



HERMANUS ASTRONOMY CENTRE

THE SKY THIS MONTH : OCTOBER 2015

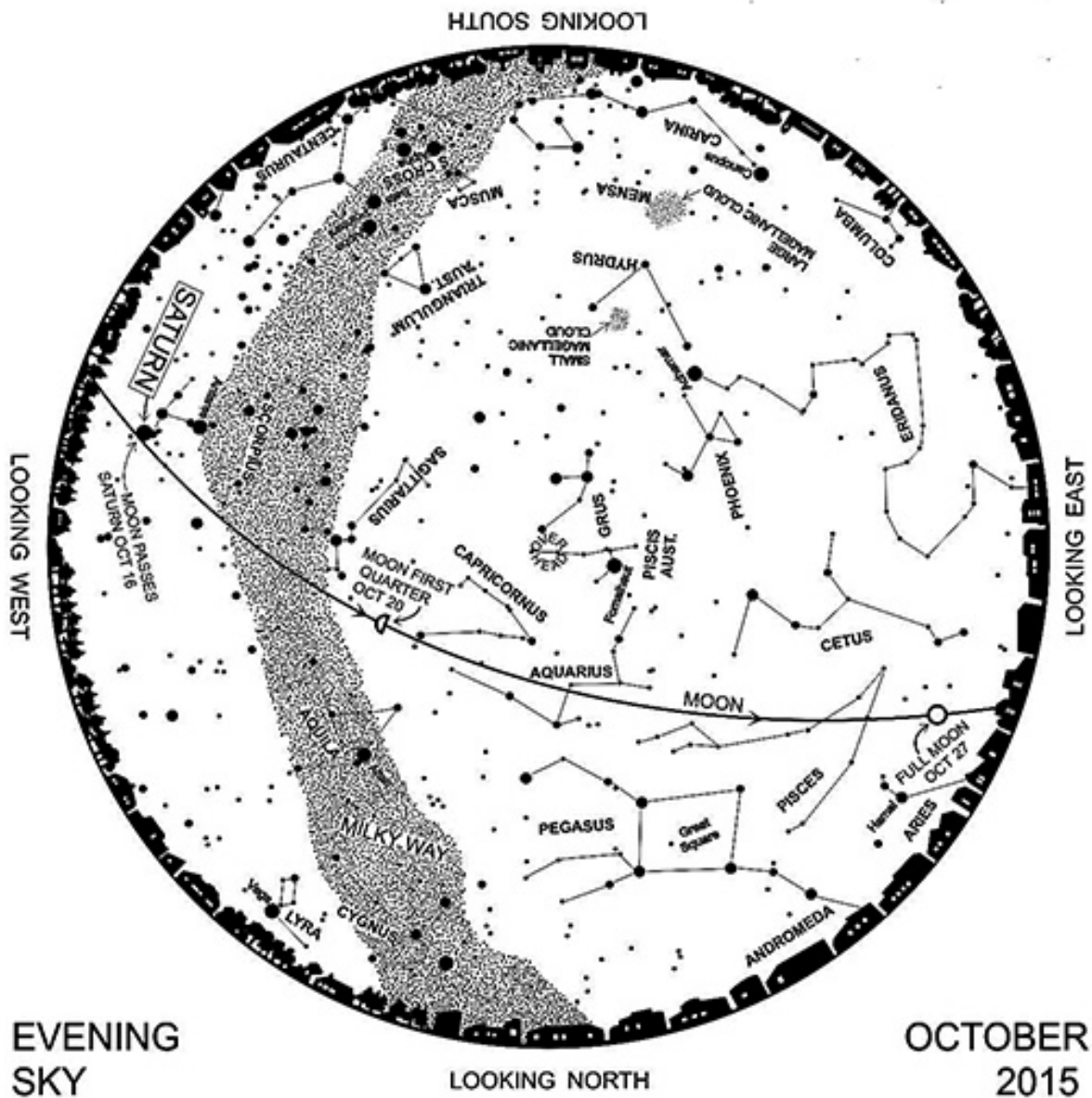
<http://www.hermanusastronomy.co.za/>

1. SKY MAPS

EVENING SKY MID OCTOBER at 21^h00



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

2. THE SOLAR SYSTEM

<i>Sun & Planets</i>	<i>OCTOBER 2015</i>		<i>1st</i>	<i>31st</i>
Sun Constellation: Virgo Length of day 12h 25m to 13h 27m	Rises:		06h21	05h44
	Transits:		12h33	12h27
	Sets:		18h46	19h11
Mercury phase 0% to 93% , ϕ 10" to 5" Constellation Virgo Magnitude: +5.1 to -1.0	Rises:		06h10	05h21
	Transits:		12h23	11h48
	Sets:		18h36	18h16
Venus phase 35% to 53% ϕ 33" to 23" Constellation: Leo Magnitude: -4.5 to -4.3	Rises:		04h13	03h43
	Transits:		09h47	09h35
	Sets:		15h21	15h27
Mars phase 97% to 95% ϕ 4" Constellation: Leo Magnitude +1.8 TO 1.7%	Rises:		04h59	03h50
	Transits:		10h30	09h40
	Sets:		16h01	15h31
Jupiter ϕ 31" to 33" Constellation: Leo Magnitude: -1.7 to 1.8	Rises:		05h16	03h34
	Transits:		10h55	09h19
	Sets:		16h34	15h04
Saturn ϕ 16" to 15" Constellation: Libra to Scorpius Magnitude: +0.6 to +0.5	Rises:		09h06	07h18
	Transits:		16h01	14h15
	Sets:		22h56	21h12
Uranus ϕ 4" Constellation: Pisces Magnitude: +5.7"	Rises:		19h30	17h26
	Transits:		01h17	23h10
	Sets:		07h00	04h59
Neptune ϕ 2" to 4" Constellation: Aquarius Magnitude: +7.8	Rises:		16h13	17h26
	Transits:		22h41	23h10
	Sets:		05h13	03h13
Pluto Constellation: Sagittarius Magnitude +14.2	Rises:		11h56	09h59
	Transits:		18h59	17h02
	Sets:		02h05	00h09

Mercury	As the month progresses, Mercury moves away from the sun, becoming visible before sunrise
Venus	This lady is the Morning Star for the month
Mars	The War God keeps close company with Venus in the early morning
Jupiter	And the Big Guy keeps a close eye on the pair in the early hours
