



OUR NEAREST NEIGHBOR, IX

By Walt Robinson

Most people believe the present-day moon is a dead world where no changes take place, at least any that are visible. In November 1958, Russian astronomer Nikolai A. Kozyrev observed probably the most famous of what were to become known as “lunar transient phenomena” (TLP’s). He observed and took spectrograms of an apparent outgassing of vapor that contained traces of carbon. More recently, in April 1999, amateurs reported another TLP event near Vallis Schroteri, which the Clementine Spacecraft confirmed through before and after images. The TLP’s were in the form of color changes.

There was another enigma that took place about 135 years earlier, and the mystery still remains as to what actually occurred.

Johann Friedrich Julius Schmidt was born October 25, 1825.



Johann Friedrich Julius Schmidt

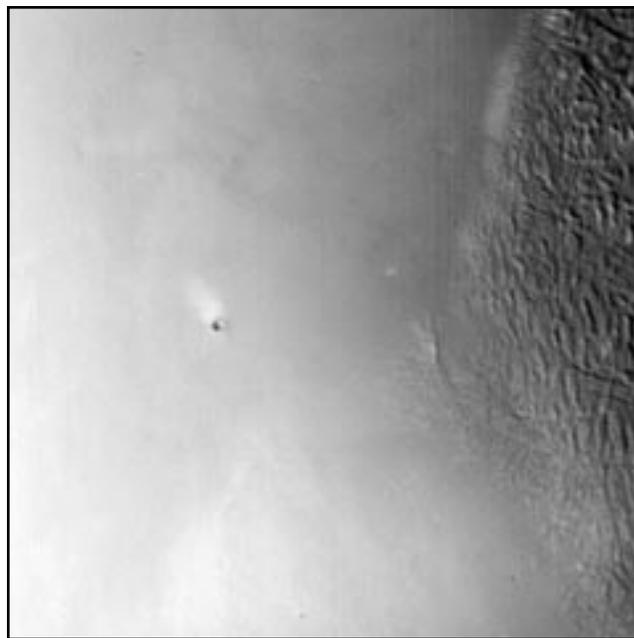
At the age of fourteen, he obtained a copy of Johann Schröter’s *Selenotopoographische Fragmente*, which led him to his life-long career as a selenographer (one skilled in the study of the physical features of the moon).

His school days were spent in Hamburg, Germany, and it was during this period that he studied in detail the epic lunar map by Wilhelm Beer and Johann Mädler. His first position after graduation was with an observatory in Dusseldorf, Germany. Soon after, in 1846 he took a position under Friedrich Argelander at the Bonn Observatory. Then in 1853 he became the director of a private observatory

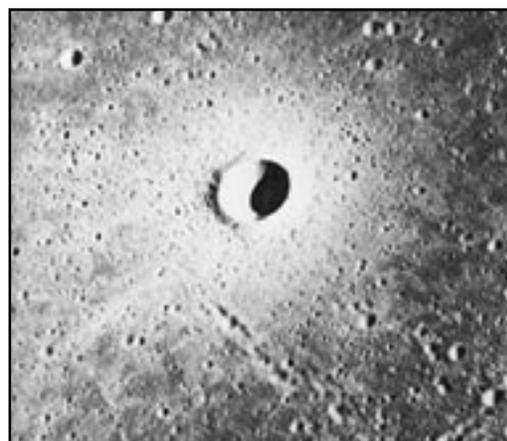


Wilhelm Beer and Johann Mädler

near Olomouc in the Czech Republic. In 1858 he took a position as the director of the Athens Observatory, where he remained for the rest of his life. From his first position at Dusseldorf to his final position at Athens, he made meticulous drawings of the moon. His lunar map of 1874 actually surpassed the quality and detail of the Beer-Mädler map. Then in 1878, he edited and republished all 25 sections of the celebrated Wilhelm Lohrmann lunar map.



