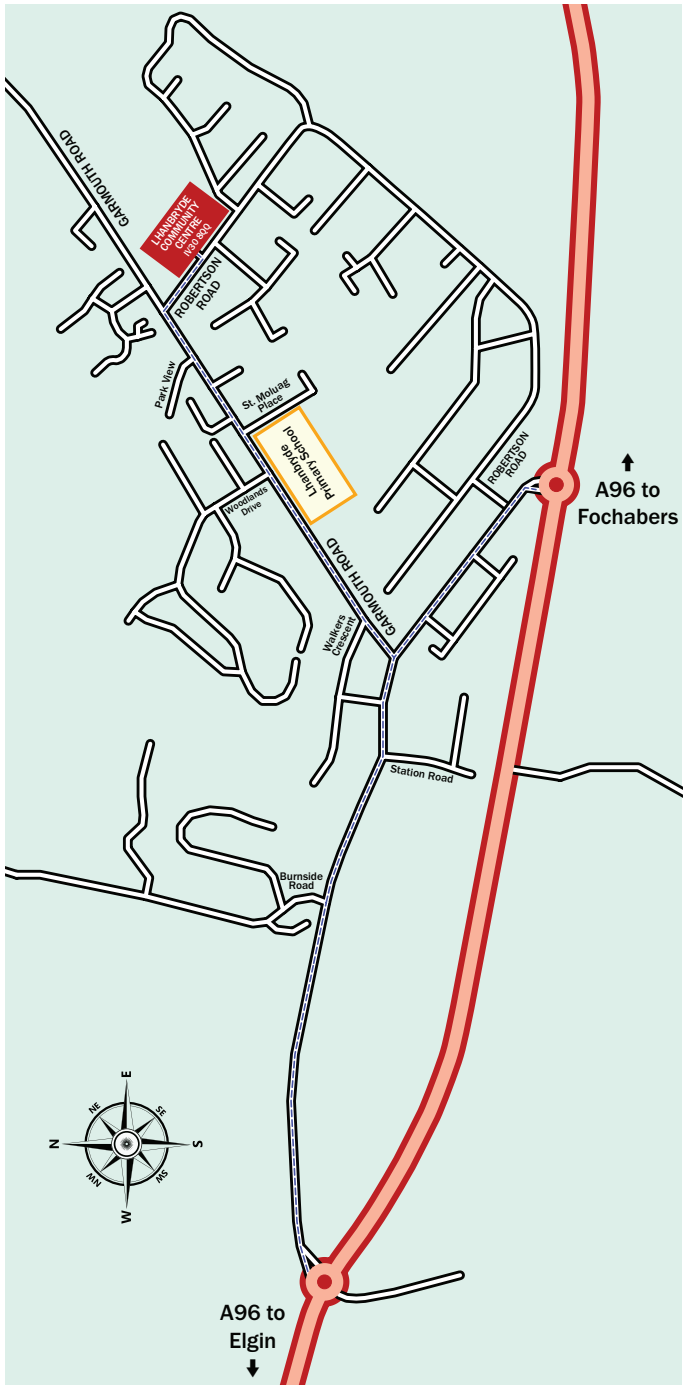
Where to Find Us



Doors open 7pm for 7.30pm start

Come along and join us - your first meeting is free.

Issue: 0722

SIGMA generally holds its meetings on the first Friday of each month (unless otherwise stated) at Lhanbryde Community Centre *(Robertson Road, Lhanbryde, Moray, IV30 8QQ).* As well as having excellent meeting facilities, the Centre is ideal for routine observing either during or after meetings, with only minimal light pollution.

Observing sessions for members are held on Friday and Saturday evenings from September through to March, subject to volunteers'/experts' availability and observing conditions; location and opening is advised by email and through Facebook.

There are also occasional observing sessions which can be held anywhere in Moray as and when the "seeing" (sky conditions) is favourable; location and opening is advised by email and through Facebook.

SIGMA also conducts 'Outreach' to bring astronomy to schools, and groups, though this too depends on volunteers' availability. Details on how to contact SIGMA can be found on our website.

Membership

Membership is open to everyone and children's membership is free, but a parent or guardian must accompany them if they're under 16 years of age. You can 'try before you buy' as the first meeting is free. So do come along and join us.

Rates

£24.... Ordinary
£12.... Student *(over 18 in full time education)*
£18.... Concessionary *(over 60s may apply for this - please contact the Membership Secretary for information)*

Membership is renewed in full *(unless there are extenuating circumstances)* in January. New members joining during the year will pay a pro-rata fee. The first meeting is always free.

