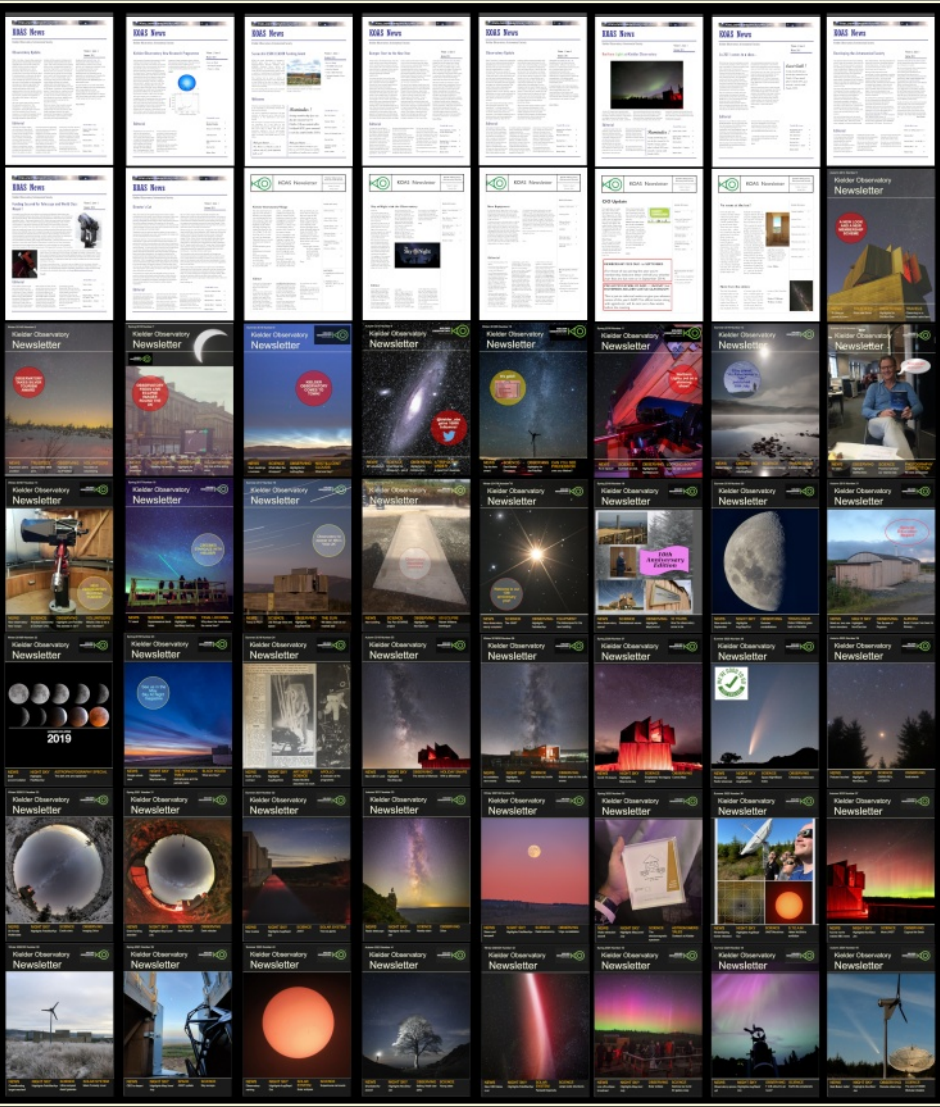
Final Edition: Number 46

Kielder Observatory Newsletter



THE FINAL EDITION OF THE NEWSLETTER

EDITORIAL

Sadly this is going to be the 46th and final edition of the KOAS pdf newsletter (although there have actually been 57 editions - more of that later!). With fewer people engaging with static pdfs due to accessibility and usability issues, the observatory is embracing more dynamic and interactive formats to better connect with our audience. Issue 1 appeared in autumn 2010, so we have been going, under at least three different editors, for 14 years. You can, however, still sign up for our monthly email newsletter, and Robert's articles will still appear on-line from time to time on the News section of our web pages (in fact his look at the Orion nebula, Messier 42, is already published) . You can also find our monthly guides to the night sky in the same place.

Nigel Metcalfe

Editors: Nigel Metcalfe & Robert Williams

Kielder Observatory Astronomical Society

Registered Charity No: 1153570.

Kielder Observatory Astronomical Society is a Charitable Incorporated Organisation. Its aims are to

* Promote interest in the science of astronomy to the general public
* Facilitate education of members of the public in the science of astronomy
* Maintain an astronomical observatory in Kielder Forest to support the above aims

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KIELDER OBSERVATORY
Infinite Inspiration

Front cover: A medley of all the newsletter front covers.
Rear cover: The front page of the very first KOAS newsletter.

A WORD FROM THE CEO

The Sir Patrick Moore Observatory is fully operational once more, welcoming visitors after extensive repairs and upgrades. Working closely with Forestry England and contractors, we ensured the deck was made safe and enhanced the space with repositioned screens and improved red lighting, making the turret the best it has ever been.

Innovation continues as we introduce live remote observations using a telescope in Spain, in partnership with First Light Optics. This ensures visitors can enjoy real-time celestial views even on cloudy nights, expanding our ability to inspire and engage.

Our outreach work is thriving, with new funding secured for impactful projects. The Culture House project, supported by a grant from Sunderland City Council, blends astrophotography and creative writing to connect people with the night sky. Stunning images captured across Sunderland will soon be displayed in Keel Square, celebrating the region's dark skies.

Our commitment to inclusivity is strengthened with renewed funding from the Association of Science and Discovery Centres, allowing us to continue working with the West End Refugee Service. This builds on previous successes in using astronomy to connect and inspire.

Though this is the final edition of this newsletter, our updates will continue in a new format. A huge thank you to Nigel and Robert for their dedication over the years—they will both continue contributing to our ongoing newsletter, which you can sign up for via the Kielder Observatory website.

Looking ahead, our 2026-2030 strategy will drive innovation, expand engagement, and ensure Kielder Observatory remains at the forefront of dark skies exploration.

As always, our dedicated team and supporters remain at the heart of everything we do, helping us share the magic of the universe with as many people as possible.

Leigh Venus

OBSERVATORY NEWS

Fun in the snow at Twice Brewed!

So the main news from the Observatory since our previous edition in November is that the Sir Patrick Moore turret has finally been repaired and reopened in mid December. Drainage issues had caused one of the wooden corner supports to rot - this has now been replaced and the drainage problems addressed. The decking has also been made safe after a year without use, and additional improvements, such as repositioned screens and red lighting have been made to improve the visitor experience. So we should be good to go for another decade at least!

One side effect of the reopening is that the Gillian Dickinson building now has its full complement of imaging telescopes back in action. We have also added a live streaming setup, so we can now broadcast views of the night sky on social media.

The Observatory has also started using a remote telescope in Spain to enhance

events on cloudy nights in Kielder. This innovative partnership with First Light Optics (FLO) allows for live observations and image capture from clearer skies, offering visitors a memorable viewing experience even when local weather conditions refuse to play ball (Spain allegedly has better weather than Kielder - ed.!)

