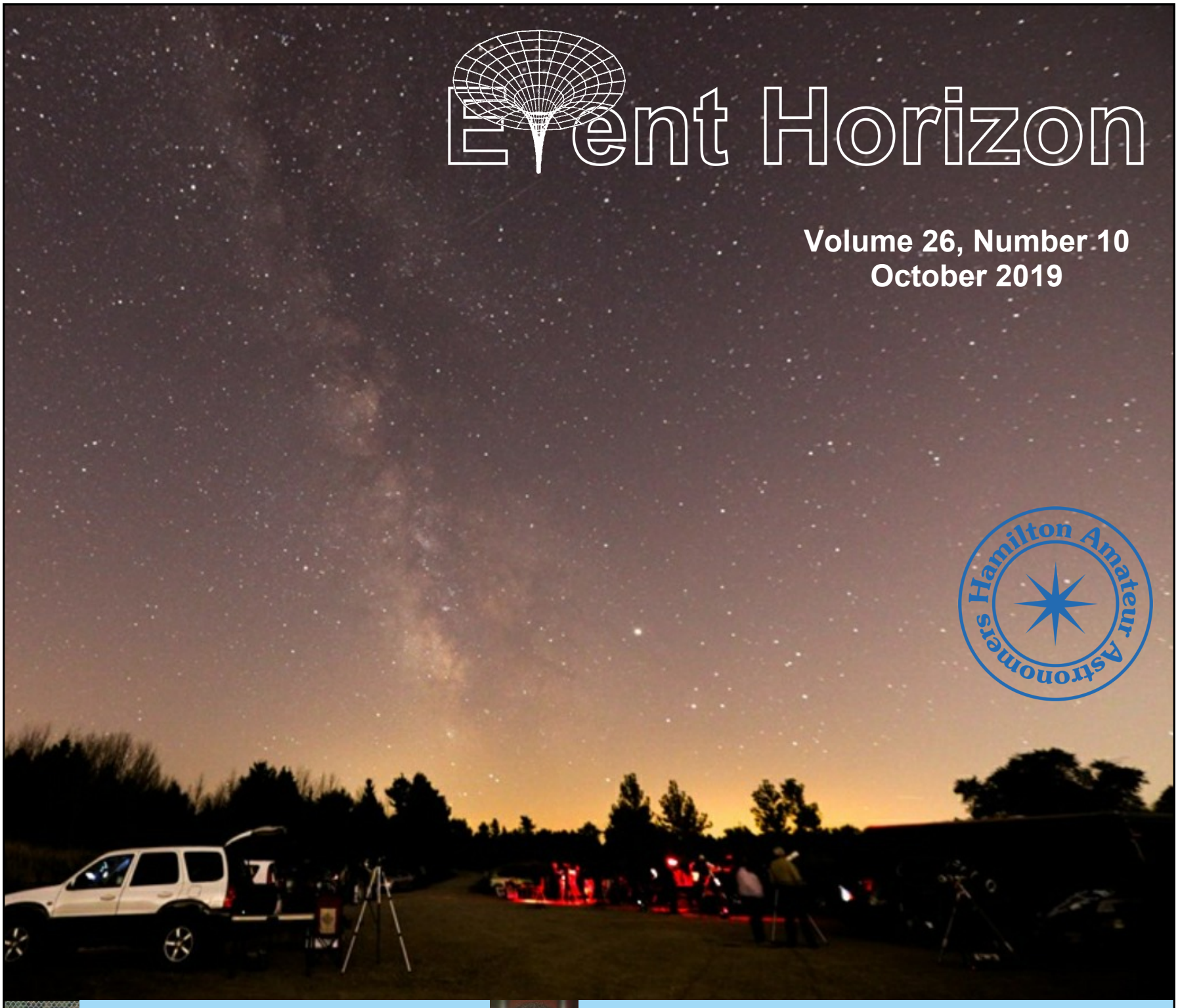
Event Horizon

Volume 26, Number 10
October 2019



From The Editor

Enjoy the October 2019 Event Horizon!

As always, thanks to all who have contributed.

Clear Skies!

Bob Christmas, Editor
editor 'AT' amateurastronomy.org

Chair's Report by John Gauvreau

It's October and I have seen Orion rising, the Pleiades shining through the trees and am thoroughly enjoying the turn of the seasons. My wife and I just got back from a week at a cottage near Tobermory, right up at the top of the Bruce Peninsula. The skies are very dark there and although I didn't have room to bring my telescope (my dog used the back seat of the car on these trips, but she does love to spend time outside at night, so she is a good observing companion), I did bring my binoculars and enjoyed a few very dark nights under

(Continued on page 2)

IN THIS ISSUE:

Chair's Report (continued)

a very beautiful sky. With the unaided eye, I showed my wife how to star hop to the Andromeda Galaxy and the Double Cluster in Perseus. She was thrilled to see both objects and marvelled at the Big Dipper hanging low over Lake Huron. And through the binoculars it felt like I was scooping up Messier objects by the handful. Jupiter set over the lake and the Pleiades rose in the water vapour laden sky, each one twinkling individually, looking like a small, never-ending firework in the east. I hope you have some equally memorable sights to look back on from the summer.

Upcoming Events

Our next meeting of the 2019/2020 season is coming up on Friday October 11. We will still be at the *Hamilton Spectator Building* for one last meeting. Next month, in November, we will be moving to our new home at *McMaster Innovation Park*. But *this* month, we will see you at the Spec.

This is Games Night for the club, and we will be playing Astro-Bingo! Fun for everyone as we try to solve trivia questions about all things astronomical and fill in our bingo cards. This month we will also hear from our club councillors about what they have accomplished over the past year. A lot goes on behind the scenes and it's worth hearing about. And there are a few leftover tee shirts and hoodies available for purchase, so if one interests you the meeting is a great time to pick it up. Feel free to contact me (chair 'AT' amateurastronomy.org) to find out what's available or reserve one.