NASA/JPL/Malin Space Science Systems



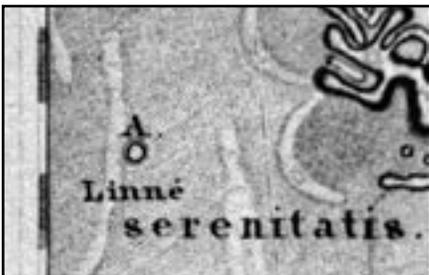
Johann Friedrich Julius Schmidt was with the Athens Observatory (top) from 1858 until the end of his career. Crater Linné A (above) is from the Malin Space Science Systems Mars Orbiter Camera Image Gallery. A closer view of Linné A (left).



Above is one of the chromolithographs that decorates Schmidt's book of the Lohrmann maps. Shown is his drawing of sunset over Clavius (top), Maginus (left-center) and Tycho (bottom, with central peak).



Wilhelm Lohrmann



A scan of crater Linne A from Lohrmann's Moon map. From the private collection of the author.

As can be seen from his career and accomplishments, Schmidt was an accomplished observer whose attention to detail was well respected throughout the astronomical community. So no one questioned, when in 1866 he made the claim that the crater Linné had totally changed its appearance — that it was completely gone! This came as a total surprise to the astronomers of the period.

When Lohrmann (1796–1840) published his charts in 1824 the crater was designated “Linné A”. It was easily seen in telescopes of the time, and was situated near the center of the lunar disk on the western edge of Mare Serenitatis. The drawings of Lohrmann show the crater very round and deep, with no ejecta blanket surrounding it. Even Schmidt made drawings of this crater between 1841 and 1843. Now Schmidt was claiming the crater had disappeared and in its place was a bright white region about six miles across with a peak in the center.

So what really happened here? Most astronomers during this period believed that craters were volcanic in origin. In fact, in 1875 Nasmyth and Carpenter published *The Moon*, which explicitly established the

fact that lunar craters were of volcanic origin. So astronomers agreed with what Schmidt saw was a dormant volcano that sprung to life between 1843 and 1846. Because of this incident, astronomers searched the moon for more volcanic activity, but to no avail.

Two astronomers did further studies on the crater Linné and discovered that the central peak (what was considered a volcanic



Father Angelo Secchi

dome) was actually a small crater pit. Father Angelo Secchi (1818–1878) measured the crater at about one-half mile in diameter. Using a larger telescope of the time, Ludwig d'Arrest (1822–1875) measured it to be one and one-half miles across.

Today's astronomers of course give no credit to the volcanic theory. Ralph Baldwin in 1949 wrote his book *Face of the Moon* which

detailed the impact theory of lunar cratering. Baldwin then wrote *The Measure of the Moon* in 1963, which proved beyond a shadow of a doubt, that craters were caused by impacts. Most argue that Schmidt and other observers made mistakes in their observations and that nothing happened at all. But how did so many make the same mistake?

Today Linné still appears as a whitish patch. High-resolution images from the Apollo 15 mission shows Linné as a crater approximately 1.3 miles in diameter. The images show no prior evidence of any other features in the area that would have caused the errors in observations.

So the story remains a mystery. We will probably never know exactly what happened here (if anything at all), at least until we revisit the moon. Linné, which is estimated to be about 20 million years old, can still be seen through amateur telescopes as a saucer-shaped crater with a blanket of ejecta formed during the impact (see photos on the preceding page). The ejecta with its high albedo, makes it easy to find.

Next month we will visit a lunar bridge and city. Until then, observe the moon! If you haven't started your Astronomical League Lunar Certificate, there is no better time than *now* to get started!



Walt Robinson has been a member of the Astronomical Society of Kansas City since 1987. His present duties include Webmaster for the society's Web site. He has presented many programs at the public nights at Powell Observatory and in Bonner Springs, Kan. where he lives.

Walt also runs the "Robinson Lunar Observatory" to spur interest in the moon among amateur astronomers. His recent "lunar light ray" program brought many amateurs together from across the United States and abroad to study and observe these events. An article written in the Astronomical League's Reflector explained the program, and as a result recruited many more interested amateurs into studying the moon.