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MESSAGE FROM THE DESK OF EDITOR IN CHIEF

The Chief Editor and Editors of the advanced research journal of Management, Engineering, Law, Paramedical Science, Nursing, Basic Science, Education, Physical Education and Yoga, Special Education, Clinical psychology and Liberal Arts i.e. IUT Journal of Advanced Research and Development (JARD) would take it as their duty to express the deep gratefulness to the contributors and readers of current volume.

We feel proud to bring the present issue of the online IUT Journal of Advanced Research and Development. We consider that the contribution in this multidisciplinary will help in the inclusive and sustainable growth process. Keeping in tune with this dignified idea, the current issue of IUT-JARD has addressed some current issues covering diversified field.

This issue needs an integrative and a holistic approach to the solution. Finally, the information contains in this journal volume has been published by the IUT obtains by its authors from various sources believed to be reliable and correct to the best of their knowledge, and publisher is not responsible for any kind of plagiarism and opinion related issues.



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PRESENTING THE SOLAR WIND AS AN ENTRANCING SPECTACLE OF THE COSMOS IN COSMOLOGY

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ABSTRACT

As the name itself signifies, the very name solar wind subsists as an indispensable phenomenon associated with the Sun, essentially the vital spring of energy for endurance subsistence of life on planet Earth. Solar wind is an indispensable constituent of the Sun's heliosphere consisting of a flow of charged or ionized particles, emanating on a large scale from the exterior corona segment i.e., the soaring ambience of the Sun. Solar wind is a continuous surge of charged particles, principally consisting of electrons and protons, flowing centrifugally in the outward direction from the Sun's corona province, outspreading all over the entire solar system. The solar wind being an accumulation of charged plasma particles, the constituents are electrons, protons and alpha particles possessing kinetic energy ranging between 0.5 and 10 kilo electronvolt. This plasma beam experiences an incessant heating and mechanism to an extreme point value due to which the gravitation encompassed by the Sun becomes unable to hold this plasma beam down. Following this, the plasma beam traverses in the direction of the Sun's magnetic field lines that become divergent external to the radial direction. The solar wind additionally portrays an assortment of essences subsist in the solar plasma ambience viz., speck extent of intense ions and atomic nuclei of essentials like carbon, oxygen, nitrogen, magnesium, neon, iron, silicon and sulphur. The supplementary fundamentals include a few exceptional assortments of some additional nuclei and isotopes such as titanium, chromium, phosphorus and additionally three isotopes of nickel viz., ^{58}Ni , ^{60}Ni and ^{62}Ni . The solar wind fluctuates on the basis of the substantial factors such as density, temperature and speed, each of these are functions of time and relatively alter corresponding to the physical quantities viz., solar latitude and longitude. These immense energy bearing charged particles become capable of escaping from the Sun's gravitational strata by a process of breaking out the Sun's gravity as a result of their high energy consequential from the elevated temperature of the corona, which consecutively deploys an upshot of the coronal magnetic field. Alfvén surface is the name given to the border line extricating the most exterior corona province right from the solar wind rendering the whole phenomena an enthralling cosmological spectacle.

Keywords: Corona, Gravity, Heliosphere, Magnetic, Solar wind.

Introducing the Fascinating Plasma Beam, the Solar Wind:

The solar wind starts off from the Sun's corona portion which is the outermost sheet of solar ambiance in which the gas is tremendously hot, grabbing temperatures of millions of degrees Celsius. Its fundamental constituent is plasma, the fourth state of matter as acclaimed and comprising of ionized gases that are basically protons and electrons. The solar wind propagates at speeds that escalates up to 900 kilometres per second or 2 million kilometres per hour [1]. Several provinces on the Sun are the originators of solar wind with the criterions of fluctuating speeds and densities. Like the coronal holes emit high-speed solar wind whereas the equatorial plane produces slower, more common type of solar wind. The solar wind interacts with Earth's powerful magnetic field that creates spectacles like auroras which are usually acknowledged as the Northern and Southern lights. The solar wind forms a giant bubble around the Sun called the heliosphere that has been stretching far beyond the orbit of the last planet of the Solar System i.e., the Pluto [1], [2].

As soon as the stream of solar wind particles stumbles upon the Earth's magnetic field, ensuing in a shock wave, the characteristics of this being ambiguous to a little extent. Since the wind stream stretches divergently into a massive volume, the physical attributes like density and pressure descends to a reduced extent. The pressure exerted by the solar wind developed into a state that is legible to compare to that of the interstellar medium in due course of time. The termination shock is the segment where the solar wind experiences retardation since it confronts the interstellar medium, to be précised at approximated numerals of 94 and 84 Astronomical Units (AU), correspondingly by the Voyager 1 and Voyager 2 spacecrafts.

The solar wind is a surge of charged particles that comes off the Sun at a velocity of approximately one million miles per hour and traverses throughout the entire solar system. The phenomenon solar wind was first coined by a physicist named Eugene Parker in the University of Chicago in the 1950.

The peripheral of the Sun exhibits tremendous thermal escalation of temperatures demeanouring a value of 6000 degrees Fahrenheit. However, the outermost province of the Sun's heliosphere, known as corona is thousand times hotter in comparison to that of the heat measure of its exterior surface. It is also exceedingly energetic strata in the Sun's backdrop the inflammatory flames and ring-shaped

spherical fire zones are the halo segments that might be speculated around the sun's blisteringly hot ambiance during the span of execution of an eclipse [2],[3].

The extreme province of the heliosphere i.e., the corona is so blistering that the gravitational forces become insufficient in holding such wave streams. As a consequence of this the constituent particles are divergent in the terrestrial space and drift across the arena of the solar system in almost every admissible trend. The instance when the sun revolves, the solar wind particles exhibit some multifarious swivels and whirlpools get created. Most of these constituent particles are characterized as negatively charged electrons and positively charged protons possessing a velocity of about one million miles per hour with which these streams traverse across the planet Earth. This beam of wind stream grains has its nomenclature as the solar wind.

