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Newsletter of the Winnipeg Centre of the Royal Astronomical Society of Canada

Lunar Eclipse on September 27, 2015

Above photo by: Ron Berard (Winnnipeg)

Below photo by: Sheila Wischar (Winnipeg)

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Lunar Eclipse on September 27, 2015

September 27's lunar eclipse was the last of a set of four consecutive total eclipses that took place over the last two years, and it was one of the best. Not only were the skies cooperative – at least partly - but it took place on a weekend evening under pleasant temperatures. Winnipeg Centre members scrounged together about 15-20 telescopes to bring to Assiniboine Park, and they were all needed. An estimated 500-700 people came out to view the eclipse with us. Television cameras from all of the media were there at the start, and several people were interviewed. It was a good night, interrupted by clouds only after totality was complete. In any lifetime, at least a dozen or more partial and total lunar eclipses should be easily visible to anyone who cares to look and many more for those of us who make a point to go out to view them at odd hours of the night. They occur at least twice a year, though some only pass through the outer edges of the Earth's shadow and are essentially invisible. Nevertheless, there are enough partial and total lunar eclipses - 12 between 2010 and 2020, for instance - that they should be a part of everyone's life experiences. It was surprising, therefore, how many adults were seeing their first lunar eclipse on September 27. We'll have to make sure that Winnipeg is ready for the next good eclipses, on January 31, 2018 and January 21, 2019. The "oh, wow!" that escapes spontaneously when the uninitiated first view an eclipse through a telescope was a big reward for those who came out to help during on the 27th. We received hundreds of thank-yous for our efforts and probably gained a few new members along the way.

Thank-you to all of those members who came out to help.

Upcoming events:

October 8: Moon & Venus together in morning twilight

October 9: Moon passes Jupiter

October 25: Jupiter and Venus in conjunction

November 3: Mars and Venus side-by-side

Submitted by Jay Anderson (Winnipeg)

Lunar Eclipse on September 27, 2015

Photo by: Judy Anderson (Winnipeg)

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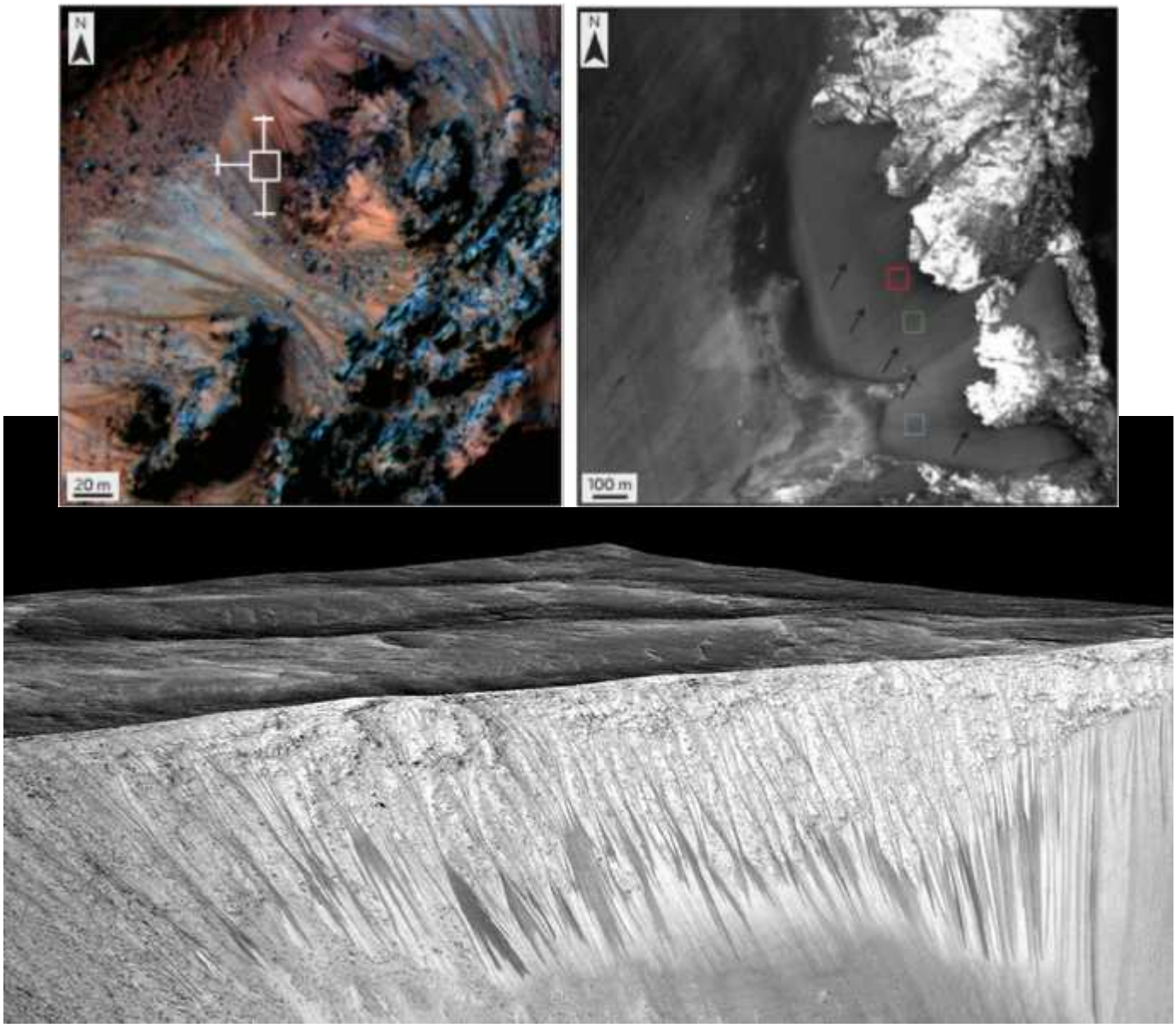

