

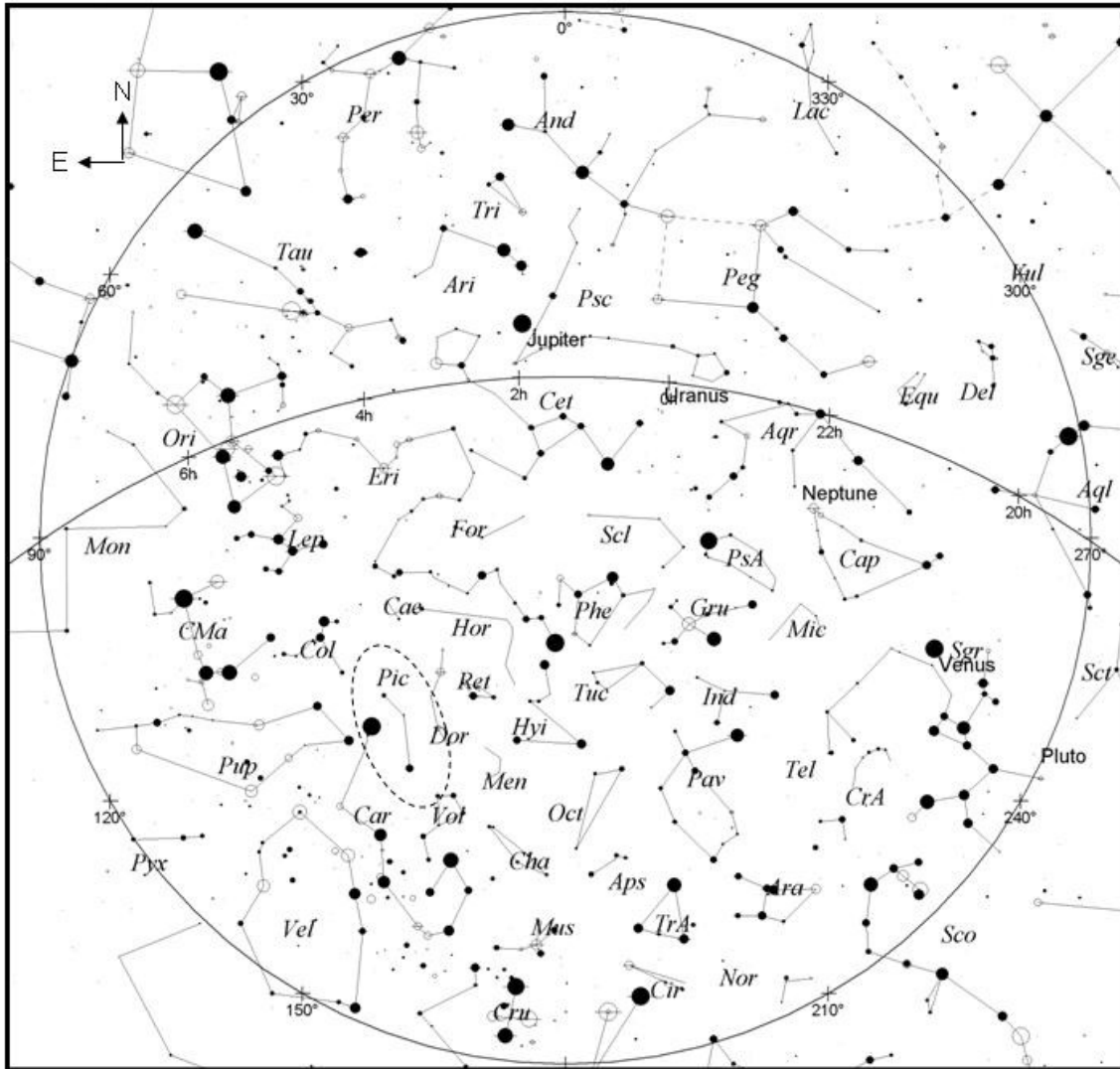


HERMANUS ASTRONOMY CENTRE THE SKY THIS MONTH : DECEMBER 2011

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

Sky Map : Evening Sky : Mid-December 2011

Source: SkyMap Lite

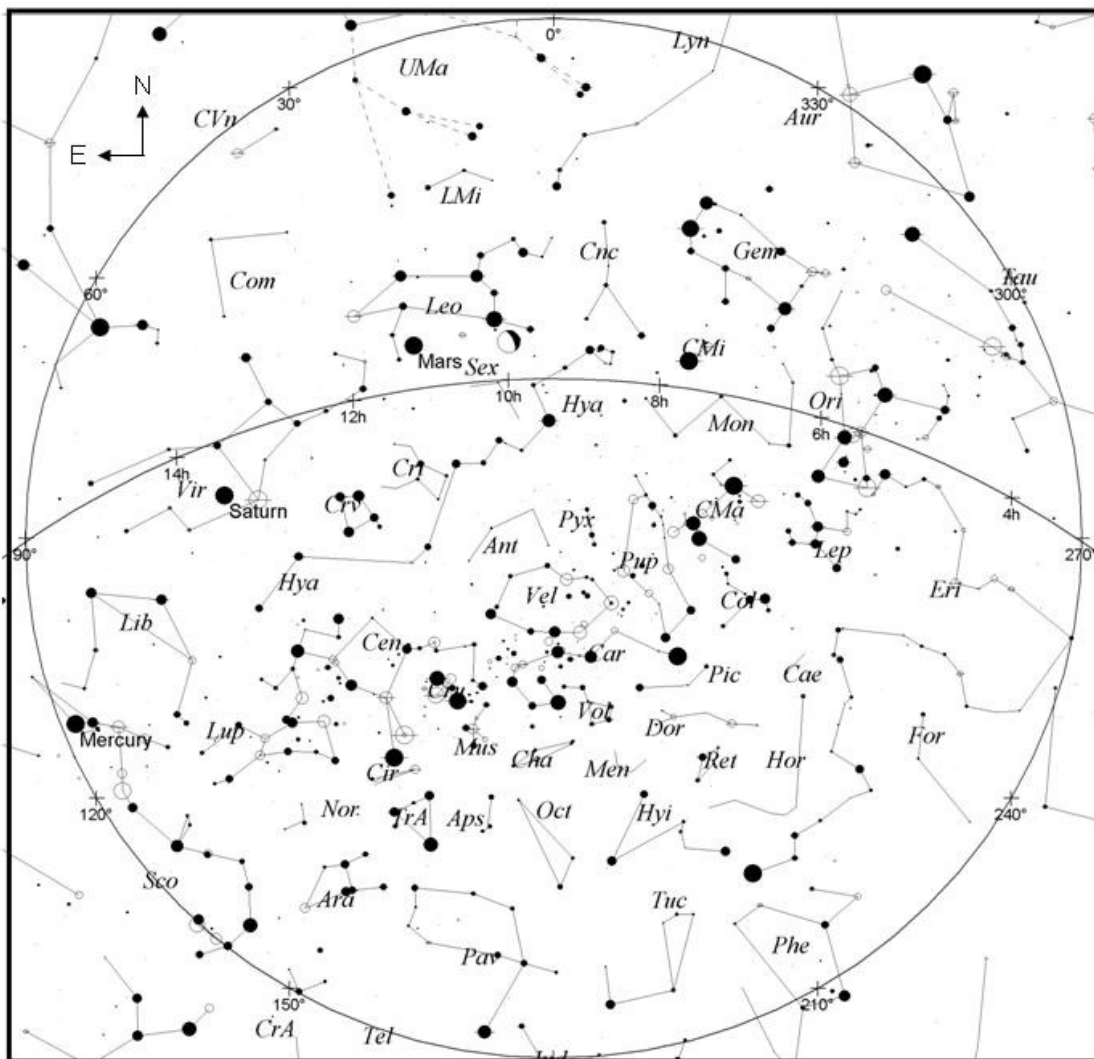


Date: 15 December 2011	Time (SAST): 20:00	Location : Gearings Point
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1. Evening Sky. The return of Orion, Taurus and Canis Major in the evening sky really heralds the return of summer. Jupiter is high in the sky, nearly on the meridian as we commence the evening's observation and is a must to visit. Consult the Sky Guide for the positions of Jupiter's moons. In the west we are saying goodbye to Sagittarius and the tail of Scorpio. The selected constellation for the month is **Pictor**, indicated by the dashed line ellipse in the sky map above.

