

An account of a surprizing meteor, seen in the air, March the 6th, 1715/16, at night. Containing, I. A description of this meteor, from the author's own observations. II. Some historical accounts of the like meteors before; with extracts from such letters, and accounts of this, as the author has receiv'd. III. The principal phænomena of this meteor. IV. Conjectures for their solution. V. Reasons why our solutions are so imperfect. VI. Inferences and observations from the premises / By William Whiston, M. A.

Contributors

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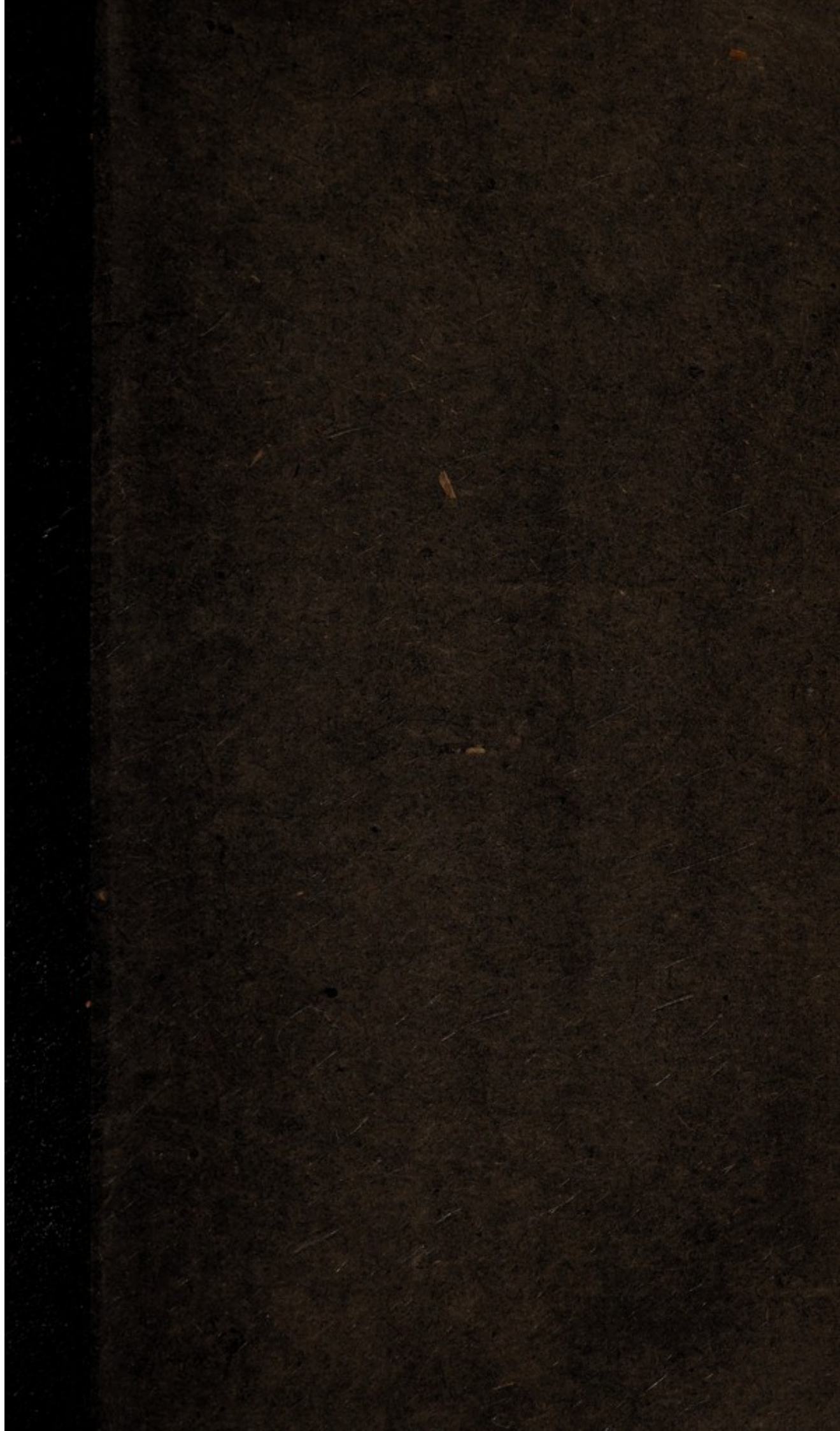
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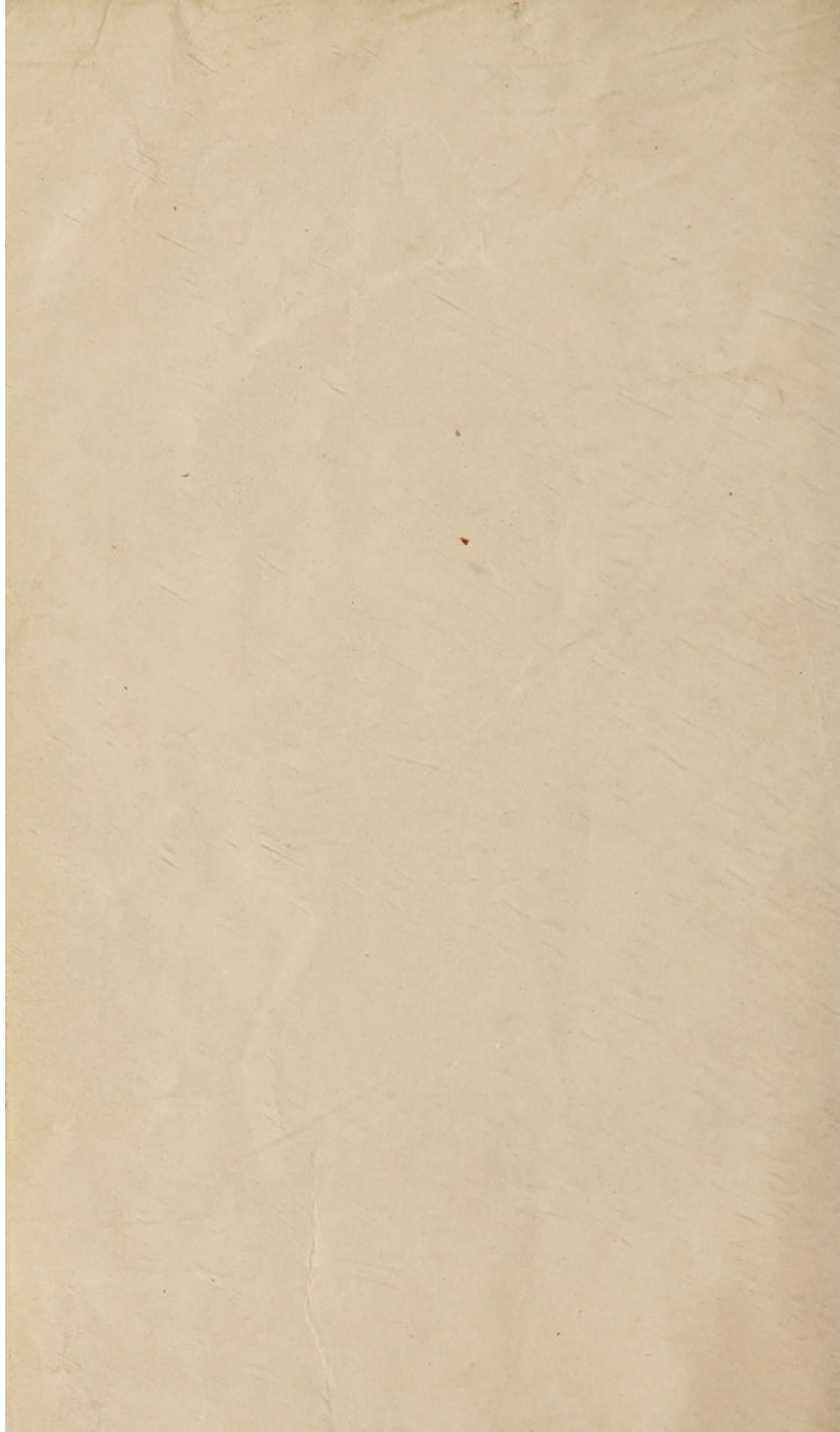


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An ACCOUNT of a
Surprizing METEOR,
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March the 6th, 17¹⁵/₁₆, at Night.

CONTAINING,

- I. A Description of this METEOR, from the *Author's* own Observations.
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By WILLIAM WHISTON, M. A.



L O N D O N :

Printed for J. SENEX, at the *Globe* in *Salisbury-Court* ; and
W. TAYLOR, at the *Ship* in *Pater-Noster-Row*, 1716.

AN ACCOUNT of a
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- I. A Description of this Meteor, from the Author's own Observations.
- II. Some Historical Accounts of the like Meteors before; with Extracts from such Authors, and Accounts of this, as the Author has received.
- III. The Principal Phenomena of this Meteor.
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By WILLIAM WHISTON, M. A.



L O N D O N :

Printed for J. Stensky, at the Globe in Salisbury-Court; and
 W. Taylor, at the Ship in Water-Street, 1716.



Some ACCOUNT
OF A
Surprizing Meteor, &c.

I. A Description of this METEOR
seen in the AIR, March the 6th
17¹⁵/₁₆, from the AUTHOR's own
Observations.



THE Day here mentioned was very Calm, Clear, and Warm with us at London. The Wind had been much North or North-East the preceding Winter, as the very great Frost we so long had from that Quarter will witness ; but it was at this time nearly Northwest. I rode out that Afternoon with a Friend to Hampstead and Highgate, and by an accidental Mistake was later abroad than usual. As we were returning back, the direct Way to London from Highgate,

and were come as far as *Nether Holloway*, about 35 Minutes past Six a Clock ; we saw a sort of a Cloud *North-East*, which stretched it self a great way towards, and far beyond the *North* ; and towards, and far beyond the *East*. Its lowest Limb, which was best defin'd, seemed to be elevated about Eight Degrees above the Horizon ; and its upper was very irregular and uneven ; as were also the Ends, excepting near the Bottom *Eastward*, which was of a Piece with the lower Limb, and joined to it. The lower Limb soon exhibited the Appearance of an odd-colour'd Light, moving and removing all along it ; but so that thin Clouds, or Vapours, in great Agitation, seem'd after a disorderly manner to be mixed with, or to intercept the Light it self in many Places.

The Upper Parts of this Cloud soon followed the Lower, in exhibiting strange *Phænomena*. Upright Pyramids, or Columns of Light arose from it ; but in a very undulating and moveable State, still changing their Places and Positions. Many Apertures seem'd to be made at Intervals in this Cloud ; and they look'd so light, as if the Moon were going to appear in each of them. One of them was so remarkable, that it deserved a peculiar Regard. It was large ; its Colour a Mixture of the Rainbow-Colours, with such strange Mutations also, and Side-Motions, like certain thin Clouds or Vapours, and those plac'd in Rows, that 'tis not easy to describe it ; nor was it easy for a Spectator to view it, without some Concern and Fear what it would come to.

About

About this Time, thin Films of bright light shot themselves frequently and suddenly from the Columns of Light, or the interrupted top of this Cloud sideways, or horizontally, quite over our Heads; and then either wholly disappear'd, or rather left such Remains, as look'd like common Clouds, without their former Brightness; while the main Cloud spread farther, and seem'd to be ready to encompass round: Which it did soon, all but towards the South; which was clear, at least while I observ'd it.

This strange Cloud, with all the lightsome columns and Films deriv'd from it, were so thin, as to permit us to see the fixed Stars every where thro' them, excepting its densest Part; thro' which, I do not remember that I could see any.

About 15 or 20 Minutes after Seven, the Sky came to it self, and these odd sort of Phænomena gradually vanished away: So that by that time we came into the City, we saw no other remains of what we had seen abroad, but that of a Mist or Fogg; which, not improbably, was derived from it, or occasion'd by it.

After the Interval of about an Hour and half from the End of this first, I was called out to view another Scene, of somewhat a different nature, but deriv'd in general, I suppose, from the same Cause. It was that of a plainly Northern *Twilight*, or *Aurora Borealis*, which I had once seen before, but never with such surprising Circumstances.

There seem'd to be a vast Fund of lightsome hours in the North, North-East, and North-Parts of the Sky, joining to the Horizon; and

and having its upper Limb, which was the most enlighten'd, 25 or 30 Degrees, and in some Parts more, above the Horizon. From this Fund, which was beyond or above a Cloud, which I saw towards the *West*, there arose perpendicular Columns or Pyramids of Light, in several Places by turns; they often changing their Places and Positions.

Besides these, which were of somewhat a more quiet and abiding Nature, there were seen to arise from the Fund, Fumes or Steams, like those from a boiling Pot, (which some would call imperfect Flashes of Lightning) flying upwards, about Five in a Second, with a prodigious Velocity; but never seem'd in this Form to reach the Zenith; no more than did any of the Columns. Many of them also were seen as they flew up, only in some part of their Course; while the rest of their Appearance was in part, or in the whole interrupted.

In this Fund, as well as in the former, such Apertures appear'd, as have been already described; (those, I mean, without Colours, which looked as if the Moon were breaking out from behind the Clouds. Nor did there want the Films of Vapours, which were shot sideways; and left some small Clouds, or Remains far beyond our Vertex towards the *South*. In short, all the Air was in a great Agitation, Disorder, and Confusion; and the Light was so great, especially by Fits, that I doubt not but a good Print might have been read by its Assistance.

This Sort of Appearance, tho' with Variety enough, continued many Hours: Only the Fund by degrees was much exhausted by the Emission

Emissions and Fumes ; insomuch that about 12 a Clock, when I last saw it, its higher Limb was scarce Three Degrees above the Horizon : Tho' at the same time its Light was very great, and the Fumes full as copious and constant as ever.

All was not over, I perceive by others Accounts, till about Half an hour after Three in the Morning ; but I saw it not considerably after Midnight.

This is as full an Account of what I saw, as I can well give : Tho' I own, there were several Things observ'd by others, and some very Remarkable ones also, which I did not myself see ; which therefore are omitted here : However, they shall be presently taken notice of, under the next Head ; where I shall insert Extracts from such Letters, or Accounts, as I have received from abroad : In which I shall omit what is common with the foregoing Narration, and confine my self chiefly to what is peculiar in any of them.

