Vol. 26 Issue 4

Autumn 2025

HORIZON

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

25th Anniversary Edition

Cookie art (partly devoured) by Yolanda Kippers

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Newsletter Editor: Curt Nason

Centre News

Business Meetings
Third Saturday in some months

Centre Presentation Meetings
Third-week evening of most months

Star Parties 2026
Kouchibouguac: May 15-16,
September 18-19

Our membership has increased to 83, thanks and a big welcome to new members since our previous newsletter: Amanda Ward Parish, Rob Parish, Gordon Wilcox, Stephane Boudreau, Daryl Boardman and Drew Schedlar.

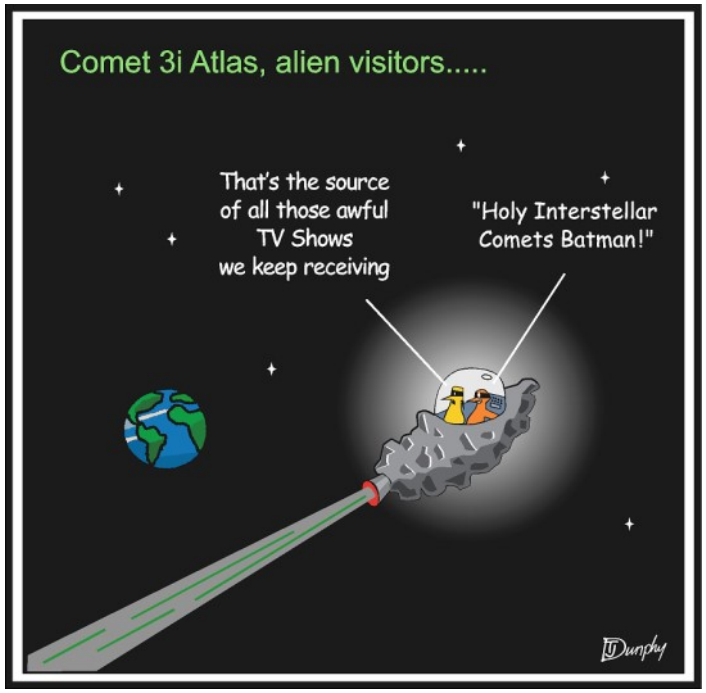
At a Centre Council meeting on November 15 we approved the purchase of a Zoom Workplace Pro Annual package for Chris Curwin, as a back-up to our other account held by June MacDonald. Each account is limited to one computer. In addition, Chris will be using the account for astronomy outreach and possibly for the Sunday Night Astronomy Show.

After our Annual Meeting on October 18 we had a presentation from member Arash Ahmadi on the use of Discord as a communication method among Centre members. It is used often by youth and gamers, and it was suggested as a way to attract youth to become members. This was discussed further at the meeting in November and we agreed to move forward on this initiative with Chris Weadick as the lead.

We had our beginning as the RASC Moncton Centre in the autumn of 2000, making this our silver anniversary as a Centre (and for the newsletter). From previous discussion on how we could celebrate, suggestions from the Fundraising Committee included Centre-marketed swag that members could purchase. Chris Weadick contacted a print company in Fredericton and reported on November 15 the various items available that would be available with a reasonable set-up fee.

