Event Horizon

Volume 32, Number 7
May 2025

From The Editor

We're getting into the middle of Spring, as the temperatures continue to moderate and it gets more comfortable out observing the sky at night.

See the announcement for the 2025 HAA Dark Sky Star Party; it's coming up in September.

Clear Skies!

Bob Christmas,
Editor
editor 'AT'
amateurastronomy.org

Chair's Report by Sue MacLachlan

As I write my May message, I look outside and see the daffodils and tulips blooming and hear the birds singing in the yard. Hopefully, as we move through May, the humidity will stay low and there will be some more clear nights for getting out there with the astronomy gear.

With that in mind, the Binbrook team has tentatively scheduled 2 or 3 Saturdays each month from now to October for viewing nights at Binbrook. The team could really use a couple more people who would be willing to help out with opening the park. Each time the park opens, two members of the Binbrook team are required to be there to ensure everything runs smoothly. No one goes to the park alone. For team members, opening Binbrook generally entails:

- opening the Binbrook gate for club members only
- choosing the observing site within Binbrook for the evening
- making sure everyone has left the park at the end of the evening.

(Continued on page 2)

IN THIS ISSUE:

Chair's Report (continued)

For full details on what is involved with opening Binbrook please contact Paula Owen at membership@amateurastronomy.org.

At the Council meeting in April the Loaner Scope Policy was finalized and Jeff Parsons will be taking over the role as program coordinator. If you are interested in borrowing a telescope please contact Jeff at loanerscope@amateurastronomy.org. Members might want to see the Loaner Scope Policy later in the newsletter to brush up on what borrowing a telescope entails.

Council also reviewed the inventory and made some decisions on what to do with some of the equipment that isn't appropriate for the loaner scope program. Some equipment will be given away to club members and some of the better items will be sold. Watch your email and future Event Horizons for notices about equipment.

Upcoming Events

See below and contact Sue at chair@amateurastronomy.org for more information.

Saturday May 3 International Astronomy Day

- Join us at Van Wagner's Beach for an afternoon of solar viewing
- Members and the public will be welcome to view the sun from 1:00 - 4:00 pm
- Location: First parking lot Hutches on Van Wagners Beach Boulevard
- Bring your solar telescope and lawn chair or just drop by to visit

Saturday August 9 Annual HAA Picnic and public Perseid night.

- Binbrook Conservation Area Pavilion #3 3:00 pm - ?
- Potluck Dinner: 6:00 pm (bring your own beverages, plates, cutlery and serving utensils)
- No park entrance fee for HAA members (but be ready to show membership card)
- Solar viewing during the day
- Evening meteor shower and observing with the public
- Volunteers are needed to bring telescopes, help direct visitors who need to park cars and answer questions from the public

HAA Dark Sky Star Party

- Friday September 19 to Sunday September 21, 2025
- Held on private property outside of Wiarton, Ontario
- Registration opens Saturday May 10
- Cost: $25 per adult, $37.50 for 1 adult and any accompanied children under 18
- Details about the weekend can be found on the HAA website

At our Friday night General Meeting in May, we will be joined by *Thomas Deere*. Thomas has been instrumental in developing the Indigenous program at the McCallion Planetarium at McMaster University. He will talk to us about how that program came about as well as share indigenous stories about the night sky.

Masthead Photo: *The Crab Nebula (M1) in Taurus*, by *Bob Christmas.*

Taken on March 17, 2025 with a ZWO Seestar S50 imager (focal ratio f/5) from Burlington, ON.

Noise-reduced on the spot, using the Seestar's Android phone app.

167 x 10s = 27 minutes, 50 seconds total.

Chair's Report (continued)

In June our own *Mario Carr* will be speaking to us. His presentation is called Our Cosmic Connection: How the cosmos has influenced life on Earth.

Lastly, as I announced at the monthly meeting in April, I have made the decision to step down from Council at the end of my term. Anyone who might be interested in joining the next Council is encouraged to contact me to find out more about possible Council jobs.

