

# H O R I Z O N

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



May/June 2012  
Vol.13 Issue 3

## IN THIS ISSUE

**Award Announcement!**

**Super Moon Image!**

## EVENT HORIZON

### Astronomy in New Brunswick

#### SRAC/RASC Centre du NB Centre Réunion / Meetings

#### Kouch Star Party

**When: May 18-21, 2012**

**Where: Kouch National Park**

For more information please contact  
**June Mac Donald or Emma MacPhee.**

Emma's email: [secondvicep@nb.rasc.ca](mailto:secondvicep@nb.rasc.ca)  
June's email: [secretary@nb.rasc.ca](mailto:secretary@nb.rasc.ca)

#### June Astronomy Meeting

**When: June 16, 2012 1:00pm**

**Where: UNB Fredericton**  
**Forestry and Geology Building**  
**Room 203**  
**1pm-4pm**  
**Watch your email for notice!**

#### RASC NB Local Unit Réunion / Meetings

#### William Brydone-Jack Unit (Fredericton)

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

**When: June 12, 2012 at 7:00pm**  
**No Meetings in Summer**

**Where: Fredericton, UNB Campus**  
**2 Bailey Drive, Room 203**

[www.frederictonastronomy.ca](http://www.frederictonastronomy.ca)

#### Saint John Astronomy Club

Meetings consist of talks on constellations, the solar system and other astronomical topics, as well as Show & Tell, observing reports and Ask the Astronomer.

**When: June 2, 2010 at 7:00pm**

**Monthly astronomy meeting will take place at Rockwood Park Interpretation Centre.**

## Inside this issue :

2. Event Horizon (Upcoming Events)  
Cover photo details
3. Presidents Report
4. NB RASC Member Awarded  
Ken Chilton Prize  
Earth Hour Photo
5. Super Moon
6. In the Light of False Security
7. Observer's Score Card

### Cover Photo/Sketch By Tim Doucette

This is a image of M33, a face on spril galaxy. Tim took this photo using his Celestron 9.25, mounted on a CGEM mount with a QHY8 camera. The telescope was autoguided using a Orion Starshoot camera.

The image itself is a stack of 56x5minutes, 23x10minutes, for a total of 8.5hours of exposure at a focal ratio of F6.3.

When it comes to image it goes to show that the more data the better the images! So remember, shoot shoot shoot as many photons as you can imagers and send your editor the images for the newsletter.

**Editors Note:** As many of you may have heard my time in NB is coming to an end with a move to Nova Scotia. Hence we are seeking a new editor! Should you be interested in composing Horizon please contact ewither Curt Nason or myself. Contact info is page 7 of this issue.

## **PRESIDENT'S REPORT**

**by Curt Nason**

Star party season is upon us. We start early in New Brunswick because we have three Dark Sky Preserves (Kouchibouguac, Mount Carleton and Fundy parks), Canada's only Urban Star Park (Irving Nature Park), and our traditional COW party at Mactaquac. We kick off at Kouchibouguac National Park on May 19 - 21, with What's Up talks, solar and nighttime observing. We schedule our weekend star parties at Mount Carleton, Fundy and Mactaquac around Nova East, the Halifax Centre's annual event at Smiley's Campground near Windsor, which many of our members like to attend. Check our Web site for details of the New Brunswick star parties. Two evening events are scheduled at the Irving Nature Park in Saint John: for the transit of Venus on June 5 and the Perseid meteor shower on August 10 or 11.

Star parties are great venues for public outreach and also for our members to see and try out each others' astronomy equipment. Preparing for and running a star party requires a fair bit of work, and many hands make light work, so please consider lending your expertise and assistance to our Star Party Co-chairs Emma MacPhee and June MacDonald.

Star parties are not the only astronomy outreach performed by our membership, for we are busy year round. Here is a summary of our outreach events since February (date, number of public participants, event).

March 1, 85 students and teachers at Quispamsis Elementary School for Literacy Day

March 17, 83 students and parents for STEM 2012 at Bliss Carman Middle School in Fredericton

March 18, 14 for public observing in Hanwell

March 20, 90 Grade 6 students at Barnhill Middle School in Saint John

March 20, 30 Cubs and parents for observing in Grand Bay-Westfield

March 21, 60 students at Blackville Elementary School

March 31, 30 observers at the Algonquin Hotel in St. Andrews for Earth Hour

March 31, 125 visitors to the Earth Hour astronomy display at the Moncton Market

March 31, 125 display visitors or solar observers for Earth Hour at the Regent Mall in Fredericton

March 31, 500 observers for Earth Hour at the Fredericton Market

April 21, 600 visitors to the activity display for the aMAZEatorium at Harbour Station in Saint John

April 25, 25 Silver Falls Beavers and par-

ents in Saint John  
April 26, 85 sidewalk observers at the Saint John Wal-Mart  
April 27, 38 young students at Assiniboine Avenue School in Oromocto  
April 28, 200 visitors to Astronomy Day displays at Lancaster Mall and Brunswick Square in Saint John

For those who didn't automatically sum the numbers while reading this, we attracted about 2100 people to our events in two months, in all four of our main geographical areas and then some. A third of our Centre membership volunteered for at least one event, with several travelling to other areas to participate. The outreach bug is contagious, and we are inflicted with a great sense of pride. Thank you all.