Ted's Toon

Ted Dunphy



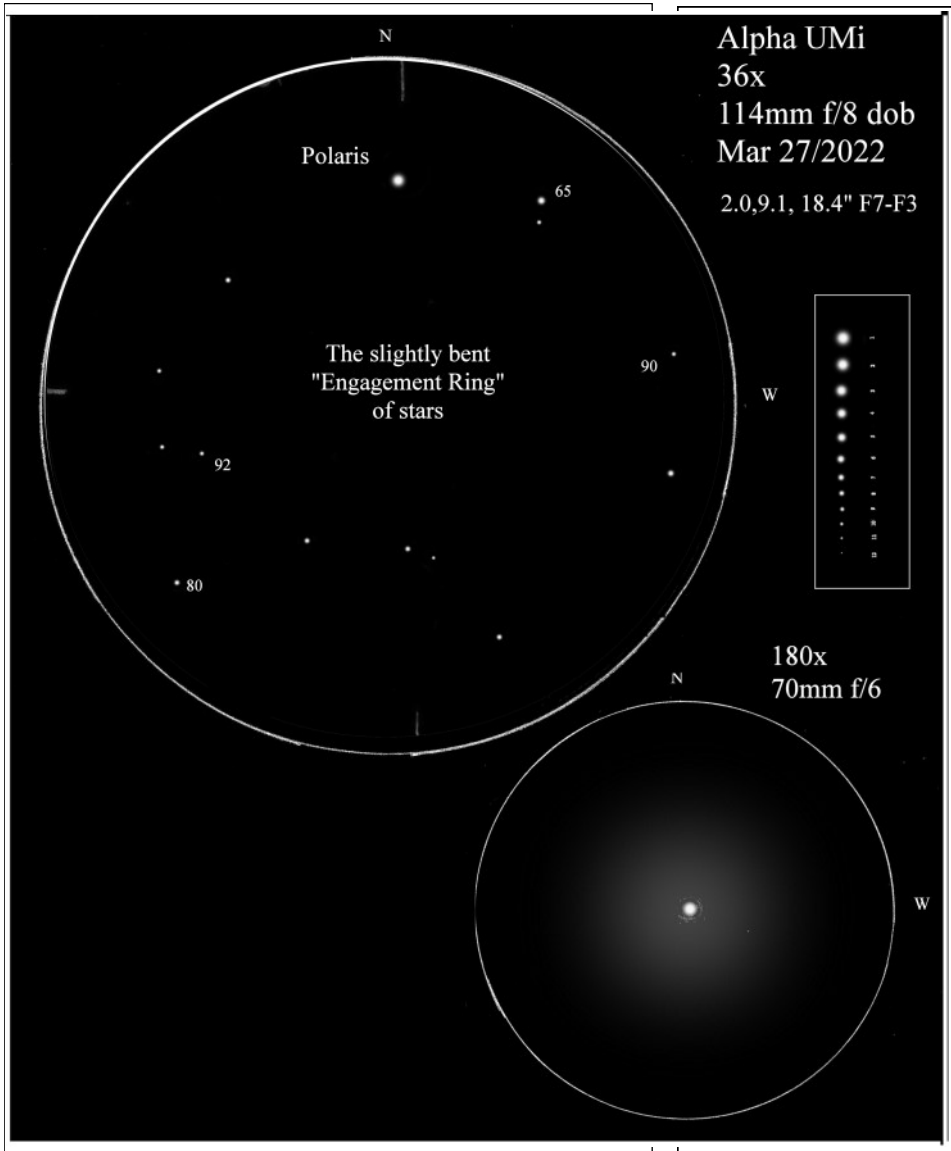
A Tale of Two Bears

Len Larkin

To me, observing is firstly about planning – I may want to try a few targets from a list or just settle into a particularly cozy constellation and see what treasures await. But secondarily it's also about expecting surprises.

One night, driven by my long-term plan to sketch all doubles on the 19 Stars list, I wanted to create an additional higher-power sketch to combine with a previous one of Alpha Ursae Minoris (Polaris). Although lots of observers see Polaris as a celestial compass or a telescope alignment tool, a few might forget that it's also a double. And who can blame them – that fact doesn't exactly market itself well while you are staring at it. The reason is fairly obvious, with a faint 9th magnitude secondary sitting near a bright 2nd magnitude primary it is one of the more subtle doubles in the 19 list.

A forecast of unsteady skies for the night forced me to sideline the 180 mm and hesitantly substitute in my 70 mm refractor. I needn't have worried as that 'scope rode out the poor seeing nicely at 180x, and once I located the faint companion the sketch was completed quickly. I glanced at Ursa Major but most of my targets there were lost in the trees and I thought I was done with the northern bears for the night. As Alpha Herculis was getting near the tops of tall trees in my western sky, I jumped over to catch a quick view of those colours – always nice.



Still basking in that view, I was interrupted by a noise from below my second floor deck. It seemed like a garbage/compost bin falling over. Something knocked it over...raccoon?, deer? I heard an animal sound. I rushed to the deck handrail and leaned over, hoping to scare off the offender with my light. What I saw froze me in my tracks. I was dealing with Ursa Major again but this time in the flesh! Even being fully dark-adapted, all I could make out was a huge mottled black shape rushing along beside the deck on its way into the woods. Embarrassingly, I forgot to turn on my light and missed a great observing opportunity.

