



The Mason-Dixon Astronomer

Westminster Astronomical Society Inc. of Maryland

November 2012

Vol. 29 No. 11

www.westminsterastro.org



Star Points for November 2012

“Planets and Meteors for the Month”

by Curtis Roelle

In This Issue:

[Pages 1 & 2](#)
Star Points

[Page 3](#)
Upcoming Events &
New Members

[Page 4](#)
Minutes from
October meeting

[Pages 5-6](#)
NASA's Space
Place

Living on the east coast buffeted by hurricanes, over the years I've noticed that their passing “scours” the atmosphere clean, leaving in its wake a crystal-clear sky free of dust. In that respect, Hurricane Sandy didn't disappoint, clearing the way for observing a few upcoming events.

Unfortunately, the most spectacular event, a total solar eclipse in Australia, won't be visible from here. However, from meteors to planets, there are enough sights in the night sky to keep the occasional outdoor observer busy during November.

The Northern Taurids is an obscure meteor shower associated with Comet Encke and normally produces at most a paltry half dozen or so meteors per hour. However, things might change for this year if the anticipated 61-year “swarm” last seen in 1951 returns. The theory behind the swarm is a cloud of larger-than-average dust particles may come our way, producing colorful meteors and a number of fireballs.

The expected swarm would arrive in the two weeks between the end of October and about November 11. The full moon interfered with the start of the period, but has been fading since. The best time to look for any “Halloween Fireballs,” as those from this shower are often called, is in the evening before moonrise.

Keep in mind predictions for meteors, and those for the comets that produce them, are often wrong. Frequently predictions fail to live up to expectations, although at times can far exceed them.

(continued on page 2)

November Meeting: Wednesday, November 14, 2012, 7:30 p.m., at Bear Branch Nature Center

Speaker: Gary Hand of Hands On Optics will lead a Telescope Buyers Workshop. See a description on page 3.

Star Points, *cont.*

November's most famous shower is the Leonids. Advantages for this year include a weekend free from interference caused by a bright moon. Expected to be best for us after midnight on Friday the 16th (Saturday morning the 17th) when perhaps a dozen per hour could be visible.

The best equipment for meteor observing is a lawn chair with a blanket or sleeping bag and the unaided eye. November also offers several planets that don't require a telescope to see.

Jupiter is rising earlier each evening. Just look for the brightest star-like object low in the eastern sky a couple of hours after sunset. By early December Jupiter reaches "opposition" when it will be up all night.

A telescope of most any size will show each of the four Galilean satellites (moons discovered by Galileo). They are Io, Europa, Ganymede, and Callisto. Telescopes at higher magnifications will also reveal the brownish-red bands and whitish-yellow zones on Jupiter. These features exist in the Jovian atmosphere where sheer winds are blowing hard.

The bright star to the right of Jupiter is Taurus's Aldebaran, which is situated among a V-shaped cluster of stars known as the Hyades. Use your binoculars to enjoy a closer look at the star cluster.

For early risers, look for the conjunction between Venus and Saturn in late November. During the last week of the month the planets will be no more than four degrees apart. However, on the mornings of Thanksgiving and "Black Friday" the planets are only one degree or less apart.

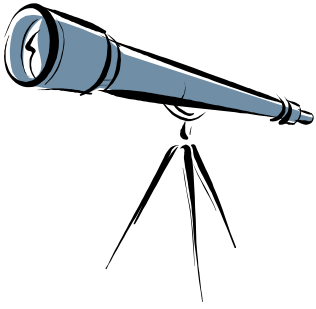
A telescope at low power should show both planets in the same field. The disk of Venus appears slightly smaller than Saturn's. Can you see Venus's gibbous phase and Saturn's rings in your telescope?

Another distant planet is also well placed for November viewing. Uranus is at its highest during evening prime time. Although technically a naked-eye object, it appears star-like and unremarkable. But a telescope will show the tiny blue-green disk of the gas-giant planet. A good up-to-date finder chart is a necessity when trying to locate it.

Perhaps the best way to see Uranus in a telescope is to attend one of the public planetarium programs followed by a star party at Bear Branch Nature Center. The next is scheduled on the evening of Saturday, November 10. Call 410-386-2103 during business hours to reserve a seat at the 7:30 p.m. planetarium show. The star party is free of charge and begins at 8:30 p.m.

"Star Points" by Curtis Roelle appears in the Carroll County Times on the first Sunday of each month. Visit the website at <http://www.starpoints.org> or send email to StarPoints@gmail.com.

Upcoming Events



Planetarium Show November 10, 7:30 p.m., at Bear Branch Nature Center (BBNC)

Soldiers Delight Public Stargazing November 10, 8 p.m., at Soldiers Delight Natural Environment Area in Owings Mills

Monthly Meeting November 14, 7:30 p.m., at BBNC

NOVEMBER MEETING PROGRAM

Gary Hand of Hands On Optics will provide tips on purchasing a telescope — what to buy and what to avoid. Gary's advice is good for both first-time buyers or those purchasing their next telescope.