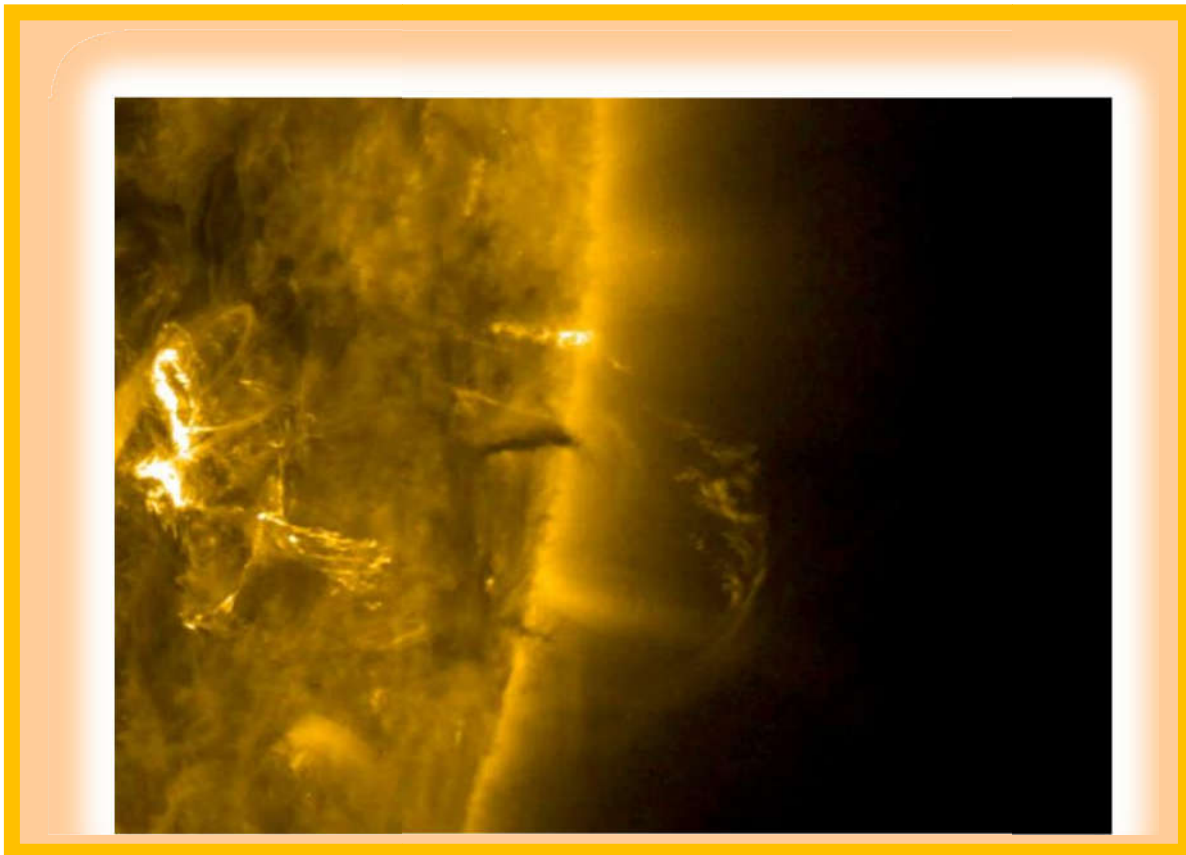


Fig.1

Image Courtesy: NASA

Fig. 1 deploys the luminous plasma beam of solar wind particles with the intense illumination arising in the Sun's proximity. The solar wind defends like a shield for existing lives on planet Earth from other detrimental particles approaching from interstellar space.

The ground breaking discovery of this spectacle transpired in the Sun's ambiance apprehended the space scientist's conceptualization of the scenario regarding the Solar System and the terrestrial domain. The astrophysicists became more evident of the cosmological phenomena that this sturdy beam of charged plasma particles traverses across space which eventually crosses the Earth's atmosphere and passes through beyond the Solar System by releasing into space which at the same time, sometimes erect as a protective shield while the other times, creates threatening for the survival of the people on planet Earth from its powerful and disastrous radiations.

The University of Chicago scientist Angela Olinto demands that the solar wind efficaciously shields the Earth like a blanket which protects the lives on Earth from the high energy particles coming from the galaxies or galaxy clusters, colossal black holes, neutron stars, various dwarf stars which are beyond the Milky Way or eventually from any other provinces of the terrestrial domain. On the reverse side, these charged beam of winds malfunctions the satellite communication systems needed for today's fast-forwarding humankind's utilization.

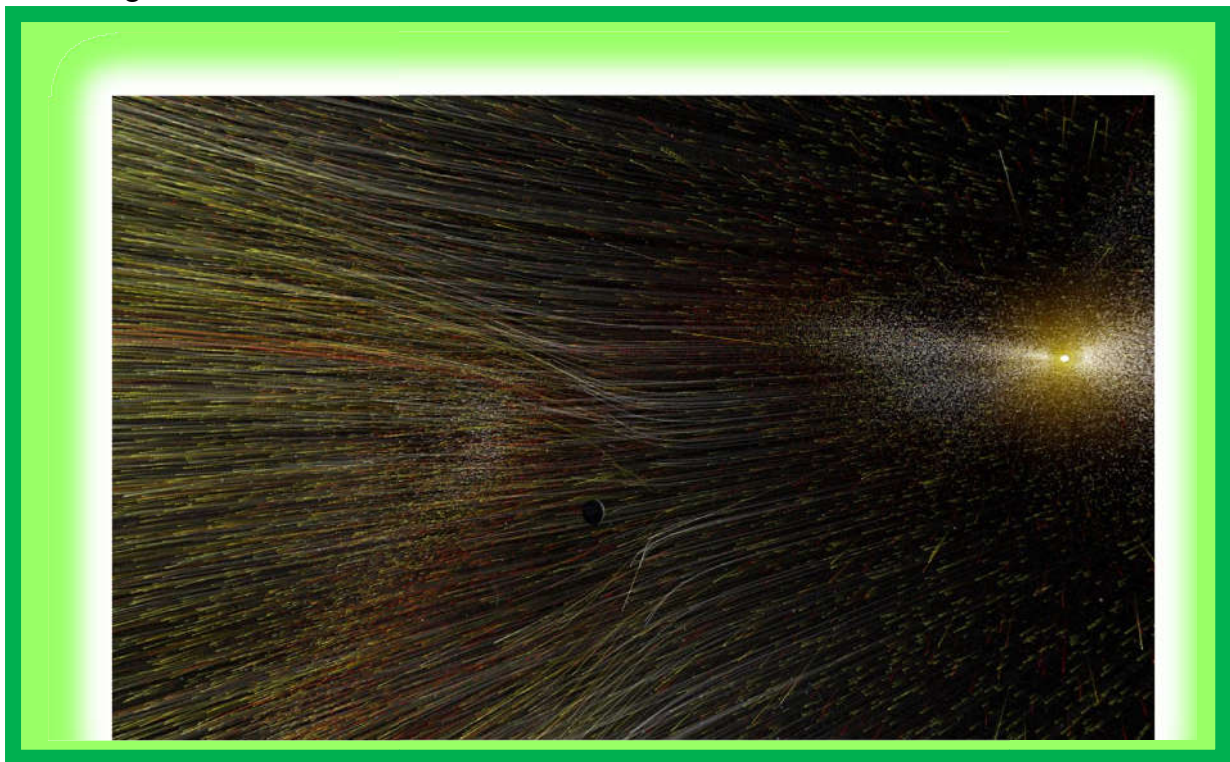


Fig. 2

Image Courtesy: NASA

Creation of the diagrammatical depiction of the beam of solar wind particles emanating from the Solar province and approaching the Earth

2.0 Perceptiveness of the Magnetosphere in Connection to the Solar Wind:

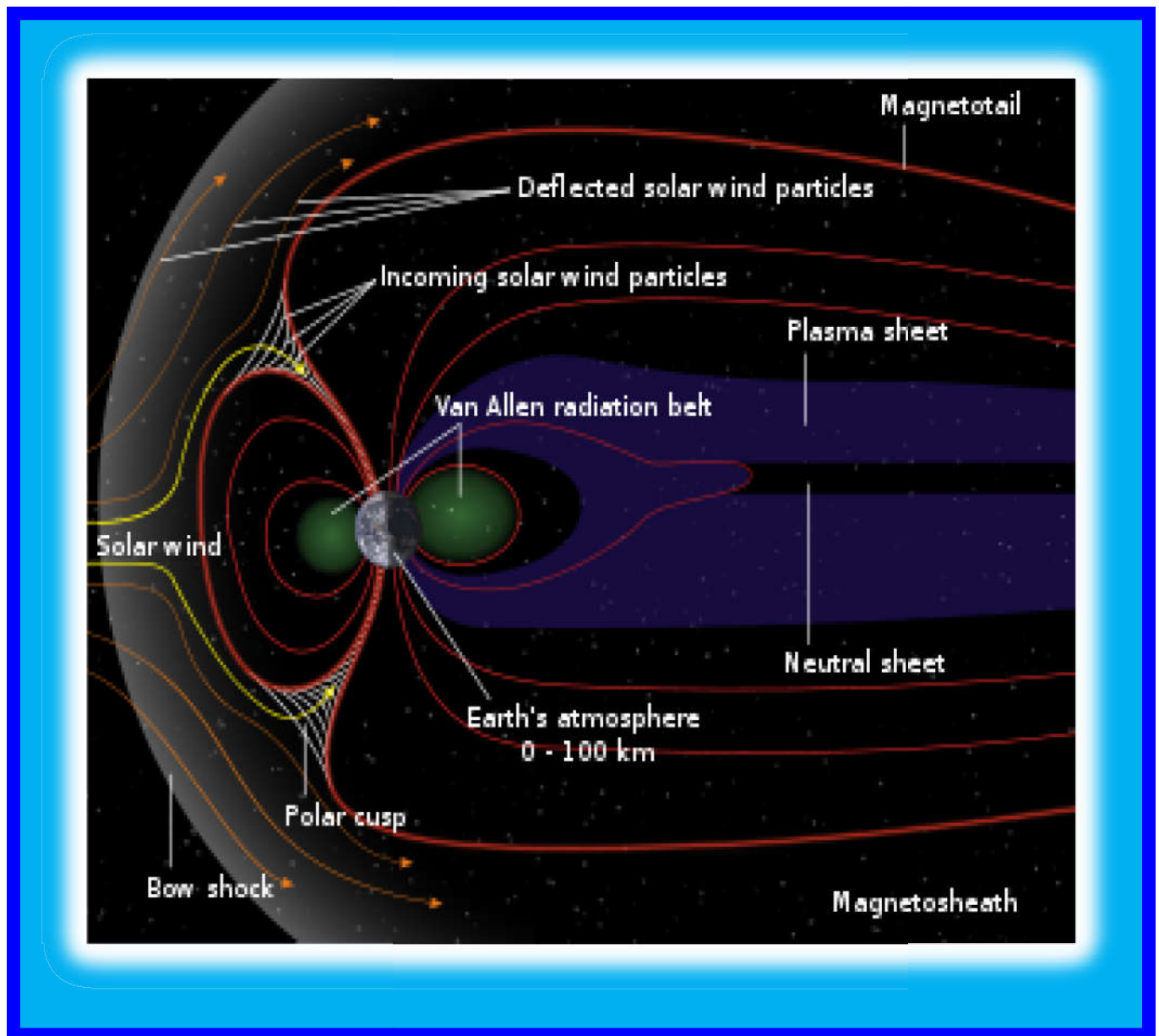


Fig. 3

Image Courtesy: NASA (.gov)/ European Space Agency (ESA) (Diagrammatic Visualization)

