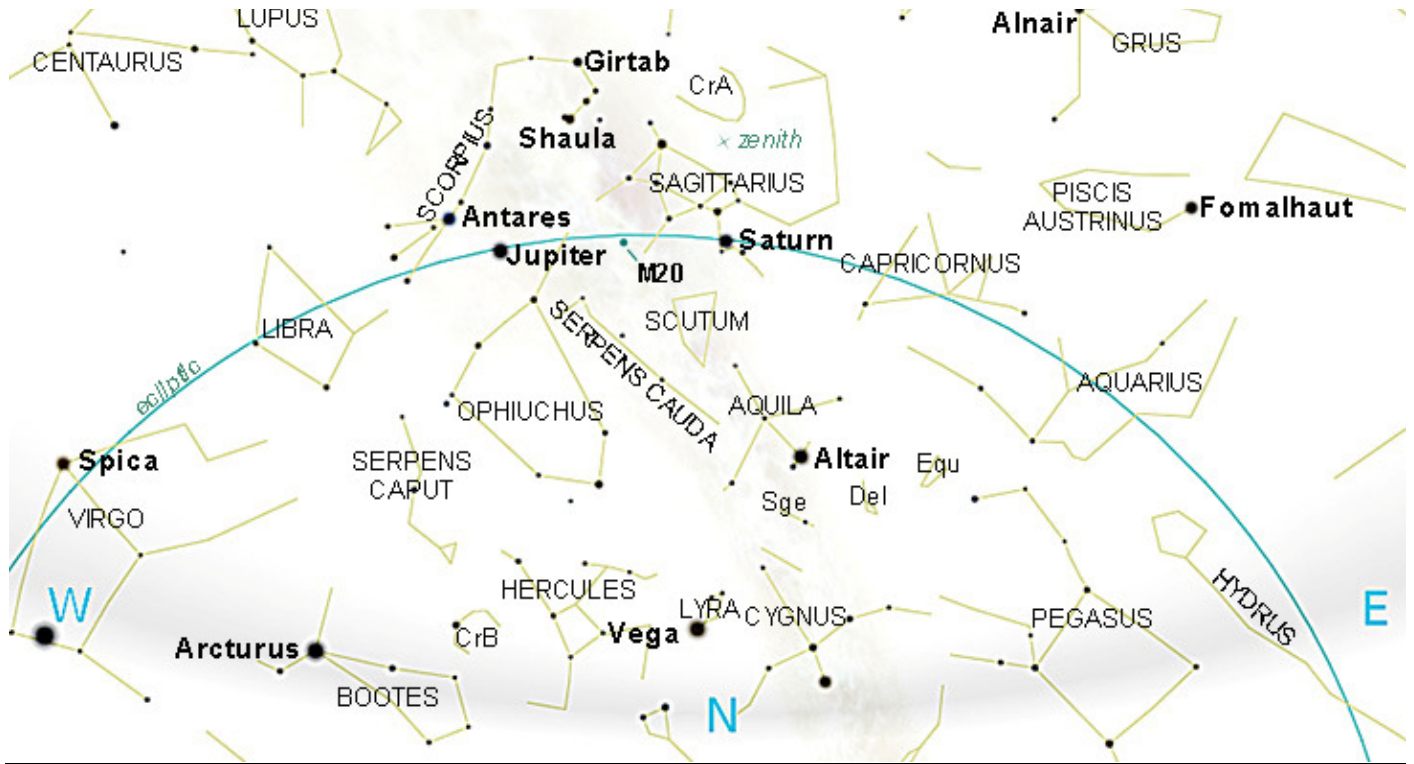


SEPTEMBER 2019

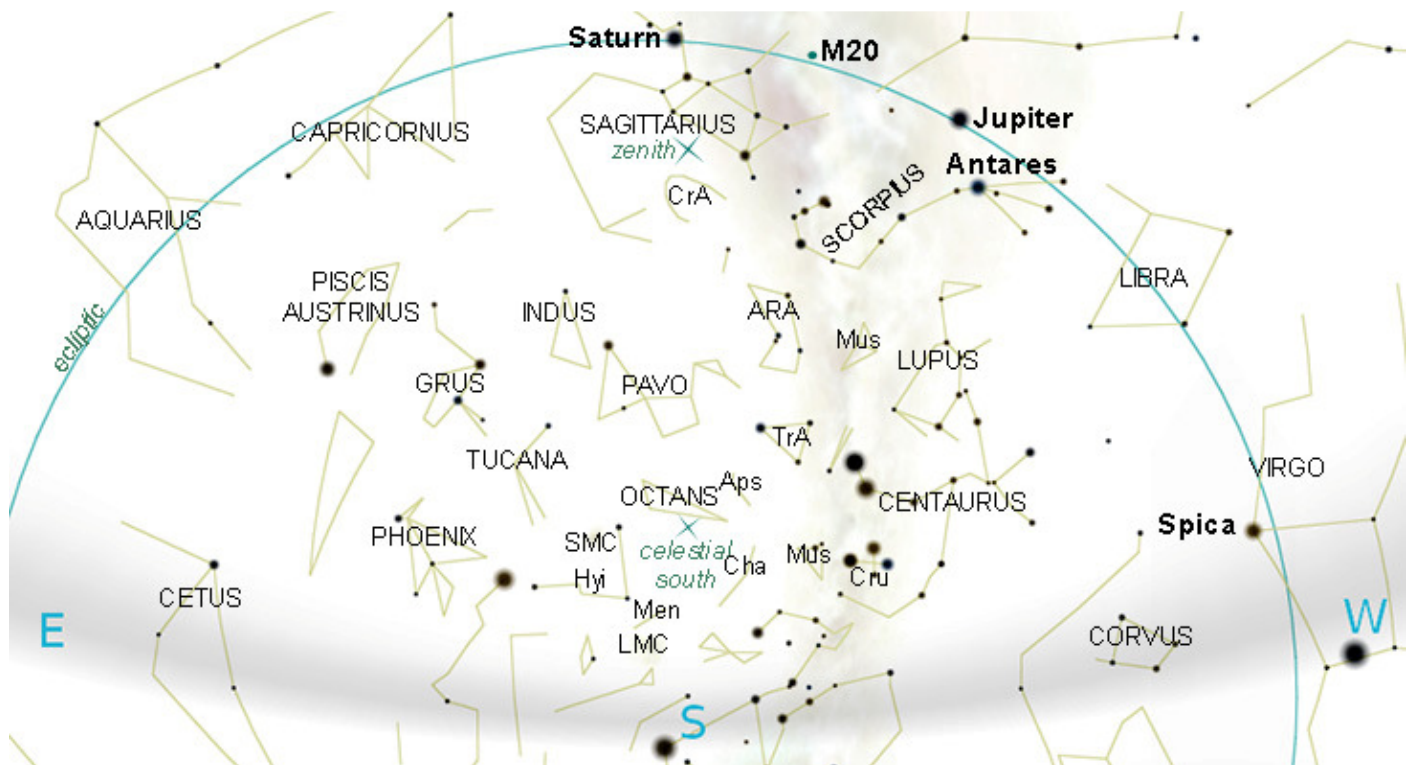


1. SKY CHARTS

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



EVENING SKY 1st SEPTEMBER 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. Times are South African Standard Time (UTC +2)

<i>Date</i>	<i>Time</i>	<i>Item</i>
2		Mars at conjunction
3		Mercury near Mars
4	22h11	Moon occults 3.9 magnitude γ Libra (dark limb event)
		Mercury at superior conjunction
6	05h10	First quarter Moon
	17h47	Luna X feature forms (sunset 18h29) ¹
		Moon near Jupiter
8		Moon near Saturn
		Moon furthest south (-22.6°)
		Moon near Pluto
13	15h33	Moon at apogee (406 377 Km)
		Moon near Neptune
		Venus near Mercury
14	06h33	Full Moon
17	22h50	Moon passes 3.9° south of Uranus
18		Saturn stationary
20	17h48	Moon passes 2.8° north of Aldebaran
22	04h41	Last quarter Moon
23	09h50	<i>EQUINOX</i>
		Moon furthest north (+22.7°)
		Moon near Pollux
25		Vesta stationary
25 - 30		<i>17th SOUTHERN STAR PARTY</i> ²
26	14h03	Moon passes 3.6° north of Regulus
27		Saturn at southernmost declination for the year (-22.5°)
28	20h26	New Moon
	04h28	Moon at perigee (357 802 Km)
		Moon near Mars
29		Moon near Venus
		Mercury near Spica
30		Moon near Mercury

¹ See 'THE MOON' on page 4 for Luna X details. As the feature remains visible for about 2 hours from formation, I suggest it is worth a look at or after sunset.

