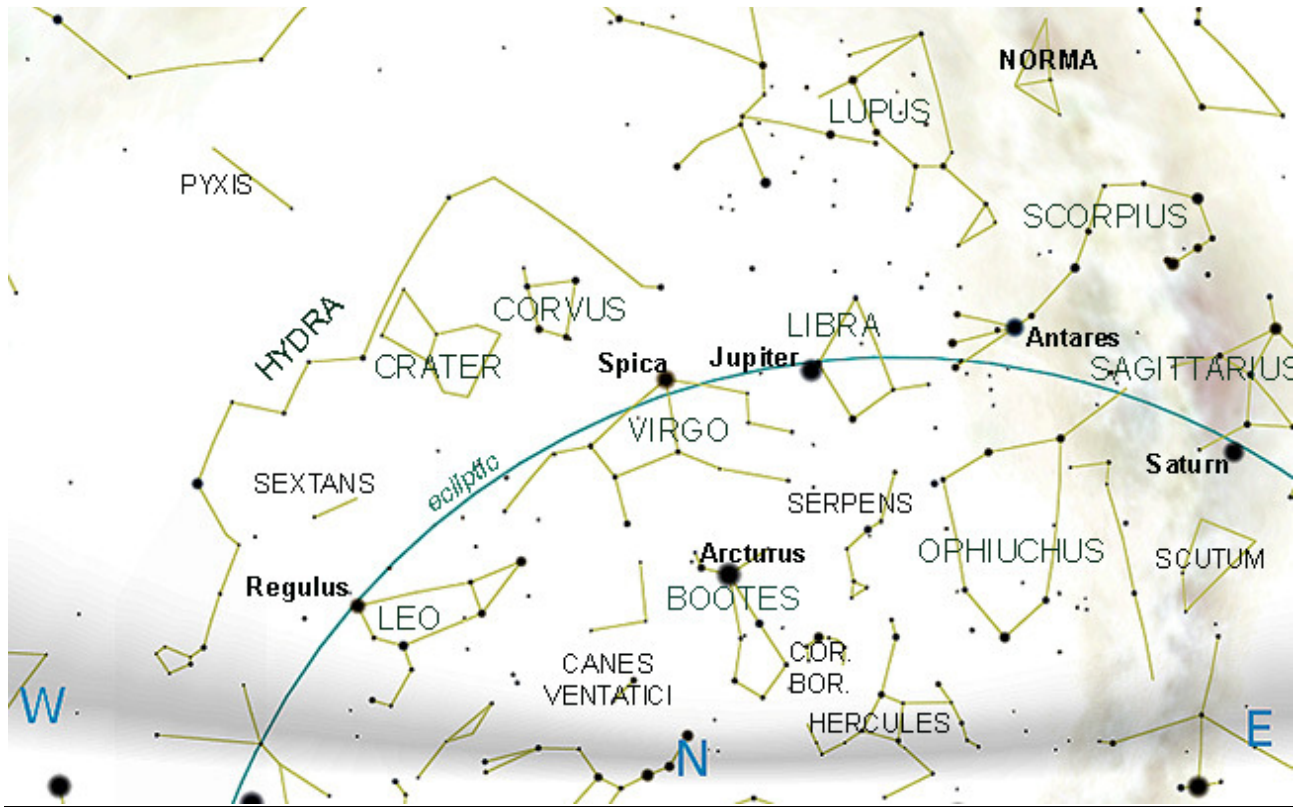


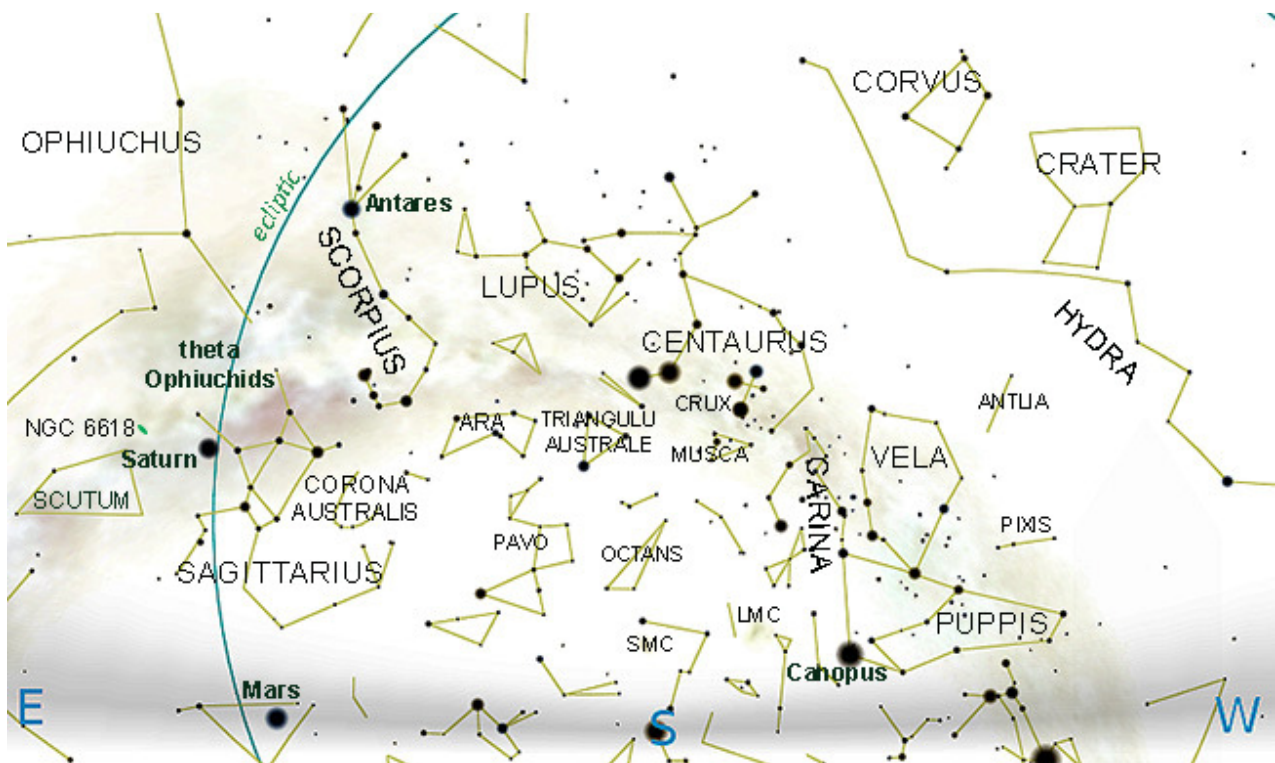


1. SKY CHARTS

EVENING SKY MID JUNE at 21^h00 (NORTH DOWN)



EVENING SKY MID JUNE at 21^h00 (SOUTH DOWN)



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

PLANET VISIBILITY

Mercury Too close to the Sun for observation
Venus the "Evening Star"
Mars Initially in the morning becoming visible throughout the night
Jupiter Initially throughout the night becoming visible in the evening
Saturn Throughout the night
Uranus Morning
Neptune Morning
Pluto Throughout the night

<i>Sun & Planets</i>	<i>JUNE 2018</i>		<i>1st</i>	<i>30th</i>
Sun Constellation Length of day	Taurus to Gemini 10h01 to 09h54	Rises:	07h40	07h50
		Transits:	12h41	12h47
		Sets:	17h42	17h44
Mercury Magnitude Phase Diameter	Taurus to Cancer -1.7 to -0.1 80% to 70% 8" to 5"	Rises:	07h13	09h25
		Transits:	12h17	14h27
