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**TOP
TECHNOLOGY
TRENDS**



Our Founder and his Vision

Knowledge is the prime wealth among all wealths. In other words, knowledge is the best and important wealth among all wealths. Start your journey to find or explore the knowledge. Our founder and renowned scholar late Padmashri Dr Vellayani Arjunan's vision is to spread quality education to entire community and make it affordable.

Shri. Vellayani Arjunan was born on 10 February 1933 at Vellayani in the erstwhile Kingdom of Travancore. After receiving a Master of Arts degree in Malayalam, he went on to teach Malayalam Language and Literature at Sree Narayana College in Kollam. He later became the first Malayalam lecturer in Aligarh Muslim University, from which he gained his PhD degree in 1964. After leaving Aligarh Muslim University, he was appointed director of the State Institute of Encyclopaedic Publications in Kerala

He was honoured with the Padma Shri award by the nation in 2008. Dr Arjun, who was the first Professor of Malayalam at the Aligarh University and head of the Department of Modern Indian Languages. He supervised 20 research scholars and published more than 100 research papers and articles. He had authored 40 books in different genres including poetry, short story, essays and literary criticism, and his books were prescribed as textbooks in Kerala schools from 1959 onwards.

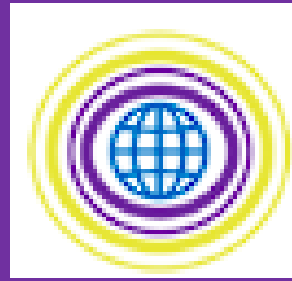


Degree	Topic	Awarding Institution
D.Litt.	Influence of Sree Narayana Guru on Malayalam Poetry.	Aligarh Muslim University
D.Litt.	A Comparative Study of the Mutual Relations and Uniformity of Hindi and Malayalam Languages.	Agra University
D.Litt.	The influence of Hindi Vocabularies on the South Indian Languages: A Linguistic study.	Jabalpur University
Ph.D.	A Comparative Linguistic Study of Common Vocables of Hindi and Malayalam Languages.	Aligarh Muslim University

Other degrees

Degree	Subject
B.A. Hons	Malayalam Language and Literature
M.A.	Malayalam Language and Literature
M.A.	Hindi Language and Literature
M.A.	Hindi Special
P.G. Diploma	Tamil, Telugu, Kannada





From the Editor's Desk.....

Dear Students & future leaders,

We are delighted to launch “The Mentors” website to enable learning easy , user friendly and affordable. www.thementors.co.in is our website and is accessible to everyone around the world. Technology has played an important role in improving and expanding education worldwide. Websites are a critical element in the ongoing growth and evolution of digital schools. Having good school web design is also very important for delivering a good user experience for its regular users, including teachers, students and parents. The well-designed **educational websites for students** can create an interactive platform on many levels. Website development is one of our Corporate Social Responsibility (CRS) initiatives. Utilize the platform to enhance knowledge and at the same time share the knowledge to others as well. Yes, it is the **time to change the way....**

WHAT IS SPECIAL ABOUT THE MONTH OF OCTOBER ?



World Animal Welfare Day serves as a poignant opportunity to highlight the myriad ways in which animals enrich our lives and ecosystems. It encourages us to consider the countless roles animals play, whether as beloved pets, essential pollinators, or integral parts of delicate ecosystems. By dedicating a day to their welfare, we acknowledge that animals are not merely resources or commodities but vital contributors to the intricate web of life on Earth.

Furthermore, this day encourages us to recognize the interdependence between human and animal well-being. The health and happiness of animals often parallel our own, and our actions directly impact their quality of life. It reminds us that responsible choices in our daily lives, such as sustainable consumption, responsible pet ownership, and conservation efforts, can make a significant difference in preserving biodiversity and ensuring the harmony of our shared environment. In conclusion, World Animal Welfare Day is a call to action, urging us to extend our circle of compassion to encompass all creatures. It is a day to celebrate the awe-inspiring diversity of life on our planet and to redouble our commitment to safeguarding the welfare of animals, both domestic and wild, for generations to come.

