

2002



Gordon Harding
1928 - 2014



Roy Goldsmith
1931 - 2014

NEXT MEETING
THURSDAY, 20th March 2014
THE ASTRONOMICAL SOCIETY OF HARINGEY
VOLUME 42 : ISSUE 5 : March 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 December Christmas Meet, though that may change back 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 March 2014

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.

Confirmation as to which meetings will be held are due to be announced after the next Committee Meeting.

March 20th : *“Observing Evening” : Old Elizabethans Memorial Playing Fields , Gypsy Corner, Mays Lane, Barnet, EN5 2AG*

April 17th : Jerry Stone : *“Is Pluto A Planet?”*

May 15th : TBA

June 19th : TBA

July 17th : TBA

August : Summer Break

September : 18th : TBA

October 16th : AGM

November 20th : TBA

December : Probably no meeting this month

COVER:

Sadly we have to report that two people well known to the Society, died in February, almost within a week of one another.

Gordon Harding was a Committee Member and Treasurer for many years. Roy Goldsmith was a regular speaker to the Society, especially on historical astronomical topics. Obituaries for both are in the magazine.

And the view of the sky... A reminder that the first of what is intended to be a regular series of Observing Meetings, will take place this month.

PHOTOS - Mat

SOCIETY NEWS MEETING ROOM

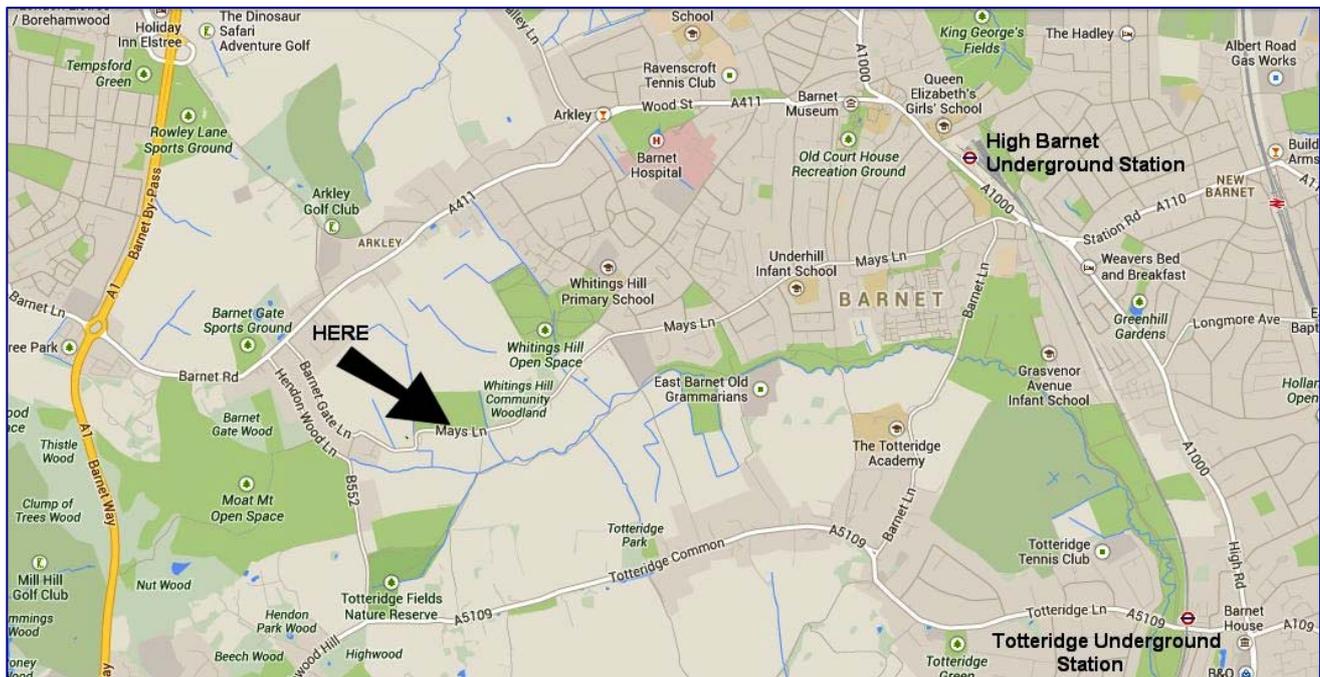


We currently meet in the Main Music Block. This is the two-storey building, next to our original room, the now-demolished Music Room (marked with the X - see the photo on left.) The route in red is shown from the main gate of the School. We hope a first floor will be suitable for all, as there isn't a lift. If anyone feels they will have difficulty, please let the Chairman know. Contact details on back page.

