



Event Horizon

Volume 26, Number 9
September 2019



From The Editor

It will soon be Fall, and it's back to school, and back to the 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

Welcome back! I am hoping you had a good summer and are looking forward to the new season as much as I am.

I have had a busy but good summer. I really did get out observing quite a bit. Just last night I enjoyed a late night with a couple of friends and we observed a wide range of objects including a couple of nice globular clusters (M2 and M15 and NGC6934), a few galaxies (M31 and its companions, and NGC253 just below Cetus) and a few open clusters (NGC6940 in Vulpecula, the Double Cluster in Perseus (wow, I spent a lot of time on that one...so nice) and we even stayed up late enough to see M45, the Pleiades). We also took in the Veil Nebula and through my friend's 10" scope it was richly detailed with lots of fine, wispy structure. Jupiter was already low and although the Red Spot was visible it certainly wasn't the best view of Jupiter I have had this year. Saturn, on the other hand, was wonderful in all our scopes, as it almost always is. A cool late summer evening, a clear dark sky, a couple of good friends and a few very vocal coyotes made for a great way to wrap up summer. Bring on the autumn!

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Chair's Report (continued)

Club Activities this Summer

The club has been very active these past few months, with public viewing events, lots of outreach and observing at Binbrook for the members. Jo Ann Salci, our education director, accommodated a large number of requests from libraries over the summer, helped by Jim Wamsley, Dee Rowan, Barry Sherman and myself. She also led several other outreach events and probably looks at the fall season as a bit of a break!

Melissa and Maia Whitman represented the club admirably at the Royal Botanical Gardens on the Summer Solstice, talking to youths about our great hobby and showing off their telescope. They were fine ambassadors for the club and undoubtedly were appreciated by the many visitors to the RBG that day as much as their efforts were appreciated by me.

And of course the club held its biggest outreach event of the year on the weekend of the Perseid meteor shower at the Binbrook Conservation Area. Many, many members came out to host about 250 members of the public for a night time observing session. Telescopes and meteorites were available for the public to see and use, and over the course of the night I spoke to many people in attendance and they were all delighted. And a few Perseid meteors were spotted too! A big thank you to all the club members who came out and helped that night!

And prior to the public event we had our annual picnic. About 25 club members and their family members attended a fun barbeque (thanks Jim for once again offering your grilling skills!) and pot luck (yum, so much good food!) at the conservation area. The cliché applies; a good time was had by all!

And also worth mentioning was the fact that there have been several good observing sessions out at the club's dark sky observing site at Binbrook, the most recent of which attracted 27 club members! What a great turnout and what a great night! You don't need a telescope to join in the fun. All members are welcome and it's a great way to meet other observers and enjoy some fun stargazing.

Upcoming Events

Our first meeting of the 2019/2020 season is coming up on Friday September 13. We will still be at the Hamilton Spectator Building for this meeting and the next one in October. In November we will be moving to our new home at McMaster Innovation Park. But this month we will see you at the Spec.

In June we had Dr. Brian McNamara from the University of Waterloo talk to us about black holes. His talk was very accessible and explained clearly the spectacular new image of the black hole's event horizon. This season we have some great meetings to look forward to including one of Dr. McNamara's colleagues from Waterloo, one of our own local professors from McMaster University, Dr. James Wadsley, and Trevor Jones, star of the website 'astrobackyard.com'.

Our outreach summer schedule continues on Saturday September 7th at Bayfront Park from 8:00 to 11:00pm. If the weather permits we will be setting up telescopes on the parking lot to share views of the Moon, Saturn and the night sky with the many members of the public that frequent this busy park. Come on out and be a part of the fun. Everyone is welcome at these fun and social events.

(Continued on [page 3](#))

Masthead Photo: *The Wizard Nebula (NGC 7380 / Sh2-142), by Peter Wolsley.*

Taken on August 10, 2019, with a Nikon D5300 DSLR (Ha modified) through a Celestron 8" EdgeHD SCT (2032mm focal length) at f/10 and ISO 200 (despite a bright waxing gibbous Moon!). Exposures: 12 x 450 seconds, for a total of 90 minutes. Digitally processed using StarTools.

Chair's Report (continued)

Calendar

This is September and that means it is time to send in your submissions 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. The deadline is at the end of this month so 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

In October (that's next 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 member is welcome to join council and if you think you would like to be a part of this, just contact me. 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 if 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 and hope you enjoy the new season as much as I.

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.





June Astrophysics Group Meeting Summary by Mike Jefferson

June 21 2019:

Our group met at Doug Black's home to hear about and discuss the Bluewater Astronomical Society's E. S. Fox Observatory, solar sailing craft and introductory spectroscopy. Six people attended. They were Doug Black, Doug Currie, Peter Hui, Mike Jefferson, Ian Rabenda and Gary Sutton. Refreshments were served.

Doug and Ian completed a PowerPoint presentation on the Bluewater Astronomical Society's and Bluewater Education Foundation Outdoor Education Centre's E. S. Fox Observatory near Warton, ON. Fox is the name of the building company that built this well-constructed roll-off building. It is used by the Bluewater Astronomical Society and a local board of education for nature studies. It houses a warm room, a 20" Dobsonian reflector, a small refractor, a 10" Meade Schmidt Cassegrain and other assorted equipment. Doug and Ian went there, with permission, to explore some possibilities of getting into higher level spectroscopy and other astrophysical endeavors.

