



Mid-Hudson Astronomical Association

November, 2015

Website: www.midhudsonastro.org

Yahoo Group: MHAstro

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

Vice President: Candace Wall
Treasurer: Ken Bailey
Membership Coordinator: Caryn Sobel
Webmaster: Paul Chauvet
College Liaison: Dr. Amy Forestell

Directors: Karl Loatman, Steve Carey, Joe McCagne, and Dave Lindemann

Minutes of the monthly meeting of the Mid Hudson Astronomical Association, October 20, 2015

The meeting was called to order at 7:30 PM by Vice President Candace Wall 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: Caryn Sobel was not present. Ken Bailey reported he has received 2 new memberships in July, 1 in August, and 1 in September, all through PayPal.

Treasurer: Ken Bailey was present, but see his latest report as published in the newsletter.

Treasurer's Report for the month of October, 2015

Date: 15 November, 2015

Bank Balance:	\$1815.76
Outstanding Checks:	\$ 0
Outstanding Deposits:	\$ 11.84
Ending Bank Balance:	\$1827.60
Checkbook Balance:	\$1827.60
Balance with Bank: Yes	

Ending balance total: \$1827.60

Notes: Outstanding deposit is a ½ year membership payment via PayPal.

Respectfully submitted: Ken Bailey
Treasurer

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

- **Saugerties High School:** October 23, Ken Bailey
- **Saugerties Science Fair:** November 13. Ken Bailey
- **Maker Faire, Poughkeepsie Day School:** November 14, Jack Chastain and Rick Versace
- **Mohonk Preserve:** November 20, Willie Yee and Joe Macagne

Publicity: Paul Chauvet was not present. However, he reported by email that he has received the "Square" device to accept credit cards. He also has our events listed on Chronogram's web site and they are in the current issue now on newstands.

Webmaster: Paul Chauvet not present. No issues known.

Upcoming programs: Candace Wall present. Speakers are set for October through December.

Old Business:

- Club Telescopes:
 - o 13" Dobsonian in use (Jack Chastain). No progress on getting the mirror resurfaced.
 - o Criterion 8" SCT is available. Tabletop use (no tripod). See Willie.
 - o ETX 125 has a focuser issue. Jo Macagne will fix it with a JMI remote focuser add-on.
 - o 4" with Paul Chauvet.
 - o 8" Dobsonian with Karl Loatmann.
 - o We agreed to donate an ETX 125 to a new club. Who has this 'scope?

New Business:

- The proposed 2016 star party schedule has been circulated on the Yahoo group. No comments received at this meeting, so it will stand.
- Nominating Committee appointed to present slate of officers for 2016 to be presented at the November meeting.

Observing Reports:

- Moon Walk on Walkway on 9/11 had a good turnout.
- International Observe the Moon Night at the Smolen Observatory on 9/19 was also well attended.
- Observing at Esopus Library on 9/24 was a good event, but the site is marginal due to street lights. About 22 people attended and saw 2 Iridium flares.
- The Lunar Eclipse on 9/27 was observed by nearly 400 people at the Smolen Observatory and about 25 at Lake Taghkanic State Park.
- There is an early morning conjunction of Jupiter, Venus, Mars, and Mercury coming up.

Visitors/New Members:

There was a total of about 15 people in attendance, no new members or visitors introduced themselves.

The meeting was adjourned at 8:03 PM. Next meeting is on November 17th. The program that followed was "The Astronomy of Dust: from Cinderella to the Search for Origins" by Prof. Douglas Whittet, Professor of Physics, Applied Physics & Astronomy, New York Center for Studies on Origins of Life at RPI.

Submitted by James Rockrohr, November 14, 2015.

From the President:

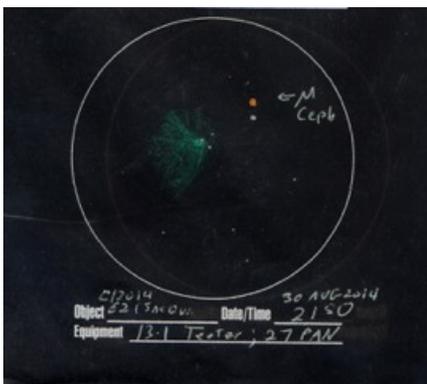
Sketching

This year I received the Astronomical League's Sketching Award. It is given for sketching and documenting 75 objects from a list of 100. It was not too hard to accomplish in the course of the year, as most of the objects are relatively easy to find. I had previously sketched all the Messier objects for an award from astronomyforum.net, which, by the way, has a very good sketching forum.



