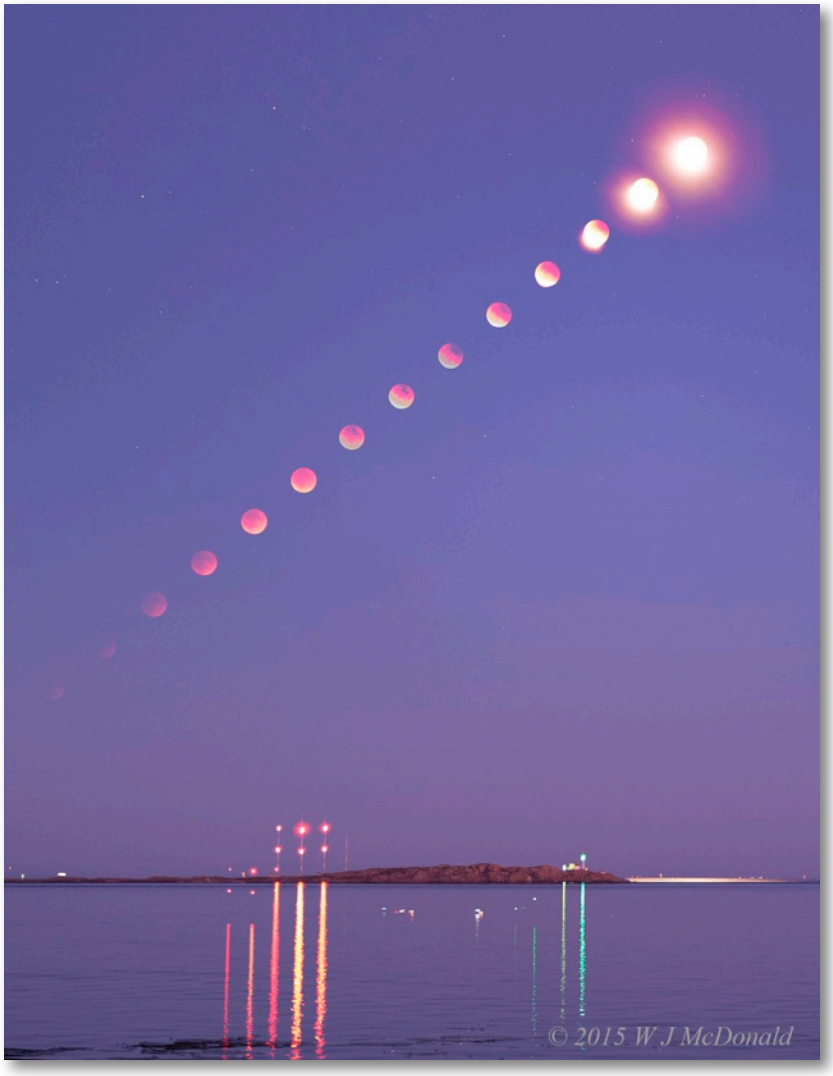
SKYNEWS



IN THIS ISSUE

Sept 27th Lunar Eclipse from Clover Point, Victoria B.C.

by John McDonald

NEXT MEETING

Wednesday Nov 22nd 6 pm our AGM @ the Moon Under Water Pub, 350 Bay St

(See page 4 for details)

w w w . v i c t o r i a . r a s c . c a

"This is the official notice of the RASC-Victoria Centre's Annual General Meeting, to be held Sunday November 22, 2015. This meeting includes our yearly reports, and board elections. Location: Moon Under Water Pub, 350 Bay St, Victoria BC. Dinner at 6:30pm. Business segment begins at 8:30pm. More info: http://victoria.rasc.ca/agm-nov-22-2015/"

On the Cover

Eclipse over Trial Island
by John McDonald

The lunar eclipse of 2015-09-27 was particularly beautiful from Clover Point in Victoria. This image is the result of a series of exposures taken at 6 min intervals with a tripod mounted Canon 6D (modified) and Sigma f1.4 A lens.

Speakers for 2015

October 14th

Bob Abraham, Univ. of Toronto and Honorary President, Toronto Centre
"Applying commercial camera lenses to gain entirely new insights into large-scale structure." - a past CASCA Hogg Lecture.

November 22nd

AGM lecture - Steve Mairs, UVic *"Molecular clouds formed from interstellar gas."*

December 9th

Dr. Alan Batten, "*When did Modern Astronomy Begin?*"

Presidents Report

by Sherry Buttnor

Welcome to Autumn! I hope you're all having a nice rest after such a busy summer. Personally, I love Autumn observing; although the balmy Summer nights are gone, they are replaced with crisp steady seeing, and longer nights. And you can observe both the Summer and Winter skies all in one night!
Did you see the Total Lunar Eclipse? Check out our members' great photos!

http://rascvic.zenfolio.com/lunareclipse2015

Even though the DAO Summer Star Parties are over for the year, there are lots of fun things coming up. Here are a few:
Cattle Point observing in Victoria's own Urban Dark Sky Park:

http://victoria.rasc.ca/events/rascals-cattle-point/

October 16th at 7:30 pm
November 6th at 6:00 pm
December 4th at 6:00 pm
January 15th, 2016 at 6:00 pm
February 5th at 6:30 pm
March 4th at 7:00 pm

Everyone welcome!
UVic telescope observing. All welcome, not just VCO Active Observers!
Oct 8, Nov 13, Dec 11.

