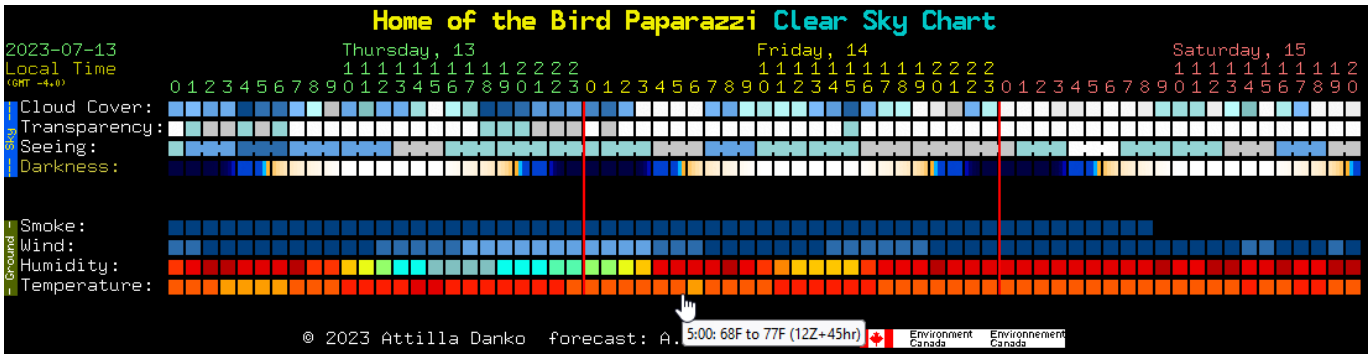
Put together by
Rich DeMidio

The NHAS Observer

Newsletter of the New Hampshire Astronomical Society

Vol. 2023 No. 7 | "All the news that fits in print" | July 2023

Rain, Clouds, Fire, and Smoke



Typical chart over the past month, at least the smoke is improving

IN THIS MONTH'S ISSUE

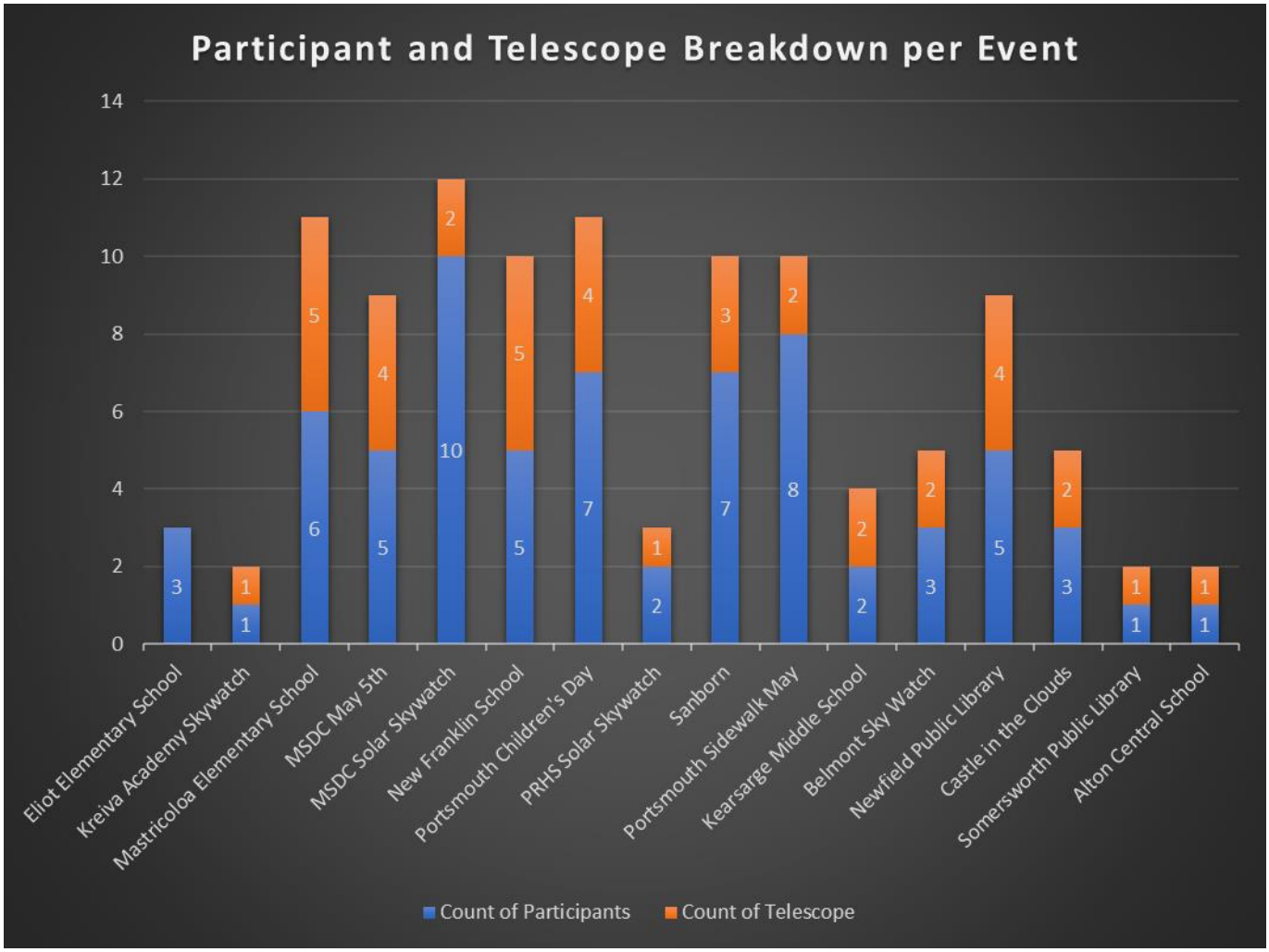
Editor's Message

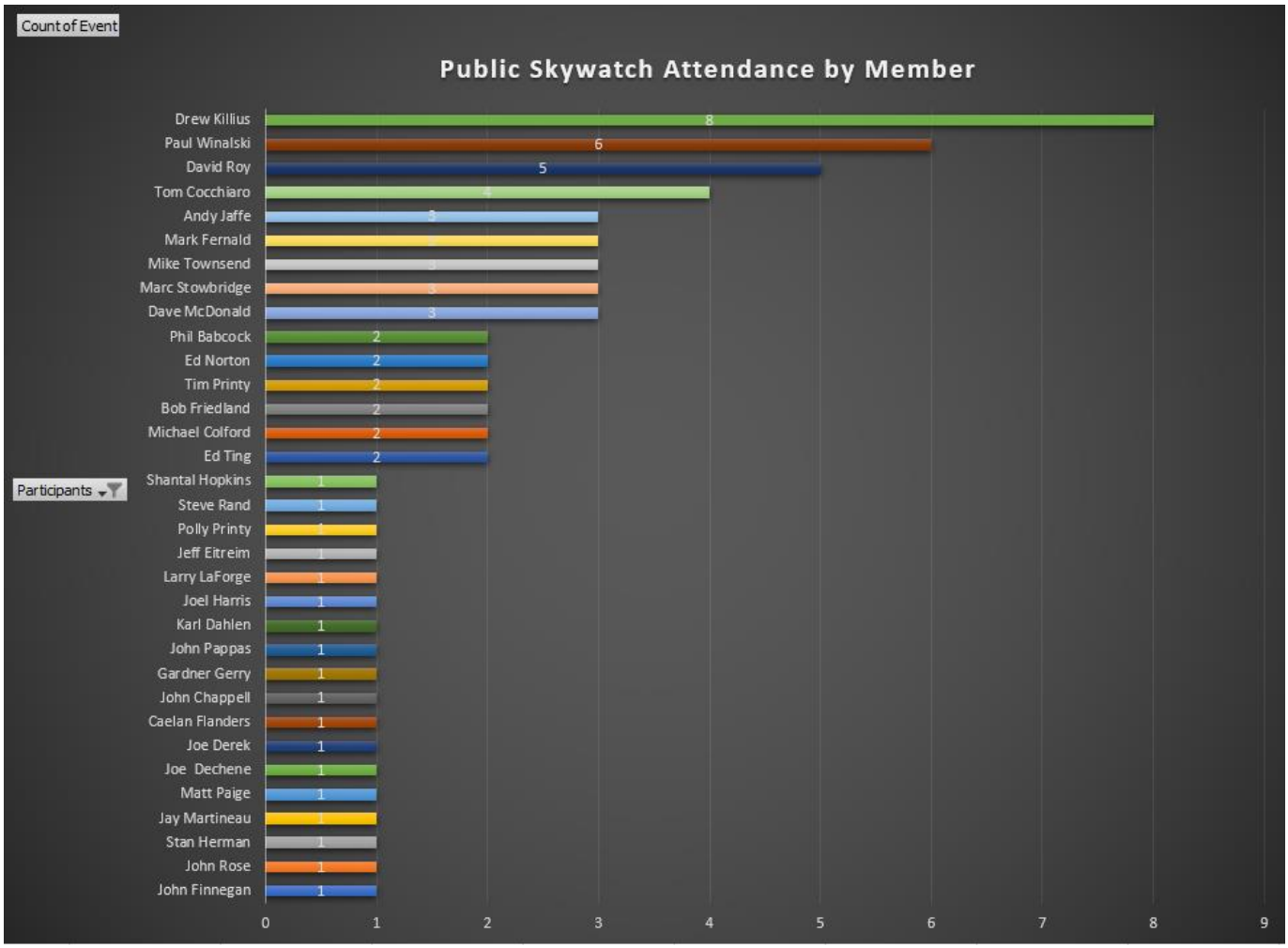
I joined in 1999 and I honestly can not remember such a bad stretch of weather since being a member. The last time that I observed or did some imaging was back in May. I am sure that many of us are going stir crazy even though it's summer. I suppose the theme for this publication should be Fire, Smoke, Clouds, and Rain. To me, the good news is that I would rather have the bad weather during this time of year since it gets dark really late, the bugs are out, and its humid many nights.

