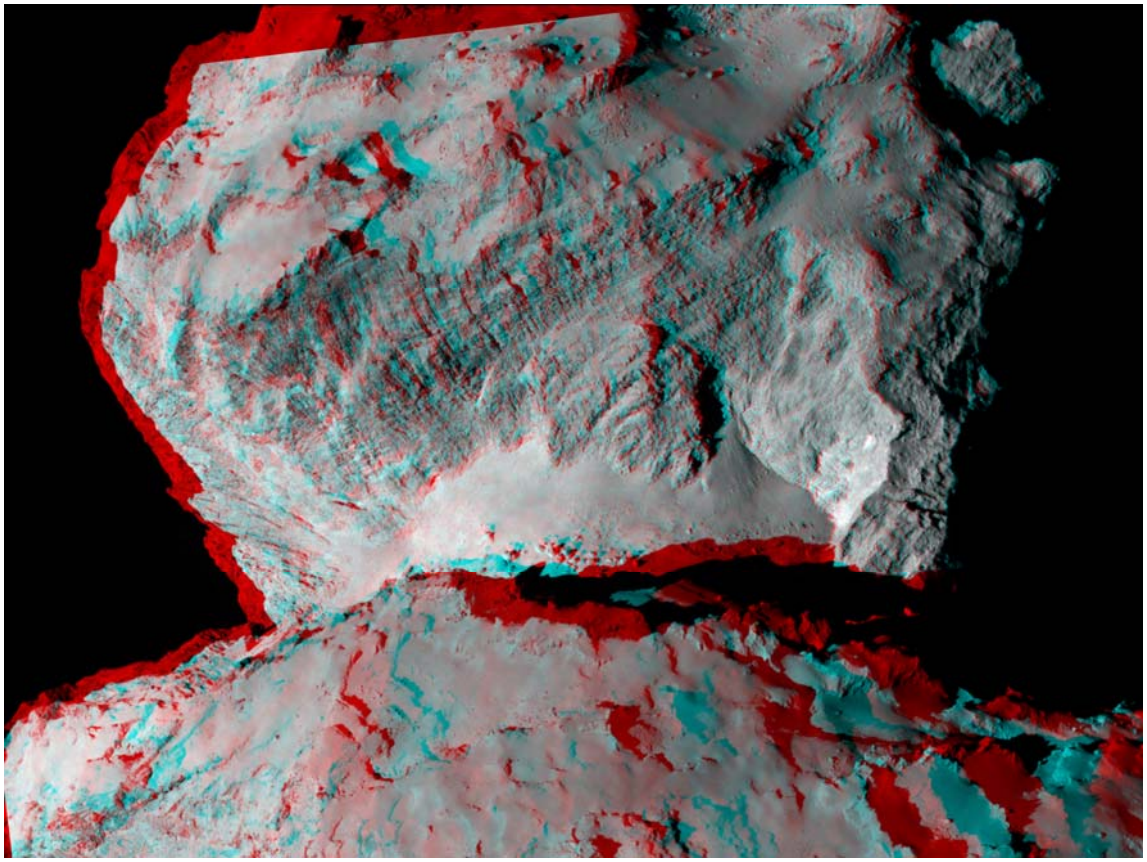
2002



NEXT MEETING

THURSDAY, 18th September 2014

THE ASTRONOMICAL SOCIETY OF HARINGEY

VOLUME 42 : ISSUE 11 : September 2014

www.ashastro.co.uk

SOCIETY NEWS

MEETING VENUE
Music Block, Ashmole School, 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.

IMPORTANT
Remember the change of meeting room.
See the next page

For more on this, and general meeting information, also check the website: www.ashastro.co.uk. Latest update September 2014

A Facebook page is being set up. It will be in 'Groups', under 'ASHastro'

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

2014

Below are the currently scheduled dates for this year.

