

RHETICUS'S LOST TREATISE ON HOLY SCRIPTURE AND THE MOTION OF THE EARTH

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It is well known that Copernicus's pupil G. J. Rheticus (1514–74) wrote a *First account* (*Narratio prima* (Dantzig, 1540)) of his teacher's system, and also a defence of its compatibility with Holy Scripture. The latter's existence was known through a letter dated 26 July 1543 from Bishop Tiedemann Giese to Rheticus, in which he advocated the insertion in copies of *De revolutionibus* of the little treatise "by which you have skilfully vindicated [the view] that the motion of the Earth is not contrary to the Holy Scriptures".

No copy of Rheticus's second treatise was known to exist, and as Giese did not give any information about its contents, posterity was left in the dark about Rheticus's (and, implicitly, Copernicus's) opinions about the authority of Scripture in scientific matters.

In the early 1970s when preparing a monograph (as yet unpublished) on *The reception of Copernicanism in the Netherlands*, I perused a large number of books and pamphlets written and published in the Netherlands (in particular, in Holland and Zeeland) that dealt with the compatibility of the doctrine of the mobility of the Earth with the text of Holy Scripture. Practically all of them had been written *after* the condemnation of Galileo (1616, 1633) and the sojourn of Descartes in the Netherlands and the publication of his works there had caused a flare-up in the controversy over the correct interpretation of biblical texts dealing with nature. Among these writings there was one to which at first I paid little attention. It was an anonymous *Letter on the motion of the Earth* (1651), written in Latin, and containing pro-Copernican arguments well known from the works of Kepler (1609), Foscarini (1615), Lansberg (1619, 1629), Wilkins (1638), and also Galileo himself (1615).

A closer inspection, however, convinced me that the work was much older than 1651, and that it must have been written before the Council of Trent (1545–47, 1551–52, 1562–63). The author wrote in such a way that it was impossible to decide whether he was on the side of Rome or Wittenberg. He often testifies that he wants to be faithful to the "Catholic" faith and the "Catholic Church", a claim made by the Protestants too. Moreover, he supports his views by frequent quotations from St Augustine who, to him, was the warrant of orthodoxy. This church father was likewise a great authority among the followers of Erasmus and Luther.

Such theological vagueness does not fit in with the post-Tridentine situation.

In the second place, the work must have been written after 1532, for the latest book quoted is Johannes Campensis's *Enchiridion Psalmorum* (1st edn, Nuremberg, 1532). Though in general the Bible is quoted from the Vulgate, on this occasion a direct translation from Hebrew into Latin was available, as was also the case when the author used the translation from Hebrew of the Book of Genesis by Nicholas of Lyra.

Thirdly, the treatise must stem from Copernicus's circle, for the author is familiar with the ideas Copernicus had developed since 1514, adducing new

physical arguments over against those of Aristotelian physics. The author must have known the contents of Copernicus's work, for there are several fragments of it freely quoted. It is true that he never mentions the title, *De revolutionibus*, but neither does the master's own manuscript.

Finally, the author must be Rheticus, for he says that he will not enter into details of the new astronomical system, because he has already done so in an earlier work. This fits in with Rheticus, who had written his *Narratio prima* already in 1539.

The decisive argument, however, is that, though the author never mentions Copernicus's name, he speaks more than once about "my teacher" ("praeceptor meus"), a custom likewise followed by Rheticus in his *Narratio prima*. Rheticus was the only person who had a full right to call Copernicus "praeceptor meus", for during a period of 2½ years he was closely associated with the Polish astronomer.

The conclusion finds ample support in the style of the treatise. The author's enthusiastic defence of the truth of Copernicus's system alternates with utterances sceptical about the certainty of human knowledge, so much so that one gets the impression that the author was of unbalanced character. It is known that Rheticus, when a young man, was restless and unstable.

It has been said that Rheticus did not remain faithful to his master's doctrine. I do not think that was the case, but, the first enthusiasm having subsided, he saw that Copernicus's work was ambiguous about hypotheses and that it still contained many "hypotheses" that were no more than convenient devices for astronomical calculation, which had, however, the advantage of keeping strictly to the rule that only circular, uniform motions should be introduced for that purpose.

The general theme of the treatise is that the Bible is intended only to teach what is necessary for salvation (doctrine and ethical precepts), but that on scientific matters it does not speak apodictically, rather adapting itself to the common way of speech or vulgar opinion. This is put forward as an Augustinian principle of exegesis. Scripture does not give scientific information: in geography, for example, this has become evident as no mention is made of the recently-discovered New World. And when Scripture says that the seed that falls in the earth must die before it can give fruit, this is an adaptation to vulgar opinion.

