Put together by
Rich DeMidio

The NHAS Observer

Newsletter of the New Hampshire Astronomical Society

Vol. 2023 No. 5 "All the news that fits in print" May 2023

NGC 6357, a star forming region also known as the Lobster Nebula, Photo by John Blackwell

IN THIS MONTH'S ISSUE

Welcome New Members

Greetings to All.

I have been a member of NHAS for 20 years. You will not find a more knowledgeable and friendly group of people anywhere. They/we are able to take you from wherever you are in your astronomy exploits to as high as you can possibly imagine

I personally produce and host an Astronomy cable TV show. It airs on 66 cable TV stations around the country but mostly in New England. It's called "The Sky This Month " with your host Dave McDonald. Most episodes are around the 30-minute mark.

I also post it on my youtube channel for friends and family.... you automatically qualify!

Here is the link to my May show:

https://www.youtube.com/watch?v=zSH8jkCLDcY

Watch it and give it a like, comment, and subscribe as you see fit.

Welcome to NHAS!

Dave McDonald

Current Board Member, NHAS

My name is Tom Bosia and I'm somewhat new, joined just before COVID breakout. I've had a long break of a dozen or so years away from observing. Wish I had a good reason but life just got in the way. During the day I'm a Microwave Product Engineer at Analog Devices which can be demanding, taking time from observing.

I'm a galaxy and general challenging DSO hunter. At the beginning of the year, I upgraded from my 10" Meade Starfinder, purchased in 1997 to an Obsession Telescopes UC22. With that I also purchased from Dave a lineup of TeleVue eyepieces (of which he has the best prices I could find). I asked Dave what he uses with his UC22 and copied that. They are 31mm Nagler, 21mm, 13mm, & 6mm Ethos.

I can't wait to retire so I have more time to dedicate to my observing, but I unfortunately have another dozen or so years. I plan on getting into sketching at the eyepiece.

Editor's Note: Jean tells me that a 5-year-old sketches far better than I do

James Webb Telescope (JWT) Discovery

I have been following James Webb Telescope and was amazed to have read about some recent findings. Specifically, JWT discovered some galaxies estimated to be formed only 200 million years after the big

bang. According to the latest theories, this should not be possible. I watched some documentaries and the numbers I heard were over 1 billion years for a galaxy to form. This discovery has shocked the scientific world and has put into question fundamental aspects of the big bang theory. I found this incredibly interesting and is a reminder of how insignificant we are. You can search the internet and find tons of articles about this, but here is one that I read https://www.space.com/james-webb-space-telescope-giant-distant-galaxies-surprise

NEAF Report (Rich DeMidio)

I have been in NHAS 24 years and one would think that in all that time, I would have attended NEAF, but the 2023 event was the first one that I ever attended. Gosh, I think that I deserve some reward for that. Perhaps the "NEAF hold-out" or "NEAF Lagger" award would be appropriate 😊

On Saturday, April 15th, I joined three other long-time veterans of NEAF for a long day trip. Larry Laforge (cruise director), Mike Townsend (NEAF expert), and John Rose (Trivia Historian) for an adventurous trek to the event. The finance committee provided a maximum number of which I was grateful since I was expecting a *no purchase order*. We left at 5am, had vigorous conversation on the way down covering a wide bandwidth of topics including but not limited to:

- ✓ Astrophotography
- ✓ Visual Astronomy
- ✓ Technology Adoption Curve
- ✓ Manual vs Automated scopes
- ✓ Scope maintenance and troubleshooting
- ✓ Best memories of NEAF