There is salty water flowing seasonally on the surface of Mars. The news was confirmed by an announcement from NASA by Jim Green (Director of Planetary Science), Michael Meyer (lead scientist for the Mars Exploration Program), and Mary Beth Wilhelm (NASA's Ames Research Center). Scientists have noticed dark streaking on the surface indicating rivers and streams. New observations show a directional tide and flow to this cyclical areas that coincide with warmer seasons. This freezing and thawing is a sure sign of liquid water. Any potential organisms would have to hibernate during the winter when the water would freeze. The water on Mars would be more gelatinous and dense in liquid form. Various salts have been detected along the darker streaks. These salts can lower the freezing point and lower the evaporation rate increasing the chance of liquid water during cooler seasons. This could allow for an active biological process.

http://observer.com/2015/09/breaking-nasa-confirms-existence-of-liquid-saltwater-on-mars/

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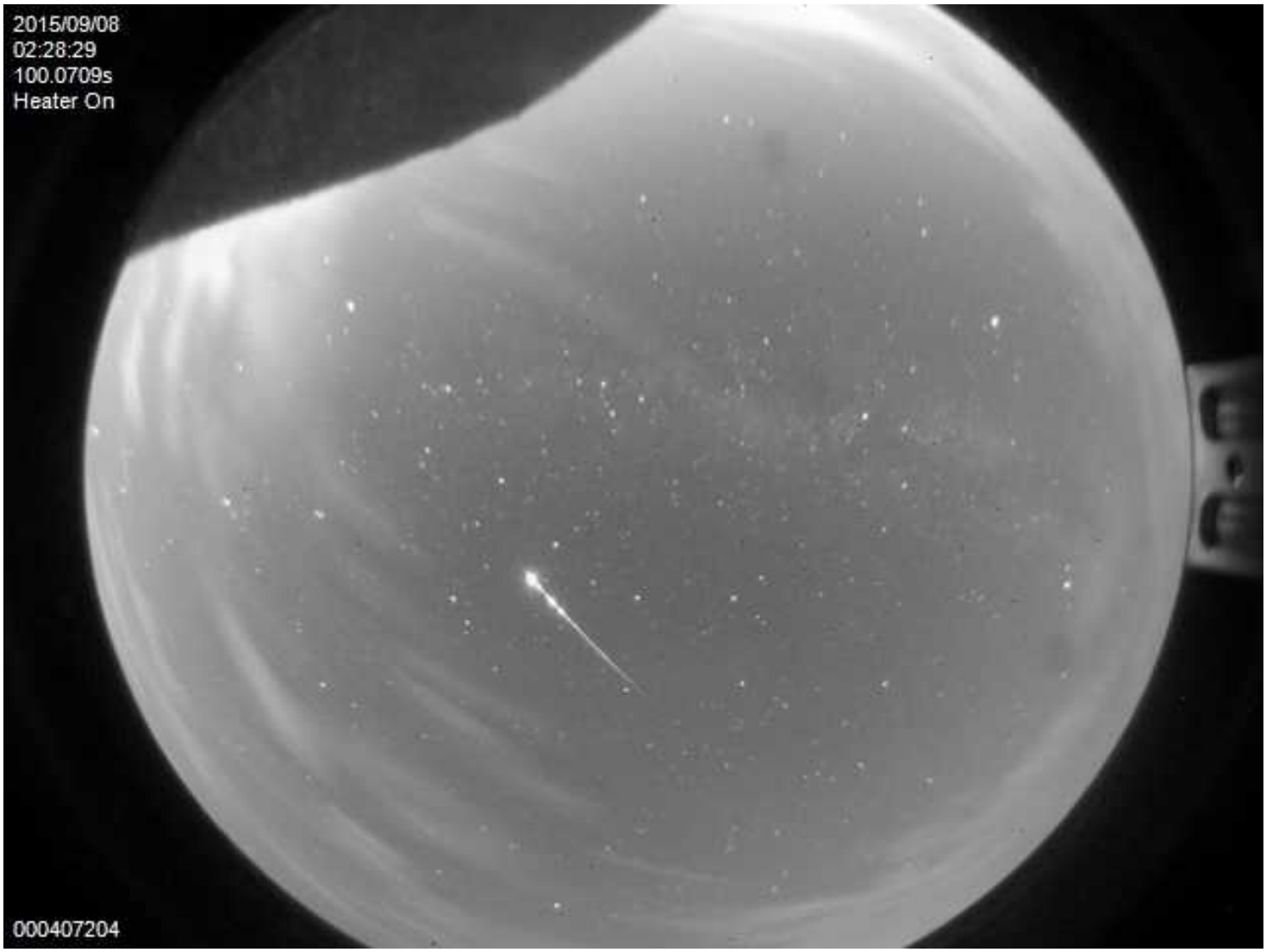

Bolide on September 7, 2015.

