The PRETORIA CENTRE
of the
Astronomical Society of Southern Africa
www.pretoria-astronomy.co.za

NEWSLETTER JUNE 2025

NEXT MEETING

From January 2025 onward, we will have our monthly meetings over the Internet, and not at CBC any more.

Date and time: Wednesday 25 June at 19h00.

Programme:

- "What's up in July 2025?" by Danie Barnardo.
- Main talk: TBA to members by e-mail.

The web link to join the meeting is: https://meet.jit.si/ASSAPretoriaMonthlyMeeting (See the note at the bottom of page 7.)

The chairperson at the meeting will be Danie Barnardo.

NEXT OBSERVING EVENING

Friday 20 June from sunset onwards near the Pretoria Centre Observatory, which is also situated at CBC. Turn left immediately after entering the main gate. Carry straight on through the car park and proceed down the tarred road that drifts to the left out of the car park and then swerves to the right. About 50 to 100 metres after the last row of studs there is a cricket sight-screen on the right. Observing will be on the cricket pitch just past the sight-screen.

Please note that we have been instructed that no one is to drive on to the sports fields because of possible damage to the irrigation systems there.

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Editor's chatter: Rogue black holes

Rogue black holes, also known as free-floating, nomad, orphan, unbound, or wandering black holes, are interstellar or intergalactic black holes. They are not bound to any other star and drift alone through space, making them difficult to find. These black holes are created when the cores of massive stars collapse and form black holes, followed by an explosion of the star.

Since black holes emit no light, the only ways to detect them are gravitational lensing or x-ray bursts from their accretion disks when they destroy an object.

A NASA mission has observed a supermassive black hole pointing its highly energetic jet straight toward Earth. Don't panic just yet, though. As fearsome as this cosmic event is, it's located at a very safe distance of about 400 million light-years away. **Ω**

Give your imagination free rein – by Pierre Lourens

- Gravity may be key evidence that our Universe is a simulation, groundbreaking new research suggests. If Our Universe Is a Simulation, then Gravity Could Be a Part of Its Programming
- Time travel. Could time travel tourism be the next space tourism? (op-ed) | Space **Ω**

What's up in July 2025? - by Danie Barnardo

July promises clear winter skies and the humidity should be low, providing excellent possibilities to spot difficult deep-sky targets. Between 29 and 30 July, the southern Aquarids meteor shower will be visible in the morning sky.

The Moon phases for July 2025

First quarter	Wednesday 2 July
Full Moon	Thursday 10 July
Third Quarter	Friday 18 July
New Moon	Thursday 24 July

The full Moon on 10 July is also known as the Meerkat Moon. The Moon is at apogee on 5 July (404,627 km) and at perigree on 20 July (368,047 km).

The Centre for Astronomical Heritage reports on their website about the Meerkat Moon (https://cfah.org.za/fullmoon/meerkat-moon/): "In San mythology the meerkat features prominently. One rendition of how the meerkat came into existence describes an event that befell a group of people. They were attacked by lions and all the adults of the family were eaten. The children managed to escape into holes in the ground where they had to hide for so long that they began to transform. Those wearing karosses (cloaks) of jackal skins became ground-squirrels but those wearing karosses of other game animals became meerkats." Also on the website, it is mentioned that the MeerKAT (KAT: Karoo Array Telescope) near the Karoo town Carnarvon in the Northern Cape, was inaugurated on 13 July 2018. It consists of 64 radio dishes and is a precursor to the SKA project.

The Planets

Four of the 5 naked-eye planets are visible at dawn during the whole month. Venus rises round about 05:00, but the other 3 are all visible since much earlier. Mercury, will be prominent just after sunset during the last week of the month. Uranus and Neptune will also be visible in the pre-dawn sky.

