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Newsletter of the New Hampshire Astronomical Society

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"All the news that fits in print"

November 2004

Nominate a Candidate

President's Message

Well, it is that time of the year, US and State elections have come and gone. Regardless of whoever was elected, the universe will keep moving on.

It is now time for our club's annual elections. This month's meeting has an important purpose, to nominate individuals to keep the club ticking on. This is an opportunity for YOU to CHANGE the UNIVERSE. Well, maybe just change how we perceive it. As you all know, variety is the best [also the spice of life – Editor]. Let us mix up the cosmic soup.

Nominations are open from now until our December election meeting. Any member may nominate any other member. The positions available are: President, Vice President, Treasurer, Secretary, and one Board of Director member. If you are interested in any of the positions, please contact any officer. (E-mail addresses are on the back of this newsletter.) We survived a year in office. You can too.

We had great turnout at the planetarium for the October 27 lunar eclipse, thanks for supporting the event there. I heard we won't have another total lunar eclipse for years! You have to blame the saros cycle for that. It lasts about 6,585.3 days. See this web site for more information:

<http://sunearth.gsfc.nasa.gov/eclipse/SEsaros/SEsaros.html>

Hope to see your eclipse photos at this November 19th meeting at St. Anselm's College in Goffstown, NH.

I want to remind you that the public observing season is getting busy. Please

check the NHAS calendar often and participate, with or without telescope.

I like how power astronomer, **Ed Ting**, spreads them out evenly, good work. Our biggest one is at Reed's Ferry School on Dec. 1st. We have to get those star photons in those kids' eyes.

You can find the NHAS calendar at <http://www.calsplus.net/nhas>
Clearer skies,

* Joel Harris
NHAS President 2004

Lunar Eclipse Notes



Photo by Mathew Marulla
(Mare Crisium at lower left)

It was a beautiful night for an eclipse. There were some high clouds when the partial phase started, but that only lent contrast for naked eye observing. About halfway to totality, I could start to make out some ruddy hues. During the baseball game Harriet and I would go outside to check the progress.

One fortuitous commercial break happened just about two minutes before totality. I have spoken with several people (all non-astronomers) who also went outside at that time and recall seeing that last sliver of light disappear.

It was a tremendous view through the 11x80 binoculars! But it was not as spectacular as the total lunar eclipse of 1989, but still a good one.

* Bert J. Bingel



Photo by David Weaver
(Mare Crisium at top)

Public Observing Highlights

We had good attendance at the Candia Library Skywatch this month despite competition from the Red Sox game on Oct. 18. Nine NHAS members turned out under partly cloudy skies and showed the Moon, the Ring, Double Cluster, and Iota Cassiopeia (the latter was a **Mike Townsend** specialty) to townspeople.

Poor weather canceled the Oct. 21 skywatch at Loudon Elementary.

Oct. 28 was our annual skywatch at Rundlett Middle School in Concord. We had about 100 people under partly cloudy skies. Eight NHAS club members brought scopes.

* Ed Ting

Noteworthy News
Skyscrapers Visit Page 2

On the web at <http://www.nhastro.com/>

Trip to Skyscrapers Convention

While on business travel in Woonsocket, RI during the lunar eclipse, I managed to make contact with the Skyscrapers astronomy club (<http://www.theskyscrapers.org/>). They invited me to observe at their location and share the experience of the eclipse with them. The conditions were very good and I was able to get a ton of photos which I posted with others on the NHAS web site.



I also had a chance to see a lot of history including an Alvan Clarke scope and their homemade 8-inch refractor in the observatory. I'm happy to have had the opportunity to enjoy the eclipse and meet some new people. If

any of you find yourself in the area, feel free to contact them.

Dan Lorraine (middle photo) gave me (top photo) a private tour of the club's homemade 8-inch refractor in their observatory.

* Rich DeMidio

AstroPhotons

The Photo Committee met on Oct. 16 at Astronomy Daily dot Com in Nashua. There were 10+ members in attendance. Various topics such as times and places for future meetings, equipment reviews,

and updating the committee slide show were discussed. The main topic for discussion after the business portion of the meeting dealt with CCD/Digital camera imaging and proper sampling of images.

The next meeting is to be on Nov. 13, at 3 p.m. and will take place at the same location. **Mike Kertyzak** will be running the meeting and the main topic of discussion will be about planetary astrophotography. Directions are at <http://www.AstronomyDaily.com>.

