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

ASTRAL PROJECTIONS

April 2012
Volume 23 Issue 4

Meeting Schedule

April 14th Meeting:

"Famous Astronomers VII" by Bob S.

Date: Friday, 4-14-2012

Time: 7:00 PM - 10:00 PM

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

May 11th Meeting:

"Open General Meeting" + Public Star Party

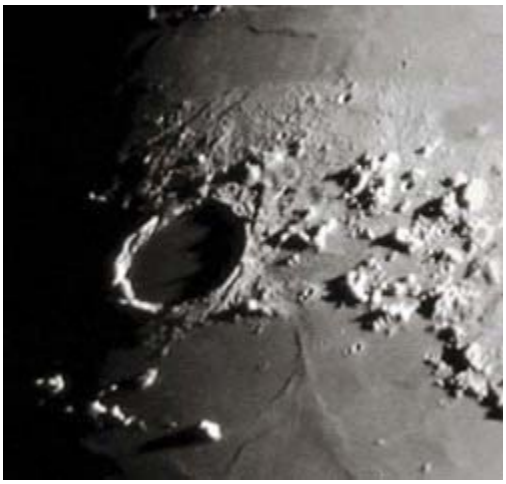
Date: Friday, 5-11-2012

Time: 7:00 PM - 10:00 PM

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

A look inside:

The Mysteries of Plato



Sunrise on the floor of Plato was captured in this video image made with a 6-inch Maksutov-Newtonian reflector on March 25, 1999. Note the spire like shadows cast by the peaks on the crater's eastern wall. In a matter of several hours, these shadows shrink to a fraction of the length seen here.

The crater Plato is one of the superstars for observers of the Moon. It is big (101 kilometers wide), conspicuous with its dark floor ringed by a bright rim, and long a subject of detailed scrutiny, speculation, and controversy.

The view through a telescope is especially intriguing because of the irregularity of Plato's rim, as shown dramatically by variations in lengths of shadows cast onto its floor. According to old measurements reported in Thomas Gwyn Elger's 1895 book, *The Moon*, three peaks on the eastern rim rise 1.5, 1.8, and 2.1 kilometers above the floor. On the western rim an obvious, large triangular massif is partially disconnected from the crater rim. This 15-km-long block, and another one farther north, resulted from giant landslides, where segments of the rim slid slightly inward, creating a scallop — a bite out of the circular rim. Variations in rim height and width may thus be due to slumping, but the height differences on Plato's east rim must be of older, unknown origins.

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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 or the ASTRA Hotline 609-971-3331 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

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

One Plato mystery with a simple solution is its lack of a central peak. Compared to other craters of similar size, Plato should have a 2.2-km-high mountain rising from its floor. However, since Plato is filled with a 2.6-km layer of lava, the peak is buried.

How many craterlets can you see on Plato's floor? Although some observers have reported dozens, only four craters are sufficiently obvious to be seen with moderate telescopes even when observing conditions are steady and the illumination angle is favorable. The largest of the four measures 2.2 kilometers across.

For more than 100 years the floor of Plato has been the focus of intense quasi-scientific debate over suspected lunar changes. Three types of observations caused controversy: detection of small craters on Plato's floor, variation in floor darkness with changing Sun angles, and obscurations of the floor itself. Because the floor possesses a few small impact craters near the limit of visibility with small telescopes, there have been unofficial contests to detect the largest number of craters.

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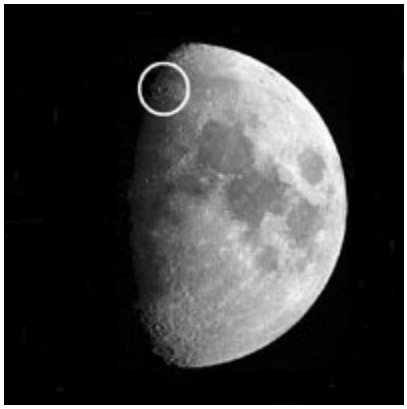
ASTRA is recognized as having one of the best public outreach programs in the country as recognized by Astronomy magazines “Out of this World” public outreach program. For more information go to http://nightsky.jpl.nasa.gov or contact Ro Spedaliere (Treasurer@astra-nj.org) or the ASTRA Hotline 609-971-3331

Harvard astronomy professor W.H. Pickering apparently won in 1892 by announcing his mapping of 71 spots on Plato's floor. Comparison of hand-drawn maps with high-resolution photographs obtained by the Lunar Orbiter 4 spacecraft in 1967 demonstrates that the observers did detect the four largest craters, and some of the smaller ones, but their estimates of sizes, locations, and numbers were often seriously in error.

