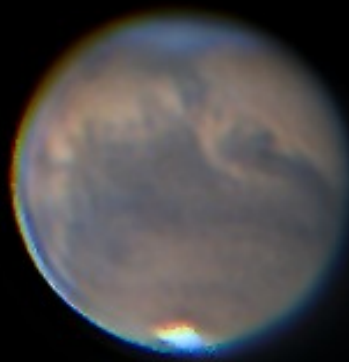




# Event Horizon



**Volume 27, Number 10**  
**October 2020**



## From The Editor

This is a short and sweet E.H. this month.

This is more of a visual edition this month and less of a written one, which is OK.

Astronomy is all about the sights!

Clear Skies!

*Bob Christmas, Editor*

editor 'AT'  
[amateurastronomy.org](http://amateurastronomy.org)



## Chair's Report by John Gauvreau

There were no star parties this year for obvious reasons and I very much missed the opportunity to get away for an indulgent weekend of astronomy. However, I did get to spend a week at a cottage with a very dark sky this past month. It was a great time and brought to light a few interesting observations, of not just the sky but about the observing experience itself.

I was up on the Bruce Peninsula, a little south of Tobermory. The sky there is Bortle class 2 with a background sky quality measurement almost exactly the same as the famous Cherry Springs State Park (in fact, it is measured at very slightly better) but of course Cherry Springs is at an elevation of several thousand feet and I was right on the shore of Lake Huron, so water vapour in the air played a part of deteriorating the sky where I was). A bigger issue was smoke from the wildfires in western North America. There was one night that was completely smoked out and another that was usable but only barely. The sky quality that night wasn't even as good as our dark sky site at the park. The one great night I had before the smoke rolled in was plagued by high winds; observing while being buffeted by winds of 70 kph is challenging and unpleasant,

*(Continued on [page 2](#))*

## IN THIS ISSUE:

- The Sky This Month for October 2020
- NASA Night Sky Notes
- Eye Candy
- Contact Information

## Chair's Report (continued)



*Milky Way from the Bruce Peninsula. 30 second exposure,  
14mm lens, f2.8, ISO 1600.*

*Image Credit: John Gauvreau*

and photography is impossible. Well, almost. The photo you see here was taken by placing the camera on the ground, propped part way up by a rock, and exposing for 30 seconds. Not a great photo or a testament to my skills, but it does show just how good the sky is there.

But then the smoke cleared, the winds died (somewhat) and there they were; the clear dark skies I had been hoping for. Milky Way from horizon to horizon, the star clouds within providing a vivid background to the dark dust along the plane of the Milky Way. I could see Uranus with the unaided eye and I counted 8 stars in the Pleiades (usually you can see 6, but if the sky is good enough you can see 8). I toured the sky with my 100mm binoculars, scooping up countless clusters and enjoying the nebulae of the summer sky. The fall sky provided stunning views of M31, the Andromeda Galaxy, and M33, the Triangulum Galaxy. Staying up late enough rewarded me with a view of Orion as it rose in the east and my big binos gave me one of the most engaging views of the Orion Nebula I have ever had. The icing on that cake was seeing the Flame Nebula just above Alnitak. I spent many hours  
(Continued on [page 3](#))

**Masthead Photo:** Mars - September 25, 2020, by Alex Kepic.

Alex took 9,698 frames with his ZWO ASI224MC camera through his Celestron AVX 8" SC Telescope, then stacked them to create this crisp image.



## Chair's Report (continued)

under that dark sky and was reminded of just how spectacular the sky is, how much we can see with modest instruments, and when so much of our time seems to be spent in front of screens and 'working' for the club, just why we do this.

And yes, while I was enjoying all these wonderful sights I was also taking some mid to wide angle photos. Hey, I had to come back with a souvenir of those great skies!

Another interesting observation that came from these wonderful nights was how productive it can be to observe alone. With no distractions, I just poured over my books and charts, spending more time looking up than I ever do here at home. Wonderful!

