

# SPACEWATCH

the newsletter of the Abingdon Astronomical Society

**Next Talk**  
**8<sup>th</sup> June 2015**  
**“Cataclysmic Variables”**  
**Professor Christian Knigge**  
**University of Southampton**

## THE NIGHT SKY THIS MONTH

by Bob Dryden

**Mercury:** Although an evening object at the moment, Mercury is heading back towards the Sun and is quite hard to see already. Shining at just +1.0 magnitude the little planet is 15° high at sunset and takes another 2 hours to reach the horizon. So although time is on your side, it is rather faint and in bright twilight, making it difficult to find.

By 18th May it will be impossible to see Mercury as it is just +2.2 magnitude and sets an hour after the Sun. Inferior conjunction occurs on 30th May following which Mercury reappears in the morning sky. However, for the final week of this session it will be just 2° high by sunrise, appearing just 15 minutes before the Sun does, meaning you will not be able to see it yet.

**Venus:** A very obvious sight in the evening sky at the moment, Venus shines at a magnificent -4.2 magnitude as it heads towards greatest elongation on June 6th. The solar elongation increases from 43° to 45° (which is the maximum it will reach this apparition) while the apparent diameter increases from 17" to 24" as Venus physically moves towards the Earth. As Venus approaches greatest elongation the phase changes from a 0.6% gibbous to 0.5% half phase.

On the evening of 21st May the crescent Moon will be approximately 10° away from Venus presently a pleasant sight in the evening twilight sky.

**Mars:** Mars is too close to the Sun to be seen at the moment.

**Jupiter:** We are well into the second half of this Jovian apparition but the planet is still a good height at sunset during this session. In mid-May the -2.1 magnitude planet is 50° above the horizon at sunset in the constellation of Cancer. It does not set until 02.00 UT so you have plenty of time to have a look at the 35" diameter disc and its four bright moons. By mid-June Jupiter is still a good 32° high at sunset and sets around midnight. By then, it will have faded slightly to -1.9 magnitude but this is still bright enough for it to be the brightest object on view apart from Venus and the Moon.

**Saturn:** Saturn is now entering the evening sky as opposition approaches on 23rd May. After starting this session in Scorpius, Saturn moves in to Libra on 14th May but this does not really help regarding the altitude of the planet. After rising at approximately 20.30 UT in mid-May, Saturn culminates in

the south just after midnight UT at the rather low angle of 20°. However, it is still an easy naked eye object shining at 0.0 magnitude. The rings are wide open at an angle of 24.5° which will help you get a view of them despite the low altitude.

By mid-June Saturn is already 12° above the south eastern horizon as the Sun sets and reaches the south by 23.30 UT. By 03.00 UT Saturn will be setting in the south west. On the 1st June the Full Moon will be approximately 1° from Saturn.

**Uranus & Neptune:** Both of these planets are on view in the morning sky but one is better placed than the other. The harder one to see is Uranus although it is the brighter of the two at +5.7 magnitude. This is because it is much nearer the Sun at the moment than Neptune is.

Uranus is currently in Pisces and in mid-May rises barely an hour before the Sun. By mid-June things have improved somewhat and it then rises about 3 hours before the Sun and is 20° high by sunrise.

Neptune, on the other hand, is further west, in Aquarius. It is already rising 2 hours before the Sun. By mid-June it rises over 2.5 hours before the Sun and is 22° high by sunrise. However, although it rises much earlier than Uranus to start with, it is much lower down and quite a bit fainter at +7.8 magnitude. Overall, this session, both these planets are quite difficult to see.

**Asteroids:** The only two reasonably bright asteroids on view this session are the same two that were observable last session. 1 Ceres continues to get brighter, going from +8.7 magnitude to +8.2 magnitude (it will be at its brightest in July) as it moves amongst the stars of Capricornus in the morning sky.

2 Pallas is in Hercules, which means it is more conveniently placed for observation as it is on view as it gets dark. However, it is fainter than Ceres, being at +9.4 magnitude all this session so you will need large binoculars or a small telescope to see it.