Due to snow and ice at the Observatory, in a new departure, we ran all but one of our events between 7th-12th January at the Twice Brewed Inn (near the Sill National Landscape Discovery Centre, just stone's throw from Hadrian's Wall). Twice Brewed do run stargazing evenings, but this was the first time we have been involved. The

"The relocation did not make the experience any less fantastic. We came for my friends 30th and we could not have had a better experience. The whole team are extremely knowledgeable and absolutely hilarious. If anything, we said we are lucky getting to experience the relocation spot because then we can come back and to the observatory! It was a special experience and I think we will be talking about it for a long time."

Kate, Sunderland

OBSERVATORY NEWS

events were a great success, so look out for future collaborations!

The development of Kielder.Space, our innovative new learning platform, is nearing completion. In collaboration with Phonetic Digital, the platform has been refined to provide a seamless and engaging user experience. Visitors will be able to create a free account, access an introductory course at no cost, and purchase additional courses to deepen their knowledge.

We are collaborating with the 5G Borderlands project who will be siting some equipment at the Observatory. This is a programme to demonstrate the commercial opportunities for advanced wireless technology in a rural tourism setting. This will go along with the upgrade to our power systems.

Over the winter months, as part of our education programme, we launched weekly 'Space Club' sessions. These sessions provide a regular opportunity for students to deepen their understanding of astronomy and space science in an engaging, hands-on environment.

Dan Pye appeared on BBC Radio Newcastle in January for an extended segment talking about the 'planetary alignment' visible in January 2025 and into February.

Starting last October, we've secured a regular slot on BBC Radio Cumbria and BBC Radio Lancashire. Each month, one of our team spends a few minutes with the afternoon presenter, sharing what's up in the night sky for the month ahead.

The first week in February was National Astronomy week, and, as part of this event, on February 6th we ran a live 'Ask an Astronomer' podcast on our Facebook page.

Our usual monthly podcasts can be found, as ever, at https://podfollow.com/kielderobs/view

Our latest edition sees Dr Luke Daly, an expert in planetary geoscience from the University of Glasgow, discussing how space rocks may hold the key to the

origins of life and the formation of the solar system.

We are delighted that our volunteer Hamish Newhouse has been presented with the Volunteer of the Year Award from the Marsh Trust and ASDC (Association for Science and Discovery Centres) at a ceremony at The Royal Society in London in recognition of his work at Kielder Observatory. You can read more about Hamish at https://kielderobservatory.org/news/latest-news/410-national-volunteer-award-for-inspirational-hamish

We have recently updated our range of incredible astrophotography prints, including some new deep sky object such as the Orion Nebula and Pleiades. Check out our full range and other gift options on our online gift shop.

You can currently book events on our website up to the end of August 2025, but the remainder of February is sold out and March is already filling up, so get in quick! Remember we do sometimes have spaces free due to cancellations, so keep an eye on our social media pages.

* * * *

SCIENCE SLOT

Astronomical noise getting louder

In today's world it is getting more and more difficult to truly get away from the problems associated with becoming a more connected world.

Kielder Forest is one of a select handful of places where it is possibly to see the night sky from a location that is as far as possible from any source of uncontrolled light pollution. Let's hope it stays that way. It is also one of the few places in the UK where you can disconnect from 4G/5G networks, if you so wish to do.

With optical astronomy it is possible, though for the purists not the desired solution, to use special imaging techniques such as narrow band filters to block out the effects of light pollution from most places outside these Dark Sky Parks/ Reserves. But there is a growing menace in the form of our ever more cluttered near-Earth space, into which a large and growing collection of technology enablers in the form of Satellite Internet providers is being placed.

For visual astronomers and imagers satellite trails are at least an inconvenience and at most a menace that requires additional processing steps to remove. But for radio astronomers the signals to and from these orbiting alarm clocks is becoming a problem for which there is – as yet - no solution.

In a recent BBC article (Elon Musk's Starlink satellites 'blocking' view of the universe) the issues around the swamping of faint signals from both near and far radio sources are being laid bare, with radio astronomers becoming less able to sift the signal of these objects from the background noise from these – artificial - radio beacons.

There is a limit of radio noise that satellites are permitted to emit and the new generation of internet broadcast satellites are exceeding this by a substantial amount.

At the moment there are more than 6,400 Starlink satellites in orbit around the Earth, at an altitude of about 550 km. These satellites are 'large' with a visible footprint of around 3 x 3m and a solar array 3x wider. OneWeb has 1,000 similar satellites in orbit and Amazon is expected to launch upwards of 3,000 more in the next few years. It is estimated that by 2030 there will be around 100,000 of these devices in orbit.

Using the LOFAR array in Holland sufficient data was obtained in a single day to raise serious concerns about the future of radio astronomy. To put it into

context, a Starlink satellite produces typically 10 million x more radio emission than a typical extragalactic radio source. Unlike visual astronomy/imaging, radio astronomers cannot easily filter out this noise. Yet there are simple solutions such as installing electromagnetic shielding around the satellite batteries and power converters. Though this would add some weight and cost to the satellite it would not be a significant addition in the context of the complexity of the satellite system. Cross-talk – the effect by which stray radio emission from Earth based electronic technology is strictly controlled in places such as hospitals, nuclear powerplants, vehicles and other activities where there are critical safety implications – is limited by mandatory regulations to which everyone must subscribe – often by enforcement of national and global laws and conventions. There is no such treaty for space based systems – at the moment. Radio astronomers are calling for a robust and rigorous world-wide standard to be created and then adopted with necessary enforcement where and when needed.

Robert Williams

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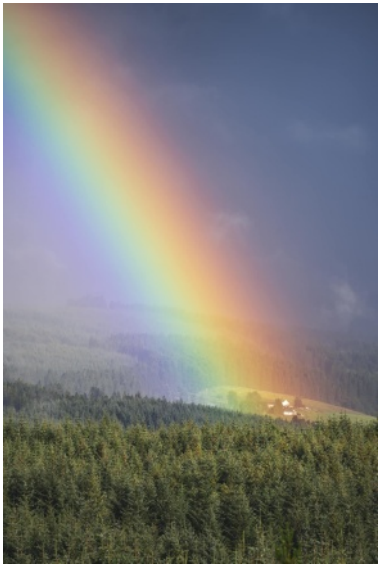


NIGHT SKY

Dank Monk captured this rather impressive panor

ama of the alignment of the planets in late January.

2025 – Calendar of Astronomical events visible from Kielder

Every year brings the potential for viewing some amazing astronomical events. Some of these require careful planning, a bit of luck with the weather and – for some – the chance that in that particular year the Moon will be out of view to have the darkest skies, unless of course it takes centre-stage.

So here is a list of the main celestial events in 2025, that are visible from Northumberland. See also the Space and astronomy highlights 2025 (Royal Observatory Greenwich).

