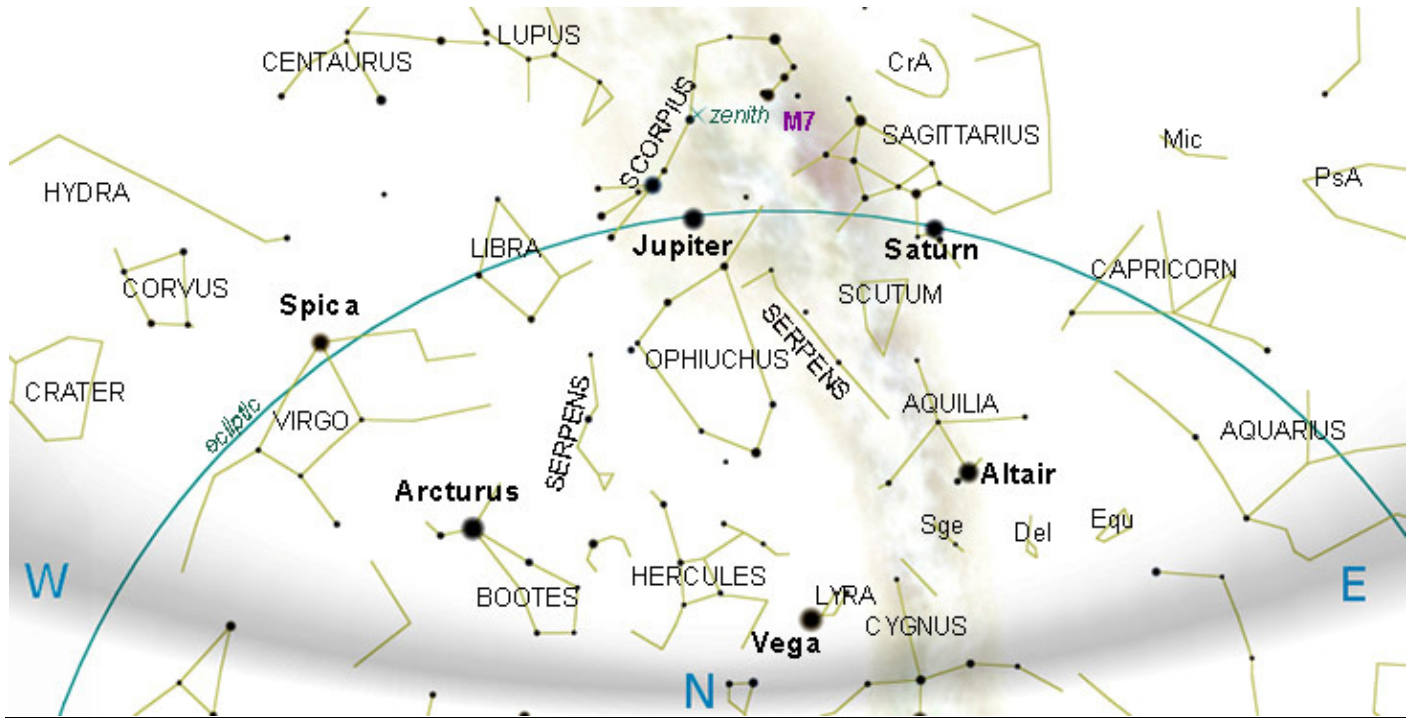
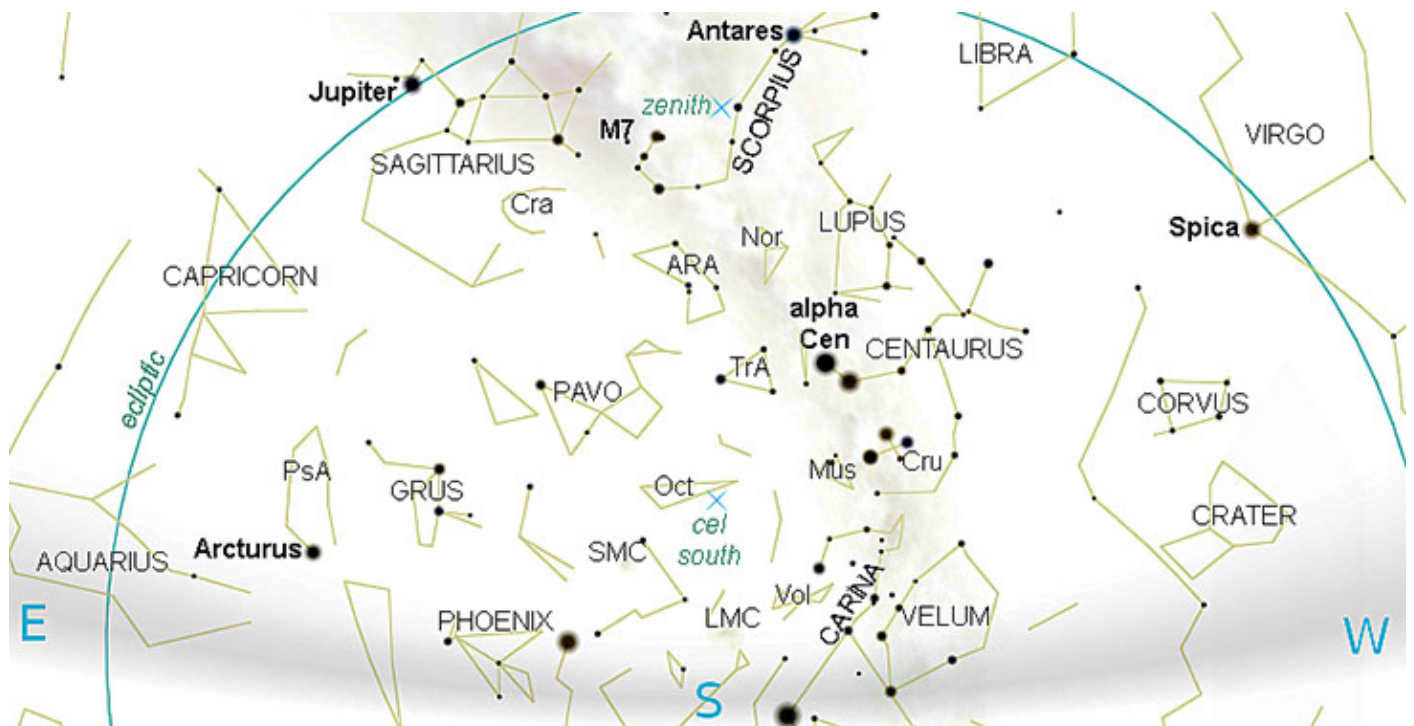


