

Vol. 24 Issue 3
Summer 2023

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



Two Views of North America Nebula ← François Thériault Paul Owen →



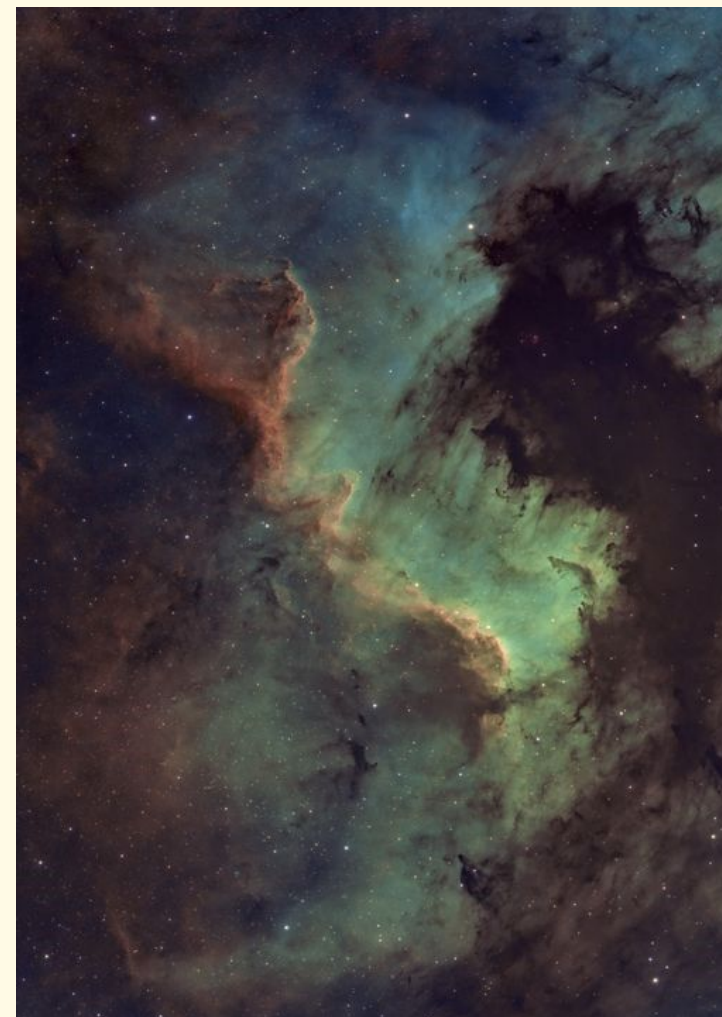
North America Nebula (NGC 7000)

François

SkyWatcher EVOGuide 50 ED
f/4.8 on a Celestron CGEM.
Software: NINA / PHD2 / Pix-
insight / Photoshop
Taken June 22 and 23, 2023
H α : 94 x 120 s = 3 h 8 min
OIII: 68 x 120 s = 2 h 16 min
SII: 68 x 180 s = 3 h 24 min
Total = 8 h 48 min
Genesis Observatory, Moncton

Paul

Stellarvue SVT105 triplet f/5.6
(reducer 0.8x) on a SkyWatcher
EQ6R Camera: ASI 2600 mm,
Optolong 36mm H α , OIII, SII
filters
Guiding: Orion Star Shoot with
50 mm guide scope
25 x 300 s on all filters
Software:
Acquisition: Sequence Genera-
tor Pro
Processing: PixInsight



Great Wall at bottom of NGC 7000

SRAC/RASC Centre du NB Centre
Inc.
<https://rascnb.ca>
<https://www.facebook.com/RASC.NB>

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June MacDonald (Acting)

1st Vice-President/-Président
June MacDonald

2nd Vice-President/-Président
Vacant

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Emma MacPhee

Treasurer/Trésorier
Emma MacPhee

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Mary King Alan Legere
François Thériault Chris Weadick

National Council Representative
François Thériault

LP Abatement: Vacant
Star Parties: Yvon Hachey, Paul Owen
Outreach: Curt Nason
Website: Chris Weadick/Trevor Johnson
Social Media: Emma MacPhee
Equipment: Chris Weadick
Library: Ted Dunphy
Newsletter Editor: Curt Nason

