

The NHAS Observer

and



The Return of a Comet

Newsletter of the New Hampshire Astronomical Society

Vol. 2006 No. 4

"All the news that fits in print"

April 2006

Messier Marathon

President's Message

How can you tell it's spring in New England? **1)** The snow banks have given way to "sand banks" (technically "ground moraines" – look it up. **2)** Ice cream stands open for the season. **3)** It's time to get the Mosquito Magnet running up at YFOS again. On that last item, it should be there in a couple weeks. I had trouble getting it started again after winter storage. It is still under warranty, so I am taking this opportunity to get shiny new replacement parts while the getting is good. Before you see the next newsletter, Astronomy Day will have come and gone. This year, the events at Christa McAuliffe planetarium happen to fall on the same weekend as the Northeast Astronomy Forum down in Suffern, NY, so I guess we may be more short-handed than usual. Anyone who can make it should contact **Joel Harris** ASAP – you can get his email on the website's contact page (we have officially named him the "Astronomy Day and Stellafane Coordinator" – jobs he was doing every year anyway, so he might as well get credit). Speaking of the club officers we have a new, official Public Observing chair! Please pass on your appreciation to **Marc Stowbridge**, who has already starting lining up observing events for the upcoming warmer months. The evening program this month will be a talk by **Robin Ann Peters**, who has just published a book on the history of Nashua. She assures me there are astronomy-related things in Nashua's history. I haven't seen her talk yet, so I am as curious as you to find out what those might be! See you at the meeting!

* Matthew Marulla
 NHAS President 2006

Messier Marathon

The weather did not cooperate this year but we did finally have an official event at the **Lopez** residence on March 31, 2006.



Photo by Larry Lopez

Several members came and we all had a wonderful time enjoying the great food, drink, and company. Many of us were able to bag several objects before the conditions deteriorated. Here are the numbers provided by Larry.

Andy Jaffe	16
Ed Los	19 Messier 5 JDS (John Davis Stars) 1 HRR (Harrington)
Herb Bubert	37
Nils 30	27 binocular 3 more 8" Newtonian
Bon Sletten	31 first marathon.
John Pappas	with Bob .
Chase McNiss	"I cheated" (he used setting circles).
Tom Cocchiario	17
John Rose 30	found 1st marathon.
Michael Townsend	Did not keep track
Rich DeMidio	27 Mix of Equipment
Gardner Gerry	61

Roger Greenwood)	1 + M42 cheated on the rest.
Ed Ting	14
Linda Lopez	31 3 inch refractor.
Larry Lopez	"I really cheated": 19 imaged 1 visually.
Charlotte Lister	13 7x50
Arvin Congleton	21: (9 10x50 5 40x90: 4 20x90: 3: 10x50 Chester)
Joe Derek	At YFOS the previous night and got 95 (10 additional with setting circles)

Many folks experimented this year with different combinations of scopes and binoculars. Others just enjoyed chatting and looking at equipment. **Roger Greenwood** had his highly customized Obsession, which was quite a hit (wish someone had taken a picture and sent it to the editor) ☺



Photo by Larry Lopez

Highlights for this Month

Tim Printy provides us with an article about an observable comet on [Page 2](#) **Joel Harris** outlines the plan for the Astronomy Day on [Page 5](#) **Ed Ting's** presentation last month is summarized on [Page 5](#)

* Rich DeMidio
 NHAS Secretary 2006

The Return of a Comet

About a year ago, I was reading about a periodic comet that was returning in 2006 and could be very spectacular due to some unusual circumstances. Comet Schwassman-Wachmann 3 was discovered in 1930 and the comet usually was not very spectacular even when it was favorably placed. However, this all changed in 1995. That fall the comet broke up on its return producing a nice little show for amateur astronomers. The comet, which normally was very faint and had never been much brighter than +6 on any previous return, peaked to about magnitude +5. Under a nice dark sky, the comet was an interesting binocular object and sported a short dust tail.



