



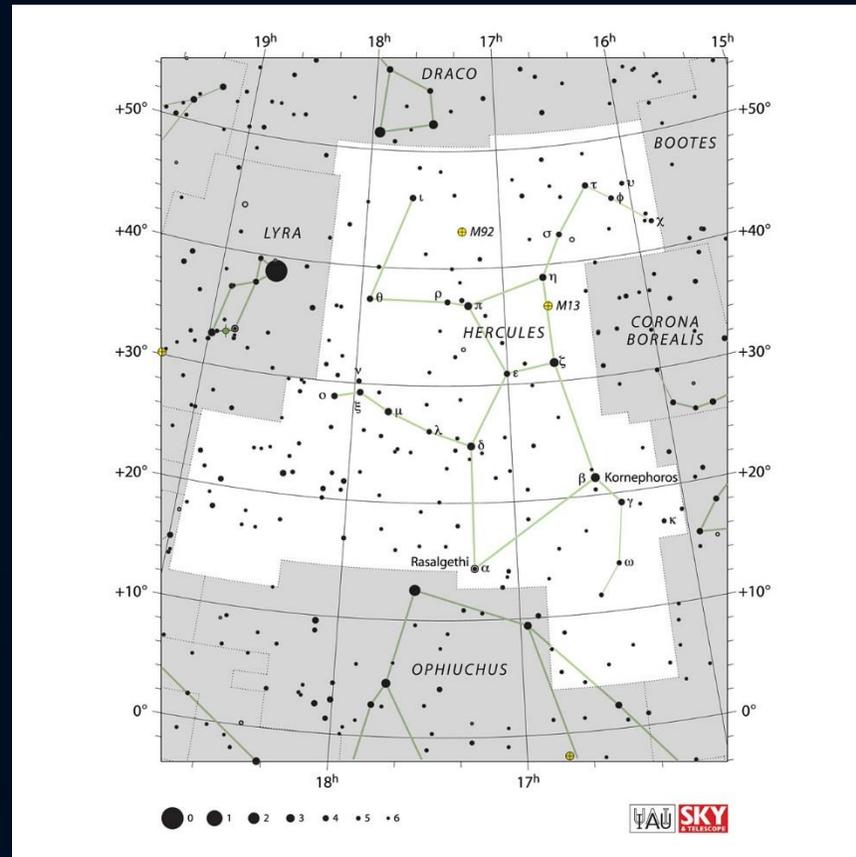
June Star Constellations 2015

NIGHT SKY TOUR

When to see Constellations

- (1) Hercules, the Hercules – June 13
- (2) Ophiunchus, the Serpent Bearer- June 11
- (3) Serpens Caput, the Serpent Head – June 6
- (4) Serpens Cauda, the Serpent Tail – June 6
- (5) Scorpius, the Scorpion – June 3
- (6) Ara, the Altar – June 3

Hercules (HER-kyuh-leez), the Hercules (Her) Herculis (Her-kyuh-liss)



Hercules

Meaning: Hercules (the hero)
Pronunciation: her' cue leez
Abbreviation: Her
Possessive form: Herculis (her' kyoo liss)
Asterisms: The Butterfly, The Keystone

Bordering constellations: Aquila, Boötes,
Corona Borealis, Draco, Lyra, Ophiuchus, Sagitta,
Serpens, Vulpecula

Overall brightness: 6.938 (48)

Central point: RA= 17h21m Dec. = +27.5°

Directional extremes: N = +51° S = +4° E = 18h56m
W = 15h47m

Messier objects: M13, M92

Meteor showers: 'r Herculids (3 Jun)

Midnight culmination date: 13 Jun

Bright stars: (129), & (183), (197), n (198)

Named stars: Cujam (o), Kajam (t), Kornephoros (o),
Maasym (2.), (ic), Marsik (ic), Ras Algethi (a),
Sarin ()

Near stars: LFT 1326-1327 (75), LFT 1273 (92), .t Her A-
B-C (107), LFT 1363 (113), Her A-B (174),
BD+3302777 (175), LFT 1371 (182), Ross 863
(187)

Size: 1225.15 square degrees (2.970% of the sky)

Rank in size: 5

Solar conjunction date: 12 Dec

Visibility: completely visible from latitudes: N of —39°
completely invisible from latitudes: S of —86°

Continued Hercules

Visible stars:

(number of stars brighter than magnitude 5.5): 85

Interesting facts:

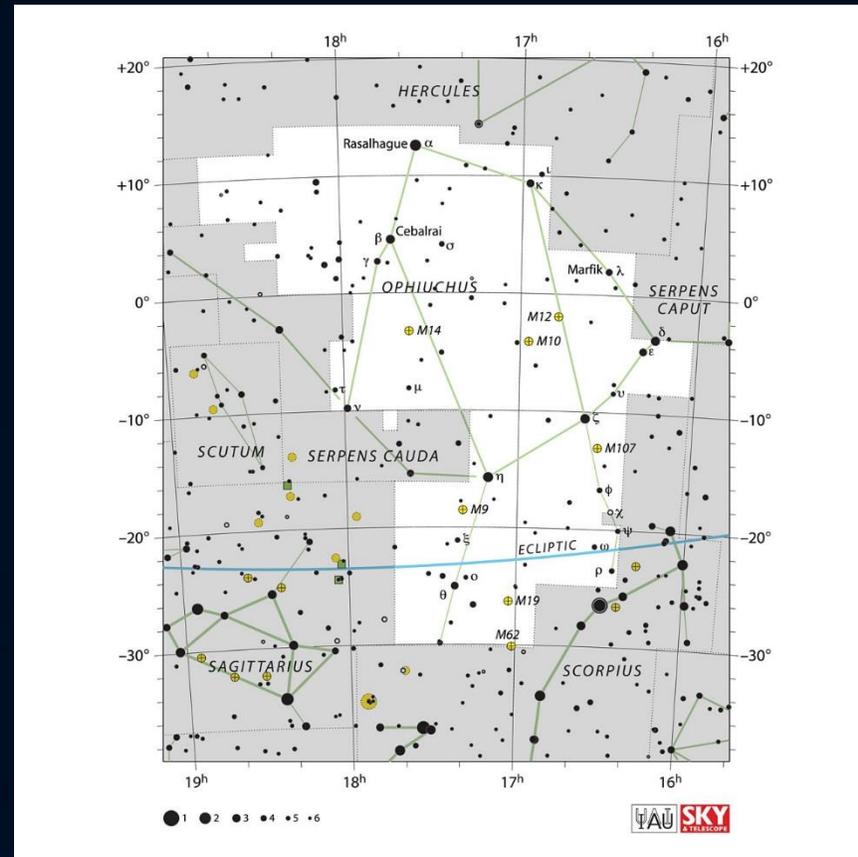
- 1) The solar apex, that point on the celestial sphere toward which the sun seems to be moving (due to its motion within the Milky Way) is found within this constellation. The approximate coordinates of the solar apex are RA = 18h Dec. = $+34^\circ$, about 30 south of the star ϵ Her.
- 2) The Great Globular Cluster in Hercules is one of the finest objects of its kind in the sky, surpassed only by the globular clusters Co Cen and 47 Tuc, both of which are located in the far southern sky. This cluster, also known as M13 and NGC 6205, was discovered in 1714 by Edmund Halley, who also

noted that it was visible to the unaided eye in a dark sky. Its magnitude is 5.7 and it can be found by looking $\frac{1}{3}$ of the way from ϵ Her to δ Her. It lies at an approximate distance of 25000 light years, and although estimates of the number of stars it contains vary, it can safely be said that this object is composed of more than 100 000 stars.

3) α Her is a wonderful example of a colorful double star. The primary of this pair is orange, and the fainter secondary star is - to this writer - olive green, although some very fine observers report seeing brighter shades of green in the light of this star.

Ophiunchus (OFF-ee-YOO-kus), the Serpent Bearer (Oph)

Ophiuchi (OFF-ee-YOO-kye)



