

ASTRAL PROJECTIONS

JUNE 2019
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Cover Photo

Capturing the drama and fury of Mother Nature, Jim Webster immortalized this thunderstorm on the night of May 28th, 2019 while looking southwest along Goose Creek Road in Toms River. Canon Rebel T6s with Tamaron 18-270 mm lens settings: 20mm / f:3.5 / ISO 200 / 6 seconds / cropped.

Image credit: Jim Webster

EVENT CALENDAR

June 8th - Jakes Branch Star Party

Location: Jakes Branch County Park, Beachwood, NJ

Time: 9:00 p.m. - 11:00 p.m.

June 14th - Monthly Meeting

Location: Ocean County College, Novins Planetarium, Building #13

Following club business, ASTRA member Gary Moshier will give a presentation called, "Amateur Astronomy And UFOs" addressing the questions of "What are they?", "Why are they here?", "Where are they from?", and "How do they get here?"

Time: 7:00 p.m. - 10:00 p.m.

June 22nd - Summer Star Party

Location: Ocean County College, Parking Lot 2R behind the Novins Planetarium.

Time: 8:30 p.m. - 10:30 p.m.

June 28th - IBSP Moonlight Stroll

Location: Island Beach State Park, Lot A15, Berkeley Twp., NJ

Time: 7:00 p.m. - 10:00 p.m.



The Astronomical Society of the Toms River Area
www.astra-nj.org

A.S.T.R.A.

Robert J. Novins Planetarium
Ocean County College
P.O. Box 2001
Toms River, NJ 08754-2001

EVENT CANCELLATIONS

Members will receive an email notification of an event cancellation, or call the ASTRA Hotline: 609-971-3331

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RECAP

Once again, John Endreson, Jr. kicked off the meeting discussing the scheduling updates regarding the annual ASTRA picnic. It will not be held in August, but later in the year when the temperatures aren't as brutal as our 2018 picnic. Global warming, folks. Right now the executive board and volunteers are knee-deep in planning the Island Beach State Park Moonlight Strolls beginning on June 28th and going through the summer.

Ro brought up an interesting item concerning a club member star party where computerized telescopes were not able to find their location, therefore rendering their go-to capabilities useless. On April 26th, the ten-bit binary timekeeping system rolled over from 1024 weeks to zero. This system has been in place since January 6th, 1980, and the first rollover occurred on August 21st, 1999. Many who attended the party remarked their devices provided a date of September 12th, 2099.

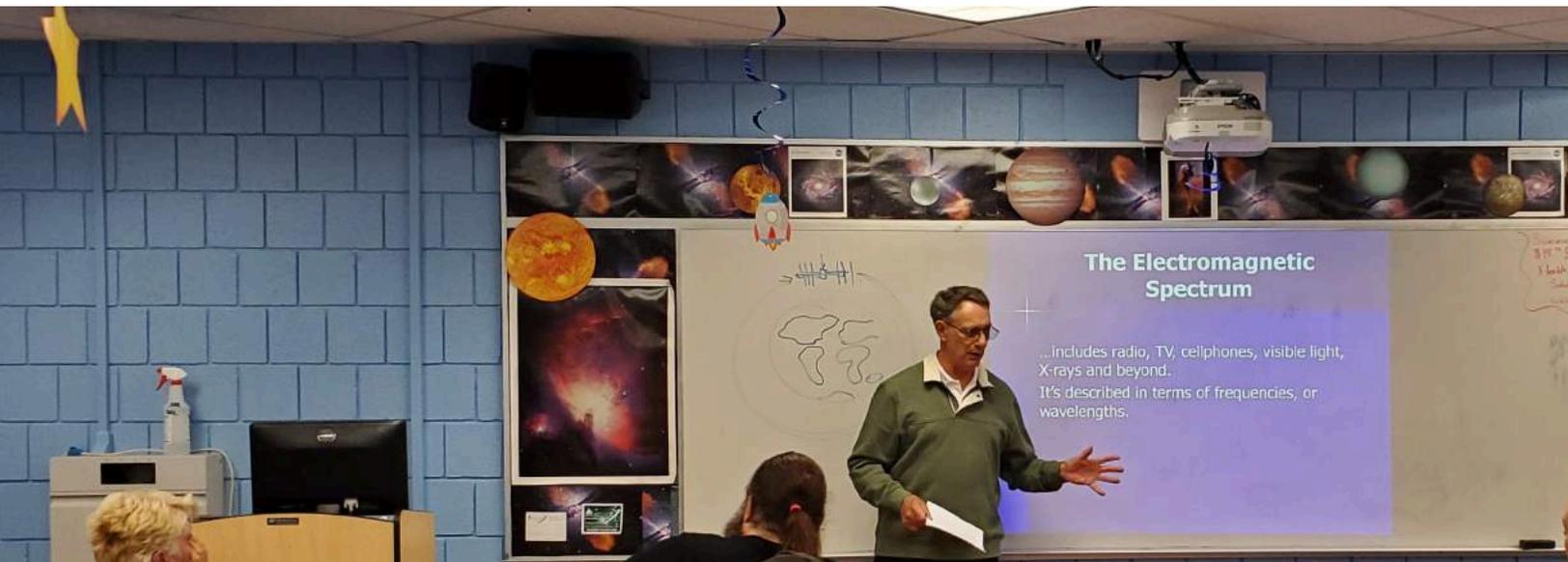
With club business out of the way, ASTRA President John Endreson, Jr. welcomed John

