Observer Staff
Editor & Publisher:
Paul Winalski

The NHAS Observer

Newsletter of the New Hampshire Astronomical Society

Vol. 2007 No. 11 "All the news that fits in print" November 2007

Comet 17P/Holmes and Insurance

President's Message

"Of Comets and Green Lasers"

The astronomy community was amazed on October 24th when Comet 17P/Holmes brightened by some *million* times to be an obvious naked eye object in the constellation Perseus. Many of our members have been imaging this bright comet; you can check out their work in the many threads in our club forums in the Pictures area. The comet is well placed for our northern location, unlike the great comet McNaught earlier this year that disappeared from our skies rapidly but put on the show of a lifetime for our friends in the southern hemisphere. I have even been able to show Comet Holmes to some non-astronomer folks at work with my binoculars in Nashua from our brightly lit parking lot now that it is dark earlier.

Also in October, oddly also on the 24th, there was the report of a green laser flashing across an aircraft above downtown Manchester, NH. I read about this report, hoping an NHAS member was not involved, and promptly forgot about it. Well, not everyone has forgotten, and you may imaging my surprise when I got a call from the local FBI office on the 8th of November asking if I know anything about this incident. Somehow they heard we had a sky watch near that date in Auburn and are investigating the incident. They think it may have been entirely accidental, but still want to get to the bottom of this. I promised to do some checking and as of this writing they have not gotten back to me for my response, but I have confirmed that our sky watch in Auburn was on the 22nd, and not on the evening of the 24th, so we as a club should have nothing to worry about. This does, however, bring up the point about green laser safety and responsibility. If you use one to show others objects in the sky, *please* make sure there are no aircraft in the area before you use it. The beam from a typical 5mW green laser pointer can be distracting to a pilot at up to 12,000 feet, more than 2 miles. Someone who shines a laser at an aircraft may be prosecuted under anti-terrorist laws, and I am sure that is not a pleasant prospect.

Our November meeting is also the opening of nominations for election of next year's officers and the junior board member. Nominations will be open until the December meeting, during which they will be closed and the actual elections will take place.

See you all at St. A's on Friday!

✶ Gardner Gerry
NHAS President 2007

Late-Breaking News – Property Insurance

At the 16 November NHAS Business Meeting, it was moved that we secure property insurance. This item will come to a vote at the December Business Meeting. If you will not attend in person, **PLEASE FILL OUT THE PROXY FORM** that is attached at the end of this Newsletter.

✶ Paul Winalski
NHAS Secretary 2007

Highlights for this Month

Comet 17P/Holmes has been putting on quite a show for us the past few weeks. A full report starts on page 2.

This year's Astro 101 and 201 series of courses has come to a very successful conclusion.

At October's business meeting, Dr. Ronald Mallett gave us a wonderful talk on his research into time travel.

✶ Paul Winalski
NHAS Secretary 2007

Election of 2008 Officers

Nominations for the 2008 club officers (President, Vice President, Secretary, Treasurer) and the new Junior Member of the Board of Directors will be taken at the November and December NHAS business meetings. The election will take place at the December business meeting.

✶ Paul Winalski

Membership and Astro 101

One new member has joined since last newsletter. Please welcome **Daniel Welch** of Pittsfield when you see him at club events.

Membership wants to give a big THANK YOU to all of the members who contributed to the success of the Astro 101 and Astro 201 courses.

This was an effort that allowed experienced members to share knowledge with other members. The Astro 101 courses offer a topic overview from experienced members while the Astro 201 format offers a more focused topic and is normally attended by more experienced members.

Our Member/Presenters offered 9 Astro 101 courses and two Astro 201 courses this year, eight of these were either held at YFOS or had a YFOS component. Most of the Astro courses had significant membership attendance. My

registration count is showing over 25% of the membership taking advantage of multiple courses. Many of this 25% were not active in club events prior to these courses.

A Big Thanks to **Chase McNiss** for Polar Alignment, Lunar Observing, Intro to YFOS, and the Titan Mount courses; **Paul Winalski** for Deep Sky Observing and Navigating the Night Sky; **John Blackwell** for Intro to Photography and Photometry; **John Bishop** for Planetary Observing (I still need to get the Collimation course scheduled); and **Rich DeMidio** for Solar Observing.

