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The NHAS Observer and Solar Eclipse

Newsletter of the New Hampshire Astronomical Society

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Space Day

President's Message

In Matt's absence, the Vice President will be chairing the meeting at St. Anselm's at 7:30 pm. We'll have the usual reports (where possible); Paul Winalski is bringing the "Scope of the Month". If anyone has a candidate for "Book of the Month",
please bring it! The presentation is: "Diffraction-based Optics"

✷ John Bishop
NHAS Vice President 2006

Highlights for this Month

The Space day report starts on this page and continues on Page **5 John Bishop** and his daughter **Susanna Bishop** provide a report and sketches from the April Eclipse visible in Turkey. Read about it on Page 2

✷ Rich DeMidio
NHAS Secretary 2006

Space Day

This year's event was a little different. CMP changed the name as they have been slowly migrating the event from a total focus on Astronomy to more of a general space event covering a variety of topics. We had the actual sky watch on Friday evening followed by the space day event on Saturday. Weather wise, this turned out to be the better choice, as Friday evening was beautiful for observing while Saturday was cloudy with some drizzle. The sky watch was well attended on Friday evening and went over extremely well. All photos in this article unless specified were taken by **Rich DeMidio**

Several NHAS members were present with scopes. The attendees were **Joel Harris, Matt Amar, Rich DeMidio, Paul Winalski, Herb Bubert, Joe Derek, Joe, Ed Los, and Mike**. Joel had signs for each of us to place on our scopes to help guide the audience. The major interest amongst the audience was the moon and planets so we had scopes trained on each of them.

Later in the evening, some of us managed to move to a few deep sky objects including M13, M92, and the beehive. Our estimates were that about 75 people passed through. Much of the audience was engaging and asked a lot of great questions. Seeing and transparency was also good so the views really pleased the audience. Since the moon was visible in the daytime as first quarter, we actually started observing early while others were arriving. I could not resist the moon starring right at me and anxious to use on my new lens for the Nikon (28mm – 300mm telephoto), I snagged this shot by just leaning against the ladder at the full 300mm setting.

The sky watch also resulted in some additional unexpected surprises. One of them was the local military orchestra playing at CMP outside near our observing area. We were treated to wonderful renditions including "Stars and Stripes". They were magnificent and we all enjoyed their concert while setting up and observing in the daytime.

We were able to pay them back later as several visited during the sky watch. Please refer to Page 5 for the remainder of this article.

✷ Rich DeMidio

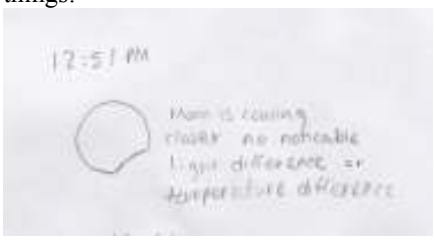
Solar Eclipse

Author John Bishop – photo by Rich DeMidio

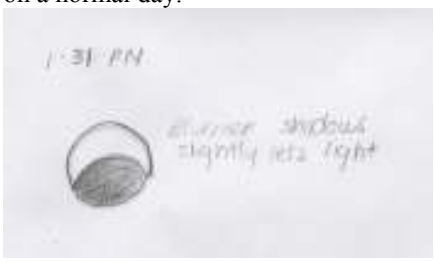
*Editor's Note: I was provided four pages of sketches done by John's Daughter **Susanna Bishop** during the event. I must say that they were very impressive and I have included several of them in this article. Unless noted otherwise, all the sketches are from Susanna Bishop.*

I went to Turkey to see the March 29, 2006 total solar eclipse. It was great, and I can see why people become total eclipse fanatics. The first things I have to say is that the pictures we've all seen don't even come close to conveying the experience. I'd see lots of pictures of the corona, and the "diamond ring" and I'd seen two partial eclipses.