Our outreach schedule for this year finishes up this Saturday, October 5th. We will be in Grimsby at the Niagara Gateway Tourism Centre on Casablanca Blvd. If the weather permits, we will be setting up telescopes right by the front doors to share views of the Moon, Saturn and the night sky with the many members of the public that frequent this busy location. And if it's not clear or you get a little chill in the cool October air, then the good news is there is a Tim Horton's right inside! Come on out and be a part of the fun. Everyone is welcome at these fun and social events.

Calendar

The deadline for submissions to the calendar is just days away and that means it is time to send in your images for the 2020 HAA calendar. Every year, we publish a wonderful wall calendar featuring the great photographic work of our own members, and everyone is invited to participate. Any member can send in their original images for consideration. Now is the time! Send your submissions to "recorder 'AT' amateurastronomy.org". They should be jpeg in format, horizontal (landscape) format and at least 300kb in size.

2019/2020 Council

This month, we elect the upcoming slate of councillors to help guide the club through the next year. These hardworking volunteers also have a lot of fun planning the club events and having a hand in just what our club does. Any eligible member is welcome to join council, and if you think you would like to be a part of this, just contact me (and all members really are welcome any council meeting!). It is actually a lot of fun and you will be a part of a great group of people. Don't hesitate to get in touch of you have questions or just want to talk about the idea of getting involved.

I look forward to seeing you at one of the upcoming club events.

Masthead Photo: *A summer observing night in Binbrook, Ontario, by Ann Tekatch.*

Taken August 24, 2019, 11:00. 14mm f/1.8, 20 second exposure, at ISO 800.

H.A.A.'s Loaner Scope Program

We at the HAA are proud of our Loaner Scope Program.

If you don't have a telescope of your own and want to make use of one for a month or so, you can borrow one of our fine loaner scopes.

Please contact Jim Wamsley, at: 905-627-4323

or e-mail Jim at:
secretary 'AT' amateurastronomy.org

and we'll gladly get one signed out for you.

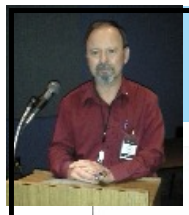
HAA Helps Hamilton

To support our community, we collect non-perishable food items and cash for local food banks at our general meetings. Please bring a non-perishable food item to the meeting or a donation of cash and help us help others.

Our donations go to Hamilton Food Share, which delivers them to various food banks around the Hamilton area.

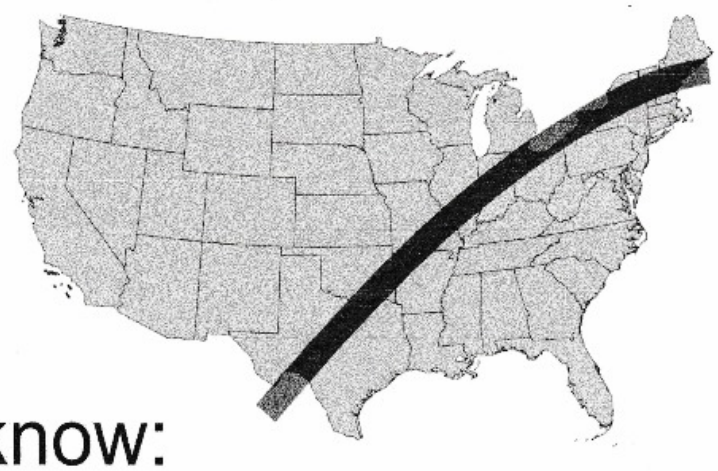
If you would like to help or have any questions about this initiative, please contact the H.A.A.

Hamilton Food Share
Hunger. It's just unacceptable.



April 8, 2024 Solar Eclipse Planning by Bernie Venasse

What are your plans for viewing the 2024 Solar Eclipse?



Let me know:

eclipse@amateurastronomy.org

Hamilton Amateur Astronomers

September Astrophysics Group Meeting Summary by Mike Jefferson

September 20/2019:

In attendance tonight were Doug Black, Doug Currie, Peter Hui, Mike Jefferson and Gary Sutton. The following description is how we kicked off the new HAA astronomical 'year'. Regrets were sent from Ian Rabenda.

Tonight's meeting began with Doug Currie's presentation on “Solar Interstellar Neighbourhood Star Systems”. After a few equipment glitches, the meeting began at 8:08 PM. Doug began with an overview of the solar neighbourhood and different star characteristics. We find that most stars in our local neighbourhood have low brightnesses. “Research Consortium On Nearby Stars” Project has discovered 316 star systems within 10 parsecs. There has been a 65% increase in the number of stars discovered since RECONS began! Most of the new discoveries are of various types of dwarfs. Our sun is a dwarf on the main sequence of the Herzsprung-Russell diagram of stellar evolution. Researchers feel that 90% of these new nearby discoveries have been found – i.e. only 10% more remain to be identified. Once this occurs, their spectra are plotted on the Morgan, Keenan and Kellman System of spectral classification. Types and numbers of stars within 10 parsecs of us have been classified to date.

Doug went on to say that no neutron stars, bright stars or black holes are included in this survey. Exoplanets of surveyed stars are also included as long as they are within the 10 parsec limit. It has been found that 56 exoplanets are attached to stars within this range. He continued by comparing the Trappist 1 system (illustration below) to the solar system. Binaries, triples and quintuples within 10 parsecs are allowed for study.

Castor is a multiple star but is at 15 parsecs from us. Doug showed us an H-R diagram of stellar candidates within 25 parsecs.

The middle part of the meeting had Mike taking up the answers to the spectroscopy quiz that he had handed out at last June's astrophysics meeting. Answers were given and problems discussed. An understanding of the difficulties of identifying spectra emerged from this Laboratory Exercise in Astronomy from The Harvard College Observatory and “Sky and Telescope”. Even though these were survey spectra, they still presented as much of a challenge as higher resolution data.

