

Sky News

Merrillville Community Planetarium
Clifford Pierce Middle School
199 East 70th Avenue
Merrillville, Indiana 46410
(219) 650-5486

Gregg L. Williams, Director

Summer, 2017

volume 29, number 10

RAVIOLI MOON

Embedded in Saturn's rings, NASA's *Cassini* spacecraft has imaged a ravioli-shaped moon called Pan. An unusual moon named after an unusual creature. In Greek mythology, Pan was a satyr, a man with a goat's legs and horns, who ruled forests.

Pan orbits Saturn within the ring system. Pan is in the Encke Gap of the bright outer A-ring. Pan keeps the Encke Gap open by shepherding the ring edges. The tiny moon sweeps and collects icy debris from the ring material. The icy pieces have collected on the equator of the little moon, giving it an unusual "skirt" of ice at its middle. It looks like ravioli! See images at <https://www.jpl.nasa.gov>. The skirt is called an accretionary equatorial bulge.

Pan is not unique. Another moon, Atlas, has the same ravioli-shape of Pan. Atlas is in the A-ring. Atlas is about 19 miles across, while Pan is only 17 miles across. Pan reflects light like dirty snow, with a 50% albedo. Pan orbits Saturn in only 14 hours.

JPL STEM ACTIVITIES

NASA's JPL (Jet Propulsion Laboratory) at the California Institute of Technology in Pasadena, California has developed an educational website with activities for all grade levels. To view, go to <https://www.jpl.nasa.gov/edu>. Have some fun and try out their innovative activities to explore science, technology, engineering, math, art, and language art this summer. Click on the Teach option for specifics.

The following sources were used
for this issue of Sky News:

www.casonline.org, www.jpl.nasa.gov,
<http://www.astropixels.com>,
<https://in-the-sky.org>, www.astronomy.com,
www.skyandtelescope.com,
Astronomy, and *Sky and Telescope*.

SUMMER PLANETS

Mercury disappears from the western evening sky by the end of June as it passes behind the Sun as seen from Earth on June 21st. Mercury reappears in the predawn eastern sky after sunset in August, passing through Taurus, Gemini, Cancer, and Leo. Mercury looks like a small white star.

Venus can be seen appearing as the "Morning Star" this summer in the predawn eastern sky moving to the constellation Gemini (the Twins), from Cancer (the Crab). Venus appears a little earlier every morning and moves a little higher in the sky before dawn. Venus looks like a bright white star.

Mars can be seen in the first half of June low in the western sky, passing from Taurus (the Bull) into Gemini (the Twins). Mars disappears in the Sun's glare for the rest of summer, as it passes behind the Sun as seen from Earth. Mars will reappear in the early morning eastern sky. Mars looks like a very bright, ruddy-colored star.

Jupiter can be seen in the southern sky after sunset in the constellation Virgo (the Maiden), above its bright blue star Spica (Ear of Wheat). Jupiter appears farther in the west every night and sets earlier. By August, Jupiter can be seen only for a short time in the southwestern sky after sunset. Jupiter looks like a bright, yellow star.

Saturn can be seen rising in the southeast after sunset in the constellation Ophiuchus (the Serpent-Bearer) on the border of Sagittarius (the Archer). Saturn rises earlier every night through the summer. By August, Saturn is in the southern sky at sunset. Saturn moves through the southwestern sky and sets in the southwest, setting earlier every night. Saturn is great to view all summer! Saturn looks like a bright, amber-colored star.

