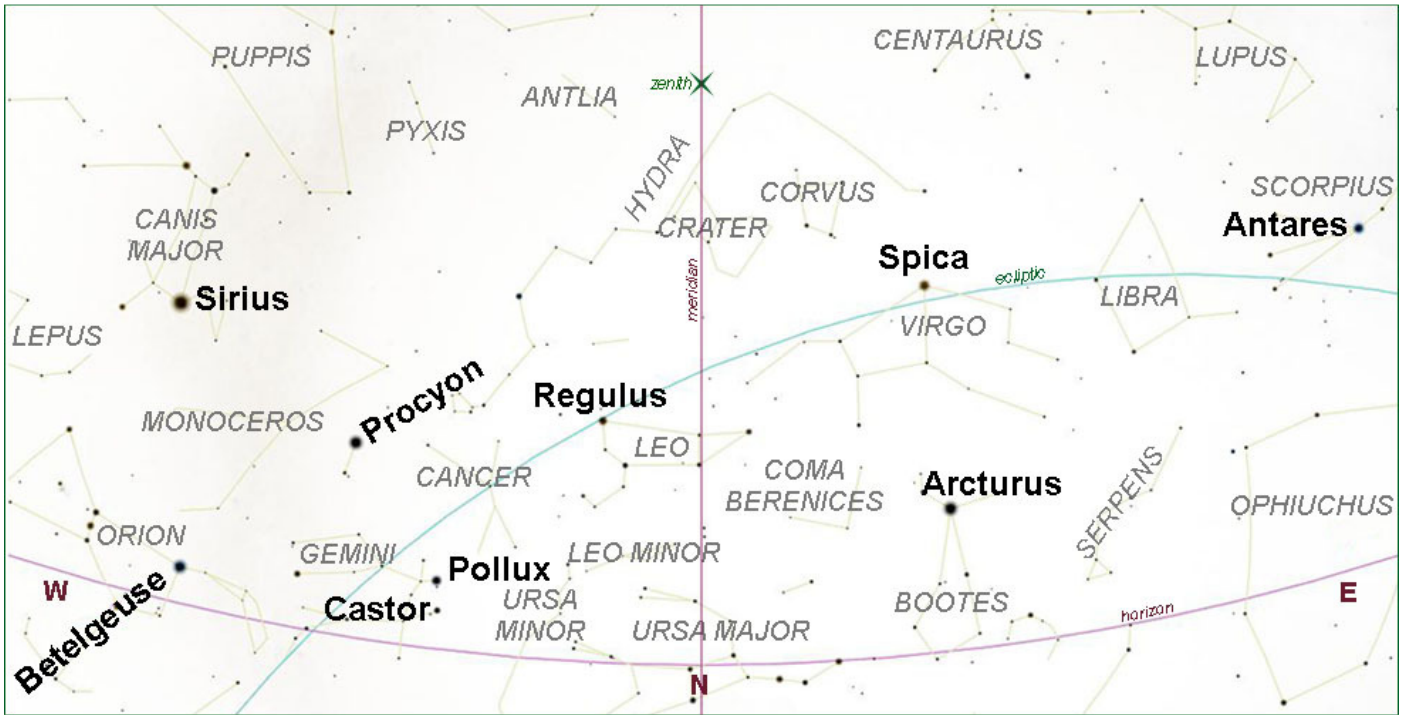
SKYNOTES from Hermanus

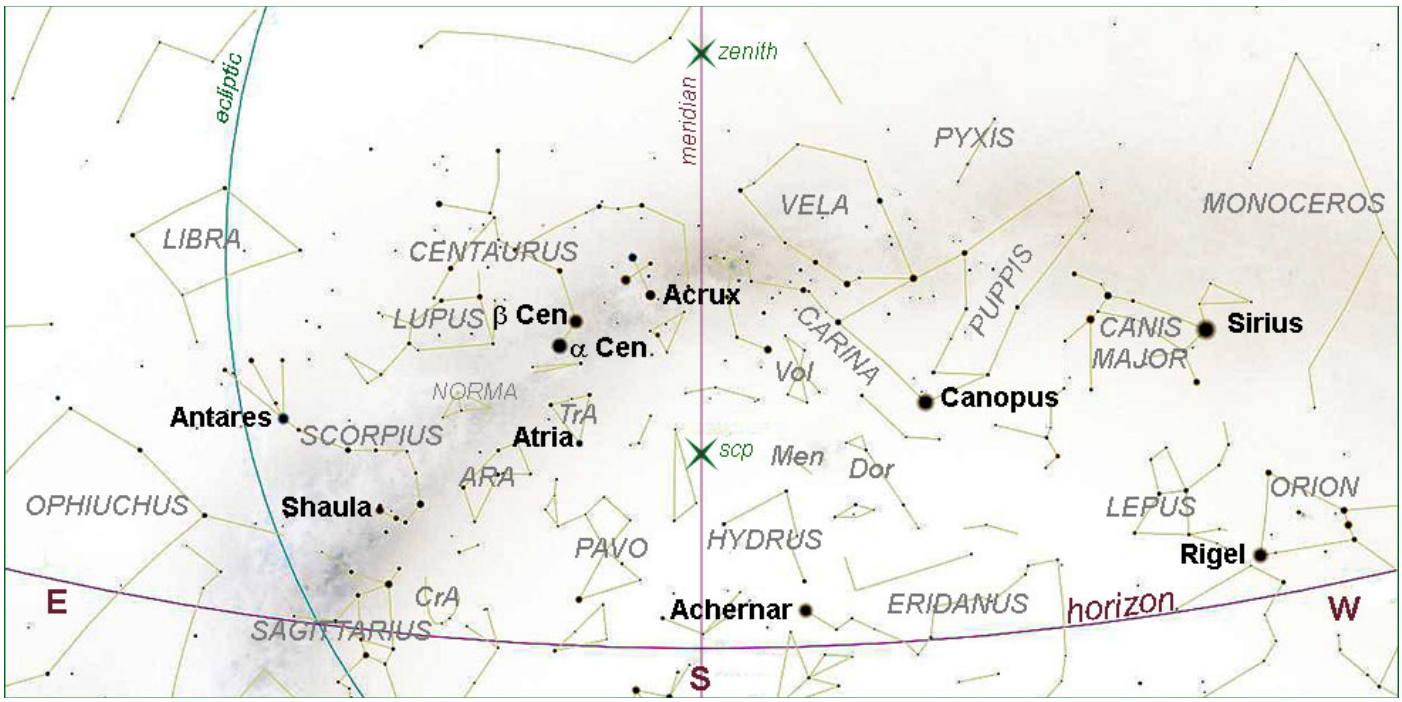
MAY 2024

SKY CHARTS

EVENING SKY MAY6th at 21h00 (NORTH DOWN)



EVENING SKY MAY6th at 21h00 (SOUTH DOWN)



SUGGESTED EVENING OBSERVATION WINDOW

(Lunar observations notwithstanding)

Date	*Moon*		*Dusk end*
1st May	*Rises*	**23h22 (50%)**	**19h26**
to **11th May**	*Sets*	**20h34 (11%)**	**19h19**

THE SOLAR SYSTEM

PLEASE NOTE: allevents are as predicted from **HERMANUS**, Western Cape, South Africa.