The mentors Digest



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MAGAZINES

JUNE 2023



JULY 2023




The Mentors Digest



We appreciate M/s Globosoft TEAM for developing a wonderful platform to accelerate our mission in the field of education

CERTIFICATE OF APPRECIATION

 THE MENTORS

time to change the way.....

Dear George Thomas and TEAM,

We appreciate the remarkable efforts and professionalism that you and your TEAM have extended to the development of "The Mentors" website-Phase I. Your hard work, perseverance and team spirit, combined with your high level of proficiency and technical expertise have propelled our activity towards its smooth and successful implementation.

Your diligence, self-motivation and passion in all the work that you do is a source of inspiration for the rest of the team. We are impressed with the work you produced and the leadership qualities you showed that others could look up to.

Special appreciation to Ms. Remya R, Ms. Anjitha Ajith, Ms. Jesna Ali & Mr. Vaishak for your valuable support in not only developing the platform, but also in making this activity a positive experience with worthwhile outcomes that are beneficial for The Mentors.

The Mentors Director Board

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SINCE 2010

The mentors Digest



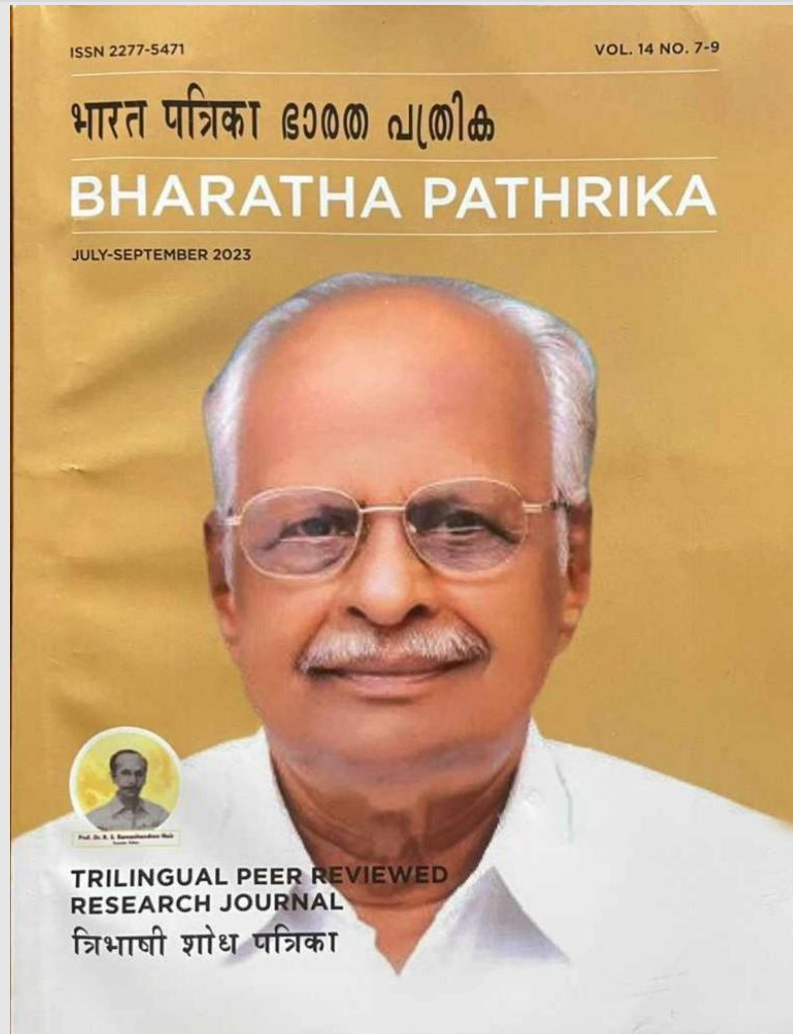
"Bharatha Pathrika" is a prestigious trilingual magazine that has been gracing the literary landscape of Kerala for the past two decades. Founded and led by the eminent scholar, writer, and college professor, Dr. Thirumala Chandran, this magazine has consistently upheld the values of literature and culture. Over the years, it has garnered recognition and accreditation from the Ministry of Human Resource Development (HRD) of the Government of India, a testament to its unwavering commitment to promoting language and literature.

