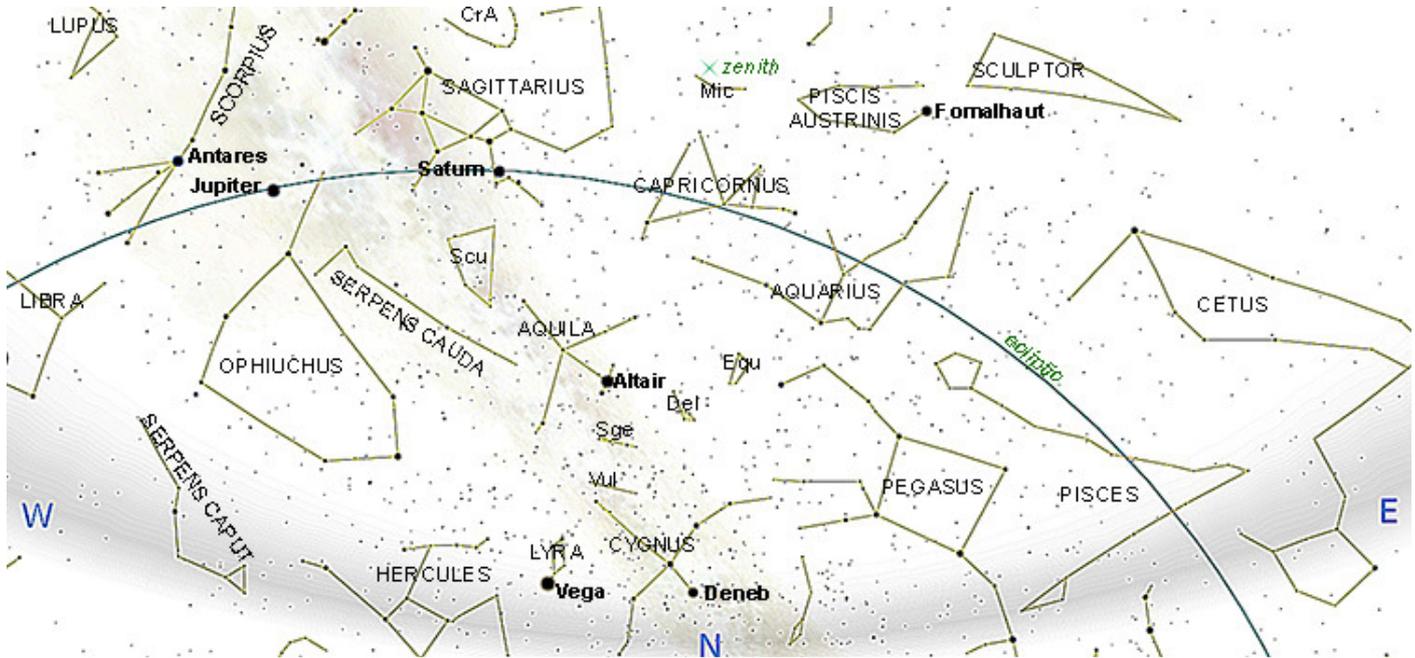
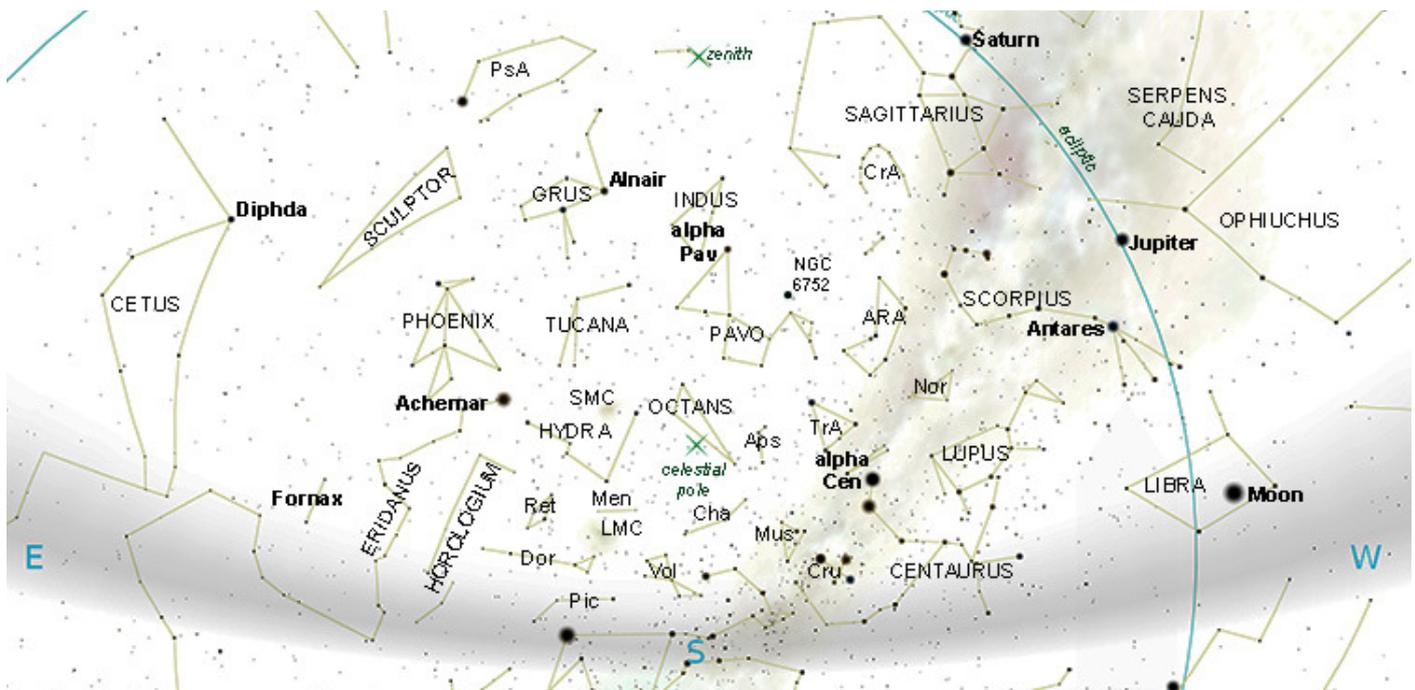


