

SPACEWATCH

the newsletter of the Abingdon Astronomical Society

Next Talk
14th October 2019
The GAIA Instrument
TBA
Centre for Electronic Imaging
(Open University)

EDITORIAL

Welcome to the new season of AAS. As usual Ian has lined up an excellent program of speakers for the session and hopefully you will all find something you like. The weather over the summer has been variable to say the best but hopefully you all got out to see the lunar eclipse in July, even though it was only partial and the early phases were hindered by low cloud. I wonder how many people realised the red colour was not due to the eclipse but atmospheric extinction. It is good to see Clifford is back imaging again. And his image of M51 on the FB page is excellent. I am not sure if he has moved to Estonia or is there on a long break but hopefully will get to see him again at some point. I must get my own apologies in early as I will not be able to make the September beginners meeting and possibly not the October main meeting as the BAA have asked me to give a couple of talks in Glasgow that weekend, which may also impact the October Spacewatch. The next major observing event will be the Mercury transit in November, another that I am sure will be clouded out but we hope to organise something for that and details nearer the time



NGC 6058 – Ian Smith

THE NIGHT SKY FOR SEPTEMBER 2019

By Steve Creasey & Cristina Garcia Pozuelo Sanchez

Well that's enough of all this warmth, holidays and fun, lets get back to Astronomy!
Of course, astronomy is a bit more awkward through the summer, with so many weeks of no real darkness, deep sky observing and imaging are pretty much written off for this time. However, going on holiday quite often gives you an opportunity to see new things, or the same things from a new location. On a recent camping trip to Cornwall with my son, staying on a remote campsite by Lands End, I was treated to a beautiful dark sky, with the Milky Way very clear to see, and an added bonus of quite a few late Perseid meteors!
I hope you all had a good summer break and look forward to seeing you at the observing sessions this season.

Sun – solar observers have had a bad time of late with the Sun still in a deep minimum and very few sunspots around. Something like 174 days (69%) of the year have been spotless and we have not really had much in the way of prominences either. There have been a couple of sunspots from the new cycle 25 but that is now not really thought to start picking up until mid-next year.

The Planets

Mercury

Mercury passes behind the Sun (Superior Conjunction) on the night of September 3rd/4th so will not be visible this month.

Venus

Venus went through superior conjunction on the far side of the Sun on the 14th August. By month's end it will set in the west south-west 30 minutes after sunset but will be very difficult to see due to the fact that the ecliptic is at a shallow angle to the horizon

and so Venus will have a very low elevation. Binoculars and a very low horizon will be needed, but please do not use them until after the Sun has set.

Mars

Mars which passes behind the Sun (superior conjunction) on September 2nd, lies too close to the Sun to be visible. We will have to wait until the end of October to spot it in the pre-dawn sky at the start of its next apparition.

Jupiter

This month Jupiter shines from -2.2 to -2. It can be seen in the south as darkness falls. Jupiter, in the southern part of Ophiuchus, ended its retrograde motion on the 11th of August and so is now moving away from Antares in Scorpius initially lying some 7 degrees up and to its left.

Look for the Great Red Spot on Jupiter. It lies on the central meridian of the planet.

BST times:

1st 20:17	15th 21:53
3rd 21:55	20th 21:03
8th 21:05	22nd 22:42
10th 22:44	27th 21:52
13th 20:14	29th 23:31

Saturn

As it crosses the meridian, Saturn is highest in the sky, at around 9pm BST. Its rings are still nicely tilted from the line of sight. By month's end it will be best seen at around 8 pm BST when lying just west of south. During the month its brightness falls from magnitude +0.3 to +0.5

As it is now in Sagittarius and therefore lying on the south-western side of the milky way, it is at the lowest point of the ecliptic and will only reach an elevation of ~14 degrees

Steady binoculars should enable you to see Saturn's brightest moon, Titan, at magnitude 8.2. A small telescope will show the rings with magnifications of x25 or more and one of 6-8 inches aperture with a magnification of ~x200 coupled with a night of good "seeing" (when the atmosphere is calm) will show Saturn and its beautiful ring system in its full glory.

As Saturn rotates quickly with a day of just 10 and a half hours, its equator bulges slightly and so it appears a little "squashed".