In 2008, I'd like to place a new emphasis on Astro 201 Courses, while maintaining the excellent overview courses already developed by our many member-presenters. To that end I am looking for Astro 201 course ideas and volunteers. Please email me with any focused courses that you could present and a suggested timeframe.

December will be without courses. Look for announcements on the 2008 lineup in January.

✶ Alan Shirey

Astro Photons

There has not been a meeting of the AP committee lately, so if there is demand for one (e-mail Gardner at the Astrophotography Chair's address on the "Contacts" page of the website) we will put one on the schedule. The usual suspects and a few new ones continue to show new work in the forums on the club's website, the focus lately naturally being Comet 17P/Holmes. Please go check out the Pictures forum to see what's happening.

✶ Gardner Gerry

YFOS

The porta-potty has been pumped and winterized.

The YFOS main heater is down. The tank is empty and will be refilled. There is a smell of gas coming from the main heater which Larry is investigating. In the meantime, **do NOT refill or re-light the main heater.** Use the secondary heater, which is OK, instead.

✶ Larry Lopez

Public Observing

We had a couple of public sky watches this past month.

Auburn Village School on 22 October: This was held at Preston Field in Auburn, an impressively dark site for somewhere so close to Manchester. A large number of students and their parents attended, many bringing their own telescopes. The students were doing a class project that required identifying several constellations and stars, and observing objects through the telescope. The weather cooperated and we were able to show them Jupiter, various double stars and star clusters, and the Andromeda galaxy.

Cub Scout Pack 405, Derry, NH, 2 November: Again, weather cooperated and we were able to show the scouts many objects, including Comet Holmes. We received this note of appreciation:

To: Marc, Paul, and the Other Members of the NH Astronomical Society:

I would like to take this opportunity to say thank you so much for taking the time out of your schedules to come to Derry and help our organization out. The boys all had a wonderful time looking through the variety of telescopes that you had available for viewing. It was truly an enjoyable event that the boys will remember for a very long time. I heard many wonderful comments from different dens in our pack. One boy went home and talked all night to his mom about the telescopes, the Holmes comet, the constellation Hercules, and the Andromeda galaxy.

It was truly a pleasure to meet such patient and kind people of the NH Astronomical Society. We enjoyed ourselves and think very highly of your organization and would recommend you to anyone who enjoys Astronomy. Thank you again.

—Jennifer Niebla and Cub Scout Pack 405 of Derry, NH

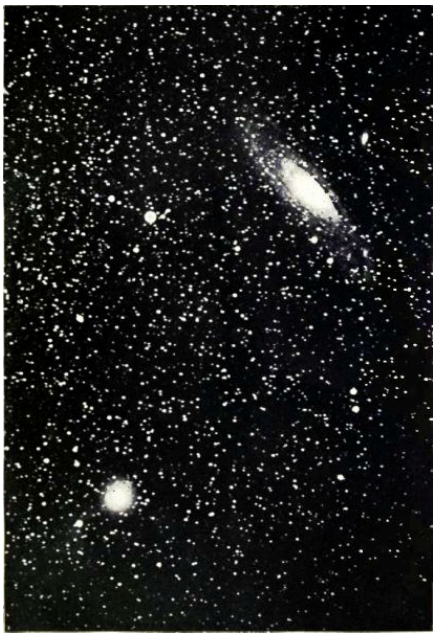
Upcoming sky watches are in Salem on 3 December and Concord on 6 December. As always, check the Event Calendar on the website for details.

✶ Paul Winalski

Comet 17P/Holmes

On 6 November 1892, British amateur astronomer Edwin Holmes was observing the Andromeda Galaxy M31 when he noticed a round patch of light in the vicinity that had not been there before. This was confirmed as a new comet by the Royal Observatory in Greenwich, England. The comet brightened to magnitude 4-5 over the next few days and then gradually faded from visibility over the next several weeks.

The comet was determined to have an elliptical orbit with perihelion on 13 June 1892 and a 6.9 year orbital period. It received the official designation 17P/Holmes. Its return visits in 1899 and 1906 were observed, but the comet was then lost until 16 July 1964, when it was recovered by Elizabeth Roemer at the US Naval Observatory in Flagstaff, Arizona. Orbital calculations by Dr. Brian Marsden of the Minor Planet Center confirmed the rediscovery, and all of the subsequent returns have been well observed.



