

Put together by  
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# The NHAS Observer

Newsletter of the New Hampshire Astronomical Society



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"All the news that fits in print"

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A gathering at YFOS, photo by Patrick Flanigan

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## Editor's Message

The past month has produced many activities in both the public and in-reach categories. Several public sky watches, use of YFOS, informal gatherings, and our imagers busy with galaxy season have provided a lot of content for this month. Please enjoy!

## Welcome New Members

Sean Torrez

## Jupiter Occultation

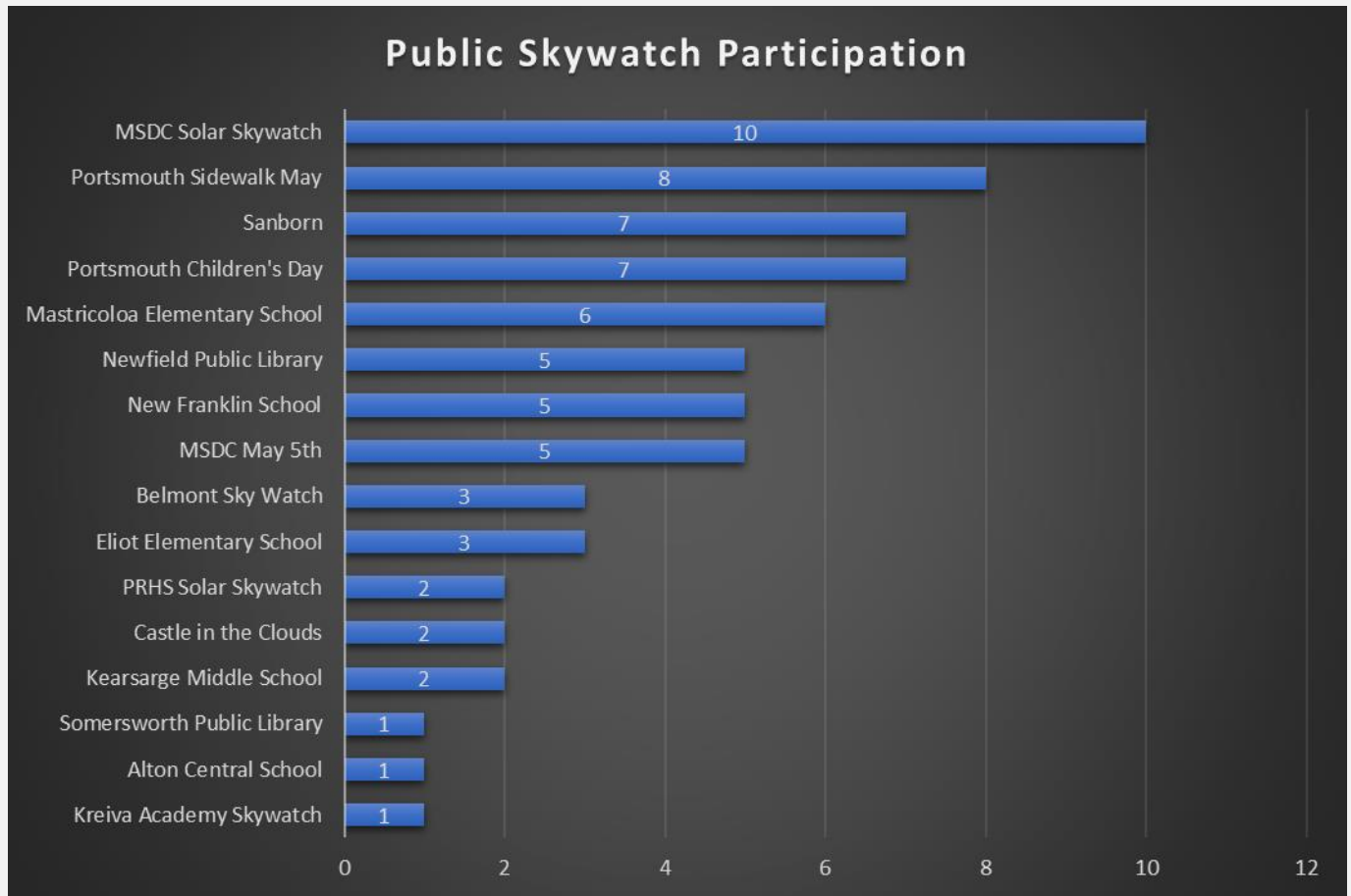
The skies were challenging because of the time of day and seeing conditions, but John Blackwell was able to snag this cool photo.



