

Observer Staff
Editor & Publisher:
Michael Frascinella

Contributors:
Joe Derek, Ed Ting, Larry
Lopez, Jim Warena,
Barbara O'Connell, Chase
McNiss, Mike Kertyzak,
Bob Sletten

THE NHAS OBSERVER AND SIRIUS TIMES



Newsletter of the New Hampshire Astronomical Society

Volume 2003 No. 4

"All the news that fits in print"

April 2003

Navigating the Night Sky

President's Message

It is the Sunday after the Messier Marathon as I write this and I am currently recovering from a two-day road trip back from Georgia. I was visiting my youngest son who had just finished basic training in the Army at Fort Benning. It was a great and important family time.

Unfortunately, it prevented me from being part of the Messier Marathon and the camaraderie that we share during this event. I trust everyone enjoyed themselves and the hospitality of Larry and Linda Lopez who opened their home for this event. It has become an annual treat for amateur astronomers in our club.

At our April 18 club meeting we will be reviewing our plans for Astronomy Day at CMP. If you haven't already volunteered to participate in some way, it's not too late.

Our highlight for the evening will be a presentation by **John Pappas** on "Navigating the Night Sky." This talk is actually the next session of the Astronomy 101 course. It should be of great for those of us interested in learning techniques for finding these elusive objects.

★ Joe Derek
NHAS President 2003

Public Observing Highlights

This was a lousy month for public observing. At the Messier Marathon, I left with a grand total of 1 object (M44)!

Luckily, entertainment for the evening was provided by many club members and their scopes, most notably **Roger Greenwood**. Roger has an 18-inch Obsession Dobsonian scope that's been

tricked out to rival the Space Shuttle in its complexity. This contraption of a scope has at least two on-board power supplies, five illuminated toggle switches for various functions, three finders (one of which is an expensive TeleVue Oracle), a built-in hair dryer, black velvet flocking on the interior, and (at last estimate) about sixty pounds of counterweights to balance out all this stuff.

On a similar note, I needed some Velcro that evening. When I sought out **Larry Lopez**, the Velcro packrat, he informed me that he did have some Velcro about an hour before, but it had all been used -- by Roger Greenwood.

★ Ed Ting

Messier Marathon Report

This was an amazingly good Messier Marathon. I mean after all, we did clean up the house!

Conditions were excellent in terms of road conditions, field conditions, temperature, participation, karma, and food. Sadly some people didn't take all of their food back with them.

I managed to wire up two additional sockets in the observatory for the observing field, I even put the observatory internal wiring under the floor. My CCD camera needed some TLC, but, apparently, that was fixed the next day.

The only problem was that it was "partly" cloudy. I tried to image Jupiter but my CCD camera shutter stuck.

I would like to thank everyone who helped with the snow removal, site set up, and food. We had a great time.

A curious thing is that when we party we go home early. Everyone was gone by midnight.

This is the list of participants, as near as I can tell. There were no children this year, sadly.

7 objects:

Richard DeMidio, Nils Wygant

2 objects:

Roger Greenwood, Carl Thunberg

1 object:

Ed Ting, Mark Mabry, Chase McNiss, John Bishop, Gardner Gerry

0 objects:

Barbara O'Connell, Mike Aramini, Roger Goun, Linda Lopez, Larry Lopez, Jim Warena, Ed Gregory, Herb Bubert, John Pappas, Michael Frascinella

★ Larry Lopez

Messier Not-a-thon

About 20 NHAS members made it to the top of Lopez Mountain for a mostly overcast Messier Marathon. The weather reports had forecast partly cloudy early changing to mostly cloudy later, but the weather was in a hurry and filled in the sky before dark. Most of the evening, even Jupiter was not visible. Once in a while a 5-10 degree hole opened up and the front line scope squad swung into action.

Most of the other attendees observed the food and ate lots of it too. Several members brought green laser pens and put on a light show during cloudy spells. You should have seen the dazzling display they made when zigzagged through the bare trees. It was like downtown Baghdad but without

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Messier Not-a-Marathon

the explosions.

But all good NHAS things must come to an end. The last of the marathoners bid goodnight to their hosts just before midnight.

One item to note: I saw one member leafing through a binder full of data sheets, one sheet per Messier object, and stored in plastic sheet protectors. He said he got them from <http://www.messiermarathon.org>. Sure enough, if you go to that site, the main topic is The Ultimate Messier Object Log (TUMOL). Click on Download TUMOL (do not click on Download MOAB!) to get to the page containing files you can download.