One of the luminary figures associated with "Bharatha Pathrika" was the illustrious Dr. Vellayani Arjunan, a pioneer and esteemed advisory member. Dr. Arjunan's profound contributions to the magazine played a pivotal role in elevating its status and popularity among literary enthusiasts not only in Kerala but also on a national scale.

His wisdom, guidance, and support helped nurture and inspire countless budding writers, molding their literary tastes and talents.

The untimely demise of the revered Padmasree Dr. Vellayani Arjunan was a profound shock to the entire "Bharatha Pathrika" community. In a heartfelt tribute to honor his memory and legacy, the magazine's editorial team decided to dedicate their 7th edition of the 14th volume as a homage to this remarkable individual. This special edition became a collection of heartfelt remembrances from people across different walks of life who share a deep passion for literature and languages. Their words and tributes painted a vivid picture of Dr. Arjunan's indelible impact on the literary world.

The release of this tribute edition was a momentous occasion, marked by a ceremony held at the Press Club in Trivandrum on the 8th of September 2023. The honor of unveiling this special edition was bestowed upon the distinguished Honorable Minister for Education of Kerala, Shri Shivankutty. It was a fitting tribute to a literary giant who left an indelible mark on the world of letters and whose legacy continues to inspire generations of writers and readers alike. "Bharatha Pathrika" remains a beacon of literary excellence, and Dr. Vellayani Arjunan's legacy lives on through its pages and the hearts of all who cherish the beauty of language and literature.





ADITYA L1

Aditya L1 Mission to Lagrange Point 1

The Aditya L1 mission is currently in space, making its way towards Lagrange Point 1 (L1) after launching from India on September 2. L1 is a special location in space where gravitational forces balance, making it an ideal spot for spacecraft with minimal fuel requirements.

Significance of Lagrange Point 1

L1 is one of the five Lagrange points in a two-body system, situated between the Sun and Earth. It allows for continuous observation of these celestial bodies and unobstructed views of other celestial entities.

Aditya L1's Unique Orbit

Aditya L1 will operate in a 'Halo orbit' around the Sun-Earth L1 point, which is approximately 15 lakh kilometers from Earth. These orbits are three-dimensional and periodic, providing comprehensive observations of the Sun's photosphere, chromosphere, and corona.

Joining Other Spacecraft at L1

Aditya L1 joins several other operational spacecraft at the Sun-Earth L1 point, including the International Sun-Earth Explorer (ISEE-3), the Genesis mission, ESA's LISA Pathfinder, China's Chang'e 5 lunar orbiter, and NASA's Gravity Recovery and Interior Recovery (GRAIL) mission.

Role of L1 Spacecraft in Space Weather Monitoring

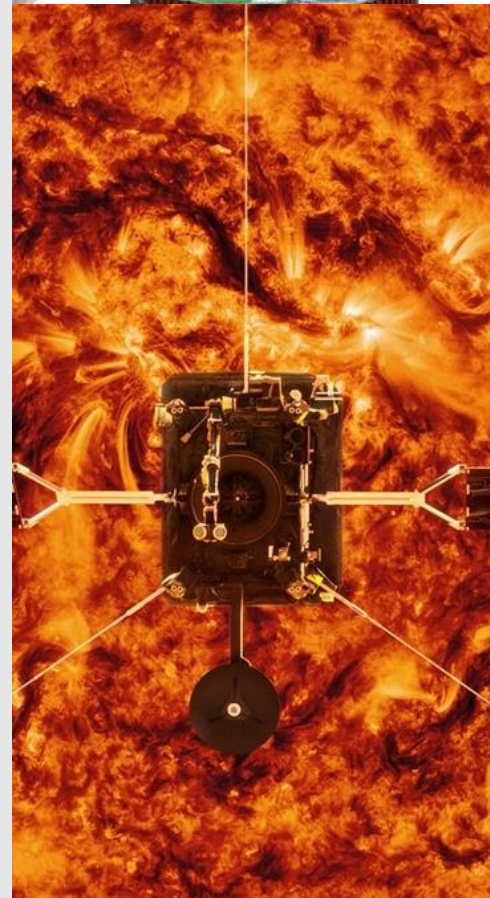
Spacecraft at the Sun-Earth L1 point play a crucial role in monitoring space weather events, providing early warnings to protect both space assets and ground-based infrastructure. Current missions like Nasa's Wind mission and others contribute significantly to our understanding of space and space weather.