Photo by: Steve Altstadt (Winnipeg)

Rick Ryerson from Lawrence Livermore and International Colleagues have discovered that there is more oxygen in the core of Earth than originally thought by considering the geophysical and geochemical signatures of the Earth's core and mantle. Silicon concentrations are lower than previous estimates. This will provide insigh into the origins of the Earth's formation. The teams believes that the earth must have accreted material that is more oxidized than today's mantle. This is similar to planetesimals such as asteroidal bodies that are objects formed from dust, rock, and other materials that can be several meters to hundreds of kilometers in size. "This new model is at odds with the current belief that core formation occurred under reduction conditions," Ryerson said. "Instead we found that Earth's magma ocean started out oxidized and has become reduced through time by oxygen incorporation into the core."

http://www.astronomy.com/news/2015/09/oxygen-in-earths-core-gives-new-view-of-planetary-formation

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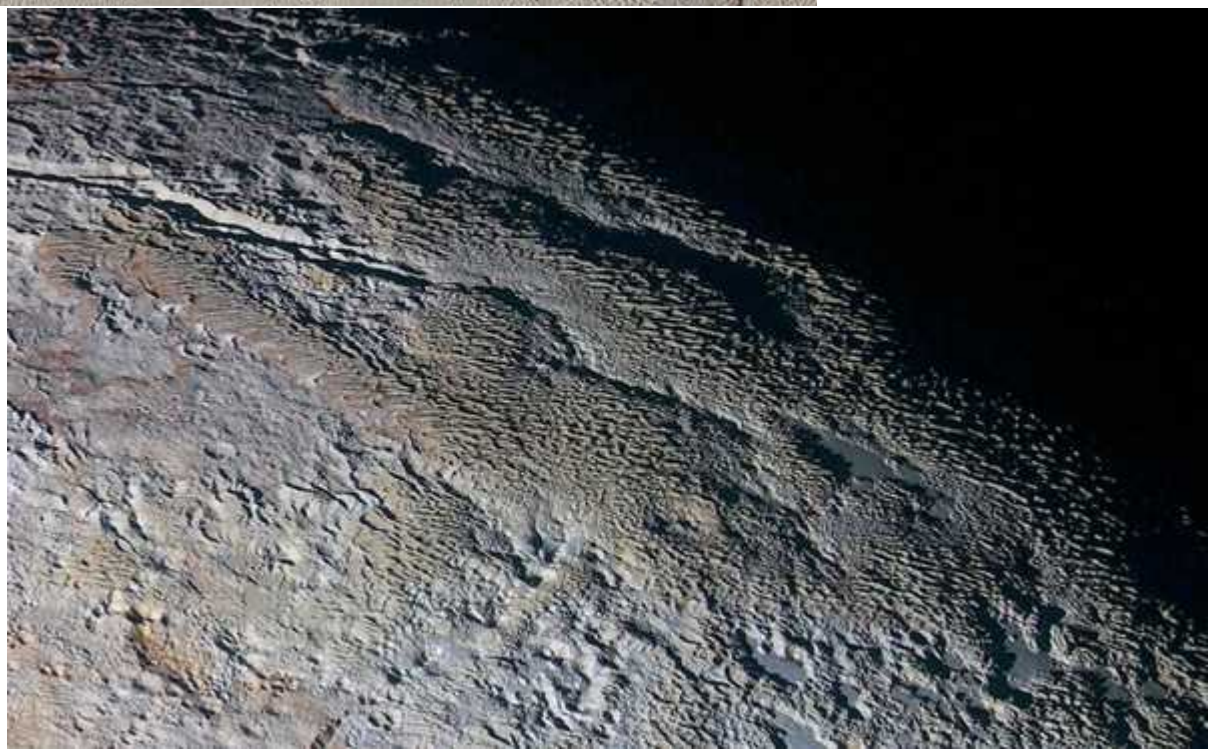
New photos of Pluto

"It's a unique and perplexing landscape stretching over hundreds of miles," said William McKinnon from Washington University in St. Louis. "It looks more like tree bark or dragon scales than geology. This'll really take time to figure out; maybe it's some combination of internal tectonic forces and ice sublimation driven by Pluto's faint sunlight."

http://www.astronomy.com/news/2015/09/perplexing-pluto-new-snakeskin-image-and-more-from-new-horizons