Mercurius: Visible at dawn just after sunset during the first 2 weeks of the month.
Venus: Visible in the early morning sky – rises just after 3:30 in the beginning of the month and later and later till it rises just after four at month-end.
Mars: Rises after 21:30 on 1 July and 21:00 at month-end. It is visible for the whole month.
Jupiter: Visible in the early morning, rising just before sunrise on 1 July and earlier and earlier during the rest of the month, till it rises at 05:00 at month-end.
Saturn: Rising at about 23:30 on 1 July and earlier and earlier, till it it rises at about 21:30 at month-end.
Uranus: Rises around 04:00 in the morning on 1 July and steadily earlier during the rest of the month, till it rises at about 02:00 at month-end.
Neptune: Visible very near Saturn during the whole month, creating an ideal opportunity to spot this elusive planet in July.

Constellations

The winter constellation, Scorpius is prominent during the month, as is its companion, Saggitarius, providing good viewing of its magnificent deep-sky objects during the

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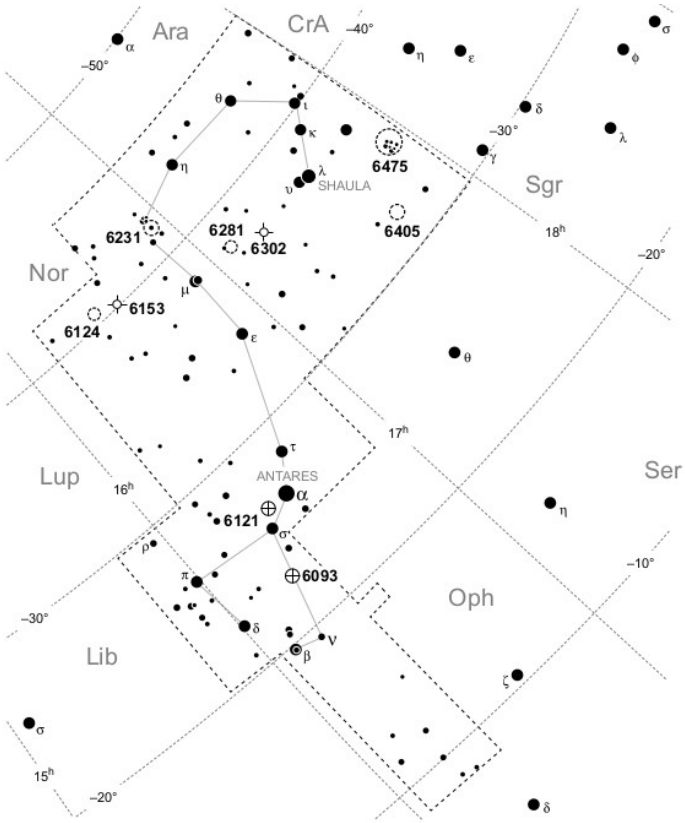
month. It is a good time to view Sculptor and its famous Sculptor or Silver Dollar galaxy (NGC253). Crux and Centaurus also provides good viewing and the Virgo-Coma galaxy fields are also visible earlier in the evening.

Scorpius

Scorpius is among the most distinctive of constellations in the zodiac. With a little imagination, you can see its stars tracing the shape of a Scorpion. The brilliant red star Antares lies at the Scorpion's Heart. The constellation has the shape of the letter J, with the curved bottom of the J representing the Scorpion's curved Tail. There's even a Stinger, consisting of two stars – Shaula and Lesath – noticeable for their nearness to each other.



NGC 6093 or M80

Object Description	Globular Cluster
R.A. Position	16h 17m 2.5s
Dec. Position	-22° 58' 30.39"
Distance	8.7 kiloparsecs (28 000 light-years)
Dimensions	The image is 3 arcminutes on the vertical side
Magnitude	7.3

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NGC 6121 or M4

Object Description	Globular Cluster
Right ascension	16h 23m 35.22s
Declination	−26° 31′ 32.7″
Distance	7.2 kly (2.2 kpc) [citation needed]
Magnitude	5.6

NGC 6124 or Caldwell 74

Object Description	Open Cluster
Right ascension	16h 25m 36s
Declination	−40° 40′ 00″
Distance	1,860 ly (512 parsec)
Magnitude	5.8

NGC 6153

Object Description	Planetary Nebula
Right ascension	16h 31m 30.6s
Declination	–40° 15′ 12″
Distance	4400±400 ly (1400±120 parsec)
Magnitude	+9.9