Mr. Snow's Account of Two Appearances of the Northern Twilight in the Reign of Queen Elizabeth.

(2.) The 7th of October [1564] at Eight of the Clock at Night, the West Part of the Northern Hemisphere was covered with Flames of Fire : Proceeding towards the Middle of the Firmament.

II. Some



II. *Some Historical Accounts of the like Meteors before : With Extracts from several Letters and Accounts of this, which the Author has receiv'd from Others.*

(1.) *Mr. Hollinhead's and Mr. Stow's Accounts of such a Meteor in the Reign of Henry IV.*

A Bout the Beginning of *March* [A. D. 1402.] appear'd a very terrible Blazing-Star, sending forth its fiery Beams, at first towards the *North-East*, and at length towards the *North*, where it seem'd to fix. *Hollinhead.*

In the Month of *March* appear'd a Blazing-Star, first betwixt the *East* and the *North*, and last of all putting fiery Beams towards the *North*. *Stow.* [This seems not to have been a real Blazing-Star, but an *Aurora Borealis*.]

Mr. Stow's Account of Two Appearances of the Northern Twylight in the Reign of Queen Elizabeth.

(2.) The 7th of *October* [1564] at Eight of the Clock at Night, the *North* Part of the Element seem'd to be covered with Flames of Fire ; proceeding towards the Middle of the Firmament :
where,

where, after it had stay'd nigh one Hour, it descended *West* ; and all the same Night, being the next after the Change of the Moon, seemed as Light as it had been Day.

(3.) The Fourteenth of *November* [1574,] being *Sunday*, about Midnight following, divers strange Impressions of Fire and Smoke were seen in the Air, to proceed forth of a black Cloud in the *North*, towards the *South* ; which so continued till the next Morning, that it was Day-light. The next Night following, the Heavens from all Parts did seem to burn marvellous ragingly ; and over our Heads the Flames from the Horizon round about rising, did meet ; and there double and roll one in another, as if it had been in a clear Furnace.

Cambden's Account of this last is, in these Words, *Eliz. A. D. 1574.* " The Clouds flamed
" with Fire, in the Month of *November*, stream-
" ing from the *North*, toward the *South*. And
" the next Night the Heaven seemed to Burn ;
" the Flames arising from the Horizon round
" about, and meeting in the Vertical Point.

(4.) *The Sieur le Peyrere's Account of the like Appearances out of the History of Greenland, written by Mr. Henry Sivers. Printed in High-Dutch at Hamburgh, 1624. p. 26.*

The Summer in *Greenland*, says our Author, is always fine both Day and Night : if we may call Night that perpetual Twilight which, during the Summer, takes up the room of it. As the Days are very short there in Winter, so to make Amends, the Nights are excessive long ;
B and

and Nature produces there a Wonder which I should not have dar'd to write to you, were it not related in the Chronicle of *Island* as a Miracle; and had I not an entire Confidence in Monsieur Retz, who has read, and faithfully interpreted it to me. After Night-fall, and when the Moon is new, or just before, there arises a Light in *Greenland* which shines over all the Country, as if the Moon were full: The darker the Night is, the clearer is the Light. It takes its Course from the *North*, for which Reason it is called the *Northern Light*. It looks like a flying Fire or Rocket, and mounts up into the Air like a high and huge Pole. It passes from one Place to another, and leaves Smoke in the Places that it quits. Such only as have seen it are capable to represent the Swiftnes and Quicknes of its Motion. It continues the whole Night, and vanishes with the Rising of the Sun.

(5.) Gassendus's *Account of a most remarkable Aurora Borea, or Northern Twilight, seen by him in Provence, Septemb. 12, A. D. 1621. taken out of his Physics, Sect. III. Memb. Priori, Lib. II. Op. Tom. II. P. 107, 108.*

It remains now that we discourse a little in this Place, concerning that wonderful Light which sometimes appears in a still Night, when the Moon is invisible, and takes up the entire *Northern Part* of the Heavens, in such a manner as to resemble a Bright Twilight, on which Account it is by some called the *Northern Twilight*. Pliny seems to mean this *Phænomenon*, where he says (*Lib. II. C. 35.*) *A Light has been seen in*
the

the Heavens in the Night time, so that the Brightness of the Day has appeared. Seneca also seems to refer to it, when he says, (*Nat. Quæst. I. 15.*) Some of the Bright Sort of Phænomena continue in one certain Place, and send forth so great a Quantity of Light, that they drive away the Darkeness of the Night, and make an Appearance of Day; till that which nourished them being spent, they first become more obscure, and at length, like a Flame that falls down upon it self, are continually diminished, and reduced to nothing. Where we are to observe however, that what Seneca affirms, that *They continue in one certain Place* is not altogether true. For, although a sort of pale Light makes that Part of the Heavens look whitish for many Hours together, yet are there other more Vivid Rays or Branches of this Light besides, which go farther, and that sometimes *Eastward* and sometimes *Westward*. There are some other wonderful Motions therein also, which I have frequently observed; but I never saw them more remarkable than they were *A. D. 1621, Sept. 12.* At that time the Twilight was almost gone down, the Heavens every where clear and calm, (as indeed it had been the preceding Days, and continued to be so for Three Days afterward.) At this Time, when no Moon was visible, a certain kind of *Twilight* was seen to arise in the *North*, which gradually rose higher and higher, and which was also diversify'd by certain Columns or Rays perpendicular to the Horizon. I don't here mention a certain small sort of whitish Clouds, of very short continuance, which appeared between the *South* and *South-West*; nor a thin Redness in Shape like a Pyramid, Tapering or Sharp at the Top, whose Horizontal Basis was about 12 Degrees broad, and its Top nearly 40 Degrees high.

high. This Redness went forward *Westward*, in such a manner, that it was at first distinguished into three Pyramids, or Parts of the whole Pyramid; the middlemost of which was Fainter or Whiter than those two other Redder Ones on either side of it, but afterwards it mixed it self with them, and at length wore away; I mean this when it had preserved it self so long, (always in a perpendicular Posture) that it had arrived near the *Southwest* Point. When the Redness ceased, that *Northern* Whiteness was elevated above 40 Degrees, or in a manner to the Pole Star; and when it had the Form of an Arch it took up on each side nearly 60 Degrees of the Horizon; where it was somewhat Denser. After this, certain Beams or Columns began to distinguish themselves more plainly. They grew White by Turns, and were a little obscure, about two Degrees broad, and always perpendicular to the Horizon, by which Means they chequered that entire Region of the Air. Soon after this, the Circumference, which was in the Nature of a Fringe, began to be torn or jagged. At which time some of those Columns which were about the Middle, and were the Whitest, began to break out, and in about a Quarter of a Minute, they were in such a manner carried up nearly to the Vertex that they became a kind of Pyramids, such as were terminated over our Heads, and did not vanish under 4 Minutes. It was now about 9 Clock when the White Arch began to decrease, or to be depress'd nearer to the Horizon. At which time certain exceeding white Fumes, which arose within the Compass of those long and continual Pyramids, from the white Columns that were under them, shewed themselves with a Wave-like and a most swift Motion,

Motion, like a sort of Lightning, unto their very Top, where they wholly disappear'd. This Spectacle, which was a most beautiful one, on account of that serene State of the Sky which appeared between the Fumes and the Pyramids, lasted near an Hour, or so long till the Whiteness below was come to be no more than 10 Degrees high. About this time there arose in the *North-East* another Whiteness, though not so bright as the former, and somewhat Red at the Top, about 20 Degrees in Altitude as well as in Latitude, (yet not of the Figure of an Arch) which proceeded with a slow Pace towards the *North*, as also *Westward*. Now here also there were certain white obscure Columns or Beams distinguished from the rest, and always perpendicular to the Horizon; yet were there not any of the long Pyramids, nor any of the white flying Fumes produced here. These Columns when they were risen above the *North* Star began to be mixed together, and the entire Whiteness was about 11 a Clock so far diminished, that it joined itself with the former; and the Appearance of the Twilight was reduc'd to 5 or 6 Degrees of Altitude: Yet did it not vanish very quickly, but lasted till one or two a Clock in the Morning.

Thus I have given a true Account of this Phenomenon: In which there are Two farther Circumstances, which increase our Admiration.

The *One* is this: That it was not only seen by me, and those that liv'd in the Neighbouring Parts; but we are inform'd, that it was also seen — *Eastward*, — *Southward*, — *Westward*, — and *Northward*; i. e. over all *France* at the least;

least ; and, as 'tis reasonable to suppose, much further also.

The *Other* Circumstance is this : That as the Whiteness, or Brightness, which resembled that Appearance of the Dawn of the Day, which we may call *Twilight*, appear'd *Northward* from me ; so did it likewise appear *Northward* from all others that saw it ; and no body saw it *Southward* from them.

Both these Circumstances, I say, increase our Admiration on this Account : That whereas the Matter of this Phenomenon seemed to be a very thin Vapour ; it must thence follow, that such Vapour must be either of a vast Length and Breadth on the Earth's Surface ; or however, of a vast Altitude above it ; that so the Convexity of the Earth might be no Hindrance to its being visible, and this in the same Situation, to Places so remotely distant. Which must be still more remarkably true, if this Appearance was also visible still farther, and even to the very *North Pole* it self. For can any one affirm, that this is not one of those, which the Learned *Peirerius* says are observ'd in *Greenland*, *Iceland*, and *Norway* ? Since those Places certainly are not any Limit, to hinder our seeing them *Southward* ; no more than *Roan* is a Limit as to us, to hinder Mens seeing them still much farther *Northward*. Or may not we venture to say, rather than say nothing at all, that sometimes such Kind of Vapours proceed from the Earth, as are capable of ascending much higher beyond the Top of the Atmosphere ; and of arriving at a mighty Elevation there ; and that the refracted Rays of the Sun may then so far penetrate, that such of the Vapours as meet with them may be enlighten'd by them,
and

and exhibit the Appearance of Twylight? — Or, May it not rather be said, with greater Probability, that it is not repugnant to Reason to suppose, that the Globe of the Earth may sometimes be so dispos'd, that Vapours may be emitted from it all over some considerable Part of its Surface; and they compos'd of those Particles, in this proper Position, that may be capable of affording such a Brightness, may appear under such a Form, and may be mov'd in such a manner as we have describ'd? Or do such Particles, like the *Bononian* Stone, or *Phosphorus*, imbibe such a Light in the day-time, on that Side where they have imbib'd it; *i. e.* that looking *Southward*? Do they, I say, turn it the same way in the Night, and so become visible on the same Side only? Just as Vegetables transplanted affect to do, when they prosper best in the same Position as to the Heavens. Which Observation of a certain Position, is also like the Case of Iron, that is touch'd with a Loadstone, &c.

Tho' indeed, what Hypothesis soever we frame to our selves of this, or the other Nature; it will appear to be very far from affording us compleat Satisfaction.

But however we determine as to the Cause of this Phænomenon, this we may at least gather from the Observations; That we know what to think of the common Stories of Armies, and Battels, and Weapons, and Shields, &c. seen in the Air; and to esteem them as Fables: Even those that *Pliny* mentions, when he says, *The Noise of Weapons, and the Sound of Trumpets have been heard out of the Sky*; as also that *Armed Forces meeting in the Heavens, were seen in the East, and West; and those in the West were beaten.*

Just

Just so it was in the Case before us. For there did not want those who spread it about, that what we saw in no other Form than that of Vapours, was the Appearance of Armies in Battel-Array, Marching, and Fighting; That Guns, Bullets, Shots, Spears, and other such Things, which I am ashamed so much as to name, were seen at the same Time.

What particular Appearances gave Occasion to the several Parts of this Fable, may be gather'd from the foregoing Description.

I say nothing of that Circumstance which increas'd the Wonder; I mean, that this was during the Siege of *Montauban*: For the People had a mind to make a Divine Omen on its account. But what can be said to those Men who thus easily feign to themselves Dreams; or believe them when they are feigned by others? Thus far *Gassendus*.

N B. This Surprizing *METEOR* was seen also in *England*, as *Cambden* himself intimates at the Year 1621, after his *Letters*.

(6.) *King James the I. Account of the like Meteor, seen by himself at Edinburgh, when He was Duke of York.*

[*Mr. Boyle's Hist. of the Air, p. 198, 199.*]

December 4. I had not Time the last Week to tell you of something, that to us that have not been long in this Country, seems strange; but the People of this Place say, happens very often.

On

On the 29th of the last Month, after I had written, and sent away my Letters; Looking out of the Dutcheſſes Window, to ſee what Weather it was; I ſaw towards the *North-Eaſt*, along the Horizon, it look'd as light, and juſt as if it had been Break of Day; (it was then about a Quarter paſt Eleven;) and gave as great a Light. I went then into the Drawing-Room, and looking out of that Window, could look more *Northberly*, and ſaw it was more Light due *North*; and ſaw ſeveral Streaks of Light, like the Tail of the Blazing Star, all pointing *North* and *South*: One of which was as long, or longer than that we ſaw laſt Year; for it reached from the Horizon, and paſſ'd between *Charles's Wain* and the *North Star*; and reached up juſt over our Heads. The ſmall ones ſometimes diſappear'd; and then we ſaw others of the ſame Dimensions appear in other Places: They were all near the great one. Two of them ſeem'd as if their Light had come from the Two Guards in *Charles's Wain*; and when they vaniſhed, others appeared more *South*.

I went to the other Side of the Houſe, and ſaw that the Light reached from the *Weſt*, or *Weſt North-Weſt*, by the *North*; to the *Eaſt*, or *Eaſt North-Eaſt*.

I did not go out, becauſe it blew very hard, and was very wet; contenting my ſelf to ſee it out of the Houſe; but ſent *George Man* up the Hill, who ſaw the ſame: And it was ſo clear, they could ſee the *Frith*.

About the New Moon before, there was ſuch a Light as this ſeen by Lord *Belcarus*, as he came in the Night from *St. Andrews* to his
C Houſe;

House ; and by the Seamen of the Yacht at *Leith*, and by some here in Town. But tho' the Sky was not then so clear, there being broken Clouds, yet it gave such Light, as they could read very plainly, as they told me. That began about 7, and lasted till 9.

