

2002



NEXT MEETING
THURSDAY, 19th September 2013

THE ASTRONOMICAL SOCIETY OF HARINGEY
VOLUME 41 : ISSUE 9/10: July - August 2013
www.ashastro.co.uk

SOCIETY NEWS

MEETING VENUE

Sixth Form Centre, Ashmole School, Southgate, London N14 5RJ.

The day for meetings is usually the third Thursday of each month. The exceptions are August, when currently we do not hold a meeting, and December, when the Christmas Meet has always traditionally been held during the second week. However, in case of changes, it is always advisable to double-check the dates below.

IMPORTANT we have ANOTHER change of meeting room. Neither of the Sixth Form Centre rooms turned out to be really suitable, so we have been give a room in the Main Music Block, which is the two storey building, next to the original Music Room, See the next page

For more on this, and general meeting information, also check the website:
www.ashastro.co.uk. Latest update July 2013

Doors open - 7.30pm : Main speaker - 8.00pm : Finish - 10.00pm sharp!
New or updated information is in *italics*

2013

July 18th : **cancelled - see the next page**

August : summer break

September 19th : NEXT MEETING – Details to Follow

October 17th : AGM

November 21st

December 12th : Christmas Do – *possibly...*

COVER

The statue of the world's first cosmonaut Yuri Gagarin that was gifted to the British Council by the Russian Federal Space Agency to mark the 50th Anniversary of manned spaceflight, (12th April 1961).

This was unveiled on 14th July 2011, marking the 50th anniversary of Gagarin's visit to London. It initially stood outside the British Council offices on The Mall in central London. It has now been moved to the Royal Observatory Greenwich for permanent display.

The statue is a copy of the one in Lyubertsy, near Moscow. This was made in 1984, to mark what would have been Gagarin's fiftieth birthday.



SOCIETY NEWS

MEETING ROOM



Due to the new rooms we had been given in the Sixth Form Centre not being entirely suitable, we are moving again, this time to the Main Music Block.

This is the two-storey building, next to our original room, the now-demolished Music Room (marked with the X) - see the main photo on left. Note, especially for those walking, the easiest route from the Main gate is as the arrow depicts, ie not

the route you'd likely think of taking through the car park! To put this into perspective, the previous building and view is shown smaller, left.

We will be meeting in one of the first floor rooms, details will be posted as you come in. We hope a 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 back page.

IMPORTANT ANNOUNCEMENT

The Committee has reluctantly decided to cancel the July meeting, as there will be no-one available to run it.

In addition recent meetings have been very poorly attended, so it could be argued it is a waste of time to get meetings ready, when very few turn up. This maybe down to the fact it is the Summer months, which we accept are times when many could be away on holidays. Plus the sky doesn't get dark until after we have finished, making any viewing we want to do, somewhat difficult. In addition we may not be putting on the type of meeting members want? However we can only know what you do want, if you tell us. My details, and those of the rest of the Committee, are on the back page – any feedback is extremely useful. The Society is over 40 years old, but we accept things change, and the direction the Society goes in the future is something the Committee is already addressing.

Consequently the usual one-month Summer break becomes two months for this year! (We trust 'for this year only...') The next scheduled meeting will be in September.

Jim Webb – Chairman

CHAIRMAN'S QUARTERS



Water is my astrological element, (whoops – Sir Patrick will no doubt be turning in his grave!) but I have always felt an affinity both for it and an attraction to it. Being by the sea and watching it washing on the beach takes me back to my days at University in Liverpool, (where there's a big river!) when I was studying biochemistry. For that one of the major subjects we had to study was, not surprisingly, chemistry.

