

## International Year of Astronomy Begins

### President's Message

It's hard to believe two years have passed since I was elected to head this wonderful organization. I've met many new folks, and answered many e-mails.

I am proud to be part of the new Educational Outreach Committee that got its start last year. Most of all I'm proud of all the club members who show up at our sky watches when the call goes out. It is their eagerness to share with others that drives this club and makes this a great organization to be a part of. Thank you for the chance to part of the leadership of such a great club!

★ Gardner Gerry

### Highlights for this Month

Election of the 2009 club officers and a director will take place at the January 2009 Business Meeting.

Is there an area of Astronomy, either elementary or esoteric, that you wish you knew more about? We are fortunate to have an extensive compilation of presentations on all sorts of topics ranging from the elementary how-to's of observing to the esoteric, and a cadre of knowledgeable members capable of presenting them. Let our membership chairman know which presentations you'd like to attend in the upcoming year.

**David Gilmore** recounts first light with his new "yard cannon" dob.

**Rich DeMidio** discusses his recovery from aperture fever, and the use of different types of scopes under different observing conditions.

2009 has been declared by the United Nations as the International Year of Astronomy. This issue of the *Observer* concludes with *So It Begins*, an inspirational retrospective of the history of Astronomy.

★ Paul Winalski  
NHAS Secretary 2008

### Election of 2009 NHAS Officers

These nominations for 2009 club officers were made and seconded at the October and November Business Meetings:

President: **Rich DeMidio**  
Vice President: **Mike Townsend**  
Treasurer: **Ken Charles**  
Secretary: **Paul Winalski**  
Director: **John Rose**

The election was supposed to take place at the December 2008 Business Meeting, but the meeting was cancelled due to bad weather. Instead, the election will take place at the January 2009 Business Meeting. The floor will be open for further nominations and then the vote will take place.

★ Paul Winalski

### Membership and Astro 101/201

We have four new members since the last newsletter:

**Carl Walker**, Wilton NH  
**Rick Amidon**, Manchester, NH  
**Daniel Griffin**, Epping, NH  
**Warner Reed**, Atkinson, NH

Please welcome these new members when you see them at Sky Watches or Club Meetings.

I am looking for member opinion on the Astro 101/201 Member to Member education series. Does the membership want courses scheduled? If so, which of the many offerings would hold the most interest in 2009?

All offerings are posted on the Resource Page of the NHAS Website.

And finally, I'd like to thank all of the member presenters for Astro 101 and 201 who gave their time to both host the various presentations and develop the course material.

★ Alan Shirey

### Astro Photons

We have not met recently face to face but there is a virtual meeting in the works that will deal with a very specific type of image processing using H-alpha camera data. Despite the cold and wind there are some new images posted in the forums so please go there and check their work out.

★ Gardner Gerry

### Educational Outreach

Meeting date: 18 December.

**Matt Amar**, **Matthew Ota**, and **Chase McNiss** attended.

The proposed NHAS flyer was the main topic of the meeting and we found a number of changes to make, including fixing the spelling errors. Most importantly we are going to put the flyer on hold until the website can mirror the key points we want to list in the flyer. Something about the cart before the horse....

We also thought it a good idea to take the membership application completely off of the flyer and recommend that people log onto the website to fill out a membership form there or to attend a meeting. The small space provided creates legibility issues for the treasurer as well as filing issues. A form that can be filled out on line and printed with typed text will be a great help over the handwritten form.

★ Chase McNiss

The next Educational Outreach Committee meeting is scheduled for 30 January. Hope to get rolling again with website, IYA2009, etc.

★ Matt Amar

### Random Acts of Observing: Yard Cannon First Light

For xmas **Steve Forbes** got me a newt. Surprised the heck out of me, that's for sure!! It's a 13.1" Odyssey on a Dobsonian mount, like all larger newts are, f/4.5, with a 1.25" focuser. **Paul Cezanne** found it on Craig's List and pointed it out to me, but I couldn't afford it. The 25<sup>th</sup> it manifested on my sidewalk! Thanks Steve!!!