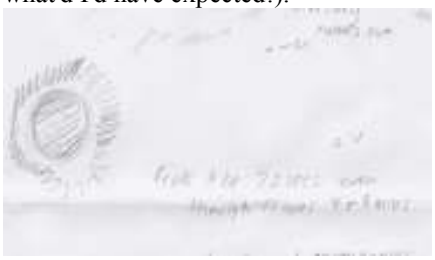
I thought I knew what it would be like. I was wrong, totally (forgive me!), wrong. True, if I'd taken photographs of the eclipsed Sun, they'd look the same as all those published ones (assuming I was really good at photography, which I'm not). But these photographs don't really represent what you actually see during an eclipse. More importantly, they completely miss both the size of what you see, the fact that it's a dynamic event rather than static one and the emotional impact of the event. To begin with, a total eclipse starts with a long, slow build-up as the Moon gradually covers the Sun. It took a bit over an hour to do this, and over that hour, the light got weirder and weirder. It was hard to say what was weird about it, but I think it's two things:



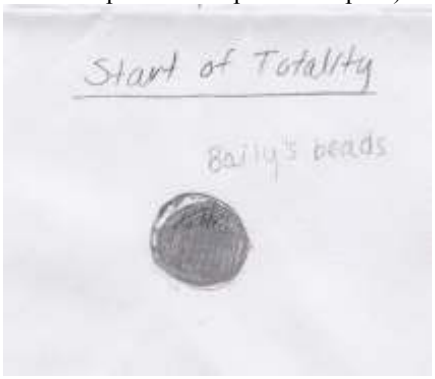
the change in shadow shapes and the shift in the color of the light from a normal sunny yellow to a blue, as more and more of the ambient light comes from sky-glow and less directly from the Sun. It didn't get noticeably darker until almost all the Sun had been covered. My eyes adjusted, just as yours do when a cloud covers the Sun on a normal day.



For most of the partial phase, that's basically how it looks, brightness-wise. But brightness isn't all that's going on during the partial phase. The shadows change. Shadows get weird for two reasons: not only are all the round dapples of sunlight replaced by crescent dapples (because the dapples are actually "pinhole" images of the Sun) but the shadows also become asymmetric. One side of all shadows is sharp while the other side is fuzzy. It's the side with the two 'horns' of the crescent, which is the fuzzy size (not what'd I'd have expected!).



As second contact approached, things started happening very quickly. The sky was dark already -- my son found Venus, and in seconds we could all see Mercury as well. The light was purple. You could still see colors, but it was dark. I was watching for "shadow bands" and for the approach of the Moon's shadow over the Mediterranean Ocean as it raced towards us (at about 1000 miles an hour, I later read). I caught two glimpses of the shadow bands and saw the approach of the shadow over the ocean. I therefore missed "Bailly's Beads" and the first diamond ring because I was looking at something else when they were going on. On the way out of totality, I saw the beads and the diamond ring, but therefore didn't see the bands again. The shadow bands were much smaller and fainter than I had expected them to be: I thought I'd see bands like the ripples of light on the bottom of a swimming pool, only bigger (because the atmosphere is deeper than a pool).



So I was expecting meter-wide bands of light. Instead, what I saw was very dim dark ripples about an inch wide. I was on a terrace with a white tile surface: ideal for seeing the bands. But even so, they were just barely perceptible and there were only there for a few seconds before (and presumably after) totality. Totality was like a move into an alternate dimension. It's not a small change from the previous state, but a step-change. Let me mention an analogous experience: when I was just beginning to learn how to paddle a kayak many years ago, I once fell over sideways. It was another quick change of state: at step one, I was warm and dry and looking out over a pond on a nice late-summer day while sitting in a kayak. Step two, I was cold and wet and looking at water while weightlessly floating. The transition was fast enough that I didn't really remember it happening. It didn't feel like a fall out of a boat, but like suddenly having been transported to a different world. Similarly, while the Sun had been reduced to a tiny point of light just before totality, it was still a yellow dot in the sky shedding light, a dot that was too bright to look at directly. Now the

Sun was completely gone, and this big thing was in the sky instead. The thing was the corona around the Moon. It was several times the size of the Sun, it could be looked at directly, it didn't shed light, and it didn't look like the pictures. Film doesn't respond like your eyes, and thus most pictures of the corona are misleading.

