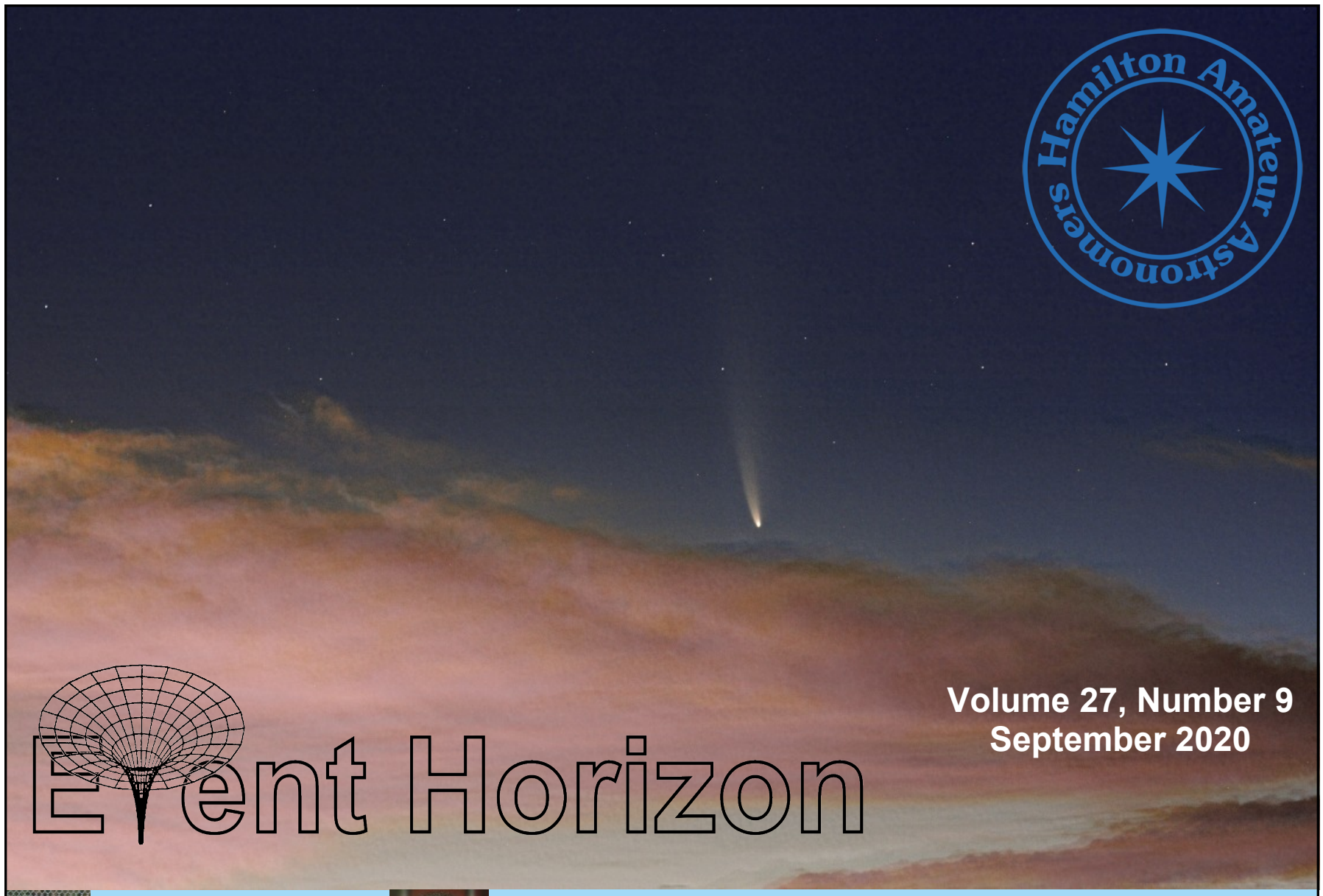


Event Horizon

Volume 27, Number 9
September 2020

From The Editor

Chair's Report by John Gauvreau

Welcome back to the E.H.!

During this summer of social distancing, there were lots of events going on in the sky, including a bright comet (C/2020 F3 NEOWISE), the Perseid Meteor Shower, Jupiter & Saturn side-by-side near the summer Milky Way, and lots more! I hope every-one had a chance to see some of these sights!

Continued Clear Skies!

Bob Christmas, Editor
editor 'AT'
amateurastronomy.org

Oh my, it has been nice to get out with the telescope! And it has been even nicer to see some members out at our observing nights. There have been several club observing nights and there will be more coming if you haven't made it out to one yet. Observing nights are currently open to members in limited numbers, but we are endeavoring to make sure that everyone who wants a turn gets one. Despite the restrictions it has actually been a great year for observing. There have been lots of clear nights, the best comet we have seen in years, and spectacular planets in the summer sky, with Jupiter and Saturn there now and Mars about to peak.

September Meeting

The Fall season is about to get underway with our first meeting back on September 11. Like the past couple of meetings, this will be an online meeting using the Zoom format. All members are welcome and of course anyone in your household is welcome to lean over your shoulder and join in too.