30 December it was clear, but moderate transparency, Steve wanted to try out the wedge he made for the minitower, and I wanted to play with the newt, particularly with someone experienced around for that first time.

I've pointed at things with lots of "yard cannon", but never set one up or collimated it. I got some tires and axle rod to build a "wheelbarrow" style carrier for it, but last night I simply used the two-wheel dolly and it worked fine, as long as one was careful on the mostly melted snow. I hauled it out, but since it was well past dark I wasn't sure how to collimate it. Steve pointed it at a light, peered in, and pronounced it good to go. I was quite surprised, thinking that looking sideways at a newt would take it out of collimation, but Steve says the old Odyssey line is pretty

good about staying in alignment short of dropping the thing. Sweet!!

Orion was prominent, and it's no secret that the Great Orion Nebula is one of my most favorite objects, so I started there. WOW. The fine shading in the nebulae was breathtaking! Since Steve was here I had a more and better quality selection of EPs at hand, so I started with a 40mm Nagler of his for a little more field of view. After a bit of that I *thought* I'd put in a 10mm, but in the dark I'd gotten a 26mm Orion Plössl instead, but it was still quite nice. Then I popped in a 4mm "LV" of Steve's. Even at that magnification (about 374x) the fine detail in the nebulae was readily apparent, thought the stars wouldn't come to sharp focus. I was quite amazed. It also took less than five seconds for anything to completely traverse the EP view! ☺ Still and all a very impressive first object for me and the newt.

Steve had the C8 pointed at the GON as well, so we compared. One thing I noticed is that the C8 had a much darker background than the newt, and while the subtle lighting was vastly superior in the newt, I thought the smaller cat did a better job of showing the *dark* parts of the nebulae. I found it more than a little interesting that each had apparent strengths when pointed at the exact same object with nearly identical images framed by the EP.

Next I went to Pleiades just 'cause they're about as hard to find as the GON, and I didn't have my laptop out to figure out where stuff was.

Even with the 40mm EP in, the field of view was a bit narrow, and the number of apparently bright stars so plentiful that I wasn't sure I'd hit it until I did. I was struck by just how *many* stars appear in the EP with that thing. The C8 seems like it shows a lot, but this newt was just crazy. Zillions of tiny little things I don't ever remember seeing were scattered all over the place, even in that fairly ikky sky.

I should point out this newt has not one thing attached to it for a finder. I lined up the tube on the GON by eye. Nori got me a green laser for

xmas, one that's designed specifically for astronomy, and it was working like a champ last night even at under 20 degrees. I kinda lined that up along the top edge of the tube, eyeballed square, and used that to "point" at where M45 should be. Found them fairly quickly with minimal scanning.

The Andromeda Galaxy was next, again because I know where that one is.

Repeated the laser pointer trick; had to do it a couple of times with a minute or two of scanning around between each, but I found it simply enough. My main problem appeared to be that I didn't really know where M31 was, exactly, and I'd pointed a couple of degrees off. ☺ M110 was right there as well, and while I know that M32 is also there, I don't remember viewing it specifically, so I didn't count it as "observed". Again Steve had the C8 pointed to the same object so we compared. No surprise, the larger aperture of the newt *really* shined, pun intended! It was simply no contest, and M110 was considerably more apparent as well.

I remembered **Chase McNiss** telling me how to find M81/82, so I again did the laser pointer trick and with minimal scanning had them in the EP. Steve had let me use a 19mm so popped that in, and for the first time I can remember I saw the core of M81. Very cool!! I didn't see any real structure, but the conditions weren't conducive to that, it was low in the sky, and things were starting to deteriorate.

I wanted to see M31 in the 19mm, so I swung back there and had a peek.

Not as much detail as I would have liked, but I did notice a dark area on one side. I think it was the same side as M110, but I unfortunately didn't write it down, but I do remember thinking it was much clearer than I could recall ever seeing it before. Neat!