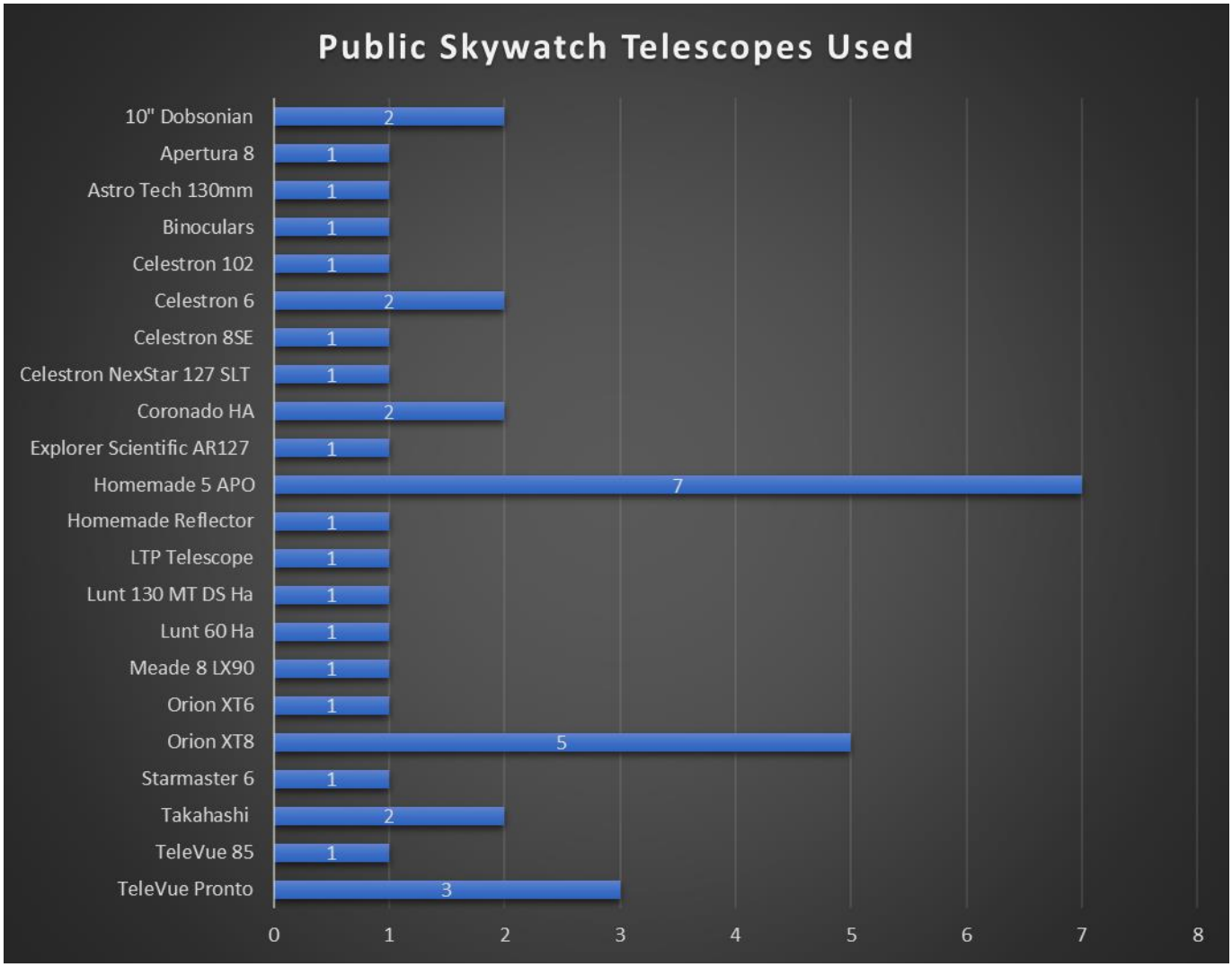
Welcome New Members

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
Participants
Drew Killius 8
Paul Winalski 6
David Roy 5
Tom Cocchiaro 4
Andy Jaffe 3
Mark Fernald 3
Mike Townsend 3
Marc Stowbridge 3
Dave McDonald 3
Phil Babcock 2
Ed Norton 2
Tim Printy 2
Bob Friedland 2
Michael Colford 2
Ed Ting 2
Shantal Hopkins 1
Steve Rand 1
Polly Printy 1
Jeff Eitreim 1
Larry LaForge 1
Joel Harris 1
Karl Dahlen 1
John Pappas 1
Gardner Gerry 1
John Chappell 1
Caelan Flanders 1
Joe Derek 1
Joe Dechene 1
Matt Paige 1
Jay Martineau 1
Stan Herman 1
John Rose 1
John Finnegan 1
0 1 2 3 4 5 6 7 8 9



CASTLE IN THE CLOUDS 6/22 (PAUL WINALSKI)

The sky watch took place as scheduled. 30 people attended the indoor presentation. Skies were clearer than expected--only slightly hazy. Seeing was so-so. The observing site is excellent--easily accessible, good field of view, and little artificial light. Skies were quite dark.

Editor's Note: Please let me know if you attended this sky watch so that I can update my records.

NEHA FAMILY CAMP SOLAR 6/29 OBSERVING EVENT (PAUL WINALSKI)

On Tuesday 6/27 the weather report for Thursday 6/29 in Moultonborough was looking very grim--overcast skies and thunderstorms. I therefore cancelled the solar observing we had planned for the New England Hemophilia Association's Family Camp at Geneva Point on July 27.

Then on 6/28 I checked the weather forecast again and it had done a 180-degree about face. But I'd already pulled the cancellation trigger, so I thought, c'est la vie. But I got a call from the Family

Camp organizers the morning of June 29 saying that the weather was very good and could I possibly still come.

So I changed plans and drove out to Moultonborough. I also emailed Marc Stowbridge asking if he could possibly come and help out. And so it was that just before 2 PM we were both setting up solar-capable scopes (one white-light, one H-alpha each). The weather was far better than I could have hoped for. The Sun cooperated by displaying a huge, naked-eye-visible sunspot and several large prominences in H-alpha. The solar observing was a huge hit. I estimate we had about 300 people visit the scopes from 2-6 PM.

My thanks to Marc for dropping everything at the last minute to help out.

NHAS received the following note of appreciation by Craig MacDonald for this event. Marc Stowbridge and Paul Winalski attended.

Dear Paul and Marc,
I hope you both feel good about what you did today for our Family Camp experience. Seeing things, we have never seen before to say nothing about holding the oldest item we will ever hold. The adults and kids seeing the sun in it glory for their first time was so enjoyable!! I'm so glad you could come and enjoy today with us. You have helped to excite young and old minds.

