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THE NHAS OBSERVER

Newsletter of the New Hampshire Astronomical Society

"All the news that fits in print"



Volume 2002 No. 5

May 2002

The Scale of the Universe

Mike Stebbins will present a talk that will bring the scale of the universe down to terms an average person can relate to. Most folks cannot relate to 93,000,000 miles, however, they usually know what 8 minutes is.

Come to the next meeting and we will discuss scale and distance relationships between the planets and the Sun, the Sun and the near stars, our galaxy, and the edge of the observable universe.

A bonus topic will cover objects in Earth orbit and why they stay there (and don't). This talk will be helpful to those who think this universe is so big they can't comprehend it, Well *it is*, but don't let that stop you from attending the May meeting which will be very, very, very, very, very near you.

Public Observing Highlights

April was a quiet month for public observing with only the one skywatch at CMP on April 19.

The coming month heats up with our big event, Astronomy Day, on May 4, skywatches at schools in Weare and Amherst, as well as back-to-back skywatches at CMP on June 7 and 8.

The school skywatches are always fun because the kids eat up this sort of thing, especially since it gives them an excuse to stay out late.

★ Ed Ting

President's Message

Some mixture of winter, spring, and summer is upon us. No matter what the weather, we hope for clear skies. NHAS is in the midst of our Astronomy Day events. In April, NHAS was well represented at the Museum of Science for Astronomy Day. Upcoming in May is the Christa McAuliffe Planetarium Space Spectacular, which is a joint venture with NHAS. Many thanks to all

those who have or will have participated in these events! You do a fabulous job of furthering public awareness of astronomy!

Even though we have no big events during the summer months, please keep in mind that NHAS still has many day and evening activities for its members. The ATM (Amateur Telescope Makers) committee is once again meeting regularly. Some members are grinding mirrors, others are polishing. Advice follows freely from ATMers who have treaded this path more than once. The Photography Committee has new leaders and veteran members that have continued the informal demos and roundtable discussions about the latest in astrophotography. See a list of committees on our web site at:

<http://www.nhastro.com/nhas/nhas-members.html#Committees>

If you don't see one that you are interested in, please let us know and we'll look into starting a new one.

NHAS is your astronomy club and part of providing astronomy education to the public means educating our own members. So, get out there and learn something new or share your knowledge this summer!

★ Barbara O'Connell
NHAS President 2002

Boston Astronomy Day

Attending for NHAS inside were Chase McNiss, Steve Foster, Don Ware, Joe Derek, Mike Stebbins. Attending for



solar observing outside were Mike Townsend and Roger Greenwood who operated two refractors, a 5-inch Schmidt, and 20x80 binoculars shown in the above photo by Roger Greenwood. Go to <http://www.astrocumb.com/a-day/A-DayatMOS.html> for more of his photos of this event.

Things went OK, our area was nice, but not well populated. It turns out the area we were in required buying a ticket to enter the Museum. This is a problem and was commented on for next year.

Don's ATM display was a big hit with many of the ATM types in the room. Steve's Viewmasters and meteors were a big hit with adult and kids. Chase's balloon expansion of the universe was a big hit, especially the balloon part. Chase's astrophoto display brought a lot of compliments and photography discussion. Joe's make-and-take astrolabe was really appreciated by the teachers who attended.

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Feature Story

New Member in Focus.....Page 2

Boston Astronomy Day (Cont'd.)

Mike and Roger did solar observing until the clouds rolled in around 11 a.m. Three or so people seemed to think they wanted to join NHAS, and were given the web page to look up.

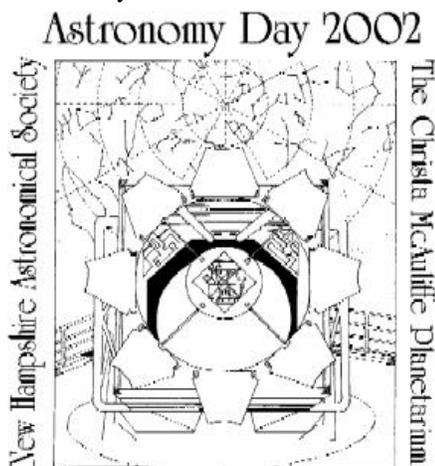
One display was on X-ray analysis from the Chandra and Magellan observatories. The fellow running it was a good speaker, so I invited him to e-mail the club for a possible talk to NHAS.