		Sets:	17h20	19h30
Venus Magnitude Phase Diameter	Gemini to Leo - 4.0 80% to 70s% 13" to 16"	Rises:	10h20	10h22
		Transits:	15h11	15h38
		Sets:	20h03	20h54
Mars Magnitude Phase Diameter	Capricornus -1.2 to -2.1 91% to 96% 15" to 21"	Rises:	21h31	19h51
		Transits:	04h39	03h03
		Sets:	11h44	10h11
Jupiter Magnitude Diameter	Libra -2.5 to -2.3 44" to 41"	Rises:	16h11	14h10
		Transits:	22h56	20h54
		Sets:	05h45	03h41
Saturn Magnitude Diameter	Sagittarius +0.2 to +0.0 18"	Rises:	19h28	17h25
		Transits:	02h39	00h36
		Sets:	09h45	07h03
Uranus Magnitude Diameter	Aries +5.9 to +5.8 3"	Rises:	04h29	02h40
		Transits:	10h00	08h10
		Sets:	15h31	13h40
Neptune Magnitude Diameter	Aquarius +7.9 2"	Rises:	00h57	23h00
		Transits:	07h16	05h22
		Sets:	13h35	11h41
Pluto Constellation Magnitude	Sagittarius 14.2	Rises:	20h27	18h30
		Transits:	03h36	01h39
		Sets:	10h40	0844