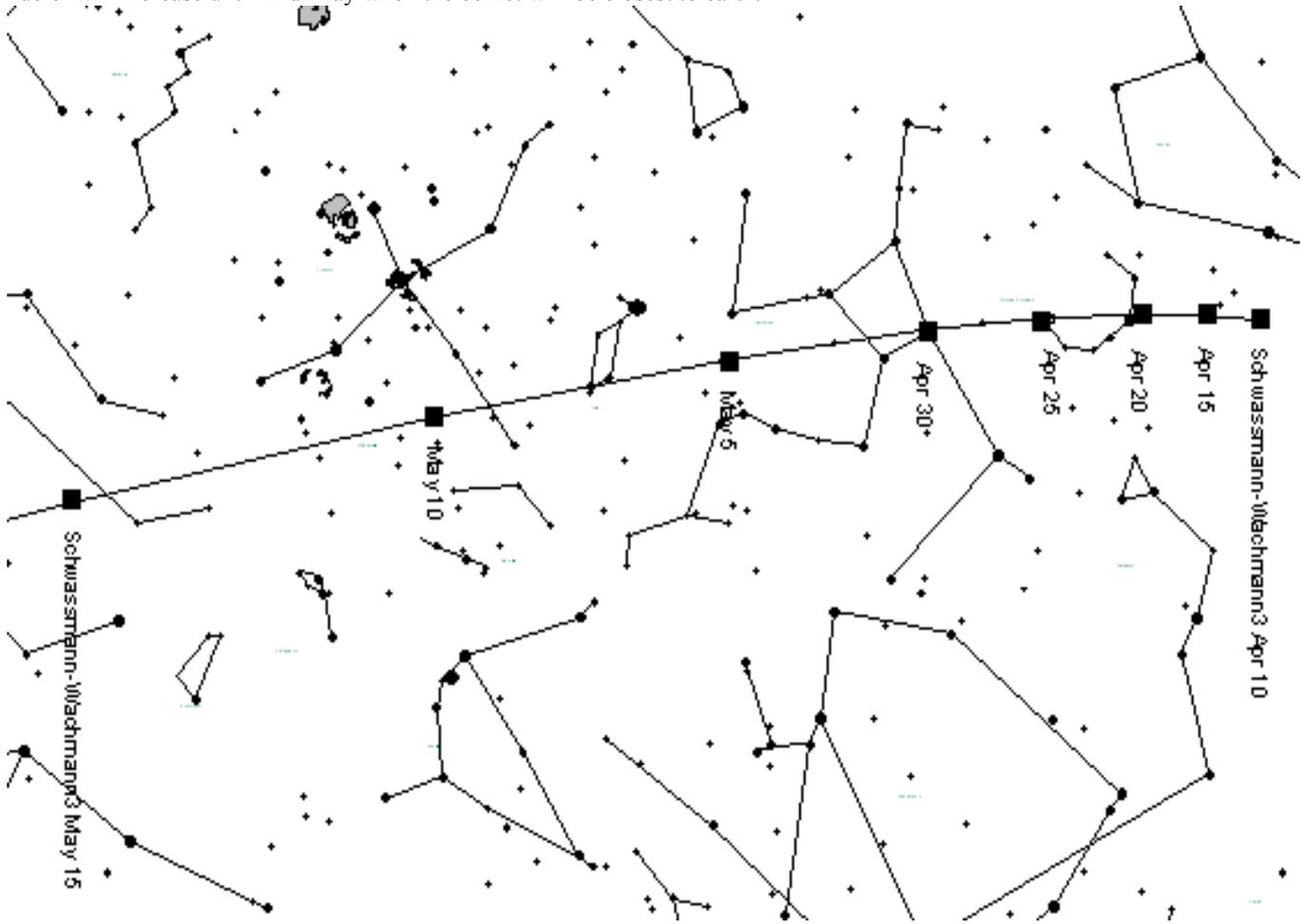
The comet in 1995 (photo by author)

In 2001, the comet's return was not that ideal but the comet and several fragments were seen indicating the comet would survive for another return in 2006 when it would make a very close pass to earth (~0.08 AU)!

