HERMANUS ASTRONOMY CENTRE

THE SKY THIS MONTH : MAY 2016

http://www.hermanusastronomy.co.za/

1. SKY MAPS

EVENING SKY MID MAY at 21h00

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PLEASE NOTE: All events predicted below are as observed from **Hermanus, Western Cape, South Africa**

2. THE SOLAR SYSTEM

Sun & Planets	*MAY 2016*		*1st*	*31st*
Sun		Rises:	07h19	07h41
Constellation:	Aries to Taurus	Transits:	12h41	12h41
Length of day	10h42 to 10h01	Sets:	118h02	17h42
Mercury	phase 6% to 29% , ϕ 11" to 9"	Rises:	08h23	05h44
Constellation	Aries	Transits:	13h26	11h10
Magnitude:	+3.0 to +1.0	Sets:	18h29	16h35
Venus	phase 99% to 100%, ϕ 10"	Rises:	06h31	07h33
Constellation:	Aries to Taurus	Transits:	12h04	12h34
Magnitude:	-3.9	Sets:	17h37	17h35
Mars	phase 98% to 100%, ϕ 16" to 19"	Rises:	19h20	16h44
Constellation:	Scorpius to Libra	Transits:	02h30	23h48
Magnitude	-1.5 to -2.0%	Sets:	09h35	06h57
Jupiter	ϕ 41" to 37"	Rises:	15h23	13h27
Constellation:	Leo	Transits:	21h04	19h08
Magnitude:	- 2.3 to -2.0	Sets:	02h48	00h53
Saturn	ϕ 18"	Rises:	19h57	17h51
Constellation:	Ophiuchus	Transits:	03h03	00h57
Magnitude:	+0.2 to +0.0	Sets:	10h05	07h58
Uranus	ϕ 3"	Rises:	05h45	03h54
Constellation:	Pisces	Transits:	11h26	09h33
Magnitude:	+ 5.9"	Sets:	17h06	15h12
Neptune	ϕ 2"	Rises:	02h34	00h38
Constellation:	Aquarius	Transits:	08h58	07h02
Magnitude:	+7.9	Sets:	15h22	13h25
Pluto		Rises:	22h14	20h14
Constellation:	Sagittarius	Transits:	05h20	03h21
Magnitude	+ 14.2	Sets:	12h23	10h23

Mercury	Visible low in the west after sunset; later in the month, visible low in the east before sunrise.
Venus	The Morning Star then moving too close to sun.
Mars	Well placed for observation throughout the night
Jupiter	Well placed for observation throughout the night
Saturn	Well placed for observation throughout the night
Uranus	Visible in the morning sky
Neptune	Visible in the morning sky
Pluto	Visible in the morning sky

THE MOON

The Sky Guide choice for the month is **Montes Caucasus**

Information extracted from the 2016 Sky Guide:

Location: Marks the boundary between M**are Serenitatis** and **Mar Imbrium.**

Type: A substantial mountain range intersected by numerous deep valleys.

Size: extends for some 536 km reaching a height of 3.6 km.

Best seen: 6 days after **New Moon** and 5 days after **Full Moon.**

Notes: readily visible in 10X binoculars. Named after the Eurasian mountain system by the 18th century German selenographer Johan Mädler.

ECLIPSES

No eclipses, solar or lunar, are visible from Hermanus in May 2016.

METEOR SHOWERS

Name	*Date & Time of Max*	*Duration*	*Radiant*	*ZHR*	*vel.*	*Observing Prospect*
η Aquarids	5th April 04h00 to 05h30	21st April to 12th May	~ 30º NNW of +1.1 mag **Fomalhaut** (α PsA)	60	65	New Moon (favourable)

Key to the table above:
ZHR – zenithal hourly rate
vel. - velocity in km per second

For more details regarding meteor watching, please see the Sky Guide Africa South (SGAS), pp 86- 87

BEST OBSERVATION DAYS

Unless one is specifically engaged in lunar observation, as I'm sure most of us are aware, the nights for best general observation of the night sky will be those avoiding the predominance of the moon. I offer you, therefore, *my* guide to the most suitable evenings to plan observations for the month:

1st to **9th May** (moonset 20h40)
26th (moonrise 21h56) to **31st May**

IF the weather be good, of course!

3. .MAY HIGHLIGHTS FROM THE SKY GUIDE

Date	*Time*	*Item*
2		**Moon** to **Neptune** 1.6º south
5		**Moon** to **Uranus** 2.1º north. **η Aquarids** meteor shower.
6	06h14	**Moon** at perigee (357,800km), **Moon** to **Venus** 2.6º north
	21h30	**New Moon**
7		**Moon** to **Mercury** 5.1º north
8	10h21	**Moon** to **Aldebaran** 0.5º south
9		Transit of **Mercury ***
	17h10	**Mercury** inferior conjunction
10		**Jupiter** stationary
13	19h02	**First quarter Moon**
		Mercury and **Venus** 23' apart (7º west of the Sun)
14	09h06	**Moon** to **Regulus** 2.5º north
15	11h30	**Moon** to **Jupiter** 2.2º north
18		**Moon** to **Spica** 4.9º south
19	00h06	**Moon** at apogee (405,900 km)
21	23h15	**Full Moon**
		Mercury stationary
22	23h59	**Moon** to **Saturn** 3.5º south
		Moon to **Mars** 5.9º south
	13h15	**Mars** at opposition
23		**Vesta** at conjunction
24	13h16	**Moon** furthest south (18.5º)
25		**Moon** to **Pluto** 2.9º south
29	14h12	**Last quarter Moon**
		Moon to **Neptune** (1.4º south)
31		**Mars** nearest to **Earth**