I wanted to show Nori the GON, so I put it back in the EP, put in the 19mm, and called her out. She was suitably impressed even though she'd seen it in the cat many times

before. Judging from her response it was like she'd never seen it before! ☺

Steve had M36 in the C8's EP, and some little guy that he thought might be a glob nearby. The C8 couldn't resolve it well, so I started looking for M36 and that little guy. I found M38 easily enough, after Stephen looked it up on Voyager and reminded me it was actually M38 where I was looking and not M36. ☺ Knowing where I was pointing, and that M36 was nearby, I panned around until it was in the EP. Nice!! Even open clusters seemed to look better in the newt than the cat, for some reason.

I spent probably the next 40 minutes looking for that little bit of nebulosity Steve found with the cat. Try as I might I simply could *not* find it anywhere. Stephen looked it up while I was vainly looking for it and declared it was most likely NGC1931, which is nearby.

Looking at CduC I'm not entirely convinced I was starting from M36. What I remember looks more like M37, which explains why NGC1931 simply could not be located. Barking up the wrong tree! Ah, well.

Looking at my EP case later I see I was in fact using that 26mm and not the 10. Duh!! But that does explain why the 19mm gave a larger image! ☺

By now Steve had the Owl Nebulae in the cat, and he told me where it was, so I did the laser pointer trick on that part of the sky.

Surprisingly I found a quite bright galaxy just off center in the EP! I looked at it a bit, and Steve looked at it, confirming it sure looked like a galaxy. Stephen verified that M108 was in fact right next to the Owl, and I'd inadvertently stumbled across it. Meantime I panned around until I found the Owl so we could compare it with the C8. Again there was no comparison; the larger aperture of the newt took the cake without even trying. I found it easily with the newt, but it was so dim in the cat that I may have missed it if I were pointing

manually. The difference was that pronounced.

We both swung back to M108, and I *know* I would have missed that in the C8. I could hardly see it in the cat, where it was plain as day in the newt, and unmistakable. Very, very cool!!

Then Steve pointed out that M101 should be up and pointed out where it was, and I did the laser pointer trick. But alas despite Steve's excellent instructions I could not find that guy no matter how hard I tried. Low in the sky, it had a lot of slop to contend with, and the clouds were coming in (plus it was just to the left of pointing towards downtown Greenfield) so I saw a ton of background brightness as well.

Around midnight I gave up 'cause I had to work the next day.

All in all I have to say I was very, very, very pleased with the newt's first light. It seemed like I saw a number of things I've seen in the cat, but as if for the first time, and I saw a number of things I haven't seen with the cat, though I've seen them in other people's newts. The icing on the cake was having the C8 right there for comparison in a number of cases, complete with an operator so I didn't have to find everything twice! (cheshire grin)

★ David Gilmore

### Fishing and Visual Observing—An Analogy

Growing up, my father and I enjoyed fishing. It was our time to spend together but I am sure the fish did not appreciate that ☺. We both were avid about it and he taught me many lessons including that fishing depends on a variety of parameters: the type of fish you wish to catch, the weather, or the location. Sometimes we would anchor and use live bait, sometimes we would troll, or fish the bottom while drifting, or we would cast along the shoreline. The technique we would choose depended on what we desired; because of the fish or our mood.

I have found over the years and particularly since being in NHAS

that the analogy holds true for visual observing. When I first joined, I had just acquired a new scope—a Celestron Ultima 2000 (Celeste). It worked and continues to work great. As things progressed, I realized that there was more that I desired. I particularly resonated to the deep sky objects and although my C8 provided some of that, especially with the go-to capability, I wanted more. After researching and talking to folks I settled in on the 18" Obsession and hence, Obby was acquired.

