CELEBRATING 40 YEARS 1978 - 2018

The Messenger

Mexborough & Swinton Astronomical Society

May 2018

The Orange Light of Hokule'a



Arcturus is the fourth brightest star in the skies, and the brightest star north of the celestial equator, an orange K1 giant some 37 light years from Earth, thought to be twice the age of the Sun.

Polynesian travellers used the stars to navigate between the islands of the pacific. Directing their canoes and outriggers by the rising, culmination and setting of the stars. The Hawaiian name for Arcturus as a single star was likely Hokule'a, which means "star of gladness", or "clear star". In Hawaii, the pattern of Boötes was called Hoku-iwa, meaning "stars of the frigate bird". This constellation marked the path for Hawaiiloa on his return to Hawaii from the South Pacific Ocean.

Hawaiiloa is the legendary founder of the Hawaiian island civilization. Hawaiiloa and his brothers were born on the east coast of a land called Ka 'Aina kai melemele. Hawai'i Loa was a distinguished man and noted for his fishing excursions which would occupy months, sometimes the whole year, during which time he would roam about the ocean in his big canoe, with his crew and his officers and navigators.

One time when they had been at sea for a long time, Makali'i, the principal navigator said to Hawai'i Loa, "Let's steer the canoe in the direction of Lao, the Eastern Star, the discoverer of land [Hoku hikina kiu o na 'aina]. There is land to the eastward, and here is a red star, hoku 'ulea (Arcturus), to guide us, and the land is there in the direction of those big stars which resemble a bird."
So they steered straight onward and arrived at the easternmost island of the Hawaiian chain.3 They went ashore and found the land fertile and pleasant, filled with 'awa, coconut trees, and so on, and Hawai'i Loa, the chief, gave that land his name. Here they dwelt a long time and when their canoe was filled with vegetable food and fish, they returned to their native country with the intention of returning to Hawai'i-nei, which they preferred to their own country. They had left their wives and children at home; therefore, they returned to get them. When Hawai'i Loa and his men arrived at their own country and among their relatives, they were detained a long time before they set out again for Hawai'i.

At last Hawai'i Loa sailed again, accompanied by his wife and his children. He settled in Hawai'i and gave up all thought of ever returning to his native land.

Hōkūle'a is the name of a Polynesian double-hulled voyaging canoe launched in 1975 by the Polynesian Voyaging Society. On May 18, 2014, Hōkūle'a and her sister vessel, Hikianalia embarked from Oahu for "Malama Honua", a three-year circumnavigation of the earth. She returned to port in Hawaii on June 17, 2017. The journey covered 47,000 nautical miles with stops at 85 ports in 26 countries.

From the Final Frontier

On Sunday night (April 8), SpaceX founder and CEO Elon Musk posted a photo of "the main body tool" for the BFR*Spaceship.. The company is building this craft to take people to the Mars and other destinations throughout the solar system. This carbon-fibre-composite spaceship is going to be big, as the inclusion of an electric car — made by one of Musk's other companies, Tesla — in the photo shows. How big? According to the specs Musk laid out in a talk last September, it'll be 48 by 9 metres. The spaceship, which will likely accommodate 100 or more passengers at a time, will also incorporate a rocket, which will feature 31 Raptor engines and be capable of lifting150 tons (136 metric tons) to low Earth orbit. The BFR rocket-spaceship combo will stand 348 feet (106 m) tall when stacked together, Musk has said, and both components will be fully reusable.



The Size of the BFR alongside a real car!



Artist impression of BFR on Mars

*BFR – official title "Big Falcon Rocket"; unofficial "Big F*****g Rocket"

Mike Hall

Keep Your Eyes Open



Thursday 3rd May "A Lift into Space"

Mike will be talking to us about methods of getting into space from the surface of Earth including "space Elevators"

Speaker – Mike Hall



Thursday,17th May "The Physics of Electromagnetic Keyboard Instruments"

Ed Daw is a Reader in Physics at the University of Sheffield. He has worked on many aspects of 'the Dark universe', including searches for two kinds of dark matter, axions and WIMPs, and the quest for direct detection of gravitational waves with the LIGO instruments, an effort which he joined in 1997. He leads the University of Sheffield gravitational wave research group, which was a member of the team that announced the first and second direct detections of gravitational waves from black hole binaries earlier this year.

Speaker Dr. Ed Daw

Mike Hall's May 2018 Skynopsis

Diary (all times BST, except Sunrise/Sunset, local (Sheffield) time).