I would like to encourage everyone, regardless of astronomical experience, or lack thereof, to try some sketching, at least for a while. It cannot be emphasized, **NO ARTISTIC TALENT IS REQUIRED**. The skill of basic sketching is easily acquired, and one gets better with practice, although most of us will not have the patience to create some of the great sketches we have seen.

Reasons to sketch include:



Having a record of your observations. Sometimes a sketch can document whether you have actually viewed something. Objects like Pluto or major asteroids really can be documented only by multiple sketches or photographs. I recently drew a crater on the moon. It was not the one I thought it was, but my drawing was sufficiently accurate for me to figure out which one it was.

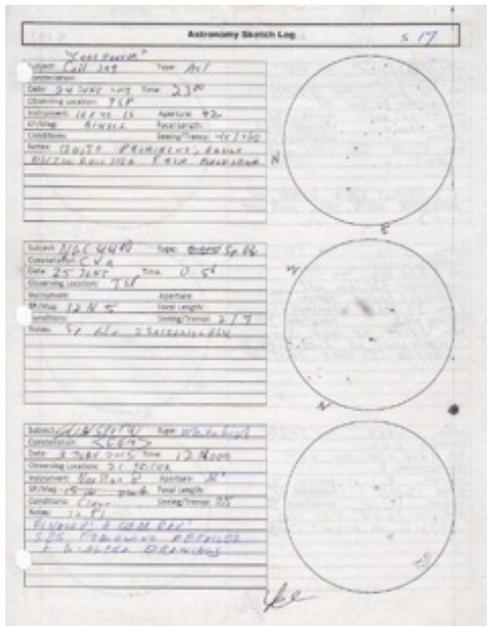
Developing your observing skill. Spending time to make a sketch means more time spent on a single target. It means looking for details that you might otherwise not see before moving on to your next target.

Challenging yourself. Like finding all the Messier or Herschel 400 objects, a sketching project can be an enormously satisfying project.

Finally, putting it all together, sketching will *make you a better observer*.

Sketching is an activity that does not require much in the way of equipment: a No. 2 pencil, a good eraser, paper, a stiff surface such as a clipboard, and whatever form of hands-free lighting suits you. That being said, some modest additional equipment can help a lot.

Blending stumps: these are tightly rolled paper, about the size of a cigarette, but pointed like a pencil. Useful for making all the fuzzy stuff.



Drafting pencils hard (4H) and soft (3B) to make small and large stars, and light and dark detail.

Ebony pencil. This is very soft black that you can make a spot of on the paper, pick up black from the paper with the blending stump to smear with.

A good sharpener. The “bullet” one is the best, though you may have to look around for it. Also some fine sandpaper or an emery board to keep things sharp.

Some people recommend an erasing mask which is a thin, stiff metal sheet, with slots and holes cut into it. I have one; I don't think I have ever used it.

Colored pencils if you want to try color and see enough of it to make it worthwhile.

Finally, in this region of the country, a wonderful product called Rite-in-the-Rain, a special paper that you can write on even when it is covered in dew. I copy my forms on it. Ink-jet printing requires a special paper that they make, which is more expensive, so I prefer photocopying the forms. I also use it for all my written logs.

There are a number of good resources with instructions on how to get started sketching, with many valuable tips, linked from this site: <http://www.astronomicalsketching.com/links.html>. There are also a number of books which one can find with a Google search, although this is one area I would suggest forgetting about the books initially. It takes so little to get started, and with a little practice one learns quickly. Once started, you might think about getting a book to learn some more tricks. For now, JUST DO IT.

Dr. Willie Yee
MHAA President

The MHAA at the Saugerties High School Science Fair

The Saugerties High School Science Club- Science Alliance hosted its third annual 7-12th grade Science Fair on November 6th from 6-8 pm in the Sr. High Gym sponsored by Neal Smoller of The Village Apothecary, Kiwanis, Opus 40, and the Jr and Sr High Student Governments. Students were required to submit a project based on experimental data, engineering, or modeling.

