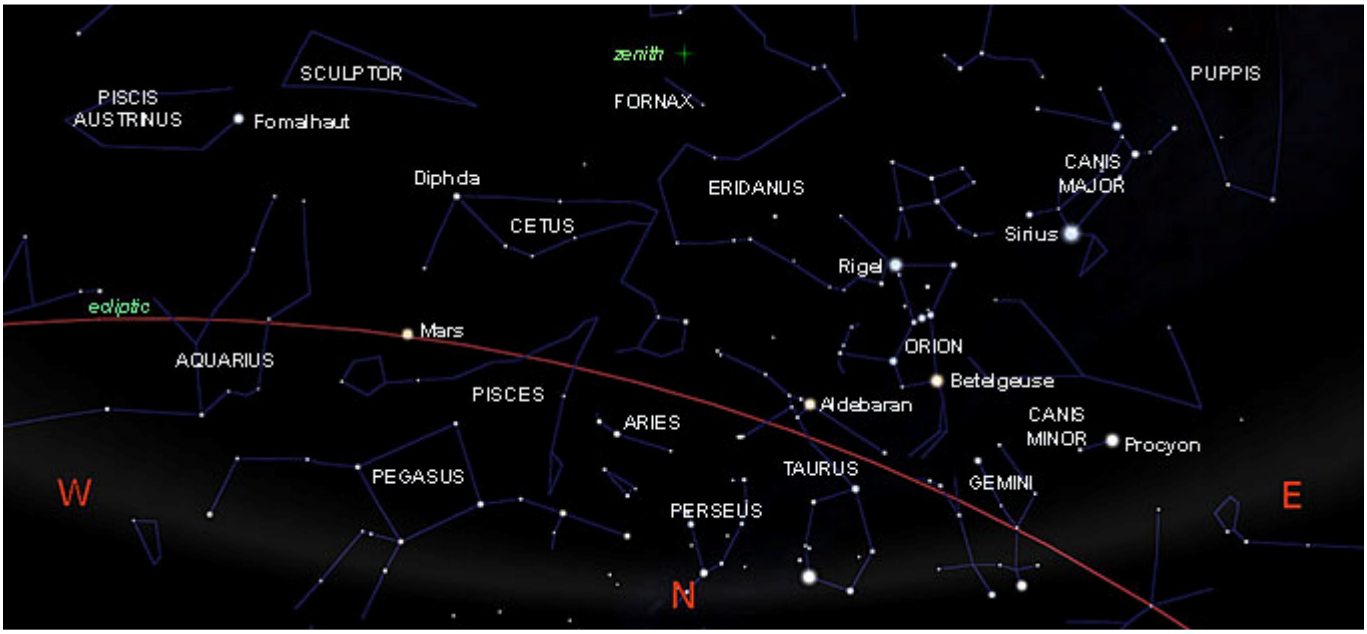
Hermanus
Astronomy Centre

Sky Maps

JANUARY 2019

1. SKY CHARTS

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



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

2. HIGHLIGHTS FROM THE SKY GUIDE

Date	Time	Item
1	23h47	**Moon** 2º NNE of **Venus**
		Saturn at conjunction
3		**Earth** at aphelion
		Moon near **Jupiter**
4	21h27	**Moon** passes 3.4º north of **Mercury**
5		**Moon** near **Saturn**
		Moon furthest south (-21.5º
6	03h28	**New Moon**
		Venus at greatest western elongation (47º)
		Moon near **Pluto**
7		**Titan** at maximum separation from **Saturn**
		Uranus stationary
8		**Callisto** at maximum separation from **Jupiter**
		Titan at maximum separation from **Saturn**
9	06h30	**Moon** at apogee (406 114 Km)
10		**Mercury** at southernmost elongation for the year (-24.1º)
11	02h45	**Moon** passes 2.3º SSW of **Neptune**
		Pluto at conjunction
12		**Mercury** at aphelion
13	02h45	**Moon** 2.3º SSW of **Mars**
		Mercury near **Saturn**
	14h35	**Luna-X** feature forms, visible in the evening
14	08h46	**First quarter Moon**
		Moon near **Uranus**
16		**Callisto** at maximum separation from **Jupiter**
		Titan at maximum separation from **Saturn**
17	19h49	**Moon** passes 2.3º north of **Aldebaran**
		Venus at greatest latitude north
18		**Mercury** near **Pluto**
	20h24	**Moon** (87% waxing) occults **ζ Tauri** (2.95 magnitude**,** dark limb event)
20		**Moon** furthest north (+21.6º)
21	07h16	**Full Moon**, Super Moon, total lunar eclipse (see ECLIPSES on page 4 below)
	21h59	**Moon** at perigee (357 344 Km)
22	20h15	**Venus** 2.4º north of **Jupiter**
23		**Moon** near **Regulus**
		Callisto at maximum separation from **Jupiter**
24		**Callisto** at maximum separation from **Jupiter**
		Titan at maximum separation from **Saturn**
25		**Titan** at maximum separation from **Saturn**
26		**Callisto** at maximum separation from **Jupiter**
	23h10	**Last quarter Moon**
30		**Mercury** at superior conjunction
31	20h21	**Moon** passes 0.8º north of **Venus**