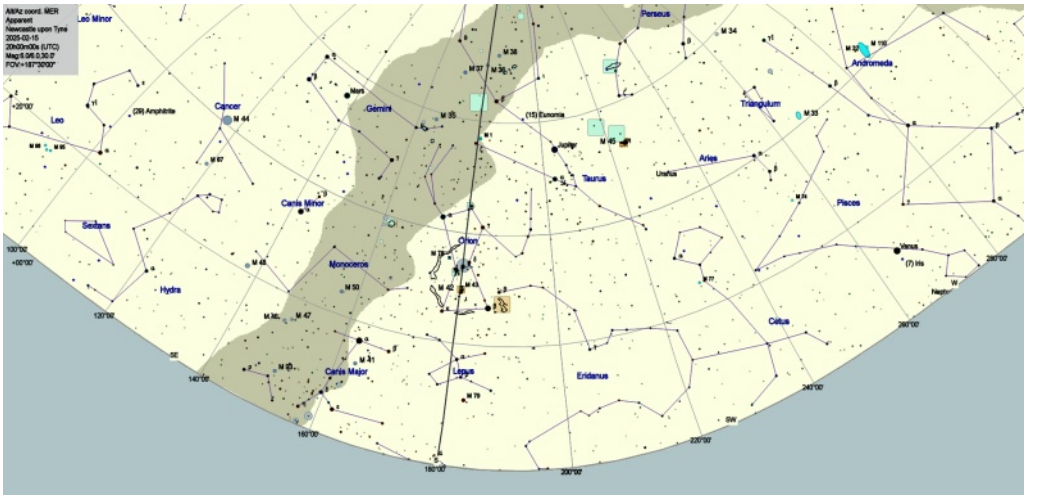
February

In 2025 there is a long-lasting alignment of the planets, that started in January and continues throughout the year.

In the early evening sky the Planets [in order of first setting] Mercury, Saturn, Venus, Jupiter, Mars and finally Uranus perform a leisurely dance as the quicker moving planets [Mercury, Venus and Mars] move through the path of the slower moving planets of Jupiter, Saturn and Uranus.

This is because Mercury and Venus have orbital periods [88 and 224 days respectively] shorter than that of Earth [365.24 days], whereas Mars [687 days], Jupiter [11.86 years], Saturn [29.45 years] and Uranus [84 years] are much longer than Earth.

Over a sidereal year Mercury orbits the Sun 4.15x, Venus orbits the Sun 1.52x and Mars 0.53x. So Mercury passes through –



The line-up of the planets - 15th February at 8pm looking S from Newcastle.

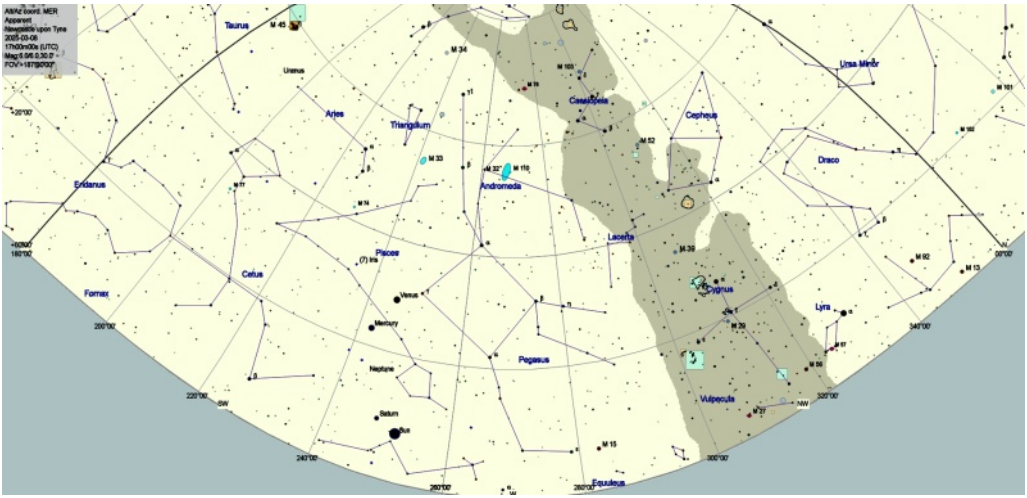
almost – 50 constellations in that time, Venus passes through 18 and Mars passes through just over 6 constellations every year.

Moreover, many of the planets share – to a good approximation – the same orbital inclination, in other words they can – in theory – appear to be in the same part of the sky with one or more other planet[s], at some point in time.

Other than Pluto, most of the planets will meet up – to a spacing of no more than 7 degrees apart [in declination] – at some time, though there are significant challenges to see some of these conjunctions as the Sun will often also be in the same part of the sky at the time of the conjunction.

March

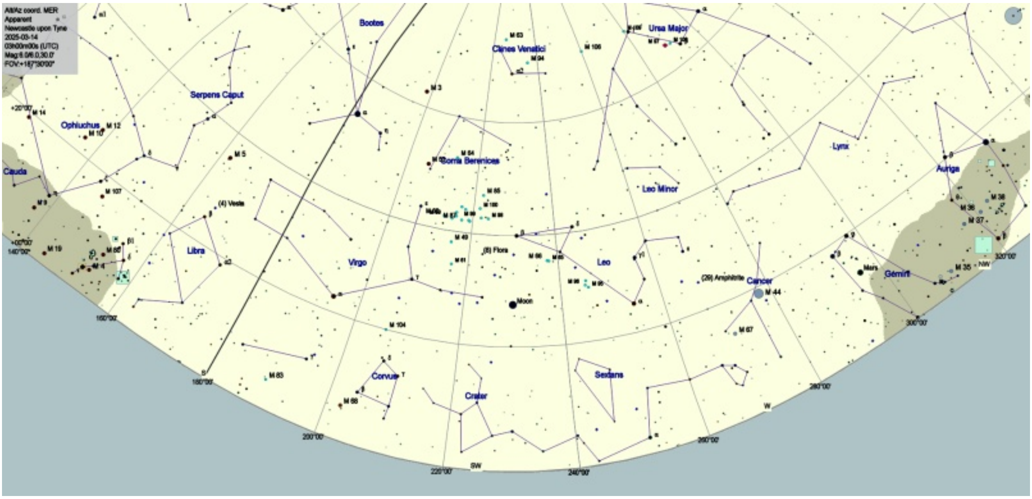
March 2025 is a great time to see Mercury at its greatest eastern elongation [where it is in its place in the sky as far away form the Sun, in angular terms, as is possible]. This means that it can be seen in the evening sky sometime after sunset. The best time to do so is on the 8th March. Sunset is at 17:56, Saturn sets at 18:06, Mercury sets at 19:50 and finally Venus sets at 20:32.



Mercury at greatest elongation - 8th March at 5pm looking W from Newcastle.

The same phenomenon will also take place on the 21st April, 19th August and 7th December. It will also be possible to see the changes in the phase of Mercury - much like the change in phase of the moon. In Mercury's case, because it is a so-called inferior planet, Mercury shows a

NIGHT SKY



The lunar eclipse - 3am on the 14th March looking SW from Newcastle.

wide thin crescent when it is far away from Earth and a narrow gibbous phase when it is closer to Earth.

It is important, though, to ensure that the Sun has set before trying to locate Mercury – especially when using binoculars or a telescope.