HIGHLIGHTS for MAY FROM THE SKY GUIDE2024

Date	***Time (SAST)***	***Item***
1	13h27	**Moon 3rd Quarter**
4		**Pluto** stationary
5	23h54	**Moon** at ascending node
6	00h11	**Moon** at perigee (363 166 km)
8	05h22	**New Moon**
	00h11	**Mars** at perihelion (1.38151 au)
9		**Mercury** at western elongation (26.4º)
11	09h45	**Moon** northernmost (+28.5º)
13		**Moon** (30%) sets near **Pollux**
		Uranus at conjunction
15	13h48	**Moon 1st Quarter**
16	00h39	**Moon** (60%) sets 3.5º north of **Regulus** (α Leo)
17	21h00	**Moon** at apogee (404 641 km)
19	00h13	**Moon** (85%) passes 0.3º south of **Zaniah** (η Vir, mag. +3.85)
	18h35	**Moon** at descending node
		(2) Pallas at opposition (mag. +9.0, 2.17 au)
20		**Moon** (91%) near **Spica**
23	20h23	**Full Moon**
24	07h00	**Moon** passes 0.7º north of **Antares**
25	21h58	**Moon** southernmost (-28.4º)
30	19h13	**3rd quarter Moon**
31		**Moon** near **Saturn**

SOLAR SYSTEM VISIBILITY

2024 MAY 6				*When visible?*
Sun	Aries	Rise:	07h23	**Never look at the sun without *SUITABLE EYE PROTECTION!***
Length of day	10 hours 33 minutes	Transit:	12h40	
		Set:	17h56	
Mercury	Pisces	Rise:	05h16	Low in the east before sunrise
Magnitude	+0.7	Transit:	11h04	
Phase	36%	Set:	16h52	
Diameter	9”			
Venus	Aries	Rise:	06h44	Too close to the Sun
Magnitude	-3.9	Transit:	12h10	
Phase	99%	Set:	17h36	
Diameter	10”			
Mars	Pisces	Rise:	04h01	Morning
Magnitude	+1.1	Transit:	10h02	
Phase	94%	Set:	16h03	
Diameter	5”			
Jupiter	Taurus	Rise:	08h07	Low in the west after sunset
Magnitude	-2.0	Transit:	13h17	
Diameter	33”	Set:	18h27	
Saturn	Aquarius	Rise:	02h39	Morning
Magnitude	+1.2	Transit:	09h00	
Diameter	16”	Set:	15h20	
Uranus	Aries	Rises:	07h55	Too close to the Sun
Magnitude	+5.8	Transit:	13h05	
Diameter	3”	Set:	18h15	
Neptune	Pisces	Rise:	03h37	Morning
Magnitude	+7.9	Transit:	09h43	
Diameter	2”	Set:	15h49	
Pluto	Capricornus	Rise:	22h53	Morning
Magnitude	+14.4	Transit:	06h05	
		Set:	13h14	

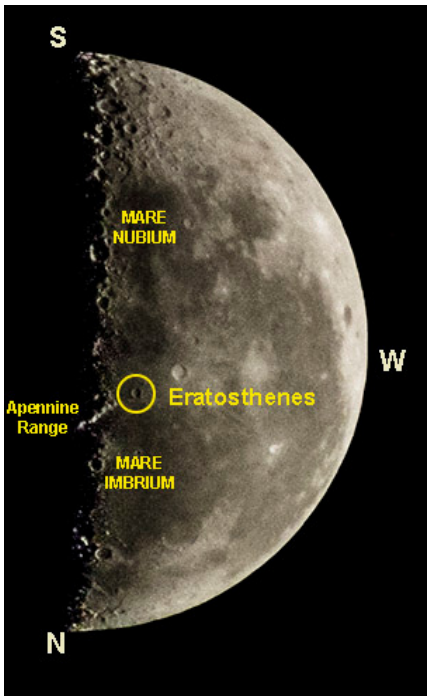
Phase: In a telescope, the inner planets (Mercury, Venus and Mars) appear to us in phases depending on the angle of the Sun’s illumination, as does the Moon. The observed **angular diameter** is given in arc seconds.

Transit: When an object crosses the **local meridian,** it is said to ‘transit’. The local meridian is an imaginary line from the horizon directly north passing overhead through the *zenith* to the horizon directly south.

Magnitude: we are accustomed to hearing stars described in terms of ‘magnitude’. For example, the planet Jupiter at magnitude -1.8 is considerably brighter than the star Antares (in Scorpius) at +1.05. The scale is ‘inverse’; the brighter the object, the lower the value. A ‘good’ human eye on a clear night can see down to a magnitude of about +6.

