

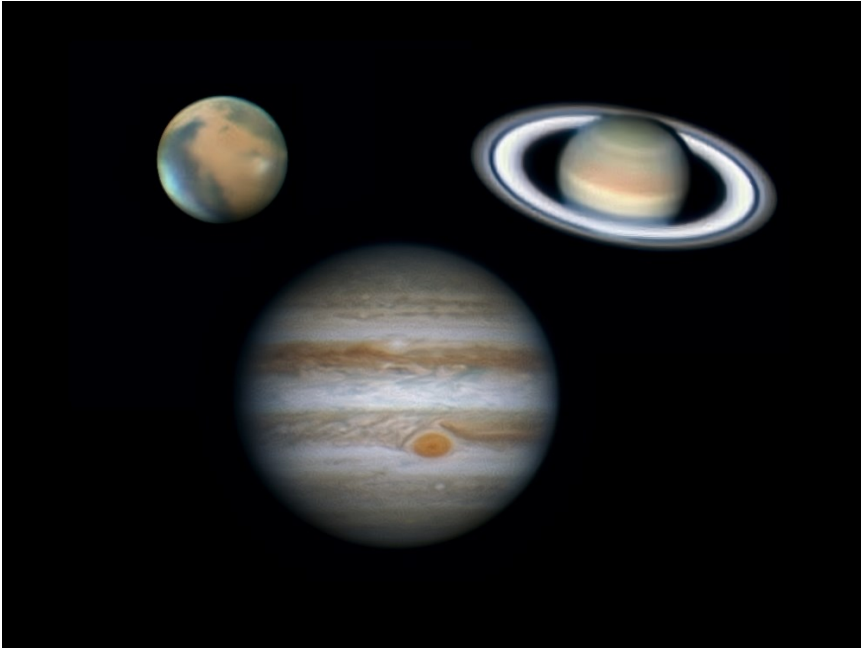
days before and after opposition.

Unfortunately there was no more time, and Steve had to shorten his presentation.

Randy thanked everyone for coming out to the meeting and reminded everyone that the **next regular membership meeting** would take place **Tuesday, June 21st, 2016 at 7:30 p.m.**

Randy **adjourned the meeting at 10:21 p.m.**

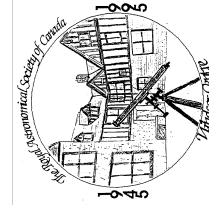
Recorded by Dan Perissinotti, RASC Windsor Centre Secretary



Mike Pataky captures a “Canadian Hat Trick Eh!”. The above photo montage has been on the SkyNews Photo of the Week page and represents the beautiful work being done by Mike. Mike captured all three images in the same night back in April. Well done Mike!



AURORA



Volume 41, No. 9

The Royal Astronomical Society of Canada - Windsor Centre

June 2016

Flyer

Next Meeting

Tuesday, September 20, 2016
7:30 p.m.

at

[Ojibway Park Nature Centre](#)

5200 Matchette Road

Speaker: Paul Preney

Topic: “*The Heyday of NASA*”

Upcoming Events

Summer Solstice: The Sun was at its furthest point North of the Celestial Equator on **Monday June 20th at 6:34 p.m. EDT** marking the start of Summer for the Northern Hemisphere.

Summer Open House Nights at Hallam: The next open house nights at Hallam will be on **Saturday July 9th at 9:45 p.m., August 6th at 9:15 p.m., and September 10th at 8:15 p.m.**

Perseid Meteor Shower: Peaks overnight on Thursday August 11/12. The moon sets just after 1:00 a.m. on the morning of the 12th so the best time to look is the pre-dawn hours of Friday the 12th.

Venus and Jupiter: will be less than 4 arc minutes apart at 6:31 p.m. on Saturday August 27th making this a difficult daylight view with either binoculars or a high power telescope.

Monthly Meeting Minutes May 17, 2016

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 7:35 p.m. and welcomed members and guests to the Ojibway Nature Centre.