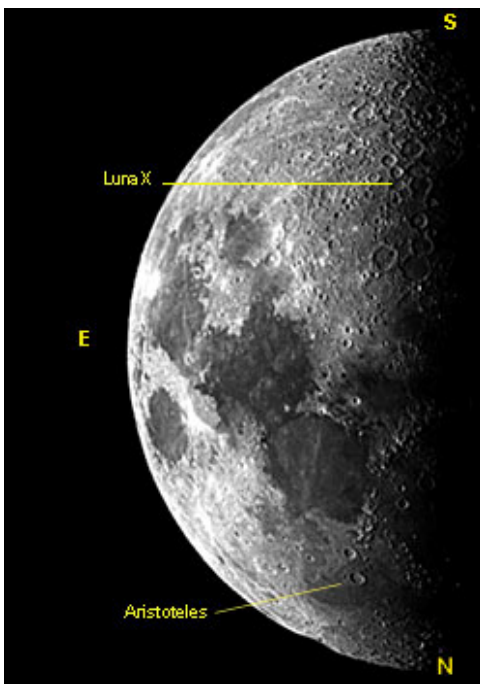
Notes to the table on page 2 above

Phase: In a telescope, the inner planets (Mercury, Venus and Mars) appear to us in phases, depending on the angle of the Sun’s illumination, as does the Moon. The **angular diameter** (ϕ) is given in arc seconds (“). This is the apparent size of the object as we see it from Earth. To illustrate this point, consider the average binoculars through which we see about 7° of sky. Therefore, for example, Mars at 19” on 1st June would cover approximately 1/1300th of the field of view.

Magnitude: we are accustomed to hearing stars described in terms of ‘magnitude’, for example Antares (in Scorpius) at +1.05 and the planet Jupiter, at magnitude -1.9. The latter is considerably brighter than Antares as the scale is ‘inverse’; the brighter the object, the lower the number. A ‘good’ human eye on a clear night can see down to a magnitude of about +6.

Transit: When an object crosses the local **meridian** it is said to ‘**transit**’. The local meridian is an imaginary line from the horizon directly north passing overhead to the horizon directly south.

1. THE SOLAR SYSTEM



THE MOON

Lunar Highlight (information from the 2018 *Sky Guide Africa South*):

ARISTOTELES

Type: A crater with 2 mountain peaks positioned off-centre towards the northern edge

Location: near the Moon’s northern limb

Diameter: 90 km

Notes: Its inner walls display some of the most complex terracing in any crater on the moon. Together with Eudoxus, forms a prominent pair visible with 10x binoculars

Best seen: 6 days after **New Moon** and 5 days after **Full Moon**

Eclipses (visible from Southern Africa):
No eclipses, solar or lunar, are predicted for this month.

METEOR SHOWERS

Name	Date & Time of Max	Duration	Radiant	ZHR velocity		Observing Prospect
				ZHR	velocity	
θ Ophiuchids *	13 th June 20h00 – 05h30	8 th - 16 th June	18° ENE of Antares (α Scorpii)	5	27	Favourable
June Lyrids	16 th June 23h30 – 02h00	11 th – 21 st June	3° S of Vega (α Lyrae) 16° above the horizon at 01h00	5	31	Favourable

* Whilst not a great hourly rate, the civilized time, if the weather be good, should make for a pleasant evening’s naked-eye stargazing in the Sagittarius – Ophiuchus region. So why not wrap up warm and make yourself comfortable?