NGC 6231 or Caldwell 76

Object Description	Open Cluster
Right ascension	16h 54m
Declination	−41° 48′
Distance	5,600±400 ly (1,700±130 parsec)
Magnitude	2.6

NGC 6281

Object Description	Open Cluster
Right ascension	17h 04.7m
Declination	−37° 59′
Distance	1,611 ly (494 parsec)
Magnitude	5.4

NGC 6302 also known as the Bug Nebula, Butterfly Nebula, or Caldwell 69

Object Description	Bipolar Planetary Nebula
Right ascension	17h 13m 44.211s
Declination	−37° 06′ 15.94″
Distance	3.4 ± 0.5 kly (1.04 ± 0.16 kiloparsec) ly
Magnitude	7.1

NGC 6405 also known as The Butterfly Cluster or M6

Object Description	Open Cluster
Right ascension	17h 40.1m
Declination	−32° 13′
Distance	1.59 kly (0.487 kiloparsec)
Magnitude	4.2

NGC 6475 also known as the Ptolemy Cluster or M7

Object Description	Open Cluster
Right ascension	17h 53m 51.2s
Declination	−34° 47′ 34″
Distance	980 ± 33 ly (300 ± 10 parsec)
Magnitude	3.3 **Ω**

NOTICE BOARD

➔ **Help to classify hundreds of thousands of galaxies.**
Galaxy Zoo » About — Zooniverse

➔ **Old newsletters.** All old newsletters from January 2004 onward are on our website. They contain a record of our Centre's activities as well as astronomical information.

Astronomy related images, video clips and documentaries on the Internet

➢ Auroras on Neptune. 1st images of elusive auroras on Neptune revealed by James Webb Space Telescope | Space

➢ Images of Mars. Mesmerizing images of Mars: a glimpse into the Red Planet

➢ Jupiter's swirling clouds. See a video clip.
Stunning new images of Jupiter show vast swirling clouds | Watch

➢ Noctilucent clouds in the atmosphere of the third planet from the Sun. They form in the mesosphere at a height of 80 km, far higher than other cloud types. Noctilucent cloud season 2025 is upon us! Here's how to spot elusive 'night-shining' clouds | Space

Report of the meeting of May 28th 2025 – by Michael Poll

Michael was scheduled to give "What's Up?" and also to add two items**:** one about circumpolar stars and the other about the constellation of Libra. In the event after about 20 minutes a cyber hiccup threw everyone out of the meeting. Those who were aware that they had been removed were able to rejoin the meeting. Michael was unaware and not contactable so spent 45 minutes talking to no one in particular.

Meanwhile Johan filled the vacuum with the video which was scheduled for the second part of the evening. The video was a presentation by Prof Jane Carruthers which discussed the restoration of the Toppieshoek observatory (formerly the Leiden Southern Observatory) and some archaeology of the Early Iron Age at Broederstroom. **Ω**

Report of the observing evening on May 23rd 2025 – by Michael Poll

Observing evenings seem to be falling out of favour, but one hopes for better things. At 5:30 pm I arrived at an empty field and sat in my car until 6:15pm. I had my hand on the ignition and just then Jacques Groenveld came. Jacques was expecting two friends, but I was getting cold, Jacques said he could entertain his friends and so I was able to leave them to it. **Ω**

