EDITION-I

VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

JUNE

VIT STELLAR

Stellar Newsletter

stellarclub-vit.github.io

OUR '24 BOARD

On behalf of VIT-STELLAR BOARD '24, I extend a warm Welcome to our Astronomy Club's Newsletter, where we embark on a journey through the cosmos, exploring celestial phenomena, unraveling mysteries, and sharing our passion for the stars. Whether you're a seasoned stargazer or just beginning your cosmic voyage, there's something for everyone in these pages. Let's ignite our curiosity, expand our horizons, journey into the infinite wonders of the cosmos and shine like the stars!

- Dr. Selva Rani B, Faculty Coordinator

As we navigate the cosmos together, I invite you to stay engaged and involved in our upcoming events. From educational workshops to immersive stargazing experiences, there is something for everyone to enjoy. Keep an eye out for further announcements, as we strive to provide enriching opportunities for all members of our stellar family.

Our inaugural newsletter marks the beginning of what promises to be an exciting and fulfilling period for VIT STELLAR. I extend my heartfelt appreciation to those who joined us for our recent workshop on the James Webb Telescope. Your participation sets a positive tone for the endeavors that lie ahead , A special note of thanks goes out to our speakers for their insightful contributions.

- Aniket Rai, Chairperson

CONSTELLATION OF THE MONTH

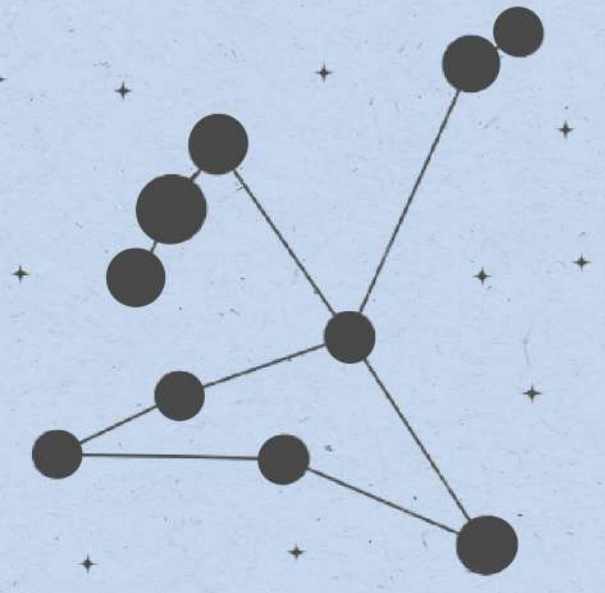
Every nightfall, when I notice the sky holding more stars than usual, I immediately look for constellations. Made when stars group together to form a pattern or shape, some of the constellations we see and observe today were recorded thousands of years ago at the earliest. The story behind each one either so unique and interesting, or intertwined like the threads of a cobweb

This month's constellation is Aquilla, a constellation that represents an eagle. Known as "The Falcon of Horus" in ancient Egyptian myths, and as "Garudan" in Hindu mythology, This Constellation consists of 10 main stars that form its eagle shape, Altair being the brightest shining star among them

This collection of stars also has its history with the Greek-Roman mythology, where the eagle it's representing is said to be the infamous King of Gods, Zeus himself, who took the form of an eagle to abduct a gorgeous mortal named Ganymede, and add him to the (long) list of mortals (and immortals) he's messed with. The Romans, on the other hand, called it "vulture Volans", to keep their profound interest in contrasting the Greeks in everything

But interestingly enough, poor Ganymede over here has a constellation for himself as well! To know more on this dude's story and the other constellation, make sure to read our next month's newsletter

~ Samita Sri CJ



LIGHT! & IT'S SECRETS

Hey, have you ever puzzled over gravity and light? You know, the concept that light is not supposed to be affected by gravity since it lacks mass? Well, let me clarify this matter for you! Imagine the universe as a massive cosmic trampoline. When a something major, like a planet or a star, lies down on it, and the whole thing gets dented. That dent is what's known as gravity. It's the thing that drags stuff in. However, while light usually moves more rapidly than a moving bullet, when it gets near something massive like a black hole, that dent is so deep that even light falls within. It's as though gravity has a superpower.