What would make this return really interesting is that the comet would not be in one piece. Multiple fragments were observed in 2001 and the close pass to earth will spread these nuclei over a wide area of the sky. Initially, the brightest fragment (identified as "C") was predicted by some to be as bright as magnitude "0". However, the International Astronomical Union (IAU) was predicting a conservative value of about +6.5 and the British Astronomical Association (BAA) was showing a peak magnitude of about +4.5. The comet's close proximity to earth and uncertain absolute magnitude is the reason for this disparity in estimates. By late March 2006, fragment C was being estimated at magnitude 10-11. This is 1-2 magnitudes brighter than the values predicted by the IAU and closely followed the values presented by the BAA. However, due to the unpredictable nature of the comet fragment, it may not brighten at the rate computed or it may break up again. One just has to watch and hope for the best.

At the time of this writing there are at least thirteen known fragments in this train of comets that will make a near pass of earth. Many will be very faint. However, several will be pretty bright. At least three should be brighter than tenth magnitude. Fragments C and B will be the brightest. B should be about two magnitudes fainter than C meaning it probable will peak around +6 if the present rate holds. The next fragment in the list of brightness is fragment E. This will be about magnitude +9-10 at its brightest. The other fragments H, J, K, L, and P-S will be much fainter, peaking near magnitude +11-12. Under normal circumstances, these fragments would be closely packed together. However, with the comet being less than 0.1 AU from earth, the fragments will be spread out over the sky. In late April, the JPL ephemeris shows that while fragment C will be

found in Hercules, fragment B will be found in Corona Borealis and fragment E will be found in Bootes! This separation of the nuclei will increase until mid-May when the comet will be closest to earth.



The fragment C's path from April 10 – May 15 using five day intervals
(Chart provided by Megastar demo version 5)

Probably the most important thing to note about observing the comet is that the moon is going to play a big role after the 8th of May. The comet's rapid motion across the sky closely matches that of the waning moon, which is full on the 12th. With such a bad coincidence of the moon interfering, one probably wonders when will be the best time to see the Comet. The table below demonstrates the best observing times we have here in NH to observe the comet in a dark sky.

Dates	Moonrise	Moonset	Time between twilight/comet rise and moon interference	Constellation	Comet magnitude (BAA est)	Comet distance from earth (AU)
4/27	NA	NA	NA	Corona Borealis	+6.6	0.16
5/5	NA	2:30AM	1 – 1.5 hrs	Hercules	+5.4	0.1
5/8*	NA	3:30AM	0.5 hours	Lyra	+4.9	0.09

After these dates, the comet rises about the same time as the moon each night. Even more frustrating is that by the time the moon is new in late May, the comet is no longer easily visible because it very low as morning twilight begins. Therefore, it seems best to start viewing the comet between now and the weekend of the 5th. After the 8th, it will difficult to observe the comet under good conditions.

My personal opinion is that comet fragment C will probably look similar to the way the comet appeared in 1995. However, it could appear featureless like IRAS-Araki-Alcock back in the early 1980s. No matter what happens, it would be best to get out and observe the comet anyway. I know I will be heading to YFOS on a regular basis over the next three weeks as long as it is clear. I plan to at least see, and photograph, a unique comet even if it fails to live up to expectations.



Fragment C on March 30, 2006 showing a short dust tail
10" SCT @ F6.3 Nikon D70, 10 min exp at ISO800 – photo by author

* Tim Printy

Astro Photons

The Astrophotography committee met at the Nashua Public Library on March 18, 2006. In attendance were myself, Chase, Nils, Herb, Tim and Pollyann Printy and new member Tom Cocchiaro



Gardner Gerry – Photo by Chase McNiss

We showed images taken at the previous meeting at YFOS where we set up the Titan with two scopes, Herb's ED80 and Nils' TV76 and swapped cameras in and out, imaging the same objects with the same exposures. Then we discussed shooting and processing techniques. The next meeting of the Astrophotography committee will

be at YFOS on April 22, 2006. Please note the 4pm start due to later sunset this time of year. Sorry for the short report, I will have to try and take more comprehensive notes at the meetings. Let me know if you need some more images

* Gardner Gerry

Here are the editor's picks for photos of the month. The good news is that there are a ton of pictures on the website keeping me busy for many months ☺

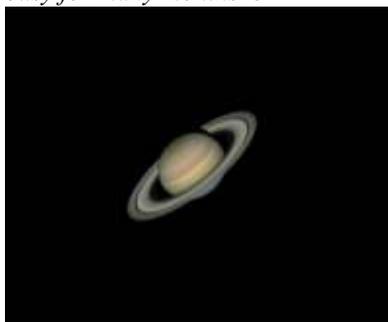


Photo by Herb Bubert

I didn't have my camera with me at the Bow skywatch to take advantage of the incredible seeing we had that night. The views through my 11" Starmaster ELT and Nil's 8"