Photo by John Blackwell

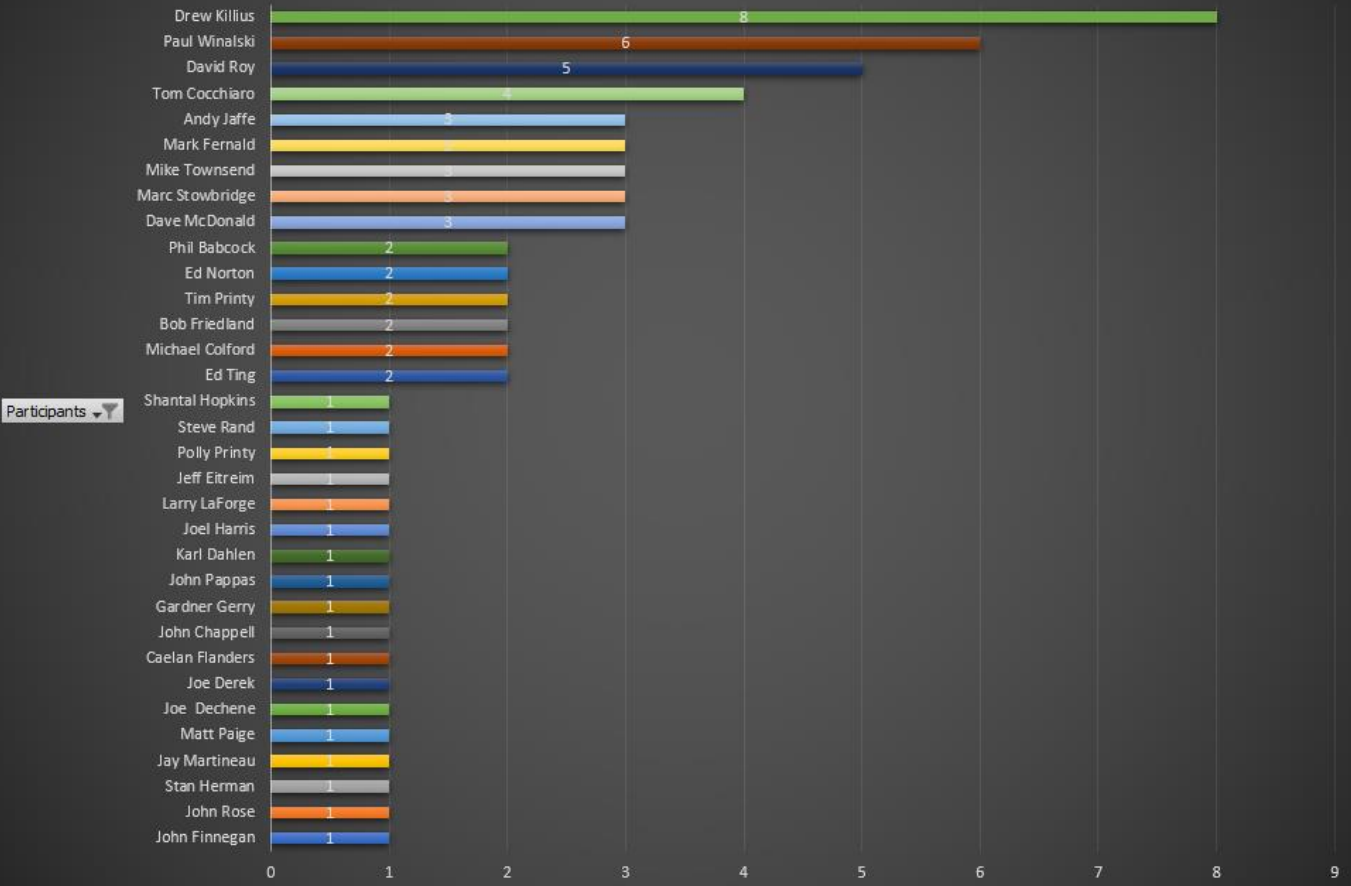
## Public Skywatch summary

Latest tally from our events. As a reminder, if you have data for a 2023 skywatch not shown, please send to me so that I can add to the list. Please email me if I missed some entries. I will update for the publication.

