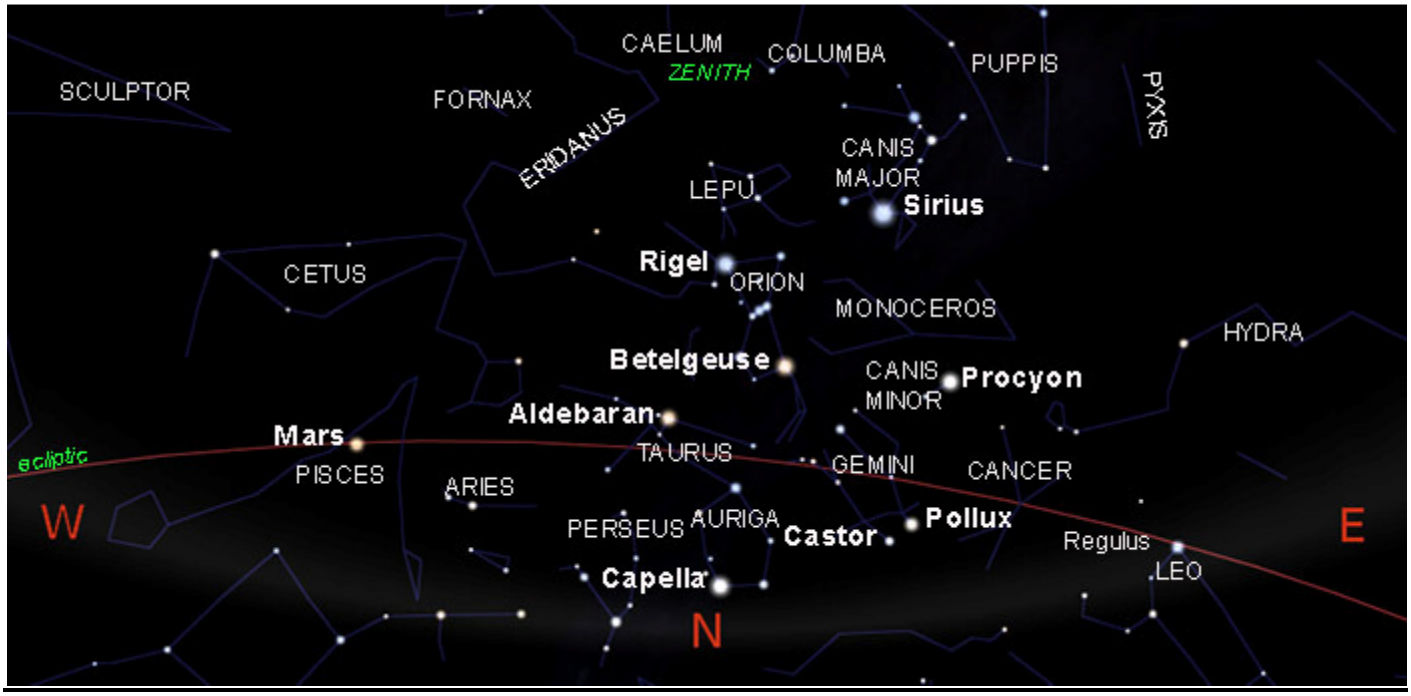
Hermanus
Astronomy Centre

Sky Maps

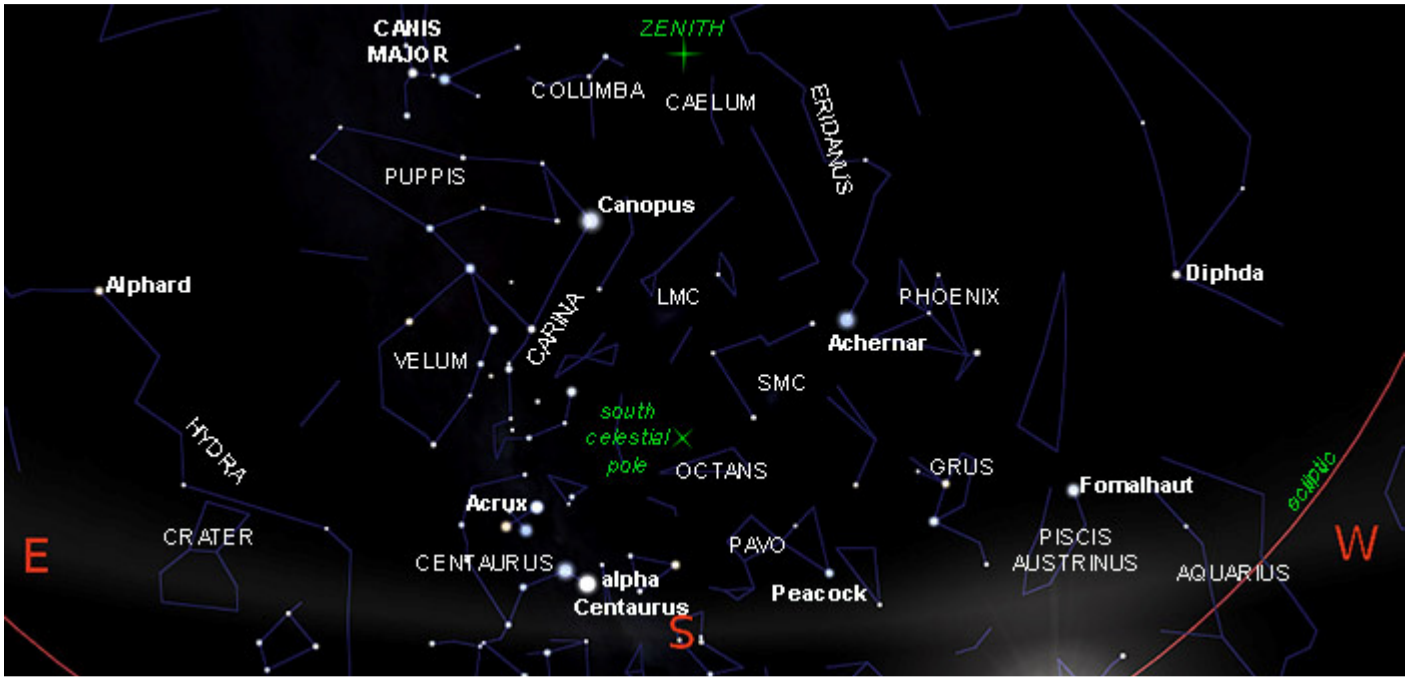
FEBRUARY 2019

1. SKY CHARTS

EVENING SKY 1st FEBRUARY at 21h00 (NORTH DOWN)



EVENING SKY 1st FEBRUARY at 21h00 (SOUTH DOWN)



2. HIGHLIGHTS FROM THE SKY GUIDE

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

Date	Time	Item
1		*ASSA SCHOLARSHIPS APPLICATION DEADLINE*
		Mercury at greatest latitude south
		Titan at maximum separation from **Saturn**
2	07h45	**Moon** 0.9º north of **Saturn**
	22h19	**Moon** 1.4º north of **Pluto**
	04h07	**Moon** (4%) occults 3.5 magnitude **ksi-2 Sagittarii** (37 Sgr, HIP93085)
		Moon furthest south (-21.5º)
		Callisto at maximum separation from **Jupiter**
4	23h04	**New Moon**
5	11h28	**Moon** at apogee (406 555 Km)
		Moon near **Mercury**
6		**Moon** near **Vesta**
7		**Moon** near **Neptune**
8		**Titan** at maximum separation from **Saturn**
9		**Callisto** at maximum separation from **Jupiter**
		Titan at maximum separation from **Saturn**
10		**Moon** near **Mars**
		Callisto at maximum separation from **Jupiter**
		Titan at maximum separation from **Saturn**
11		**Moon** (30%) 4.1º south-west of **Uranus**
12	04h13	**Lunar-X** feature forms *
13		**First quarter Moon**
		Mars 0º59' north of **Uranus**
14		**Moon** near **Aldebaran**
16		**Moon** furthest north (+21.6º)
	23h45	**Moon** (87%) occults 3.5 magnitude **δ Gem**
17		**Callisto** at maximum separation from **Jupiter**
		Titan at maximum separation from **Saturn**
18		**Venus** near **Saturn**
19	17h54	**Full Moon** (Super Moon)
	11h07	**Moon** at perigee (356 761 Km)
		Moon near **Regulus** (
		Mercury near **Neptune** (0º40.3')
		Callisto at maximum separation from **Jupiter**
20		**Callisto** at maximum separation from **Jupiter**
23		**Venus** near **Pluto**
24		**Titan** at maximum separation from **Saturn**
25		**Mercury** at perihelion
		Titan at maximum separation from **Saturn**
26	13h28	**Last quarter Moon**
27		**Moon** near **Jupiter**
		Mercury at greatest elongation (18º)
		Callisto at maximum separation from **Jupiter**