Most meetings will also end with a round-up of 'What to View in the Night Sky' for the following month. This is a continuation of what you get in the Night Sky pages here.

September : 18th : *Jim Webb : "Observing Evening at the Observing Site"*
See next page for location details

October 16th : AGM *and Mat Irvine : "Space at Farnborough" - postponed from September*
November 20th : TBA
December : Probably no meeting this month

COVER:

With 'three dimensional holograms' being the subject of Chairman's Quarters this month, here is another 3D representation. This is formed from images from the Rosetta space-probe, that recently rendezvoused with Comet 67P/C-G, otherwise known as the tongue-twisting Comet Churyumov-Gerasimenko.

The ESA transformed the new images to create this 3D photo. The two photos used to create the 3D image were taken 17 minutes apart, with an exposure time of 138 milliseconds.

This cover image requires standard red/blue-green glasses to see the 3D effect, which probably many will have to hand. However if you don't, see inside as the same images can be seen, which purely require you to go cross-eyed to get the same effect!

Photo Credit: ESA/Rosetta/MPS for OSIRIS Team MPS/UPD/LAM/IAA/SSO/INTA/UPM/DASP/IDA

MEETING ROOM

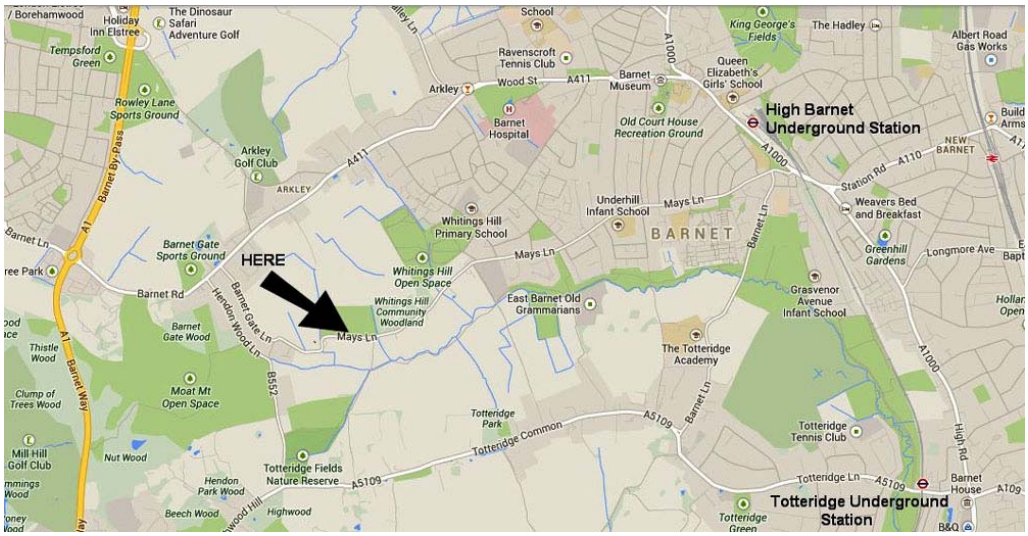
We currently meet on the first floor of the Main Music Block. This is the two-storey building, next to our original room, the original Music Room. This is marked with the X in the photo on left, (and although it is demolished, the site is currently being redeveloped with a new structure). The route in red is shown from the main gate of the School. 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.

MEETING PREVIEW : 19th September 2014

Jim Webb: "More Observing"

With the nights closing in, and it still being reasonably warm, these months are an ideal time for observing the night sky. So the September meeting will be at our new Observing Site in Barnet - and these are also on the ASH website. As here is no direct public transport to the site, you can contact Jim Webb for arrangements - see back page for contact details.

There will also be 'inclement weather cover' - ie the nearest pub.



