

# 2002



**NEXT MEETING**

**THURSDAY, 20<sup>th</sup> September 2018**

**THE ASTRONOMICAL SOCIETY OF HARINGEY**

**VOLUME 46 : ISSUE 11 : September 2018**

**[www.ashastro.co.uk](http://www.ashastro.co.uk)**

# SOCIETY : MEETING VENUES and CALENDAR

## Inside Meetings

Music and Drama Block, Ashmole Academy,  
Cecil Road, Southgate, London N14 5RJ.

The day for meetings is usually the third Thursday of each month. The exceptions are August, when we do not hold a meeting, and this now currently applies to the July and December meetings, though that may alter in the future.

However, in case of changes it is always advisable to double-check the dates below.

Doors open - 7.30pm : Main speaker - 8.00pm : Finish - 10.00pm sharp!

For more on this, and general meeting information, also check the website page:  
[www.ashastro.co.uk](http://www.ashastro.co.uk). Last minute changes will be on the Facebook page :  
[www.facebook.com/groups/ASHastro](http://www.facebook.com/groups/ASHastro)

## Outside OBSERVING EVENINGS

Old Elizabethans Memorial Playing Fields, Gypsy Corner,  
Mays Lane, Barnet EN5 2AG (*Barnet Gate Lane end*)

Regarding any changes to Observing Evening meetings, this is a continuing message to let Observing Officers : Jim Webb, Alister Innes or Kyri Voskou know your mobile phone number. Last minute changes can then be notified via text messaging. The Facebook page will also be used, but we realise not all have (or want!) Facebook access, so it will be secondary to texting. And if you do not have a computer or cell phone, you can be phoned on your landline. More maps and details on the website [www.ashastro.co.uk](http://www.ashastro.co.uk)



## 2018

September 20<sup>th</sup> : Greg Smye-Rumsby : "Can We Live On Mars?"

October 18<sup>th</sup> : "Kyri Voskou : "The Changing Views of the Solar System" - plus AGM

November 15<sup>th</sup> : Jerry Stone : "The Build-Up to the Apollo 50<sup>th</sup>"

December : no meeting this month

### **COVER**

One of the five finalists' designs in the NASA competition to design a Mars base, using 3D techniques. The competition was not about designing something that just 'looked good', but had to be practical as well, so all facilities and life-support had to be designed in.

(Though whether it includes a pub is another question? See [MEETING PREVIEW](#) if you are scratching your head re: this comment!)

The design on the cover came from Team SEArch+ / Apis Cor, in New York.

*Photo : NASA/ SEArch+ / Apis Cor*



Find us on  
**Facebook**

## SOCIETY NEWS

For up-to-date information, we are using that  
'necessary evil' - Facebook.

Go to : [www.facebook.com/groups/ASHastro/](http://www.facebook.com/groups/ASHastro/)

However although originally you could view 'Public' Facebook pages (which ASHastro is), and read posts, without being a member, it now seems you have to be a member of FB to even read them. So, sorry, you'll have to join - **BUT** this does not mean you need to give away information you don't want to give. Although Facebook doesn't go out of its way to tell you, any individual's home page can be blank (as your Editor's is) it does not have to have any information. Even your birth date need not be correct.

However, once a member, if you want to 'interact' - ie post messages – on the ASH Group you will need to ask to join, and you will get 'signed up' by your Chairman or Editor.  
**The more the merrier!**

## MEETING ROOM



For indoor meetings, we currently meet at Ashmole Academy, Cecil Road, Southgate N14 5RJ, on the first floor of the Music and Drama Block. This is the two-storey building, (lower left) with the entrance marked with the red arrow. We hope the first floor will be suitable for all, as there isn't a lift. If anyone feels they will have difficulty, please let the Chairman know. Contact details on the back page.

**NOTE – the Academy has installed new fences and gates between the car park and buildings. The route marked in red is now via a fenced off path. Alternatively there is a gate from the car park, at approximately the centre of the image.**

[For historical reference the X in the photo was our original meeting room, the original Music Studio. This is now demolished, and the site now has a new building.]



## MEETING PREVIEW 20<sup>th</sup> September 2018 Greg Smye-Rumsby : "Can We Live On Mars?"

Although a popular topic amongst current 'space entrepreneurs', living on Mars will not be a walk in the park – with or without a protective helmet and suit! Greg will talk all about the many problems that would need to be overcome. There's the lack of a protective magnetic field, there's a poisonous atmosphere, there's a lack of plant-growing sunlight and (most important...) a complete lack of pubs...