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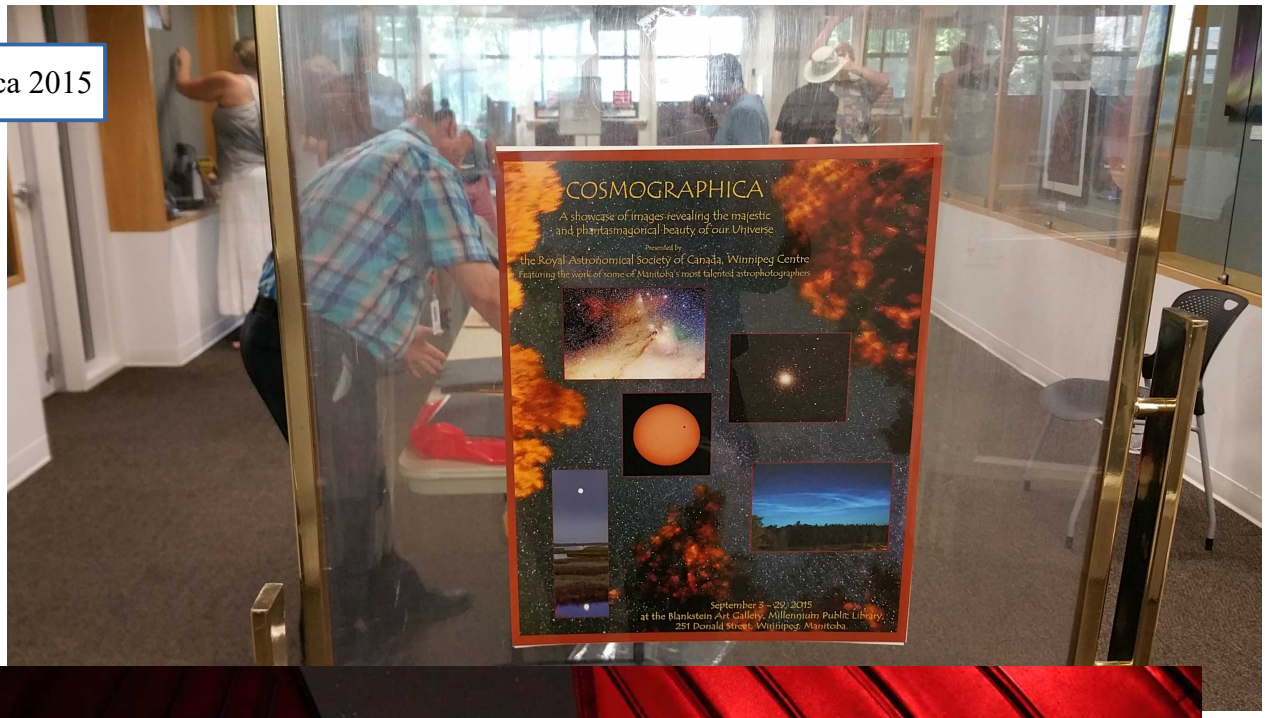
Cosmographica 2015



October 2015

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Welcome to Winnipeg, Mars.

The Curiosity Mars rover, seen in the above photo taken in June 2014, recently arrived at a spot dubbed 'Winnipeg' in a rocky area on Mars known as the Murray formation. The Curiosity rover is trying to determine whether the planet had the conditions to support microbial life. NASA has named a small area known as a target. "It's probably like a foot across," said Scott Young, an astronomer and manager of science communication and visitor experiences at the Manitoba Museum in Winnipeg. "It's an area where there has definitely been some running water in the past and these layers are being laid down, so it's a great place to look for, for example, any possible Martian fossils from the early days if there was ever life on Mars," Young explained. "Some of those really big exciting questions that we've been trying to figure out about Mars — the little area called Winnipeg is the perfect place to gain those observations and maybe solve some of those mysteries." A drill and an X-ray spectrometer on Curiosity will analyze rocks and take images of the area.

Late in 2013, the Manitoba Museum reported that temperatures in Winnipeg were as cold as the surface of Mars. On December 31, 2013, the Curiosity rover reported that the temperature on Mars reached as maximum of -29C. The daytime high in Winnipeg on December 31, 2013 was predicted to be -31C with windchill values ranging between -40C and -50C. The temperature reached a maximum of -29C at 3 p.m. on that day in Winnipeg.

In 2012, NASA named the landing spot for the Curiosity rover on Mars after Yellowknife because of the city's link to the exploration of North America's oldest rocks.

http://www.cbc.ca/news/canada/manitoba/winnipeg-on-mars-tiny-piece-of-red-planet-named-after-manitoba-city-1.3233261