The full address:

Old Elizabethans Memorial Playing Fields,
Gypsy Corner,
Mays Lane
Barnet,
EN5 2AG

More Society News

Jim Webb also recently discovered this photo taken that shows our late Treasurer, Gordon Harding, in 2007. He was attending a Camden Amateur Telescope Society meeting, and is pictured above with Simon Lang, left, and, centre, Chairman Jim. At the current time we can finally announce that Gordon's funeral will be at the New Southgate Cemetery and Crematorium. However we are still waiting for that date, but when that is, all Society members will be very welcome. New Southgate Cemetery and Crematorium, Brunswick Park Road, New Southgate, London N11 1JJ. 0208 361 1713; www.newsouthgatecemetery.co.uk

photo Jim

Meanwhile Jim was in Leicester Square at the time the first Doctor Who story with the latest Doctor was being shown at the Odeon Leicester Square. Guess Who made an appearance on the balcony!

And staying with Who, there was reunion of 'School Reunion' at the Sheffield Film and Comic Con on 30th August. Here we have John Leeson, K-9 and Anthony Head.

photo Mat

CHAIRMAN'S QUARTERS

I was recently rooting through some old stuff of mine and came across some holograms I had made in the late 1970's! A hologram is essentially three-dimensional information coded onto a two-dimensional surface. To make one you need a laser (always) and to view it, depending on the way it was made you either need a laser or ordinary white light. As an aside, popular press have many misconceptions on the subject and, often, video projections on large translucent screens or other 3D tricks are referred to as 'holograms'. Back to the 'real' world, holograms can store immense amounts of information in a very small space. Because of this, many researchers are currently exploring concepts in the lines of, "Could our memories be holographically stored inside us?" or even, "Is our Universe really a hologram?"

The US Department of Energy's Fermi National Accelerator Laboratory is embarking on a unique experiment, called the Holometer, which has recently started collecting data to answer some of these questions about whether we live in a hologram. All physical matter, everything we have around us, is the result of a frequency. If the frequency is amplified, the structure of the matter will change. This self-contained system is a hologram. Change any one aspect of the hologram, and you change the entire system. If one goes close up to a TV screen you see pixels, the small points of data that make a seamless image if you stand back. Scientists think that the Universe's information may be contained in the same way, and that the natural 'pixel size' of space is roughly 10 trillion trillion times smaller than an atom, a distance physicists refer to as the Planck Scale.