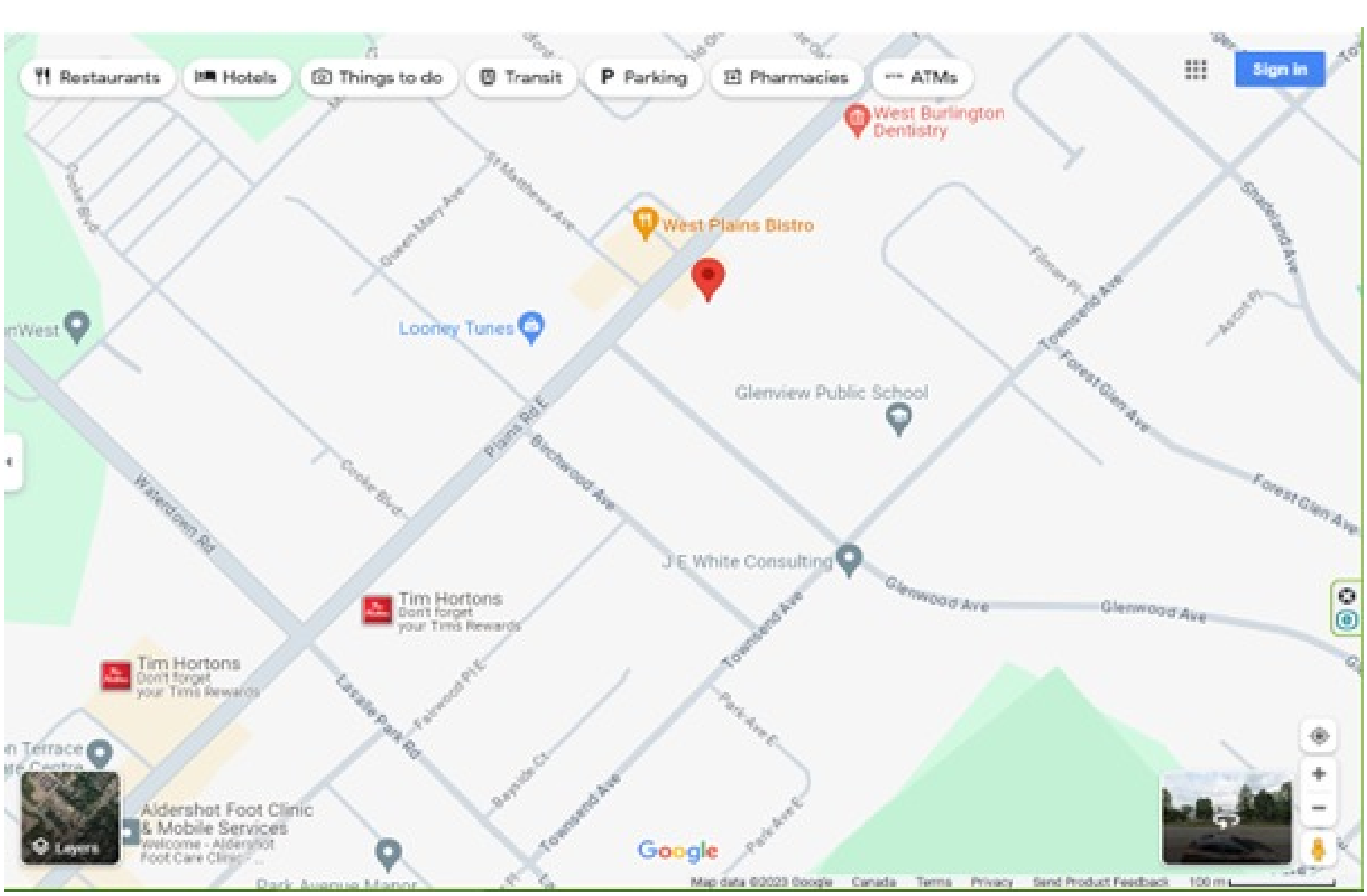
As always, I look forward to seeing everyone on Friday May 9th at St. Matthew's-on-the-Plains Anglican Church at 126 Plains Road E. Burlington and on Zoom for those who cannot attend in-person.

Clear skies,

Sue MacLachlan *chair 'AT' amateurastronomy.org*

Meeting Location

Our upcoming meeting is scheduled for *May 9th, 2025*, 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 Dark Sky Star Party

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

September 19 - September 21, 2025
Andromeda Meadow
Wiarton, 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
- E.S. Fox Observatory visit
- 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
mattmannastro@outlook.com

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

REGISTRATION OPENS Saturday May 10, 2025

Hamilton Amateur Astronomers (HAA)
LOANER SCOPE PROGRAM LENDING POLICY 2025

POLICY PURPOSE

To ensure that the HAA Loaner Scope Program facilitates broad utilization of the telescopes and serves its members in a fair and consistent manner. The borrowing policy outlines:

1. The criteria for members to borrow telescopes
2. Borrowing responsibilities of the member
3. Borrowing privileges and loan periods

1. ELIGIBLE BORROWERS

- You must be a member in good standing (Paid up Membership) of the HAA to borrow any telescope.
- A valid HAA card is required to borrow materials.
- Contract must be signed by borrowers accepting terms and conditions.
- An HAA member may not check out a telescope for non members.

2. BORROWING RESPONSIBILITIES

Signing the telescope contract implies the card holder's acceptance of and adherence to rules and regulations of the HAA Telescope Lending Program. All card holders are responsible for:

- Materials checked out on their card
- Returning telescopes by their due date
- Immediately report any damages to the equipment to (*loanerscope@amateurastronomy.org*)
- Promptly reporting changes in registration information such as name, address or contact information to the HAA.

Notifications:
Members who provide an email address will receive notifications regarding their borrowing from the program. Members will be notified by email regarding items that are overdue.

3. BORROWING PRIVILEGES POLICY

1. Loan Period

1. Loan period for the telescope is 3 months.
2. Possibility to extend renewal must be approved by the person in charge of the Loaner Scope Program.

2. Borrowing Limits for Telescopes

1. A limit of 1 (one) telescope can be checked out at any time.

3. Suspension of Borrowing Privileges

1. Borrowing privileges can be suspended under certain circumstances, such as materials overdue for greater than 3 months, damage to equipment etc.
2. Borrowing privileges can be suspended if the membership is not renewed.

Approved March 2025
To be reviewed in 5 years or sooner if needed.

Calling All Telescope Enthusiasts! Share Your Gear and Experience in Our New Segment: "Talking Telescopes"

We're launching an exciting new segment for our club's YouTube channel called "Talking Telescopes"! This is your chance to showcase your equipment, share how you use it, and pass along tips and lessons learned. Whether you're working with a trusty beginner scope or a high-end astrophotography setup, we'd love to hear your story.

These short interviews will be filmed around 7:00 pm at St. Matthew's-on-the-Plains Church just before our monthly meetings (during setup time) and are a great opportunity to inspire fellow members and new astronomy enthusiasts alike. It's a fun and informal way to highlight the diversity of approaches and experiences within our community.