MEETING PREVIEW : 20th March 2014

Observing Evening

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



This is the first of what is hoped to be regular observing meetings at this 'new' site. It will be run by Chairman, Jim Webb and Membership Secretary, Alister Innes.

Telescopes will be provided, though if you have your own, or binoculars, bring them along as well. There aren't any facilities there that we have access to, so if you want a hot drink, bring a Thermos!

Obviously, as with any 'outdoor event', we are subject to the weather, but if it appears inclement, we will retreat to The Old Red Lion pub at the A1000 end, near to High Barnet underground station.

We accept this location is not on a public transport route, the nearest is about 1 mile away, so if you will have difficulty getting there, contact one of the Committee Members (details on the back page).

Next page, an aerial view that shows the precise location, and what to expect! The entrance is at the left-hand end, where the road has a right-angle bend, by the 'M' of 'Mays Lane'. This is locally known as 'Gypsy Corner'.



MEETING REVIEW : 20th February 2014

"Jim Webb : "Lasers – A Solution Looking For A Problem"

Unfortunately not one of our best turned-out meetings – and we had been doing so well over previous months! But those that were there had an extremely intriguing talk and demonstration, and those who weren't – well you missed a treat!

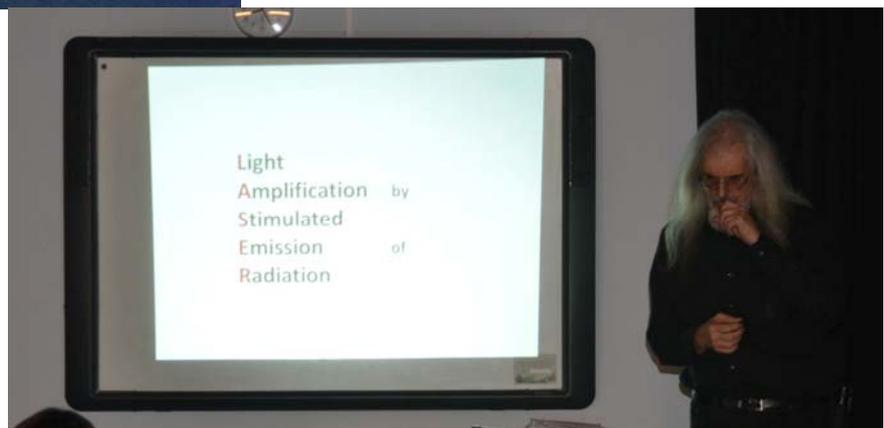


As is generally known, our Chairman's actual work is with lasers. This is both in the setting up and running of shows and also as a safety officer. (He had just returned as the latter for an exhibition in Germany.)

For this meeting he spelled out just how far laser technology has progressed since they were invented by Theodore Maiman 52 years ago, who constructed the first visible laser using a ruby crystal. Jim took us through exactly how this was achieved. But although the result looked, literally, dazzling - as the title of his talk suggests - no-one at that time could come up with a use for the invention!