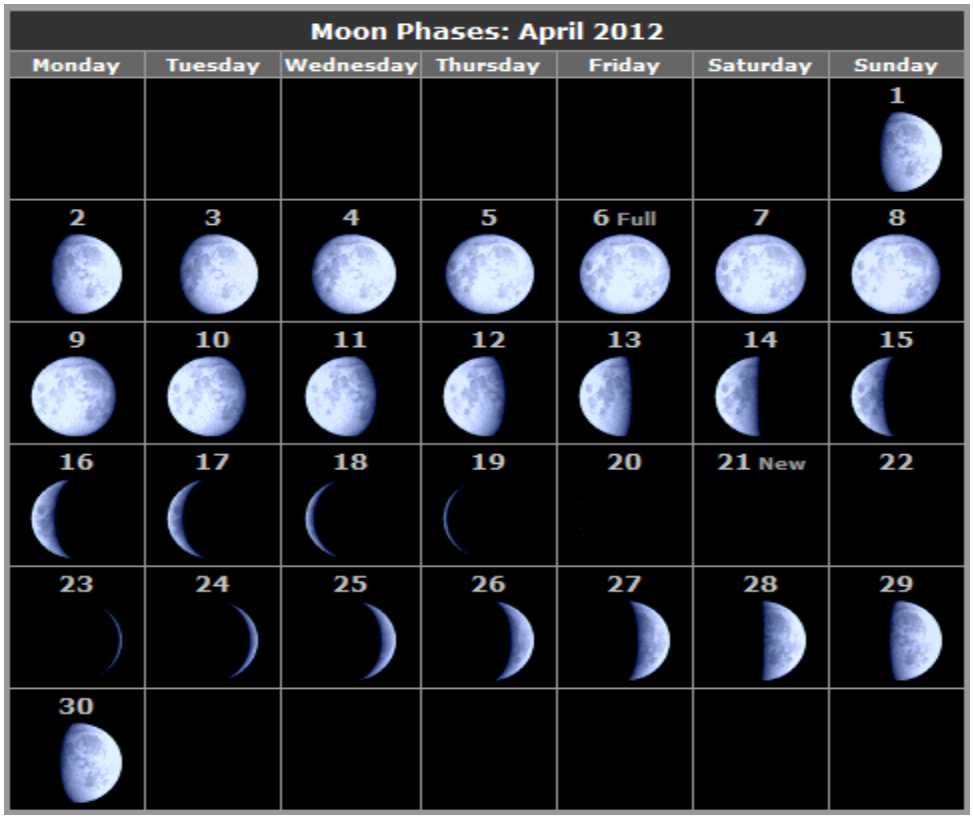
Craterlets were not the only source of controversial observations. According to Elger, "The gradual darkening of the floor of Plato as the sun's altitude increases from 20° till after full moon may be regarded as an established fact, though no feasible hypothesis has been advanced to account for it." Actually, just the opposite is true, according to measurements of the floor's brightness by sensitive photometers mounted on large telescopes. Like the rest of the Moon, Plato's floor brightens until near full, when it rapidly gets much brighter, and then darkens after full Moon.



Plato area highlighted.

The third of Plato's controversies concerns reports that the dark floor is occasionally obscured by mists or clouds. Most of the observations were made during the last century; Walter Goodacre's 1931 book, also called *The Moon*, mentions that there are "a number of well authenticated cases." Descriptions include a fog that cleared as the Sun rose, a "curious luminous milky kind of light," and a nondescript lack of detail. Another 19th-century observer found that the floor was covered by myriad points of light, "as if reflected from flocculent clouds lying near the surface."

In contrast with these visual observations, in none of the many photographs taken by space probes or by large telescopes have there been obscurations of Plato's floor. Perhaps, like UFO's, only believers see them.



What's up this month?

ASTRA Public Outreach & Star Parties Schedule for April 2012

Jake's Branch Star Party

ASTRA will share their telescopes to show you some marvelous sights of the universe.
Date: Saturday, 4/14/2012
Time: 7:30 PM
Location: Jakes Branch County Park, Double Trouble Rd, Beachwood, NJ 08722

Call the ASTRA Hotline 609-971-3331 or 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 would like to join the AL, contact Astronomical League Coordinator (Alcor)
Ro Spedaliere (Treasurer@astra-nj.org) or the ASTRA Hotline
609-971-3331 and leave a message.

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 **webmaster@astra-nj.org** or call the ASTRA Hotline 609-971-3331

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 Call the ASTRA Hotline at 609-971-3331.

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.
Call the ASTRA Hotline at 609-971-3331
We will come and pick-up your used equipment.