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

3. THE SOLAR SYSTEM

JANUARY 2019			*1st*	*31st*	*Visibility*
Sun Length of day	Sagittarius to Capricornus 14h24 – 13h48	Rises:	05h35	06h03	***Never look directly at the sun without suitable eye protection!***
		Transit:	12h47	12h57	
		Sets:	19h59	19h50	
Mercury Magnitude Phase Diameter	Ophiuchus to Cap -0.4 to -1.4 89% to 100% 5”	Rises:	04h24	06h04	**Low in east before sunrise then too close to sun**
		Transit:	11h36	13h03	
		Sets:	18h49	20h01	
Venus Magnitude Phase Diameter	Libra to Ophiuchus -4.5 to -4.3 47% to 62% 26” – 19”	Rises:	02h44	02h42	**Morning**
		Transit:	09h30	09h45	
		Sets:	16h17	16h48	
Mars Magnitude Phase Diameter	Pisces +0.5 to +0.9 87% to 89% 7” - 6”	Rises:	11h58	11h37	**Evening**
		Transit:	18h01	17h17	
		Sets:	00h06	22h56	
Jupiter Magnitude Diameter	Ophiuchus -1.8 to -1.9 32” to 34”	Rises:	03h37	02h02	**Low in east before sunrise**
		Transit:	10h42	09h09	
		Sets:	17h47	16h16	
Saturn Magnitude Diameter	Sagittarius +0.5 to +0.6 15”	Rises:	05h42	04h00	**Too close to the sun then low in east before sunrise**
		Transit:	12h50	11h07	
		Sets:	19h58	18h13	
Uranus Magnitude Diameter	Pisces +5.8 4” to 3”	Rises:	14h13	12h17	**Evening**
		Transit:	19h46	17h49	
		Sets:	01h23	23h22	
Neptune Magnitude Diameter	Aquarius +7.9 to +8.0 2”	Rises:	10h41	08h47	**Evening**
		Transit:	17h02	15h08	
		Sets:	23h24	21h28	
Pluto Magnitude	Sagittarius +14.3	Rises:	06h23	04h30	**Early evening**
		Transit:	13h29	11h36	
		Sets:	20h35	18h41	

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.

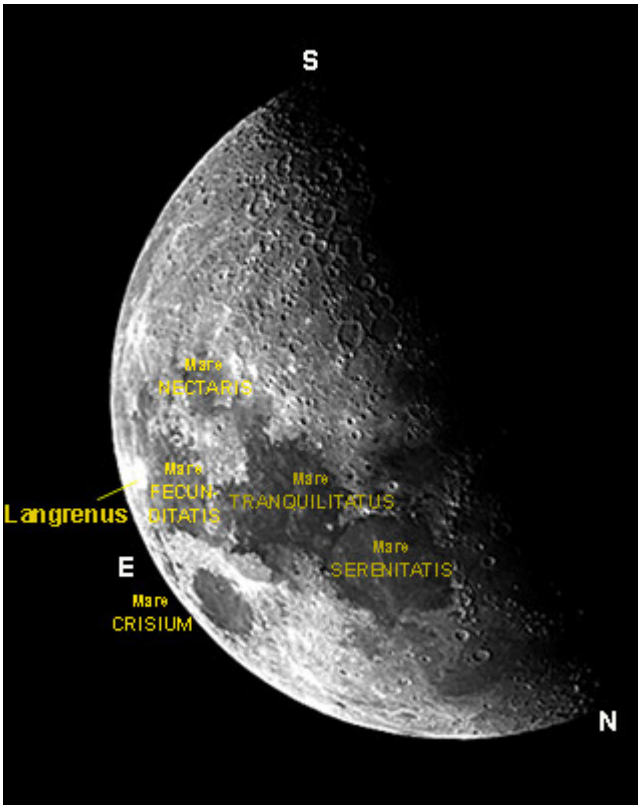
Magnitude: we are accustomed to hearing stars described in terms of ‘magnitude’, for example Antares (in Scorpius) at +1.05 and the planet Jupiter, at (say) magnitude -1.8. The latter is considerably brighter than Antares as the scale is ‘inverse’; the brighter the object, the lower the number. A ‘good’ 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 2018 *Sky Guide Africa South):*

