CELEBRATING 40 YEARS 1978 - 2018

The Messenger

Mexborough & Swinton Astronomical Society

September 2018

"Working on the Site from Morning until Night…."

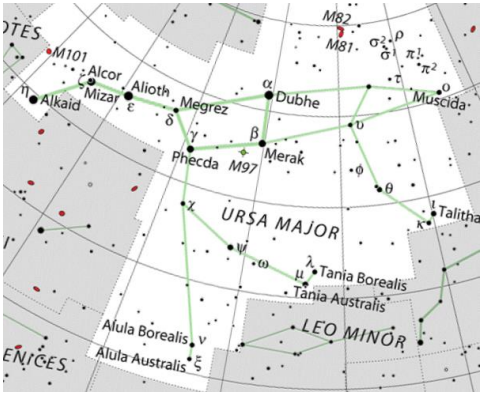




Work continues at the Observatory as the Aquarius project takes pace. The waste tank is shown being positioned above, and the completed outside of the extension can be seen to the left.
We are now ready to begin installing the interior fitting, including the long awaited toilet, Volunteers to assist with painting and decorating will be need next in order to complete by the end of September

Ursa Major, the Great Bear

Circumpolar constellations none is more easily recognized than Ursa Major. Assuming the time of observation as
about 8 o'clock in the evening on September 22, it will be found below the pole and to the west.
The familiar Dipper is sloping downward in the northwest, composed of seven stars, all of about the second magnitude, excepting Delta (at the junction of the handle to the bowl), which is of the third magnitude.
The stars Alpha (Dubhe) and Beta (Merak) are known as the " Pointers," because a line drawn from Beta through Alpha and produced about 30° passes very near the Pole-star. The dimensions of the Dipper furnish a convenient scale of angular measure. From Alpha to Beta is 5°; from Alpha to Delta is 10° ; and from Alpha to Eta, at the extremity of the Dipper-handle (which is also the Bear's tail), is 26°.
The Asterism known as “The Plough” and in American and some astronomical publications as The Dipper” or “Big Dipper”" and also sometimes called the " Wain," or “Wagon” comprises but a small part of the whole constellation.
The head of the Bear, indicated by a small group of scattered stars, and the “nose” being o Ursae Majoris, Muscida, (magnitude 3.4) and is nearly on the line from Delta through Alpha, and at a distance of about 15° and at September 22, 8 o'clock is almost exactly under the pole. Muscida is a G4 giant star, mass 3 times that of the sun and a radius up to 14 times that of the sun. It has one discovered planet – some 4 times the mass of Jupiter, orbiting in 1,630 days at 4AU.
Three of the four paws of the creature are marked each by a pair of third- or fourth-magnitude stars. The three pairs are nearly equidistant, about 20° apart, and almost on a straight line parallel to the diagonal of the Dipper-bowl from Alpha to Gamma, but some 20° south of it. At the time assumed they are all three very near the horizon, but during the spring or summer, when the constellation is high in the sky, they can be easily made out. These stars form another asterism known as the "Three Leaps of the Gazelle".
The star ω Ursae Majoris a contact binary, where the two stars are almost touching and will share a common “atmosphere” or coronal region. The orbital period is 8 hours, and the average separation of the physical surfaces may only be about 1 million miles. It has become the “prototype star for this type of binary. The orbital period has shortened by about half a second since 1903, indicating the stars orbits may be contracting.
The star Zeta (Mizar), at the bend in the handle, is easily recognized by the little star Alcor near it. Mizar itself is a double star, easily seen as double with a small telescope. The two stars of the close double of Mizar are both spectroscopic binaries, as well as Alcor which is also a spectroscopic binary. So you are looking at a total of 6 stars here!
M81 is a good target for our binocular challenge, this galaxy is magnitude 7, as is the lose by M82 at magnitude 8.5. M101, the pinwheel galaxy, is also a binocular object at magnitude 8. M97, the owl nebula may be difficult as it is down at magnitude 10 and is fairly small only 3’ of arc across.



According to the ancient legends, Ursa Major is Calisto, the daughter of Lycaon, king of Arcadia. The jealousy of Juno changed her into a bear, and afterwards Jupiter placed her among the constellations with Areas her son, who became Ursa Minor. One of the quaint old authors explains the very un-bearlike length of the creatures' tails by saying that they stretched as Jupiter lifted them to the sky.

