

Venus Approaching

President's Message

Astronomy Day - short version:

I want to thank all the volunteers at Astronomy Day.

I hope that everyone had fun; I did.

The helicopter was a bit too loud.

The planets came out, some before sunset.

Weather was cooperative, sunscreen needed.

What Is Coming Up Now?

Our star comets, NEAT (C/2001 Q4) and LINEAR (C/2002 T7), should be binocular objects by mid-May. You can learn details at the May 14 club meeting at St. Anselm's College in Goffstown and at this link:

http://skyandtelescope.com/observing/objects/comets/article_1229_1.asp

Another comet, Bradfield (C/2004 F4), is in the morning sky but fading fast. That makes three comets at once!

For the next meeting, I invite members to bring all their previous photos of comets. Prints are preferred, but we may be able to find a slide projector.

The big event coming up is the Venus Transit on Tuesday, June 8th, so mark your calendar. Plan to be late a little for work. This rare event occurs when Venus passes in front of the sun. This is called inferior conjunction but there is nothing inferior about the excitement that this is stirring in the world of Astronomy. **Marion Hochuli** will be bringing some photos of a 1973 transit of Mercury to give us a feeling of what this will look like.

We are on the side of the world that will see the very end of this transit. Sunrise, which is at 7:05 a.m., will have our sister planet already crossing the

sun's disk. By 7:25 a.m., it will be off the sun, and you can go to work or back to sleep.

This event requires proper sun block for your telescope for eyeball safety and to prevent damage to your optics.

The club is planning a seashore excursion that morning. Specific details will be settled at the club meeting.

Inhale some comet dust with the pollen.

* Joel Harris
NHAS President 2004

Public Observing Highlights

Well, there is no news to report, sad to say. The one skywatch that did take place was at Astronomy Day. At some point during the evening, we may have had more visitors than NHAS astronomers. We did have a major display of equipment.

* Ed Ting

Astronomy Day

The sun shone brightly then dimmed occasionally as large cloud masses drifted across the sky in Concord, NH. NHAS members turned out in large numbers and set up scopes and equipment that ranged from small spotting scopes to large Obsessions. Besides observing sunspots, the more computerized members located Venus, Saturn, and some bright stars in the daytime.

The warm day brought good sized crowds to the event but we had the misfortune to get located behind trees and far from either entrance to CMP.

We set up a display table for t-shirts and information along the path across from the construction and still had limited contact with the public. The constant helicopter noise was an

ongoing annoyance. Finally, we moved the table right to the edge of the path and brought over two small telescopes for solar viewing. Then we started getting people to stop and talk and take a look through the scopes.



CMP was able to get several food vendors to make donations, so we had plenty of good food to eat during the afternoon. The downside was that t-shirt sales were almost nonexistent.

As the sky darkened and visitors exited the planetarium shows, we were able to amaze them with up close views of the Moon, Venus, Jupiter, Saturn, and an occasional quickie explanation of how to measure distances in the sky by using your hands. By 9:30 p.m., all the visitors had left. We packed up and thus ended Astronomy Day 2004.



(See Astronomy Day, page 2)

Noteworthy News
Lunar Observing Fun.....Page 2

Astronomy Day (from p. 1)

Larry Lopez sent this upbeat comment: "I had a lot of fun and did much more talking to people in NHAS than I have in the past. Bringing the club tent was not much work at all because of all the help. I had a great time."

(photos courtesy of Nils Wygant)



Rick Hedrick and Chase McNiss



Rich DiMidio's first scope?



Radio Telescope



Ernie Lopez at the NHAS Table



Mike Townsend: "No, not the eyepieces!"

Lunar Observing Fun

On the NHAS Yahoo news group, you will find some recent lunar photos that were taken the night of April 29, 2004. Equipment included a TeleVue 102, 880 mm, f/8.6 refractor on a Vixen GP-DX mount. Eyepieces used were a BK Optic binocular viewer and 2x amplifier, 11 mm TeleVue (TV) Plossl @ 160x, 9 mm TV Nagler @ 196x, 8 mm TV Plossl @ 220x, and 7 mm TV Nagler @ 252x.

Seeing was typical for NE, 6-7 on scale of 1-10, transparency was 8 with occasional hazy glow around moon, but never apparent at the eyepiece. Surface winds buffeted the setup and I decided not to attempt digital imaging. This was going to be a visual night.

