The Forgotten Legacy of Leo Brenner

IN HIS *Astronomical Scrapbook,* the late Joseph Ashbrook introduced readers to Leo Brenner — a colorful yet tragic figure who burst onto the astronomical scene at the end of the last century. From his observatory on the Adriatic island of Lošinj, Brenner began a systematic study of the Moon and planets in 1894. The Balkan astronomer's 7-inch Reinfelder and Hertel refractor performed superbly in the steady island air, and his early observations gained him worldwide attention.

But Brenner had a nearly pathological craving for fame and recognition, driving him to ridicule influential colleagues who dared to contradict him (see the box on page 102). They, in turn, ostracized Brenner from the astronomical community. Thoroughly discredited, he gave up astronomy and faded into obscurity.

Today Brenner is nearly forgotten — only an ancient lunar crater south of Mare Nectaris recalls this enigmatic observer of Lošinj and the past glory of his Manora Observatory. His planetary observations have suffered a similar fate. Ashbrook identified the problem: "This strange man and his actual accomplishments are hard to disentangle from the legends that he invented."

Ashbrook wrote those words in 1978, when we had just begun to reap the benefits of interplanetary exploration. Robotic spacecraft have now surveyed all of our solar system's planets except Pluto. So I resurrected Brenner's observations, to give them a fresh look.

Top: **Spiridion Gopčević, also known as Leo Brenner, was born July 9, 1855, in the Adriatic seaport of Trieste. From an 1878 photograph.** ***Right:*** **At age 38, Brenner built Manora Observatory on the island of Lošinj. With its 7-inch refractor, he conducted extensive lunar and planetary observations. All photographs, unless otherwise noted, were supplied by the author.**

BRENNER'S WORLDS

Leo Brenner was actually the pseudonym for a Balkan political writer named Spiridion Gopčević. (He assumed the new name in 1893 after marrying into wealth and moving to Lošinj.)Brenner did not become seriously interested in astronomy until his mid-30s, when he purchased his first telescope — a small refractor with a 3¼-inch lens. Fascinated by the wonders of the starry sky, Brenner soon abandoned his political aspirations and in May 1894 established Manora Observatory, which he named after his wife. Over the next five years he spent nearly 3,000 hours at the eyepiece and made nearly 2,000 drawings. Most noteworthy were his observations of the planets.

In 1975 Larry Krumenaker of New York University analyzed 21 of Brenner's Mercury drawings, concluding that at least some of the albedo features he recorded correspond to those shown in Mariner 10 imagery. But Krumenaker also likened Brenner's observations to a "broken clock that shows the right time twice a day."

Nevertheless, one striking characteristic appears often in Brenner's Mercury drawings: bright polar caps. Polish astronomer A. Wonaczek of Podmaniscy Observatory, who observed the planet with Brenner at Manora Observatory on July 23, 1896, found the bright caps a conspicuous sight even in fair seeing.

These observations are supported by more recent ones by the French astronomer Audouin Dollfus, who spied Mercury's bright polar regions through the 24-inch refractor atop Pic du Midi in the French Pyrenees. To validate his sightings, Dollfus defocused images of Mercury taken by Mariner 10 in the early 1970s — to simulate ground-based telescopic views — and discovered that the planet's heavily cratered polar regions would indeed appear bright visually.

Venus was even more intriguing. Brenner thought he saw oceans through holes in the planet's dense cloud cover. His drawings show dark features aligned symmetrically about the planet's equator, resembling the C-, X-, and Y-shaped cloud formations recorded in ultraviolet light by the Pioneer Venus orbiter in 1979. The bright polar caps in Brenner's drawings have also been confirmed by the spacecraft's imaging, though they are clouds, not snow as he believed.

Brenner often saw the prolonged horns of Venus when the planet was at quarter phase or more. This is puzzling, because normally scattered light cannot reach

the unilluminated edge of the disk at these phases. Nevertheless, this strange phenomenon was also seen in 1986 by German amateurs. They thought they had found something new until they learned of Brenner's observations nearly 100 years earlier. Unfortunately, his Venus observations are spoiled by one fact: Brenner derived a prograde rotation of $23^h\ 57^m\ 36.27728^s$; the true value is about four days retrograde.