Physical chemistry consisted of 80 hours learning about gasses, liquids and solids. The first 40 hours were about gasses. They're easy – their properties have been known and characterised for the past several hundred years, with equations galore! Then there were 39 hours about solids. These are a lot more complex and have only been adequately characterised and understood over the past 50 years or so. Lots more equations and having to understand electron orbits! Now, if you've been doing the maths, it will become obvious that there is one hour remaining. Well, that was that one we learned about liquids - or not! The upshot was that no one actually knows much about them other than describing their physical properties – they take up the shape of any container and they will boil when heated. That's it! Liquids cannot be mathematically described, they make no sense so therefore they shouldn't exist. But, of course they do and without that wonderful liquid, water, we wouldn't be around to be talking about it. Interestingly enough we learned very little about water in that hour - that came at a later stage in the organic chemistry lectures.

So what did we learn about water, specifically? Families of chemical substances follow certain predictable properties. Water (H₂O) belongs to a family including sulphur, selenium and tellurium. The hydrides, of which water is the first in the series, follow a regular boiling point pattern. However water stands out in that its boiling point is 200°C higher than it should be! So what is it that makes water so different? All the hydrides have their two hydrogen atoms in a straight line making them totally symmetrical. Water has its two hydrogen atoms arranged in a V shape – the hydrogen at the two tips and the oxygen at the apex. This asymmetry results in the hydrogen atoms obtaining a slight positive charge and the oxygen an equal and opposite negative charge. This has the result of causing water molecules to be attracted to each other (positives to negatives) and forming loose chains which hold together enough to increase the boiling point by 200°C. This polar property also makes water an extremely good solvent! In fact, without these remarkable - and wonderful - properties, life on Earth would not exist.

There is a lot of evidence to suggest that water arranges itself in very specific structures depending on its environment. Unfortunately measuring and proving this has turned out to be very difficult because any attempt to measure the structure results in a random restructuring of the form (similar to the Heisenberg Uncertainty Principle). Research also hints that not only do living organisms have a highly structured chemical composition but that the water inside them takes on a very specific structure. Furthermore, any disruption to the water structure appears to unbalance the organism and possibly gives rise to disease. Again, the evidence is empirical because in order to measure the water structure the cells have to be disrupted, therefore changing the water structure. Whatever the case, water is a wonderful substance and just being in it is a true pleasure in life. This was one of our late Patron, Arthur C. Clarke's, passions – SCUBA diving. Being surrounded by the sea at depth is a sensation beyond compare – like being in another universe.

As a total aside, I've been a bit remiss in keeping us up to date with the latest elements in the Periodic Table! As of late May 2012, two more elements have been named – element 114, Flerovium (symbol Fl) and 116, Livermorium (symbol Lv). These were named after the Flerov Laboratory of Nuclear Reactions in Dubna, Russia and the Lawrence Livermore National Laboratory, California, USA, respectively. The elements 113 and 115 are notably missing as the odd numbered atomic weight heavy elements are more difficult to synthesize. That's nuclear physics for you!

