It was a very packed programme for our February meeting which was well attended and also doubled up as our Annual General Meeting (AGM).

First, though, the important part; our talk this month was given by Andrew Ciavarella of the South Somerset Astronomical Society on the topic of "Discovering the Milky Way". This was an exploration of how the structure of the Milky Way has been discerned by astronomers of, mainly, the last 400 years. Andy took us through the fundamental problem which is that we're somewhere within the Milky Way and unable to get a view from outside. He then looked at the various galactic structures that we **do** see in galaxies outside our own. We see elliptical, spiral and barred spiral galaxies but they themselves have different structures creating a whole zoo of galaxies out there.

He then looked at the history of the attempts to determine the structure from early work by Herschel (who did work out that we were in a disk but thought we were near the centre), later work on the distribution of the halo of globular clusters by Shapley in the early 20th century (which proved were about 2/3 of the way out from the centre) and finally radio and IR studies by Oort and others which mapped the various spiral arms of the Milky Way for the first time.

All of this work has concluded that the Milky Way is a barred spiral, probably of type SB(rs)bc (Barred, weak ring around the bulge and tightly wound arms). Andy showed some images of similarly structured galaxies but speculated that, as the evidence for well structured arms was weak in the GAIA data, the Milky Way may be more of a flocculent type of galaxy rather than a "grand design" structure like the Andromeda Galaxy.

A very well presented talk with lots of detail to chew on!

After the break, Andy's compatriot from SoSAS, Nick O'Donnell, gave us an update on the Solar System path along the Taunton to Bridgwater canal. Nick had given us an outline of plans back in May of 2023. Funding is now in place (some from the Anne Dodgson Memorial Fund set up by CADAS members) to start the work on setting up the markers for Halley's comet. One is already in place showing the maximum distance of Halley's from the Sun. Inevitably, where lots of bureaucracies are involved, progress is slower than hoped but a builder has now been identified and work should start soon.

Bud then gave his Treasurer's report and, though expenditure exceeds receipts by about £200 for last year, the Society's finances are in good health. Costs of the hall and now the bank account are significantly higher than previous years. The unofficial "subsidy" by the producers of the cakes that we've enjoyed for many years to the society has now been stopped and we're paying proper prices for our cakes. We thank Zena and Sue for their generosity over the years but we do believe we should be paying a fair price. As it turns out, we still make a return on the ½ time teas so there is no real issue.

The report was approved by the meeting and (after the usual resignations and elections) Terry, as Chair, and Bud, as Treasurer, were re-elected.

It's also the start of our membership year and an encouragingly large number of members have paid their subscriptions for the upcoming year.

Bud then showed a short film he'd made of Astrofest 2025 which took place on the 7th & 8th of February. He showed lots of the exhibition stands with all the equipment laid out to try to tempt one's credit card from one's wallet! In the meantime, of course, some 600 others were listening to talks in the main hall with the inevitable numb bum after 16 talks!

Terry then looked at what's going to be in the skies over the next few weeks (see below). Two highlights are the possibility of observing Mercury towards the end of February and the Lunar Eclipse on the morning of 14th March. He then reviewed our Outreach activities for the past winter. We did :

- Manor Court School on Friday 2025 January 24th. Some patchy cloud but we managed to see Saturn, Venus, Jupiter and Mars as well as pointing out some constellations.
- Redstart School on Thursday 2025 January 30th. Finally(!!) managed a clear night at Redstart. Again, managed Saturn, Venus, Jupiter and Mars and Pete and Roger Hunt pointed out constellations and the pole star.
- South Petherton Junior 2025 on Thursday February 13th. Had to be cloudy sometime ☹ so we had to make do with the backup "what we would have seen" slideshow, a demo of Ken's telescope and some looking through Pete's small scope outside.

Sadly, the planets will be nothing as good next year with only a ringless Saturn and Jupiter to look forward to.

The rest of the meetings for 2025 have now been arranged (bar one – see later) and are as follows:

Mar 19 Richard Kilbey *Captain Cook and the Transit of Venus*
Apr 16 Professor Chris Lintott
May 21 Ask the Panel
June 18 Kate Earl *The 88 Constellations*
July 16 Tim Whetherell
Aug 20 Joe Williams *Formation of Planets and their atmospheres*
Sep 17 Gadgets and Gizmos followed by Observing Session
Oct 15 TBA
Nov 19 Heather Johnston *The rise and fall of the giant planet occurrence rate*
Dec 17 Arthur Davis lecture and Christmas Social

We may move the Observing session to October as Saturn will be in a better position to observe by then (even if it will be ringless!).

Terry finished the meeting with some images including some of the planets taken with a DSLR which are remarkably similar to what they actually look like through the eyepiece of the same telescope. This included spotting Neptune and Uranus on wide field images and then their moons detected on the DSLR photos. His research object – NGC6729 – is now back in view and the first set of images were show, though it is in its quiescent phase at the moment so not very exciting!

Terry thanked everyone for coming along and for the help given serving teas and washing up afterwards and hoped that we would see everyone next month for the talk on Captain Cook and the Transit of Venus.

Upcoming Events

Planets

Venus is still very bright in the West until 9pm. It is starting to sink in towards the Sun, though, and will be setting by 7pm (soon after end of Civil Twilight) by the next meeting. Nice crescent in a telescope.

Mercury is just visible at end of Civil Twilight but you'll need a very clear Western horizon. It improves over the next few weeks and will be below Venus and near the moon on 1st March.

Mercury and Venus will be close between 9th and 13th March (about 7pm) though Mercury will be much fainter by then.

Saturn is rapidly falling in towards the Sun and will be gone by the next meeting. It will be very close to Mercury (binocular field of view) between 24th and 26th February.

Mars is still going westwards in Gemini but reaches the end of retrograde motion around 24th February and will start moving eastwards again.

Jupiter Is bright and more or less due South when it gets dark.

Uranus near the Pleiades

Neptune between Venus and Saturn but will be difficult without a well aligned telescope.

March 14th Total Lunar Starts 05h Total just at moonset 06:35h