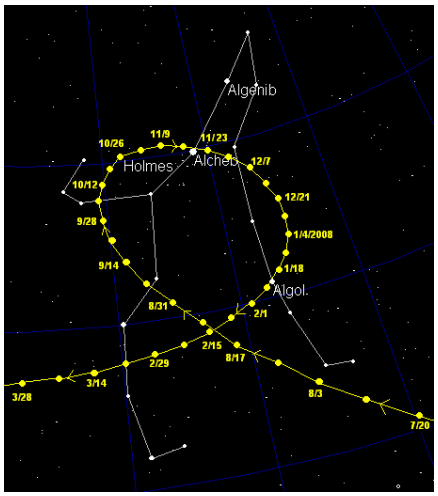
Comet 17P/Holmes and M31 in Andromeda on 10 November 1892 (image by E. E. Barnard)

The 2007 return of 17P/Holmes proceeded uneventfully. On the night of 23 October the comet was past perihelion, past the orbit of Mars, and on its way out, a 17th magnitude object in retrograde motion in Perseus. Suddenly it brightened to magnitude 2.5 in just a few hours–a million-fold

increase! To the naked eye, Perseus had acquired a new 2nd magnitude star.

The comet is currently very near opposition to the Sun as viewed from Earth. Since comet tails point directly away from the Sun, we thus are looking nearly straight down the tail. This is why the comet appears as a bright sphere.

The comet was to the east of 3rd magnitude δ Persei when it first brightened, and is moving toward conjunction with α Persei (Mirfak) on 18 November, when it will pass less than ¼° of arc from that 2nd magnitude star. On its way there, it will pass through the α Persei star cluster.



Comet Holmes trajectory through Perseus during the 2007 pass (diagram by Full Sky Observatory)

From there it continues its retrograde journey until 4 January 2008, when it resumes direct eastward motion. The comet will pass less than ¼° of arc from β Persei (Algol) on 22 January. During February and March it will pass eastward through Perseus.

Since the sudden brightness increase, 17P/Holmes has been a delight to the naked eye, as well as in binoculars and the telescope. It shows a conspicuous disk even to the naked eye that has grown from a few minutes of arc to 30 minutes (the diameter of the full Moon). The comet seems to be dimming as its size increases. It changes size, brightness, and shape from day to day as our line of sight moves away from head-on, and we see more of the comet's tail.

Here is a sampling of the many observations and images from club members. Be sure to check out the Pictures and Member pages in the Forums section of the NHAS website for more images and reports of this unfolding celestial wonder.

✶ Paul Winalski

25 October

Naked eye visible, 6:40pm, just cleared the trees. Fuzzy blob in 15x50 binocs.

Getting the scope ready.

7:15pm, partly cloudy.

It is not as bright as Mirfak (mag 1.81), but seems brighter than Delta Perseus (mag 3.03).

Manchester is bright enough that I cannot see Psi Perseus, mag 4.34, with the naked eye.

With a 7mm eyepiece my scope calculates out at 0.16 TVOF. I estimate it is 1/4 of that in size. Probably bigger in a darker environment.

And first pitch is in a bit more than an hour. What to do????

✶ Paul Cezanne

Just came back in from observing Comet Holmes. I have to tell you, I wasn't expecting much given the almost full moon less than 40º away, but when I hit it in the field of view there was no question I had found it. I observed it with my Zhummel 25x100s first and it was so distinctive, I got the William Optics FLT110 out and put the TeleVue 13mm T6 on. Wow! Rather than try to describe it, since I wasn't prepared to image it, I opened up PhotoShop and tried to get as close as I could to what I saw through the viewfinder. If you haven't gone out to take a look yet, and you're reading this–grab your scope and GO right now.

Through the FLT110, there was a fine, star-like and distinct core with a bulls-eye-type haze all around with a dark ring roughly ⅓ the diameter of the entire fuzz ball about halfway between the core and the outer edge. There was also a noticeable bright wedge from about 8 o'clock to 11 o'clock extending about halfway from the core to the outer edge with the focus at the core.

This comet looks like it's coming right at us dead on. Really unusual.

