Published: December 15, 2003
Last Updated: June 6, 2013

HARTNER, WILLY

HARTNER, WILLY, Professor of the History of Sciences specializing in astronomy (b. Ennigerloh Westfalen (Germany), 22 January 1905, d. Bad Homburg, 16 May 1981). Hartner studied astronomy at Frankfurt University under Martin Brendel, who introduced him to classical and modern celestial mechanics. Already in 1928 he published an important contribution to his chosen field: "Die Störungen der Planeten in Gyldénschen Koordinaten als Funktionen der mittleren Länge," on the basis of which he was awarded the degree of Doctor Philosophiae Naturalis in the "Naturwissenschaft Fakultät" of Frankfurt University. Hartner's interests in the scientific world of the Orient led him initially to the Frankfurter China-Institut, where he studied classical Chinese with Richard Wilhelm, before studying with Paul Pelliot in Paris and publishing research on the Chinese calendar. He studied Arabic with Prof. Josef Horowitz and gained expertise in the Muslim world, contributing articles to the *Encyclopaedia of Islam* (see Schramm, pp. 6-7). At the Völkerkundeinstitut of Frankfurt University, directed by the ethnologist Leo Frobenius, Hartner also became acquainted with new metho-dological trends which inspired his future research.

While holding the post of Lector at Frankfurt University (1931-1935) Hartner spent much time in Scandinavia and married Else Eckhoff in Norway in 1935. That same year he was invited to Harvard University as Guest Professor of the History of Natural Sciences. To this fruitful period belong many studies, such as those on the iconography of the lunar nodes in Hindu and Islamic works, e.g., "The Pseudoplanetary Nodes of the Moon's Orbit in Hindu and Islamic

Iconographies," and in particular his masterful essay, "The Principle and Use of the Astrolabe" (see also the later article "Asṭurlāb," in *EI2*). When he returned to Germany in 1938, the country was under the rule of the Nazi regime, whose anti-semitic persecution had affected some of his colleagues. Hartner's strong opposition to the Nazis is illustrated in two of his lectures that were published in 1961 (see Schramm, p. 11). He completed his "Habilitation" in 1940, and in 1943 his work "Zahlen und Zahlensysteme bei Primitiv- und Hochkulturen" was finally published; in that same year he was given the opportunity to found the second German "Institut für Geschichte der Naturwissenschaften," the first one having been founded by Julius Ruska in 1922 (on his relations and collaboration with Ruska, see Schramm, pp. 12-13). This Institute was bombed in 1944.

After the end of World War II, Hartner was officially engaged in the reconstruction of Frankfurt University, playing a chief role in the relations with the American Military Government (Schramm, pp. 13 ff.). On 28 August 1946 he became a full professor, and from that year he started a fruitful collaboration with the University of Chicago. He was Rector of Frankfurt University for the academic year 1959-60 and guest professor at Harvard a number of times during the years 1961-65. Hartner received many prizes and official aknowledgements for his scientific achievements: in 1971 he was awarded the George Sarton Medal, and he also received the Hegel-Medal from the Soviet Academy of the Sciences. From 1971 until 1977 he was President of the Académie Internationale d'Histoire des Sciences. Hartner was also a corresponding member of many academies: Academia Real de Buenas Letras, 1968; Accademia Nazionale dei Lincei, 1975; Royal Danish Academy, 1980. In 1968, in honor of his sixtieth birthday, the volume *Oriens-Occidens*, containing many of his articles, was published. A second *Festschrift*, entitled *Prismata*, was dedicated to him in 1977.

