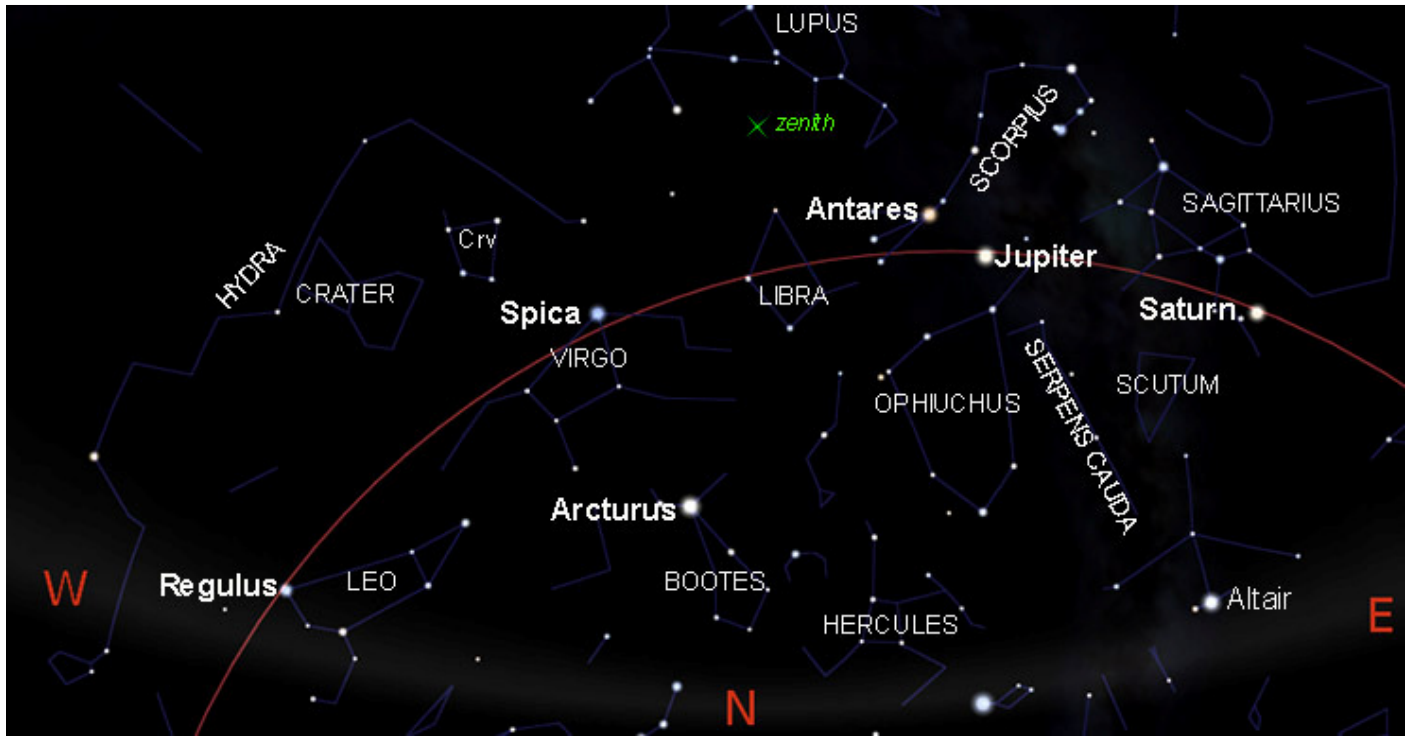


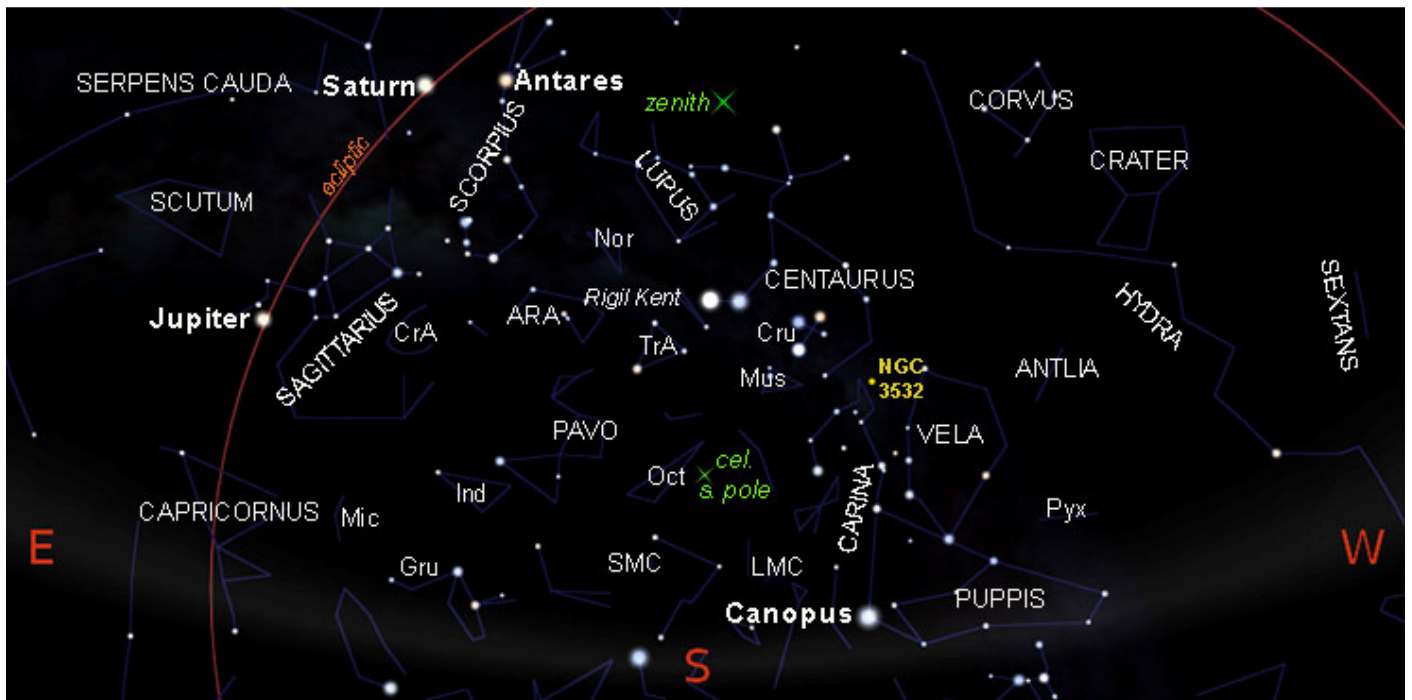


1. SKY CHARTS

EVENING SKY 1st JULY at 21^h00 (NORTH DOWN)



EVENING SKY 1st JULY at 21^h00 (SOUTH DOWN)



2. HIGHLIGHTS FROM THE SKY GUIDE

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

Date	Time	Item
1		Venus near Moon
2	21h16	New Moon
		Annular solar eclipse (not visible in southern Africa)
		Moon furthest north (22.4°)
4		Moon near Mercury
		Moon near Mars
5		Earth at aphelion
	06h56	Moon at perigee (363 727 Km)
6	06h09	Moon 3.5° north-west of Regulus
7		Mercury at aphelion
		Mercury stationary
		Venus at northernmost declination for the year (+23.4°)
8		Mercury near Mars
9	12h55	First quarter Moon
	17h58	Lunar X feature forms *
		Saturn at opposition
13	22h18	Moon passes 2.6° north of Jupiter
		July Phoenicids meteor shower at maximum (see METEOR SHOWERS)
14		Pluto at opposition
16	23h38	Full Moon
		Moon furthest south (-22.4°)
		Moon near Saturn
		Moon near Pluto
16-17	20h42	Partial lunar eclipse (see page 4, ECLIPSES)
18		Mars at greatest latitude north
19		Ceres stationary
21	02h02	Moon at apogee (405 478 Km)
		Moon near Neptune
		Mercury at inferior conjunction
25	03h18	Last quarter Moon
		Moon near Uranus
		Venus near Mercury
27		Mercury at greatest latitude south
28		Moon near Aldebaran
30		Moon furthest north +22.4°)
31		Moon near Mercury and Venus
		Mercury stationary

* SGAS gives “sighting unlikely” but, for the sake of the show, give it a go! (sunset 17h42)