## 1. SKY CHARTS

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



### EVENING SKY 1<sup>st</sup> OCTOBER 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**.  
**Times are South African Standard Time (UTC +2)**

<i>Date</i>	<i>Time</i>	<i>Item</i>
3		<b>Mercury</b> at aphelion
4	00h17	<b>Moon</b> passes 2.3° west of <b>Jupiter</b>
		<b>Venus</b> near <b>Spica</b>
4 – 10		<i>World Space Week</i> <sup>1</sup>
5	18h47	<b>First quarter Moon</b>
		<b>Moon</b> furthest south (-22.8°)
		<i>INTERNATIONAL OBSERVE THE MOON NIGHT</i> <sup>2</sup>
	23h36	<b>Moon</b> occults <b>Saturn</b> [ <i>dark limb event, well worth the late hour, I think</i> ] <sup>3</sup>
6	06h17	<b>Lunar X</b> forms
		<b>Moon</b> near <b>Pluto</b>
9		<b>Moon</b> occults $\gamma$ <b>Cap</b>
10	20h30	<b>Moon</b> at apogee (405 901 Km)
11	04h30	<b>Moon</b> passes 2.6° SE of <b>Neptune</b>
13	23h08	<b>Full Moon</b>
15	05h12	<b>Moon</b> passes 3.3° south of <b>Uranus</b>
17		<b>Moon</b> near <b>Aldebaran</b>
20		<b>Moon</b> furthest north (+22.9°)
		<b>Mercury</b> at greatest eastern elongation
21	14h39	<b>Last quarter Moon</b>
		<b>Moon</b> near <b>Pollux</b>
23		<b>Moon</b> near <b>Regulus</b>
		<b>Mercury</b> at greatest latitude south
26	12h42	<b>Moon</b> at perigee (361 314 Km)
		<b>Moon</b> near <b>Mars</b>
28	05h38	<b>New Moon</b>
		<b>Uranus</b> at opposition
29	18h58	<b>Moon</b> passes 4° north of <b>Venus</b>
30		<b>Venus</b> near <b>Mercury</b>
31		<b>Moon</b> near <b>Jupiter</b>
		<b>Mercury</b> stationary