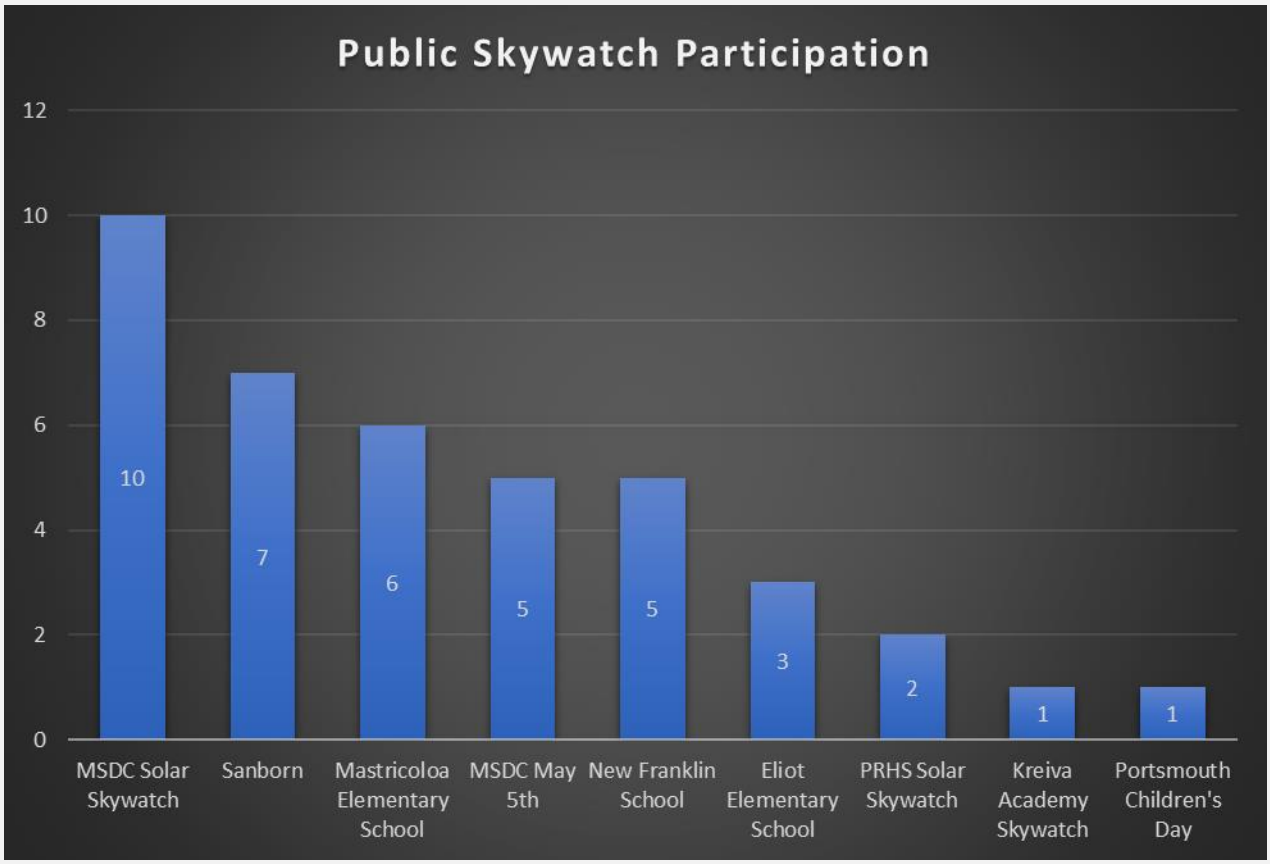
When we arrived, registered, and got my first look at the gym with all the vendors, it reminded of an IBM conference where dozens of vendors were showing off their wares. I was a tad overwhelmed at first, but gradually settled down. Mike provided some initial guidance but then he and the others threw me into the fire to see if I could survive. An hour later after running into Mike, I still had my full purchase allocation 😊 I noticed that there were several empty areas where vendors would normally reside. After checking with the gang and few others, they all confirmed that vendor turnout was low for this year. No one was really sure on why.

