

## Where to Find Us



**\*\*Doors open 7pm for 7.30pm start\*\***

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

Issue: 0121

**SIGMA generally holds its meetings on the first Friday of each month (unless otherwise stated).**

**Due to the Covid-19 situation meetings are currently being held online for SIGMA and affiliated members via Zoom Webinars.**

**You can 'try before you buy' as the first meeting is free. Please contact us to request access to the online meeting:**

**membership@sigma-astro.co.uk**

**There will also be no public observing sessions.**

**This will continue until restrictions are lifted**

### **OUTREACH**

**It may be possible to continue to offer our Outreach programme via Zoom - please contact us to discuss.**

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.*)

All information correct at time of publication. E&OE.



# Club Meetings and Information 2021

### **Presidents**

Bill Leslie

Tim Schroder

### **Committee**

Pete Sherman (Chairman)

Richard Oakley (Secretary)

Stuart Brooks (Treasurer)

Donna Williamson (Events)

Mick O'Donnell (Membership)

Kevin Stocks

Contact emails for the above are on the website

[www.sigma-astro.co.uk](http://www.sigma-astro.co.uk)



**Friday 8 January 2021**

### **Black Holes - a Dark Story**

**Sandra Brantingham - British Astronomical Association**

Starting off with how big suns are, how they work, how they die, how they create black holes and what we have discovered about them.

**Friday 5 February 2021**

### **Apollo 15:**

#### **The First Science Expedition to the Moon**

**Ken MacTaggart - Highlands Astronomical Society**

50 years ago, having succeeded with 3 short Moon landing missions, NASA set out its plans for the first extensive exploration of the Moon. The crew of Apollo 15 landed at a dramatic site below the Apennine Mountains where they stayed for 3 days, discovering unique clues to the origin of the Moon.

**Friday 5 March 2021**

### **Nightsapes, Wide Field Astrophotography**

**Maciej Winiarczyk - Caithness Astronomy Group/  
wildnorthskies.com**

This talk will cover the basics of how to make nightscape pictures. Including, among others: selection of suitable locations, choice of equipment, typical camera settings dependent on the subject, photographing technics, basics of post processing.

**Friday 2 April 2021**

### **Non Professional Comet Observing and Discovery Today**

**Denis Buczynski -**

**British Astronomical Association Comet Section**

This talk looks at the activities, practices and opportunities for comet observers and discoverers in this age of electronic observing. The role of the non professional still has a significant role to play in cometary science.



**Prof. George Fraser**

**(22 July 1955 - 18 March 2014)**

Born and brought up in Burghead, George was Professor of Detector Physics and Director of the Space Research Centre of the University of Leicester. Though his work was recognised internationally, his achievements are virtually unknown locally.

**Friday 7 May 2021**

### **Solar Microscopes**

**Prof. Lyndsay Fletcher - University of Glasgow**

The Daniel K. Inouye Solar Telescope (DKIST) on Haleakala mountain in Hawaii is our newest solar 'microscope'. It is the most powerful in the world by some way, with a main mirror diameter of 4 metre. Lyndsay will discuss the telescope and some of its predecessors, and its ever-improving observations: the boiling solar surface, sunspots, and flares.

**Friday 4 June 2021**

### **AGM**

*followed by*

#### **Satellite Data and (Trans)Planetary Ecology: How Space is Changing our World-View**

**Matjez Vidmar - Royal Observatory Edinburgh**

Data from satellites is changing the way we perceive natural environment and life on Earth. From protection of wildlife, mapping the climate change or disaster relief, remote sensing from space is enabling us to monitor most of Earth's surface in near real-time allowing for a very different perspective on our planet and the global consequences of local actions.

**Friday 2 July 2021**

### **Solar Observing & Equipment Night**

**Hopefully!!!!**

**Friday 6 August 2021**

### **Astronomy and the Art of Navigation**

**David Paterson - Dundee Astronomical Society**

This talk explores the development of the art of navigation. From our earliest times, mankind has had an urge to travel. Astronomical observations and theories have played a major role, from early, simple approaches using basic astronomy, to the latest techniques which rely on fundamental theories of astrophysics.

**The second half of most meetings features an in-depth look into what you can see in Moray's night sky for the coming month, as well as Space and Club News with details of any forthcoming SIGMA events.**

**Friday 3 September 2021**

### **The Fourth George Fraser Memorial Lecture Preparing for Space Settlements Using Microbes**

**Prof. Charles Cockell - University of Edinburgh**

As we explore and settle space, we will take microbes with us. On Earth, we use them to make yogurt, drugs and to mine metals. I will talk about how microbes can help us in space and about our experiments on the International Space Station. As we head out into the stars, microbes will come with us as our allies.

**Friday 1 October 2021**

### **The High Energy Sun**

**Dr. Alec L. MacKinnon - University of Glasgow**

The Sun is just an "ordinary star" but it nonetheless displays high-energy radiation (cosmic rays and gamma rays) more often associated with black holes and supernovae. We will look at some highlights of high-energy solar physics: the global neutron monitor network, solar cosmic rays studied on Earth, gamma-rays from the Quiet Sun, solar flares and the puzzling gamma-radiation that persists for hours after them.

**Friday 5 November 2021**

### **Mercury: The Incredible Shrinking Planet**

**Dr. Simon Cuthbert -**

**AGH University of Science and Technology, Poland**

Mercury has been recognised as a "wanderer" of the night sky since Babylonian times, but its proximity to the Sun has made it a difficult body to study. The recent MESSENGER mission has revealed a fascinating and distinctive member of the family of terrestrial planets. This presentation will explore current knowledge about this rather uncelebrated planet, with a look ahead to the upcoming Bepi-Colombo mission.

**Friday 3 December 2021**

### **Christmas Quiz Night**

**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.

Correct at time of publication. SIGMA/Guest Speakers reserve the right to change a talk/venue - these will be updated on the website and Facebook