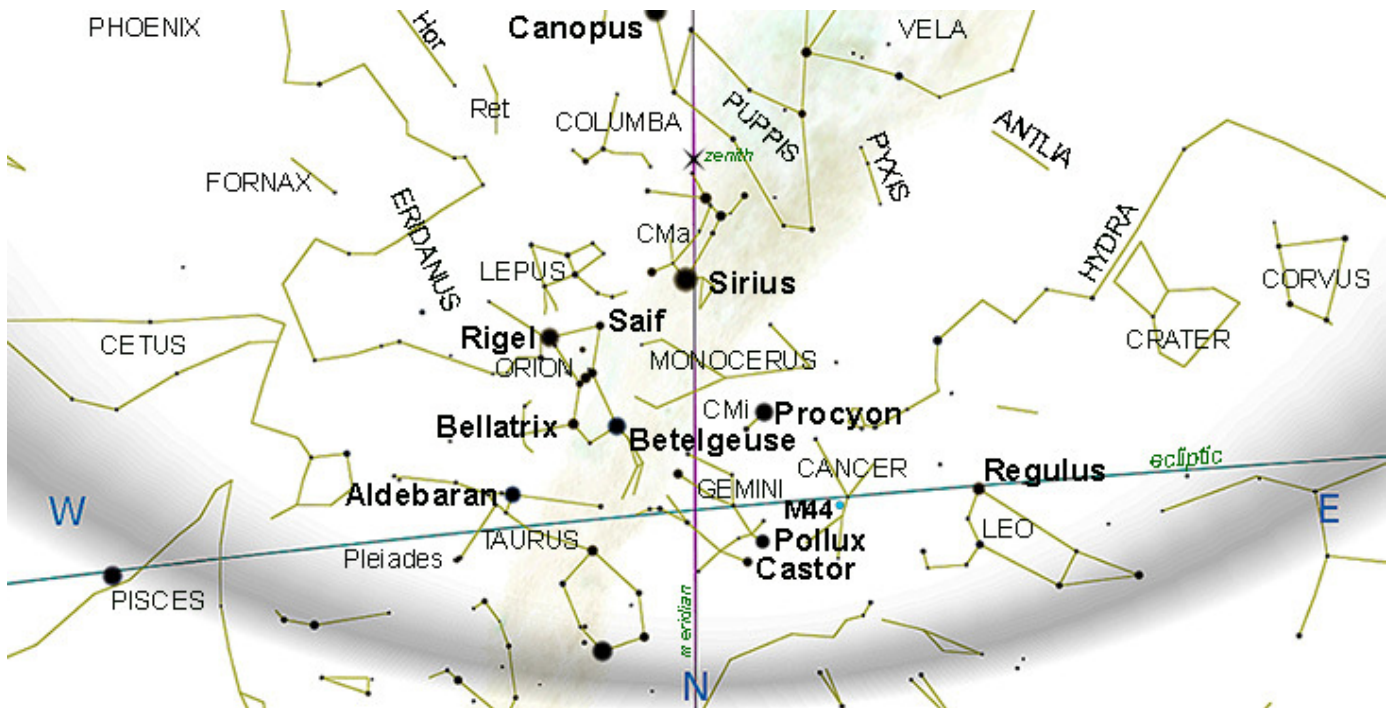
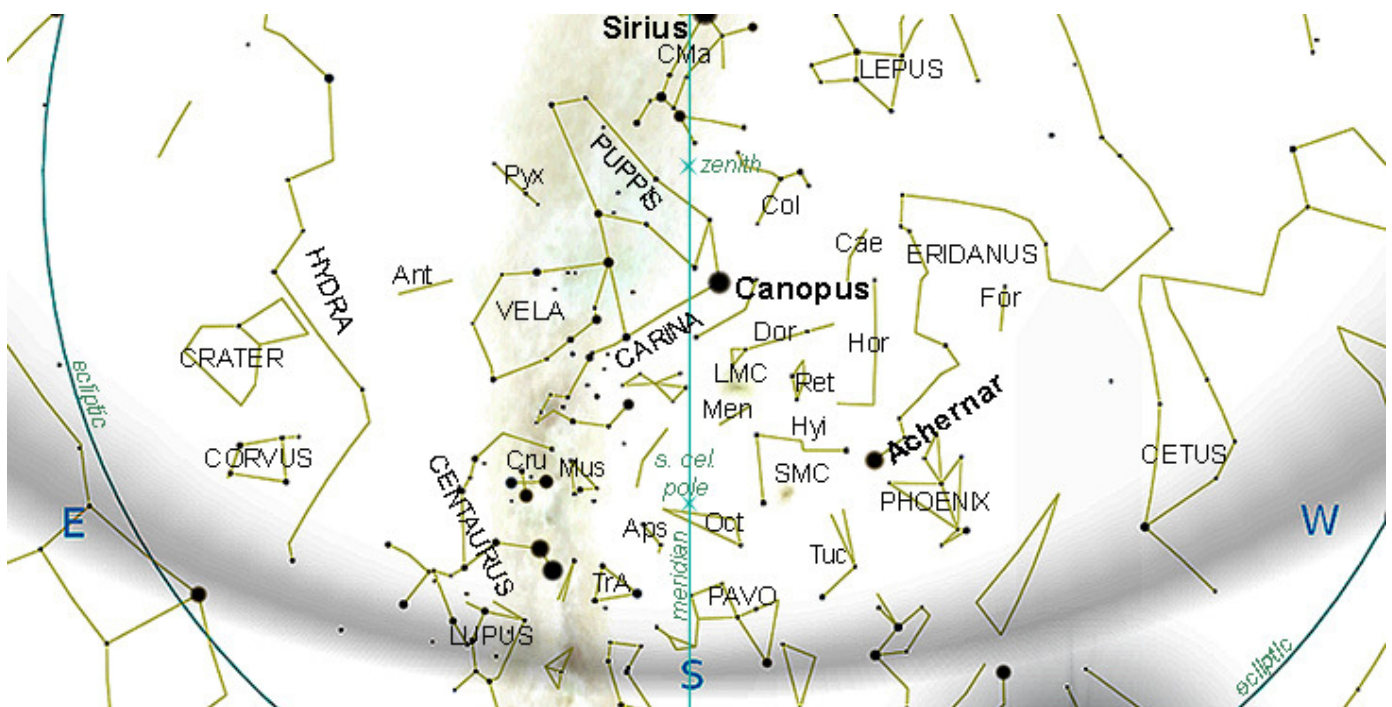


