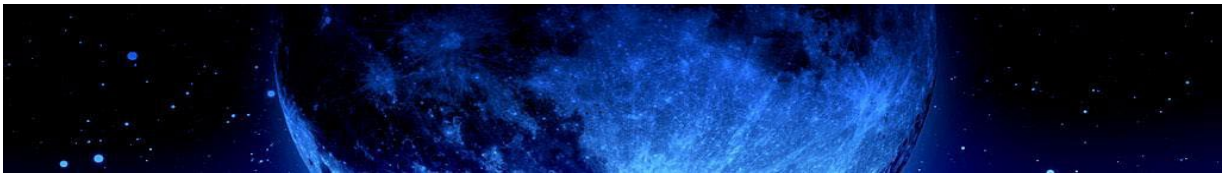
Lewes Astronomical Society

October Newsletter

Guest Editor: Jason Wye



Herstmonceux Astronomy Festival

By Jason Wye

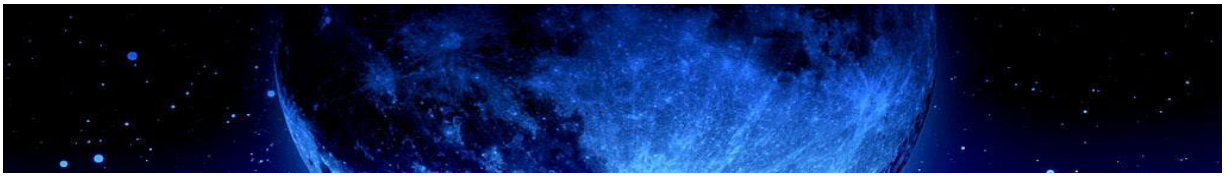
The Lewes Astronomical Society was fully represented at this year's Astronomy Festival, which ran from Friday 29th to Sunday 31st August. Not only did we have a gazebo, but three of our members also gave talks in the main speakers' programme.

The weather was kind to us on Friday, although a little breezy, and there was an unexpected clear night that allowed for observations. See the atmospheric picture below!

Indeed, I was able to get this image of the Whirlpool Galaxy (M51), which is about 23 million light years away, with a SeeStar telescope.

Saturday's weather was not so kind: the remnants of Storm Erin had arrived. The wind was the chief issue, along with some rain, which softened the ground a little. But the festival was well-attended and we chatted to many people about astronomy and the LAS.

By the evening, the wind was getting fierce. Most of the attendees who weren't holding down their tents were sheltering in the Golden Nose Bar, enjoying the astronomy quiz.



But not so Steve & Judith from the LAS committee. They had spotted the peril that faced our gazebo and, I'm still not sure how, wrangled the flapping canvas to the ground and moved its contents to the safety of one of the telescope domes.

By Sunday, the wind had eased somewhat and the rain had gone. Miraculously, we were able to restore the gazebo and its slightly damp contents.

If you've not been to this annual festival before, it's a wonderful weekend with camping available too.

Back to the Moon

By Robert Massey

In December 1972 Apollo 17 lifted off from the moon's surface, marking the end of three and a half years of lunar exploration. During this time, a total of twelve American astronauts (men only in those days) walked on and explored our neighbouring world.

Those exciting times, along with the interest of space agencies, ended when I was just three years old.

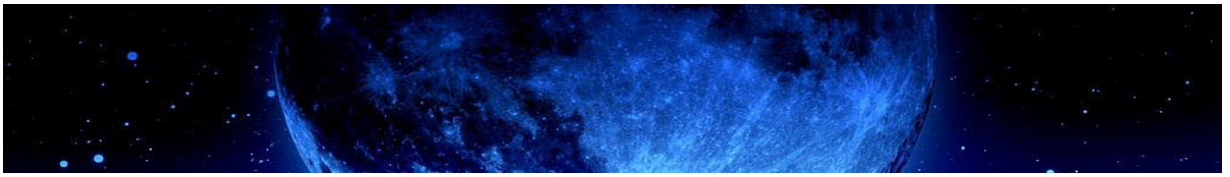
The Moon is always captivating. The only object apart from the Sun that appears as more than a point of light, it gives rise to our calendar month, roughly the time it takes to return to the same phase. Human beings have marked its presence for tens of thousands of years, from rock art in Palaeolithic caves at Lascaux, to stone circles in Africa and Europe, and on objects like the early bronze age Nebra Sky Disk.

As modern astronomers, we are lucky enough to have equipment that transforms the changing circle in the sky into a detailed world.

Six years ago, the curator and writer Alexandra Loske invited me to co-author a book with her covering all these aspects (something I wouldn't have done without a push) and if you can get hold of Moon: Art, Science, Culture, I'd be happy to sign it.