Ophiuchus

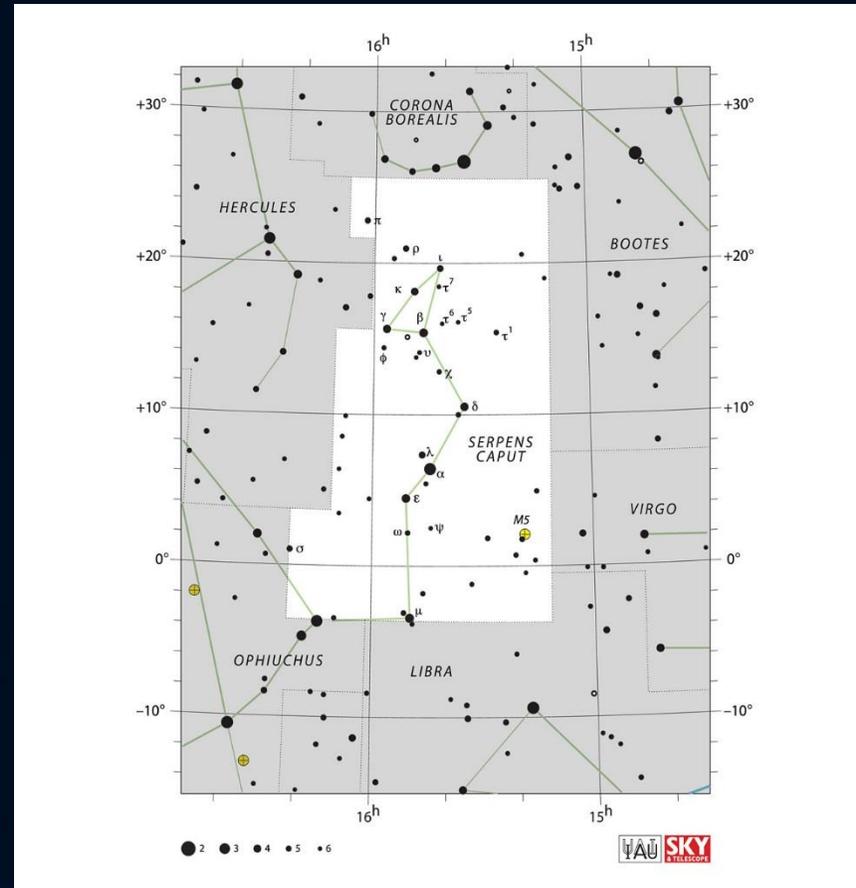
Meaning:	The Serpent Bearer	Named stars:	Cebalrai (13), Cheleb (13), Keib Alrai (13), Rasalhague (a), Sabik (11), Yed Posterior(E), Yed Prior ()
Pronunciation:	off ee oo' kus	Near stars:	Barnard's Star (3), Wolf 1061 (25), 70 Oph A-B(42), 36 Oph A-B (45), LIFT 1332(47), Wolf 629 (62), V1054 Oph A-B-C (72), Wolf 718 (99), Wolf 751 (176), Wolf 636 (190)
Abbreviation:	Oph	Size:	948.34 square degrees (2.299% of the sky)
Possessive form:	Ophiuchi (off ee oo' key)	Rank in size:	11
Asterisms:	The Bull of Poniatowski	Solar conjunction date:	12 Dec
Bordering constellations:	Aquila, Hercules, Libra, Sagittarius, Scorpius, Serpens	Visibility:	completely visible from latitudes: +60 to -76 portions visible worldwide
Overall brightness:	5.800 (62)	Visible stars:	(number of stars brighter than magnitude 5.5): 55
Central point:	RA = 17h 20m Dec. = -8°	Messier objects:	M9, M10, M12, M14, M19, M62, M107
Directional extremes:	N = +14° S = -30° E = 18h42m W = 15h58m	Meteor showers:	☉ Ophiuchids (13 Jun)
Midnight culmination date:	11 Jun	Bright stars:	a (56), η (83), ζ (95), 6 (115), 13(122)

