</sup> Wire.
- (f) Observed on the Meridian.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.		Parallax.		Microm. for opposite Limb.	Semi- diameter.		Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet. Bulb.												
#	o	'	"	Inch.	o	o	o	'	"	'	"	r	'	"	o	'	"		
	32	38	43.14	30.115	69.0	61.8	62.0	36.57	2.07						88	43	14.39		‡
	38	12	45.54	30.170	72.0	75.0	68.5	43.89	5.28				16	00.70	94	33	21.60		⊙
	38	44	42.87					44.73	5.34						94	33	18.31		⊙
	15	59	02.80	.121	71.0	72.5	67.0	16.03							72	03	15.58	673	α Leporis.
	-0	13	59.40					0.23							55	49	57.12	699	α Columbæ.
6.40	41	17	30.01	.124	71.0	72.0		49.04							97	22	15.80	734	α Orionis R.
	41	17	29.08												97	22	14.87	734	α Orionis.
	-56	29	39.42	.143	70.0	66.8		1 25.29							-0	27	07.96		β Octantis SP.
8.57	-12	55	31.12	.143	70.0	66.8		13.00							43	08	12.63	1003	γ <sup>2</sup> Argus R.
	-12	55	27.70												43	08	16.05	1003	γ <sup>2</sup> Argus.
	1	19	41.57	.143	70.0	67.8		1.31							57	23	39.63	1070	α Pix. Naut.
	53	03	14.84	.143	70.0	66.8		1 15.08	1.42	19.179		19.58			109	08	44.83		♃
6.92	-8	50	37.26	.141	70.0	67.0	65.5								47	13	10.69	1114	λ Argus R.
	-8	50	37.15					8.80							47	13	10.80	1114	λ Argus.
	86	09	37.61	.141	70.0	67.0												1152	θ Ursæ Majoris.
	77	35	27.97	.141	70.0	67.4		4 10.81							133	43	35.53	1219	λ Ursæ Majoris.
	76	11	22.94	.141	70.0	66.3		3 46.02							132	19	5.71	1230	μ Ursæ Majoris.
	-57	40	12.32	.141	70.0	66.0		1 29.30							-1	37	44.87		τ Octantis SP.
	82	30	16.54	.143	70.0	66.0		6 45.10							138	40	58.39	1370	χ Ursæ Majoris.
	0	55	46.47	.134	69.5	66.3		0.83							56	59	44.05	1378	β Hydr. et Crat.
	-67	51	20.05	.134	69.5	66.3		2 18.18							-11	49	41.48	27	β Hydr. SP.
	73	4	52.19	.133	69.5	66.5		3 3.73							129	11	52.67	1492	12 Canum Ven.
	73	4	39.36					3 3.70							129	11	39.81		Companion.
5.96	-1	55	02.51	.128	69.5	66.5			1.89						54	08	52.35	1527	ι Centauri R.
	-1	55	04.31												54	08	50.55	1527	ι Centauri.
	89	16	45.73	.125	69.5	66.5												1534	ζ Ursæ Majoris.
	34	09	35.93	.117	69.5	66.5		38.39							90	14	11.07	1550	ζ Virginis.
	1	42	52.99	.116	69.5	66.6		1.69							57	46	51.43	1562	ι Centauri.
	1	44	53.93	.115	69.5	66.7		1.73							57	48	52.41	1579	κ Centauri.
	1	44	50.34					1.73							57	48	48.82	1579	Companion.
	32	46	49.14	.113	69.5	66.4		36.50							88	51	22.39		*
	32	46	38.12					36.46							88	51	11.33		*
	32	46	35.02					36.46	2.08						88	51	06.15		‡
	-23	18	23.08	.098	69.8	63.3		24.51							32	45	09.16	2398	α Pavonis.
	3	26	54.31	.097	70.0	67.0	64.8	3.40							59	30	54.46	2741	Fomalhaut.
	31	51	27.87	.097	71.0	72.8		34.72	3.47						87	55	55.87		♃
	32	44	04.75	.097	71.0	72.8		35.91	2.76						88	48	34.65		♀
	-44	13	19.74	30.097	71.0	73.0		54.31							11	49	42.70	27	β Hydri.
	39	07	47.37	30.093	70.0	73.0	68.0	45.42	5.39						94	56	23.65		⊙
	38	35	48.80					44.56	5.32						94	56	25.29		⊙
7.06	-56	29	36.99	30.098	69.0	60.6		1 26.17							-0	27	06.41		β Octantis SP.
	-12	55	27.82	.101	69.0	60.0	58.8	13.14							43	08	15.79	1003	γ <sup>2</sup> Argus R.
	-12	55	27.42												43	08	16.19	1003	γ <sup>2</sup> Argus.
	53	03	36.62	.107	66.5	58.5	57.1	1 19.85	1.40	21.119		19.54			109	08	32.28		♃
	54	32	47.94	.107	66.5	58.2	57.0	1 20.55	7.06	20.410		5.24			110	37	52.94		♃
6.43	-8	50	37.86	.107	66.5	58.0		8.95							47	13	09.94	1114	λ <sup>2</sup> Argus R.
	-8	50	38.73												47	13	09.07	1114	λ <sup>2</sup> Argus.
	86	09	15.34	.112	66.5	57.6												1152	θ Ursæ Majoris.
8.48	-59	15	24.25	.107	66.5	57.3		1 36.50							-3	13	04.00		γ Octantis SP. R.
	-59	15	21.01												-3	13	00.76		γ Octantis SP.
	77	35	23.86	.109	64.0	57.2	56.5	4 15.75							133	43	36.36	1219	λ Ursæ Majoris

Coincidence of Micrometer Wire with fixed Wire, =20°.150 One revolution =40°.335  
 Correction for Runs =-2°.9  
 Adopted Zenith Point =326°. 04'. 06".87 to April 1<sup>st</sup>. From April 1<sup>st</sup>, =326°. 04'. 06".86  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			''	''	''	''	''	''					
♄ 5 April	1230	μ Ursæ Majoris....	15 07.1	52.9	39.2	00.5	03.7	52.4			42 15 25.93	T.M.	
		τ Octantis SP.....	24 17.2	3.7	35.9	11.2	30.0	22.0			268 23 59.62	T.M.	
	1370	χ Ursæ Majoris....	34 01.8	41.2	27.1	52.0	50.0	44.1			48 34 15.61	T.M.	
	1378	β Hydræ et Crat...	59 57.5	56.3	12.9	40.2	02.0	30.6			325 59 52.76	T.M.	
	27	(a) β Hydri SP.....	13 08.2	56.2	21.7	7.1	21.0	18.5	12 17 26		258 12 50.76	T.M.	
	1550	ζ Virginis.....	13 33.0	47.0	34.8	44.2	42.4	36.4			0 13 39.28	T.M.	
		ξ.....	36 47.0	61.2	49.0	59.1	58.8	49.2			0 36 54.27	T.M.	
	2398	(b) α Pavonis.....	45 52.5	51.4	12.8	18.8	2.8	13.0	20 13 01		302 45 45.15	T.M.	
	2417	(c) α Indi.....	9 27.0	22.0	40.8	59.0	27.8	50.8	20 27 22	-1.20	312 09 16.28	T.M.	
	2741	Fomalhaut.....	31 04.1	05.2	16.6	55.0	10.3	42.0			329 31 02.10	T.M.	
	27	(d) β Hydri.....	51 07.4	49.6	28.5	1.4	13.2	11.4	0 18 53	+0.88	281 50 49.38	T.M.	
	♃ 6 April		⊙ S. L. M.....	13 34.8	51.1	36.1	47.7	47.5	39.1	23.597	-2 19.04	6 11 23.66	T.M.
			⊙ N. L.....	43 11.0	30.4	11.4	26.0	25.2	16.8			6 43 19.41	T.M.
		673	α Leporis.....	3 12.1	10.0	15.3	07.2	13.8	58.6			342 03 09.18	T.M.
699		a Columbæ.....	50 15.1	9.8	25.1	55.0	15.5	46.0			325 50 07.74	T.M.	
712		μ Columbæ.....	6 32.1	30.0	31.8	29.3	28.8	19.0			345 06 28.36	T.M.	
732		β Columbæ.....	10 08.0	05.3	20.8	49.4	10.1	38.9			324 10 02.08	T.M.	
838		Sirius.....	29 53.8	53.0	55.1	49.1	53.0	38.2			343 29 49.91	T.M.	
869		(e) ε Canis Maj. M.R.	53 42.9	39.0	22.6	52.8	08.2	46.3	20.160	-0.40	140 53 34.96	T.M.	
869		(c) ε Canis Majoris....	14 43.5	38.8	52.2	27.5	46.2	22.2			331 14 38.56	T.M.	
		B Octantis SP....	34 40.0	35.2	01.8	39.5	57.9	45.2	7 47 10		269 34 26.18	T.M.	
990		ζ Argus.....	27 25.5	17.6	40.4	54.8	27.8	46.8			320 27 15.26	T.M.	
1003		γ Argus.....	8 51.2	40.0	06.0	14.7	52.1	09.0			313 08 38.48	T.M.	
		♃ S. L.....	6 39.8	18.4	53.8	59.3	16.6	45.5			19 06 58.72	T.M.	
		♃'s center.....	33 22.0	2.0	37.9	42.1	0.5	30.4			20 33 42.12	T.M.	
		ξ.....	29 16.2	28.1	15.5	27.7	23.8	19.0			359 29 21.30	T.M.	
		(f) ♀.....	16 35.2	50.4	35.5	50.0	46.0	40.0		-1.60	1 16 41.09	T.M.	
♀ 7 April			⊙ S. L. M.....	34 19.5	37.2	23.0	33.3	34.5	25.3	20.902	-30.33	6 33 58.39	T.M.
			⊙ N. L.....	5 43.0	67.3	45.5	60.5	61.7	50.5			7 5 54.26	T.M.
	838	Sirius.....	29 52.8	53.7	55.2	50.2	59.0	39.5			343 29 51.26	T.M.	
		B Octantis SP....	34 46.2	33.9	8.2	39.7	58.3	49.3			269 34 28.84	T.M.	
	990	ζ Argus.....	27 22.7	19.2	35.6	00.4	24.0	49.0			320 27 14.94	T.M.	
	1003	γ Argus.....	8 49.1	44.4	63.7	20.3	52.7	10.1			313 08 39.69	T.M.	
		A Octantis M....	38 46.8	52.0	05.4	02.0	05.4	5.0	20.367 8 37 04	-8.75 -0.50	271 38 29.83	T.M.	
	1070	(f) α Pix. Naut.....	23 52.9	53.0	59.4	42.8	52.6	32.3		+0.76	327 23 49.23	T.M.	
		♃ S. L.....	27 57.2	40.0	25.0	10.2	48.0	55.2			20 28 18.95	T.M.	
	1114	λ Argus.....	13 36.8	32.6	44.7	16.7	32.9	8.5			317 13 28.37	T.M.	
	1219	λ Ursæ Majoris....	39 15.4	0.0	53.1	0.6	15.0	51.9			43 39 32.24	T.M.	
	1230	μ Ursæ Majoris....	15 08.5	54.2	48.4	55.1	12.0	46.0			42 15 27.33	T.M.	
		τ Octantis SP....	24 08.3	03.3	20.0	16.9	20.2	22.5	11 03 15		268 23 54.61	T.M.	
	1370	(g) χ Ursæ Majoris....	33 61.6	41.0	96.3	43.0	59.0	35.4			48 34 15.63	T.M.	
	1378	β Hydræ et Crat...	59 55.0	58.2	64.5	47.8	55.0	35.8			326 59 52.25	T.M.	
	27	β Hydri SP. M...	12 42.0	33.1	49.0	49.2	48.3	59.0	19.587 12 17 29	+22.71	258 12 49.25	T.M.	
	1433	u Centauri.....	51 57.5	50.9	61.7	40.6	47.8	32.7			321 51 48.36	T.M.	
	1527	i Centauri.....	9 06.0	04.8	14.0	53.2	04.1	43.0			324 09 00.46	T.M.	
1542	d Centauri.....	26 29.7	22.0	36.0	11.5	22.1	03.5			321 26 20.67	T.M.		
1550	ζ Virginis.....	13 37.8	48.0	39.9	45.0	46.0	38.8			0 13 42.23	T.M.		
1562	i Centauri M.....	48 47.5	46.9	55.8	37.2	45.7	28.2	22.719 21.771	-1 43.62 -1 05.38 +2.17	327 46 59.57	T.M.		
1570	(h) v Centauri M....	8 61.2	57.2	67.9	45.0	55.4	35.8			319 07 50.27	T.M.		
1580	h Centauri.....	52 52.2	49.7	58.4	43.6	50.0	32.1			328 52 47.40	T.M.		
	ξ.....	36 55.0	63.0	53.7	61.0	59.8	55.0			359 36 57.74	T.M.		

Molyneux slow, April 6<sup>th</sup>, 19<sup>h</sup>.—7<sup>th</sup>, 19<sup>h</sup>.

- (a) The Stars are crabby, excepting low down towards the North. The night is calm and serene. 10<sup>h</sup>. added for error in reading off.
- (b) Very bad image. A cold morning.
- (c) Observed at the 5<sup>th</sup> Wire.

- (d) Observed at the 4<sup>th</sup> Wire.
- (e) Observed on the Meridian.
- (f) Observed beyond the 5<sup>th</sup> Wire.
- (g) A nebulous blotch.
- (h) Leaving the field.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	°	'	"	Inch.	°	'	"	"	"	"	"	°	'	"				
	76	11	19.07	30.109	64.0	57.2	56.0	3	49.94			132	19	5.76	1230	$\mu$ Ursæ Majoris.		
	-57	40	07.24	.108	64.0	55.5		1	31.07			-1	37	41.55		$\tau$ Octantis SP.		
	82	30	8.75	.108	64.0	53.6		6	55.14			138	41	0.64	1370	$\chi$ Ursæ Majoris.		
	-0	04	14.10	.108	64.0	53.6			0.07			55	59	42.58	1378	$\beta$ Hydræ et Crat.		
	-67	51	16.10	.108	64.0	54.0		2	21.45			-11	49	40.80	27	$\beta$ Hydri SP.		
	34	09	32.42	.098	66.0	52.8			39.40			90	14	08.57	1550	$\zeta$ Virginis.		
	34	32	47.41	.093	66.0	52.6			39.97	2.18		90	37	21.95		$\ddagger$		
	-23	18	21.71	.075	66.5	52.5			25.01			32	45	10.03	2398	$\alpha$ Pavonis.		
	-13	54	50.58	.074	66.5	53.0			14.37			42	08	51.80	2417	$\alpha$ Indi.		
	3	26	55.24	.068	67.0	64.0	60.9		3.43			59	30	55.42	2741	Fomalhaut.		
	-44	13	17.48	30.048	67.5	67.4	62.9		54.82			11	49	44.45	27	$\beta$ Hydri.		
	40	07	16.80	30.031	69.8	69.3			47.27	5.49		96	27	54.73		$\odot$		
	40	39	12.55						48.17	5.55	15	59.40	96	27	52.52		$\odot$	
	15	59	02.32	29.967	70.0	73.0			15.93			72	03	15.00	673	$\alpha$ Leporis.		
	-0	13	59.12	29.967	70.0	73.0			0.23			55	49	57.40	699	$\alpha$ Columbæ.		
	19	02	21.50	29.970	70.0	73.0			19.19			75	06	37.44	712	$\mu$ Columbæ.		
	-1	54	04.78	29.970	70.0	73.0			1.85			54	09	50.12	732	$\beta$ Columbæ.		
	17	25	43.05	29.979	70.0	68.3			17.63			73	29	57.43	838	Sirius.		
6.76	5	10	31.90	29.982	70.0	68.0			5.08			61	14	33.73	869	$\epsilon$ Canis Maj .R.		
	5	10	31.70									61	14	33.53	869	$\epsilon$ Canis Majoris.		
	-56	29	40.68	30.015	69.0	64.4		1	25.31			-0	27	09.24	990	$B$ Octantis SP.		
	-5	36	51.60	.020	69.0	64.0			5.57			50	26	59.58		$\zeta$ Argus.		
	-12	55	28.38	.028	68.0	63.5			13.02			43	08	15.35	1003	$\gamma^2$ Argus.		
	53	02	51.86	.034	67.0	62.8		1	15.42	1.40	19.260	17.95	109	08	20.58		$\pi$	
	54	29	35.26	.038	67.0	62.3		1	19.61	7.00			110	34	44.62		$\delta$	
	33	25	14.44	.074	67.5	58.3			37.89	2.12			89	29	46.96		$\ddagger$	
	35	12	34.23	30.151	68.0	66.5			39.97	2.92			91	17	08.03		$\phi$	
	40	29	51.53	30.149	68.5	67.0	61.3		48.31	5.54		15	59.10	96	50	30.65		$\odot$
	41	01	47.40						49.22	5.60			96	50	28.67		$\odot$	
	17	25	44.40	.133	68.0	61.5			17.95			73	29	59.10	838	Sirius.		
	-56	29	38.02	.140	67.0	60.8		1	26.28			-0	27	07.55		$B$ Octantis SP.		
	-5	36	51.92	.138	67.0	60.6			5.64			50	26	59.19	990	$\zeta$ Argus.		
	-12	55	27.17	.136	67.0	60.6			13.14			43	08	16.44	1003	$\gamma^2$ Argus.		
	-54	25	37.03	.144	66.5	60.5		1	19.94			1	36	59.78		$A$ Octantis.		
	1	19	42.37	.144	66.5	60.5			13.28			57	23	52.40	1070	$\alpha$ Pix. Naut.		
	54	24	12.09	.149	66.5	60.5		1	19.89	6.93	19.891	5.23	110	29	27.03		$\delta$	
	-8	50	38.49	.151	66.5	60.5			8.91			47	13	09.35	1114	$\lambda$ Argus.		
	77	35	25.38	.162	66.0	60.5		4	14.50			133	43	36.63	1219	$\lambda$ Ursæ Majoris.		
	76	11	20.47	.162	66.0	60.0		3	49.04			132	19	6.26	1230	$\mu$ Ursæ Majoris.		
	-57	40	12.25	.163	66.0	60.5		1	30.34			-1	37	45.84		$\tau$ Octantis SP.		
	82	30	8.77	.163	65.5	60.3		6	50.13			138	40	55.65	1370	$\chi$ Ursæ Majoris.		
	0	55	45.39	.161	65.5	60.0			0.93			56	59	43.07	1378	$\beta$ Hydr. et Crat.		
	-67	51	17.61	.148	65.0	60.0		2	19.98			-11	49	40.84	27	$\beta$ Hydri SP.		
	-4	12	18.50	.147	65.0	60.0			4.22			51	51	34.03	1433	$\alpha$ Centauri.		
	-1	55	06.40	.143	65.0	59.8			1.92			54	08	48.43	1527	$\epsilon$ Centauri.		
	-4	37	46.19	.143	65.0	59.8			4.65			51	26	05.91	1542	$d$ Centauri.		
	34	09	35.37	.143	65.0	59.8			38.93			90	14	11.05	1550	$\zeta$ Virginis.		
	1	42	52.71	.143	65.0	59.6			1.72			57	46	51.18	1562	$i$ Centauri.		
	-6	56	16.59	.143	65.0	59.6			6.98			49	07	33.18	1570	$\nu$ Centauri.		
	2	48	40.54	.143	65.0	59.5			2.82			58	52	40.11	1580	$h$ Centauri.		
	33	32	50.88	.140	65.0	59.4			37.97	2.13		89	37	23.47		$\ddagger$		

Coincidence of Micrometer Wire with fixed Wire, =20°.150 One revolution =40°.335  
 Correction for Runs =-2°.9  
 Adopted Zenith Point =326°. 04'. 06".86  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			l #	#	#	#	#	#				
♀ 7 April	1604	θ Centauri.....	26 15.9	15.5	22.6	3.0	11.9	52.8			324 26 10.16	T.M.
	2741	Fomalhaut.....	31 05.5	4.7	13.8	57.2	6.5	46.8			329 31 02.32	T.M.
		♀'s center.....	40 20.0	31.0	19.4	27.8	29.1	21.2			1 46 24.61	T.M.
		♄'s center.....	55 59.4	72.6	61.7	68.0	71.3	61.9			2 56 05.72	T.M.
♁ 8 April	(a)	⊙ N.L. M.....	28 50.1	64.1	55.8	57.5	65.7	52.0	21.009	-34.65	7 28 22.83	T.M.
		⊙ S.L.....	56 22.1	37.0	25.7	30.5	36.8	23.0			6 56 28.63	T.M.
	673	α Leporis.....	3 13.0	9.1	15.2	8.3	13.1	0.0			342 03 09.48	T.M.
	699	α Columbæ.....	50 14.5	11.6	20.8	01.7	10.5	52.0			325 50 8.51	T.M.
	712	μ <sup>1</sup> Columbæ.....	6 34.1	29.6	33.7	29.7	31.6	21.7			345 06 29.93	T.M.
	732	β Columbæ.....	10 08.2	7.0	16.4	56.2	5.0	45.6			324 10 03.07	T.M.
	807	Canopus M. R....	44 30.5	25.4	24.2	29.2	12.7	31.5	20.064	+3.47	164 44 28.27	T.M.
	807	Canopus.....	23 51.2	55.0	56.1	37.3	48.6	25.9			307 23 45.68	T.M.
	838	Sirius M.R.....	37 40.5	48.0	11.4	2.9	6.3	48.5	19.050	+44.37	128 38 20.05	T.M.
	838	Sirius.....	29 57.5	50.6	56.8	50.2	54.5	43.2			343 29 52.01	T.M.
	869	ε Canis Maj. M.R.	53 36.9	42.5	12.2	60.0	3.6	47.2	20.100	+2.02	140 53 34.80	T.M.
	869	ε Canis Majoris ...	14 44.6	39.5	48.0	33.0	41.1	27.8			331 14 39.16	T.M.
		B Octantis SP....	34 40.1	39.4	55.0	50.9	52.0	54.6	7 50 00	0.06	269 34 28.19	T.M.
	1003	γ <sup>2</sup> Argus M.R....	59 39.0	32.5	28.5	43.5	15.4	46.8	20.080	-2.82	158 59 36.35	T.M.
	1003	γ <sup>2</sup> Argus.....	8 45.1	47.0	49.4	32.9	39.7	20.0			313 08 38.98	T.M.
		A Octantis.....	38 46.5	37.5	64.0	49.9	55.6	00.2	8 33 38		271 38 31.94	T.M.
		♃ N.L.....	6 43.8	24.0	10.9	53.9	34.8	39.3			19 07 04.26	T.M.
		♄ N.L.....	22 37.5	20.5	7.7	49.0	30.5	34.5			20 22 59.66	T.M.
	1114	λ Argus.....	13 39.2	31.7	44.0	17.9	30.2	11.8			317 13 28.79	T.M.
	1152	θ Ursæ Majoris...	13 18.2	58.7	50.5	0.6	13.8	50.8			52 13 31.76	T.M.
		C Octantis SP....	48 56.5	50.1	10.8	2.7	8.2	10.0	9 59 30	-0.43	266 48 42.25	T.M.
	1219	λ Ursæ Majoris...	39 15.0	57.8	54.1	57.2	15.0	49.8			43 39 31.05	T.M.
	1230	μ Ursæ Majoris...	15 11.1	54.4	51.4	54.3	14.1	46.0			42 15 28.51	T.M.
		τ Octantis SP....	24 12.0	59.1	23.6	13.0	19.8	22.2	11 00 16		268 23 54.57	T.M.
	1370	χ Ursæ Majoris...	33 62.9	103.5	97.4	45.0	119.5	37.9			48 34 17.28	T.M.
	1378	β Hydræ et Crat...	59 56.0	55.2	65.0	46.0	54.0	35.0			326 59 51.41	T.M.
	27	β Hydri SP.....	12 65.8	57.1	74.1	12.9	74.5	22.0	12 17 29		258 12 50.80	T.M.
	1492	12 Canum Ven....	8 38.5	24.2	15.7	26.6	41.1	16.4			39 08 56.70	T.M.
	Companion M....							20.508	-14.44	39 08 42.26	T.M.	
1527	ε Centauri.....	9 06.4	3.9	14.5	52.6	4.0	43.0			324 09 00.35	T.M.	
1542	d Centauri.....	26 28.5	21.0	35.7	10.5	22.8	2.6			321 26 20.05	T.M.	
1550	(b) ζ Virginis.....	13 37.2	46.9	38.3	44.4	45.2	38.7			0 13 41.41	T.M.	
1562	(b) i Centauri.....	47 02.3	2.6	12.5	52.6	2.4	43.8			327 46 59.18	T.M.	
	(b) †.....	44 27.0	35.0	26.8	33.0	33.8	27.1		-0.26	359 44 29.76	T.M.	
⊙ 9 April	2741	Fomalhaut.....	30 05.0	05.3	14.0	58.0	07.3	46.2			329 30 02.63	T.M.
	27	β Hydri.....	51 08.5	55.4	20.8	15.9	08.7	23.2	0 17 12		281 50 51.99	T.M.
		♀'s center.....	45 39.2	51.0	38.9	46.5	48.3	40.6			2 45 44.01	T.M.
		♄'s center.....	42 38.7	51.9	40.3	48.2	52.2	42.3			4 42 45.34	T.M.
♁ 10 April		⊙ S.L. M.....	42 38.9	54.0	44.0	47.1	54.3	40.0	22.680	-1 42.05	7 41 04.57	T.M.
		⊙ N.L.....	12 52.8	7.5	55.6	1.0	5.3	53.6			8 12 58.60	T.M.
	699	α Columbæ.....	50 14.5	12.9	19.5	2.5	13.2	52.0			325 50 09.09	T.M.
	734	α Orionis M.R....	46 50.8	36.1	17.2	41.1	14.8	41.7	20.047	+4.15	104 46 37.74	T.M.
	734	α Orionis.....	21 27.0	45.2	36.8	34.4	49.0	26.2			7 21 36.15	T.M.
	807	Canopus.....	23 56.0	52.2	62.4	35.0	49.0	27.7			307 23 46.68	T.M.
	838	Sirius.....	29 54.3	52.8	55.4	50.2	55.1	41.5			343 29 51.08	T.M.
	869	ε Canis Majoris ...	14 43.8	42.2	47.0	35.4	42.7	26.0			331 14 39.08	T.M.
		♃ S.L.....	5 26.4	8.3	53.2	37.0	19.7	22.0			19 05 37.71	T.M.
		♄ S.L.....	11 11.5	54.0	41.7	20.1	6.2	6.1			20 11 33.13	T.M.
	1114	(b) λ Argus.....	13 37.5	31.0	42.6	16.1	30.1	10.0		+1.00	317 13 28.55	T.M.

Molyneux fast, April 8<sup>th</sup>, 19<sup>s</sup>.

- (a) Very bad images.
- (b) Observed at the 5<sup>th</sup> Wire.



CAPE OF GOOD HOPE.

CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET
					Attach.	Out.	Wet Bulb.									
#	°	'	"	Inch.	°	'	"	"	"	"	"	°	'	"		
	-1	37	55.46	.140	65.0	59.4		1.64				54	25	58.41	1604	θ Centauri.
	3	26	55.46	30.168	65.0	63.0		3.44				59	30	55.65	2741	Fomalhaut.
	35	42	17.75	30.186	67.0	67.2	60.0	40.70	2.95			91	46	52.25		♀
	36	51	58.86	30.185	67.0	67.2	60.0	42.46	3.85			92	56	34.22		♁
	41	24	15.97	30.182	67.0	67.1	59.0	49.92	5.64			97	12	58.20		☉
	40	52	21.77					49.00	5.58		15 58.80	97	13	00.74		☉
	15	59	02.62	.175	67.0	63.6	57.0	16.34				72	03	15.71	673	α Leporis.
	-0	13	58.35	.178	66.5	63.5	57.0	0.23				55	49	58.17	699	α Columbæ.
	19	02	23.07	.180	66.2	63.4	57.0	19.69				75	06	39.51	712	μ <sup>1</sup> Columbæ.
	-1	54	03.79	.181	66.2	63.0	57.0	1.89				54	09	51.07	732	β Columbæ.
6.98	-18	40	21.41	.188	66.0	61.6	55.7					37	23	15.99	807	Canopus R.
	-18	40	21.18					19.35				37	23	16.22	807	Canopus.
6.03	17	25	46.81	.188	66.0	61.0	55.6					73	30	01.47	838	Sirius R.
	17	25	45.15					17.91				73	29	59.81	838	Sirius.
6.98	5	10	32.06	.188	66.0	61.0	55.5					61	14	34.00	869	ε Canis Maj. R.
	5	10	32.30					5.19				61	14	34.24	869	ε Canis Majoris.
	-56	29	42.67	.213	65.5	60.0	56.0	1 26.62				-0	27	12.54		B Octantis SP.
7.67	-12	55	29.49	.215	65.5	60.0	55.0					43	08	14.06	1003	γ <sup>2</sup> Argus R.
	-12	55	27.88					13.20				43	08	15.67	1003	γ <sup>2</sup> Argus.
	-54	25	34.92	.230	65.5	59.8		1 20.28				1	37	01.55		A Octantis.
	53	02	57.40	.232	65.5	59.5		1 16.41	1.39	21.052	18.19	109	07	50.98		♃
	54	18	52.80	.228	65.0	59.4		1 20.02	6.86	20.383	4.70	110	23	58.01		♄
	-8	50	38.07	.225	65.0	59.4		8.95				47	13	09.73	1114	λ Argus.
	86	09	24.90	.225	65.0	59.3									1152	θ Ursæ Majoris.
	-59	15	24.61	.232	65.0	59.4		1 36.54				-3	13	04.40		C Octantis SP.
	77	35	24.19	.234	65.0	59.0		4 15.89				133	43	36.83	1219	λ Ursæ Majoris.
	76	11	21.65	.234	65.0	59.0		3 50.06				132	19	8.46	1230	μ Ursæ Majoris.
	-57	40	12.29	.243	65.0	58.6		1 30.92				-1	37	46.46		τ Octantis SP.
	82	30	10.42	.243	65.0	58.0		6 53.22				138	41	0.39	1370	χ Ursæ Majoris.
	0	55	44.55	.243	65.0	58.0		0.94				56	59	42.24	1378	β Hydræ et Crat.
	-67	51	16.06	.241	65.0	58.0		2 20.97				-11	49	40.25	27	β Hydri SP.
	73	4	49.84	.241	65.0	58.0		3 7.53				129	11	54.12	1492	12 Canum Ven.
	73	4	35.40					3 7.49				129	11	39.64		Companion.
	-1	55	06.51	.233	64.5	58.4		1.93				54	08	48.31	1527	ε Centauri.
	-4	37	46.81	.235	64.5	58.5		4.67				51	26	05.27	1542	d Centauri.
	34	09	34.55	.235	64.5	58.6		39.13				90	14	10.43	1550	ζ Virginis.
	1	42	52.32	.235	64.5	59.0		1.73				57	46	50.80	1562	i Centauri.
	33	40	22.90	30.235	64.5	58.8		38.41	2.14			89	44	55.92		†
	3	25	55.77	30.281	66.5	68.2	61.0	3.40				59	29	55.92	2741	Fomalhaut.
	-44	13	14.87	.267	67.0	71.5		54.79				11	49	47.09	27	β Hydri SP.
	36	41	37.15	.260	67.0	73.2	63.0	41.83	3.02			92	46	12.71		♀
	38	38	38.48	30.260	67.0	73.3	63.0	44.87	3.99			94	43	16.11		♁
	41	36	57.26	30.246	67.0	73.7	63.2	49.78	5.66		15 58.30	97	57	36.43		☉
	42	08	51.29					50.72	5.72			97	57	34.74		☉
	-0	13	58.22	.191	68.5	69.0		0.23				55	49	58.30	699	α Columbæ.
6.95	41	17	29.57	.191	68.5	68.9	61.0					97	22	15.89	734	α Orionis R.
	41	17	28.84					49.57				97	22	15.16	734	α Orionis.
	-18	40	20.63	.190	68.5	68.8	60.5	19.09				37	23	17.03	807	Canopus.
	17	25	43.77	.186	68.5	68.4	61.5	17.74				73	29	58.26	838	Sirius.
	5	10	31.77	.185	68.5	68.4		5.12				61	14	33.64	869	ε Canis Majoris.
	53	1	30.40	.173	67.2	66.3	59.0	1 15.20	1.38	19.289	17.37	109	6	58.34		♃
	54	07	25.82	.174	67.0	66.0	58.2	1 18.32	6.73	19.920	4.64	110	12	38.80		♄
	-8	50	38.76	.175	67.0	66.0		8.84				47	05	09.15	1114	λ Argus.

Coincidence of Micrometer Wire with fixed Wire, =20°.150 One revolution =40°335  
 Correction for Runs =-2°.9  
 Adopted Zenith Point =326°. 04'. 06".86 to April 10<sup>th</sup>. From April 10<sup>th</sup>, =326°. 04'. 07".31  
 Assumed Co-latitude =56°. 03'. 56".75







CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. ASC	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.									
#	o	'	"	Inch.	o	o	o	'	"	"	'	"	o	'	"	
	86	09	38.98	30.175	67.0	65.6							1152	θ Ursæ Majoris.		
	-59	15	27.84	30.175	66.0	65.0		1	35.32			-3	13	06.41	C Octantis SP.	
	77	35	28.20	.174	66.0	65.0		4	12.35			133	43	37.30	λ Ursæ Majoris	
	76	11	22.42	.171	66.0	65.0	58.5					132	19	6.07	μ Ursæ Majoris.	
	-57	40	16.76	.168	66.0	66.2	58.0	1	29.39			-1	37	49.40	τ Octantis SP.	
	11	59	24.10	.168	66.0	66.2			12.05			68	03	33.90	β Hydr. et Crat.	
	82	30	11.63	.159	66.0	61.8	57.0	6	48.87			138	40	57.25	χ Ursæ Majoris.	
	0	55	44.30	.157	66.0	61.8	57.0		0.93			56	59	41.98	β Hydræ et Crat.	
	-67	51	21.82	.150	65.5	61.2	57.0	2	19.66			-11	49	44.73	β Hydri SP.	
	73	04	51.51	.147	65.5	61.5		3	5.68			129	11	53.94	12 Canum Ven.	
	73	04	37.80					3	5.64			129	11	40.19	Companion.	
	-1	55	07.81	.143	65.0	61.2			1.92			54	08	47.02	ε Centauri.	
	-4	37	48.24	.142	65.0	61.2			4.63			51	26	03.88	d Centauri.	
	34	09	33.49	.141	65.0	61.2			38.83			90	14	09.07	ζ Virginis.	
	1	42	51.02	.141	65.0	61.2			1.71			57	46	49.48	i Centauri.	
	33	55	30.98	.137	65.0	61.2			38.48	2.15		90	0	4.06	‡	
	-23	18	24.49	.074	65.0	61.0			24.61			32	45	07.65	α Pavonis R.	
8.63	-23	18	21.85									32	45	10.29	α Pavonis.	
	3	26	54.79	30.097	66.0	70.0			3.39			59	30	54.93	Fomalhaut.	
	-0	13	59.54	30.010	68.0	73.2	62.5		0.23			55	49	56.98	α Columbæ.	
	41	17	28.78						48.88			97	22	14.41	α Orionis R.	
7.33	41	17	28.81									97	22	14.44	α Orionis.	
	4	56	27.97	29.998	68.0	67.8	61.0		4.86			61	00	29.58	η Canis Maj. R.	
6.63	4	56	26.61									61	00	28.22	η Canis Majoris.	
	-1	55	04.65	29.916	67.0	68.8			1.88			54	08	50.22	ε Centauri R.	
6.23	-1	55	06.82									54	08	48.05	ε Centauri.	
	-4	37	48.80	29.916	67.0	68.4			4.54			51	26	03.41	d Centauri.	
	34	09	34.86	29.916	67.0	68.0	59.0		38.02			90	14	09.63	ζ Virginis.	
	1	42	50.71	29.915	67.0	63.0	54.6		1.69			57	46	49.15	i Centauri.	
	34	02	51.31	29.914	67.0	63.0	54.6		38.23	2.16		90	7	24.13	‡	
	80	40	45.59	29.911	67.0	61.8		5	31.63			136	50	13.97	λ Bootis.	
	-53	30	19.78	29.911	67.0	61.8		1	16.53			2	32	20.44	τ Octantis.	
	73	04	50.64	30.158	65.0	57.5		3	7.20			129	11	54.59	12 Canum Ven.	
	73	04	36.24					3	7.16			129	11	40.15	1492 Companion.	
	-1	55	04.74	.160	65.0	58.3			1.93			54	08	49.08	ε Centauri R.	
	-4	37	48.72	.160	65.0	58.3			4.67			51	26	03.36	d Centauri.	
	34	09	34.52	.158	65.0	58.3			39.05			90	14	10.32	ζ Virginis.	
	34	17	35.48	.157	65.0	58.2			39.26	2.17		90	22	9.32	‡	
6.32	-1	37	56.47	.156	65.0	57.4			1.64			54	25	58.64	θ Centauri R.	
	-1	37	58.45									54	25	56.66	θ Centauri.	
	80	40	35.06	.156	65.0	56.7		5	37.75			136	50	9.56	λ Bootis.	
	3	26	56.84	.129	65.0	66.3	61.2		3.41			59	30	57.00	2741 Fomalhaut.	
	-44	12	15.06	.125	67.5	68.8			54.76			11	50	46.93	27 β Hydri.	
	38	39	34.57	30.107	67.8	70.2	63.8		44.92	3.14		94	44	13.10	♀	
	43	36	18.07	30.085	68.0	72.0	64.6		53.25	5.87		99	25	5.00	⊙	
	43	4	27.99						52.30	5.81	15	57.20	99	25	8.43	⊙
	-0	13	57.13	.010	68.0	68.8						55	49	59.39	699 α Columbæ.	
	41	17	29.59	30.010	68.0	68.5	63.0		49.31			97	22	15.65	734 α Orionis R.	
6.79	41	17	28.55									97	22	14.61	734 α Orionis.	
	52	39	48.33	29.956	67.0	63.0		1	14.18			108	44	59.26	1066 δ Cancri R.	
7.12	52	39	47.94									108	44	58.87	1066 δ Cancri.	
	53	0	15.47	29.955	66.0	62.8	61.0	1	15.11	1.36	21.084	18.82	109	5	7.15	♃
	53	43	22.44	29.954	66.0	63.2	61.0	1	17.03	6.48	20.408	5.18	109	48	24.56	♃

Coincidence of Micrometer Wire with fixed Wire, =20°.150 to April 13<sup>th</sup> at noon. From April 13<sup>th</sup> at noon, =20°.151  
 One revolution =40".335  
 Correction for Runs =-2".9  
 Adopted Zenith Point =326°.04'.07".31  
 Assumed Co-latitude =56°.03'.56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			1	2	3	4	5	6					
♀ 14 April		δ N. L. ....	27	50.1	32.5	2.8	09.2	31.0	56.5			22 28 10.04	T.M.
	1171	ο Leonis .....	36	49.2	12.7	56.8	02.4	11.8	53.2			10 37 00.82	T.M.
	1197	π Leonis .....	48	24.8	46.1	30.7	39.0	47.1	31.2			8 48 36.14	T.M.
	1219	λ Ursæ Majoris...	39	23.7	06.2	51.2	16.9	13.6	10.0			43 39 39.82	T.M.
	1230	μ Ursæ Majoris...	15	13.0	58.0	40.9	08.4	06.3	59.4			42 15 30.95	T.M.
		τ Octantis SP.....	24	08.8	53.2	27.0	00.8	23.0	11.9	11 02 50	0.35	268 23 50.07	T.M.
	1370	χ Ursæ Majoris....	34	12.0	59.9	37.5	0.0	4.9	58.5			48 34 28.37	T.M.
	1378	β Hydræ et Crat...	59	58.3	51.0	14.8	33.7	01.9	26.0			326 59 50.49	T.M.
	27	β Hydri SP.....	12	59.9	48.4	13.8	58.7	14.4	10.0	12 17 21		258 12 43.94	T.M.
	1492	12 Canum Ven....	8	40.2	29.6	04.9	44.0	33.8	32.7			39 09 00.49	T.M.
		Companion M.....								20.496	-13.91	39 08 46.58	T.M.
	1527	ε Centauri .....	9	06.5	00.5	23.8	40.0	13.6	32.0			324 08 59.02	T.M.
	1542	d Centauri M.R....	41	45.9	28.4	24.5	46.5	7.1	51.2	19.602	22.14	150 41 55.68	T.M.
	1542	d Centauri .....	26	26.0	21.9	44.1	59.5	33.2	49.5			321 26 19.14	T.M.
	1550	ζ Virginis .....	13	35.1	51.2	33.9	50.0	43.3	42.0			0 13 42.23	T.M.
	1562	i Centauri .....	47	02.8	59.8	20.0	41.3	10.5	33.5			327 46 57.80	T.M.
		‡ .....	28	46.2	58.3	45.1	58.5	53.2	51.2			0 28 51.70	T.M.
		z Octantis M.R....	34	18.0	32.5	08.7	33.8	55.5	03.1	19.370	-0.15	199 34 26.56	T.M.
		z Octantis .....	33	60.2	59.4	25.0	01.7	21.0	09.2	14 15 10	31.50	272 33 49.06	T.M.
	1646	γ Bootis .....	57	61.1	50.0	26.0	3.0	54.6	52.9	14 16 23		38 58 20.94	T.M.
♁ 15 April	699	α Columbæ .....	50	15.8	10.0	31.8	51.0	20.5	41.8			325 50 08.47	T.M.
	734	α Orionis .....	21	22.5	44.2	27.9	38.4	40.9	29.8			7 21 33.80	T.M.
♁ 18 April	732	β Columbæ .....	10	10.1	06.4	27.6	45.1	16.2	35.2			324 10 3.42	T.M.
	807	(a) Canopus M. R....	44	27.2	01.4	10.0	15.0	48.8	28.8	19.781	+14.92	164 44 26.01	T.M.
	807	Canopus .....	23	58.6	51.1	18.3	19.2	05.5	13.0			307 23 47.61	T.M.
	838	Sirius M.R.....	38	22.9	14.3	61.4	21.0	46.8	16.0	19.916	+9.48	128 38 19.23	T.M.
	838	Sirius .....	29	52.9	52.8	55.8	48.4	57.0	39.4			343 29 50.93	T.M.
	869	ε Canis Maj. M.R.	53	32.1	29.9	15.0	41.9	02.0	33.0	19.930	+8.91	140 53 33.63	T.M.
	869	ε Canis Majoris...	14	45.8	39.8	56.2	26.5	48.6	19.8			331 14 39.61	T.M.
	883	δ Canis Majoris...	51	37.8	36.0	48.6	26.3	43.4	15.0			333 51 34.37	T.M.
	903	π Argus .....	11	40.0	31.4	55.8	12.0	42.2	3.3			323 11 30.63	T.M.
	915	η Canis Majoris...	0	38.5	34.1	49.2	19.7	43.6	12.7			331 00 32.92	T.M.
		B Octantis SP....	34	46.1	32.9	07.8	37.5	0.0	46.3	7 47 55		269 34 28.01	T.M.
	2398	α Pavonis SP.....	35	64.4	32.5	61.3	3.0	57.2	25.0	8 13 04		237 35 40.50	T.M.
		A Octantis .....	38	45.0	36.7	08.0	42.4	02.4	52.2	8 33 41		271 38 30.77	T.M.
	2463	β Indi SP.....	17	49.4	14.2	48.4	44.0	42.4	06.8			239 17 23.96	T.M.
		δ S. L. ....	20	39.8	20.8	54.6	00.8	19.2	46.2			19 21 00.14	T.M.
	1152	θ Ursæ Majoris...	13	13.0	58.9	34.9	09.8	01.2	57.8			52 13 28.93	T.M.
		C Octantis SP....	48	57.5	47.2	15.9	54.8	13.2	02.8	9 58 30		266 48 41.53	T.M.
	1219	λ Ursæ Majoris...	39	12.0	58.1	39.0	09.5	03.8	59.4	10 07 34.5		43 39 29.87	T.M.
	1230	μ Ursæ Majoris...	15	02.0	51.2	30.9	02.0	57.6	50.9			42 15 22.40	T.M.
	2700	β Octantis SP....	15	64.2	54.8	80.0	04.3	78.2	12.2	10 29 18		262 15 48.87	T.M.
2774	(b) γ Tucanæ SP....	21	42.4	09.9	42.1	40.0	37.0	01.4	11 08 51	-0.45	239 21 19.12	T.M.	
1370	χ Ursæ Majoris...	33	62.1	102.8	85.2	55.3	107.4	47.0	11 37 46		48 34 16.21	T.M.	
1378	β Hydræ et Crat...	59	55.0	56.4	12.3	36.6	04.8	24.9	11 44 56		326 59 51.20	T.M.	
1415	η Virginis .....	13	35.7	51.1	34.3	50.0	44.1	41.2			0 13 42.36	T.M.	
	δ N. L. ....	2	55.0	69.0	53.2	72.3	62.4	61.8			1 03 01.99	T.M.	
1465	γ Virginis .....	25	57.7	74.7	56.4	73.7	67.3	62.1			359 25 05.31	T.M.	
1491	(c) δ Virginis .....	16	06.8	28.1	10.0	26.8	23.0	14.0	12 47 42		4 16 17.99	T.M.	
1527	ε Centauri M.R....	58	45.0	35.2	26.7	50.9	12.3	48.0	19.229	+37.19	147 59 12.93	T.M.	
1527	ε Centauri .....	9	02.6	03.8	22.1	42.0	13.7	29.5			324 08 58.67	T.M.	
1550	ζ Virginis .....	13	35.0	48.3	34.8	46.0	42.1	37.8	13 26 42		0 13 42.37	T.M.	

Molyneux fast, April 18<sup>th</sup>, 16<sup>th</sup>.

- (a) The Circle was not clamped before the Reflected Observation, the Microscopes were carefully read off, the Circle being free, and it does not seem to have moved when the Micrometer of the eyepiece was worked.
- (b) Observed at the 2<sup>nd</sup> Wire, having passed the Meridian.
- (c) Observed at the 5<sup>th</sup> Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.			
					Attach.	Out.	Wet Bulb.												
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"				
	56	24	02.73	29.951	66.0	63.2		1	25.04	45	07.21		14	48.18	111	29	29.13	D	
	44	32	53.51	29.947	66.0	62.8			55.75						110	37	46.01	1171	o Leonis.
	42	44	28.83	29.945	66.0	62.3	60.5		52.38						98	49	17.96	1197	π Leonis.
	77	35	32.51	29.943	66.0	62.2		4	11.81						133	43	41.07	1219	λ Ursæ Majoris.
	76	11	23.64	29.943	66.0	62.2		3	46.41						132	19	6.80	1230	μ Ursæ Majoris.
	-57	40	17.24	29.941	65.5	62.1	60.0	1	29.43						-1	37	49.92		τ Octantis SP.
	82	30	21.06	29.941	65.5	62.1		6	45.78						138	41	3.59	1370	χ Ursæ Majoris.
	0	55	43.18	29.941	65.5	62.1			0.91						56	59	40.84	1378	β Hydræ et Crat.
	-67	51	23.37	29.958	65.5	60.0	59.0	2	19.10						-11	49	45.72	27	β Hydri SP.
	73	04	53.18	29.953	66.0	60.5		3	4.83						129	11	54.76	1492	12 Canum Ven.
	73	04	39.27					3	4.80						129	11	40.82		Companion.
	-1	55	08.29	29.952	66.0	60.5	59.5		1.91						54	08	46.55	1527	ε Centauri.
7.41	-4	37	48.37	29.950	66.0	60.6			4.61						51	26	03.77	1542	d Centauri R.
	-4	37	48.17												51	26	03.97	1542	d Centauri.
	34	09	34.92	29.950	66.0	60.6	59.5		38.62						90	14	10.29	1550	ζ Virginis.
	1	42	50.49	29.950	66.0	61.8			1.66						57	46	48.90	1562	i Centauri.
	34	24	44.39	29.950	66.0	61.8			38.89	2.17					90	29	17.86		‡
	-53	30	19.25	29.957	65.0	60.0		1	16.90						2	32	20.60		z Octantis R.
7.81	-53	30	18.25												2	32	21.60		z Octantis.
	72	54	13.63	29.957	64.5	59.3		3	3.33						129	1	13.71	1646	γ Bootis.
	-0	13	58.84	30.005	66.5	64.0			0.23						55	49	57.68	699	α Columbæ.
	41	17	26.49	30.005	66.5	64.0	61.0		49.73						97	22	12.97	734	α Orionis.
	-1	54	3.08	30.328	65.2	62.3	55.5		1.91						54	09	51.76	732	β Columbæ.
6.81	-18	40	19.51												37	23	17.82	807	Canopus R.
	-18	40	19.89	.331	65.0	61.0	55.0		19.42						37	23	17.44	807	Canopus.
5.08	17	25	47.27	.334	65.0	60.5	55.0		18.11						73	30	02.13	838	Sirius R.
	17	25	44.43												73	29	59.29	838	Sirius.
6.62	5	10	32.87	.340	65.0	60.0	54.6		5.24						61	14	34.86	869	ε Canis Maj. R.
	5	10	33.11												61	14	35.10	869	ε Canis Majoris.
	-7	47	27.87	.345	65.0	59.0			7.93						48	16	20.95	883	δ Canis Majoris.
	-2	52	35.87	.350	65.0	58.5			2.91						53	11	17.97	903	π Argus.
	4	56	26.42	.352	65.0	58.0	53.5		5.01						61	00	28.18	915	η Canis Majoris.
	-56	29	38.49	.353	64.5	57.3		1	27.50						-0	27	09.24		B Octantis SP.
	-88	28	26.00	.361	64.0	57.1												2398	α Pavonis SP.
	-54	25	35.73	.361	64.0	57.1		1	21.08						1	36	59.94		A Octantis.
	-86	46	42.54	.363	64.0	57.0	53.0											2463	β Indi SP.
	53	16	53.64	.365	63.5	57.0		1	17.78	6.24	19.941		4.24	109	22	08.17			δ
	86	9	22.43	.365	63.5	57.0	52.5											1152	θ Ursæ Majoris.
	-59	15	24.97	.367	63.0	56.6		1	37.51						-3	13	05.73		C Octantis SP.
	77	35	23.37	.368	63.0	56.5	52.5	4	18.30						133	43	38.42	1219	λ Ursæ Majoris
	76	11	15.90	.368	63.0	56.5		3	52.24						132	19	4.89	1230	μ Ursæ Majoris.
	-63	48	17.63	.373	63.0	56.5		1	57.77						7	46	18.65	2700	β Octantis SP.
	-86	42	47.38	.370	62.5	56.3	53.2											2774	γ Tucanæ SP.
	82	30	9.71	.367	63.0	55.8		6	56.89						138	41	3.35	1370	χ Ursæ Majoris.
	0	55	44.70	.365	63.0	55.8			0.95						56	59	42.40	1378	β Hydræ et Crat.
	34	9	35.86	.369	63.0	55.8			39.54						90	14	12.15	1415	η Virginis.
	34	58	55.49	.369	63.0	55.8			40.76	31	59.93		15	17.30	90	16	15.77		D
	33	20	58.81	.367	62.5	56.0			38.32						89	25	33.88	1465	γ Virginis.
	38	12	11.49	.367	62.5	56.0			45.82						94	16	54.06	1491	δ Virginis.
5.80	-1	55	6.43	.367	62.5	56.0			1.95						54	08	48.37	1527	ι Centauri R.
	-1	55	7.83												54	08	46.97	1527	ι Centauri.
	34	9	35.87	30.366	62.5	56.2			39.50						90	14	12.12	1550	ζ Virginis.

Coincidence of Micrometer Wire with fixed Wire, =20<sup>r</sup>.151

Correction for Runs =-2<sup>r</sup>.9

Adopted Zenith Point =326°. 04'. 07<sup>r</sup>.31 to April 18<sup>th</sup>. From April 18<sup>th</sup>, =326°. 04'. 06<sup>r</sup>.50

Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.			Initials of Observer.	
			A	B	C	D	E	F			°	'	"		
			t	"	"	"	"	"							
♂ 18 April	2303	† .....	56	36.1	51.0	36.9	50.6	45.8	40.6			0	56	43.34	T.M.
		θ Cygni.....	42	19.2	02.7	43.0	14.2	07.0	04.2			49	42	34.80	T.M.
	2398	B Octantis.....	28	58.6	53.0	21.2	59.5	17.9	06.3	19 45 50		270	28	45.73	T.M.
		α Pavonis M.R....	22	35.0	15.6	19.0	27.8	03.1	40.7	20.000	+6.10	169	22	29.17	T.M.
	2463	(a) α Pavonis.....	45	54.9	49.7	21.5	12.1	08.0	08.4	20 13 00		302	45	46.11	T.M.
		β Indi M.R.....	12	12.1	27.5	26.4	39.3	14.5	49.6	22.157	-1 27.00	171	11	00.54	T.M.
	2463	β Indi.....	57	15.1	08.3	39.4	28.8	25.7	25.9	20 42 16		300	57	14.11	T.M.
	2741	Fomalhaut MR...	37	41.4	33.1	24.0	46.8	10.8	42.5	20.730	-23.35	142	37	8.90	T.M.
2741	Fomalhaut.....	31	5.9	8.9	24.0	53.0	17.0	39.3	22 48 51		329	31	5.22	T.M.	
♄ 19 April	2321	B Octantis SP. M.	35	11.0	55.0	31.1	1.0	21.4	12.2	20.730	-23.35	269	34	28.14	T.M.
		δ Cygni.....	38	58.0	47.0	25.5	58.5	51.4	47.0			44	39	17.49	T.M.
	2398	B Octantis.....	29	03.5	51.9	26.4	58.8	20.1	08.0	19 48 30		270	28	47.76	T.M.
		α Pavonis M.R....	22	58.2	38.1	42.0	50.6	25.8	04.0	20.560	-16.50	169	22	29.30	T.M.
	2398	(c) α Pavonis.....	45	54.0	49.2	19.7	11.0	07.9	09.0		+1.75	302	45	46.80	T.M.
♃ 20 April	1624	☉ S. L.....	14	47.0	23.6	57.0	11.4	18.7	55.1			11	14	35.03	T.M.
		☽ S.L.....	59	33.8	32.1	32.2	32.8	33.2	26.3			347	59	31.30	T.M.
	1681	λ Virginis.....	22	32.1	31.3	32.0	30.5	35.0	24.6			347	22	30.68	T.M.
		α <sup>2</sup> Libræ.....	38	02.1	02.9	04.5	59.7	03.6	49.0			344	38	00.01	T.M.
	2741	Fomalhaut.....	31	09.0	05.9	24.0	51.3	15.8	41.4			329	31	04.47	T.M.
	27	β Hydri.....	51	11.9	56.0	36.9	03.9	22.2	13.0			281	50	53.89	T.M.
		φ's center.....	5	47.4	11.0	49.7	06.8	05.3	54.0			8	05	58.93	T.M.
♀ 21 April	673	α Leporis.....	3	11.0	14.3	17.0	08.2	18.2	57.2			342	03	10.67	T.M.
	699	(b) α Columbæ.....	50	15.0	14.8	31.7	54.0	25.0	43.0			325	50	10.57	T.M.
		(d) Canopus.....	23	59.0	52.8	17.0	19.1	06.6	12.0		+0.36	307	23	47.75	T.M.
	838	Sirius M.R.....	38	16.1	05.6	52.3	13.1	39.1	08.3	19.738	+16.66	128	38	18.44	T.M.
	838	Sirius.....	29	53.6	56.9	55.6	51.9	59.4	40.4			343	29	53.22	T.M.
	869	ε Canis Maj. M.R.	53	55.8	49.5	35.4	1.5	21.1	54.3	20.465	-12.66	140	53	32.65	T.M.
	869	ε Canis Majoris...	14	43.5	43.7	55.4	28.2	52.5	19.0			331	14	40.53	T.M.
	990	B Octantis SP....	34	41.8	34.2	47.9	42.2	53.3	49.3	7 48 44		269	34	24.36	T.M.
		z Argus.....	27	21.0	20.0	26.7	06.0	18.4	54.2			320	27	14.16	T.M.
	1070	α Pix. Naut.....	23	52.4	54.6	00.0	42.0	53.6	31.8			327	23	48.71	T.M.
	1114	♃ N. L.....	58	40.5	23.2	00.3	58.0	27.2	41.6			18	59	01.42	T.M.
		λ Argus M.R.....	54	41.7	38.5	27.0	52.0	15.3	53.0	19.911	+9.68	154	54	46.86	T.M.
	1114	λ Argus.....	13	30.5	33.8	39.1	16.8	30.6	04.4			317	13	25.82	T.M.
	1152	♂ N. L.....	59	52.0	32.9	09.8	10.0	34.6	55.2			19	00	12.40	T.M.
		θ Ursæ Majoris...	13	15.2	59.6	44.2	02.9	10.2	51.5			52	13	30.26	T.M.
	2651	C Oct. SP. M.R..	19	02.8	28.6	08.2	13.8	01.4	37.9	{ 9 58 43	+50.42	205	19	35.51	T.M.
		C Octantis SP....	49	02.0	44.0	17.9	53.0	10.8	06.0	{ 18.901	-0.43	266	48	41.50	T.M.
	2651	α Tucanæ SP....	13	51.8	24.9	53.8	48.7	52.8	08.3	10 00 38		241	13	29.71	T.M.
(e) τ Oct. SP. M.R..		44	17.5	36.5	18.7	26.1	06.5	54.0	{ 19.455	+28.08	203	44	24.25	T.M.	
1370	τ Octantis SP....	24	06.1	55.5	19.1	8.3	15.3	16.9	{ 11 00 31		268	23	49.83	T.M.	
	(y) χ Ursæ Majoris...	34	11.6	54.1	42.9	57.5	07.2	48.7			48	34	36.56	T.M.	
1378	β Hydræ et Crat...	59	54.6	56.2	04.0	45.0	56.4	33.5			326	59	51.16	T.M.	
27	β Hydri SP.....	12	61.2	51.0	72.0	3.8	72.1	14.0	12 17 27		258	12	45.42	T.M.	
	B Octantis.....	28	54.2	41.8	15.7	50.9	08.7	00.2	20 11 00		270	28	38.23	T.M.	
♄ 22 April	D 24 April	☉ N.L. M.....	28	31.9	66.0	38.5	56.8	59.6	41.0	22.018	-1 15.31	12	27	33.58	T.M.
		☉ S. L.....	55	30.3	58.0	34.9	51.0	51.0	38.1			11	55	43.41	T.M.
D 24 April	(f) ♂'s center.....	B Octantis SP....	34	43.2	38.7	07.8	41.5	03.0	47.7	7 49 50		269	34	29.89	T.M.
		♃ S. L.....	55	05.5	50.0	19.9	29.0	46.3	13.0			18	55	27.23	T.M.
			37	40.0	23.2	56.2	02.7	22.1	47.0		18	38	01.58	T.M.	

Molyneux fast, April 19<sup>th</sup>, 16<sup>th</sup>—20<sup>th</sup>, 17<sup>th</sup>—21<sup>st</sup>, 17<sup>th</sup>—22<sup>d</sup>, 16<sup>th</sup>.5—24<sup>th</sup>, 15<sup>s</sup>.

- (a) The time of Transit set down is that over the middle Wire, inferred from its Transit at the 1<sup>st</sup> or 2<sup>nd</sup> in the Mercury, and the 4<sup>th</sup> or 5<sup>th</sup> by direct vision.
- (b) Seen indistinctly through clouds.
- (c) Observed at the 5<sup>th</sup> Wire.
- (d) Observed at the 4<sup>th</sup> Wire.
- (e) When raising my head from Microscope D, I encountered the eye-end of the Telescope, namely, the Ghost-tube—not sharply.
- (f) Bisected Mars because of the bad definition; the stars are crabby also.
- (g) A probable Error of 2' in reading of the Microscopes.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.
					Attach.	Out.	Wet. Bulb.									
#	o	'	"	Inch.	o	o	o	'	"	r	'	"	o	'	"	
	34	52	36.84	30.363	62.5	56.3		40.56	2.19				90	57	11.96	‡
	83	38	28.30	.308	62.0	54.5		8 1.71					139	50	26.76	2303
	-55	35	20.77	.308	62.0	54.8	50.0	1 24.88					0	27	11.10	θ Cygni.
7.64	-23	18	22.67	.309	62.0	55.0	49.5						32	45	08.99	2398
	-23	18	20.39					25.09					32	45	11.27	2398
7.33	-25	6	54.04	.310	62.0	55.9	49.8						30	56	35.46	2463
	-25	6	52.39					27.25					30	56	37.11	2463
7.06	3	26	57.60	30.310	63.0	59.5	55.0						59	30	57.83	2741
	3	26	58.72					3.48					59	30	58.95	2741
	-56	29	38.37	30.201	65.0	61.0	53.5	1 26.43					-0	27	8.05	B Octantis SP.
	78	35	10.99	.085	60.3	59.0		4 36.46					134	43	44.20	2321
	-55	35	18.74	.085	60.3	59.0		1 23.57					0	27	14.44	B Octantis.
8.05	-23	18	22.80	30.085	61.0	59.5	58.0						32	45	09.25	2398
	-23	18	19.70					24.70					32	45	12.35	2398
	45	10	28.53	30.075	65.0	75.2	63.0	55.96	6.03		15 55.70		101	31	10.91	⊙
	21	55	24.80	.113	61.2	54.5		23.32	21 13.56		15 37.44		77	54	08.75	⊙
	21	55	24.18	.113	61.2	54.0		22.62					77	22	43.55	1624
	18	33	53.51	.113	61.0	52.8		19.53					74	38	09.79	1681
	3	26	57.97	.151	64.0	65.8	62.5	3.42					59	30	58.14	2741
	-44	13	12.61	.149	65.0	65.8	63.2	55.17					11	49	48.97	27
	42	1	52.43	.155	66.0	69.0		50.81	3.34				98	06	36.65	♀
	15	59	4.17	30.071	66.5	71.0	63.4	16.05					72	03	16.97	673
	-0	13	55.93					0.23					55	50	00.59	699
	-18	40	18.75	.072	66.0	70.0	62.5	18.98					37	23	19.02	807
5.83	17	25	48.06					17.66					73	30	02.47	838
	17	25	46.72	.076	66.2	69.3	63.0						73	30	01.13	838
6.59	5	10	33.85	.076	66.2	69.8	64.5	5.09					61	14	35.69	869
	5	10	34.03										61	14	35.87	869
	-56	29	42.14	.078	66.2	65.8	61.2	1 25.29					-0	27	10.68	B Octantis SP.
	-5	36	52.34					5.56					50	26	58.85	990
	1	19	42.21	.110	66.0	62.8		1.32					57	23	40.28	1070
	52	54	54.92	.111	66.0	62.3	59.8	1 15.34	1.33	21.042	17.97		108	59	47.71	♃
6.34	-8	50	40.36	.111	65.0	61.6	59.6	8.89					47	13	07.50	1114
	-8	50	40.68										47	13	07.18	1114
	52	56	5.90	.110	65.0	61.0	59.4	1 15.57	6.07	20.360	4.22		109	1	7 93	♄
	86	9	23.76	.109	65.0	60.8										1152
	-59	15	29.01	.105	64.0	59.2	57.0	1 36.17					-3	13	08.43	♅ Octantis S.P. R.
8.51	-59	15	25.00	.105	64.0	59.0	57.0						-3	13	04.42	C Octantis SP.
	-84	50	36.79													2651
	-57	40	17.75	.112	63.0	57.4	56.2	1 30.78					-1	37	51.78	♆ Octantis S.P. R.
7.04	-57	40	16.67	.110	63.0	59.0							-1	37	50.70	♆ Octantis SP.
	82	30	29.66	.110	63.0	56.5		6 53.01					138	41	19.42	1370
	0	55	44.26	.105	63.0	55.5	54.5	0.95					56	59	41.96	1378
	-67	51	21.48	30.082	63.0	58.0		2 20.25					-11	49	44.98	27
	-55	35	28.67					1 23.72					0	27	04.36	B Octantis.
	46	23	26.68	30.075	66.0	67.4	64.2	59.17	6.15		15 55.10		102	12	21.35	⊙
	45	51	36.51					58.09	6.10				102	12	20.35	⊙
	-56	29	37.01	30.215	65.0	61.2	58.0	1 26.44					-0	27	06.70	B Octantis SP.
	52	51	20.33	.218	63.5	58.3	56.5	1 16.03	1.32	19.288	17.40		108	56	49.19	♃
	52	33	54.68	30.218	62.5	56.8	55.0	1 15.46	5.90				108	39	0.99	♄

Coincidence of Micrometer Wire with fixed Wire, =20<sup>r</sup>.151 One revolution =40<sup>r</sup>.335  
 Correction for Runs =-2<sup>r</sup>.9  
 Adopted Zenith Point =326°. 04'. 06<sup>r</sup>.50. From April 21<sup>st</sup>, 11<sup>h</sup>. S. T. =326° 04'. 06<sup>r</sup>.90  
 Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.					
			A	B	C	D	E	F									
			1	2	3	4	5	6									
D 24 April	1152	$\theta$ Ursæ Majoris...	13	07.8	55.0	31.4	03.8	58.3	50.5	19.380	-3.51	52	13	24.14	T.M.		
		C Oct. SP. M.R...	20	04.3	19.1	57.2	14.0	43.0	42.8			20.238 9 58 48	205	19	26.56	T.M.	
	2651	(e) C Octantis SP....	48	61.0	50.0	79.9	56.0	76.9	06.0			10 00 40	-0.43	266	48	44.18	T.M.
			14	16.0	47.8	18.8	11.8	16.9	32.3			10 09 48	-4.53	241	13	39.04	T.M.
	2700	$\alpha$ Tucanæ SP....	15	59.5	57.2	76.2	5.9	78.0	9.8			{ 20.679 11 00 17	-21.30	262	15	47.69	T.M.
			24	28.2	23.3	50.9	28.0	47.4	33.0					268	23	53.42	T.M.
	1319	$\beta$ Hydreæ et Crat...	3	32.9	33.2	41.0	26.0	38.0	15.6					338	03	30.78	T.M.
	1370	$\chi$ Ursæ Majoris....	33	61.0	107.9	86.3	57.2	113.6	46.2					48	34	18.28	T.M.
	1378	$\beta$ Hydreæ et Crat...	59	55.0	52.2	10.2	35.7	00.6	26.0					326	59	51.48	T.M.
	1527	$\iota$ Centauri M.R....	58	54.4	41.0	34.8	56.5	19.2	55.0				+31.10	147	59	14.03	T.M.
	1527	$\iota$ Centauri .....	8	62.0	59.6	81.1	37.5	71.0	27.1					324	08	56.20	T.M.
	1550	$\zeta$ Virginis.....	13	36.0	51.0	34.5	50.0	43.0	42.0					0	13	42.39	T.M.
		$\ddagger$ .....	34	57.3	76.0	56.9	75.0	68.2	65.9					1	35	06.06	T.M.
		$\frac{1}{2}$ N.L. of Ball....	14	41.0	44.9	43.9	43.0	44.2	33.5					346	14	41.30	T.M.
D 25 April		$\odot$ N.L. M.....	27	33.8	70.8	44.2	59.8	65.8	43.2	21.477	-53.48	13	26	59.43	T.M.		
		$\odot$ S.L.....	54	53.1	88.5	63.2	78.5	80.0	65.3			12	55	10.56	T.M.		
		(a) $\delta$ 's center.....	53	29.8	69.2	40.7	52.9	65.0	36.8		-0.80	17	53	47.90	T.M.		
	673	$\alpha$ Leporis.....	3	13.3	13.9	18.5	09.2	19.3	59.5			342	03	11.97	T.M.		
	699	$\alpha$ Columbæ.....	50	17.9	13.8	34.6	54.0	25.0	43.8			325	50	11.50	T.M.		
	734	$\alpha$ Orionis.....	21	23.8	46.2	28.9	40.9	41.3	30.6			7	21	35.12	T.M.		
D 26 April	807	Canopus M. R....	44	22.1	53.0	00.3	09.2	40.2	24.5	19.576	+23.19	164	44	47.29	T.M.		
	807	Canopus.....	23	57.0	54.1	17.0	20.0	09.0	12.2			307	23	28.25	T.M.		
	838	(b) Sirius M.R.....	38	07.8	00.3	47.0	05.9	35.5	59.2	19.538	+24.72	128	38	30.37	T.M.		
	838	(c) Sirius .....	29	54.0	55.1	56.4	51.0	58.5	40.3			343	29	42.44	T.M.		
	869	(d) $\epsilon$ Canis Maj. M.R.	53	43.8	38.4	26.0	49.2	12.6	42.8			140	53	34.53	T.M.		
	869	(e) $\epsilon$ Canis Majoris...	14	42.8	44.3	55.9	27.2	53.6	17.3			331	14	40.34	T.M.		
	928	$\sigma$ Argus.....	1	47.0	44.1	05.3	20.0	56.2	09.5			317	01	40.19	T.M.		
		B Octantis SP....	34	45.2	38.0	04.2	45.9	58.5	53.1	7 48 10		269	34	30.39	T.M.		
	1003	(a) $\gamma^2$ Argus M.R....	58	61.8	51.0	45.0	66.5	30.1	72.1	19.100	+49.40	158	59	36.16	T.M.		
	1003	(e) $\gamma^{29}$ Argus.....	8	44.0	45.0	53.9	26.0	45.0	12.1		+2.60	313	08	39.92	T.M.		
	1114	$\lambda$ Argus M.R....	54	30.1	17.3	13.7	33.2	56.8	37.6	19.465	+27.67	154	54	48.43	T.M.		
	1114	$\lambda$ Argus .....	13	30.1	36.3	40.8	16.9	33.8	03.3			317	13	26.82	T.M.		
		$\delta$ S.L.....	22	22.0	0.7	38.4	39.1	2.5	25.2			18	22	41.06	T.M.		
		C Octantis SP. R..	19	60.3	25.0	61.6	12.0	53.2	36.1	9 58 54		205	19	30.94	T.M.		
	C Octantis SP....	48	63.0	52.3	78.3	01.2	75.5	11.1	10 5 16	-4.40	266	48	42.16	T.M.			
1230	(c) $\mu$ Ursæ Majoris...	15	06.0	54.9	40.9	59.8	07.4	48.3		-1.00	42	15	25.18	T.M.			
2700	$\beta$ Octantis SP....	15	62.6	55.7	77.8	06.1	77.1	12.5			262	15	48.55	T.M.			
	$\tau$ Octantis SP....	24	09.8	58.3	25.8	08.9	21.0	18.0	11 00 20		268	23	53.24	T.M.			
D 27 April	1378	$\beta$ Hydreæ et Crat...	59	53.0	56.7	63.8	43.5	56.0	32.2			326	59	50.41	T.M.		
	27	$\beta$ Hydri SP.....	12	56.0	52.0	64.5	07.0	68.0	14.0	12 17 24		258	12	43.32	T.M.		
	44	$\beta^1$ Tucanæ SP....	58	22.2	06.4	25.9	30.2	29.8	42.4			243	58	05.85	T.M.		
	45	$\beta^2$ Tucanæ SP. M.								19.542	+24.56	243	58	30.41	T.M.		
	46	$\beta^3$ Tucanæ SP. M.								13.735	+4 18.79	244	02	24.64	T.M.		
	1492	12 Canum Ven....	8	40.3	28.1	19.0	29.2	45.6	18.0			39	08	59.65	T.M.		
		Companion M....								20.517	-14.76	39	08	44.89	T.M.		
	1527	(f) $\iota$ Centauri M.R....	59	24.3	31.9	07.1	46.9	00.2	36.1	20.386	-9.48	147	59	14.32	T.M.		
	1527	$\iota$ Centauri.....	8	60.1	64.7	68.5	52.1	62.0	39.0			324	08	57.56	T.M.		
	1542	(b) $\delta$ Centauri M.R....	41	34.9	44.4	20.5	55.5	15.3	46.3	19.601	+22.18	150	41	58.18	T.M.		
	1542	(h) $\delta$ Centauri.....	26	21.2	21.0	28.0	10.2	18.3	58.4		+3.50	321	26	19.56	T.M.		
		$\ddagger$ .....	52	52.2	65.0	54.5	60.1	64.0	55.0			1	52	58.19	T.M.		
	1579	(g) $k$ Centauri preced..	48	61.0	61.0	70.0	51.8	60.3	42.4			327	48	57.38	T.M.		

Molyneux fast, April 27<sup>th</sup>, 16<sup>s</sup>.

- (a) Observed at the 4<sup>th</sup> Wire.
- (b) Observed on the Meridian.
- (c) Observed at the 5<sup>th</sup> Wire.
- (d) Bisected by the fixed Wire.

- (e) Observed at one interval beyond the 5<sup>th</sup> Wire.
- (f) Bad observation.
- (g) Faint.
- (h) Observed 24<sup>s</sup>. beyond the 5<sup>th</sup> Wire ; bad observation.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
#	o	'	"	Inch.	o	o	o	'	"	"	'	"	o	'	"	
5.37	86	9	17.24	30.220	62.0	56.0									1152	θ Ursæ Majoris.
	-59	15	19.66	.224	61.0	55.2	53.2	1	37.31				-3	13	00.22	C Octantis SP. R.
	-59	15	22.72										-3	13	03.28	C Octantis.
	-84	50	27.86	.226	61.0	54.6	52.8	9	34.95				-28	56	6.06	2651 α Tucanæ SP.
	-63	48	19.21	.226	61.0	54.0		1	57.78				-7	46	20.24	2700 β Octantis SP.
	-57	40	13.48	.226	61.0	53.0	51.8	1	31.89				-1	37	48.62	τ Octantis SP.
5.12	11	59	23.88	.226	61.0	52.5	51.8		12.39				68	03	33.02	1319 β Hydræ et Crat.
	82	30	11.38	.226	61.5	52.2		6	58.11				138	41	6.24	1370 χ Ursæ Majoris.
	0	55	44.58	.226	62.0	52.2	51.0		0.95				56	59	42.28	1378 β Hydr. et Crat.
	-1	55	7.13	.226	62.0	51.0	50.5		1.96				54	08	47.66	1527 ε Centauri R.
	-1	55	10.70										54	08	44.09	1527 ε Centauri.
	34	9	35.49	.220	62.0	51.0			39.68				90	14	11.92	1550 ζ Virginis.
	35	30	59.16						41.76	2.21			91	35	35.46	†
	20	10	34.40	30.206	63.0	50.5	50.0		21.52	0.30	20.585	8.75	76	14	43.59	‡
	47	22	52.53	30.153	64.2	62.2	59.5	1	02.03	6.25			103	11	50.66	⊙
	46	51	3.66					1	00.90	6.19	15	54.40	103	11	49.52	⊙
7.77	51	49	41.00	.120	65.0	62.5	59.5	1	12.44	5.51			107	54	44.68	§
	15	59	5.07	.101	65.0	64.2	59.0		16.28				72	03	18.10	673 α Leporis.
	-0	13	55.40	30.097	65.0	66.3	59.4		0.23				55	50	01.12	699 α Columbæ.
	41	17	28.22						49.67				97	22	14.64	734 α Orionis.
	-18	40	40.39	30.198	65.0	62.5	58.5		19.34				37	22	57.02	807 Canopus R.
	-18	40	38.65										37	22	58.76	807 Canopus.
	17	25	36.53	.200	65.0	61.8	57.5		17.98				73	29	51.26	838 Sirius R.
	17	25	35.54										73	29	50.27	838 Sirius.
	5	10	32.37	.200	65.0	61.4	57.8		5.19				61	14	34.31	869 ε Canis Maj. R.
	5	10	33.44										61	14	35.38	869 ε Canis Majoris.
7.44	-9	2	26.71	.200	64.5	59.6	55.3		9.16				47	01	20.88	928 σ Argus.
	-56	29	36.51	.198	63.0	58.6	54.6	1	26.84				-0	27	06.60	B Octantis SP.
	-12	55	29.26	.198	63.0	58.6	54.5		13.23				43	08	14.26	1003 γ <sup>2</sup> Argus R.
	-12	55	26.98										43	08	16.54	1003 γ <sup>2</sup> Argus.
	-8	50	41.53	.216	64.0	57.3	53.5		9.00				47	13	06.22	1114 λ Argus R.
	-8	50	40.08										47	13	07.67	1114 λ Argus.
8.04	52	18	34.16	.217	64.0	56.5		1	14.80	5.78	19.948	4.10	108	23	44.03	δ
	-59	15	24.04	.220	62.0	55.6	53.0		1	37.23			-3	13	04.52	C Octantis S.P. R.
	-59	15	24.74										-3	13	05.22	C Octantis SP.
	76	11	18.28	.220	62.0	55.2		3	51.70				132	19	6.73	1230 μ Ursæ Majoris.
	-63	48	18.35	.220	62.0	54.5	52.0	1	57.63				-7	46	19.23	2700 β Octantis SP.
	-57	40	13.66	30.220	62.0	53.7		1	31.75				-1	37	48.66	τ Octantis SP.
5.94	0	55	43.51	30.355	62.5	54.8	53.0		0.95				56	59	41.21	1378 β Hydr. et Crat.
	-67	51	23.58	.358	62.5	54.8	52.6	2	22.43				-11	49	49.26	27 β Hydri SP.
	-82	6	1.05	.360	62.5	54.5		6	38.58				-26	08	42.88	44 β <sup>1</sup> Tucanæ SP.
	-82	5	36.49					6	38.30				-26	08	18.04	45 β <sup>2</sup> Tucanæ SP.
	-82	1	42.26					6	35.28				-26	04	20.79	46 β <sup>3</sup> Tucanæ SP.
	73	4	52.75	.360	62.0	54.2		3	9.74				129	11	59.24	1492 12 Canum Ven.
	73	4	37.99					3	9.70				129	11	42.44	Companion.
	-1	55	7.42	.360	62.0	54.3			1.96				54	08	47.37	1527 ε Centauri R.
	-1	55	9.34										54	08	45.45	1527 ε Centauri.
	-4	37	51.28	.360	62.0	54.6			4.73				51	26	00.74	1542 d Centauri R.
8.87	-4	37	47.34										51	26	04.68	1542 d Centauri.
	35	48	51.29	.360	62.0	54.5		42.17	2.21				91	53	28.00	†
	1	44	50.48	30.360	62.0	54.0		1.59					57	48	48.82	1579 k Centauri prec.

Coincidence of Micrometer Wire with fixed Wire, =20°.151 One revolution =40''.335  
 Correction for Runs =-2''.9  
 Adopted Zenith Point =326°.04'.06''.90  
 Assumed Co-latitude =56°.03'.56''.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			l #	#	#	#	#	#					
27 April	1604	$\theta$ Centauri M.R...	41 32.6	41.5	14.6	57.1	10.7	44.1	19.360	+31.90	147 42 05.07	T.M.	
	1604	$\theta$ Centauri.....	26 11.5	14.0	19.2	01.0	10.4	49.0			324 26 07.61	T.M.	
		$z$ Octantis.....	33 58.0	55.6	74.0	07.0	60.8	15.3	14 16 08		272 33 46.10	T.M.	
	1681	$\alpha^2$ Libræ M.R....	29 44.9	46.2	15.4	02.9	06.0	52.0	19.288		+34.81	127 30 11.96	T.M.
	1681	$\alpha^2$ Libræ.....	38 04.8	03.9	05.5	02.0	03.3	52.2				344 38 01.97	T.M.
		$\gamma$ S.L.....	18 18.7	20.0	20.0	18.9	20.2	10.4				346 18 17.71	T.M.
	2657	$\alpha$ Tucanæ.....	56 56.2	56.0	63.2	34.7	52.1	28.5				298 56 48.28	T.M.
	2741	Fomalhaut MR...	37 61.2	70.0	39.0	89.1	33.7	76.8	21.456		-52.64	142 37 8.05	T.M.
	2741	Fomalhaut.....	31 10.3	10.2	17.3	4.9	10.9	53.5				329 31 8.48	T.M.
	27	$\beta$ Hydri.....	51 14.0	06.4	22.2	31.4	11.7	36.4	0 17 07			281 51 00.25	T.M.
44	(a) $\beta^1$ Tucanæ.....	9 40.0	41.7	43.2	18.0	34.5	13.8		+0.57	296 09 32.01	T.M.		
28 April		$\odot$ N.L. M.....	25 56.0	95.0	79.0	71.0	101.7	54.8	22.608	-1 39.02	14 24 37.35	T.M.	
		$\odot$ S.L.....	52 33.2	72.6	54.0	50.1	75.9	34.0			13 52 52.66	T.M.	
		$\delta$ 's center.....	57 13.3	61.3	45.8	24.5	72.9	6.0			19 57 37.05	T.M.	
	699	$\alpha$ Columbæ.....	50 19.0	13.2	23.4	04.9	13.0	55.7				325 50 11.51	T.M.
	807	Canopus M.R....	43 43.0	30.3	42.0	29.0	28.0	34.5	18.822		+53.68	164 44 27.46	T.M.
	807	Canopus.....	23 55.9	60.5	58.0	44.1	52.1	31.8				307 23 50.39	T.M.
	838	Sirius M.R.....	38 04.0	04.5	29.0	23.5	21.6	13.2	19.570		+23.52	128 38 28.85	T.M.
	838	Sirius.....	29 56.4	55.2	58.0	52.2	58.5	43.1				343 29 53.79	T.M.
	869	$\epsilon$ Canis Maj. M.R.	53 29.8	33.6	04.2	53.5	54.2	41.4	19.978		+7.22	140 53 32.25	T.M.
	869	$\epsilon$ Canis Majoris...	14 47.6	43.4	50.1	37.9	44.0	30.0				331 14 42.32	T.M.
		$A$ Octantis.....	38 43.1	40.3	57.2	55.4	50.6	2.6	8 33 17			271 38 31.20	T.M.
		$\gamma$ N.L.....	51 07.2	46.4	35.4	15.0	57.5	2.0				18 51 27.11	T.M.
		$\delta$ N.L.....	6 46.9	86.0	76.0	52.5	100.0	37.8				18 07 6.33	T.M.
	1152	$\theta$ Ursæ Majoris...	13 18.8	57.8	53.0	56.5	74.4	49.4				52 13 31.31	T.M.
		$C$ Octantis SP....	48 54.6	47.8	64.2	03.1	62.2	11.7	10 01 20		-0.68	266 48 39.57	T.M.
	2651	(b) $\alpha$ Tucanæ SP....	13 55.0	37.9	54.2	5.0	57.0	19.0	10 (?) 39			241 13 37.67	T.M.
	2700	$\beta$ Octantis SP....	15 56.1	56.8	65.0	13.4	66.6	16.5	10 29 22			262 15 45.66	T.M.
		$\tau$ Octantis SP....	23 64.0	57.0	72.0	14.3	70.2	21.0	11 00 30			268 23 49.39	T.M.
	1370	$\chi$ Ursæ Majoris...	33 66.0	106.9	103.3	45.8	125.1	37.6				48 34 20.37	T.M.
	1379	$\gamma$ Ursæ Majoris...	17 10.9	46.4	43.2	46.9	63.3	40.3				54 17 21.60	T.M.
	27	$\beta$ Hydri SP.....	12 54.7	51.2	60.0	9.0	63.3	15.7	12 17 28			258 12 42.06	T.M.
	44	$\beta^2$ Tucanæ SP....	57 79.5	62.0	78.0	28.4	81.7	41.4				243 58 01.54	T.M.
	45	$\beta^2$ Tucanæ SP. M.							19.478		+27.23	243 58 28.77	T.M.
	46	(c) $\beta^3$ Tucanæ SP. M.							13.699		+4 20.32	244 02 21.86	T.M.
	1492	$12$ Canum Ven....	8 39.8	88.0	82.0	26.8	108.0	14.4				39 08 59.45	T.M.
	1492	Companion M.....							20.521		-14.84	39 08 44.61	T.M.
	1527	$\epsilon$ Centauri M.R....	59 47.8	66.0	37.8	74.0	35.9	56.5	21.032		-35.45	147 59 16.88	T.M.
	1527	$\epsilon$ Centauri.....	8 62.5	63.9	70.0	53.0	61.0	41.6				324 08 58.09	T.M.
	1550	$\zeta$ Virginis.....	13 34.9	52.8	42.0	44.0	52.0	34.0				0 13 42.93	T.M.
		$\xi$ .....	58 46.8	65.8	54.9	55.8	65.0	46.1				1 58 55.36	T.M.
219	$\alpha$ Hydri SP.....	29 59.5	48.6	63.0	15.2	65.7	25.1	13 54 56		242 29 45.73	T.M.		
1623	$\lambda$ Bootis.....	44 29.9	72.2	69.5	7.4	92.2	58.7			46 44 44.53	T.M.		
	$z$ Octantis.....	33 57.0	54.3	69.2	9.9	03.0	17.8	14 16 01		272 33 44.93	T.M.		
1646	$\gamma$ Bootis.....	57 63.6	109.8	105.0	48.0	130.2	37.2			38 57 22.07	T.M.		
1681	$\alpha^2$ Libræ M.R....	29 28.3	29.0	53.8	48.6	45.0	39.0	18.850	+52.56	127 30 12.44	T.M.		
1681	$\alpha^2$ Libræ.....	37 65.2	64.3	66.1	62.0	64.0	52.5			344 38 2.39	T.M.		
	$\gamma$ S.L.....	19 40.9	35.2	41.0	36.9	37.8	30.1			346 19 36.54	T.M.		
2651	$\alpha$ Tucanæ MR....	12 57.0	44.8	62.1	37.8	50.8	45.4	22.102	-1 18.61	173 11 30.27	T.M.		
2651	$\alpha$ Tucanæ.....	56 54.8	57.5	59.6	39.8	49.3	32.1			298 56 49.18	T.M.		
2741	Fomalhaut M.R....	37 41.6	55.0	20.8	72.8	17.8	56.9	21.038	-35.70	142 37 07.54	T.M.		
2741	Fomalhaut.....	30 71.1	70.7	76.2	66.2	70.0	54.2			329 31 08.61	T.M.		
	(d) $\varphi$ 's center.....	45 57.9	77.4	72.8	61.0	85.2	50.6			11 46 07.37	T.M.		

(a) Observed at the 4th Wire.  
 (b) The upper edge of the spectrum of  $\alpha$  Tucanæ is orange, and the lower white.  
 (c) Bad definition Northwards, but good to the South.  
 (d) Woolly.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET	
					Attach.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"		
6.34	-1	37	58	17	30.360	62.0	54.0	52.0					54	25	56.91	1604	θ Centauri R.
	-1	37	59.29										54	25	55.79	1604	θ Centauri.
	-53	30	20.80		.360	61.0	63.6		1	15.67			2	32	20.28		z Octantis.
6.97	18	33	54.96										74	38	10.98	1681	α <sup>2</sup> Libræ R.
	18	33	55.07		.359	61.0	63.4						74	38	11.11	1681	α <sup>2</sup> Libræ.
	20	14	10.81		.358	61.0	63.0		21	19	0.33	19.712	8.86				β
	-27	7	18.62		.358	61.0	56.0		29	84			28	56	08.29	2657	α Tucanæ.
8.27	3	26	58.85		.366	61.0	57.4	52.4					59	30	59.10	2741	Fomalhaut R.
	3	27	1.58						3	50			59	31	01.83	2741	Fomalhaut.
	-44	13	6.65		.374	62.0	60.6	54.8		56	15		11	49	53.95	27	β Hydri.
	-29	54	34.89		30.374	62.0	60.6	54.0		33	22		26	08	48.64	44	β <sup>1</sup> Tucanæ.
	48	20	29.27		30.347	63.2	62.0	56.0	1	04.60			104	09	30.68		⊙
	47	48	44.58						1	03.41			104	09	32.06		⊙
	53	53	28.97		.341	63.5	62.4		1	18.65			109	58	38.42		ξ
	-0	13	56.57		.309	63.0	61.9	55.5		0.23			55	49	59.95	699	α Columbæ.
8.93	-18	40	19.38		.304	63.0	61.0	55.2					37	23	17.92	807	Canopus M.R.
	-18	40	17.69							19.45			37	23	19.61	807	Canopus.
6.32	17	25	39.23		.304	63.0	60.0			18.11			73	29	54.09	838	Sirius M.R.
	17	25	45.71										73	30	00.57	838	Sirius.
7.37	5	10	35.83		.303	63.0	59.9	55.0					61	14	37.80	869	ε Canis Maj M.R.
	5	10	34.24						5	22			61	14	36.21	869	ε Canis Majoris.
	-54	25	36.88		.289	62.0	57.8		1	20.78			1	36	59.09		Α Octantis.
	52	47	19.03		.292	62.0	58.0		1	16.09			108	52	13.38		ζ
	52	2	58.25		.289	62.0	57.8		1	14.11			108	7	59.05		δ
	86	9	23.23		.289	62.0	57.8	53.6								1152	θ Ursæ Majoris.
	-59	15	28.51		.288	61.0	57.8		1	37.05			-3	13	08.81		C Octantis SP.
	-84	50	30.41		.287	61.0	57.8	53.0	9	32.22			-28	56	5.88	2651	α Tucanæ SP.
	-63	48	22.42		.286	61.0	57.6	53.0	1	57.19			-7	46	22.86	2700	β Octantis SP.
	-57	40	18.69		.284	61.0	57.4		1	31.31			-1	37	53.25		τ Octantis SP.
	82	30	12.29		.282	61.0	57.5		6	54.37			138	41	3.41	1370	χ Ursæ Majoris.
	88	13	13.52		.280	61.0	57.3	53.0								1379	γ Ursæ Majoris.
	-67	51	26.02		.270	61.0	57.2		2	21.38			-11	49	50.65	27	β Hydri SP.
	-82	6	6.54		.268	61.0	57.0		6	35.38			-26	8	45.17	44	β <sup>1</sup> Tucanæ SP.
	-82	5	39.31						6	35.04			-26	8	17.60	45	β <sup>2</sup> Tucanæ SP.
	-82	1	46.22						6	32.02			-26	4	21.49	46	β <sup>3</sup> Tucanæ SP.
	73	4	51.37		.268	61.0	57.0		3	8.15			129	11	56.27	1492	12 Canum Ven.
	73	4	36.53						3	8.11			129	11	41.39	1492	Companion.
7.47	-1	55	8.80		.260	61.0	57.0			1.94			54	08	46.01	1527	ε Centauri R.
	-1	55	9.99										54	08	44.82	1527	ε Centauri.
	34	9	34.85		.258	61.0	57.0			39.30			90	14	10.90	1550	ζ Virginis.
	35	54	47.28		.256	61.0	57.0			42.29			91	59	24.11		η
	-83	34	22.35		.253	61.0	56.8		7	55.36			-27	38	20.96	219	α Hydri SP.
	80	40	36.45		.250	61.0	56.8		5	38.57			136	50	11.77	1623	λ Bootis.
	-53	30	23.15		.249	61.0	56.8		1	18.16			2	32	15.44		z Octantis.
	72	54	13.99		.248	61.0	57.1		3	5.96			129	1	16.70	1646	γ Bootis.
	18	33	55.64		.240	61.0	57.0			19.45			74	38	11.84	1681	α <sup>2</sup> Libræ R.
	18	33	54.31										74	38	10.51	1681	α <sup>2</sup> Libræ.
7.42	20	15	28.46		.235	61.0	57.0		21	37	0.33	19.730	8.53				β
	-27	7	22.19		.180	61.0	58.0	53.3		29.54			28	56	05.02	2651	α Tucanæ R.
	-27	7	18.90										28	56	08.31	2651	α Tucanæ.
8.08	3	27	0.54		.181	61.0	58.8	54.0		3.48			59	31	00.77	2741	Fomalhaut R.
	3	27	0.53										59	31	00.76	2741	Fomalhaut.
	45	41	59.29		30.190	63.0	63.8	58.0		58.40			101	46	50.89		♀

Coincidence of Micrometer Wire with fixed Wire, =20°.151 to April 28<sup>th</sup> at noon. From April 28<sup>th</sup> at noon, =20°.153.

