

# SPACEWATCH

the newsletter of the Abingdon Astronomical Society

14<sup>th</sup> September 2009

## Grant Privett (Shropshire AS), 'Imaging Impossibly Faint Objects'

Welcome back to a new season of Abingdon Astronomical Society meetings. We have a packed programme of events this year, with speaker meetings, more informal beginners' meetings, and observing evenings, which this year include two lunar observing evenings. Normally we try to avoid the Moon, but since this is the object most people look at through a telescope when looking for the first time, we thought we would have two sessions concentrating on our nearest astronomical neighbour.

### THE NIGHT SKY THIS MONTH

by Bob Dryden

**Sun:** The Sun crosses the celestial equator on 22<sup>nd</sup> September at 21.19 UT, which signals the autumn equinox and after this the nights become longer than the days.

**Mercury:** Following a very poor showing in the evening sky, Mercury reaches inferior conjunction on 20<sup>th</sup> September. This is the date the planet passes between the Earth and the Sun, after which it moves into the morning sky. This will be the best morning apparition of the year, as Mercury crosses Leo and Virgo. Greatest elongation from the Sun will be 18° which is reached on 6<sup>th</sup> October. Mercury will be approximately 15° high at sunrise around this date. On the morning of 8<sup>th</sup> October, Mercury will be just 19 arc minutes from Saturn. At +1.1 magnitude, Saturn will be the fainter of the two, as Mercury shines at -0.6 mag that morning. To add to the view, Venus will be just above the pair, giving you an easy guide to Mercury and Saturn.

**Venus:** Slowly approaching the Sun, Venus continues to shine brightly in the morning sky. It has faded slightly, now -3.8 mag, but this still makes it the brightest thing in the morning sky so it is very easy to find. The planet crosses from Leo into Virgo during October. The phase of Venus is increasing, reaching 0.9% by mid October which means the disc will be very gibbous indeed. You will need to look towards the east in September to see Venus rising about 03.00 UT. By October, look more to the south-east, but by then the planet does not appear until about 04.30 UT.

The Moon will be just north of Venus on the morning of 16<sup>th</sup> September, and just south of it on the 17<sup>th</sup>. Also, on the 20<sup>th</sup> September, Venus has a close encounter with Regulus, the first magnitude star in Leo. Towards mid October, Venus closes in on Saturn. They are at their closest on the 13<sup>th</sup> October and you will also find Mercury just below the pair that morning.

**Mars:** Mars has been out of the limelight as it has stayed close to the Sun, and the horizon before sunrise, for many months now. However, it is now on the move at last, and is appearing earlier above the horizon each week. This session it spends its time crossing Gemini. It increases in brightness slightly, from +0.9 to +0.6 mag, which means while it is not the brightest thing around, it is still easily visible with the naked eye. Telescopically it is not very impressive yet as it is just 6.5 arc seconds across at the moment. However, because of the angle between the Earth, Sun, and Mars, the disc is distinctly gibbous as only 89% is sunlit from the Earth's perspective.

**Jupiter:** This is the second brightest planet on view at -2.6 mag, and conveniently, it is visible in the evening sky in Capricornus. It is a bit low for any good views of the disc, but even so, you should still be able to see some detail through Earth's bubbling atmosphere. Make the most of your time with Jupiter because it is approaching the twilight and will soon be lost behind the Sun.

**Saturn:** Saturn is in conjunction with the Sun on 17<sup>th</sup> September so will be out of view until very late in the month. In early October you should be able to find Saturn very low in the morning twilight. The rings will be all but invisible though as Earth crosses the ring plane in September and we will be looking at them from edge on.

**Uranus + Neptune:** Both these planets are quite well placed for observation throughout autumn. Uranus is now in Pisces, and reaches opposition on 17<sup>th</sup> September. At +5.7 mag, binoculars will show you the planet easily enough, especially as it culminates (i.e. reaches its highest in the sky) at about 35° in the south just after midnight. Neptune is still in Capricornus, at magnitude +7.8. It culminates at just 20°, and being lower and fainter than Uranus, means it is harder to see in binoculars, but perfectly possible if you have a good finder chart.

**Comets:** The two summer comets, Kopff and Howell, are still around. 22P/Kopff is fading now, going from 10<sup>th</sup> to 11<sup>th</sup> magnitude by mid October as it crosses Aquarius. It is not too far from Jupiter which gives you some idea of where it is.