Following Doug's and Ian's presentation, Doug Currie treated us to some of the latest developments in the field of solar sailing. These craft would unfold large, gossamer sails of mylar or other similar materials to utilize the solar wind and the Sun's radiation to push them through space to orbits around other solar system bodies. Because of their slow acceleration these craft would be better employed for long-duration scientific missions and delivering cargo and supplies to waiting space stations and other craft in planetary orbits.

The third presentation was done by Mike. It consisted of some introductory spectroscopy and a take home questionnaire on spectra from "Laboratory Exercises in Astronomy" by "Sky & Telescope". Mike will take up and discuss the results at the upcoming September astrophysics meeting.

We thank Doug B. for his kind hospitality and also other members for refreshments. We meet again in September 20, 2019, on Friday evening, at 7:30 P.M., at 26 Markland Street, Hamilton. Today is the final astrophysics meeting for this 'HAA calendar year'. Please watch the HAA website for any changes or cancellations.



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

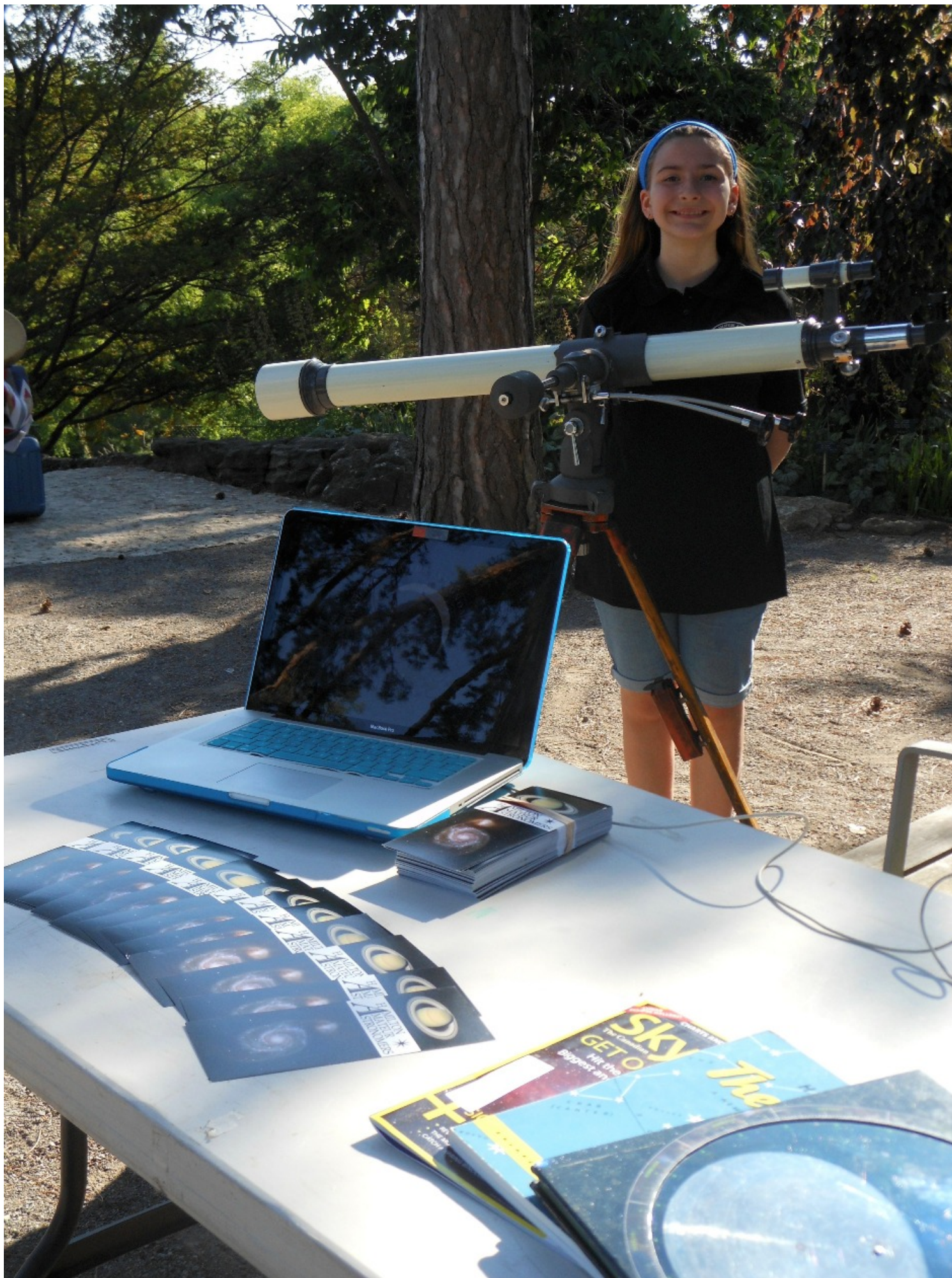
or e-mail Jim at: *secretary 'AT' amateurastronomy.org*