The third and final part of the meeting consisted of doing a 'think tank' analysis of Astrophysics and where it might be going. Some of the membership wants to raise cash for big observational projects, some want large armchair projects involving a great deal of discussion, no observations and no equipment, and some want to continue with making ourselves up as we go along, with small topics brought up on a monthly basis. Doug Black volunteered to send out an email outlining what we had discussed and to try to figure out our best course of future action.

Our sincere thanks to the Blacks for their hospitality and refreshments; and to those members who brought extra refreshments. Our next meeting will convene on October 18/19. Please watch the HAA website for any changes that may occur between now and then.

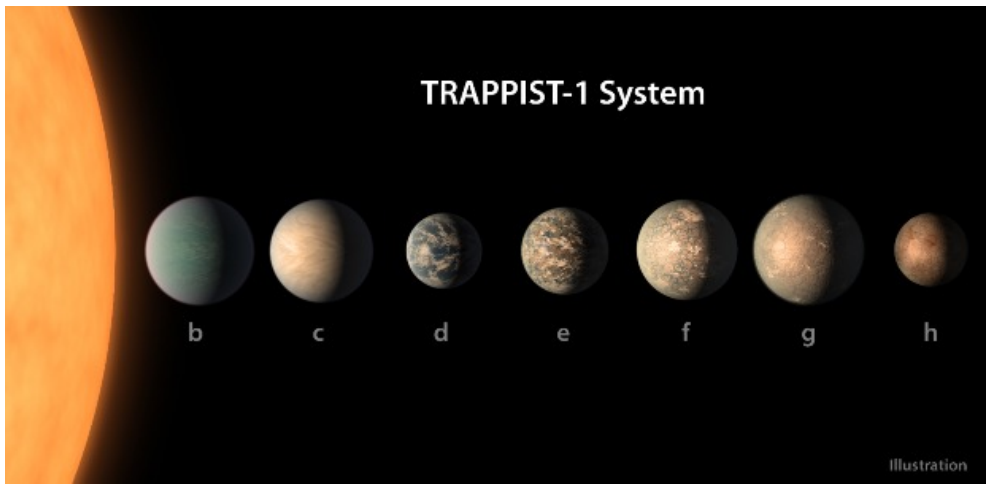
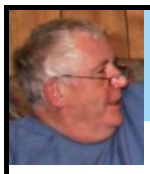


Illustration of Trappist-1 System

Image Credit: NASA/JPL-Caltech



Report from the 2019 Black Forest Star Party by Leslie Webb

A good time was had by all. *Ed Smith* was also in attendance. He took this photo for me. Ed acquired a Atlas mount (eq 6 size); not sure of the model type.

Robert Smoke got a real deal on a planet imager.

Janice Mannering won a Celestron power pack.

Denise White acquired a Teleview 13mm type 6. Also scratched M73 off her Messier list. Well done Denise!

Matthew Mannering acquired lots of data on the silver dollar galaxy. Will make a good photo (for the calendar).

Jo Ann Salci videoed Saturn. Look forward to seeing the results.

Ron — I can't remember what he was up to. The two *Chris*'s also added to the mix. All in all, it was good time for everyone.

Well me, I used my 13mm Etho, a newly acquired eyepiece in my New Zenithstar 73mm. Actually for imaging.

The talks were good. Trevor Jones did a presentation. We will see Trevor at our meeting in November at our new venue. Hope to see more HAA members at Cherry Springs next year.

Photo Credit: Ed Smith

The Sky For October 2019 by Bob Christmas

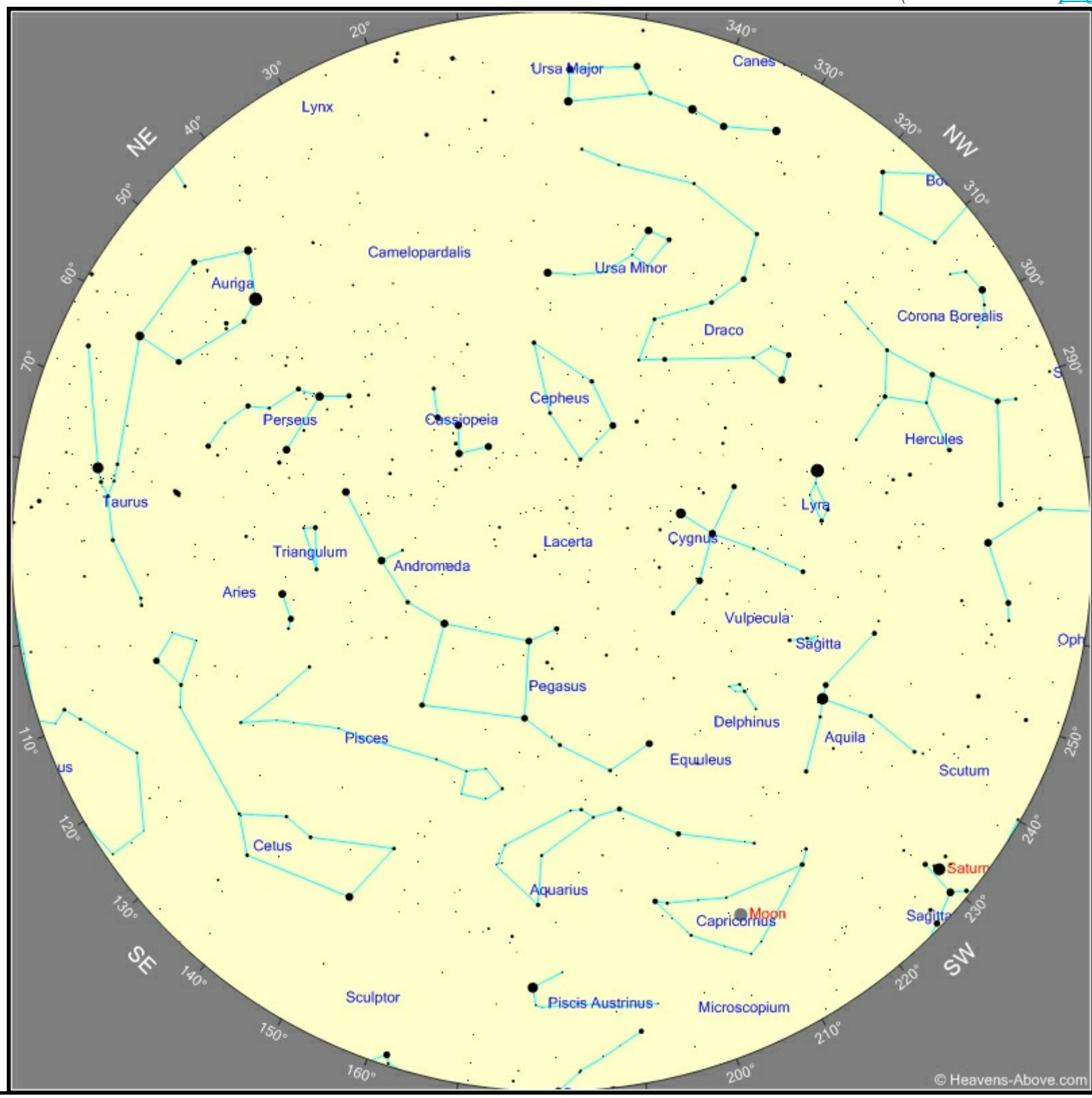
Hello, it's me once again, as we crash into fall. Autumn is actually my favourite time of year, especially for sky gazing; the heat, humidity and mosquitos are gone, etc.