Affiliated Clubs / Societies

SIGMA membership gives you affiliated membership of both *Highlands Astronomical Society* and *North Ronaldsay Astronomy Group*. You are welcome to attend their monthly meetings and events. Members of these clubs/societies are also welcome to attend SIGMA meetings and events. *(Note this does not confer voting rights.)*

sigma
moray's astronomy club

Club Meetings and Information 2022

Presidents

Bill Leslie
Tim Schroder

Committee

Pete Sherman (Chairman)
Richard Oakley (Secretary)
Stuart Brooks (Treasurer)
Chris Stradling MBE (Events)
Mick O'Donnell (Membership)
Kevin Stocks (Health & Safety)
Helen Williamson (Webmaster)

Contact emails for the above are on the website

www.sigma-astro.co.uk

SigmaAstro **sigmaastro**

Friday, 7 January 2022

Echo-mapping of Supermassive Black Holes

Dr Juan Santisteban, University of St Andrews

Super-massive black holes inhabit the cores of every galaxy in our Universe. As material spirals into the black hole it may form a flat, thin disc of hot material. As light travels outwards further away from the black hole, it "echoes" at larger distances in the surrounding disc which we observe at different colours of the electromagnetic spectrum shifted in time, which allows us to probe this otherwise inaccessible environment, enabling us to measure the size of the disc and the mass of the black hole.

Friday, 4 February 2022

From Clouds to Crust - How Can We Investigate The Surface of Rocky Exoplanets Without Seeing Them Directly?

Oliver Herbort, University of St Andrews and Institute for Space Science in Graz, Austria.

A variety of planets around other stars have been detected over the last 20 years - more and more of these are of a rocky nature, similar to Earth, Mars and Venus, but larger. Future observations will provide insights about atmospheric composition, but surfaces will remain obscured. An understanding of the link between the higher parts of their atmosphere and their surface becomes necessary. In this talk, Oliver will present his current work as part of his PhD studies.

Friday, 4 March 2022

White Dwarfs

Maarten De Vries, SIGMA

White dwarf stars are the most common type of stellar object in our galaxy, possibly the whole universe. Maarten will explain how they were discovered and how our understanding of them has been expanded through the discoveries by the GAIA mission.

Friday, 1 April 2022

Earth Observation - Foundations and the Future

Christopher Jennings

The longest running satellite imagery mission is Landsat, with nearly 40 years of eyes on the Earth. The Earth Observation industry is still growing and innovating. How do these satellites work? What can we do with all this imagery? And what will the future look like?

Friday, 6 May 2022

Messages from Mercury: Discovering the Innermost Planet

Keith Nicholson, Caithness Astronomy Group

Looking at the history of observing Mercury and data from the Messenger mission.

Friday, 3 June 2022

AGM & Solar Outdoor Astronomical Kitchen Event (SOAKE)

SIGMA Members

Friday, 1 July 2022

Exploring Cosmic Dawn with the James Webb Space Telescope

Prof. Jim Dunlop, Royal Observatory Edinburgh

Prof. Dunlop will review the huge progress (made with both ground-based and space-based observatories) over the last ~2 decades. The James Webb Space Telescope (JWST) is due to launch December 2021. By the time of this talk it should be in position at Lagrangian Point 2 and about to start science operations. Prof. Dunlop is Principal Investigator of the largest "Galaxies" JWST program. He will focus in particular about what this transformative major new infrared imaging survey should/could reveal about the early evolution of our Universe.

Friday, 5 August 2022

Synchronized Swinging: The (Simplified) Story of Polaritons

Dr Kristin Arnardottir, University of St Andrews

Theoretical physics is about solving equations to explain how physical phenomena behave. Many phenomena can be approximated to behave like the simple swinging of pendulums. When two pendulums interact, they can swing synchronously. But what does that mean for the analogous system?

The British Astronomical Association
Autumn Weekend Meeting
9th - 11th September 2022
Venue: UHI Moray, Moray Street, Elgin. IV30 1JJ
Book at : britastro.org/event/elgin-2022

Friday, 2 September 2022*

A Billion Years of Stargazing

Dr Michael Petersen, Royal Observatory Edinburgh

We look up at the night sky and see familiar constellations, but a few thousand, million or a billion years ago the sky would look different - at some point, unrecognisable. We'll learn about some timescales for the motions of stars in the galaxy, and focus on the biggest changes in the sky in the last billion years: smaller galaxies that our Milky Way galaxy has dragged in. Current research is trying to construct a timeline of the Milky Way history, and what astronomers might hope to learn in the next few years.

A decision will be made nearer the dates if September & November meetings will be at Lhanbryde or fully online

Friday, 7 October 2022

The Life of a Planetary System

Dr Tom Wilson, University of St Andrews

Planets, moons, asteroids, and comets have fascinated professional and amateur astronomers for millennia. Over the past 50 years astrophysicists have been able to probe the complete life of a planetary system due to the development of space and ground-based telescopes. Dr. Wilson will discuss the current state of knowledge, and highlight upcoming missions and telescopes that will provide valuable insight into the life of planetary systems.

Friday, 4 November 2022*

How to Run a Space Telescope

Neill Reid, Space Telescope Science Institute (STScI)

STScI was founded in the early 1980s to help astronomers worldwide get the most out of what then known as the "Large Space Telescope" which became Hubble. STScI will also look after the James Webb Space Telescope and the Roman Space Telescope (launching later this decade). Neill will look at the history of Hubble and JWST, and what it actually means to support observations with a space telescope. He will then give a brief look forward to Roman.

Friday, 2 December 2022

Christmas Quiz

SIGMA Members and your Families

Bring along the family for a night of fun, questions and mince pies to end the year. There will also be the usual Christmas raffle.