NIGHTFALL

A PUBLICATION OF THE HUACHUCA ASTRONOMY CLUB

OCTOBER 2020

PRESIDENT'S NOTES

Wow, it's October 2020. A very interesting (weird) year for, well, everything.

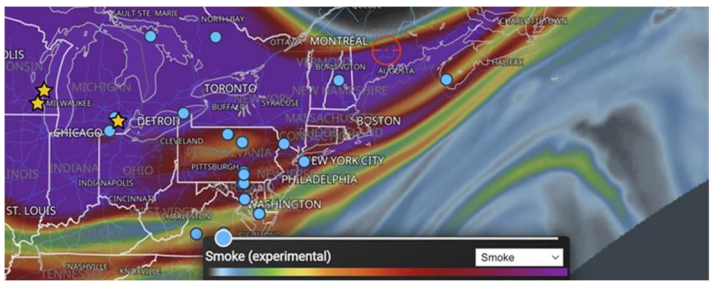
Usually this is a beautiful time of the year here in southeastern Arizona. Second Summer prevails and the evenings are clear and cool. Orion and the winter constellations are rising earlier (but still relatively late), and we get a slice of the Milky Way arching across the sky.

As I said, this year has been weird. I think our last club meeting was March and the spring and summer were lost for meetings, outreach, and star parties. We've gathered only on our group sites. October we will try to pull off our first Zoom club star party. I've been trying out our ability to host such meetings, as well as virtual star parties, for this fall and winter. We're shooting for November as our first general HAC Zoom meeting, and hope to have a Zoom star party or two before that. We'll keep you informed on our group site. At least at first, these events will only be open for members due to Zoom limits. But that shouldn't interfere with our business.

October is also the run-up time for club elections. If you have a hankering to join the board, we welcome you. The current board members have graciously continued their service for a year beyond what they expected to serve.

Bad news: wildfires in California continue to spread tragedy locally and poor air quality across the nation, belching blankets of smoke our way from time to time. Some recent nights we've been relegated to sky of only with stars of magnitude 3 and brighter. The west coast states continue to be at high threat to continuing and new fires this season.

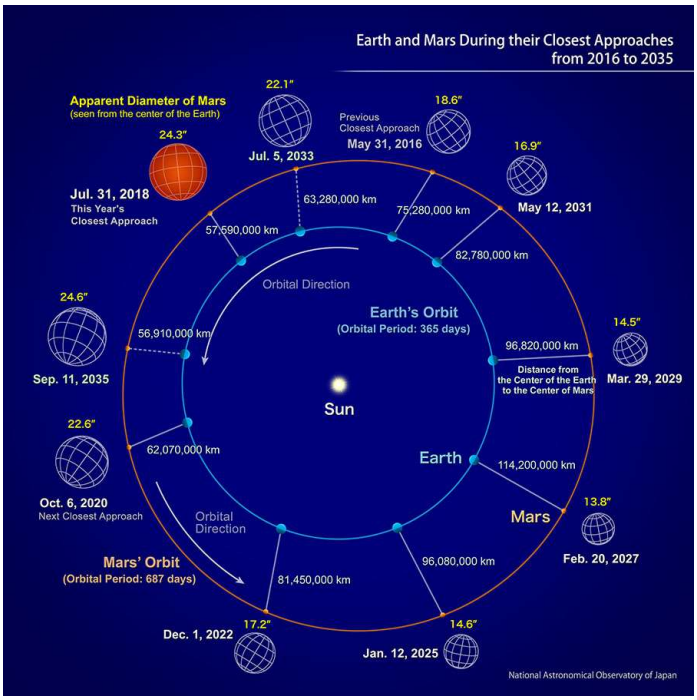
SMOKE FROM CALIFORNIA, OREGON AND WASHINGTON MAKE IT ACROSS NATION TO THE EAST COAST



Source: Unknown

Good news: I am almost through harping about getting out to view Mars. Although you have even less reason for not trying to see it every clear night, as it rises earlier each night, becoming a convenient evening object. By the time of this newsletter's publication, Mars will be at its brightest, largest, and fully-phased in this encounter. Mars makes its closest approach October 6 and opposition (directly opposite the sun from our Earth perspective) October 13. That means Mars will rise in the east at sunset and be visible all night. It will also be high in the sky, so viewing will be less scattered by our atmosphere; all good things.