The Sky at a Glance

Here's an all-sky chart for *October 7, 2019, at 11:00 pm EDT* as seen from Binbrook, ON. This chart was generated using the Heavens Above website. By this time, the fall constellations are high up, including *Pisces*, *Aquarius*, *Cetus*, *Piscis Austrinus* and the *Square of Pegasus*. Jupiter and Saturn are waving goodbye to the evening sky, and other constellations like *Auriga* and *Taurus*, including the *Pleiades*, are rising in the east. The *Summer Triangle* of bright stars, Vega, Deneb and Altair, are still in the sky, but are getting lower in the west.

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

(Continued on page 8)



The Sky For October 2019 (continued)

The Moon

Phases this month:

- October 5 16:47 UT — 1st Quarter
- October 13 21:08 UT — Full Moon
- October 21 12:39 UT — Last Quarter
- October 28 03:38 UT — New Moon

The Planets

- *Mercury* is visible low in the western sky in the evening throughout the month. On the 20th, its elongation from the sun will be 25 degrees.
- *Venus* gets more easily visible low on the western horizon in evening as the month progresses.
- *Mars* starts to appear in morning twilight in the east in Virgo.
- *Jupiter* is still in the early evening sky, but sets earlier in the west at the month goes on.
- *Saturn* is also still in the evening sky in Sagittarius, but sets about an hour after Jupiter does.
- *Uranus* is in the sky most of the night this month in Aries. It reaches opposition on October 28. There's more on Uranus' apparition this month in NASA's Night Sky Notes on pages 11 and 12.
- *Neptune* is in the sky most of the night this month in Aquarius.

Minor Planets

- *(4) Vesta* is in Taurus and rises progressively earlier in the night at the month goes on. At about magnitude 7, it should be easily visible in binoculars.

Comets

As I mentioned last month, comet *C/2018 W2 Africano*, is well placed in the sky and be visible most of the night during October, although it will plunge deeper down in the southern sky. It should be visible in small telescopes. It starts the month near the lower-right-most "ring" of Pisces at perhaps magnitude 8, then makes its way through Aquarius and Piscis Austrinus, then ends the month near the northern tip of Grus. By then, it will be a challenge to glimpse it from mid-northern latitudes.

You can keep track of comets currently in the sky, using 2 very useful websites:

Weekly Information about Bright Comets:

http://www.aerith.net/comet/weekly/current.html

Heavens Above's Comet Page:

https://www.heavens-above.com/Comets.aspx

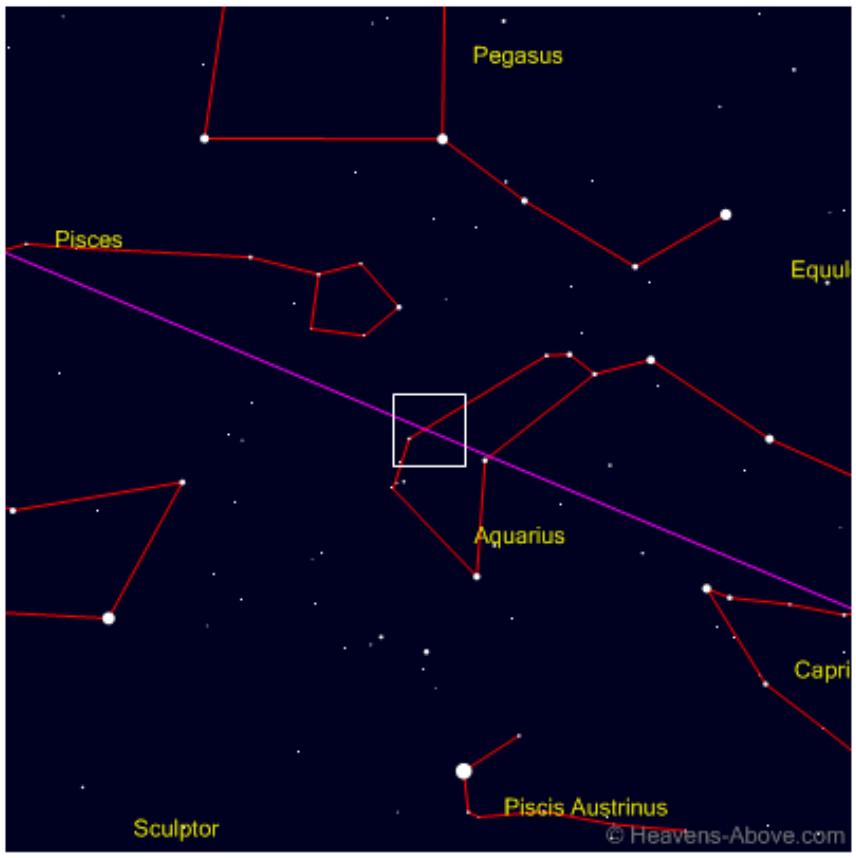
(Continued on page 9)