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

Letter to the Editor

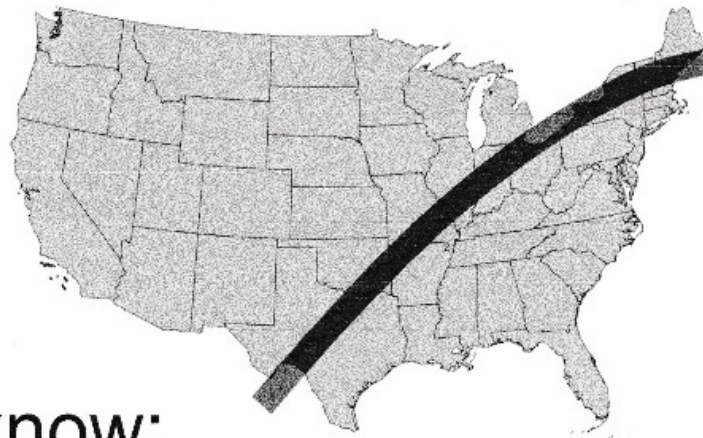
In June, Maia did some youth outreach on behalf of the HAA at the Royal Botanical Gardens! The timing wasn't great for sky viewing, but we pointed the telescope at some far away flowers and viewers were still impressed! Maia represented the group well with her knowledge and enthusiasm. Here is a photo of her all set up.

Melissa and Maia Whitman





What are your plans for viewing the 2024 Solar Eclipse?



Let me know:

eclipse@amateurastronomy.org





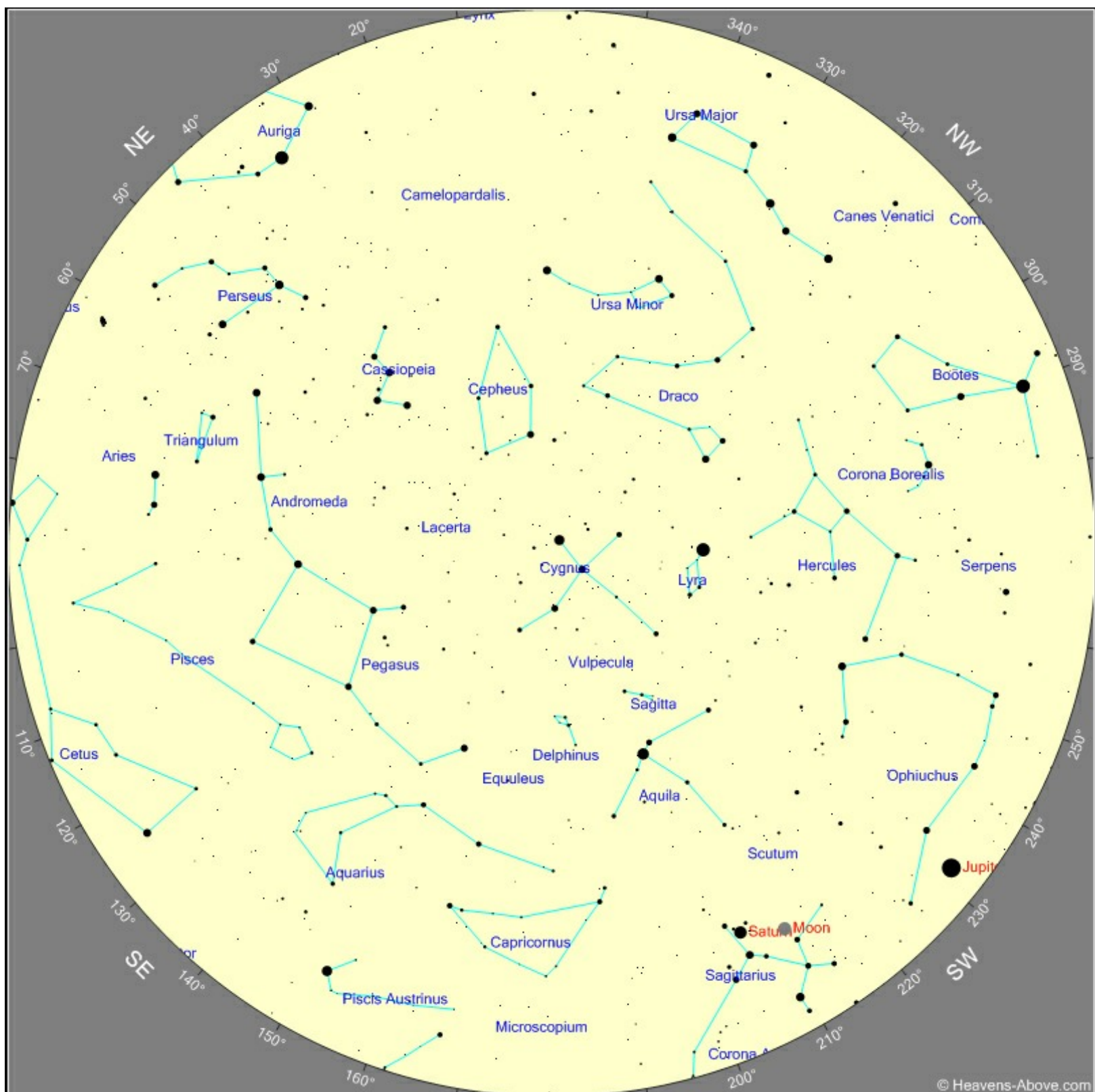
This month, Steve is still on his personal sabbatical from writing the monthly *The Sky This Month* column for the E.H. so once again, I am standing in.

The Sky at a Glance

Here's an all-sky chart for *September 7, 2019, at 11:00 pm EDT* as seen from Binbrook, ON. This chart was generated using the Heavens Above website. The summer constellations are starting to rotate out of view, and the fall constellations are starting to rise in the east.

