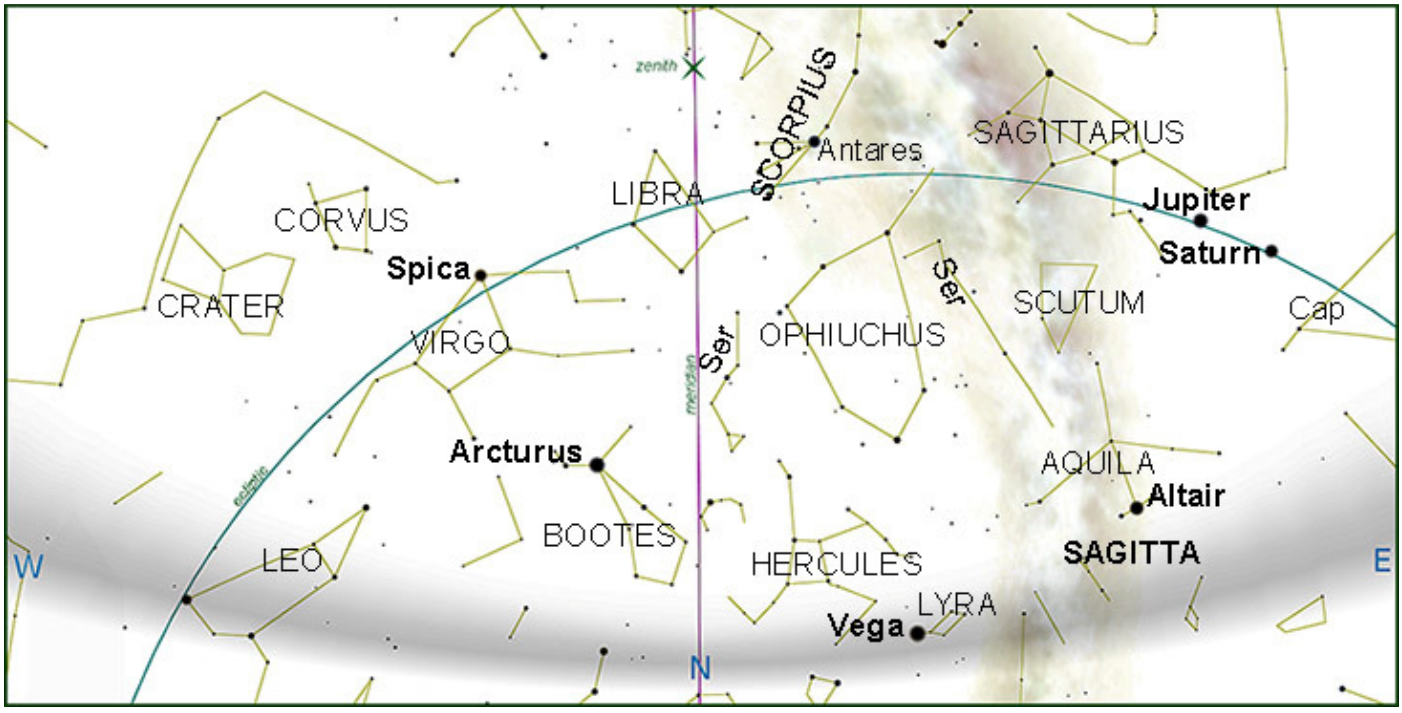
SKYNOTES from Hermanus

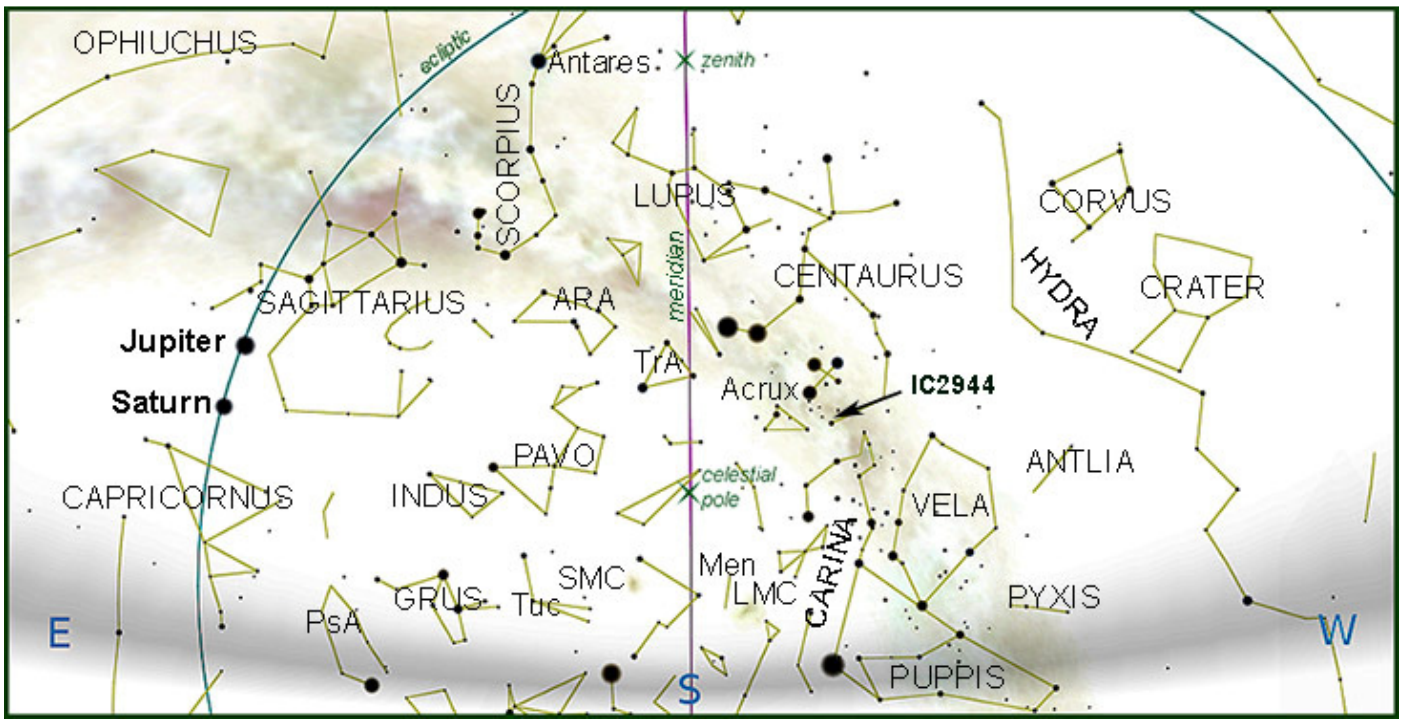
JULY 2020

1. SKY CHARTS

EVENING SKY 16th JULY at 20h30 (NORTH DOWN)



EVENING SKY 16th JULY at 20h30 (SOUTH DOWN)



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**

2. THE SOLAR SYSTEM

(magnitude +14.4), all these objects are visible with binoculars and, in most cases, to the naked eye.

Date	Time	Item
1		*ANNUAL SUBSCRIPTIONS FOR ASSA COUNTRY MEMBERS DUE*
	04h45	**Mercury** in inferior conjunction
4	16h59	**Earth** at aphelion (1,0167 AU)
5	06h44	**Full Moon**
	06h30	Penumbral lunar eclipse (see p.4 for details)
	23h23	**Moon** passes 1.7º south of **Jupiter**
	03h37	**Moon** furthest south (-24.1º)
		Vesta in conjunction with the Sun
6	07h00	**Moon** near **Jupiter** and **Saturn**, a fine trio before sunrise
	01h00	**Moon** passes 1º south of **Pluto** (just info., no practical use)
8		**Mars** greatest latitude south
10		**Venus** at aphelion and greatest illuminated extent
11	21h28	**Moon** passes 1.5º south of **Mars**
12	21h27	**Moon** at apogee (404 200 Km)
		Mercury stationary
13	01h29	**Last quarter Moon**