Continued Ophiuchus

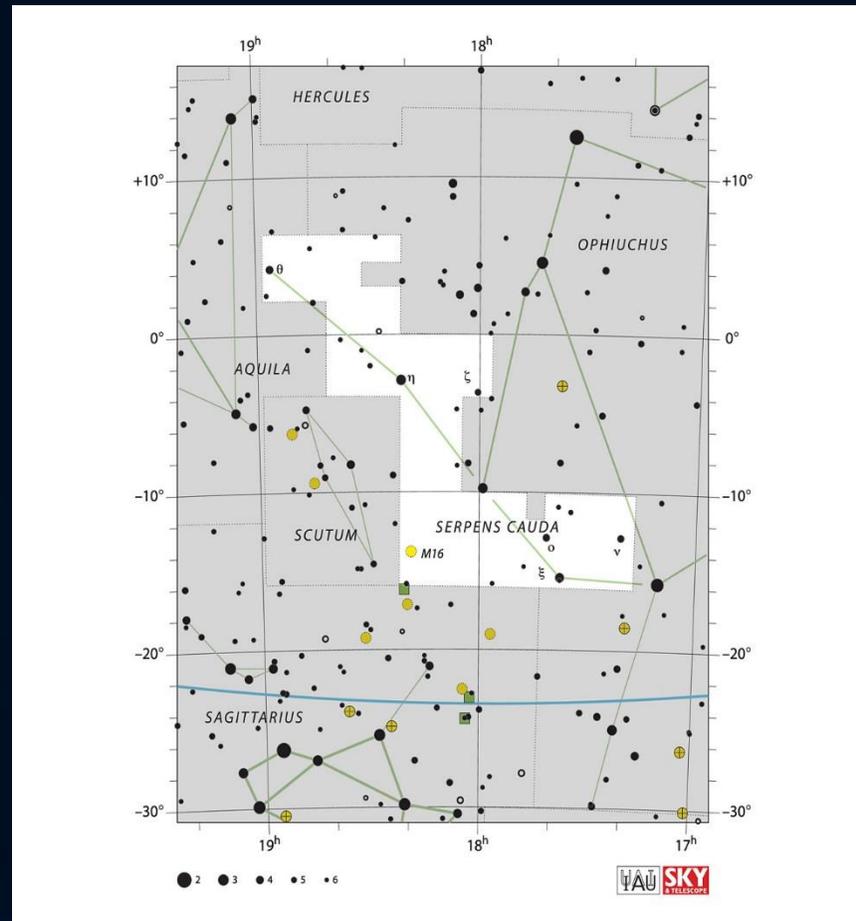
Interesting facts:

- 1) Within the constellation of Ophiuchus lies Barnard's Star, the star with the greatest proper motion of any in the sky. This 'runaway star,' as such stars were called in the last century, moves across our field of view at the rate of 10.29 seconds of arc per year. This means that in only 175 years, Barnard's Star will have changed its position by the width of the Moon! This is also a very nearby star. In fact, after the α Cen system, it is the nearest star to the Earth, lying at a distance of only 5.95 light years. Barnard's Star is a red dwarf star shining at an apparent magnitude of 9.5. Irregularities in its motion suggest to some the possible existence of planetary bodies in orbit around this star.
- 2) The most recent great supernova explosion in our Milky Way galaxy was observed in this constellation in the year 1604. It is known as 'Kepler's Nova,' due to the detailed study this astronomer made of this object, although Kepler was not the first to observe it. It was unusual that on the date the supernova first appeared, it was only 30 to the northwest of Mars and Jupiter, which were in conjunction, and only 40 to the east of Saturn. At maximum brightness, approximately three weeks after its discovery, this object shone at an estimated visual magnitude of -3.

Serpens Caput (SER-punz), the Serpent Head (Ser) Serpentis (ser-PEN-tiss)



Serpens Cauda (SER-punz), the Serpent Tail (Ser) Serpentis (ser-PEN-tiss)



Serpens

Meaning: The Serpent

Pronunciation: sir' pens

Abbreviation: Ser

Possessive form: Serpentis (sir pen' tiss)

Asterisms: None

Bordering constellations: Aquila, Boötes, Corona Borealis, Hercules, Libra, Ophiuchus, Sagittarius, Scutum, Virgo

Overall brightness: 5.652 (67)

Central point: RA = 16h55m Dec. = +5°

Directional extremes: N = +26° S = -16°

E = 18h56m W = 14h55m

Messier objects: M5, M16

Meteor showers: none

Midnight culmination date: 6 Jun

Bright stars: a (104)

Named stars: Alya (8), Cor Serpentis (a), Unuk al Hai (a)

Near stars: BD-304233 (93)

Size: 636.92 square degrees (1.544% of the sky)

Rank in size: 23

Continued Serpens

Solar conjunction date: 5 Dec

Visibility:

completely visible from latitudes: $+74^\circ$ to -64°
portions visible worldwide

