



March, 2023

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 Dittmar, 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 March January 21<sup>st</sup>, 2023, on Zoom and in person. Check MeetUp for details and link. Zoom link will be sent to all those that RSVP.

## March Speaker

### "The Invisible Universe"

Steven Bellavia

A large portion of the universe cannot be seen by the human eye, or even very large optical telescopes. But Radio and Gravitational Waves can be detected, helping us unravel the mysteries of space and time

This is a talk about exploring the universe in wavelengths well beyond the human eye, and the latest non-visible schemes, using gravitational waves, as predicted by Albert Einstein but not proven until recently.

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Online link to the MHAA monthly Business Meeting Agenda:

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

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## Minutes of the monthly meeting of the Mid Hudson Astronomical Association, February 21, 2023

The meeting was called to order at 7:33 PM by President Jack Chastain in the Auditorium of the Coykendall Science Center and on the online application Zoom.

The minutes of the January meeting as published in the newsletter were unanimously approved.

### Officer's Reports:

**President:** Jack Chastain was present.

- Jack stated that there will be no reports other than Treasurer and SSA since we need to review last year's financials and pass a budget for 2023.

**Solar System Ambassador:** Willie Yee was present.

- Night Sky Awards were presented to those qualifying members that attended:
  - o Jack Chastain
  - o Steve Dittmar
  - o Eric Myers
  - o (others I may have missed)
- Night Sky Awards a given to those who participate in at least 2 public events during the year. (Our monthly star parties count!)

**Treasurer:** Eric Myers was present.

- Annual report as required by the By-Laws was reviewed and discussed. See the newsletter for a copy of the report.
- Eric discussed the pros and cons of being a 501(c)(3) charitable organization versus a 501(c)(7) Social organization.
  - o Registering as either of these types of organizations requires a \$250 "user fee" for the application.
  - o Eric mentioned that this is more than 1 year's fees to Google which is the reason we are applying as a non-profit (to eliminate Google's fees).
- He will investigate further and make a recommendation to the board of directors.
- Eric presented the annual Treasurer's Report as required by the By-Laws. See the Newsletter for the detailed report he presented.
- Since we have a surplus, a couple of suggestions were made for club purchases:
  - o Buy one or more Celestron NexYZ smart phone adaptors to allow imaging online at our star parties.

- o Buy a StarLab Projector Stand for the Mid-Hudson Discovery Museum in Poughkeepsie.
- o Make a stand for a digital projector.
- Eric presented a proposed budget for 2023 as required by the By-Laws. See the Newsletter for the details he presented.
  - o After some discussion the Budget was tabled until the next meeting due to lack of time.

The business meeting was adjourned at 8:00 PM. There were 21 Zoom windows open at the end of the business meeting and approximately 19 people were in the Coykendall Auditorium. **The next meeting is March January 21<sup>st</sup>, 2023, on Zoom and in person. Check MeetUp for details and link. Zoom link will be sent to all those that RSVP.**

The presentation that followed was by Phoebe Heretz, an undergraduate student at SUNY New Paltz titled: “How JWST will Revolutionize Our Understanding of Planet Formation.”

Submitted by James Rockrohr, March 19, 2023.

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MHAA Treasurer’s Report for March 2023

As of 19 March 2023 we have \$4206.42 in our bank account and \$1906.49 in our PayPal account, with the Treasurer holding \$40 as petty cash. Since the last meeting we took in \$174.73 in dues for 3 new members and 5 renewals and \$24.25 as an additional donation from a member.

Our monthly payment for Zoom Pro was paid on the 15th of the month, and has gone up to \$15.99. Our monthly payment for Google gSuite was paid on the 1st of the month, and has gone down to \$16.22.

Since we had not finished the fiscal year at our last meeting I have updated the final report in the on-line datastore, though the numbers reported at the last meeting (and in the newsletter) are close to the final values.

