



## NEWSLETTER MAY 2021

### NEXT MEETING

Internet meeting. \*

Date and time: Wednesday 26 May 2021 at 19h00.

Programme:

Two presentations by Clyde Foster. \*\*

Chairman: Michael Poll.

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

\*\* As soon as the topics are known, members will be informed by e-mail.

### NEXT OBSERVING EVENING

Friday 21 May from sunset onwards.

**Note:** we have a new venue for our viewing evening - it is on the rugby grounds of the Silver Valke Rugby Club in Silverton, about 4.3 km east of CBC. Please see [here for a route description](#). Please note that, to conform to the Covid regulations only ASSA Pretoria Centre members will be allowed at viewing evenings, but members can bring along guests.

### TABLE OF CONTENTS

Astronomy-related articles on the Internet	2
Astronomy-related images and video clips on the Internet	2
Observing: The Ghostly Woman	3
Astrophotos by Johan Moolman	4
NOTICE BOARD	5
Feature of the month: Astronomers detect a bright blue bridge of stars, and it's about to blow	5
Astronomy basics: The Sun	5
Web links for the astronomy enthusiast	6
Pretoria Centre committee	6

## Astronomy-related articles on the Internet

[New Horizons passes milestone distance 50 AU | Space | EarthSky](#) On April 17, 2021, the New Horizons spacecraft passed 50 astronomical units from the Sun. This is the fifth spacecraft to pass this milestone.

[Lift off! 4 astronauts in Crew-2 mission blast off to ISS | Human World | EarthSky](#)

This is a mission of SpaceX, the aerospace company founded by Elon Musk. (Elon Musk was in Pretoria Boys High school.)

[Record-breaking flare from nearby Proxima Centauri | Space | EarthSky](#)

Proxima Centauri emitted a flare 100 times as powerful as flares from the Sun. This flare ranks as one of the most violent seen on a solitary star anywhere in the galaxy.

[What Proxima's massive flare means for our chances of alien neighbors | Space | EarthSky](#)

[1st complete view of Venus' orbital dust ring | Space | EarthSky](#)

NASA's Parker Solar Probe, currently studying the Sun, has observed the entire dust ring that encircles the Sun along Venus' orbit.

[Map of Milky Way halo reveals dark matter ocean | Space | EarthSky](#)

The gravity of the Large Magellanic Cloud is collecting stars behind it in a trail, like the wake from a boat, as it travels through our galaxy's halo.

[NASA expects upcoming space telescope to find 100,000 new worlds | Space | EarthSky](#)

[Spica, bright beacon of Virgo, is a whirling pair of egg-shaped stars | Brightest Stars | EarthSky](#)

Spica, the brightest star in Virgo, is a very close, scorching-hot pair of stars, whirling around one another. One may go supernova as it nears the end of its lifetime.

[See a nova or "new" star. V1405 Cas is now visible to the eye | Space | EarthSky](#)

Nova V1405 Cassiopeiae first brightened in March of 2021 and has now flared bright enough to be seen without binoculars or a telescope.

[China's Yutu 2 rover about to 'wake up' on the far side of the moon | Live Science](#)

[China wants to launch its own Hubble-class telescope as part of space station | Live Science](#)

[Chinese rover Zhurong to attempt to land on Mars this month | Human World | EarthSky](#)

## Astronomy-related images, video clips and documentaries on the Internet

[Watch two black holes bend the daylights out of space-time in this trippy NASA visualization | Live Science](#)

**See a volcanic eruption on a large island in a liquid water ocean on the third planet from the Sun.** [Stunning images of Fagradalsfjall volcano in Iceland | Earth | EarthSky](#)

[Watch a black hole tear a star to bits in epic new animation | Live Science](#)

**Jupiter's moon Ganymede eclipsed another moon Io on 14 May 2021 at 05h44 SAST. Jupiter's moon Io eclipsed another moon Europa on 29th April 2021 at 03h15 SAST. See video clips made of these events by Neville Young of the Pretoria Centre of the ASSA. He obviously rose very early to record these video clips. Well done, Neville!**  
[Starwaders - Posts | Facebook](#)

### Observing: The Ghostly Woman - by Magda Streicher

I could not resist the temptation to describe another object in Gemini. The constellation holds a certain fascination and is clearly a favourite among amateurs.