And yet...there was something missing. I realized how much I enjoy the social aspect of observing here with other club members. Being able to share your views and observations, and enjoy the revelations and discoveries of other observers, is a big part of the fun. Talking about your gear and your observing plan, new equipment and how successful your latest astrophoto was, is all part of the experience. Yes, my nights alone under the stars were more productive, but perhaps not quite as much fun.

I did get some of that social aspect just last night. I opened the park for observing and of the members that came out 5 of them were brand new members that just joined this summer. It was a pleasure getting to meet new members and even with distancing practices in effect we all had a great time together. It wasn't the best sky last night; haze and a gibbous moon made the sky bright and observing any deep sky objects was difficult at best. But, late at night the sky calmed, the light haze cut the glare on the bright stars (and obscured the rest completely) and Mars was absolutely wonderful. There was an abundance of surface detail along with the polar hood showing very blue. It's a great time to observe Mars and last night did not disappoint. Opening the park to members is a lot of work and often I don't get any observing in myself, but last night had it all; members got to observe, new people enjoyed their first visit to the park, everyone enjoyed each other's company and even I got in some really great views of Mars.

So, I think that autumn is my favourite time of year to observe and so far, this fall has been great.

## HAA Meetings

Our first meeting back was a great success, largely thanks to the amazing people who contributed both on screen and behind the scenes.

Our speaker was Sian Ford, who filled in at the last minute. Sian is an astrobiologist at McMaster University and gave a fantastic presentation on looking for life in the solar system. Her practical approach was well received by an appreciative audience.

We also had another wonderful presentation from Matthew Mannering and gave away a few door prizes.

Our October guest speaker will be Dr. Hilding Neilson from the University of Toronto. Dr Neilson is a Mi'kmaw person who will be speaking on indigenous astronomy. I am very much looking forward to this unique opportunity and his presentation.

A friendly reminder that since we are holding our meetings online there is no collection for the foodbank, 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 October meeting begins at the usual time of 7:30pm on the 16th. Hope to 'see you there'!

*(Continued on [page 4](#))*

## Chair's Report (continued)

### HAA 2021 Calendar

There have been many beautiful submissions for the 2021 calendar and it is now in the final stages of readiness. Then off to the printer and it should be available sometime in November. Details on how to pick up calendars will be forthcoming.

### 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 if you 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. If you would like to be more active in the club and participate in these activities, please get in touch with me. I will be more than happy to discuss it with you.

### 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!).

### Other Club Activities

There has been a small trickle of public outreach happening, as we find new ways to continue our activities during these trying times. Some members have been able to have one on one sessions with individuals and very small outdoor groups. Thank you to those members who have given of their time and made the special efforts required to accommodate even one other person. The extraordinary lengths that some of our members have gone to (Ann Tekatch and Jo Ann Salci come to mind) to help others is inspiring.

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.

### HAA Helps Hamilton

While during the pandemic, the H.A.A. hasn't been able to collect 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](#).

In that spirit, we encourage you to continue making donations directly to your local food banks.





