

JUNE 2025

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UPCOMING OBSERVING SESSION

None Planned for June, July or August

Sign up to the Observing Mailing List here: <u>https://wasnet.org.uk/observing/</u>

NEWSLETTER

WILTSHIRE ASTRONOMICAL SOCIETY



Perseid Meteor (Royal Museums Greenwich)

WILTSHIRE AS CONTACT INFO:

Chairperson:	Simon Barnes		
Newsletter:	Simon Barnes		
Treasurer and Membership:	Sam Franklin		
Speaker secretary:	Position Vacant		
Observing Sessions coordinators:	Chris Brooks, Jon Gale,		
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PR and Design:	Tracey Kelly		
Contact the Society here:			
Email:	contact@wasnet.org.uk		
Website url:	https://wasnet.org.uk/		
Follow our Public Facebook Page https://www.facebook.com/Wiltshire-Astronomical-Society- 154077261327030/			

Join the members only Facebook group:

https://www.facebook.com/groups/wiltshire.astro.society/

Committee Page:

https://wasnet.org.uk/committee/



2024-2025 UPCOMING SPEAKERS:

 3rd June
 4 topics incl. Astrophotography, A bit of Space Shuttle History, Musica Universalis and The Astronomers Library Society Members, Matthew Terrell, John Dartnell, Tracey Kelly and Jon Gale (IP)

****Interested in Joining the Society? See https://membermojo.co.uk/was/

REPORT FROM THE CHAIR

Hello Members,

The June meeting brings a close to our 2024/2025 season of monthly meetings. This gives me the opportunity to give my thanks to the committee, Sam Franklin, Chris Brookes and Tracey Kelly. They have been very committed to bring you improved ideas, support, observing meetings and behind the scenes activities among many other things to keep the society moving forward for the coming years. Each of them has freely given their spare time to do all these things for your benefit. The observing sessions organised by Chris Brookes continue to be a great success albeit we have a constant battle with weather forcing Chris to cancel some of the sessions. We had a very successful partial solar eclipse event on March 29th once again ably supported by society volunteers, where possible we will organize similar events for key astronomical events.

I also thank you, the members, for your zoom attendances and a special thank for those that submitted articles for the Newsletter.

The survey that was carried out in March indicated that members generally liked the format of the society. Time permitting I will give a snapshot of the feedback at the monthly meeting. We will try to implement some suggestions made although to fully commit to all ideas may well need more volunteers.

I hope the range of topics from our guest speakers have satisfied the membership. A range of topics for future subjects have been suggested through the survey and I will endeavour to find suitable speakers.

We will be trialling a new venue in the new season, Pewsham Community Hall in Chippenham. This location will hopefully allow us to amalgamate in-person meeting with Zoom broadcast. I hope that members will attend the in-person meeting, although I realise that personal schedules or global location can impact attendance; my personal opinion is the core purpose of a society is to allow members to meet up with like minded people and share knowledge, something I don't think our zoom meetings provide. Additionally, the booking of the venue is an expense for the society. With the covid lock-downs an almost distant memory the majority of societies and groups are back to in-person meetings.

I look forward to our members presentations this evening and I thank them for stepping up to prepare and talk to us. We will also have a short AGM among other topics Sam will cover our finances. Although perhaps unlikely! any volunteers for committee positions, that said if anybody wants to do so, they will be most welcome.

Finally, enjoy your summer and I look forward to welcoming you back next season at our new venue on 2nd September 2025.

Simon

Our June 2025 member Speakers:

- Matthew Terrell Astrophotography.
- Tracey Kelly Musica Universalis: A Brief Look at Music & Astronomy .
- Jon Gale The Astronomers Library

John Dartnell

— A Bit of the Space Shuttle History.