By 3:30 p.m. the place was pretty empty, but we stayed until 5 p.m.

★ Mike Stebbins

Astronomy Day 2002

May 4th is fast approaching. Below is a preliminary draft from **Joe Malinowski** of the t-shirt design that members approved at the last meeting. You can still order yours at the event.



Pray for sunny weather and clear evening skies.

AstroPhotons

This recent picture of Comet Ikeya-Zhang was taken on April 17. A satellite in the picture caused neat little streak below the comet.

Exposure time was 8 minutes using LE400 film and a 200 mm F2.8 lens.



I tracked the comet using my 10-inch LX50 scope.

★ Tim Printy

Web Uploads

The NHAS web site home page now links to photos by **Tim Printy** and **Steve Stefanik** taken of Comet Ikeya-Zhang. Another link covers the fine planetary alignment (more like a planetary Kodak moment) after sunset. Mercury makes a brief appearance to the lower right of Venus if you can arrange a low western horizon and clear skies at the same time.

ATM True Grit

ATMs met on April 28, 2002 in New Boston. Don Ware and Ed Dougherty offered assistance while Larry Lopez did support work. Barbara O'Connell repoured her pitch lap and Paul Norris evaluated his mirror.

The Ronchi/Foucault tester now has horizontal and vertical sync pulses off the camera, the tilt rotate table for the mirror was fixed (minor solder joint failure), and the O Scope was used to look at frame lines in the image.

The next meeting is at Don Ware's facilities on May 19, the Sunday after Mother's Day. This is the same weekend as the NEAF convention in New York.

★ Larry Lopez

New Member in Focus

Michael Wheeler joined NHAS just a few weeks ago, and, after exchanging a few e-mails, I decided to introduce him to the rest of the club.

He is retired from AT&T with over 35 years of service having worked in the broadband terrestrial microwave transmission department. He currently works [that was a short retirement!--Ed.] for Tektronix, Inc., in North Chelmsford, Mass. He is an active amateur radio operator (W1VI) and enjoys all things electronic and scientific.

The next picture shows his three telescopes:

(1) a Meade 10-inch LX50 e/w U.S. Digital 12-bit encoders and



Brian Kidwell's Deep Space Navigator digital setting circle interface, (2) a Meade 12.5-inch Dobsonian with Universal Optics 2-inch focuser (as opposed to the infamous Meade #77 model), and (3) a Celestron 6-inch Dobsonian.

The next photo was his first attempt at digital camera astrophotography – the full Moon on January 27, 2002.



Michael said he was (and remains) very impressed with the NHAS group and hopes to become and active and interested member.

★ Michael Frascinella

The Bottom Line

Balance: \$8,600

2002 members: 133

There were no donations this month.

★ Jim Warena

Looking Back at Last Month

Opening. **Joe Derek** presided.

Book of the Month. **Mike Stebbins** brought Visual Astronomy of the Deep Sky. He recommended it for anyone observing deep sky objects.

Scope of the Month. Club scope went to **Mike Souza**.

Committees. **Web:** **Larry Lopez** explained the new Sky Clock now

(Cont'd. p. 3)

Looking Back, cont'd.

appearing on the NHAS home page. Larry and **Ed Ting** were commended for upgrading and testing on new features on the web site. **ATMs:** **Larry Lopez** said some members worked on their mirrors at the Apr. 7th meeting. The next meeting was to be Apr. 28.

Photo: **Chase McNiss** noted that six people were at the Apr. 13th meeting. **Tim Printy** provided CDs with good information on imaging. Chase said they would be updating the NHAS slide show and welcomed submissions.

Membership: **Bob Sletten** asked for input about what members would like the committee to do. Two people said they planned to join that evening.

Messier Marathon. **Larry** was pleased with the results and everyone had a good time tracking down objects. **Joe Derek** thanked **Larry** and **Linda** for opening their home to us. This sparked a round of applause from attendees.