Consequently - permanent occupation of Mars by humans may not be a possibility?

Greg works at The Royal Observatory Greenwich, presenting planetarium shows, school workshops, adult evening classes and sometimes presenting media spots on radio and television. He also works for Astronomy Now magazine creating both artwork and articles, you will probably have seen his name against many maps of the night sky. He was last at the Society as long ago as 2010, so a very welcome return.

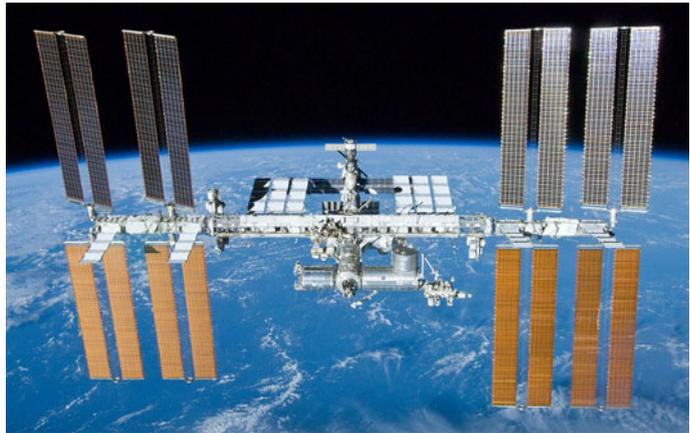
## INTERNATIONAL SPACE STATION REPAIRED AFTER A LEAK

The ISS has had a leak repaired, although the exact cause hasn't been identified.

NASA initially suggested that an impact from a micro-meteorite may have caused the 2 millimetre fracture and resulting pressure leak on board one of the two Soyuz spacecraft docked with the ISS.

Russia has since suggested that the damage may have been caused by careless use of a drill either on the ground or in space.

Astronauts patched the crack from the inside using a resin. The repair has so far held up and there is thought to be no danger to the six man crew or any equipment after the incident.



The pressure leak was spotted by ground staff, who constantly monitor the health of both the Space Station and its inhabitants.

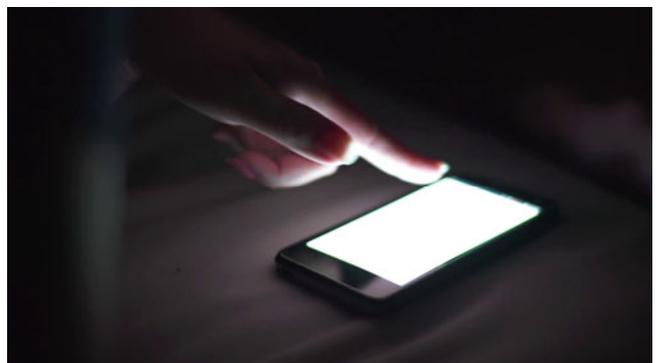
There are currently 700,000 pieces of debris larger than 1cm in size orbiting Earth and each of them could cause significant damage if they collided with the ISS or a satellite.

A further 170 million smaller fragments are in orbit and include fragments no bigger than a flake of paint. Even these can be dangerous because of the high speed of any impact.

## BLUE LIGHT FROM SCREENS AND MOBILE DEVICES DAMAGES SIGHT

It has been known for some time that the blue light emitted by computer and mobile device screens was bad for your eyes, but scientists have now discovered exactly why that's the case.

A protein called retinal exists in our retinas of the eye, and reacts to blue light by releasing toxic molecules. These molecules kill the photo-receptor cells in our eyes. Once the photo-receptor cells are dead they cannot be replaced and over time the result is a deterioration of eye-sight.



The scientists also noticed that neither blue light nor retinal were able to cause damage alone – they both had to be present for the eye damage to occur.

In order to reduce eye damage we're all advised to stop using devices in the dark and to wear protective eyewear.

## SWEDEN LOSES 4 METRES IN HEIGHT

Thanks to global warming Sweden's highest point is 13 feet lower than it was this time last year.

The peak which was previously second highest has now become the highest with the two likely to be swapping positions several times over the next few years.

