



## AḤMAD ṢĀĠĀNĪ

**AḤMAD B. MOḤAMMAD ṢĀĠĀNĪ**, ABŪ ḤĀMED, one of the many astronomers who worked for the Buyids in Baghdad in the 4th/10th century. Thus Bīrūnī (*Taḥdīd al-amāken*, ed. P. Bulgakov, Cairo, 1964, p. 100; tr. J. Ali, Beirut, 1967, p. 69; commentary E. S. Kennedy, Beirut, 1973, p. 43; see also *al-Qānūn al-mas'ūdī*, Hyderabad, 1954-56, p. 364) quotes from his lost *Kētāb al-qawānīn* his determination of the obliquity of the ecliptic and of the latitude of Baghdad in A. H. 374, Yazdeġerdī 354 (20 March-23 May 985); Bīrūnī (*al-Qānūn*, pp. 659-60) also reports that he observed the lengths of the seasons at Baghdad in Yazdeġerdī 355 (20 March 986-19 March 987) in order to determine the longitude of the solar apogee. According to Ebn al-Qeġṭī (*Ta'riḳal-ḥokamā'*, ed. J. Lippert, Leipzig, 1903, pp. 79, 353) and Abu'l-Faraġ (*Ta'riḳ moḳtaṣar al-dowal*, Beirut, 1958, p. 176), he was associated with Kūhī in the observatory established in that same city under Šaraf-al-dawla (r. 376-79/987-89). Apparently, he was responsible for the instruments in that observatory. Abu'l-Faraġ adds that Ṣāġānī died at Baghdad in 379/989-990; Ebn al-Qeġṭī (*Ta'riḳ*<sup>2</sup>, p. 79) narrows the time to *Ḍu'l-qa'da* or *Ḍu'l-ḥejġa* of that year (31 January-30 March 990). Bīrūnī provides additional information about Ṣāġānī's activities. He notes, for instance, his determination of the solar equation (*Tamhīd al-mostaqarr fi'l-taḥqīq ma'na 'l-mamarr*, in *Rasā'el al-Bīrūnī*, Hyderabad, 1948, pp. 22-23; tr. M. Saffouri and A. Ifram, Beirut, 1959, p. 26), his development of a method of stereographic projection for use in astrolabes (see below, no. 1; *Ātār al-bāqīa*, p. 357; *Chronology*, p. 357), and his report of the expedition sponsored by Ma'mūn to measure the circumference of the earth (*Taḥdīd*, ed. p. 214, tr. p. 179, commentary, p. 233). For this report he depended on Tābet b. Qorra. Seġzī



(Woepcke, *L'Algèbre d'Omar Alkhayyāmī*, Paris, 1851, pp. 119, 123) quotes two propositions concerning the trisection of an angle from him.

Ṣāġānī's surviving works are: 1. *Ketāb fī kayfīya taṣṭīḥ al-kora 'alā saṭḥ al-aṣṭorlāb* ("Book on the manner of projecting a sphere on the plane surface of an astrolabe"), published as item 7 in *al-Rasā'el al-motafarreqa fī'l-hay'a*, Hyderabad, 1948. 2. *Resāla fī'l-sā'āt al-ma'mūla 'alā ṣafā'eḥ al-aṣṭorlāb* ("Epistle concerning the hour-lines constructed on the tympan of an astrolabe"). 3. *Maqāla fī'l-ab'ād wa'l-ajrām* ("Treatise on the distances and sizes [of certain celestial bodies]"). 4. *Resāla fī 'amal zeḥ' al-mosabba' al-motasāwī le azlā' fī'l-dā'era* ("Epistle on constructing the side of an equilateral heptagon in a circle").

## BIBLIOGRAPHY

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See also A. Sayili, *The Observatory in Islam*, Ankara, 1960, pp. 110-15.

Sezgin, *GAS V*, p. 311.