Motion to accept the minutes of the April 19, 2016 meeting was made by Dr. Susan Sawyer-Beaulieu, seconded by Greg Mockler. **MOTION CARRIED.**

Main Presentation

Randy Groundwater welcomed everyone to the meeting and gave a brief overview of the topics which were going to be discussed. Randy introduced **Dr. Sergey Postnikov**, born in St. Petersburg Russia, a trained astronomer who discussed *New Profound Ways of Observing the Universe*.

Sergey started off with a quick overview of the many ways we have observed the universe throughout history. Starting with the naked eye, then from visible to invisible light waves / particles, down to the small neutrinos and compact objects, and scaled up to ripples in space time.

Cultures throughout the world have been observing the skies with the naked eye since pre-recorded history to today. It is the easiest way to observe, and objects like the sun, moon, stars, planets, and zodiacal light are some of the observations that take place almost every day. The history of optical observing is very short, and ever evolving from ground based to satellite based telescopes.

As technology evolves, we are able to observe the universe in light waves that are not visible with the naked eye. Currently radio, infrared, ultraviolet, x-rays, and gamma-rays have all become common in the scientific world of study. Every band tells its own part of the story, allowing us to expand our knowledge. Along with the electromagnetic spectrum, we created sensitive equipment to study alien particles for various regions of the cosmos. These particles which are charged and similar to protons, travel through the vacuum of space and some collide with the Earth. Similar to extraterrestrial detection, we have the ability to observe our own radioactivity through beta-decay and neutrino detection that is created on Earth. Ripples in space-time have been the latest advancement in observations. This includes massive moving objects that disturb space-time, creating a detectable disturbance. Einstein's Theory of General Relativity predicts that ripples in space-time propagate at the speed of

light as gravity waves. The most powerful sources are merging supermassive black holes. These waves have been indirectly confirmed, but had not been directly detected, until this past year.

Post presentation, Sergey answered a multitude of questions from the audience. Some were very difficult to answer, nonetheless, an in-depth comment was given sparking excited discussions.

Randy thanked Sergey for his presence and very informative presentation.

Break and 50/50 draw: took place at 9:30 p.m. \$8.00 went to **Brian Thomas** which was donated back to the centre.

Director of Observing Report

Randy welcomed **Steve Pellarin** to the floor, to present the D of O Report. Starting with an image of the **current sky**, Steve walked us through the constellations as the rose in the east. Meteor showers in May-early June include the **Eta Aquarids**, which peak on May 6th. They are a relatively fast moving shower, spawning from a broad stream associated with the comet Halley.

On May 7th there was a double shadow transit on the disk of Jupiter. Going into great detail, Steve described how the axial tilt of Jupiter causes a **multi-satellite shadow transit** event every 6 years. Each "event season" happens for roughly 6 months before and after the equinox. Another well observed transit (not a shadow, rather a body) occurred on May 9th, Mercury crossed the Sun's disk. This event only occurs when Mercury is at inferior conjunction and its' tilted orbit with that of Earth's line up roughly with the centre of the Sun. **Mercury's transit** started at 7:12 a.m. and ended at 2:42 p.m. The next transit will take place in 2019.

Mars is becoming a prominent feature in the spring sky. It is very bright in the sky because it is in opposition. Mars oppositions happen about every 26 months, and every 15 or 17 years opposition occurs within a few weeks of Mars' perihelion. This year **Mars' opposition** occurs at 6:00 a.m. EDT on May 22, 2016. Since the apparent size of Mars is currently larger than normal, there are many interesting features to observe. These include the **Hellas** basin, **Sinus Sabaeus**, and **Syrtis Major** to name a few prominent surface features.

A couple things to look for in June include **Mercury's greatest elongation**. As it completes this it will pass close to the Moon, it will also have a bigger crescent than the Moon. **Jupiter** will also be passing close to the Moon on June 11th, though this will happen in daylight, and may be difficult to see. On June 3, **Saturn will be in opposition**, its apparent size / brightness are at their largest. During this time there will be no shadows on the rings. As this happens the rings are angled more towards Earth than normal, causing them to appear brighter, this is known as the **Seeliger Effect**. It only happens for a few