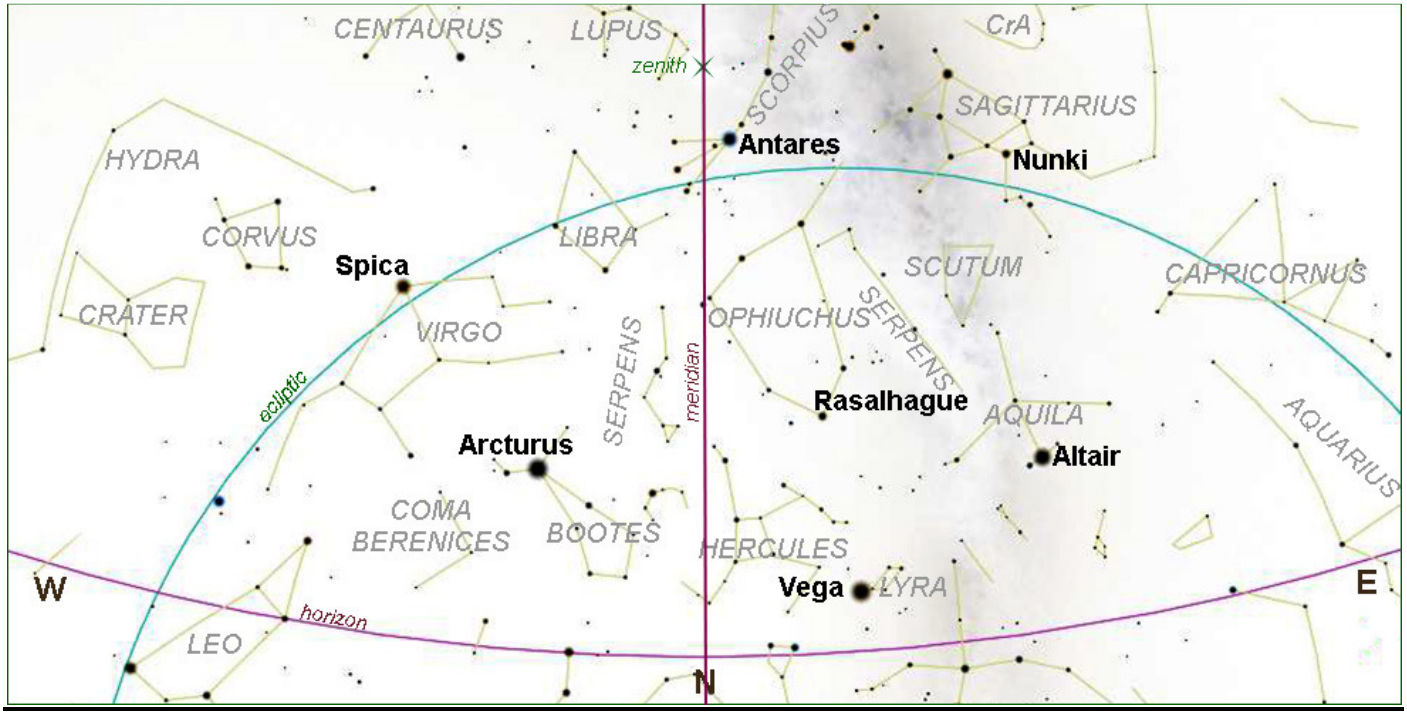
SKYNOTES from Hermanus

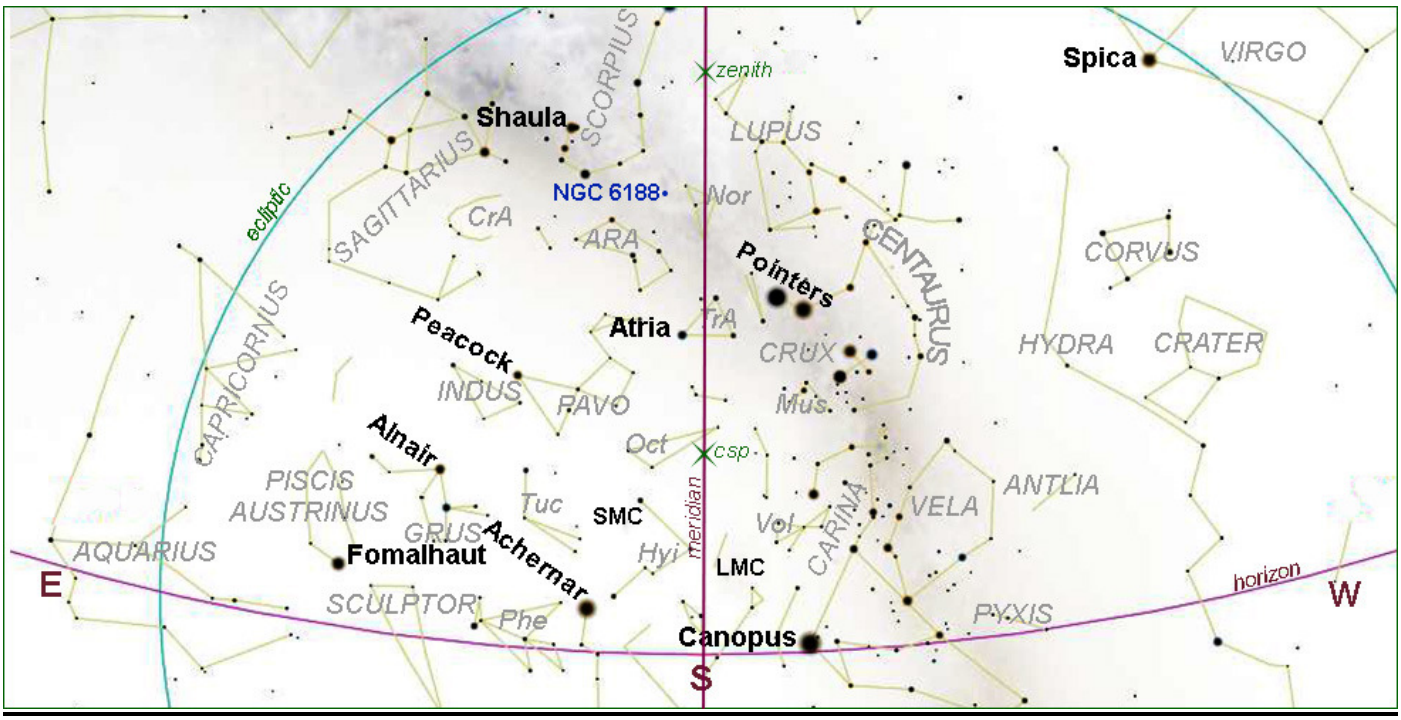
JULY 2025

SKY CHARTS

EVENING SKY – JULY 21st at 21h00 (NORTH DOWN)



EVENING SKY – JULY 21st at 21h00 (SOUTH DOWN)



SUGGESTED EVENING OBSERVATION WINDOW

(Lunar observations notwithstanding)

Date		*Moon*	*Dusk end*
July 15	*Rise*	**22h47 (81%)**	**19h20**
to July 27	*Set*	**20h53 (10%)**	**19h27**

THE SOLAR SYSTEM

JULY HIGHLIGHTS based on the 2025 SKY GUIDE

(PLEASE NOTE: all events are as viewed from **HERMANUS**, Western Cape, South Africa)

Date	***Time (SAST)***	***Item***
1	05h46	**Moon** at ascending node
2	21h30	**First quarter Moon**
3		Earth at aphelion (101 664 au)
	21h33	**Mercury** passes 1.2º south of the **Beehive Cluster** (M44) in Cancer
4	01h33	**Moon** (69%) passes 0.6º south of **Spica** (α Vir)
		Mercury at eastern elongation (25.9º)
5	04h29	**Moon** at apogee (404 627 km)
		Callisto at maximum from **Jupiter** (7')
6	24h00	**Saturn** at 58' south of **Neptune** as they rise together at midnight
7	18h34	**Moon** (90%) occults **Antares***
9		**Moon** southernmost (-28.4º)
10	22h37	**Full Moon**
14		**Mercury** at aphelion
		Saturn stationary
		Callisto at maximum from **Jupiter** (7')
15	12h42	**Moon** at ascending node
17		**Mercury** stationary
18	02h38	**Last quarter Moon**
20	12h52	**Moon** at perigee (368 057 km)
22		**Callisto** at maximum from **Jupiter** (7')
		Moon northernmost (+28.5º)
24	21h11	**New Moon**
26		**Pluto** at opposition
28	21h47	**Moon** (16%) and **Mars** are separated by 1.1º as they set together
	10h30	**Moon** at descending node
		Mercury closest to **Earth** (0.588 au)
		Piscis Austrinids at maximum
31	24h00	**Moon** and **Spica** set together
		Callisto at maximum from **Jupiter** (7')
		α Capricornids and **δ Aquariids** at maximum

***** July 7th 18h34 - **Moon** occults **Antares,** a dark limb event but the 90% Moon may be a bit overwhelming. Sunset is at 17h46 with dusk end at 19h16.