Close Approach Assessments for Safety

Despite the sparse population at L1 and vast spacecraft separation, ISRO plans to conduct periodic close approach assessments for Aditya L1 due to positional uncertainty and sensitivity to perturbative forces. NASA-JPL's support ensures

Expected Arrival Date

Aditya L1 is expected to reach its destination at Lagrange Point 1 on January 6, 2024.



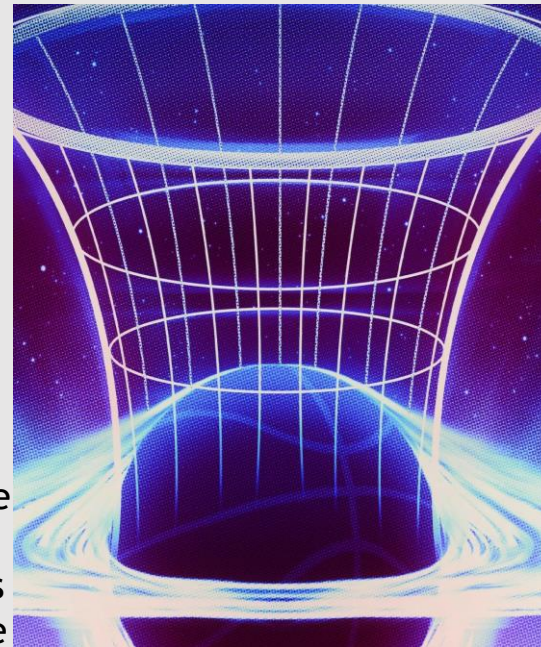


Mathematics

Advances in Black Hole Science: Identifying Higher-Dimensional Black Holes and Unveiling New Insights"

In the early 20th century, physicist Karl Schwarzschild introduced the concept of black holes, where gravity becomes so overwhelming that nothing, not even light, can escape from a region known as the Schwarzschild radius. Recent advancements by mathematicians have significantly enhanced our understanding of these enigmatic cosmic entities. They've developed a mathematical framework that enables the identification of potential black holes based solely on the concentration of matter, and they've also mathematically proven that black holes can exist in higher-dimensional spaces.

To provide context, the work of physicists like Roger Penrose and Kip Thorne is crucial. Penrose's singularity theorems, formulated in the 1960s, showed that if space-time contains a closed trapped surface, where the curvature is so extreme that light is trapped and directed inward, a singularity—a point where known physics breaks down—is also present. Kip Thorne's 1972 hoop conjecture furthered our understanding of black hole formation. It addressed when a non-spherical object could collapse into a black hole. Thorne's idea was to determine an object's mass and then calculate the critical radius of a hypothetical hoop. This hoop, regardless of its orientation, would ensure the formation of a black hole if it could fit around the object. However, the vague wording of the hoop conjecture presented challenges. It needed a more precise formulation. In a recent paper by Marcus Khuri, Sven Hirsch, Demetre Kazaras, and Yiyue Zhang, an alternative approach is introduced. They use the Jang equation, which can reach infinity at specific points in space, coinciding with the presence of a closed trapped surface. This method allows researchers to identify potential black holes by determining where the Jang equation becomes infinite. It offers a more intuitive and practical approach compared to previous techniques involving tori (doughnuts).