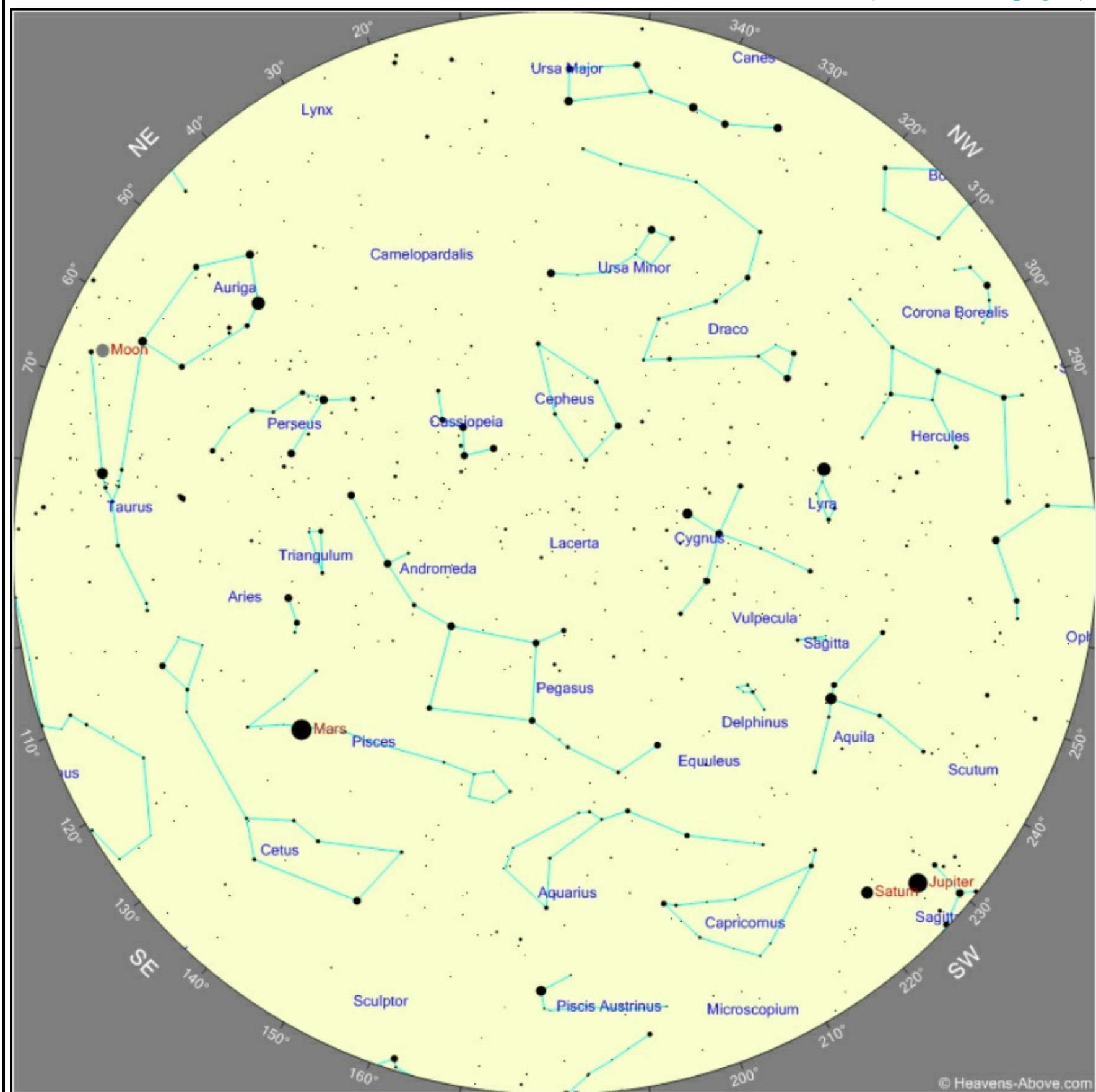
## The Sky This Month for October 2020 by Bob Christmas

Due to personal reasons, HAA Observing Director *Matthew Mannering* had to bow out for the newsletter edition of The Sky This Month. Once again, I have agreed to pick up the ball.

This October will be an ideal time to observe two planets in particular, Mars and Uranus, given that both are at opposition this month.

### The Sky at a Glance

Here's an all-sky chart for *October 7, 2020, at 11:00 pm EDT* as seen from Binbrook, ON. This chart was generated using the Heavens Above website. The *Summer Triangle* is still high in the west, and the fall sky is prominent by now, including *Pegasus, Aquarius, Cetus* and *Piscis Austrinus*. (Continued on [page 6](#))



## The Sky This Month for October 2020 (continued)

Part of the summer sky is still visible after sunset in the evening. The *Summer Milky Way* is still high and prominent under a dark sky at the end of evening twilight. *Jupiter* and *Saturn* are still visible in the southwest for a couple of hours after the end of evening twilight in Sagittarius. The effect of the celestial geometry of the Ecliptic in the evening sky this time of year keeps the summer Milky Way and much of its rich collection of nebulae, star clusters and dust lanes visible in the western evening sky for a more extended period of time as the Sun plunges deeper into the southern hemisphere. So get out there for a last look at them before they wave bye-bye for the winter!

