ASTRAL PROJECTIONS

January 2012
Volume 23 Issue 1

Meeting Schedule

January 13th Meeting: "Telescope Workshop"

Date: Friday, 1/13/2012

Time: 7:00 PM - 10:00 PM

Location: Robert J. Novins Planetarium, College Drive, Ocean County College, Toms River, NJ 08754

February 13th Meeting:

Date: Friday, 1/10/2012

Time: 7:00 PM - 10:00 PM

Location: Robert J. Novins Planetarium, College Drive, Ocean County College, Toms River, NJ 08754

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A look inside this issue:

ANNOUNCEMENTS

ASTRA Dues are Due

Membership Application Form is Attached

Membership in the
Astronomical League
is separate and requires an additional dues payment of
$7.50
The Astronomical League Membership Form is also attached.

What's up this month?

January 2012

Celestial Events

1st: First Quarter Moon (1:14 EDT)

4th: Quadrantid Meteors (2:00 EDT).

8th: Stephen Hawking's 70th Birthday.

9th: Full Moon (2:30 EDT).

16th: Last Quarter Moon (4:08 EDT)

23rd: New Moon (2:39 EDT)

30th: First Quarter Moon (23:10 EDT)

ASTRA Public Outreach & Star Parties Schedule for January

There are no star parties scheduled for January. Stay warm!

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

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).

Newsletter: E-mail material (Meeting reports, Observing reports) to Newsletter@astra-nj.org

EXECUTIVE BOARD
President – John Endreson, President@astra-nj.org;
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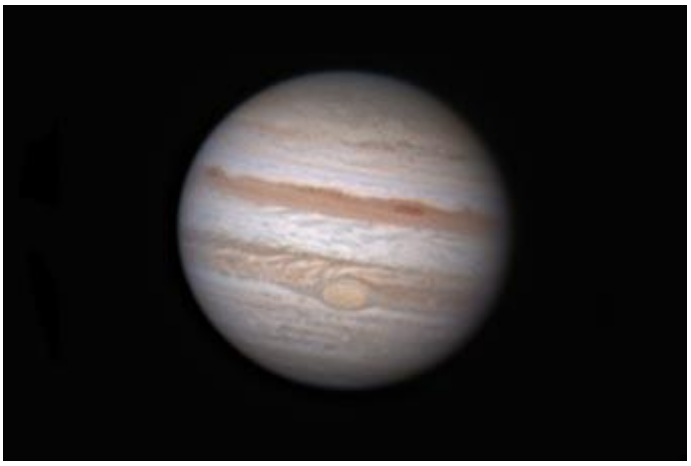
Check us out on Facebook, search groups for (ASTRA Astronomy) and look for our logo.

Jupiter: Big, Bright, and Beautiful



S&T imaging editor Sean Walker used a 12½-inch reflector to capture Jupiter on August 17, 2011, from Masil Observatory East in New Hampshire. Note the Great Red Spot, which overlaps the dark South Equatorial Belt below center.

What's your favorite planet?

If it's Mars, you certainly have lots of company. The fascination with the Red Planet as a possible abode of life goes back well over a century. But Mars is almost always tiny in a telescope, and in 2011 it's not placed well for viewing. Or perhaps you're fondest of Saturn. Nothing compares to those wonderful rings.

For me, however, it's Jupiter. What makes Jupiter such a treat is that it offers more to see in a telescope than any other planet. It's the only one that shows distinct features in even a fairly small scope. And it's got four large moons that hover nearby like bright fireflies, forever shuttling back and forth around Jupiter's glaring globe.

Jupiter was king of the gods in Roman mythology, and in late 2011 it rules unchallenged as the brightest "star" shining in the evening sky. You'll find it low in the east after sunset in October, and it climbs higher up week by week through year's end. By next April, Jupiter's early evening position will have shifted far to the west.

ASTRA Library of Books & DVD's
The following books and DVD's are available to borrow for one month at a time. Request for these items must be made prior to our regular meeting and returned the following meeting. Please e-mail your request for these items to John Endreson at President@astra-nj.org

BOOKS

1) The National Air and Space Museum Second Edition by C.D.B. Bryan

2) Milestones of Aviation Smithsonian Institution National Air and Space Museum

3) New Atlas of the Moon by Serge Brunier (Author), Thierry Legault (Photographer).

4) Encyclopedia of space by National Geographic

5) The Real Mars by Michael Hanion

DVD's

1) Parts 1&2 Understanding the Universe What's New in Astronomy 2003 Taught by: Professor Alex Filippenko. Each pert has 8 lectures, 45 minutes per lecture.

2) Parts 1 to 5 Understanding the Universe An Introduction to Astronomy Taught by: Professor Alex Filippenko each pert has 8 lectures, 45 minutes per lecture.

