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Summer 2026

HORIZON

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

August 12 Partial Solar Eclipse

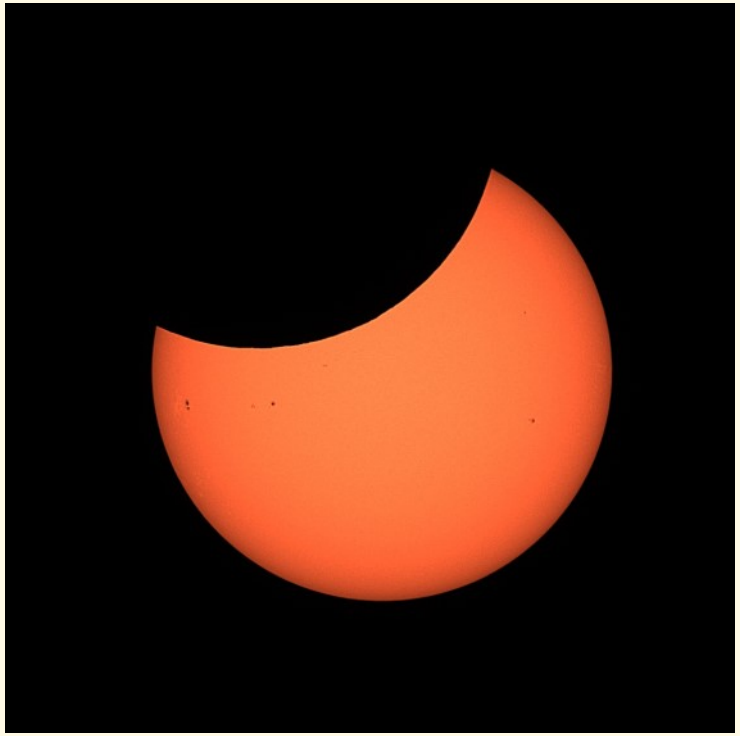

Photo by Arash Ahmadi

Mactaquac COW Star Party

Photo by Mike Powell

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Centre News

Business Meetings

Third Saturday in some months

Centre Presentation Meetings

Third-week evening of most months

Star Parties 2026

Fundy September 4-5
Kouchibouguac September 18-19
Irving Nature Park October 16 (17)

Our membership is at 82, thanks and a big welcome to new members since our previous newsletter: Pat Phelan, Cathy Adams, Maria DiCarlo, and Mike Powell (returnee). If you look at our outreach numbers on Page 9 you will see a very large value in the Live Feed column for 2026. That is due to Chris Curwin and Mike Powell participating in a worldwide stream of the partial eclipse through *Time and Date*, attracting 521,000 viewers. In all we had 19 people participating in 7 eclipse-viewing events around the province on August 12. Well done everyone! We purchased 1200 eclipse glasses prior to the event, outreach money well spent.

Centre elections are coming up in October and June MacDonald is beating the bushes for volunteers to stand or sit for a position. It really is not all that-consuming and experience is not required. Please, be involved so that RASC NB will continue to bring astronomy to New Brunswick (and the world).

Outreaching with the Gods

Yolanda Kippers

Urania vowed an event to raise hopes;
So, astronomers decided to set up their scopes.
They invited the mortals to come to the park:
First, in the daytime – then, after dark.

Ephemerides, Cassandra - all did tell us
When Luna would cover part of Helios.
As the astronomers drew in the crowds,
Hera, for spite and hype, blew in the clouds.

'Twixt inhale and exhale 'twas a brief space
Back to the eyepiece the mortals would race.
Elpis, in action gave plenty of hope;
By day's end, forty did come to the scopes.

Returning at dusk in hopes of a shower
(Many were predicted, hour-by-hour)
Perseus, the host was looking quite grim –
Hera had been busy nursing her whim.

Then out in the north some saw a bright flash!
"Oohs" and "aahs" were heard from the mash.
Again and again the flashes appeared;
Off in the distance, they never quite neared.

Not alone, was Hera with her foul tricks;
Zeus sent the lightning, making sassy kicks.
Ever undaunted, the mortals dropped by –
Thirty-five souls took a look at the sky.

