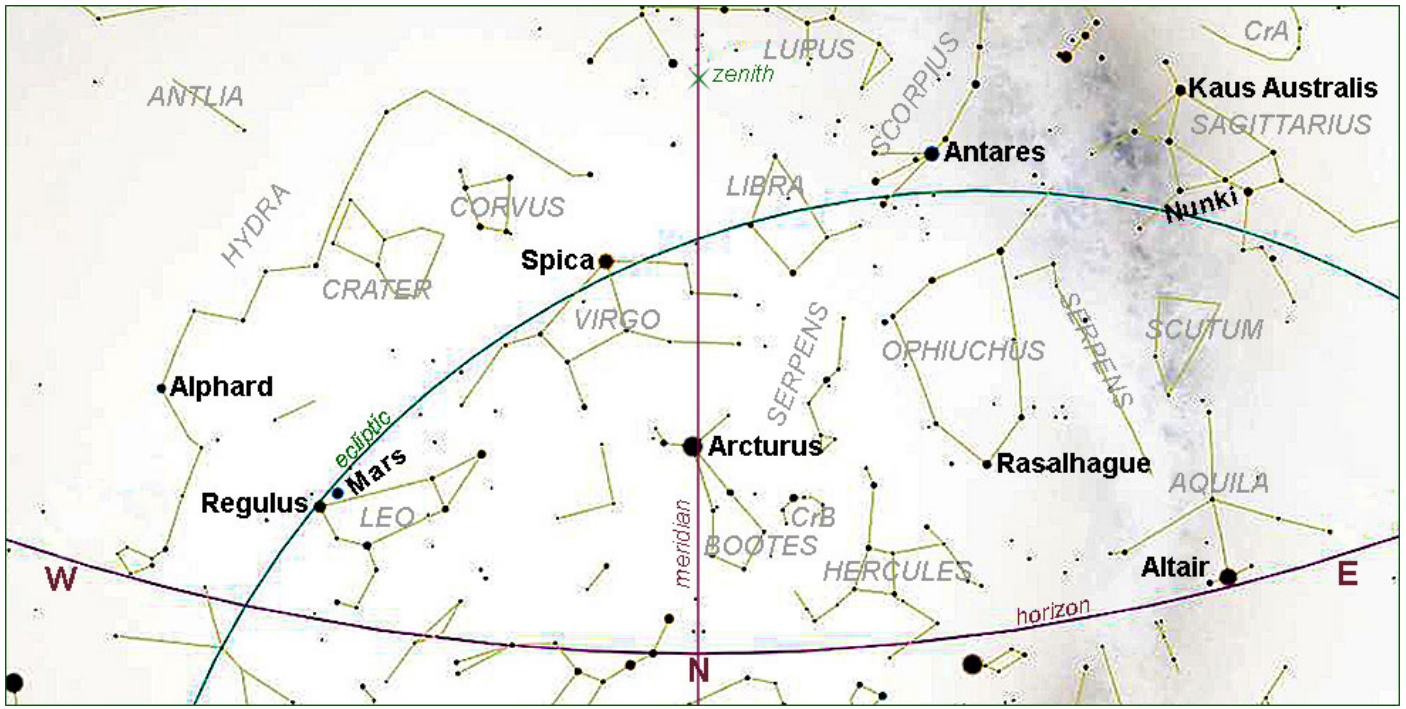
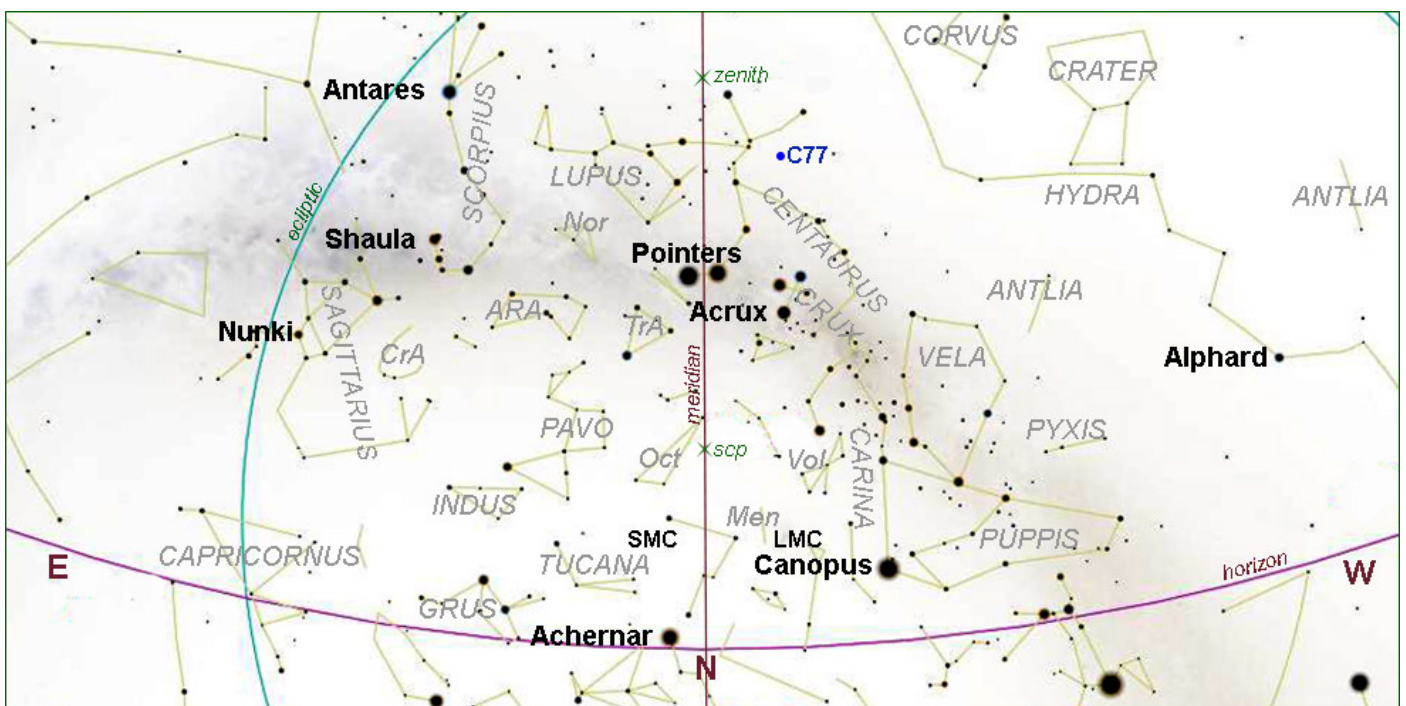