Saturn	Visible after sunset but dipping lower towards month end. Catch the beauty now, while you can!
Uranus	Well placed for observation throughout the night for the whole month
Neptune	Well placed for observation throughout the night but see setting time above
Pluto	Visible in the evening sky

3. ECLIPSES

There are no eclipses, solar or lunar, predicted for October 2015.

4. OCTOBER HIGHLIGHTS FROM THE SKY GUIDE

<i>Date</i>	<i>Time</i>	<i>Item</i>
2		Moon near Aldebaran
4		Last quarter Moon
4 - 10		World Space Week ¹
8		Moon and Venus near Regulus . Moon – Venus 5.3° at noon. Mercury stationary
9		Moon and Mars near Jupiter
11		Moon (at apogee) near Mercury
13	02h06	New Moon near Spica
16		Moon near Saturn
18		Mars near Jupiter
20	22h31	First quarter Moon
21		Orionid meteor shower max (see 5. METEOR SHOWERS below)
25		Venus near Jupiter . Comet 22P Kopff at perihelion ²
26		Moon near Uranus
27	14h05	Full Moon
29		Mercury near Spica
30		Moon near Aldebaran

¹ World Space Week Theme

The early days

The World Space Week Association (WSWA) began in 1980 as the promoter of “Spaceweek”, a celebration of the first Moon landing, each July. The first celebration in Houston that year was led by Ernie Hillje, Troy Welch, David Koch and Dennis Stone (see picture, left to right). In 1981 they formed “Spaceweek National Headquarters” to organize a nationwide celebration in the United States. By 1999 Spaceweek had spread to over 15 nations when the UN General Assembly declared “World Space Week” to be held every year from 4 to 10 October. The new World Space Week Association took responsibility to organize this event on behalf of the United Nations from then onwards. The first UN-declared celebration of World Space Week took place in 2000.



