

# SPACEWATCH

the newsletter of the Abingdon Astronomical Society

**Next Talk**  
**13<sup>th</sup> June 2016**  
**X-Ray Binary Stars**  
**Prof Paul Roche**  
**University of South Wales**

## THE NIGHT SKY THIS MONTH

by **Bob Dryden**

**Mercury:** After the excitement of the transit, Mercury puts on a rather poor show this session. Appearing in the morning sky, it remains low down and rather faint right up to the end of May. In fact, by month's end, Mercury is rising just 30 minutes before the Sun and will be difficult to see as it is just +0.8 magnitude. Mercury reaches Greatest Western elongation on 5th June when it will be 24° from the Sun. Things improve slightly by 13th June when Mercury is rising about an hour before the Sun, and is 8° high at sunrise. It has also brightened to zero magnitude which will help a bit in locating the planet. On the morning of 3rd June the crescent Moon will be 2° west of Mercury which may help you find it, although they will be very low down, barely 5° high at sunrise.

**Venus:** Going through Superior Conjunction with the Sun on 6th June, Venus remains out of sight again this session.

**Mars:** While Mercury was the star of the show last session, this time it is Mars. On 22nd May Mars reaches opposition when it will shine at -2.1 magnitude low in the constellation of Scorpius. On 29th May the planet crosses into Libra. Although it is slightly fainter at the beginning and end of this session, it will still be -1.7 magnitude, making it one of the brightest objects in the night sky at the moment (only the Moon and Jupiter are brighter).

Mars is currently rising at 21.00 UT, culminating at 16° around 01.00 UT and is 5° above the south western horizon at sunrise. Once it reaches opposition it rises as the Sun sets, spends the whole night crossing to the western horizon, which it reaches at sunrise. By mid-June Mars is already 12° high in the south east at sunset and culminates around 22.00 UT. The apparent size of the Martian disc is greater than 17" throughout this session so you should be able to see surface detail in your telescope despite the low altitude. At opposition, the disc will be 18.6", the largest it will reach this apparition. On 21st May the Full Moon will be 4° north of Mars.

**Jupiter:** Still slowly drifting through the constellation of Leo, Jupiter shines at magnitude -2.2 and dominates the evening sky. Already culminating at a height of 46° at sunset, the planet sets at around 03.00 UT. By sunset in mid-June it is lower, at an altitude of 35° and is setting by midnight. While not hard to find, if you want a guide, the waxing gibbous Moon will be approximately 5° west of Jupiter on 14th May. The next night,

15th, the Moon will be 5° east of the planet. A month later, on 11th June, the first quarter Moon will be closer, 2°, north of Jupiter.

**Saturn:** Moving amongst the stars of the constellation of Ophiuchus Saturn reaches opposition on 3 June. Shining at +0.1 magnitude means the planet is easy to find despite being low down. Currently reaching culmination at approximately 02.00 UT when it is just 18° above the southern horizon. Of course, around the date of opposition Saturn will rise at sunset, be visible all night, and set at sunrise. The rings are still wide open at an angle of 26° so are easy to see in a telescope. On 22nd May the Full Moon will be 2° north of Saturn.

**Uranus & Neptune:** Uranus starts this session quite close to the Sun and difficult to see. However, by mid-June it is rising approximately 2 hours before the Sun, although by sunrise it is still only 12° above the horizon in the constellation of Pisces. Shining at +5.7 magnitude, binoculars will enable you to see the distant planet in the short window of darkness between Uranus rising and the morning twilight. Neptune is still in Aquarius and rises earlier than Uranus. It presently appears about 2 hours before the Sun and reaches an altitude of 15° by sunrise. Mid-June sees Neptune rising a good 4 hours before the Sun giving you much longer to look for it. By sunrise it is 25° high in the south west, shining at +7.8 magnitude.