All are weather permitting. Email notifications are sent out prior to each of these events, and you can find more info on the Victoria Centre website.

Our weekly Astronomy Cafe is an excellent, informal, way to meet us. Bring your coffee mug and join the chat!

http://victoria.rasc.ca/events/astro-cafe/

And don't forget our regular monthly meetings. Joe has lined up some terrific guest speakers, so come on out for those.

And a reminder of our upcoming Annual General Meeting, which includes Victoria Centre Board elections, Sunday November 22. A spouse, partner, or friend are welcome to attend with you.

Check the RASC Website for schedule, and menu:

http://victoria.rasc.ca/agm-nov-22-2015/

Please contact Nelson with your meal choices as soon as possible. His contact information is provided on that page. The Moon Under Water pub is able to keep the cost the same as last year, so big thanks to them!

Speaking of the elections, we have a few spots we really need to fill. There is link to the Call for Nominations on the AGM event page. Remember: every paid Victoria Centre member in good standing is eligible to run for a Council position, whether or not there is an incumbent or nominee already listed. So give it some thought, and if you would like to be a part of Council, please let us know!

Fairfield Community Centre
1330 Fairfield Rd. Victoria,

7:30pm - 11pm

Contact: Chris Purse for further details vp2@victoria.rasc.ca New comers are especially encouraged.

Email Lists

Observer / CU Volunteers / Members

Contact Joe Carr to subscribe

New Observers Group

Hosted by Sid Sidhu - 1642 Davies Road, Highlands. Call 250.391-0540 for information and directions.

L' Éclipse Royale by Charles Banville

The weather in Montreal this September was great and the forecast for the lunar eclipse were encouraging. I headed to the summit of Mont-Royal and arrived after the moonrise. Using a 40mm lens I decided to attempt something new: a multiple exposure picture of the eclipse. The lookout summit was jam-packed with enthusiast lunar observers. At about 22:10 EST, the time of total eclipse, the crowd erupted in cheers. This image is comprised of thirty-three separate images taken with a five-minute interval that were combined using Photoshop.
Date: September 27, 2015
Location: Mont-Royal, Montreal, Qc
Optics: Canon EF 40mm f/2.8 STM
Camera: Canon EOS 5D Mark III
Exposures: 33 images of 1/2000 sec to 4 sec, f/4.0, ISO 200.

November AGM

Just a reminder of our upcoming Annual General Meeting, Sunday November 22nd, at the Moon Under Water pub, 350 Bay St.

Please have a look at the AGM page, and make your dinner choices as soon as possible, so we can let the pub know. Spouses/partners are welcome. The fee remains at $35 per person, not including drinks.

http://victoria.rasc.ca/agm-nov-22-2015/

Call or email Nelson with your meal choices, and the number of people in your party, by November 13:
250-477-4820 or pastpres@victoria.rasc.ca

6:00pm – Drinks, conversation

- No host bar

6:30 – Dinner

Payment -Cost of the fixed, sit-down dinner is **$35.00 per person**, inclusive of all taxes and gratuities. Alcoholic beverages not included.

- Payment is only required for the meal.
- Attendance at both the speaker presentation and the business meeting is free of charge.
- The total number of dinners must be **confirmed by Friday, November 13th**. Please look over the menu and send your choice of First Course and Main Course to:
  - Nelson Walker: 250-477-4820 or
  - By email to pastpres@victoria.rasc.ca
  - **Payment at the door – by cheque (preferred) or cash**
  - Meals will be pre-ordered and must be paid for, whether you show up or not

Menu: fixed sit-down meal. Choices:

First Course – choice of soup or salad

- Potato bacon soup
- House salad

Main Course – choice of one entrée

- Roast beef dinner with seasonal vegetables, Yorkshire pudding and gravy.
- Grilled salmon fillet with dill sauce, seasonal vegetables and rice.
- Vegetarian stuffed mushroom cap with seasonal vegetables and mashed potatoes.
- Dessert: stand-up dessert buffet.
- Coffee and Tea included.

7:30pm – Speaker – Molecular clouds formed from interstellar gas & lots of public outreach talks – Steve Mairs

8:30-9:30 pm Annual General Meeting

Chris Purse, Lauri Roche and Bruce Lane raise a glass at last years AGM.

What Happened to Early Mars' Atmosphere? New Study Eliminates One Theory

Scientists may be closer to solving the mystery of how Mars changed from a world with surface water billions of years ago to the arid Red Planet of today.

A new analysis of the largest known deposit of carbonate minerals on Mars suggests that the original Martian atmosphere may have already lost most of its carbon dioxide by the era of valley network formation.

"The biggest carbonate deposit on Mars has, at most, twice as much carbon in it as the current Mars atmosphere," said Bethany Ehlmann of the California Institute of Technology and NASA Jet Propulsion Laboratory, both in Pasadena. "Even if you combined all known carbon reservoirs together, it is still nowhere near enough to sequester the thick atmosphere that has been proposed for the time when there were rivers flowing on the Martian surface."