Depiction of Earth's Magnetosphere has been done in Fig. 3.

The solar wind has been conscientious on the whole for the shape of Earth's Magnetosphere. The direction of the solar wind is from the left to the right of the Magnetosphere. The solar wind as soon as it associates with some planets possessing strapping magnetic field like the Earth, the Jupiter, the Saturn etc., the solar wind constituents acknowledge deflection by a force called Lorentz force. This interstellar province, known as the Magnetosphere, causes the wind particles to progress just about the very planet relatively than executing bombardment in the ambience. The Magnetosphere roughly takes the shape of a hemisphere on the Sun facing side while the other side of it has been dragged out in a vast expanse whose outermost layer is known as the Magnetopause.

As the solar wind further advances from the Sun's exterior segment, it gets further spreading out in a divergent manner making it slim. At such stage, it can no longer stand firm against the inward thrust exerted by the interstellar space medium. At this tip, the solar wind particles surpass a region of shock wave which is the termination shock as after this province it experiences retardation and turn out to be subsonic i.e., slowing down. This slowing down province of solar wind region is named as the heliosheath stretching up to the Heliopause segment. It is the edge of amalgamating the heliosphere with the interstellar medium of the cosmos.

The solar wind gets bounced back by Earth's magnetic shielding as it enters Earth's province, conforming a large abundance of dynamic and forceful particles of the solar wind to stream around and away from Earth. This province that brings together and obstructs the solar wind particles is the Magnetosphere which expanse in the close proximity of Earth is lively and forceful because Earth's Magnetosphere contends with the gesticulation of the Sun.

Streaming from the tremendously hot exterior of the corona segment, constituent parts of the solar wind attain escape velocity, emanating towards the outside at a velocity of 300 to 800 km/sec. From being originated to confrontation with the interstellar medium, the velocity gradually slows down and finally halts. This point has been named as the termination shock and here at this verge the solar wind gradually slowing down its speed as it get ahead of the heliosheath section of the heliosphere escorting to a frontier line described as theheliopause [1],[2],[3] the cosmological expanse where the interstellar medium and solar wind pressures establish an equilibrium.

3.0 Prominences of the Sun:

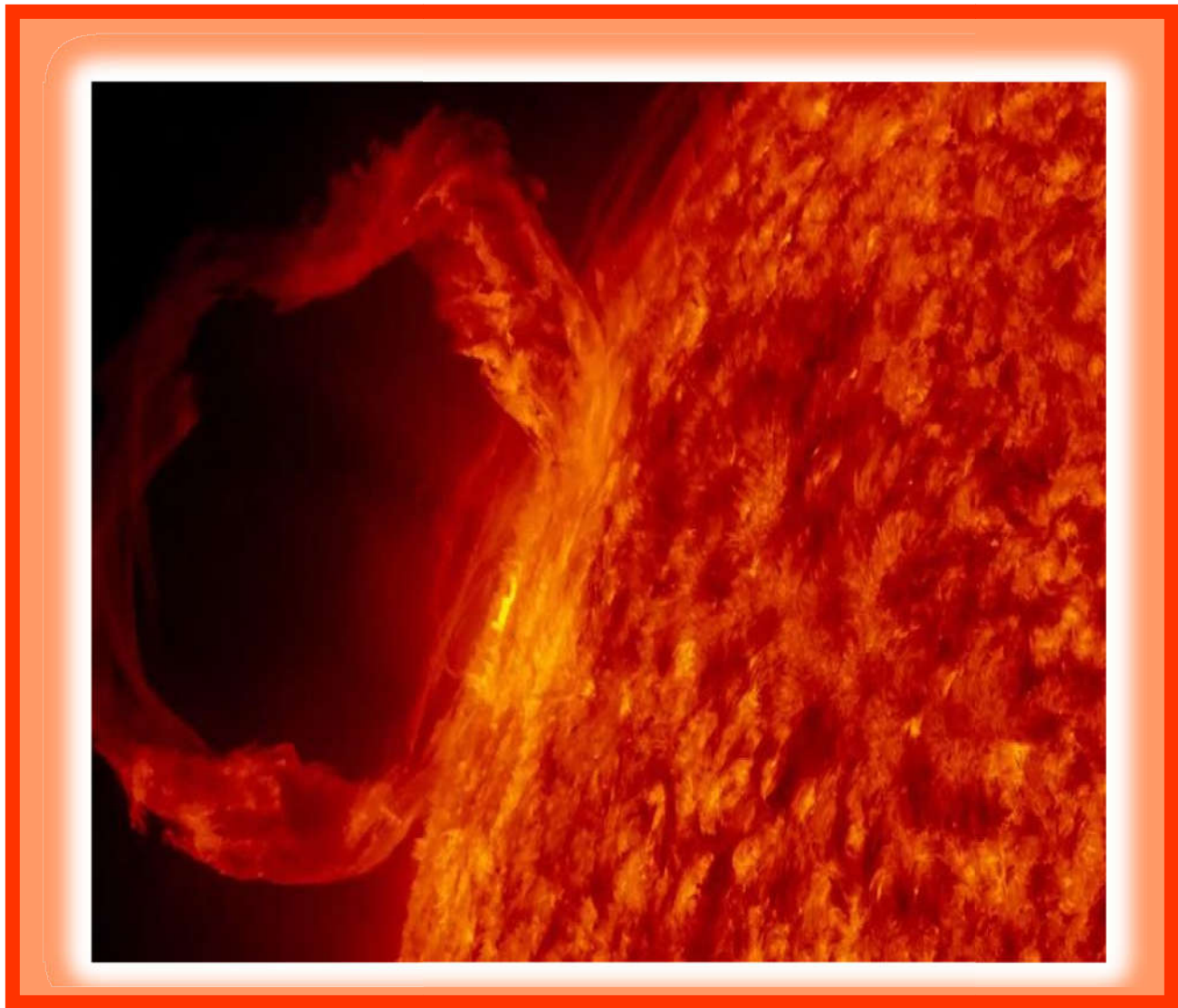


Fig. 4

Image Credit: Solar Dynamics Observatory Satellite

A flaring up of an erupting solar prominence visualized by the Solar Dynamics Observatory Satellite endorsed on 30th March, 2010.

One of the most speculative phenomena flourished by the Sun are its solar prominences. These have been quite similar to the clouds forming in the Earth's ambiance but the only difference is that these have been geared up by the magnetic fields which in the case of clouds have been triggered up by the thermal currents. In case of the region of horizontal magnetic fields, the beam of charged plasma

particles as it been an amalgamation of charged ions and electrons, are unable to traverse the province of magnetic field lines, becomes resistant against gravity. This scenario occurs at the boundary regions between one magnetic polarity and its opposite polarity as such the joining magnetic field lines are eventually on the tendency of reversing its direction, indicating sharp field transitions where the fields are either up or down since tilted fields exhibit ambiguous characteristics. In the Chromosphere region, prominences glow as transparent white illuminating light. The density of the prominences is amounting to be significantly decreasing in comparison to the Photosphere region where the subsisting few numerals of lines produce radiation. The temperature of prominences escalates up to 5000-50,000 Kelvin.

