



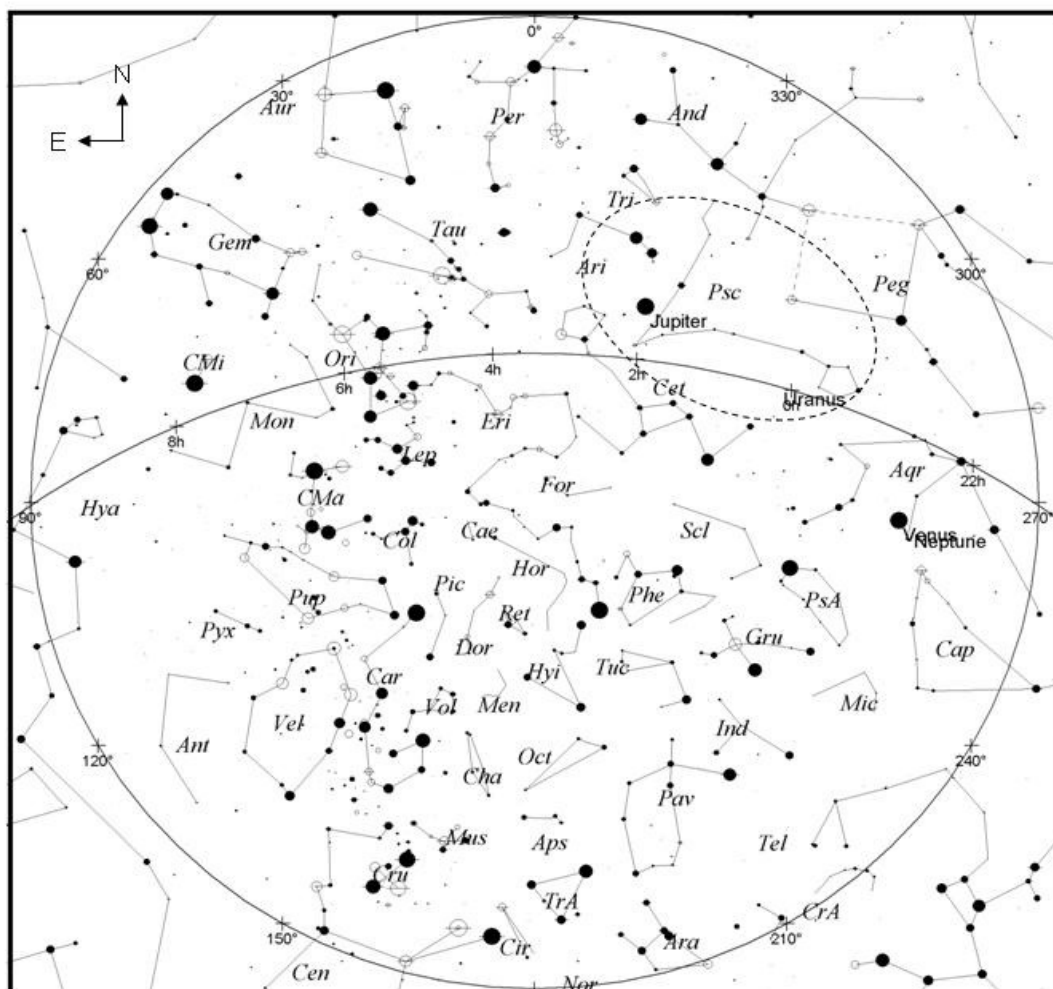
HERMANUS ASTRONOMY CENTRE

THE SKY THIS MONTH : JANUARY 2012

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

Sky Chart : Evening Sky

Source: SkyMap Lite

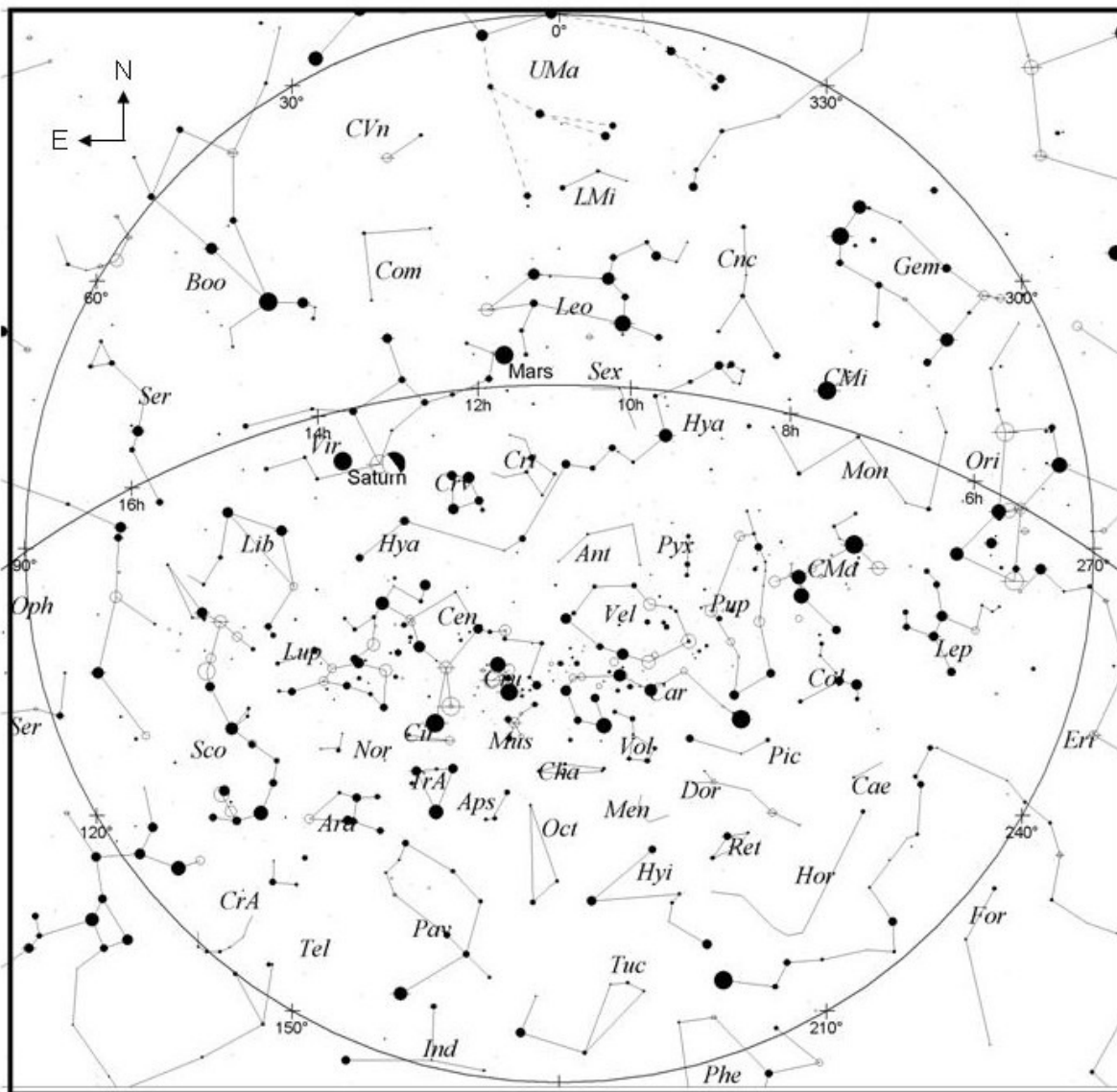


Date: 15 January 2012	Time (SAST): 20:30	Location : Gearings Point
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1. Evening Sky. Jupiter is visible throughout the month and Achernar (α Eridanii) is just past the meridian in the evening sky. The Southern Cross is really close to the horizon and somewhat difficult to see but it is rising in the evening sky. Orion, on the other hand, is already four hours above the horizon and is clearly visible. During the second week of January, Venus (mag -4.0) and Neptune (mag 8.0) come quite close together, in fact on 13 January they are about 1 degree apart. Special events to observe in the evening are the following:

- 2 January (early evening) – Moon (64%) and Jupiter about 5° apart
- 5 January (early evening) – Moon (87%) and Pleiades about 5° apart
- 26 January (early evening) – Moon (12%) and Venus about 7° apart
- 30 January (early evening) – Moon (45%) and Jupiter about 6° apart

The selected constellation for the month is **Pisces** (see the dashed lines in the star map above).



Date: 15 January 2012

Time (SAST): 04:00

Location : Gearings Point

2. Morning Sky. In the morning sky Saturn and Mars are both easily visible. The Southern Cross is high and rising towards the meridian. It is a good time to observe the constellations Centaurus, Carina, Vela, Puppis and Pyxis (the components of the ship) as they are just past the meridian. Orion is just setting in the west.

3. The Sun. At about 10:00 on 22 December 2011, the sun turned at the Tropic of Capricorn and commenced its journey north. By 1 January 2012, the sun will reach a declination of $23^{\circ} 01' S$, will rise at 05:34 and set at 19:59. By the end of January, the sun will have reached a declination of $17^{\circ} 27' S$, will rise at 06:03 and set at 19:50. During the month the sun will move from Sagittarius to Capricornus.