(Continued on page 2)

IN THIS ISSUE:

Chair's Report (continued)

We have *Sian Ford*, who is a doctoral student at McMaster University, studying astrobiology through life in the most extreme environments of Earth to help us understand how life could survive on other worlds such as Mars or Titan.

We also have *Matthew Mannering* with a new edition of The Sky This Month, and we will see the return of door prizes! Yes, we are going to give away a few goodies. Look for the email reminder with the link to join in the meeting coming your way next week.

Of course we look forward to getting together in person when it is safe to do so. McMaster Innovation Park, the host venue for our monthly meetings, has been wonderful to work with through this pandemic and has been as accommodating as possible as we go through these uncertain times. For now, all we know is that the September and October meetings (with guest speaker Dr. Hilding Neilson from the University of Toronto) will be online, and that we will assess the situation moving forward from there, working with MIP to determine when we can safely return to the venue.

A friendly reminder that since we are holding our meetings online, there is no collection for the food bank, but don't let that stop you from contributing yourself. It doesn't matter if it comes from the club or straight from the club members; there are people in need and any donation is always welcome.

The September meeting begins at the usual time of 7:30 on the 11th. Hope to 'see you there'!

HAA 2021 Calendar

The calendar is coming along nicely. This year we have decided to offer the calendar at cost. The club won't make any money from it but the idea was always to simply showcase the member's wonderful astrophotos, images and art. This year the project is being spearheaded by Doug Turner who has worked hard and put together a great wall calendar. All it needs now is your pictures! You have until the end of the month to submit images. Send them to: calendar 'AT' amateurastronomy.org

HAA Council

The new club year is nearly upon us and if you are interested in joining council to participate more fully in the club's activities you would be more than welcome. Feel free to get in touch with me to ask any questions or would like to find out more. Council plans speakers, does outreach, prepares this newsletter, and handles the club finances, membership rolls, online presence and much more. They are a fun and friendly group of members and are welcoming of anyone who wants to join in.

Membership

This is the time of year when we renew our memberships. We are still the least expensive and most active club in the area, and members like you are what make the club so great. You can join through our PayPal link on our website or even mail in a cheque (but doing it online is really easy!).

(Continued on page 3)

Masthead Photo: *Comet C/2020 F3 (NEOWISE)*, July 12, 2020, 4:35am, by *Bob Christmas*.

This is a composite of 8 2.5-second exposures, for 20 seconds total, at ISO 800, with a Canon 40D DSLR through a 100mm Canon telephoto lens. Taken from Sam Lawrence Park in Hamilton, Ontario

See more images of NEOWISE on pages 9 and 10.

Chair's Report (continued)

Club Activities

The HAA has been featured prominently in the print media recently. First a wonderful illustrated article in the Globe and Mail showing several of our members observing the comet. Congratulations and thanks to Matthew and Janice Mannering, Chris Strejch, and Denise & Chris White for being such great ambassadors for the club. We were also featured in an article originally for the Glanbrook Gazette which was then picked up by the Hamilton Spectator. Thank you to Mario Carr for taking the time to be interviewed and offering some insight on the challenges of light pollution. Well done all!

Of course there is still no public outreach happening. We all missed having our summer picnic leading up to the Perseid Public Night, but we will enjoy next year's all the more. The club still fielded many calls and emails from the public hoping to come to the event. Thank you to Jim Wamsley, Chris Strejch and all the others who took the time to help the public find a way to enjoy the meteor shower on their own.

Please take care of yourselves and stay safe. Feel free to get in touch and hopefully I'll see you at the online meeting and out observing.

H.A.A. In The News!

Observing the Summer Milky Way. Image Credit: Ann Tekatch

This summer, Hamilton Amateur Astronomers was in the news for various topics.

Here's a link to an August 22, 2020 article in Sachem.ca about light pollution and the HAA's efforts to raise awareness about light pollution:

https://www.sachem.ca/news-story/10144351-hamilton-amateur-astronomers-members-struggle-to-stargaze-with-more-light-pollution/

And, from July 19, 2020, here's an article in the Globe and Mail about Comet NEOWISE, and HAA members observing it:

https://www.theglobeandmail.com/canada/article-in-photos-neowise-comet/

And don't miss HAA Publicity Director *Mario Carr's* weekly talk about the night sky every Sunday night on CHCH TV's Evening News at 6pm.

The Sky This Month for September 2020 by Matthew Mannering

September and October this year are perfect for observing the planets with particular emphasis being placed on *Mars* which reaches opposition on October 13th.

Mars is a small planet even at closest approach. This year, opposition provides us with one of the best looks in years. Two years ago, Mars was a little closer and there were high hopes for amateurs. However 2018 was the year of major forest fires that sent a cloud of smoke right across North America.

At the same time, Mars became wrapped in a world wide dust storm. The net effect was that the entire Mars watching season was lost.

