

ASTRAL PROJECTIONS

NOVEMBER 2018
VOLUME 29 ISSUE 11



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Cover Photo

*A shot looking directly into the 26" Cassegrain telescope at the Paul Robinson Observatory.
Image credit: Vic Palmieri*

EVENT CALENDAR

October 12th - Monthly Meeting

Location: Ocean County College, Building #10 opposite the Planetarium

Following club business, ASTRA member Ryan Knipple continues his Ancient Astronomy series of presentations. This October is entitled "Extraterrestrial Extinctions: Just How Dangerous Is The Cosmos?"

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

October 13th - Jakes Branch Star Party

Location: Jakes Branch County Park, Beachwood, NJ

Time: 7:00 p.m. - 9:00 p.m.

October 27th - Cloverdale Park Star Party

Location: Cloverdale Farm County Park, Dartmouth Blvd, Barnegat Twp., NJ

Time: 7:00 p.m. - 9:00 p.m.



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 event cancellation, or call the ASTRA Hotline: 609-971-3331

President:

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President@astra-nj.org

Treasurer:

Ro Spedaliere

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ELECTIONS

Election of officers shall take place at the December meeting.
Individual members have one vote. A plurality shall be sufficient to elect.

TERM OF OFFICERS

Office shall be effective on January 1 for a term of one year or until a successor is elected.
The officers of the organization shall be the President, the Vice President-Secretary, and the Treasurer.

The officers shall be elected, and no person may hold more than one elected office concurrently.

ASTRA President: The President shall be the primary point of contact for the organization, speak for the organization in all official matters and preside over all meetings.

ASTRA Vice President-Secretary: ASTRA Vice President-Secretary shall assume the responsibilities of the President in the President's absence, make a record of any formal actions taken by the organization, coordinate with the Newsletter Editor in mailing appropriate club business, keep track of telescope and equipment loans, and maintain the official version of the bylaws and policy documents. In addition the Vice President-Secretary performs as the Astronomical League Correspondent communicating with the Astronomical League, periodically furnishing the League with copies of our membership list.

ASTRA Treasurer: The Treasurer shall be the club membership chairperson, shall maintain the club treasury, shall collect club dues, and shall expend funds as directed. Recurring expenditures normal to the operation of the organization are authorized. The Treasurer shall provide a written report of the year's expenditures, which shall be included in the Newsletter, published within the first calendar quarter. Separate accounting will be maintained for the Telescope Fund and it will not be used for general club operations without a vote at a regular meeting.

Please make your selections by circling the nominee of your choice.

Nominee for President: John Endreson

Nominee for Vice President-Secretary: Chris Savia

Nominee for Treasurer: Ro Spedalieri

Please bring this ballot to the monthly meeting on December 14th, or mail it to:

**A.S.T.R.A. 2017 Elections
Robert J. Novins Planetarium
Ocean County College P.O. Box 2001
Toms River, NJ 08754-2001**

Alternatively, you can email your ballot to elections@astra-nj.org

RECAP

At the Astronomical Flea Market

by Vic Palmieri, image credits: Vic Palmieri

On Saturday, September 29, John Endreson, Phil Zoller and I took part in the astronomical flea market on the grounds of the observatory of the New Jersey Astronomical Association in Voorhees State Park. ASTRA has accumulated an abundance of telescopes, eyepieces and telescope accessories. We sold a lot of this stuff thereby adding some money to our club's treasury.



ASTRA in October, 2018

On Friday October 12th, ASTRA member Ryan Knipple regaled his fellow club members with part four of his Ancient Astronomy series entitled "Just How Dangerous Is The Cosmos?" concerning the potential dangers of meteor and asteroid impacts.

Stray space rocks aren't the only threat to Earth, as Ryan notes gamma ray bursts also pose a potent threat to life as we know it. Throughout Earth's history, the planet's endured many extinction scenarios like the Ordovician Extinction 450 million years ago notorious for wiping out 85% of all living beings. Some scientists argue the cause came from the leftovers of a dying star or supernova. No one has yet to find any evidence a supernova was at fault, but there's a lot of ground to cover.

Not as terrible as the Ordovician, the Devonian Extinction witnessed the loss of 75% of marine life! Astroblemes, or 'star wounds', abound in the strata for this era suggesting Earth was bombarded by a swarm of meteors. Another, non-astronomical, cause could be from the sharp increase of oxygen production courtesy of new plants rooting themselves upon dry land.

The granddaddy of all extinction events is the Permian Extinction, wiping out 95% of all life on Earth in one fell swoop. Ryan, and other experts, conjecture the object which created a crater the size of Ohio in Antarctica triggered a Siberian supervolcano.

While dinosaurs are known to have gone out with a bang in the Cretaceous/Tertiary Extinction event, they also arrived with one after the Triassic Extinction. Just 23° north of the equator are a string of craters dated to about 200,000,000 years ago. Another potential cause could lay in the break up of the supercontinent Pangaea into Laurasia and Gondwanaland.

While the Permian Extinction was the biggest, the Cretaceous/Tertiary Extinction is the most famous, delineated by a line of iridium on Earth's crust. Iridium is a rare metal on Earth, and its origin tends to be extraterrestrial.

The most recent extinction events cited by Ryan are the Eocene and Pleistocene Extinctions. They are far less deadly than their forebears, but these events did shape the world and humanity. The Eocene possibly triggered an ice age, killing off most of North America's megafauna. At the same time, the first primates were emerging on Earth. The earliest anthropoid fossil being a 47 million year-old monkey-like fossil called Darwinus by paleontologists. Ten thousand years ago, Earth was shaken by the Pleistocene Extinction. No one has yet to find a crater to ascribe to this event, so conventional wisdom holds the cosmos was not gunning for life on Earth. For once.