**Comets:** There are three comets above 10th magnitude around this session but they are going to take a bit of effort to see. Comet 19P Borrelly is around magnitude +9.7 in the constellation of Taurus, in the evening sky. However, being rather faint, and very low to the horizon, it will be very difficult to see.

The other two comets are on view in the morning sky. C/2015 F2 Polonia starts at +9.3 magnitude but fades to +9.9 by mid-June. It starts in Capricornus, moves in to Aquarius on 12th May, and in to Pegasus on 22nd May. The final comet is in Aries and probably will not be visible until the last week of May. C/2014 Q1 PanStarrs starts at +9.8 magnitude and brightens to +8.1 magnitude by mid-June. Note that Comet Lovejoy is still around and doing well and is now circumpolar

## LAST MONTH'S TALK

by Gwyneth Hueter

April's talk: 'The Consequences of Contact'

Martin Griffiths is a Senior Lecturer with the University of South Wales. His talk was an enlightening examination of the policy for contacting aliens.

There is a Rio (de Janeiro) scale of significance for rating any kind of possible alien report, ranging from 0 = no significance (e.g. it's an abduction) to 10 = extraordinarily significant (e.g. it's a NASA observation that contains an actual location). He added (rather tongue in cheek?) that if it's 11 then they're already here.

Dr Griffiths then discussed what kind of evidence we could find, such as a radio signal, alien artefact, probe in the vicinity, or direct contact from the aliens themselves.

Because of the astronomical distances involved and the cost of sending any items through space, the remote contact would be more likely.

He then embarked on how we would try to understand the message. He harked back to our using mathematical symbols to communicate, but he said that is very limited, and really we should not worry if we cannot understand it; just getting it is the main thing! Does it really matter if we can't interpret it?

Before you get too alarmed that the aliens may already be on their way to plunder our little blue heaven, Dr Griffiths reassured us that the aliens probably wouldn't have the resources to reach us anyway. Not even NASA funds our search for ET now. And there are plenty of resources scattered around other solar systems already, so why should they want to use ours?

Dr Griffiths gave the impression that he was happy to keep things the way they are. Yes, it would be good to know that we are not alone, but astronomical distances are so vast that communication would be extremely limited and if we did actually come to meet aliens face to face we might stagnate if they took us over with their politics and beliefs. Interestingly, he said that they could easily be religious, as it is natural to create a religion to explain the unexplainable, and that most religions grow out from a minority that has been persecuted.

As you see, his talk was full of philosophical hypotheticals. Would we look after our planet better if we knew they were out there? My thought was yes, but he immediately pointed out that we already know how to improve things but we don't. So, probably not!

Sadly, Dr Griffiths does not expect anyone to contact us. But, if by any chance you do come across any aliens, his advice is to contact the UN General Secretary. (Ban Ki Moon, if I recall!)

## IAS SHOW

Anybody missing the IAS show that used to be held in June should not that it has now moved to October.

## CLOSURE OF ASTRONOMICAL OUTLETS

Sad to note the two astronomical retailers have closed their doors in the last month. Both Astronomia and IO Astronomy have closed down for different reasons but probably due to overstretching themselves.

## NGC 949



Image: ESA/Hubble

This image provides the clearest ever view of galaxy NGC 949, which lies over 30 million light-years away in the constellation of Triangulum. The galaxy has an unusual shape, made more obscure due to its inclination. From our point of view, it is difficult to discern exactly what type of galaxy NGC 949 is, but it is certainly a disk galaxy of some kind, most likely a spiral.

NGC 949 was first discovered by Sir William Herschel on September 21, 1786, using an 18.7-inch reflecting telescope. The galaxy was one of about 3,000 objects Herschel catalogued as "nebulae" during an intense and systematic deep sky survey, the results of which eventually formed the bulk of the New General Catalogue (NGC).