UN-declared

Today, the World Space Week Association proudly supports the UN in the global coordination of World Space Week each October 4–10. The World Space Week Association is led by a dedicated team of international officers and volunteers that facilitates and coordinates a large global network of volunteers. The Association also holds a Permanent Observer position in the United Nations Committee on the Peaceful Uses of Outer Space where the results of World Space Week are reported back every year.

<http://www.worldspaceweek.org/history/>

5. METEOR SHOWERS

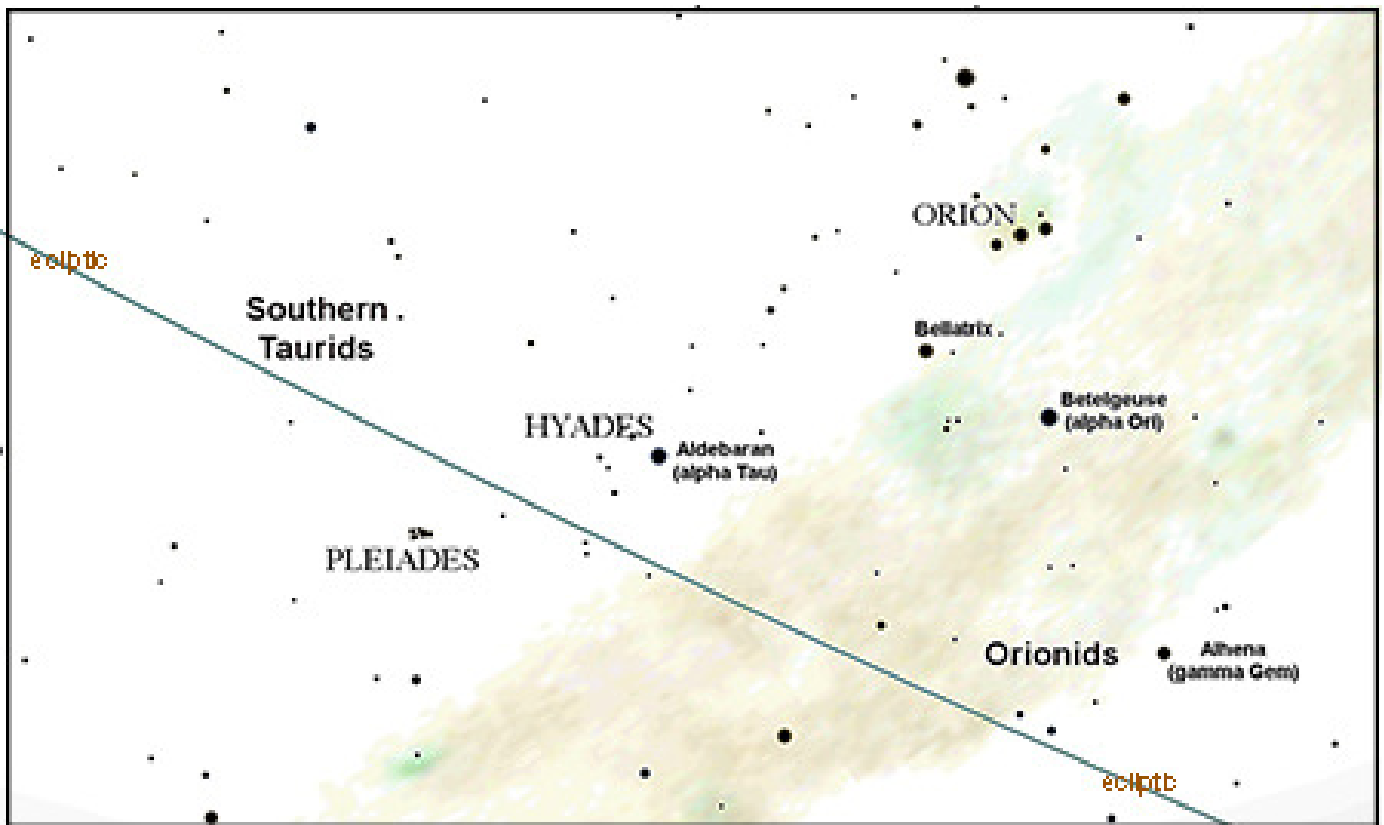
Name	Date & Time of Max	Duration	Radiant	ZHR vel.		Observing Prospect
				ZHR	vel.	
Orionids	21 st October 00h00 to 04h00	2 nd Oct – 7 th Nov	About 13° N of Betelgeuse	30	68	Good
Southern Taurids	5 th November 21h30 to 03h30	1 st Oct – 25 th Nov	About 17° WNW of Aldebaran	10	29	Good