Centre News and Outlook

Meetings

September 12 (Presentations)
September 16 (Business)
October 21 Annual Meeting (Business—
Elections and Presentations)
November 18 (Business)
November 22 (Presentations)

Star Parties 2023

Fundy: September 8-9
Kouchibouguac Fall Fest: Sept 22-23

Irving Nature Park

Fall Astronomy Day: Sept 22 (23)
Partial Solar Eclipse: Oct 14
Observe the Moon Night: October 21 (22)

Orbit: Around the Centre *What sparked your interest in astronomy?*

Mary King

Observing the 2017 "Great American
Eclipse" in Rexburg, Idaho....two minutes
plus of totality.

Curt Nason

Constellations and pictures of their figures
from mythology in books. Orion and Taurus
facing off is forever etched in memory.

Observatory at U de M Shippagan Campus Jacques Robichaud

During the last fundraising campaign at Uni-
versité de Moncton, one of the projects re-
tained by the Shippagan Campus was the
installation of an astronomical observatory.
We now see the results of the efforts that
were put in the project, since on the 13th of
December 2022 the observatory was hoisted
on top of the building.

The observatory is a 14' Ash Dome that will
host a 16" Meade Schmidt-Cassegrain. The
building in the photo faces south.

Sometime next year, when we reach "first
light" as they say, I plan to write more details
about the observatory and how it came to be.



Congratulations Emma! RASC Service Awardee

The Service Award, established in 1959, is awarded to members of the RASC who have made significant contributions at either the National and/or Centre levels.

Following is the nomination made by Centre President June MacDonald to the RASC Awards Committee in January.

Emma MacPhee has been a member of RASC N.B. since November 2001, shortly after it was established originally as RASC Moncton Centre. Since joining, she has been an important, dedicated, hard-working and integral part of the Centre.

She has been a Council member since 2003, holding numerous positions on the Council:

- Secretary 2003-2006
 - Newsletter Editor 2007
 - Treasurer 2007-2010
 - Treasurer and general committee member for the N.B. Centre GA/AGM in 2010
 - Councillor 2011
 - 2VP in 2012
 - Treasurer 2012 interim
 - Treasurer 2013 to present
 - National Observing Committee member
 - RASC N.B. Inc. Observing Chair
 - Secretary-Treasurer 2020 to present
- Frequent speaker at meetings
- Outreach: about 100 events since 2016 (mostly courses for seniors, Guides, public observing at Moncton HS, Mad Science summer camp)

- Prior to 2016, participated in numerous observing events held by RASC N.B. annually (star parties, special events)
- Earned certificates for the Explore the Universe, Messier and Finest NGC programs, now working on the Double Star and Lunar Program certificates

Emma has contributed in many ways to the growth and well-being of our Centre. She has been supportive of and involved in Centre and member initiatives, projects, and events. She was part of the committee for the application for charitable status from 2019-2022. Emma has helped mentor new members in their observing as well as recruiting new members to the Centre. She has also been involved in planning for the future of RASC N.B. Inc.



Over the years, Emma has demonstrated her commitment and dedication to RASC N.B. in small, quiet, unsung ways. Supporting new members in their efforts, offering ideas for future plans, events, problem-solving, observing, etc. She has contributed much to RASC N.B. and so we are proud to nominate her for the well-deserved RASC Service Award.



Emma receiving her EtU certificate from president Adrien Bordage (c. 2004) and a raffle win from treasurer Charles Doucet in 2005.