* **SPOTTING THE LUNA-X** Please see the detailed guide attached to the e-mail.

3. THE SOLAR SYSTEM

FEBRUARY 2019			1st February	1st March	Visibility
Sun Length of day	Capricornus to Aquarius 13h 46m	Rises:	06h03	06h30	***Never look directly at the sun without suitable eye protection!***
		Transit:	12h57	12h55	
		Sets:	19h49	19h20	
Mercury Magnitude Phase Diameter	Cap to Pisces -1.4 to +0.0 37% 8”	Rises:	06h08	07h58	**Too close to sun**
		Transit:	13h06	13h57	
		Sets:	20h03	19h56	
Venus Magnitude Phase Diameter	Sagittarius -4.3 to -4.1 62% to 72% 19” to 16”	Rises:	02h42	03h14	**Morning**
		Transit:	09h45	10h14	
		Sets:	16h49	17h13	
Mars Magnitude Phase Diameter	Pisces to Aries +0.9 to +1.2 89% to 91% 6” to 5”	Rises:	11h36	11h18	**Evening**
		Transit:	17h15	16h37	
		Sets:	22h54	21h56	
Jupiter Magnitude Diameter	Ophiuchus -1.9 to – 2.0. 34” to 36”	Rises:	01h58	00h25	**Morning**
		Transit:	09h06	07h33	
		Sets:	16h13	14h41	
Saturn Magnitude Diameter	Sagittarius +0.6 15” to 16”	Rises:	03h56	02h19	**Morning**
		Transit:	11h03	09h25	
		Sets:	18h10	16h30	
Uranus Magnitude Diameter	Pisces +5.8 3”	Rises:	03h56	10h27	**Evening**
		Transit:	17h45	15h58	
		Sets:	23h17	21h30	
Neptune Magnitude Diameter	Aquarius +8.0 2”	Rises:	08h43	06h57	**Evening then moving too close to sun**
		Transit:	15h03	13h17	
		Sets:	21h24	19h36	
Pluto Magnitude	Sagittarius +14.3	Rises:	04h26	02h39	**Morning**
		Transit:	11h31	09h45	
		Sets:	18h37	16h50	

Notes to the table 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** is given in arc seconds (“). This is the apparent size of the object as we see it from Earth.

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 (say) magnitude -1.8. 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 (through *zenith,* see charts on page 1) to the horizon directly south.

THE MOON

Lunar Highlight (information from the 2019 *Sky Guide Africa South):*

MARE CRISIUM (Sea of Crises)

Type: Dark basaltic plain formed by volcanic eruptions.

