NORTH JERSEY ASTRONOMICAL GROUP

THE Dark Sky Observer

Summer A Publication of the North Jersey Astronomical Group **2005**

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
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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 Membership Committee Chair, Jim Coughlin, at woodwrench@aol.com.

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.

JUNE MEETING

The next NJAG meeting will be Wednesday, June 8 at 8:00 p.m. Our guest speaker will be Ed Carlos of Amateur Astronomers, Inc. He will give a presentation about the telescope restoration project he is working on. The late Roger Tuthill, a well-known amateur astronomer and telescope dealer, built a 20-inch portable telescope mounted on a trailer in 1964. On his passing in 2000, this telescope was donated to the UACNJ and is now at Sperry Observatory undergoing renovations. Ed Carlos will give us an update on this interesting project.

JULY MEETING

The Summer Meeting of the NJAG will feature an excellent movie "Total Eclipse: Solar Eclipses and Mysteries of the Cornoa" " Total Eclipse" is a thirty-minute educational video focusing on the science of solar eclipses. Scientist interviews, NASA animation, and historical imagery are blended with footage from three Exploratorium and NASA eclipse expeditions.
Meetings of the NJAG are held on the second Wednesday of the month in Richardson Hall, Room 232 at Montclair State University. Meetings are open to the public, so bring a friend!

TELESCOPE NIGHTS

Our Thursday night Telescope Nights have ended for the season. Telescope Nights will resume in the fall.

SUMMER STARGAZING

We are planning another event for Riker Hill Park in Livingston. Friday, July 15, 9 - 11 p.m. Telescopes will be set up for the public to see Jupiter, the Moon and other the wonders of the summer sky. Directions to Riker Hill are on the web site.

ANNUAL DINNER

The NJAG's Annual Dinner was held on May 13 at the Russian Hall. The evening featured good friends, good food and a great talk by our guest speaker. Mike Wallace obtained 18 great door prizes so almost everyone went home with something! The Annual Astrophotography Contest was held and we had eight entries. Andrian Oradean won "Best of Show" with a spectacular deep sky image (for details see Angelo's report).
The highlight of the evening was a presentation by Dr. James Connor of Kean University. Dr. Connor talked about Johannes Kepler's fight to keep his mother from being burned at the stake as a witch – an appropriate topic for Friday the 13th! Following the talk, he autographed copies of his book for members. All had a good time!

Our thanks to the following for their door prize donations:

Optical Components
Learning Technologies, Inc.
Ken Press
AdAstra West
Orion
Sky Publishing Corp.
Jim's Mobile Inc.
Meade Instruments Corp.
Lumicon International
Software Bisque
Kalmbach Publishing
High Point Scientific

L to r, guest speaker James Connor and his guest shared a table with NJAG's Mary Lou and Roger West

THANKS FROM THE DEAN

Robert Prezant, Dean of the College of Science and Mathematics at Montclair State, has dropped by Telescope Nights on occasion to take a look through the telescopes. Here's what the Dean wrote to Dr. West after our final telescope night:

"While I have not regularly stopped to take a "viewing," I've often passed you and your surrounding crowd on astronomy night. Tonight was one such night. Once again, I saw youngsters anxiously awaiting their turn, yelling with excitement and clearly having a wonderful educational moment. In the background were the adults... maybe not yelling but clearly also learning and enjoying. I wanted to make sure I let you know... your efforts in consistently bringing the stars to the public are not only appreciated, they are important. Thanks, Bob"

A SMALL GATHERING OF PLANETS

A small gathering of planets will occur in late June. From approximately June 22 through 25, Venus, Saturn and Mercury will be clustered near Castor and Pollux in Gemini. Unfortunately, you will need a very good view of the northwestern horizon – the trio is only 7 degrees above the west-northwest horizon at 9:15 p.m.

ASTROPHOTOGRAPHY CONTEST RESULTS ANNOUNCED

I would like to congratulate the winners of the 2004 Astrophotography Contest and also all who had participated. Overall there were a total of 8 photos entered and in my eyes, they were all winners. BUT those winners whose names will appear on the Astrophoto award plaque are as follows:

DEEP SKY

Of the two entries, both by Adrian Oradean, his photo of Herbing Haro 555 takes the category. Adrian combined over 300 photos to make this one spectacular RGB false color image. Great job.

SOLAR SYSTEM

There were three entries in this category. John Miksits with a digital image of the crescent moon. Angelo Restivo also with a digital image of a half moon and Joe Marzullo with an image of Jupiter. The winner, Joe, taking a .02 second prime focus image with beautiful contrast of Jupiter. Top notch.