Prominences are of two categories viz.,

- Quiescent or Long-lived and
- Transient.

Quiescent form of prominences has been accompanying with grander- appraised magnetic fields, those making the boundaries of unipolar magnetic regions or sunspot groups. Since the grander unipolar plates have longer lives thereby quiescent forms also exhibit the characteristic of long-lived. Such prominences flourish different forms e.g., hedgerows, suspended clouds or funnels which frequently take the form of two-dimensional suspended sheets. The filaments which are stable in general become unstable and suffer eruption but these flaring ups may as well just disappear. An insignificant numeral of quiescent prominences survived for an additional few days however newly-flanged get developed on the boundary of the magnetic fields.

Transient prominences are an indispensable solar action. The spectrum of the prominences has no springs of energy other than that have been coming from the external province of the Sun i.e., the corona segment through conduction amounting it to be a tiny attempt since hat cannot pass through the magnetic field lines. This spectrum becomes analogous to the Chromosphere; spicule motion generates some sort of broader lines. However, the prominences are significantly narrower until they explode that directs to some natures of internal motions.

4.0 Flares of the Sun:

The extreme fascinating phenomenon twinned with the sunspot speculation is the flares of the Sun or solar flare that appears due to an abrupt release of magnetic energy from the sunspot region. But inspite of an abundance of bundles of energy involvements, majority of the solar flares are nearly become

invisible in ordinary light because the energy release tactic can transpire only in the transparent ambiance and in the photosphere can be visualized in visible light ray bands. Solar flares can be visualized in the $H\alpha$ line whereas the luminosity may be 10 times brighter in comparison to the surrounding chromosphere or sometimes 3 times than that of the surrounding continuum. A major portion of the energy is an upshot of the initially released high energy electrons and the optical emission is a secondary effect has been caused by the particles impacting the chromosphere. The disastrous effects of solar flares include malfunctioning of the on-board computers and other electronic devices, satellites, rockets, telecommunication services and surface on the Earth making a threatening for life - expectancy of various fauna species on planet Earth.



Fig. 5

Photo Courtesy: Solar Dynamics Observatory Satellite

A combination of solar flare and shock wave in the Sun's propinquity, Visualized by the Atmospheric Imaging Assembly boarding on the Solar Dynamics Observatory Satellite on 8th April, 2010.



Fig. 6

Image Courtesy: Solar and Heliospheric Observatory (SOHO) satellite as endorsed on 4th November, 2003.

The above Fig. displays one of the sturdiest solar flares enduringly detected. These are known as X-class flares which are extremely powerful in nature encompassed in a supreme Earth[1],[2],[3].

A disastrous effect of such flares on Earth is that these flares discharge radiations which are predicted to block the radio signals all across the Earth.

5.0 Categories Exfoliated and Functioning of Solar Wind:

Notably, two admissible categories of solar wind arrangements are:

- **Slow Solar Wind**
- **Fast Solar Wind and**
- **Coronal Mass Ejections.**

5.1 Properties and structure of the three variants of Solar Winds:

5.2 Fast Solar Wind:

The fast solar wind initiates from exterior coronal holes. These holes exhibiting the structures of funnels in the terrestrial segments of open field lines of the Sun's Magnetic Field. The plasma source is small magnetic fields created by convection cells in the solar atmosphere. These charged Magnetic fields incarcerate the plasma beam of particles and transfer the charged plasma waves into the bottle neck of the coronal funnel structures, positioned only 20,000 kilometre exceeding the Photosphere region of the cosmos [2]. This beam of plasma eventually gets released into the funnel as soon as these magnetic field lines tend to hook up again.

Speed of progression is the chief podium of differing the very two categories of solar winds viz., fast and slow solar winds. Statistics reported against the fast solar wind entails the data regarding the typical velocity of it is 750 kilometre per second, a thermal elevation of up to 800 Milli-Kelvin[2] and has a near resemblance with the composition of the Sun's Photosphere. The Milli-Kelvin scale of temperature refers to the thermal escalation stretching the lower value below 0.3 Kelvin and the higher value intensifying above or equal to 0.001K.

5.3 Slow Solar Wind:

The slow solar wind stream come into sight to initiate from a section in the region of the Sun's equatorial belt, described as the streamer belt, the streamers validated in the corona province of the

cosmos have been created by the magnetic flux endorsing magnetic properties. The accurate coronal construction tactics involved in the generation and propagation of the slow solar wind is not comprehensible till this minute. Inferences drawn on the experimental evidences carried out on the Sun between the years 1996 and 2001 illustrates that the emanation of the slow solar wind occur at some stages in the solar minimum (i.e., the period of lowest solar activity) at latitudes ranging between $30-35^{\circ}$ then expanded toward the two polar regions since the solar cycle come close to maximum value. At such point of solar maximum, the extreme poles might also be evidenced to discharge slow solar wind stream [2].

In the close proximity of the Earth's ambience, the statistics revealing the velocity of propagation of the slow solar is 300–500 kilometres per second, experiencing a thermal elevation of 100 Milli- Kelvin and the composition of the solar stream is strictly analogous to the exterior province, i.e., the Corona. The slow solar wind has been enumerated to be twice thick or simply impenetrable and more inconsistent in temperament in comparison to the fast solar wind.

5.4 Coronal Mass Ejections

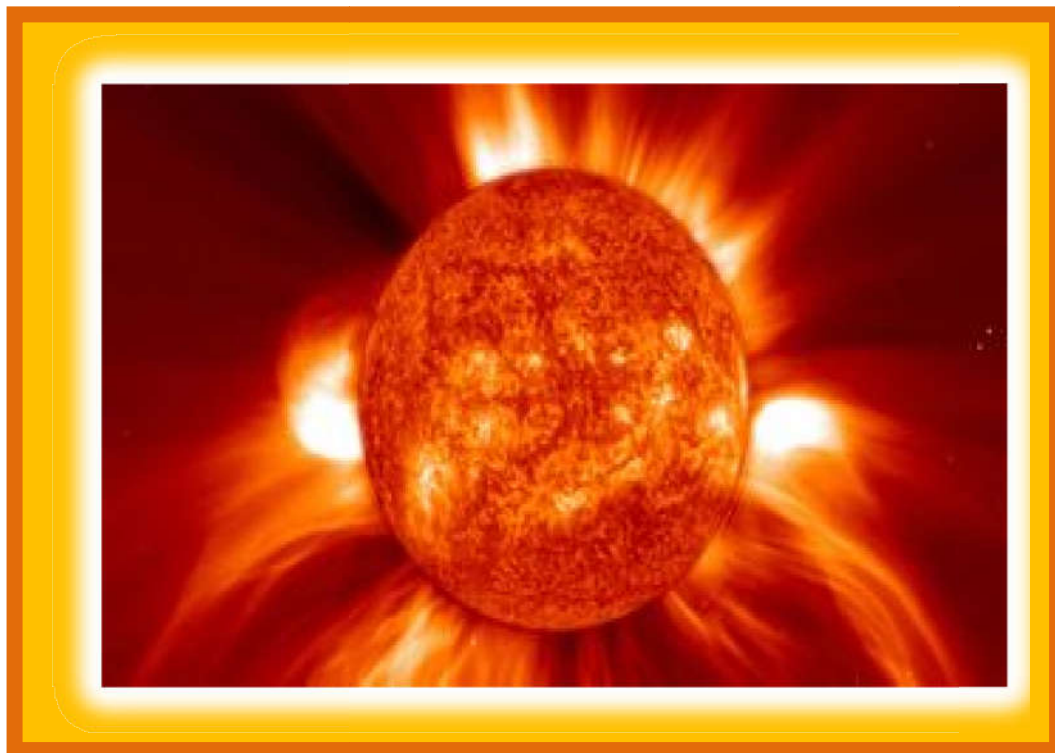


Fig. 7

Image Courtesy: NASA/GFSC/SOHO/ESA

The mechanism, Coronal Mass Ejection or abbreviated CME is a huge, fast-traversing rupture of plasma waves that eventually disrupts the motion of propagation of the fast and slow solar winds accordingly. Coronal Mass Ejection's are triggered off by a discharge of energy due to magnetic properties of the ejection of charged plasma particles available in the Sun's province. Other popular names for this CME are solar storms or space storms. Very infrequently these mass ejections have been acquainted with solar flares, which are another sturdy materialization of magnetic energy release at the Sun's corona. These CME's grounds shock waves in the thin plasma zone of the Sun's heliospheric ground, inducing electromagnetic waves and speeding up predominantly the positively charged protons and negatively charged electrons to structure providing the abundance of ionizing radiation that pave the way for CME [2], [3].

