

Vol. 17 Issue 2
Year End 2016

H O R I Z O N

LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
New Brunswick Centre du Nouveau-Brunswick
THE ROYAL ASTRONOMICAL SOCIETY OF CANADA



What is it?

- A. The University of Michigan locker room.
- B. The Frank Mahovlich Hall of Fame.
- C. Half of a famous candy factory.
- D. None of the above.

See inside for the answer.

2016 in the Year View Mirror

This issue of Horizon is a collection of articles and photos submitted by RASC NB members over the past several months. It provides a summary of Centre activities, including the opening ceremony of the Moncton High School Observatory, the RASC GA in London, a book review, and a profile of one of our newer members.

Sadly, 2016 saw the passing in April of one of our longtime members, Eldon Rogers of Miramichi. In the words of our President, June MacDonald: Eldon was a wonderful man with a young heart and mind. He had a vast life experience and was continually interested in doing and learning new things, as well as favourite interests like rocketry and veterans' issues. He will be missed.

The Winter issue of Horizon is planned for February 2017. Happy New Year and clear skies.

EVENT HORIZON
Astronomy in New Brunswick

SRAC/RASC Centre du NB Centre

President/Président
June MacDonald
president@nb.rasc.ca

1st Vice-President/-Président
Chris Curwin
firstvicep@nb.rasc.ca

2nd Vice-President/-Président
Peter Jensen
secondvicep@nb.rasc.ca

Secretary/Secrétaire
Curt Nason
secretary@nb.rasc.ca

Treasurer/Trésorier
Adrien Bordage
treasurer@nb.rasc.ca

Councillors / Conseillers
James Ayles Marilyn Bregg
Emile Cormier Chris Weadick

LP Abatement: Dwayne Branch
Education-Outreach: Curt Nason
Star Party-Events: Adrien Bordage
Newsletter Editor: Curt Nason
Web Site: Emile Cormier
Equipment: Chris Weadick
Library: Ted Dunphy
Fundy Upgrade: Emma MacPhee

NB Astronomy Clubs
Réunion / Meetings

SRAC/RASC Centre du NB Centre

When: January 21, 2017 13:00
Where: Rockwood Park Interpretation
Centre, Saint John

Subsequent meetings to be determined.

William Brydone-Jack Astronomy
Club (Fredericton)

A local group of members meet in Fredericton monthly for meetings and observing.

When: Second Tuesday of the month
Where: Fredericton, UNB Campus
2 Bailey Drive, Room 203
www.frederictonastronomy.ca

Saint John Astronomy Club

Meetings consist of talks on astronomical topics, as well as Show & Tell, observing reports and maybe observing.

When: First Saturday of the month
Where: Rockwood Park Interpretation
Centre.

www.sjastronomy.ca

Find us on...

FACEBOOK

<https://www.facebook.com/RASC.NB>

TWITTER

<https://twitter.com/rascnb>

Star Parties 2017

Kouchibouguac National Park
June 2 - 4

COW Mactaquac Provincial Park
July 28 - 30

Mount Carleton Provincial Park
August 11 - 13

Fundy National Park
September 15 - 17

Kouchibouguac Fall Star Gaze
September 22 - 24

Astronomer Profile on Elijah Lockhart by Adrien Bordage

1. *What got you interested in Astronomy?*

My dad, while driving down the highway on a winter night, showed me Orion and its bright stars. Then, my schoolwork started talking about the stars and constellations. And since then, I loved astronomy.

2. *What is your educational background thus far (schooling)?*

I'm in grade 10. I have finished many things including Astronomy, and Algebra 1. (Algebra 1 is before calculus.)

3. *What types of astronomical objects do you like to observe or study the most, and why?*

I enjoy looking at Jupiter and deep sky objects. I like Jupiter for the reason that it is never the same. It always has something different on it, whether it may be the moon positionings or the big red spot. It is very bright and you don't need a large telescope to look at Jupiter and its four moons. And the deep sky objects like nebulas or galaxies because they are a challenge to look for. But the joy is amazing when you find what you were looking for, and some of them can be quite beautiful.



4. *What would be your "Dream Telescope" to someday own?*

So far, with my experience, my "Dream Telescope" that I would like to own someday in the future would be a 16-inch Schmidt Cassegrain telescope.

5. *Which Astronomer in the past do you most admire?*

For what I know right now, the astronomer that I most admire would be Nicolaus Copernicus. I like him for many reasons, but the reason that I like him the most would be because he made the heliocentric system in which the planets revolve around the sun instead of everything revolving around Earth. And even though he was rejected in his theory, his observations and records were far more correct and accurate than other astronomers at the time. So he used his observations to drive him and to continue with astronomy.

