

Astronomy: a diagram showing how to determine latitude. Coloured engraving by J. Emslie, 1851, after himself.

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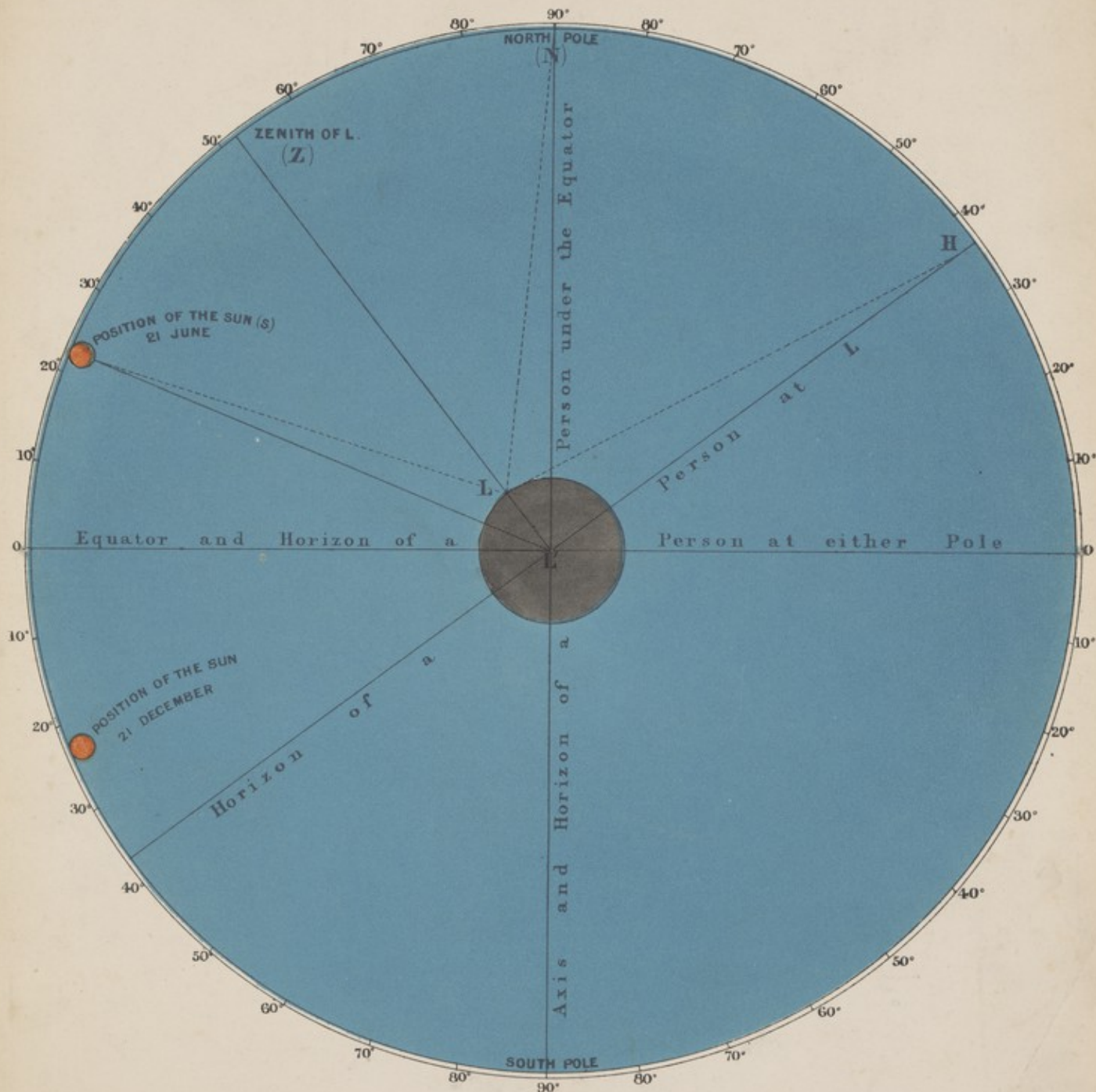
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METHODS OF ASCERTAINING THE LATITUDE.



In this Diagram the size of the Earth has necessarily been exaggerated; but supposing it had been drawn to scale, the distance to the nearest fixed star, in order to be proportionate to its size on the Diagram, would be no less than 44,000 statute miles. The Earth, therefore, is as a mere speck in the Universe, and for all practical purposes the lines L H, L N, and L S, must be assumed as parallel, or identical with, L/H, L/N, and L/S.

In order to find the Latitude of the place L on the Diagram, three methods may be employed. 1st—Observe distance between the Horizon (H) and the North Pole Star (N), and the angle N L' H (N L H) will indicate the latitude desired, viz. 53°. Instead of the Pole Star, any other Fixed Star, the distance of

which from the Pole is known, may be made use of.

2nd.—Observe distance between the Zenith (Z) of L, and the Celestial Pole (N). The angle N L' Z (N L Z) subtracted from 90° (N L' Horizon), will give the desired latitude, viz. 53°.

3rd.—We are acquainted with the daily declination of the Sun at noon, that is, his distance from the Equator, North or South. On the 21st June this declination is 23½ North: if we observe on that day the distance of the Sun from the Zenith (Z) of L, we obtain the angle Z L' S (Z L S) equal to 29½°, to which must be added 23½°, the known northern declination of the Sun, in order to obtain the desired latitude, viz. 53°.