



# Mid-Hudson Astronomical Association

## February, 2021

Website: [www.midhudsonastro.org](http://www.midhudsonastro.org)

groups.io Group: [mhaa.groups.io](https://groups.io/g/mhaa)

**President :** Jack Chastain

**Secretary:** Jim Rockrohr

**Newsletter Editor:** Rick Versace

**Publicity:** Tim Denman

**Speakers:** Alexandra Passas

**Vice President:** Tim Denman

**Treasurer:** Eric Myers

**Membership Coordinator:** Rick Versace

**Webmaster:** Steve Dittmar

**Outreach:** Joe Macagne

**College Liaison:** Dr. Amy Bartholomew

**Directors:** Joe Macagne, Steve Carey, Willie Yee, Karl Loatman

The next meeting is February 16<sup>th</sup>, 2021, on Zoom. Check MeetUp for details and link. Link will be sent to all those that RSVP.

### Speaker for February

Katie Whittaker

Meteorologist/Science Teacher

Meteorology Meets Astronomy



# Minutes of the monthly meeting of the Mid Hudson Astronomical Association, January 19, 2021

The meeting was called to order at 7:30 PM by President Jack Chastain on the online application Zoom.

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

In the interest of saving time, only those officers with something significant to report were called on.

## Officer's Reports:

**Treasurer:** Eric Myers was present.

- We are in good financial health.
- See the newsletter for the latest information.
- Per the by-laws Eric will submit a budget for consideration next month.
- Eric paid our event liability insurance bill of \$518.00 as it was due. He asked for a motion authorizing the expenditure. It was so moved and seconded and passed unanimously.

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

- Tomorrow evening (1/20/2021) a webinar on "Mars Madness" at 10 PM.
- Perseverance rover lands on Mars February 18. (Do we want to organize a watch party?)

## Old Business:

- The last club star party was scheduled for last Friday but was cancelled due to solid overcast both Friday and Saturday.

## New Business:

- We received a request for a radio show in Catskill at 7 PM on 2/4. WGXC on the web.
- Eric Myers is proposing the club purchase new imaging camera(s) for use in virtual star parties. Discussion will continue later in the meeting (see below) and on Slack.

## Upcoming Events

- **Star Trek magic Show:** by Willie Yee. 1/29 at 8 PM presented the Westchester Astronomy Club on Zoom. (Willie is working on getting access information. See MeetUp for details.)
- **WGXC radio show:** February 4.
- **Next Club Star Party:** February 12 at Lake Taghkanic State park. See MeetUp and YOU MUST RSVP with car make, model and license plate number to attend.
- **Mars Madness:** webinar on 2/18. See MeetUp for details.

## Observing Reports:

- **(none)**

## Special Presentation by Eric Myers

- Working on getting our star parties on Zoom; virtual star parties.
- He's been experimenting with an IR camera that can "see in the dark".
- Allows people to see whose there and the telescopes that are set up.
- See the MHAA YouTube channel for examples.
- Eric has found a way to use imagers in a Zoom call.
- One can create breakout rooms for each telescope and participants can switch between them.
- Eric is looking for volunteers to join in.
- Will also need Zoom monitors and hosts to make it go smoothly. These people can be remote from the actual star party location.
- If interested contact Eric and join the discussion on Slack.

## Visitors/New Members:

There were about 64 (!) Zoom windows in attendance at the end of the business meeting.

The business meeting was adjourned at 8:00 PM. **The next meeting is February 16<sup>th</sup>, 2021, on Zoom. Check MeetUp for details and link. Link will be sent to all those that RSVP.**

The presentation that followed was by Seth McGowan, Vice President of the Adirondack Sky Center and Observatory: “Entering Astrophotography Without Fear”. The presentation was available live on Facebook and recorded for posting on YouTube.

Submitted by James Rockrohr, February 11<sup>th</sup>, 2021.