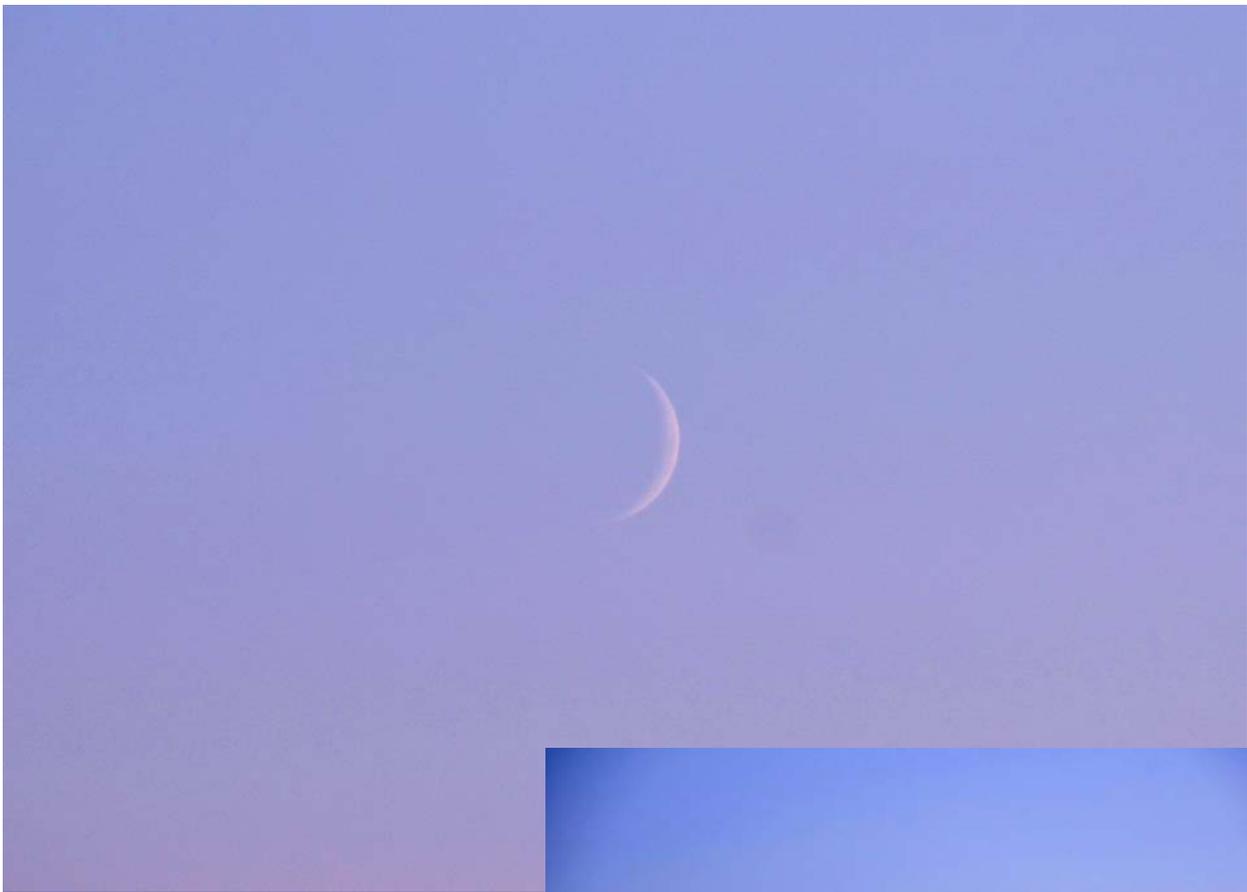
Jim



With the Gagarin statue on the cover, a few other images from, arguably, the world's most famous astronomical observatory. The Royal Observatory, Greenwich, or ROG.

Top: The view from the Onion Dome that houses the 28 inch refracting telescope, (right) This is the largest such (working) telescope in the British Isles and seventh largest in the world. In the background the black 'tube' is what remains of William Herschel's 40 feet long telescope – bottom. This was originally built in his gardens at Slough and completed in 1789. At that time it was the largest telescope in the world, though Herschel found it too unwieldy for much serious observing. Here, the Onion Dome is in the background.





Sky Views

The two-day old crescent Moon, faint in the sky on 11th July. Below the Saturnian satellite line up on 24th July - see **THE NIGHT SKY**



THE NIGHT SKY

THE PLANETS: July – September 2013

MERCURY : Currently in the morning skies after inferior conjunction on 9th July, but poorly placed for viewing. The planet is at greatest eastern elongation on 30th July, then superior conjunction on 24th August. This is a return to the evening skies, but again not well placed for viewing. Moon to the south on 5th August. In conjunction with Saturn on 10th September.

VENUS : Still bright at magnitude -3.8 in the north-west after Sunset, but still low down and invariably difficult to spot in twilight, so needing a clear horizon. It will be mid-September before the twilight darkens enough to make the planet more easily visible. Moon to the south on 10th August and 8th September.

EARTH : Autumn Equinox 22nd September

MARS : Now in the morning skies at around magnitude 0.4, but the planet will not be easy to spot until December. In conjunction with Jupiter 22nd July. Moon to the south on 4th August and 2nd September.

JUPITER : Re-emerges in the morning sky at the end of July, after superior conjunction, on 19th June. In conjunction with Mars, 22nd July. Moon to the south on 3rd and 31st August.

