

# SPACEWATCH

the newsletter of the Abingdon Astronomical Society

**Next Talk**  
**10<sup>th</sup> April 2017**  
**High Energy Astrophysics**  
**Professor Martin Hardcastle**  
**University of Hertfordshire**

## EDITORIAL

Unfortunately last month's editorial on the February weather turned out to be rather accurate and I for one got no observing in in the month, despite a trip to Devon which gave about an hour of clear sky in a week. Let us hope that as Spring comes and the star party season starts the weather improves.

Many of the last month's pleas also remain the same. We are still looking for people to give after tea talks. This can be on historical, practical or what you have been observing. Assume you have 35 minutes to work with which means perhaps 30 slides. As always contact Chairman Clifford. We were asked to do a school visit but unfortunately as it was in the day time we did not have any resources available at short notice to do it. If you have an interest in this kind of outreach and can perhaps give some time during the day then again please let Clifford know, so if we have this happen again then we have some contacts to work from. I know Valerie Calderbank does some of this kind of work between cruise trips.

A further look ahead for an event the society will be participating in the Festival of Science and Technology (ATOM) in Abingdon this year. It takes place from March 22nd to March 26th inclusive in Abingdon. We will be having a stall on the Saturday and will be looking for volunteers for this; unfortunately I will be looking at clouds in Wales.



Image of NGC 7662 by Ian Smith – he finally moves on from planets ☺



Members at Oxford University bash.

## THE NIGHT SKY THIS MONTH

by Bob Dryden

**Sun & Earth:** At 10.30 UT on 20th March the Earth reaches the point in its solar orbit known as the Equinox - the Sun enters the northern hemisphere of the sky.

**Mercury:** Having just past Superior Conjunction, Mercury moves into the evening sky and starts what is a very favourable apparition. On 13th March the little planet is still close to the Sun, but shining brightly at  $-1.6$  magnitude. Whilst moving away from the Sun, Mercury does fade slightly but gains altitude making it very easy to see. By 18th March it is  $10^\circ$  high at sunset and takes about an hour to reach the horizon. Greatest Eastern Elongation occurs on 1st April by which time Mercury is at  $+0.0$  magnitude, at an elongation of  $19^\circ$ . It is then  $18^\circ$  high at sunset and is above the horizon for 2 hours. Following greatest elongation Mercury starts to move back towards the Sun, of course, and by this session's end on 10th April the elongation has decreased to  $13^\circ$ , while the magnitude has faded to  $+2.0$ .

On 18th March Mercury passes Venus but they are about  $10^\circ$  apart. Mercury passes Uranus at a distance of approximately  $2^\circ$  on 25th/26th March. The crescent Moon will be around  $10^\circ$  east of Mercury on the evening of 29th March.

**Venus:** This evening apparition of Venus comes to an end this session when Venus reaches Inferior Conjunction on 25th March. Before then, you will still find the planet in the evening sky although it will sink further and further into the twilight.

At sunset on 13th March, Venus is at an altitude of  $19^\circ$  and takes two hours to set, so you will have no trouble seeing it. Especially as it shines at a brilliant  $-4.2$  magnitude. The apparent size of the disc is huge at  $52''$  so even binoculars will reveal the crescent shape. You will probably have trouble finding Venus after about 20th March as it will be too close to the Sun following that.

Once past solar conjunction, Venus leaps in to the morning sky. Just two days after conjunction the planet has already reached an altitude of  $8^\circ$  by sunrise. By the end of this session on 10th April, Venus is  $11^\circ$  high by sunrise, rising about an hour before the Sun.

**Mars:** Currently in Aries shining at +1.4 to +1.5 magnitude, Mars is visible low in the south west. As this session begins, Mars is  $32^\circ$  high at sunset and sets about 3.5 hours after the Sun. By mid-April, it has dropped to a height of  $26^\circ$  at sunset and is visible for another 3 hours.

With an apparent disc diameter of just 4.4" to 4.1", along with the low altitude, you will not see much detail on the Martian surface.

On the evening of 30th March the crescent Moon will be approximately  $5^\circ$  east of Mars. Throughout the first week of April Mars will be around  $2^\circ$  from the dwarf planet Ceres.

**Jupiter:** Jupiter reaches opposition on 7th April, so it is quite nicely placed for most of this session. To start with, it does not reach a decent altitude until late in the evening as it rises at 20.30 UT. At 02.00 UT it reaches its highest point in the south (at  $31^\circ$ ) and by dawn it is around  $10^\circ$  high in the west. By this session's end, the planet rises as the Sun sets and is visible all night long.

Jupiter is approximately  $5^\circ$  or  $6^\circ$  from the first magnitude star Spica all session. On 15th March the waning gibbous Moon is  $3^\circ$  from Jupiter, while on 10th April the full Moon is  $1^\circ$  above the planet.

**Saturn:** Being in Sagittarius, Saturn is not going to get very far above the horizon in the UK, in fact, at culmination it reaches an altitude of just  $16^\circ$ , so telescopic views are not going to be very good.

Shining at +0.5 magnitude it is not going to be hard to see, however. Currently it rises around 03.00 UT and is culminating at the time of sunrise. By mid-April it rises two hours earlier and culminates near 05.00 UT, which is about half an hour before the Sun appears.

On the morning of 20th March the Last Quarter Moon is approximately  $4^\circ$  away from Saturn.