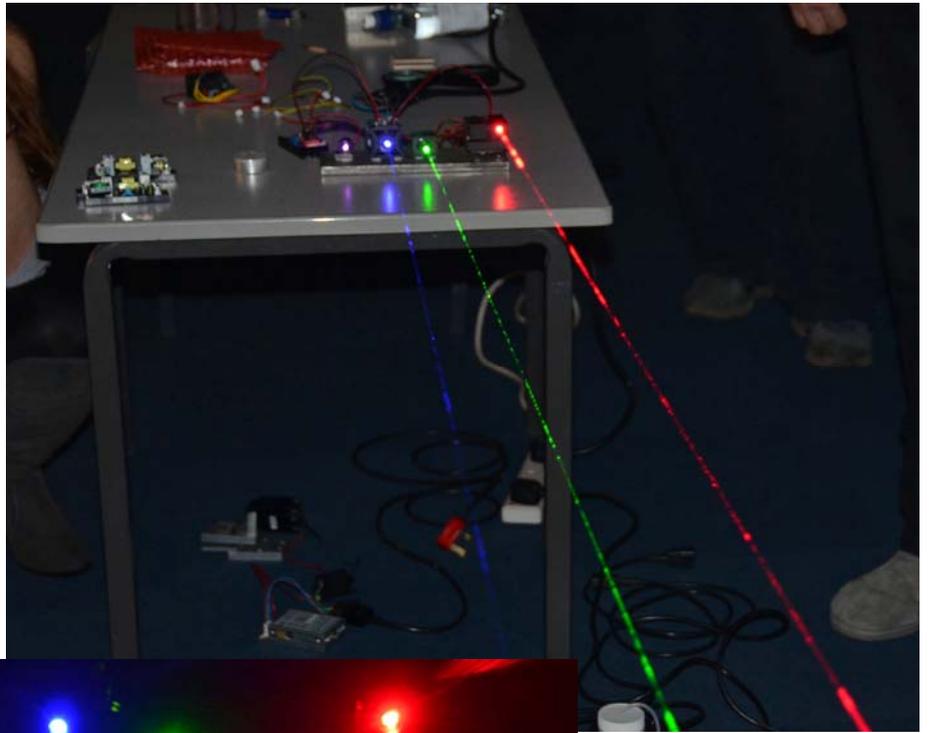
Above : Jim sets up some of the lasers – this involved a lot of crawling around on the floor and under tables ...

Right : ...and just in case you had forgotten what LASER stands for!





After the science bit, including showing the power that can light a match (*above*) - came the fun, and for this we had chosen to use the largest of the rooms on the First Floor, the theatrical space, as it gave the demonstrations far more impact! This also showed just how far



technology had progressed. Initially lasers were large, heavy, power-dependant, and many needed three-phase power and a running water supply for cooling. Not so these days. Much is solid-state technology, with lasers as small as a pack of cigarettes (whatever they are...), and plugged into an

ordinary household power socket. The range of colours has also vastly widened since Maiman's first red ruby laser. Here, (*above*) Jim set up four lasers giving red, blue and green and also violet, which really gives stunning colours - the images here don't really do these justice.

Then more fun when the smoke machine was switched on. Here you get the classic 'Alien' images – the surreal constantly moving floor of the 'egg chamber'... (*left and below*)



So all those who couldn't make this meeting - this is some of what you missed!



Gordon Harding 1928 - 2014



Gordon joined the ASH in 1996 and soon was a member of the Committee, eventually becoming Treasurer. He was always very affable, great fun to talk to but also quite a private person. He originally worked as a Civil Engineer, for the Vintage Magazine Company and as a Quantity Surveyor, which we think he continued to do before he retired early, sometime in his fifties.

He had a love of ships, trains and aircraft. As a member of the RAS, he was often at Burlington House helping out. He worked as a scrutineer of the ballots and was good friends with the late Peter Hingley, the RAS librarian. His numeracy skills were excellent as he could easily confirm the combined totals of postal and, later, electronic votes. At the RAS his jovial nature always lightened the day and together with Cleuta and what became known as his 'his harem' it always ensured he was hard to miss. He brought many new friends into the *Alternative RAS Dinner* and would ensure the evening went with a swing. He was always a charming gentleman.

He also worked at the Hampstead Scientific Society's Observatory as an Assistant. His job was to help the Demonstrators set up the Dome Building and the 6" Cooke Refractor telescope in readiness for the public. Although he didn't know his way around the sky very well, he did have an enormous amount of knowledge about astronomy generally, in particular about the history of astronomy, and was very good at entertaining the troops with his knowledge. In typical Gordon style, he didn't hold fort, but was always happy to answer questions from members of the public, taking a load off the Demonstrators who are better on the observational side of things. He would always roll up his sleeves and launch into action when asked, very generous with his time. The day before the opening for the June 2004 Transit of Venus the Hampstead Observatory's grounds were very overgrown with weeds. When phoned, Gordon dropped everything and went straight along to help clear the grounds and worked furiously for over eight hours sweeping paths in the sweltering heat, even though he was then already 75 years old.

