

# SPACEWATCH

the newsletter of the Abingdon Astronomical Society

**Next Talk**  
**11<sup>th</sup> January 2016**  
**“Exploring and Observing Asterisms ”**  
**Jon Gale**  
**Wiltshire AS**

## THE NIGHT SKY THIS MONTH

by **Bob Dryden**

**Sun & Earth:** We reach the winter solstice on 21st December at 04.48 UT, and then the days start to get longer again.

January 2nd at 22.49 UT sees the Earth reach the point in its orbit when it is closest to the Sun (called perihelion). We will then be 147,100,176 km from the Sun which is comforting to know as we freeze.

**Mercury:** Just about on view in the evening sky for a two week period centred on Greatest Elongation on 29th December. By then, Mercury will be 9° high in the south west (in Capricornus) at sunset and will set about an hour after the Sun. In the week preceding greatest elongation Mercury will be quite bright at -0.6 magnitude, fading to -0.5 magnitude by the 29th, and then rapidly fading over the following few days.

**Venus:** Whilst past greatest elongation and heading back towards the Sun, Venus is still very much on view in the morning sky. The solar elongation decreases from 41° to 36° during this session but, with a magnitude of -4.1, it is difficult to miss the dazzling planet. Presently rising about 4 hours before the Sun, it reaches a height of 25° by sunrise. By the time we reach mid-January, Venus rises about 3 hours before the Sun and is 15° high at sunrise.

Between 6th and 11th January Venus is within 2° of Saturn. On the morning of the 9th they are at their closest and both will be in the same field of view of your telescope. On the morning of 7th January the crescent Moon joins the planetary pairing to form a tight triangle.

**Mars:** Currently in Virgo, Mars continues to slowly increase in both brightness and apparent diameter. This session it reaches +1.1 magnitude (after starting at +1.4 magnitude) and the disc diameter reaches 6.0" by mid-January. Still a morning object, the red planet rises just after 02.00 UT in mid-December and reaches culmination in the south (at 35°) at approximately 07.30 UT, just a few minutes before sunrise. By mid-January Mars culminates at 07.00 UT which is 90 minutes before sunrise. On the morning of 27th December Mars is approximately 3° away from the first magnitude star Spica.

**Jupiter:** Jupiter is now gradually moving in to the evening sky. It currently rises around midnight and culminates at a height of 42° around 06.00 UT. By mid-January the planet appears

above the eastern horizon near 22.00 UT, culminates at 04.00 UT and is 25° above the south western horizon by sunrise. Shining brightly in the constellation of Leo, Jupiter brightens slightly during this session, going from -2.0 magnitude in December to -2.2 magnitude in January.

**Saturn:** Saturn starts this session quite close to the Sun after its conjunction last month. So to start with it rises just an hour before the Sun and will be hardly worth looking for due to its low altitude (just 8° high by sunrise). By mid-January, however, the ringed planet is rising 2 hours before the Sun and reaches a more decent height of 15° by sunrise. Shining at +0.5 magnitude, Saturn is not hard to find in the slightly less well known ecliptic constellation of Ophiuchus. The rings are wide open at 26° so only a small telescope is required to see them.

**Uranus & Neptune:** Both are now evening objects. Uranus is in Pisces shining at +5.7 magnitude and Neptune in Aquarius, a bit fainter at +7.8 magnitude. In mid-December Neptune is already culminating (at 25°) at sunset and sets about 22.00 UT. Uranus is 25° high in the south east at sunset, culminates at 20.00 UT (at a decent 45°) and sets at 02.00 UT.

By mid-January you will not have much time to look at Neptune as it is just 23° above the horizon at sunset and sets just 3 hours later. Being further east, Uranus is just approaching culmination at sunset, and sets around midnight.

**Meteors:** The Geminid meteor shower is still active until the 17th December but, unfortunately, the maximum has just passed so hourly rates will be decreasing now.

The next major shower is the Quadrantids, which you can see between the 1st and 6th January. The maximum occurs on the 4th, at 09.00 UT, so that morning just before dawn will be the very best time to look this year. The hourly rate should be 80, but a waning, large crescent Moon (24 days old) will be in Virgo which will drown out some of the fainter meteors.

**Occultations:** One excellent lunar occultation to report this time, and one you should not miss if it is clear.

On 23rd December, at 18.10 UT the first magnitude star, Aldebaran, disappears behind the Moon. At 19.12 UT it reappears from behind the trailing limb. Despite the Moon being just 2 days before Full, Aldebaran shines at +0.9 magnitude so all you will need to watch this event is a pair of binoculars. When Aldebaran disappears the Moon will be 28° high in the east, and this will have increased to 35° by the time the star reappears. First magnitude stars are not occulted very often so make the effort to see this if you can.

**Asteroids:** 4 Vesta continues to cross the constellation of Cetus. It also continues to fade, going from +7.6 magnitude in December to +8.1 magnitude in January.

Fainter still is 15 Eunomia which starts at +9.0 magnitude and reaches +9.5 magnitude by mid-January. Eunomia starts in Pegasus and enters Pisces on 20th December.

27 Euterpe is the only brightish asteroid to increase in magnitude this time. It is +8.9 magnitude to start with, and brightens to +8.5 magnitude by mid-January. It can be found in Gemini until 8th January when it moves into Taurus.

