



ASTRAL PROJECTIONS

December 2014
Volume 25 Issue 11

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Upcoming Events

Monthly Meeting on Friday, December 12th

The next meeting will be held at the [Robert J. Novins Planetarium](#) located on the Ocean County College campus (Bldg. 13 next to parking lot 2) from 7pm to 10pm.

2015 Election and Awards

There will be a presentation on Famous Astronomers IX by Bob Salvatore.

Star Party on Saturday, December 27th

Join us as we set up our telescopes and observe the universe from 5:00pm to 8:00pm at [Jakes Branch County Park, 1054 Sunset Road, Beachwood NJ](#)

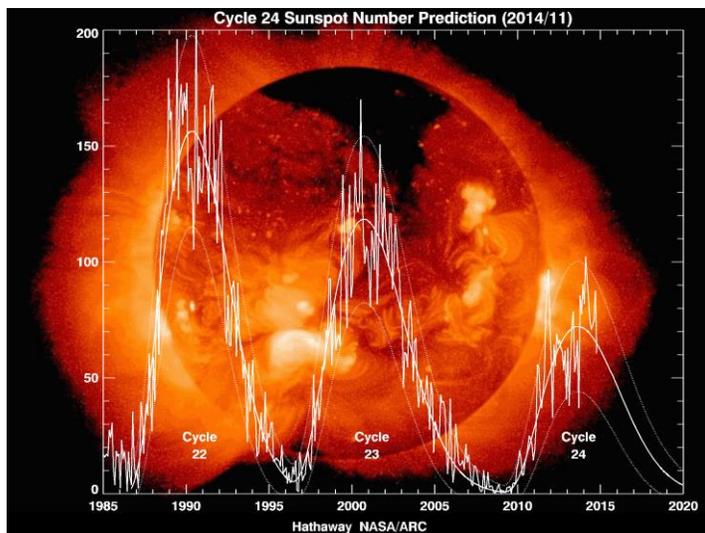
A.S.T.R.A.
Robert J. Novins Planetarium
Ocean County College
P.O. Box 2001
Toms River NJ 08754-2001

EVENT CANCELLATIONS

Two hours before the event start time please check out the ASTRA Message Board at <http://forum.astra-nj.org/viewforum.php?f=4> or call the ASTRA Hotline: 609-971-3331

Recap

Bill Edelen gave an update on Solar Cycle #24 at the November meeting. This current cycle has reached a maximum that is weaker than previous cycles. At this weak maximum the solar storms tend to be more intense.



NOMINATIONS FOR THE 2015 OFFICERS

Nominees

President: Matthew McCue
Vice-President – Secretary: Sarah Waters
Treasurer: Ro Spedaliere

Please see more details on page 5 of this newsletter.

CLUB TELESCOPES:

- A.S.T.R.A. owns seven small telescopes
- 6-inch Dobsonian (needs repairs)
 - 8-inch Dobsonian
 - 80mm Celestron Refractor
 - 120mm EQ AstroView Refractor.
 - Lunt 35mm H-Alpha solar scope
 - 8-inch Celestron NexStar 8i SE
 - 60mm Meade EQ refractor

These telescopes are available for club members to borrow and use for a month or two at a time. Contact John Endreson at Telescope_Loan@astra-nj.org to borrow a telescope

CELESTIAL EVENTS FOR DECEMBER 2014

December 6 - Full Moon

December 13, 14 - Geminids Meteor Shower

December 22 - New Moon

December 22, 23 - Ursids Meteor Shower

Source: <http://www.seasky.org/>

ASTRONOMICAL HELP OR ITEMS FOR SALE

If you have an astronomical item to sell, or need help with an astronomical problem (a question, or telescope setup) contact the President President@astra-nj.org to announce it at a meeting. To advertise in our monthly newsletter please send all information to astra.newsletter@gmail.com

ASTRA LIBRARY OF BOOKS AND DVDS:

Many books and DVDs are available for loan from the ASTRA Library for a one month period. A list of these items is available on the ASTRA website. Request for these items must be made prior to our regular meeting and returned by the following meeting. Please e-mail your request for these items to our Librarian Barbara Novick at Library-Loan@astra-nj.org or call her at 732-840-3111.