My source for all Moon and Planet info is the *RASC Observer's Handbook 2020*.

### Mars!

While all seven of the planets in Earth's sky are observable this month at various points of time between dusk and dawn, one planet has the spotlight this October..... *Mars*.

Mars is in the sky all night this month in the constellation Pisces. During this year's alignment of Mars with the Earth and the Sun, it has its closest approach to Earth on October 6th. At this time, it shines at magnitude -2.6, and its disk is 22.6 arc seconds in diameter as observed from Earth, making some detail of the Martian surface visible through half-decent amateur telescopes. Then on the 13th, it reaches *opposition*, the meridian in the sky directly opposite the Sun as seen from Earth. By the way, why aren't the closest approach to Earth and opposition on the same date & time? Because, Mars' orbit around the Sun, and Earth's for that matter, are not perfect circles, but are *ellipses*.

Read more about Mars in this month's NASA Night Sky Notes article on page 8.

### The Moon

*Libration* this month is as follows: The Northern limb will be most exposed on the 1st and 28th, and the Southern limb will be most exposed on the 15th. The Western limb will be most exposed on the 11th and the Eastern limb on the 23rd.

There are two full moons this month. *Phases* this October:

- October 1 21:05 UT — Full Moon the Harvest Moon
- October 10 00:39 UT — Last Quarter
- October 16 19:31 UT — New Moon
- October 23 13:23 UT — 1st Quarter
- October 31 14:49 UT — Full Moon

### The Planets

- *Mercury* is at its greatest eastern elongation in the evening sky at the beginning of October when it is  $26^\circ$  from the Sun, but gradually gets closer to the Sun's position as the month goes on, until it gets lost in the evening twilight, ultimately reaching inferior conjunction with the Sun on the 25th.
- *Venus* remains prominent in the morning sky all month long. Venus has a very close brush with Regulus (Alpha Leonis) on the mornings of the 2nd and 3rd. The Moon passes within  $4^\circ$  of Venus on the 14th.
- *Mars* is in the sky all night from sunset to sunrise all month in Pisces. As mentioned above, Mars makes its closest approach to Earth on the 6th, and is at opposition on the 13th. The Moon passes within  $0.7^\circ$  of Mars the night of the 2nd and 3rd.

(Continued on [page 7](#))



## The Sky This Month for October 2020 (continued)

- *Jupiter* is in the southwest evening sky in Sagittarius, just to the upper left of the Sagittarius Teapot. It sets around midnight around mid-month, but it will set earlier each night as the month progresses.
- *Saturn* is just to the left of Jupiter, and sets in the southwest about half an hour after Jupiter does.
- *Uranus* is in the sky most of the night this month in Aries. It reaches opposition on the 31st.
- *Neptune* is in the sky most of the night this month in Aquarius.

### Minor Planets

- (1) *Ceres* is well-placed in the southern sky on the Aquarius/Piscis Austrinus border, just above and to the right of Fomalhaut (Alpha Piscis Austrini), and is visible most of the night. Its magnitude is about 8.5.

### The Draconid Meteor Shower

The Draconid Meteor Shower peaks the night of the 7th and 8th. As its name suggests, its radiant is in Draco, high in the northern sky.

Here's a chart depicting the region of the radiant for the Draconids.



*The radiant of the Draconid Meteor Shower*

*Chart Credit: EarthSky.org*

Happy observing everyone, and good luck!