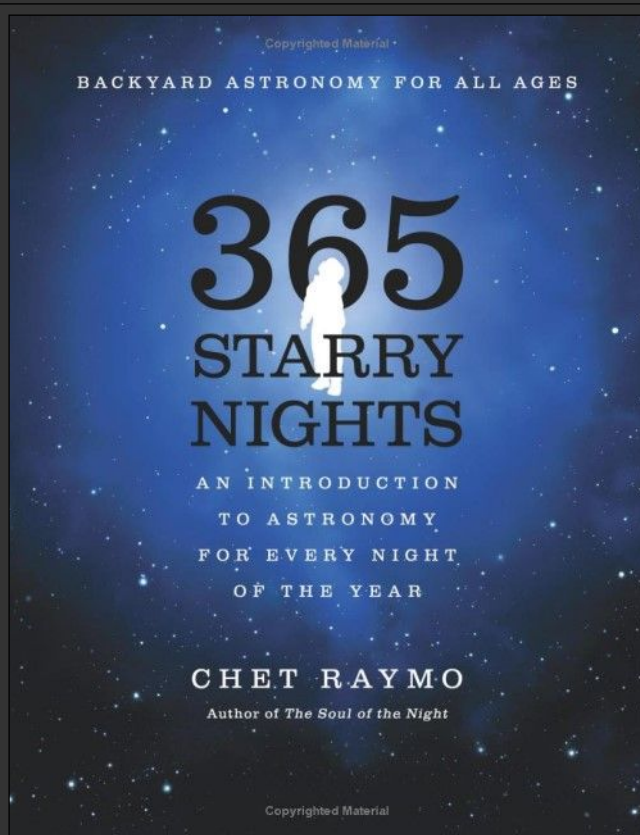


Book Review of
365 Starry Nights
Rosanna Armstrong

I have a new book! For anyone who knows me that statement is guaranteed to bring a chuckle. Of course I have a new book, probably three, on almost every week of the year. If I were the third little pig my house would be built out of books, and when the wolf came puffing I would likely hand him a copy of *Breath Taking* by pulmonologist Michael Stephen and a library card.

The new book is actually not a new book in that it was first copyrighted in 1982 and my new copy is a 1990 publication. Somehow this edition escaped my radar all these years. It is titled *365 Starry Nights: An Introduction to Astronomy for Every Night of the Year* by Chet Raymo (Simon & Schuster).

This large book, 8.5" x 11" and 240 pages, is printed on almost colouring book type paper. Every page has illustrations and charts in black and white. Although likely not intended there is room to journal your own observations to match the dates. There are two days to every page. My fervent wish is to eventually have observed everything the author has written about and to make a note of it on each page. Considering the yearly percentage of cloudy skies this sky diary will last for years, maybe longer than I will! My grandkids may colour the illustrations if they wish or maybe I will on rainy evenings.



The simple yet substantial text is full of critical information and helpful hints on how to observe the stars, describe their positions, calculate their age, brightness, distance and more. The book also has a map of the night sky looking south to start each month and a Glossary of Terms. You can start anywhere on any day. Since I received the book on August 10 that is the day I have started. I will jot down the Starlinks and ten meteors I saw on August 11; a great start and one could say the book arrived at just the perfect time. Any time is a perfect time for a book to arrive on my doorstep.

Chet Raymo, born 1936, is a noted writer, educator and naturalist. He is Professor Emeritus of Physics at Stonehill College in Easton, Massachusetts. His weekly newspaper column "Science Musings" appeared in the Boston Globe for 20 years.

Interestingly, in the Introduction Raymo states, "Let it be said that although I have been trained as a scientist and have taught courses in descriptive astronomy, my interest in the sky is primarily esthetic rather than scientific. If I were to be exiled on a desert island and allowed to take the traditional handful of books, they would not be works of science but of poetry and natural history." This prejudice is revealed in the title of this book, which refers not to stars but to starry nights.

The book, however, is actually filled with science which he justifies with this thought: "Knowledge is a prerequisite for love. Knowing the night sky is a different thing from knowing, say, the mechanism of a clock or a computer. The clock or computer is finite. The night sky is more like a human being, inexhaustibly complex and finally beyond reach. Knowledge only whets our interest and increases our wonder. The selection of things to be included in this book is entirely personal."

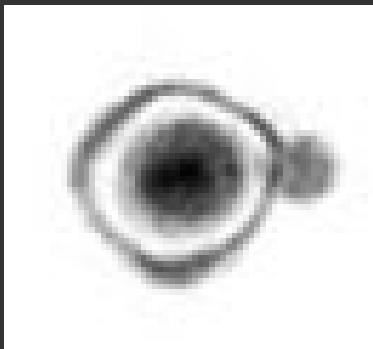
To my mind, that last statement just makes the book all that much more interesting to explore.