Interested in being featured? Please reach out to ***Chris Szaban*** at

talkingtelescopes@amateurastronomy.org

to schedule a time. Let's show the world what makes the Hamilton Amateur Astronomers so incredible!

HAA Helps Hamilton

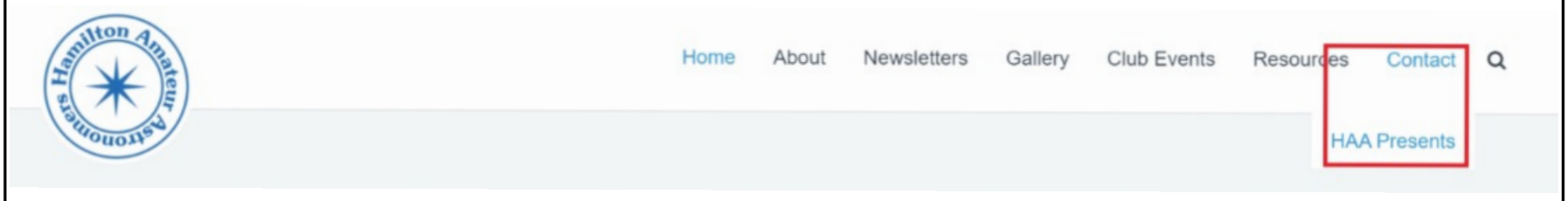
The H.A.A. is accepting and collecting donations from our members and guests for local food banks at our general meetings. The H.A.A. has always valued its relationships with food banks in the community, particularly Hamilton Food Share.

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

“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 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.

The Sky This Month for May 2025 by Bob Christmas

Kevin, unfortunately, was unable to submit the TSTM article this month due to personal reasons. So I'm standing in for May. This from Kevin:

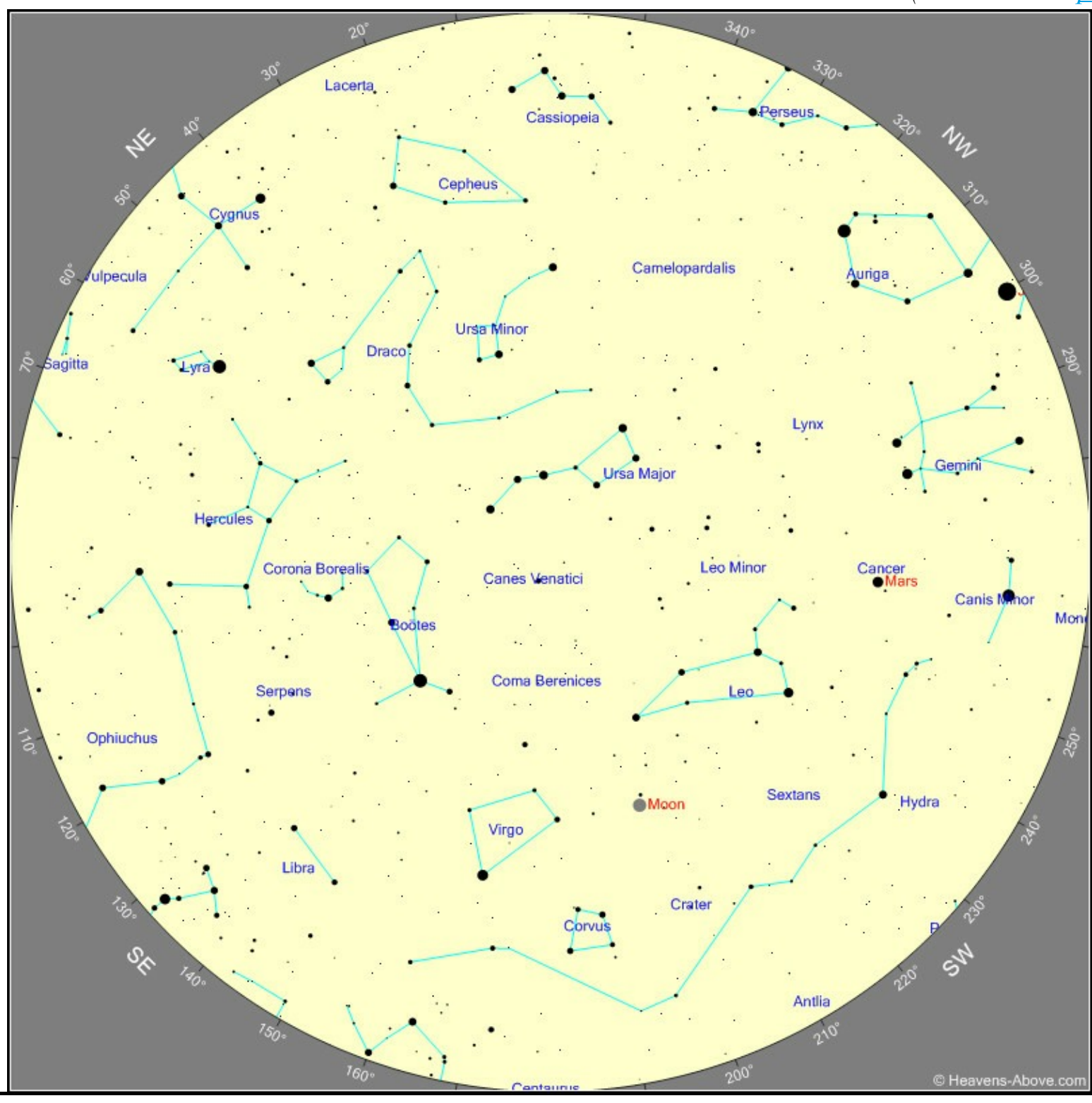
"Due to personal issues over the past month which have taken up my full time and attention, I have been unable to put together a Sky This Month article for May. My sincere apologies to everyone who may have been looking forward to it. I will be giving my usual presentation at the May meeting as well as an extended article in June covering the entire summer. Clear Skies, Kevin Salwach"