When viewing Mars, wait for the planet to rise to at least 25° above the south-east horizon to get a steady view. Here is a list of a few times to begin viewing in the evening.

Sept. 1 - midnight
Oct. 1 - 10pm
Oct 13 (opposition) - 9pm

Take special note of September 5th at 11:45pm when Mars will be 0.5° from the Moon. That is one lunar diameter apart so both objects will appear at once in your eyepiece.

Mars, like Jupiter, benefits from coloured filters. For Mars itself, use an orange or red filter to increase contrast and use a blue filter to enhance clouds and frost (ie: weather). It seems odd that you can see weather on a planet which is only 22 arc seconds across but it really is possible. My best view came one night with perfect conditions while using a 12" Dob. I was able to see clouds over part of the planet and frost in Hellas basin. I verified this by doing a sketch at the eyepiece and then going online to see what others observed that night. I hope to have at least one such night again this year.

With nightfall coming earlier at this time of year, you have plenty of time to observe *Jupiter* and *Saturn*. I find that filters don't help me very much when observing Saturn, but Jupiter is another story. Try green or blue to increase contrast between the equatorial bands and the rest of the disk. One thing to remember is that a dark filter on a small scope will overly darken the view. So when viewing through a small scope use a lighter version of that colour filter.

Neptune reaches opposition this month on the 11th, followed by *Uranus* 7 weeks later on October 31st. At opposition, Uranus may be a naked eye object from a dark site at magnitude 5.7, while Neptune remains a binocular target at magnitude 8. You will need very keen eyes to see either planet as a disk rather than a point of light when using a telescope. The atmosphere near the Great Lakes usually restricts you to a minimum observable object diameter of two to three arc seconds. That means that any object smaller than that limit will appear as a point of light. Uranus reaches 3.7 arc seconds so there is a chance to see a disk with very good seeing, while Neptune only reaches 2.7 seconds of arc. Honestly, I can't say I have ever been able to discern a disk for either planet.

Uranus trails Neptune by about 3 hours as they cross the sky. On September 14, Neptune is due south at about 1am, followed by Uranus at 4am.

At the top of the next page is a picture of the sky and the planets for mid September at 10pm.

(Continued on page 5)

The Sky This Month for September 2020 (continued)