Jupiter and Saturn are still visible in the evening sky in the south-west. Also, the *Summer Triangle* of bright stars, Vega, Deneb and Altair, are still high in the sky.

The stars in the sky rise and set an hour earlier every half month later. On September 23, this will be the sky at 10:00 pm; on October 7, this will be the sky at 9:00 pm, etc. *(Continued on [page 8](#))*



The Sky For September 2019 (continued)

The Moon

Phases this month:

- September 6 03:10 UT – 1st Quarter
- September 14 04:33 UT – Full Moon
- September 22 02:41 UT – Last Quarter
- September 28 18:26 UT – New Moon

The Planets

- *Mercury* becomes visible low on the western horizon in the evening sky mid-month.
- *Venus* becomes visible very low on the western horizon in evening twilight by mid-month.
- *Mars* is at superior conjunction with the Sun on September 2. It will not be safely visible this month.
- *Jupiter* is in the evening sky all month in the constellation Ophiuchus, and the first-quarter moon will pass just 2 degrees to its north on September 6.
- *Saturn* is in the evening sky all month in the Sagittarius, and the waxing gibbous moon will pass very close to it on September 8.
- *Uranus* is in the sky most of the night this month in Aries.
- *Neptune* is in the sky most of the night this month in Aquarius. It reaches opposition on September 10.

Minor Planets

A couple of objects of the Asteroid Belt brighter than magnitude 9 will be easily visible in September:

- (4) *Vesta* is in Taurus and will rise progressively earlier in the night at the month goes on. At magnitude 7.7, it should be easily visible in binoculars as it gets higher in the sky.
- (15) *Eunomia* is well-placed in Aquarius. It is about magnitude 8.5, and should be visible in binoculars.

Comets

One comet, *C/2018 W2 Africano*, will be excellently placed in the sky and be visible most of the night during all of September. It should be visible in small telescopes. It starts the month at about magnitude 10 in Perseus, then races through Andromeda, Pegasus and Pisces during the month. It's at perihelion (closest approach to the Sun) on September 5, and at the end of the month, it will in the lower-right-most "ring" of Pisces. By then, it could be as bright as magnitude 8. See the finder charts on the next page.

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>

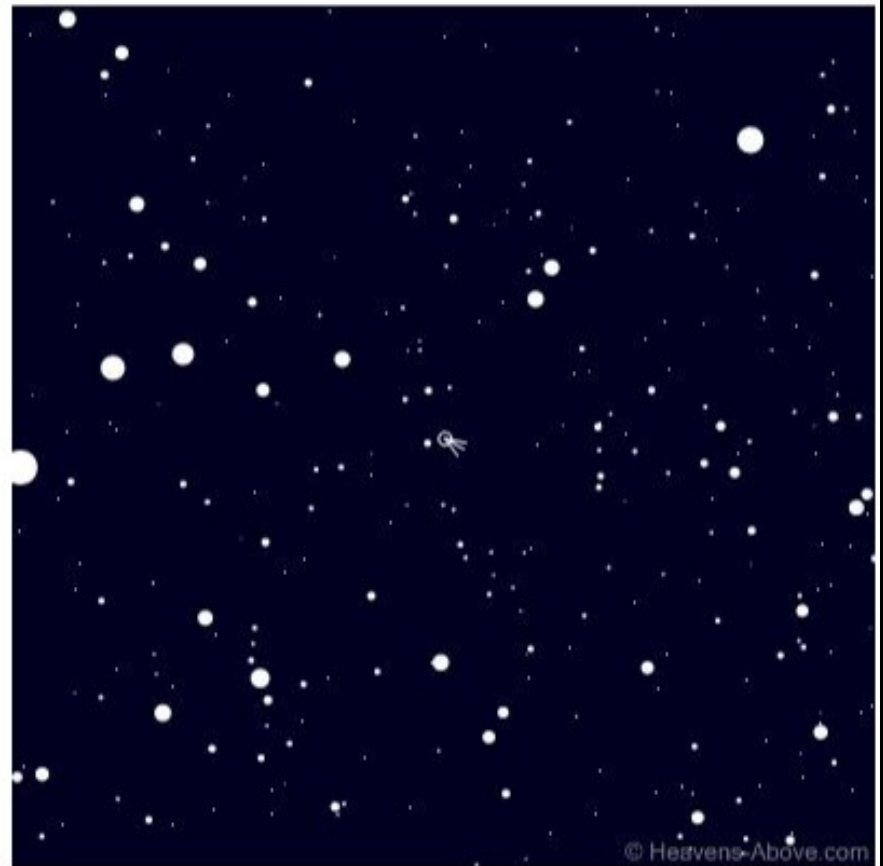
(Continued on [page 9](#))

The Sky For September 2019 (continued)