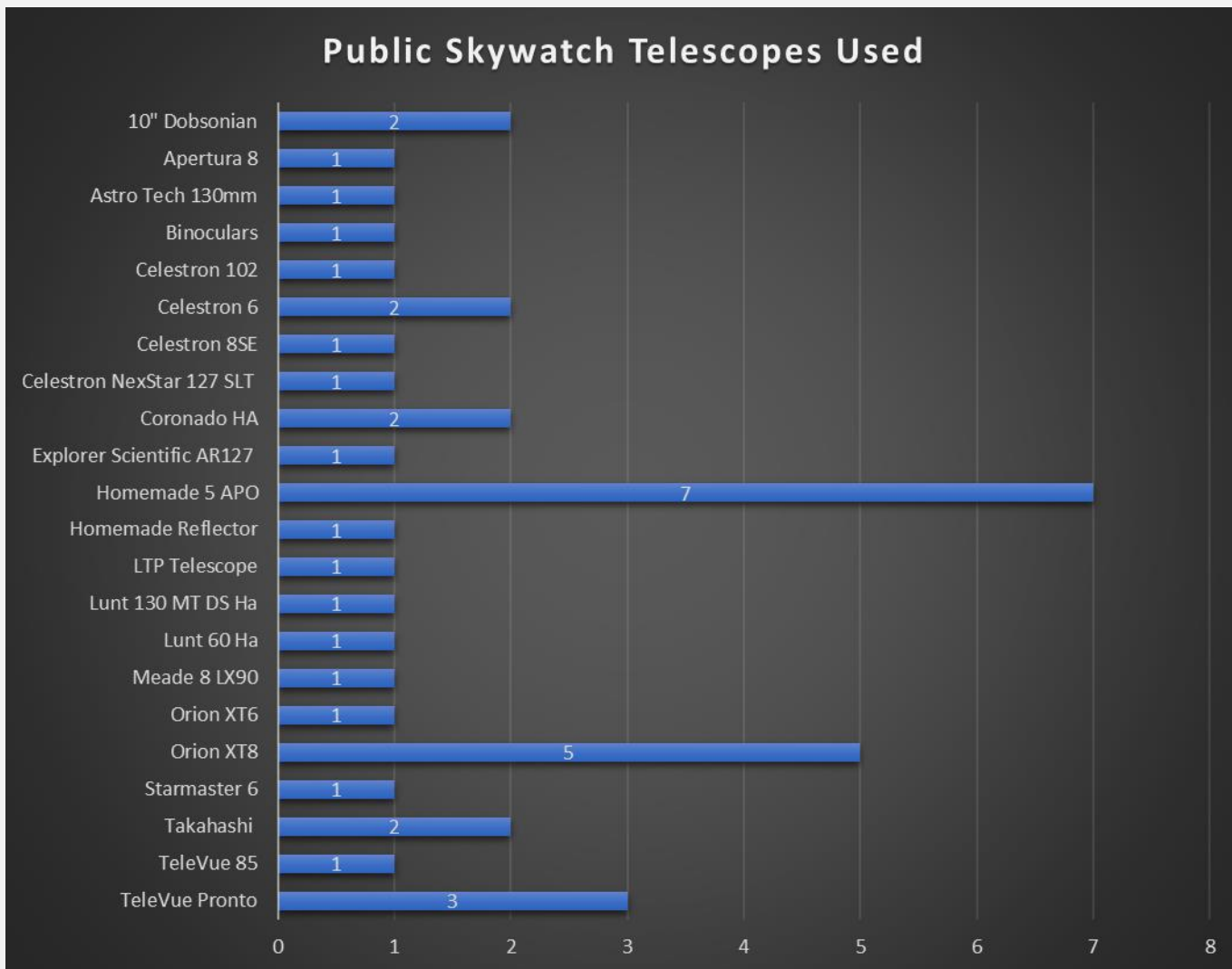


Count of Event

### Public Skywatch Attendance by Member







## Alton Central School Skywatch (Paul Winalski)

May 25<sup>th</sup>. I set up the XT8 with a solar filter and a Coronado PST for H-alpha solar observing. The Sun was very active that day--10 sunspot groups including one large enough to be naked-eye visible. I had eclipse glasses for that. There were several huge prominences in H-alpha. I packed up at 6:15 PM and at 6:30 gave a talk on finding your way around the constellations currently in the sky, with Ursa Major as the starting point (e.g., finding Polaris, arc to Arcturus, spike to Spica). We had about 20 people look through the scopes and about 15 at the talk.

## Castle in the Clouds Solar Observing (Marc Stowbridge)

Last Monday (5/29) saw 128 people stop by to view the Sun, a good number to start the season! **Tom, Alvin See, Stan Herman, John Chappell** and I worked about 6 telescopes of various types and sizes. I really appreciated the help setting up and closing down, as I was not very mobile.