Obby became my favorite scope and it met the needs well. Then one day came the knowledge of an upcoming transit of Venus in June, 2004. Obby was not a good scope to try and view it with for many reasons but the primary one was that I desired to get some pictures. It was around that time I decided to acquire my TeleVue Pronto. This was a great scope to use for the transit while at the same time, to learn about prime focus astrophotography. At that time, I had not thought about much in the way of visual Astronomy because of my "Obsession" (pardon the pun), with aperture fever. In 2007, it was time to get the mirror re-coated on Obby. At first, my thought was "oh my, what am I going to do?" Well, it turns out that this was probably the best thing that could have happened because I came to appreciate other types of scopes and viewing; just like the different types of fishing. Forcing functions are a good thing ☺

First there was low power Astronomy with the Pronto. Using the same TeleVue eyepieces, I quickly realized how "Context" is so important. With Obby, the FOV is very narrow with a 31mm Nagler (about 1 degree). Now, I can look at 5.5 degree FOV with the same eyepiece in the Pronto. I still remember my reaction as the same to viewing M13 with Obby! Other eyepieces reduced the FOV and while maintaining context; details would start to emerge. This was the beginning in realizing the power of low power Astronomy. I would spend hours on the porch looking at

favorite areas of the sky getting a new appreciation. After doing this for several months and enjoying it, I decided there some situations where I wanted get more detail, but not at the expense of losing a lot of context. For example, resolving double stars. Enter the TV102 which I have had the opportunity to observe with other club members. This is great for double stars and provides more power yet is very portable. With my configuration totally manual, it is also very easy to transport and set up.

Another factor to consider is time. There are some situations where I have found myself anxious to observe, but lazy about wanting to spend elaborate setup time. This when it's great to walk outside with the Pronto and observe on the porch for a bit. If I get cold, just go inside and warm up a bit. Setup is simple because the scope is already assembled. My TV102 can also be set up in just a few minutes in the driveway. Sometimes, I am just too tired to pack Obby and drive somewhere or assemble him on the platform. Many times, I like to leave the scope unassembled so that I can be ready to attend a sky watch or a trip to YFOS. Here is a summary of the typical situations:

**Scenario:** Appreciate the big picture  
**Scope:** Pronto  
**Target Objects:** Large clusters and visible asterisms  
**Comments:** Low power at its best

**Scenario:** Limited time at home  
**Scope:** TV 102  
**Target Objects:** Double stars, large clusters, Messier objects  
**Comments:** Typical driveway setup

**Scenario:** Formal trip to YFOS (deep sky)  
**Scope:** Obby  
**Target Objects:** Deep sky objects from planning session from S&T or Skytools  
**Comments:** Mostly Saturdays or Coffee House nights

**Scenario:** Spur of the moment trip to YFOS  
**Scope:** TV 102  
**Target Objects:** Favorite objects from a different perspective  
**Comments:** Some weeknights or great weather conditions

**Scenario:** Weeknight viewing at home  
**Scope:** Pronto  
**Target Objects:** Variety but typically Moon, doubles, or carbon stars  
**Comments:** From my deck

**Scenario:** Weeknight viewing from home (not tired and a few hours available)  
**Scope:** TV 102  
**Target Objects:** Resolve hard doubles, carbon stars, Skytools objects of interest  
**Comments:** From driveway

**Scenario:** Lunar light pollution  
**Scope:** TV 102  
**Target Objects:** Lunar observing (try to find specific craters and other objects)  
**Comments:** From driveway for detailed observing of the Moon

**Scenario:** NHAS sky watch  
**Scope:** Obby  
**Target Objects:** Messier objects, colorful double stars  
**Comments:** Big attractor

In summary, I wish to reinforce some key messages.

- Aperture fever can be a bad. The best thing that could have happened to me was to lose Obby for nearly eight months. It really made me appreciate other aspects of visual Astronomy. It taught me other ways to view just like there are many ways to fish.
- The avid visual Astronomer will choose the tools based on the conditions. Light pollution from the moon offers great opportunities to lunar observe and hunt for double stars. Dark skies are great for pulling out Obby and doing detailed deep sky exploration.
- You don't need to have hours of time available to observe.

Short sessions are wonderful to appreciate the skies.