SKY DATES

- June**
- 1 - First quarter moon at 6:42 a.m.
 - 3 - Venus at greatest western elongation
 - 4 - Venus at dichotomy
 - 6 - Mercury passes 5.3° S of Pleiades
 - 8 - Moon at apogee (farthest point from Earth)
 - 9 - Full moon called Rose, Green Corn, Hot, Planting, or Strawberry Moon at 7:10 a.m.
 - Moon passes 3.1° N of Saturn
 - 12 - Venus at aphelion
 - Comet Johnson at perihelion
 - 14 - Earliest sunrise at 4:31 a.m. for 40° N. Lat.
 - 15 - Saturn at opposition at 3:00 a.m.
 - 16 - June Lyrid meteor shower
 - 17 - Last quarter moon at 5:33 a.m.
 - Kemil Beach FREE viewing event
 - 19 - Mercury at perihelion
 - 20 - Moon passes 2.4° S of Venus in Aries
 - Summer Solstice at 10:25 p.m.
 - Ophiuchid meteor shower peaks
 - 21 - Mercury at superior conjunction
 - Mercury at its brightest
 - 23 - Moon at perigee (closest point to Earth)
 - Mercury at dichotomy
 - 24 - CAS hosts an Open House at Conway 1:00
 - 26 - Moon passes 3.2° S of Beehive cluster
 - 27 - Latest sunset at 7:33 p.m. at 40° N. Lat.
 - Moon passes .1° S of Regulus
 - June Bootid meteor shower peaks
 - 30 - First quarter moon at 6:51 p.m.
 - Asteroid Day
- July**
- 1 - Moon passes 2.7° N of Jupiter in Virgo
 - 2 - Midpoint of the year
 - 3 - Earth at aphelion (farthest from sun)
 - 5 - Moon at apogee (farthest point from Earth)
 - 6 - Moon passes 3.13° N of Saturn
 - 8 - Full moon called Summer, Red Cherries, Hay, Buck, or Thunder Moon at 10:07 p.m.
 - Capricornid meteor shower 2-5/h
 - 9 - Pluto in opposition
 - 14 - 2nd anniversary of New Horizons at Pluto
 - 15 - Kemil Beach FREE viewing event
 - Comet LINEAR at its brightest in Taurus
 - Capricornid meteor shower peaks
- 16 - Last quarter moon at 1:26 p.m.
- 20 - Moon passes 2.42° S of Venus
- 21 - Moon at perigee (closest point to Earth)
- 23 - New moon at 3:46 a.m.
- 25 - Moon passes 0.51° N of Mercury in Leo
- Moon occults Regulus at 11:03 a.m.
- Mercury passes 0.8° S of Regulus
- 26 - Mars in conjunction with the Sun at 6 p.m.
- 27 - Delta Aquarid meteor shower peaks
- Mercury in dichotomy
- 28 - CAS hosts an Open House at Conway 8:30
- Moon passes 2.57° N of Jupiter
- 29 - Mercury at greatest eastern elongation
- 30 - First quarter moon at 9:23 a.m.
- Alpha Capricornid meteor shower peaks
- August**
- 1 - Cross-quarter day, Lammas
 - 2 - Mercury at aphelion
 - Moon at apogee (farthest point from Earth)
 - 3 - Moon passes 3.25° N of Saturn
 - 5 - Mars at apogee at 2.66 AU from Earth
 - Moon passes 2.26° N of Pluto
 - 7 - Full moon called Green Corn, Grain, Red, Cherries Turn Black, Lightning, or Dog Day's Moon at 12:11 p.m.
 - Partial lunar eclipse
 - 12 - CAS Open House at Conway at 9:30 p.m.
 - 12/13 - Perseid meteor shower peaks after sunset
 - 14 - Last quarter moon at 7:15 p.m.
 - 18 - Moon at perigee (closest point to Earth)
 - Moon passes 2.2° S of Venus
 - 19 - Kemil Beach FREE viewing event
 - 21 - Solar eclipse at 12:27 p.m.
 - New moon at 12:30 p.m.
 - Kappa Cygnid meteor shower peaks
 - 22 - Moon passes 6.09° N of Mercury
 - 24 - Moon passes 26.05° S of Makemake
 - 25 - Moon passes 3.5° N of Jupiter
 - 26 - Mercury at inferior conjunction
 - 29 - First quarter moon at 2:13 a.m.
 - 30 - Moon at apogee (farthest point from Earth)
 - Moon passes 3.6° N of Saturn
 - 31 - Aurigid meteor shower peaks

This edition of the
Sky News
was written by
Linda K. Charnetzky