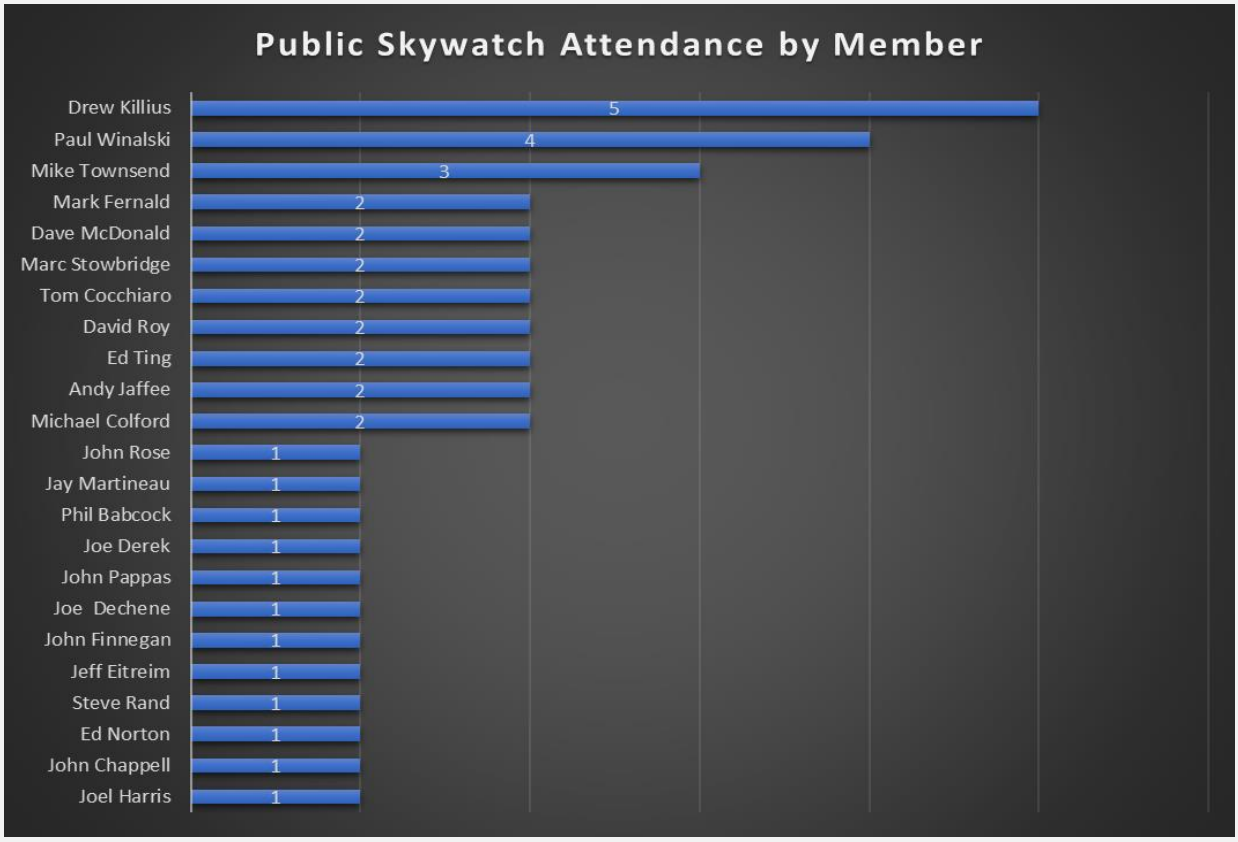
I was going to purchase an ZWO EAF focuser and found a vendor that had them. The price was the same as I could get from Agena online but with NYS sales tax, it would nearly add $20.00 so I decided to just order it online instead. The guy did not want to deal as he had an opening when I told him that I did not want to pay NYS tax. He never offered cash w/o sales tax option which surprised me. Many other vendors including TeleVue were offering cash only for eyepieces. I was surprised but now understood why a lot folks paid with cash. My Personal Highlights

