



# Mid-Hudson Astronomical Association

## March, 2022

**Website:** [www.midhudsonastro.org](http://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 March 15<sup>th</sup>, 2022, on Zoom (and maybe in person). Check MeetUp for details and link. Link will be sent to all those that RSVP.**

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### March Meeting In Person

Monthly business meeting in which the Association discusses any upcoming events, planning and other business before the Association. Speaker or Presentation of Interest follows after the meeting and is a separate Meetup event. LOCATION: Lecture Center, Room 104 (LC104) - as well as online (Zoom - See link below) Although all meetings are open to the public, the Business Meeting has been separated from the overall meeting to allow those that do not wish to be notified of MHA-related specifics and are only there for the Presentation. Participants are currently required to be vaccinated and masked.

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## March Speaker

### How the Milky Way got its dark spots — and how that led to the formation of the Earth

Dr. Mordecai-Mark Mac Low

The origin and nature of the dark spots we see in the Milky Way has been debated for fifty years since it became clear from radio astronomical observations of molecular line widths that the gas within them was moving supersonically. I'll present numerical simulations of their formation that strongly suggest these clouds are rapidly collapsing under their own self-gravity to quickly form stars and then blow apart. This star formation has been demonstrated in the last decade to inevitably be accompanied by planet formation, tracing the history of the formation of our own planet. I'll show a few aspects that I have worked on of how that complex process proceeds as well.



### Minutes of the monthly meeting of the Mid Hudson Astronomical Association, February 15, 2022

The meeting was called to order at 7:30 PM by President Jack Chastain 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.

- Our monthly indoor meetings can return to SUNY New Paltz beginning in March. See MeetUp for details as the meeting approaches. Proof of full vaccination will be required.
- Discussed progress on online star parties. See some example videos online. Still need some helpers to manage Zoom windows, etc. See Jack or Eric Myers or Tim Denman.
- Also looking for volunteers with imaging cameras to zoom from star parties or from their locations.
- Need someone to handle the in-person camera at star parties.

**Vice President:** Dave Sherman was present.

- No report
- Mentioned that there were about 5 people at the last club star party. It was cold with a bright moon.

**Secretary:** Jim Rockrohr was present.

- Nothing to report.

**Publicity:** Tim Denman was present.

- He sent out publicity for this meeting and our past outdoor star party.
- Tell Tim if you see/hear anything in the local media about our events.

**Newsletter:** Rick Versace was not present.

- No report.

**Membership:** Rick Versace was not present. Eric reported:

- 56 members paid up.
- Now sending out automated membership renewal letters by email.
- The SUNY liaison, Amy Bartholamew, has a free membership.
- It was moved to also give a free membership to Raj Pandya. It was seconded and approved by acclamation.

**Treasurer:** Eric Myers was present.

- See the newsletter for the latest information.
- The annual report was published in February's newsletter.

- Eric presented the 2022 budget as required by the By-Laws.
- After questions and discussion, it was moved and seconded to approve the budget as presented. It was passed by acclamation.
- See the budget published elsewhere in the March newsletter.

**Outreach:** Joe McCagne was not present.

- We need someone to assist Joe.
- Willie has the award pins for outreach events and will award them at the next meeting in March.

**Upcoming Programs:** Alexandra Passas was present.

- Alex now has lots of leads for this year and has booked presenters through April.

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

- Nothing new to report.
- The Webb telescope alignment is going well.

**Webmaster:** Steve Dittmar was present.

- Little progress on the web pages since last month.

### **Old Business:**

- The last club star party was held on a cold clear night. There was 1 telescope and 5 people.

### **New Business:**

- Added a “bot” to the launch channel of Slack.
- Jack is updating the club history documents on Google Documents. He is looking to include all club events. If you have any information about past events let him know.
- Jack is still planning to start a “Tech Meeting” to discuss various technical issues rather than use time in this meeting. Look for future info.
- 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.

### **Upcoming Events**

- **Next Club Star Party:** March 4, 2022, at Lake Taghkanic State park. See MeetUp and YOU MUST RSVP with car make, model and license plate number to attend.
- **NEAF is 4/9-10 at Rockland Community College. (Editor’s note:** Recently cancelled due to lack of vendor participation.)
- **College Hill Park in Poughkeepsie.** Cancelled or rescheduled; TBD.
- **Vassar College Star party:** March 2. See Jack for details.
- **Timor Park in Union Vale:** Date TBD (October?).

### **Observing Reports:**

- None

The business meeting was adjourned at 7:58 PM. There were 35 Zoom windows open at the end of the business meeting. **The next meeting is March 15<sup>th</sup>, 2022, on Zoom (and maybe in person). Check MeetUp for details and link. Link will be sent to all those that RSVP.**

The presentation that followed was by China Blue and Alax Passas: “A Science Based Artist’s Journey”.

