



# Mid-Hudson Astronomical Association

## August, 2016

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

## July 2016 Minutes

7:35PM - the meeting was called to order by MHAA President Willie Yee.

### Reports

#### Treasurer

Treasurer Ken Bailey was unable to attend due to the effects of the Tappan Zee Bridge crane accident on traffic.

## Treasurer's Report for the month of July, 2016

Date: 13 August, 2016

Bank Balance:	\$2657.53
Outstanding Checks:	\$ 384.49
Outstanding Deposits:	\$ 286.60
Ending Bank Balance:	\$2559.64
Checkbook Balance:	\$2559.64
Balance with Bank:	Yes

Ending balance total: \$2559.64

Notes: Outstanding checks are for last month's speaker's honorarium and reimbursement for solar glasses purchases. Outstanding deposits are from memberships and Olana.

Respectfully submitted: Ken Bailey  
Treasurer

### **Outreach**

Olana - July 29th: This outreach event is actually being done by the Albany Astronomical Association, but due to attendance a request was made for assistance by the MHAA as well. Olana will contribute to the MHAA as usual.

Tivoli - August 12th - The MHAA will be doing an outreach event for the Tivoli Library.

Olana - August 26th - This will be an MHAA outreach event at Olana.

Sam's Point Preserve - They would like MHAA to come do another event at a date to be determined in September 2016.

Albany - November 12th - The Dudley Observatory will be having an Astronomy Night as part of the Museum of Science's Science Festival.

### **Publicity & Webmaster**

Nothing new to report

### **Membership**

Membership coordinator not present, no report presented

### **New Business**

Paul Chauvet started a discussion about planning for 2017's Eclipse. A guide for those new to solar eclipse viewing, a talk, etc. Members recommended a number of Youtube videos including one from the Rockland Astronomy Club's page. Additionally it was suggested that a mini-talk for our Member's Presentation's during our Holiday Party include something about the eclipse.

### **Outreach Reports**

- Willie Yee and Joe M. were at Olana's kids camp for a solar observing event.

- The most recent star party (as of the July business meeting) was successful with good skies and around a dozen attendees
- Jack Chastain represented the MHAA at the Ulster County Fairgrounds for the Girl Scouts. There were hundreds of attendees at this event.
- Jack C. and Ken B. represented the MHAA at an event for the Boy Scouts. This had 30-50 observers.
- Joe M. represented the MHAA at a private event held at the Wallkill Airport. There were around 90 observers.

Dr. Savin began his Chemistry in the Cosmos event at 7:59PM.

## From the President:

PRESIDENT'S NOTE  
August 2016

### STAR TREK 50 AT LAS VEGAS

*What happens in Vegas . . . gets plastered all over the Internet almost immediately.*

Day One, Wednesday August 3

Irene had already taken care of registration for us: no lines!  
Met someone I knew every twenty minutes.  
Said hi to Barbara Luna and JG Herzler.



Went to Leonard Nimoy tribute. Cried.  
Saw Gowron, Martok, and B'etor panel. Laughed.  
Viewed Bridge and Transporter imitations.  
Lots of costumes. Some cool, some crummy. I think I will be the most authentic TOS when I dress up Thursday.  
Bought a few minor items from vendors.  
Talked to folks at G and T Show, and Star Talk radio. Latter will interview me later.  
Did interview with the Roddenberry crew on how Star Trek changed my life. Cried again.  
Had great Chinese (REAL Chinese) dinner at Pin Pang Pong.  
Went to see Cirque du Soleil's KA. Most amazing staging I have EVER seen. Got a backstage tour from one of my daughter Irene's (she works for Cirque) friends.  
Astounding.  
Uniform tomorrow.  
Psyched.

Day Two, Thursday August 4

Spent day in TOS costume. Red shirt. Didn't die.  
Got my sideburns touched up at the MAC booth. Cried and laughed a lot. (yes I have become a crybaby in my old age. Tearing up all the time.)  
Got to see both Nichelle Nichols and Whoopi Goldberg.  
Did interview with UFP radio.  
Talked to Las Vegas Star Trek club people.  
Saw blooper reels. Liz had never seen them before.  
Rom and Nog in costume. They really brought out a lot about those characters in their discussion. Makes me want to see DS9 again.  
Someone left a note on my windshield saying how awesome my car was.

Had dinner at a Korean-Mexican fusion restaurant. Fabulous food, Little atmosphere. Few customers. CHEAP. An undiscovered treasure.

Day Three, Friday August 5

Autographs from Michael Dorn, Levar Burton, and Denise Crosby.  
Appearances: George Takei, Gates McFadden, Levar Burton, Brent Spiner, Crosby, John de Lancie, Nana Visitor, Terry Farrell, Nicole de Boer  
Irene showed up in her giant tribble costume. Instant hit.  
Caught Nichelle Nichols coming to the MAC publicity shoot.  
Joined the Planetary Society.  
Bought another pair of Spock ears. Cheap.  
Saw the fantastic 50/50 art exhibit.  
Korean BBQ for dinner. Wonderful weirdness.  
Back to hotel for Rio Olympics opening.