LANGRENUS



Type: Crater with steeply rising walls up to 2.6km high. The central double-peaked mountain is 1km high.

Diameter: 136 km.

Notes: Named after Michael van Langren, 17th century Dutch lunar cartographer who introduced a scheme of nomenclature for lunar features still used today (mare, sinus, oceanus, montes, etc).

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

Location: Eastern limb on the eastern "shore" of Mare Fecunditatis.

ECLIPSES

Lunar eclipse 21st January
NB *sunrise is 05h57!*
Penumbral stage 05h34
Totality 06h41 to 07h44
Penumbral stage 08h51
The total duration of the eclipse is 5 hours, 12 minutes.

METEOR SHOWERS

Name	*Date & Time of Max*	*Duration*	*Radiant*	*ZHR*	*velocity*	*Observing Prospect*
α Crucids	19 January* 00h00 to 03h30	6 to 28 January	Radiating from the Coalsack in **Crux**	<5	50	Unfavourable

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

* Peaking on 19th with the moon at 94% waxing and setting at 04h44, I would rather stay in bed!

4. STARGAZING

SUGGESTED OBSERVATION DAYS FOR late DECEMBER 2018 to early JANUARY 2019: Unless *specifically* targeting the moon, may I suggest the most convenient dates to plan evening stargazing are from **25th December** (moonrise 22h36) to **7th January** (moonset 21h05) then from **24th January** (moonrise 22h35) to **7th February** (moonset 21h25).

*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**).*

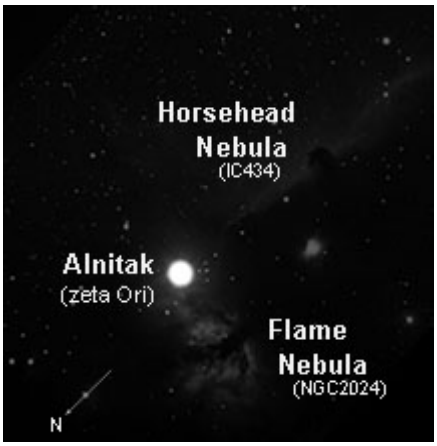
NO 'SCOPE REQUIRED

If you are anything like I am, you have probably built up a dependance on the constellation lines drawn on star charts to identify the stars in their constellations. Bad habit! Unfortunately, the real sky does not display such convenient guidelines so here I offer you a chart *without* lines so we can lie on the lawn (or reclined deckchair) and get to know the sky as we see it. The trick is to recognise and remember the *patterns* of the prominent stars of each constellation.

With toes pointed NNE, we are presented with magnificent ORION, perhaps the best known constellation in the sky. To the east of **Betelgeuse** (α Ori) is the little dog, CANIS MINOR, with prominent star **Procyon** (α CMi). South of **Rigel** (β Ori) we find LEPUS (the hare) with brilliant **Sirius** (α CMa) to the south-east.

Further south we have **Canopus** (α Car) with PUPPIS to the east.

By this time we have developed a crick in the neck so let's make a cuppa or whatever.



5. DEEP SKY HIGHLIGHTS

This month we visit that lovely area around **Alnitak,** the easternmost star of the Sword of Orion.

About 0º31' south of Alnitak lies the well-known **Horse Head** nebula, a dark, hydrogen gas cloud silhouetted by the bright southern regions of NGC 2024. Identification of the Horse's Head is made difficult by the close proximity of Alnitak. To the east of Alnitak, the **Flame** nebula, even closer to Alnitak at 0º15', is part of NGC 2024.

