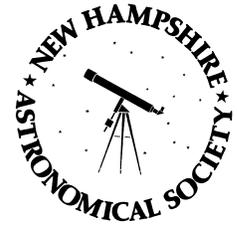


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THE NHAS OBSERVER AND ECLIPSE ENQUIRER



Newsletter of the New Hampshire Astronomical Society

Volume 2003 No. 11

"All the news that fits in print"

November 2003

Auroras, CCDs, and Near-Earth Objects

President's Message

Hello NHAS Members,

I was traveling to a meeting with a client on Thursday night, Oct. 29 – the very same night of the Reed's Ferry Skywatch. That night seemed amazingly clear and it left me feeling a little excluded from all the excitement you feel during such observing sessions for schools.

As I was traveling on Route 3 South, in the Billerica, Mass. area, a faint reddish column of light to the northeast streaking vertically overhead surprised me. I couldn't believe my luck to be able to see the Northern Lights!

I called everyone I knew on my cell phone as I traveled, being careful not to cause an accident. The experience made my day, or should I say evening! It will be great to hear from others in the club during our next meeting about their own recent northern light experiences.

Well, to backtrack a bit, during the last coffee house, it was great to see the new mounts both for the observatory and the 16-inch Dobsonian going through their paces and performing very well. My thanks goes out to all those who participated in making this possible.

I also want to thank **Larry Lopez**, **Bob Sletten**, and **John Blackwell** for a fine presentation regarding radio astronomy and sharing their experiences. It was certainly an eye opener for those who are only familiar with the visible aspects of the electromagnetic spectrum.

At our next meeting, we will continue receiving nominations for those interested in serving as officers in the New Hampshire Astronomical Society

in 2004. Those positions are President, Vice President, Treasurer, Secretary, and Board Member.

Some names have already been submitted but it's not too late to jump in and take the Barlow by the horns, so to speak. Voting will take place during our December meeting. The newly elected officers will look forward to your support during the coming year.

The Nov. 14th Evening Program at St. Anselm's College will be presented by **Steve Brady**. His subject: CCD imaging. **Steve and Larry Weber** developed software called FocusMax which is an auto-focus freeware. Steve is also involved in finding near earth objects, and has one to his credit: SNE 2002KF.

Until we meet again, clear skies!

★ Joe Derek
NHAS President 2003

Public Observing Highlights

We are well on our way to a great school skywatch season.

Thanks to **Herb Bubert** and **Rich DeMidio** for coming out to Woodman Elementary in Dover, NH on Oct. 15th. About 75 students and adults were thrilled to see Mars, the Ring, the Double Cluster, and other objects in the night sky.

October 20th brought our annual skywatch at Mountain View Middle School. Seven NHAS members came out, but the clouds rolled in just as we were getting started. A few of the early birds caught some nice views, but most of the students who arrived later saw nothing but our green laser pointers aimed at the low clouds.

Reed's Ferry in Merrimack, NH is our largest skywatch of the year at nearly

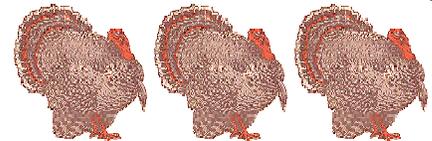
350 attendees, and this year did not disappoint. Despite rescheduling for Oct. 30, and torrential rains the day before, eleven NHAS members entertained the kids for almost three hours in the muddy, clay-filled field.

One bonus was that everyone present was treated to one of the best aurora shows I've ever seen in my life. At one point, the reddish glow was so strong that you could have fooled someone into thinking that it was sunset (which had already occurred several hours before.)

Several die-hard NHAS members attended the Nov. 7 CMP skywatch despite enough hazy clouds to make even the moon hard to see at low power. Several planetarium goers wandered out to our scopes but there was nothing to show them. Your editor brought along some NHAS literature and gave little talks on angular distance and calibrating your hands and fingers (too cold to talk about toes), as well as reminders about Saturday's glorious lunar eclipse and mid-November's Leonid meteor shower.