Proposed Budget:

Last month at the business meeting I presented a proposed budget, though there was no vote on it. I am amending the proposal to include purchasing eclipse glasses for the solar eclipse of April 2024, and removing the proposal for eyepiece phone holders, since Jack Chastain has several that can be used. Here is the budget I propose to be debated at the next business meeting:

Proposed Budget:

Insurance:	\$700
Park Permit:	\$ 25
Meetup.com:	\$250
Google gSuite	\$250
Domain Registration:	\$ 30
Zoom:	\$200
Speakers:	\$300
Publicity:	\$300?
Equipment Repairs:	\$300
New Equipment:	\$300
Science Fair Prizes:	\$150
Eclipse Glasses	\$200
Star Lab Projector Project	\$150
TOTAL:	\$3155

Expected Income: 65 members × \$25	\$1625
Expected Income – Proposed Expenses:	– \$1530

While this suggests a loss of about \$1500, that does not include any non-member donations, which were about \$1400 last year and can be expected to be comparable this year. Furthermore, we came out ahead last year by \$1346 and the year before by \$758 so that loss would be tolerable, even though it isn't expected.

Also keep in mind that the values listed here are maximums to be approved, and for some of them we may not spend that much. (It's also possible to spend more on something with the approval of the members at another meeting.)

The \$300 for Publicity is the potential cost of advertising in the Chronogram, though no decision has been made yet to do so.

We still have some eclipse glasses left from the last eclipse. I imagine giving glasses to members who want them at no cost, and selling the rest to non-members at about our cost (around \$1 each).

The Star Lab Projector project is to contribute to the construction of a stand or frame to hold a projector vertically inside the Star Lab planetarium dome at the Mid-Hudson Discover Museum (formerly the Children's Museum). They would pay for a fisheye lens, and they might pay for parts instead of us, but this would let us buy things for the project to speed it along with or without reimbursement.

I encourage everyone who attends the business meeting to vote in favor of this proposed budget. As of 19 March 2023 we have \$4206.42 in our bank account and \$1906.49 in our PayPal account, with the Treasurer holding \$40 as petty cash. Since the last meeting we took in \$174.73 in dues for 3 new members and 5 renewals and \$24.25 as an additional donation from a member.

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Since we had not finished the fiscal year at our last meeting I have updated the final report in the on-line datastore, though the numbers reported at the last meeting (and in the newsletter) are close to the final values.

Respectfully Submitted,
Eric Myers
Treasurer

MHAA Membership Report for March 2023

As of 20 March 2023 the club has 67 paid members in good standing and 12 lapsed memberships, of which 2 expired over a year ago. We have 3 student members and 12 lifetime members. This month we had 6 membership renewals and gained 3 new members.

Our Slack workspace has 57 "regular" members, which does not include 16 deactivated accounts or 44 invitations sent out but not used. We have 2342 "members" who have subscribed to our site on Meetup.com

Respectfully Submitted,
Eric Myers
Acting Membership Coordinator

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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](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

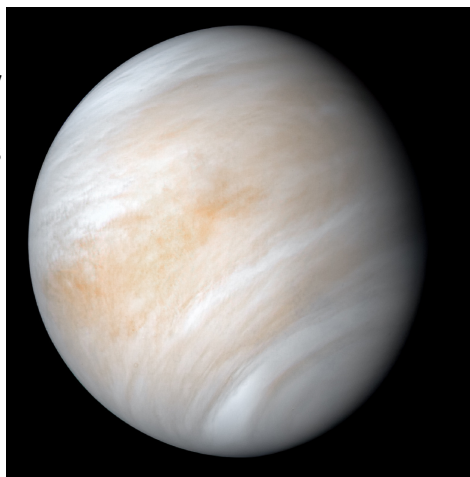
## Spot the King of Planets: Observe Jupiter

David Prosper

Venus is usually the brightest planet in our skies, and is called “Earth’s Twin” due to its similar size to Earth and its rocky composition. However, Venus is a nightmare version of our planet, featuring a thick, crushing atmosphere of acidic clouds, greenhouse gasses, howling winds, and intense heat at its surface.

