



Mid-Hudson Astronomical Association

June, 2022

Website: www.midhudsonastro.org

President : Jack Chastain
Secretary: Jim Rockrohr
Newsletter Editor: Rick Versace
Publicity: Tim Denman
Speakers: Alexandra Passas

Directors: Alex Passas, Karl Loatman, Steve Carey, and Willie Yee

groups.io Group: mhaa.groups.io

Vice President: Dave Sherman
Treasurer: Eric Myers
Membership Coordinator: Eric Myers
Webmaster: Steve Dittmar
Outreach: Joe Macagne
College Liaison: Dr. Amy Bartholomew

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**The next meeting is June 21<sup>st</sup>, 2022, on Zoom and in person. Check MeetUp for details and link. Link will be sent to all those that RSVP.**

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June Meeting In Person

Note new location

Original meeting description listed the meeting in the wrong building - We will be (once again) back in the new Science Hall, most North-Eastern building on Campus, corner of South Manheim (Rt 32) and Plattekill Ave. Parking is available on Orchard Lane (or Plattekill on the Eastern side of S. Manheim) and POSSIBLY in the large main parking lot (bottom left of image included) - Handicapped spaces are available close to the South Side building building entrance.

New online link to the MHAA monthly Business Meeting Agenda:

<http://mhaa.midhudsonastro.org/agenda>



Minutes of the monthly meeting of the Mid Hudson Astronomical Association, May 17, 2022

The meeting was called to order at 7:30 PM by President Jack Chastain in person at the SUNY New Paltz Lecture Center room 104 and on the online application Zoom.

The minutes of the April meeting as published in the newsletter were unanimously approved with the following corrections:

- Dave Sherman was present but had no report.
- The title of the presentation was “Neutron Stars...”, not Neutron Starts...”

Officer’s Reports:

President: Jack Chastain was present.

- Agenda for each meeting is posted in Google docs.
- The club has received a 1980’s vintage star finder. If you would like to play with it, see Jack.

Vice President: Dave Sherman was present.

- No report.

Secretary: Jim Rockrohr was present.

- Nothing to report.

Publicity: Tim Denman was present.

- Zoom links have been fixed.

Newsletter: Rick Versace was not present.

- No report.

Treasurer: Eric Myers was present.

- See the newsletter for the latest information.

Outreach: Joe McCagne is doing better but we need someone to take over this task.

- Sam’s Point would like to have ‘scopes for star parties. Need someone to organize this.

Upcoming Programs: Alexandra Passas was present.

- Alex has booked presentations through July.
- Need ideas for August and beyond.

Membership: Rick Versace was not present. Eric reported:

- Membership numbers are in the newsletter. We have about 60 paid members.
- 1 renewal this month.

Solar System Ambassador: Willie Yee was not present.

Webmaster: Steve Dittmar was not present but sent report:

- Web site is unofficially launched. Needs integration with MeetUp.

- Can now do ad hoc star parties if requested through the web site.
 - o **Policy:** Need an MHAA officer present for public star parties.
 - o Impromptu events do not need a club officer but must be requested and attended by a club member.

Old Business:

- The last club star party was well attended.
 - o Helped several newbies with their ‘scopes.
 - o Reasonable skies for viewing.
 - o Observed Mercury before it set.

New Business:

- Need a volunteer to organize a club BBQ/picnic for this summer.
- Tanya and Rick will assist with event organizing. More volunteers needed.
- Eric is interfacing with the Walkway events.
- Still looking for volunteers to help update the club history document on Google Docs. See Jack.
- The club’s 8” Dob, 13” Dob and 8” Meade telescopes are available to members. There also is a large collection of CDs and several imagers that can be loaned. Contact Jack.
- We need more T-shirts and sweatshirts. Eric will make a recommendation.

Upcoming Events

- **Walkway events Fridays near new moon.** (This conflicts with our star parties but consensus is we can support both.)
- **Next Club Star Party:** May 27, 2022, at Lake Taghkanic State park. See MeetUp and YOU MUST RSVP with car make, model and license plate number to attend.
- **Vineyard Commons, Highland:** June 3 (Rain date June 24). Looking for ‘scopes. See Jack
- **Walkway:** June 10. See Eric.
- **Innes Hotel, Accord, NY:** June 19. Looking for ‘scopes. See Tanya.
- **Opus 40 number 1:** June 24. See Rick.
- **Opus 40 number 2:** July 29. See Rick.
- **Club Star Party:** July 29.
- **Wedding in the woods:** August 13. Looking for ‘scopes and “guidance” for guests. See Tanya.
- **Girl Scouts in Saugerties:** Date TBD. See Rick.
- **Sam’s Point:** date TBD.
- **Personal request via Facebook:** date TBD. See Jack.