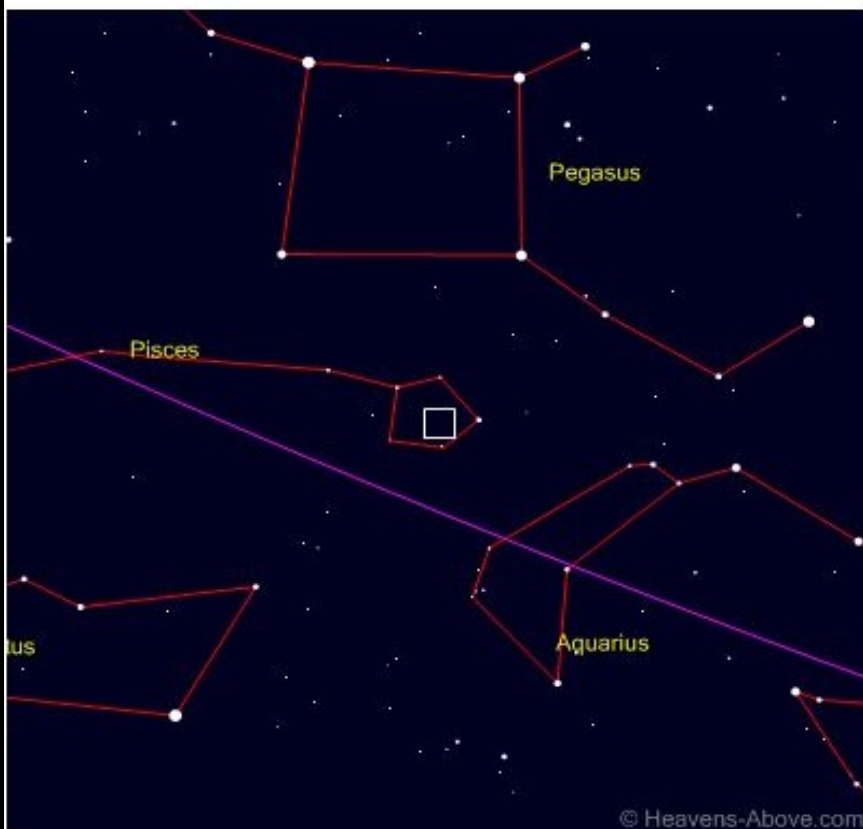
Here are finder charts of *C/2018 W2 Africano* for September 5 (perihelion day) and for September 30. These were generated from the Heavens Above website.

Comet C/2018 W2 Africano

Year Month Day Time



Year Month Day Time



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

Fine finder chart
(Field of view: 2°, Max. star mag.: 12)

(Continued on [page 10](#))

September Messier Objects

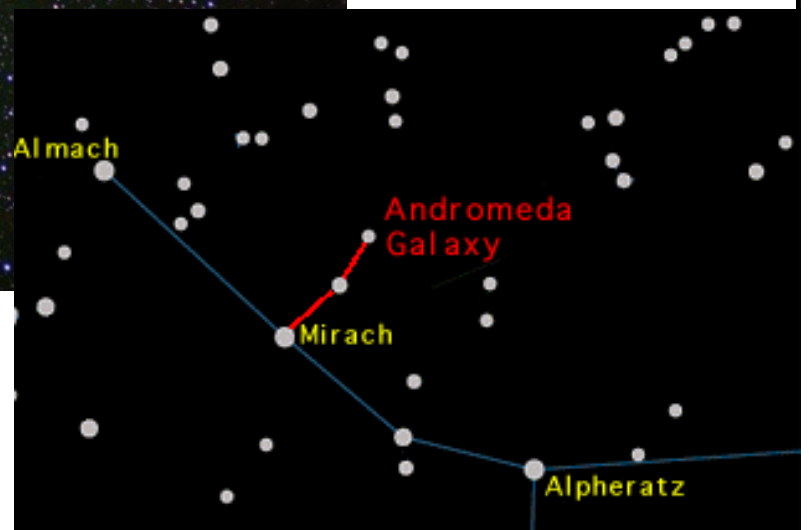
The September sky offers up some of Charles Messier's deep sky objects. Here's a selection:

- *M11* – (open cluster) the “Wild Duck” Cluster, in the constellation Scutum; a showpiece cluster, still high in the evening sky this time of year. Its visual magnitude is 5.8.
- *M2* – (globular cluster) in Aquarius; magnitude 6.4.
- *M15* – (globular cluster) in Pegasus; magnitude 6.0.
- *M33* – (galaxy) the Triangulum Galaxy, in the constellation of the same name; big but with low surface brightness; need a dark sky to see well.
- *M31* – (galaxy) the Andromeda Galaxy (pictured below), in the constellation of the same name; big and bright; look for its elliptical companions, *M32* and *M110*.



Left: M31, the Andromeda Galaxy, by Bob Christmas (taken Sept. 25, 2011)

Below: finder chart for M31 in constellation Andromeda. Courtesy of starchild.gsfc.nasa.gov.



Timeline of Significant Events

- September 6 – Jupiter 2 degrees south of the Moon.
- September 8 – Saturn 0.04 degrees north of the Moon.
- September 10 – Neptune at opposition.
- September 17 – Uranus 4 degrees north of the Moon.
- September 23 – Fall Equinox (07:50 UT).
- September 24 – Waning crescent Moon 0.4 degrees north of the Beehive Cluster (*M44*).
- September 28 – Mercury 1.4 degrees north of Spica.

Happy observing, everyone.

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>



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!