This last I did not see till after 11 ; and at a Quarter of 12 it began to lessen ; at which Time I went to bed, and the Tails were then no more to be seen.

Tell Dr. *Flamsted* of this ; and know of him, whether he has seen, or heard of such Kind of Things.

[This was from his Royal Highness the Duke of *York*, then High-Commissioner in *Scotland*.]

O. B.

(7.) *A Description of the Northern Light, which was seen at Hamburg, the Night between the 1st and 2d of February, N. S. 1706-7.*

[Out of the *Miscellanea Berolinensia*, A. D. 1710. p. 131, &c.]

This Phænomenon began to appear about Eleven a Clock ; and was extended like an Arc, from *West North-West*, to *North North-East*. This Arc was Three Degrees, or Six apparent Diameters of the Sun, above the Horizon, at its greatest Elevation. This Phænomenon rose higher

higher and higher, and all along its upper Limb grew brighter and brighter, till it exceeded the Light of the Moon, when it is behind a Cloud.

About Half an hour after 12, a new bright Arc arose above the former; and both of them exhibited an even Edge. But about One a Clock, certain Lucid Rays, or Beams, darted themselves to a great Height; first those from the upper Arc, and then those from the Nether also.

This Sort of Radiation continued for some Time; but the Rays themselves were exceeding mutable, both as to the Variety, and as to the Suddenness of their Changes. The greatest part ascended in a right Line; while others of them seem'd to wave a little several ways. When they were ready to disappear, they were shorter and broader: But before, when they were at the highest, they were elevated Four Degrees above the superior Arc.

This Meteor was in the greatest Perfection about Half an hour after 2; when the Lucid Rays were conspicuous every where. At 2 it was at the greatest Elevation; and by degrees diffused it self over all the Heavens; and at length, a thick hoary Mist, that cover'd the Heavens, depriv'd us of the farther Sight of it.

The same Phænomenon was seen from the Observatory in the preceding Years; and that always between the *West* and the *North*: But it never appear'd so bright and perfect, as at this Time.

March 1. N. S. the like *Meteor* was seen in the same Quarter of the Heavens, from 10 a Clock in the Evening, till 1; but this was not so

regular as the former. The same Shew was again visible *March* the 6th N. S. after Sun-set, about 7 or 8 a Clock, but neither was this so regular as the First. But there was one Circumstance singular in this Last; that among those few Rays which it threw out from it self, the greatest Part reached as far as the Vertex. Yet did they in a little while disappear, and others succeeded in their Place; and this Change happened two or three Times, while one might repeat the *Lord's Prayer*. Presently after this the Sky was covered with Clouds and Mists, and so the *Phænomenon* ceased to be visible.

There appear such *Meteors* as these in *Norway* and *Island* almost every Year. It must needs be Low, and New, and Hard by us. For at *Pilenburgh*, two Leagues from *Hamburgh*, it appeared much Clearer and Larger. Whence it follows, that it was nearer their Vertex than ours. It is an Indication rather of the present than of the future State of the Air. For what some suppose, that in Summer Fair, and in Winter Frosty Weather succeed such Appearances is not always true.

(8.) Christopher Matthew Seidelius's *Observation of the Northern Light, in the Year 1707, at Schonberg in the old Marquisate [of Brandenburg] Abridg'd. Ibid. P. 133, &c.*

On *Sunday*, about 8 a Clock in the Evening, *March* the 6th, 1707, N. S. as I was viewing the Heavens, I found the Sky exceeding Clear, especially *Northward*, and could discern the smallest Stars on that side. I had often before observed

served this sort of Dawn or Twilight *Northward*, about the Equinoxes, late at Night. I us'd to guess, that this arose from some violent Thunder and Lightning *Northward*; but I afterwards changed my Mind, and esteemed it to arise from some other Cause, though I am not able yet to assign what that Cause is. This Light, at this time above-mentioned, was very great, and almost like that of the Sun, and it spread it self over the *Northern* Parts of the Horizon. Nor was the Moon old enough to occasion it, especially since it continued the same after the Moon was set. I used also to be surprized in these Cases not only at the Light, but at the Scenical Representations of Things which were then exhibited; for, contrary to the common Twilight this had its own peculiar Limits, and appear'd in various Shapes: First of all there were two Arcs of considerable Breadths, and in Length stretching out from *West* to *East*, which did themselves alone take up all the Splendor of the Sky, while the rest of the Heavens were clear Azure. Both the Arcs were near to the Horizon, and about 60 Degrees long, or rather they reach'd from *North-East* to *North-West*. In viewing these Arcs I was amaz'd at their Brightness; but much more at the Variety and Frequency of their Motions, and wonderful Mutations; while yet those Arcs still retained their Figures; or if at any time they lost it, they both (and peculiarly that which was nearest us) recovered it again immediately. In these Arcs, a bright *Phænomenon* shewed it self, but on a sudden vanished. After this (P. 137, 138) certain *Phænomena* like Flames, representing inverted Pyramids, broadest upward, rose up above twenty Times by Turns; yet observing the Order from

West

West to *East*, which in Velocity imitated Lightning, these brake through the interposed Arc and the upper Arc, and when they were got above it, expanded it self into a very light Vapour, and on a sudden vanished away entirely. All the particular Shews were so short and momentany that I could not well observe what was most remarkable : However this I noted, that the nearer Arc ascended gradually upwards, and when it had lost its Arched Figure, seemed to be a very white Cloud that enlightened the Earth by its Brightness. We saw this come over our Heads and encompass us ; (and saw it then not without a kind of Horror :) thence it proceeded *Westward*, and stayed about the Moon then setting. And though this Cloud continued there in the *West* above an Hour after the Moon was set before it disappeared, yet did that Arc whence it was derived recover its Position and Shape in great Part, and in its former Place. At length both Arcs disappeared ; this last mentioned sooner, but the other not till about Midnight ; whereupon the Air, as disturbed by these Agitations, became in a manner intolerable, and the *Northwind* blew fiercely a long time, and we had a great Frost, and very stormy Weather.

(8.) G. Kirchius's *short Description of a certain Clear Light seen at Berlin, Northward, on Quinquagesima-Sunday in the Evening, March the 6th, N. S. 1707. Ibid P. 135, &c.*

This Day being *Sunday*, was all along both Morning and Evening a clear Day with us at *Berlin*. The Night before was a small Frost, as there

there was also the next : but at Noon the Sun's Heat thawed it. When at 8 a Clock at Night I look'd out at the Window of one of my Rooms, which pointed *Southward*, and was busy in observing *Jupiter*, and in noting by the Micrometer its Distance from some Fixed Stars, One of the Company gave me a Hint to cast my Eyes *Northward* ; because there appear'd somewhat unusual in that Quarter. Upon this I turned my self to that Window which was towards the *North* ; and observ'd a certain, clear and white Light, in the shape of a Rainbow, but much broader ; whose Center, by Estimation, was under the Horizon, in or near to the Meridian ; the two Ends of this Light seem'd to be about 100 Degrees distant from one another upon this Horizon. The highest Part of that Arc was elevated about 8 or 10 Degrees above the Horizon. For that Star which is in the Tail of the Swan (called by *Bayer α*) was placed in the Arc a little towards the *West* of the *Northern* Meridian ; and that Star which is the brightest in the Harp was in it also, but more *Eastward*. Whether the two Limits of the Arc upon the Horizon were 100 Degrees distant, I cannot certainly affirm ; because the Positions of some Houses hindred me from seeing the *Eastern* Limit so low as the Horizon. That Distance might be more than 100 Degrees ; but I think it was not less. There was the New Moon a little *Westward* of the *Western* Limit, with its very small Portion of remaining Light, which was inconsiderable in comparison of this other, which was much brighter. However, the Moon quickly set, and so could by no means occasion such a Light as that was. Neither could the Sun be its Cause neither ; since it was then so far below the Horizon, that it could not afford us the least

Remains

Remains of its Evening Twilight ; much less could it exhibit a Light so bright as to illuminate that Part of the Sky with a Splendor equal to that of the Moon. Now while we were Viewing this Phenomenon, and Admiring that Lucid Arc, there were Rays of Light sent up from the Horizon, strait upwards, towards the Vertex, but with a slow Motion, like the Ascent of a Rocket. Yet was not their Colour red or fiery ; but they were like Lucid Columns, which seemed in part to tremble, and afforded so great a Light near the Arc, that they obscured the Light of our Lanthorn. Those Rays rose up first in one Place, and then in another ; not like Lightning, but, as I said before, very slowly, and as it were with deliberation. I could not count the Number of these Rays, because they were not constant, but shot out by fits : so that while one vanished in one Place, another arose in another. There was also a certain Black kind of Darkness between these Lucid Rays ; insomuch that the Spectacle was majestic, and in some sense terrible. Now that this Darkness was not deriv'd from Clouds, we may gather from this, That when we look'd through a short and wide Telescope of only two Foot, we could see the Stars therein every-where, as we could do in the bright and white Arc itself. This Darting up of the Rays continued for about half an Hour. But now, because I was hindred by the Houses which were in the way from seeing this Appearance to the very Horizon, I went to the Royal Observatory, that I might see every Thing the more freely. Where I observ'd that, so far as I could judge, the Lucid Arc before-mention'd was just as before. But then above that another Arc was here seen, about 30 Degrees in Altitude. Yet was it
not

not so entire as the other, but rather broken in some Places, nor did its two Ends reach to the Horizon. After 9 a Clock, the upper Arc began to be diminished, and at length to vanish away ; but still the Lower Arc continued as before : yet did it seem by little and little, though insensibly, to tend towards the Horizon ; which when I perceived, I went home. And when I was come down from the Observatory at 10 a Clock, I saw nothing more of the Arc ; only the *Northern* Part of the Sky appeared a little brighter than the rest.

(9.) G. G. L.'s *Observations about that Light which some call the Aurora Borealis, or Northern Twilight. Ibid.*

Armies were seen in the Air in the Night, in *August, September, and October* ; and that in such a Manner, that a Day-like Brightness did all along shew it self, from the *East* to the *North* ; and bloody Columns proceeding from it, ran all about. So say the *Bertinean Annals* of the Year 859. Hence we learn, what the Historians sometimes mean by Armies seen in the Heavens. It is a certain *Northern* Brightness, which has been seen in our Age also, and which sends out at Intervals great interrupted Beams of Light. The *Saxon Chronologer*, which I first published, means such a kind of *Northern Light*, when at *A. D. 993.* he has these Words, We
 ‘ saw a Wonder, that was never before hear’d
 ‘ of, on *St. Stephen’s*, the first Martyr’s Night : I
 ‘ mean, we saw about the first Cock-crowing, so
 ‘ great a Light to spring out from the *North*, that
 ‘ many said it was Day. It continued for one
 D whole

‘ whole Hour, and after that the Sky looked a
 ‘ little Red, and then returned to its wonted
 ‘ Colour. The same Account, in a Manner, is
 given in the *Quodlinburgh Chronicle*, (which I
 also published) in his History of the same
 Year.

[What follows from *Gassendus* is more fully set
 down above, and so is omitted here.]

(10) *Mr. Neve's Account of some Appea-
 raances in the Heavens, seen by him in
 Ireland, Novemb. 16. 1707. In a Letter
 to the Reverend Mr. Derham, F. R. S.*

[*Philosoph. Transact. N. 320. P. 310, 311.*]

The last Curiosity he gives me an Account
 of, is, as I imagine, that which some call the
Northern Streaming; which I do not remember
 the Society had ever any Accounts of; and this
 being (I must confess) one of the most particu-
 lar Accounts I ever met with of it, and very
 consentaneous to such another Appearance in
 the Heavens, which my Ingenious Neighbour
 and Friend Mr. *Barret* (of the Society) was cre-
 dibly informed, was seen in his Neighbourhood
 in *September* or *October*, 1706; I say, Mr. *Neve's*
 Account being so particular, will I hope be very
 acceptable to the Society. It is thus: ‘ On Sun-
 ‘ day, November 16, 1707, after a Frosty Morn-
 ‘ ing, and Fair still Day, Wind North-Westerly,
 ‘ about half an Hour after Eight in the Evening,
 ‘ there appeared a very strange Light in the
 ‘ North. The Evening was Clear and Star-light,
 ‘ only the Horizon was darkened with con-
 ‘ densed Vapours in the North, reaching, I guess,

10 or 15 Degrees above the Horizon. Out
 of this Cloud proceeded several *Streams*, or
Rays of Light, like the Tails of some Comets,
 broad below, and ending in Points above.
 Some of them extended almost to the Tail of
Ursa Minor, and all were nearly perpendicular
 to the Horizon; and it was as bright as if the
 Full Moon had been rising in the Cloud. But
 what I wondered at most, was the Motion of
 the dark and lighter Parts, running strangely
 through one another in a Moment, sometimes
 to the *East*, and sometimes to the *West*. It
 continued after I first saw it about a Quarter
 of an Hour, often changing its Face and Ap-
 pearance, as to Form and Light; sometimes
 broken, sometimes entire and long Rays of
 Light in the clear Sky, quite separate from,
 and above the Cloud, and none below in the
 Clouds.

*Mr. Whiston's own Account of Three such
 Appearances seen by himself.*

(11.) About the Year 1700, when I lived at
Lowestoft in *Suffolk*, I saw one Evening, long after
 Daylight was down, a kind of Twilight in the
North, reaching about 20 Degrees on each side,
 but still and quiet without any thing remarkable.
 I then imagined the Town of great *Yarmouth*,
 which lay *North* from me at 7 Miles distance, to
 have been on Fire; but found my self mistaken,
 and so afterward concluded it to be this *Aurora
 Borealis*.

(12.) I saw a strange *Meteor*, of this kind, at
Cambridge, about *A. D.* 1707. It was so far as I
 can now guess, *Northwest*, and a considerable

time after Sun-set. It was exceeding Light ; and all that part of the Sky was in great Agitation. Apertures appear'd so bright, as if the Sun it self were going to arise backward, or appear through them. Nor were there wanting the Columns of Light as usual : In short, though this *Meteor* did not last very long, yet was it not a little remarkable ; and indeed somewhat terrible during its Continuance, to such as had never seen such Appearances before.