Splitting Zeta Herculis

Len Larkin

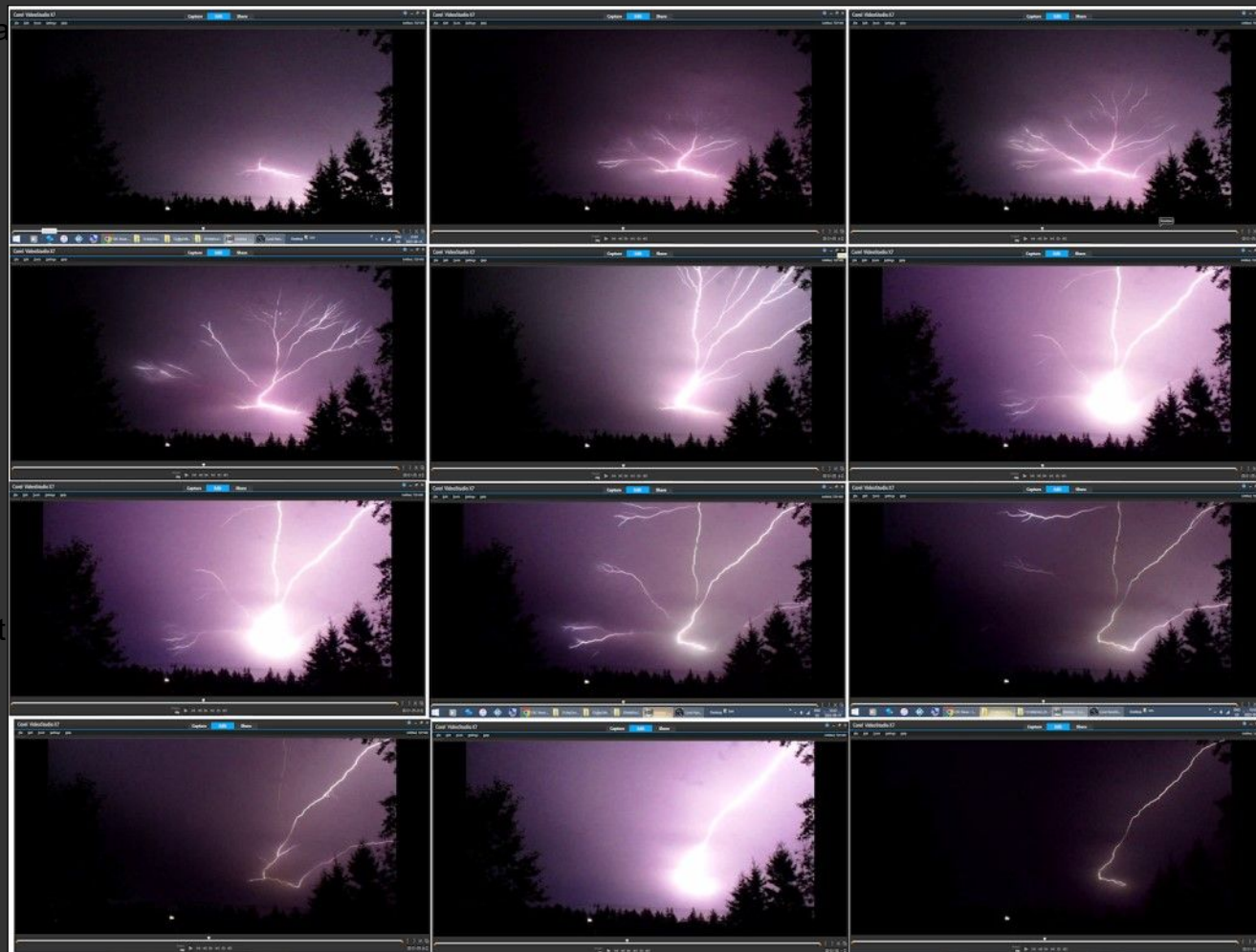
I had tangled with Zeta Her before, using a 100 mm refractor. Challenging it was, because the secondary can get lost in the diffraction ring. Recently, on July 12, a 180 mm Maksutov-Cassegrain was readied for the showdown but lower powers showed the image a busy mess. Higher power (340x) suggested it was settling down. Even though the diffraction ring was distorting out past the dimmer star at times, the secondary looked good enough for measuring, so I commenced the six measures I usually do (at 430x).