Missed these fine events? Don't worry, some other big ones are on the way. We have Rundlett Middle School in Concord on Nov. 10th, and Loudon Elementary on Nov. 19th.

★ Ed Ting



Noteworthy News
Northern Light Show.....Page 2

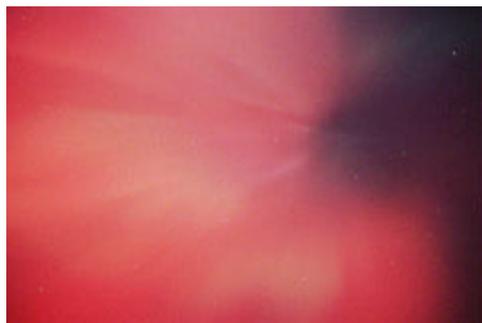
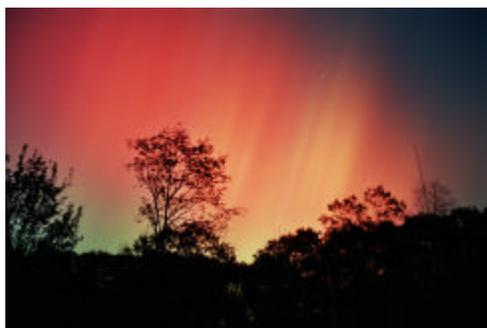
On the web at <http://www.nhastro.com/>

Auroral Light Show

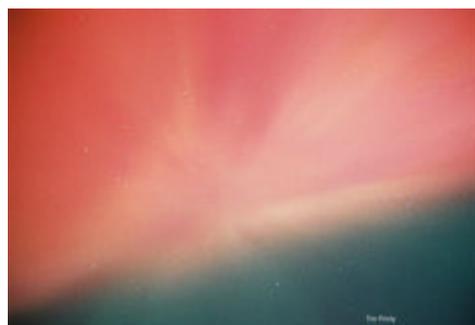
On the night of Oct. 30, the plasma from the Oct. 28 solar flare reached Earth and provided some spectacular auroras. There ensued a mini-e-mail storm between NHAS members who reported local visual conditions to each other.

John Blackwell and **Tim Printy** posted some fine photos on their web sites and here are just a few of the more vivid apparitions. If you try to print any of these from the web sites, you may quickly run out of red ink!

This first set is from John Blackwell. Go to John's web site at <http://regulusastro.com/regulus/photos/images/aurora/> to see them in full size and in thumbnail size.



This next set is from Tim Printy. Go to this page at Tim's web site: <http://members.aol.com/tprinty2/aurora7.html> to see more glorious color photos.



Leonid Meteor Shower

The following information about the Leonids comes from **Lew Gramer** and the North American Meteor Network (NAMN).

The meteor experts tell us that the storms are over – but that this shower can still hold some surprises for us. As is the case with all meteor

activity, you won't know what these surprises are unless you go out to observe!

According to the International Meteor Organization's (IMO) 2003 Meteor Shower Calendar, the Leonids (LEO) will reach a maximum on Nov. 18th at 2h 30m UT. For observers in Eastern North America, this means **9:30 p.m. EST, Monday Nov. 17th.**

Leonids can be seen from about November 14th to 21st. At maximum, the radiant will be at 153 degrees, that is, RA 10h 12m, Dec +22, which is up in the sickle of the constellation of Leo. For more information, see <http://www.imo.net/calendar/cal02.html#Leonids>.

These are fast meteors at about 71 km per second. ZHR rates are listed as 100+ in the calendar. ZHR is Zenithal Hourly Rate, and is the average number of meteors that an observer can expect to see if one is out under a dark country sky, and if the radiant (the area of the sky where the meteors seem to come from) is directly overhead. The Leonids may put on a decent show this month. This year's meteor shower is active from Nov. 14-Nov. 21 with a peak on Nov. 18.