Deriso to present his Pilgrimage to Holmdel. He discussed the electromagnetic spectrum, introducing the meeting's attendees to the history of radio astronomy, along with the various tools they had available in the early days like passive satellites and active satellites which brought us to the Holmdel Horn Antenna.

The scientists using this facility detected noise which they believed to be caused by the local pigeons nesting in the Holmdel Horn. Once they had exterminated the birds, the noise persisted and they were able to determine the source was not from New York City nor other earthbound sources.

Instead, humanity was catching its first whispers from the universe.

Turns out the noise was the cosmic microwave background (CMB), and the data collected at the Holmdel Horn jibed with an unpublished paper by some Princeton researchers postulating the existence of the CMB.



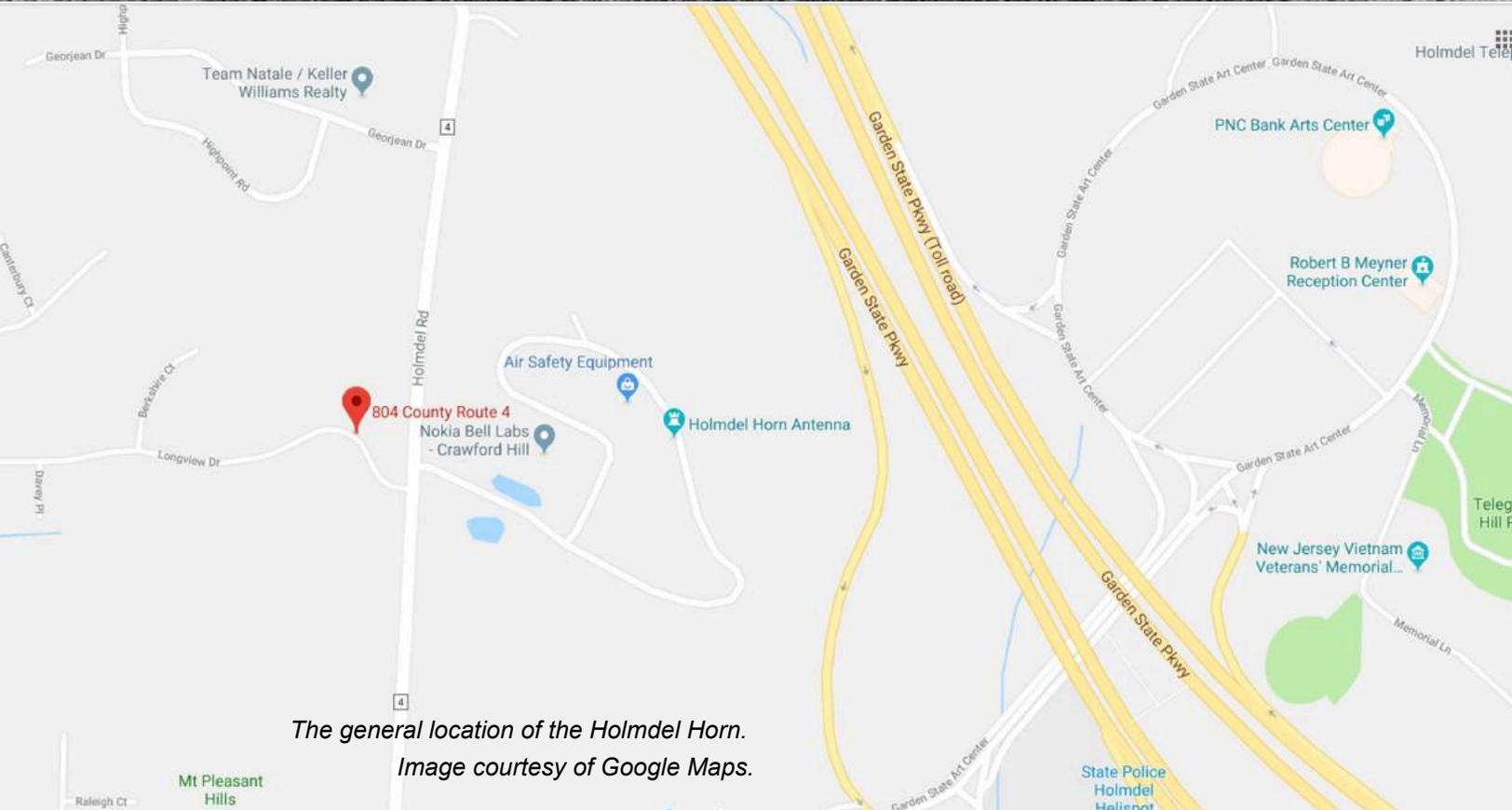
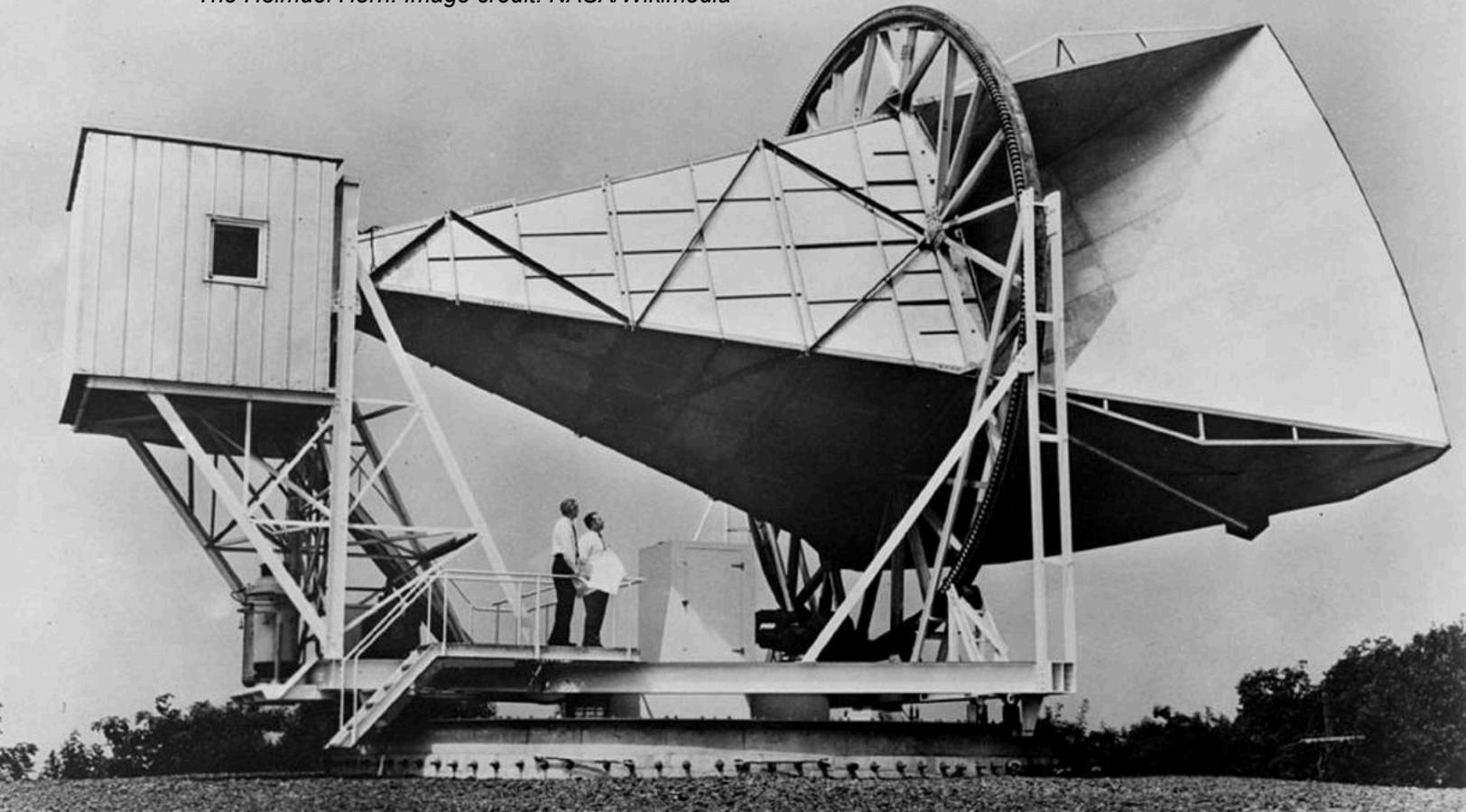
SUBMISSIONS WELCOME