Mike Hall's September 2018 Skynopsis



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

1st	Sunrise 05.20, Sunset 19.57
2nd	Asteroid (115)Thyra is at opposition (mag. +9.9)
3rd	Moon at last Quarter 03h; 02.00h Aldebaran 1.2° South of Moon
6th	Aldebaran 1.1° . South of Moon
6th	Saturn stationary; Asteroid (27) Eutepe at opposition (mag. +9.8)
7th	Neptune at opposition
8th	Sunrise 06.20, Sunset 19.40
9th	New Moon
10th	Comet 21P/Giacobini-Zinner at perihelion (peak mag. +3.6)
14th	Jupiter 4° . South of Moon
15th	Sunrise 06.30, Sunset 19.23
16th	Moon at First Quarter
17th	Saturn 2° South of Moon
19th	Asteroid (30) Urania is at opposition (mag. +9.6)
20th	Moon at apogee (408,877km); Mars ° . South of Moon
21st	Mercury at superior conjunction; 10.00h Venus at greatest illuminated extent
22nd	Sunrise 06.50, Sunset 19.08
23rd	Autumn Equinox; 16.00h Neptune 2° . North of Moon
25th	Full Moon
29th	Sunrise 07.03, Sunset 15.54; 04h
30th	Dwarf planet Pluto stationary

The Solar System and beyond

- Messier 15 in Pegasus
- NGC 7009 Saturn Nebula
- Mars still observable in the early evening sky
- Neptune at opposition

Keep Your Eyes Open



Paul Money

Thursday September 27th **"Mars Part One"**

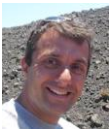
Paul will be regaling us with one of his excellent talks. This time taking us to the "Red Planet"



Dr David M Benoit

Thursday October 4th **"The Chemistry of Space"**

Dr David M Benoit is Senior Lecturer in Physical Chemistry at University of Hull. He previously led a research group in computational chemistry at the University of Ulm, Germany. His research interests include "Astrochemistry on ice surfaces and interstellar dust grains" and "Molecule–surface interactions"



Professor Vik Dhillon

Thursday October 18th **"The European Extremely Large Telescope"**

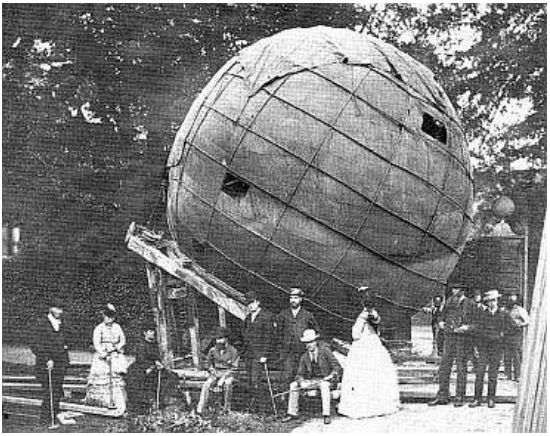
With a primary mirror of diameter 39m, the European Extremely Large Telescope (E-ELT) will be the world's largest telescope operating in the visible to infrared wavelength range. The E-ELT will collect 13 times more light than the largest telescopes today and the telescope's adaptive optics will deliver images 16 times sharper than the Hubble Space Telescope.

CELEBRATING 40 YEARS 1978 - 2018

Saturday October 27th **MSAS 40th Anniversary "ASTROCON"**

Mexborough & Swinton Astronomical Society are celebrating the 40th year of our formation. As part of our year long series of events we have designed a programme of talks at a special day "AstroCon" that we are hosting. There will be a number of trade

Roger Long's Great Sphere



Roger Long (1680 – 16 December 1770) was an English astronomer, and Master of Pembroke College, Cambridge. He also constructed a "zodiack", now considered to be the first planetarium, a hollow sphere that could hold thirty people showing the movements of the planets and constellations which remained in the grounds of Pembroke until 1871.
The sphere was 18 feet in diameter, made of copper, and could hold 30 people. It was turned by a winch. Holes were made to represent the stars. The photograph was taken in 1870, and the sphere was broken up a year after the photograph was taken.