The Organizing Channel in Slack can be used to help set up these events.

Observing Reports:

- The lunar eclipse was visible late as the clouds cleared.

The business meeting was adjourned at 8:01 PM. There were about 6 people in the lecture center and 12 Zoom windows open at the end of the business meeting. **The next meeting is June 21st, 2022, on Zoom and in person. Check MeetUp for details and link. Link will be sent to all those that RSVP.**

The presentation that followed was by Susan Sherwood, Director of TechWorks: “TechWorks Center for Technology and Innovation Past, Present and Future”. (321 Water St., Binghamton, NY, web: ctandi.org)

(There were up to 22 Zoom windows open and 14 persons live at SUNY during the presentation.)

Submitted by James Rockrohr, June 18th, 2022.



MHAA Treasurer's Report for June 2022

As of 19 June 2022 we have \$4,131.85 in our bank account and \$1308.78 in our PayPal account, with the Treasurer holding \$40 in petty cash. A review of our list of equipment shows that it has an overall estimated value of \$2500.00. Our monthly Zoom subscription of \$14.99 was paid via PayPal on the 15th of the month, as it always is.

Since last month's report we have received \$148.80 for three new memberships and 3 renewals. This month we also received a generous donation of \$477.56 from Longview Philanthropy (longview.org) for participation in a private event at Inness in Acord, NY.

At the request of the club Webmaster, Steve Dittmar, I have been looking at how we can obtain an official Letter of Determination from the IRS to verify our status as a tax-exempt non-profit organization. So far I've verified that we qualify to use the simpler on-line Form 1023-EZ, and I'm going through the detailed instructions to submit that on-line form. Even though this should be fairly straightforward, I'm not sure we will get an immediate determination from the IRS, but since we have been operating as a 501(c)(3) organization anyway we have filed IRS Form 990-N almost every year since 2007, which is documented on the IRS Tax Exempt Organization search tool (<https://apps.irs.gov/app/eos/>).

Respectfully Submitted,
Eric Myers
Treasurer

MHAA Membership Report for June 2022

As of 19 June 2022 the club has 63 members in good standing and 8 lapsed memberships, of which 5 expired over a year ago. We have 12 Lifetime members and 2 student members. The monthly renewal reminders seem to be effective, hopefully without being too annoying. This month we welcomed 3 new members, and had 3 renewals of existing memberships.

Respectfully Submitted,
Eric Myers
Acting Membership Coordinator

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## **June 2022 Webmaster Status**

### **MHAA Website**

Member facing (i.e. after login)

- Created a web form with the Lake Taghkanic State Park to allow MHAA members to register to be in the park after hours via the MHAA permit, outside of our club-wide events
- Implemented optional multi factor authentication (MFA/2FA) for member accounts
- Working on a separate Kb to document the officer responsibilities and processes as well as info about the website for the webmaster role.
- Fixed the final issue I was having with the checkout process for current MHAA members that will be migrating to website-managed membership. So now I can FINALLY distribute those codes to our elected officers as a final beta test before sending the same to the general membership.

## Google workspace

We are subscribed to what's now known as Google's G Suite legacy free edition. This was intended for personal use only (ie individuals and families) and they are pushing business users to their paid workspace services. We have until 6/27 to either continue to pretend we are using it for personal use or switch to a business plan. I vote for remaining legitimate and paying for a service we legitimately rely on:

- MHAA email addresses
- Google calendar for events
- Google drive storage of club documents
- App APIs for website features
  - reCAPTCHA – on web forms to prevent spam and bot misuse
  - maps API
  - OAUTH token API - for authentically sending email from the website as an MHAA email address

Similar services from Microsoft etc cost similar prices, as you'd expect, so wouldn't advocate for that kind of move. Could managed email, cloud storage, and calendar through the website server, but would probably request some service upgrades for reliability if we did that, so wouldn't be free and acquiring the app API type services would cost money through other providers.

I think we can ultimately switch to Google's nonprofit version, which is free and just as featureful as the full product, but we can't do that yet as we have been unable to locate a Letter of Determination from the IRS that confirms we were 501(c)3 approved. Attempts to call the IRS have failed and a fax sent a few weeks ago has resulted in no response so far. We are going to file for 501c3 again as if it was our first time, but it could take some time to hear back. We don't know if the previous treasurer(s) filed for 501c3 properly only sent in the yearly postcards, but only the yearly postcards are found when we search the IRS database. Once we confirm our 501(c)3 status, we should also be able to take advantage of the MS Bing charity and Amazon Smile programs.