## 1. SKY CHARTS

### EVENING SKY 1<sup>st</sup> AUGUST at 21<sup>h</sup>00 (NORTH DOWN)



### EVENING SKY 1<sup>st</sup> AUGUST at 21<sup>h</sup>00 (SOUTH DOWN)



## 2. HIGHLIGHTS FROM THE SKY GUIDE

PLEASE NOTE: All events predicted are as observed from **Hermanus, Western Cape, South Africa**.

<b>Date</b>	<b>Time</b>	<b>Item</b>
1	05h12	<b>New Moon</b>
		<b>Moon near Mars</b>
2	09h10	<b>Moon</b> at perigee (359 397 Km)
		<b>Moon near Regulus</b>
2 - 4		<i>MOUNTAIN SANCTUARY PARK STAR PARTY</i> <sup>1</sup>
7	19h31	<b>First quarter Moon</b>
		<i>ASSA ANNUAL GENERAL MEETING</i>
8	05h43	<b>Luna-X</b> feature forms (sunrise 07h24)
		<b>Venus</b> at perihelion
10		<b>Mercury</b> at greatest western elongation (19°)
	03h05	<b>Moon</b> passes 2.8° west of <b>Jupiter</b>
11		<b>Jupiter</b> stationary
12	11h25	<b>Moon</b> passes 0.7° north of <b>Saturn</b>
		<b>Moon</b> furthest south (-22.4°)
		<b>Uranus</b> stationary
13	00h51	<b>Moon</b> 0.35° north of <b>Pluto</b>
14		<b>Venus</b> at superior conjunction
15	14h29	<b>Full Moon</b>
17	12h51	<b>Moon</b> at apogee (406 243 Km)
		<b>Neptune</b> near <b>Moon</b>
18		<b>Mars</b> near <b>Regulus</b>
20		<b>Mercury</b> at perihelion
21	18h46	<b>Moon</b> passes 4.1° south of <b>Uranus</b>
		<b>Venus</b> near <b>Regulus</b>
22		<b>Juno</b> at conjunction
23	16h56	<b>Last quarter Moon</b>
24		<b>Moon</b> near <b>Aldebaran</b>
	18h52	<b>Venus</b> passes 0.3° north of <b>Mars</b>
26		<b>Moon</b> occults <b>eta Geminorum</b>
		<b>Moon</b> furthest north (+22.5°)
		<b>Mars</b> at aphelion
29		<b>Mercury</b> near <b>Regulus</b>
30	12h37	<b>New Moon</b> (Black Moon) <sup>2</sup>
	17h59	<b>Moon</b> at perigee (357 175 Km)
		<b>Moon</b> near <b>Mercury</b>
		<b>Moon</b> near <b>Venus</b>
		<b>Moon</b> near <b>Mars</b>
		<b>Moon</b> near <b>Regulus</b>
		<b>Mercury</b> greatest latitude north
		<b>Venus</b> greatest latitude north

