VILLAGES STAR
Newsletter of The Villages Astronomy Club

**Volume 3, Number 6**
**June 2022**

Club Website:
http://vlgastroclub.org/
Facebook:
https://www.facebook.com/groups/vlgastroclub/

**Club Officers & Directors**

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| President | Mark Graybill |
| Vice President | Ken Katta |
| Secretary/Historian | Burt Salk |
| Treasurer | Linda Meng |
| Education Coord. | Randy Gilbert |

**Newsletter Contact**
saundby@gmail.com
(please include TVAstro in subject line)

## UPCOMING EVENTS

**June 7th: Telescope Workshop**
7pm Trueman Recreation Center Pavilion area. Learn how to choose and use a telescope, or share your knowledge with others. Note that this is an informal event, if others are using the pavilion we will still be there, but will set up outside the pavilion area. Cancelled in the event of inclement weather.

**June 20th: General Meeting**, 6:20pm, Laurel Manor Recreation Center. Dr Henderson and the ERAU EagleCAM team speak on their lunar surface camera project. See more below.

**June 1st: Director's Meeting**
11am Fishhawk Recretion Center, Buttonwood Run. Come help us plan future events for the club!

Calendar: https://vlgastroclub.org/calendar/

## NEWS

**Eclipse Event Report**

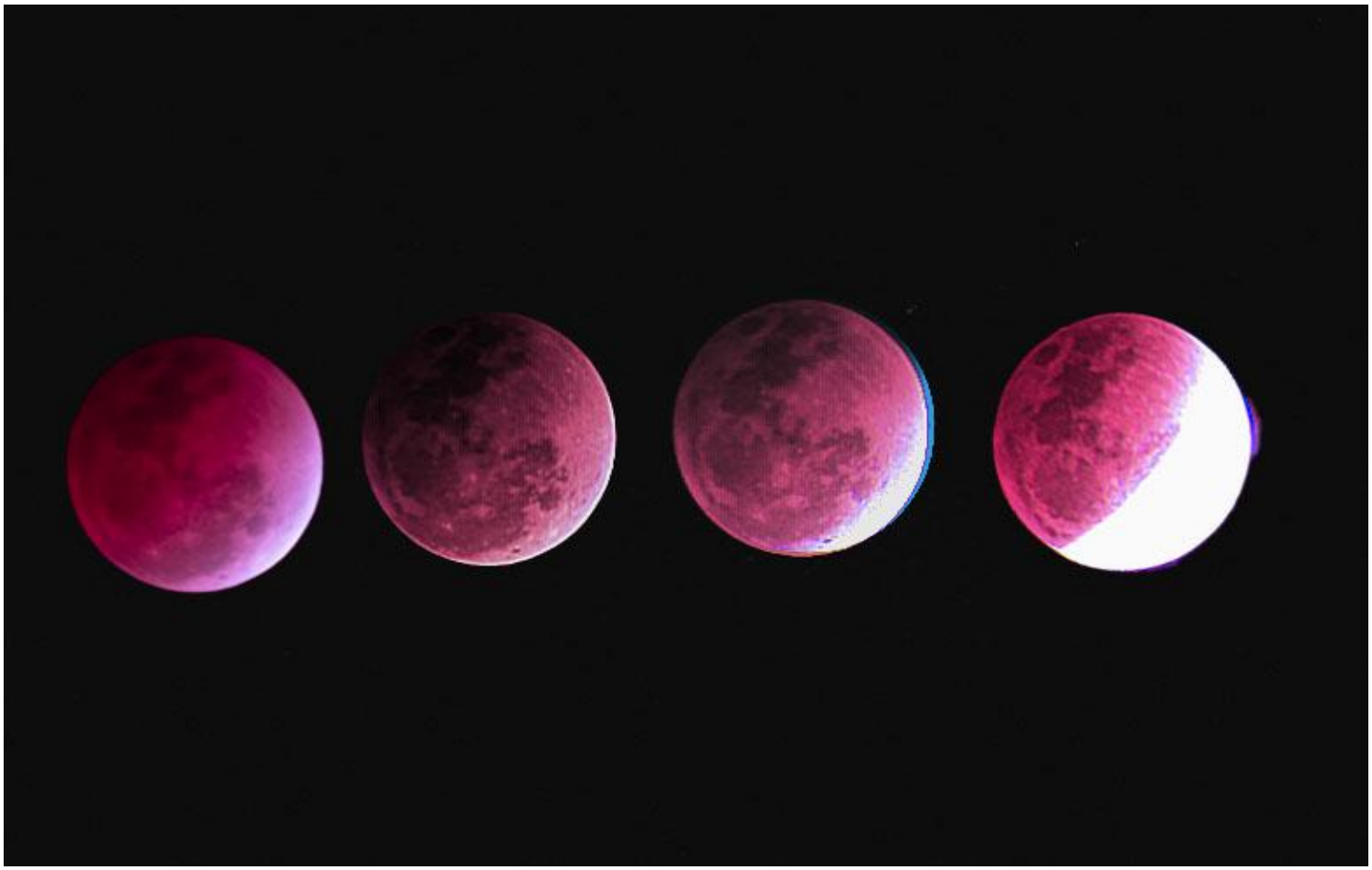
On the evening of May 15th, we held a joint event with the Fruitland Park Astronomy Club at their site in Fruitland Park. The subject of the event was a lunar eclipse that was nearly centered over our longitude.