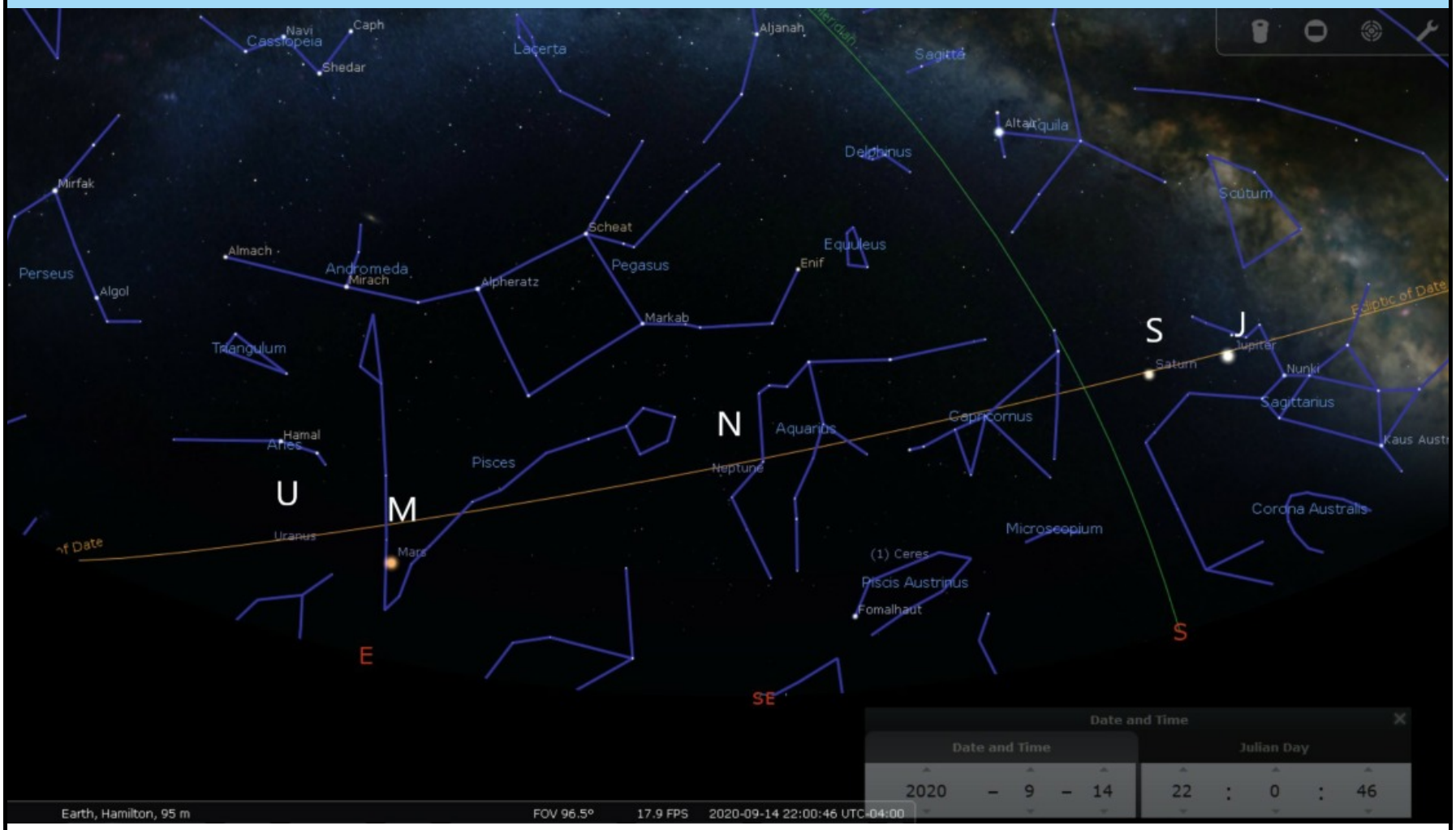


Chart for September 14, 2020, 10pm, with the positions of (right to left) Jupiter, Saturn, Neptune. Mars and Uranus.

Chart generated using Stellarium

I hope many of you were able to see Comet NEOWISE (C/2020 F3). I was able to photograph it several times in the morning sky from the escarpment in Hamilton with other members of the club. Other nights I used my binoculars to get a good look at it. The best cometary tail I saw was about five to six degrees long. I never was able to see the blue ion trail, but that was OK. It was just nice to see a good comet after waiting for years for one to appear.

We were camping during the Persieds meteor shower in August. Over the course of four nights, we saw three meteors with green vapour trails that hung in the sky for five to seven seconds. The most spectacular example was different from all the others we saw. That meteor was a non-Perseid sporadic that trundled across the sky over period of several seconds. You could even see the bow wave at the front of the meteor. The green vapour trail lasted many seconds before dissipating. The green colour denotes nickel in the meteor.

A few nights later, Janice was shooting wide angle Milky Way shots when she captured the second best meteor of the trip. On page 7 is the shot with the Persied meteor along the left edge of the frame. The bright objects just to the right of the meteor are Saturn and Jupiter.

(Continued on page 6)

The Sky This Month for September 2020 (continued)

The Planets

Note: I am using an altitude of roughly 15° to determine when an outer planet (ie. Mars and beyond) becomes visible. Viewing a planet below 15° isn't recommended due to atmospheric interference.

- *Mercury* will be in the evening sky in September but never rises above 5°. This is a very poor appearance of Mercury which won't really provide any observing opportunities.
- *Venus* appears in the eastern morning sky before dawn through next spring.
- *Mars* is at its best this month and next. Miss it and you will have to wait until December 2022.
- *Jupiter* and *Saturn* remain close together through the fall season. They are now early evening objects.
- *Uranus* and *Neptune* are visible (above 15°) from about 10pm (Neptune) and midnight (Uranus) at the beginning of September.

The Summer Milky Way, with Jupiter, Saturn and a Perseid Meteor.

Image Credit: Janice Mannering

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.gov to find local clubs, events, and more!

Summer Triangle Corner: Altair

David Prosper

Altair is the final stop on our trip around the Summer Triangle! The last star in the asterism to rise for Northern Hemisphere observers before summer begins, brilliant Altair is high overhead at sunset at the end of the season in September. Altair might be the most unusual of the three stars of the Triangle, due to its great speed: this star spins so rapidly that it appears "squished."