Key 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 for Africa South (SGAS) pp. 86 – 87



6. COMETS

² Comet **22P Kopff** is reported in the Sky Guide (SGAS) as magnitude 11, an unlikely target I think! Otherwise, nothing to report.

7. CONSTELLATION OF THE MONTH - AQUARIUS

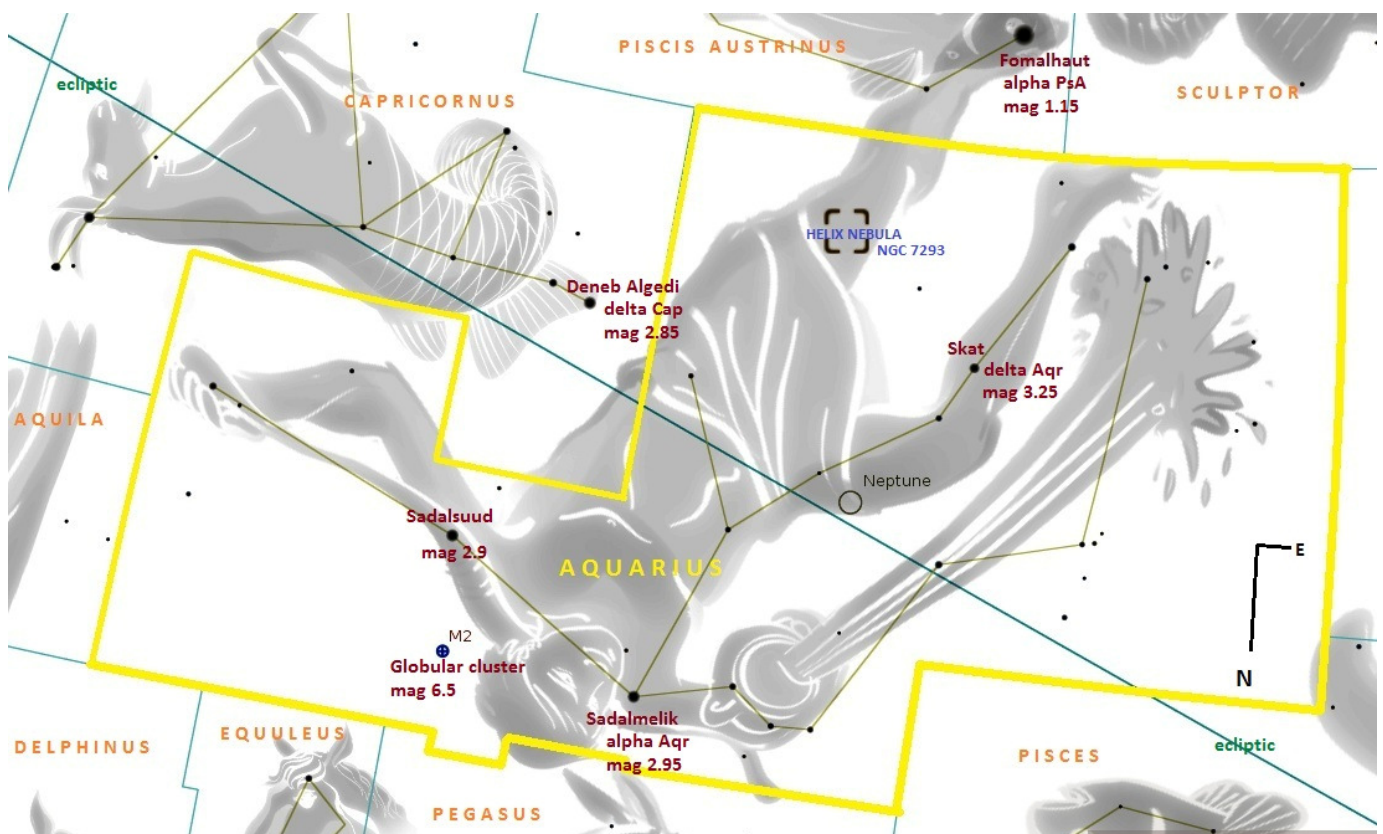
(extracted from *Cosmic pursuits*)