*Comet 88P/Howell* brightens slightly during this session, going from +9.3 to +9.1 mag. However, this comet is very low, crossing Libra and Scorpius, which means from the UK it will probably be a difficult observation. As a guide, Howell will be close to Antares by early October.

Perhaps a more interesting comet to look for is *C/2006 W3 Christensen*. This one is in Aquila, which makes it an evening object, reasonably high in the sky. In fact, in September it is just south of Altair which makes it easier to find the right area, after which it heads southward.

What makes this comet more interesting is how bright it is. Predicted to be around 12<sup>th</sup> magnitude, Christensen has surprised everyone by reaching 8<sup>th</sup> magnitude as I write. This puts it within range of a small telescope, and even binoculars if you have a dark enough sky. Keep an eye on this one over the next few weeks, as nobody actually knows what it is going to do.

**Asteroids:** There is one asteroid, 3 Juno, on view this session. In mid September it is at its brightest, on view around the Pisces/Aquarius border. Opposition is reached on 21<sup>st</sup> September so after midnight is the best time to hunt for this asteroid. Shining at +7.7 mag, you will just need binoculars to see it. Juno fades to +8.0 mag by mid October but this is still within binocular range.

### MOON PHASES:

New: 18<sup>th</sup> Sept.; First Qtr: 26<sup>th</sup> Sept.; Full: 4<sup>th</sup> Oct.; Last Qtr: 11<sup>th</sup> Oct.; New: 18<sup>th</sup> Oct.

### LAST MONTH'S TALK

by Gwyneth Hueter

Having half expected our planned speaker, Chris Lintott to give us a miss yet again, we were lucky to have Owen Brazell to step into the breach (not for the first time).

The Abell planetary nebula project was started by the BAA deep sky section about fifteen years ago (when Owen was on the committee). They decided that the objects would be a challenge for amateur observers of that time. The Abell planetaries are objects found by George Abell when he studied the Mount Palomar sky survey plates from the 1950s. He came up with 85 objects which he believed were planetary nebulae. Unfortunately Abell used his own numbering system, rather than using the accepted NGC and IC designations – and in a later paper he renumbered everything. (Disasters waiting to happen?)

- Owen then amused us with the various attempts to verify and observe these 85 objects:
- Abell 17 is a plate fault (yet it's apparently been observed!). 11 is another and 32 is possibly a galaxy or another plate fault.
- 76 is a galaxy and 85 is a supernova remnant.
- Of the best ones try Abell 21, the Medusa nebula in Gemini, and Abell 50, NGC 6742 in Draco.

To make observing easier, the Lumicon UHC (0 III) filters are best.

To help with finding the planetaries, astroplanner 1.6.1 is a shareware being discussed on our yahoogroups at the moment.

After our teabreak Owen also talked about his most recent trip to the Kelling Heath Star Party at the end of April. It seems to

be the most popular one now, with up to 300 amateur astronomers and 20" Dobsonians becoming more normal. He saw an 8" refractor and a 7" was for sale!

The 2010 star party is already booked up, but if you are tempted to go to another one there are others at Kielder Forest (October and March) and at the Isle of Wight in March.

Paul McGale also gave us an update of what he has imaged, mainly deep sky objects. Can you believe he has only been at it for 7-8 years and he had a 5" Takahashi and swapped it. (Did he swap it for a new car?). He now uses a 12" Meade and a 3" refractor. We were treated to a wonderful tour of his deep sky objects, including open clusters, planetaries and supernova remnants.

The logo for NASA Space Place, featuring the words "NASA Space Place" in a blue, sans-serif font, all contained within a stylized blue oval shape.

### A PLANET NAMED “EASTERBUNNY”

You know Uranus, Neptune, and Pluto. But how about their smaller cousins Eris, Ceres, Orcus, and Makemake? How about Easterbunny?

These are all names given to relatively large “planet-like” objects recently found in the outer reaches of our solar system. Some were just temporary nicknames, others are now official and permanent. Each has a unique story.

“The names we chose are important,” says Caltech astronomer Mike Brown, who had a hand in many of the discoveries. “These objects are a part of our solar system; they’re in our neighborhood. We ‘gravitate’ to them more if they have real names, instead of technical names like 2003 UB313.”