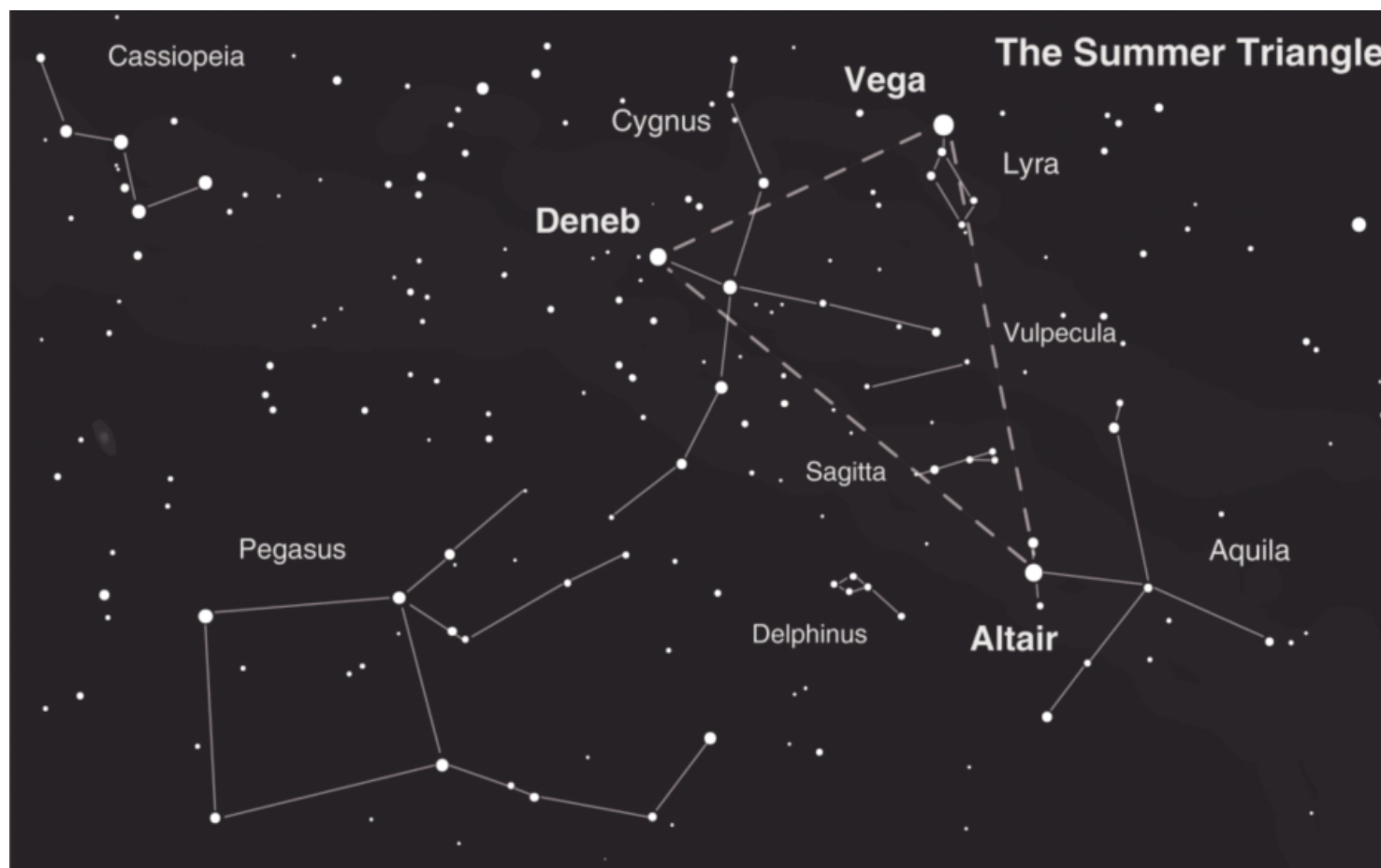
Spot the Stars of the Summer Triangle

By David Prosper

September skies are a showcase for the **Summer Triangle**, its three stars gleaming directly overhead after sunset. The **equinox** ushers in the official change of seasons on September 23. **Jupiter** and **Saturn** maintain their vigil over the southern horizon, but set earlier each evening, while the terrestrial planets remain hidden.

The bright three points of the **Summer Triangle** are among the first stars you can see after sunset: Deneb, Vega, and Altair. The Summer Triangle is called an **asterism**, as it's not an official constellation, but still a striking group of stars. However, the Triangle is the key to spotting multiple constellations! Its three stars are themselves the brightest in their respective constellations: Deneb, in Cygnus the Swan; Vega, in Lyra the Harp; and Altair, in Aquila the Eagle. That alone would be impressive, but the Summer Triangle also contains two small constellations inside its lines, Vulpecula the Fox and Sagitta the Arrow. There is even another small constellation just outside its borders: diminutive Delphinus the Dolphin. The Summer Triangle is huge!

(Continued on [page 12](#))



This wider view of the area around the Summer Triangle includes another nearby asterism: the Great Square of Pegasus.

