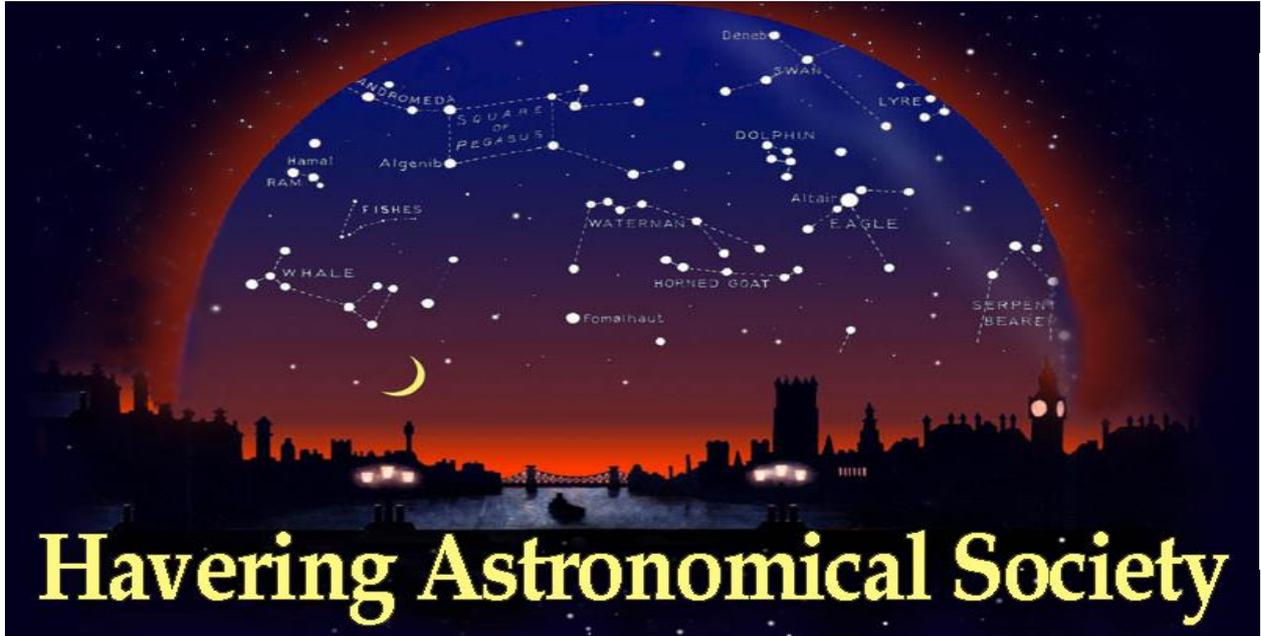


**WELCOME TO OUR MEMBERS AND GUESTS.  
PLEASE SIGN IN AND WE HOPE YOU ENJOY THE EVENING**

NOVEMBER

2019



www.havastro.co.uk

### This Month

This evening we welcome our own *Nik Szymanek* who will be showing us some more of the wonderful images that he has taken and how he has achieved them with his equipment.

### Last Month

We enjoyed the talk by *Dr Paul Whiting* who spoke to us about Gravity Waves. It certainly got us thinking.

### Members News

*Liz Watson* has a Meade LX10 telescope with accessories for sale. It is in excellent condition with a custom made box. Contact *Liz* for further details.

### Programme for The Year

Please take one along with the Newsletter, situated by the Register. There are also some copies of the Society Directory available as well. We would like to thank *John Bowling* for taking the time to produce it for us.

### Havering Fun Palace, Queens Theatre,

Four of us attended a discussion recently about the Society's attendance at this event on Oct 1<sup>st</sup> and what could be done to improve the next event. We were able to chat with other groups that were involved and it proved to be very helpful. We wait to hear from the Queens Theatre to when the next Fun Palace will take place. (Two young teenagers suggested a sleepover!!)

### Churchfield School, Redbridge

We have been contacted by the above school to present an evening of astronomy and we have suggested Friday December 2<sup>nd</sup> as a possible date. With pupil numbers of up to 80 aged between 9-10 years we will need as many members as possible to help. If it is a clear night, we will need as many telescopes as possible and if not, as many presentations and hands on activities as possible. At least 5 members have already offered to assist with telescopes but we would appreciate a few more. We will finalise the details at tonight's meeting

## *Next Meeting ~ December 14<sup>th</sup>*

Next month we meet on the **second** Wednesday of the month and we will be having our **Annual Quiz**, again prepared and run by *John*. We will also be having a raffle and nibbles so any contributions for either even will be greatly appreciated.