This site uses frames so the download page is actually located at <http://www.davidpaulgreen.com/download.html>. The third row of the table has links to PDF files for the Windows or Mac OS. The PDF file is a few MB (piece of cake for a broadband download) and contains a 206-page guide to the Messier objects. The first 110 pages contain the data sheets.

So if you have a fresh inkjet cartridge, or better yet, a laser printer, go for it. This might make your next clear night a Messier Marathon.

★ Michael Frascinella

Astronomy Day Nears

Astronomy Day is scheduled for Saturday May 10th this year from 1-9 p.m. As in past years, we will join the Christa McAuliffe Planetarium (CMP) in support of this event. CMP is calling the event a "Space Spectacular" (<http://www.starhop.com/whatsup.htm#ss>). Thank you for the T-shirt designs. The Officers will decide a finalist by the first week of April.

On March 28th, I met with **Dave McDonald** to discuss the list of exhibits and discuss layout details. I will post the A-Day plans on our NHAS web site soon.

At the April meeting, I'll bring a sign-up sheet and ask for volunteers for the exhibits. The more volunteers we have, the shorter the shifts. Volunteers usually get perks like free food, beverages, CMP tickets, and whatever else the A-Day coordinator can finagle.

Please join us as a volunteer or a participant and make this a memorable Astronomy Day!

★ Barbara O'Connell

2003 Astronomy Day Coordinator

Astronomy 101

Finally, more news about the Astronomy 101 courses! We have had a few months of reprieve from these introductory astronomy sessions. However, we will now resume with vigor as we are scheduling **two** classes for the month of April.

The next class will be held at the Friday April 18th NHAS business meeting at Christa McAuliffe Planetarium (CMP). The subject will be "Navigating the Night Sky" and it will be taught by **John Pappas**. John will lead us to an understanding of the celestial sphere and show us proven techniques for finding its treasures. The CMP dome will be used to show the stars fields and should be an excellent learning aid!

The following class will be held a week later at our YFOS observing site on the night of the coffeehouse, Friday April 25th. The topic will be "Deep Sky Objects" and will be taught by **Alan Shirey**. This "Deep Sky Objects" class will cover the more distant objects in the heavens: stars, clusters, nebulae, galaxies, and other objects. (This is the complementary session to the one given by Mike Stebbins discussing nearby solar system objects.) Because this class will be held on the evening of the coffeehouse, there is the possibility of observing some of the deep sky objects directly after class.

The intent of these classes is for entry level amateur astronomers to learn the fundamentals of different aspects of astronomy. There are no prerequisites for attendance. It is open to all members of NHAS and there is no cost.

As the dates approach, a detailed reminder e-mail will be sent out.

★ Bob Sletten

Web Uploads

As mentioned previously, we've transitioned to an interim web site on mv.com. Mv.com has allowed us to recreate the e-mail lists, so our e-mail lists are now as follows:

nhas-members@lists.mv.net (this is officer announcement only list) and nhas@lists.mv.net (this is the general purpose chat/discussion list).

If you haven't received e-mail in March, please let Larry know. Also, CodeMeta has graciously donated some web space, so we are looking into a permanent transition to that server.

Stay tuned!

★ Barbara O'Connell

AstroPhotons

The March photography meeting was scheduled for Mar. 22 at the Nashua public library. The format was open discussion.

★ Mike Kertyzak

Welcome New Members

NHAS welcomes the following new members. We hope to see you at the next meeting or skywatch.

Carl Thunberg	Concord
Edward Goodhue	Londonderry
Stephen Seron	Concord

The Bottom Line

As of April 1, the NHAS books look like this:

Balance: \$5,700
Accounts Payable: \$3,600
2002 members: 156

★ Jim Warendt

Looking Back at Last Month

Joe Derek opened the meeting by asking if there were any new members or visitors at the meeting. Of the two visitors, one party joined, and the other was **Ted Goodhue**. Joe then verified with **Jim Warendt** that there was no new mail to discuss or distribute.

ATM Comm: Joe then represented the ATM committee and discussed his current project of flex mirror testing with **Don Ware**. **Larry Lopez** was not available for the ATM committee report.

Photo Comm: Neither of the co-chairs was present. **Chase McNiss** mentioned that the Photo Committee was scheduled to meet on March 22nd, but the location was not yet confirmed and would be announced via e-mail.