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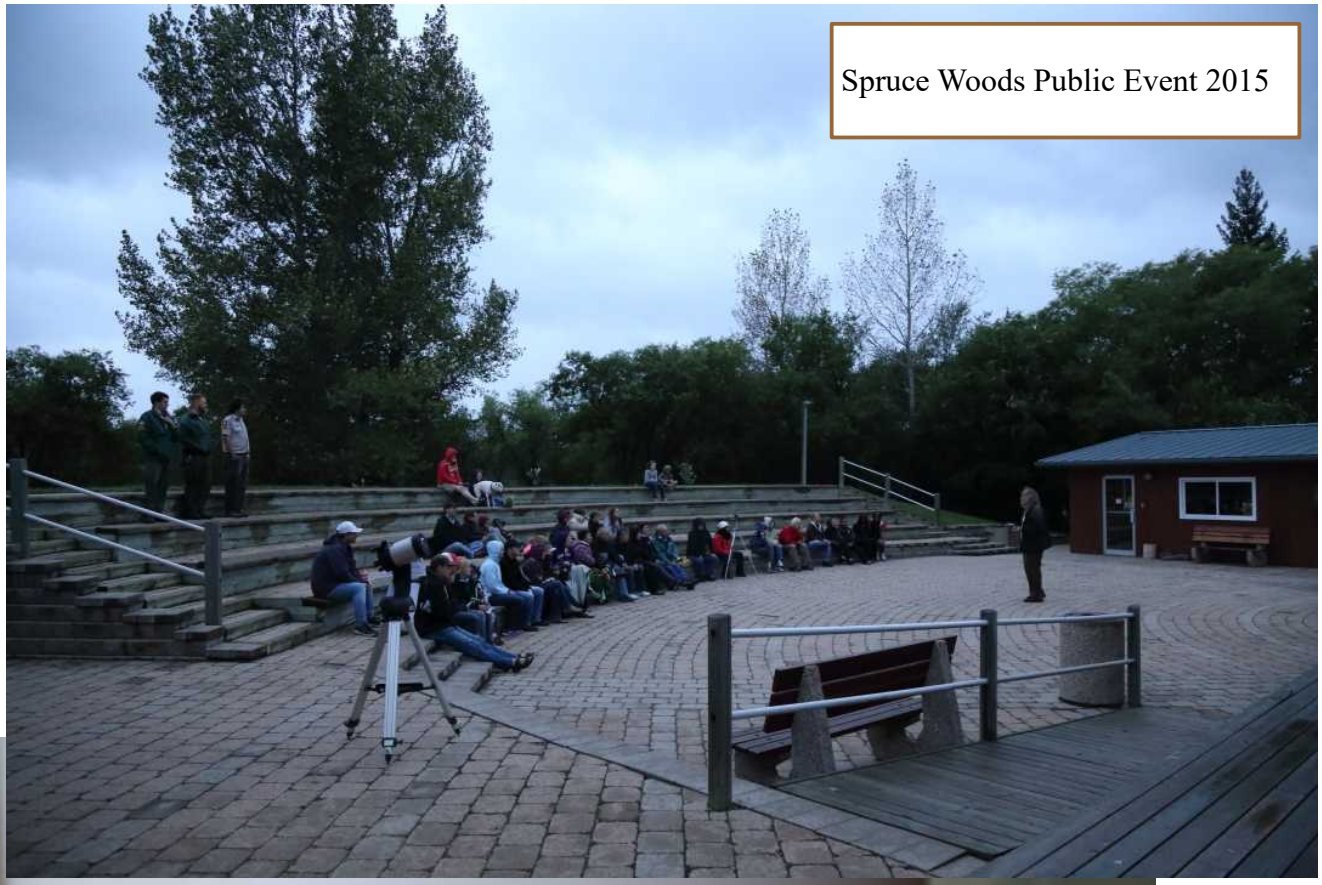

Spruce Woods Public Event 2015

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Spruce Woods Star Party 2015

Photos by: Ron Berard (Winnipeg)

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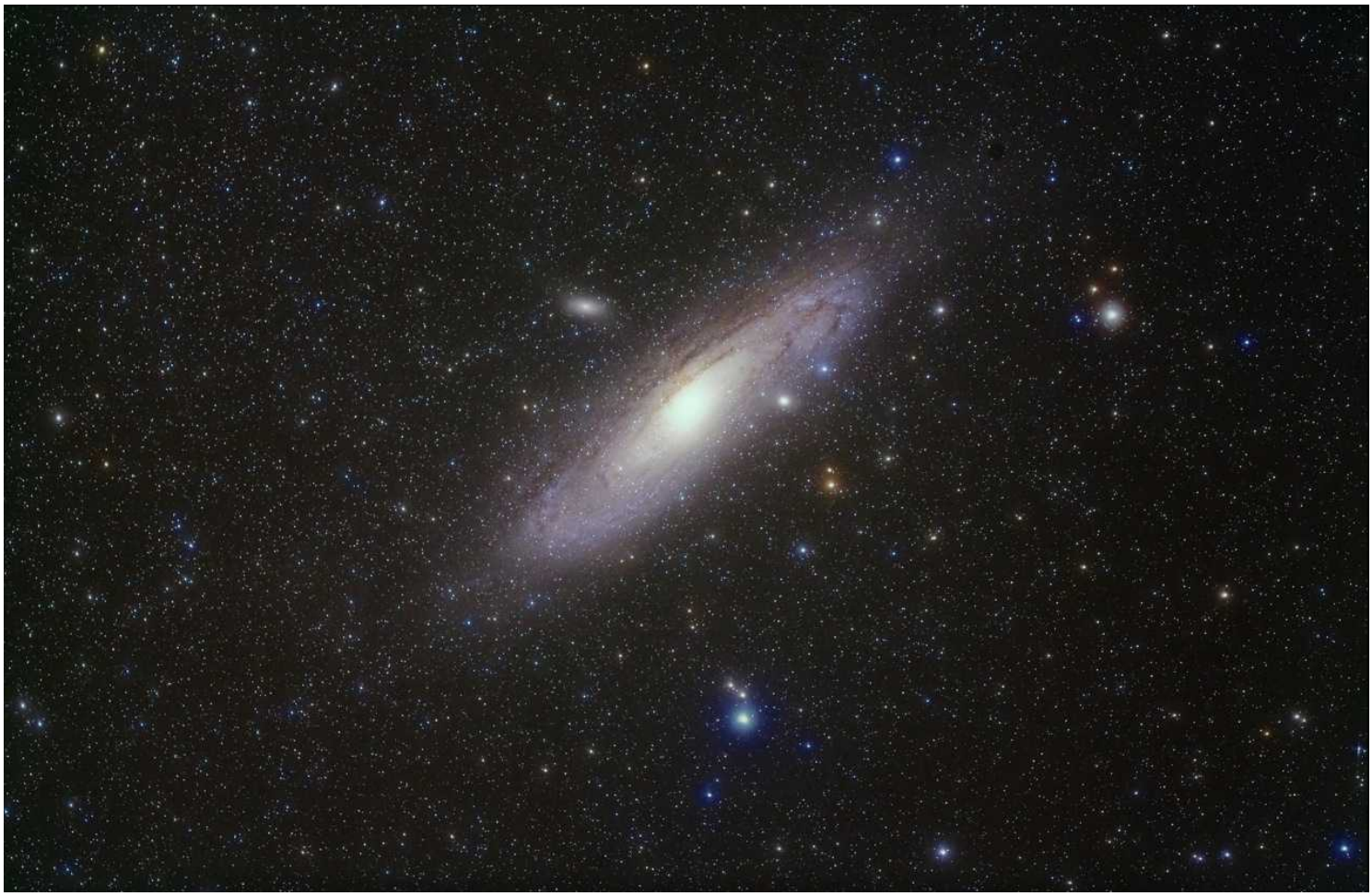