The Sky For October 2019 (continued)

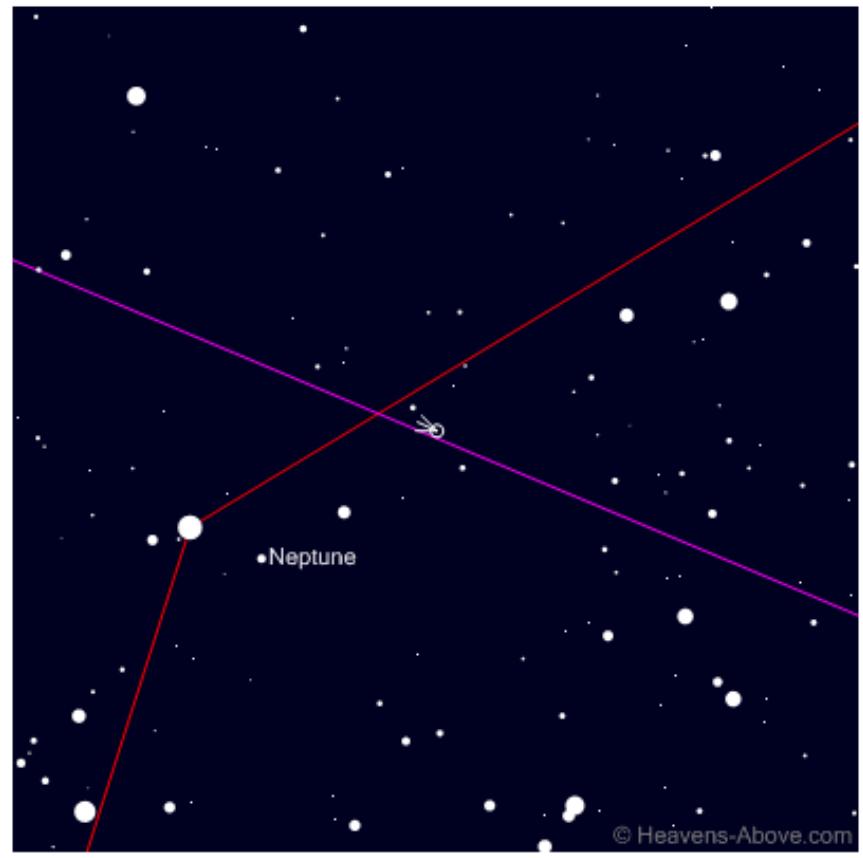
Here are finder charts of *C/2018 W2 Africano* for October 3 when it is in Aquarius. That night, this comet will be just 2 degrees from Neptune! These were generated from the Heavens Above website.

Comet C/2018 W2 Africano

Year 2019 Month October Day 3 Time 23:00:00 Update Reset to now



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



Fine finder chart
(Field of view: 5°, Max. star mag.: 10)

Deep Sky Objects

Many of the fall Messier objects currently visible I already listed last month in the September E.H. But this month, I will highlight a non-Messier deep sky object that is very prominent in the fall sky (a pair of objects, actually).

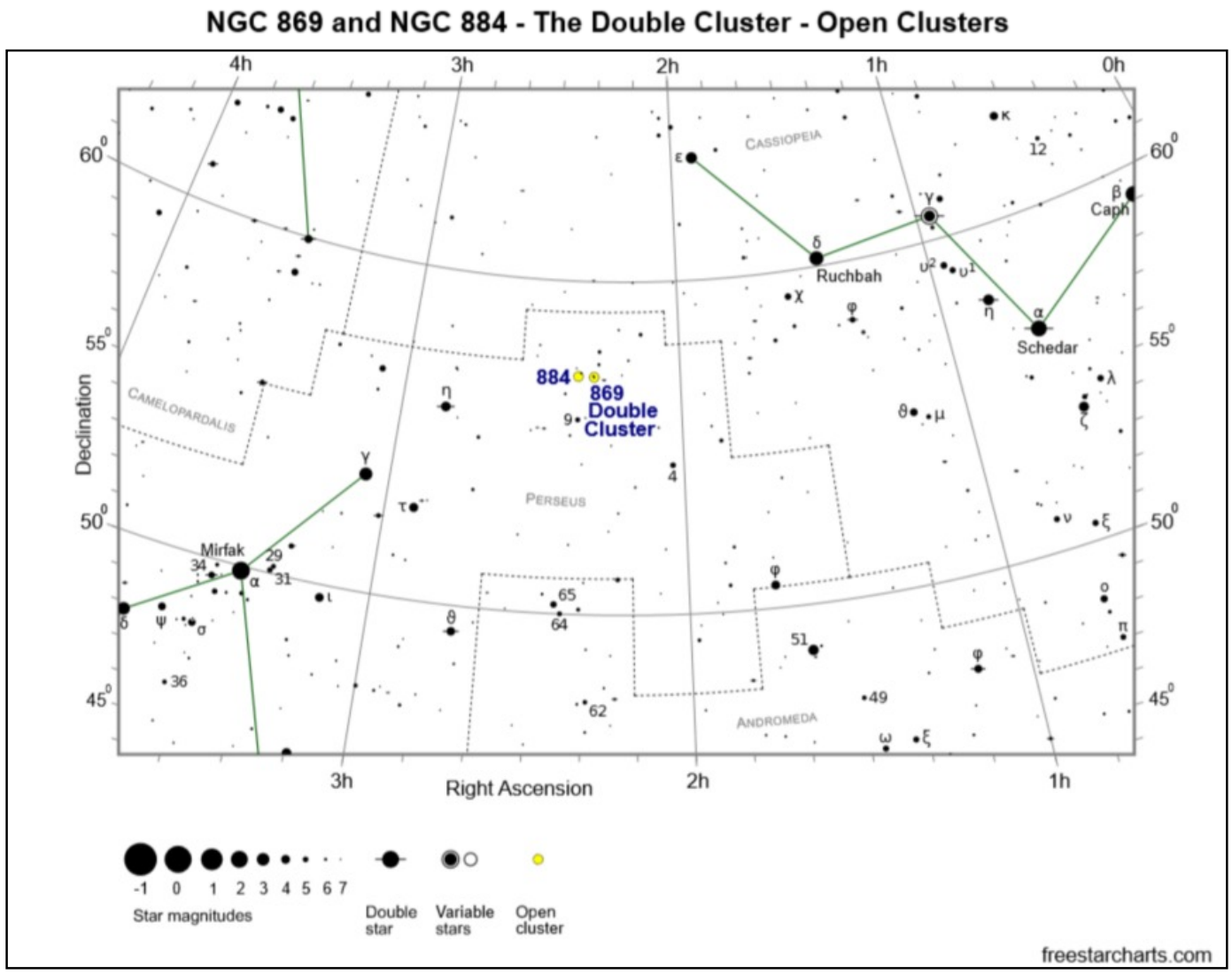
That would be the Double Cluster in Perseus (NGC 869 & 884). Both of these open star clusters have visual magnitudes of about 4. The pair is visible to the naked eye from a dark sky location away from big cities. They are showpieces in binoculars.

