



Mid-Hudson Astronomical Association

June, 2016

Website: www.midhudsonastro.org

Yahoo Group: MHAstro

President : Willie Yee
Secretary: Jim Rockrohr
Newsletter Editor: Rick Versace
Publicity: Paul Chauvet
Parks Liaison: OPEN

Vice President: Candace Wall
Treasurer: OPEN (Ken Bailey until June)
Membership Coordinator: OPEN
Webmaster: Paul Chauvet
College Liaison: Dr. Amy Forestell

Directors: Karl Loatman, Joe McCagne, Steve Carey, Paul Granich

Minutes of the monthly meeting of the Mid Hudson Astronomical Association,

May 17, 2016

The meeting was called to order at 7:32 PM by President Willie Yee in the Auditorium of the Coykendall Science Center at SUNY, New Paltz, NY.

The previous meeting's minutes were approved as published in the most recent newsletter.

Officer's Reports:

Membership: Caryn Sobel was not present.

Treasurer: Ken Bailey was present. See his latest report as published in the newsletter.

Treasurer's Report for the month of May, 2016

Date: 16 June, 2016

Bank Balance:	\$2610.78
Outstanding Checks:	\$ 386.36
Outstanding Deposits:	\$ 247.94
Ending Bank Balance:	\$2472.36
Checkbook Balance:	\$2472.36
Balance with Bank: Yes	

Ending balance total: \$2472.36

Notes:

Outstanding checks are for Dutchess County Science Fair prizes, reimbursement for solar glasses purchases. Outstanding deposits are from memberships paid via PayPal and from the Girl Scouts for our participation in the 2016 Camporee.

Respectfully submitted: Ken Bailey
Treasurer

Outreach: Candace Wall was present and the following were discussed:

- **James Evans Elementary School** (Wappingers Falls): Looking for a brief presentation and outdoor star gazing in May for 6-12 year olds on a Thursday or Friday.
- **Smith Clove Park** in Monroe looking for program at end of May and September.
- **Girl Scouts Camporee at Ulster County Fairgrounds:** June 11. Looking for an activity for the girls during the day and star gazing for those who stay overnight. Willie and Rick are coordinating. So far, Rick, Ken and Jim attending. Night program only.
- **Boy Scouts at Thurman Camping Area:** 6/24 (6/25 rain date), Ken Bailey coordinating.
- **Olana:** September 3 (Labor Day weekend). Also looking for 'scopes on their Movie nights July 29 and August 26.
- **Montessori Schools** (New Paltz?): Looking for a regular (monthly?) presentation. Joe Macagne working on this.

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

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

Upcoming programs: Candace Wall was present and the following information was shared:

- June – Prof. Kevin H. Knuth: "UFOs: Governments, Pilots and the Military Speak"
- July – Dr. Daniel Wolf Savin: "A Brief History of Chemistry in the Cosmos"
- August – Linda Zimmerman: "Mysterious Stone Sites"
- September – Chris Kendall

Old Business:

- **Club Telescopes:**
 - 13" Dobsonian (Jack Chastain). Mirror has been recoated and returned. Jack will reassemble the telescope when time is available.
 - Criterion 8" SCT is available. Tabletop use (no tripod). See Willie.
 - ETX 125 has a focuser issue. Willie has it.
 - 4" with Paul Chauvet.
 - 8" Newtonian on an equatorial mount needs to be picked up by Ken Bailey from Karl Loatmann to be transferred Ken's son's new astronomy club in South Carolina.

New Business:

- Willie asked for a motion to approve the purchase of another 500 solar sunglasses for \$264.49. Our current stock is almost depleted. Motion made, seconded and passed unanimously.
- **RAC Summer Star Party:** July 29-Aug 7, Savoy, MA. Our club has been invited to co-sponsor the event. Looking for volunteers to man the booth, etc.

Observing Reports:

- **Sam's Point:** great time, good sky.
- **Transit of Mercury:** Willie had solar scopes set up on campus. A lot of people stopped to look.
- **Bolide over Northeast:** 1:50 AM. New Jersey to Maine.

Visitors/New Members:

There were about 23 people in attendance.

The meeting was adjourned at 7:52 PM. The next meeting is on June 21st. The program that followed was "The Eye is an Optimist, the Camera a Pessimist" by Steve Bellavia.

Submitted by James Rockrohr, June 16, 2016.