One of the many wonderful objects in Gemini is a planetary nebula that has been discussed a great many times, namely the Medusa Nebula. It isn't very easy to observe, but with some care and patience it can be found through an average-sized telescope. A dark, star-filled night sky and generally favourable conditions would be ideal for finding and observing this nebula.

First locate the open cluster NGC 2395, which displays a really large number of faint stars that give the impression of a table of sorts in their formation. Imagine the flat part of the table as facing north-east – it is quite amazing.

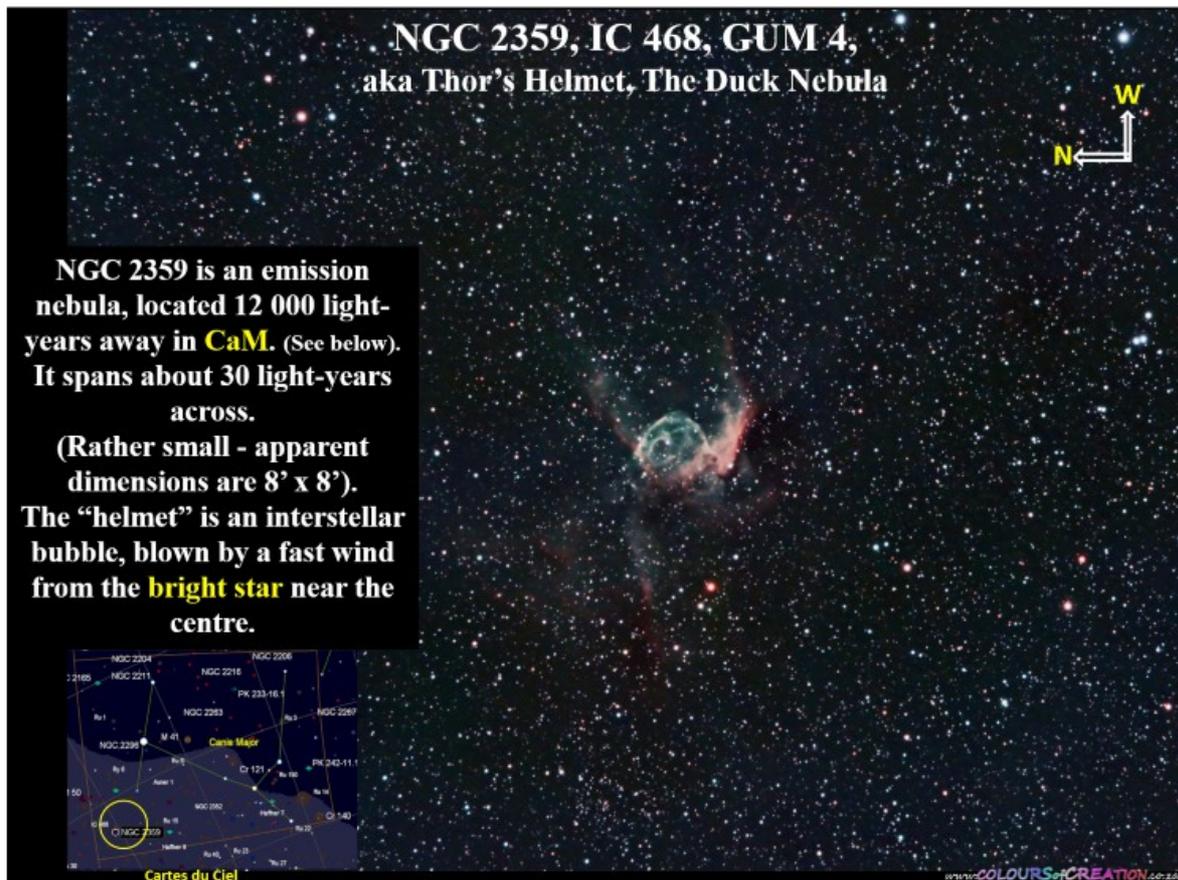
Scan 30' south-east of the cluster to locate the elusive Medusa Nebula with its unusual name. It is also known as Abell 21 and by many other names. The nebula looks very much like a crescent moon, convex shaped out towards the southeast, with the open, concave area northwestward. The roundish, ghostly glow is quite large, with a faded northwestern side and a much brighter southeastern part, with faint filamentary structures accompanied by dark bays inside this brighter outer rim. A few faint stars can be glimpsed embedded on its surface. What I really appreciate is the flimsy nebulosity that appears to become intertwined with the brighter parts, but this can be seen only with really high power and larger telescopes. The uneven half-moon-shaped nebula with a very low surface brightness would probably be better seen with averted vision or the use of a nebular filter. In Greek mythology, Medusa was generally described as a hideous looking woman with poisonous live snakes instead of hair. Anyone gazing directly on her would turn to stone. She was beheaded by the hero Perseus. He first used her cut off head as a weapon, and then gave it to the goddess Athena to put on her shield.