One revolution =40<sup>h</sup>335

Correction for Runs =-2<sup>h</sup>.90

Adopted Zenith Point =326°. 04'. 06<sup>h</sup>.90 to April 28<sup>th</sup>. From April 28<sup>th</sup> at noon, =326°. 04'. 08<sup>h</sup>.08

Assumed Co-latitude =56°. 03'. 56<sup>h</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			′ ″	′ ″	′ ″	′ ″	′ ″	′ ″						
29 April	699 734	⊙ S. L. M. ....	11 05.3	41.7	28.7	15.0	50.3	01.7	19.830	+13.03	14 11 36.90	T.M.		
		⊙ N. L. ....	43 06.4	29.6	24.2	08.3	37.8	00.4			14 43 17.09	T.M.		
		α Columbæ ....	50 20.9	15.2	25.0	06.7	14.3	57.5			325 50 13.26	T.M.		
		α Orionis. ....	21 25.0	46.8	38.4	32.3	50.9	23.0			7 21 35.92	T.M.		
		Δ Octantis. ....	38 41.0	39.3	55.8	53.9	50.1	01.2			8 33 17	271 38 29.89	T.M.	
		ϒ N. L. ....	49 52.0	89.4	73.2	55.2	103.8	43.0			18 50 9.42	T.M.		
		♁ N. L. ....	58 44.0	80.0	72.3	46.3	96.1	33.3			17 59 01.62	T.M.		
		C Octantis SP. ....	48 52.0	49.4	61.0	5.2	61.5	10.2			10 02 25	-1.74	266 48 37.80	T.M.
		Ant. Pn. M.R. ....	57 37.5	55.9	17.2	71.0	13.7	52.8			19.209	+38.08	140 58 18.57	T.M.
		Ant. Pn. ....	9 60.8	59.1	64.7	53.0	59.9	45.0					331 09 57.20	T.M.
		β Octantis SP. ....	15 51.0	57.3	60.2	13.4	65.7	14.4					262 15 43.60	T.M.
		τ Octantis SP. ....	23 61.3	58.9	69.6	16.0	69.2	20.4			11 01 00		268 23 48.87	T.M.
		λ Hyd. et Crat. M.R. ....	0 43.7	52.5	12.2	11.8	06.9	58.6			18.691	+58.97	130 01 39.49	T.M.
		λ Hyd. et Crat. ....	6 37.1	37.2	41.5	33.3	39.4	25.0					342 06 35.80	T.M.
		β Hydræ et Crat. ....	59 52.6	56.9	59.0	47.6	51.8	35.6					326 59 50.12	T.M.
		δ Centauri M.R. ....	56 49.1	43.8	50.2	41.9	37.3	46.3			19.841	+12.58	161 56 56.84	T.M.
		δ Centauri. ....	11 27.0	30.0	29.0	27.6	21.1	06.2					310 11 23.68	T.M.
		(e) α Centauri R. ....	16 30.8	41.9	21.7	47.3	16.8	37.2					150 16 32.24	T.M.
		α Centauri. ....	51 50.7	49.2	54.1	40.0	44.6	30.0					321 51 44.83	T.M.
		ε Centauri M.R. ....	59 40.0	53.0	29.0	62.5	25.1	48.0			20.808	-26.42	147 59 15.89	T.M.
		ε Centauri. ....	8 62.7	62.6	68.3	52.9	58.6	41.9					324 08 57.65	T.M.
		ζ Virginis. ....	13 35.6	52.8	50.0	37.1	59.1	28.2					0 13 43.42	T.M.
		(a) ♯. ....	3 68.4	84.7	82.0	67.8	92.5	59.6			20.808	-26.42	2 03 49.06	T.M.
		(b) θ Centauri M.R. ....	41 50.0	52.9	43.4	57.1	35.3	47.0			19.679	+19.12	147 42 06.33	T.M.
		θ Centauri. ....	25 73.2	78.8	77.3	63.2	68.2	52.8					324 26 08.11	T.M.
		Fomalhaut M.R. ....	37 39.8	48.9	31.6	55.1	26.6	41.4			20.960	-28.52	142 37 11.14	T.M.
		Fomalhaut. ....	30 72.2	71.0	79.3	66.0	71.8	54.3					329 31 9.64	T.M.
β Hydri. ....	50 69.8	71.0	67.7	45.0	61.9	45.0	0 17 7		281 50 59.97	T.M.				
♀'s center. ....	12 20.0	46.0	51.1	15.0	67.8	3.0			12 12 33.57	T.M.				
30 April	2741	(c) ⊙ N. L. M. ....	1 37.3	79.9	74.8	40.0	99.0	21.2	20.324	-6.90	15 01 51.83	T.M.		
		⊙ S. L. ....	29 54.8	81.0	26.4	45.8	42.0	37.6			14 30 7.09	T.M.		
		(d) Fomalhaut M.R. ....	36 36.5	42.8	31.0	45.7	24.2	32.5	19.437	+28.88	142 37 3.52	T.M.		
		Fomalhaut. ....	31 14.0	09.1	21.2	3.0	12.6	54.2			329 31 9.56	T.M.		
		♀'s center. ....	38 31.0	48.4	59.0	18.8	73.2	10.8			12 38 39.83	T.M.		
1 May	807 838 838 869 869	⊙ S. L. M. ....	48 40.8	03.8	13.8	28.0	29.7	19.7	20.924	-31.10	14 48 21.50	T.M.		
		⊙ N. L. ....	19 54.2	79.6	87.2	42.0	103.0	31.7			15 20 5.69	T.M.		
		Canopus. ....	23 58.2	58.9	54.8	48.4	46.0	39.4			307 23 50.95	T.M.		
		Sirius M.R. ....	38 22.6	39.0	54.9	50.0	56.1	31.7	20.203	-2.02	128 38 20.02	T.M.		
		Sirius. ....	29 55.5	56.4	62.0	46.4	65.2	36.5			343 29 54.01	T.M.		
		ε Canis Maj. M.R. ....	52 49.9	60.0	40.2	62.3	35.8	47.4	19.048	+44.57	140 53 33.24	T.M.		
		ε Canis Majoris. ....	14 49.8	41.5	52.0	35.0	45.6	29.9			331 14 42.90	T.M.		
		Δ Octantis. ....	38 31.9	48.2	31.9	15.6	36.4	13.5	8 34 20	+0.05	271 38 29.63	T.M.		
		ϒ S. L. ....	46 38.8	80.9	80.0	34.8	105.5	19.8			18 46 59.97	T.M.		
		♁ S. L. ....	41 69.0	109.0	109.0	65.5	134.0	49.4			17 42 29.32	T.M.		
		C Octantis SP. ....	48 47.8	48.0	42.0	18.0	44.1	21.6	9 58 40		266 48 36.92	T.M.		
		α Tucanæ SP. ....	13 41.8	33.0	33.4	05.3	41.5	16.0	10 07 39		241 13 28.50	T.M.		
		..... SP. ....	52 58.8	56.9	55.8	24.8	63.7	35.4	10 16 52	-0.59	245 52 48.64	T.M.		
		β Octantis SP. ....	15 50.6	57.4	47.9	23.5	54.3	24.3	10 29 28		262 15 43.00	T.M.		
		τ Octantis SP. ....	23 55.9	60.0	50.8	29.0	53.8	31.0	11 01 02		268 23 46.75	T.M.		
		(f) ..... SP. ....	20 65.9	55.0	58.4	31.2	64.6	42.4	11 08 14		239 20 52.92	T.M.		
		γ <sup>1</sup> Octantis SP. ....	56 83.0	89.0	80.0	54.6	85.0	56.8	11 42 50		262 57 14.73	T.M.		
γ <sup>2</sup> Octantis SP. ....	6 28.0	35.8	26.0	01.6	31.4	02.7	11 48 55		263 06 20.92	T.M.				
γ <sup>3</sup> Octantis SP. ....	9 43.7	51.8	41.6	17.3	46.8	18.6	12 03 00?		263 09 36.63	T.M.				

(a) Juno was, I suspect, bisected by the Micrometer Wire, which has been applied according to its distance from the fixed Wire.  
 (b) There is a strong South wind to-night at the Observatory. Yet the Ship's bows in Table Bay point towards Robben Island, indicating that it blows there in a contrary direction.

(c) Very woolly and diffused.  
 (d) Direct Observation on the Meridian. Reflected at the 5<sup>th</sup> Wire; Star glittering.  
 (e) Bisected by the fixed Wire.  
 (f) The Star moves up and down about 10'. alternately.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
#	°	'	"	Inch.	°	'	"	"	"	"	"	°	'	"		
	48	7	28.82	30.191	63.2	64.0	57.0	1 03.53	6.32			104	28	16.18		⊙
	48	39	9.01					1 04.72	6.37		15 53.40	104	28	10.71		⊙
	-0	13	54.82	.164	63.5	63.2		0.23				55	50	1.70	699	α Columbae.
	41	17	27.84	.167	63.5	63.1	57.0	50.10				97	22	14.69	734	α Orionis.
	-54	25	38.19	.155	62.0	59.2		1 20.13				1	36	58.43		Δ Octantis.
	52	46	1.34	.163	62.0	59.4		1 15.50	1.30	20.980	16.68	108	50	55.61		π
	51	54	53.54	.167	62.0	59.0	56.0	1 13.29	5.63	20.360	4.18	107	59	53.77		δ
	-59	15	30.28	.173	61.0	59.0		1 36.46				-3	13	9.99		γ Octantis SP.
7.89	5	5	49.51	.172	61.5	59.1						61	9	51.39	1249	Ant. Pn. R.
	5	5	49.12					5.13				61	9	51.00	1249	Ant. Pn.
	-63	48	24.48	.173	62.0	59.0	55.5	1 56.44				-7	46	24.17	2700	β Octantis SP.
	-57	40	19.19	.173	61.5	58.6		1 30.75				-1	37	53.19		τ Octantis SP.
7.65	16	2	28.59	.172	61.5	58.7						72	6	41.88	1337	λ Hyd. et Crat. R.
	16	2	27.72					16.54				72	6	41.01	1337	λ Hyd. et Crat.
	0	55	42.04	.172	61.5	58.8		0.95				56	59	39.74	1378	β Hydræ et Crat.
10.26	-15	52	48.76	.172	61.5	58.8		16.38				40	10	51.61	1395	δ Centauri R.
	-15	52	44.40									40	10	55.97	1395	δ Centauri.
8.54	-4	12	24.16	.172	61.5	58.5						51	51	28.35	1433	α Centauri R.
	-4	12	23.25					4.24				51	51	29.26	1433	α Centauri.
6.77	-1	55	7.81	.166	61.5	58.0		1.93				54	8	47.01	1527	ε Centauri R.
	-1	55	8.43									54	8	46.39	1527	ε Centauri.
	34	9	35.34	.166	61.5	58.0		39.10				90	14	11.19	1550	ζ Virginis.
	35	59	40.98	.166	62.0	58.0		41.86	2.21			92	4	17.38		†
7.22	-1	37	58.25	.161	62.0	58.3	55.2	1.64				54	25	56.86	1604	θ Centauri R.
	-1	37	59.97									54	25	55.14	1604	θ Centauri.
10.39	3	26	56.94	.177	62.0	62.8	56.1	3.44				59	30	57.13	2741	Fomalhaut R.
	3	27	1.56									59	31	1.75	2741	Fomalhaut.
	-44	13	8.11	.188	63.4	65.6	59.2	55.27				11	49	53.37	27	β Hydri.
	46	8	25.49	30.180	63.5	67.8		58.83	3.58			102	13	17.49		♀
	48	57	43.75	30.175	63.5	68.2	61.4	1 04.87	6.40			104	46	45.87		⊙
	48	25	59.01					1 03.68	6.34		15 53.10	104	46	46.20		⊙
6.54	3	27	4.56	.137	62.5	64.0		3.44				59	31	4.75	2741	Fomalhaut R.
	3	27	1.48									59	31	1.67	2741	Fomalhaut.
	46	34	31.75	30.130	64.2			1 0.06	3.60			102	39	24.96		♀
	48	44	13.49	30.120	64.5	73.3	62.9	1 3.63	6.37			105	5	00.40		⊙
	49	15	57.68					1 4.82	6.44		15 52.90	105	4	59.91		⊙
	-18	40	17.06	.098	64.5	73.2	62.6	18.88				37	23	20.81	807	Canopus.
7.02	17	25	47.99	.096	64.5	73.0	62.5	17.55				73	30	2.29	838	Sirius R.
	17	25	46.00									73	30	0.30	838	Sirius.
8.07	5	10	34.77	.096	64.5	72.4	61.8	5.07				61	14	36.59	869	ε Canis Majoris R.
	5	10	34.89									61	14	36.71	869	ε Canis Majoris.
	-54	25	38.38	.100	64.5	62.9	58.2	1 19.49				1	36	58.88		Δ Octantis.
	52	42	51.96	.100	64.5	63.0		1 14.67	1.29	19.285	17.51	108	48	19.60		π
	51	38	21.31	.100	64.5	63.4		1 11.79	5.53	19.962	3.85	107	43	28.17		δ
	-59	15	31.09	.098	64.0	62.5	57.0	1 35.55				-3	13	9.89		γ Octantis SP.
	-84	50	39.51	.098	64.0	62.7		9 22.72				-28	56	5.48	2561	α Tucanae SP.
	-80	11	19.37	.100	64.0	62.8		5 17.76				-24	12	40.38	2670	.... SP.
	-63	48	25.01	.100	64.0	62.8		1 55.28				-7	46	23.54	2700	β Octantis SP.
	-57	40	21.26	.100	63.0	60.9	56.0	1 30.12				-1	37	54.63		τ Octantis SP.
	-86	43	15.09	.100	63.0	60.6									2774	.... SP.
	-63	6	53.28	.100	63.0	60.2		1 52.45				-7	4	48.98	2849	γ <sup>1</sup> Octantis SP.
	-62	57	47.09	.101	63.0	60.1	56.1	1 51.75				-6	55	42.09	2861	γ <sup>2</sup> Octantis SP.
	-62	54	31.38	.101	63.0	59.4		1 51.64				-6	52	26.27	10	γ <sup>3</sup> Octantis SP.

Coincidence of Micrometer Wire with fixed Wire, =20°.153 One revolution =40°.335  
 Correction for Runs =-2°.9  
 Adopted Zenith Point =326°. 04'. 08".08 to May 1<sup>st</sup>. From May 1<sup>st</sup> noon, =326°. 04'. 08".01  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			l #	#	#	#	#	#				
D 1 May	27	β Hydri SP. M...	13 51.0	55.0	46.2	21.7	54.1	25.0	12 17 27 21.690	-1 01.99	258 12 40.18	T.M.
		ο Octantis SP.....	17 41.6	48.0	39.8	16.2	41.0	16.1	12 19 30	-0.30	269 17 33.48	T.M.
	46	..... SP.	2 32.1	25.1	26.0	57.6	33.8	06.8	12 27 15	-2.27	244 02 17.96	T.M.
	1492	12 Canum Ven....	8 48.5	86.6	90.0	24.4	112.0	18.7			39 09 3.37	T.M.
	1527	ε Centauri M.R....	58 53.0	56.2	54.1	53.0	45.8	44.1	19.521	+25.50	147 59 16.33	T.M.
	1527	(a) ε Centauri M.....	8 37.2	35.0	43.4	24.3	33.1	14.8		+25.50	324 08 57.00	T.M.
	1550	ζ Virginis .....	13 34.9	52.0	52.4	32.2	63.0	24.0			0 13 48.08	T.M.
		ξ .....	13 58.6	76.9	78.3	56.0	87.5	47.0			2 14 7.38	T.M.
	1604	θ Centauri M.R....	41 40.2	42.2	41.7	39.8	33.8	30.3	19.426	+29.32	147 42 7.12	T.M.
	1604	θ Centauri.....	25 73.4	71.3	78.2	59.4	68.0	50.1			324 26 6.93	T.M.
	1623	λ Bootis .....	44 45.5	70.5	78.1	71.4	92.6	13.2			46 45 1.88	T.M.
	1681	α <sup>2</sup> Libræ M.R....	29 56.2	74.5	29.0	85.3	30.3	67.2	19.803	+14.12	127 30 10.89	T.M.
	1681	α <sup>2</sup> Libræ.....	37 61.0	67.1	71.2	57.3	71.7	44.5			344 38 2.46	T.M.
		γ N.L.....	23 50.9	52.1	59.2	43.5	62.0	35.0			346 23 50.45	T.M.
	2741	Fomalhaut M.R...	36 61.0	70.2	56.6	72.0	51.3	58.0	20.000	+6.17	142 37 7.04	T.M.
2741	Fomalhaut .....	30 74.0	68.1	81.6	62.4	71.9	54.0			329 31 9.32	T.M.	
D 3 May	27	β Hydri SP.....	12 48.1	52.0	43.1	20.0	49.7	23.4	12 17 30		258 12 39.38	T.M.
	1542	d Centauri M.R...	41 30.1	36.6	33.7	30.1	28.0	23.1	19.408	+29.95	150 41 59.96	T.M.
	1542	d Centauri.....	26 26.0	15.0	25.2	10.9	11.0	04.0			321 26 15.59	T.M.
		ξ (?) .....	23 51.0	64.3	71.9	40.4	81.0	33.4			2 23 57.00	T.M.
		* M.....							22.096	-1 18.49	2 22 38.51	T.M.
	1580	h Centauri M.R...	14 33.1	35.9	33.0	32.9	21.2	24.2	18.664	+59.94	143 15 29.39	T.M.
	1580	h Centauri.....	52 52.1	45.2	55.3	38.9	46.3	30.3			328 52 45.28	T.M.
	1604	θ Centauri M.R....	41 46.6	50.0	49.0	45.6	41.3	35.5	19.591	+22.55	147 42 7.02	T.M.
	1604	θ Centauri.....	25 74.8	70.0	79.0	59.0	67.9	51.0			324 26 7.15	T.M.
	1624	λ Virginis M.R....	44 56.2	28.9	67.0	27.6	80.0	62.1	18.990	+46.79	124 45 40.17	T.M.
	1624	λ Virginis .....	22 33.8	32.5	45.0	21.3	46.0	15.8			347 22 32.65	T.M.
		z Octantis .....	33 48.0	58.0	42.4	28.2	43.5	30.8	14 17 38	+0.10	272 33 41.92	T.M.
	1681	α <sup>2</sup> Libræ M.R....	30 55.0	64.5	31.8	72.7	30.0	58.4	21.113	-38.84	127 30 12.90	T.M.
	1681	α <sup>2</sup> Libræ.....	37 62.9	67.0	74.0	54.0	75.6	43.2			344 38 3.11	T.M.
		(b) γ N.L.....	26 31.0	29.0	41.2	18.4	41.9	11.4	21.150	-40.34	141 40 58.37	T.M.
	1731	f Lupi M.R.....	41 40.2	48.2	39.2	43.8	31.2	31.2			330 27 17.29	T.M.
	1731	f Lupi .....	27 26.1	14.8	30.1	08.0	19.2	04.0			330 27 17.29	T.M.
	1760	γ Lupi M.R.....	44 41.0	48.6	37.9	33.1	37.1	28.4	19.768	+15.41	152 44 52.83	T.M.
	1760	γ Lupi.....	23 40.0	19.3	41.4	12.1	22.1	11.3			319 23 24.63	T.M.
	1816	ρ Scorpii M.R....	52 36.2	34.8	42.2	25.5	39.1	27.0	20.626	-19.20	140 52 14.33	T.M.
	1816	(c) ρ Scorpii.....	15 67.6	60.0	73.0	51.1	65.9	46.1			331 16 1.22	T.M.
	1872	σ Scorpii M.R....	19 61.0	68.5	52.2	68.5	44.7	56.0	19.972	+7.18	137 20 5.14	T.M.
	1872	σ Scorpii.....	47 73.2	69.0	82.7	61.3	77.6	53.2			334 48 10.02	T.M.
	1885	Antares M.R....	12 40.2	54.6	34.1	55.7	31.5	37.3	20.900	-30.25	138 12 11.44	T.M.
	1885	Antares.....	55 69.0	63.2	77.4	57.6	70.2	49.0			333 56 4.94	T.M.
1915	ε Scorpii .....	0 47.5	39.0	54.0	29.8	40.0	22.9			326 00 38.87	T.M.	
	σ Octantis.....	45 65.6	75.1	60.0	50.8	62.2	49.0	17 06 07		270 45 50.45	T.M.	
2741	Fomalhaut MR...	37 50.0	54.1	49.2	52.7	42.0	40.8	21.160	-40.74	142 37 6.74	T.M.	
2741	Fomalhaut .....	30 74.5	67.8	82.7	61.0	73.0	52.8			329 31 9.28	T.M.	
D 4 May		(d) ☉ N.L. M.....	14 31.8	70.1	73.5	28.0	94.0	12.5	22.321	-1 27.57	16 13 24.06	T.M.
		☉ S.L.....	41 26.6	50.5	64.8	10.8	78.4	01.0			15 41 38.08	T.M.
		☿'s center .....	59 25.0	68.0	68.5	16.7	94.0	3.2			22 59 45.90	T.M.
	699	α Columbæ.....	50 25.4	12.1	29.2	3.4	14.7	58.9			325 50 13.95	T.M.
	734	α Orionis M.R....	45 50.2	72.3	20.2	74.2	33.7	57.2	19.008	+46.06	104 46 37.49	T.M.
	734	α Orionis.....	21 26.2	47.8	56.8	17.0	69.5	07.3			7 21 37.30	T.M.
	807	Canopus M. R....	44 20.5	22.8	40.2	2.2	31.4	01.4	19.984	+6.70	164 44 26.09	T.M.
	807	Canopus.....	23 60.8	56.0	54.0	48.9	42.1	41.8			307 23 50.96	T.M.

Molyneux fast, May 4<sup>th</sup>, +16<sup>o</sup>.

- (a) Accidentally bisected by the Micrometer Wire.
- (b) Beautiful definition.
- (c) Beautiful.
- (d) Observed at the 1<sup>st</sup> and 5<sup>th</sup> Wires.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet. Bulb.										
#	°	'	"	Inch.	°	'	"	'	"	r	'	"	°	'	"		
	-67	51	27.83	30.100	62.5	58.7		2	20.16				-11	49	51.24	27	$\beta$ Hydri SP.
	-56	46	34.53	30.100	62.0	58.3	55.0	1	27.54				-0	44	5.32		$\circ$ Octantis SP.
	-82	1	50.05	.100	62.0	58.0		6	29.13				-26	4	22.43	46	.... SP.
	73	4	55.36	.096	62.0	59.0		3	6.35				129	11	58.46	1492	$\lambda$ Canum Ven.
6.67	-1	55	8.32	.094	62.0	57.4	54.0		1.93				54	8	46.50	1527	$\epsilon$ Centauri R.
	-1	55	11.01										54	8	43.81	1527	$\epsilon$ Centauri.
	34	9	40.07	.093	62.0	57.0			39.09				90	14	15.91	1550	$\zeta$ Virginis.
	36	9	59.37	.093	62.0	57.0			42.10	2.21			92	14	36.01		$\ddagger$
7.03	-1	37	59.11	.092	62.0	57.5			1.64				54	25	56.00	1604	$\theta$ Centauri R.
	-1	38	1.08										54	25	54.03	1604	$\theta$ Centauri.
	80	40	53.87	.090	62.0	57.5		5	36.80				136	50	27.42	1623	$\lambda$ Bootis.
6.67	18	33	57.12	.090	62.0	57.2			19.34				74	38	13.21	1681	$\alpha^2$ Libræ R.
	18	33	54.45	.090	62.0	55.5	53.3						74	38	10.54	1681	$\alpha^2$ Libræ.
	20	19	42.44						21.41	0.33	20.602	9.06	76	23	51.21		$\eta$
8.18	3	27	0.97	30.093	63.0	66.2			3.41				59	31	1.13	2741	Fomalhaut R.
	3	27	1.31										59	31	1.47	2741	Fomalhaut.
	-67	51	28.63	30.245	62.5	57.0		2	21.30				-11	49	53.18	27	$\beta$ Hydri SP.
7.78	-4	37	51.95	.242	63.0	58.0			4.68				51	26	0.12	1542	$d$ Centauri R.
	-4	37	52.42										51	25	59.65	1542	$d$ Centauri.
	36	19	48.99	.242	63.0	58.8	58.0		42.41	2.20			92	24	25.95		$\ddagger$ (?)
	36	18	30.50						42.38				92	23	9.63		*
7.34	2	48	38.62	.240	63.0	59.5			2.83				58	52	38.20	1580	$h$ Centauri R.
	2	48	37.27										58	52	36.85	1580	$h$ Centauri.
7.09	-1	37	59.01	.240	63.0	59.8			1.64				54	25	56.10	1604	$\theta$ Centauri R.
	-1	38	0.86										54	25	54.25	1604	$\theta$ Centauri.
6.41	21	18	27.84	.239	63.0	59.8			22.46				77	22	47.05	1624	$\lambda$ Virginis R.
	21	18	24.64										77	22	43.85	1624	$\lambda$ Virginis.
8.00	-53	30	26.09	.229	63.0	60.0	59.0	1	17.63				2	32	13.03		$z$ Octantis.
	18	33	55.11	.229	63.0	60.0	59.0		19.33				74	38	11.19	1681	$\alpha^2$ Libræ R.
	18	33	55.10										74	38	11.18	1681	$\alpha^2$ Libræ.
	20	22	20.81	.228	63.0	60.0	59.0		21.37	0.33	20.581	8.69	76	26	29.91		$\eta$
7.83	4	23	9.64	.226	63.0	60.0			4.41				60	27	10.80	1731	$f$ Lupi R.
	4	23	9.28										60	27	10.44	1731	$f$ Lupi.
8.73	-6	40	44.82	.220	63.0	59.9			6.74				49	23	5.19	1760	$\gamma$ Lupi R.
	-6	40	43.38										49	23	6.63	1760	$\gamma$ Lupi.
7.78	5	11	53.68	.218	63.0	60.0			5.23				61	15	55.66	1816	$\rho$ Scorpii R.
	5	11	53.21										61	15	55.19	1816	$\rho$ Scorpii.
7.58	8	44	2.87	.218	63.0	60.0			8.84				64	48	8.46	1872	$\sigma$ Scorpii R.
	8	44	2.01										64	48	7.60	1872	$\sigma$ Scorpii.
8.19	7	51	56.57	.216	63.0	60.0			7.95				63	56	1.27	1885	Antares R.
	7	51	56.93										63	56	1.63	1885	Antares.
	-0	3	29.14	.216	63.0	60.0			0.06				56	0	27.55	1915	$\epsilon$ Scorpii.
	-55	18	17.56	.216	63.0	60.0	59.6	1	22.87				0	44	16.32		$\sigma$ Octantis.
8.01	3	27	1.27	30.233	63.0	61.0	60.0		3.46				59	31	1.48	2741	Fomalhaut R.
	3	27	1.27										59	31	1.48	2741	Fomalhaut.
	50	9	16.05	30.239	64.5	65.5	61.5	1	8.14	6.50			105	58	22.24		$\odot$
	49	37	30.07						6.88	6.45		15 52.20	105	58	19.45		$\odot$
	56	55	37.89	.228	65.0	65.6	61.2	1	27.28	6.96			113	0	54.96		$\ddagger$
	-0	13	54.06						0.23				55	50	2.46	699	$\alpha$ Columbæ.
7.40	41	17	30.52	.220	64.5	65.0	60.0		50.00				97	22	17.27	734	$\alpha$ Orionis R.
	41	17	29.29										97	22	16.04	734	$\alpha$ Orionis.
8.53	-18	40	18.08	30.221	64.2	64.3	59.8		19.28				37	23	19.39	807	Canopus R.
	-18	40	17.05										37	23	20.42	807	Canopus.

Coincidence of Micrometer Wire with fixed Wire, May 1<sup>st</sup>, =20".153. May 3<sup>rd</sup>, =20".150  
 One revolution =40".335  
 Correction for Runs from May 1<sup>st</sup>, =-0".0  
 Adopted Zenith Point =326°. 04'. 08".01  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.			Initials of Observer.		
			A	B	C	D	E	F			° ' "					
			l	ll	lll	llll	lllll	llllll			h.	m.	s.			
24 4 May	838	Sirius M.R.....	38	54.0	63.8	33.0	70.0	30.0	54.0	20.927	-31.34	128	38	19.12	T.M.	
	838	Sirius .....	29	54.3	58.8	67.4	45.0	70.0	32.4			343	29	54.99	T.M.	
		A Octantis .....	38	34.0	44.9	27.4	18.8	30.0	20.6	8 34 30	+0.06	271	38	29.34	T.M.	
		2 S.L.....	42	22.2	62.0	66.9	13.7	90.7	00.0			18	42	42.58	T.M.	
		3 S.L.....	16	35.0	74.3	78.8	29.1	101.0	14.6			17	16	55.47	T.M.	
		C Octantis SP....	48	47.8	51.8	36.0	26.5	41.0	28.0	9 59 07		266	48	38.52	T.M.	
	2651	a Tucanæ SP....	13	43.0	34.0	32.9	10.0	39.8	20.3	10 07 38		241	13	30.00	T.M.	
	1230	(a) µ Ursæ Majoris...	14	85.0	111.3	121.2	114.9	135.8	55.2	10 14 15	-1.20	42	15	42.70	T.M.	
	2700	β Octantis SP....	15	47.1	59.3	40.2	30.2	47.9	28.6	10 29 31		262	15	42.22	T.M.	
		γ Octantis SP....	23	57.5	61.4	48.0	36.8	51.0	38.1	11 04 34	-0.68	268	23	48.12	T.M.	
	1370	χ Ursæ Majoris...	33	52.4	65.8	77.1	16.3	86.5	22.7	19.367	+31.58	48	34	25.05	T.M.	
	2849	γ <sup>1</sup> Octantis SP....	57	21.2	33.1	14.0	02.9	21.4	02.6	11 42 55		262	57	15.87	T.M.	
	2861	γ <sup>2</sup> Octantis SP....	6	24.7	37.0	18.0	08.2	25.4	07.9	11 48 58		263	06	20.20	T.M.	
	10	γ <sup>3</sup> Octantis SP....	9	40.0	52.8	33.1	23.6	41.7	22.8	11 02 58		263	09	35.67	T.M.	
	27	β Hydri SP.....	12	44.4	53.2	36.9	24.0	46.0	24.5	12 17 29		258	12	38.17	T.M.	
	1492	12 Canum Ven....	8	53.0	83.8	88.5	27.0	107.8	24.0			39	09	4.02	T.M.	
	1492	Companion M.....								20.520	-14.92	39	08	49.10	T.M.	
	1527	ι Centauri M.R...	59	48.0	49.0	51.6	44.2	42.0	37.0	20.835	-27.63	147	59	17.47	T.M.	
	1527	ι Centauri.....	8	65.2	58.9	70.8	48.8	60.0	41.0			324	08	57.65	T.M.	
		κ.....	28	30.0	45.2	52.6	19.9	63.0	12.1			2	28	37.13	T.M.	
	1575	η Ursæ Majoris...	59	40.0	48.8	61.1	02.5	68.0	10.8			49	59	58.53	T.M.	
		z Octantis.....	33	43.0	60.5	39.8	30.0	43.0	29.0			272	33	40.88	T.M.	
	1646	γ Bootis.....	58	16.2	42.5	50.9	46.1	68.0	46.4			38	58	25.02	T.M.	
	1678	Libræ M.R.....	24	30.0	42.8	26.0	41.6	20.0	26.1	19.414	+29.69	139	25	0.21	T.M.	
	1678	Libræ.....	42	82.0	74.0	86.0	68.0	80.0	58.1			332	43	15.24	T.M.	
		ι S.L. M.....	27	31.6	28.0	41.6	17.0	41.0	11.1	19.715	+17.55	346	27	28.38	T.M.	
	2741	Fomalhaut M.R...	37	27.0	32.6	26.2	31.2	19.5	19.2	20.625	-19.16	142	37	6.14	T.M.	
2741	Fomalhaut.....	30	76.0	67.0	83.0	62.0	72.0	55.0			329	31	9.82	T.M.		
	♀ N.L.....	19	48.2	76.5	77.2	46.4	95.0	37.6	20.351	-8.11	14	20	3.48	T.M.		
25 5 May		⊙ S.L. M.....	58	31.1	76.5	62.9	43.8	88.0	23.0	20.092	+2.34	15	58	56.76	T.M.	
		⊙ N.L.....	30	14.1	61.8	45.4	26.9	74.0	06.3			16	30	37.72	T.M.	
		(b) δ's center.....	20	64.3	100.2	100.6	57.5	123.5	46.0		-0.48	23	21	21.54	T.M.	
	699	a Columbæ.....	50	18.0	16.1	22.0	07.2	14.0	57.2			325	50	12.42	T.M.	
	734	a Orionis M.R....	45	48.2	47.4	15.2	53.4	18.0	48.0	18.676	+59.45	104	46	37.95	T.M.	
	734	a Orionis.....	21	26.0	48.8	43.6	29.6	57.0	20.5			7	21	37.45	T.M.	
	838	Sirius .....	29	54.3	58.0	58.2	53.1	60.0	42.3			343	29	54.32	T.M.	
		A Octantis.....	38	39.4	39.0	50.3	58.4	47.7	03.9	8 32 58		271	38	29.78	T.M.	
		(b) 2 N.L.....	41	19.3	70.0	60.9	27.3	89.5	7.4		-0.09	18	41	45.64	T.M.	
		(c) δ's center.....	7	50.0	96.6	87.0	57.7	113.8	39.0			17	08	14.02	T.M.	
		C Octantis SP....	48	48.0	45.0	50.3	09.3	51.0	14.2	9 58 53		266	48	36.30	T.M.	
	2651	a Tucanæ SP....	13	41.8	36.0	39.0	06.0	48.1	15.5			241	13	31.07	T.M.	
	2670	..... SP.	52	55.3	56.7	56.0	22.0	64.3	30.8	10 16 01		245	52	47.52	T.M.	
	2700	β Octantis SP....	15	52.5	55.2	55.9	15.9	59.8	27.3	10 29 21		262	15	44.38	T.M.	
		γ Octantis SP....	23	56.9	60.5	60.0	23.4	63.0	24.8	11 00 50		268	23	48.10	T.M.	
	2774	..... SP.	20	72.2	63.1	69.8	35.6	75.7	45.5	11 08 12		239	21	0.32	T.M.	
	1370	χ Ursæ Majoris...	33	14.9	52.6	53.2	50.0	73.5	43.8			48	34	28.00	T.M.	
	2849	γ <sup>1</sup> Octantis SP....	57	29.8	27.6	32.1	47.8	34.0	54.0	11 45 38	-1.95	262	57	15.60	T.M.	
	2861	γ <sup>2</sup> Octantis SP....	6	31.8	31.2	35.0	51.8	36.8	57.2	11 49 55	-0.12	263	06	20.51	T.M.	
	10	γ <sup>3</sup> Octantis SP....								{ 15.265	+3 17.07	263	09	37.58	T.M.	
		o Octantis SP....	17	43.0	46.6	45.9	09.9	47.0	10.0	{ 12 03 01		269	17	33.73	T.M.	
	44	..... SP.	57	68.2	63.5	65.7	33.0	75.2	40.3	12 24 23		243	57	57.65	T.M.	
	45	..... SP.								{ 12 24 24	+26.26	243	58	23.91	T.M.	
										{ 19.499						

Molyneux fast, May 5<sup>th</sup>, 16<sup>o</sup>.

- (a) There seems to be an error in the Microscopic readings for this \* and for no 1575.
- (b) Observed at the 4<sup>th</sup> Wire.
- (c) A blotch.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	o	i	g	Inch.	o	o	o	i	g	r	i	g	o	i	g			
7.06	17	25	48.89	30.221	64.2	63.8	59.5	17.93					73	30	3.57	838	Sirius R.	
	17	25	46.98										73	30	1.66	838	Sirius.	
	-54	25	38.67	.227	64.0	60.4	56.5	1	20.20				1	36	57.88		A Octantis.	
	52	38	34.57	.229	63.5	60.5	56.5	1	15.16	1.27	19.321	16.72	108	44	2.93		z	
	51	12	47.46	.230	63.5	60.0		1	11.48	5.38	19.935	4.34	107	17	54.65		δ	
	-59	15	29.49	.242	63.2	60.0		1	36.47				-3	13	9.21		C Octantis SP.	
	-84	50	38.01	.245	63.0	60.0	56.5	9	28.83				-28	56	10.09	2651	α Tucanæ SP.	
	76	11	34.69	.246	63.0	60.0		3	49.81				132	19	21.25	1230	μ Ursæ Majoris.	
	-63	48	25.79	.246	63.0	59.0		1	56.70				-7	46	25.74	2700	β Octantis SP.	
	-57	40	19.89	.250	63.0	60.0		1	30.72				-1	37	53.86		τ Octantis SP.	
	82	30	17.04	.253	63.0	59.8		6	51.99				138	41	5.78	1370	χ Ursæ Majoris.	
	-63	6	52.14	.253	63.0	59.8		1	53.11				-7	4	48.50	2849	γ <sup>1</sup> Octantis SP.	
	-62	57	47.81	.253	63.0	59.8		1	52.38				-6	55	43.44	2861	γ <sup>2</sup> Octantis SP.	
	-62	54	32.34	.248	63.0	60.0		1	52.06				-6	52	27.65	10	γ <sup>3</sup> Octantis SP.	
-67	51	29.84	.248	63.0	60.0		2	20.49				-11	49	53.58	27	β Hydri SP.		
73	4	56.01	.248	63.0	60.0		3	6.90				129	11	59.66	1492	12 Canum Ven.		
73	4	41.09					3	6.87				129	11	44.71	1492	Companion.		
7.56	-1	55	9.46	.246	63.0	60.0		1.93					54	8	45.36	1527	ε Centauri R.	
	-1	55	10.36										54	8	44.46	1527	ε Centauri.	
	36	24	29.12	.246	63.0	60.0		42.44			2.20		92	29	6.11		ζ	
	83	55	50.52	.248	63.0	60.0	57.5	8	16.04			140	8	3.31	1575	η Ursæ Majoris.		
7.73	-53	30	27.13	.245	62.5	59.8		1	17.70			2	32	11.92		z Octantis.		
	72	54	17.01	.245	62.5	59.8		3	4.95			129	1	18.71	1646	γ Bootis.		
	6	39	7.80	.243	62.5	59.8		6.72					62	43	11.27	1678	Libræ R.	
	6	39	7.23										62	43	10.70	1678	Libræ.	
7.98	20	23	20.37	.243	62.5	59.8		21.41	0.33	19.715	8.78	76	27	46.98		ι		
	3	27	1.87	.237	62.5	60.4	58.5	3.47					59	31	2.09	2741	Fomalhaut R.	
7.70	3	27	1.81					3.47					59	31	2.03	2741	Fomalhaut.	
	48	15	55.47	30.328	65.0	67.0		1	3.77	3.69	20.351	4.06	104	20	48.24		♀	
	49	54	48.75	30.223	65.0	67.0	60.8	1	7.33	6.48		15	52.00	106	15	38.35	⊙	
	50	26	29.71					1	8.60	6.53				106	15	36.53	⊙	
	57	17	13.53	.212	65.0	67.5	61.0	1	28.00	7.15			113	22	31.13		♄	
	-0	13	55.59						0.23					55	50	0.93	699	α Columbæ.
	41	17	30.06	.186	65.0	65.8	60.5	49.87					97	22	16.68	734	α Orionis R.	
	41	17	29.44										97	22	16.06	734	α Orionis.	
	17	25	46.31	.186	64.5	64.3	60.0	17.89					73	30	0.95	838	Sirius.	
	-54	25	38.23	.182	64.5	60.5		1	20.07				1	36	58.45		A Octantis.	
	52	37	37.63	.185	64.0	60.4		1	15.02	1.27	21.013	17.40	108	42	30.73		z	
	51	4	6.01	.185	64.0	60.2		1	10.98	5.33			107	9	8.41		δ	
	-59	15	31.71	.186	63.5	60.3		1	36.24				-3	13	11.20		C Octantis SP.	
	-84	50	36.94	.186	63.5	60.3		9	27.27				-28	56	7.46	2651	α Tucanæ SP.	
-80	11	20.49	.186	63.5	60.3		5	19.64				-24	12	43.38	2670	.... SP.		
-63	48	23.63	.186	63.5	60.3		1	56.17				-7	46	23.05	2700	β Octantis SP.		
-57	40	19.91	.186	63.5	59.7		1	30.58				-1	37	53.74		τ Octantis SP.		
-86	43	7.69	.186	63.5	59.5										2774	.... SP.		
82	30	19.99	.181	63.0	58.2		6	52.41				138	41	9.15	1370	χ Ursæ Majoris.		
-63	6	52.41	.183	62.5	58.0		1	53.25				-7	4	48.91	2849	γ <sup>1</sup> Octantis SP.		
-62	57	47.50	.185	62.0	58.0		1	52.52				-6	55	43.27	2861	γ <sup>2</sup> Octantis SP.		
-62	54	30.43					1	52.26				-6	52	25.94	10	γ <sup>3</sup> Octantis SP.		
-56	46	34.28	.185	62.0	58.0		1	27.83				-0	44	5.36		o Octantis SP.		
-82	6	10.36	.185	62.0	57.8		6	33.65				-26	8	46.26	44	.... SP.		
-82	5	44	10	.184	62.0	57.8	6	33.31				-26	8	20.66	45	.... SP.		

Coincidence of Micrometer Wire with fixed Wire, May 4<sup>th</sup> and 5<sup>th</sup> = 20".150 One revolution = 40".335  
 Correction for Runs = -0".0  
 Adopted Zenith Point = 326°. 04'. 08".01  
 Assumed Co-latitude = 56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			''	''	''	''	''	''					
5 May	46	..... SP.							{ 12 25 37 13.679	+4 21.01	244 02 44.92	T.M.	
	1492	12 Canum Ven....	8 46.2	91.0	91.2	26.2	116.7	15.9			39 09 4.53	T.M.	
	1492	Companion M....							20.527	-15.21	39 08 49.32	T.M.	
	1542	d Centauri M.R....	40 52.4	66.0	53.9	63.7	49.0	53.0		+1 03.97	150 42 0.06	T.M.	
	1542	d Centauri.....	26 24.3	16.5	26.2	10.2	13.0	02.7			321 26 15.72	T.M.	
		‡.....	32 60.5	79.6	76.8	62.2	89.2	51.0			2 33 9.88	T.M.	
	1573	g Centauri.....	21 61.0	58.2	68.1	50.6	57.0	41.2			326 21 56.02	T.M.	
	1604	θ Centauri M.R....	42 46.8	52.3	41.0	57.0	34.1	45.0	21.116	-38.96	147 42 6.87	T.M.	
	1604	θ Centauri.....	26 52.0	50.5	56.0	41.6	45.0	31.6			324 26 6.32	T.M.	
	1624	(a) λ Virginis M.R....	46 54.0	62.5	17.0	83.0	14.1	09.0	21.860	-1 08.98	124 45 40.71	T.M.	
		z Octantis.....	33 46.3	59.4	51.0	20.9	53.0	21.1	14 17 30		272 33 41.95	T.M.	
	1681	α <sup>2</sup> Libræ M.R....	30 52.5	70.9	20.9	88.0	22.0	69.5	21.147	-40.22	127 30 13.42	T.M.	
	1681	α <sup>2</sup> Libræ.....	37 60.8	67.3	67.5	60.3	69.0	48.0			344 38 2.48	T.M.	
		γ S.L.....	28 48.0	46.0	52.9	42.2	54.3	34.0			346 28 46.23	T.M.	
	2518	Piscis Aust.....	9 24.0	17.8	29.3	10.8	17.4	03.8			327 09 17.18	T.M.	
	2577	ι Piscis Aust.....	14 28.2	19.4	32.9	12.2	20.9	05.8			326 14 19.90	T.M.	
	2651	α Tucanæ MR....	12 63.8	56.9	78.7	40.2	70.0	45.9	22.381	-1 30.00	173 11 28.75	T.M.	
	2651	α Tucanæ.....	56 52.0	60.3	51.8	46.8	44.3	37.9			298 56 49.35	T.M.	
	6 May		⊙ N.L. M.....	47 36.8	78.3	71.1	40.0	97.3	24.0	20.702	-22.27	16 47 35.84	T.M.
			⊙ S.L.....	15 41.9	68.4	75.0	35.0	91.0	24.0			16 15 55.53	T.M.
		A Octantis.....	38 33.4	45.4	41.3	7.0	42.9	06.6	8 33 00		271 38 29.43	T.M.	
		γ N.L.....	39 44.9	91.7	84.2	49.8	110.5	32.6			18 40 8.95	T.M.	
		C Octantis SP....	48 49.1	47.0	53.0	09.3	53.5	14.0	9 58 55		266 48 37.65	T.M.	
2651		α Tucanæ SP....	13 50.1	39.4	47.0	09.1	53.0	20.8	10 07 38		241 13 36.57	T.M.	
		γ Octantis SP....	23 59.0	55.4	65.8	15.1	65.4	19.0	11 00 50		268 23 46.62	T.M.	
2774		(a)..... SP.	20 62.0	47.3	61.1	18.8	64.4	30.5	11 09 36	-1.88	239 20 45.47	T.M.	
2849		γ <sup>1</sup> Octantis SP. M.	57 41.2	45.6	45.9	02.7	50.0	06.3	20.590	-17.75	262 57 14.20	T.M.	
2861		γ <sup>2</sup> Octantis SP. M.	6 43.7	50.0	49.8	08.7	55.0	10.0	20.557	-16.42	263 06 19.78	T.M.	
2862		(b)..... SP.	17 60.5	50.1	57.0	16.4	64.3	28.3	11 50 09	-0.60	245 17 45.50	T.M.	
10		γ <sup>3</sup> Octantis SP....	9 44.3	47.3	47.5	07.0	51.8	11.0			263 09 34.82	T.M.	
		o Octantis SP. M.	17 49.8	57.6	55.4	17.3	58.3	16.1	20.423	-11.01	269 17 31.41	T.M.	
27		β Hydri SP.....	12 47.5	50.2	50.9	09.9	58.1	13.0	12 17 28		258 12 38.27	T.M.	
1492		12 Canum Ven....	8 44.6	92.9	87.8	28.9	116.0	16.8			39 9 4.50	T.M.	
1492		Companion M....							20.530	-15.33	39 08 49.17	T.M.	
1533		Spica M.R.....	26 37.8	48.0	05.2	65.0	04.2	51.4	19.215	+37.72	122 27 12.79	T.M.	
1533		Spica.....	40 64.4	65.2	66.0	61.6	68.4	55.0			349 41 3.63	T.M.	
		‡.....	37 23.0	35.6	32.0	23.8	40.9	17.8			2 37 28.85	T.M.	
1580		k Centauri M.R....	16 37.5	56.8	26.1	64.2	23.5	46.0	21.890	-1 10.18	143 15 31.51	T.M.	
1580	k Centauri.....	52 49.0	48.0	53.9	42.3	47.0	30.0			328 52 45.69	T.M.		
1624	λ Virginis M.R....	00 35.2	47.0	03.0	04.2	00.0	48.1	21.443	-52.15	124 45 40.52	T.M.		
1624	λ Virginis.....	22 33.8	35.0	38.0	31.0	40.0	24.0			347 22 33.88	T.M.		
1681	α <sup>2</sup> Libræ M.R....	30 55.0	72.2	23.4	89.2	25.0	69.8	21.168	-41.06	127 30 14.38	T.M.		
1681	α <sup>2</sup> Libræ.....	37 62.8	67.9	68.0	61.9	68.8	50.0			344 38 3.56	T.M.		
	γ N.L.....	30 23.1	25.0	27.5	19.5	30.4	11.4			346 30 22.82	T.M.		
2741	Fomalhaut M.R....	37 45.0	62.1	34.2	69.8	33.5	52.3	21.218	-43.08	142 37 5.75	T.M.		
2741	Fomalhaut.....	30 74.2	71.6	80.2	66.0	72.4	55.2			329 31 10.58	T.M.		
20 May		* (1).....	51 25.8	27.8	26.8	24.3	29.2	17.8	10 11 (32)?		350 51 25.28	T.M.	
		* (16).....	30 54.1	54.4	59.5	50.1	55.8	39.8	{ 42 }		336 30 52.28	T.M.	
		* (17).....	10 71.0	69.2	77.5	65.1	72.3	55.3	11 46 44		335 11 8.40	T.M.	
	1527	ι Centauri M.R....	58 41.0	51.3	31.8	57.4	27.5	45.4	19.228	+37.39	147 59 19.59	T.M.	
	1527	ι Centauri.....	8 57.8	61.2	64.2	52.0	56.9	39.0			324 08 55.38	T.M.	

Molyneux fast, May 6<sup>th</sup>, 16<sup>th</sup>.—20<sup>th</sup>, 21<sup>st</sup>.

- (a) Observed near the 5<sup>th</sup> Wire.
- (b) Observed at the 4<sup>th</sup> Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	o	i	''	Inch.	o	o	o	i	''	r	i	''	o	i	''			
	-82	1	23.09	30.184	62.0	57.8		6	30.04				-26	3	56.38	46	.... SP.	
	73	4	56.52	30.183	61.5	57.0	55.0	3	7.62				129	12	0.89	1492	12 Canum Ven.	
	73	4	41.31					3	7.59				129	11	45.65	1492	Companion.	
7.89	-4	37	52.05	.177	61.5	56.8	55.0						51	26	0.02	1542	d Centauri R.	
	-4	37	52.29						4.68				51	25	59.78	1542	d Centauri.	
	36	29	1.87	.177	61.5	56.8			42.73	2.20			92	33	39.15		‡	
	0	17	48.01						0.30				56	21	45.06	1573	g Centauri.	
6.60	-1	37	58.86	.177	61.5	56.8							54	25	56.24	1604	θ Centauri R.	
	-1	38	1.69						1.65				54	25	53.41	1604	θ Centauri.	
	21	18	28.30	.171	61.5	56.5			22.55				77	22	47.60	1624	λ Virginis R.	
	-53	30	26.06					1	18.01				2	32	12.68		z Octantis.	
7.95	18	33	54.59	.168	61.5	56.7			19.41				74	38	10.75	1681	α <sup>2</sup> Libræ R.	
	18	33	54.47										74	38	10.63	1681	α <sup>2</sup> Libræ.	
	20	24	38.22	.166	61.5	56.8	65.0		21.50	0.33	19.705	8.98	76	29	5.12		h	
	1	5	9.17	.124	61.5	54.3			1.10				57	9	7.02	2518	Piscis Australis.	
	0	10	11.89	.129	61.5	54.2			0.17				56	14	8.81	2577	ι Piscis Australis.	
9.05	-27	7	20.74	30.130	61.5	54.8	54.0		29.67				28	56	6.34	2651	α Tucanæ R.	
	-27	7	18.66										28	56	8.42	2651	α Tucanæ.	
	50	43	27.83	30.165	63.5	65.5	61.0	1	9.37	6.56			106	32	35.69		⊙	
	50	11	47.52					1	8.12	6.51			106	32	37.58		⊙	
	-54	25	38.58	.163	63.0	60.0			1	20.10			1	36	58.07		A Octantis.	
	52	36	0.94	.164	63.0	60.0			1	14.96	1.27	20.946	16.06	108	40	55.32		ζ
	-59	15	30.36	.170	63.0	59.8			1	36.28				-3	13	9.89		C Octantis SP.
	-84	50	31.44	.175	63.0	59.8		9	27.56				-28	56	2.25	2651	α Tucanæ SP.	
	-57	40	21.39	.175	63.0	59.8		1	30.54				-1	37	55.18		τ Octantis SP.	
	-86	43	22.54	.175	63.0	59.8										2774	.... SP.	
	-63	6	53.81	.175	63.0	59.8		1	52.81				-7	4	49.88	2849	γ <sup>1</sup> Octantis. SP.	
	-62	57	48.23	.175	63.0	59.8		1	52.09				-6	55	43.57	2861	γ <sup>2</sup> Octantis SP.	
	-80	46	22.51	.175	63.0	59.9		5	39.10				-24	48	4.86	2862	.... SP.	
	-62	54	33.19	.175	63.0	59.9	57.0	1	51.81				-6	52	28.25	10	γ <sup>3</sup> Octantis SP.	
	-56	46	36.60	30.176	62.0	60.0		1	27.47				-0	44	7.32		o Octantis SP.	
	-67	51	29.74	30.176	62.0	60.0		2	20.17				-67	49	53.16		β Hydri SP.	
	73	4	56.49	.173	62.0	60.4		3	5.96				129	11	59.20	1492	12 Canum Ven.	
	73	4	41.16					3	5.93				129	11	43.84	1492	Companion.	
8.21	23	36	55.22	.164	62.5	60.8			25.07				79	41	17.04	1533	Spica R.	
	23	36	55.62										79	41	17.44	1533	Spica.	
	36	33	20.84	.164	62.5	60.6			42.51	2.19			92	37	57.91		‡	
8.60	2	48	36.50	.164	62.5	60.3			2.82				58	52	36.07	1580	h Centauri R.	
	2	48	37.68										58	52	37.25	1580	h Centauri.	
7.20	21	18	27.49	.164	62.5	60.0			22.40				77	22	46.64	1624	λ Virginis R.	
	21	18	25.87										77	22	45.02	1624	λ Virginis.	
8.97	18	33	53.63	.160	62.0	59.8			19.29				74	38	9.67	1681	α <sup>2</sup> Libræ R.	
	18	33	55.55										74	38	11.59	1681	α <sup>2</sup> Libræ.	
	20	26	14.81	.158	62.0	59.8			21.40	0.33	20.617	9.42	76	30	23.21		h	
8.16	3	27	2.26	30.153	62.0	58.8			3.47				59	31	2.48	2741	Fomalhaut R.	
	3	27	2.57										59	31	2.79	2741	Fomalhaut.	
	24	47	16.62	30.420	60.2	57.0			26.90				80	51	40.27		⊙*(1)	
	10	26	43.62	.426	59.2	56.4			10.76				66	30	51.13		⊙*(16)	
	9	6	59.74	.428	59.2	56.4			9.36				65	11	5.85		⊙*(17)	
7.49	-1	55	10.93	30.461	60.1	55.8	52.1		1.96				54	8	43.86	1527	ι Centauri R.	
	-1	55	13.28										54	8	41.51	1527	ι Centauri.	

Coincidence of Micrometer Wire with fixed Wire, May 5<sup>th</sup>, =20°.150 May 20<sup>th</sup>, =20°.155  
 One revolution =40".335  
 Correction for Runs =-0".0  
 Adopted Zenith Point =326°. 04'. 08".01 to May 7<sup>th</sup>. From May 7<sup>th</sup>, 326°. 04'. 08".66  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			<i>l</i> <i>h</i>	<i>m</i> <i>s</i>	<i>m</i> <i>s</i>	<i>m</i> <i>s</i>	<i>m</i> <i>s</i>	<i>m</i> <i>s</i>				
h 20 May	1562	<i>i</i> Centauri M.R...	20 49.0	67.0	38.2	72.8	35.0	54.4	19.436	+29.00	144 21 21.04	T.M.
	1562	<i>i</i> Centauri.....	46 57.0	56.0	64.2	48.3	54.2	40.0			327 46 53.97	T.M.
	1580	<i>h</i> Centauri.....	52 46.0	45.2	50.8	40.2	45.0	27.8			328 52 42.50	T.M.
	1580	Companion M.....							20.572	-16.82	328 52 25.68	T.M.
		<i>h</i> N. L. ....	47 39.4	40.0	42.4	37.0	44.3	30.4			346 47 38.92	T.M.
	1818	$\pi$ Scorpii M.R....	46 50.0		32.1		33.0	61.3	20.391	-9.52	137 46 45.67	T.M.
	1818	$\pi$ Scorpii.....	21 34.6	32.5	39.8	28.6	36.6	17.0			334 21 32.05	T.M.
		$\delta$ S. L.....	3 50.2	50.2	55.4	46.7	52.1	35.4			335 03 48.33	T.M.
	1967	<i>A</i> Ophi prec. M.R.	28 57.3	83.3	40.0	95.0	40.3	72.8	19.196	+38.68	138 29 46.26	T.M.
	1967	<i>A</i> Ophiuchi prec...	38 35.1	32.1	40.2	28.6	34.1	17.0			338 38 31.72	T.M.
1986	$\theta$ Ophiuchi.....	9 67.5	67.2	73.3	63.0	70.1	52.9			335 10 5.67	T.M.	
o 21 May	(a)	$\phi$ * (2).....	28 22.1	24.2	23.1	19.8	27.0	14.4		+0.20	351 28 21.97	T.M.
		$\phi$ * (7).....	49 65.2	69.8	69.2	65.8	71.3	56.6	10 27 57		347 50 6.32	T.M.
		$\phi$ * (16).....	30 56.0	56.0	61.4	51.8	57.0	41.5	11 34 04		336 30 53.95	T.M.
		$\phi$ * (17).....	10 71.6	69.8	76.4	66.0	71.8	56.5	11 46 44		335 11 8.68	T.M.
D 22 May		$\phi$ * (3).....	42 33.5	36.0	36.8	32.2	39.0	26.0	10 12 38		350 42 34.17	T.M.
		$\phi$ * (7).....	40 64.6	69.0	68.4	65.0	70.4	55.6	10 27 58		347 41 5.61	T.M.
		$\tau$ Octantis SP....	23 56.2	59.0	65.0	16.3	67.1	18.1	11 01 00		268 23 47.31	T.M.
		$\phi$ * (16).....	30 55.8	55.0	59.2	52.5	55.0	42.4			336 30 53.41	T.M.
		$\phi$ * (17).....	10 70.0	69.0	75.5	66.4	71.3	55.7	11 46 46		335 11 8.09	T.M.
	1492	12 Canum Ven....	8 40.8	90.5	84.8	26.5	11.8	14.0			39 09 1.78	T.M.
	1527	<i>i</i> Centauri M.R....	59 46.0	53.0	38.1	59.3	31.0	48.8	20.810	-26.42	147 59 20.26	T.M.
	1527	<i>i</i> Centauri.....	8 58.6	61.9	64.3	52.0	56.0	40.0			324 08 56.04	T.M.
	1562	<i>i</i> Centauri M.R....	20 44.5	60.2	34.8	65.5	29.6	49.2	19.287	+35.01	144 21 21.70	T.M.
	1562	<i>i</i> Centauri.....	46 59.0	56.6	66.4	49.9	54.2	41.0			327 46 55.40	T.M.
1624	$\lambda$ Virginis.....	22 31.5	31.4	36.5	28.0	35.9	22.1			347 22 31.14	T.M.	
	(b)	$z$ Octantis.....	33 45.0	53.2	53.0	13.5	51.6	16.5	14 19 00	+0.97	272 33 39.77	T.M.
j 23 May	1572	$\mu$ Centauri M.R...	47 37.5	41.8	55.3	24.2	42.7	18.2	19.954	+8.11	153 47 44.72	T.M.
	1572	$\mu$ Centauri.....	20 42.2	32.0	43.3	24.2	28.0	19.3			318 20 31.82	T.M.
	1604	(c) $\theta$ Centauri M.R...	42 42.0	43.0	52.3	32.0	43.0	22.2	20.918	-30.78	147 42 8.36	T.M.
	1604	$\theta$ Centauri.....	25 73.8	65.1	79.1	54.0	65.0	48.1			324 26 4.48	T.M.
		$z$ Octantis.....	33 44.0	52.1	34.1	28.3	33.2	31.5	14 15 40		272 33 37.55	T.M.
	1646	$\gamma$ Bootis.....	57 76.2	96.5	105.0	46.5	118.2	49.7	14 25 57		38 58 22.35	T.M.
		$h$ S. L.....	50 43.2	45.4	62.8	28.5	64.0	20.2			346 50 44.09	T.M.
	1711	$\nu^1$ Libræ M.R....	45 50.2	54.1	31.9	58.5	25.2	46.0	20.040	+4.64	127 45 48.72	T.M.
	1711	$\nu^1$ Libræ.....	22 26.2	25.2	43.0	10.8	40.5	00.9			344 22 24.99	T.M.
	1768	(d) Libræ.....	24 35.5	28.4	46.0	18.5	40.0	10.9			332 24 30.88	T.M.
	1800	<i>b</i> Scorpii M.R....	22 58.3	61.2	57.4	55.4	46.7	44.0	19.345	+32.67	137 23 26.26	T.M.
	1800	<i>b</i> Scorpii.....	44 54.0	49.6	69.1	37.0	62.0	28.8			334 44 51.06	T.M.
	1836	$\beta^1$ Scorpii M.R...	30 30.8	33.9	19.7	34.5	10.8	23.0	21.134	-39.49	131 29 45.99	T.M.
1836	$\beta^1$ Scorpii.....	38 33.0	32.0	51.0	17.0	47.8	6.8			340 38 32.02	T.M.	
27	$\beta$ Hydri.....	51 20.7	16.4	08.2	01.8	59.2	05.0	0 17 14		281 51 8.66	T.M.	
z 24 May		o N. L. M.....	3 29.9	67.0	73.5	18.3	96.8	8.0	23.793	2 26.74	21 01 22.62	T.M.
		o S. L.....	29 28.2	67.2	71.6	19.9	92.7	07.5			20 29 48.03	T.M.
	699	$\alpha$ Columbæ.....	50 27.4	20.1	34.0	07.1	24.5	59.5			325 50 18.80	T.M.
		$\phi$ * (5).....	24 66.1	67.0	83.5	46.5	87.2	42.0	10 14 58		351 25 5.86	T.M.
		$\tau$ Oct. SP. M.R...	43 61.1	45.1	81.5	14.8	81.3	31.0	10 58 45 19.179	+4.49 +39.37	203 44 32.71	T.M.
		$\tau$ Octantis SP....	23 53.4	58.2	37.4	37.9	42.3	39.4	11 01 44		268 23 45.12	T.M.

Molyneux fast, May 22<sup>nd</sup>, 21<sup>st</sup>.—May 23<sup>rd</sup>, 22<sup>nd</sup>.

- (a) Leaving the field.
- (b) Bad images.
- (c) Part of the Object Glass beyond the line of the Quicksilver.
- (d) Observed at the 5<sup>th</sup> Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet. Bulb.										
#	°	'	"	Inch.	°	°	°	'	"	"	'	"	°	'	"		
7.51	1	42	47.62	30.465	60.0	55.6							57	46	46.12	1562	$\delta$ Centauri R.
	1	42	45.31					1.75					57	46	43.81	1562	$\delta$ Centauri.
	2	48	33.84	.466	60.0	55.6		2.87					58	52	33.46	1580	$\lambda$ Centauri.
	2	48	17.02										58	52	16.64	1580	Companion.
8.86	20	43	30.26	.489	59.0	55.6		22.15	0.34	20.600	8.98		76	47	39.84		$\eta$
	8	17	22.99	.500	59.4	55.0		8.55					64	21	28.29	1818	$\pi$ Scorpii R.
	8	17	23.39					9.30	9	4.80	16	9.45	64	21	28.69	1818	$\pi$ Scorpii.
	8	59	39.67	.496	59.4	54.0		7.81					65	10	50.37		$\delta$
8.99	7	34	22.40	.490	59.0	53.9		10.36					63	38	26.96	1967	$\lambda$ Ophiuchi R.
	7	34	23.06										63	38	27.62	1967	$\lambda$ Ophiuchi.
	9	5	57.01	30.485	59.0	53.8							65	10	4.12	1986	$\theta$ Ophiuchi.
	25	24	13.31	30.562	61.0	58.8		27.70					81	28	37.76		$\epsilon$ *(2)
	21	45	57.66	.562	61.0	58.8		23.28					77	50	17.69		$\epsilon$ *(7)
	10	26	45.29	.600	61.0	58.4		10.78					66	30	52.82		$\epsilon$ *(16)
	9	7	0.02	30.602	61.0	58.4		9.38					65	11	6.15		$\epsilon$ *(17)
	24	38	25.51	30.565	60.0	54.0		27.00					80	42	49.26		$\epsilon$ *(3)
	21	36	56.95	.562	60.0	54.0		23.33					77	41	17.03		$\epsilon$ *(7)
	-57	40	21.35	.560	59.0	53.5	48.0	1	32.84				-1	37	57.44		$\tau$ Octantis SP.
	10	26	44.75	.558	59.0	52.4		10.89					66	30	52.39		$\epsilon$ *(16)
	9	6	59.43	.558	59.0	52.4		9.48					65	11	5.66		$\epsilon$ *(17)
	73	4	53.12	.540	56.5	48.4		3	13.17				129	12	3.04	1492	$\iota$ 2 Canum Ven.
8.15	-1	55	11.60	.540	56.5	49.8		1.99					54	8	43.16	1527	$\epsilon$ Centauri R.
	-1	55	12.62										54	8	42.14	1527	$\epsilon$ Centauri.
8.55	1	42	46.96	.538	56.8	46.8		1.78					57	46	45.49	1562	$\epsilon$ Centauri R.
	1	42	46.74					23.34					57	46	45.27	1562	$\epsilon$ Centauri.
	21	18	22.48	.533	55.5	45.3	42.5	1	20.75				77	22	42.57	1624	$\lambda$ Virginis.
	-53	30	28.89	30.529	55.0	45.2							2	32	7.11		$z$ Octantis.
8.27	-7	43	36.06	30.358	58.5	50.2	44.4	8.00					48	20	12.69	1572	$\mu$ Centauri R.
	-7	43	36.84										48	20	11.91	1572	$\mu$ Centauri.
6.42	-1	37	59.70	.357	58.5	49.5		1.68					54	25	55.37	1604	$\theta$ Centauri R.
	-1	38	4.18										54	25	50.89	1604	$\theta$ Centauri.
	-53	30	31.11	.357	58.0	49.0		1	19.68				2	32	5.96		$z$ Octantis.
	72	54	13.69	.357	57.5	48.4		3	9.93				129	1	20.37	1646	$\gamma$ Bootis.
6.86	20	46	35.43	.357	57.5	48.0		22.45	0.34	19.690	9.38		76	51	3.67		$\eta$
	18	18	19.94	.357	57.5	47.8		19.58					74	22	36.27	1711	$\nu^1$ Libræ R.
	18	18	16.33					6.59					74	22	32.66	1711	$\nu^1$ Libræ.
	6	20	22.22	.356	56.5	46.6		9.08					62	24	25.56	1768	Libræ.
8.66	8	40	42.40	.356	56.0	45.6		15.48					64	44	48.23	1800	$\delta$ Scorpii R.
	8	40	42.40										64	44	48.23	1800	$\delta$ Scorpii.
9.01	14	34	22.67	.356	56.0	45.0		56.15					70	38	34.90	1836	$\beta^1$ Scorpii R.
	14	34	23.36										70	38	35.59	1836	$\beta^1$ Scorpii.
	-44	13	0.00	30.298	58.5	59.4	52.0						11	50	0.60	27	$\beta$ Hydri.
	54	57	13.96	30.264	64.2	70.5	59.5	1	20.32	6.91	15	48.30	110	46	35.82		$\odot$
	54	25	39.37					1	18.78	6.86			110	46	36.34		$\odot$
	-0	13	49.86					0.23					55	50	6.66	699	$\alpha$ Columbæ.
	25	20	57.20	.224	61.5	61.0		27.21					81	25	21.16		$\epsilon$ *(5)
8.92	-57	40	24.05	30.234	60.0	57.2	52.3						-1	37	58.49		$\tau$ Octantis SP. R.
	-57	40	23.54					1	31.19				-1	37	57.98		$\tau$ Octantis SP.

Coincidence of Micrometer Wire with fixed Wire, =20°.155 One revolution =40°.335  
 Correction for Runs =-0°.0 to May 22<sup>nd</sup> at Noon. From May 22<sup>nd</sup>, +2°.9  
 Adopted Zenith Point =326°.04'.08".66  
 Assumed Co-latitude =56°.03'.56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			r	g	h	i	j	k						
♄ 25 May		⊙ S. L. M.....	40	48.0	84.8	91.8	36.7	114.6	45.0	20.680	-21.18	20 40 49.16	T.M.	
		(a) ⊙ N. L.....	11	61.8	98.4	104.1	48.5	126.7	97.7			21 12 19.47	T.M.	
		♀'s center.....	6	25.6	63.9	63.0	15.0	91.6	03.9			21 06 44.00	T.M.	
		C Octantis SP....	48	42.7	48.0	27.0	26.3	32.2	28.0	9 59 28		266 48 34.37	T.M.	
		♄*(5).....	24	66.8	69.1	84.3	48.7	87.8	42.4	10 15 00		351 25 7.00	T.M.	
		♄*(7) M.....	50	40.5	49.1	60.0	29.1	64.9	18.0	10 28 20	-33.80	347 50 9.87	T.M.	
		♄*(8).....	19	72.9	72.5	90.0	55.2	91.8	47.8	10 31 39		346 20 12.18	T.M.	
		τ Octantis SP. R.	44	41.0	30.0	63.6	58.5	65.1	11.0	11 01 06		203 44 35.30	T.M.	
		τ Octantis SP.....	23	48.0	62.0	34.4	39.0	43.0	36.0	11 06 00	-1.34	268 23 42.74	T.M.	
	10		γ <sup>3</sup> Octantis SP....	9	33.0	47.3	20.1	22.2	30.7	20.9	12 03 18		263 09 29.46	T.M.
	27		β Hydri SP.....	12	35.9	49.3	22.0	25.2	34.0	24.0	12 17 43		258 12 31.97	T.M.
	2543		(b) ζ Capricorni M.R..	15	41.9	47.8	34.2	45.0	28.7	32.1	21.110	-30.45	135 15 7.41	T.M.
	2543		ζ Capricorni.....	52	79.1	76.8	93.9	62.7	89.2	51.7			336 53 16.35	T.M.
	2566		γ Capricorni M.R..	32	60.1	61.2	46.3	64.5	38.7	52.0	21.455	-52.44	129 32 1.29	T.M.
	2566		γ Capricorni.....	35	76.8	76.5	96.0	57.4	93.0	48.3			342 36 15.14	T.M.
			δ N. L.....	25	81.5	79.8	100.0	63.5	97.1	54.0			342 26 19.45	T.M.
			C Octantis.....	14	42.9	57.7	33.8	32.2	36.5	32.0	21 59 45		273 14 39.63	T.M.
	2655		θ Aquarii.....	23	74.2	72.3	90.7	54.0	92.8	49.3			351 24 12.62	T.M.
	2688		σ Aquarii M.R....	39	49.0	55.4	26.4	59.7	25.4	47.8	21.172	-41.02	123 39 2.70	T.M.
	2688		σ Aquarii.....	28	75.7	73.0	92.8	55.5	93.0	49.5			348 29 13.88	T.M.
2741		Fomalhaut MR....	37	34.4	37.8	41.1	28.8	33.1	18.4	20.884	-29.40	142 37 2.46	T.M.	
2741		Fomalhaut.....	30	79.2	73.3	93.0	62.8	82.5	54.5			329 31 14.99	T.M.	
		τ Octantis R.....	28	54.5	41.9	78.8	14.2	80.0	23.9	22 58 46	-0.11	200 28 49.15	T.M.	
		τ Octantis.....	39	35.5	45.9	27.0	24.5	27.0	25.2	23 06 22	+2.10	271 39 33.38	T.M.	
27		β Hydri.....	51	20.1	16.6	07.4	00.9	59.3	03.2	0 17 16		281 51 8.03	T.M.	
⊙ 28 May	182	Achernar M.R....	12	48.0	63.2	78.0	33.2	78.8	26.3	22.475	1 33.46	170 11 20.96	T.M.	
	182	Achernar.....	56	63.0	62.0	56.5	54.4	45.3	48.0			301 56 55.49	T.M.	
♃ 29 May		⊙ S. L. M.....	20	41.5	81.0	87.4	30.0	108.5	18.5	20.420	-10.57	21 20 50.72	T.M.	
		⊙ N. L.....	51	61.5	100.7	106.0	51.0	127.8	37.0			21 52 20.60	T.M.	
		♀'s center.....	2	32.2	70.8	75.0	20.6	96.8	06.1			22 02 50.52	T.M.	
		τ Octantis SP.....	23	54.2	59.8	40.5	37.0	44.8	38.1	11 05 50	-1.97	268 23 44.12	T.M.	
	1604		θ Centauri M.R....	42	25.0	26.7	34.2	15.6	26.0	07.0	20.486	-13.23	147 42 9.21	T.M.
	1604		θ Centauri.....	25	69.3	65.4	75.7	53.2	63.8	44.6			324 26 2.30	T.M.
	2598		γ Gruis M.R.....	15	42.2	49.0	57.5	32.9	47.4	25.1	20.485	-13.19	150 15 29.00	T.M.
	2598		γ Gruis.....	52	56.0	45.2	59.4	35.6	43.6	31.2			321 52 45.43	T.M.
			C Octantis.....	14	46.5	59.8	39.2	34.0	39.0	34.0	22 00 49	+1.10	273 14 43.63	T.M.
	2689		β Piscis Austr....	49	41.2	35.0	49.8	26.2	36.0	19.0			326 49 34.97	T.M.
	2689		Companion M.....								20.900	-29.93	326 49 5.04	T.M.
	2741		Fomalhaut M.R....	36	39.6	41.8	45.7	34.3	35.0	24.6	19.564	+23.96	142 37 0.20	T.M.
	2741		Fomalhaut.....	30	79.8	72.0	91.0	63.8	79.0	56.6			329 31 14.47	T.M.
			(c) τ Octantis.....	39	38.5	47.0	29.0	25.0	28.0	26.8	22 58 47		271 39 32.82	T.M.
	2779		γ App. Sculp.....	34	79.0	71.1	87.4	63.0	74.9	57.8			326 35 12.86	T.M.
	31		α Phœnicis M.R..	18	33.8	37.8	54.0	21.5	43.0	16.0	19.320	+33.80	155 19 8.22	T.M.
31		α Phœnicis.....	48	73.8	66.6	75.1	59.0	59.2	53.5			316 49 5.20	T.M.	
182		Achernar M.R....	11	42.0	58.9	72.2	29.8	72.0	23.2	20.871	-28.75	170 11 20.68	T.M.	
182		Achernar.....	56	63.2	60.0	56.0	53.0	43.8	47.8			301 56 54.59	T.M.	
♃ 30 May		⊙ N. L. M.....	1	47.0	83.6	93.0	34.3	113.3	21.0	20.926	-30.98	22 01 34.62	T.M.	
		⊙ S. L.....	29	42.8	80.0	86.5	32.9	107.0	20.3			21 30 1.80	T.M.	
		(d) ♀'s center.....	14	66.3	104.8	108.5	53.0	132.1	40.2			22 15 23.54	T.M.	
	699		α Columbæ.....	50	28.5	18.9	34.3	08.1	22.0	00.9			325 50 18.81	T.M.

Molyneux fast, May 25<sup>th</sup>, 22<sup>s</sup>.—29<sup>th</sup>, 25<sup>s</sup>.

- (a) Very unsteady.
- (b) Hurried.
- (c) The Stars like torches; indifferent bisections.
- (d) Observed beyond the 5<sup>th</sup> Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"		
	54	36	40.50	30.145	62.0	70.2	61.0	1	19.05	6.88		110	57	37.62		⊙	
	55	8	10.81					1	20.60	6.92	15	48.20	110	57	33.04		⊙
	55	2	35.34	.143	62.5	70.2	61.0	1	20.32	4.04			111	7	48.37		♀
	-59	16	34.29	.093	62.0	62.0		1	35.51				-3	14	13.05		C Octantis SP.
	25	20	58.34	.093	62.0	62.0			27.03				81	25	22.12		♂ * (5)
	21	46	1.21	.093	62.0	61.0			22.83				77	50	20.79		♂ * (7)
	20	16	3.52	.093	62.0	61.0	56.5		21.12				76	20	21.39		♂ * (8)
9.02	-57	40	26.64	.085	61.5	59.0		1	30.42				-1	37	60.31		τ Octantis SP. R.
	-57	40	25.92										-1	37	59.59		τ Octantis SP.
	-62	54	39.20	.085	61.2	58.5		1	51.81				-6	52	34.26	10	γ <sup>3</sup> Octantis.
	-67	51	36.69	30.081	61.2	58.8		2	20.08				-11	50	0.02	27	β Hydri SP.
(11.88)	10	49	1.25	29.915	61.5	61.0			9.84				66	53	7.84	2543	ζ Capricorni R.
	10	49	7.69										66	53	14.28	2543	ζ Capricorni.
8.22	16	32	7.37	29.915	61.5	61.0			16.88				72	36	21.00	2566	γ Capricorni R.
	16	32	6.48										72	36	20.11	2566	γ Capricorni.
	16	22	10.79	29.916	61.5	61.0		16.70	16	30.88			71	53	44.22		δ
	-52	49	29.03	29.916	61.0	60.0		1	14.96		16	9.14	3	13	12.76		C Octantis.
	25	20	3.96	29.916	61.0	59.8		26.97					81	24	27.68	2655	θ Aquarii.
8.29	22	25	5.96	29.922	61.0	58.6		27.14					78	29	29.85	2688	σ Aquarii R.
	22	25	5.22										78	29	29.11	2688	σ Aquarii.
8.73	3	27	6.20	29.927	61.0	58.0		3.45					59	31	6.40	2741	Fomalhaut R.
	3	27	6.33										59	31	6.53	2741	Fomalhaut.
11.26	-54	24	40.49					1	19.90				1	37	56.36		τ Octantis R.
	-54	24	35.28	29.929	61.0	57.0							1	38	1.57		τ Octantis.
	-44	13	0.63	29.929	61.0	58.0		55.60					11	50	0.52	27	β Hydri.
8.23	-24	7	14.22	30.488	57.0	50.0	49.0	26.51					31	56	16.02	182	Achernar R.
	-24	7	11.25										31	56	18.99	182	Achernar.
	55	16	43.98	30.437	59.0	55.8	50.6	1	24.12	6.93			111	37	45.42		⊙
	55	48	13.86					1	25.77	6.98	15	47.50	111	37	41.90		⊙
	55	58	43.78	.437	59.0	55.8	50.6	1	26.34	4.10			112	4	2.77		♀
5.76	-57	40	22.62	.350	58.5	49.5		1	32.94				-1	37	58.81		τ Octantis SP.
	-1	38	2.47	.328	58.0	44.0	43.0	1.70					54	25	52.58	1604	θ Centauri R.
	-1	38	4.44										54	25	50.61	1604	θ Centauri.
7.22	-4	11	22.26	.229	56.0	38.4		4.40					51	52	30.09	2598	γ Gruis R.
	-4	11	21.31										51	52	31.04	2598	γ Gruis.
	-52	49	23.11	.227	55.6	38.2		1	19.08				3	13	14.56		C Octantis.
	0	45	28.23	.226	56.0	38.4		0.79					56	49	25.77	2689	β Piscis Australis.
	0	44	58.30					0.80					56	48	55.85	2689	Companion.
7.34	3	27	6.54	.224	56.0	38.8		3.62					59	31	6.91	2741	Fomalhaut R.
	3	27	7.73										59	31	8.10	2741	Fomalhaut.
	-54	24	33.92	.224	56.0	38.9		1	23.64				1	37	59.19		τ Octantis.
	0	31	6.12					0.54					56	35	3.41	2779	γ App. Sculp.
6.71	-9	15	1.48	.220	56.0	42.8		9.70					46	48	45.57	31	α Phœnicis R.
	-9	15	1.54										46	48	45.51	31	α Phœnicis.
7.64	-24	7	13.94	30.209	56.0	50.3	48.0	26.25					31	56	16.56	182	Achernar R.
	-24	7	12.15										31	56	18.35	182	Achernar.
	55	57	27.88	30.126	59.0	64.3	56.0	1	24.01	6.99			111	46	54.25		⊙
	55	25	55.06					1	22.38	6.94	15	47.40	111	46	54.65		⊙
	56	11	16.80	30.122	59.5	64.8	56.5	1	24.64	4.11			112	16	34.08		♀
	-0	13	47.93					0.23					55	50	8.59	699	α Columbæ.

Coincidence of Micrometer Wire with fixed Wire, May 23<sup>rd</sup>, =20°.155 May 28<sup>th</sup>, =20°.158 One revolution =40°.335  
 Correction for Runs =+2°.9  
 Adopted Zenith Point =326°. 04'. 08".66 to May 26<sup>th</sup>. From May 26<sup>th</sup>, =326°. 04'. 06".74  
 Assumed Co-latitude =56°. 03'. 56".75

The Zenith Point of the Circle appears to deminish as the rain sets in the winter, and to increase in the dry weather, implying that the South end of the pier is raised in the former case.



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			h	m	s	h	m	s					
♂ 30 May	807	Canopus M. R....	44 32.5	44.0	58.6	17.4	54.8	11.0	20.588	-17.34	164 44 19.12	T.M.	
	807	Canopus.....	23 67.0	59.8	60.4	52.3	48.1	46.2			307 23 56.37	T.M.	
	838	Sirius M.R.....	38 40.6	50.1	25.0	54.0	19.4	37.8	20.730	-23.07	128 38 14.76	T.M.	
	838	Sirius.....	29 58.4	58.2	74.6	42.0	74.0	31.5			343 29 57.26	T.M.	
		(a) * (1) M.....	50 75.8	83.2	95.4	63.7	97.8	53.6	19.902	+10.33	350 51 28.71	T.M.	
		* (5).....	24 64.5	68.0	83.0	48.0	86.1	42.1			351 25 5.76	T.M.	
		* (7) M.....	50 43.1	51.0	62.8	33.5	65.1	22.0	21.121	-38.84	347 50 7.48	T.M.	
		* (8).....	19 72.0	71.8	90.0	56.0	90.5	47.0			346 20 11.72	T.M.	
		τ Oct. SP. M.R....	43 47.0	32.1	68.3	02.8	68.2	17.2	18.829 11 03 00	+53.60 +.50	203 44 33.72	T.M.	
		τ Octantis SP.....	23 45.8	56.1	32.9	34.7	39.1	31.9	11 04 20	-1.05	268 23 39.38	T.M.	
	1378	β Hydræ et Crat....	59 54.3	47.2	63.1	35.9	51.0	30.0			326 59 47.38	T.M.	
	10	γ <sup>3</sup> Octantis SP....	9 28.4	44.1	18.2	18.0	27.3	16.0	12 03 22		263 09 25.65	T.M.	
		ο Octantis SP. R....	50 58.8	44.9	68.7	15.1	80.0	28.8	12 12 10	+1.00	202 50 50.46	T.M.	
		ο Octantis SP.....	17 29.0	41.2	17.9	18.0	23.4	14.3	12 18 40		269 17 24.20	T.M.	
	1492	12 Canum Ven....	8 58.8	86.0	88.5	34.6	105.1	32.5			39 09 7.97	T.M.	
		Α Octantis SP....	24 50.2	56.9	38.0	34.5	40.0	35.0	20 40 02	-2.10	268 24 40.78	T.M.	
	2489	(b) ν Cygni.....	28 62.5	80.6	89.3	92.3	102.1	36.3			40 29 17.59	T.M.	
	1137	..... SP.	50 28.0	20.0	15.0	01.0	20.1	11.0	21 13 14		238 50 15.87	T.M.	
	2577	ι Piscis Austr.....	14 30.3	20.0	37.0	10.0	24.3	05.0	21 35 38		326 14 21.51	T.M.	
		C Octantis R.....	53 41.1	33.0	65.6	03.7	68.7	13.0	21 58 09		198 53 37.87	T.M.	
		C Octantis.....	14 41.5	51.7	30.8	26.0	31.0	28.3	22 03 33	+3.20	273 14 38.52	T.M.	
	2689	β Piscis Austr.....	49 41.4	31.0	47.0	22.2	35.5	17.5			326 49 32.86	T.M.	
	2689	Companion M.....							20.923	-30.86	326 49 2.00	T.M.	
	2741	Fomalhaut M.R....	37 31.5	33.7	36.9	26.0	28.8	16.0	20.880	-29.12	142 36 59.29	T.M.	
	2741	Fomalhaut.....	30 78.4	71.9	89.5	62.1	80.0	54.7			329 31 13.54	T.M.	
	τ Octantis R.....	28 51.4	38.0	74.6	11.3	75.3	21.0	22 59 20		200 28 45.62	T.M.		
	τ Octantis.....	39 33.9	40.0	21.9	19.5	22.1	22.0	23 04 10	+1.30	271 39 28.29	T.M.		
2779	(c) γ App. Sculp....	34 80.1	72.0	37.9	62.0	75.8	55.6			326 35 12.25	T.M.		
♂ 5 June	1570	ν Centauri M.R....	0 55.0	68.0	74.8	47.0	66.0	37.8	20.730	-22.99	153 00 34.95	T.M.	
	1570	ν Centauri.....	7 48.0	39.3	50.4	30.6	35.0	25.0			319 07 38.30	T.M.	
	1604	θ Centauri M.R....	42 38.0	45.0	49.8	33.0	43.2	21.4	20.807	-26.10	147 42 12.35	T.M.	
	1604	θ Centauri.....	25 69.2	65.0	75.8	52.2	63.7	45.1			324 26 2.13	T.M.	
		z Octantis M.R....	33 75.3	69.0	98.7	39.0	101.9	49.0	19.423	+29.73	199 34 42.28	T.M.	
		z Octantis.....	33 38.0	50.0	29.1	25.2	29.3	27.0	14 17 34	+0.25	272 33 33.35	T.M.	
		ι S. L.....	3 35.0	35.3	53.0	18.0	54.5	12.0			347 03 34.97	T.M.	
	1505	Scorpii M.R.....	46 49.0	57.8	47.8	52.2	41.2	39.0	20.333	-6.98	136 46 40.51	T.M.	
	1705	Scorpii.....	21 35.3	35.2	50.8	22.1	46.0	10.5			335 21 33.99	T.M.	
		(d) τ Octantis R.....	28 79.5	71.4	103.1	42.4	105.4	52.0	23 19 00	19.83	200 28 46.19	T.M.	
		τ Octantis.....	38 62.4	72.0	52.4	50.3	51.9	50.7	23 25 50	36.82	271 39 33.82	T.M.	
	31	α Phœnicis M.R....	19 44.5	52.4	65.2	33.9	56.8	28.0	21.148	-39.90	155 19 7.08	T.M.	
	31	α Phœnicis.....	48 74.8	68.3	76.0	60.8	61.2	55.0			316 49 6.69	T.M.	
	♂ 6 June		⊙ N.L.....	53 78.0	118.0	120.3	68.0	143.1	55.3			22 54 37.56	T.M.
		699	α Columbæ.....	50 28.4	22.0	36.1	11.5	25.2	02.1			325 50 20.91	T.M.
		τ Octantis SP....	23 51.2	55.2	34.8	35.1	40.0	36.1	11 01 54		268 23 42.42	T.M.	
		* (16).....	30 54.0	54.5	67.1	42.0	63.2	31.4			336 30 52.11	T.M.	
		* (17).....	10 69.0	68.6	82.8	56.8	78.7	46.3			335 11 7.14	T.M.	
		ο Octantis SP....	17 30.0	40.3	18.3	17.3	22.5	15.3	12 18 17		269 17 24.18	T.M.	
1533		Spica M.R.....	26 52.2	65.6	32.2	71.0	31.9	55.8	19.658	+20.25	122 27 11.68	T.M.	
1533		Spica.....	40 62.0	64.0	80.4	45.8	82.0	38.1			349 41 2.35	T.M.	
1580		h Centauri.....	52 46.1	41.0	55.0	31.0	47.2	20.8			328 52 40.44	T.M.	
		Companion M.....							20.548	-15.69	328 52 24.75	T.M.	
1624		λ Virginis M.R....	46 36.0	45.3	17.8	49.0	13.5	34.3	21.439	-51.59	124 45 40.96	T.M.	
1624		λ Virginis.....	22 31.5	32.0	49.2	14.2	50.8	8.6			347 22 31.54	T.M.	

Molyneux fast, June 6<sup>th</sup>, 22<sup>a</sup>.