1st	Sunrise 05.03, Sunset 20.34
2nd	Mars 1.3° South of Saturn 12.00
4th	20.00 Jupiter 41.7°. South of the Moon
5th	Eta Aquarids meteor shower peak
6th	Eta Aquarids meteor shower peak; 01.00 Moon at apogee; 07.00 Mars 3°. North of Moon
8th	Last Quarter Moon, Sunrise 05.19, Sunset 20.46;
9th	01.00 Jupiter at opposition
10th	09.00 Neptune 2°. North of Moon
12th	21.00 Mercury 2°. South of Uranus
13th	17.00 Mercury 2°. North of Moon
15th	New Moon; Sunrise 05.07, Sunset 20.58
16th	18.00 Aldebaran 1.2deg. South of Moon
17th	18,00 Venus 5deg. North of Moon; 21.00 Moon at perigee
22nd	Moon at First Quarter; Sunrise 04.57, Sunset 21.09
27th	18.00 Jupiter4°. South of Moon
29th	Full Moon; Sunrise 04.48, , Sunset 21.18

The Solar System

Mercury	Out of view this month
Venus	Bright after sunset in the North-Western sky
Mars	Showing at mag. -0.08, rising mid-month around 01.30
Jupiter	In opposition this month, visible all night, at its best on the 9th in Libra
Saturn	In Sagittarius, difficult observing before dawn
Uranus	In the morning in sky late in the month but too close to the Sun to observe in UK
Neptune	Visible before dawn in south-eastern sky
Aquarids	Meteor shower, peaks ,5th – 6th

May's Messier Objects – A gallimaufry of Galaxies
Canes Venatici:- M3, M51, M63, M94, M106
Ursa Major:- M81 and M82, M97, M101,M108, M109,
Coma Berenices:- M88,M91, M98, M99

Thanks to Mick Nicholls



Mick Nicholls has donated a telescope to the Society. Tony Morris and |Andy Kirton-Vaughan intend to use it as a guide scope for the observatory main scopes.

In the photograph Mick can be seen with Chairman Les handing it over. The scope is a 70mm IKI ED refractor made by TS Optics in Germany. IKI stands for Ian King Imaging.

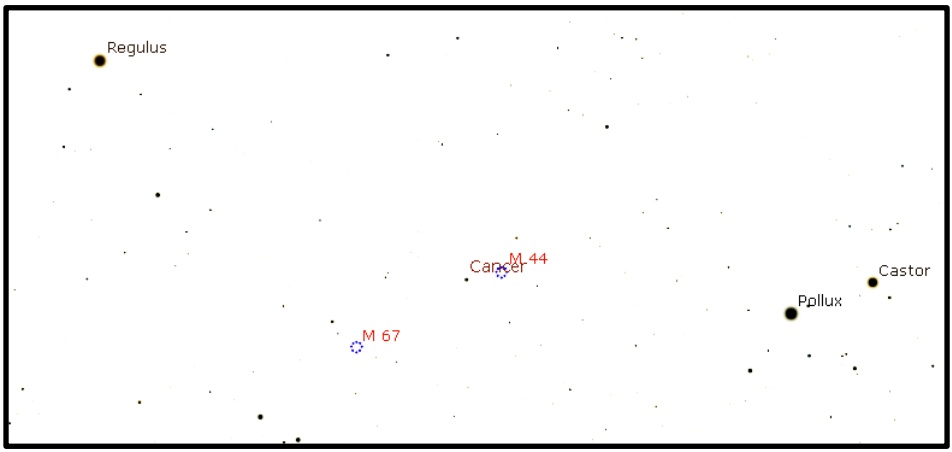
MESSIER BINOCULAR CHALLENGE

So a couple of objects this month that you could get your binoculars on to help you start filling the society's sheet.

On May 15th at about 10pm you should be able to find two open Star Clusters, M44 (The Beehive) and M67. M44 has stars as bright as magnitude 6.5, is sometimes called "Praecipe". It is about 550 LY away, and is over 1° across, so should fit nicely into a binocular field of view. So find Castor and Pollux, then Regulus. M44 lies almost halfway between Pollux and Regulus. Find the halfway point and M44 should be visible probably one field of view below that point.

M44, the Beehive is a very nice binocular object, in which you may be able to resolve up to 20 or so stars in 10×50 binoculars.

With M67 relatively few stars are resolved in big binoculars, this is a large, bright cluster with many stars that are too faint to be seen but which contribute to the nebulous glow. It is a curiosity in that, at an estimated 4 billion years old, it is older than usual for an open cluster.



What you might see through binoculars



M44



M67

Charon Gets Named Features

On April 11, the IAU Working Group for Planetary System Nomenclature approved names for features on the moon Charon, which had been proposed by the New Horizons spacecraft team. These features are the very first to receive official names on the moon. Many of the names had already been adopted informally by the New Horizons team in 2015, but the official acceptance of the nomenclature now means astronomers everywhere will universally use the terms.