August 12 Partial Solar Eclipse

by Alan Hindle

I observed most of the partial solar eclipse and took a few images to share with you, just in case you missed it. I set myself up in our yard in Perth-Andover with eclipse glasses, shielded binoculars, and our Tele Vue TV-85 refractor. The telescope was not guided, using a manual alt-az head on a wooden tripod.

The eclipse started at about 1:50 pm, local time, with maximum obscuration at 2:51 and it ended at 3:49. Maximum coverage of the Sun was only around 29% so it certainly wasn't as spectacular as totality on April 08, 2024. Even at maximum there was no noticeable dimming of the light. If you didn't know it was going to happen ahead of time, you wouldn't even notice it.

I took this first image at 2:12 pm. This is a white light image using an APM Herschel prism for a solar filter. All three of the included images were taken using the afocal photographic method. I used my iPhone 11, shooting through a Tele Vue 17.3mm Delos eyepiece. The phone was held in place on the eyepiece with a Tele Vue PhoneMate adapter.

This image shows the Moon on its way in, coming in from the top right. I did some simple photo editing on the iPad and corrected the image orientation, so north is up, south is down, east is left and west is to the right. There are a few sunspots on the solar surface, 4508, 4507 and 4503 as seen from left to right. 4508 has a widening light bridge and is starting to look like two sunspots. There is some darkening visible on the lower part of the Sun which is a passing cloud. It was partially cloudy when the eclipse started, and the sky was fully overcast before it ended. And so, viewing and taking pictures was sporadic, waiting for gaps in the clouds.

The next couple of images were taken with the TV-85 dressed up with a Lunt LS60FHa front-mounted hydrogen-alpha etalon and a Lunt B1200 12 mm blocking filter. I used the same eyepiece and iPhone setup.

This image was taken at 2:47 pm, just a few minutes before maximum coverage. As you can see, there's a lot more Sun than Moon in this partial eclipse. For this image I adjusted the etalon and the exposure to highlight the solar prominences that were located on the east and west limbs, at around 9 and 3 o'clock on the perimeter. With these settings there is very little surface and disc detail to be seen.

This last image was taken at 2:56 pm, about five minutes after maximum. I adjusted the etalon and exposure to highlight surface and disc details, which reduced detail in the prominences on the edges. Sunspots are again visible. There are also areas of bright plages which can be seen in the vicinity of the sunspots and in other locations. There are also numerous filaments to be seen on the disc. And, of course, the Moon is there too! There is a bright spot on the Moon which is a photographic artifact from the camera and/or lenses.

When talking about details on the Sun there are a couple things to know. White light filters, like a Herschel prism or solar film, show the photosphere and do not normally show solar prominences. Hydrogen-alpha (Hα) filters show the chromosphere and solar prominences.

Solar prominences and filaments are basically the same thing. The difference is your point of view (literally) and the background that they are seen against. Prominences are solar materials lifted by electromagnetic forces seen above the limb of the Sun with space as the background. Filaments look like squiggly dark lines and are the same thing seen 'looking down' on them with the disc of the Sun as a background.

Faculae are seen on the photosphere as bright white areas in coloured images, normally only visible near the limb of the Sun. Plage is a similar detail seen on the chromosphere in the Hydrogen-alpha and Calcium wavelengths. Plages can be seen on any part of the Solar disc. Both faculae and plages are structures caused by strong electromagnetic activity near the surface of the Sun.

Very shortly after the last image was taken the sky closed and we didn't get to see much more. I hope you had a chance to see a bit of the Moon and Sun at play.

Eclipse Outreach in Moncton

Photo and text by Emma MacPhee

An event organized by PPT for the seniors in my building. I had a total of 85 people attending! It was very busy afternoon for me, and folks appreciated the chance to view the partial eclipse. As we know, the Wow's were nice to hear, but the most memorable comment I heard was this elderly lady saying she is calling her son who lives in Western Canada that she got to see the partial eclipse. She was very happy to get the chance.

What's Up for Autumn

Curt Nason

The highlight for the months of September to November will be occultations of Jupiter in September and October.

The **Sun** reaches the autumnal equinox at 21:05 on September 22. Although solar activity is waning we could be treated to aurorae around this time due to the Russell-McPherron effect.