NGC 869 is about 7,000 light years away, and NGC 884 is about 8,100 light years away, placing both in the Perseus Arm of our galaxy.

The next page has both a finder chart and an image of the Double Cluster. Just follow a line perpendicular to a line joining the two left-most stars of the W of Cassiopeia towards the bright star Mirfak (alpha Persei) until you bump into the Double Cluster.

(Continued on page 10)

The Sky For October 2019 (continued)



left:

Finder chart for the Perseus Double Cluster.

Credit: freestarcharts.com
https://freestarcharts.com/the-double-cluster

right:

The Perseus Double Cluster (NGC 884 and NGC 869).

Image Credit: Bob Bryant (Orange County Astronomers)

Timeline of Significant Events

- October 3 — Jupiter 1.9 degrees south of the Moon.
- October 5 — Saturn 0.3 degrees north of the Moon.
- October 20 — Mercury at greatest elongation in evening sky (25 degrees).
- October 22 — Moon 0.7 degrees north of the Beehive Cluster (M44).
- October 28 — Uranus at opposition.
- October 31 — Jupiter 1.3 degrees south of the Moon.

Sources

- The Royal Astronomical Society of Canada. *Observer's Handbook 2019*. Editor: James S. Edgar. Toronto, ON, 2018.
- The Heavens Above website; https://www.heavens-above.com
- The freestarcharts website; https://freestarcharts.com

NASA Night Sky Notes

This article is distributed by NASA Night Sky Network.

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach.