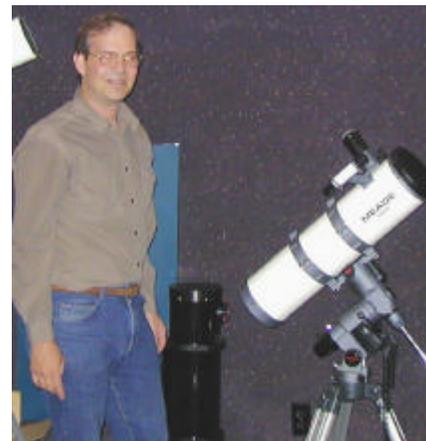
YFOS. Grass is growing and needs to be mowed. Members should attend the next coffee house to get "checked out" on proper site use.

Public Observing. **Ed Ting** said April was a quiet month. He recently added three new events to the calendar: May 8 in Weare, May 31 in Amherst, and July 10 in Goffstown.

Treasury. **Jim Warenda** reported a balance of \$9400 and membership of 140. He presented a printed member list but apologized that some names were lost during a mail merge. Discussion ensued about how much member information was really needed and that the list should not be e-mailed. Jim would correct the list for next month.

Astronomy Day at CMP. **Tanja Diederich** of CMP reviewed all the activities and said inside space would be available for NHAS. The event would start at 2 p.m. with sky divers. Of the four t-shirt designs, the winner was the Sloan Digital Sky Survey Telescope (shown on p. 2). **Joe Malinowski** provided order forms for t-shirts. **Chase McNiss** asked for a volunteer to transport the club canopy between YFOS and CMP that day.

Astronomy Day Boston. **Mike Stebbins** noted that the Apr. 20 event would run from 8 a.m.-5 p.m. and that six NHAS members would offer solar observing and static displays.



Evening Program. A Telescope Review followed the meeting. Photos were taken by Bob Sletten.

Don Ware (top left photo) presented a do-it-yourself 4-inch f/5 triplet refractor. The tube was powder-coated by a friend and had a stainless steel bucket for a dew shield. It gave a 3-degree field with a 40 mm eyepiece.

Mike Stebbins (middle left) presented an Orion 120 mm f/6.5 Pronto refractor on an equatorial mount. The mount, which he bought separately, was light but made the scope very portable. He favored this scope because of the good high-contrast views it gave.

Chase McNiss (bottom left) had a hybrid 80 mm refractor with a 2-inch focuser. He

swapped the front lens from a Stellarvue scope for the optics in a Magrez scope and ended up with sharp, low-color optics and a smooth focuser.

John Blackwell (top right) brought a Ceravolo HD 145 mm (5.7-inch) Maksutov-Newtonian scope that combined a spherical mirror with a thick spherical front corrector lens. The handcrafted unit was *two years* in the making. The optics yield pinpoint images and he has readily viewed Cassini's division on Saturn's rings.

Bill Babineau (bottom right) showed off his brand new Meade 6-inch f/5 Schmidt-Newtonian (just arrived).

Everyone enjoyed the impressive and varied display of telescope equipment.

★ Michael Frascinella

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Stargazing in New Hampshire

An unusual opportunity allowed me to provide a feature newspaper writer with some background information on star gazing in New Hampshire – dark skies, places to go, tips on observing. So I thought I'd share those thoughts with you, my fellow stargazers, especially those new to the field.

Any expedition to view the stars needs to begin with some preparation. Make sure you have more warm clothing than you think you need. It gets cold just standing still. Bring a flashlight and red filter so you don't ruin your dark-adaptation every time you refer to a star chart. Pack some bug spray for the summer mosquitoes. Bring some kind of star charts. Astronomy magazines include a monthly star map. You can get a star wheel or book of monthly star charts at a local planetarium or book store or science store.

Practice using these tools in your backyard first. Learn the constellations because they are your celestial landmarks. Without them, you'll be lost in space, for sure, Will Robinson. Make a list of the objects you want to find that evening. It is more satisfying to find what you planned to find than to just search the skies and hope to find something interesting. Think of it as a celestial scavenger hunt.

Binoculars, a reclining lawn chair, a blanket, and a star chart make for an enjoyable evening under the night sky. 7x50 binoculars are a good size near the low end. A small telescope like a 6-inch reflector or a 4-inch refractor dramatically increases the amazing sights you can discover. Always pack a folding chair with a telescope. You will tire much more quickly if you have to stand up all evening. For you veterans, just think of how much better guard duty might have been if you had use of a chair. If you don't have binoculars or a telescope, join an astronomy club like NHAS and learn from their members.