As soon as CME's collide with the Earth's Magnetosphere, it for the time being distorts the Earth's magnetic field, which in turn directs in altering the compass needles directions and stirring upheave electrical ground currents in Earth itself. The entire phenomenon has been christened as a geomagnetic storm which is a large-scale phenomenon.

Slow solar wind is frequently coupled with streamers manifestly perceptible at some stage happening in a solar eclipse. Highly-speedy, homogeneous and balanced solar wind streaming with an ejection velocity of 800 km or 500 miles per second and exfoliating the characteristics of wind stream possessing a few unique characteristics of sluggish and hard blowing together with intermittent breeze roughly with the half speed of the fast solar stream. These two categories of wind beams start off at diverse regions of the Sun's heliosphere and hurried to attain the terminal velocity at scattered locations from the Sun. The rations of the two solar wind resources subsist on a succession sequence of endorsing eleven years of mechanism depicting the solar behaviours [1], [2], [3].

The interior configuration of the CMEs exhibit a complicatedly fabricated arrangement having an exceedingly turbulent province of blisteringly hot and compressed/ condensed plasma particles that has been commonly named as sheath, preceding an influx of comparatively cold and powerfully magnetized plasma constituency, this being usually termed as magnetic cloud or ejecta. Sheath and ejecta both deploy exceptionally transformed phenomenon of bumping into the Earth's Magnetosphere, also on an assortment of space weather spectacles, like the actions of Van Allen Radiation Belts.

6.0 Review of the Correlated literature and Experimental Evidences Reported:

In the year 1957, an academician and researcher named Eugene Parker serving as an Assistant Professor at the University of Chicago put forward some flamboyant theory regarding the structure of the solar system where he prioritized to invade the mystery of formation of solar stream. For which Parker calculated that the Sun's Corona is a million degrees blistering province of the cosmos. His research led him to convince a stream that had to be a rushing of particles detaching away from the peripheral surface of the Sun, gradually in the prolonged run becoming extremely faster and faster even exceedingly the speed of sound. Later this phenomenon has been nomenclature as the solar wind [1],[3].

Astrophysicist Eugene Parker apprehended about a model of the cosmos named Chapman's model in which the intensified heat has been flowing incessantly from the Sun and the tail of the comet has been detaching apart from the Sun, as illustrated in Biermann's hypothesis. These two observatory theories have led to the enunciation of the celestial phenomenon, termed as the solar wind [1], [2].

In 1957, Parker unveiled that although the Sun's corona is strappingly attracted by the gravitational attraction of the Sun which has been an excellent conductor of heat, is still exceedingly scorching at vast expanses from the Sun's Corona. Since solar gravity gets diminished with course of time correspondingly at amounting remoteness from the Sun, the external coronal ambience is capable of running away supersonically and penetrates the cosmological terrain. Parker was the first person to observe the deteriorating influence of Sun's gravitational attraction that deploys similar upshots on hydrodynamic stream as a deLaval nozzle, provocative a changeover from subsonic to supersonic flow. There was strong opposition to Parker's hypothesis on the solar wind, later on accepted by Subrahmanyan Chandrasekhar, the editor of The Astrophysical Journal in the year 1958[4],[5],[6], [7], [8], [9], [10], [11], [12], [13].

Voyager 1 spacecraft on December 13, 2010 marked a remarkable enunciation regarding the velocity of propagation of the solar wind bombarding on the Earth's surface decelerated to zero at a distance of about 10.8 billion miles or whenever expressed in terms of kilometres amounts at remoteness of 17.4 billion kilometres [4],[5],[6].

Voyager 1 project scientist Edward Stone predicted about a point of emanation of the ejection of solar stream from the Sun. This point always bears an external divergent motion, is no longer blowing outward, rather than it is only flowing to the sideways of the Sun and eventually ends up blowing in the

descending direction of the Sun's peripheral anatomical structure i.e., the tail of the Heliosphere, which formed an object which bears the shape of a comet [4], [6], [7].

In the very year of 2018, NASA unleashed the Parker Solar Probe, the first NASA spacecraft named in respect of American Astrophysicist and Professor Eugene Parker. During the seven-year expedition envisioned by this Probe, it is desirous to make twenty-four orbits of the Sun, traversing further and entering into the corona with each of these twenty-four orbits of the perihelion, finally transitioning within a distance of 0.04 Astronomical Units(A.U.) of the Sun's external surface [5], [6], [8], [9], [10].

Throwing light on previous groundwork of British Astrophysicist named Arthur Eddington explaining the existence of hot flux emanating from Sun's corona fundamentally insisted the existence of the solar wind streams, mentioned in a footnote in an article on Comet More house in the year 1910 here the name of this hot flux was exactly proposed by him as Solar Wind. Eddington in his later investigations propositioned that the emanated stream subsists of charged particle such as electrons, while he thought sight differently in his investigation on Comet More house where he hypothesized these streaming particles as ions.

The suggestion that the driven-out substance is made up of both ions and electrons was initially put forwarded by Norwegian scientist Kristian Birkeland. In 1916, he premeditated that the solar wind comprises of negatively charged electrons as well as positively charged ions. British physicist named Frederick Lindemann in 1919 recommended that the Sun ejects charged particles that retain mutual polarities of protons and electrons.

German Astronomer Ludwig Biermann in the year 1950 determined that the tail of a comet at all times drifts away from the Sun, irrespective of the comet's direction in which it is drifting. Biermann put forwarded this phenomenon to be really valid since the Sun discharge a stable torrent of particles that drives the comet's tail away [7],[8], [9], [10], [11].

Another fascinating phenomenon called Magnetic Switchbacks are some unexpected turnaround movements of the charged stream incurred in the induced magnetic field traced by the propagation of solar wind particles. These can also be thought as disturbances travelling along with the solar wind compelling the magnetic field to be bent and reversed on itself. Initially observed by the NASA-ESA Mission named Ulysses. It was the earliest spacecraft to fly above the Sun's poles. Parker Solar Probe

spacecraft reportedly apprehended the first switchback mechanisms in 2018 [4],[5],[6],[7], [10], [11].

7.0 Favourable and Adverse Effects of the Solar Wind on Earth:

7.1 Special effects of Solar Wind on the Earth's Inhabitants:

As assured by National Aeronautics and Space Administration (NASA), USA stating about the acquaintances behind explaining the mechanism of speculation on the sun's peripheral is extremely multifaceted. The solar stream deploys massive influence for life survival on planet Earth. The solar wind working as a shield for the lives on Earth from the probable diffracted cosmic rays bombarding from the cosmological terrain in the galaxy. in spite of the shielding, the effects of solar interstellar storms on the sun's exterior also affects the human-designed telecommunication networks. This solar stream might also erect as an intimidation for the space exploring astronauts[4],[5],[6],[7],[8], [9], [10], [11].

7.2 Travelling Through Interstellar Space:

A sophisticated and rigorous perceptive of the solar wind stream features on additional adventure encompassed by humankind. A quantifiable solar wind streaming particles are tremendously energetic and possibly legible in making punchen tailing infinitesimal holes on the spacecrafts and human bodies of the Astronauts as well. In order to protect the astronauts, NASA pens to comprehend the mechanism, features and frequencies of these cosmological particles. Pressurization has been authenticated to forecast space weather in advance for safe expedition of the astronauts in their respective spacecrafts.

8.0 Mesmerizing Phenomena Incurred by the Presence of solar wind in the Earth's Atmosphere:

This interaction with the solar wind causes Earth's magnetosphere to compress at some points and stretch at others. Charged solar wind particles that enter Earth's atmosphere near the poles indulge in reacting with abundant gases within our atmosphere to generate stunning demonstration of illumination in the sky called Auroras.