✶ Tom Cocchiaro

10/25, drawing by Tom Cocchiaro

10/28, Herb Bubert image showing the two background stars that at first we thought might be the comet's nucleus splitting

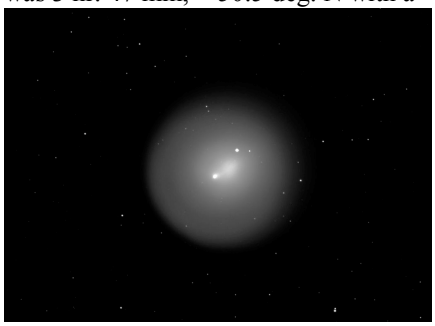
Images by Herb Bubert, 10/27, 10/28, 10/30, showing the comet's dramatic increase in size

30 October

I went out studying the comet with 15x70 Orion binocs off and on. High haze kept forming and dissipating but I got enough study to pin down a location and a size.

Using the Sky Atlas 2000, I found the three stars to the west (left) of the comet. They were distinctive since they were in a row pointing to the comet and were of increasing brightness from left to right. The atlas puts them at mag. 8.5, 7.5, and 6.5. The comet's position

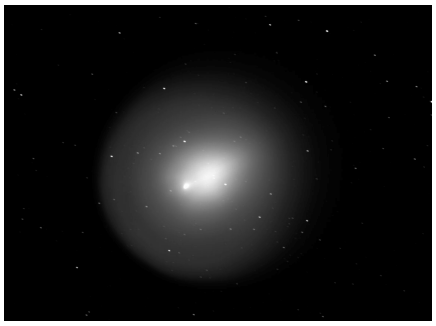
was 3 hr. 47 min, + 50.5 deg. N with a



11/1, image by Dave Weaver. Another background star is evident.

diameter of about 10 arc min. Another string of three stars was to the left of the first three and almost at right angles to them. I used the spacing between them to estimate the comet's diameter. My last observation was at 10:30 pm.

✶ Mike Frascinella



11/6. Note the tail starting to show. Dave Weaver image.

11/11. The halo is distinctly ragged to the west. Rich Schueller image.

11/13. Herb Bubert image. The comet's core is dimming, but the tail is becoming more prominent.

Observing Report: 10 November 2007, YFOS

With all my business travel of late and it being cloudy when I have been home, there was no way that I was going to miss this night. So I packed up the Pronto and headed off to YFOS. My plan was to use the Pronto and Skytools2 for some deep sky objects. I really wanted to leverage the success I have had at home to see just how powerful this little scope was. I also knew that I could get some viewing in with the club dob and other members' scopes.

Upon arrival, **Chase McNiss** and **Joe Derek** were already there and getting set up. The sky was already clear even though the sky clock said it would not be till roughly 6 PM or so. After getting set up, I started to plan my observing session. First on the list was comet Holmes. I had seen it naked eye and with binoculars through a sucker patch at home, so I was really looking forward to seeing it in my scope. I also planned on catching some deep sky objects that I thought might be in reach of the Pronto under dark skies. The Veil Nebula, M81, and M82 fit this bill. Finally, I thought it might be cool to try and image the comet using the camcorder technique for the moon through the club dob as I had done with Obby.

Darkness arrived and I aligned the starbeam with Jupiter, which was just above the horizon. Very soupy but I only cared to get the finder aligned. After I did this, it was dark enough and I immediately saw comet Holmes naked eye. Quickly turning the pronto to it I located it with ease. I had the 27mm Panoptic and saw it with great clarity. I listened to Chase and **Paul Winalski** in the warming hut describing the "Bowhead" and saw it easily. I could not believe how well it looked even under low power. It looked incredible with Joe's dob and the club dob, nearly filling up the entire FOV on each scope. I could even see some stars through the dust and even caught glimpses of the core popping in and out with averted vision. I did try to image it with the camcorder but I could not get an image to appear. I tried both my 27mm Panoptic and Joe's 32mm Plossl. I knew this method worked via my experiences with Obby using these eyepieces, but the comet was just not bright enough. Later on, **Don Ware** let me borrow his custom prime focus adapter that allows you to set aperture priority and let the camera auto-focus. The comet was too dim for auto-focus, but I did get several 30 second exposures in manual mode at 800 ISO. I have not looked at the results yet as of this writing and will follow up later if there is anything worthy to report.