From the President:

Jennifer Yee, Ph.D., Astrophysicist

Making a commitment to writing a monthly note to the newsletter does have a few advantages. One of them is I can choose to brag about my daughter if I want.

Jennifer has finalized her employment plans with the Smithsonian Astrophysical Observatory in Cambridge, MA. <https://www.cfa.harvard.edu/sao> The SAO is a partner with Harvard University to make up the Center for Astrophysics. Someone has estimated that 10% of the Ph.D. astrophysicists in the US work there.

Jennifer has spent the past three years as the NASA Carl Sagan Exoplanet Fellow. Now she moves to permanent full time employment. Although it means she will be moving from the auspices of Harvard to the Smithsonian, she will still be in the same complex of buildings.

She will continue working on exoplanet research, <http://arxiv.org/abs/1509.05043> and now manages graduate students and others in various of her projects. The main challenge she will face at the Smithsonian is that it is and always has been a very male-dominated institution. They say they are trying to address that, but progress has been slow to say the least. Once through the "glass ceiling" one can find herself all alone.

The best part of it, is she will remain living in the Boston area for the foreseeable future, so I can see my grandson regularly.



Dr. Willie Yee
MHAA President



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Hubble's bubble lights up the interstellar rubble

By Ethan Siegel

When isolated stars like our Sun reach the end of their lives, they're expected to blow off their outer layers in a roughly spherical configuration: a planetary nebula. But the most spectacular bubbles don't come from gas-and-plasma getting expelled into otherwise empty space, but from young, hot stars whose radiation pushes against the gaseous nebulae in which they were born. While most of our Sun's energy is found in the visible part of the spectrum, more massive stars burn at hotter temperatures, producing more ionizing, ultraviolet light, and also at higher luminosities. A star some 40-45 times the mass of the Sun, for example, might emit energy at a rate hundreds of thousands of times as great as our own star.



The Bubble Nebula, discovered in 1787 by William Herschel, is perhaps the classic example of this phenomenon. At a distance of 7,100 light years away in the constellation of Cassiopeia, a molecular gas cloud is actively forming stars, including the massive O-class star BD+60 2522, which itself is a magnitude +8.7 star despite its great distance and its presence in a dusty region of space. Shining with a temperature of 37,500 K and a luminosity nearly 400,000 times that of our Sun, it ionizes and evaporates off all the molecular material within a sphere 7 light years in diameter. The bubble structure itself, when viewed from a dark sky location, can be seen through an amateur telescope with an aperture as small as 8" (20 cm).

As viewed by Hubble, the thickness of the bubble wall is both apparent and spectacular. A star as massive as the one creating this bubble emits stellar winds at approximately 1700 km/s, or 0.6% the speed of light. As those winds slam into the material in the interstellar medium, they push it outwards.

The bubble itself appears off-center from the star due to the asymmetry of the surrounding interstellar medium with a greater density of cold gas on the "short" side than on the longer one. The blue color is due to the emission from partially ionized oxygen atoms, while the cooler yellow color highlights the dual presence of hydrogen (red) and nitrogen (green).

The star itself at the core of the nebula is currently fusing helium at its center. It is expected to live only another 10 million years or so before dying in a spectacular Type II supernova explosion.

2016 Star Party Schedule

Date	Time	Sunset	End Civil Twilight	Nearest New Moon
January 8th	7:30 PM	4:42 PM	5:13 PM	January 9th
February 5th	7:30 PM	5:16 PM	5:45 PM	February 8th
March 11th	7:30 PM	5:59 PM	6:26 PM	March 8th
April 8th	8:00 PM	7:30 PM	7:58 PM	April 7th
May 6th	8:30 PM	8:01 PM	8:32 PM	May 6th
June 10th	8:30 PM	8:31 PM	9:05 PM	June 4th
July 1st	8:30 PM	8:35 PM	9:09 PM	July 4th
July 29th	8:30 PM	8:17 PM	8:49 PM	August 2nd
September 2nd	8:00 PM	7:27 PM	7:56 PM	September 1st
September 30th	7:30 PM	6:38 PM	7:06 PM	September 30th
October 28th	7:30 PM	5:55 PM	6:23 PM	October 30th
November 25th	7:30 PM	4:28 PM	4:59 PM	November 29th
December 30th	7:30 PM	4:34 PM	5:06 PM	December 29th

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.