(13.) The like Appearance I also saw about A. D. 1709, one *Saturday* Evening, when I was at Mr. *Proby's*, not far from *Stamford, Lincolnshire* : It was still and calm, like the last but one. I know it was about the End of *February*, or beginning of *March* ; because I observed the Sun's Milky Way, as I call that odd *Phænomenon* mentioned by Mr. *Childrey*, at the same time, which only is visible in an Evening at that Season of the Year.

Extracts from Letters relating to this METEOR.

L E T T E R I.

Edinburgh, March the 6th, 1718.

— I reckon by this Post you will hear of very dreadful Stories of Apparitions in the Air, seen by all the People of this City. I believe it won't be disagreeable to you, to hear the Account I will give you on this Head ; and to own the Truth,

Truth, I've been so long employed in Star-Gazing, &c. that I've scarce time to put up my Letters soon enough for the Post.

It seems, all this Evening there has been a great Disturbance in the Firmament ; but I got notice of it from my Servants, only at 10 a Clock, when I went out to view the *Phænomenon*: 'Twas, I confess, a very surprizing Sight; the Heavens were enlightened to a prodigious Degree by Starts ; insomuch, that tho' the Moon is in its last Quarter and affords no Light, I assure you I read several Papers very distinctly by it. As to the Appearance it self, I scarce know how to describe it to You. Though in Night gown and Slippers I walk'd up to the Castle-Hill, to have a more distinct and open Prospect: Here I found Young and Old, Rich and Poor, in short, the whole Body of People gather'd together. The whole Horizon at some times was quite cover'd with a Bright Light, such as your flying Clouds in a fine Moonshine Night. This Light flew about, backwards and forwards, in a strange Manner ; sometimes collecting it self into a Body, and giving by that Means a more extraordinary Brightness ; at other Times expanding it self, and rushing through other Parts of the Light, which seemed to stand still, with a Velocity equal to Lightning ; and had the same Effect upon the Eye, bating the Colour, which as I said before was of a vivid bright Nature : There happened to be scarce any Wind stirring, which is more remarkable. The strongest Body of Light, which sometimes formed it self into a Rainbow, (and almost as extended) other times into a streight Line, and again into a Wave, seem'd to impend immediately over the City almost due *East* and *West* ; but the shifting of those Forms were instantaneous.

stantaneous. One Appearance there was indeed, which gave great Astonishment : The Sky grew very Light on a sudden ; and from the several Parts of the Heaven, the Light collected it self into so many several Points, which (with great haste) flew unanimously toward a Center, which seem'd directly over the Town. When these pointed Lights met, they formed a Figure just like the Star which our Noblemen wear (this is the nearest Image I can give you of it) or to a Mariner's Compass. The Light at this Meeting was prodigiously great, though not lasting ; when the several Points seem'd just upon each other in the Center, they appeared to clash with great Fury, then retired, seemingly half a Dozen or Ten Yards, then flew on again ; particularly the Points from the *East* and *West*, which perfectly, as it were, fought and run into each other, which always gave the greater Brightness. At this Mixture, there appeared all the Colours of the Rainbow ; and the Good Wives are making Dreadful Prognostications of what will follow this unusual Sight. These Appearances yet continue, and have for some Hours, more or less. I suppose it to be nothing else, but an extraordinary, tho' accidental, meeting of Vapours and Exhalations in the Air, which thus collected have produced this Effect ; which however I am sure you'll hear very terrible Descriptions of, and therefore I send you this Account to possess you at once of the whole Affair.

LETTER II.

Watford, [*Northamptonshire*]
 Reverend Sir, March 8. 1715-6.

On *Tuesday* last, about a Quarter before 7 in the Evening, one of my Servants came to me in a great Fright; and begg'd of me to come out immediately, for there were Two Armies fighting in the Sky.

I hasten'd to the Door, which opens almost full *North*; and indeed every thing was dreadful. The Beginning I did not see; but at my first coming out, the Appearance of the Heavens from *North-East* (from whence it seem'd to me to have first risen, by the constant Supply that always came from thence) to full *North*, and full *East*, was in long Streams, something resembling the Pipes of an Organ; but with a most Glorious Light, appearing thro' the Intervals. This Light was continually in Motion; sometimes every where, sometimes in particular Places: And sometimes Two different Lights came with great seeming Fury against each other; and having met together, each roll'd gently back, like two Waves that have dash'd themselves in their Opposition.

About 7 a Clock, there arose a seeming Fire and Smoke in the *North-East*: So then we thought, what we had seen was the Effect of a Fire at some Neighbouring Town. But in about 2 Minutes Time, there was such a seeming Fire and Smoke, that if the whole City of *London* had been all on fire, it would not have look'd half so big. This extended it self to almost

most full *West*, and to about *South-East*: But as it spread, the seeming Fire lessen'd ; and all on the *South* side, was a most glorious Star-light Evening ; and we cou'd not perceive the least Breath of Air, but the Fanns pointed to the *South-East*.

There were several times Appearances thro' these Streams, that look'd like the Glory that is generally pictur'd about our *Saviour*.

About 35 Minutes after 7, these Streams all met in a Point, directly over our Heads : And so soon as they seem'd to meet, they appear'd in all Sorts of Colours, and wav'd about like a Streamer in a moderate Wind, and something of that Shape, only broader at the End, and vastly large.

During all this Time, there was not the least Noise in the Air. But when that prodigious seeming Fire arose, we had a most dreadful Cry amongst my Neighbours ; all thinking to be consum'd by it immediately ; or that the last Day was come.

Having been so very ill, so long, and not yet well, I went into my House a little before 8 : But about 9, they would force me out again, to see a Glorious Light in the *North-East*. It look'd like about Half an hour before Sun-Rising, in a very fine Morning. I could perceive it make a plain Shadow upon the Wall ; and my Son and Daughters read by its Light.

About 10 I went to Bed, and the Light still continued. Four of my Servants would sit up ; some out of Fear, and some to make Observations. At a Quarter after 12, they call'd to me with the utmost Earnestness, to rise immediately ; which I did ; and then saw prodigious large
Flakes

Flakes of Fire, gently tumbling or rolling ; and in Shape, as they generally draw, or paint rolling Clouds, and of a Colour like burning Brimstone. The Light in the *North-East* still continued ; and so (they told me next Morning) it did the whole Night.

Tho' in the Beginning of this Relation, I call'd it dreadful, and so in some Sense it was ; yet it was the most Glorious, Beautiful Sight, at some Times, that ever my Eyes beheld ; and such a Sort of Glory, as I had not the least kind of Notion of. And so all that saw it said.

I doubt not, but you will hear several Accounts of this wonderful Appearance. However, I thought it might not be unacceptable, to acquaint you with what was seen and observ'd by,

Reverend Sir,

Your most Faithful,

Humble Servant.

P. S. These Things were seen by all the Towns near us : And some fancy they saw a Shower of Blood ; and about 10 at Night, a very large Half-Moon in the *North-West*. But these I did not see ; but several positively affirm it to me.

All that saw the Beginning, affirm it to resemble Two Armies fighting.

My Indisposition hinder'd me from being out so much as others were.

On the 29th of *February*, about a Quarter before Sunsetting, there appear'd a *Tribelion* ; each Sun seem'd about 200 Yards Distance. Mr. *Smith* his Curate told me he saw them.

N. B. Mr. *Flamsteed* has a Letter from the *North*, giving him an Account of two other such *Parbelia*, seen there Two or Three Days after these.

L E T T E R I I I .

Dear Sir,

Oxford, March
the 7th.

—— I shall fill up this Sheet of Paper, with an Account of an Appearance in the Air last Night ; which was very strange and surprizing, and is a little difficult to describe.

About Half an hour after 6, there appear'd in the Extremity of the Hemisphere, a pretty large Cloud, like Smoke intermix'd with Fire ; out of which arose a great many oblong Rays, or Streams of Light, playing upwards, and darting themselves about the Sky : These increas'd by degrees in Number and Magnitude, and arose in a continued Circle at *East*, *North*, *West*, and a little at *South*. They all tended upwards ; and as they pass'd along, interchangeably took one another's Places, playing over, and mixing with each other. Sometimes almost the whole Sky was cover'd with them ; and some of them were very glaring and fiery.

In about a Quarter of an Hour's Time, they all gather'd in a Center at the Top of the Hemisphere ; forming a Ring in the Middle, and then diffusing themselves all around, pointed their Rays obliquely downwards.

This Appearance was something like the usual Pictures of the Sun on our Sign-Posts ; only the Streams were larger and longer, reaching
near

near to the Bottom of the Hemisphere; on which Account I think it was rather like a Hole broke by a Stone in the Middle of a Looking-Glass, or upon the Ice in a Pond, when the Cracks extend themselves all round, Ray-like, to the Extremities of the Glass or Pond. The Meteor stood glowing there a few Minutes, and then gradually disappear'd; and by a little after Seven o' Clock the Sky recover'd its former Face.

Towards Nine the Sky was again on Fire much after the same manner; only I think there was not such a Number of pointed Rays as before, but several red Gleams or thin Clouds of Fire one after another, skimm'd nimbly over the Sky. And thus it continued by Fits and Starts till after Eleven o' Clock. Sometimes the Heavens look'd exceeding terrible, and once I observ'd the whole Hemisphere to be one uninterrupted Blaze of Light. Then it look'd as if a Thousand Rooms had been on Fire in a continued Circuit about us within a few Miles of us: And the Face of the Heavens was such, as we may suppose it will be at the Conflagration, when the Elements are just set on Fire.

Neither Dr. K. nor any of our Naturalists, can give an Account of this Phænomenon; nor have they ever read or heard of the like. They want very much to know how far off these Things were seen, that so they may measure the Height of it: They think it to have been above the Clouds, because sometimes a dark Cloud would intercept some of the Pillars of Fire.

Already strange Things are portended: I have met several who tell me they saw Swords drawn, and Armies fighting in the Air: But as I was out my self, and saw almost the Whole, you may depend upon it there was nothing of this Nature,

any further than large Rays of Light are like broad Swords ; and the playing of the Streams within one another, their advancing, and intermingling, &c. may somewhat represent the Mustering of Soldiers.

I have a little more to say ; but if I stay longer, I shall lose the Post.

Yours, &c.

LETTER IV.

March 7. Hough near Grantham.

— I here give you an Account of a strange Appearance in the Sky about 7 a Clock the last Night. There were several pointed Streams of Fire or Light making a Compass, the Points all meeting in a Center ; and go where you would, the Center always seemed directly over you ; nay, were in Colour like the Flame of Brimstone. My Servants, who first saw it, were so frightened, they came running into the House ; and some Company who were coming on Horseback, said it was like Fire coming just upon 'em. It was indeed very Astonishing when I saw it, but they said much more frightful at first.

LETTER V.

Hillington, near Lynn.

— I give Thee an Account of an Apparition which did appear here in the Air on the 6th Instant, between 7 and 8 in the Evening. I was coming from *Lynn*, and when I was a-Top of the Hill, I saw a Range of thin whitish Clouds
in

in the *North*, reaching from *North-West* to *North-East*, but more *East*; and above and below the black Clouds, appeared two or three very light Places, like that in Shape which is said to be another Sun, but of a pale white Colour, which I took for a Reflection from the Evening Day-light, which was then very bright: But as I beheld, I saw the Lights in a Motion; sometimes very large, as if the Breadth of a Thing was towards one, and presently the Edge; They stream'd up with many Colours, the Motion and Colours very Visible to the Eye; and as I kept looking, I saw many Places of the white Clouds also streaming upwards with Colours, and reaching over my Head; and when I came to the River at the Town's-end, it was so light, I could see to read, I thought. After this a very great Appearance in the *North-East* and *East*, of many colour'd Light streamed upward, that that Part of the Heaven was cover'd, and reached over my Head, and went forward to the *South-East*; and the Flamings and Streamings of many Colours, and their Changings and Shakings were very Amazing; for they at that time seem'd in great Hurry and Haste; so that all Parts of the Sky were in Motion. I never saw the like Appearance before. The Heavens remained very light till after Ten, a larger Light than is an Hour before Sun-rising, or after Sun-set; or that which is seen in the *North* above the Horizon in the Night, when the Sun is in the Beginning of *Cancer*. Pray, was any of this seen in *London*? If it was, I should be glad to hear what the Astronomers and Mathematicians say of it. It was more surprizing to me than the Eclipse of the Sun in *April* last. The Colours that were seen were, a light pale white, green, murry and darkish, and such Colours

lours as are seen in Rainbows, when they are at their brightest ; these, with their several Colours and Motions to the Right and Left, with their Eagerness upward as the Flames of a fierce Fire : so did all these do their Office, which was very strange to behold. I give thee this, that thou may'st consider what the Meaning may be, knowing thou hast a Mind to enquire into Things both secret and manifest. I pray God bless us, and keep us from all Evil, which is the Prayer of

Thy Servant, &c.

LETTER VI.

Friday, March 9. 1715.

Upton upon Severn, Worcestershire.

—About 7 on *Tuesday* Evening there appear'd Streaks of Red, Blue, Green, &c. not unlike those of a Rainbow, but the Colours not so strong, nor so broad, but intermix'd like Colours of a Prism ; the Streaks were of different Lengths, and interspers'd here and there from about 20 Degrees above the *Northern* Horizon, (and so from *North-West* to *North-East*) to about 90 Degrees, (for none appear'd on the *Southern* Part of our Hemisphere,) but as it were, determin'd, in the Zenith ; continually moving and shifting place, darting and contracting, or rather changing their Colours, as they were differently enlightened ; but I took little Notice of this, thinking it was produc'd by the same Cause, as is the Rainbow, or from the Sun's Rays refracted, and so thought no more on't. But about an Hour, or Hour and an half after, I heard the People were in a great Consternation, and that it continued ; upon which I went out, and made these following Observations.