2. HIGHLIGHTS FROM THE SKY GUIDE (viewed from Hermanus)

Date	Time	Item
1	02h50	Moon 2° north of Saturn
		Moon furthest south (-20.7°)
2	18h36	Moon at apogee (405 314 km)
		Moon near Pluto
3		Mercury near Aldebaran
		Moon near Mars
6	20h32	Last quarter Moon
		Mercury at perihelion and at superior conjunction
		Venus at greatest latitude north
		Moon near Neptune
8		5 th FREE STATE STAR PARTY (8 to 10 June) ¹
	18h00	Venus 4.7° south of Pollux
10	06h54	Moon (12%, waning gibbous) 4.2° south of Uranus
13	21h43	New Moon
		θ Ophiuchids maximum (see METEOR SHOWERS above)
15	01h56	Moon at perigee (359 506 km)
		Moon furthest north (+20.8°)
16		Mercury greatest latitude north
		Moon near Venus
		June Lyrids maximum (see METEOR SHOWERS above)
18		Moon near Regulus
19		Neptune stationary
		Vesta at opposition
20	12h51	First quarter Moon
	21h35	Lunar X visible ²
21	12H07	Southern Hemisphere winter solstice
24	00h30	Moon (87%, waxing gibbous) 4.2° north of Jupiter
27		Saturn at opposition
28	06h53	Full Moon
		Moon furthest south (-20.8°)
		Moon near Saturn
		Mars stationary
30		ASSA FINANCIAL YEAR END, ASSA SECTION REPORTS DUE
		INTERNATIONAL ASTEROID DAY
	04h44	Moon at apogee (406 059 km)

¹ The 5th FREE STATE STAR PARTY will be held from 8th to 10th June on the guest farm Gansvlei near Brandfort, about 50 km from Bloemfontein. There is accommodation for 40 people (mostly sharing) and there are numerous guest houses in the vicinity. Contact: assabfn@gmail.com [www.assabfn.co.za]

² From page 27 of SGAS: *Around the time of **first quarter** ... a highlighted X (latitude -25.8° longitude +1.1°) created by sunlight falling on the ridges between the craters la Caille, Blanchinus and Purbach. When the sun has an elevation about -0.84° as seen from the lunar surface, the Luna X is a striking feature and can be viewed even in binoculars.*

Not to be confused with “Luna 10”, the first satellite of the moon put into orbit by Russia!

3. STARGAZING

SUGGESTED OBSERVATION DAYS FOR JUNE:

Unless *specifically targeting the moon*, may I suggest the most convenient dates to plan evening stargazing in **June** are **3rd** (moonrise 21h58) to **16th** (moonset 20h49).

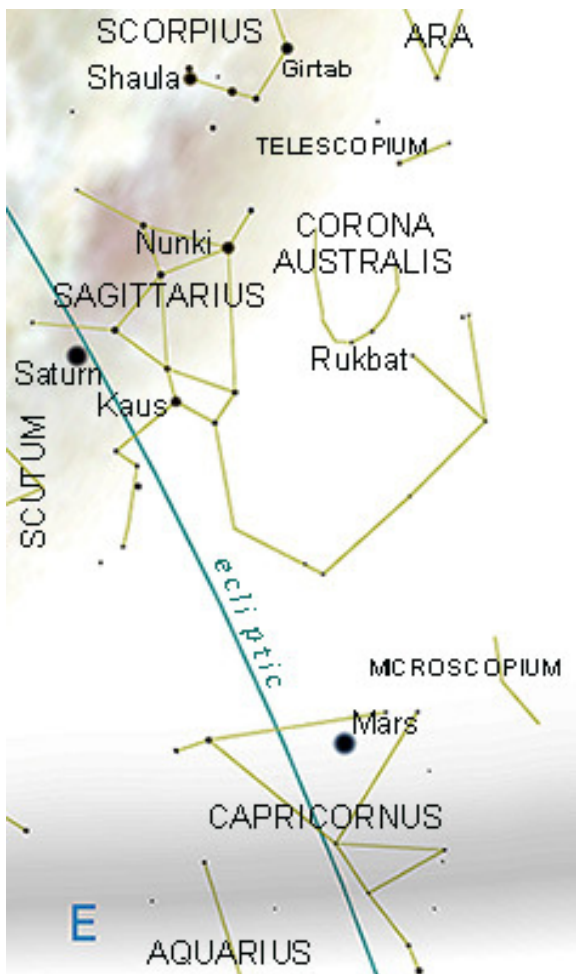


The next club stargazing evening is yet to be planned. Members will received e-mail notification. Please consult our diary of events on

