INTRODUC TION.

PROB. XIV.

To tell the Sun's right Afcenfion.

Bring the fun's place to the Brazen Meridian, and note what degree of the Equator is cut by the Meridian, for that is his right alcention required.

To know the fun's right alcention on March the 21ft, June the 21ft, September the 22d, and December the 21ft.

Find the fun's place for their different days, and bringing it to the Meridian, it is found the Meridian cuts the Equator in 0, in 90. in 180, and in 270, his right alcention required. Note, When the funenters m, March the 21ft, he has no right alcention, becaufe it is counted from,

or begins at γ ; therefore, on March the 20th, he mult have his greatest right alcension, viz. 359°.

R 0 В. XV. Р

To find the Sun's oblique Afcenfion and Defcenfion at any Time, and in any I.atitude.

Rule 1. Rectify the globe for the latitude, and bring the fun's place down to the eaftern verge of the Horizon, then observe what degree the Horizon cuts the Equator in, for that is the oblique afcention required.

2. Turn the globe till the fun's place come to, or lies level with the weltern verge of the Horizon, and the degree of the Equator cut by the Hor zon is the oblique descension required.

Thus on March the 21ft, June the 21ft, September the 22d, and December the 21ft, viz. when the fun enters m, m, and m, you will find his oblique alcenfion will be 0, 56, 180, and 304. And on the tame days his oblique defcention will be 0, 123, 180, and 237 and a half.

> R 0 B. XVL

The Latitude and Day of the Month given, to tell the Sun's afcenfional Difference, viz. how much he rifes or fets before and after fix ; and confequently to tell the Length of the Days, fuppofe there were no Index to the Globe.

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Rule. By the laft problem find the fun's right and oblique afcention; then fubtract the oblique from the right alcention, or the contrary, and the remainder is the alcentional difference required ; wh ch divide by fifteen, the degrees of the Equator that pass through the Meridian for one hour (or feven and a half for half an hour) gives the antwer in time that the fun rules and fets before and after fix.

Thus on May the 26th is found the fun 6° of π , and his right alcention is 64°, and on the lame day his oblique alcention is 34°; now 34° from 64°, there remains 30°, his alcentional difference; which divide by fifteen gives two hours, the time that he rifes before or fets after fix.

N. B. The right exceeds the collique alcention from w to Δ , when the fun riles before fix; but the other halt year that he rifes after, or fets before fix, the oblique exceeds the right alcention.

RO В. XVII.

The Latitude and Day of the Month given, to tell the Sun's Amplitude, viz. his Diflance from the eaft and west Points at his rifing and feiting, and the Points of the Compass be rifes and sets upon.

Rule. The globe being rectified, bring the fun's place to the eattern verge of the Horizon, (which fhews his riling) then the degrees upon the innermost circle of the Horizon, counted from the true east point to the place where the fun's place lies against on the Horizon, shews you the fun's amplitude.

Proceed according to the rule, you will find the fun's amplitude at London, (May the 21st) at riling to be about 34° from the east to the north, and at fetting 34° from the west to the north, and the point he rifes upon is north east by east, and fets north welt by west. But on November the fifth he has about 25° and a half amplitude from the east to the fouth, and at fetting 25° and a half from the welt to the fouth. The point he rifes upon is east fouth east, and the point he fets upon is weft-fouth-weft.

P R O B. XVIII.

The Latitude and Day given, to tell the Sun's Azimuth, viz. his Diftance from the Eaft and Weft, or from the North and South Points at any Time.

Rule. Rectify the globe in general, then turn the globe till the index points to the given hour; this being done, turn the quadrant till it touches the fun's place for the given day; and then the quadrant will cut the Horizon in the Azirauth required from the east or west points, or from the north or fouth points, for you may reckon from either, only then name it properly and accordingly.

Thus on August the 17th, at nine in the morning, the fun will have about 30° Azimuth from the east to the south; or, which is the same, 60° from the south to the east, for 60° and 30° make 90°, the whole quarter from east to south.

N. B. Some authors call this 60° fouth amplitude; but others call it 30° fouth amplitude; that is, 30° from the east to the fouth, as was faid before.

PROB. XIX.

The Latitude, Day, and Hour given, to tell the Sun's Almacantar.

Definition. Almacantars are circles of Altitude that run parallel to the Horizon, whole poles are the Zenith and Nadir; fo that you may imagine as many circles of altitude, viz. Almacantars, as you pleafe.

Rule. The almacantar is found the fame as the altitude of the fun at any time, therefore we refer you back to Prob. xiji. 7

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