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Ṭabarī: Abū Ja‘far Muḥammad ibn Ayyūb al-Ḥāsib al-Ṭabarī

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Flourished (Iran), 1092-1108

Ṭabari lived in Iran under the Saljūqs, probably in Āmul, and is the author of two independent treatises in Persian on the astrolabe as well as several other books, including two on arithmetic. Although several modern studies place him in the 13th century, he must have lived earlier based upon manuscript sources and since he is mentioned by al-Bayhaqī in his *Tatimmat ṣiwān al-ḥikma* (1164).

The first astrolabe treatise is known under the title *Shish faṣl* (Six chapters [on the knowledge of the astrolabe]), the oldest manuscript copy dating to 1176-1177. It was probably composed at the request of some students and is arranged in a question-answer (q/a) format:

- (1) On the parts of the astrolabe and their names (60 q/a);
- (2) On lines, figures, inscriptions, and circles on the astrolabe (77 q/a);
- (3) On knowing the functioning of the back part of the astrolabe (49 q/a);
- (4) On knowing the functioning of the face side of the astrolabe (136 q/a);
- (5) On knowing how to check the exactness of the astrolabe (28 q/a);
- (6) On the use of the astrolabe for land-surveying/measuring (*misāḥa*) (17 q/a).

The second treatise is a shorter and simplified version of the “six chapters” and is arranged simply into 104 entries. Entitled ‘*Amal wa-alqāb* ([On the] functions and names [of the astrolabe]), the oldest extant manuscript copy is dated 1162. It was written for a certain nobleman of his time, who is named in two copies as Abū al-Faḥ Dawlatshāh ibn Sulaymān. In the beginning of the treatise, Ṭabari states that there are three types of astrolabes: (1) spherical (*kurī*) used in earlier times; (2) circular (*dawrī*), used in the time of the author, who describes it as circular and flat; and (3) boat-

shaped/*navicula* (King, 1999, p. 352) (*zawraqī*), which is nevertheless described by Ṭabari as a “hemisphere, like a cup,” who indicates that it was used in pre-Islamic Iran and that the astrolabe was called in Pahlavi “the cup that mirrors the world” (*jām-i jahān-namā*). This passage is not found in **Abū Rayḥān al-Bīrūnī**'s *Tafhīm* and is quoted here as a curiosity.

Ṭabari's two treatises on the astrolabe are among the oldest extant Persian texts on the subject. For a detailed study of their content, they should be compared to the earlier chapter on the astrolabe in Bīrūnī's *Tafhīm* and to the later *Bist bāb dar ma'rifat-i usṭurlāb* (20 chapters on knowledge on the astrolabe) by **Naṣīr al-Dīn al-Tūsī**.

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