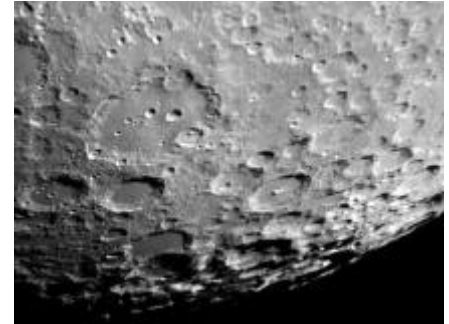
At 160x, Sinus Iridium was partially sunlight, with the shadow falling just short of the Jura Mountains. The visual appeal was that the Juras were bathed in sunlight and they stood out in stark contrast to the nearby terminator. The mountains were dazzling to say the least. Mts. Pico and Piton were still casting harsh shadows that made them stand out as well.

At 160x, there is plenty of field of view through the Plossl to take in quite a bit of surface area and explore other areas of interest.

Moving further south, Copernicus was the big center of attraction. Although the crater floor was hidden in shadow the night before, with the terminator just on the edge of the crater, tonight the floor of Copernicus was 95% lit with just a small shadow on the eastern rim. Although the terraced rims were easily seen, the previous night's view was more visually appealing with a higher contrast view.

The night before, Eratosthenes, north of Copernicus, was bathed in light with its floor showing lots of detail in its central

peaks. Too bad the seeing was not as good as tonight. What was interesting was to see the subtle changes in the crater Stadius just south of Eratosthenes. On Wednesday, Stadius was obvious, although it is nearly flooded by lava flows, and Thursday night it was a strain to see it. Also very apparent the night before was the chain of small craters that dot the area and wind down toward Copernicus. It was amazing what a difference 24 hours makes when viewing the moon.



Next I moved down to one of my favorite craters, Clavius, in the southern highlands. Libration this month was very favorable to see Clavius and western limb objects with little edge on distortion. So it was a good time to count craters on the main floor.

On Wednesday night I did quite well but would admit I was stretching it when at 160x I counted 30 craters on the main floor of Clavius.

On Thursday night I started my count at 252x and came up with only three more craters. Common sense happily took over and I dropped the magnification down to 196x. It was like somebody opened the dirty window. Suddenly I was able to see much more detail and what at first appeared as single craters very near the main crater rim were now two craters almost touching – almost like splitting double stars! That is what is nice about finding the right eyepiece and magnification combination, especially on the moon.

The count was now up to 43 craters – a new record for the TeleVue 102. I think using the binocular viewer also helps, with eye comfort apparently playing a big role in seeing ability and staying focused at the eyepiece.

(See Lunar, p. 3)

Lunar (from p. 2)



With that feat on the record book, I stayed with the 9 mm Nagler and 196x and moved NW towards Mare Humorum. Gassendi was still hidden in the shadow of the terminator and I stayed to the east and took in the partially obscured crater Hippalus. What I found most interesting was Rimae Hipplaus. There are three rilles running N/S along the eastern edge of Hippalus and Mare Humorum. What makes these rilles interesting is that they seem to go right through mountains and craters alike.

This brings up an interesting issue: what came first, the crater or the rille. It is obvious that the Mare Humorum and the mountains came first, but where along the timeline did the rilles develop into what we see today? I wondered if it has been a progressive process that has continued to widen and lengthen as more and more smaller meteors crashed into the area. A little research didn't turn up much about this specific rille system so speculation will have to do.

Another interesting issue is that the Virtual Moon Atlas listed the needed aperture to see this rille system in detail at 200 mm, 8-inch reflector. The view the refractor was providing was wonderful, so I'll stick with my very portable, carry out of the house, all set up system. Maybe I'm getting lazy, but if this is what it takes to get me under the stars, then this is what I will use.

By the way, I did look at Saturn and Jupiter. Saturn was in the west and anything from my house looking west is almost always turbulent. Jupiter, however, was high and close to the moon, so it appeared much steadier. I wasn't able to use as much power as I did on the moon and I eventually went back to the high-power eye candy views. I am enjoying the moon more and more. It's always there, always

changing and there is a ton of material to read and research. Give it a try.

* Chase McNiss

YFOS Country

There is no status change. **Don Ware** has been checking out the observatory mount and remodeling it.

* Larry Lopez

ATM True Grit

This will start up in June.

