



# Mercury Transit

## President's Message

To paraphrase the immortal words of Richard Nixon, "You won't have me to kick around anymore!" :) By this, I mean that thanks to a two-term limit, I will no longer be your club president come January 1<sup>st</sup>. What does this mean to you? It means that it's time to put your own hat in the ring! Nominations for the 2007 club officers start at this month's meeting at St. Anselm College. Everyone should try to be there!

On the astronomy front, it has been a pretty busy, if cloudy, month. We had the transit of Mercury last week (even if all of us in New England were forced to watch it online), a new big storm brewing on Saturn, and the Leonid meteor shower on the Saturday night after the meeting (forecast is "mostly cloudy", but we still have hope).

Finally, our evening presentation this month will be on "The Weak Anthropic Principle of Cosmology". This subject is somewhat similar to the talk that we had originally scheduled for our October meeting, but this one will be given by our own Vice President, John Bishop.

See you at the meeting!

\* Matthew Marulla  
NHAS President 2006

## Highlights for this Month

Comet Swan has been the focal point for the last several weeks so I am showcasing the hard work of many club members on page 2. The Mercury Transit was a bust locally, but other parts of the world got to see it. Read about it on page 6. An interesting

experiment is also being planned for the upcoming Leonid's meteor shower which can be read on page 3

\* Rich DeMidio  
NHAS Secretary 2006

## Officer Elections

The election process starts this month at the November business meeting (Friday, the 17<sup>th</sup>). Our current president and vice president retire due to term limits. One board member also retires by rotation. Nominations can also be made at the December meeting just prior to the vote. Please be sure to participate in these important decisions.

\* Rich DeMidio  
NHAS Secretary 2006

## Public Observing

We have had two very successful sky watches recently: The CMP crowd was attentive and a few folks brought their own scopes to learn how to use them. Many club members left their spots to come over and help the newcomers. A fresh wave of observers came out after the CMP lecture was finished, keeping us star hopping till late. As usual, we snagged the interest of some Tech students, too.

The Auburn Village School Sky Watch was frenetic fun! **Herb, Gardner, Brian, Matt, Mike, Bob, Joe, & I** set up scopes in the shadow of a modular classroom, avoiding the bright lights. About 50 7<sup>th</sup> graders and many of their parents, grandparents and siblings came to fill in answers on their science handouts. They were enthusiastic, energetic and many "Wow!"s were heard when they saw galaxies, star clusters and especially, green lasers. We have another school event on Nov 29<sup>th</sup>, at Londonderry Middle School,

On the web at <http://www.nhastro.com/>

rain date Nov 30<sup>th</sup>. We expect about 50 to 60 7<sup>th</sup> graders (as astronomy is now in the 7<sup>th</sup> grade curriculum) and their families. This sky watch begins a 6:00. We also have some pending requests for two scout groups: a Cub Scout den that needs only one or two of us, and a Girl Scout function of indeterminate size. Please check the web site for the latest info on these and other December outings. We have had a lot of interest in the handout material from Night Sky, and I will see about obtaining some more. We have also handed out the NHAS flyers and cards. It will be interesting to see if they generate new members of event requests. Please feel free to send me any material you think should be used for cards or handouts. As always, thank you all for your continued support. Finally, the Girl Scouts of Spar and Spindle Council, in Northeastern MA., are running a Sky Search program that has filled to maximum capacity on Friday, December 8th, 2007. They are currently looking for help with the telescope portion of the program at their camp in Rowley, MA. About 75 girls will attend. Other astronomical activities will be going on, with Council Staff leading them. I am still getting the details figured out, so please keep an eye for emails about it. This would be a particularly good time for the females amongst us to elbow the guys out of the way. The requirements for the program are listed at:

<http://www.astronomy.org/programs/girlscouts.html>

\* Marc Stowbridge

## Comet Swan

*Editor's Note: Over the past month, NHAS members have focused a lot of time in observing and photographing this comet. This section will showcase their observations and results*

I just got back from YFOS. Clouded out but on my way home the sky cleared. I stopped before getting on I-89 and found a boat ramp. I set up my portable tracking platform and managed to get a few shots of the comet as the clouds passed over it.



*Photo by Tim Printy*

The comet is magnitude +4 to +4.5 and the ion tail was 4 degrees long in my binoculars. This image really could have been better if the sky conditions were not so bad. The passing clouds are what give the mottled look to the image. M13 can be seen at the top.

\* Tim Printy

Set up in an apple orchard in Chester and imaged the comet on Monday night.