For pertinent, timely information about upcoming meteor showers, events, and programs, go to the NAMN web site at <http://www.namnmeteors.org/>. Clear skies!

★Lew Gramer
Public Outreach
(dedalus@alum.mit.edu)
<http://www.meteorobs.org>

Astro 101: the Finale

The last session of our Astro-101 introductory course will be held this November 21 at our club dark sky site. The session is entitled "Using the Dark Sky Site" and will be taught by **Larry Lopez** and **Chase McNiss**.

It begins at 7:30 p.m. and the class runs about an hour, depending on questions. It will be held even if it is cloudy.

(See Finale, page 3)

Finale

(Cont'd from page 2)

There are no prerequisites and this is free for club members. This is a great opportunity to learn the details of using the facilities [no, not those facilities] at our club observing site.

Below is a list of some of the topics that will be covered.

- Detailed walk through
- Main electric power
- Opening the warming room
- Heaters
- Opening the observatory
- Roll-off roof
- Setting-up the 8" SCT on the pad
- Rolling out the 16" DOB
- Demonstration of the 14" SCT (not actual training)

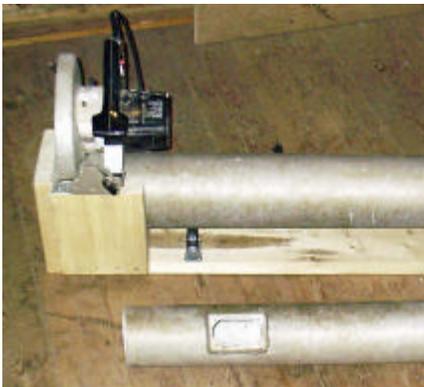
Hope to see you there.

★ Bob Sletten

From Light-Pole to Telescope Pier

A friend (actually, more his wife) offered to give me a 24-foot aluminum light pole they had lying on the ground in their backyard. This monster was broken off at the 8-inch diameter base and tapered to about 4 inches, several yards away. I cut it into three 6-foot sections with a reciprocating saw and carted it and the scrap home.

I wanted to make a 40-inch pier for my LX90 out of the larger piece. I built a jig (shown in the next photo) to cut the tapered sections by mounting 2 sets of castors to a 7-foot long 2x10 so that they cradled the pole and allowed it to turn on its axis.



I then built a U shaped support (see preceding photo) out of scrap wood that straddled the pole and held a circular saw with a metal-cutting blade. By turning the pole under the saw, and

letting the saw cut by it's own weight, I made near-perfect cuts at right angles to the pole's axis.

After shaping three pieces of angle aluminum stock I bought from a local boat-dock builder, I mounted them inside the wider end of the tube as in the following photo. This made them rigid and secure, and allowed for bolting to a concrete base.



I then cut seven (7) pieces of 3/4-inch plywood into rough circles the size of the inside diameter of the top of the pier, which was 6 1/2 inches. After gluing them together, I turned the resulting plug on a lathe and drilled out the center to accommodate the 1/2 inch rod that fits the LX90 (see next photo).



The plug mounts under the scopes base, just as if I was putting it on the tripod. The plug is then secured to the top of the pier with a threaded knob.

Scopes with smaller bases would need to have the upper-

most piece of plywood to be a bit bigger to act as a flange. In-fact, this top piece could be an oversized metal pan, allowing for eyepiece storage or accessories.

I have made a similar plug for a GEM on a 4-inch pier. If the scope bolts to something, you can most likely accommodate it by such an arrangement.

I have a 5-gallon pail of concrete with three imbedded eyebolts that protrude two inches above the surface. By moving the nuts under the angles, and securing them with nuts above the angles, I can level the pier quite precisely. As soon as I figure out where I want this thing, I'll bury it level with the ground.

