The ASTERISM

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The Voice of World Control

by Bonnie B. Witzgall

The job of Pharaoh's astrologer was to predict the movements of the planets, predict solar eclipses and to work out the daily transportation schedule of Osiris' Sun Chariot. The Sun God Ra brought light and warmth to the World, dried the mud bricks used to build the pyramids and determined the length of each day and growing season. Those Egyptian astrologers didn't have it easy, but they did perform 'basic astronomy' with continual day and night observations. In addition, they were highly rewarded for their planetary predictions and had great influence over Pharaoh's decisions. These ancient astronomers served the good of Pharaoh and his civilized community, setting the stage for present day sky observers.

Today we do so much more than track the schedule of Osiris' Sun Chariot. Modern astronomers can predict Solar flares and coronal mass ejections. We can compute any planet's location and calculate when to launch probes for the quickest rendezvous. Any iceberg sized asteroids threatening Earth? Astronomers have them numbered, named and monitored. So why do our leaders artificially change time, don't consult us and claim it's good for the country? Even the Hollywood movies show Earth's leaders scoffing when astronomers warn of planetary doom. Most of those movies are exaggerated and flawed, but the Government disbelieving the educated astronomer is an accurate portrayal. It's too bad that astronomers have fallen from the government's favor over the past centuries. You can bet the High Priest of Luxor wouldn't dare think of resetting the Sun God's timetable!

Oh, if we ran the current civilized community, this world would be a more realistic and informed place! Astronomers would saturate the world with honest information and realistic analysis. Educated people would be valued and exalted for their knowledge. Everyone would be encouraged to learn! The taunting label of 'geek' would be an outmoded word. There would be great strides in medicine, engineering, agriculture, exploration, natural energy production, literacy, political harmony, and perhaps World Peace if the Astronomers ruled the World again! …but we don't. So, just be grateful to retrieve that extra hour of time in October. Try using it to educate someone in the vast subject of astronomy. We must stay prepared for that great Solar Day when informed Astronomers preside once more. Ω

Dome Duty Schedule

Oct. 21	**Team C**
Oct. 28	**Team D**
Nov. 4	**Team E**
Nov. 11	**Team A**
Nov. 18	**Team B**
Nov. 25	**Team C**
Dec. 2	**Team D**

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Club Email Addresses:

editor@asterism.org
Editor of The Asterism
membership@asterism.org
AAI Membership Chair
trustees@asterism.org
All three Trustees of AAI
exec@asterism.org
Executive Committee
ray@asterism.org
Ray Shapp for website matters

Monthly Meeting
Friday, October 21st
at 8:00 PM
in the **Roy Smith Theater**

This month our speaker will be

Dr. Dale Gary
AAI Member and Professor of Physics
New Jersey Institute of Technology
whose topic will be
"Future Large Optical Solar Telescopes"

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Membership Dues

Regular Membership: $21
Sustaining Membership: $31
Sponsoring Membership: $46
Family Membership: $5

Sky & Telescope subscription: $32.95
Astronomy subscription: ***$34.00 (note the change!)***
First Time Application Fee: $3

Dues can be paid to the Club Treasurer or Membership Chairperson at the Observatory.

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The ASTERISM

can be reached at editor@asterism.org

THEATER IN THE SKY

by Ron Ruemmler

November 2005 begins with Mars Week. The Red Planet was at its nearest to the earth on the 29th of October. It reaches opposition from the sun on the 7th of November. These two events occur every 26 months or so and are always close together. The period between them has Mars at its absolute brightest.

This time will not be as spectacular as the event in August 2003, but Mars will still be brighter than it will be for the next 13 years. Also it will be much higher in the southern sky than it was two years ago. Finally, without Daylight Saving Time, we can appreciate the full glory of Mars long before the children's bedtime. As the month progresses, Mars gets higher and higher at the end of evening twilight.

After opposition Mars is technically an evening object, but it doesn't set until just before morning twilight. Jupiter rises just before Mars sets. Now is one of the rare times when Mars is brighter than Jupiter, but this may go totally unnoticed unless someone is looking from the top of a mountain with a clear horizon both east and west.

The only other morning planet is Saturn which is 90° from the sun. This is called western quadrature, and provides a nice, three-dimensional appearance in a telescope since the planet casts the maximal shadow on the rings as seen from the earth.