* Larry Lopez

Ed Dougherty on Mars

I wandered into a NASA site on September 5, 2002. I found that they were sending a DVD to Mars. So I added four names: me, Linda, Ed, and my mother. Then I found out that the recent Mars Rover missions had the DVDs on them. This link shows Ed's certificate:
<http://spacekids.hq.nasa.gov/2003/getcert5.cfm?uid=2778066>

* Larry Lopez

Variable Stars in Your Eyes

A Variable Star Yahoo newsgroup came into being after **John Blackwell's** talk in April. I got my V filter for CCD and have been trying it out.

If you are an NHAS member interested in variable stars, go to <http://groups.yahoo.com/group/nhas-yso/> and submit a request to join the group.

* Larry Lopez

Meteors for May

With Spring comes one of our favorite meteor showers – the eta Aquarids (ETA). These meteors are debris from the famous Halley's Comet and peak in our skies on May 5th, but they display from about April 19th until May 28th. Zenithal hourly rates (ZHR) at the peak will be about 60 meteors per hour. These are fast meteors, with a velocity of about 66 km per second.

The Sagittarids are a complex of radiants near the ecliptic in Sagittarius. They are surmised to be debris from a number of unknown bodies. Fireballs have also been associated with this meteor shower complex. They will be visible from about mid-April until about mid-July.

For complete meteor news, get the newsletter of the North American Meteor Network at <http://www.namnmteors.org>

* Lew Gramer

The Bottom Line

Cash Balance: 3,860.44
 Deposits: \$60 (memberships:
 (1) renewal, (3) New)

Acct. Payable:

\$25 Village Rent-alls (plowing)

\$46.67 Peerless Insurance

Net Balance: 3,860.44

Membership: 144

New Members:

Paul Lennon Northwood, NH

Mathew Marulla Nashua, NH

John Olapurath Nashua, NH

Dwayne White Grantham, NH

Welcome to NHAS!

Donations: **Taylor Cole** \$20

Thank you, Taylor!

* Barbara O'Connell

treasurer.2004@nhastro.com

NHAS 2004 Treasurer

Looking Back at Last Month

Opening. **Joel Harris** opened the meeting

Committees. Membership: **Bob Sletten** reported that the March session on Goto scopes was "wonderfully informative." The next session was to be on Apr. 16 on variable stars. Photography: A meeting was planned for Apr. 10.

ATM: **Larry Lopez** was hoping for a first meeting of the year late in April. YFOS: Larry had no news but surmised that the site was still muddy.

Web: There were no new developments and work on the new site was still slow.

Public Observing. **Ed Ting** said March was a busy month. Two of four skywatches plus the Messier Marathon were held. He would keep posting skywatches as he confirmed them.

NEAF. **Chase McNiss** described this annual telescope equipment show to be held in Suffern, NY on Apr. 17-18.

He also mentioned a new astronomy store opening in Nashua, and one in Mass. that was closing.

(See Looking Back on p. 4)

Looking Back (from p. 3)

Dr. Janet Mattei. John Blackwell spoke about this well-loved giant among variable star observers. He first met her in 1985 and praised her for helping him to develop his interest in variable stars.

Astronomy Day. The May 1 event was to run from 1-9 p.m. and NHAS members needed to set up from 11 a.m.-noon. **Joel Harris** circulated a sign-up sheet for Astronomy Day activities. He noted that we would not have a location to offer a slide show.

Rick Hedrick and Cindy Dougherty presented three designs for t-shirts and for a new club logo. There appeared to be confusion about the designs and members spoke strongly for and against them. This stemmed from the fact that we started the design process too late and had to rush to get something to print on the t-shirts.

After the break, we had a lively (impassioned?) discussion of the designs. The majority voted for the Rick's design for use on the t-shirt only. Further discussion of Rick's design for the club logo for use as a patch on hats and clothing was postponed until the next meeting. **Barbara O'Connell** was to take care of getting enough t-shirts to sell to the public. Orders for members would be taken at the May meeting.

Scope of the Month. **Joe Derek** showed off the tabletop mirror grinding machine that he used to make his 12.5-inch mirror.

It was motorized to perform the "W" grinding motion and had suction cups to hold the upper tool to the moving arm.

The club scope was loaned to



Photos courtesy Bob Sletten

Pat Kinne of Charlestown, NH

Jovian Sounds. **Bob Sletten** discussed and played his latest experiments with audio recordings of Jovian transmissions (5-speed?).