**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](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

### Observe the Skies Near Mars

David Prosper

October is a banner month for Mars observers! October 6 marks the day Mars and Earth are at closest approach, a once-every-26-months event. A week later, on October 13, Mars is at opposition and up all night. Mars is very bright this month, and astronomers are eager to image and directly observe details on its disc; however, don't forget to look at the space around the planet, too! By doing so, you can observe the remarkable retrograde motion of Mars and find a few nearby objects that you may otherwise overlook.

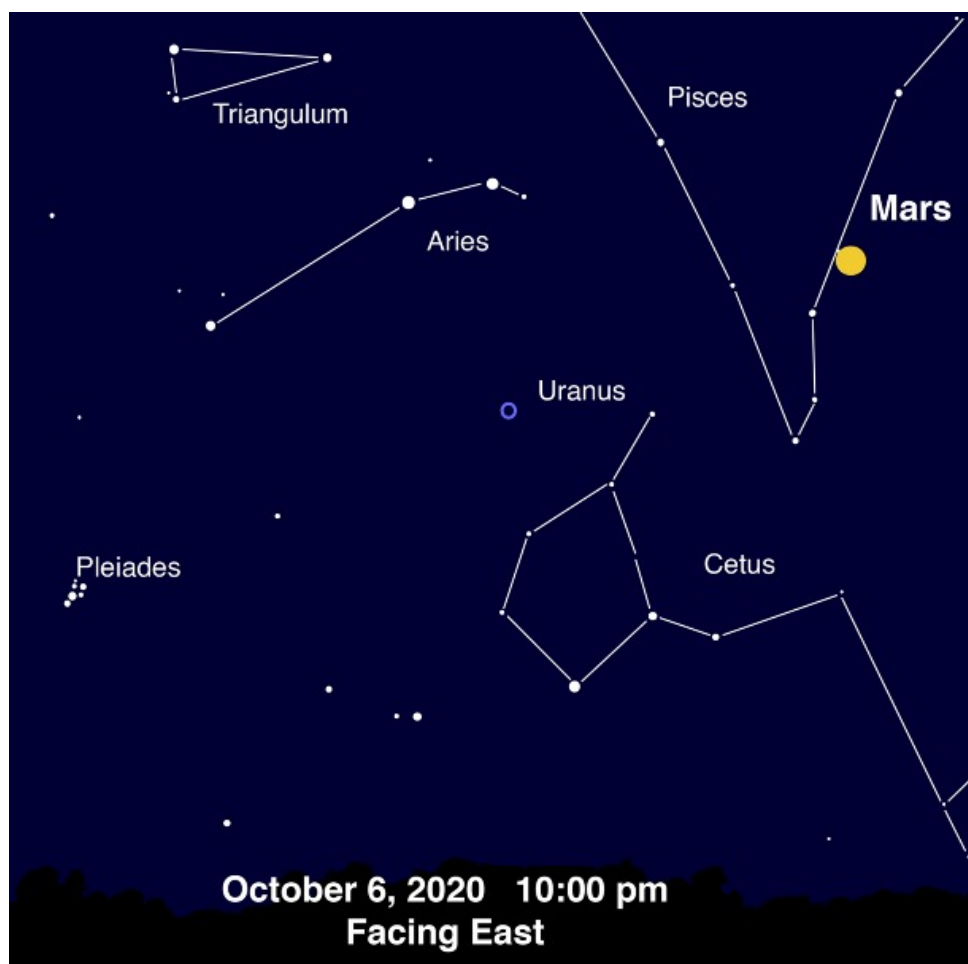
Since ancient times, Mars stood out to observers for its dramatic behavior. Usually a noticeable but not overly bright object, its wandering path along the stars showed it to be a planet instead of a fixed star. Every couple of years, this red planet would considerably flare up in brightness, for brief times becoming the brightest planet in the sky before dimming back down. At these times, Mars would also appear to slow down its eastward motion, stop, then reverse and head westward against the stars for a few weeks, before again stopping and resuming its normal eastward movement. This change in the planet's movement is called "apparent retrograde motion." While all of the planets will appear to undergo retrograde motion when observed from Earth, Mars's retrograde appearances may be most dramatic. Mars retrograde motion in 2020 begins on September 10, and ends on November 16. You can observe its motion with your eyes, and it makes for a fun observing project! You can sketch the background stars and plot Mars as you observe it night after night, or set up a photographic series to track this motion. Does the planet move at the same rate night after night, or is it variable? As you observe its motion, note how Mars's brightness changes over time. When does Mars appear at its most brilliant?

