

As public observatories remain closed, we observe and image from our backyards, and sometimes from distant lands. As in-person meetings have been cancelled we meet online by Zoom, Webex, and YouTube. This has been a blessing to some people who can now “attend” astronomical conferences and presentations around the globe.

Solar System: Clif Ashcraft imaged Venus in the daylight at its first quarter phase. Galileo would have loved it.

Mark Zdziarski and also *Neil Yablonsky imaged Venus traversing the Pleiades* (M45, Subaru, Seven Sisters) star cluster. These close conjunctions happen every eight years in early April. Venus (magnitude -4.5) was 870 times brighter than Alcyone (magnitude 2.86), the brightest member of the cluster. The formula for comparing brightnesses is

$$B1/B2 = 10^{-0.4(m1-m2)} \text{ or in this case}$$

$$\text{Brightness of Venus} / \text{Brightness of Alcyone} = 10^{-0.4(-4.5 - 2.86)} = 10^{2.94} = 870$$

That's a lot of photons.

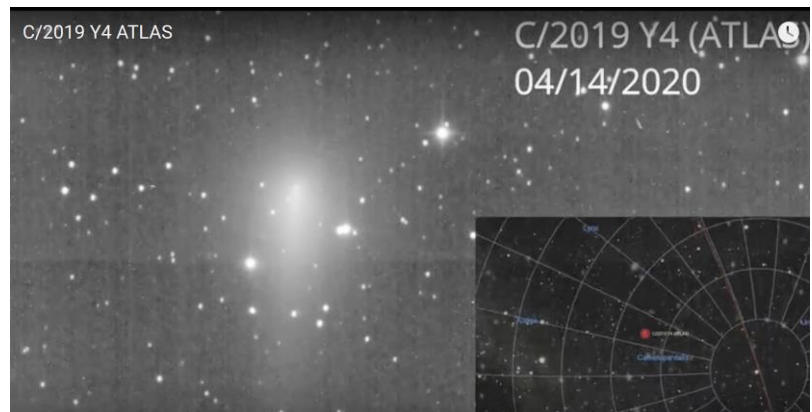
Clif posted Mars images by Damian Peach taken remotely from a 1 meter Chilescope. Small local dust storms are seen in the Hellas basin near the south polar cap. Perhaps they will spread to obscure the whole planet as they did in 2018, but we don't know yet.

A Jupiter image by Christopher Go was taken from the roof of his apartment building in Cebu City in the Philippines and shows an orange Great Red Spot and multiple detailed festoons in the cloud tops.

Comet c/2019 Y4 ATLAS was imaged by Isbel Gonzalez remotely from the Canary Islands on April 7 before it began to break up on April 11.

Tolga Gumusayak also imaged this comet from April 11 to 16 with a 14" CDK telescope at his remote observatory in New Mexico. He produced a *comet video* with dramatic music. Watch it several times and notice the changes in the seeing, especially on April

16 at 0:36. <https://www.youtube.com/watch?v=2hZaKqoCSFc>



Stars: Steve Lowe has taken many spectra of Betelgeuse over several years. However, as Betelgeuse dimmed the spectra do not show any changes. It is thought that this is because the dimming was caused by an external cloud and not by changes in Betelgeuse's surface itself. Clif has resumed his observations of close double stars by speckle interferometry. He has analyzed their separations and position angles by two methods and now prefers Bispectrum to the Autocorrelogram software.

Deep Space: Isbel imaged remotely from Chile the Trifid Nebula (M20), and also the *Sombrero Galaxy (M104)* one of the largest galaxies at the southern edge of the Virgo Cluster of Galaxies. It has a very bright central bulge and a nearly edge-on disk.

Useful sites and webinars:

Ask an Astronomer, Newark Museum of Art, Live Alternate Tuesdays at 10 AM

Ask an Astronomer, McDonald Observatory, TX, askanastronomer.org/

Ask an Astronomer, National Radio Astronomy Obs, public.nrao.edu/ask/

Ask an Astronomer, NASA,

https://imagine.gsfc.nasa.gov/ask_astro/ask_an_astronomer.html

Ask a Geologist, Rutgers U

American Museum of Natural History

British Astronomical Association



Other: Jim Nordhausen and I enjoyed the NEAF Virtual experience, especially the talk by Jani Radebaugh of BYU about the Dragonfly drone mission planned for Saturn's moon Titan in 2026. Bonnie Witzgall sent a picture of the Apollo 11 astronauts in quarantine in 1969.

On a clear evening I texted my neighbor and her kids about a pass of the International Space Station at 8:30. We met in the middle of the street (no traffic since it was after curfew), wearing masks and socially distancing. We waved at our astronauts, then at the Moon (our nearest extraterrestrial neighbor), then at Venus (our nearest planetary neighbor), then at each other (our real neighbors), and went back into our houses. It was a sweet outreach moment.

Mark Zdziarski pointed out that we all have Schrodinger's virus. Because we cannot get tested, we can't know whether we have the virus or not. We have to act as if we have the virus, so that we don't spread it to others. We have to act as if we don't have the virus because if we didn't have it, we're not immune. Therefore, we both have and don't have the virus.

Respectfully, Mary Lou West, Research Chair