3. THE SOLAR SYSTEM

JULY 2019			1 st July	1 st August	Visibility
Sun Length of day	Gemini to Cancer 09h53 to 10h26	Rises:	07h50	07h37	Never look directly at the sun without suitable eye protection!
		Transit:	12h47	12h49	
		Sets:	17h44	18h02	
Mercury Magnitude Phase Diameter	Cancer to Gemini -1.2 to +1.9 25% to 14% 10"	Rises:	09h16	06h33	Low in the west after sunset then low in the east before sunrise
		Transit:	14h26	11h45	
		Sets:	19h35	16h56	
Venus Magnitude Phase Diameter	Taurus to Cancer -3.9 98% to 100% 10"	Rises:	07h00	07h30	Low in the east before sunrise then too close to the Sun
		Transit:	11h55	12h36	
		Sets:	16h49	17h42	
Mars Magnitude Phase Diameter	Cancer to Leo +1.8 99% to 100% 4"	Rises:	09h14	08h16	Low in the west after sunset
		Transit:	14h15	13h33	
		Sets:	19h15	18h50	
Jupiter Magnitude Diameter	Ophiuchus -2.6 to -2.4 45" to 43"	Rises:	16h01	13h50	Evening
		Transit:	23h08	20h56	
		Sets:	06h19	04h07	
Saturn Magnitude Diameter	Sagittarius +0.1 to +0.2 18"	Rises:	18h15	16h03	Throughout the night
		Transit:	01h25	23h10	
		Sets:	08h31	06h21	
Uranus Magnitude Diameter	Aries +5.8 3" to 4"	Rises:	02h57	00h58	Morning
		Transit:	08h22	06h23	
		Sets:	13h48	11h48	
Neptune Magnitude Diameter	Aquarius +7.8 2"	Rises:	23h07	21h03	Throughout the night
		Transit:	05h28	03h24	
		Sets:	11h44	09h41	
Pluto Magnitude	Sagittarius +14.2	Rises:	08h34	16h29	Throughout the night
		Transit:	01h44	23h35	
		Sets:	08h51	06h46	

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 **angular diameter** is given in arc seconds ("). This is the apparent size of the object as we see it from Earth.

Magnitude: we are accustomed to hearing stars described in terms of 'magnitude', for example Antares (in Scorpius) at +1.05 and the planet Jupiter, at (for example) magnitude -2.6. The latter is considerably brighter than Antares as the scale is 'inverse'; the brighter the object, the lower the number. A 'good' human eye on a clear night can see down to a magnitude of about +6.

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 *zenith*, see charts on page 1) to the horizon directly south.

THE MOON

ARCHIMEDES

(from the 2019 Sky Guide)

Best seen : at first quarter and six days after Full Moon.

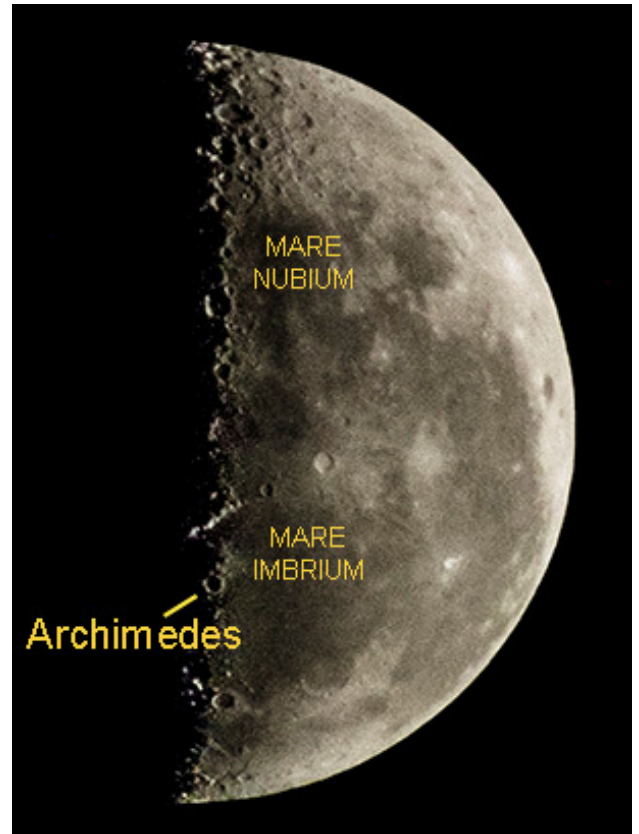
Location : in the plains of south-eastern Mare Imbrium.

