



Event Horizon



**Volume 31, Number 7
May 2024**



From The Editor

Behold the Eclipse edition of the E.H.! Enough said!

Enjoy!

*Bob Christmas,
Editor*

*editor 'AT'
amateurastronomy.org*

Chair's Report by Sue MacLachlan

It was great to see so many of you in person at the April meeting. Hearing about everyone's eclipse experiences was very exciting and the eclipse pictures were stunning. I am so happy that the weather co-operated for most of us and we got to experience a truly amazing astronomical event.

Recently, the RASC-Hamilton Centre approached Council with a proposal to jointly build an observatory to house the 36" Dobsonian Telescope that was donated to RASC-Hamilton Centre by Attila Danko. I meet with Andy Blanchard, President of RASC-Hamilton Centre to discuss this proposal for
(Continued on [page 2](#))

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Chair's Report (continued)

the two clubs to come together to build the observatory and to provide public education and observing opportunities focused on this large telescope. Our Council has devoted significant time to reviewing and discussing this proposal. The vote to accept the proposal and enter into further discussions with RASC-Hamilton Centre was unanimously rejected by Council. However, this decision does not preclude the HAA from future discussion with RASC-Hamilton Centre in regards to opportunities to work together. If you have questions regarding this proposal, please contact me directly at chair@amateurastronomy.org.

At the April meeting our guest speaker, Perry Edmundson from Canadensys, extended an offer for HAA members to visit the "Sand Box" where the company tests various iterations of the Canadian Space Agency's Lunar Rover project. A show of hands indicated that many people were interested in taking a trip to visit the test facility in Stratford. The Program Team is looking into planning a visit in the fall. Stay tuned for more details, perhaps there will even be an opportunity to drive a lunar rover in the "Sand Box".

The HAA Perseid Picnic will be held on Saturday August 10, 2024 (weather permitting) at the Binbrook Conservation Area. Members and guests are welcome to come to the potluck picnic. After the picnic the conservation area will be open into the evening for viewing the Perseid meteor showers. Volunteers are requested to help with the public part of the event. People will be needed to direct traffic and parking, provide public viewing through telescopes, binoculars and answer questions about the Perseids and the night sky. Please consider helping out with this enjoyable event and watch for more information in May.

Don't forget to send your astronomy related images for the 2025 Celestial Events Calendar to calendar@amateurastronomy.org; for more information on submitting your images, see the March newsletter.

The 3rd Annual HAA Dark Sky Star Party will happen over the Labour Day weekend between Friday August 30 and Tuesday September 3. This is a great opportunity to connect with others who share your passion for the night sky and to meet other people in the club. Check out the website for more information and the registration form.

On Friday May 10th our guest speaker will be Dr. Chris Jillings, a Research Scientist at Snolab. Dr. Jillings' topic will be "How to know the universe from a hole in the ground". He will discuss how we look for dark matter and why we think we understand the history of the universe, but, only if 80% of the matter is invisible.

At the final meeting before the summer break, on Friday June 14, our speaker will be Benjamin Law. Benjamin will speak to us about astrophotography in a city environment. He will share his passion, challenges and rewards of this popular hobby.

I look forward to seeing everyone on Friday May 10 at St. Matthew's-on-the-Plains Anglican Church at 126 Plains Road E. Burlington and on Zoom for those who cannot attend in-person.

Enjoy the first long weekend of the summer season!

Clear skies,

Sue MacLachlan *chair 'AT' amateurastronomy.org*

Masthead Photo: *The Diamond Ring Effect of the April 8, 2024 Total Solar Eclipse, by Janice Mannering.*

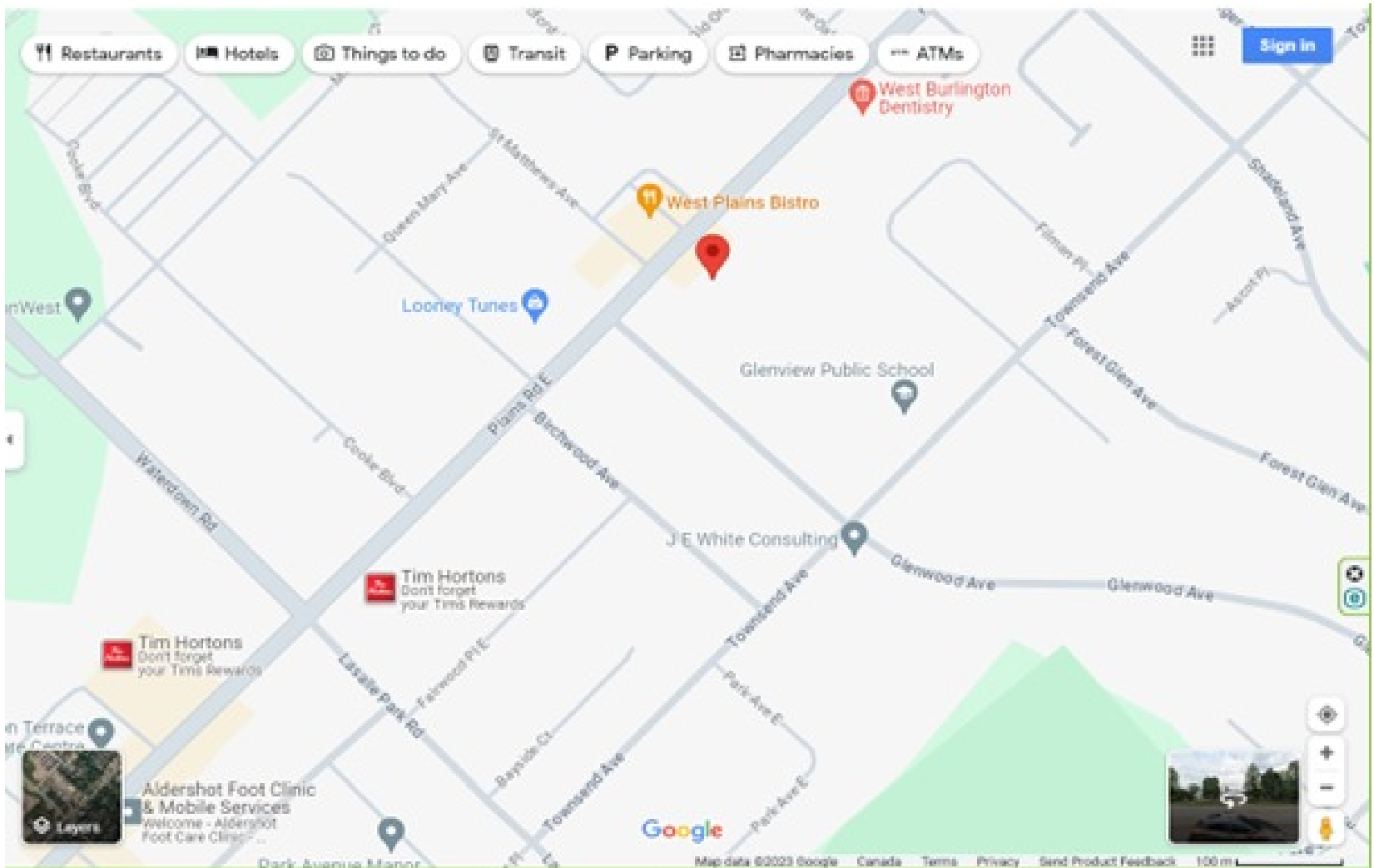
Single shot, cropped, with limited processing. Taken from Farnham, Quebec.