Sky Map : Morning Sky : Mid-December 2011

Source: SkyMap Lite



Date: 16 December 2011

Time (SAST): 04:30

Location : Gearings Point

2. Morning Sky. The morning sky is graced by three planets, Mercury, Saturn and Mars. Mercury should be visible just before morning twilight above the south-eastern horizon. The constellations Carina, Vela and Puppis are arranged around the meridian. Remember, the sun rises early and if you wish to observe the morning sky you should take up your position soon after 04:00.

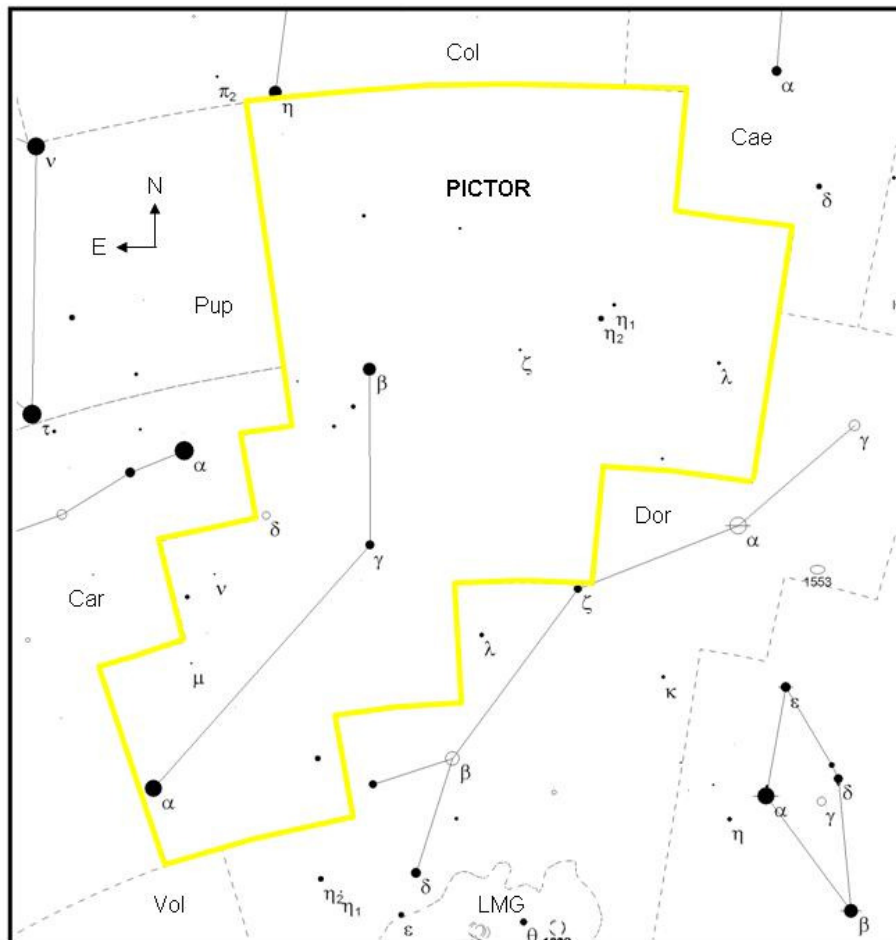
3. Special Events. The following special events are recorded in the Sky Guide for this month:

2011	December	Time	Event
	02	11:51	FIRST QUARTER
	10	16:35	FULL MOON
	18	02:47	LAST QUARTER
	20	04:00	Spica 1.9°N of 27% Moon with Saturn
	23	04:00	Antares 4.2° S of 4% Moon
	24	20:06	NEW MOON
	26	13:00	Jupiter stationary

4. Eclipse. There is a total eclipse of the moon on 10 December 2011 (full moon) BUT IT IS NOT VISIBLE FROM OUR LOCATION! The eclipse takes place 3½ hours before moon rise (in other words while it is below our horizon).
5. Lunar Occultation. ν Tau (Upsilon Tau – mag 4.3) will be occulted by the moon on 9 December 2011 at 20:04. This is a dark limb event, BUT the moon phase is 99.3% so expect only a very slight dark edge. The star will disappear at a cusp angle of 87°N and will reappear on the bright limb at 21:20 at a cusp angle of 68°S [Source: Sky Guide and SkyMap].
6. Meteor Showers. Please refer to page 75 of the Sky Guide. The Velids are reported as good between the dates 5 Dec to 7 Jan with a maximum on 29 Dec from 22:30. A zenith hourly rate of 5 is forecast. The radiant is in the constellation Vela at an altitude of 35° and an azimuth of 131° T. An easy way to find the radiant is to extend the long axis of the False Cross towards the NE a distance equal to $\frac{2}{3}$ the length of the long axis measured from the north-easterly star (κ Velorum) of the False Cross.
7. Comets. Comet Garrard is at perihelion at mag 7.0 on 23 December [Source: Sky Guide]. This comet is too close to the sun for us to observe.

CONSTELLATION OF THE MONTH

8. The selected constellation for December is the constellation **Pictor**.



Pictor is a small constellation in the southern sky and with an area of 247 square degrees it is the 59 largest constellation. It was created and named by Abbé Nicolas de Lacaille during visit to the Cape in 1751 – 1754.

α Pictoris is the brightest star magnitude 3.3 and about 99 light years from our sun.

β Pictoris is the second brightest star magnitude 3.86. There is a large disk of dust and planetary matter around this star and planet forming may be taking place. The European Southern Observatory (in the Atacama Desert in Chile) has confirmed the presence of at least one planet round β Pictoris.

A star, known as “Kapteyn’s Star” (VZ Pictoris), is a red dwarf at mag 9.0 and at a distance of some 12.8 light years, it is visible through a telescope or good binoculars (This is quite an interesting star and readers are referred to Wikipedia for more information). The co-ordinates for Kapteyn’s Star are RA 05^h12^m12^s and Dec -45° 1.5’ (north western corner of the constellation).

Some double and multiple stars in these constellations:

Star	Sep (arc secs)	Posn Angle	Mag1	Mag2	RA	Dec	Alt at 21:00 on 15 Nov
IOTA PIC	12.3	58	5.5	6.5	04:50.9	-53° 26'	46° 9' 37"
HJ 3715	9.9	112	7.5	9	04:59.5	-49° 27'	16° 34' 0"
THETA PIC	38.2	287	7	7	05:24.7	-52° 19'	41° 1' 41"
HJ 3822	55.9	305	6.5	7.5	05:57.3	-53° 25'	36° 20' 34"
DUN 27	40.1	229	6.5	8	06:16.3	-59° 12'	34° 47' 56"

Note: In selecting double/multiple stars, only those stars of mag 9 or brighter, having at least a separation of 10 arc seconds are tabled.

There are no significant deep sky objects in Pictor.

If you have difficulties in finding these stars, log onto the virtual telescope at <http://www.fourmilab.ch/yoursky/>. Use your lat and long and then click on “make sky map”. Once on the sky map screen, click on the map and then enter the RA and declination of your aiming point in the fields below. Enter 10° for the initial field of view, then click on Update. Play around until you have the object you are searching for in the centre, print a sky map and prepare for star hopping!