3) COSMOS
In his "ship of the imagination," Carl Sagan guides us to the farthest reaches of space and takes us back into the history of scientific inquiry in the course of 13 fascinating hours.

For a complete list of books and DVD's, visit our website or e-mail John Endreson at President@astra-nj.org

Club Telescopes




A.S.T.R.A. owns four small telescopes
6-inch Dobsonian
8-inch Dobsonian
80mm Celestron Refractor
120mm EQ AstroView Refractor.
These telescopes are available for club members to borrow and use for a month or two at a time.

Wanted!

No longer used telescopes, Telescope parts, and accessories.
E-mail John Endreson at President@astra-nj.org
We will come and pick-up your used equipment.

ASTRA-WEAR: For 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

Jupiter (Continued from Page 3)

Before you track down this planet with your telescope, grab your binoculars and find a tree or wall to brace against while pointing them toward Jupiter. If your binoculars are good quality and magnify at least seven times (they'll be marked 7×35 or 7×50, for example), you'll see Jupiter as a tiny white disk.

Look closely to either side of Jupiter's disk — do you see a line of three or four tiny stars? Each of these is a satellite of Jupiter roughly the size of our own Moon. They only look tiny and faint because they're about 2,000 times farther away.

Hide-and-Seek Moons

Now put a low-power eyepiece in your telescope and center Jupiter. Focus carefully so that the planet's edge is as sharp as possible, let any vibrations settle down, and then take a good long look.

Jupiter and three of its four Galilean satellites, as they would appear in a small telescope.

Depending on the size of your scope and the quality of the night's seeing, you'll see something like the view here. Now the moons are much more obvious. You'll probably see all four — but possibly only three depending on when you look. The count often changes from night to night (or if you're patient, even from hour to hour). That's because while orbiting Jupiter they sometimes glide in front of the planet, behind it, or through its shadow.

These hide-and-seek movements confounded Galileo Galilei when he first spied these "stars" in 1610. But he soon realized they were actually circling around Jupiter, forming a miniature solar system of sorts. We see their orbits almost exactly edge on.

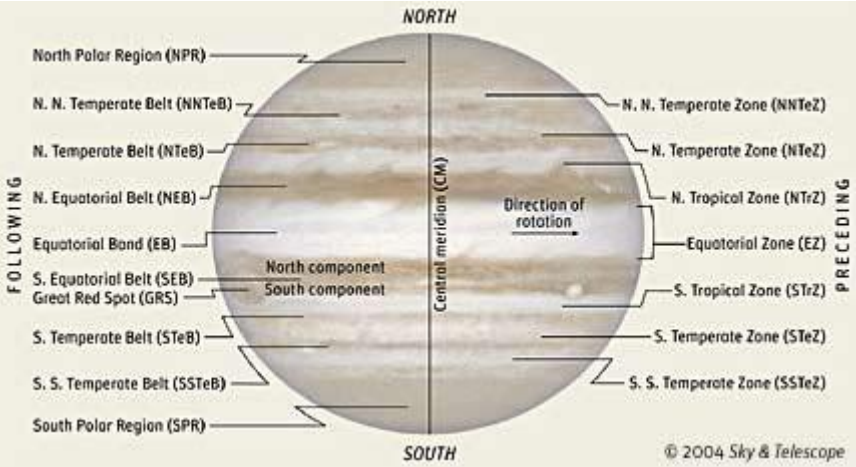
The four are named Io, Europa, Ganymede, and Callisto — or, collectively, the Galilean satellites — and it's hard to tell which is which just by looking. Callisto is usually (but not always) farthest from Jupiter, and Ganymede is a little brighter than the others. Sulfur-coated Io has a pale yellow-orange cast. Still not sure? The answers are just a mouse clicks away, thanks to SkyandTelescope.com's handy guide to identifying the Galilean satellites at any time and date.

Earning Your Stripes

Now turn your attention to Jupiter itself. Center its round disk in the middle of your telescope's view, then carefully switch to a higher-power eyepiece and refocus. Study the disk closely, and two things should be noticeable. First, the disk is not perfectly round. Jupiter spins so fast (once every 10 hours) that its equatorial midsection bulges out a bit. It's 7% wider across the equator than from pole to pole.

Jupiter is a *gas-giant planet* — it consists almost entirely of hydrogen and helium, nearly all the way down. The "surface" you see is actually the top layers of cloud decks floating near the top of an immensely deep atmosphere.

Look for at least two tawny-colored stripes running parallel to the equator. These darkish cloud bands are called *belts*, and the brighter cloud areas between them are called *zones*. The North and South Equatorial Belts, usually the most prominent, straddle the bright Equatorial Zone like a cream-filled cookie sandwich. If you're using at least a 6-inch telescope, you may be able to pick out a few belts and zones closer to Jupiter's poles.