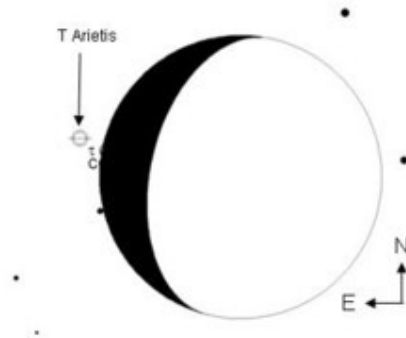
4. Phases of the Moon.

2012	January	Time	Event
	01	08:15	First Quarter
	09	09:30	Full Moon

16	11:08	Last Quarter
23	09:39	New Moon
31	06:10	First Quarter

5. Lunar Occultations. The Sky Guide lists the occultations of five stars brighter than magnitude 4 for 2012.

On Thursday morning 5 January 2012 at 00:04 the star *Tau Arietis* (a variable star with magnitude between 5.26 and 5.32) will be occulted by the 82% Moon. This is a dark limb event and should be visible through binoculars. The cusp angle of the disappearance is 85°N. The star will reappear again at 01:21 on the bright limb of the Moon on a cusp angle of 75°N. The diagram shown, is the situation at 23:57 on Wednesday 4 January 2012, about seven minutes before the disappearance takes place.



6. The Planets

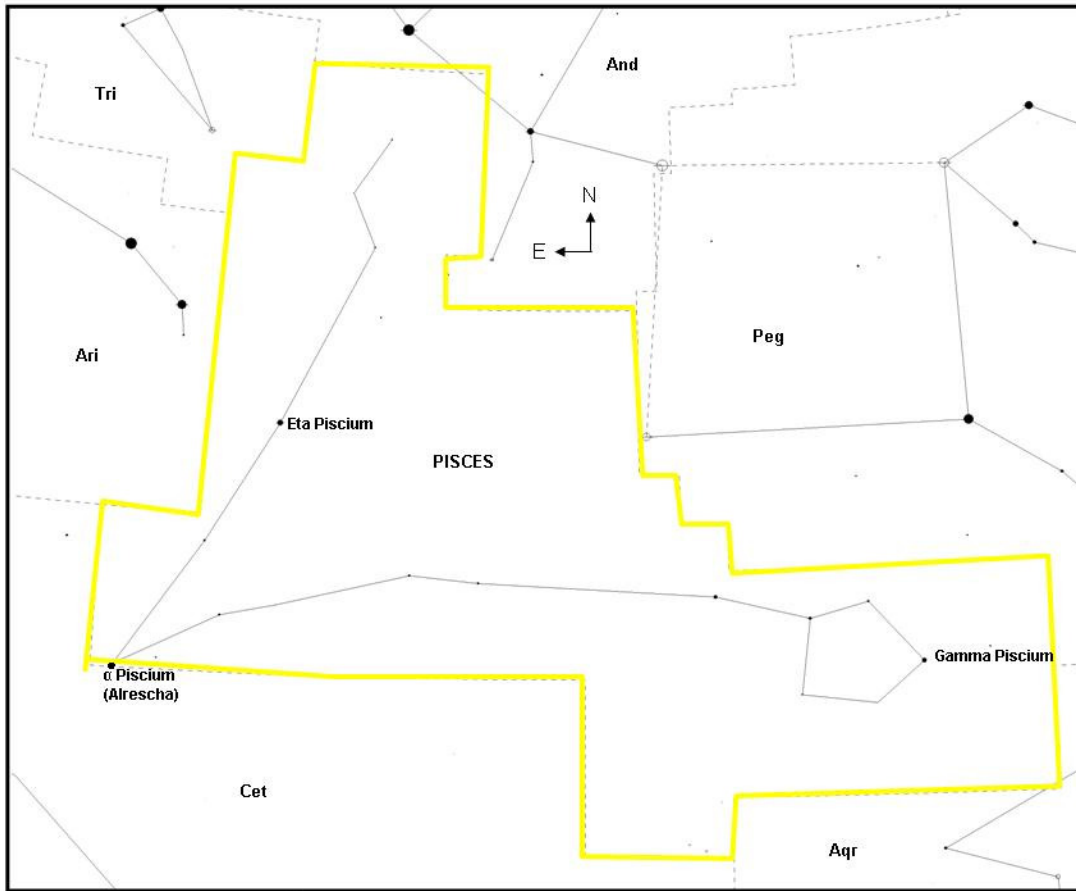
Planets	Month:	January 2012	1 st	31 st
Mercury		Rises:	04:12	05:35
Constellation:	Oph - Cap	Sets:	18:29	19:43
Magnitude:	- 0.4, -1.0	Comment:		
Venus		Rises:	08:16	09:15
Constellation:	Cap - Aqr	Transits:	15:11	15:31
Magnitude:	-4.0	Sets:	22:06	21:45
Mars		Rises:	23:44	21:56
Constellation:	Leo - Vir	Transits:	05:31	03:44
Magnitude:	0.2, -0.5	Sets:	11:15	09:28
Jupiter		Rises:	14:22	12:35
Constellation:	Psc - Ari	Transits:	19:55	18:05
Magnitude:	-2.6, -2.4	Sets:	01:32	23:36
Saturn		Rises:	01:25	23:27
Constellation:	Vir	Transits:	07:51	05:58
Magnitude:	0.7	Sets:	14:17	12:24
Uranus		Rises:	12:02	10:09
Constellation:	Psc	Sets:	00:11	22:12
Magnitude:	5.8	Comment:		
Neptune		Rises:	05:35	03:42
Constellation:	Aqr	Sets:	22:42	20:47
Magnitude:	7.9, 8.0	Comment:		