Another neighbour also saw a bear that same week in their back yard. A few nights previous, our next-door neighbour had their garbage raided with contents strewn through their back yard almost to the woods. We were luckier, I must have scared it off before it got too much garbage out of the bin (even though I had it secured with three bungee cords).

The following day I tried to estimate the size of the bear. I would guesstimate 1.2 - 1.8 metres long. Wow! Glad they are timid. Who would have thought that my tale of two bears would turn into three!

Gear Up and Show Your Stargazing Spirit with Official RASC NB Swag!

Chris Weadick

The Royal Astronomical Society of Canada New Brunswick Centre is thrilled to announce the launch of our new official merchandise store, offering an stellar line-up of branded apparel and accessories for members and the general public! This is your chance to proudly display your passion for the cosmos and to support RASC NB.

We've been working diligently to secure an unprecedented variety of items. The collection is more extensive than ever before and features high-quality options like:

Jackets and Hoodies: Stay warm during late-night observing sessions with our comfortable and stylish outer layers.

Ball Caps: Keep the sun out of your eyes during the day, or shield yourself from errant light at star parties.

Grab and Go Bag: A convenient and practical way to carry your essentials.

Drink Cups: Perfect for your coffee or tea as you enjoy the night sky.

Patches and Stickers: Get creative and customize your own gear, from laptop cases to telescopes!

And the excitement doesn't stop there! We are also exploring the addition of commemorative coins in the new year.

The online store will be hosted by local business Mayday Printing in Fredericton. We are pushing for an early December opening, with the goal of providing delivery options to ensure your items arrive before Christmas.

Keep an eye out for an official announcement with the store link and detailed ordering information coming very soon. Get ready to gear up and showcase your enthusiasm for astronomy!

Centre Council reviewed the items and commented that the costs are all reasonable and fair with what look like good quality clothing. The City of Fredericton used the services of MayDay Printing for the 2024 eclipse event and they were very happy with the quality, service and costs.

If you would like to look at some of the products which may be available you can visit:

https://www.maydaygroup.ca/

Not all items on the site will be included but it will provide you with an idea of the approximate price and delivery that will be completed through the ordering process.

Meet The Pope's Astronomer: Guy Consolmagno

Mary E. King

I recently learned that the Pope's Astronomer is a guy named Guy (Guy Consolmagno, to be precise) and he's from Detroit, Michigan. What other bits of information might be of interest here?

Guy Consolmagno came from an Italian–Irish family in Detroit. He became a Jesuit at the age of 38 after years of study of physics and astronomy at the University of Arizona in Tucson, and at Harvard and MIT. In 1993 he became "The Pope's Astronomer" to Pope John Paul II. Consolmagno is in charge the Vatican Observatory, founded in the 1891 and dedicated to the scientific study of the heavens.

The observatory as an institution is composed of a staff of fifteen astronomers. These men (yes – all men) divide their time between the Vatican Observatory at Castel Gandolfo (a former papal summer residence located a few miles south of Rome) and the Mt. Graham International Observatory, near Tucson, Arizona. This is the location of the multi-million dollar telescope called The VATT: The Vatican Advanced Technology Telescope. Arizona, because of its remote mountain landscape, is famous for its clear skies. The current city of Rome, not so much. Because of light pollution, the original Vatican telescopes, which sat atop the Vatican Library and Museum, were moved to Castel Gandolfo in the late 1930s.

The Vatican has played an outsized part in the world of astronomy. In the late 1800s under Pope Leo XIII, Vatican scientists were able to join in a project mapping the skies alongside international astronomers centered in Paris. In 1582, under the advice of a Jesuit named Christopher Clavius, Pope Gregory XIII replaced the Julian Calendar with the Gregorian Calendar. In 1992, Pope John Paul II conceded that the Church prosecutors who persecuted Galileo were wrong.

Back to the present day. What was Consolmagno's directive from the outgoing head of the observatory? Do good science. And that has led to significant achievements to date. Consolmagno and his colleagues developed a new method for measuring the density and porosity of meteorites, working from a collection of meteorites bequeathed to the Vatican by the Marquis de Mauroy, a French nobleman. The Vatican has made fragments of the rare meteorite known as the Chassigny (believed to be from Mars) available to scientific researchers. Another Vatican astronomer, Bob Macke, worked with NASA in analyzing samples from the Bennu asteroid taken from the OSIRIS-REX mission (2016-2023). Current projects involve research collaborations on the Kuiper belt's ice asteroids.