VEDIC MATHS TRICK

One of the effective vedic maths tricks is to divide a large number by 5.

To find the answer for $16951/5$:

Step 1: $16951 * 2 = 33902$

Step 2: Move the decimal: 3390.2 or just 3390

To find the answer for $2112/5$:

Step 1: $2112 * 2 = 4224$

Step 2: Move the decimal: 422.4 or just 422

To find the answer for $4731/5$:

Step 1: $4731 * 2 = 9462$

Step 2: Move the decimal: 946.2 or just 946



CHAPTER OF THE MONTH: COMPLEX NUMBERS

Complex Number

A number of the form $z = a + ib$, where $a, b \in \mathbb{R}$ and $i = \sqrt{-1}$, is called a complex number. Here $\text{Re}(z) = a$ and $\text{Im}(z) = b$.

Algebra of Complex Numbers

Let $z_1 = a_1 + ib_1$, $z_2 = a_2 + ib_2$, then

- $z_1 + z_2 = (a_1 + a_2) + i(b_1 + b_2)$
- $z_1 - z_2 = (a_1 - a_2) + i(b_1 - b_2)$
- $z_1 z_2 = (a_1 a_2 - b_1 b_2) + i(a_1 b_2 + a_2 b_1)$
- $\frac{z_1}{z_2} = \frac{a_1 a_2 + b_1 b_2 + i(a_2 b_1 - a_1 b_2)}{a_2^2 + b_2^2}$, where $z_2 \neq 0$
- $z_1 = z_2 \Rightarrow a_1 = a_2$ and $b_1 = b_2$

Geometry of Complex Numbers

If z is a variable point and z_1, z_2 are two fixed points in the argand plane, then

- $|z - z_1| = |z - z_2|$ represents perpendicular bisector of the line segment joining z_1 and z_2 .
- $|z - z_1| + |z - z_2| = K$ (a fixed quantity > 0) ... (i)
 - \Rightarrow If $K > |z_1 - z_2|$, then (i) represents an ellipse.
 - \Rightarrow If $K = |z_1 - z_2|$, then (i) represents the line segment joining z_1 and z_2 .
 - \Rightarrow If $K < |z_1 - z_2|$, then (i) does not represent any curve in the argand plane.
- If $K \neq |z_1 - z_2|$, then $|z - z_1| - |z - z_2| = K$ represent a hyperbola with foci at z_1 and z_2 .
- If $K = |z_1 - z_2|$, then $|z - z_1| - |z - z_2| = K$ represents a straight line joining z_1 and z_2 but excluding the line segment joining z_1 and z_2 .
- Triangle ABC with vertices $A(z_1)$, $B(z_2)$ and $C(z_3)$ is equilateral if and only if $\begin{vmatrix} 1 & z_1 & z_2 \\ 1 & z_2 & z_3 \\ 1 & z_3 & z_1 \end{vmatrix} = 0$.
- The equation of circle whose centre is at point having affix z_0 and radius R is $|z - z_0| = R$.
- The equation of circle whose centre is $-a$ and radius $R = \sqrt{|a|^2 - b}$ is $z\bar{z} + a\bar{z} + \bar{a}z + b = 0$.

Some Basic Terms

If $z = a + ib$, then

- Conjugate: $\bar{z} = a - ib$
- Modulus: $|z| = \sqrt{a^2 + b^2}$
- Argument: $\arg(z) = \tan^{-1}(b/a)$

