NIGHTFALL

A PUBLICATION OF THE HUACHUCA ASTRONOMY CLUB

MAY 2020

PRESIDENT'S NOTES

INSPECTING PLANETARY DISTANCING

I know you might be losing track of time and days by now from being house bound, but I'm here to remind you it's May 2020; goldilocks time here in the southwest. The temperatures and the nights are warm but not too warm. The atmosphere is drying out, and the stars and planets are becoming less blobby (yep a technical term). Now, I still get a gust of wind for five or ten minutes somewhere between 11:30pm and midnight, but that's about it. I take it as a sign to go get a spoon of peanut butter or a piece of chocolate to help my vision, you know for medicinal purposes. The rest of such nights are usually calm and make for very pleasant viewing.

But what to look at? As it's early May, and let's say dusk or early evening we've got to take a look at Venus. The Evening Star is quickly approaching Earth, and with its inside track, also known as an inferior orbit (i.e., an orbit closer to the Sun than ours), it is growing in apparent size every night. Venus is also going through phases, just like our moon, because of its inferior orbit. It passed the half-disk (quarter phase) in April, so it is now a crescent showing more thinning with each night. The combination of growing in apparent size and the ever-thinning crescent phase create remarkable changes in view we get of Venus in a relatively short number of evenings. The picture below shows a couple of things. First, it highlights the phases and change in apparent size. That may already be a couple of things. Anyway, this also goes to show that when two planets circle (or oval) around the same star in different but stable orbits, countless times, you are very likely to repeat yourself, positionally speaking.

For Viewing Venus, It Seems Like 2004 Again

Source: https://www.eso.org/public/outreach/eduoff/vt-2004/photos/vt-photos-top04.html

A word of warning, Venus is always bright, no not just bright glaring. In any telescope so you will probably need to move your eye around while looking through most eyepieces to get a spot with the least glare. If you have a moon filter, or even better a polarizer, then pop that in and prepare to stare. This is an ideal time to use the variable polarizer, as the reflected sunlight bouncing from Venus is polarized and so you can fine-tune the amount of light reaching through the eyepiece and into your waiting eye. The beauty of Venus is the totality of Venus, seeing the blazing orb floating in the darkened sky. Also, as some poems suggest, its beauty is just skin deep. Ok, it is just as deep as we can see into the cloud tops. Without a filter the planet is hard to look at for an extended period, but with a filter take some time to examine that cloud layer. Do you see any cloud banding? Probably not, but what about wave action? Some people report seeing a planet wide wave extending from pole to pole with the wave front advanced at the equator. Some color filters may help. I've heard deep red sometimes works. Imaging with various filtering schemes have worked. I remember, as a child, often seeing the wave, using no filter, through my 60mm Tasco refactor. It could be that my eyesight extended into the near ultraviolet back then, and no it wasn't from the halo given off from the poorly corrected objective lens. The cloud bank looked as if there were differences in their ceiling altitudes. So, while Venus is showing its cloud tops with long angles of reflection you might give yourself a leg-up at catching a wave. Before we move from Venus, remember this month the show changes nightly as the phase wanes.

One last suggestion before I stop. Start getting up early right now, say 3am, and begin viewing Jupiter, Saturn, and Mars. Jupiter and Saturn are wonderful, as always. This year will be a very good visitation, with Mars near the earth's elliptic, and our closest encounter will be during a Marian season less likely to breed dust storms. When you get a morning with good viewing push to higher magnifications than you usually use and watch for occasional stillness in your eyepiece to give you a spectacular vision of the red planet.

Until next time keep your distance, stay well, get outside, look up, and stare.

America's return to manned spaceflight

Mark your calendars! If all goes according to schedule, we will see the first launch of a manned spacecraft to lift off from American soil since 2011 when the Space Shuttle program was retired.

SpaceX will launch NASA astronauts Doug Hurley and Bob Behnken aboard a Crew Dragon capsule to the International Space Station during its Demo 2 mission which is on track to launch from Cape Canaveral at 4:32 PM EDT on Wednesday, May 27.

You can watch live on NASA TV.

Demo 2 is part of NASA's Commercial Crew Program that will employ vehicles from SpaceX and Boeing to restore the United States' capability for manned space launches.

NASA Night Sky Notes May 2019

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!

Become a Citizen Scientist with NASA!

David Prosper

Ever want to mix in some science with your stargazing, but not sure where to start? NASA hosts a galaxy of citizen science programs that you can join! You'll find programs perfect for dedicated astronomers and novices alike, from reporting aurora, creating amazing images from real NASA data, searching for asteroids, and scouring data from NASA missions from the comfort of your home. If you can't get to your favorite stargazing spot, then NASA's suite of citizen science programs may be just the thing for you.