The Sky at a Glance

Here's an all-sky chart for *May 7, 2025, at 11:00 pm EDT* as seen from Binbrook, ON. This chart was generated using the Heavens-Above website. By this time, the spring constellations are high up, including *Virgo*, *Bootes* and *Coma Berenices*.

The stars in the sky rise and set an hour earlier every half month later. On May 23, this will be the sky at about 10:00 pm; on June 3, this will be the sky at about 9:00 pm, etc.

(Continued on page 9)



The Sky This Month for May 2025 (continued)

The Moon

Phases this month:

- May 4 13:51 UT — 1st Quarter
- May 12 16:55 UT — Full Moon
- May 20 11:58 UT — Last Quarter
- May 27 03:02 UT — New Moon

Source: timeanddate.com

The Planets

Mars in still in the evening sky in Cancer, passing right next to the open star cluster M44, the Beehive Cluster, for the first week or so of May. At the time of writing, Mars and M44 were joined by the first quarter Moon. Mars sets earlier as May goes on.

Venus and *Saturn* are visible in the morning sky in Pisces just before sunrise.

Jupiter sets earlier after sunset as the month goes on, getting lost in the Sun's glare at month end.

Uranus is lost in the Sun's glare, and is not visible this month.

Neptune is right next to Saturn in Pisces in the morning sky, but it will be challenging to find it in the morning twilight.

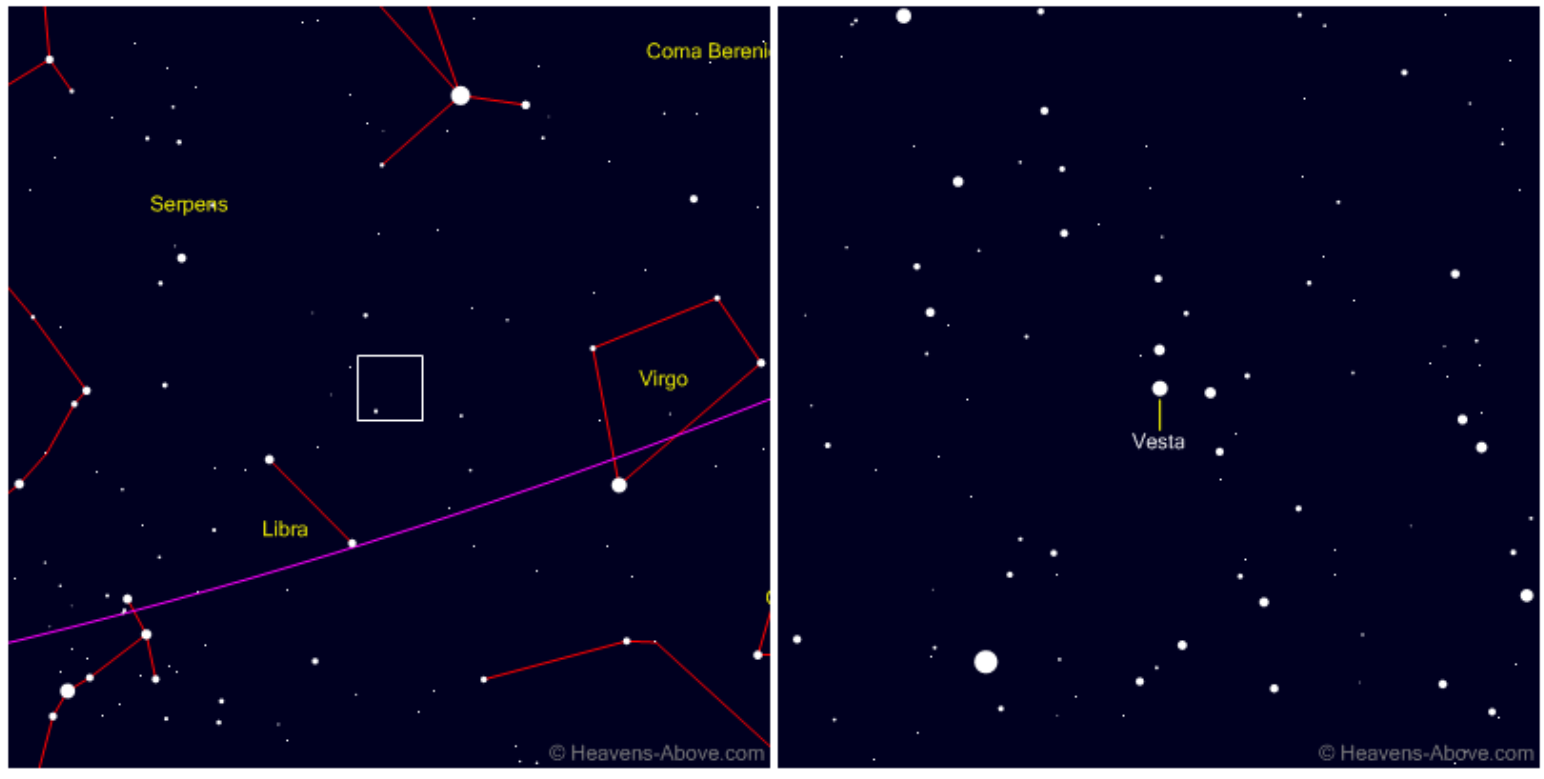
Asteroids and Minor Planets

(4) Vesta is in the Virgo-Libra border area and is visible all month for most of the night. At about magnitude 6, it should be easily visible in binoculars.