Vatican research outcomes are held to the same rigorous standards as other academic institutions, but all the funding comes from the Holy See, and therefore is not subject to the internal politics of academics looking for tenure or funding sources. Their mission is to do "middle of the road science and middle of the road faith."

Consolmagno does less peering through a telescope these days and more public speaking. He has written numerous popular science books that link faith and science, including God's Mechanics (2008). He reportedly loves science fiction, especially space operas: stories of high adventure and acts of heroism.

Vatican Observatory in Castel Gandolfo, Rome

Some frequent questions he is asked:

- Was there really a Star of Bethlehem? (There were various celestial phenomena at the time that could have appeared to be a star to the observers of the day.)
- Would you baptize an extra-terrestrial? (Only if the extra-terrestrial asked to be baptized).
- Do you have moments of doubt in God? (About three times every minute.) This last response always gets a laugh from the audience.

Consolmagno goes on to say that the opposite of faith is not doubt, it's certainty. Science requires an open mind to understand new findings and to ask new questions.

What lies ahead? Consolmagno himself is looking forward to retirement. In an odd alignment of the stars, the new pope, Cardinal Robert Francis Prevost, is an American who attended high school in the state of Michigan. He took the name Leo XIV after Leo XIII, who championed the struggle of the poor, and who founded the modern Vatican Observatory. The Vatican's status as a neutral country would allow it to be a place where the scientific ethics and priorities of space exploration could be discussed.

Source: Mead, R. (2025, August 4). "The Pope's Astronomer": A career at the intersection of faith and science. The New Yorker, pp 20 – 26.

What's Up for Winter

by Curt Nason

The highlights for the months of December to February will be the Geminid meteor shower peaking two days past the third quarter Moon in December, Jupiter at opposition in January, and a lunar occultation of Regulus in early February,.

The **Sun** reaches the solstice around noon on December 21. It is past peak activity but aurorae are often seen during this stage. Earth is at perihelion January 3 at ~13:00.

New **Moon** dates are December 19, January 18 and February 17. The waning crescent Moon occults Regulus on February 2 around 22:00 for about 65 minutes.

Mercury is at greatest elongation on the evening of December 7/8 in its best morning apparition for 2025. It reaches superior conjunction January 21 and begins its best evening apparition for 2026 in the second week of February, reaching greatest elongation above a day-old Moon on the 18th.

Venus is out of sight through December, reaching superior conjunction January 6. In late February it sets an hour past sunset.

Mars is in conjunction January 9 and by the end of February it rises less than 20 before the sunrise.

Jupiter is well-placed for late evening observing in December, reaching opposition January 10. See the What's Up calendar posted to our website and social media for most of its moon action and Red Spot transits between evening twilight and 01:00.

Saturn begins December in early stages of prograde motion and with its rings just past their minimum tilt for the next decade and a half. This is a good time to locate its brighter moons. By the end of February Saturn will be setting less than two hours after sunset with Venus rising toward it

Uranus begins this period ten days past opposition at magnitude 5.6 and within a binocular field lower right of the Pleiades. Prograde motion resumes in early February to take it below the Pleiades.

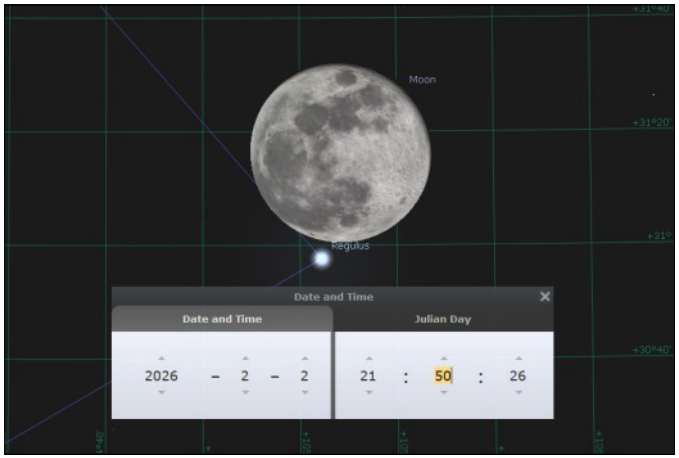
Neptune achieves its second stationary point on December 11 at magnitude 7.9 and within a binocular view to the upper left of Saturn. By mid-February it will be about 1˚ above Saturn

Comets A few of the comets visible through November might still be high and bright enough for observing in mid-size to large telescopes. C/2024 E1 Wierzchos could reach magnitude 9 after its perihelion on January 20.