The Earth itself is principally shielded from the solar wind by its magnetic field, strongly bouncing back the stream of stimulating ionized particles. A splinter of these charged particles is trapped in the Van Allen Radiation Belts. However, during this episode a less significant numeral of

particles succeed in escaping and move about from the solar wind, as an electromagnetic energy transmission stripe in the Earth's top ambience and also the Ionosphere in the auroral zones. The mere instant when the solar wind is discernible on the Earth's boundary is when this is strapping at a desirous amount to generate celestial happenings like the Aurora and Geomagnetic Storms. Intense auroras powerfully heat the ionosphere, causing the ionized plasma to inflate into the Magnetosphere, ever-increasing the volume of the Plasma Geosphere and thereby infusing atmospheric substances into the stream of solar wind. Geomagnetic storms promote an upshot when the pressure exertion of the plasmas enclosed in the interior of the Magnetosphere is adequately huge to amplify and thereby accelerated the warping of Geomagnetic field[4],[6], [12], [13], [14], [15], [16], [17].

9.0 Acceleration Effects Exhibited by the Solar Wind:

Initial models hypothesized on solar wind were based chiefly on thermal energy to promote the acceleration of the solar stream. During 1960, investigations all-inclusively made it clear that thermal acceleration in an unaccompanied fashion cannot be held responsible for the outstanding speediness of the solar wind. A supplementary unidentified acceleration tactic is inevitable and expected to abundance of magnetic fields in the solar ambience [1],[2],[3].

10.0 Upshot on Solar System's Ambiance:

The solar wind impinges on additional cosmic rays incoming from the cosmological terrain and amalgamated with terrestrial surroundings. Celestial bodies with very feeble and non-existing Magnetosphere are exposed to atmospheric stripping by the presence of the hot solar streams.

Venus is the next-door and the most alike planet as of the Earth that bears 100 times denser ambience in comparison to planet Earth, recorded with insignificant or zero Geo-Magnetic Field. Space probe spacecrafts revealed a tail like structure of a comet that stretches to the Earth's orbit in some cosmological modules [4],[5],[7],[8], [11], [12], [15], [17], [18], [19], [20].

The solar wind is accountable for the astounding aurora light visible around the polar regions. In the Northern Hemisphere, this dazzling phenomenon is acknowledged as the Northern lights or Aurora Borealis whereas this fabulous speculation in the Southern hemisphere is called the Southern lights or Aurora Australis.



Fig. 8

Image Courtesy:Noppawat Tom Charoensinphon via getty Images, captured in Alaska.

Coronal Mass Ejection can touch off larger-scaled geomagnetic storms that upshots in producing breath-taking auroras [17], [18], [19], [20].

Geomagnetic storms can also bring about disorder with the satellite services, electricity networks and even cause threatening for the astronauts in space. During such storming, astronauts on the international Space Station (ISS) need for sheltering and all pre-scheduled space-walks should be

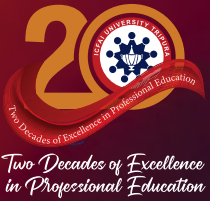
halted and sensitive satellite devices are to be powered down till the complete passing away of such radiation engrained solar storms.

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ABOUT THE UNIVERSITY

The ICFAI University, Tripura was established in 2004 through an Act of State Legislature. The University has been approved by the University Grants Commission, under Section 2(f) of the UGC Act, 1956. ICFAI University Tripura is a multidisciplinary University offering 50+ different programs.

ACCREDITATIONS

- University Grants Commission (UGC)
- National Assessment and Accreditation Council (NAAC)
- Bar Council of India (BCI)
- National Council for Teacher Education (NCTE)
- Rehabilitation Council of India (RCI)
- Tripura Nursing Council (TNC)
- Indian Nursing Council (INC)
- MSME(HI/BI), Govt of India has recognised as Host Institute to Support for Entrepreneurial and Managerial Development of MSMEs through Business Incubators

MEMBERSHIP

- Member of the Association of Indian Universities, New Delhi, India
- Member of the Association of Commonwealth Universities, London, UK.
- Member of Institute of Engineers (India)
- Members of Association of Management Development Institutions in South Asia (AMDISA)
- Registered Member with Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India
- Member of Confederation of Indian Industry (CII).
- Member of Vijnana Bharati.
- Member of Academy of Hospital Administration, Govt of India.
- National Cyber Safety and Security Standards (NCSSS)
- National HRD Network (NHRDN), Gurgaon
- Inter- University National Cultural Board (IUNCB)
- Amazon Internet services Pvt. Ltd for AWS (Cloud Computing) Program
- Oracle Academy
- Indo-Australian Chamber of Commerce

RANKING/ CERTIFICATES

- ICFAI University Tripura has been ranked 1st among Private Multidisciplinary University in Tripura by Education World India Higher Education Ranking 2023-24.
- ICFAI University Tripura has been ranked 35 in the year 2024 as the Best University all over India by India Today – MRDA
- Faculty of Science & Technology of ICFAI University Tripura has been ranked 148 as the Best Engineering College all over India Rank among private/government colleges by India Today – MRDA
- ICFAI Law School of ICFAI University Tripura has been ranked 35 as the Top Law School all over India by India Today – MRDA
- ICFAI Science School, Bachelor of Science(H) of ICFAI University Tripura has been ranked 175 as Best college all over India by India Today – MRDA
- Faculty of Liberal Arts, Bachelor of Arts of ICFAI University Tripura has been ranked 136 as Best college all over India by India Today – MRDA
- Faculty of Management & Commerce, Bachelor of Business Administration of ICFAI University Tripura has been ranked 70 as Best College all over India by India Today – MRDA
- Faculty of Science and Technology of ICFAI University Tripura has been ranked 113 among the top 160 Pvt. Engineering Institute in India by Outlook India.
- Faculty of Management & Commerce, Bachelor of Business Administration of ICFAI University Tripura has been ranked 59 among the Top 130 BBA institute in India by Outlook India in the year 2023.
- The ICFAI University Tripura has been ranked 18 by CSR-GHRDC as the Top Outstanding Engineering colleges of Excellence all over India category in the year 2023
- ICFAI University Tripura got AAA ratings as India's best Engineering Institute 2023 by Careers 360 Magazine.
- Established 'Institute Innovation Council (IIC) as per norms of Innovation Cell, Ministry of MHRD, Govt. of India
- Certified by ISO 9001: 2015
- ICFAI University Tripura certified by Directorate of Social Welfare & Social Education
- ICFAI University Tripura has been registered as a club under the Yuva Tourism Club an Initiative by the Ministry of Tourism in the year 2023
- Registered with NGO Darpan, Niti Ayog, Govt. of India
- Best Universities & Colleges 2018-19 awarded to ICFAI University Tripura in the special category by Rubber Skill Development Council (RSDC).

SCIENCE AND TECHNOLOGY

- B.Tech (CE, ME, ECE, EE, CSE)
- B.Tech (Lateral Entry)
- B.Sc. in Data Science & AI
- BCA
- Integrated MCA
- MCA
- M.Tech - CSE
- M.Tech - Structural Engineering
- M.Tech - Water Resource

BASIC SCIENCE

- B.Sc. Physics (Hons)
- B.Sc. Chemistry (Hons)
- B.Sc. Mathematics (Hons)
- M.Sc. Physics
- M.Sc. Chemistry
- M.Sc. Mathematics

EDUCATION

- B.Ed
- MA Education
- M.Ed

LIBERAL ARTS

- B.A. English (Hons.)
- B.A/B.Sc. Psychology (Hons.)
- M.A English
- M.A/M.Sc-Psychology
- B.A./B.Sc. Journalism and Mass Communication
- M.A./M.Sc. Journalism and Mass communication

ALLIED HEALTH SCIENCES

- B.Sc. in Emergency Medical Technology
- B.Sc. in Cardiac Care Technology
- B.Sc. in Dialysis Therapy Technology
- Bachelor in Health Information Management
- B.Sc. in Medical Laboratory Technology (BMLT)
- B.Sc. in Medical Laboratory Technology (BMLT) (*Lateral Entry*)
- Master in Medical Laboratory Technology (MMLT)

CLINICAL PSYCHOLOGY

- M.Phil in Clinical Psychology

Ph.D

Engineering (CE, CSE, ME, ECE, EE), Science (Physics, Chemistry, Mathematics), Allied Health Sciences (Molecular Biology, Clinical Bacteriology, Clinical Biochemistry), Management (OB, HR, Marketing, Finance), Economics, Commerce, Law, English, Psychology, Education, Spl. Education, Sociology, Physical Education, Political Science, Philosophy.



