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Artistic Islamic Astrolabes in the light of modern Geometric Concepts

Speaker: Professor Jan P. Hogendijk



January 23, 2024



03:00 PM (GMT+5) Pakistan Time

01:30 PM (GMT+3:30) Iran Time

Zoom Link: <http://tinyurl.com/t49m6zk5>

Zoom ID: 871 9239 3607

Password: 760011



Prof. Jan P. Hogendijk

Abstract: After a brief explanation of the astrolabe, we will look at the patterns engraved on Islamic astrolabe plates, in examples from the school of Allahdad. We will use modern geometric concepts and introduce these astrolabe patterns as orthogonal pencils of coaxial circles. We do not want to suggest a historical connection: The mathematicians who discovered pencils of coaxial circles in the 19th century were unaware of Islamic astrolabes, and the Islamic astrolabe makers did not use coaxial circles. But we will discuss the question which mathematical concepts and techniques the Islamic astrolabe makers did use, to engrave the beautiful patterns, which were recognized later as pencils of coaxial circles. Some answers can be given by al-Farghani (ninth century CE) and al-Biruni (973-ca. 1048 CE), but mysteries remain.

Bionote – Professor Jan P. Hogendijk

Professor Jan P. Hogendijk studied mathematics and Arabic at Utrecht University, Netherlands and received his PhD in 1983 with a dissertation on Ibn Al-Haytham. He worked in the History of Mathematics Department, Brown University, Providence RI, USA, and the History of Science Department, Goethe-University, Frankfurt, Germany, and then returned to the Mathematics Department of Utrecht University, where he became Full Professor in History of Mathematics in 2005. Together with Prof. A.I. Sabra (Harvard University, USA) he received the World Book of the Year Award of the Islamic Republic of Iran in 2005. Since his retirement In 2020 he continues his research in the history of mathematical sciences in the Islamic world and in the Netherlands. He also travels to Islamic countries for lectures and workshops.

Since the establishment of Isfahan Mathematics House, in 1997, he has been a regular visitor of the IMH and other Mathematics Houses in Iran and a supporter of these houses worldwide. He has been active in the House of Mathematics itself and in its international cooperation projects with the Netherlands.



Professor Jan P. Hogendijk