- ✓ We gave out solar viewers (eclipse glasses without the ear bits) to kids and adults who showed a particular interest. The viewers are always a big hit.

- ✓ Our record attendance was last year, at, I think, 238. Most days are between 80 and 150. When school lets out, the numbers shoot up.
- ✓ The sun was very cooperative, too. Very big spots, eruptions all over and not blistering hot.
- ✓ On cloudy days, we will be giving talks upstairs in the carriage house. I'll post a notice over the weekend to confirm what we are doing.
- ✓ The first presentation will likely be about telescopes, types and uses, with links to SDO sites, too.
- ✓ I'd like to get a sense of what people want to hear.
- ✓ Start time is noon, but we are usually early, until 4:00, though rarely leave before 4:30 or 5.
- ✓ Come join one of the longest running sky watches in recent memory that draws some of our biggest crowds (though spread out over 4 hours).

## Portsmouth Children's Day (Tom Cocchiaro)

It couldn't have been a more beautiful day for solar observing in Portsmouth May 7th as hundreds of children and family members traveled to the city for the annual 2023 Children's Day event. Despite CSC and Weather Underground predictions for clouds during the time of the event, which ran from noon to 4 p.m., one couldn't have wished for better skies—clear and blue. Luckily, we had five astronomers with scopes and three volunteers to handle the information booth and children's activities which included the making of bracelets with UV beads that allowed children to experience the UV component of light coming from the Sun. During the four hours of the event, we treated literally hundreds of kids, parents and relatives to views of the sun in both white light and H-alpha--and those views didn't disappoint. The sun was active with loads of sunspots and prominences all around the limb as well as many surface details. Visitors were totally aghast at having a chance to see the "real" sun. NHAS members who participated in the day were **Larry LaForge** and his friend **Cindy Carter**, **Shantal Hopkins**, **Karl Dahlen**, and **Caelan Flanders**, who peopled the information booth and managed the kid's bead bracelet-making activity, **Karl Dahlen**, **Drew Killius** and his wife, **Andy Jaffe** and **Tom Cocchiaro**.



A young visitor takes a look at the sun through a Lunt 60mm double stack Ha scope.





Larry LaForge and friend Cindy Taylor relax before the start of the event next to their Coronado Ha scope.





Drew Killius came with his home-made reflector and showed views of various sites along the Piscataqua River in Portsmouth.





Andy Jaffe talks with one of the event sponsors before showing some white light views of the sun.





Shantal Hopkins works with a group of kids and parents to create UV bead bracelets made to alert the youngsters to the presence of UV rays from the sun and the need to slop on some sunscreen or cover up.

## **Newfield's Public Library Skywatch (Paul Winalski)**

We had a good crowd (20 people) for my indoor presentation at the library. We then all drove to the trail head parking lot at Raynes Farm in Exeter for the observing. There were at least four telescopes already running, so rather than set up the scope I brought, I gave laser pointer sky tours.

The field at Raynes Farm was deeply overgrown and to avoid tick problems the scopes were set up right at the edge of the parking lot. This meant an obscured northwest view and occasional problem with lights from cars passing by on route 85. There was a general haze in the sky that made star hopping difficult. Fortunately, the scopes that were set up all had go-to capability and so we were able to get a good number of the objects that had been in the presentation: Mizar/Alcor, M3, M13, M44. One of the scopes was set up with a real-time imaging apparatus that produced excellent images of M101 and M13.

We also got to see the satellite train of the 20 Starlink Group 6-3 satellites that were launched just after midnight (0:30 EDT) on Friday. The satellites were very bright--second magnitude—and tightly bunched together in a perfect line. I'm not very pleased with what Starlink is doing to Astronomy, but I have to admit that the satellite trains put on a good show.

#### **From Ed Norton**

It was a good time. I was surprised by the number of people. The parking lot was full and a few cars had to park along the road. I was set up in the southern corner of the lot and was just able to polar align through a gap in the trees.

I was doing live stacking (EAA) with 10 second exposures and showing people on an iPad. It was a great way to show groups of people what was in the scope all at the same time. I think I had 6-8 people at once for a bit.

Setup:

Celestron C6 + Hyperstar (300mm f2) with ASIAir plus + ASI2600MC on AM5. Controlled through the iPad.

For the various groups that came through we cycled through:

- M3
- M5
- M51
- M63
- M64
- M81 M82
- M84 M86 M87 M88 and the rest of the chain.
- M101

Most targets were easily recognizable after only a few frames.