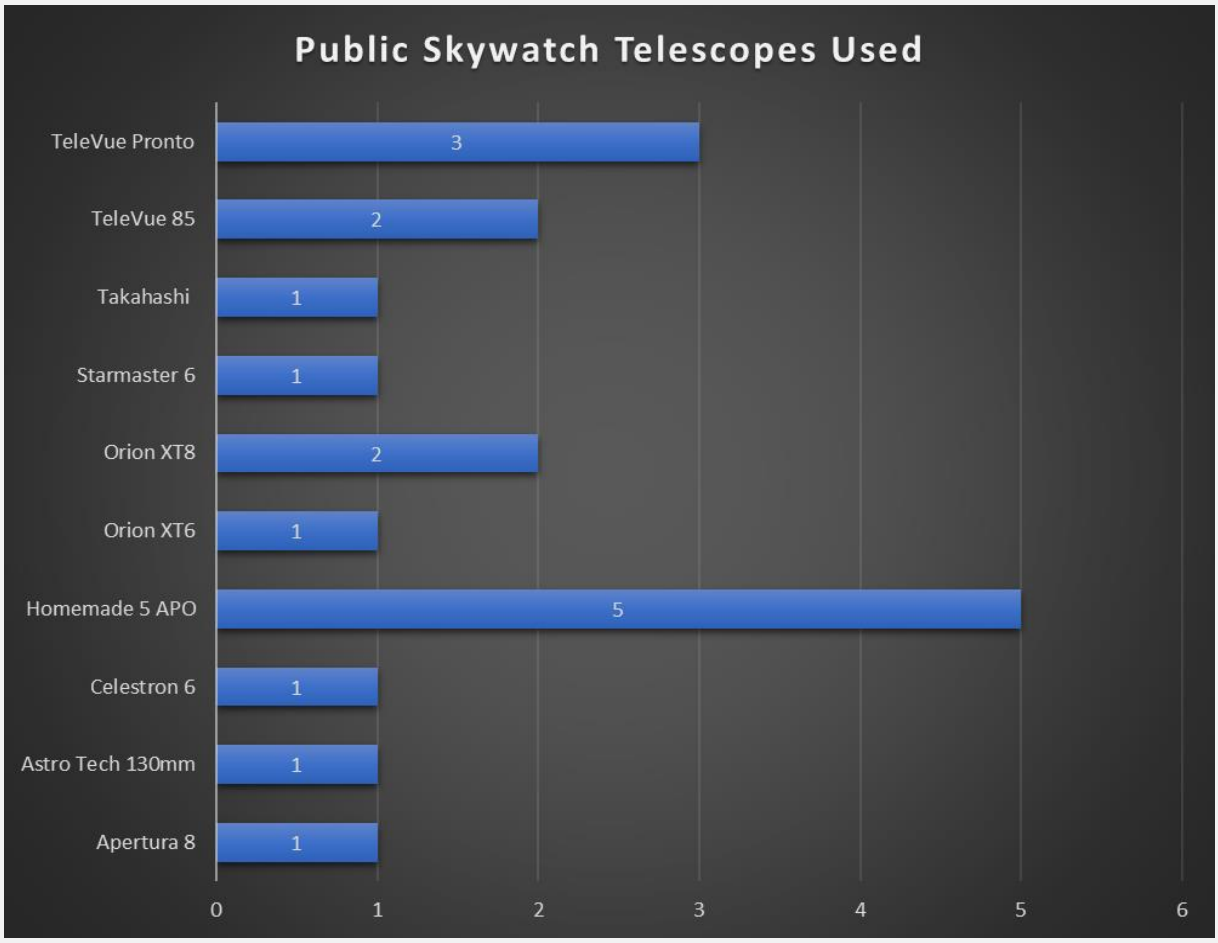
- ✓ Meeting Al Nagler and thanking him for my many years of happiness with his creations
- ✓ Meeting the owner and developer of Skytools4
- ✓ Meeting the folks at Simulation Curriculum, the makers of Sky Safari. They were very interested in my reporting work utilizing their exporting capabilities

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 if I missed some entries. I will update for the publication.




Public Skywatch Attendance by Member
Drew Killius 5
Paul Winalski 4
Mike Townsend 3
Mark Fernald 2
Dave McDonald 2
Marc Stowbridge 2
Tom Cocchiaro 2
David Roy 2
Ed Ting 2
Andy Jaffee 2
Michael Colford 2
John Rose 1
Jay Martineau 1
Phil Babcock 1
Joe Derek 1
John Pappas 1
Joe Dechene 1
John Finnegan 1
Jeff Eitreim 1
Steve Rand 1
Ed Norton 1
John Chappell 1
Joel Harris 1


Public Skywatch Telescopes Used
TeleVue Pronto 3
TeleVue 85 2
Takahashi 1
Starmaster 6 1
Orion XT8 2
Orion XT6 1
Homemade 5 APO 5
Celestron 6 1
Astro Tech 130mm 1
Apertura 8 1
0 1 2 3 4 5 6

Eliot Elementary School (Paul Winalski, David Roy)

Last night (April 27) NHAS conducted a sky watch for 1st grade students at Eliot Elementary School in Eliot, ME, just across the NH border. This was the final event in their Astronomy night. When I arrived at 6:45 PM to set up, the indoor part of the event was well underway.