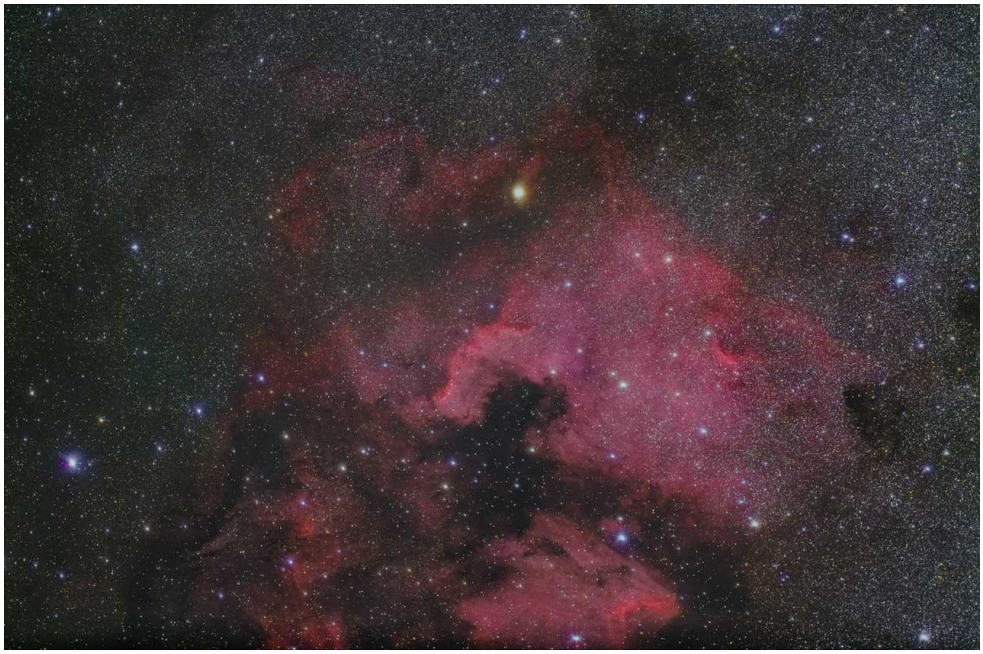

Spruce Woods Star Party 2015

M31 1x3min (above)

NGC7000 6x4min iso3200 (below)

Photos by: Sheila Wiwchar (Winnipeg)

