

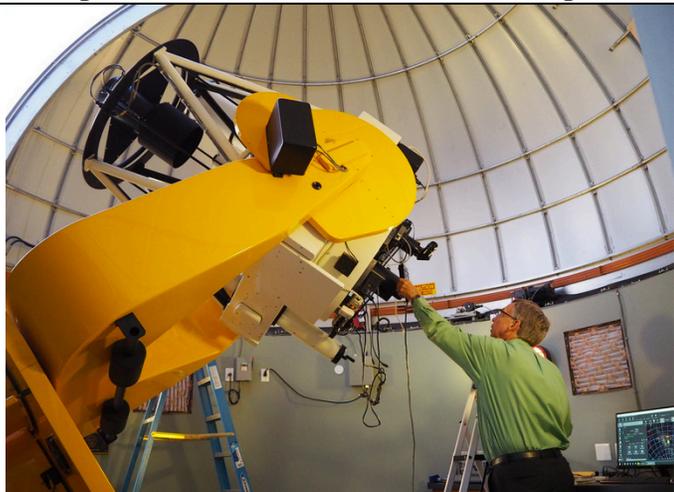


AU AstroNews

The Newsletter of the Astronomical Unit

April 2020

Sponsored by the Santa Barbara Museum of Natural History



Dr. Ken Kihlstrom readies Westmont's telescopes for a recent Third Friday outreach. Photo credit: Tom Totton.

APRIL GENERAL MEETING

Due to the COVID-19 Pandemic our club's April General Meeting has been canceled.

OUTREACH SUMMARY

With the rain and clouds and COVID-19 pandemic, we had to cancel a lot of planned outreach, including all of April coming up. Despite all that, since the last newsletter, AU volunteers Brandy Ackerman, Sabine & Marciano Chan, Krissie Cook, Tim Crawford, Sean Kelly, Ken Kihlstrom, Bryan McGuffin, Pat & Chuck McPartlin, Janet & Martin Meza, Bruce Murdock, Peggy O'Rork, Diane & Russell Ruiz, Charles Schueler, Bob Smith, Tom Totton, and Tom Whittemore managed to show cool stuff in the sky to 982 people.

APRIL OUTREACH EVENTS

April outreach is almost entirely cancelled, and May is as yet undecided, but doubtful. The SBAU radio hour on KZSB AM1290 at 9 AM on the second and fourth Monday of each month will continue as a phone-in show, thanks to the dedication of Baron Ron Herron.

STAY SAFE!

In an effort to continue public outreach, SBAU Merch Manager Pat McPartlin contacted the CDC to inquire about procuring enough biohazard level 4 suits with optical-quality goggles so that we could issue one to each volunteer and attending member of the public at scheduled events from **April 1, 2020** through **April 1, 2021**. Not only was the total price somewhat prohibitive, but the SB Air Pollution Control District refused to issue us a permit to incinerate the suits at the end of each outreach.

Keep calm, wash your hands, practice social distancing, and stay healthy!

FROM THE PRESIDENT

Jerry Wilson

A bright, naked-eye comet, known as Comet ATLAS, or C/2019 Y4, is about to show up in the northern evening sky. When it was discovered on Dec. 28, 2019, it was quite faint, at about magnitude 20, but since then, it has been brightening so rapidly that astronomers have high hopes it may soon become a spectacular object. But don't hold your breath because comets are tricky. Many have fizzled short of the show they could've put on. ATLAS stands for Asteroid Terrestrial-impact Last Alert System, a robotic astronomical survey system located in Hawaii searching for smaller near-Earth objects nearing closest approach. But this time it found a comet.

At its closest, on May 31, Comet ATLAS will be just 23.5 million miles (37.8 million km) from the sun. At this distance it should be about magnitude 8 and visible in small scopes. However this comet has been brightening dramatically so that now, over two months before perigee it is already about 7th magnitude. If it continues to brighten at this pace it will be magnitude -2 at perigee and rival Venus in the evening sky. That's very unlikely to happen

though. Its rate of brightening has slowed a bit, but is still atypically rapid. In addition, its visual appearance is also atypical. According to John Bortle, the head (or coma) of Comet ATLAS is big, albeit "very faint and ghostly," which doesn't make sense. "If it's a truly significant visitor, it should be considerably sharper in appearance. Instead we see, at best, a quite modestly condensed object with only a pinpoint stellar feature near its heart."