1. SKY CHARTS

EVENING SKY 21st FEBRUARY at 21h30 (NORTH DOWN)



EVENING SKY 21st FEBRUARY at 21^h30 (SOUTH DOWN)



2. HIGHLIGHTS FROM THE SKY GUIDE

PLEASE NOTE: All events predicted are as observed from **Hermanus, Western Cape, South Africa**. Times are **South African Standard Time (UTC +2)**.

Also please note: with the exception of **Pluto** (at magnitude +14.4), all these events are visible with binoculars and, in most cases, to the naked eye.

Date	Time	Item
1		Moon near Uranus
2	03h42	First quarter Moon
		Moon near Vesta (+7.4 magnitude)
4		Moon near Aldebaran
6	18h10	Moon furthest north (+23.3°)
7		Moon near Pollux
8		Moon near Beehive (M44)
9	09h33	Full Moon
	21h35	Moon occults η Leonis
10	02h34	Moon passes 0.3° north of Regulus
	22h30	Moon at perigee (360 500 Km)
	15h59	Mercury at greatest elongation (18.2°)
12		Mercury at perihelion
13		Juno stationary
16	00h17	Last quarter Moon
		Mercury stationary
18		Moon near Mars
19-24		<i>18TH SOUTHERN STAR PARTY</i> ¹
19	10h58	Moon furthest south (-23.3°)
	21h27	Moon occults Jupiter ²
20		Moon near Pluto
		Moon near Saturn
22		Mercury greatest latitude north
23	17h32	New Moon
24	21h14	Moon passes 3° south-east of Neptune
26		Moon at apogee (406 300 Km)
	03h37	Mercury at inferior conjunction
27	20h08	Moon passes 3° south-east of Venus
28		Moon near Uranus

¹ 19th to 24th February - *18TH SOUTHERN STAR PARTY* at Leeuwenboschfontein. Further details regarding bookings, etc., will be passed to members via e-mails as they become available.