- (a) Very faint.
- (b) A blotch, seen through the edge of a cloud.
- (c) Almost constant rain from May 30<sup>th</sup> to June 5<sup>th</sup>, the observing rooms were drenched with rain, which found its way through the Lantern. Wood structures are not adapted to warm climates, they are not secure against wet.
- (d) This is a bad observation.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
7.75	-18 40 12.38			30.068	60.0	65.6						37 23 25.23	807	Canopus R.		
	-18 40 10.37						19.14					37 23 27.24	807	Canopus.		
6.01	17 25 51.98			.065	60.0	66.0						73 30 6.50	838	Sirius R.		
	17 25 50.52						17.77					73 30 5.04	838	Sirius.		
	24 47 21.97			.023	60.0	61.0						80 51 45.07		☉*(1)		
	25 20 59.02			.023	60.0	61.0						81 25 22.80		☉*(5)		
	21 46 0.74			.023	60.0	61.0						77 50 19.27		☉*(7)		
	20 16 4.98			.023	60.0	61.0						76 20 22.80		☉*(8)		
6.55	-57 40 26.98			.022	60.0	60.5						-1 38 0.22		τ Octantis SP. R.		
	-57 40 27.36						1 29.99					-1 38 0.60		τ Octantis SP.		
	0 55 40.64			.023	60.0	60.5						56 59 38.32	1378	β Hyd. et Crat.		
7.33	-62 54 41.09			.023	60.0	60.8	52.8	1 51.10				-6 52 35.44	10	γ <sup>3</sup> Octantis SP.		
	-56 46 43.72			.023	60.0	60.2	52.5	1 27.02				-0 44 13.99		ο Octantis SP. R.		
	-56 46 42.54										-0 44 12.81		ο Octantis SP.			
	73 5 1.23			30.020	60.0	62.4	52.8	3 5.49				129 12 3.47	1492	12 Canum Ven.		
	-57 39 25.96			29.885	59.5	62.5	53.5	1 29.16				-1 36 58.37		A Octantis SP.		
	74 25 10.85			29.885	59.5	62.4	53.5	3 20.07				130 32 27.67	2489	ν Cygni.		
8.20	-87 13 50.87			29.885	59.5	61.5	53.1						1137	.... SP.		
	0 10 14.77						0.17					56 14 11.69	2577	ι Piscis Australis.		
	-52 49 31.13			29.875	59.5	62.0	54.1	1 14.58				3 13 11.04		C Octantis R.		
	-52 49 28.22											3 13 13.95		C Octantis.		
	0 45 26.12			29.875	59.5	62.0		0.75				56 49 23.62	2689	β Piscis Australis.		
	0 44 55.26							0.76				56 48 52.77	2689	Companion.		
6.42	3 27 7.45			29.875	59.5	62.2						59 31 7.62	2741	Fomalhaut R.		
	3 27 6.80						3.42					59 31 6.97	2741	Fomalhaut.		
6.96	-54 24 38.88			29.980	59.5	62.3	53.1	1 19.24				1 37 58.63		τ Octantis R.		
	-54 24 38.45											1 37 59.06		τ Octantis.		
	0 31 5.51						0.51					56 35 2.77	2779	γ App. Sculp.		
6.63	-6 56 27.92			30.467	57.0	51.8	51.8	7.18				49 7 21.65	1570	ν Centauri R.		
	-6 56 28.73											49 7 20.84	1570	ν Centauri.		
7.24	-1 38 5.32			.478	58.0	51.5						54 25 49.75	1604	θ Centauri R.		
	-1 38 4.90											54 25 50.17	1604	θ Centauri.		
7.82	-53 30 35.25			.481	57.0	50.5						2 32 1.73		z Octantis R.		
	-53 30 33.68						1 19.77					2 32 3.30		z Octantis.		
	20 59 27.94			.482	57.0	50.4		22.69	0.34	19.724	8.80	77 3 55.84		η		
7.25	9 17 26.52			.482	57.0	50.2		9.68				65 21 32.95	1705	Scorpii R.		
	9 17 26.96											65 21 33.39	1705	Scorpii.		
(10 01)	-54 24 39.16			.448	56.0	51.5						1 37 55.39		τ Octantis R.		
	-54 24 33.21						1 22.20					1 37 61.34		τ Octantis.		
6.89	-9 15 0.05			30.448	57.0	52.7		9.58				46 48 47.12	31	α Phœnicis R.		
	-9 15 0.34											46 48 46.83	31	α Phœnicis.		
	56 50 30.53			30.406	59.6	60.2	56.5	1 28.34	7.05		15 46.50	112 40 2.07		⊙		
7.02	-0 13 46.12			.402	60.0	60.8		0.24				55 50 10.39	699	α Columbæ.		
	-57 40 24.61			.296	58.5	55.1		1 31.77				-1 37 59.63		τ Octantis SP.		
	10 26 45.08			.296	58.5	55.1		10.74				66 30 52.57		☉*(16)		
	9 7 0.11			.296	58.5	55.1		9.35				65 11 6.21		☉*(17)		
	-56 46 42.85			.291	58.0	54.2		1 28.83				-0 44 14.93		ο Octantis SP.		
	23 36 55.35			.286	57.0	54.3		25.50				79 41 17.60	1533	Spica R.		
	23 36 55.32											79 41 17.57	1533	Spica.		
	2 48 33.41			.258	57.0	54.0		2.86				58 52 33.02	1580	h Centauri.		
	2 48 17.72											58 52 17.33		Companion.		
	21 18 26.07			30.265	57.0	53.6		22.76				77 22 45.58	1624	λ Virginis R.		
21 18 24.51											77 22 44.02	1624	λ Virginis.			

Coincidence of Micrometer Wire with fixed Wire, =20°.158 June 5<sup>th</sup>, =20°.160 One revolution =40°.335  
 Correction for Runs =+2°.90  
 Adopted Zenith Point to May 31<sup>st</sup>, =326°. 04'. 06".74 From May 31<sup>st</sup>, =326°. 04'. 07".03  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			1	2	3	4	5	6					
5 6 June	1681 2741 2741 27	z Octantis.....	33	34.0	45.6	25.0	20.3	26.0	21.7	14 17 10		272 33 29.11	T.M.
		(a) 1/2 N.L. M.....	5	47.8	57.0	68.6	37.9	73.1	27.8	21.805	-1 06.35	347 04 45.70	T.M.
		α <sup>2</sup> Libræ.....	37	59.8	64.0	77.7	45.4	77.8	34.1			344 38 0.09	T.M.
		Fomalhaut R.....	36	60.5	69.8	68.5	60.5	62.2	48.1		-1.5	142 36 59.64	T.M.
		(b) Fomalhaut.....	30	75.1	74.8	90.0	62.2	81.2	51.2			329 31 13.19	T.M.
		τ Octantis.....	39	38.0	46.9	51.8	05.0	49.1	06.3	22 59 45		271 39 32.68	T.M.
		β Hydri.....	50	76.2	83.7	83.0	50.3	78.7	47.8	0 17 22		281 51 10.06	T.M.
		(c) ☉ S. L.....	28	46.0	96.2	81.2	49.8	110.4	32.5		-0.74	22 29 9.01	T.M.
		α Columbæ.....	50	23.9	25.8	28.6	17.4	21.0	04.8	5 34 03.5		325 50 20.28	T.M.
		τ Oct. SP. M.R....	43	69.6	52.7	91.4	23.4	90.1	38.9	19.360	+32.27	203 44 33.68	T.M.
8 7 June	699 1492 1533 1533 1562 1562 1604 1604 1681 1721 1721 1760 1760 31 31	τ Octantis SP.....	23	48.8	57.0	53.0	17.2	59.3	16.9	11 03 00	-0.17	268 23 42.22	T.M.
		o Oct. SP. M.R....	50	28.2	11.6	49.8	41.3	48.7	56.3	12 17 10 19.373	+31.74	202 50 51.09	T.M.
		o Octantis SP.....	17	30.8	40.1	36.0	00.2	40.3	57.9	12 18 20		269 17 24.45	T.M.
		12 Canum Ven....	8	40.2	38.3	85.5	33.2	117.5	16.2			39 08 55.53	T.M.
		Companion M.....								20.502	-13.79	39 08 41.74	T.M.
		Spica M.R.....	26	47.0	62.5	19.6	75.4	19.4	58.7	19.524	+14.68	122 27 11.77	T.M.
		Spica.....	40	59.0	63.1	61.8	60.0	64.0	52.0			349 41 0.28	T.M.
		(d) i Centauri M.R...	21	29.0	53.0	18.3	59.8	16.6	39.0	20.490	-13.31	144 21 22.70	T.M.
		i Centauri.....	46	50.5	53.8	58.0	45.4	49.5	34.0			327 46 49.40	T.M.
		θ Centauri M.R...	41	40.5	58.3	31.0	65.9	30.6	48.7	19.578	+23.47	147 42 9.28	T.M.
24 8 June	699 734 807 807 838 838 1494 1494 1533 1570 1570 1604 1604 1624 1624	θ Centauri.....	25	62.0	69.8	68.0	58.0	62.6	43.0			324 26 0.87	T.M.
		z Octantis M.R...	34	44.2	30.8	63.5	05.4	63.5	18.0	20.012 14 15 42	+5.97	199 34 43.98	T.M.
		z Octantis.....	33	39.3	48.0	44.7	08.0	44.0	11.2	14 16 55	+0.13	272 33 33.00	T.M.
		1/2 N.L. M.....	5	41.0	52.5	51.1	44.7	54.8	33.5	20.464	-12.26	347 05 34.09	T.M.
		α <sup>2</sup> Libræ.....	37	57.5	66.0	64.6	58.0	65.3	45.0			344 37 59.69	T.M.
		γ <sup>2</sup> Libræ M.R....	18	51.2	70.6	24.5	86.0	22.8	67.0	20.324	-6.62	131 18 47.04	T.M.
		γ <sup>2</sup> Libræ.....	49	26.7	30.9	34.4	24.3	33.1	13.0			340 49 27.90	T.M.
		γ Lupi M.R.....	44	32.1	43.5	35.5	38.3	25.0	32.5	19.630	+21.38	152 44 56.04	T.M.
		γ Lupi.....	23	23.2	20.0	24.3	14.0	11.9	05.8			319 23 17.79	T.M.
		φ*(48).....	29	39.0	36.6	42.1	29.0	36.3	21.8	15 38 58		330 29 34.57	T.M.
α Phœnicis M.R...	19	49.0	51.3	53.0	49.3	41.2	46.0	21.202	-42.03	155 19 6.45	T.M.		
24 8 June	31 699 734 807 807 838 838 1494 1494 1533 1570 1570 1604 1604 1624 1624	α Phœnicis.....	48	73.8	73.0	74.8	66.3	63.1	56.8			316 49 8.65	T.M.
		φ's center.....	37	72.1	125.7	113.3	77.3	143.0	56.5			23 38 38.33	T.M.
		α Columbæ.....	50	26.4	26.7	29.5	17.4	23.5	05.5			325 50 21.53	T.M.
		α Orionis.....	21	21.0	58.4	48.2	31.1	67.8	13.8			7 21 40.21	T.M.
		Canopus M. R....	43	44.8	42.0	54.0	30.8	43.4	32.1	19.252	+36.42	164 44 17.59	T.M.
		Canopus.....	23	63.2	68.4	60.9	57.3	54.8	45.2			307 23 59.05	T.M.
		Sirius M.R.....	38	41.3	59.1	11.8	75.0	11.0	55.2	20.881	-29.28	128 38 12.97	T.M.
		Sirius.....	29	57.5	63.5	64.0	56.3	66.5	43.4			343 29 59.35	T.M.
		o Octantis SP. R.	50	60.2	42.0	81.9	09.4	81.4	27.4	12 17 50		202 50 50.46	T.M.
		o Octantis SP.....	17	35.0	39.8	38.5	01.4	40.5	02.5	12 23 32		269 17 25.65	T.M.
24 8 June	1494 1494 1533 1570 1570 1604 1604 1624 1624	(e) δ Muscæ R.....	47	48.2	45.0	66.0	22.0	66.0	30.0	20.105	+2.02	182 47 48.49	T.M.
		δ Muscæ.....	20	29.8	38.1	31.4	16.0	26.5	13.0	12 51 31		289 20 25.84	T.M.
		Spica R.....	27	16.4	23.0	41.0	43.0	37.0	31.3			122 27 12.16	T.M.
		ν Centauri M.R...	1	53.0	64.3	56.2	61.5	46.2	53.0	20.658	-20.29	153 00 35.24	T.M.
		ν Centauri.....	7	41.1	40.2	42.0	32.0	31.4	23.3			319 07 34.98	T.M.
		(f) θ Centauri M.R...	42	51.5	66.9	47.4	68.4	46.0	53.2	21.272	-45.05	147 42 10.80	T.M.
		(g) θ Centauri.....	25	64.8	68.8	68.9	58.0	61.4	45.8			324 26 2.15	T.M.
		λ Virginis M. R...	46	34.3	50.0	01.2	66.0	02.4	48.4	21.467	-52.92	124 45 40.69	T.M.
		λ Virginis.....	22	30.0	34.2	37.0	27.8	40.2	20.0			347 22 32.02	T.M.
		z Octantis.....	33	38.0	44.2	43.2	5.0	42.0	09.6	14 17 10		272 33 30.67	T.M.
1/2 N.L. M.....	7	24.0	33.2	33.0	25.5	38.0	15.3	21.790	-1 05.95	347 06 22.45	T.M.		

Molyneux fast, June 7<sup>th</sup>, 24<sup>h</sup>.—8<sup>th</sup>, 23<sup>h</sup>.

- (a) The Micrometer Wire made to touch the North and South Limbs in succession. Correction -0'.06
- (b) The distance from the fixed Wire estimated by the thickness of the Wire.
- (c) 1<sup>st</sup>. beyond the 5<sup>th</sup> Wire.
- (d) Observed on the Meridian; hurried.
- (e) A nebulous blur from wind.
- (f) Observed on the Meridian.
- (g) Observed at the 5<sup>th</sup> Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
#	o	'	"	Inch.	o	o	o	'	"	"	'	"	o	'	"	
6.42	-53	30	37.92	30.268	57.0	53.6		1	18.75				2	32	0.08	z Octantis.
	21	0	38.67	.267	57.0	53.6	50.0		22.42	0.34	22.234	8.62	77	4	48.88	h
	18	33	53.06	.267	57.0	53.6	50.0		19.60				74	38	9.41	α <sup>2</sup> Libræ.
	3	27	7.39	.235	57.0	44.6			3.58				59	31	7.72	1681 Fomalhaut R.
	3	27	6.16										59	31	6.49	2741 Fomalhaut.
7.95	-54	24	34.35	.235	57.0	44.6		1	22.73				1	37	59.67	τ Octantis.
	-44	12	56.97	30.227	57.0	44.4			57.68				11	50	2.10	27 β Hydri.
	56	25	1.98	30.209	59.0	64.8	59.0	1	25.62	7.02		15	46	4.00	112 46 3.73	⊙
	-0	13	46.75						0.23				55	50	9.77	699 α Columbæ.
	-57	40	26.65	.184	58.5	56.5		1	31.40				-1	37	61.30	τ Octantis SP. R.
7.77	-57	40	24.81										-1	37	59.46	τ Octantis SP.
	-56	46	44.06	.186	58.0	55.3	52.8	1	28.34				-0	44	15.65	o Octantis SP. R.
	-56	46	42.58										-0	44	14.17	o Octantis SP.
	73	4	48.50	.186	58.0	53.3		3	9.03				129	11	54.28	1492 12 Canum Ven.
	73	4	34.71					3	8.99				129	11	40.45	Companion.
6.03	23	36	55.26	.184	58.0	51.0			25.57				79	41	17.58	1533 Spica R.
	23	36	53.25										79	41	15.57	1533 Spica.
6.05	1	42	44.33	.184	58.0	51.0			1.75				57	46	42.83	1562 i Centauri R.
	1	42	42.37										57	46	40.87	1562 i Centauri.
5.08	-1	38	2.25	.183	58.0	50.5			1.67				54	25	52.83	1604 θ Centauri R.
	-1	38	6.16										54	25	48.92	1604 θ Centauri.
8.49	-53	30	36.95	.182	57.5	50.3		1	19.02				2	32	0.78	z Octantis R.
	-53	30	34.03										2	32	3.70	z Octantis.
	21	1	27.06	.178	57.5	50.8	49.0		22.49	0.34	20.905	8.90	77	5	37.06	h
	18	33	52.66	.178	57.5	50.8	49.0		19.63				74	38	9.04	1681 α <sup>2</sup> Libræ.
	14	45	19.99	.178	58.0	49.5			15.45				70	49	32.19	1721 γ <sup>2</sup> Libræ R.
6.92	14	45	20.87										70	49	33.07	1721 γ <sup>2</sup> Libræ.
	-6	40	49.01	.178	58.0	49.5			6.87				49	23	0.87	1760 γ Lupi R.
	-6	40	49.24										49	23	0.64	1760 γ Lupi.
	4	25	27.54	.176	58.0	49.5			4.54				60	29	28.83	♄*(48)
	-9	14	59.42	30.151	57.0	51.0			9.52				46	48	47.81	31 α Phœnicis R.
8.32	-9	14	58.38										46	48	48.85	31 α Phœnicis.
	57	34	31.54	30.143	60.0	64.0	58.0	1	29.41	4.19			113	39	53.51	♀
	-0	13	45.26	.143	60.0	64.0	58.0		0.23				55	50	11.26	699 α Columbæ.
	41	17	33.42	.141	60.0	63.2	58.0		50.06				97	22	20.23	734 α Orionis.
	-18	40	10.80	.130	60.0	65.3			19.15				37	23	26.80	807 Canopus R.
6.16	-18	40	7.74										37	23	29.86	807 Canopus.
	17	25	53.82	.129	60.0	65.5			17.82				73	30	8.39	838 Sirius R.
	17	25	52.56										73	30	7.13	838 Sirius.
	-56	46	43.67	.135	58.5	51.8		1	28.79				-0	44	15.71	o Octantis S.P. R.
	-56	46	41.14										-0	44	13.18	o Octantis SP.
7.17	-36	43	41.70	.136	58.0	51.8			43.49				19	19	31.56	1494 δ Muscæ R.
	-36	43	40.95										19	19	32.31	1494 δ Muscæ.
	23	36	54.63	.136	58.0	51.8			25.49				79	41	16.87	1533 Spica R.
	-6	56	28.45	.138	58.0	52.8			7.09				49	7	21.21	1570 ν Centauri.
	-6	56	31.81										49	7	17.85	1570 ν Centauri.
6.48	-1	38	4.01	.138	58.0	52.5			1.66				54	25	51.08	1604 θ Centauri R.
	-1	38	4.64										54	25	50.45	1604 θ Centauri.
	21	18	26.10	.138	58.0	52.4	52.0		22.72				77	22	45.57	1624 λ Virginis R.
	21	18	25.23										77	22	44.70	1624 λ Virginis.
	-53	30	36.12	.138	58.0	52.2		1	18.61				2	32	2.02	z Octantis
6.36	21	2	15.66	.138	58.0	52.2			22.41	0.34	22.183	7.93	77	6	26.55	h

Coincidence of Micrometer Wire with fixed Wire, =20<sup>r</sup>.160 June 8<sup>th</sup>, =20<sup>r</sup>.155 Telescope pointed North and South in succession taking the readings. One revolution =40<sup>r</sup>.335  
 Correction for Runs =+2<sup>r</sup>.90  
 Adopted Zenith Point to June 8<sup>th</sup> at noon, =326°. 04'. 07<sup>r</sup>.03 From June 8<sup>th</sup> at noon, =326°. 04'. 06<sup>r</sup>.79  
 Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.				
			A	B	C	D	E	F								
			''	''	''	''	''	''								
♃ 8 June	1681	α <sup>2</sup> Libræ.....	37	60.0	65.8	66.5	58.1	68.0	46.2	18.415	+1 10.18	344	38	1.06	T.M.	
	1760	γ Lupi M.R.....	43	45.2	52.0	46.0	48.2	35.8	43.4			152	44	55.38	T.M.	
	1760	γ Lupi.....	23	25.0	20.0	24.3	14.2	12.3	06.0			319	23	17.55	T.M.	
♀ 9 June		⊙ N.L.....	10	51.0	112.8	104.3	62.7	133.9	45.0			23	11	25.09	T.M.	
		τ Oct. SP. M.R..	44	68.4	49.8	91.3	17.7	89.5	34.8	{11 3 6	+0.34	203	44	32.21	T.M.	
		τ Octantis SP....	23	47.2	54.8	51.5	16.0	56.2	16.1	{ 20.829	-27.19	268	23	39.54	T.M.	
		ο Oct. SP. M.R..	50	71.9	54.1	93.2	22.1	92.8	40.0	{12 17 11	-1.11	202	50	51.82	T.M.	
		ο Octantis SP....	17	30.0	37.6	35.2	59.0	38.0	58.5	{ 20.421	-10.73	269	17	23.28	T.M.	
	1494	(a) δ Muscæ M.R....	48	44.4	37.0	02.8	15.5	58.5	24.2	12 18 20		269	17	23.28	T.M.	
	1494	δ Muscæ.....	20	29.0	38.0	30.1	14.9	25.4	11.4	21.394	-49.98	182	47	50.77	T.M.	
	1570	ν Centauri M.R...	0	51.8	60.8	53.6	57.0	43.0	50.1	20.582	+0.79	289	20	25.63	T.M.	
	1570	ν Centauri.....	7	45.0	43.0	45.5	35.4	34.2	26.6	20.582	-17.22	153	00	35.33	T.M.	
	1604	θ Centauri M.R...	42	31.1	41.3	26.5	43.9	22.3	31.0	20.691	-21.62	319	07	38.79	T.M.	
	♃ 12 June		τ Octantis SP....	23	49.0	53.0	51.0	17.3	55.0	18.8			268	23	41.03	T.M.
			ι <sup>2</sup> N.L. M.....	8	43.2	50.8	51.0	43.4	55.3	34.3	19.400	+30.46	347	09	17.15	T.M.
1681		α <sup>2</sup> Libræ.....	37	59.3	64.9	64.8	57.8	66.0	45.7			344	38	0.04	T.M.	
1816		ρ Scorpii M.R....	52	30.6	54.0	21.2	58.4	20.0	38.1	20.689	-21.54	140	52	15.16	T.M.	
1816		ρ Scorpii.....	15	59.4	57.0	64.0	48.1	58.4	41.1			331	15	55.36	T.M.	
1872		σ Scorpii M.R....	19	42.8	66.0	25.0	75.0	26.2	54.4	19.675	+19.36	137	20	7.53	T.M.	
1872		σ Scorpii.....	47	67.0	68.0	73.7	62.0	70.5	51.0			334	48	6.19	T.M.	
1900		τ Scorpii M.R....	0	31.5	61.0	20.5	65.9	21.2	42.4	20.220	-2.82	140	00	37.08	T.M.	
1900		τ Scorpii.....	7	37.1	37.6	43.8	30.9	39.5	21.3			332	07	35.85	T.M.	
1915		ε Scorpii.....	0	39.5	38.8	43.2	29.8	35.5	20.0			326	00	34.52	T.M.	
1947		k Scorpii.....	6	54.8	52.0	59.2	44.6	50.1	34.3			326	06	49.34	T.M.	
		σ Octantis.....	45	55.0	62.1	60.8	28.0	60.9	28.3			270	45	49.26	T.M.	
2007		(b) λ Scorpii M.R....	6	53.0	62.7	52.1	63.8	46.0	52.5	20.400	-9.88	149	06	44.50	T.M.	
2007		λ Scorpii.....	1	30.9	34.0	36.5	26.0	29.1	13.3			323	01	28.66	T.M.	
2016		γ Draconis.....	12	73.0	101.8	103.0	46.1	119.5	42.5			52	13	20.94	T.M.	
2071		γ Draconis.....	19	76.2	108.3	110.0	50.5	128.0	45.3	17 53 17.5	-0.36	51	20	26.42	T.M.	
2101		β Telescopii.....	11	61.3	62.5	66.0	54.8	68.0	43.0			323	11	59.67	T.M.	
2110	ε Sagittarii.....	32	55.5	56.4	60.5	48.5	53.0	37.0			325	32	52.09	T.M.		
♃ 13 June	1491	δ Virginis M.R....	51	49.0	63.2	17.0	70.5	23.8	55.5	23.030	+5.05	107	51	51.81	T.M.	
	1491	δ Virginis.....	15	65.8	91.5	88.0	71.2	102.6	57.8			4	16	19.53	T.M.	
	1506	g Virginis M.R....	0	36.5	54.5	03.2	69.4	06.8	52.0	20.000	+6.25	122	00	43.19	T.M.	
	1506	g Virginis.....	7	27.8	33.2	34.8	26.5	37.7	17.5			350	07	30.01	T.M.	
		♃ N.L.....	3	14.0	19.8	17.8	12.2	25.3	04.1			354	03	15.84	T.M.	
	1545	74 Virginis M.R..	33	31.9	44.4	57.6	59.4	58.8	44.0	20.155	0.000	117	33	29.60	T.M.	
	1545	74 Virginis.....	34	38.1	49.5	46.9	39.0	52.4	31.0			354	34	43.37	T.M.	
	1565	O Virginis M.R..	44	39.6	53.0	6.0	70.7	07.8	55.2	19.537	+24.93	123	45	3.87	T.M.	
1565	O Virginis.....	23	04.0	14.2	11.3	07.4	16.8	54.6			348	23	8.57	T.M.		
♃ 14 June		⊙ N.L. M.....	32	34.6	90.0	78.0	41.6	108.8	19.8	22.520	-1 35.39	23	31	26.95	T.M.	
		⊙ S.L.....	59	34.7	90.0	77.1	40.2	108.0	20.9			23	00	2.12	T.M.	
		⊙ N.L.....	58	61.1	67.0	66.8	61.8	69.8	51.8			347	59	3.44	T.M.	
	1624	(c) λ Virginis.....	22	28.8	32.8	36.0	26.2	38.2	19.0			347	22	30.41	T.M.	
	182	Achernar M.R....	12	59.5	55.1	71.0	41.2	62.2	47.0	22.633	-1 39.95	170	11	15.90	T.M.	
182	Achernar.....	56	62.3	70.4	61.5	57.8	55.0	47.0			301	56	59.62	T.M.		
♃ 15 June		⊙ N.L.....	33	46.0	99.0	88.5	51.6	118.8	30.0			23	34	12.73	T.M.	
		(d) ♀'s center.....	4	24.1	76.7	66.3	29.1	95.0	8.5			24	04	49.45	T.M.	
	807	Canopus M.R....	44	34.1	32.0	43.0	20.1	33.0	21.5	20.584	-0.96	164	44	13.39	T.M.	
	807	Canopus.....	23	66.4	71.5	63.9	60.4	58.7	48.4			307	24	2.01	T.M.	

Molyneux fast, June 12<sup>th</sup>, +25°.

- (a) Observed on the Meridian.
- (b) Observed at the 1<sup>st</sup> and 4<sup>th</sup> Wires.
- (c) Tremulous; a cloud intervened.
- (d) Observed beyond the 5<sup>th</sup> Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
#	o	'	"	Inch.	o	o	o	"	"	"	"	o	'	"		
6.47	18	33	54.27	30.138	58.0	52.2		19.57				74	38	10.59	1681	α <sup>2</sup> Libræ.
	-6	40	48.59	30.142	58.0	51.8		6.83				49	23	1.33	1760	γ Lupi R.
	-6	40	49.24									49	23	0.68	1760	γ Lupi.
5.88	57	7	18.30	30.119	59.0	56.0	56.0	1 29.13	7.07		15 46.20	112	56	50.91		⊙
	-57	40	25.42									-1	37	59.64		τ Octantis SP. R.
	-57	40	27.25	.057	59.0	55.5		1 30.97				-1	37	61.47		τ Octantis SP.
7.55	-56	46	45.03	.060	59.0	55.3						-0	44	16.24		o Octantis SP. R.
	-56	46	43.51					1 27.96				-0	44	14.72		o Octantis SP.
8.20	-36	43	43.98	.063	59.0	56.0						19	19	29.75	1494	δ Muscæ R.
	-36	43	41.16					43.02				19	19	32.57	1494	δ Muscæ.
7.06	-6	56	28.54	.071	59.0	56.4						49	7	21.19	1570	ν Centauri R.
	-6	56	28.00	30.075	59.0	56.8		7.02				49	7	21.73	1570	ν Centauri.
	-1	38	4.51					1.64				54	25	50.60	1604	θ Centauri R.
5.26	-57	40	25.76	30.333	59.0	54.3		1 32.02				-1	38	1.03		τ Octantis SP.
	21	5	10.36	.338	58.0	55.0	52.1	22.50	0.34	19.820	8.48	77	09	20.79		η
	18	33	53.25	.338	58.0	55.0		19.59				74	38	10.59	1681	α <sup>2</sup> Libræ.
6.86	5	11	51.63	.330	58.0	55.0						61	15	53.69	1816	ρ Scorpii R.
	5	11	48.57					5.31				61	15	50.63	1816	ρ Scorpii.
6.47	8	43	59.26	.323	58.5	55.5	52.5					64	48	4.96	1872	σ Scorpii R.
	8	43	59.40					8.95				64	48	5.10	1872	σ Scorpii.
6.58	6	3	29.71	.323	58.0	55.3						62	7	32.65	1900	τ Scorpii R.
	6	3	29.06					6.19				62	7	32.00	1900	τ Scorpii.
	-0	3	32.27	.323	58.0	55.3		0.06				56	0	24.42	1915	ε Scorpii.
6.49	0	2	42.55	.315	58.0	54.6		0.05				56	6	39.35	1947	k Scorpii.
	-55	18	17.53	.310	58.0	54.4		1 24.08				0	44	15.14		σ Octantis.
	-3	2	37.71	.309	58.0	54.0						53	1	15.93	2007	λ Scorpii R.
	-3	2	38.13	.309	58.0	53.5		3.11				53	1	15.51	2007	λ Scorpii.
	86	9	14.15	.308	58.0	53.0									2016	β Draconis.
	85	16	19.63	.305	58.0	52.5									2071	γ Draconis.
	-2	52	7.12	.307	58.0	53.0		2.93				53	11	46.70	2101	β Telescopii.
5.67	-0	31	14.70	30.307	58.0	53.0		0.53				55	32	41.52	2110	ε Sagittarii.
	38	12	14.98	30.192	57.5	52.4						94	16	57.63	1491	δ Virginis R.
	38	12	12.74					45.90				94	16	55.39	1491	δ Virginis.
6.60	24	3	23.60	.193	57.5	52.4						80	7	46.40	1506	g Virginis R.
	24	3	23.22					26.05				80	7	46.02	1506	g Virginis.
6.49	27	59	9.05					31.00	26 21.44		15 23.98	83	21	51.38		δ
	28	30	37.19	.193	57.5	52.4						84	35	5.63	1545	74 Virginis R.
	28	30	36.58					31.69				84	35	5.02	1545	74 Virginis.
6.22	22	19	2.92	30.195	57.5	52.4	51.0					78	23	23.62	1565	O Virginis R.
	22	19	1.78					23.95				78	23	22.48	1565	O Virginis.
7.76	57	27	20.16	30.277	58.5	57.5	53.0	1 30.51	7.10		15 45.80	113	16	54.52		⊙
	56	55	55.33					1 28.74	6.44			113	17	00.18		⊙
	21	54	56.65	.340	58.0	52.4	48.8	23.59	21 14.57		15 38.55	77	22	23.87		δ
	21	18	23.62	.340	58.0	52.4		22.87				77	22	43.24	1624	λ Virginis.
	-24	7	9.11	30.376	57.0	52.0	49.4		26.30			31	56	21.34	182	Archernar R.
7.70	-24	7	7.17									31	56	23.28	182	Archernar.
	57	30	5.94	30.377	58.0	57.0	54.0	1 31.08	7.10		15 45.70	113	19	40.97		⊙
	58	0	42.66	.374	58.0	57.2		1 32.83	4.23			114	06	08.01		♀
7.70	-18	40	6.60	30.360	58.0	58.2	54.0					37	23	30.55	807	Canopus R.
	-18	40	4.78					19.60				37	23	32.37	807	Canopus.

Coincidence of Micrometer Wire with fixed Wire, =20°.155 One revolution =40°.335  
 Correction for Runs =+2°.90  
 Adopted Zenith Point =326°. 04'. 06°.79  
 Assumed Co-latitude =56°. 03'. 56°.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction to Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			<i>l</i> <i>h</i>	<i>h</i> <i>m</i>	<i>m</i> <i>s</i>	<i>s</i> <i>t</i>	<i>t</i> <i>u</i>	<i>u</i> <i>z</i>				
15 June	1818	$\pi$ Scorpii M.R. ....	46 44.0	69.1	27.0	77.1	28.8	44.4	20.190	-1.61	137 46 46.44	T.M.
	1818	$\pi$ Scorpii.....	21 30.0	33.2	35.2	26.8	34.8	13.6			334 21 29.60	T.M.
	1885	Antares M.R. ....	12 57.2	82.0	40.8	92.9	42.1	70.4	21.374	-49.17	138 12 14.81	T.M.
	1885	Antares.....	55 61.8	63.0	69.0	57.9	65.6	46.2			333 56 1.22	T.M.
	1915	$\epsilon$ Scorpii.....	0 38.9	38.0	43.8	29.4	35.3	19.8			326 00 34.25	T.M.
	1947	$k$ Scorpii.....	6 54.8	52.8	60.0	45.1	50.5	34.9			326 06 49.86	T.M.
		$\sigma$ Octantis.....	45 57.8	57.1	71.6	14.8	67.5	19.0	17 11 00	+0.13	270 45 48.18	T.M.
16 June	1572	$\mu$ Centauri M.R. ...	47 52.5	55.6	47.5	58.3	35.3	54.7	20.282	-5.12	153 47 45.53	T.M.
	1570	(a) $\nu$ Centauri.....	7 46.2	41.4	51.2	30.0	37.6	23.2			319 07 39.46	T.M.
		(b) $\eta$ 's center.....	11 34.6	41.6	39.0	38.6	43.2	29.4		+0.82	347 11 38.71	T.M.
	1705	Scorpii M.R. ....	46 43.8	53.2	16.0	73.3	10.5	56.7	20.250	-3.83	136 46 38.07	T.M.
	1705	Scorpii.....	21 34.5	36.4	40.0	33.3	37.2	21.8			335 21 34.54	T.M.
	1731	15 Lupi M.R. ....	41 40.1	60.0	20.9	72.5	18.0	55.6	21.240	-43.77	141 41 0.33	T.M.
	1731	15 Lupi.....	27 17.0	16.3	20.4	09.0	15.8	00.2			330 27 13.92	T.M.
	1760	(c) $\gamma$ Lupi M.R. ....	49 45.0	56.0	37.9	59.6	29.2	54.0	27.352	-4 50.29	152 44 56.86	T.M.
	1760	$\gamma$ Lupi.....	22 81.2	15.3	26.8	04.5	14.0	57.0			319 23 14.84	T.M.
	1800	$b$ Scorpii M.R. ....	23 32.2	41.8	04.8	59.8	59.3	46.0	20.273	-4.04	137 23 26.43	T.M.
	1800	$b$ Scorpii.....	44 47.2	51.3	52.2	46.8	51.0	34.6			334 44 48.16	T.M.
	1823	(e) $\delta$ Scorpii.....	.....	.....	.....	.....	.....	.....	15 51 00		337	T.M.
		$\delta$ N. L. ....	28 58.5	62.7	63.0	57.1	62.6	44.0			337 28 58.36	T.M.
	1885	Antares M.R. ....	12 32.1	44.0	06.5	63.4	01.5	48.0	20.655	-20.17	138 12 12.11	T.M.
	1885	Antares.....	55 61.2	63.0	67.0	59.8	63.0	48.0			333 56 0.97	T.M.
17 June	1542	$\delta$ Centauri M.R. ...	41 38.8	52.8	30.0	58.2	27.8	48.5	19.640	-20.77	150 42 1.90	T.M.
	1542	$\delta$ Centauri.....	25 74.8	74.1	80.8	63.7	70.7	52.5			321 26 9.78	T.M.
	1570	$\nu$ Centauri M.R. ...	0 38.2	52.7	32.2	56.1	24.8	47.7	20.311	-6.29	153 00 35.47	T.M.
	1570	$\nu$ Centauri.....	7 44.0	41.0	51.0	28.5	38.1	20.9			319 07 37.76	T.M.
		$z$ Octantis.....	33 35.6	41.2	50.8	53.7	48.0	58.1	14 16 12		272 33 28.23	T.M.
	1646	$\gamma$ Bootis.....	57 66.0	119.0	109.0	56.3	118.2	44.0			38 58 25.55	T.M.
		$\eta$ N. L. M. ....	12 38.2	47.1	43.0	42.9	48.0	33.7	20.692	-21.66	347 12 20.72	T.M.
	1681	$\alpha^2$ Libræ.....	37 58.8	64.0	62.1	59.2	61.7	48.2			344 37 59.29	T.M.
	1705	Scorpii M.R. ....	46 46.1	57.6	18.7	76.0	14.1	61.5	20.313	-6.37	136 46 38.95	T.M.
	1705	Scorpii.....	21 33.3	35.6	38.8	21.5	35.3	20.0			335 21 31.42	T.M.
	1760	$\gamma$ Lupi M.R. ....	44 40.8	51.0	34.7	53.4	23.6	48.5	19.780	+15.13	152 44 57.32	T.M.
	1760	$\gamma$ Lupi.....	23 23.0	18.6	28.6	08.3	16.5	00.4			319 23 16.47	T.M.
	1835	$\theta$ Lupi M.R. ....	29 51.0	64.0	39.0	72.6	35.5	60.8	20.940	-31.66	148 29 22.42	T.M.
	1835	$\theta$ Lupi.....	38 54.0	58.0	62.0	45.3	54.7	34.0			323 38 51.91	T.M.
	1885	Antares M.R. ....	11 39.5	52.7	14.2	71.8	09.4	56.3	19.338	+30.94	138 12 11.22	T.M.
	1885	Antares.....	55 60.6	63.9	66.4	59.4	63.5	48.0			333 56 0.94	T.M.
	1905	$\sigma$ Herculis.....	41 82.8	70.8	65.5	66.8	89.0	56.7			42 42 12.14	T.M.
	1913	$\eta$ Herculis.....	10 43.1	95.4	86.2	32.3	115.2	19.0			39 11 5.31	T.M.
	$\delta$ S. L. ....	27 69.1	70.4	74.0	64.8	69.1	53.2			333 28 7.07	T.M.	
	$\sigma$ Octantis.....	45 54.8	58.5	70.5	14.5	68.2	17.5	5 08 27		270 45 47.41	T.M.	
1986	$\theta$ Ophiuchi.....	9 65.6	67.5	71.0	63.3	68.2	52.2			335 10 5.11	T.M.	
2039	$p$ Sagittarii M.R. .	54 51.1	67.3	28.2	83.4	24.0	66.2	21.558	-56.59	139 53 56.68	T.M.	
2039	$p$ Sagittarii.....	14 16.2	18.7	19.8	13.7	17.5	02.8			332 14 15.76	T.M.	
19 June	699	$\alpha$ Columbæ.....	50 30.9	28.6	35.0	19.8	25.7	10.0			325 50 25.04	T.M.
20 June		$\odot$ N. L. M. ....	41 43.2	96.2	79.8	53.5	111.7	32.6	20.450	-12.10	23 41 57.48	T.M.
		$\odot$ S. L. ....	9 63.8	120.0	101.8	74.0	133.7	54.5			23 10 31.22	T.M.
	807	Canopus.....	23 67.8	70.4	69.8	54.9	64.0	44.7			307 24 2.32	T.M.

Molyneux fast, June 16<sup>th</sup>, 27<sup>th</sup>.—17<sup>th</sup>, 27<sup>th</sup>.

- (a)  $\nu$  Centauri observed instead of  $\mu$ , by accident.
- (b) Leaving the field. A bad Observation.
- (c) Observed at the 4<sup>th</sup> Wire by reflexion, the Star leaving the field at the direct Observation.

(e)  $\delta$  Scorpii was occulted this evening. The difference in declination at the Moon's Transit, exceeded the range of the Micrometer.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.			
					Attach.	Out.	Wet. Bulb.												
#	o	'	"	Inch.	o	o	o	'	"	r	'	"	o	'	"				
8.02	8	17	20.35	30.358	57.0	53.2							64	21	25.64	1818	$\pi$ Scorpii R.		
	8	17	22.81																
8.02	7	51	51.98	.358	57.0	53.2							63	55	56.82	1885	Antares R.		
	7	51	54.43																
	-0	3	32.54	.358	57.0	53.2							56	0	24.15	1915	$\epsilon$ Scorpii.		
	0	2	43.07										.357	57.0	53.3				
	-55	18	18.61	.350	57.0	53.5		1	24.36					0	44	13.78		$\sigma$ Octantis.	
	-7	43	38.74	30.276	56.5	50.5							48	20	10.04	1572	$\mu$ Centauri R.		
	-6	56	27.33																
	21	7	31.92	.281	56.5	50.2		22	7.1	0.34			77	11	51.04		$\eta$		
6.31	9	17	28.72	.282	56.5	50.2	48.0						65	21	35.09	1705	Scorpii R.		
	9	17	27.75																
7.13	4	23	6.46	.281	56.5	50.0	47.0						60	27	7.72	1731	15 Lupi R.		
	4	23	7.13																
5.85	-6	40	50.07	.281	56.5	49.6							49	22	59.79	1760	$\gamma$ Lupi R.		
	-6	40	51.95																
7.30	8	40	40.36	.278	56.5	50.0							64	44	46.09	1800	$\delta$ Scorpii R.		
	8	40	41.37																
	11	24	51.57	.278	56.5	50.0	47.8	11	8.7	11	31.48	16	7	8.1	67	1	20.90	1823	$\delta$ Scorpii.
6.54	7	51	54.68	30.278	56.5	50.5	47.5						63	55	59.54	1885	Antares R.		
	7	51	54.18																
5.84	-4	37	55.11	30.195	57.0	50.8	48.8						51	25	56.90	1542	$\delta$ Centauri R.		
	-4	37	57.01																
6.62	-6	56	28.68	.200	57.0	50.1							49	7	20.93	1570	$\nu$ Centauri R.		
	-6	56	29.03																
	-53	30	38.56	.203	57.0	50.0		1	19.13					2	31	59.06		$z$ Octantis.	
	72	54	18.76					3	8.38				129	1	23.89	1646	$\gamma$ Bootis.		
	21	8	13.93	.204	57.0	48.0		22	7.7	0.34	21.084	7	9.1	77	12	25.20		$\eta$	
	18	33	52.50	.205	57.0	47.5		19	8.0				74	38	9.05	1681	$\alpha^2$ Libræ.		
5.19	9	17	27.84	.205	57.0	48.0							65	21	34.22	1705	Scorpii R.		
	9	17	24.63																
6.90	-6	40	50.53	.205	57.0	48.2	49.0						49	22	59.32	1760	$\gamma$ Lupi R.		
	-6	40	50.32																
7.17	-2	25	15.63	.209	56.0	53.7	53.7						53	38	38.66	1835	$\theta$ Lupi R.		
	-2	25	14.88																
6.08	7	51	55.57	.209	56.0	54.0							63	55	60.36	1885	Antares R.		
	7	51	54.15																
	76	38	5.35	.212	56.0	53.6		4	0.29				132	46	2.39	1905	$\sigma$ Herculis.		
	73	6	58.52	.212	56.0	53.2		3	9.70				129	14	4.97	1913	$\eta$ Herculis.		
	7	24	0.28	.212	56.0	53.6		7	5.7	7	31.60	16	19.71	63	36	52.71		$\delta$	
	-55	18	19.38	.212	56.0	53.8		1	23.92					0	44	13.45		$\sigma$ Octantis.	
	9	5	58.32	.212	56.2	54.0		9	3.3				65	10	4.40	1986	$\theta$ Ophiuchi.		
6.22	6	10	10.11	30.212	56.2	54.5							62	14	13.15	2039	$p$ Sagittarii R.		
	6	10	8.97																
	-0	13	40.82	29.990	60.0	61.5		0	2.2				55	50	15.71	699	$\alpha$ Columbæ.		
	57	37	51.62	29.990	60.0	61.5	58.4	1	29.58	7.11			113	27	25.44		$\odot$		
	57	06	25.36					1	27.80	7.06			113	27	28.25		$\odot$		
	-18	40	03.54	29.988	60.0	61.8	58.8	19	2.3				37	23	33.98	807	Canopus.		

Coincidence of Micrometer Wire with fixed Wire, =20'.155 One revolution =40'.335  
 Correction for Runs = +2".90  
 Adopted Zenith Point to June 19<sup>th</sup> at Noon, =326°. 04'. 06".79 From June 19<sup>th</sup>, at Noon, =326°. 04'. 05".86  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.			Initials of Observer.
			A	B	C	D	E	F			° ' "			
			''	''	''	''	''	''			r.	''	''	
♂ 20 June	838	Sirius M.R.....	38 45.8	58.1	13.0	75.7	12.3	59.0	21.000	-34.08	128 38	9.92	T.M.	
	838	Sirius .....	29 60.0	65.0	62.2	60.9	65.7	48.2			343 30	1.15	T.M.	
♀ 23 June	699	α Columbæ.....	50 27.2	31.6	33.0	22.1	27.7	08.2	19.980	+6.98	325 50	25.01	T.M.	
	734	α Orionis M.R....	46 36.3	33.8	3.0	42.2	4.0	35.5			104 46	33.02	T.M.	
	734	α Orionis.....	21 25.5	49.0	38.8	36.7	51.3	26.4			7 21	38.01	T.M.	
♄ 24 June		⊙ S.L. M.....	8 57.3	108.0	92.7	64.1	121.4	46.2	20.356	-8.19	23 09	13.69	T.M.	
		⊙ N.L.....	40 13.0	67.2	49.0	24.3	80.1	02.8			23 40	39.34	T.M.	
	838	Sirius M.R.....	38 46.1	53.2	14.0	71.4	13.0	58.1	20.982	-33.44	128 38	9.21	T.M.	
	838	Sirius .....	29 60.2	66.0	63.0	62.5	66.2	49.2			343 30	2.00	T.M.	
		♀ N.L.....	46 52.8	108.0	99.8	64.8	123.0	42.5	19.281	+35.17	23 47	22.04	T.M.	
	1533	Spica M.R.....	26 36.2	47.1	06.1	60.6	05.7	47.3			122 27	8.94	T.M.	
	1533	Spica.....	40 59.2	65.7	60.8	63.0	64.0	54.4	20.173	-0.81	349 41	1.48	T.M.	
	1572	μ Centauri M.R....	47 43.2	57.0	38.7	60.4	31.0	50.3			153 47	45.96	T.M.	
	1572	μ Centauri.....	20 32.8	31.0	37.0	19.0	27.0	10.8	20.808	-26.42	318 20	26.58	T.M.	
	1623	λ Bootis.....	44 41.0	91.0	81.5	24.5	108.4	13.1			46 45	0.40	T.M.	
	1639	θ Bootis.....	24 5.2	50.0	40.5	49.8	64.3	38.2	19.714	+17.30	52 24	21.74	T.M.	
	1646	γ Bootis.....	57 70.2	124.0	110.0	61.8	140.6	48.0			38 58	32.77	T.M.	
		♄ N.L. M.....	15 52.0	60.4	55.2	57.0	61.8	48.2	20.894	-29.89	347 15	29.44	T.M.	
	1681 (a)	α <sup>2</sup> Libræ.....	37 60.2	63.2	62.0	60.0	62.2	50.2			344 37	59.70	T.M.	
	1708	β Bootis.....	58 29.5	82.3	71.0	20.2	100.3	7.0	21.509	-54.69	40 58	52.07	T.M.	
	1760	γ Lupi M.R.....	44 37.0	48.3	30.0	52.0	22.1	44.8			152 44	56.46	T.M.	
	1760	γ Lupi.....	23 22.8	16.1	27.7	06.3	14.4	59.0	23 00 02		319 23	15.01	T.M.	
	2689 (a)	β Piscis Austr....	49 42.0	39.5	46.8	32.0	37.5	23.7			326 49	37.11	T.M.	
	2689	Companion M.....	.....	.....	.....	.....	.....	.....	21.509	-54.69	326 49	7.22	T.M.	
	2741	Fomalhaut M.R....	37 44.4	65.8	26.2	81.0	26.0	63.5			142 36	55.99	T.M.	
	2741	Fomalhaut.....	31 17.3	20.5	24.8	14.7	18.0	03.0	20.384	-9.32	329 31	17.15	T.M.	
		γ Octantis.....	39 38.5	45.0	53.3	57.7	54.8	00.8			271 39	32.11	T.M.	
	2779	γ App. Sculp.....	35 19.5	21.9	26.8	13.7	20.0	03.0	19.123	+1.21	326 35	17.51	T.M.	
	2841	n Piscium M.R....	48 37.0	39.1	02.1	51.4	02.0	43.1			115 48	30.62	T.M.	
	2841	n Piscium.....	19 33.5	46.5	34.7	45.0	43.7	32.8	20.384	-9.32	356 19	39.87	T.M.	
	2870	r Piscium M.R....	3 48.7	55.1	17.7	70.0	14.9	58.0			119 03	34.98	T.M.	
	2870	r Piscium.....	4 33.0	42.8	33.5	40.0	37.9	30.2	353 04	36.80	T.M.			
	(b) δ N.L.....	46 11.4	28.9	18.0	22.2	27.5	13.0	21.524	-55.30	359 46	7.40	T.M.		
86	m Ceti M.....	58 39.0	57.0	44.5	51.5	54.4	39.5			357 57	52.72	T.M.		
103	ε Piscium M.R....	7 30.8	22.5	55.8	28.7	54.2	27.2	18.891	+50.90	105 08	7.53	T.M.		
103	ε Piscium.....	59 50.8	77.5	66.2	60.0	82.6	47.2			7 00	4.65	T.M.		
161	γ Phœnicis M.R....	17 43.6	45.8	38.5	51.1	29.6	47.8	21.523	-55.26	156 16	47.44	T.M.		
161	γ Phœnicis.....	51 30.1	31.4	34.8	16.6	23.6	07.0			315 51	24.35	T.M.		
699	α Columbæ.....	50 30.8	30.7	36.6	20.3	28.4	09.4	18.910	+50.14	325 50	26.07	T.M.		
734	α Orionis M.R....	45 54.9	47.7	19.5	54.0	18.5	52.8			104 46	31.54	T.M.		
734	α Orionis.....	21 22.9	57.0	40.0	39.0	59.0	23.7	7 21	40.33	T.M.				
⊙ 25 June		⊙ N.L. M.....	39 41.1	91.3	75.5	49.7	104.6	30.9	21.261	-44.69	23 39	21.15	T.M.	
		⊙ S.L.....	7 31.9	86.7	66.4	41.0	97.0	22.4			23 07	57.75	T.M.	
	838	Sirius M.R.....	38 54.0	61.0	21.2	78.6	15.3	65.0	21.174	-41.82	128 38	7.39	T.M.	
	838	Sirius .....	29 61.0	65.1	63.5	61.0	65.7	48.8			343 30	1.67	T.M.	
		δ N.L. M.R.....	44 21.0	17.4	46.9	23.7	46.8	19.8	19.090	-8.51 +42.88	105 44	44.06	T.M.	
	(c) δ N.L.....	23 22.0	45.2	36.0	31.0	49.8	19.6	-8.51			6 23	25.74	T.M.	
♃ 26 June		z Octantis M.R....	35 27.8	06.8	42.7	45.8	38.3	01.2	20.884	-29.48	199 34	47.65	T.M.	
		z Octantis.....	33 32.1	37.0	46.6	49.8	44.1	55.0			272 33	24.43	T.M.	
	1681	♄ N.L. M.....	17 47.1	54.6	50.0	51.5	55.2	43.5	22.674	-1 41.68	347 16	8.91	T.M.	
	α <sup>2</sup> Libræ.....	37 60.0	63.0	61.8	60.0	62.0	49.6	344 37			59.69	T.M.		

Molyneux fast, June 24<sup>th</sup>, 30<sup>th</sup>.

(a) Observed at the 4<sup>th</sup> Wire.

(b) Observed at the 5<sup>th</sup> Wire, 48° past the Meridian.

(c) Observed at 33° before Transit by reflexion, and the same distance past the Meridian, by direct vision.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	o	i	''	Inch.	o	o	o	i	''	r	i	''	o	i	''		
5.54	17	25	55.94	29.988	60.0	61.8	58.8						73	30	10.56	838	Sirius R.
	17	25	55.29					17.87					73	30	9.91	838	Sirius.
5.52	-0	13	40.85	30.274	58.0	59.4		0.23					55	50	15.67	699	α Columbæ.
	41	17	32.84	30.274	58.0	59.4	55.6	50.66					97	22	20.25	734	α Orionis R.
5.61	41	17	32.15										97	22	19.56	734	α Orionis.
	57	05	07.83	30.272	58.0	59.6	55.2	1 28.90	7.06		15 45.20		113	26	11.62		☉
5.61	57	36	33.48					1 30.67	7.10				113	26	08.60		☉
	17	25	56.65	.266	58.5	60.2	56.0	18.09					73	30	11.49	838	Sirius R.
5.21	17	25	56.14										73	30	10.98	838	Sirius.
	57	43	16.18	.260	59.0	60.8	56.2	1 30.82	4.26	20.370	4.38		113	48	35.11		♀
5.21	23	36	56.92	.281	58.7	56.8	54.2	25.37					79	41	19.04	1533	Spica R.
	23	36	55.62										79	41	17.74	1533	Spica.
6.27	-7	43	40.10	.285	58.6	57.3	54.2	7.87					48	20	8.78	1572	μ Centauri R.
	-7	43	39.28										48	20	9.60	1572	μ Centauri.
5.74	80	40	54.54	.290	58.5	57.2	54.0	5 39.30					136	50	30.59	1623	λ Bootis.
	86	20	15.88	.290	58.5	57.2										1639	θ Bootis.
5.74	72	54	26.91	.295	58.5	57.1		3 6.34					129	1	30.00	1646	γ Bootis.
	21	11	23.58	.295	58.5	57.1		22.49	0.33		7.91		77	15	34.58		η
5.74	18	33	53.84	.296	58.5	57.1		19.49					74	38	10.08	1681	α <sup>2</sup> Libræ.
	74	54	46.21	.298	58.5	57.0		3 31.83					131	2	14.79	1708	β Bootis.
5.74	-6	40	50.60	.298	58.5	57.1		6.80					49	22	59.35	1760	γ Lupi R.
	-6	40	50.85										49	22	59.10	1760	γ Lupi.
6.57	0	45	31.25	.236	57.5	56.2		0.78					56	49	28.78	2689	β Piscis Australis.
	0	45	01.36					0.76					56	48	58.87	2689	Companion.
6.57	3	27	09.87	.235	57.5	56.2		3.50					59	31	10.12	2741	Fomalhaut R.
	3	27	11.29										59	31	11.54	2741	Fomalhaut.
5.25	-54	24	33.75	.234	57.5	56.2		1 20.87					1	38	2.13		τ Octantis.
	0	31	11.65	.234	57.5	56.2		0.52					56	35	8.92	2779	γ App. Sculp.
5.89	30	15	35.24	.234	57.5	56.2		33.83					86	20	5.82	2841	π Piscium R.
	30	15	34.01										86	20	4.59	2841	π Piscium.
5.89	27	00	30.88	.234	57.5	56.2		29.56					83	4	57.19	2870	r Piscium R.
	27	00	30.94										83	4	57.25	2870	r Piscium.
6.09	33	42	01.54	.240	57.5	55.8		38.72	32 12.10		15 54.10		88	58	30.81		δ
	31	53	46.86	.240	57.0	55.6		36.14					87	58	19.75	86	m Ceti.
6.09	40	55	58.33	.240	57.0	55.2		50.37					97	0	45.45	103	ε Piscium R.
	40	55	58.79										97	0	45.91	103	ε Piscium.
5.90	-10	12	41.58	.240	57.0	55.2		10.47					45	51	4.70	161	γ Phœnicis R.
	-10	12	41.51										45	51	4.77	161	γ Phœnicis.
5.94	-0	13	39.79					0.23					55	50	16.73	699	α Columbæ.
	41	17	34.32	30.212	59.0	63.0	58.0	50.20					97	22	21.27	734	α Orionis R.
4.53	41	17	34.47										97	22	21.42	734	α Orionis.
	57	35	15.29	30.208	60.0	63.8	58.5	1 29.68	7.10		15 45.20		113	24	49.42		☉
4.90	57	03	51.89					1 27.90	7.06				113	24	54.68		☉
	17	25	58.47	.172	60.0	63.8	58.8	17.91					73	30	13.13	838	Sirius R.
6.04	17	25	55.81										73	30	10.47	838	Sirius.
	40	19	21.80	30.180	57.0	49.6	48.6	49.74	37 07.87		15 42.37		95	31	18.05		δ
6.04	40	19	19.88										95	31	16.13		δ
	-53	30	41.79	30.229	58.0	54.5	53.3	1 18.50					2	31	56.46		z Octantis R.
5.94	-53	30	41.43										2	31	56.82		z Octantis.
	21	12	03.05	30.229	58.0	54.8		22.55	0.33	23.064	7.87		77	16	14.15		η
4.53	18	33	53.83	30.229	58.0	54.8		19.53					74	38	10.11	1681	α <sup>2</sup> Libræ.

Coincidence of Micrometer Wire with fixed Wire, June 24<sup>th</sup>, =20<sup>r</sup>.153 One revolution =40<sup>r</sup>.335  
 Correction for Runs =+2<sup>r</sup>.90  
 Adopted Zenith Point =326°. 04'. 05<sup>r</sup>.86  
 Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			<i>l</i> <i>h</i>	<i>h</i> <i>m</i>	<i>m</i> <i>s</i>	<i>s</i> <i>s</i>	<i>s</i> <i>s</i>	<i>s</i> <i>s</i>				
D 26 June	1708	(a) β Bootis M.....	59 39.2	85.0	78.5	24.7	103.0	15.1	21.850	-1 08.45	40 58 48.66	T.M.
	1731	f Lupi M.R.....	41 40.0	56.3	17.3	71.3	14.0	55.2	21.176	-41.26	141 41 0.65	T.M.
	1731	f Lupi.....	27 13.8	14.4	17.0	06.8	12.1	58.2			330 27 11.20	T.M.
	1760	γ Lupi M.R.....	43 31.6	40.1	22.6	45.0	13.1	39.8	18.046	+1 24.99	152 44 57.09	T.M.
	1760	γ Lupi.....	23 23.0	17.2	27.2	05.8	15.8	59.0			319 23 15.24	T.M.
	1806	(b) A Scorpii M.R...	58 54.2	60.9	25.2	86.0	19.5	18.0	20.684	-21.42	136 58 22.39	T.M.
	1806	A Scorpii.....	9 41.8	43.7	45.0	41.8	44.0	30.8			335 9 42.15	T.M.
	1885	Antares M.R.....	12 34.0	44.2	45.0	64.5	44.0	50.5	20.660	-20.45	138 12 16.29	T.M.
	1885	Antares.....	55 60.0	61.1	63.9	59.2	60.5	47.5			333 55 59.33	T.M.
	1915	ε Scorpii.....	0 37.0	37.1	41.6	27.4	34.3	16.8			326 00 32.42	T.M.
		σ Octantis.....	45 54.5	52.3	68.8	08.1	65.3	13.6	17 08 10		270 45 43.84	T.M.
	2007	λ Scorpii M.R.....	6 34.0	47.6	20.2	58.0	16.7	46.4	19.958	+7.86	149 06 44.95	T.M.
	2007	λ Scorpii.....	1 31.0	29.0	38.8	18.4	29.0	09.0			323 01 26.23	T.M.
	2043	γ Telescopii M.R..	7 44.9	56.8	30.8	68.1	26.3	56.4	21.139	-39.77	149 07 7.50	T.M.
	2043	γ Telescopii.....	0 69.2	68.1	77.4	57.8	67.0	47.0			323 01 4.75	T.M.
	2071	γ Draconis.....	19 75.2	122.3	112.6	60.2	137.6	48.6			51 20 32.80	T.M.
	2110	ε Sagittarii.....	32 54.8	54.8	61.0	45.0	53.6	34.3			325 32 50.85	T.M.
	166	η Piscium M.R....	40 49.9	43.9	26.8	36.5	25.7	35.4	22.743	-1 44.47	97 38 52.26	T.M.
	166	η Piscium.....	28 58.4	97.9	84.9	70.7	108.0	56.7			14 29 19.55	T.M.
		Δ N.L. M.R.....	31 46.5	42.1	20.5	38.4	19.7	36.0	18.447	-11.19	99 32 31.89	T.M.
	(c) Δ N.L.....	35 30.0	54.8	50.0	35.2	67.1	25.1		+1 08.81	-11.19	12 35 32.33	T.M.
	734	α Orionis M.R....	45 92.8	83.8	58.2	90.9	56.7	90.0	19.864	+11.66	104 46 30.62	T.M.
	734	α Orionis.....	21 26.1	51.0	40.4	35.4	54.3	26.4			7 21 38.99	T.M.
δ 27 June		⊙ S.L. M.....	3 39.1	104.6	87.7	62.5	118.2	46.1	20.662	-20.57	23 03 56.04	T.M.
		⊙ N.L.....	34 59.0	113.0	93.2	71.1	123.2	52.0			23 35 25.64	T.M.
		♀ N.L.....	28 15.8	68.3	50.0	26.2	81.5	6.0			23 28 41.66	T.M.
	1575	η Ursæ Majoris...	59 23.2	68.0	59.7	06.0	84.2	57.0			49 59 40.12	T.M.
	1624	λ Virginis M.R....	46 37.0	47.2	06.3	60.7	04.2	46.7	21.502	-54.41	124 45 39.17	T.M.
	1624	λ Virginis.....	22 30.0	32.0	31.8	30.0	34.0	24.0			347 22 30.79	T.M.
		z Octantis.....	33 36.1	36.9	50.5	48.3	45.9	57.2			272 33 26.15	T.M.
	1646	γ Bootis.....	58 07.0	64.0	48.0	00.2	71.7	45.3			38 58 29.70	T.M.
		♃ N.L. M.....	18 43.5	50.9	46.1	47.9	51.0	39.8	23.682	-2 22.34	347 16 24.55	T.M.
	1681	α <sup>2</sup> Libræ M.R....	30 39.0	50.1	08.0	66.0	05.8	51.6	20.788	-25.60	127 30 10.88	T.M.
	1681	α <sup>2</sup> Libræ.....	37 59.4	63.1	61.4	59.8	61.8	49.4			344 37 59.77	T.M.
	1708	β Bootis.....	58 29.1	81.5	70.8	18.2	100.3	7.0			40 58 51.52	T.M.
	1836	β <sup>1</sup> Scorpii M.R....	29 37.4	44.5	06.4	64.9	00.8	52.0	19.964	+7.62	131 29 41.98	T.M.
	1836	β <sup>1</sup> Scorpii.....	38 29.6	29.0	32.7	26.9	30.8	18.0			340 38 28.57	T.M.
	1885	Antares M.R.....	12 45.9	57.1	20.3	76.3	14.9	61.1	20.971	-33.00	138 12 12.65	T.M.
	1885	Antares.....	55 59.8	62.4	62.5	58.7	60.2	46.0			333 55 58.90	T.M.
	1905	σ Herculis.....	42 17.8	71.7	62.2	07.6	87.9	55.0			42 42 40.63	T.M.
	1915	ε Scorpii.....	0 36.0	35.1	43.5	25.5	33.4	15.0			326 00 31.47	T.M.
		(d) σ Octantis.....	45 51.0	59.8	68.8	13.0	69.8	13.0			270 45 45.97	T.M.
		(e) Planetary Nebula..	6 56.0	57.0	63.0	48.0	54.5	35.3	18 01 13		326 06 52.48	T.M.
	(f) Δ N.L.....	6 48.0	94.0	77.4	59.2	104.5	42.4			18 07 11.13	T.M.	
ζ 28 June		σ Octantis M.R....	22 59.5	35.0	72.2	12.9	71.5	32.4	20.616	-18.69	201 22 28.83	T.M.
		σ Octantis.....	45 50.7	55.4	18.8	16.0	58.2	18.0	17 10 00		270 45 43.02	T.M.
	2043	γ Telescopii M.R..	7 49.1	69.9	53.5	74.0	42.4	58.2	21.390	-49.89	149 07 8.02	T.M.
2043	γ Telescopii.....	0 67.2	69.8	72.0	62.4	64.8	50.0			323 01 4.69	T.M.	
η 1 July		⊙ N.L. M.....	22 45.2	97.0	86.2	51.8	116.0	32.0	21.000	-34.16	23 22 37.32	T.M.
		⊙ S.L.....	50 47.5	101.4	87.0	54.2	118.5	34.0			22 51 13.83	T.M.
	1580	h Centauri.....	52 40.2	40.5	44.8	35.2	38.8	21.1			328 52 37.02	T.M.
1580	Companion M.....							20.552	-16.09	328 52 20.93	T.M.	

Molyneux fast, June 27<sup>th</sup>, 30<sup>th</sup>.

- (a) Bad observation. Observed an interval beyond the 5<sup>th</sup> Wire. Correction for Curvature of path -0'.93
- (b) The reading of Microscope D is uncertain. If 1<sup>st</sup>. is added, the horizontal point accords: it is left out.
- (c) Observed at the 1<sup>st</sup> and 5<sup>th</sup> Wires.
- (d) The Stars have become crabby. Early in the evening they were well defined.
- (e) A Planetary Nebula discovered lately by Sir JOHN HERSCHEL. It is very faint. The Mural Circle does not possess sufficient optical power for it.
- (f) Very indistinct. Seen through a cloud.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	o	'	"	Inch.	o	o	o	'	"	r	'	"	o	'	"			
5.93	74	54	42.80	30.229	58.0	54.5		3	32.38				131	2	11.93	1708	$\beta$ Bootis.	
	4	23	05.21	.229	58.0	54.5							60	27	6.42	1731	$f$ Lupi R.	
	4	23	05.34						4.46				60	27	6.55	1731	$f$ Lupi.	
6.17	-6	40	51.23	.229	58.0	54.2			6.82				49	22	58.70	1760	$\gamma$ Lupi R.	
	-6	40	50.62										49	22	59.31	1760	$\gamma$ Lupi.	
(2.27)	9	05	43.47	.229	58.0	54.0			9.32				65	9	49.54	1806	$A$ Scorpii R.	
	9	05	36.29										65	9	42.36	1806	$A$ Scorpii.	
7.81	7	51	49.57	.229	58.0	54.0	52.8		8.05				63	55	54.37	1885	Antares R.	
	7	51	53.47										63	55	58.27	1885	Antares.	
5.59	-0	03	33.44	.229	58.0	54.0			0.06				56	0	23.25	1915	$\epsilon$ Scorpii.	
	-55	18	22.02	.225	57.5	55.8		1	23.63				0	44	11.10		$\sigma$ Octantis.	
	-3	02	39.09	.225	57.5	55.5			3.09				53	1	14.57	2007	$\lambda$ Scorpii R.	
6.13	-3	02	39.63										53	1	14.03	2007	$\lambda$ Scorpii.	
	-3	03	01.64	.225	57.5	55.5			3.09				53	0	52.02	2043	$\gamma$ Telescopii R.	
5.91	-3	03	01.11										53	0	52.55	2043	$\gamma$ Telescopii.	
	85	16	26.94	.224	57.5	55.8	53.6		0.53							2071	$\gamma$ Draconis.	
	-0	31	15.01	.224	57.5	55.8							55	32	41.21	2110	$\epsilon$ Sagittarii.	
(2.11)	48	25	13.60	.155	57.0	46.2		1	6.40				104	30	16.75	166	$\eta$ Piscium R.	
	48	25	13.69										104	30	16.84	166	$\eta$ Piscium.	
4.81	46	31	33.97	.148	54.5	46.3							101	39	48.71		$\delta$ R.	
	46	31	26.47					1	02.13	41	12.29	15	31.85	101	39	41.21		$\delta$
4.81	41	17	35.24	30.155	58.5	60.0			50.40				97	22	22.39	734	$\alpha$ Orionis R.	
	41	17	33.13										97	22	20.28	734	$\alpha$ Orionis.	
4.98	56	59	50.18	30.147	59.2	60.9	58.0	1	28.00	7.05			113	20	52.97		$\odot$	
	57	31	19.78					1	29.78	7.08			113	20	54.11		$\odot$	
	57	24	35.80	.134	60.2	61.2	59.0	1	29.30	4.26	20.343	3.83	113	29	53.76		$\odot$	
5.33	83	55	34.26	.058	58.5	51.4		8	21.78				140	7	52.79	1575	$\eta$ Ursæ Majoris.	
	21	18	26.69	.057	58.5	50.4	50.0		22.74				77	22	46.18	1624	$\lambda$ Virginis R.	
	21	18	24.93										77	22	44.42	1624	$\lambda$ Virginis.	
5.28	-53	30	39.71	.056	58.5	50.6		1	18.64				2	31	58.40		$z$ Octantis	
	72	54	23.84	.053	58.5	50.8		3	7.15				129	1	27.74	1646	$\gamma$ Bootis.	
	21	12	18.69	.050	58.5	50.8			22.59	0.33	24.078	7.99	77	16	29.71		$b$	
5.78	18	33	54.98	.049	58.5	50.8			19.56				74	38	11.29	1681	$\alpha^2$ Libræ R.	
	18	33	53.91										74	38	10.22	1681	$\alpha^2$ Libræ.	
6.36	74	54	45.66	.040	58.5	50.2		3	32.92				131	2	15.33	1708	$\beta$ Bootis.	
	14	34	23.88	.037	58.0	50.4			15.15				70	38	35.78	1836	$\beta^1$ Scorpii R.	
5.93	14	34	22.71										70	38	34.61	1836	$\beta^1$ Scorpii.	
	7	51	53.21	.034	56.5	49.0	47.8		8.07				63	55	58.03	1885	Antares R.	
	7	51	53.04										63	55	57.86	1885	Antares.	
6.36	76	38	34.77	30.032	56.5	48.3		4	1.55				132	46	33.07	1905	$\sigma$ Herculis.	
	-0	03	34.39						0.06				56	0	22.30	1915	$\epsilon$ Scorpii.	
5.93	-55	18	19.89	30.032	56.5	47.0		1	24.54				0	44	12.32		$\sigma$ Octantis.	
	0	02	46.62						0.05				56	6	43.42		Planetary Nebula.	
6.36	52	03	05.27	29.955	56.5	49.8		1	14.48	44	18.18	15	21.53	107	08	36.79		$\delta$
	-55	18	22.97	29.900	58.0	50.8							0	44	10.25		$\sigma$ Octantis R.	
6.36	-55	18	22.84					1	23.53				0	44	10.38		$\sigma$ Octantis.	
	-3	03	02.16	29.896	58.0	50.6			3.09				53	0	51.50	2043	$\gamma$ Telescopii R.	
5.93	-3	03	01.17										53	0	52.49	2043	$\gamma$ Telescopii.	
	57	18	32.13	30.378	55.0	52.8	52.0	1	31.18	7.08			113	8	7.98		$\odot$	
5.93	56	47	08.64					1	29.38	7.04			113	8	12.73		$\odot$	
	2	48	31.83	30.449	55.5	46.5			2.92				58	52	31.50	1580	$\lambda$ Centauri.	
5.93	2	48	15.74										58	52	15.41	1580	Companion M.	

Coincidence of Micrometer Wire with fixed Wire, =20°.153 One revolution =40".335  
 Correction for Runs =+2".90  
 Adopted Zenith Point =326°. 04'. 05".86 to July 1<sup>st</sup> at noon. From July 1<sup>st</sup>, at noon, =326°. 04'. 05".19  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			t #	#	#	#	#	#					
1 July		z Octantis.....	33	34.0	41.2	44.1	59.8	42.0	03.3	14 16 01		272 33 27.73	T.M.
	1644	η Centauri M.R....	34	34.2	38.8	31.0	39.8	20.6	34.4	20.315	-6.53	153 34 26.77	T.M.
	1644	(a) η Centauri.....	33	43.4	49.4	46.0	39.2	38.2	26.6		+0.96	318 33 41.78	T.M.
		γ N.L.....	17	06.8	11.4	11.8	08.0	14.3	00.6			347 17 9.03	T.M.
	1774	40 Libræ M.R....	22	38.6	67.0	27.5	74.2	28.5	51.9	20.550	-16.01	141 22 31.61	T.M.
	1774	40 Libræ.....	45	42.0	43.0	47.0	36.2	42.2	27.3			330 45 40.28	T.M.
	807	Canopus M. R....	44	34.9	30.0	36.9	25.8	26.0	27.2	20.712	-22.55	164 44 7.65	T.M.
	807	(b) Canopus.....	24	09.0	15.3	08.5	01.8	03.3	48.4			307 24 5.22	T.M.
	838	Sirius M.R.....	38	36.2	50.5	06.2	67.4	03.0	50.0	20.875	-29.12	128 38 6.43	T.M.
	838	Sirius.....	29	61.4	66.0	64.2	61.5	66.1	50.0			343 30 2.35	T.M.
2 July		⊙ S. L. M.....	47	38.5	89.6	75.0	44.0	106.4	25.2	21.680	-1 01.59	22 47 1.61	T.M.
		⊙ N. L.....	17	58.8	110.8	96.4	65.9	126.8	47.9			23 18 24.71	T.M.
	1885	Antares M.R.....	12	41.5	60.2	18.0	77.2	17.0	58.8	20.994	-34.92	138 12 10.24	T.M.
	1885	Antares.....	55	57.5	60.2	63.0	57.0	60.2	44.6			333 55 57.73	T.M.
6 July		(c) ⊙ N. L.....	57	12.2	65.2	49.4	18.3	78.8	01.0			22 57 37.02	T.M.
		(d) ⊙ S. L.....	25	45.5	104.0	81.4	54.2	112.9	34.6			22 26 11.98	T.M.
7 July	1681	α <sup>2</sup> Libræ M.R....	30	40.8	55.2	09.4	71.8	08.6	55.4	28.892	-29.81	127 30 10.13	T.M.
	1681	α <sup>2</sup> Libræ.....	37	58.0	61.8	60.1	58.1	60.2	48.0			344 37 58.32	T.M.
	1711	γ <sup>1</sup> Libræ M.R....	45	59.0	75.0	27.0	89.0	27.4	73.0	20.482	-13.27	127 45 44.90	T.M.
	1711	γ <sup>1</sup> Libræ.....	22	22.8	25.1	25.2	23.2	26.6	13.0			344 22 23.20	T.M.
	1835	θ Lupi M.R.....	29	48.0	62.7	33.1	75.2	30.2	61.4	20.925	-31.14	148 29 20.88	T.M.
	1835	θ Lupi.....	38	50.2	54.2	57.8	41.7	51.1	30.2			323 38 48.10	T.M.
	1885	Antares M.R....	12	35.4	47.5	10.2	65.8	06.0	50.3	20.748	-24.00	138 12 11.58	T.M.
	1885	Antares.....	55	56.2	61.0	60.0	57.3	59.2	44.5			333 55 57.00	T.M.
	1905	σ Herculis.....	42	21.8	69.2	63.0	07.5	87.3	57.8			42 42 41.36	T.M.
	1915	ε Scorpïi.....	0	34.8	35.4	40.8	33.5	25.8	14.6			326 00 30.87	T.M.
		σ Octantis M.R....	22	32.7	08.0	45.8	46.3	42.3	04.3	19.881	+10.97	201 22 31.09	T.M.
		σ Octantis.....	45	46.5	49.0	62.7	03.7	60.2	06.4	17 09 30		270 45 38.14	T.M.
	2071	γ Draconis.....	19	66.1	111.5	102.0	51.3	126.0	39.4			51 20 23.21	T.M.
	2110	ε Sagittarii.....	32	51.0	52.1	58.5	43.0	50.6	31.4			325 32 48.04	T.M.
8 July		γ N.L. M.....	17	34.2	42.0	28.1	39.4	42.3	31.5	20.480	-13.19	347 17 23.31	T.M.
	1681	α <sup>2</sup> Libræ M.R....	30	43.0	53.8	13.6	68.7	10.8	55.0	20.945	-31.92	127 30 8.64	T.M.
	1681	α <sup>2</sup> Libræ.....	37	58.4	61.5	59.2	58.8	59.4	49.2			344 37 58.36	T.M.
	1768	Libræ M.R.....	43	46.8	61.1	22.5	78.0	18.1	63.6	20.240	-3.51	139 43 44.64	T.M.
	1768	Libræ.....	24	21.8	27.2	25.0	23.0	26.0	09.6			332 24 23.08	T.M.
	1800	b Scorpïi M.R....	22	55.0	65.3	30.0	82.8	23.2	68.9	19.435	+28.96	137 23 22.92	T.M.
	1800	b Scorpïi.....	44	43.4	49.1	49.2	45.0	46.8	32.2			334 44 45.25	T.M.
	1836	β <sup>1</sup> Scorpïi M.R....	29	43.1	56.3	15.6	73.7	12.8	58.3	20.240	-3.51	131 29 39.83	T.M.
	1836	β <sup>1</sup> Scorpïi.....	38	26.5	30.0	30.1	26.8	30.1	15.5			340 38 27.23	T.M.
		Companion M.....								19.867	+11.54	340 38 38.77	T.M.
9 July		(e) δ N. L.....	19	24.9	43.8	29.2	37.2	41.4	30.0			2 19 34.84	T.M.
	1465	γ Virginis.....	25	57.0	74.4	60.8	69.5	70.3	58.8			359 26 5.24	T.M.
	1488	ψ Virginis.....	20	18.0	26.0	18.0	23.2	23.7	15.0			351 20 20.68	T.M.
	1534	ζ Ursæ Majoris...	20	12.0	54.5	43.0	55.8	66.0	46.7			55 20 26.37	T.M.
		z Octantis M.R....	34	43.8	16.1	54.8	57.3	48.4	19.0	19.745	+16.46	199 34 46.79	T.M.
		(f) z Octantis.....	33	28.2	34.0	44.9	44.3	42.6	48.8		+0.08	272 33 20.87	T.M.
		γ N. L. M.....	17	35.8	48.0	40.0	44.8	47.6	33.4	20.674	-21.01	347 17 20.85	T.M.
	1681	α <sup>2</sup> Libræ M.R....	30	44.0	61.0	15.0	74.0	15.1	57.0	21.009	-34.53	127 30 9.56	T.M.
1681	α <sup>2</sup> Libræ.....	37	58.2	62.1	59.8	59.8	60.7	49.0			344 37 58.88	T.M.	

Molyneux fast, July 2<sup>nd</sup>, 31<sup>st</sup>.—8<sup>th</sup>, 28<sup>th</sup>.

- (a) Bisected at the 5<sup>th</sup> Wire. The Stars are crabby. Indifferent bisections.
- (b) Good observations. The Zenith Point appears to diminish.
- (c) Observed at the first Vertical Wire, by the fixed Horizontal Wire, the shutter was then closed, and the Microscopes read off. The shutter was again opened, and the Obser-

- vation repeated for the South Limb at the 5<sup>th</sup> Vertical Wire.
- (e) The Observatory is nearly insulated by water. Heavy rain, with hail and thunder, since Sunday.
- (f) The preceding Moon culminating Stars invisible from clouds and day-light.
- (g) 55<sup>th</sup> past the Meridian.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. ASC	NAME OF STAR or PLANET.
			Attach.	Out.	Wet. Bulb.							
#	o ' "	Inch.	o	o	o	' "	' "	r	' "	o ' "		
4.28	-53 30 37.46	30.450	55.5	45.2		1 20.54				2 31 58.75		z Octantis
	-7 30 21.58					7.87				48 33 27.30	1644	η Centauri R.
	-7 30 23.41									48 33 25.47	1644	η Centauri.
	21 13 3.84	.451	55.5	43.8		23.24	0.33	20.530	7.61	77 17 15.89		β
5.95	4 41 33.58	.456	55.5	45.0		4.90				60 45 35.23	1774	40 Libræ R.
	4 41 35.09									60 45 36.74	1774	40 Libræ.
6.44	-18 40 2.46	.377	55.0	54.3		19.77				37 23 34.52	807	Canopus R.
	-18 39 59.97									37 23 37.01	807	Canopus.
4.39	17 25 58.76	30.377	55.0	54.4		18.36				73 30 13.87	838	Sirius R.
	17 25 57.16									73 30 12.27	838	Sirius.
3.99	56 42 56.42	30.374	55.0	54.4	51.0	1 28.93	7.03		15 45.00	113 4 0.07		⊙
	57 14 19.52					1 30.71	7.07			113 3 54.91		⊙
	7 51 54.95	30.267	55.5	48.3	47.6	8.15				63 55 59.85	1885	Antares R.
	7 51 52.54									63 55 57.44	1885	Antares.
4.23	56 53 32.53	29.968	56.0	57.0	55.5	1 27.81	7.05		15 45.10	112 43 4.94		⊙
	56 22 7.49					1 26.09	7.00			112 43 8.43		⊙
4.05	18 33 54.36	30.097	55.0	53.1		19.51				74 38 10.62	1681	α <sup>2</sup> Libræ R.
	18 33 53.83									74 38 10.09	1681	α <sup>2</sup> Libræ.
4.05	18 18 19.59	.096	55.0	52.8		19.23				74 22 35.57	1711	ν <sup>1</sup> Libræ R.
	18 18 18.71									74 22 34.69	1711	ν <sup>1</sup> Libræ.
4.49	-2 25 16.39	.125	55.0	52.1		2.46				53 38 37.90	1835	θ Lupi R.
	-2 25 16.39									53 38 37.90	1835	θ Lupi.
4.29	7 51 52.91	.126	55.0	50.2	49.3	8.08				63 55 57.74	1885	Antares R.
	7 51 52.51									63 55 57.34	1885	Antares.
4.62	76 38 36.87	.126	55.0	50.2	49.3	4 1.43				132 46 35.05	1905	σ Herculis.
	-0 3 33.62	.126	55.0	50.2	49.3	0.06				56 0 23.07	1915	ε Scorpii.
	-55 18 26.60	.138	55.0	50.0		1 24.36				0 44 5.79		σ Octantis R.
	-55 18 26.35									0 44 6.04		σ Octantis.
3.50	85 16 18.72	30.164	54.5	50.0	48.0	0.53				55 32 39.77	2071	γ Draconis.
	-0 31 16.45										2110	ε Sagittarii.
3.86	21 13 18.82	30.357	55.0	52.0		22.81	0.33	20.847	7.40	77 17 30.65		β
	18 33 55.85	.357	55.0	52.0		19.72				74 38 12.32	1681	α <sup>2</sup> Libræ R.
	18 33 53.87									74 38 10.34	1681	α <sup>2</sup> Libræ.
4.09	6 20 19.85	.358	55.0	51.8		6.53				62 24 23.13	1768	Libræ R.
	6 20 18.59									62 24 21.87	1768	Libræ.
3.53	8 40 41.57	.363	55.0	51.6		8.97				64 44 47.29	1800	δ Scorpii R.
	8 40 40.76									64 44 46.48	1800	δ Scorpii.
3.83	14 34 24.66	30.364	55.0	51.8		15.28				70 38 36.69	1836	β <sup>1</sup> Scorpii R.
	14 34 22.74					15.28				70 38 34.77	1836	β <sup>1</sup> Scorpii.
	14 34 34.28									70 38 46.31		Companion.
3.83	36 15 30.35	30.424	55.6	56.0		42.81	32 19.92		14 58.34	91 32 51.65		δ
	33 22 00.75	.425	55.5	56.0		38.45				89 26 35.95	1465	γ Virginis.
	25 16 16.19	.428	55.5	55.0		27.62				81 20 40.56	1488	ψ Virginis.
	89 16 21.88	.418	55.5	54.2							1534	z Ursæ Majoris.
4.22	-53 30 42.30	.460	55.0	52.8		1 19.38				2 31 55.07		z Octantis R.
	-53 30 43.62									2 31 53.75		z Octantis.
4.22	21 13 16.36	.462	55.0	52.7		22.85	0.33	21.103	8.66	77 17 26.97		β
	18 33 54.93	30.465	55.0	52.5		19.77				74 38 11.45	1681	α <sup>2</sup> Libræ R.
	18 33 54.39									74 38 10.91	1681	α <sup>2</sup> Libræ.

Coincidence of Micrometer Wire with fixed Wire, =20°.153 One revolution =40°.335  
 Correction for Runs =+2°.9  
 Adopted Zenith Point =326°. 04'. 05".19 to July 6<sup>th</sup>. From July 6<sup>th</sup>, =326°. 04'. 04".49  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction to Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			<i>l</i> <i>h</i>	<i>m</i>	<i>s</i>	<i>h</i>	<i>m</i>	<i>s</i>						
☉ 9 July	1711	$\nu^1$ Libræ M.R....	45 46.1	63.6	16.8	75.2	17.2	58.0	20.153	-0.00	127 45 45.90	T.M.		
	1711	$\nu^1$ Libræ.....	22 22.0	24.6	24.0	23.2	25.0	12.3			344 22 22.40	T.M.		
	1768	Libræ M.R.....	42 51.1	71.8	29.5	86.0	27.3	68.4	18.921		+49.69	139 43 44.80	T.M.	
	1768	Libræ.....	24 22.3	27.0	26.0	22.9	26.1	09.8			332 24 23.33	T.M.		
	1797	$\chi$ Serpentis.....	52 24.5	29.0	32.8	19.3	25.8	06.8			326 52 23.26	T.M.		
	1872	$\sigma$ Scorpii M.R....	19 34.5	48.8	09.3	64.5	05.1	48.5	19.393		+30.65	137 20 5.69	T.M.	
	1872	$\sigma$ Scorpii.....	47 61.2	66.1	66.0	62.6	65.1	49.1			334 48 2.20	T.M.		
	1889	$\alpha$ Normæ.....	39 25.0	25.0	30.8	15.4	23.4	04.9			325 39 21.16	T.M.		
	1905	$\sigma$ Herculis.....	42 20.4	70.0	62.0	08.1	86.8	57.0			42 42 40.98	T.M.		
	1913	$\eta$ Herculis.....	10 43.8	96.8	85.1	35.0	113.4	21.5			39 11 6.04	T.M.		
		$\sigma$ Octantis M.R....	21 31.4	05.0	43.2	45.8	38.0	05.0			18.378 17 09 02	+1 11.59	201 22 29.77	T.M.
		$\sigma$ Octantis.....	45 45.2	52.0	62.8	05.7	63.0	06.0			17 10 20	+0.04	270 45 39.22	T.M.
	2007	(a) $\lambda$ Scorpii M.R....	6 43.2	60.0	29.0	70.7	27.2	55.4	20.210		-2.30	149 06 45.24	T.M.	
	2007	(b) $\lambda$ Scorpii.....	1 26.0	28.5	34.2	18.3	25.6	06.1			-0.82	323 01 24.08	T.M.	
	2043	$\gamma$ Telescopii M.R..	6 43.2	57.6	30.8	68.0	27.1	55.4	19.710		+17.87	149 07 4.85	T.M.	
	2043	$\gamma$ Telescopii.....	0 63.5	67.2	71.9	57.0	63.9	44.2				323 01 1.60	T.M.	
	2071	$\gamma$ Draconis.....	20 01.1	49.7	38.6	49.2	62.0	36.7				51 20 19.58	T.M.	
	254	(c) $\delta$ Hydri.....	36 74.5	75.8	85.3	47.8	75.1	45.5			+2.94	290 37 10.48	T.M.	
	611	Capella.....	43 65.0	111.8	105.8	53.0	128.0	41.7				45 44 24.45	T.M.	
	734	$\alpha$ Orionis M.R....	46 42.8	34.7	09.9	40.6	07.5	38.5	20.153		+0.12	104 46 29.40	T.M.	
734	$\alpha$ Orionis.....	21 23.8	50.1	36.0	37.8	50.0	26.3			7 21 37.36	T.M.			
	$\zeta$ 's center.....	16 23.0	77.0	55.0	36.5	87.0	15.2			22 16 49.12	T.M.			
807	Canopus M.R....	44 25.5	23.0	19.2	26.8	09.3	28.9	20.613	-18.43	164 44 3.75	T.M.			
807	Canopus.....	23 74.5	77.8	77.5	60.6	70.3	48.8			307 24 9.01	T.M.			
838	Sirius M.R.....	38 34.1	48.4	05.1	61.6	4.0	44.6	20.880	-29.20	128 38 3.77	T.M.			
838	Sirius.....	29 62.3	67.4	63.9	63.5	66.8	51.6			343 30 3.40	T.M.			
☽ 10 July		☉ S.L. M.....	57 50.2	99.0	82.5	62.8	109.7	43.4	18.990	+47.03	21 59 1.69	T.M.		
		☉ N.L.....	29 62.8	117.0	92.4	76.7	125.3	54.9			22 30 28.67	T.M.		
	2110	$\epsilon$ Sagittarii.....	32 50.4	54.8	56.5	43.9	52.0	31.5			325 32 48.45	T.M.		
	368	$\epsilon$ Eridani.....	18 60.8	59.0	66.3	41.6	54.3	36.1			316 18 53.39	T.M.		
	699	$\alpha$ Columbæ.....	50 31.3	34.0	36.7	25.0	31.2	11.0			325 50 28.24	T.M.		
	838	Sirius M.R.....	38 41.6	59.2	14.1	71.2	15.0	52.2	21.109	-38.44	128 38 3.80	T.M.		
	838	Sirius.....	29 64.5	66.8	62.6	63.5	67.0	52.1			343 30 3.57	T.M.		
	♁ 11 July		☉ N.L. M.....	22 52.0	103.1	82.1	62.8	112.2	44.8	20.930	-31.22	22 22 45.01	T.M.	
		☉ S.L.....	50 53.2	105.7	84.0	68.1	112.0	47.0			21 51 18.47	T.M.		
1533		Spica M.R.....	26 58.0	69.8	28.1	81.5	28.4	68.8	19.865	+11.74	122 27 7.49	T.M.		
1533		Spica.....	40 59.8	64.8	59.4	63.0	62.3	55.4			349 41 1.08	T.M.		
		☽ N.L.....	21 12.0	16.9	10.8	16.4	15.0	08.0			350 21 13.30	T.M.		
1615		$\kappa$ Virginis M.R....	39 28.5	40.0	00.5	51.0	00.3	38.0	20.311	-6.25	121 39 20.36	T.M.		
1615		$\kappa$ Virginis.....	28 48.0	51.0	46.2	50.1	50.7	43.7			350 28 48.83	T.M.		
1624		$\lambda$ Virginis.....	22 29.8	31.5	31.3	30.0	32.7	24.2			347 22 30.16	T.M.		
		$z$ Octantis.....	33 29.0	33.5	46.4	42.0	44.1	48.0			272 33 20.84	T.M.		
		$\iota$ N.L. M.....	17 35.0	42.1	38.0	40.0	42.3	32.0	20.984	-33.40	347 17 5.08	T.M.		
1681		$\alpha^2$ Libræ M.R....	30 56.9	74.4	30.0	84.8	31.6	66.3	21.320	-46.95	127 30 10.14	T.M.		
1681		$\alpha^2$ Libræ.....	37 59.0	63.4	60.3	60.1	61.0	49.5			344 37 59.50	T.M.		
1708		$\beta$ Bootis.....	58 30.5	81.0	70.0	20.8	98.0	09.2			40 58 51.95	T.M.		
1780		$\chi$ Libræ M.R....	25 35.0	48.3	08.5	63.3	07.6	47.0	20.433	-11.17	135 25 23.44	T.M.		
1780		$\chi$ Libræ.....	42 44.4	50.7	48.5	46.8	48.0	32.0			336 42 45.81	T.M.		
1797		$\chi$ Serpentis.....	52 24.4	29.2	32.7	19.4	26.7	07.5			326 52 23.55	T.M.		
1835		$\theta$ Lupi M.R.....	29 37.1	50.6	21.0	62.7	17.3	50.4	20.611	-18.35	148 29 21.74	T.M.		
1835		$\theta$ Lupi.....	38 50.5	54.2	57.0	42.5	50.0	31.2			323 38 48.14	T.M.		
1872		$\sigma$ Scorpii M.R....	19 44.6	62.0	20.9	75.0	19.7	58.0	19.680	+19.20	137 20 5.86	T.M.		
1872		(d) $\sigma$ Scorpii.....	47 62.2	68.0	67.0	64.3	66.7	50.5			334 48 3.93	T.M.		

Molyneux fast, July 9<sup>th</sup>, 27<sup>s</sup>.

(a) Hurried.

(b) Rather past the 5<sup>th</sup> Wire.

A small film of Cobweb projecting from the fixed Horizontal Spider Line, touches the Micrometer Line in passing, but

apparently without disturbing it. Several attempts to remove it have failed.

(c) Observed at the 5<sup>th</sup> Wire or 128<sup>s</sup>. past the Meridian. Could not be seen by Reflexion.