Astronomy basics: Bright stars of Orion

Bright Stars of Orion - Betelgeuse, Rigel, Bellatrix, Belt Stars

Astronomy related articles on the Internet

- Collapse of Arecibo radio observatory. 4 years after the giant Arecibo Observatory collapsed, we finally know what happened | Space
- World's largest telescope threatened by light pollution. https://www.space.com/space-exploration/worlds-largest-telescope-threatened-by-light-pollution-from-renewable-energy-project
- Asteroid exploration. 'Right now, we are in what has to be a Golden Age of asteroid exploration.' Scientists celebrate NASA's latest space rock flyby | Space
- Water found in atmosphere of exoplanet. James Webb Space Telescope finds water in the air of exotic 'sub-Neptune' exoplanet | Space
- Rogue supermassive black hole eats star. Hubble Telescope sees wandering black hole slurping up stellar spaghetti | Space
- Doomed star. Doomed star circling supermassive black hole could be ripped apart in less than 6 years | Space
- The good old HST. Aging gracefully: The Hubble Telescope remains in 'excellent technical condition' on its 35th birthday | Space
- Bizarre double star system. Scientists discover bizarre double-star system with exoplanet on a sideways orbit (video) | Space
- The evolving search for extraterrestrial life. From science fiction to reality: the evolving search for extraterrestrial life
- Planet crashed into star. This star burped after eating a planet — but the planet was really asking for it | Space
- Planet Venus. Venus' crust is surprisingly thin. Could this explain why it's so geologically active? | Space
- Rare double star system. Scientists find rare double-star system where one star orbited inside the other | Space
- Water ice around a star. Milestone discovery: James Webb telescope discovers frozen water around a distant, sunlike star | Live Science
- Another dwarf planet discovered in Kuiper belt. Scientists discover new dwarf planet far beyond the orbit of Neptune: Meet 2017 OF201 | Live Science

Note about joining our monthly meeting over the Internet

If you wish to attend, please be online before 19h00 SAST (= 17h00 GMT) and mute your microphone until you wish to speak.
Disabling your camera will save bandwidth on your side too.

Observing: Ruprecht 106 misjudged– by Magda Streicher

Before studies and observations through very large telescopes, globular clusters could at times have been confused with, and catalogued as, open clusters. The little known globular cluster Ruprecht 106 is a case in point. The object is situated in the southern part of the constellation Centaurus, with the brightest star within it only magnitude 15. Named after the Czech astronomer Jaroslav Ruprecht it was discovered on photographic plates taken at the Boyden Observatory, South Africa, and first catalogued as an open cluster. This type of old galactic clusters with certain mass shows evidence for the existence of multiple stellar populations. Clearly the cluster Ruprecht 106 initial mass must have been significantly greater, although no current data shows mass loss during its evolution. The orbital integration indicates that Ruprecht 106 is clearly a globular cluster and belongs to the halo of our Milky Way.

In 1966 the Czech astronomer Jaroslav Ruprecht travelled up the slope of Mount Ararat, an extinct volcano in northern Armenia. Ruprecht was carrying out a mission for the International Astronomical Union and on his way to the Byurakan Astrophysical Observatory to study the detailed list of young hot stars and clusters compiled more than a decade before at this observatory.

The unique beauty of various deep sky objects filled my life with sheer wonder.

OBJECT	TYPE	RA	DEC	MAG	SIZE
Ruprecht 106	Globular cluster	12h38m.7	-51°08’.2	13	3’

Barred spiral galaxy NGC 5335

Web links for the astronomy enthusiast

- **The website for all information about the ASSA and the ASSA Centres:**
  https://assa.saao.ac.za/
- **ASSA Specialist Sections:**
  ASSA has various areas of interest. Join and participate!
  https://assa.saao.ac.za/sections/
- **ASSA Publications to download and enjoy:**
  MNASSA: https://www.mnassa.org.za/
  Nightfall: http://assa.saao.ac.za/sections/deep-sky/nightfall/
  To receive as part of ASSA membership benefits - *Sky Guide Southern Africa,* the astronomical handbook for Southern Africa:
  http://assa.saao.ac.za/about/publications/sky-guide/
- **Mail Groups to join:**
  For general ASSA related information: https://groups.io/g/ASSA-announce
  For posting general items and discussion: https://groups.io/g/ASSA-discussion
- **Social Media to join and share:**
  Facebook: https://www.facebook.com/Astrosocsa/?_rdc=1&_rdr
  Youtube: https://www.youtube.com/channel/UCJ4b1fhmPvYTOsy15YP-_JA
  Twitter: https://twitter.com/AstroSocSA
- **Planetaria:**
  WITS Planetarium (Johannesburg): Welcome to Wits Planetarium
  Naval Hill Planetarium (Bloemfontein): Planetarium Home (ufs.ac.za)
  Iziko Planetarium (Cape Town): Planetarium and Digital Dome - Iziko Museums
  Sutherland Planetarium (Sutherland): Sutherland Planetarium
- **More web links can be found on page 118 of "2025 SKY GUIDE Southern Africa". Ω**

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