A big welcome to our two new members, Robert Pelletier in Beresford and Don Williams in Moncton. Thank you to the following who have renewed their membership since the last issue of Horizon: Rosanna Armstrong (a 5-year member), Holly Ayles, Daymon Baker, Mandy Bregg, Peter Jensen, Eloi Langteigne, Daniel LeBlanc, and Clifford MacKenzie. Unfortunately, two members decided to not renew so our Centre membership remains stable and healthy at 65. Healthy and active.

## NB Member Awarded the RASC Ken Chilton Prize By Paul Gray

Every now and then I have had the privilege of announcing something exciting to a club or group of RASC members. Recently I had the chance once again, this time to announce that Holly Ayles is receiving the RASC's Ken Chilton Prize. Below is the citation. Her surprise reaction was priceless!

RASC Awards Committee

It is with great pleasure and pride that, on behalf of the New Brunswick Centre Council, we submit the following nomination to the RASC National Awards Committee.

The Chilton Prize is awarded to an amateur astronomer, resident in Canada, in recognition of a significant piece of astronomical work carried out or published during the year. The New Brunswick Centre has a member we believe qualifies admirably for the award. Holly Ayles is a 14-year old student at École Sainte-Anne in Fredericton, New Brunswick and a member of our centre's Education Committee. Her activities in astronomy began with a shared interest with her father. In the winter of 2011 she began a project, *Does Light Pollution Exist in the Village of New Maryland?*, using the RASC's Sky Quality Me-

ter. Measurements were taken throughout the village of New Maryland during January along with data on the number of street lights within the vicinity, visibility and weather conditions, all of which were plotted on a graph. In addition, GPS coordinates were taken at each location. The coordinates and readings were charted on an interactive Google Map of the village such that, when you click on a coordinate, you see the specific SQM reading and other information and how they compare with other observations in the area. An average SQM for the village was calculated to be 18.33. The village has seven subdivisions and the average SQM for them ranged from 19.13 to 17.79.

Holly presented her project at the Bliss Carmen Middle School Science Fair, where she won first place. Next, the project was again given first place honours at the School District 18 Science Fair, in Fredericton. Finally, the project won a Bronze medal at the River Valley Science Fair, hosted by Science East and the University of New Brunswick on May 19, 2011. Unlike most science fair projects, it did not end by not moving on to the national competition. Instead, she and a friend transformed it into a poster project, *La Pollution Lumineuse (Light Pollution)*, Originally submitted in French, for a Statistics Canada contest. For this, Holly won first place in the provincial and national contests and her poster was then to travel to the International

Statistical Literacy Project – Poster Competition 2010-2011 in Dublin, Ireland. For this poster project the International Statistical Institute awarded her first place for the ages 12-15 category!

Holly Ayles is a bright young student that the New Brunswick Centre is very proud to include among its membership. Holly has shown just how much can be accomplished by our youth and her achievements bring us all tremendous pleasure. We feel that it is the duty of societies such as ours to formally recognize talent such as Holly has shown. Therefore, we are pleased to nominate Holly Ayles as a worthy recipient of the Ken Chilton Prize.

## Earth Hour Moncton By Emma MacPhee



Marilyn, Frank & Emma at the Earth Hour Event Moncton Market, where we had approximately 125 persons stopping by for information on astronomy.



### Super Moon by Roy Bishop

Here are two Full Moon images. (see next page) One I took 2011 Oct. 11 at apogee (406,400 km), the other was 207 days later on 2012 May 5 at perigee (357,000 km), each with a 400 mm focal length. The juxtaposition shows how the "superMoon" compares to the smallest Full Moon.

The distance ratio (or diameter ratio) is 1.138. Neglecting the slight variation in the Sun's distance, the area (or brightness) ratio is the square of that number which is 1.295. The tidal effect ratio goes as the cube, which is 1.474, so the tidal effect is almost half as large again for a superMoon compared to the smallest Moon. Here on the Bay of Fundy a 47% increase amounts to several metres in the vertical range of the tide, so we do not need a clear sky to tell when the Moon is close!