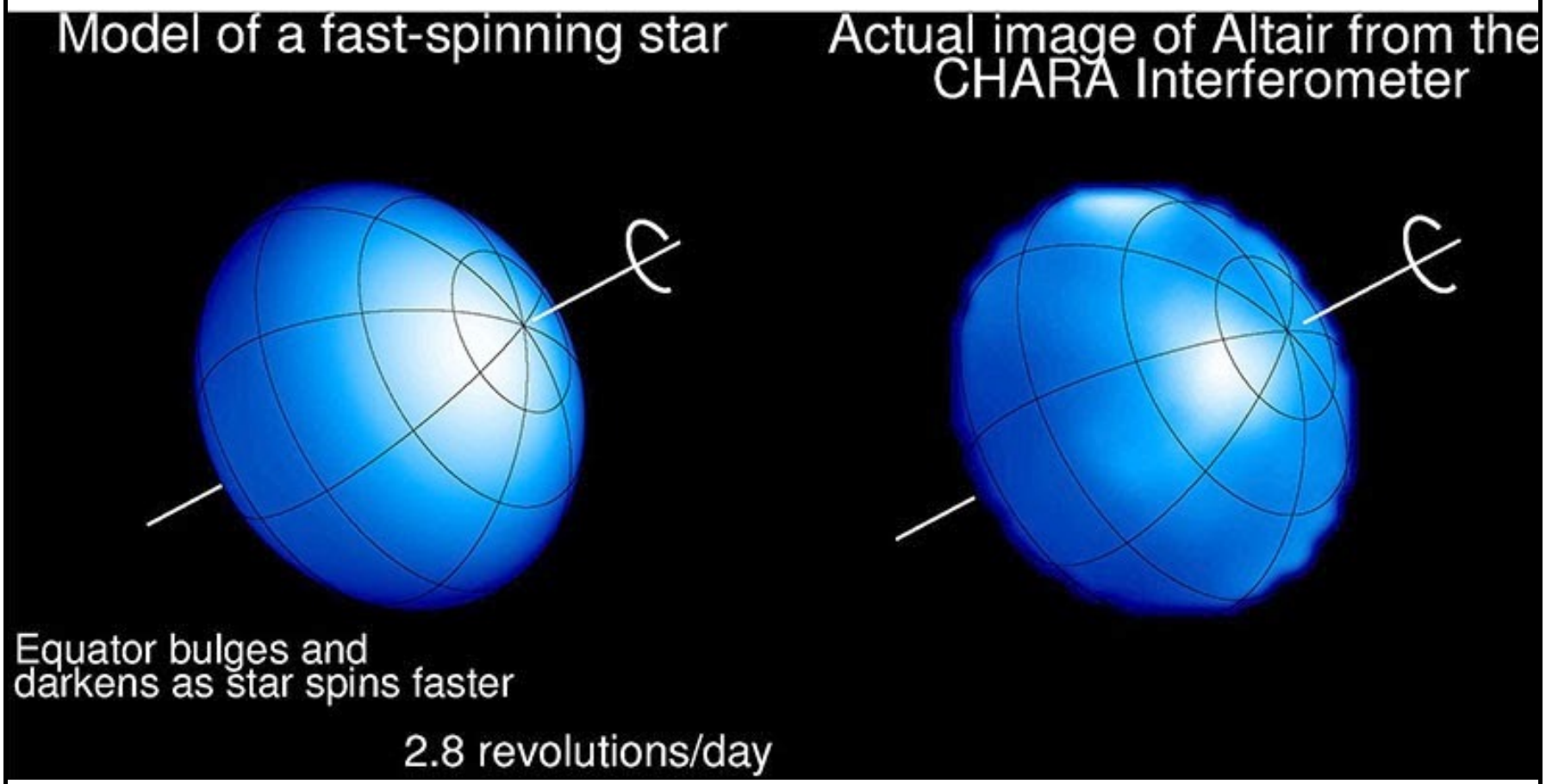
A very bright star, Altair has its own notable place in the mythologies of cultures around the world. As discussed in our previous edition, Altair represents the cowherd Niulang in the ancient Chinese tale of the "Cowherd and the Weaver Girl." Altair is the brightest star in the constellation of Aquila the Eagle; while described as part of an eagle by ancient peoples around the Mediterranean, it was also seen as part of an eagle by the Koori people in Australia! They saw the star itself as representing a wedge-tailed eagle, and two nearby stars as his wives, a pair of black swans. More recently one of the first home computers was named after the star: the Altair 8800.

Altair's rapid spinning was first detected in the 1960s. The close observations that followed tested the limits of technology available to astronomers, eventually resulting in direct images of the star's shape and surface by using a technique called interferometry, which combines the light from two or more instruments to produce a single image. Predictions about how the surface of a rapidly spinning massive star would appear held true to the observations; models predicted a squashed, almost "pumpkin-like" shape instead of a round sphere, along with a dimming effect along the widened equator, and the observations confirmed this! This equatorial dimming is due to a phenomenon called gravity darkening. Altair is wider at the equator than it is at the poles due to centrifugal force, resulting in the star's mass bulging outwards at the equator. This results in the denser poles of the star being hotter and brighter, and the less dense equator being cooler and therefore dimmer. This doesn't mean that the equator of Altair or other rapidly spinning stars are actually dark, but rather that the equator is dark in comparison to the poles; this is similar in a sense to sunspots. If you were to observe a sunspot on its own, it would appear blindingly bright, but it is cooler than the surrounding plasma in the Sun and so appears dark in contrast.

