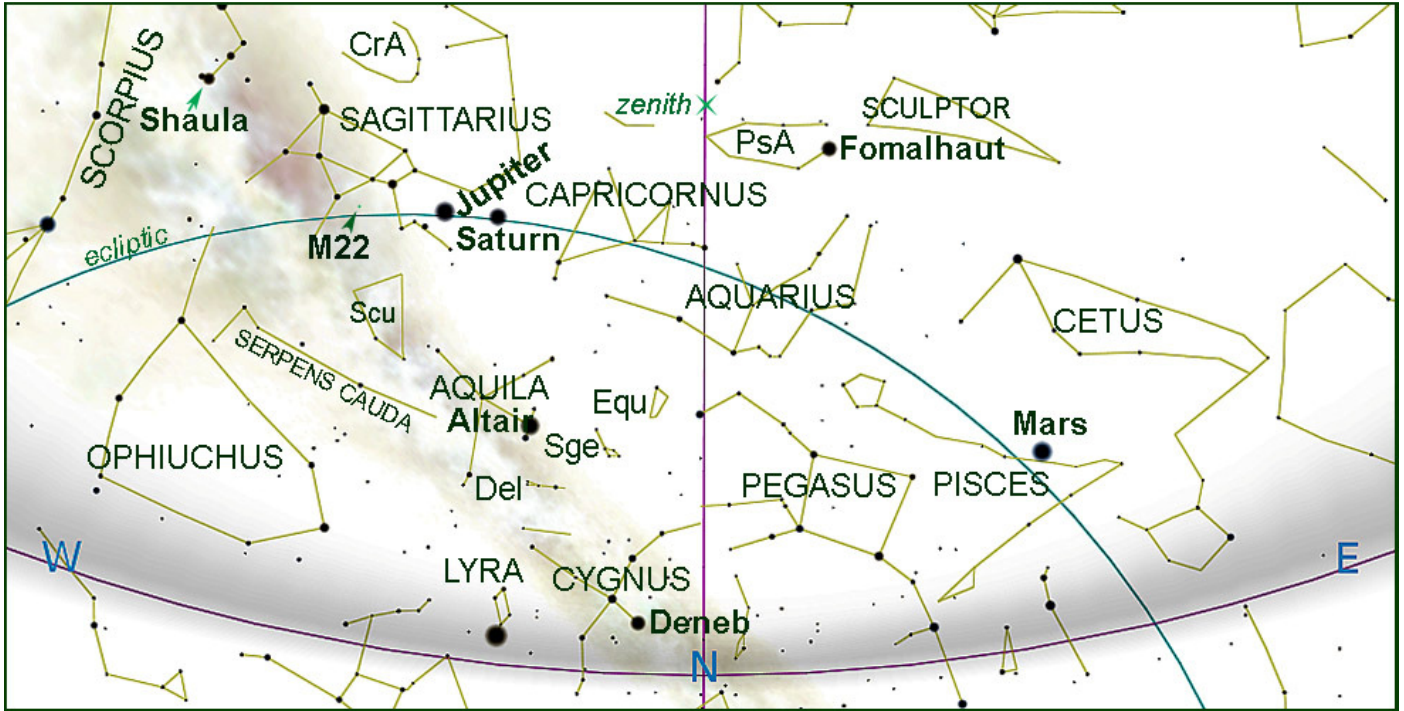
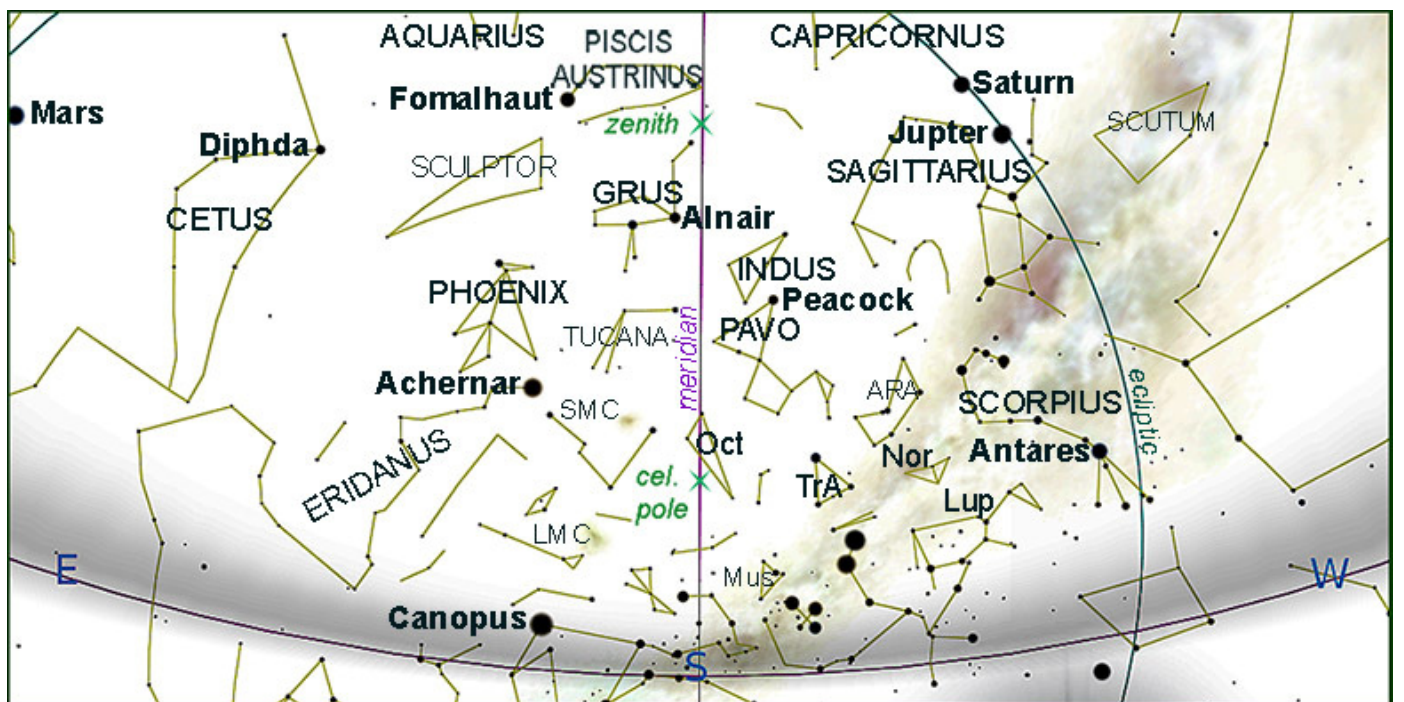


