

SPACEWATCH

the newsletter of the Abingdon Astronomical Society

Next Talk
6th May 2017
Annual General Meeting + talk(s) by
members

EDITORIAL

Welcome to the April issue. The weather improved through March as you can see from the increased contributions from the imaging members. The society has its AGM next month and with a number of committee members standing down now is the time to start to decide if you would like to help the committee with the running of the society. If you are interested then please see Chairman Clifford. The duties are in general not too onerous. As a backup note because of the light evenings the formal observing sessions have now finished for the session. There may however be speciality events organised. I assume these will be advertised via Facebook and the newsgroup.

Steve Creasey has taken over running the Facebook page so if there is anything you would like him to add to it then please see him.

Note that the web version of the Newsletter contains a number of extra images from Tony Boer that we could not fit into the printed magazine.

We are still short of contributions for the after tea slots so if you have anything you would like to talk about please see Clifford. We are also starting to plan for next seasons speaker meetings so if there is a topic that you would be particularly interested in hearing about please see Clifford or Ian Smith.



Image of the planetary nebula Abell 5 by Ian Smith.



Image of the planetary nebula Jones-Emberson 1 by Clifford Marcus.

THE NIGHT SKY THIS MONTH

by **Bob Dryden**

Mercury: Mercury in the evening sky to start with although you will be hard pushed to see it as the planet is heading towards Inferior Conjunction on 20th April. It will then reappear in the morning sky but, again, you will have difficulty finding it due to the low angle of the ecliptic with the horizon. By the end of this session on 8th May the solar elongation has reached 22° but Mercury is just 4° above the horizon at sunrise and is shining at just +1.5 magnitude so the morning twilight will drown it out.

Venus: Now well and truly on view in the morning sky, Venus is relatively low but very bright at -4.5 magnitude so it is very easy to see. It currently rises about an hour before the Sun and is 11° high by sunrise. By sessions end in mid May, the situation has not changed very much, except that Venus has moved much further westward along the horizon.

The solar elongation increases from 20° in April to 42° by 8th May. The apparent diameter of the disc decreases to 34" (after starting this session at 55") by mid May, as Venus physically moves away from the Earth. To start with Venus presents a narrow crescent shape, visible in binoculars. As the session progresses the crescent becomes fatter and harder to make out in binoculars so you might have to use a small telescope to see it. On the morning of 23rd April the crescent Moon will be approximately 10° west of Venus which should look nice in the morning twilight.

Mars: We are definitely coming to the end of this Martian apparition after several months hanging in the evening sky. In mid April Mars is 26° above the horizon at sunset, and sets 3 hours later. Shining at +1.6 magnitude means it will not be an obvious target once it gets near to the horizon. As the disc is only 4" in diameter, you will certainly struggle to see even the largest dark areas on the surface. By mid May it is lower at sunset, 18° , and sets two hours later, meaning it is not worth turning your telescope on to the planet by then. On 28th April the crescent Moon will be about 10° east of Mars.

Jupiter: To be found in Virgo, Jupiter is visible for most of the night having just past opposition. Rising at sunset, the planet culminates around midnight at an altitude of 32° , and is setting at sunrise. By mid May it is already 26° high in the south east at sunset and culminates at 22.00 UT. Shining at -2.4 magnitude means you cannot fail to notice the planet once above the horizon. On 11th April the Full Moon will be 1° from Jupiter, and this is repeated on 7th May.

Saturn: It is a good job the rings are wide open (at an angle of 26°) because Saturn culminates at a height of just 16° now, so the telescopic view will be poor making it difficult to see anything other than the rings and a few moons.

Visible in Sagittarius, Saturn rises around 01.00 UT in mid April and culminates about an hour before sunrise. By mid May it is rising at 23.00 UT and is low in the south west by dawn. Although low down, it is +0.3 magnitude so it is an easy naked eye target.

On the morning of 16th April the waning gibbous Moon is approximately 5° west of Saturn and the next morning it is about the same distance east of Saturn.

Uranus & Neptune: Uranus is too near the Sun to be seen this time around.

Neptune is not much better placed, being in Aquarius in the morning sky. By mid May it rises just under two hours before the Sun, and is just 15° high by sunrise. As its magnitude is a lowly +7.8, it means you will have difficulty seeing it.

Meteors: There are two active meteor showers just about worth a mention this time but neither are spectacular.

The Lyrids can be seen between 18th and 25th April with maximum occurring on 22nd. The Moon will be just a thin crescent in the morning so conditions are very favourable although the hourly rate at maximum is a rather low 10 meteors.

The other shower is more of a southern hemisphere shower but we can see some of it here in the UK. The Eta Aquarids are visible between 24th April and 20th May, with the maximum spread over the 5th and 6th May. With an hourly rate of 40 meteors, the shower sounds good, but the radiant in Aquarius never gets very high from the UK so we miss many of the meteors. In addition to the low radiant, this year the Moon will interfere badly with observations on the nights of maximum as it will be a 9 day old waxing gibbous Moon that will be above the horizon for most of the night.

Occultations: There are two occultations of brighter stars this session, one easy to see, and one not so easy.

The easy one is Gamma Libra, which is a +3.9 magnitude star, that will reappear from behind the bright waning gibbous Moon at 00.54 UT on 14th April. The Moon will be 15° above the horizon in the south east at that time. The other occultation involves a much brighter star, but occurs at a difficult moment in the day. The star is +0.9 magnitude Aldebaran in Taurus. It is occulted by the crescent Moon at 18.11 UT on 28th April. Unfortunately, the Sun is still above the horizon at this time so finding the Moon in the first place could be difficult, especially as it will be just a thin crescent. The slightly better news is Aldebaran reappears from behind the Moon at 19.07 UT when the Sun will be just setting giving you a better chance of actually seeing the Moon.