Starmaster V-8 were simply stunning. Last night the seeing was pretty good as well. Of course, the clouds started rolling in as soon as I finished setting up on my front lawn in Derry, but I managed to get quite a few good frames to stack before it became completely overcast. I used my Nikon Coolpix 4500 and a 10mm Radian with the 11" Starmaster on a Tom 'O platform. The full resolution image can be seen at:

<http://community.webshots.com/album/230997590rTyFLv>



Photo by John Buonomo

Leo Triplet SAC10 WO ZS80 Red @ f3.2

Radio Astronomy



Antenna by Bob Sletten

The next tour is planned! It will be at Haystack Observatory located in Westford, MA. **Phil Shute** will organize this meeting as he is on the staff at haystack.



Phil Shute - Photo by Bob Sletten

They have a large assembly of scopes and radar tracking. Equipment. Recently, the United States Air force purchased the scope and radio antenna. Phil is working on a date with it most likely in April on a Saturday. The array is used for both radar and astronomy. Currently, the equipment is in radar mode so he wants to make sure it is in Astronomy mode before the group tours the facility. The tour will be open to anyone who wishes to attend. Bob will handle logistics in briefing the club when the date is set. This includes working with security so that we may pass. There will be no time limit but we may not be able to get as close to the scope as the last tour. However, we hope to watch it move which apparently is very impressive. Please contact Bob if you want to go so he can get a rough head count. Phil will try to

give us enough lead-time but that might not be always possible since the Air Force controls it now and we are on their schedule.

* Bob Sletten

2006 Astronomy Day

This year's Astronomy day at CMP will be on May 6th. Unfortunately, this date conflicts with NEAF so those planning on staying behind, please come support our Astronomy Day program. Last year was a rainout and we were inside. CMP requests that we treat the main observing event on Friday evening, which coincides with the normal monthly CMP sky watch. .



Joel Harris – Photo by Bob Sletten

We can have an unofficial backup date on Saturday but the catch is that CMP will be closed at 7PM. *Editor's Note: At the time of this publication, we have inconsistent data with respect to a sky watch on Saturday evening. More will be forthcoming at the meeting and in email.* Joel is planning on some club advertising ahead of time – some type of media advertising plug. Signs and an exhibit is also planned. **Joe Derek** mentioned his ideas relating to the night sky network, which could be used for these or other events. Their needs to be coordination since key members will be at NEAF this year- canopy, selling shirts, and such. Chase will need a replacement to sell the T-Shirts since he will be at NEAF. CMP has provided sign up sheets and such so they know who is coming. You must be on the list to get the benefits they are offering. Coordination is key this year because of NEAF. Expect more discussion at the April Business meeting.

* Joel Harris

Mini-Messier Marathon

At the March 2006 Business Meeting, **Ed Ting** provided a briefing on his recent publication for “**The Mini Messier Marathon!**” In the past, Ed's talk was very comprehensive and targeted for folks who would perform the full MM.



Ed Ting – Photo by Bob Sletten

Tonight's talk is targeted for folks who are willing to spend the entire time, but only bag 25 objects from various times of the marathon. This is less intense and provides time to napping and socializing. You get the full experience with no pressure. As Ed was researching and preparing the paper, he determined that Messier was actually looking for Comet Halley. At the time, scientists were not sure about the comet and whether is it really coming back. In fact, it was quite a debate. As luck would have it, an incorrect calculation always had Messier repeatedly find M1 and M2. After a few years, he got really annoyed and started to compile a list of these objects that he kept finding. Ironically, no one remembers the comets, but they all remember the “nuisance” objects, which became the messier objects. The modern marathon as we know of it today originated in 1980. The mini-marathon requires only 25 objects in an average of 25 minutes. Try the marathon and send an Email to Ed to your results. He will send a cool, signed certificate for the club. Ed's full article can be read in the March/April issue of Night Sky Magazine. BTW, if you do the full marathon, it also counts ☺

The Bottom Line

Starting Balance	\$3716.11 (checking acct)
Deposits/Credits	\$200.00 (acct. interest, membership, mag overpayment)
A/P	\$219.34 (Plowing, Insurance, domain fee)
Net Acct Balance	\$3716.11 Cash
Cash Balance	\$3846.02 + Petty Cash Drawer
Membership	115
New members	Zane Whitney, Joe LeBrun, Heather Renyck, Ken Adey
Donations	None

* Chase McNiss

Looking Back at Last Month

Opening Matthew Marulla

reported that we are still looking for more members to vote on the proposal to allow for electronic voting. Forms were provided to anyone present that desired to vote.