Partly because of this, Luke Jerram, the British installation artist, invited me to join him on a video call with the Artemis 2 crew, which for the first time will take a woman and a person of colour to the Moon.

Commander Reid Wiseman wanted to talk about the significance of the Moon in culture, and to explore how they could respect the beliefs of different peoples around the



world, occasionally disregarded, for example, when human ashes are scattered there. I was struck by how engaged they were with this despite the US administration trying to turn back the clock. This was a group that wanted to go back for all humankind.

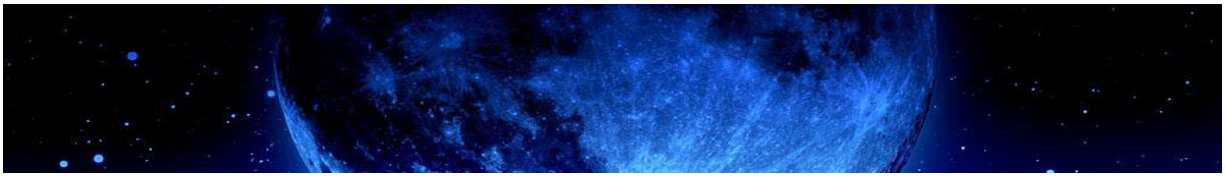
If all goes to plan, Artemis 2 will fly around the Moon early next year, and Artemis 3 should put astronauts on the surface in 2027. Despite an array of robots and rovers telling us more about the Moon

than ever, missions to places like the south pole, where some craters see almost no sunlight, could give us critical information on the origin of the planets, including the Earth. That same site could be ideal for use as a base, with water ice and high peaks where the Sun rarely sets.

Anyone who has shown the Moon through a telescope to the public is familiar with the incredible response – and seeing a place of lava plains, craters and volcanoes always moves me.

The Moon has been celebrated by artists throughout the centuries. Caspar David Friedrich's melancholy depictions of people gazing at the lunar crescent; Luke Jerram's Museum of Moon is almost always on display somewhere in the world, and Katie Paterson playing Moonlight Sonata from a transmission reflected off the lunar surface are just a few examples.

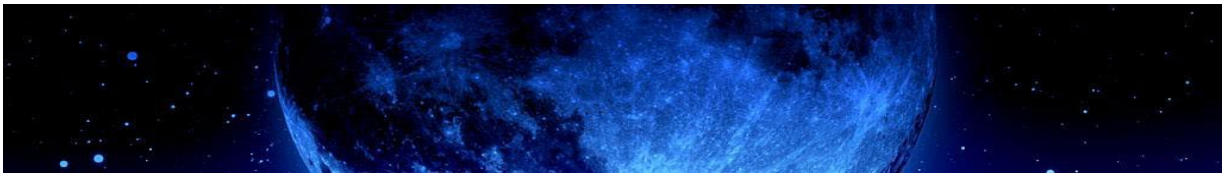
This is potentially an exciting time. In the meantime, if you want to see the Moon for yourself, the autumn months are when the Moon around last quarter (half phase, three quarters of the way from one New Moon to the next) is high in the morning sky, with the next opportunity to see this from about 12th October onwards. Do take a look and spend a moment thinking about just how much our natural satellite means to all of us.



The Night Sky

By Paul Whitmarsh & Sarah Carson

The chart depicts how the night sky will appear at 11pm at the start of October, 10pm by the middle of the month, and 8pm at the end of October, allowing for the move back to GMT on the 26th October. The position and phase of the Moon are given for the 1st , 4th & 10th October.



This month features the autumn constellations. The square of Pegasus is high in the south. Andromeda contains the great spiral galaxy, Messier 31, visible as a smudge in binoculars.

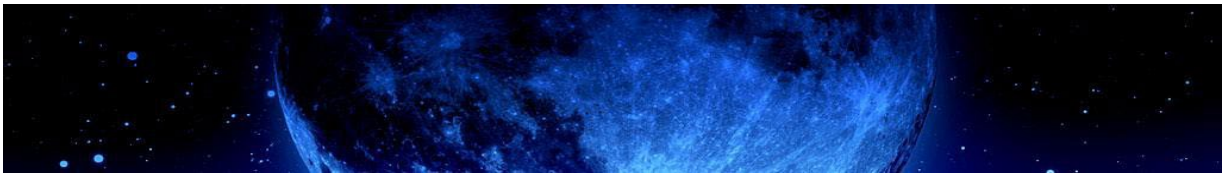
Below the front of the square of Pegasus, near the horizon, you will see a lone bright star. This is Fomalhaut, known as the loneliest star because it has no bright neighbour. On the 4th the Moon, Saturn and Fomalhaut form a triangle in the south.