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Looking Back

Public Observing: Ed Ting indicated that there were no public skywatches since the last club meeting. Ed indicated that there have not been any clear nights on the scheduled dates. He said there was an Equinox skywatch scheduled for the upcoming Thursday the 20th at CMP. Ed also said there was a private skywatch on the 25th in Massachusetts, particulars to be distributed to members in southern NH and Mass. Ed said there was a scheduled skywatch at Mountain View Middle school on April 1st, with more information to come.

Web Comm: Larry Lopez arrived in time to give the Web Committee report. Larry said the committee was looking into a new calendar format for the NHAS web page, since the current calendar was not reliable.

YFOS: Larry Lopez gave a report on the YFOS site, describing what mud season meant and to be careful entering the YFOS parking lot this time of year.

Treasury: Jim Warenda gave the Treasurer's Report. He indicated that there was \$2100 available in the treasury after he accounted for money that was still due on the newly ordered Titan Mount and the 16-inch Truss Tube Assembly that was due for delivery in April. Jim indicated that the club had spent \$200 on 2003 membership cards and a laminate kit. Jim stated that all paid members should have received their cards in the mail.

Messier Marathon: Larry Lopez then stood up to report on the upcoming Messier Marathon at the Lopez Estate in New Boston. Larry said that with the help of numerous volunteers the leach field observing area had been cleared to the grass and should be dry by the weekend of the 28th. Larry said his driveway was bad and still narrow, but he hoped that the forecast weather would improve this.

He recommended that people arrive early and come directly to the Marathon from work. Larry suggested that people drive to the top of the hill, turn around near the garage, and then park facing down hill so early departures would not disturb the people still on the observing field. Larry encouraged us to bring family members and children. He said

Ed Ting would give the go/no go for Friday or Saturday night.

Web Comm: Barbara O'Connell arrived and gave a further report from the Web Committee. Barbara said the move to mv.com had gone smoothly, but that there would be another move coming up. Barbara said she did not expect any interruptions with the next move. Barbara said she was waiting for the officers to vote on the new calendar format, which would be easier to read and view as well as post to. Barbara then discussed the alias name issue.

Astronomy Day: Barbara then discussed the upcoming Astronomy Day scheduled for May 10th. She had been in contact with David McDonald, the new Education Director at CMP, and would soon be meeting to hash out the details for this year's event.

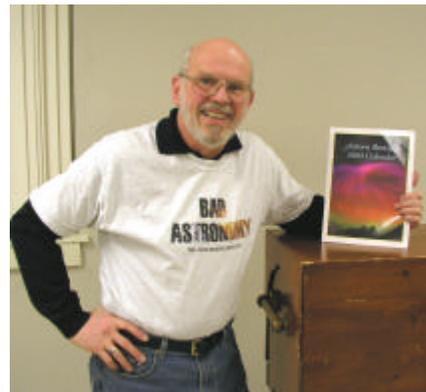
She listed a number of the displays that have been used in the past and asked members for new ideas and volunteers for the listed displays. She would distribute a sign up sheet at the April meeting. Free pizza and free planetarium tickets were possibilities for participants/volunteers. Volunteers would work in 2-hour time slots so there would be opportunity for free time to enjoy the event. The NASA truck would be onsite and there was a projected Skywatch for the evening, weather permitting.

Barbara's next topic was the A-Day T-shirt and the artwork for it. She distributed two possible candidates – the Subaru Telescope and the Gemini North Telescope. Bob Veilleux indicated the Gemini scope was on Mt. Mauna Kea, Hawaii and the PR director was a friend of his and had sent line drawings and illustrations for us to use.

Joe Derek then stated that the NHAS would not be participating in the

Boston Museum of Science A-Day event because of the conflicting dates.

Membership Comm: Bob Sletten indicated that there would be two Astro 101 classes for the month of April. The first, "Navigating the Night Sky," would take place at the next club meeting at CMP. The second class, "Deep Sky Objects," would take place at the April Coffee House at YFOS.



Evening Talk: After the break, Bob Veilleux gave a short multimedia presentation in memory of the Columbia Shuttle Crew and their tragic death. Next, Bob gave a slide show presentation of celestial objects and the aurora.

★ Chase McNiss

NASA Space Place

Musical Satellites

By Tony Phillips

If light were sound, then chemicals would play chords.

Water: C major. Cyanide: A minor. Chlorophyll: G diminished 7th. (Please note that the choice of chords here is only for the sake of illustration, and not meant to reflect the actual spectra of these chemicals.)