New **Moon** dates are September 11, October 10 and November 9.

Mercury begins a difficult apparition in mid-September and reaches greatest eastern elongation on October 12 without being more than 7˚ altitude at sunset. It has a close conjunction with Spica on September 25/26, and it is at inferior conjunction on November 4. Mercury has a favourable morning apparition that month, reaching greatest western elongation on November 21.

Venus is at its greatest illuminated extent on September 18 but it sits only 7˚ above the southwest horizon at sunset. After inferior conjunction on October 24 it has a scenic meet-up with Spica and the crescent Moon on November 7 and reaches greatest illuminated extent on November 29.

Mars begins September rising around 02:00 in Gemini, and on October 11 it is within the Beehive cluster in Cancer. With the time change on November 1 it will be rising around midnight, and it has a close conjunction with Jupiter on November 15.

Jupiter's first lunar occultation begins at 15:54 on September 8 with the waning crescent Moon about 27˚ high In the west, and the planet reappears at 16:51. The second occurs begins at 05:33 on October 6 with the slim waning crescent 28˚ high in the east. Reappearance occurs an hour later with the Moon 10˚ higher. Times can vary slightly with location. It takes a little more than a minute for Jupiter to disappear and reappear, and occultations of its moons are a bonus.

Saturn is at opposition in Pisces on October 4 with its rings open about 8˚ to the south.

Uranus reaches its first stationary point in Taurus on September 10 and it is at opposition on November 25.

Neptune is at opposition on September 26 between Saturn and the Circlet of Pisces.

Comet Hoping 220P/McNaught has another outburst soon.

Meteor Showers The Orionids peak October 21 with a waxing gibbous Moon. The South Taurids peak November 5 and the North Taurids a week later, with the new Moon in between, The Leonids peak November 17/18 with the Moon at first quarter.

Zodiacal light might be seen in the east an hour or two before sunrise for two-weeks beginning September 9 and October 8.

Reflections of the COW Mactaquac Star Party

Ted Dunphy

Friday afternoon brought clouds and fretful astronomers. But as twilight fell, the skies cleared, the astronomers mellowed under transparent skies. After the presentation on the many guises of the Big Dipper, observing began in earnest. A zodiac of astronomers welcomed approximately 75 adults and 35 children to peek into the past through their telescopes. The scopes were kept busy, teleporting photons into budding images till well after the witching hour.

On Saturday afternoon clouds again shrouded the Sun, allowing only fleeting moments to catch a prominence or sunspot. Saturday evening though brought burgers and jovial conversation. Later as we packed up and said our goodbyes, Old Jove sent rain to accompany us on our voyages home. But a good time was had by all.

A Dam Fine Star Party

Photo submitted by Ted Dunphy

Maria DiCarlo

This was my first star party since joining the WBJ club in 2024. I was surprised and especially enjoyed the opportunity to see just how much creativity and variety is involved in each person's set up/approach, and how cool it made the 'ecosystem' of our group that the public could experience. This was a valuable takeaway that was apparent before it even got dark (thank you clear skies!).

My point here is, as a beginner in any world (in this instance, for me, it is telescope ownership and still learning what it means, practically and personally, to be an observer), I welcome and appreciate the AHA moments when an idea that there's 'one way to do things' and 'how to gain experience' is demystified and the imposter monster is staved. As a hands-on learner who can be a bit shy with new things, I'm so thankful to the members and mentors in WBJ/RASC NB who have been so welcoming and encouraging. I easily could have left my new-to-me telescope at home and decided I was supposed to 'know how to use it enough' or a certain way before ever bringing it to a star party, or an expectation to share with others.