Fomalhaut is just 25 light- years away (this still means its light takes 25 years to reach us). It is twice the mass of the Sun and shines 16 times as bright. Fomalhaut is a multiple star system, but lives up to its lonely moniker, with its companion stars 0.9 and 2.5 light-years distant. From our perspective, its furthest and faintest companion star isn't even in the same constellation. In 2014, Fomalhaut was found to have a planet called Dragon, and it is so distant that it takes 1,700 years to complete an orbit. For comparison, Pluto takes a mere 249 years to orbit our Sun.

Pale yellow Saturn is nicely placed for viewing. If you have even a small telescope, you can see its rings are starting to open up again.

The Orionids meteor shower is active from 2nd October to 7th November and is named after Orion, the constellation from which the meteors appear to originate. It peaks on the 20th-21st, coinciding with the New Moon. From Lewes, you could expect to see 5 meteors an hour, and twice that from a dark site in the countryside. Look towards the east after 11pm, and the best time to see the meteors is after 2am, when Orion has risen higher in the sky.

In the early morning of the 10th October, the Moon passes in front of the Pleiades, a good photo opportunity.



Useful Apps

Stellarium

(computer & phone)

Free planetarium to download. Used to make the charts above. There's even a web version that just works on your browser, but has fewer features. You can set the time & date and see what's in the sky. You can also search for things and it will show you where they are.

Telescopius

(computer & phone)

Website that suggests what is good for observing on any given evening. You can even tell it what sorts of things you are interested in seeing. Finally, if you can only see in particular directions because of trees, buildings, etc., you can tell it that too.

Met Office Forecast

(computer & phone)

Not only will it tell you the weather, there is a useful map that shows you rain showers and cloud cover up to five days ahead.

Nightshift

(Phone)

Another weather app.

Sky Safari

(Phone)

Another planetarium app for navigating the night sky.

The Sky Live

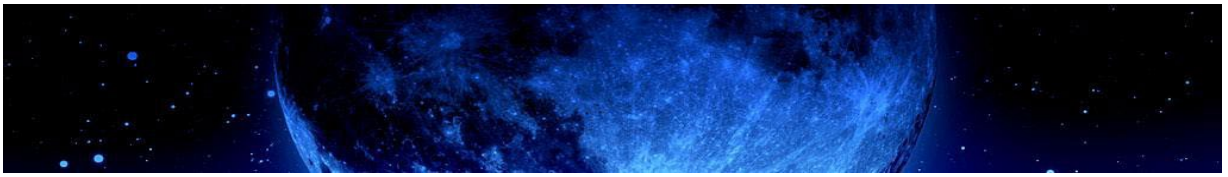
(Phone)

A summary of 'tonight's best…' planets, constellations, meteors, etc.

Go Stargazing

(Phone)

A listing of local astronomy events, talks, society meetings, etc.



October Meeting

At the meeting on Wednesday 1st October, historian of military survey and cartography, **Dr Peter Chasseaud** gave a fascinating talk on the way in which astronomy was used in the First World War—on land, at sea and in the air. In fact he strayed slightly and included the Court of Louis XVI in France and WW2. Using images of original training manuals from the army, air force and navy, he explained how knowledge of astronomy was used to navigate aircraft and ships, and to aim long-range artillery.

Particularly incredible was the 'Paris Gun' (it's on Wikipedia). It was a 250 tonne gun, 34 metres long that fired 100 kg shells a distance of 120 km! You may have guessed where it was aimed. Somehow, despite the shell taking three minutes to reach its target, and reaching an altitude of 40km (Everest is about 9 km high), and the Earth rotating while it was in the air, it managed to land on target. As our chair pointed out, not all science and astronomy is benevolent.

November Meeting

This is a slight misnomer. The first Wednesday of November (our usual meeting day) is bonfire night when the town of Lewes usually gets a little busy in the evening, spoiling the night sky for astronomers.

So our meeting will be held a week earlier on **Wednesday 29th October** at 7:30pm. Usual venue: the Subud Centre in Lewes. Doors open at 7pm.

The talk entitled, '*Chasing Shadows: How Scientists Hunt for Dark Matter*' will be by Dr Cenk Turkoglu.

What is Dark Matter? How is it different to 'ordinary' matter? Why do we need it? Why is it so hard to find if it is supposed to comprise about 80% of the matter in the universe?

Come along and find out more about this intriguing topic and realise that 'scientists' do not always have all of the answers.

Contact

If you wish to find out more about our society, please contact the LAS secretary:

secretary@lewesas.org.uk