(Editor's note: More eclipse images are in the Members' Eclipse Gallery on pages 14, 15 and 16.)

Chair's Report (continued)

Meeting Location

Our upcoming meeting is scheduled for *February 9th, 2024*, at St. Matthew's-on-the-Plains Anglican Church. St. Matthew's is located at 126 Plains Road East, Burlington, Ontario. Doors open at 7:00 and the meeting begins at 7:30.



*St Matthew's-on-the-Plains Anglican Church (indicated with red locator)
Image generated using Google Maps*

HAA Helps Hamilton



The H.A.A. is once again accepting and collecting donations from our members and guests for local food banks at our general meetings. The H.A.A. has always valued its relationships with food banks in the community, particularly [Hamilton Food Share](#).

If you can't make an in-person meeting, you can make a donation directly to your local food bank.



...A column for young astronomers - and those young at heart!

Well! What was seen and experienced? Let's find out!

Wow!!

Where were you on April 8th in the afternoon? This is where I was:

The Sand Hills

Ontario, Canada

Total solar eclipse
(100.00%)

✕

Obscuration	100.00%
Magnitude	1.0137
Duration	2h, 28m, 13s ▶
Duration of totality	3m, 20s

Partial begins	Apr 8 at 2:02:06 pm
Full begins	Apr 8 at 3:16:05 pm
Maximum	Apr 8 at 3:17:45 pm
Full ends	Apr 8 at 3:19:25 pm
Partial ends	Apr 8 at 4:30:19 pm

Times shown in local time (EDT)

Image Courtesy of TimeandDate.com



I was fortunate to visit Sand Hill Park with a fellow club member and enjoy the total solar eclipse with relatively clear skies. It was magnificent! I used my solar telescope to look at the Sun and Moon during the different phases of the eclipse and was able to see sun spots and plages and prominences. This is a view of the Sun's edge right before totality when looking through my eyepiece. Notice the solar prominence on the left!

As the afternoon grew darker, it also became a lot cooler. The breeze off the lake stopped and the direction of the breeze changed! It came from behind us! The birds quieted down, the waves on the lake subsided...and the mosquitoes came out!! And then TOTALITY!! Wow! It was an awesome sight! It became very dark and the horizon was pink all the way around (see image at top of next page).

Image Credit: Jo Ann Salci

(Continued on [page 5](#))

HAA Explorers (continued)

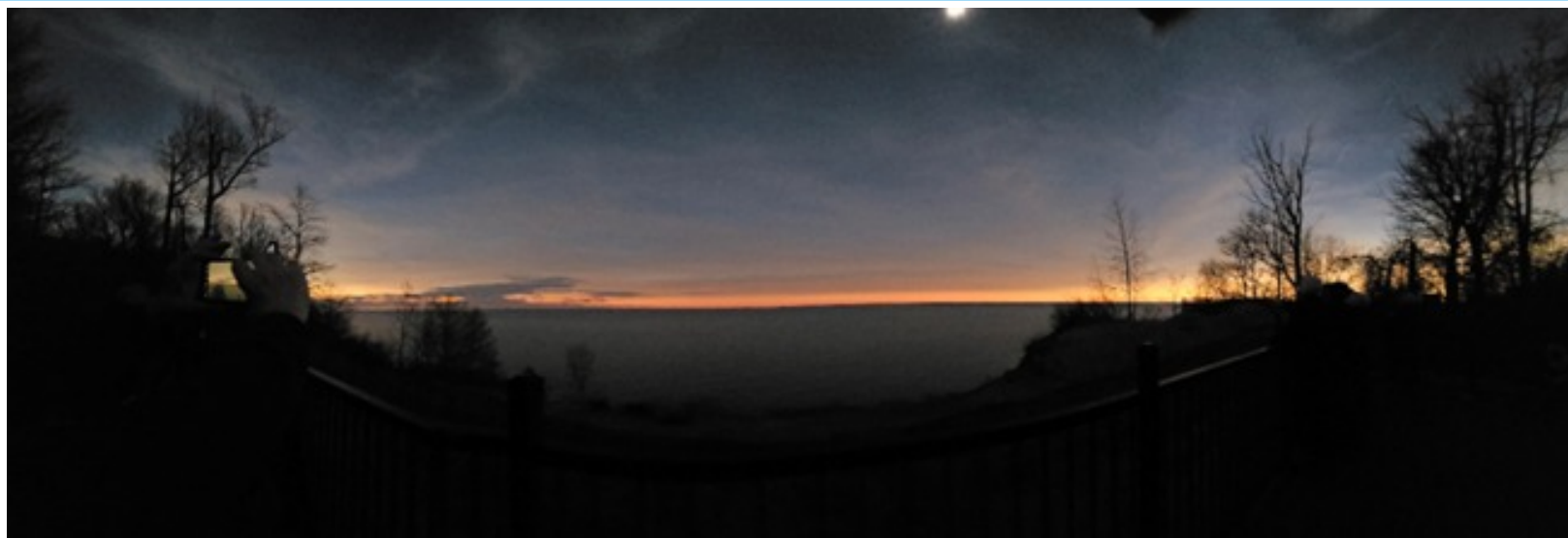


Image Credit: Jo Ann Salci

Venus and Jupiter could easily be seen (Jupiter is not visible in the photo). My telephone did not do a very good job of capturing totality, but others have great photos to share. *(Editor's note: See more eclipse images from other HAA members in the Eclipse Gallery on pages 14, 15 and 16.)*

Ann Tekatch, a club member, captured this photo of the Diamond Ring AND a beautiful view of the solar prominence that I was seeing with my telescope. This prominence was easily visible with just your eyes and it looked like a large flame coming off the Sun.