Lou MacNarin School Astronomy Club - Emma MacPhee

When Ms. Tasha Steeves, a teacher at Lou MacNarin School, decided to start an astronomy club for Grade 2 students, she had no idea how popular it would become. "I was inspired to start this club because my daughter has a passion for astronomy," explained Ms. Steeves. "She has a telescope and so I thought that we could have an evening viewing for students at the school. I had guessed that I might have six or seven children join because the club would be held after school and pick-up arrangements can be very difficult for working parents."



Unbelievably, twenty one permission slips were sent back, which is one third of the students. With one teacher

and 21 students, Ms. Steeves now had too many students in the club. "I was extremely excited about the interest, but I wasn't really sure how I was going to manage that many students on my own. I considered doing a few sessions, but that would have interfered with a night viewing I had planned. After the time change, the sun stays out longer and Grade 2 students can only stay up so late."

Thankfully, Mr. Stewart Landry, another Grade 2 teacher, offered to help. Together, Ms. Steeves and Mr. Landry did many activities with the club from making paper maché planets, having a trivia day, and even having students make their own telescopes. The biggest event had to be the night viewing.

"I was contacted by one of my student's parents and she told me that the new Moncton High School has an observatory and that a teacher was there by the name of Mr. Mosher. He offered to show the students how the observatory works," explained Ms. Steeves. "My daughter brought her telescope, and a few members of the Royal Astronomical Society of Canada (RASC NB) were generous enough to bring their telescopes and offer their time for this event." It turned out to be a clear evening, despite it snowing

earlier in the day. Students and parents were able to view Jupiter clearly in the night sky.



The final activity that the astronomy club did was a daytime viewing with a solar scope at Lou MacNarin School.



Emma MacPhee, a member of the RASC NB brought the scope as well as star and moon charts for all of the students. "It worked out well that Emma could make it during

school hours because that allowed all of the Grade 2 students, not just the ones who were in the astronomy club, to have that experience," said Mr. Landry. "We are hoping that next year there will continue to be interest and that we can build on this year's success from the astronomy club."

RASC London GA 2016 - June MacDonald

The annual RASC General Assembly (GA) was held in London, Ontario this year on the May long weekend. The GAs are always held on either the May or July long weekends because the timing works well for time off and organizing a venue at a university or college. The GA consists of lots of presentations, guest speakers, award presentations, a BBQ, wine & cheese and a banquet, as well as special activities for attendees should they wish to participate.

This year the event was combined with AstroCATs (Canadian Astronomy & Telescope Show) - a display/exhibit of various astronomical equipment and items. You could just look or if your credit card was cold, you could warm it up with a few passes buying equipment: telescopes, cameras, all kinds of accessories. It was smaller than in previous years, however, which was unfortunate.

Three from our Centre were fortunate enough to attend. Peter Jensen went as our National Rep; Mandy Bregg and I went because it's interesting and fun. It's hard to resist the opportunity

to meet people, both new and old acquaintances, learn new things about various aspects of astronomy, hear different speakers from across the nation and even from another country, and have an opportunity to visit a part of Canada and see sights you've not seen before.



June and Mandy and Friends

It opened on May 19 with a day-long astrophotography workshop organized by CAPS - Canadian Astro Photography Schools - which apparently was excellent and continued on the next day. We timed our arrival to enable us to hear the first talk of the GA that evening. Robert Jedicke, an astronomer currently working out of the University of Hawaii Institute for Astronomy, gave a public lecture on "Earth's Mini Moons." These objects, some as

small as three metres, come from the main asteroid belt and are sometimes captured by the Earth's gravity and go into a temporary orbit around the Earth before spinning out from our planet or, in rare cases, breaking up in Earth's atmosphere. It was a very interesting talk, including a bit of history of the Apollo missions and rock collection, and how scientists obtain information on asteroids and comets. Poster, art and astrophotography displays also opened on Thursday and the photography was beautiful.

On Friday there was a day long sketching workshop held by Brian McCullough and Erica Rix. Brian is from Ottawa and is very involved in astronomical sketching. Erica Rix does a column for Astronomy magazine on astronomy sketching. It was very cool to learn and see how this type of sketching is done, the process and all the little tricks needed to complete a sketch of various, favourite astronomical objects. Erica's work is beautiful and sometimes difficult to differentiate from a photo. That day there was a "Spacecraft Building" workshop - we didn't see any blazing smoke and fire or hear a boom, so I'm assuming no one left the GA early.

The wine and cheese event was held that evening. Here was a time for socializing and the handing out of a few RASC awards. Late in the evening, people who took the opportunity went on a road trip to visit a member's private observatory - a Sky Shed - just to check it out and do some observing. During the day, people also had the opportunity to sign up for a trip to an aviation museum in London to see old planes, a jet, history exhibit, etc. Also, people could sign up to tour the Hume Cronyn Observatory at Western University. Opened in 1940, it is now used for undergrad labs and public observing programs, in which London RASC members participate.