Moon–June 2025 Phases with Rise and Set Times

June 2025						
Sun	Mon	Tues	Wed	Thur	Fri	Sat
1	2	3	4	5 🔘	6	7 🌑
Sun: 04:59 21:18 Moon: 10:35 01:30	Sun: 04:58 21:19 Moon: 11:54 01:46	Sun: 04:58 21:20 Moon: 13:08 01:58	Sun: 04:57 21:21 Moon: 14:18 02:08	Sun: 04:56 21:22 Moon: 15:29 02:18	Sun: 04:56 21:23 Moon: 16:39 02:27	Sun: 04:55 21:24 Moon: 17:51 02:39
8	9	10 🔘	11 🔘	12 🔘	13 🔵	14 🌑
Sun: 04:55 21:25 Moon: 19:05 02:53	Sun: 04:54 21:28 Moon: 20:18 03:11	Sun: 04:54 21:28 Moon: 21:29 03:38	Sun: 04:54 21:27 Moon: 22:30 04:11	Sun: 04:53 21:28 Moon: 23:19 05:00	Sun: 04:53 21:28 Moon: 23:54 06:04	Sun: 04:53 21:29 Moon: 07:19
15 🔵	16 🌒	17 🌑	18	19 🌑	20	21
Sun: 04:53 21:29 Moon: 00:20 08:39	Sun: 04:53 21:30 Moon: 00:38 10:01	Sun: 04:53 21:30 Moon: 00:53 11:23	Sun: 04:53 21:31 Moon: 01:06 12:44	Sun: 04:53 21:31 Moon: 01:18 14:08	Sun: 04:53 21:31 Moon: 01:30 15:34	Sun: 04:53 21:31 Moon: 01:45 17:04
22	23	24	25	26	27	28
Sun: 04:53 21:32 Moon: 02:03 18:37	Sun: 04:54 21:32 Moon: 02:29 20:08	Sun: 04:54 21:32 Moon: 03:08 21:27	Sun: 04:55 21:32 Moon: 04:05 22:25	Sun: 04:55 21:32 Moon: 05:20 23:05	Sun: 04:55 21:32 Moon: 06:44 23:32	Sun: 04:56 21:31 Moon: 08:10 23:50
29	30	1	2	3	4	5
Sun: 04:57 21:31 Moon: 09:33	Sun: 04:57 21:31 Moon: 10:50 00:03	Sun: 04:58 21:31 Moon: 12:03 00:14	Sun: 04:59 21:30 Moon: 13:15 00:24	Sun: 04:59 21:30 Moon: 14:25 00:34	Sun: 05:00 21:29 Moon: 15:38 00:45	Sun: 05:01 21:29 Moon: 16:51 00:58
6	7	8	9	10	11	12 🕥
Sun: 05:02 21:28 Moon: 18:04 01:15	Sun: 05:03 21:28 Moon: 19:17 01:37	Sun: 05:04 21:27 Moon: 20:22 02:08	Sun: 05:05 21:28 Moon: 21:15 02:52	Sun: 05:06 21:26 Moon: 21:55 03:52	Sun: 05:07 21:25 Moon: 22:24 05:05	Sun: 05:08 21:24 Moon: 22:44 06:25

Summer Meteor Showers

Shower Name	Date of Max	Normal Range	Rate/Hr	Description
Eta Aquariids Comet	5 May	19 Apr-28 May	40	Low in sky. Associated with Halley
Alpha Capricornids	30 July	3 July-15 Aug	5	Yellow slow fireballs
Delta Aquariids over per	30 July	12 July-23 Aug	25	Steady stream of meteors several days but a low rate hour
Perseids with trains.	12 August	17 July-24 Aug	150	Many bright fast meteors Associated with Comet Swift- Tuttle (1737, 1862, 1992)

The rate per hour gives some idea of how many meteors you can expect to see under optimum conditions, while the description gives some more detail about each meteor shower.

The Planets in June

Mercury sets with the Sun early in the month with its separation increasing toward the end of the month as it approaches greatest elongation. (mag -2.0 - 0.3) .lune 1 /enus Venus rises above the eastern horizon before sunrise (in Aries) (mag -4.4 - 4.2) Mars visible in the evening sky, it gradually sets earlier as the month progresses. magnitude ranging between 1.2 and 1.4 magnitude. Jupiter moving into Gemini mid month at magnitude – 1.9 and sets shortly after the Sun. Saturn its rings are now beginning to open again (visible at infra red). View in the dawn Saturn sky. On 29th June it shares the same Right Ascension as Neptune and 1^o apart in the sky; view telescopically at low power to get them both into the field of view. Uranus Uranus at magnitude 5.8 is in the dawn sky. **Neptune** in the dawn sky still at mag 7.8. (see comment under Saturn) 10" Other key moments during June: 1st June–Venus greatest elongation (45.9°W, mag -4.4.)(02:00 UT) 3 June – Moon first quarter. (03:41) 7th June- Moon at apogee 405,553km. (10:42) 10th June – Antares 0.3° N of the moon. (10.25) 19th June- Saturn 3.4°S of the moon. (mag 1.0)(03:47) 21st June- Summer Solstice. 23rd June- Pleiades 0.6°S of the moon (0:59) 25th June- Jupiter 5.1°S of the moon (mag -1.9) (09:19) 27th June- Mercury 2.9°s of the moon. (06:02) Saturn and Neptune paths to 29th June conjunction viewing opportunity 30th June- Mars 0.20S of the moon. (mag 1.4) (01:05) For further information about the current night sky, you can go to various web pages e.g., Sky and Telescope https://skyandtelescope.org/observing