The

The Sky was extremely Serene and Clear, the Stars appearing very Bright, not a Cloud nor a Breath of Wind stirring ; and as light as in a clear Night, when the Moon is just above the Horizon, or like the Twilight in *June*. I cou'd plainly see the Hour and Minute Hands and Figures on a Watch, and the Vane on the Church Steeple. Day seem'd to be breaking in the *Northern* Horizon, from whence there often appear'd (sometimes at *North North-West*, and so along to *North-East*, but chiefly about *North*) a Whitish Streak which rose up from the Horizon to about 15 or 20 Degrees high, and in Breadth to the Eye (at their first appearing) about a Yard, but in 6 or 8 Minutes they would spread to 12 or 14 Yards in Breadth, and then as slowly dye away and disappear, but were soon succeeded by others, in the same Place or some other, sometimes *Eastward*, and sometimes *Westward*. This I observed 4 or 5 Times, and near (as I remember) when they appear'd to be at their greatest Magnitude, which was when they were about Square, then we saw the greatest Motions of Disorder over our Heads, which appeared like very Violent, Quick, and Sudden Agitations of small Whitish Clouds, that seem'd to Dart, and Shoot over and a-cross, and oppose each other, and shoot along in Streaks and sudden Drifts, like as I often saw the Snow this Winter, when driven from a Heap where it had lodg'd, over a Field, and appearing only here and there in its Passage, and did not entirely cover the Ground ; so in this the Blue Sky appear'd, and the Stars all the Time as bright as ever, only somewhat fainter in those Places where the Vapours seem'd to pass, which was over all Parts at several

several times, but never over the whole all together. By the whole I mean only that Part of the *Northern* side of the Hemisphere, from about 45 Degrees to 90 Degrees, and between *East* and *West*, for nothing appear'd *Southward* but Stars; and but now and then that any thing appear'd between 20 Degrees and 45 Degrees *North*.

Sometimes they seem'd to crowd together and cling about each other, twisting and twirling in circular Manner, like Dust or Snow, when in the Eddy of the Wind, or like Water in a Gully Hole, and so disappearing, without any Darkeness or Cloud appearing in its Room; but this kind of Eddying I did not observe above two or three times, which always seem'd to be just over our Heads. Nor did any of their Appearances of any Shape whatever (for some said they were like Armies fighting, others like firing of Guns, and a 1000 others) continue visible above a Second or two, or thereabouts, and often not so long, but rather seem'd only to be made Visible, by fresh Supplies of sudden Flashes of Light, constantly succeeding each other, like Light striking upon Objects plac'd in the Dark, but often intercepted. 'Twas sometimes for a Minute or two all Serene and Clear; and then again those Whitish Clouds appear'd, clashing and succeeding each other, (like Circles made, and spreading in the Water by the throwing in a Stone) but with more Quick and Violent Motions, and appearing and disappearing in a Twink.

Which makes me imagine 'twas Light (but from what Cause I know not) striking upon the Atmosphere, and making it visible; for Light striking or falling obliquely on the uneven Surface of any Body, will produce every Moment
different

different Appearances, as either of them are mov'd ; and none but the rising Parts enlighten'd, as the Position is alter'd. But these Things I only offer, as my humble Opinion, to your better Judgment, that you might easier guess at what I would more plainly describe, if I could. For I think, no Body can be mov'd by any Natural Cause, so swift as these Clouds were : I know not what to call them else.

I fear I have tir'd you already ; so shall conclude, with begging Pardon for the Length and Uncorrectness of this, which I would have polish'd, had I had Time ; but the Impatience of my Townsmen won't permit me. Some of them say, it lasted till 1 or 2 ; and some say, that it was much more terrible at *Worcester*, and lasted till 4. *Worcester* lies from this Place about (*North-West*) 7 Miles.

I hear it was also seen at *Glocester*, the contrary way (almost) from hence 13 Miles ; but don't hear of its being seen *Southward*.

If you excuse the Freedom of this, and vouchsafe to send me an Answer, you will infinitely oblige me. In Expectation of which, I remain,

Worthy Sir,

Your very Humble Servant.

F L E T.

LETTER VII.

*An Exact Account of this METEOR, from
Salisbury.*

Tuesday the 6th of *March*, 1715, in the Close of *Sarum*, the Morning from 6 to 8 was very calm, and the Air near the Earth clear, so that I could see Houses, and other Things, at a good Distance: But a thin Mist hung about 100 Foot from the Ground, that obscured the Sight of the Steeple, tho' I look'd at it, being about 200 Yards from it: Which Mist, about 8 a Clock, was broken by the Sun; and all the Day after proved very fair and warm, with very little Wind, at *West* by *North*.

In the Evening at 7 a Clock, the Horizon was wholly clear, and the Air calm; only in the *North*, a Strip of a black Cloud lay about 10 Degrees above the Horizon: On which appear'd an extraordinary bright Cloud, in Form of a broken Column, about 6 Degrees above the said Cloud, which seemed to rest on it. This soon disappear'd; and another Cloud of like Magnitude presently arose to the *West* of it as bright as the first, which I took great Notice of, as having scarce ever observed such a Phenomenon: But I thought that the Second Cloud, by obstructing the Light from falling on the first, and by receiving it on it self, might be the Cause of this Appearance. This was succeeded by a Third and Fourth Cloud; one
vanish-

vanishing, and another arising near it, with equal Brightness.

I soon return'd from my Garden into my House, not in any wise surprized; yet thinking on the Variety of such a Sight.

In a Quarter of an Hour after, I went into the City; and as soon as I was got half way of the Close, I met with several, who had not taken notice of what I had observ'd; but told me of vast Streams of Light, in Forms of Pyramids, like Lightning, like a Rainbow, like Fire, like the Sky opening, quivering, and indeed like any thing they could think of; had arisen from the *North* and *West*, and towards the *East*, as far as the *Zenith*.

Going on, I found *High-street* full of People, all talking of what had appear'd, and what they thought it might be compar'd to.

By this Time Day-light ought to have been over; but a great Light continued near the Horizon, in the *North*, from *North-East* to *North-West*; which increasing at Half an hour past 7 a Clock, I concluded and said, that I thought it would produce another of those Fluxes of Light which they had seen; which soon broke forth like a Stream of Fire, and quickly rose up by the Chair of *Cassiope*, on the *West*-side of the Pole-star, almost to the *Zenith*; and continued visible at least a Minute. Its Motion was very swift; and sometimes the Forepart, moving faster, than what succeeded it, seem'd to break off; but soon was reach'd again, and united by what followed. Its Form was a Pyramid, whose Point was in the *Zenith*, and Base on the Body of the aforesaid Light.

Soon after, this disappear'd, and more in the like Form arose ; but none, that I could observe, were near so large as this which I have described.

Between 8 and 9 a Clock, many (at least 20) Meteors appeared in all Parts of the Sky ; some larger, some lesser ; white, like the Tails of Comets, one after another. By their Whiteness, the Sky look'd gloomy, and very dreadful.

The *North* Part of the Horizon continued very light 20 Degrees high, from *North-West* to *North-East* ; so that at 10 a Clock, you might (and we did) read by it in a good Character. At the same Time, besides several Emanations of Light, that issued from this *Northern* Light, a kind of Flame, or bright Smoke, arose from it ; and, as swift as the Shooting of a Star, or Meteor, ascended to and beyond the Vertex, and terminated at *Cor Leonis*, or near it : As did several times the like Vapour, from both *East* and *West*, and sometimes also from the *South* ; but this last did not arise nigh the Horizon, but from Parts much nearer the Zenith. The Celerity of this Vapour seem'd very strange, and made me think it very nigh the Earth ; and that it could not be visible at any great Distance from this Place, but that Time must discover.

This Light in the *North*, and Vapours ascending from it, and also Emanations of Rays, continued till One in the Morning ; when I went to Bed.

N. B. Notwithstanding the vast Celerity of the Vapour, it caused no Alteration in the Air, which

which still continued Calm and Serene ; the Fanes pointing that the Wind was at *West* ; and even through the light Cloud in the *North* the Stars were visible. Thus far I saw, and am inform'd by those that sate up longer, that soon after Two a Clock in the Morning the Moon arose, and all the aforesaid Phænomena disappeared.

Soon after 12 at Night the upper Part of the bright Cloud in the *North* grew more Bright, and the under Part black ; and instead of the Breaking out of the Pyramids at several Places, as aforesaid, there was, as it were, Flakes or Rolls of Fire breaking off from the bright Verge of the whole Length of the Cloud from *North-West* to *North-East*, which were carried up as the Vapour or Smoke had ascended.

Between 11 and 12 a-Clock the several Streams of Light seemed to Form themselves into a sort of Canopy or Umbrella in the Zenith, continuing there with a Motion and Quivering in its Parts for a little time, and then disappearing.

LETTER VIII.

Wakefield, March the 7th, 1718.

S I R,

The following Appearance is to me so very surprizing, that I hope the freedom I take in the way of communicating this Account will need no other Apology ; it's probable you may have seen it in *London*, or the like to it ; but since I am uncertain of that, I shall be particular in some
Cir-

Circumstances, which perhaps may not be very material ; and yet by comparing Observations, may determine, whether the same individual Thing was seen at two very distant Places. Yesterday I coming home from a Friend's House in this Town about 7 of the Clock in the Evening, was astonished with an unusual Crepuscular Brightness in the *East*, whither my Face was directed, and the more because I knew the Moon was not near its Rising. In less than a Minute I observed this to increase sensibly and to a prodigious Degree, in a Manner as manifestly as a Blush in a Man's Face, but not quite so suddenly, which alarmed me a little, and put me upon several Guesses at the Occasion (it may be some Advantage to the Description, to tell you I imagined it the Light of some quick Fire in the Neighbourhood, as of Straw or such Materials). When I had walked about a Stones Throw in this Amusement, I remarked some obscure Streaks in the Brightness, like the Streams of falling Rain seen at a Distance. But immediately my wandering Eye being directed very intently towards Heaven, discerned a *Phænomenon*, which my little Philosophy cannot account for.

About 20 Degrees from the *Zenith*, on the *North North-East* (this Estimate being taken from the Position of the Church against which I was passing) appeared a Circle of more glorious Light, whose Diameter I judged to be about 15 Degrees of the Prime Verticle ; the Extremities on all Sides were more obscure gradually than nearer the Center. But in the Middle (extending about three Times the Diameter of the Sun) was an Obscurity, like that of a thick Cloud rowling with a remarkable Commotion as if disturbed

disturbed with the Wind, not much different from the fuming of a gross Smoak from a Furnace, and shewing different Forms, in which I sometimes fancy'd I saw something like a Moon through a Mist very red. The light Circle was almost as Bright as the Blaze of Lightning, and cast a Splendor like that of the Moon at her Quadratures, which made Objects very visible, which otherwise could not then have appeared. This whole Circle was variegated with fine Threads or Streaks of Shade like Radii (regularly and at equal distance) drawn from the Circumference towards the Center, which gave it the perfect resemblance of that Figure by which *Painters* and *Printers* express not the Body but the Lustre of the Sun. This whole System of Light sometimes stay'd in one Place for a few Moments, then again moved sometimes directly, sometimes circularly, but irregularly, as a Feather tossed in the Air. The Continuance of this Spectacle might be, as nearly as I can judge, somewhat more than a Minute, after which it vanished towards the *South* about 30 Degrees from the *Zenith*. The Church Clock struck 7 during the Prodigy, which at 8 I found to be 9 Minutes slower than the Sun by a Movement which I kept regular. The Heavens were aspersed with some few Clouds; but when the Meteor came near them, it seemed to attract (violently and suddenly) their Vapours, which formed the shady Streaks, and in Shape, but not Colour, imitated the *Virgæ*, which through broken Clouds seem to Center in the Sun. After this Scene was over, the same monstrous Twilight, which was its Prelude, continued increasing and decreasing at unequal Intervals of Time, of which some might be a Minute or two, others

6 or 7 ; as also in different Quarters, but chiefly *North North-East*, till about half an Hour past 8 it spread and kindled into an untimely Morning over the whole Hemisphere to the Degree of Twilight, when the Sun is 12 Degrees below the Horizon. This continued till about 10, without much Abatement ; from that it languish'd till 11, and was very Visible at 12 ; but then I attended it no longer. The chief Part of this Show was short ; but its Impression on my awakened Imagination so lasting and legible, that though the Estimates here are given by Conjecture, yet I can confidently say, and assure you, they are very near Truth : It was seen by Multitudes in this Town, and I should be glad of authentick Intelligence from other Parts, whether the like was seen at any considerable Distance ; the rather, because I am persuaded that the general Twilight which I observed so long, proceeded from one or more of such Phænomena, which was too far for me to discern. If by this faithful Account I may procure the Opinion of the Curious on a Subject which is above my Ability to solve, it will be a great Satisfaction to,

S I R,

Your Humble Servant.

LETTER IX.

Lewes, Sussex, March 1715-16.

All the Account I am able to give you of the *Tuesday Night's Phænomenon*, is as follows.

I was

I was upon *Glind-Hill* riding home, and observed a large Cloud, of an unusual Colour, that hung over my Head at shutting in of Day-light: It appear'd yellowish, and of a brighter Colour than I could expect at that time in the Evening; the Stars every-where Clear, besides: Infomuch that I do not remember I could see one Cloud towards the Sea (which was within sight) the Wind being at *North-West*; all of a sudden it burst and dispers'd Rays of Light, that went different Ways; but those that were sent to the *North-East* only were returned; which made several Strokes on the Remainder of the Cloud that hung *South-West*, and by their Collision produced a considerable Light.

I am well assured there was no Light *North-East*, till it was produced by the frequent Strokes of the Striæ (that were sent with incredible Swiftneſs from the Cloud when it first broke) on each other: Which seem'd also to be beaten back, as if they had met with a Resistance, in the same manner as you have seen Water to be thrown off from a Red-hot Iron.

I am

Your most Obedient

Humble Servant.

N. We had a Smell of Sulphur in the Air.

LETTER X.

Elston, near Newark, March 7.