Photo by Chase McNiss

Matt also reminded folks that we currently have no membership committee lead. He suggested that we should first define the needs and requirements for the position before we can members to volunteer.

Scope of the Month None.

Public Observing. Matthew

Marulla reported that the transition to Marc Stowbridge is occurring and Matt will be updating the web site aggressively now. April 11th is next visit- watch the website. Another on the 5th of April. Ed

mentioned that here was once recently at Bow, NH and it was very good. Matt will get all of this updated this week on the Website. Matt followed up with lessons learned from Milford and determined root cause of not many kids showing up. Put simply, 8th graders did not want to hang with parents and Monday was a day off. We will do it again next year in a manner that should allow more participation. Paul Winalski, Nils Wygant, and Gardner Gerry attended with about 12 people there. They consisted of adult scoutmasters and older scouts. Although the turnout was low, the audience was very engaging. Unfortunately, the sky conditions were hazy so there was not much to show. They were able to show the Orion Nebula, NGC 457, and a few other objects.

People seemed interested and asked many questions. Things like how far are these objects, what are they made of, and so forth. Next event is Monday at Milford High School. They are anticipating 250 people.

Book of the Month, None
Committees. Photo Club Chase McNiss officially handed over the reigns to Gardner Gerry who is our Astrophotography chairperson. Currently, the group is discussing imaging processing techniques from pictures taken at YFOS the last visit there. Turned out that was quite a challenge as no power was at YFOS. They improvised by powering the Titan with Herb's truck. Anyone member is welcome to attend. Non-members may attend as the guest of a member. **Web:** Matthew Marulla No update **ATM:** Larry Lopez reported that the group has not been very active lately. They are in the process of performing an inventory of all parts and deciding what to do next. Joe Derek's wireless tracking is on

temporary hold but the intention is to complete it. One new member requested help as we works on his homemade 8" reflector.

YFOS Larry Lopez reminded the audience about the NHAS tradition of new member snow shoveling, lawn mowing, and rock removal ☺ Larry anticipates that more rocks will need to be moved this year. Finally, he reminded everyone that YFOS is officially in mud season. If you go there, please do the "test" before driving into the parking area. Leave your car on the road and try walking on the driveway. If your feet sink and get muddy, do not drive onto the premises. If your feet sink, there is no way that your vehicle will be supported.

Membership: no report. **Other Topics.** During treasurer report, Chase McNiss took the opportunity

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to show new members sample shirts that we have. These will be put on the website for everyone to see. We still have a bunch left over from Astronomy day last year. The order form is on the website. Contact Chase first if you want to order something he knows what is in inventory. Speaking of Astronomy day, Linda is going to work on a new design for Astronomy Day next year. **Matthew Marulla** reported that Saturn's E ring is composed of Ice and believe the source of the ring is from water particles from the moon Enceladeus. Spitzer shows it looking significantly different in Infrared. Check the website. The entire article can be found at: <http://saturn.jpl.nasa.gov/news/press-release-details.cfm?newsID=639> In another area of interest, some folks at NASA are discussing the

theory that meteor impacts play a role in life on other worlds. The idea is that debris scattered from impacts gets into space and eventually finds a home in another world. So, the focus is to look for bacteria on other planets. So, if we find bacteria on other planets – it is possible that it originated from our own Earth via comet and asteroids impacts. **Evening Program**. Ed Ting, “The Mini Messier Marathon” see above article on [page 5](#)

* Rich DeMidio

Deep Sky Object of the Month

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!