THE MOON

ERATOSTHENES CRATER



Location: in the plains of south-eastern Mare Imbrium.

Best seen : At **last quarter** (May 1) and **one day after first quarter** (May 16).

Description : A relatively deep lunar impact crater that lies on the boundary between the **Mare Imbrium** and **Sinus Aestuum** mare regions. It forms the western terminus of the **Montes Apenninus** mountain range.

This feature has a well-defined circular rim, terraced inner wall, central mountain peaks, an irregular floor, and an outer rampart of ejecta. It lacks a ray system of its own but is overlain by rays from the prominent crater Copernicus to the south-west.

The crater is believed to have been formed about 3.2 billion years ago. In 1910–1920, William H. Pickering noted dark patches in the crater that varied in a regular manner over each lunar day. He put forward the speculative idea that these patches appeared to migrate across the surface, suggestive of herds of small life forms. The idea received a degree of attention primarily due to Pickering's reputation.

Diameter : 59 Km

Depth: 3 600 metres

Name : after ancient Greek astronomer *Eratosthenes of Cyrene*, who estimated the circumference of the Earth and the distance from the Earth to the Sun

No eclipses, lunar or solar, will be visible from southern Africa in May 2024

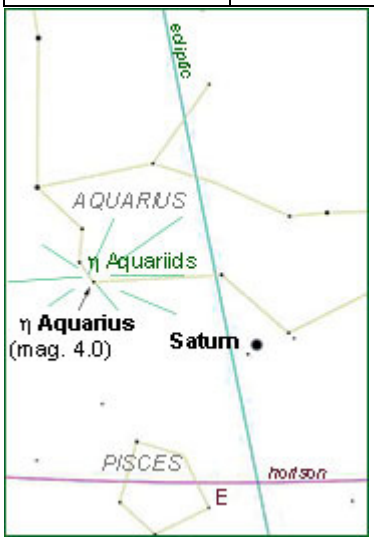
MEMBERS' IMAGES

To the right we have another fine image from Derek Duckitt –

The Moon First Quarter

METEOR ACTIVITY

From SGSA 2024	*Maximum Date/Time*	*Moon on max Date/Time*	*Duration*	*Radiant*	*ZHR**	*Velocity Km/sec*
eta Aquariids	May 5 02h00 – 05h00	Rise 04h00 12%	Apr 19- May 28	See chart below	50	66



* A word of caution regarding predicted Zenithal Hourly Rates:

ZHR is an ideal value. It is by definition the number of meteors a single observer could possibly see during a shower's peak with the radiant directly overhead on a clear, dark night. Most observers, however, will not see as many meteors as the ZHR suggests. Also, the presence of a bright moon and the shower's proximity to the horizon can seriously diminish the observation of meteor activity.

The **Eta Aquariids** are associated with periodic comet 1P/Halley. Very swift, often appearing in persistent trains, the Eta Aquariids are best viewed in the pre-dawn hours away from the glow of city lights. Unlike most major annual meteor showers, there is no sharp peak but rather a plateau of good rates that last approximately one week centred on May 5.

The meteors we currently see as members of the eta Aquariid shower separated from Halley's Comet hundreds of years ago. The current orbit of Halley's Comet does not pass close enough to the Earth to be a source of meteoric activity.

For more meteor watching details, please see SGSA 2024, pages 86 - 87.

NO 'SCOPE REQUIRED

(or **Getting to Know The Constellations**)

I offer here some more tips for the less experienced enthusiast on getting started with recognising constellations and identifying some of the lesser-known features of the night sky. Wrap up and settle down with your toes pointing east and a warming beverage at your side. No telescope to worry about. Maybe have your binoculars just in case you need a closer look at an interesting object.