(Continued on page 8)

Asteroid 4 Vesta

Year 2025 Month May Day 15 Time 22:38:11 Update Reset to now



Coarse finder chart
(Field of view=60°, Limiting magnitude=5)

Fine finder chart
(Field of view=5°, Limiting magnitude=10)

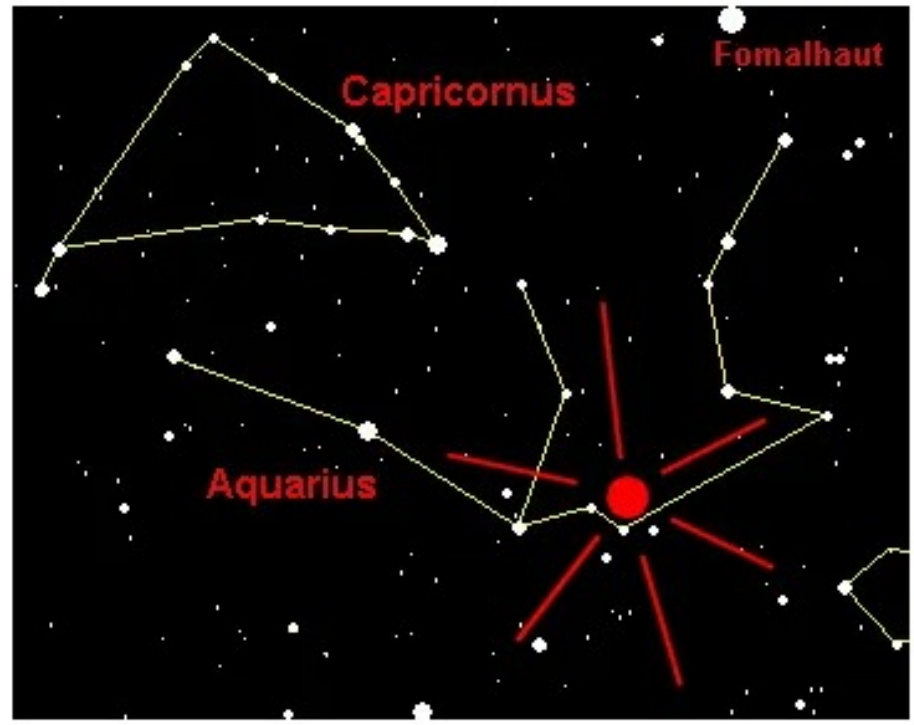
The Sky This Month for May 2025 (continued)

Comets

Comet C/2025 F2 SWAN is still in the evening sky in May just after sunset, near the Taurus-Orion border area, but is has severely faded, possibly disintegrated, since its perihelion with the Sun right at the start of this month. It will get more southerly and will be invisible from the Northern Hemisphere as the month goes on.

Meteor Showers

The *Eta Aquarid meteor shower* peaks in the overnight hours of May 5 to 6 and May 6 to 7, 2025. The best time to look for it is in the pre-dawn hours, when the radiant will rise along with Aquarius in the eastern sky.



The radiant of the Eta Aquarids. Credit: NASA

Deep Sky Targets

There are lots of galaxies visible this month in Virgo, Coma Berenices, Canes Venatici, Ursa Major, and elsewhere in the Spring night sky.

After all, Spring is Galaxy Season!

Here's a list of selected Messier objects that are prominent in May:

- ***M97*** — The Owl Nebula - planetary nebula in Ursa Major; magnitude 9.9; about 3' in diameter *(see image in the Eye Candy section on page 16)*.
- ***M83*** — The Southern Pinwheel - spiral galaxy in Hydra; magnitude 7.6; dimensions: 16' x 13'
- ***M53*** — globular cluster in Coma Berenices; magnitude 7.5; 12.6' in diameter
- ***M3*** — globular cluster in Canes Venatici; magnitude 5.9; 16.2' in diameter
- ***M63*** — spiral galaxy in Canes Venatici; magnitude 8.6; dimensions: 14' x 8'
- ***M51*** — The Whirlpool Galaxy - spiral galaxy in Canes Venatici; magnitude 8.4; dimensions: 8' x 7'
- ***M101*** — The Pinwheel Galaxy - spiral galaxy in Ursa Major; magnitude 7.9; 26' in diameter *(see image in the Eye Candy section on page 16)*.

Sources

- The Royal Astronomical Society of Canada. *Observer's Handbook 2024*. Editor: James S. Edgar. Toronto, ON, 2023.
- The timeanddate website; https://www.timeanddate.com/
- The Heavens Above website; https://www.heavens-above.com
- The Space.com website; https://www.space.com/

On behalf of Kevin Salwach, good luck, and happy observing!

NASA Night Sky Notes

This article is distributed by NASA Night Sky Network (NSN).

Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

May's Night Sky Notes: How Do We Find Exoplanets?