I cannot but impart to you a most strange Phænomenon, which happen'd yesterday, being *Tuesday* the 6th Instant, a little past Seven in the Evening. Coming home to my House from *Newark*, I observ'd in the *North-West* a long and broad Stream of Light, issuing out of a darkish Cloud, (betwixt 20 and 25 Degrees of the Horizon *North-East*, as near as I can guess) like to the Beams of the Sun setting in a drizzling Evening, the Stream pointing directly towards the Zenith. I was somewhat amazed at it, considering the Sun had been then more than an Hour set, and the Moon's Rising not being till the Morning. Presently after, some other Streams issued out of another Cloud, near to the former, with a very unusual Light, and with Variety of Colours, black, blue, Flame-colour, yellow, &c. and so more and more, till all that Part of the Heavens was overspread. During this whole Time, never were such Contentions (as it were) as betwixt these Meteors; being all in Confusion, and darting one against another, with an incredible Force and Swiftnefs, for about an Hour and a half. Thro' all that Region of the Air where this Confusion and Strife (for I can term it nothing else) was, the Stars appear'd clear as thro' a thin bright Smoke, or as the Sun sometimes thro' a thin bright Cloud. The other Part of the Heaven toward the *North-East* and *South-East* was very clear, the Stars bright and twinkling, as in a Winter's cold Night when there is

no Moon. About Nine at Night, these Meteors (if I may so call them) in a great Measure disappear'd, but not quite ; some faint Sort of Contentions (as it were) were still perceived : And about Ten of the Clock they broke out again with a fresh Violence in the same manner as before, and so continued till about half an Hour past Eleven. About Twelve, a bright Globular Body appeared, as big as, and like the Sun at his Rising, but not quite so clear. Indeed it was the most astonishing Sight I ever yet beheld. During this time, the Light was such, that I my self (tho' almost sixty Years of Age) and another Clergyman did read several Titles of the Books in the Bible, without any Use of Art. The Night was calm, not so much as a Breath of Wind was perceiv'd. It began, according to my Opinion, in the *North-West*, and so drew round to the *South-East*. It was observ'd by a thousand People, not without the greatest Wonder, and with strange Apprehensions ; some looking for the Day of Judgment, others as the Pre-
sages of future Events and Calamities, &c.

LETTER XI.

Huntington, March 6. 1718.

This Evening, betwixt 7 and 8 a Clock, we were called out to join with great Numbers of People in admiring the unusual Appearance of the Sky ; which was such, that though I cannot possibly find Words to give you a perfect Description of it, yet it was to me extremely surprizing ; doubt not but different Accounts will be given of it from this Place : and to be certain the fright-

ful Circumstances of it will be multiplied with the Addition of Political Remarks, as People stand affected. I think almost the whole Hemisphere was cover'd with a thin bright Cloud, but darting from the Point directly over our Heads as the Center, in sharp Rays towards every Part of the Horizon, and Sheets of it moving very quick in opposite Motions, meeting each other Side-ways, varying its Colour frequently; sometimes giving us the Appearance of Fire, and other times like Flashes of Lightning; the whole in a prodigious Confusion and Hurry, which lasted above a quarter of an Hour; after which, the Skies were as before. This happen'd very Clear, and many Stars appear'd. Since my concluding this, the Disorder in the Skies has begun again in a different manner from what it was before: For from the Horizon, but particularly from the *North-West* Rays of Light, or a thin bright Cloud or Vapour, I do not know which to call it, darts it self in the Heavens with a prodigious Swiftnefs, and with a continu'd Torrent as it were; but the Stars seem to be vastly higher than it, and a great Light appears in the *North-West*.

LETTER XII.

*Watford, Northamptonshire,
Easter-day, 1716.*

I went to Bed last Night, a little before Ten, and then it was a very Clear, Still, Star-light Night. About 5 Minutes after 10 I was call'd up, to see such Appearances in the Sky, as we had so lately seen. At my Coming to my Window,

dow, I saw a very great Light from the *North-East* to the *North-West*, and a thick black Cloud, all that Space almost level, and the Top of it was about the heighth of a small Hill, at a quarter of a Mile distance. From behind that Cloud this Light came; and it seemed to us, that if that Cloud had not been there, we should have seen more amazing Things than before; for what we saw, was only the Tail of what those, that were more *North*, must needs see. Above this Cloud, (all the whole Space) appear'd a Multitude of different Sizes of Pyramidical Streams; some seeming not above 10 Yards above it, and some about half-way to the Zenith: But all seem'd to be the Ends of prodigious large Ones, which were hid from our Sight by this Cloud. These Streams mov'd gently from the *North-East*, (where they first appear'd) till they came to the *North-West*; and then leisurely dispers'd. Then there arose a kind of a reddish Mist, which pass'd all along the Top of this Cloud, and (by the thicker and thinner Parts of this Mist properly dispos'd for that Purpose (I suppose) betwixt Us and that great Light) appear'd like an Army marching upon a Hill. Then all was clear for about 4 Minutes; and then in the same Place arose a more dark Cloud, which pass'd (as I should have told you the seeming Army did) to the *North-West*, and appear'd perfectly along the Top of this black Cloud, like different Sorts of Ships sailing on the Sea: But we were so intent upon new Appearances from the *North-East*, that I can give you no Account what became of the seeming Army and Ships. We had several sudden Explosions like the faint Resemblance of a Rocket: But those things that heretofore would have astonish'd us, were now so common, or so little,

in

in comparison of the Great, that we scarce regarded them. These Things continued till about half an Hour after 11, when the Moon rose; and I went to Bed, having much disorder'd my self, But the Appearance and Light continued long after (as they told me.) Pardon my Freedom, Dear Sir, and believe me when I tell you I am sincerely,

Your Faithful Friend and Servant.

LETTER XIII.

*Richmond in Surrey, April
the 2d, 1716.*

About Nine in the Evening, I observ'd a very Large, Luminous Arch in the Sky, reaching from the *East* Part of the Horizon to the *West*, and passing at the Distance of about Twenty-five Degrees from the *Zenith* towards the *South*. Its Breadth was about Ten Degrees, and its Light was every where Uniform, Pale and Faint, and the Stars might easily be seen through it. Its Limits were parallel, and very well defined. It continued from the time I saw it about Half a Quarter of an Hour, and then vanish'd by Degrees. Afterwards I went to a more open Place; and about Ten a Clock, I saw towards the *North*, near the Horizon, another Light like the Day-Break, seemingly Circular, extending half a Quadrant on each side the *North*; the Middle was more Luminous than the Outside, towards which the Light gradually grew fainter. I also observ'd to the *West* of the Pole Star six or seven little Branches, or luminous Clouds very faint and short, consisting of Parallel-Lines perpendicular

cular to the Horizon, and about the same Height as the Pole Star, (by Height I mean the same Number of Degrees of a small Concentrical Circle) which faded by Degrees, and disappear'd.

*De Cælo tibi signa dabit, noctisque per umbram
Cernes flammæ longos albescere tractus. Virg.*

N. B. That we are assured by a Letter to the Reverend Dr. Pound, shewn to the *Royal-Society*, and coming from an Authentick Hand, that at *Calne* in *Wiltshire*, *March* the Third, several uncommon Rainbows appear'd ; as also a Parhelion at the same time. I suppose it will be published in the Philosophical Transactions, to which I refer the Reader.

N. B. That I say nothing here of some other Prodigies or uncommon Things which we have of late been alarm'd with ; such as the swimming of Stones against the Stream in *Ireland* ; the numerous Balls of Fire sent up in the *North* ; the Showers of Blood with Thunderbolts, at *Genoa*, &c. because I am not satisfy'd of the Truth, or at least not well enough inform'd of the Circumstances of such Things ; and therefore can say nothing Authentickly about them, either to my own or the Readers Satisfaction.



III. *The principal particular Phænomena of this METEOR.*

(1.) **T**HERE seem'd to be, besides the first Cloud, and its Appearances, another large Fund of Matter, or vast Quantity of Vapours in the Air, in a bright State ; whence the particular Phænomena were mainly deriv'd.

(2.) This Fund of Vapours appear'd to be above, or beyond the Clouds.

(3.) It was situate mainly in the North, North-East, and North-west Parts of the Heavens ; and little or nothing of it Southward.

(4.) It was at a vast Extent, so as to be visible over all England, Scotland, Ireland ; and in Holland, Hanover, Prussia, &c.

(5.) It was seen still towards the Northern Parts chiefly, in all these several Countries.

(6.) There arose from this Fund, besides a bright Limb, Streams or Pyramids of Light, tending towards the Zenith in all these Places.

(7.) There were also several Apertures, or Openings of Light, as if the Moon were going to appear from behind the Clouds ; and these Apertures were generally of the Colour of the Light of Phosphori ; and, at least once, in the first Cloud, a kind of Mixture of the Colours of the Rainbow.

(8.) There

(8.) *There was in almost all Places seen, a little after 7, (and also about 11 more Northwards,) near the Zenith, a kind of Cupolo, or Bright Circle, with regular Rays, tending towards the Center ; in which Center, great Agitations of Smoke and Vapour appear'd ; which Circle was in some places regularly colour'd like the Rainbow, and carry'd to a great Distance.*

(9.) *There were also great Vibrations of a Sort of Fume, or thin lightsome Steams or Flashes, which arose about 5 in a Second, with a vast Velocity, from the Fund below, and threw themselves towards the Zenith.*

(10.) *These Fumes, or Steams, or Flashes, were visible sometimes but at certain mutable Intervals, along their Passage ; while Part of their Course was interrupted and obscur'd.*

(11.) *The Fund of Vapours it self was gradually diminished ; and from about 25 or 30 Degrees above the Horizon, it descended till it came down to it ; and this in about Five or Six Hours Time.*

(12.) *In some few Places there appear'd in the North, near the Horizon, about Midnight, a kind of Sun, tho' not so bright as the true one ; which lasted for several Minutes together.*

(13.) *There was a strong Smell of Nitre and Sulphur in many Places ; and this sometimes such as affected and disorder'd the Spectators to a great degree.*

(14.) *These very Particles seem in some Places to have fallen down in a kind of Shower of Light and Sulphur ; nay, in the Baltick, (if the Publick Prints be true) of Fire and Brimstone ; to the great Terror and Amazement of the People.*

(15.) *All the Phænomena every where were very mutable, and in a great Hurry and Commotion.*

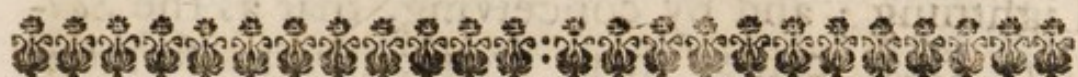
(16.) *Tho' the main Phænomena were every where of the same Nature in general ; yet was there a considerable Difference, as to the particular ones in different Places.*

(17.) *A Comet, with a small Tail, was seen by several, a little before and after this Appearance. [This I have heard so many ways, that I know not how to deny the Truth of it.]*

(18.) *Three Suns were also seen in the Heavens, both in Northamptonshire and Yorkshire, within a Week before this Appearance ; at two Days distance from each other. As was another Sun seen in the West ; first on the North, and then on the South Side of the true one, three Days before it.*

(19.) *Surprizing Rainbows appear'd in the West, three Days before this Northern Twilight ; not in Opposition to the Sun, as usual ; but the same way with it ; and so that two of them touched each other externally.*

(20.) *There have been several lesser Scenes of this Northern Light, with some of its usual Phænomena, seen since that Time ; particularly the Night preceding Easter-Day, with the three Nights following ; tho' all still far inferior to this before us ; unless we except the Night before Easter-Day, where the Phænomena were in some Places very remarkable. Yet did the Rain on Wednesday put a stop to their further Appearance at that time.*



IV. *Conjectures for the Solution of the foregoing Phænomena.*

(I.) **T**HIS large Fund, or Promptuary of the following *Phænomena*, could, I think, be no other than such Exhalations as arose out of the Earth some Time before ; and which at this time got together, as Vapours do before they compose dense Clouds for Rain, or Matter for great Storms. How long they, or many of them, had been in the Air before this Union, or Coalition, 'tis hard to say. It might be several Months, if not Years, for any thing we know to the contrary : As it seems to be sometimes in the other Cases.

But then, as for the Nature of these Exhalations, it seems plainly to be like that of the Ingredients of Gunpowder, Nitre and Sulphur, especially the latter : Which as they are proper in Fermentations to cause Light, and if that Fermentation be very violent, Thunder and Lightning also ; so is it here : These Exhalations as well and as properly exhibiting such a thin Light in the *Northern* cold Countries, as they do Thunder and Lightning when they are more ripened in the *Southern* hot Ones. Nor can we, methinks, better explain the Nature of these Exhalations which cause this *Northern Twilight*, than by supposing them in a mean State, between the lower Vapours which cause Winds and Storms, and those

higher Exhalations which cause Thunder and Lightning ; and by conceiving, that as the *Southern* Heat causes them frequently to ferment there into Thunder and Lightning ; so does the *Northern* Cold usually hinder them from passing to any farther Degree than that of this *Northern Twilight*.

(2.) Whence it will naturally follow, that the usual Place of these Exhalations will be above the Vapours for the Wind, or the lower Clouds ; and below the higher Exhalations for Thunder and Lightning. Tho' it must be granted that any of these three Sorts of Effluvia from the Earth, if once sufficiently coagulated, or united together, may grow heavier than even any Part of the Air ; and so may, in such a State, descend below the Clouds, even to the Earth it self, whence they were originally deriv'd : Which we shall see anon was the Case here.

(3.) Hence also it will naturally follow, that the main Fund of these Exhalations must be about the *Northern* Parts ; because those which are in the *South* will be rather heated and fermented into Thunder and Lightning, than go off in a thin Light only ; and so will appear under those more terrible Shapes to the World. But whether the Coming of these Exhalations more *Southward*, be not usually owing to long or strong *North* or *North-East* Winds, I cannot certainly determine ; since the Accounts above say nothing of that Circumstance. If the former Meteors of this kind were herein like this last, there would be a considerable Foundation for such an Hypothesis.

(4.) Hence also 'tis no more Wonder, that these Phænomena are sometimes of a vast Extent, than that Storms or Rains are sometimes so also. And tho' Thunder and Lightning are rarely

ly, in the same Storm, of any such great Extent ; yet if we compute the several Storms which, in the same Summer, are at different Places heard and seen in the *Southern* Countries, and put them together, we shall find them, upon the whole, still more extensive. Nor are any *Northern* Regions to be any more exempted from the Effects of these, than any of the *Southern* from the other Exhalations. Nor are we perhaps to suppose that Persons very remote saw the same individual Lights, Films, and Fumes in this Case, any more than they hear all the same individual Claps of Thunder, see the same individual Flashes of Lightning, or are under the same individual Clouds at the same time.