The original plan was to do telescopic observation of the Moon and Venus starting at 7:30 PM while we waited for it to become dark enough to see the stars. I would then conduct a laser pointer sky tour of constellations and bright stars. Unfortunately, twilight lasted too long. By 8:15 PM all but one family had left, so we had to abandon the sky tour part of the program.

The weather cooperated. Early drizzle cleared out and when observing started at 7:30 PM skies were clear and steady, if a bit damp. An open, flat area of the playground was well away from the school building lights and had good horizon views. I, Tom Cocchiaro, and Dave Roy were there from NHAS with scopes. There were about 80 first graders, plus parents and siblings, so we had 200+ people in all. Everyone was very patient with the longish lines. The organizers were very pleased with the event. I only wish we had been on Standard Time and not DST so that we could have gotten in the sky tour.

From David Roy: I had a great time. Definitely a new perspective with most the viewers so young, had me thinking how to connect with each one and give them something to try to find or describe to me that they we're seeing so they could hopefully remember the experience.

Photo by David Roy

New Franklin School Skywatch (Phil Babcock)

On May 1st, we had a successful Skywatch at New Franklin School in Portsmouth, NH. I volunteered to be the scribe for this report. The photos are of students looking at the moon while we wait for it to get darker.

Photo by Phil Babcock

We had 5 telescopes there:

- Andy Jaffee with his Celestron 6" Schmitt-Cassegrain
- John Finnegan with his 8" Apertura Dobsonian
- John Pappas with his classic Starmaster 6" Dobsonian (with a binocular viewer)
- Drew Killius with his home-made 5" Apo refractor

- Phil Babcock with his 85mm Tele Vue refractor

Everyone was on a manual alt-az mount.

The field behind the school was dry enough to use, but the consensus was that it was too far to carry equipment. So, we used the paved play area next to the parking lot in the front. The horizon views were fine. The lights on the side of the building, not so fine. The sky was completely overcast at 6:30, but cleared by shortly after 7:00, as Paul predicted, and stayed clear for our time there.

The students, K-5th grade, were doing some inside activity at the school prior to joining us, and started showing up at the telescopes around 7:45. All students were accompanied by a parent, and some older siblings were there, too. At the peak, it looked like maybe 20-25 people. There didn't appear to be any long lines at the scopes.

Initially all the scopes were on the moon – it was all that could be easily seen. Then a few went to Venus and showed its phase, a few showed Mars (but I don't believe anyone went to enough power to see the

disk), a few went to Alcor and Mizar, and around 8:15 it was dark enough for M44 (the Beehive cluster) to be worth looking at in the Tele Vue 85.

People started leaving around 8:15 and were essentially gone by 8:30. Between the moon and the building lights, I could only see down to 2nd magnitude, with just a few 3rd magnitude stars visible.

Tami Truax was very pleased and appreciative of what we had done. She said next time she would try for a time when it gets dark earlier. At least one other teacher showed up, but I didn't get her name. As always with a Skywatch, it was an enjoyable evening.

MSDC May 5th (Michael Colford)

I attended the May 5th Skywatch and clinic. I thought it was a very nice evening as the temperature was pleasant, the bugs were minimal and the observations got better as the evening progressed. The other NHAS attendees were Mike Townsend, John Rose and Drew Killius. As previously mentioned, in the thread leading up to the event, Nanette Samuelson and family attended with their newly acquired antique collector's telescope.

John, Mike and Drew were very attentive to assisting the Samuelson family with their old telescope. Unfortunately, it appeared to have fallen over where the focusing barrel have been dented and the focus knob shaft bent. John assessed all the components that were brought in a box and explained where they were used on the telescope. He also shared that the optics on the telescope were good for that era, so if they could get it working it would be worth it. In the end, the best recommendation was for the Samuelsons to have a machinist repair the focus tube and knob shaft. They indicated a cousin of theirs' was a machinist and they could contact him to potentially do the repairs.

