



Mid-Hudson Astronomical Association

August/September, 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, July 21, 2015

The meeting was called to order at 7:31 PM by Webmaster Paul Chauvet in Room 222 of the Coykendall Science Center at SUNY, New Paltz, NY. (President Willie Yee and Vice President Candace Wall were not available.)

It was moved and seconded that the minutes of the last meeting as published in the newsletter be approved. The motion passed.

Officer's Reports:

Membership: Caryn Sobel was not present.

Treasurer: Ken Bailey present. See his report in the newsletter.

Treasurer's Report for the month of July, 2015

Date: 9 August, 2015

Bank Balance:	\$1963.46
Outstanding Checks:	\$ 0
Outstanding Deposits:	\$ 0
Ending Bank Balance:	\$1963.46
Checkbook Balance:	\$1963.46
Balance with Bank: Yes	

Ending balance total: \$1963.46

Notes: None.

Respectfully submitted: Ken Bailey
Treasurer

Outreach: Candace Wall was not available, but the following were discussed:

- Event with Boy Scouts in Yorktown on 7/25. Ken Bailey coordinating.
- **Walkway Over the Hudson** general observing on 7/31. Candace coordinating.
- **Walkway "Starry, Starry Night" gala:** October 2.
- **Saugerties High School:** October 23.
- **Saugerties Science Fair:** November 13.

Publicity: Paul Chauvet looking for input on events.

Webmaster: Paul Chauvet present. No issues reported.

Upcoming programs: Candace Wall not present.

Old Business:

- (none)

New Business:

- Ken Bailey's son is starting a new astronomy club in South Carolina and would like us to donate one of the club 'scopes to his effort. A motion was made to donate the Meade 125 EXT. Motion seconded and passed.

Observing Reports:

- Ken attended the Mason Dixon Star Party. Had one good night of observing. T-shirt and sweatshirt we donated were raffled off.

Visitors/New Members:

There was a total of about 25 people in attendance.

The meeting was adjourned at 7:55 PM. Next meeting is on August 18th. The program that followed at 8:00 PM was "Black Holes DO Exist (They do, They do, THEY DO!). The History, Nature, and Physics of the Invisible Beasts" by Jack Chastain.

Submitted by James Rockrohr, August 7, 2015.

Minutes of the monthly meeting of the Mid Hudson Astronomical Association, August 18, 2015

The meeting was called to order at 7:29 PM by President Willie Yee in the Auditorium of the Coykendall Science Center at SUNY, New Paltz, NY.

The newsletter was not published this month, so the minutes of the last meeting will be approved at the next meeting.

Officer's Reports:

Membership: Caryn Sobel was not present but sent an email that there were no new memberships in the last month.

Treasurer: Ken Bailey present. We have a balance of \$1963.46 and it balances with the bank statement. There are no outstanding checks or deposits at this time.

Treasurer's Report for the month of August, 2015

Date: 13 September, 2015

Bank Balance:	\$1895.59
Outstanding Checks:	\$ 0
Outstanding Deposits:	\$ 0
Ending Bank Balance:	\$1895.59
Checkbook Balance:	\$1895.59
Balance with Bank: Yes	

Ending balance total: \$1895.59
Notes: None.

Respectfully submitted: Ken Bailey
Treasurer

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

- **Walkway Over the Hudson "Moonwalk"** on 8/28. Candace coordinating.
- **Olana:** 9/6, Willie coordinating.
- **International Observe the Moon Night at Smolen Observatory:** 9/19
- **Esopus Library:** 9/24, Rick Versace and Jack Chastain
- **Avalon Senior Citizens Center:** 9/24, Willie Yee and Ken Bailey
- **Lunar Eclipse observing at Lake Taghkanic SP:** 9/27
- **Walkway "Starry, Starry Night" gala:** October 2.
- **Saugerties High School:** October 23.
- **Saugerties Science Fair:** November 13.

Publicity: Paul Chauvet will be publicizing the IOMN and eclipse events.

Webmaster: Paul Chauvet present. Renewed our MeetUp account for another 6 months.

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

Old Business:

- Club Telescopes:
 - o 13" Dobsonian in use (Jack Chastain). No progress on getting 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. Motion made and approved to authorize him to spend up to \$200 for parts.

- 4" with Paul Chauvet.
- 8" Dobsonian with Karl Loatmann.

New Business:

- Steering Committee meeting scheduled for September 8, 7:30 PM, at the College Diner. Willie to prepare agenda.