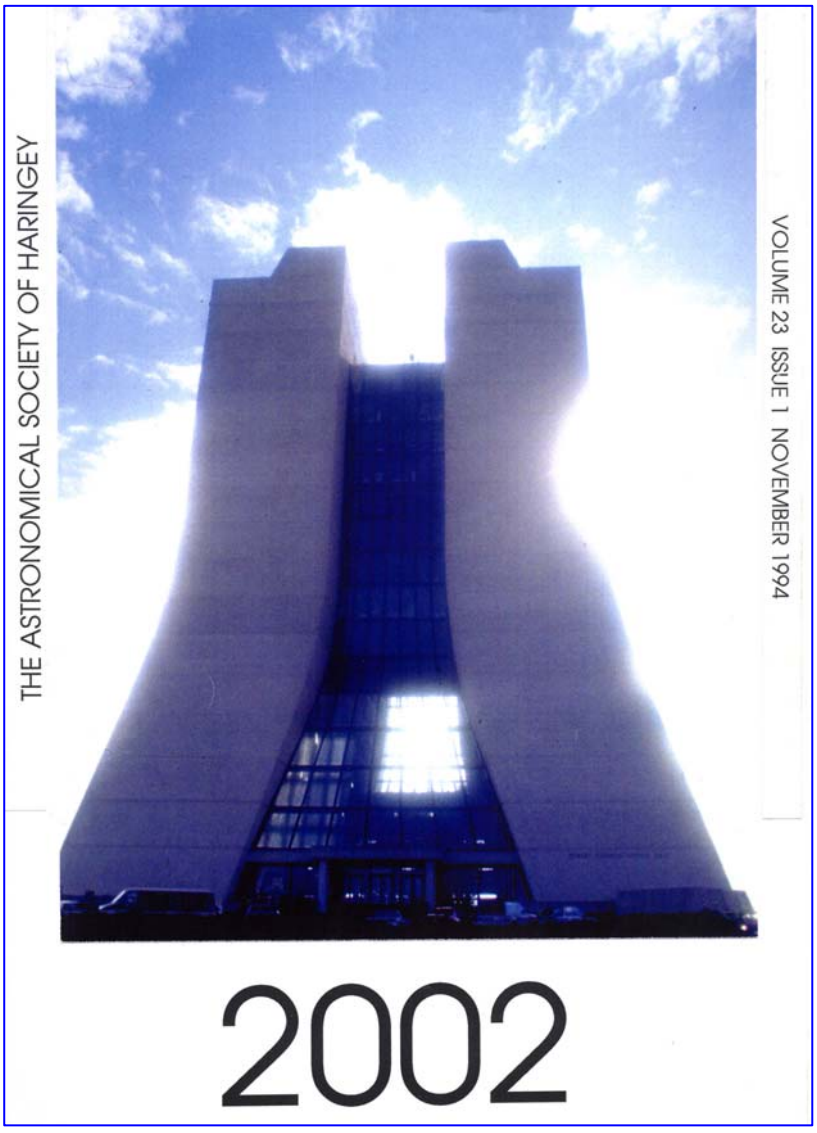
Theoretical physicists Leonard Susskind and Gerard 't Hooft explained the idea as such: if a three-dimensional star could be encoded on a black hole's 2D event horizon, maybe the same could be true of the whole Universe. The Universe has a horizon beyond which point light would not have had time to reach us since the Big Bang. They have suggested that this 2D 'surface' may encode the entire 3D Universe that we experience, at the Planck Scale, much like the hologram on a credit card. Theoretical physicists have long suspected that space-time is pixelated, or grainy. "Being in the holographic universe is like being in a 3D movie," says Fermilab's Craig Hogan. "On a large scale, it looks smooth and three-dimensional, but if you get close to the screen, you can tell that it is flat and pixelated. We want to find out whether space-time is a quantum system just like matter is."

Quantum Theory suggests that it is impossible to know both the exact location and the exact speed of subatomic particles. If space comes in 2D bits with limited information about the precise location of objects, then space itself would fall under the same theory of uncertainty. The same way that matter continues to jiggle, as quantum waves, even when cooled to absolute zero, this digitized space should have built-in vibrations even in its lowest energy state. Essentially, the experiment probes the limits of the Universe's ability to store information. If there are a set number of bits that tell you where something is, it eventually becomes impossible to find more specific information about the location – even in principle. The instrument testing these limits is Fermilab's Holometer, or holographic interferometer, the most sensitive device ever created to measure the quantum jitter of space itself. The team comprises of 21 scientists and students from around the USA. If they find an unexplained noise they might be detecting something fundamental about nature – a noise that is intrinsic to space-time. A positive result would open a whole new avenue of questioning about how space works and challenge every assumption we have about the world we live in.

See you observing in September *JIM*

SPACE NEWS

Mention of Fermilab in the Chairman's Quarters prompts this photo taken from an aircraft (though that, um, probably goes without saying…), which shows the whole double-circular structure.

