CHAIRMAN'S REPORT 2025

The society has had another exceptionally good year, with an excellent range of speakers for which we must thank Shirish and Ron Johnson, Martin Howe, and myself.

We began in January with Tim Parsons giving us a talk entitled 'A Massive Star menagerie; touring the Hertzsprung Russell diagram'. In his talk, Tim explained Wolf Rayet stars and the red and blue stars classification before discussing the main spectral types based on effective ("surface") temperature. As a stars hydrogen fuel is consumed, stars like our Sun will swell to become red giants. More massive stars approach the end of their lives with truly gigantic proportions in the form of relatively cool red supergiants. So far, so good! what fabulous way to start the year, with a great attendance and Ron Johnson giving us a review of last years weather report.

In February we listened to Neil Phillipson talk about 'Mankind's next giant Leap'. It was a fascinating talk about solar panels in space, Telstar, the Space Shuttle, Mars Odyssey and Mars Reconnaissance Orbiter. It does make you wonder and appreciate all the clever scientists and engineers and what humans have done in space, I am astounded by it all.

In March, Sarah Matthews talked to us about Living with a Star, and the many Faces of our Sun. Sarah discussed the importance of studying the Sun in visible light, Hydrogen Alpha and it's Magnetic field evolution that drives Plasma to the Surface. The Sun's Magnetic field reversing every 11 years and a size so big that 1.3 million Earths can fit in inside it, I wonder what else we will find out about our Sun that we do not know yet.

In April we had our own Martin Howe talk about the formation of planetary systems. The formation and evolution of planets is one of the most fascinating subjects in planetary science. Understanding these processes not only sheds light on our own Earth but also enhances our knowledge about other celestial bodies in our solar system and beyond. The journey of planetary development begins with the solar nebula, a vast cloud of gas and dust in space. During this stage, particles within the nebula began to collide and stick together due to gravitational attraction. Planetesimals are critical for planetary formation as they serve as the nuclei around which planets can build through. Once enough planetesimals have formed, the next stage is protoplanet formation.

By the end of this stage, several protoplanets remain in orbit around the young star, each varying in size.

As protoplanets continue their growth, they undergo a process known as planetary clearing. This stage involves the removal of leftover material in the protoplanetary disk. clearing out smaller bodies through collisions or ejections from their orbits. This stage is crucial for determining which will become full-fledged planets.

In May we had Greg Smye-Rumsby talking about if Venus had a moon. Venus's atmosphere is 100 times the pressure of the Earth at it's surface, is at 463 degrees Celsius and is radioactive, so not only would you get crushed to death but because of the heat and radioactivity you would not even last a second. Cooked and Boiled no less. Nice.

He also talked about the so-called hypothetical Moon of Venus called Neith.

In June we had the pleasure of Sian Prosser from the RAS, talking about Pioneering women Astronomers. I never knew of all the women who historically were not recognised by the RAS, and how they fought in those times with a little help from male colleagues and husbands. Thank God it isn't like that now, otherwise I wouldn't be standing here talking to you. Caroline Herschel sister of William Herschel, discovered comets and nebulae. Mary Somerville, a science writer, Agnes Clarke historian of astronomy, just to name a few of them. I am indebted to them all.

In July we had Adam Amara talking about Dark Energy Surveys. I thought this was going to be difficult to grasp considering the subject matter, but Adam explained everything clearly, including cosmology, distances between objects, how lumpy things are in space with planets etc, dark matter, dark energy, gravitational lensing, and inflation. He even discussed satellites such as Euclid and the Vera Rubin Observatory First Light in Chile. I look Forward to an update with Adam later.

On the 6th of Sept we had a Picnic at Headley Heath, where we had a wonderful time looking at Saturn, Moon, and Andromeda Galaxy.

At the September meeting we had Dr Steven Banham from Imperial College talking about the Gale Odysseys on Mars. He went on to talk about what NASA had discovered on Mars. The Rock that they had examined at Cheyava Falls in Jezero Crater which contained G Band Carbon and potential Pro-active Microbial Life. Wow what a find. Amazing.

In October we listened to Professor Peter Bull talking about the “A Window through the Universe.” He went through how the universe came into being, from the Big Bang to the present day and onto the End. How we know less about the atom than we know about the Earth and the Sun, and about time & space as a Dimension.

The Solar System walk opened with great enthusiasm; with the launch being well attended by members, dignitaries, including our patron (Professor Andrew Coates), councillor Steven McCormick, and the mayors of both Sutton and Epsom & Ewell, Louise Phelan and Robert Leach and members of the public.
Helium filled balloons adorned information boards, which were then given away after the launch to children.
A massive thank you needs to be given to the Nonsuch park Joint Management Committee, for their permission, Councillor Steven McCormick for sponsoring the walk with a community grant from Surrey County Council, Whistlestop Arts, who did a fantastic job with the artwork for the walk and the EAS working group, consisting of Peter, Suzanne, Shirish and Srikala plus all our Volunteers who gave up their time to come to install the walk and of course Martin.

In November we had Dr Eugene Vasiliev talk about Evolution of the milky way, and everything that goes into the Milky way, for example, the Heavy Elements, Metals, Planets. Black hole and Dark Matter, all Rolled into one to make a nice, delicious soup. Lol.

I hope you all enjoyed the year as much as I have, I've learned a hell of a lot. If I retain it that's totally different matter. lol

I must thank all my fellow committee members for all their hard work and support and who make my job such a joy to do.

School Space for the use of the school.

An excellent job by Steve for keeping our Accounts for last year and observing sessions.

John Davey for his splendid work on Janus.

Peter for all his help in the Secretary role, for continuing to develop our website and the outreach for scouts etc.

Martin and the Team for the Solar System Walk which was well received.

Ron Johnson Maurice Gavin Observatory

Thanks to Shirish and Susanne, Martin and myself for organising speakers for 2026.

Ron, Martin, and Shirish for all the sky at night sessions - which were most informative Interesting & Fun.

And let us not forget Gary Walker who helped the committee with tables and chair set up.

Finally, may I wish you a merry Christmas and a wonderful new year.

Anita King EAS Chairperson