The PRETORIA CENTRE

of the

Astronomical Society of Southern Africa

www.pretoria-astronomy.co.za

NEWSLETTER JULY 2022

NEXT MEETING

Internet meeting. *

Date and time: Wednesday 3 August 2022 at 19h00.

Programme: 1. AGM.

2. "Jack Bennett – founder member of the Pretoria Centre of the ASSA" by Neville Young.

Chairman: Bosman Olivier.

* You will receive an e-mail invite from Johan Smit around 18:30 to join the meeting.

Please join as quickly as possible.

Virtual observing evening chat

Date: Friday 22 July 2022. Time: 18h30. Johan Smit will open the meeting at around 18h15 and anyone who wishes to join the chat is welcome to join in the fun. Be seated in front of your computer at 18h15 with a glass of wine/beer/coffee.

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Astronomy related articles on the Internet

Contreras Fire reaches the observatories at Kitt Peak - Wildfire Today
All of the more than 20 telescopes at Kitt Peak National Observatory in southern Arizona survived the wildfire that struck the site in mid June. However, four non-scientific buildings burned.

EarthSky | Odd Fast Radio Burst only 2nd known of its kind
Astronomers have observed an unusual repeating fast radio burst – only the second so far – where smaller bursts persistently occur in between the large bursts. The mystery about their source deepens.

EarthSky | M5, your new favorite globular star cluster
M5 is a beautiful globular cluster in Serpens Caput to explore with a small telescope. It is now visible in the night sky. (See the article on observing elsewhere in this newsletter.)

The Curious Case of Titan's Missing Clouds - The Daily Galaxy
Climate models had predicted clouds and rain at Titan's north pole, indicating the start of the northern summer. No clouds have been seen, but evidence of rainfall was found.

EarthSky | Is Zubeneschamali a green star?
The star Zubeneschamali (aka Beta Librae) was earlier described by observers as a green star. But is it really green?

EarthSky | Charon's red cap created by "atmospheric surges"
An odd reddish polar cap on Pluto's moon Charon has puzzled scientists since first seen in 2015. Now they may have solved the puzzle.

EarthSky | Whoosh! Speedy star orbits Milky Way black hole
Newly discovered speedy star S4716 is the fastest known star orbiting our Milky Way's central black hole.

EarthSky | Habitable water worlds don't have to be Earth-like
A new study shows how potentially habitable water worlds don't need to be just like Earth. The results may help expand the search for alien life.

Massive Black Holes Existed Before the First Stars of the Universe (Weekend Feature) - The Daily Galaxy
Supernovas are not the only way by which black holes form.