The Samuelsons stayed for a while and observed Venus and some binary stars that Mike Townsend was sharing. They stayed for over an hour. Thereafter, I estimate approximately a dozen people going in and coming out of the Discovery Center who stopped and observed what was available to see from the 4 telescopes available. Some of them took a quick look and moved on, while one father daughter pair stayed and chatted until 10:00 PM. They were very interested in learning how to go about buying a telescope and learning more about astronomy. John Rose showed them how to use a star chart and they tried to match a photo taken on a phone to learn which constellation they had captured. I talked to them about using the constellations to read and navigate the sky. They were more interested in a go-to telescope and potentially getting into astrophotography. Overall, the conversation covered a lot of topics such as joining NHAS, researching many telescope websites and watching Ed Ting's and Nico Carver's (Nebula Photos) youtube channels.

YFOS Session April 21st

From Tim Printy: Field conditions have significantly improved. Grass is coming up and most of the soft area in the center has firmed up enough so I could shrink down the off-limits area by half. I still need to fill in some of the ruts on the left side of the entrance but YFOS is ready for May observing now that the moon is starting to get in the way and we have clouds in the forecast for a few days.

Phil Babcock, Andy and Savanna Cox, and myself were there and enjoyed a pretty good night. I would not say sky conditions were perfect but they were acceptable. It was clear and we could see the faint milky way band setting in the west. That said, I have seen better sky conditions. I would say the transparency was a little below average. Other than that, it was clear. On a scale of 1-10, I would have given the sky a 7 overall. We did not see any Lyrids but we all left by 2330. By the time I got home the sky started clouding up.

From Rob Mack: In addition to the 'below-average' seeing forecasted last night on Clear Sky Clock for YFOS, there was a small asterisk below the chart that noted that high altitude smoke over NH from

various wildfires across the continent could further worsen sky transparency. With all the wildfires around the country these days, this can be a significant concern. High level smoke particles can make a perfectly blue sky a little milkier, though still blue. At night, in light polluted areas, the otherwise clear, moonless sky will seem oddly brighter than other nights. In dark skies, the night sky is still dark, but stars get oddly fainter, losing perhaps a magnitude or more.

So even if the sky condition charts are indicating great observing conditions, and your plan is to view faint extended objects like galaxies or nebulae, then check to make sure smoke isn't an issue. I use the NOAA site below. They usually updated it daily in the morning. So if the chart doesn't have colored smoke layers on it, try back later in the day.

Office of Satellite and Product Operations - Hazard Mapping System (noaa.gov)

From Phil Babcock:

YFOS was pretty good last night. I've seen better transparency a few times, but this was good enough to justify the trip. All 7 stars in the Little Dipper were visible, so that's pretty good.

I was working on the galaxies in the Virgo cluster, as part of my Astronomical League Messier Observing project. I started from epsilon Virgo (called "Vindemiatrix" – no I don't know what it means or how to pronounce it). This is the end of the upstretched arm in some line drawings of Virgo. I was able to hop my way along through 6 elliptical and spiral galaxies. The sky was good enough for me to see galaxies down to 10.7 magnitude with my 85 mm (3.3") refractor. (Yes, I know surface brightness is the official way to decide if something is visible, but my small aperture means that most surface brightness measurements are not good estimates for my scope – but in general I find magnitude to be a better indicator of whether I can see it.) Just 8 more Messier objects to go (all dim, fuzzy galaxies) to complete the list. Then lots and lots of writing it all up.

I think the trend I have seen (but others have much longer track records with the weather tools) is that Clear Sky (cleardarksky.com) is usually right 1 day before the evening in question, Accuweather et al can be way off, and I haven't used Astropheric enough to have an opinion. For YFOS predictions, I think Tim's emails indicating he is going up there are the most accurate source I have experienced.

So, it was a productive night, the temps were not all that bad, and the sky was a lot better than I get at home, and even better than Joppa Hill.

LTP (Steve Rand)

Library Telescope #161 and Library Planisphere #105 went out this month to the Orford Free Library. Library staff members Laurel Fulford, Carol Boynton, and Susan Kling were on hand to receive the items and get instructions on use. They had lots of questions and seemed very excited for the new additions to their library.

Photo provided by Steve Rand

In-Reach Report (Phil Babcock)

NHAS In-Reach Report, May 12, 2023

We continue to make progress in re-starting NHAS's In-Reach activities, were we focus on the services we provide to members. Over the last month we have:

- ✓ Sent out a survey to allow members to let us know what needs and desires they have for support from NHAS. This will help guide where we focus our time and make sure we provide the support the members most desire. Once the survey response period is done, we will summarize the results and distribute a summary to the membership.

