

2. The inhabitants under the Equator have a pleasant sight of all the stars from pole to pole; for they rise and set with them at right angles; therefore no star can continue above twelve hours above this Horizon.

P R O B. X.

To know at any Time of the Year (in the Latitude of London) where to find any Star, or to tell the Name of any Star at Pleasure.

Rectify the globe for the day, and turn it till the index points to the given hour; then by a quadrant take the height of the required star; or, for want of this (in a common way of guessing) observe well what part of the heavens it is in, viz. whether east-north-east, south-west, or the like; also its height as near as you can guess. This being done, let the globe in due order for the day and hour, and you will find the same star on the globe; and, by applying the quadrant, you will find the exact point of the compass, and the real height the star then has, which, though not perhaps near to what you guessed it at, yet, if it be any noted star, you may assure yourself you were right, as there is no other star of note near it about that height, and upon the same point.

Thus, on December the 25th, at eight at night, was observed a bright star (as near as can be guessed) on the south-east point, and about 48° high; It is desired to know what star it is? *Ans.* Aldebaran.

I rectify the globe, and turn the index to the hour, and then turn the quadrant to the given point of the compass, and looking about 48° high on the quadrant, Aldebaran is found to be the nearest bright star by the quadrant on that point and height; therefore I conclude it is Aldebaran.

Also at three quarters past ten, the same night, was seen two very bright stars, one on, or near, the Meridian, about 30° high, and the other near the south-east point, and about 35° high; I demand their names? *Ans.* Regel and Procyon in Canicula.

P R O B. XI.

To tell the Latitude and Longitude of the Stars.

First, Observe whether the given star be on the north or south side of the Ecliptic; for if it be on the north side, elevate the North Pole $66^{\circ}\frac{1}{2}$, and turn the globe till ∞ and ω lie in the north and south points of the Horizon, viz. the Ecliptic will be parallel, or even to the Horizon, and fix the quadrant in the Zenith: then keeping the globe steady, turn the quadrant till the edge of it touches the center of the star; and that degree on the quadrant, viz. the altitude of the star in the latitude $66^{\circ}\frac{1}{2}$, is the latitude required, and the degree of the Ecliptic, cut by the quadrant, reckoned from Aries (or rather reckoned among the signs, as it happens) is the longitude required.

Thus you will find Arcturus in Bootes to be about $30^{\circ}\frac{1}{2}$ north latitude, and 230° longitude from ω , or rather 23° of Δ . Also, Alcair is about $29^{\circ}\frac{1}{2}$ of north latitude, and 28° of longitude in ω .

2. For any south star. Elevate the South Pole $66^{\circ}\frac{1}{2}$, and fix the quadrant in the Zenith, and apply it to the star, as before directed, you have the latitude and longitude required. Thus you will find Pes Centaurus to have about $42^{\circ}\frac{1}{2}$ of south latitude, and 230° longitude from ω , or rather 26° in π ; and thus for any other star.

P R O B. XII.

The Latitude and Day of the Month given (suppose December 25, at Nine at Night at London) to set the Globe so as to represent the Face of the Heavens at that Time, and shew your Acquaintance the Name and Position of the most eminent fixed Stars.

Rectify the globe so: the latitude, and bring the sun's place to the Meridian, and the index to twelve: then turn the globe to the given hour, viz. five minutes past nine at night, and there fix it, so will every star on the globe (if you set the globe north and south) correspond with, or point to the same star in the heavens.

Thus (at London) is found Capella east by south about 75° high, Castor and Pollux, one about 40° and the other about 45° high, near the east point: Procyon below them, to the left hand, 23° high east-south-east: Sirius yet lower, to the left, south-east about 10° high: Betelgeuze higher, on the same point, about 38° high; Regel, more southward, about 2° high: Aldebaran, on the same point, much higher, viz. about 53° : the Seven Stars, or Pleiades, south nearly about 62° high: Meneur, south by west 40° high: Arides, north-west about 26° high, &c. &c.

P R O B. XIII.

To tell the Time of the acronical Rising and Setting of any Star.

Definition. 1. The acronical rising of a star is when the star rises just at the sun-set.

2. A star is said to set acronically when it sets with the sun.

Bring the sun's place for the given day to the western side of the Horizon, and all those stars that are on, or near the eastern side of the Horizon, rise acronically; and those on the western verge of the Horizon set acronically.

Thus it is found on December the sixth, that Aldebaran rises acronically, but it sets acronically on May the 21st. Also Sirius rises acronically on February the fourth, and sets acronically on May the fourteenth.

P R O B.