### SKY CHARTS

#### EVENING SKY – JUNE 22<sup>nd</sup> at 21h00 (NORTH DOWN)



#### EVENING SKY – JUNE 22<sup>nd</sup> at 21h00 (SOUTH DOWN)



## SUGGESTED EVENING OBSERVATION WINDOW

(Lunar observations notwithstanding)

<i>Date</i>	<i>Moon</i>	<i>Dusk end</i>
<b>June 16</b>	<i>Rise</i> <b>22h43 (71%)</b>	<b>19h10</b>
<b>to June 27</b>	<i>Set</i> <b>19h54 (5%)</b>	<b>19h12</b>

## THE SOLAR SYSTEM

### JUNE HIGHLIGHTS based on the 2025 SKY GUIDE

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

<i>Date</i>	<i>Time (SAST)</i>	<i>Item</i>
1		<b>Venus</b> at western elongation (45.9°)
2		<b>Moon</b> near <b>Mars</b> and <b>Regulus</b> ( $\alpha$ Leo)
3	05h41	<b>First quarter Moon</b>
4	03h33	<b>Moon</b> at descending node
6	15h39	<b>Moon</b> (77%) brushes <b>Spica</b> but in daylight
7	12h42	<b>Moon</b> at apogee (405 553 km)
10		<b>Callisto</b> at maximum from <b>Jupiter</b> (7')
11	09h44	<b>Full Moon</b>
12		<b>Moon</b> southernmost (-28.4°)
		<b>Venus</b> at aphelion
16		<b>Moon</b> (87%) occults <b>Nashira</b> ( $\gamma$ Cap) (+3.65)
17	21h00	<b>Mars</b> passes 0.75° north of <b>Regulus</b>
18	11h41	<b>Moon</b> at ascending node
	21h19	<b>Last quarter Moon</b>
19		<b>Callisto</b> at maximum from <b>Jupiter</b> (7')
	01h03	<b>Moon, Saturn</b> and <b>Neptune</b> rise together in a 3° group
21	04h42	<i>JUNE SOLSTICE</i>
22	04h30	<b>Moon</b> (10%) and <b>Venus</b> (60%) rise together
23	05h47	<b>Moon</b> (7%) rises 8 minutes after the <b>Pleiades</b> (M45)
	06h43	<b>Moon</b> at perigee (363 178 km)
24		<b>Jupiter</b> at conjunction
		<b>Moon</b> northernmost (+28.4°)
25	12h31	<b>New Moon</b>
June 26 to 29		<i>FREE STATE STAR PARTY</i>
26		<b>Jupiter</b> furthest from <b>Earth</b> (6.16 au)
27		<b>Callisto</b> at maximum from <b>Jupiter</b> (7')