Europe has had such a warm summer that the southern peak of Sweden's Kebnekaise mountain shrank far more than it usually does during the summer months, dropping from a height of 6,892.4 feet down to 6,879.2 feet. Kebnekaise's northern peak measures 6,879.3 feet making it Sweden's new highest point.



Although the southern peak is likely to regain some of that lost height during the winter when snow accumulates on its glacier-capped top, the heights of the two peaks are so close that neither is likely to emerge as clear leader in the immediate future.

## LATEST BLOCK-BUSTER - NOT



Looking, slightly, like a scene from the latest science fiction movie, the above is science fact. It is the entrance of a cave, in Riegelberg, Germany. An intrepid group of real explorers (not actors!) carefully approach the opening, seeking out origins of life on this planet. This scene is from a recent 'Pangaea' field training course. Named after the ancient supercontinent, Pangaea equips future explorers with a better understanding of

planetary geology and includes collecting and documenting interesting rock samples to assess the most likely places where to find traces of life on other planets.

The 'Pangaea Project' is now in its third year, and the 2018 campaign includes participants ESA astronaut Thomas Reiter, Roscosmos cosmonaut Sergei Kud-Sverchkov and 'Spaceship EAC' (European Astronaut Centre) leader, Aidan Cowley.

Lead by European planetary geologists, the crew attend lectures, work with satellite imagery, and use robotic tools to analyse rock samples. Here they put knowledge into practice at the Ries Crater in Germany, one of the best-preserved impact craters on Earth and an ideal place to find extra-terrestrial minerals.

Around 15 million years ago, a one-kilometre-diameter asteroid hit Earth at 20 km/s releasing one trillion times the energy of the Hiroshima atomic bomb. The result is still visible in West Bavaria today, a 25 km-crater with a depth of roughly 200 metres.

At the Ries Crater the Pangaea participants find the best resemblance on Earth to a Moon crater. With eyes set on returning to our natural satellite, practical knowledge of lunar formation is vital. Future astronauts must understand both the science and operations of lunar geology to make the right moves while on the Moon.

The structure in this image is made out of a megablock of limestone that was cracked open by the Ries impact and is the ideal classroom for learning about cave formation. Tracing the origins of such rocky structures helps to tell the greater story of life on Earth and of detecting life on other planets.

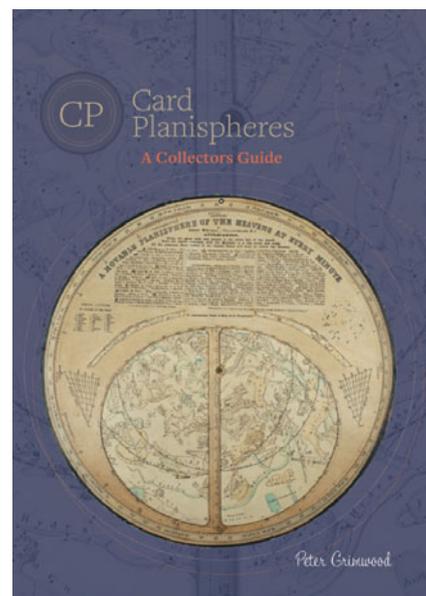
## BOOK REVIEW

We have been sent details of a new book by Peter Grimwood on card planispheres

Over the years Peter has built up a very large collection of these devices and has recently published 'Card Planispheres, a Collectors' Guide'. It is 84 pages long with many high definition colour pictures of examples from 1780 up to 2000.

There are nearly 200 different planispheres from around the world featured, with sizes, technical details and background notes about their designers and publishers.

There is another review of the book plus a number of sample images on The Sky at Night magazine website  
[www.skyatnightmagazine.com/gallery/history-astronomy-planispheres](http://www.skyatnightmagazine.com/gallery/history-astronomy-planispheres)

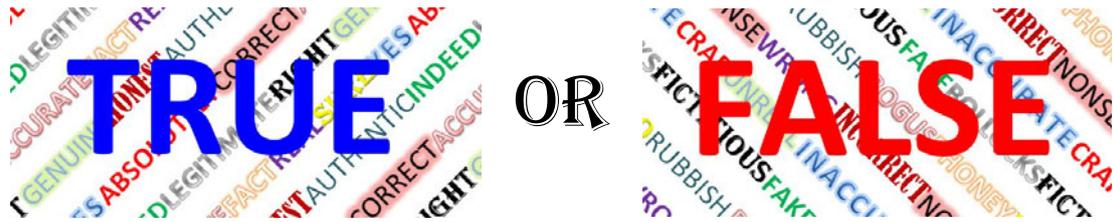


The book is available from the website : [www.orreries.co.uk](http://www.orreries.co.uk) at £29.50 including postage.