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

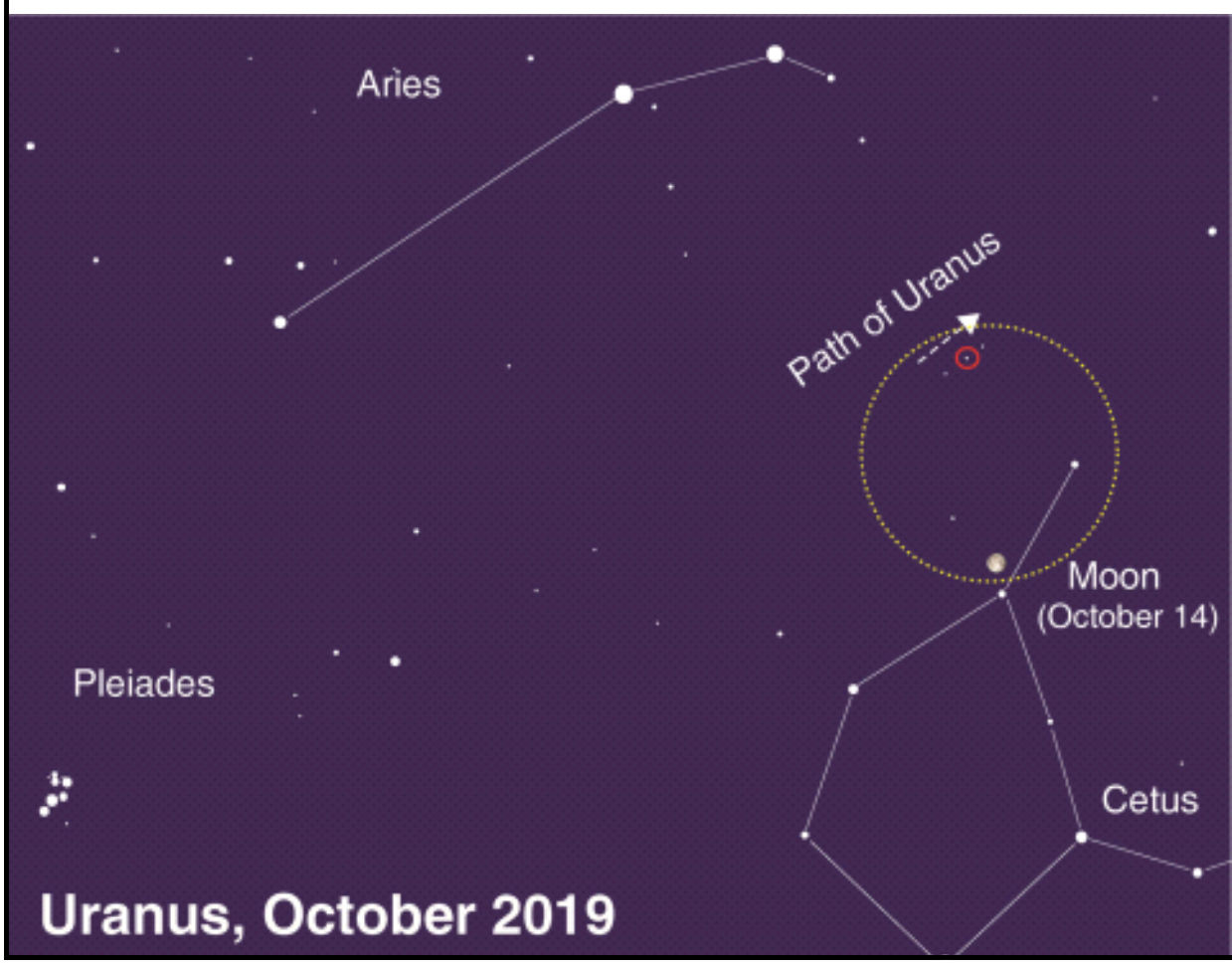
Find Strange Uranus in Aries

By David Prosper

Most of the planets in our solar system are bright and easily spotted in our night skies. The exceptions are the ice giant planets: Uranus and Neptune. These worlds are so distant and dim that binoculars or telescopes are almost always needed to see them. A great time to search for Uranus is during its opposition on October 28, since the planet is up almost the entire night and at its brightest for the year.

Search for Uranus in the space beneath the stars of Aries the Ram and above Cetus the Whale. These constellations are found west of more prominent Taurus the Bull and Pleiades star cluster. You can also use the Moon as a guide! Uranus will be just a few degrees north of the Moon the night of October 14, close enough to fit both objects into the same binocular field of view. However, it will be much easier to see dim Uranus by moving the bright Moon just out of sight. If you're using a telescope, zoom in as much as possible once you find Uranus; 100x magnification and greater will reveal its small greenish disc, while background stars will remain points.

(Continued on page 12)



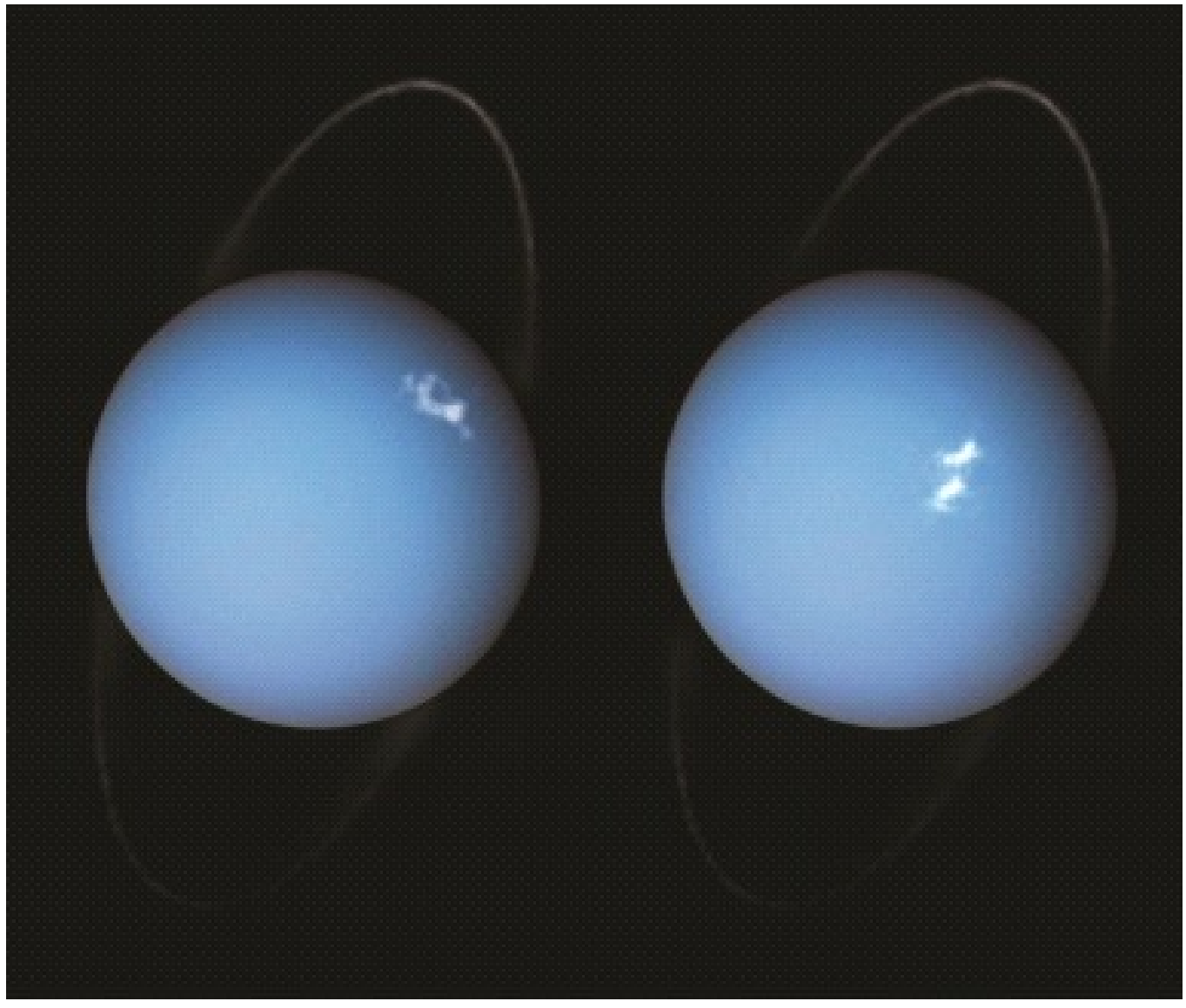
The path of Uranus in October is indicated by an arrow; its position on October 14 is circled. The wide dashed circle approximates the field of view from binoculars or a finderscope. Image created with assistance from Stellarium.