On the tail end of measures seeing really got good (~4/5). The diffraction ring became several thin arcs and the blue-grey secondary was outside it, just touching (perched, I called it, as east was up in my view). What an amazing view! Hopefully, the sketch shows something of that as it was an absolute joy to finish the measurements with such a crisp view.



Delightful Compensation for a Cloudy Perseid Night

Len Larkin



On the evening of August 13, Saint John and the surrounding areas were treated to a spectacular thunderstorm with near-constant lightning flashes for close to an hour. Above is a progression of a dozen stills from a one-second video captured by Len Larkin.

Mental Mutterings
observing report by Yolanda Kippers
(with apologies to A.A. Milne)

"Let's go down to the river bank," said Pooh. "I heard that Mars is going to visit the Beehive. I hope he doesn't take all of the honey." This was on a Thursday, the first day of June.

"Isn't it time to go to bed?" asked Piglet.

"It's still early. We can rest on the rocks. I'll take a pad to sit on."

It had been a warm day. Pooh put on a jacket but did not think about gloves or a hat. A cool breeze blew off the water.

"Those clouds are making a lovely sunset," squealed Piglet.

"Oh, bother," sighed Pooh, "We don't want a beautiful sunset this evening. Those clouds are all in the direction of the Beehive." Pooh was worried.

"I have an idea," offered Tigger. "We can go down to the Rock House. The stones will be warmed by the Sun and we will be sheltered from the wind. It also gives a good view to the west."

"I still don't see anything but blue sky above and dark clouds on the horizon. How will we ever see if Mars is taking any honey from the hive?" questioned Piglet.

"We have to wait until it gets darker but we should be able to easily see Venus by now," explained Pooh. "Venus must be behind the clouds. It's a cozy spot here and we'll be patient." Pooh did wish for gloves and more padding.

"We've already been waiting for hours," lamented Eeyore. They had been there for 30 minutes. "Those clouds are getting bigger and darker. Maybe we should just go home."

Pooh was disappointed, thinking about the honey.

"We could wait a few more minutes," advised Owl. "Those clouds do keep moving. Maybe we will see something between the gaps."

Just then Piglet got very excited. "Look! There's Venus!"

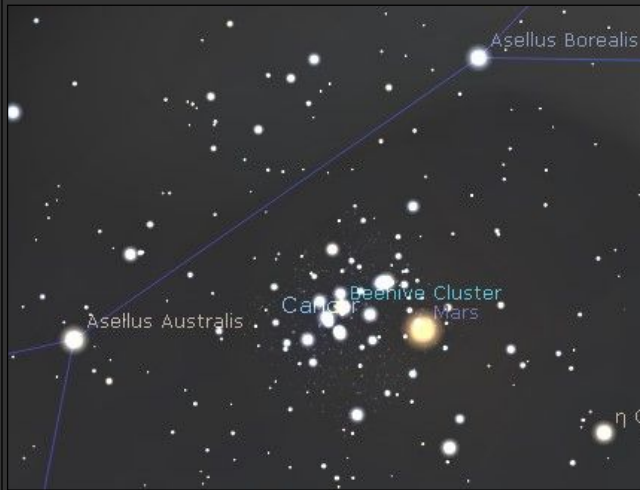
Pooh was relieved. "Mars will be to the left." Pooh used binos to look for it. "No, I don't see it."

"I just see dark clouds, even Venus has disappeared," sighed Eeyore.

"I say we keep trying," said Owl. "It's not too cold and these rocks are still warm. Next time we should bring more padding. There are still a few breaks in the clouds and we may be lucky. Don't give up now." Tigger agreed with Owl.