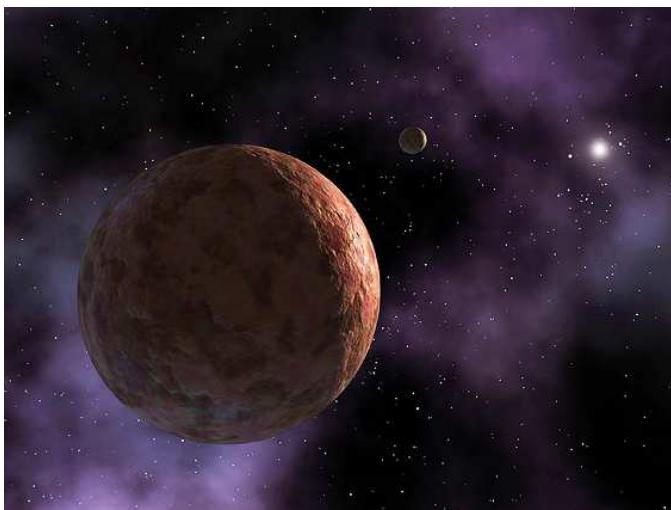
Nearby planets such as Venus and Mars have been known since antiquity and were named by the ancient Romans after their gods. In modern times, though, who gets to name newly discovered dwarf planets and other important solar-system bodies?

In short, whoever finds it names it. For example, a few days after Easter 2005, Brown and his colleagues discovered a bright dwarf planet orbiting in the Kuiper belt. The team’s informal nickname for this new object quickly became Easterbunny.

However, ever since its formation in 1919, the International Astronomical Union (IAU) ultimately decides whether to accept or reject the name suggested by an object’s discoverers. “Easterbunny” probably wouldn’t be approved.

According to IAU guidelines, comets are named after whoever discovered them—such as comet Hale-Bopp, named after its discoverers Alan Hale and Thomas Bopp. Asteroids can be named almost anything. IAU rules state

that objects in the Kuiper belt should be given mythological names related to creation.



*Artist's rendering of dwarf planet Makemake, discovered around Easter 2005. Unlikely to gain acceptance their nickname 'Easterbunny', the discoverers named it for the god of humanity in the mythology of Easter Island.*

So Brown's team started brainstorming. They considered several Easter-esque names: Eostre, the pagan mythological figure that may be Easter's namesake; Manabozho, the Algonquin rabbit trickster god.

In the end, they settled on Makemake (pronounced MAH-kay MAH-kay), the creator of humanity in the mythology of Easter Island, so named because Europeans first arrived there on Easter 1722.

Other names have other rationales. The dwarf planet discovered in 2005 that triggered a fierce debate over Pluto's status was named Eris, for the Greek goddess of strife and discord. Another dwarf planet with an orbit that mirrors Pluto's was dubbed Orcus, a god in Etruscan mythology that, like Pluto, ruled the underworld.

Brown says he takes "this naming business" very seriously and probably spends too much time on it. "But I enjoy it." More tales of discovery and naming may be found in Brown's blog [MikeBrownsPlanets.com](http://MikeBrownsPlanets.com).

Constellations have also been named after ancient gods, human figures, and animals. Kids can start to learn their constellations by making a Star Finder for this month at [spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml](http://spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml). There you will also find a handy explanation of why astrology has no place in science.

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

## FURTHER DISCUSSION

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 abastro list, please go to <http://www.yahoogroups.com> . You can also unsubscribe from the list here. To post messages to the list, please send them to [abingdonas@yahoogroups.com](mailto:abingdonas@yahoogroups.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/> .

Further discussion on astronomy and many other topics takes place at the Spread Eagle pub in Northcourt Road after the meeting. You are most welcome to join us.

## DATES FOR YOUR DIARY

**21<sup>st</sup> - 23<sup>rd</sup> Sept.** (FCN\*) 8pm. Observing evening at Britwell Salome. Ring Ian on 07817 687627 for confirmation. [FCN = First clear night].