As the meeting wound down, ASTRA President John Endreson showed off a plaque in honor of Gloria Villalobos to be installed at Ocean County College. See page 8 for a photo. Yes, we know it says "In Momery" rather than "In Memory".

On Saturday, October 13th, everyone convened at Jakes Branch to hold a spectacular star party. Many witnessed a fireball in the northwest sky, and Ro spotted a few satellites much to the amazement of attendees.

SPACE PLACE

November's Dance of the Planets

By Jane Houston Jones and David Prosper

November's crisp autumn skies bring great views of our planetary neighbors. The Moon pairs up with Saturn and Mars in the evenings, and mornings feature eye-catching arrangements with dazzling Venus. Stargazers wanting a challenge can observe a notable opposition by asteroid 3 Juno on the 17th and watch for a few bright Leonid meteors.

Red Mars gleams high in the southern sky after sunset. Saturn sits westward in the constellation Sagittarius. A young crescent Moon passes near Saturn on the 10th and 11th. On the 15th a first quarter Moon skims by Mars, coming within 1 degree of the planet. The red planet receives a new visitor on November 26th, when NASA's InSight mission lands and begins its investigation of the planet's interior. News briefings and commentary will be streamed live at:

bit.ly/landsafe

Two bright planets hang low over the western horizon after sunset as November begins: Jupiter and Mercury. They may be hard to see, but binoculars and an unobstructed western horizon will help determined observers spot them right after sunset. Both disappear into the Sun's glare by mid-month.

Early risers are treated to brilliant Venus sparkling in the eastern sky before dawn, easily outshining everything except the Sun and Moon. On November 6th, find a location with clear view of the eastern horizon to spot Venus next to a thin crescent Moon, making a triangle with the

bright star Spica. The following mornings watch Venus move up towards Spica, coming within two degrees of the star by the second full week of November. Venus will be up three hours before sunrise by month's end – a huge change in just weeks! Telescopic observers are treated to a large, 61" wide, yet razor-thin crescent at November's beginning, shrinking to 41" across by the end of the month as its crescent waxes.

Observers looking for a challenge can hunt asteroid 3 Juno, so named because it was the third asteroid discovered. Juno travels through the constellation Eridanus and rises in the east after sunset. On November 17th, Juno is at opposition and shines at magnitude 7.4, its brightest showing since 1983! Look for Juno near the 4.7 magnitude double star 32 Eridani in the nights leading up to opposition. It is bright enough to spot through binoculars, but still appears as a star-like point of light. If you aren't sure if you have identified Juno, try sketching or photographing its star field, then return to the same area over the next several days to spot its movement. See next page for a handy guide to spot Juno.

The Leonids are expected to peak on the night of the 17th through the morning of the 18th. This meteor shower has brought "meteor storms" as recently as 2002, but a storm is not expected this year. All but the brightest meteors will be drowned out by a waxing gibbous Moon. Stay warm and enjoy this month's dance of the planets!



ASTRONOMY



This finder chart shows the path of the asteroid 3 Juno as it glides past 32 Eridani in November 2018. The asteroid's position is highlighted for selected dates, including its opposition on the 17th. Image created in Stellarium for NASA Night Sky Network.

Eridanus

Rana

OBSERVING CALENDAR

November 7th - New moon at 11:01 a.m. EDT.

November 11th - Conjunction of the Moon and Saturn. The pair become visible around 5:00 p.m. EDT 21° above the southwestern horizon in Sagittarius before setting at 7:38 p.m. EDT.

November 17th - The Pleiades (M45) is well placed, becoming visible at 5:44 p.m. EDT, reaching its highest point of 74° above the southern at 11:55 p.m. EDT, until 5:57 a.m. EDT.

November 15th - Conjunction of the Moon and Mars. The pair become visible around 4:59 p.m. EDT 32° above the southeastern horizon in Aquarius. Mars and the Moon will be visible until 10:57 p.m. EDT.

November 4th - Taurid meteor shower. The Taurids will reach their peak activity of 10 meteors per hour on this date. The radiant will be 56° above the southeastern horizon within the constellation of Taurus.

November 27th - Close approach of the Moon and M44. The pair become accessible around 9:43 p.m. EST 7° above the eastern horizon. The Moon and M44 will pass within 0°25' of each other. The pair reach their highest point of 69° above the southern horizon at 4:12 a.m. EST.

November 23rd - Full moon at 12:38 a.m. EDT.

November 29th - Venus at greatest brightness. Venus will shine at -4.7 magnitude on this date in the eastern sky at 3:40 a.m., 29° above the southeastern horizon.

CLUB BENEFITS

Image credit: Chris Savia

I Am Who I Am.
Like Me, Love Me.
Take Me, Leave Me.
Know That I Am A
True Friend To The End.

In Momery Of
GLORIA VILLALOBOS

WHY JOIN?

For \$25.00 a year, you can enjoy many benefits with the Astronomical Society of the Toms River Area. Members can take advantage of A.S.T.R.A.'s lending library, borrow telescopes for observations, access to private star parties, in addition to comraderie 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 2018 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.

ASTRA'S LIBRARY

Many books are available for loan to ASTRA members from our library. A list of these books is available at the ASTRA website. To request any of these books, please email John Endreson at Library-Loan@astra-nj.org, or call 609-971-3331 with your request for materials.

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.

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.

DECEMBER'S NEWSLETTER DEADLINE: NOVEMBER 26, 2018