



# Mid-Hudson Astronomical Association

## December, 2017

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

Yahoo Group: MHAstro

**President :** Willie Yee  
**Secretary:** Jim Rockrohr  
**Newsletter Editor:** Rick Versace  
**Publicity:** Paul Chauvet  
**Speakers:** Paul Granich

**Vice President:** Jack Chastain  
**Treasurer:** Karen Tulchinsky  
**Membership Coordinator:** Caryn Sobel  
**Webmaster:** Paul Chauvet  
**Outreach:** (open)  
**College Liaison:** Dr. Amy Forestell

**Board of Directors:** Joe Macagne, Karl Loatman, Steve Carey

### Minutes of the monthly meeting of the Mid Hudson Astronomical Association, November 21, 2017

The meeting was called to order at 7:33 PM by President Willie Yee in the Coykendal Auditorium at SUNY, New Paltz, NY.

The minutes of the last meeting were not available for this meeting.

#### Officer's Reports:

**Membership:** Caryn Sobel was not present.

**Treasurer:** Karen Tulchinski was not present.

**Publicity:** Paul Chauvet was present. Send him info on public events.

**Webmaster:** Paul Chauvet was present. No issues known.

**Outreach:**

- No upcoming events were reported.

**Upcoming programs:** The following information was shared:

- **December** – Annual Member presentations. Contact Willie if you have a short (10-15 min) presentation you would like to make.

**Old Business:**

- Reminder that we have 4 **club telescopes** to lend to interested members:
  - o The ETX-80 is available. See Joe Macagne.
  - o Jack told us that the club's 13.1" DOB is working great and is available.
- **Nominations for 2018:** The following slate was presented:
  - o President – Jack Chastain
  - o Vice President – Paul Granich, however Paul Chauvet or Willie Yee will fill in at meetings if the president is unavailable.
  - o Secretary – Jim Rockrohr
  - o Treasurer – Karen Tulchinsky
  - o Newsletter Editor – Rick Versace
  - o Publicity Chairperson – Paul Chauvet
  - o Board of Directors:
    - Karl Loatman
    - Steve Carey
    - Joe Macagne
    - Willie Yee
  - o There were no additional nominations from the floor. It was moved and seconded to accept this slate of nominations to be voted on at the December meeting. The motion was passed.

**New Business:**

- Bill Walsh has index cards for outreach to get people to draw what they see. He said it has been effective in the past. They were passed to Jack Chastain.
- Discussion regarding paying expenses for a speaker to come from Columbus, Ohio. It was suggested that a video webinar be arranged instead.

**Observing Reports:**

- **Olana** – Oct 21. Karl presented.
- **Saugerties High School** – October 27, observing. 7 telescopes (not all ours), lots of kids. Good turnout, as usual.
- **IOMN at SUNY NP.** – October 28. Good turnout.
- **Saugerties High School Science Fair** – November 3. One telescope (Jack).
- **Walkway Over the Hudson** – November 4. Jack and Eric, lots of clouds, but saw Moon Dogs through the haze.
- **Dudley Observatory** – November 11. (We did not participate.)
- **Poughkeepsie Mini Maker Faire** – November 18. Rick and Jack had tables. Lots of fun and interest although no viewing due to clouds.

**Visitors/New Members:**

There were about 31 people in attendance at the end of the business meeting.

The meeting was adjourned at about 7:56 PM. The next meeting is on December 19<sup>th</sup>. It is our annual holiday party, so bring goodies and non alcoholic beverages to share.

The presentation that followed at 8 PM was “How to Build a Supermassive Black Hole” by Prof. Jillian Bellovary, Department of Physics & Astronomy, Queensborough Community College.

Submitted by James Rockrohr, December 17<sup>th</sup>, 2017.

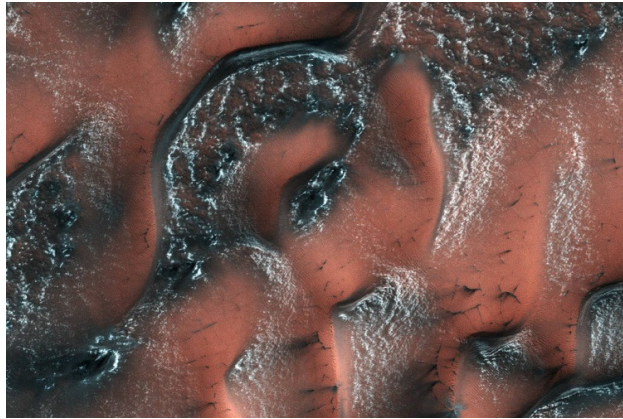


**Snowy Worlds Beyond Earth**  
By Linda Hermans-Killiam

There are many places on Earth where it snows, but did you know it snows on other worlds, too? Here are just a few of the places where you might find snow beyond Earth:

**Mars**

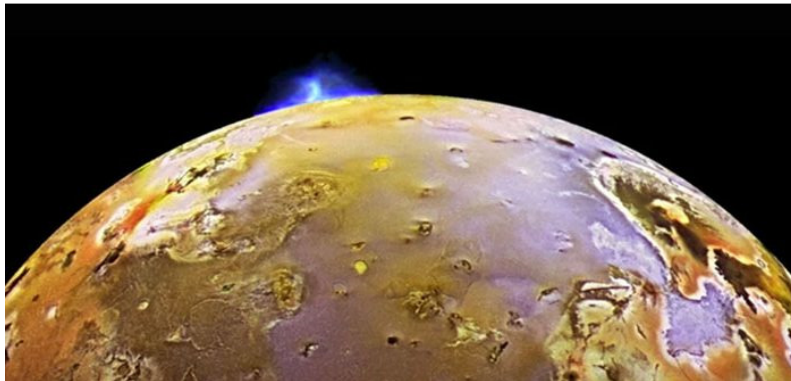
The north pole and south pole of Mars have ice caps that grow and shrink with the seasons. These ice caps are made mainly of water ice—the same kind of ice you’d find on Earth. However, the snow that falls there is made of carbon dioxide—the same ingredient used to make dry ice here on Earth. Carbon dioxide is in the Martian atmosphere and it freezes and falls to the surface of the planet as snow. In 2017, NASA’s Mars Reconnaissance Orbiter took photos of the sand dunes around Mars’ north pole. The slopes of these dunes were covered with carbon dioxide snow and ice.



*NASA's Mars Reconnaissance Orbiter captured this image of carbon dioxide snow covering dunes on Mars. Credit: NASA/JPL/University of Arizona*

### **A Moon of Jupiter: Io**

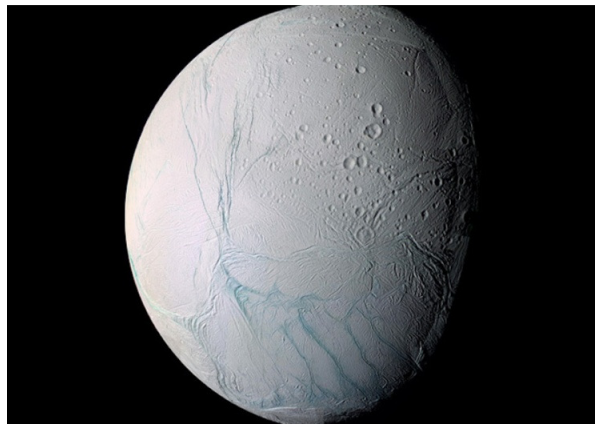
There are dozens of moons that orbit Jupiter and one of them, called Io, has snowflakes made out of sulfur. In 2001, NASA's Galileo spacecraft detected these sulfur snowflakes just above Io's south pole. The sulfur shoots into space from a volcano on Io's surface. In space, the sulfur quickly freezes to form snowflakes that fall back down to the surface.



*A volcano shooting molten sulfur out from the surface of Io. Credit: NASA/JPL-Caltech*

### **A Moon of Saturn: Enceladus**

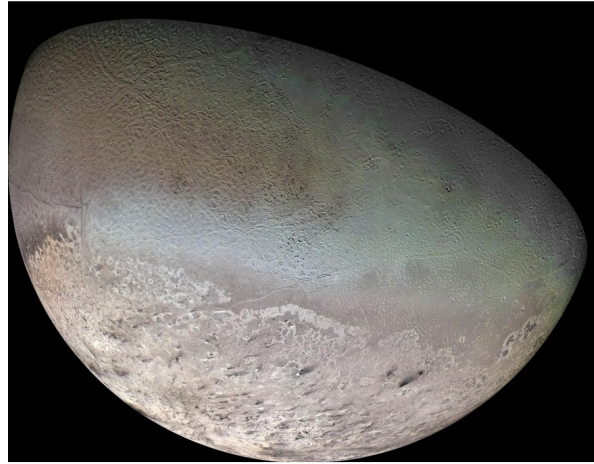
Saturn's moon, Enceladus, has geysers that shoot water vapor out into space. There it freezes and falls back to the surface as snow. Some of the ice also escapes Enceladus to become part of Saturn's rings. The water vapor comes from a heated ocean which lies beneath the moon's icy surface. (Jupiter's moon Europa is also an icy world with a liquid ocean below the frozen surface.) All of this ice and snow make Enceladus one of the brightest objects in our solar system.



