



HERMANUS ASTRONOMY CENTRE

THE SKY THIS MONTH : SEPTEMBER 2015

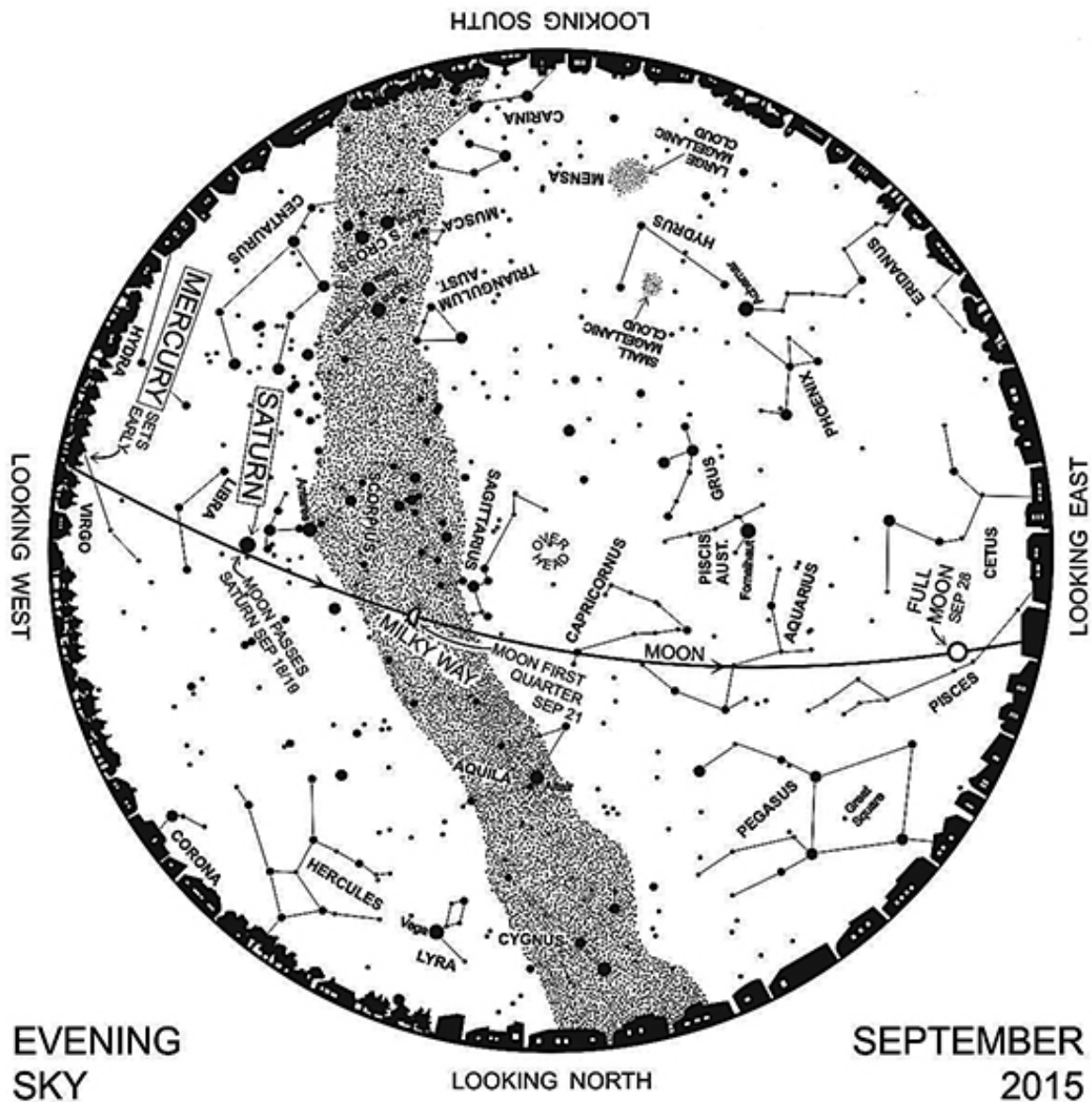
<http://www.hermanusastronomy.co.za/>

1. SKY MAPS

EVENING SKY MID SEPTEMBER at 21<sup>h</sup>00



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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 &amp; Planets</i>	<i>SEPTEMBER 2015</i>		<i>1<sup>st</sup></i>	<i>30<sup>th</sup></i>
<b>Sun</b> Constellation: Leo to Virgo Length of day 11h22m to 12h23m	Rises:		07h03	06h22
	Transits:		12h44	12h34
	Sets:		18h25	18h45
<b>Mercury</b> phase 60% to 0% , $\phi$ 7" to 10" Constellation Virgo Magnitude: +0.2 to +5.1	Rises:		08h06	06h15
	Transits:		14h20	12h31
	Sets:		20h34	18h45
<b>Venus</b> phase 9% to 35% $\phi$ 52" to 33" Constellation: Cancer to Leo Magnitude: -4.4 to -4.5	Rises:		05h26	04h15
	Transits:		11h03	09h48
	Sets:		16h40	15h21
<b>Mars</b> phase 98% to 97% $\phi$ 4" Constellation: Cancer to Leo Magnitude +1.8	Rises:		06h01	05h01
	Transits:		11h14	10h31
	Sets:		16h27	16h02
<b>Jupiter</b> $\phi$ 31" Constellation: Leo Magnitude: -1.7	Rises:		06h57	05h20
	Transits:		12h29	10h59
	Sets:		18h02	16h37
<b>Saturn</b> $\phi$ 16" Constellation: Libra Magnitude: +0.6	Rises:		10h57	09h09
	Transits:		17h50	16h04
	Sets:		00h48	23h00
<b>Uranus</b> $\phi$ 4" Constellation: Pisces Magnitude: +5.7"	Rises:		21h33	19h34
	Transits:		03h19	01h21
	Sets:		09h01	07h04
<b>Neptune</b> $\phi$ 2" Constellation: Aquarius Magnitude: +7.8	Rises:		18h15	16h17
	Transits:		00h46	22h45
	Sets:		07h03	05h17