SATURN : Well placed for viewing this month, as it was at opposition on 28th April, so visible all night. The rings are open at the moment, around 19 degrees, making a worthwhile visit from even the smallest telescope. The Moon 3° south on 13th August and 9th September. In conjunction with Mercury 10th September. There is a good line up of Saturnian satellites on 24th July. See **Sky Views**.

URANUS : Stationary on 18th July. Moon to the north on 27th July, 24th August and 17th September.

NEPTUNE : Moon to the north on 25th July, 21st August and 15th September. At opposition on 27th August

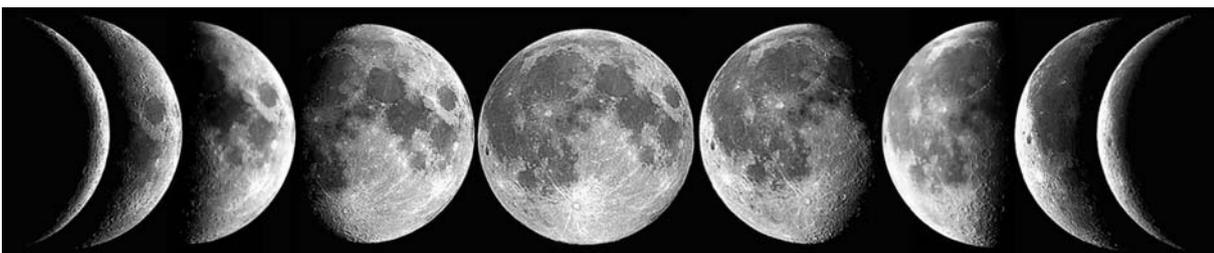
COMETS

PanSTARRS never reached its predicted potential, though this only proves it's a thankless task trying to predict what comets will do! But good things are still being predicted for ISON later in the year. We will know by the October when its visibility will either be obvious – or not. Comet 2P/Encke also makes its return this year. Approaching the Sun in September, it will be in the evening skies though very faint at magnitude 12. It should be brighter in November, around magnitude 5 in the morning skies. Encke has a period of 3.3 years, shortest of any known comet.

METEORS

Delta Aquidis peak on 6th August, at a New Moon. Perseids peak on 12th August. The Moon will still be a crescent, two days before First Quarter, so the skies will still be reasonably dark.