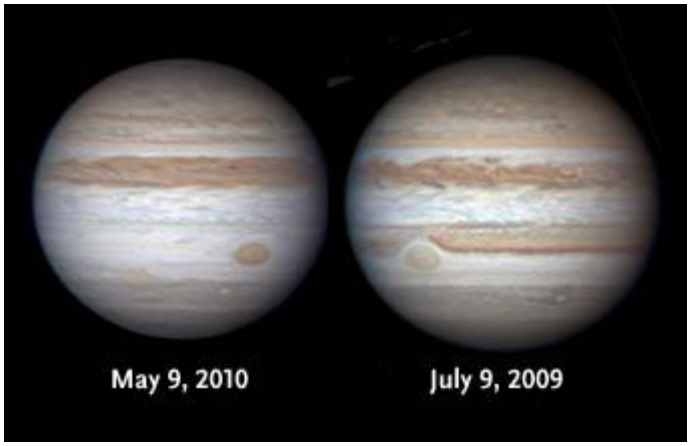


Almost any kind of Jupiter observation requires familiarity with the correct names for the various belts and zones. This diagram replicates the view in an inverting telescope such as a Newtonian reflector, or a refractor, Schmidt-Cassegrain, or Maksutov used without a star diagonal. Telescopes used with a star diagonal will

The single most famous cloud feature on Jupiter is the Great Red Spot, an enormous, oval-shaped storm about twice the size of Earth. Astronomers have observed the Red Spot for at least 150 years, but there's still no agreement on what chemical compounds create its distinctive color. Like any big storm, the spot changes appearance over time. The intensity of its color has sometimes been brick red (very rarely), pale orange tan (more often), pinkish tan, or an almost invisible creamy yellowish. Changes usually happen over a year or two.

When the spot is so pale as to be invisible, you may be able to identify it indirectly by noting the indentation it makes in the south edge of the South Equatorial Belt: a feature dubbed the "Red Spot Hollow."

Be forewarned that seeing the Great Red Spot is a challenge in a small telescope. Your best prospects will be when the spot appears near the middle of Jupiter's disk — SkyandTelescope.com's online calculator helps you know when to look. The planet's rapid rotation means that these windows of opportunity last only a couple hours, so be prepared to search for the spot over several consecutive nights.



In 2010 observers were surprised to find that Jupiter's South Equatorial Belt had completely disappeared over a 10-month span — leaving the Great Red Spot quite easy to glimpse. But since then the SEB has returned.

No matter how you look at it, Jupiter is so easy to see that it makes an irresistible telescopic target anytime it's visible in the night sky — and *that's* why it's my favorite planet.

ASTRA Membership Application Form

Thank you for your interest in the Astronomical Society of the Toms River Area. Please read carefully and fill in the appropriate information below.

New membership Annual dues are $ 25.00 (January to December): **($_____)**

Telescope Fund Assessment required for all new members **($5.00)**
"Optional for returning members"

Returning members Annual dues are $ 25.00 from (January to December): **($_____)**

Prorated membership dues are $ 15.00 from (July to December): **($_____)**

TOTAL AMOUNT PAID (as determined by the above schedule): **($_____)**

PLEASE MAKE CHECKS PAYABLE TO ASTRA.

☐ New Members check box

NAME_____ **PHONE** ( )_____

ADDRESS_____

CITY_____ **STATE**_____ **ZIP**_____

Please provide your E-mail address so you can receive a copy of our "Astral Projections" Newsletter**.**

E-MAIL ADDRESS _____

I declare that to the best of my knowledge all particulars supplied by me are correct and complete.

APPLICANT SIGNATUURE _____

Send this application form with your dues payment to:
A.S.T.R.A. Robert J. Novins Planetarium
Ocean County College P.O. Box 2001
Toms River NJ 08754-2001

www.astroleague.org

ASTRA's Astronomical League Membership Form

What does the Astronomical League offer you, as a Member?

• A subscription to the Reflector, our quarterly, full-color newsletter.

• The Book Service through which you can buy astronomy-related books at a 10% discount.
(Does not apply to League Sales merchandise)

• Eligibility for all Astronomical League awards, both national and observing.

• Support an organization that promotes education, observing, research and communications.

• But the most important benefit is that you join a national organization of amateur astronomers. You become part of a group that promotes observing, research, and the love of the sky. You have the opportunity to earn awards for your observing skills and learn more about what other amateurs are doing through our national newsletter.

ASTRA's Astronomical League Dues are $7.50 and must be paid to ASTRA.

"Cash or Check is acceptable"

Name: _____ Phone: (_____) _____-_____

Address: _____

City: _____ State: _____ ZIP: _____

E-mail: _____

Send this application form with your dues payment to:
Robert J. Novins Planetarium
ATTN: ASTRA
Ocean County College
Toms River NJ 08754-2001