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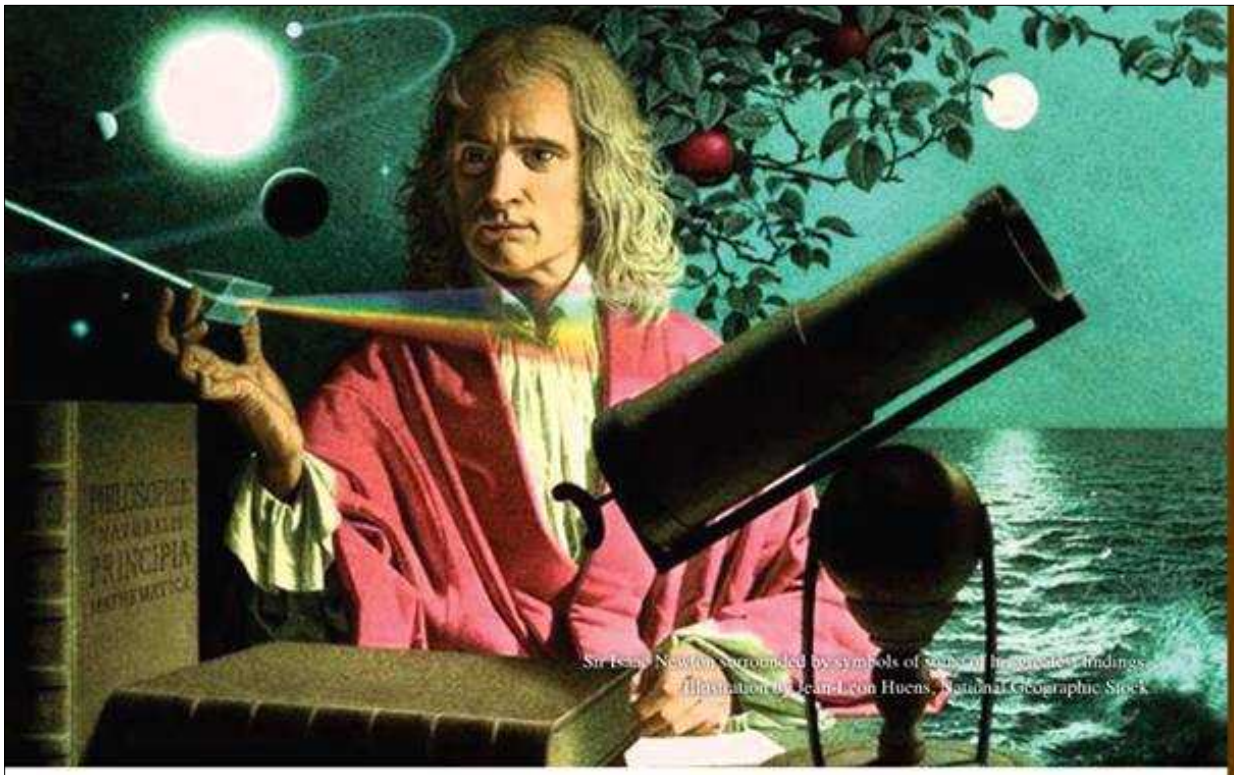
Spruce Woods Star Party 2015

friday orion andhorsehead 8x2min iso1600 (above)

Photo by: Sheila Wiwchar (Winnipeg)

Spruce Woods Star Party 2015

Photo by: MeghanOstrum (Winnipeg)



Sir Isaac Newton surrounded by symbols of many of his greatest findings.
Illustration by Jean-Leon Huens, National Geographic Stock

THE CONNOR LECTURES, PRESENTED BY FACULTIES OF SCIENCE, ARTS, & ST. JOHN'S COLLEGE

ISAAC NEWTON'S ALCHEMY

Why one of the most insightful scientists in history was convinced that alchemical transformations were scientifically plausible.

PUBLIC LECTURE:

NEW LIGHT ON ISAAC NEWTON'S ALCHEMY

OCTOBER 22, 2015
6:30 PM
ROBERT B. SCHULTZ
LECTURE THEATRE
RM. 172 ST. JOHN'S COLLEGE
92 DYSART RD.
RECEPTION TO FOLLOW

SPECIALIZED LECTURE:

UNSOLVED MYSTERIES OF ISAAC NEWTON'S ALCHEMICAL PRACTICE

OCTOBER 23, 2015
5:00 PM
ROBERT B. SCHULTZ LECTURE THEATRE
RM. 172 ST. JOHN'S COLLEGE
92 DYSART RD.
RECEPTION TO FOLLOW

William R. Newman, Distinguished Guest Lecturer

Indiana University professor of History and Philosophy of Science, William R. Newman presents this series of lectures, on Isaac Newton's beliefs in Alchemy. Through historical documents and experiments that demonstrate alchemical processes, these lectures will explain why one of the most insightful scientists in history was convinced that alchemical transformations were scientifically plausible.