² Lunar occultation of **Jupiter**. Unfortunately, this event will only be visible from well south of Africa.

3. THE SOLAR SYSTEM

FEBRUARY 2020			1st February	1st March	Visibility
Sun Length of day	Capricornus to Aquarius 13h47 to 12h48	Rises:	06h03	06h31	Never look at the sun without SUITABLE EYE PROTECTION!
		Transit:	12h57	12h55	
		Sets:	19h50	19h19	
Mercury Magnitude Phase Diameter	Capricornus to Aquarius -1.0 to +3.3 84% to 5% 6" to 11"	Rises:	07h14	05h56	Low in the west after sunset to low in the east before sunrise
		Transit:	13h56	12h17	
		Sets:	20h37	18h39	
Venus Magnitude Phase Diameter	Aquarius to Pisces -4.1 to -4.2 73% to 63% 15" to 19"	Rises:	09h19	10h07	Evening
		Transit:	15h32	15h39	
		Sets:	21h45	21h10	
Mars Magnitude Phase Diameter	Ophiuchus to Sagittarius +1.4 to +1.1 93% to 91% 5"	Rises:	02h04	01h34	Morning
		Transit:	09h14	08h46	
		Sets:	16h25	15h59	
Jupiter Magnitude Diameter	Sagittarius -1.9 to -2.0 32" to 34"	Rises:	03h50	02h23	Morning
		Transit:	10h59	09h30	
		Sets:	18h07	16h36	
Saturn Magnitude Diameter	Sagittarius +0.6 to +0.7 15"	Rises:	04h44	03h04	Morning
		Transit:	11h47	10h06	
		Sets:	18h50	17h07	
Uranus Magnitude Diameter	Aries + 5.8 3"	Rises:	12h33	10h43	Evening
		Transit:	18h01	16h10	
		Sets:	23h29	21h38	
Neptune Magnitude Diameter	Aquarius +7.9 to +8.0 2"	Rises:	08h54	07h05	Too close to the Sun
		Transit:	15h12	13h22	
		Sets:	21h31	19h39	
Pluto Magnitude	Sagittarius +14.4	Rises:	04h34	02h44	Morning
		Transit:	11h40	09h50	
		Sets:	18h47	16h56	

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 -1.8. 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

Sky Guide lunar feature of the month:

Mare Crisium - the Sea of Crises

(A fine feature for binoculars)

Type: A dark, basaltic plain formed by volcanic eruptions

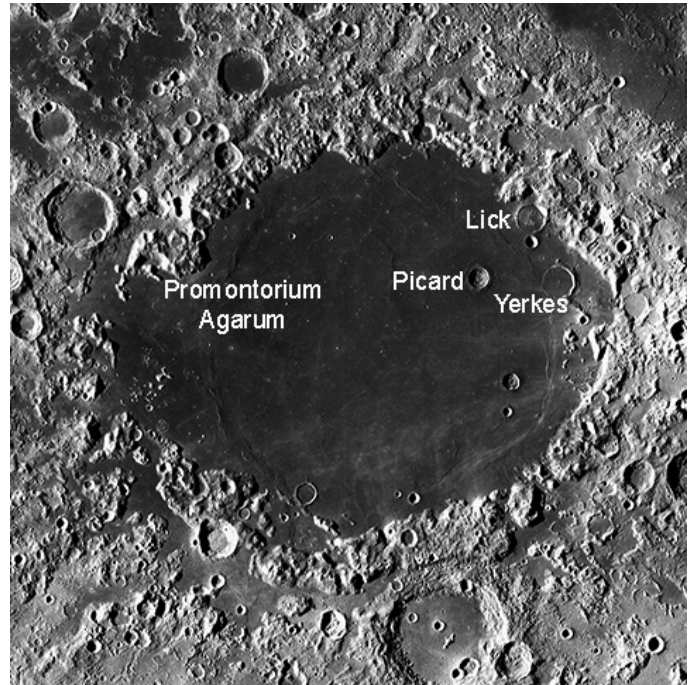
Location: Near the east-northeast limb. It is easily identified as the only “land-locked sea” on the moon.