The weather during the day had been stormy and overcast. There were breaks in the clouds, but the view from most of The Villages did not look promising as the sun set. From the Cales Soccer Fields in Fruitland Park, there were clouds to the south and lightning storms to the north in Lady Lake. Thin patches in the western sky teased us with the hope that the sky would open up more broadly.

Though the storm cells with flashing lightning moved south, they stayed well to the east of us, and shortly before first contact the glow of the Moon could be seen through the thin clouds that covered it. It remained frustratingly covered through the first half hour of the penumbral eclipse.

Then the clouds opened. A triangular gap formed around the Moon, with just a few minutes to go until the start of the umbral eclipse. The penumbra (outer shadow) couldn't be seen clearly on the Moon, which is typical when observing from low altitudes with humid skies. But when the umbra (inner shadow) first touched the lower left edge of the Moon, it was immediately obvious. A dark bite was taken out of the Moon that slowly spread toward its center.

We were able to watch it spread until it was near to touching the center of the Moon's disk,



**May 2022 Lunar Eclipse Image Series**
**by Member Ted Mitrou**

then the clouds closed in again. We could still see the light of the Moon through the clouds, but no detail.

After we wondered whether that was all we were going to get to see, the clouds opened again just before the darkness covered the Moon. We got to wath the last light fade and disappear, and totality begin.

At first, the surface of the Moon looked very dark with a brown tinge to it. As the clouds cleared away and the Earth's shadow continued to move across the face of the Moon, the center of the Moon took on an orange tinge, and it seemed to brighten a bit.

Experienced watchers of lunar eclipses know that each one looks a bit different, and unfolds in its own way. This is in part an effect of the geometry of the eclipse--the Earth's shadow is very large compared to the Moon, and the Moon can pass through different parts of the Earth's shadow. A large factor, though, is the state of Earth's atmosphere. More or less light can be refracted through our atmosphere, and at different wavelengths depending on the dust that is suspended in the air of our home planet.

In this case, we were initially treated to a dark brown Moon that gradually became a deep orange, brightest in the center but still not bright. There was an occasional reddishness near the limb of the Moon at times, but overall the face of the Moon stayed quite dark. The darkness is likely a result of recent volcanic events on Earth, which put dust into our upper atmosphere that blocked much of the light that would otherwise have been refracted toward the Moon.

Observing the Moon with binoculars or a telescope during an eclipse is a unique experience. With the harsh light of the full moon dampened, the textures of the different surface types on the Moon stand out in sharp contrast. The seas take on a striated appearance, the highlands look like rugged gravel. The edges of

each stand out sharply against each other.

The sky remained clear for us through totality and through the rest of the eclipse from the site in Fruitland Park. We had about 35 people come out to join us in spite of the threatening weather, and had several telescopes set up as well as a pair of binoculars on tripods thank to the volunteers who brought out their equipment to share views with the public.

Totality ended with a bright spot appearing in the same place that first inky black spot had appeared on the lower left edge of the Moon. It immediately made the rest of the Moon look that much darker. It drove away the darkness over the next hour. Though it was still shadowed by the Earth's outer shadow, it was not enough of a shadow to be visible to us, and no change could be seen when the full light of the Sun reached the Moon. About 3am, it was over, and the Moon had gone back to being an ordinary Full Moon, showing no signs of the spectacle that had come before.

The event in Fruitland Park was a great success in spite of the weather. We had many young people out for the event who got to bend the ears of the experienced astronomers. The site was convenient, safe, and accommodating. We hope to have many more such events in concert with the Fruitland Park Astronomy Club in the future. Our thanks to Dave Scruggs, president of their club, for working with the City of Fruitland Park to arrange for this event, and to the City of Fruitland Park for hosting us.