(d) The Companion appears to be North of the larger Star about 0<sup>s</sup>.5



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"			
4.15	18	18	18.59	30.465	55.0	51.8	19.50					74	22	34.84	1711	$\nu^1$ Libræ R.	
	18	18	17.91									74	22	34.16	1711	$\nu^1$ Libræ.	
4.07	6	20	19.69	.465	55.0	51.0	6.56					62	24	23.00	1768	Libræ R.	
	6	20	18.84									62	24	22.15	1768	Libræ.	
3.95	8	43	58.80	.465	55.0	50.6	9.08					56	52	16.35	1797	$\chi$ Serpentis.	
	8	43	57.71									64	48	4.63	1872	$\sigma$ Scorpii R.	
4.50	-0	24	43.33	.465	54.5	50.4	0.43	4	4.05			55	39	12.99	1889	$\alpha$ Normæ.	
	76	38	36.49									132	46	37.29	1905	$\sigma$ Herculis.	
4.66	73	7	1.55	.465	54.5	50.5	3	12.34				129	14	10.64	1913	$\eta$ Herculis.	
	-55	18	25.28									0	44	6.36		$\sigma$ Octantis R.	
3.23	-55	18	25.27	.466	54.5	51.0	1	25.11				0	44	6.37		$\sigma$ Octantis.	
	-3	2	40.75									53	1	12.86	2007	$\lambda$ Scorpii R.	
3.59	-3	2	40.41	.466	55.0	51.0	3.14					53	1	13.20	2007	$\lambda$ Scorpii.	
	-3	3	0.36									53	0	53.24	2043	$\gamma$ Telescopii R.	
6.38	-3	3	2.89	.466	55.0	51.0	3.15					53	0	50.71	2043	$\gamma$ Telescopii.	
	85	16	15.09												2071	$\gamma$ Draconis.	
3.38	-35	26	54.01	.442	53.0	43.4	42.63					20	36	20.11	254	$\delta$ Hydri.	
	79	40	19.96									135	49	28.33	611	Capella.	
3.59	41	17	35.09	.452	55.0	56.6	51.24					97	22	23.08	734	$\alpha$ Orionis R.	
	41	17	32.87									97	22	20.86	734	$\alpha$ Orionis.	
3.59	56	12	44.63	.450	55.5	57.5	1	26.87	6.88			112	18	1.37		$\delta$	
	-18	39	59.26									37	23	37.90	807	Canopus R.	
3.59	-18	39	55.48	.446	55.5	60.0	19.59					37	23	41.68	807	Canopus.	
	17	26	0.72									73	30	15.68	838	Sirius R.	
3.59	17	25	58.91	30.443	55.5	60.0	18.21					73	30	13.87	838	Sirius.	
	55	54	57.20									112	15	57.41		$\odot$	
3.69	56	26	24.18	30.418	57.0	61.0	1	25.23	6.97		15	45.20	112	15	55.66		$\odot$
	-0	31	16.04										1	26.94			
3.69	-9	45	11.10	.360	55.2	48.0	0.54						55	32	40.17	2110	$\epsilon$ Sagittarii.
	-0	13	36.25										46	18	35.39	368	$e$ Eridani.
3.69	17	26	0.69	30.378	58.2	56.5	18.23						55	50	20.26	699	$\alpha$ Columbæ.
	17	25	59.08										73	30	15.67	838	Sirius R.
4.29	56	18	40.52	30.364	57.0	63.2	1	26.00	7.00		15	45.30	73	30	14.06	838	Sirius.
	55	47	13.98										112	8	10.97		$\odot$
4.29	23	36	57.00	.356	56.8	54.0	25.57						112	8	13.40		$\odot$
	23	36	56.59										79	41	19.32	1533	Spica R.
4.60	24	17	8.81	.356	56.5	53.6	26.41	22	59.94		15	21.37	79	41	18.91	1533	Spica.
	24	24	44.13										79	43	10.66		$\delta$
4.82	24	24	44.34	.370	56.2	54.0	26.56						90	29	7.44	1615	$\epsilon$ Virginis.
	21	18	25.67										80	29	7.65	1615	$\epsilon$ Virginis.
4.82	-53	30	43.65	.374	56.2	54.0	22.82				8.09		77	22	45.24	1624	$\lambda$ Virginis.
	21	13	0.59										2	31	54.05		$z$ Octantis
4.82	18	33	54.35	.377	56.2	53.0	1	19.05	0.32	21.385			77	17	11.70		$\eta$
	18	33	55.01										74	38	10.79	1681	$\alpha^2$ Libræ R.
4.63	74	54	47.46	.377	56.0	53.2	3	34.01					74	38	11.45	1681	$\alpha^2$ Libræ.
	10	38	41.05										131	2	18.22	1708	$\beta$ Bootis.
4.94	10	38	41.32	.373	55.5	52.8	11.03						66	42	48.83	1780	$\chi$ Libræ R.
	0	48	19.06										66	42	49.10	1780	$\chi$ Libræ.
4.94	-2	25	17.25	.372	55.5	53.4	0.82						56	52	16.63	1797	$\chi$ Serpentis.
	-2	25	16.35										53	38	37.02	1835	$\theta$ Lupi R.
4.90	8	43	58.63	30.372	55.5	54.4	8.99						53	38	37.92	1835	$\theta$ Lupi.
	8	43	59.44										64	48	4.37	1872	$\sigma$ Scorpii R.
													64	48	5.18	1872	$\sigma$ Scorpii.

Coincidence of Micrometer Wire with fixed Wire, =20°.153 July 10th, =20°.156 One revolution =40°.335  
 Correction for Runs =+2°.90  
 Adopted Zenith Point =326°. 04'. 04".49  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.					
			A	B	C	D	E	F									
			1	2	3	4	5	6									
♂ 11 July	1889	$\alpha$ Normæ .....	39	23.8	29.1	30.6	18.3	24.0	04.2	17 08 50	+1 04.17	325	39	22.08	T.M.		
	1915	$\epsilon$ Scorpii .....	0	33.6	36.3	40.6	26.1	34.1	13.0			326	00	30.67	T.M.		
		$\sigma$ Octantis .....	45	45.8	50.8	64.0	02.5	64.8	03.7			270	45	38.66	T.M.		
	699	$\alpha$ Columbæ .....	50	33.0	34.8	39.0	26.1	32.0	12.2			325	50	29.57	T.M.		
	734	$\alpha$ Orionis M.R. ....	45	39.0	09.0	31.5	07.5	33.8	31.5			104	46	29.72	T.M.		
	734	$\alpha$ Orionis .....	21	29.0	49.3	37.3	40.3	48.0	32.0			7	21	39.28	T.M.		
	807	Canopus M. R. ....	44	42.0	42.4	35.1	46.0	27.2	46.2			21.061	-36.50	164	44	3.40	T.M.
	807	Canopus .....	23	72.0	79.0	78.7	59.8	73.0	47.1			20.998	-33.96	307	24	9.02	T.M.
	838	Sirius M.R. ....	38	35.5	56.5	12.9	64.1	14.2	43.2			128	38	3.78	T.M.		
	838	Sirius .....	29	63.0	69.5	64.8	65.6	68.4	53.4			343	30	4.94	T.M.		
	♄ 12 July		☉ S.L. M. ....	43	59.8	111.8	88.8	77.0	117.6			58.0	22.008	-1 14.70	21	43	10.96
		☉ N.L. ....	14	11.0	65.0	39.3	28.9	70.7	08.3			22	14	37.66	T.M.		
		$\varphi$ 's center .....	24	50.5	96.0	78.8	66.9	102.8	51.0			20	25	14.81	T.M.		
1573		$g$ Centauri .....	21	48.8	53.4	57.6	43.0	50.2	30.2			326	21	47.37	T.M.		
1624		(a) $\lambda$ Virginis M.R. ....	45	47.0	59.0	20.4	68.5	19.3	54.0	20.362	-8.31	124	45	36.46	T.M.		
1624		$\lambda$ Virginis .....	22	30.1	32.6	30.2	31.5	33.5	25.0			347	22	30.95	T.M.		
		$\mu$ N. L. ....	37	42.5	47.1	43.0	44.8	43.5	33.4			344	37	42.64	T.M.		
		$\nu$ S. L. M. ....	16	35.5	38.1	36.5	36.5	38.8	31.0	19.760	+15.97	347	16	36.23	T.M.		
1681		$\alpha^2$ Libræ .....	37	58.1	63.1	59.1	60.2	61.0	49.5			344	37	58.79	T.M.		
1705		20 Libræ M.R. ....	46	50.1	65.8	28.5	78.9	26.4	61.5	20.500	-13.87	136	46	37.67	T.M.		
1705		20 Libræ .....	21	29.6	36.6	36.0	31.5	35.4	17.2			335	21	31.71	T.M.		
1768		Libræ M.R. ....	43	35.2	53.5	13.8	65.5	12.8	48.8	19.971	+7.46	139	43	45.51	T.M.		
1768		Libræ .....	24	24.0	28.0	27.9	22.0	28.1	09.8			332	24	24.28	T.M.		
1797		$\chi$ Serpentis .....	52	23.4	31.8	31.0	20.0	27.5	05.8			326	52	23.48	T.M.		
1835		(b) $\theta$ Lupi M. ....	29	18.4	30.0	02.3	43.1	58.0	31.5	20.156	-0.00	148	29	20.76	T.M.		
1835		$\theta$ Lupi .....	38	47.0	56.7	53.9	43.0	51.1	28.3			323	38	47.23	T.M.		
1876		$\tau$ Herculis .....	36	34.0	85.0	72.0	21.3	100.0	09.8			46	36	53.86	T.M.		
1905		$\sigma$ Herculis .....	42	27.8	78.1	67.8	17.0	93.2	05.4			42	42	48.49	T.M.		
1913		$\eta$ Herculis .....	10	49.0	102.9	89.6	41.4	118.3	28.4			39	11	11.72	T.M.		
		$\sigma$ Octantis .....	45	47.0	48.8	65.4	01.3	63.7	04.0	17 08 25		270	45	38.43	T.M.		
2007		$\lambda$ Scorpii M.R. ....	6	36.8	48.3	22.0	60.8	17.1	50.0	19.982	+7.02	149	06	46.13	T.M.		
2007		(c) $\lambda$ Scorpii .....	1	24.6	28.0	32.7	17.9	25.7	04.3		+0.82	323	01	23.15	T.M.		
2016		(c) $\beta$ Draconis .....	12	76.0	121.0	107.4	63.8	133.2	52.0		-1.44	52	13	31.13	T.M.		
219	$\alpha$ Hydri M.R. ....	29	45.0	36.8	43.4	36.2	35.0	43.2	21.262	-44.61	174	28	55.23	T.M.			
219	$\alpha$ Hydri .....	39	23.5	27.7	31.9	02.2	23.7	55.8			297	39	18.39	T.M.			
	$z$ Octantis SP. ....	29	65.0	64.2	80.4	16.4	80.6	21.0	2 16 54		267	29	54.60	T.M.			
699	$\alpha$ Columbæ .....	50	30.1	34.0	37.4	23.0	31.4	09.2			325	50	27.56	T.M.			
734	$\alpha$ Orionis M.R. ....	46	36.2	30.2	08.2	32.8	07.4	29.9	20.055	+4.07	104	46	28.46	T.M.			
734	$\alpha$ Orionis .....	21	27.1	49.4	36.5	41.3	35.0	31.2			7	21	39.28	T.M.			
	(d) $\varphi$ 's center M.R. ....	16	30.5	28.8	21.2	05.7	22.8	05.0	19.834	+12.99	89	16	32.28	T.M.			
	$\varphi$ 's center .....	51	10.0	61.0	39.6	25.5	70.1	06.9			22	51	34.89	T.M.			
838	Sirius M.R. ....	38	44.0	57.8	19.0	68.1	16.8	52.0	21.137	-39.57	128	38	3.40	T.M.			
838	Sirius .....	29	61.0	70.0	64.0	64.9	69.2	51.5			343	30	4.25	T.M.			
♃ 13 July		(e) ☉ N.L. M.R. ....	2	35.8	38.8	26.2	13.7	31.7	11.5	20.898	-29.93	90	01	56.85	T.M.		
		☉ N.L. ....	5	44.0	97.3	69.8	61.3	103.1	41.6			22	06	9.66	T.M.		
		(f) $\varphi$ 's center M.R. ....	0	40.8	39.8	28.9	19.8	31.8	17.0	20.810	-26.38	92	00	4.34	T.M.		
		$\varphi$ 's center .....	7	42.1	88.5	69.0	58.0	92.8	41.9			20	08	5.85	T.M.		
	182	Achernar SP. ....	20	38.0	19.0	39.4	46.6	40.2	02.1			238	20	20.91	T.M.		
		$z$ Oct. M.R. SP. ....	35	26.2	55.3	35.0	40.7	36.5	02.2	20.645	-19.72	199	34	51.26	T.M.		
		$z$ Octantis SP. ....	33	30.8	31.4	48.8	39.0	46.6	47.0			272	33	20.92	T.M.		
		$\nu$ N. L. M. ....	16	43.0	53.3	47.0	49.4	54.2	40.3	20.291	-5.44	347	16	42.60	T.M.		
	1681	$\alpha^2$ Libræ M.R. ....	30	43.0	56.0	10.1	71.8	10.4	58.2	20.945	-30.61	127	30	10.70	T.M.		
	1681	$\alpha^2$ Libræ .....	37	58.3	66.8	60.0	61.3	64.8	50.0			344	38	0.82	T.M.		

Molyneux fast, July 12<sup>th</sup>, 25<sup>th</sup>.—13<sup>th</sup>, 25<sup>th</sup>.

(a) Observed on the Meridian.

(b) Found bisected by the fixed Wire.

(c) Observed at the 5<sup>th</sup> Wire.

(d)  $\varphi$  Observed at the 1<sup>st</sup> and 5<sup>th</sup> Wires. Correction for motion -0<sup>h</sup>.31, for Curvature 0<sup>h</sup>.47. Touched the

Telescope by accident, read the Microscopes a second time.

(e) Limbs flocculent.

(f) Observed at the 1<sup>st</sup> and 5<sup>th</sup> Wires. Correction for motion +0<sup>h</sup>.58, for Curvature 0<sup>h</sup>.41



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.		Parallax.		Microm. for opposite Limb.	Semi- diameter.		Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.												
#	o	'	"	Inch.	o	o	o	'	"	'	"	r	'	"	o	'	"		
	-0	24	42.41												55	39	13.92	1889	$\alpha$ Normæ.
	-0	3	33.82												56	0	22.87	1915	$\epsilon$ Scorpii.
	-55	18	25.83	30.478	55.5	52.0	49.0	1	24.97						0	44	5.95		$\sigma$ Octantis.
	-0	13	34.92						0.23						55	50	21.60	699	$\alpha$ Columbæ.
4.50	41	17	34.77	.356	56.0	59.8			50.77						97	22	22.29	734	$\alpha$ Orionis R.
	41	17	34.79												97	22	22.31	734	$\alpha$ Orionis.
6.21	-18	39	58.91	.354	56.0	62.3	57.5		19.45						37	23	38.39	807	Canopus R.
	-18	39	55.47												37	23	41.83	807	Canopus.
4.36	17	26	0.71	30.350	56.4	63.5	59.0		18.03						73	30	15.49	838	Sirius R.
	17	26	0.45												73	30	15.23	838	Sirius.
	55	39	5.94	30.332	57.0	66.8	58.5	1	23.24	6.95			15	45.30	112	0	4.28		$\odot$
	56	10	32.64					1	24.89	6.99					112	0	1.99		$\odot$
	54	21	9.79	.313	58.0	68.4	61.0	1	19.04	4.21					110	26	21.37		$\ominus$
	0	17	42.35						0.29						56	21	39.39	1573	$\eta$ Centauri.
3.71	21	18	28.56	.292	57.0	59.8			22.51						77	22	47.82	1624	$\lambda$ Virginis R.
	21	18	25.93												77	22	45.19	1624	$\lambda$ Virginis.
	18	33	37.62	.292	57.0	58.7			19.42						74	4	14.95		$\delta$
	21	12	31.21	.292	57.0	58.5		18	2.63			15	36.21	77	16	58.08			$\iota$
	18	33	53.77	.292	57.0	58.0			19.45	0.32	19.760		7.99	74	38	9.97	1681	$\alpha^2$ Libræ.	
4.69	9	17	27.35	.292	57.0	57.6			9.48						65	21	33.58	1705	20 Libræ R.
	9	17	26.69												65	21	32.92	1705	20 Libræ.
	6	20	19.51	.292	57.0	56.8			6.45						62	24	22.71	1768	Libræ R.
	6	20	19.26												62	24	22.46	1768	Libræ.
	0	48	18.46	.292	57.0	56.4			0.82						56	52	16.03	1797	$\chi$ Serpentis.
4.90	-2	25	15.74	.292	56.5	55.5	51.0		2.46						53	38	38.55	1835	$\theta$ Lupi R.
	-2	25	17.79												53	38	36.50	1835	$\theta$ Lupi.
	80	32	48.84	.288	56.5	55.4		5	35.99						136	42	21.58	1876	$\tau$ Herculis.
	76	38	43.47	.289	56.5	55.3		4	0.28						132	46	40.50	1905	$\sigma$ Herculis.
4.00	73	7	6.70	.289	56.5	55.3		3	9.43						129	14	12.88	1913	$\eta$ Herculis.
	-55	18	26.59	.289	56.3	54.0		1	24.11						0	44	6.05		$\sigma$ Octantis.
4.64	-3	2	41.11	.289	56.3	53.0			3.11						53	1	12.53	2007	$\lambda$ Scorpii R.
	-3	2	41.87												53	1	11.77	2007	$\lambda$ Scorpii.
	86	9	26.11	.290	56.3	51.5												2016	$\beta$ Draconis.
6.81	-28	24	50.21	.275	55.4	46.7			32.01						27	38	34.53	219	$\alpha$ Hydri R.
	-28	24	46.63												27	38	38.11	219	$\alpha$ Hydri.
	-58	34	10.42	.277	53.5	45.8		1	36.74						-2	31	50.41		$z$ Octantis SP.
	-0	13	37.46						0.23						55	50	19.06	699	$\alpha$ Columbæ.
3.87	41	17	36.56	.289	56.0	62.0	56.8		50.44						97	22	23.75	734	$\alpha$ Orionis R.
	41	17	34.26												97	22	21.45	734	$\alpha$ Orionis.
3.59	56	47	32.74	.291	58.0	63.5	58.5	1	27.30	6.37					112	52	50.42		$\xi$ R.
	56	47	29.87												112	52	47.55		$\xi$ R.
3.83	17	26	1.62	30.288	58.0	67.0	59.4		17.87						73	30	16.24	838	Sirius R.
	17	25	59.23												73	30	13.85	838	Sirius.
3.26	56	2	8.17	30.282	58.5	68.8	60.8	1	23.97	6.98			15	45.40	111	51	36.51		$\odot$ R.
	56	2	4.64												111	51	32.98		$\odot$
5.10	54	4	0.68	.258	59.0	70.0	62.2	1	17.83	4.20					110	9	11.06		$\ominus$ R.
	54	4	0.83												110	9	11.21		$\ominus$
	-87	43	44.11	.268	58.5	60.0	56.3											182	Achernar SP.
6.09	-53	30	46.24	.251	58.5	59.0	55.0	1	17.87						-2	31	52.64		$z$ Octantis R.
	-53	30	44.10												-2	31	54.78		$z$ Octantis.
	21	12	37.58	.251	58.0	58.0			22.44	0.32	20.682		7.89	77	16	48.56			$\iota$
5.76	18	33	54.32	30.251	58.0	57.0			19.46						74	38	10.53	1681	$\alpha^2$ Libræ R.
	18	33	55.80												74	38	12.01	1681	$\alpha^2$ Libræ.

Coincidence of Micrometer Wire with fixed Wire, =20'.156 One revolution =40".335  
 Correction for Runs =+2".90  
 Adopted Zenith Point to July 12<sup>th</sup> at noon, =326°. 04'. 04".49 From July 12<sup>th</sup>, =326°. 04'. 05".02  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			<i>l</i> <i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>					
13 July	1705	20 Libræ M.R....	46 32.5	46.9	04.4	65.0	03.1	49.0	20.042	+4.60	136 46 37.72	T.M.	
	1705	20 Libræ.....	21 32.0	35.4	36.9	31.0	35.2	19.1			335 21 32.26	T.M.	
		δ N. L.....	29 57.0	58.8	61.2	54.5	60.6	45.4			339 29 56.71	T.M.	
	1818	π Scorpii M.R....	46 46.5	60.5	18.1	77.2	15.9	62.1	20.225	-2.78	137 46 43.58	T.M.	
	1818	π Scorpii.....	21 27.1	29.0	30.0	26.9	30.2	14.5			334 21 26.95	T.M.	
	1836	β <sup>1</sup> Scorpii.....	38 29.2	29.9	32.5	26.5	32.4	17.3			340 38 28.30	T.M.	
	1836	Companion M....							19.852	+12.26	340 38 40.56	T.M.	
	1905	σ Herculis.....	42 29.3	78.9	72.4	15.0	97.6	04.0			42 42 49.80	T.M.	
	1913	η Herculis.....	10 51.8	106.3	93.5	43.2	124.2	29.0			39 11 14.79	T.M.	
	1947	ε Scorpii.....	6 50.1	49.4	54.0	40.5	47.3	30.8			326 06 45.52	T.M.	
		σ Octantis M.R..	22 50.6	30.6	65.0	07.2	65.5	23.5	20.271	-4.64	201 22 36.01	T.M.	
		σ Octantis.....	45 42.0	45.0	54.5	01.6	55.2	04.5			270 45 33.85	T.M.	
	2007	λ Scorpii M.R....	6 48.6	61.2	36.0	71.0	33.1	59.7	20.255	-3.99	149 06 47.57	T.M.	
	2007	λ Scorpii.....	1 27.2	25.6	35.0	16.0	25.5	06.5			323 01 22.98	T.M.	
	2043	γ Telescopii M.R..	7 43.0	56.4	31.2	64.7	28.0	54.0	21.121	-38.92	149 07 7.34	T.M.	
	2043	γ Telescopii.....	0 67.1	67.0	74.1	57.0	66.8	46.2			323 01 3.35	T.M.	
	2071	γ Draconis.....	20 27.2	74.8	63.2	12.4	89.1	00.3			51 20 44.57	T.M.	
	2110	ε Sagittarii.....	32 52.2	53.1	57.5	43.8	51.7	33.1			325 32 48.84	T.M.	
		z Oct. SP. M.R....	38 29.5	09.7	44.6	47.0	42.4	03.1	20.090	+2.66	204 38 22.36	T.M.	
		(a) z Octantis SP....	29 54.8	52.8	62.3	09.2	65.4	14.6			.05	267 29 43.58	T.M.
	611	Capella.....	43 72.7	124.2	115.8	62.0	139.7	48.0			45 44 34.16	T.M.	
	699	(b) α Columbæ.....	50 35.0	32.8	37.5	25.2	30.0	14.0		+0.30	325 50 29.42	T.M.	
	807	Canopus M. R....	44 37.8	29.7	37.6	27.9	25.5	32.0	20.876	-29.04	164 44 2.78	T.M.	
	807	Canopus.....	23 74.8	79.0	75.5	64.2	68.2	53.0			307 24 9.87	T.M.	
	γ's center.....	59 31.1	80.6	65.0	38.3	93.5	21.2			22 59 55.41	T.M.		
838	Sirius M.R.....	38 40.6	48.5	07.6	67.8	04.3	53.8	20.990	-33.64	128 38 3.47	T.M.		
838	Sirius.....	29 63.8	67.8	65.2	63.8	68.3	53.0			343 30 4.47	T.M.		
14 July		(c) ☉ N.L. M.....	57 51.0	100.0	87.0	59.5	115.3	40.0	21.589	-57.80	21 57 17.71	T.M.	
		☉ S. L.....	25 25.1	77.0	60.8	36.0	90.2	17.0			21 25 51.14	T.M.	
		δ N.L.....	24 65.2	68.5	68.5	64.2	67.5	52.6			335 25 4.90	T.M.	
	2079	γ <sup>2</sup> Sagittarii M.R.	33 34.0	47.7	11.5	65.0	09.2	51.0	20.595	-17.71	142 33 18.39	T.M.	
	2079	γ <sup>2</sup> Sagittarii.....	34 52.5	53.1	57.5	48.5	52.5	38.0			329 34 51.46	T.M.	
	2101	β Telescopii M.R..	56 50.0	65.5	41.0	71.6	36.2	60.2	21.090	-37.67	148 56 16.38	T.M.	
	2101	β Telescopii.....	11 58.0	58.1	64.0	47.8	56.4	37.0			323 11 53.94	T.M.	
	2110	ε Sagittarii.....	32 53.6	53.2	59.4	44.5	52.0	33.9			325 32 49.70	T.M.	
	15 July	1835	θ Lupi M.R.....	29 48.8	62.8	35.8	72.8	34.6	60.0	20.909	-30.37	148 29 22.35	T.M.
		1835	θ Lupi.....	38 51.6	53.5	57.2	42.8	50.2	32.1			323 38 48.47	T.M.
1900		τ Scorpii M.R....	0 35.0	56.1	12.4	70.7	10.8	52.5	20.218	-2.50	140 00 36.56	T.M.	
1900		τ Scorpii.....	7 33.7	36.2	37.4	31.5	36.0	20.4			332 07 33.35	T.M.	
1919		μ <sup>1</sup> Scorpii M.R....	53 41.0	54.6	31.4	62.2	28.5	49.5	20.066	+3.63	149 53 48.29	T.M.	
1919		μ <sup>1</sup> Scorpii.....	14 26.7	24.0	33.2	13.9	24.1	05.0			322 14 21.79	T.M.	
1921		μ <sup>2</sup> Scorpii M....							17.628	+1 41.97	322 16 3.76	T.M.	
1967		A <sup>1</sup> Ophiuchi M.R.	29 31.6	46.1	05.0	63.8	02.8	47.8	19.874	+11.37	138 29 44.10	T.M.	
1967		A <sup>2</sup> Ophiuchi M.R.							19.975	+7.30	138 29 40.58	T.M.	
1967		A <sup>1</sup> Ophiuchi.....	38 04.0	30.7	31.6	26.0	29.5	12.8			333 38 23.30	T.M.	
		σ Octantis.....	45 42.0	45.8	55.0	03.5	54.5	05.0	17 14 10	+0.64	270 45 34.99	T.M.	
		δ N. L.....	55 27.0	28.3	29.2	25.1	26.9	10.0			332 55 24.46	T.M.	
2079		γ <sup>2</sup> Sagittarii M.R.	33 32.0	53.8	14.0	66.2	15.2	48.6	20.634	+19.28	142 33 18.72	T.M.	
2079		γ <sup>2</sup> Sagittarii.....	34 50.8	57.5	57.0	51.0	53.3	36.9			329 34 52.19	T.M.	
2110		ε Sagittarii.....	32 53.0	53.2	57.4	44.8	51.0	33.5			325 32 49.09	T.M.	
734		(d) α Orionis M.R....	45 40.4	39.2	07.6	43.2	08.0	39.1	18.663	-1 00.22	104 46 29.98	T.M.	
734		α Orionis.....	21 25.4	50.2	38.5	35.2	53.6	25.2			7 21 37.93	T.M.	
807	(e) Canopus M. R....	44 45.0	37.5	43.0	34.9	32.1	39.5	21.056	-36.30	164 44 2.45	T.M.		
807	Canopus.....	24 13.6	19.6	14.8	03.8	08.6	52.8			307 24 9.62	T.M.		

Molyneux fast, July 14<sup>th</sup>, 26<sup>th</sup>.—15<sup>th</sup>, 24<sup>th</sup>.

- (a) Faint from day light. Bisection uncertain. 50°. past the Meridian.
- (b) 40°. past the Meridian.
- (c) Woolly and tremulous.
- (d) Observed at the 5<sup>th</sup> Wire, faint.
- (e) Unsteady, flickering.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"		
4.99	9	17	27.30	30.251	58.0	57.0		9.48				65	21	33.53	1705	20 Libræ R.	
	9	17	27.24									65	21	33.47	1705	20 Libræ.	
	13	25	51.69	.250	58.0	56.0		13.87	13	20.48	15	52.23	69	0	49.60	1818	♃
5.27	8	17	21.44	.248	58.0	55.4		8.47				64	21	26.66	1818	π Scorpii R.	
	8	17	21.93									64	21	27.15	1818	π Scorpii.	
	14	34	23.28	.247	58.0	56.0		15.09				70	38	35.12	1836	β <sup>1</sup> Scorpii.	
4.93	14	34	35.54					15.10				70	38	47.39	1836	Companion M.	
	76	38	44.78	.247	58.0	59.8		3 57.79				132	46	39.32	1905	σ Herculis.	
	73	7	9.77	.247	58.0	59.8		3 7.49				129	14	14.01	1913	η Herculis.	
5.35	0	2	40.50	.247	58.0	60.0		0.05				56	6	37.30	1947	κ Scorpii.	
	-55	18	30.99	.247	58.0	61.0	55.6	1 22.85				0	44	2.91		σ Octantis R.	
	-55	18	31.17									0	44	2.73		σ Octantis.	
5.28	-3	2	42.55	.247	58.0	60.8	55.0	3.06				53	1	11.14	2007	λ Scorpii R.	
	-3	2	42.04									53	1	11.65	2007	λ Scorpii.	
	-3	3	2.32	.247	58.0	60.0	55.0	3.07				53	0	51.36	2043	γ Telescopii R.	
6.33	-3	3	1.67									53	0	52.01	2043	γ Telescopii.	
	85	16	39.55	.247	58.0	60.0		0.53							2071	γ Draconis.	
	-0	31	16.18									55	32	40.04	2110	ε Sagittarii.	
(2.97)	-58	34	17.34	.207	57.5	61.2	54.5	1 33.64				-2	31	54.23		z Octantis SP.	
	-58	34	21.44									-2	31	58.33		z Octantis SP.	
	79	40	29.14	.215	58.0	64.0	58.4	5 2.90				135	49	28.79	611	Capella.	
3.97	-0	13	35.60	.213	58.2	65.5		0.23				55	50	20.92	699	α Columbae.	
	-18	39	57.76	.207	59.0	67.0	62.0	19.17				37	23	39.82	807	Canopus R.	
	-18	39	55.15									37	23	42.43	807	Canopus.	
6.33	56	55	50.39	.207	59.0	67.0	62.0	1 26.94	6.26			113	1	7.82		γ	
	17	26	1.55	30.204	59.0	68.0	62.0	17.79				73	30	16.09	838	Sirius R.	
	17	25	59.45									73	30	13.99	838	Sirius.	
4.93	55	53	12.47	30.168	60.0	69.5	62.3	1 23.08	6.97			111	42	39.93		☉	
	55	21	45.90					1 21.47	6.92			111	42	42.60		☉	
	9	20	59.66	.162	59.0	61.8		9.43	9	26.14	16	7.92	64	59	31.78		♃
5.16	3	30	46.85	.160	59.0	59.2	55.0	3.53				59	34	47.13	2079	γ <sup>2</sup> Sagittarii R.	
	3	30	46.22									59	34	46.50	2079	γ <sup>2</sup> Sagittarii.	
	-2	52	11.14	.162	59.0	59.2	55.0	2.88				53	11	42.73	2101	β Telescopii R.	
5.41	-2	52	11.30									53	11	42.57	2101	β Telescopii.	
	-0	31	15.54	30.162	59.0	59.2		0.53				55	32	40.68	2110	ε Sagittarii.	
	-2	25	17.11	30.331	59.2	57.3		2.46				53	38	37.18	1835	θ Lupi R.	
4.96	-2	25	16.77									53	38	37.52	1835	θ Lupi.	
	6	3	28.68	.331	59.2	57.4		6.16				62	7	31.59	1900	τ Scorpii R.	
	6	3	28.11									62	7	31.02	1900	τ Scorpii.	
5.04	-3	49	43.05	.331	59.2	57.4		3.89				52	14	9.81	1919	μ <sup>1</sup> Scorpii R.	
	-3	49	43.45									52	14	9.41	1919	μ <sup>1</sup> Scorpii.	
	-3	48	1.48					3.86				52	15	51.41	1921	μ <sup>2</sup> Scorpii.	
3.70	7	34	21.14	.332	59.4	58.0		7.71				63	38	25.60	1967	A <sup>1</sup> Ophiuchi R.	
	7	34	24.66									63	38	29.12	1967	A <sup>2</sup> Ophiuchi.	
	7	34	18.06					7.71				63	38	22.52	1967	A <sup>1</sup> Ophiuchi.	
5.46	-55	18	30.25	.334	59.2	58.0		1 23.57				0	44	2.93		σ Octantis.	
	6	51	19.22	.337	59.2	58.0		6.97	6	59.01	16	22.72	62	32	1.21		♃
	3	30	46.52	.337	59.2	58.0		3.56				59	34	46.83	2079	γ <sup>2</sup> Sagittarii R.	
3.96	3	30	46.95									59	34	47.26	2079	γ <sup>2</sup> Sagittarii.	
	-0	31	16.15					0.53				55	32	40.07	2110	ε Sagittarii.	
	41	17	35.26	.401	59.5	60.2		50.78				97	22	22.79	734	α Orionis R.	
6.04	41	17	32.69									97	22	20.22	734	α Orionis.	
	-18	39	57.21	30.400	60.0	60.8		19.52				37	23	40.02	807	Canopus R.	
	-18	39	55.62									37	23	41.61	807	Canopus.	

Coincidence of Micrometer Wire with fixed Wire, =20°.156 One revolution =40°.335  
 Correction for Runs =+2°.90  
 Adopted Zenith Point to July 14<sup>th</sup>, at Noon, =326°. 04'. 05".02 From July 14<sup>th</sup>, =326°. 04'. 05".24  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.				
			A	B	C	D	E	F								
			′ ″	′ ″	′ ″	′ ″	′ ″	′ ″								
15 July	838	Sirius M.R. ....	38 37.0	50.5	05.4	65.8	03.2	50.9	20.933	-31.34	128 38 4.14	T.M.				
	838	(a) Sirius .....	29 64.2	67.7	66.0	62.9	69.0	52.9					343 30 4.60	T.M.		
		(a) $\delta$ 's center .....	9 63.7	118.4	102.5	72.1	133.0	53.8							23 10 30.63	T.M.
16 July		(a) $\odot$ S. L. M. ....	6 49.4	104.4	86.8	62.0	117.3	42.5	20.668	-20.65	21 06 56.36	T.M.				
		$\odot$ N. L. ....	37 54.8	110.5	90.5	68.3	121.2	46.5					21 38 22.35	T.M.		
		$\delta$ 's center .....	28 33.2	55.0	41.8	43.0	54.6	32.7							2 28 43.74	T.M.
	2079	(b) $\gamma^2$ Sagittarii M.R.	33 20.0	35.9	59.0	51.0	58.6	36.2	20.218	-2.50	142 33 21.27	T.M.				
	2079	$\gamma^2$ Sagittarii .....	34 51.0	53.0	56.0	49.0	50.8	37.0					329 34 50.68	T.M.		
	2110	$\epsilon$ Sagittarii .....	32 51.2	52.2	56.5	43.9	49.6	33.8							325 32 48.14	T.M.
		(c) * .....	20 13.8	17.0	16.0	13.5	16.0	01.8	18 36 18		332 20 13.04	T.M.				
		$\delta$ S. L. ....	56 21.5	25.2	26.7	20.3	25.1	09.2					331 56 21.46	T.M.		
	2208	$\tau$ Sagittarii M.R. . .	2 28.6	47.0	05.0	61.0	02.4	45.2							20.532	-15.17
	2208	$\tau$ Sagittarii .....	5 53.8	57.2	57.7	52.9	56.7	41.5	332 05 53.97	T.M.						
	2290	$h^2$ Sagittarii M.R. .	22 44.0	56.2	16.9	73.4	13.3	59.0			20.660	-20.33	137 22 23.21	T.M.		
	2290	$h^2$ Sagittarii .....	45 46.0	50.0	51.0	46.3	49.0	34.4	334 45 46.71	T.M.						
	807	Canopus M.R. ....	43 41.0	38.2	42.7	34.8	32.0	36.8							19.539	+24.89
	807	Canopus .....	24 13.2	19.7	14.6	5.0	10.0	52.9	307 24 9.99	T.M.						
	838	Sirius M.R. ....	37 43.1	54.4	11.0	70.7	07.8	55.6			19.602	+24.35	128 38 4.69	T.M.		
838	Sirius .....	29 65.6	69.0	68.0	64.6	69.8	53.9	343 30 5.97	T.M.							
	(d) $\delta$ 's center M.R. . .	56 43.7	35.0	26.8	14.6	27.6	18.9			21.303					-46.26	88 55 42.02
	$\delta$ 's center .....	12 02.2	53.2	39.1	09.0	67.8	52.2	23 12 26.91	T.M.							
17 July		(h) $\odot$ N. L. M.R. ....	40 44.0	37.5	28.2	20.4	28.0			22.6	21.342	-47.84	90 39 42.62	T.M.		
		$\odot$ S. L. R. ....	11 20.2	18.5	05.8	03.5	01.2	04.2	91 11 9.83	T.M.						
		$\varphi$ 's center M.R. . .	16 54.9	47.0	30.7	33.0	33.6	34.0							23.545	-2 16.69
		(e) $\varphi$ S. L. ....	53 21.5	67.0	55.0	29.2	80.4	13.6	18 53 45.06	T.M.						
		$\eta$ N. L. ....	15 29.4	35.0	32.0	32.0	37.1	24.2			347 29 32.05	T.M.				
	1919	$\mu^1$ Scorpii M.R. . .	53 44.0	55.4	33.0	64.2	27.8	52.8	20.102	+2.18			149 53 48.51	T.M.		
	1919	$\mu^1$ Scorpii .....	14 25.2	24.2	31.3	14.1	22.3	04.1			322 14 20.84	T.M.				
	1921	$\mu^2$ Scorpii M. ....													17.598	+1 43.18
	1960	$\eta$ Scorpii M.R. ....	9 34.6	46.0	28.1	51.0	24.7	44.0	21.100	-34.04	155 09 4.19	T.M.				
	1960	$\eta$ Scorpii .....	59 10.1	12.7	14.5	01.2	07.1	50.0					316 59 6.60	T.M.		
		$\sigma$ Octantis .....	45 43.0	49.0	56.8	04.5	57.9	05.6							17 08 22	
	2016	$\beta$ Draconis .....	13 22.0	65.5	55.8	05.3	81.0	54.8	52 13 37.75	T.M.						
	2208	(f) $\tau$ Sagittarii M.R. . .	2	49.5	09.6	63.7	06.0				20.578	-17.02	140 2 19.25	T.M.		
	2208	$\tau$ Sagittarii .....	5 53.8	57.0	57.8	52.4	56.0	40.8	332 05 53.64	T.M.						
	2290	$h^2$ Sagittarii M.R. .	22 35.8	47.2	09.4	63.8	04.5	49.4							20.424	-10.81
2290	$h^2$ Sagittarii .....	45 46.8	50.0	52.4	46.5	49.3	34.5	334 45 47.17	T.M.							
	(g) $\delta$ S. L. ....	48 30.0	31.5	32.8	27.5	28.7	13.8			20.318	-2.97	338 48 24.90	T.M.			
2403	$\pi$ Capricorni M.R. . .	52 50.8	60.2	21.0	78.4	18.0	65.0	130 52 42.26	T.M.							
2403	$\pi$ Capricorni .....	15 28.2	30.8	33.7	27.6	31.8	17.2							341 15 28.64	T.M.	
2445	$\psi$ Capricorni M.R. . .	59 36.0	45.3	08.0	65.9	04.0	51.3	20.770	-24.76	137 59 10.21	T.M.					
2445	$\psi$ Capricorni .....	8 60.5	61.6	64.0	59.0	60.8	46.8					334 08 59.70	T.M.			
18 July	1678	Librae M.R. ....	24 50.0	64.0	25.1	81.2	22.0							65.5	19.912	+9.84
	1678	Librae .....	43 10.6	12.0	12.1	07.8	10.4	53.2	332 43 8.64	T.M.						
		$\delta$ 's center M.R. . .	59 41.2	29.8	24.1	11.0	24.4	15.4			20.372	-8.71	88 59 16.64	T.M.		
	$\delta$ 's center .....	8 27.0	77.8	62.5	34.6	91.0	18.0	+0.15	23 08 51.86	T.M.						
19 July		(h) $\odot$ S. L. M. ....	36 46.4	95.6	81.0	58.4	107.0				41.0	20.536	-15.33	20 35 56.35	T.M.	
		$\odot$ N. L. ....	6 57.8	108.0	91.2	69.1	119.7	53.0	21 07 23.43	T.M.						
		$\varphi$ 's center M.R. . .	56 34.2	25.1	13.8	12.4	12.0	13.8			22.632					-1 39.87
		(i) $\varphi$ S. L. ....	12 65.0	107.3	92.4	74.6	119.4	59.0	18 13 26.90	T.M.						
		z Octantis M.R. . .	34 47.5	22.2	59.2	2.8	55.0	22.2				19.782	+15.09	199 34 50.35	T.M.	
		z Octantis .....	33 31.4	34.0	45.3	46.5	42.2	52.4	.20		272 33 22.29					T.M.

Molyneux fast, July 16<sup>th</sup>, 26<sup>s</sup>.—17<sup>th</sup>, 26<sup>s</sup>.

- (a) Unsteady and flickering.
- (b) Observed on the Meridian by reflexion, and beyond the 5<sup>th</sup> Wire direct.
- (c) An occultation was observed this evening, and this appears to be the Star.
- (d) Observed at 40° from the Meridian. Correction for Motion and Curvature of path, +0°.37 and -0°.39. Beautiful definition.
- (e) Correction for Motion in Declination +0°.66
- (f) Microscopes A and F overlooked. Only C and D employed in the reduction.
- (g) Observed 25° past the Meridian. (h) Observed on the Meridian.
- (i) Correction for Motion in Declination 0°.67



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet. Bulb.											
#	o	'	"	Inch.	o	o	o	'	"	r	'	"	o	'	"			
4.37	17	26	1.10	30.398	60.0	60.8		18.15					73	30	16.00	838	Sirius	R.
	17	25	59.36										73	30	14.26	838	Sirius.	
	57	6	25.39	30.397	60.0	60.8		1 29.11	6.05				113	11	45.20		♄	
5.98	55	2	51.12	30.354	70.5	61.6	60.0	1 22.17	6.90		15	45.00	111	23	48.64		☉	
	55	34	17.11					1 23.79	6.94				111	23	45.21		☉	
	36	24	38.50	.358	60.5	59.4		42.66	2.80				92	29	15.11		♁	
	3	30	43.97	.370	59.0	54.0		3.59					59	34	44.31	2079	γ <sup>2</sup> Sagittarii	R.
	3	30	45.44					0.53					59	34	45.78	2079	γ <sup>2</sup> Sagittarii.	
5.00	-0	31	17.10	.370	59.0	54.0		6.43					55	32	39.12	2110	ε Sagittarii.	
	6	16	7.80	.370	56.8	54.0		6.02	6	1.51	16	33.85	62	20	10.98		*	
	5	52	16.22	.368	58.6	53.8		6.19					62	6	51.33	2208	♃	
4.96	6	1	48.73					8.95					62	5	52.16	2208	τ Sagittarii	R.
	8	41	42.03	.365	58.6	53.8							62	5	51.67	2208	τ Sagittarii.	
6.23	18	39	57.22	.340	59.0	60.2	58.0	19.51					64	45	47.73	2290	h <sup>2</sup> Sagittarii	R.
	18	39	55.25										64	45	47.17	2290	h <sup>2</sup> Sagittarii.	
5.33	17	26	0.55	.340	59.5	60.8		18.11					37	23	40.02	807	Canopus	R.
	17	26	0.73										37	23	41.99	807	Canopus.	
4.47	57	8	23.22	30.340	60.0	61.4	58.0	1 28.95	5.96				73	30	15.41	838	Sirius	R.
	57	8	21.67										73	30	15.59	838	Sirius.	
4.68	55	24	22.88	30.330	60.4	61.0	57.5	1 23.37	6.93		15	45.60	111	13	50.47		☉	R.
	54	52	55.67					1 21.77	6.88				111	13	52.91		☉	R.
	52	49	42.10	.312	61.0	59.5	57.0	1 16.04	4.17	19.932	4.52		108	54	50.72		♀	R.
	52	49	39.56					22.82	0.32	20.523	7.40		108	54	52.70		♀	
	21	25	26.55	.292	59.0	55.8		3.91					77	29	38.40		♁	
	-3	49	43.10	.288	59.0	53.5		3.88					52	14	9.74	1919	μ <sup>1</sup> Scorpii	R.
	-3	49	44.66					9.35					52	14	8.18	1919	μ <sup>1</sup> Scorpii.	
5.40	-9	4	58.69	.289	59.0	53.0		9.35					52	15	51.39	1921	μ <sup>2</sup> Scorpii.	
	-9	4	58.90					1 24.26					46	58	48.71	1960	η Scorpii	R.
(6.45)	-55	18	29.31	.289	59.0	53.0		1 24.26					46	58	48.50	1960	η Scorpii.	
	86	9	32.25	.289	58.5	52.8		6.23					0	44	3.18	2016	σ Octantis.	
	6	1	46.25	.280	57.5	48.8							62	5	49.23	2208	τ Sagittarii	R.
5.56	6	1	48.14										62	5	51.12	2208	τ Sagittarii.	
	8	41	41.56	.268	57.0	47.3		9.04					64	45	47.35	2290	h <sup>2</sup> Sagittarii	R.
	8	41	41.67					8.05	8	2.52	16	40.16	64	45	47.46	2290	h <sup>2</sup> Sagittarii.	
5.45	7	44	19.40	.267	56.6	46.0		16.10					63	57	1.84		♃	
	15	11	23.24	.260	56.0	45.4							71	15	36.09	2403	π Capricorni	R.
4.96	15	11	23.14										71	15	35.99	2403	π Capricorni.	
	8	4	55.29	30.256	55.0	44.8	45.4	8.43					64	9	0.47	2445	ψ Capricorni	R.
4.84	8	4	54.20										64	8	59.38	2445	ψ Capricorni.	
	6	39	4.46	30.207	59.0	50.6		6.84					62	43	8.05	1678	Libræ	R.
4.25	6	39	3.14										62	43	6.73	1678	Libræ.	
	57	4	48.86	30.283	59.0	56.4	55.0	1 29.44	5.78				113	10	9.27		♄	R.
6.32	57	4	46.36										113	10	6.77		♄	
	54	31	50.85	30.277	59.6	58.6	57.0	1 20.96	6.86		15	45.80	110	52	47.50		☉	
	55	3	17.93					1 22.54	6.90				110	52	44.52		☉	
	52	9	25.64	.261	60.0	59.6		1 14.09	4.15	19.928	4.60		108	14	32.33		♀	R.
	52	9	21.40										108	14	32.69		♀	
	-53	30	44.85	30.269	55.5	53.5		1 18.78					2	31	53.12		z Octantis	R.
	-53	30	43.21										2	31	54.76		z Octantis.	

Coincidence of Micrometer Wire with fixed Wire, =20°.156 One revolution =40°.335  
 Correction for Runs =+2°.90  
 Adopted Zenith Point to July 17<sup>th</sup>, at Noon, =326°. 04'. 05".24 From July 17<sup>th</sup>, =326°. 04'. 05".50  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.						
			A		B		C						D		E		F	
			1	2	3	4	5	6					7	8	9	10	11	12
♄ 19 July	1721	ε Libræ.....M.R.	18	42.2	52.8	12.4	70.0	7.0	56.2	20.088	+2.74	131	18	42.79	T.M.			
	1721	ε Libræ.....	49	27.0	28.9	30.0	25.3	29.4	16.2			340	49	26.95	T.M.			
	1768	Libræ.....M.R.	43	38.2	53.8	13.7	69.2	10.6	54.8	19.990	+6.70	139	43	46.53	T.M.			
	1768	Libræ.....	24	24.4	27.2	26.8	23.2	26.7	11.8			332	24	24.34	T.M.			
	1816	ρ Scorpii....M.R.	52	32.2	48.5	13.0	63.6	05.4	47.8	20.580	-17.10	140	52	17.63	T.M.			
	1816	ρ Scorpii.....	15	55.6	58.0	58.4	50.2	56.5	41.0			331	15	53.97	T.M.			
	1876	τ Herculis.....	36	35.0	89.8	75.4	22.6	105.5	09.3			46	36	56.45	T.M.			
	1905	σ Herculis.....	42	25.7	80.0	69.4	95.6	16.6	30.0			42	42	53.16	T.M.			
	1913	(a) η Herculis.....	10	47.8	105.2	90.0	42.0	121.2	27.0			39	11	11.43	T.M.			
	182	Achernar....M.R.	12	33.5	32.0	35.0	27.4	28.6	31.5	22.203	-1 22.57	170	11	8.57	T.M.			
	182	Achernar.....	56	68.0	77.6	73.0	67.5	58.3	47.2			301	57	5.90	T.M.			
	699	α Columbæ.....	50	35.0	37.8	40.8	28.8	34.0	15.0			325	50	31.95	T.M.			
	734	α Orionis....M.R.	46	34.0	25.6	59.0	32.0	57.3	30.0	19.920	+9.52	104	46	29.46	T.M.			
	734	α Orionis.....	21	28.4	51.1	39.8	39.8	52.0	29.5			7	21	40.14	T.M.			
	807	Canopus....M.R.	44	41.8	41.0	38.0	40.5	29.2	41.2	21.070	-36.87	164	44	1.83	T.M.			
	807	Canopus.....	24	15.0	22.0	16.6	05.4	12.0	52.6			307	24	11.36	T.M.			
	838	Sirius.....M.R.	37	39.9	51.0	09.8	66.4	06.1	51.0	19.528	+25.33	128	38	2.61	T.M.			
	838	Sirius.....	29	66.8	68.7	67.9	65.0	68.8	55.0			343	30	6.17	T.M.			
			(b) ζ's center...M.R.	5	55.0	47.4	40.0	26.9	39.2	29.2	21.220	-42.98	89	04	57.43	T.M.		
			ζ's center.....	2	47.8	91.3	82.2	49.2	108.9	35.8			23	03	9.27	T.M.		
♃ 20 July		⊙ N.L....M...	56	32.8	84.5	68.7	45.2	96.5	27.0	21.052	-36.14	20	56	22.86	T.M.			
		⊙ S.L.....	24	26.5	77.0	60.0	41.0	85.0	22.0			20	24	52.47	T.M.			
	27	β Hydri SP.....	12	33.3	33.8	40.4	49.8	45.5	54.8			258	12	23.15	T.M.			
		z Octantis.....	33	28.0	33.0	39.6	47.7	39.2	52.9	14 15 50		272	33	20.39	T.M.			
	1689	(c) β Lupi.....M.R.	36		48.6	35.0	51.6	29.5	....	20.390	-9.44	154	36	33.76	T.M.			
	1689	β Lupi.....	31	41.9	46.4	46.0	34.0	37.3	23.2			317	31	38.56	T.M.			
	1768	Libræ.....M.R.	43	38.0	56.2	15.0	70.5	12.5	54.1	20.032	+5.00	139	43	45.85	T.M.			
	1768	Libræ.....	24	25.0	26.0	26.3	21.7	25.9	12.0			332	24	23.81	T.M.			
	1800	b Scorpii....M.R.	22	41.1	56.2	16.6	72.2	12.9	56.0	19.091	+42.96	137	23	25.20	T.M.			
	1800	b Scorpii.....	44	46.0	49.5	51.2	45.0	49.2	33.4			334	44	46.69	T.M.			
	1835	θ Lupi.....M.R.	29	14.5	29.0	01.5	37.2	00.4	23.8	20.037	+4.80	148	29	22.73	T.M.			
	1835	θ Lupi.....	38	49.4	49.2	54.6	39.4	45.3	39.4			323	38	46.79	T.M.			
	1872	σ Scorpii....M.R.	19	36.9	49.4	09.0	66.3	05.9	51.3	19.421	+29.68	137	20	6.04	T.M.			
	1872	σ Scorpii.....	47	64.4	66.2	68.4	62.6	67.0	52.0			334	48	4.24	T.M.			
	1889	α Normæ.....	39	26.0	27.0	30.1	18.0	24.2	07.0			325	39	22.46	T.M.			
	1919	μ <sup>1</sup> Scorpii...M.R.	53	31.6	46.0	22.4	52.9	18.0	40.1	19.832	+13.07	149	53	48.36	T.M.			
	1919	μ <sup>2</sup> Scorpii.....	14	22.0	25.0	29.5	14.4	22.4	03.5			322	14	20.11	T.M.			
	1921	μ <sup>2</sup> Scorpii....M...								17.620	+1 42.29	322	16	2.40	T.M.			
	1960	η Scorpii....M.R.	9	37.0	42.6	32.0	46.8	24.8	43.0	20.982	-33.32	155	09	4.54	T.M.			
	1960	η Scorpii.....	58	69.8	74.8	74.7	62.7	67.8	50.8			316	59	7.44	T.M.			
			σ Octantis.....	45	45.9	46.0	57.5	04.2	55.4	07.5	17 08 05		270	45	36.14	T.M.		
			C Octantis.....	14	44.0	46.1	53.2	01.0	51.8	07.3	21 58 20		273	14	34.33	T.M.		
	2688	σ Aquarii....M.R.	39	40.0	50.3	06.5	64.2	08.8	50.2	21.296	-45.98	123	38	50.90	T.M.			
	2688	σ Aquarii.....	29	15.0	19.0	15.4	17.8	18.0	09.1			348	29	16.35	T.M.			
			(d) Georgian....M.R.	28	36.5	50.0	07.1	61.0	08.2	47.0	19.762	+15.89	121	28	51.21	T.M.		
			(e) Georgian.....	39	16.5	22.3	18.3	19.1	21.9	12.1			350	39	19.31	T.M.		
			(f) D N.L....M.R.	39	18.2	32.0	47.8	45.6	50.5	31.0	20.754	-24.12	121	39	7.52	T.M.		
			(g) D N.L.....	29	18.0	25.2	19.5	23.6	24.9	13.8			350	29	8.82	T.M.		
2841	n Piscium....M.R.	48	49.0	60.1	18.0	70.0	21.2	57.3	20.584	-17.36	115	48	28.85	T.M.				
2841	(h) n Piscium.....	19	35.6	49.0	37.6	45.1	47.5	32.5			356	19	41.75	T.M.				
♀ 21 July	1889	α Normæ.....	39	27.1	24.6	28.8	17.1	20.6	07.5			325	39	21.36	T.M.			
	1905	σ Herculis.....	42	29.8	78.0	75.0	12.0	98.8	01.0			42	42	49.37	T.M.			
	1915	ε Scorpii.....	0	34.2	34.0	38.1	25.9	30.7	15.0			326	00	29.70	T.M.			

Molyneux fast, July 20<sup>th</sup>, 20<sup>a</sup>.

- (a) Observed at the 5<sup>th</sup> Wire.
- (b) Correction for Motion in Declination 0'.25
- (c) Overlooked Microscopes A and F. The Mean of C and D taken.
- (d) Observed on the Meridian.
- (e) Observed 76'. past Meridian. Correction for Motion in Declination, +0'.03, and for Curvature of Path, +0'.50

- (f) Observed at the 2<sup>nd</sup> Wire. Correction for Motion in Declination, -6'.30, for Curvature of Path, -0'.09 The Quicksilver disturbed by wind, bad Observation.
- (g) Observed at the 5<sup>th</sup> Wire. Correction for Motion in Declination, -12'.61, for Curvature of Path, +0'.19
- (h) A film of thin cloud overspreads the sky, the Stars are seen steady.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR OR PLANET.		
					Attach.	Out.	Wet Bulb.											
#	°	'	"	Inch.	°	°	°	'	"	r	'	"	°	'	"			
4.87	14	45	22.71	30.272	59.0	52.4		15.41					70	49	34.87	1721	ε Libræ	R.
	14	45	21.45										70	49	33.61	1721	ε Libræ.	
5.44	6	20	18.97	.275	58.8	52.8		6.50					62	24	22.22	1768	Libræ	R.
	6	20	18.84										62	24	22.09	1768	Libræ.	
5.80	5	11	47.87	.276	58.5	53.0		5.32					61	15	49.94	1816	ρ Scorpii	R.
	5	11	48.47										61	15	50.54	1816	ρ Scorpii.	
7.23	80	32	50.95	.281	58.3	54.0		5 36.81					136	42	24.51	1876	τ Herculis.	
	76	38	47.66	.282	58.2	55.0		4 0.35					132	46	44.76	1905	σ Herculis.	
	73	7	5.93	.282	58.0	55.0		3 9.46					129	14	12.14	1913	η Herculis.	
	-24	7	3.07	.251	58.0	55.5							31	56	27.67	182	Archernar	R.
4.80	-24	6	59.60					26.01					31	56	31.14	182	Archernar.	
	-0	13	33.55					0.23					55	50	22.97	699	α Columbæ.	
6.60	41	17	36.04	.269	58.0	59.1	56.2	50.68					97	22	23.47	734	α Orionis	R.
	41	17	34.64										97	22	22.07	734	α Orionis.	
4.39	-18	39	56.33	.267	59.0	60.2	56.8	19.46					37	23	40.96	807	Canopus	R.
	-18	39	54.14										37	23	43.15	807	Canopus.	
3.35	17	26	2.89	.266	59.0	61.0	58.5	18.06					73	30	17.70	838	Sirius	R.
	17	26	0.67										73	30	15.48	838	Sirius.	
6.16	56	59	8.07	30.266	59.0	62.0		1 28.12	5.70				113	4	27.24		♃	R.
	56	59	3.77										113	4	22.94		♃	
4.83	54	52	17.36	30.248	60.2	63.8	58.0	1 21.08	6.89		15 45.80		110	41	42.50		☉	
	54	20	46.97					1 19.53	6.84				110	41	42.21		☉	
5.95	-67	51	42.35	.217	60.0	59.5		2 20.55					-11	50	6.15	27	β Hydri SP.	
	-53	30	45.11	.210	59.3	55.7		1 18.26					2	31	53.38		z Octantis.	
4.76	-8	32	28.26	.210	59.3	54.5		8.73					47	31	19.76	1689	β Lupi	R.
	-8	32	26.94										47	31	21.08	1689	β Lupi.	
5.14	6	20	19.65	.203	59.0	54.6		6.46					62	24	22.86	1768	Libræ	R.
	6	20	18.31										62	24	21.52	1768	Libræ.	
5.26	8	40	40.30	.203	59.0	54.5		8.87					64	44	45.92	1800	b Scorpii	R.
	8	40	41.19										64	44	46.81	1800	b Scorpii.	
5.30	-2	25	17.23	.203	59.0	54.5		2.46					53	38	37.06	1835	θ Lupi	R.
	-2	25	18.71										53	38	35.58	1835	θ Lupi.	
3.63	8	43	59.46	.204	59.0	53.5		8.95					64	48	5.16	1872	σ Scorpii	R.
	8	43	58.74										64	48	4.44	1872	σ Scorpii.	
5.99	-0	24	43.04					0.42					55	39	13.29	1889	α Normæ.	
	-3	49	42.86	.201	58.5	53.6		3.90					52	14	9.99	1919	μ <sup>1</sup> Scorpii	R.
8.17	-3	49	45.39					3.87					52	14	7.46	1919	μ <sup>1</sup> Scorpii.	
	-3	48	3.10										52	15	49.78	1921	μ <sup>2</sup> Scorpii.	
5.26	-9	4	59.04	.201	58.5	52.8		9.32					46	58	48.39	1960	η Scorpii	R.
	-9	4	58.06										46	58	49.37	1960	η Scorpii.	
5.30	-55	18	29.36	.202	58.5	52.0		1 24.18					0	44	3.21		σ Octantis.	
	-52	49	31.17	.145	58.0	49.8		1 17.06					3	13	8.52		C Octantis.	
5.30	22	25	14.60	.146	57.5	48.0		24.24					78	29	35.59	2688	σ Aquarii	R.
	22	25	10.85										78	29	31.84	2688	σ Aquarii.	
5.30	24	35	14.29	.143	56.5	46.0		26.99	0.18				80	39	37.85		Georgean	R.
	24	35	13.81										80	39	37.37		Georgean.	
5.30	24	24	57.98	.140	55.0	45.0		26.83	24 45.42		16 28.53		79	48	7.61		♃	R.
	24	25	3.32										79	48	12.95		♃	
5.30	30	15	36.65	30.138	56.0	45.4		34.45					86	20	7.85	2841	n Piscium	R.
	30	15	36.25										86	20	7.45	2841	n Piscium.	
5.30	-0	24	44.03	30.070	58.5	54.0		0.42					55	39	12.30	1889	α Normæ.	
	76	38	43.98	.070	58.5	54.2		3 59.01					132	46	39.74	1905	σ Herculis.	
	-0	3	35.69	30.070	58.5	54.2		0.06					56	00	21.00	1915	ε Scorpii.	

Coincidence of Micrometer Wire with fixed Wire, =20°.156 One revolution =40°.335  
 Correction for Runs =+2°.90  
 Adopted Zenith Point to July 21<sup>st</sup>, at Noon, =326°. 04'. 05".50 From July 21<sup>st</sup>, =326°. 04'. 05".39  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			°	'	"	°	'	"					
♀ 21 July	1947	κ Scorpii.....	6 49.4	48.5	53.2	41.4	44.8	31.3	20.300	-5.81	326 06 44.93	T.M.	
	2027	κ Scorpii.... M.R.	4 27.0	40.2	24.6	37.9	22.7	29.0			151 04 24.52	T.M.	
	2027	κ Scorpii.....	3 52.1	50.2	52.1	45.0	42.0	33.4			321 03 46.44	T.M.	
♃ 24 July	807	Canopus .... M.R.	44 46.8	42.6	63.7	22.7	52.1	26.3	21.231	-43.36	164 43 59.10	T.M.	
	807	Canopus.....	24 20.8	21.0	14.0	12.8	06.2	04.2	20.861	-28.44	307 24 13.93	T.M.	
	838	Sirius..... M.R.	38 25.8	48.8	58.4	61.8	01.5	39.5			128 38 0.86	T.M.	
	838	Sirius.....	29 64.5	71.1	73.2	61.1	76.1	48.3			343 30 6.54	T.M.	
	(a)	♄'s center...M.R.	15 43.0	44.8	20.5	33.8	26.5	30.8			22.227	-1 23.53	90 14 10.91
♃ 25 July		☉ S. L. .... M...	23 43.4	28.5	24.5	42.3	51.5	25.2			19.518	+25.73	19 24 31.72
		☉ N. L.....	55 37.2	85.7	80.0	38.0	106.6	20.0	22.082	-1 17.69	19 56 1.36	T.M.	
		♀'s center...M.R.	8 38.0	39.0	15.4	33.8	09.8	31.0			96 07 11.58	T.M.	
		♀'s center.....	6 36.4	80.0	75.3	40.3	100.3	22.4	23.189	-2 02.34	16 00 59.65	T.M.	
		♂'s center...M.R.	55 93.3	103.0	55.9	119.0	58.4	105.9			111 54 27.53	T.M.	
		♂'s center.....	13 34.0	48.6	49.6	31.5	58.6	23.4			0 13 41.77	T.M.	
	27	(c) β Hydri SP.....	12 34.0	39.7	32.9	03.8	41.2	06.0	14 15 20	-0.40	258 12 26.10	T.M.	
	219	α Hydri SP.....	29 49.6	44.8	45.9	14.2	54.0	23.0			242 29 39.01	T.M.	
		z Octantis.....	33 28.6	40.0	27.4	05.6	30.2	07.4			272 33 23.53	T.M.	
	1731	f Lupi..... M.R.	41 44.4	62.9	36.5	62.3	35.0	46.0	21.289	-45.70	141 41 2.01	T.M.	
	1731	f Lupi.....	26 74.0	70.0	77.8	62.7	71.6	55.6	20.056	+4.03	330 27 9.20	T.M.	
	1768	Libræ..... M.R.	43 37.0	58.0	27.0	60.4	28.1	40.7			139 43 45.68	T.M.	
	1768	Libræ.....	24 26.3	25.0	30.0	20.3	27.4	10.0	19.441	+30.05	332 24 24.17	T.M.	
	1800	δ Scorpii.... M.R.	22 48.3	71.3	35.9	75.6	36.5	55.1			137 23 23.59	T.M.	
	1800	δ Scorpii.....	44 47.1	46.8	52.0	42.3	49.2	32.0	20.567	-16.58	334 44 45.87	T.M.	
	1835	θ Lupi..... M.R.	29 40.5	46.0	39.2	43.8	33.0	34.5			148 29 23.15	T.M.	
	1835	θ Lupi.....	38 56.0	50.0	58.2	40.0	48.0	32.3	18 01 30	+3.66	323 38 47.98	T.M.	
	1876	τ Herculis.....	36 36.0	73.3	73.9	10.0	95.1	06.0			46 36 49.22	T.M.	
	1889	α Normæ.....	39 29.1	23.1	32.5	15.5	23.1	07.8	23.150	-2 00.76	325 39 22.26	T.M.	
	1905	σ Herculis.....	41 88.4	131.9	132.8	67.0	155.0	58.8			42 42 45.91	T.M.	
	1913	η Herculis.....	10 49.2	98.7	94.2	33.1	122.1	20.4	14 16 32	-31.66	39 11 09.73	T.M.	
		σ Octantis.....	45 41.0	51.0	41.2	21.2	43.3	19.0			270 45 36.18	T.M.	
	2071	γ Draconis.....	20 17.8	46.4	46.4	52.0	63.7	48.8	0 26 30	+3.66	51 20 25.89	T.M.	
		(d) Planetary Nebula..	6 27.0	20.6	31.4	12.5	21.0	04.1			18 01 30	326 06 19.56	T.M.
		o Octantis.....	45 52.0	65.0	53.0	34.2	55.8	31.6	20.941	-31.66	270 45 52.34	T.M.	
	219	α Hydri .... M.R.	30 54.0	54.9	76.4	31.6	72.2	33.1			174 28 52.50	T.M.	
	219	α Hydri.....	39 21.0	32.5	17.3	19.8	13.2	09.6	14 16 32	-2 00.76	297 39 19.84	T.M.	
		z Octantis SP.....	29 58.8	68.4	58.2	36.7	64.0	35.0			267 29 53.98	T.M.	
	319	ε Arietis.... M.R.	28 57.0	53.6	32.7	46.7	36.0	43.5	18.614	+1 02.20	91 28 14.04	T.M.	
	319	ε Arietis.....	39 31.1	77.4	75.7	32.5	99.3	16.4			20 39 55.44	T.M.	
		(e) δ N. L.....M.R.	28 45.6	45.5	25.0	35.1	28.0	34.8	19.912	+9.84	90 29 30.37	T.M.	
		δ N.L.....	38 13.0	59.3	57.3	12.0	83.7	54.3			21 38 38.63	T.M.	
	414	η Tauri.....M.R.	33 43.8	43.7	22.8	30.9	26.2	31.0	20.618	-18.64	88 33 43.74	T.M.	
	414	η Tauri.....	35 60.5	109.0	106.0	60.1	133.9	41.8			23 34 25.15	T.M.	
	699	α Columbæ.....	50 49.0	34.8	44.3	26.0	34.0	16.5	20.985	-33.44	325 50 32.65	T.M.	
	734	α Orionis.... M.R.	46 53.0	62.8	20.0	69.4	26.7	58.0			104 46 29.95	T.M.	
	734	α Orionis.....	21 23.1	57.4	52.5	29.5	70.3	14.0	21.195	-41.91	7 21 41.16	T.M.	
	807	Canopus .... M.R.	44 39.3	29.0	55.0	12.0	39.8	17.0			164 43 58.65	T.M.	
	807	Canopus.....	24 19.3	21.0	14.1	12.7	05.8	02.4	2 19 00	0.77	307 24 13.31	T.M.	
	838	Sirius..... M.R.	38 38.2	65.6	14.0	76.0	18.4	52.0			128 38 2.14	T.M.	
	838	Sirius.....	29 65.2	72.5	75.1	62.0	78.5	48.5	343 30 7.79	T.M.			
♃ 26 July		☉ N. L.....M...	43 47.8	92.6	90.5	46.5	115.1	30.0	22.000	-1 14.38	19 42 56.12	T.M.	
		☉ S. L.....	11 02.0	49.4	43.1	02.4	70.9	45.4	2 19 00	0.77	19 11 25.80	T.M.	
		z Octantis SP....	29 56.0	64.4	57.0	31.8	61.8	30.8			267 29 49.99	T.M.	
	329	γ Persei.....	38 38.5	61.0	63.8	09.8	77.6	10.2	52 38 43.83	T.M.			

Molyneux fast, July 25<sup>th</sup>, 11<sup>h</sup>.—26<sup>th</sup>, 6<sup>h</sup>.

- (a) Observed at the 1<sup>st</sup> Wire. Correction for Motion, 0<sup>h</sup>.70. Invisible by direct vision. ? Mispointed.
- (b) Correction for Motion, 0<sup>h</sup>.77
- (c) Observed 54<sup>h</sup>. past Meridian.
- (d) Very faint. Observation uncertain.

- (e) The Reflected Observation at the 5<sup>th</sup> Wire and the direct, leaving the field. The Correction for Motion and Curvature of Path, -7<sup>h</sup>.85 and -18<sup>h</sup>.35. The Observation very uncertain.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	o	'	"	Inch.	o	o	o	'	"	r	'	"	o	'	"		
5.48	0	2	39.54	30.070	58.5	54.0		0.05					56	6	36.34	1947	$\kappa$ Scorpii.
	-5	0	19.13	30.070	58.5	52.0							51	3	32.53	2027	$\epsilon$ Scorpii
	-5	0	18.95					5.09						51	3	32.71	2027
6.52	-18	39	53.71	30.406	58.4	56.0							37	23	43.33	807	Canopus
	-18	39	51.46					19.71					37	23	45.58	807	Canopus.
3.70	17	26	4.53	30.408	58.4	56.3							73	30	19.59	838	Sirius
	17	26	1.15										73	30	16.21	838	Sirius.
	55	49	54.48					1	25.71	5.36			111	55	11.58		$\gamma$
(5.62)	53	20	26.33	30.416	59.2	57.5	52.0	1	18.03	6.75	15 46.30		109	41	20.66		$\odot$
	53	51	55.97					1	19.54	6.80			109	41	19.16		$\odot$
	49	56	53.81	.418	59.5	57.8		1	9.08	4.08			106	1	55.56		$\eta$
(4.65)	49	56	54.26										106	1	56.01		$\eta$
	34	9	37.86	.445	59.0	56.0	53.0						90	14	11.67		$\delta$
	34	9	36.38					39.63	2.57				90	14	10.19		$\delta$
5.61	-67	51	39.29	.449	59.0	55.6		2	22.71				-11	50	5.25	27	$\beta$ Hydri SP.
	-83	34	26.38	.485	58.6	51.3		8	4.80				-27	38	34.43	219	$\alpha$ Hydri SP.
	-53	30	41.86	.487	58.0	51.0		1	19.71				2	31	55.18		$z$ Octantis.
4.93	4	23	3.38	.496	58.2	50.8							60	27	4.67	1731	$f$ Lupi
	4	23	3.81					4.54					60	27	5.10	1731	$f$ Lupi.
4.73	6	20	19.71	.500	58.2	51.0							62	24	23.03	1768	Librae
	6	20	18.78					6.57					62	24	22.10	1768	Librae.
5.57	8	40	41.80	.503	58.2	51.0							64	44	47.57	1800	$b$ Scorpii
	8	40	40.48					9.02					64	44	46.25	1800	$b$ Scorpii.
6.17	-2	25	17.76	.506	58.0	50.3	47.0						53	38	36.49	1835	$\theta$ Lupi
	-2	25	17.41					2.50					53	38	36.84	1835	$\theta$ Lupi.
	80	32	43.83	.567	58.0	50.0	47.0	5	42.77				136	42	23.35	1876	$\tau$ Herculis.
4.74	-0	24	43.13	.507	58.0	50.0			0.43				55	39	13.19	1889	$\alpha$ Normæ.
	76	38	40.52	.507	58.0	50.0	46.8	4	4.53				132	46	41.80	1905	$\sigma$ Herculis.
	73	7	4.34	.507	58.0	50.0	46.8	3	12.76				129	14	13.85	1913	$\eta$ Herculis.
4.45	-55	18	29.21	.509	57.0	50.0	46.8	1	25.39				0	44	2.15		$\sigma$ Octantis.
	85	16	20.50	.521	57.0	50.0	47.0									2071	$\gamma$ Draconis.
	0	2	14.17	.521	57.0	50.0	47.0		0.04				56	6	10.96		Planetary Nebula.
5.56	-55	18	13.05	.510	57.0	49.0			1	25.54			0	44	18.16		$\alpha$ Octantis.
	-28	24	47.11	.501	56.0	48.5			32.13				27	38	37.51	219	$\alpha$ Hydri
	-28	24	45.55										27	38	39.07	219	$\alpha$ Hydri.
5.98	-58	34	11.41	.500	56.0	49.0			1	36.81			-2	31	51.47		$z$ Octantis SP.
	54	35	51.35	.498	55.0	49.5			1	23.23			110	41	11.33	319	$\epsilon$ Arietis
	54	35	50.05										110	41	10.03	319	$\epsilon$ Arietis.
4.97	55	34	35.02	.500	55.0	49.8							110	37	28.29		$\delta$
	55	34	33.24					1	26.26	46 11.66			110	37	26.51		$\delta$
	57	30	21.65	.498	55.0	49.8	46.5						113	35	51.17	414	$\eta$ Tauri
5.86	57	30	19.76					1	32.77				113	35	49.28	414	$\eta$ Tauri.
	-0	13	32.74	.506	56.0	52.5			0.24				55	50	23.77	699	$\alpha$ Columbæ.
	41	17	35.44	.506	56.0	52.5			51.74				97	22	23.93	734	$\alpha$ Orionis
4.45	41	17	35.77										97	22	24.26	734	$\alpha$ Orionis.
	-18	39	53.26	.508	57.0	54.0	50.5						37	23	43.63	807	Canopus
	-18	39	52.08					19.86					37	23	44.81	807	Canopus.
4.97	17	26	3.25	30.508	57.5	55.0							73	30	18.42	838	Sirius
	17	26	2.40					18.42					73	30	17.57	838	Sirius.
	53	38	51.46	30.475	58.5	57.3	52.2	1	19.10	6.78			109	28	14.23		$\odot$
5.98	53	7	21.14					1	17.60	6.74			109	28	15.05		$\odot$
	-58	34	14.67	.398	57.0	53.5	51.5	1	35.64				-2	31	53.56		$z$ Octantis SP.
	86	34	39.17	30.398	56.5	53.6										329	$\gamma$ Persei.

Coincidence of Micrometer Wire with fixed Wire, =20°.156 One revolution =40°.335  
 Correction for Runs =+2".90  
 Adopted Zenith Point =326°. 04'. 05".39 to July 26<sup>th</sup>. From July 26<sup>th</sup>, =326°. 04'. 04".66.  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.					
			A	B	C	D	E	F									
			l #	#	#	#	#	#									
26 July	340	(a) Persei.....	51	51.0	78.2	82.4	23.3	98.6	20.8	19.675	-1.27	48	51	57.98	T.M.		
	365	α Persei.....	8	61.8	85.0	92.8	33.0	110.1	31.9			49	09	9.50		T.M.	
	414	η Tauri.....M.R.	33	36.0	26.8	13.8	17.5	14.5	22.2			88	33	42.01		T.M.	
	414	η Tauri.....	34	01.0	49.9	40.8	08.4	70.1	49.8			23	34	26.60		T.M.	
	699	(b) δ N. L.....	25	61.8	110.0	105.0	63.8	134.0	46.1			-7.66	25	26		18.60	T.M.
		α Columbæ.....	50	38.2	33.4	42.4	29.6	33.3	18.5				325	50		32.62	T.M.
27 July	699	(c) ⊙ S. L.....	57	37.2	83.0	74.2	44.3	102.2	25.0	21.063	-36.58	18	58	0.95	T.M.		
		⊙ N. L.....	28	64.4	109.6	101.8	70.5	129.9	52.5			19	29	28.68	T.M.		
	699	(d) ♀'s center...M.R.	55	41.0	34.4	18.3	33.9	15.6	31.4	21.451	-52.23	96	54	53.67	T.M.		
		♀'s center.....	12	59.0	86.6	88.0	56.8	108.8	44.5			15	13	14.74	T.M.		
	27	(e) ♂'s center...M.R.	25	44.4	55.9	12.8	69.0	19.8	54.7	19.664	+19.84	112	24	51.09	T.M.		
		♂'s center.....	43	08.0	21.4	15.8	16.1	27.4	06.2			359	43	16.61	T.M.		
	60	(f) β Hydri SP.....	12	34.4	35.5	39.0	57.8	48.8	01.0	19.755	+16.17	258	12	26.30	T.M.		
	699	α Cassiopeæ.....	13	04.2	36.2	34.5	42.8	56.0	36.7			-1.63	55	13	23.76	T.M.	
	807	α Columbæ.....	50	41.1	30.0	45.7	26.1	34.8	18.5	19.664	+19.84	325	50	32.75	T.M.		
	807	Canopus...M.R.	43	35.6	41.8	57.6	22.4	52.5	18.0			164	43	57.81	T.M.		
	807	Canopus.....	24	21.0	15.2	16.4	11.8	04.3	04.8	19.755	+16.17	307	24	13.01	T.M.		
	838	Sirius...M.R.	37	43.8	56.9	26.2	65.9	24.3	46.8			128	38	0.07	T.M.		
	838	Sirius.....	29	65.8	67.0	81.2	56.6	82.5	44.6	343	30	7.11	T.M.				
	28 July	1797	(g) ⊙ N. L.....M...	15	28.2	70.0	72.3	27.4	97.5	11.8	20.224	-2.74	19	15	48.22	T.M.	
⊙ S. L.....			43	56.2	98.6	97.1	57.7	122.8	40.0	18			44	19.28	T.M.		
1823		(h) ♀'s center...M.R.	19	36.4	39.6	06.0	42.7	15.0	34.0	20.368	-8.55	97	19	21.29	T.M.		
		♀'s center.....	48	29.0	54.4	68.4	18.0	87.9	08.0			14	48	45.03	T.M.		
1823		χ Serpentis.....	52	29.1	20.8	34.2	17.0	25.4	09.4	20.315	-6.41	326	52	22.87	T.M.		
1876		(i) τ Herculis.....	17	35.0	52.0	22.8	60.0	22.7	40.0			134	17	32.13	T.M.		
1905		(i) σ Herculis.....	50	36.0	35.3	45.4	30.0	45.6	18.2	20.220	-2.58	337	50	35.58	T.M.		
1913		(i) η Herculis.....	36	51.2	69.0	82.5	15.1	96.3	19.0			40	36	55.70	T.M.		
699		α Columbæ.....	42	39.0	63.3	75.6	09.2	91.2	08.5	20.220	-2.58	42	42	48.07	T.M.		
734		α Orionis...M.R.	10	59.8	92.0	98.4	36.5	120.8	31.0			39	11	13.20	T.M.		
734		α Orionis.....	50	42.0	29.6	45.4	26.2	33.4	18.8	19.980	+7.10	325	50	32.62	T.M.		
807		Canopus...M.R.	46	31.0	46.0	00.8	53.9	11.8	37.8			104	46	27.92	T.M.		
807		Canopus.....	21	26.2	47.1	57.6	21.2	70.2	10.8	21.125	-39.08	7	21	38.88	T.M.		
838		Sirius...M.R.	43	49.5	53.0	67.3	38.5	62.5	34.0			164	43	57.91	T.M.		
838	Sirius.....	24	21.5	15.9	14.7	13.0	06.5	05.3	20.370	-8.63	307	24	13.58	T.M.			
838	Sirius.....	38	40.8	51.2	18.7	63.5	17.0	46.0			128	38	0.46	T.M.			
29 July	1885	(k) ⊙ S. L. M.....	30	43.8	84.5	88.0	41.2	115.6	24.0	22.408	-1 30.34	343	30	7.21	T.M.		
		⊙ N. L.....	1	25.5	67.9	67.8	95.0	25.2	08.1			18	30	18.32	T.M.		
	1885	(k) ♀'s center...M.R.	45	47.6	57.1	20.2	59.0	29.3	46.5	20.525	-14.88	19	01	48.57	T.M.		
		♀'s center.....	23	37.2	62.2	76.6	26.1	93.6	17.8			97	44	13.47	T.M.		
	1919	(l) ♀'s center.....	55	37.8	47.2	01.2	65.6	06.0	52.0	20.510	-14.28	14	23	53.13	T.M.		
		♂'s center...M.R.	12	39.0	51.4	55.5	37.5	64.2	28.5			112	55	20.62	T.M.		
	1919	(m) ♂'s center.....	12	39.0	51.4	55.5	37.5	64.2	28.5	17.640	+1 41.48	359	12	46.76	T.M.		
	1921	Antares...M.R.	12	21.4	38.8	09.0	50.5	09.5	29.5			138	12	11.87	T.M.		
	1921	Antares.....	55	59.0	55.9	65.4	55.5	62.8	44.1	20.156	+1 41.48	333	55	57.75	T.M.		
	1947	μ <sup>1</sup> Scorpii...M.R.	53	40.1	38.6	43.9	37.5	34.6	30.3			149	53	47.64	T.M.		
	2027	μ <sup>1</sup> Scorpii.....	14	28.2	15.2	33.9	11.1	20.6	05.3	17 09 24	+0.06	322	14	19.69	T.M.		
	2027	μ <sup>2</sup> Scorpii...M...	6	51.6	42.0	57.0	37.4	46.2	30.0			322	16	1.17	T.M.		
	2027	(n) κ Scorpii.....	45	31.9	46.8	34.2	18.7	40.2	12.8	20.370	-8.63	326	06	44.19	T.M.		
	2027	κ Scorpii...M.R.	4	34.0	35.8	39.0	30.8	33.2	26.0			270	45	30.88	T.M.		
2027	(n) κ Scorpii.....	3	54.9	42.8	56.2	39.4	44.2	31.0	151	04	24.64	T.M.					
												321	03	45.40	T.M.		

Molyneux fast, July 27<sup>th</sup>, 6<sup>h</sup>.—28<sup>th</sup>, 7<sup>h</sup>.

- (a) Observed at the 5th Wire.
- (b) Observed at 1/2 space beyond the 5th Wire. Correction for Curvature of Path, 0<sup>h</sup>.55
- (c) Found the Limb in contact with the fixed Wire.
- (d) Correction for Motion, 0<sup>h</sup>.79
- (e) Correction for Motion, 0<sup>h</sup>.48 (f) Observed at the 5th Wire. Nebulous.
- (g) Limbs fringy.

- (h) The Reflected Observation at the 2d Wire, and the direct 35e. past Meridian. Correction for Curvature of Path and Motion, 40<sup>h</sup>.47 and 0<sup>h</sup>.40
- (i) Nebulous.
- (k) Observed at the 2nd Wire. Correction for Motion and Curvature of Path, 40<sup>h</sup>.46
- (l) Observed in the middle of the 4th space. Correction for Motion and Curvature of Path, 40<sup>h</sup>.51 (m) Correction for Motion, 0<sup>h</sup>.48
- (n) The Stars are like mops. A brisk and hot South wind.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
	#	o	'	"	Inch.	o	o	o	'	"	r	'	"	o	'	"		
4.31	82	47	53.32	30.398	56.5	53.6		7	14.91				138	59	4.98	340	Persei.	
	83	5	4.84	.399	56.5	53.6		7	30.99				139	16	32.58	365	α Persei.	
	57	30	22.65	.399	56.5	53.8							113	35	51.14	414	η Tauri	
	57	30	21.94					1	31.74				113	35	50.43	414	η Tauri.	
	59	22	13.94	30.409	56.5	55.0		1	38.44	47	37.87	15	7.34	114	25	3.92		δ
	-0	13	32.04						0.23					55	50	24.48	699	α Columbæ.
(4-21)	52	53	56.29	30.437	58.6	58.3	53.6	1	16.74				109	14	49.56		⊙	
	53	25	24.02					1	18.21				109	14	45.72		⊙	
	49	9	10.99	.433	59.0	58.4	54.5	1	7.13				105	14	10.82		♀	
	49	9	10.08										105	14	9.91		♀	
(3.85)	33	39	13.57	.426	58.8	56.4	53.5		38.82				89	43	46.62		♂	
	33	39	11.95						2.52				89	43	45.00		♂	
5.41	-67	51	38.36	.426	58.0	56.4		2	22.38				-11	50	3.99	27	β Hydri SP.	
	89	9	19.10	.405	57.5	55.4										60	α Cassiopeæ.	
	-0	13	31.91						0.23				55	50	24.61	699	α Columbæ.	
	-18	39	53.15	.452	58.0	58.8	55.6		19.64				37	23	43.96	807	Canopus	
3.59	-18	39	51.65										37	23	45.46	807	Canopus.	
	17	26	4.59	30.456	58.0	59.0	55.8		18.25				73	30	19.59	838	Sirius	
	17	26	2.45										73	30	17.45	838	Sirius.	
(3.16)	53	11	43.56	30.429	59.0	61.4	56.0	1	17.08				109	1	4.05		⊙	
	52	40	14.62					1	15.63				109	1	6.90		⊙	
	48	44	43.37	.420	59.2	61.2	57.0	1	5.79				104	49	41.88		♀	
	48	44	40.37										104	49	38.88		♀	
3.86	0	48	18.21	.380	59.0	56.0			0.82				56	52	15.78	1797	χ Serpentis.	
	11	46	32.53	.380	58.8	56.0			12.16				67	50	41.44	1823	δ Scorpii	
	11	46	30.92										67	50	39.83	1823	δ Scorpii.	
	80	32	51.04	.380	58.8	56.0		5	36.55				136	42	24.34	1876	τ Herculis.	
3.40	76	38	43.41	.380	58.0	56.0	53.0	4	0.64				132	46	40.80	1905	σ Herculis.	
	73	7	8.54	.380	58.0	56.0	53.0	3	9.70				129	14	14.99	1913	η Herculis.	
	-0	13	32.04	.316	57.3	58.0			0.23				55	50	24.48	699	α Columbæ.	
	41	17	36.74	.316	57.3	58.0			50.87				97	22	24.36	734	α Orionis	
5.75	41	17	34.22										97	22	21.84	734	α Orionis.	
	-18	39	53.25	.316	57.6	61.0	56.0		19.47				37	23	44.03	807	Canopus	
3.84	-18	39	51.08										37	23	46.20	807	Canopus.	
	17	26	4.20	30.314	58.0	62.2	56.0		18.05				73	30	19.00	838	Sirius	
	17	26	2.55										73	30	17.35	838	Sirius.	
(3.30)	52	26	13.66	30.260	58.8	63.0	57.0	1	14.36				108	47	4.79		⊙	
	52	57	43.91					1	15.78				108	47	3.02		⊙	
	48	19	51.19	.210	60.1	64.5		1	3.99				104	24	47.91		♀	
	48	19	48.47						4.02				104	24	45.19		♀	
(3.69)	33	8	44.04	.170	60.0	63.0			37.29				89	13	15.61		♂	
	33	8	42.10										89	13	13.67		♂	
4.81	7	51	52.79	.127	58.8	56.6			7.98				63	55	57.52	1885	Antares	
	7	51	53.09										63	55	57.82	1885	Antares.	
3.67	-3	49	42.98	.126	58.6	56.5			3.87				52	14	9.90	1919	μ <sup>1</sup> Scorpii	
	-3	49	44.97										52	14	7.91	1919	μ <sup>1</sup> Scorpii.	
5.02	-3	48	3.49						3.84				52	15	49.42	1921	μ <sup>2</sup> Scorpii.	
	0	2	39.53						0.05				56	6	36.33	1947	κ Scorpii.	
	-55	18	33.78	.124	58.6	57.5		1	23.08				0	43	59.89		σ Octantis.	
	-5	0	19.98	30.116	58.5	60.2			5.02				51	3	31.75	2027	κ Scorpii	
	-5	0	19.26										51	3	32.47	2027	κ Scorpii.	

Coincidence of Micrometer Wire with fixed Wire, =20<sup>r</sup>.156 One revolution =40<sup>r</sup>.335  
 Correction for Runs =+2<sup>r</sup>.90  
 Adopted Zenith Point =326°. 04'. 04<sup>r</sup>.66  
 Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			<i>l</i> <i>h</i>	<i>h</i> <i>m</i>	<i>m</i> <i>s</i>	<i>s</i> <i>t</i>	<i>t</i> <i>u</i>	<i>u</i> <i>v</i>						
29 July		Georgean . . . . M.R.	34 42.2	58.4	10.8	76.2	14.3	56.8	19.601	+22.39	121 35 5.75	T.M.		
		Georgean . . . . .	32 62.8	64.0	71.2	58.8	76.2	50.3			350 33 4.39	T.M.		
2 Aug.	2110	(a) $\sigma$ Octantis . . . . .	45 39.0	46.6	39.3	21.5	42.4	19.2	19 09 40	+0.03	270 45 34.77	T.M.		
		(a) $\epsilon$ Sagittarii . . . . .	32 52.0	45.0	57.6	41.2	48.7	32.0			325 32 46.34	T.M.		
3 Aug.	699	$\alpha$ Columbæ . . . . .	50 41.8	32.6	46.6	28.1	35.9	19.1	20.325	-6.73	325 50 34.07	T.M.		
	734	$\alpha$ Orionis . . . . M.R.	46 37.3	46.0	04.8	56.3	13.6	43.6			104 46 27.15	T.M.		
	734	$\alpha$ Orionis . . . . .	21 26.4	50.0	54.4	27.3	70.2	15.0			7 21 40.58	T.M.		
	807	Canopus . . . . M.R.	43 50.2	40.0	66.1	27.3	54.4	30.8			164 43 55.21	T.M.		
	807	Canopus . . . . .	24 19.6	19.2	15.2	14.8	08.3	04.1			307 24 14.29	T.M.		
	838	Sirius . . . . . M.R.	38 46.7	70.4	23.8	84.0	29.2	59.4			128 37 59.04	T.M.		
	838	Sirius . . . . .	29 68.0	69.0	76.8	63.1	80.0	51.0			343 30 8.81	T.M.		
4 Aug.		(b) $\odot$ N. L. . . . . M. . .	30 38.0	76.0	68.1	38.2	103.1	20.0	19.737	-16.98	17 31 14.30	T.M.		
		$\odot$ S. L. . . . .	59 21.8	62.8	60.0	24.8	86.0	07.0			16 59 43.91	T.M.		
		$\varphi$ 's center . . . M.R.	22 37.7	44.9	08.3	48.5	14.4	36.3			22.382	-1 29.71	100 21 2.70	T.M.
		$\varphi$ 's center . . . . .	46 44.0	81.7	79.1	50.1	102.4	30.8			11 47 5.25	T.M.		
	1818	$\pi$ Scorpii . . . . M.R.	46 39.2	59.0	24.3	66.2	28.2	44.9			20.148	+0.40	137 46 43.67	T.M.
	1818	$\pi$ Scorpii . . . . .	21 27.7	24.0	33.0	23.1	32.3	11.2			334 21 25.89	T.M.		
	1836	(b) $\beta^1$ Scorpii . . M.R.	29 20.0	45.0	57.8	54.7	04.1	33.0			19.788	+14.92	131 29 41.14	T.M.
	1836	$\beta^1$ Scorpii . . . . .	38 27.0	26.0	34.2	22.2	36.2	10.7			340 38 26.79	T.M.		
	1872	$\sigma$ Scorpii . . . . M.R.	19 35.9	53.6	21.5	63.1	21.2	43.5			19.470	+27.75	137 20 7.47	T.M.
	1872	$\sigma$ Scorpii . . . . .	47 65.0	61.8	71.0	60.0	69.5	49.0			21.078	-37.11	334 48 3.43	T.M.
	1885	(d) Antares . . . . M.R.	12 43.0	62.3	30.5	72.3	33.8	51.6			138 12 11.93	T.M.		
	1885	Antares . . . . .	55 58.0	53.9	63.2	53.8	61.4	42.5			333 55 56.10	T.M.		
	1915	$\epsilon$ Scorpii . . . . .	0 33.7	24.7	38.4	21.0	29.0	12.6			326 00 26.62	T.M.		
		(e) $\sigma$ Octantis . . . . .	45 37.5	44.3	37.0	19.7	40.0	16.8			270 45 32.60	T.M.		
	10 Aug.	1781	$\kappa$ Libræ . . . . M.R.	17 38.9	63.6	19.8	76.3	22.2			52.2	21.032	-35.25	131 17 10.56
1781		(f) $\kappa$ Libræ . . . . .	50 52.0	53.2	62.0	49.5	63.0	36.5	+1.20	340 50 53.95	T.M.			
		$\delta$ N.L. . . . .	48 15.5	14.7	22.0	12.8	20.1	59.5	336 48 14.40	T.M.				
		* (7 mag.) . . . M. . .							24.851	-3 09.29	336 45 5.11			T.M.
1885		Antares . . . . M.R.	12 28.2	48.0	18.4	56.8	19.3	34.2	20.712	-22.35	138 12 11.50			T.M.
1885		Antares . . . . .	55 58.8	55.3	65.7	55.0	61.8	43.0	333 55 57.23	T.M.				
1900		$\tau$ Scorpii . . . . .	7 34.0	32.0	39.0	30.6	36.1	19.3	332 07 32.07	T.M.				
883		$\delta$ Canis Maj. M.R.	16 24.8	40.0	5.5	59.3	04.0	39.8	20.470	-12.58	138 16 15.92			T.M.
883		$\delta$ Canis Majoris . . .	51 54.4	54.9	60.8	54.9	58.4	40.8	333 51 54.75	T.M.				
11 Aug.			$\odot$ N.L. . . . . M. . .	33 40.1	77.5	61.0	59.0	84.8	40.0	21.725	-1 03.20			15 32 57.21
		$\odot$ S.L. . . . .	1 03.7	40.4	24.1	45.3	21.9	04.4	15 01 23.66			T.M.		
		(g) $\varphi$ 's center . . . M.R.	11 47.3	34.9	23.2	36.0	19.5	32.3	23.620			-2 19.64	100 09 14.33	T.M.
		$\varphi$ 's center . . . . .	58 40.7	62.7	54.4	52.3	69.1	41.2	11 58 54.91			T.M.		
		(h) $\varphi$ 's center . . . . .	30 01.2	30.4	17.1	20.2	34.7	04.0	+1.68			8 30 19.64	T.M.	
	27	$\beta$ Hydri SP. . . . .	12 40.0	33.2	51.0	51.0	55.5	57.0	258 12 28.18			T.M.		
	1885	Antares . . . . M.R.	11 51.8	66.0	30.8	84.8	29.7	66.3	19.780			+15.25	138 12 10.33	T.M.
	1885	(i) Antares . . . . .	55 55.0	58.0	61.4	57.6	61.3	43.4	+1.22			333 55 57.43	T.M.	
		$\delta$ N.L. . . . .	39 24.0	27.5	29.8	26.6	29.3	11.0	333 39 25.12			T.M.		
	1967	A Ophiuchi Seq. M. . . . .							21.551			-56.19	333 38 28.93	T.M.
	1967	A Ophi. Prec. M. . . . .							21.645			-59.98	333 38 25.14	T.M.
	2079	(k) $\gamma^2$ Sagittarii M.R.	33 38.5	56.0	22.0	73.4	22.9	54.1	20.770			-24.68	142 33 19.50	T.M.
	2101	$\beta$ Telescopii . . M.R.	56 19.1	32.8	07.4	47.7	03.0	33.8	20.298			-5.65	148 56 18.25	T.M.
	2101	$\beta$ Telescopii . . . . .	11 53.0	53.6	60.6	47.8	54.4	33.5	323 11 50.87			T.M.		
	2110	$\epsilon$ Sagittarii . . . . .	32 48.0	48.2	56.0	50.1	42.0	29.0	325 32 45.80			T.M.		
699	$\alpha$ Columbæ . . . . .	50 39.0	37.8	46.6	31.8	38.7	18.7	325 50 35.48	T.M.					