PROBING GAS GIANTS

In the vast expanse of space, the origins of gas giants like Jupiter and Saturn have long intrigued astronomers. Recent research utilizing the James Webb Space Telescope (JWST) offers new insights into this cosmic puzzle.

Scientists focused on a phenomenon called the "disk wind," which involves the escape of gas from protoplanetary disks surrounding young stars. These disks, rich in gas and dust, are the birthplaces of planets. Understanding the mechanisms behind gas dispersal is crucial for understanding gas giant formation.

Lead author Naman Bajaj, from the University of Arizona, highlighted the significance of their findings. By harnessing the JWST's infrared capabilities, the team uncovered the physics of disk winds and their impact on planetary formation, advancing our understanding of gas giants' origins. Gas giants play critical roles in shaping planetary systems and influencing celestial evolution. Bajaj's team suggests that gas giants may have a brief window of opportunity–approximately 100,000 years–to form before protoplanetary disk gas dissipates completely. This timeframe, though short in astronomical terms, has profound implications for planetary dynamics. These discoveries represent a significant leap forward in our quest to comprehend the cosmos. As humanity delves deeper into space with instruments like the JWST, we edge closer to unlocking the secrets of our celestial origins and our place in the universe.

~A Anjana Nair and Kaushiki Kumari

FACTS OF THE MONTH

COSMIC LULLABY : When astronomers tune into the faint radio waves emitted by interstellar gas clouds, they can sometimes translate them into audible frequencies. These mesmerising sounds are nicknamed "cosmic lullabies" and offer a unique way to listen to the universe.

NEUTRON STAR RAIN: The incredibly strong magnetic field of a neutron star can rip material from a companion star, funnelling it down to the neutron star's poles in a torrential downpour of superheated plasma.

OUR TOP PICKS!

Books:

1. The end of everything *by Katie Mack.*
1. The future of humanity *by Michio Kaku.*

TV Series:

- Three body problem.

Other content:

- Timelapse of the Future. *by melodysheep*

'STELLAR' DATES

June 3 - 'Parade of Planets' [alignment of Mercury, Mars, Jupiter, Saturn, Uranus, and Neptune]

June 20 - Summer Solstice

June 22 - Strawberry Moon

MIRAGE MATRIX

Can you picture a world where everything you see and experience–the people you meet, the world around you, even time itself–is just a grand, magical illusion, like a spectacular movie being projected on a cosmic screen? This fun and mind-bending concept is what the holographic universe theory is all about.

Think of it like this: instead of the world being made up of solid objects and three-dimensional space as we usually perceive it, imagine that all the information that creates this reality is actually stored on a flat, two-dimensional surface. It's as if the entire universe is a giant hologram, with every detail of our existence encoded in patterns on this cosmic "screen."

So, when you look at the world, what you're really seeing is just the illusion created by this holographic projection. The seemingly solid objects around you, the depth and space–all of it is just a product of your brain interpreting the information from this two-dimensional source.

But it doesn't stop there. Time, too, is part of this illusion. Just as the illusion of space is created by the interaction of light and information on the holographic surface, our perception of time might also be a product of this cosmic projection. The past, present, and future could all be part of the same holographic tapestry, woven into the fabric of reality.

Now, this idea might sound far-fetched, but it challenges us to rethink everything we thought we knew about the nature of the universe. It's like peeling back the layers of reality to reveal a hidden truth that's both awe-inspiring and mind-bending.

Next time you're admiring the world around you, just remember–what you're seeing could be a wonderfully grand illusion. It's a cosmic hologram that's as delightfully mysterious as it is fascinating!