## SOLAR SYSTEM VISIBILITY

**2025 JUNE 22**

*When visible?*

<b>Sun</b>	Gemini	Rise:	07h50	<b>Never look at the sun without SUITABLE EYE PROTECTION!*</b>
Length of day	09 hours 51 minutes	Transit:	12h45	
		Set:	17h41	
<b>Mercury</b>	Gemini	Rise:	09h28	Low in the west after sunset
Magnitude	-0.1	Transit:	14h24	
Phase	61%	Set:	19h20	
Diameter	7".			
<b>Venus</b>	Aries	Rise:	04h17	Morning
Magnitude	-4.2	Transit:	09h40	
Phase	60%	Set:	15h03	
Diameter	19"			
<b>Mars</b>	Leo	Rise:	11h30	Evening
Magnitude	+1.4	Transit:	17h00	
Phase	92%	Set:	22h31	
Diameter	5"			
<b>Jupiter</b>	Gemini	Rise:	07h58	Too close to the Sun
Magnitude	-1.9	Transit:	12h52	
Diameter	32"	Set:	17h46	
<b>Saturn</b>	Pisces	Rise:	00h44	Morning
Magnitude	+1.0	Transit:	06h50	
Diameter	17"	Set:	12h55	
<b>Uranus</b>	Taurus	Rises:	05h23	Morning
Magnitude	+5.8	Transit:	10h28	
Diameter	3"	Set:	15h34	
<b>Neptune</b>	Pisces	Rise:	00h48	Morning
Magnitude	+7.9	Transit:	06h50	
Diameter	2"	Set:	12h53	
<b>Pluto</b>	Capricornus	Rise:	19h54	All night
Magnitude	+14.4	Transit:	03h07	
		Set:	10h17	

**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

### MARE NECTARIS

**Location:** Mare Nectaris is a basin south of Mare Tranquillitatis and west of Mare Fecunditatis. Its diameter of 360km is approximately the straight-line distance between Cape Town and Mossel Bay. Its area is 101 000 square km, about 80% the size of the Western Cape.

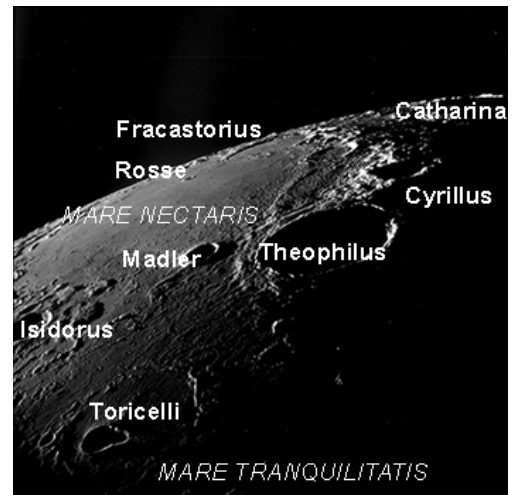
**Type:** Dark basaltic plain formed by volcanic eruptions.

**Age:** Between 3.85 and 3.92 billion years

**Best seen** with oblique lighting, a situation which occurs when the [terminator](#) is nearby; suggest 1<sup>st</sup> and 30<sup>th</sup> June (5 days after New Moon).