Molyneux fast, Aug. 2<sup>nd</sup>, 3<sup>rd</sup>, 1<sup>st</sup>.

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|--|---|
| (a) Crabby.  | (f) The Reflexion Observation on the Meridian, the direct beyond the 5 <sup>th</sup> Wire. A hurried Observation. |
| (b) Observed on the Meridian.  | (g) Correction for Motion, 1".38  |
| (c) Observed at the 2 <sup>nd</sup> and 4 <sup>th</sup> Wires. Correction for Motion, +0".43, for Curvature of Path, 0".06 | (h) Observed 66°. past Meridian.  |
| (d) Observed at the 2 <sup>nd</sup> Wire.  | (i) Observed at 75°. past the Meridian.   |
| (e) The Stars crabby. They were steady in the day-light.   | (k) Observed at the 5 <sup>th</sup> Wire.   |



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	o	'	"	Inch.	o	o	o	'	"	'	"	o	'	"			
5.07	24	28	58.91	30.054	57.4	51.4		26.50	0.18			80	33	21.98		Georgean	R.
	24	28	59.73									80	33	22.80		Georgean.	
	-55	18	29.89	30.234	58.0	51.2		1 24.41				0	44	2.45	2110	σ Octantis.	
	-0	31	18.32	30.236	58.0	51.2		0.53				55	32	37.90		ε Sagittarii.	
	-0	13	30.59	30.200	58.0	56.6		0.23				55	50	25.93	699	α Columbae.	
3.87	41	17	37.51	.200	58.0	57.2	56.0	50.75				97	22	25.01	734	α Orionis	R.
	41	17	35.92									97	22	23.42	734	α Orionis.	
4.75	-18	39	50.55	.197	58.5	58.2	57.0	19.49				37	23	46.71	807	Canopus	R.
	-18	39	50.37									37	23	46.89	807	Canopus.	
3.93	17	26	5.62	30.194	59.0	58.8		18.10				73	30	20.47	838	Sirius	R.
	17	26	4.15									73	30	19.00	838	Sirius.	
	51	27	9.64	30.150	60.8	61.4	59.0	1 11.72	6.59			107	16	24.02		⊙	
	50	55	39.25					1 10.40	6.54		15 47.50	107	16	27.36		⊙	
(3.98)	45	43	1.96	.123	61.5	64.2	60.0	58.27	3.91			101	47	53.07		♀	R.
	45	43	0.59									101	47	51.70		♀	
4.78	8	17	20.99	.131	60.2	56.3	54.0	8.42				64	21	26.16	1818	π Scorpii	R.
	8	17	21.23									64	21	26.40	1818	π Scorpii.	
3.97	14	34	23.52	.131	60.0	56.0		15.03				70	38	35.30	1836	β <sup>1</sup> Scorpii	R.
	14	34	22.13									70	38	33.91	1836	β <sup>1</sup> Scorpii.	
5.45	8	43	57.19	.131	59.5	55.3		8.90				64	48	2.84	1872	σ Scorpii	R.
	8	43	58.77									64	48	4.42	1872	σ Scorpii.	
4.02	7	51	52.73	.135	59.0	54.2	52.0	8.02				63	55	57.50	1885	Antares	R.
	7	51	51.44									63	55	56.21	1885	Antares.	
	-0	3	38.04					0.06				56	0	18.65	1915	ε Scorpii.	
	-55	18	32.06	30.136	59.0	52.0	50.0	1 24.00				0	44	0.69		σ Octantis.	
(2.26)	14	46	53.91	30.596	56.0	50.0		15.68				70	51	6.34	1781	κ Librae	R.
	14	46	49.48									70	51	1.91	1781	κ Librae.	
	10	44	9.93	.596	56.0	50.3		10.04	10 36.37		15 47.20	66	21	53.15		♃	
	10	41	0.64					11.22				66	45	8.61		* (7 mag.)	
4.37	7	51	52.97	.604	56.0	50.3		8.21				63	55	57.93	1885	Antares	R.
	7	51	52.76									63	55	57.72	1885	Antares.	
	6	3	27.60	.604	56.0	50.0		6.31				62	7	30.66	1900	τ Scorpii.	
5.34	7	47	48.55	30.594	55.0	53.3	50.0	8.09				63	51	53.39	883	δ Canis Maj.	R.
	7	47	50.28									63	51	55.12	883	δ Canis Majoris.	
	49	28	52.74	30.560	56.6	57.6	52.5	1 8.32	6.42		15 48.60	105	18	2.79		⊙	
	48	57	19.19					1 7.07	6.36			105	18	5.25		⊙	
(4.62)	45	54	50.14	.513	57.5	58.3	53.5	1 0.12	4.69			101	59	42.32		♃	R.
	45	54	50.44									101	59	42.62		♃	
	42	26	15.17	.505	58.0	58.8		53.20	3.76			98	31	1.36		♀	
	-67	51	36.29	.469	58.0	59.0	53.0	2 21.86				-11	50	1.40	27	β Hydri SP.	
(3.88)	7	51	54.14	.468	56.5	54.0		8.11				63	55	59.00	1885	Antares	R.
	7	51	52.96									63	55	57.82	1885	Antares.	
	7	35	20.65		56.5	53.2		7.84	7 35.44		16 2.94	63	15	46.86		♃	
	7	34	24.46	.468	56.5	53.2		7.82				63	38	29.03	1967	A Ophiuchi Seq.	
	7	34	20.67									63	38	25.24	1967	A Ophiuchi Prec.	
4.56	3	30	44.97	.465	56.2	52.2		3.60				59	34	45.32	2079	γ <sup>c</sup> Sagittarii	R.
	-2	52	13.78	30.465	56.2	52.2		2.95				53	11	40.02	2101	β Telescopii	R.
	-2	52	13.60									53	11	40.20	2101	β Telescopii.	
	-0	31	18.67					0.54				55	32	37.54	2110	ε Sagittarii.	
	-0	13	28.99					0.23				55	50	27.53	699	α Columbae.	

Coincidence of Micrometer Wire with fixed Wire, =20°.156 Aug. 3<sup>d</sup>, =20°.158 One revolution =40".335  
 Correction for Runs =+2".90  
 Adopted Zenith Point =326°. 04'. 04".66 to Aug. 5<sup>th</sup>. Aug. 10<sup>th</sup>, =326°. 04'. 04".47  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			′ ″	″	″	″	″	″					
♀ 11 Aug.	734	α Orionis... M.R.	45 51.6	39.5	23.1	47.0	20.4	45.0	18.925	-49.73	104 46 27.69	T.M.	
	734	α Orionis .....	21 29.0	46.8	38.3	42.2	49.8	33.8			7 21 40.01	T.M.	
	807	Canopus ... M.R.	43 35.0	32.4	28.9	40.5	20.8	40.0	19.660	-20.09	164 43 53.53	T.M.	
	807	Canopus .....	24 24.5	23.0	26.9	08.2	21.5	55.1			307 24 17.29	T.M.	
	838	Sirius... M.R.	37 35.0	52.1	11.7	65.0	12.2	44.9	19.631	-21.26	128 37 57.99	T.M.	
	838	Sirius .....	30 08.5	09.8	09.8	10.6	13.1	59.0			343 30 8.82	T.M.	
♃ 12 Aug.		☉ S. L. M.....	43 42.2	76.6	60.8	60.5	81.2	43.0	21.020	-34.77	14 43 25.97	T.M.	
		☉ N. L.....	14 42.5	78.5	60.0	61.5	82.4	44.3			15 15 2.23	T.M.	
	27	β Hydri SP.....	12 37.0	31.8	47.5	50.0	51.8	55.8	20.527	-14.88	258 12 25.88	T.M.	
		♁'s center... M.R.	31 38.4	33.0	04.1	49.5	02.6	42.0			116 31 13.97	T.M.	
		♁'s center .....	36 49.6	56.8	48.8	59.0	56.5	49.4	21.047	-35.86	355 36 54.10	T.M.	
	1986	θ Ophiuchi... M.R.	58 43.9	54.0	21.2	71.9	18.4	56.5			136 58 8.31	T.M.	
	1986	θ Ophiuchi.....	9 59.2	62.2	66.1	61.7	66.0	47.7	24.880	-3 10.46	335 10 1.46	T.M.	
		♃ S. L.....	43 16.1	13.0	20.0	11.3	18.8	0.0			331 40 3.05	T.M.	
		* 7.8 mag... M..	.....	.....	.....	.....	.....	.....	20.800	-25.90	139 17 15.87	T.M.	
		φ Sagittarii... M.R.	17 37.8	54.7	19.8	70.0	18.9	51.2			332 50 50.77	T.M.	
		2163	φ Sagittarii.....	50 51.2	51.9	56.4	51.9	54.6	34.8	19.565	+23.82	325 50 35.99	T.M.
		699	α Columbæ.....	50 40.5	37.4	47.0	31.5	39.2	20.0			164 43 52.51	T.M.
		807	(b) Canopus ... M.R.	43 31.5	26.5	26.8	33.9	18.4	35.2	19.830	+13.23	307 24 17.42	T.M.
		807	Canopus.....	24 22.1	22.0	28.0	08.8	22.0	57.0			128 37 57.52	T.M.
		838	Sirius... M.R.	37 45.4	57.0	20.4	70.9	18.8	53.7	21.860	-1 08.65	343 30 9.48	T.M.
		838	Sirius .....	30 09.0	10.8	10.2	11.5	13.3	00.0			14 56 55.31	T.M.
	☉ 13 Aug.		☉ N.L. .... M...	57 45.2	80.0	65.1	60.6	88.0	45.3	22.190	-1 21.96	14 25 20.80	T.M.
			☉ S.L.....	25 0.0	37.0	20.2	19.4	42.5	04.2			101 36 3.68	T.M.
		♁'s center... M.R.	37 38.0	27.2	13.0	29.0	11.7	26.6	21.721	-1 03.04	10 32 4.42	T.M.	
		♁'s center .....	31 49.4	72.8	63.0	60.2	81.0	49.2			104 36 14.58	T.M.	
		(d) ♀'s center... M.R.	37 31.3	18.0	00.5	25.6	59.8	24.5	21.473	-53.04	7 31 58.06	T.M.	
		♀ N. L.....	31 44.4	65.9	55.5	57.7	71.3	46.0			116 46 45.02	T.M.	
		(e) ♂'s center... M.R.	47 46.3	41.9	13.7	59.8	12.7	50.0	20.508	-14.12	355 21 24.03	T.M.	
		♁'s center .....	21 20.0	25.8	18.8	28.5	27.5	19.4			325 32 47.03	T.M.	
		ε Sagittarii.....	32 47.8	48.1	55.2	42.2	48.2	39.1	21.025	-34.97	139 17 17.87	T.M.	
		φ Sagittarii... M.R.	17 27.5	45.2	09.8	60.8	08.7	41.6			332 50 51.57	T.M.	
		2163	φ Sagittarii.....	50 51.6	53.0	56.7	52.8	56.2	35.5	18.849	+52.80	332 28 5.01	T.M.
		2163	♃ S.L.....	27 66.4	65.2	72.0	64.4	70.2	50.1			270 28 19.28	T.M.
		2339	59 Sagittarii... M.R.	44 24.2	39.4	03.7	54.0	03.0	37.3	20 34 20	+0.06	268 24 32.23	T.M.
		2339	59 Sagittarii.....	24 18.0	18.8	22.1	17.0	23.0	04.2			325 50 36.22	T.M.
		699	B Octantis.....	28 28.7	26.2	44.8	43.0	44.2	46.5	19 54 30	+16.94	104 46 26.23	T.M.
		734	A Octantis SP....	24 34.0	28.5	46.8	45.2	47.3	49.0			7 21 41.76	T.M.
		734	α Columbæ.....	50 38.3	39.6	46.0	33.8	39.8	19.8	19.738	+27.47	307 24 16.94	T.M.
		807	α Orionis ... M.R.	45 46.8	36.0	19.0	41.5	16.2	40.0			128 37 57.90	T.M.
		807	Canopus ... M.R.	21 31.5	48.0	39.6	44.2	51.0	36.7	19.477	+0.13	343 30 9.44	T.M.
		807	Canopus .....	43 39.4	34.5	32.5	42.7	23.4	44.0			201 39 50.51	T.M.
		838	Sirius... M.R.	24 18.2	25.6	25.5	9.4	22.8	55.6	21.540	-55.74	128 37 57.90	T.M.
	838	Sirius .....	37 32.3	42.4	06.0	57.8	03.4	41.3	307 24 16.94			T.M.	
♃ 14 Aug.		(f) ☉ S.L..... M..	7 33.0	69.0	53.0	50.8	77.0	36.0	20.905	-30.13	14 06 57.30	T.M.	
		☉ N. L.....	38 12.0	49.6	32.8	31.0	55.6	15.0			14 38 33.23	T.M.	
		(g) ♁'s center... M.R.	20 30.9	22.4	03.2	22.2	04.3	20.0	9 48 19.19	T.M.			
♃ 19 Aug.		B Octantis... M.R.	40 29.0	58.1	39.3	46.4	34.0	04.7	19 44 12 20.775	-24.89	270 28 18.58	T.M.	
		B Octantis.....	28 27.2	26.0	43.8	42.7	44.0	45.1			19 47 20	T.M.	

Molyneux fast, Aug. 12<sup>th</sup>, 1<sup>st</sup>.—19<sup>th</sup>, 3<sup>rd</sup>.

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|---|---|
| (a) Correction for Motion in Declination, 0".50           | (c) Correction for Motion in Declination, 0".49 |
| (b) The Micrometer reading was inadvertently not entered. | (f) Limbs flocculent.                           |
| (e) Correction for Motion in Declination, 1".39           | (g) Correction for Motion in Declination, 1".39 |
| (d) Correction for Motion in Declination, 0".93           |   |



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. A S C	NAME OF STAR or PLANET.							
			Attach.	Out.	Wet Bulb.														
#	° ' "	Inch.	°	°	°	' "	' "	"	' "	° ' "									
3.85	41 17 36.78	30.418	54.6	50.0	48.2	51.85				97 22 25.38	734	α Orionis R.							
	41 17 35.54									97 22 24.14		734	α Orionis.						
5.41	-18 39 49.06	.416	55.0	56.0	51.7	19.72				37 23 47.97	807	Canopus R.							
	-18 39 47.18									37 23 49.85		807	Canopus.						
3.41	17 26 6.48	30.416	55.0	56.4	51.7	18.32				73 30 21.55	838	Sirius R.							
	17 26 4.35									73 30 19.42		838	Sirius.						
(4.04)	48 39 21.50	30.374	57.3	59.5	55.0	1 5.72			15 48.70	105 0 6.33	27	⊙							
	49 10 57.76					1 6.94				6.39		105 0 6.36	⊙						
	-67 51 38.59					2 20.00				-11 50 1.84		β Hydri SP.							
	29 32 50.50					.358				58.2		64.0	56.5	32.52	2.13	85 37 17.64	δ	R.	
	29 32 49.63															85 37 16.77			
4.89	9 5 56.16	.364	57.0	53.5		9.38			16 18.06	65 10 2.29	1986	θ Ophiuchi R.							
	9 5 56.99									65 10 3.12		1986	θ Ophiuchi.						
	5 39 9.04									.362		56.5	56.0		5.77	5 42.14	61 53 47.48	D	* 7.8 mag.
5 35 58.58	61 40 1.04																		
3.32	6 46 48.60	.362	56.5	55.8		6.93				62 50 52.28	2163	φ Sagittarii R.							
	6 46 46.30									62 50 49.98		2163	φ Sagittarii.						
4.97	-0 13 28.48	.420	56.4	57.5	55.0	0.23				55 50 28.04	699	α Columbæ.							
	-18 39 48.04									37 23 49.04		807	Canopus R.						
	-18 39 47.05									37 23 50.03		807	Canopus.						
3.50	17 26 6.95	30.420	56.5	57.8	55.8	18.27				73 30 21.97	838	Sirius R.							
	17 26 5.01									73 30 20.03		838	Sirius.						
(4.05)	48 52 50.84	30.392	58.2	62.5	57.3	1 5.89			15 48.90	104 41 58.22		⊙							
	48 21 16.33					1 4.69				6.31		104 42 0.36	⊙						
	44 28 0.79					.380				58.8		63.8		56.32	4.62	100 32 49.24	ξ	R.	
	44 27 59.95															100 32 48.40			
	41 27 49.89					.380				58.8		61.5		50.94	3.71	97 32 33.87	♀	R.	
41 27 53.59	97 32 32.65																		
(4.53)	29 17 19.45	.360	58.6	60.2	56.4	32.41	2.11			85 21 46.50		♂							
	29 17 19.56									85 21 46.61		♂							
4.72	-0 31 17.44	.357	57.5	56.4		0.53			16 30.22	55 32 38.78	2110	ε Sagittarii.							
	6 46 46.60									62 50 50.27		2163	φ Sagittarii R.						
	6 46 47.10									62 50 50.77		2163	φ Sagittarii.						
4.98	6 24 0.54	.356	57.0	56.0	53.5	6.54	6 33.75			62 38 0.30	2339	D							
	6 20 12.65									62 24 15.86		59 Sagittarii R.							
	6 20 13.67									62 24 16.88		2339	59 Sagittarii.						
	-55 35 45.19									.348		57.0	55.4		1 24.95		0 26 46.61	B Octantis.	
	-57 39 32.24																1 31.90		
-0 13 28.25	.278	57.0	57.8	53.2		0.23		55 50 28.27	699	α Columbæ.									
41 17 38.24								97 22 25.82		734	α Orionis R.								
4.00	41 17 37.29	.280	57.0	59.0	54.3	19.52				97 22 24.87	734	α Orionis.							
	-18 39 48.54									37 23 48.69		807	Canopus R.						
4.98	-18 39 47.53	30.379	57.0	59.8	55.2	18.18				37 23 49.70	807	Canopus.							
	17 26 6.57									73 30 21.50		838	Sirius R.						
3.67	17 26 4.97									73 30 19.90	838	Sirius.							
(3.93)	48 2 52.83	30.245	59.0	64.4	58.2	1 3.45			15 49.10	104 23 35.86		⊙							
	48 34 28.76					1 4.63				6.33		104 23 34.71	⊙						
	43 44 15.81					30.214				59.6		65.4	59.2	54.43	4.59	99 49 2.40	ξ	R.	
	43 44 14.72															99 49 1.31			ξ
4.55	-55 35 46.89	30.009	56.0	50.0	50.0	1 24.90				0 26 44.96		B Octantis R.							
	-55 35 45.04									0 26 46.81		B Octantis.							

Coincidence of Micrometer Wire with fixed Wire, =20°.158 One revolution =40°.335  
 Correction for Runs =+2°.90  
 Adopted Zenith Point to Aug. 15<sup>th</sup>, =326°. 04', 04".47 From Aug. 15<sup>th</sup>, =326°. 04', 03".62  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			' "	" "	" "	" "	" "	" "						
19 Aug.	2388	$\alpha^{\circ}$ Capricorni M.R.	11 42.6	48.8	15.4	66.0	12.3	49.2	21.149	+39.97	125 10 58.98	T.M.		
	2388	$\alpha^{\circ}$ Capricorni . . . . .	57 03.8	05.7	05.4	08.4	10.8	59.5			346 57 6.06	T.M.		
		A Oct. SP. . . . M.R.	44 36.0	02.8	46.6	48.2	39.0	10.2			{ 21.035	-35.37	203 43 45.85	T.M.
		A Octantis SP. . . . .	24 33.8	39.0	47.8	45.8	49.0	49.0			{ 20 36 35		+0.34	268 24 23.59
		Piscis Austr. . . . .	9 18.0	17.4	24.4	13.7	18.0	00.8			20 38 10	-0.90	327 09 15.78	T.M.
		C Octantis. . . . .	14 33.6	31.0	49.5	46.0	46.7	51.3			21 58 20		273 14 23.44	T.M.
		Georgian. . . . M.R.	51 52.0	58.0	25.0	74.0	23.5	60.0			19.430	+29.36	121 52 18.08	T.M.
		Georgian. . . . .	15 46.6	49.5	46.0	53.6	51.0	43.4					350 15 48.63	T.M.
		Fomalhaut. . . M.R.	37 36.9	51.0	20.9	69.0	19.7	50.8			21.384	-49.45	142 36 51.54	T.M.
		Fomalhaut. . . . .	31 16.4	17.0	24.0	15.3	20.0	01.8					329 31 16.52	T.M.
		$\tau$ Octantis. . . M.R.	29 39.5	04.8	51.0	56.4	42.2	14.6			{ 21.049	-35.94	200 28 49.14	T.M.
		$\tau$ Octantis. . . . .	39 26.8	27.8	46.5	44.0	44.0	46.1			{ 23 02 00		-0.09	271 39 10.19
		Vesta . . . . .	1 11.0	11.6	11.8	16.7	12.7	02.4			23 21 27	+0.58	345 01 11.14	T.M.
		(a) $\gamma^1$ Octantis. . M.R.	2 41.8	05.8	50.4	00.0	39.3	19.3			20.750	-23.88	195 02 2.45	T.M.
		2849 $\gamma^1$ Octantis. . . . .	5 77.6	73.1	92.0	32.4	86.3	37.0			23 44 04	+0.31	277 06 6.82	T.M.
		10 $\gamma^3$ Octantis. . M.R.	15 30.3	57.0	40.8	45.0	31.4	05.0			21.480	-53.32	195 14 21.62	T.M.
		10 $\gamma^3$ Octantis. . . . .	53 56.3	51.9	71.0	11.6	66.2	16.2			0 04 05	+0.12	276 53 46.01	T.M.
		$\sigma$ Octantis. . . . R.	22 40.1	07.6	52.2	53.5	47.8	12.3			0 17 00		201 22 25.81	T.M.
		$\sigma$ Octantis. . . . .	45 52.2	50.0	68.2	09.3	66.2	11.8			0 22 30	+0.93	270 45 43.95	T.M.
		79 Piscium . . . . .	25 55.4	71.5	61.0	70.9	73.3	60.8					4 26 5.58	T.M.
	D N.L. . . . . .	27 07.0	22.4	16.3	19.4	27.8	09.8			8 27 17.34	T.M.			
	189 $\sigma$ Piscium . . . . .	19 26.6	40.8	32.2	37.5	46.1	28.8			8 19 35.76	T.M.			
21 Aug.		$\odot$ S.L. . . . . .	51 43.2	77.6	60.8	62.2	82.6	45.5			11 52 2.18	T.M.		
	1915	$\epsilon$ Scorpii. . . . .	0 30.0	28.8	36.5	23.6	30.5	11.0			326 00 26.77	T.M.		
	1947	k Scorpii. . . . .	6 44.9	44.5	51.6	39.9	44.7	26.6			326 06 42.03	T.M.		
		$\sigma$ Octantis. . . M.R.	22 46.8	13.9	58.0	00.0	52.8	20.0	19.947	+8.51	201 22 40.67	T.M.		
		$\sigma$ Octantis. . . . .	45 37.8	33.2	54.8	52.2	51.8	55.2			270 45 27.54	T.M.		
		$\beta$ Draconis . . . . .	13 28.0	70.0	59.7	75.6	86.5	03.3			52 13 54.22	T.M.		
		$\gamma$ Draconis. . . . .	20 17.2	62.5	52.3	06.9	79.2	53.6			51 20 35.33	T.M.		
		$\beta$ Telescopii. . M.R.	56 34.0	50.2	23.0	65.8	20.0	48.4	20.713	-22.38	148 56 17.80	T.M.		
		$\beta$ Telescopii. . . . .	11 51.8	52.7	58.6	47.4	52.4	32.8			323 11 49.66	T.M.		
		2110 $\epsilon$ Sagittarii . . . . .	32 44.1	46.5	51.3	41.8	46.6	27.1			325 32 43.16	T.M.		
24 Aug.		(b) $\odot$ N.L. . . . . M. . . . .	22 45.2	81.2	56.8	73.4	79.2	56.2	20.380	-8.95	11 22 56.30	T.M.		
		$\odot$ S.L. . . . . .	50 56.0	92.2	64.0	85.0	88.0	67.0			10 51 15.77	T.M.		
		$\mathcal{S}$ 's center. . . M.R.	36 33.6	35.2	19.8	30.8	22.7	20.8	21.628	-59.29	109 35 29.36	T.M.		
		(c) $\mathcal{S}$ 's center. . . . .	32 27.2	47.3	28.0	48.0	42.5	36.6			2 32 39.82	T.M.		
		(d) $\mathcal{S}$ 's center. . . M.R.	10 35.5	37.6	21.2	33.4	24.0	26.7	22.442	-1 32.13	110 08 58.65	T.M.		
		$\mathcal{S}$ 's center. . . . .	58 58.0	76.6	58.5	78.0	70.3	67.8			1 59 9.53	T.M.		
		$\sigma$ Octantis. . . . .	45 38.0	32.0	61.7	44.0	58.0	48.2			270 45 27.02	T.M.		
		2007 $\lambda$ Scorpii . . . M.R.	6 42.4	41.2	24.4	60.8	17.0	54.8	19.994	+6.61	149 06 46.65	T.M.		
		2007 $\lambda$ Scorpii. . . . .	1 20.0	22.2	33.0	12.0	28.0	58.0			323 01 19.22	T.M.		
		2043 (e) $\gamma$ Telescopii. . M.R.	7 41.0	35.3	23.0	55.0	11.5	51.9	20.853	-28.03	149 07 8.28	T.M.		
		2043 (e) $\gamma$ Telescopii. . . . .	0 59.0	61.9	72.0	50.0	67.2	35.9			323 00 57.98	T.M.		
		2071 (e) $\gamma$ Draconis. . . . .	20 29.0	75.0	58.5	25.4	84.8	12.2			51 20 47.55	T.M.		
		2110 (e) $\epsilon$ Sagittarii . . . . .	32 46.3	46.9	58.3	36.0	52.2	22.2			325 32 43.91	T.M.		
25 Aug.		(e) $\odot$ S.L. . . . . .	30 16.2	52.8	25.3	44.2	48.0	27.0			10 30 35.64	T.M.		
		$\sigma$ Octantis. . . . .	45 36.0	33.1	61.8	43.2	59.4	47.0			270 45 26.79	T.M.		
	2027	$\kappa$ Scorpii. . . . M.R.	4 45.5	37.5	27.0	53.9	17.1	55.4	20.550	-15.81	151 04 23.74	T.M.		
	2027	$\kappa$ Scorpii. . . . .	3 47.0	43.1	64.0	25.8	56.2	14.0			321 03 42.33	T.M.		
	2071 $\gamma$ Draconis . . . . .	20 21.2	69.4	47.0	23.2	73.5	09.0			51 20 40.61	T.M.			

Molyneux fast, Aug. 24<sup>th</sup>, 2<sup>d</sup>.5

(a) Observed on the Meridian.

(b) Woolly and unsteady.

(c) Flickering. Correction for Motion in Declination, 1".33

(d) Correction for Motion in Declination, 0".97

(e) The aperture of the Object Glass reduced to  $\frac{1}{4}$ -inch for the Objects specified, as an experiment on the images.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	o	i	''	Inch.	o	o	o	i	''	''	i	''	o	i	''			
2.52	20	53	4.64	30.001	56.0	50.2							76	57	23.61	2388	$\alpha^2$ Capricorni R.	
	20	53	02.44					22.22					76	57	21.41	2388	$\alpha^2$ Capricorni.	
	-57	39	42.23	29.990	56.0	50.0							-1	37	17.21		A Oct. SP. R.	
4.72	-57	39	40.03					1	31.73				-1	37	15.01		A Octantis SP.	
	1	5	12.16	29.978	56.0	50.0			1.10				57	9	10.01	2518	Piscis Australis.	
	-52	49	40.18	29.956	56.0	50.0			1	16.57			3	13	00.00		C Octantis.	
3.36	24	11	45.54	29.946	56.0	50.0				27.99	0.18		80	16	10.10		Georgian R.	
	24	11	45.01										80	16	9.57		Georgian.	
4.03	3	27	12.08	29.940	56.0	50.0				3.51			59	31	12.34	2741	Fomalhaut R.	
	3	27	12.90										59	31	13.16	2741	Fomalhaut.	
	-54	24	45.52	29.938	56.0	50.0							1	37	50.16		$\tau$ Octantis R.	
4.67	-54	24	43.43					1	21.07				1	37	52.25		$\tau$ Octantis.	
	18	57	7.52	29.924	55.5	50.2			19.95	2.03			75	1	22.19		Vesta.	
4.64	-48	57	58.83	29.918	55.5	50.2			1	6.64			7	4	51.28	2849	$\gamma^1$ Octantis R.	
	-48	57	56.80										7	4	53.31	2849	$\gamma^1$ Octantis.	
3.82	-49	10	18.00	29.910	55.5	50.4				1	7.08		6	52	31.67	10	$\gamma^3$ Octantis R.	
	-49	10	17.61										6	52	32.06	10	$\gamma^3$ Octantis.	
4.88	-55	18	22.19	29.905	55.0	50.4			1	23.64			0	44	10.92		$\sigma$ Octantis R.	
	-55	18	19.67	29.882	55.0	50.3							0	44	13.44		$\sigma$ Octantis.	
	38	22	1.96	29.877	55.5	50.2			45.87				94	26	44.58	79	Piscium.	
	42	23	13.72	29.877	55.5	50.4			52.87	39	38.99	16	5.73	97	32	18.62		D
	42	15	32.14						52.64				98	20	21.53	189	$\sigma$ Piscium.	
	45	47	58.56	30.272	56.5	56.0	53.0	59.69	6.06		15	50.40	102	8	39.34		$\odot$	
	-0	3	36.85	.210	56.0	52.0		0.06					56	0	19.84	1915	$\epsilon$ Scorpii.	
	0	2	38.41	.210	56.0	52.0							56	6	35.21	1947	$\lambda$ Scorpii.	
4.11	-55	18	37.05	.210	56.0	52.0	50.0	1	24.23				0	43	55.47		$\sigma$ Octantis R.	
	-55	18	36.08										0	43	56.44		$\sigma$ Octantis.	
	86	9	50.60	.210	56.0	51.6	50.0									2016	$\beta$ Draconis.	
	85	16	31.71	.211	55.5	51.5										2071	$\gamma$ Draconis.	
3.73	-2	52	14.18	.211	55.3	51.4		2.93					53	11	39.64	2101	$\beta$ Telescopii R.	
	-2	52	13.96										53	11	39.86	2101	$\beta$ Telescopii.	
	-0	31	20.46	30.211	55.3	51.4		0.53					55	32	35.76	2110	$\epsilon$ Sagittarii.	
	45	18	52.68	30.088	58.0	58.8	56.0	58.01	6.01		15	51.00	101	7	50.43		$\odot$	
	44	47	12.15					56.95	5.96				101	7	50.89		$\odot$	
(4.59)	36	28	34.26	.054	60.0	59.3	57.0	42.36	4.28				92	33	9.09		$\delta$ R.	
	36	28	36.20										92	33	11.03		$\delta$	
(4.09)	35	55	4.97	.050	59.8	59.2	56.8	41.49	3.40				91	59	39.81		$\eta$ R.	
	35	55	5.91										91	59	40.75		$\eta$	
	-55	18	36.60	.065	57.0	54.6		1	23.40				0	43	56.78		$\sigma$ Octantis.	
2.94	-3	2	43.03	.065	57.0	54.5		3.08					53	1	10.64	2007	$\lambda$ Scorpii R.	
	-3	2	44.40										53	1	9.27	2007	$\lambda$ Scorpii.	
3.13	-3	3	4.66	.065	57.0	54.4		3.09					53	0	49.00	2043	$\gamma$ Telescopii R.	
	-3	3	5.64										53	0	48.02	2043	$\gamma$ Telescopii.	
	85	16	43.93	.065	57.0	54.6										2071	$\gamma$ Draconis.	
	-0	31	19.71	30.065	57.0	54.6		0.53					55	32	36.51	2110	$\epsilon$ Sagittarii.	
	44	26	32.02	30.278	59.0	63.0	60.0	56.17	5.92		15	51.20	100	47	10.22		$\odot$	
3.04	-55	18	36.83	.290	58.4	55.6		1	23.85				0	43	56.07		$\sigma$ Octantis.	
	-5	0	20.12	.286	58.0	56.3		5.09					51	3	31.54	2027	$\kappa$ Scorpii R.	
	-5	0	21.29										51	3	30.37	2027	$\kappa$ Scorpii.	
	85	16	36.99	30.286	58.0	56.3										2071	$\gamma$ Draconis.	

Coincidence of Micrometer Wire with fixed Wire, =20".158 The Coincidence is often examined, but the dates are not entered unless the readings have altered. One revolution =40".335  
 Correction for Runs =+2".96  
 Adopted Zenith Point =326°. 04'. 03".62  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			''	''	''	''	''	''						
☽ 25 Aug.	2101	β Telescopii...M.R.	56 38.8	33.2	23.0	49.8	10.8	47.0	20.550	-15.81	148 56 17.90	T.M.		
	2101	β Telescopii.....	11 52.1	51.4	70.5	34.4	64.6	21.8			323 11 49.52	T.M.		
	2110	ε Sagittarii.....	32 44.8	47.7	62.2	32.0	58.4	18.1			325 32 44.13	T.M.		
	699	α Columbæ.....	50 40.4	41.0	52.8	29.0	46.7	15.5			325 50 37.63	T.M.		
	734	α Orionis...M.R.	46 41.2	37.0	24.0	31.9	26.8	26.8			20.336	-7.18	104 46 24.38	T.M.
	734	α Orionis.....	21 26.5	52.6	31.1	52.2	46.4	39.9			7 21 41.49	T.M.		
♄ 26 Aug.		☉ S. L.....M..	9 35.8	69.7	43.5	62.7	65.4	47.9	20.278	-4.84	10 09 49.42	T.M.		
		☉ N. L.....	41 09.8	47.7	17.5	39.5	41.0	21.7	10 41 29.95	T.M.				
	1885	(a) Antares...M.R.	12 31.0	37.0	12.9	53.0	09.2	39.0	20.639	-19.40	138 12 11.04	T.M.		
	1885	(a) Antares.....	55 55.3	57.0	65.5	52.9	65.2	59.4	333 55 59.85	T.M.				
		σ Octantis.....	45 38.9	29.0	62.9	40.9	56.2	47.1	17 08 15	270 45 25.87	T.M.			
	2043	γ Telescopii...M.R.	7 39.0	30.2	21.4	49.0	10.2	47.0	20.746	-23.72	149 07 9.11	T.M.		
	2043	γ Telescopii.....	0 61.2	59.0	79.6	42.0	72.5	31.2	323 00 57.88	T.M.				
	2101	β Telescopii...M.R.	56 33.9	29.4	17.8	46.9	06.7	42.8	20.460	-12.18	148 56 17.33	T.M.		
	2101	β Telescopii.....	11 50.8	52.3	69.6	35.0	65.0	21.5	323 11 49.41	T.M.				
	2110	ε Sagittarii.....	32 44.2	48.8	63.0	31.8	60.0	18.0	325 32 44.56	T.M.				
		COctantis.....	14 36.2	29.2	60.3	35.6	55.1	44.8	21 58 21	273 14 23.95	T.M.			
	2181	δ Gruis...M.R.	27 39.2	21.0	22.5	39.9	06.1	45.2	20.685	-21.26	156 27 7.66	T.M.		
	2181	δ Gruis.....	40 63.1	66.0	81.4	43.2	74.0	31.3	315 41 0.22	T.M.				
		(b) Georgean...M.R.	58 42.3	36.7	21.5	44.6	14.9	39.5	20.242	-3.39	121 58 30.02	T.M.		
		(b) Georgean.....	9 34.4	36.4	32.2	41.2	37.8	33.1	350 09 36.51	T.M.				
	2741	Fomalhaut...M.R.	37 32.0	33.1	15.0	49.5	09.2	41.4	21.095	-37.79	142 36 51.83	T.M.		
	2741	(c) Fomalhaut.....	30 72.7	75.0	87.2	66.7	84.0	53.5	329 31 13.95	T.M.				
		τ Octantis.....	38 89.8	84.5	113.6	33.4	110.6	41.1	23 00 05	271 39 19.24	T.M.			
		(d) Vesta...M.R.	5 41.0	36.2	21.1	45.8	14.0	38.3	20.712	-22.34	128 05 10.51	T.M.		
		(d) Vesta.....	2 51.3	58.0	56.2	57.0	62.2	44.2	344 02 55.71	T.M.				
♃ 30 Aug.	2741	Fomalhaut..M.R.	37 28.2	29.5	13.7	47.2	04.9	37.2	21.003	-34.08	142 36 52.28	T.M.		
	2741	(e) Fomalhaut.....	31 14.5	14.7	30.5	06.4	25.4	54.4	329 31 15.09	T.M.				
		τ Octantis.....	39 31.0	23.8	56.0	33.2	50.2	40.6	28 00 23	271 39 19.54	T.M.			
		(f) Vesta...M.R.	37 34.8	29.6	13.8	42.4	03.2	33.3	20.353	-7.86	128 37 18.45	T.M.		
	(f) Vesta.....	30 44.3	48.8	50.4	48.2	52.7	35.3	343 30 47.29	T.M.					
♃ 31 Aug.		τ Octantis.....	39 24.2	23.2	49.9	32.8	47.5	38.0	23 00 23	271 39 16.33	T.M.			
		(f) Vesta...M.R.	45 41.2	36.8	20.0	50.5	10.5	40.8	20.848	-27.83	128 45 5.42	T.M.		
		(f) Vesta.....	22 56.6	61.0	60.4	59.9	65.0	47.2	343 22 59.23	T.M.				
	2861	γ <sup>2</sup> Octantis..M.R.	11 35.5	57.5	30.6	02.4	16.8	25.5	{ 23 47 49	-0.20	195 11 8.70	T.M.		
									{ 20.380	-9.28				
	2861	γ <sup>2</sup> Octantis.....	56 66.8	64.0	91.2	14.9	86.5	17.8	23 49 39	+0.20	276 56 57.25	T.M.		
	10	γ <sup>3</sup> Octantis..M.R.	15 39.2	02.2	36.0	06.8	21.0	29.5	{ 0 1 22	-0.17	195 14 25.31	T.M.		
									{ 21.571	-57.00				
	10	γ <sup>3</sup> Octantis.....	53 53.0	49.2	77.0	00.0	72.1	04.2	0 3 00	+0.17	276 53 43.11	T.M.		
		(g) σ Octantis...R.	22 46.1	02.2	41.6	04.1	30.2	29.6	0 16 30		201 22 25.86	T.M.		
		σ Octantis.....	45 51.4	46.2	76.0	59.2	72.3	02.0	0 18 08		270 45 41.25	T.M.		
	60	α Cassiopæ.....	12 43.7	83.2	66.6	39.2	29.1	28.0	0 31 21		55 12 58.93	T.M.		
	807	Canopus...M.R.	43 36.0	20.4	22.2	36.2	07.9	43.0	19.660	+20.08	164 43 47.67	T.M.		
	807	Canopus.....	24 27.4	24.0	45.2	58.0	36.7	49.0	307 24 20.82	T.M.				
838	Sirius...M.R.	37 39.6	42.1	17.9	53.3	12.7	40.4	19.664	+19.92	128 37 54.15	T.M.			
838	Sirius.....	30 08.2	12.9	12.7	12.5	16.6	59.6	343 30 10.78	T.M.					
☽ 1 Sept.		(h) ☉ N.L....M...	33 31.8	66.5	41.8	60.8	63.3	43.4	20.930	-31.14	8 33 20.44	T.M.		
		☉ S.L.....	1 19.8	54.0	26.0	48.9	47.8	30.5	8 01 38.35	T.M.				
		(i) ☽'s center...M.R.	19 36.1	26.2	14.8	31.4	10.6	26.9	23.550	-2 16.82	114 17 8.46	T.M.		
	(i) ☽'s center.....	50 48.2	63.2	50.7	65.5	60.2	55.0	357 50 58.19	T.M.					

Molyneux fast, Aug. 26<sup>th</sup>, 0<sup>a</sup>.

- (a) The Reflected Observation at the 2<sup>nd</sup> Wire, the direct, at the 5<sup>th</sup>.
- (b) Correction for Motion in Declination, 0<sup>o</sup>.02
- (c) Like a torch. The images were good in the early part of the evening; thin clouds have since spread over.
- (d) Faint. Correction for Motion in Declination, 0<sup>o</sup>.27
- (e) Clouds clearing off. The images are crabby.

- (f) Correction for Motion in Declination, 0<sup>o</sup>.25
- (g) Found bisected by the fixed Wire.
- (h) The 1<sup>st</sup> Observation at the 4<sup>th</sup> Wire, and the 2<sup>nd</sup> at the 5<sup>th</sup>. Correction for Curvature and Motion respectively, +0<sup>o</sup>.31 and +0<sup>o</sup>.52
- (i) Correction for Motion in Declination, 0<sup>o</sup>.98



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	o	'	"	Inch.	o	o	o	'	"	γ	'	"	o	'	"			
3.71	-2	52	14.28	30.286	58.0	56.3							53	11	39.56	2101	β Telescopii R.	
	-2	52	14.10					2.91					53	11	39.74	2101	β Telescopii.	
	-0	31	19.49	.286	58.0	56.3		0.53					55	32	36.73	2110	ε Sagittarii.	
	-0	13	25.99	.208	57.0	56.0		0.23					55	50	30.53	699	α Columbæ.	
2.94	41	17	39.24	30.208	57.0	56.0							97	22	26.87	734	α Orionis R.	
	41	17	37.87					50.88					97	22	25.50	734	α Orionis.	
5.45	44	5	46.03	30.172	59.8	65.0	61.0	55.08	5.89		15 51.50		100	26	23.47		⊙	
	44	37	26.56					56.11	5.94				100	26	21.98		⊙	
	7	51	52.35	.104	60.0	58.0		7.95					63	55	57.05	1885	Antares R.	
3.50	7	51	56.46										63	55	61.16	1885	Antares.	
	-55	18	37.52	.104	59.0	56.2	54.0	1 23.23					0	43	56.00		σ Octantis.	
3.37	-3	3	5.72	.104	59.0	55.6	54.0	3.08					53	0	47.95	2043	γ Telescopii R.	
	-3	3	5.51										53	0	48.16	2043	γ Telescopii.	
3.94	-2	52	13.94	.105	59.0	55.8		2.90					53	11	39.91	2101	β Telescopii R.	
	-2	52	13.98										53	11	39.87	2101	β Telescopii.	
2.89	-0	31	18.83					0.53					55	32	37.39	2110	ε Sagittarii.	
	-52	49	39.44	.068	59.0	52.8		1 16.42					3	13	00.89		ζ Octantis.	
3.27	-10	23	4.27	.067	59.0	52.7		10.64					45	40	41.84	2181	δ Gruis R.	
	-10	23	3.17										45	40	42.94	2181	δ Gruis.	
2.89	24	5	33.37	.066	59.0	52.0		26.00	0.18				80	9	55.94		Georgean R.	
	24	5	33.12										80	9	55.69		Georgean.	
(3.11)	3	27	11.56	.063	58.5	51.3		3.51					59	31	11.82	2741	Fomalhaut R.	
	3	27	10.56										59	31	10.82	2741	Fomalhaut.	
(2.87)	-54	24	44.15	.060	58.5	51.3		1 21.18					1	37	51.42		τ Octantis.	
	17	58	52.88	30.058	58.0	51.4		18.89	1.94				74	3	6.58		Vesta R.	
(2.33)	17	58	52.32										74	3	6.02		Vesta.	
	3	27	11.11	30.465	56.0	46.8		3.59					59	31	11.45	2741	Fomalhaut R.	
(2.33)	3	27	11.70										59	31	12.04	2741	Fomalhaut.	
	-54	24	43.85	.465	55.5	46.6		1 23.05					1	37	49.85		τ Octantis.	
(2.98)	17	26	44.94	30.465	55.2	46.5		18.72	1.89				73	30	58.52		Vesta R.	
	17	26	43.90										73	30	57.48		Vesta.	
(2.98)	-54	24	47.06	30.312	55.0	48.3		1 22.37					1	37	47.32		τ Octantis.	
	17	18	57.97					18.42	1.87				73	23	11.27		Vesta R.	
4.21	17	18	55.84										73	23	9.14		Vesta.	
	-49	7	5.31	.308	55.0	49.8		1 7.92					6	55	43.52	2861	γ <sup>2</sup> Octantis R.	
3.56	-49	7	6.14										6	55	42.69	2861	γ <sup>2</sup> Octantis.	
	-49	10	21.92	.300	55.0	51.2		1 7.85					6	52	26.98	10	γ <sup>3</sup> Octantis R.	
4.25	-49	10	20.28										6	52	28.62	10	γ <sup>3</sup> Octantis.	
	-55	18	22.47	.298	55.0	51.2		1 24.60					0	44	9.68		o Octantis R.	
2.47	-55	18	22.14										0	44	10.01		o Octantis.	
	89	8	55.54	.290	54.5	51.9	50.0	19.65								60	α Cassiopeæ,	
(3.33)	-18	39	44.28	.244	56.0	55.0	53.5	18.25					37	23	52.82	807	Canopus R.	
	-18	39	42.57										37	23	54.53	807	Canopus.	
(3.33)	17	26	9.24	30.244	56.0	55.5	53.6	35.38	3.14				73	30	24.24	838	Sirius R.	
	17	26	7.39										73	30	22.39	838	Sirius.	
(3.33)	42	29	17.05	30.178	58.0	62.0	58.5	52.40	5.72		15 52.80		98	18	7.68		⊙	
	41	57	34.96					51.44	5.66					98	18	10.29		⊙
	31	46	54.93	30.132	58.0	62.5	58.2							87	51	23.92		♀
	31	46	54.80											87	51	23.79		♀

Coincidence of Micrometer Wire with fixed Wire, =20°.158 One revolution =40°.335  
 Correction for Runs =+2''.90 to Sept. 1<sup>st</sup>. From Sept. 1<sup>st</sup>, =0''.00  
 Adopted Zenith Point to Noon on Aug. 26<sup>th</sup>, =326°.04'.03''.62 From Aug. 26<sup>th</sup>, =326°.04'.03''.39  
 Assumed Co-latitude =56°.03'.56''.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			''	''	''	''	''	''						
♀ 1 Sept.		σ Octantis.....	45	33.8	29.5	57.1	40.9	55.5	45.1	17 07 30		270 45 23.65	T.M.	
	2071	γ Draconis.....	20	30.3	77.0	57.3	30.2	84.0	16.1	17 52 50		51 20 49.15	T.M.	
	2101	β Telescopii...M.R.	56	24.5	22.0	08.8	39.0	58.0	34.2	20.225	-2.70	148 56 18.17	T.M.	
	2101	β Telescopii.....	11	51.0	49.9	65.6	36.5	60.0	23.6			323 11 47.98	T.M.	
	2110	ε Sagittarii.....	32	45.0	45.3	58.5	33.5	54.0	20.5	18 13 21		325 32 42.80	T.M.	
	2254	κ Cygni.....	50	48.0	91.2	73.1	44.3	99.3	32.2			52 51 4.68	T.M.	
		B Octantis.....	28	22.8	17.4	46.2	28.4	45.2	34.4			270 28 12.40	T.M.	
	2387	α <sup>2</sup> Cygni.....	9	43.0	89.8	71.8	42.7	98.7	31.0			46 10 2.83	T.M.	
	2518	Piscis Austr.....	9	15.2	15.1	28.6	04.4	22.0	53.2			327 09 13.08	T.M.	
		(a) Georgian...M.R.	3	41.1	35.2	19.2	46.1	18.0	39.0	19.772	+15.57	122 03 48.50	T.M.	
		Georgian.....	3	59.8	62.0	56.4	67.9	62.6	59.1	19.772	+15.57	350 04 17.10	T.M.	
	2741	Fomalhaut...M.R.	36	36.0	38.4	19.9	56.0	13.5	45.5	19.750	+16.46	142 36 50.69	T.M.	
	2741	Fomalhaut.....	31	13.6	16.0	27.6	08.6	24.0	54.8			329 31 14.75	T.M.	
		τ Octantis.....	39	24.0	20.6	49.0	30.0	45.5	36.0	23 00 20		271 39 14.18	T.M.	
		Vesta.....	15	16.1	22.0	19.0	20.6	25.0	08.0			343 15 18.45	T.M.	
	♁ 4 Sept.	2254	κ Cygni.....	50	28.8	72.0	53.2	26.0	79.8	15.1	19 13 15		52 50 45.82	T.M.
			B Octantis...M.R.	39	69.5	27.0	63.7	30.0	53.0	55.4	20.070	+3.55	201 39 53.32	T.M.
			B Octantis.....	28	26.5	18.0	49.0	30.1	45.9	36.8			270 28 14.38	T.M.
2388		α <sup>2</sup> Capricorni M.R.	11	49.2	45.0	27.6	57.8	17.0	47.7	21.173	-40.94	125 10 59.52	T.M.	
2388		α <sup>2</sup> Capricorni.....	56	62.0	66.0	64.0	69.2	70.4	59.8			346 57 5.49	T.M.	
		A Oct. SP...M.R.	44	26.2	42.6	22.0	41.9	09.5	10.2	20.556	-16.05	203 43 49.35	T.M.	
		A Octantis SP....	24	29.0	24.0	48.0	36.0	48.1	40.0			268 24 17.52	T.M.	
		Georgian.....	1	35.6	41.8	33.8	47.0	39.9	36.3			350 01 39.07	T.M.	
2741		Fomalhaut...M.R.	36	31.9	33.2	17.4	49.5	09.7	39.3	20.110	+1.94	142 36 51.46	T.M.	
2741		Fomalhaut.....	31	12.1	14.5	28.6	04.4	25.0	51.2			329 31 13.28	T.M.	
		τ Octantis...M.R.	28	49.0	06.0	42.2	12.8	32.0	37.0	19.640	+20.89	200 28 50.72	T.M.	
		τ Octantis.....	39	25.8	23.8	51.2	33.0	47.2	38.2			271 39 16.53	T.M.	
		Vesta.....	52	61.7	63.5	64.6	63.1	68.7	51.8			342 53 2.23	T.M.	
2849		(c) γ <sup>1</sup> Octantis...M.R.	4	36.1	58.2	31.0	04.9	19.2	27.6	23.482	-2 14.07	195 02 5.37	T.M.	
2849		γ <sup>1</sup> Octantis.....	5	71.0	69.5	96.8	19.8	91.2	24.1			277 06 2.13	T.M.	
2861		γ <sup>2</sup> Octantis.....	56	67.5	65.8	92.0	16.2	87.8	19.7			276 56 58.17	T.M.	
10		(d) γ <sup>3</sup> Octantis...M.R.	12	56.2	18.0	51.9	22.9	37.6	46.0	17.533	+1 45.95	195 14 24.66	T.M.	
10		γ <sup>3</sup> Octantis.....	53	49.6	47.0	73.3	56.8	78.4	02.2	0 06 20	+1.70	276 53 42.93	T.M.	
		(e) ο Octantis...M.R.	23	16.2	32.2	10.4	35.6	59.0	01.2	20.880	+29.12	201 22 26.55	T.M.	
		ο Octantis.....	45	49.4	46.0	74.6	57.8	70.8	01.5	10 18 50		270 45 40.40	T.M.	
219		α Hydri.....R.	29	24.8	00.0	04.3	14.4	53.8	23.2	20.566	-16.46	174 28 53.62	T.M.	
254		(f) δ Hydri...M.R.	31	41.0	19.2	30.0	32.4	21.1	45.1	21.008	-34.28	181 30 57.19	T.M.	
254		δ Hydri.....	36	85.6	72.8	107.6	37.0	93.8	39.7		+0.74	290 37 13.49	T.M.	
340		γ Persei.....M.	52	41.8	89.1	69.1	42.6	97.5	29.1	20.908	-30.25	52 52 31.28	T.M.	
341		Persei.....	15	43.0	91.8	73.4	47.0	100.8	35.0			40 16 5.17	T.M.	
365		α Persei.....	8	49.1	96.8	75.9	49.5	103.2	36.5	3 12 39		49 09 8.50	T.M.	
439		γ Hydri...M.R.	52	38.8	09.2	29.9	20.0	18.3	38.4	22.520	-1 35.28	186 50 49.49	T.M.	
439		γ Hydri.....	17	32.4	21.1	56.2	38.0	45.0	46.0			285 17 20.78	T.M.	
699		α Columbæ.....	50	38.9	40.9	52.5	30.8	45.2	16.4	5 33 35.5		325 50 37.45	T.M.	
838		Sirius...M.R.	36	33.5	31.1	10.2	48.2	01.7	35.0	17.963	+1 28.54	128 37 54.82	T.M.	
838		Sirius.....	30	10.8	13.6	14.2	14.1	17.1	01.4			343 30 12.21	T.M.	
♁ 5 Sept.			⊙ S.L.....M..	32	49.0	76.8	58.4	72.1	76.5	57.2	19.636	+21.05	6 33 25.68	T.M.
		⊙ N. L.....	4	51.2	86.8	60.6	79.5	82.4	61.2			7 05 10.61	T.M.	
		(g) ♀'s center...M.R.	28	47.5	40.2	24.1	49.0	19.1	42.2	20.055	-1 16.52	117 27 21.03	T.M.	
		♀'s center.....	40	38.4	49.3	39.0	54.0	46.3	43.2			354 40 45.60	T.M.	
		(h) ♀'s center...M.R.	22	51.8	43.2	26.3	51.2	24.0	45.0	22.655	-1 40.72	116 21 0.41	T.M.	
		♀'s center.....	46	59.0	68.8	56.4	73.0	65.2	62.5			355 47 5.21	T.M.	

Molyneux slow, Sept. 4<sup>th</sup>, 11<sup>h</sup>.

- (a) Accidentally Observed on the Micrometer Wire. Correction for Motion in Declination, 0<sup>o</sup>.03
  - (b) The Quicksilver disturbed by Wind.
  - (c) Observed at 30s. on each side of the Meridian. Correction for Curvature, 0<sup>o</sup>.06
- The times of Transit over the middle Wire of α Columbæ and α Persei, indicate an error in Azimuth of 2s.3, provide the Axis is horizontal.

- (d) Unclamped the Circle, supposing that it was mispointed, by the delay the Star reached the 4<sup>th</sup> space before it was observed.
- (e) Correction for Curvature of Path, -0<sup>o</sup>.10 and +0<sup>o</sup>.38
- (f) Reflexion Observation on the Meridian, the direct at the 4<sup>th</sup> Wire.
- (g) Observed at the 2<sup>nd</sup> and 4<sup>th</sup> Wires. Correction for Motion in Declination, 0<sup>o</sup>.55
- (h) Correction for Motion in Declination, 0<sup>o</sup>.97



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"	
3.08	-55	18	39.74	30.090	57.3	57.0		1	23.08			0	43	53.93		σ Octantis.
	85	16	45.76	.077	57.3	56.8	54.5								2071	γ Draconis.
	-2	52	14.78	.077	57.3	56.8	54.5		2.89			53	11	39.08	2101	β Telescopii R.
	-2	52	15.41									53	11	38.45	2101	β Telescopii.
	-0	31	20.59						0.52			55	32	35.64	2110	ε Sagittarii.
	86	47	0.29	.071	57.0	55.5									2254	κ Cygni.
2.80	-55	35	50.99	.063	57.0	55.2		1	24.19			0	26	41.57		B Octantis.
	80	5	59.44	.060	57.0	55.8		5	18.89			136	15	15.08	2387	α <sup>2</sup> Cygni.
	1	5	9.69	.038	57.0	57.0	53.0		1.09			57	9	7.53	2518	Piscis Australis.
	24	0	14.89	.204	57.0	54.5						80	4	37.35		Georgean R.
	24	0	13.71						0.18			80	4	36.17		Georgean.
	3	27	12.70	30.200	57.0	53.5						59	31	12.96	2741	Fomalhaut R.
2.72	3	27	11.36					3.51			59	31	11.62	2741	Fomalhaut.	
3.85	-54	24	49.21	29.992	56.5	52.8		1	20.77			1	37	46.77		τ Octantis.
	17	11	15.06	29.990	56.3	52.3			1.86			73	15	27.92		Vesta.
	86	46	42.51	30.321	57.4	49.8									2254	κ Cygni.
	-55	35	50.01	.323	56.0	49.6		1	25.86			0	26	40.88		B Octantis R.
	-55	35	48.93									0	26	41.96		B Octantis.
	20	53	3.79	.332	56.2	49.2	48.0		22.50			76	57	23.04	2388	α <sup>2</sup> Capricorni R.
2.51	20	53	2.18								76	57	21.43	2388	α <sup>2</sup> Capricorni.	
3.44	-57	39	46.04	.328	55.0	47.8	46.5	1	33.18			-1	37	22.47		A Octantis SP. R.
	-57	39	45.79								-1	37	22.22		A Octantis SP.	
	23	57	35.76	.327	55.0	47.0		26.33	0.18		80	1	58.66		Georgean.	
2.37	3	27	11.85	.327	55.0	47.0					59	31	12.18	2741	Fomalhaut R.	
	3	27	9.97					3.58			59	31	10.30	2741	Fomalhaut.	
3.63	-54	24	47.41	.327	55.0	47.0		1	22.62			1	37	46.72		τ Octantis R.
	-54	24	46.78								1	37	47.35		τ Octantis.	
	16	48	58.92	.327	55.0	47.0		17.90	1.82		72	53	11.75		Vesta.	
3.75	-48	58	2.06	.326	55.0	47.0		1	7.98			7	4	46.71	2849	γ <sup>1</sup> Octantis R.
	-48	58	1.18								7	4	47.59	2849	γ <sup>1</sup> Octantis.	
3.80	-49	7	5.14	.326	55.0	47.0		1	8.34			6	55	43.27	2861	γ <sup>2</sup> Octantis.
	-49	10	21.35	.326	54.0	47.0		1	8.48			6	52	26.92	10	γ <sup>3</sup> Octantis R.
3.48	-49	10	20.38									6	52	27.89	10	γ <sup>3</sup> Octantis.
	-55	18	23.24	.318	54.0	46.8		1	25.40			0	44	8.11		o Octantis R.
	-55	18	22.91									0	44	8.44		o Octantis.
	-28	24	50.31	.314	56.0	50.2		31.83				27	38	34.61	219	α Hydri.
	-35	26	53.88	.315	56.0	48.8		41.99				20	36	20.88	254	δ Hydri R.
	-35	26	49.82									20	36	24.94	254	δ Hydri.
5.14	86	48	27.97	.321	54.0	45.2	44.3							340	γ Persei.	
	74	12	1.86	.321	54.0	45.2	44.3	3	27.14			130	19	25.75	341	Persei.
	83	5	5.19	.324	54.0	45.6	44.8	7	37.64			139	16	39.58	365	α Persei.
	-40	46	46.18	.329	54.5	45.2	44.5	51.25				15	16	19.32	439	γ Hydri R.
	-40	46	42.53									15	16	22.97	439	γ Hydri.
	-0	13	25.86					0.23				55	50	30.66	699	α Columbæ.
3.52	17	26	8.49	30.370	56.0	47.5		18.61				73	30	23.85	838	Sirius R.
	17	26	8.90									73	30	24.26	838	Sirius.
(3.32)	40	29	22.37	30.346	58.0	59.4	54.6	49.36	5.50		15	53.80	96	49	56.78	⊙
	41	1	7.30					50.30	5.56				96	49	54.99	⊙
	28	36	42.28	.323	58.6	60.0	55.5	31.49	3.96				84	41	6.56	♃
	28	36	42.29										84	41	6.57	♃
(2.81)	29	43	2.90	30.323	58.6	60.0	55.5	32.96	3.00				85	47	29.61	♀
	29	43	1.90										85	47	28.61	♀

Coincidence of Micrometer Wire with fixed Wire, =20".158 One revolution =40".335  
 Correction for Runs =0".00  
 Adopted Zenith Point =326°. 04'. 03".39 From Vesta on Sept. 1<sup>st</sup>, =326°. 04'. 03".31  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.			Initials of Observer.				
			A	B	C	D	E	F			/ / "							
			l "	" "	" "	" "	" "	" "			r.	l "	" "		o / "			
♁ 5 Sept.		σ Octantis.....	45	35.5	33.7	57.8	47.0	56.3	40.4	18.960	+48.32	270	45	25.12	T.M.			
		Georgean...M.R.	6	38.0	34.7	12.4	46.1	07.1	39.5			122	07	17.95	T.M.			
		(a) Georgean.....	0	41.8	47.0	39.5	52.0	45.8	41.9			350	00	44.90	T.M.			
	2741	Fomalhaut...M.R.	37	38.2	41.0	19.5	60.8	14.9	50.0			20.265	-44.65	142	36	52.10	T.M.	
	2741	Fomalhaut.....	31	13.2	14.8	24.8	09.2	21.0	57.0					329	31	13.98	T.M.	
		τ Octantis...M.R.	28	44.1	02.5	45.2	02.3	35.0	25.8			19.498	+26.62	200	28	52.44	T.M.	
		(b) τ Octantis.....	39	28.0	25.0	47.6	40.0	44.4	45.2					271	39	18.37	T.M.	
		Vesta.....	45	51.0	55.9	52.2	56.3	56.8	43.6					342	45	52.63	T.M.	
		(c)																
	♃ 9 Sept.		σ Octantis.....	45	37.8	39.5	58.0	44.8	54.5			51.0	17 09 30		270	45	27.60	T.M.
2110		ε Sagittarii.....	32	42.2	46.1	53.6	37.0	50.0	22.2			325	32	41.85	T.M.			
2122		λ Sagittarii.....	29	31.0	38.9	39.0	34.8	40.6	20.0			334	29	34.05	T.M.			
		♃ S.L.....	41	59.3	63.9	67.1	57.8	69.1	43.2			331	42	0.07	T.M.			
2220		π Sagittarii...M.R.	25	49.0	52.8	27.0	67.2	22.1	53.7	21.510	-54.65	133	24	50.11	T.M.			
2220		π Sagittarii.....	43	15.2	15.5	19.2	15.7	22.2	04.0			338	43	15.84	T.M.			
2290		h <sup>2</sup> Sagittarii M.R.	22	46.6	56.1	28.3	70.7	26.2	55.4	20.730	-23.19	137	22	23.49	T.M.			
2290		h <sup>2</sup> Sagittarii.....	45	41.6	44.3	50.8	41.8	50.0	29.1			334	45	43.47	T.M.			
		(d)																
☉ 10 Sept.			σ Octantis.....	45	34.2	29.0	57.3	41.0	54.4	46.1	17 10 50	+0.19	270	45	23.86	T.M.		
	2110	ε Sagittarii.....	32	43.7	46.0	56.8	35.0	52.1	21.4			325	32	42.50	T.M.			
	2220	π Sagittarii...M.R.	24	30.2	26.0	06.8	42.0	57.4	33.1	19.470	+27.63	133	24	49.67	T.M.			
	2220	π Sagittarii.....	43	15.5	15.8	21.0	14.0	22.2	02.6			338	43	15.72	T.M.			
	2290	h <sup>2</sup> Sagittarii M.R.	22	32.0	32.2	11.5	48.4	04.1	36.9	20.232	-3.11	137	22	23.87	T.M.			
	2290	h <sup>2</sup> Sagittarii.....	45	41.2	44.0	51.0	40.2	50.2	27.0			334	45	42.81	T.M.			
		♃ S.L.....	38	19.9	23.1	28.7	19.0	28.7	03.7			333	38	20.52	T.M.			
	2403	π Capricorni M.R.	52	35.8	34.0	13.2	50.1	06.7	41.1	19.951	+8.23	130	52	38.38	T.M.			
	2403	π Capricorni.....	15	24.8	27.2	30.0	27.8	32.0	16.2			341	15	26.71	T.M.			
	2445	ψ Capricorni M.R.	59	22.3	24.8	03.5	41.0	57.3	30.0	20.381	-9.01	137	59	10.27	T.M.			
2445	ψ Capricorni.....	8	56.0	56.3	64.2	53.4	62.8	40.5			334	08	56.07	T.M.				
2741	Fomalhaut...M.R.	36	41.0	44.1	22.7	63.6	16.6	52.6	19.840	+12.71	142	36	52.16	T.M.				
2741	Fomalhaut.....	31	13.0	15.0	26.0	18.1	21.8	55.5			329	31	13.88	T.M.				
	(e) Vesta.....	12	46.1	48.0	50.5	48.0	53.5	37.3			342	12	47.80	T.M.				
838	(f) Sirius.....M.R.	37	43.2	41.8	18.2	55.1	11.2	44.8	19.739	+16.78	128	37	52.41	T.M.				
838	(f) Sirius.....	30	08.5	12.2	11.1	12.7	15.6	00.2			343	30	10.14	T.M.				
♃ 11 Sept.		☉ N.L.....M...	49	29.5	54.0	34.8	54.5	51.5	40.9	20.190	-1.61	4	49	42.20	T.M.			
		☉ S.L.....	17	39.5	61.1	43.8	62.4	57.2	49.1			4	17	52.52	T.M.			
		♀ N.L.....	43	45.6	51.1	42.0	57.1	48.8	47.0			352	43	48.60	T.M.			
		(g) σ Octantis.....	45	37.2	27.8	60.0	39.4	56.2	46.0	19 11 00	-20	270	45	24.63	T.M.			
	2110	ε Sagittarii.....	32	42.5	46.0	56.2	34.1	52.6	21.0			325	32	42.07	T.M.			
	2254	κ Cygni.....	50	49.6	96.1	75.1	48.5	102.8	35.9			52	51	8.00	T.M.			
		B Octantis.....R.	40	15.3	33.2	11.1	36.4	59.4	01.0	19 40 40	+0.53	201	39	55.60	T.M.			
		B Octantis.....	28	22.6	18.1	40.3	33.4	39.7	39.0	19 45 50		270	28	12.18	T.M.			
	2388	α <sup>2</sup> Capricorni M.R.	11	48.1	50.6	19.6	66.6	16.6	54.0	21.272	-45.05	125	10	57.53	T.M.			
	2388	(a) α <sup>2</sup> Capricorni.....	57	05.0	04.0	04.0	09.0	09.2	02.5			346	57	6.02	T.M.			
2445	ψ Capricorni M.R.	59	39.6	52.8	21.1	68.7	19.7	52.2	20.938	-31.58	137	59	10.23	T.M.				
2445	ψ Capricorni.....	8	56.5	56.5	61.0	56.6	60.6	43.7			334	08	56.36	T.M.				
	♃ S.L.....	34	44.4	44.5	48.0	45.0	48.0	34.0			337	34	43.98	T.M.				
2543	ζ Capricorni...M.R.	15	35.6	50.0	15.4	64.0	16.6	47.0	21.317	-46.87	135	14	50.76	T.M.				
2543	ζ Capricorni.....	53	13.5	15.0	17.3	15.1	17.7	01.2			336	53	13.77	T.M.				
2586	ξ Capricorni...M.R.	60	30.0	41.2	06.3	55.2	05.6	39.0	20.980	-33.28	128	59	55.92	T.M.				
2586	ξ Capricorni.....	8	06.8	09.1	07.0	10.6	11.0	59.0			343	08	7.60	T.M.				
	C Octantis...M.R.	54	35.5	58.8	39.9	53.8	32.4	15.4	{21 58 30	-28.07	198	53	51.23	T.M.				
	C Octantis.....	14	29.1	27.5	47.0	40.0	45.0	46.0	{20.851		273	14	19.10	T.M.				

Molyneux slow, Sept. 11<sup>th</sup>, 17<sup>s</sup>.

- (a) The Reflected Observation on the Meridian. The direct at the 5<sup>th</sup> Wire. Correction 0'.03
- (b) A blotch from wind.
- (c) Heavy rain or cloudy weather in the interval between the 4<sup>th</sup> and 9<sup>th</sup>.
- (d) Reflected Observation on the Meridian, the direct at the 5<sup>th</sup>.
- (e) The Reflected Observation was lost.
- (f) Observed at the 2<sup>nd</sup> and 4<sup>th</sup> Wires.
- (g) Faint.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"			
(1.43)	-55	18	38.19	30.326	58.0	53.2		1	24.35			0	43	54.21		σ Octantis.		
	23	56	45.36	.324	57.0	48.8						80	1	8.14		Georgean	R.	
	23	56	41.59					26.21	0.18			80	1	4.37		Georgean.		
3.04	3	27	11.21	.316	57.5	48.6						59	31	11.52	2741	Fomalhaut	R.	
	3	27	10.67					3.56				59	31	10.98	2741	Fomalhaut.		
5.41	-54	24	49.13	30.313	56.0	47.0	47.2	1	22.57			1	37	45.05		τ Octantis.	R.	
	-54	24	44.94									1	37	49.24		τ Octantis.		
	16	41	49.32					17.76	1.80			72	46	2.03		Vesta.		
2.98	-55	18	35.75	30.355	58.0	52.2		1	24.59			0	43	56.41		σ Octantis.		
	-0	31	21.50	.366	57.0	49.3			0.54			55	32	34.71	2110	ε Sagittarii.		
	8	25	30.70	.366	57.0	49.3			8.75			64	29	36.20	2122	λ Sagittarii.		
	5	37	56.72	.374	57.0	49.0		5.83	5 37.95		16	9.62	61	52	30.97		δ	
	12	39	13.24	.382	57.0	48.6	46.5						68	43	23.45	2220	π Sagittarii	R.
	12	39	12.49					13.46					68	43	22.70	2220	π Sagittarii.	
3.48	8	41	39.86	30.400	57.0	48.3			9.06			64	45	45.67	2290	h <sup>2</sup> Sagittarii	R.	
	8	41	40.12									64	45	45.93	2290	h <sup>2</sup> Sagittarii.		
2.70	-55	18	39.49	30.191	57.5	56.2		1	23.48			0	43	53.78		σ Octantis.		
	-0	31	20.85						0.53			55	32	35.37	2110	ε Sagittarii.		
	12	39	13.68	.185	58.0	57.0		12.98				68	43	23.41	2220	π Sagittarii	R.	
	12	39	12.37									68	43	22.10	2220	π Sagittarii.		
3.34	8	41	39.48	.185	57.2	57.3		8.84				64	45	45.07	2290	h <sup>2</sup> Sagittarii	R.	
	8	41	39.46									64	45	45.05	2290	h <sup>2</sup> Sagittarii.		
2.55	7	34	17.17	.185	57.2	54.3		7.73	7 43.10		16	21.50	63	47	0.05		δ	
	15	11	24.97	.172	57.0	53.2	50.5						71	15	37.53	2403	π Capricorni	R.
	15	11	23.36					15.81					71	15	35.92	2403	π Capricorni.	
3.17	8	4	53.08	.165	57.0	53.8	50.5		8.26			64	8	58.09	2445	↓ Capricorni	R.	
	8	4	52.72									64	8	57.73	2445	↓ Capricorni.		
3.02	3	27	11.19	.128	57.0	51.0			3.52			59	31	11.46	2741	Fomalhaut	R.	
	3	27	10.53									59	31	10.80	2741	Fomalhaut.		
1.28	16	8	44.45	.126	57.0	51.0		16.90	1.73			72	12	56.37		Vesta.		
	17	26	10.94	30.042	56.0	49.0		18.36				73	30	26.05	838	Sirius	R.	
	17	26	6.79									73	30	21.90	838	Sirius.		
3.89	38	45	38.85	30.005	59.0	66.4	61.6	45.29	5.33		15	55.30	94	34	20.26		⊙	
	38	13	49.17					44.44	5.25				94	34	20.41		⊙	
	26	39	45.25	29.996	60.0	65.2	60.0	28.39	2.78	20.495	6.86		82	44	0.75		♀	
	-55	18	38.72	30.026	59.0	57.4		1	22.82			0	43	55.21		σ Octantis.		
	-0	31	21.28						0.52			55	32	34.95	2110	ε Sagittarii.		
	86	47	4.65	.056	59.0	53.4									2254	κ Cygni.		
	-55	35	52.25	.056	58.0	53.7	52.8						0	26	40.09		B Octantis	R.
	-55	35	51.17					1	24.41				0	26	41.17		B Octantis.	
	20	53	5.82	.056	58.0	53.5	53.0		22.11				76	57	24.68	2388	α <sup>2</sup> Capricorni	R.
	20	53	2.67										76	57	21.53	2388	α <sup>2</sup> Capricorni.	
3.30	8	4	53.12	.056	58.0	53.5	53.0		8.23			64	8	58.10	2445	↓ Capricorni	R.	
	8	4	53.01									64	8	57.99	2445	↓ Capricorni.		
2.27	11	30	40.63	.056	58.0	53.5		11.80	11 53.79		16	30.57	67	39	25.96		δ	
	10	49	12.59	.063	57.5	51.8							66	53	20.46	2543	ζ Capricorni	R.
	10	49	10.42					11.12					66	53	18.29	2543	ζ Capricorni.	
1.76	17	4	7.43	.063	57.5	51.5			17.87			73	8	22.05	2586	δ Capricorni	R.	
	17	4	4.25									73	8	18.87	2586	δ Capricorni.		
5.17	-52	49	47.88	30.070	57.5	51.2	50.0					3	12	52.19		C Octantis	R.	
	-52	49	44.25					1	16.68			3	12	55.82		C Octantis.		

Coincidence of Micrometer Wire with fixed Wire to Sept. 9<sup>th</sup>, =20°.158 From Sept. 9<sup>th</sup>, =20°.155  
 One revolution =40<sup>g</sup>.335  
 Correction for Runs =0<sup>g</sup>.00  
 Adopted Zenith Point =326°. 04'. 03<sup>g</sup>.31 to Vesta, on Sept. 5<sup>th</sup>. From Noon Sept. 9<sup>th</sup>, =326°. 04'. 03<sup>g</sup>.35  
 Assumed Co-latitude =56°. 03'. 56<sup>g</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction fo Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			<i>h</i> <i>m</i> <i>s</i>	<i>h</i> <i>m</i> <i>s</i>	<i>h</i> <i>m</i> <i>s</i>	<i>h</i> <i>m</i> <i>s</i>	<i>h</i> <i>m</i> <i>s</i>	<i>h</i> <i>m</i> <i>s</i>				
D 11 Sept.	2741	Georgean...M.R.	12 48.9	46.0	19.0	63.0	14.8	54.5	20.496	-13.75	122 12 27.11	T.M.
		Georgean.....	55 37.0	37.8	34.2	43.4	38.2	35.8			349 55 37.96	T.M.
		Fomalhaut.....R.	36 40.0	53.2	23.0	72.4	21.5	56.6	19.948	+8.35	142 36 52.15	T.M.
		Fomalhaut.....	31 14.3	14.8	23.4	12.0	19.4	00.5			329 31 14.72	T.M.
		Vesta.....M.R.	1 32.0	45.3	09.8	60.3	10.2	43.6	20.495	-13.71	130 01 19.64	T.M.
		(a) Vesta.....	6 43.6	47.0	49.0	48.8	50.1	37.0		342 06 46.48	T.M.	
f 16 Sept.	2700	C Octantis...M.R.	54 34.0	56.8	37.0	53.2	29.4	16.0	20.805	-26.22	198 53 51.51	T.M.
		(b) C Octantis.....	14 25.0	26.2	44.0	38.1	41.8	43.0		+0.11	273 14 16.46	T.M.
		β Octantis...M.R.	20 46.7	11.9	50.0	11.0	40.0	33.0	19.853	+12.18	194 20 44.28	T.M.
		(b) β Octantis.....	47 34.1	28.5	53.0	46.2	45.2	50.8		+2.28	277 47 23.27	T.M.
		Fomalhaut...M.R.	37 48.0	58.0	31.0	77.5	27.4	63.8	21.552	-56.35	142 36 53.95	T.M.
		Fomalhaut.....	31 11.8	14.1	21.4	11.0	17.2	57.5			329 31 12.82	T.M.
		Vesta.....M.R.	28 61.0	74.0	39.8	87.0	40.5	71.2	20.936	-31.50	130 28 30.58	T.M.
		(c) γ <sup>1</sup> Octantis...M.R.	1 77.7	43.0	83.2	38.0	73.1	59.0	19.995	+6.45	195 02 8.50	T.M.
		2849 (c) γ <sup>1</sup> Octantis.....	5 68.2	64.9	86.7	21.2	80.3	26.4			277 05 58.23	T.M.
		10 (c) γ <sup>3</sup> Octantis...M.R.	14 45.2	09.3	52.7	02.5	41.0	25.0	20.168	-0.52	195 14 28.48	T.M.
10 (c) γ <sup>3</sup> Octantis.....	53 51.3	44.0	69.5	61.5	63.0	08.2			276 53 39.86	T.M.		
☉ 17 Sept.		☉ N.L.....M...	30 37.1	57.5	43.0	54.4	56.1	43.1	19.206	+38.28	2 31 26.44	T.M.
		☉ S.L.....	59 26.1	38.2	27.6	39.0	36.6	31.4			1 59 33.50	T.M.
		(d) ☉'s center...M.R.	59 27.0	33.0	01.0	49.6	58.8	35.9	21.440	-51.85	122 58 32.69	T.M.
		☉'s center.....	9 34.1	32.0	32.5	38.0	34.5	31.2			349 09 34.50	T.M.
		(e) ☉'s center...M.R.	23 38.1	43.3	11.0	60.0	09.2	48.0	21.770	-1 05.14	122 22 30.50	T.M.
		☉'s center.....	45 35.6	33.6	32.8	39.3	36.0	31.9		349 45 36.00	T.M.	
D 18 Sept.		☉ S.L.....M...	35 47.7	70.1	52.1	68.1	67.6	55.0	19.587	+22.91	1 36 22.64	T.M.
		☉ N.L.....	8 02.8	19.0	05.1	19.0	14.6	09.8			2 08 12.07	T.M.
		(f) ☉'s center...M.R.	15 34.0	35.2	03.6	55.3	58.2	43.4	20.937	-31.54	123 14 56.98	T.M.
		☉'s center.....	53 07.0	08.8	05.6	13.5	08.6	05.0			348 53 8.79	T.M.
		(e) ☉'s center...M.R.	52 47.8	46.7	17.0	65.5	13.2	45.4	21.925	-1 11.39	122 51 28.58	T.M.
		☉'s center.....	16 34.6	35.0	31.3	39.6	36.1	31.3			349 16 35.79	T.M.
		B Octantis.....R.	40 21.3	46.2	28.0	36.5	20.2	58.0	19 25 35	-7.61	201 39 57.42	T.M.
		.....D.	28 16.2	10.8	33.0	27.7	31.9	34.0	19 30 33	+4.61	270 28 10.21	T.M.
		.....R.	40 15.2	40.3	22.8	30.0	15.2	52.2	19 36 35	-1.97	201 39 57.31	T.M.
		(g) .....D.	28 18.2	15.7	34.5	32.7	35.1	37.1	19 43 40	+0.28	270 28 9.16	T.M.
21 Sept.	2110	(k) ☉ N.L.....M...	57 30.6	52.3	44.2	43.0	60.7	28.0	19.324	+33.52	0 58 16.65	T.M.
		☉ S.L.....	26 14.0	26.0	25.0	18.1	35.8	09.9			0 26 21.84	T.M.
		ε Sagittarii.....	32 48.3	40.5	53.5	35.8	44.2	27.2			325 32 41.58	T.M.
		B Octantis.....R.	40 13.8	00.0	36.0	35.8	37.8	46.6	19 19 40	-12.16	201 39 56.07	T.M.
		.....D.	27 68.0	75.0	56.0	60.0	60.2	58.4	19 23 52	+8.82	270 28 11.75	T.M.
		.....R.	39 67.0	52.8	88.0	29.0	91.0	39.0	19 28 26	-5.79	201 39 55.21	T.M.
		.....D.	27 73.2	80.9	61.4	65.8	65.5	65.0	19 34 26	+2.78	270 28 11.41	T.M.
		.....R.	39 62.2	49.4	84.3	25.5	87.5	35.4	19 41 00	-0.74	201 39 56.64	T.M.
		(h) .....D.	27 77.0	84.8	64.2	69.8	69.0	68.0	19 46 09	+0.05	270 28 12.18	T.M.
		.....R.	39 60.2	46.6	82.0	23.2	84.3	34.0	19 51 12	-0.16	201 39 54.89	T.M.
		.....D.	28 14.0	22.6	01.6	07.8	07.2	06.0	19 56 45	+1.18	270 28 11.05	T.M.
		.....R.	39 64.0	50.4	86.4	26.8	90.0	36.8	19 62 31	-3.23	201 39 55.84	T.M.
		.....D.	28 11.0	17.8	58.2	02.7	02.1	02.8	19 67 45	+5.96	270 28 11.73	T.M.
		A Oct. SP.....R.	43 59.5	42.4	86.9	17.8	82.0	32.1	20 30 30	+0.22	203 43 52.67	T.M.
		.....D.	24 22.6	27.3	07.2	12.3	12.0	12.1	20 35 45	-0.59	268 24 14.99	T.M.
(i) .....R.	43 57.4	39.8	78.8	15.7	80.0	29.2	20 41 03	+4.08	203 43 54.23	T.M.		
.....D.	24 34.2	38.8	18.2	23.7	24.8	23.2	20 46 04	-10.25	268 24 16.90	T.M.		
340		Persei.....	51 64.8	67.4	81.0	31.0	87.8	41.0		48 52 2.17	T.M.	

Molyneux slow, Sept. 17<sup>h</sup>, 18<sup>s</sup>.—21<sup>h</sup>, 27<sup>s</sup>.

(a) Correction for Motion in Declination, 0°.19

(b) One minute past Meridian.

(c) Observed at one minute on each side of the Meridian. Correction, 0°.28

(d) Correction for Motion in Declination, 0°.55

(e) Correction for Motion in Declination, 0°.92

(f) Correction for Motion in Declination, 0°.48

(g) Became cloudy at the 4<sup>th</sup> Observation.

(h) The supposed time of Transit over the Meridian by Molyneux, is 19<sup>h</sup>. 47<sup>m</sup>. 57<sup>s</sup>.

(i) The Quicksilver disturbed by wind. Supposed time of Transit over the Meridian by Molyneux, 20<sup>h</sup>. 32<sup>m</sup>. 29<sup>s</sup>.

(k) In violent agitation.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"			
2.54	23	51	36.24	30.073	57.5	51.8		25.74	0.18			79	55	58.55			R.	
	23	51	34.61									79	55	56.92				
3.44	3	27	11.20	.076	57.5	51.8		3.51				59	31	11.46	2741		R.	
	3	27	11.37									59	31	11.63	2741			
(3.06)	16	2	43.71	30.090	57.5	52.2	51.6	16.73	1.71			72	6	55.48			R.	
	16	2	43.13									72	6	54.90				
3.99	-52	49	48.42	30.247	57.0	49.8	47.6	1 17.73				3	12	50.60			R.	
	-52	49	46.63									3	12	52.39				
3.78	-48	16	41.19	.244	57.0	49.5		1 5.84				7	46	9.72	2700		R.	
	-48	16	39.82									7	46	11.09	2700			
3.39	3	27	9.14	.243	57.0	49.6		3.55				59	31	9.44	2741		R.	
	3	27	9.73									59	31	10.03	2741			
3.37	15	35	32.51	.243	57.0	49.6		16.40	1.64			71	39	44.02			R.	
	-48	58	5.41	.232	57.5	51.0						7	4	44.11				2849
4.17	-48	58	4.86					1 7.23				7	4	44.66	2849		R.	
	-49	10	25.39	30.232	57.5	51.0						6	52	23.65	10			
(3.60)	-49	10	23.23					1 7.71				6	52	25.81	10		R.	
(3.25)	36	27	23.35	30.160	60.0	60.8	56.0	42.34	5.05		15 56.80	92	16	0.59		⊙		
	35	55	30.41									41.53	4.99					
(2.89)	23	5	30.40	.130	60.8	62.8		24.33	3.95			79	9	47.53		⊙	R.	
	23	5	31.41									79	9	48.54				
(2.19)	23	41	32.59	30.106	61.0	63.2	59.0	25.00	2.55			79	45	51.79		⊙	R.	
	23	41	32.91									79	45	52.11				
3.82	35	32	19.55	29.968	60.3	60.2	57.2	40.72	4.94		15 57.10	91	52	49.18		⊙		
	36	4	8.98									41.52	5.01					
3.24	22	49	6.11	29.949	60.5	61.0		23.95	3.98			78	53	22.83		⊙	R.	
	22	49	5.70									78	53	22.42				
3.91	23	12	34.51	29.940	60.6	61.3		24.38	2.51			79	16	53.13		⊙	R.	
	23	12	32.70									79	16	51.32				
3.82	-55	35	54.33	29.945	58.2	54.0		1 24.04				0	26	38.38		⊙	R.	
	-55	35	52.88	29.945	58.2	54.0						0	26	39.83				
3.24	-55	35	54.22					1 24.04				0	26	38.49		⊙	R.	
	-55	35	53.93	29.945	58.2	54.0	52.5						0	26				38.78
3.91	34	54	13.56	30.308	61.0	62.5	59.6	40.05	4.87		15 57.90	90	42	47.59		⊙		
	34	22	18.75									39.27	4.80					
3.31	-0	31	21.51	.301	58.5	53.2	51.4	1 25.16				55	32	34.71	2110		R.	
	-55	35	52.98									0	26	38.61				0
3.31	-55	35	51.34					1 25.25				0	26	40.25		⊙	R.	
	-55	35	52.12									0	26	39.38				
4.41	-55	35	51.68					1 25.33				0	26	39.82		⊙	R.	
	-55	35	53.55									0	26	37.87				
2.97	-55	35	50.91					1 25.40				0	26	40.51		⊙	R.	
	-55	35	51.80									0	26	39.55				
3.79	-55	35	52.04					1 25.44				0	26	39.31		⊙	R.	
	-55	35	52.75									0	26	39.31				
3.83	-55	35	51.36	.312	57.2	51.8	50.0	1 25.44				0	26	38.56		⊙	R.	
	-57	39	49.58									0	26	39.95				
5.57	-57	39	48.10	.316	56.2	50.0	48.8	1 32.74				-1	37	25.57		⊙	R.	
	-57	39	51.14									-1	37	24.09				
5.57	-57	39	46.19					1 32.74				-1	37	27.13		⊙	R.	
	-57	39	46.19									-1	37	22.18				
	82	47	59.08	30.346	58.0	48.5	47.9	7 18.88				138	59	14.71	340		Persei.	