Please join our guest for a pre-meeting dinner at 6 p.m. at Harry's in Westminster.

Welcome, New WASI Members!

WASI extends a warm welcome to the following new members.

John Church of Rockville, Maryland
Benjamin Clingan of Finksburg, Maryland
Joseph Colbourne, Jr., of Ellicott City, Maryland
Don Jewell of Westminster, Maryland
Helen Niemeyer of Westminster, Maryland
Patricia Piper of Westminster, Maryland
Elizabeth C. Ryan of Reisterstown, Maryland

Want to join the Westminster Astronomical Society?
Sign up online at www.westminsterastro.org/members
or bring a check for \$25 made out to WASI
to our next meeting at Bear Branch Nature Center.

Minutes of Meeting on October 10, 2012

Called to order at 7:40 by Skip Bird, Treasurer

Announcement:

The latest MDA is available.

Observation reports were called for:

It was reported that there is a “new” comet on the left side of the Pegasus square.
No observations reported by club members.

Observatory:

Plans have arrived in redone form and are ready to be resubmitted for building permits.

Outreach:

Soldiers Delight Star Party scheduled for October 13.
Sandymont school in Finksberg needs star party volunteers.
Udvar-Hazy National Air & Space Museum at Dulles airport Air & Scare on October 27
(Bob Clark needs help)

Curt Roelle had prepared a presentation but he is some place between Colorado and here. He had supplied two presentations to Vanessa who ran them.

Adjourned 8:40 PM.

Respectively submitted,
Robert L. Clark



A Cosmic Tease: Trials of the Herschel Space Telescope Science Teams

by Dr. Marc J. Kuchner

Vast fields of marble-sized chunks of ice and rock spun slowly in the darkness this week, and I sat in the back of a gray conference room with white plastic tables spread with papers and laptops. I was sitting in on a meeting of an international team of astronomers gathered to analyze data from the Herschel Infrared Observatory. This telescope, sometimes just called Herschel, orbits the Sun about a million miles from Earth.

The meeting began with dinner at Karl's house. Karl charred chorizo on the backyard grill while the airplanes dribbled into Dulles airport. Our colleagues arrived, jetlagged and yawning, from Germany, Sweden, and Spain, and we sat on Karl's couches catching up on the latest gossip. The unemployment level in Spain is about twenty percent, so research funding there is hard to come by these days. That's not nice to hear. But it cheered us up to be with old friends.

The meeting commenced the next morning, as the vast fields of ice and rock continued to spin — shards glinting in the starlight. Or maybe they didn't. Maybe they didn't exist at all.

You see, this team is looking at a series of images of stars taken by a device called a bolometer that is blind to ordinary starlight. Instead, the bolometer inside Herschel senses infrared light, a kind of light that we would probably refer to as heat if we could feel it. But the idea of pointing the bolometer at the stars was not to collect ordinary starlight. It was to measure heat coming from the vicinity of these stars, like an infrared security camera, in case there was something else to be found lurking nearby.

And lo and behold, for a handful of stars, the bolometer measurements were off the charts! Maybe something was orbiting these stars. From the details of the bolometer readings — which channels lit up and so on — you would guess that this stuff took the form of majestic fields or rings of icy and rocky particles. It would be a new kind of disk, a discovery worth writing home to Madrid about.

There are several teams of astronomers analyzing data from the Herschel Space Telescope. They call themselves by oddly inappropriate sounding acronyms: GASPS, DUNES, DEBRIS. For the time being, the scientists on these teams are the only ones with access to the Herschel data. But in January, all the data these teams are working on will suddenly be released to the public. So they are all under pressure to finish their work by then. The team whose meeting I was sitting in on would like to publish a paper about the new disks by then.

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But it's not so simple. The stars that this team had measured were relatively nearby as stars go, less than a few hundred light-years. But the universe is big, and full of galaxies of all kinds — a sea of galaxies starting from maybe a hundred thousand light-years away, and stretching on and on. Maybe one of those background galaxies was lined up with each of the stars that had lit up the bolometer — fooling us into thinking they were seeing disks around these stars.

The team argued and paced, and then broke for lunch. We marched to the cafeteria through the rain. Meanwhile, vast fields of marble-sized chunks of ice and rock spun slowly in the darkness. Or maybe they didn't.

What else did Herschel recently uncover? Find out at <http://spaceplace.nasa.gov/comet-ocean>.

Dr. Marc J. Kuchner is an astrophysicist at the Exoplanets and Stellar Astrophysics Laboratory at NASA's Goddard Space Flight Center. NASA's Astrophysics Division works on big questions about the origin and evolution of the universe, galaxies, and planetary systems. Explore more at <http://www.science.nasa.gov/astrophysics/>.



Samuel Pierpoint Langley developed the bolometer in 1878. His instrument detects a broad range of infrared wavelengths, sensitive to differences in temperature of one hundred-thousandth of a degree Celsius (0.00001 °C). In 1961, Frank Low developed the germanium bolometer, which is hundreds of times more sensitive than previous detectors and capable of detecting far-infrared radiation.