By: Dave Prosper
Updated by: Kat Troche

Astronomers have been trying to discover evidence that worlds exist around stars other than our Sun since the 19th century. By the mid-1990s, technology finally caught up with the desire for discovery and led to the first discovery of a planet orbiting another sun-like star, Pegasi 51b. Why did it take so long to discover these distant worlds, and what techniques do astronomers use to find them?

The Transit Method

One of the most famous exoplanet detection methods is the **transit method**, used by Kepler and other observatories. When a planet crosses in front of its host star, the light from the star dips slightly in brightness. Scientists can confirm a planet orbits its host star by repeatedly detecting these incredibly tiny

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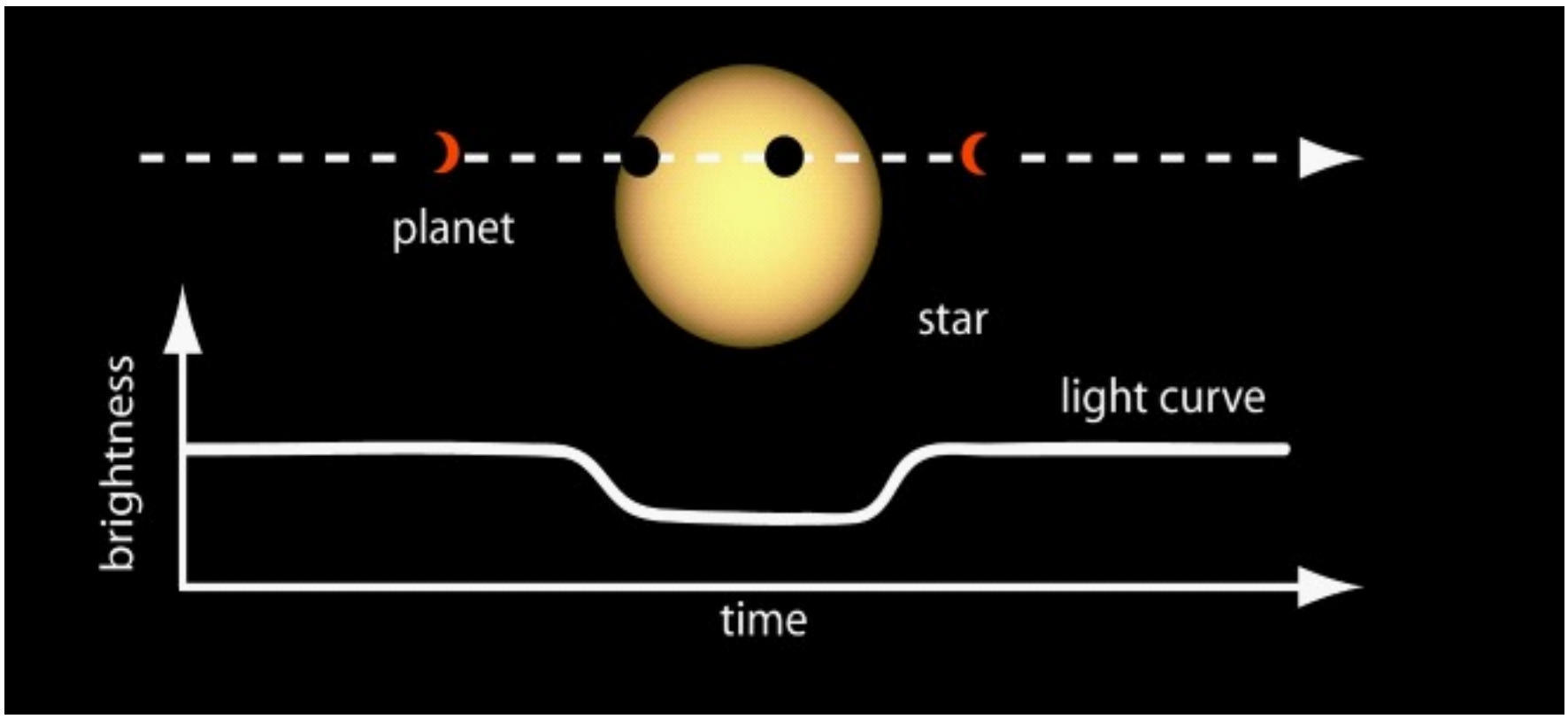

A planet passing in front of its parent star creates a drop in the star's apparent brightness, called a transit. Exoplanet Watch participants can look for transits in data from ground-based telescopes, helping scientists refine measurements of the length of a planet's orbit around its star. Credit: NASA's Ames Research Center

dips in brightness using sensitive instruments. If you can imagine trying to detect the dip in light from a massive searchlight when an ant crosses in front of it, at a distance of tens of miles away, you can begin to see how difficult it can be to spot a planet from light-years away! Another drawback to the transit method is that the distant solar system must be at a favorable angle to our point of view here on Earth – if the distant system's angle is just slightly askew, there will be no transits. Even in our solar system, a transit is very rare. For example, there were two transits of Venus visible across our Sun from Earth in this century. But the next time Venus transits the Sun as seen from Earth will be in the year 2117 – more than a century from now, even though Venus will have completed nearly 150 orbits around the Sun by then!

