



Mid-Hudson Astronomical Association

February, 2017

Website: 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, January 17, 2017

The meeting was called to order at 7:35 PM by President Willie Yee in the Auditorium of the Coykendall Science Center at SUNY, New Paltz, NY.

The minutes of the last meeting were approved as published in the most recent newsletter.

Officer's Reports:

Membership: No report. Dues for 2017 are now due.

Treasurer: Ken Bailey was present. See his latest report as published in the newsletter. He is working with Karen Tulchinsky to transfer Treasurer's duties to her.

Treasurer's Report for the month of January, 2017

Date: 5 February, 2017

Bank Balance:	\$2506.08
Outstanding Checks:	\$ 25.00
Outstanding Deposits:	\$ 0
Ending Bank Balance:	\$2481.08
Checkbook Balance:	\$2481.08
Balance with Bank: Yes	

Ending balance total: \$2481.08

Notes: Outstanding check is to NYS OPRHP for the 2017 Lake Taghkanic State Park Stargazing Permit. We have the permit, they just didn't get the check to the bank in time.

Respectfully submitted: Ken Bailey
Treasurer

Outreach: Nothing currently planned.

Publicity: Paul Chauvet was not present. Send him info on public events.

Webmaster: Paul Chauvet was not present. No issues known.

Upcoming programs: The following information was shared:

- February: "The Discovery of Gravitational Waves" by Dr. Francis P. Wilkin, Professor of Physics and Astronomy at Union College in Albany, NY.
- March: "Diffraction of Light and Astronomy" by Steve Bellavia.
- April: (TBD)
- May: "How Superman Sees the Stars" by Dr. David J. Helfand, Columbia University.

Old Business:

- **Club Telescopes:**
 1. We have a donation of a 60 mm Tasco refractor with tripod, simple alt-az mount, star diagonal and an eyepiece (1.25"). Does anyone want to use it? See Willie.
 2. Should we sell the Criterion? Some Discussion. Willie will add more details on Yahoo list.
 3. We still have the "classic" Meade LX-200. It needs a pier or tripod. Looking for a worthy organization to donate it to.

New Business:

- Insurance payment is due in February; it is going up \$66.00. Ken investigated alternatives and recommends we stay with the current provider, even with the increase.
- Discussion about the annual dinner. It will be at the Would restaurant in Highland. Do people prefer February 4 or February 11? No consensus in the audience. Willie will conduct a poll in the MHAstro Yahoo group to determine the date and announce it on MeetUp.

Observing Reports:

- (none reported)

Visitors/New Members:

There were about 22 people in attendance at the end of the business meeting.

The meeting was adjourned at about 7:50 PM. The next meeting is on February 21st.

The presentation that followed was “Looking for Cosmic Glue: Dark Matter Searches with XENON” by Dr. Ethan Brown, Assistant Professor of Physics at Rensselaer Polytechnic Institute.

Submitted by James Rockrohr, February 17, 2017.



Solar Eclipse Provides Coronal Glimpse By Marcus Woo

On August 21, 2017, North Americans will enjoy a rare treat: The first total solar eclipse visible from the continent since 1979. The sky will darken and the temperature will drop, in one of the most dramatic cosmic events on Earth. It could be a once-in-a-lifetime show indeed. But it will also be an opportunity to do some science.

Only during an eclipse, when the moon blocks the light from the sun's surface, does the sun's corona fully reveal itself. The corona is the hot and wispy atmosphere of the sun, extending far beyond the solar disk. But it's relatively dim, merely as bright as the full moon at night. The glaring sun, about a million times brighter, renders the corona invisible.

"The beauty of eclipse observations is that they are, at present, the only opportunity where one can observe the corona [in visible light] starting from the solar surface out to several solar radii," says Shadia Habbal, an astronomer at the University of Hawaii. To study the corona, she's traveled the world having experienced 14 total eclipses (she missed only five due to weather). This summer, she and her team will set up identical imaging systems and spectrometers at five locations along the path of totality, collecting data that's normally impossible to get.

Ground-based coronagraphs, instruments designed to study the corona by blocking the sun, can't view the full extent of the corona. Solar space-based telescopes don't have the spectrographs needed to measure how the temperatures vary throughout the corona. These temperature variations show how the sun's chemical composition is distributed—crucial information for solving one of long-standing mysteries about the corona: how it gets so hot.