(5.) Since this Fund of Vapours must have been really thickest in the *North*, and thinnest in the *South* ; 'tis no Wonder that it every-where appear'd accordingly. Only it is to be noted, that Places far *North* may well be suppos'd to see such smaller Appearances *South* in a lesser degree, as well as *North* in a greater : which really seems to have been the Case at *Edinburgh* in particular, by the Extract from the Letter above sent from thence ; and was probably the Case in other Places as far *North* also.

(6.) These Streams or Pillars seem to me to have arisen from such violent Fermentation and Rarefaction in some Parts of this Fund of Exhalations, as are those by which Spouts are thrown out of the Ocean, or Rockets and Squibs thrown up into the Air. Nor is it strange that they went up perpendicularly, since 'tis the greater Gravitation of the Air which, in part at least, must cause and govern that Ascent. Which Gravitation, as in the Case of Flame and Smoke, must always operate by sending such lighter Vapours upward. Nor is it strange, if there were somewhat

what of Explosion in the Case, that it join'd in sending the Columns of Light upward, or the same way ; since the Resistance upwards, where the Air is thinner, is still less than side-ways, where it is of equal Density every way. I take it for granted, that the seeming Bend of the Columns towards the Zenith is only Optical, and need not be particularly accounted for : Since all that know any thing of Perspective, or of Vision, cannot but know that all such Parallel Columns must appear to the Eye as bending towards a Union in the Vertex ; which Union yet they never fully attain to : And this seems to have been the very Case here.

(7.) These Apertures seem to be truly such, or real Openings of the lower interposed Clouds or Vapours ; for this would permit us to see the light fermenting Matter it self more clearly. And as to the Colour of these Apertures of Light, like the *Phosphori*, even sometimes to the degree of a Mixture of the Rainbow-Colours themselves ; 'tis not very Surprizing in this Case : Since our *Phosphori*, or *Lights by Fermentation*, exhibit sometimes the very same Colours ; and since this Light seems to have been of the same Nature, and it self no other than an *Aerial Phosphorus*, or *Light by Fermentation* also.

(8.) This Cupolo, or Circle, was caused, as a very Skilful Observer who saw it informs me, by a kind of Vortex, or Circular Whirlwind, made (as usual) by the Stoppage of the Current of its Vapours, and thence rolling it self round. Its Rays of Light, tending towards the Center, seem by the Observations to have been the upper Parts of the bright Columns, which at that time were many, and almost on every Side ; and, as before, would appear to the Eye to tend to the Zenith, as to a Pole. Nor is this a little

tle confirm'd by the smoaky Agitations about the Center it self; which seems to have arisen from the smoaky Top of those Columns, which to the Eye would approach still nearer to the Center. For as the Fund well enough answers to the Tallow of a Candle; the light Streams to its Flame; so will a fuliginous Smoke at their Top well enough answer also to the like Smoke at the Top of the Flame of a Candle. As to the regular Circles of Colours in this Appearance, seen in some Places, whether they might not some-way arise in the first Case, where alone they were seen, from the Sun's own Rays regularly refracted, since Twilight was not then gone down; or whether the different Parts of the Cloud were not differently Colour'd, as is the Case in different Sorts of our *Phosphori*; and by rolling themselves together, rendred the Colours so regular and circular, I shall not determine. Only the swift angular Motion of this Circular Cupolo, 50 Degrees in 1' or 2'; and its turning it self about so strangely, seems to imply it hurried by a kind of irregular Wind, and that at no great Distance from us neither.

(9.) These Fumes seem literally to have been such; and to have arisen from the fermenting Fund below; just as Smoke arises from a boiling Pot, or from two fermenting Liquors put together; either of which it exactly resembled. Only the much greater Velocity of each Wave, and the prodigious Quickness with which they followed one another, and why they ascended in the manner of Pulses, at certain equal Intervals of Time, depend upon such Circumstances of the Fund of Air there as we do not yet know; and so they cannot be here more particularly explain'd.

The like Velocity and regular Pulses belong to

to the ordinary Winds also ; but even there we know not the particular Cause of them.

(10.) This Loss of the Sight of the ascending Fumes, at certain Intervals of Space, which Intervals were themselves mutable, seems the plain Result of the different State of the inferior Vapours ; in some Places clearer or more dispers'd ; in others cloudier or more collected ; and accordingly, permitting or obstructing the Sight of these very thin Fumes in their Passage upward.

Nor is it a wonder, that these Vapours chang'd their Places in this Case, and so made the Places of the Appearing or Disappearing of the Fumes somewhat mutable ; since that is their usual State ; and especially must be so at this Time, when the whole Atmosphere seems to have been subject to so great internal Motions and Agitations.

Only it must be remark'd, that such great Motions and Agitations, of the intermix'd or interpos'd Vapours, might also in great measure occasion those seeming Progresses and Regresses, those seeming Clashings and Conflicts, those strange Mutations and Disorders in some of the Phenomena, especially in the first great colour'd Aperture, which the unthinking, affrighted, or superstitious Spectators called Armies, Spears, and Battels in the Air ; which yet to a sober and judicious Person they did no way at all properly resemble.

(11.) This Diminution of the Fund of Light by the Columns, and especially by the almost innumerable Waves or Fumes, which sprang continually from it, is as natural and necessary, as the Consumption of the Tallow by the Flame of the Candle, or of the boiling Water, by the Smoke that arises from it ; and so needs no farther Explication. Only

Only as to the Time of this Evaporation here noted, we are not yet well enough acquainted with this Fund, or the Degree of its Fermentation, to determine *à priori* its Duration.

However we may Observe, that this Time well enough agrees with other Appearances of the like Nature, already set down; especially with that of *Gassendus*; which I think was the most eminent, and the most agreeable to this, of all that are recorded in History.

(12.) Such Meteors as this, resembling the Moon or Sun for a while, are not very uncommon. I have my self seen one, which seem'd scarce inferior in Light for the Time to the Full Moon: And the ordinary Falling Stars (as we commonly but injudiciously call them,) seem to be lesser Meteors of the same Nature. It is not therefore to be much wonder'd at, if at this Critical Time, when the Air and its Exhalations were in so uncommon a Ferment, somewhat extraordinary of this Nature should appear. Only the Reader is to observe, that this Meteor is quite different from that in the 18th Phænomenon, of the Appearing of the Mock-Suns: That being more easy to be accounted for, and indeed Optical or a-kin to the usual Rainbow, and, like it, always seen in the day-time only. But of this more hereafter.

(13.) Since the Exhalations which occasion'd this Appearance, must, on all Accounts, be suppos'd of a Nitrous and Sulphureous Nature; it is no great Wonder, that some of its grosser Remains or Sediments, that did not fly up in Light, or Fumes, did in some Places (like a kind of Soot) descend downward; and, by mixing with the lower Vapours, or foggy Air, become very sensible, and sometimes very offen-

five to the Smell, and indeed sometimes to the Stomach also. The Case is usually the same, or the like, before a Storm of Thunder ; when such sultry Steams of Nitre and Sulphur, more ripen'd and heated, affect us in no very different manner.

(14.) Hence it is not very strange, that where these Remains and Sediments, mixed with the Air, happen to be very heavy and numerous, they may descend to the Earth in a more plentiful manner ; almost like a Shower of Light and Sulphur ; tho' they are usually too thin, and too little fiery, to do any great Damage there.

Now this was plainly the Case about *Essex* or *Suffolk*, which lie *North-East* from us. For the first Cloud, which had exhibited the strangest and most frightful Appearances of a Sort of fiery Light, for near Three Quarters of an Hour, and so had Sediment enough left, was seen here as *North-East* from us ; and by consequence, as directly over some such Neighbouring Country in that Quarter. And if the more terrible Relations from the *Baltick* prove true, the Reader will not be wholly at a loss to account for them on the same Principles.

(15.) Since the Appearance was owing to that vehement Fermentation of Exhalations above in the Air ; such as put almost the whole Element about us into Confusion ; 'tis no wonder, that this was communicated to the lower watry Vapours also ; whose Agitations, joined with the others, must needs cause (for that Time) no small Agitations, Motions, and Disorders, every where. I say, *for that Time* only ; for after the Fermentation was once over, the Case would be the same with that in other Fermentations, that all would remain still and quiet,

as

as before. Which has accordingly been the general State of our Air since this Appearance.

(16.) Since different Countries afford different Quantities of such Effluvia from the Earth; and Spectators, at great Distances, do not usually see the same Individuals, but others in part like them; 'tis no wonder, that there was such Difference in the particular Phænomena, at remote Places; tho', for the main, they might well resemble one another, and happen near the same Time also.

(17.) This Comet, which seems lately to have stolen by without much Observation, is here taken notice of, rather to give an Occasion of Information and Caution to the Reader, than that it has any Connection with the present Phænomenon. It is therefore to be observed, that such a Comet, with a small Tail, appears lately to have been seen, not only at *Genoa*, (as the Public Prints inform us) but with us about *Leicester*, *Litchfield*, *Hereford*, and in the *West*, a Fortnight together at least. Tho' I do not find, that it has been observ'd either at *London*, *Greenwich*, *Oxford*, or *Cambridge*. For want therefore of due Observations, we are not able to say, whether it will return again, or not. If it should return, it must (very probably) bring with it a much longer Tail from the Neighbourhood of the Sun; and such its Appearance must therefore be much more remarkable, and must be for certain in a very little Time also. So that the Event will soon satisfy our Curiosity in this Matter.

But to suppose with some, that this our *Northern Twilight* could any way depend on such a Comet's coming by, seems to be the Imagination of those that know not the Astronomy and

Philosophy of Comets ; and to be destitute of all solid Foundation whatsoever.

(18.) These Mock Suns, which were seen a little before this *Northern Twilight*, seem not much more to belong to it than the Comet beforementioned. Now such Suns are not very rare among us, at least if we reckon those that never arrive at their perfect State. These ever appear in the two Intersections of that pale Circle which we call an *Halo*, frequently seen about the Sun, with another Circle or Arch passing thro' the Sun it self, and parallel to the Horizon. And indeed, as I have noted above, are more Optical, than Real Phenomena of Nature ; as are the Colours of the Rainbow, and the like Colours of those *Crowns*, which more rarely and nearly circle the Sun's Body round.

Nor is that Circumstance, of the apparent Removal of one of these Mock Suns, from the *North* to the *South* Side of the Real Sun's Body, very hard to be accounted for ; since it seems to mean no more than this, That the *Northern* Mock Sun disappear'd, about the same time that the *Southern* one began to appear ; which may easily happen at any time.

And indeed it is not very strange, in case our Atmosphere were so long before disposing it self for the late Appearances, that among other Disorders, some Regions of it should abound with those peculiar Particles, which are necessary to the Exhibition of these Mock Suns, whereof we are now speaking. See *Hugenius de Coronis & Parbeliis*, who has given us the best Account of all such Mock Suns yet extant.

(19.) This Sort of Rainbows is very rare ; and I don't know, whether the Circumstances of the airy Particles, on which they depend, have been yet (upon Experience) stated accu-

rately enough, to afford us any certain Solution of them.

However, it being evident, that such have been formerly ; and that they are of the general Nature of the usual Rainbow, which is a Thing perfectly understood by the Mathematicians ; it need not cause any particular Surprize. See *Hugenius ubi prius*. Where the Reader will find Accounts of yet stranger Sorts of these irregular Rainbows, and the best Hypotheses for their Solution.

Nor is it so very strange, that the unusual Fermentation the Air has of late been in, has produc'd unusual Effects of this, as well as of other Kinds.

(20.) This is not much to be wonder'd at neither ; since the same Causes that produced the greater Appearances of this Nature, may well be suppos'd capable of producing the less.

Nor is this quite a New Thing, since the *Berlin* Papers above give us an Account of Three such Phænomena, in little more than Five Weeks Time.

And that this Rain might cool, and put a stop to this Fermentation in the Air, as I expected it would, is highly reasonable.

To conclude : All these Things, with others that have lately happen'd, are certainly agreeable to the Natural Course of Things, without any Sign of a Properly Miraculous, or Supernatural Power therein concern'd. They are such Phænomena, as admit (in good measure) of a Philosophical Solution. Only it must be allow'd, that some of them are very rare and uncommon ; and that the Appearance of so many of them almost together, or in a little time, is still very peculiar and remarkable. But more of this under the Sixth Head, hereafter.



V. *Reasons why our Solutions are here
so Imperfect.*

(1.) **T**HE Air, in which this Meteor was, is an invisible Fluid, in its own Nature; and accordingly, the small Parts of Vapours and Exhalations therein contained, (whence it must have arisen) are generally in an almost invisible State also. So 'tis no great wonder, that the preparatory Actions and Fermentations, that happen in this Fluid, are to us in a manner invisible; and the grosser Effects of them little understood, any otherwise than by such visible Phænomena themselves. Not to say here, that were those Preparations never so perceptible in themselves; yet do the greatest Part of Mankind live too much in Valleys or Plains, and too far remote from the Regions of the Air, which are here concern'd, to be well acquainted with them.

(2.) This Imperfection of our Philosophical Knowledge, is the Case not only in this, but in all the rest of the *Meteors*, or particular *Phænomena* of the Air. We are not yet able fully to solve any of them; excepting so far as they are of an optical Nature, and belong to the Refraction or Reflection of the Rays of Light by the Aerial Particles in certain Circumstances therein. We are not able to give a strict or proper Mechanical Account, of even the Wind itself, the most common of all *Meteors*, with its Horizontal Direction, Intervals of Pulsation, Change of its Quarter, and its other Circumstances. Nor can we, with any Certainty, or

from any Philosophick Principles, foretel its State for one Day or Hour beforehand. Much less can we foretel, or mechanically solve, the Particulars, of those other more uncommon *Meteors* of Thunder and Lightening, Storms and Hurricanes, Hail, Snow, Frost, and Rain. It is not therefore to be wonder'd at, if such an uncommon and surprizing Appearance as this be not distinctly known by us. Nay, I think I may add, that this Imperfection is now almost confined to such *Meteors* or *Aerial Phænomena*, with their Effects upon Things below, since in the rest of the System of the Material World, we either do already understand, or are in a fair way to understand the Mechanical Reason of them, and to reduce the several Circumstances to Calculation also. We are able, with Certainty, to tell what Weight Bodies are of in the Surfaces of *Jupiter* and *Saturn*, the most remote of our Planets. To tell where the noblest, and sometimes remotest of our Comets, that of *Anno Domini*, 16⁸⁰₈₁, now is; and when it will return; with the like wonderful and surprizing Things elsewhere; while here at Home we are not able to give a direct Account of one Blast of Wind, or one Storm of Thunder, belonging to the Air in which we breath, and on which our Life and Health, and Affairs (both by Sea and Land) do so much depend. What should be the Cause of this mighty Difference, will well deserve our Enquiry here; especially since all our Modern Philosophers seem to have neglected the same. I venture therefore to propose it to the Consideration of all Christian Philosophers, (for as to others, they will not bear any such Enquiries.)