Film must either be exposed to show the inner corona, and thus fail to capture the outer part of the corona or it must be exposed to capture the dimmer outer corona, which will overexpose the inner part. Your eyes don't have this problem. What you see is the whole of the corona. That means that this huge glowing object dominates the dark sky. In the center is a black dot the size of the regular Sun, but it's just a dot inside a vast pearly grey glow. I've read that the total light from the corona is about as much as from a full Moon, but the corona doesn't look as bright because it's so much larger -- easily five times wider. It's also not a circle, but a structured object. It looks like a pair of wings and has feathery radial streaks. It's really alarming. At the same time, the sky was dark but all around the horizon was a band of orange, like a sunset. Birds were flying around in a confused manner. The crowds were making inarticulate noises -- and so was I! I was laughing, I was giggly, I couldn't say much more than "Wow" and "Look!" It was very odd. Some part of your brain is in shock at the loss of the Sun, I guess. But I don't think it was a bad feeling. Another analogy may help here. After college, I went youth-hostelling through Europe. At one point I took a train to Venice. I knew a lot about Venice, I'd seen lots of paintings and photographs: Venice as a concept wasn't strange to me. But when I walked out of what was just another ordinary Italian train station, stepped out on to the edge of a canal and was suddenly surrounded by Venice-ness, I got giddy. I realized later that I'd never really believed Venice was real; I'd thought of it as kind of a fiction -- and now here I was inside that fiction. Maybe that'll help you understand the emotional component of totality, maybe not. In my telescope, I could see prominences. They were bright red. There were a few small ones and two big ones. The biggest was an arc like a fishhook, about one-twentieth as long as the Moon was wide. I think I could just barely see them naked eye as red dots at the edge of the Moon. In the telescope, I could see lots of detail in the corona, looking somewhat like the pattern of a bar magnet. It was in subtle shades of grey and very beautiful and regular. There's a saying that all eclipses only last eight seconds of subjective time, no matter how long they are objectively. This was a long eclipse (almost four minutes), but it seemed to be over very quickly: there was a glow out on the ocean and then the second diamond ring and it was over.

The diamond ring was a good example of how dynamic the whole eclipse was: it wasn't a static event, but a process. It starts with the appearance of a tiny bright white spot on the edge of the Moon. Over about a second, the spot blossoms into a bright bit of the sun and finally is so bright that the corona disappears and totality is over. But during the blossoming, what you see is a ring made by the inner corona. The outer corona quickly becomes too dim to see. The "diamond" is much whiter than the corona, and it grows and (at least for me) had spiky lines of light coming from it. It really did look like a diamond ring under a bright light, with a ring of brushed silver and a diamond, which went from a tiny chip to a multi-carat monster in a second or so. It was really gorgeous. While the eclipse continued through partial phases for another hour, the event was pretty much over -- you could tell other people felt that way, as the crowd clapped, as for a theater performance. Even with the partial phases, the whole event lasted less than three hours. For the rest of the time in Turkey, we were tourists. We went to several of the local Roman ruins. In particular, two theaters (Side and Aspendos, which latter is the best-preserved theater from Roman times) and one city (Perge). I wish I'd had more time to explore Perge. This part of Turkey has more than the usual amount of Roman ruins because the local rock is a weak conglomerate. Cut blocks of this stone can't be pried out of the mortar and re-used; they'd crumble if you tried. That means that unlike most Roman buildings, they weren't disassembled for building materials during the middle Ages, though the marble cladding and anything else valuable was of course removed. We had six daylight hours to be tourists in Istanbul, though to do the job right you'd want several days. As a result, I can only report that Hagia Sophia is just as impressive as all the books say it is. It's far bigger than you can really comprehend without something to give you a human scale. Luckily, we had just that thing: there was some scaffolding inside the dome going up to part of the main dome. This scaffold was the size of a large building: the base was about 60 feet by 100 feet and it was 13 stories high (we counted the stairs inside). It fit into a corner of the dome, leaving most of of the interior space open. So Hagia Sophia is so big inside that you can put a 13-story office building in it and have plenty of room left over! It's even more impressive when you know that this building is more than 1400 years old. Turkey is far more modernized than I'd expected. People look prosperous, the roads are new, there's lots of construction (both industrial and residential). It looks like a boom is going on. The food was great. I'd happily go back. There's a good total eclipse coming up in 2009. It's almost seven minutes long and goes through China and south of Japan into the ocean. I'm very tempted!