The thing that makes Saturn stand out is, of course, its ring system. The two outermost rings, A and B, are separated by a gap called Cassini's Division which should be visible in a telescope of 4 or more inches aperture if seeing conditions are good. Lying within the B ring, but far less bright and difficult to spot, is the C or Crepe Ring.

Due to the orientation of Saturn's rotation axis of 27 degrees with respect to the plane of the solar system, the orientation of the rings as seen by us changes as it orbits the Sun and twice each orbit they lie edge on to us and so can hardly be seen. This last happened in 2009 and they are currently at an angle of 26 degrees to the line of sight. The rings will continue to narrow until March 2025 when they will appear edge-on again.

Uranus is currently visible as a morning object. It is visible in the morning sky, becoming accessible around 23:29, when it rises to an altitude of 21° above your eastern horizon. It will then reach its highest point in the sky at 04:21, 51° above your southern horizon. It will be lost to dawn twilight around 04:46, 51° above your southern horizon.

Neptune

Neptune in Aquarius. September 5th to 9th
These nights are a great time to find the blue planet Neptune as it is very close to the 4th magnitude star Phi Aquarii. With a magnitude of 7.8, large binoculars or a small telescope will be required to spot it. A medium aperture telescope will reveal Neptune's disk showing a hint of blue grey. With such a telescope, you might also be able to spot its 14th magnitude Moon Triton. On the night of the 5th/6th Neptune lies just 13 arc seconds from Phi Aquarii

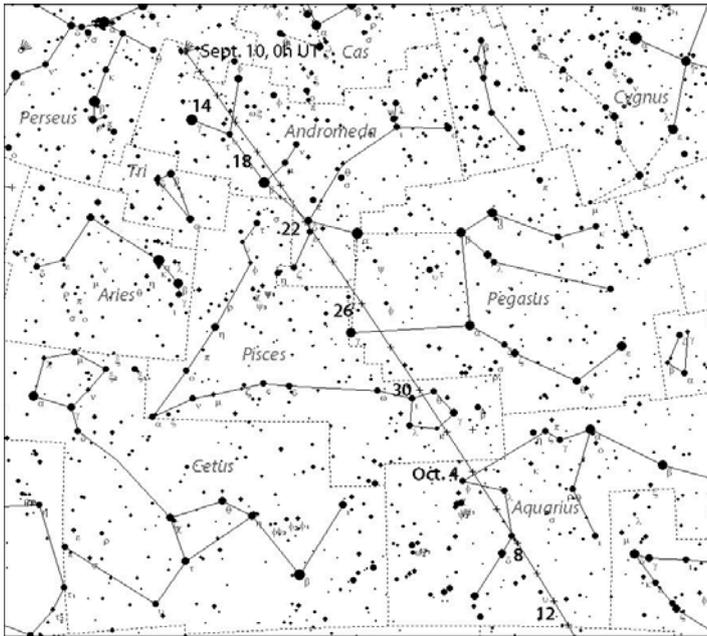
Dwarf planets and Asteroids

This Autumn, Earth has about a 1-in-7,000 chance of getting an uninvited extra-terrestrial visitor: asteroid 2006 QV89.

The space rock is expected to whiz by our planet on Sept. 9, 2019, according to European Space Agency's (ESA) list of space objects that could collide with Earth. That list was updated online June 6. Out of 10 objects on the list, 2006 QV89 ranked fourth.

Comets

In comet terms September gets quite interesting as we have two comets around. Neither are particularly bright but comet C/2018 W2 (Africano) reaches perihelion this month and it may come into binocular range as it passes through Andromeda and Pegasus. It runs pretty much parallel to the chain of stars that make up the main body of Andromeda.



objects to be seen As usual at this time of year we have some of the best Globular clusters, well positioned for observing and imaging. We also have some double stars, planetary nebulae and a few galaxies.

M56, GC is an 8th magnitude object, it is easy to see in binoculars and is found in the constellation of Lyra.

