



ASTRAL PROJECTIONS

October 2013
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SEPTEMBER MEETING: Sam Micovic presented a terminology guide on astronomy vocabulary, the solar system, and living in space. He only got through one of the three parts. His presentation was excellent and very thorough. He is invited to take up the other parts in a future presentation. Thanks for a great job Sam!

OCTOBER MEETING: Oct 11, 2013, ASTRA Members will see the 8:30 PM Planetarium show – “Touching the Edge of the Universe.”

Announcements

RYAN KNIPPLE ASTRONOMY BLOG: ASTRA members can post anything they want about astronomy and their own observations on <http://captainknipz.weebly.com>, Ryan's Astronomy Blog

ELECTION OF CLUB OFFICERS: It's time to think about the election of club officers. Anyone interested in serving as a club officer (President, Vice President-Secretary, or Treasurer) please let the current executive board know.

OBSERVER'S HANDBOOKS 2014: It is time to think about ordering the RASC Observer's handbooks. RASC is accepting pre-orders at this time. Prices (including S&H for the US): Single issue - \$38.20; 2 – 9 copies \$26.95; 10 – 25 \$23.95. The cost will be at least \$26.95. If we get orders for 10 or more that will go to \$23.95. Let us know at the next meeting if you want to order a handbook for 2014

SCHEDULE FOR 2014: Ideas for the 2014 schedule are being solicited.

What's up this month?

INTERNATIONAL OBSERVE THE MOON NIGHT: The Planetarium will host the International Observe the Moon Night. Saturday, October 12, 2013, around 7:30 PM - 11:00 PM. Location: Ocean County College, In front of the planetarium, TOMS RIVER, NJ 08723

Check the online message board on the date of the star party for up to date information on these events and directions.

How to hunt for your very own supernova!

By Dr. Ethan Siegel

In our day-to-day lives, stars seem like the most fixed and unchanging of all the night sky objects. Shining relentlessly and constantly for billions of years, it's only the long-term motion of these individual nuclear furnaces and our own motion through the cosmos that results in the most minute, barely-perceptible changes.

Unless, that is, you're talking about a star reaching the end of its life. A star like our Sun will burn through all the hydrogen in its core after approximately 10 billion years, after which the core contracts and heats up, and the heavier element helium begins to fuse. About a quarter of all stars are massive enough that they'll reach this giant stage, but the *most* massive ones -- only about 0.1% of all stars -- will continue to fuse leaner elements past carbon, oxygen, neon, magnesium, silicon, sulphur and all the way up to iron, cobalt, and, nickel in their core. For the rare ultra-massive stars that make it this far, their cores become so massive that they're unstable against gravitational collapse. When they run out of fuel, the core implodes.

The intruding matter approaches the center of the star, then rebounds and bounces outwards, creating a shockwave that eventually causes what we see as a core-collapse supernova, the most common type of supernova in the Universe! These occur only a few times a century in most galaxies, but because it's the most massive, hottest, shortest-lived stars that create these core-collapse supernovae, we can increase our odds of finding one by watching the most actively star-forming galaxies very closely. Want to maximize your chances of finding one for yourself? Here's how.

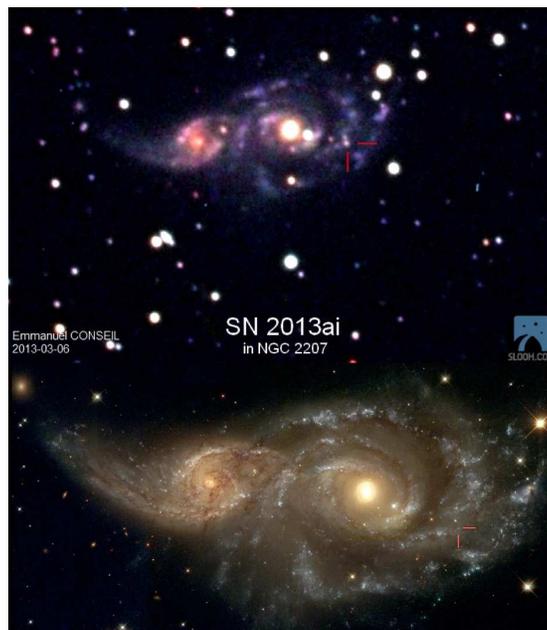
Pick a galaxy in the process of a major merger, and get to know it. Learn where the foreground stars are, where the apparent bright spots are, what its distinctive features are. If a supernova occurs, it will appear first as a barely perceptible bright spot that wasn't there before, and it will quickly brighten over a few nights. If you find what appears to be a "new star" in one of these galaxies and it checks out, report it *immediately*; you just might have discovered a new supernova!