Members are invited to submit articles, photos, news, or stories for inclusion with Astral Projections. Please contact Chris Savia at newsletter@astra-nj.org.

JULY'S NEWSLETTER DEADLINE: JUNE 24, 2019

RECAP

The Holmdel Horn. Image credit: NASA/Wikimedia



The general location of the Holmdel Horn.
Image courtesy of Google Maps.

NIGHT SKY NOTES

Jupiter Shines In June

by David Prosper

Jupiter stakes its claim as the king of the planets in June, shining bright all night. Saturn trails behind Jupiter, and the Moon passes by both planets mid-month. Mercury puts on its best evening appearance in 2019 late in the month, outshining nearby Mars at sunset.

Jupiter is visible almost the entire evening this month. Earth will be between Jupiter and the Sun on June 10, meaning Jupiter is at opposition. On that date, Jupiter rises in the east as the Sun sets in the west, remaining visible the entire night. Jupiter will be one of the brightest objects in the night sky, shining at magnitude -2.6. Its four largest moons and cloud bands are easily spotted with even a small telescope.

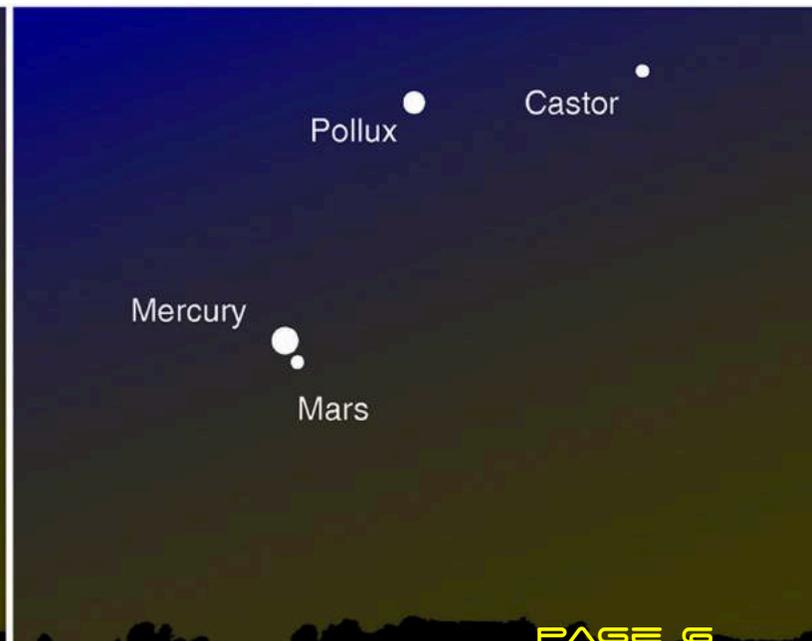
What if your sky is cloudy or you don't have a telescope? See far more of Jupiter than we can observe from Earth with NASA's Juno mission! Juno has been orbiting Jupiter since 2016, swooping mere thousands of miles above its cloud tops in its extremely elliptical polar orbits, which take the probe over 5 million miles away at its furthest point! These extreme orbits minimize Juno's exposure to Jupiter's powerful radiation as it studies the gas giant's internal structure, especially its intense magnetic fields. Juno's