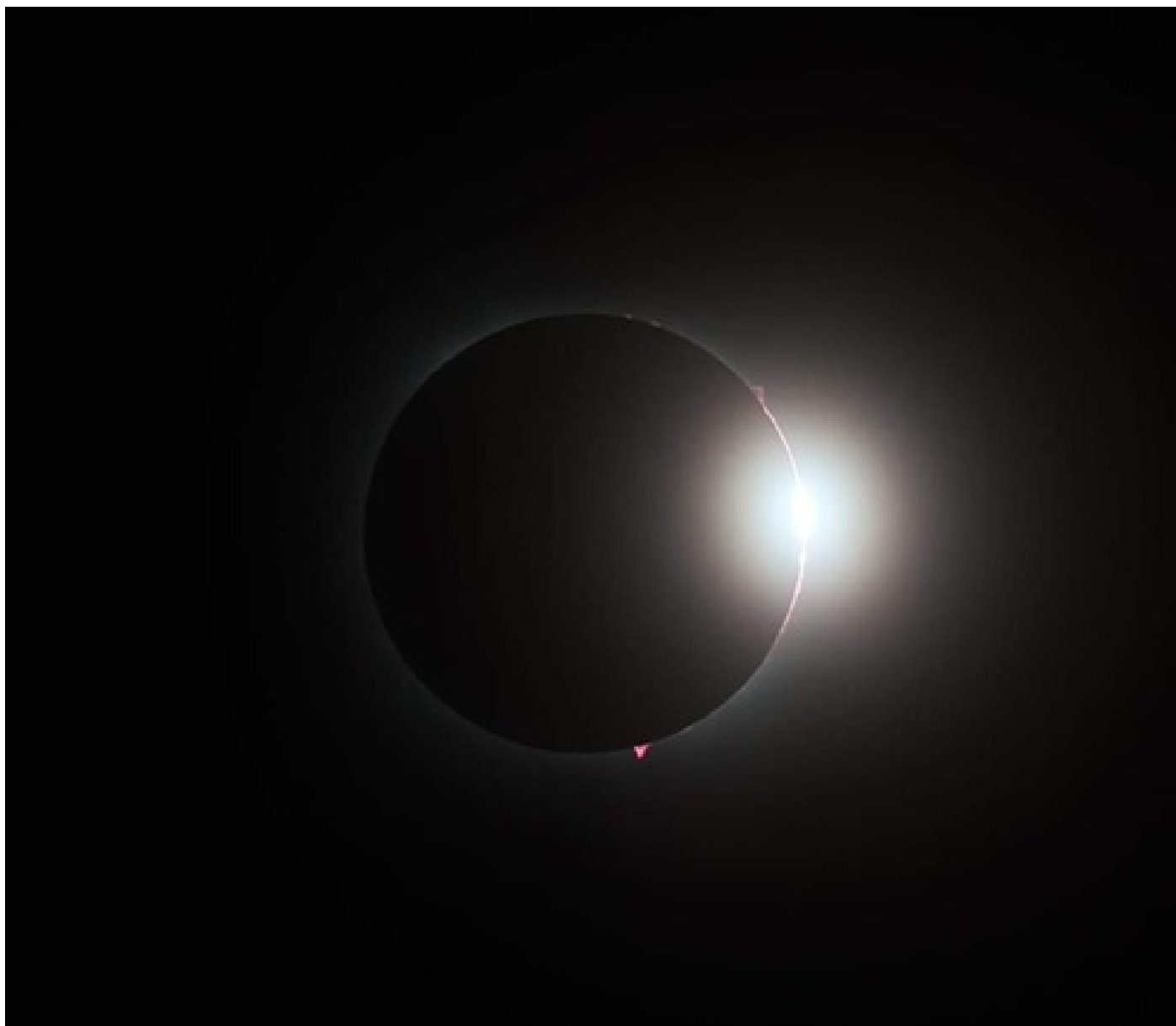


Image Credit: Ann Tekatch

(Continued on [page 6](#))

HAA Explorers (continued)



Image Credit: John Gauvreau

John Gauvreau, another club member, captured this beautiful view of the corona.

And this is what the Moon's shadow on Earth looked like from space!



NASA Earth Observatory images by Michala Garrison and [Wanmei Liang](#), using data from [DSCOVR EPIC](#) and VIIRS data from NASA EOSDIS [LANCE](#), [GIBS/Worldview](#), and the [Joint Polar Satellite System \(JPSS\)](#)

(Continued on [page 7](#))

HAA Explorers (continued)

After totality, we continued observing the eclipse until the Moon had made last contact with the Sun. The eclipse lasted about 2.5 hours. The breeze changed direction again, the air warmed up and the birds began singing again. AND the mosquitos disappeared...thank goodness!

One never knows what stories they will have to tell after an experience such as this! What is your story? Submit it to education@amateurastronomy.org and I may publish it in the June edition (if there is space available - no pun). Did you use a pinhole projector, cereal or shoe box projector? Did you use solar eclipse glasses? Anything else? Where did you see the eclipse from? What surprised you?

The next Total Solar Eclipse will be on August 12, 2026. You would need to travel to Greenland, Iceland or Northern Spain. Something to think about!

I hope your eclipse experience was memorable and that you share your story!

Wow!

S	G	N	I	R	D	N	O	M	A	I	D	C	V
D	O	H	T	O	T	A	L	I	T	Y	I	O	O
R	E	T	S	O	S	L	I	K	O	S	B	M	C
I	U	P	U	S	P	E	A	P	P	C	A	E	O
B	Y	I	N	T	R	O	N	K	P	O	T	T	R
I	N	C	R	E	D	I	B	L	E	P	S	L	O
O	M	I	B	R	C	M	C	H	E	E	R	S	N
G	L	A	S	S	E	S	A	U	S	E	R	U	A
L	S	C	E	N	T	R	E	L	I	N	E	I	S
A	R	A	G	A	I	N	V	R	O	A	T	T	E
P	B	A	I	L	Y	S	B	E	A	D	S	N	S
A	A	R	E	T	I	P	U	J	N	L	F	O	A
V	B	T	I	C	L	O	U	D	S	U	F	O	H
A	O	A	H	R	E	L	O	O	C	O	S	M	P

PATH
LAKE ERIE
DIAMOND RING
NIAGARA
TOTALITY
BIRDS
SUN
COOLER
FLARES
CENTRE LINE
CORONA
INCREDIBLE
CHEERS
CLOUDS
ROOSTERS
JUPITER
MOON
BAILYS BEADS
COMET
SCOPE
VENUS
BATS
GLASSES
PHASES

HAA Explorers (continued)

Things to do until next time **:

** Check with your parents or caregivers before checking out websites.

1. **Play:** Snap It: An Eclipse Adventure Game: <https://spaceplace.nasa.gov/snap-it-eclipse-game/en/>
2. **Check out** https://www.youtube.com/watch?v=N_6P9jtvDyl to see the Moon's shadow on Earth from the International Space Station.
3. **Visit:** <https://spaceplace.nasa.gov/sunspot-cookies/en/> for instructions on how to bake Sunspot cookies (you may have seen some sunspots during the partial phases of the eclipse).

