



NEWSLETTER MAY 2020

NEXT MEETING

This will be a virtual meeting. See page 6 for details on how to join it.

Date and time: Wednesday 27 May at 18h45 for 19h15.

Programme:

- **Beginner’s Corner:** “A journey through the observational Universe”
by Percy Jacobs.
- **What’s Up:** by Louis Kloke.

NO OBSERVING EVENING THIS MONTH

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Astronomy-related articles on the Internet

Come to know orange Arcturus in Boötes. Arcturus is more evolved than the Sun. It is much bigger and has a much greater luminosity than the Sun, and the surface temperature is lower. It's less than 37 light-years away and appears as the brightest star north of the celestial equator. https://earthsky.org/brightest-stars/bright-orange-arcturus-use-the-big-dipper-to-find-it?utm_source=EarthSky+News&utm_campaign=c421ba8d0e-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-c421ba8d0e-394671529

Ripples on Pluto hint at subsurface ocean. A new study of unusual ripples on Pluto's far side add to the evidence for a subsurface ocean on this distant and cold dwarf planet. https://earthsky.org/space/pluto-subsurface-ocean-new-horizons?utm_source=EarthSky+News&utm_campaign=f9f52b7579-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-f9f52b7579-394671529

Will SETI 2.0 lead to a discovery of intelligent aliens? 2020 has been an interesting year so far with respect to the search for extraterrestrial intelligence, aka SETI. There's been no alien signal yet, but scientists have been working with new technologies and strategies that should greatly improve the search. https://earthsky.org/space/seti-breakthrough-listen-new-technologies-and-strategies?utm_source=EarthSky+News&utm_campaign=6b6f379b5b-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-6b6f379b5b-394671529

WFIRST. The **Wide Field Infrared Survey Telescope** has a 2.4 metre mirror, the same size as Hubble's, but with a view 100 times greater than Hubble's. It is scheduled for launch by the middle of the year. https://wfirst.gsfc.nasa.gov/?utm_source=EarthSky+News&utm_campaign=0bd08de91c-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-0bd08de91c-394671529

How WFIRST will use warped spacetime to find exoplanets. https://earthsky.org/space/wfirst-exoplanets-microlensing-space-time-milky-way?utm_source=EarthSky+News&utm_campaign=0bd08de91c-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-0bd08de91c-394671529

Update on 2I/Borisov, the first known interstellar comet. It comes from interstellar space. https://earthsky.org/space/comet-2i-borisov-comets-red-dwarf-stars-hubble-space-telescope?utm_source=EarthSky+News&utm_campaign=812141c4af-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-812141c4af-394671529

This small asteroid recently zipped closely past Earth. A small asteroid between 4 and 8 meters in diameter and labelled 2020 HS7 came close enough to sweep near satellites in Earth's geostationary ring at about 36 400 km from Earth, only about 1 200 km from the nearest geostationary satellite. That's a close shave on the scale of the solar system! https://earthsky.org/space/asteroid-2020-hs7-passed-closely-apr-28-2020?utm_source=EarthSky+News&utm_campaign=b43ae463b7-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-b43ae463b7-394671529

Astronomy related images and video clips on the Internet

Mesmerizing images of galaxies taken by the Hubble Space Telescope.

<https://www.msn.com/en-za/news/photos/mesmerizing-images-of-galaxies-taken-by-hubble-telescope/ss-BBAJ0bd?ocid=spartandhp&pfr=1>

Ten images of Earth from space. https://earthsky.org/space/earth-images-from-space?utm_source=EarthSky+News&utm_campaign=8fe19b0a27-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-8fe19b0a27-394671529

Dharti Ma – A Tribute to Earth. https://earthsky.org/human-world/dharti-ma-a-tribute-to-earth-music-video?utm_source=EarthSky+News&utm_campaign=eced9a5dd3-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-eced9a5dd3-394671529

Astronomy basics: What are gravitational waves?