Coincidence of the Micrometer Wire with fixed Wire, =20°.155 One revolution =40°.335  
 Correction for Runs =0°.00  
 Adopted Zenith Point =326°. 04'. 03".35 to Vesta, Sept. 11<sup>th</sup>, =326°. 04'. 03".09  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			l	g	g	g	g	g						
21 Sept.	365	α Persei.....	8	70.2	73.0	85.7	36.2	92.0	45.6	3 12 21		49 09 7.12	T.M.	
	433	ε Persei.....	28	44.6	61.2	72.0	17.8	86.2	20.2			39 28 50.33	T.M.	
	482	X Eridani.....	48	42.8	32.2	49.1	27.8	39.0	18.0			325 48 34.82	T.M.	
22 Sept.	(a)	⊙ S.L.....M..	2	46.7	57.1	73.1	35.2	81.7	26.8	20.035	+4.84	0 02 58.27	T.M.	
		⊙ N. L.....	34	44.4	51.8	69.7	30.2	77.6	22.3			0 34 49.70	T.M.	
	1885	Antares.....M.R.	12	58.1	65.1	57.2	64.0	53.2	49.6	21.367	-48.89	138 12 8.83	T.M.	
	1885	Antares.....	55	58.0	56.3	73.0	47.0	70.8	34.9			333 55 56.82	T.M.	
	2110	ε Sagittarii.....	32	48.3	41.1	56.9	34.4	48.0	25.6			325 32 42.38	T.M.	
		B Octantis...M.R.	40	61.0	45.8	82.0	22.1	84.3	32.8	21.367	-48.89	201 39 56.79	T.M.	
		.....D.	28	11.2	15.8	59.0	01.9	01.2	01.5	19 29 00	-8.99	270 28 10.58	T.M.	
		.....R.	39	65.2	50.3	87.5	26.7	89.3	37.8	19 34 5	+5.48	201 39 56.53	T.M.	
		.....D.	28	14.8	21.0	02.8	05.8	06.1	06.1	19 39 05	-2.93	270 28 10.63	T.M.	
		.....R.	39	63.0	48.0	85.0	24.5	86.2	35.2	19 43 30	+1.20	201 39 56.68	T.M.	
		.....D.	28	16.4	21.7	04.0	07.6	06.8	07.5	19 47 40	-0.30	270 28 10.67	T.M.	
		.....R.	39	62.1	46.8	84.2	23.8	85.1	34.8	19 52 24	+0.00	201 39 55.83	T.M.	
		.....D.	28	13.8	21.0	00.7	06.0	05.0	05.3	19 57 21	-0.30	270 28 9.97	T.M.	
		.....R.	39	64.8	50.0	86.8	27.4	88.5	38.1	19 62 20	+1.34	201 39 56.13	T.M.	
		(b)	.....D.	28	11.2	16.3	58.6	02.3	01.4	02.4	19 67 10	-3.14	270 28 10.98	T.M.
		A Oct. SP....R.	43	59.2	41.0	79.8	16.8	80.2	32.0	20 26 50	+5.61	203 43 53.29	T.M.	
		.....D.	24	19.0	22.6	03.0	07.9	08.7	08.0	20 31 50	+1.79	268 24 11.50	T.M.	
		.....R.	43	60.2	43.0	80.8	18.5	81.2	32.7	20 36 20	-0.03	203 43 53.55	T.M.	
		(c)	.....D.	24	24.0	27.8	08.8	13.2	13.3	13.3	20 42 16	+0.82	268 24 11.43	T.M.
	2518	Piscis Austr.....	9	19.3	10.3	28.6	04.5	16.2	57.0		-5.30	327 09 12.65	T.M.	
	2577	ε Piscis Austr.....	14	21.7	12.2	29.7	06.2	19.0	58.2			326 14 14.50	T.M.	
		C Octantis...M.R.	53	38.0	24.0	61.1	01.4	64.0	11.2	19.660	+19.96	198 53 53.24	T.M.	
		.....D.	14	19.8	27.0	08.4	08.3	09.6	10.2			273 14 13.88	T.M.	
	2681	δ Gruis.....M.R.	27	38.9	49.1	62.3	32.1	57.2	22.7	20.921	-30.90	156 27 12.53	T.M.	
	2681	ζ Gruis.....	40	59.8	54.8	60.2	49.7	48.0	42.0			315 40 52.71	T.M.	
		Georgian...M.R.	20	38.6	51.9	19.4	60.2	20.8	45.1	19.175	+39.53	122 21 18.67	T.M.	
		.....D.	46	43.6	44.9	63.2	31.0	67.0	22.4			349 46 45.58	T.M.	
2741	Fomalhaut...M.R.	36	45.1	51.5	53.6	46.8	47.3	34.1	19.994	+8.51	142 36 54.26	T.M.		
2741	Fomalhaut.....	31	16.2	12.0	30.4	05.0	22.1	54.9			329 31 14.08	T.M.		
	τ Octantis.....R.	28	63.1	47.0	86.2	26.1	87.7	36.0	23 00 00		200 28 57.68	T.M.		
	.....D.	39	13.2	24.0	03.9	08.1	06.7	07.0	23 05 50		271 39 12.34	T.M.		
	* 6 mag.....	25	19.0	27.0	41.5	10.8	45.9	01.0	23 46 18		354 25 24.20	T.M.		
807	Canopus....M.R.	44	42.8	54.8	69.8	30.6	67.2	23.2	21.750	-1 04.33	164 43 43.38	T.M.		
807	(d) Canopus.....	24	30.2	24.4	24.9	21.2	13.6	14.0			307 24 21.74	T.M.		
838	(d) Sirius.....M.R.	38	42.1	47.1	27.0	52.1	22.2	38.0	21.240	-43.76	128 37 53.98	T.M.		
838	Sirius.....	29	69.5	71.4	88.2	56.1	91.0	44.6			343 30 10.47	T.M.		
1281	η Argus.....M.R.	57	34.3	51.4	64.5	25.1	69.3	17.0	20.792	-25.69	170 57 17.47	T.M.		
1281	η Argus.....	10	56.9	58.1	50.2	53.0	41.0	46.9			301 10 51.46	T.M.		
23 Sept.		⊙ N. L.....	11	22.3	33.0	47.6	10.1	57.5	03.0			0 11 28.79	T.M.	
	2110	ε Sagittarii.....	32	47.0	42.0	56.8	34.0	48.8	24.0			325 32 41.86	T.M.	
		(e) B Octantis....R.	39	73.8	60.4	95.8	37.0	98.4	47.0	19 19 55	-11.95	201 39 56.33	T.M.	
		.....D.	27	65.0	71.1	51.4	56.5	56.0	57.1	19 25 9	+7.90	270 28 7.13	T.M.	
		.....R.	39	64.0	52.2	87.0	28.6	90.7	38.0	19 32 19	-3.71	201 39 55.92	T.M.	
		.....D.	28	12.6	17.7	00.9	04.2	04.0	04.2	19 37 22	+1.70	270 28 8.69	T.M.	
		.....R.	39	60.9	49.5	83.0	25.1	87.2	34.5	19 42 14	-0.50	201 39 55.75	T.M.	
		.....D.	28	16.1	20.6	02.2	07.1	06.2	07.1	19 46 41	+0.02	270 28 9.61	T.M.	
		.....R.	39	62.8	46.9	84.5	24.0	86.0	35.6	19 52 09	-0.27	201 39 55.91	T.M.	
		.....D.	28	13.2	19.5	00.2	05.3	04.8	05.1	19 57 00	+1.25	270 28 8.99	T.M.	
		.....R.	39	66.0	50.0	86.8	88.5	26.9	38.6	19 61 21	-2.74	201 39 56.28	T.M.	
		.....D.	28	10.6	15.1	58.5	01.4	01.2	02.0	19 66 26	+5.21	270 28 9.73	T.M.	

Molyneux slow, Sept. 22<sup>nd</sup>, 28<sup>s</sup>.—23<sup>rd</sup>, 28<sup>s</sup>. Sept. 23<sup>rd</sup>, put back the minute hand of the Clock Hardy 1<sup>st</sup>.

- (a) Observed on the Meridian.
- (b) Assumed time of Transit by Molyneux 19<sup>h</sup>. 47<sup>m</sup>. 55<sup>s</sup>.
- (c) Assumed time of Transit by Molyneux 20<sup>h</sup>. 32<sup>m</sup>. 30<sup>s</sup>.
- (d) Like a torch.
- (e) Assumed time by Molyneux of Transit over the Meridian, 19<sup>h</sup>. 47<sup>m</sup>. 56<sup>s</sup>.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
#	o	'	"	Inch.	o	o	o	'	"	"	'	"	o	'	"	
	83	5	4.03	30.345	58.0	48.0	47.0	7	35.45			139	16	36.23	365	$\alpha$ Persei.
	73	24	47.24	30.338	56.5	47.0	46.0	3	16.34			129	32	0.33	433	$\epsilon$ Persei.
	-0	15	28.27						0.27			55	48	28.21	482	X Eridani.
	33	58	55.18	30.327	59.8	63.0	57.0	38.69	4.76			90	19	24.06		$\odot$
	34	30	46.61					39.46	4.82		15 58.20	90	19	19.80		$\odot$
2.83	7	51	54.26	.269	60.8	60.8		7.95				63	55	58.96	1885	Antares R.
	7	51	53.73					7.95				63	55	58.43	1885	Antares.
	-0	31	20.71					0.53				55	32	35.51	2110	$\epsilon$ Sagittarii.
	-55	35	53.70	.254	58.0	52.0						0	26	37.76		B Octantis R.
3.69	-55	35	52.51					1	25.29			0	26	38.95		D.
	-55	35	53.44					1	25.29			0	26	38.02		R.
3.58	-55	35	52.46					1	25.29			0	26	39.00		D.
	-55	35	53.59					1	25.29			0	26	37.87		R.
3.68	-55	35	52.42					1	25.29			0	26	39.04		D.
	-55	35	52.74					1	25.29			0	26	38.72		R.
2.90	-55	35	53.12					1	25.29			0	26	38.34		D.
	-55	35	53.04					1	25.29			0	26	38.42		R.
3.56	-55	35	52.11	.251	57.2	51.4	50.5	1	25.29			0	26	39.35		D.
	-57	39	50.20					1	32.36			-1	37	25.81		A Oct. SP. R.
2.40	-57	39	51.59					1	32.36			-1	37	27.20		D.
	-57	39	50.46					1	32.36			-1	37	26.07		R.
2.49	-57	39	51.66	.248	57.0	51.0		1	32.36			-1	37	27.27		D.
	1	5	9.56					1	1.11			57	9	7.42	2518	Piscis Australis.
	0	10	11.41					1	0.17			56	14	8.33	2577	$\epsilon$ Piscis Australis.
	-52	49	50.15	.218	56.2	50.0	48.8	1	17.25			3	12	49.35		C Octantis R.
3.56	-52	49	49.21					1	17.25			3	12	50.29		C Octantis.
	-10	23	9.44	.217	56.2	50.0		1	10.76			45	40	36.55	2681	$\delta$ Gruis R.
2.62	-10	23	10.38					1	10.76			45	40	35.61	2681	$\delta$ Gruis.
	23	42	44.42					25.77	0.18			79	47	6.76		Georgian R.
2.13	23	42	42.49					25.77	0.18			79	47	4.83		Georgian.
	3	27	8.83	.216	56.2	49.3		3.55				59	31	9.13	2741	Fomalhaut R.
4.17	3	27	10.99					3.55				59	31	11.29	2741	Fomalhaut.
	-54	24	54.59	.214	56.0	49.0		1	21.99			1	37	40.17		$\tau$ Octantis R.
5.01	-54	24	50.75					1	21.99			1	37	44.01		$\tau$ Octantis.
	28	21	21.11	.209	56.2	47.0		31.84				84	25	49.70		* 6 mag.
	-18	39	40.29	.145	56.3	42.0		20.08				37	23	56.38	807	Canopus R.
2.56	-18	39	41.35					20.08				37	23	55.32	807	Canopus.
	17	26	9.11	.145	56.2	42.1		18.67				73	30	24.53	838	Sirius R.
2.23	17	26	7.38					18.67				73	30	22.80	838	Sirius.
	-24	53	14.38	30.131	58.4	63.6		26.43				31	10	15.94	1281	$\eta$ Argus R.
4.47	-24	53	11.63					26.43				31	10	18.69	1281	$\eta$ Argus.
	34	7	26.13	30.117	60.0	70.0	59.0	38.12	4.77		15 58.40	89	55	57.83		$\odot$
	-0	31	20.80	.168	61.0	60.2		0.53				55	32	35.42	2110	$\epsilon$ Sagittarii.
	-55	35	53.67					1	24.24			0	26	38.84		B Octantis R.
1.73	-55	35	55.53	.205	59.2	57.2	53.0	1	24.24			0	26	36.98		D.
	-55	35	53.26					1	24.33			0	26	39.16		R.
2.31	-55	35	53.97					1	24.33			0	26	38.45		D.
	-55	35	53.09					1	24.42			0	26	39.24		R.
2.68	-55	35	53.05					1	24.42			0	26	39.28		D.
	-55	35	53.25					1	24.50			0	26	39.00		R.
2.45	-55	35	53.67					1	24.50			0	26	38.58		D.
	-55	35	53.62					1	24.58			0	26	38.55		R.
3.01	-55	35	52.93	30.225	59.0	55.5	52.2	1	24.58			0	26	39.24		D.

Coincidence of Micrometer Wire with fixed Wire, =20".155 One revolution =40".335  
 Correction for Runs to Sept. 23<sup>rd</sup>, =0".00. From Sept. 23<sup>rd</sup>, =-2".70  
 Adopted Zenith Point =326°. 04'. 03".09 to  $\eta$  Argus on Sept. 22<sup>nd</sup>. From  $\eta$  Argus, =326°. 04'. 02".66  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			l #	#	#	#	#	#					
♄ 23 Sept.	2577	A Octantis SP. R.	43 48.4	30.4	68.2	06.0	69.7	20.1	20 18 23	+11.13	203 43 51.27	T.M.	
		..... D.	24 22.5	27.2	06.1	12.5	13.0	12.3	20 24 00	-4.05	268 24 11.17	T.M.	
		..... R.	43 62.0	43.5	82.3	19.7	83.8	34.1	20 28 30	+0.90	203 43 54.78	T.M.	
		(a) ..... D.	24 18.2	22.1	01.8	07.3	08.0	08.0	20 33 02	-0.01	268 24 10.51	T.M.	
		..... R.	43 60.1	43.9	81.1	19.4	82.7	33.0	20 37 21	+1.29	203 43 54.31	T.M.	
		..... D.	24 23.7	27.1	06.9	13.0	13.1	13.2	20 41 30	-4.47	268 24 11.32	T.M.	
		..... R.	43 51.8	37.0	72.4	12.0	75.1	24.1	20 45 43	+9.66	203 43 54.72	T.M.	
		..... D.	24 37.0	39.6	21.0	25.2	26.0	26.5	20 50 30	-17.95	268 24 10.87	T.M.	
		..... Piscis Austr. ....	14 22.4	13.9	29.5	08.0	20.0	59.6				326 14 15.19	T.M.
		C Octantis ... M.R.	53 49.5	33.7	73.0	10.3	74.5	22.8	19.920	+9.48	198 53 53.12	T.M.	
		C Octantis ...	14 18.2	27.5	06.7	08.1	09.4	10.0				273 14 12.94	T.M.
		..... M.R.	21 40.4	50.7	18.8	59.8	20.0	45.1	19.514	+25.85	122 22 4.65	T.M.	
		..... Georgean ...	45 57.2	60.5	77.0	45.4	82.1	35.5				349 45 59.76	T.M.
		(b) Vesta ... M.R.	57 42.2	49.1	32.0	53.8	30.4	38.5	20.852	-28.11	130 57 12.37	T.M.	
		Vesta ...	10 52.5	53.2	72.5	40.0	72.1	29.0				341 10 53.64	T.M.
		..... R.	28 62.3	46.4	86.9	24.4	88.4	34.7	22 58 8	-00.22	200 28 56.62	T.M.	
		..... R.	39 15.0	20.3	02.8	05.2	04.2	07.0	22 64 5	+0.88	271 39 9.58	T.M.	
		1281 η Argus ... M.R.	57 47.5	63.2	77.6	36.9	83.1	29.1	21.130	-39.32	170 57 16.09	T.M.	
1281 η Argus ...	10 59.0	58.8	51.6	54.0	41.8	48.7				301 10 52.68	T.M.		
☉ 24 Sept.		☉ S.L. .... M...	16 55.3	69.2	79.1	48.6	91.2	39.0	21.502	-54.37	359 16 8.80	T.M.	
		(c) ☉ N.L. ....	47 58.4	66.0	30.4	47.5	89.7	41.0			359 48 4.12	T.M.	
		(d) ♀'s center ...	27 48.8	45.6	66.0	31.4	68.2	24.4			346 27 47.15	T.M.	
♃ 25 Sept.		☉ N.L. .... M...	24 37.2	54.4	63.8	33.0	74.0	20.9	20.329	-7.02	359 24 39.39	T.M.	
		☉ S.L. ....	52 35.1	44.4	59.0	22.7	69.0	16.0			358 52 41.18	T.M.	
		A Octantis SP. ....	24 14.6	20.2	59.4	04.9	06.8	04.9	20 34 20	-0.06	268 24 8.04	T.M.	
2518	(e)	Piscis Austr. ....	9 17.0	10.9	26.4	03.2	17.8	54.8		+0.74	327 09 12.04	T.M.	
2577		Piscis Austr. ....	14 21.9	13.0	31.7	05.0	21.6	57.8			326 14 14.79	T.M.	
		C Octantis ...	14 18.0	22.7	05.5	03.6	06.2	07.1	21 57 17		273 14 10.14	T.M.	
2651		α Tucanæ ...	56 38.6	38.8	29.0	35.5	22.2	29.2			298 56 32.08	T.M.	
2676		c Lacertæ ...	15 33.6	37.9	46.0	05.1	52.6	12.6			51 15 31.25	T.M.	
		..... M.R.	23 45.9	56.1	24.2	65.0	25.9	51.2	20.403	-10.04	122 23 34.15	T.M.	
		..... Georgean ...	44 30.0	30.1	47.0	16.5	50.4	08.8			349 44 30.29	T.M.	
		(f) Vesta ... M.R.	3 27.1	32.0	15.3	37.2	13.1	24.8	20.403	-10.04	131 03 14.27	T.M.	
		Vesta ...	4 50.0	52.1	69.4	38.0	69.8	27.2			341 04 51.13	T.M.	
		..... R.	39 12.0	20.0	00.2	03.0	03.9	04.0	22 58 40	+0.06	271 39 6.86	T.M.	
2779		γ App. Sculp. ....	35 17.8	10.4	25.9	04.0	17.7	55.7			326 35 11.90	T.M.	
2849		γ <sup>1</sup> Octantis ...	5 60.0	66.0	49.0	48.0	47.9	50.3			277 05 53.45	T.M.	
2861		γ <sup>2</sup> Octantis ...	56 54.9	59.0	43.0	43.2	42.8	44.2			276 56 47.69	T.M.	
10		γ <sup>3</sup> Octantis ... M...	.....	.....	.....	.....	.....	.....	24.871	-3 10.26	276 53 37.43	T.M.	
		o Octantis ...	45 34.2	42.8	22.2	28.2	26.0	26.0	0 12 50	+0.06	270 45 29.92	T.M.	
44		β <sup>1</sup> Tucanæ ...	9 12.8	12.2	01.9	07.0	56.0	03.4			296 09 5.18	T.M.	
45		β <sup>2</sup> Tucanæ ... M...	.....	.....	.....	.....	.....	.....	19.466	+27.75	296 09 32.93	T.M.	
182		Achernar ... M.R.	11 45.0	65.9	75.2	38.4	81.7	39.0	21.237	-43.68	170 11 13.24	T.M.	
182		Achernar ...	56 66.0	60.5	56.1	58.5	48.1	54.0			301 56 57.45	T.M.	
		z Octantis SP: ...	29 43.0	50.5	27.1	35.8	36.0	33.5			267 29 37.23	T.M.	
		(g) Pallas ... M.R.	16 35.7	44.0	17.8	52.2	17.2	35.5	21.431	-51.51	125 15 42.31	T.M.	
		Pallas ...	52 20.8	19.1	39.2	50.8	43.2	58.6			346 52 21.97	T.M.	
♃ 26 Sept.		(h) ♀'s center ... M.R.	36 35.0	45.7	17.8	51.8	20.5	35.0	23.614	-2 19.56	126 34 15.16	T.M.	
		♀'s center ...	33 50.5	45.5	64.0	32.5	67.0	23.2			345 33 47.94	T.M.	
	2110	ε Sagittarii ...	32 47.5	41.2	55.4	32.8	49.5	24.1			325 32 41.51	T.M.	
		B Octantis ... R.	39 73.4	63.8	34.8	39.0	40.2	47.6	19 21 17	-10.68	201 39 58.67	T.M.	
		..... D.	28 05.0	12.5	51.2	57.8	57.2	57.1	19 27 10	+6.47	270 28 6.32	T.M.	
		..... R.	39 65.5	56.5	27.1	31.2	34.0	40.0	19 32 01	-3.78	201 39 58.15	T.M.	
		..... D.	28 10.0	17.1	55.7	02.4	02.1	02.0	19 36 50	+1.82	270 28 6.42	T.M.	

Molyneux slow, Sept. 26<sup>th</sup>, 30<sup>th</sup>.

(a) Assumed time of Transit by Molyneux, 20<sup>h</sup>. 32<sup>m</sup>. 32<sup>s</sup>.

(b) Correction for Motion in Declination, 0'.11

(c) The Limb in agitation, bisected the fringe. Strong South wind. Clouds rising from the South.

(d) A blotch.

(e) Observed at the 5<sup>th</sup> Wire.

(f) Correction for Motion in Declination, 0".00

(g) Observed at the 2<sup>nd</sup> and 5<sup>th</sup> Wires. Correction for Motion in Declination, 0'.29 and 0'.59

(h) Very unsteady. Correction for Motion in Declination, 0'.86



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	°	°	"	"	"	"	°	'	"			
1.22	-57	39	48.61					1	31.63			-1	37	23.49		A Octantis SP. R.	
	-57	39	51.49									-1	37	26.37		D.	
2.65	-57	39	52.12									-1	37	27.00		R.	
	-57	39	52.15									-1	37	27.03		D.	
2.82	-57	39	51.65									-1	37	26.53		R.	
	-57	39	51.34									-1	37	26.22		D.	
2.80	-57	39	52.06									-1	37	26.94		R.	
	-57	39	51.79									-1	37	26.67		D.	
	0	10	12.53					0	0.17			56	14	9.45	2577	ι Piscis Australis.	
3.03	-52	49	50.46					1	16.73			3	12	49.56		C Octantis R.	
	-52	49	49.72	30.251	58.1	53.9	52.4					3	12	50.30		C Octantis.	
	23	41	58.01					23.90	0.18			79	46	18.48		Georean R.	
2.21	23	41	57.10	.252	58.2	53.5						79	46	17.57		Georean.	
	15	6	50.29	.252	58.2	53.5		15.76	1.63			71	11	1.17		Vesta R.	
3.01	15	6	50.98									71	11	1.86		Vesta.	
	-54	24	53.96	30.252	58.2	53.4	52.0	1	21.37			1	37	41.42		τ Octantis R.	
3.10	-54	24	53.08									1	37	42.30		τ Octantis.	
	-24	53	13.43									31	10	16.26	1281	η Argus R.	
4.39	-24	53	9.98					27.06				31	10	19.71	1281	η Argus.	
	33	12	6.14	30.311	61.0	63.0	60.0	37.54	4.66		15	58.70	89	32	34.47	⊙	
	33	44	1.46					38.30	4.73				89	32	33.08	⊙	
	20	23	44.49	30.313	61.0	62.2		21.37	2.28				76	28	0.33	♀	
	33	20	36.73	30.224	61.0	66.8	61.5	37.36	4.68		15	59.00	89	9	7.16	⊙	
	32	48	38.52					36.61	4.61				89	9	6.27	⊙	
	-57	39	54.62	.140	61.0	62.8		1	29.91				-1	37	27.78		
	1	5	9.38					1.08					57	9	7.21	2518	A Octantis SP.
	0	10	12.13	.135	61.0	62.8	59.0	0.17					56	14	9.05	2577	ι Piscis Australis.
	-52	49	52.52	.135	61.0	62.7	58.2	1	15.13				3	12	49.10		C Octantis.
	-27	7	30.58	.135	61.0	62.7		29.24					28	55	56.93	2651	α Tucanæ.
	85	11	28.59	.135	61.0	62.7										2676	c Lacertæ.
	23	40	28.51	.135	61.0	62.4							79	44	50.12		Georean R.
2.22	23	40	27.63					25.04	0.18				79	44	49.24		Georean.
	15	0	48.39	.135	61.0	62.4		15.32	1.63				71	4	58.83		Vesta R.
2.70	15	0	48.47										71	4	58.91		Vesta.
	-54	24	55.80	.130	61.2	62.2	58.5	1	19.66				1	37	41.29		τ Octantis.
	0	31	9.24					0.52					56	35	6.51	2779	γ App. Sculp.
	-48	58	9.21	.130		62.4		1	5.52				7	4	42.02	2849	γ <sup>1</sup> Octantis.
	-49	7	14.97	.130		62.4		1	5.87				6	55	35.91	2861	γ <sup>2</sup> Octantis.
	-49	10	25.23	.130		62.4		1	5.99				6	52	25.53	10	γ <sup>3</sup> Octantis.
	-55	18	32.74	.127	61.2	62.4		1	22.28				0	44	1.73		ο Octantis.
	-29	54	57.48	.127	61.2	62.4		32.85					26	8	26.42	44	β <sup>1</sup> Tucanæ.
	-29	54	29.73					32.84					26	8	54.18	45	β <sup>2</sup> Tucanæ.
	-24	7	10.58	.098	61.0	62.0							31	56	20.61	182	Achernar R.
5.35	-24	7	5.21					25.56					31	56	25.98	182	Achernar.
	-58	34	25.43	.085	61.0	62.4		1	33.02				-2	32	1.70		z Octantis SP.
(2.14)	20	48	20.35	30.084	61.0	62.4		21.66	1.65				76	52	37.11		Pallas R.
	20	48	19.31										76	52	36.07		Pallas.
(1.55)	19	29	47.50	29.974	63.4	75.0		19.64	2.20				75	34	1.69		♀ .R
	19	29	45.28										75	33	59.47		♀
	-0	31	21.15					0.52					55	32	35.08	2110	ε Sagittarii.
2.50	-55	35	56.01	29.958	62.0	61.5	60.0	1	22.77				0	26	37.97		B Octantis R.
	-55	35	56.34										0	26	37.64		D.
	-55	35	55.49										0	26	38.37		R.
2.29	-55	35	56.24					1	22.89				0	26	37.62		D

Coincidence of Micrometer Wire with fixed Wire to Sept. 24<sup>th</sup>, =20°.155 From Sept. 24<sup>th</sup>, =20°.154  
 One revolution =40".335  
 Correction for Runs =-2".70  
 Adopted Zenith Point =326°. 04'. 02".66  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>					
26 Sept.		<i>B</i> Octantis . . . . . R.	39	63.6	53.0	24.5	28.5	30.8	37.1	19 41 40	-0.57	201 39 58.56	T.M.
		(a) . . . . . D.	28	12.0	19.0	57.7	04.2	04.2	04.2	19 46 30	+0.02	270 28 6.62	T.M.
		. . . . . R.	39	61.7	51.0	22.3	26.3	28.1	35.2	19 51 27	-0.21	201 39 56.77	T.M.
		. . . . . D.	28	12.2	18.3	58.6	04.1	04.0	05.0	19 56 36	+1.19	270 28 7.94	T.M.
		. . . . . R.	39	66.0	54.9	27.7	30.0	32.6	39.1	19 61 11	-2.74	201 39 58.53	T.M.
		. . . . . D.	28	09.1	14.3	54.8	00.5	00.4	01.0	19 66 05	+5.11	270 28 8.19	T.M.
		. . . . . R.	39	70.8	60.4	32.0	35.7	37.5	44.7	19 71 05	-8.27	201 39 58.13	T.M.
		. . . . . D.	28	01.9	07.0	47.3	53.2	53.0	53.3	19 76 14	+12.34	270 28 8.03	T.M.
		<i>A</i> Octantis SP. R.	43	62.1	49.9	82.0	23.9	87.8	36.0	20 29 00	+0.66	203 43 57.26	T.M.
		<i>A</i> Octantis SP. . . . .	24	15.3	22.3	59.8	06.4	08.2	05.7	20 34 12	-0.17	268 24 9.08	T.M.
		2518 <i>P</i> iscis Austr. . . . .	9	17.0	10.8	25.3	03.0	17.0	54.8			327 09 10.94	T.M.
		2577 <i>P</i> iscis Austr. . . . .	14	21.2	14.0	29.1	07.0	21.4	57.8			326 14 14.70	T.M.
		. . . . . M.R.	54	25.0	15.0	49.0	50.2	54.2	00.0	20.788	-25.57	198 53 56.30	T.M.
		<i>C</i> Octantis . . . . .	14	19.4	24.7	05.0	06.1	07.1	10.0			273 14 11.67	T.M.
		2681 $\delta$ Gruis . . . . . M.R.	27	35.5	43.0	58.0	26.4	53.7	18.1	20.774	-25.01	156 27 13.62	T.M.
		2681 $\delta$ Gruis . . . . .	40	58.8	55.2	58.5	49.0	48.7	41.0			315 40 52.08	T.M.
		(b) Georgean . . . . . M.R.	23	35.0	47.0	13.3	55.6	16.2	40.6	19.096	+42.67	122 24 16.97	T.M.
		(c) Georgean . . . . .	43	48.2	45.8	65.0	32.0	68.9	25.1			349 43 47.67	T.M.
		(d) <i>V</i> esta . . . . . M.R.	5	36.3	46.0	25.1	50.5	25.2	35.3	19.717	+17.63	131 05 53.67	T.M.
		<i>V</i> esta . . . . .	2	10.3	11.0	28.9	57.7	31.7	47.5			341 02 11.46	T.M.
		$\tau$ Octantis . . . . . M.R.	30	54.9	45.0	78.6	22.5	83.9	30.0	{ 22.920	-1 51.57}	200 29 0.32	T.M.
		$\tau$ Octantis . . . . .	39	11.0	19.9	58.8	03.8	03.2	04.1	{ 23 03 00	-0.42}	271 39 7.21	T.M.
		2861 $\gamma^2$ Octantis . . . . . M.R.	11	33.0	26.7	58.0	01.5	62.2	08.1	20.488	-13.47}	195 11 17.87	T.M.
		2861 $\gamma^2$ Octantis . . . . .	56	55.8	61.0	43.0	45.8	44.0	46.8		-0.11}	276 56 49.35	T.M.
		10 $\gamma^3$ Octantis . . . . . M.R.	14	45.7	38.7	70.3	12.9	73.0	20.5	20.430	-11.13}	195 14 31.87	T.M.
		10 $\gamma^3$ Octantis . . . . .	53	42.3	46.5	29.0	30.9	30.2	33.2		-0.11}	276 53 35.14	T.M.
		$\sigma$ Octantis . . . . . M.R.	22	25.1	14.1	46.9	50.0	53.0	59.0	{ 0 15 43	+13.39	201 22 34.53	T.M.
		$\sigma$ Octantis . . . . .	45	35.6	43.7	22.4	30.0	27.7	27.1	{ 19.822		270 45 31.04	T.M.
182 <i>A</i> chernar . . . . . M.R.	11	34.5	52.1	63.6	25.3	69.1	17.1	20.940	-31.70	170 11 11.77	T.M.		
182 <i>A</i> chernar . . . . .	56	62.1	59.7	52.6	57.6	46.0	50.9		+1.79	301 56 56.44	T.M.		
28 Sept.		$\odot$ N.L. . . . . .	14	17.5	25.0	40.1	05.1	48.8	58.0			358 14 32.01	T.M.
		$\ominus$ N.L. . . . . .	41	15.8	16.6	33.6	03.0	37.2	51.9			344 41 16.27	T.M.
		<i>B</i> Octantis . . . . . R.	39	66.3	51.4	87.4	28.7	90.2	39.4	19 37 17	-1.64	201 39 58.48	T.M.
		. . . . . D.	28	12.8	18.4	58.9	05.1	03.2	05.0	19 43 30	+0.26	270 28 7.21	T.M.
		. . . . . R.	39	64.6	49.5	85.3	26.0	87.4	37.6	19 48 38	-0.02	201 39 57.93	T.M.
		. . . . . D.	28	13.2	18.1	00.5	04.9	03.3	05.4	19 53 57	+0.60	270 28 7.89	T.M.
		<i>A</i> Oct. SP. . . . . R.	43	63.4	45.6	83.8	21.5	84.6	35.6	20 27 41	+1.29	203 43 56.68	T.M.
		(g) . . . . . D.	24	16.8	20.3	00.7	06.0	05.6	06.0	20 32 42	0.00	268 24 8.85	T.M.
		$\alpha$ Octantis . . . . . R.	44	67.2	76.1	105.8	50.9	108.4	57.0	20 43 11	-0.54	189 45 17.00	T.M.
		$\alpha$ Octantis . . . . .	22	49.5	44.5	36.0	34.5	27.8	38.6	20 48 45	+8.01	282 22 46.26	T.M.
		2472 <i>P</i> iscis Austr. . . . .	14	22.8	12.9	39.5	07.1	19.0	59.0			326 14 16.33	T.M.
		2472 <i>C</i> Octantis . . . . . M.R.	53	59.5	48.3	83.1	25.0	87.6	33.8			198 53 55.87	T.M.
		2577 <i>C</i> Octantis . . . . .	14	16.0	23.5	04.2	04.8	06.2	07.0			273 14 9.90	T.M.
		Georgean . . . . . M.R.	25	29.0	39.8	10.8	49.0	10.4	33.6	19.770	+15.49	122 25 44.01	T.M.
		Georgean . . . . .	42	22.0	20.0	40.4	06.0	42.7	58.0			349 42 21.53	T.M.
		<i>V</i> esta . . . . . M.R.	10	39.2	48.0	29.0	53.6	27.7	36.4	20.370	-8.71	131 10 29.90	T.M.
		(i) <i>V</i> esta . . . . .	57	35.9	34.0	54.9	22.2	55.1	11.2			340 57 35.78	T.M.
		$\tau$ Octantis . . . . . M.R.	29	51.7	77.0	42.2	80.8	19.8	26.0	{ 21.391	-49.89	200 28 59.21	T.M.
		$\tau$ Octantis . . . . .	39	13.0	23.0	02.4	06.4	05.1	06.2	{ 23 1 00		271 39 9.31	T.M.

Molyneux slow, Sept. 28<sup>th</sup>, 33<sup>rd</sup>.

- (a) Assumed time of Transit by Molyneux, 19<sup>h</sup>. 47<sup>m</sup>. 46<sup>s</sup>. and on the 28<sup>th</sup>, . . . . . 19 47 39.
- (b) Observed on the Meridian.
- (c) Observed at 70° past the Meridian. Hurried.
- (d) Correction for Motion in Declination, 0°.08
- (e) Observed 40° before and after Transit.
- (f) Observed at the 3<sup>rd</sup> and 5<sup>th</sup> Wires.
- (g) Assumed time of Transit by Molyneux, 20<sup>h</sup>. 32<sup>m</sup>. 30<sup>s</sup>.
- (h) Found bisected by the fixed Wire.
- (i) Correction for Motion in Declination, 0°.07



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. A S C	NAME OF STAR or PLANET.
			Attach.	Out.	Wet Bulb.							
#	° ' "	Inch.	°	°	°	' "	' "	"	' "	° ' "		
2.59	-55 35 55.90					1 22.92				0 26 37.93		B Octantis R.
	-55 35 56.04									0 26 37.79		D.
2.36	-55 35 54.11					1 22.99				0 26 39.65		R.
	-55 35 54.72									0 26 39.04		D.
3.36	-55 35 55.87					1 23.01				0 26 37.87		R.
	-55 35 54.47									0 26 39.27		D.
3.08	-55 35 55.47					1 23.05				0 26 38.23		R.
	-55 35 54.63	29.959	62.0	60.2	59.0					0 26 39.07		D.
3.17	-57 39 54.66	29.969	62.0	60.0	59.0	1 29.87				-1 37 27.78		A Octantis SP. R.
	-57 39 53.58									-1 37 26.70		A Octantis SP.
3.99	1 5 8.28					1.08				57 9 6.11	2518	Piscis Austr.
	0 10 12.04					0.17				56 14 8.96	2577	♄ Piscis Australis.
3.99	-52 49 53.64	29.987	62.0	59.6	58.8	1 15.21				3 12 47.90		C Octantis R.
	-52 49 50.99									3 12 50.55		C Octantis.
2.85	-10 23 10.96	29.992	62.0	59.3		10.48				45 40 35.31	2681	♂ Gruis R.
	-10 23 10.58									45 40 35.69	2681	♂ Gruis.
2.32	23 39 45.69	29.997	62.0	59.0		25.07	0.18			79 44 7.33		Georgean R.
	23 39 45.01									79 44 6.65		Georgean.
2.57	14 58 8.99	29.997	62.0	58.8		15.31	1.62			71 2 19.43		Vesta R.
	14 58 8.80									71 2 19.24		Vesta.
3.77	-54 24 57.66	29.997	62.0	58.4		1 19.88				1 37 39.21		τ Octantis R.
	-54 24 55.45									1 37 41.42		τ Octantis.
3.61	-49 7 15.21	30.006	62.0	58.0		1 6.15				6 55 35.39	2861	γ <sup>2</sup> Octantis R.
	-49 7 13.31									6 55 37.29	2861	γ <sup>2</sup> Octantis.
3.51	-49 10 29.21	.006	62.0	58.0		1 6.28				6 52 21.26	10	γ <sup>3</sup> Octantis R.
	-49 10 27.52									6 52 22.95	10	γ <sup>3</sup> Octantis.
2.79	-55 18 31.87	.004	61.5	58.0	56.3	1 22.64				0 44 2.24		ο Octantis R.
	-55 18 31.62									0 44 2.49		ο Octantis.
4.11	-24 7 9.11	30.004	61.5	57.0						31 56 21.92	182	Achernar R.
	-24 7 6.22									31 56 24.81	182	Achernar.
2.85	32 10 29.35	30.283	63.2	65.0	59.0	35.91	4.54	15 59.80		87 58 57.67		☉
	18 37 13.61	.228	64.5	65.0		19.20	2.13	20.467	6.31	74 41 21.12		♀
2.91	-55 35 55.82	.127	60.4	56.3		1 24 17				0 26 36.76		B Octantis R.
	-55 35 55.45									0 26 37.13		D.
2.77	-55 35 55.27					1 24 17				0 26 37.31		R.
	-55 35 54.77	.127	60.4	56.3						0 26 37.81		D.
2.89	-57 39 54.02	.127	60.0	56.6		1 30 95				-1 37 28.22		A Octantis SP. R.
	-57 39 53.81									-1 37 28.01		D.
(1.63)	-43 41 14.34	.127	60.0	56.6		55.10				12 21 47.31	2472	α Octantis R.
	-43 41 16.40									12 21 45.25	2472	α Octantis.
2.89	0 10 13.67					0.17				56 14 10.59	2577	♄ Piscis Australis.
	-52 49 53.21	.117	60.0	56.2		1 16 05				3 12 47.49		C Octantis R.
2.77	-52 49 52.76	.114	60.0	55.5		~ 25.32	0.18			3 12 47.94		C Octantis.
	23 38 18.65									79 42 40.54		Georgean R.
2.84	23 38 18.87	30.110	60.0	56.6		15.35	1.62			79 42 40.76		Georgean.
	14 53 32.76									70 57 43.24		Vesta R.
4.26	14 53 33.12	30.104	59.0	53.6		1 20 94				70 57 43.60		Vesta.
	-54 24 56.55									1 37 39.26		τ Octantis R.
	-54 24 53.35									1 37 42.46		τ Octantis.

Coincidence of Micrometer Wire with fixed Wire, =20<sup>r</sup>.154 One revolution =40<sup>r</sup>.335  
 Correction for Runs =-2<sup>r</sup>.70  
 Adopted Zenith Point =326°. 04'. 02<sup>r</sup>.66  
 Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			'	"	"	"	"	"					
28 Sept.		(x) $\alpha$ Octantis.....	45	39.5	49.2	39.0	35.4	31.9	32.2			270 45 37.82	T.M.
		Neb. in Pegasus...	19	58.3	75.2	86.3	31.8	99.8	35.3	0 33 40		40 20 4.00	T.M.
	182	Achernar.... M.R.	11	63.0	81.8	93.2	55.1	198.1	46.2	21.651	-1 00.38	170 11 12.27	T.M.
	182	Achernar.....	56	65.0	60.6	57.0	59.5	47.2	53.3			301 56 57.38	T.M.
		Pallas..... M.R.	10	35.0	46.1	20.0	52.2	18.3	35.1	20.130	+0.97	126 10 35.68	T.M.
		(a) Pallas.....	57	29.0	25.0	45.9	13.0	46.1	03.0			345 57 27.65	T.M.
29 Sept.		$\odot$ S. L..... M..	19	31.3	44.8	56.1	24.1	65.0	13.2	20.995	-33.92	357 19 4.37	T.M.
		$\odot$ N. L.....	50	55.4	61.6	79.0	42.8	86.1	34.5			357 51 0.18	T.M.
		$\varphi$ 's center... M.R.	53	28.4	38.7	11.8	44.0	12.8	29.0	21.236	-43.64	127 52 44.01	T.M.
		$\varphi$ 's center.....	15	18.2	18.0	36.4	05.0	39.1	53.1			344 15 19.42	T.M.
	1885	Antares.... M.R.	12	41.5	50.0	41.6	47.0	38.9	32.3	20.948	-32.02	138 12 9.47	T.M.
	1885	Antares.....	55	59.0	56.5	74.6	47.0	72.1	35.2			333 55 57.47	T.M.
1915	$\epsilon$ Scorpii.....	0	34.5	26.6	44.0	18.2	34.2	09.8			326 00 27.84	T.M.	
1 Oct.		$\odot$ N.L. .... M...	3	41.2	53.2	65.6	33.0	75.0	20.8	19.386	+30.98	357 04 18.77	T.M.
		$\odot$ S.L.....	31	72.7	80.8	94.0	62.1	102.8	51.0			356 32 17.41	T.M.
	1533	Spica ..... M.R.	26	42.8	51.0	20.8	60.9	23.3	47.1	19.641	+20.69	122 27 1.32	T.M.
	1533	Spica.....	40	63.8	63.2	81.3	48.1	85.8	40.6			349 41 3.91	T.M.
		$\varphi$ 's center . . M.R.	44	26.0	35.2	13.4	39.0	10.2	23.0	21.861	-1 08.85	128 43 15.69	T.M.
		$\varphi$ 's center.....	24	48.5	47.1	66.0	32.0	67.2	22.8			343 24 47.97	T.M.
	1885	Antares.... M.R.	12	32.4	39.4	34.2	36.4	31.2	21.4	20.732	-23.31	138 12 8.82	T.M.
	1885	Antares.....	55	60.1	55.1	75.3	45.5	70.8	35.0			333 55 57.04	T.M.
	1915	$\epsilon$ Scorpii.....	0	37.0	26.9	46.0	18.0	35.5	10.6			326 00 28.96	T.M.
		B Octantis.... R.	39	67.0	49.5	87.4	26.9	89.6	39.0	19 38 00	-1.38	201 39 58.07	T.M.
		..... D.	28	17.8	24.4	05.1	11.5	09.7	11.2	19 42 45	+0.33	270 28 13.32	T.M.
		(f) ..... R.	39	64.1	46.8	84.6	23.7	86.5	36.2	19 48 03	-0.00	201 39 56.54	T.M.
	..... D.	28	17.0	23.6	02.4	10.1	08.1	09.8	19 54 05	+0.66	270 28 12.20	T.M.	
3 Oct.		$\odot$ N. L. .... M...	17	49.8	61.4	73.0	41.4	83.6	29.5	20.391	-9.56	356 17 46.25	T.M.
		(g) $\odot$ S. L.....	45	42.0	46.9	62.0	28.0	69.0	19.0			355 45 44.76	T.M.
		(h) B Octantis.... R.	39	66.0	48.0	87.0	25.3	88.5	37.6	19 57 20	-1.48	201 39 56.81	T.M.
		B Octantis.... D.	28	13.6	15.4	59.0	03.0	01.2	04.9	19 58 25	+1.82	270 28 4.08	T.M.
	2472	$\alpha$ Octantis.....	22	57.0	52.7	42.2	43.2	35.2	46.8	20 44 04		282 22 45.94	T.M.
	2503	Equulei.... M.R.	51	31.2	55.9	01.9	65.7	16.3	43.8	23.290	-2 06.49	106 49 29.26	T.M.
	2503	Equulei.....	18	27.0	39.2	58.2	13.0	71.3	05.1			5 18 35.22	T.M.
	2518	Piscis Austr.....	8	78.5	69.0	88.8	60.0	78.5	53.8			327 09 11.05	T.M.
	2577	$\epsilon$ Piscis Australis...	14	22.1	12.2	32.1	103.5	22.7	57.0			326 14 14.55	T.M.
		C Octantis... M.R.	53	52.2	40.3	75.4	16.8	79.4	26.0	19.905	+10.04	198 53 57.96	T.M.
		C Octantis.....	14	17.2	21.3	02.6	04.5	03.9	08.0			273 14 9.21	T.M.
	2676	c Lacertæ.....	15	27.8	28.0	38.2	57.2	42.5	06.8			51 15 24.38	T.M.
		Georgian ... M.R.	28	33.2	40.8	12.7	51.1	13.0	37.1	19.307	+34.16	122 29 4.96	T.M.
		Georgian.....	38	60.6	58.0	76.0	43.8	80.9	36.9			349 38 59.22	T.M.
		Vesta..... M.R.	17	35.5	49.2	28.0	50.8	27.2	32.4	20.030	+5.00	131 17 41.60	T.M.
		Vesta.....	50	22.2	22.7	42.1	08.9	42.8	57.6			340 50 23.10	T.M.
		$\tau$ Octantis.... R.	28	68.8	51.0	091.0	30.2	91.8	40.6	22 55 13	-1.34	200 29 0.53	T.M.
		..... D.	39	11.2	16.8	59.0	02.5	00.0	04.3	22 59 41	+0.01	271 39 5.27	T.M.
		..... R.	28	67.4	50.3	89.9	29.5	91.3	39.1	22 64 20	-0.99	200 28 59.90	T.M.
		..... D.	39	06.8	14.2	54.0	59.0	56.8	0.0	22 68 13	+3.66	271 39 5.09	T.M.
2844	$\delta$ App. Sculp... R.	10	27.5	34.0	39.0	24.2	31.6	12.5	21.257	-44.49	141 09 42.99	T.M.	
2844	$\delta$ App. Sculp.....	58	26.8	22.2	39.2	12.2	36.2	04.2			330 58 23.76	T.M.	
10	$\gamma^3$ Octantis. M.R.	13	73.2	65.6	99.1	39.4	101.0	48.0	19.574	+23.39	195 14 34.06	T.M.	
10	$\gamma^3$ Octantis.....	53	39.0	43.9	25.0	29.8	25.1	31.4			276 53 32.06	T.M.	
	$\alpha$ Octantis... M.R.	22	58.8	44.4	18.6	20.4	22.8	32.0	20.540	-15.57	201 22 37.00	T.M.	
	$\alpha$ Octantis.....	45	32.6	44.0	21.8	30.0	26.1	26.2			270 45 30.08	T.M.	

Molyneux slow, Oct. 3<sup>rd</sup>, 34<sup>th</sup>.

- (a) Correction for Motion in Declination, 0<sup>o</sup>.59
- (b) Correction for Motion in Declination, 0<sup>o</sup>.83
- (c) Observed at the 2<sup>nd</sup> and 4<sup>th</sup> Wires.
- (d) Correction for Motion in Declination, 0<sup>o</sup>.80
- (f) Assumed Time of Transit by Molyneux, 19<sup>h</sup>. 47<sup>m</sup>. 31<sup>s</sup>.
- (e) Very indistinct from clouds.
- (h) Assumed time of Transit by Molyneux, 19<sup>h</sup>. 47<sup>m</sup>. 29<sup>s</sup>.
- (i) Assumed time of Transit by Molyneux, 23<sup>h</sup>. 0<sup>m</sup>. 7<sup>s</sup>.
- (x) Probably a mistake of 1'. in reading off.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. A S C	NAME OF STAR or PLANET.
			Attach.	Out.	Wet Bulb.							
#	o' ' "	Inch.	o' ' "	o' ' "	o' ' "	' "	' "	r	' "	o' ' "		
4.83 (1.67)	-55 18 24.84	.072	58.4	50.2		1 24.11				0 44 7.80		o Octantis.
	74 16 1.34	.072	58.0	49.8		3 24.37			130 23 22.46		Neb. in Pegasus.	
	-24 7 9.61	.067	59.0	50.0					31 56 21.01	182	Achernar R.	
	-24 7 5.28					26.13			31 56 25.34	182	Achernar.	
	19 53 26.98	30.058	59.5	50.0		21.11	1.60		75 57 43.24		Pallas R.	
19 53 24.99								75 57 41.25		Pallas.		
3.47 (1.72)	31 15 1.71	30.147	62.2	66.2	60.8	34.41	4.42		16 0.00	87 35 28.45		⊙
	31 46 57.52					35.13	4.49			87 35 24.91		⊙
	18 11 18.65	.096	62.6	67.0		18.58	2.09			74 15 31.89		♀ R.
	18 11 16.76									74 15 30.00		♀
	7 51 53.19	30.089	62.5	65.5		7.83				63 55 57.77	1885	Antares R.
7 51 54.81					0.06				63 55 59.39	1885	Antares.	
-0 3 34.82									56 0 21.87	1915	ε Scorpii.	
2.62 (1.83)	31 0 16.11	30.274	62.0	61.0	54.8	34.56	4.39			86 48 42.43		⊙
	30 28 14.75					34.84	4.32			86 48 42.62		⊙
	23 37 1.34	.260	62.0	61.3		25.13				79 41 23.22	1533	Spica R.
	23 37 1.25									79 41 23.13	1533	Spica.
	17 20 46.97	.256	62.4	61.6		17.94	2.02		16 0.60	73 24 59.64		♀ R.
17 20 45.31									73 24 57.98		♀	
2.93	7 51 53.84	.226	62.3	61.8	55.5	7.92				63 55 58.51	1885	Antares R.
	7 51 54.38					0.06				63 55 59.05	1885	Antares.
	-0 3 33.70									56 0 22.99	1915	ε Scorpii.
	-55 35 55.41	.226	59.0	52.0		1 25.16				0 26 36.18		B Octantis R.
	-55 35 49.34									0 26 42.25		..... D.
4.37	-55 35 53.88					1 25.24				0 26 37.63		..... R.
	-55 35 50.46	30.220	59.0	51.4						0 26 41.05		..... D.
	30 13 43.23	30.185	62.0	70.4	67.0	32.82	4.29		16 1.20	86 2 7.31		⊙
	29 41 41.74					32.12	4.22			86 2 7.59		⊙
	-55 35 53.79	.098	61.2	58.5		1 23.72				0 26 39.24		B Octantis R.
2.24	-55 35 58.94	.085	61.2	58.6		54.81				0 26 34.09		B Octantis.
	-43 41 17.08	.080	61.4	59.0		46.84				12 21 44.86	2472	α Octantis.
	39 14 33.76									95 19 17.35	2503	Equulei R.
	39 14 32.20									95 19 15.79	2503	Equulei.
	1 5 8.03					1.09				57 9 5.87	2518	Piscis Australis.
3.59	0 10 11.53					0.17				56 14 8.45	2577	ι Piscis Australis.
	-52 49 54.94	.066	61.0	58.3	57.5	1 15.60				3 12 46.21		C Octantis R.
	-52 49 53.81									3 12 47.34		C Octantis.
	85 11 21.36										2676	c Lacertæ.
	23 34 58.06	.055	61.0	57.1		25.12	0.18			79 39 19.75		Georgan R.
2.35	23 34 56.20	.054	61.0	57.2		15.17	1.44			79 39 17.89		Georgan.
	14 46 21.42									70 50 31.90		Vesta R.
	14 46 20.08									70 50 30.56		Vesta.
	-54 24 57.51	.050	60.5	57.0		1 20.25				1 37 38.99		τ Octantis R.
	-54 24 57.75									1 37 38.75		..... D.
2.50	-54 24 56.88					1 20.29				1 37 39.58		..... R.
	-54 24 57.93	.041	60.2	56.6	56.0					1 37 38.53		..... D.
	4 54 20.03	30.037	60.0	56.0		4.95				60 58 21.73	2844	δ App. Sculp. R.
	4 54 20.74									60 58 22.44	2844	δ App. Sculp.
	-49 10 31.04	30.028	60.0	56.0	55.2	1 6.60				6 52 19.11	10	γ <sup>3</sup> Octantis R.
3.54	-49 10 30.96									6 52 19.19	10	γ <sup>2</sup> Octantis.
	-55 18 33.98	30.010	60.0	56.0		1 22.99				0 43 59.78		o Octantis R.
	-55 18 32.94									0 44 0.82		o Octantis.

Coincidence of Micrometer Wire with fixed Wire, =20<sup>r</sup>.154 One revolution =40<sup>r</sup>.335  
 Correction for Runs =-2<sup>r</sup>.70  
 Adopted Zenith Point =326°. 04'. 02<sup>r</sup>.66 to Noon Oct. 2<sup>nd</sup>. From Oct. 2<sup>nd</sup>, =326°. 04'. 03<sup>r</sup>.02  
 Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			l	h	m	s	l	h				
♂ 3 Oct.	182	Achernar...M.R.	11 37.8	53.0	68.2	25.9	72.2	18.8	20.954	-32.27	170 11 13.13	T.M.
	182	Achernar.....	56 63.0	57.8	54.0	56.2	44.2	51.5			301 56 54.71	T.M.
	219	α Hydri...M.R.	29 42.6	53.6	75.8	25.0	78.0	21.0	21.348	-48.16	174 29 0.21	T.M.
	219	α Hydri.....	39 17.3	11.2	05.7	10.0	55.2	07.2			297 39 7.93	T.M.
		z Oct. SP...M.R.	38 33.8	17.4	55.0	56.0	56.1	07.8	19.124	+1.21	204 38 28.58	T.M.
♀ 4 Oct.		z Octantis SP....	29 40.8	48.0	26.1	34.4	32.3	32.4			267 29 35.26	T.M.
		(a) Pallas...M.R.	42 45.5	52.0	31.1	55.1	29.9	41.3	21.495	-54.09	127 41 48.34	T.M.
		⊙ S. L.....M..	22 34.1	46.2	56.7	25.3	68.3	13.6	20.300	-5.77	355 22 34.31	T.M.
		⊙ N. L.....	54 25.2	33.5	47.5	14.0	55.3	04.8			355 54 30.01	T.M.
		⊙ N.L.....M...	31 39.2	52.9	63.0	31.0	74.1	17.7	20.780	-25.13	355 31 20.69	T.M.
		⊙ S.L.....	59 16.4	22.0	36.0	2.2	43.0	53.9			354 59 18.85	T.M.
		(b) B Octantis...M.R.	40 31.0	17.3	50.8	54.1	55.4	2.8	19 54 12	-0.76	201 39 59.28	T.M.
		B Octantis.....	28 11.5	19.1	58.0	4.8	3.0	3.6	20.780	-25.13	270 28 8.76	T.M.
		A Oct. SP...M.R.	43 35.2	21.8	54.0	57.1	59.2	9.2	19 59 45	+2.42	203 43 56.26	T.M.
		A Octantis SP....	24 16.0	21.8	59.2	7.2	6.0	7.3	19.482	+27.22	268 24 9.15	T.M.
♀ 5 Oct.	2472	α Octantis...M.R.	45 43.2	45.1	72.9	18.1	78.2	23.8	20.790	-25.53	189 45 21.28	T.M.
	2472	α Octantis.....	22 57.3	53.2	42.7	43.9	34.8	47.6		+0.41	282 22 46.71	T.M.
	2518	Piscis Austr.....	9 16.8	11.0	28.0	1.2	20.0	53.0			327 9 11.24	T.M.
	2577	Piscis Austr.....	14 21.2	15.5	32.2	6.0	24.6	56.3			326 14 15.53	T.M.
	2741	Fomalhaut...M.R.	37 45.0	46.3	56.6	36.8	49.8	26.2	21.319	-46.87	142 36 55.70	T.M.
	2741	Fomalhaut.....	31 14.6	10.0	30.0	0.8	22.1	50.5			329 31 11.81	T.M.
		(d) Pallas.....M.R.	36 41.2	51.8	31.7	52.0	30.0	35.9	21.512	-54.65	128 35 45.87	T.M.
		Pallas.....	32 21.9	20.0	44.4	3.0	45.0	52.1			343 32 21.73	T.M.
		⊙ S.L.....M...	13 34.1	36.1	55.4	15.3	62.0	6.9	20.779	-25.09	354 13 9.18	T.M.
		⊙ N.L.....	45 7.7	14.1	33.2	52.7	39.0	44.8			354 45 12.29	T.M.
♀ 6 Oct.		♀ N.L.....	2 71.5	68.9	93.2	52.1	92.8	42.4			341 3 9.82	T.M.
	1885	Antares...M.R.	12 43.6	55.0	52.9	44.2	51.2	26.9	21.038	-35.53	138 12 9.28	T.M.
	1885	Antares.....	55 59.5	55.8	77.7	43.1	74.5	32.9			333 55 57.69	T.M.
	2110	ε Sagittarii.....	32 47.5	42.0	60.8	30.4	52.4	20.8		+1.62	325 32 43.66	T.M.
	2156	Vega.....	35 20.0	36.0	48.9	51.8	62.7	55.4	18 31 49.8		38 35 25.76	T.M.
	2388	α² Capricorni.....	56 65.7	63.4	87.2	46.2	91.4	40.0	20 08 26.0		346 57 5.44	T.M.
		⊙ N. L.....M...	22 36.0	43.9	59.6	23.2	69.1	13.0	20.780	-25.13	354 22 15.00	T.M.
		⊙ S. L.....	50 8.0	11.2	30.0	51.5	35.0	42.1			353 50 9.95	T.M.
	1885	Antares...M.R.	12 55.9	64.1	64.0	54.2	60.6	39.2	21.320	-46.91	138 12 8.52	T.M.
	1885	Antares.....	55 60.5	56.4	79.2	43.6	75.7	33.0			333 55 58.57	T.M.
♂ 7 Oct.	1915	ε Scorpii.....	0 36.1	26.9	50.0	14.8	38.5	7.6			326 0 28.93	T.M.
		⊙ S.L.....M...	27 41.0	42.5	62.8	23.0	67.1	17.4	20.785	-25.33	353 27 16.36	T.M.
		⊙ N. L.....	59 19.0	21.2	38.4	2.8	44.9	55.1			353 59 20.18	T.M.
		♀'s center...M.R.	49 34.6	40.6	26.4	38.0	27.0	23.1	21.420	-50.94	131 48 40.52	T.M.
		♀'s center.....	19 24.0	22.1	43.4	17.3	45.5	56.0			340 19 25.37	T.M.
	1915	ε Scorpii.....	0 36.3	29.0	49.1	16.7	40.2	8.2			326 0 29.87	T.M.
	2110	ε Sagittarii.....	32 48.0	42.2	60.0	31.4	52.2	21.9			325 32 42.34	T.M.
	2497	η Capricorni...M.R.	38 30.4	38.5	19.2	44.0	17.0	27.8	21.073	-36.95	132 37 51.75	T.M.
	2497	η Capricorni.....	30 15.0	15.0	33.0	2.8	33.2	51.4			339 30 15.46	T.M.
	2543	ζ Capricorni...M.R.	15 36.8	62.0	17.3	75.3	23.6	52.9	21.419	-50.90	135 14 53.21	T.M.
♂ 8 Oct.	2543	ζ Capricorni.....	53 16.0	13.0	20.8	11.0	19.5	59.5			336 53 13.44	T.M.
		⊙ S.L.....	30 44.8	43.9	51.7	42.0	50.2	32.0			340 30 44.02	T.M.
	2622	ι Aquarii...M.R.	47 45.5	63.3	17.3	80.2	22.4	60.2	20.440	-11.41	126 47 36.16	T.M.
	2622	ι Aquarii.....	20 31.0	31.2	34.0	31.1	36.0	19.8			345 20 30.76	T.M.
	2655	θ Aquarii...M.R.	44 27.5	42.8	58.2	57.8	64.8	40.0	21.212	-42.55	120 43 45.50	T.M.
	2655	θ Aquarii.....	24 18.3	21.0	20.3	20.0	26.7	12.4			351 24 19.52	T.M.

Molyneux slow, Oct. 5<sup>th</sup>, 34<sup>th</sup>, 7<sup>th</sup>, 23<sup>rd</sup>.

- (a) Bisected 70<sup>s</sup>. past Meridian. Correction for Curvature of Path, 0<sup>s</sup>.69; for Motion in Declination, 0<sup>s</sup>.85. Splendid Observing night.
- (b) Found bisected by the Micrometer Wire.
- (c) Observed 1<sup>m</sup>. past the Meridian.
- (d) Correction for Motion in Declination, 0<sup>s</sup>.58

- (e) 80<sup>s</sup>. past Meridian. Oct. 6<sup>th</sup>, 3<sup>rd</sup>. M.T. moved the Circle in Azimuth to bisect the Meridian mark.
- (f) Correction for Motion in Declination, 0<sup>s</sup>.71
- (g) Observed on the Meridian. Hurried.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"		
3-92	-24	7	10	11	29.967	60.6	56.2						31	56	20.91	182	Achernar R.
	-24	7	8.31					25.73					31	56	22.71	182	Achernar.
4-07	-28	24	57.19		29.960	61.0	57.3						27	38	28.52	219	α Hydri R.
	-28	24	55.09					31.04					27	38	30.62	219	α Hydri.
1-92	-58	34	25.56		29.953	61.0	59.4						-2	32	1.96		z Oct. SP. R.
	-58	34	27.76					1 33.15					-2	32	4.16		z Octantis SP.
	18	22	14.68		29.946	61.0	58.5						74	26	28.92		Pallas R.
	29	18	31.29		29.886	64.4	75.4	70.0					85	38	56.27		⊙
	29	50	26.99					31.01	4.18		16	1.40	85	38	49.79		⊙
	29	27	17.67		30.088	63.0	62.8	59.6					85	15	40.69		⊙
	28	55	15.83					31.47	4.13		16	1.70	85	15	41.62		⊙
	-55	35	56.26		.155	61.8	56.4						0	26	36.27		B Octantis R.
4-02	-55	35	54.26					1 24.22					0	26	38.27		B Octantis.
2-71	-57	39	53.24		.165	61.2	55.8						-1	37	27.69		A Octantis SP. R.
	-57	39	53.87					1 31.20					-1	37	28.32		A Octantis SP.
4-00	-43	41	18.26		.172	61.3	55.8						12	21	43.23	2472	α Octantis R.
	-43	41	16.31					55.26					12	21	45.18	2472	α Octantis.
	1	5	8.22					1.10					57	9	6.07	2518	Piscis Austr.
	0	10	12.51					0.17					56	14	9.43	2577	Piscis Austr.
3-76	3	27	7.32					3.50					59	31	7.57	2741	Fomalhaut R.
	3	27	8.79										59	31	9.04	2741	Fomalhaut.
(3-80)	17	28	17.15		30.174	60.0	54.5						73	32	30.74		Pallas R.
	17	28	18.71					18.28	1.44				73	32	32.30		Pallas.
	28	9	6.16		30.232	62.0	62.2	57.6					84	29	31.84		⊙
	28	41	9.27					30.66	4.03		16	2.30	84	29	30.97		⊙
	14	59	6.80		.231	62.2	62.7						71	3	10.22		♀
3-49	7	51	53.74		.230	62.2	61.8	56.2					63	55	58.41	1885	Antares R.
	7	51	54.67					7.92					63	55	59.34	1885	Antares.
	-0	31	19.36					0.53					55	32	36.86	2110	ε Sagittarii.
	72	31	22.74		.263	61.5	58.3		3 1.42				128	38	20.91	2156	Vega.
	20	53	2.42		30.298	61.2			22.08				76	57	21.25	2388	α <sup>2</sup> Capricorni.
	28	18	11.98		30.425	62.0	63.4	58.0					84	6	33.06		⊙
	27	46	6.93					30.98	4.05		16	2.60	84	6	32.60		⊙
3-55	7	51	54.52		30.384	62.0	62.0	56.8					63	55	59.23	1885	Antares R.
	7	51	55.55					7.96	3.98				63	55	60.26	1885	Antares.
	-0	3	34.09					0.06					56	0	22.60	1915	ε Scorpii.
	27	23	12.78		30.323	61.8	65.3	60.0					83	43	38.00		⊙
	27	55	16.60					29.60	3.93		16	2.80	83	43	36.83		⊙
(2-95)	14	15	23.06		.300	62.2	64.5	61.0					70	19	32.61		♀ R.
	14	15	21.79					14.53	1.73				70	19	31.34		♀
	-0	3	33.71					0.06					56	0	22.98	1915	ε Scorpii.
	-0	31	21.24					0.53					55	32	34.98	2110	ε Sagittarii.
3-61	13	26	11.83		.301	61.0	57.2	55.0					69	30	22.44	2497	η Capricorni R.
	13	26	11.88					13.86					69	30	22.49	2497	η Capricorni.
3-33	10	49	10.37		.305	61.0	57.3	55.0					66	53	18.21	2543	ζ Capricorni R.
	10	49	9.86					11.09					66	53	17.70	2543	ζ Capricorni.
	14	26	40.44		.326	61.0	57.2	55.0					70	32	26.50		♃
3-46	19	16	27.42		.326	61.0	57.1						75	20	44.47	2622	ε Aquarii R.
	19	16	27.18					20.30	14 44.17		16	18.53	75	20	44.23	2622	ε Aquarii.
2-51	25	20	18.08		.325	61.0	57.0						81	24	42.33	2655	θ Aquarii R.
	25	20	15.94					27.50					81	24	40.19	2655	θ Aquarii.

Coincidence of the Micrometer Wire with fixed Wire, =20°.154 From Oct. 4<sup>th</sup>, at Noon, =20°.157  
 One revolution =40".335  
 Correction for Runs from Oct. 4<sup>th</sup>, at Noon, =-3".10  
 Adopted Zenith Point =326°. 04'. 03".02 to Oct. 9<sup>th</sup>, at Noon. From Oct. 9<sup>th</sup>, =326°. 04'. 03".58  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			l #	#	#	#	#	#				
D 9 Oct.		Georgean... M.R.	32 43.0	60.9	15.1	76.1	20.6	57.7	20.169	-0.48	122 32 44.61	T.M.
		Georgean.....	35 21.3	25.0	24.1	24.1	29.3	15.0			349 35 23.32	T.M.
	2741	Fomalhaut... M.R.	37 52.0	74.0	41.0	86.2	45.0	64.9	21.725	-1 03.24	142 36 56.31	T.M.
	2741	Fomalhaut.....	30 71.7	70.9	80.1	68.1	75.0	56.5			329 31 10.91	T.M.
		(a) Pallas..... M.R.	28 45.8	64.2	20.4	83.8	24.6	61.0	20.450	-11.82	129 28 37.98	T.M.
		Pallas.....	39 28.0	26.0	33.9	24.6	32.8	14.6			342 39 27.10	T.M.
♄ 10 Oct.		☉ N. L..... M.	36 55.8	57.0	79.0	37.5	83.2	28.4	20.750	-23.82	353 36 32.47	T.M.
		☉ S. L.....	4 24.7	28.1	47.8	8.2	51.4	0.0			353 4 26.63	T.M.
	1915	ε Scorpii.....	0 35.6	28.6	49.3	16.9	39.5	7.3			326 0 29.48	T.M.
	2577	ε Piscis Austr.....	14 21.8	12.1	33.6	1.2	24.9	54.0			326 14 14.16	T.M.
	2622	ε Aquarii... M.R.	47 53.6	60.5	43.0	61.8	41.5	47.0	20.510	-14.24	126 47 36.41	T.M.
	2622	ε Aquarii.....	20 32.0	29.0	52.5	12.2	53.6	2.1			345 20 30.47	T.M.
	2655	θ Aquarii... M.R.	43 62.8	75.0	43.5	80.2	47.8	63.2	20.561	-16.30	120 43 45.20	T.M.
	2655	θ Aquarii.....	24 20.0	19.1	41.2	59.6	45.5	53.8			351 24 19.59	T.M.
		☽ S. L.....	36 32.2	29.1	55.6	11.7	58.0	5.2			346 36 31.81	T.M.
	2730	λ Aquarii... M.R.	35 40.0	54.9	21.0	61.4	26.0	42.6	21.300	-46.10	120 34 54.64	T.M.
	2730	λ Aquarii.....	33 11.8	11.3	33.0	51.1	37.8	44.8			351 33 11.48	T.M.
	2781	ψ <sup>3</sup> Aquarii... M.R.	38 47.8	60.9	31.3	65.2	35.0	49.0	21.039	-35.57	122 38 12.03	T.M.
	2781	ψ <sup>3</sup> Aquarii.....	29 55.0	55.0	77.3	36.0	79.2	29.6			349 29 55.05	T.M.
	2844	δ App. Sculp. M.R.	10 23.6	31.5	38.2	17.3	31.8	5.2	21.161	-40.50	141 9 43.46	T.M.
	2844	δ App. Sculp.....	58 29.0	21.7	44.0	7.8	40.0	1.5			330 58 24.25	T.M.
	31	α Phœnicis... M.R.	19 47.4	49.0	65.0	37.9	54.9	34.0	21.218	-42.80	155 19 4.46	T.M.
	31	α Phœnicis.....	48 69.8	64.0	71.6	58.4	60.8	51.5			316 49 2.55	T.M.
	60	(b) α Cassiopeæ.....	13 19.8	22.9	31.0	48.1	40.2	57.2		-1.60	55 13 14.60	T.M.
	(c) Pallas..... M.R.	46 38.6	50.1	24.0	59.0	24.9	39.2	21.179	-41.22	129 45 58.19	T.M.	
		Pallas.....	21 66.1	79.1	83.9	58.8	86.8	44.6			342 22 10.58	T.M.
♄ 11 Oct.		☉ S. L..... M.	41 32.8	40.9	52.5	25.0	61.0	13.4	19.970	+7.54	352 41 44.64	T.M.
		☉ N. L.....	13 45.8	57.2	64.7	41.0	73.2	28.7			353 13 51.76	T.M.
	1915	ε Scorpii.....	0 37.1	27.5	44.6	21.4	34.8	13.9			326 0 29.83	T.M.
	2110	ε Sagittarii.....	32 49.4	41.5	55.7	36.2	46.4	27.4			325 32 42.49	T.M.
	2503	Equulei... M.R.	49 32.0	53.1	4.2	62.1	17.0	40.5	20.324	-6.74	106 49 27.51	T.M.
	2503	Equulei.....	18 27.6	42.2	55.6	18.5	70.8	9.8			5 18 37.16	T.M.
	2518	Piscis Austr.....	9 18.0	9.0	24.9	3.1	14.6	56.4			327 09 10.57	T.M.
	2577	Piscis Austr.....	14 22.2	10.7	28.1	5.3	18.4	59.0			326 14 13.51	T.M.
	2730	λ Aqua... M.R.	34 39.8	52.0	12.8	65.0	16.8	48.9	19.805	+14.20	120 34 52.77	T.M.
	2730	λ Aqua.....	33 9.0	12.8	25.0	57.0	33.0	48.8			351 33 10.78	T.M.
	2781	ψ <sup>3</sup> Aqua... M.R.	38 35.6	48.8	13.1	60.8	16.1	44.2	20.800	-25.93	122 38 9.92	T.M.
	2781	ψ <sup>3</sup> Aqua.....	29 54.0	56.2	70.5	43.4	75.2	33.7			349 29 55.20	T.M.
		(d) ☽ S. L.....	31 68.0	73.0	86.8	56.2	94.3	46.4			353 32 10.56	T.M.
	2870	(e) r Piscium... M.R.	3 45.1	61.8	18.8	75.6	25.4	56.3	20.816	-26.58	119 3 20.08	T.M.
	2870	r Piscium.....	4 41.0	46.9	59.0	31.3	64.7	21.5			353 4 43.69	T.M.
♄ 12 Oct.		Georgean... M.R.	33 40.0	54.0	16.0	66.4	20.1	49.4	19.180	+39.41	122 34 19.82	T.M.
		Georgean.....	33 44.5	47.9	60.5	33.3	66.2	24.3			349 33 45.96	T.M.
	2741	Fomalhaut... M.R.	37 34.0	38.3	37.6	35.6	34.1	24.4	21.043	-35.74	142 36 57.34	T.M.
	2741	Fomalhaut.....	31 14.1	8.2	24.1	3.0	17.9	54.0			329 31 10.75	T.M.
		r Octantis.....	38 69.8	71.8	83.7	30.0	84.3	33.4	23 00 30		271 39 1.75	T.M.
♀ 13 Oct.	2741	Fomalhaut... M.R.	36 25.8	43.1	9.6	60.5	10.2	43.4	19.524	+25.53	142 36 56.82	T.M.
	2741	Fomalhaut.....	31 11.5	11.0	19.0	9.5	14.3	57.2			329 31 10.95	T.M.
♄ 14 Oct.		☉ N. L..... M.	6 41.8	48.1	45.6	47.6	51.3	38.2	20.850	-27.95	352 6 16.98	T.M.
		☉ S. L.....	34 8.2	12.9	8.0	12.0	15.8	3.1			351 34 9.95	T.M.
		(f) ♀ N.L.....	39 14.8	9.5	19.6	9.6	18.2	0.8		+0.24 +1.91	338 39 13.56	T.M.

(a) Correction for Motion in Declination, 0<sup>u</sup>.57  
 (b) A faint nebulous blotch. Observed at the 5<sup>th</sup> Wire.  
 (c) Correction for Motion in Declination, 0<sup>u</sup>.57  
 (d) Hot puffs of wind. Bad definition.

(e) A blotch from wind.  
 (f) Observed one space beyond the 5<sup>th</sup> Wire. Correction for Motion, 0<sup>u</sup>.94, for Curvature of Path, 0<sup>u</sup>.97



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
	°	'	"		Inch.	°	'					"	°	'		
3.97	23	31	18.97	30.323	61.0	57.0		25.22	0.18			79	35	40.76		Georgean R.
	23	31	19.74									79	35	41.53		Georgean.
3.61	3	27	7.27	.323	61.0	57.0		3.50				59	31	7.52	2741	Fomalhaut R.
	3	27	7.33									59	31	7.58	2741	Fomalhaut.
(2.54)	16	35	25.60	30.291	60.4	56.2		17.31	1.38			72	39	38.28		Pallas R.
	16	35	23.52									72	39	36.20		Pallas.
	27	32	28.89	30.250	62.0	64.8	60.0	29.75	3.95			83	20	48.34		☉
	27	0	23.05					29.08	3.88		16 3.10	83	20	48.10		☉
	-0	3	34.10	.250	62.0	64.8		0.06				56	0	22.59	1915	ε Scorpii.
	0	10	10.58	.224	61.6			0.17				56	14	7.50	2577	ε Piscis Australis.
3.44	19	16	27.17	.226	61.6	59.2		20.15				75	20	44.07	2622	ε Aquarii R.
	19	16	26.89									75	20	43.79	2622	ε Aquarii.
2.40	25	20	18.38	.226	61.6	59.2		27.29				81	24	42.42	2655	θ Aquarii R.
	25	20	16.01									81	24	40.05	2655	θ Aquarii.
	20	32	28.23	.223	61.0	58.6		21.62	20 53.84		16 22.72	76	32	15.48		δ
3.06	25	29	8.94	.221	61.0	58.3		27.51				81	33	33.20	2730	λ Aquarii R.
	25	29	7.90									81	33	32.16	2730	λ Aquarii.
3.54	23	25	51.55	.221	61.0	58.0		25.03				79	30	13.33	2781	ψ <sup>3</sup> Aquarii R.
	23	25	51.47									79	30	13.25	2781	ψ <sup>3</sup> Aquarii.
3.86	4	54	20.12	.207	61.0	58.0		4.96				60	58	21.83	2844	δ App. Sculp. R.
	4	54	20.67									60	58	22.38	2844	δ App. Sculp.
3.51	-9	15	0.88	.196	61.0	58.4		9.39				46	48	46.48	31	α Phœnicis R.
	-9	15	1.03									46	48	46.33	31	α Phœnicis.
	89	9	11.02	.190	61.0	58.3	55.4								60	α Cassiopeæ.
(4.39)	16	18	5.39	30.181	61.0	58.4		16.86	1.36			72	22	17.64		Pallas R.
	16	18	7.00									72	22	19.25		Pallas.
	26	37	41.06	30.140	62.2	66.6	62.2	28.40	3.83			82	58	5.78		☉
	27	9	48.18					29.07	3.90		16 3.40	82	58	6.70		☉
	-0	3	33.75					0.06				56	0	22.94	1915	ε Scorpii.
	-0	31	21.09	.079	63.0	65.4		0.53				56	32	35.13	2110	ε Sagittarii.
2.34	39	14	36.07	.082	62.5	62.0	59.0	46.57				95	19	19.39	2503	Equulei R.
	39	14	33.58									95	19	16.90	2503	Equulei.
	1	5	6.99					1.08				57	9	4.82	2518	Piscis Austr.
	0	10	9.93					0.17				56	14	6.85	2577	Piscis Austr.
1.78	25	29	10.81	.070	62.6	67.8		26.88				81	33	34.44	2730	λ Aqua. R.
	25	29	7.20									81	33	30.83	2730	λ Aqua.
2.56	23	25	53.66	.064	64.0	69.0	62.5	24.38				79	30	14.79	2781	ψ <sup>3</sup> Aqua. R.
	23	25	51.62									79	30	12.75	2781	ψ <sup>3</sup> Aqua.
	27	28	6.98	.054	63.2	67.0	61.6	29.34	27 33.51		16 23.46	83	21	23.02		δ
1.89	27	0	43.50	30.051	63.0	65.0	60.2	28.88				83	5	9.13	2870	r Piscium R.
	27	0	40.11									83	5	5.74	2870	r Piscium.
2.89	23	29	43.76	30.040	63.0	60.0	57.8	24.86	0.18			79	34	5.19		Georgean R.
	23	29	42.38									79	34	3.81		Georgean.
4.05	3	27	6.24	.037	63.0	59.8		3.45				59	31	6.44	2741	Fomalhaut R.
	3	27	7.17									59	31	7.37	2741	Fomalhaut.
	-54	25	1.83	.034	62.8	59.8	58.0	1 19.76				1	37	35.16		τ Octantis.
3.89	3	27	6.76	30.017	62.0	52.8		3.50				59	31	7.01	2741	Fomalhaut R.
	3	27	7.37									59	31	7.62	2741	Fomalhaut.
	26	2	13.40	30.120	63.2	65.0	61.0	27.74	3.75			81	50	29.94		☉
	25	30	6.37					27.09	3.68		16 4.20	81	50	30.73		☉
	12	35	9.98	30.104	63.6	68.2	63.0	12.60	1.57	20.636	9.66	68	39	8.10		♀

Coincidence of Micrometer Wire with fixed Wire, =20°.157 One revolution =40°.335  
 Correction for Runs =-3°.10  
 Adopted Zenith Point =326°. 04'. 03".58  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			<i>r</i> #	#	#	#	#	#					
14 Oct.	1885	Antares . . . . . M.R.	12	49.1	64.0	26.5	85.0	26.8	65.2	21.210	-42.48	138 12 9.45	T.M.
	1885	Antares . . . . .	55	58.1	58.8	65.2	58.8	63.6	46.0			333 55 58.85	T.M.
	2518	Piscis Austr. . . . .	9	14.1	11.9	19.5	7.6	12.8	57.9			327 9 10.20	T.M.
		<i>C</i> Octantis . . . . . M.R.	54	41.0	18.7	57.2	0.0	57.9	16.0	20.939	-31.54	198 53 59.79	T.M.
		<i>C</i> Octantis . . . . .	14	19.8	22.4	32.7	38.3	33.0	42.2			273 14 10.97	T.M.
		Georgean . . . . . M.R.	34	32.5	42.8	4.7	58.6	7.0	44.1	18.982	+47.15	122 35 18.11	T.M.
		Georgean . . . . .	32	43.9	45.0	45.8	46.5	49.7	37.4			349 32 44.66	T.M.
		Fomalhaut . . . . . M.R.	37	43.1	60.6	27.1	77.0	29.3	59.1	21.438	-51.67	142 36 56.76	T.M.
		Fomalhaut . . . . .	30	71.6	69.4	78.5	67.1	73.7	56.0			329 31 9.92	T.M.
		$\tau$ Octantis . . . . . M.R.	29	29.0	7.0	45.2	50.8	45.6	4.2	20.582	-17.14	200 29 2.71	T.M.
	$\tau$ Octantis . . . . .	39	10.9	13.8	27.0	32.0	27.2	34.0			271 39 03.73	T.M.	
16 Oct.	27	$\beta$ Hydri . . . . .	50	59.0	58.0	70.4	24.5	65.5	24.3	0 17 18		281 50 50.20	T.M.
17 Oct.	1885	(a) Antares . . . . . M.R.	12	35.6	48.5	12.2	70.2	11.0	52.1	20.898	-29.90	138 12 8.09	T.M.
	1885	Antares . . . . .	55	58.5	57.0	65.0	57.0	62.5	42.0			333 55 57.44	T.M.
	2518	Piscis Austr. . . . . M.	10	18.0	21.8	26.8	15.5	21.6	3.0	21.810	-1 06.67	327 09 11.08	T.M.
	137	(b) Argus SP. . . . .	50	43.0	28.2	45.0	58.8	49.3	11.4	21 12 53		236 50 29.23	T.M.
		Georgean . . . . . M.R.	36	52.4	63.8	25.0	78.8	28.2	63.7	20.314	-6.33	122 36 45.27	T.M.
		Georgean . . . . .	31	20.0	22.4	22.0	22.5	27.0	13.5			349 31 21.32	T.M.
		Fomalhaut . . . . . M.R.	37	38.1	56.0	21.2	73.1	24.1	55.1	21.301	-46.14	142 36 57.56	T.M.
		Fomalhaut . . . . .	31	8.6	12.1	18.1	8.3	15.5	54.9	22 48 45		329 31 10.11	T.M.
		$\tau$ Octantis . . . . .	39	10.0	12.9	25.0	29.6	26.2	32.9	23 1 0		271 39 2.35	T.M.
		$\delta$ App. Sculp. M.R.	10	45.2	68.4	28.4	79.8	28.4	62.0	21.820	-1 7.08	141 9 44.69	T.M.
		$\delta$ App. Sculp. . . . .	58	25.2	22.2	30.2	19.2	29.1	10.2			330 58 22.51	T.M.
		$\gamma^2$ Octantis . . . . .	56	54.8	52.7	72.6	8.7	69.3	12.3			276 56 44.89	T.M.
	10	$\gamma^3$ Octantis . . . . .	53	39.7	37.1	57.0	52.9	53.2	58.0			276 53 29.29	T.M.
	27	$\beta$ Hydri . . . . .	50	61.0	54.5	75.8	17.3	70.0	19.5	0 19 0	+1.34	281 50 56.94	T.M.
	52	$\zeta$ Cassiopeæ . . . . .	46	61.4	103.7	96.8	47.8	122.3	37.0			52 47 17.93	T.M.
	161	$\gamma$ Phœnicis M.R. . . . .	17	50.5	54.1	43.0	65.1	37.0	59.4	21.690	-1 01.83	156 16 49.10	T.M.
	161	$\gamma$ Phœnicis . . . . .	51	21.0	25.5	27.9	12.2	21.2	59.0			315 51 17.96	T.M.
	182	Achernar . . . . . M.R.	12	55.5	49.3	55.0	52.2	46.8	56.5	22.474	-1 33.46	170 11 18.37	T.M.
	182	Achernar . . . . .	56	54.9	58.9	63.0	40.8	58.6	30.6	1 31 48		301 56 51.37	T.M.
	220	$\gamma$ Andromedæ . . . . . M. Companion . . . . .	28	64.6	113.2	106.0	56.0	134.0	42.6	20.038	+4.80	41 29 25.61	T.M.
	Pallas . . . . . M.R.	42	41.6	55.1	19.2	71.0	18.2	52.4	21.290	-45.70	131 41 57.06	T.M.	
	Pallas . . . . .	26	7.0	9.7	13.7	9.4	14.2	57.0			340 26 9.30	T.M.	
18 Oct		(c) $\odot$ S.L. . . . . M.	5	47.4	51.1	49.1	52.1	54.6	42.9	20.314	-6.33	350 5 42.82	T.M.
		$\odot$ N.L. . . . .	37	49.8	55.0	51.2	55.9	57.1	47.2			350 37 52.80	T.M.
		$\varphi$ 's center . . . . . M.R.	40	41.0	57.6	19.8	71.1	20.0	53.2	22.042	-1 16.03	134 39 27.68	T.M.
		$\varphi$ 's center . . . . .	28	37.9	39.1	42.0	38.0	42.2	24.8			337 28 37.97	T.M.
	1915	$\epsilon$ Scorpii . . . . .	0	33.8	32.6	41.1	25.0	35.8	12.9			326 0 30.15	T.M.
2110	$\epsilon$ Sagittarii . . . . .	32	46.1	45.6	54.0	39.0	48.6	26.9			325 32 43.09	T.M.	
19 Oct.		(e) $\odot$ S.L. . . . . M.	44	38.6	37.2	38.0	40.2	40.2	33.1	21.218	-42.80	349 43 54.61	T.M.
		$\odot$ N.L. . . . .	16	4.8	5.9	4.2	7.6	8.0	0.0		+0.71	350 16 5.68	T.M.
		(f) $\varphi$ N.L. . . . .	12	34.8	37.6	40.0	36.2	41.0	22.0			337 12 35.00	T.M.
	2110	$\epsilon$ Sagittarii . . . . .	32	45.4	46.2	54.3	39.0	49.2	25.5			325 32 42.99	T.M.
	2388	$\alpha^2$ Capricorni . . . . .	57	3.5	3.5	4.9	6.1	9.5	58.5			346 57 4.12	T.M.
	2489	$\gamma$ Cygni . . . . .	29	13.8	60.5	53.8	64.0	83.0	52.3			40 29 44.08	T.M.
	2505	$\zeta$ Cygni . . . . .	12	47.8	94.6	89.5	37.0	117.8	24.5			43 13 8.21	T.M.
	2518	Piscis Austr. . . . .	9	14.0	11.2	20.0	6.1	13.2	56.3			327 9 9.70	T.M.
	2577	Piscis Austr. . . . .	14	18.0	14.9	25.0	9.5	18.3	58.6			326 14 13.61	T.M.
		<i>C</i> Octantis . . . . . M.R.	54	23.4	55.0	38.5	40.0	35.3	58.0	20.416	-10.45	198 54 0.82	T.M.
		<i>C</i> Octantis . . . . .	14	16.5	19.6	31.8	34.0	32.2	38.2			273 14 8.29	T.M.
	2676	<i>c</i> Lacertæ . . . . .	15	1.6	49.0	40.8	50.5	68.0	36.2			51 15 20.98	T.M.

(a) Observed on the Meridian. (d) Correction for Motion in Declination, 0'.56 The Reflected Observation on the Meridian.  
 (b) Bisected the junction of the orange and green colour of the spectrum. (e) South Limb on the Meridian, and the North at the 5<sup>th</sup> Wire.  
 (c) Correction for Motion in Declination, 0'.53 (f) Cloudy. Bad observation.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	'	"	"	"	"	"	°	'	"			
4·15	7	51	54·13	30·102	63·8	68·8	64·2					63	55	58·67	1885	Antares	R.
	7	51	55·27					7·79				63	55	59·81	1885	Antares.	
	1	5	6·62	·145	62·0	58·2		1·09				57	9	4·46	2518	Piscis Austr.	
5·38	-52	49	56·21	·171	61·4	56·5						3	12	44·41		C Octantis	R.
	-52	49	52·61					1 16·13				3	12	48·01		C Octantis.	
1·39	23	28	45·47	·173	62·0	56·0						79	33	7·18		Georgean	R.
	23	28	41·08					25·14	0·18			79	33	2·79		Georgean.	
3·34	3	27	6·82	·173	62·0	55·8						59	31	7·06	2741	Fomalhaut	R.
	3	27	6·34					3·49				59	31	6·58	2741	Fomalhaut.	
3·22	-54	24	59·13	30·182	61·5	55·5						1	37	36·79		τ Octantis	R.
	-54	24	59·85					1 20·83				1	37	36·07		τ Octantis.	
2·77	-44	13	13·38	30·187	62·1	58·4						11	49	47·33	27	β Hydri.	
	7	51	55·49	30·117	64·0	66·2	61·6					63	55	60·07	1885	Antares	R.
	7	51	53·86					7·83				63	55	58·44	1885	Antares.	
3·30	1	5	7·50	·136	63·2	58·0						57	9	5·34	2518	Piscis Austr.	
	-89	13	34·35	·140	63·0	58·0		1·09							137	Argus SP.	
	23	27	18·31	·146	63·0	58·3						79	31	39·87		Georgean	R.
3·84	23	27	17·74					24·98	0·17			79	31	39·30		Georgean.	
	3	27	6·02	·142	63·0	58·2						59	31	6·24	2741	Fomalhaut	R.
3·60	3	27	6·53					3·47				59	31	6·75	2741	Fomalhaut.	
	-54	25	1·23	·142	63·0	58·0		1 20·33				1	37	35·19		τ Octantis.	
	4	54	18·89	·138	63·0	57·8	55·2					60	58	20·59	2844	δ App. Sculp.	R.
3·53	4	54	18·93					4·95				60	58	20·63	2844	δ App. Sculp.	
	-49	7	18·69	·130	63·0	57·8		1 6·44				6	55	31·62	2861	γ <sup>2</sup> Octantis	
	-49	10	34·29	·127	63·0	57·5	55·2	1 6·60				6	52	15·86	10	γ <sup>3</sup> Octantis.	
4·87	-44	13	6·64	·124	62·5	57·2		56·05				11	49	54·06	27	β Hydri.	
	86	43	14·35	·124	62·5	57·2									52	ζ Cassiopeæ.	
	-10	12	45·52	·120	62·2	56·2						45	51	0·82	161	γ Phœnicis.	R.
(3·18)	-10	12	45·62					10·41				45	51	0·72	161	γ Phœnicis.	
	-24	7	14·79	·110	62·0	56·0		25·86				31	56	16·10	182	Achernar	R.
	-24	7	12·21									31	56	18·68	182	Achernar.	
(2·83)	75	25	22·03	·102	61·8	55·3	54·0	3 38·59				131	32	57·37	220	γ Andromedæ.	
	75	25	26·83					2 38·61				131	33	2·19		Companion.	
	14	22	6·52	30·100	61·5	55·2		14·82	1·21			70	26	16·88		Pallas	R.
4·56	14	22	5·72									70	26	16·08		Pallas.	
	24	1	39·00	30·101	63·8	64·5	58·8	25·32	3·48		16	5·30	80	22	2·89	⊙	
	24	33	48·98					25·96	3·56			16	5·30	80	22	2·83	⊙
4·56	11	24	36·14	30·100	64·0	65·3	62·0	11·45	1·46			67	28	42·88		♀	R.
	11	24	34·15									67	28	40·89		♀	
	-0	3	33·67					0·06				56	0	23·02	1915	ε Scorpil.	
4·56	-0	31	20·73					0·53				55	32	35·49	2110	ε Sagittarii.	
	23	39	50·79	30·149	64·0	69·0	63·6	24·72	3·43		16	5·60	80	0	14·43	⊙	
	24	12	1·86					25·35	3·51			16	5·60	80	0	14·85	⊙
4·56	11	8	31·18	·106	65·0	68·8	64·0	11·10	1·43	20·520	7·32	67	12	30·28		♀	
	-0	31	20·83					0·53				55	32	35·39	2110	ε Sagittarii.	
	20	53	0·30	·085	64·0	60·0		21·85				76	57	18·90	2388	α <sup>2</sup> Capricorni.	
4·56	74	25	40·26	·085	61·0	57·3		3 23·51				130	33	0·52	2489	γ Cygni.	
	77	9	4·39	·085	61·0	57·0		4 7·06				133	17	8·20	2505	z Cygni.	
	1	5	5·88					1·09				57	9	3·72	2518	Piscis Australis.	
4·56	0	10	9·79					0·17				56	14	6·71	2577	Piscis Australis.	
	-52	49	57·00	·085	60·2	55·5	54·0	1 16·07				3	12	43·68		C Octantis	R.
	-52	49	55·53									3	12	45·15		C Octantis.	
	85	11	17·16	30·085	60·3	55·5										c Lacertæ.	