Members are encouraged to bring in planetary images they have taken and be ready to discuss their equipment and methodology. Please e-mail Mike Kertyzak or myself if you wish to make a presentation.

All NHAS members are welcome to attend.

* Chase McNiss

Membership Notes

A new membership year started in October. You need to "re-up" or else the NHAS e-mail will soon stop, heaven forbid.

Also, the annual election of NHAS officers occurs in December and you need to be a member to join in the annual nomination follies.

* Bob Sletten

Meteors Incoming

The Leonids will reach a maximum on Nov. 17 at 3.25 a.m. EST. They can be seen from about Nov. 14 to 21. These are fast meteors, at about 71 km per second. The Zenithal Hourly Rates are listed as 10-50+ meteors per hour.

The Earth will pass close to two streams of debris shed by the parent comet in 1333 and in 1733. The 1333 stream is predicted to yield a ZHR of 10 meteors per hour on Nov. 19 at 6h 42m UT, or 1.42 a.m. EST locally. The 1733 stream is predicted to give a ZHR of about 65 meteors per hour on Nov. 19 at 21h 49m UT, or 4.49 p.m. EST locally.

The alpha Monocerotids (AMO) peak on Nov. 21 and should be watched carefully. This shower is classed as 'variable and has been known to have outbursts. The ZHR rate is usually around 5 meteors per hour, but the shower has had rates as high as over 400 meteors per hour. The maximum this year is at 8h 45m UT, or 3.45 a.m. EST locally.

The northern and southern Taurids are an interesting pair of meteor showers. The southern Taurids (STA) reach a peak on Nov. 5, and can be seen until about the 25th. The northern Taurids (NTA) peak on Nov. 12. Peak ZHR rates for both are about 5 meteors per hour. These are slow meteors, with a velocity of about 27-29 km per second.

* Lew Gramer

Far Out Objects

M31, M32, M110, NGC206

Category: Spiral, Elliptical, Lenticular, Star Cloud

Constellation: And

Date of Observation: Evening, Nov.

Location: Medford, MA, USA (42N)

Site classification: urban

Limiting magnitude: 4.8

Seeing: 3+ - medium good

Moon up: no

Instrument: Reflector 4.5-in. f/4.25

Magnification: 20x, 40x (Nagler), 65x

Filters used: None and Lumicon

DeepSky

Data: mag. 3.4 size 135'

RA/DE: 00h42m +41o16m

(See Far Out, p. 3)

Far Out, from p. 2**Description:**

Easily found at 20x. Elongated core condensation, and a hint of halo were observable at this magnification, but no other detail. M32 was also noted with averted and fixated vision.

At 40x and 65x, M31 showed an oblique core elongated 7'x15' ENE-WSW, with an "axis" or arm 15' long peeling off of the W end and curving to the S. The halo of light around this core showed some unevenness with a granularity of about 5', within 10' SE of core. Sharp edge NW of core about 10'-20' may have been the edge of the halo (outer dust lane), or an inner dust lane.

M110 and NGC206 (a star cloud in M31) were not apparent at 20x. M110 could be located at 40x with great difficulty, using averted and fixated vision, and jittering the telescope to help my eye pick up the faint object. To locate it under these nasty conditions, use a faint triangle of 9 to 10 mag. stars NNW of the core, readily apparent in photographs of the main galaxy. No detail. At 65x, some slight elongation of M110 was apparent with averted vision and fixation. NGC206 was not apparent at either 20x or 65x, but was detected at 40x with the 12 mm Nagler (weighing almost as much as the scope!

M45 (Pleiades)

Category: Open Cluster

Constellation: Tau

Date of Observation: Midnight, Nov.

Location: Medford, MA, USA (42N)

Site classification: urban

Limiting magnitude: 4.8

Seeing: 3+ - medium good

Moon up: no

Instrument: Reflector 4.5-in. f/4.25

Magnification: 20x, 40x

Filters used: None

Data: mag. 1.2 size 100'

RA/DE: 03h47m +24o07m

Description:

Under these skies with this scope, much of the stunning beauty of the seven sisters is lost! But at 20x, I could still count some 74 stars, and saw them scattered out to 3 degrees from the center of the cluster, using averted vision at 40x. A pretty blue-red double (the red color was probably due to a contrast effect) were seen at 40x, but

this pretty pair blended together at 20x. Still glorious, and still a very great improvement over the view in a 60 mm finder or binoculars!