March 20th sees the Vernal Equinox, when the Sun traverses north through the ecliptic plane, resulting in a 12 hour day followed by a 12 hour night.

A special event happens on the 23rd of March when Earth lines up with Saturn's equator. On this night Saturn's rings appear edge on and will seem to disappear from view – at least for the next few days. The next time this will happen will be in the year 2040. Unfortunately, on this date, Saturn will be in conjunction [the same part of the sky] as the Sun so it will not be safe to locate it in the sky.

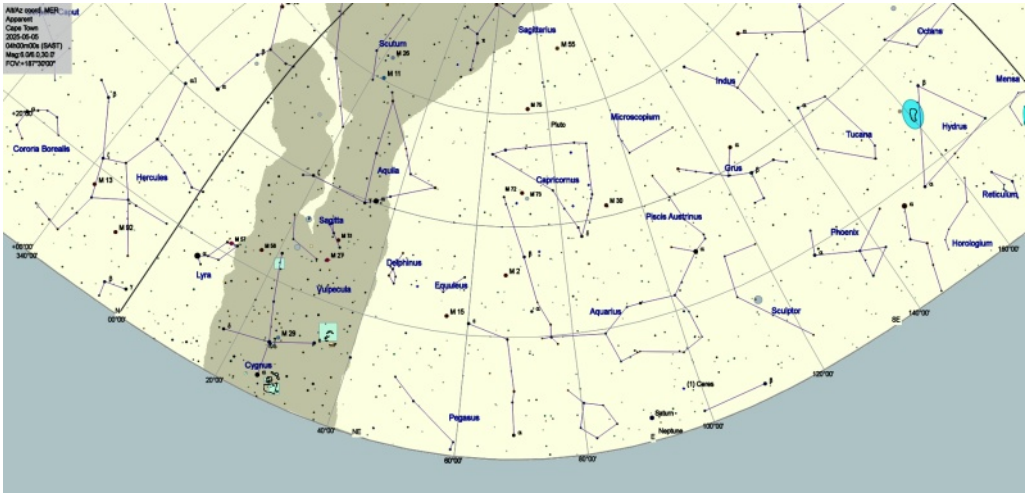
On the 14th March there will be a partial Lunar Eclipse, visible from the UK. The penumbral phase stars at 03:57, with deepest [visible] at 06:19 and the Moon sets before the maximum extent is reached.

Two weeks later – on the 29th March there will be a partial Solar eclipse visible from the UK [these events often show up paired together]. Between 30% and 40% of the Sun will be obscured by the Moon with first contact at around 10:07 GMT, maximum obscuration at 11:03 and last contact at 12:00 GMT.

April

April hosts one of the most overlooked meter showers – the Lyrids, so called because the radiant is in the easily located constellation of Lyra the Harp. Visible between 16th and 25th of April and peaking on the 22nd of the month, this shower contains meteors that may be few in number but can nevertheless be brilliant and colourful.

In 2025 the Moon will not rise until 0400 on the 22nd April, so – providing there is a clear sky at the time – there is good opportunity to see these meteors in 2025. Originating from Comet C/1861 Thatcher, which has a 416 year orbit of the Sun, this shower has been recorded for almost 2,700 years, being first recorded by the Chinese in 687 BC. However, the parent comet will not be seen again until nearly 2280!



The Eta-Aquarids are best seen from the Southern hemisphere - the night sky from Cape Town, South Africa - 4am local time on 25th May.

May

Like April, the highlight of May is a meteor shower – the Eta-Aquarids. Active between 18th April and 28th May, with a peak during the 5th of May and reaching up to 40 meteors per hour. Obviously the night sky is very bright at this time of year. So as the saying goes - go south to see them at their best, preferably south of the equator!

Maximum happens [5th May] at first quarter Moon so you need to wait until after the Moon sets at approximately midnight so as to be viewing the shooting

stars in darkened skies.
Famously this shower is associated with Comet 1P/Halley (Halley's Comet).

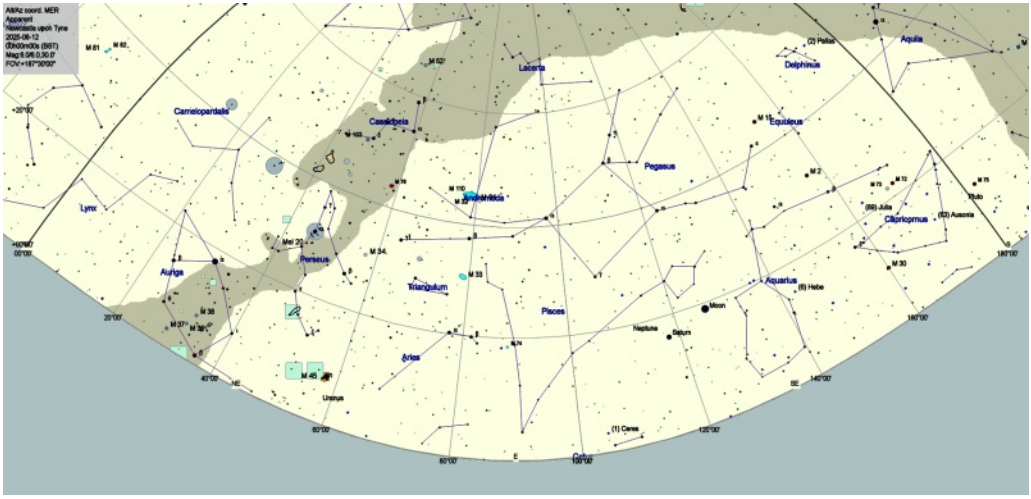
June

The main event in June is the Summer Solstice on the 21st with the longest day and shortest night. In 2025 the solstice happens at 03:42.
22nd June sees a major milestone in stargazing as it will be the 350th anniversary of the Royal Greenwich Observatory.

July/August

The main highlight of July and August is the reliable Perseid Meteor Shower (When and where to see the 2025 Perseid meteor shower in the UK: RGO) .

Peaking on the 12th/13th August and with hourly rates as high as 150 per hour at maximum, this shower is one of the key events of the year to view, if the conditions are right. In 2025 there will be a nearly full moon during the maximum so will make for challenging conditions.
Associated with Comet Swift-Tuttle, this shower has been recorded since Roman times [AD36], and the comet – with its 133 year orbit - has been viewed many times in the period.
The meteor shower builds up from mid-July and ends around the end of August. During the peak, Perseus rises at around 10pm so this shower is best seen between midnight and pre-dawn. This shower is associated with the martyrdom of Saint Lawrence in August 258AD.



Perseid meteor shower - midnight on 12th August looking SW from Newcastle.

September

The highlight in September is on the 7th with a total lunar eclipse. The eclipse reaches maximum extent at at 19:11, with the Moon yet to rise – at 19:33. Eclipse ends at 21:55. Because of the geometry of the alignment [Sun-Earth-Moon] the Moon will appear deep red during the eclipse phase.

Almost 2 weeks later – on the 19th of September – Venus will be occulted by the Moon. Beginning at 12:55pm and ending at 14:14, this will be a difficult observation to make as there will be the Sun nearby in the sky, so take care!