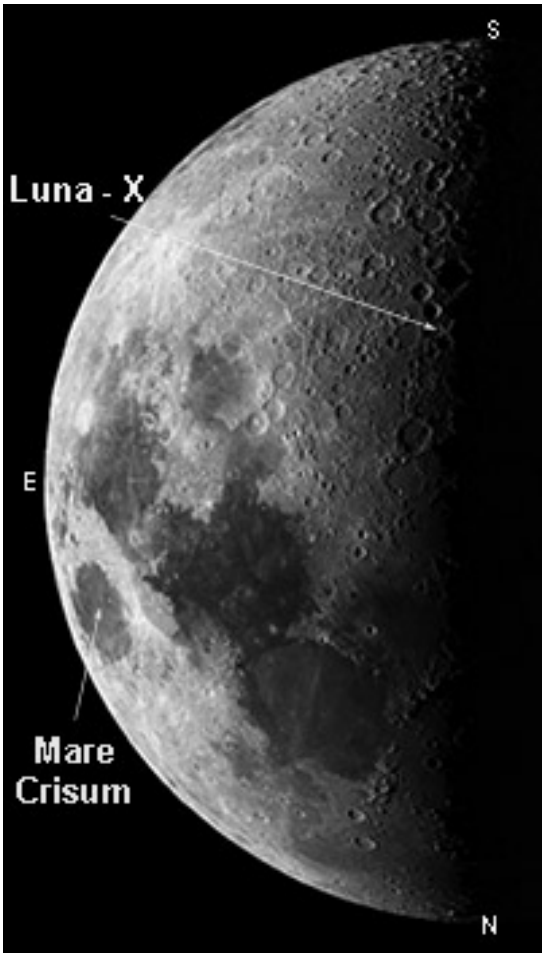
Diameter: 638 Km

Age: about 3.8 billion years

Notes: Like most lunar maria, it was named by the Italian astronomer Giovanni Riccioli, pioneer lunar scholar who first named features on the moon for scientists. He published one of the earliest books on astronomy, *Almagestum Novum*, in 1651. Nearly circular, it is notably the only "land-locked" mare on the moon.

Best seen: three days after **New Moon** and two days after **Full Moon**.

Location: Near the east-north-eastern limb.



ECLIPSES

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*
α Centaurids	7^{h} February 22h00 to 03h30	28th January to 21st February	Very close to **Hadar** (β Centauri)	<5	50	Favourable

Guide to the table above:

ZHR – zenithal hourly rate
vel. - velocity in km per second

For more details regarding meteor watching, please see the Sky Guide Africa South (SGAS), pages 86- 87

4. STARGAZING

SUGGESTED OBSERVATION DAYS FOR late JANUARY 2019 to early FEBRUARY 2019: Unless *specifically* targeting the moon, may I suggest the most convenient dates to plan evening stargazing are from **24th January** (moonrise 22h35) to **7th February** (moonset 21h24) then from **24th February** (moonrise 22h53) to **8th March** (moonset 20h27).

*The next club stargazing evening is provisionally planned for **1st February 2019.** Members will receive updated information by e-mail (and, remember, it's always weather dependant!). Please check our website calendar (http://www.hermanusastronomy.co.za) closer to the date for confirmation of the event and venue (probably **Gearing's Point**).*

5. DEEP SKY HIGHLIGHTS

Observation Preparation

To improve the enjoyment and aims of your evening's observation, may I suggest the following checklist be completed before venturing out with 'scope or binos.

- Target plan with, where applicable, guide stars and/or RA/DE
- Observation report form and pen or pencil
- Charts with appropriate sky areas
- Instruments required (binoculars and/or telescope with appropriate eyepieces, etc.)
- Headlight
- Appropriate clothing
- Chair, side table

The PLEIADES (M45, 'The Seven Sisters')

The beautiful **Pleiades** cluster is among the nearest to Earth and most easily seen and identified. Containing hundreds of stars, with only a handful visible to the naked eye, some are surrounded by swirls of nebulosity. This blue nebulosity, although prominent as a result of reflection from nearby cluster members, is unrelated to the cluster which is only passing through a particularly dusty region of the interstellar medium.

In Greek mythology, the Pleiads were the seven daughters of Atlas, a Titan who held up the sky, and the oceanid Pleione, protectress of sailing. The sisters were Maia, Electra, Alcyone, Taygete, Asterope, Celaeno and Merope. The Pleiades were sometimes said to be nymphs in the train of Artemis.