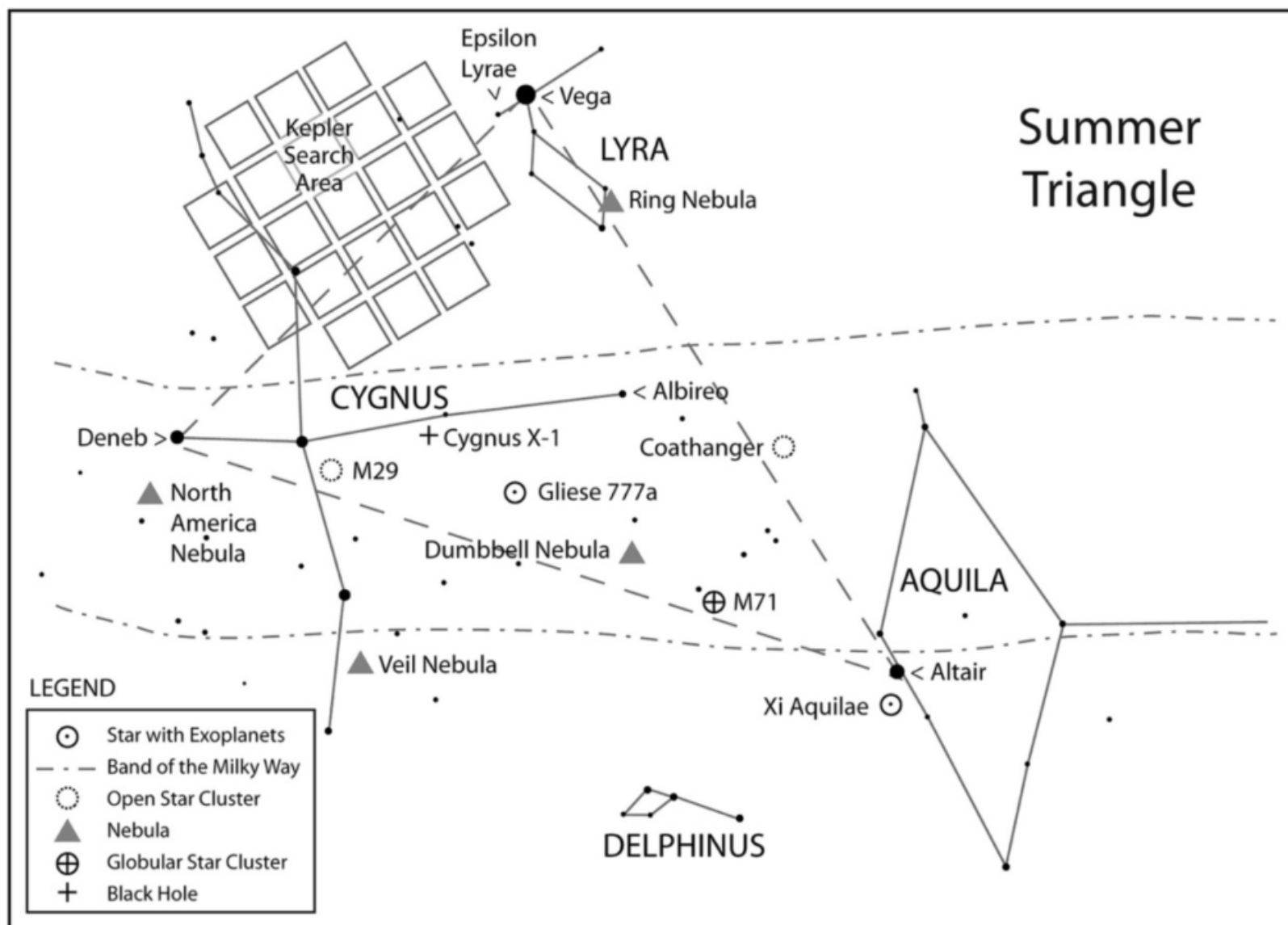
NASA Night Sky Notes (continued)

The **equinox** occurs on September 23, officially ushering in autumn for folks in the Northern Hemisphere and bringing with it longer nights and shorter days, a change many stargazers appreciate. Right before sunrise on the 23rd, look for Deneb - the Summer Triangle's last visible point - flickering right above the western horizon, almost as if saying goodbye to summer.

The Summer Triangle region is home to many important astronomical discoveries. Cygnus X-1, the first confirmed black hole, was initially detected here by x-ray equipment on board a sounding rocket launched in 1964. NASA's Kepler Mission, which revolutionized our understanding of exoplanets, discovered thousands of planet candidates within its initial field of view in Cygnus. The Dumbbell Nebula (M27), the first planetary nebula discovered, was spotted by Charles Messier in the diminutive constellation Vulpecula way back in 1764!

Planet watchers can easily find **Jupiter** and **Saturn** shining in the south after sunset, with Jupiter to the right and brighter than Saturn. At the beginning of September, Jupiter sets shortly after midnight, with Saturn following a couple of hours later, around 2:00am. By month's end the gas giant duo are setting noticeably earlier: Jupiter sets right before 10:30pm, with Saturn following just after midnight. Thankfully for planet watchers, earlier fall sunsets help these giant worlds remain in view for a bit longer. The terrestrial planets, Mars, Venus, and Mercury, remain hidden in the Sun's glare for the entire month.