*Photo by Herb Bubert*

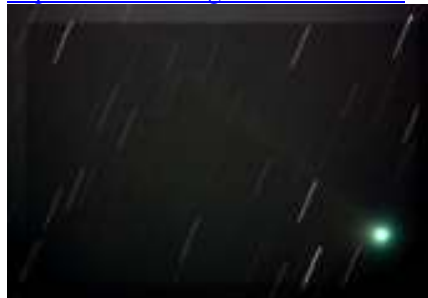
The moon was out and the sky in Chester is nothing like YFOS but it's only a 10-minute ride from my house in Derry

\* Herb Bubert

*Editor's Note: NHAS member **John Buonomo** has spent a lot of time producing animations which may be viewed on his website. They are very stunning. Here is an excerpt from his blog describing the work.*

Seeing was not that great but I think that this is the best animation so far to

date. I have posted 4 sizes on my site <http://www.astronight.com/swan.htm>



*Photo by John Buonomo*

Hope everyone has a chance to catch it while it is still there. It is noticeably dimmer and the tail is just barely visible. This one looks somewhat different. I rotated the view since my camera never displays the correct orientation... I did not color correct the twilight so you can see a correct look in sky color Image Details are as follows:

55 total frames  
5:18pm - 7:26pm est  
Twilight  
15x60 seconds  
10x90 seconds  
Dark  
30x180 seconds

320x480  
<http://www.astronight.com/latest/11-02-06/CometSwan-11-02-06-320x240.htm>  
640x480  
<http://www.astronight.com/latest/11-02-06/CometSwan-11-02-06-640x480.htm>  
800x600  
<http://www.astronight.com/latest/11-02-06/CometSwan-11-02-06-800x600.htm>  
1024x768  
<http://www.astronight.com/latest/11-02-06/CometSwan-11-02-06-1024x768.htm>

\* John Buonomo

At the November CMP sky-watch, I was able to finally see the comet through Obby. Although the moon was nearly full and causing a lot of light pollution, I was able to quickly find the comet utilizing the map **Paul Winalski** provided. The comet core was very bright and I was able to detect the dust of the tail. Some of the audience including myself commented that saw a slight green tint in the core. I kept

Obby trained on the comet for as long as possible so everyone could get a good look. I was very pleased with the results.

\* Rich DeMidio

I took the TeleVue 85mm refractor out when I got home tonight to view Comet SWAN right near Epsilon Herculis (got the constellation right this time 😊). Despite a good bit of moonlit background haze, and the Merrimack light pollution, the comet was showing very well. Even at 19X magnification, it showed a distinct bright, spherical core and surrounding hazy coma--considerably different from last week at the Reed's Ferry sky watch, when with the same eyepiece and scope it looked much smaller and less distinct, and was a dead ringer for M13. It made quite a contrast compared to the pinpoint star image of Epsilon Herculis. With a 11mm Plossl (54X) the contrast between the halo and the core was more distinct. One long (over 1 minute of arc) tail was clearly visible, and there were hints of a second tail at about a 45 degree angle to the first. I was glad to get this third (and perhaps last, given its trajectory towards the evening twilight sky, and the upcoming weather conditions) view of a fine telescopic comet. It's not Hyakutake or Hale-Bopp, but it's giving Maccholz and NEAT a run for their money. By all means do observe this if you get the chance. It's in a hyperbolic orbit and leaving the Solar System for good, so neither our descendants nor we will ever see it again, once it's gone.

\* Paul Winalski

## Astro Photons



*Gardner Gerry – Photo by Chase McNiss*

As mentioned at the last business meeting, **John Blackwell** has generously offered to hold an advanced CCD astrophotography class at

Grainger Observatory at Phillips Exeter Academy. The date will be Friday, December 1st at 7:00pm. This promises to be an exiting event for imagers. The following is a summary John sent to me via email:

*"Cost: Free.*

*Title: Advanced CCD astrophotography*

*Topics:*

*CCDs, their internal workings and how to get the most from it.*

*Purchasing CCDs and scopes that play well together.*

*At the telescope... using these things. Focus, cooling, power, etc.*

*Inside: Image processing. Darks, flats, bias frames. Summing vs. Averaging. Color. Stretching, sharpening and more. Tricks and tips.*

*I assume that those coming would have had some film experience and some CCD experience before. The image processing portion is certainly accessible and useful to anyone who has digital images to work with, but will lean towards those doing CCD work.*

*If anyone is further interested: we can touch upon science: photometry and astrometry in particular."*

As usual, our regular contributors continue to post wonderful images in the NHAS "Pictures" forum. Check out John Buonomo's Comet Swan animations, Chase's lunar work, images from new members Paul Howard and Rich Schueller and many others.