Evening Program. **John Blackwell** presented a slide show of many beautiful deep sky objects that he had captured recently on film (how retro!). For some images, he actually stacked the negatives to get a better image.



* Michael Frascinella

NASA Space Place

Voyage to a Double Planet

By Patrick L. Barry and Dr. Tony Phillips

Download a "nine planets" computer screensaver with spectacular photos of our solar system, and you'll notice that one planet is conspicuously missing: Pluto. Icy and mysterious, Pluto is the only planet never visited and photographed by NASA space probes.

In fact, the clearest image we have of Pluto is a tiny, pixelated blob of light and dark patches taken by the Hubble Space Telescope in 1994. It's tantalizing but not much more. Earth-based telescopes have succeeded, however, in discovering one amazing fact: Pluto is not a lone world, but a double-planet system. Its companion, measuring about half the size of Pluto itself, is named Charon.

Work is underway to launch a robotic probe to visit and photograph Pluto and Charon. The project, called New Horizons, will map both worlds.

Sensors will chart surface minerals and ices, and catalog the gases that make up Pluto's wispy atmosphere.

Alan Stern, the principal investigator for New Horizons at the Southwest Research Institute

in Colorado, said "We're going to the very edge of the solar system."

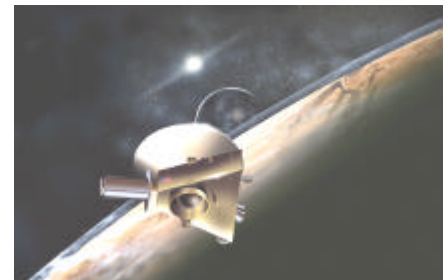
The probe is scheduled to be launched in January 2006. Even with a speed boost from a flyby of Jupiter, the probe won't arrive at Pluto until July 2015. Afterward, the probe will venture on to explore the Kuiper Belt, a distant "halo" of small, frozen objects from which comets originate.

Aside from sheer curiosity about these distant worlds, scientists are motivated by questions about the formation of the solar system. Orbiting in the deep freeze far from the sun, Pluto and Charon have undergone less change than the inner planets during the solar system's 4.5 billion year history, and will provide a glimpse into the past.

Pluto could also shed light on the origin of our own Moon. The Pluto-Charon system is the only other similar pair in the solar system. In fact, some astronomers consider Earth and the Moon to be a double planet, too. So knowing more about Pluto and Charon could give clues about how the Earth-Moon system formed.

And, of course, the spectacular, up-close photos of Pluto and Charon are going to look great as a screensaver!

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



(Credit: Dan Durda)

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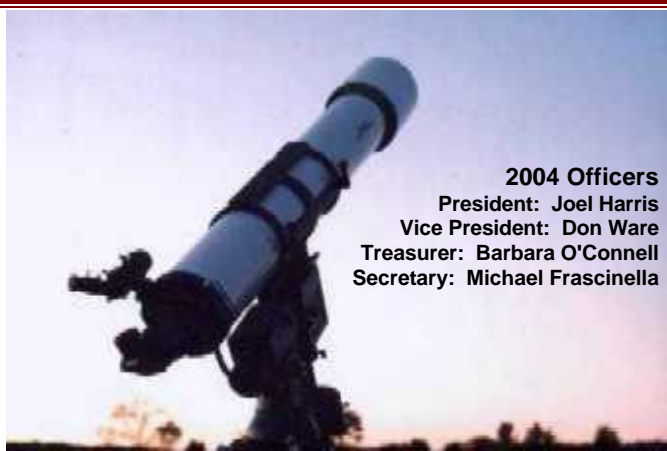
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This month's contributors:

Joel Harris, Ed Ting, Larry Lopez, Nils Wygant,
Barbara O'Connell, Chase McNiss



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Plan for Venus Transit, May 14, St. Anselm

NHAS Upcoming

Event	Date	Time	Location
CMP Skywatch	May 7	7:00 p.m.	Planetarium, Concord, NH
May meeting	May 14	7:30 p.m.	St. Anselm's College, Goffstown, NH
Brookline Skywatch (tentative)	May 20	7:30 p.m.	Brookline, NH
Coffee House	May 21	7:00 p.m.	YFOS
Photography Meeting	May 22	6:30 p.m.	Public Library, Nashua, NH
CMP Skywatch	June 4	7:00 p.m.	Planetarium, Concord, NH
June meeting	June 11	7:30 p.m.	Planetarium, Concord, NH