Coincidence of Micrometer Wire with fixed Wire, =20<sup>o</sup>.157 One revolution =40<sup>o</sup>.335  
 Correction for Runs =-3<sup>o</sup>.10  
 Adopted Zenith Point =326<sup>o</sup>. 04'. 03<sup>o</sup>.58 From Oct. 18<sup>th</sup>, 326<sup>o</sup>. 04'. 03<sup>o</sup>.82  
 Assumed Co-latitude =56<sup>o</sup>. 03'. 56<sup>o</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			′ ″	″	″	″	″	″				
21 19 Oct.	2741	Georgian... M.R.	37 47.0	58.0	20.6	73.2	23.0	57.8	20.390	-9.40	122 37 36.72	T.M.
		Georgian .....	30 27.8	32.0	30.8	32.1	34.6	22.1			349 30 30.08	T.M.
		Fomalhaut... M.R.	37 41.6	58.2	24.0	77.0	25.7	58.5	21.386	-49.57	142 36 56.99	T.M.
		Fomalhaut .....	31 10.4	9.5	18.6	7.4	13.4	55.0			329 31 9.58	T.M.
		τ Octantis... M.R.	29 41.4	16.0	56.7	1.8	54.1	17.0	20.808	-26.26	200 29 4.44	T.M.
		τ Octantis .....	39 10.0	11.9	26.3	29.8	26.0	32.0			271 39 2.25	T.M.
		γ <sup>3</sup> Octantis... M.R.	14 22.0	53.2	38.0	38.1	29.7	56.4	19.429	+29.36	195 14 38.50	T.M.
		γ <sup>3</sup> Octantis .....	53 37.0	41.6	51.8	0.5	51.7	1.2			276 53 30.27	T.M.
		β Hydri... M.R.	18 34.0	7.6	47.5	56.0	39.8	13.2	21.730	-1 03.45	190 17 19.22	T.M.
		β Hydri .....	50 56.4	61.0	70.0	25.9	68.0	22.7			281 50 50.58	T.M.
		Achernar... M.R.	11 56.0	51.2	62.0	48.9	54.3	52.2	21.016	-34.65	170 11 18.82	T.M.
		Achernar .....	56 54.1	60.1	59.9	45.5	55.3	33.8			301 56 51.69	T.M.
		Pallas... M.R.	13 42.0	49.1	12.8	69.5	10.5	52.8	21.125	-39.04	132 13 0.16	T.M.
		Pallas .....	55 6.1	4.0	13.0	4.9	12.0	54.4			339 55 6.65	T.M.
		21 21 Oct.	2110	⊙ S. L. .... M..	1 49.0	56.5	52.2	56.4	59.0	45.0	21.700	-1 02.24
⊙ N. L. ....	32 57.3			59.0	58.4	60.4	63.0	50.9			349 32 58.25	T.M.
ε Sagittarii .....	32 46.8			45.5	55.0	39.4	49.0	27.0			325 32 43.50	T.M.
Georgian... M.R.	37 49.0			62.1	22.2	76.9	25.9	61.6	19.286	+35.13	122 38 24.28	T.M.
Georgian .....	29 40.5			42.0	43.0	43.9	46.2	34.5			349 29 41.42	T.M.
Fomalhaut... M.R.	37 33.2			49.5	15.2	69.0	15.5	51.4	21.160	-40.46	142 36 58.05	T.M.
Fomalhaut .....	31 10.4			11.0	19.1	8.9	14.9	55.8			329 31 10.08	T.M.
τ Octantis... M.R.	24 39.8			15.0	57.0	0.2	53.2	14.5	13.349	+4 34.60	200 29 4.10	T.M.
τ Octantis .....	39 13.9			13.9	30.0	31.0	28.7	35.0			271 39 4.99	T.M.
⊙ S. L. ....	48 49.8			97.1	75.8	70.0	105.0	50.9			23 49 21.13	T.M.
♀'s center .....	38 46.9			43.0	76.7	19.6	78.2	16.8			357 38 46.48	T.M.
α <sup>c</sup> Capricorni M.R.	11 42.0			37.8	36.0	32.7	29.1	23.7	20.962	-32.15	125 11 1.03	T.M.
α <sup>c</sup> Capricorni .....	57 15.9			56.9	37.8	37.0	34.0	39.4			346 57 6.82	T.M.
α Octantis... M.R.	45 49.0			35.9	79.1	9.3	76.3	22.0	20.695	-21.38	189 45 23.66	T.M.
α Octantis .....	22 63.4			46.2	46.2	40.0	32.5	50.0			282 22 46.24	T.M.
Georgian... M.R.	38 60.2	54.4	52.5	51.7	47.7	43.8	20.260	-3.83	122 38 47.31	T.M.		
Georgian .....	29 28.2	11.8	52.1	50.9	47.1	51.0			349 29 19.96	T.M.		
Fomalhaut... M.R.	36 48.8	58.6	71.0	40.9	67.8	25.4	20.010	+6.25	142 36 57.96	T.M.		
Fomalhaut .....	31 23.0	56.4	42.0	44.4	23.9	45.0			329 31 9.18	T.M.		
τ Octantis... M.R.	29 45.1	22.0	64.8	4.1	62.4	17.0	20.984	-33.03	200 29 2.40	T.M.		
τ Octantis .....	39 13.0	8.9	55.6	59.0	52.3	5.1			271 39 1.90	T.M.		
Pallas... M.R.	57 31.9	31.0	40.2	16.4	30.2	6.4	20.110	+2.22	132 57 27.99	T.M.		
♄'s center... M.R.	54 53.0	49.6	34.8	51.9	30.5	44.9	21.894	-1 09.74	114 53 34.66	T.M.		
♄'s center .....	14 35.5	26.1	62.1	2.2	62.0	1.4			357 14 31.95	T.M.		
23 23 Oct.	1885	⊙ S. L. M. ....	18 45.0	28.3	69.4	10.0	64.5	8.9	20.636	-19.00	348 18 18.03	T.M.
		⊙ N. L. ....	50 36.0	23.9	60.9	2.0	58.4	0.0			348 50 30.55	T.M.
		Antares... M.R.	12 15.9	22.0	32.2	5.1	27.7	51.0	20.319	-6.21	138 12 9.06	T.M.
		Antares .....	56 13.6	45.4	32.8	31.5	18.0	33.2			333 55 59.13	T.M.
		♀'s center... M.R.	54 48.1	48.9	55.9	33.8	48.7	21.3	20.960	-32.06	135 54 10.35	T.M.
		♀'s center .....	14 8.4	45.0	29.8	28.2	15.8	29.0			336 13 55.98	T.M.
		ε Scorpii .....	0 49.0	18.3	63.1	5.2	42.7	7.4			326 0 30.90	T.M.
		ε Sagittarii .....	32 59.0	33.0	74.0	19.2	56.6	19.6			325 32 43.29	T.M.
		Georgian... M.R.	38 59.5	52.0	51.9	48.6	46.0	42.6	19.706	+18.51	122 39 8.16	T.M.
		Georgian .....	28 67.5	51.0	91.2	30.0	86.2	30.0			349 28 58.95	T.M.
		Fomalhaut... M.R.	36 38.5	50.8	60.8	32.3	59.8	15.9	19.780	+15.53	142 36 58.19	T.M.
		Fomalhaut .....	30 82.9	58.0	102.6	43.9	86.3	34.5			329 31 9.60	T.M.
		τ Octantis .....	38 72.0	67.0	55.0	56.0	51.6	63.1			271 39 0.37	T.M.
		ν Argus .....	41 67.1	51.0	57.6	44.5	42.8	50.4			295 41 52.04	T.M.
		Regulus... M.R.	17 47.0	45.2	17.0	51.2	19.0	44.5	11.532	+5 48.21	99 23 25.15	T.M.
Regulus .....	44 38.0	42.5	69.0	13.0	76.0	13.7			12 44 40.98	T.M.		

(a) Correction for Motion, 0".51  
 (b) Observed at the 2<sup>nd</sup> and 4<sup>th</sup> Wires.  
 (c) Correction for Motion in Declination, +7".29 For Curvature of Path, -0".49  
 (d) Oct. 21<sup>st</sup>, 20<sup>th</sup>, 30<sup>th</sup>. M. T. cleaned the Circle pivots, and applied oil to them. Examined the Axis by means of the plumb line, and found the horizontal error trifling. The

Meridian Wire is a tangent on the East side to the disc on the Meridian mark.  
 (e) Correction for Curvature of Path, 0".15  
 (f) Hurried.  
 (g) Correction for Motion in Declination, 0".82  
 (h) Observed at the 2<sup>nd</sup> and 4<sup>th</sup> Wires. Correction for Motion, 0".23  
 (i) Observed on the Meridian, and 69°. after.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	o	'	''	Inch.	o	o	o	'	''	r	'	''	o	'	''		
3.40	23	26	27.10	.084	61.0	55.5		25.05	0.17				79 30 48.73			Georgan	R.
	23	26	26.26										79 30 47.89			Georgan.	
3.29	3	27	6.83					3.49					59 31 7.07	2741		Fomalhaut	R.
	3	27	5.76										59 31 6.00	2741		Fomalhaut.	
3.35	-54	25	0.62	30.084	61.0	56.0		1 20.50					1 37 35.63			γ Octantis	R.
	-54	25	1.57										1 37 34.68			γ Octantis.	
4.39	-49	10	34.68	30.077	60.2	55.0		1 6.83					6 52 15.24	10		γ <sup>3</sup> Octantis	R.
	-49	10	33.55										6 52 16.37	10		γ <sup>3</sup> Octantis.	
4.90	-44	13	15.40	.072	60.0	54.3		56.29					11 49 45.06	27		β Hydri	R.
	-44	13	13.24										11 49 47.22	27		β Hydri.	
5.26	-24	7	15.00	.065	61.0	54.2		25.92					31 56 15.83	182		Achernar	R.
	-24	7	12.13										31 56 18.70	182		Achernar.	
(3.41)	13	51	3.66	30.063	61.0	64.2		14.27	1.17				69 55 13.51			Pallas	R.
	13	51	2.83										69 55 12.68			Pallas.	
	22	56	46.47	30.185	61.5	57.0	56.0	24.47	3.34		16 6.10		79 17 10.45			☉	
	23	28	54.43					25.11	3.41				79 17 6.78			☉	
	-0	31	20.32					0.53					55 32 35.90	2110		ε Sagittarii.	
2.85	23	25	39.54	.311	59.8	53.2		25.34	0.17				79 30 1.46			Georgan	R.
	23	25	37.60										79 29 59.52			Georgan.	
4.07	3	27	5.77	.311	59.8	53.2		3.53					59 31 6.05	2741		Fomalhaut	R.
	3	27	6.26										59 31 6.54	2741		Fomalhaut.	
4.55	-54	25	0.28	.311	59.8	52.5		1 21.67					1 37 34.80			γ Octantis	R.
	-54	24	58.83										1 37 36.25			γ Octantis.	
	57	45	17.31	.306	60.0	55.2		1 32.06	45 47.24		14 47.58		113 19 46.46			♃	
	31	34	42.66	30.302	61.3	61.0	56.2	35.39	4.44				87 39 10.36			♃	
3.93	20	53	2.79	30.230	62.0	55.8		22.14					76 57 21.68	2388		α <sup>2</sup> Capricorni	R.
	20	53	3.00										76 57 21.89	2388		α <sup>2</sup> Capricorni.	
4.95	-43	41	19.84	.231	60.0	54.2		54.29					12 21 42.62	2472		α Octantis	R.
	-43	41	17.58										12 21 44.88	2472		α Octantis.	
3.64	23	25	16.51	.234	61.0	53.3		25.26	0.17				79 29 38.35			Georgan	R.
	23	25	16.14										79 29 37.98			Georgan.	
3.57	3	27	5.86	.234	61.0	53.3		3.52					59 31 6.13	2741		Fomalhaut	R.
	3	27	5.36										59 31 5.63	2741		Fomalhaut.	
2.15	-54	24	58.58	.234	61.0	53.6		1 21.28					1 37 36.89			γ Octantis	R.
	-54	25	1.92										1 37 33.55			γ Octantis.	
(3.31)	13	6	35.83	.228	60.5	53.8		13.57	1.11				69 10 45.04			Pallas	R.
	31	10	29.16	30.201	62.0	62.9	58.2	34.58	4.27				87 14 56.22			♃	R.
	31	10	28.13										87 14 55.19			♃	
	22	14	14.21	30.187	62.0	63.4	58.0	23.34	3.24		16 6.60		78 34 37.66			☉	
	22	46	26.73					23.97	3.31				78 34 37.54			☉	
4.10	7	51	54.76	.134	62.3	64.5	60.5	7.86					63 55 59.37	1885		Antares	R.
	7	51	55.31										63 55 59.92	1885		Antares.	
(3.17)	10	9	53.47	.134	62.3	64.5	60.5	10.20	1.34				66 13 59.08			♀	R.
	10	9	52.16										66 13 57.77			♀	
	-0	3	32.92					0.06					56 0 23.77	1915		ε Scorpii.	
	-0	31	20.53					0.53					55 30 35.69	2110		ε Sagittarii.	
3.56	23	24	55.66	.127	61.5	58.4		24.91	0.17				79 29 17.15			Georgan	R.
	23	24	55.13										79 29 16.62			Georgan.	
3.90	3	27	5.63	.127	61.5	58.2		3.47					59 31 5.85	2741		Fomalhaut	R.
	3	27	5.78										59 31 6.00	2741		Fomalhaut.	
	-54	25	3.45	.127	61.5	58.2		1 20.26					1 37 33.04			γ Octantis.	
	-30	22	11.78	.071	61.0	58.8		23.62					25 41 21.35	1186		ν Argus.	
3.07	46	40	38.67	30.075	61.0	60.5	59.0	1 0.59					102 45 36.01	1209		Regulus	R.
	46	40	37.16										102 45 34.50	1209		Regulus.	

Coincidence of Micrometer Wire with fixed Wire, =20°.157 Oct. 22<sup>nd</sup>, Noon, =20°.165 One revolution =40°.335  
 Correction for Runs =-3''.10  
 Adopted Zenith Point to Noon Oct. 24<sup>th</sup>, =326°. 04'. 03''.82 From Oct. 24<sup>th</sup>, =326°. 04'. 03''.92  
 Assumed Co-latitude =56°. 03'. 56''.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			l #	#	#	#	#	#					
♂ 24 Oct.	1885	⊙ N. L. .... M...	29 40.2	22.6	63.9	3.7	58.8	3.0	20.140	+1.01	348 29 32.30	T.M.	
		⊙ S. L. ....	56 85.2	69.8	109.2	48.8	117.3	49.0			347 57 20.03	T.M.	
		Antares.....	55 71.8	46.6	92.5	30.9	79.0	31.2			333 55 59.11	T.M.	
	2388	(a) ♀'s center... M.R.	8 52.4	53.2	62.0	37.0	55.8	25.0	22.451	-92.21	136 7 14.90	T.M.	
		♀'s center .....	0 65.0	42.2	87.0	24.7	74.9	24.0			336 0 53.82	T.M.	
	2388	α <sup>2</sup> Capricorni M.R.	11 42.0	33.6	33.2	28.2	26.0	19.0	20.897	-29.53	125 11 0.39	T.M.	
	2741	α <sup>2</sup> Capricorni.....	56 74.1	55.2	98.2	35.4	95.0	37.2			346 57 5.89	T.M.	
		C Octantis... M.R.	54 42.2	23.2	61.2	3.2	62.2	17.4	20.960	-32.06	198 54 2.37	T.M.	
	2741	C Octantis.....	14 20.0	13.1	0.8	0.5	57.2	10.2				273 14 6.54	T.M.
		2741	Georgian ... M.R.	39 46.9	38.5	40.4	35.8	33.8	29.6	20.346	-7.30	122 39 29.54	T.M.
	Georgian .....		28 45.7	31.5	69.2	10.0	66.8	9.3		349 28 38.59		T.M.	
	1137	(b) Fomalhaut... M.R.	36 41.6	56.7	63.3	37.0	64.8	19.5	19.863	+12.18	142 36 58.96	T.M.	
		Fomalhaut .....	30 82.1	58.0	102.6	43.3	87.3	43.3			329 31 9.50	T.M.	
	1137	τ Octantis... M.R.	29 42.7	22.8	60.8	5.8	61.1	17.4	20.850	-27.63	200 29 7.00	T.M.	
		τ Octantis.....	39 12.1	7.8	53.8	57.7	51.7	3.9			271 39 0.74	T.M.	
	1186	ι Argus..... M.R.	43 37.0	31.9	69.5	2.6	64.0	7.0	21.128	-38.84	170 42 55.68	T.M.	
		ι Argus .....	25 27.4	11.3	20.0	6.5	5.7	7.6			301 25 13.50	T.M.	
	1209	ν Argus.....	41 67.0	50.2	56.8	44.4	42.1	51.0		+0.57	295 41 52.29	T.M.	
		Regulus..... R.	23 33.4	34.0	5.3	39.4	8.4	31.2			99 23 25.18	T.M.	
	1427	(d) α Crucis..... M.R.	19 48.8	48.4	81.4	17.6	78.5	20.2	20.950	-31.66	174 19 16.99	T.M.	
		α Crucis.....	48 67.9	47.6	57.0	44.0	40.4	49.1				297 48 51.13	T.M.
	1427	(e) ♀'s center... M.R.	51 45.0	40.2	28.0	39.9	26.0	33.0	21.975	-1 13.00	115 50 23.08	T.M.	
		♀'s center .....	17 44.0	37.0	71.7	13.2	73.2	10.0				356 17 42.28	T.M.
♀ 25 Oct.	1114	(f) ⊙ S. L..... M...	36 47.3	32.7	71.4	11.0	69.4	11.6	20.393	-9.20	347 36 30.92	T.M.	
		⊙ N.L.....	8 46.0	31.5	70.8	11.2	68.4	9.7			348 8 39.22	T.M.	
		λ Argus.....	14 10.9	42.2	18.2	30.2	56.8	33.7			317 13 51.60	T.M.	
	1137	ι Argus.....	25 27.6	9.5	22.4	2.9	5.8	5.0			301 25 12.18	T.M.	
		ν Argus.....	41 65.6	49.2	57.3	42.0	42.6	48.4			295 41 50.66	T.M.	
	1209	Regulus..... M.R.	23 42.9	41.7	14.0	48.2	16.9	40.1	20.364	-8.03	99 23 25.83	T.M.	
		Regulus .....	44 38.0	40.9	68.0	12.7	74.9	13.2			12 44 40.54	T.M.	
	1209	♀'s center... M.R.	23 24.9	19.4	5.9	19.9	5.1	12.7	21.693	-1 01.63	116 22 13.64	T.M.	
		♀'s center .....	45 56.8	49.0	83.9	24.0	84.0	21.4				355 45 54.20	T.M.
	♀ 26 Oct.	1885	⊙ N. L. .... M...	48 35.6	28.6	61.7	6.1	62.3	3.9	20.840	-27.22	347 48 5.18	T.M.
			⊙ S. L.....	15 58.2	42.6	83.5	20.9	82.6	22.3			347 15 51.99	T.M.
Antares..... M.R.			12 38.9	48.0	55.9	29.3	52.0	14.3	20.910	-30.05		138 12 9.26	T.M.
1885		Antares.....	55 73.1	47.8	94.8	31.6	82.0	31.2			333 56 0.13	T.M.	
2741		♀ N.L.....	36 61.6	40.6	84.4	22.1	73.8	20.5			335 36 50.31	T.M.	
		♀'s center... M.R.	57 46.5	41.5	29.2	42.0	28.5	34.5	22.751	-1 44.31	116 55 53.44	T.M.	
2741		♀'s center .....	11 79.4	69.8	106.2	45.8	105.0	45.0				355 12 16.14	T.M.
♀ 27 Oct.		2741	(b) Georgian... M.R.	39 50.0	42.5	42.1	38.7	37.2	32.5	19.088	+43.44	122 40 23.40	T.M.
	Georgian .....		27 50.0	33.0	74.6	11.1	69.7	12.3		349 27 41.56		T.M.	
	2741	(b) Fomalhaut . M.R.	36 45.0	61.1	67.4	41.4	68.6	23.7	19.957	+8.39	142 36 59.23	T.M.	
		Fomalhaut .....	30 81.9	57.2	104.0	42.0	88.0	42.2			329 31 9.27	T.M.	
	2779	τ Octantis... M.R.	29 40.7	19.5	59.0	2.0	58.7	15.0	20.781	-24.85	200 29 7.16	T.M.	
		τ Octantis .....	39 14.3	7.0	55.2	57.6	50.5	6.8			+0.06	271 39 1.54	T.M.
	2844	γ App. Sculp....	35 20.5	59.0	40.0	43.1	24.3	42.1			326 35 8.15	T.M.	
		δ App. Sculp. M.R.	10 51.0	65.0	72.9	43.0	70.0	27.2	21.862	-1 08.45	141 9 46.14	T.M.	
	2844	δ App. Sculp....	58 35.8	8.0	55.0	51.0	40.0	55.2				330 58 20.66	T.M.
		10	(i) γ <sup>3</sup> Octantis... M.R.	14 53.1	35.8	75.6	12.4	72.4	26.1	20.236	-2.86	195 14 42.55	T.M.
	γ <sup>3</sup> Octantis.....		53 38.1	31.2	20.8	20.1	16.2	27.8		+0.24		276 53 25.59	T.M.
27	(k) β Hydri.... M.R.	17 50.0	35.0	74.8	12.1	74.2	22.8	20.750	-23.59	190 17 20.94	T.M.		
	β Hydri.....	50 64.4	52.1	48.1	44.8	38.0	51.2				281 50 50.09	T.M.	
83	ν Andromedæ.....	8 41.6	36.0	53.0	6.2	56.0	22.0		-0.39	40 8 35.43	T.M.		

(a) Correction for Motion, 0<sup>h</sup>.44.  
 (b) Observed at the 2<sup>nd</sup> and 4<sup>th</sup> Wires.  
 (c) Found bisected by the fixed Wire. The Observation at the 1<sup>st</sup> Wire.  
 (d) Bisected the space between the double star. Difference in dec. of the two stars, 2<sup>h</sup>.8. Observed on the Meridian and at the 4<sup>th</sup> Wire.

(e) Correction for Motion in Declination, 0<sup>h</sup>.97  
 (f) Observed on the Meridian.  
 (g) Correction for Motion in Declination, 1<sup>h</sup>.03  
 (h) Correction for Motion in Declination, 1<sup>h</sup>.08  
 (i) 1<sup>m</sup> past Meridian.  
 (k) 1<sup>m</sup> past Meridian. Crabby.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.	
					Attch.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"		
	22	25	28.38	30.092	62.5	70.2	63.4	23.14	3.27		16 6.90	78	13	38.10		☉	
	21	53	16.11					22.53	3.19				78	13	39.10		☉
(4.36)	7	51	55.19	30.089	63.2	71.8	66.5	7.77				63	55	59.71	1885	Antares.	
	9	56	49.02	30.088	63.2	72.0	65.0		9.82	1.32		66	0	54.27		♀	
3.14	9	56	49.90									66	0	55.15		♀	
	20	53	3.53	.120	64.0	62.5			21.77			76	57	22.05	2388	α <sup>2</sup> Capricorni	
4.46	20	53	1.97									76	57	20.49	2388	α <sup>2</sup> Capricorni.	
	-52	49	58.45	.157	63.0	59.5		1	15.64			3	12	42.66		γ Octantis	
4.07	-52	49	57.38									3	12	43.73		γ Octantis.	
	23	24	34.38	.157	62.5	58.8			24.91	0.17		79	28	55.87		Georgian	
4.23	23	24	34.67									79	28	56.16		Georgian.	
	3	27	4.96	.160	62.3	58.5	56.5		3.47			59	31	5.18	2741	Fomalhaut	
3.87	3	27	5.58									59	31	5.80	2741	Fomalhaut.	
	-54	25	3.08	.166	62.2	58.0	56.5	1	20.40			1	37	33.27		τ Octantis	
4.59	-54	25	3.18									1	37	33.17		τ Octantis.	
	-24	38	51.76	.170	61.5	60.2			26.34			31	24	38.65	1137	ι Argus	
4.06	-24	38	50.42									31	24	39.99	1137	ι Argus.	
	-30	22	11.63	.176	61.8	61.6	59.0		33.56			25	41	11.56	1186	ν Argus.	
(2.68)	46	40	38.74					1	0.66			102	45	36.15	1209	Regulus.	
	-28	15	13.07	.193	63.4	67.0	63.0		30.47			27	48	13.21	1427	α Crucis	
3.19	-28	15	12.79									27	48	13.49	1427	α Crucis.	
	30	13	40.84	30.190	63.2	67.5			33.00	3.95		86	18	6.64		♄	
4.70	30	13	38.36									86	18	4.16		♄	
	21	32	27.00	30.188	63.8	68.8	63.3	22.31	3.14		16 7.20	77	52	50.12		☉	
22	4	35.30					22.92	3.22				77	52	44.55		☉	
3.19	-8	50	12.32	.084	62.0	60.3		8.88				47	13	35.55	1114	λ Argus.	
	-24	38	51.74					26.26				31	24	38.75	1137	ι Argus.	
(3.92)	-30	22	13.26	.086	62.0	62.0		33.43				25	41	10.06	1186	ν Argus.	
	46	40	38.09					1	0.43			102	45	35.27	1209	Regulus	
4.79	46	40	36.62	.088	62.2	62.4						102	45	33.80	1209	Regulus.	
	29	41	50.28	30.090	63.5	67.8		32.18	3.80			85	46	15.41		♄	
4.70	29	41	50.28									85	46	15.41		♄	
	21	44	1.26	30.082	64.2	70.6	65.0	22.37	3.17		16 7.40	77	32	9.81		☉	
21	11	48.07					21.76	3.10				77	32	10.88		☉	
(4.79)	7	51	54.66	.047	68.2	70.2		7.75				63	55	59.16	1885	Antares	
	7	51	56.21									63	55	60.71	1885	Antares.	
2.48	9	32	46.39					9.43	1.28	20.522	7.20	65	36	44.09		♀	
	29	8	10.48	30.117	63.6	67.0	64.0	31.53	3.66				85	12	35.10		♄
4.25	29	8	12.22									85	12	36.84		♄	
	23	23	40.52	30.116	63.2	69.2	60.4	24.37	0.17			79	28	1.47		Georgian	
4.35	23	23	37.64									79	27	58.59		Georgian.	
	3	27	4.69	.116	62.5	59.0	57.0		3.47			59	31	4.91	2741	Fomalhaut	
3.40	3	27	5.35									59	31	5.57	2741	Fomalhaut.	
	-54	25	3.24	.116	63.0	58.3	56.8	1	20.21			1	37	33.30		τ Octantis	
4.07	-54	25	2.38									1	37	34.16		τ Octantis.	
	0	31	4.23					0.52				56	35	1.50	2779	γ App. Sculp.	
5.52	4	54	17.78	.137	63.0	57.8	57.0	4.95				60	58	19.48	2844	δ App. Sculp.	
	4	54	16.74									60	58	18.44	2844	δ App. Sculp.	
4.07	-49	10	38.63	.141	62.5	57.4						6	52	11.47	10	γ <sup>3</sup> Octantis	
	-49	10	38.33									6	52	11.77	10	γ <sup>3</sup> Octantis.	
4.79	-44	13	17.02	.141	62.0	56.7	56.0	56.14				11	49	43.59	27	β Hydri	
	-44	13	13.83									11	49	46.78	27	β Hydri.	
	74	4	31.51					3	19.51			130	11	47.77	83	ν Andromedæ.	

Coincidence of Micrometer Wire with fixed Wire, =20°.165 One revolution =40°.335  
 Correction for Runs =-3".10  
 Adopted Zenith Point to Achernar Oct. 27<sup>th</sup>, =326°. 04'. 03".92  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			h m s	h m s	h m s	h m s	h m s	h m s				
♀ 27 Oct.	182	Achernar.... M.R.	11 40.5	38.0	72.0	9.6	68.0	11.3	20.640	-19.06	170 11 20.24	T.M.
	182	Achernar.....	56 64.0	44.1	56.0	41.2	39.2	43.2			301 56 48.20	T.M.
	219	α Hydri.... M.R.	29 36.6	32.9	69.8	4.9	65.0	7.2	20.876	-28.68	174 29 6.38	T.M.
	219	α Hydri.....	39 20.0	59.5	9.0	57.7	52.6	1.2			297 39 3.45	T.M.
		Pallas..... M.R.	5 45.5	50.7	56.5	36.3	50.5	22.8	20.985	-33.07	134 5 10.54	T.M.
		z Oct. SP. ... M.R.	38 42.1	22.5	57.8	6.2	57.6	19.2	20.135	+1.21	204 38 35.08	T.M.
		z Octantis SP.....	29 51.3	37.6	26.3	31.2	25.5	40.3	14 19 30	-0.79	267 29 34.10	T.M.
	365	α Persei.....	9 31.2	21.4	32.4	57.0	33.3	13.2	3 12 22.2		49 9 20.97	T.M.
	393	δ Persei.....	10 10.0	4.2	15.8	35.8	18.3	51.0			47 10 2.51	T.M.
	433	ε Persei.....	28 69.0	63.8	80.2	34.8	85.1	49.8			39 29 3.36	T.M.
	482	χ Eridani.....	48 46.5	21.1	63.1	6.0	45.3	3.4			325 48 30.54	T.M.
		σ Oct. SP..... R.	50 31.7	9.8	47.0	50.0	45.2	7.2	4 45 16	+11.20	202 50 32.98	T.M.
		..... R.	17 58.0	49.3	35.9	41.1	33.4	47.9	4 50 50	-6.08	269 17 37.90	T.M.
		..... R.	50 39.4	18.1	55.0	59.0	54.2	15.2	4 56 10	+2.62	202 50 32.72	T.M.
		..... R.	17 51.5	42.1	28.9	34.5	25.9	41.2	5 1 3	-0.72	269 17 36.36	T.M.
		(a)..... R.	50 43.0	21.0	58.5	1.4	57.9	18.4	5 5 57	+0.01	202 50 33.32	T.M.
		..... R.	17 52.1	44.0	30.0	35.4	28.7	41.8	5 11 9	-0.57	269 17 37.82	T.M.
		..... R.	50 39.9	19.2	56.1	59.4	55.7	15.2	5 16 8	+2.39	202 50 33.25	T.M.
		..... R.	17 55.8	47.9	33.2	39.9	31.2	46.2	5 21 45	-5.94	269 17 36.15	T.M.
	699	α Columbæ.....	50 49.8	26.4	65.8	11.3	48.8	10.0	5 33 16.5		325 50 35.29	T.M.
734	α Orionis.... M.R.	46 65.0	61.7	36.3	67.0	40.0	61.5	20.860	-28.03	104 46 27.16	T.M.	
734	α Orionis.....	21 37.4	42.0	70.4	13.8	77.2	11.3			7 21 41.70	T.M.	
	ψ's center... M.R.	31 47.6	47.0	....	47.7	....	37.0	21.208	-42.07	117 30 59.12	T.M.	
	(b) ψ's center.....	36 71.0	63.0	98.0	38.4	97.9	36.8			354 37 8.52	T.M.	
♁ 28 Oct.		(c) Pallas..... M.R.	18 42.5	45.8	52.4	32.4	44.8	19.9	21.580	-57.07	134 17 42.15	T.M.
		Pallas.....	50 35.0	15.5	60.0	57.0	49.4	55.0			337 50 26.15	T.M.
	282	θ Persei.....	25 55.0	46.7	60.6	22.0	61.8	38.5			48 25 47.35	T.M.
	329	γ Persei.....	39 27.0	17.6	25.3	54.6	26.9	11.0			52 39 16.62	T.M.
	353	Eridani.... M.R.	45 59.0	72.7	79.8	51.3	77.7	34.7	20.628	-18.68	141 45 43.58	T.M.
	353	Eridani.....	22 41.0	14.0	60.0	57.2	44.6	59.4			330 22 25.95	T.M.
	365	α Persei.....	9 41.2	30.8	42.6	7.0	44.7	23.4	3 12 21.3		49 9 31.15	T.M.
	424	m <sup>2</sup> Eridani.. M.R.	31 40.8	45.0	48.5	31.1	54.0	15.9	21.375	-48.81	136 30 50.24	T.M.
	424	(d) m <sup>2</sup> Eridani.....	36 87.4	69.4	51.5	51.0	40.7	47.4			335 37 17.83	T.M.
	433	ε Persei.....	28 70.8	66.5	82.7	36.8	88.1	50.5			39 29 5.48	T.M.
♃ 30 Oct.	1186	ν Argus SP.....	24 64.0	58.0	35.2	53.8	46.8	63.3			244 24 53.01	T.M.
	182	Achernar.... M.R.	11 43.0	41.1	75.2	10.8	71.0	13.8	20.649	-19.52	170 11 22.36	T.M.
	182	Achernar.....	56 61.2	44.5	53.0	39.5	40.1	41.5			301 56 46.88	T.M.
♃ 1 Nov.		* Octantis SP....	32 25.0	21.5	5.0	11.4	8.0	16.2			267 32 14.29	T.M.
		(e) Georgean... M.R.	40 59.8	53.8	51.6	50.3	46.3	41.5	19.075	+43.96	122 41 34.37	T.M.
		Georgean.....	26 40.5	26.1	64.5	5.0	61.4	4.0			349 26 33.47	T.M.
	2741	Fomalhaut.. M.R.	36 47.0	60.5	68.4	40.1	68.2	24.8	19.959	+8.31	142 36 59.45	T.M.
	2741	(e) Fomalhaut.....	30 80.0	57.9	101.5	42.0	87.0	40.2			329 31 8.15	T.M.
		(f) Pallas..... M.R.	4 30.1	33.8	41.1	17.3	35.9	5.9	20.722	-22.47	135 4 4.32	T.M.
		Pallas.....	3 74.8	54.5	59.6	37.3	86.7	33.0			337 4 4.24	T.M.
	254	(g) δ Hydri.... M.R.	31 40.6	35.2	72.5	7.8	72.0	11.0	20.747	-23.47	181 31 15.46	T.M.
	365	α Persei.....	9 42.7	31.0	44.4	7.4	44.3	25.0	3 12 17		49 9 32.00	T.M.
	424	(h) m <sup>2</sup> Eridani.. M.R.	31 55.8	60.4	68.4	46.2	64.1	31.1	21.720	-1 02.72	136 30 51.27	T.M.
424	m <sup>2</sup> Eridani.....	36 88.6	67.6	112.4	50.8	101.0	48.0			335 37 18.33	T.M.	
♀ Nov. 3.		⊙ N. L..... M...	10 36.8	26.1	62.6	7.1	58.4	0.4	20.155	+0.40	345 10 32.02	T.M.
		⊙ S. L.....	37 83.4	69.2	107.8	47.8	103.0	44.2			344 38 15.93	T.M.

(a) Time of Transit by Molyneux, 5<sup>h</sup> 6<sup>m</sup> 23<sup>s</sup>  
 (b) Correction for Motion in Declination, 1".12  
 (c) Correction for Motion in Declination, 0".42  
 (d) Meridian and 4<sup>th</sup> Wire.

(e) Observed at the 2<sup>nd</sup> and 4<sup>th</sup> Wires.  
 (f) Correction for Motion in Declination, 0".37  
 (g) Observed near the 5<sup>th</sup> Wire. Correction-0".75  
 (h) Observed at the 2<sup>nd</sup> and 5<sup>th</sup> Wires.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	o	'	"	Inch.	o	o	o	'	"	'	"	o	'	"			
4.22	-24	7	16.32	30.142	63.0	55.8	54.2					31	56	14.53	182	Achernar	R.
	-24	7	15.72									31	56	15.13	182	Achernar.	
4.92	-28	25	1.99	30.142	63.0	65.0		0	30.75			27	38	24.01	219	$\alpha$ Hydri	R.
	-28	25	0.94									27	38	25.06	219	$\alpha$ Hydri.	
	11	58	53.85							1.01		68	3	1.65		Pallas	R.
4.59	-58	34	30.69	.142	61.5	54.6	53.0	1	34.61			2	32	8.55		$z$ Oct. SP.	R.
	-58	34	30.29									2	32	8.15		$z$ Oct. SP.	
	83	5	16.58	.142	61.5	53.8	53.2	7	26.95			139	16	40.28	365	$\alpha$ Persei.	
	81	5	58.12	.142	61.5	53.8		5	54.82			137	15	49.69	393	$\delta$ Persei.	
	73	24	58.97	.142	61.5	54.0		3	12.39			129	32	8.11	433	$\epsilon$ Persei.	
	-0	15	33.85						0.26			55	48	22.64	482	X Eridani.	
5.44	-56	46	28.59	.140	61.0	54.0		1	28.40			-0	43	60.24		$\sigma$ Oct. SP.	R.
	-56	46	26.49									-0	43	58.14			
4.54	-56	46	28.33					1	28.39			-0	43	59.97			R.
	-56	46	28.03									-0	43	59.67			
5.57	-56	46	28.93					1	28.39			-0	43	60.57			R.
	-56	46	26.57									-0	43	58.21			
4.70	-56	46	28.86					1	28.39			-0	43	60.50			R.
	-56	46	28.24	.136	60.0	54.0	53.6					-0	43	59.88			
	-0	13	29.10						0.23			55	50	27.42	699	$\alpha$ Columbæ.	
4.43	41	17	37.23	.135	60.0	54.9	54.9		50.86			97	22	24.84	734	$\alpha$ Orionis	R.
	41	17	37.31									97	22	24.92	734	$\alpha$ Orionis.	
(3.82)	28	33	5.27	30.191	64.0	73.0	68.5	30.50		3.52		84	37	29.00		$\zeta$	R.
	28	33	4.13									84	37	27.86		$\zeta$	
(4.15)	11	46	22.24	30.216	63.2	58.6		12.02		0.99		67	50	30.02		Pallas	R.
	11	46	21.76									67	50	29.54		Pallas.	
	82	21	42.96	.213	63.0	58.5		6	45.56			138	32	25.27	282	$\theta$ Persei.	
	86	35	12.23	.201	62.2	58.5								329		$\gamma$ Persei.	
4.77	4	18	20.81	.190	62.2	58.5			4.34			60	22	21.90	353	Eridani	R.
	4	18	21.56									60	22	22.65	353	Eridani.	
	83	5	26.76	.186	62.2	58.4		7	23.49			139	16	47.00	365	$\alpha$ Persei.	
4.04	9	33	14.15						9.70			65	37	20.60	424	$m^2$ Eridani	R.
	9	33	13.44									65	37	19.89	424	$m^2$ Eridani.	
	73	25	1.09	30.186	62.2	58.3		3	11.05			129	32	8.89	433	$\epsilon$ Persei.	
	-81	39	11.38	29.813	67.0	68.2		6	1.65			-25	41	16.28	1186	$\nu$ Argus SP.	
4.62	-24	7	17.97	29.834	61.0	62.9			25.29			31	56	13.49	182	Achernar	R.
	-24	7	17.51									31	56	13.95	182	Achernar.	
	-58	31	50.10	30.095	64.2	58.2		1	33.62			-2	29	26.97		* Octantis SP.	
3.92	23	22	30.02	.086	65.8	59.6			24.77		0.17	79	26	51.37		Georgean	R.
	23	22	29.08									79	26	50.43		Georgean.	
3.80	3	27	4.94	.086	65.8	59.9			3.46			59	31	5.15	2741	Fomalhaut	R.
	3	27	3.76									59	31	3.97	2741	Fomalhaut.	
(4.28)	11	0	0.07	.118	65.0	56.3			11.22		0.92	67	4	7.12		Pallas	R.
	10	59	59.85									67	4	6.90		Pallas.	
	-35	27	11.07						41.03			20	36	4.65	254	$\delta$ Hydri	R.
	83	5	27.61	.114	63.5	57.0	55.5	7	23.68			139	16	48.04	365	$\alpha$ Persei.	
4.80	9	33	13.12	30.110	63.6	56.8	55.0		9.71			65	37	19.58	424	$m^2$ Eridani	R.
	9	33	13.94									65	37	20.40	424	$m^2$ Eridani.	
	19	6	27.63	30.244	64.6	62.6	57.2	19.84		2.81		16	9.40	74	54	32.01	$\odot$
	18	34	11.54					19.24		2.73				74	54	34.20	$\odot$

Coincidence of Micrometer Wire with fixed Wire, =20<sup>r</sup>.165 One revolution =40<sup>r</sup>.335  
 Correction for Runs =-3<sup>r</sup>.10  
 Adopted Zenith Point =326°. 04'. 04".39  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction of Microm. or Time.	Concluded reading of Circle.	Initials of Observer.			
			A	B	C	D	E	F							
			1	2	3	4	5	6							
4 Nov.	1533	Spica . . . . . M.R.	26 38.4	31.4	29.2	28.2	24.6	20.4	19.273	+35.98	122 27 4.33	T.M.			
	1533	Spica . . . . .	40 68.4	54.3	93.8	34.0	90.1	32.4	25.040		-3 16.63	349 41 2.26	T.M.		
	(a)	♁'s center . . . M.R.	40 39.8	36.6	30.8	34.9	26.7	25.8			122 37 16.79	T.M.			
		♁'s center . . . . .	30 57.6	43.2	80.9	22.0	78.7	20.2			349 30 51.79	T.M.			
		⊙ N. L. . . . .	33 38.0	22.7	63.1	2.7	59.0	59.0			344 33 30.39	T.M.			
	♀'s center . . . M.R.	50 63.8	68.8	77.7	52.0	73.2	38.0	19.765		+16.05	137 51 17.81	T.M.			
5 Nov.		(b) ♀'s center . . . . .	16 60.5	40.0	85.0	23.0	74.5	20.8	19.280	+0.19	334 16 51.12	T.M.			
	2110	(c) ε Sagittarii . . . . .	32 60.0	34.8	76.0	19.3	59.8	19.0		+35.61	325 32 44.72	T.M.			
		Georgian . . . M.R.	41 43.7	40.0	35.0	37.4	31.3	29.0		122 42 11.30	T.M.				
		Georgian . . . . .	25 64.0	50.8	87.2	28.8	85.9	27.7		349 25 57.51	T.M.				
	2741	Fomalhaut . . M.R.	36 41.6	53.1	63.0	33.5	62.5	19.2		19.804	+14.48	142 36 59.61	T.M.		
	2741	(d) Fomalhaut . . . . .	30 65.4	43.1	88.0	26.1	73.9	26.5		20.688	-21.17	329 31 8.39	T.M.		
	1209	Regulus . . . . M.R.	23 57.5	57.7	27.4	64.2	32.0	55.4			99 23 27.53	T.M.			
	1209	Regulus . . . . .	44 37.2	41.2	68.5	12.2	75.7	12.0			12 44 40.59	T.M.			
	6 Nov.		Pallas . . . . .	14 59.4	41.6	84.1	22.4	72.9			20.5	20.816	-26.34	336 14 49.65	T.M.
		254	(e) δ Hydri . . . . M.R.	31 43.0	38.8	74.2	11.0	75.7			15.0		-0.75	181 31 16.24	T.M.
254		δ Hydri . . . . .	36 68.2	52.0	55.6	47.8	42.0	53.3	290 36 53.70		T.M.				
365		α Persei . . . . .	9 52.4	43.2	52.8	18.6	56.2	35.0	49 9 42.54		T.M.				
393		δ Persei . . . . .	10 26.2	21.0	31.0	51.2	34.8	6.4	47 10 18.40		T.M.				
482		χ Eridani . . . . .	48 44.0	19.5	59.2	3.9	43.7	2.0	325 48 28.36		T.M.				
588		η Aurigæ . . . . .	57 20.0	18.1	31.9	57.2	38.8	0.9	40 57 17.58		T.M.				
611		Capella . . . . .	44 47.0	39.2	55.0	13.0	56.0	30.0	5 4 35	45 44 39.55	T.M.				
		σ Octantis SP. . . . .	17 40.0	37.6	21.4	25.5	22.4	28.2	5 9 16	269 17 28.93	T.M.				
673		α Leporis . . . M.R.	4 48.9	45.8	50.7	37.3	43.8	38.0	20.303	-5.65	130 4 37.94		T.M.		
673		α Leporis . . . . .	3 39.3	18.3	63.5	0.0	56.2	59.0	342 3 29.39	T.M.					
699		α Columbæ . . . . .	50 47.0	25.0	65.0	7.9	48.8	6.4	5 32 59.5	325 50 33.29	T.M.				
7 Nov.			* Octantis SP. . . . .	8 31.1	27.0	9.1	13.9	13.2	20.6	22 15 00	266 8 18.81		T.M.		
			* Octantis SP. . . . .	45 8.2	9.4	48.1	53.2	54.0	1.0	22 33 00	265 44 58.98		T.M.		
			* Octantis SP. . . . .	16 24.0	22.8	1.5	8.8	8.0	15.2	22 40 00	265 16 13.26		T.M.		
		* Octantis SP. . . . .	32 55.3	53.2	33.6	39.4	39.4	45.5	22 44 00	265 32 44.12	T.M.				
		* Octantis SP. . . . .	53 47.3	43.8	25.5	30.0	34.5	38.6	23 8 00	264 53 36.24	T.M.				
	2844	(f) δ App. Sculp. M.R.	10 37.2	50.0	58.2	38.6	56.0	13.2	21.450	-51.91	141 9 50.05	T.M.			
	2844	δ App. Sculp. . . . .	58 33.8	10.0	53.8	51.2	43.8	52.9	330 58 20.74	T.M.					
		* Oct. (6 m.) SP. . . . .	45 25.0	22.2	5.1	8.9	11.8	16.0	23 54 00	264 45 14.81	T.M.				
		(g) Companion . . . M. . . . .	.....	.....	.....	.....	.....	.....	19.588	+21.19	264 45 36.00	T.M.			
		* Octantis SP. . . . .	32 20.0	17.0	59.2	6.7	4.2	10.8	0 5 00	267 32 9.43	T.M.				
		(h) * Octantis SP. . . . .	16 42.2	41.0	19.4	27.2	26.7	33.0	0 13 00	265 16 31.43	T.M.				
	12 Nov.		⊙ N. L. . . . M. . . . .	32 42.2	23.1	67.6	3.5	60.0	1.2	20.262	-3.99	342 32 28.51	T.M.		
			⊙ S. L. . . . .	0 16.9	1.0	41.8	41.2	36.7	38.3	342 0 09.65	T.M.				
		2110	ε Sagittarii . . M. . . . .	32 49.0	33.8	66.8	17.8	53.7	13.0	20.000	+6.57	325 32 45.31	T.M.		
			♀ S. L. . . . .	3 16.0	55.3	38.0	38.1	27.2	34.5	334 3 4.53	T.M.				
		* Octantis SP. . . . .	45 10.0	9.0	50.5	53.4	54.2	1.4	22 33 15	265 44 59.75	T.M.				
		* Octantis SP. . . . .	16 26.2	24.0	4.9	9.4	10.6	16.0	22 39 37	265 16 15.06	T.M.				
		* Octantis SP. . . . .	32 55.0	51.4	35.0	37.3	39.1	44.1	22 43 14	265 32 43.37	T.M.				
		* Octantis SP. . . . .	53 48.8	44.8	27.2	31.0	34.0	39.8	23 7 49	264 53 37.23	T.M.				
2844		δ App. Sculp. M.R.	9 45.0	53.8	66.0	34.3	59.4	19.8	20.100	+2.54	141 9 48.26	T.M.			
2844		δ App. Sculp. . . . .	58 30.9	7.5	51.4	48.9	39.8	50.0	330 58 17.91	T.M.					
		* Octantis SP. . . . .	45 26.2	23.2	6.0	9.5	12.0	17.6	23 54 15	264 45 15.73	T.M.				
		Companion . . . M. . . . .	.....	.....	.....	.....	.....	.....	23 54 26	+19.97	264 45 35.70	T.M.			
		* Octantis SP. . . . .	32 21.4	17.6	1.8	7.2	5.1	12.5	0 5 30						
		* Octantis SP. . . . .	16 42.8	41.8	21.9	27.1	27.3	33.1	0 13 04				265 16 32.17	T.M.	

Molyneux slow, Nov. 5<sup>th</sup>, 37<sup>s</sup>.

- (a) Correction for Motion in Declination, 1".24
- (b) Correction for Motion in Declination, 0".15
- (c) Observed at the 4<sup>th</sup> Wire.
- (d) Observed by accident on the Micrometer Wire, and at the 2<sup>nd</sup> and 4<sup>th</sup> Wires.

- (e) Observed in the 2<sup>nd</sup> interval, and at the 4<sup>th</sup> Wire. Corrections, 0".20 and 0".75
- (f) Observed at the 2<sup>nd</sup> and 4<sup>th</sup> Wires.
- (g) Faint blue colour. ? Brisb. No. 3884.
- (h) ? Brisb. No. 4018. Cannot find Brisb. No. 4015.



CALCULATION OF GOECNTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.					
					Attach.	Out.	Wet Bulb.														
#	°	'	"	Inch.	°	'	"	"	"	"	"	°	'	"							
3-30 (4-29)	23	37	0-06	30-304	64-4	72-0	64-0	24-65				79	41	21-46	1533	Spica	R.				
	23	36	57-87									79	41	19-27	1533	Spica.					
	23	26	47-60	30-295	64-2	73-2	64-1					24-39	2-59			79	31	6-15		♄	R.
	23	26	47-40													79	31	5-95		♄	
4-47	18	29	26-00	30-285	64-8	74-6	66-0	18-75	2-72	16	9-90	74	17	28-88		☉					
	8	12	46-58	·228	64-5	71-6	67-0	8-12	1-17			64	16	50-28		♀	R.				
	8	12	46-73									64	16	50-43		♀					
4-41	-0	31	19-67					0-53				55	32	36-55	2110	ε Sagittarii.					
	23	21	53-09	·211	64-2	61-4		24-77	0-17			79	26	14-44		Georgean	R.				
4-00	23	21	53-12									79	26	14-47		Georgean.	R.				
	3	27	4-78	·211	64-2	61-6		3-46				59	31	4-99	2741	Fomalhaut	R.				
4-06	3	27	4-00									59	31	4-21	2741	Fomalhaut.	R.				
	46	40	36-86	30-147	63-4	64-2	61-2	1 0-29				102	45	33-90	1209	Regulus	R.				
4-97	46	40	36-20									102	45	33-24	1209	Regulus.					
	10	10	45-26	30-066	65-0	66-3		10-15	0-84			66	14	51-32		Pallas.					
3-67	-35	27	11-85	·066	65-0	66-0	58-0	40-26				20	36	4-64	254	♁ Hydri	R.				
	-35	27	10-69									20	36	5-80	254	♁ Hydri.					
	83	5	38-15	·037	65-0	63-0	58-8	7 17-18				139	16	52-08	365	α Persei.					
	81	6	14-01	·037	65-0	63-5		5 46-78				137	15	57-54	393	♁ Persei.					
	-0	15	36-03	·025	64-8	63-0		0-26				55	48	20-46	482	X Eridani.					
	74	53	13-19	·020	64-8	62-8	58-9	3 27-05				131	0	36-99	588	η Aurigæ.					
	79	40	35-16	·017	64-8	63-0		5 1-37				135	49	33-28	611	Capella.					
	-56	46	35-46	·016	64-8	63-2	58-5	1 26-46				0	44	5-17		σ Octantis SP.					
	15	59	26-45	·012	64-7	63-0		16-28				72	3	39-48	673	α Leporis	R.				
	15	59	25-00	·009	64-5							72	3	38-03	673	α Leporis.					
	-0	13	31-10	30-009	64-5	63-0		0-23				55	50	25-42	699	α Columbæ.					
	-59	55	45-65	30-003	67-0	67-0		1 36-76				-3	53	25-66		* Octantis SP.					
	-60	19	5-48	·000	67-0	66-7		1 36-35				-4	16	45-08		* Octantis SP.					
	-60	47	51-20	·000	67-0	66-5		1 40-50				-4	45	34-95		* Octantis SP.					
	-60	31	20-34	·000	67-0	66-4		1 39-40				-4	29	2-99		* Octantis SP.					
-61	10	28-22	·000	67-0	66-2		1 42-11				-5	8	13-58		* Octantis SP.						
4	54	14-41	·003	67-0	66-5						60	58	16-00	2844	♁ App. Sculp. R.						
4	54	16-28					4-84				60	58	17-87	2844	♁ App. Sculp.						
-61	18	49-65	·010	67-5	68-0		1 42-38				-5	16	35-28		* Octantis SP.						
-61	18	28-46					1 42-37				-5	16	14-08		Companion.						
-58	31	55-03	·014	67-5	69-0		1 31-44				-2	29	29-72		* Octantis SP.						
-60	47	33-03	30-015	68-0	69-8		1 39-90				-4	45	16-18		* Octantis SP.						
3-09	16	28	24-05	30-061	66-5	72-3	65-0	16-53	2-43	16	11-50	72	16	23-40		☉					
	15	56	5-19					15-96	2-35			72	16	27-05		☉					
	-0	31	19-15	29-994	67-0	74-5		0-52					55	32	37-08	2110	ε Sagittarii.				
	7	59	0-07	29-994	67-0	74-5		7-79	1-19			19-700	9-34	64	3	12-76		♀			
	-60	19	4-71	29-995	66-5	63-0		1 39-28						-4	16	47-24		* Octantis SP.			
	-60	47	49-40					1 41-16						-4	45	33-81		* Octantis SP.			
	-60	31	21-09					1 40-03						-4	29	4-37		* Octantis SP.			
	-61	10	27-23	29-990	66-5	62-3		1 42-85						-5	8	13-33		* Octantis SP.			
	4	54	16-20	29-990	66-5	61-9								60	58	17-83	2844	♁ App. Sculp. R.			
	4	54	13-45					4-88						60	58	15-08	2844	♁ App. Sculp.			
	-61	18	48-73	29-990	66-5	61-7		1 43-56						-5	16	35-54		* Octantis SP.			
	-61	18	28-76					1 43-54						-5	16	15-55		Companion.			
	-58	31	53-75					1 32-66						-2	29	29-66		* Octantis SP.			
	-60	47	32-29	29-990	66-5	61-0	61-5	1 41-51						-4	45	17-05		* Octantis SP.			

Coincidence of Micrometer Wire with fixed Wire, =20°.165 Nov. 5<sup>th</sup> 20°.163 One revolution =40°.335  
 Correction for Runs =-3°.10  
 Adopted Zenith Point to Nov. 7<sup>th</sup>, at Noon, =326°. 04'. 04".39 From Nov. 7<sup>th</sup>, =326°. 04'. 04".46  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>				
☉ 12 Nov.		♃ N. L. ....	13 73.0	80.6	101.8	49.8	113.0	53.6			23 14 18.19	T.M.
	448	A <sup>1</sup> Tauri .....	36 41.8	50.0	72.0	19.2	84.4	20.0			21 36 47.71	T.M.
	502	ν <sup>1</sup> Tauri .....	25 3.5	13.1	32.1	39.3	47.0	40.7			22 25 9.27	T.M.
	699	α Columbæ .....	50 45.8	23.9	63.1	6.9	47.2	4.8			325 50 31.90	T.M.
♄ 15 Nov.		(a) ♄'s center... M.R.	19 32.2	25.9	32.9	16.7	24.2	7.9	21.347	-47.76	129 18 35.09	T.M.
♃ 16 Nov.		☉ N. L. .... M.	29 49.0	29.8	73.2	10.0	65.2	9.2	19.714	+18.11	341 29 56.87	T.M.
		☉ S. L. ....	57 45.4	28.8	70.4	8.2	64.8	5.0			340 57 37.15	T.M.
2844		(b) δ App. Sculp. MR.	10 63.0	76.5	85.4	55.0	82.6	39.0	22.032	-75.39	141 9 51.41	T.M.
2844		δ App. Sculp. ....	58 34.5	8.1	55.0	50.0	42.1	52.6			330 58 20.69	T.M.
31		α Phœnicis... M.R.	19 52.0	67.0	85.2	39.8	83.0	29.1	21.283	-45.18	155 19 13.38	T.M.
31		α Phœnicis .....	48 70.7	47.0	78.2	36.2	60.2	37.4			316 48 54.83	T.M.
83		ν Andromedæ .....	8 45.1	41.2	57.0	11.4	62.0	26.1			40 8 40.09	T.M.
182		(c) Achernar... M.R.	11 41.2	41.7	74.6	11.9	70.8	13.2	20.535	-15.00	170 11 27.06	T.M.
182		Achernar .....	56 58.6	40.5	52.2	36.4	36.6	37.9		+1.77	301 56 45.29	T.M.
220		γ Andromedæ .....	29 42.0	35.3	52.7	7.1	55.3	21.4			41 29 35.16	T.M.
		Companion... M. ....							20.057	+4.28	41 29 39.44	T.M.
		z Octantis SP. ....	29 38.0	31.4	16.0	21.7	18.6	27.0	2 17 10		267 29 24.99	T.M.
282		θ Persei .....	25 54.6	47.0	57.9	22.2	61.0	37.8			48 25 46.67	T.M.
340		(f) Persei .....	51 59.8	51.8	64.0	28.0	67.1	41.8			48 51 51.89	T.M.
365		α Persei .....	9 32.2	23.2	34.5	58.0	36.3	14.2	{ 13 01.5 19.863	+12.10	49 9 34.72	T.M.
368		Eridani .....	18 63.0	38.8	70.2	26.7	50.8	27.5			316 18 45.78	T.M.
393		δ Persei .....	10 40.5	31.6	45.2	3.2	47.0	19.0	20.683	-20.97	47 10 10.06	T.M.
424		m <sup>c</sup> Eridani... M.R.	31 22.9	27.0	36.6	12.2	32.3	56.0	20.816	-26.34	136 30 54.55	T.M.
424		m <sup>c</sup> Eridani .....	37 25.6	4.0	51.0	47.0	37.7	44.1			335 37 14.81	T.M.
433		ε Persei .....	29 14.5	9.4	26.8	40.1	31.8	53.8			39 29 8.97	T.M.
482		X Eridani .....	48 42.0	15.8	59.0	1.8	40.9	58.6			325 48 26.00	T.M.
		σ Octantis SP... R.	50 48.8	24.9	63.5	6.4	63.1	23.5	5 0 16	+1.08	202 50 39.38	T.M.
		..... SP. ....	17 39.9	36.5	21.4	25.6	20.5	29.0	5 5 17	-0.06	269 17 28.50	T.M.
		..... SP. . R.	50 50.0	27.0	65.6	7.2	63.7	24.8	5 10 21	+0.39	202 50 39.95	T.M.
		..... SP. ....	17 41.0	38.0	22.9	27.1	22.1	29.3	5 14 50	-1.59	269 17 28.22	T.M.
		Ceres .....	58 14.6	20.8	45.8	50.6	55.1	54.0	5 28 42		20 58 19.81	T.M.
684		ζ Tauri .... M. ....							16.018	+2 47.19	21 1 7.00	T.M.
699		α Columbæ .....	50 45.3	22.0	63.9	5.8	46.2	4.2			325 50 31.18	T.M.
734		α Orionis... M.R.	46 45.0	44.1	18.2	48.9	22.2	41.2	20.410	-9.96	104 46 26.60	T.M.
734		α Orionis .....	21 36.1	38.0	69.8	10.3	75.1	9.0			7 21 39.41	T.M.
807		Canopus .... M.R.	44 45.1	41.3	76.8	14.6	67.6	14.2	21.364	-48.41	164 43 54.01	T.M.
807		Canopus .....	24 32.2	9.8	30.5	41.3	11.3	4.5			307 24 15.36	T.M.
838		Sirius .....	38 40.1	33.7	42.1	24.5	32.3	15.0	20.905	-29.93	128 38 0.65	T.M.
838		Sirius .....	30 14.6	58.0	42.1	37.0	34.3	33.4			343 30 6.90	T.M.
881		τ Geminorum .....	28 27.2	26.0	50.8	55.0	56.4	3.0			30 28 26.05	T.M.
900		δ Geminorum .....	15 12.9	19.6	42.3	46.9	53.5	49.1			22 15 17.34	T.M.
		(d) ♃ S. L. ....	39 56.3	57.6	80.5	28.0	89.5	32.6		+3.37	27 40 0.27	T.M.
		B Octantis SP. ....	34 67.2	64.0	49.8	52.2	46.4	56.4	7 54 30		269 34 55.49	T.M.
1012		λ Cancrī .....	30 11.6	14.9	42.0	47.4	49.2	49.5			24 30 35.71	T.M.
♄ 17 Nov.		σ Octantis SP. . R.	50 48.0	25.2	63.1	5.8	62.2	23.5	4 59 54	+1.21	202 50 39.11	T.M.
		..... SP. ....	17 44.8	41.0	26.0	30.0	25.9	34.0	5 6 30	0.00	269 17 33.35	T.M.
		..... SP. . R.	50 49.2	27.7	65.9	8.1	64.8	25.0	5 11 18	+0.50	202 50 40.55	T.M.
		..... SP. ....	17 46.1	43.6	27.0	32.0	27.5	36.3	5 16 30	-2.31	269 17 32.84	T.M.
		Ceres .....	0 51.0	58.2	81.5	27.6	91.9	31.0			21 0 56.77	T.M.
684		ζ Tauri .... M. ....							19.988	+7.18	21 1 3.95	T.M.
699		(e) α Columbæ .....	50 43.5	20.2	61.0	4.8	43.2	3.5		+0.70	325 50 30.01	T.M.
984		(e) 6 Cancrī .....	12 53.4	54.5	76.4	23.0	85.5	30.0		-0.58	28 12 52.92	T.M.

Molyneux fast, Nov. 16<sup>th</sup>, 13.5 The minute hand had been previously pushed on 1<sup>st</sup>.

(a) Seen indistinctly through clouds.

(b) Observed at the Meridian and 5<sup>th</sup> Wires.

(c) Observed at the Meridian and 5<sup>th</sup> Wires.

(d) Observed at the 5<sup>th</sup> Wire. Correction for Motion in Declination, + 3'.93 For Curvature of Path, -0'.56

(e) Observed near the 5<sup>th</sup> Wire.

(f) It is probable this Star was observed on the Micrometer Wire.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.			
					Attach.	Out.	Wet Bulb.												
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"				
	57	10	13.73	29.955	66.0	59.0		1	28.28	48	17.13		15	42.09	112	11	39.54		δ
	55	32	43.25	29.949	66.0	58.7		1	23.08						111	38	3.08	448	α <sup>1</sup> Tauri.
	56	21	4.81	29.943	65.0	57.8		1	25.76						112	26	27.32	502	γ <sup>1</sup> Tauri.
	-0	13	32.56	29.895	65.0	57.0			0.22						55	50	23.97	699	α Columbae.
	16	45	29.37	30.000	66.0	66.8			16.97		1.72				72	49	41.37		ξ R.
	15	25	52.41	30.003	66.0	66.4	61.2		15.57		2.28				71	13	50.05		⊙
	14	53	32.69						15.00		2.20				71	13	54.64		⊙
6.05	4	54	13.05	.074	65.0	58.0			4.93						60	58	14.73	2844	δ App. Sculp. R.
	4	54	16.23												60	58	17.91	2844	δ App. Sculp.
4.11	-9	15	8.92	.074	64.6	57.2			9.38						46	48	38.45	31	α Phœnicis R.
	-9	15	9.63												46	48	37.74	31	α Phœnicis.
	74	4	35.63	.078	63.5	57.0		3	18.96						130	11	51.34	83	γ Andromedæ.
6.18	-24	7	22.60	.079	63.0				25.81						31	56	8.34	182	Achernar R.
	-24	7	19.17												31	56	11.77	182	Achernar.
	75	25	30.70	.080	63.0	56.4	54.5	3	37.98						131	33	5.43	220	γ Andromedæ.
	75	25	34.98					3	37.99						131	33	9.72		Companion.
	-58	34	39.47	.085	63.0	56.5		1	34.08						-2	32	16.80		z Octantis SP.
	82	21	42.21					6	45.47						138	32	24.43	282	θ Persei.
	82	47	47.43	.085	63.0	56.0		7	7.93						138	58	52.11	340	Persei.
	83	5	30.26					7	24.67						139	16	51.68	365	α Persei.
	-9	45	18.68	.084	62.0	56.0	54.0		9.92						46	18	28.15	368	Eridani.
	81	6	5.60					5	52.58						137	15	54.93	393	δ Persei.
4.68	9	33	9.91	.081	62.0	56.0			9.71						65	37	16.37	424	m <sup>2</sup> Eridani R.
	9	33	10.35												65	37	16.81	424	m <sup>2</sup> Eridani.
	73	25	4.51	.081	62.0	56.0		3	11.26						129	32	12.52	433	ε Persei.
	-0	15	38.46						0.26						55	48	18.03	482	X Eridani R.
3.94	-56	46	34.92					1	27.83						-0	44	6.00		σ Octantis SP. R.
	-56	46	35.96												-0	44	7.04		σ Octantis SP.
4.09	-56	46	35.49					1	27.83						-0	44	6.57		σ Octantis SP. R.
	-56	46	36.24	30.062	61.0	56.0									-0	44	7.32		σ Octantis SP.
	54	54	15.35					1	21.89		3.91				110	59	30.08		Ceres.
	54	57	2.54					1	22.03						111	2	21.32	684	ζ Tauri.
	-0	13	33.28						0.23						55	50	23.24	699	α Columbae.
3.01	41	17	37.86	.163	61.0	55.9		1	50.80						97	23	25.41	734	α Orionis R.
	41	17	34.95												97	23	22.50	734	α Orionis.
4.69	-18	39	49.55	.163	61.0	54.5			19.60						37	23	47.60	807	Canopus R.
	-18	39	49.10												37	23	48.05	807	Canopus.
3.78	17	26	3.81	.163	61.0	54.0			18.24						73	30	18.80	838	Sirius R.
	17	26	2.44												73	30	17.43	838	Sirius.
	64	24	21.59	.163	61.0	55.0		2	0.44						120	30	18.78	881	τ Geminorum.
	56	11	12.88			55.3		1	20.73						112	16	30.36	900	δ Geminorum.
	61	35	55.81					1	46.74	48	17.68				117	8	21.54		δ
	-56	29	8.97	.163	61.0	55.0		1	27.33						-0	26	39.55		B Octantis SP.
	58	26	31.25	30.163	61.0	55.0		1	34.12						114	32	2.12	1012	λ Cancri.
6.23	-56	46	34.65	30.067	61.0	50.0		1	28.88						-0	44	6.78		σ Octantis SP. R.
	-56	46	31.11												-0	44	3.24		σ Octantis SP.
6.70	-56	46	36.09	.057	60.0	50.0		1	28.86						-0	44	8.20		σ Octantis SP. R.
	-56	46	31.62												-0	44	3.73		σ Octantis SP.
	-54	56	52.31					1	23.12		3.93				111	2	8.25		Ceres.
	54	56	59.49	.046	59.0	49.0	47.6	1	23.13						111	2	19.37	684	ζ Tauri.
	-0	13	34.45						0.23						55	50	22.07	699	α Columbae.
	62	8	48.46	30.042	59.0	50.2		1	49.95						118	14	35.16	984	6 Cancri.

Coincidence of Micrometer Wire with fixed Wire, =20<sup>r</sup>.163 One revolution =40<sup>r</sup>.335  
 Correction for Runs =-3<sup>r</sup>.10  
 Adopted Zenith Point to Noon, Nov.. 17<sup>th</sup>, =326°. 04'. 04<sup>r</sup>.46  
 Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.			Initials of Observer.
			A	B	C	D	E	F						
			° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″			° ′ ″	° ′ ″		
18 Nov.	31	α Phœnicis.. M.R.	19 25.8	35.9	60.0	7.6	55.1	58.4	20.573	-16.42	155	19	13.30	T.M.
	31	α Phœnicis.....	48 70.1	47.9	79.7	34.8	61.2	35.3			316	48	54.71	T.M.
20 Nov.		☉ N. L. .... M...	32 55.0	39.2	80.0	17.6	75.0	15.0	20.210	-1.66	340	32	44.90	T.M.
		τ Octantis .....	38 68.0	64.2	50.6	52.0	49.4	58.6	23 3 40	+0.67	271	38	57.39	T.M.
	2779	γ App. Sculp.....	35 17.4	57.6	37.3	40.0	24.0	38.0			326	35	5.71	T.M.
	31	α Phœnicis.. M.R.	19 40.0	48.3	72.4	20.4	67.2	13.1	20.894	-29.36	155	19	13.44	T.M.
	31	α Phœnicis .....	48 70.0	47.1	78.6	34.9	61.3	35.5			316	48	54.44	T.M.
	60	(a) α Cassiopeæ .....	14 35.0	25.5	30.8	4.1	34.3	18.1			55	14	23.78	T.M.
	83	ν Andromedæ .....	8 48.5	40.0	58.4	11.6	60.5	27.2			40	8	40.65	T.M.
	161	γ Phœnicis M.R...	17 43.0	51.0	76.1	22.4	72.5	14.1	21.368	-48.41	156	16	57.53	T.M.
	161	α Phœnicis .....	50 87.8	65.0	93.5	51.2	75.5	51.4			315	51	10.90	T.M.
	182	Achernar.... M.R.	11 53.4	49.6	85.9	20.3	80.3	22.2	20.743	-23.27	170	11	28.05	T.M.
	182	Achernar.....	56 59.1	40.2	51.7	35.9	36.7	37.1			301	50	43.71	T.M.
	219	(b) α Hydri.... M.R.	29 36.0	32.5	69.0	3.6	65.3	5.3	20.667	-20.21	174	29	14.07	T.M.
	219	α Hydri.....	38 72.0	54.0	62.4	50.6	46.9	53.1			297	38	56.62	T.M.
	365	(c) α Persei.....	9 46.0	36.0	46.8	12.0	48.8	27.3			49	9	35.68	T.M.
	482	X Eridani.....	48 41.0	16.5	56.4	1.0	41.0	57.3			325	48	25.18	T.M.
	506	Eridani.....	36 43.8	20.0	61.6	3.2	45.0	2.0			325	36	29.11	T.M.
	667	τ Tauri..... M...	23 29.5	36.0	58.9	5.4	70.5	6.0	14.990	+3 28.77	18	27	2.78	T.M.
		Ceres .....	8 58.8	65.2	88.8	34.2	99.0	37.8	5 25 54			21	9	3.55
	699	α Columbæ.....	50 46.2	23.2	64.1	5.7	47.2	4.0			325	50	31.68	T.M.
	734	α Orionis.... M.R.	46 23.5	23.0	56.4	27.0	1.2	19.8	19.874	+11.78	104	46	26.93	T.M.
734	α Orionis .....	21 37.5	41.8	70.2	12.9	78.4	10.1		7		21	41.51	T.M.	
807	Canopus..... M.R.	44 30.6	26.9	61.3	0.0	53.6	59.0	20.964	-32.19	164	43	55.55	T.M.	
807	Canopus.....	24 30.0	8.2	27.2	2.0	9.8	2.0			307	24	13.12	T.M.	
838	Sirius..... M.R.	38 43.5	37.1	43.5	27.2	35.6	18.0	20.964	-32.19	128	38	1.25	T.M.	
838	Sirius .....	29 74.8	57.8	100.8	37.0	95.2	33.7			343	30	6.36	T.M.	
21 Nov.	365	α Persei.....	9 43.8	34.2	45.6	10.8	46.9	25.5			49	9	33.99	T.M.
	482	(d) X Eridani.....	47 99.5	74.3	116.1	59.2	99.5	56.1		+0.19	325	48	23.96	T.M.
	506	Eridani.....	36 42.5	19.2	60.8	2.7	43.0	1.5			325	36	28.13	T.M.
	515	(e) τ Tauri .....	15 41.1	48.5	72.1	18.6	81.8	7.4			15	15	44.53	T.M.
	582	ζ Aurigæ .... M...	46 51.8	47.0	62.2	19.2	66.7	30.8	20.320	-6.21	40	46	39.89	T.M.
	807	Canopus .... M.R.	44 40.0	34.4	70.7	7.9	61.7	8.4	21.137		-39.17	164	43	57.18
	807	Canopus.....	24 30.1	9.0	27.8	2.3	10.6	1.6				307	24	13.49
	838	Sirius..... M.R.	38 52.8	45.3	54.6	34.6	44.7	26.0	21.180	-40.09	128	38	2.19	T.M.
	838	Sirius .....	30 16.1	59.0	42.0	38.0	35.8	35.2			343	30	8.01	T.M.
	883	δ Canis Maj. M.R.	16 35.3	47.1	55.2	28.0	53.1	10.2	20.667	-20.21	138	16	17.23	T.M.
	883	δ Canis Majoris...	51 65.7	41.0	87.5	24.9	75.0	23.8			333	51	53.33	T.M.
	915	(f) η Canis Maj. M.R.	7 38.5	52.1	62.0	30.8	57.7	12.2	20.820	-26.38	141	7	15.39	T.M.
	915	η Canis Majoris...	0 70.0	43.1	90.8	24.6	75.8	27.0			331	0	55.29	T.M.
	1070	(g) α Pix. Naut. M.R.	44 47.0	59.3	69.1	36.0	66.0	18.1	21.361	-48.00	144	44	0.57	T.M.
1070	α Pix. Naut.....	23 82.4	56.8	101.0	39.3	83.5	41.0		327		24	7.09	T.M.	
22 Nov.		☉ S. L. .... M...	34 35.2	20.0	61.6	59.4	55.1	55.6	21.121	-38.52	339	33	48.73	T.M.
		☉ N. L.....	6 24.0	5.1	47.0	44.6	41.6	42.1			340	6	14.25	T.M.
	31	α Phœnicis.. M.R.	19 23.0	32.0	56.6	4.0	51.1	55.6	20.462	-11.94	155	19	14.37	T.M.
31	α Phœnicis.....	48 70.0	47.3	78.0	35.8	60.0	35.7		316		48	54.34	T.M.	
23 Nov.		z Octantis SP....	29 34.8	26.8	12.2	16.2	14.2	22.2			267	29	20.62	T.M.
		(g) α Centauri SP...	20 40.2	38.8	13.0	36.8	25.9	41.5			240	20	32.64	T.M.
	365	α Persei.....	9 59.0	50.0	61.0	24.4	64.0	40.2			49	9	49.27	T.M.
	424	m <sup>2</sup> Eridani.. M.R.	31 37.8	44.8	52.1	26.8	49.3	10.8	21.170	-40.50	136	30	55.75	T.M.
	424	m <sup>2</sup> Eridani.....	36 85.0	63.1	107.7	46.0	97.4	43.0			335	37	13.98	T.M.

Molyneux fast, Nov. 16<sup>th</sup>, 13<sup>h</sup>.5

Nov. 17<sup>th</sup>. Good bisections impossible from bad images. Nov. 20<sup>th</sup>. Molyneux Clock was removed to the center room, preparatory to pendulum experiments.

- (a) Observed at the 4<sup>th</sup> Wire. Image faint.
- (b) Disturbed by wind.
- (c) A boiling prismatic spectrum.
- (d) Observed at the 4<sup>th</sup> Wire.
- (e) Observed at the 5<sup>th</sup> Wire. Cloudy.
- (f) Observed at the 2<sup>nd</sup> and 4<sup>th</sup> Wires.
- (g) Boiling brilliant prismatic colours.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	o	i	''	Inch.	o	o	o	'	''	'	''	o	i	''			
4.01	-9	15	8.69	30.176	64.2	56.0						46	48	38.63	31	$\alpha$ Phœnicis R.	
	-9	15	9.90					9.43				46	48	37.42	31	$\alpha$ Phœnicis.	
3.94	14	28	40.29	30.289	64.5	67.0	59.5	14.69	2.14		16	13.10	70	16	36.49	☉	
	-54	25	7.22	.225	64.0	58.0		1 20.54				1	37	28.99	2779	$\tau$ Octantis.	
	0	31	1.10					0.52				56	34	58.37	31	$\gamma$ App. Sculp.	
	-9	15	8.83	.218	63.5	57.0		9.43				46	48	38.49	31	$\alpha$ Phœnicis R.	
4.22	-9	15	10.17									46	48	37.15	31	$\alpha$ Phœnicis.	
	89	10	19.17	.218	63.5	57.2	54.0							60	$\alpha$ Cassiopeæ.		
	74	4	36.04	.218	63.5	57.2	54.0	3 19.18			130	11	51.97	83	$\nu$ Andromedæ.		
	-10	12	52.92	.218	63.5	57.2	54.0	10.42			45	50	53.41	161	$\gamma$ Phœnicis R.		
5.88	-10	12	53.71									45	50	52.62	161	$\gamma$ Phœnicis.	
	-24	7	23.44	.215	63.5	57.2		25.89			31	56	7.42	182	Achernar R.		
5.35	-24	7	20.90									31	56	9.96	182	Achernar.	
	-28	25	9.46	.213	63.0	57.0		31.30			27	38	15.99	219	$\alpha$ Hydri R.		
4.22	-28	25	7.99									27	38	17.46	219	$\alpha$ Hydri.	
	83	5	31.07	.203	63.0	57.0		7 25.07			139	16	52.89	365	$\alpha$ Persei.		
	-0	15	39.43					0.26			55	48	17.06	482	X Eridani.		
	-0	27	35.50					0.46			55	36	20.79	506	Eridani.		
4.34	52	22	58.17	.160	63.0	57.2	54.6	1 14.77			108	28	9.69	667	Tauri.		
	55	4	58.94					1 22.49	3.98		111	10	14.20		Ceres.		
	-0	13	32.93					0.23			55	50	23.59	699	$\alpha$ Columbæ.		
	41	17	37.68	.151	62.5	57.2		50.65			97	22	25.08	734	$\alpha$ Orionis R.		
4.34	41	17	36.90									97	22	24.30	734	$\alpha$ Orionis.	
	-18	39	50.94	.144	63.0	57.0		19.50			37	23	46.31	807	Canopus R.		
3.81	-18	39	51.49									37	23	45.76	807	Canopus.	
	17	26	3.36	30.137	62.5	57.2		18.11			73	30	18.22	838	Sirius R.		
5.34	17	26	1.75									73	30	16.61	838	Sirius.	
	83	5	29.38	30.110	63.0	56.0		7 24.56			139	16	50.69	365	$\alpha$ Persei.		
	-0	15	40.65					0.26			55	48	15.84	482	X Eridani		
	-0	27	36.48					0.46			55	36	19.81	506	Eridani.		
5.10	49	11	39.92	.110	63.0	56.2		1 6.78			105	16	43.45	515	Tauri.		
	74	42	35.28	.110	63.0	56.4	54.0	3 27.84			130	49	59.87	582	$\zeta$ Aurigæ.		
	-18	39	52.57	.110	63.0	56.4		19.50			37	23	44.68	807	Canopus R.		
	-18	39	51.12								37	23	46.13	807	Canopus.		
5.28	17	26	2.42	.110	63.0	56.4		18.13			73	30	17.30	838	Sirius R.		
	17	26	3.40								73	30	18.28	838	Sirius.		
5.34	7	47	47.38	.090	62.5	55.3		7.92			63	51	52.05	883	$\delta$ Canis Maj. R.		
	7	47	48.72								63	51	53.39	883	$\delta$ Canis Majoris.		
3.83	4	56	49.22	.086	62.5	55.0		5.01			61	0	50.98	915	$\eta$ Canis Maj. R.		
	4	56	50.68								61	0	52.44	915	$\eta$ Canis Majoris.		
4.36	1	20	4.04	30.104	62.5	56.0		1.34			57	24	2.13	1070	$\alpha$ Pix. Naut. R.		
	1	20	2.48								57	24	0.57	1070	$\alpha$ Pix. Naut.		
4.87	13	29	44.12	30.138	64.5	70.0	63.8	13.51	2.00		16	13.50	69	50	5.88	☉	
	14	2	9.64					14.07	2.08				69	50	4.88	☉	
	-9	15	9.76	30.188	64.0	62.0		9.33					46	48	37.66	31	$\alpha$ Phœnicis R.
	-9	15	10.27										46	48	37.15	31	$\alpha$ Phœnicis.
4.87	-58	34	43.99	30.105	64.5	63.0		1 32.97					-2	32	20.21	1654	$\zeta$ Oct. SP.
	-85	43	31.97	.101	64.0	64.5		7 19.07			139	17	0.48	365	$\alpha^2$ Centauri SP.		
	83	5	44.66	.095	64.0	62.0		9.60			65	37	15.21	424	$m^2$ Eridani R.		
	9	33	8.86	30.090	64.0	62.0					65	37	15.72	424	$m^2$ Eridani.		

Coincidence of Micrometer Wire with fixed Wire, =20".166 One revolution =40".335  
 Correction for Runs =-3".10  
 Adopted Zenith Point from Nov. 18<sup>th</sup>, at Noon =326°. 04'. 04".61  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			<i>l</i> <i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>				
23 Nov.	482	X Eridani	48 40.8	15.8	58.5	0.0	41.0	57.1			325 48 25.18	T.M.
	506	(c)	35 94.0	70.3	110.4	54.0	95.7	52.3			325 36 19.31	T.M.
	582	ζ Aurigæ	46 48.4	43.1	57.8	15.2	63.1	29.6			40 46 42.69	T.M.
	588	η Aurigæ	57 19.0	12.8	28.0	45.1	33.7	0.1			40 57 12.89	T.M.
	611	(a) Capella	44 48.1	38.0	55.6	13.1	56.0	30.1			45 44 39.67	T.M.
		σ Octantis SP.	17 37.6	32.0	18.0	21.0	18.5	25.0			269 17 25.10	T.M.
		Ceres	16 69.0	74.0	97.6	44.8	107.3	47.8			21 17 13.19	T.M.
	699	α Columbæ	50 45.9	20.3	62.5	3.4	45.2	2.9			325 50 29.98	T.M.
732	β Columbæ	10 39.1	17.0	56.8	59.6	39.0	58.2			324 10 24.90	T.M.	
24 Nov.	482	X Eridani	48 39.0	15.0	55.1	58.2	40.8	55.3			325 48 23.55	T.M.
	506	Eridani	36 41.4	17.5	58.0	0.4	43.7	59.0			325 36 26.52	T.M.
	582	ζ Aurigæ M.	46 37.8	43.1	56.0	15.0	63.0	30.0	20.043	+4.96	40 46 45.60	T.M.
	588	η Aurigæ	57 20.4	16.2	29.3	47.8	35.6	2.0			40 57 14.98	T.M.
	611	Capella	44 54.0	44.0	60.6	19.5	61.7	36.0			45 44 45.47	T.M.
		σ Octantis SP.	17 36.0	32.0	15.8	20.0	17.1	24.0			269 17 23.90	T.M.
		Ceres	19 52.7	58.0	80.2	27.0	89.5	32.0			21 19 56.06	T.M.
	699	α Columbæ	50 44.2	19.5	61.1	2.5	45.2	1.8			325 50 29.00	T.M.
	734	α Orionis M.R.	46 44.2	43.1	16.8	46.8	22.1	40.8	20.397	-9.32	104 46 26.28	T.M.
	734	α Oriouis	21 37.8	40.2	69.5	12.1	77.0	11.3			7 21 41.01	T.M.
	807	Canopus M.R.	44 34.0	29.1	63.6	2.8	55.8	3.0	20.973	-32.55	164 43 58.01	T.M.
	807	Canopus	24 29.8	6.4	26.8	59.5	10.0	1.0			307 24 12.18	T.M.
	838	Sirius M.R.	38 47.2	43.2	47.4	31.6	40.8	21.5	21.050	-35.66	128 38 2.24	T.M.
	838	Sirius	30 17.6	56.4	39.2	35.9	34.0	35.6			343 30 6.78	T.M.
883	δ Canis Maj. M.R.	16 40.2	52.0	57.4	31.0	58.1	14.0	20.772	-24.44	138 16 16.96	T.M.	
883	δ Canis Majoris	51 65.5	40.2	86.2	22.5	74.0	23.0			333 51 52.25	T.M.	
27 Nov.	83	ν Andromedæ	8 48.6	44.0	58.2	14.3	63.1	29.5			40 8 42.57	T.M.
	1223	Arg. M.R.	27 33.2	47.0	66.0	19.2	63.0	7.3	21.444	-51.55	153 26 47.18	T.M.
	1223	Arg.	41 39.1	13.6	49.4	0.5	39.3	1.2			318 41 23.99	T.M.
28 Nov.	2741	Fomalhaut	30 79.0	54.0	101.2	36.8	85.7	36.3			329 31 5.39	T.M.
	31	α Phœnicis M.R.	19 43.4	53.1	76.9	25.8	71.7	7.4	20.966	-31.90	155 19 13.71	T.M.
	31	α Phœnicis	48 68.9	45.1	77.4	33.2	59.8	34.8			316 48 53.08	T.M.
	340	Persei	52 39.4	32.1	42.4	7.6	45.8	21.4			48 52 31.19	T.M.
	341	β Persei	16 37.3	34.0	49.3	4.0	54.0	18.4			40 16 32.67	T.M.
	365	(b) α Persei	9 48.2	39.0	50.0	14.2	54.2	30.2			49 9 38.82	T.M.
	433	ε Persei	29 17.8	12.0	28.9	43.0	33.6	57.4			39 29 11.68	T.M.
	482	X Eridani	48 38.9	11.9	56.2	56.0	38.0	54.2			325 48 22.18	T.M.
	582	ζ Aurigæ	46 48.4	44.6	59.0	17.0	65.0	30.5			40 46 43.90	T.M.
	588	η Aurigæ	57 19.4	14.4	30.7	46.4	35.8	0.4			40 57 14.29	T.M.
	611	Capella	44 49.0	40.0	57.1	15.1	57.8	31.2			45 44 41.21	T.M.
		Ceres	30 47.1	51.2	76.5	21.9	86.8	25.8			21 30 51.46	T.M.
	699	α Columbæ	50 43.5	18.0	61.5	1.4	43.3	0.4			325 50 27.97	T.M.
797	β Canis Maj. M.R.	1 45.9	44.4	50.8	34.2	43.8	22.5	21.269	-44.13	130 0 55.58	T.M.	
797	β Canis Majoris	6 83.8	62.8	110.7	43.2	101.7	43.2			342 7 14.38	T.M.	
29 Nov.	31	α Phœnicis M.R.	19 33.5	46.0	67.1	17.8	64.2	7.3	20.718	-21.90	155 19 16.66	T.M.
	31	α Phœnis	48 70.6	44.8	78.5	32.4	60.3	35.0			316 48 53.48	T.M.
	60	α Cassiopeæ	13 71.3	64.6	68.6	43.0	73.8	56.6			55 14 2.57	T.M.
	83	ν Andromedæ	8 50.4	44.1	61.2	15.1	65.5	31.1			40 8 44.18	T.M.
	161	γ Phœnicis M.R.	17 42.1	51.0	75.3	22.0	73.0	13.1	21.286	-44.81	156 17 0.70	T.M.
	161	γ Phœnicis	50 86.0	63.1	91.8	49.0	74.0	50.0			315 51 9.16	T.M.
3 Dec.	365	α Persei	9 59.4	49.5	59.6	24.0	62.3	41.9			49 9 48.95	T.M.

(a) A blotch. Images spread out to several times their usual dimensions.  
 (b) Prismatic colours. Strong S. wind.

(c) Probably bisected by the Micrometer Wire. Engaged on Thursday, Friday, and Saturday, preparing for, and measuring a Base Line on the Parade, in Cape Town.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.									
#	°	'	"	Inch.	°	'	"	"	"	r	"	°	'	"		
	-0	15	39.43	30.077	64.0	60.5		0.26				55	48	17.06	482	X Eridani.
	-0	27	45.30	.077	64.0	60.5		0.46				55	36	10.99	506	
	74	42	38.08	.072	64.0	60.8		3 25.80				130	50	0.63	582	ζ Aurigæ.
	74	53	8.28					3 28.21				131	0	33.24	588	η Aurigæ.
	79	40	35.06					5 3.11				135	49	34.92	611	Capella.
	-56	46	39.51	.055	64.0	60.8		1 26.98				-0	44	9.74		σ Octantis SP.
	55	13	8.58	30.048	64.0	61.0		1 22.00	4.02			111	18	23.31		Ceres.
	-0	13	34.63					0.23				55	50	21.89	699	α Columbæ.
	-1	53	39.71					1.89				54	10	15.15	732	β Columbæ.
	-0	15	41.06	29.890	66.5	72.2	65.4	0.26				55	48	15.43	482	X Eridani.
	-0	27	38.09	29.886	66.5	65.0		0.46				55	36	18.20	506	Eridani.
	74	42	40.99					3 22.81				130	50	0.55	582	ζ Aurigæ.
	74	53	10.37					3 25.20				131	0	32.32	588	η Aurigæ.
	79	40	40.86	29.882	65.6	63.6	60.0	4 59.67				135	49	37.28	611	Capella.
	-56	46	40.71	29.880	65.6	63.6	60.0	1 26.00				-0	44	9.96		σ Octantis SP.
	55	15	51.45	29.870	66.0	64.0	61.0	1 21.17	4.03			111	21	5.34		Ceres.
	-0	13	35.61					0.22				55	50	20.92	699	α Columbæ.
3.65	41	17	38.33	29.861	66.2	65.0	60.0	49.40				97	22	24.48	734	α Orionis R.
	41	17	36.40									97	22	22.55	734	α Orionis.
5.10	-18	39	53.40	29.858	66.0	67.0	62.0	18.94				37	23	44.41	807	Canopus R.
	-18	39	52.43									37	23	45.38	807	Canopus.
4.51	17	26	2.37		66.0	65.8		17.65				73	30	16.77	838	Sirius R.
	17	26	2.17									73	30	16.57	838	Sirius.
4.61	7	47	47.65	29.852	66.0	67.5	62.5					63	51	52.07	883	δ Canis Maj. R.
	7	47	47.64									63	51	52.06	883	δ Canis Majoris.
	74	4	37.63	30.133	67.0	60.3		3 17.93				130	11	52.31	83	ν Andromedæ.
5.59	-7	22	42.24	30.189	66.0	59.0		7.46				48	41	7.05	1223	Argus R.
	-7	22	40.95									48	41	8.34	1223	Argus.
	3	27	0.45	30.228	67.8	64.4		3.44				59	31	0.64	2741	Fomalhaut.
3.40	-9	15	8.77					9.35				46	48	38.63	31	α Phœnicis R.
	-9	15	11.86	.223	66.5	61.2						46	48	35.54	31	α Phœnicis.
	82	48	26.25	.221	66.2	60.6	56.0	7 6.30				138	59	29.30	340	Persei.
	74	12	27.73					3 20.14				130	19	44.62	341	β Persei.
	83	5	33.88	.218	65.2	60.6		7 21.94				139	16	52.57	365	α Persei.
	73	25	6.74	.211	65.5	61.5		3 9.98				129	32	13.47	433	ε Persei.
	-0	15	42.76					0.26				55	48	13.73	482	X Eridani.
	74	42	38.96	.189	65.5	62.0		3 25.40				130	50	1.11	582	ζ Aurigæ.
	74	53	9.35	.189	65.5	62.0		3 28.49				131	0	34.59	588	η Aurigæ.
	79	40	36.27	.185	65.2	61.8		5 3.79				135	49	36.81	611	Capella.
	55	26	46.52	.180	65.0	61.5		1 22.98	4.08			111	32	2.17		Ceres.
	-0	13	36.97					0.23				55	50	19.55	699	α Columbæ.
4.98	16	3	9.36	30.168	65.0	62.0		16.46				72	7	22.57	797	β Canis Maj. R.
	16	3	9.44									72	7	22.65	797	β Canis Majoris.
5.07	-9	15	11.72	30.110	68.0	64.0		9.26				46	48	35.77	31	α Phœnicis R.
	-9	15	11.46									46	48	36.03	31	α Phœnicis.
	89	9	57.63	.113	67.4	64.5						60			60	α Cassiopeæ.
	74	4	39.24	.111	67.0	63.2	61.0	3 16.73				130	11	52.72	83	ν Andromedæ.
4.93	-10	12	55.76	30.113	67.2	63.8		10.25				45	50	50.74	161	γ Phœnicis R.
	-10	12	55.78									45	50	50.72	161	γ Phœnicis.
	83	5	44.01	29.996	71.2	68.8	62.0	7 11.28				139	16	52.04	365	α Persei.