SOLAR SYSTEM VISIBILITY

2025 JULY 22				*When visible?*
Sun	Cancer	Rise:	07h44	**Never look at the sun without *SUITABLE EYE PROTECTION!***
Length of day	10 hours 11 minutes	Transit:	12h50	
		Set:	17h55	
Mercury	Cancer	Rise:	08h24	Low in the west after sunset
Magnitude	+2.4	Transit:	13h51	
Phase	11%	Set:	19h17	
Diameter	11".			
Venus	Taurus	Rise:	04h55	Morning
Magnitude	-4.0	Transit:	09h57	
Phase	72%	Set:	15h00	
Diameter	15"			
Mars	Leo	Rise:	10h20	Evening
Magnitude	+1.6	Transit:	16h09	
Phase	94%	Set:	21h59	
Diameter	5"			
Jupiter	Gemini	Rise:	06h31	Low in the east before sunrise
Magnitude	-1.9	Transit:	11h26	
Diameter	32"	Set:	16h21	
Saturn	Pisces	Rise:	22h48	Midnight to morning
Magnitude	+0.9	Transit:	04h57	
Diameter	18"	Set:	11h03	
Uranus	Taurus	Rises:	03h35	Morning
Magnitude	+5.8	Transit:	08h40	
Diameter	3"	Set:	13h44	
Neptune	Pisces	Rise:	22h50	Morning
Magnitude	+7.8	Transit:	04h56	
Diameter	2"	Set:	10h59	
Pluto	Capricornus	Rise:	17h56	All night
Magnitude	+14.4	Transit:	01h11	
		Set:	08h21	

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.

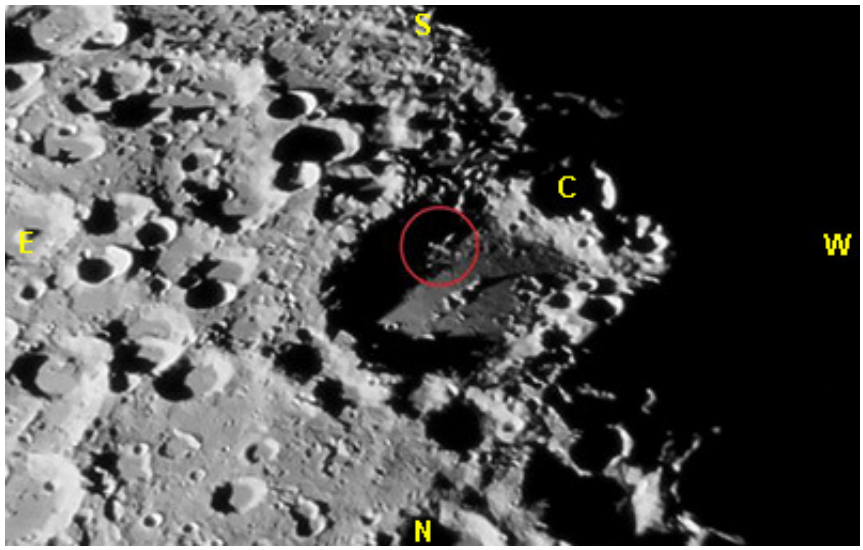
Transit: When an object crosses the **local meridian**, it is said to 'transit'. The local meridian is an imaginary line from the horizon directly north passing overhead through *zenith* to the horizon directly south.

Magnitude: we are accustomed to hearing the brightness of 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 a star down to a magnitude of about +6.

THE MOON

CRATER MAGINUS

Maginus is an ancient lunar impact crater located in the southern highlands to the southeast of the prominent crater Tycho. The rim of Maginus is heavily eroded with impact-formed incisions and multiple overlapping craters across the western side. The wall is broken through in the southwest by Maginus C, a worn crater. Indeed, owing to all the damage, the crater appears almost square which does not fit well the accepted formation of craters. Little remains of the original features that formed the rim of Maginus and it no longer possesses an outer rampart. The floor is relatively flat, with a pair of low central peaks.



Rob, the author of this mage, states "… there happens to be a distinct 'X' at the edge of one side of the ray shadow. I'm guessing maybe a 7 day old moon?"

Diameter: 164 km

Naming: after Giovanni Antonio Magini (1555-1617), Italian astronomer, astrologer, cartographer and mathematician.

Best seen: about 1st August.

(I am guessing that the observational timing of the "X" needs to be very precise! Ed.)

No visible solar or lunar eclipses are predicted for southern Africa this month.

COMETS, ASTEROIDS AND METEORS

From **Tim Cooper**

The latest circular of the Comet Asteroid and Meteor Section, CAMNotes 2025 No.2, has been uploaded to the ASSA website and contains details of meteor showers and asteroid observations required for April to July. There are no bright comets visible during this period.