\* Gardner Gerry

Having the day off really helps motivate you to get out and image even though the forecast is for poor seeing

and transparency.



*Photo by Chase McNiss*

Got out for an hour between 2:00 and 3:00 AM EST. The wind prevented me from getting any avi sequences longer than 35 seconds. The image posted (Aristoteles and Eudoxus) is taken with a Nexstar 8iSE @f16 in Alt-AZ mode w/ IR-pass filter, 10fps, 100/350 frames stacked w/ Registax V3, 5pt MAP processing and finished in PSCS.

\* Chase McNiss

After 18 months of playing around, experimenting, and tuning I finally got to gather some photons and produce my first image. Very excited when that color popped out on the combine. The details of this picture are as follows:

M27 - LRGB - 120:120:150:150 - all 30m subs. ST-10XME, 14" LX200R @ f/9.25, Astrodon filters, Paramount ME on a pier. Processed in CCDStack, AIP4Win, and Photoshop CS2



*Photo by Paul Howard*

I'm not happy with some of the halos and bloom removal was interesting (to say the least)

\* Paul Howard

I also decided to revisit M31 last night at YFOS.

\* Herb Bubert



*Photo by Herb Bubert*

Two nice groups though they are diminishing now.



*Photo by John Blackwell*

Taken with 500 frames with registax and FS125 at 1000mm with ToUCam II.

\* John Blackwell

## Radio Astronomy



*Antenna by Bob Sletten*

The radio astronomy group is going to make an attempt to receive a radio signal from the Leonid meteors as they enter the atmosphere. This is an unproven technique and if we have any

success it will be intriguing. If conditions are clear Saturday night (Nov 18th) we will try to associate visual sighting with low frequency radio signals from individual meteors. If it works this technique may be able to obtain split second warnings of an incoming meteors! But mostly this will be for fun to see if we can pull off a science project that involves video, radio, audio, recordings and antennas. The event will be at YFOS. There is a predicted peak between 11:00 and midnight. It may be necessary to set up some of the equipment in the daylight. See the forums section of the web site for further information. If the weather is poor then we will postpone until another shower or possibly try for random meteors. All interested members are welcome to attend.

\* Bob Sletten

*Editor's Note: I am including a diagram and a few excerpts from the forums thread. There is much more detail in the entire documented in the forums portion of our website.*

I was thinking that we could record WWV on one track, audio on another and receiver output on a third. That will work, but none of these recorders have 4-track output -- they are all designed to mix-down into stereo.

So... I think the next best alternative might be a PC with a pair of sound cards. Can record 4 independent channels and everything will already be digital for later analysis. Of course, a PC could also time-stamp the recording, but there would be no way to sync that with the video. So we record WWV on one PC channel, and we also need it on the video's audio track.

I have several PCs I could use, and lots of sound cards, so I will get one of those up and running and get an OS loaded. Need to make sure I can record to both at once.

Then I'll need to sort out all the cables and connectors. Will get back to you on that one - once I figure out what I have and what I need, I'll ask what connectors other people's equipment takes.

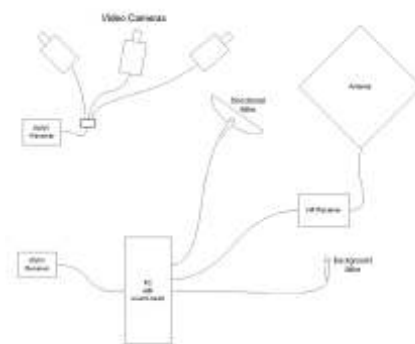


Diagram by Matthew Marulla

\* Matthew Marulla

The schematic you drew is perfect. Nicely done. Indeed the 12kHz antenna shown is nearly identical to what I am designing and building. The diamond will be 8 feet on a side. It is a loop antenna and I am determining how many turns to put on. The computer audio is a nice, high tech way of doing it. It should work well. The back up would be to put the audio on camera as you suggest. Maybe we should keep the computer far away from the 12 kHz antenna.

We all agree that there will be an audio connector challenge, lots of wires. We don't have a W W V receiver problem. There seems to be plenty. I have a dipole more or less ready to go that we can throw into the trees behind the warming room. Actually, we may only need a whip antenna to get it reliably, depending on conditions. We need someone to build up the directive microphone system. There is a good bit of mechanical assembly. Getting it right might be a trick. I suppose the simple answer is to point the microphone itself at the meteor and see what we get. Background subtraction may be less effective then.