Mars was a prime target for the Manora refractor. Like Percival Lowell, Brenner believed that Martian canals could have been the work of a past civilization. His map of the red planet shows a maze of canals, 72 of which were discovered at Manora Observatory.

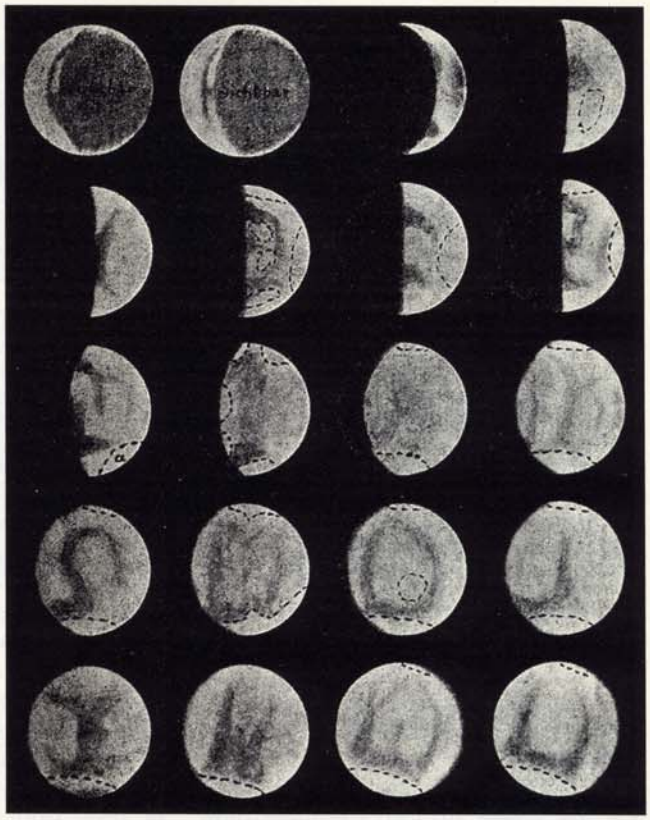
Although observations by E. M. Antoniadi in 1909 using the 33-inch refractor in Meudon, France, disproved their existence, not all of the surface features recorded by Brenner were imaginary. During the 1988 opposition I saw in my 10-inch reflector at least two markings noted by Brenner: Sisyphus and Trichonis Lacus (which is identical to a feature known today as Hephaestus). Under favorable circumstances Brenner also saw the elusive moons of Mars. Johann Palisa of Vienna Observatory, who visited Brenner in 1894, confirmed these sightings.

Jupiter consumed most of Brenner's time. As Jovian clouds are always changing, it's difficult to judge the accuracy of his drawings, even with Voyager spacecraft images. Brenner's maps reproduced on page 102 show no fewer than 150 spots. These might not all be spurious. In moments of perfect seeing sometimes there *are* hundreds of small spots and knots visible through the telescope.

His Saturn drawings show remarkable detail. For example, he detected 18 spots on the planet on August 31, 1900, and used them to derive a rotation period of 10 hours 38 minutes. This is very nearly the true value for atmospheric features well away from the equator.

In 1897 Brenner announced the discovery of two new divisions in Saturn's rings. One of them separated rings B and C, and he called it the "Manora Division," since his wife discovered it. The other feature, between the Cassini and Encke Divisions, was called the "Brenner Division." Neither term survived. But other observers (William Dawes, Angelo Secchi, and François Terby) had previously noted a gap between rings B and C, and Voyager images do suggest some structure there. Likewise, a dark line in ring A can be seen just where he recorded the Brenner Division, in an image of Saturn taken with the Hubble Space Telescope.

Brenner made these drawings of Mercury in 1896 between May 19th and August 8th. Note the bright polar caps, ashen light, and some of the dark markings, which Brenner said to be even more delicate than those on Venus.