Observing Reports:

- Last Walkway Over the Hudson "Moonwalk" a great success. Over 1500 people attended.
- Montessori School: Joe Macagne gave a daytime talk to some 3-9 year olds. Went over well.
- RAC/AOS Summer Star Party: Willie will publish a full report in the next newsletter.
- Persied meteor shower: About 80 people observed at Mohonk.

Visitors/New Members:

There was a total of about 23 people in attendance, 3 introduced themselves as new.

The meeting was adjourned at 7:53 PM. Next meeting is on September 15th. The program that followed at 8:00 PM was "Ancient Astronomy or What You Can Learn From Naked Eye Observations" by Steve Schimmerich, Professor of Environmental Science at SUNY Ulster.

Submitted by James Rockrohr, September 13, 2015.



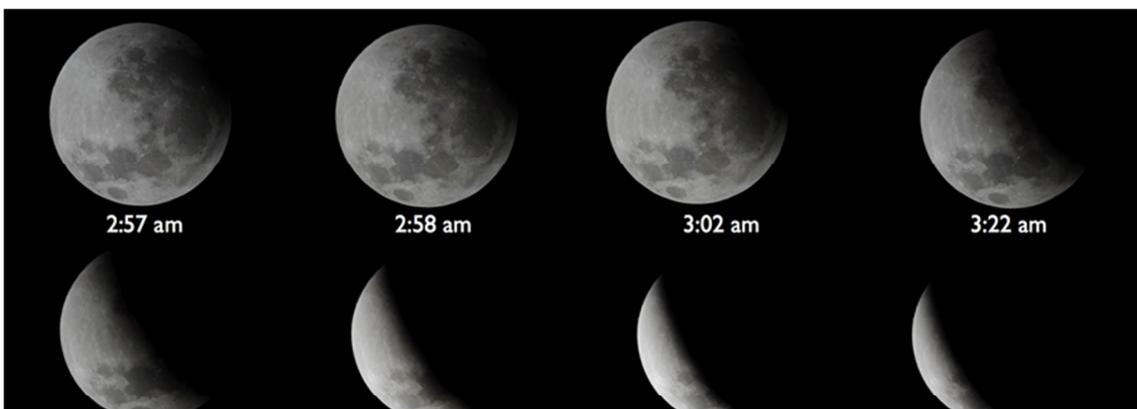
Measure the moon's size and distance during the next lunar eclipse

By Dr. Ethan Siegel

The moon represents perhaps the first great paradox of the night sky in all of human history. While its angular size is easy to measure with the unaided eye from any location on Earth, ranging from 29.38 arc-minutes (0.4897°) to 33.53 arc-minutes (0.5588°) as it orbits our world in an ellipse, that doesn't tell us its physical size. From its angular size alone, the moon could just as easily be close and small as it could be distant and enormous.

But we know a few other things, even relying only on naked-eye observations. We know its phases are caused by its geometric configuration with the sun and Earth. We know that the sun must be farther away (and hence, larger) than the moon from the phenomenon of solar eclipses, where the moon passes in front of the sun, blocking its disk as seen from Earth. And we know it undergoes lunar eclipses, where the sun's light is blocked from the moon by Earth.

Lunar eclipses provided the first evidence that Earth was round; the shape of the portion of the shadow that falls on the moon during its partial phase is an arc of a circle. In fact, once we measured the radius of Earth (first accomplished in the 3rd century B.C.E.), now known to be 6,371 km, all it takes is one assumption—that the physical size of Earth's shadow as it falls on the moon is approximately the physical size of Earth—and we can use lunar eclipses to measure both the size of and the distance to the moon!



Simply by knowing Earth's physical size and measuring the ratios of the angular size of its shadow and the angular size of the moon, we can

Image credit: Daniel Munizaga (NOAO South/CTIO EPO), using the Cerro Tololo Inter-American Observatory, of an eight-image sequence of the partial phase of a total lunar eclipse.

determine the moon's physical size relative to Earth. During a lunar eclipse, Earth's shadow is about 3.5 times larger than the moon, with some slight variations dependent on the moon's point in its orbit. Simply divide Earth's radius by your measurement to figure out the moon's radius!

Even with this primitive method, it's straightforward to get a measurement for the moon's radius that's accurate to within 15% of the actual value: 1,738 km. Now that you've determined its physical size and its angular size, geometry alone enables you to determine how far away it is from Earth. A lunar eclipse is coming up on September 28th, and this supermoon eclipse will last for hours. Use the partial phases to measure the size of and distance to the moon, and see how close you can get!

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.