



23°05'15.2" South  
29°54'48.2" East

## SEPTEMBER 2014-NEWSFLASH

### **THE FIVE NAKED EYE PLANETS IN SEPTEMBER:**

**Mercury** is well placed for observation this month reaching greatest elongation on the 21<sup>st</sup> setting two hours after the Sun.

**Venus** is lost in the solar glare, reappearing in our evening skies in November.

**Mars** is visible from dusk till just till around 22:30 by the end of September. The red planet is close to alpha Scorpii (Antares) on the 28<sup>th</sup> of the month. Compare the colours of the two at the time.

**Jupiter** can be seen in our morning skies from around mid-month onwards. Spring is the best time to view the zodiacal light in the morning sky prior to sunrise. Look towards Jupiter in the east where the faint glow of tiny particles and cosmic dust is reflected by sunlight.

**Saturn** is visible for the first half of the night as it moves towards conjunction in November.

The planet has spent most of the year in the constellation Libra and towards the end of October it is too close to the Sun to be observed, moving to the morning sky in late November. Therefore September is your last chance for a while to see possibly one of the most striking of our Solar Systems planets in the evening sky.

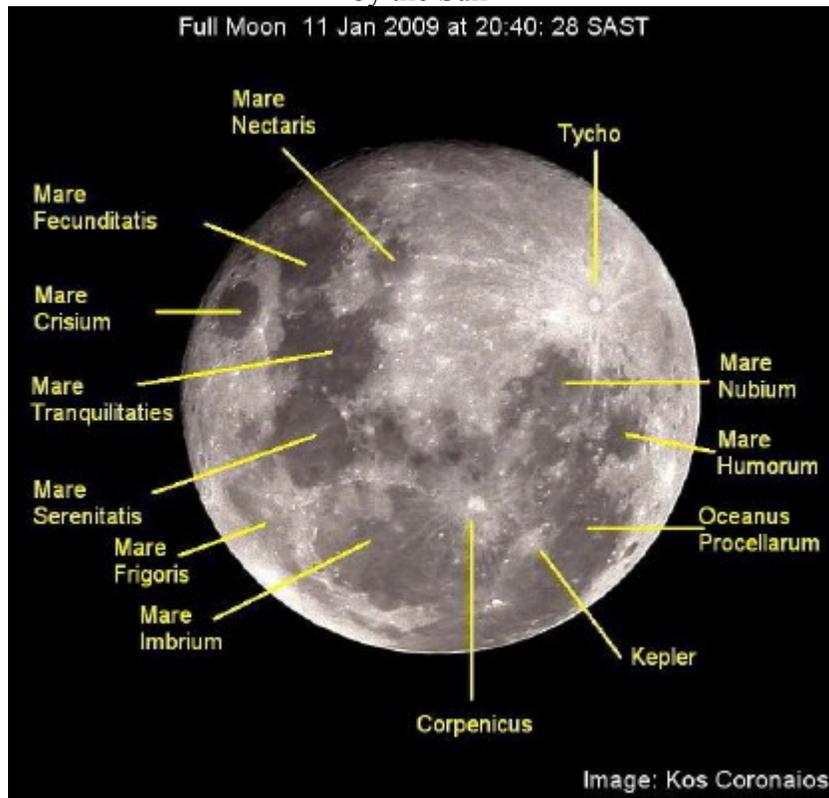
### **OBSERVATION / STARGAZING EVENING:**

Weather permitting, this will be held at the Club's premises on **Saturday 20<sup>th</sup> September, from 19h00**. Everyone is welcome, and refreshments and braai packs will be available, but please confirm with me well prior to the date if these will be required, as they have to be ordered timeously.