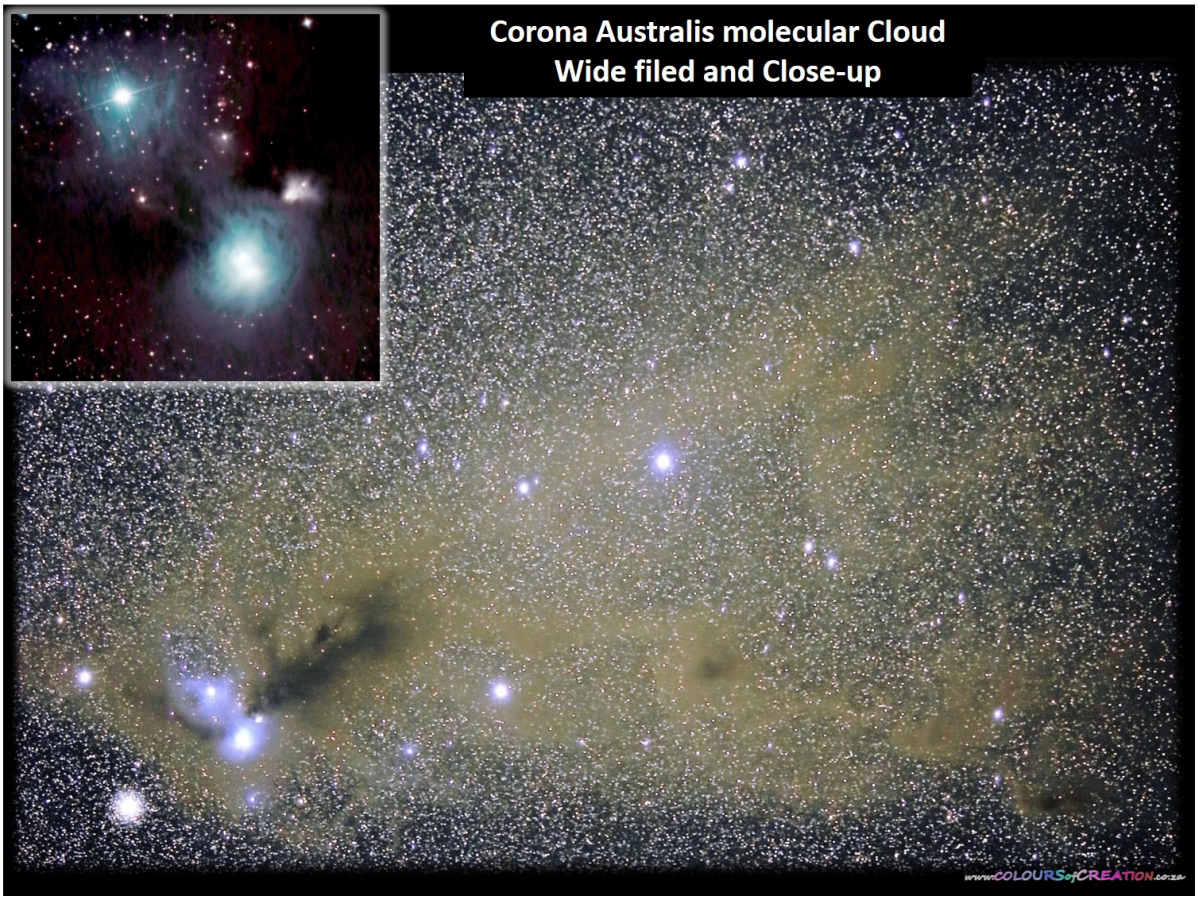
EarthSky | Shoemaker-Levy 9 impact on Jupiter 28 years ago
Long time members of the Pretoria Centre will remember that we had TV screens set up next to our observatory at CBC at that time. The impacts on Jupiter of the fragments of the comet were shown on these screens in real time as they happened. A large number of members of the public attended.

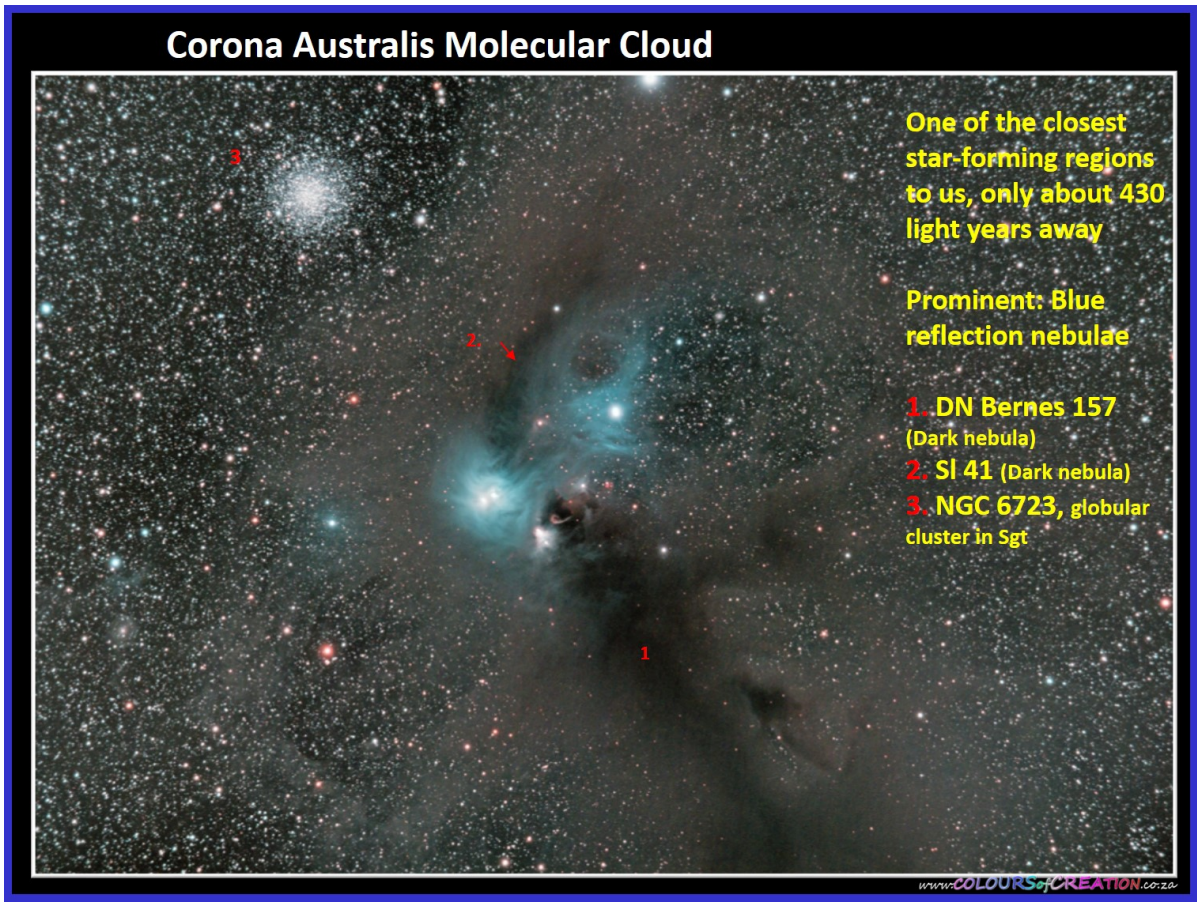
EarthSky | Clouds of sand on distant worlds
A new study about how clouds of sand (silicates) can form in the atmospheres of brown dwarfs and gas giant exoplanets.