Thank you so very much.

Sincerely yours,
Craig

In-Reach Report (Phil Babcock)

NHAS In-Reach Report, July 11, 2023

It has been a bit of a quiet month on the In-Reach front. Late evening darkness, seemingly endless clouds, and wildfire smoke have all restricted observing opportunities. But we are hoping for better weather for the next month, and there are more In-Reach activities to come!

Over the last month:

- We had a Hands-On Astro 101 session at YFOS on 6/10. While no one arrived looking for help, the small group that was there had a nice social evening and got to do some observing with surprisingly clear skies (given the long run of cloudiness and smoke we had been having).
- Some reminders were sent to the membership 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.
- Open observing sessions were planned for Little River Park in Lee, but we had to cancel them due to cloudiness.
- The 3rd episode of "The Constellation of the Month-ish" was released. 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 3rd episode explored Boötes (the Herdsman), the globular cluster M3, and the Coma Star Cluster (a huge, open cluster in Coma Berenice).

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 Scorpio (the Scorpion) and M4, a Globular Cluster. This will lay the groundwork for finding the open clusters M7 and M6, and an exploration of Sagittarius (the Archer) and many of its Messier objects.
- 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.

Phil Babcock
7/11/23

Evening Observing at Little River Park in Lee

Fellow Astronomers:

This may just be wishful thinking, but we have reserved 3 nights for Observing Evenings at Little River Park in Lee.

Friday 7/14,

Saturday 7/15,

Sunday 7/16.

Little River Park

39 North River Road (Rt 155), Lee

While the weather doesn't seem to be cooperating, this weekend, from 7/14 to 7/16, is one of the no-evening-moon weekends this month, so we got on the town calendar, just in case the clouds and wildfire smoke to cooperate.

If the sky does clear, we should have a good time observing with others. In addition to socializing, I find it educational to look at other people's equipment and find out what they are hunting for that evening. There are no formal activities planned, just observing with other members.

We have permission for use of the park from **7:30 PM to 12:00 Midnight** on each of these nights. If the weather is bad, we will call off the observing for that night. If the weather is good for all 3 nights, we will have availability of the park for all 3 nights.

If there is anything you would like help with, please let me know and I'll see if we can make sure there will be someone there to help you.

Hoping for clear, smokeless weather,

Phil Babcock

Please note that, other than the times we have made arrangements with the town, such as 7/14 – 7/16, this park is closed after dusk. It cannot be used other than for NHAS-sanctioned evenings.

CONSTELLATION OF THE MONTH (PHIL BABCOCK)

Fellow Astronomers:

In this 3rd episode of "The Constellation of the Month-ish", we cover Boötes, the Herdsman, as our bright and rewarding-to-find constellation, with its bright, first-magnitude star: Arcturus. We show that the Big Dipper has a few more pointing tricks left, and we use the Big Dipper to find Arcturus and Spica (in Virgo, the Virgin). The rewarding constellation (and a gateway from Boötes to Hercules) Corona Borealis (the Northern Crown) is also shown.

For the deep sky object of the month, we look next door, just over the border into the constellation Canes Venatici (the Hunting Dogs) and show two strategies for finding the globular cluster M3. We use the bright star of Canes Venatici to help find M3, and also to lead us to the extra object of the month: the beautiful and large Coma Star Cluster (an open star cluster) in Coma Berenices (Berenice's Hair).

Along the way, we show where to look in this neighborhood to find the Whirlpool Galaxy (M51) is, and also the galaxy M101.

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 Boötes (and its neighborhood), or share photos of these objects that they have taken.

Happy hunting!

Phil Babcock

Link to PDF:
https://drive.google.com/file/d/1UDP7OUWY_6nKWbeD81dptQve5S3GD9P7/view?usp=sharing

NANOGRAV'S ANNOUNCEMENT (JOHN BLACKWELL)

It is very likely that you have run into this news tidbit already, given the nature of our membership! If not, this is one important one not to miss. The Nanograv observing run has released news that they have detected gravitational waves with oscillation periods on the order of years to decades... the low-frequency stuff that we knew was likely there, but now we know it is there. This is looking at the "other side" of the gravitational wave spectrum, the opposite of those fast-moving high frequency chirps that people know from the LIGO observations of colliding neutron stars and black holes.