✷ John Bishop

Astro Photons

Gardner Gerry – Photo by Chase McNiss

The Astrophotography committee met at YFOS on April 29th. In attendance were Nils, Herb, Chase, Tim and Gardner. We had no specific topic planned and used the time to set up our equipment and socialize. During twilight we were treated to a 2-day-old new moon showing wonderful Earthshine.

Photo by Gardner Gerry

After twilight ended we had a spectacular night with very dark skies and excellent transparency. Comet 73P/Schwassmann-Wachmann was a popular subject as were the brighter galaxies in Ursa Major.

Photo by Herb Bubert

NHAS member **John Buonomo** also produced some stunning video of the comet that is posted on his website http://www.astronomyspot.com/AstroNights/Comet050606.htm and also accessible from the HomePage http://www.astronomyspot.com/AstroNights/ These were very impressive indeed. Finally, one more shot that I really liked of M81 and M82 taken by Gardner. This was a single 5-minute image with dark frame and levels adjustment. From Saturday night, D50 at prime focus of the TV102 on the Titan, auto guided with Nils help. I know I can get a lot more out of this, I have 5 frames total that I can stack but I'm still working on that

Photo by Gardner Gerry

✷ Gardner Gerry

Radio Astronomy

Antenna by Bob Sletton

Phil Shute is still arranging for our tour mentioned in the last meeting at Haystack Mountain. The Air Force still has the dish set to Radar mode but will be switching to Astronomy mode soon we hope. Remember that there is a forum on the website for this topic. Members are also doing inventory of some equipment for possible donation.

✷ Bob Sletton

Deep Sky Object of the Month

Observer: Lew Gramer
Your skills: Intermediate
Date and UT of observation: May 27 1995 05:30UT
Location: Sheepsfold, MA, USA (42.4oN, 71.1oW)
Site classification: suburban
Limiting magnitude (visual): 5.5
Seeing (from 1 to 5): 4+
moon up/phase: down
Instrument: naked eye (direct vision)
Magnification: -
Filters used: none
Object: Eps Lyrae
Category: Double star
Constellation: Lyra
Object diameter: ?
RA/DE: 18:44 +39o39
Description: After long noting this as an "elongated star"
during my meteor watches, I finally split it on this slow
meteor night with the naked eye! A real "Eureka", as this
is an easy naked-eye double for some, but not for me.
Epsilon is the star left of Vega at the top of the lyre

Observer: Lew Gramer
Your skills: Advanced (many years)
Date/time of observation: 17 May 2004 03:00 CDT
Location of site: Texas Star Party, Ft Davis TX USA (Lat 30, Elev 1700m)
Site classification: Rural
Sky darkness: 7.3 <Limiting magnitude>
Seeing: 4 <1-10 Seeing Scale (10 best)>
Moon presence: None - moon not in sky
Instrument: unaided eye
Magnification: 1x
Filter(s): None
Object(s): M4
Category: Globular cluster.
Class: IX
Constellation: Sco
Data: mag 5.4 10.8* size 35'
Position: RA 16:24 DEC -26:31
Description:
Unlike in prior observations at more northerly locations
(see related URL), M4 tonight was a distinct hazy "spot",
and quite obviously NOT a star. There was even a hint of
"irregularity" noted in the spot. I'll be interested to
see how M4 looks from the beach at 25 N latitude (and in
much sharper seeing), during the Perseids this Summer!

Observer: Lew Gramer
Your skills: Intermediate (some years)
Date/time of observation: 01 May 1999 05:00 UT
Location of site: Medford, MA, USA (Lat 42N, Elev 5m)

Site classification: Suburban
Sky darkness: 4 <Limiting magnitude>
Seeing: 7 <1-10 Seeing Scale (10 best)>
Moon presence: Heavy - nearly full moon
Instrument: 10x46 handheld monocular
Magnification: 10x
Filter(s): None
Object(s): M4
Description:
This diffuse globular cluster, so conveniently located just off of bright Antares at the "heart" of Scorpius, the Scorpion, was only suspected with this new monocular tonight. However it *WAS* suspected, which is almost a miracle considering the presence of the moon, light pollution, and sheer diffuseness of this deceptively bright globular. No detail noted.
--
(What a difference between Texas desert - the prior log - and Medford! :>)

✷ Lew Gramer

Space Day (Continued)

Several of us also observed and had fun with another unexpected event. Just after Paul and I finished setting up and were starting to observe the moon, we heard a huge commotion behind us. When I turned around I spied a beautiful red tail hawk crashing out of the bushes (apparently unsuccessful in catching a meal). I immediately grabbed my camera, started clicking, managing to get several shots of the hawk flying away.