I have also realized that on the lighter side, this is the opportunity to achieve the **Mike Townsend** Doctrine of a "scope in every room" I am still working on that and perhaps some day that goal will be achieved ☺

★ Rich DeMidio

### So, It Begins

This article, entitled "So, It Begins" is from *The Daily Astronomer*, published by Edward Gleason of the University of Southern Maine Southworth Planetarium. I think it is an excellent summary of the history of Astronomy, and a fine call to action to us for the International Year of Astronomy. Mr. Gleason has graciously granted permission to republish his article here. My thanks to **Marc Stowbridge** for emailing it to me initially.

★ Paul Winalski

We don't know when Astronomy started.

As humanity's first considerations of the sky predated our ability to record our thoughts and accomplishments, we shall never know the precise moment of astronomy's inception. That's fine. We needn't know when the human race first devoted its precious time away from survival to profound contemplation. Yet we know that at some point it did and continues to do so, with an intensity that time itself has been powerless to diminish.

Astronomy, like so many other ventures, is an uneasy wedding between the solid past and open future. While we know what astronomy achieved, we are unable to fathom what it will reveal.

We have seen Astronomy's many aspects.

The Chaldean tables and Egyptian calendar reckoning endowed astronomy with its first practical application: the timing of seasons and periodic flooding. It was astronomy as science.

Creatures, heroes, and legends took ethereal form amongst the stars. The projection of the humanity's world-creating imagination onto a receiving firmament. It was astronomy as art.

The earliest astronomers assigned severe significance to the varying configurations of the Moon and planets against stellar houses. From the complex celestial motions, these ancient priests crafted forecasts both hopeful and foreboding—forecasts that would move armies and determine marriages. It was astronomy as purpose.

In Sapphic verses, we found a Moon that nurtured gently while glowing softly—the same Moon that, more than two thousand years later, would play host to twelve of the intensely alive creatures who first gave it a face and a soul.

Ptolemy made us stewards of the center, but Polish clergyman Copernicus dislodged us from this divine fulcrum to make us inhabitants of a spinning orb. Brahe and Kepler, obsessives both, combined decades of precise observation with meticulous calculation to discover the mathematics governing the revolutions of worlds. With this achievement, the harmony of the spheres was wrested away from the designs of the mystical and became the machinations of the quantitative. Newton, poised upon the giants' shoulders, tore open the shroud to expose a clockwork system that bestowed upon us the predictive powers that the ancient priests could never command, while at the same time relegating humanity to the role of inconsequential observer.

Einstein would contort Newton's timekeeping devices, showing that regularity of time and uniformity of space is merely a special condition reserved for regions where speed is low and gravity weak.

Einstein's contemporaries, some of whom were initially dismissed by Einstein himself, approached the Grand Universe paradoxically—they strove to comprehend the cosmologically large by examining the atomically small. Their research

unveiled the strange realm of quantum theory: a system of thought which asserted, among many other astonishing declarations, that the very act of observation alters that which is being observed. Suddenly, we were no longer Newton's observers. We became Heisenberg's interferers. Humanity was confronted by a Universe that changed by the mere action of sentient scrutiny. This fusion of sight and sought, long a facet of Eastern mysticism, eventually became an accepted—though disquieting—reality of Western science.

Meanwhile, the telescope grew from Galileo's eyepiece to dome-enclosed glass. Mirrors and lenses meters in diameters captured nebulae with multi-layered filaments tintured by hues and shades that we had hitherto believed were the sole preserve of our verdant Earth. Hardly. Telescopes coupled with cameras showed us a sky that is as alive with color as it is crowded with exotic worlds. The telescope transformed the tapestry of fancy to the depth less fields of form and function. Stars were born out of clouds and died in exploding flame. Galaxies by the millions pockmarked deep space. Within these "island universes" lurked stars by the trillions and, perhaps, planets of comparable number. The vision of Giordano Bruno, the 16<sup>th</sup> century friar who saw the stars as worlds instead of dots, was no longer heresy, but elementary fact.

The stars themselves, thought by some to be unknowable, conveyed their properties to those capable of decoding its light. Cannon, Leavitt, and others amassed the stars by the thousands; by studying their spectra, they cracked open their interiors. Stars were Suns of various sorts. Some lived in perpetual furious blaze, living briefly but brilliantly. Others were tortoise-like red dwarfs—creeping along slowly but earnestly, working through life-spans that will be far longer than the current age of the Universe.