# NIGHT SKY

**The Great Square of Pegasus:** can best be seen on November 22<sup>nd</sup> at 20:00 GMT due South and 60° up. This asterism is made up of four stars of equal brightness; **Scheat**, **Alpheratz**, **Markab** and **Algenib** and takes the form of a diamond or a great square. Counting the number of stars you can see within it is an easy way of checking your sky clarity. If you can count seven or more, your sky is pretty good.

**Jupiter:** can best be seen on November 30<sup>th</sup> at 06:00 GMT in the Southeast in **Virgo**.

**Jupiter** is the only planet that can be seen in the pre-dawn sky this month. The planet will be mag.-1.7 with a 32-arcsecond disc and, even with a small telescope, early risers should be able to see the equatorial bands in the atmosphere and the four Galilean moons as they weave their way around it.

**Mercury:** can also be best seen on November 30<sup>th</sup> at 16:15 GMT in the Southwest in **Sagittarius**.

**Mercury** spends the month in the evening sky gradually increasing its apparent distance from the Sun. All the same, its position is poor from the UK and it's not easily seen in November.

**Neptune:** can best be seen on December 1<sup>st</sup> at 18:00 GMT in the South in **Aquarius**.

**Neptune** is well placed at this time managing to reach its highest point in the sky. At mag.+7.9 it will be too dim to be seen with the naked eye but is an easy binocular target.

**Uranus:** can also be best seen on December 1<sup>st</sup> at 20:30 GMT in the South in **Pisces**.

**Uranus** is well positioned and culminates in darkness all December. It will shine at mag.+5.8 and its disc will have an apparent diameter of 3.5 arcseconds and will show a distinct green hue.



*Thank you to  
everyone who  
helps with  
refreshments.*

## Observing at South Weald

No observing took place this month as it would have fallen on Guy Fawkes Night and it was thought to be impractical. The dates for next month are Saturday 3<sup>rd</sup> or Sunday 4<sup>th</sup> December but please check the Society website or Facebook page nearer the time for further details.

## Young Astronomers

As **Frances** had family visiting during November it was decided that our next meeting will be Thursday December 1<sup>st</sup> when we have been invited to the home of **Terry** and **Christine** for our pre-Christmas get together.

## Spaceflight News

### Leaked NASA paper suggests the 'impossible' EmDrive engine actually works

If we Earthlings are ever going to travel vast distances into deep space at speeds that won't have us tapping our fingers and asking the captain, "Are we there yet?", then scientists are going to have to develop a seriously efficient propulsion system to make it happen. Current methods can indeed transport spacecraft huge distances, but they require large amounts of heavy fuel, as well as plenty of time to get anywhere. One idea that's been getting plenty of attention since it was first presented in 1999 is the **EmDrive**. Designed by aerospace engineer **Roger Shawyer**, the proposed "warp drive" design is remarkable in that its engine doesn't use fuel to cause a reaction. Instead, the system makes use of a magnetron and microwaves to create a propellant less propulsion system. Put simply, the thrust necessary to propel a craft is created by pushing microwaves into a closed, truncated cone and back toward the small end of the cone. The **EmDrive** is, however, controversial, not least because it seems to challenge the known laws of physics. But a leaked NASA document obtained this week by the IB Times suggests the system may indeed be viable. The paper, described as "an early draft of NASA's much-anticipated peer-reviewed paper" on the technology, details tests carried out by NASA's experimental Eagleworks Laboratories at the Johnson Space Centre in Texas and describes the system as "consistently performing." The **EmDrive's** propellant less propulsion system in theory allows for a significantly lighter and more cost effective mode of transportation, but notably, it would be able to generate incredibly high speeds, bringing the outer reaches of the solar system tantalizingly close. As for Mars, it could get spacecraft there in a mere 10 weeks instead of the six months it takes with current technology. Not surprisingly, the **EmDrive** continues to cause much debate in the scientific community, with many quick to dismiss the entire concept as "baloney".