I had tracking enabled but I know it's very unreliable, so fortunately it was a short exposure photo with no drift observed ☺ Paul and I watched him circle and land on a tree where we tried to train Obby on him. We could not get focus even with the holy hand grenade (31mm Nagler). A few minutes later, he flew off to a tree about a quarter mile away we observed him with Obby. He was in the full FOV and upside down! It was a fun diversion. Wish my SLR could do afocal photography. Do you think that perhaps this could be a challenge for the Astrophotography committee?

On Saturday, several NHAS members participated throughout the day talking with the public, performing solar observing, and recruiting. The first folks arrived around 10am to setup the tent and get things organized.

Don Ware, John Bishop, and Larry Lopez joined the rest of us that were at the sky watch the previous night. **Matt Amar** handled the merchandise sales and did a great job.

The conditions during the day varied between drizzle, clouds, and patches of sunshine. Many of us had our scopes setup for solar observing. I had never seen Don Ware's homemade refractor so that was quite a treat seeing and using it.

The event also had some of the classic ones from previous such as the model rocketry launches, rides for the kids, and of course the helicopter tour. Perhaps it was just the angle, but a few of us commented on just how close it was to the building on take offs. Our own **Joel Harris** decided to partake and provided this view from above.

Photo by Joel Harris

We had a steady crowd interested in solar observing and what NHAS was about. Many of us spent time talking with the public about Astronomy in general and our club.

Many people stopped to look at Joe Derek's scope admiring the inscription and award emblem.

It was fun day getting to spend time with friends, enjoy some solar observing, and interacting with the public. With several of our members at NEAF, the turnout was great and everyone did a wonderful job. Thank you for your contribution to another successful event.

✷ Rich DeMidio

The Bottom Line

Starting Balance	$3716.11 (checking acct)
Deposits/Credits	$147.00 (membership, cash S&T Payment)
A/P	**$198.17 (Facilitations, Ltd. A-day T's, S&T Sub.)**
Net Acct Balance	$3664.98Cash
Cash Balance	N/A at time of meeting
Membership	121
New members	Laurie Owens John Shappy Ralph Minichiello Loren Blaisdell James Nelson Scott Simon
Donations	None

✷ Chase McNiss

Looking Back at Last Month

Opening Matthew Marulla walked through the agenda and immediately handed the floor over to committee reports.

Photo by Chase McNiss

Scope of the Month None.

Public Observing. Mark Stowbridge reported that ten requests for sky watches were received and responded to. He is currently coordinating dates and times ranging from May to September. Mark uses a form that he emails to help qualify and for us to plan on for the event. One of the questions he asks if for anyone with special needs that will attend the event. Past experience has shown that we can handle special needs with the equipment we have. Mark is also planning on sending folks sky watch etiquette to set expectations; along with other pertinent information. Please let Marc know if anyone has ideas. The New Searles event went well 80-100 in attendance. This was perceived as highly successful. Thanks to **Nils Wygant** for organizing the event, which happened prior to Marc taking over.

Book of the Month, **None**

Committees. Photo Club **Gardner Gerry** reported that the meeting for tomorrow is not cooperative for tomorrow's event at YFOS. Decided to push off to next week. Group has been reviewing images from last sessions. Web: **Matthew Marulla** no updates to report ATMs: **Larry Lopez** Well, this may not exactly qualify but **Larry Lopez** mentored Rich on how to install motion handle on Rich's TeleVue Pronto during the Messier Marathon. ATM work in general has been slow but some new requests have been coming that might rekindle the efforts. YFOS **Larry Lopez** reported that the mosquito magnet would be deployed in the next month. Matt explained that we are getting a new one based on issues encountered. Mud season is over and conditions are good. Some members there recently reported good conditions. We also anticipate some rock moving and other work tasks this season. A new mower has been provided so stay tuned to email updates describing the work parties. If you need a walkthrough, it is suggested that you show up early during daylight hours. This activity is hard to perform in the dark.