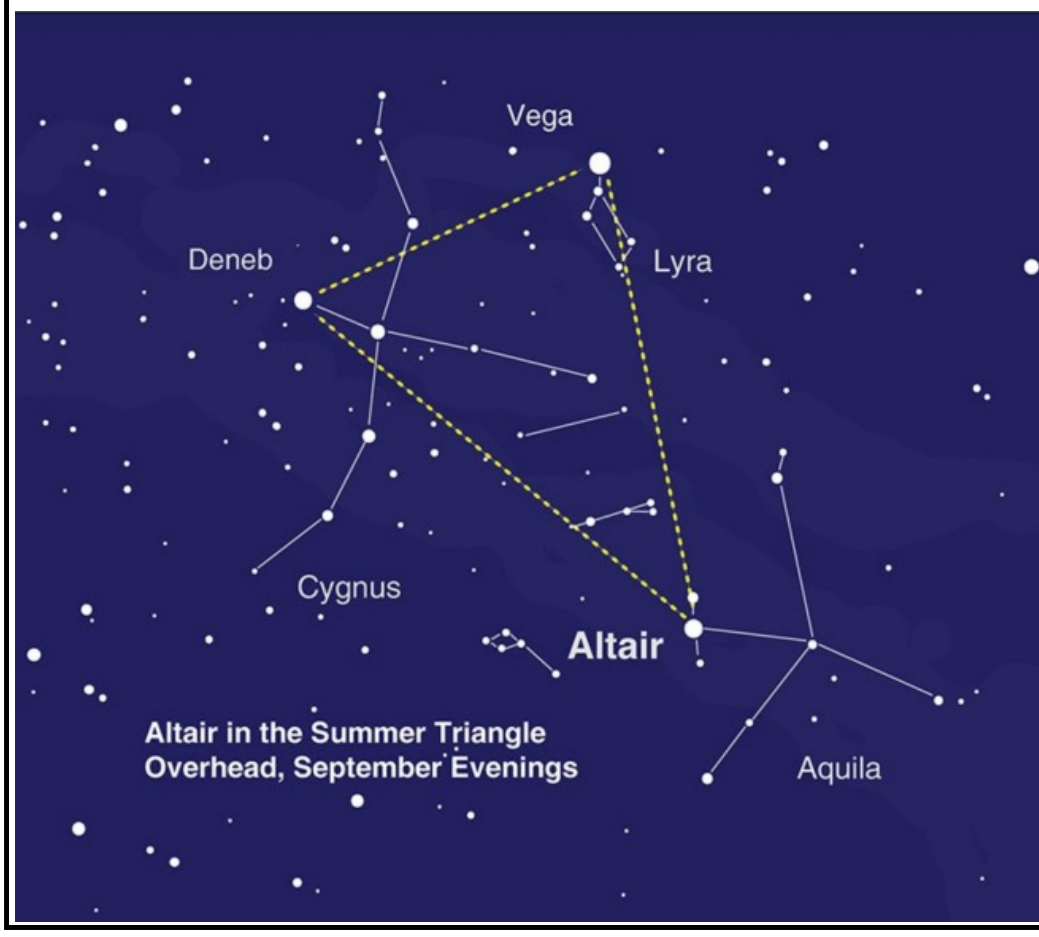
(Continued on page 8)

NASA Night Sky Notes (continued)

As summer winds down, you can still take a Trip Around the Summer Triangle with this activity from the Night Sky Network. Mark some of the sights in and around the Summer Triangle at: bit.ly/TriangleTrip. You can discover more about NASA's observations of Altair and other fast and furious stars at nasa.gov.

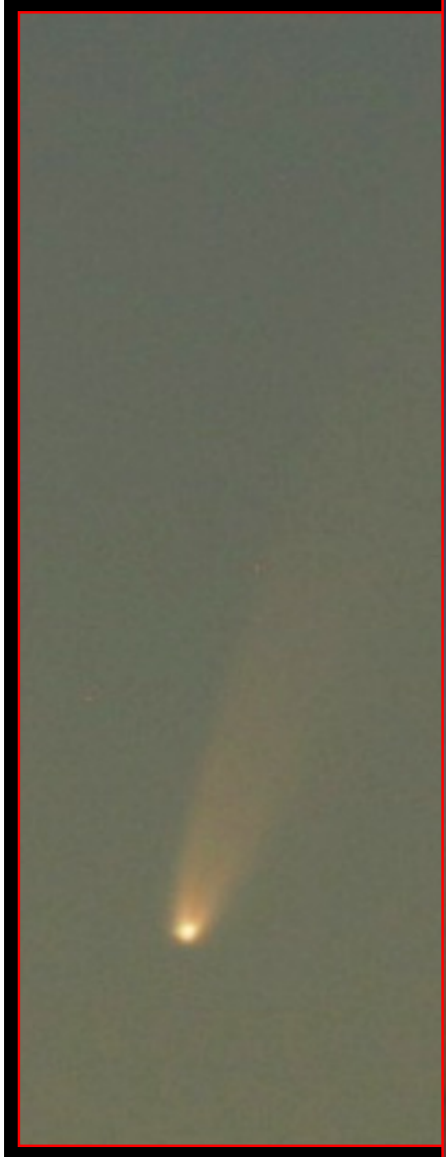


The image on the right was created using optical interferometry: the light from four telescopes was combined to produce this image of Altair's surface.
Image credit: Ming Zhao. More info: bit.ly/altairvsmodel



Altair is up high in the early evening in September. Note Altair's two bright "companions" on either side of the star. Can you imagine them as a formation of an eagle and two swans, like the Koori?

Comet NEOWISE (C/2020 F3)



above:

July 5, 2020, 4:30am, from Hamilton, ON, with Canon 5D and 600mm Sigma zoom lens,

by
Ann Tekatch

July 7, 2020, pre-dawn, over Hamilton and Lake Ontario, by **John Gauvreau**

Comet NEOWISE (C/2020 F3)

July 12, 2020, 4:45am, from Hamilton, ON.