MARS MAKES ITS CLOSEST APPROACH TO EARTH OCTOBER 13, 2020.

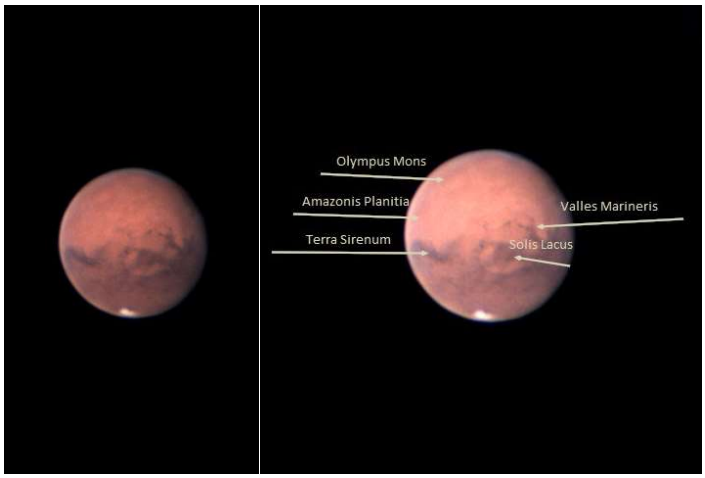


Source: National Astronomical Observatory of Japan, 2018

As Mars recedes from Earth, we will see the planet seem to shrink and go in a slight less-than-full phase, like the Moon looks just before or after being full. The southern ice cap is nearly gone, and there is a haze over the northern pole. Recently, I've also spotted some cloud activity over the largest volcanoes! No, I don't mean volcanic activity, just frozen mist over Olympus Mons and maybe Arsia Mons. Mars in October is big and bright, maybe too bright. The red planet is a low contrast object. When it is this close to us, its

brightness washes out subtle features (such as divisions between the darker, rougher terrain and the sand colored plains) even in relatively small telescopes.

Mars Image from the End of September 2020.



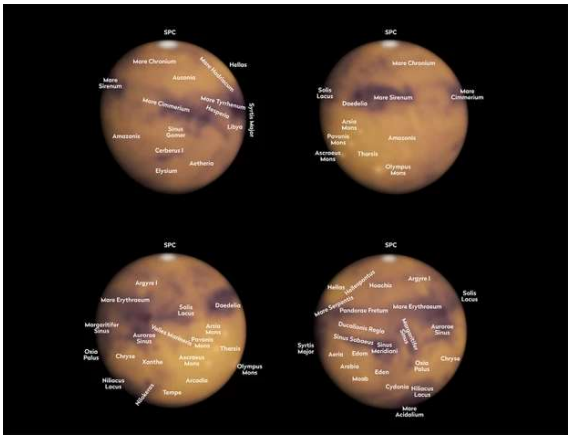
Source: David R, 2020

Remember, when you view, keep a few filters around to alter your perception of surface features. A variable polarizer is my first recommendation for filtering Mars' bright image. Also, try a light red, green or blue filter to discern the different hues of features.

There has been no dust storm activity on Mars this time around, and it is not likely to begin now. So, any clear (and hopefully smoke free) night, Mars should be at the top of your list of objects to visit, and don't forget to get out and stare.

And let's say you're not up to date on your Mars geography or nomenclature. There is abundant information at your disposal. Both major US astronomy magazines, *Astronomy* and *Sky & Telescope* will no doubt have special articles on Mars. There is also much information on the web, including a staggering number of maps and atlases. There is even Google Mars (like Google Maps) that you can resize and angle as you see fit. Until that time, try to acquaint yourself with the planet, and just enjoy the ride as we overtake the red planet (orbitally and metaphorically speaking).

A good example of the Mars References Available to You on The Web



Source: https://www.skyatnightmagazine.com/advice/skills/how-to-observe-mars/

A small scope can show the larger markings, while any telescope with a diameter of six inches or over will begin to reveal more surface detail. In these south-up views Mars rotates right to left with the orientation shown. Credit: Pete Lawrence

Anyway, I want to keep kick-starting you to get out there and look (even before Earth really closes in) to track the changes over time, in planet size and the surface features. Oh, and then I'll try to get you to spend your evenings watching the subtle feature changes and sense the slight phasing as Mars recedes once again from our perspective.