## General Data Protection Regulations

Because the ASH falls under the new UK GDPR (General Data Protection Regulations) - as we hold details on members - there is the Privacy Notice the Society will adhere to printed in the June issue of 2002. These details can be found on the website, [www.ashastro.co.uk](http://www.ashastro.co.uk). There is a pdf version that can be downloaded. It is on the ABOUT page, or use the links from the Home Page.

# QUESTION TIME



What fascinating facts these are.... or are they?

Check out the statements below and see if you can tell fact from fiction!

1. It's impossible to burp in space
2. Humans evolved from chimpanzees
3. Bananas are radioactive
4. The full Moon affects our behaviour
5. Men are more likely to be colour-blind than women
6. Hot water freezes faster than cold water
7. Cold water heats up faster than hot water
8. Cracking your knuckles gives you arthritis

**ANSWERS NEXT MONTH – and LAST MONTH'S ANSWERS BELOW**

1. There are more stars in our Galaxy than there are trees on Earth
2. There are places where it rains diamonds
3. Water doesn't conduct electricity
4. Our bodies are more bacteria than human
5. In different parts of our body, blood can be red or blue
6. Genes don't determine race
7. Goldfish have three-second memories
8. Helium can work against gravity

## ANSWERS

1. **FALSE** There are estimated to be between 100 billion and 400 billion stars in our galaxy, whereas there are estimated to be 3 trillion trees on Earth.
2. **TRUE** Over a thousand tons of diamond rain falls on Saturn each year. The other gas giants are also likely to experience diamond rain.
3. **TRUE** Pure water is an insulator, not a conductor. It is the minerals and chemicals that we usually find in water which actually conduct electricity.
4. **TRUE** Our bodies contain about 30 trillion human cells and about 40 trillion bacteria.
5. **FALSE** Blood is red everywhere in your body, just a bit brighter when full of oxygen. The tissue around veins can make blood look blue, but it isn't.
6. **TRUE** We share 99.9% of our genes with each other and the remaining 0.1% contains no racial markers.
7. **FALSE** Goldfish have been trained to respond differently to different songs. This couldn't happen if their memories were as short as people claim they are.
8. **TRUE** Super cooled helium can flow up and over the sides of a container and can continue to flow against gravity permanently.

## SKY VIEWS



Above : A very weird sky appeared over areas of central England on 18<sup>th</sup> August! It looked like landing trails from UFOs, but it was purely an Earthly weather phenomenon, called 'Cloud Streets' where cumulus clouds formed these parallel lines.

Below : The Cloud Streets, with the Moon and Mars



# CHAIRMAN'S QUARTERS



We recently lost Professor Stephen Hawking – a remarkable man whose courage, in the face of extreme adversity, allowed him to express his mind in ways which are almost unimaginable. As a tribute to him I would like to share some of the quotations he has left with us, even if we may not necessarily agree with them:

“It surprises me how disinterested we are today about things like physics, space, the Universe and philosophy of our existence, our purpose, our final destination. It's a crazy world out there. Be curious.”

“My goal is simple. It is a complete understanding of the Universe, why it is as it is and why it exists at all.”

“One, remember to look up at the stars and not down at your feet. Two, never give up work. Work gives you meaning and purpose and life is empty without it. Three, if you are lucky enough to find love, remember it is there and don't throw it away.”

“One of the basic rules of the Universe is that nothing is perfect. Perfection simply doesn't exist.....Without imperfection, neither you nor I would exist”

“People who boast about their IQ are losers.”

“My expectations were reduced to zero when I was 21. Everything since then has been a bonus.”

“Quiet people have the loudest minds.”

“We are just an advanced breed of monkeys on a minor planet of a very average star. But we can understand the Universe. That makes us something very special.”

“Life would be tragic, if it weren't funny.”