Meteor Showers The reliable Geminids peak on December 13/14 with a 26% lit Moon rising around 02:30. The Ursids peak on December 22 with the Moon a couple of days past new, and the Quadrantids peak around the full Moon on January 3.

Zodiacal light has a two-week period after evening twilight beginning February 3.

Minutes before the lunar occultation of Regulus from Saint John on February 2, 2026



Queen Elizabeth School Astronomy Presentation

Gerry Alain

A couple of years ago I did a presentation at this school. I contacted them again in early November to see if they would like me to do another. They have a science course for the grade 8 and they talk a bit about astronomy, so we agreed on me doing a presentation to three classes on November 13 .

I made sure my presentation was up to date with the proper number of moons for the big planets. My wife was interested in attending, so we arrived at the school around 8:15 and met with the teacher I was organizing with. She set up my PowerPoint presentation and we waited for the students to arrive for 8:30.

All three presentations went very well and the kids had a lot of questions. I always get surprised looks when we discuss the planets, and how long each takes to go around the Sun. I ask a student how old they are. If I get one 13 years old, well, I tell them if they were on Mars they would be 6.5 years old. They always laugh. When we get to the outer planets, they go "Wow"; they would not have had a birthday yet. Some say they would not be born. I say yes you would be, but no first birthday yet as you have not gone around the Sun. Then they get it. And they are sad as, with the far planets, they would not live long enough to have even one birthday. I always get "What no presents or cakes ever!"

I also freak them out when I say what we see in the sky is in the past. Like the sunlight leaves the Sun and takes about eight minutes to reach us. If we could turn off the Sun, we would not know it was off for eight minutes because the sunlight is still coming. Then I tell them some new stars have been born, but we don't see them yet as the light has not reached us. And some have died but we still see the light, but they are gone. They then get how big the universe is.

They kids AND the teachers enjoyed it. Chris Curwin had given me five sky atlases this summer, so I gave them to the teachers to do a draw to give them to some students.

The kids all smiled and said thank Mr. Gerry, that was fun. The teachers thanked me as well and said they want me there again next year. In all we had 54 students there and three teachers. I so enjoy doing that.

M8: The Lagoon Nebula

Image by Stephan Hamel

25th Anniversary Party

Anniversary logo by Ted Dunphy
Photo by Emma MacPhee

We had 17 members and former members attend a bring-you-own-lunch gathering at Rockwood Park in Saint John to celebrate 25 years as a RASC Centre in New Brunswick. Page 1 shows the tastiest logo we have ever had, courtesy of Yolanda Kippers. June MacDonald posted many photos of past events around the room, and Ted Dunphy supplied stickers with a 25th anniversary logo for RASC NB (see above).

Following a couple of hours of nosh and chat, Curt Nason ran a Centre history quiz on PowerPoint and followed that with a retrospective of Ted's Toons. The final hour was spent discussing the future of the Centre.

RASC NB History Quiz

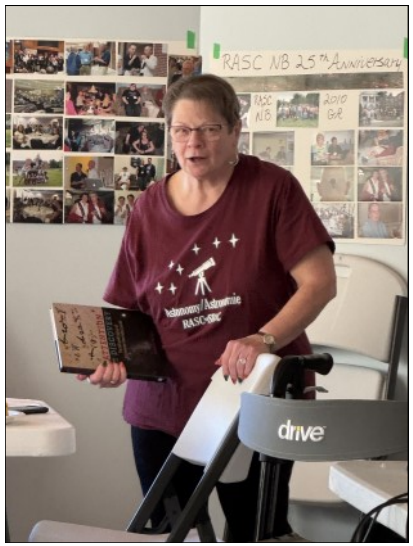
Q. Which president had the shortest term?
Q. Who was the first newsletter editor?
Q. Who was the first woman to be a member?
Q. What 3 brothers were members at the same time?
Q. Name all the locations where we held Centre meetings.
Q. Name the RASC Presidents who visited.
Q. Who were Centre Presidents?
Q. Who has received RASC awards?
Q. What was the big event in 2009?
Q. What was the big event in 2010
Q. How many members did we start with?
Q. Can you name them?
Q. How many members in total overall?
Q, What is this?