MANAGEMENT & COMMERCE

- BBA
- B.Com (Hons.)
- B.A./B.Sc. Economics
- MBA
- Executive MBA
- M.Com
- MA./MSc. In Economics
- Master in Hospital Administration (MHA)

LAW

- BA-LLB (Hons.)
- BBA-LLB (Hons.)
- LL.B
- LL.M (2 Years)

SPECIAL EDUCATION

- B.Ed. Spl. Ed. (ID)
- D.Ed.Spl. Ed. (IDD)
- M.Ed. Spl. Ed. (ID)
- Integrated B.A. B.Ed. Spl. Ed. (ID)
- Integrated B.Com. B.Ed. Spl. Ed. (ID)
- Integrated B.Sc. B.Ed. Spl. Ed. (ID)
- Integrated B.A. B.Ed. Spl. Ed. (Visually Impaired)

NURSING

- GNM

LIBRARY AND INFORMATION SCIENCES

- B.Lib.I.Sc.
- M.Lib.I.Sc.- Integrated
- M.Lib.I.Sc.

PHYSICAL EDUCATION

- B.P.Ed
- D.P.Ed
- B.P.E.S
- B.P.E.S (Lateral Entry)
- M.P.E.S

YOGA & NATUROPATHY

- Post Graduate Diploma in Yoga Education and Therapy
- B.Sc. in Yoga
- B.A. in Yoga



Program	Duration	Eligibility	Career Prospects Employment Opportunities
B. Tech (CE, CSE, ECE, ME, EE)	4 Years	Pass in 10 + 2 (Phy/Chem/Math) with minimum 45%, (40 % in case of SC/ST/ OBC) aggregate marks	IT,ITEs, Manufacturing,Companies, Corporates, Telecom, Banks, Govt. Services
B. Tech - Lateral Entry (CE, CSE, ECE, ME, EE)	3 Years	Pass in 3 - year diploma course with minimum 45 % (40 % in case of SC/ ST/ OBC) aggregate marks	IT,ITEs, Manufacturing,Companies, Corporates, Telecom, Banks, Govt. Services
B.Sc. in Data Science & AI	4 Years	Pass in 10+2 examination with 45% marks from science discipline	Corporates, AI Researcher, Data Scientist, Machine Learning Engineer, Data Analyst, Business Intelligence Developer, AI/ML Product Manager
BCA	3 Years	Pass in 10 + 2 (any Discipline) examination	IT,ITEs, Corporates, Banks,Govt. Services, NGO's.
Integrated MCA	5 Years	Pass in 10 + 2 (any Discipline) examination	IT,ITEs, Corporates, Banks,Govt. Services, NGO's.
MCA	2 Years	Graduation in any discipline, with 40% and above aggregate marks.	IT,ITEs, Corporates, Banks, Govt. Services, NGO's,Research
M.Tech - Water Resource Engineering	2 Years	Valid GATE Scorer with B.Tech /B.E in Civil Engineering or B.Tech /B.E in Civil Engineering with 60% marks	Research, consultant to Pvt. Organization in the field of flood forecasting, flood inundation, flood disaster management, Entrepreneur.
M.Tech - Structural Engineering	2 Years	Valid GATE Score with B.Tech/B.E., in Civil Engineering or B.Tech/B.E. in Civil Engineering with 60% marks.	Structural Engineer,Project Manager, Researcher, Quality Control, Teaching, Entrepreneurship, and more.
M.Tech - Computer science & Engineering	2 Years	Pass with 60% aggregate marks in B.Tech. (CSE or IT or ECE or EEE) or MCA or M.Sc. (IT or Computer Science) or equivalent	Offers opportunities in cutting-edge technology-based research like AI ML, Cybersecurity, and software development roles in the ever-evolving field of computer science.

Basic Science

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Sc. Physics (Hons.)	4 Years	Pass in 10 + 2 with 40 % marks in Physics & pass in Maths	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
B.Sc. Chemistry (Hons.)	4 Years	Pass in 10 + 2 with 40 % marks in Chemistry	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
B.Sc. Mathematics (Hons.)	4 Years	Pass in 10 + 2 with 40 % marks in Mathematics	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.Sc. Physics	2 Years	Graduate with 45 %(40 % in case of SC/ST/ OBC) marks in Physics	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.Sc. Chemistry	2 Years	Graduate with 40% marks in Chemistry	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.Sc. Mathematics	2 Years	Graduate with 40 % marks in Mathematics	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate

Liberal Arts

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.A. English (Hons.)	4 Years	Pass in 10 + 2 (any Discipline) with 40 % marks in English	Jobs in Govt., Teaching in Schools/Educational Administrators/ Corporate, Banks, Telecom, Media, Journalism
M.A English	2 Years	Graduate in any Discipline with minimum 45 % in English (40% in case of SC/ST/ OBC) aggregate marks	Jobs in Govt., Teaching in Schools/Educational Administrators/ Corporate, Banks, Telecom, Media, Journalism/ Research
B.A. Psychology (Hons)	4 Years	Pass in 10 + 2 (any Discipline) with 50 % (45% in case of SC/ST/ OBC) marks	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.A Psychology	2 Years	Graduate with 45 % in Psychology(40 % in case of SC/ST/ OBC) marks.	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
B.Sc. Psychology (Hons)	4 Years	Pass in 10 + 2 (any Discipline, with Economics or Maths as a combination subject) with 50 % (45%in case of SC/ ST/ OBC) marks	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
M.Sc. Psychology	2 Years	B.Sc Psychology degree from a recognized university with 45 %(40% in case of SC/ST/ OBC) marks in Psychology.	Teaching in Schools/ Colleges/ Educational Administrator/ Corporate
B.A. Journalism and Mass Communication	4 Years	Minimum10+2 (in any discipline) with 40% or above marks in aggregate	Reporter, Journalist, News Editor, or Photojournalist in print, electronic or digital media, Public Relations Officer,Content Writer/ Developer for websites, blogs and social media, Filmmaking and Radio jockey, Advertising campaigns, Social Media Manager
B.Sc. Journalism and Mass Communication	4 Years	Minimum10+2 (in Science Stream) with 40% or above marks in aggregate	
M.A. Journalism and Mass Communication	2 Years	Minimum Graduation (in any discipline) with 45% or above marks in aggregate	Director of Communications for advertising campaigns, Content writer/ Developer for websites, blogs and social media,Journalist/ Photojournalist, Filmmaking and Radio Jockey (RJ),Screenwriter, Sound Engineer, TV Correspondent, Producer, Art Director, Technical Communication Specialist, Web Producer
M.Sc. Journalism and Mass Communication	2 Years	Minimum B.Sc. or B. Tech Degree with 45% or above marks in aggregate.	

Law

Program	Duration	Eligibility	Career Prospects Employment Opportunities
BBA-LLB Integrated	5 Years	Pass in 10 + 2 with minimum 45 % (40 % in case of SC/ST, 42% in case of OBC) aggregate marks	Corporates, Banking, Judiciary, Legal Practice, NGO's IPR
BA-LLB Integrated	5 Years	Pass in 10 + 2 with minimum 45 % (40 % in case of SC/ST, 42% in case of OBC) aggregate marks	Corporates, Banking, Judiciary, Legal Practice, NGO's IPR
LL.B	3 Years	Graduate in any Discipline with minimum 45 % (40 % in case of SC/ST, 42% in case of OBC) aggregate marks	Corporates, Banking, Judiciary, Legal Practice, NGO's IPR
LL.M	2 Years	Graduate with LLB degree (Recognised by BCI)	Corporates, Banking, Judiciary, Legal Practice, NGO's IPR,Research