Going back to the evening sky, Venus and Mercury reach their maximal angular distance from the sun on the 3rd of the month. This is usually a good time to observe the inner planets, but not this month. Both planets are near their maximal possible southern declination (latitude), and very low in the southwestern sky.

The greatest southern declination of Venus is a record breaker of sorts. Every eight years Venus repeats its position relative to the earth and the sun almost exactly. This month's southern declination of -27.1° is ever so slightly further south than the event in 1997. It will, however, be slightly surpassed in 2013. All three of these events happen on November 6th.

Venus has a lovely conjunction with the moon on the 5th. Two days earlier, the very thin crescent moon slides just below Mercury. If you find them, look for Antares, the heart of Scorpius, the Scorpion, just to the left of Mercury. The star and the planet have the same brightness (magnitude 0.0), the same color, and the same altitude above the horizon! They are so close to the sun, however, that binoculars may be needed for all three objects. A much more impressive conjunction occurs on the 14th between Mars and the almost-full moon.

The Full Moon also ruins the Leonid meteor shower this year. Ω

NOVEMBER SKY CALENDAR

1	TUE	8:23 PM	New Moon
2	WED	6:00 PM	Venus half illuminated (dichotomy)
3	THU	2:00 AM	Saturn at west quadrature
3	THU	11:00 AM	Mercury at greatest elongation from the sun
3	THU	2:00 PM	Venus at greatest elongation from the sun
3	THU	5:20 PM	Mercury just above very thin crescent moon
5	SAT	6:00 PM	Venus upper right of crescent moon
6	SUN	2:00 PM	Venus at maximum southern declination
7	MON	3:00 AM	Mars at opposition from the sun
8	TUE	8:57 PM	First Quarter Moon
14	MON	10:00 PM	Mars lower left of almost-full moon
15	TUE	7:56 PM	Full Moon
21	MON	11:00 PM	Saturn right of gibbous moon
23	WED	5:12 PM	Last Quarter Moon
24	THU	11:00 AM	Mercury passes between earth and sun
29	TUE	6:00 AM	Jupiter above thin crescent moon

The Super Star Party

by Ernie Rossi

I was hoping this Star Party would be my best since this was going to be my final one at my dark site home. I have been hosting star parties since Sept 2000 at my home which is located just past the western edge of the Catskill mountains on almost 17 acres.. The star party was set for Friday Sept 2, through Sunday Sept 4, however, I had someone come up Sept 1, and some people stayed until Sept 6. It's rare that you get two clear nights back to back but it turned out we had a week of clear to mostly clear nights from just below average to excellent conditions. To get so many clear nights is just amazing. I figured I have had at least 30+ star parties at this site and more than 200 attendees, from beginners to avid observers. The reason this was my last star party was that I was selling the place and the closing was just several weeks away. It was a decision that was difficult to make but it is that time in my life that I wanted to retire and move to a place that was less expensive and had many more options and things to do. For me this final star party with the selling of my home brings such sadness and yet so much joy and terrific memories. I also feel blessed that I was able to give many observers from beginners to avid amateurs a chance to see the sky without them having to travel great distances, spend a lot of money and have poor accommodations and not be around friends.

This is a very rural area at an elevation of 1800 to 2300 feet. with large flat clearings and some forest. The area is only zoned for Agricultures and is surrounded by state forest and parks throughout. This is one of the closes and darkest sites in location to New Jersey. Under pristine sky conditions visual magnitude of close to 7 is possible.

My guest were Joe Marshalek, Neil Wendt, Bill Anthony, Dan Pontone, Doug Berger, Jeremy Carlo, Dave Nelson, Nancy McGuire, Jordan Fedor, Steve Feder, Mike Sullivan, Steve (Scopehead), Ralph and Ron from the Princeton club, and Tim Tierney and his daughter. Joe Marshalek was the only observer that was at my first star party and my last.

Each time I observe from this location I always find new objects and old objects that look more awesome than ever. NGC 253, 891, and 246 were the best ever and many other observers also agreed. I have seen these objects from Cherry Springs but through my 25'' not even pictures looked as good. Stephan's Quintet all 5 galaxies at 363 x were not only visible but distinct shapes an arms were visible. Everyone had to mention some object they either saw for the first time or found objects with such detail they never thought possible to see with their particular telescope.