WIDE FIELD

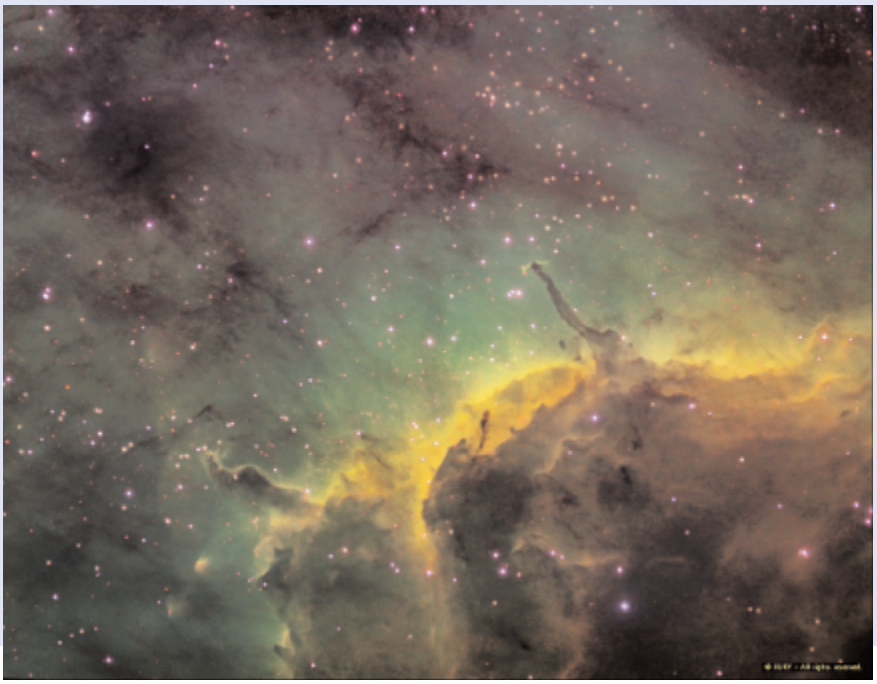
Kevin Conod wins this category for his 30 second photo of a November Aurora. The photo was taken with camera on tripod in Denville, NJ with actual 35 mm 800 ASA film. Great shot.

GENERAL TOPIC

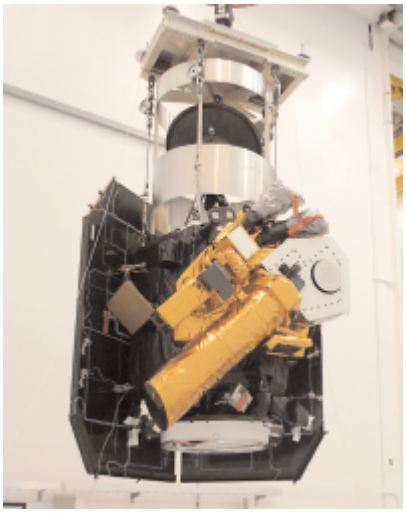
Two entries competed in this topic. John Miksits for Venus crossing the Sun and Joe Marzullo for his 15 minute shot of the Comet Machholz. The winner is John with his image through a Mylar filter and a 6" Newtonian scope. Hand holding the camera a-focal. Nice steady shot.

Every year, the NJAG gives a one-year free membership for the best photo of the astrophotography contest. This year, the winner took two thirds of all the votes. For the second year in a row, our winner is Adrian Oradean. I would like to offer special congratulations to Adrian in this spectacular photo. Until now, I've only seen this quality of photos in magazines taken by professionals. Keep up the great, professional work!
Each year, good quality, affordable digital cameras are easier to obtain. Good luck to all in taking your prize-winning photo for next years contest.

Keep snapping,
Angelo Restivo,*Astrophotography Committee*



Herbing Haro 555 by Adrian Oradean



DEEP IMPACT

The Deep Impact spacecraft will reach comet Tempel 1 on July 4. It will release an 820-lb. copper probe that will collide with the comet's nucleus. At a speed of 23,000 miles per hour, the resulting impact will make a crater the size of a football stadium. Deep impact will then be able to study the comet's interior. The impact unfortunately occurs after the comet has set, so we will only be able to see the aftermath, but the comet's brightness is expected to rise perhaps to as high as fifth or sixth magnitude. For details and updates see: deepimpact.jpl.nasa.gov

Timeline of mission events:

- By June 15, Deep Impact may be able to release an image per day.
- By June 28, the nucleus may be resolved.
- July 2, Impactor is released 24 hours before impact. An image will be taken every 2 hours until 12 hours before Impact. Seven hours before impact, An image will be taken every hour. Three hours before impact, an image will be taken every 30 minutes. Images will start coming faster and faster until impact.
- July 4, 1:50 a.m. EDT moment of impact.
- A movie from actual images is also planned to be available by mid-morning July 4. Imagery from telescopes around and above the world (Hubble, Chandra, Spitzer) will be made available as soon as they are available.