During May, check out:

1. **On May 16th at 9:30 pm**, check out the bright stars Procyon, Pollux, Regulus, the Moon and Spica. If you look straight up to the Zenith (Z in the picture) and look to the left you will see bright star Arcturus:

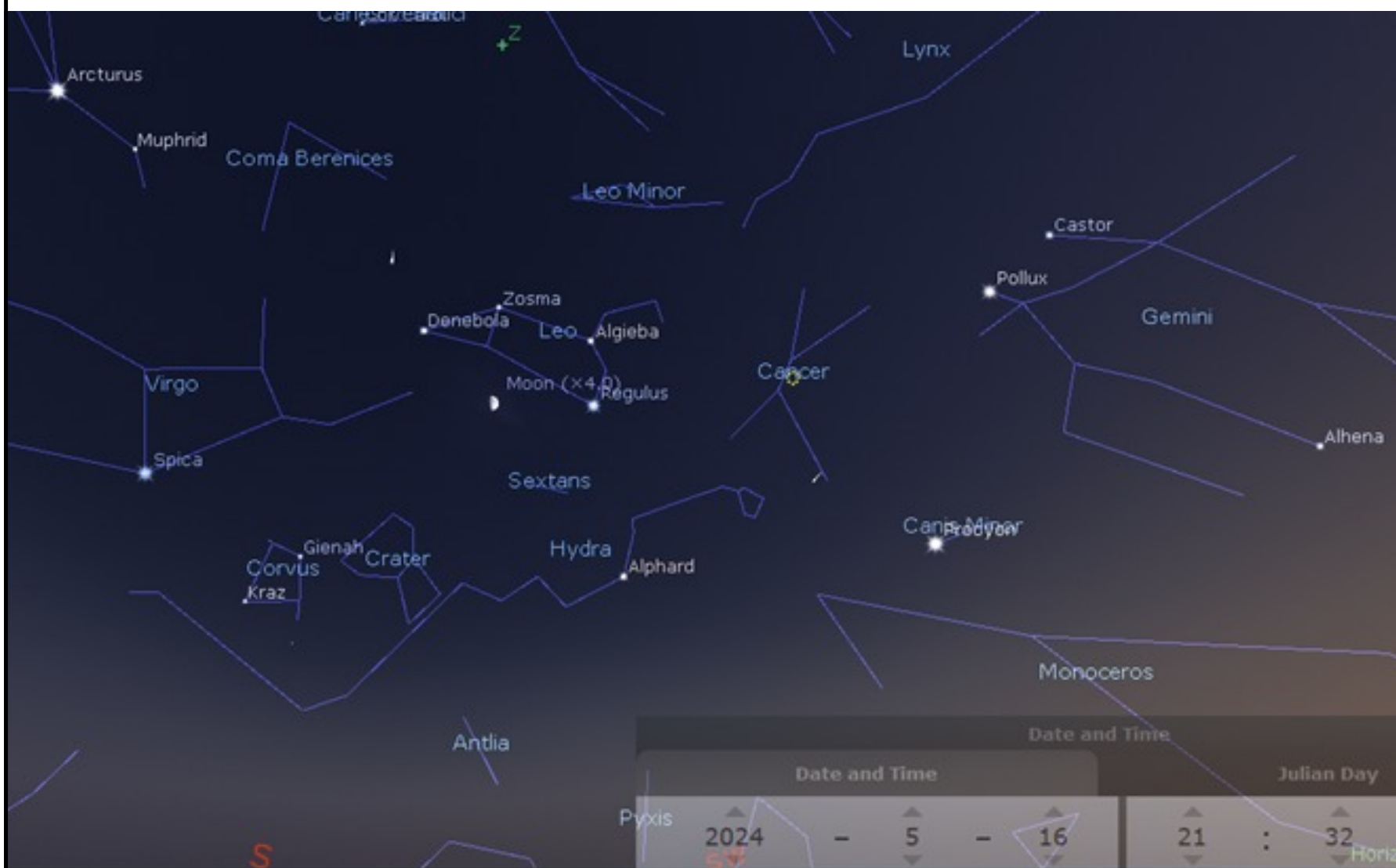


Image generated using Stellarium

(Continued on [page 9](#))

HAA Explorers (continued)

2. On May 31st around 10:00 pm, we are going to look North this time! See the bright stars Capella and Vega? Between and above them you will find both the Big and Little Dipper asterisms.



Image generated using Stellarium

Finally:

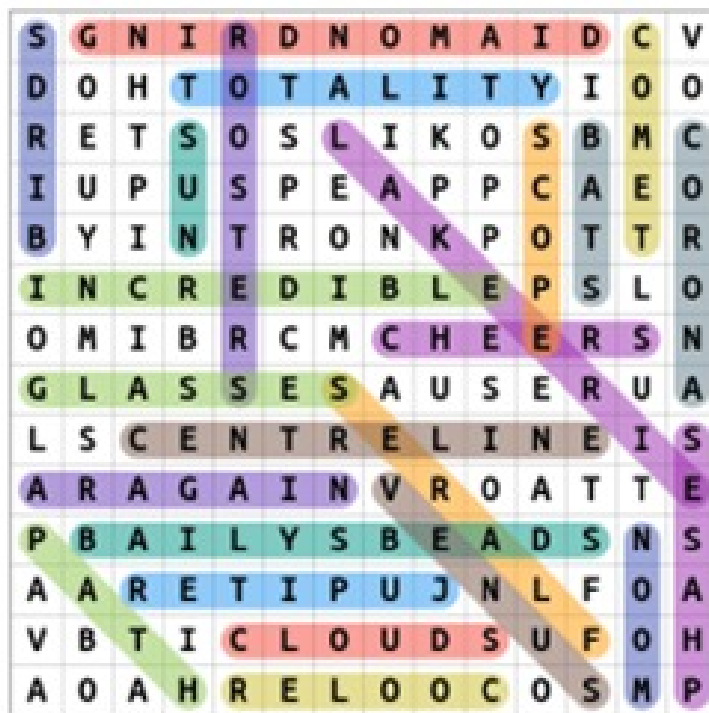
What did the Moon bring to the beach on April 8th?