This is one of the few cutting-edge astronomical discoveries well-suited to amateurs; Australian Robert Evans holds the all-time record with 42 (and counting) original supernova discoveries. If you ever find one for yourself, you'll have seen an exploding star whose light traveled millions of light-years across the Universe right to you, and you'll be the *very first* person who's ever seen it!

Read more about the evolution and ultimate fate of the stars in our universe:

<http://science.nasa.gov/astrophysics/focus-areas/how-do-stars-form-and-evolve/>.

While you are out looking for supernovas, kids can have a blast finding constellations using the Space Place star finder: <http://spaceplace.nasa.gov/starfinder/>.



SN 2013ai, via its discoverer, Emmanuel Conseil, taken with the Slooh.com robotic telescope just a few days after its emergence in NGC 2207 (top); NASA, ESA and the Hubble Heritage Team (STScI) of the same interacting galaxies prior to the supernova (bottom).





CELESTIAL EVENTS FOR September:

Mercury is low in the evening twilight WSW for most of the month and later in the month vanishes in the twilight. Venus is low in the SW evening sky. Mars is Leo in the morning sky. Jupiter rises ENE late evening – in Gemini. Saturn is low in the WSW evening twilight and vanishes at the end of the month. Highlights for the month:

- 1 Mars 7° N of Moon
 - 5 New Moon
 - 6 Mercury 3° S of Moon
 - 7 Saturn 2° N of Moon
 - 8 Draconid meteors peak
Venus 5° S of Moon
 - 11 First Quarter
 - 14 Mars 1° N of Regulus
 - 18 Full Moon
 - 21 Orionid meteors peak
 - 25 Jupiter 5° N of Moon
 - 26 Last Quarter Moon
 - 30 Mars 6° N of Moon
- Credit: Observer's handbook



CLUB TELESCOPES:

A.S.T.R.A. owns five small telescopes:

- 6-inch Dobsonian (in need of repairs)
- 8-inch Dobsonian
- 80mm Celestron Refractor
- 120mm EQ AstroView Refractor.
- Lunt 35mm H-Alpha solar scope

These telescopes are available for club members to borrow and use for a month or two at a time.

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.

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)

ASTRONOMICAL ITEMS FOR SALE, OR HELP WANTED ADVERTISEMENTS: If you have an 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 and send the advertisement to the newsletter (See Newsletter below).

FOR SALE: Tele-vue Radian eyepiece, 14mm. Like new in original packaging. Rarely used. \$120.00 (one half original price). Contact Phil Zollner: pazap at optimum.net or 732-905-0889

NEWSLETTER: E-mail material (meeting reports, observing reports, or other items of interest) to Newsletter@astra-nj.org.



EXECUTIVE BOARD

President – Rich Brady President@astra-nj.org
Vice President-Secretary – Bob Salvatore, VP@astra-nj.org
Treasurer – Ro Spedaliere Treasurer@astra-nj.org
Newsletter Editor – Rich Brady Newsletter@astra-nj.org
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SCHEDULE FOR 2013: If anyone would like to do a presentation or suggest one, please contact the executive board.

ASTRA TENTATIVE SCHEDULE FOR 2013

Jake's Branch and other star parties not included

(Comments and Suggestions are Welcome)

Jan 11 Telescope Workshop
Feb 8 Cancelled
Mar 8 Top Stories for 2012 – Rich Brady
Apr 12 Famous Astronomers VIII – Bob Salvatore
May 10 Telescope Equipment Show & Tell – All Members
Jun 14 Astronomical Pronunciation Guide – Matthew McCue
Jul 12 Pluto and Kuiper Belt Objects – Ryan Kipple
Aug 9 No Meeting
Aug 10 Saturday - Perseid Picnic
Sep 13 Terminology Guide (?) – Sam Micovic
Sep 28 Fall Star Watch (8 – 11 PM)
Oct 11 Planetarium Show
Nov 8 Tentative – Other Telescopes – Rich Brady
Dec 13 Awards, Open Meeting
Dec 21 Winter Star Watch (7 – 11 PM)

Check us out on Facebook, search groups for (ASTRA Astronomy) and look for our logo.