**Asteroids:** There are three asteroids above 10th magnitude this session but they are all in the morning sky.

1 Ceres is in Cetus and is at magnitude +9.2/+9.3, so will be quite difficult to see due to the morning twilight.

7 Iris starts at +9.8 magnitude in the constellation of Ophiuchus. It brightens to +9.2 magnitude by 30th May, before fading back to +9.6 magnitude by mid-June. On 1st June it moves from Ophiuchus in to Scorpius, and is reasonably near to Antares.

8 Flora is a faint +10.1 magnitude in mid-May, but brightens to +9.4 magnitude by mid-June. This will be the brightest it gets this apparition. It starts in Sagittarius, and moves in to Ophiuchus on 20th May.

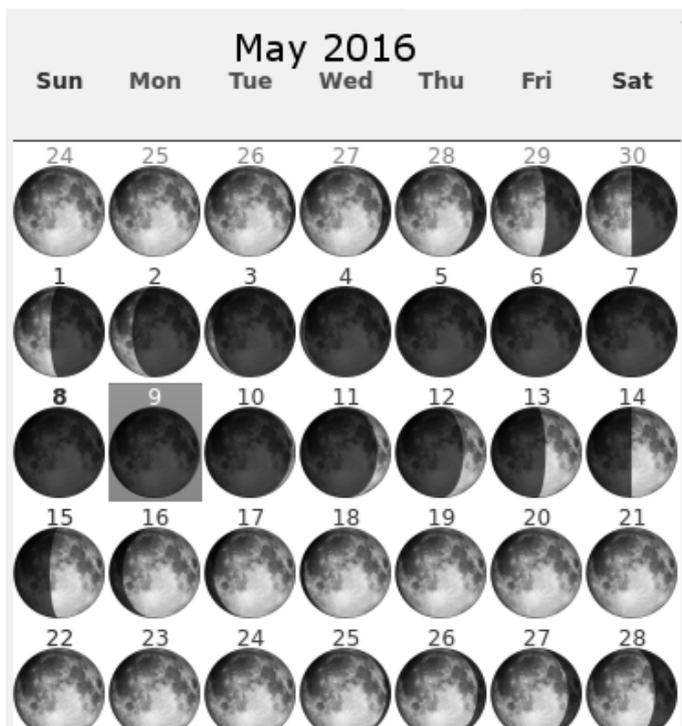
**Comets:** Occasionally a comet has an outburst and becomes much brighter than expected. In April there was one such occurrence involving comet 252P LINEAR.

It was predicted to be around 15th magnitude, but suddenly brightened to 6th magnitude.

So you might like to have a look for it to see how it is getting on. It is fading now, but it might have another outburst, but even so, it could well be around 7th or 8th magnitude during May and June making it a decent target for small telescopes. In Ophiuchus, moving into Hercules on 25th May, it is well placed for evening viewing.

Editors note. *The comet is very diffuse and hard to see. It is still quite large and responds well to A Swan Band filter. Use a wide field eyepiece. Should be interesting for the imagers.*

## MOON PHASES:



## LAST MONTH'S TALK

by Gwyneth Hueter

April's talk, 2016

Prof Clive Ruggles' name pops up everywhere when you look up Archaeoastronomy on the Web. He's is at the School of Archaeology and Ancient History at Leicester University. He was a keen and entertaining proponent of the fact that our prehistoric ancestors made pictures in the sky; he explained how he could see the emu shape in the Milky Way when he was in Australia under a very dark sky, as in Aboriginal skylore. But he was keen to shoot down some of the more overcooked theories of how buildings and structures were placed so that our ancestors could make complicated astronomical predictions.

He told us that Stonehenge was not built to predict eclipses but that people understood the seasons well enough to look for ways of recognising the solstices and the equinoxes, as these were important for survival.

Early observers used features in the horizon to time a solstice, for instance a notch where the Sun would shine through. There are a lot of them in Scotland. However there are others in south west Ireland, which were picked up by other researchers. They were thought to be stones pointing to notches on the horizon but then turned out to be misaligned, so we shouldn't get so excited.