~Vanshika Garg

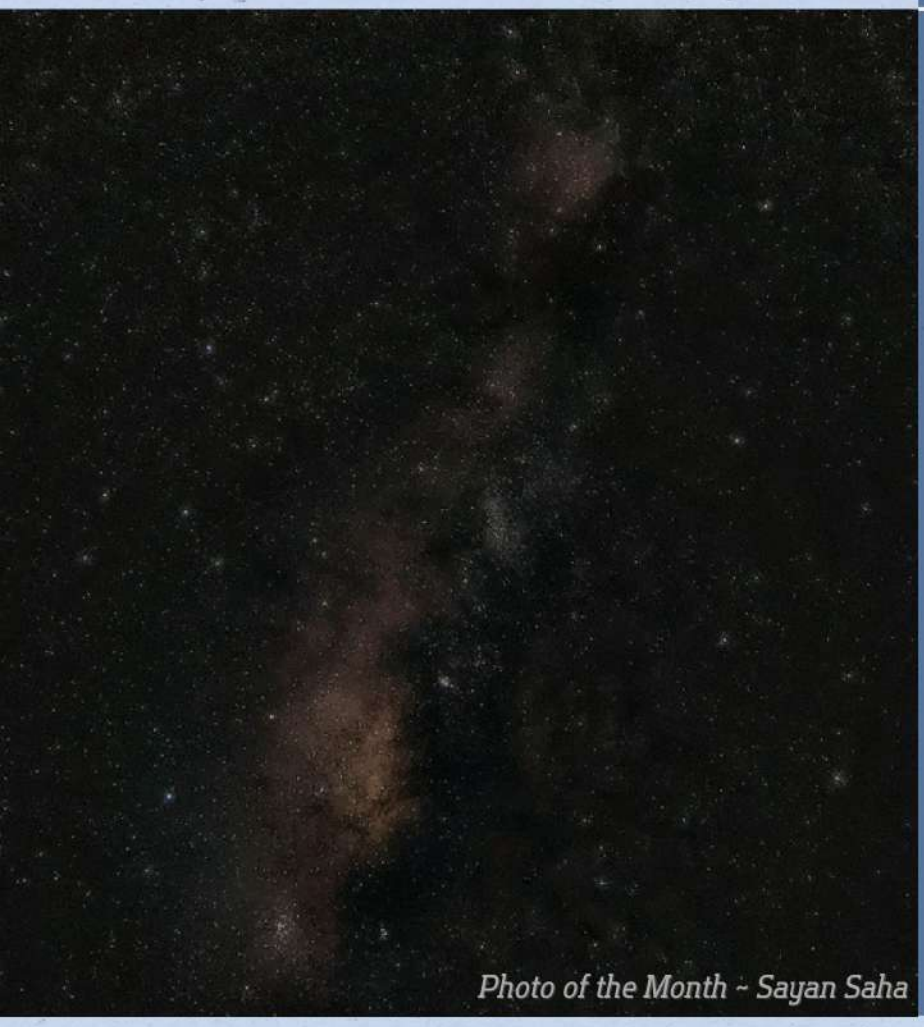


Photo of the Month ~ Sayan Saha

COSMIC LOVE

YOUR EYES, JUST LIKE STARS IN THE NIGHT,
SPARKLING WITH STORIES, SHINING BRIGHT.

YOUR PRESENCE, A SOOTHING MOONBEAM,
CHASING AWAY SHADOWS, LIKE A DREAM.

OUR LOVE FEELS LIKE SUN'S WARM EMBRACE,
BANISHING DARKNESS, LEAVING NO TRACE.

AS BEAUTIFUL AS SATURN'S RINGS,
IMPERFECT, YET PERFECT IN ALL THINGS.

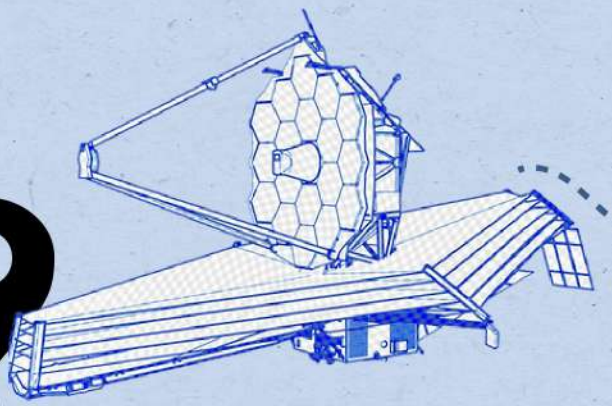
IN THIS VAST UNIVERSE, WE'LL GO HAND IN HAND,
IT'S A COSMIC LOVE STORY, ONE OF A KIND.