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.

Answers are on Page 11.

All photos by Emma MacPhee

RASC NB Silver Revellers — Left to right by head
Chris Curwin, Cindy McHatten, Don Kelly, Chris Weadick, Yolanda Kippers, Robert Gaudet, Curt Nason, Emma MacPhee, Mike Powell peeking, Len Larkin, Yves St. Germain, June MacDonald, Shawn McHatten, Paul Gray, Karen Dunphy, Ted Dunphy, Alan Legere



←

June receives the President's Award for being our President for a decade

→

Ted gets the book thrown at him for his artistic contributions to the Centre

Mining the Sky for Dwarf Planets

Newspaper article by Curt Nason

It has been nearly two decades since the International Astronomical Union (IAU) showed there is no room for sentimentality in science by reclassifying Pluto as a dwarf planet, and subsequently outraging a significant portion of the world's population. Within two years a total of five dwarf planets had been blessed by the IAU, and the night sky has several more awaiting that distinction.

At a meeting of the IAU in August 2006 the astronomers in attendance were charged with deriving a definition of a planet. The result was that a planet must orbit the Sun, be large enough to be round, and it must have cleared its orbit of any other bodies of comparable size. Planets around other stars are called exoplanets and a specific definition of that term has been proposed. To be round a planet must be massive enough for its gravity to pull itself into a roughly spherical shape.

Dwarf planets meet the first two criteria but they orbit within areas shared with thousands of other objects, many of which exceed one hundred kilometres in width. Dwarf planet Ceres is the first-discovered (in 1801) and largest body within the asteroid belt between Mars and Jupiter. Pluto, Makemake and Haumea orbit within the icy Kuiper belt beyond Neptune, and Eris spends most of its time in the scattered disc beyond the Kuiper belt. Unofficial dwarf planets Quaoar and Orcus are also within the Kuiper belt, Gonggong has an orbit similar to that of Eris, while Sedna's orbit takes it within that of Eris and out to ten times beyond Eris's aphelion or farthest point. Hygiea, the tenth asteroid discovered (in 1849), is less than half the diameter of Ceres but it is nearly spherical in shape and possibly another dwarf planet candidate.

Astronomers use the term astronomical unit (AU) for describing Solar System distances. It is equal to Earth's average distance from the Sun, which is approximately 150 million kilometres. Sedna's orbit varies from 76 to 938 AU, and the Kuiper belt ranges from 30 to 50 AU.

Sedna is one of six or more large bodies with elongated orbits that have their perihelion, or closest point to the Sun, in the same quadrant of the Solar System. There is much debate among astronomers whether
this peculiar alignment is due to the gravitational influence of a body larger than Earth orbiting several hundred AU from the Sun; well-known now as Planet 9. The James Webb telescope and others that are just beginning operation or in construction are expected to discover many more objects beyond the Kuiper belt that could confirm or negate the existence of Planet 9.

How did all those bodies get out there in the first place? When the Sun was forming within a nebula of gas and dust 4.6 billion years ago, its increasing mass attracted more material that eventually formed a broad disc around its equator. Through collisions that material slowly built up into planets, with Saturn and especially Jupiter being strategically placed to hog most of material. Jupiter is more massive than all the other bodies orbiting the Sun combined. In clearing their orbits the larger planets' gravity threw most of the remaining bodies outward, possibly including some that were planet-size.

Whether we wind up with more dwarf planets than planets in the Solar System will be determined by the International Astronomical Union. I might be sentimental or perhaps the latter half of that, but I would like to see just two added to the current total. There is something about dwarfs and the number seven that feels familiar.

Dwarf planet Pluto
NASA/Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute/Alex Parker)

How Far is that Star?

