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Amici's double star observations

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Amici's double star observations

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Giovanni Battista Amici, Il catalogo delle stelle doppie. Edited by Alberto Meschiari (Edizioni Tassinari, Florence, 2020). Pp. 259. 75 €. ISBN 9791280141033.

In April 1824, as part of an extended tour through Europe following the death of his father William, the British astronomer and polymath John Herschel (1792–1871) met the Italian astronomer Giovanni Battista Amici (1786–1863) at the latter's observatory in Modena. At the time, along with Herschel and Wilhelm Struve (1793–1864) in Dorpat, Amici was among the few astronomers measuring double stars. Their study, pioneered by Herschel's father, was of interest because (in the case of optical doubles) they provided opportunity for measuring parallax or (in the case of true binaries) a chance to derive orbital parameters from observational data, as Felix Savary (1797–1841) would do for the first time in 1827. Measuring double stars was at the edge of observational precision, and determining orbital parameters depended on high-quality optics, precise micrometers, and data from as many different observers as possible. The younger Herschel encouraged a network of double star observers wherever he went, and much of his later work in astronomy involved synthesizing and publishing this data. Unlike Struve and Herschel, however, Amici never published his own extensive double star observations.

Amici's double star observations, stretching from 1815 to 1851 (although most are from 1824–1826), are now available in a handsome edition by Edizioni Tassinari as the second volume of *Edizione Nazionale delle Opere e della Corrispondenza di Giovanni Battista Amici*. The volume includes a 23-page introduction in Italian and English providing context on double star research in the 19th century as well as a discussion of Amici's instruments and a survey of his correspondence related to double stars. The introduction explains why Amici and his instruments were important to double star research but not, however, why double star research was important to Amici. No doubt other volumes in the series contain Amici's biographical details, but without a sketch of his life and career a reader of this volume alone will not know what role double stars played in Amici's work, his institutional affiliations, or why he moved from Modena to Florence in 1831.

The bulk of the volume (200 pp) is devoted to a high-quality, page-by-page reproduction of Amici's six unpublished double star notebooks. The first notebook forms what would have been the introduction to Amici's catalogue, showing the influence of William Herschel's double star classes. The other notebooks contain his observations, organized roughly chronologically.

An advantage to this approach of reproducing the notebooks is that it lets a reader peer over the observer's shoulder as Amici records his measurements, sketches double star orientations, calculates average values, and sometimes doodles on the margins (see for instance p. 137). It also makes apparent information that may have disappeared had Amici ever published his catalog. For example, though he tells Herschel in a letter of February 1825 of observing the planet that "will hand down to posterity the glorious name of your family" (not realizing Herschel never referred to Uranus as "Herschel"), Amici's notebook from that night reveals this to be a diplomatic lie. He records, in fact, that he measured the "diametro di Urano." (It was 4.085"; see pp. 37, 119).

On the other hand, the lack of an index forces readers interested in specific data to search the notebooks chronologically for when an object would have been visible. For example, observations from the night Herschel joined Amici at Modena and measured the diameter of Jupiter to test Amici's new micrometer only appear in a "Memoria" on the final page of the second notebook (p. 139), easily missed. Likewise, as the components of γ Virginis swung toward their closest approach, Herschel coordinated as many observations of the prominent double star as possible. Amici measured the star on 30 April 1815, when it was at a comfortable separation (p. 111), but did he ever observe it again? An online version of this reproduction, though not as enjoyable to leaf through, might answer such a question with search functionality.

The volume also includes an inventory of Amici's astronomical library and concludes with attractive full-color plates, including images of Amici's instruments with descriptive captions in Italian and English. Amici's double star catalog formed a significant part of his works and correspondence, and this lovingly-produced volume thus forms an integral part of the *Edizione*.

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Late Babylonian astronomy and astrology

A Babylonian Calendar Treatise: Scholars and Invaders in the Late First Millennium BC.
Frances Reynolds (Oxford University Press, Oxford, 2019). Pp. xxx + 464. £100.
ISBN 9780199539949.

As an increasing number of complex cuneiform scholarly texts (both published and unpublished) from the Hellenistic period are subject to academic scrutiny, we are rapidly improving our picture of how deeply ingrained aspects of astronomy and astrology were within traditional forms of cuneiform knowledge in the Hellenistic period. The erudition and complex ideas recorded by scribes at the tail end of the first millennium BCE is only matched by the work of contemporary scholars seeking to understand the underlying themes and intertextual references of these esoteric texts.