Answer: ɹɹɹɹɹɹ ☺

If you have a question that you would like answered in the newsletter, please send it to education@amateurastronomy.org

Thank you to Ro for reviewing this article! ☺

Answers to Word Search:



© TheWordSearch.com



The Sky for May 2024 by Steve Germann

Finally we have warm weather, but later evenings.

A late evening is a blessing in disguise. You have more time after supper with light to get your equipment positioned and set up for observing, and it's warm so you don't have to rush it.

The downside is dew. This time of year is very humid, as the soil was saturated in the winter. Be mindful of dew and keep some hotpacks handy to put on the edge of the front of your binoculars or telescope lenses. Dobs are usually pretty well protected, but if the outside is getting wet, it is probably a good idea to warm the main mirror and the secondary mirror.

Dew on a dob turns dust to mud... just sayin'.

So that said, there's plenty to look for, just later at night.

Technically, the things that are 'new' in the sky are the things we can newly see just before dawn. Sirius, being the brightest star, stands out even through twilight, and it can first be spotted in the morning twilight around the time of the Summer Solstice, June 21. That's why Sirius is used to time summer's arrival, even though we see it all winter. It finally emerges again into morning twilight after the Sun passes it, and then it remains visible at least part of the night, for about 10 months. It's gone now, though. Too close to the Sun to spot for until you see it in the morning.

Last Month's Armchair Challenge

If there was ever a good reason to get out of your chair, the Great Eclipse of 2024 was it.

Most of Hamilton got a good look through high patchy clouds. In Niagara it only got dark due to 100 percent clouds. Further west, the skies were clear, like near Long Point.

If you have an eclipse story, this and next month's EH would love to hear it.

Next 5 Asteroids

As usual, you will have to check this link multiple times during the month in case of something interesting.

Right now, nothing of note.

I check the website <https://www.jpl.nasa.gov/asteroid-watch/next-five-approaches> regularly.

Planets

By midnight, all the planets have set.

(Continued on [page 11](#))

Year Month Day Time

	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	Pluto
Rises	05:37	06:02	04:54	07:05	04:30	06:59	04:55	02:44
Sets	18:09	19:17	16:39	21:25	15:35	21:19	16:40	11:37
Altitude	-42.2°	-35.2°	-46.4°	-20.0°	-47.1°	-20.6°	-46.3°	-30.1°

Chart generated using Heavens-Above

The Sky for May 2024 (continued)

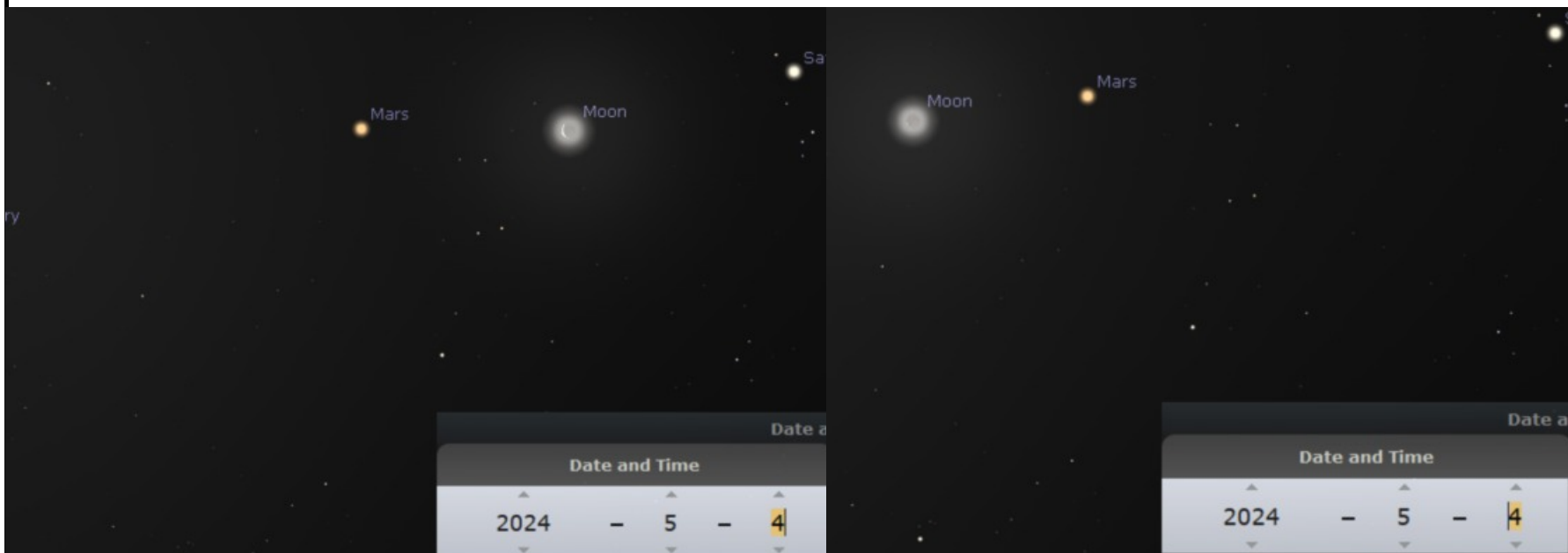
So, then we have the chance to see planets in the daytime.

On May 5th (a Sunday) Mars will be 0.2 degrees south of the Moon. For our location, that is at 9 PM on May 4th.

The Moon, being 3rd quarter, rises before the Sun and should be high in the sky at Sunrise. For instance, on the morning of Sunday May 5th, the sky looks like this:



and during the night the Moon passed by Mars on its way towards the Sun:



Images generated using Stellarium

But that means that the Moon, if visible on May 5th, is only a few degrees from Mars and the direction is almost directly opposite the Sun, so you have a distance and direction to point your binoculars and look for Mars. I am going to try this.

Be advised, the Moon will be very dim. Best to follow it from before Sunrise when it's visible, and learn to recognize it in the sunlit sky.