Newspaper article by Curt Nason

A common remark made by people who have been under a truly dark sky is that the stars seem to be so close you could reach out and touch them. It has been nearly two centuries since astronomers discovered how far the nearest sparkling gems of the night sky really are.

Influential philosophers of ancient Greece proposed the stars to be on an outer crystalline sphere, surrounding nested spheres of the planets, Moon and Sun that were circling the earth. The development of the telescope four centuries ago revealed a sky of innumerable stars, changing our view of the universe and displacing the earth as its central point. Assuming that all stars were essentially the same and that a brighter star must be closer, its distance could be determined by seeing how its position changed relative to more distant stars when viewed from widespread locations.

This measurement is called the parallax method. By holding your thumb out at arm's length and viewing it with one eye shut and then the other, you notice it seemingly jumps from one spot on the wall to another. By measuring the angle from between your eyes to the two spots and knowing the distance between your eyes, through trigonometry you can calculate the distance to your outstretched thumb. Yes, I know you could more easily use measuring tape but it won't stretch to the stars.

Early attempts to determine stellar parallax were stymied by poor telescope optics and too short of a baseline, even across the earth. Eventually astronomers realized that the longest baseline could be obtained by comparing measurements taken six months apart, when the earth was on opposite sides of the Sun; a baseline of 300 million kilometres. In mid-eighteenth century London, telescope-maker John Dollond fashioned the first heliometer, an instrument designed to measure extremely small angles in the sky.

Using a heliometer made by master optician Joseph Fraunhofer, in 1837 German astronomer Friedrich Bessel began taking measurements of the star 61 Cygni to determine its parallax. Although barely visible from a dark-sky location, this star was suspected to be close because its position relative to other stars had been changing slowly and regularly. All stars are in motion, but for only the nearer ones would the motion be detectable over decades. Located above the southern wing of Cygnus the Swan, 61 Cygni is a binary star, two stars in mutual orbit travelling together. This meant that Bessel could measure the parallax of two stars against the more distant stars within the field of view.

Over the previous decade Bessel had spent five years verifying the precision of his heliometer, started but aborted parallax measurements because a comparison star was too faint to be seen regularly, and then he spent a few years working on other commitments including observations of Halley's Comet. Once the parallax project resumed he recorded hundreds of measurements over a year, each being an average of a dozen measurements over a night. In December 1938 Bessel published his results: 61 Cygni's tiny parallax angle indicated the star was 10.3 light years away. Within a couple of years other astronomers determined the distance to Vega and Alpha Centauri.

With improved equipment and space telescopes, we now know the distance to 61 Cygni is 11.4 light years (108 trillion kilometres, well out of reach). Using star position data amassed by the Gaia Space Observatory over twelve years, reasonably accurate distances for stars out to 40,000 light years can be calculated.

How can we determine the distance to farther objects such as galaxies? Ahh, that is another story, so stay tuned.

Friedrich Bessel
Painting by
Christian Albrecht Jensen

History Quiz Answers

Q. What president had the shortest term?
Shawn McHatten

Q. Who was the first newsletter editor?
Adrien Bordage

Q. Who was the first woman to be a member?
Francine Daigle

Q. What 3 brothers were members at the same time?
Andrew & Barry Leger, Peter Jensen

Q. Name all the locations where we held Centre meetings.
Moncton: U de Moncton, 2 High Schools
Fredericton: UNB, HJF Forestry Centre
Saint John: NB Tel, Rockwood Park, UNBSJ, Main Library, Seawood School
Miramichi: NBCC
Sackville: Mount A

Q. Name the RASC Presidents who visited.
Bob Garrison, Rajiv Gupta, Scott Young, James Edgar, Dave Lane, Mary Lou Whitehorne
Former Presidents: Randy Attwood, Damien Lemay, Roy Bishop, John Percy

Q. Who were Centre Presidents?
Francis LeBlanc(2001-2), Adrien Bordage (2003-4+), Shawn McHatten (2005-6), Paul Gray (2007-8), Peter Jensen (2009-10) Curt Nason (2011-14), June MacDonald (2015-24)