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Musical Satellites

It's a loose metaphor, but an apt one. Musical chords are combinations of frequencies of sound (notes), while chemicals leave unique combinations of dips in the frequency spectrum of reflected light, like keys pressed on a piano. Spectrographs – machines that recognize chemicals from their "chords of light" – are among the most powerful tools of modern chemistry.

Most Earth-watching satellites, like the highly successful Landsat series, carry spectrographs onboard. These sensors measure the spectra of light reflected from forests, crops, cities, and lakes, yielding valuable information about our natural environment. Current satellites do this in a fairly limited way; their sensors can "hear" only a few meager notes amid the symphony of information emanating from the planet below.

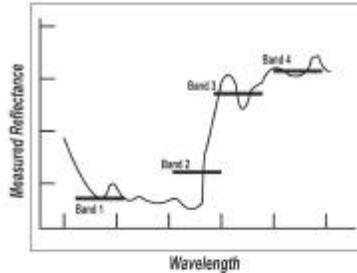
EO-1 could change that. Short for "Earth Observing 1," EO-1 is an experimental NASA satellite in orbit since 2000. It's testing out a more advanced "spectrometer in the sky" – the Hyperion hyperspectral imager. How good is it? If Landsat were "chopsticks," EO-1 would be Gershwin's "Rhapsody in Blue."

The Hyperion sensor looks at 220 frequencies in the spectrum of visible and infrared light (0.4 to 2.5 microns) reflecting off Earth's surface. Landsat, in contrast, measures only 10. **Bryant Cramer**, who manages the EO-1 project at the Goddard Space Flight Center, puts these numbers in perspective. "If we flew Landsat over the northeastern United States, it could readily identify a hardwood forest. But using hyperspectral techniques, you probably can tell the oak trees from the maple trees."

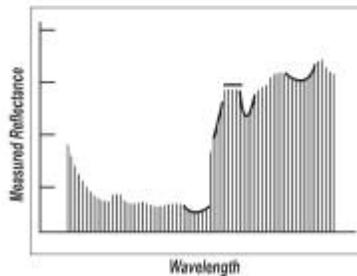
Future earth-watching satellites may use Hyperion-like instruments to vastly improve the environmental data they provide. EO-1 is paving the way for these future missions by taking on the risk of flight-testing the sensor for the first time.

For farmers, foresters, and many others, this new remote sensing technology will surely be music to the ears.

Read about EO1 at <http://eo1.gsfc.nasa.gov>. Budding young astronomers can learn more at http://spaceplace.nasa.gov/eo1_1.htm. This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Multispectral Imaging
(few bands)



Hyperspectral Imaging
(hundreds of bands)

Hyperion instrument distinguishes hundreds of wavelength bands, while current Landsat instrument images only a few.

Northeast Astronomy Forum and Telescope Show

On Saturday and Sunday, May 17-18, you can trek to upstate Suffern, New York for the 12th annual forum. This event is really a big trade show with over 70 vendors onsite, so it's a great place to get a look at everything astronomical. Just don't bring your credit cards.

To spice it up, several well-known guest speakers have been recruited, but the admission fee is still reasonable (\$15 one day, \$25 both days).

Speakers on Saturday include **Richard Berry** and **John Dobson**. Sunday features **Stephen James O'Meara** and **Dr. Story Musgrave**. I would go just to experience Dr. Musgrave's enchanting and engaging persona and

his fabulous collection of photos from Earth orbit, but he is the closing speaker at 4-5 p.m. on Sunday. If you managed to get on the road by 6 p.m., you would still have a four-hour trip back to NH. So it's your call.

★ Michael Frascinella

DEADLINE May 2003 Issue: 5 PM Apr. 26

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.

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New Hampshire Astronomical Society
P.O. Box 1001
Manchester, NH 03105-1001



Navigating Night Sky, Apr. 18, CMP

NHAS Upcoming Events

Event	Date	Time (EDT)	Location
April meeting	Apr. 18	7:30 p.m.	Planetarium, Concord, NH
Coffee House	Apr. 25	7:00 p.m.	YFOS
CMP Skywatch	May 2	7:30 p.m.	Planetarium, Concord, NH
Astronomy Day	May 10	1-9 p.m.	Planetarium, Concord, NH
Lunar Eclipse	May 16	9 p.m.-2 a.m.	Everywhere in NH
May meeting	May 16	7:30 p.m.	St. Anselm's College, Goffstown, NH
NEAF convention	May 17-18		Rockland Community College, Suffern, NY