\* Bob Sletten

## Membership

We have had one new member since last month's meeting, **James McIntosh** of Tyngsboro MA. We have had many new members over the summer months. It is still my intention, when clear skies permit, to host a new member roundtable at a YFOS coffeehouse. This would essentially be a forum to ask questions and get direction from surrounding members. The proposed new members discussion scheduled for

October's coffeehouse was clouded out. Perhaps we'll have success with our post Thanksgiving coffeehouse, on the 24th. Clear Sky permitting, I hope to see you there.

October is the time to renew memberships, as I know that many of you have. For \$15 you remain a member of one of New England's premier astronomy organizations, with access to people knowledgeable or expert in many areas of astronomy as well as discounts on equipment and magazines like Sky and Tel and Astronomy. When you factor in your access to club facilities at YFOS, it is an unbelievable (except that we are not for profit and entirely volunteer, more on that next time) value. If you have not yet renewed, please send your \$15 dues to

The New Hampshire Astronomical Society  
P.O. Box 5823  
Manchester, NH 03108-5823  
Attention: Treasurer

\* Alan Shirey

## Hubble Update

Several NHAS members reported via email that NASA has approved funding a mission to repair Hubble. There are several URLs that document the details. Here are a few that I found and that were provided by club members.

<http://news.nationalgeographic.com/news/2006/10/061031-hubble.html>

<http://www.nature.com/news/2006/061030/full/061030-5.html>

[http://www.space.com/news/061031\\_hubble\\_wrap.html](http://www.space.com/news/061031_hubble_wrap.html)

\* Rich DeMidio

## The Bottom Line

Starting Balance	\$2939.22 (checking acct)
Deposits/Credits	\$1802.38 (Donation, Membership, Moose Lodge, Calendar Deposits, Acct Int.)
A/P	\$194.25 (Astronomy Calendars)
Net Acct Balance	\$4548.28
Cash Balance	+ Petty cash drawer (195.25) \$4740.53
Membership	140 (2006) 84 (2007)
Donations	\$20.00 Alan Shirey

Please note that NHAS membership is due October 1st. The cost is \$15.00 payable by cash or check. Our mail address is:

NHAS  
Attn: Treasurer  
P.O. Box 5823  
Manchester, NH 03108-5823  
\* Chase McNiss

## Looking Back at Last Month

**Opening** **Matthew Marulla** opened the meeting introducing the agenda. He brought up the topic of the Proxy vote that we have had going on for the last year. The proposal is to allow proxy votes in electronic form. A motion was made and approved to vote on this with a quorum of members present. The motion was seconded and voted on with a unanimous decision.

**Scope of the Month** None

**Public Observing.** **Marc Stowbridge** reported that many sky watches are coming up (check the web and forums). 10/25 at Reeds Ferry School is the biggie; expected near 400 peeps. 10/28 AMT group near Mark for a sky watch. Mark reported and briefed us on the details of many upcoming events – all is on the web. He did report on a small sky watch on 12/4 that is not on the

schedule. Mark brought a box containing copies of the Night Sky magazine to be handed out by members at star watches, and includes nice astronomy startup documentation. If anyone wishes to propose a sky watch, please direct people to the website and mark's contact information in the officer's area. Mark asked for help to review some materials on star party etiquette. He also showed the club the proposed brochure to hand out at parties. Currently, he has been sending these attachments to sponsors who want us to do a star party. He is asking us to review and propose changes if deemed appropriate. Also reminded folks to request someone to take point and formulate a status report. Mark also briefed on an idea that another club did regarding sky watches based on geographically dispersed teams and propose the idea for us to think about. We should be able to leverage this via the current number of regulars that tend to show up at the sky watches

**Book of the Month,** None

**Committees.** **Photo Club Gardner Gerry** reported that last Saturday at YFOS was a great session with several folks taking images and posting on the web site. **John Blackwell** has also volunteered to open his observatory on Friday nights for advanced Astrophotography. There will be a limit of 15 members in order to make it productive. The focus will be on CCDs internal working, purchasing them, using them at the scope. Please contact Gardner if you are interested. **Web:** **Matthew Marulla** reported that he will work on sky maps now that he is back. There is still some material on the old web site archived that needs to be migrated to the new site. Matt is figuring that he can do that once he is no longer president.

**ATMs:** **Larry Lopez** reported about a donation by **Larry LaForge** from Stellafane. Formally thanked Larry for his donation and we are going to put the materials at YFOS.

**YFOS** **Larry Lopez** reported that the Porta potty needs to be pumped. Mosquito Magnet is put away and broke again during the season. Matt is going to contact the manufacturer for a new one because there are obvious

problems that their fix did not address. Some discussion about why the device kept shutting down. Larry has a lengthy discussion about this on his blog for technical details on the cycle on why it is going dead. Small heater at YFOS is working fine. Large heater has not been started yet. Site is in good shape – there will be sand when winter comes. Plow person needs to be contacted. Potential issue with Mount in the observatory. Larry to contact Don Ware.