<b>Pluto</b> Constellation: Sagittarius Magnitude +14.1 to +14.2	Rises:		13h55	12h00
	Transits:		20h57	19h03
	Sets:		04h04	02h09

<b>Mercury</b>	Initially an evening object but moving close to the Sun as the month progresses
<b>Venus</b>	The "Morning Star" for the month
<b>Mars</b>	Chasing Venus in the morning sky
<b>Jupiter</b>	Initially too close to the Sun but becoming visible in the morning sky late in the month
<b>Saturn</b>	Visible in the evening sky
<b>Uranus</b>	Well placed for observation throughout the night
<b>Neptune</b>	Well placed for observation throughout the night
<b>Pluto</b>	Visible in the evening sky

### 3. ECLIPSES

There is a partial solar eclipse on 13 Sep 2015

#### Timing Information

##### Beginning of partial phase

Time: 2015 Sep 13 06:44:23  
 PA of centre of Moon: 253.6  
 Sun's altitude: -1.2°

##### Maximum eclipse

Time: 2015 Sep 13 07:44:10  
 Eclipse magnitude: 0.432  
 Moon/Sun size ratio: 0.929  
 PA of centre of Moon: 198.1°  
 Sun's altitude: 11.0°

##### End of partial phase

Time: 2015 Sep 13 08:51:07  
 PA of centre of Moon: 143.0°

Sun's altitude: 24.1°

There is a total lunar eclipse the morning of 28 September 2015

#### Circumstances of the Eclipse

Moon enters penumbra: 2015 Sep 28 02:10:04  
 Moon enters umbra: 2015 Sep 28 03:06:35  
 Start of totality: 2015 Sep 28 04:10:29  
 Maximum eclipse: 2015 Sep 28 04:46:53  
 End of totality: 2015 Sep 28 05:23:17  
 Moon leaves umbra: 2015 Sep 28 06:27:10  
 Moon leaves penumbra: 2015 Sep 28 07:23:42

