

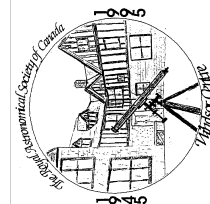
Matt showed other member photos, highlighting the morning planetary alignment of **Jupiter, Venus, Mars and Mercury** taken by Randy Groundwater at Hallam Observatory in mid-October. Jupiter and Mars were less than a degree apart at the time. It was noted that in the days leading up the meeting, spotting elusive Mercury low in the east was relatively easy over an extended stretch of due to good weather. Matt pointed out that a close conjunction of **Jupiter and Venus** would take place on the morning of October 26th and between **Venus and Mars** on November 3rd. The moon will also be passing through this area of the sky from November 6 - 8. Venus is also near its greatest elongation west (highest point before sunrise). Tom Sobocan also added that people should take the time when multiple planets are close like this to peek out at them on consecutive mornings as it is relatively easy to detect their motion across the sky with the naked eye.

Matt used Stellarium software to project the October night sky and highlighted 5 objects visible this season - **M33** (the Pinwheel galaxy) in Triangulum, **M31** (the Andromeda galaxy), the **Double Cluster** in Perseus, **M35** (open cluster) in Gemini, and **NGC 1499** (the California nebula). Matt discussed each object and presented images taken by members of them. Brian Thomas noted that **Uranus** is fairly easy to find right now, being near a bright star in Pisces. Steve Pellarin also noted that later that evening would be the peak of the **Orionid meteor shower** (debris from Halley's comet), so members might want to keep their eyes open in the early morning hours for any shooting stars. From the observatory you might be able to spot about 10 an hour for the next couple of mornings, depending on conditions. Matt added that the **Taurid meteors** are peaking in early November and that there are an unusually large number of bright fireballs that are associated with this shower, so it will be something to keep an eye out for as we approach the peak on November 5th. Matt rapped up his presentation by mentioning that we have an RASC-hosted **Dark Sky Night at Point Pelee** coming up in early November and that any volunteers available to come out that night with telescopes or binoculars would be greatly appreciated. Members participating should meet at the Visitor Centre and dress warmly.

Randy thanked Matt for his presentation and reminded the audience that the **next regular membership meeting** would take place on **Tuesday, November 17th at 7:30 p.m.** Randy mentioned that a number of members were planning on going together to see the movie, **'The Martian' in 3D** at Silver City Theatres at 6:40 PM on the coming Thursday night. Mike Mastronardi put in a plug for the **December 4th Christmas Social** potluck dinner. Anyone who is coming and can bring something should talk to Mike after the meeting so that he can better coordinate the event.

Randy **adjourned the meeting at 9:58 p.m.**

Recorded by Steve Pellarin, RASC Windsor Centre Secretary.



# AURORA



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The Royal Astronomical Society of Canada - Windsor Centre

November 2015

## Flyer

### Next Meeting

Tuesday, January 19, 2016  
7:30 p.m.

at  
Ojibway Park Nature Centre  
5200 Matchette Road

Speaker: It's a Movie Night!

Movie: "Human Universe with Dr. Brian Cox: Are We Alone?"

### Upcoming Events

**December Social:** Our annual Holiday Party will be held on Friday December 4th at 6:00 p.m. at the Ojibway Park Nature Centre. The dinner is "pot luck" style and will be served around 7:00 p.m.. Please contact Mike Mastronardi at ([michael.mastronardi@stantec.com](mailto:michael.mastronardi@stantec.com)) to coordinate what you will be bringing and confirm the number of people in your party.

**Open House Night at Hallam:** The next open house night at Hallam is on Saturday December 12th at 7:00 p.m.. The January open house night also begins at 7:00 p.m. on January 16th.

**Geminid Meteor Shower:** Peaks in moonless skies of Sunday/Monday December 13th/14th.

**Winter Solstice:** Winter officially begins for the northern hemisphere at 11:48 p.m. EST on Monday December 21st.

## Monthly Meeting Minutes

October 20, 2015

The monthly meeting of the Royal Astronomical Society of Canada - Windsor Centre was held at the Ojibway Park Nature Centre.