Properties

- $\overline{(\bar{z})} = z$
- $z = \bar{z} \Leftrightarrow z$ is purely real
- $z + \bar{z} = 0 \Leftrightarrow z$ is purely imaginary
- $\overline{z_1 \pm z_2} = \bar{z}_1 \pm \bar{z}_2$
- $\overline{z_1 z_2} = \bar{z}_1 \bar{z}_2$
- $\overline{(z_1 / z_2)} = \bar{z}_1 / \bar{z}_2; z_2 \neq 0$
- $\overline{(z^n)} = (\bar{z})^n$
- $|z| = |\bar{z}| = |-z| = |-\bar{z}|$
- $z\bar{z} = |z|^2 = |\bar{z}|^2$
- $|z^n| = |z|^n$, where $n \in \mathbb{Q}$
- $|z_1 + z_2 + \dots + z_n| \leq |z_1| + |z_2| + \dots + |z_n|$
- $\arg(z_1 z_2) = \arg(z_1) + \arg(z_2) + 2n\pi \forall n \in \mathbb{I}$
- $\arg(z_1 / z_2) = \arg(z_1) - \arg(z_2) + 2n\pi \forall n \in \mathbb{I}$
- $\arg(z^n) = n \arg(z) + 2n\pi \forall n \in \mathbb{I}$

Different Forms of Complex Numbers

- Polar Form:** $z = a + ib = r(\cos\theta + i\sin\theta) = r \text{cis } \theta$, where $r = \sqrt{a^2 + b^2}$, $\theta = \tan^{-1}(b/a)$
- Euler's Form:** $z = re^{i\theta}$, $\bar{z} = re^{-i\theta}$ where $-\pi < \theta < \pi$, θ is the principal argument.

Square Root of a Complex Number

Let $z = a + ib$ be a complex number. So, square root of $z = a + ib$ is defined as,

$$\sqrt{a + ib} = \pm \left\{ \sqrt{\frac{1}{2}(\sqrt{a^2 + b^2} + a)} + i \sqrt{\frac{1}{2}(\sqrt{a^2 + b^2} - a)} \right\}$$

To find the square root of $a - ib$, replace i by $-i$ in the above result.

Cube Roots of Unity

Let $x = (1)^{1/3} \Rightarrow x^3 - 1 = 0 \Rightarrow x = 1, \frac{-1 + i\sqrt{3}}{2}, \frac{-1 - i\sqrt{3}}{2}$
or $x = 1, \omega, \omega^2$

- Note:** (i) $\omega^3 = 1$ (ii) $1 + \omega + \omega^2 = 0$
(iii) $1 + \omega^n + \omega^{2n} = \begin{cases} 0, & \text{if } n \text{ is not a multiple of } 3 \\ 3, & \text{if } n \text{ is a multiple of } 3 \end{cases}$



Science & Technology

Alien Corpses: Unveiling the Mystery

Alien Corpses in Mexico: Lab Tests Raise Questions

Recent events in Mexico involving the unveiling of alien corpses have raised questions, as laboratory tests were conducted to determine their authenticity.

Laboratory Tests on Alien Corpses

One of the alien corpses unveiled in Mexico Congress underwent extensive laboratory testing, including X-rays and CT scans. The tests aimed to establish whether the remains were real or man-made.

Test Results Suggest Authenticity

The laboratory tests, completed in Mexico City, indicated that the mummified remains were not manufactured or tampered with, suggesting they might be authentic. Experts found no evidence of assembly or manipulation of the skulls, and the bodies belonged to a single skeleton.

Unusual Findings in Testing

The testing revealed intriguing details, including the presence of large lumps in the abdomen of one of the alleged aliens, which were suggested to be eggs. This finding added to the mystery surrounding the specimens.

Skepticism in the Scientific Community

While some have suggested the possibility of authenticity, the scientific community remains divided. Many experts, including British physicist Brian Cox, have expressed skepticism and called for independent verification.

Questions Surrounding Origins and Possession

Questions also arise regarding how these alien remains found near the Nazca Lines in Peru came into the possession of journalist and UFO enthusiast Jaime Maussan. The Peruvian government has initiated a criminal probe into the matter.