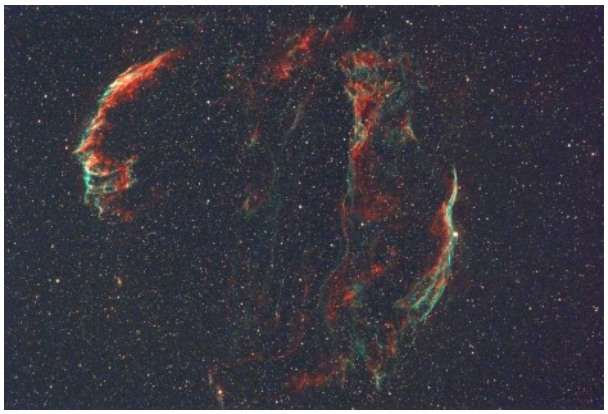
Challenging ourselves like that may be one of the best ways to practice, or burst the bubble of whatever is holding us back from deciding we are welcome or feeling overwhelmed by a new process. I had a lot of questions and assistance that night that helped me make more progress than I had from a few months of intermittent self-teaching. Since then, I've done some of my own observing and I'm finding what I think is the beginning of my style and zone of interest. I'm still processing and reflecting on the experience and all that it has inspired. I'm excited that as I keep going I'll get to return the favour.

<u>A few other notes</u>

- Awesome to see people of all ages, including families and intergenerational enthusiasm. Some kids influencing their parents, and vice versa.
- Amazed to hear that some people had been planning their vacations and camping trips around this star party. I think someone even said it was their 12th or 13th time coming!
- I really enjoyed seeing my first globular cluster (M13) through Ted's telescope, and we stayed up late enough that it was hardly a 'big deal' to turn over to see Saturn and Titan rising up above the trees. A sight I hadn't seen since high school, and reminiscing on that 'wow, it's real' feeling I had.
- Stephan's astrophotography setup was fascinating and clearly a labour of many years of effort and evolution.
- Again, the variety of advanced technology and simplicity between setups and personal observing styles and preferences was fun and interesting to me.
- I have yet to tire from the span of topics that come up in conversations with people who share an interest in astronomy. I really loved the chance to see and talk with everybody, especially the ones I've come to spend my monthly Tuesdays with at WBJ. It was great to be together under the sky, rather than a roof, for the night. This won't be my last star party, and I'm really glad I went!

Say hello to Earl.
RASC NB Star Party Mascot
and alter-ego of Mike Powell

Images from the COW



Above: Veil Nebula and Elephant Trunk Nebula by Stephan Hamel

Below: M51, M27, M20 and M13 imaged by Dave Kerr

The images are from an eVscope 1 and the resulting Fits files were processed in Siril using the RC Astro BlurXterminator and NoiseXterminator plug in scripts. I found the Siril Workflow Companion script from Deep Space Astro to be invaluable for all the other steps required. The Naztronomy smart telescope script was used to pre-process and stack the images. The telescope provides live stacked images but I've found that manual processing provides better results. Imaging time was 15 minutes or less for all targets.

Summer's Blue Light Special

July 2026 Night Sky newspaper column
by Curt Nason

The two biggest gripes of amateur astronomers are nighttime clouds and sources of light that reduce the brilliance of stars. Exceptions are made for the occasional displays of northern lights, as they are astronomy related after all, but there is an even rarer phenomenon that we forgive for lighting the night sky.

Around 10:10 p.m. on the evening of June 12, 2019, I located Mercury and Mars together in binoculars from my bedroom window. Yes, I peek through bedroom windows but only from inside, taking advantage of the added height to observe planets above trees and houses. My wife was going to bed so I went outside to try for a clearer view. It was here that I noticed some oddly bright clouds to the north, light blue in colour in a herringbone pattern, and I was elated to recognize perhaps the first occurrence of noctilucent clouds in New Brunswick. I have a standing order to get Sharon out of bed for northern lights so I assumed, correctly, it would apply here.

Noctilucent clouds are a fairly recent atmospheric phenomenon having first been reported from France in 1885, perhaps resulting from the volcanic eruption of Krakatoa two years before. They usually occur within about six weeks of the summer solstice and are seen from latitudes of 50 to 70 degrees, and typically 60 to 90 minutes after sunset or before sunrise. These clouds are at an altitude of 80 kilometres, within the mesosphere where clouds do not normally form.

Sandwiched between the stratosphere below and the thermosphere above, typically 50 to 85 kilometres in altitude, the mesosphere is the coldest layer of our atmosphere, with the temperature decreasing with height. Meteors usually disappear within this layer. Seasonal solar heating of the atmosphere can result in an upwelling of moist air into the upper Arctic mesosphere, where at temperatures of -120 C tiny ice crystals form on dust particles. Sunlight reflecting off these high clouds of crystals is visible from the latitudes stated above. These clouds are usually below the horizon from farther south, and farther north the summer sunlight is too bright to see them.