The Club Trip to Oxford – August 18th



The Radcliffe Observatory



Alan Chapman explains all



Phil gets the pointing Finger Treatment



Time for a “Shandy” or two

Marcel De Kerolyr (1873-1969)



An amateur pioneer of astro-photography who took perhaps the finest pre-digital images of Deep Space Objects during the years from 1929 to 1934

Kérolyr was born in 1873. Being an accomplished violist, he married a singer and toured Europe from 1914 to 1918 acting as accompanist to his wife. During this period Kérolyr performed a recital before Tsar Nicholas II and his wife. Between tours, the couple lived in Nice and were known to entertain a lot.
In 1927 Kérolyr was a witness to the fatal car accident of the actress Isadora Duncan at "Promenade des Anglais".
Months later his wife lost her voice through illness and was unable to perform. An earlier interest in Astronomy prompted him to visit the Nice observatory and getting in touch with several French amateur astronomers, Kérolyr decided to become an amateur astronomer and to develop astrophotography as an interest. Being independently wealthy due to his performing successes he was able to live comfortably and pursue these new interests.
The couple bought a house in a place with very low levels of light pollution in Digne. Kérolyr built a roll-off-roof. Housed in this observatory was an equatorial mount made with Mecano.
Many of his first astrophotographs were published in L'Astronomie magazine in 1928. Some of these photographs were of high quality and very unusual. A milky way wide-field image with a -12 magnitude fireball is one example. Another photograph featured the Andromeda galaxy imaged with a total exposure of 7 hours over three different nights taken in May 1929.
In 1930 Kérolyr moved to Forcalquier, located about 50 km from Digne. He was given the use of a 80 cm Cassegrain reflecting telescope, at the nearby "Paris Observatory Annex" . The telescope was housed under an eight metre dome close to Kérolyr's house.
The observatory was known as "Paris Observatory Astrophysical Out-Station". Kérolyr worked as an observer and all cost were supported by the Paris observatory. He did not obtain an official position at the observatory and initially was not paid. Though many of his photographs used for publication allowed him to obtain some royalties.
Kérolyr is also known for being able to obtain the first colour photograph of the "green flash". This photograph was taken in 1931 from his home at Forcalquier.
His photograph of the Horsehead Nebula and the nearby Flame Nebula adorned many astronomy publications in the 1930's, and for 40 years after. The quality of some of his photographs would not be bettered until the advent of digital photography techniques.
Today, Marcel De Kerolyr is almost forgotten, yet in the 1930s he was the most celebrated astronomical photographer of that time. His magnificent images adorned the pages of the leading astronomical journals and magazines during this period, including the Monthly Notices of the Royal Astronomical Society, Journal of the Royal Astronomical Society of Canada, L'Astronomie and the Astrophysical Journal.
It is a sad indictment on the Paris Observatory that it neither gave De Kerolyr an official position nor did it even bother to ensure that a fitting obituary was published given his outstanding contributions in the field of astronomical photography.

Some of Marcel De Keroyr's photographs





Diary

Date	Time	Location	Subject / Event	
Thu Sept 6th	19:45	Club Room	Their Germans were better	*Mike Hall*
Wed Sept 12th	20:00	Club Room	Executive Committee Meeting	
Thu Sept 13th	19:45	Club Room	Pluto	*Kris Hudson-Lee*
Thu Sept 20th	19:45	Club Room	The Latest Updates in Astronomy	*Swirthan Manoharen*
Thu Sept 27th	19:45	Club Room	Mars Part 1	*Paul Money*
Thu Oct 4th	19:45	Club Room	The Chemistry of Space	*Dr David Benoit*
Wed Oct 10th	20:00	Club Room	Executive Committee Meeting	
Thu Oct 11th	19:45	Club Room	Autumn Sky	*Andy Kirton-Vaughan*
Sat Oct 13th		RSPB Old Moor	PO	
Thu Oct 18th	19:45	Club Room	The European Extremely Large Telescope	*Prof Vic Dhillon*
Thu Oct 25th	19:45	Club Room	Their Germans were Better	*Mike Hall*
Sat Oct 27th	10:00	Masonic Hall	ASTROCON	

(Details correct to time of publication)
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
Old Moor RSPB – Manvers Way, Barnsley, S73 0YF
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
Masonic Hall - Swinton Masonic Hall, 63 Station St, Swinton, Mexborough S64 8PZ
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 was in 100 Acre Wood when a rock fell on my head", said Pooh

"Meteor?", asked Piglet

"Yes, and Tigger too", responded Pooh.