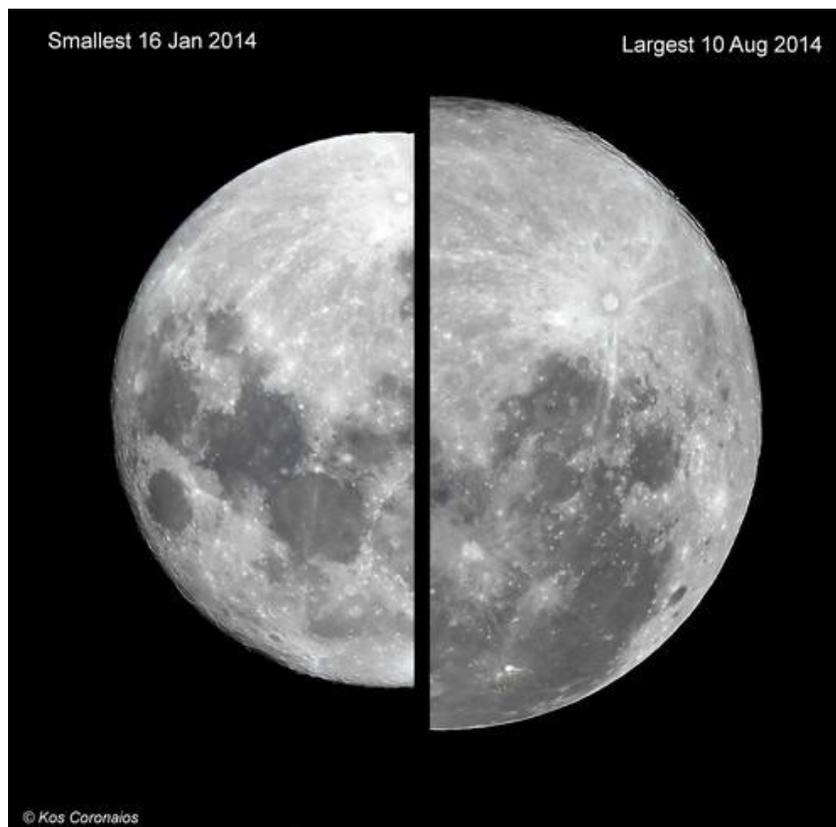
### **MOON PHASES FOR SEPTEMBER:**

**First Quarter Moon** is on the 02<sup>nd</sup> September. **Full Moon** occurs 03:38 on the 9<sup>th</sup> and **Last Quarter** is on the 16<sup>th</sup> September. **New Moon** occurs on the 24<sup>th</sup>.

Some of the naked eye features that are visible on the Moon when it is 100% illuminated by the Sun



**The smallest full Moon** of the year occurred on the 16<sup>th</sup> January (29.32'),  
**The LARGEST one** (closest to the Earth), was on the 10<sup>th</sup> August (20:09:, 33.72", 356 900 km). The difference is clearly visible in the image below.



## **HIGHLIGHTS FOR THE MONTH:**

Further details can be found on the ASSA web site, their face book page, the SAC Facebook page at the links below, or in the Southern African Sky Guide 2014.

<http://assa.sao.ac.za/>

<https://www.facebook.com/Astrosocsa>

<https://www.facebook.com/pages/Soutpansberg-Astronomy-Club/1424119847804031>

- 01/09 20:00 Grouping of Moon, Mars and Saturn high in the west.  
Occultation of theta Librae by the Moon
- 10/09 20:00 The Moon near Uranus in the east. The planet is roughly  $3\frac{1}{2}^\circ$  below, and slightly to the right of the Moon, as it rises.
- 14/09 24:00 The Moon and Aldebaran rising in the east.
- 20/09 04:00 The Moon and Jupiter low down in the eastern horizon.
- 26/09 19:00 Grouping of Spica, Mercury and the Moon in the west.
- 29/09 19:00 Grouping of Antares, Mars and Spica high up in the west.

## **LATEST ON SPOTLESS DAYS:**

Spotless Days

Current Stretch:

- 2014 total: 1 day (<1%)
- 2013 total: 0 days (0%)
- 2012 total: 0 days (0%)
- 2011 total: 2 days (<1%)
- 2010 total: 51 days (14%)
- 2009 total: 260 days (71%)

Update 30 Aug 2014



## **METEOR SHOWERS:**

From ASSA Sky Guide 2014

The next favourable meteor shower is the Orionids in October.

### **Orionids:**

The duration of the **Orionids** is from October 2<sup>nd</sup> to November 07<sup>th</sup>. The radiant is right ascension: RA 06h 20m and declination: Dec +16°. The zenithal hourly rate is 30 and start times are from 00:30 to 04:00 in the morning. The shower **peaks on the 21<sup>st</sup> October**, and is classed as favourable in the South African Sky Guide 2014.

## **COMETS:**

These chunks of ice and rocks, some orbiting the Sun far beyond the most distant planets, are making headlines. This debris, left over from the formation of our Solar System, still orbits the Sun today.

As of August 2014 there are 5,186 known comets, a number which is steadily increasing. However, this represents only a tiny fraction of the total potential comet population, as the reservoir of comet-like bodies in the outer Solar System may number one trillion.

**The two news-making ones are comet *67P/Churyumov-Gerasimenko* and Comet *C/2013 A1 (Siding Spring)*.**

- **A robotic space probe built** and launched by the European Space Agency to perform a detailed study of comet *67P/Churyumov-Gerasimenko*, called Rosetta, was launched on the 2nd March 2004. The spacecraft consists of two main elements: the Rosetta space probe orbiter, which features 12 instruments, and the Philae robotic lander, with an additional nine instruments.

On 6 August 2014 it approached the comet to a distance of about 100 km, reducing its relative velocity to 1 m/s thus becoming the first spacecraft to rendezvous with a comet. Following further manoeuvres, it will enter orbit after approaching to 30km five weeks later.