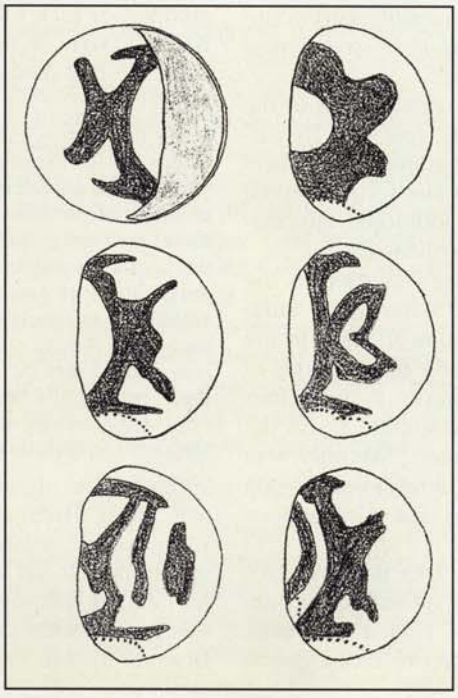


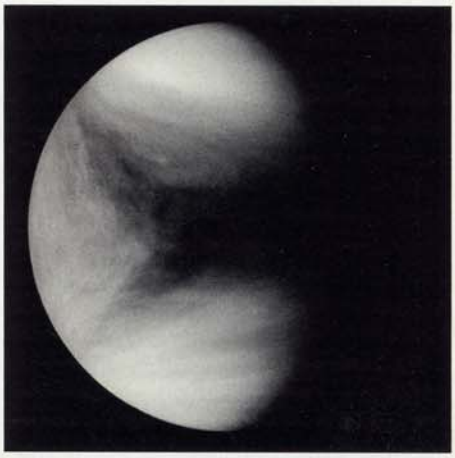
Uranus received only 25 hours of Brenner's attention. Yet, he claimed, "I was the first and only, who was able to see and follow markings on its surface and therefore to calculate its rotation period to 8¼ hours." However, the English observer William Lassell had noted markings as early as 1852.

Although Brenner's drawings show luminous clouds on Uranus, he derived an incorrect rotation period from them. Interestingly, in 1981 Stephen J. O'Meara followed bright clouds on Uranus for several months with the 9-inch Clark refractor at Harvard Observatory and found their rotation period to be 16.2 hours. This was confirmed five years later by Voyager 2. Perhaps Brenner did see luminous clouds but selected the wrong multiple for calculating the planet's rotation.

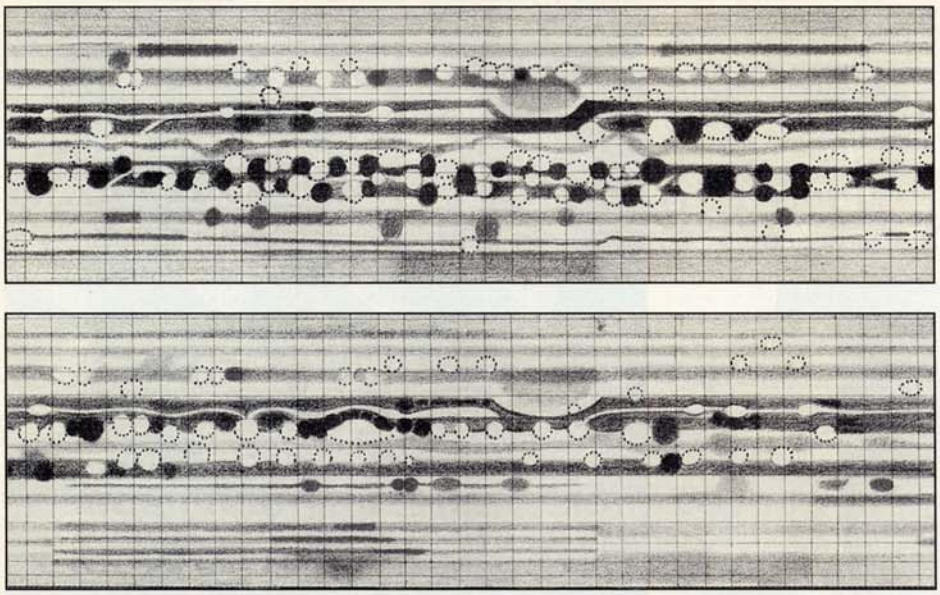
CONCLUSIONS?