**Terence Dickinson & David Levy
at the GA Barbecue**

During two days of the GA there are paper presentations, where various members of RASC and other guest speakers give 30-minute talks on topics in which they have an interest and a high level of expertise. David Levy spoke of his history of comet observing, Erica Rix described astronomy sketching, Stan Metchu talked on exoplanets, and Randall Rosenfeld explained how the technical language of astronomy during Medieval and Renaissance times was incorporated into the music of those ages, with any astronomy references finally disappearing altogether from music in the late 1700s. These were a few of the wonderful presentations by RASC members.

Saturday started with a presentation by Jeremy Hansen, one of our Canadian astronauts. He told us a bit of what it takes to be an astronaut, how it involves global cooperation, and how it affects astronauts' bodies and minds. He also told the audience that RASC plays a significant part in getting the public, young people especially, interested in science and astronomy. He felt that public education and outreach was the most important thing we could do and that we were experts at it. Good to know and nice to hear. Tina Pollmann, a physicist who works at



Astronaut Jeremy Hansen

SNOLAB in Sudbury, 2000 metres underground, presented on her research: "How Weakly Interacting Massive Particles (WIMPS) Can Help Explain Dark Matter." I think a WIMP accessed the dark matter in my brain because, while interesting, it was over my head unfortunately. Robert Jedicke spoke again on "Super Catastrophic Disruption of Asteroids at Perihelion Distances." This was not as complicated a talk as it sounds. It was another cool and interesting presentation on asteroids, NEOs, orbits, their characteristics, life span and research on them. There was a talk on exoplanets, which I missed, but it was riveting from the applause I heard as I went into the room at the end. Erica Rix did a brief talk on sketching as well.

The Hogg lecture was given by Dr. Ann Hornschemeier, a NASA astronomer and chief scientist for the Physics of the Cosmos Program at NASA. She spoke on “All the X-Ray Binaries in the Universe,” talking about black holes, X-ray emissions from star formation in galaxies, and formation and evolution of stars. It was a great talk. She was actually at Western University at the same time, head-hunting for NASA.

As part of the GA, at the AstroCATS hall, there were four displays: a “practice” model of the Planetary Surface Rover, which I didn’t see thanks to those WIMPS. There was a small piece of the Hubble Space Telescope on display, and I mean a very small part: an old piece of the solar array. Also on display outside was the cockpit section of a jet fighter plane; kind of cool. The big draw was a meteorite display, a private collection of David Gregory’s which was awesome; pieces of some major and well-known finds around the world. He had a number from his collection on display, some of which were a couple of lunar pieces, a couple of Martian basalt, a bit of Eucrite possibly from asteroid 4 Vesta, and a few found in Russia: Seymchan and Sikhote-Alin. You could view some slide pieces under a microscope for



Peter scoping out the Fingal gear

detail, which was really beautiful and so cool to see.

Saturday evening was the BBQ. We were all bused out to their observing site in Fingal Park, where the London Centre has their two observatories set up. We had the meal first, followed by some Fellowship awards and President’s award presentations. People had the opportunity to stay behind afterward to do some observing, but it really wasn’t clear so they could only see Jupiter poorly.

Sunday held the RASC annual business meeting; interesting to see a bit of how RASC works. There is a new President, Craig Levine. A few talks took place, some of which I’ve men-

tioned, and the banquet in the evening. The Simon Newcomb, Qilak and Service Awards were presented at the banquet. One of our former members, Paul Gray, received a Service Award.

During the GA you have the opportunity to mingle with a diverse group of people who have different levels of expertise and knowledge, just as in our own Centre. People mingle easily and are eager to discuss all kinds of topics and issues in astronomy. It is one large learning experience. Socializing is a big part of the event. There is a hospitality suite open every night where you can exchange news and views while enjoying a beverage. There is always an opportunity to find a quiet spot to chat or a private spot to have some alone time for a breather. All in all, it was an enjoyable time: great speakers and activities, and meeting others who share an abiding interest in astronomy.

Next year it is being held in Ottawa, as it is their 110th anniversary and Canada’s 150th anniversary. It will be at Algonquin College and we’ve been promised an amazing slate of speakers and activities. Make plans to attend!

From our Library by Don Kelly

Atlas of Mars

Atlas of Mars - The 1:5,000,000 Map Series by Batson, Bridges and Inge – NASA 1979.