Moon sets at 06:33

Sun rises at 06:25

### 4. SEPTEMBER HIGHLIGHTS FROM THE SKY GUIDE

<i>Date</i>	<i>Time</i>	<i>Item</i>
1		<b>Moon near Uranus</b>
5	11h54	Last quarter <b>Moon</b> . <b>Moon</b> near <b>Aldebaran</b> and within the <b>Hyades</b>
10		<b>Moon</b> near <b>Venus</b> and <b>Mars</b>
11		<b>Moon</b> near <b>Mars</b> and <b>Regulus</b> in <b>Leo</b>
12		<b>Moon</b> near <b>Jupiter</b>
13	06h44 to 08h51	<b>Partial Solar eclipse</b> (see <i>Eclipses</i> above)
15		<b>Moon</b> near <b>Mercury</b> and <b>Spica</b>
15	22h00	<b>Comet C/2013 US10 Catalina</b> (see 6. COMETS below)
18		<b>Moon</b> near <b>Saturn</b> . <b>Moon</b> occults $\gamma$ <b>Lib</b>
19		<b>International "Observe the Moon Night"</b> (33% waxing crescent) <sup>1</sup>
19		<b>Moon</b> near <b>Saturn</b>
21	10h59	First quarter <b>Moon</b> .
21	17h00	<b>Venus</b> greatest illuminated extent
23	10h26	<b>SPRING EQUINOX</b> ( <b>Sun</b> crosses the celestial equator)
25		<b>Mars</b> near <b>Regulus</b>
28		<b>Total Lunar eclipse</b>
25	04h55	Full <b>Moon</b>
29	04h00	<b>Moon</b> occults <b>Uranus</b>

<sup>1</sup> **International Observe the Moon Night (InOMN)** is an annual worldwide public event that encourages observation, appreciation and understanding of our Moon and its connection to NASA 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. On this site, <http://observethemoonnight.org>, you can find information about how to host, register and evaluate your InOMN event, look for an InOMN event near you and share pictures and highlights from InOMN.

InOMN is sponsored by NASA's Lunar Reconnaissance Orbiter, NASA's Solar System Exploration Research Virtual Institute (SSERVI) and the Lunar and Planetary Institute.

## 5. METEOR SHOWERS

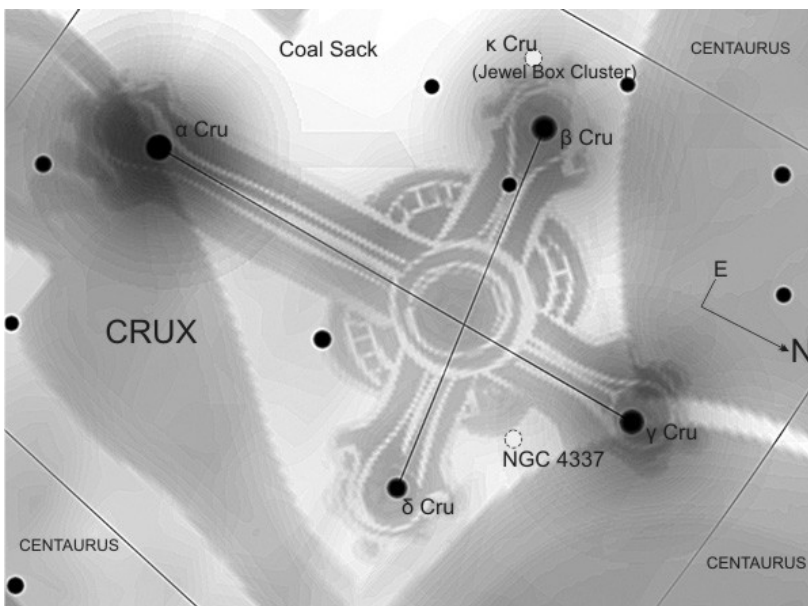
There are no meteor showers predicted for the month.