The "electric blue" colour of noctilucent clouds is due to the blue portion of sunlight being absorbed by ozone, although they can also be colourless. They are often seen as bands, streaks or as waves. If you are wondering where the dust comes from, the answer lies above. The earth is constantly plowing through tons of micrometeoroids daily, which are too tiny to burn up in the atmosphere and gently drift to the surface over time. Larger pebbles disintegrate in the mesosphere leaving dust as meteor smoke. Ash from powerful volcanoes can be a minor contributor.

In June 2019 noctilucent clouds exceeded their normal range, and a few days before appearing in New Brunswick they were seen as far south as Oklahoma. Many sightings were made from the Maritimes on June 12 and local astrophotographer Trudy Almon imaged them. Scientific studies indicate that the brightness of the clouds varies inversely with the eleven-year solar cycle, probably due to an increase in ultraviolet solar radiation breaking the bonds of water molecules in the mesosphere. In 2019 the solar cycle was at its minimum activity.

Trudy Almon's photo of New Brunswick's noctilucent lights in 2019

With the increasing number of rocket launches releasing water vapour to the atmosphere, and with what could become a daily shower of satellite burn-ups, sightings of noctilucent clouds could become more frequent and wider spread. The proliferation of satellites has already shown a negative effect on the night sky and an increase in noctilucence will no longer be forgiven by griping amateur astronomers.

François Thériault Imaging Gallery

Sh2-101, Tulip Nebula and surrounding region

In the central region of Cygnus, the Tulip Nebula can be seen in the lower right of this image. Wolf-Rayet star WR 134 is in the central left portion, we can see the bright blue bubble ejected by the star's hot winds.

We can observe a lot of movement in the background gas and dust clouds that are ionized from the bright young stars in this region.

Telescope: Skywatcher EVO Guide 50ED, focal length 242mm
Camera: ZWO ASI1600MM Pro
Exposures: Hα = 34 x 300 s, OIII = 37 x 300 s, SII = 30 x 300 s, total = 6.2 h

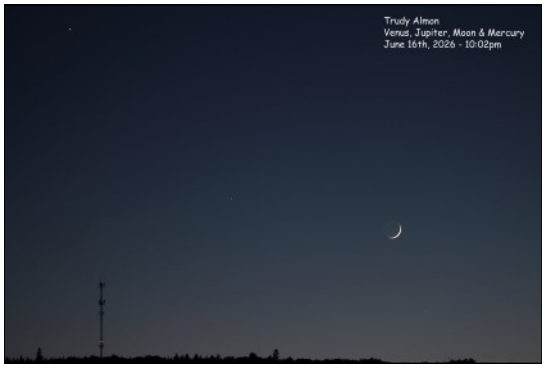
Barnard 147, a dark nebula in Cygnus

B147 is a dark patch of dust that obscures the bright nebula in the background. I found it difficult to capture and process because of the thin wispy nature of the surrounding gas. There does not seem to be any hard feature to emphasize in the treatment. However, I am relatively satisfied with the resulting image.

We can see Barnard 147 in the centre of the image. Barnard 146, its closest neighbor. is at the upper right in the form of a large dark mass, and open cluster NGC 6871 is at the left of the image.

Telescope: Skywatcher EVO Guide 50ED / focal length 242 mm
Camera: ZWO ASI1600MM Pro
Exposures: Hα = 37 x 300 s, OIII = 45 x 300 s, SII = 45 x 300 s, total = 8.5 h

Moon & Planets
Venus Occultation
Images by Trudy Almon
ZOOM IN



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
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	167	4907	61,810	2506	607	167	808	90	2237
2026	105	2378	525078	1009	280	32	354	32	1355

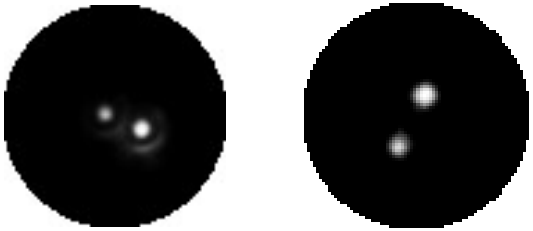
Types of Outreach Events

Year	Presenta-tion	Night Observing	Day Ob-serving	Youth Group	School Talks	Exhibi-tion	Observ./ Planet'm
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	76	36	7	21	26	1	0
2026	66	12	9	1	16	1	0