EarthSky | Lyra the Harp contains Vega, a summer gem
Vega (aka Alpha Lyrae) and constellation Lyra are now visible in the night sky.

Psychology of alien contact: Could we even handle it? - Big Think
The fact that this can even be a topic of serious discussion suggests that contact with extraterrestrials is no longer considered an unlikely pipe dream. (On this web page there are links to web pages on related topics.)

**Four photos of the Corona Australis Cloud Complex, taken by Johan Moolman.
TeleVue 127mm Apo-refractor, Modified Canon 6D. Multiple stacks.
Wide angle (no 1): Canon 200mm f/2.0 lens, Canon 1Dx. Multiple stacks.**





Corona Australis Molecular Cloud

1. IC 4812: Reflection nebula around double star BSO 14 (WD 1450+432). Part of the same gas and dust as NGC 6726/27.

2. NGC 6726/7: NGC 6726/27 is only one nebulosity, made up of two rounded areas which come into contact with and are illuminated by the stars TY CrA and SAO 210820.

3. NGC 6729. This fan-shaped nebula opens from the star R Coronae Australis toward the south-east. R CrA is a pre-main-sequence star .It is an Emission/Reflection nebula object that is also a variable nebula. Northwest-southeast orientation.

3b. There is another variable star called T CrA, which is involved with the nebula and situated 1.2' to the southeast of R CrA. It is in and close to the border of NGC 6729, in 'the tail of the comet'. The brightness of this star ranges between 11.7 and 13.5.

4. Bernes 157: boomerang -shaped dark nebula.

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Corona Australis Molecular Cloud

HH: Herbig–Haro objects - **High-speed jets of material that travel away from the baby stars at velocities as high as one million kilometres per hour are slamming into the surrounding gas and creating shock waves. These shocks cause the gas to shine and create the strangely coloured glowing arcs and blobs known as Herbig–Haro objects.**

Herbig–Haro objects (HH) – after astronomers George Herbig and Guillermo Haro – are narrow jets of gas and matter ejected by young stars at speeds of 100 to 1000 kilometers per second that collide with the surrounding nebula, producing bright shock fronts that glow as the gas is heated by friction while the surrounding gas is excited by the highenergy radiation of nearby hot stars. These objects are transient phenomena, lasting not more than a few thousand years.

1. **GN - Atlas of Galactic Nebulae: GN 18.57.8**
2. **S CrA**
3. **EXTREMELY faint HH 82A and 82B**

4. **HH 101**
5. **HH 100**
6. **HH 97**
7. **HH 98 (Faint!)**
8. **R CrA**
9. **T CrA**
10. **HH 99**
11. **NGC 6729**

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What's up in August 2022 - by Louis Kloke

10 August 2022. Conjunction of the Moon and Venus.
5 August 2022. Nishimura will be the closest to Earth, 158 000 000 km.
12 August 2022. Look out for the Perseid meteor shower. It will be at its peak.
21 August 2022. Closest conjunction of Jupiter and the Moon.
20 August 2022. Saturn in conjunction with the Moon.
Also to be seen in August:
Constellation Corona Australis will be quite high in the sky. (See the astrophotos on pages 3 and 4 of this newsletter.)
Scorpius will be heading towards the west. The comet will be close to the tail.
Aquarius rising in the east.
Looking for the gas giants and ice giants this month will be quite an experience as they are in opposition.
Saturn is readily visible to the unaided eye. Even a small telescope will render the rings easily visible.
If all else fails, look straight up and you will find the Milky Way arching from south to north above your head. And there you will find thousands of stars to keep you looking for a long time. Just think of that fantastic photo from the James Webb telescope. I don't think you knew that there were so many galaxies out there just waiting for us to take a look.
Clear skies to you for this month. **Ω**