Not only is St Augustine quoted in support of the principle of accommodation, but also the medieval commentator Nicholas of Lyra. This principle implies that arguments for or against the mobility of the Earth should not be borrowed from Scripture. Only certain facts about nature that lie beyond the scope of scientific investigation (for example, whether the world has been created or exists from eternity) must be learned from the Bible.

Some pages are devoted to the physical tenets Copernicus put over against Aristotle: like Copernicus, the author holds that a body falls to the Earth because it wants to be united with the main body to which it belongs, whereas according to Aristotle a heavy body falls because it wants to be in the centre of the universe.

It is remarkable that the author cannot resist the temptation to detect in Scripture allusion, though "under a veil", to the motions of the Earth: the daily

Astron. Copernicana. 63
 quievit à motu diurno, cū Do-
 minus pugnaret pro Israël, Ita
 Assyrii cum auferes Spiritum
 eorum deficient, & in pulve-
 rem convertentur, & pro hac
 tua liberatione à suis hostibus,
 reliquæ tibi gratias agent &c.
 Verum per me quispiam hunc
 locum poterit figurate dictum
 intelligere aut quomodocun-
 que. Quod doctis ac piis in tota
 hac disputatione visum fuerit
 convenientissimum ad assu-
 mendum, nos quoque seque-
 mur. Cum autem quilibet in
 suâ vocatione aliquid cum suo
 talento Ecclesiæ Catholicæ
 Christi debeat lucrifacere,
 probanda est opera Domini
 præceptoris mei, quam Reip:
 Literariæ præstat & nobis Ma-
 thematica duce certam ratio-
 nem, & omnibus seculis con-
 sentientem temporum, anno-
 rum & dierum communicat.
 De-

FIG. 1. A page from the work, in which the author recommends reading the works of “my teacher”.

and also the annual motion (Job 9: 6, “Who moveth the Earth from its place . . .”) and even the so-called “third motion” (declination) (Ps 73 [A.V. 74]: 17). And though the texts about the “foundations of the Earth” are divested of any literalistic meaning favouring the Earth’s immobility, the author himself interprets them as referring to the centres of the diverse circular motions of the Earth. It must be recognized, however, that he does not insist too strongly on these interpretations. Nevertheless, they would not have been possible without the help of astronomical science, so that the author here contradicts his own precept that “true understanding of everything contained in the Sacred Writings is to be sought from them, and not elsewhere”.

In the next century, Galileo, too, weakened his position by extracting astronomical data from the Bible, as when he claimed in the *Letter to the Grand Duchess* that Joshua 10: 13 (“ . . . the Sun stood still in the midst of heaven”) alludes to the rotation of the Sun.

At the end of his treatise, Rheticus advises the reader to examine and accept the work of his preceptor. And then follows the surprising sentence: “The

philosophers say that some things are known to nature, but unknown to us. To this category let us indeed consign also disputes about hypotheses.”

The text as we have it now is composed rather carelessly: some arguments are repeated several times and the inner consistency is weak.

One might ask: why did the author not have it published? In itself it is a harmless tract, written in a moderate tone, as befitted a pupil of Melanchthon and friend of Giese.

It is probable that it was written shortly after 1540. At that time there was little hostility towards the Copernican hypotheses. Melanchthon, who thoroughly disliked them, nevertheless wanted Rheticus back in his chair in Wittenberg, and when Rheticus went to Nuremberg in 1542 to put Copernicus's *De Revolutionibus* in the press, the Reformer wrote a letter of recommendation to the printer, his friend Johannes Petreius.

Nevertheless there was the possibility that a downright attack, however mildly put, on the literalistic interpretation of the Bible texts at issue, would raise trouble. It seems probable that Rheticus, who was anything but pugnacious, after all deemed it better to let sleeping dogs lie.

In spite of the lack of historical influence, the discovery of Rheticus's defence and its publication in the course of 1984 (by the Royal Netherlands Academy of Sciences) seems important, because the work had the full approval of Copernicus's closest friend and, certainly, also of Copernicus himself. We know now what Copernicus meant when he spoke in the Preface to *De revolutionibus* of *mataiologoi* who distort the Bible for their own ends, and how he would reconcile his theory of the motions of the Earth and the immobility of the Sun with the authority of Holy Scripture.