The Fruitland Park Astronomy Club holds meetings on the third Saturday of the month at the Cales Soccer Field at dusk. Members of The Villages Astronomy Club are invited to attend and participate. Bring instruments if you wish, or come to enjoy views through others' instruments. The fields are on the corner of Shiloh Street and N Dixie Ave in Fruitland Park, with the entrance on Shiloh St. There is power available, and you can set up equipment right off the tailgate of your vehicle.


**June Meeting**

Dr Troy Henderson of the EagleCam Team of the Embry Riddle Aeronautical University's astronomy department will speak on the lunar EagleCam project, placing a camera on the Moon. The camera will land on the Moon prior to the landing of the Nova-C lunar lander, then it will film that vehicle's landing. This will be the first time that a landing on the Moon has been remotely observed.

Come learn more about how this amazing project is being executed, and how you can help support it at our June meeting with Dr Henderson! https://daytonabeach.erau.edu/eaglecam

**July and August Meetings**

In the past the club has gone into abeyance through July and August. At the request of our members, as voted on in our meetings, we will not only continue to hold meetings during these months, but we will hold them in person (as opposed to via Zoom or other electronic means.)

The meetings will be held in a round table format, there will be no formal presentation. They will provide an opportunity for our members to share their own experiences and interests in astronomy with each other. We will discuss such subjects as what drew us to astronomy, programs or information sources that we enjoy, good places to observe, and our favored equipment and suppliers.

**Directors' Meetings**

The next Directors' Meeting will be held on June 3rd at 11am at the Fishhawk Recreation Center on Buttonwood Way (Village of Buttonwood.) All members are welcome to join us, to assist us with the planning and organization of the club, and in developing our plans for activities to help the club better serve its membership.

## IN THE SKY THIS MONTH

**The Moon:**

1st Quarter, June 7th,
Full Moon, June 14th,
Last Quarter, June 21st,
New Moon, June 29th.

**The Planets:**

There is a parade of the planets in the early morning sky this month. The morning of June 24th will be especially nice, with the planets spanning 107 degrees of sky, stretching from ***Saturn*** in the south to ***Mercury*** low on the eastern horizon. Mercury will shine at magnitude -0.2 and 12 degrees above the horizon, well away from the Sun in a darker sky than earlier in the month (don't let that deter you from getting up to see the planets earlier, though, the change over time is slight.) Late this month will be one of the best times to get a view of Mercury by eye or by binoculars.

***Saturn***, in Capricornus, rises near midnight for those evening observers willing to wait on it.The axial tilt of the planet will be favorable for observers looking for the shadow of the rings on the planet. Another observing challenge is to see the inner "crepe ring" inside the more easily visible rings around Saturn. The rings can be viewed with about 30-40 powers of magnification, so they are out of the reach of most binoculars. Seeing the faint crepe ring requires a telescope with good contrast, enhanced by the contrast provided by midrange magnifications from about 120 to 250 powers. The stillness of the air, and clarity of the sky will also be important factors in spotting the inner ring.

***Jupiter*** rises in the early morning hours this month, shining at magnitude -2.4, much brighter than Saturn's 0.7. Binoculars will show its satellites.

Between Jupiter and Saturn, invisible to the unaided eye, lies planet ***Neptune***. In a low power view in a telescope, it can be seen as a dim blue or green dot that is clearly not a normal star. The color is determined by the atmosphere over the observer and the aperture of their telescope. The smaller the aperture, the stronger the color. Midrange magnification reveals it as a disk.

***Mars*** rises a bit over an hour after Jupiter, and though it is a reasonably bright magniture 0.8, its distance from the Earth hides surface detail from low or medium level magnification. A light blue filter and magnifications of over 200 powers will bring out the polar cap, and may capture some atmospheric clouds. A green filter will darken surface regions like Syrtis Major, making them easier to see.

***Venus*** is a bright morning star this month, visible through telescopes as over half illuminated, and gaining in illumination as it moves closer to the Sun in our sky through the month. On the morning of the 26th, it will be 2.5 degrees from a thin crescent Moon, forming a pair in the sky before dawn that will be worth an early morning's rising to observe.

**Summer Solstice**

The longest day of the year will be June 21st, with 13 hours, 57 minutes, and 41 seconds of daylight at our latitude. It will be just under a second longer than the 20th's daylight, and just over a second longer than the 22nd's.