Membership: No new reports as the needs are still being determined. If anyone has a vision of what the membership chairperson needs to be, then please provide that feedback.

Other Topics. **Matthew Marulla** The Mars Rovers are still alive now almost 2 yrs past their expected die date. The Opportunity rover is currently on the way to crater located at the equater and is expected to continue operation. Unfortunately, Spirit is down to only five wheels as one of them appears to be locked up with a burned out motor. NASA engineers have continued to keep it alive with their creative styles. They have it on the way to a south facing hill to angle solar panels toward the sun. As of April 12th, it is in safe mode on the hill and should survive the winter, then continue operating on 5 wheels. Matt also discussed the ratification process of the amendment for voting online. We still need more people to vote to make a quorum. We really need all members to vote so that we can reach a quorum. **Moose lodge** is getting us a price to rent out the whole place for an event. Campground is not ready yet but they can allow up to 10 people to camp. He will get the pricing and details before the next meeting. Looking at June 23rd, 24th as the target date. Updates will be posted in email. Space Day Update **Joel Harris** is our official coordinator. It is now two weeks away and we have our location, which will be the opposite of the walkway in open field with plenty of space. Event is from 11am to 7pm on Saturday. The sky watch will be on Friday at normal CMP event. CMP will be closed 7PM on Saturday so if we do use the backup night, planning will need to happen. T-Shirts will also be sold and since Chase will not be there, he needs a volunteer to take over the selling of the shirts **Evening Program**. **Robin Ann Peters**, a local historian wrote a book about Nashua and it's connection to Astronomy. She presented a historical timeline of astronomy related trivia in the Nashua area.

✷ Rich DeMidio

Member Blogs

April 28th. We finally got a Coffee House Night with completely clear skies that lasted all night. Temperatures gradually dropped to below freezing as the night progressed, but the air was pretty dry and dew was not a problem, except for a bit of frost before dawn. I arrived about 8 PM and stayed until dawn at 4 AM. Skies were very dark, there was little wind, but the atmosphere was turbulent and seeing was under par. I spent most of my time on DSOs, saying goodbye to winter favorites and getting reacquainted with the spring and summer sky. Moon: We caught a less than 1 day old crescent at twilight. I was able to catch it in Mr. T. through the trees. I've never seen a crescent this thin before. It was awesome. ISS: There was a transit in the northern sky at about 8:30 PM (IIRC). A predicted Iridium flare didn't materialize--it was too low to the horizon in the north and got lost in the trees, although Tom saw the satellite go by in his big binoculars. Comet Schwassmann-Wachmann 73P: The C fragment was lurking around Zeta Herculis and was an easy find. It has a tight nucleus, good coma, and fairly long tail. The B fragment was harder to find, but I finally tracked it down in Corona Borealis, near one tip of the Crown. Under low power B's nucleus appears ovoid. Under high power it is distinctly in two fragments (the second being the recently christened AQ). Both the C and B fragments have brightened considerably over the last week. They are now both mag 8 or brighter, and easy finds in binoculars or a spotter scope. Jupiter: I watched an occultation of Io at 1:04 AM. The planet itself wasn't showing too much detail, alas. Monoceros DSOs: I found the Christmas Tree Cluster just off the foot of the Pollux side of Gemini. From there I went south past the fine little double star just over the treetop, to Hubble's Variable Nebula, which was not showing very well (too close to the horizon). From there, south to the cluster within the Rosette Nebula. The Rosette itself became visible as a dim, mottled ring with a O-III filter in place. Carbon stars: S Cephei took the prize for reddest star of the evening. T Lyrae appears more of an orange shade than I remember it being last year. WZ Cassiopeia forms an excellent color-contrast, widely spaced double just to the north of Beta CAS. Its companion is spectral class A0, but in contrast to the deep red of the carbon star it looks azure. V Aquilae, in the eagle's tail, appeared more yellow-orange than red this evening. The Veil in Cygnus showed extremely well with a O-III filter. Traceable all the way around, and with lots of fine detail. M13 was awesome, as always. An amusing thing happened trying to find it, though. I followed my usual procedure of pointing the scope at the Hercules Keystone, then zeroing in on the fuzzy spot visible in the 9x50 finder. On my first try I got the C fragment of Comet 73P instead of M13! Those pesky comets do get in the way of observing Messier objects. I have never tried using an O-III filter on the Lagoon, Triffid, Swan, or Eagle Nebulae before. The result is awesome. Unaided, the Lagoon and Eagle usually are very dim and hard to see. They are strikingly visible with the filter in place. The filter also reveals the full extent of the Swan and brings out more detail in the Triffid and the Pillars of Creation in the Eagle. This was a great night for observing M51. At higher powers, plenty of detail was visible in the spiral arms. I also observed the various Leo Messier galaxies, M64 (the black eye was just visible), M104 (dark lane of the Sombrero very sharp), and M101 (core dimly visible, surrounded by a lot of faint glow). One of the "eyes" of the Owl Nebula (M97) was visible. Nearby M108 showed as a tiny spindle. M81 and M82 were showing well, with lots of detail visible in M82.