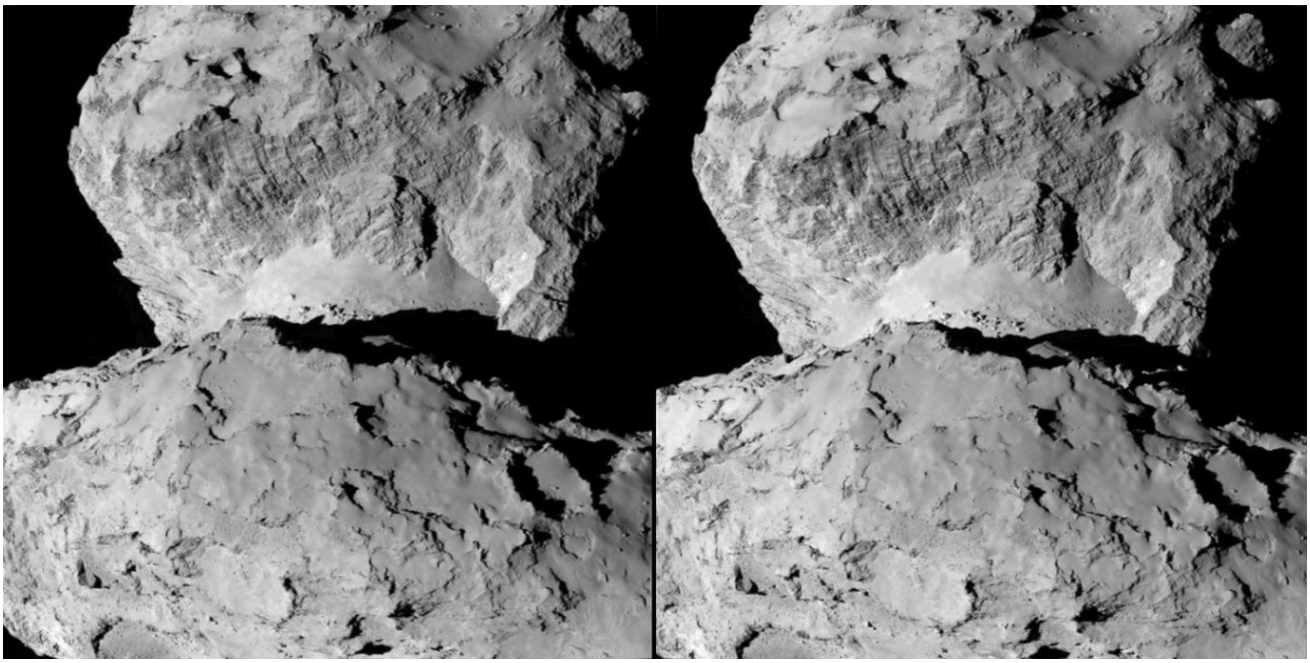


The main administration building, [*visible above: centre top*] as seen from ground level, graced the cover of the November 1994 issue of **2002**. Although created in colour, we were only printing in black and white at that time, so - as it is still in the files - this time have it in its original form. The photo originated as a 35mm slide, and printed as an early colour photocopy, hence being slightly fuzzy. The cover was also assembled by cut-n-paste methods, not completely digital, as it is these days. Below a clearer photo of the building that shows its intriguing overall shape.

Photos - Mat

SKY VIEWS

As promised with the cover image, here is the alternative version. Here you purely have to go cross-eyed while staring at the images, and they will 'float together' to form the 3D effect in the centre!



Right : Almost the closest conjunction of Venus and Jupiter in the morning skies. The closest approach was 18th August, but the skies were totally overcast. This was taken on the 19th at 05.30hrs. Venus is the lower and brighter of the two.

Below : Comet A1 Siding Spring could be visible as it in conjunction with Mars on 19th October. For more details see: The NIGHT SKY,

