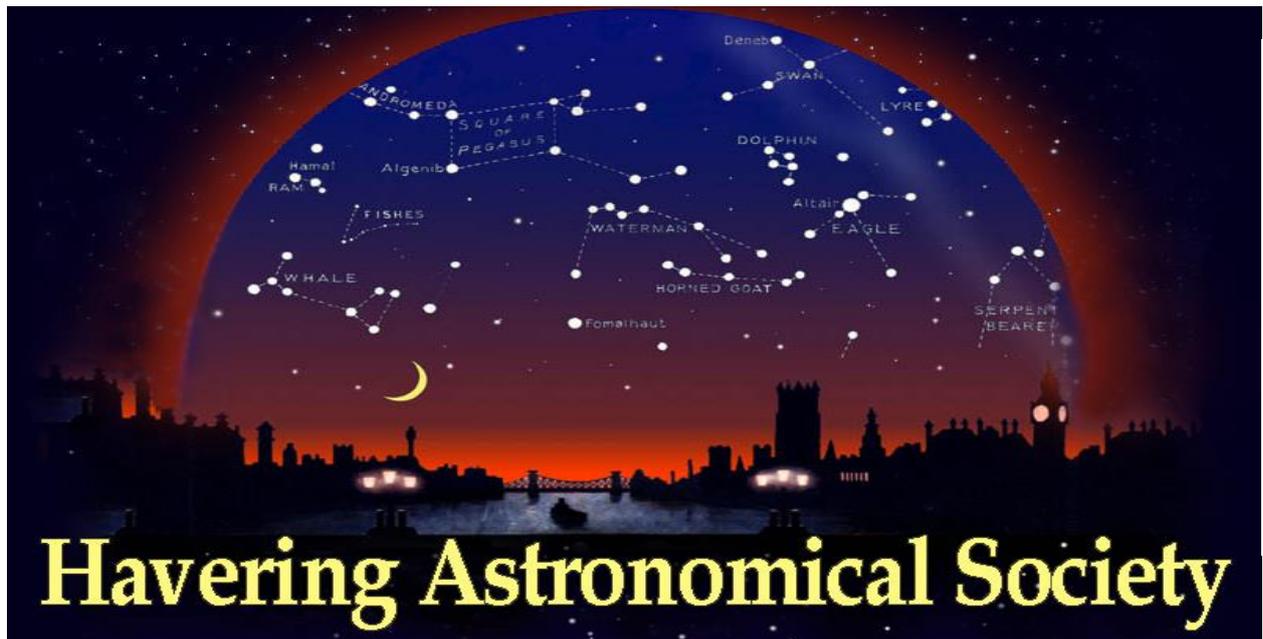


**WELCOME TO OUR MEMBERS AND GUESTS.
PLEASE SIGN IN AND WE HOPE YOU ENJOY THE EVENING**

NOVEMBER 2016



www.havastro.co.uk

This Month

We look forward to our annual Christmas Quiz set by **John** and thank him for his work in finding mind bending questions to entertain us. There will also be a raffle and some nibbles to enjoy tonight.

Last Month

We had a most enjoyable talk from **Nik** about his move to his new home which involved relocating his observatory and equipment. We wish him many clear skies in the future and look forward to seeing more of his amazing images

Member's News

Terry is recovering from an operation and we wish him a full recovery soon. **Sid** sends his good wishes and, depending on the weather, hopes to see us soon.

Annual Membership Fee

Members are kindly reminded that the Annual Membership fee is due next month. It is £13.00 for Ordinary Membership and £10.50 for Seniors. Please pay at the Registration Desk. Members are also asked to check at the Desk that their contact details are up to date.

European Astrofest 2017

The European AstroFest will return to London on 10th & 11th February 2017 at the Kensington Conference and Events Centre. This will be the 25th anniversary of the show so it promises to be a great event. AstroFest is the world's premier space conference and exhibition, and 2017 will be the biggest and best yet bringing together the professional and amateur communities. During the course of the two-day event, speakers from around the world will talk on some of the most exciting topics in astronomy. Conference tickets will go on sale very soon. See www.europeanastrofest.com for further details.