Mercury will be visible low in the east before sunrise in the first week of the month. Venus and Jupiter are visible in the evening sky, Mars and Saturn are visible in the morning sky.

7. Meteor Showers. The only meteor shower listed for January 2012 is the Alpha Crucids with the date for the maximum 19 January and promises a zenith hourly rate of less than five but with good observing prospects between the hours 00:00 and 03:30. There is a waning crescent moon with moonrise at 01:52. The radiant is about 3° S of *beta Crucis*.

CONSTELLATION OF THE MONTH

8. I have been doing some housekeeping with regard to the constellations I have discussed in these monthly sky maps since March 2008, and have realised that I have neglected 23 of the 85 constellations visible to us from Hermanus. **Pisces** is the first of these “neglected constellations” and I will attempt to cover all the remainder during 2012.



Pisces, at 889 square degrees, is the 14th largest constellation. It, however, is quite unremarkable with its brightest star, *eta Piscium*, at magnitude 3.62 and the runner-up, *gamma Piscium* at magnitude 3.70. There are no deep sky objects of note in Pisces. The indications are that there may be as many as 10 stars with exoplanets in the constellation. The constellation also contains *Van Maanen's Star*, a white dwarf star of magnitude 12.3 and this star is the third closest white dwarf star to our sun (Sirius B and Procyon B are closer). Some of the easier visible binary stars in Pisces are listed below:

Star	Sep (arc secs)	Posn Angle	Mag1	Mag2	RA	Dec	Alt at 21:00 on 15 Jan
35 Psc	11.8	149°	6	7.5	00:15.0	N8° 49'	+19° 47' 33"
ψi Psc	30	160°	5	5	01:05.7	N21° 29'	+21° 6' 54"
77 Psc A/B	32.9	83°	6	6.5	01:05.8	N4° 55'	+33° 57' 58"

HERMANUS STERREKUNDE-SENTRUM

DIE SON

Ek het in November 2011 oor sonvlekke geskryf, maar nou, terwyl ek deur die internet blaai, het ek die mooiste foto van die son gevind, 'n foto geneem deur Peter Lawrence op 12 November 2011. Ek het die webskakel vir die foto in die dek-epos geskryf, klik asseblief daarop en geniet 'n fantastiese skouspel. Hierdie foto is duidelik deur 'n waterstof-filter afgeneem en deur so 'n filter is dit moontlik om die son se chromosfeer waar te neem – die chromosfeer word ondeursigtig wanneer slegs die rooilig vanaf waterstof waargeneem word. In die foto sien ons dus nie die fotosfeer nie, daarom is daar geen sonvlekke sigbaar nie.

Die foto gee my die geleentheid om enkele Afrikaanse terme vir die son neer te skryf:

Die eerste is “vuurtong”, die verskynsel wat mens links onder op die rand van die son kan waarneem, in Engels “prominence”.

Die tweede is die “flokculus of plages”, die helder vlekke wat op die son se chromosfeer waargeneem kan word. Op Engels word dit ook “plages or flocculi” genoem. Die plages is sigbaar in dieselfde area waar daar sonvlekke is, maar die sonvlekke is op die fotosfeer (die “oppervlak” van die son) en is nie sigbaar deur die waterstof-filter nie.

Die derde is die baie duidelike donker “filamente” wat sigbaar is in die chromosfeer naby sonvlekke. Op Engels word hulle “filaments” genoem.

Die vierde is die korrelagtige voorkoms van die chromosfeer wat “sonspykers” (Engels: “spicules”) genoem word. Hierdie sonspykers is inderwaarheid klein gaspriepe (Engels: “gas jets”) wat tussen die korrels van die fotosfeer opskiet en in die chromosfeer sigbaar is. Sodanige sonspykers kan tot 700km in deursnit en tot 7,000 km hoog wees. Hulle het slegs 'n leeftyd van 5 tot 15 minute en daar word beweer dat tot 'n half miljoen op enige oomblik op die oppervlak van die son mag wees.

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Compiled by: Johan Retief e-mail: johanretief@gmail.com Tel: 028 315 1132

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