SUN AND MOON DATA

9. For sunrise and sunset you are referred to p47 of your 2011 Sky Guide: Use data for Cape Town but correct as follows for Hermanus: Sunrise = Cape Town – 3 minutes, Sunset = Cape Town – 1 minute. For moonrise and moonset you are referred to p48 of the 2011 Sky Guide: Use data for Cape Town but correct as follows for Hermanus: Moonrise = Cape Town – 3 minutes, Moonset = Cape Town – 1 minute.

THE SUN AND PLANETS

Sun & Planets	Month:	December	1 st	15 th	30 th
Sun		Rises:	05:43	05:31	05:25
Constellation:	Lib - Lib - Oph	Transits:	12:27	12:28	12:32
Magnitude:	26.8	Sets:	19:12	19:25	19:40
Mercury		Rises:	06:37	06:03	06:02
Constellation:	Lib - Oph - Oph	Sets:	20:52	21:20	20:17
Magnitude:	-0.3, -0.2, 2.8	Comment:			
Venus		Rises:	06:47	06:54	07:12
Constellation:	Lib - Oph - Sgr	Transits:	13:48	14:07	14:29
Magnitude:	-3.9	Sets:	20:50	21:20	21:46

Mars		Rises:	02:33	01:59	01:20
Constellation:	Leo	Transits:	07:54	07:26	06:54
Magnitude:	1.1 - 0.8	Sets:	13:15	:	12:28
Jupiter		Rises:	18:43	:	03:42
Constellation:	Ari	Transits:	00:17	23:10	16:33
Magnitude:	-2.9	Sets:	05:46	04:45	22:05
Saturn		Rises:	08:08	04:18	03:23
Constellation:	Vir	Transits:	11:29	10:40	09:47
Magnitude:	0.7	Sets:		17:01	19:10
Uranus		Rises:	16:04	15:07	14:07
Constellation:	Pis	Sets:	04:12	03:16	02:17
Magnitude:	5.8	Comment:			
Neptune		Rises:	13:26	12:31	11:32
Constellation:	Aqr	Sets:	02:44	01:49	02:17
Magnitude:	7.9	Comment:			

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HERMANUS STERREKUNDE-SENTRUM

DIE VOORWAARTSE EN TRUWAARTSE BEWEGING VAN PLANETE

Op 26 Desember is Jupiter in 'n stationêre punt. Dit beteken dat, in hierdie geval, die voorwaartse beweging (E: *prograde motion*) van die planeet gestaak het en dat die truwaartse beweging (E: *retrograde motion*) van die planeet 'n aanvang neem.

Planete dryf stadig van wes-na-oos as 'n mens hulle teen die sterre-agtergrond waarneem en hul beweging teen hierdie agtergrond meet. Hierdie wes-na-oos beweging word hulle "voorwaartse beweging" genoem. Maar, omdat ons op die aarde ook om die son draai, gebeur dit soms dat die waargenome dryfrigting verander en vind dit in 'n van oos-na-wes rigting plaas, laasgenoemde beweging heet die "truwaartse beweging" van die planeet. Hierdie bewegings is baie duidelik waarneembaar by Mars en by Jupiter.

Aldus begin Jupiter van oos-na-wes te dryf vanaf 25 Desember. Hierdie truwaartse beweging van Jupiter duur vir 'n relatiewe lang tyd en Jupiter kom eers weer tot stilstand op 5 Oktober 2012, waarna dit weer voorwaarts beweeg. Gedurende hierdie tydperk (Desember 2011 tot Oktober 2012) bly Jupiter in die sterrebeelde Aries en Taurus en is sy waarneembare beweging heen en weer in dié sterrebeelde. Jupiter se "sideriese periode" (een omwenteling van die son) neem ongeveer 11.862 jaar (amper twaalf keer solank as dié van die aarde). Die truwaartse beweging is maklik om te verstaan indien 'n mens in aanmerking neem dat vir een wenteling van die aarde om die son, Jupiter slegs ongeveer 30° van sy wentelbaan om die son voltooi het, en die aarde dus vir Jupiter "verbygaan" en dan later weer by hom "opvang".

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