Description : The rim has a significant outer rampart brightened with ejecta and the upper portion of a terraced inner wall, but lacks the ray system associated with younger craters. A triangular promontory extends 30 kilometres from the southeast of the rim. The floor of this crater was flooded with lava billions of years ago removing all traces of central elevations it may have had, leaving Archimedes remarkably featureless. Transient lunar phenomena have been reported within this prominent crater.

Diameter : 81 Km, the largest of any crater in Mare Imbrium.

Depth : 2100 metres.

Named for the 3rd century BCE Greek mathematician and scholar.



ECLIPSES(visible from Southern Africa) : A partial lunar eclipse is visible from southern Africa.

Commencing: **16th July** at 20h42

Mid-eclipse: 23h30

Ending: **17th July** at 02h19

METEOR SHOWERS

Name	Date & Time of Max	Duration	Radiant	ZHR velocity		Observing Prospects
				ZHR	velocity	
July Phoenicids	13 July 23h00 – 05h00	10 to 16 July	12° NE of Achernar (α Eri)	>5	47	Poor
Piscis Australids	28 July 21h30 – 05h00	19 July to 17 August	3° west of Fomalhaut (α PsA)	5	35	Good

Guide to the table above:

ZHR – zenithal hourly rate.

Velocity is in km per second.

“Observing prospects” are based on the phase of the moon for “Date and time of Max”.

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

4. STARGAZING

SUGGESTED OBSERVATION DAYS

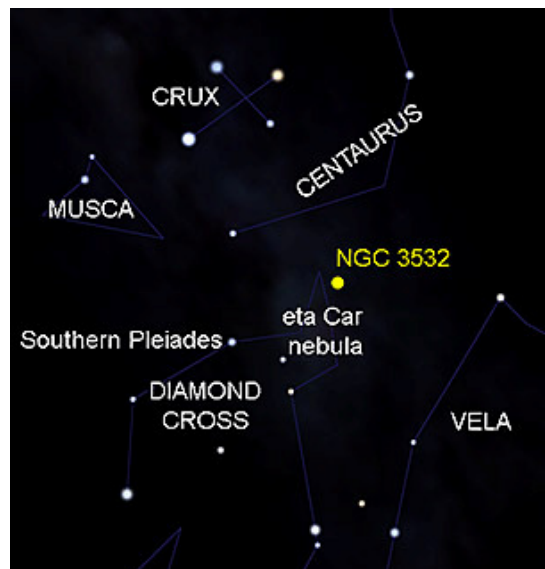
Unless *specifically* targeting the moon, may I suggest the most convenient dates to plan evening stargazing are from **23rd June** (moonrise 23h22) to **5th July** (moonset 20h52). Then from **23rd July** (moonrise 23h57) to **3rd August** (moonset 20h54).



The next club stargazing evening is scheduled for August or September. Members will receive updated information by e-mail. Remember, it's always weather dependant! Please check our website calendar closer to the date for confirmation and venue. (<http://www.hermanusastronomy.co.za>)

DEEP SKY HIGHLIGHTS

	PINCUSHION CLUSTER (NGC 3532, C91)	NOTES
<u>Description</u>	Open cluster	Discoverer: Nicolas Louis de Lacaille in 1752.
<u>Distance</u>	490 pc, 160 LY	The brightest cluster in a rich region, containing about 120 stars, the Pincushion is one of the most outstanding clusters in the southern sky. A striking black lane appears to cut through the centre of the cluster.
<u>Apparent Size</u>	50.0 arcmin	
<u>Magnitude</u>	+3.0	
<u>Location</u>	10.8° west of the Southern Cross 3.1° north of η Car	John Herschel wrote of it as “a glorious cluster of immense magnitude ... the most brilliant object of the kind I have ever seen.”
<u>J2000 coordinates</u>	11h 06m 24.0s -58° 40' 00"	The cluster is roughly 300 million years old and several of its red giant stars are brighter than 8 th magnitude.
<u>Visibility</u>		Also sometimes known as “the Wishing Well Cluster”, it resembles a group of silver coins shimmering in the bottom of a wishing well.
<u>Naked eye</u>	Yes. A bright, elongated patch east of eta Car nebula	
<u>Binoculars & telescopes</u>	Yes. A sparkling star cluster	