1. SKY CHARTS

EVENING SKY 12th OCTOBER at 21h00 (NORTH DOWN)



EVENING SKY 12th OCTOBER at 21h00 (SOUTH DOWN)



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** (magnitude +14.4), all events predicted are visible with the naked eye.

2. THE SOLAR SYSTEM

HIGHLIGHTS FROM THE SKY GUIDE

<i>Date</i>	<i>Time</i>	<i>Item</i>
1	23h05	Full Moon
	17h59	Mercury at greatest elongation (25.8°)
3	01h00	Venus passes 0° 5' south-east of Regulus
	06h23	Moon occults Mars (but the sun rises at 06h21)
	19h22	Moon at apogee (406 300 Km)
4		Moon near Uranus
		Pluto stationary
6	16h00	Mars nearest to Earth (62.07 million Km) ¹
7	00h28	Moon passes 4.9° north of Aldebaran
9	15h07	Moon furthest north (+24.6°)
		Mercury greatest latitude south
10	02h39	Last quarter Moon
		Moon near Pollux
11		Moon near Beehive (M44)
13		Moon near Regulus
13th – 19th		<i>SOUTHERN STAR PARTY</i> ²
14	01h10	Mars at opposition
	03h51	Moon passes within 5° of Venus
		Mercury stationary
16	21h31	New Moon
17	01h46	Moon at perigee (356 900 Km)
20	00h02	Moon passes 6.1° north of Antares
		<i>20TH BIRTHDAY OF THE ROYAL OBSERVATORY, CAPE OF GOOD HOPE (SAAO)</i>
22	04H00	Moon furthest south (-24.7°)
	20h24	Moon passes 1.8° south-east of Jupiter
23	15h23	First quarter Moon
		Ceres stationary
25	20h14	Mercury in inferior conjunction
27		Moon near Neptune
29		Moon near Mars
30	20h46	Moon at apogee (406 400 Km)
31		<i>DARK MATTER DAY</i> (https://www.darkmatterday.com/)
	16h49	Full Moon
	18h05	Uranus at opposition

¹ It's that time of year when the media (social and others) will be telling us that **Mars** will look as big as the **Full Moon**! As a matter of interest, on average the **Moon's** apparent diameter (about 31 arc minutes) is about 84 times that of **Mars** at its apparent biggest! Mars is at its brightest in 2020 throughout the month of October. It is now shining as brilliantly as the planet **Jupiter**. It's not very often that Mars competes with the king planet! The planet's largest apparent size occurs when it is closest to Earth and this typically occurs a few days adrift of the opposition date (owing to elliptical orbits). For 2020, Mars is closest to Earth on 6 October and appears 22.6 arcseconds across, a week before opposition on 13th August, 2020.