or the British Astronomical Society

https://britastro.org/news/sky-notes





Constellation of the Month Draco



Draco is the eighth largest constellation in the night sky. Draco has nine stars with known planets and contains one Messier object, M102 (NGC 5866). The brightest star in the constellation is Eltanin, Gamma Draconis. There is one meteor shower associated with the constellation; the Draconids.

Gamma Draconis is the brightest star in Draco. It has an apparent magnitude of 2.3617 and is 154.3 light years distant from the solar system. It is sometimes known as the Zenith Star because it lies close to the zenith point directly overhead in London. Eltanin is pretty easy to find in the sky. It lies just north-northwest of Vega, the brightest star in the constellation Lyra.

Omicron Draconis is notable for being the North Pole star of Mercury.

Nu Draconis is a binary star composed of v1 Draconis and v2 Draconis, two similar white A-type stars separated by 62 arc seconds. The first component is a hydrogen fusing dwarf of the spectral type A6 and the second component is an A4 class dwarf and has a dimmer, low mass companion that completes an orbit every 38.6 days.

The system has a combined apparent magnitude of 4.13

26 Draconis is a triple star system composed of a spectroscopic double star with an orbital period of 76 years and composite spectral classification GOV. The stars belong to the spectral classes F9V and K3V. The third star in the system is a red dwarf of the spectral type M1V, separated from the main pair by 12.2 arc seconds. The three stars share a common proper motion. They are suspected to be members of the Ursa Major Moving Group. The system lies some 46 light years from Earth.

BY Draconis is another multiple star in Draco constellation. It is composed of a close binary star with components orbiting each other every 5.98 days. The star serves as a prototype of a class of variable stars called BY Draconis variables. Their variability is a result of activity in their photosphere called starspots and the rapid rotation that changes the viewing angle of the activity when the stars are observed from Earth.

Kepler-10 is a star very similar to the Sun approximately 564 light years away. It was the first star identified by the Kepler spacecraft as a possible host to a small transiting exoplanet. The star has at least two planets in its system. The first, Kepler-10b, is a rocky planet discovered in January 2011. It orbits the star with a period of 0.8 days. The second one, Kepler-10c, was discovered in May 2011. It has an orbital period of 42.3 days. Kepler-10 is a G-class star about 11.9 billion years old, which is 2.6 times the age of the Sun. It has an apparent magnitude of 10.96 and cannot be seen without optical aid.

Deep sky objects in Draco

Cat's Eye Nebula - NGC 6543 (Caldwell 6)

The Cat's Eye Nebula is a planetary nebula approximately 3300 light years distant from Earth. It has a visual magnitude of 9.8. It is one of the most complex nebulae ever discovered. It was formed about a thousand years ago, when a bright hot star lost its outer envelope in the red giant phase. The central star has the stellar classification 07 and is about 10,000 times more luminous than the Sun. Because the structure of the nebula is so complex, the central star is suspected to be a binary star. As a result of a strong stellar wind, it is losing about 20 trillion tons of mass per second and is currently believed to be only slightly more massive than the Sun. The nebula was discovered by William Herschel in February 1786. It was the first planetary nebula to be observed with a spectroscope, by William Huggins in August 1864.



A composite image of data from NASA's Chandra X-ray Observatory (blue) and Hubble Space Telescope (red and purple) of NGC 6543 shows a phase that Sun-like stars undergo at the end of their lives. Material from the outer layers of the star in the Cat's Eye is flying away at about 4 million miles per hour. A hot core is left behind that eventually collapses to become a white dwarf star. The Chandra data reveal that the central star in NGC 6543 is surrounded by a cloud of multi-million-degree gas. *Image: Smithsonian Institution, X-ray: NASA/CXC/SAO; Optical: NASA/STScI*

Spindle Galaxy - Messier 102 - NGC 5866

The Spindle Galaxy is a spiral or lenticular galaxy discovered in 1781 by either Pierre Méchain or Charles Messier and then independently discovered by William Herschel in 1788. It has an apparent magnitude of 10.7 and is about 50 million light years distant. It is one of the brightest galaxies in the NGC 5866 group, which also contains NGC 5879 and NGC 5907, two spiral galaxies discovered by William Herschel.