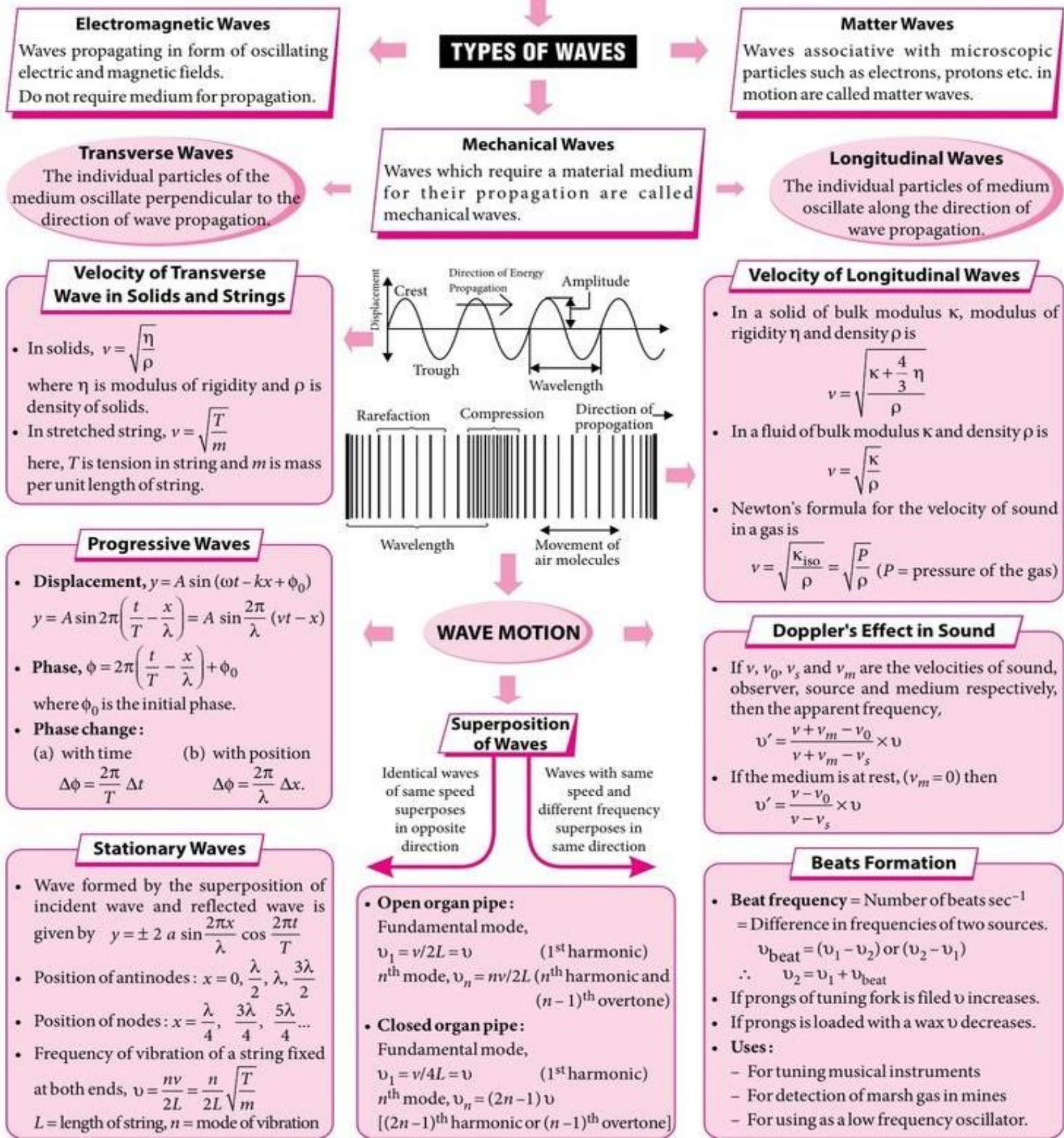
Ongoing Controversy

The controversy surrounding these alien corpses and their origins continues to captivate the public and the scientific community. Jaime Maussan maintains his innocence and promises to reveal more details in due course.





CHAPTER OF THE MONTH : WAVES



The mentors Digest

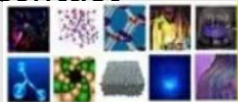


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