The Wobble Method

Spotting the Doppler shift of a star's spectra was used to find Pegasi 51b, the first planet detected around a Sun-like star. This technique is called the **radial velocity or "wobble" method**. Astronomers split up the visible light emitted by a star into a rainbow. These spectra, and gaps between the normally smooth bands of light, help determine the elements that make up the star. However, if there is a planet orbiting the star, it causes the star to wobble ever so slightly back and forth. This will, in turn, cause the lines within the spectra to shift ever so slightly towards the blue and red ends of the spectrum as the star wobbles slightly away and towards us. This is caused by the blue and red shifts of the planet's light. By carefully measuring the amount of shift in the star's spectra, astronomers can determine the size of the object pulling on the host star and if the companion is indeed a planet. By tracking the variation in this periodic shift of the spectra, they can also determine the time it takes the planet to orbit its parent star.

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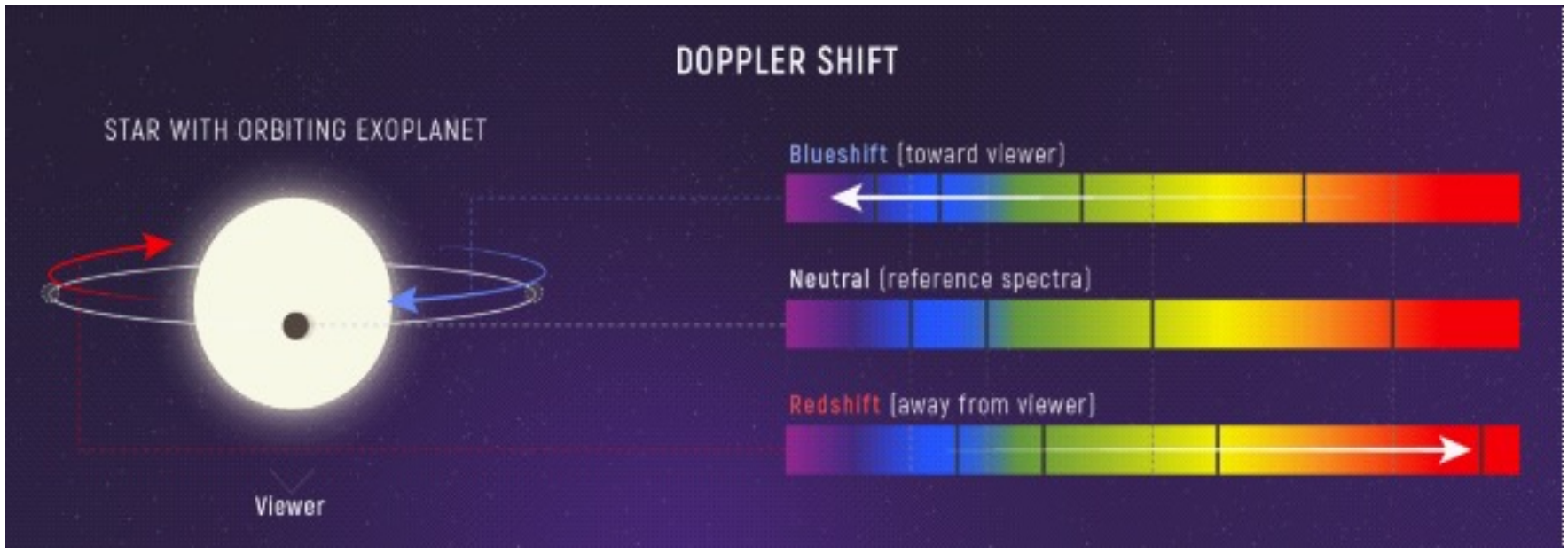

As a planet orbits a star, the star wobbles. This causes a change in the appearance of the star's spectrum called Doppler shift. Because the change in wavelength is directly related to relative speed, astronomers can use Doppler shift to calculate exactly how fast an object is moving toward or away from us. Astronomers can also track the Doppler shift of a star over time to estimate the mass of the planet orbiting it.

Credit: NASA, ESA, CSA, Leah Hustak (STScI)

Direct Imaging

Finally, exoplanets can be revealed by **directly imaging** them, such as this image of four planets found orbiting the star HR 8799! Space telescopes use instruments called **coronagraphs** to block the bright light from the host star and capture the dim light from planets. The Hubble Space Telescope has captured images of giant planets orbiting a few nearby systems, and the James Webb Space Telescope has only improved on these observations by uncovering more details, such as the colors and spectra of exoplanet atmospheres, temperatures, detecting potential exomoons, and even scanning atmospheres for potential biosignatures!