		Mercury greatest latitude south
		Ceres stationary, **Pallas** at opposition
		July Phoenicids at maximum (see p.4 for details.)
14	09h03	**Jupiter** at opposition (619.4 million Km geocentric distance)
15		**Pluto** at opposition
15 - 19		*NATIONAL KAROO STAR PARTY 2020* [1]
19	13h51	**Moon** furthest north (+24.1º)
20	19h33	**New Moon**
		Saturn at opposition
22	16h59	**Mercury** at greatest elongation (20.1º)
25	06h54	**Moon** at perigee (368 400 Km)
27	14h32	**First Quarter Moon**
28		**Piscis Australids** at maximum (see p.4 for details)
29		**Southern Delta Australids** at maximum (see p.4 for details)
31		*NOMINATIONS FOR ASSA COUNCIL CLOSE*

[1] *NATIONAL KAROO STAR PARTY 2020* 15-19 July – organised by the ASSA Pretoria Centre members. This is a get-together of friends who want to share the enjoyment of the beautiful Karoo sky. There are no scheduled events, talks or workshops. The venue is the Kambro Accommodation and Farm Stall about 20 Km north of Britstown, next to the N12 national road. Booking is essential with accommodation also available in Britstown at the Karoo Country Inn. Contact: www.scopex.co.za .