In the meantime, I propose we switch to the regular business account. They offer to give that to us for free until September 20th, and 50% off for the first year after that. We have 6 users and at 50% off it's \$3/user/month, so worst case this would cost \$18/month (\$216/yr) from September 2022 through 2023, giving us plenty of time to sort out our IRS status. If we can't get to the nonprofit service by September 2022, I think we can reduce the cost during 2023 by removing 3 of the 6 IDs bringing it down to \$9/mo (\$108/yr).

We currently have two generic admin IDs that I believe are simply backups of each other; one hasn't been logged into in 2 yrs and the other in 9 months. I'd argue we don't need either of them since Jack's and my IDs are super admins, too. I believe we can also remove a YouTube specific ID that was created before I converted the YouTube channel from a single user channel to a brand channel. Under the new configuration, Jack, myself, and Eric are various levels of owner and admin of the brand channel without need for a dedicated ID solely for YouTube activity. It has not been logged into for 2 years.

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This article is distributed by NASA Night Sky Network

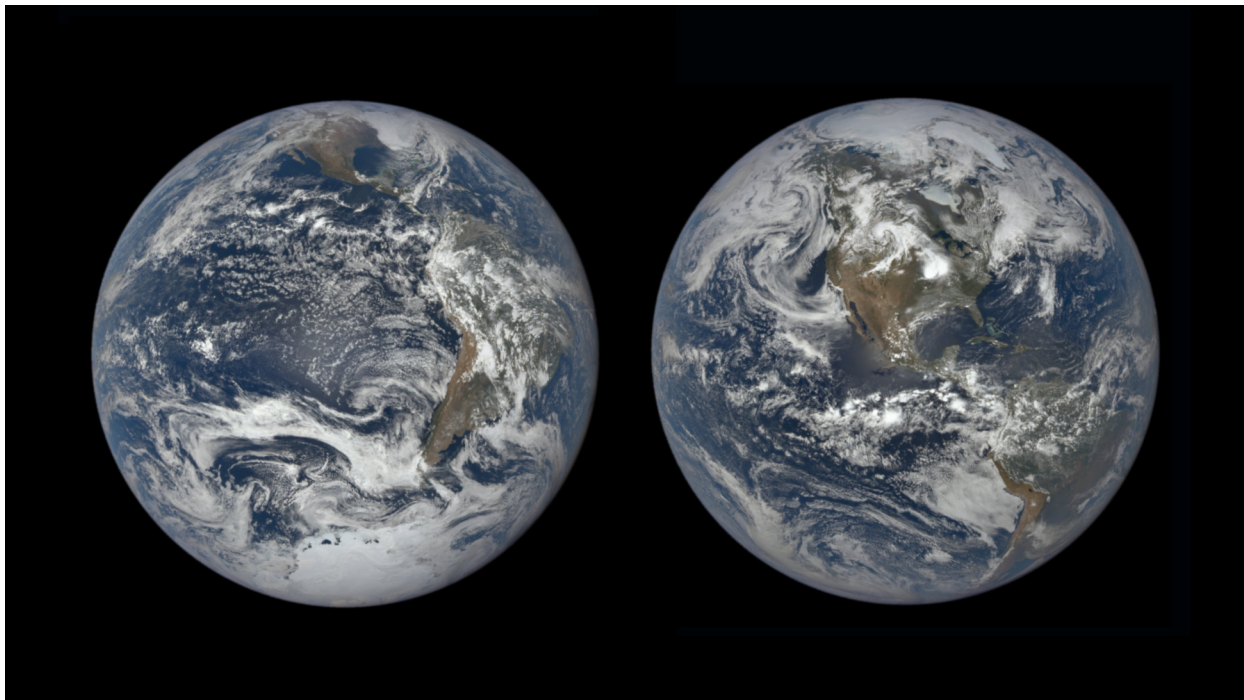
The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

Solstice Shadows

by David Prosper

Solstices mark the changing of seasons, occur twice a year, and feature the year's shortest and longest daylight hours - depending on your hemisphere. These extremes in the length of day and night make solstice days more noticeable to many observers than the subtle equality of day and night experienced during equinoxes. Solstices were some of our earliest astronomical observations, celebrated throughout history via many summer and winter celebrations.