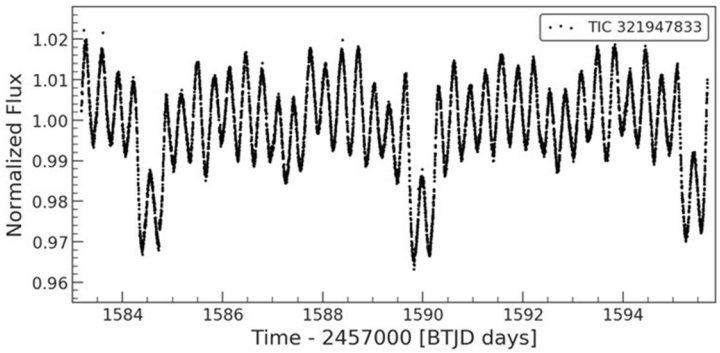
Jupiter shines brightly in the morning sky this spring. If you'd rather catch up on sleep, or if your local weather isn't cooperating, all you need is a space telescope - preferably one in orbit around Jupiter! Download raw images straight from the Juno mission, and even process and submit your favorites, on the **JunoCam** website! You may have seen some incredible images from Juno in the news, but did you know that these images were created by enthusiasts like yourself? Go to their website and download some sample images to start your image processing journey. Who knows where it will take you? Get started at bit.ly/nasajunocam

Interested in hunting for asteroids? Want to collaborate with a team to find them?? The **International Astronomical Search Collaboration** program matches potential asteroid hunters together into teams throughout the year to help each other dig into astronomical data in order to spot dim objects moving in between photos. If your team discovers a potential asteroid that is later confirmed, you may even get a chance to name it! Join or build a team and search for asteroids at iasc.cosmosearch.org

Want to help discover planets around other star systems? NASA's TESS mission is orbiting the Earth right now and scanning the sky for planets around other stars. It's accumulating a giant horde of data, and NASA scientists need your help to sift through it all to find other worlds! You can join **Planet Hunters TESS** at: planethunters.org

Intrigued by these opportunities? These are just a few of the many ways to participate in NASA citizen science, including observing your local environment with the GLOBE program, reporting aurora with Aurorasaurus, measuring snowpack levels, training software for Mars missions – even counting penguins! Discover more opportunities at science.nasa.gov/citizenscience and join the NASA citizen science Facebook group at facebook.com/groups/Sciencing/ And of course, visit nasa.gov to find the latest discoveries from all the research teams at NASA!

GREAT SOUTHERN JUPITER: Incredible image of Jupiter, submitted to the JunoCam site by Kevin M. Gill. Full Credits : NASA/JPL-Caltech/SwRI/MSSS/Kevin M. Gill



Light curve of a binary star system containing a pulsating (variable) star, as spotted on Planet Hunters TESS by user mhuten and featured by project scientist Nora Eisner as a "Light Curve of the Week." Credit: Planet Hunters TESS/NASA/mhuten/Nora Eisner

Pictures from HAC Members

Mars by David Roemer

Jupiter by David Roemer

Saturn by David Roemer

Leo Triplet M65, M66 and NGC 3628 by Mark Orvek

M101 Pinwheel Galaxy by JD Maddy

M97 Owl Nebula and M108 by JD Maddy

Club Officers and Contacts

President: David Roemer **Vice President:** Bill Howard

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

Past President: Bob Gent

Board Members-at-Large

Howard Day Ken Duncan Gary Grue Ken Kirchner

***Nightfall* Editor:** Cindy Lund cindy.jean.lund@gmail.com

Webmaster: Ken Kirchner

Facebook Editors: Bert Kelher and Craig Gundy

MSP Coordinator Keith Mullen

Website: http://www.hacastronomy.org

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

Email: info@hacastronomy.org

Please Support Our Sponsors

Our sponsors have been keeping us supplied in door prizes for some years. If you have not contacted them lately, please consider this. They have a lot of great astronomical products that we all need.

For more information on products and contact information, their websites are:

Farpoint Astronomy http://www.farpointastro.com/

Starizona http://starizona.com/

HAC May/Jun Calendar of Events

SU	MO	TU	WE	TH	FR	SA
26 	**27**  Venus Greatest Brillancy	**28** 	**29** **ALL MAY EVENTS ARE CURRENTLY CANCELLED**	**30** **1:38 PM** 	**1 May**	**2** 
3	**4** Eta Aquarid Meteors	**5** Eta Aquarid Meteors	**6** Eta Aquarid Meteors	**7** **3:45 AM**	**8**	**9**
10 	**11**	**12**	**13**	**14** **7:03 AM**	**15**	**16**
17	**18**	**19**	**20**	**21**	**22** **10:39 AM**	**23**
24	**25** 	**26**	**27**	**28**	**29** **8:30 PM**	**30**
31 **JUNE EVENTS ARE TENTATIVE**	**Jun 1** **TBD BY THE STATUS OF CONTINUING SITUATION**	**2**	**3**	**4** Mercury at greatest eastern Elongation	**5** **12:12 pm** **HAC Meeting Community Room (?)**	**6**
7	**8** Jupiter-Saturn and Moon in morning sky	**9**	**10**	**11**	**12** **11:24 pm**	**13**
14 	**15**	**16**	**17**	**18**	**19**	**20** **11:41 pm** Summer Solstice 2:44 PM
21 	**22**	**23**	**24**	**25** **Patterson Public Night 8 PM (?)**	**26**	

Join HacAstro to keep up to date with all of the Huachuca Astronomy Club events
Send an email to: HACAstro+subscribe@groups.io