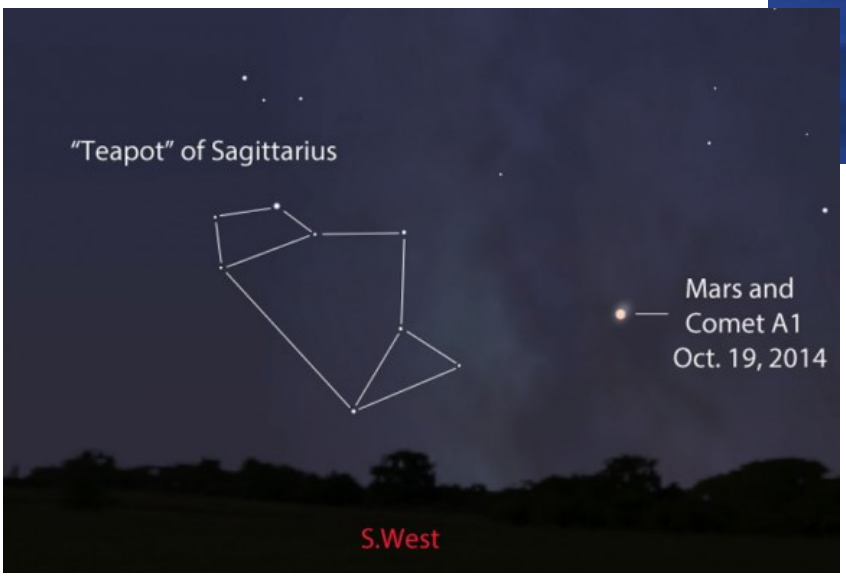


Photo credits
Top : ESA/Rosetta/MPS for OSIRIS Team
Above : Mat
Left : Stellarium

THE NIGHT SKY : THE PLANETS
September - October 2014

MERCURY : In the evening skies with Mars and Saturn, but all three are close to the setting Sun and the angle of the ecliptic (the plane of the planets) will make them difficult to spot, unless you have a very clear horizon. At greatest eastern elongation on 21st and the Moon to the north on 26th, both September. The planet is at inferior conjunction on 16th October.

VENUS : Still brilliant at magnitude -3.9 in the morning skies, but sinking lower and lower in the morning skies. The crescent Moon is in theory close by on 20th September, but, unless a vey clear horizon, Venus will now be too low.

EARTH : 23rd September - Autumn Equinox

MARS : Moving east towards Scorpius, closing in on the star Antares by the end of September. Magnitude around +0.8, setting around three hours after the Sun. Less of the features are now readily observable, with only Syrtis Major possibly being visible. Moon to the north on 29th September. **SATURN** is to the right

JUPITER : The giant planet has been close to Venus in the morning skies, both bright objects (Venus the brighter), at magnitude -1.8. (see SKY VIEWS) Starts close to the Beehive Cluster, M44 in Cancer, but will move towards Leo by mid-October, at that time rising to over four hours before the Sun. Moon to the south on 20th September and 18th October.

SATURN : magnitude +0.6 in Libra. Gradually closing in on the Sun, it will reach superior conjunction at the end of September, disappearing for a month or so. The rings are open to 23 degrees, and should be visible with modest magnification, along with the largest satellite, Titan. A thin, three day old crescent Moon will be close to the right on 27th, and will have moved to the left by 28th. **MARS** is further to the left.

URANUS : In Pisces, at opposition on 7th October. Full Moon just over a degree to the north on 8th. An occultation will be visible in northern latitudes

NEPTUNE : In Aquarius, magnitude around +8, so visible in binoculars or a small telescope. Moon to the north on 5th October

METEORS

Orionids peak over 21st - 24th October.