Among Hartner's many works devoted to Oriental studies, some deal with Iranian subjects: in particular two important articles, written in the last years of his life, concern the historical origins and development of the ancient Persian calendar systems: "The Young Avestan and Babylonian Calendars and the Antecedents of Precession," and "Old Iranian Calendars." Hartner presents strong arguments here that the Zoroastrian calendar and the "reformed" Babylonian calendar (with 7 intercalary months every 19th year) were introduced under Darius I in the year 503 B.C.E. (= -502); he noted that the length of the Young Avestan religious year was identical with that of the so-

called Babylonian System B (i.e., it was sidereal), and that the 19-year cycle followed with an excellent approximation the tropical year. Despite the stance of many scholars, Hartner has argued cogently that the intercalary period of 116 years, referred to by Biruni as the religious Zoroastrian calendar, should be given more serious consideration than the period of 120 years (see CALENDARS). In addition, these articles offer a new interpretation of the Avestan *Ḡahānbar*s, considered by Hartner as "solar terms defined by the cosmical setting of certain stars." His essay, "The Earliest History of the Constellations in the Near East and the Motif of the Lion-Bull Combat" offers an astronomical evaluation of the motif of the lion-bull combat which appears in the Achaemenid palace of Persepolis; Hartner has in fact shown that during the fifth century B.C.E. the concomitant phenomenon of the heliacal setting of the Pleiades (i.e., of Taurus) while Leo still occupied the zenith, marked the time immediately before the spring equinox (i.e., it served to announce the beginning of the Assyrian luni-solar calendar and the calendar associated with the Zoroastrian Nowruz). Finally, his contribution, "Le problème de la planète Kaïd," sheds light on the Indian and Pahlavi backgrounds of Islamic astronomy.

For a more detailed biography of Hartner with a complete bibliography and a thorough evaluation of his contribution to the history of sciences, see M. Schramm's obituary.

BIBLIOGRAPHY

Willy Hartner, "Die Störungen der Planeten in Gyldénschen Koordinaten als Funktionen der mittleren Länge," *Mitteilungen der Universitäts-Sternwarte Frankfurt am Main*, Stück 5, *Arbeiten d. Planeteninstituts* 6, 1928, pp. 1-51.

Idem, "Das Datum der Shih-ching Finsternis," *T'oung Pao* 31/3-5, 1935, pp. 188-236.

Idem, *Oriens-Occidens, Ausgewählte Schriften zur Wissenschafts-und*

Kulturgeschichte: Festschrift zum 60. Geburtstag, ed. G. Kerstein, F. Klemm, W. Rüegg, and M. Schramm, Hildesheim, 1968.

Idem, “The Pseudoplanetary Nodes of the Moon’s Orbit in Hindu and Islamic Iconographies,” *Ars Islamica* 5, 1938, pp. 113-54.

Idem, “The Principle and Use of the Astrolabe,” *Survey of Persian Art* III, 1939, pp. 2530-54. Idem, “Asṭurlāb,” *EI2*, I, pp. 722-28.

Idem, *Oriens-Occidens*: *Ausgewählte Schriften zur Wissenschafts-und Kulturgeschichte* II, ed. Y. Maeyama (with a preface by M. Schramm), Hildesheim, 1984.

Idem, “Zahlen und Zahlensysteme bei Primitiv-und Hochkulturen,” *Paideuma* 2, Heft 6/7, pp. 268-326.

Idem, “The Young Avestan and Babylonian Calendars and the Antecedents of Precession,” *Journal for the History of Astronomy* 10, 1979, pp. 1-22, pp. 144-65.

Idem, “Old Iranian Calendars,” *Camb. Hist. Ir.* II, *The Median and Achaemenian Periods*, ed. I. Gershevitch, Cambridge, 1985, pp. 714-92.

Idem, “The Earliest History of the Constellations in the Near East and the Motif of the Lion-Bull Combat,” *JNES* 24, 1-2, January-April 1965, pp. 1-17.

Idem, “Le problème de la planète Kaïd,” *Conférences du Palais de la Découverte*, Sér. D, Nr. 36, Université de Paris, 1955, pp. 84-138.

Yasukatsu Maeyama and Walter G. Saltzer, eds., *Prismata*, *Naturwissenschaftliche Studien*: *Festschrift für Willy Hartner*, Wiesbaden, 1977.

M. Schramm, “Willy Hartner (1905-81),” *Zeitschrift für allgemeine Wissenschaftstheorie* 13/1, 1982, pp. 1-21, 174-79.