SEEING IN THE DARK WITH SPITZER

by Patrick Barry and Tony Phillips

Have you ever gotten up in the middle of the night, walked to the bathroom and, in the darkness, tripped over your dog? A tip from the world of high-tech espionage: next time use night-vision goggles.

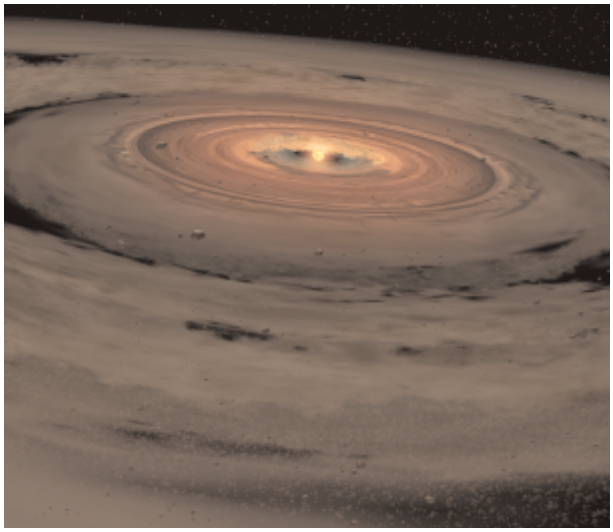
Night vision goggles detect heat in the form of infrared radiation—a "color" normally invisible to the human eye. Wearing a pair you can see sleeping dogs, or anything that's warm, in complete darkness.

This same trick works in the darkness of space. Much of the exciting action in the cosmos is too dark for ordinary telescopes to see. For example, stars are born in the heart of dark interstellar clouds. While the stars themselves are bright, their birth-clouds are dense, practically impenetrable. The workings of star birth are thus hidden.

That's why NASA launched the Spitzer Space Telescope into orbit in 2003. Like a giant set of infrared goggles, Spitzer allows scientists to peer into the darkness of space and see, for example, stars and planets being born. Dogs or dog stars: infrared radiation reveals both.

There is one problem, though, for astronomers. "Infrared telescopes on the ground can't see very well," explains Michelle Thaller, an astronomer at the California Institute of Technology. "Earth's atmosphere blocks most infrared light from above. It was important to put Spitzer into space where it can get a clear view of the cosmos."

The clear view provided by Spitzer recently allowed scientists to make a remarkable discovery: They found planets coalescing out of a disk of gas and dust that was circling—not a star—but a "failed star" not much bigger than a planet! Planets orbiting a giant planet?



Artist's rendering of brown dwarf OTS44 with its rotating planetary disk.

The celestial body at the center of this planetary system, called OTS 44, is only about 15 times the mass of Jupiter. Technically, it's considered a "brown dwarf," a kind of star that doesn't have enough mass to trigger nuclear fusion and shine.

Scientists had seen planetary systems forming around brown dwarfs before, but never around one so small and planet-like.

Spitzer promises to continue making extraordinary discoveries like this one. Think of it as being like a Hubble Space Telescope for looking at invisible, infrared light. Like Hubble, Spitzer offers a view of the cosmos that's leaps and bounds beyond anything that came before. Spitzer was designed to operate for at least two and a half years, but probably will last for five years or more.

For more about Spitzer and to see the latest images, go to http://www.spitzer.caltech.edu/-spitzer. Kids and grown-ups will enjoy browsing common sights in infrared and visible light at the interactive infrared photo album on The Space Place, http://spaceplace.nasa.gov/en/kids/sirtf1/sirtf_action.shtml.

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SKY CALENDAR

June

8 Crescent Moon near Venus
9 Crescent Moon near Saturn
16 near Jupiter
21 Summer Solstice (2:46 a.m.)
22-25 Venus, Saturn and Mercury near Castor and Pollux in Gemini
27 Mercury and Venus very close
29 Moon near Mars

July

4 Deep Impact spacecraft reaches comet Tempel 1
8 Moon near Venus and Mercury
9 Mercury at greatest eastern elongation
13 Moon near Jupiter
13-31 Launch window for Space Shuttle
17 Mars closest to the sun
22 Venus near Regulus in Leo
27-28 Moon near Mars

Moon Phases

New Moon	June 6	July 6
First Quarter	June 14	July 14
Full Moon	June 22	July 21
Last Quarter	June 28	July 27

ANNUAL DINNER WINNERS
After a delightful meal and a fascinating presentation on Kepler, raffle winners posed — clearly pleased! — with their prizes.

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.