Argo Chasma	named for the ship sailed by Jason and the Argonauts
Butler Mons	named for Octavia E. Butler, a science fiction writer
Caleuche Chasma	named for a mythological ghost ship that collects the dead in Chile.
Clarke Montes	named for famous science fiction writer Sir Arthur C. Clarke
Dorothy Crater	named for the lead character in L. Frank Baum's books about Oz
Kubrick Mons	named for film director Stanley Kubrick
Mandjet Chasma	named for the boat that carried the Egyptian sun god Ra
Nasreddin Crater	named for a folklore protagonist who appears in stories throughout the Middle East
Nemo Crater	named for the captain of the fictional submarine Nautilus
Pirx Crater	named for the protagonist in a series of stories written by Stanislaw Lem
Revati Crater	named for the lead character of the Hindu epic Mahabharata
Sadko Crater	named for an adventurer in the Russian tale of Bylina

Still to be confirmed are such places as

Gallifrey Macula	Kaguya-Mime Crater	Serenity Chasma
Mordor Macula	Kirk Crater	Tardis Chasma
Vulcan Planum	Organa Crater	Alice Crater
Macross Chasma	Nemo Crater	Uhura Crater
Nostromo Chasma	Ripley Crater	Skywalker Crater
Spock Crater	Sulu Crater	Vader Crater

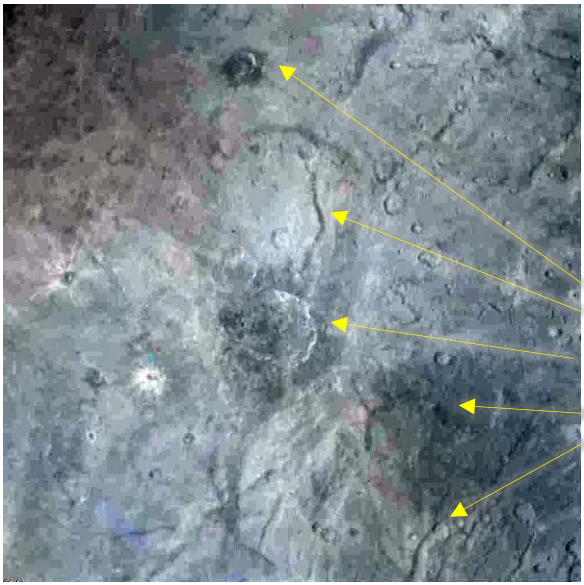


Photo of Charon centred on Ripley Crater. Nostromo Chasma crosses Ripley vertically. Vader is the dark crater at 12 o'clock.
Organa Crater is at 9 o'clock
Skywalker Crater at 8 o'clock
Gallifrey Macula and Tardis Chasma at 4:o'clock

My Learned Friend

A few Sundays ago I was flicking through the channels trying to find something entertaining to watch when I saw Les Marsden in an old black and white film!
It turned out to be Will Hay in "*Good Morning Boys*" (1937) I did say it was an old film). However the resemblance was remarkable. Hay plays a bumbling school master trying to get the better of his charges. The similarity with Les trying to control the committee was striking.
Seeing Will Hay on TV brought back lots of memories from childhood but also the fact that he was a talented amateur astronomer. In between appearing on stage, not only in Britain but across the world and starring in 20 films he built and used his own observatory, and taught himself how to make useful observations becoming a talented amateur astronomer.
Born in 1888 William Thompson Hay was born into a family that moved about the country spending his childhood in Stockton, Lowestoft, Hemel Hempstead and Manchester. He first tried his hand at engineering before moving on to printing. He used the knowledge gained, later building his own micrometre and blink comparator which he used in the measuring and detecting of comets. By the age of twenty one the performance bug had bitten and he developed his act as a conniving headmaster in music halls up and down the country. By the end of the 1920's Hay had taken his act across the world and was in such demand that he performed in the Royal Variety Performance in 1925. By 1933 he had made his first film and over the next ten years he made 19 more as well as having a radio programme and stage performances.



Les Marsden



Will Hay

Joining the RNVR during the war he served as a navigation instructor but illness forced him to be discharged before the end of the war.

During his entire entertainment career Hay kept his passion for astronomy out of the public eye. In the 1920s he obtained a 12.5 inch reflector which he restored with the help of friendly local members of the BAA. He built an observatory to house the instrument at his home in Norbury and after obtaining a 6 inch refractor built a second observatory. He became a member of the BAA in 1932 and served on the council

and member of the Comet Section. He was quickly elected to the position of Fellow of the Royal Astronomical Society the following year.