* Lew Gramer

The Bottom Line

Starting Balance: 3,317.98

October Deposits: \$783.17

(5 deposits for new and renewing members, bank interest, t-shirt sales)

October A/P: \$350.28

(25 Astronomy Calendars, YFOS Door, Porta Potty)

Net Balance: 3,750.87

Cash Balance: 3,750.87

Membership: 56

Welcome New Members

NHAS welcomes the following new members into our club:

Rebecca Richardson Boscawen
6-in. Newtonian-reflector, solar filter
for Meade 60

LuAnne Pigeon Concord

Henry Hopkinson Dover

Mary Brzezinski Derry

Jeremy Burton Londonderry

Has LX200 8" Milburn Wedge

* Barbara O'Connell

Looking Back at Last Month

Opening. Joel Harris welcomed all, reviewed the items in the mail, and welcomed new member, **Jeremy Burton**.

Committees. Web: **Barbara**

O'Connell stated that more items are working on the new web site.

ATMs: **Larry Lopez** reviewed the purpose of the ATMs but noted that there were no upcoming meetings.

Membership: **Bob Sletten** reported that the officers decided to plan an astronomy lab on clear Coffee House nights. One topic might be "How to use your scope." Someone suggested that we try doing that at CMP skywatches.

Photo Comm.: **Chase McNiss** said the next meeting would be Oct. 16 at YFOS but will relocate to Nashua if cloudy. An agenda would be provided.

YFOS. **Larry Lopez** reviewed all the accomplishments of the last work session (see Oct. newsletter).

Treasury. **Barbara O'Connell** reported a \$3317.98 balance. The officers approved a winter plowing budget for YFOS. Membership last month – 158; 2005 dues year has started.

Member Moment: John Bishop said he recently bought a 16-inch Goto dob. When he sent it to find an object, the tube kept moving and almost lifted itself from the rocker box! A loose connection was partly to blame.

Scope of the Month. **Bob Sletten** reviewed his list of top features for an ideal telescope, all the while wearing a backpack, and looking very much like he was waiting for the school bus.

His ideal portable scope was in the backpack, an 80 mm refractor with 2-inch Crayford focuser, packed in a foam-fitted block, all from Williams Optics. A separate tripod completed the set up. To avoid the need for a finder, he used a low-power eyepiece that offered a 5 degree field of view. Very impressive!

Lunar Eclipse: For the Oct. 27 event, CMP asked for NHAS members to provide telescopes.

Book of the Month. **John Bishop** discussed the positive features of *365 Starry Nights* by Chet Raymo. **Larry Lopez** brought several library book for members to borrow.

Club scope is still at YFOS.

Evening Program. **Bob Veilleux** presented "The Aurora Borealis"



Photo by Bob Sletten

Bob has been studying them for 25 years and has developed a slide show for use at CMP, where he is a volunteer. Bob described the sources of the aurora: coronal mass ejections and solar wind. These hit the upper atmosphere creating charged particles. He demonstrated the effect with a cheap "plasma ball" and said we should all get one. The best places to view auroras were of course near the poles.

(See Looking Back, p. 4)

Looking Back, from p. 3

Basic equipment included a camera, tripod, and cable release. Bob uses 400 ASA 35 mm color film and scanning the images for online use. He suggested 5-15 second exposures for a 50 mm lens and 15-45 seconds for a 28 mm wide angle lens.

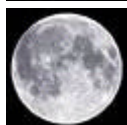
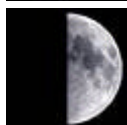
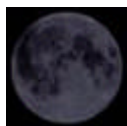
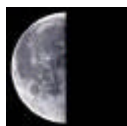
He has made a habit of checking the sky every night before bedtime in case there is auroral activity. He ended his talk with a beautiful aurora slide show set to music.

* Michael Frascinella

Phased by the Moon

In November, every Friday is a new phase of the Moon.

Nov. 5	Nov. 12
Last Quarter	New Moon



Nov. 19	Nov. 26
First Quarter	Full Moon

NASA Space Place

A Summer Vacation Tracking Down UFOs

Erin Schumacher's summer job for NASA was to look for UFOs. Erin is a 16-year-old high school student from Redondo Beach, California, attending the California Academy of Mathematics and Science in Carson. She was one of ten students selected to work at NASA's Jet Propulsion Laboratory (JPL) in Pasadena as part of the Summer High School Apprenticeship Research Program, or SHARP.