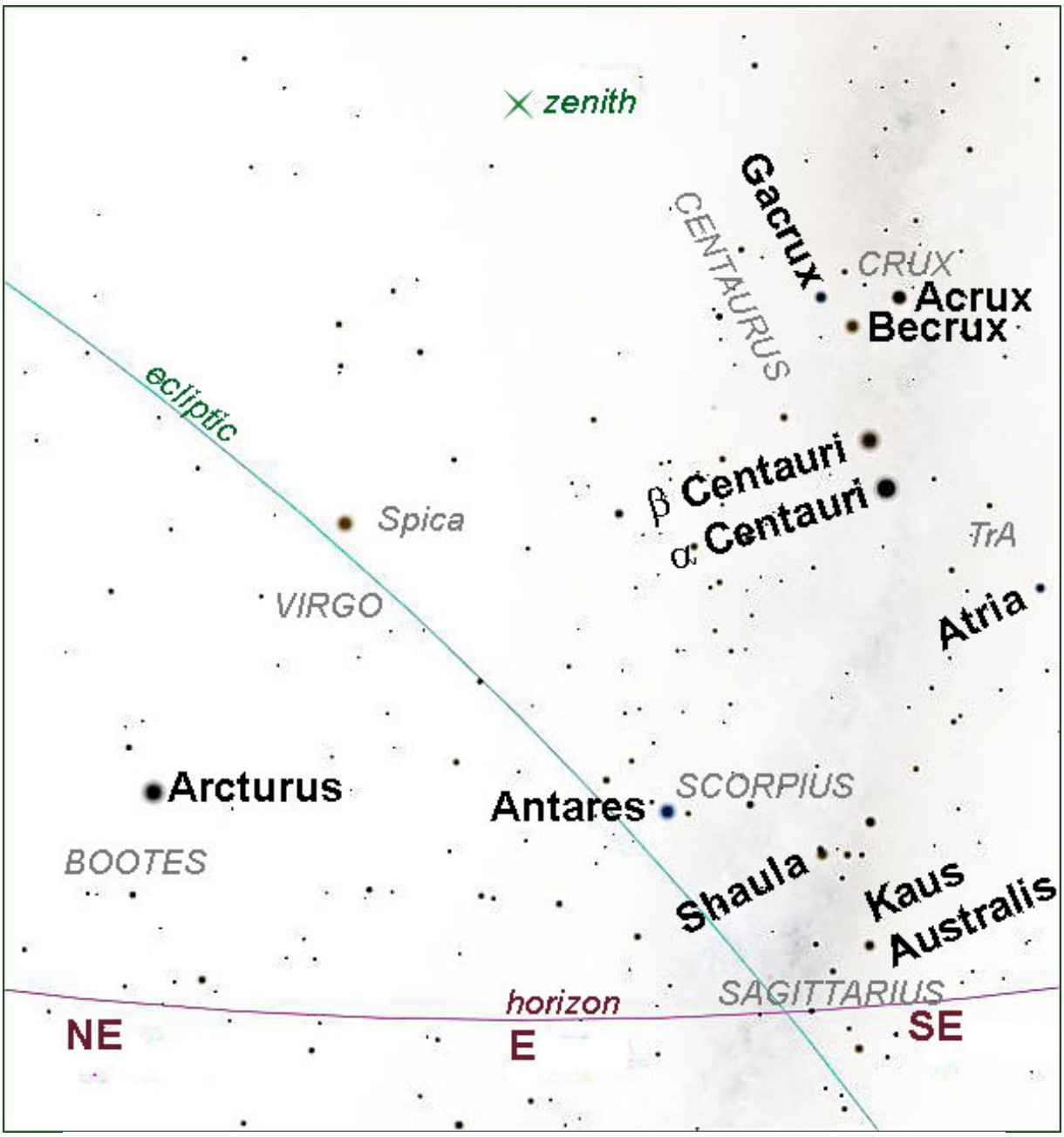
Your phone or tablet with this chart and notes with an app like *SkySafari* or *Stellarium* loaded could also be of use. These apps do have a "night" mode (red) for their charts; a distinct advantage.

