The Messenger

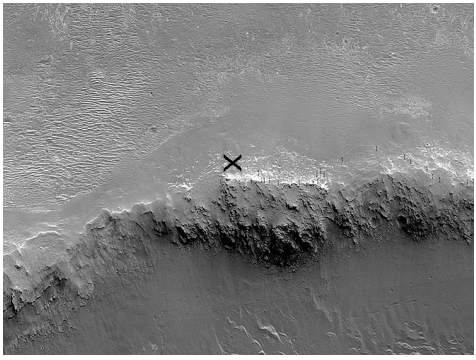
Mexborough & Swinton Astronomical Society

August 2014



Launched on July 3rd 2003, the Martian rover, Opportunity, landed on Mars' Meridiani Planum on January 25th 2004. Now more than ten years later it is still operating and sending back wonderful photographs like the one above.

Currently Opportunity is exploring around the rim of Endeavour crater having travelled nearly 25 miles from its original landing site.



'X' marks opportunity's current location

Ahead lies "Smectite Valley" a deep notch cut out of the hills further to the south, which is where high levels of smectite clays have been detected from orbit.

Get a Better View of Jupiter

by Brian Ventrudo

Do most of your observing when Jupiter is highest in the sky so you look through the least amount of atmosphere.

Try not to observe Jupiter when it's over a rooftop or a driveway, or anything else that's slowly radiating daytime heat. The turbulence and shimmering caused by the rising warm air will make the image into an ugly boiling blob.

Refractors tend to have better contrast than reflectors. But bigger telescope have better resolutions. While it's easy to find an 8-10" or larger reflector, good luck getting your hands on an 8-10 refractor! Look carefully… even at 240x, the Great Red Spot appears tiny. It takes a little practice seeing such fine detail.

Above all, be patient. Sometimes you just have to wait for a patch of steady air to let you glimpse the maximum detail. Some nights, you get just 10 seconds of good seeing at a time. But it's often worth the wait.

Use a simple eyepiece design to enhance contrast and color fidelity. Plossls and Orthoscopics work well, as does the slightly more expensive Radian design by Televue.

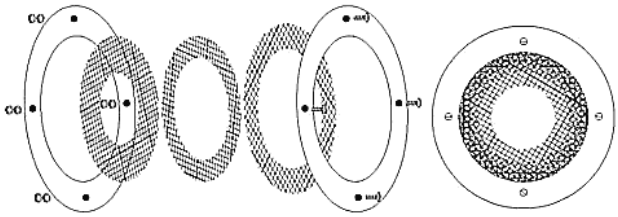
If you have an 8-inch or larger scope, try an apodizing mask. This is a type of filter or screen than fits over the top of the telescope. It gradually decreases the amount of light reaching the edge of the objective lens or mirror. This has the effect of improving contrast by reducing the amount of light from one feature that diffracts into another.

(Trust me, you do NOT want to see the mathematics required to prove this).

On planets and double stars, apodizing masks can work remarkably well.

This is a technique that can be used on telescopes of medium to large aperture to improve the dynamic range and enhance small details. Can be used to spate double stars when there is a disparity in their magnitudes and the fainter is hidden by the brighter.

An Apodizing mask basically reduces the light passing through the aperture incrementally from the centre, and is usually achieved by using material cut into rings to achieve this effect Instructions to build such a mask can be found here - http://csastro.org/2009/10/a-do-it-yourself-apodizing-mask/



Courtesy of One-Minute Astronomer - http://oneminuteastronomer.com/

Work Party at the Ob! (Tuesday July 15th)

We would like to give a big thank you to the imaging gang who went up and did a sterling job sorting out the trees and hedges around the site.



How's this thing work? Les forgot the Instructions again!



"You prune the tree – I'll Shout Instructions!"



"To Me – To You"

The August Night Sky – Mike Hall

Key Dates

3rd	Mercury and Jupiter in conjunction
4th	Moon, first quarter
10th	Moon, full.
12/13th	Perseid meteor shower peaks; moonlight may be a problem.
13/14th	Northern Delta Aquarid meteor shower peaks
17th	Moon, last quarter.
17-19th	Close conjunction of Venus, Jupiter and M44, East-North-East entre of Cancer at 04.40
27th	Mars and Saturn in conjunction in the evening twilight
31st	Close conjunction of Moon and Saturn