*Enceladus as viewed from NASA's Cassini spacecraft. Credit: NASA*

### **A Moon of Neptune: Triton**

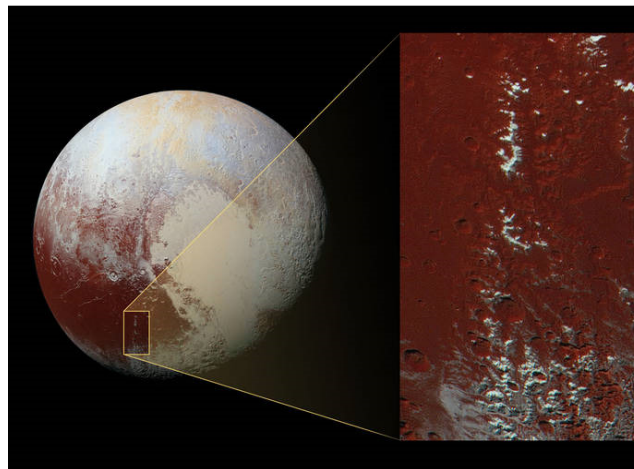
Neptune's largest moon is Triton. It has the coldest surface known in our solar system. Triton's atmosphere is made up mainly of nitrogen. This nitrogen freezes onto its surface covering Triton with ice made of frozen nitrogen. Triton also has geysers like Enceladus, though they are smaller and made of nitrogen rather than water.



*The Voyager 2 mission captured this image of Triton. The black streaks are created by nitrogen geysers. Credit: NASA/JPL/USGS*

### **Pluto**

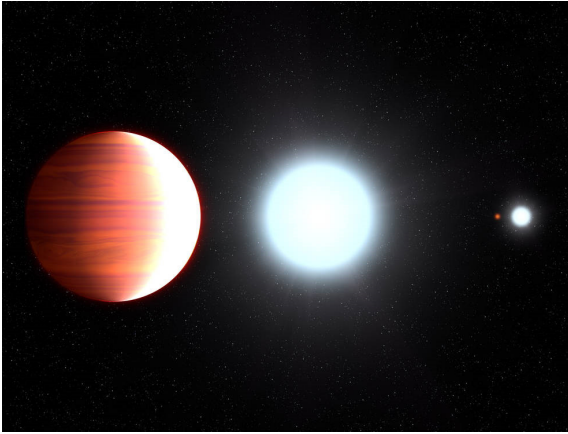
Farther out in our solar system lies the dwarf planet Pluto. In 2016, scientists on the New Horizons mission discovered a mountain chain on Pluto where the mountains were capped with methane snow and ice.



*The snowy Cthulhu (pronounced kuh-THU-lu) mountain range on Pluto. Credits: NASA/JHUAPL/SwRI*

## Beyond Our Solar System

There might even be snow far outside our solar system! Kepler-13Ab is a hot, giant planet 1,730 light years from Earth. It's nine times more massive than Jupiter and it orbits very close to its star. The Hubble Space Telescope detected evidence of titanium oxide—the mineral used in sunscreen—in this planet's upper atmosphere. On the cooler side of Kepler-13Ab that faces away from its host star, the planet's strong gravity might cause the titanium oxide to fall down as "snow."



This is an artist's illustration of what Kepler-13Ab might look like. Credit: NASA/ESA/G. Bacon (STScI)

Want to learn more about weather on other planets? Check out NASA Space Place: <https://spaceplace.nasa.gov/planet-weather>

## 2017 Star Party Schedule

<i>Date</i>	<i>Time</i>	<i>Sunset</i>	<i>End Civil Twilight</i>	<i>Nearest New Moon</i>
January 27th	7:30PM	5:05PM	5:35PM	January 27th
March 3rd	7:30PM	5:49PM	6:17PM	February 26th
March 24th	7:30PM	7:13PM	7:40PM	March 27th
April 28th	8:00PM	7:51PM	8:21PM	April 26th
May 26th	8:30PM	8:19PM	8:52PM	May 25th
June 30th	8:30PM	8:34PM	9:09PM	June 23rd
July 28th	8:30PM	8:18PM	8:49PM	July 23rd
August 18th	8:30PM	7:51PM	8:20PM	August 21st
September 22nd	7:30PM	6:52PM	7:20PM	September 20th
October 20th	7:30PM	6:06PM	6:35PM	October 19th
November 17th	7:30PM	4:33PM	5:04PM	November 18th
December 15th	7:30PM	4:26PM	4:48PM	December 18th

## 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:

- ♦ For the foreseeable future, all indoor meetings will be held on the 3<sup>rd</sup> Tuesday of each month in Coykendall Science Bldg., SUNY New Paltz (directions above) at 7:30 PM. All indoor events are FREE! All are welcome. The presentations are generally geared towards teenagers and up. For more information, call the Club Hotline.
- ♦ 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).