in the Tables more than one whole degree, as I haue found by many obſeruations.

For the eaſier mending of theſe faults in the tables of the ſunnes declination, I thought it meete firſt to ſet downe the table following, which ſheweth the declination of euery minute of the ecliptike in degrees, minutes, and ſeconds, whereby the place of the ſunne is preſently knowne, his declination being firſt giuen by obſeruation, and conſequently his eccentricitie and apogeum were eaſily found, and the theoricke of the Sunne corrected: out of which the Ephemerides hereafter following were calculated, ſhewing the true place of the Sunne for euerye daye of foure yeeres agreeable, (without notable errour) to the ſeuenth of the heauens: and out of theſe with helpe of this Table of declination, a new regiment (or table of the Suns declination for euery day of foure yeres) was moſt eaſily made: free from ſuch errours as wherewith the tables hitherto publiſhed and commonly vſed haue beene too much peſtered: as by compariſon of this, & thoſe tables with the obſeruations hereafter following may euidently appeare.

¶ *Of the Table of Declination following: wherein is ſet downe, the Declination of euery Minute of the Ecliptick, in Degrees, Minutes, and Seconds. Made according to the greateſt obliquitie of the Zodiacke this preſent age, which by exact obſeruation is found to be 23. Degrees 30. Minutes. Seruing eſpecially for finding out moſt ſpeedily, the true place of the Sunne, his Declination being firſt knowne: Or, contrariwiſe, To find the Declination of the Sunne, his place being firſt giuen.*

BEcauſe the Table of Declination following, dooth differ ſomething from the Tables heretofore publiſhed by others, whereof ſome make the greateſt declination of the Sun to be 23. Degrees, 28. Minutes only, as *Copernicus* and his followers (according to which the Tables of Declination and regiments of the Sunne now generally vſed by our Engliſh Mariners are made:) whereas others of late, as that noble Aſtronomer of *Denmarke Tycho Brahe* in his ſecond book *De recentioribus ætheres mundi phænomenis* ſetteth down the ſame to bee by his obſeruations 23 degr. 27 mi. pag. 38. 23 de. 31 mi. pag. 386. 23 de. 31 mi. 30 ſec. pag. 217. according to which there is a table of declination already publiſhed by *Maginus*: I thought it therfore needfull to ſet downe, what reaſons mooued me to cleaue neither to the one, nor the other, but to keepe, as it were, a middle courſe betweene both: herein not onely agreeing with that excellent arts-man *Germanies Euclide Regiomontanus*, whom *Petrus Nonius* (compared by *Ramus* to *Archimedes*) & *Clarius* (a great Mathematitian though a Ieſuite)

choſe rather to follow, then either of the other: But reſting alſo vppon many and diligent obſeruations (taken by a quadrant of more then ſixe foote *ſemidiameter*, ſo exactly made & diuided into minutes and halfe minutes, as poſsibly we could: and as accurately vſed and rectified by a plumb'line (euerie time we obſerued) as ſight could diſcerne:) All whirh obſeruations do proone with one conſent, that the greateſt declination of the ſunne in this age is 23 degrees and 30 minutes, as thus it may appeare.

In the yeare 1594. the 11 and 12 dayes of Iune, the meridian altitude of the ſunne was obſerued to bee 61 deg. 58 min. whereto the obſeruations of the 8, 9, 10, 13, 14, and 15 dayes of the ſame moneth doo well agree, wherin the meridian altitudes of the ſunne were 61 deg. 55 mi. ½ 61 deg. 56 mi. ½ 61 d. 57 mi. 61 d. 57 mi. ½ 61 d. 57 mi. 61 deg. 56 mi. almoſt, as alſo the obſeruations of the 9, 11, 12, and 13 dayes of Iune, in the yeare 1597: In which daies the meridian altitudes of the ſunne were 61 de. 57 mi. 61 de. 58 ½ mi. almoſt. 61 de. 58 mi. 61 de. 57 ½ mi. By all which obſeruations it may be concluded that the greateſt height of the ſun here at *London* is 61 deg. and 58 minutes. Likewiſe by diligent obſeruation made the 12 of December in the yeare 1595 (which day was very cleare) it is manifeſt that the leaſt meridian altitude of the ſunne at *London* is 14 degrees, 58 minutes, which being taken out of the greateſt height, 61 degrees, 58 minutes, there remaineth 47 degrees, 0 minutes. the diſtance of the *tropiokes*, the halfe whereof is the obliquitie of the *zodiacke*, or greateſt declination of the ſunne at this time, *viz.* 23 degrees 30 minutes.

But yet further to ſatiſſfie them that may perhappes be in doubt hereof, becauſe I bring but one obſeruation onely of the leaſt meridian altitude of the ſunne: who may alſo obiect the refraction of the ſunne beames, being

ſo neare the *horizon*. I haue alſo tried the ſame another way, by many and heedefull obſeruations of the Pole ſtarre, whereby I found the greateſt height thereof here at *London* to be 54 degrees, 24 minutes, and ½: and the leaſt height 48 degrees, 39 minutes ½: the difference of which heigths is 5 degrees 45 minutes: the half whereof 2 degrees 52 min. ¼ (the diſtance of the Pole-ſtar from the Pole) added to the loweſt heigth of the Pole ſtarre, ſheweth the heigth of the Pole at *London* to bee 51 degrees, 32 minutes: the complement whereof (38 degrees, 28 minutes) is the heigth of the equinoctial, which ſubtracted out of the greateſt heygth of the ſunne, 61 degrees, 58 minutes: there remaineth the greateſt declination of the ſunne as before 23 degrees 30 minutes.