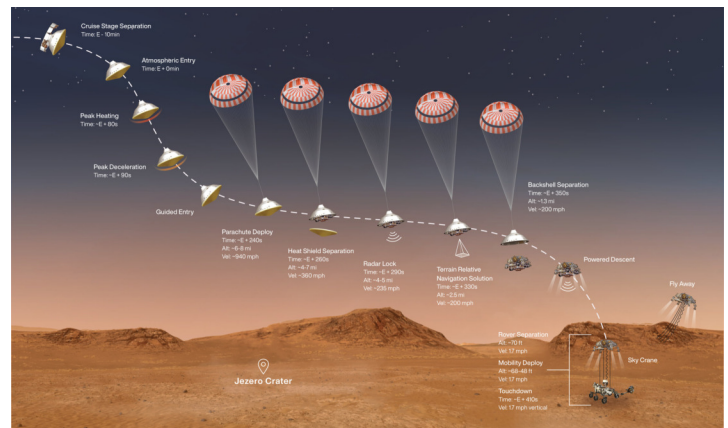
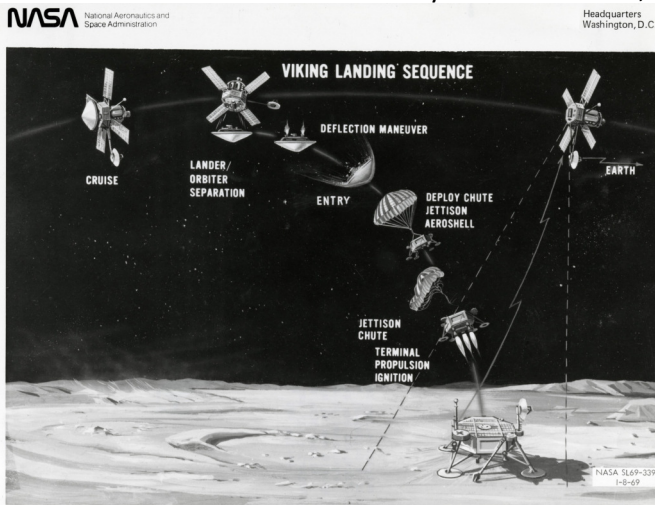


This article is distributed by NASA Night Sky Network

## Landing On Mars: A Tricky Feat!Landing On Mars: A Tricky Feat!

David Prosper

The Perseverance rover and Ingenuity helicopter will land in Mars’s Jezero crater on February 18, 2021, NASA’s latest mission to explore the red planet. Landing on Mars is an incredibly difficult feat that has challenged engineers for decades: while missions like Curiosity have succeeded, its surface is littered with the wreckage of many failures as well.



*Illustrations of the Entry, Descent, and Landing (EDL) sequences for Viking in 1976, and Perseverance in 2021. Despite the wide gap between these missions in terms of technology, they both performed their landing maneuvers automatically, since our planets are too far apart to allow Earth-based engineers to control them in real time! (NASA/JPL/Caltech)*

Why is landing on Mars so difficult? Mars presents a unique problem to potential landers as it possesses a relatively large mass and a thin, but not insubstantial, atmosphere. The atmosphere is thick enough that spacecraft are stuffed inside a streamlined aeroshell sporting a protective heat shield to prevent burning up upon entry - but that same atmosphere is not thick enough to rely on parachutes alone for a safe landing, since they can’t catch sufficient air to slow down quickly enough. This is even worse for larger explorers like Perseverance, weighing in at 2,260 lbs (1,025 kg). Fortunately, engineers have crafted some ingenious landing methods over the decades to allow their spacecraft to survive what is called Entry, Descent, and Landing (EDL). The Viking landers touched down on Mars in 1976 using heat shields, parachutes, and retrorockets. Despite using large parachutes, the large Viking landers fired retrorockets at the end to land at a safe speed. This complex combination has been followed by almost every mission since, but subsequent missions have innovated in the landing segment. The 1997 Mars Pathfinder mission added airbags in conjunction with parachutes and retrorockets to safely bounce its way to a landing on the Martian surface. Then three sturdy “petals” ensured the lander was pushed into an upright position after landing on an ancient floodplain. The Opportunity and Spirit missions used a very similar method to place their rovers on the Martian surface in 2004. Phoenix (2008) and Insight (2018) actually utilized Viking-

style landings. The large and heavy Curiosity rover required extra power at the end to safely land the car-sized rover, and so the daring “Sky Crane” deployment system was successfully used in 2012. After an initial descent using a massive heat shield and parachute, powerful retrorockets finished slowing down the spacecraft to about 2 miles per hour. The Sky Crane then safely lowered the rover down to the Martian surface using a strong cable. Its job done, the Sky Crane then flew off and crash-landed a safe distance away. Having proved the efficacy of the Sky Crane system, NASA will use this same method to attempt a safe landing for Perseverance this month! You can watch coverage of the Mars Perseverance landing starting at 11:00 AM PST (2:00 PM EST) on February 18 at [nasa.gov/nasalive](https://nasa.gov/nasalive). Touchdown is expected around 12:55 PM PST (3:55 PM EST). NASA has great resources about the Perseverance Rover and accompanying Ingenuity helicopter on [mars.nasa.gov/mars2020](https://mars.nasa.gov/mars2020). And of course, find out how we plan to land on many different worlds at [nasa.gov](https://nasa.gov).

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## 2021 Star Party Schedule

|              |         |
|--------------|---------|
| January 15   | 4:30 PM |
| February 12  | 5:30 PM |
| March 12     | 6:00 PM |
| April 9      | 7:30 PM |
| May 14       | 8:00 PM |
| June 11      | 8:30 PM |
| July 9       | 8:30 PM |
| August 6     | 8:00 PM |
| September 10 | 7:00 PM |
| October 8    | 6:30 PM |
| November 5   | 5:30 PM |
| December 3   | 4:30 PM |

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## 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).