

Program: Adventures in the Dusty Universe.
Dr Karin Sandstrom.

Volume 27, No.01
May 2021

Greg Smith – editor.

Meeting: May 26, 2021
Zoom 7:00 pm.

Note this is the 4th Wednesday

Waiting to see the stars.

These past seven weeks have been frustrating for me as I have not been able to make use of the clear nights that we have had.

The reason is that I have had to have cataract surgery on both my eyes. This has caused me not to be able to see up close, which was an option I chose, but the far vision is better, but not 100%. Thus, I have had to wait for my eyes to heal and my eyes settle in with the new lenes. Then I was able to get my eyes measured for new glasses. Now I am waiting for the new glasses to come in.

As of now when I go out to look at the stars, with just my eyes, they are all double stars with a bit of fringe around them. Maybe my eyes have not healed totally, and I will at least be seeing one star.

I do have at least one eyepiece that has long eye relief. I maybe able to use it with my glasses.

I am looking forward for a short time of viewing the stars and star clusters, as I may well have to have further eye surgery this summer for a macular ‘lump’ in my left

eye. This ‘lump’ causes a distortion that bends lines into waves.

So, my viewing may be curtailed this summer.

The Martian helicopter has done exceedingly well on all its flights, except for one glitch in its software that was fixed. The videos of it flying have been fantastic. It has done so well that its mission has been extended. It may be used in coordination with the rover as a further test of its abilities.

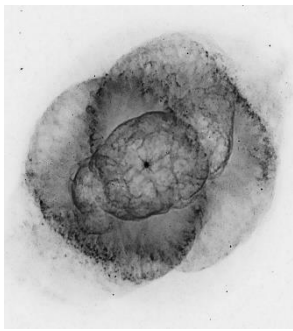
The Chinese have landed their rover successfully and has sent back its first pictures.

I have been writing this little editorial now for over 12 years. I do not want to hog the white space. **I would love to have a club member express their thoughts on what Astronomy as a general subject, or as a hobby, has meant to them.**

All it takes is a 350 to 400 word short essay on what astronomy means to them.

I have the deadline listed on the back page of the newsletter.

**Every Day is a Star Filled Day,
Every Night is a Starry Night**



Lord of the Rings?



Astronomers keep finding mysterious circular rings in the sky .

In the last few years, astronomers have spotted a handful of gigantic and almost perfectly circular radio objects out in the distant universe. Though no one has an explanation for these mysterious entities yet, a team has recently added another one to their catalog, potentially moving them closer to solving this head-scratcher.

The enigma began shortly after the Australian Square Kilometre Array Pathfinder (ASKAP), a bank of 36 colossal dishes in Western Australia that scans the heavens in the radio part of the electromagnetic spectrum, began producing maps of the entire night sky in 2019.

ASKAP scientists were mainly looking for bright sources that could indicate the presence of black holes or huge galaxies glowing in radio waves. But some in the team are always on the hunt "for whatever is weird, whatever is new, and whatever looks like nothing else," Bärbel Koribalski, a galactic astronomer at Commonwealth Scientific and Industrial Research Organization (CSIRO) and Western Sydney University in Australia, told Live Science.

In the data, group member Anna D. Kapińska of the National Radio Astronomy Observatory in Socorro, New Mexico, spotted four bright radio circles, Koribalski recalled, though initially the rest of the researchers dismissed them as a more familiar phenomenon.

But when telescopes tried to look at the objects in other wavelengths, such as the optical light our eyes use to see, they turned up empty, leading the team to dub them odd radio circles (ORCs).

Even stranger, each of the ORCs had a galaxy perched almost exactly in its center, like a bullseye. The astronomers were able to determine that the entities were each several billion light-years away and potentially as big as a few million light-years in diameter.

No one had seen anything like these before, and in a paper published last year, the team offered 11 potential explanations as to what they could be, including imaging glitches, warps in space-time known as Einstein rings, or a new type of remnant from a supernova explosion.

The researchers have since scanned the skies again with ASKAP and found one more ORC to add to their collection, an entity about 1 million light-years across located about 3 billion light-years away. They posted their findings on April 27 to the preprint database arXiv, and they have been accepted for publication in the Monthly Notices of the Royal Astronomical Society.