For another hour, Pooh kept looking, trying not to be discouraged. This hour had 15 minutes. "Ahh! I see Mars now...but I don't see any bees."

"Maybe it's not dark enough yet," encouraged Owl.



"Those clouds keep getting in the way," said Eeyore gloomily.

"Now I see two stars with Mars in the middle. That would be the Northern Donkey and the Southern Donkey," Pooh explained.

"Are they your relations, Eeyore?" joked Tigger.

Eeyore paused. "I don't think I have any constellations."

"But, I still don't see any bees," worried Pooh. Another 15-minute hour went by. Pooh was still thinking about honey.

"I'm sure the bees are there," said Owl. "Keep trying."

Pooh waited a bit longer as the clouds got bigger and darker and covered more of the sky. Venus was no longer visible and hadn't been for a while.

Then, "I can see them!" Pooh whispered excitedly. "Not as many as a few days ago, but I see them! Just to the left of Mars. They look like an arrow pointing away from the Red Planet. If we can wait a bit longer, more bees will show up." Pooh tried for a few more minutes hoping that more bees would come into view.

"Too late," said Eeyore. "Just as I thought. Now there are only clouds."

"Yes, but we didn't give up. We saw Mars in the Beehive," said Tigger. "Never give up."

Then they walked up the hill to the Half Acre Wood. Pooh could hardly wait to tell Christopher Robin. "And, tomorrow the bees will be to the right of Mars. We can try again."

"It's supposed to rain," muttered Eeyore.

"Maybe it won't," said Tigger, "but we do need some rain."

The RASC NB AstroVerse

Emma MacPhee

Night Sky

Time to contemplate
Take a break
Stay awake
Bring your chair
Feel the night air
Keep a look out for a bear
Focus on a star
It is quite far
Time stands still
On top of a hill
Don't need any skill
To look at the colors
Bring your star maps
Who needs a nap
You are here to relax
And feel being part of the universe.

Don Kelly

Ptolemy wrote a book called the Almagest.
He placed 48 constellations on his list.
The one he called Argo
capsized with its cargo.
Three new ones sailed from the mist!

Some say, on the back of the Moon
there's a feature that's shaped like a loon.
I will, on a dare,
take a journey up there
to determine if that's really true.

Yolanda Kippers

The Gift

In the times before one BCE,
In the skies the ancients did see
An odd light that moved through the night.
Eighteen-sixty-two 'twas "discovered",
When once more in the skies it hovered.
Swift and Tuttle would claim their right.

The great minds then brought out their
books,
Calculating just what it took
To predict its return to our night -
"Every hundred'n, thirty-three years."
The comet should then re-appear;
To mortal observers' delight.

Alas, by twenty-one, twenty-six,
We will not be part of that mix.
Take heart. We can yearly delight
In the wonderful, celestial gift
Left behind by Tuttle and Swift;
Heaven-sent to adorn our night.

As that comet rounds our great star,
Its tail gets scattered quite far,
Leaving a trail of debris.
Then each August we must
Pass through this great dust;
And, Oh, what a great sight we can see!

As dust collides with atmosphere,
The stars then seem to shed bright tears,
As frictions cause great streaks of light.
Meteoroids vary in size;
We see them as they vapourize,
As meteors fall through the night.

Be well prepared; keep in-the-know:
A prolific event, a very good show;
Over many nights with many per hour,
They're easy to see; they're well-placed.
Enjoy this gift with which we're graced:
The Perseid meteor shower.

Don Kelly

The Sunday Night Astronomy Show
is a place sky enthusiasts should go.
Be sure to tune in
it's on Channel 10
Three hosts very much in the know!