² *SOUTHERN STAR PARTY* - 13 to 19 October at **Leeuwenboschfontein**. Booking essential, contact info@southernstarparty.org [<http://www.southernstarparty.org>]

OCTOBER 2020			1st October	1st November	Visibility
Sun Length of day	Virgo to Libra 12h27 to 13h31	Rises:	06h19	05h41	Never look at the sun without SUITABLE EYE PROTECTION!
		Transit:	12h33	12h27	
		Sets:	18h46	19h12	
Mercury Magnitude Phase Diameter	Virgo -0.4 to +1.4 61% to 16% 7" to 9"	Rises:	07h18	05h11	Initially too close to the sun then low in the east before sunrise
		Transit:	14h05	11h38	
		Sets:	20h53	18h05	
Venus Magnitude Phase Diameter	Virgo -4.2 to -4.0 72% to 82% 16" to 13"	Rises:	04h35	04h16	The morning star
		Transit:	10h03	10h20	
		Sets:	15h32	16h25	
Mars Magnitude Phase Diameter	Pisces -2.1 99% to 98% 22" to 20"	Rises:	19h51	17h11	All night
		Transit:	01h41	22h59	
		Sets:	07h25	04h52	
Jupiter Magnitude Diameter	Sagittarius -2.4 to -2.2 40" to 37"	Rises:	12h09	10h22	Evening
		Transit:	19h18	17h29	
		Sets:	02h30	00h40	
Saturn Magnitude Diameter	Sagittarius +0.5 to +0.6 18" to 16"	Rises:	12h45	10h47	Evening
		Transit:	19h49	17h51	
		Sets:	02h57	00h58	
Uranus Magnitude Diameter	Aries +5.7 4"	Rises:	21h07	18h59	All night
		Transit:	02h33	00h26	
		Sets:	07h54	05h49	
Neptune Magnitude Diameter	Aquarius +7.8 2"	Rises:	17h04	14h59	Evening
		Transit:	23h20	21h16	
		Sets:	05h41	03h37	
Pluto Magnitude	Sagittarius +14.3 to +14.4	Rises:	12h29	10h28	Evening
		Transit:	19h37	17h36	
		Sets:	02h50	00h49	

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.

THE MOON

PLATO CRATER

(from the 2020 Sky Guide)

Location : Between the northern “shore” of Mare Imbrium and the southern “shore” of Mare Frigorus at the western extremity of the Montes Alpes mountain range.

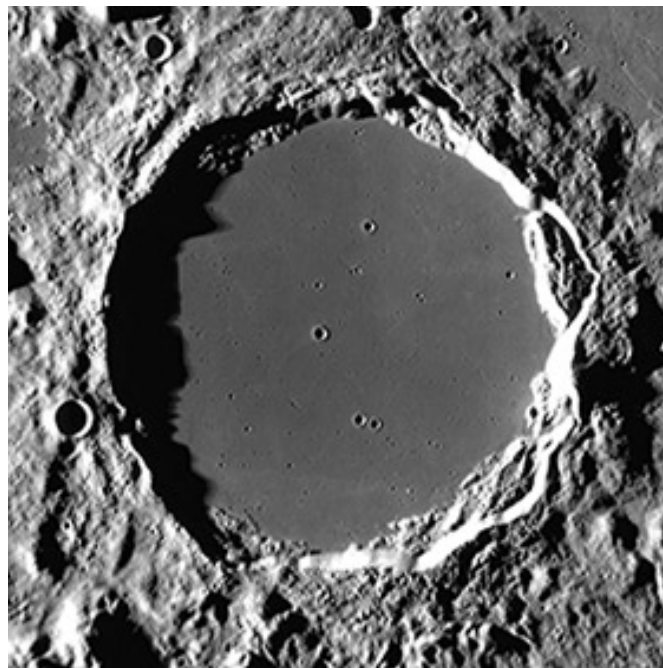
Best seen : one day after **first quarter** and at **last quarter**.

Description : a lava-filled impact crater. Several small craters are scattered across Plato’s floor; all traces of its original central elevations have been wiped out by later lava flows. Transient lunar phenomena have been reported within Plato.

Diameter : 104 Km

Depth : Sunk about 2 km deep into the western heights of the lunar alps.

Name : Named after the ancient Athenian philosopher Plato (5th to 4th century BC).