#### **From Mark Fernald:**

My first time at Raynes Farm. Like Ed, I was just able to see Polaris through the trees. I got there early enough to see Venus, but I was the only one there. Nice quarter phase. Looked at M3, M13, and the Ring Nebula. I had an 8" Meade LX90. We must have had a good time, because it was 10:30 when we left.

## **Kearsarge Skywatch (Bob Friedland)**

A great Sky watch at Kearsarge Regional Middle School in Sutton tonight. Science teacher Rob and his students showed up, many having a knowledge of astronomy. Thanks to Tara who coordinated the program. A wonderful turnout at least 40 people showed up including parents and students.

I set up 2 telescopes, my red 10 inch Dobsonian and the Celestron Nextstar 8SE. Sky's were very clear



but some haze as the evening went on. The guest enjoyed viewing the moons craters, Venus, Arcturus, double star Mizar. We also got a nice view of M13.

*Editor's Plug: Bob did this skywatch solo and with that many people attending, that is quite the effort!*

## **Belmont Sky Watch (David Roy)**

Skies were very clear, twenty people attended. Belmont high school astronomy club was selling snacks and tee shirts, I purchased one. I helped Tom and his son Mike with two scopes. A 5" Celestron with a go to mount and an Orion 8" dob that Mike won at N.E.F.A.F. (New England Fall Astronomy Festival) I collimated the scope and worked with Mike with basic star hopping, ending with Mike finding M13. I had my explorer scientific AR127 refractor on an I-Optron pro cube mount.



Photo by David Roy

## **Somersworth Public Library Skywatch (Phil Babcock)**

May 31<sup>st</sup>. Yesterday I did the Somersworth Public Library "Skywatch". It was a bit different in that there was no observing of the sky – just an indoor presentation. This time of year, the dark-sky observing is just too late for some groups.

They had specifically requested an introduction to their telescope that is part of the Library Telescope Program (LTP), so I watched Steve Rand's introductory LTP videos on the NHAS website to see what the critical elements of the story are. We spent about half of the presentation time on the telescope operation, care, and safety (don't point at sun or anywhere near it, and don't use it during an eclipse unless you have specific instructions – all said a few times). Then we covered a modified version of Paul Winalski's "What's Up In Tonight's Sky?" to fill in the rest of the hour. After the presentation, I invited people to stay and I would help them to point, focus, and zoom the telescope while looking at a streetlight fixture down the street. They were amazed how close it looked, even at the lowest power, and also surprised at how things move in the inverted field of view.

It was a small group – 8 people in 3 families. Each family had a child. The small group let us have a more interactive "conversation" rather than a more formal lecture. The kids asked good questions, as is often the case.

Tanya, the head of the library, plans to set up another Skywatch when it gets dark at a reasonable time, such as the fall. She had also recently been to a Castle in the Clouds solar observing session, and was interested in possibly doing that at the library. I suggested she talk to Paul about that.

It was a fun time with a group of pleasant and interested people.



Photo by Phil Babcock

## Portsmouth Sidewalk Astronomy (Tom Cocchiaro)

Sidewalk Astronomy in Portsmouth (Saturday, May 27, 2023) In a change from being rained or clouded out these last several months, it couldn't have been a more ideal evening for this month's sidewalk astronomy event held Saturday in Portsmouth's Market Square—a clear blue sky, temps in the 70s and a huge crowd of Memorial Day weekend visitors.

The crew of **Dave Roy, Tim and Polly Printy, Mark Fernald, Drew Killius, Andy Jaffe, Tom Cocchiaro** and visiting wayward member **Gardner Gerry** (back in New Hampshire for the summer after a cross country trek) set up between 6 and 7 p.m in broad daylight across from the Old North Church. Almost immediately we had lines of passersby waiting to take a look at the quarter moon through the many scopes lining the sidewalk. As it got darker some of the group moved on to try and catch a glimpse of other objects like M13 despite the "light veil" of period colonial street lamps.

Tom provided several photos which are too much to include here. They can be accessed by this link. <https://drive.google.com/drive/folders/1ioAfQrvs7wIZRNqTUmhT2B0NW7xKwLQs?usp=sharing>

A highlight of the evening came around 10:17 p.m. as the International Space Station rose up from the west above the buildings behind our line of telescopes. Told ahead of time, the crowd was glued to their watches so as not to miss the sight of the bright, Mag -3.3 craft moving slowly across the sky and zooming just beneath the moon on its way to a flyover of the weather vane atop the Old North Church before fading into the Earth's shadow.

In the four hours plus we were there we saw literally hundreds of visitors from college students to families with kids and other groups enjoying the holiday weekend in the downtown.