NASA has tons of great Mars-related resources! Want to know more about apparent retrograde motion? NASA has an explainer at: [bit.ly/marsretromotion](https://bit.ly/marsretromotion). Find great observing tips in JPL's "What's Up?" videos: [bit.ly/jplwhatsup](https://bit.ly/jplwhatsup). Check out detailed views with NASA's HiRISE satellite, returning stunning closeups of the Martian surface since 2006: [hirise.lpl.arizona.edu](https://hirise.lpl.arizona.edu). NASA's Curiosity Rover will be joined in a few months by the Perseverance Rover, launched in late July to take advantage of the close approach of Mars and Earth, a launch window that opens two years: [nasa.gov/perseverance](https://nasa.gov/perseverance). Calculate the ideal launch window yourself with this handy guide: [bit.ly/marslaunchwindow](https://bit.ly/marslaunchwindow). The Night Sky Network's Exploring Our Solar System handout invites you to chart the positions of the planets in the Solar System, and NSN  
(Continued on [page 9](#))

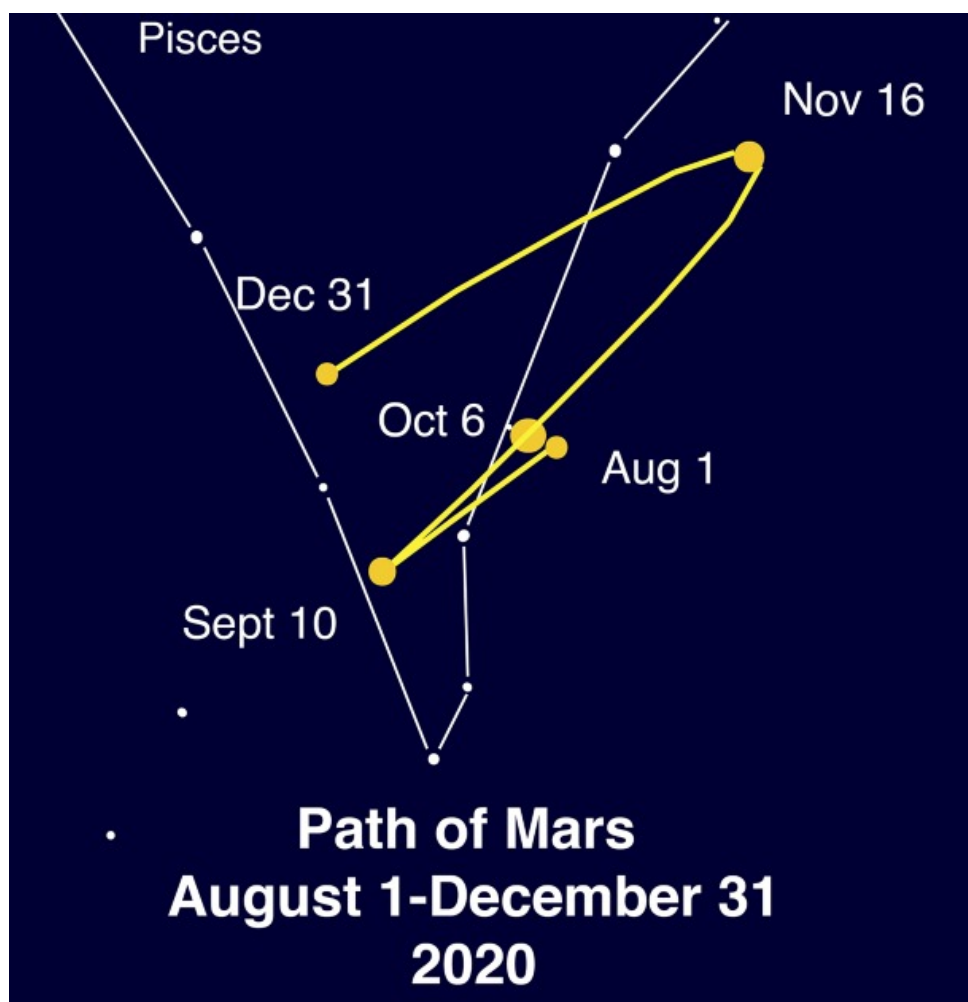


## NASA Night Sky Notes (continued)

coordinator Jerelyn Ramirez recently contributed an update featuring Mars opposition! You can download both versions at [bit.ly/exploresolarsystem](https://bit.ly/exploresolarsystem). Young astronomers can find many Mars resources and activities on NASA's Space Place: [bit.ly/spaceplacemars](https://bit.ly/spaceplacemars). Here's to clear skies and good seeing for Mars's best appearance until 2033!



*If you are paying this much attention to Mars, you're likely curious about the skies surrounding it! Find Mars in the constellation Pisces, with constellations Aries, Triangulum, and Cetus nearby. Aries may be the only one of these dimmer patterns readily visible from light-polluted areas. The Pleiades rises shortly after Mars. Dim Uranus is found close by, in Aries. If you are observing Mars up close, use the same eyepiece to check out Uranus's tiny blue-green disc. If you are uncertain whether you spotted Uranus, you didn't see it! Unlike stars, Uranus doesn't resolve to a point at high magnifications.*



*The path of Mars during the last five months of 2020. Notice the retrograde motion from September 10 to November 16, with prime Mars observing time found in between. October 6 is the day of closest approach of Earth and Mars, "just" 38.6 million miles apart.*

*Images created with help from Stellarium: [stellarium.org](https://stellarium.org)*



**Jupiter and Saturn in Sagittarius**



September 20, 2020, from Ancaster, ON. Taken with a cell phone.  
by Jo Ann Salci



September 17, 2020, from near Barry's Bay, ON. 2 x 2 min = 4 minutes of exposure time @ ISO 800 & f/4.  
by Bob Christmas



