**The original publication in which Galileo forged the beginning of solar science**

Galileo Galilei, *Istoria e dimostrazioni intorno alle macchie solari e loro accidenti.* Rome: Giacomo Mascardi, 1613. 9 inches x 5 7/8 inches (229 x 149 mm), 168 pages, 38 engravings.

Solar science begins with Galileo's "discovery" of sunspots. Although they had been observed in Europe, China, and the Middle East for over a millennium, no one had previously subjected these random observations to serious scrutiny or systematic analysis, two factors essential to establishing a science of the sun. Galileo had the inestimable initial advantage of a telescope, as described in his *Sidereus Nuncius*. By devising a means of projecting the image of the sun through the telescope onto a piece of paper, Galileo could record the location of the sunspots. The plates in this *History and demonstrations concerning sunspots and their phenomena* are transcriptions of these projections.

From his observations Galileo concluded that sunspots were not the image of planets caught between the eye and the sun (as Jesuit upholders of tradition asserted) but rather an indication that the sun rotated. Moreover, according to Galileo, by their waxing and waning the spots demonstrated that the sun was neither immutable nor immaculate — the Italian word for "spots" is *macchie*, derived from the same Latin word that has given "immaculate" to the English language. The declaration of solidarity here first made with the heliocentric cosmology of Copernicus eventually led Galileo into trouble with the Roman Catholic Church, still committed to the Aristotelian doctrines of heavenly and godly perfection.

This copy of Galileo's brilliant work on sunspots is from The Warnock Library. It is bound in contemporary vellum and has a paper title label.

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