Submitted by James Rockrohr, March 12<sup>th</sup>, 2022.

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## MHAA Treasurer's Report for March 2022

As of 13 March 2022 we have \$3990.81 in our bank account and \$783.31 in our PayPal account, with the Treasurer holding \$80 in petty cash. This past month we received \$49.52 in dues for new or renewed memberships, and a \$15 donation from a new member. I anticipate that our monthly Zoom subscription of \$14.99 will be paid out of our PayPal account on Tuesday.

Respectfully Submitted,  
Eric Myers  
Treasurer

### Treasurer's Report for FY 2021 – 2022

According to the Bylaws of the Mid-Hudson Astronomical Association the fiscal year begins on the first day of March, and the Treasurer is to submit a proposed budget for the coming year at the February meeting. Before presenting the proposed budget, I want to report on the finances for the past fiscal year:

#### Income

|                   |                   |
|-------------------|-------------------|
| Dues Paid:        | \$1,515.87        |
| T-shirt sales     | \$40.00           |
| Tips & Donations: | \$995.00          |
| Eclipse Glasses   | \$148.33          |
| Credit Interest:  | \$4.43            |
| <b>TOTAL:</b>     | <b>\$2,704.11</b> |

#### Expenses

|                      |                   |
|----------------------|-------------------|
| Insurance:           | \$1,154.25        |
| Zoom:                | \$179.97          |
| Meetup.com:          | \$213.72          |
| Park Permit:         | \$25.00           |
| Domain Registration: | \$0.00            |
| Publicity:           | \$0.00            |
| Speakers             | \$0.00            |
| Eclipse glasses      | \$183.03          |
| Other:               | \$101.65          |
| <b>TOTAL:</b>        | <b>\$1,946.62</b> |

|                       |            |
|-----------------------|------------|
| March 2021 Assets:    | \$3,932.52 |
| February 2022 Assets: | \$4,690.01 |
| Net gain:             | +\$757.49  |

15 Feb 2022

### Proposed Budget for FY 2022-2023

Accepted at  
the Business  
Meeting 15

Projected Income: 50 members × \$25 = \$1250

| <u>Last Year's Accepted Budget:</u> | <u>Actual Expenses</u> | <u>Proposed Budget:</u> |
|-------------------------------------|------------------------|-------------------------|
| Insurance:                          | \$518                  | \$696 + ...             |
| Park Permit:                        | \$25                   | \$25                    |
| Meetup.com:                         | \$220                  | \$213.72                |
| Domain Registration:                | \$30                   | \$0                     |
| Publicity:                          | \$50                   | \$0                     |
| Equipment Repairs:                  | \$200                  | \$0                     |
| Speakers:                           | \$300                  | \$0                     |
| Zoom:                               | \$180                  | \$179.97                |
| Planetary Imager:                   | \$400                  | \$0                     |
| Science Fair Prizes                 | \$100                  | \$75                    |
| <b>TOTAL:</b>                       | <b>\$2073</b>          | <b>\$1,947</b>          |

|         |        |         |                   |        |
|---------|--------|---------|-------------------|--------|
| Income: | \$1225 | \$2,704 | 50 members x \$25 | \$1250 |
|---------|--------|---------|-------------------|--------|

|                    |        |       |   |        |
|--------------------|--------|-------|---|--------|
| Income – Expenses: | -\$798 | \$758 | Expected Income –<br>Proposed Expenses: | -\$955 |
|--------------------|--------|-------|---|--------|

## MHAA Membership Report for March 2022

As of 13 March 2022 MHAA has 59 members in good standing, and 15 lapsed memberships, of which 3 expired over a year ago. We have 12 Lifetime members, and 1 Student member. Since my report last month we have had 1 membership renewal and gained 1 new regular annual member.

Reminders are continuing to go out automatically to lapsed members, but only once a month, usually around the 21st of the month.

Before the pandemic the club voted to make Student memberships free of charge. With one exception the students have not really been that active, while this has also had the unanticipated effect of not requiring them to renew their membership. I am considering proposing a minor revision to the policy, where Student memberships are offered at a reduced rate (it could be just \$1) but are not free. This would make the membership seem more valuable while only attracting students who are actually interested, but still give them a discount. We don't have to decide this right away, but I look forward to discussing the policy at the meeting.

