NORTH JERSEY ASTRONOMICAL GROUP

THE Dark Sky Observer

March/April A Publication of the North Jersey Astronomical Group **2004**

THE DARK SKY OBSERVER

The Dark Sky Observer is a publication of the North Jersey Astronomical Group (NJAG), whose purpose is to promote the study and knowledge of the science of astronomy.

The Dark Sky Observer needs your input! Letters, comments, suggestions, book and product reviews, and articles are welcomed and encouraged. Contact the editor at 973-586-0612, kdconod@optonline.net, or at this address:

Dark Sky Observer
North Jersey Astronomical Group
P.O. Box 1472, Clifton, NJ 07015-1472

VISIT OUR WEB PAGE AT

http://njagweb.tripod.com.
Mary Lou West also maintains a web page at:
http://www.csam.montclair.edu/~west/njag.html

MEMBERSHIP

Dues are only $15.00 per year ($20.00 for family and $10.00 for student memberships). Benefits of membership include: $10 discount on subscriptions to "Sky & Telescope" or "Astronomy" magazines ("Sky & Telescope" subscribers also get a 10% discount on all books, maps, and products at Sky Publishing); a subscription to this newsletter; an e-mail list for the latest club and astronomy news; use of our dark sky sites; field trips to local planetariums, science centers, and star parties; a lending library of astronomical books; a Telescope Loan Program; and star parties for special celestial events.

Make checks out to the NJAG and mail to: North Jersey Astronomical Group, P.O. Box 1472, Clifton, NJ 07015-1472. If you have any questions regarding membership, contact our Acting Membership Committee Chair, Gigi Inturrisi at: g.inturrisi@verizon.net.

UACNJ

The NJAG is a member of the United Astronomy Clubs of New Jersey (UACNJ),a consortium of more than a dozen astronomy clubs, united to better help support, coordinate, and communicate ideas between stargazers in and around the state. The UACNJ operates an observatory at Jenny Jump State Forest near Hope, NJ which serves as the NJAG's dark sky site.

RED MOON RISING AT ANNUAL DINNER

Friday, March 19, 2004, 7:30 p.m.
Russian Hall, Little Falls, NJ

Join us for our Annual Dinner! The evening will include an ample buffet dinner (beer and soda included) and great door prizes. We will also hold our annual Astrophotography Contest!

Our keynote speaker will be Mike McClare, senior producer for NASA's Goddard Space Flight Center. His presentation is "Red Moon," an introduction to the often-overlooked accomplishments of the Soviet space program with an emphasis on the incredible trials and circumstances Soviet space pioneers had to work within. He will conclude with some behind the scenes insight into the production of his film "Red Moon: The Secret Soviet Moon Program."

Spouse, friends, and guests are welcome!

$30 per person in advance.
$35 at the door.
Reservations are required by March 10, 2004.

Dinner invitation, reservation form & directions are available at:
http://njagweb.tripod.com/events.htm

CASSINI AT MARCH MEETING

Wednesday, March 10, 8:00 p.m.

Our guest speaker will be Laura Venner. Laura is a Solar System Ambassador for NASA/JPL and she will give a presentation on the Cassini spacecraft's upcoming mission to Saturn. Laura received an Associates Degree in Science from Bergen Community College and has been an Earth and Space Explainer at the American Museum of Natural History for 3 years.

The meeting will be held at 8:00 p.m. on the campus of Montclair State in Richardson Hall room 232.

IMPORTANT NOTE ABOUT PARKING

Montclair State is now charging for visitor's parking. Parking is $3 for 1 to 2 hours at the Red Hawk Parking Deck. Metered parking near the Red Hawk Diner is $0.50 per half hour. See:
http://www.montclair.edu/pages/ofm//parking/wheretopark.html

STARLINE For a weekly update on the night sky, call the StarLine at 973-680-8420.

PLANETWATCH

March 24, 2004

7:30 – 11:00pm

Join us at Riker Hill Park in Livingston for a spectacular view of the planets. All the naked eye planets, Mercury, Venus, Mars, Jupiter, Saturn, and the Moon will be visible!

Note: Our telescopes cannot see through clouds!

Telescopes will be set up only if the weather permits. If the event needs to be canceled, a message will be left on the planetarium hotline (973-596-6529) after 5:00 p.m. on the day of the event.

Co-sponsored by the Newark Museum and the Essex County Department of Parks.

TELESCOPE NIGHTS

Every clear Thursday through May 6!

SPRING 2004 TELESCOPE NIGHTS

Children are invited too! At Montclair State University, Upper Montclair, NJ

WHEN:

8 - 9 pm Clear Thursdays: January 22 to May 6, except March 18 (Spring Break)
7:30 pm for Families with Kids on last Thursdays (2/26, 3/25, 4/29)

WHERE:

In front of Richardson Hall, a Science and Mathematics Building, just east of the Student Center, Montclair State University, Upper Montclair, NJ

TO SEE:

Constellations, the Moon, Planets, Double stars, Nebulae, etc.

- The Moon will be featured on Jan. 29, Feb. 5, 26, Mar, 4, 25, and Apr. 1, 29.
- See Venus March to April.
- See Mars January to April.
- See Saturn all spring.
- See Jupiter March to May.

Our telescopes cannot see through clouds! Public Telescope Night will be cancelled if the weather is cloudy, very cold, or very windy (It is clear if you can see the moon or ten stars clearly).

DIRECTIONS:

For directions, see: njagweb.tripod.com

MOON AND MARS

17 July 2003
Georgiana Inturrisi
Harrison, NJ

STUMP THE ASTRONOMERS

Have a question about astronomy?
Send it in to Kevin Conod at the address on page 1
or to kdconod@optonline.net
and we'll try to have an answer in the next newsletter.