This is a composite of 19 1.3-second exposures, for 24.7 seconds total, at ISO 800, through a 300mm lens.

by
Matthew Mannering

Note the "bowshock" effect on the coma around the head.

NEOWISE, with the International Space Station passing below!

July 20, 2020, 10:08 to 10:23pm, from Burlington, ON.

21 x 3.5-seconds, for 67.2 seconds total, at ISO 1600, through a 100mm lens.

by
Bob Christmas

The Gas Giants,

by Alex Kepic

above:

Saturn at opposition on July 20, 2020.

below:

Jupiter
with *Io* starting to transit and *Ganymede* finishing its transit.

Alex used his Celestron AVX 8" SCT telescope and ZWO ASI224MC camera to obtain these sharp images.

Eye Candy the Members' Image Gallery

left:

Brian Whitman at his telescope finds a sunspot, June 7, 2020

below right:

The faint sunspot found by Brian W.

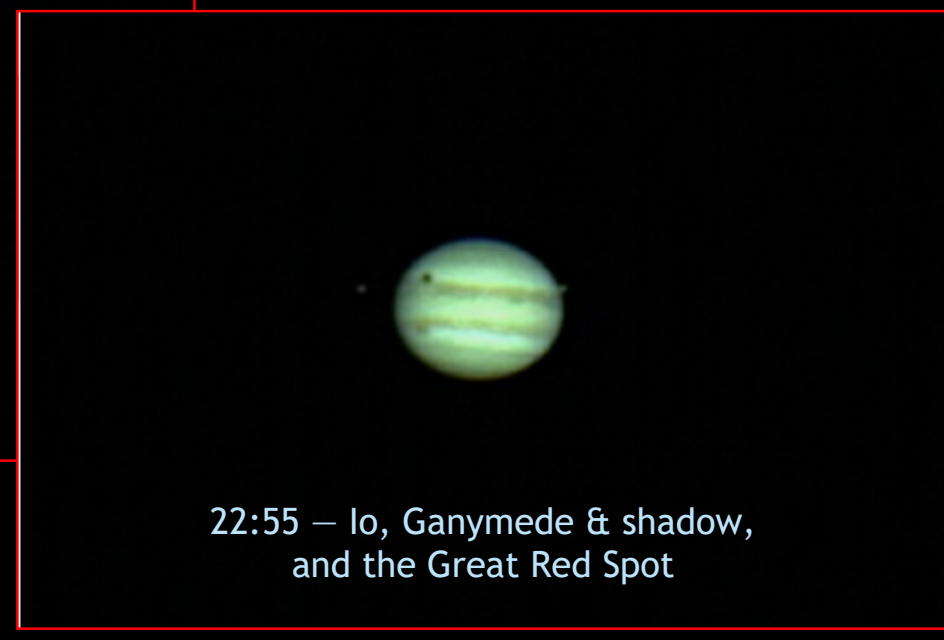
Credit: **Melissa Whitman** (both)

below left:

The Moon, Jupiter and Saturn

by Dee Rowan

22:21 — Io and Ganymede



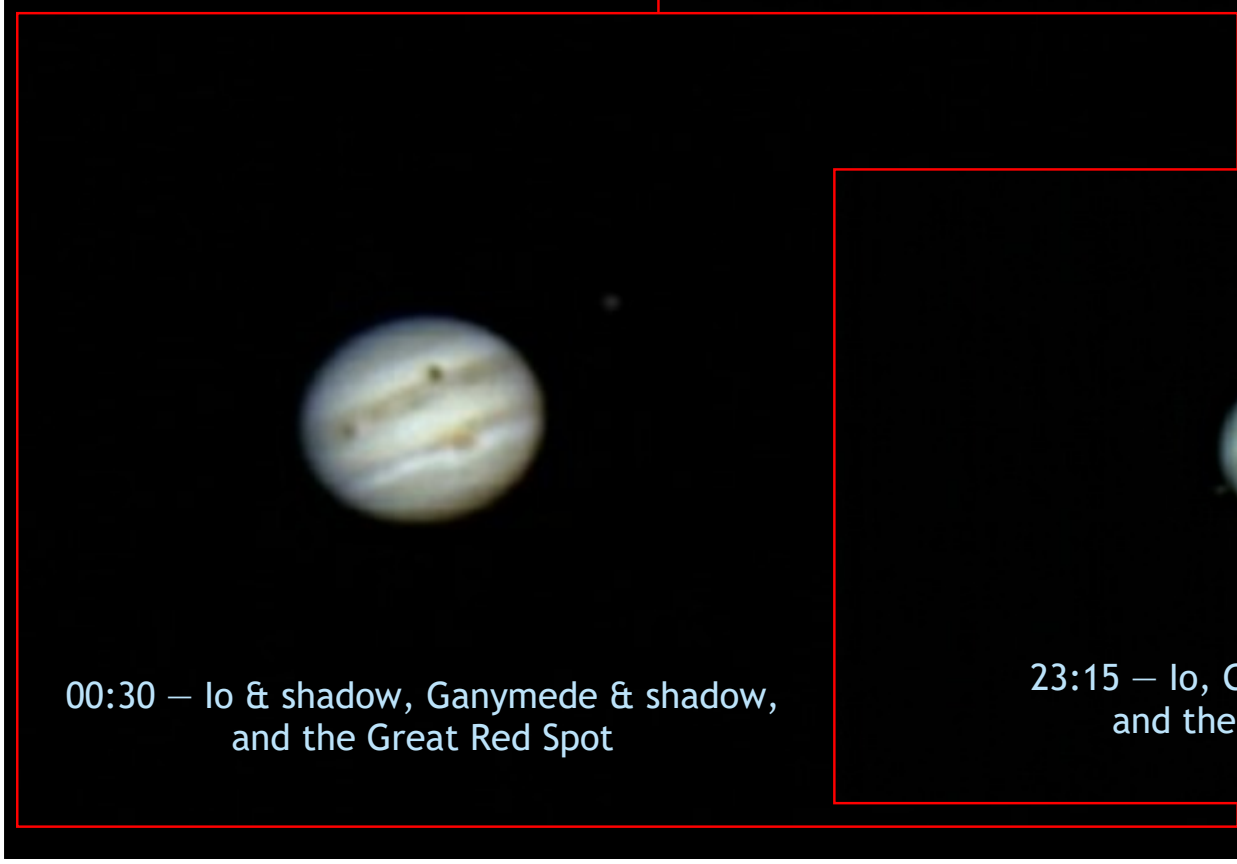
22:55 — Io, Ganymede & shadow,
and the Great Red Spot