Gordon was one of the more regular members of telescope-making CATS (Camden Amateur Telescope Society) until his age and heart condition started to catch up in the last couple of years. He attended all year around, always brought along his jovial attitude and was a dedicated socialite, helping to keep all the other people in the group



cheerful and entertained. His knowledge of optics was formidable! (*The photos show him talking about optics during an ASH meeting.*)

If anyone needed help or advice he was always the first to step forward and help people. He was very good at putting technical terms into a language anyone could understand and his patience was legendary. His humour and fun outlook always helped and his experience could be relied upon to find a solution to anything.

Apart from astronomy, Gordon had wide ranging interests and always managed to convey something of his passion and

enthusiasm to those he was with. He was a great lover of classical music and opera. One of his favourite composers was Mozart and he used to go to productions, at the ENO, of *The Marriage of Figaro*, *Don Giovanni*, *The Magic Flute* and others. When he would meet special friends for dinner, he would often arrive carrying a small plastic bag containing a tape or, more recently, a CD, of works by Mozart, Bach, Beethoven or Mahler as a present and would always talk about the piece and why he liked it. He was also a great reader. Some of the authors he most enjoyed were Charles Dickens, PG Wodehouse and Joseph Conrad. His favourite fictional heroine was *Bathsheba Everdene* in Thomas Hardy's *Far from the Madding Crowd*. He was fascinated by spiders, but had a bit of a phobia about them so set out to combat it by finding out as much as he could about them. Apparently at one dinner he explained how to 'sex' a spider and, in typical Gordon fashion, illustrated his description by whipping out one of his fine-nibbed pens and drawing on a paper napkin!



Apart from being a very interesting companion, Gordon was always the perfect gentleman, which is probably why he had a large circle of women friends. He was transparent, sincere, respectful and truthful. Although in many ways Gordon was very modest and unassuming, he had a way of bringing people together and facilitating friendships. He enjoyed eating out and enjoying a few large brandies with his friends. Over the last seven years Cleuta Medeiros was his companion, and he would invariably remark that he didn't know how he managed to get a Brazilian girlfriend! Their age difference was always a source of fascination to those who did not know Gordon, but that was our Gordon. He died on 17th February 2014, aged 85. He will be greatly missed by all of us.

JW

Roy Goldsmith 1931 - 2014



Roy was the youngest of six children, a sister and five brothers, and lived his early years in Palmers Green, North London. He attended Michendon Grammar School in Southgate, (less than a mile from Ashmole School), and during the Second World War was in the Medical Corp. He always had an interest in the sciences and teaching, and ended up lecturing at Dunstable College until he was into his eighties, although by then part-time. He never married, both he and Harry, his eldest brother, were confirmed bachelors, although he definitely had an eye for the ladies. The two brothers shared a house in Luton for many years, until Harry's death, when Roy, who was around 16 years younger, moved to Dunstable, into a flat near the town centre.

Of all the sciences, astronomy, especially the history of astronomy, was a particular interest, and he started to build up a library of talks that he would do for many groups and societies. This included the ASH. Since February 2005 he gave us four talks, the first on the Dark Ages of Astronomy, titled Fifteen Hundred Years - A Long Time to Wait. Second was in March 2007, on The Astronomers of the Renaissance. Then in September 2008 with The Chinese Astronomers, while the most recent was in November 2011, on The Arabic Astronomers. He was in the process of preparing another talk for us on the discovery of Neptune. He also came along to several other meetings, including one of the Christmas Parties, below. Here he is on the right, and the photo coincidentally also shows Gordon, left.



Roy died on 26th February 2014, aged 82. He will be much missed by his many friends. The funeral will be held on 26th March 2014 at the Luton Crematorium, 10.30am.

No flowers please, but donations can be made to his charities, via Co-op Funeralcare, Dunstable.

Any other queries, contact Mat Irvine, via addresses on back page.

MI

CHAIRMAN'S QUARTERS



It may be news that is a year old now, but on 15th February 2013 we had a visitor from space – the Chelyabinsk Meteor. There have been many hyperboles expressed over this event, but the realities are even more remarkable. Measuring an estimated 20 metres in diameter, it was a sizeable object – about the size of a five storey block of flats. The estimated mass was around 12,000 tons, which was travelling at over 40,000mph. (The escape velocity from Earth is 'only' about 25,000mph.) The kinetic energy of this ($E = \frac{1}{2}mv^2$) is around 2PJ (Petajoules = 10^{18} Joules) or in terms that are more 'awesome' to the press, about a half Megaton of nuclear explosion.