So, as always, get out there and stare.

Astronomy Exhibit at Henry F. Hauser Museum

The Henry F. Hauser Museum will be receiving a traveling *Discover Exoplanets* exhibit from the Space Science Institute's National Center for Interactive Learning and NASA's Universe of Learning in mid-October. There will be a companion exhibit that will highlight amateur astronomy in our area including the history of both the Patterson Observatory and the Huachuca Astronomy Club. The exhibit is also expected to display some HAC member astro-photography.

The museum is located at 2950 East Tacoma Street in Sierra Vista and **will be open Monday-Wednesday from 10 a.m. to 4 p.m., and Thursday-Friday from 10 a.m. to 1 p.m. The number of visitors who can enter at one time will be limited. The astronomy themed display open later this month and runs through December.**

Elections for HAC officers

Officer elections take place in November. There are eight elected seats on the board of directors, the four officers (President, Vice President, Secretary and Treasurer) and four at-large board members. A ninth seat is filled by the most recent past president. Currently, that position is filled by our previous Vice President as there are no past presidents available.

Most of the current officers and board members are willing to continue in their present roles or are candidates for other positions. The current leadership has served for a number of years. "Willingness to step down in favor of a new candidate" is perhaps universal at this point.

If you are willing to serve on the board, please speak up. If you know of another member that has expressed interest in serving, please encourage them – and let a current member of the board know who they are.

Current members of the board will be reaching out to other members that they think may be willing to serve. A special COVID-era election procedure will be promulgated to

facilitate this year's election given that an "in-person" November meeting is unlikely.

Announcing a "Dues Holiday" for current HAC members

The HAC board of directors recognizes that this has been an exceptionally odd, and for some, quite a difficult year. The club has been mostly inactive since March and it is assumed that many of our members have experienced some financial challenges during the COVID lockdowns.

Therefore, we are announcing a "Dues Holiday" for all current members. Everyone's HAC membership will be automatically extended to December 2021 or twelve months from their current membership expiration date whichever is LONGER. In November, the treasurer will be sending out emails to members notifying them of their new expiration dates.

In lieu of dues, we will graciously accept donations. Think of it as a year's worth of voluntary dues payment, but if you find yourself a little strapped this year, there is no need to pay dues to remain a member through 2021.

Any donation amount will be appreciated, of course, but if you wish to make a donation equivalent to your owed dues, please do so. Normal family membership is $35, individual membership is $25. Active duty military would normally pay $25 family and $20 individual.

To make a donation, you can pay by check made out to Huachuca Astronomy Club and mailed to PO Box 922, Sierra Vista, 85636. You can pay on line with your credit card or PayPal account at www.hacastronomy.org – the "Donate" button is in the right-hand column. If you have a Pay Pal account, you can use PayPal Direct to send your payment to paypal@hacastronomy.org and if you have a Zelle account with your bank, you can make your donation to HAC by transferring funds to twforte@powerc.net

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Please Note This Change Regarding Calendars for 2021:

In past years, Astronomy has offered their Deep Space Mysteries Calendar to club members at half price only when purchased through the club, by the treasurer. But now, members can just go online and get their discount by visiting **MyScienceShop.com/ASYClubs** and using the code **CAL50** at checkout.

Therefore, we will not be making a group order for calendars this year. If you would like a discounted calendar, just go online and purchase it.

For Sale

Takahashi Mewlon 250 (10") About 9 yrs old. Seldom used. Dealer (Anacortes) installed field-flattener and upgraded manual focuser with an electric (computer-controllable) focuser. **Asking just $4,700**. (new price ~$ 8,000). Contact Alex Woronow at Alex@FaintLightPhotography.com
(Alex lives in Silver City NM (SW Corner) but would meet a buyer halfway to deliver the scope).

NASA Night Sky Notes October 2020

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!