There were over 200 people in attendance to view 57 student projects with 80 participants. The judges were; Saugerties HS retired teachers- Mitch Stevens, Mary Bishop, Dorothy Silberg; Cahill teachers- Amy Hopf and Deb Ciccone ; Kingston HS teacher - Bonnie Parmelee; Ketcham HS teacher- Bob Davis; Physicist- Anne Davis; Retired chemical engineer- Ted Skaar and IBM engineer- Alex Feinberg.

On display during the event was the Mid-Hudson Astronomical Association with two telescopes, SUNY New Paltz Geology department with their Darcy Column demonstration and Opus 40 with information about their historic site and the Center of Health was present promoting health and wellness . Thank you to Ms. Van Voorhis, Mr. Kemp, Mr. Van Vliet and Ms. Mooney who presented student work or fun interactive science manipulatives. Thank you to Ms Sachar for helping with the refreshment table. A special thank you to Greg and Kim from Bailiwick Ranch/Zoo for entertaining us with their animal show.

Winners of the 2015-16 Saugerties High School 3rd Annual Science Fair are as follows:

Overall Top Prize Winner

10th-Lula Rappoport

App for the Students of Saugerties High School \$1000 scholarship

7th and 8th awards

1st place(\$75 gift card) 7th-Alexis Ranzer- Do All Liquids Evaporate?

2nd place (\$50 gift card)7th- Sarah Villafane, Theresa Fiscaletti, and Carmen Costello- Which Fruits Float?

Eight Third prize winners-(\$25 gift card) all 7th graders

-MacKenzie Lowec- Walking on Water

-Sam Millham and Collin Biegel- How Do Ferro Fluids React?

-Lyndsey Gaulin and Dylan Burns- Dry Ice Bubbles

-Dominic Clark- The Lie Test-

-Robert English- Hydraulic Effect

-Miles Glasser- What Temperature is Needed to Cause an Explosion?

-Jeff Aguirre and Michael Salmi- How Many Lemons Will Light Up a Light?

-Gillian Henderson and Mia Garginone- Edible Water Bottles

9th-12th grader awards

1st place-(\$75 gift card) 9th-Libby Scott- Bridge Structures

2nd place (\$50 gift card) 9th- Giona Kleinberg-Games: Myth or Man Stereotypes vs Reality Checks

-Six Third prize winners (\$25 gift card)

-9th-Madeline Gruen and Fiona McGregor-Effect of Video Games on the Human Body

-9th-Megan Czebatol- Which Helmets Work Best?

-9th-Cheyenne Candlin- Color Effect on Taste

-9th-Elise Peters and Ashley Pettengill- How to Make Tie-Dye Shirts Brighter

-10th-Michaela Cohen- Why do Some Sounds Sound Irritating?

-12th- Aidan Murphy and 11th- Meghan Murphy- How the Past Can Still Advance Us.

The science fair presentations were outstanding. It took a lot of hard work to research, prepare and demonstrate their content and knowledge of their presentation. If you attended this successful event you would have witnessed the talent of our young adults. As advisors, Amy Scanlon and Ara Krom, we were honored to be a part of this wonderfully growing event here at SHS.