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

NO 'SCOPE REQUIRED (or **Getting to Know The Constellations**)

I offer here some more tips for the less experienced enthusiast on getting to know the constellations and identifying some of the lesser-known features of the night sky.



Point the toes just south of east!

At about 22h00 on 13th June, coinciding with the **θ Ophiuchids** (see METEOR SHOWERS above), **Sagittarius** (the Archer) is rising in the eastern sky, lying some 25° above the horizon, a convenient height for naked-eye stargazing.

Sagittarius (the Archer) contains the “teapot” which is recognisable as such. Tilt the head to the left and see the handle containing **Kaus** (ε Sag) and the spout with **Nunki** (σ Sag). His left leg contains **Rukbat** (α Sag) and **Arkab** (β Sag).

Surrounding **Sagittarius**, moving clockwise, we have **Scorpius**, **Ara** (the Alter) and **Telescopium** above, with **Corona Australis** (the Southern Crown) nestled close in. Given good conditions, **Corona Australis** presents a fine array.

Down to the right is **Microscopium** then **Capricornus**, containing **Mars** right now, and then **Scutum** (the Shield) with **Saturn** close by.

For more on this distinctive constellation, see Ian Ridpath’s “Star Tales below.

4. DEEP SKY HIGHLIGHT (from the Sky Guide Africa South 2018)

The Swan Nebula (M 17, NGC 6618) [see south down chart on page 1]

RA 21h 29m 22sec Dec -16° 10' 26"

(extract from the Sky Guide)

The Graceful Swan Nebula in Sagittarius was first seen in the mid 1740s by the youthful Swiss astronomer Jean-Phillipe Loys de Chéseaux. Two decades later it was recorded by French comet hunter Charles Messier.

Binoculars show its rectangular shape and north-western tick-like feature clearly. Even a small telescope reveals its splendour, inspiring Carol Botha to write "I am sure this is one of the most beautiful sights in the heavens". A larger telescope shows the curved "head" of the Swan more distinctly, accounting for several of its other popular names: "Horseshoe" and "Omega Nebula".

The Swan is part of a massive star-forming complex about 5000 light years away. It spans at least 15 light years and weighs in at about 100 solar masses, making it more massive than the Orion Nebula.

From Ian Ridpath's "Star Tales"



Genitive: Sagittarii

Abbreviation: Sgr

Size ranking: 15th

Origin: One of the 48 Greek constellations listed by Ptolemy in the [Almagest](#)

Greek name: Τοξότης (Toxotes)

Sagittarius is depicted in the sky as a centaur, with the body and four legs of a horse but the upper torso of a man. He is shown wearing a cloak and drawing a bow, aimed in the direction of the neighbouring scorpion, Scorpius. Aratus spoke of the Archer, Τοξότης (Toxotes), and his Bow, Τόξον (Toxon), as though they were separate constellations. Most likely this is because the stars of the bow and arrow are the most distinctive part of the figure. They form the asterism that we now know as the Teapot.

Sagittarius is a constellation of Sumerian origin that represented PA.BIL.SAG, a god of war and hunting whom they depicted as a centaur-like archer with wings. The Sumerian figure was subsequently adopted by the Greeks, although without the wings. As a result there are no particular myths associated with this constellation and the Greek mythographers were confused as to its identity.

Some doubted that this was a centaur at all, among them Eratosthenes who gave as one of his reasons the fact that centaurs did not use bows. Instead, Eratosthenes described Sagittarius as a two-legged creature with the tail of a satyr. He said that this figure was Crotus, son of Eupheme, the nurse to the Muses, who were nine daughters of Zeus. The Roman mythographer Hyginus in his Fabulae added the information that the father of Crotus was Pan, agreeing with Eratosthenes that the archer was a satyr rather than a centaur.