ASTRONOMICAL LEAGUE MEMBER SOCIETY

Astronomical League National Headquarters, 9201 Ward Parkway; Suite 100, Kansas City, MO 64114

1-816-333-7759 or www.astroleague.org

The REFLECTOR is published in March, June, September and December. If you do not receive your copy of the REFLECTOR magazine, contact Astronomical League Coordinator (Alcor) Ro Spedaliere (Treasurer@astra-nj.org)



Where the Heavenliest of Showers Come From

By Dr. Ethan Siegel

You might think that, so long as Earth can successfully dodge the paths of rogue asteroids and comets that hurtle our way, it's going to be smooth, unimpeded sailing in our annual orbit around the sun. But the meteor showers that illuminate the night sky periodically throughout the year not only put on spectacular shows for us, they're direct evidence that interplanetary space isn't so empty after all!

When comets (or even asteroids) enter the inner solar system, they heat up, develop tails, and experience much larger tidal forces than they usually experience. Small pieces of the original object—often multiple kilometers in diameter—break off with each pass near the sun, continuing in an *almost* identical orbit, either slightly ahead-or-behind the object's main nucleus. While both the dust and ion tails are blown well off of the main orbit, the small pieces that break off are stretched, over time, into a diffuse ellipse following the same orbit as the comet or asteroid it arose from. And each time the Earth crosses the path of that orbit, the potential for a meteor shower is there, *even after* the parent comet or asteroid is completely gone!

This relationship was first uncovered by the British astronomer John Couch Adams, who found that the Leonid dust trail must have an orbital period of 33.25 years, and that the contemporaneously discovered comet Tempel-Tuttle shared its orbit. The most famous meteor showers in the night sky all have parent bodies identified with them, including the Lyrids (comet Thatcher), the Perseids (comet Swift-Tuttle), and what promises to be the best meteor shower of 2014: the Geminids (asteroid 3200 Phaethon). With an orbit of *only* 1.4 years, the Geminids have increased in strength since they first appeared in the mid-1800s, from only 10-to-20 meteors per hour up to *more than 100* per hour at their peak today! Your best bet to catch the most is the night of December 13th, when they ought to be at maximum, before the Moon rises at about midnight.

The cometary (or asteroidal) dust density is always greatest around the parent body itself, so whenever it enters the inner solar system and the Earth passes near to it, there's a chance for a **meteor storm**, where observers at dark sky sites might see *thousands* of meteors an hour! The Leonids are well known for this, having presented spectacular shows in 1833, 1866, 1966 and a longer-period storm in the years 1998-2002. No meteor storms are anticipated for the immediate future, but the heavenliest of showers will continue to delight skywatchers for all the foreseeable years to come!

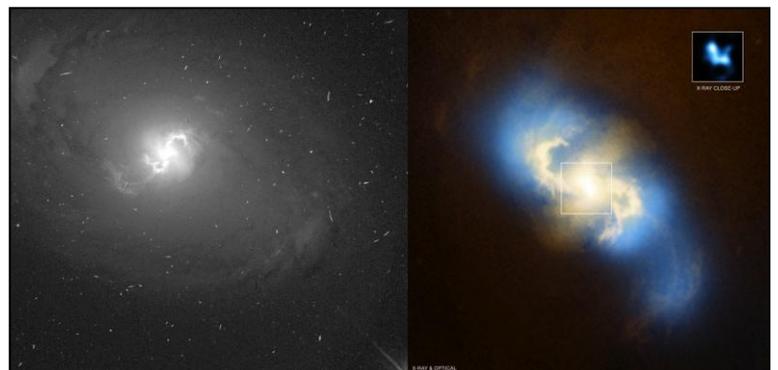
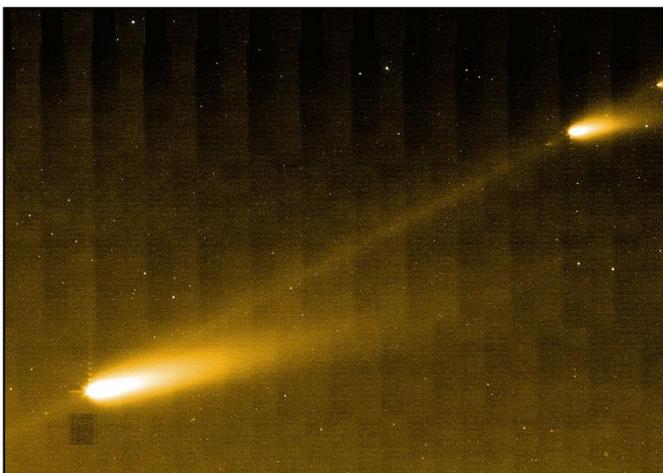
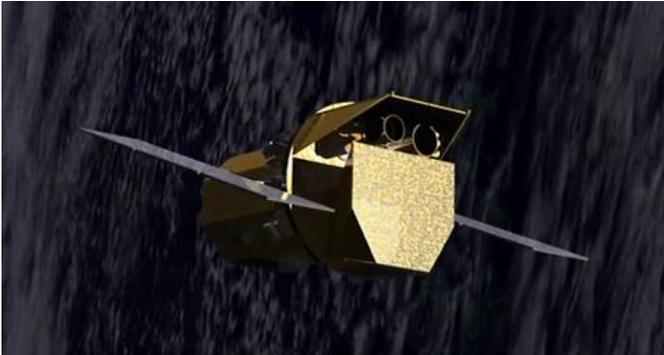