Q. Who has received RASC awards?
Ken Chilton Prize Ted Dunphy, Paul Gray, Don Kelly, Chris Weadick (2010); Holly Ayles (2012); Kathryn Gray (2014)
Service Award: Curt Nason (2010), Emma MacPhee (2023), June MacDonald (2024)
Qilak Award: Chris Curwin (2019)
Asteroid:
Curt Nason (2020: 10052 Nason)
Chris Curwin, Paul Owen, Mike Powell (2023: 20020 Mipach)

Q. What was the big event in 2009?
International Year of Astronomy
Canada's Goal: 1 million Galileo Moments
Our NB Goal: 23,000 (2.3% of population)
Canada: 1,931,439 GMs
RASC NB: ~7300 Science East: ~7300
Gemini Observatories: ~8000
Moncton Museum (Stars 'n Stuff): 13,000
NB total: ~36,000

Q. What was the big event in 2010?
RASC General Assembly at UNBF

Q. Who was the BBQ Entertainer?
Pat Kelly: Who Wants to be an Astronomer?

Q. Who was the Luncheon Speaker
David Levy: A Nightwatchman's Journey: My Life and Hard Times as a Comet Chaser

Q. Who was the Banquet Speaker?
Roy Bishop: The Tides of Fundy

Q. How many members did we start with?
26

Q. Can you name them?
Tom Anderson, Adrien Bordage, N Bowen, Chris Clayton, Francine Daigle, William Demond, Daniel Dupuis, Dr. Fernand Girouard. Yvon Hachey, Dr. Bob Hawkes, Donald Kelly, Mathieu Landry, Daniel Leblanc, Reginald Leblanc, Dr. Francis LeBlanc, Andrew Leger, Barry Leger, Shawn McHatten, Curt Nason, Edward O'Reilly, Christopher Ratcliffe, Jacques Richard, Jacques Robichaud, Dr. David Ross, Terry Sevenson, William Spragg

Q. How many members in total?
356

Q. What is it?
An observatory at Moncton High School. RASC NB donated $1000 toward its purchase. We held some meetings at the school and supported observing nights.

Outreach Reporting

Curt Nason

We appear to be maintaining our normal number of outreach events. School visits picked up in autumn. There is a significant drop in the number of people, and especially youth, attending events when compared with the past few years. The reason for all three is that there was no Science Week in the schools this spring. It consisted of online presentations seen in multiple classrooms simultaneously, as well as recorded viewings.

The biggest event to date in 2025 was the live feed of the partial solar eclipse on March 29 by the Sunday Night Astronomy Show crew with 51,668 viewers on Facebook and YouTube.

Youth group visits picked up over the summer with nine library reading club programs and four science camps. The star party at Mactaquac was revived this year after a covid hiatus with 225 attendees. Approximately 1300 people attended the four star parties at our Dark Sky Preserves. About 60 turned out for a late season event at our Urban Star Park, the sole event held there for the year,

When you do perform outreach, please record the event in our monthly spreadsheet. Contact me if you need assistance. French and English Star Finders and Moon Guides are available for handouts.

RASC NB Outreach Events and Handouts

Year	# of Events	People At Events	Live Feed	Youth	Star Finders English	Star Finders French	Moon Guides English	Moon Guides French	Volunteer Hours
2016	219	9498			1984	115	2290	87	988
2017	248	9951	8441		2276	162	2262	131	1937
2018	187	7289	37,922	>1300	1788	170	1635	79	1355
2019	240	7036	46,675	2997	1320	216	1520	213	1950
2020	171	1859	161,688	954	817	22	636	125	1079
2021	131	731	60,240	565	108	0	46	0	1160
2022	173	12,952	63,122	10,192	586	60	472	106	1809
2023	168	23,419	9787	20,612	556	223	452	110	1789
2024	186	12,362	12,304	6805	352	92	506	87	2331
2025	158	4869	61,018	2506	607	167	808	90	2139

Types of Outreach Events

Year	Presentation	Night Observing	Day Observing	Youth Group	School Talks	Exhibition	Observ./ Planet'm
2016	31	55	39	19	54	11	10
2017	61	89	22	19	50	6	1
2018	50	80	13	18	20	5	1
2019	73	94	10	22	36	5	0
2020	86	43	5	8	29	0	0
2021	65	48	6	1	11	0	0
2022	72	52	6	4	34	4	0
2023	60	13	8	14	69	4	0
2024	101	23	8	15	33	6	0
2025	69	34	7	21	26	1	0