Observe the Skies Near Mars

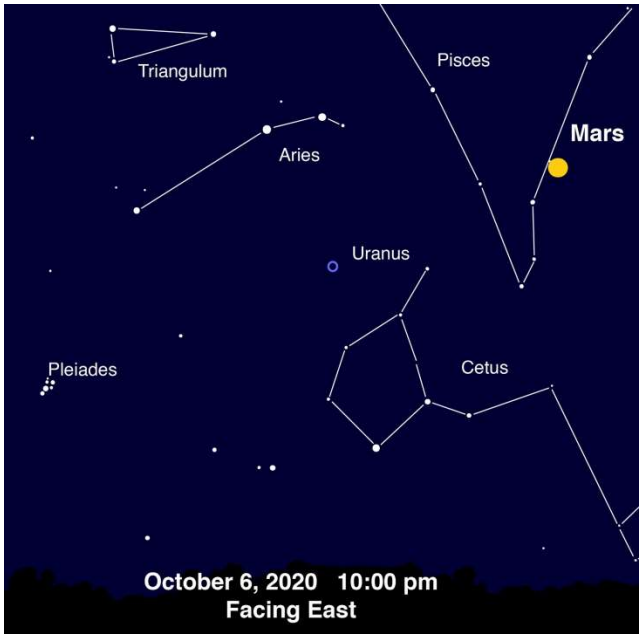
By David Prosper

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.

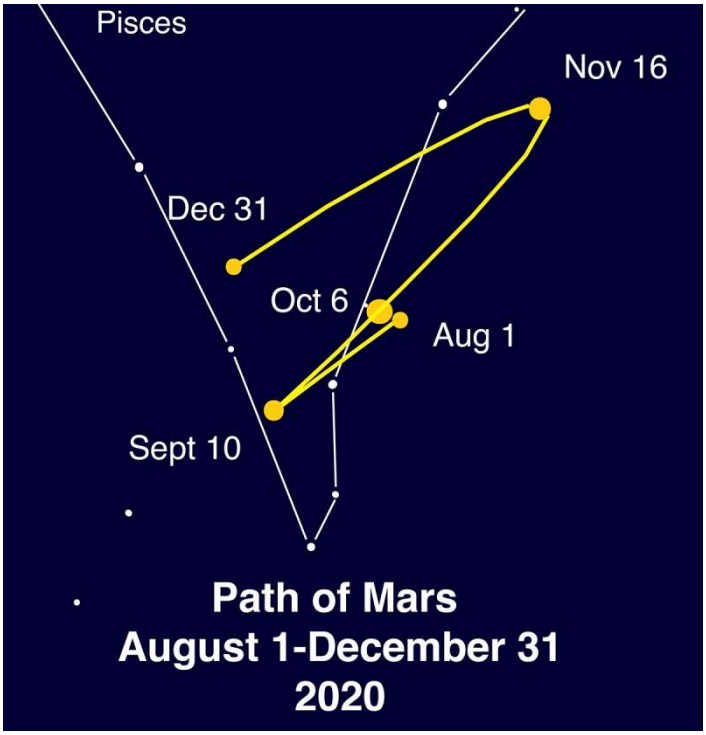
Since ancient times, Mars stood out to observers for its dramatic behavior. Usually a noticeable but not overly bright object, its wandering path along the stars showed it to be a planet instead of a fixed star. Every couple of years, this red planet would considerably flare up in brightness, for brief 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. Find great observing tips in JPl's "What's Up?" videos: 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. 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. Calculate the ideal launch window yourself with this handy guide: 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 coordinator Jerelyn Ramirez recently contributed an update featuring Mars opposition! You can download both versions at bit.ly/exploresolarsystem. Young astronomers can find many Mars resources and activities on NASA's Space Place: bit.ly/spaceplacemars. Here's to clear skies and good seeing for Mars's best appearance until 2033!



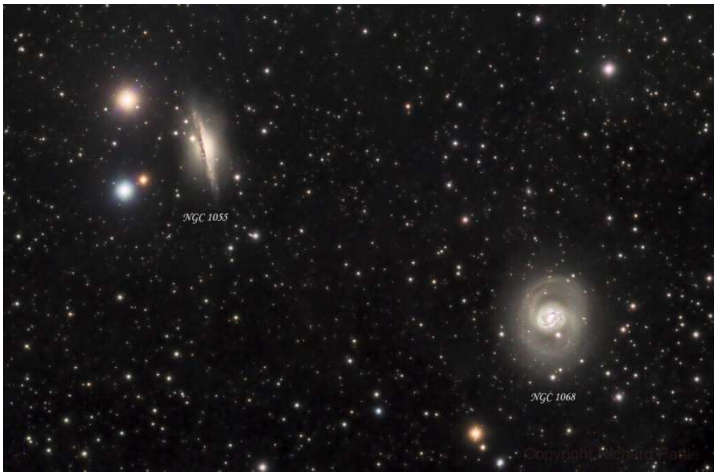
If you are paying this much attention to Mars, you're likely curious about the skies surrounding it! Find Mars in the constellation Pisces, with constellations Aries, Triangulum, and Cetus nearby Aries may be the only one of these dimmer patterns readily visible from light-polluted areas. The Pleiades 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

