

they had been made by the author personally. The problem of dating the *Almagest* was discussed in many works; in particular, it was conjectured that the "earlier" observations had been made by Hipparchus. Many astronomers did not agree with this ([257⁺], pp. 80-81). Though, an objection to the primacy of the Latin text is possible. In the 16th c., Ptolemy's book was published not as a document of the history of science, but as a treatise for immediate use by scientists and students of astronomy. The catalogue could not be used, made obsolete due to precession, and the translator updated it, introducing the latest data. As to the Greek edition, he believed it unnecessary as a textbook, because the Latin translation was available, and, hence, restored Ptolemy's original figures (which relate the catalogue to the beginning of the first millenium). This argument is also supported by the title page of the Latin edition, with direct indication that the book was reduced to "the modern epoch" and especially designed for students; thus acknowledging that the Latin edition (at least with respect to the catalogue) was apocryphal, but denying this concerning the Greek edition.

The objection can be refuted by the fact that the coordinates of many of the most remarkable stars listed in the Greek edition were considerably improved in comparison with the Latin edition (see their list in [13], V. 4). Besides, the Greek edition of 1538 literally teems with improvements of this sort in contrast to the Latin one signed by 1537 A.D. But that was not all. Comparison of the star latitudes in the Latin "translation" and the Greek "original" shows that they all were increased by 25" or corrected to more precise ones, and not due to precession, for the latitudes are not subject to it. The corrections were always such that the whole ecliptic was shifted southwards, almost onto the sun's diameter, which seems to be, possibly, only due to the author's introduction of systematic corrections to refraction, without taking into account that they, just equal to the sun's diameter, decreased in shifting towards the pole of the ecliptic (a vertically falling ray is not refracted). The author could not calculate the differential corrections of today, and confined himself to systematically shifting all the stars except those investigated in an especially precise way. Thus, "restoring" Ptolemy's data in one respect (cf. precession), the Greek edition improved them (or attempted to improve) in another, which does not agree with the conjecture regarding the text' originality.

Studying the latitudes, J. Bode noticed that the *Almagest's* entire ecliptic had been askew (which was, in fact, true), indicating that its deviation is one and a half times greater than in theory, and expressed his bewilderment as to what such a considerable systematic difference can be ascribed. There is an explanation: The catalogue's author resorted to so-called ecliptical, and not equatorial coordinates (as expected), which are substantially more precise and more easily determined from observations. If we assume that he originally determined the star positions in the equatorial system and subsequently recalculated them into the ecliptical, then the deviation can be immediately explained by the rounding-off errors. It suffices to put the distance on the sphere of the pole of the ecliptic precisely equal to 23° instead of 23.5° in order to obtain the systematic difference that so surprised J. Bode. The generally accepted method of rounding off was rejecting any fractional parts, even close to unity, and in our case it is only 0.5.

However, if the author simply knew of oscillations in the ecliptic with respect to