Planets

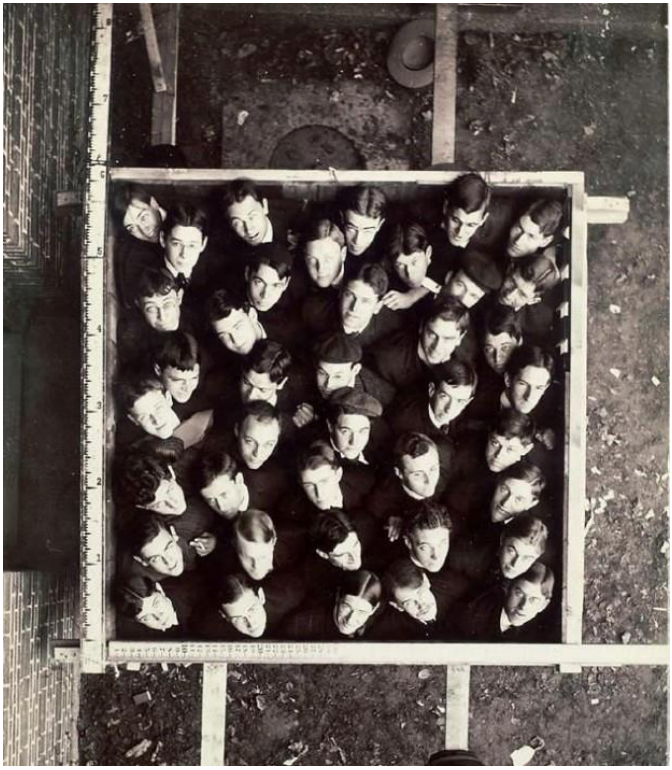
Mercury	Morning object until 8th August (superior conjunction); visible in the evening from mid-August
Venus	A morning object; close encounter with Jupiter on the 18th
Mars	Low in the south-west after sunset; forms a line with Spica, Saturn and waxing crescent Moon on the evening of the 1st.
Jupiter	Close to the Sun, poor observing; close to Mercury just before sunrise on the 3rd. In conjunction with Venus early morning on the 18th, (see above); should be able to see Io and Europa with binoculars/telescope
Saturn	Low in the evening twilight; Saturn and the waxing crescent Moon are 0.5 degree apart on the evening of the 31st. See above
Uranus of the month.	Mostly a morning object which culminates in darkness by the end
Neptune	Close to a mag 6 star on the 10th and reaches opposition on the 29th; close to Sigma Aquari and visible most of the night through the month.

Miscellaneous

The **Summer Triangle** asterism joining **Debhne (Cygnus), Altair (Cygnus) and Vega (Lyra)** dominates the south-western night sky this month.

The **Great Square of Pegasus** is also prominent in the south-east.

A **Gallimaufry of Galactic Goodies** is gathered around the ecliptic in the south-west between **Scotum** and **Serpens Cadia** – M8, M11, M16, M17 and M18.

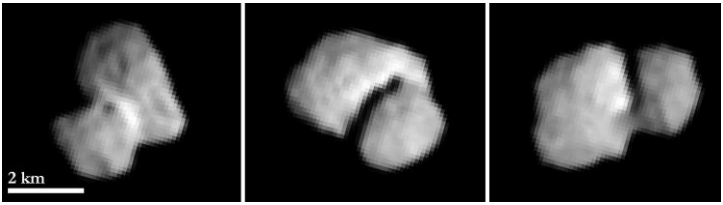


THE OBSERVATORY EXTENSION WILL ENABLE US TO REALLY PACK 'EM IN FOR THOSE PUBLIC VIEWING EVENTS

Rosetta Latest

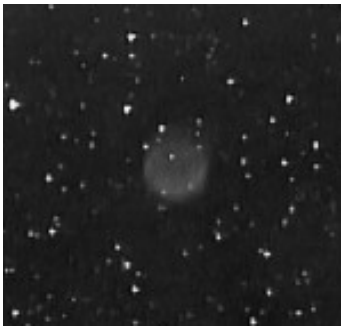
On the 6th the **ROSETTA** space probe reaches the vicinity of the comet 67P/Churymov-Gerasimenko.

Images released July 27th by ESA from the Rosetta probe on its way with a rendezvous with Comet 67P (Churyumov-Gerasimenko). It will "arrive to within 100km of the comet on August 6th.