~ Kaushiki Kumari

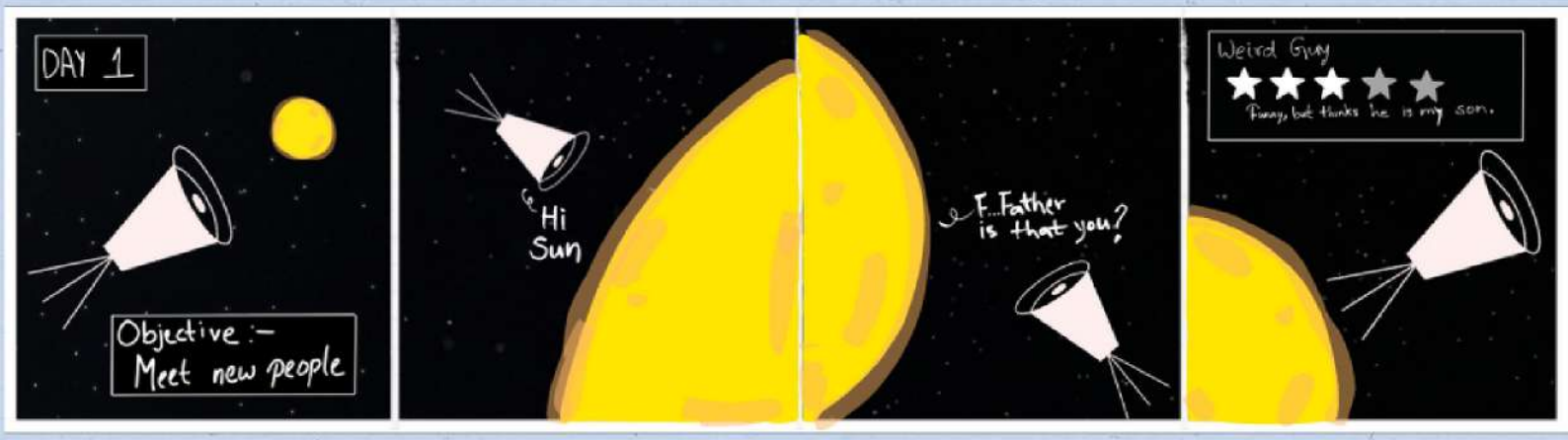
OUR MONTHLY RECAP

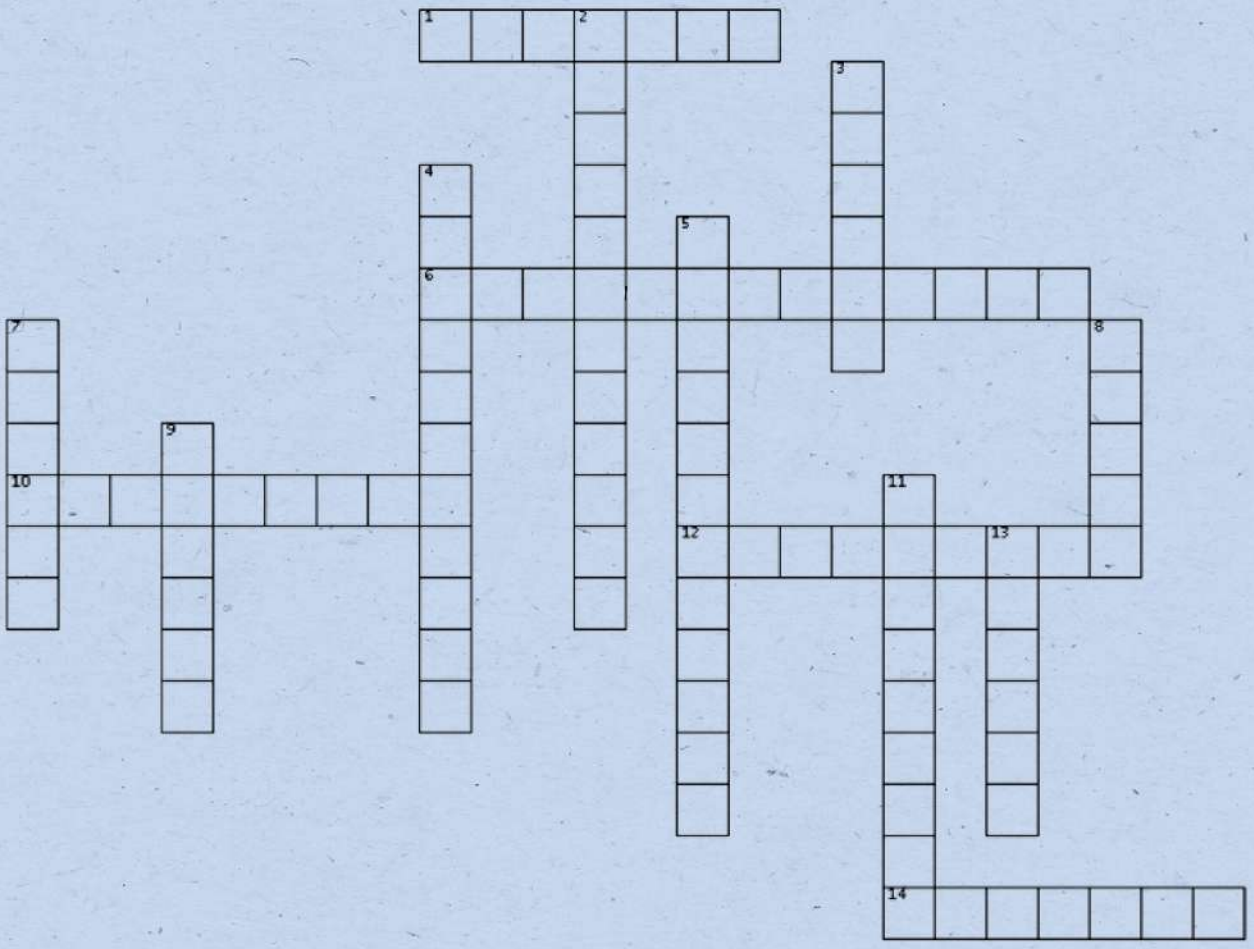
1 March
Zero Gravity dance party

16 March
Stellar Ice breaking session



19 March
workshop on James Webb Telescope





ACROSS:-

1. THE PARTIAL OR COMPLETE OBSCURING OF ONE CELESTIAL BODY BY ANOTHER.
6. A GROUP OF STARS FORMING A RECOGNIZABLE PATTERN THAT IS TRADITIONALLY.NAMED AFTER ITS APPARENT FORM OR IDENTIFIED WITH A MYTHOLOGICAL FIGURE.
10. AN EXTREMELY BRIGHT EXPLOSION OF A STAR THAT OCCURS AT THE END OF ITS LIFE CYCLE
12. A PLANET THAT ORBITS A STAR OUTSIDE THE SOLAR SYSTEM
14. THE TIME OF THE YEAR WHEN THE SUN CROSSES THE CELESTIAL EQUATOR, RESULTING IN NEARLY EQUAL LENGTHS OF DAY AND NIGHT.

DOWN:-

2. A FAMOUS MOVIE BASED ON SPACE