**The Waxing Gibbous Moon**

**by John Gauvreau**

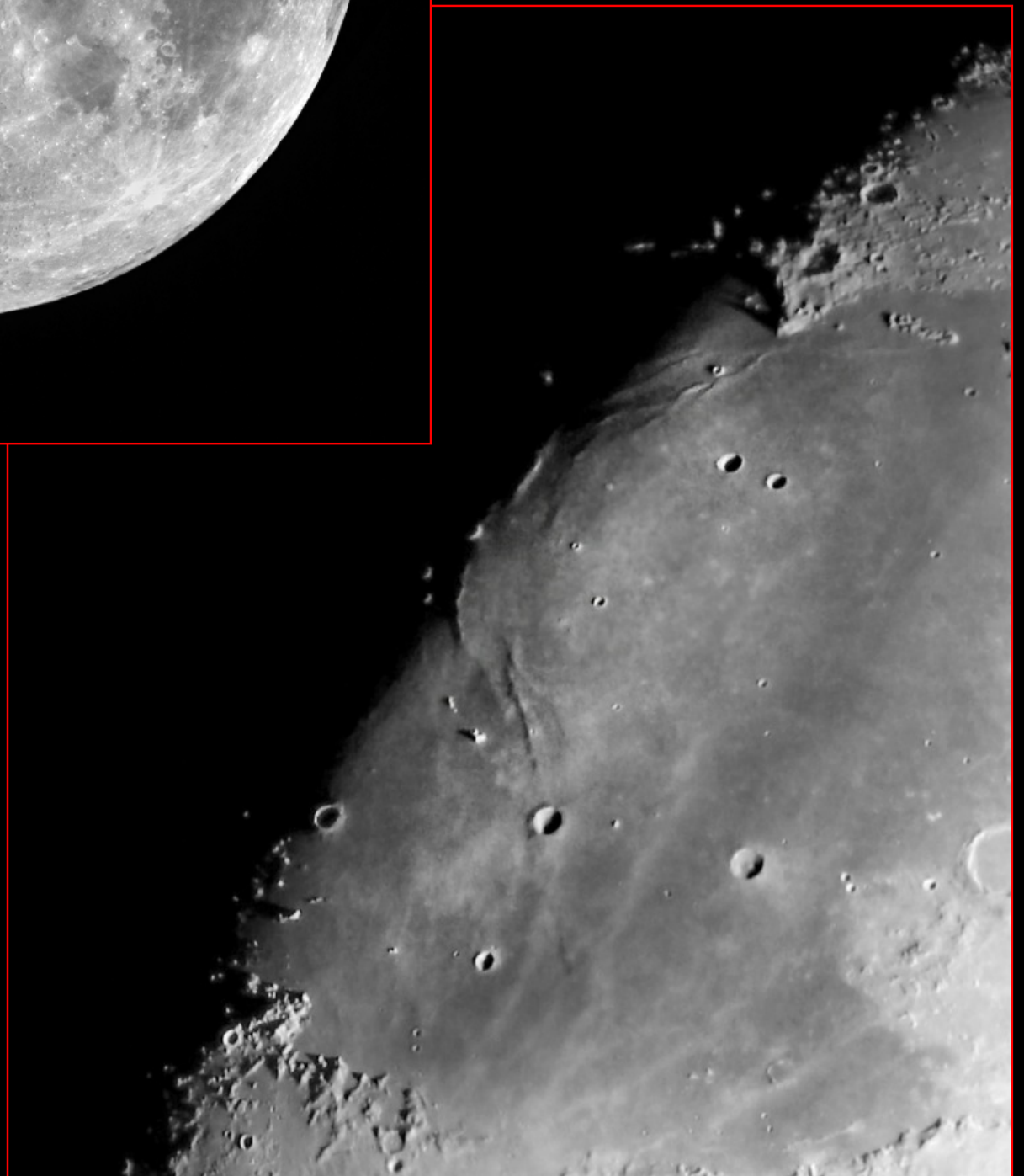
*left:*

**Waxing Gibbous Moon**  
September 26, 2020



*right:*

**Dorsa (wrinkle ridges)  
in Mare Imbrium**







The M16-M17-M18-M24-M25 Milky Way Area of Northern Sagittarius, SE Serpens Cauda & SW Scutum  
9 x 2 minutes; 18 minutes of total exposure time at 100mm f/2.8 and ISO 800  
by Bob Christmas



## 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

October 16, 2020 - 7:30 pm – Virtual Online H.A.A. Meeting for members. Our main speaker will be *Dr. Hilding Neilson* of the University of Toronto. 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
Event Horizon Editor	Bob Christmas
Recorder	Brenda Frederick
Secretary	Denise White
Publicity Director	Mario Carr
Councillors at Large	Barry Sherman Bernie Venasse Dee Rowan Gary Sutton Melissa Whitman Mike Jefferson Steve Germann Sue MacLachlan

Check out the H.A.A. Website  
[www.amateurastronomy.org](http://www.amateurastronomy.org)



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#### Public Events:

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#### Newsletter:

[editor@amateurastronomy.org](mailto:editor@amateurastronomy.org)

#### Digital Platforms Director:

[webmaster@amateurastronomy.org](mailto: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](mailto:library@amateurastronomy.org)