## 6. COMETS

Comet C/2013 US10 Catalina on 15 Sep 2015 at 20:00, Az 227° Alt 24.4° Mag 7.0 Constellation Lupus

## 7. CONSTELLATION OF THE MONTH - CRUX

Beloved of the southern hemisphere sky-gazers, the beautiful Southern Cross is probably the most easily recognized constellation of the night skies after Orion. A particularly rewarding sight in a small telescope is the lovely “Jewel Box” cluster close to  $\beta$  Crucis. The binary Acrux ( $\alpha$  Crucis) is easily resolved in a small telescope.



Ian Ridpath outlines the history of this small though spectacular arrangement of stars.

*From Ian Ridpath's "Star Tales"*

The smallest of all the 88 constellations. Its stars were known to the ancient Greeks and were catalogued by Ptolemy in the *Almagest*, but were regarded as part of the hind legs of Centaurus, the centaur, rather than as a separate constellation. They subsequently became lost from view to Europeans because of the effect of precession, which causes a gradual drift in the position of the celestial pole against the stars, and were rediscovered during the 16th century by seafarers venturing

south.

The Italian explorer Amerigo Vespucci (1454–1512) charted what seems to have been Alpha and Beta Centauri and the stars of Crux in 1501, but the most accurate early depiction was made by the Italian navigator Andrea Corsali in 1515. (Corsali's diagram shows the stars as they would appear on a celestial globe, so their positions are a mirror image of the view as seen from Earth, as pointed out by the Dutch historian Elly Dekker.) Corsali described the pattern as 'so fair and beautiful that no other heavenly sign may be compared to it'. Thereafter navigators began using the cross as a pointer to the south celestial pole, and it was adopted by astronomers as a separate constellation by the end of the 16th century.

Crux first appears in its modern form on the celestial globes by the Dutch cartographers Petrus Plancius and Jodocus Hondius in 1598 and 1600; Plancius had earlier shown a stylized southern cross in a completely different part of the sky, south of Eridanus. It seems that only after he received the first accurate observations of the southern stars made by the Dutch navigator Pieter Dirkszoon Keyser did Plancius realize that the stars of Crux had been listed in Ptolemy's *Almagest* all along, as part of Centaurus. Benefiting from this revelation, Johann Bayer drew the cross over the hind legs of Centaurus on his *Uranometria* atlas of 1603. The five main stars of Crux were listed as a separate constellation for the first time in the southern star catalogue of another Dutch seafarer, Frederick de Houtman, published in 1603.

#### The stars of Crux

The constellation's brightest star is sometimes called Acrux, a name applied by navigators from its scientific designation Alpha Crucis. It is actually a double star, divisible through small telescopes into two sparkling blue-white points. The names Becrux and Gacrux for Beta and Gamma Crucis have a similar modern origin. At declination  $-63.1^\circ$ , Alpha Crucis is the most southerly first-magnitude star.

Crux contains a famous dark cloud of gas and dust called the Coalsack Nebula, which appears in silhouette against the bright Milky Way background. This was first described in an account by Amerigo Vespucci published in 1503 or 1504, where it was described as a "black canopy of immense bigness".

#### Chinese associations

Chinese astronomers worked at a similar latitude to Ptolemy, so they were able to see the same stars as he did, including those of Crux. However, the effect of precession gradually carried this part of the southern sky below their horizon about 1,500 years ago, as it did for European astronomers.

The stars we know as Alpha, Beta, Gamma and Delta Crucis were once part of the constellation Kulou, which represented a military depot. In their book *The Chinese Sky During the Han*, Sun and Kistemaker show these four stars forming a diamond-shaped tower at the southern end of the depot. Later, though, this feature was placed farther north among the stars of Centaurus. Probably Chinese astronomers gradually moved this part of Kulou northwards on their charts as Crux became lost from view. A similar transfer to more northerly stars over time affected other Chinese constellations in this region of sky, for the same reason.

## Keep in touch

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Grateful thanks to the following, without whom this publication could not have materialised:

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Pierre de Villiers

ASSA

Margie Walter of Iziko Planetarium

Auke Slotegraaf

Sky Guide for Southern Africa 2015

Ian Ridpath

Stellarium