**Features:** Most of the floor of this lunar mare is flat and pockmarked with craterlets. The largest distinct crater found within the plain of Nectaris is bowl-shaped **Rosse**. A bright ray from the distinctive 88km-wide crater [Tycho](#) slashes across it, creating a bright stripe that runs diagonally from the southwest to the northeast. This 12km-wide feature is easy to spot with a 4-inch telescope.

**Montes Pyrenaeus** borders the mare to the east and **Sinus Asperitatis** fuses to its north-western edge. On the mare's northern border lies **Isidorus**, a lunar impact crater named after the 6<sup>th</sup> century Spanish astronomer and archbishop of Seville, Saint Isidore. Located along the north-western "coast" are **Mädler**, **Theophilus**, **Cyrillus** and **Catharina**. The largest crater is lava-filled **Fracastorius** (dia. 124 km) which fuses with the southern boundary.



*Above: an oblique view of Mare Nectaris looking south-east*

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### The Naming of Lunar Features:

Most of the [lunar nomenclature](#) is credited to **Giovanni Battista Riccioli** (17 April 1598 – 25 June 1671), an Italian astronomer and a Catholic priest in the Jesuit order. He is known, inter alia, for his experiments with [pendulums](#), with falling bodies and for his discussion of 126 arguments concerning the motion of the Earth.. He is also widely known for discovering the first double star. His [Almagestum Novum](#) was published in 1651 as a summary of the astronomical thinking of the time. In particular he outlined the arguments in favour of and against various cosmological models, both heliocentric and geocentric. *Almagestum Novum* contained scientific reference matter based on contemporary knowledge and was widely used by educators across Europe. Although this handbook of astronomy has long since been superseded, its system of lunar nomenclature is used to this day.

**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 June. There are no bright comets visible during this period.

The issue can be downloaded from:

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



**Derek Duckitt's *Centaurus A***



*HARDWARE*

Telescope	Skywatcher Refractor 120/600
Camera	Fujifilm X-T30 (CMOS)
Mount	Skywatcher HEQ5 Pro
Guiding	Williams Optics Refractor 32/120 ZWO Optical ASI 553 MC PRO (CMOS)

*PROCESSED WITH*

Affinity Photo 2.5.7  
Siril 1.4.0 Beta-1  
Fujifilm XT-30 Android app  
DeNoise (Topaz Labs)  
GraXpert AI  
Photoshop 2025  
PHD Guiding (Stark Labs) 2  
Seti Astro Suite 2.7.1

## CENTAURUS A

### C77, NGC 5128, the Hamburger Galaxy

<i>Description</i>	Spiral galaxy	<b>Visibility on June 22<sup>nd</sup> 2025</b>		
<i>Constellation</i>	Centaurus	<i>Rises</i>	<i>Transits</i>	<i>Sets</i>
<i>Distance</i>	12 Mly, 3.7 Mpc	11h22	20h06	04h53
<i>Apparent size</i>	25.7 x 20 arcmin			
<i>Actual size</i>	89.2 kly, 27.4 kpc	<i>Naked Eye</i>	<i>Binoculars</i>	<i>Telescopes</i>
<i>Magnitude</i>	+6.8	No	Yes	Yes
<i>J2000</i>	-43°01'09" / 13h25m28s			
<i>Alt/Az</i>	+79°06'14" / 145°43'30"			

**Centaurus A** is a peculiar lenticular galaxy in the constellation Centaurus which appears to be an elliptical with a huge superimposed dust lane. It is one of the closest radio galaxies and its active galactic nucleus has been extensively studied.

### Discovery and Identity

NGC 5128 was discovered by James Dunlop on August 4, 1826. John Herschel was next to see it from South Africa in 1834; he catalogued it as H3501 which became GC 3525 in his General Catalogue of 1864 and NGC 5128 in J. L. E. Dreyer's New General Catalog. Herschel was first to note this galaxy's peculiarity, in 1847.

Halton Arp included NGC 5128 in his 1966 Atlas of Peculiar Galaxies as one of the best examples of a "disturbed" galaxy with dust absorption.