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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

Member Blogs

I was visiting parents and friends in South Florida last week, and hence missed the club's Messier Marathon 😞, but I shipped the TeleVue 85 down South in hope of viewing the Moon occulting the Pleiades on 1 April. I was in West Palm Beach at the time, and fortunately the weather cooperated. The afternoon scattered cloudiness dissipated at sunset into a general light background haze. Otherwise the skies were steady and viewing conditions were as good as they get, given the atrocious light pollution in West Palm Beach. The crescent Moon was showing very well, but as 7 PM approached the background sky was still too bright to see the Pleiades naked eye. However, the cluster was clearly visible in the telescope. At 7:15 or so, we got an

excellent 75x view of the earthshine-lit dark limb of the Moon lumbering toward the bright Pleiad star Maia. It looked like the prow of a supertanker chugging inexorably toward a small lit buoy. Contact occurred seconds before 7:18 PM EST, and suddenly Maia wasn't there anymore. I'd say it was like an electric light being switched off, except it was more abrupt than that. I saw a couple of dimmer Pleiades get occulted, but then I had to pack up and drive off to a 8 PM dinner engagement. After dinner (about 11 PM), I threw an impromptu star party for the dinner party, with Jupiter as the entree. Light pollution was bad and transparency only so-so, but seeing was rock steady, and we got an excellent view of the King of the Planets and his entourage of four moons. This is one of the best views I've had so far of Jupiter in this year's opposition cycle. Excellent detail in the planetary bands at 120x with a 5mm Radian eyepiece. A couple of nights later, on Monday 3 April, we got excellent views in Naples, FL, of a fuller crescent Moon, Saturn, the Beehive, M41, M42, Sigma Orionis (and its nearby Struve companion), Castor, and Gamma Leonis. I was hoping to get a glimpse of Iapetus, which according to CalSky would be close to Titan, but in the Naples light pollution, and with the general pervasive background haze, only Titan was visible of Saturn's moons. The rings and planet surface were very sharp and steady, however. South Florida may have a problem with haze, but the seeing seems to be steadier than is usual in NH. It was nice to observe without 8 layers of clothing, too. 😊

*Paul Winalski

DEADLINE Apr2006 Issue: 5 PM May15

E-mail articles to the Editor.

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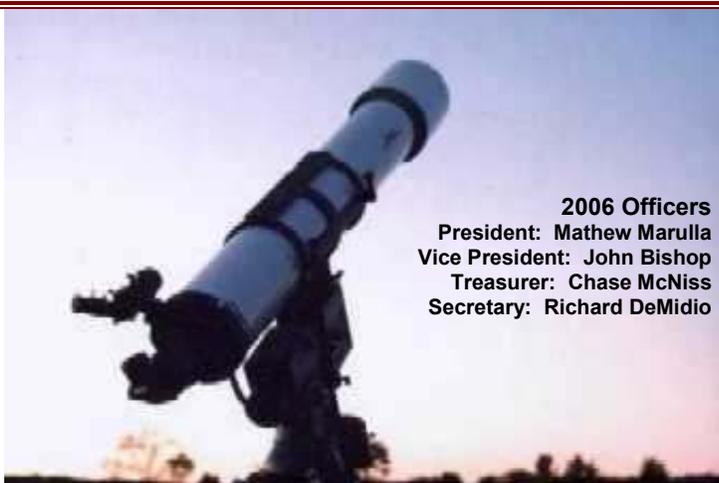
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Vice President: John Bishop
Treasurer: Chase McNiss
Secretary: Richard DeMidio

This month's contributors:

Mathew Marulla, Chase McNiss, Bob Sletten, Lew Gramer,
Paul Winalski, Larry Lopez, Gardner Gerry, Joel Harris,
Herb Bubert, John Buonomo, Tim Printy, Phil Shute

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NHAS Upcoming Events

4/21 Planetarium – History of Nashua

Event	Date	Time	Location
Business Meeting	Apr 21	7:30 pm	Planetarium Concord, NH
Coffee House	Apr 26	Dusk	YFOS
CMP Skywatch	May 5	7PM	Planetarium Concord, NH
Astronomy Day	May 6	Mid Morning	Planetarium Concord, NH (possible sky watch in the evening)
Business Meeting	May 19	7:30 pm	St. Anselms College
Coffee House	May 26	Dusk	YFOS