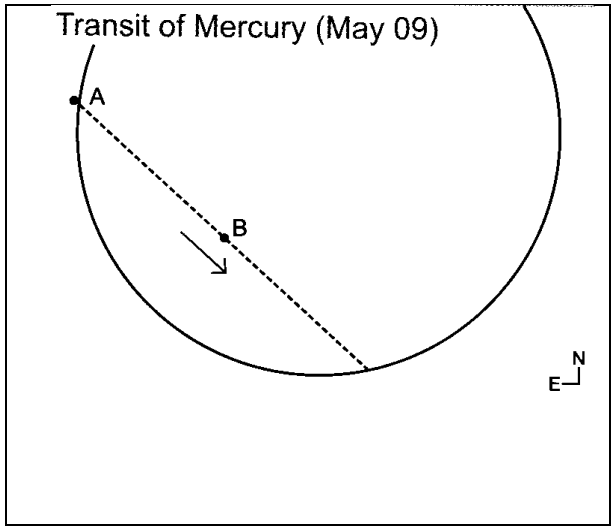
*** THE TRANSIT OF MERCURY**

By *Johan Retief*

On Monday, 9 May 2016, the smallest planet in our solar system, Mercury, will transit the face of the Sun. This occurrence will be visible from South Africa provided that one watches the event with the help of a solar telescope or with a telescope fitted with a proper solar filter. The planet is visible as a tiny black dot against the face of the Sun. This specific transit commences with the planet crossing the edge of the Sun at approximately 13h15 as seen from Fisherhaven.

Transits of the Sun by the two inner planets, Mercury and Venus, are rare planetary events. Transits by Mercury take place in May or November, intervals between a November transit to the next November transit may be 7, 13 or 33 years, with the transit occurring close to 10 November. Transits in May are less frequent, the interval between subsequent May transits being 13 or 33 years, with the transit occurring close to 8 May. The next transit of Mercury will take place on 11 November 2019.

The diagram on the right is copied from the Sky Guide Africa South (SGAS) and shows the planet relative to the face for the Sun. A is the point at which the planet commences the transit (the point of ingress). B shows the planet at the point where it is closest to the centre of the Sun.



The times of the event on 9 May are as follows:

- Ingress (A) takes place at 13h15, with the Sun at an altitude of 37½° above the horizon.
- Minimum separation from the solar centre (B) takes place at 16h57, with the Sun at an altitude of approximately 10° above the WNW horizon.
- The planet will leave the face of the Sun (the point of egress) at approximately 20h40, well after sunset which is at 17h54.

Only the two inner planets (Mercury and Venus) can be seen to transit the Sun from the Earth. If we were to be on Mars, a transit of the Earth would of course theoretically be visible.

Transits by Venus occur very rarely and when they do occur they do so in pairs with two transits, with pairs of transits eight years apart separated by long gaps of 121.5 years and 105.5 years (The pattern repeats every 243 years). The last pair of transits took place in June 2004 and June 2012, these were the last Venus transits in the 21st century. The next pair of Venus transits will be in December 2117 and December 2125.

Venus, being considerably larger than Mercury (its angular diameter being nearly 9 x that of Mercury) and also considerably closer to Earth, provides for a much more spectacular transit than in the case of Mercury.