- ✓ Started to remind 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.
- ✓ Initiated a series of hands-on lectures (Astro 101) at YFOS (near Hillsboro), focused on beginners, that cover the basics of telescope operation and, once it gets dark, finding things in the sky.
- ✓ Completed an arrangement with the town of Lee, NH, to use their town park for NHAS events. This will provide a focal point for the members in the SE portion of the state.
- ✓ Started to plan the first Astro 101 and observing evening, with a focus on beginners, to take place at the Lee town park. The topics will be the motions of the sky, using sky charts, and, once it gets dark, finding things in the sky.
- ✓ Released the first 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 first episode also covered the use of star charts and how to determine your binoculars' or finder scope's Field of View (FOV).

Coming soon are:

- ✓ Reminders for the members of the membership benefits of belonging to NHAS, such as free membership in the Astronomical League and discounted subscriptions to Sky and Telescope and Astronomy magazines.
- ✓ 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.
- ✓ The next exciting episode of "The Constellation of the Month-ish". This one will cover Leo, the Leo Triplet of galaxies, and the nearby, spectacular M44 (Beehive) 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 Astro 101/201 seminars and who can be a mentor.
- ✓ Another to collect information on observing sites across the state that members can use freely.
- ✓ We'll be continuing to share our progress with you.

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.

Phil Babcock
5/9/23

In the News (Steve Rand)

I am including some links to augment what Steve has written about.

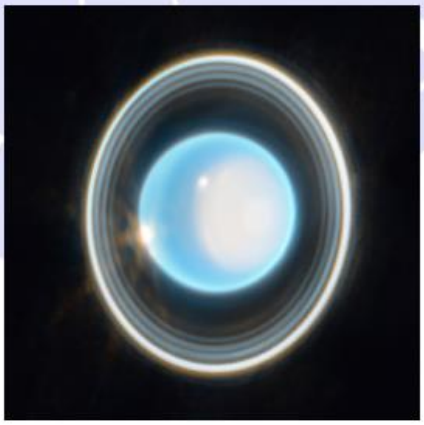
Juice: https://www.esa.int/Science_Exploration/Space_Science/Juice

Artemis 2: https://www.nasa.gov/specials/artemis-ii/

4-14-23

IN THE NEWS...

- **Asteroids**
  - 80' 2023 EY swept passed on 3/17 at 60% of the Moon's distance
  - 210' 2023 DZ2 passed on 3/25 at half the Moon's distance (14th this year!)
  - Oumuamua's strange orbit
- **Outer SS**
  - Dragon Fly to check out Titan's water lake
  - ESA's JUICE mission to Jupiter's moons
  - Europa's crust rides on warm ocean currents
  - Saturn's Ring ice warms upper Atmosphere
- **Potpourri**
  - Rings of Uranus
  - UAE Space Program
  - 3D Printed Rocket
  - Artemis 2 Crew



Unfortunately, communication was lost with Japan's HAKUTO-R mission during the landing sequence. However, not before it sent back this jaw-dropping image of Earth-rise. You can see the Moon's shadow over Australia during the April 20 eclipse.

Image via ispace

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.

May 13 or 20. If the skies are clear on the 13th, we can do the session then. If it is not, I can perform the session on the 20th no matter what the weather is. This starter class will be an introduction to the StarMaster 14.5 and the 16-inch. We will be examining collimation and the process of "star hopping" to find a deep sky object using a sky chart without a computer go-to. As a bonus, I will bring my SCT and we can show how to do a visual collimation of an SCT using an artificial star. The session will begin at 7:00 PM (an hour before sunset). After sunset we can look at some jewels of the night sky. We will be using the go-to and perform some starhopping using the 16-inch.

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

The Springfield Telescope Makers have just announced the opening of registration for this year's Stellafane Convention – **from John Rose**

https://stellafane.org/convention/2023/index.html

Marc Stowbridge shared this funny video. https://www.youtube.com/watch?v=hok8bVToZrg

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

https://drive.google.com/drive/folders/1eVm896w7E_cGyLEdYP4QSRJlZGl8RPU3?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!