<sup>1</sup> *World Space Week* - On December 6, 1999, The United Nations General Assembly declared World Space Week as an annual event celebration to be commemorated between October 4 and 10. The choice of dates was based on recognition of two important dates in space history: the launch of the first human-made Earth satellite, [Sputnik 1](#), on October 4, 1957; and the signing of the [Outer Space Treaty](#) on October 10, 1967.

<sup>2</sup> *INTERNATIONAL OBSERVE THE MOON NIGHT (INOMN)* is an annual public outreach event sponsored by the [Lunar Reconnaissance Orbiter](#) mission and other NASA and astronomical organizations that encourage observation, appreciation and understanding of our Moon and its connection to planetary science and exploration. Everyone on Earth is invited to join the celebration by hosting or attending an InOMN event — and uniting on one day each year to look at and learn about the Moon together. First organized in 2010, there are usually over 500 events annually in over 40 countries, hosted by universities, observatories, NASA Centres, schools, museums, parks, libraries and amateur astronomers. Some events are offered both in person and via internet streaming video. The date is selected to enhance visibility of lunar topography. [https://en.wikipedia.org/wiki/International\\_Observe\\_the\\_Moon\\_Night](https://en.wikipedia.org/wiki/International_Observe_the_Moon_Night)

<sup>3</sup> The occultation of **Saturn** by the moon happens to occur on **International Observe the Moon Night!** If the weather be good, I shall attempt a photograph. You could submit images to me; I can pass them on to InOMN. Please see **THE MOON** (pg. 4 below) for details of times.

### 3. THE SOLAR SYSTEM

OCTOBER 2019			1st October	1st November	Visibility
<b>Sun</b> Length of day	Virgo to Libra 12h25 to 13h29	Rises:	06h20	05h42	<b>Never look directly at the sun without SUITABLE EYE PROTECTION!</b>
		Transit:	12h33	12h27	
		Sets:	18h46	19h12	
<b>Mercury</b> Magnitude Phase Diameter	Virgo to Libra -0.2 to +0.6 86% to 29% 5" to 9"	Rises:	07h09	06h33	<b>Low in the west after sunset</b>
		Transit:	13h43	13h40	
		Sets:	20h19	20h46	
<b>Venus</b> Magnitude Phase Diameter	Virgo to Libra -3.9 98% to 94% 10" to 11"	Rises:	07h00	06h48	<b>Too close to the Sun then low in the west after sunset</b>
		Transit:	13h22	13h50	
		Sets:	19h46	20h53	
<b>Mars</b> Magnitude Phase Diameter	Virgo +1.8 100% to 99% 4"	Rises:	06h01	04h50	<b>Low in the east before sunrise</b>
		Transit:	11h59	11h10	
		Sets:	17h57	17h30	
<b>Jupiter</b> Magnitude Diameter	Ophiuchus -2.0 to -1.9 36" to 33"	Rises:	10h03	08h22	<b>Evening</b>
		Transit:	17h12	16h32	
		Sets:	00h24	22h43	
<b>Saturn</b> Magnitude Diameter	Sagittarius +0.5 to +0.6 17" to 16"	Rises:	11h56	10h00	<b>Evening</b>
		Transit:	19h03	17h08	
		Sets:	02h15	00h19	
<b>Uranus</b> Magnitude Diameter	Aries +5.7 4"	Rises:	20h50	08h42	<b>Throughout the night</b>
		Transit:	02h19	00h13	
		Sets:	07h45	05h40	
<b>Neptune</b> Magnitude Diameter	Aquarius +7.8 2"	Rises:	16h56	14h51	<b>Throughout the night then evening</b>
		Transit:	23h15	21h10	
		Sets:	05h37	03h34	
<b>Pluto</b> Magnitude	Sagittarius +14.3	Rises:	12h25	10h24	<b>Evening</b>
		Transit:	19h32	17h31	
		Sets:	02h43	00h42	

**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 -1.9. 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

### CRATER PLATO

**Location** : near the moon's northern limb, between the northern "shore" of Mare Imbrium and the southern "shore" of Mare Frigorus.