The PLEIADES (M45)

Description	Star cluster
Distance	Average 444 LY
Location	Constellation Taurus, approximately 13º north-west of Aldebaran
J2000 coordinates	RA 3h47m29s Dec +24º06'18"
Guide star	Aldebaran

Visibility

Naked eye	About 6 stars
Binoculars	More than 100 stars
Small telescope	Yes
Modest telescope	Yes

Further comment

This image, taken from Galileo's drawing, is north down, in other words, as we see it. He, of course, drew it south down.

Note the lovely bending trail of (unrelated) stars to the south-east!

Taurus The bull

Genitive: Tauri
Abbreviation: Tau
Size ranking: 17th
Origin: One of the 48 Greek constellations listed by Ptolemy in the Almagest
Greek name: Ταῦρος (Tauros)
:

Taurus (Ταῦρος in Greek) is a distinctive constellation, with star-tipped horns and a head defined by a V-shaped group of stars. Two Greek bull-myths were associated with Taurus. Usually it was said to represent Zeus in the disguise he adopted for another of his extramarital affairs, this time as the bull that carried away Europa, daughter of King Agenor of Phoenicia. Europa liked to play on the beach with the other girls of Tyre. Zeus instructed his son Hermes to drive the king's cattle from their pastures on the mountain slopes towards the shore where the girls were playing. Adopting the shape of a bull, Zeus surreptitiously mingled with the lowing herd, awaiting his chance to abduct Europa. There was no mistaking who was the most handsome bull. His hide was white as fresh snow and his horns shone like polished metal.

Europa was entranced by this beautiful yet placid creature. She adorned his horns with flowers and stroked his flanks, admiring the muscles on his neck and the folds of skin on his flanks. The bull kissed her hands, while inwardly Zeus could hardly contain himself in anticipation of the final conquest. The bull lay on the golden sands and Europa ventured to sit on his back. At first, she feared nothing when the bull rose and began to paddle in the surf. But she became alarmed when it began to swim strongly out to sea. Europa looked around in dismay at the receding shoreline and clung tightly to the bull's horns as waves washed over the bull's back. Craftily, Zeus the bull dipped more deeply into the water to make her hold him more tightly still. By now, Europa had realized that this was no ordinary bull. Eventually, the bull waded ashore at Crete, where Zeus revealed his true identity and seduced Europa. He gave her presents that included a dog that later became the constellation Canis Major. The offspring of Zeus and Europa included Minos, king of Crete, who established the famous palace at Knossos where bull games were held.

An alternative story says that Taurus may represent Io, another illicit love of Zeus, whom the god turned into a heifer to disguise her from his wife Hera. But Hera was suspicious and set the hundred-eyed watchman Argus to guard the heifer. Hera, furious at this, sent a gadfly to chase the heifer, who threw herself into the sea and swam away.

In the sky, only the front half of the bull is shown. This can be explained mythologically by assuming that the hind quarters are submerged. In reality, there is no space in the sky to show the complete bull, for it is too big. The constellations Cetus and Aries lie where the bull's hind quarters would otherwise be. Taurus shares with Pegasus this uncomfortable fate of having been sliced in half in the sky. Adding to the awkwardness, Taurus moves across the sky backwards, as though retreating from Orion.

Aratus described the bull as 'crouching', and star maps have traditionally depicted Taurus with its front legs folded, perhaps lowering itself to entice Europa onto its back. Manilius described the bull as lame and drew a moral from it: 'The sky teaches us to undergo loss with fortitude, since even constellations are fashioned with limbs deformed', he wrote.

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.saao.ac.za
ASSA Deep-Sky Section
Whatsapp chat group: [074 100 7237]
Official Big 5 of the African Sky web page
Official Big 5 Facebook group
ASSA Deep-Sky Section mailing list

Contact ASSA

Get in touch with officers of the Society - we're real people with a passion for astronomy, so **contact us** and let's talk!
You can find us on Facebook, Twitter, the ASSA Info mailing list and the ASSA Discussion mailing list.

Grateful thanks to the following:

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