Astronomy related images, video clips and documentaries on the Internet

First image from the JWST. EarthSky | 1st Webb image: Farther, deeper, older light

More images from the JWST. Apart from images, the JWST has already captured the distinct signature of water in the atmosphere surrounding a giant planet orbiting a distant Sun-like star. First Images from the James Webb Space Telescope | NASA

Alien life documentary. With technology advancing faster than ever, and more and more discoveries being made every day, is the day we contact extraterrestrial life almost here? How Is NASA Contacting Aliens? | Alien Life Documentary | Spark - YouTube

Spectacular filament eruption on the Sun. This took place on 15 July. See a video clip of the event. EarthSky | Sun activity: Spectacular filament eruption

Astronomy basics: What's a pulsar and why does it pulse?

EarthSky | What's a pulsar and why does it pulse?

Feature of the month:
The Five-hundred-meter Aperture Spherical radio Telescope (FAST)

This radio telescope is situated in China. It is nicknamed **Tianyan** which means "Sky's/Heaven's Eye" in Chinese. It is built into a natural depression in dolomite. Just like the decommissioned radio telescope at Arecibo in Puerto Rico, it is immobile with respect to the Earth and is rotated as the Earth rotates.

It is the world's largest filled aperture radio telescope and the second largest single dish aperture, after the sparsely filled RATAN-600 in Russia. FAST became fully operational on 11 January 2020. **Ω**

Five-hundred-meter Aperture Spherical Telescope – Wikipedia

NOTICE BOARD

Become a Jovian vortex hunter with your PC. Vortices are large round clouds, like hurricanes on Earth. On Jupiter, vortices can be several thousand kilometers wide and come in a variety of colours, from white to deep brown, and even have very irregular shapes. Jovian Vortex Hunter — Zooniverse

Cloud spotting on Mars. Do data mining with your PC of data acquired by the Mars Climate Sounder on NASA's Mars Reconnaissance Orbiter and help to study clouds in the atmosphere of Mars. Cloudspotting on Mars » About — Zooniverse

UFO update. World's Astronomers Comment on NASA's New UAP/UFO Study (Revised and Expanded) - The Daily Galaxy

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.

Data base: Members are reminded that a data base of the books in our library is to be found on our website.

Observing: A lovely object in a snaky constellation - by Magda Streicher

The word “serpent” is from French. In Germany the constellation is known as “die Schlange”, the very sound of which seems to embody and suggest the meaning of that creepy creature. Serpens is intertwined with the stars of the Ophiuchus constellation, which is why it is in two parts, namely Serpens Caput (the head) en Serpens Cauda (the tail), which makes it somewhat complex.

Serpens Caput is the area to search out the beautiful globular cluster NGC 5904, better known as Messier 5, which is situated in the north-western part of the constellation. It is one of the most beautiful and brightest globular clusters and can easily be picked out with binoculars. It is almost 13 billion light-years away and about 130 light-years across. In plain language, it has all the qualities of a true rich globular cluster.

Through my medium size telescope, it displays a very dense, over-exposed core. Dark patches and lanes as well as short faint strings cover the whole of the surface and flares out like embroidery lace, with a somewhat outstanding string on the northern edge. Star members covered in nebulosity indicate more faint stars. This cluster is pleasing to the eye, rich in stars and lifted out of the star field with utmost flair. The yellow-coloured star 5 Serpentis shines with a magnitude of 5.2 and could be seen as the culprit trying to take centre stage only 15' south-east of M5.

Fortunately, the serpent we’re dealing with in this article is known as a constellation, because let’s face it, most of us are rather more than wary of real, living snakes that share the space on planet Earth with us. Do not be scared, go out and enjoy this wonderful object. **(**Magda Streicher’s e-mail address: magdalena@mweb.co.za) **Ω**

OBJECT	TYPE	RA	DEC	MAG	SIZE
NGC 5904 / Messier 5	Globular cluster	15 h 18.5 m	+02º 04.3’	5.7	22’

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,* 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
- **More web links can be found on page 118 of "2022 Sky Guide Africa South". Ω**

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