Vol. 19 Issue 1

Winter 2018

HORIZON

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

Complements in Art

Ancient Photons by Len Larkin

West Veil Nebula by François Theriault

NGC 6990 West Veil Nebula in Cygnus

July 9, 2013
Genesis Observatory, Moncton, NB

Long travelled light from a galaxy, far,
shimmering along threads of time,
ancient light beams sparkle on a retina,
send a symphony of impulses to the mind.

Stargazers hold dear the observing of dark skies,
searching beyond the city-bound night.
We know the universe through oracles and eyes,
minds reeling at the presence of such delights.

Was it Bonnestell's art or Arthur C's mind
that sent so many of us on this great quest?
Herschel's superb skill or Hawking's thoughts of space?
Ideas that put our minds to the test.

Pioneers have led us to these moments of awe,
as we now probe for nearby planets, and more,
Could man be the lucky first with such knowledge,
Or, has it thrilled distant minds, civilizations before?

We, the sons and daughters of supernovae,
weave synaptic connections that define
Feelings and ideas, enabled by stardust,
of our true place in space and time.

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Equipment: Chris Weadick
Library: Ted Dunphy
Fundy Upgrade: Emma MacPhee

NB Astronomy Clubs
Réunion / Meetings

SRAC/RASC Centre du NB Centre

April 28 Moncton High School
May 26 UNB Fredericton

http://www.nb.rasc.ca/

William Brydone-Jack Astronomy Club (Fredericton)

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

Saint John Astronomy Club

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

Astronomy - Astronomie Moncton

When: First Quarter Moon weekend observing
Where: Moncton HS Observatory
www.astronomymoncton.org

Find us on...

FACEBOOK
https://www.facebook.com/RASC.NB

TWITTER
https://twitter.com/rascnb

Events 2018

Astronomy Week: April 16 - 22

Kouchibouguac Spring Star Fest
June 15 - 16
Mount Carleton Star Party
July 13 - 14
Nova East August 10 - 12
Fundy Park Stargaze
August 31 - September 1
Kouchibouguac Fall Stargaze
September 14 - 15

National Star Party: September 15
Fall Astronomy Day: October 13
International Observe the Moon Night: October 20

Website Welcome Message
by June MacDonald

RASC NB Centre is one of 29 Centres of the Royal Astronomical Society of Canada. We are the “little Centre that does.” This reflects that, although we are a small Centre, we have since our inception worked diligently to bring about the many things that have caused our group to grow in membership and accomplishment.

Our Centre was established in 2000 and since then we have continued to gradually increase our membership and expand our astronomical activities, events and projects.

The original objective of the early RASC was “aiding of each other in the pursuit of astronomical knowledge.” While that remains true today, the other very important objective is to “promote astronomy to all.” The mission of the Society is “to enhance understanding of and inspire curiosity about the universe, through public outreach and education.” The NB Centre believes strongly in this mandate. We simply want to share our love of astronomy and the wonders of the universe. We welcome everyone who shares this interest. Our Centre currently enjoys a membership of 110.

We are a diverse group, having a wide spectrum of expertise in astronomy: from beginner to expert. There is a wide range of age groups and life experiences as well.

To provide easier access to members, we hold our meetings in three cities: Fredericton, Saint John and Moncton. The meeting dates and locations will be posted on the website. The general meetings are open to the public, while business meetings are only for RASC members.

We provide ongoing public outreach throughout the province by holding various observing activities and events, including four annual star parties, plus providing speakers for presentations to groups, organizations and schools who are interested in astronomy.

If you wish to know more about astronomy or telescopes, don’t hesitate to come to a meeting, where we'll be happy to help. We also have mentors in all corners of the province who can be contacted for any kind of assistance (see under “Resources” at the bottom of the “About Us” website page.) We encourage members to support us in any way they are able: attending meetings and observing events, joining the council or a committee, or offering to give a talk at a meeting. Participating in these activities is a good way to gain experience and share your interest with others.