**28<sup>th</sup> Sept.** 8pm. Beginners' Meeting in the Perry Room.

**12<sup>th</sup> Oct.** 8pm Talk by Dr Jane Gregory (UCL), 'Fred Hoyle'.

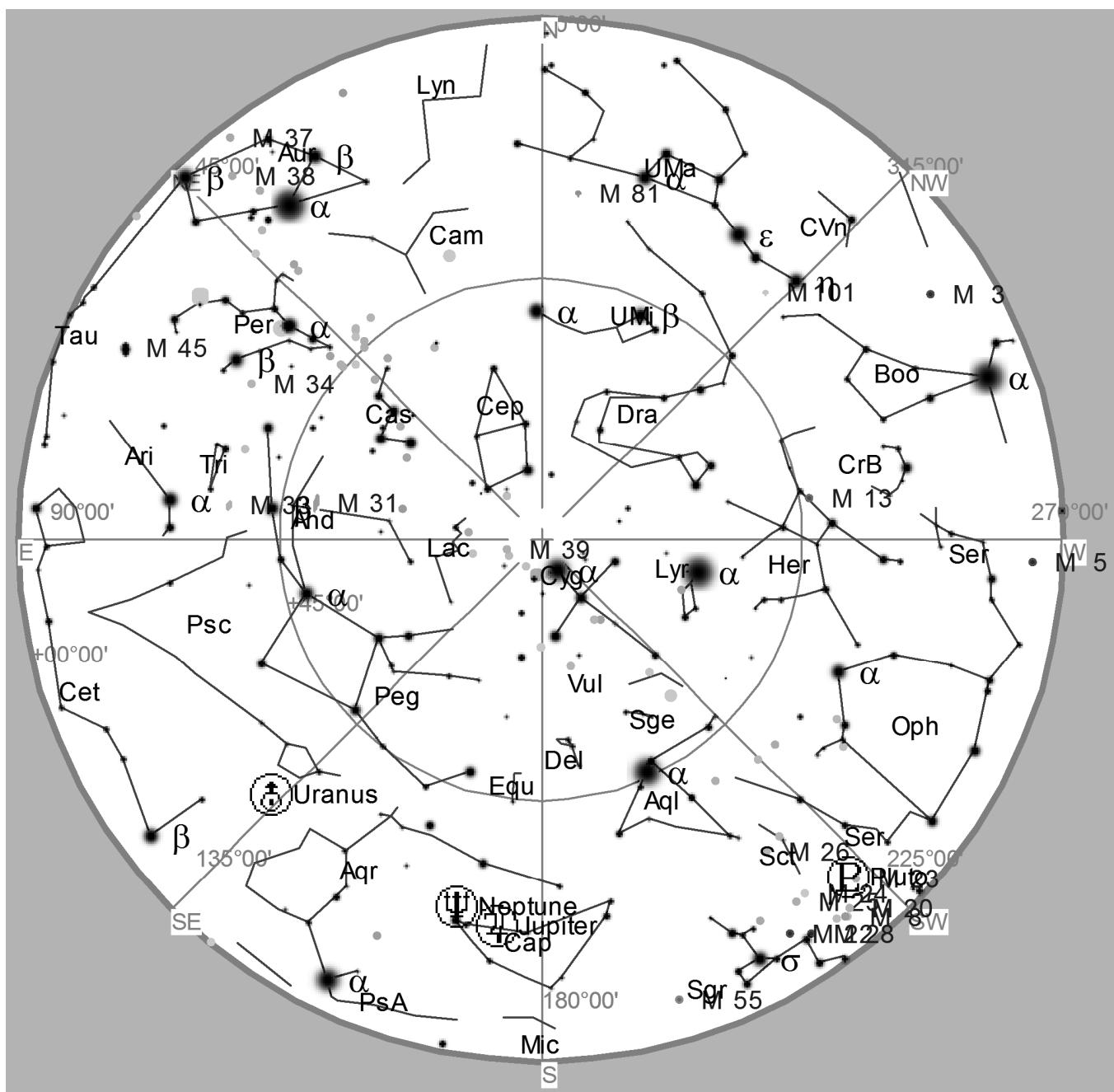
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## STAR CHART



**The Night Sky at 22:00pm (BST) next Saturday (19<sup>th</sup> September)**

Jupiter dominates the southern aspect, though it is rather low down, even when at its highest. Neptune is nearby if you have a small telescope, and Uranus is over to the left too. The “Summer Triangle” of Deneb, Altair and Vega is still fairly high up, with Deneb being virtually overhead. Look for the Ring Nebula in Lyra, between  $\beta$  and  $\gamma$ , the two stars at the opposite end of Vega. A small telescope will show this planetary nebula as a fuzzy blob. Over to the south-east you will see the Square of Pegasus. Follow the top side along to the left two stars, then up one star and just beyond you will see M31, the Great Spiral in Andromeda, the nearest galaxy to our own Milky Way, lying about 2.2 million light-years from us. This is the furthest object you can see with the naked eye.