Jupiter on the Night of August 14 & 15, 2020

by Jo Ann Salci

Time order starting clockwise from top left.

23:12 — Io, Ganymede & shadow, and the Great Red Spot



00:30 — Io & shadow, Ganymede & shadow,
and the Great Red Spot

23:15 — Io, Ganymede & shadow,
and the Great Red Spot

For Sale

Set of 6 Astrotech Paradigm Eyepieces

Focal lengths of 5mm, 8mm, 12mm, 15mm, 18mm and 25mm. 60 degree apparent field. All eyepieces are in excellent condition with clean glass. Each comes with top and bottom caps and the original box.

Asking $300 for the set.

Contact John at astrojag 'AT' hotmail.com

For Sale

Telescope & Power Tank

Brand new *Meade ETX125 Observer Telescope* including *Meade Autostar Hand Controller*, and *Celestron Power Tank - 7aH - 12V Power Supply* with spot light.

NEW LOWER PRICE
$850.00 TOTAL

I joined the HAA about 3 years ago. Just before that I had given my 45+ year-old 4" Tasco to my half-brother who lives in a dark sky area NW of Huntsville, but I missed the old scope, so almost exactly a year ago on March 19, 2019, I purchased the above-noted Meade ETX 125 & the power tank from KW Telescope in Kitchener for $1151.47.

I soon realized that the new instruments exceeded my capabilities at my venerable current age, so I've decided to sell them.

Shannon Cameron (who operates KW Telescope) has informed me that the Meade ETX125 is the most popular telescope in her store. I only used this telescope once (without any of the electronics) for less than an hour to show my grandkids the Moon and Jupiter with its 4 Galilean moons. A fantastic experience for me and them!

Once you've got it up and running, I wouldn't mind a peek thru it to see what I'm missing!

Thanks!

Jim Rose - Guelph - (519) 821-4333

jmrose43 'AT' gmail.com

Product Specifications

- *Optical Tube Design:* Maksutov-Cassagrain
- *Aperture:* 127mm (5 inches)
- *Focal Length:* 1900mm f/15
- *Mount Type:* Computerized Go-To
- Focuser: Internal
- Optical Cowling: Multi-coated
- Eyepieces: Two (2) 1.25" Super Plossl 9.7mm & 25mm
- Tripod: Adjustable height stainless steel with accessory tray; built-in tilt plate for EQ alignment.
- Software: AutoStar Suite DVD
- Batteries: Requires 8 AA batteries (user supplied)

UPCOMING EVENTS

September 11, 2020 - 7:30 pm — Virtual Online H.A.A. Meeting for members. Our main speaker will be *Ms. Sian Ford*, a Ph.D. student at McMaster University. The meeting will be conducted on the platform Zoom. Be on the lookout for an invitation e-mail with a meeting link. You may download the Zoom app for various platforms from Zoom's Download Center

Due to the COVID-19 Coronavirus pandemic, all in-person Hamilton Amateur Astronomers meetings and events are suspended until further notice.

2019-2020 Council

Chair	John Gauvreau
Second Chair	Jim Wamsley
Treasurer	Ann Tekatch
Digital Platforms Director	Christopher Strejch
Membership Director	Leslie Webb
Observing Director	Matthew Mannering
Education Director	Jo Ann Salci
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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