Ghost of the Moon" Nebula in Aquila

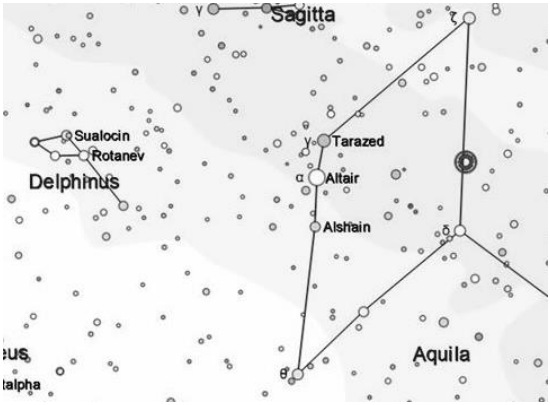
by Brian Ventrudo



Here's a snapshot of an overlooked beauty in the constellation Aquila. This lovely 11th-magnitude planetary nebula, first seen by William Herschel, lies in a fine field of the Milky Way and can be glimpsed in a moderate-sized telescope. This ring-like nebula consists of glowing gas cast off by a dying star some 3,100 light years away.

NGC 6718 is located in the constellation Aquila in a rich field of the Milky Way on a line from delta to zeta Aquilae (see below). The nebula spans about 3', big for a planetary nebula, which means it has a true diameter of about 2 light years. At magnitude 11.4 it's quite faint and has a low surface brightness. That makes it a challenge for a 4" to 6" scope, and dark sky is essential if you want to spot it visually in any instrument. A nebula filter is a big help.

At 60x-75x in a 12" scope, the nebula looks like a ghost image of the Moon. It presents a beautiful spherical shell which brightens towards the edge and a ring around the circumference. The central star, a mid-sized star like our Sun, is throwing off the outer layers of its atmosphere in a last gasp of life. The star is about 16th magnitude so it's very hard to see visually. The nebula will dissipate over the next many thousands of years, and the central star will remain as a white dwarf, a hot glowing cinder which will cool slowly over billions of years.



The snapshot above was taken with a Mallincam Extreme video camera, a UHC filter, and a 6" RC astrograph in highly light-polluted sky. Settings were adjusted to give you an idea of what the nebula looks like in a 14" or larger telescope…

Location of faint planetary nebula NGC 6781 in Aquila

http://oneminuteastronomer.com/10226/nebula-ngc-6781/#sthash.bLB4ytNR.dpuf

MOONLIGHTING

STEVE'S MISTAKE.—When Steve Taylor was appointed town marshal, 'The Kicker' advanced the opinion that he was weak in the back, and would 'crawl' if he got into a tight place. Steve and his friends were down on us for the announcement, and we believe it was Steve himself who fired a bullet into this office one night a few weeks ago and shot the pendulum off our eight-day clock. The affair of Sunday night proved the correctness of our opinion regarding Steve's sand. A bad man from Zuni broke loose all of a sudden, and began firing right and left. Steve happened to be within 20 feet of him, but the 'ping' of bullets started him off down the street like an antelope. His Honour the Mayor was in church, and heard the firing. He ran straight for the crowd, sized up the situation at a glance, and next moment he had the bad man by the neck. The fellow was quickly disarmed, and within five minutes of his first shot he was lying on the floor of the calaboose and wondering which side of the United States had tipped up on him. Monday morning he was so anxious to get out of town that he was willing to go without his guns, which will be sold at auction for the benefit of the street improvement fund. Steve Taylor has handed in his resignation and begged our pardon. He thought he had sand, but it was a mistake. He will open a carpenter shop on Cactus-street, and his advertisement will appear in our next.

Arizona Kicker – July 1892

Programme for August & September 2014

Date	Time	Location	Subject & Speaker
Sun Aug 3rd	14:00	Hoober Observatory	**Solar Observing**
Thu Aug 7th	19:45	Club Room	**Astronomy in Pathe News** *Roy Gunson*
Thu Aug 14th	19:45	Club Room	**The Herschels** Trevor Worrall
Sun Aug 17th	10:00	RSPB Old Moor	**View the Sun – Public Outreach**
Thu Aug 21st	19:45	Club Room	**Constellation Corner** *Michael Waterfield*
Thu Aug 28th	19:45	Cub Room	**Autumn Sky**
Thu Sept 4th	19:45	Club Room	**A Pictorial History of MSAS** *Jo Botterill & Joan Launders*
Fri Sept 5th	19:45	Observatory	**PVE** *Les Marsden*
Thu Sept 11th	19:45	Club Room	**Astrophotography** *Tony Morris*
Sat Sept 13th	18:30	Thrybergh Country Park	**A Night Under The Stars**
Thu Sept 18th	19:45	Club Room	**Guide to Variable Stars** Gary Poyner

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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

RSPB Old Moor is at Manvers Way, Wath-Upon-Dearne, S73 0YF

Thyrbergh Country Park, Doncaster Rd, Thrybergh, S65 4NU

PVE – Public Viewing Event

Mexborough & Swinton Astronomical Society is Registered Charity N^{o} 1064103 in England & Wales

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