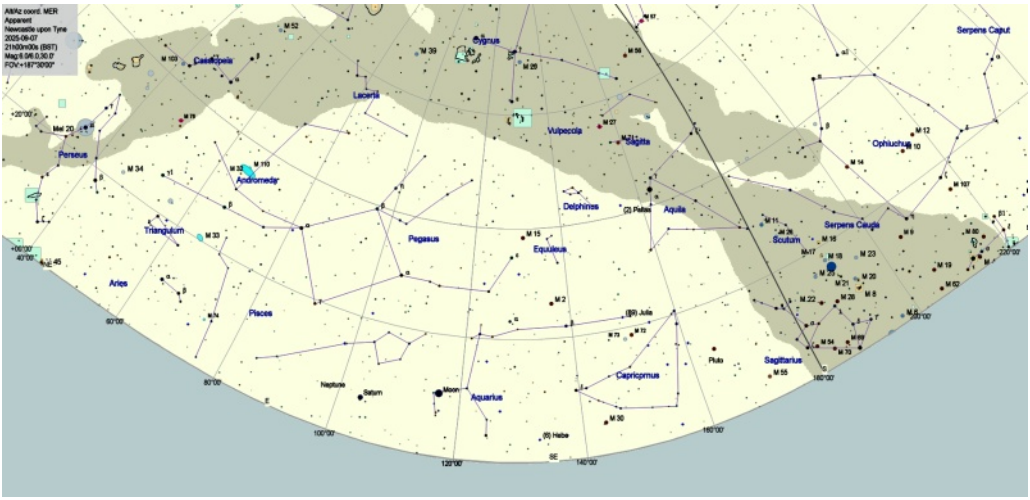
On the 21st September, Saturn reaches opposition [rises at sunset and sets as the Sun rises]. It is only a few months since equinox [in March] so the rings will be a challenge to view because of their very narrow inclination angle at this time.

One day later - on 22/09/25 – will be the Autumnal Equinox, whereby the Sun travels south of the ecliptic.

October

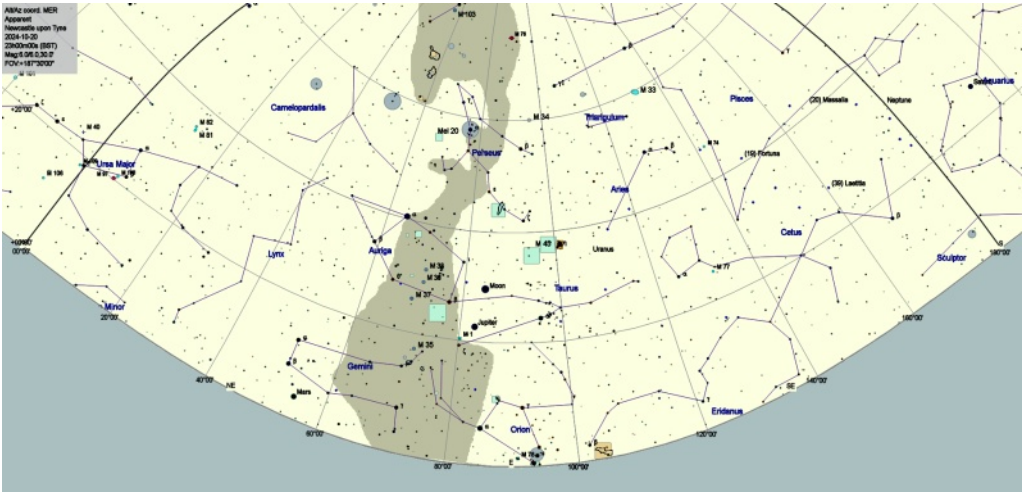
Between 2nd October and 7th November the Orionid Meteor Shower – which peaks on the 21st October – will be visible. Peaking at around 20 per hour, this shower is also associated with Comet 1P/Halley.

In 2025, the peak will coincide with a new Moon so there should be – when the sky is clear – a great opportunity to see these meteors, which are fast moving, bright and colourful.



The total lunar eclipse - 9pm on 7th September looking SE from Newcastle.

NIGHT SKY



The Orionid meteor shower - 11pm on 20th October looking E from Newcastle.

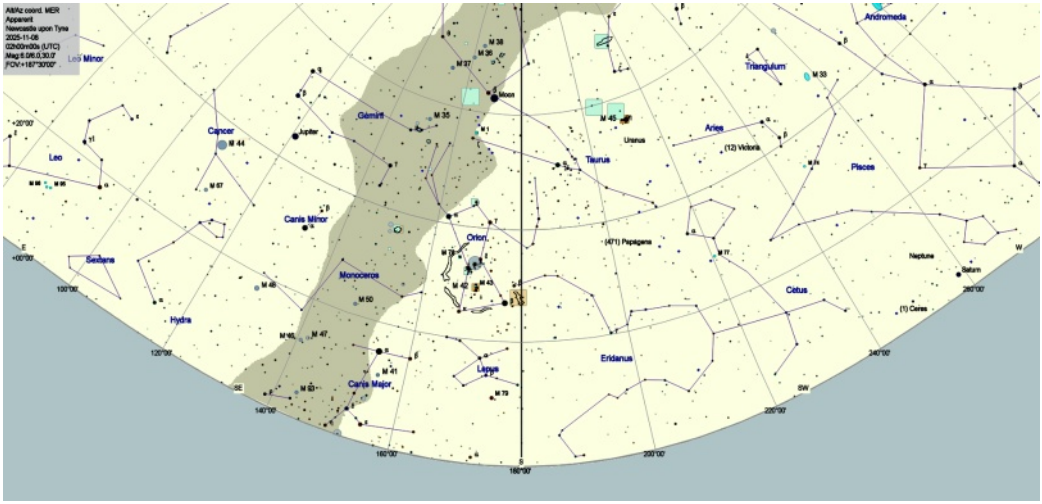
November

On around 8th November the Taurid Meteor Shower is active. Associated with short period Comet Enke, this shower is split into Northern [which originates from an asteroid [2004 TG10]] and Southern components, which peak on separate dates.

The Southern component is visible from 23rd September to 8th December, with the Northern component visible from 13th October to 2nd December – overlapping with the Leonids – see below.

Few [approximately 5/hour] in number they make up for their sparsity with being – often – brilliant, with colourful and sometimes very long lasting trails [as bright at magnitude -10 (equivalent to the full Moon) with remnants lasting many seconds in the sky, which may leave vapour/smoke trails as well].