(3.) Whether there be not a farther Occasion for this Difference than is vulgarly thought of? And whether those Invisible Beings, Good and Bad,

Bad, which all Antiquity, Profane and Sacred, assures us, inhabit in the Invisible Medium of the Air ; (which Place is also, Philosophically speaking, the most proper Habitation for any such Beings that we know of, in the sublunary World ; and under whose Conduct and Management, the same Antiquity assures us, Mankind are by Providence in good Measure placed,) may not frequently interpose. Mechanical Causes act necessarily and regularly ; and when their Subject or Matter is constantly the same, the Effects are equally constant : Nay, when the former are augmented, or diminished, in any Proportion whatsoever, those Effects are (in the same Proportion) mechanically and regularly augmented, or diminished. Free Agents do not act by such Mechanical Necessity, but Voluntarily ; by Counsel, and on Motives, and Reasons, not easily known to others. Since therefore, the *Phænomena* of the Air, and particularly those of the Wind, (on which the rest seem mainly to depend,) do, by all Tokens, appear to be generally immechanical and uncertain ; and it is still very observable that, *The Wind bloweth where it listeth, and we hear the Sound thereof, but cannot tell whence it cometh, nor whither it goeth,* (John iii. 8.) it may be justly question'd, whether they are not in part under the Government of those Voluntary Agents before-mentioned, I mean Good and Bad Angels ; and so brought about at such Times, and in such Circumstances, (whether for Mercy or Judgment,) as best suites the Divine Providence, whose Ministers all such inferior Agents most certainly are. The Foundations of almost all our present noble mechanical Philosophy, is laid in the immechanical Power of Gravity, pervading the Universe ; and in other lesser immechanical

chanical Powers on other Occasions ; and deriv'd all from the constant Influence of the Supreme Being himself ; as is now, upon full Evidence, forc'd to be allowed by the best Philosophers. It cannot therefore be justly thought very Unphilosophical if I Conjecture or Suspect, (for I desire this my Proposal may at present pass only under the Notion of my *Conjecture* or *Suspicion*) that in this Case, where Mechanical Necessity, and Mechanical Causes appear to fail us ; and we have rather Indications of Choice and Reason, we have recourse to such free and voluntary Agents as we otherwise know to be real, and to be there present, and to be capable of performing what we here assign to them. I say, that Mechanical Causes here fail us ; and we must therefore have recourse to such as are Immechanical, as we have in like Cases every where. For while the Air is the same Elastic Fluid, with the same Noble Properties one Year that it is another ; while the Sun, and Moon, and Stars, are the same, both as to their Courses and Influences (which are the Mechanical Causes of the Air's Mutations) one Year or Age that they are another ; while the Upper Parts of the Earth, with its several Strata and Effluvia, in its several Climates and Countries, are the same one Year and Age that they are another ; or if any Mutations happen in any of them they must happen regularly and gradually, and so will not much disturb the forementioned Constancy or Regularity : While, I say, all such Mechanical Causes and Materials are constant and regular ; yet does it appear, that the Effects before us are not so, but rather Uncertain and Occasional. I do not mean that there are no general Rules fixed for these Meteors in no Parts of the World : For Ratio-

nal Agents may act, or permit mechanical Causes to act, constantly and regularly, if they see occasion; especially, where there is a sort of Necessity for the same; which is the Case of the regular *Trade-Winds* between the Tropicks, and its Consequences, without which the *Southern Hemisphere* could hardly have been Peopled from this; nor it self have been in any tolerable Degree habitable or comfortable to Mankind. However, I shall desire the Inquisitive, if not to receive, yet to bear with this my *Suspicion*, till they are able to give some tolerable Account, upon meerly Mechanical Principles, of these sort of Aerial *Phænomena*, which hitherto have been too hard for all our Philosophical Solutions. I now indeed, upon this remarkable Occasion, first propose this Notion to the Publick; but confess it has been my own Conjecture about such Matters for a considerable time; which yet I am prepared to forego, upon the Production of better Evidence to supersede it.



VI. *Inferences and Observations from the Premises.*

(I.) **H**ERE we may observe, that these *Northern Twilights* are not confin'd to one Season of the Year, nor to one Temperature of the Air; but have been sometimes seen before, as well as after Winter; sometimes in Rainy and Windy, as well as in Fair and Calm Weather; though I think, the greater Part of the foregoing Histories, place them either in, or near the Winter Half Year; and in Calm and Clear Weather also.

also. But those Histories are too few to make any general Rules by, without more Observations. Only so far, that none of these *Meteors* having been seen in the Heat of Summer, when Thunder and Lightning are most common ; this is some Confirmation of my Hypothesis, that they are a kind of imperfect, unripe Lightning, as we have already observed.

(2.) Hence we readily learn the Origin of our common Stories, both in Ancient and Modern Accounts, concerning the pretended Openings of the Heavens, the Air being on Fire, the exhibition of Weapons, Armies, Navies, and Battels in the Air, and the like ; these in all probability being generally deriv'd from such sort of *Meteors* in the Air as this was ; and arising from the Fears, and Fancies, and Superstitions, and Prejudices of Vulgar and Injudicious Spectators ; as we accordingly find the like Chimerical Representations of this Appearance so current at this Day among us. I am sure I saw nothing of that Nature my self, so long as I viewed ; nor have met with any such Accounts which I could depend on from others.

(3.) We learn from all the Accounts of such *Northern Lights*, compar'd with the History of the Times following them, that nothing has been remarkably taken notice of by the Judicious to succeed after them ; I mean this particularly, as to Sicknesses, or Murdrains, or Plagues, or the like Miseries, which yet it is very likely the Air is much concerned in. And indeed I should be so far my self from expecting any such dismal Consequences from these Appearances, that I should think them rather useful for the Purgation of the Air from those unwholesome Exhalations and Vapours, which might otherwise be to our Prejudice in these Respects,

which the great Clearness of the Sky for some time since these Appearances seems to confirm. As I think it is generally, and justly observed in the Case of Thunder and Lightning; that by such Explosions, the sultry and suffocating Particles contain'd in the Air are spent and dissipated; and it is thereby rendred more healthful to all Creatures that breathe in it.

(4.) We hence learn, in the same manner, the Weakness of those Vulgar Prognostications and Omens, which are perpetually drawn from all such uncommon Phænomena of Nature; and that, I observe, almost constantly, such is the Guiltiness of Mankind, for Judgments, and Deaths, and Wars, and Miseries, of one sort or other; though usually they apply them not to themselves, or their own Party, which they ought rather to do for their Repentance and Amendment, and the averting of such Judgments from them; but to others, and to other Parties, for the gratification of their own Passions, and support of their own Interest in the World. For if we compare what Things have happen'd after the Appearance of *Comets*, of *Eclipses*, of these *Northern Lights*, &c. we shall generally find Things going on *after* them just as they went on *before*. Princes dye, Plagues happen, Wars are begun and carried on, and the usual Miseries to which we are all subject in this Mortal Life, fall out as well *before* as *after* such *Phænomena*; and, as far as the most judicious Observers can see, equally *before* as *after* them. I say, we shall *generally*, or in the ordinary Course of Things find it to be so; without supposing that there is no Exception in such Cases. If *Samuel* (1. *Sam.* xii. 16, -- 19.) foretells to the *Israelites* in Wheat-Harvest, a most terrible Storm of Thunder and Rain, to come on the very Day

Day of his Denunciation, as a Sign from God of his Displeasure at their Disobedience to him, and it comes accordingly ; this will not prove, that other ordinary Storms of that kind, which are not foretold by any Prophet, nor denounc'd as Judgments to any People, are to be suppos'd Signals of such Judgments. If our Saviour foretells the horrible Destruction of *Jerusalem*, (*Luke xxi. 10, 11.*) with the several surprizing Signals or Warnings, and some of them from Heaven, and in the Air, of their Approach ; and they are faithfully recorded, as having really happen'd accordingly ; It will not from thence follow, that any other Phænomena somewhat resembling them, but falling out in the constant Course of Things, without any such Predictions, must forebode the like Judgments. And it is the same Thing as to any *Signs in the Sun, and in the Moon, and in the Stars, in the Earth, or Sea*, *Mat. xxiv. 29. Luk. xxi. 25.* foretold by Christ as Preludes and Prefages of his Coming ; which will most certainly be sad Omens to bad, and joyful ones to Good Men, and will require the Attention of all the World. For this will not imply that the Eclipses of the Sun or Moon ; the Appearing or Disappearing of New Stars and Comets ; the Bursting out of Vulcano's and Earthquakes ; the Greater or Suddener Tides in the Sea ; with the rest of the Aerial Meteors, Thunder, Lightning, *Northern Lights*, Storms and Hurricanes, when at uncertain Intervals they appear to us, in the usual Course of Things, as they have frequently done before, are still therefore to be esteem'd Ominous, and Prognostications of mighty Calamities. And the Reason is plain ; that the Author of Nature has in one Case declar'd his Meaning

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as to those Events ; but has not done so in the other : Which Meaning, without such Declaration, it is great Folly and Presumption for poor Mortals to pretend to discover. God may, no doubt, if he pleases, make use of his Original Settlement of Natural Causes, without recourse to his own immediate Power ; not only to foreshew and foretel, but also to execute his own Purposes. A Deluge or Conflagration, as I have elsewhere shewn, may be brought about by a Comet, in its Descent or Ascent, without the Introduction of any thing strictly Supernatural or Miraculous. And the Reason is plain, that Nature is only God's appointed Order for his own Creatures Operations, by Powers deriv'd from himself ; and therefore, He that foreknew all Things at first, could accordingly foreordain, prepare, and pre-dispose any Parts of his own System, not only to foreshew, but really to bring about what Acts of Mercy or Judgment he, in his Divine Wisdom, shall think fit for his Creatures. This World is *God's World* : and what Nature does, is in reality and ultimately done by the God of Nature ; and so can never be justly look'd on as having no dependance on him, or regard to him. On which account, in a sober Sense, all the Phænomena of the World are deriv'd from a Supernatural and Divine Power. But then, till God's particular Meaning be discover'd to us, this will not enable us to foretel future Events from them. I am indeed under a peculiar Temptation myself to Wish and Suppose that this and the like unusual Appearances, may be Prognosticks and Fore-warnings of the Coming of those Great Concussions and Mutations which I expect soon in the World, to the Depression of Antichristianism, and the Revival of true Christianity in its stead. But this notwithstanding,

standing, I shall keep to Truth and Evidence ; and till I see apparent Marks of a Supernatural Intention herein, shall not pretend to interpret the Secrets of Divine Providence in favour of any Opinions, I have entertain'd on other Foundations.

As we are not to disregard *the Signs of the Times*, Matt. xvj. 2. or Prophetical Revelations, and Miraculous Operations coming from God ; so are we *not to learn the way of the Heathen ; nor be dismayed at the Signs of Heaven ;* Because 'tis a part of the Heathen Superstition *to be dismayed at them*, as the Prophet *Jeremiah* assures us, Ch. x. 2.

(5.) Hence we may learn the Folly of Judiciary Astrology, and of all such Methods of Divination and Prognostication as the Vulgar Superstitious People are so fond of ; and by which the pretended Masters of those vain and unlawful Arts either knowingly Cheat, for I fear that is frequently the Case ; or irreligiously abuse the weak and wicked Passions of their Admirers. For if the Unusual Phænomena of Nature afford us ordinarily no sure Ground for the Discovery of Futurities, what Ground can such known, daily, vulgar, necessary Circumstances, as the Conjunctions, Oppositions, and Aspects of the Planets, afford us for these Prognostications ? I do not suppose that all such Pretences are perfect Cheats, and that nothing has been, in an extraordinary Manner, predicted by Astrologers : But this I may justly suppose and affirm, that the Stars give no manner of Indications themselves ; and are perfectly Innocent as to the Prediction of future Events ; So that if any thing be thus foretold, it is by a Power plainly Dæmoniacal ; and that, as sound Reason wholly discountenances, so do both the *Jewish* and *Christian* Revelations utterly disclaim and forbid all such Practices. And 'tis a great shame that there
are

are so many still found that call themselves Christians among us, who use these Arts, or make the deluded People believe they use them; and thereby make them guilty, in desiring they may be used for them: while the remotest Instances of the same Practice, would, in the earliest Ages, have excluded Men from the first Admission into Christianity. But this is somewhat like a Digression; tho' not very improper upon this Occasion.

(6.) Hence we learn, instead of the irrational and superstitious, the Rational and Religious Uses of this, and the like uncommon Phænomena of Nature; *viz.* the same with that of the rest of the wondrous Works of the Almighty; whose *Heavens declare his Glory*; and whose *Firmament shews his handy-work*, Psal. xix. 1. We ought to learn from all these Phænomena, whether Natural or Supernatural, that the Heavens, the Air, the Earth, and the Seas, are all *full of God*; and contain innumerable Demonstrations of his Power, Wisdom, Beneficence, and Providence over his Creatures; that we are in his Hand, and at his Disposal, and have no way to get clear of his Omnipotence, and the Ministers of his Providence. We ought to make use of the more uncommon Works of his, which most affect us, to raise those Affections of Reverence, Fear, Trust, Admiration, Worship, and Praise to the World's great Creator and Governor; which even the not less Wonderful, but more Common, ought constantly to inspire us with. I conclude therefore with the Words put into the Mouths of the Three Children in the fiery Furnace, which are very suitable to this Occasion: *O ye Fire and Heat; O ye Lightnings and Clouds; O All ye Works of the Lord, Bless ye the Lord; Praise and Exalt him above all for ever!*

Apr. 23. 1716.

WILL. WHISTON.

Errata: Page 14. Lin. 23. read *James II.*