3. AN EXTREMELY BRIGHT AND DISTANT ACTIVE GALACTIC NUCLEUS, POWERED BY A SUPERMASSIVE BLACK HOLE.
4. THE PHENOMENON IN WHICH ONE CELESTIAL BODY IS HIDDEN BY ANOTHER AS VIEWED FROM EARTH.
5. A MODEL OF THE SOLAR SYSTEM IN WHICH THE SUN IS AT THE CENTER, WITH PLANETS ORBITING AROUND IT.
7. A HIGHLY MAGNETIZED ROTATING NEUTRON STAR THAT EMITS BEAMS OF ELECTROMAGNETIC RADIATION.
8. A CELESTIAL OBJECT COMPOSED MOSTLY OF ICE, DUST, AND GAS.
9. ALSO KNOWN AS A SHOOTING STAR.
11. A REGION OF SPACETIME WHERE GRAVITY IS SO STRONG THAT NOTHING, NOT EVEN LIGHT, CAN ESCAPE FROM IT.
13. A CLOUD OF GAS AND DUST IN OUTER SPACE, VISIBLE IN THE NIGHT SKY EITHER AS AN INDISTINCT BRIGHT PATCH OR AS A DARK SILHOUETTE AGAINST OTHER LUMINOUS MATTER.

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