High level release here:
https://nanograv.org/news/15yrRelease

Details with links to papers here:
https://iopscience.iop.org/collections/apjl-230623-245-Focus-on-NANOGrav-15-year

In the News (Steve Rand)

ARC TO ARCTURUS… SPEED TO CHICAGO?

If you follow the arc of the Big Dipper's handle, you'll come to the bright star Arcturus in the constellation of Bootes. In 1933, the best estimates had Arcturus at a distance of 40 light years. To the planners of the 1933 Chicago World's Fair, that meant the light from Arcturus left during the very successful 1893 Exposition. Looking for a way to connect the two celebrations, it was decided to have the telescopes from four different observatories focus the light from Arcturus onto photoelectric cells and transmit the current to the Expo site along the Lake Michigan shore. At 9:15 on May 27,1933 the current lit up the fair floodlights, opening the Century of Progress Exposition before a crowd of 30,000. Today we know Arcturus (Guardian of the Bear) is about 36.7 LY away, the 4th brightest star in the night sky, and a forever fixture in Chicago history.

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.

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.

SUNSPOTS

There has been a lot of activity over the past month regarding several groups. Several members reported seeing some large groups.

Sunspot AR3354 June 29, 2023: Paul Winalski

I spent all afternoon observing this sunspot. Marc Stowbridge and I were conducting a solar observing session for a Family Camp in Moultonborough. AR3354 as easily visible naked-eye through eclipse glasses. I estimate it is about 15 Earths across. And this sunspot only first appeared on July 27. It grew from nothing to immense size in under two days!

Sunspot AR3354 June 29, 2023: Rob Mack

Handheld camera with 500 mm lens and Thousand Oaks solar filter. *Visit the Astro-pictures slack channel for the full resolution version.*

Sun without a filter June 30th 2023: Rich DeMidio

I took a sunset photo handheld from the boat on the lake this evening. The smoke from the wildfires was intense so I did not need a filter. Nikon D7100, 300-500mm telephoto VR. Taken at the 200mm setting, 1/400th, ISO 400. If you zoom in, you can see a large sunspot group. *Visit the Astro-pictures slack channel for the full resolution version.*

BETELGEUSE NEARING THE END OF CORE CARBON FUSION? (JOHN HAYNES)

A new study is suggesting that Betelgeuse may be in the later stages of core carbon fusion, and we may see a supernova within a matter of decades. Hideyuki Saio of Tohoku University in Japan and collaborators modeled the patterns in Betelgeuse's brightness (not counting the recent abnormal dipping in 2019 and 2020. Their models suggest that the amount of carbon remaining in the core is less than 20%, possibly much less. While astronomers expect Betelgeuse to go supernova in the future, most estimates have suggested time frames of thousands of years from now, possibly hundreds of thousands. The modeling in this study suggests that the carbon fusion could soon run out and Betelgeuse could supernova within a few tens of years.

Paper here: https://arxiv.org/pdf/2306.00287.pdf

Commentary by Dr. Becky Smethurst (an astrophysicist at Oxford University who runs an astronomy and astrophysics YouTube channel): https://www.youtube.com/watch?v=3QgLwpuDGhI&t=415s

I'm not holding my breath on this one… but one can always hope!

Editor's Note: There was quite a lengthy thread on the email chat regarding this topic.

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.

JAMES WEBB FIRST YEAR

I was made aware of this link that discusses the first-year successes.

https://l.facebook.com/l.php?u=https%3A%2F%2Fyoutube.com%2Flive%2FCcWEts59a6o%3Ffeature%3Dshare%26fbclid%3DIwAR2YHY_rb-Xng9YBhs1gWE9OIHjRvAjBgncCgGsP3XIIL7eVX48Nd3zffiE&h=AT1eUAl_Qe5wIHAZdGSC1l5Mpa5FCNyqvCiWLnKdj9KFVxrlsA_iS3wy3hQaOkxdrew6U52fTt3tYz_S59k9HnxWLKE4u48K1BXnhrtwXoMonyBQWCoM6FCoES-6_0PZ4EsuJ2zwM_lItCI

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_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.

Clear Skies!
Rich DeMidio