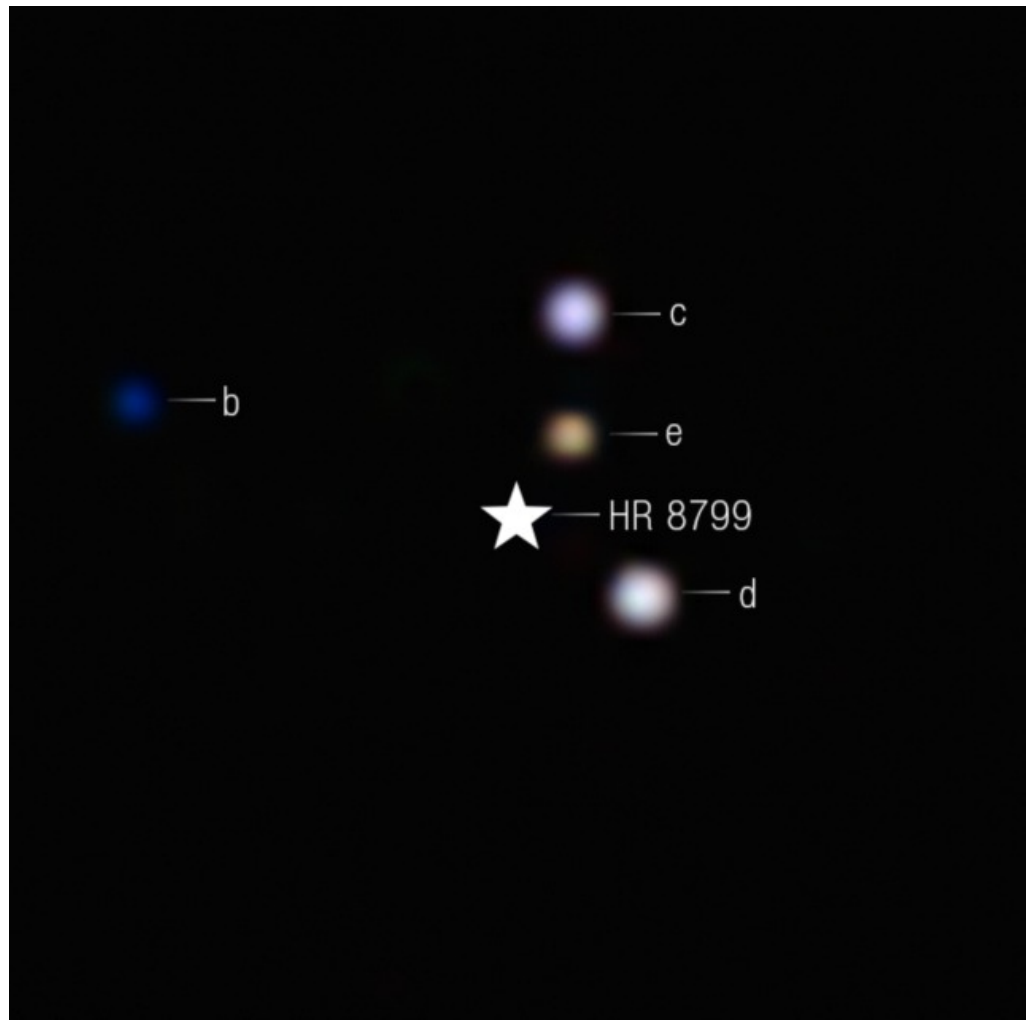

Image taken by the James Webb Space Telescope of four exoplanets orbiting HR 8799.

Credit: NASA, ESA, CSA, STScI, Laurent Pueyo (STScI), William Balmer (JHU), Marshall Perrin (STScI)

You can find more information and activities on NASA's Exoplanets page, such as the Eyes on Exoplanets browser-based program, The Exoplaneteers, and some of the latest exoplanet news. Lastly, you can find more resources in our News & Resources section, including a clever demo on how astronomers use the wobble method to detect planets!

The future of exoplanet discovery is only just beginning, promising rich rewards in humanity's understanding of our place in the Universe, where we are from, and if there is life elsewhere in our cosmos.

Eye Candy the Members' Image Gallery

top:
Night sky over Woodstock

by **Chris White**

Canis Minor, Canis Major, Orion and Taurus appear in the image. Jupiter is on the right.

Taken with his Canon T7i with Canon 10-20 mm lens; 5 seconds; ISO 400

lower left:
The 2.2 day old Moon and Venus on March 1, 2025
by **Jo Ann Salci**

Taken with her Samsung S23 cell phone; 7mm f/2.4 1/100 sec ISO 320.

Eye Candy the Members' Image Gallery

Scenes from Oyster Pond, Saint Martin

left: **the rising Moon with the Belt of Venus**

right: **Canis Major and Orion**

By Sue MacLachlan (both)

Taken with her Moto G Stylus cell phone.

Eye Candy the Members' Image Gallery

The Owl Nebula (M97), by **Bob Christmas**
Taken with a ZWO Seestar S50 imager from Burlington, ON. 197 x 10s = 32 minutes, 50 seconds total.

The Pinwheel Galaxy (M101), by **Chris Szaban**
Taken with a Celestron NexStar 6SE and ASI294MC Pro camera from Milton, ON. 8 hours, 15 minutes total.

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 7: Introductory Astronomy for Kids — Constellations**
  - **May 14: Moon Madness**
  - **May 17: Introductory Astronomy for Kids — Galaxies**
  - **May 21: The Unknown Universe**
  - **May 28: The Expanse: A Journey into Real Space Colonization**

- **For show times and further details, visit www.physics.mcmaster.ca/planetarium**

UPCOMING EVENTS

May 9, 2025 - 7:30 pm — H.A.A. Meeting at St. Matthew's Anglican Church. Our guest speaker will be *Thomas Deere*. **There is the option of attending online via Zoom.** Past meetings can be viewed on our YouTube channel.

June 13, 2025 - 7:30 pm — H.A.A. Meeting at St. Matthew's Anglican Church. Our guest speaker will be the H.A.A.'s *Mario Carr*.

2024-2025 Council

Chair	Sue MacLachlan
Second Chair	Christopher Strejch
Treasurer	Marcus Freeman
Digital Platforms Director	Christopher Strejch
Membership Director	Paula Owen
Observing Director	Kevin Salwach
Education Director	Jo Ann Salci
Event Horizon Editor	Bob Christmas
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Publicity Director	Mario Carr
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Check out the H.A.A. **Website**
www.amateurastronomy.org

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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