**Membership:** **Alan Shirey** reported that six new members joined since the last meeting. Next coffee house will have roundtable at 7pm. General questions and topics encouraged with Allan aligning them with proper club members.

**Radio Astronomy:** **Bob Sletten** reported on recent NSL article regarding about listening to meteors. He would like to setup an experiment for the upcoming Leonids meteor shower. Scientists believe EMR is emitted while in the atmosphere and claim that they can hear it before they see it. Some people have reported a sizzling sound before seeing it – interesting since it would take a long time for the audible sound to reach. However, the belief is that Electromagnetic Radiation can be detected and translated into sound. Bob explained the details about how sound might be detected. He would like to try and detect this radiation at YFOS during this shower. This is new science so if we actually detect something, it can be reported. In theory, if this theory does work, an instrument could be built to detect and derive the direction of where the meteor would be coming from. Kinda like an early warning meteor detection system (see NSL and forum).

**Miscellaneous.** Matthew Marulla drove a discussion regarding the upcoming Mercury Transit. We will see the beginning and egress. YFOS and CMP are the ideas. Will need a clear western horizon to view. Kanagangous is possibility and finally, Pack Monadnack but openings might be narrower for view. The audience decided that CMP would be the official

location. Dave McDonald would scout out and report back on the best location to setup. Matt also reported that the NH Park Service is now locking Pack Monadnock at night now. Matt has received permission and a procedure for us to get access to the place. Matt will let the officers know the procedure.

**Matthew Marulla** also showed some pictures from Victoria Crater from Mars. JPL website an high res image of 20 mb. The MRO orbiter took the picture and if one zooms in, it will show where Opportunity is currently sitting. I found a nice URL that has the picture

[http://en.wikipedia.org/wiki/Victoria\\_crater](http://en.wikipedia.org/wiki/Victoria_crater)



Photo provided by NASA

Elections: The 2007 nominations for officers will be in November, and again in December meeting followed by the actual vote. The office of President, Vice President, Board, Secretary, and Treasurer all up for nominations. **Don Ware** will become chairman and one new board member will be elected as the Jr. Board Member. There was discussion about the VP position in that whomever gets elected, they should view is as the president in training with a natural progression occurring. There was also discussion about officers migrating to the board. Finally, the main point emphasized is that you do not need to know a lot about Astronomy to serve as an officer.

Evening Program. **Matthew Marulla** treated the membership to a wonderful slide show depicting his summer at Bryce Canyon. We were able to see the

complete trip with various stopovers. The pictures were breath taking. Thank you Matt for sharing this with everyone!

\* Rich DeMidio

## Mercury Transit

Unfortunately, the transit was clouded out in New England. CMP offered a show inside the dome and NHAS was

invited to attend. I was also able to find a wealth of articles on the web relating to the transit. One web site <http://www.xs4all.nl/~carlkop/mercurius/transit.html> contains photos taken by both professional and amateur Astronomers. Many of you also know that NHAS

president **Matthew Marulla** is affiliated with Slooh and he posted the following in the pictures forum.



Photo provided by Matthew Marulla via [www.slooh.com](http://www.slooh.com)

We will have to wait another ten years in New England before another transit visible to us occurs.

\* Rich DeMidio

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E-mail articles to the Editor.

**CHANGE OF ADDRESS** – Notify the Treasurer of changes to postal or e-mail address.

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P.O. Box 5823  
Manchester, NH 03108-5823  
Attn: Treasurer

**Send E-mail to:**

[info@nhastro.com](mailto:info@nhastro.com)

**Use our web site:**

<http://www.nhastro.com/>



**2006 Officers**

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

**This month's contributors:**

Matthew Marulla, Chase McNiss, Bob Sletten, Gardner Gerry, Allan Shirey, Gardner Gerry, Bob Sletten, Rich DeMidio, Paul Winalski, Herb Bubert, John Buonomo, Paul Howard, John Blackwell

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



**November 17<sup>th</sup> - TBA**

<b>Event</b>	<b>Date</b>	<b>Time</b>	<b>Location</b>
Business Meeting	Nov 17	7:30 pm	St. Anselms College
Coffee House	Nov 24	Dusk	YFOS
CMP Skywatch	Dec 1	Dusk	CMP
Business Meeting	Dec15	7:30 pm	CMP
Coffee House	Dec22	Dusk	YFOS