hardy JunoCam instrument takes incredible photos of Jupiter's raging storms during its flybys. All of the images are available to the public, and citizen scientists are doing amazing things with them. You can too! Find out more at bit.ly/JunoCam

Saturn rises about two hours after Jupiter and is visible before midnight. The ringed planet rises earlier each evening as its own opposition approaches in July. The Moon appears near both gas giants mid-month. The Moon's tour begins on June 16 as it approaches Jupiter, and its visit ends on June 19 after swinging past Saturn.

Mercury is back in evening skies and will be highest after sunset on June 23, just two days after the summer solstice! Spot it low in the western horizon, close to the much dimmer and redder Mars. This is your best chance this year to spot Mercury in the evening, and nearly your last chance to see Mars, too! The two smallest planets of our solar system pass close to each other the evenings of June 17-18, coming within just $\frac{1}{4}$ degree, or half the width of a full Moon, making for a potentially great landscape photo at twilight.

Mars and Mercury after sunset the evenings of June 17-18, 2019. Image created with assistance from Stellarium.



CLUB BENEFITS

OBSERVING CALENDAR

June 3 - New moon at 6:01 a.m.

June 10 - Ophiuchid meteor shower. A minor meteor shower producing up to 5 meteors per hour at its peak. Look 26° above the southern horizon at midnight for a glimpse.

June 10 - Jupiter at opposition. Jupiter will be 4.28 astronomical units away, measuring 45 arcsec in diameter, and shining at -2.6 magnitude in the constellation of Ophiuchus. Jupiter rises at 9:04 p.m., reaching its highest point at 12:56 a.m., then setting at 4:45 a.m.

June 16 - The moon and Jupiter will pass within 1°59' of each other in the constellation of Ophiuchus. Look southeast starting at 8:46 p.m. EDT.

June 17 - Full moon at 4:30 a.m.

June 17 - Mercury at dichotomy. Mercury will shine at 0.1 magnitude during its half phase tonight, reaching a peak altitude of 18° above the western horizon.

June 18 - The moon and Saturn will pass within 0°26' of each other in the constellation of Sagittarius. Look southwest starting at 10:35 p.m. EDT.

June 19 - Mercury reaches its highest point in the sky, reaching a peak altitude of 18° above the western horizon.

June 22 - Summer solstice at 11:54 a.m. Avoid the strange circle of stones around Apple Pie Hill in the Pine Barrens unless you happen to know the password.

June 23 - Mercury at greatest eastern elongation. Our innermost planet will shine at 0.4 magnitude, reaching a peak altitude of 18° above the western horizon.

WHY JOIN?

For \$15.00 a year, you can enjoy many benefits with the Astronomical Society of the Toms River Area. Members can borrow A.S.T.R.A.'s telescopes for observations, have access to private star parties, access to Island Beach State Park permits, in addition to camaraderie with local amateur astronomers. Contact one of our club officers today to join the fun.

ISLAND BEACH STATE PARK PERMITS

One of the perks of being an ASTRA member is the special permit for after-hours stargazing at Island Beach State Park. Please contact the executive board for more details about how you can acquire your 2019 permit.

ASTRA'S TELESCOPES

ASTRA has several different types of telescopes, telescope mounts, along with binoculars, eyepieces, and eyepiece filters available for members to borrow. If any member is interested, please check out ASTRA's website and contact John Endreson at telescope-loan@astra-nj.org, or 609-971-3331.

VOLUNTEER PRESENTERS

Members are invited to give presentations related to astronomy or space science at our monthly meetings. Please contact a club officer to make arrangements.