



# Mid-Hudson Astronomical Association

## February, 2014

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:**

**Vice President:** Joe Macagne  
**Treasurer:** Ken Bailey  
**Membership Coordinator:** Caryn Sobel  
**Webmaster:** Paul Chauvet  
**College Liaison:** Dr. Amy Forestell

**Directors:** Steve Carey, Dave Lindemann, Karl Loatman, & Tom Rankin

## Meeting Minutes

### **Minutes of the monthly meeting of the Mid-Hudson Astronomical Association, January 24, 2014.**

Minutes of Indoor meeting from 1-24-2014

Meeting opened by club President Willie Yee at 7:34

The President called for a moment of silence for John Dobson. He has been a guest speaker for us in the past. John passed on earlier this month.

Minutes of last meeting approved and accepted as written.

We had no officer reports this month.

There is going to be a total Lunar Eclipse on 4-15 around 2-4 am. A discussion followed to find out if the club wants to do an organized group viewing. Nothing established yet. Tabled to be discussed on the meet-up site.

The Garrison School outing went very well. Jupiter and the moon were the stars that night. About 200 people showed up.

For the near future, all indoor meetings will be returning to the Cokendall hall auditorium.

New Business-

International Sun Day will be 6-22. Input sought?

The winter dinner will be discussed on meet-up. We selected the "Would Inn" in Highland on Feb. 22nd. Please send in rsvp's on meetup or Yahoo.

Boy Scouts has requested an outdoor for their Jamboree on 5-16, 17, 18. Volunteers needed.

We had 1 visitor and 14 members show. Very good considering the weather.

Tonights presentation was a live video web-ex from Tom Field in Portland. Tom did a talk on "Real time Spectroscopy." Measuring the spectroscopy of stars and their wavelengths. You can determine the stars gasses and chemical makeup and elements being emitted by the wavelengths of the elements coming from their light. More can be found at [www.rspectro.com](http://www.rspectro.com)