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

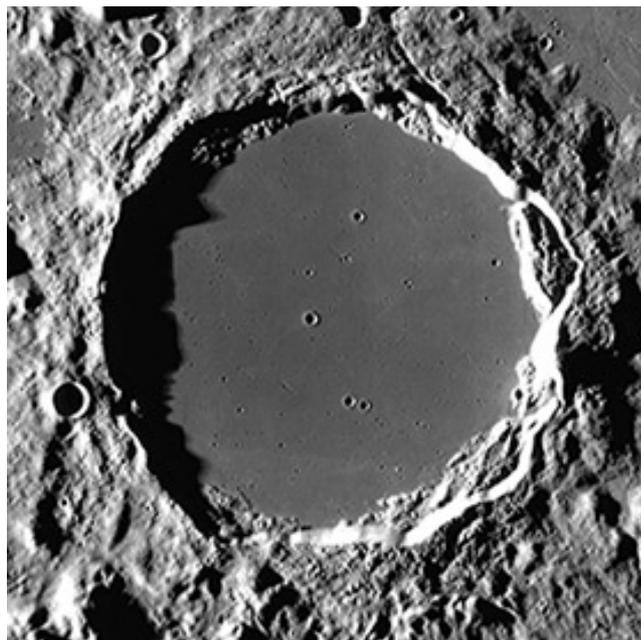
*The image to right is north down.*

**Description** : a lava-filled lunar 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 (5<sup>th</sup> to 4<sup>th</sup> century BC).



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The **Moon's** occultation of **Saturn** commences on Saturday 5<sup>th</sup> October at 23h36, ending Sunday 6<sup>th</sup> at 00h21.

**ECLIPSES**(visible from Southern Africa) :

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

## METEOR SHOWERS

Name	Date & Time of Max	Duration	Radiant	ZHR	velocity	Observing Prospect
<b>Orionids</b>	21 <sup>st</sup> October 00h0400	2 <sup>nd</sup> October to 7 <sup>th</sup> November	About 10° north-east of <b>Bellatrix (α Ori)</b>	30	68	Poor on 21st (but see below) <sup>1</sup>

<sup>1</sup> Better from 24<sup>th</sup> October with the moon out of the way

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.*

## 4. STARGAZING

### SUGGESTED OBSERVATION DAYS

Unless *specifically* targeting the moon, may I suggest the most convenient dates to plan evening stargazing are from **19<sup>th</sup> September** (moonrise 23h37) to 1st **October** (moonset at 21h58, 13%). Then from 19th **October** (moonrise 23h27) to **31<sup>st</sup> October** (moonset 22h54, 14%).



*The next club stargazing evening is yet to be scheduled. Members will receive updated information by e-mail. Please check our website calendar.*

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

*Remember, it's always weather dependant!*

### DEEP SKY HIGHLIGHTS

#### THE CARTWHEEL GLOBULAR CLUSTER NGC 6752, C 93

#### NOTES

Description A large cluster with a dense concentration of stars. The 3<sup>rd</sup> brightest cluster after **ω Cen** and **47 Tuc**.

Discovered by James Dunlop of Parramatta on 30<sup>th</sup> June, 1826 (catalogued Dunlop 295), describing it as an irregular bright nebula which could be resolved into a cluster of many stars, highly compressed at the centre.

Distance 13 000 LY

This cluster may have been discovered earlier by Nicolas-Louis de Lacaille in 1751 or 1752 but measured it at a position more than 10° off.

Apparent Size 4 arc-minutes diameter

Size Core region 1.3 LY diameter. The highly compressed centre indicates it has undergone core collapse

*[from SGAS]*

Magnitude 5.4

Small telescopes show individual stars scattered across its disc, the brightest members being about mag. +10.5 with a reddish tinge.