Ted's Toon

Ted Dunphy

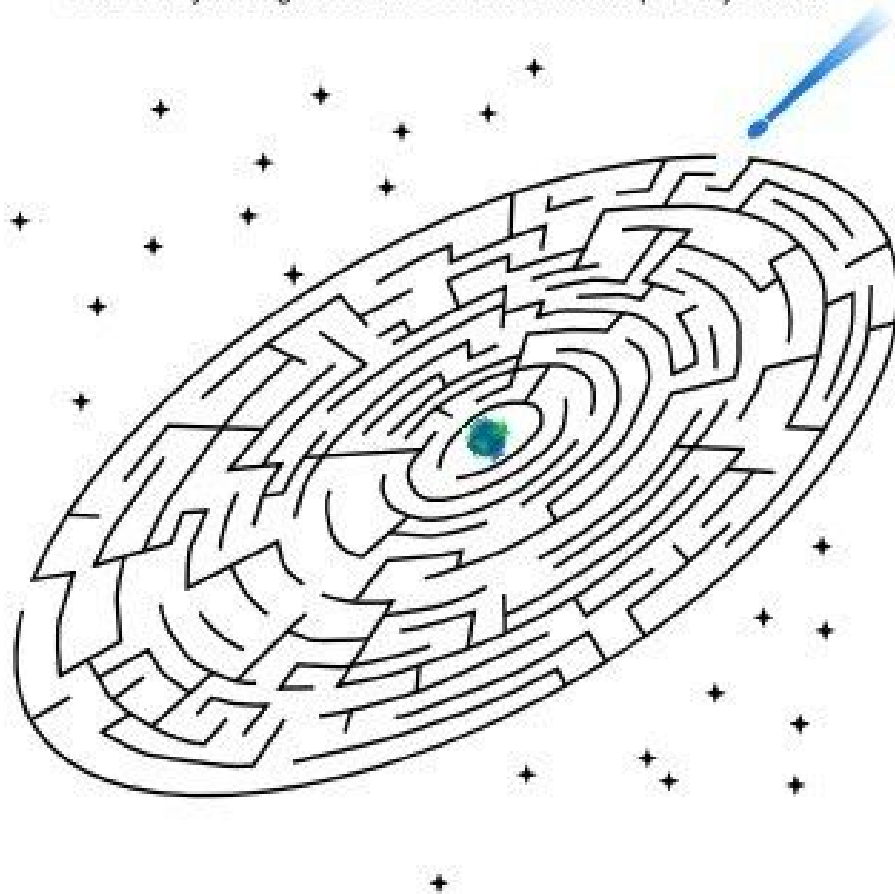
In September 1793 Charles Messier discovered a comet.
As in the past he called upon his mathematician friend,
Jean - Bochart de Saron to calculate it's orbit.
Jean was imprisoned during the french revolution and
awaiting the Guillotine, which fell in March of 1794





Comets are like big dirty snowballs, the kind you like to throw at your brother. They come from the outer edges of our solar system and when they get closer to the sun they begin to melt and burp and belch off gases! Creating long tails.

Find a way through the maze for the comet to pass by Earth.



Welcome to KIDS SPACE, an initiative of Master Designer and RASC NB Librarian Ted Dunphy. He suggests “you print this page for your children, grandchildren or neighbourhood hooligans.” A full-page PDF is available from the editor if you prefer.

Ted is hoping other members will send in interesting things for kids to do associated with astronomy. Please channel your childhood or consult a kid to come up with an astronomical activity for the next and future issues of Horizon.



SH2-125 (IC 5146) - Cocoon Nebula in Cygnus

*Cocoon Nebula (IC5146) and Sharpless 2-125
in Cygnus
Image by François Thériault*

What's Up for Autumn

Curt Nason

The highlights for the months of September to November are a challenging lunar occultation of Mars, a partial solar eclipse and Jupiter at opposition.

Sun Solar Cycle 25 continues to be active. The Autumnal Equinox occurs at 03:30 on September 23. A partial solar eclipse occurs October 14 (10% obscuration, 19% diameter) from ~13:33 to 15:35.

Moon New Moon dates are September 14, October 14, and November 13. The full Moon rises on October 28 ten minutes after the end of the umbral portion of a partial eclipse. The day-old Moon occults Antares just before sunset on November 14 but they set before the reappearance. Challenge!

Mercury reaches inferior conjunction September 6, and has its best morning apparition of the year when it reaches greatest W elongation September 22. It is at superior conjunction October 20, returning brightly to the evening sky toward mid-November but it is low in the southwest in Scorpius.