During the course of the evening, I successfully used Skytools2 to help find many objects that normally I would have not dreamed of even attempting. Some of them were Uranus, T Lyrae, W Orionis, M81/M82, and the Veil. Uranus was very exhilarating to find because it required star hopping and use of my map for several jumps. In the end, it appeared as a small disk looking light blue to me. The Veil was an incredible site with the holy hand grenade (31mm Nagler). You could easily see both structures. In my FOV of 5.5 degrees and roughly 15x, the tuning fork was visible on the lower portion and the upper portion directly above. What a comparison and it really made me appreciate once again low power Astronomy. In Obby, I can only get a 1-degree FOV even with the holy hand grenade so the perspective is certainly different. **Gardner Gerry** commented, and I agree, that getting Obby's mirror re-coated was a blessing in disguise because it forced me to use my other scopes. It's funny how things work in that respect.

Dan Smith took the time to show me another object that I never would dream of seeing, which was the California Nebula in Perseus. We used the 31mm Nagler and my H-Beta. Dan positioned the scope and was able to see the Nebula. I was ecstatic when I could also see it. I knew from buying the filter that it was good for the Horsehead, but I had tried this object. I was grateful to Dan for showing it to me and I was able to find it again it later for other club members.

We also had a wonderful turnout for the Astro 201 class and were able to meet and observe with some of our new members whom I have not had a chance to speak with. **Paul Cezzane**, **Rags**, and **Ken Charles** mainly. It was great

sharing information and learning information from them.

✶ Rich DeMidio

NHAS October 2007 Business Meeting

Evening Program

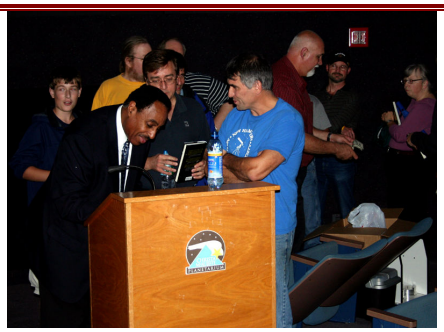
In a departure from the usual sequence of events, our evening's guest speaker was first rather than last. Theoretical physicist Dr. Ronald Mallett made the long, rainy, and traffic-jammed trek from UConn in Storrs, CT to give us a presentation on his research into time travel. The first part of the program was a television documentary of Dr. Mallett and his work. He then amplified on some of the points and answered questions for us.

Einstein's Special Theory of Relativity predicts that the passage of time is relative to the observer. To someone travelling very fast, time will seem to pass more slowly than for a stationary observer. Put another way, the person travelling very fast has traveled into the stationary observer's future.

Dr. Mallett explains frame-dragging to NHAS members.

Einstein's General Theory of Relativity, which models the force of gravity as curved four-dimensional space/time, predicts a yet more astounding phenomenon. Through a process called frame-dragging, a sufficiently strong gravitational field from a rotating object twists space/time in a way that would permit travel into the past. Such fields very likely exist near the giant rotating black holes known to exist at the cores of many galaxies.

Dr. Mallett first became interested in time travel as a child when, devastated by his father's death, he read H. G. Wells's The Time Machine and dreamed of being able to travel into the past to prevent his father's death.



Dr. Mallett signs copies of his book for NHAS members (Gardner Gerry photo).

Today, as a theoretical physicist, he is working to put Einstein's frame-dragging theories to the test. Using high powered lasers, he hopes to create a circular eddy of light that will create a region of frame-dragging sufficient to allow transmission of subatomic particles into the past. It all sounds like science fiction, but it is real, serious cutting-edge theoretical and experimental physics.

After the lecture, Dr. Mallett signed copies of book Time Traveler, his combination popular exposition of his theory and personal memoir.

It was a most fascinating evening, and we all thank Dr. Mallett for traveling in space/time three hours each way to talk to us.

ATM

Chase McNiss reports that the club's 8" Newtonian scope has been reconstructed on a Dobsonian mount. **Steve Forbes** may fix the old mount. There is another 8" scope available for parts.

YFOS

Larry Lopez put up stakes for the winter observing season.

Membership

Alan Shirey reports that dues time is here again. Two new members: **Bill Steele** from Manchester and **Daniel Welch** from Pittsfield. Upcoming courses: Astro 101: Solar Observing (**Rich DeMidio**); Deep Sky Observing (**Paul Winalski**) . Astro 201: Photometry (**John Blackwell**); Titan Mount Orientation (**Chase McNiss**, **Don Ware, Gardner Gerry**).