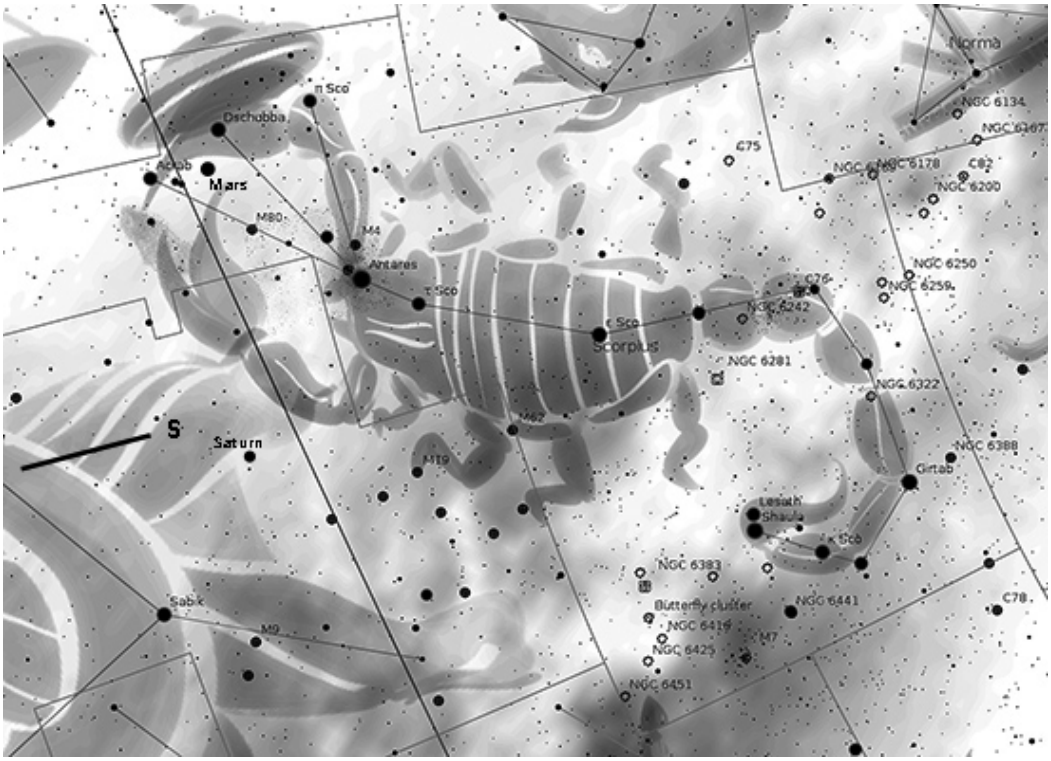
WARNING: NEVER LOOK AT THE SUN WITH YOUR NAKED EYES

Compiled by Johan Retief with information from various sources, amongst others the *Sky Guide Africa South* issued annually by the Astronomical Society of Southern Africa and Wikipedia.

4. DEEP SKY

Constellation of the month – Scorpius

I have said it before and, making no apologies, I say it again: Scorpius ranks side by side with Orion as the most recognisable and glorious sight in the night sky. Rising above the urban lights and becoming ever more apparent, the Scorpion firmly grips Mars in its claws between Acrab (σ Sco) and Dischubba (β1 Sco). Saturn lies in Ophiucus, about 8º below the red giant, 1st magnitude Antares (α Sco).



Towards the eastern border of the constellation lie the open clusters, M6 and M7, both attainable with binoculars or small telescope.

M6, also known as the Butterfly Cluster (magnitude 4.2), is about 5.5º NNE of Lesath, the sting of the Scorpion.

From Ian Ridpath's *"Star Tales"*:

Genitive: Scorpii

Abbreviation:Sco

Size ranking:33rd

Origin:One of the 48 Greek constellations listed by Ptolemy in the Almagest

Greek name: Σκορπίος

'There is a certain place where the scorpion with his tail and curving claws sprawls across two signs of the zodiac', wrote Ovid in his Metamorphoses. He was referring to the ancient Greek version of Scorpius, which was much larger than the constellation we know today. The Greek scorpion was in two halves: one half contained its body and sting, while the front half comprised the claws. The Greeks called this front half Chelae, which means 'claws'. In the first century BC the Romans made the claws into a separate constellation, Libra, the Balance.

In mythology, this is the scorpion that stung Orion the hunter to death, although accounts differ as to the exact circumstances. Eratosthenes offers two versions. Under his description of Scorpius he says that Orion tried to ravish Artemis, the hunting goddess, and that she sent the scorpion to sting him, an account that is supported by Aratus. But in

his entry on Orion, Eratosthenes says that the Earth sent the scorpion to sting Orion after he had boasted that he could kill any wild beast. Hyginus also gives both stories. Aratus says that the death of Orion happened on the island of Chios, but Eratosthenes and Hyginus place it in Crete.

In either case, the moral is that Orion suffers retribution for his hubris. This seems to be one of the oldest of Greek myths and the origin may lie in the sky itself, since the two constellations are placed opposite each other so that Orion sets as his conqueror the scorpion rises. But the constellation is much older than the Greeks, for the Sumerians knew it as GIR-TAB, the scorpion, over 5000 years ago.

the alternative name Calbalacrab, from the Arabic meaning ‘scorpion’s heart’.

Scorpius clearly resembles a scorpion, particularly the curving line of stars that form its tail with its sting raised to strike. Old star maps show the lower left leg and foot of Ophiuchus, to the north, awkwardly overlapping the scorpion’s body. Incidentally, Scorpius is the modern astronomical name for the constellation; Scorpio is the old name, now used only by astrologers. The name in Greek was Σκορπίος, as used by Ptolemy in the Almagest.

that is a corruption of the Arabic word meaning ‘forehead’, in reference to its position in the middle of the scorpion’s head.

Keep in touch

Please don't forget to have a look at our excellent website, edited by Derek Duckitt.
http://www.hermanusastronomy.co.za/

Also...

ASSA Deep-Sky Section

Whatsapp chat group: [074 100 7237]
Official Big 5 of the African Sky web page
Official Big 5 Facebook group
ASSA Deep-Sky Section mailing list

Contact ASSA

Get in touch with officers of the Society - we're real people with a passion for astronomy, so **contact us** and let's talk!

You can also find us on Facebook, Twitter, the ASSA_Info mailing list and the ASSA_Discussion mailing list.

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