You don't need expensive telescopes to enjoy astronomy. Just go outside and look up with your eyes or binoculars. Check out the Moon while sitting outside on a warm summer evening. Watch for meteors (aka "shooting stars"). Look for planet groupings called conjunctions. Go to star parties and observing events, where you can look through a club member’s telescope. Such events give you an opportunity to learn basic information, to talk astronomy with members, ask questions and check out various types of telescopes, which can help if you decide to purchase your own piece of equipment.

Astronomy is a growing and active hobby. For some it is a passion. It tells us our past and our future. If you are a member, please share your interest. If you are not a member, why not join and explore the universe with us?

Winter Solstice at Newgrange, Ireland

by Ruth Weyburn

Stone Age Observatory?

I walked along the path leading from the Visitor Centre at Newgrange to the Passage Tomb and paused on the bridge over the River Boinne. The water babbled softly as it curled its way compliantly around the vast high mound which obstructed its journey to the nearby Irish Sea. Fish jumped downstream, and a family of ducks glided effortlessly on the river's surface. Across the meadow, cows basked lazily in the afternoon's sun. Upstream, a man cast a line into the swirl. Butterflies flitted in and out of view, and I could hear but not see the birds chirping in the trees at the water's edge. The aroma of the forest completed the enchantment. I had arrived.

I had come to Europe to walk in the footsteps of the Stone Age people who had built megalithic monuments all over the British Iles and Northwestern Brittany. I am writing a historical fiction set 5,200 years ago and wanted to understand just who these enigmatic people were and how they could have achieved such incredible feats of architecture and why. Whimsically, I had dreamed of traveling back in time to observe them first hand. This was better than I could ever have hoped for. This scene I now stood in had not changed since the days Newgrange was built. In my mind, I stepped into the world of my book.

Newgrange overview: the entrance is on the left

As I walked along the path, the wooded area abruptly gave way to an area of bulletin boards where people waited for buses to transport them up the hill. I wished I could walk the two kilometres to Newgrange, but it is now a UNESCO World Heritage Site and access is carefully controlled. I watched the countryside pass by my window—the same pastoral scene of eons ago. From time to time through the trees, I caught a glimpse of the sun glinting off the white quartz exterior of the imposing structure strategically positioned at the highest elevation in the area. Covering more than an acre of land and sitting at the centre of the world's largest natural amphitheater, the kidney shaped mound rose 13.5 metres. It was just as awe-inspiring as it must have been to its astronomer-builders.

When we reached our destination, we were shepherded up to the main entrance of the passage tomb along massive horizontal stones that ringed the base of the structure. An intricately engraved stone lay across the entrance which had been reconstructed to allow access to the passage chamber. We were led 19 metres through a corridor of standing stones to a cruciform chamber with an amazingly beautiful three-metre high corbelled roof that remains watertight today. As if this was not impressive enough, we were treated to a re-enactment of what happens at Winter Solstice when the light from the rising Sun enters the roof-box located above the entrance and illuminates the chamber.

I was struck by the corbelled roof, the chamber's cruciform shape and the stone placed at the entry to the tomb. Had Neolithic architecture influenced Christianity?

Newgrange entrance way, window box and entrance stone.

After exiting the tomb, I walked 5.6 kilometres around the circumference. Of the 96 kerbstones at its base, several had inscriptions carved into them that had survived over 5,200 years. My heart skipped a beat. Had the Ancients left messages written in stone? I was particularly drawn to the artwork on kerbstone 52. It seemed to echo the entrance stone. Both had a vertical line down the middle to the right of the famous tri-spiral. I was informed that the rising Sun fell on the vertical line on the entrance stone at Winter Solstice and also illuminated the tri-spiral on a standing stone inside the chamber. It also aligned with the vertical line on K52 which is located on the far side of the mound. It is believed that the kerbstones and standing stones of the passageway and chambers were positioned before the mound was built.

