

## **Galileo's earth-shaking investigation of the moon's surface and Jupiter's satellites as it was first published**

Galileo Galilei, *Sidereus Nuncius*. Venice: Thomas Baglioni, 1610. 8 1/8 inches x 6 1/4 inches (206 x 159 mm), 96 pages.

Galileo Galilei launched *Sidereus nuncius* (The Starry Messenger), perhaps the most momentous book ever published in the history of astronomy, into the midst of a debate between ancient and early modern cosmologies. For more than a millennium classical astronomy had held that the universe consisted of two regions: the Heavens—made up of the Moon, the Sun, the planets, and the fixed stars—and the Earth. Ancient cosmologists imagined this universe as a finite, geocentric sphere, in which the Heavens enclosed the Earth in a series of material shells, like the layers of an onion, radiating outward from the Moon to the fixed stars, the absolute boundary of the physical and temporal world. This system flourished in the Middle Ages because it explained man's position in the universe in terms consistent with Christian theology while also predicting eclipses and other celestial phenomena with tolerable accuracy.

The first consequential departure from the classical system occurred in 1543 when Nicolaus Copernicus published *De revolutionibus orbium coelestium*, with its incendiary claim that the Sun, not the Earth, was the center of the universe. This theory was given a decisive boost in 1609, when Galileo Galilei fashioned a twenty-powered telescope and with it undertook to observe the Moon. With this device he quickly discovered that its surface was rugged and mountainous rather than uniformly perfect, as would have befit the heavenly bodies of classical cosmology. Galileo began writing up his lunar research in January of 1610, the same month that he noticed what appeared to be three bright little “stars” on a straight line near Jupiter. Gradually, he became aware that these were not fixed stars but rather moons of Jupiter. Galileo recognized that this discovery was even more dramatic than his observations of the Moon's surface, and he moved quickly in order to preserve his scientific feat. While continuing to make observations of Jupiter's moons, he began to write *Sidereus nuncius*.

The unprecedented discoveries detailed in *Sidereus nuncius* propelled Galileo onto the European stage virtually overnight. In this work, he described the play of light and shadow on the lunar surface in prose and illustrated his argument with copper engravings. As telescopes of sufficient power and optical quality became more widespread, anyone could observe these lunar phenomena and see that Aristotle and his followers were wrong about the nature of the Moon, and by implication about the perfection of the Heavens too. By the spring of 1611, the most prominent European astronomers agreed that the telescope did not deceive the eye, that the Moon's surface appeared to be rough, that Jupiter had four moons, and that there were many more fixed stars than were visible with the naked eye.

The binding of this first edition from the Warnock Library is of modern brown goatskin over pasteboard. The boards have gold-tooled decorations; the spine has gilt titling on the second panel and ornaments on the other panels. The text block has gilt edges.

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