COMETS

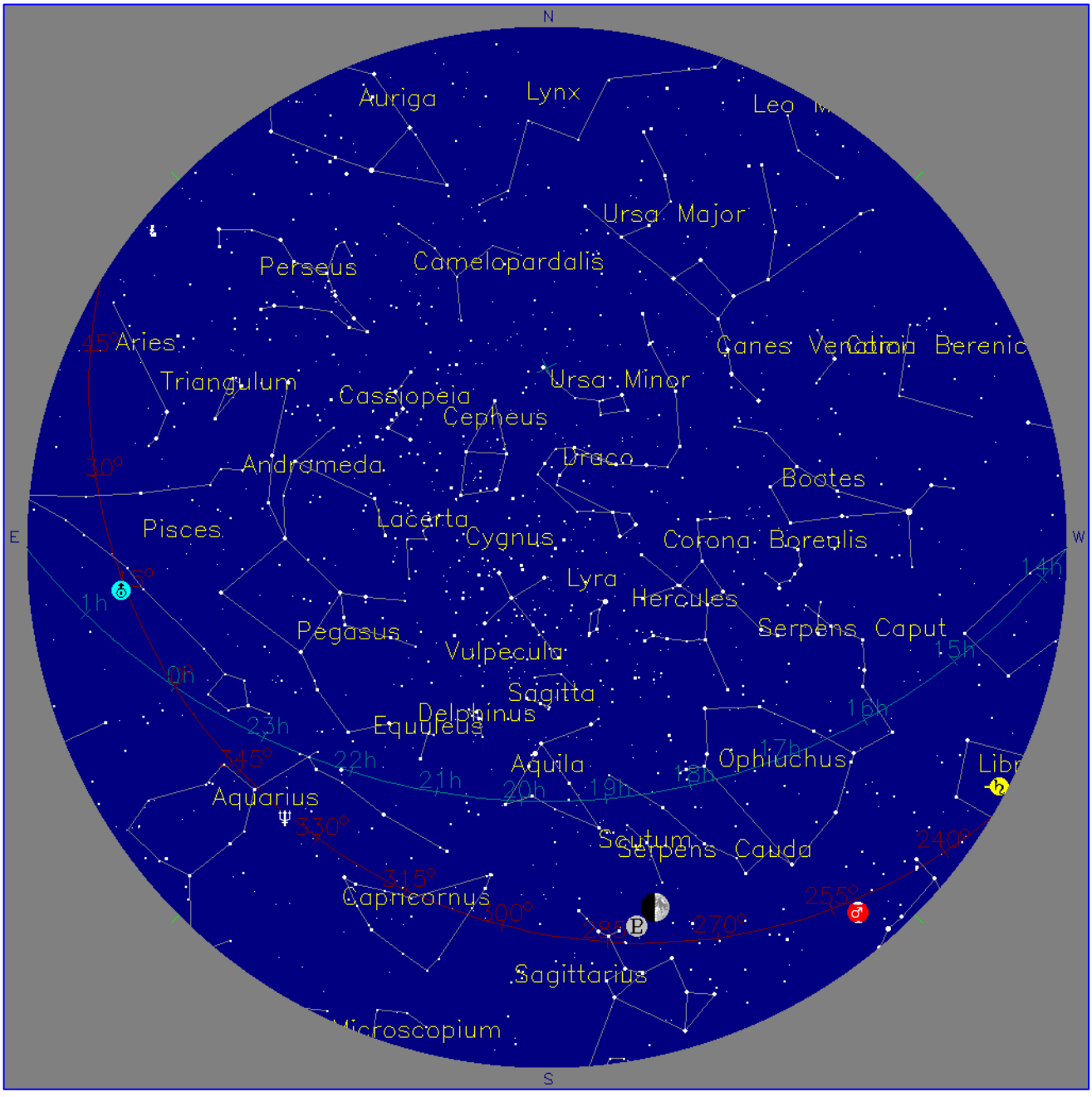
Possibly 2014's most anticipated comet, C/2013 A1 Siding Spring, approaches Mars on 19th October. The tail may even envelope the Red Planet, so you could get a 'fuzziness' appearing! The Comet is below naked-eye visibility at magnitude +7.5, but the usual binoculars or small telescope should show it. See SKY VIEWS

THE MOON

New 25th	First 2nd September	Full 9th (Harvest)	Last 16th	New 24th
New 24th	First 1st October	Full 8th	Last 15th	New 23rd

THE NIGHT SKY : MAP

1st October 2014 : 20.00hrs BST / 19.000hrs GMT/ UTC



KEY	
MERCURY	SATURN
VENUS	URANUS
MARS	NEPTUNE
JUPITER	PLUTO