Dimensions: Diameter 556 Km, area 176 000 square kilometres

Notes: It has a very flat floor with a ring of wrinkle ridges (dorsa) toward its outer boundaries.

The cape-like feature protruding into the southeast of the mare is Promontorium Agarum. On the western rim of the mare is the palimpsest Yerkes. Lick to its southeast is similar. The crater Picard is located just to the east of Yerkes, and northwest of Picard are the craters Peirce and Swift. Binoculars will show the ray system of the crater Proclus overlying the north-western mare.

Best seen: three days after **New Moon** and two days after **Full Moon**.



Mare Crisium (north down)

Age: About 3.8 billion years.

Naming: named by Giovanni Riccioli, pioneer lunar scholar who first named many other features on the moon.

*No eclipses, solar or lunar, are predicted
for February 2020*

METEOR SHOWERS

<i>Name</i>	<i>Date & Time of Max</i>	<i>Duration</i>	<i>Radiant</i>	<i>ZHR</i>	<i>velocity</i>	<i>Observing Prospect</i>
α Centaurids	7 February 22h00 to 03h30	28 January to 21 February	1 ^o north of Hadar (β Centauri)	5	60	Unfavourable

ZHR – the zenithal hourly rate (ZHR) of a meteor shower is the number of meteors a single observer would see in an hour of peak activity, assuming the conditions are excellent (stars visible up to magnitude 6.5). The rate that can effectively be seen is nearly always lower and decreases the closer the radiant is to the horizon.

velocity - velocity in Km per second.

*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 **15th** (moonrise 23h56) to **26th February** (moonset 21h10, 8%).



Henceforth, Stargazing evenings will be planned on a “pop up” basis! Members will receive updated information by e-mail. Also, please check our website calendar on <http://www.hermanusastronomy.co.za>.

DEEP SKY HIGHLIGHTS

Southern Pleiades IC 2602, C1025, θ Carinae Cluster

Description	Open cluster	Azimuth/Altitude	149° 19' 54" / +44° 15' 37"
Distance	547 ly, 167.7 pc	J2000 coordinates	10h 43' 12" / -64° 30' 21"
Magnitude	+1.6	Location	In the Diamond Cross
Absolute mag	-4.43	21 February	Transits 01h 25 min, does not rise or set
Apparent size	50 arcmin	Naked eye	Yes, a small fuzzy spot
Actual size	15.3 ly, 4.7 pc	Binoculars	Excellent
		Telescopes	Wide field recommended

The **Southern Pleiades** (or Theta Carinae Cluster), is an open cluster in the constellation **Carina** that was discovered, along with **NGC 3372** (see below), in 1751- 52 from South Africa by **Abbé Nicolas-Louis de Lacaille**. This is easily seen with the naked eye. The cluster is one of the closest to us. **IC 2602**, 70% fainter than the **Taurean Pleiades**, contains seventy-odd stars. It is the third-brightest open cluster in the sky, following the **Hyades**. Like its northern counterpart, the Southern Pleiades spans a sizeable area of sky, approximately 50 arcminutes, so it is best viewed with binoculars or a telescope with a wide-angle eyepiece.

θ Carinae is the brightest star within the open cluster, having an apparent magnitude of +2.74. **ρ Carinae** (PP Carinae), 3° NNW of IC 2602, is another third-magnitude star known to be a member of IC 2602, although it lies well outside the main visible grouping of stars. All the other members of the cluster are of the fifth magnitude.

Note the distinct “M”. Is this advertising for Macdonalds? In our winter, it switches to a “W”! Woolworths maybe?