**Comets:** There is one comet worth a mention this session and that is comet 2013US<sub>10</sub> Catalina which will be visible in the morning sky. Hopefully it will be somewhere around 5th Magnitude (always difficult to predict accurately how bright comets will be) and so an easy binocular object. It will be in Virgo to start with, enter Bootes on 23rd December, and then Canes Venatici on 8th January. The comet will pass very close to the bright star Arcturus on 31st December/1st January if you need a guide to find it.

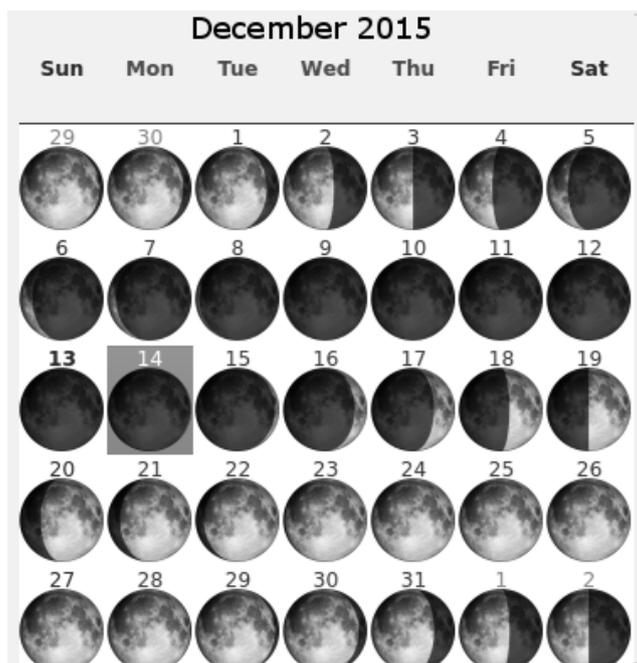
**Editor's note.**

*The comet is running about 1.5 magnitudes faint so about 6.5 magnitude. Still easily visible in 10x42 binoculars, and in a larger telescope shows both the dust and ion tail. I found that it responded well to a Swan band (Comet) filter. Although the comet is now receding from the Sun, it is coming closer to the earth so the best views may well be in January, if you can get up early enough to see it.*



Comet Catalina image by Trevor Pitt

**MOON PHASES:**



**LAST MONTH'S TALK**

by Gwyneth Hueter

November's talk

Andy Burns (Wiltshire AS) has done a lot of research on Sir John Frederick William Herschel, the subject of November's talk.

We tend to remember John Herschel (1792-1871) for being William's son, and that he did a lot of observing and dabbled in early photography, but he was a lot more than that.

He came from a long family of migrants, Moravian Protestants who migrated down the river Elbe to Würzburg then Hanover (north west if you look on a map). William (by now in the UK) married Mary Pitt in 1792, who had wealth from the brewery trade and was protective of her only child, John, after losing her only other child, a sickly son who died as a child. She had also been widowed.

John, who became the first Baronet of Slough, turned out to have loads of energy and put fingers into lots of pies. He studied in Cambridge; he published a maths paper at the age of 21 for which he was awarded the Royal Society's Copley Medal. He was elected a fellow then, too. (He was awarded another Copley Medal later in life.)

In November 1833 he went to Cape Town to make stellar observations and work on his father's star catalogues. He made recordings of 10,000 double stars. He used a 6" refractor to follow up the work his father did with his 18" reflector. He established the Julian calendar. Charles Darwin went to see him there.

While in Cape Town Herschel also made lots of drawings, and there are publications of exquisite plant sketches. The musician Graham Nash has many in his art collections. Google 'camera lucida', which is what Herschel used to make his sketches. It is a way of framing a 3d image so it can be copied onto a paper.

In 1839 he made his first photographs, having devised a technique of sensitising paper to light. This was independent of William Fox Talbot.

In 1849 he published 'Outlines of Astronomy', which was aimed at the educated layman. His style of writing is still comfortable today.

Along with all the work he did on publishing his catalogues and his academic career, he became Master of the Mint in 1850, but the workload involved was too much for him. He also missed his family and in 1853 he had some kind of breakdown. He didn't resign from the Mint until 1856.

When he was 36 he married Margaret Brodie Stewart who was 18 and they had 12 children. Among them was Sir William James who discovered the uniqueness of fingerprints and Constance Ann, an archivist who opened up so much of her father's life to us. Thank you to her for letting us appreciate what a great scientist and populariser of science he was.

There is also a link to his obituary in The Times if you open the link in the St Andrews University www entry. His list of accomplishments is mindboggling.

#### 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 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

**25th Jan** 8pm Beginners' Meeting in the Main Hall. Note there is no beginners' meeting in December

**Observing evening: Next Observing evening is the FCN Week Feb 1st – 3rd at Frilford Heath Golf Driving Range eye on the AAS group mailing list. Note there is no observing evening in January**

**European AstroFest will once again be held in Kensington Town Hall on the 5/6<sup>th</sup> of February**

**It is rumoured that Stargazing Live will be broadcast in January 2016 with the 12,13 and 14<sup>th</sup> being suggested as dates.**

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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