The deepest secret of the stars—one that would not be easily discovered—is their relation to life in general and humans in particular. The star watchers of Earth learned that all that the planet had become was once an explosion of star dust—the carbon in skin, iron in blood, calcium in bone, oxygen in the lungs—these elements were forged in the stellar infernos of the infant Universe. Dust that would be fashioned through arduous evolution to the level of awareness: a cosmos made curious of itself through the potent medium of human intellect.

And astronomy, which the Universe didn't have for the first few aeons of its existence, took form from star fire—grew from mythology to astrology; commerce to cosmology.

The star fire that gave us astronomy gave us the poets who spoke of it with admiration and astonishment.

Fleet-footed and nimble minded, how shall the flesh-trapped spirits live breathless in their quest to subdue this unquiet Earth and soar into unknowable sky?

We don't know what astronomy will tell us a hundred years from now, but it will tell us something we can't even imagine.

What an amazing ride!

And, so, the International Year of Astronomy begins.

★ Edward Gleason

## NHAS December 2008 Business Meeting

No meeting was held due to a severe snowstorm.

★ Paul Winalski

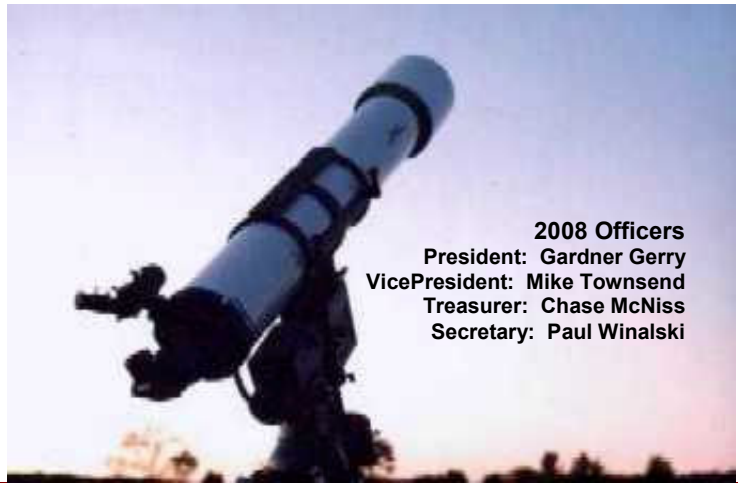
## The Bottom Line

<b>Starting Balance:</b>	<b>\$6393.68</b>
<b>Deposits/Credits:</b>	<b>30.00</b>
(membership)	
<b>Accounts/Paid:</b>	<b>241.74</b>
<b>Net Account Balance:</b>	<b>\$6181.94</b>
<b>Petty cash drawer:</b>	<b>\$100.00</b>
<b>Cash Balance:</b>	<b>\$6281.94</b>

**Membership:** 92

**Balance of Grant Funds** **\$809.70**

★ Chase McNiss



**2008 Officers**  
President: Gardner Gerry  
VicePresident: Mike Townsend  
Treasurer: Chase McNiss  
Secretary: Paul Winalski

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**DEADLINE February 2009 Issue: 5 PM February 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](mailto:info@nhastro.com)

**Use our web site:**

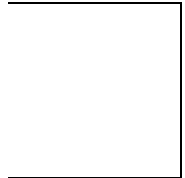
<http://www.nhastro.com/>

**This month's contributors:**

Gardner Gerry, Alan Shirey, Chase McNiss, Matt Amar, David Gilmore, Rich DeMidio, Edward Gleason

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New Hampshire Astronomical Society  
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## NHAS Upcoming Events

Event	Date	Time	Location
NHAS Business Meeting	January 16	7:30 PM	St. Anselm College
Coffee House Night	January 23	5:00 PM	YFOS
Educational Outreach Ctte. Meeting	January 30	6:30 PM	Ralph Pill Building, Concord NH
CMP Public Sky Watch	February 6	7:00 PM	Christa McAuliffe Planetarium