**Uranus & Neptune:** Uranus cannot be seen at the moment because it is too close to the Sun.

Equally, Neptune is very poorly placed in the morning sky. Even by mid-April it is just  $8^\circ$  high at sunrise after rising about an hour before the Sun. As it is a faint +7.8 magnitude, all this means that Neptune is a very difficult object to find.

**Asteroids:** There are just 3 brighter asteroids on view this session.

4 Vesta is fading, reaching +7.7 by mid-April as it crosses the constellation of Gemini (just below Pollux).

14 Irene is also fading, going from +9.3 to +9.9 magnitude. This one is in Leo, towards the top of the Sickle asterism.

29 Amphitrite is also in Leo, and is also fading, reaching +10.0 magnitude by mid-April.

**Comets:** There are four comets visible this session that should be above 10th magnitude. Perhaps the most interesting is 41P Tuttle-Giacobini-Kresak. It begins this session in Ursa Major, around magnitude +8.2, enters Draco on 29th March, and by 10th April it will be +6.7 magnitude.

What makes this a potentially very interesting comet is that it is prone to outbursts when it increases its brightness by several magnitudes. If it has an outburst this time around it could well become an easy naked eye comet. However, it does not always do this, but even if this does not happen, a 6th magnitude comet will be well worth looking for in binoculars, especially such a well placed one as this.

Comet C/2015 V2 Johnson is going to spend this session in the constellation of Hercules. It starts at +9.1 magnitude and reaches +8.1 magnitude by mid-April. It should be quite a bit brighter later in the spring.

Comet D/Harrington-Wilson is in Taurus at +8.8 magnitude. It moves in to Auriga on 15th March and Gemini on 2nd April, by which time it will have faded to +9.5 magnitude.

The final comet is fading fast. 45P Honda-Mrkos-Pajdusakova is in Leo. It shines at +9.0 magnitude to start with but reaches +10 magnitude by 25th March after which it fades rapidly.

## LAST MONTH'S TALK

by Gwyneth Hueter

February's talk

Dr Helen Walker is a familiar face from RAL, and runs the Satellite Operators' Group. She gave us an update on planetary exploration.

She also gave us an update on the Moon, and that it was time to be a bit more adventurous and explore more exciting areas, rather than the safe, flat maria that we chose for the Apollo missions. The south pole, with its huge Aitken basin (1800km in diameter) has areas accessible with peaks in permanent sunlight and also ice trapped in its craters. There are proposals of creating a base there, such as an igloo-type affair, created out of bricks printed by a 3-D printer and covered by gravel.

Mercury is unlikely to ever be visited by us. Temperatures are too variable. Its surface composition is not as homogenous as that of the Moon, although it looks Moonlike.

Venus may still have active volcanoes as there are hotspots visible in its sky (according to the Venus Xpress orbiter). The Japanese Akatsuki orbiter (which arrived in 2015) is making infra-red observations of its clouds and notes they are very active at night, with a huge wave moving very slowly across the face of Venus as it rotates slowly. She thinks it is caused as the air moves over mountains underneath.

Mars is her first love. The rover Curiosity has now been there for over four years and is in the middle of Gale crater, which was once a lake and has lots of sedimentary rock. There is a crater near the north pole which has a permanent ice rink. One of the Mariner pictures had one white pixel in it. We now know that was the ice lake (and not a duff pixel?!).

There are practice runs of a new Mars rover going on in Utah. Mars Utah Rover Field Investigations = MURFI.

Jupiter and its Galilean satellites have plenty going on for us. The Juno craft will be crashed into Jupiter once its mission was over. There are storms and hurricanes going on right to the pole. Does Callisto have rock and ice in an ocean under its surface? Europa's insides are kept liquid by tidal stresses caused by Jupiter. We are treading very carefully where exploration of Europa is concerned, so we do not cause any possible contamination.

Likewise Saturn's big moon Titan. Cassini is in its final year of Saturn exploration.

Uranus and Neptune. These two are so far away from us that they looked featureless from telescopes on Earth, but we now have had so many opportunities to see them that we have been able to see Uranus change through the seasons.

Pluto and Charon were passed by the wonderful New Horizons probe in 2015. Pluto's icy surface is rock hard.

Comet 67p, which was visited so successfully by Rosetta and little Philae, is seen to consist of two different cometary bodies which came together slowly.

In the final stages of her talk she dismissed the possibility of seeing a planet directly, such as when Hubble was believed to have seen a very slow moving planet orbiting Fomalhaut. She postulates an icy ring.

### BBC STAR GAZING LIVE DATES

It has been confirmed that the BBC Stargazing Live program this year will be 28, 29, 30<sup>th</sup> March 2017 and the presenters will be based in Australia. It does not appear to be based around any astronomical event. An interesting use of the license payers' money.

### BAA YOUTUBE CHANNEL

The BAA has asked us if there anything they can do to make themselves more relevant to modern amateur astronomy. As a taster they have put their skynotes that are presented at the BAA meetings up as a YouTube channel along with other videos they think may be of interest at <https://www.youtube.com/user/britishastronomical>

### 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

**20<sup>th</sup> March** 8pm Beginners' Meeting in the Main Hall, talks to include Introduction to Galaxies, Remote Astronomy and What's Up.

**Observing evening:** The next observing evening will be 27<sup>th</sup> -29<sup>th</sup> March 2017 at Frilford Heath Golf driving range. Contact Trevor Pitt or Steve Creasey for details.

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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