More Double Stars

Len Larkin

These images of Epsilon1 and Epsilon2 Lyrae (the double-double) were actually taken on different nights back in June using my 180 mm Mak and an ASI678 camera. I stacked 200 or so images to get each final image. I've also seen them widely separated in the eyepiece using the 180 mm on steady nights at 540x - on those nights they are split with lots of dark space between. Can't recall if I saw any diffraction rings. Certainly, you can glimpse the duplicity of these stars in scopes as small as 70 mm. I never get tired of this view.



Left: Epsilon Lyrae 1 (AB)

Right: Epsilon Lyrae 2 (CD)

The first historical catalogue where I found Eps Lyr was William Herschel's publications in the Philosophical Transactions of the Royal Society of London (in the 1780s). But of the 807 double stars in his three catalogues this was one of the few not discovered by him. I believe that honour goes to a German astronomer named Christian Mayer who, in 1779, published a catalog of 72 "doubled stars" with one being the four stars of Epsilon Lyrae. He discovered this with a 2.5 inch refractor (made by Peter Dollond of U.K.) with a focal length of 97 inches - a 64 mm f/39 instrument!

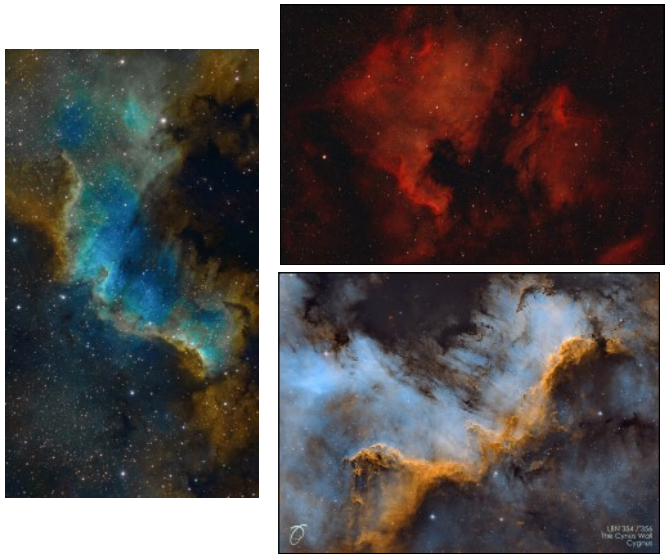
Here is a comparison between Mayer's measures and the Washington Double Star Catalog; observations 230 years apart. His measures were reasonably accurate considering they happened at the dawn of double star observing.

Eps Lyr AB (Mayer 57)
1778 3.8", 38 PA
2007 3.4", 31 PA

Eps Lyr CD (Mayer 58)
1778 2.5", 180 PA
2007 2.9", 155 PA

This system is quite a sight from our distance of 160 light years but imagine this. Eps1 and Eps2 are 0.16 light years apart. An observer in a spacecraft at one pair of stars would see the other pair as two bright Venuses (about mv = −5.0), a degree apart from each other (from Wiki page). Worth the trip!

Three Views of the Cygnus Wall



Above are three images of the Cygnus Wall, a denser feature within NGC 7000, the North America Nebula (NAN). Top right is a wide-field view of the NAN with the Pelican Nebula to the right, imaged by Stephan Hamel. The wall is the brighter patch to the lower left of the Gulf of Mexico.

To the left is a close-up by Robert Gaudet taken with his SeeStar. Total exposure time three hours using 30 -second subs in EQ mode, processed using the Seestar's processing tools and an AI script to convert the image to the Hubble pallet.

Bottom right an even more magnified image by François Thériault with a Skywatcher Evostar 100ED , focal length 900 mm.

Camera: ZWO ASI1600MM Pro
Exposures: Hα = 42 x 180 s, OIII = 37 x 180 s,
SII = 37 x 180 s. total = 5.8 h

Shouldn't the wall be just a little north of Mexico?