

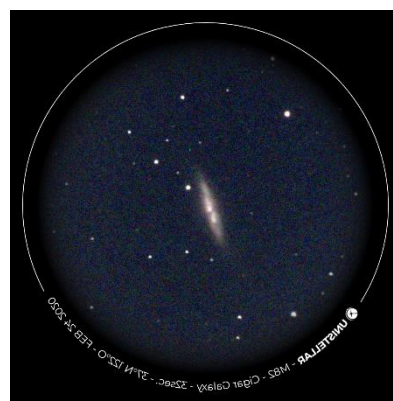
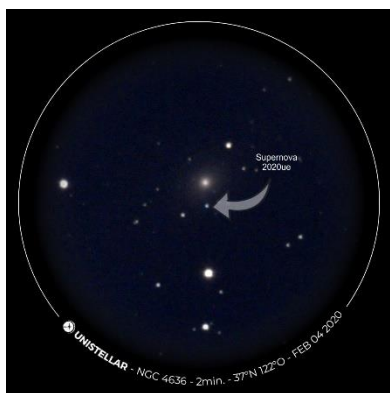
## ***My New Electronically Enhanced Telescope – The eVscope***

I received my eVscope from Unistellar Optics on January 24th of this year. On the inside flap of the box when I opened it was the phrase “PREPARE TO BE AMAZED”. I took it out on the first clear night and was certainly amazed!

The telescope is a 114 mm (4.5 in) reflector with a focal length of 450 mm. Inside the instrument is a Sony IMX224 sensor (1280 x 960) astronomical camera and an OLED (Extremely high contrast ratio) screen behind the eyepiece. The only control on the telescope is an on/off switch, all other functions are controlled wirelessly from a smart phone app. The telescope and tripod weigh 20 pounds together. It is rated to <16 magnitude under medium skies.

Alignment consists of pointing the telescope somewhere in the sky and pressing the Align button in the app. Alignment is accomplished in about a minute and then you can choose from preselected objects or enter the designation or coordinates of an object. The telescope will slew to the object and the view can be improved by touching Enhance. The hardware takes a series of short photos and does real time stacking. As you view the image it keeps improving while continuing to be available in the eyepiece. The image is also shown in the smartphone app.

Everything is designed to be used in real time, the photons are used to build up the image as they arrive. You can see detail and color in objects that just isn't available in other amateur telescopes, even very large ones. In the last few weeks, I have managed to view a distant supernova, saw incredible color and detail in the Orion Nebula and detail in galaxies that I have never come close to seeing before. All of this under conditions that were far from ideal and with typical Bay Area light pollution. The pictures below which are what is seen in the eyepiece.



*Type 1a Supernova 2020ue in NGC 4636 (left), M42 (middle) and M82 (right) as seen in the eVscope.*

I have loaded a number eyepiece images which are larger and at higher resolution onto my website, [www.AstronomerEd.com](http://www.AstronomerEd.com).

Another exciting capability the eVscope is the ability to participate in Citizen Science efforts led by the SETI Institute. Professional astronomers with beta versions of the telescope have proven it sensitive enough to imaging the transit of exoplanets and the occultation a star by a Trojan Asteroid. The concept is to use images taken by owners in different geographies to get views of exoplanet transits, asteroids occultations, comets and other faint or transitory events. This will provide capabilities that are not available to professional astronomers now.

I brought the eVscope to Jazz Under the Stars on February 1, 2020 and to the Star Party at Central Middle School on February 4, 2020. At these two events about 300 people had a chance to view objects through the eVscope. At both events the public attending were quite impressed, but the astronomers were blown away. The ability to see fine detail and colors make viewing a much more interesting and informative experience.

The eVscope has significant advantages for those of us who are finding it more difficult dealing with our telescopes and equipment as we age. For the older astronomer it offers the following benefits:

- The eVscope is easy transport because the telescope and tripod weigh under 20 pounds.
- Setup is easy and fast. The only attachment is the telescope to the tripod.
- The image in the eyepiece is always bright enough to see, even if the object is faint. Good night vision is not required.
- There is no heavy power supply to lug around since power is from an integrated rechargeable battery.
- There are no eyepieces, finders, GPS units or other accessories to carry and attach. Everything is integrated in the telescope and the smart phone app.
- Changing magnification only requires a pinch/spread gesture on the smartphone screen. No eyepieces to change.
- There are no external wires to get tangled or be a tripping hazard.
- Alignment is totally automatic, there are no alignment stars to find or auxiliary alignment device to install and adjust.
- You can clearly see the object you are observing with the smartphone app so there is requirement to repeatedly look through the eyepiece. In fact, the telescope can be run competently while sitting in a nearby chair.

**And it runs circles around any of your older telescopes!**

Please feel free to email me with any questions at [epieret@comcast.net](mailto:epieret@comcast.net).

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**Vice President, San Mateo County Astronomical Society**