First postulated by Albert Einstein in 1916, but not observed directly until September 2015, gravitational waves are *ripples in spacetime*. Much as a ship traveling across the surface of a calm sea leaves a wake behind it, so moving objects in the universe create gravitational waves. Ω

https://earthsky.org/space/definition-what-are-gravitational-waves?utm_source=EarthSky+News&utm_campaign=eced9a5dd3-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-eced9a5dd3-394671529

Feature of the month: Dark matter

It is a form of matter thought to account for approximately 85% of the matter in the Universe and about 25% of its total energy density. It has not been directly detected, but astronomers know it's inside and between galaxies because of the gravitational attraction it exerts. The rotational curves of stars in galaxies, the movements of galaxies in clusters of galaxies and gravitational lensing are phenomena that are evidence of the existence of dark matter.

But what is it? There are lots of theories about what it is. God knows, but He does not reveal it to us. We must try and find out ourselves. The fact that there are so many theories, is indicative of the high degree of ignorance about the nature of dark matter. Its nature is one of the major problems in cosmology. Ω

https://earthsky.org/astronomy-essentials/definition-what-is-dark-matter?utm_source=EarthSky+News&utm_campaign=c421ba8d0e-EMAIL_CAMPAIGN_2018_02_02_COPY_01&utm_medium=email&utm_term=0_c643945d79-c421ba8d0e-394671529

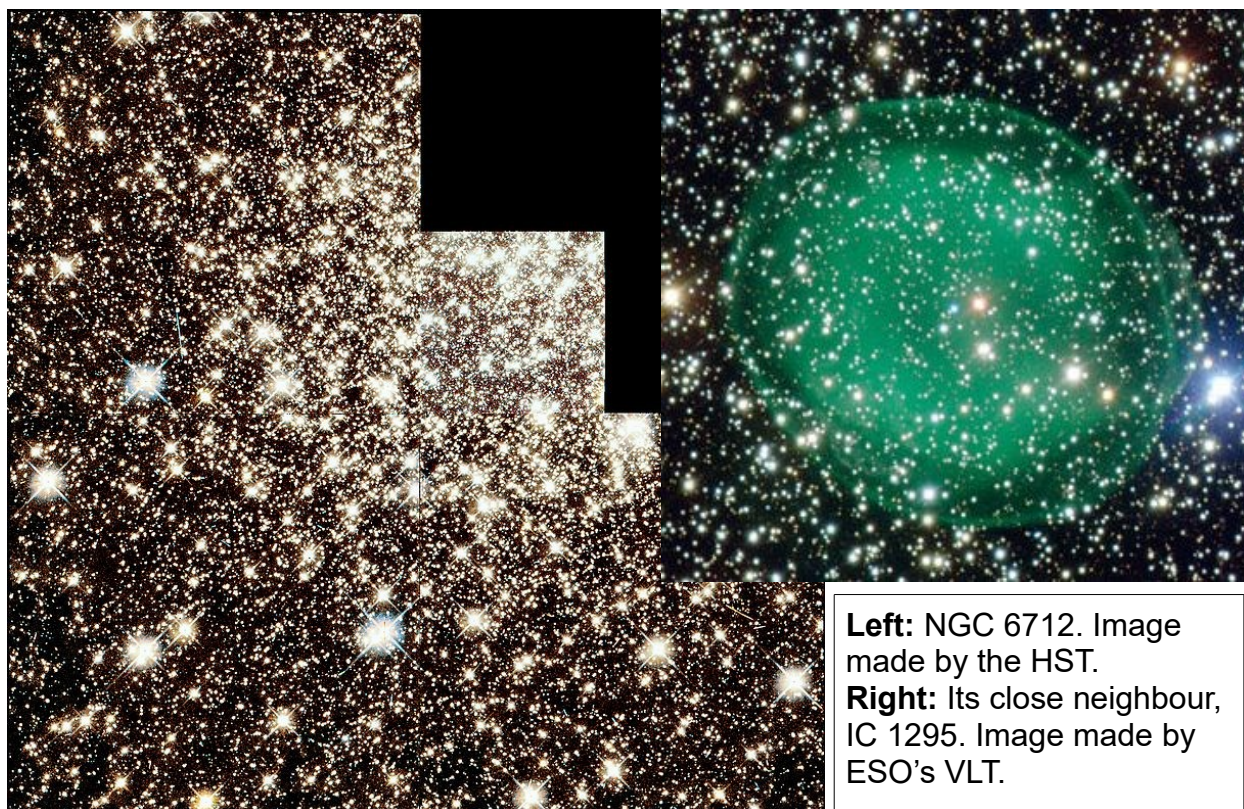
Observing: NGC 6712 - by Magda Streicher