Next Meeting ~ January 18th

Our next meeting will be a Member's meeting and we hope that some of our members will bring along their expertise.

We would like to wish all our members a Merry Christmas and a Happy New Year for 2016

NIGHT SKY

Mercury: can best be seen on 17th December 20 mins after sunset low in *Sagittarius* in the Southwest. Having reached its greatest eastern elongation on 11th December, Mercury will appear bright at mag. 0.0 in the early evening sky at this time. However, for the rest of the month as it approaches conjunction with the Sun it will be lost from view.

Venus and Mars: can both best be seen on 31st December at 17:30 in *Aquarius* in the South - southwest. Venus will be shining at mag. -4.3 and even to the naked eye can appear stunning against a dark sky. Mars becomes slightly better placed, appearing 7° higher in the sky than it did at the start of December. Its disc will be 5.6 arcseconds and close to mag. +0.8

The Quadrantids Meteor Shower. Can best be seen on 3rd January after midnight in the North. The shower owes its name to the now defunct constellation *Quadrans Muralis*. The constellation was left off a list of constellations drawn out by the International Astronomical Union (IAU) in 1922, but because the shower had already been named after *Quadrans Muralis*, its name was not changed.

Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 11:34. This full moon was known by early Native American tribes as the Full Wolf Moon because this was the time of year when hungry wolf packs howled outside their camps. This moon has also been known as the Old Moon and the Moon After Yule.



Thank you to everyone who helps with refreshments.

Observing at South Weald

A few members attended on December 4th and were able to view the Andromeda galaxy, the Orion nebula and the double star in Mira. The next favourable observing dates are Friday January 6th from 7pm or Saturday January 7th if the weather is unsuitable on the Friday.

Young Astronomers

With the help of *Les* and *Barbara*, we were out in the garden with *John* pointing out constellations and star names. Then we had a question and answer session followed by our usual Christmas treats. We missed going to *Terry* and *Christine* but looking forward to visiting them in June

Spaceflight News

First Manned Orion Spaceflight Tests in the Works, 'Journey to Mars' Closer Than Ever

NASA is gearing up for the first crewed flight of the *Orion* spacecraft, which marks a significant step forward on the "Journey to Mars." The mission involves confirming whether all of the spacecraft's systems are working as designed in an actual deep space environment. According to *NASA*, this will be their first crewed mission in a series of missions in the proving ground, which is an area of space around the Moon where crew can build and test systems needed to prepare for the challenge of missions to Mars. "Like every test flight, we will have test objectives for this mission both before and after we commit to going to the moon," *Bill Hill*, deputy associate administrator for Exploration Systems Development at *NASA's* Headquarters in Washington, said in a statement. "It's just like the *Mercury*, *Gemini*, and *Apollo* programs, which built up and demonstrated their capabilities over a series of missions. During this mission, we have a number of tests designed to demonstrate critical functions, including mission planning, system performance, crew interfaces, and navigation and guidance in deep space." The test flight is built around a concept called multi-translunar injection (*MTLI*) or multiple departure burns, in which the *Orion* spacecraft and its Exploration Upper Stage (*EUS*) will be placed initially into an elliptical orbit around the Earth with an apogee of 35,000 kilometres. After spending a day in the orbit, the spacecraft will separate from the *EUS* and use its service module engine for a final burn that will fly the spacecraft to the moon, *NASA* said. *Orion* will fly on a "free return" trajectory around the Moon without going into orbit and without the need for another engine burn. The mission will return to Earth eight days after launch but could be extended to up to 21 days to complete additional flight test objectives. According to *Space News* the approach differs from the earlier concepts for Exploration Mission 2 (*EM-2*), which was initially planned to last 9 to 13 days. But the new mission plan takes consideration the risks associated with the flight.