### Amateur Observation

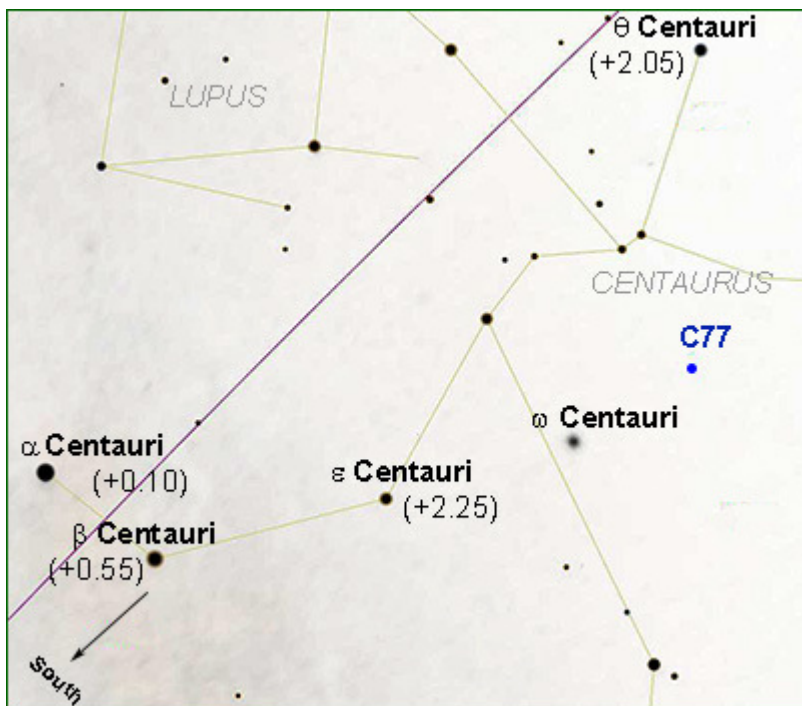
Centaurus A appears approximately 4° north of the naked-eye globular cluster Omega Centauri. At magnitude 7.0, this galaxy is the fifth brightest in the sky, making it ideal for observation, although it is only visible from the southern hemisphere and low northern latitudes. Centaurus A has been spotted with the naked eye by expert observers under very good conditions. The bright central bulge and dark dust lane are visible in finderscopes and large binoculars, and additional structure may be seen in larger telescopes.

NGC 5128 is a "lenticular" galaxy, of intermediate type between elliptical and disk (spiral) galaxies. Its main body has all characteristics of a large elliptical but a pronounced dust belt is superimposed over the centre, forming a disk plane around this galaxy.

The only supernova discovered in Centaurus A so far is SN 1986G, a Type Ia event that reached mag +12.5 in May, 1986.

### Properties and Evolution

Centaurus A is located about 12 million light-years away, at the centre of one of two subgroups within the Centaurus A/M83 Group. Messier 83 (the Southern Pinwheel Galaxy) is at the centre of the other subgroup.



*The chart above is timed at 21h00 on 22 June 2025*

These two groups are sometimes identified as one, since the galaxies around Centaurus A and the galaxies around M 83 are physically close to each other, and both subgroups appear to be stationary relative to each other. The Centaurus A/M83 Group is part of the Virgo Supercluster.

NGC 5128's strange morphology is the result of a merger between two smaller galaxies. The bulge of Centaurus A comprises mainly evolved red stars. Its dusty disk, however, has been the site of more recent star formation; over 100 star formation regions have been identified in the disc. As observed in other such "starburst" galaxies, a collision is responsible for the intense star formation. Scientists using the Spitzer Space Telescope have confirmed that Centaurus A is an elliptical galaxy going through a collision, devouring a spiral.

In the radio part of the spectrum, Centaurus A exhibits two vast regions of radio emission, running along the polar axis of NGC 5128's disc and extending hundreds of light years in both directions. A relativistic jet from what is believed to be a supermassive black hole at the centre of the galaxy is responsible for emissions in the X-ray and radio wavelengths. Radio observations of the jet indicate that the inner parts of the jet are moving at about 1/2 the speed of light. X-rays are produced further out as the jet collides with surrounding gases, creating highly energetic particles.

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### **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

BBC Sky at Night

Derek Duckitt

Sky Safari

Stellarium

The Practical Skywatcher's Handbook

Tim Cooper

Wikipedia

Edited by Peter Harvey - [petermh@hermanus.co.za](mailto:petermh@hermanus.co.za)