While the sun's surface is ~9980 Farenheit (~5800 Kelvin), the corona can reach several millions of degrees Farenheit. Researchers have proposed many explanations involving magneto-acoustic waves and the dissipation of magnetic fields, but none can account for the wide-ranging temperature distribution in the corona, Habbal says.

You too can contribute to science through one of several citizen science projects. For example, you can also help study the corona through the Citizen CATE experiment; help produce a high definition, time-expanded video of the eclipse; use your ham radio to probe how an eclipse affects the propagation of radio waves in the ionosphere; or even observe how wildlife responds to such a unique event.

Otherwise, Habbal still encourages everyone to experience the eclipse. Never look directly at the sun, of course (find more safety guidelines here: <https://eclipse2017.nasa.gov/safety>). But during the approximately 2.5 minutes of totality, you may remove your safety glasses and watch the eclipse directly—only then can you see the glorious corona. So enjoy the show. The next one visible from North America won't be until 2024.

For more information about the upcoming eclipse, please see:

NASA Eclipse citizen science page

<https://eclipse2017.nasa.gov/citizen-science>

NASA Eclipse safety guidelines

<https://eclipse2017.nasa.gov/safety>

Want to teach kids about eclipses? Go to the NASA Space Place and see our article on solar and lunar eclipses!

<http://spaceplace.nasa.gov/eclipses/>

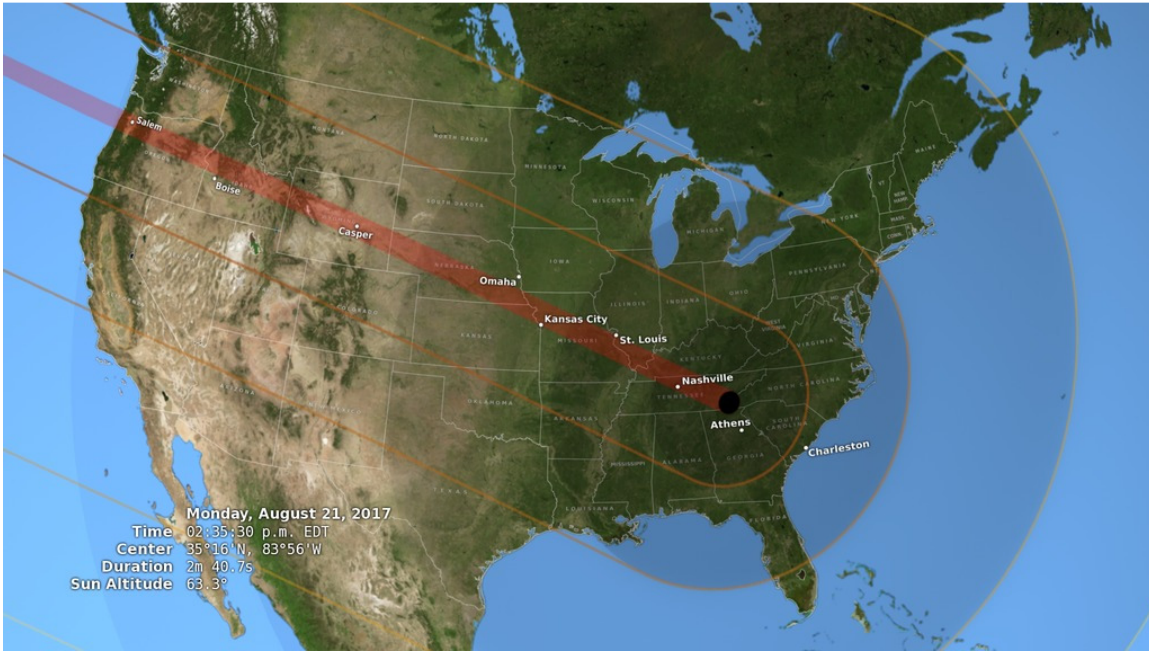


Illustration showing the United States during the total solar eclipse of August 21, 2017, with the umbra (black oval), penumbra (concentric shaded ovals), and path of totality (red) through or very near several major cities. Credit: Goddard Science Visualization Studio, NASA

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 3rd 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.