My guest came from 4 different clubs in New Jersey -- AAI, NJAA, AAAP and STAR. Telescope sizes ranged from 4'' to 25'' -- refractors, SCT's, and Newtonians. Everyone looked at their favorites; mine are M13, M27, M17, M8, M22 which just looked unbelievable in 3-D using binoviewers in the 25''. Many observers would take a break at times just to look up and enjoy the sky naked eye.

Here are some of the comments from some of the observers that posted messages on the STAR bulletin board several days after the star party. Jordan Feder wrote 'I had the chance over 3 days of meeting other club members as well as members of other clubs and learning from their experiences of observing knowledge of the sky'. Not only was the 25'' available but scopes of various sizes, observers at various stages of experience and with somewhat different observing lists for some extra ideas. Musical background was provided by Jeremy and his radio and a combo of classical and BB King from Dan's system during setup on Sunday night, NWS forecast on Jeremy's receiver, stack of muffins by Nancy, birding with Neil and Bill, and target practice with Joe. Highlights for Jordan were NGC 246 in the 25'' with and without a filter. The bubble was well defined and with the filter had structure and varying wisps of thickness on the edge. NGC 891 in scopes 16'' and larger all the experienced observers commented that was the brightest they have seen it and it extended a bit further in the smaller scopes as well due to the sky darkness.. The center of NGC 253 had lots of swirling detail with arms and dust lanes in the 25'' scope. Other highlights veil in all the scopes and NGC 7008 in Bill Anthony's 12'' scope. Stephan's Quintet showed detail in the 25'' as well as sizeable companion to 7331, probably 7335 mag. 13.4. All the objects in the 25'' with or without the bino viewer were truly impressive like seeing the structure of M11, and see how wonderful M92 is. Two dust lanes could easily be seen in M31 and so many other objects that are difficult to see were so bright and defined. This is just part of Jordan's list and many of the other observers wrote about their wonderful experience and highlights of the star party. Many of the advanced observers come to find those elusive objects you can only see in very dark pristine skies or through a long exposure photograph and this just happens to be one of those places.

One of the pleasures in having your own dark sky home is all the amenities that comes with it, warm beds, a shower, toilet, kitchen, hot food, cold drinks, TV, and privacy of your own property. I will always cherish this place for it's beauty, dark skies, comradeship, and most of all the wonderful memories and fun. This was truly a Super Star Party. Ω

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Sperry Observations

The eighth edition of the AAI Journal, ***Sperry Observations****, is now available at the Observatory! The price for AAI Members is only $10!!!*

Articles include:

** The Evolution of Meteor Science -- Mike Luciuk*

** Going Beyond 19th Magnitude! -- Hank Adams*

** Cadwallader Colden: The Man Who Attempted to Do What Newton Wouldn't - Gordon Bond*

** On The Force of Gravitation -- William G. Poelstra*

** Determining the Position of a Body Orbiting The Sun From Orbital Elements -- Dr. Lewis C. Thomas*

** Hunting For Asteroids -- Hank Adams*

** Antigravity Matters -- George Chaplenko*

** The Chaplenko Problem -- William G. Poelstra*

** The Skies of Discovery, Part II -- Alan P. Witzgall*

** Binoculars in Astronomy -- George Helmke*

Stewart's Skybox

by Stewart Meyers

On the night of July 29th, I was checking out the Space Daily website and noticed the lead story was the discovery of a possible 10th planet to our solar system. Checking around, I saw no mention of this major event in any other news source. It was yet another case of the mainstream media getting caught with their pants down around their ankles. The more traditional news sources (TV, radio, and newspapers) picked up on the story the next day.

The New Addition

At first, details were about the newly discovered object, currently known as 2003 UB313, were sketchy. Actually it was discovered back in 2003, but its motion was so slow that it wasn't noticed for about 15 months. The reason it moves so slowly is that it is about 97 Astronomical Units (AU) from the Sun (Earth is at 1 AU by definition), near the aphelion (far point) of its 557 year orbit around the sun. When it is at perihelion (closest point to the Sun), it is about 38 AU, still further out than Pluto.