Pictures from HAC Members

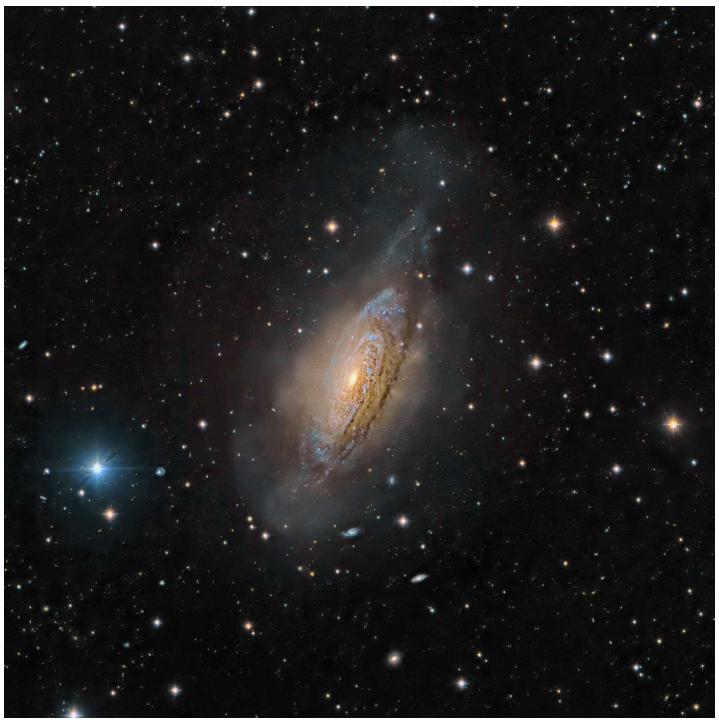
NGC 1055 and NGC1068 by Richard Pattie



Mars September 19 by Mike Shade

Mars October 04 by Mike Shade

NGC 3521 by Alex Woronow



Club Officers and Contacts

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Secretary: Bert Kelher **Treasurer:** Ted Forte

Past Vice President: Bill Howard

Board Members-at-Large

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Facebook: http://www.facebook.com/HuachucaAstronomyClub

Email: info@hacastronomy.org

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HAC Oct/Nov Calendar of Events

SU	MO	TU	WE	TH	FR	SA
4 **ALL IN-PERSON EVENTS ARE**	**5** **SUSPENDED INDEFINITELY**	**6**  Mars closest approach	**7**	**8** Draconid meteors	**9** **5:40PM** Draconid meteors	**10**
11	**12**	**13**  Mars at Opposition	**14**	**15**	**16** **12:30PM**	**17**
18	**19**	**20** O-Rex Sample Attempt Orionid meteors	**21** Orionid meteors	**22** Jupiter 2º moon Orionid meteors	**23** **6:23AM**	**24**
25	**26**	**27**	**28**	**29** Mars 3ºN of Moon	**30**	**31** **7:49AM** Uranus Opposition Halloween
1 Nov Daylight Savings Time Ends	**2**	**3** 	**4**	**5**	**6**	**7**
8 **6:46AM**	**9**	**10**	**11** 	**12**	**13**	**14** **10:07PM**
15 Mars Stationary	**16** Leonid Meteors	**17** Leonid Meteors	**18** Leonid Meteors	**19** Jupiter 2º N of moon. Saturn 3º N of Moon	**20**	**21** **9:45PM**
22	**23**	**24**	**25**	**26** 	**27**	**28**
29	**30** **2:30AM**	**Dec 1**	**2**	**3**	**4**	

Join **HacAstro** to keep up to date with all of the Huachuca Astronomy Club events
Send an email to: HACAstro+subscribe@groups.io
Watch the group for notice when in person events and meetings will resume