For more information,
visit **umanitoba.ca/science**

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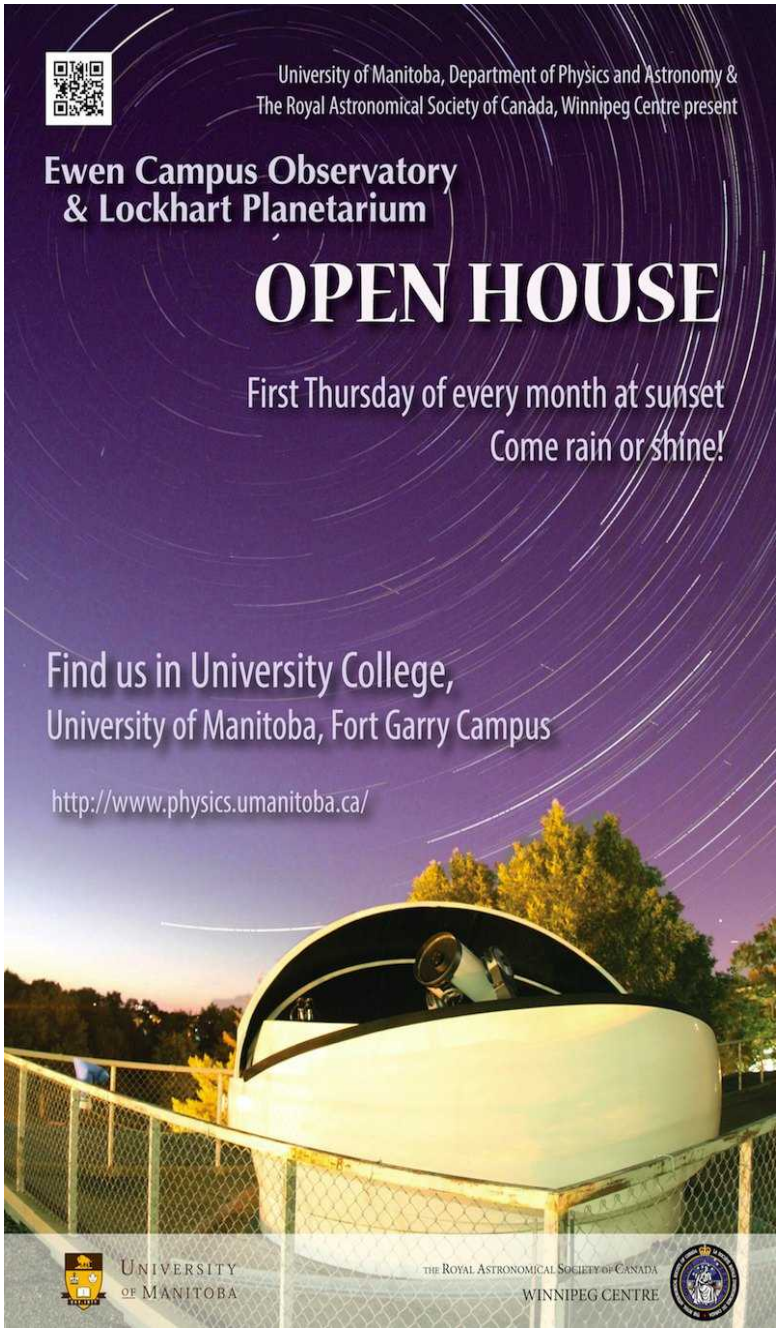

Open houses are starting again and our September open house is happening a week later than usual, on Septmeber 10, to coincide with the start of the university fall term.

Monthly open houses at the Ewen Campus Observatory and the Lockhart Planetarium in University College at the Fort Garry Campus of the University of Manitoba usually occur on the first Thursday of the month beginning at sunset – rain or shine!

The Lockhart Planetarium is located in Room 394 University College and the Ewen Campus Observatory is on the roof (access via the north stairwell of the lecture wing) (See an online interactive map or pdf version.) Free evening parking is available on the South side of the building (Parking Lot B).

Starting approximately 15 minutes after sunset there will be a brief introduction in the planetarium to the night sky in season (What's Up?) followed by viewing through the telescopes, weather permitting. Should the weather be unfavourable then there will be another planetarium presentation of astronomy in the news (What's New?).

Complete Fall 2015 Schedule:

September 10 7:54 pm CDT
October 01 7:08 pm CDT
November 05 5:00 pm CST
December 04 4:29 pm CST

The open house will last for approximately two hours.

The Planetarium is wheelchair accessible but the observatory is not wheelchair accessible at the present time.

You are all welcome to join us! We would welcome RASC members who can bring small telescopes and set them up on our rooftop observing deck for visitors to look through. Our April open house had almost 90 visitors and so having a few extra telescopes on hand is very helpful. Please let me know in advance if you are able to help out with this!

Correction: Last month the photo by Ron Bryson was of M 42 rather than M 27 as indicated.
Correction: Images in the past have been credited to Doug Moug and should read David Moug.

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Upcoming events

October 4, 2015
Last Quarter

October 9, 2015
RASC Monthly Meeting

October 13, 2015
New Moon

October 20, 2015
First Quarter

October 27, 2015
Full Moon

November 3, 2015
Last Quarter

November 11, 2015
New Moon
Rememberance Day

November 13, 2015
RASC Monthly Meeting

November 19, 2015
First Quarter

November 25, 2015
Full Moon

October Meeting Schedule

Beginner's Session with Gerry Smerchanski

What's New?: Jennifer West

Coming Events: Jay Anderson

Constellation of the Month: Gail Wise

Astro Apps: Kris Keller

Lunar Eclipse reprise

Feature Presentation:

Black Holes versus Galaxies with Dr. Chris O'Dea

Dr. O'Dea will discuss the role of supermassive black holes in galaxy formation and evolution and in the intracluster medium of clusters of galaxies. He will present multi-wavelength observations (Chandra, Hubble Space Telescope, ALMA, VLA) of the interaction of extended radio sources (produced by the central black holes) with their environments.

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Brenden Petracek

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Meghan Ostrum
Drew Daniels

Regular meetings of the Winnipeg Centre are held in the Robert B. Schultz lecture theatre in St. John's College at the University of Manitoba. The theatre is on the lower (basement) floor of the College. Meetings are held on the second Friday of each month from 7 p.m. to 10 p.m. After the meetings, members who wish to do so usually retire to "The Hub" in University Centre for more conversation about astronomical subjects.

The June meeting is not held at St. John's College but is instead a barbeque at either a member's house or at Glenlea. Meeting dates and meeting places may be adjusted during exam times and during Bomber home games or stadium events.