He described places elsewhere in the world where sites such as the Mayan temples in Guatemala are aligned to the sunrise. Particularly interesting are the three in Peten, in a north-south line, with one larger temple to the west, facing the middle one. So, when you are looking east from the large temple the three eastern ones are positioned where the summer, equinoctial and winter sunrises are. Apparently there are other temples that are aligned to the sunrises but they've had bits added on top so that the alignment is not very accurate. Prof Ruggles seems to think they lost their importance.

Archaeo-astronomers use the program Stellarium ([www.stellarium.org](http://www.stellarium.org)) a lot, because it can give views of the night sky and solar system objects against the horizon or other landscape features.

In China is a feature called Sunbird Hill. If you stand at a particular spot, it has points on it where the Sun rises at the two solstices and equinoxes.

Michael Hoskin is a retired astronomer who has travelled the western Mediterranean to survey temples and tombs from the third to the first millennium BC. He found that they were oriented by an observer looking south east from a north stance.

Malta also has evidence that people marked the heliacal rising of stars and asterisms such as the Pleiades, as well as the number of days between certain objects rising and the next object rising. Most remarkable is the temple Mnajdra, which has lines of dots in the eastern pillar. The spaces between the dots fit in well with the number of days between various celestial objects and their heliacal rising.

The Polynesian sailors used the stars to navigate and were able to populate lands as far apart as the Hawaiian islands, Easter Island and New Zealand. There are about 50 temples in the Hawaiian islands and these have a north-east orientation, dating to the earliest centuries of our era. (So the observer is looking for the sunrise from a southerly stance, as the islands are south of the equator.)

However, the love of Prof Ruggles' life is a wonderful site that he has researched extensively, and it's in Chenkillo, Peru. There is the ruin of a building which is side on to a ridge which has 13 towers on it which to me looked a bit like the crenellations on a castle wall. The building had a corridor along the south west corner and this seemed to exist purely for viewing the sunrise as it came over the ridge. The towers were originally squared off but are now

rounded, but you can tell the time of year by looking at the sunrise and the gaps between the towers amount to ten days. That is incredibly accurate for something which is nearly 2000 years old. He is working to get this site recognised as a World Heritage site.

Prof Ruggles is a quick speaker who threw a lot of information at us. It was a real value for money talk. If you wonder what else you missed then you can Google things like Newgrange, Ireland: Goseck, Germany: Uxmal, a Mayan building which has lots of Venus glyphs, indicating that Venus was very important to them. Google Uaxactun for more on the Peten temples in Guatemala. The Incas in Cuzco also had hillside towers for solar observations.



quite active, with several messages most weeks. To read through previous messages click on: <http://groups.yahoo.com/group/abingdonas/> .

To join the abingdonas list, please go to <http://www.yahogroups.com> . You can also unsubscribe from the list here.

To post messages to the list, please send them to [abingdonas@yahogroups.com](mailto:abingdonas@yahogroups.com) . Please note that you will need to sign up with a YahooID if you do not already have one. You can do this on the above page.

Further information about the mailing list can be found on the abingdonas webpage at : <http://groups.yahoo.com/group/abingdonas/> .

### DATES FOR YOUR DIARY

**23rd May 8pm** Beginners' Meeting in the Main Hall., talks to include Asteroids, Brown Dwarfs and a topic TBD.

**Observing evening:** There will be no more observing meetings until the Autumn because it does not really get dark. Specials may be organised though so keep a look out on the AAS group mailing list.

### FURTHER DISCUSSION

Why not take a look at our website? It's at: [www.abingdonastro.org.uk](http://www.abingdonastro.org.uk) .

If you are not already on our internet mailing list, then why not log on to YahooGroups. The list is called 'abingdonas'. Members use the list to alert each other about celestial events and to chat about amateur astronomy. The list is

The following images illustrate some of the telescopes at last month's Kelling Star party and is in as a belated illustration for that piece.



The editor of "SpaceWatch" is Owen Brazell, who would very much appreciate your stories & contributions. In particular whilst many fine images are being posted on the discussion group it would be nice to have some in the SpaceWatch. Please send any news, observations, photos, etc. to:

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# STAR CHART

The night sky at 10 pm (BST) on Sunday 15<sup>th</sup> May 2016