<sup>1</sup> *MOUNTAIN SANCTUARY PARK STAR PARTY*, hosted by the West Rand Astronomy club, will be held at a secluded private nature reserve between Hartebeespoortdam and Rustenburg, Northwest Province. Booking essential, contact Kenny Nevill, 082 335 1983, [kennynev@telkomsa.net](mailto:kennynev@telkomsa.net).

<sup>2</sup> Black Moon – the second New Moon of the month.

### 3. THE SOLAR SYSTEM

AUGUST 2019			1st August	1 <sup>st</sup> September	Visibility
<b>Sun</b> Length of day	Cancer to Leo 10h26 to 11h22	Rises:	07h37	07h02	<b>Never look directly at the sun without suitable eye protection!</b>
		Transit:	12h49	12h43	
		Sets:	18h02	18h24	
<b>Mercury</b> Magnitude Phase Diameter	Cancer to Leo +1.9 to -1.7 14% to 99% 10" to 5"	Rises:	06h33	07h03	<b>Low in the east before sunrise then moving too close to the sun</b>
		Transit:	11h45	12h36	
		Sets:	16h56	18h10	
<b>Venus</b> Magnitude Phase Diameter	Cancer to Leo -3.9 100% 10"	Rises:	07h30	07h23	<b>Too close to the Sun</b>
		Transit:	12h36	13h04	
		Sets:	17h42	18h46	
<b>Mars</b> Magnitude Phase Diameter	Cancer to Leo +1.8 to +1.7 100% 4" to 3"	Rises:	08h16	07h09	<b>Low in the west after sunset then moving too close to the sun</b>
		Transit:	13h33	12h46	
		Sets:	18h50	18h23	
<b>Jupiter</b> Magnitude Diameter	Ophiuchus -2.4 to -2.2 43" to 39"	Rises:	13h50	11h49	<b>Evening</b>
		Transit:	20h56	18h57	
		Sets:	04h07	02h07	
<b>Saturn</b> Magnitude Diameter	Sagittarius +0.2 to +0.3 18"	Rises:	16h03	13h54	<b>Evening</b>
		Transit:	23h10	21h02	
		Sets:	06h21	04h13	
<b>Uranus</b> Magnitude Diameter	Aries +5.8 to +5.7 4"	Rises:	00h58	22h51	<b>Morning</b>
		Transit:	06h23	04h20	
		Sets:	11h48	09h45	
<b>Neptune</b> Magnitude Diameter	Aquarius +7.8 2"	Rises:	21h03	18h58	<b>Throughout the night</b>
		Transit:	03h24	01h20	
		Sets:	0941	07h38	
<b>Pluto</b> Magnitude	Sagittarius +14.2	Rises:	16h29	14h24	<b>Evening</b>
		Transit:	23h35	21h31	
		Sets:	06h46	04h42	

**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

### **ALPHONSUS**

(from the 2019 Sky Guide and Wikipedia)

**Location** : on the eastern “shore” of Mare Nubium.

**Description** : Ancient impact crater with a large central peak dating from 4.5 to 3.9 bn years ago, shortly after the formation of the moon.

**Diameter** : 120 Km.

**Best seen:** 7<sup>th</sup> to 9<sup>th</sup> and 20<sup>th</sup> to 21<sup>st</sup> August.  
**Alphonsus, Ptolemaeus, Arzachel** and **Alpetragius** form a magnificent group of craters visible in binoculars. The big one to the east (left) is **Albertegnius**.

**Notes:** Named for 13th century King Alphonso X of Castile. Several tiny, dark-haloed craters can be seen on its floor; these are volcanic vents surrounded by deposits of dark ash.

Alphonsus slightly overlaps the crater Ptolemaeus and the surface of Alphonsus is broken and irregular along this boundary. The outer walls are slightly distorted and possess a somewhat hexagonal form.

A low ridge system of deposited ejecta bisects the crater floor, and includes the steep central peak designated Alphonsus Alpha ( $\alpha$ ). This pyramid-shaped formation rises to a height of 1.5 km above the interior surface. It is not volcanic in origin, but rather is made of anorthosite\* like the lunar highlands.