Our Solar System Is *Almost* Normal, But Not Quite

by Ethan Siegel

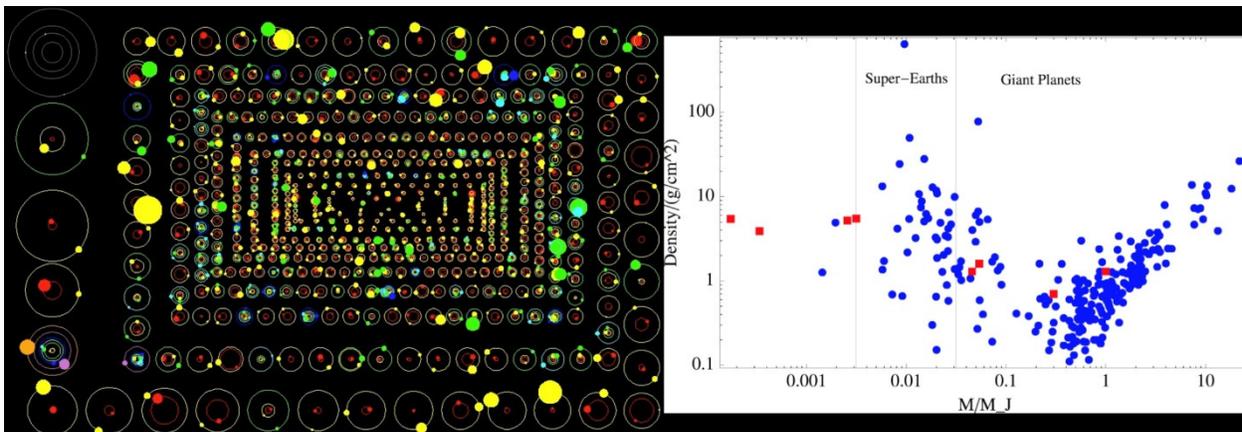
It was just over 20 years ago that the very first exoplanet was found and confirmed to be orbiting a star not so different from our own sun. Fast forward to the present day, and the stellar wobble method, wherein the gravitational tug of a planet perturbs a star's motion, has been surpassed in success by the transit method, wherein a planet transits across the disk of its parent star, blocking a portion of its light in a periodic fashion. Thanks to these methods and NASA's Kepler spacecraft, we've identified many thousands of candidate planets, with nearly 2,000 of them having been confirmed, and their masses and densities measured.

The gas giants found in our solar system actually turn out to be remarkably typical: Jupiter-mass planets are very common, with less-massive and more-massive giants both extremely common. Saturn—the least dense world in our solar system—is actually of a fairly typical density for a gas giant world. It turns out that there are many planets out there with Saturn's density or less. The rocky worlds are a little harder to quantify, because our methods and missions are much better at finding higher-mass planets than low-mass ones. Nevertheless, the lowest mass planets found are comparable to Earth and Venus, and range from just as dense to slightly less dense. We also find that we fall right into the middle of the "bell curve" for how old planetary systems are: we're definitely typical in that regard.

But there are a few big surprises, which is to say there are three major ways our solar system is an outlier among the planets we've observed:

- All our solar system's planets are significantly farther out than the average distance for exoplanets around their stars. More than half of the planets we've discovered are closer to their star than Mercury is to ours, which might be a selection effect (closer planets are easier to find), but it might indicate a way our star is unusual: being devoid of very close-in planets.
- All eight of our solar system's planets' orbits are highly circular, with even the eccentric Mars and Mercury only having a few percent deviation from a perfect circle. But most exoplanets have significant eccentricities, which could indicate something unusual about us.
- And finally, one of the most common classes of exoplanet—a super-Earth or mini-Neptune, with 1.5-to-10 times the mass of Earth—is completely missing from our solar system.

Until we develop the technology to probe for lower-mass planets at even greater distances around other star systems, we won't truly know for certain how unusual we really are!



Images credit: NASA / Kepler Dan Fabricky (L), of a selection of the known Kepler exoplanets; Rebecca G. Martin and Mario Livio (2015) *ApJ* 810, 105 (R), of 287 confirmed exoplanets relative to our eight solar system planets.

2015 Star Party Schedule

Date	Time	Sunset	End Civil Twilight	Nearest New Moon
January 16th	7:30 PM	4:51 PM	5:22 PM	January 20th
February 13th	7:30 PM	5:26 PM	5:55 PM	February 18th
March 20th	8:00 PM	7:08 PM	7:36 PM	March 20th
April 17th	8:30 PM	7:39 PM	8:08 PM	April 18th
May 15th	8:30 PM	8:09 PM	8:41 PM	May 17th
June 19th	8:30 PM	8:34 PM	9:09 PM	June 16th
July 17th	8:30 PM	8:28 PM	9:01 PM	July 15th
August 14th	8:30 PM	7:58 PM	8:28 PM	August 14th
September 11th	8:00 PM	7:13 PM	7:41 PM	September 12th
October 9th	7:30 PM	6:25 PM	6:52 PM	October 12th
November 13th	7:30 PM	4:37 PM	5:07 PM	November 11th
December 11th	7:30 PM	4:25 PM	4:56 PM	December 11th

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.