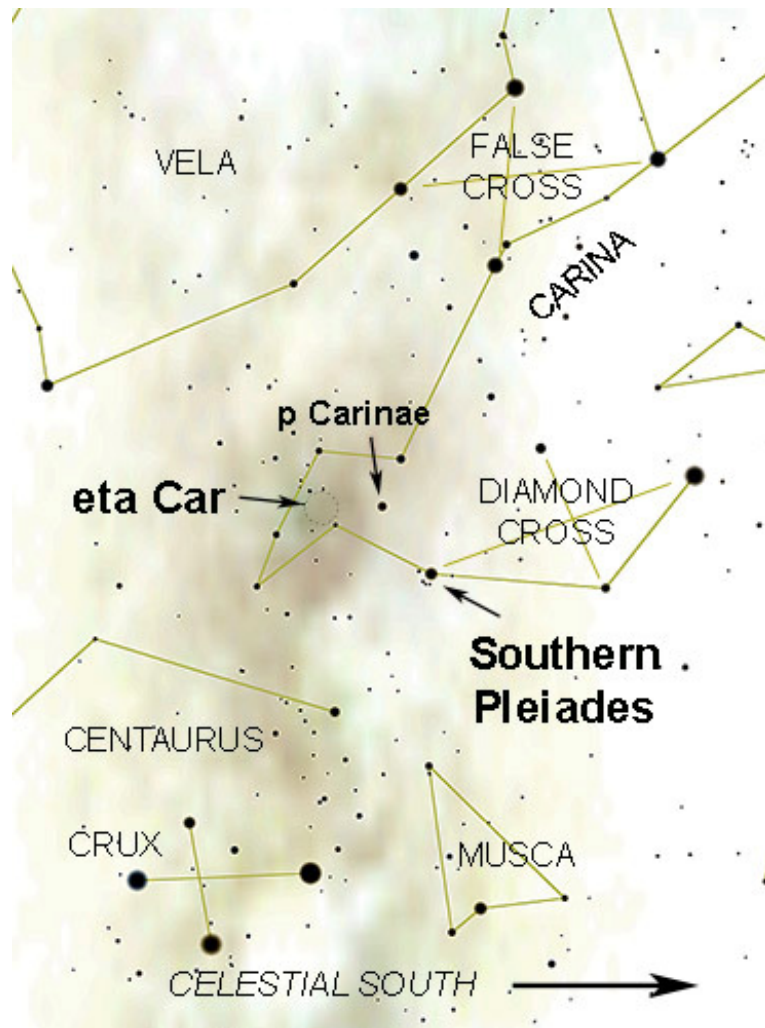
η Carinae Nebula NGC 3372, C92, The Great Nebula in Carina

Description	Bright nebula	Azimuth/Altitude	143° 01' 51" / +44° 57' 45"
Distance	10 000 ly, 3.1 Kpc	J2000 coordinates	10h 43m 35sec / -59° 42' 00"
Magnitude	+1.00	Location	Constellation Carina
Absolute mag	-11.43	21 February	Transits 01h 26 min, does not rise or set
Apparent size	120 x 120 arcmin	Naked Eye	Yes, a rich mass of stars and nebulae
Actual size	349 ly, 107 pc	Binoculars	Excellent
		Telescopes	Wide field

The **η Carinae Nebula** is a large bright object surrounding several open clusters. Although visually difficult to identify in the maze of surrounding stars and nebulosity, the nebula can be spotted with the naked eye and is clearly visible when viewed through binoculars or telescope.

And a very fine sight it is!

The central part of **NGC 3372** is known as the **Keyhole Nebula**, a famous dark zone near the massive star. In binoculars, the nebula is seen as three fan-shaped areas separated by dark lanes.



This first magnitude nebula is one of the largest H II regions in the Milky Way and one of the largest diffuse nebulae in the sky. Although it is some four times as large and much brighter than the famous Orion Nebula, the Carina nebula is less well known owing to its location far down in the southern hemisphere.

Within the large, bright nebula is a much smaller feature immediately surrounding the star η Carinae known as the **Homunculus Nebula** (from the Latin for "Little Man"). It is believed to have been ejected in an enormous outburst in 1841, leaving η Carinae the second brightest star in the sky.

The star **η Carinae** is a giant variable and is still among the most massive and luminous stars in the Milky Way.

*The Southern Pleiades / eta Carinae area
(orientation 21 February at 21h30)*

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/>

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