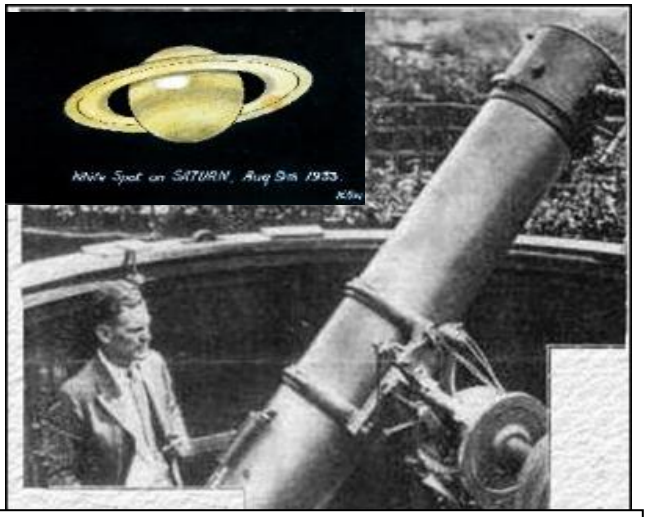
In 1933 Hay's private interest and public life collided when he was the first person to observe a great white spot, a huge storm, in the atmosphere of Saturn. On the night of 3rd August 1933 he observed and sketched the spot (remember very few amateurs had access to photography) and announced his observations in Monthly Notes of the Royal Astronomical Society (vol. 94, p. 85 1933) thus beating US Naval Observatory Washington by over a day. His and others further observations allowed Saturn's equatorial rotation to be calculated as 10 hours and 14 minutes. The press went wild with the idea that a famous comedic film actor could also be an accomplished observer and kept him in the news for over a month – they obviously had longer attention spans in the 1930's.

After this Hay was persuaded to write a book by his friends in the BAA and RAS. He decided to write a beginners book and in 1935 as W T Hay published 'Through My Telescope; Astronomy For All' (John Murray). The book is out of print but you can pick up copies on the internet for between £150 -£200 for one in good condition. However, there are digital copies available.1

Even after 83 years this is an entertaining read. Hay produced a book in a light conversational tone full of interesting information, much of which is still valid to today's beginner. His book is peppered with his sketches and explanations are clear and concise. The book covers the Sun, Moon, planets stars and constellations. He describes nebulae, including the Andromeda nebula which we now know is a separate galaxy. Hay freely acknowledges that he does not understand how the Sun works as nuclear fusion had not been discovered. Hay goes on to encourage amateurs to take up observing programmes as professional astronomers are too busy to keep up surveys of different celestial objects. The more things change the more they stay the same.

Will Hay was released from military service but his illness kept him away from making further films. He suffered a stroke in 1946 and went into semi-retirement. After a long convalescence in South Africa Hay seemed to have made a full recovery and returned home with plans to make further films. However he suffered another massive stroke and died on the 18th April 1949. Many of his instruments were donated to the BAA before his death and his observing notes are archived at the RAS.

I shall leave you with the Will Hay's view that astronomers are "the only men who see life in its true proportion."



The picture of Will Hay and the 12½ inch Calver which appeared in the Daily Mirror following his discovery of the @Great White Spot' on

Paul D'Silva

Diary

Date	Time	Location	Subject / Event	
Thu May 3rd	19:45	Club Room	A Lift into Space	*Mike Hall*
Wed May 9th	20:00	Club Room	Executive Committee Meeting	
Thu May 10th	19:45	Club Room	TBA	*Paul D'Silva*
Thu May 17th	19:45	Club Room	The Physics of Electromagnetic Keyboard Instruments	*Ed Daw*
Thu May 24th	19:45	Club Room	Summer Sky	*Andy Kirton-Vaughan*
Thu May 31st	19:45	Club Room	Deep Sky Observing; Equipment & Techniques – Part 4	*Tony Morris*
Thu June 7th	19:45	Club Room	AGM (Provisional)	
Wed June 13th	20:00	Club Room	Executive Committee Meeting	
Thu June 14th	19:45	Club Room	Quiz	*Roy Gunson*
Friday June 15th	19:30	Rotherham Golf	Anniversary & Solstice Dinner	*Alan Chapman*

(Details correct to time of publication)

Old Moor RSPB – Manvers Way, Barnsley, S73 0YF
TCP - Thryberg Country Park
PVE – Public Viewing Event – Bookable Only
CAE – Community Access Event
PO – Public Outreach
TBA – To be announced – (otherwise – We don't know!)

Web site: http://msas.org.uk
Meeting room is at Swinton Working Men's Club, Station Street, Swinton, South Yorkshire, S64 8AU.
Observatory is at Lee Brook Lane, Hoober, S62 7SH
Mexborough & Swinton Astronomical Society is Registered Charity N° 1064103 in England & Wales

For submissions to The Messenger - Editor: Roy Gunson: royg@gmx.co.uk



I tell you what, no more dates with Astronomers! What I thought would be a romantic walk under the stars ended up being a two-hour Physics lecture...