The Leonids – this meteor shower is active between 15th and 20th November with a maximum on the 17th/18th. This shower is one of the most studied of meteor showers because once every 33 years it exhibits a super-maximum because of the 33 year orbit of the parent comet [Comet 55P/Temple-Tuttle], with slightly reduced activity in the years leading and lagging the year of the super maximum. As such it is not only possible to determine the precise date and time of the maximum but also – geographically - where the peak will intersect the Earth's surface. Hence many stargazers headed for Egypt in 1999 and to Palau – in the



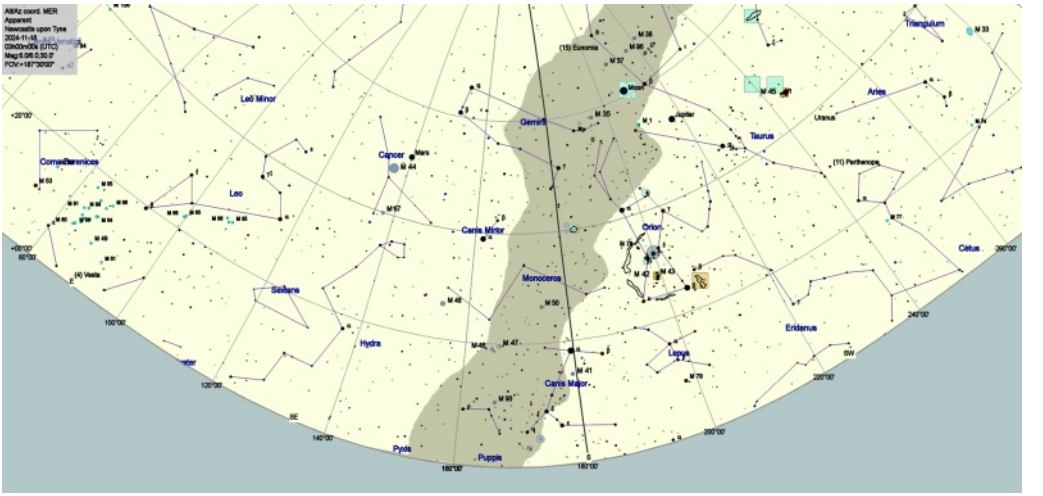
The northern Taurid meteor shower - 2am on 8th November looking S from Newcastle.

southern Pacific – in 2001. 2025 is – approximately – 7 years before the next super-maximum, so the activity of this shower will be somewhere around 150 per hour, with a mini-outburst possible from a previous meteor stream seen in 1699.
It is then expected to have further mini-outbursts in 2027 [1167 stream] with peak activity on the 20th November and 2029 [1998 stream in outburst] and finally 2033, which will be the return of the same stream from 1899].

December

Peaking on the 13th December another bright meteor shower – the Geminids – are visible throughout the night as Gemini rises opposite the Sun (Geminid meteor shower 2025: when and where to see it in the UK: Royal Observatory Greenwich).
Beginning on the 4th until the 17th December, this shower is somewhat unusual as the particles originate from an Asteroid – 3200 Phaethon. There is other evidence [from the Parker Solar Probe] that at least 2 other asteroids were destroyed during the creating of the particles of this shower.
This shower is a relative newcomer having been first observed in 1862.
Typical numbers are in the region of around 100 to 300 meteors per hour, in the past 20 years.
21st December sees the Winter Solstice – the date on which the Sun is as far south

NIGHT SKY



The peak of the Leonid meteor shower - 3am on 18th November, looking S from Newcastle.

as it can get, giving the longest night and shortest day. On 21/12/2025 it happens at 15:03.

Robert Williams

The Planets in 2025 – rise and set times

	Sun	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune
Feb	0712/1712	0748/1724	0758/2120	1233/0643	1037/0324	Daylight	Daylight	Day/2010
Mar	0619/1809	Day/1943	0539/1951	Day/0449	Day/0146	Daylight	Day/2356	Daylight
Apr	0601/2010	Daylight	Daylight	1100/0406	Day/0109	Daylight	Daylight	Daylight
May	0456/2107	Daylight	Daylight	Day/0232	Day/2341	Daylight	Daylight	Daylight
Jun	0424/2146	Day/2312	0244/Day	Day/0055	Day/2210	0146/Day	0308/Day	0138/Day
Jul	0444/2136	Day/2206	0203/Day	Day/2320	Daylight	2347/Day	0114/Day	2340/Day
Aug	0537/2039	Daylight	0220/Day	Day/2143	0200/Day	2145/Day	2314/Day	2138/Day
Sep	0635/1923	Conjunct.	Day/2008	Conjunct.	0028/Day	Oppositn.	2113/Day	Oppositn.
Oct	0733/1807	Daylight	0525/Day	Daylight	2250/Day	Oppositn.	1914/Day	Oppositn.
Nov	0735/1602	Daylight	0614/Day	Daylight	1955/1235	1431/0150	1609/0806	1429/0219
Dec	0822/1537	Daylight	Daylight	Daylight	1746/1033	1232/2353	1404/0617	1231/0021

The Rise and Rise of the Smart Telescope

If you are interested in amateur astronomy, you can hardly have missed the appearance of, and subsequent debates about, smart telescopes. These are instruments designed (mostly) for astrophotography, which are essentially 'plug-and-play' - you put them outside, connect them to your smartphone or tablet and away you go. No prior knowledge of astronomy needed, and very little manual interaction beyond the initial set-up.

In fact, smart telescopes have been around for a few years now, but it is the recent arrival of a couple of sub £500 pound models which have ignited the concept - namely the ZWO SeeStar and the Dwarf Lab models. This has made astrophotography much more affordable, and much more accessible.

There are more expensive offerings, by Vaonis and Unistellar, and recently Celestron have jumped on the bandwagon with their £4k Origin, which at the moment is the largest aperture model (at 150mm, or 6 inches) around.

So what do you get for your money? Well, at the sub £500 mark we are talking refractors with apertures between 30-50mm coupled with CMOS imaging cameras which give fields of view of around 1-3 degrees. This might seem quite small, but remember that these devices are meant to be ultra-portable - the larger the aperture the heavier the telescope and the more robust its construction has to be. One thing to be aware of though is that these telescopes have no way of zooming in to subjects and so are not really suitable for imaging the planets (although they can do a good job

Seestar S50 image of the Sun

Credit: S.A.Wrathmall

Messier 27: 60 sec exposure with a Seestar S50.

Credit: S.A. Wrathmall

on the sun and moon). They are designed for the brighter deep sky objects, and generally rely on taking lots of shortish exposures (maybe 10 to 30 secs) and stacking them together. Note that the software does all this for you - you really can just put your feet up indoors and watch the result come through! They will track the objects automatically as the stars move during the night - although in their simplest configurations they work in alt-az mode (their axes move up and down and horizontally), which mean the image rotates slowly. This means (a) your individual exposure times are limited to under ~30 secs, otherwise you will get rotational star trails, and (b) if you take exposures of the same object at different times of the night you will find it is at a different angle, and the edges of the images will no longer overlap. In practice, this means you need probably to crop the final image to avoid artifacts at the edges. These problems can be overcome in equatorial mode, where one axis of the telescope points at the pole - although this

The moon: Seestar S50.

Credit: S.A. Wrathmall

Messier 42: 180 sec exposure, Seestar S50.

Credit: S.A. Wrathmall

requires the user to line this up at the start of the night, so is no longer quite plug-and-play.

As you go up in price (there is a jump to ~£1500 plus), apertures tend to get larger and the field-of-view tends to go down, although as far as I am aware all current smart models will cover the full moon. The weight also goes up - the Celestron Origin comes in a a hefty 19 kg compared with just 1.3kg for the 35mm Dwarflab Dwarf 3. Note that the Unistellar offerings are also reflecting telescopes rather than refractors - they also offer one model with a digital eyepiece, so you can 'look' through it as well as image.

