

Biographical Encyclopedia of Astronomers

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Wittich, Paul

Born Breslau (Wrocław, Poland), circa 1546

Died Vienna, (Austria), 9 January 1586

Paul Wittich was one of many late-16th-century mathematicians who pursued the project of geometrically modifying the Copernican models of planetary motion to adapt them to a central Earth. He also studied the trigonometric problem of prosthaphaeresis

Little is known about the family of Paul Wittich except that his uncle was the physician of Wrocław, Balthasar Sartorius, and that he was survived by a sister who inherited his books and papers. The first known record of Wittich concerns his matriculation at the University of Leipzig in the summer of 1563. He later matriculated at Wittenberg in June 1566 and at Frankfurt an der Oder in 1576, but he is not known to have received degrees from these or any other institutions. Wittich seems to have preferred the lifestyle of the itinerant scholar: He wandered widely between attending these universities, and indeed subsequently

Wittich was a talented mathematician, and his contributions to astronomy derive from the combination of his mathematical interests and his peripatetic lifestyle. He wanted to transform the Copernican models of planetary motion so as to adapt them to the stability and centrality of the Earth. He also worked on prosthaphaeresis, a method of reducing problems involving the multiplication and division of trigonometric functions to those of addition and subtraction. Wittich's progress in both of these fields is attested by annotations he made to the several copies of *De Revolutionibus* that he owned, and marginalia in further copies of Nicolaus Copernicus' text are among the sources that indicate the transmission of these ideas to others.

During the course of his travels, and the intermittent sojourns in his hometown of Wrocław, Wittich met many individuals actively interested in mathematics and astronomy with whom he collaborated or whom he instructed. His known contacts include the Altdorf professor Johannes Praetorius, the imperial physician Tadeáš Hájek z Hájku, the Oxford mathematician Henry Savile, and the Scottish physicians John Craig and Duncan Liddel. (It is possible that Wittich's "discovery" of the first prosthaphaeretic identity was facilitated by Johannes Praetorius, who had come into contact with a manuscript by Johannes Werner that contained it.) In the late 1570s, Wittich communicated the prosthaphaeretic method to Craig, who later shared it with John Napier; he also divulged his work on planetary models to Savile in 1581. The most consequential of Wittich's collaborations, however, resulted from his visits to the two chief centers of astronomical endeavor in the late 16th century, the observatories of Tycho Brahe and Landgrave William IV of Hesse.

In the autumn of 1580, Wittich visited Brahe's observatory in Denmark, revealing to him the first prosthaphaeretic identity and showing him his geometrical manipulations of the Copernican planetary models. Both were important to Brahe's astronomical project: Prosthaphaereos greatly simplified the task of reducing observational data, and by a slight

alteration of Wittich's models, Brahe would arrive at the geoheliocentric scheme he promoted as the true system of the world. Brahe envisioned a long and fruitful collaboration with Wittich, but for reasons that remain unclear, Wittich left Uraniborg after only a few months, deceiving the Danish astronomer with a promise to return.

In 1584, Wittich made his way to Kassel, where he worked with Wilhelm's mechanic, Jost Bürgi, improving the instruments of the Kassel observatory according to the design principles employed at Uraniborg. When Brahe learned of this collaboration, he was angered that Wittich had not credited him with these improved instrument designs; however, Brahe quickly came to appreciate the close agreement between the observational data produced at Uraniborg and Kassel that resulted. Wittich also designed an astrolabe for Landgrave Wilhelm, and he revealed to Bürgi the first prosthaphaeretic identity. Bürgi went on to discover a second, with proofs for both, and later showed these to Nicholas Bär (Raimarus Ursus). As a consequence, Brahe's priority dispute with Bär over the invention of the geoheliocentric world-system became entangled with the quest to establish priority for himself and Wittich in the development of prosthaphaeresis

Wittich also made observations, some of which he shared with other astronomers. However, both Christoph Rothmann and Brahe declared that Wittich was a poor observer, and in this respect was a better mathematician than astronomer.

Adam Mosley

Selected References

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