	Alnitak (ζ Ori)	**Horsehead Nebula** (IC434)	**Flame Nebula** (NGC2024)
Type	Double star	Nebula	Nebula
Magnitude	+1.85		
RA/DE (J2000)	5h45'45"	5h41'0"	5h41'54"
	-1º56'33"	-2º24'0"	-1º51'0"
Distance	817 LY	1 500 LY	

Ian Ridpath's STAR TALES

Orion
The hunter

Genitive: Orionis
Abbreviation: Ori
Size ranking: 26th
Origin: One of the 48 Greek constellations listed by Ptolemy in the Almagest
Greek name: Ὡρίων

Orion is the most splendid of constellations, befitting a character who was in legend the tallest and most handsome of men. His right shoulder and left foot are marked by the brilliant stars Betelgeuse and Rigel, with a distinctive line of three stars forming his belt. 'No other constellation more accurately represents the figure of a man', says Germanicus Caesar.

Manilius called it 'golden Orion' and 'the mightiest of constellations', and exaggerated its brilliance by saying that, when Orion rises, 'night feigns the brightness of day and folds its dusky wings'. Manilius described Orion as 'stretching his arms over a vast expanse of sky and rising to the stars with no less huge a stride'. In fact, Orion is not an exceptionally large constellation, ranking only 26th in size (smaller, for instance, than Perseus according to the modern constellation boundaries), but the brilliance of its stars gives it the illusion of being much larger.

Orion is also one of the most ancient constellations, being among the few star groups known to the earliest Greek writers such as Homer and Hesiod. Even in the space age, Orion remains one of the few star patterns that non-astronomers can recognize.

In the sky, Orion is depicted facing the snorting charge of neighbouring Taurus the bull, yet the myth of Orion makes no reference to such a combat. However, the constellation originated with the Sumerians, who saw in it their great hero Gilgamesh fighting the Bull of Heaven. The Sumerian name for Orion was URU AN-NA, meaning light of heaven. Taurus was GUD AN-NA, bull of heaven.

Gilgamesh was the Sumerian equivalent of Heracles, which brings us to another puzzle. Being the greatest hero of Greek mythology, Heracles deserves a magnificent constellation such as this one, but in fact is consigned to a much more obscure area of sky. So is Orion really Heracles in another guise? It might seem so, for one of the labours of Heracles was to catch the Cretan bull, which would fit the Orion–Taurus conflict in the sky. Ptolemy described him with club and lion's pelt, both familiar attributes of Heracles, and he is shown this way on old star maps. Yet despite these parallels, no mythologist hints at a connection between this constellation and Heracles.

Tales of Orion

According to myth, Orion was the son of Poseidon the sea god and Euryale, daughter of King Minos of Crete. Poseidon gave Orion the power to walk on water. Homer in the Odyssey describes Orion as a giant hunter, armed with an unbreakable club of solid bronze. In the sky, the hunter's dogs (the constellations Canis Major and Canis Minor) follow at his heels, in pursuit of the hare (the constellation Lepus).

On the island of Chios, Orion wooed Merope, daughter of King Oenopion, apparently without much success, for one night while fortified with wine he tried to ravish her. In punishment, Oenopion put out Orion's eyes and banished him from the island. Orion headed north to the island of Lemnos where Hephaestus had his forge. Hephaestus took pity on the blind Orion and offered one of his assistants, Cedalion, to act as his eyes. Hoisting the youth on his shoulders, Orion headed east towards the sunrise, which an oracle had told him would restore his sight. As the Sun's healing rays fell on his sightless eyes at dawn, Orion's vision was miraculously restored.

Orion is linked in a stellar myth with the Pleiades star cluster in Taurus. The Pleiades were seven sisters, daughters of Atlas and Pleione. As the story is usually told, Orion fell in love with the Pleiades and pursued them with amorous intent. But according to Hyginus, it was actually their mother Pleione he was after. Zeus snatched the group up and placed them among the stars, where Orion still pursues them across the sky each night.

There is a strange and persistent story about the birth of Orion, designed to account for the early version of his name, Urion (even closer to the Sumerian original URU AN-NA). According to this story, there lived in Thebes an old farmer named Hyrieus. One day he offered hospitality to three passing strangers, who happened to be the gods Zeus, Neptune, and Hermes. After they had eaten, the visitors asked Hyrieus if he had any wishes. The old man confessed that he would have liked a son, and the three gods promised to fulfil his wish. Standing together around the hide of the ox they had just consumed, the gods urinated on it and told Hyrieus to bury the hide. From it in due course was born a boy whom Hyrieus named Urion after the mode of his conception.

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

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