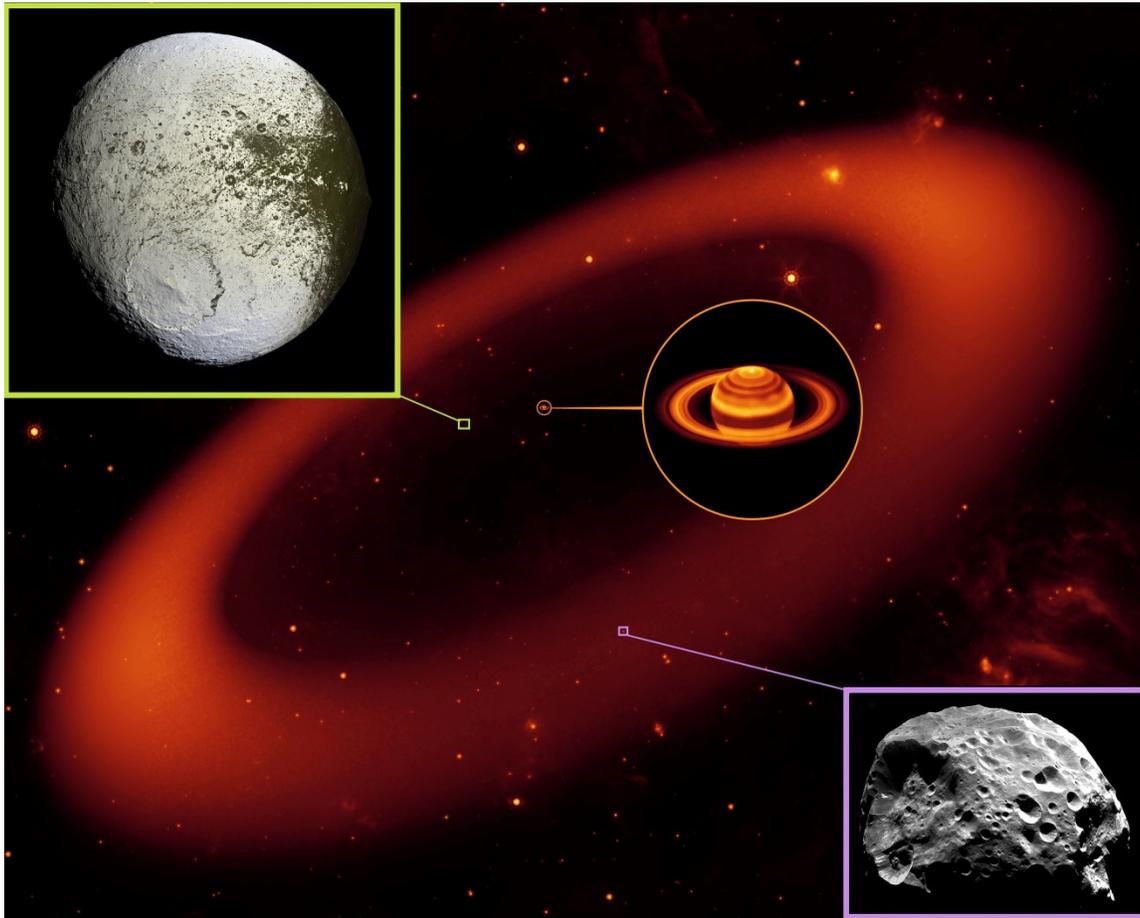
Respectfully submitted-  
Steve Carey



## **A Two-Toned Wonder from the Saturnian Outskirts**

By Dr. Ethan Siegel

Although Saturn has been known as long as humans have been watching the night sky, it's only since the invention of the telescope that we've learned about the rings and moons of this giant, gaseous world. You might know that the largest of Saturn's moons is Titan, the second largest moon in the entire Solar System, discovered by Christiaan Huygens in 1655. It was just 16 years later, in 1671, that Giovanni Cassini (for whom the famed division in Saturn's rings—and the NASA mission now in orbit there—is named) discovered the second of Saturn's moons: Iapetus. Unlike Titan, Iapetus could only be seen when it was on the west side of Saturn, leading Cassini to correctly conclude that not only was Iapetus tidally locked to Saturn, but that its trailing hemisphere was intrinsically brighter than its darker, leading hemisphere. This has very much been confirmed in modern times!



In fact, the darkness of the leading side is comparable to coal, while the rest of Iapetus is as white as thick sea ice. Iapetus is the most distant of all of Saturn's large moons, with an average orbital distance of 3.5 million km, but the culprit of the mysterious dark side is *four times* as distant: Saturn's remote, captured moon, the dark, heavily cratered Phoebe!

Orbiting Saturn in retrograde, or the opposite direction to Saturn's rotation and most of its other Moons, Phoebe

most probably originated in the Kuiper Belt, migrating inwards and eventually succumbing to gravitational capture. Due to its orbit, Phoebe is constantly bombarded by micrometeoroid-sized (and larger) objects, responsible for not only its dented and cavity-riddled surface, but also for a huge, diffuse ring of dust grains spanning *quadrillions* of cubic kilometers! The presence of the "Phoebe Ring" was only discovered in 2009, by NASA's infrared-sensitive Spitzer Space Telescope. As the Phoebe Ring's dust grains absorb and re-emit solar radiation, they spiral inwards towards Saturn, where they smash into Iapetus— orbiting in the opposite direction—like bugs on a highway windshield. Was the dark, leading edge of Iapetus due to it being plastered with material from Phoebe? Did those impacts erode the bright surface layer away, revealing a darker substrate?

In reality, the dark particles picked up by Iapetus aren't enough to explain the incredible brightness differences alone, but they absorb and retain *just enough* extra heat from the Sun during Iapetus' day to sublimate the ice around it, which resolidifies preferentially on the trailing side, lightening it even further. So it's not just a thin, dark layer from an alien moon that turns Iapetus dark; it's the fact that surface ice sublimates and can no longer reform atop the leading side that darkens it so severely over time. And that story—only confirmed by observations in the last few years—is the reason for the one-of-a-kind appearance of Saturn's incredible two-toned moon, Iapetus!

Learn more about Iapetus here: <http://saturn.jpl.nasa.gov/science/moons/iapetus>.

Kids can learn more about Saturn's rings at NASA's Space Place: <http://spaceplace.nasa.gov/saturn-rings>.

Images credit: Saturn & the Phoebe Ring (middle) - NASA / JPL-Caltech / Keck; Iapetus (top left) - NASA / JPL / Space Science Institute / Cassini Imaging Team; Phoebe (bottom right) - NASA / ESA / JPL / Space Science Institute / Cassini Imaging Team.

## 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 Taghanic 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. Call the Club Hotline for updated information. Everyone should meet at the gate at the scheduled time. The gate will be closed after that time.
- ♦ 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).