The galaxy is notable for its extended disk of dust, seen exactly edge-on. The disk, which might contain a ring-like structure, is an unusual feature for a lenticular galaxy. The galaxy might also be a spiral galaxy, in which case the dust disk would not be unusual.



Spindle Galaxy



Tadpole Galaxy - Arp 188

The Tadpole Galaxy is a disrupted (collided) barred spiral galaxy in Draco. It has a visual magnitude of 14.4 and is about 400 million light years distant from the solar system. It is notable for its enormous trail of stars, about 280 thousand light years long. The galaxy contains many clusters of massive, bright blue stars. The disrupted shape of the galaxy is believed to be a result of gravitational interaction with a smaller, more compact galaxy, which drew out the stars, dust and gas out of the main body of Arp 188.

The smaller galaxy is believed to be located about 300 thousand light years behind the Tadpole Galaxy and can be seen in the picture.

Abell 2218

Abell 2218 is a galaxy cluster in Draco, about 2.345 million light years distant. It contains thousands of galaxies and a mass equal to 10,000 galaxies. The cluster was used as a gravitational lens to find the most distant known object in the universe, a 13 billion year-old galaxy that is seen from Earth as it appeared only 750 million years after the Big Bang. Gravitational lensing refers to the phenomenon of the light of the source being bent (or lensed) as it travels toward the person observing it. In this case, it means that spacetime around Abell 2218 is curved because the cluster is such a massive object and that rays of light coming from a background galaxy get bent as they pass through the spacetime. As a result the image of the background galaxy (or any other background object) can be magnified and distorted. The lensing effect allows astronomers to study objects that are even more distant than the cluster.

NGC 6340

NGC 6340 is a spiral galaxy in Draco. It has a visual magnitude of 11.9 and is approximately 52 million light years distant.

NGC 5879

NGC 5879 is a spiral galaxy that is a member of the NGC 5866 Group. It was discovered by William Herschel in 1788. It has an apparent magnitude of 12.4.

NGC 4236

NGC 4236 is a barred spiral galaxy with a visual magnitude of 10.5. It is a member of the M81 Group, which also contains the famous Bode's Galaxy (Messier 81) and the Cigar Galaxy (Messier 82), both of which are located in the constellation Ursa Major.

NGC 4236

Beginners Section

You will often see in star maps stars with a Greek alphabet letter in front of it e.g., β Orionis (beta). This is a way of indicating the brightest to the least brightest star in a constellation. The example indicates the 2nd brightest star in Orion (Rigel). α Orionis (alpha) is the brightest star in Orion (Betelgeuse). So on this basis γ (Gamma) will be third brightest star, δ (Delta) will be the fourth brightest and so on. This was started with Johann Bayer's Uranometer star maps in 1603 which introducted designating the brighter stars of each constellation by the small letters of the Greek alphabet.

Alphabet	Uppercase	Lowercase
Alpha	A	α
Beta	В	β
Gamma	Г	Y
Delta	Δ	δ
Epsilon	E	8
Zeta	Z	ζ
Eta	Н	η
Theta	Θ	0 9
lota	I	ι
Карра	К	к
Lambda	٨	λ
Mu	М	μ

Greek al	phabet
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Alphabet	Uppercase	Lowercase
Nu	N	v
Xi	Ξ	ξ
Omicron	0	o
Pi	П	π
Rho	Р	ρ
Sigma	Σ	σς
Tau	Т	τ
Upsilon	Y	υ
Phi	Φ	φ
Chi	Х	x
Psi	Ψ	ψ
Omega	Ω	ω

If you look at this star map of Ursa Minor you can see each star with its Greek letter designation. Polaris is the brightest star, Kochab is the second brightest, Perkhad is the third brightest and so on.

ISS Sightings

ISS Sighting data is readily available by going to the various web pages that provide such information for the public. It does not make sense to fill these pages with data that is so easily available elsewhere. This data can be tailored to a location and most members I would imagine have access to the internet. There are also Apps for your phone or tablet that sightings can be found. I have been using the Heavens Above web page, where data for many other vehicles can be accessed.

Suggested ISS Data web pages:

https://www.heavens-above.com

https://www.spotthestation.nasa.gov/home.cfm