Venus dominates the morning sky, at its brightest September 19 at mag. -4.8. It reaches greatest W elongation October 23, and is 1° south of the waning crescent Moon on the morning of November 9.

Mars is essentially out of sight, reaching conjunction on November 18. It provides an observing challenge September 16 at 16:40 when it is occulted briefly by a 17-hour Moon.

Jupiter begins retrograde motion in early September and is at opposition in Aries on November 3, shining at mag. -2.9. It will be well-placed for mid-to-late evening observing with earlier sunsets.

Saturn begins this period just past opposition in Aquarius, with its rings open about 8°. The ring tilt will increase by 2° over the season. Saturn is stationary November 4, resuming prograde motion thereafter.

Uranus is at opposition in southeastern Aries on November 13. At mag. 5.6, try to see it naked-eye from a dark location.

Neptune reaches opposition in southwestern Pisces on September 19.

Comet This could be a good season for comets. Recently discovered C/2023 P1 Nishimura was pegged around mag. 10 shortly after its discovery in Gemini on August 11. It could brighten significantly as it approaches a close perihelion on September 17. C/2021 T4 Lemmon and C/2023 E1 ATLAS might still be within reach September 1; C/2020 V2 ZTF and 103P/ Hartley will be brightening, and C/2023 A3 Tsuchinshan-ATLAS could reach binocular or naked-eye brightness in October.

Meteor Showers The Orionids peak around the first quarter Moon on October 21/22. The broad South Taurid and North Taurid showers peak between the third quarter and new Moon periods in the second week of November. The Leonids peak on November 18, two days before first quarter.

Zodiacal Light The high angle of the ecliptic on autumn mornings make the dusty wedge of zodiacal light visible after new Moon along the ecliptic in the east. Look for it during the two-week periods starting in mid-September and mid-October.



IC 1396 - Elephant Trunk Nebula

*Two more images by
François Thériault*



Sadr and IC 1318 Butterfly Nebula in Cygnus

Centre Outreach

Since the Spring Horizon came out we have started the star party and public observing season. Both the Kouchibouguac star party in June and the Mount Carleton star party in August were hampered by rain.

At Kouchibouguac, eight astronomers were on hand and two presentations were given to 40 people. Mount Carleton hosted three astronomers and 99 people were entertained with two days of solar observing and a presentation. Neither location had a clear night.

We had better luck with clear skies for single nights at St. Martins in July and the Irving Nature Park in August. Old Home Week observing in St. Martins saw 40 people getting views through three telescopes. There were 16 astronomers at the Irving Nature Park in Saint John for Perseids, Saturn and deep sky observing, and a record number of 556 people attended. The Park Manager was positioned at the entrance gate counting people as they arrived.

Other notable events were an online presentation by Chris Curwin for 352 elementary students and teachers in June, and an exhibition at the Cruise Terminal in Saint John where an estimated 180 people, mostly students, visited our LPA / Eclipse 2024 table. This was for the annual and international Envirothon competition, which was held at Mount Allison University this year. ScienceEast hosted the exhibition.

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 |
|------|-------------|------------------|-----------|--------|----------------------|---------------------|---------------------|--------------------|-----------------|
| 2014 | 104 | 4843 | | | 1716 | 241 | 1378 | 199 | |
| 2015 | 114 | 7262 | | | 2106 | 244 | 2568 | 156 | |
| 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 | 130 | 21,986 | 8471 | 19,958 | 309 | 122 | 293 | 10 | 1299 |

0

| Year | Presentation | Night Observing | Day Observing | Youth Group | School Talks | Exhibition | Observ./ Planet'm |
|------|--------------|-----------------|---------------|-------------|--------------|------------|-------------------|
| 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 | 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 | 44 | 7 | 7 | 12 | 58 | 2 | 0 |

Outreach Shots



↑ *Kouchibouguac Star Party* ↓
Submitted by *M King*



↑ *Envirothon*
Submitted by *R Armstrong*



↑ *Irving Nature Park* ↓
Submitted by *P Owen*



↑ *Mount Carleton Star Party* ↓
Submitted by *Y Hachey*