I still have enough stock for five more piers, at a cost of about \$25 each. This includes the bolts, angle stock, and the abrasive blades to cut them. Let me know if you are interested in one.

★ Marc Stowbridge

P.S. Please contribute your own Do-It-Yourself projects. Share and Enjoy!

The Bottom Line

Club balance is \$3800. Membership is up to 92.

NHAS offers its thanks those who joined or renewed this month and for the following donations:

Cindy Dougherty 12.5-inch mirror
Jim McCarthy \$5.00

Welcome New Members

Several people from across New Hampshire joined recently. Say hello to them at the next meeting.

Audrey Cairns, Randolph, NH
Yuval Gonen, Sandown, NH
Pat Kinne, Charlestown, NH
Frank Smith, Jaffrey, NH

★ Jim Warendra

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Looking Back at Last Month

Opening. **Joe Derek** opened the meeting by welcoming new members.

Committees. **ATMs** – **Larry Lopez** said there had been no meetings recently and the next one was to be Jan. 15, 2004.

Photo – **Chase McNiss** recapped the group's purpose and noted that at the last meeting, they discussed stacking software for CCD images. Poor weather has been a recurring problem at YFOS.

Web – **Barbara O'Connell** surveyed member use of the web calendar and asked about ease of use. The new web site is still in process.

Membership – **Bob Sletten** announced that the last session of Astronomy 101 would be scheduled soon, now that the 16-inch scope is ready.

Public Observing. **Ed Ting** said the Dover skywatch on Oct. 16 was good with **Rich Demidio** and Herb **Bubert** supporting. About 100 people attended. Three major skywatches were planned with Reed's Ferry in Merrimack being on Oct. 29.

YFOS. **Larry Lopez** spoke of current concerns about loss of snow plowing support. We are looking for a local contractor. The C14 scope has been worked on recently and the collimation problem has been fixed. **Larry** led in a round of applause for the members who have given much of their time and energy to improve and support YFOS. The 16-inch truss mount arrived and **Chase** brought it for display. (Hooray!) It takes but a few minutes to set up and collimate. The old 16-inch Orion tube assembly and dob mount is available for members (conditions TBD)

Treasury. **Jim Warena** reported a balance of \$3500 and growing and all bills are paid. Membership was at 67. Jim read the names of the newest members.

Book of the Month. **Larry** brought in *Wide Field Astrophotography*. It was fairly up to date with much good information about equipment.

Scope of the Month. The club's 16-inch truss-mounted Dobsonian of course. This was its first time in public and it got a lot of attention during the break.

Nominations for 2004 Officers

Joe Derek opened the floor for nominations.

President: **Bob Sletten** (maybe), **Joe Derek** (maybe)

Vice President: **Don Ware**, **Alan Shirey**, **Nils Wygant** nominated

Treasurer: **Barbara O'Connell**, **Roger Goun** nominated

Secretary: **Michael Frascinella** nominated (to a round of applause)

Board: **Joel Harris** (absent), **Jim Warena**, **John Blackwell** nominated.

Chase McNiss is the outgoing Board member.

Evening Program. "Radio Astronomy: Jovian Decameter Radiation."

Bob Sletten introduced the talk and reviewed the topics to be covered.

John Blackwell discussed the following topics:

- Physics of Jupiter's emissions
- Predicting radiation beams
- Sample sound clips of Jovian radiation (really weird when slowed down)
- Information available on the Internet (search for "radio jove")

Bob Sletten returned to discuss why a radio antenna is like a telescope by comparing the features of both, for example, magnification vs. radio gain.

Larry Lopez then elaborated on his interest in Radio Jove. He mentioned a kit that is available from Radio Shack, educational material is available from NASA, and radio prediction software is available from <http://www.radiosky.com>.

Bob Sletten finished up with a talk on his 21-MHz receiving antenna. It has a 28-foot beam and can be disassembled for transport.