The Helix Nebula NGC 7293, a planetary nebula in Aquarius that ranks as the closest of its kind to Earth, is sometimes called the "Eye of God". It appears so large compared to other such nebulae that it can be unnerving to see it through a telescope or binoculars. But it is a beautiful sight.

This captivating image is by astrophotographer Warren Keller. *Image credit: Warren Keller at BillionsandBillions.com. Additional credit: Piermario Gualdoni and Alessandro Cipolat Bares.*

The showpiece of the constellation Aquarius is the grand and elusive Helix Nebula, NGC 7293. One of the closest and apparently largest of all planetary nebulae, the Helix is one of the few sights that's easier to see in a small telescope than in a large one. In images, like the excellent collaboration above led by Warren Keller at BillionsandBillions.com, the nebula looks like an expansive eye in deep sky. Some refer to the Helix as the "Eye of God".



Like all planetary nebulae, the Helix is a region of rarefied gas thrown off by a dying star of moderate mass. The star is essentially ejecting its outer atmosphere and exposing its blazing hot core to full view. The Helix is distinguished by its proximity to Earth, about 700 light years, and its consequent very large apparent size. By

comparison, the Ring Nebula in Lyra, is some 2,000 light years away. The Helix gets its name from its ring-like appearance which resembles the two coils of a spring seen on axis.

When you first see the Helix Nebula you may be astonished to discover how large it appears. Most planetaries are so small as to appear star-like, even at moderate power, so happening upon a planetary nebula that's half the size of the full Moon can be a little unsettling, even for experienced observers. The apparent surface area of the nebula is about four times larger than M27, the Dumbbell Nebula, and more than 100x the area of the Ring Nebula (M57)! Charles Messier missed this nebula, likely because his telescopes had a narrow field of view and did not enable him to notice a large object with low surface brightness.

The Helix Nebula is located about 10° NW of the bright star Fomalhaut. It looks like a big Moon-sized grey circle in a pair of binoculars. At low-to-medium power in a telescope, the nebula appears as a smokey oval set in a triangle of 10th-magnitude stars. At first it appears well defined and somewhat featureless. But keep looking. With averted vision, you'll begin to see the ring-like structure of this ghostly object in a 3" to 4" scope. The central region appears transparent at low power, and slightly brighter than the background sky at medium power. The 13th-magnitude central star is a challenge with a 4" scope but a snap with a 6" or 8" reflector, especially at 80x. Notice how the bright outer ring appears better defined at its inner edge. A UHC or OIII filter is usually a big help with this nebula.

Some observers at high altitudes and under dry sky claim to have seen the Helix without optics. If you have exceptionally clear and dry skies, give it a try. This will be much easier at southern latitudes where the nebula can be observed much higher in the sky.