² Venue – *Leeuwenboschfontein* in the Klein Karoo. Booking essential: info@southernstarparty.org
<http://www.southernstarparty.org> .Mobiles: 083 787 0792 (Ed) 084 512 9866 (Lynnette) 074 100 7237 (Auke)

3. THE SOLAR SYSTEM

SEPTEMBER 2019			1st September	1st October	Visibility
Sun Length of day	Leo to Virgo 11h22 to 10h26	Rises:	07h02	06h20	Never look directly at the sun without suitable eye protection!
		Transit:	12h43	12h33	
		Sets:	18h24	18h46	
Mercury Magnitude Phase Diameter	Leo to Virgo -1.7 to +1.9 99% to 14% 5"	Rises:	07h03	07h09	Too close to the Sun then low in the west after sunset
		Transit:	12h36	13h43	
		Sets:	18h10	20h19	
Venus Magnitude Phase Diameter	Leo to Virgo -3.9 100% to 100% 10"	Rises:	07h23	07h00	Too close to the Sun then low in the west after sunset
		Transit:	13h04	13h22	
		Sets:	18h46	19h46	
Mars Magnitude Phase Diameter	Leo to Virgo +1.7 100% to 100% 3"	Rises:	07h09	06h01	Too close to the Sun then low in the east before sunrise
		Transit:	12h46	11h59	
		Sets:	18h23	17h57	
Jupiter Magnitude Diameter	Ophiuchus -2.2 to -2.4 39" to 43"	Rises:	11h49	10h03	Evening
		Transit:	18h57	17h12	
		Sets:	02h07	00h24	
Saturn Magnitude Diameter	Sagittarius +0.3 to +0.2 18"	Rises:	13h54	11h56	Evening
		Transit:	21h02	19h03	
		Sets:	04h13	02h15	
Uranus Magnitude Diameter	Aries +5.7 4" to 4"	Rises:	22h51	20h50	Morning to throughout the night
		Transit:	04h20	02h19	
		Sets:	09h45	07h45	
Neptune Magnitude Diameter	Aquarius +7.8 2"	Rises:	18h58	16h56	Throughout the night
		Transit:	01h20	23h15	
		Sets:	07h38	05h37	
Pluto Magnitude	Sagittarius +14.3	Rises:	14h24	12h25	Evening
		Transit:	21h31	19h32	
		Sets:	04h42	02h43	

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

ERATOSTHENES CRATER

(from the 2019 Sky Guide)

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

Best seen : one day after first quarter and at last quarter.

Description : A relatively deep lunar impact crater that lies on the boundary between the **Mare Imbrium** and **Sinus Aestuum** mare regions. It forms the western terminus of the **Montes Apenninus** mountain range.

The crater has a well-defined circular rim, terraced inner wall, central mountain peaks, an irregular floor, and an outer rampart of ejecta. It lacks a ray system of its own but is overlain by rays from the prominent crater Copernicus to the south-west.

The crater is believed to have been formed about 3.2 billion years ago. In 1910–1920, William H. Pickering noted dark patches in the crater that varied in a regular manner over each lunar day. He put forward the speculative idea that these patches appeared to migrate across the surface, suggestive of herds of small life forms. The idea received a degree of attention primarily due to Pickering's reputation.

Diameter : 59 Km

Depth : 3600 metres.

Name : after ancient Greek astronomer *Eratosthenes of Cyrene*, who estimated the circumference of the Earth and the distance from the Earth to the Sun.

LUNA X

6th September, commencing 17h47, **Luna X** remains visible for about 2 hours so some care in preparation for observation is called for. Predictions for the visibility of Lunar X (see table right) have been kindly supplied by Dana Thomson who gives the approximate start time of the fully formed feature. [*most suitable viewing times in bold*]