Once they get to this kind of money, it is worth studing what the software gives you as well as just the hardware, before deciding what is suitable for you.

There has certainly been lively debate as to whether smart telescopes are taking the 'skill' out of the hobby, but there is no doubt they are here to stay, and they are going to become more sophisticated as time goes by.

Nigel Metcalfe

"The work done at the Observatory is absolutely fascinating - and completely mind blowing - and even though, due to the weather we couldn't see the stars let alone the aurora - it didn't ruin the evening at all, because the team were more than able to make up for it."

Holly, Newcastle

ASTRONOMER'S TALES

A Brief History of the Newsletter

With this being the last edition, I thought I would take a look back at the history of the newsletter. It started life as a perk for members of the Society, with the first edition being produced in Autumn 2010 (see the back cover of this issue). It was always meant to be a quarterly release, and has continued so ever since, with the possible exception of the Summer 2014 edition which I suspect never happened due to the change of secretary that summer. Certainly the first edition I produced was Autumn 2014. I also do not have a copy of the Winter 2013 edition (Vol 4.2), but I have no reason to think this was not produced (so if you have a copy we would be delighted to know!).

It has undergone two facelifts, once in Winter 2012 and again when I took over. I also changed the numbering system to be sequential, rather than four editions within each numbered volume. So although this is edition #46, there have been at least 57 newsletters!

I designed it to be printable as a booklet, so there have always been a multiple of four pages - but it was never actually available in this form, and has always been an on-line pdf.

In 2019 the Society redrew its constitution and no longer had an official membership, so the newsletter became a general release (although in practice it had not been restricted to members only for some years).

For those interested in such things, the current incarnations have been produced with the open source Scribus publishing package.

As I noted in my introduction, Robert will still be writing his articles, but now for the Observatory website - https://kielderobservatory.org/news/latest-news/407-the-secret-life-of-nebula.

You will also still find reviews for the current month's night sky on the website - here is February 2025 as an example https://kielderobservatory.org/news/latest-news/432-what-s-up-february-2025.

Finally, as this is the last edition, I thought I would provide an index to all the articles we have published over the years. Many thanks to those who have contributed. Most of these back editions are available at

https://kielderobservatory.org/news/newsletters

where you can also sign up for our monthly email newsletter.

Nigel Metcalfe
(editor and trustee)

Edition	Pages	Title
45	9 to 11	Something weird found in Globular Clusters
45	18 to 19	The end of NASA Mission WISE
45	20 to 24	Imaging the Bubble Nebula
45	26 to 27	The Astronomy Photographer of the Year Exhibition
44	9 to 11	T Corona Borealis
44	18 to 23	Earth 2.0
44	24 to 27	An Astronomer's holiday diary
43	9 to 11	The Great American Eclipse
43	18 to 20	GRB221009A – a new idea
43	21 to 25	Plotting the Universe in 3D
42	7 to 9	Mindsets and Missions: The North East Astrophotography Academy
42	10 to 11	Ishbel heads for Norway …
42	18 to 21	Ingenuity has had its final flight
42	22 to 25	Large Scale Structure of the Universe
41	7 to 11	The Autumn 2023 Kelling Heath Equinox Star Party
41	18 to 25	Young stars
40	8 to 13	The most amazing show visible from Earth
40	20 to 27	Supernovae Remnants
39	8 to 11	James Webb Space Telescope – Mission update
39	18 to 23	Automated Sky Surveys
38	8 to 9	(Ishbel biopic)
38	10 to 13	Ultra-compact Dwarf Galaxies
38	20 to 25	Mars Curiosity Rover and beyond
37	8	Franks Fellowship
37	10 to 15	The Constellation of Cygnus
37	22 to 25	James Webb Space Telescope: First images – part 2
36	8 to 11	Another Dimension' outdoor exhibition: a createive encounter with dark skies
36	12 to 15	James Webb Space Telescope: First images
36	22 to 25	Neutrinos
35	8 to 15	What is Light?
35	22 to 25	Public Outreach at Kielder Observatory
34	8 to 13	Radio Astronomy – Part 1 – a Beginners Guide
34	20 to 24	The Constellation of Virgo
33	8 to 15	Our Neighbourhood of Stars
33	22 to 27	The Constellation of Orion
32	7 to 15	Return to the Ice Giants
32	22 to 26	An update on the James Webb Space Telescope
31	8 to 11	Out of the darkness comes forth light
31	18 to 22	New Physics?
30	8 to 11	The Effect of Focal Length on Imaging Orion
30	12 to 15	And Now for Something Completely Different … or Things to Do Under Lockdown
30	22 to 26	Exotic Stars
29	9 to 11	The Constellation of Andromeda
29	18 to 19	Mining an asteroid – OSIRIS-Rex on Bennu
29	20 to 22	The Extreme Universe
28	8 to 15	Telescope selection guide
28	22 to 28	The Return of US Space Launch Capability and Other Firsts
28	29 to 30	When is a Neutron Star not a Neutron Star? ….. when it's a Black Hole
27	7 to 12	Creating observations and snoozing under the stars
27	13 to 19	Exoplanets
27	20 to 21	Comet C/2019 Y4 Atlas
27	28 to 30	Farewell to Spitzer
26	11 to 13	Catching Meteors Through the Clouds
26	20 to 22	Gamma Ray Bursts
25	9 to 10	KOAS at the National Astronomy Meeting
25	11 to 13	The Transit of Mercury
25	20 to 25	3 Astronomers, a Volcano and the Milky Way
24	7 to 10	Apollo – before and after
24	11 to 13	The bright Meteor showers and viewing conditions for the next few years