Image credit: NASA / JPL-Caltech / W. Reach (SSC/Caltech), of Comet 73P/Schwassman-Wachmann 3, via NASA's Spitzer Space Telescope, 2006.

NASA Highlights

Information from www.nasa.gov/



NASA's Swift Satellite Marks 10 Years of Game-changing Astrophysics

Over the past decade, NASA's Swift Gamma-ray Burst Explorer has proven itself to be one of the most versatile astrophysics missions ever flown. It remains the only satellite capable of precisely locating gamma-ray bursts -- the universe's most powerful explosions -- and monitoring them across a broad range of wavelengths using multiple instruments before they fade from view.

Image Credit: NASA's Goddard Space Flight Center



NASA's Orion Spacecraft for Human Exploration

The teams working to ready Orion for its flight test on Dec. 4 are making progress preparing the spacecraft for its first trip to space. At Space Launch Complex 37 at Cape Canaveral Air Force Station in Florida

Artist concept of Delta IV with Orion at the launch pad.

**JANUARY NEWSLETTER DEADLINE:
DECEMBER 19, 2014**



ASTRA-WEAR – Embroidered and/or Printed items with the ASTRA Logo

You can see some samples at ASTRA meetings. To order by mail: Shelter Cove Embroidery Co. 1333 Bay Ave Toms River, NJ 08753 call 732-506-7700 or E-mail astra-wear@estitches.com. Order form is on the ASTRA website.

2014 Calendar

- Dec 12 ASTRA Meeting (7pm – 10pm)
Awards, Open Meeting, Elections
- Dec 27 Star Party (5pm – 8pm)
Public star party at Jakes Branch

2015 Calendar

- Jan 24 Star Party (5pm – 8pm)
Public star party at Jakes Branch
- Feb 21 Star Party (5pm – 8pm)
Public star party at Jakes Branch
- Mar 21 Star Party (6pm – 9pm)
Public star party at Jakes Branch



The Astronomical Society of the Toms River Area

Elections Ballot for the 2015 Term

Election of officers shall take place at the December meeting.
Individual members shall 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.

a. 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.

b. The Vice President-Secretary shall:

- 1) Assume the responsibilities of the President in the President's absence.
- 2) Make a record of any formal actions taken by the organization.
- 3) Coordinate with the Newsletter Editor in mailing appropriate club business.
- 4) Perform as the ALCor (Astronomical League Correspondent). The ALCor communicates with the Astronomical League (AL) and periodically furnishes the AL with copies of our membership list.
- 5) Keep track of telescope equipment loans.
- 6) Keep the official version of the Bylaws and Policy documents.

c. 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, or fill in your name to self nominate.

Nominee for President: Matthew McCue or **Self-Nominate:** _____

Nominee for Vice-President - Secretary:
 Sarah Waters or **Self-Nominate:** _____

Nominee for Treasurer: Ro Spedalieri or **Self-Nominate:** _____

Send this ballot to (or bring it to the December meeting):
A.S.T.R.A. 2015 Elections
Robert J. Novins Planetarium
Ocean County College P.O. Box 2001
Toms River NJ 08754-2001

or e-mail your vote to elections@astra-nj.org