This rocky inner world’s orbit brings it closer to Earth than any of the other planets, and is the second closest to the Sun after Mercury. Like Mercury, Venus orbits between our planet and the Sun, so Earth-based observers can observe Venus in the morning before sunrise, or in the evening after sunset – but never high in the sky in the middle of the evening, unlike the outer planets. Since Venus is so striking in its twilight appearances, the planet features heavily in sky mythologies worldwide. Venus’s bright morning and evening appearances are the origin for its dual nicknames: the Morning Star, and the Evening Star. Some ancient astronomers never made the connection, and assumed the Evening Star and Morning Star were two unrelated objects! Observers can even spot Venus during the daytime, if the sky is very clear and the planet is bright enough. Venus also has phases, similar to the Moon and Mercury. Galileo’s observations of Venus’s phases helped turn the astronomy world upside down in the early 1600s, and you can see them yourself using a telescope or even a surprisingly low-power pair of binoculars. Warning: Please be very careful when observing Venus with a telescope in the early morning or daytime. Never allow the Sun to enter your instrument’s field of view, as you could be permanently blinded.

Venus’s other moniker of “Earth’s Twin” is a bit misleading. In terms of their surface temperatures and atmospheres, Venus and Earth are extremely different! The surface of Venus is warmer than that of Mercury, despite Mercury being many millions of miles closer to the Sun. While Mercury is still a scorching 800 degrees Fahrenheit (427 degrees Celsius), Venus is even hotter: 900 degrees Fahrenheit (482 degrees Celsius). The vast amount of carbon dioxide in the thick Venusian atmosphere acts as an insulating blanket that retains much of the Sun’s heat, creating the runaway greenhouse effect that dominates its present-day climate. The Venusian surface is a crushing 90 Earth atmospheres on top of its absurd temperatures. These extreme conditions mean that the mission life of any past Venusian robotic landers were measured in hours at best – and usually minutes! However, conditions in Venus’s upper atmosphere may be much more hospitable, with temperatures and pressures at 30 miles (50 km) above the surface that are much more Earth-like in temperature and pressure. Studies of the Venusian atmosphere, including seasonal appearances of dark streaks and faint signals of suggestive chemistry, intrigue researchers with the possibility that some sort of life may persist in its clouds. But far more evidence is needed to confirm such a claim, since non-biological factors like volcanism and other processes could also be the source for these signals.



*The top layers of Venus’s cloud pop in this contrast-enhanced image, reprocessed with modern techniques from Mariner 10 data. Credit: NASA/JPL-Caltech*  
Source:  
<https://solarsystem.nasa.gov/resources/2524/newly-processed-views-of-venus-from-mariner-10/>

Venus’s thick sulfuric acid clouds block direct visual observations of its surface from optical telescopes on Earth. Multiwavelength observations from space probes show evidence of active volcanoes and possibly some sort of plate tectonics, but followup missions will be needed to confirm the presence of active volcanism, plate tectonics, and any

possible signs of life. In order to do so, NASA is sending two new missions to Venus by the end of this decade: the orbiter VERITAS, which will map the surface in high detail and study the chemistry of its rocks and volcanoes, and DAVINCI+, which will study its atmosphere and possible tectonic surface features via a “descent sphere” that will plunge into Venus’s clouds. Follow their development and discover more about Venus at [solarsystem.nasa.gov/venus](https://solarsystem.nasa.gov/venus), and of course, continue your exploration of the universe at [nasa.gov](https://nasa.gov).

## 2023 Star Party Schedule

(New format thanks to Eric)

| Date        | Arrival Time | Civil Dusk |
|-------------|--------------|------------|
| Mar 17 2023 | 7:00 PM      | 19:31 EDT  |
| Apr 21 2023 | 7:30 PM      | 20:12 EDT  |
| May 19 2023 | 8:00 PM      | 20:45 EDT  |
| Jun 16 2023 | 8:30 PM      | 21:07 EDT  |
| Jul 14 2023 | 8:30 PM      | 21:02 EDT  |
| Aug 11 2023 | 8:00 PM      | 20:31 EDT  |
| Sep 15 2023 | 7:00 PM      | 19:32 EDT  |
| Oct 13 2023 | 6:00 PM      | 18:44 EDT  |
| Nov 10 2023 | 4:30 PM      | 17:07 EST  |



### 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](http://www.midhudsonastro.org).