Bright objects are always the first to be observed, and rightfully so. Bright globular clusters are usually the more outstanding and a treat to the eye. NGC 6712 in the constellation Scutum (The Shield), is one such a cluster: bright, slightly round in shape with an edge speckled with faint star strings. The core is very dense but so is the field of view. If I say it is a busy star field, it is stated mildly. It is crowded with stars of great variability.

But I do not want to talk about NGC 6712, but rather about its neighbour IC 1295. This is the object which most likely has been overlooked because it is faint, more or less around magnitude 14. And on top of it star hop will be one very difficult task. But that should not put you off. The trick here is to put in a little effort and search for this faint planetary nebula barely a few arc-minutes away from NGC 6712. The only way to success is perhaps a nebula filter and then it is still questionable if it will be glimpsed. In deep pictures the nebula glows with a metallic see-through blue colour and as a round object, not small as the norm is for planetary nebulae.

Now you will ask: "Magda, why go out and search for such a faint object then?" Always look around, searching out the fainter neighbours hanging around bright well-known objects and bag a bright and faint object situated close to one another. Another reason is, you never know when you will come across, perhaps a double star or asterism on your way to the neighbour next door. The bonus is satisfaction, and the so-called good feeling! Ω

OBJECT	TYPE	RA	DEC	MAG	SIZE
NGC 6712	Globular cluster	18 h 53.1 m	-08° 42'	8.2	7.2'
IC 1295	Planetary Nebula	18 h 54.6 m	-08° 50'	14-15	86"



Left: NGC 6712. Image made by the HST.
Right: Its close neighbour, IC 1295. Image made by ESO's VLT.

Summary of coming presentation on 27 May under “What's Up?” - by Louis Kloke

For the next month, we will be looking at the autumn night sky and the various constellations that are now coming up:

Mercury in the evening sky after sunset.

Scorpio rising in the evening sky in the east.

And towards the end of the month Mercury and the moon will be close to each other.

Venus and the moon before sunrise.

Mars and Neptune close to the moon on 13 June.

Earth in the penumbra of the lunar eclipse on 5 June.

For those who look at the moon, one of the craters of the moon that stands out quite spectacularly.

And finally, Comet Swan (C2020 F8) showing up in the northern sky in the days to come. See: <https://theskylive.com/c2020f8-info> Ω

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NOTICE BOARD

- ◆ **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.
- ◆ **A new Zooniverse project.** Help astronomers to measure the curvature of spiral arms in galaxies. https://www.zooniverse.org/projects/astro-lab-ncmns/spiral-graph?utm_source=Newsletter&utm_medium=Email&utm_campaign=announce13may2020
- ◆ **Another new Zooniverse project.** Help astronomers to find elusive muons disguised as gamma ray photons!
https://www.zooniverse.org/projects/zooniverse/muon-hunter-classic?utm_source=Newsletter&utm_medium=Email&utm_campaign=announce13may2020

The virtual meeting on 27 May 2020

The Pretoria Centre management committee decided at a meeting held on 4 May 2020 to embark on a series of Virtual Meetings via WebEx for the duration of the lockdown period. The first meeting will take place on Wednesday 27 May 2020 (i.e. on the normal meeting date) at 18:45 for 19:15.

Johan Smit will be responsible for the technical aspects of the meeting. He will send an email invitation to all members. You, the member must follow the instructions in the email to enter the meeting. Johan will arrange a test meeting with members who are unsure if their equipment is compatible. Please email him at johanchsmit@gmail.com to set up a test meeting.

WebEx is a safer option than other meeting platforms and can be used across most platforms, including Android and iOS. This will allow people to attend the meetings via their smartphones and tablets as well as their computers. Ω