NJAG

A TALE OF TWO COMETS

Two comets may be visible this spring. Comets NEAT and LINEAR may become bright enough to be visible with the naked eye. To boot they may be visible at the same time. Of course, comets are notoriously hard to predict so there's no guarantee we'll get a good view.

The first will be Comet NEAT, also known as C/2001 Q4. Even though this is not the brighter of the two, it may be the better comet because it will be well placed high in the western sky. It will be convenient to view too in the early evening sky. It appears near Sirius in early May. As it gets higher in the western sky it's easier to view and is visible longer but its brightness will drop off rapidly. Maximum brightness is expected to reach 1st magnitude.

Comet LINEAR (or C/2002 T7) is already sporting a 0.2-degree tail, but is in the southern hemisphere of the sky. It first becomes visible in the morning sky (at magnitude 1.5) in late April and early May. But its best appearance may be in the western sky after sunset. Unfortunately the comet is in a poor spot south of the Sun and so it is only visible near sunrise and sunset. By the time it reaches the evening sky in late May its brightness is waning, though it will still be near 2nd magnitude.

In this late May timeframe you may be able to see both comets in the western sky in the early evening hours.

If you want to follow the progress of these two comets, visit NASA's Comet Observation Home Page at: http://encke.jpl.nasa.gov

M42 & M43

23 February 2004
Dave Trapani
Time: 9:54PM
Location: 41 N 74 W
Camera:
Starlight Express MX7C
Scope: Orion ED 80 APO
F/L: 600mm
F/R: 7.5
Exposure: 10 1 minute images stacked.

DEEP SPACE

DEEP SPACE NETWORK 2-FOR-1 SALE!

By Patrick L. Barry

Call it a "buy one, get one free" sale for astronomers: Build a network of radio dishes for communicating with solar-system probes, get a world-class radio telescope with a resolution nearly as good as a telescope the size of Earth!

That's the incidental bonus that NASA's Deep Space Network (DSN) offers the astronomy community. Designed to maintain contact with distant spacecraft in spite of the Earth's rotation, the large, widely spaced dishes of the DSN are ideal for performing a form of radio astronomy called "very long baseline interferometry" (VLBI).

VLBI produces very high-resolution images of the cosmos by combining the output from two or more telescopes. The result is like having a giant "virtual" telescope as large as the distance between the real dishes! Since bigger telescopes can produce higher resolution images than smaller ones, astronomers need to use dishes that are as far apart as possible.

That need dovetails nicely with the DSN's design. To maintain continuous contact with deep space missions, the DSN has tracking stations placed in California, Spain, and Australia. These locations are roughly equally spaced around the Earth, each about 120 degrees of longitude from the others -- that way at least one dish can always communicate with a probe regardless of Earth's rotation. That also means, though, that the straight-line distance between any two of the stations is roughly 85 percent of Earth's diameter-or about 6,700 miles. That's almost as far apart as land-based telescopes can be.

"We often collaborate with other VLBI groups around the world, combining our dishes with theirs to produce even better images," says Michael J. Klein, manager of the DSN Science Office at NASA's Jet Propulsion Laboratory. "Since our 70-meter dish in Canberra, Australia, is the largest dish in the southern hemisphere, adding that dish in particular makes a huge difference in the quality of a VLBI observation."

Even though only about 1 percent of the DSN's schedule is typically spared from probe-tracking duty and scheduled for radio astronomy, it manages to make some important contributions to radio astronomy. For example, the DSN is currently helping image the expanding remnant of supernova 1987A, and Dr. Lincoln Greenhill of the Smithsonian Astrophysical Observatory is using the DSN dishes to explore a new way to measure the distances and velocities of galaxies.

And all this comes as a "bonus" from the dishes of the DSN.

To introduce kids to multi-wavelength astronomy, NASA's website for kids, The Space Place, has just added the interactive demo, "Cosmic Colors," at spaceplace.nasa.gov/cosmic.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

The Dark Sky Observer
North Jersey Astronomical Group
P.O. Box 1472
Clifton, NJ 07015-1472

SKY CALENDAR

March

1	Moon & Saturn
4	Jupiter at opposition
20	Spring Equinox (1:48 a.m.)
22	All Five Naked-eye Planets & Moon visible together through Apr. 2
23&24	Venus & Moon close
25&26	Mars & Moon close
29	Mercury at greatest elongation
29	Venus at greatest elongation
29	Moon close to Saturn
31	Mars near Aldebaran

April

1	Moon near Saturn
2&3	Venus near the Pleiades
2	Moon near Jupiter
4	Daylight Saving Time Begins
7	Moon near Saturn
19	Solar Eclipse (not visible from NJ)
19	Launch of ISS Expedition 9
20	Gravity Probe B launch
21/22	Lyrid Meteor Shower
22&23	Moon near Venus & Mars
24	National Astronomy Day
24	Moon near Saturn
29	Moon near Jupiter

COMPLEX CALDERA OF OLYMPUS MONS - Mars Express 11 February 2004
View from overhead of the complex caldera (summit crater) at the summit of Olympus Mons on Mars, the highest volcano in our Solar System. Olympus Mons has an average elevation of 22 km and the caldera has a depth of about 3 km. This is the first high-resolution colour image of the complete caldera of Olympus Mons. The image was taken from a height of 273 km during orbit 37 by the High Resolution Stereo Camera (HRSC) on ESA's Mars Express on 21 January 2004. The view is centred at 18.3°N and 227°E. The image is about 102 km across with a resolution of 12 m per pixel. South is at the top.