(Continued on [page 12](#))

The Sky for May 2024 (continued)

Minor Planets

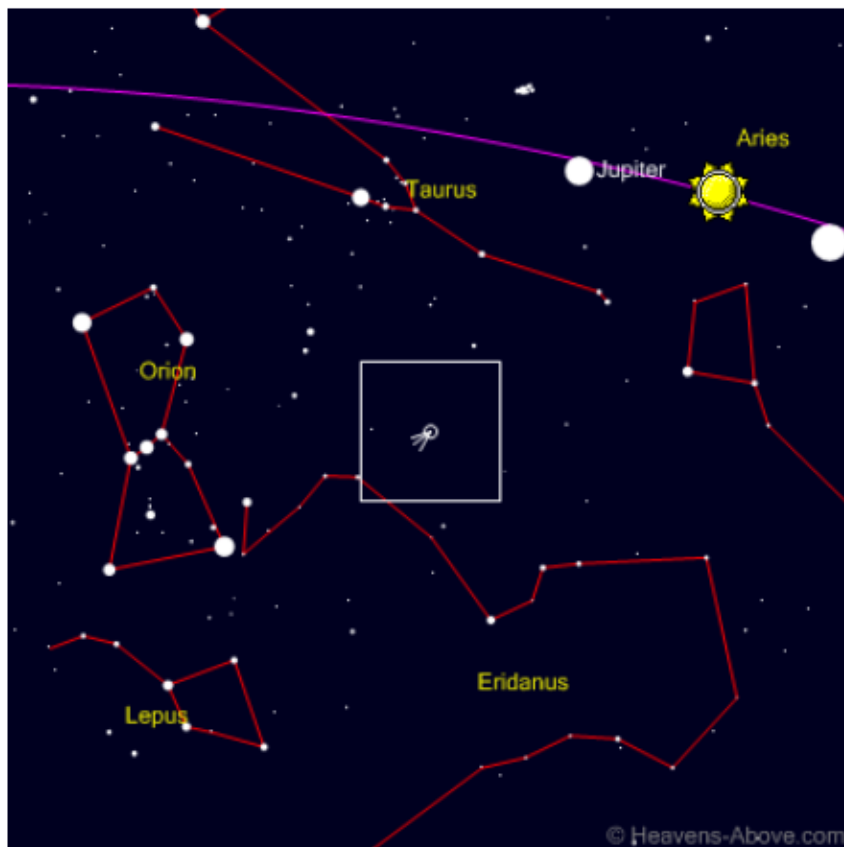
Nothing noteworthy this month. Move along...

Comets

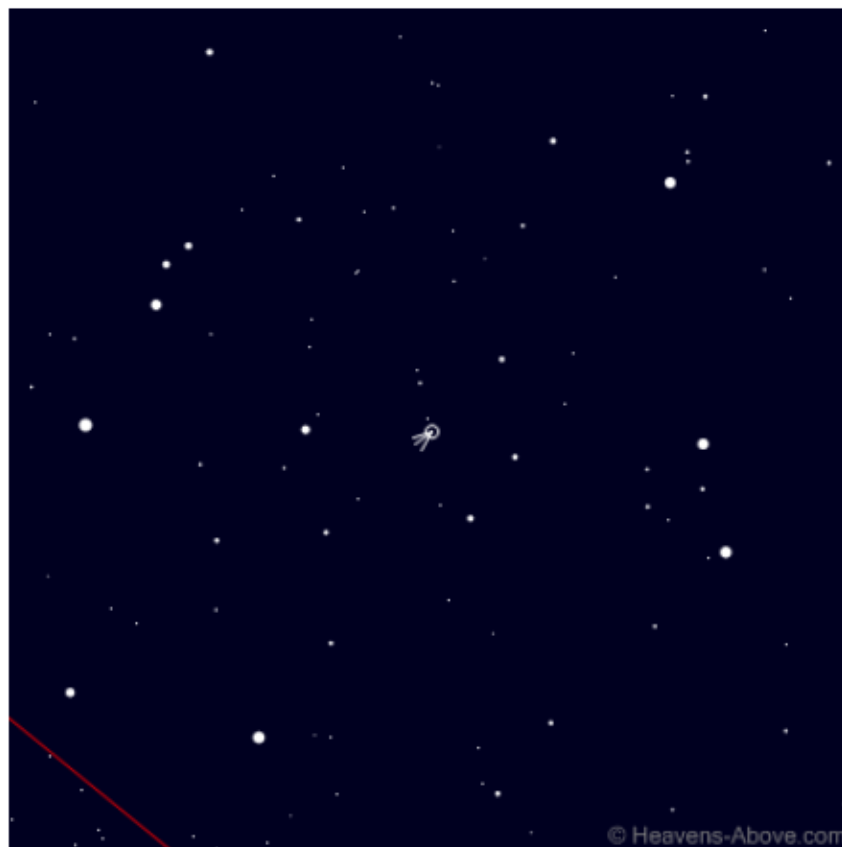
Comet 12P Pons-Brooks is now 4.6 magnitude. It will reward any attempt to photograph it.

Comet 12P Pons-Brooks

Year Month Day Time



Coarse finder chart
(Field of view: 60°, Max. star mag.: 5)



Fine finder chart
(Field of view: 10°, Max. star mag.: 8)

Charts generated using Heavens-Above

May's Armchair Astronomer Challenge

Now that we are in May, how about doing something on May the 4th, which is a Saturday, 3rd quarter Moon. It won't rise until after midnight, so the club will probably have a Binbrook event. Even if it does not, look for *Cassiopeia* in the sky. It's like a big W (as in Star Wars). May the 4th be with you. It is circumpolar, so you will be able to find it anytime of the night, looking north towards the North Star. Find the North Star to complete your nod to George Lucas.

[https://en.wikipedia.org/wiki/Cassiopeia_\(constellation\)#/media/File:Cassiopeia_IAU.svg](https://en.wikipedia.org/wiki/Cassiopeia_(constellation)#/media/File:Cassiopeia_IAU.svg)

If you have binoculars handy, swing down for a peek at the Andromeda galaxy.

Whatever you do, don't rent the early movies in the series...

(Continued on [page 13](#))

The Sky for May 2024 (continued)

Moonrise

This month, only the Lakeshore vantage points will work for viewing Full Moon rise. Burlington's Brant Street Pier is an example.

The rest of our usual locations will need to see over trees and hills instead of looking out towards a clear horizon.

That said, 127 degrees azimuth at 9:27 PM, works for anyplace with a distant horizon, that you choose to see the Moon rise from. Be aware that the Moon comes up diagonally, and you will have to allow for that if you don't have a clear horizon.

The day before Full Moon is a Wednesday evening, with azimuth 122 degrees at 8.17 PM. Moon is still 99.68 percent illuminated (due to perspective, it will look full).

On the other side, by May 24 the Moon is 97 percent lit, at an azimuth of 130 degrees but at 10:35 PM which is a little late to be waiting for the Moon to peek above the lake.

Here are this month's full moon rise times:

Date, Time, Azimuth, Percentage Illumination:

May 22, 8:17PM, 122 degrees, 99.68%

May 23, 9:27PM, 127.09 degrees 99.74%

May 24, 10:35PM, 130 degrees, 97%

I wish you clear skies.