Plato - north down

Lunar and Solar eclipses: None predicted for this month

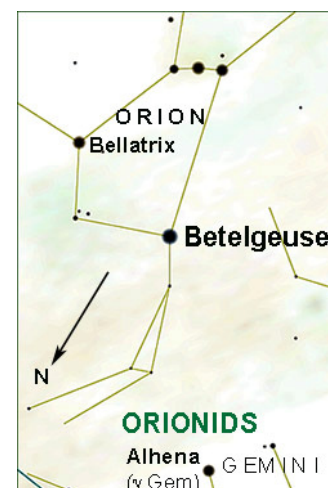
METEOR SHOWERS

Name	Date & Time of Max	Duration	Radiant	ZHR velocity		Observing Prospect
				ZHR	velocity	
Orionids	21 st October 00h00 to 04h00	2 nd October to 7 th November	About 10° north-east of Betelgeuse (α Ori)	30	68	Favourable moonset 00h32

Guide to the table above:

ZHR – zenithal hourly rate
vel. - velocity in km per second

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



3. LOOKING UP ...

SUGGESTED OBSERVATION SCHEDULE for OCTOBER (*Lunar observations notwithstanding*)

Date	dusk end	moonrise	moonset
6 th	20h16	23h07 (79%)	
18 th	20h29		21h06 (6%)



STARGAZING . *With regret, we have had to suspend all our stargazing functions owing to the current situation.*

Consult our website for updates:

<http://www.hermanusastronomy.co.za>.

DEEP SKY HIGHLIGHTS

SAGITTARIUS CLUSTER M22, NGC 6656

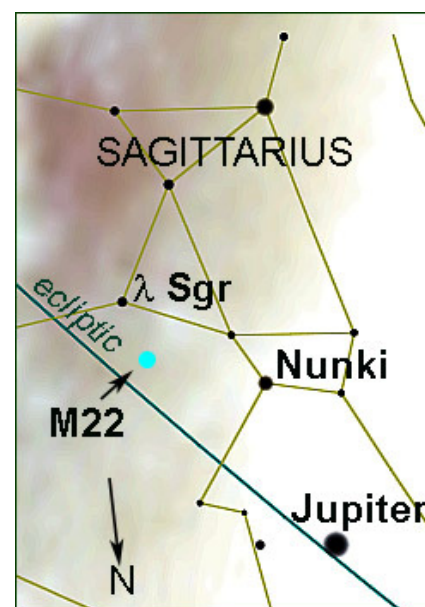
Description	Globular cluster	Visibility on 12th October :		
Distance	10 Kly, 3.2 Kpc			
Visual magnitude	+5.09	<i>Rise</i>	<i>Transit:</i>	<i>Set:</i>
Apparent size	32 arcmin	00H35	10H06	17H19
Actual size	97.2 ly, 29.8 pc			
Alt/Azimuth	41° 03' 26" / 266° 52' 55"	Naked eye:	Yes, clear night and good eyes	
J2000 lat/long	-23° 08'00" / 21h 10m 48s	Binoculars:	Yes, but neck-breaking	
Constellation	Sagittarius	Telescopes:	Yes	

Discovery and History

Messier 22, one of the brightest clusters, is also one of the first to be discovered

The first recorded sight of M22 is usually credited to the obscure German astronomer **Abraham Ihle** in 1665, but it may be spotted previously by the Polish astronomer **Hevelius**. The cluster was included in **Edmund Halley's** list of six nebulous objects published in 1715.

It was also observed in the 18th Century by **Jean-Philippe de Cheseaux**, **Guillaume le Gentil** and by **Nicholas Louis de Lacaille** who included it in his catalogue of southern objects as Lacaille I.12. **Charles Messier**, who catalogued M22 on 6th June 1764, stated that it is also included in John Bevis' *English Atlas*. M22 was one of the first globular clusters to be studied by **Harlow Shapley** who counted 70 000 stars in this great stellar swarm.



Observing

Location – 2.4° NNE of **Kaus Borealis** (λ Sgr).

Considered to be one of the finest globular clusters with a visual magnitude of 5.1, the **Sagittarius Cluster** can be seen with the naked eye on a clear night and is the third brightest after **Omega Centauri** and **47 Tucanae**.

Physical Properties

Distinctly elliptical with a visual diameter of 32'; slightly larger than the full moon and containing approximately 500 000 stars, the brightest being about magnitude 11.

Receding at approximately 149 Km/s.

One of only four globular clusters known to contain a planetary nebula, the others being **M15**, **NGC 6441** and **Palomar 6**. This nebula was discovered by the infrared satellite IRAS and catalogued as IRAS 18333-2357 or GJJC 1.

Recent HST investigations of M22 reveal a number of planet-sized objects which appear to float throughout this cluster. These objects were discovered by microlensing effects, i.e. the bending of the light of background stars.

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.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](#).

Grateful thanks to the following:

ASSA

Sky Guide Africa South 2020

Sky Safari

Stellarium

Telescopius <https://telescopius.com/>

Edited by Peter Harvey

e-mail: petermh@hermanus.co.za

Tel: 081 212 9481