Fortunately, its path in March and April will be very favorable for Northern Hemisphere observers, as it will be circumpolar and always remain above the horizon. As darkness falls, it will be positioned more than halfway up in the north-northwest sky. Right now, the comet is in western Ursa Major, and it will shift into the boundaries of Camelopardalis the Giraffe — a rather dim, shapeless star pattern — by March 29. There it will stay through the month of April.

VISITING COMETS

Chuck McPartlin

After more than a week of pandemic-induced social isolation, with SBAU public outreach and school astronomy activities cancelled for at least two months, and days of clouds and rain (at least!), I was feeling a bit deprived of my usual diet of long-range photons. On March 18, the sky was mostly clear, so I dragged out a telescope and spent some time with the stars.

As luck would have it, there were two reasonably bright comets in our northern sky, and what more currently relevant objects could there be to observe than a couple of those traditional harbingers of doom and disaster?



First up was comet C/2017 T2 PANSTARRS, in Cassiopeia in the northwest. It was discovered by Pan-STARRS (Panoramic Survey Telescope and Rapid Response System) in Hawaii on October 2, 2017. The Pan-STARRS system scans the skies with two 1.8 meter (about 71 inches of aperture) telescopes on the Haleakala volcano on the island of Maui.

T2 was about 165 million miles away from us, beyond the orbit of Mars. It was closest to Earth on December 29, 2019, and will reach perihelion on May 4. It is currently at an integrated visual magnitude of 8.6, so faintly visible in binoculars on a good night, and that's about as bright as it's expected to be. If you want to wait for its next visit to the inner solar system, it'll only be about 309,487 years.



Next up was comet C/2019 Y4 ATLAS, high overhead in Ursa Major. It was the last comet discovered in 2019, on December 28, by ATLAS (Asteroid Terrestrial-impact Last Alert System), also in Hawaii. ATLAS utilizes two 50 centimeter (about 20 inches of aperture) telescopes, one on Haleakala and one on Mauna Loa on the big island of Hawaii.

Y4 was about 102 million miles away. It is still heading in toward the Sun, and will reach perihelion on May 31, at an extremely close 24.4 million miles from the Sun - closer than Mercury. Y4 is at an integrated visual magnitude of 8, much brighter than expected. It appears to be a first-time visitor to the inner solar system, with lots of volatile ices that are sublimating to form a bright coma. There is speculation that it could reach naked-eye brightness in late May, but unfortunately it will then be close to the Sun in our dawn skies. Then again, it could

evaporate completely before even reaching perihelion. If it survives, it may return in about 5,519 years.

Each of the images on the preceding page is a composite of 6 images exposed for 30 seconds at ISO 3200 with a DSLR attached to a 5-inch f/6.3 refractor. The greenish glow in the comas is from fluorescing gaseous diatomic carbon.

The automated systems astronomers are using to detect potentially hazardous asteroids and comets will be facing many problems caused by the swarms of small internet satellites, up to a potential total of 60,000, being launched by Elon Musk, Amazon, and other companies. Let's hope they don't obscure an impactor!

References for a Cloudy Evening

<https://solarsystem.nasa.gov/asteroids-comets-and-meteors/comets/overview/>

<https://en.wikipedia.org/wiki/Pan-STARRS/>

https://en.wikipedia.org/wiki/Asteroid_Terrestrial-impact_Last_Alert_System/

NEW LIFE FOR OLD SCOPES

Looking to repurpose that rickety old 50mm department store refractor in your closet? Many of those long-focus refractors of almost any aperture can be used as an aid to social distancing in times of pandemics. Simply extend the tripod legs fully, duct-tape them together, and then duct-tape the refractor in its maximum altitude orientation. This should give you a roughly 6 foot long prod to carry when you go outside, especially if you hold it by the optical tube and the tripod legs end in little pointy things.

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April 2020

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13 TECH TALK KZSB (AM1290) 9-10 AM	14	15	16	17	18
19	20	21	22	23	24	25
26	27 TECH TALK KZSB (AM1290) 9-10 AM	28	29	30		