Intrigued by the artwork, I scoured the literature looking for interpretations and learned that the engravings all pertain to things astronomical—a recording of what the Stone Age people were studying at the site and their findings. The Irish archaeoastronomer, Paul Griffin, reported in the Washington Post that one of the stone carvings at Loughcrew is a drawing of the solar eclipse of November 30, 3340 BC—the world's oldest known recording of a solar eclipse. James Swagger, in his book, *The Newgrange Sirius Mystery*, writes "Newgrange occurs to me and many others to be a Stone Age university of observational astronomy. The heavily featured artwork there seems to all to be a teaching platform." Swagger makes a convincing case that Newgrange was built to study earth's wobble.

Kerbstone K52 with a tri-spiral and the Summer Solstice vertical line to their right.

On my return visit in the fall, it seemed obvious that this was indeed a place of highly advanced astronomical study. It is now recognized that Newgrange was more than a passage tomb. "Temple of the Stars," is a more fitting description as it appears to have been a place of burial, ritual, art and observational astronomy.

Ruth Welburn is the author of The Devil's Ruse and soon to be released historical fiction, ***The Land of Uriel.*** *She is also the mother of RASC NB member David McCashion.*

Contact: authorruthwelburn.com

Contact darren@extremeireland.ie for information on an archaeoastronomy tour of Ireland's ancient past.

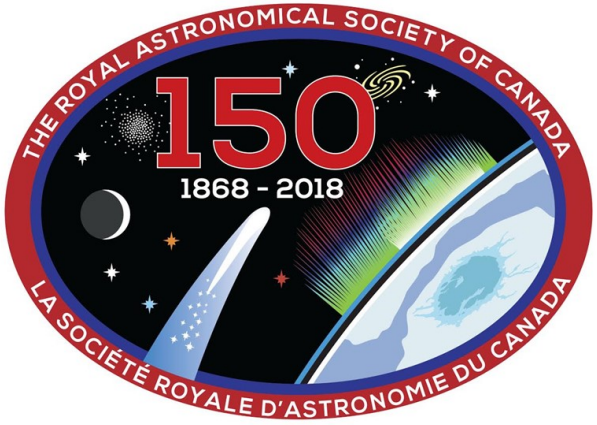
RASC 150th Anniversary Logo
submitted by June MacDonald

As part of the celebration of RASC's 150th anniversary, a special logo was designed as a representation of what the RASC is and its relationship with science and astronomy in particular, RASC members' contributions and its history. This is a brief description of the anniversary logo, taken from the RASC anniversary website.

Aurora: The aurora is a space weather phenomenon, shared by high latitude countries, including Canada. RASC members have contributed to the science, history and artistic investigation of the aurora

Manicouagan Crater: At 214 million years of age (give or take a million years), this represents the discovery of impact cratering sites in the Canadian Shield by astrophysicists and geophysicists at the Dominion Observatory, many of whom were RASC members. The crater also acknowledges Canadian excellence in meteor dynamics, meteorite petrology and curation as well as the RASC's interest in this work.

Stars: This represents Canada's contribution to stellar spectroscopy, done at the Dominion Observatory, Dominion Astrophysical Observatory and the David Dunlap Observatory, whose major contributors were RASC members. The stars also represent other related sciences and research.



Globular Cluster: This represents the field of Helen Sawyer-Hogg's greatest scientific contributions and the Helen Sawyer-Hogg telescope of the University of Toronto Southern Observatory at Cerro Las Campanas.

Spiral Galaxy: The galaxy represents both the work of Canadian observational cosmologists (e.g., Sidney van den Bergh's classification of galaxy morphology) as well as efforts of amateur Canadian observers and imagers.

Comet: The comet stands for the contributions to the study of comets, by Canadian comet discoverers such as David Levy, Rolf Meier and Chris Wilson.

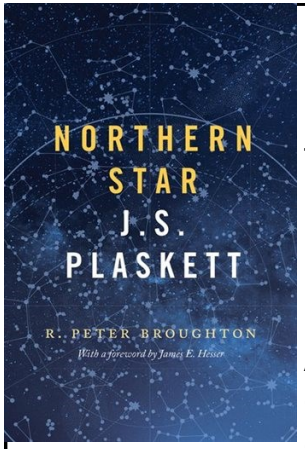
Moon: The Moon has great significance for First Nations peoples and their lunar and seasonal divisions of the year—the annual cycle. The earliest recorded lunar observations by European Canadians were as far back as the 17th century. The Moon and the stars symbolise the practice of navigational astronomy. As well, the Moon is a popular object that RASC members have shared with the public through their outreach beginning 150 years ago and continue to do so today.