The issue can be downloaded from:

https://assa.saao.ac.za/wp-content/uploads/sites/23/2025/03/ASSA-CAMnotes-2025-Number-2.pdf

STOCK IMAGES

The large emission nebula NGC 6188

Astrophotographer - Sauro Gaudenzi

NGC 6188
The Fighting Dragons, The Firebird Nebula, The Rim Nebula

Description	Bright nebula
Constellation	Ara
Distance	3.8 kly, 1.2 kpc
Apparent size	22 x 12 arcmin
Actual size	21.9 ly, 6.7 pc
Magnitude	+5.19
J2000	-48°30'0" / 16h40m0s
Alt/Az	+75°04'07" / +163°14'13"

Visibility on 2025 July 21

Rises	*Transits*	*Sets*
11h56	21h26	07h00

Naked Eye	*Binoculars*	*Telescopes*
Marginal	Yes	yes

The choice of this month's feature is inspired by those fine images in the Sky Guide by John Gill and Tiaan Niemand.

DESCRIPTION

Ara is embedded in the southern Milky Way where dense interstellar dust clouds hide the distant stars.

NGC 6188, looking like two dragon heads facing each other, is an interstellar carnival of young blue stars, hot red gas and cool dark dust. Dark shapes with bright edges, winging their way through dusty NGC 6188, are tens of light-years long. Located 3 800 light years away, the nebula is home to the Ara OB1 association, a group of bright young stars that spans a full square degree of the southern sky. Its nucleus forms the bright open cluster NGC 6193. Embedded in an area cloaked by thick gas clouds and obscuring lanes of dust, this cluster is itself visible on dark, clear nights. Its stars are so bright that some of their light reflects off the interstellar dust, forming a diffuse blue glow.

The massive young stars of the Ara OB1 association sculpt the fantastic shapes and illuminate the nebula with stellar winds and intense ultraviolet radiation. The hottest stars of the cluster are two closely spaced O-type giants HD 150135 and HD 150136. HD 150136 is a remarkable binary system comprising massive O3 and O6 V type stars which are nearly in contact with each other. Colliding stellar winds from the pair may be responsible for the prodigious X-ray emission emitted from this bright stellar system.

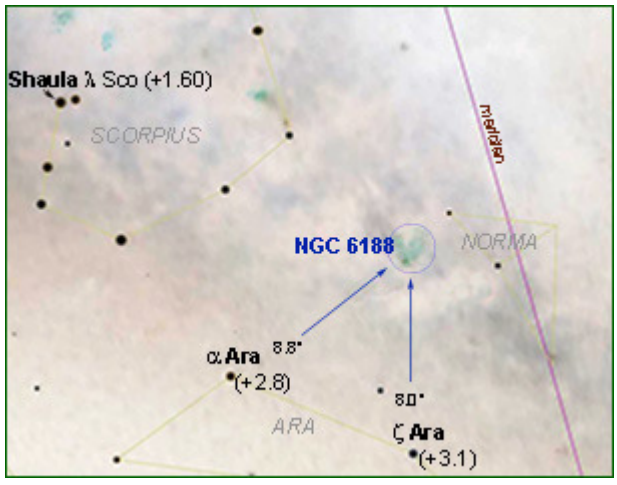
NGC 6193 and the surrounding emission nebula NGC 6188 lie along the edge of an immense molecular cloud and an expanding bubble of hydrogen gas spanning some 300 ly across. Ultraviolet radiation from the O-type giant stars of NGC 6193 presently erodes the eastern edge of the molecular cloud and may be triggering further star formation in other regions inside it.

NGC 6193 formed about three million years ago from the surrounding gas, appearing unusually rich in close binary stars. A likely evolutionary scenario of this region begins with the formation of the older cluster NGC 6167 which is currently at the centre of the expanding gas bubble. Powerful winds, blasted from the first supernovae in this cluster, produced the expanding bubble of neutral hydrogen gas. The expanding shell subsequently ploughed into the surrounding interstellar medium, triggering the formation of the Ara OB1 association and of NGC 6193 along the edge of the bubble some 1 to 3 million years ago.

OBSERVATION

Visible on the western edge of the image on page 7 is the **Dragon's Egg** with its expanding shell..

NGC 6188 is one of the most popular targets for astrophotographers who live in the southern hemisphere - https://www.galactic-hunter.com/post/ngc-6188 .



DISCOVERY

John Herschel, using an 18.36" (466 mm) telescope on 15th April 1836.

Please keep in touch...

Have a look at our excellent website, edited by Derek Duckitt: https://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!**

http://www.mnassa.org.za/

With Grateful thanks to the following:

2025 Sky Guide Southern Africa
John Gill
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Tiaan Niemand
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Wikipedia

Edited by Peter Harvey - petermh@hermanus.co.za