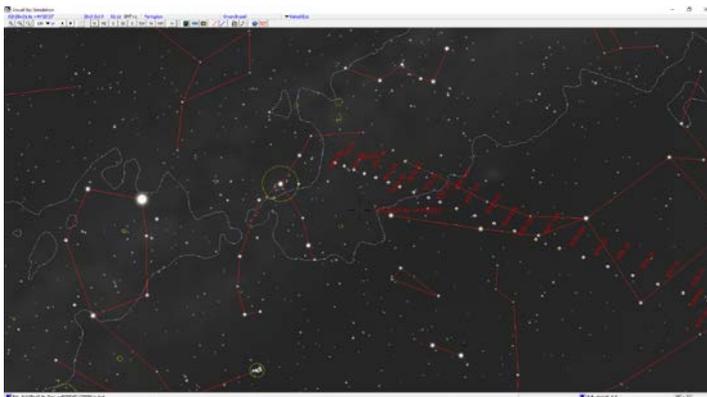
M13, The great globular cluster in the constellation of Hercules.

M92, GC in the constellation of Hercules.

M5, GC in the constellation of Serpens.

Epsilon Lyrae, The Double Double star system in the constellation of Lyra.

Algol, The Demon Star is in an eclipsing binary system. The eclipse can be seen on the 12th and the 15th of September.



The asterism, Brocchi's cluster, otherwise known as the Coat Hanger cluster, in the constellation of Vulpecula.

M1, The Crab Nebula, a beautiful Planetary Nebula in the constellation of Taurus.

M57 The Ring Nebula, another fantastic, easy to see, Planetary Nebula in the constellation of Lyra.

M31 The Andromeda Galaxy and it's companion satellite galaxies M32 and M110, in the constellation of Andromeda. M31 is our closest neighbouring Spiral Galaxy at only 2.5 million light years, easily visible in binoculars and small telescopes, at six times the size of the full moon in the sky, this does not require much magnification. Visible with the naked eye from a semi-dark site (I can see it from my backyard in Faringdon on a good night) M31 shows up really well in both binoculars and small telescopes. Larger instruments will pick up its two companions in M32 and M110 and even the large star cluster NGC 206 in its outer reaches, although this maybe one for larger telescopes. The dust lanes too can be seen and again wide fields are best here.

The other comet is more of a salutary warning. C/2017 T2 PanSTARRS had been forecast to get quite bright this month and some programs etc. still show this happening. Unfortunately it is actually around 13th magnitude and although it has a nice tail it is really one for CCD imagers rather than visual observers. It will mostly be in Taurus and moving into Auriga over the next two months. It is still along way from perihelion which it reaches next year, unfortunately it does not get that close to the sun and will not be well placed from the earth either.

Deep Sky Objects

The deep sky scene is at a cross roads this month as we start to lose the summer Milky Way targets and move into the blank (as in stars) Autumn skies, the reason being in that we are now looking more into intergalactic space rather than the plane of our own galaxy. There are however some rather nice

M2 – this rather nice globular cluster in Aquarius is often overlooked because of its location in a rather starless area of sky. It has also not been helped in that its co-ordinates were wrongly entered into a number of the catalogues used in Go-To telescope systems. With a

concentration class of VI this is a very nice object to view.

M15 – a more popular Globular cluster in Pegasus this is a very tightly concentrated globular cluster with a concentration class of IV it is quite a different object to view compared to M2. It is thought to contain an intermediate mass black hole at its centre and is one of only four globular clusters currently known to contain a planetary nebula in Pease 1. This is one for large telescopes however.

NGC 7009 – known as the Saturn nebula because of the oval shape and prominent ansae that can be seen in images and visually through larger telescopes this is also an interesting object, albeit somewhat low down as seen from the UK.

NGC 246 – known as the Skull nebula this large faint planetary can be seen in smaller telescopes if you use a nebula filter. In general at low powers use an OIII filter and with higher powers a UHC type filter will do to find this object

NGC 7479 - of course we should not neglect galaxies and this barred spiral in Pegasus is one of the finer examples. The bar is relatively easily seen but to pick out the spiral arms may require a larger aperture telescope. It does however image well.