There are many ghostly nebulae playing hide-and-seek among the stars, but if you put some effort and energy into searching for them you will show those ghosts a trick or two.  $\Omega$

OBJECT	TYPE	RA	DEC	MAG	SIZE
PK205+14.1 Medusa Nebula	Planetary nebula	07 h 29.2	+13° 14.8'	10.3	15"



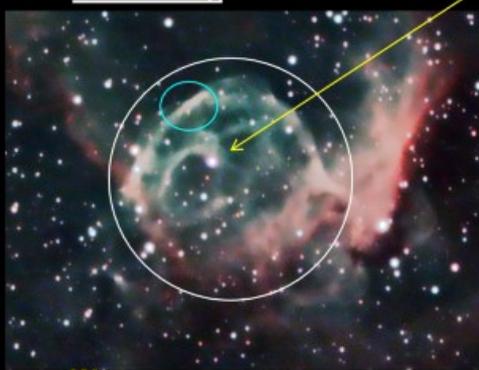
**Astrophotos by Johan Moolman**



**NGC 2359 is an emission nebula, located 12 000 light-years away in CaM. (See below). It spans about 30 light-years across. (Rather small - apparent dimensions are 8' x 8'). The "helmet" is an interstellar bubble, blown by a fast wind from the bright star near the centre.**



**NGC 2361 is a bright knot of nebulosity on one edge of the central ring of NGC 2359.**



The **central star** is the Wolf-Rayet star **WR7** (mag 11.4) - an extremely hot star thought to be in a brief, pre-supernova stage of evolution. (It is 280 000 times brighter, 16 times more massive and 1.4 times larger than our Sun).

Interactions with a nearby large molecular cloud are thought to have contributed to the complex shape and curved bow-shock structure of Thor's Helmet. The nebula has an overall bubble shape, but with complex filamentary structures. It contains several hundred solar masses of ionised material, plus several thousand more of un-ionised gas. It is largely interstellar material swept up by winds from the **central star**, although some material does appear to be enriched with the products of fusion and is likely to come directly from the star.

Multiple stacks (2 ½ hours total integration time).  
 Takahashi TOA 150 apochromatic refractor, f/7.2, FL 1100mm; Nikon D850 - modified; IDAS V4 LPS filter; Losmandy G11-GT mount.  
 Guiding: AZI cam, Takahashi 60mm f/5.9 refractor, FL 355mm.  
 Software: BackYardNIKON; Cartes du Ciel; PHD; DSS; PixInsight; Paint.NET.  
 (Pretoria, April 2021).

All **Wolf-Rayet** stars are highly luminous objects due to their high temperatures. Examples include the naked-eye stars: Gamma Velorum ( $\gamma$  Velorum; **WR 11**) and Theta Muscae ( $\theta$  Muscae; **WR 48** - although much of the visual brightness of Theta comes from its massive companions). [The only two **WR** stars brighter than mag 6]. Another example is one of the most massive stars known, R136a1 in 30 Doradus. (Wikipedia)

## NOTICE BOARD

**Small 4¼ inch Newtonian telescope for sale.** This was advertised in last month's newsletter. The price has now been reduced to R2000.