The next Sidewalk Astronomy in Portsmouth event is scheduled for June 24.





ISS to the right of the moon, Photo by Andy Jaffe



ISS to the left of the moon, Photo by Andy Jaffe





ISS just to the right of the tower peak, Photo by Andy Jaffe

## YFOS May 13<sup>th</sup>, 2023 (Tim Printy)

It was a good night. Sky conditions were pretty good and it got a little cool (reminder for observers to always bring some warm clothing, even in summer, just in case the temperature does drop). The astro101 class was limited since there weren't a lot of new members there but we still did the star hopping instruction as well as the Star Master class. Everyone knew how to perform collimation so I skipped that part of the lesson.



Photo by Tim Printy

## IN-Reach: The Constellation of the Month-ish #2: Leo and M44 (Phil Babcock)

Fellow Astronomers:

In this 2<sup>nd</sup> episode of “The Constellation of the Month-ish”, we cover Leo as our bright and rewarding-to-find constellation, and we look between Leo and Gemini into Cancer (not so exciting a constellation) to find the wonderful M44, or Beehive Cluster. This cluster is 4 times the diameter of the moon and seen best in binoculars, finder scopes, and telescopes with a very wide field of view.

Along the way, we show that the Big Dipper has more pointing tricks up its sleeve, and we also do a star hop where there are not many stars to hop to. We also show a fun double star that is easy to find in Leo, and show where the Leo Triplet of galaxies is and how to find it (this is a telescope set of objects).

The big news is that Mars will be going through M44 from June 1 to June 3, and will be in the center of the open cluster on June 2! Should be a lovely show. Let's hope the skies cooperate.

While “The Constellation of the Month-ish” is mostly for the members that are in the earlier parts of their journey, more experienced members can join in by sharing their favorite objects in Leo (and Cancer), or share photos of these objects that they have taken.

The article can be found here:

<https://drive.google.com/file/d/1Uy8xorZfVvpuKxT1cxJzCztHI5jSkuGm/view?usp=sharing>

Happy hunting!

## **Astro 101 and Observing Evening in Lee, NH (Phil Babcock)**

Fellow Astronomers:

Last night we held our first observing evening at Little River Park in Lee. A few more than a dozen people showed up, and we had 7 telescopes and 2 binocular set-ups out on the tennis courts. Unfortunately, we had thin clouds drifting across the sky which slowed down the observing as we waited for holes, but when there was a gap in the clouds, the observing was good. At one point I could just barely make out M44, the Beehive, by naked eye.

As you can infer, this is a surprisingly dark site, given how close it is to towns and cities in the SE of NH. There are no neighbor lights or facility lights at this park. Along the horizon, there were slight glows from Manchester and Dover (perhaps with a little Portsmouth?). The horizons are good, and observing from a tennis court is a pleasure.

The attendance was a mix of members who had recently joined, members with limited experience, and members with much experience. We even had a non-member family from Lee with 2 young and curious kids join us for the observing portion. They were there because this event was advertised by the Lee Public Library, too. They intend to join NHAS.

We started with an Astro 101 under the gazebo, sitting at picnic tables. The motion of the earth’s rotation and its journey around the sun and the resulting effects on what we see in the sky were demonstrated with some models. We also used models to cover where seasons come from, the moon phases (and why the inferior planets have phases too, but not the outer planets), and how solar eclipses come about. This was followed by how to use sky charts, and going over some strategies for star hopping to M44 and M3. The highlight of this portion of the evening were one member’s two daughters, the youngest is 6 years old, asking questions and correcting things I was saying. It added a lot of fun and allowed the adults to hear answers to questions they were perhaps afraid to ask.

Once outside, Various members showed others the constellations they know. Binoculars were used on M44 and Alcor/Mizar. Telescopes pointed to Venus, Mars, Alcor/Mizar, M44, M3, and some gallant attempts at M81/M82 were made (I’m not sure any succeeded before getting shut out by some cloud drifting by).

The temperatures were pleasant, there was minimal wind, and no bugs. It was an enjoyable evening of learning and growing with like-minded people.

The next Little River Park observing evening and Astro 101 will be this Sunday, 5/21. I’ll make the weather call on this shortly.

## In-Reach Report (Phil Babcock)

NHAS In-Reach Report, June 6, 2023

There have been lots of In-Reach activities over the last month, and there are more to come!