The team has now narrowed their ideas down to three potential explanations, Koribalski said. The first is that perhaps there are additional galaxies forming a cluster near the object and bending bright material into a ring-like structure. These might simply be too faint to be picked up by current telescopes.

Another possibility is that the central supermassive black hole of these galaxies is consuming gas and dust, producing humongous, cone-shape jets of particles and energy. Astronomers have often spotted such phenomena in the universe, though generally the jets align in such a way with Earth that observatories see them as moving out of the sides of the galaxy.

Perhaps in the case of the ORCs, the jets are simply pointing directly towards our planet, Koribalski suggested, so that we are in essence looking down the barrel of a long tube, creating a circular, two-dimensional image around a central galaxy.

"The other explanation is more exciting," she said. "This could be something completely new."

It's possible that some unknown but highly energetic event took place in the middle of these galaxies, creating a blast wave that traveled out as a sphere and resulted in a ring structure. Koribalski isn't yet sure what type of event could leave such a signature, though perhaps it's a previously unknown product of crashing black holes such as the kind seen in gravitational waves at the Large Interferometer Gravitational Wave Observatory (LIGO) in the United States.

But Harish Vedantham, an astronomer at the Netherlands Institute for Radio Astronomy who was not associated with the work, favors the simpler idea — that the ORCs are a manifestation of a well-known phenomenon, and are bright jets shooting from a galaxy at a rarely seen angle.

Vedantham is guided in this by the principle of Occam's razor, which prefers mundane explanations over strange, new ones. "You can construct an exotic scenario," he told Live Science. "But the simplest answer is almost always correct."

In a similar vein, the possibility that an ORC is an invisible galactic cluster isn't appealing to him because "it's kind of hard to hide a cluster," he said. The objects are far away, but they are not that far, so at least a few additional galaxies should be noticeable, he added.

Both Vedantham and Koribalski agree that more telescope observations in other wavelengths should help scientists get a better idea of what's going on. New data will be forthcoming in the next six months or so, hopefully adding additional ORCs to their catalog, Koribalski said.

In the meantime, she is somewhat enjoying the mystery. "You become a detective. You look at all the clues and weigh them up against each other," she said. "Sometimes the universe just comes up with weird and wonderful shapes."

Originally published on [Live Science](#).

Minutes of the April Meeting

General

- Introductions, welcome everybody
- Program - "Tidal Forces" by Steve Powell
- Short break
- Sky report – will be listed on the web
- Business meeting

Business Meeting Topics

Resumption of in-person meetings delayed - Cowlitz County has reverted to Phase 2

May 19 outdoor meeting tentatively planned at Mike's, along with a show and tell program for some of his astronomy toys.

Upcoming election of club officers (May meeting)

Reminder - 2021-22 club dues are payable in May.

Willow Grove Park summer solstice event (6/20) –

Still planned Public sidewalk astronomy event scheduled for 5/21 or 5/22 - may be canceled.

Need programs for upcoming FoG meetings.

Anything else you feel needs to be discussed.

Next meeting 5/19 (outdoor meeting at Mike's with possible star party to follow, or Zoom)

☞ **May 2021 Meeting** ☞

DATE: **Wednesday May 26, 2021**

TIME 7:00pm

PLACE: Zoom

PROGRAM: Dr. Karin Sandstrom: Adventures in the Dusty Universe.

Drinks : Your Choice

Snacks : Whatever is in your Cupboards

Dues for 2021 up for renewal this month.

The Star Report is posted on the clubs website : www.friendsofgalileo.com

It is listed in the blog portion of the website.

Friends of Galileo Club Officers

PRESIDENT	Ted Gruber
VICE-PRESIDENT/ PROGRAM CHAIR	Mark Thorson
SECRETARY	Greg Smith
TREASURER	Steve Powell
WEBSITE	Ted Gruber
NEWSLETTER ED.	Greg Smith
ALCOR	Tom Meek

Next Month's Newsletter Deadline

The deadline for items in next month's newsletter is:
Wednesday: seven days before next meeting.

Please feel free to send in your thoughts and experiences about your astronomical adventures.

Submit your material by E-mail to: gryth@msn.com

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 Longview, WA