As fascinating as some of Brenner's observations are, others are equally incredi-





Left: **Venus, as sketched by Brenner on several dates in 1897 and 1898. The one at upper left, made on August 7, 1898, shows faint "ashen light" on the night side surrounded by a bright border.** ***Above:*** **The shapes of the markings are very similar to cloud structures recorded in ultraviolet light by the Pioneer Venus spacecraft in 1979. Photograph courtesy NASA.**



These maps of Jupiter made by Brenner in February 1897 (top) and January 1898 show a wealth of detail. Note the Great Red Spot and other features he recorded in his drawings.

ble — such as resolving the Andromeda Galaxy into individual stars on the night of August 24, 1895, or measuring the separation of Sirius B in March 1897, when it was not visible through even the most powerful telescopes. These observations led astronomers to suspect that all his records were forgeries.

On the other hand, lending credence to Brenner's visual acuity are drawings of Saturn by Wonaczek and Brenner published in the *Astronomiche Nachrichten* in 1898. Both were made on the same day and based on independent views through the Manora refractor. The correspondence of the drawings is striking.

The errors that ultimately crept into Brenner's work are probably due to an overestimation of the possible. If someone was skeptical about his observations, Brenner always pointed out the exceptional circumstances under which they were made. He even thought his eyepieces to be unique. Brenner probably often "saw" what he expected to see.

MARTIN STANGL
Liebiggasse 26
A-8010 Graz, Austria

An avid lunar and planetary observer himself, Martin Stangl studied history at Graz University. He currently teaches history and language in Salzburg.

Further Reading

Ashbrook, Joseph. "The Curious Career of Leo Brenner," *The Astronomical Scrapbook*, 103–111. Cambridge: Sky Publishing Corp., 1984.

Heim, Michael. *Spiridion Gopčević: Leben und Werk*. Wiesbaden: O. Harrassowitz, 1966.

Sheehan, William, *Planets & Perception: Telescopic Views and Interpretations*. Tucson: University of Arizona Press, 1988.

The *Astronomische Rundschau* and the Fall of Leo Brenner

LEO BRENNER didn't refrain from ridiculing anyone who criticized him, including such contemporaries as Lowell, Antoniadi, N. von Konkoly, and Camille Flammarion. When astronomical journals stopped publishing Brenner's observations, he began his own monthly astronomical magazine — the *Astronomische Rundschau* (Astronomical Review) — in 1899.

Each issue opened with a feature about observations of the Moon and planets at Manora Observatory, followed by discovery news, a beginner's section, and biographies. It always ended with replies to readers' letters. This last section served two functions: to provide amateurs with additional information about a topic and to insult unwanted colleagues.

Lowell was the main target for Brenner's attacks. In the second volume of the *Rundschau*, Brenner commented unfavorably for 21 pages on Lowell's observations of Mars. In the third volume Brenner also criticized Lowell's observations of Mercury, though he did confine his remarks to only four pages. The article closed with a sneering comment about the fissures Lowell believed to see on this planet: "We only wish Mr. Lowell that he, together with his capital telescopes, won't fall into one of those broad and of course equivalently deep crevices."

Brenner's colleagues, fed up with his attacks, destroyed his reputation throughout the world. Brenner retaliated by publishing letters by famous astronomers who valued his works. Most of these could be genuine, but the letter of Lick Observatory director James E. Keeler is, according to Hermann Haupt of the Institute for Astronomy in Graz, Austria, undoubtedly a fake.

No copy of this alleged letter exists in the Mary Lea Shane archives of Lick Observatory. Furthermore, it isn't written in Keeler's style. Keeler couldn't complain about forgery because he had died five months before its publication. It read in part:

> My dear Sir . . . As for your fine work it is simply magnificent! Words fail to express the admiration which I feel for it, above all your superb planetary drawings and charts, which surpass any thing of the kind published! . . . We are at a loss what we shall admire more: your great skill and industry in observing planets, your splendid telescope, your clear sky and fine air or your admirable eye! . . . Surely some of our large observatories would be very glad of your abilities as an observer. We shall always esteem it an honor to secure for you in America the high place you so fully deserve. . . . Please, rest assured that the one thing I shall always look forward to more than anything else, will be the publication of your admirable observations and drawings, always so interesting and valuable. I am, my dear Sir, very respectfully yours James E. Keeler.

Such vain attempts could not stem the loss of readers soured by Brenner's vendettas. The *Astronomische Rundschau* folded in 1909, the same year he gave up Manora Observatory, left his wife, and returned to politics. The year of his death is unknown. His friend Philipp Fauth cited 1928, but this is somewhat doubtful. Historian Michael Heim believes Brenner died in 1936.