### Over the last month we have:

- ✓ Received responses from the Member Survey regarding needs and desires for support from NHAS. We received responses from 19% of the members (which is a very good response rate), and the responses were nearly evenly split between beginners, intermediates, and advanced members. Interestingly, there was pretty good overlap between the most common requests for support from NHAS and education topics across the 3 levels of experience. A summary of the results of the survey has been distributed to all members. These results will help guide where we focus our time and make sure we provide the support the members most desire.
- ✓ We sent out reminders to members of what events are coming up that are places to bring questions and to get help. These opportunities are very much focused on members that are new to amateur astronomy.
- ✓ Hands-on Astro 101 sessions have started. We had one session at YFOS (near Hillsboro), focused on beginners, that covered the basics of telescope operation and, once it got dark, finding things in the sky. There were 2 sessions held at Little River Park in Lee where the topics covered included how things move in the sky, how to use a star chart, and how to star hop. We tried to take these skills and use them under the sky but had murky conditions due to Canadian wild fire smoke. Even so, we did find some objects to look at.
- ✓ Released the 2<sup>nd</sup> episode of “The Constellation of the Month-ish”. These episodes describe how to find a prominent and useful constellation, and how to find a deep sky object (cluster, nebula, galaxy) or other object of interest in or near the constellation in binoculars and a telescope. This 2<sup>nd</sup> episode explored Leo and M44, the Beehive Cluster.

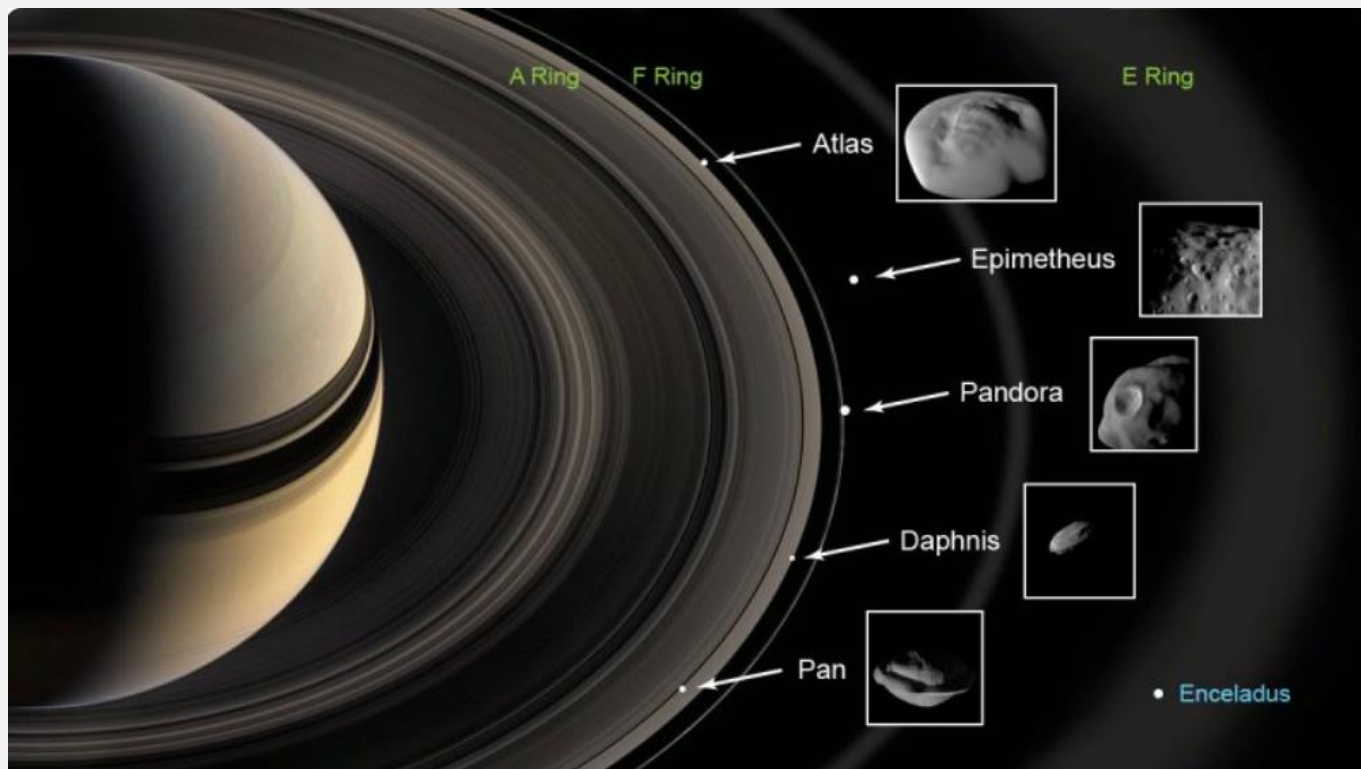
### Coming soon are:

- ✓ Reminders for the members of the membership benefits of belonging to NHAS.
- ✓ Alerts for all the various opportunities for the members newer to amateur astronomy to get the help they need.
- ✓ More Astro 101 and beginner-focused observing nights.
- ✓ Scheduled open observing evenings at Little River Park in Lee.
- ✓ The next exciting episode of “The Constellation of the Month-ish”. This one will cover Bootes (the Herdsman) and a real star hop to M3, a Globular Cluster.
- ✓ Work on securing an observing focal point (like we did in Lee) for the northern members.
- ✓ 2 more surveys:
- ✓ One to determine which members can contribute what skills to meet the desires for Astro 101 seminars and education topics, along with who can be a mentor.
- ✓ Another survey to collect information on observing sites across the state that members can use freely.

As always, if you have any suggestions or want to volunteer to help out with some aspect of this, please let me know at [psbiv4@gmail.com](mailto:psbiv4@gmail.com).

## In the News (Steve Rand)

*Moons, Moons, Moons!*



NASA-JPL photo

A team from Taiwan's Academia Institute of Astronomy and Astrophysics using the shift and stack method have found 62 new moons around Saturn. This ups the number from 83 to 145! With diameters getting down to 1.5 miles, it brings up the question: "How big does a natural object have to be to be considered a moon"? Do we start counting ring particles? Time for Neil De Grasse Tyson or the IAU to step in. Watch out Jupiter!

If you go to the Astronomical League's outreach page <https://www.astroleague.org/outreach>, you'll come to a dozen helpful charts covering a number of basic items from "What is the best telescope for me", to "How do you find celestial objects".

I think they're worth taking a look.

## Astro Classes (Tim Printy)

Phill Babcock and I had a brainstorming session towards the end of the evening. We noted that it is difficult to devote the time out of our observing session to help the new observers. I felt that maybe we could organize things so we could at least get people on the right track before it gets dark. Therefore, I propose running some dark sky prep classes prior to sunset. This is a schedule I am suggesting. I can do the classes or, if anybody feels "froggy", they can jump in and volunteer.



**June 11 or 18.** If the skies are clear on the 11th, we can do the session then. If it is not, I can perform the session on the 18th no matter what the weather is. This class will be on the early summer sky constellations and deep sky objects for the night. Start time will be 7:30 PM.

**July 8 or 15.** If the skies are clear on the 8th, we can do the session then. If it is not, we can perform the session on the 15th no matter what the weather is. This will probably have to do with the observatory and Gemini mount. Start time will be 7:30 PM.

**August 12.** This is a hard date for this session. It is the night of the Perseid meteor shower! The session will be “How to observe a meteor shower”. I have been observing meteor showers since I was 14 years old. I have done work with the AMS and IMO over the years (although I just do most of it for fun now). The session will start at 7:00 PM. I suggest people bring a chair, binoculars, and a camera (these days a cell phone is not too bad).

After August, the sun sets too soon to squeeze in the classes between arrival and sunset.

## Astro Photons

Many club members have been showcasing their astrophotography talents on the Astro-pictures channel in slack. Please go there to review photos as it would be terribly redundant to include them here. In addition, Herb Bubert takes a sampling from that channel posting them on the club’s Facebook page on a monthly basis.

## Club and Other Links of Interest

Facebook Page:

<https://www.facebook.com/search/top?q=new%20hampshire%20astronomical%20society>

NHAS YouTube including some enablement education:

<https://www.youtube.com/@newhampshireastronomicalso1786>

NHAS Club Calendar:

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

Did you know that Slack offers analytics? It’s pretty cool if you are a metrics nerd like me 😊

<https://nhastro.slack.com/stats#overview>

LTP YouTube channel

<https://www.youtube.com/@librarytelescope>

Phil Babcock In-Reach materials (let me know if you cannot see the folder)

[https://drive.google.com/drive/folders/1eVm896w7E\\_cGyLEdYP4QSRJIZGI8RPU3?usp=share\\_link](https://drive.google.com/drive/folders/1eVm896w7E_cGyLEdYP4QSRJIZGI8RPU3?usp=share_link)

## Summary

This is your newsletter so please let me know of content you might like to see. Anyone is also welcome to submit articles of your choosing. For example, an observing session report, a field trip or some event, etc.

Rich DeMidio

Clear Skies!