ASTRONOMERS' TALES

24	20 to 25	Kielder Observatory's Resident Artist
23	14 to 19	Nucleosynthesis
23	20 to 24	The Supermassive Black Hole in Galaxy M87
22	14 to 19	Beginners Guide to Landscape Astrophotography
22	20 to 24	How to Get Started: Deep Sky Astrophotography
21	16 to 17	The Constellation of Pegasus
21	18 to 22	Becki goes to Norway
20	14 to 17	Small Summer Constellations
20	18 to 23	Observing the highlights of the Southern Hemisphere
19	14 to 18	Gravitational Waves
19	19 to 23	Ten Years of Kielder Observatory
18	8 to 11	The James Webb Space Telescope (JWST)
18	18 to 19	Instrumentation for the new observatory
18	19 to 22	(Lesser known objects in Orion)
17	8 to 11	The Panoramic Survey Telescope and Rapid Response System (Pan-STARRS)
17	18 to 21	The 2017 US Total Solar Eclipse
17	22 to 23	Buying a telescope …
16	9 to 13	(Book review Wallace Arthur)
16	20 to 23	The Sun: A giant Cosmic Radiator
15	9 to 13	(The heart of our galaxy)
15	22 to 24	A Familiar Face: The Story of our One Sided Moon
14	9 to 11	A new telescope for the Observatory
14	12 to 15	(Durham University astronomy laboratory)
14	22 to 23	(Volunteering at Kielder by Dave Wright)
14	24	Comet 45P/Honda-Mrkos-Pajdusakova
14	25 to 27	The Planets in 2017
13	9 to 11	Proxima Centauri
13	20 to 22	Meteor Showers
12	8 to 11	From the top of the world the stars shine brightly
12	15 to 19	Suth Africa stargazing travelogue
12	21 to 22	Planetary Nebulae
11	10 to 13	Outreach and STEM
11	17 to 19	Photographing the night sky with a portable tracking Camera Mount
11	20 to 22	How far south can you see?
10	8 to 13	Higgs, WIMPs and a time machine
10	17 to 20	What Killed the Dinosaurs? – Part 3 – Comparing Theories
10	21 to 26	Does the Eath's Axis Really Precess?
9	8 to 11	What Killed the Dinosaurs? – Part 2 – Extra-Terrestrial Causes
9	17 to 19	A Short History of the 20" Telescope
9	20 to 23	Outback Astronomy
8	8 to 10	What Killed the Dinosaurs? – Part 1 – Terrestrial Causes
8	17 to 19	Noctilucent Clouds
8	20 to 22	The National Astronomy Meeting
8	23	Astronomical Darkness
7	7 to 9	Using air curtains to improve astronomical observations
7	13 to 15	The Planets are coming
7	16 to 20	The Realm of the Galaxies
7	21	Volunteering at Kielder
6	8 to 9	Bending Light
6	14 to 15	A Volunteer's Warming Winter's Tale
6	16 to 18	Volunteering at Kielder Observatory
6	19 to 21	A Large, Accessible Telescope for Kielder?
5	8 to 9	Dragonfly – Cosmology on the cheap
5	14 to 19	Namibia Travelogue
5	20 to 21	Astrophotography Without a Telescope
4.3	3	Water jets from the asteroid Ceres
4.1	2 to 3	Nova and Supernova – a whistle-stop guide
4.1	5	Constellation Spotlight: Pegasus
3.4	2 to 3	Counting Stars
3.4	3	Software Review: LunarPhase Pro

3.4	5	UK Meteor Observation Network (UKMON)
3.4	7	Constellation Spotlight: Vulpecula
3.3	2	King Edward VI High School's Space Agency
3.3	3	Book Review – Objects in the Heavens by Peter Birren
3.3	5	Messier Marathon
3.2	3	E-book Review: One Minute Astronomer by Brian Ventrudo
3.2	5	Constellation Spotlight: Aurgia
3.2	6 to 7	The 45th Eclipse of Saros 133 on 14 November 2012 from Queensland, Australia
3.1	2	If only everything else was so predictable – Tales of the Venus Transit
3.1	5	Constellation Spotlight: Capricornus
2.4	2	Transit of Venus
2.4	4	Observing the Transit of Venus
2.4	5	Constellation Spotlight – Hercules
2.3	2	What's your challenge going to be?
2.3	5	Constellation Spotlight – Leo
2.2	3	9th Kielder Forest Autumn Star Camp: 26th - 30th October
2.2	5	Constellation Spotlight – Cepheus
2.1	2	Norther Lights at Kielder Observatory – continued
2.1	3	Beginner's Guide to Meteors and Metoer Showers
2.1	5	Constellation Spotlight – Cassiopeia
1.4	2	Beginner's Guide to Eyepiece Terminology
1.4	3	Measuring Double Stars with a Cross-hair Eyepiece and Stopwatch
1.4	5	Constellation Spotlight – Ophiuchus
1.3	2	Practical Astronomy Project: Focusing – the Not-a-Bahtinov-Mask
1.3	5	Constellation Spotlight – Coma-Virgo Cluster
1.2	2	My Star Trek – First Impression sof Kielder Observatory
1.2	4	8th Kielder Forest Autumn Star Camp Report
1.2	7	Constellation Spotlight – Orion the Hunter
1.1	4	Observatory Equpiment
1.1	7	Constellation Spotlight – Andromeda

GALLERY

In collaboration with UK astronomy retailer First Light Optics, we now have access to a remote observatory in Granada, southern Spain. Here some images we have taken with the equipment there:

The Jellyfish Nebula (IC443) in Gemini.

GALLERY

"Having checked the weather forecast, we knew the chances of seeing the Aurora Borealis were non-existent. However, the talks from Liam and his team were so informative and interesting that we didn't care."

Michelle, Solihull

The Rosette Nebula (NGC2244) in Monoceros.

GALLERY

The Heart Nebula (IC1805) in Cassiopeia.

Not been to Kielder Observatory yet?
Then why not book one of our events for yourself and/or your family?
Advanced booking is essential. Weekend events can fill up several weeks in advance. Please book online at https://www.kielderobservatory.org/our-events/.
We can also be contacted at admin@kielderobservatory.org

The Orion Nebula (M42) and (to the left) the Running Man Nebula (NGC1977).

KIELDER OBSERVATORY.ORG

KOAS News

Kielder Observatory Astronomical Society

Successful £50K LEADER Funding Grant

KOAS has been successful in securing a £50,000 grant over 2 years from the Northumberland Uplands LEADER Fund. LEADER (Liaison Entre Action de Développement de l'Économie Rurale) falls under the EU rural development policy and is a method of mobilizing and delivering rural development in local rural communities.

This funding will be used to deliver an increased series of events at the observatory so that KOAS will be able to adapt a robust scheme for the future years of sustaining itself without grant funding.

Part of the funding will be used to pay a member of staff to deliver this programme of events.

Kielder Observatory—South-Western Elevation

See the Chairman's Update on Page 3 for further details on this award.

Volume 1, Issue 1

Autumn 2010

News in Brief

- £50K LEADER funding secured
- Observatory Equipment
- Friends of Kielder Observatory
- Forthcoming Programme of Events released

Welcome

Welcome to the first issue of KOAS News. This is the newsletter of the Kielder Observatory Astronomical Society.

Our aim is to publish this quarterly in the first instance, to keep you up to date with the goings-on at the observatory and future events.

We also hope to include articles produced by our members. So if you have so any interesting astronomical related topics you feel you'd like to share with the other members, whether it be an astro-image, details of an observing session or a general topic of interest, then please send it to the *Editor*.

Reminder !

Society membership fees are due for renewal on 1st October (If you joined after 1st April 2010, your renewal is not due until October 2011)

Inside this issue:

Did you know……

The Moon is as black as coal; it reflects only 6% of the light that falls on it?

Did you know……

As a result of human activity in space there are over 10,000 large piece of debris and millions of smaller pieces up there?

"Absolutely fabulous experience. We are not experts at all and we all (my husband and our two grandchildren aged 11 and 13) learnt loads. The presenters were very knowledgeable and had us engaged and inspired throughout. My grandson said 'I wish Dan was my Science teacher!'. Fantastic guys and highly recommended. Presenters were lovely with my grand daughter too making sure she could see everything and they answered loads of questions from people who were clearly very knowledgeable already. The presentation when we arrived and the agsin at the end about the aurora were great. Hot chocolate well received to warm us up! THANKYOU!"

Yvonne, Wakefield