On reading these figures, a very scary scenario could be inferred. In nuclear explosion terms, that is around 25 times the yield of the Hiroshima bomb. It is important to remember that a nuclear bomb delivers its energy in one spot within a period of less than a millionth of a second – the damage caused is from the after-effects of the sudden energy output. The Chelyabinsk Meteor however, dissipated its energy over a distance of around 100 miles. It entered that atmosphere at something like 60 times the speed of sound and atmospheric friction made it glow much brighter than the Sun. The heat flash was felt at ground level, but was not powerful enough to cause serious damage, even though it did cause temporary blindness in a number of people! More significant was the sonic boom – the shock wave caused by the supersonic velocity of the object. Its amorphous, non-aerodynamic shape served to amplify this boom. This had a devastating effect on structures around the city and nearby towns. Most of the damage was broken windows from the shock waves, with a few collapsed roofs. In all over 7000 buildings were damaged. Records show that over 1000 people had to receive medical attention, mostly from glass cuts, but no fatalities were reported.

In contrast, a half Megaton nuclear explosion would have completely destroyed buildings (with almost total fatalities) within a five mile radius and lit fires up to 15 miles away! Even more interesting is the fact that this meteor exploded at a height of 20 miles, breaking up into much smaller fragments which eventually reached the ground – fortunately in an uninhabited area. The largest impact found left a hole on a frozen lake about 20 feet across, though most of the other fragments discovered have been less than an inch in diameter!

Needless to say, all the panic buttons have been pressed to increase the scanning of the Solar System for smaller rock fragments than 'Chelyabinsk'. Very recently the UN has passed a resolution setting up a monitoring system to detect much smaller pieces than currently possible. What emerged from this incident is the fact that this meteor entered the Earth's atmosphere at a very shallow angle. The net result of this was for much of the energy to be absorbed by the atmosphere and for the meteor to break up into much smaller pieces. Had the meteor come down at a far more vertical angle, the result could have been quite different. The result could have been closer to a nuclear explosion but deep in the ground. Much of the damage would then be from the intense heat due to the rapid deceleration and the ground impact shock waves disrupting nearby buildings.

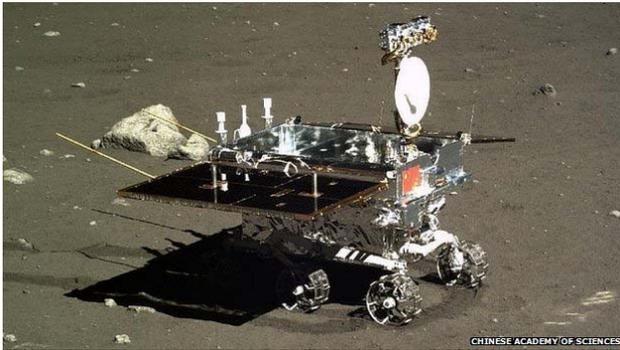
How much protection our atmosphere would give in this latter scenario depends on many factors, but the indications actually suggest the probability that the destruction caused, although hardly insignificant, would not be as cataclysmic as the media like to portray!

See you at the next meeting.

Jim.

NEWS FROM SPACE

Chinese Lunar Rover Could be Saved



China's first Lunar Rover could potentially be saved despite experiencing mechanical problems.

Jade Rabbit suffered serious problems in January and reports in Chinese media had suggested that Jade Rabbit, or *Yutu* in Chinese, had been declared dead on the surface of the Moon.

The Rover had been scheduled to become dormant for 14 days during the Lunar night, when there would be no sunlight to power its solar panels. The concern was that the Rover could not withstand the low temperatures on the Moon because it entered its dormancy while in an abnormal state. However the Rover has awoken from its scheduled dormancy and stands a chance of being saved, although it still has a mechanical malfunction.

Radio amateurs also reported picking up downlink transmissions from the Rover, proving that there were signs of activity. Experts are still trying to work out what caused the malfunction. Some reports suggest the problems could have been caused by a build-up of sticky dust on the Lunar surface.

Jet Stream may be Changing

The main system that helps determine the weather over Northern Europe and North America may be changing. A study shows that the jet stream has increasingly taken a longer, meandering path resulting in weather remaining the same for more prolonged periods. The jet stream is a high-speed air current in the atmosphere that has a very strong bearing on the weather.