Age 11.78 bn years old

Moderate telescopes under dark skies show the cluster at around 20 arc-minutes in diameter

Location Constellation **Pavo**  
guide stars:  
3° 9' NNE of mag. 4.2 **λ Pav**  
10° 7' WSW of mag. 1. **α Pav**

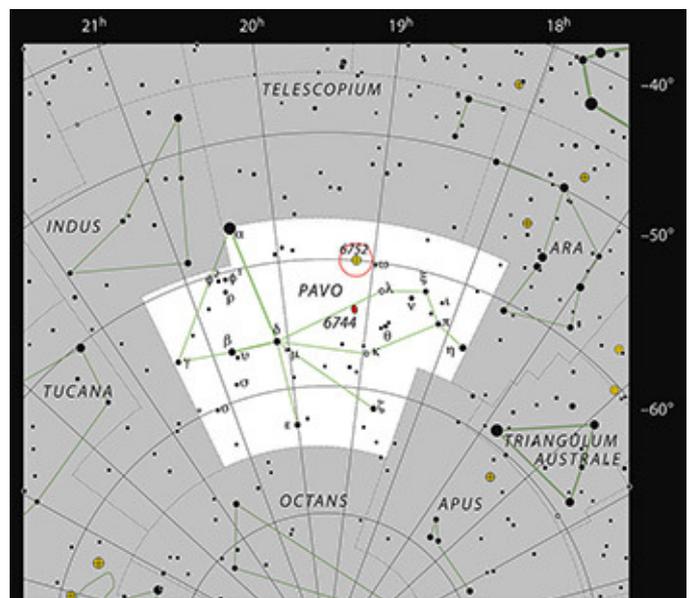
J2000 coordinates 19h 10m 54s / -59° 59' 00"

#### Visibility

Naked eye Yes, a 5<sup>th</sup> magnitude glow

Binoculars An impressive blaze of light

Telescopes Individual stars



*Ian Ridpath's*  
**STAR TALES**

*Pavo*  
*The peacock*

Genitive: Pavonis

Abbreviation: Pav

Size ranking: 44th

Origin: The 12 southern constellations of [Keyser and de Houtman](#)

The peacock is one of the 12 figures introduced into the southern skies at the end of the 16th century by the Dutch navigators Pieter Dirkszoon Keyser and Frederick de Houtman. Pavo probably represents not the common blue, or Indian, peacock commonly seen in parks but its larger, more colourful, and more aggressive cousin, the Java green peacock which Keyser and de Houtman would have encountered in the East Indies. Pavo was first depicted in 1598 on a globe by Petrus Plancius and first appeared in print in 1603 on the Uranometria atlas of Johann Bayer. On Bayer's representation the peacock had a more expansive tail, but this was later trimmed by Lacaille to make room for Telescopium to the north.

In mythology the peacock was the sacred bird of Hera, who drove through the air in a chariot drawn by peacocks. How the peacock came to have eyes on its tail is the subject of a Greek myth that began one day when Zeus turned his illicit love Io into a white cow to disguise her from his wife, Hera, who nearly caught them together. Hera was suspicious and put the heifer under the guardianship of Argus, who tethered the animal to an olive tree. Argus was ideally suited to the task of watchman, since he had 100 eyes, of which only two were resting at a time while the others kept a look out. Wherever Argus stood, he could always keep several of his eyes on Io.

Zeus sent his son Hermes to release Io from her captivity. Hermes swooped down to Earth and spent the day with Argus, telling him stories and playing his reed pipes until, one by one, the eyes of Argus became sleepy and began to close. When Argus was finally asleep, Hermes lopped off his head and released the heifer. Hera placed the eyes of Argus on the tail of the peacock.

The constellation's brightest star, second-magnitude Alpha Pavonis, is called Peacock, a name given in or around 1937 by the UK's Nautical Almanac Office for use in The Air Almanac, a navigation guide produced for the Royal Air Force. The RAF specified that all navigation stars should have proper names, so this name was coined for the otherwise unnamed Alpha Pavonis.

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## **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](#)

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### **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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