Taken with Hubble's Advanced Camera for Surveys (ACS), this image shows extraordinary detail. This detail allows us to see a strange asymmetric alignment in the dark lanes of dust that snake across the galaxy. The top-right half of the galaxy appears considerably more marbled with dust in this image; a curious observation explained by stars tending to favour locations towards the centre of a galaxy, and dust preferring almost invariably to reside along the galactic plane.

When a galaxy is inclined as NGC 949 is, some regions — in this case the top-right — are tipped toward us and the light from the stars we see in these regions has had to travel through more dust. This causes the light to appear redder — the result of the same process that gives the sun’s light a red hue at dusk — or else disappear entirely, making the dust appear more prominent on that side of the galaxy.

In the part tipped away from us, the light from the stars has had to pass through much less dust to reach us, so it appears brighter, and the dust is much less prominent. Were it possible to view NGC 949 from the opposite side, the apparent alignment of the dust would be reversed.

The scientific advantages of this effect were recently displayed in suitably stunning style in the M31 PHAT mosaic, which allowed astronomers to produce a partial three-dimensional dust map of M31 four times clearer than any previously attempted.

### 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.yahoo.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

**18<sup>th</sup> May** 8pm Beginners’ Meeting in the Perry Room, or possibly the main hall depending on numbers

**Observing evening:** As noted in the last Spacewatch official observing evenings are over for this session but you can always try and arrange one through the society newsgroup if you are interested. Formal ones will start again in September.

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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E-mail: [owen@online.rednet.co.uk](mailto:owen@online.rednet.co.uk)

### MOON PHASES:

| May 2015  |  |  |  |   |  |  |
|---|--|--|--|---|--|--|
| Sun   | Mon  | Tues   | Wed  | Thur  | Fri  | Sat  |
| 26 <br>Sun: 05:53 20:40                      | 27 <br>Sun: 05:50 20:42 | 28 <br>Sun: 05:48 20:44 | 29 <br>Sun: 05:46 20:46 | 30 <br>Sun: 05:44 20:48                  | 1 <br>Sun: 05:42 20:49  | 2 <br>Sun: 05:40 20:51                  |
| 3 <br>Sun: 05:38 20:53                       | 4 <br>Sun: 05:36 20:55  | 5 <br>Sun: 05:34 20:57  | 6 <br>Sun: 05:32 20:59  | 7 <br>Sun: 05:30 21:01<br>Moon: — 08:02  | 8 <br>Sun: 05:28 21:02  | 9 <br>Sun: 05:26 21:04                  |
| 10 <br>Sun: 05:24 21:06<br>Moon: 01:46 11:13 | 11 <br>Sun: 05:22 21:08 | 12 <br>Sun: 05:21 21:10 | 13 <br>Sun: 05:19 21:11 | 14 <br>Sun: 05:17 21:13                  | 15 <br>Sun: 05:15 21:15 | 16 <br>Sun: 05:14 21:16                 |
| 17 <br>Sun: 05:12 21:18<br>Moon: 05:11 20:23 | 18 <br>Sun: 05:10 21:20 | 19 <br>Sun: 05:09 21:21 | 20 <br>Sun: 05:07 21:23 | 21 <br>Sun: 05:06 21:25<br>Moon: 08:17 — | 22 <br>Sun: 05:04 21:26 | 23 <br>Sun: 05:03 21:28                 |
| 24 <br>Sun: 05:01 21:29<br>Moon: 11:27 01:24 | 25 <br>Sun: 05:00 21:31 | 26 <br>Sun: 04:59 21:32 | 27 <br>Sun: 04:58 21:34 | 28 <br>Sun: 04:56 21:35                  | 29 <br>Sun: 04:55 21:36 | 30 <br>Sun: 04:54 21:38                 |
| 31 <br>Sun: 04:53 21:39                      | 1 <br>Sun: 04:52 21:40  | 2 <br>Sun: 04:51 21:42  | 3 <br>Sun: 04:50 21:43  | 4 <br>Sun: 04:49 21:44                   | 5 <br>Sun: 04:49 21:45  | 6 <br>Sun: 04:48 21:46<br>Moon: — 09:02 |