The Rosetta mission will orbit the comet for 17 months and will complete the most detailed study of a comet ever attempted. In November this year, the lander is scheduled to reduce its relative speed with the comet and make contact with the surface firing two harpoons to prevent it from bouncing off the surface. Additional drills will be used to secure the lander, whereupon it will begin its science mission of analysis of the nucleus, determining the chemical compounds that are present amongst others.



*Comet C/2013 A1 (Siding Spring) passing the globular cluster NGC 104 (47Tuc) on the 29th August 2014*

Point your browser to [http://www.esa.int/Our\\_Activities/Space\\_Science/Rosetta](http://www.esa.int/Our_Activities/Space_Science/Rosetta) and find out more about Rosetta.

- **The other comet making the news** is *C/2013 A1 (Siding Spring)*, an Oort cloud comet discovered by Robert H. McNaught on the 3rd January 2013 at Siding Spring Observatory. The orbital period of this comet is several million years inbound and around 1 million years outbound.

Next perihelion is on the 25<sup>th</sup> October, but a few days earlier the comet will pass extremely close to Mars. Calculations show that on the 19th October it could pass as close as 0.00088 AU's, (132 000 km) from the center-point of Mars. For comparison, Mars's outer moon Deimos orbits at 24 000 km from the planet. It will pass Mars at a relative velocity of 56 km/s reaching an apparent magnitude of -6 as seen from Mars.

More at <http://mars.nasa.gov/comets/sidingspring/>



Passing close to the 7<sup>th</sup> mag. Globular cluster NGC 632 comet C/2013 A1 (Siding Spring) was 4 magnitudes dimmer at +10. The star are trailing due to the stacking process where the comet (upper right corner) is used as a reference point and not the stars.

## **THE OMEGA NEBULA (M17):**

M17, The Omega Nebula, is also known as the Swan Nebula, Checkmark Nebula, Lobster Nebula and Horseshoe Nebula and was catalogued as Messier 17 or NGC 6618. It was discovered by Philippe Loys de Chéseaux in 1745. The nebula is located in the rich star fields of the Sagittarius area of the Milky Way.



It lies between 5,000 and 6,000 light years from Earth and it spans some 15 light years in diameter. The cloud of interstellar matter of which this nebula is a part is roughly 40 light years in diameter and has a mass of 30,000 solar masses. The total mass of the Omega Nebula is estimated at 800 solar masses.

It is considered to be one of the brightest and most massive star-forming regions of our galaxy. Its local geometry is similar to the Orion Nebula except that it is viewed edge-on rather than face-on.

An open cluster of 35 stars are embedded in the nebulosity which cause the gases within the nebula to shine due to radiation from these hot, young stars.

## **TELESCOPES FOR SALE:**

The Club has three telescopes for sale.

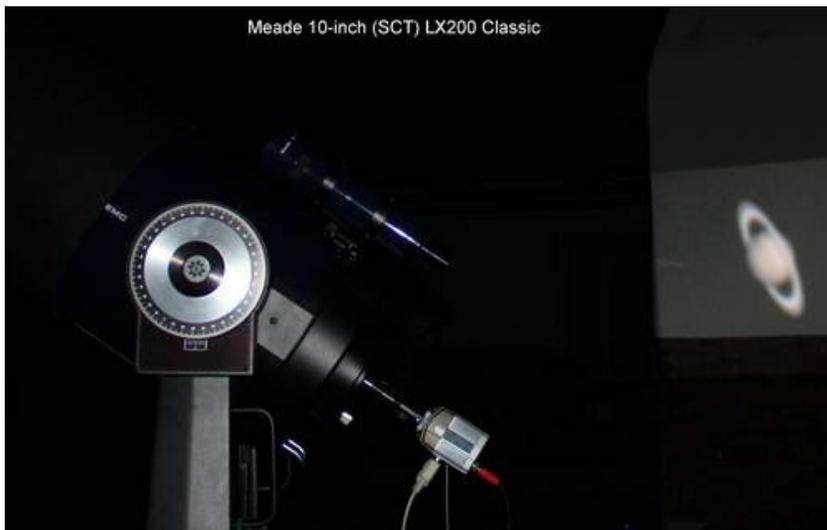
1x Meade 102mm, pic on the right.

1x Meade 10-inch (SCT) LX 200 Classic.

1x Meade 10-inch (SN) LXD 55.

Please contact me via email for detail.





(All references unless otherwise stated: Astronomy made simple by Meir H Degani, observing the Constellations by John Sanford, Collins Gem Guide, The Night Sky, ASSA 2014 Sky Guide, Sky & Telescope, Astronomy Starter CD by ASSA. Deep Sky Observer's Companion [www.docdb.com](http://www.docdb.com). Photographs by the author unless otherwise stated and are all © Copyright. SAC Logo courtesy of Laura van Zyl.)

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