The change could be as a result of the recent warming of the Arctic. Temperatures there have been rising two to three times faster than the rest of the globe. The jet stream is fuelled partly by the temperature differential between the Arctic and the mid-latitudes. If the differential is large then the jet stream speeds up and ploughs through any obstacles - such as areas of high pressure that might be in its way. If the temperature differential reduces because of a warming Arctic then the jet stream weakens and is forced to go around obstacles because it doesn't have the energy to force its way through them.

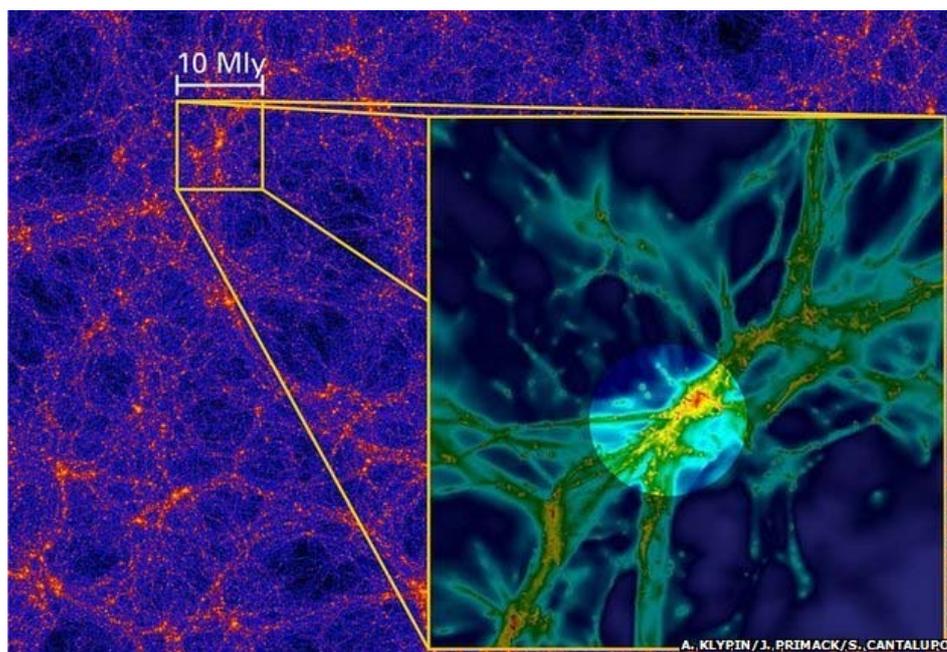
This results in weather patterns tending to becoming stuck over areas for weeks on end and has accounted for the recent stormy weather over the UK and the bitter winter weather in the US Mid-West remaining longer than it otherwise would have.

It also drives cold weather further south and warm weather further north. Examples of the latter are Alaska and parts of Scandinavia, which have had exceptionally warm conditions this winter.

The idea that changes in the polar north could influence the weather in middle latitudes is referred to as "Santa's Revenge". The strong warming that might drive this is tied in with the loss of sea-ice cover because the sea-ice cover acts as a lid that separates the ocean from a colder atmosphere. Removing that lid allows a lot of heat to escape into the air and warm up the polar atmosphere. The Arctic has been warming rapidly for the past 15 years and such conditions are expected to arise more frequently.

Cosmic Web Seen for the First Time

Cosmology theory predicts that galaxies are embedded in a cosmic web of stuff, most of which is dark matter.



The hidden tendrils of dark matter that underlie the visible Universe may have been traced out for the first time. Astronomers obtained the first direct images of a part of this network, by exploiting the fact that a luminous object (in this case a quasar) can act as a natural cosmic flashlight.

The quasar illuminated a nearby gas cloud measuring two million light-years across and

the glowing gas appears to trace out filaments of underlying dark matter. The quasar, which lies 10 billion light-years away, shines light in just the right direction to reveal the cold gas cloud. The new results from the 10-metre Keck telescope in Hawaii are the first direct observations of cold gas decorating such cosmic web filaments. Invisible in itself, dark matter still exerts gravitational forces on visible light and ordinary matter nearby.

Massive clumps of dark matter bend light that passes close by through a process called gravitational lensing, and this had allowed previous measurements of its distribution. But it is difficult to use this method to see very distant dark matter, and cold ordinary matter remains tricky to detect as well.