Windsor Centre **President Randy Groundwater** chaired the meeting. Randy called the meeting to order at 7:36 p.m. and welcomed members and guests to the Ojibway Nature Centre.

**Motion to accept the minutes** of the September 15, 2015 meeting was made by Steve Mastellotto, seconded by Dan Perisinotti. **MOTION CARRIED.**

### Main Presentation

Randy introduced our main speaker for the evening - **Dr. Dale Partin**, a retired electrical engineer, first vice-president for programmes of the Warren Astronomical Society, programme director for the Ford Astronomy Club and astronomy instructor at Macomb Community College. Dale's presentation was called *"The Grid: Is it Safe? Are You Safe?"*

The presentation began with Dale describing what the power grid is and how it distributes electricity across North America. He noted that there are many links between Canadian, American and Mexican power suppliers and customers, basically creating one massive power distribution network. Because it is so interconnected, it is possible for failures in one part of the system to cause power outages across large parts of the continent. The massive 2-day power outage in the eastern U.S. and Canada back in 2003 was a prime example of the risks involved in having such an interlinked system. Dale then went on to describe how giant clouds of charged particles erupting from solar flares on the sun called coronal mass ejections (CMEs) can quickly race towards earth and induce massive currents in power lines running cross country, burning out transformers and overloading systems across a large area.

While temporary electrical grid shutdowns due to CMEs have occurred occasionally in the past century, what has not been seen are the effects of the types of massive solar eruptions that occurred about 150 years ago. Back in the 1850s, the sun went through a series of ultraviolet eruptions, known as 'superflares', where the release of energetic charged particles in a CME were at least twice as large as anything seen before or since. While much rarer than the common types of solar eruptions we see today, the sun is certainly capable of producing these violent eruptions in the future. Our understanding of the sun's internal dynamics is not yet to the point where we can predict with any real lead time when CMEs will threaten the earth. If superflare eruptions were to occur now, there are fears that so much damage could be created in our power distribution system, that it would essentially take years, to restore it

completely. The fear is that, in the intervening time, the loss of useable electric power (which has essentially become a necessity for modern life), would lead to a breakdown in our society. No refrigeration, little or no electronic communication, no internet, difficulties in banking, transactions, buying groceries, etc. The picture painted by Dale was not pretty.

Dale also pointed best precautionary measures that an individual might make to survive over the long term is to have a cabin or farm outside of large urban areas and to set aside large supplies of food, alternate fuels (with gas-powered generators) and find a clean easily accessible source of drinking water.

Dale also went on to explain that the Sun isn't the only threat to our power grid - terrorist attacks and natural disasters are other possible doomsday scenarios. Although this all sounds rather extreme, Dale argued that the CME threat from our sun is very real and that our current power infrastructure is not designed to handle anything that might happen in the future. Certainly it gives one reason to pause and think about what each person might do to better prepare for such a situation.

After taking a few questions, Randy thanked Dale for his sobering presentation. Randy then called for a fifteen minute social break. He also acknowledged the visitors and guests that were in the audience.

**Break and 50/50 Draw** - \$14 went to Glen Philpot which he donated back to the Centre.

Randy called on **Past-President Rick Marion** who presented the slate of positions (see October newsletter for the list) for the **Centre's Executive and Council for 2016** which will be voted on at the November membership/annual meeting. Randy indicated that this list is not set in stone and that if anyone wished to put their name forward to run for any position that they would be equally considered so long as they were nominated from the floor and met the conditions of serving on Council in our bylaws. Randy indicated that we are always looking for volunteers to assist us in our Centre activities and that no experience is necessary to become a valued member of our Council.

**Director of Observing Report, Matt McCall:** Matt started his presentation by showing two photos taken by Tom Sobocan of the recent total lunar eclipse taken at Hallam Observatory. Tom described how the photos were taken and highlighted some of his group's experience out at Hallam during the eclipse.

Matt then presented a 2 minute time-lapse video of the lunar eclipse that was created by Mahayarrahh Starr-Livingstone using his 35mm DSLR camera attached to a Meade 4"refractor that tracked the event. The well-produced video complete with soundtrack was well received by the audience and stimulated conversation as to the views people had from various locations around the county.