Coincidence of Micrometer Wire with fixed Wire, =20°.166 Nov. 28<sup>th</sup>, =20°.175 One revolution =40°.335  
 Correction for Runs =-3".10  
 Adopted Zenith Point to Nov. 25<sup>th</sup>, at Noon, =326°. 04'. 04".61 From Nov. 25<sup>th</sup>, =326°. 04'. 04".94  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
☉ 3 Dec.	424	m <sup>o</sup> Eridani... M.R.	31 53.5	56.8	66.9	41.0	64.1	26.2	21.493	-53.16	136 30 58.07	T.M.
	424	(a) m <sup>o</sup> Eridani .....	36 83.0	59.1	106.4	41.0	96.2	39.4			335 37 11.12	T.M.
	433	ε Persei .....	29 23.9	17.4	34.5	48.0	40.0	3.0			39 29 17.36	T.M.
	883	δ Canis Maj. M.R.	16 35.8	42.9	51.8	25.0	50.0	9.5			138 16 19.48	T.M.
	883	δ Canis Majoris ...	51 63.2	37.8	85.0	20.4	72.8	20.1			333 51 50.23	T.M.
	961	ξ Argus..... M.R.	35 47.8	52.0	62.0	35.0	58.1	20.9			136 35 21.62	T.M.
	961	ξ Argus .....	32 58.0	34.4	80.8	16.3	70.2	14.8			335 32 45.98	T.M.
☽ 4 Dec.		☉ N.L. ....	59 67.5	48.8	93.2	27.0	85.0	21.1	20.510	-13.51	337 59 56.59	T.M.
	336	.....	44 22.6	02.0	45.4	43.4	37.3	41.0			335 44 11.52	T.M.
	365	(b) α Persei .....	9 66.4	56.9	67.3	32.0	69.6	48.0			49 09 56.19	T.M.
	389	.....	59 38.1	18.0	63.0	58.1	54.8	57.1			341 59 27.72	T.M.
	433	ε Persei..... M...	29 38.1	32.7	49.0	03.6	53.5	17.8			39 29 18.47	T.M.
	439	γ Hydri.....	16 66.0	52.3	51.0	43.4	39.5	53.0			285 16 50.68	T.M.
	482	X Eridani.....	48 36.4	12.0	52.2	55.6	38.0	53.1			325 48 20.87	T.M.
	506	.....	36 38.4	14.9	56.4	58.0	40.5	56.8			325 36 24.17	T.M.
		(c) Ceres .....	46 67.8	72.0	96.0	41.0	106.9	44.1			21 47 11.08	T.M.
	699	α Columbæ.....	50 41.0	18.5	58.8	59.5	43.5	58.3			325 50 26.55	T.M.
	807	Canopus .... M.R.	44 43.8	37.9	74.0	08.9	65.1	10.9			164 44 2.84	T.M.
	807	Canopus.....	23 86.0	63.3	83.5	54.6	68.7	55.5			307 24 8.53	T.M.
	838	Sirius ..... M.R.	38 59.5	50.5	60.2	39.5	50.1	32.5			128 38 3.73	T.M.
	838	Sirius .....	29 74.0	56.0	99.3	34.0	93.9	32.8			343 30 4.82	T.M.
	883	δ Canis Maj. M.R.	16 56.4	64.8	73.6	45.2	72.7	26.9			138 16 19.76	T.M.
	883	δ Canis Majoris....	51 63.4	40.0	85.3	21.0	74.2	19.7			333 51 50.95	T.M.
	961	ξ Argus ..... M.R.	34 32.0	34.0	44.2	16.5	40.5	03.1			136 35 21.22	T.M.
	961	ξ Argus .....	32 60.1	37.5	82.2	27.8	73.8	17.1			335 32 49.97	T.M.
	♃ 7 Dec.		☉ S.L. .... M...	6 43.6	26.1	66.9	06.8	58.9			00.6	21.898
		☉ N.L. ....	37 60.4	40.8	84.4	21.2	73.8	19.1	337 37 49.89	T.M.		
31		α Phœnicis... M.R.	19 30.0	41.8	62.9	12.0	55.0	04.7	155 19 18.12	T.M.		
31		α Phœnicis .....	48 68.0	44.0	76.4	33.6	56.0	35.0	316 48 52.05	T.M.		
103		ε Piscium.....	0 15.0	16.3	48.0	47.2	55.3	45.0	7 00 17.77	T.M.		
		☽ S.L. ....	19 43.8	43.8	78.0	15.5	83.7	14.2	9 19 46.00	T.M.		
189		ο Piscium .....	19 37.2	37.0	70.0	09.8	75.7	07.6	8 19 39.07	T.M.		
199		γ Arietis.....	28 42.3	49.8	75.2	17.5	87.2	17.5	18 28 47.86	T.M.		
		Companion ... M.	.....	.....	.....	.....	.....	.....	18 28 56.01	T.M.		
		Ceres .....	54 65.3	71.0	96.5	38.8	104.3	40.7	21 55 08.92	T.M.		
623		Tauri..... M.	.....	.....	.....	.....	.....	.....	21 54 11.24	T.M.		
673		α Leporis... M.R.	4 47.4	41.3	49.4	34.7	38.8	25.4	130 04 43.28	T.M.		
673		α Leporis.....	3 34.9	12.0	60.1	55.3	51.2	54.0	342 03 24.61	T.M.		
699		α Columbæ.....	50 42.0	14.4	60.0	59.6	40.0	59.2	325 50 25.82	T.M.		
807		Canopus .... M.R.	44 47.0	40.8	79.0	12.8	67.8	14.0	164 44 2.18	T.M.		
807		Canopus .....	23 86.8	62.8	85.0	56.9	65.8	57.1	307 24 9.00	T.M.		
838		Sirius ..... M.R.	38 42.6	32.9	42.5	24.5	31.1	17.3	128 38 5.42	T.M.		
838	(d) Sirius .....	30 14.8	53.7	39.0	34.8	31.0	33.7	343 30 4.84	T.M.			
♀ 8 Dec.	31	α Phœnicis.. M.R.	19 39.4	48.2	72.7	22.1	66.8	13.3	20.811	-25.65	155 19 17.33	T.M.
	31	α Phœnicis.....	48 66.8	43.5	80.2	33.8	57.9	32.6			316 48 52.35	T.M.
	189	ο Piscium.....	19 39.2	47.0	72.4	17.8	83.0	11.8			8 19 44.71	T.M.
	199	γ Arietis.....	28 53.1	61.3	86.3	28.7	98.7	28.3			18 28 58.99	T.M.
	199	γ Arietis ... M.	.....	.....	.....	.....	.....	.....			18 28 50.64	T.M.
		☽ S.L. ....	30 40.0	51.2	75.0	18.5	86.9	14.1			15 30 47.53	T.M.
	302	π Arietis.....	45 71.0	80.7	104.4	48.4	117.0	46.4			16 46 17.85	T.M.
	319	ε Arietis .....	40 06.0	16.0	40.1	43.0	50.9	44.0			20 40 13.31	T.M.

(a) Observed at the Meridian and 5<sup>th</sup> Wires.

(b) Very hot. Light S. wind. The image of α Persei a nebulous dancing blotch; green is the prevailing colour of the spectrum.

(c) Capella allowed to Transit without bisection, as the observation might be 10'. in error.

(d) Very strong wind: bad images.



CALCULATION OF GOECENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.		
					Attach.	Out.	Wet Bulb.											
#	o	i	"	Inch.	o	o	o	i	"	"	i	"	o	i	"			
4.60	9	33	6.87	29.996	71.2	68.6							65	37	13.07	424	m <sup>2</sup> Eridani R.	
	9	33	6.18					9.45					65	37	12.38	424	m <sup>2</sup> Eridani.	
	73	25	12.42					3	6.19				129	32	15.36	433	ε Persei.	
4.86	7	47	45.46	29.965	70.6	63.8							63	51	49.96	883	δ Canis Maj. R.	
	7	47	45.29					7.75					63	51	49.79	883	δ Canis Majoris.	
3.80	9	28	43.32	29.967	70.2	61.8							65	32	49.57	961	ξ Argus R.	
	9	28	41.04					9.50					65	32	47.29	961	ξ Argus.	
5.69	11	55	51.65	30.049	71.8	73.0	68.0	11.78	1.77		16	15.40	67	43	43.01		☉	
	9	40	6.58	29.962	71.4	79.0	69.0	9.37					65	44	12.70	336		
	83	5	51.25	29.961	71.3	79.5	67.0	7	1.05				139	16	49.05	365	α Persei.	
	15	55	22.78	29.958	71.8	75.0		15.80					71	59	35.33	389		
	73	25	13.53	29.945	72.0	74.0		3	3.77				129	32	14.05	433	ε Persei.	
	40	47	14.26	29.945	72.0	74.0	66.6	47.82					15	15	54.67	439	γ Hydri.	
	-0	15	44.07					0.26					55	48	12.42	482	X Eridani.	
	-0	27	40.77	29.944	72.0	74.0	66.0	0.46					55	36	15.52	506		
	55	43	6.14	29.914	72.0	75.0	66.0	1	20.92	4.14			111	48	19.67		Ceres.	
	-0	13	38.39	29.908	72.0	71.5		0.22					55	50	18.14	699	α Columbæ.	
4.28	17	26	1.21	29.898	71.5	75.5	66.5	17.34					37	23	40.13	807	Canopus R.	
	17	25	59.88										37	23	41.62	807	Canopus.	
5.36	7	47	45.18	29.885	71.2	77.0	66.6	7.54					73	30	15.30	838	Sirius R.	
	7	47	46.01										73	30	13.97	838	Sirius.	
5.60	9	28	43.72	29.885	71.2	74.0	64.0	9.24					63	51	49.47	883	δ Canis Maj. R.	
	9	28	45.03										63	51	50.30	883	δ Canis Majoris.	
5.09	11	1	19.23	30.209	70.0	68.5	59.8	11.00	1.64		16	15.80	67	21	41.14		☉	
	11	33	44.95					11.57	1.72				67	21	35.75		☉	
	-9	15	13.18	.153	68.8	61.0		9.33					46	48	34.24	31	α Phœnicis R.	
	-9	15	12.89										46	48	34.53	31	α Phœnicis.	
	40	56	12.83	.153	68.0	60.4		49.69					97	0	59.27	103	ε Piscium.	
	43	15	41.06	.157	66.5	60.0		53.96	39	45.27	15	52.36	98	56	38.86		δ	
	42	15	34.13	.156	66.2	60.0		52.10					98	20	22.98	189	ο Piscium.	
	52	24	42.92	.156	66.0	60.0		1	14.41				108	29	54.08	199	γ Arietis.	
	52	24	51.07					1	14.42				108	30	2.24		Companion.	
	55	51	3.98	.113	67.2	60.0		1	24.27	4.16			111	56	20.84		Ceres.	
3.95	15	59	21.66	.100	67.0	60.0		1	24.22				111	55	27.27	623	Tauri.	
	15	59	19.67					16.41					72	3	34.82	673	α Leporis R.	
5.59	-0	13	39.12					0.23					72	3	32.83	673	α Leporis.	
	-18	39	57.24	.083	66.5	60.0		19.34					55	50	17.40	699	α Columbæ.	
5.13	-18	39	55.94										37	23	40.17	807	Canopus R.	
	17	25	59.52	30.080	66.5	60.0		17.98					37	23	41.47	807	Canopus.	
4.84	-17	25	59.90										73	30	14.25	838	Sirius R.	
	-9	15	12.58	30.017	68.3	62.0		9.27					73	30	14.63	838	Sirius.	
	-9	15	12.40										46	48	34.90	31	α Phœnicis R.	
	42	15	39.96	.010	67.2	61.6		51.69					46	48	35.08	31	α Phœnicis.	
	52	24	54.24	.010	66.0	61.6		1	13.84				98	20	28.40	189	ο Piscium.	
	52	24	45.89					1	13.83				108	30	4.83	199	γ Arietis.	
	49	26	42.78	.010	66.0	61.3		1	6.47	43	47.26	15	45.60	108	29	56.47	199	γ Arietis.
	50	42	13.10	.004	66.0	61.3		1	9.48					105	3	44.34		δ
54	36	8.56	30.000	66.0	61.3	58.0	1	19.96					106	47	19.33	302	π Arietis.	
													110	41	25.27	319	ε Arietis.	

Coincidence of Micrometer Wire with fixed Wire, =20°.175 One revolution =40°.335  
 Correction for Runs =-3°.10  
 Adopted Zenith Point to Dec. 8<sup>th</sup>, at Noon, =326°.04'.04".94 From Dec. 8<sup>th</sup>, =326°.04'.04".75  
 Assumed Co-latitude =56°.03'.56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction of Microm. or Time.	Concluded reading of Circle.	Initials of Observer.			
			A	B	C	D	E	F							
			′ ″	″ ″	″ ″	″ ″	″ ″	″ ″							
♀ 8 Dec.	623	Ceres .....	57 45.1	51.6	76.8	19.0	86.8	20.9	25.408	-3 34.70	21 57 49.74	T.M.			
		Tauri .....	.....	.....	.....	.....	.....	.....			21 54 15.04	T.M.			
♁ 9 Dec.	340	Persei .....	52 43.9	33.4	47.0	08.8	49.7	24.0	20.045	+4.80	48 52 39.00	T.M.			
	341	β Persei .....	16 37.6	34.1	52.0	01.3	57.0	15.0			40 16 32.67	T.M.			
	414	δ S.L. ....	50 11.0	20.6	45.1	47.2	55.5	48.4			20 50 17.93	T.M.			
	448	η Tauri .....	34 36.7	42.5	66.8	11.0	79.0	12.6			23 34 40.95	T.M.			
		A <sup>1</sup> Tauri .....	36 49.1	55.4	81.4	22.6	92.5	24.0			21 36 53.97	T.M.			
♃ 11 Dec.	543	(a) γ Tauri .....	36 66.7	73.8	95.4	39.4	108.9	41.0	21.476	-52.92	22 37 10.64	T.M.			
		Companion... M...	.....	.....	.....	.....	.....	.....			22 36 17.72	T.M.			
	585	(b) ε Tauri .....	19 55.7	62.1	87.5	28.4	96.5	32.6			21 20 00.21	T.M.			
		δ N.L. ....	11 58.0	60.9	85.5	25.7	96.2	31.6			28 11 59.44	T.M.			
	699	α Columbæ .....	50 41.4	14.8	58.0	59.2	39.0	58.8			325 50 25.16	T.M.			
	722	ζ Tauri .....	32 28.4	31.0	56.1	57.5	65.7	01.0			27 32 29.71	T.M.			
	807	Canopus .... M.R.	44 43.5	41.1	76.6	13.0	68.5	12.0			164 44 03.97	T.M.			
	807	Canopus .....	24 25.0	00.8	21.8	56.1	04.2	56.6			307 24 07.35	T.M.			
	838	Sirius .....	38 36.8	30.5	36.0	22.4	27.0	13.5			128 38 5.78	T.M.			
	838	Sirius .....	30 12.0	51.9	36.0	33.0	29.6	31.8			343 30 2.72	T.M.			
	1885	Antares .... M.R.	12 48.4	52.7	65.8	34.3	59.6	20.5			138 12 8.27	T.M.			
	1885	Antares .....	55 74.8	49.1	98.2	32.8	84.5	32.0			333 56 2.33	T.M.			
	♃ 12 Dec.		ξ 's center .....	29 35.5	08.8	57.7	52.1	45.3			52.1	21.101	-37.79	334 29 21.46	T.M.
			(c) ♀ N.L. ....	20 29.0	06.1	54.5	47.3	45.0			47.5			339 20 18.20	T.M.
		582	ζ Aurigæ .....	46 53.2	49.1	66.2	18.5	73.5			32.4			40 46 48.63	T.M.
588		(g) η Aurigæ .....	57 22.4	78.4	95.6	47.2	101.7	01.2	40 57 19.65	T.M.					
		(h) Ceres .....	8 14.1	20.8	42.9	47.7	56.0	49.4	22 08 28.13	T.M.					
687		ι Aurigæ .....	21 37.6	39.7	63.8	04.8	71.2	12.0	30 21 38.01	T.M.					
699		α Columbæ .....	50 41.1	13.8	58.5	58.2	39.5	58.9	325 50 24.90	T.M.					
734		α Orionis .... M.R.	46 34.5	33.6	05.7	38.6	10.3	32.0	104 46 25.77	T.M.					
734		α Orionis .....	21 34.6	45.0	70.9	13.8	80.8	08.2	7 21 41.91	T.M.					
		δ N.L. ....	16 44.2	47.1	69.6	13.0	80.1	19.8	29 16 45.45	T.M.					
807		Canopus .... M.R.	44 28.6	24.2	60.2	57.2	51.6	54.4	164 44 03.99	T.M.					
807		Canopus .....	24 24.0	00.0	21.0	54.0	03.0	55.8	307 24 06.23	T.M.					
831		ε Geminorum .....	15 38.1	42.5	69.0	10.4	79.0	14.7	25 15 42.21	T.M.					
870		ω <sup>1</sup> Geminorum .....	29 57.1	62.2	87.0	31.8	96.6	34.8	24 30 01.07	T.M.					
1885		Antares .... M.R.	12 52.4	56.3	70.0	38.8	64.2	24.4	138 12 7.18	T.M.					
1885	Antares .....	55 74.2	48.8	98.1	31.9	84.2	30.5	333 56 1.72	T.M.						
♁ 13 Dec.		⊙ N.L. ....	5 50.3	27.1	67.4	13.4	56.7	11.3	19.990	+7.02	337 05 37.64	T.M.			
		(d) ξ 's center .. M.R.	40 51.5	49.3	59.8	36.0	51.0	26.2			137 40 52.08	T.M.			
		ξ 's center .....	27 31.0	04.4	47.0	32.5	35.1	52.8			334 27 17.47	T.M.			
	2741	Fomalhaut .....	30 18.0	52.0	93.8	40.8	78.6	41.5			329 31 4.01	T.M.			
♃ 14 Dec.	340	Persei .....	52 41.8	33.8	49.4	03.6	54.0	17.7	20.275	-4.48	48 52 28.64	T.M.			
	1885	Antares .... M.R.	12 51.6	52.2	61.5	42.0	53.4	29.0			138 12 8.26	T.M.			
	1885	Antares .....	55 75.0	47.0	90.4	36.8	76.0	36.5			333 56 0.75	T.M.			
♀ 15 Dec.		(e) ξ 's center... M.R.	40 27.1	26.0	35.9	13.2	27.8	01.5	19.850	+12.66	137 40 33.97	T.M.			
		ξ 's center .....	27 49.8	22.5	66.0	10.2	53.6	10.4			334 27 35.69	T.M.			
		(f) ♀ 's center... M.R.	47 43.2	41.0	40.8	33.5	35.8	23.9			131 48 32.44	T.M.			
		♀ 's center .....	19 50.4	24.2	69.9	09.8	68.5	10.1			340 19 38.17	T.M.			
	31	α Phœnicis.. M.R.	19 50.0	50.2	78.8	27.8	68.2	24.0			155 19 17.48	T.M.			
	31	α Phœnicis .....	48 70.3	42.7	75.8	34.5	53.6	37.5			316 48 52.37	T.M.			

(a) Bisected by moonlight. Fine observing night. S. wind, and a cloud bank in the South horizon.  
 (b) One half the Correction for Runs applied.  
 (c) Very unsteady.  
 (d) Correction for Motion, 0°.04 A faint blotch; cirri.

(e) Correction for Motion in Declination, 0°.05  
 (f) Correction for Motion in Declination, 0°.28  
 (g) Accidentally bisected on the Micrometer Wire.  
 (h) There is a probable error of 10'. from reading off Microscope D, 1'. too great?



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.		Parallax.		Microm. for opposite Limb.	Semi-diameter.		Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.
					Attach.	Out.	Wet Bulb.												
#	o	'	"	Inch.	o	o	o	'	"	'	"	"	'	"	o	'	"		
	55	53	44.99	29.976	66.0	60.8		1	23.90		4.17				111	59	1.47	623	Ceres.
	55	50	10.29					1	23.72						111	55	30.76		Tauri.
	82	48	34.25	29.950	66.0	60.7		7	2.46						138	59	33.46	340	Persei.
	74	12	27.92	29.950	66.0	60.7		3	18.31						130	19	42.98	341	Persei.
	54	46	13.18	29.952	66.0	60.4	57.0	1	20.47	46	42.94				110	20	25.31		δ
	57	30	36.20	29.952	65.6	60.0		1	29.26						113	36	2.21	414	η Tauri.
	55	32	49.22	29.954	65.2	59.8		1	22.93						111	38	8.90	448	α <sup>1</sup> Tauri.
	56	33	5.89	30.295	65.0	57.4		1	27.49						112	38	30.13	543	τ Tauri.
	56	32	12.97					1	27.46						112	37	37.18		Companion.
	55	15	55.46	.295	64.0	57.0		1	23.42						111	21	15.63	585	ε Tauri.
	62	7	54.69	.291	63.5	57.2	54.0	1	49.17	49	40.08		15	20.82	117	8	39.71		δ
	-0	13	39.59						0.23						55	50	16.93	699	α Columbæ.
	61	28	24.96	.282	63.5	57.8		1	46.07						117	34	7.78	722	γ Tauri.
5.66	-18	39	59.22	.249	63.5	57.0			19.56						37	23	37.97	807	Canopus R.
	-18	39	57.40												37	23	39.79	807	Canopus.
4.25	17	25	58.97	.248	63.5	56.7			18.20						73	30	13.92	838	Sirius R.
	17	25	57.97												73	30	12.92	838	Sirius.
5.30	7	51	56.48	30.187	66.2	71.0			7.77						63	56	1.00	1885	Antares R.
	7	51	57.58												63	56	2.10	1885	Antares.
	8	25	16.71	30.152	67.0	72.0			8.31	0.89					64	29	20.88		ζ
	13	16	13.45	.117	67.6	68.4			13.30	2.56	20.712	11.05			69	20	9.89		ξ
	74	42	43.88	.038	65.5	62.3		3	24.95						130	50	5.58	582	ζ Aurigæ.
	74	53	14.90	.038	65.5	62.3		3	27.42						131	0	39.07	588	η Aurigæ.
	56	4	23.38	.035	65.0	61.8	56.2	1	24.47		4.18				112	9	40.42		Ceres.
	64	17	33.26	.031	65.0	62.5		1	57.55						120	23	27.56	687	ι Aurigæ.
	-0	13	39.85						0.23						55	50	16.67	699	α Columbæ.
3.84	41	17	38.98	.026	65.0	64.0			49.77						97	22	25.50	734	α Orionis R.
	41	17	37.16												97	22	23.68	734	α Orionis.
	63	12	40.70	.020	65.0	64.0		1	51.78	49	40.58		15	12.00	118	13	36.65		δ
5.11	-18	39	59.24	.003	65.0	61.0			19.25						37	23	38.26	807	Canopus R.
	-18	39	58.52												37	23	38.98	807	Canopus.
	59	11	37.46	30.000	65.0	59.6		1	35.52						115	17	9.73	831	ε Geminorum R.
	58	25	56.32	29.990	65.0	56.8		1	33.18						114	31	26.25	870	ω <sup>1</sup> Geminorum.
4.45	7	51	57.57	29.895	67.0	86.0	70.0		7.49						63	56	1.81	1885	Antares R.
	7	51	56.97												63	56	1.21	1885	Antares.
	11	1	32.89	29.880	67.0	87.4	71.8		10.53		1.64		16	16.50	66	49	22.03		⊙
4.78	8	23	12.67						7.95		0.89				64	27	16.48		ξ R.
	8	23	12.72	29.864	67.5	88.0									64	27	16.53		ξ
	3	26	59.26	29.806	69.5	79.8			3.29						59	30	59.30	2741	Fomalhaut.
	82	48	23.89	30.222	67.0	58.6	53.2	7	7.84						138	59	28.48	340	Persei.
4.51	7	51	56.49	30.285	67.0	67.0	60.0		7.86						63	56	1.10	1885	Antares R.
	7	51	56.00												63	56	0.61	1885	Antares.
4.83	8	23	30.78	30.260	67.3	67.6			8.37		0.91				64	27	34.99		ξ R.
	8	23	30.94												64	27	35.15		ξ
(5.31)	14	15	32.31	30.203	67.0	66.4			14.43		2.84				70	19	40.65		φ R.
	14	15	33.42												70	19	41.76		φ
4.93	-9	15	12.73	30.172	67.0	61.2			9.33						46	48	34.69	31	α Phœnicis R.
	-9	15	12.38												46	48	35.04	31	α Phœnicis.

Coincidence of Micrometer Wire with fixed Wire, Dec. 9<sup>th</sup>, =20".164  
 Correction for Runs =-3".10 From Dec. 14<sup>th</sup>, =-2".35  
 Adopted Zenith Point, =326°. 04'. 04".75  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			l #	#	#	#	#	#				
16 Dec.		☉ N. L. . . . . M. . .	56 49.0	23.0	66.5	10.4	54.0	09.2	21.497	-53.77	336 55 41.55	T.M.
		☉ S. L. . . . .	22 84.6	62.0	101.4	47.7	90.8	48.0			336 23 12.34	T.M.
		☿'s center . . . . .	29 73.6	47.2	89.9	34.8	78.0	35.0	334 29 59.75	T.M.		
		(a) ♀'s center. . . M.R.	26 52.0	51.7	51.8	45.6	46.4	34.0	18.572	+1 04.21	131 27 49.91	T.M.
		♀ S. L. . . . .	39 77.3	53.1	97.2	37.9	88.1	38.0	20.860	-28.07	340 40 4.97	T.M.
		2741 Fomalhaut. . . M.R.	37 34.0	34.4	49.0	19.8	43.4	11.0			142 37 3.01	T.M.
	2741 Fomalhaut . . . . .	30 80.6	55.1	96.0	42.3	81.7	43.0			329 31 7.01	T.M.	
17 Dec.		☉ S. L. . . . .	20 58.2	40.0	67.1	34.8	58.6	31.5			336 20 48.30	T.M.
19 Dec.		(b) ♀ N.L. . . . .	44 54.7	34.0	65.5	27.1	56.9	26.6		-0.36	341 44 43.40	T.M.
		2741 Fomalhaut. . M.R.	37 22.3	24.2	37.0	21.7	26.6	15.0	20.669	-20.37	142 37 5.57	T.M.
		1533 Spica . . . . . M.R.	26 28.0	35.2	04.1	49.8	04.0	34.8	18.993	+47.23	122 27 12.90	T.M.
		1533 Spica. . . . .	40 63.1	50.8	76.8	41.5	74.5	38.0			349 40 57.58	T.M.
20 Dec.		♁ Canis Maj. M.R.	16 38.0	39.6	34.2	40.2	29.0	28.3	20.419	-10.28	138 16 23.94	T.M.
		883 ♁ Canis Majoris . . .	51 57.8	34.1	66.1	30.9	54.2	28.2			333 51 45.62	T.M.
		928 ♂ Argus. . . . . M.R.	5 37.3	31.9	53.0	22.3	41.6	21.2	19.161	-40.46	155 06 14.69	T.M.
		928 ♂ Argus . . . . .	1 67.9	47.9	68.7	46.4	50.8	44.4			317 01 54.48	T.M.
		B Octantis SP. . . . .	34 52.1	61.0	45.5	38.1	50.0	35.0			269 34 46.58	T.M.
		1070 α Pix. Naut. . . . .	23 74.2	53.3	80.0	49.1	63.4	48.0			327 24 01.02	T.M.
		1092 ε Ursæ Majoris. . . . .	33 37.8	45.8	59.8	03.0	69.8	08.5			48 33 37.17	T.M.
		1223 Argus in Vel. M.R.	27 40.4	32.4	54.8	24.0	40.4	21.6	21.220	-42.59	153 26 52.54	T.M.
		1223 Argus in Velis . . . . .	41 33.9	09.0	34.3	06.4	14.8	06.0			318 41 17.57	T.M.
		1281 (c) η Argus. . . . . M.R.	51 49.0	52.3	75.0	30.8	74.3	27.2	12.030	+5 28.08	170 57 18.92	T.M.
		1281 η Argus. . . . .	10 63.2	57.0	58.0	52.0	43.2	49.0			301 10 54.11	T.M.
	21 Dec.		(d) ☉ S. L. . . . M. . .	17 38.4	26.3	48.8	20.9	41.5	14.9	22.334	-1 27.37	336 16 4.36
		☉ N. L. . . . .	48 43.0	24.2	50.0	20.0	41.8	15.8			336 48 32.32	T.M.
		2741 Fomalhaut. . M.R.	37 49.6	39.0	55.0	33.9	43.5	29.1	21.087	-37.07	142 37 3.75	T.M.
		2741 Fomalhaut . . . . .	30 77.0	57.1	86.6	53.3	73.1	50.5			329 31 6.83	T.M.
		31 α Phœnicis. . M.R.	19 38.5	35.1	37.3	40.6	27.0	39.0	20.597	-17.30	155 19 18.31	T.M.
		31 α Phœnicis . . . . .	48 60.0	52.0	62.5	46.9	49.5	39.0			316 48 51.63	T.M.
		(e) δ S. L. . . . .	42 59.3	47.1	59.9	51.2	56.6	49.8			350 42 53.76	T.M.
		1596 β Centauri. . M.R.	42 31.4	14.8	40.0	10.2	29.4	19.5	19.940	+9.20	171 42 32.77	T.M.
		1596 β Centauri. . . . .	25 42.8	45.0	44.9	31.5	37.1	23.1			300 25 37.81	T.M.
		1885 Antares. . . . . M.R.	12 45.3	64.5	29.0	78.0	32.0	57.0	21.203	-41.75	138 12 8.45	T.M.
		1885 Antares. . . . .	55 70.3	52.0	73.8	54.9	63.1	49.6			333 56 1.08	T.M.
22 Dec.			☉ N. L. . . . M. . .	48 42.4	30.9	46.0	31.1	40.4	23.1	20.230	-2.50	336 48 33.00
		☉ S. L. . . . .	15 67.2	56.1	71.1	56.6	65.1	50.4			336 16 1.13	T.M.
		☿'s center . . . . .	16 52.3	35.4	55.8	37.5	46.8	31.8			335 16 43.13	T.M.
		2741 Fomalhaut. . M.R.	37 33.0	44.0	23.2	57.1	24.9	39.8	21.020	-34.36	142 37 2.27	T.M.
		2741 (f) Fomalhaut . . . . .	30 74.8	59.2	79.5	58.8	69.0	53.2			329 31 5.83	T.M.
		z Octantis SP. . . . .	29 29.0	25.8	39.8	43.0	44.1	46.0			267 29 17.61	T.M.
		340 Persei . . . . . M. . .	52 38.2	79.0	75.2	22.0	102.1	10.0	20.510	-13.79	48 52 40.40	T.M.
		341 β Persei . . . . .	15 79.0	123.2	120.8	64.9	149.4	54.0			40 16 38.42	T.M.
		365 α Persei. . . . .	9 32.1	72.8	68.5	14.0	94.0	04.6			49 09 47.29	T.M.
		433 ε Persei. . . . .	28 57.2	101.8	98.0	45.0	126.2	33.0			39 29 16.53	T.M.
		482 X Eridani. . . . .	48 28.0	13.0	31.8	09.7	20.4	01.1			325 48 17.08	T.M.
		506 Eridani. . . . .	36 30.0	16.2	35.0	12.4	24.5	05.9			325 36 20.56	T.M.
		Ceres . . . . .	32 63.5	105.4	97.0	67.9	127.0	51.0			22 33 25.03	T.M.
		611 Capella. . . . .	44 25.9	66.8	68.8	08.5	91.6	00.0			45 44 43.23	T.M.
		σ Octantis SP. . . . .	17 28.0	25.5	42.3	43.4	44.0	45.0			269 17 17.85	T.M.

(a) Correction for Motion in Declination, 0'.69 No Correction for Runs required for the direct observation, the Microscopes were counted from Zero, though entered as above.

(b) Observed at the 5th Wire. Correction for Motion in Declination, -0'.73 For Curvature of Path, +0'.37

(c) This Star is increasing in magnitude to which my attention has been called by Sir J. HERSCHEL. It is equal to Rigel or α Centauri.

(d) The limbs fringed and undefined.

(e) Spica invisible from clouds.

(f) Observed at the 2nd and 4th Wires.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	°	'	"	Inch.	°	'	"	'	"	"	'	"	°	'	"		
5.01	10	51	36.80	29.941	68.5	87.0	70.6	10.39	1.62		16 16.70	66 39 25.62			☉		
	10	19	7.59					9.86	1.53			66 39 29.37			☉		
	8	25	55.00	29.936	69.0	88.8		8.00	0.92			64 29 58.83			♁		
	14	36	14.84	29.900	70.5	88.0	73.0					70 40 22.73			♀	R.	
	14	36	0.22					14.07	2.93	19.490	13.59	70 40 21.70			♀		
	3	27	1.74	29.902	71.4	83.0						59 31 1.78	2741		Fomalhaut	R.	
	3	27	2.26					3.29				59 31 2.30	2741		Fomalhaut.		
5.24	10	16	43.27	29.958	69.0	70.5	63.5	10.13	1.53		16 16.80	66 37 5.42			☉		
	15	40	38.37	30.242	67.2	65.0	59.0	16.00	3.25	20.670	10.21	71 44 37.66			♀		
	3	26	59.46	.274	67.5	65.0		3.44				59 30 59.65	2741		Fomalhaut.	R.	
	23	36	52.13	30.327	65.0	61.0						79 41 14.07	1533		Spica	R.	
	23	36	52.55					25.19				79 41 14.49	1533		Spica.		
4.78	7	47	41.09	30.071	64.8	59.5		7.85				63 51 45.69	883		♁ Canis Maj.	R.	
	7	47	40.59									63 51 45.19	883		♁ Canis Majoris.		
4.59	-9	2	9.66	.061	65.0	59.4						47 1 37.98	928		♁ Argus	R.	
	-9	2	10.55					9.11				47 1 37.09	928		♁ Argus.		
	-56	29	18.45	.056	64.2	59.4		1 26.27				-0 26 47.97			B Octantis SP.		
	1	19	55.99	.044	64.5	59.4		1.33				57 23 54.07	1070		α Pix. Naut.		
	82	29	32.14	.038	64.2	59.4	56.0	6 48.75				138 40 17.64	1092		ε Ursæ Majoris.		
5.06	-7	22	47.51	.023	64.3	59.5						48 41 1.83	1223		Argus in Velis	R.	
	-7	22	47.46					7.41				48 41 1.88	1223		Argus in Velis.		
6.52	-24	53	13.89	30.026	64.3	59.2						31 10 16.31	1281		η Argus	R.	
	-24	53	10.92					26.55				31 10 19.28	1281		η Argus.		
5.29	10	11	59.33	30.003	67.2	71.2	64.8	10.06	1.52		16 17.00	66 32 21.62			☉		
	10	44	27.29					10.60	1.60			66 32 16.04			☉		
	3	27	1.28	29.954	68.0	68.2	63.5					59 31 1.41	2741		Fomalhaut	R.	
	3	27	1.80					3.38				59 31 1.93	2741		Fomalhaut.		
4.97	-9	15	13.28	29.968	67.5	65.0	62.2					46 48 34.27	31		α Phœnicis	R.	
	-9	15	13.40					9.20				46 48 34.15	31		α Phœnicis.		
	24	38	48.73	30.104	66.0	65.3	61.8	0 26.02	23 0.82		15 9.16	80 35 19.84			♁		
5.29	-25	38	27.74	.108	66.0	66.2	62.8					30 25 1.83	1596		β Centauri	R.	
	-25	38	27.22					27.18				30 25 2.35	1596		β Centauri.		
4.77	7	51	56.58	30.125	67.0	70.8	64.0					63 56 1.09	1885		Antares	R.	
	7	51	56.05					7.76				63 56 0.56	1885		Antares.		
4.05	10	44	27.97	30.130	67.2	71.4	64.8	10.64	1.66		16 17.10	66 32 16.66			☉		
	10	11	56.10					10.10	1.52			66 32 18.53			☉		
	9	12	38.10	.033	67.6	70.0		9.09	1.08			65 16 42.86			♁		
	3	27	2.76	.112	68.0	67.0	63.6					59 31 2.92	2741		Fomalhaut	R.	
	3	27	0.80					3.41				59 31 0.96	2741		Fomalhaut.		
	-58	34	47.42	.124	66.2	61.0		1 33.37				-2 32 24.04			z Octantis SP.		
	82	48	35.37	30.127	66.2	61.0		7 4.76				138 59 36.88	340		Persei.		
	74	12	33.39					3 19.39				130 19 49.53	341		β Persei.		
	83	5	42.26	.126	65.5	61.0		7 20.33				139 16 59.34	365		α Persei.		
	73	25	11.50	.122	65.5	61.0	57.8	3 9.62				129 32 17.87	433		ε Persei.		
	-0	15	47.95					0.26				55 48 8.54	482		X Eridani.		
	-0	27	44.47					0.46				55 36 11.82	506		Eridani.		
56	29	20.00	.114	65.2	60.3		1 26.28	4.16			112 34 38.87			Ceres.			
79	40	38.20					5 3.91				135 49 38.86	611		Capella.			
-56	46	47.18	30.107	65.0	60.3		1 27.21				-0 44 17.64			σ Octantis SP.			

Coincidence of Micrometer Wire with fixed Wire, =20°.164 Dec. 21<sup>st</sup>, =20°.168 One revolution =40".335.  
 Correction for Runs =-2".35  
 Adopted Zenith Point to Dec. 17<sup>th</sup>, at Noon, =326°. 04'. 04".75 From Dec. 17<sup>th</sup>, =326°. 04'. 05".03  
 Assumed Co-latitude =56°. 03'. 56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			l #	# #	# #	# #	# #	# #						
♀ 22 Dec.	673	α Leporis... M.R.	4 45.2	49.6	17.9	70.0	14.2	57.5	20.016	+6.13	130 04 47.48	T.M.		
	673	α Leporis.....	3 28.0	14.1	30.0	17.2	25.5	13.4			342 03 21.48	T.M.		
	699	α Columbæ.....	50 32.0	17.6	37.0	14.4	24.5	08.1			325 50 22.24	T.M.		
	732	β Columbæ.....	10 25.6	12.5	31.6	08.0	18.0	01.2			324 10 16.13	T.M.		
	746	γ Columbæ.....	42 09.0	56.2	12.5	50.2	01.2	43.5			324 41 58.61	T.M.		
	787	κ Columbæ.. M..	55 30.0	21.8	36.0	16.2	26.0	06.5			20.932	-30.80	324 54 51.92	T.M.
	807	Canopus... M.R.	44 32.5	18.8	29.0	24.2	16.2	30.2			20.580	-16.62	164 44 07.82	T.M.
	807	Canopus.....	23 70.8	67.5	75.2	53.9	68.3	44.7			307 24 03.44	T.M.		
	838	Sirius... M.R.	38 34.5	38.1	06.0	56.5	02.0	42.8			20.660	-19.84	128 38 9.53	T.M.
	838	Sirius.....	29 67.0	53.0	66.7	56.0	63.0	52.4			343 29 59.63	T.M.		
♁ 23 Dec.	365	α Persei.....	9 36.0	76.1	72.9	18.0	98.0	08.1	19.870	+12.02	49 09 51.14	T.M.		
		Ceres.....	35 33.3	76.0	67.7	36.2	97.0	20.4			22 35 55.63	T.M.		
	673	α Leporis...MR.	4 38.3	44.9	10.0	64.0	09.0	50.2			130 04 47.35	T.M.		
	673	α Leporis.....	3 28.0	14.0	29.0	17.0	25.4	13.4			342 03 21.25	T.M.		
	699	α Columbæ.....	50 32.7	18.0	36.8	13.8	25.5	08.0			325 50 22.43	T.M.		
	732	β Columbæ.....	10 25.6	14.1	32.0	07.2	19.7	00.8			324 10 16.54	T.M.		
	746	γ Columbæ.....	41 70.0	58.0	74.2	50.8	63.1	44.0			324 41 59.86	T.M.		
	807	Canopus... M.R.	44 26.4	13.6	22.9	19.0	11.0	24.2			20.436	-10.81	164 44 08.01	T.M.
	807	Canopus.....	23 69.7	66.2	75.2	53.2	66.9	43.8			307 24 02.55	T.M.		
	838	Sirius... M.R.	38 31.8	37.1	02.6	54.0	00.0	40.0			20.625	-18.43	128 38 8.54	T.M.
	838	Sirius.....	30 05.0	54.6	05.5	56.8	04.2	51.1			343 29 59.87	T.M.		
	883	δ Canis Maj. M.R.	16 31.0	41.2	08.1	61.0	07.0	44.6			20.310	-5.73	138 16 25.76	T.M.
883	δ Canis Majoris... B Octantis... SP.	51 52.1 34 54.4	38.2 52.0	53.8 67.9	40.4 08.5	45.4 67.5	34.0 11.5	333 51 44.39 269 34 43.27	T.M. T.M.					
☉ 24 Dec.		☉ N. L. .... M..	50 49.8	35.0	49.0	40.0	41.0	33.3	21.350	-47.68	336 49 53.77	T.M.		
		☉ S. L. ....	17 26.7	15.1	27.4	19.4	20.8	13.0			336 17 20.33	T.M.		
		(a) ♃'s center...M.R.	22 50.0	54.2	22.5	73.0	18.0	58.5	18.910	-50.74	136 23 35.54	T.M.		
		♃'s center.....	44 40.2	27.6	41.4	30.6	34.9	24.0			335 44 32.72	T.M.		
	2741	Fomalhaut.. M.R.	37 34.0	45.6	15.0	63.5	15.5	48.5	20.995	-33.36	142 37 2.79	T.M.		
	2741	Fomalhaut.....	30 73.4	60.4	78.0	60.0	68.8	53.9			329 31 6.31	T.M.		
		Ceres.....	37 57.4	106.0	90.0	62.0	121.4	46.0			22 38 20.21	T.M.		
		(b) σ Oct. SP. . M.R.	51 41.0	57.5	49.0	43.9	38.5	11.4	{ 5 01 02 20.995	{ +0.68 -33.36	202 50 47.43	T.M.		
		σ Octantis SP....	16 86.3	84.0	99.8	41.6	100.5	43.7	5 06 30	-0.00	269 17 15.81	T.M.		
		σ Oct. SP. . M.R.	50 71.0	27.2	79.1	14.2	69.0	41.6	5 12 00	+0.85	202 50 51.14	T.M.		
		σ Octantis SP....	16 89.8	89.0	104.8	45.0	106.1	46.3	5 17 00	-2.95	269 17 17.03	T.M.		
	699	α Columbæ.....	50 31.0	19.0	35.0	14.1	24.2	07.1			325 50 21.71	T.M.		
♁ 26 Dec.		☉ S. L. .... M..	21 66.2	53.8	70.2	56.9	63.0	50.0	22.195	-1 21.80	336 20 38.23	T.M.		
		☉ N. L. ....	53 17.0	04.0	17.0	06.1	10.5	58.5			336 53 8.69	T.M.		
		(c) ♃'s center.....	18 20.0	07.0	24.1	08.8	16.2	03.2			-0.18	336 18 12.78	T.M.	
		♀ N.L. ....	26 40.8	28.1	41.1	33.2	38.0	26.9			344 26 34.56	T.M.		
	2741	Fomalhaut.. M.R.	37 33.3	44.8	15.8	63.2	15.4	46.8	20.960	-31.98	142 37 3.72	T.M.		
	2741	Fomalhaut.....	30 74.0	60.8	79.6	60.0	70.0	53.2			329 31 6.83	T.M.		
	365	α Persei.....	9 26.8	67.6	63.8	09.5	88.1	59.5			49 09 42.19	T.M.		
		Ceres.....	42 45.8	88.1	79.8	50.5	108.6	34.5			22 43 07.64	T.M.		
		σ Octantis SP. . R.	50 71.1	25.9	79.6	13.7	68.2	41.5	5 02 20	+1.12	202 50 51.07	T.M.		
		σ Octantis SP....	17 25.6	23.9	41.5	40.4	41.2	42.0	5 07 32	-0.06	269 17 15.53	T.M.		
		σ Octantis SP. . R.	50 73.8	28.9	82.8	16.1	71.1	43.0	5 12 35	+0.32	202 50 52.87	T.M.		
		(d) σ Octantis SP....	17 27.6	26.2	42.7	42.6	43.2	43.3	5 17 50	-1.95	269 17 15.47	T.M.		
699	α Columbæ.....	50 28.8	16.4	34.6	12.3	22.0	05.1			325 50 19.84	T.M.			
732	β Columbæ.. M.R.	58 31.8	38.4	17.9	54.0	14.9	41.6	21.147	-39.53	147 57 53.09	T.M.			
732	β Columbæ.....	10 24.5	14.0	30.2	08.7	17.6	00.6			324 10 16.12	T.M.			

Grimaldi slow, Dec. 24<sup>th</sup>, at 5<sup>h</sup>, S.T. -35°. Dec. 26<sup>th</sup>, at 5<sup>h</sup>, 26<sup>m</sup>. fast 2<sup>m</sup>, 16<sup>s</sup>., and at 8<sup>h</sup>, 15<sup>m</sup>. fast 3<sup>m</sup>, 2<sup>s</sup>.

- (a) Correction for Motion, 0'.53. There appears a discrepancy in the observation.
- (b) The times noted are from the Journeyman Clock Grimaldi, and 5<sup>h</sup>, 32<sup>m</sup>, 22<sup>s</sup>. of the Transit Clock Hardy, corresponds to 5<sup>h</sup>, 31<sup>m</sup>, 00<sup>s</sup>. of Grimaldi.
- (c) Observed at the 4<sup>th</sup> Wire. Cor. for Motion, -0'.32, for Curv. +0'.14

- (d) Comparisons of Hardy and Grimaldi.  
H. 5<sup>h</sup>, 26<sup>m</sup>, 0<sup>s</sup>. = 5<sup>h</sup>, 27<sup>m</sup>, 31<sup>s</sup>. Hardy fast, 46<sup>s</sup>. 4  
H. 8<sup>h</sup>, 15<sup>m</sup>, 43<sup>s</sup>. = 8<sup>h</sup>, 18<sup>m</sup>, 0<sup>s</sup>.  
Grim. gains on Hardy 0'.271 per minute, and the approximate Sid. Times of observation by Grim. are 5<sup>h</sup>, 0<sup>m</sup>, 10<sup>s</sup>. -5<sup>h</sup>, 5<sup>m</sup>, 20<sup>s</sup>. -5<sup>h</sup>, 10<sup>m</sup>, 22<sup>s</sup>. and 5<sup>h</sup>, 15<sup>m</sup>, 36<sup>s</sup>.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.	No. A S C	NAME OF STAR or PLANET.
			Attach.	Out.	Wet Bulb.							
#	° ' "	Inch.	°	°	°	' "	' "	"	' "	° ' "		
4.63	15 59 17.25	30.100	65.0	60.0		16.42				72 3 30.42	673	$\alpha$ Leporis R.
	15 59 16.45									72 3 29.62	673	$\alpha$ Leporis.
	-0 13 42.79					0.23				55 50 13.73	699	$\alpha$ Columbæ.
	-1 53 48.90					1.90				54 10 5.95	732	$\beta$ Columbæ.
	-1 22 6.42	.086	65.0	60.0		1.37				54 41 48.96	746	$\gamma$ Columbæ.
	-1 9 13.11					1.15				54 54 42.49	787	$\epsilon$ Columbæ.
5.63	-18 40 2.79	.080	65.0	60.0		19.34				37 23 34.62	807	Canopus R.
	-18 40 1.59									37 23 35.82	807	Canopus.
4.58	17 25 55.50	30.076	65.0	59.8		17.98				73 30 10.23	838	Sirius R.
	17 25 54.60									73 30 9.33	838	Sirius.
4.30	83 5 46.11	29.934	67.2	63.2		7 15.54				139 16 58.40	365	$\alpha$ Persei.
	56 31 50.00					1 25.44	4.15			112 37 8.04		Ceres.
	15 59 17.68	29.927	66.8	63.0		16.23				72 3 30.66	673	$\alpha$ Leporis R.
	15 59 16.22									72 3 29.20	673	$\alpha$ Leporis.
	-0 13 42.60					0.23				55 50 13.92	699	$\alpha$ Columbæ.
	-1 53 48.49					1.88				54 10 6.38	732	$\beta$ Columbæ.
5.28	-1 22 5.17					1.35				54 41 50.23	746	$\gamma$ Columbæ.
	-18 40 2.98					19.13				37 23 34.64	807	Canopus R.
4.21	-18 40 2.48									37 23 35.14	807	Canopus.
	17 25 56.49	29.904	67.0	62.7		17.78				73 30 11.02	838	Sirius R.
5.08	17 25 54.84	29.895	66.2	62.6		7.75				73 30 9.37	838	Sirius.
	7 47 39.27									63 51 43.77	883	$\delta$ Canis Maj. R.
4.55	7 47 39.36	29.886	66.3	62.9		1 25.19				63 51 43.86	883	$\delta$ Canis Majoris.
	-56 29 21.76									-0 26 50.20		$B$ Octantis SP.
(4.13)	10 45 49.49	29.929	68.2	72.8	67.0	10.48	1.60		16 17.10	66 33 38.02		$\odot$
	10 13 16.05					10.02	1.52			66 33 38.40		$\odot$
	9 40 28.74	29.930	68.5	73.0		9.47	1.16			65 44 33.80		$\gamma$ R.
	9 40 28.44									65 44 33.50		$\gamma$
4.55	3 27 1.49	29.968	69.0	69.6		3.38				59 31 1.62	2741	Fomalhaut R.
	3 27 2.03									59 31 2.16	2741	Fomalhaut.
(1.62)	56 34 15.93	30.050	67.0	58.8		1 26.59	4.15			112 39 35.12		Ceres.
	-56 46 43.15					1 27.28				-0 44 13.68		$\sigma$ Octantis SP. R.
4.09	-56 46 48.47	30.047	65.0	58.4						-0 44 19.00		$\sigma$ Octantis SP.
	-56 46 46.86					1 27.36				-0 44 17.47		$\sigma$ Octantis SP. R.
	-56 46 47.25									-0 44 17.86		$\sigma$ Octantis SP
5.28	-0 13 42.57					0.23				55 50 13.95	699	$\alpha$ Columbæ.
	10 16 33.95	30.300	67.0	71.2	63.0	10.23	1.53		16 17.20	66 36 56.60		$\odot$
	10 49 4.41					10.79	1.61			66 36 53.14		$\odot$
	10 14 8.50	.286	67.4	70.8	63.0	10.20	1.27			66 18 14.18		$\gamma$
	18 22 30.28	.278	68.0	70.3	63.3	18.77	4.10	20.818	13.13	74 26 28.57		$\gamma$
	3 27 0.56	.269	68.0	70.0		3.41				59 31 0.72	2741	Fomalhaut R.
3.30	3 27 2.55									59 31 2.71	2741	Fomalhaut.
	83 5 37.91	.285	65.0	58.8	55.6	7 24.58				139 16 59.24	365	$\alpha$ Persei.
4.17	56 39 3.36	.276	63.4	58.0	55.5	1 27.67	4.13			112 44 23.65		Ceres.
	-56 46 46.79	30.276	63.6	58.0	55.8	1 28.10				-0 44 18.14		$\sigma$ Octantis SP. R.
4.61	-56 46 48.75									-0 44 20.10		$\sigma$ Octantis SP.
	-56 46 48.59					1 28.10				-0 44 19.94		$\sigma$ Octantis SP. R.
4.61	-56 46 48.81									-0 44 20.16		$\sigma$ Octantis SP.
	-0 13 44.44					0.23				55 50 12.08	699	$\alpha$ Columbæ.
4.61	-1 53 48.81					1.92				54 10 6.02	732	$\beta$ Columbæ R.
	-1 53 48.16									54 10 6.67	732	$\beta$ Columbæ.

Coincidence of Micrometer Wire with fixed Wire, =20°. 168 Dec. 26<sup>th</sup> =20°. 167 One revolution, =43. #335  
 Correction for Runs =-2#. 35  
 Adopted Zenith Point to Dec. 24<sup>th</sup>, at Noon, =326°. 04'. 05#. 03 From Dec. 24<sup>th</sup>, =326. 04'. 04#. 28  
 Assumed Co-latitude =56°. 03'. 56#. 75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.		
			A	B	C	D	E	F						
			' "	" "	" "	" "	" "	" "						
♂ 26 Dec.	807	Canopus . . . . M.R.	44	41.6	29.9	39.0	35.0	26.7	41.0	20.800	-25.33	164 44 09.28	T.M.	
	807	Canopus . . . . .	23	68.0	65.8	74.5	52.6	66.0	41.6			307 24 01.46	T.M.	
	838	Sirius . . . . . M.R.	38	41.0	45.0	14.1	63.0	09.4	48.5	20.817	-26.22	128 38 9.99	T.M.	
	838	Sirius . . . . .	29	64.6	47.5	64.0	52.0	58.5	48.5			343 29 55.80	T.M.	
	883	♁ Canis Maj. M.R.	16	40.1	50.2	18.4	70.0	16.0	53.5	20.510	-13.84	138 16 26.85	T.M.	
	883	♁ Canis Majoris . . .	51	51.6	35.5	53.7	39.0	43.7	32.5			333 51 43.07	T.M.	
		B Octantis SP. R.	33	34.2	50.0	42.7	34.8	31.3	02.9	7 19 16	+12.68	202 33 25.08	T.M.	
		..... D.	34	61.0	61.9	70.2	24.2	69.5	25.0	7 25 00	-8.14	269 34 43.44	T.M.	
		..... R.	33	36.8	02.1	51.4	42.2	45.6	03.7	7 30 20	+4.82	202 33 24.86	T.M.	
		..... D.	34	55.2	55.9	64.2	18.8	63.8	19.1	7 35 55	-2.27	269 34 43.52	T.M.	
		..... R.	33	40.2	05.0	54.8	45.0	47.8	07.9	7 41 20	+0.70	202 33 23.88	T.M.	
		(a) ..... D.	34	53.2	55.0	62.8	16.5	63.1	17.2	7 46 30	-0.04	269 34 44.22	T.M.	
		..... R.	33	40.0	05.1	53.6	45.8	47.1	08.0	7 51 40	+0.19	202 33 23.19	T.M.	
		..... D.	34	52.7	57.1	58.7	22.2	60.2	21.5	7 57 00	-1.19	269 34 43.84	T.M.	
		..... R.	33	37.9	01.7	54.9	38.6	47.4	01.9	8 03 20	+3.50	202 33 23.64	T.M.	
		..... D.	34	56.9	61.2	63.6	26.6	65.0	25.5	8 08 30	-6.93	269 34 42.49	T.M.	
		1885 Antares . . . . M.R.	12	55.8	72.1	40.5	86.0	40.2	65.8	21.422	-50.62	138 12 8.67	T.M.	
		1885 Antares . . . . .	55	72.0	51.0	74.8	54.0	63.3	51.0			333 56 1.48	T.M.	
	♀ 27 Dec.		(b) ☉ N.L. . . . M. . .	56	38.4	26.1	43.0	26.2	37.3	18.5	21.661	-1 00.26	336 55 31.36	T.M.
			☽ S.L. . . . .	22	65.8	51.1	68.7	51.2	62.4	46.4			336 22 57.78	T.M.
		(c) ☿'s center . . . M.R.	30	39.0	58.1	19.2	71.0	23.3	48.4	19.652	+20.77	135 31 2.73	T.M.	
		☿'s center . . . . .	36	76.3	57.4	79.2	58.4	70.6	54.1			336 37 5.57	T.M.	
		♀ S.L. . . . .	50	29.3	15.9	31.0	15.0	28.6	11.0			344 50 21.77	T.M.	
		2741 Fomalhaut . . . . .	30	76.5	58.2	80.7	57.8	69.5	54.6			329 31 06.13	T.M.	
		31 α Phœnicis . . M.R.	20	41.2	34.8	49.1	30.2	38.2	29.0	22.080	-1 17.16	155 19 19.60	T.M.	
		31 α Phœnicis . . . . .	48	63.0	50.0	60.6	47.6	47.0	43.4			316 48 51.91	T.M.	
♂ 28 Dec.			(e) Ceres . . . . .	37	45.3	78.1	72.7	37.0	42.3	20.5			22 37 49.09	T.M.
		619	Rigel . . . . . M.R.	31	51.8	62.4	19.6	80.5	24.2	63.4	19.832	-13.51	120 32 3.51	T.M.
	619	Rigel . . . . .	35	67.8	59.5	67.2	62.3	68.2	59.8			351 36 4.22	T.M.	
♀ 29 Dec.		(d) ☉ S.L. . . . M. . .	30	58.8	47.0	60.0	49.4	54.2	43.0	22.828	-1 47.53	336 29 4.66	T.M.	
		☉ N.L. . . . .	1	42.2	30.4	40.6	33.4	35.8	26.0			337 01 34.68	T.M.	
		γ Andromæ . . . . .	29	26.0	68.8	61.4	14.8	89.0	04.2			41 29 43.66	T.M.	
		Companion . . M. . .	.....	.....	.....	.....	.....	.....	.....	20.044	+4.04	41 29 47.70	T.M.	
		z Octantis SP. . . . .	29	29.0	23.6	38.0	43.4	44.2	47.1	14 14 30	1.07	267 29 16.14	T.M.	
		θ Persei . . . . .	25	40.1	84.0	77.2	27.2	104.3	16.8			48 25 58.19	T.M.	
		γ Persei . . . . M. . .	38	48.3	86.5	80.8	32.4	105.9	23.0	19.246	+36.95	52 39 39.45	T.M.	
		353 Eridani . . . . M.R.	45	43.0	56.8	22.6	72.8	23.0	55.2	19.895	-10.77	141 45 55.66	T.M.	
		353 Eridani . . . . .	22	22.1	08.0	23.0	07.2	14.9	03.5			330 22 13.56	T.M.	
		365 α Persei . . . . .	9	32.4	72.7	67.0	16.6	69.1	4.07.2			49 09 47.51	T.M.	
		424 m <sup>2</sup> Eridani . . M.R.	31	41.0	49.0	14.8	70.0	13.3	53.0	21.061	-36.26	136 31 3.29	T.M.	
		424 m <sup>2</sup> Eridani . . . . .	37	12.7	01.3	13.8	05.0	08.2	57.8			335 37 6.80	T.M.	
		482 X Eridani . . . . .	48	24.4	11.9	26.6	10.6	16.0	01.2			325 48 14.86	T.M.	
		582 ζ Aurigæ . . . . .	46	27.0	72.2	65.1	17.8	95.0	06.4			40 46 47.11	T.M.	
		588 η Aurigæ . . . . .	56	59.6	103.7	98.0	48.2	126.9	37.4			40 57 18.79	T.M.	
		611 Capella . . . . .	44	31.0	71.9	70.4	16.0	93.6	07.2			45 44 47.97	T.M.	
		σ Octantis SP. . . . .	17	24.1	23.4	37.6	40.6	39.8	42.3			269 17 14.46	T.M.	
		673 α Leporis . . . . M.R.	4	33.6	39.4	06.0	58.9	02.8	45.5	19.710	-18.23	130 04 48.53	T.M.	
		673 α Leporis . . . . .	3	26.1	14.1	25.0	19.0	22.0	15.0			342 03 20.34	T.M.	
		699 α Columbæ . . . . .	50	29.5	17.0	31.6	13.8	20.5	07.1			325 50 19.89	T.M.	
	746 γ Columbæ . . . . .	41	66.1	56.3	68.2	51.2	58.3	43.1			324 41 57.05	T.M.		
	787 κ Columbæ . . M. . .	55	39.1	33.8	43.8	29.4	35.8	18.0	21.278	-45.01	324 54 48.06	T.M.		

(a) The Apparent R. of B Octantis is 19<sup>h</sup>. 45<sup>m</sup>. 15<sup>s</sup>. The times of observation are by Grimaldi, 8<sup>h</sup>. 18<sup>m</sup>. 0<sup>s</sup>. of which correspond to 8<sup>h</sup>. 15<sup>m</sup>. 43<sup>s</sup>. of Hardy, the latter being 45<sup>s</sup>. fast on Sid. Time. Grimaldi's gaining rate on Hardy=2.71 in ten minutes. An excellent observing night. No wind.

(b) Observed at the 2<sup>nd</sup> and 5<sup>th</sup> Wires.  
 (c) Correction for Motion, 0<sup>h</sup>. 67  
 (d) Limbs undulating.  
 (e) This place of Ceres differs 10'. from that in the Ephemeris.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. A S C	NAME OF STAR or PLANET.																																						
					Attach.	Out.	Wet Bulb.																																															
#	o	'	"	Inch.	o	o	o	" "	" "	r	" "	o	'	"																																								
5.37	-18	40	5.00	30.269	64.6	58.0		19.54				37	23	32.21	807	Canopus R.																																						
	-18	40	2.82																									Canopus.																										
2.90	17	25	54.29	.265	65.0	57.8		18.16				73	30	9.20	838	Sirius R.																																						
	17	25	51.52																									Sirius.																										
4.96	7	47	37.43	.260	65.0	57.9		7.92				63	51	42.10	883	δ Canis Maj. R.																																						
	7	47	38.79																									δ Canis Majoris.																										
4.26	-56	29	20.80	.258	65.0	58.0		1 27.07				-0	26	51.12	883	β Octantis SP. R.																																						
	-56	29	20.84																									D.																										
4.19	-56	29	20.58					1 27.07				-0	26	50.90		R.																																						
	-56	29	20.76																									D.																										
4.05	-56	29	19.60					1 27.07				-0	26	49.92		R.																																						
	-56	29	20.06																									D.																										
3.52	-56	29	18.91					1 27.07				-0	26	49.23		R.																																						
	-56	29	20.44																									D.																										
3.07	-56	29	19.36					1 27.07				-0	26	49.68		R.																																						
	-56	29	21.79																									D.																										
5.08	7	51	55.61	30.147	67.5	73.8		7.72				63	56	0.08	1885	Antares R.																																						
	7	51	57.20																									1885 Antares.																										
(4.15)	10	51	27.08	30.122	69.0	74.9	68.8	10.69	1.62		16	17.20	66	39	15.70		☉																																					
	10	18	53.50																											☉																								
	10	33	1.55														.094	69.0	74.4		10.38	1.34				66	37	7.34		♃																								
	10	33	1.29																																								♃											
	5.76	18	46														17.49	.054	69.5	74.0	68.0	18.93	4.23	19.465	14.16	74	50	43.10	2741	♀																								
		3	27														1.85													.042	69.0	71.0		3.38				59	31	1.98	31	♀ Fomalhaut.												
5.76	-9	15	15.32	30.040	69.0	68.0		9.17				46	48	32.26	31	α Phœnicis R.																																						
	-9	15	12.37																									α Phœnicis.																										
3.87	56	33	44.81	29.978	67.0	64.0		1 25.50	4.11			112	39	2.95	619	Ceres.																																						
	25	32	0.77																									Rigel R.																										
	25	31	59.94																									619 Rigel.																										
4.61	10	25	0.38	30.085	69.4	74.3	66.2	10.24	1.55		16	17.30	66	45	23.12	220	☉																																					
	10	57	30.40																											☉																								
	75	25	39.38														.093	69.0	64.4		3 34.61				131	33	10.74		131	γ Andromedæ.																								
	75	25	43.42																																								Companion.											
	5.05	-58	34														48.14	.096	69.0	64.0	61.0	1 32.73				-2	32	24.12	282	z Octantis SP.																								
		82	21														53.91													.106	68.3	63.4	61.2	6 40.06			138	32	30.72	282	θ Persei.													
		86	35														35.17																								.108	68.2	63.8	61.5				60	22	9.65	353	γ Persei.		
		4	18														8.62													.108	68.2	64.0	62.1	4.28			60	22	10.31	353												Eridani R.		
		4	18														9.28																																				Eridani.	
		4.44	83														5													43.23	.108	68.2	64.0	62.2	7 17.26				139	16	57.24	365	α Persei.											
			9														33													0.99													.108	68.2	64.0	62.2	9.56			65	37	7.30	424	m <sup>c</sup> Eridani R.
			9														33													2.52																								
-0			15	49.42	.123	68.2	64.0		0.26				55	48	7.07	482	X Eridani.																																					
74			42	42.83													.134													68.2													64.2	61.8	3 24.79			130	50	4.37	582	ζ Aurigæ.		
74			53	14.51																																																η Aurigæ.		
79			40	43.69	.130	68.2	64.2	61.6	5 1.75				135	49	42.19	611	Capella.																																					
-56	46		49.82																									σ Octantis SP.																										
4.44	15		59	15.75					16.30				72	3	28.80	673	α Leporis R.																																					
	15		59	16.06																									α Leporis.																									
	-0		13	44.39																									699 α Columbæ.																									
	-1		22	7.23																									746 γ Columbæ.																									
	-1	9	16.22	30.130	68.2	64.0	62.0	1.15				54	54	39.38	787	κ Columbæ.																																						

Coincidence of Micrometer Wire with fixed Wire, =20°.167 Dec. 29<sup>th</sup>, =20°.162 One revolution =40°.335  
 Correction for Runs =-2".35  
 Adopted Zenith Point, =326°.04'.04".82  
 Assumed Co-latitude =56°.03'.56".75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction of Microm. or Time.	Concluded reading of Circle.	Initials of Observer.
			A	B	C	D	E	F				
			<i>l</i> <i>h</i>	<i>h</i> <i>h</i>	<i>h</i> <i>h</i>	<i>h</i> <i>h</i>	<i>h</i> <i>h</i>	<i>h</i> <i>h</i>				
♀ 29 Dec.	807	Canopus . . . . M.R.	44 37.8	28.0	28.8	36.8	19.0	40.0	20.682	-20.97	164 44 10.05	T.M.
	807	Canopus . . . . .	23 66.8	65.0	71.9	52.1	64.4	42.1			307 24 00.43	T.M.
	838	Sirius . . . . . M.R.	38 29.1	35.0	01.2	52.4	57.3	37.8	20.526	-14.68	128 38 10.18	T.M.
	838	Sirius . . . . .	29 63.2	51.6	61.5	56.5	58.4	52.0			343 29 57.15	T.M.
	883	δ Canis Maj. M.R.	16 42.0	53.5	19.1	74.1	17.6	57.0	20.564	-16.21	138 16 27.00	T.M.
	883	δ Canis Majoris . . .	51 50.2	37.2	50.8	41.0	42.2	33.7			333 51 42.92	T.M.
	915	η Canis Maj. M.R.	7 37.8	51.6	20.1	67.3	16.5	51.0	20.505	-13.83	141 07 26.08	T.M.
	915	η Canis Majoris . . .	0 51.0	37.4	51.7	38.2	43.0	34.0			331 00 43.10	T.M.
		B Octantis SP. . . .	34 53.0	51.4	65.4	09.2	65.3	11.7			269 34 42.30	T.M.
	1070	α Pix. Naut. . . . .	23 65.6	52.9	67.0	50.8	55.8	46.5			327 23 56.13	T.M.
	1092	ι Ursæ Majoris . . . .	33 26.9	68.0	62.4	12.8	88.0	02.5			48 33 43.14	T.M.
	1114	λ Argus . . . . M.R.	54 22.8	22.1	12.0	36.7	05.2	33.6	19.940	+8.95	154 54 30.39	T.M.
	1114	λ Argus . . . . .	13 47.0	40.8	49.3	33.0	40.0	24.0			317 13 39.01	T.M.
	1152	θ Ursæ Majoris . . . .	12 47.0	85.0	78.0	31.1	104.0	20.0			52 13 00.62	T.M.
	1223	Argusin Vel. M.R.	27 50.0	54.0	38.6	67.8	31.5	60.5	21.540	-55.58	153 26 54.32	T.M.
	1223	Argus in Velis . . . .	41 23.0	15.0	27.1	09.0	15.8	59.5			318 41 15.08	T.M.
	1281	(a) η Argus . . . . M.R.	57 43.0	29.0	37.8	35.5	29.8	41.5	20.558	-15.97	170 57 19.48	T.M.
	1281	η Argus . . . . .	10 55.0	57.5	61.8	39.2	55.1	32.0			301 10 51.88	T.M.
	1319	Hyd. et Crat. M.R.	3 33.3	41.5	08.4	60.0	06.2	44.4	18.538	+1 05.50	134 04 37.06	T.M.
	1319	Hydræ et Crat. . . .	3 39.0	25.8	38.2	30.7	33.6	24.9			338 03 32.22	T.M.
	1378	Hydræ et Crat. . . .	59 62.5	50.2	66.2	48.2	54.9	43.0			326 59 53.78	T.M.
	1448	β Corvi . . . . M.R.	38 35.5	43.2	11.9	61.6	07.8	47.0	20.882	-29.04	134 38 4.72	T.M.
	1448	β Corvi . . . . .	30 10.0	58.1	09.3	02.1	04.4	55.3			337 30 3.66	T.M.
	1596	β Centauri . . . . M.R.	43 43.7	24.4	40.0	30.0	29.2	40.3	21.663	-1 00.54	171 42 33.32	T.M.
	1596	β Centauri . . . . .	25 43.2	42.8	50.0	25.9	41.3	18.7			300 25 37.40	T.M.
	1654	α <sup>1</sup> & α <sup>2</sup> Cent. M.R.	17 37.2	19.0	34.0	22.6	23.8	33.0	20.550	-15.65	172 17 11.94	T.M.
									20.844	-27.51	172 17 00.08	T.M.
	1654	α <sup>1</sup> & α <sup>2</sup> Centauri . . .	50 76.3	76.3	82.3	58.8	75.5	51.3	20.446	-11.46	299 50 59.01	T.M.
	1885	Antares . . . . M.R.	12 38.0	15.6	47.3	13.1	67.5	51.0	20.886	-29.20	138 12 8.80	T.M.
	1885	Antares . . . . .	55 68.1	54.0	70.4	58.7	61.1	53.0			333 56 1.34	T.M.
♂ 30 Dec.		⊙ N. L. . . . M. . . .	5 47.8	32.5	45.8	37.8	38.8	31.2	20.680	-20.79	337 05 18.34	T.M.
		⊙ S. L. . . . .	32 53.2	40.9	52.0	45.0	46.2	39.0			336 32 45.89	T.M.
		(b) γ's center . . M.R.	25 26.0	36.4	01.0	55.8	58.8	37.7	17.655	+1 41.12	134 27 5.82	T.M.
		γ's center . . . . .	40 70.6	54.3	69.0	60.0	61.9	55.5			337 41 1.48	T.M.
	482	X Eridani . . . . .	48 26.2	11.5	27.0	09.2	16.4	01.8			325 48 15.10	T.M.
	515	(c) η Tauri . . . . .	15 32.0	67.0	53.8	45.1	77.8	30.0			15 15 50.88	T.M.
	517	Tauri . . . . M. . . .							15.184	+3 20.19	15 19 11.07	T.M.
		Ceres . . . . M. . . .	53 26.1	69.2	56.5	34.4	86.9	18.5	21.700	-1 02.04	22 52 46.26	T.M.
	582	ζ Aurigæ . . . . .	46 31.4	77.2	70.1	21.2	100.6	09.8			40 46 51.57	T.M.
	588	η Aurigæ . . . . .	56 59.8	105.2	98.5	49.3	128.2	38.0			40 57 19.65	T.M.
	611	Capella . . . . .	44 32.0	74.6	71.4	18.7	95.8	08.8			45 44 49.84	T.M.
		σ Octantis SP. . . .	17 24.0	23.0	36.3	39.8	39.4	42.0			269 17 13.91	T.M.
	673	α Leporis . . . . M.R.	4 34.2	41.6	06.0	60.9	05.0	46.1	19.730	+17.42	130 04 48.99	T.M.
	673	α Leporis . . . . .	3 27.1	11.0	23.5	17.5	20.5	14.6			342 03 19.15	T.M.
	699	α Columbæ . . . . .	50 29.4	16.7	30.0	13.3	20.6	07.0			325 50 19.47	T.M.
	732	β Columbæ . . M.R.	57 41.6	50.1	23.8	66.0	24.1	53.8	19.891	+10.93	147 57 53.79	T.M.
	732	β Columbæ . . . . .	10 23.1	12.1	26.2	08.0	14.5	08.8			324 10 15.63	T.M.
	746	γ Columbæ . . . . .	41 67.0	56.1	68.1	51.0	57.7	44.0			324 41 57.16	T.M.
	787	κ Columbæ . . M. . .	54 39.0	34.0	41.5	26.6	33.7	17.0	19.752	+16.54	324 54 48.15	T.M.
	807	Canopus . . . . M.R.	44 36.0	25.5	28.0	34.0	18.2	38.0	20.620	-18.47	164 44 10.77	T.M.
807	Canopus . . . . .	23 66.2	65.1	79.5	52.1	63.8	42.0			307 24 01.50	T.M.	
838	Sirius . . . . M.R.	38 36.4	40.8	07.4	59.4	03.6	45.0	20.682	-20.97	128 38 10.51	T.M.	
838	Sirius . . . . .	29 65.3	51.1	62.0	56.0	59.0	52.9			343 29 57.67	T.M.	

(a) Bisected at the 2<sup>nd</sup> and 5<sup>th</sup> Wires.  
Dec. 29<sup>th</sup>, a remarkably fine observing night.

(b) Correction for Motion, 0<sup>o</sup> 77  
(c) No. 515 appears larger than No. 517.



CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi-diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.					
					Attach.	Out.	Wet Bulb.														
#	°	'	''	Inch.	°	'	''	''	''	''	''	°	'	''							
5-24	-18	40	5-77	30-124	68-2	63-6	61-8	19-23				37	23	31-75	807	Canopus R.					
	-18	40	3-85														37	23	33-67	807	Canopus.
3-67	17	25	54-10					17-88				73	30	8-73	838	Sirius R.					
	17	25	52-87																	73	30
4-96	7	47	37-65	-117	68-2	63-6		7-79				63	51	42-19	883	δ Canis Maj. R.					
	7	47	38-27														63	51	42-81	883	δ Canis Majoris.
4-59	4	56	38-57	-117	68-2	63-6		4-92				61	0	40-24	915	η Canis Maj. R.					
	4	56	38-45														61	0	40-12	915	η Canis Majoris.
4-70	-56	29	22-35	-114	68-2	63-5		1 25-73				-0	26	51-33		B Octantis SP.					
	1	19	51-48		68-0	63-2						1-32					57	23	49-55	1070	α Pix. Naut.
	82	29	38-49									6 46-31					138	40	21-55	1092	ι Ursæ Majoris.
	-8	50	25-74		68-0	63-2	61-2					8-85					47	13	22-16	1114	λ Argus R.
4-70	-8	50	25-64	-087	68-0	63-2	61-2					47	13	22-26	1114	λ Argus.					
	86	8	55-97		67-8	63-2	61-2					1152									θ Ursæ Majoris.
4-70	-7	22	49-67	-078	67-6	63-0	61-5	7-37				48	40	59-71	1223	Argus in Velis R.					
	-7	22	49-57														48	40	59-81	1223	Argus in Velis.
5-68	-24	53	14-83	-074	67-8	63-0	61-5	26-39				31	10	15-53	1281	η Argus R.					
	-24	53	12-77														31	10	17-59	1281	η Argus.
4-64	11	59	27-59	-080	67-5	63-0		12-09				68	3	36-43	1319	Hyd. et Crat. R.					
	11	59	27-57														68	3	36-41	1319	Hydræ et Crat.
4-19	0	55	49-13	-080	67-5	63-0		0-92				56	59	46-80	1378	Hydr. et Crat.					
	11	25	59-93		67-5	64-0											67	30	8-17	1448	β Corvi R.
5-36	11	25	59-01	-083	67-5	64-0		11-49				67	30	7-25	1448	β Corvi.					
	-25	38	28-67		68-0	67-6											30	25	0-99	1596	β Centauri R.
5-38	-25	38	27-25	-092	68-0	67-6		27-09				30	25	2-41	1596	β Centauri.					
	-26	13	7-29														29	50	21-76		α' & β Centauri R.
5-07	-26	12	55-43	-100	68-2	69-4		27-70				29	50	33-62	1654	α' & β Centauri.					
	-26	13	5-64														29	50	23-41	1654	α' & β Centauri.
5-07	-26	12	54-18	30-104	69-0	74-5		7-70				29	50	34-87							
	7	51	55-85														63	56	0-30	1885	Antares R.
5-07	7	51	56-69									63	56	1-14	1885	Antares.					
	11	1	13-69	30-102	70-0	76-4	69-0	10-94	1-64	16 17-30		66	49	2-44		⊙					
10	28	41-24					10-39	1-56					66	49	4-12		⊙				
(3-65)	11	36	58-83	-100	70-3	76-0		11-42	1-56			67	41	5-44		♄ R.					
	11	36	56-83														67	41	3-44		♄
4-07	-0	15	49-55	-075	70-0	66-5	65-0	0-26				55	48	6-94	482	χ Eridani.					
	49	11	46-23		70-0	66-5	65-5					1 5-37					105	16	48-35	515	η Tauri.
4-07	49	15	6-42	-074	69-4	66-5		1 5-49	4-10			105	20	8-66	517	Tauri.					
	56	48	41-61														112	54	0-40		Ceres.
4-07	74	42	46-92	-075	69-0	66-4		3 23-52				130	50	7-19	582	ζ Aurigæ.					
	74	53	15-00														131	0	37-67	588	η Aurigæ.
4-07	79	40	45-19	-077	69-0	66-0		5 0-16				135	49	42-10	611	Capella.					
	-56	46	50-74		69-0	66-0						1 26-15					-0	44	20-14		σ Octantis SP.
4-07	15	59	15-66	-072	69-0	66-0		16-21				72	3	28-62	673	α Leporis R.					
	15	59	14-50														72	3	27-46	673	α Leporis.
4-71	-0	13	45-18					0-23				55	50	11-34	699	α Columbæ.					
	-1	53	49-14																	54	10
4-09	-1	53	49-02					1-87				54	10	5-86	732	β Columbæ.					
	-1	22	7-49																	54	41
6-14	-1	9	16-50					1-35				54	54	39-11	787	κ Columbæ.					
	-18	40	6-12																	37	23
4-09	-18	40	3-15	30-072	69-0	65-8	64-0	19-12				37	23	34-48	807	Canopus.					
	17	25	54-14														73	30	8-66	838	Sirius R.
4-09	17	25	53-02					17-77				73	30	7-54	838	Sirius.					

Coincidence of Micrometer Wire with fixed Wire, =20°.162 One revolution =40°.335.  
 Correction for Runs =-2°.35  
 Adopted Zenith Point to Sirius, on the 29<sup>th</sup>, =326°. 04'. 04''.28 From Sirius, =306°. 04'.04''.65  
 Assumed Co-latitude =56°. 03'. 56''.75



ZENITH DISTANCES OBSERVED WITH THE MURAL CIRCLE IN THE YEAR 1837.

Month and Day.	No. A.S.C.	NAME OF STAR or PLANET.	Microscopes.						Micrometer or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Initials of Observer.	
			A	B	C	D	E	F					
			''	''	''	''	''	''					
30 Dec.	883	δ Canis Maj. M.R.	16 29.9	40.5	04.8	61.0	04.5	44.1	20.245	-3.35	138 16 26.64	T.M.	
	883	δ Canis Majoris....	51 48.2	35.0	48.2	38.8	41.1	32.0			333 51 40.96	T.M.	
	915	η Canis Maj. M.R.	7 31.8	42.1	10.8	60.7	06.7	46.1	20.315	-6.17	141 07 26.06	T.M.	
	915	η Canis Majoris...	0 50.0	37.0	49.6	36.6	43.0	33.2			331 00 42.11	T.M.	
		B Oct. SP...M.R.	32 89.6	46.0	93.8	32.5	85.6	60.2	19.656	+20.41	202 33 28.12	T.M.	
		B Octantis SP....	34 51.3	50.8	63.0	08.8	64.1	11.0			269 34 41.13	T.M.	
	1114	λ Argus.....M.R.	54 38.4	37.2	28.2	49.5	22.8	46.2	20.330	-6.78	154 54 29.63	T.M.	
	1114	λ Argus .....	13 47.9	40.1	49.5	34.0	40.1	25.8			317 13 39.56	T.M.	
	1152	(a) θ Ursæ Majoris...	12 39.0	77.4	71.0	22.0	96.4	12.2			52 12 52.78	T.M.	
	1223	Arg. in Velis M.R.	26 36.8	42.8	27.4	56.0	19.5	47.4	19.720	+17.83	153 26 55.74	T.M.	
	1223	Arg. in Velis.....	41 22.8	15.3	27.1	08.3	17.0	59.2			318 41 15.13	T.M.	
	1281	η Argus..... M.R.	57 35.2	21.5	33.0	25.8	24.0	32.2	20.360	-7.99	170 57 19.99	T.M.	
	1281	η Argus.....	10 55.1	58.8	63.4	40.2	54.6	32.9			301 10 51.21	T.M.	
		τ Oct. SP... M.R.	44 53.9	12.3	62.2	58.8	52.1	25.0	20.845	-27.55	203 44 06.13	T.M.	
		τ Octantis SP. ....	23 73.0	72.0	78.2	35.5	83.9	36.6			268 24 02.88	T.M.	
	31 Dec.		(b) ☉ S.L. .... M..	36 34.0	23.0	35.3	26.9	31.2	18.0	19.432	+29.44	336 36 57.39	T.M.
			☉ N. L. ....	9 41.2	25.5	38.6	30.0	32.6	24.9		+0.32	337 09 32.10	T.M.
		2741	Fomalhaut.. M.R.	38 36.2	53.5	18.0	71.2	22.0	52.6	22.590	-1 37.93	142 37 3.38	T.M.
2741		Fomalhaut .....	30 75.0	59.7	77.8	61.2	67.2	57.0			329 31 6.88	T.M.	
31		(c) α Phœnicis.. M.R.	19 35.9	37.0	29.2	45.6	22.4	42.2	20.571	-16.50	155 19 18.52	T.M.	
31		α Phœnicis.....	48 59.4	51.0	60.0	46.0	49.5	39.5			316 48 50.88	T.M.	
		Ceres .....	54 44.4	87.0	84.2	44.1	113.5	28.0			22 55 06.47	T.M.	
611		Capella.....	44 36.4	68.0	76.4	11.5	95.5	07.0			45 44 48.76	T.M.	
		σ Octantis SP....	17 17.6	26.8	19.0	56.0	26.5	53.0			269 17 12.98	T.M.	
673		α Leporis..... R.	4 42.8	65.2	19.0	80.0	25.7	58.5			130 04 47.78	T.M.	
673		α Leporis.....	3 26.0	08.7	29.7	09.8	25.2	08.0			342 03 18.02	T.M.	
699		α Columbæ.....	50 33.0	10.5	32.4	10.0	17.7	08.8			325 50 18.71	T.M.	
732		β Columbæ.. M.R.	57 32.9	24.4	30.5	28.1	21.0	24.0	19.470	+27.91	147 57 54.25	T.M.	
732		β Columbæ .....	10 27.6	07.8	28.8	06.9	12.7	04.2			324 10 14.93	T.M.	
746		(e) γ Columbæ .....	41 73.2	49.8	69.4	49.8	54.2	49.0			324 41 57.41	T.M.	
807		Canopus.... M.R.	44 34.7	01.8	47.0	51.5	24.8	06.6	20.280	-4.76	164 44 12.28	T.M.	
807		Canopus.....	23 68.5	60.1	63.1	55.7	53.8	50.0			307 23 58.58	T.M.	
838		Sirius.....M.R.	38 24.4	46.0	58.2	61.0	03.5	37.5	20.610	-18.07	128 38 9.75	T.M.	
838	Sirius .....	29 65.5	50.1	67.5	49.7	64.5	46.9			343 29 57.32	T.M.		

(a) A Blotch. (d) Found bisected by the fixed Wire.  
 (b) Observed at the Meridian and 5<sup>th</sup> Wires. (e) Cloudy on the Meridian, observed at the 5<sup>th</sup> Wire.  
 (c) Obscured and faint, observed at the Meridian and 4<sup>th</sup> Wires.



-CALCULATION OF GEOCENTRIC SOUTH POLAR DISTANCES.

Sec. of appa- rent Zenith Point.	Apparent Zenith Distance.			Barom.	Thermometer.			Refraction.	Parallax.	Microm. for opposite Limb.	Semi- diameter.	Geoc. S. P. D. of Center.			No. ASC	NAME OF STAR or PLANET.	
					Attach.	Out.	Wet Bulb.										
#	o	i	''	Inch.	o	o	o	'	''	r	'	''	o	i	''		
3.80	7	47	38.01	30.073	69.0	65.4	64.0	7.75				63	51	42.51	883	δ Canis Maj. R.	
	7	47	36.31													δ Canis Majoris.	
4.09	4	56	38.59	.071	69.0	65.0	64.0	4.90				61	0	40.24	915	η Canis Maj. R.	
	4	56	37.46													η Canis Majoris.	
4.63	-56	29	23.47	.056	69.0	61.4	60.2	1 25.36				-0	26	52.08	915	B Oct. SP. R.	
	-56	29	23.52													B Octantis SP.	
4.60	-8	50	24.98	.041	68.0	61.0	60.2	8.87				47	13	22.90	1144	λ Argus R.	
	-8	50	25.09													λ Argus.	
5.44	86	8	48.13	.034	68.0	63.4	63.0	7.36				48	40	58.30	1223	θ Ursæ Majoris.	
	-7	22	51.69													Arg. in Velis R.	
5.60	-7	22	49.52	.032	68.5	63.9	63.0	26.31				48	40	59.87	1223	Argus in Velis.	
	-24	53	15.34													η Argus R.	
4.51	-24	53	13.44	30.038	68.5	64.0	63.0	1 29.34				31	10	17.00	1281	η Argus.	
	-57	40	1.48													τ Octantis SP. R.	
5.13	-57	40	1.77	.020	72.0	74.3		10.30	1.57		16 17.30	66	53	15.52	883	⊙	
	10	32	52.74													30.076	71.0
4.70	3	27	1.27	.021	71.4	70.5		3.35				59	31	1.37	2741	Fomalhaut R.	
	3	27	2.23													Fomalhaut.	
2.90	-9	15	13.87	.054	69.0	65.4	63.0	1 26.42	4.08			46	48	33.76	31	α Phœnicis R.	
	-9	15	13.77													α Phœnicis.	
4.59	56	51	1.82	.055	69.0	65.5	63.0	5 0.23				46	48	33.86	31	α Phœnicis.	
	79	40	44.11													112	56
3.54	-56	46	51.67	.054	69.0	65.4		1 26.17				135	49	41.09	611	Capella.	
	15	59	16.87													-0	44
5.43	15	59	13.37	.052	69.2	65.8		16.22				72	3	29.84	673	α Leporis R.	
	-0	13	45.94													72	3
3.80	-1	53	49.60	.038	69.2	66.0		0.23				55	50	10.58	699	α Columbæ.	
	-1	53	49.72													54	10
5.43	-1	22	7.24	30.034	69.2	66.0		1.88				54	10	5.15	732	β Columbæ.	
	-18	40	7.63													54	41
3.54	-18	40	6.07	.038	69.2	66.0		1.35				37	23	30.03	807	Canopus R.	
	17	25	54.90													37	23
3.54	17	25	52.67	.038	69.2	66.0		19.09				73	30	9.39	838	Sirius R.	
	17	25	52.67													73	30

Coincidence of Micrometer Wire with fixed Wire, =20<sup>r</sup>.162 One revolution =40<sup>r</sup>.335  
 Correction for Runs =-2<sup>r</sup>.35  
 Adopted Zenith Point, =326°. 04'. 04<sup>r</sup>.65  
 Assumed Co-latitude =56°. 03'. 56<sup>r</sup>.75



STATE OF TEXAS

COMMISSIONERS OF GENERAL LAND OFFICE

Section	Block	Acres	Original Patent	Original Patentee	Original Patent Date	Original Patent No.	Original Patent Locality	Original Patent Description	Original Patent Remarks
1	1	40	1850	John Smith	1850	1000	Section 1, Block 1	40 Acres	
2	1	40	1850	John Smith	1850	1000	Section 2, Block 1	40 Acres	
3	1	40	1850	John Smith	1850	1000	Section 3, Block 1	40 Acres	
4	1	40	1850	John Smith	1850	1000	Section 4, Block 1	40 Acres	
5	1	40	1850	John Smith	1850	1000	Section 5, Block 1	40 Acres	
6	1	40	1850	John Smith	1850	1000	Section 6, Block 1	40 Acres	
7	1	40	1850	John Smith	1850	1000	Section 7, Block 1	40 Acres	
8	1	40	1850	John Smith	1850	1000	Section 8, Block 1	40 Acres	
9	1	40	1850	John Smith	1850	1000	Section 9, Block 1	40 Acres	
10	1	40	1850	John Smith	1850	1000	Section 10, Block 1	40 Acres	
11	1	40	1850	John Smith	1850	1000	Section 11, Block 1	40 Acres	
12	1	40	1850	John Smith	1850	1000	Section 12, Block 1	40 Acres	
13	1	40	1850	John Smith	1850	1000	Section 13, Block 1	40 Acres	
14	1	40	1850	John Smith	1850	1000	Section 14, Block 1	40 Acres	
15	1	40	1850	John Smith	1850	1000	Section 15, Block 1	40 Acres	
16	1	40	1850	John Smith	1850	1000	Section 16, Block 1	40 Acres	
17	1	40	1850	John Smith	1850	1000	Section 17, Block 1	40 Acres	
18	1	40	1850	John Smith	1850	1000	Section 18, Block 1	40 Acres	
19	1	40	1850	John Smith	1850	1000	Section 19, Block 1	40 Acres	
20	1	40	1850	John Smith	1850	1000	Section 20, Block 1	40 Acres	