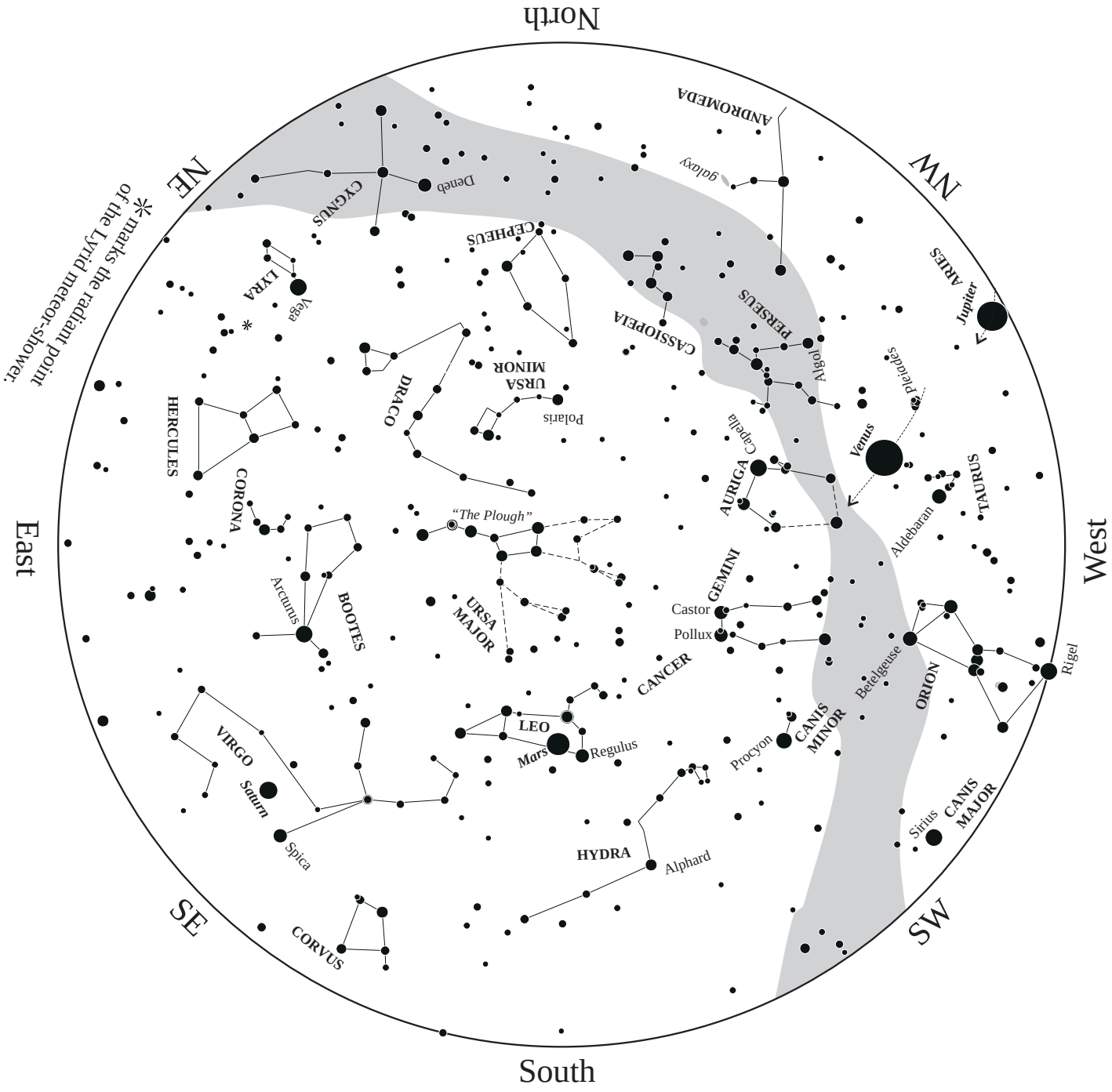
ASTRA-WEAR: For Embroidered and/or Printed items With the ASTRA Logo

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

The Evening Sky in April 2012

This map shows the sky at around 10 pm BST in mid-April.
To view the southern sky, hold the map this way up.
To view the sky in any other direction,
hold the map with that direction at the bottom.
The centre of the map is the point directly overhead.

Fiona Vincent
University of St.Andrews



The positions of the planets **Venus**, **Mars**, **Jupiter** and **Saturn** are shown for the middle of April.
Mars and Saturn move very little during the month; the arrows show how Venus and Jupiter move.

Up to the end of 2012, sky-maps and text notes can be obtained each month from:
`www-star.st-and.ac.uk/~fv/sky/`