Denise

Day Four, Saturday August 6

Up early for costume parade. 100s of costumes. Amazing creativity.  
Pulled the Zhang Heng up near the entrance for display but nobody came.  
Got Vulcan eyebrows done by MAC cosmetics people.  
Listen to CBS marketing dude talk about new projects. Great video of our Original Series Set Tour. Virtual Reality game looks very cool.  
Talked to a lot of folks about the Set Tour and gave out flyers. Some of these folks will definitely be coming eventually.  
Heard the Shat live for the first time. Scratch that off my bucket list.  
Other panelists: Kate Mulgrew, Michael Dorn, Jonathan Frakes, Mirina Sirtis, Walter Koenig  
Got Mirina's autograph on Enterprise E print. Wil Wheaton the only one left. Wesley Crusher. Do I care?  
Helped Irene through the Costume contest. The judges were not as impressed as the fans were, so she did not make the finals.  
Dinner at the Noodle restaurant. Shared a hot pot thingy. Found ice cream.  
Concert of Star Trek Music by the Nevada Pops. Fun, but performance and acoustics left much to be desired. Highlight was the Inner Light Suite.

Day Five, Friday August 7

Skipped morning's events to have breakfast with Liz and Irene at Paris Village Buffet. Ate enough food for two days.  
At Irene's request, wore TOS costume one more day. Took many photos.  
Shakespeare and Star Trek panel had Robert Picardo and Duncan McNeil do the Kirk/McCoy bummed out birthday scene (TWOK) in Shakespearian style.  
Celebs on stage: Andrew Robinson, Armin Shimerman, Cirroc Lofton, James Daren, Rene Auberjownois, Jeffrey Combs, Steven Behr  
Tribute to Gene Roddenberry.  
Shopping run for supplies for the trip home.  
Dinner at Skinny Fat's. Fun menu.  
The DS9 Rat Pack show to close out. Great fun.  
Tired. Now marathon driving trip home, then . . .  
TREKONDEROGA!





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## Is there a super-Earth in the Solar System out beyond Neptune?

By Ethan Siegel

When the advent of large telescopes brought us the discoveries of Uranus and then Neptune, they also brought the great hope of a Solar System even richer in terms of large, massive worlds. While the asteroid belt and the Kuiper belt were each found to possess a large number of substantial icy-and-rocky worlds, none of them approached even Earth in size or mass, much less the true giant worlds. Meanwhile, all-sky infrared surveys, sensitive to red dwarfs, brown dwarfs and Jupiter-mass gas giants, were unable to detect anything new that was closer than Proxima Centauri. At the same time, Kepler taught us that super-Earths, planets between Earth and Neptune in size, were the galaxy's most common, despite our Solar System having none.

The discovery of Sedna in 2003 turned out to be even more groundbreaking than astronomers realized. Although many Trans-Neptunian Objects (TNOs) were discovered beginning in the 1990s, Sedna had properties all the others didn't. With an extremely eccentric orbit and an aphelion taking it farther from the Sun than any other world known at the time, it represented our first glimpse of the hypothetical Oort cloud: a spherical distribution of bodies ranging from hundreds to tens of thousands of A.U. from the Sun. Since the discovery of Sedna, five other long-period, very eccentric TNOs were found prior to 2016 as well. While you'd expect their orbital parameters to be randomly distributed if they occurred by chance, their orbital orientations with respect to the



Sun are clustered extremely narrowly: with less than a 1-in-10,000 chance of such an effect appearing randomly.

Whenever we see a new phenomenon with a surprisingly non-random appearance, our scientific intuition calls out for a physical explanation. Astronomers Konstantin Batygin and Mike Brown provided a compelling possibility earlier this year: perhaps a massive perturbing body very distant from the Sun provided the gravitational "kick" to hurl these objects towards the Sun. A single addition to the Solar System would explain the orbits of all of these long-period TNOs, a planet about 10 times the mass of Earth approximately 200 A.U. from the Sun, referred to as **Planet Nine**.

More Sedna-like TNOs with similarly aligned orbits are predicted, and since January of 2016, another was found, with its orbit aligning perfectly with these predictions.

Ten meter class telescopes like Keck and Subaru, plus NASA's NEOWISE mission, are currently searching for this hypothetical, massive world. If it exists, it invites the question of its origin: did it form along with our Solar System, or was it captured from another star's vicinity much more recently? Regardless, if Batygin and Brown are right and this object is real, our Solar System may contain a super-Earth after all.

*A possible super-Earth/mini-Neptune world hundreds of times more distant than Earth is from the Sun. Image credit: R. Hurt / Caltech (IPAC)*

## 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 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).