Discover the latest in space science from the NASA missions studying our universe at [nasa.gov](https://www.nasa.gov)



Once you spot the Summer Triangle, you can explore the cosmic treasures found in this busy region of the Milky Way. Make sure to “Take a Trip Around the Triangle“ before it sets this fall! Find the full handout at bit.ly/TriangleTrip



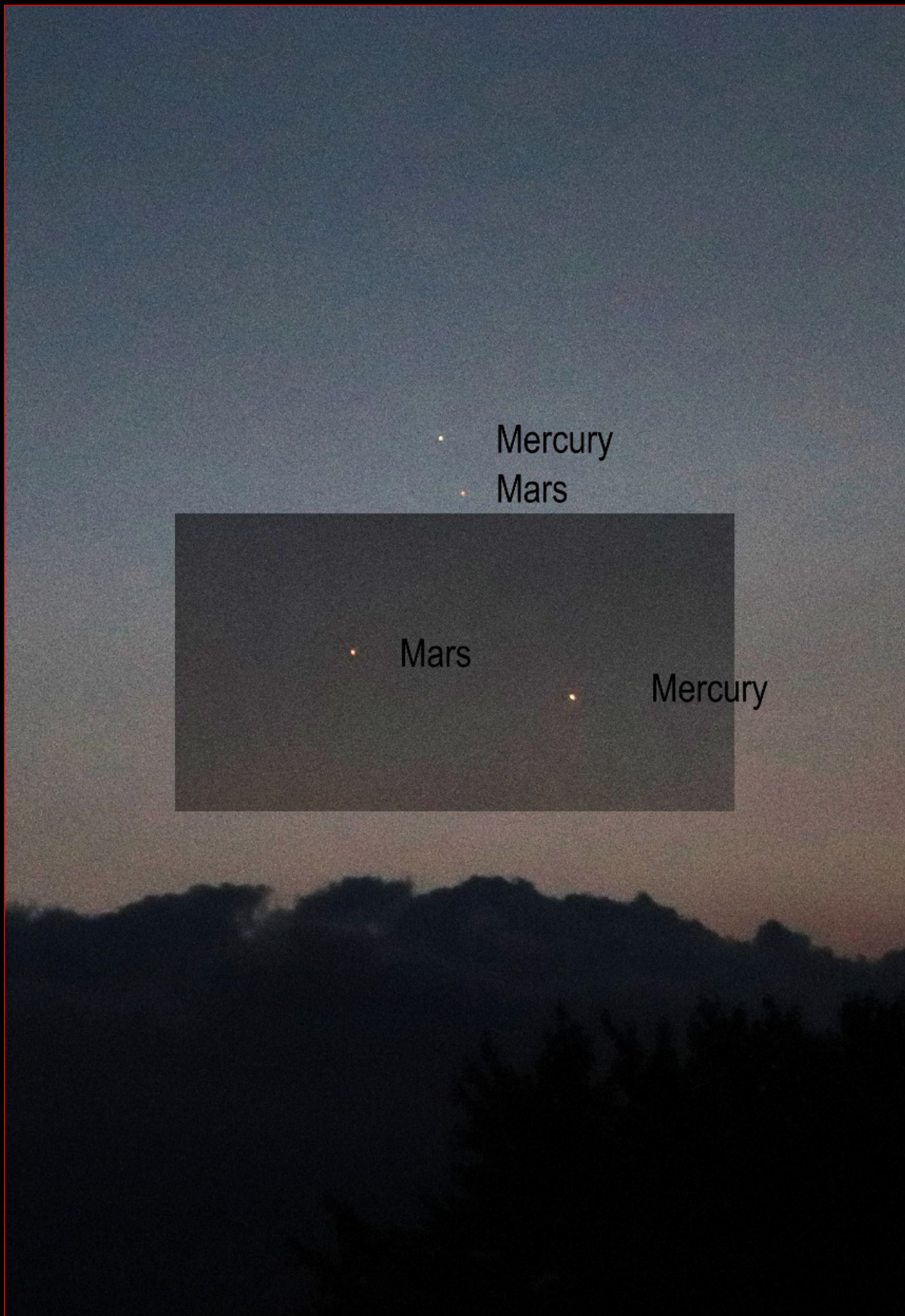
**The Summer Triangle (Vega, Deneb & Altair) June 2, 2019, from Cherry Springs State Park, Pennsylvania
by Janice Mannering**

Note the faint ribbons of green sky glow in this image.



**Jupiter and its Four
Brightest Moons**
June 11, 2019, from
McQuesten Park in
Hamilton, by
**Melissa and Maia
Whitman**

Taken with an
iPhone 6 through
the 8" reflector
loaner scope on the
Skyscapers' first
outreach night.



Mercury and Mars Close Approach June 16 & 18, 2019, by Matthew Mannering

Main image taken on June 18 when Mercury and Mars were 17 arcminutes apart; Inset at same scale is from June 16, at 65 arcminutes separation. Taken with his 135mm telephoto lens.



Waxing Gibbous Moon and Jupiter & its Moons August 9, 2019, by Bob Christmas

Taken with Canon 40D through Tamron 300mm telephoto lens, at ISO 200. Main image is 1/250 seconds at f/8, with a 1/2 second exposure at f/4 of Jupiter and its moons blended in.



© Ann Tekatch

The Summer Milky Way August 27, 2019, by Ann Tekatch

Taken with Canon 5D and 14mm lens, at ISO 1600 at f/1.8 from Tobermory, ON; 30 second exposure.



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:
 - **Sept 4: Introductory Astronomy for Kids**
– **Solar System**
 - **Sept 11: Astronomy Through the Ages**
 - **Sept 18: Astronomy for Muggles**
 - **Sept 25: 50 Years in Space**
- For more details, visit
www.physics.mcmaster.ca/planetarium

UPCOMING EVENTS

September 7, 2019 - 8:00 pm - 11:00 pm – *Public Stargazing Night* at Bayfront Park, Hamilton, ON.

September 13, 2019 - 7:30 pm – *HAA Meeting* at the Hamilton Spectator Auditorium.

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.

2018-2019 Council

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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