“For millions of years, mankind lived just like the animals. Then something happened which unleashed the power of our imagination. We learned to talk and we learned to listen. Speech has allowed the communication of ideas, enabling human beings to work together to build the impossible. Mankind's greatest achievements have come about by talking, and its greatest failures by not talking. It doesn't have to be like this. Our greatest hopes could become reality in the future. With the technology at our disposal, the possibilities are unbounded. All we need to do is make sure we keep talking.”

“Intelligence is the ability to adapt to change.”

“The victim should have the right to end his life, if he wants. But I think it would be a great mistake. However bad life may seem, there is always something you can do, and succeed at. While there's life, there is hope.”

“I believe the simplest explanation is, there is no God. No one created the Universe and no one directs our fate. This leads me to a profound realization that there probably is no heaven and no afterlife either. We have this one life to appreciate the grand design of the Universe and for that, I am extremely grateful.”

“If aliens visit us, the outcome would be much as when Columbus landed in America, which didn't turn out well for the Native Americans. We only have to look at ourselves to see how intelligent life might develop into something we wouldn't want to meet.”

“I have noticed that even people who claim everything is predetermined and that we can do nothing to change it, look before they cross the road.”

See you in September

*Jim*

# THE NIGHT SKY : THE PLANETS

## September - October 2018

**MERCURY** : Disappeared into the twilight mid-September and at superior conjunction on 21<sup>st</sup>. Not visible during October. Reappears in the evening skies in November, but will not be easy to spot. A pointer will be 8<sup>th</sup> and 9<sup>th</sup> November when it will be close to the crescent Moon, and Jupiter and Saturn.

**VENUS** : Can still just about be seen very low in the west after sunset, but getting lower as the month progresses. But by the end of September it loses its reign of six months, and disappears from view. However it will be at its very brightest on 21<sup>st</sup>. Moon was close on 12<sup>th</sup> September. Not visible in October. Reappears in the morning skies in November.

**EARTH** : Autumn Equinox, 23<sup>rd</sup> September

**MARS** : In Capricornus and made its closest approach to Earth since 2003, on the night of July 30th/31<sup>st</sup>. Now setting around 01.30hrs, magnitude of -1.4. With the dust clouds cleared, and with a small telescope, it should be possible to spot details, such as Syrtis Major, on its salmon pink surface. Moon close on 19<sup>th</sup> September

**JUPITER** : Still to be viewed in the southwest soon after sunset at the start of the month. It shines at magnitude -1.9. Jupiter's equatorial bands, sometimes the Great Red Spot and up to all four of its Galilean moons should be visible in a small telescope. Sets around 21.00hrs. The giant planet is moving slowly westwards in Libra during the month. Jupiter is heading towards the southern part of the ecliptic and will only have an elevation of around 15 degrees after sunset. Moon close 13<sup>th</sup> September and 11<sup>th</sup> October.

**SATURN** : Magnitude around +0.4. The rings are still, at 26 degrees to the line of sight, well open and spanning 2.5 times the size of Saturn's globe. Saturn, lying in Sagittarius, sets late evening.

**URANUS** : Rising late evening in Aries, magnitude fractionally brighter at +5.7, so still *just* on the theoretical edge of naked-eye visibility. At opposition on 24<sup>th</sup> October.

**NEPTUNE** : Neptune came into opposition - nearest to the Earth - on the 7th of September, so well placed this month. Magnitude is +7.8 so Neptune, with a disk just 3.7 arc seconds across, should be easy to spot with low magnification. It is in the constellation Aquarius, left of Lambda Aquarii. It rises to an elevation of around 27 degrees when due south. Moon close on 23<sup>rd</sup> September

## COMETS and METEORS

Comet Giacobini-Zinner – ‘the green comet’ - should be visible through binoculars during September. It could reach magnitude +7.0, so only required low magnification. But because comets are unpredictable, it could increase in brightness to become naked-eye visible (+6 magnitude). It is below Gemini and Orion, near star clusters M35, M37 and NGC 2264. Was closest to the Sun on 10<sup>th</sup> September. The Comet produces the Draconid Shower over 8<sup>th</sup>-9<sup>th</sup> October.

Then, over 21<sup>st</sup>/22<sup>nd</sup>, we get the Orionids Shower, but the Moon is almost at full.