Public Observing

Marc Stowbridge lamented the current cloudy skies. Upcoming events are sky watches at Auburn Village School on 22 October and for a Derry cub scout pack on 1 November.

There was a discussion of observing etiquette problems at past public sky watches and how to deal with them.

Web Administration

No report.

Photography

Gardner Gerry reported that no meeting has been held recently and none are planned.

Radio Astronomy

Bob Sletten reports that we intend to have another go at listening to the upcoming Leonid meteor shower in November.

Books of the Month

Ken Charles brought The Universe, a coffee table book with great pictures of astronomical objects.

Scope of the Month

A Meade My Sky.

Miscellaneous Business

Rivers Camera is cutting back on their astronomy business. We have obtained a Meade dob base from Rivers.

✶ Paul Winalski

The Bottom Line

Starting Balance:	**$4742.35**
Deposits/Credits:	1293.17
(Membership, Donations, Calendars, Checking acct. interest)	
Accounts/Paid:	149.63
(Kalmbach Pub., Handy House)	
Net Account Balance:	**$5885.89**

Petty cash drawer: $100.00
Cash Balance: **$5985.89**

2008 Membership: 71

- ✶ Chase McNiss

18 November 2007:

STOP PRESS SPECIAL — Vote on Securing Property Insurance

At the November NHAS business meeting on 16 November, this measure was moved by Don Ware and seconded:

> **The Corporation authorizes the Board of Directors to purchase real property insurance for the Corporation pursuant to section III.A.1.e of the Corporation by-laws, on an ongoing basis.**

"Corporation" here means NHAS (see the Club Constitution and By-laws at http://www.nhastro.com/const.php).

Passage of this measure requires a simple majority of a quorum of the membership voting in favor. 39 members were present at the November Business meeting and recorded their vote. At the time we had 91 total members. A quorum was thus 46 members. Passage required a majority of the quorum, or 24 votes in favor.

Since we did not achieve a quorum at the meeting, the issue is still undecided and goes to a proxy vote, as called for in Article IX of our Constitution.

Another vote on this measure will be taken at the next Business Meeting, scheduled for 21 December at Christa McAuliffe Planetarium in Concord, NH. You can vote on this measure three ways:

- **IN PERSON:** Show up for the meeting and cast your vote.
- **BY PROXY:** Fill in the form at the back of this Newsletter indicating your vote, sign it, and either give it to a member who will attend the meeting, or mail it to:

  New Hampshire Astronomical Society
  P.O. Box 5823
  Manchester, NH 03108-5823
  Attention: Secretary (Proxy Vote)

- **BY ELECTRONIC PROXY:** The Secretary is sending out an email to all members with a proxy form. Fill out the form and send it to the Secretary by email.

If you already voted on this measure at the November Business Meeting, your vote is already registered. You may if you wish change it at the December meeting, or before then by sending in a proxy form with your new vote.

Background Information

Section III.A.1.e of the NHAS By-laws says, concerning duties of the Board of Directors:

> "[The Board of Directors shall:] seek an insurance carrier as appropriate to protect the real property of the corporation. Insurance may be secured and paid for from Society funds only after an approval stemming from a majority vote of a quorum of the membership;"

At the November 16 2007 Business Meeting, Don Ware, Chairman of the NHAS Board of Directors, reported that the Board has decided to seek real property insurance, and he made a motion that the membership approve the funding in accordance with the By-laws.

The Board contacted three insurance agents. They all said that our current company, Peerless, was the best liability insurance company. Our cheapest alternative is to add a rider to our current policy with Peerless for property insurance.

Our most significant real asset is YFOS. The observatory building has been appraised at $20,000 and the warming hut at $10,000. The policy would cover up to $60,000 total replacement value. The telescopes and other significant equipment owned by NHAS would also be covered—we would get an inland marine rider that would cover up to $25,000 of assets when off-premises or in transit.

We currently pay $560.04 for liability insurance. Adding property insurance would bring our annual premium to $1157.

The balance in the NHAS treasury currently stands at $5885.89. We thus have more than enough funds to pay for the first year's premium without any additional levy on the membership, and without putting our other ongoing expenses at risk.