Respectfully Submitted,  
Eric Myers  
Acting Membership Coordinator

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### This article is distributed by NASA Night Sky Network

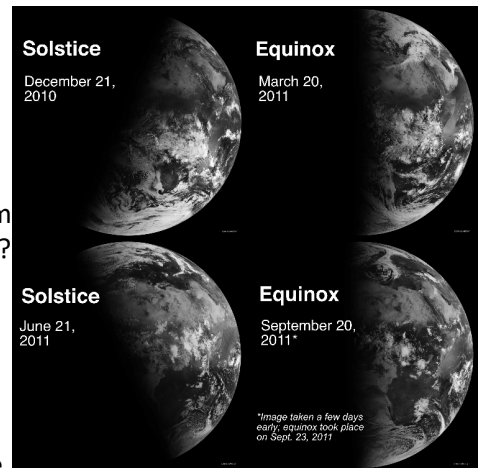
The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.gov](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

## Embracing the Equinox

David Prosper

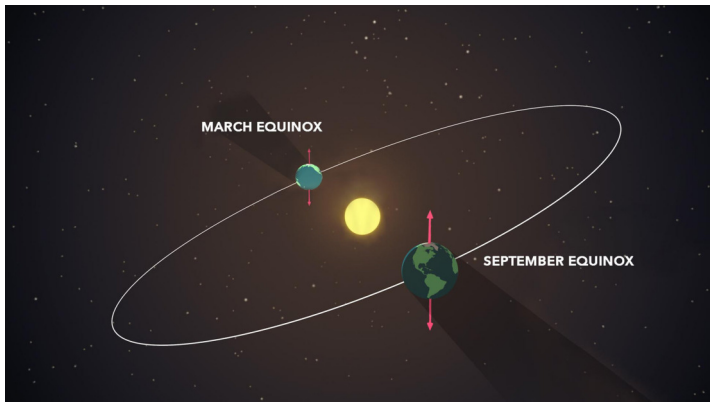
Depending on your locale, equinoxes can be seen as harbingers of longer nights and gloomy weather, or promising beacons of nicer temperatures and more sunlight. Observing and predicting equinoxes is one of the earliest skills in humanity's astronomical toolkit. Many ancient observatories around the world observed equinoxes along with the more pronounced solstices. These days, you don't need your own observatory to know when an equinox occurs, since you'll see it marked on your calendar twice a year! The word "equinox" originates from Latin, and translates to equal (equi-) night (-nox). But what exactly is an equinox?

An equinox occurs twice every year, in March and September. In 2022, the equinoxes will occur on March 20, at exactly 15:33 UTC (or 11:33 am EDT), and again on September 23, at 01:04 UTC (or September 22 at 9:04 pm EDT). The equinox marks the exact moment when the center of the Sun crosses the plane of our planet's equator. The day of an equinox, observers at the equator will see the Sun directly overhead at noon. After the March equinox, observers anywhere on Earth will see the Sun's path in the sky continue its movement further north every day until the June solstice, after which it begins traveling south. The Sun crosses the equatorial plane again during the September equinox, and continues traveling south until the December solstice, when it heads back north once again. This movement is why some refer to the March equinox as the northward equinox, and the September equinox as the southward equinox.



Scenes of Earth from orbit from season to season, as viewed by EUMETSAT. Notice how the terminator - the line between day and night - touches both the North and South Poles in the equinox images. See how the shadow is lopsided for each solstice, too: sunlight pours over the Northern Hemisphere for the June solstice, while the sunlight dramatically favors the Southern Hemisphere for the December solstice. Source: [bit.ly/earthequinox](https://bit.ly/earthequinox) Images: NASA/Robert Simmon

Our Sun shines equally on both the Northern and Southern Hemispheres during equinoxes, which is why they are the only times of the year when the Earth's North and South Poles are simultaneously lit by sunlight. Notably, the length of



day and night on the equinox aren't precisely equal; the date for that split depends on your latitude, and may occur a few days earlier or later than the equinox itself. The complicating factors? Our Sun and atmosphere! The Sun itself is a sphere and not a point light source, so its edge is refracted by our atmosphere as it rises and sets, which adds several minutes of light to every day. The Sun doesn't neatly wink on and off at sunrise and sunset like a light bulb, and so there isn't a perfect split of day and night on the equinox - but it's very close.

*This (not to scale) image shows how our planet receives equal amounts of sunlight during equinoxes. Credit: NASA/GSFC/Genna Duberstein*

Equinoxes are associated with the changing seasons. In March, Northern Hemisphere observers welcome the longer, warmer days heralded by their vernal, or spring, equinox, but Southern Hemisphere observers note the shorter days – and longer, cooler nights - signaled by their autumnal, or fall, equinox. Come September, the reverse is true. Discover the reasons for the seasons, and much more, with NASA at [nasa.gov](http://nasa.gov)



## 2022 Star Party Schedule

|              |         |
|--------------|---------|
| 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](http://www.midhudsonastro.org).