I would recommend getting 10-20 miles from any large city and going to any state park that offers access to open fields or shoreline around a lake or pond, especially with low southern horizons. I live near Bear Brook State Park in Allentown and it is NOT one

of those places, since it is mostly wooded with few open areas. (I think they built the park just so they could grow trees.) Pawtuckaway State Park to the southeast might offer better skies.

Another option is to find farmland and ask permission of the landowner to do some observing there (after the cows go home). If you're not too superstitious, look for a country cemetery to use as an observing location. Nearby in Epsom there is a lovely hilltop cemetery across from a church and it has a truly awesome western horizon. The other directions also offer low horizons. A few years ago, I spend some pre-dawn hours there observing planet groupings before sunrise. With the car radio keeping me company, that was the first time I heard Wayne Watson singing "For such a time as this, I was placed upon the Earth, To hear the voice of God, And do His will, whatever it is."

During the daytime, if you are out sightseeing along some rural route, make note of any places that offer open spaces away from streetlights and shopping areas. Return there at night to see if that might be a good dark sky site. You will then have found your own secret observing site.

The amazing thing about stargazing is that it gets you thinking of cosmic and eternal ideas - the vast distances, the immense emptiness, the huge balls of fire that look so small and harmless, how the universe came to be, why we are here, stuff like that. It is at the same time intellectually challenging and physically therapeutic. To find a deep sky object like a galaxy, star cluster, gaseous nebula, or a lunar crater requires skill and determination but results in the soothing satisfaction of finding it, and thinking that maybe you are the only one in the world who is looking at that distant object right then.

★ Michael Frascinella

Light Pollution and You

What is this NHCRL we hear about from time to time? Did you know there is a statewide organization fighting light pollution and sky glow? New Hampshire Citizens for Responsible Lighting, formed by NHAS members in 1997, has been working with towns and the state government to reduce light pollution in NH.

To date we have had a few wins in towns like Peterborough, which uses full cut-off street lights thanks in part to NHCRL. The town of Hillsboro voted down new street lighting due to NHCRL efforts. Technical Bulletin #16 produced by the Office of State Planning on Light Pollution abatement for town planning boards was a direct result of NHCRL working with the legislature to get an awareness of the problem out to the lawmakers.

Public awareness and working with towns on this issue will have long-term effects on slowing the sky glow over the remaining dark parts of NH. It took 70+ years to get the sky as bright as it is at night, it may take that amount of time to reverse it too, but by making the effort now for reform, folks in the future, maybe even the near future, will be able to see more stars again in the night sky (weather permitting).

It takes people from each town to talk to their town leaders about light pollution within their governmental domain. NHCRL has printed materials for this, and has made many presentations, but we need local people who will approach the leaders of the town they live in to discuss this issue, and we will come too, if asked.

For further information or to contact NHCRL, go to the NHCRL website: <http://www.mv.com/users/lopez/nhcrl/>

★ Mike Stebbins

Field Trip to Insight Technologies

Here is some late breaking news from Mike Townsend. The field trip to Insight Technologies will take place Weds. May 22nd or Thurs. May 23rd.

Those who signed up at the March meeting will be contacted. If others wish to go on the field trip, please let us know at the May 17 meeting. The field trip sign-up is closed, but we will try to set up another one if there is enough interest.

DEADLINE June 2002 Issue: 5 PM June 1st

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.

How to Join N.H.A.S.**Write to us:**

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Secretary: Michael Frascinella Secretary@nhastro.com

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NHAS Upcoming Events**Scale of the Universe, May 17, St. Anselm**

Event	Date	Time	Location
Astronomy Day	May 4	2 p.m.-night	Planetarium, Concord, NH
Weare School Skywatch	May 8	8 p.m.	Weare Middle School, Weare, NH
Coffee House	May 10	8:00 p.m.	YFOS
May meeting	May 17	7:30 p.m.	St. Anselm's College, Goffstown, NH
Wilkins School Skywatch	May 31	9 p.m.	Wilkins School, Amherst, NH
CMP Skywatches	June 7 & 8	9 p.m.	Planetarium, Concord, NH
Coffee House	June 14	8:00 p.m.	YFOS
June meeting	June 21	7:30 p.m.	Planetarium, Concord, NH