JULY 2020			1st July	1st August	Visibility
Sun Length of day	Gemini to Cancer 9h54 to 10h27	Rises: Transit: Sets:	07h50 12h47 17h44	07h36 12h49 18h03	***Never look at the sun without SUITABLE EYE PROTECTION!***
Mercury Magnitude Phase Diameter	Gemini +5.0 to -0.8 1% to 71% 12" to 6"	Rises: Transit: Sets:	07h35 12h43 17h52	06h40 11h42 16h43	**Too close to Sun then low in east before sunrise**
Venus Magnitude Phase Diameter	Taurus -4.5 to -4.4 19% to 43% 43" to 27"	Rises: Transit: Sets:	05h10 10h23 15h36	04h31 09h38 14h45	**Morning**
Mars Magnitude Phase Diameter	Pisces -0.5 to -1.1 84% to 86% 11" to 15"	Rises: Transit: Sets:	00h08 06h16 12h24	23h21 05h16 11h08	**Morning**
Jupiter Magnitude Diameter	Sagittarius -2.7 47"	Rises: Transit: Sets:	18h40 01h49 08h54	16h19 23h26 06h38	**All night**
Saturn Magnitude Diameter	Capricornus to Sagittarius +0.2 to +0.1 18"	Rises: Transit: Sets:	19h09 02h14 09h15	16h57 00h03 07h05	**All night**
Uranus Magnitude Diameter	Aries +5.8 3" to 4"	Rises: Transit: Sets:	03h13 08h34 13h56	01h14 06h35 11h56	**Morning**
Neptune Magnitude Diameter	Aquarius +7.9 to +7.8 2"	Rises: Transit: Sets:	23h15 05h33 11h47	21h11 03h30 09h44	**All night**
Pluto Magnitude	Sagittarius +14.3	Rises: Transit: Sets:	18h39 01h50 08h57	16h33 23h41 06h52	**All night**

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 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 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.

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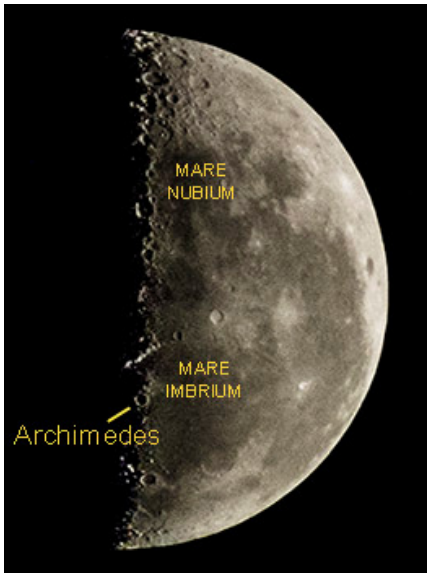
THE MOON *(Sky Guide lunar highlight)*

ARCHIMEDES



Type	Impact crater
Location	Eastern edge of Mare Imbrium
Size	Diameter 81 Km
Best seen	At first quarter and six days after Full Moon
Naming	Archimedes is named after the 3rd century BC Greek scientist by Giovanni Riccioli, whose 1651 nomenclature system has become standardized.
Notes	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 about 30 Km from the southeast of the rim. The interior of the crater lacks a central peak, and is flooded with lava.

It is devoid of significant raised features, although there are a few tiny meteor craters near the rim. Scattered wisps of bright ray material lie across the floor, most likely deposited by the impact that created Autolycus.

Lunar eclipse 5th July (penumbral)	Commences Maximum Ends	05h07 06h30 07h52	*Please note*: penumbral lunar eclipses can be hard to distinguish from the normal Full Moon.

Solar eclipses	None predicted for this month

Meteor Showers	*Max Date/Time*	*Observing Prospects*	*Duration*	*Radiant*	*ZHR*	*Velocity Km/sec*
July Phoenicids	13 July 23h00 – 05h00	Moon 50% Rises 00h52	10 – 16 July	9º SE of Achernar 14º above horizon[1]	<5	47
Piscis Australids	28 July 21h00 – 05h00	Moon 61% Sets 02h38	19 July – 17 August	3º west of Fomalhaut (α PsA)	5	35
Southern δ Aquariids	29 July 22h00 – 05h00	Moon 72% Sets 03h45	21 July – 29 August	14º north of Fomalhaut	25	42

[1] the July Phoenicids' low elevation and low hourly rate will make this a tough one to observe.

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.*

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

3. STARGAZING

SUGGESTED OBSERVATION DAYS

Unless *specifically* targeting the moon, may I suggest the most convenient dates to plan evening stargazing are from **10th** (moonrise 23h02) to **23rd July** (moonset 21h01, 11%).

STARGAZING . With regret, we have had to suspend all our functions owing to the current situation. Please consult our website for updates: http://www.hermanusastronomy.co.za.