The glowing hydrogen illuminated by the distant quasar in these new observations traces out an underlying filament of dark matter that is attracted to it by gravity. The new results also include dark galaxies in addition to the much more diffuse and extended nebula. Dark galaxies are much denser and smaller parts of the cosmic web. While the observations support the cosmological simulations' general picture of a cosmic web of filamentary structures, results suggest around 10 times more gas in the nebula than predicted from typical computer simulations.

Compiled by Kyri Voskou

THE NIGHT SKY : THE PLANETS

March - April 2014

MERCURY : Was at greatest elongation west on 14th March. In conjunction with Neptune on 22nd March. The Moon is to the north on 29th March. The planet is currently not well-placed for viewing. Searching around 30 minutes before dawn is the best option, though the usual care should be taken to avoid the glare from the rising Sun.

VENUS : In the morning skies, rising around 06.00hrs. During this month Venus is lower in altitude, and has reduced slightly in magnitude, from -4.7 to -4.4, but that is still bright, so you would be hard pressed to miss it!! The planet reaches greatest elongation on March 22nd, and the angular diameter shrinks from 33 to 22 arc seconds while the illumination phase increases from 36% to 54%. However the usual reminder has to be given if you are viewing at dawn, be very aware of the rising Sun, and especially avoid using any optical device. In conjunction with the waning crescent Moon, (three days to New), on 26th.

MARS : Rises around mid-evening in Virgo, near to the bright star Spica and increasing in magnitude, as the month progresses, from about +0.2 to -0.5. With modest magnification and good seeing it is possible to see markings on its reddish surface, such as the Syrtis Major and the polar regions. The North Pole is currently tilted towards us. The two-day old Moon will be four degrees to the right (8 x Moon widths) on 18th March around 23.00hrs. The Moon itself will be over one degree (2 x Moon widths) to the left of Spica making an interesting photo opportunity. On the 21st April, Mars will be at its closest to the Earth, and very thin crescent Moon will be 3 degrees to the south.

JUPITER : Still dominated all night in Gemini, at around 60 degrees altitude. The magnitude is around -2.4 with a disk 47 arc seconds across. A small telescope will reveal the four Galilean satellites and The Great Red Spot which still seems to be somewhat larger than usual. Moon to the south on 6th April.

SATURN : Currently rising just before midnight, dropping back to 22:30hrs by the end of March and the beginning of April. In Libra, at magnitude, +0.4, increasing slightly to +0.3 as the month progresses. The disk has a diameter of 17.4, increasing to 18.4 arc seconds. Saturn was stationary on 3rd March, and then began a retrograde motion across the sky. The rings, with a diameter of 38 arc seconds, have opened to around 23 degrees presenting a magnificent view in a small telescope. Two close encounters with the waning Moon occur in March and April. The Moon is .2 degrees to the south on 21st March, and .4° south on 17th April. At this time, though only from points in the Southern Hemisphere, the Moon will occult the planet.

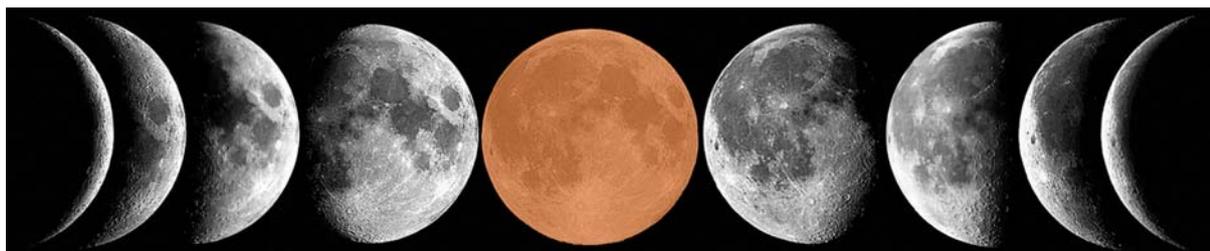
URANUS : In conjunction with the Sun on 2nd April.

NEPTUNE : Moon to the north on 22nd March.

COMETS

Still nothing so far forecast for any 'Great Comets' for 2014. However Comet Lovejoy and PANStarrs are in the morning skies, but both need good seeing and some optical enhancement to have any hope of spotting them.