Carbon dioxide makes up most of the Martian atmosphere. That gas can be pulled out of the air and sequestered or pulled into the ground by chemical reactions with rocks to form carbonate minerals. Years before the series of successful Mars missions, many scientists expected to find large Martian deposits of carbonates holding much of the carbon from the planet's original atmosphere. Instead, these missions have found low concentrations of carbonate distributed widely, and only a few concentrated deposits. By far the largest known carbonate-rich deposit on Mars covers an area at least the size of Delaware, and maybe as large as Arizona, in a region called Nili Fossae.

Christopher Edwards, a former Caltech researcher now with the U.S. Geological Survey in Flagstaff, Arizona, and Ehlmann reported the findings and analysis in a paper posted online by the journal Geology. Their estimate of how much carbon is locked into the Nili Fossae carbonate deposit uses observations from numerous Mars missions, including the Thermal Emission Spectrometer (TES) on NASA's Mars Global Surveyor orbiter, the mineral-mapping Compact Reconnaissance Imaging Spectrometer for Mars (CRISM) and two telescopic cameras on NASA's Mars Reconnaissance Orbiter, and the Thermal Emission Imaging System (THEMIS) on NASA's Mars Odyssey orbiter.

Edwards and Ehlmann compare their tally of sequestered carbon at Nili Fossae to what would be needed to account for an early Mars atmosphere dense enough to sustain surface waters during the period when flowing rivers left their mark by cutting extensive river-valley networks. By their estimate, it would require more than 35 carbonate deposits the size of the one examined at Nili Fossae. They deem it unlikely that so many large deposits have been overlooked in numerous detailed orbiter surveys of the planet. While deposits from an even earlier time in Mars history could be deeper and better hidden, they don't help solve the thin-atmosphere conundrum at the time the river-cut valleys formed.

The modern Martian atmosphere is too tenuous for liquid water to persist on the surface. A denser atmosphere on ancient Mars could have kept water from immediately evaporating. It could also have allowed parts of the planet to be warm enough to keep liquid water from freezing. But if the atmosphere was once thicker, what happened to it? One possible explanation is that Mars did have a much denser atmosphere during its flowing-rivers period, and then lost most of it to outer space from the top of the atmosphere, rather than by sequestration in minerals.

"Maybe the atmosphere wasn't so thick by the time of valley network formation," Edwards said. "Instead of Mars that was wet and warm, maybe it was cold and wet with an atmosphere that had already thinned. How warm would it need to have been for the valleys to form? Not very. In most locations, you could have had snow and ice instead of rain. You just have to nudge above the freezing point to get water to thaw and flow occasionally, and that doesn't require very much atmosphere."

NASA's Curiosity Mars rover mission has found evidence of ancient top-of-atmosphere loss, based on the modern Mars atmosphere's ratio of heavier carbon to lighter carbon. Uncertainty remains about how much of that loss occurred before the period of valley formation; much may have happened earlier. NASA's MAVEN orbiter, examining the outer atmosphere of Mars since late 2014, may help reduce that uncertainty.

Arizona State University, Tempe, provided the TES and THEMIS instruments. The Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland., provided CRISM. JPL, a division of Caltech, manages the Mars Reconnaissance Orbiter and Mars Odyssey project for NASA's Science Mission Directorate, Washington, and managed the Mars Global Surveyor project through its nine years of orbiter operations at Mars. Lockheed Martin Space Systems in Denver built the three orbiters.

http://mars.nasa.gov/mro

For more information about the Mars Odyssey mission, visit:

http://mars.nasa.gov/odyssey

RASC Victoria Centre Council 2014 / 2015

POSITION	NAME	E-Mail
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President	Sherry Buttnor	president@victoria.rasc.ca
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Second Vice President	Chris Purse	vp2@victoria.rasc.ca
Treasurer	Bruce Lane	treasurer@victoria.rasc.ca
Secretary	Joy Fisher	secretary@victoria.rasc.ca
Librarian	Michel Michaud	librarian@victoria.rasc.ca
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Skynews Editor	Malcolm Scrimger	editor@victoria.rasc.ca
Media Relations	Ed Weibe	media@victoria.rasc.ca
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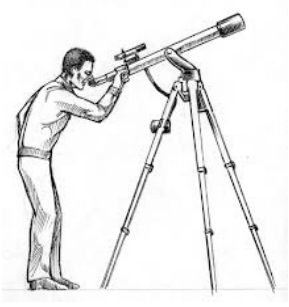
NRC Liaison	Dr. James Hesser	
NRC Liaison	James di Francesco	
UVic Liaison	Alex Schmid	
Member at Large	David Lee	

Online Resources

Magazines

SkyNews Our National RASC Newsletter
Sky & Telescope Magazine
Astronomy Magazine
Astronomy Now Astronomy in the UK
Amateur Astronomy Magazine
Astrophotography Magazine

Borrowing Telescopes



The centre has telescopes for new and seasoned observers that members can use. Contact Sid Sidhu from the email list above.