For more information on the logo and anniversary project plans and events throughout the year, please visit:

www.rasc.ca/2018

OFF THE SHELF

by Curt Nason



Northern Star—J.S. Plaskett, by R. Peter Broughton, with a foreword by James E. Hesser; xx + 539 pp; University of Toronto Press, 2018.

A month ago I received an email from a representative of the University of Toronto Press announcing this biography of Canada's most internationally renowned astronomer in the first half of the 20th century. Of course I ordered it and put it at the top of my reading list, and now I follow the wishes of the UT Press and pass the word along.

John Stanley (Jack) Plaskett was born to English immigrants in 1865 in Woodstock, Ontario. At 16, when his father died, he left school to operate the family farm, and a few years later he became an apprentice machinist—a trade that would serve him and astronomy well in future years. At age 25 he started work with the Physics Department at the University of Toronto, where his photography skills and dogged diligence with tinkering led to improvements in spectroscopy, a field that was gaining importance in astronomy.

By 1905 Plaskett was in charge of instrument maintenance at the Dominion Observatory in Ottawa, where he developed an interest in solar astronomy following a failed eclipse expedition to Labrador, and began a program of collecting spectra of Types O and B stars to measure their radial velocities (movement toward or away from us). Over the decade his precise work and never-ending quest to improve measuring techniques earned the respect of astronomers and equipment manufacturers internationally. His drive led the construction of what was planned to be the largest telescope in the world, the Dominion Astrophysical Observatory near Victoria, BC.

Northern Star takes us through Plaskett's career as Director of the DAO, his struggles with department heads in Ottawa, and his international acclaim which led to membership in prestigious societies and on several committees. He was also an early developer and prominent, long-time member of the RASC. But the book is not only about astronomy. We learn much about his wife Reba and their children, one of whom, Harry, earned his own acclaim in astronomy.

The story of JS Plaskett covers two-thirds of the book. The rest includes two appendices of Plaskett's numerous publications and talks, plus nearly 100 pages of end notes. If you are the type who reads reference notes as you come to them in a chapter, don't.

Peter Broughton, FRASC, has given us a highly readable and informative story of a person who made Canada an important player in the world of astronomy. For anyone who has an interest in the history of the RASC and astronomy in Canada, *Northern Star* is a must read along with Broughton's *Looking Up: A History of the Royal Astronomical Society of Canada,* and Richard A. Jarrell's *The Cold Light of Dawn: A History of Canadian Astronomy*.

List price is $90 plus tax and shipping but it might still be available at 25% off from UT Press. One for our library?

RASC NB Education & Outreach Update for 2018

Year	Events	People	Star Finders English	Star Finders French	Moon Guides English	Moon Guides French	Getting Started in Astronomy	Volunteer Hours
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	219	9498	1984	115	2290	87	514	988
2017	248	18,453	2276	162	2262	131	340	1944
2018	13	1633	83	0	65	0	6	87

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	55	39	19	54	11	10
2017	54	85	22	18	49	5	1
2018	4	4	2	1	1	1	0

Puzzle 'n Pics

Astro Anagram

The answer is one astronomical word formed by rearranging the letters of the other word. Each clue word is a hint for one of the anagrams. Example clue "Star BBQ". Answer "ASTRO ROAST"

CLUE... **Lunar Sketcher**

□□□□□□□ □□□□□□□

Can you solve this puzzle created by the enigmatic Ted Dunphy?

Answer to the previous puzzle:

PLANET CORE = EARTH HEART

<— Last month's Lunar Eclipse from LA taken by Michael Ornstein (submitted by Don Kelly)

Moonrise over McLaren's Beach, Saint John by Paul Owen —>