Some of the points brought up in the discussion at the 16 November meeting:

- There are several ways we could pay for the additional insurance expense. A dues increase is one option. Or we could set up a fund for donations specifically to cover insurance. The Board and Officers think that it is important enough to get coverage that we should do so now using current club funds. How to pay for future years' premiums can be decided by the 2008 officer corps.
- We recently had a case where a significant club asset (the Titan mount) was taken off-site and shipped out for repair. The property insurance would have covered the Titan if it had been stolen while at Don Ware's house, or if it had been lost in transit to or back from Losmandy.
- The Vermont Astronomical Society recently had a robbery at their dark sky site that totally cleaned them out.

Proxy For Vote on Securing Real Property Insurance

It is intended that this measure will be voted on at the 21 December NHAS Business Meeting:

> **The Corporation authorizes the Board of Directors to purchase real property insurance for the Corporation pursuant to section III.A.1.e of the Corporation by-laws, on an ongoing basis.**

I hereby authorize the holder of this Proxy to cast my vote on this measure as follows:

[ ] YES. I wish to vote FOR the measure authorizing the purchase of real property insurance.

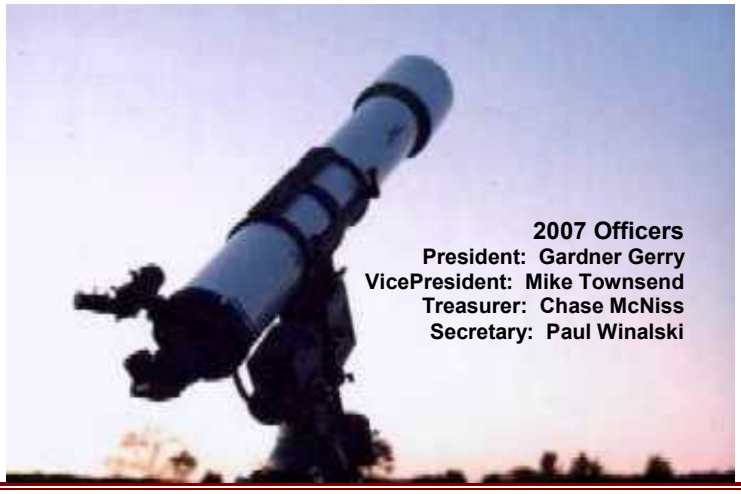
[ ] NO. I wish to vote AGAINST the measure authorizing the purchase of real property insurance.

[ ] ABSTAIN. I choose to vote neither for nor against the measure authorizing the purchase of real property insurance.

Name (please print): _____

Signature: _____

Date: _____



2007 Officers
President: Gardner Gerry
VicePresident: Mike Townsend
Treasurer: Chase McNiss
Secretary: Paul Winalski

DEADLINE December 2007 Issue: 5 PM December 13
E-mail articles to the Editor.
CHANGE OF ADDRESS – Notify the Treasurer of changes to postal or e-mail address.

How to Join N.H.A.S.
Write to us:
NHAS
P.O. Box 5823
Manchester, NH 03108-5823
Attn: Treasurer

Send E-mail to:
info@nhastro.com

Use our web site:
http://www.nhastro.com/

This month's contributors:
Gardner Gerry, Alan Shirey, Larry Lopez, Paul Cezanne, Tom Cocciaro, Herb Bubert, Dave Weaver, Mike Frascinella, Rich Schueller, Rich DeMidio, Chase McNiss, Paul Winalski

New Hampshire Astronomical Society
P.O. Box 5823
Manchester, NH 03108-5823

NHAS Upcoming Events

Event	Date	Time	Location
NHAS Business Meeting	Nov 16	7:30 PM	St. Anselm College
Operation Night Light Sky Watch	Dec 3	7:00 PM	Pleasant Street Methodist Church, Salem, NH
Broken Ground Middle School Sky Watch	Dec 6	7:00 PM	White Farm, Clinton St., Concord NH
CMP Public Sky Watch	Dec 7	7:00 PM	Christa McAuliffe Planetarium
Coffee House Night	Dec 14	5:00 PM	YFOS
NHAS Business Meeting	Dec 21	7:30 PM	Christa McAuliffe Planetarium