From Ian Ridpath's "Star Tales"

AQUARIUS – the water bearer

Star maps show Aquarius as a young man pouring water from a jar or amphora, although Ovid, in his *Fasti*, says the liquid is a mixture of water and nectar, the drink of the gods. The water jar is marked by a Y-shaped asterism of four stars centred on Zeta Aquarii, and the stream ends in the mouth of the Southern Fish, *Piscis Austrinus*. But who is this young man commemorated as Aquarius?

The most popular identification is that he is Ganymede or Ganymedes, said to have been the most beautiful boy alive. He was the son of King Tros, who gave Troy its name. One day, while Ganymede was watching over his father's sheep, Zeus became infatuated with the shepherd boy and swooped down on the Trojan plain in the form of an eagle, carrying Ganymede up to Olympus (or, according to an alternative version, sent an eagle to do it for him). The eagle is commemorated in the neighbouring constellation of *Aquila*. In another version of the myth, Ganymede was fought over by two rival admirers: he was first carried off by Eos, goddess of the dawn, who had a passion for young men, but was then stolen from her by omnipotent Zeus.

Either way, Ganymede became wine-waiter to the gods of Olympus, dispensing nectar from his bowl, to the annoyance of Zeus's wife Hera. Robert Graves tells us that this myth became highly popular in ancient Greece and Rome where it was regarded as signifying divine endorsement for homosexuality. The Latin translation of the name Ganymede gave rise to the word *catamite*.

If this myth seems insubstantial to us, it is perhaps a result of the Greeks imposing their own story on a constellation adopted from elsewhere. The constellation of the water pourer originally seems to have represented the Egyptian god of the Nile – but, as Robert Graves notes, the Greeks were not much interested in the Nile.

Germanicus Caesar identifies the constellation with Deucalion, son of Prometheus, one of the few men to escape the great flood. 'Deucalion pours forth water, that hostile element he once fled, and in so doing draws attention to his small pitcher', wrote Germanicus. Hyginus offers the additional identification of the constellation with Cecrops, an early king of Athens, seen making sacrifices to the gods using water, for he ruled in the days before wine was made.

Stars of Aquarius

Several stars in Aquarius have names beginning with 'Sad'. In Arabic, sa'd means 'luck'. Alpha Aquarii is called Sadalmelik, from sa'd al-malik, usually translated as 'the lucky stars of the king'. Beta Aquarii is called Sadalsuud, from sa'd al-su'ud, possibly meaning 'luckiest of the lucky'. Gamma Aquarii is Sadachbia, from sa'd al-akhbiya, possibly meaning 'lucky stars of the tents'. The exact significance of these names has been lost even by the Arabs, according to the German expert on star names, Paul Kunitzsch.

In the *Almagest*, Ptolemy described Alpha, Beta and Gamma Aquarii as lying in the right shoulder, left shoulder, and the right forearm of Aquarius respectively. The head of Aquarius is marked by the relatively lowly 25 Aquarii, of 5th magnitude. Ptolemy listed 20 stars as lying in the flow of water from the jar, almost as many stars as in the main figure of Aquarius itself. In fact, early writers such as Aratus and Eratosthenes regarded the Water (Hydor, Ὕδωρ) as either a separate constellation or a sub-constellation within Aquarius (Hydrochous, Ὕδροχόος). The flow of water started at the star we know as Kappa Aquarii and ended at the star we call Fomalhaut, in the mouth of the southern fish, Piscis Austrinus. This is another example of stars being shared between constellations in the days before rigorous boundaries were established. Fomalhaut is now the exclusive property of Piscis Austrinus.

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Keep in touch

Please don't forget to have a look at our excellent website, edited with loving care by Derek Duckitt.

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

Also...

[ASSA Deep-Sky Section](#)

Whatsapp chat group: [074 100 7237]

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

[Official Big 5 Facebook group](#)

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Stellarium

Cosmic Pursuits