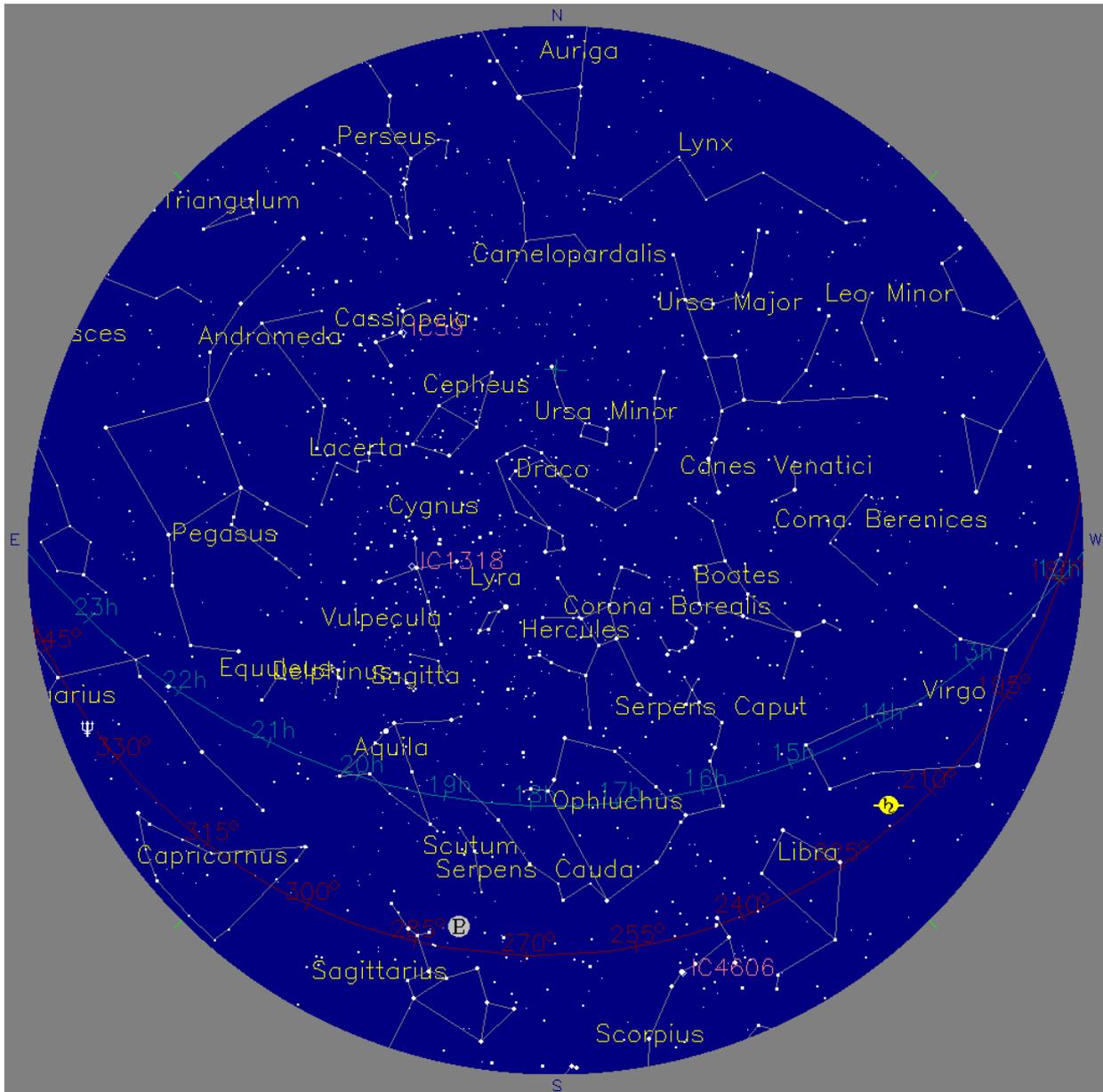
THE MOON



New 8th July First Quarter 16th Full 22nd Last Quarter 29th New 6th August
New 6th First Quarter 14th Full 21st Last Quarter 28th |New 5th September