Publisher: Superintendent of Documents, US. Government Printing Office, Washington, DC 20402

What luck! I just received a copy of *Atlas of Mars*. My daughter Rebecca attended a Calgary CBC book sale, partly to look for Antonin Rukl's *Atlas of the Moon* for me. This copy of the Mars Atlas is in pristine condition, suggesting that it had never been cracked open. The book is destined for our RASC NB Centre's library for use by our members.

I will quote from Stephen E. Dwornik, Chief, Planetary Geology Program, NASA Office of Space Science:

"This Atlas is a culmination of efforts begun in 1964 when the Mariner 4 spacecraft returned pictures of 1 percent of the surface of Mars. In the ensuing years, the science and technology of planetary mapping progressed

dramatically as did the sophistication of the spacecraft that gathered map data. Mariner 6 and 7 photographed 10 percent of Mars, and Mariner 9 photographed 100 percent of Mars at low resolution. From 1976 through 1979, two Viking Orbiter spacecraft returned medium and high resolution pictures covering the entire planet, thus completing the photographic base required to make detailed maps of the entire surface of Mars."

The photo mosaics are presented in three versions: 1) controlled photomosaic, 2) shaded relief and 3) topographic (contour).

The book's Appendix contains 17 pages of Gazetteer. There are 751 craters, valleys, seas, mountains, plains and a dozen additional surface features named after people or places. For example, Valles Marineris is the general name of a system of canyons honouring the Scientific Team of the Mariner 9 Program. Crater Airy is named after Astronomer Royal George B. Airy (1801-1892), who developed a conflict with UNB's Dr. William Brydone Jack, our Fredericton club's namesake. Dr. Jack clarified the US/Canada border between Maine and New Brunswick by

establishing Canada's first accurate line of longitude. In collaboration with William Cranch Bond at Harvard, Dr. Jack determined a true north-south meridian, the first in Canada made from a celestial reading. The pillar still exists behind Aitken House, UNB Fredericton. The observatory's telescope and the pillar form the north-south meridian.

Many features are named after the giants of astronomy and history such as Nicolaus Copernicus, Galileo Galilei, Simon Newcomb, Gregor Mendel, Tycho Brahe, H.G. Wells, Giovanni Schiaparelli and Edmund Halley. However, reading the list is an introduction to many lesser knowns in the history of science. Surprisingly, a number of Canadian locations can be found on Mars: Chapais and Lachute (Quebec), Chinook, Banff and Windfall (Alberta), Hope (British Columbia) and Nutak and Nain (Newfoundland and Labrador).

For anyone planning a vacation to Mars, *Atlas of Mars* is a must read.

Education & Outreach Committee Report for 2016

RASC NB Outreach Events and Handouts							
Year	Events	People	Star Finders E	Star Finders F	Moon Guides E	Moon Guides F	Get Start Astronomy
2012	75	4658	2188	229	1852	137	
2013	102	4119	1602	8	1513	120	
2014	104	4843	1716	241	1378	199	
2015	114	7262	2106	244	2568	156	819
2016	218	9439	1984	115	2290	87	514

Types of Outreach Events							
Year	Presenta-tion	Night Observing	Day Ob-serving	Youth Group	School Talks	Exhibi-tion	Observ./ Planet'm
2012	12	24	2	12	17	8	0
2013	24	24	3	12	32	7	0
2014	23	21	20	17	12	8	3
2015	22	33	23	7	15	13	1
2016	31	54	39	19	54	11	10

As you can see from the tables 2016 was a highly successful year for public outreach. The handouts listed are English and French versions of Star Finders (planispheres), English and French versions of Moon Gazer's Guides, and Getting Started in Astronomy pamphlets, all of which are provided by the RASC for the cost of shipping only. The 218 outreach events have entailed approximately 980 volunteer hours on Centre members' time, including preparation and travel time. The RASC can use this volunteer-time information when applying for grants. A guideline for reporting outreach events via the RASC Web site is included in our Centre Policy Manual, which can be found in the Library section of the Centre Web site.

Members of the Education and Outreach Committee are Yvon Hachey, Don Kelly, June MacDonald (ex officio) and Curt Nason (Chair). During the year three standing banners were commissioned to promote the Centre and Society at exhibitions and other events. Thank you all for contributing to an amazing year of outreach.

Opening Ceremony of the Moncton High School Observatory June 3, 2016

After more than two years of planning, fundraising, construction and tweaking, the Moncton High School Observatory (pictured on the cover page) was opened officially on 03 June 2016. The ceremony included congratulatory messages from local dignitaries, an inspiring presentation by Halifax Centre member (and former RASC NB member) Tim Doucette, planetarium shows by Science East, an exhibition table by RASC NB members, solar observing whenever the clouds took pity on us, and ice cream.



Tim, Emma, Yvon, Daniel and June



Yvon with a Customer



Planetarium and Exhibition Table