NASA Night Sky Notes (continued)

Try this observing trick from a dark sky location. Find Uranus with your telescope or binoculars, then look with your unaided eyes at the patch of sky where your equipment is aimed. Do you see a faint star where Uranus should be? That's not a star; you're actually seeing Uranus with your naked eye! The ice giant is just bright enough near opposition - magnitude 5.7 - to be visible to observers under clear dark skies. It's easier to see this ghostly planet unaided after first using an instrument to spot it, sort of like "training wheels" for your eyes. Try this technique with other objects as you observe, and you'll be amazed at what your eyes can pick out.

By the way, you've spotted the first planet discovered in the modern era! William Herschel discovered Uranus via telescope in 1781, and Johan Bode confirmed its status as a planet two years later. NASA's Voyager 2 is the only spacecraft to visit this strange world, with a brief flyby in 1986. It revealed a strange, severely tilted planetary system possessing faint dark rings, dozens of moons, and eerily featureless cloud tops. Subsequent observations of Uranus from powerful telescopes like Hubble and Keck showed its blank face was temporary, as powerful storms were spotted, caused by dramatic seasonal changes during its 84-year orbit. Uranus's wildly variable seasons result from a massive collision billions of years ago that tipped the planet to its side.

Discover more about NASA's current and future missions of exploration of the distant solar system and beyond at nasa.gov



Composite images taken of Uranus in 2012 and 2014 by the Hubble Space Telescope, showcasing its rings and auroras. More at bit.ly/uranusauroras Credit: ESA/Hubble & NASA, L. Lamy / Observatoire de Paris

Eye Candy the Members' Image Gallery

The Full Harvest Moon September 14, 2019, by **Sylvie Gionet**

Taken with her Canon EOS Rebel T6i Manual Exposure Evaluative Metering; 1/125 second; ISO 100.

A “Heads-Up”: Upcoming and Online Shows

— from David Simpson:

Kronos Quartet: Sun Rings

Nov 9, 2019 and Nov 10, 2019

Details at:
https://socrates.mcmaster.ca/events/kronos-quartet-sun-rings/

Location: Concert Hall, L.R. Wilson Hall,
McMaster University
(https://socrates.mcmaster.ca/locations/concert-hall-l-r-wilson-hall-mcmaster-university/)

“Art and science have enjoyed a triumphant meeting… Terry Riley’s empyrean masterpiece for the Kronos Quartet, chorus, electronic sounds from outer space, and lavish visual projections provides music of supreme beauty and spiritual impact.” – Los Angeles Times

November 9 at 8 p.m. and November 10 at 2 p.m.
Limited seating. General admission: $15 | Students: $5
Buy tickets online
(https://secureca.imodules.com/s/1439/17/event.aspx?sid=1439&gid=1&pgid=8678&cid=15699&Source=SocratesWebsiteEvents)
or call 905 525 9140 ext. 26848.

One of North America’s most acclaimed string quartets presents their multi-disciplinary masterpiece. Sun Rings draws from sounds and images from space recorded by NASA and music for string quartet and chorus composed by Terry Riley.

Performances will include the participation of McMaster University and Women’s Choirs.

For 45 years, San Francisco’s Grammy-winning Kronos Quartet and its nonprofit Kronos Performing Arts Association have reimagined and redefined the string quartet experience through thousands of concerts, over 60 recordings, collaborations with composers and performers from around the globe, more than 1,000 commissioned works, and education programs for emerging musicians.

In partnership with the Socrates Project and the School of the Arts and Faculty of Science.

The man who brings astronomy to downtown Montreal

CBC Radio · Posted: Sep 20, 2019 5:47 PM ET | Last Updated: September 20

https://www.cbc.ca/radio/thesundayedition/the-man-who-brings-astronomy-to-downtown-montreal-1.5291212

Segment of The Sunday Edition, Sept 22, 2019 with Michael Enright

William J. McCallion Planetarium

McMASTER UNIVERSITY, HAMILTON, ONTARIO

- Public shows every Wednesday (7:00pm; 8:15pm)
- Public transit available directly to McMaster campus
- Tickets $7 per person; private group bookings $150
- Different shows every week
- Upcoming shows include:

  – Oct 2: Introductory Astronomy for Kids — Galaxies
  – Oct 9: Moons
  – Oct 16: The Search for Life: Are We Alone?
  – Oct 23: Stories of the Sky
  – Oct 30: Next Generation Telescopes for Cutting Edge Science

- For more details, visit
  www.physics.mcmaster.ca/planetarium

UPCOMING EVENTS

October 5, 2019 - 8:00 pm - 11:00 pm — *Public Stargazing Night* at the Niagara Gateway Tourism Centre, Grimsby, ON.

October 11, 2019 - 7:30 pm — *Annual General Meeting* at the Hamilton Spectator Auditorium.

November 8, 2019 - 7:30 pm — *HAA Meeting* at McMaster Innovation Park, 175 Longwood Rd. S, Hamilton, ON.

2018-2019 Council

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Second Chair	Mike Jefferson
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Digital Platforms Director	Christopher Strejch
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Check out the H.A.A. **Website**
www.amateurastronomy.org

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Observing site for the HAA provided with the generous support of the
Binbrook Conservation Area
Come observing with the HAA and see what a great location this is for stargazing, a family day or an outdoor function.
Please consider purchasing a season's pass for $79 to help support the park.
http://www.npca.ca/conservation-areas/binbrook/
905-692-3228

The Harvey Garden HAA Portable Library

Contact Information
E-mail: library@amateurastronomy.org