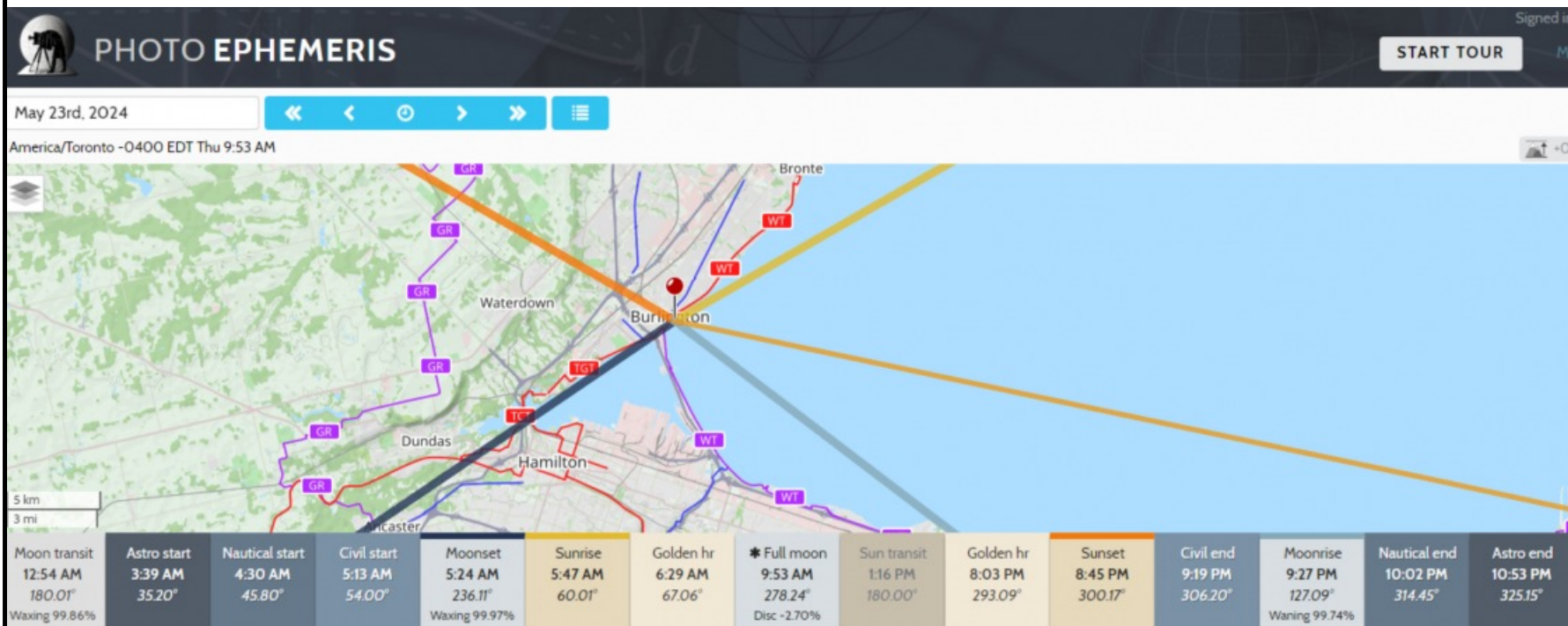


Image generated using Photographer's Ephemeris



top: Eclipse Collage,
by Chris White

below right: Totality From St.
Catharines,
by Bob Christmas



above left: Before Totality
by Matthew Mannering



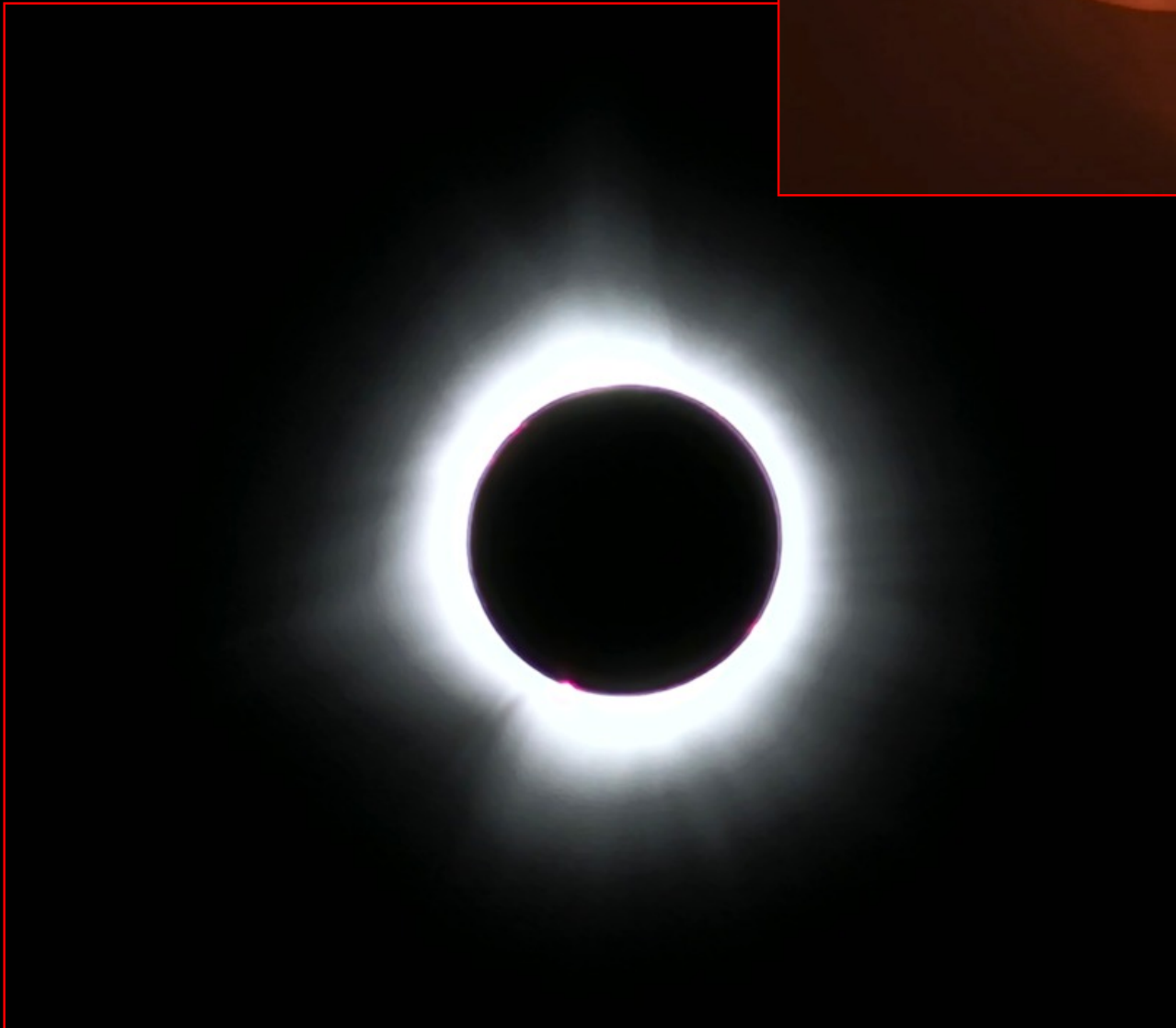
Total Solar Eclipse April 8, 2024 Members' Image Gallery



top left: Totality, by Chris Szaban



top right: After Totality, by Bob Christmas



bottom:

**Totality from Quebec,
by Janice Mannering**

Total Solar Eclipse April 8, 2024 Members' Image Gallery



Totality from Quebec ("1st attempt"), by Matthew Mannering



Eclipse Collage, by Chris Szaban

HAA Outreach Presentations with Vulnerable Sectors

The HAA executive has created a policy for any HAA member who wishes to do outreach presentations to vulnerable sectors, which includes children under 18 years of age and vulnerable adults. This does not include our general club outreach activities.

Presentations include in-person or virtual sessions where parents/guardians may not be present. **As it is not always possible to anticipate caregiver attendance at outreach activities for children under the age of 18, or vulnerable adults, it is therefore a requirement for HAA member-volunteers who work with these vulnerable populations to complete a Police Vulnerable Sector Check.**

These can be obtained only in your region of residency. Costs vary from one area to another. They will be kept on file by the HAA Education Director. No details regarding the findings of the check will be made in any way public or viewed beyond the HAA Education Director.

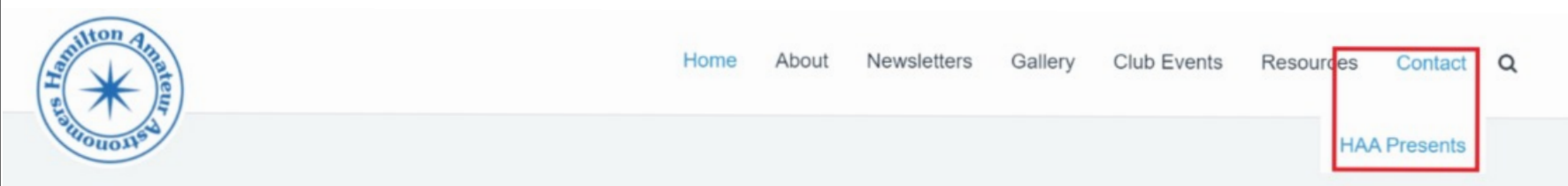
The HAA will reimburse any member who wishes to do outreach presentations to vulnerable individuals, provided a receipt is submitted.

Please contact Jo Ann Salci if you have any questions about this policy and/or if you wish to put your name forward to help with outreach activities to young people! This policy is effective immediately.

“HAA Presents”

Members of the public of any age in the GTHA can now request an in-person or virtual presentation from the HAA directly on our website.

Simply navigate to www.amateurastronomy.org and select “Contact” from the top menu bar and then click on “HAA Presents” (see image below). You will be presented with a request form and once all required fields are entered, click on the “Submit” button and you will see a confirmation message that your request has been successfully submitted.



Once received, our Public Education Director, Jo Ann Salci, will respond to your request within 5 business days to discuss next steps. If you have any questions, feel free to send an email to: haapresents@amateurastronomy.org.



HAA Dark Sky Star Party

Come and join your HAA friends for a weekend of stargazing on the Bruce Peninsula.

August 30 - September 3, 2024
Andromeda Meadow
Warton, Ontario



Cost: \$25 per person, \$50 Family
\$37.50 1 Parent/Guardian & 1 child under 18

Weekend Events

- Visual observing and astrophotography opportunities
- Keppel Croft Gardens visit
- Buffet Dinner onsite Saturday (optional extra cost)
- There are no lectures

Ground camping and trailer sites onsite
Motels, Cottages rentals etc. nearby

ONSITE AMMENITIES

- Portable Washrooms
- Gas generator for charging astronomy equipment only
- Gathering tent

CONTACT INFORMATION

Sue at
starparty@amateurastronomy.org
Matt at
observing@amateurastronomy.org



This is a remote site with no:
water,
electricity,
flush toilets,
showers,
electical or water hookup for trailers.

REGISTRATION OPENS APRIL 27, 2024



William J. McCallion Planetarium

McMASTER UNIVERSITY, HAMILTON, ONTARIO

- **Public transit available directly to McMaster campus**
- **Tickets \$10 per person; private group shows \$169.50**
- **Upcoming shows:**
 - **May 1 & 25: Introductory Astronomy for Kids — Galaxies**
 - **May 8: Introductory Astronomy for Kids — Solar System**
 - **May 15: Lost at Sea**
 - **May 22: Ancient Astronomy: Earth's First Scientists**
 - **May 29: Strange New Worlds: Planets Beyond Our Solar System**
- **For show times, special shows about the April 8 Solar Eclipse, and further details, visit**
www.physics.mcmaster.ca/planetarium

UPCOMING EVENTS

May 10, 2024 - 7:30 pm – H.A.A. Meeting at *St. Matthew's Anglican Church, 126 Plains Rd. E., Burlington, ON*. Our main speaker will be *Dr. Chris Jillings* of Snolab, who will talk about dark matter. This will be a “hybrid” meeting, with the attendance option of in-person or online via [Zoom](#). Past meetings can be viewed on our [YouTube](#) channel.

June 14, 2024 - 7:30 pm – H.A.A. Meeting at St. Matthew's Anglican Church.

2023-2024 Council

Chair	Sue MacLachlan
Second Chair	Christopher Strejch
Treasurer	Marcus Freeman
Digital Platforms Director	Christopher Strejch
Membership Director	Paula Owen
Observing Director	Matthew Mennering/ Steve Germann
Education Director	Jo Ann Salci
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Check out the H.A.A. Website
www.amateurastronomy.org

Follow us!



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Observing Inquiries:

observing@amateurastronomy.org

Education:

education@amateurastronomy.org

Newsletter:

editor@amateurastronomy.org

Digital Platforms Director:

webmaster@amateurastronomy.org

All active HAA members have the privilege of access to an exclusive HAA members only dark sky location.

Be on the lookout for e-mails with dark sky observing details. Space is limited.

The Harvey Garden HAA Portable Library



Contact Information

E-mail: library@amateurastronomy.org