M51 – Clifford Marcus

DATES FOR YOUR DIARY

23rd September 8pm Beginners' Meeting in the Main Hall., talks to include Neptune and Uranus, GoTo Telescopes and the 1769 Transit of Venus , although subject to change

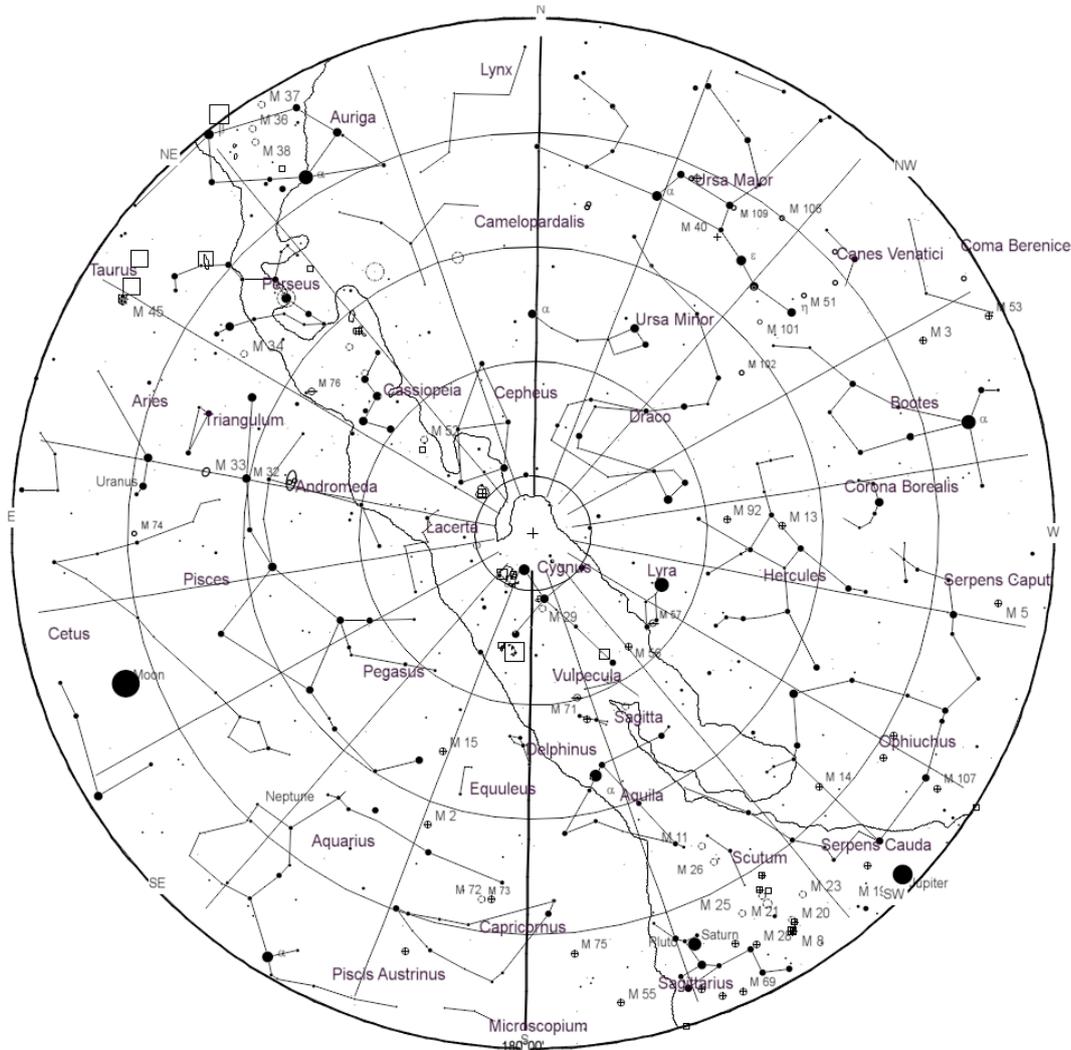
Observing evening: Observing evening: The next observing session will be on the FCN 30th Sep-2nd Oct at Frilford Heath Tubney Golf driving range, note that this is a new location and maps will be on the website. As always go/no go notes will be posted on the newsgroup as well as the Facebook page so please look there for more info or contact Steve Creasey for details.

Federation of Astronomical Societies Annual Meeting 13th September 2019 IOA Cambridge. Details at <http://fedastro.org.uk/fas/fas-convention-agm-2019/>

International Astronomy Show 15-16th November (Warwick) for more details see <https://www.ukastroshow.com/>

STAR CHART

The night sky at 22:00 (BST) Sunday 15th September 2019



MOON PHASES: 2019