THE MOON



There is a total eclipse of the Moon on the 15th March – partially visible in the UK at Moonset

New 1st March
New 30th

First 8th Feb
First 7th April

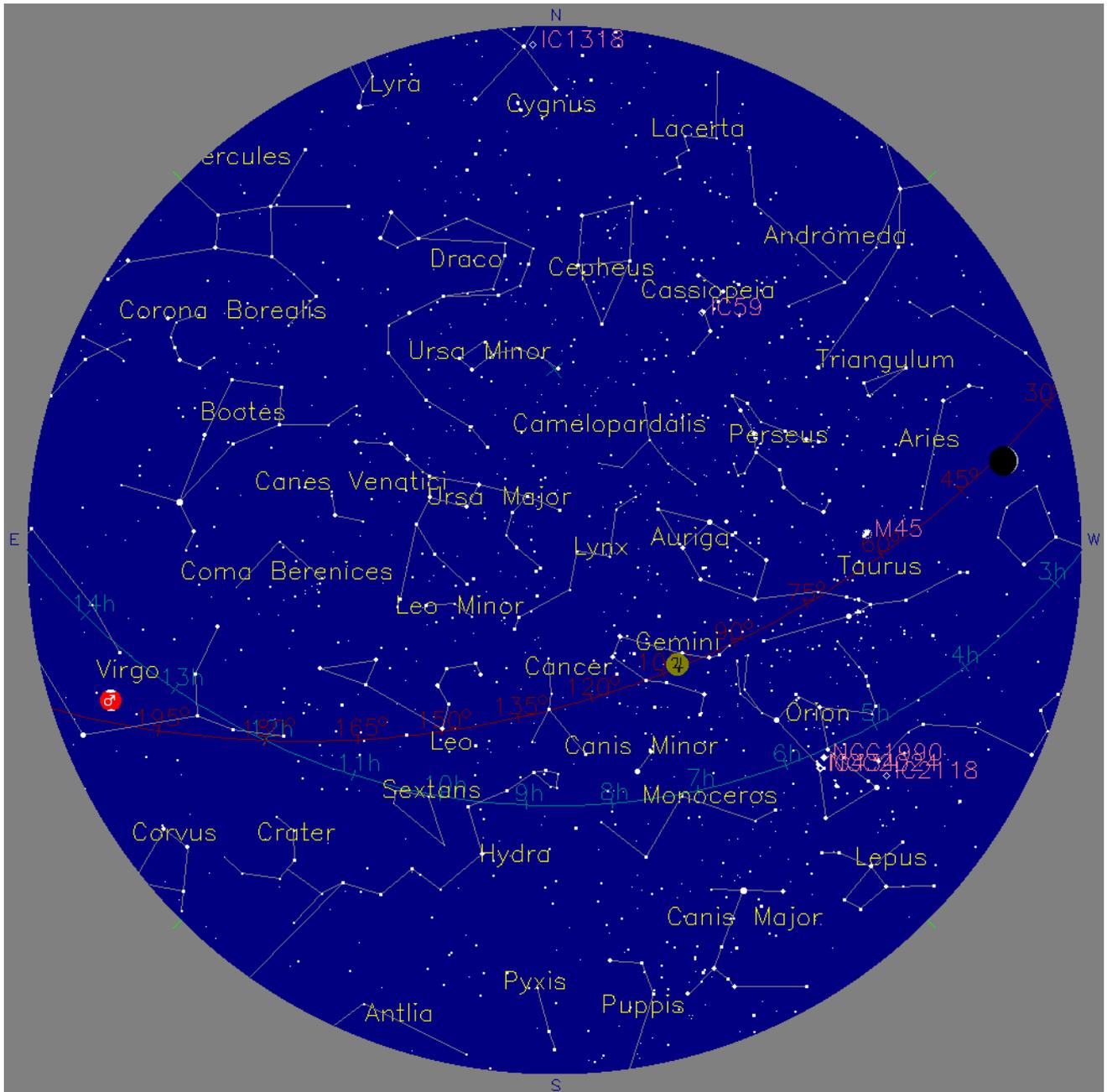
Full 16th
Full 15th

Last 24th
Last 22nd

New 30th
New 29th

THE NIGHT SKY : MAP

1st April 2014 : 21.00hrs BST / 20.00hrs GMT/ UTC



KEY	
 MERCURY	 SATURN
 VENUS	 URANUS
 MARS	 NEPTUNE
 JUPITER	 PLUTO



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