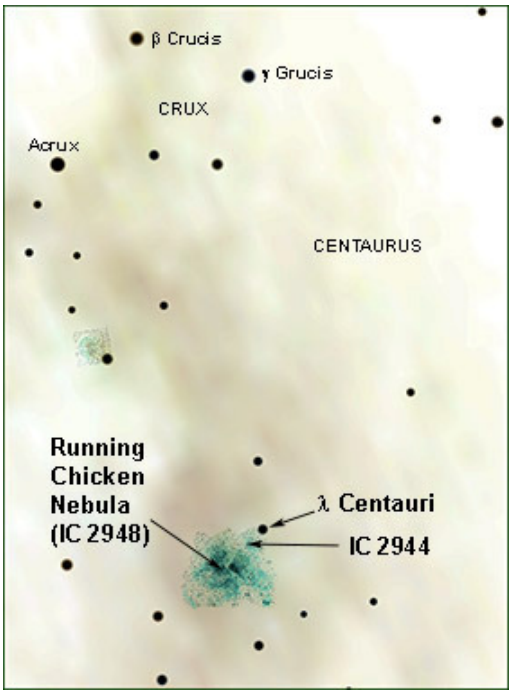
DEEP SKY HIGHLIGHTS

THE RUNNING CHICKEN NEBULA (IC 2948)
λ CENTAURI CLUSTER (IC 2944)

Description	Open cluster with nebulosity		Visibility on	
Distance	5.9 Kly, 1.8 Kpc	Rise:	Transit:	Set:
Magnitude	+4.5	No	16h43	No
Apparent size	65 arcmin			
Actual size	111 ly, 34 pc	Naked eye	Yes but indistinct against the rich star fields and nebulosity of the region.	
Alt/Azimuth	44º 59' / 211º 56'			
J2000 lat/long	-63º 02' 00" / 11h 33m 36s	Binoculars	Yes	
Location	5.4º south-west of Acrux	Telescopes	Yes	

Discovery and History

Discovered by Royal Harwood Frost in 1906-8.



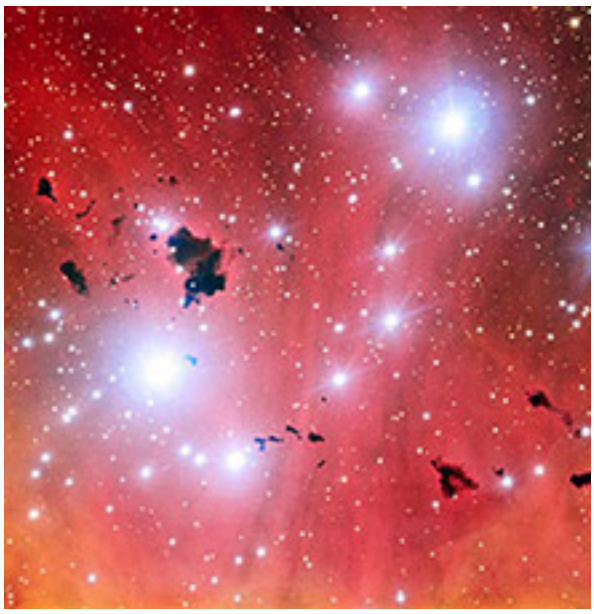
Observing

The region of nebulosity visible in modern images includes both **IC 2944** and **IC 2948**. IC 2948 is the brightest emission and reflection nebula towards the southeast, while IC 2944 is the cluster of stars and surrounding nebulosity stretching towards λ Centauri.

Physical Properties

IC 2944, also known as the "Running Chicken Nebula" or the "λ Centauri Nebula", is an open cluster with an associated emission nebula found in the constellation Centaurus, near the star **λ Centauri**. It features Bok globules, frequently a site of active star formation.

The ESO Very Large Telescope image to right is a close up of a set of Bok globules, named for the Dutch-American astronomer who first drew attention to them as possible sites of star formation.



Discovered by South African astronomer A. David Thackeray in 1950, IC 2944 contains these globules which are now known as Thackeray's Globules. In 2MASS images, 6 stars are visible within the largest globule.

They are discrete, opaque dust clouds, the largest containing enough material to form several stars the mass of the Sun and is a site of active star formation with a sprinkling of bright stars. However, no evidence of star formation has been found in any of the globules in IC 2944.

These globules are not some line-of-sight coincidence, the brightened rim of the largest clearly showing it to be associated with the nebulosity of IC 2948 at a distance of about 6 Kly. The nebula spans about 70 ly.

Patrick Moore incorrectly labelled IC 2944 as the γ Centauri Cluster in his original Caldwell catalogue of 1995.

λ Cen is not associated with the system.

Please keep in touch...

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

Also...

ASSA website http://assa.saao.ac.za
ASSA Deep-Sky Section
Whatsappchat group: [074 100 7237]
MNASSAhttp://assa.saao.ac.za/about/publications/mnassa/
Nightfall https://assa.saao.ac.za/?s=Nightfall
Official Big 5 of the African Sky web page
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Grateful thanks to the following:

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Sky Safari
Stellarium

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