Solstices occur twice yearly, and in 2022 they arrive on June 21 at 5:13 am EDT (9:13 UTC), and December 21 at 4:48pm EST (21:48 UTC). The June solstice marks the moment when the Sun is at its northernmost position in relation to Earth's equator, and the December solstice marks its southernmost position. The summer solstice occurs on the day when the Sun reaches its highest point at solar noon for regions outside of the tropics, and those observers experience the longest amount of daylight for the year. Conversely, during the winter solstice, the Sun is at its lowest point at solar noon for the year and observers outside of the tropics experience the least amount of daylight- and the longest night - of the year. The June solstice marks the beginning of summer for folks in the Northern Hemisphere and winter for Southern Hemisphere folks, and in December the opposite is true, as a result of the tilt of Earth's axis of rotation. For example, this means that the Northern Hemisphere receives more direct light from the Sun than the Southern Hemisphere during the June solstice. Earth's tilt is enough that northern polar regions experience 24-hour sunlight during the June solstice, while southern polar regions experience 24-hour night, deep in Earth's shadow. That same tilt means that the Earth's polar regions also experience a reversal of light and shadow half a year later in December, with 24 hours of night in the north and 24 hours of daylight in the south. Depending on how close you are to the poles, these extreme lighting conditions can last for many months, their duration deepening the closer you are to the poles.



These images from NASA's DSCOVR mission shows the Sun-facing side of Earth during the December 2018 solstice (left) and June 2019 solstice (right). Notice how much of each hemisphere is visible in each photo; December's solstice heavily favors the Southern Hemisphere and shows all of South America and much of Antarctica and the South Pole, but only some of North America. June's solstice, in contrast, heavily favors the Northern Hemisphere and shows the North Pole and the entirety of North America, but only some of South America. Credit: NASA/DSCOVR EPIC Source: <https://www.nasa.gov/image-feature/goddard/2021/summer-solstice-in-the-northern-hemisphere>

While solstice days are very noticeable to observers in mid to high latitudes, that's not the case for observers in the tropics - areas of Earth found between the Tropic of Cancer and the Tropic of Capricorn. Instead, individuals experience two "zero shadow" days per year. On these days, with the sun directly overhead at solar noon, objects cast a minimal shadow compared to the rest of the year. If you want to see your own shadow at that moment, you have to jump! The exact date for zero shadow days depends on latitude; observers on the Tropic of Cancer (23.5° north of the equator) experience a zero shadow day on the June solstice, and observers on the Tropic of Capricorn (23.5° south of the equator) get their zero shadow day on December's solstice. Observers on the equator experience two zero shadow days, being exactly in between these two lines of latitude; equatorial zero shadow days fall on the March and September equinoxes. There is some serious science that can be done by carefully observing solstice shadows. In approximately 200 BC, Eratosthenes is said to have observed sunlight shining straight down the shaft of a well during high noon on the solstice, near the modern-day Egyptian city of Aswan. Inspired, he compared measurements of solstice shadows between that location and measurements taken north, in the city of Alexandria. By calculating the difference in the lengths of these shadows, along with the distance between the two cities, Eratosthenes calculated a rough early estimate for the circumference of Earth – and also provided further evidence that the Earth is a sphere!

Are you having difficulty visualizing solstice lighting and geometry? You can build a "Suntrack" model that helps demonstrate the path the Sun takes through the sky during the seasons; find instructions at stanford.io/3FY4mBm. You can find more fun activities and resources like this model on NASA Wavelength: science.nasa.gov/learners/wavelength. And of course, discover the latest NASA science at nasa.gov.

2022 Star Party Schedule

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|--------------|---------|
| February 4 | 5:00 PM |
| March 4 | 5:30 PM |
| April 1 | 7:00 PM |
| April 29 | 8:00 PM |
| May 27 | 8:30 PM |
| July 1 | 8:30 PM |
| July 29 | 8:00 PM |
| August 26 | 7:30 PM |
| September 23 | 6:30 PM |
| October 28 | 6:00 PM |
| November 26 | 4:30 PM |
| December 23 | 4:30 PM |



Directions To The Star Party Site

[Lake Taghkanic State Park](#) is in the town Ancram, NY. The park entrance is on the Taconic Parkway 10 minutes north of the exit used for Wilcox park.

Star Parties at Lake Taghkanic are held in the West Parking lot, next to the beach. The skies are darker than in Wilcox, with less stray light to deal with. The horizon is also much lower, especially to the south and east, making many more targets possible.

IMPORTANT: all events at Lake Taghkanic State Park require an **RSVP** which includes license plate number of the car you are bringing (please do so via [Meetup](#)). The park is patrolled by state police, and all non registered cars will be ticketed and risk our use of the park.

General Information:

- ♦ Dates listed for star parties are the primary dates. The rain date is the following night unless otherwise noted. Only one session is held for a given weekend, usually on the primary date, Friday, unless postponed (usually due to inclement weather) to the backup date, Saturday. Exceptions to this are noted in the “Scheduled Events” section above.
- ♦ All outdoor events are FREE! All are welcome. If you bring small children, it is **your** responsibility to keep a close eye on them. Please do not bring white-light flashlights. Instead, bring a red astronomer’s flashlight or an ordinary flashlight covered with several layers of red cellophane. If in doubt about the weather, check the status of the event at www.midhudsonastro.org.