The floor is fractured by an elaborate system of rilles and contains four or five smaller craters surrounded by a symmetric darker halo. These dark-halo craters are cinder cone-shaped and are believed by some to be volcanic in origin, although others think they were caused by impacts that excavated darker mare material from underneath the lighter lunar regolith.

\**Anorthosites* are of enormous geologic interest because it is still not fully understood how they form. Most models involve separating plagioclase crystals based on their density. Plagioclase crystals are usually less dense than magma. As plagioclase crystallizes in a magma chamber, the plagioclase crystals float to the top, concentrating there.



Crater **Alphonsus** (north down as we see it from the southern hemisphere).

Below (north-east) is **Ptolemaeus**.

Top right (south-west) is **Alpetragius**.

**Arzachel**, above this image, is to the south.

**ECLIPSES:** No eclipses, visible from Southern Africa, are predicted for this month.

**METEOR SHOWERS:** No meteor shows are predicted for August 2019.



## 4. STARGAZING

### SUGGESTED OBSERVATION DAYS

Unless *specifically* targeting the moon, may I suggest the most convenient dates to plan evening stargazing are from **23<sup>rd</sup> July** (moonrise 23h57) to **3<sup>rd</sup> August** (moonset 20h54). Then from **21<sup>st</sup> August** (moonrise 23h42) to **1<sup>st</sup> September** (moonset 20h53).



*The next club stargazing evening is scheduled for August (probably after 23<sup>rd</sup>) or in September. If weather permits, we may have a "Moonwatch" evening in August or September. 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

#### PTOLEMY'S CLUSTER NGC 6475, M7

<u>Description</u>	Huge open cluster
<u>Distance</u>	300 pc, 800 to 1000 ly
<u>Apparent Size</u>	80 arcmin
<u>Magnitude</u>	+3.29
<u>Location</u>	In Scorpius near the border with Sagittarius within the main-flow of the Milky Way
<u>J2000 coordinates</u>	17h 53m 54s/ -34° 49' 0"

#### Visibility

<u>Naked eye</u>	Concentrated nebulous patch in the Milky Way
<u>Binoculars</u>	A large, scattered cluster of bright stars
<u>Telescopes</u>	About 80 stars within a field of view of 1.3°

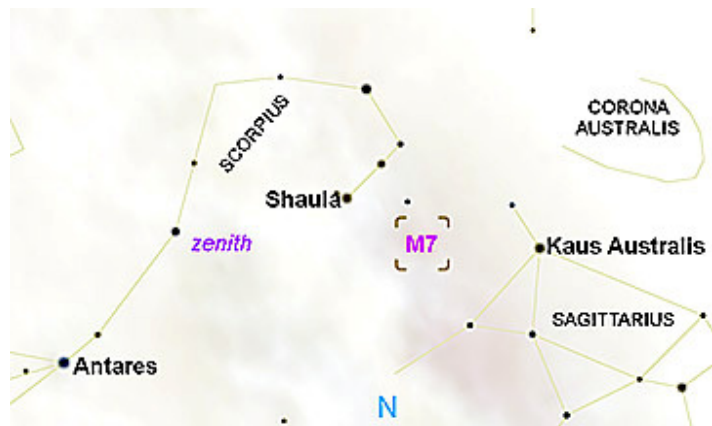
#### NOTES

**Claudius Ptolemy** mentioned this splendid cluster in about 130 CE, describing it as "the little cloud following the sting of Scorpius".

Also observed by **Giovanni Battista Odierna** before 1654, who counted 30 stars, **Edmond Halley** who listed it as number 29 in his list of southern stars in 1678 and **de Lacaille** in his catalogue of southern objects as Lac II.14. **Messier** listed it in his 1764 catalogue as the 7<sup>th</sup> object.

Modern sources agree on M7's integrated magnitude at 3.3. its brightest star is a mag 5.6 yellow giant of spectral type G8. Its hottest main sequence star is of spectral type B6. The age of the cluster is estimated at 220 million years.

The brighter stars are near the cluster's centre with jagged star chains running east to west. The actual diameter is 18-25 ly. The cluster is approaching us at 14 Km/sec.



## **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>

[Official Big 5 of the African Sky web page](#)

[Official Big 5 Facebook group](#)

[ASSA Deep-Sky Section mailing list](#)

### **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!](#)

You can find us on [Facebook](#), [Twitter](#), the [ASSAInfo mailing list](#) and the [ASSADiscussion mailing list](#).

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