The orbit of 2003 UB313 has another claim to fame. It is inclined to the ecliptic (the plane in which the major planets of our solar system orbit) by about 45 degrees. Most of the past planet hunting surveys kept to within 10 to 20 degrees of the ecliptic and therefore missed it.

It's The Size That Counts

One very important detail that had to be determined for 2003 UB313 was its size. Since it is so far from Earth, it cannot be resolved directly. However, there is a way to find how big it is. Since it is at a known distance and the intensity of sunlight is known, the size can be estimated by how bright it appears. Of course, that also depends on how much light the surface reflects. Since the object is at almost 19th magnitude, the only way it can be the same size as Pluto would be if it reflected all of the light that hit it – a very unlikely circumstance. If it reflects light like Pluto does, that gives an estimated size of about 3,000 to 3,400 kilometers (about 1,860 to 2,100 miles – nearly the size of the Moon). An attempt to refine the size estimate by imaging the object in the infrared with the Spitzer Space Telescope failed due to an error in coordinates. However, ground based astronomers did manage to get a spectrum of 2003 UB313 and it is almost identical to a spectrum of Pluto, indicating that size estimates must be close to the truth and that it is definitely bigger than Pluto.

The Great Debate

One side effect of this discovery is that it has reopened the debate over whether Pluto should be considered a planet or a Kuiper Belt Object (KBO). Some people like Brian Marsden feel that Pluto should be demoted and that 2003 UB313 and any other very large objects discovered in the Kuiper Belt should be merely considered KBOs. On the other hand, folks like Michael Brown, the astronomer who discovered the possible new planet feel that Pluto should remain a planet because of historical precedent (Pluto was instantly considered a planet when it was discovered in 1930).

Either way, that still leaves the question of how to classify 2003 UB313. Some have argued that, given its eccentric orbit and high inclination to the ecliptic, it should be considered just a KBO, regardless of size. Any subsequent discoveries of large objects would also be considered KBOs.

Others argue that the criterion should be based on size. Some of these people say that Pluto should be the low end of what is called a planet. So 2003 UB313 would definitely be a planet, while Sedna, and the other recently discovered objects fall short.

But some feel that this is too arbitrary and that the standard should be set by some physical property. One property considered is shape. All planets and very large objects in space are spherical or at least some variation on the sphere. Small objects such as many asteroids and comet nuclei are not. The reason for this is gravity. Large objects have enough gravity to pull their constituents into a sphere. Small objects don't. If this is the standard, then Ceres (the largest asteroid) is then considered a planet as well as Sedna and some of the recently discovered objects in the Kuiper belt.

My opinion is that we should keep Pluto as a planet and set its size as the minimum for a planet. This would avoid public confusion (the public is very easily confused when it comes to things astronomical) and would allow very large objects to be considered planets.

The Name Game

If 2003 UB313 is considered a planet, as seems very likely, a name has to be selected.

Michael Brown says he has come up with a name and sent it to the IAU for approval. However, he will not elaborate on what it is. When asked how he refers to it when talking about it with his colleagues, he says that he calls it *Xena*. While I have no issue with using pop culture as a naming source for celestial objects, I feel that a planet deserves better than to be named for a fictional character of ambiguous lifestyle.

Some names that have been proposed are Persephone (the wife of Hades), Cerberus (the three-headed dog that guarded the Greek underworld), and Loki (the Norse trickster god).

Here are my suggestions for a name (in no real order):

1. Meta – In addition to being short and simple, it was also the name of a rather mysterious and enigmatic planet on *Space:1999* which, like 2003 UB313, was very difficult to study.
2. Thule – In Greek myths, the island of Ultima Thule was the world's northernmost point. An excellent name for such a distant object.
3. Rupert – This is from the book *Mostly Harmless* by the late Douglas Adams. In the book, the solar system had ten planets, the tenth planet being named Persephone, but everyone called it Rupert in honor of the discoverer's pet parrot.
4. Isis – In the old computer game *Echelon*, this was the name given to the 10th planet on which the story of the game took place.

Of the four, I like Rupert best. Douglas Adams shown a considerable interest in science and physics in his writings, so such a gesture would be a very fitting memorial for an author who had such witty fun with science. Ω