But is studying UFOs a useful kind of NASA research? Well, it is when they are "unidentified flashing objects" that appear in certain images of Earth from space. Erin worked with scientists on the Multi-angle Imaging SpectroRadiometer (MISR) project to track down these mysterious features. MISR is one of five instruments onboard the Earth-orbiting Terra satellite. MISR's nine separate cameras

all point downward at different angles, each camera in turn taking a picture of the same piece of Earth as the satellite passes overhead. Viewing the same scene through the atmosphere at different angles gives far more information about the aerosols, pollution, and water vapor in the air than a single view would give. Ground features may also look slightly or dramatically different from one viewing angle to another.

Erin's job was to carefully examine the pictures looking for any flashes of light that might be visible from just one of the nine angles. Such flashes are caused by sunlight bouncing off very reflective surfaces and can be seen if a camera is pointed at just the right angle to catch them. Because the satellite data contain precise locations for each pixel in the images, Erin could figure out exactly where a flashing object on the ground should be. Her job was then to figure out exactly what it was that made the flash-in particular, to see if she could distinguish man-made objects from natural ones.

When Erin began working at JPL, scientists on the MISR project had already identified two large flashes out in the middle of the Mojave Desert in Southern California. These turned out to be from solar power generating stations. Soon, Erin began finding flashes all over the place. She learned how to apply her math knowledge to figuring out how the objects would have to be oriented in order to be seen by a particular MISR camera. One time, she and a team of MISR scientists and students went on a field trip to the exact locations of some flashes, where they found greenhouses, large warehouses with corrugated metal roofs, a glass-enclosed shopping mall, and a solar-paneled barn. For some flashes, they could find nothing at all. Those remain "UFOs" to this day!

Learn more about SHARP at <http://www.nasasharp.com> and Earth science applications of MISR at <http://www-misr.jpl.nasa.gov>. Kids can do an online MISR crossword at http://spaceplace.nasa.gov/en/kids/misr_xword/misr_xword1.shtml.

This article was written by Diane K. Fisher. It was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the NASA.

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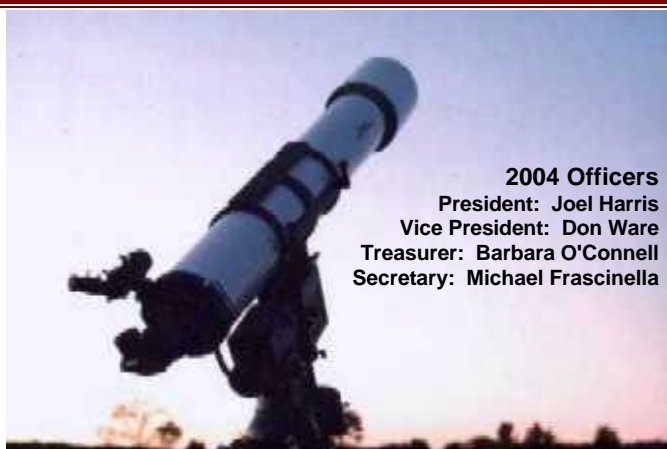
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<http://www.nhastro.com/>

This month's contributors:

Joel Harris, Ed Ting, Larry Lopez, Bob Sletten, Barbara O'Connell, Chase McNiss, Rich DeMidio, Lew Gramer



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New Hampshire Astronomical Society
P.O. Box 5823
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NHAS Upcoming Events

Lunar Eclipse, Nov. 19, St. Anselm

Event	Date	Time	Location
Coffee House	Nov. 12	5:00 p.m.	YFOS
Photography Comm.	Nov. 13	3:00 p.m.	Astronomy Daily, Nashua, NH
Hancock Skywatch	Nov. 17	7:00 p.m.	Hancock School, Hancock, NH
Nov. Business Meeting	Nov. 19	7:30 p.m.	St. Anselm's College, Goffstown, NH
Reed's Ferry Skywatch	Dec. 1	7:00 p.m.	Reed's Ferry School, Merrimack, NH
CMP Skywatch	Dec. 3	7:00 p.m.	Planetarium, Concord, NH
Coffee House	Dec. 10	5:00 p.m.	YFOS
Dec. Business Meeting	Dec. 17	7:30 p.m.	Planetarium, Concord, NH