**Beanies:** Beanies will be offered for sale @ R40.00 each at every monthly meeting, until they are sold out.

**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.

### Feature of the month:

#### **Astronomers detect a bright blue bridge of stars, and it's about to blow**

Researchers were creating the most detailed map yet of the star-flecked spiral arms of our galactic neighbourhood with ESA's Gaia telescope when they discovered a region which they have named the Cepheus spur. As seen from Earth, it is nestled between the Orion-Cygnus Arm — where our solar system is — and the constellation Perseus.

The spur is a belt stretching from the Orion-Cygnus arm towards the Perseus arm and is filled with enormous hot blue stars with mass  $3M_{\odot}$ . Stars of this type are the rarest, hottest, shortest-living and largest stars in the Galaxy. The violent nuclear reactions taking place inside their cores make them six times hotter than the Sun. They will soon (on the cosmic time scale) become supernovae of type II. Then they will scatter the heavy elements essential for complex life far into the galaxy.  $\Omega$

[Astronomers detect a bright-blue bridge of stars, and it's about to blow | Live Science](#)

### **Astronomy basics: The Sun**

See a 5-minute video clip about the Sun.

[Sun 101 | National Geographic - YouTube](#)

### Web links for the astronomy enthusiast

- ◆ **The website for all information about the ASSA and the ASSA Centres:**  
<https://assa.sao.ac.za/>
- ◆ **ASSA Specialist Sections:**  
 ASSA has various areas of interest. Join and participate!  
<https://assa.sao.ac.za/sections/>
- ◆ **ASSA Publications to download and enjoy:**  
 MNASA: <https://www.mnassa.org.za/>  
 Nightfall: <http://assa.sao.ac.za/sections/deep-sky/nightfall/>  
 To receive as part of ASSA membership benefits - *Sky Guide*, the astronomical handbook for Southern Africa: <http://assa.sao.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](https://www.facebook.com/Astrosocsa/?_rdc=1&_rdr)  
 Youtube: [https://www.youtube.com/channel/UCJ4b1fhmPvYTOsy15YP-\\_JA](https://www.youtube.com/channel/UCJ4b1fhmPvYTOsy15YP-_JA)  
 Twitter: <https://twitter.com/AstroSocSA>
- ◆ **More web links can be found on page 118 of “2021 Sky Guide Africa South”. Ω**

### Pretoria Centre committee

Chairman	Bosman Olivier	082 883 1869	<a href="mailto:bosman@compendia.co.za">bosman@compendia.co.za</a>
Vice Chairman	Johan Smit	072 806 2939	<a href="mailto:johanchsmit@gmail.com">johanchsmit@gmail.com</a>
Secretary	Michael Poll	074 473 4785	<a href="mailto:pollmj@icon.co.za">pollmj@icon.co.za</a>
Newsletter Editor	Pierre Lourens	072 207 1403	<a href="mailto:pierre.lourens@vodamail.co.za">pierre.lourens@vodamail.co.za</a>
Librarian and Webmaster	Danie Barnardo	084 588 6668	<a href="mailto:daniebar@webmail.co.za">daniebar@webmail.co.za</a>
Assistant webmaster	Craig Kloke	083 404 2059	<a href="mailto:info@craigsmoodels.co.za">info@craigsmoodels.co.za</a>
Public Relations Officer	Fred Oosthuizen	072 373 2865	<a href="mailto:fredo@oostvallei.co.za">fredo@oostvallei.co.za</a>
Observing Coordinator	Louis Kloke	083 393 3594	<a href="mailto:dawn@mweb.co.za">dawn@mweb.co.za</a>
Asistant Observing Coordinator	Percy Jacobs	060 883 8106	<a href="mailto:percymj@iafrica.com">percymj@iafrica.com</a>
Treasurer and Membership Secretary	Michelle Ferreira	073 173 0168	<a href="mailto:michellem.ferreira@standardbank.co.za">michellem.ferreira@standardbank.co.za</a>
Curator of Instruments	Louis Kloke	083 393 3594	<a href="mailto:dawn@mweb.co.za">dawn@mweb.co.za</a>
Assistant Curator of Instruments	Johan Smit	072 806 2939	<a href="mailto:johanchsmit@gmail.com">johanchsmit@gmail.com</a>