Asteroids: There is now only one asteroid on view that is brighter than 9th magnitude and that is 4 Vesta, and even that one is fading. It starts at +7.7 magnitude and fades to +8.0 mag by mid May. Vesta starts out in Gemini and enters Cancer on 23rd April.

Comets: There are three comets visible this time that should be above 10th magnitude.

The brightest is 41P Tuttle-Giacobini-Kresak that is +6.7 magnitude in Draco. It moves in to Hercules on 20th April, then in to Lyra on 1st May. By the 8th May the comet will have faded to +8.4 magnitude.

Not too far away from comet 41P is comet C/2015 U2 Johnson. Comet Johnson is to be found in Hercules at +8.1 magnitude. It enters Bootes on 2nd May and will have increased its magnitude to +7.1 by 8th May.

The third comet is D/1952 B1 Harrington-Wilson. This one is shining at +9.4 magnitude in Gemini. By mid May it will have faded to +10.4 magnitude after moving through Lynx and entering Cancer on 23rd April.

There are as well a couple of surprise visitors in the morning sky both of which are binocular objects in C/2017 E4 (Lovejoy) and C/2015 ER61 (PANSTARRS), both of these seem to be in outburst and are at around 7th magnitude. As always with comets they can go down in brightness as well as up.

LAST MONTHS TALK

by Andrew Ramsay

March's talk

"General Relativity" by Prof. Malcolm MacCallum from Queen Mary University of London (QMUL) Prof. MacCallum introduced the concept of the constancy of the speed of light and talked about how all the early experiments in the late 19th century to try to prove that the speed of light must vary due to the motion of the Earth through the supposed ether had failed. Albert Einstein in 1905 published his paper on how the constancy of the observed speed of light by all observers, no matter how they are moving led to the ideas of a four-dimensional space-time in which space contracted and time dilated to make all measurements of the speed of light the same. He described how Einstein then went on to work on accelerated motion and to explain that gravity was a

bending of this 4D space-time by massive objects. With this theory he explained the precession of the perihelion point of Mercury's orbit which was twice as much as predicted by Newton's theory of gravity, which used the idea of an invisible force acting across space.

General Relativity predicted the bending of the light from distant stars by massive objects such as stars and when Sir Arthur Eddington returned from an expedition to the island of Principe in 1919 with observations that showed Einstein was correct, Albert Einstein became an overnight celebrity – a “genius”.

Einstein's theory could not describe a universe that was static, as was believed back then and he introduced a “cosmological constant” into his equations to balance the pull of gravity. When Hubble found that the universe was in fact expanding, Einstein called this “the greatest blunder of my life”. It was only much later when dark energy was postulated that the cosmological constant has come back into vogue.

Einstein went on to predict gravitational waves from fast-rotating pairs of very massive stars and it is only last year that these waves were finally detected by the LIGO instrument in the USA.

NOTICE OF ANNUAL GENERAL MEETING

The Annual General Meeting for 2016/17 will take place on **Monday 8th May 2017** at All Saints' Methodist Church Hall, Dorchester Crescent, Abingdon at **8.00 p.m.**, and will be followed by a talk *to be announced*.

Agenda

1. Apologies for absence
2. Minutes of the previous Abingdon AS AGM (held 9/5/2016)
3. Matters arising
4. Presentation of Committee's report
5. Presentation of Treasurer's report and Adoption of accounts
6. Setting of membership fees for 2017/2018
7. Election of officers
i) Chairman ii) Secretary iii) Treasurer iv) Publicity Officer
8. Election of other committee members (between one and six in number)
9. Any other business

Chris Holt, Secretary, Abingdon Astronomical Society

NOMINATIONS FOR ELECTIONS TO COMMITTEE

Nominations are sought for the posts of Chairman, Secretary, Treasurer, Publicity Officer and between 1 and 6 other committee members.

Under the Constitution of the Society, the “candidates for election shall be proposed and seconded by ordinary members of the Society and the nomination, including the candidate's signature, submitted in writing to the Chairman at least four weeks prior to the Annual General Meeting”(para. 10.3.3). Ordinary members are all those who are not honorary members or affiliated members.

The Constitution goes on to say that, “in the event of there being no candidate for the election of an officer of the Society, or fewer than ten candidates for the election to the Committee, the Chairman may accept nominations given at the meeting” (para. 10.3.4).

Chris Holt, Secretary, Abingdon AS



M101 By Tony Boer

This were taken with a Quattro 8-CF with a Coma Corrector on an HEQ-5 Pro mount with Rowan belt mod. Guided with a 60mm guide scope and PHD2. Camera is a Ultrastar mono. All 1 minute subs, in this case 40.

DATES FOR YOUR DIARY

24th April 8pm Beginners' Meeting in the Main Hall., talks to include Lunar Imaging, Observing the Sun in CaK and the Milky Way. (Talks may change to external circumstances)

Observing evening: The observing evenings have come to an end because of steadily lightening skies for the season. There may be some specials for observing the Moon and planets. Keep an eye on the Facebook page and the abingdonas group for details.. 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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Phone:

Images by Tony Boer using what is classically known as EAA Astronomy. These were taken with a Quattro 8-CF with a Coma Corrector on an HEQ-5 Pro mount with Rowan belt mod. Guided with a 60mm guide scope and PHD2. Camera is a Ultrastar mono. All 1 minute subs



M64 12x 1m



M94 - 2x 1m



M63 5x1m



NGC 4631 – The Whale Galaxy 4x1m



M51 – The Whirlpool Galaxy 20 x 1m