Genitive: Carinae

Abbreviation: Car

Size ranking: 34th

Origin: Part of the original Greek constellation [Argo Navis](#)

The smallest but most prominent of the three parts into which the ancient Greek constellation of [Argo Navis](#), the ship of the Argonauts, was divided by the French astronomer Nicolas Louis de Lacaille in his first catalogue of the southern stars, published in 1756. In that catalogue he gave it the French name Corps du Navire. His final catalogue, Coelum australe stelliferum, appeared in 1763 containing the same three subdivisions but with Latin instead of French names. Although usually described as the keel, **Carina** represents the main body or hull of the ship. The other two parts are [Puppis](#), the poop or stern, and [Vela](#), the sails.

Carina inherited the two brightest stars of the dismantled Argo, now labelled **alpha Carinae** (better known as **Canopus**) and **beta Carinae** (Miaplacidus). **Canopus**, a creamy white giant just over 300 light years away, is in fact the second-brightest star in the entire sky; it marks the blade of one of the ship's two steering oars. Eratosthenes and Ptolemy both spelled the star's name Κάνωβος (Kanobos); Canopus is the Latinized version.

CANOPUS AND OTHER STARS

Canopus was not mentioned by Aratus in the Phaenomena (c.275 BC), because the star was below the horizon from Greece in his day. The name first appears with his somewhat younger contemporary Eratosthenes who was based farther south at Alexandria in northern Egypt. From there he could see Canopus low in the south, as could Claudius Ptolemy who worked at Alexandria four centuries later. It was the most southerly star by some way that Ptolemy catalogued in his Almagest. The next most southerly was the present-day **tau Puppis**, over 3° to the north.

Greek writers such as Conon (c.280–c.220 BC) and Strabo (64/63 BC–c.AD 24) tell us that Canopus is named after the helmsman of the Greek King Menelaus. On Menelaus' return from Troy with Helen his fleet was driven off-course by a storm and landed in Egypt. There Canopus died of a snake bite; Helen killed the snake and she and Menelaus buried Canopus with full honours. On that site grew the city of Canopus (the modern Abu Qir) at the mouth of the Nile. Fittingly, modern space probes now use Canopus as a navigation star. Eratosthenes also knew this star by the name Περίγειος (i.e. Perigeios, or Perigee), in reference to the fact that it remained close to the horizon; this name appeared in Eratosthenes's entry on Eridanus, not Argo.

The constellation contains a unique star, **eta Carinae**, that flared up to become brighter than Canopus in 1843, but has since faded to the edge of naked-eye visibility. Astronomers now think that eta Carinae is a close pair of hot, very massive stars. They cannot be seen directly because they are embedded in a cloud of gas called the Homunculus Nebula that was ejected during the great eruption. One or both of the stars will one day explode as a supernova.

Beta Carinae is called Miaplacidus, but the origin of the name is unknown. The second-magnitude stars **epsilon** and **iota Carinae**, along with **delta** and **kappa Velorum** to the north in **Vela**, form a cruciform shape known as the **False Cross**, sometimes mistaken for the true **Southern Cross**. Epsilon Carinae is called **Avior**, a name given in or around 1937 by the UK's Nautical Almanac Office for use in The Air Almanac, a navigation guide produced for the Royal Air Force. The RAF specified that all navigation stars should have proper names so this name was coined for the otherwise unnamed epsilon Carinae.

Please keep in touch...

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

Also...

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

[ASSA Deep-Sky Section](#)

Whatsappchat group: [074 100 7237]

[MNASSA](http://assa.sao.ac.za/about/publications/mnassa/)<http://assa.sao.ac.za/about/publications/mnassa/>

[Nightfall](https://assa.sao.ac.za/?s=Nightfall) <https://assa.sao.ac.za/?s=Nightfall>

[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 find us on [Facebook](#), [Twitter](#), the [ASSAInfo mailing list](#) and the [ASSADiscussion mailing list](#).

Grateful thanks to the following:

ASSA

Auke Slotegraaf

Ian Ridpath

Johan Retief

Sky Guide Africa South2019

Sky Safari

Stellarium

Edited by Peter Harvey

e-mail:petermh@hermanus.co.za

Tel: 081 212 9481