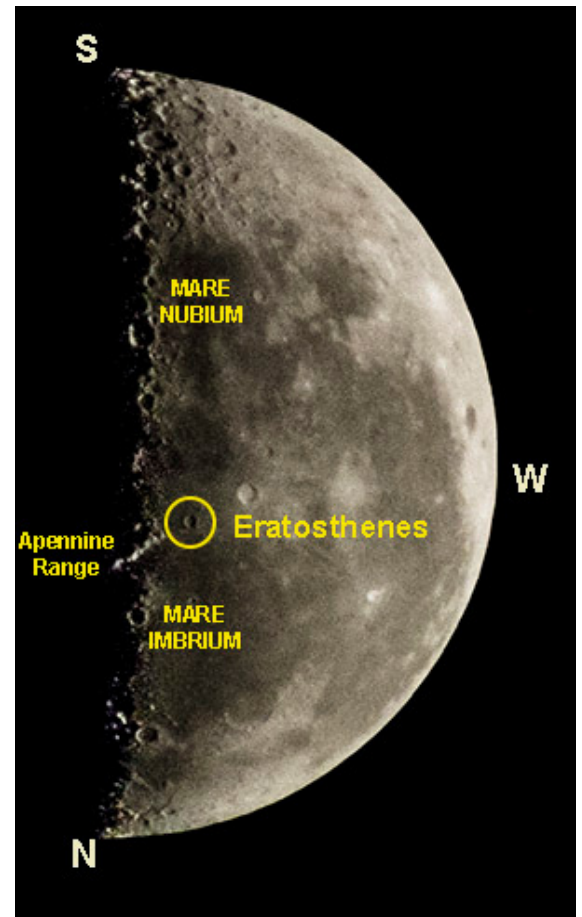
Sep 6	17h47
Oct 6	06h17
Nov 4	19h18
Dec 4	08h44

ECLIPSES(visible from Southern Africa) :

No eclipses, solar or lunar are predicted for September 2019.

METEOR SHOWERS

No meteor showers are predicted for September 2019.



4. STARGAZING

SUGGESTED OBSERVATION DAYS

Unless *specifically* targeting the moon, may I suggest the most convenient dates to plan evening stargazing are from **21st August** (moonrise 23h42) to 1st **September** (moonset 20h53). Then from 19th **September** (moonrise 23h33) to **30th September** (moonset 20h49).



The next club stargazing evening is scheduled for 30th or 31st August. 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

TRIFID NEBULA M20, NGC 6514, LBN 27

<u>Description</u>	Cluster associated with nebulosity
<u>Distance</u>	1.6 Kpc, 5 200 ly
<u>Apparent Size</u>	0° 29'
<u>Magnitude</u>	6.3
<u>Location</u>	Sagittarius . Just north of the ecliptic between Jupiter and Saturn . The Lagoon Nebula (M8) is about 1.5° SSE of the Trifid .
<u>J2000 coordinates</u>	18h 02m 18s / -23° 02' 0"
<u>Size</u>	29 x 27 arcmin
<u>Visibility</u>	
<u>Naked eye</u>	No
<u>Binoculars</u>	Yes, easily spotted as an ellipse of haze.
<u>Telescopes</u>	Yes, a perennial favourite of amateur astronomers. Nearly the size of the Full Moon, M20 contains both reddish emission and bluish reflection nebulosity. The relatively high surface brightness of M20 provides a good contrast to its three dark, radial dust lanes. Situated on M20's northern edge is the star HD 164514. This supergiant, visual magnitude 7.4, spectral type A5 1a, illuminates M20's blue reflection nebulosity.

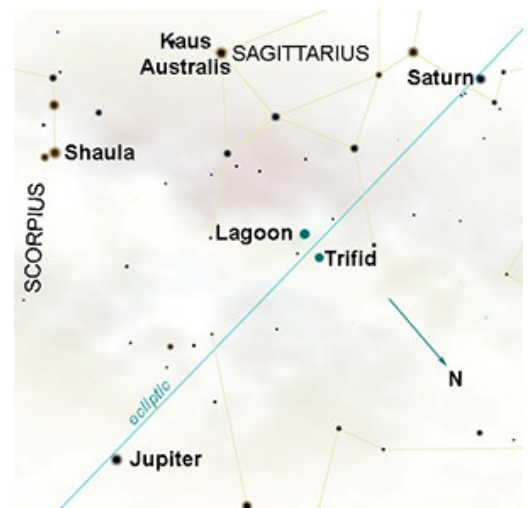
NOTES

Discovered by le Gentil before 1750, Messier added it as the 20th entry in his catalogue in June 1764, describing it as "a cluster of stars of 8th to 9th magnitude enveloped in nebulosity."

The famous three-lobed appearance of M20 may have caused William Herschel to assign four different numbers to parts of this nebula: H IV.41, H V.10, H V.11, H V.12. Herschel, who normally avoided numbering Messier's objects in his own catalogue, may have done so because Messier merely described it as a "cluster of stars".

The name "Trifid", describing the dark nebulae, was first used by John Herschel.

J. L. E. Dreyer's New General Catalog listed it as 6514.



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>

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