I have prepared a separate attachment on learning to read a skychart. At first glance, this may seem unnecessary to most people. However, I do believe that the few minutes reading through this one page will prove useful to the average beginner.

Crux and **Scorpius,** after **Orion**, are the most recognisable constellations in our night skies. All the stars identified in this exercise are brighter than magnitude +2.0 so should be visible even in the city.

So let's start with Crux, up to the right, and work our way clockwise around the chart.

Star	*Constellation*	*Magnitude*	*Description*	*AKA*
Acrux	Crux	+1.25	Blue-white double	α Cru
Becrux	Crux	+1.25	Blue-white pulsating variable double	β Cru
Gacrux	Crux	+1.55	Orange-red double	γ Cru
Hadar	Centaurus	+0.55	Blue-white pulsating variable double	β Cen
Toliman	Centaurus	+0.10	Yellow double	α Cen
Atria	Triangulum Australe	+1.90	Orange star	α TrA
Kaus Australis	Sagittarius	+1.75	White variable double	λ Sco
Shaula	Scorpius	+1.60	Blue-white variable double	ε Sgr
Antares	Scorpius	+1.05	Orange-red pulsating variable double	α Sco
Arcturus	Boötes	+0.15	Orange double	α Boo
Spica	Virgo	+0.95	Blue-white variable double	α Vir



The chart above depicts the Hermanus eastern sky on May 6th at 21h00.

Ian Ridpath's

STAR TALES

Scorpius

The scorpion

Genitive: Scorpii

Abbreviation: Sco

Size ranking: 33rd

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

Greek name: Σκορπίος (Skorpios)

'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, called Σκορπίος (Skorpios), contained its body and sting, while the front half comprised the claws. The Greeks called this front half Χηλαί (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 5 000 years ago.

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.

Antares and the stars of Scorpius

The brightest star in Scorpius is brilliant Antares, from the Greek word Ἀντάρης, meaning 'like Mars', on account of its strong reddish-orange colour, similar to that of the planet Mars. The name is often translated as 'rival of Mars', but the star name expert Paul Kunitzsch noted that the Greek word ἀντί can mean 'like' or 'similar to'. Antares is a remarkable supergiant star, several hundred times the diameter of our Sun.

Antares is often popularly termed 'the heart of the scorpion', which is what its Arabic name qalb al-'aqrab means, but Ptolemy in the Almagest simply referred to it as 'the middle one of the three bright stars in the body, which is reddish and called Antares'. It was, incidentally, one of the few stars he gave a

name to. The other two stars in the body that Ptolemy referred to are now known as Sigma and Tau Scorpii. Oddly, Ptolemy classified Antares as second magnitude rather than first, but that may be because he observed it close to the horizon, where it was dimmed.

Beta Scorpii is officially named Acrab, from the Arabic al-'aqrab for 'scorpion'; an obsolete alternative was Graffias, Latin for 'claws'. Delta Scorpii is called Dschubba, a strange-sounding name that is a corruption of the Arabic word jabhah meaning 'forehead', in reference to its position in the middle of the scorpion's head. At the end of the scorpion's tail lies Lambda Scorpii, called Shaula from the Arabic al-shaula meaning 'the sting' which is what Ptolemy said that it marked.

Ptolemy in the Almagest listed three stars as lying outside the constellation (i.e. they were so-called unformed stars). The first of these he described as 'the nebulous star to the rear of the sting'. This is most likely the large and bright open cluster we know as M7, which as a result is sometimes called Ptolemy's Cluster. M7 is the most southerly of the objects listed by Charles Messier, at declination –34°.8. Ptolemy's other two unformed stars have been transferred to neighbouring constellations where they are now known as 45 Ophiuchi and 3 Sagittarii (aka the variable X Sgr).

Please keep in touch...

Have a look at our excellent website, edited by Derek Duckitt.
http://www.hermanusastronomy.co.za/

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!**

With Grateful thanks to the following:

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