THE NIGHT SKY : MAP

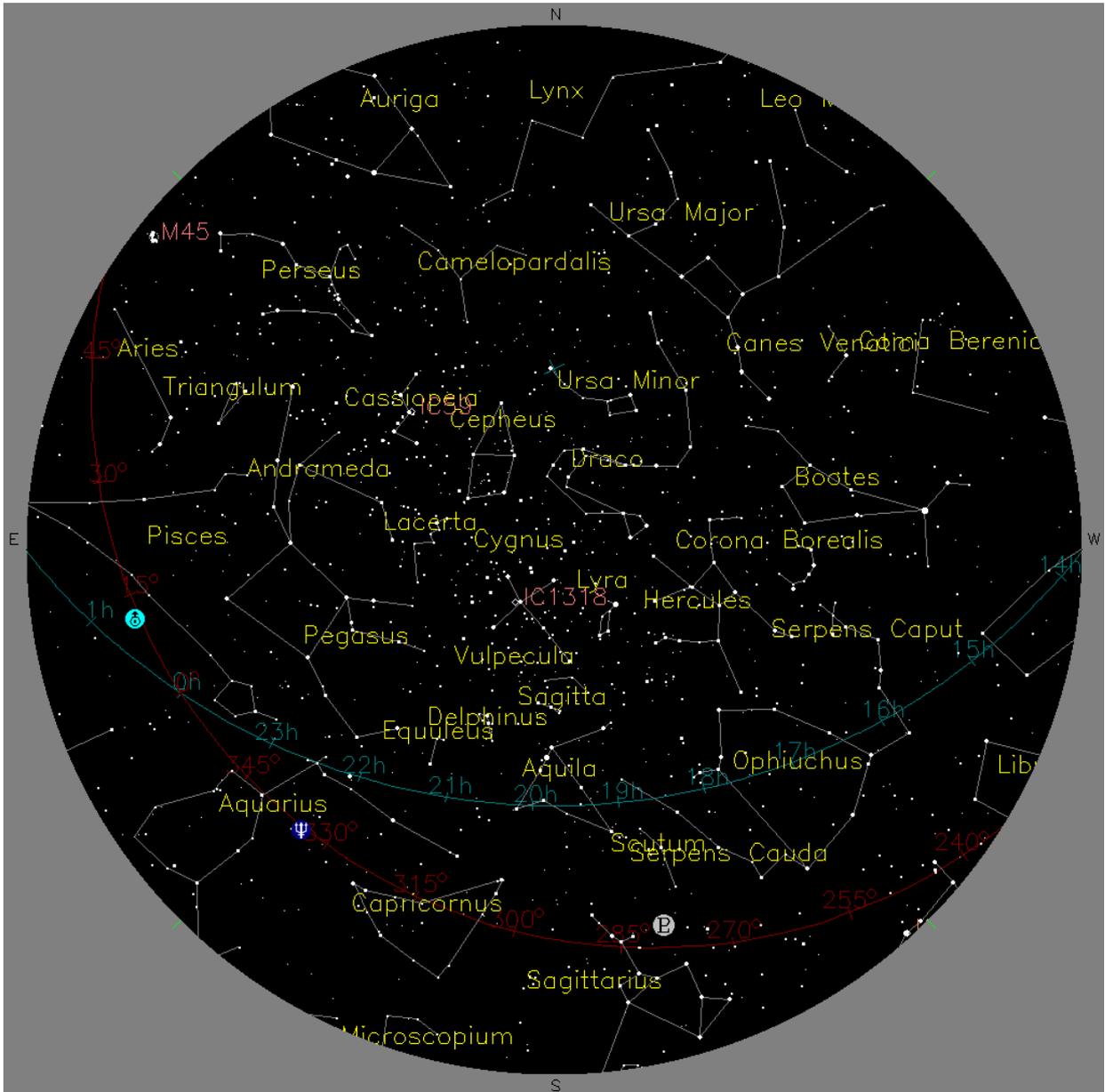
1st August 2013 22.00 BST [21:00 GMT/ UTC]



KEY	
	MERCURY
	VENUS
	MARS
	JUPITER
	SATURN
	URANUS
	NEPTUNE
	PLUTO

THE NIGHT SKY : MAP

1st September 2013 22.00 BST [21:00 GMT/ UTC]



KEY	
 MERCURY	 SATURN
 VENUS	 URANUS
 MARS	 NEPTUNE
 JUPITER	 PLUTO



Astronomical Society of Haringey

Patron: **Sir Arthur C. Clarke, C.B.E., B.Sc., F.R.A.S., F.B.I.S.**

President : **Frederick W. Clarke, F.Ph.S.(Eng), F.B.I.S.**

Vice President : **Walter T. Baker**

ASH COMMITTEE MEMBERS : 2012 – 2013

CHAIRMAN : Jim Webb email chairman@ashastro.co.uk [www.glservices.org]

SECRETARY: Charles Towler email secretary@ashastro.co.uk

TREASURER : Gordon Harding

MEMBERSHIP SECRETARY: Alister Innes email memsec@ashastro.co.uk

EDITOR, P.R.O. and VICE-CHAIRMAN (and current WEBMASTER) : Mat Irvine
email editor@ashastro.co.uk [www.smallspace.demon.co.uk]

GENERAL MEMBER : Mitchell Sandler

GENERAL MEMBER : Liz Partridge

JUNIOR MEMBER : Nicholas Lucas

GENERAL MEMBER AT LARGE : Gary Marriott

GENERAL INFORMATION : info@ashastro.co.uk



Astronomical Society of Haringey