

## **Giovan Battista Donati and the birth of a new physics for stars**

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In the second half of the 19th century, Italian astronomers made a fundamental contribution to the birth of astrophysics through the first spectroscopic analysis of stellar light. These were the dawn of spectroscopy and astrophysics, transforming our scientific knowledge of the universe through the study of the intrinsic characteristics of stars (chemical composition, temperature, density, velocity), a prospect previously considered unthinkable.

Angelo Secchi and Lorenzo Respighi in Rome, Giuseppe Lorenzoni in Padua, Pietro Tacchini in Palermo, and Giovan Battista Donati in Florence were pioneers in this field. These scientists were protagonists of essential results such as the first spectral classification of stars, the first spectrum of a comet, the development of solar physics, and the establishment of the first scientific society devoted to astrophysical studies.

This talk retraces the key milestones of this extraordinary turning point in Italian astronomy, with a particular emphasis on the Pisan astronomer Giovan Battista Donati, founder of the Arcetri Observatory.

**Primary author:** Dr GARGANO, Mauro (Istituto Nazionale di Astrofisica (INAF))

**Presenter:** Dr GARGANO, Mauro (Istituto Nazionale di Astrofisica (INAF))

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