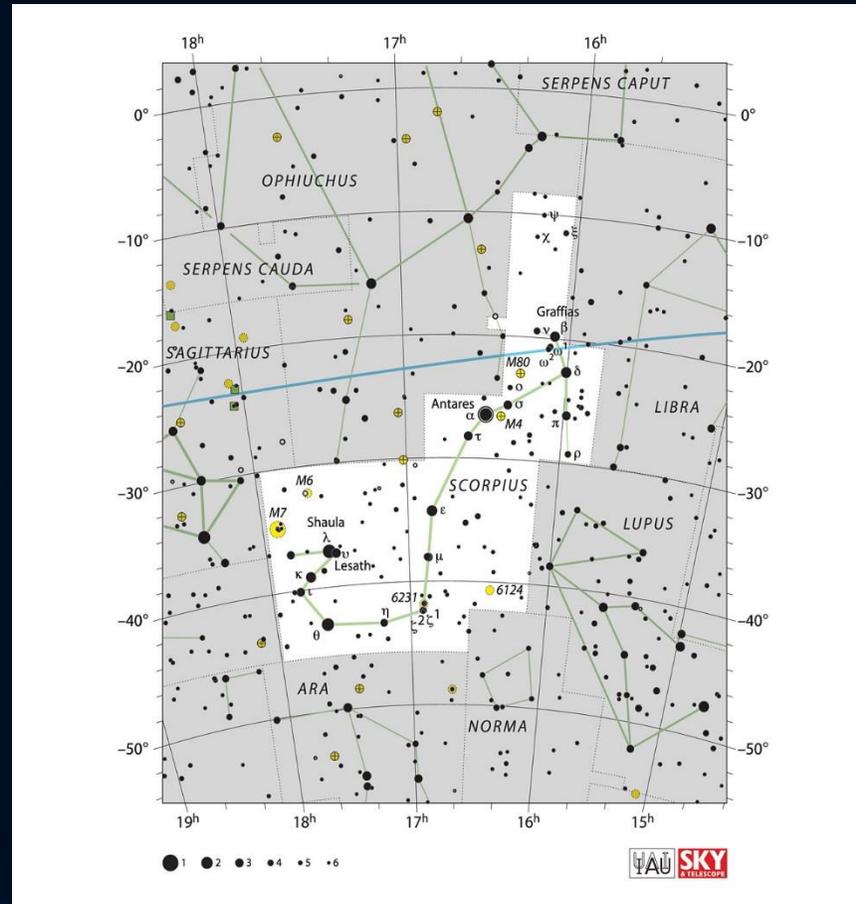
Visible stars: (number of stars brighter than magnitude 5.5): 36

Interesting facts:

(1) Approximately 10° directly north of β_3 Lib lies the magnificent globular cluster M5. Perhaps, in the entire northern sky, only M13 in Hercules is more wonderful.

(2) In this constellation is another noteworthy object on Messier's list, M16, the famous Eagle Nebula. Somewhat disappointing in small and medium-sized instruments, on long-exposure photographs, a magnificent diffuse nebula is revealed. Robert Burnham, Jr., in his famous *Celestial Handbook*, Dover, 1978 christened this object the 'Star-Queen Nebula.'

Scorpius (SCOR-pee-us), the Scorpion (Sco) Scorpii (SCOR-pee-eye)



Scorpius

Meaning: The Scorpion
Pronunciation: skor' pee us
Abbreviation: Sco
Possessive form: Scorpii (skor' pee ee)
Asterisms: The Fish Hook

Midnight culmination date: 3 Jun

Bright stars: a (15), ? (25), o (39), c (72), (76), K (81),
o (93), u (111), r (129), it (146), Y (147), i (176),
i.1 (182)

Bordering constellations: Ara, Corona Australis, Libra,
Lupus, Norma, Ophiuchus, Sagittarius

Named stars: Acrab (13), Al Niyat (r), AlNiyat(t), Antares((x),
Dschubba (s), Graffias (Q), Jabbah (v), Lesath(v),
Sargas (8), Shaula (X), Vespertilio ((x)

Overall brightness: 12.480 (10)

Central point: RA = 16h49m Dec. = -27°

Near stars: LFT 1358 (33), HD 156384 A-B-C (88),
LFT 1266-1267 (102)

Directional extremes: N = -8° S = -46° E = 17h55m
W = 15h44m

Size: 496.78 square degrees (1.204% of the sky)

Messier objects: M4, M6, M7, M80

Rank in size: 33

Solar conjunction date: 4 Dec

Meteor showers: a Scorpiids (3 May)
X Scorpiids (5 Jun)

Continued Scorpius

Visibility:

completely visible from latitudes: S of $+44^\circ$ completely invisible from latitudes: N of $+82^\circ$

Visible stars:

(number of stars brighter than magnitude 5.5): 62

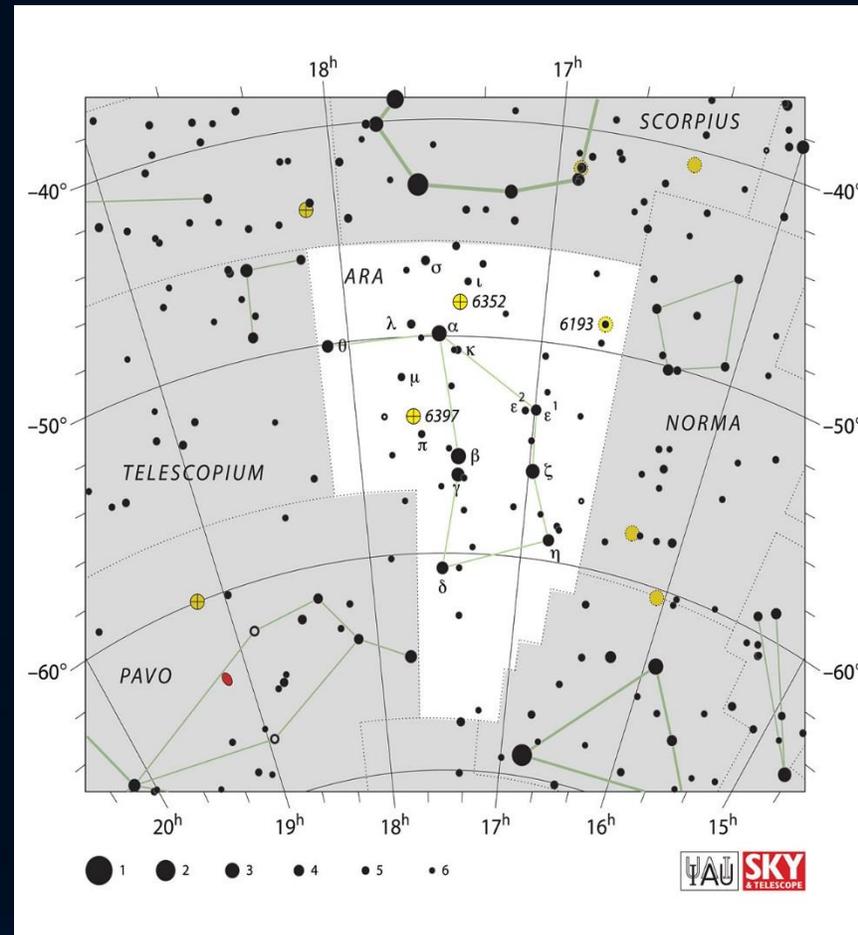
Interesting facts:

- (1) In ancient times, Scorpius also contained the stars of the present day constellation of Libra, the Scales. Libra represented the claws of the Scorpion.
- (2) α Sco, or Antares, is one of the four Royal Stars of the ancient Persians. The other three are Aldebaran (α Tau), Regulus (α Leo), and Fomalhaut (α PsA).

(3) α Sco is a reddish star, and since it lies in the band of the zodiac, the planets are often seen nearby. It was because of the frequent proximity of Mars, that this star received its name, 'Antares.' This title is a literal combination of the terms 'anti' and 'Ares,' meaning, of course, 'the rival of Mars.'

(4) About 5° NNE of ν Sco lies the strongest x-ray source in the sky. Designated Scorpius X-1, this object is a close binary star with an apparent magnitude of 13. One of the stars is probably a neutron star of high density. As gas enveloping the system streams into the intense gravitational and magnetic fields near this star, it is accelerated to speeds near that of light. The result is the emission of x-rays called synchrotron radiation.

Ara (AIR-uh, AR-uh), The Altar (Ara) Arae (Air-ee)



Ara

Meaning: The Altar
Pronunciation: air' uh
Abbreviation: Ara
Possessive form: Arae (air' eye)
Asterisms: none

Bordering constellations: Apus, Corona Australis,
Norma, Pavo, Scorpius,
Telescopium, Triangulum Australe

Overall brightness: 8.015 (34)
Central point: RA = 17h18m Dec.=-56.50
Directional extremes:N= -45° S=-68' E = 18h06m
W = 16h31m

Messier objects: none
Meteor showers: none

Midnight culmination date: 10 Jun
Bright stars: 13(137), a (158), (195)

Named stars: none
Near stars: LFT 1351 (30), 41 Ara A-B (103),
LFT 1297 (167)

Size: 237.06 square degrees (0.575% of the sky)

Rank in size: 63
Solar conjunction date: 9 Dec

Visibility: completely visible from latitudes: S of +22°
completely invisible from latitudes: N of +45°

Visible stars: (number of stars brighter than
magnitude 5.5): 19

Interesting facts: (1) NGC 6397, with a visual magnitude of 7.5, is probably the nearest globular cluster to our solar system. It lies at a distance of only 8400 light years.