Crotus was said to have invented archery and often went hunting on horseback. He lived on Mount Helicon among the Muses, who enjoyed his company. They sang for him, and he applauded them loudly. The Muses requested that Zeus place him among the stars, where he is seen demonstrating the art of archery. In the sky he was given the hind legs of a horse because he was a keen horseman.

Aratus and Ptolemy, though, both spoke of the archer as a four-legged creature, which is how he is usually depicted. Ptolemy described him with a flowing cloak, known as the ephaptis, attached at his shoulders. By his forefeet is a circle of stars that Hyginus said was a wreath 'thrown off as by one at play'. This circlet of stars is the constellation Corona Australis.

Sagittarius was sometimes misidentified as Chiron, a wise and scholarly centaur. But Chiron is in fact represented by the other celestial centaur, the constellation Centaurus.

Stars of Sagittarius

Alpha Sagittarii is called Rukbat, from the Arabic rukbat al-rami, 'knee of the archer'. Beta Sagittarii is called Arkab, from the Arabic name meaning 'the archer's Achilles tendon'. Gamma Sagittarii is Alnasl, from the Arabic meaning 'the point', referring to the tip of the archer's arrow.

Delta, Epsilon, and Lambda Sagittarii are respectively called Kaus Media, Kaus Australis, and Kaus Borealis. The word Kaus comes from the Arabic al-qaus, 'the bow', while the suffixes are Latin words signifying the middle, southern, and northern parts of the bow. Zeta Sagittarii is Ascella, a Latin word meaning 'armpit'. All these names closely follow the descriptions of the stars' positions given by Ptolemy in his Almagest.

Last, but not least, is Sigma Sagittarii, called Nunki. This name was applied relatively recently by navigators, but it was borrowed from a list of Babylonian star names. The Babylonian name NUN-KI was given to a group of stars representing their sacred city of Eridu on the Euphrates. The name has now been applied exclusively to Sigma Sagittarii, and is reputed to be the oldest star name in use.

Ptolemy in the Almagest inexplicably classified the stars that we know as Alpha and Beta Sagittarii as second magnitude, when they are in fact fourth. Bayer, who lived too far north to see these stars for himself, accepted Ptolemy's assessment and labelled them Alpha and Beta. (Al-Şūfī had corrected the mistake in his Book of the Fixed Stars, but Bayer ignored him.) In fact, Alpha Sagittarii is only the 15th brightest star in the constellation, over seven times fainter than the brightest star, Epsilon, which is mag. 1.8 (wrongly assessed by Ptolemy as third magnitude).

Tea, with milk

Among present-day astronomers, the shape outlined by the eight main stars of Sagittarius (Gamma, Delta, Epsilon, Lambda, Phi, Sigma, Tau, and Zeta) is popularly known as the Teapot. Its handle consists of Phi, Sigma, Tau, and Zeta, the top of the lid is marked by Lambda, while Delta, Epsilon, and Gamma are the triangular spout. This same group of stars, with the addition of Mu Sagittarii, was originally visualized as the archer's bow and arrow.

A subset of these stars – Lambda, Phi, Sigma, Tau, and Zeta – form a ladle shape called the Milk Dipper, fittingly placed in a rich area of the Milky Way. Ancient Chinese astronomers also imagined a dipper among these same stars.

Sagittarius contains dense Milky Way star fields that lie towards the centre of our Galaxy. The exact centre of the Galaxy is believed to be marked by a radio-emitting source that astronomers call Sagittarius A, near the border with Ophiuchus, close to the point of the archer's arrow. There are many notable objects in Sagittarius, including the Lagoon Nebula and the Trifid Nebula, two clouds of gas lit up by stars inside them.

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Please keep in touch...

Don't forget to have a look at our excellent website, edited by Derek Duckitt.
<http://www.hermanusastronomy.co.za/>

Also...

ASSA website <http://assa.saa0.ac.za>
[ASSA Deep-Sky Section](#)
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