The talk ended with a brief Q&A.

★ Michael Frascinella

NASA Space Place

Hurricane Team Work

by Dr. Tony Phillips

On a gray breezy day last month, thousands of people got in their cars and reluctantly left home. When powerful Hurricane Isabel arrived some 38 hours later nearly everyone in the storm's path had fled to safety.

Days later, Vice Admiral Lautenbacher, in a briefing to President Bush, praised

the National Atmospheric and Oceanic Administration (NOAA): "Without NOAA's excellent track forecasts, hurricane Isabel's toll on lives and property would have been even more devastating. This is NOAA's first year of providing 5-day forecasts – and the 5-day forecast for Isabel was as good as our two-day forecasts have been over the last decade."

Many people in NOAA played a role. A team of pilots flew Gulfstream-IV High Altitude Surveillance jets logged 25,000 miles in the days before landfall. Their jets deployed devices called dropsondes – little weather stations that fall toward the sea, measuring pressure, humidity, temperature, and wind velocity as they plummet. The data were radioed back to the aircraft and transmitted to forecasters on shore.

From an orbit 22,300 miles above the Atlantic Ocean, a GOES-EAST satellite monitored the entire hurricane. Ron Gird of NOAA said "Scientists used infrared spectrometers onboard the satellite to estimate the height of the storm clouds, their temperature, and water content. GOES can also measure the temperature of the ocean surface - the source of power for hurricanes."

Constant streams of data from GOES and the Gulfstream aircraft were fed to supercomputers at NOAA's Environmental Modeling Center in Maryland where sophisticated programs, developed over the years by meteorologists and programmers, calculated the storm's most likely path.

Says Vice Admiral Lautenbacher: "I hope everyone at NOAA shares the pride of being part of a team effort that so effectively warned the public of impending danger and enabled citizens to take action to protect themselves and their loved ones."

To learn more about the GOES, see <http://www.oso.noaa.gov/goes/>. For kids, the SciJinks Weather Laboratory at <http://scijinks.nasa.gov> has lots of fun activities and fascinating facts about the wild world of weather.

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

DEADLINE December 2003 Issue: 5 PM Nov. 29

E-mail your articles to the Editor. Phone if you have a late submission.

CHANGE OF ADDRESS

Notify the Treasurer. Include your full name and new street address. If changing an e-mail address, specify whether you want to add, modify, or delete an e-mail address.

This months' contributors:

Joe Derek, Ed Ting, Larry Lopez, Bob Sletten, Jim Warenda, Lew Gramer, Marc Stowbridge, Tim Printy, John Blackwell

How to Join N.H.A.S.

Write to us:

NHAS
P.O. Box 5823
Manchester, NH 03108-5823
Attn: Treasurer

Send E-mail to:

info@nhastro.com

Use our web site:

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

2003 Officers

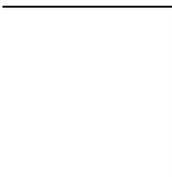
President:: Joe Derek

Vice Pres.: Todd Miller

Treasurer: Jim Warenda

Secretary: Michael Frascinella

**New Hampshire Astronomical Society
P.O. Box 5823
Manchester, NH 03108-5823**



Happy Thanksgiving!



NHAS Upcoming Events

CCDs for Astronomy, Nov. 14, St. Anselm

Event	Date	Time	Location
November club meeting	Nov. 14	7:30 p.m.	St. Anselm's College, Goffstown, NH
Loudon Skywatch	Nov. 19	6:30 p.m.	Loudon Elementary School, Loudon, NH
Coffee House	Nov. 21	6:00 p.m.	YFOS
CMP Skywatch	Dec. 5	7:00 p.m.	Planetarium, Concord, NH
Goffstown Skywatch	Dec. 6	5:30 p.m.	Public Library, Goffstown, NH
December club meeting	Dec.12	7:30 p.m.	Planetarium, Concord, NH