In terms of visual magnitude difference (re p. 31 of your Handbook):

$$[\log (1.295)]/0.4 = 0.28 \text{ magnitude}$$

## In the Light of False Security By Chris Weadick

In many instances when we have been overwhelmed with the glare or sky glow of dusk to dawn (D2D) lights the claim of their purpose is for security. For success there is always a rule of the right time and right place but installing more light does not imply more security. As seen in the two pictures below you can see how the glare from a D2D light can actually permit someone to hide in plain sight by positioning themselves in the dark shadows caused by the bright light and the overwhelming glare of an 'open bulb' (observer is able to see the light source directly verses a light that is shielded).



Bright lighting can cause excessive shadowing and extensive glare - counter intuitive to the thought of a safe environment!

With The Royal Astronomical Society of Canada and the International Dark Sky Association we have many reports

available to demonstrate the negative influence of additional lighting verses security. In general, 75% of home invasions happen during the day time when homes are not occupied. Burglars do not want confrontation. Similar to homes being invaded during the day time when no one is home and no one is usually watching, the same can be said regarding D2D lights. Most home owners do not have cameras monitoring their property and neighbours do not usually watching for movement. What is the value or purpose of lighting a property when no one is monitoring for activity?



Someone walking in your yard with a flashlight would cause more attention!

Another consideration regarding the use of yard lights or D2D lights is hoping your neighbours might see some unusual activity on your property. Burglars are opportunists - lighting your property and your belongings helps a would-be thief determine the level of interest verses your neighbours. Reduce your risk and keep



your belongings hidden in the darkness of night. Add in a motion activated security light which will startle someone trespassing and will save you 95% of the costs of D2D lighting. Your neighbours would be more likely to notice someone walking in your backyard with a flashlight verses under a fully lit yard the neighbours become accustomed to the lighting and ignore activity in your yard. They would be more likely to call you or the police if they saw someone with a flashlight in your yard or home... something unexpected.

If you have ideas or questions about light pollution contact the RASC NB Light Pollution Chair at [Chris.Weadick@gmail.com](mailto:Chris.Weadick@gmail.com)

## OBSERVERS' SCORECARD

	Explore the Universe	Messier	Finest NGC	I. William-son Lunar	Deep Sky Challenge	Dark Nebulae	Herschel 400	Levy Deep Sky Gems	Caldwell	Arp Galaxies	Abell Galaxy Clusters	Hickson
Gerry Allian	101	93										
James Ayles	37											
Adrien Bordage	100											
Bob Crossman		110	28									
Charles Doucete	110	110	110				65					
Ted Dunphy	102	110	110	51	10	8	265					
Colette Fortier	87	28										
Paul Gray	97	110	110	46	31	20	238					
Peter Jensen	12	73										
Don Kelly	110	110										
Mark Laflamme	106	30	2									
Danny LeBlanc		110	110				127		8	21	21	9
Emma MacPhee	78	110	110	5								
Curt Nason		110	110									
Mike Powell	70											
Detlef Rudolph	62											
Chris Weadick	71	26										

This section is intended to inspire our members to get out observing by promoting a friendly competition. The left column includes our members who have reported their successes to the scorekeeper, Paul Gray. To be included please contact Paul Gray at: [editor@nb.rasc.ca](mailto:editor@nb.rasc.ca)

***President/Président***

Curt Nason  
[president@nb.rasc.ca](mailto:president@nb.rasc.ca)

***1st Vice-President/-Président***

Marc Arsenault  
[firstvicep@nb.rasc.ca](mailto:firstvicep@nb.rasc.ca)

***2nd Vice-President/-Président***

Emma MacPhee  
[secondvicep@nb.rasc.ca](mailto:secondvicep@nb.rasc.ca)

***Secretary/Secrétaire***

June MacDonald  
[secretary@nb.rasc.ca](mailto:secretary@nb.rasc.ca)

***Treasurer/Trésorier***

Mandy Bregg  
[treasurer@nb.rasc.ca](mailto:treasurer@nb.rasc.ca)

***Past Pres./Président sortant***

Peter Jensen  
[pastpresident@nb.rasc.ca](mailto:pastpresident@nb.rasc.ca)

***Councillors /Conseillers***

James Ayles  
 Paul Gray  
 Roger Pitre  
 Chris Weadick

***Website Chair***

Tim Doucette

***Light Pollution Chair***

Chris Weadick

***Equipment Chair***

Eldon Rogers

***Library Chair***

Ted Dunphy

***Education Chair***

Don Kelly