✷ Paul Winalski

Thursday the 20th, Paul Winalski mentioned to me in the afternoon that he was going to YFOS because the Clear Sky Clock predicted a great night. I looked, saw a prediction of dark and transparent skies and was persuaded to go as well. The only downside was that the seeing was likely to be only fair. That sounded like a "galaxy" night. So I packed my 16-inch into my little car and drove up to YFOS. I got there around 8:00 pm. Paul was already there, as was someone else astroimaging with a 10-inch SCT whose name I have forgotten. It was a spectacularly dark night: all of Ursa Minor was visible (i.e., it was better than mag 5.something) and faint stars were everywhere. The zenith was probably mag. 6 . Even near the horizon where the skies over YFOS are usually murky it was clear: I could see stars right down to the tree-line. I started with a two-inch 42mm eyepiece looking at bright objects during twilight. Even with a still-blue sky in which only a few bright stars were visible, in the 16 objects like M42 and M35 were bright. Soon it got really dark. There was some horizon light to the south east but other than that it was as dark as I've seen it get at YFOS. In conditions like that with a 16-inch, galaxies are not dim little blobs. They are white and grey structured shapes. You can magnify them and they'll still stay bright. The more you magnify, the more structure you see. I routinely went up to 225x with the 8-24 zoom eyepiece to see arms and dust lanes. In the 16 M51 showed arms. M101 showed arms near the core and lots of blobby regions around it, but no structure. M82 was great, with grey mottling on a white background. M64 ("the Blackeye") showed the black dust lane. In Paul's 14-inch M104 ("the Sombero") the dark lane of the "hat-brim" was visible. I kept going back to M51 for another look at the spiral arms. I also looked at some planetaries (NGC 3242 ("Ghost of Jupiter"), NGC 6543 ("Cat's Eye"), M97) and several globulars. M13 and M3 were spectacular at high power. Due to the seeing, Saturn and Jupiter weren't in the spectacular class, but Saturn was high enough that there was a reasonably good view, with five moons. The Cassini Division was in and out, visible when the air was momentarily stiller. Paul and I tried to see the "eyes" in the "Owl" (M97), but I at least didn't really succeed. The nebula was bright, but didn't seem to show consistently darker regions. Time flew by. I didn't even get to the other Canes Venitici galaxies, let alone the Virgo ones! I left at midnight.

✷ John Bishop

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This month's contributors:
Mathew Marulla, Chase McNiss, Bob Sletten, Lew Gramer, Gardner Gerry, Herb Bubert, John Buonomo, Rich DeMidio, John Bishop, Susanna Bishop, Joel Harris, Paul Winalski

2006 Officers
President: Mathew Marulla
Vice President: John Bishop
Treasurer: Chase McNiss
Secretary: Richard DeMidio

New Hampshire Astronomical Society
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NHAS Upcoming Events

Event	Date	Time	Location
Business Meeting	May 19	7:30 pm	St. Anselms College
Coffee House	May 26	Dusk	YFOS
CMP Skywatch	Jun 02	Dusk	CMP
Business Meeting	Jun 16	7:30 pm	CMP
Coffee House	Jun 23	Dusk	YFOS
CMP Skywatch	Jul 07	Dusk	CMP
Business Meeting	Jun 16	7:30 pm	St. Anselms College
Public Skywatch	Jul 19	Dusk	Goffstown Public LIbrary