## THE MOON



New 9<sup>th</sup> September

First 17<sup>th</sup>

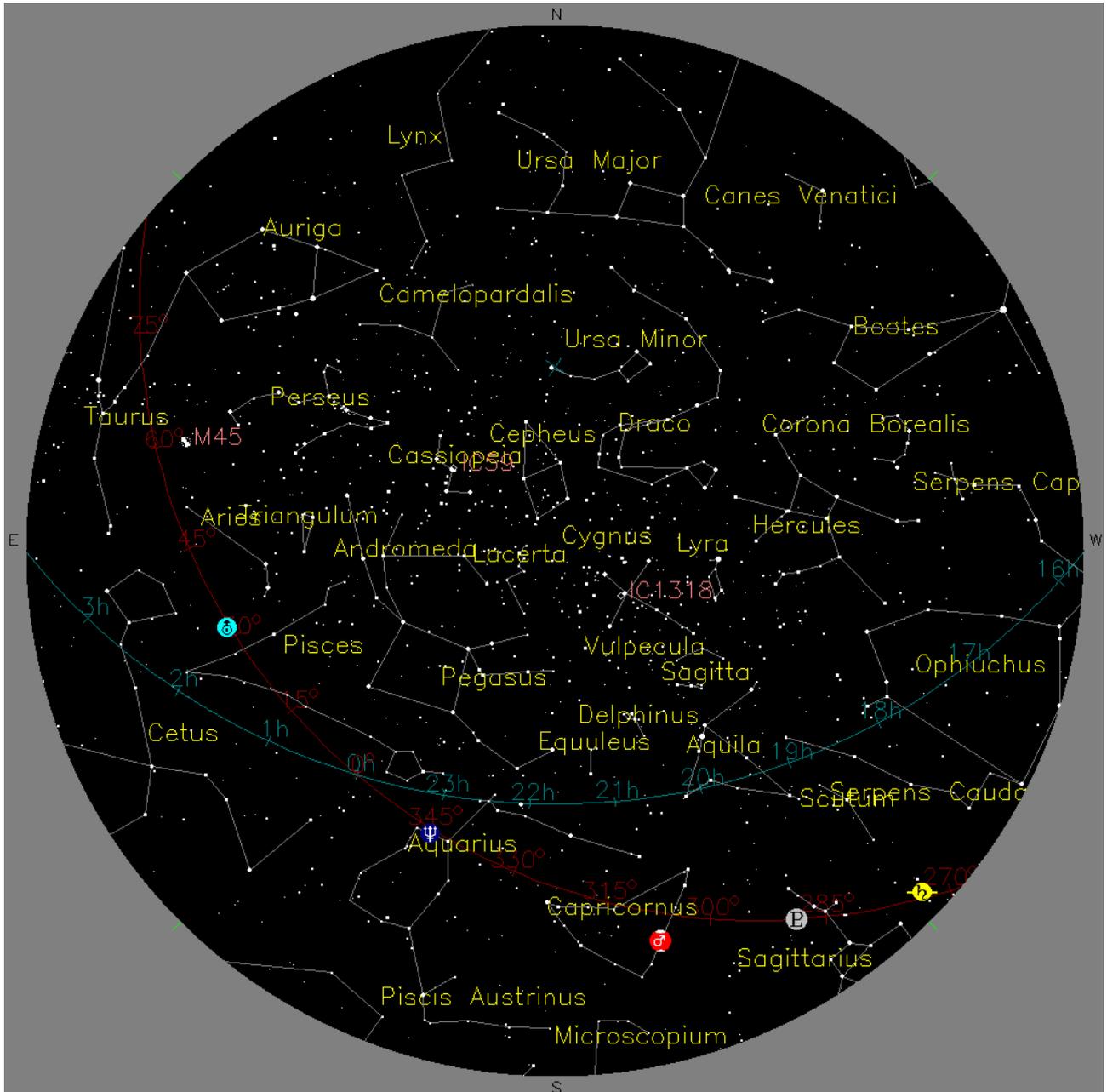
Full 25<sup>th</sup>

Last 2<sup>nd</sup> October

New 9<sup>th</sup>

# THE NIGHT SKY : MAP

1<sup>st</sup> October 2018 for 22.00hrs BST (21.00hrs UTC/GMT)



KEY	
 <b>MERCURY</b>	 <b>SATURN</b>
 <b>VENUS</b>	 <b>URANUS</b>
 <b>MARS</b>	 <b>NEPTUNE</b>
 <b>JUPITER</b>	 <b>PLUTO</b>



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# Astronomical Society of Haringey