Management & Commerce Studies

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Com (Hons.)	4 Years	Pass in 10 + 2 examination in commerce or Science with 45% (40% in case of ST/ SC/OBC) marks	Banks, Financial Services, Corporates
BBA	3 Years	Pass in 10 + 2 (any Discipline) examination with minimum 40% marks	Banks, Financial Services, IT, Insurance, Telecom, Corporates, Consulting Companies.
B.A. Economics	4 Years	Pass in 10 + 2 (any Discipline) examination with minimum 40% marks	Financial Analyst/ Investment Banker/ Risk Manager/ Actuary/ Public Sector Policy Analyst/ Economic Advisor/ Public Sector Economist/ Central Bank Analyst/ Management Consultant/ Trade Specialist/ Data Analyst/ Statistician/ Market Research Analyst/ Startups and Business Ventures
B.Sc. Economics	4 Years	Pass in 10 + 2 with minimum 45 % marks in Mathematics	Financial Analyst/ Economist /Management Consultant /Data Scientist/ Public Policy Analyst/ Financial Manager/ Marketing Manager/ Research Analyst/ Economic Advisor/ Statistician/ Market Research Analyst/ Startups.
MBA	2 Years	Graduate in any discipline with minimum 50 % (45 % in case of SC/ST/OBC) aggregate marks	Banks, Financial Services, IT, Insurance, Telecom, Corporates, Consulting Companies, Research
Executive MBA	2 Years	Graduation in any discipline with 45% and above aggregate marks, with a minimum of two years of work experience.	Banks, Financial Services, IT, Insurance, Telecom, Corporates, Consulting Companies, Research
M.Com	2 Years	B.Com with 45%(40% in case of ST/SC/OBC) Marks	Banks, Financial Services, Corporates
Master of Hospital Administration (MHA)	2 Years	Graduate with 40% aggregate marks (Preference will be given to MBBS, BDS, BHMS, B.Sc Nursing, BPT, BAMS, B.Sc Allied Health Science, Bioscience, General Science, Veterinary Sciences & B.Sc Pharma)	Hospitals(Government /Private), NUHM, NRHM, NRLM, Healthcare consultancy firm, Hospitality industry, Medico-legal consultancy firm, Insurance sector (Government/ Private)
M.A Economics	2 Years	Candidates must hold BA/B.Sc. Honours degree in Economics with a minimum of 45% aggregate marks (or equivalent).	Public Policy Analyst/ Economic Advisor/ Central Bank Analyst/ Trade Specialist/ Public Sector Economist/ Management Consultant/Professor/ entrepreneurial ventures in policy-related domains.
M.Sc. Economics	2 Years	Candidates must hold a B.Sc. Honours degree in Economics with a minimum of 45% aggregate marks (or equivalent).	Data Scientist/ Financial Analyst/ Risk Manager/ Statistician/ Econometrician/ Research Consultant/ Actuary roles in think tanks of international organizations, and academic institutions.

Allied Health Sciences

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.sc. in Emergency Medical Technology	4 Years	Pass in 10 + 2 (Science Discipline) with 45% marks in PCB (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private hospital having ICU/ITU/Critical care unit, Demand in disaster management team for both state/central government, army/navy/airforce. Eligible for Post graduation courses.
B.sc. in Cardiac Care Technology	4 Years	Pass in 10 + 2 (Science Discipline) with 45 %marks in PCB (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private Hospitals in cardiology department, different cath- labs or diagnostic centers. Eligible for postgraduate courses.
B.sc. in Dialysis Therapy Technology	4 Years	Pass in 10 + 2 (Science Discipline) with 45 % marks in PCB (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private hospitals, NRHM, NUHM, NGO, clinics/ healthcare setup offering dialysis treatment. Eligible for Post Graduation courses in dialysis.
Bachelor in Health Information Management	4 Years	Pass in 10 + 2 (any Discipline) with 45 % marks (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government / Private hospitals, diagnostic centers, NRHM/ NUHM, legal firms,Healthcare consultancy .Eligible for Post Graduate courses.
B.Sc. Medical Lab Technology (BMLT)	4 Years	Pass in 10 + 2 (Science Discipline) with 45% marks in PCB (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private hospital having ICU/ITU/Critical care unit, Demand in disaster management team for both state/central government, army/navy/airforce. Eligible for Post graduation courses.
B.Sc. Medical Lab Technology (BMLT) (LE)	3 Years	Pass in 3 years diploma with 45% marks in aggregate (5% relaxation for SC/ST/OBC Candidates)	Opportunity in Government /Private hospital having ICU/ITU/Critical care unit, Demand in disaster management team for both state/central government, army/navy/airforce. Eligible for Post graduation courses.
Master in Medical Lab Technology (MMLT)	2 Years	Candidate must have passed degree, e.g. B.Sc. MLT/ B.Sc. Physiology/ Microbiology/ Biotechnology/ Biochemistry or equivalent B.Sc. Biosciences from a recognized University	Opportunity in Government / Private sector, Lab Technician, Medical Lab Incharge, Research and Development Manager (Laboratory), Technical Officer etc. Can pursue research or can flourish in academics as well

Education

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Ed	2 years	Graduate or post graduate in any discipline with minimum 50 % (45 % in case SC/ST/ OBC) aggregate marks	Teaching in Secondary level
MA - Education	2 years	Graduate in any discipline	Teaching in Schools/Educational Administrators/ Research
M.Ed	2 years	B.Ed. (1/2 years)/ B.EL,ED/B.Sc.B.Ed./B.A B.Ed./ D.EL.Ed. /D.Ed. with a Bachelors degree. 50% marks at all the levels	Teaching in Teacher Education

Physical Education

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.P.Ed	2 years	Pass in graduation in any discipline and as per university selection procedure.	Jobs in School/ College/ Physical Trainer
D.P.Ed	2 years	Pass in 10+2 or equivalent with 50% of marks in any stream	
BPES	3 years	Pass in 10 + 2 examination or equivalent from any recognised education Board/ University	
BPES(LE)	1 year	Pass in two years diploma in Physical Education	
MPES	2 years	Candidates must have passed with at least 50% marks for Gen/OBC and 45% for SC/ST category. B.P.E.D (4yr. integrated) /B.P.E.D (1yr. or 2yr.)/B.P.E (3yrs.)/B.sc (Physical Education)/ B.P.E.S (3yrs.)	Jobs in School/ College/ University, Physical Trainer/Sports/ Job in Govt. and Private sector as teacher, instructor, coach etc.

Yoga & Naturopathy

Program	Duration	Eligibility	Career Prospects Employment Opportunities
PGDYET	1 year	Any graduate	Yoga Teacher in Schools, Yoga Therapist/ Yoga Psychologist/ Yoga Inspector in MNC's, Health Club, Yoga Club
B.A. in Yoga	3 years	Pass in 10 + 2 (Arts/Commerce) with minimum 40% aggregate marks.	
B.Sc. in Yoga	3 years	Pass in 10 + 2 (Science) with minimum 40% aggregate marks.	

Special Education

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Ed.Spl.Ed. (ID)	2 years	Graduate or post graduate in any discipline with minimum 50 % (45% in case SC/ST/ OBC) aggregate marks	Teaching in Secondary level and at special schools
D.Ed.Spl.Ed. (IDD)	2 years	Pass in 10 + 2 (any Discipline) with minimum 50% (45 % in case SC/ ST/ OBC) aggregate marks.	Special schools, Sarva Siksha Abhiyan/ Resource teacher in General School/ Integrated/ Inclusive setup
M.Ed.Spl.Ed.(ID)	2 years	B.Ed. Spl. Ed (ID) / B.Ed. General with D.Ed. Spl. Ed (ID) with 50% marks (RCI).	Professional preparation of teacher educators- engaged in continuous professional development of teachers
Integrated B.A./ B.Com /B.Sc./ B.Ed. Spl.Ed.	4 years	Pass in 10 + 2 with 50% marks	Teaching in Secondary level and at special schools
Integrated B.A. B.Ed. Spl. Ed. (Visually Impaired)	4 years	Pass in 10 + 2 (any Discipline)	They can appear the CTET and TET exam i.e. for Central and State Level, RCI Registered Rehabilitation Professional in Clinic, Nursing home, Hospitals, Counseling centers, Special Educator or Children with Visual Impairment in Inclusive school, Special school and General school.

Clinical Psychology

Program	Duration	Eligibility	Career Prospects Employment Opportunities
M. Phil in Clinical Psychology	2 years	M.A / M.Sc degree in the Psychology with 55% marks in aggregate, Preferably with special paper in Clinical Psychology .	Qualified professional & extensive inputs & widespread Clinical experience to acquire the necessary skills in the area of Clinical Psychology

Library And Information Sciences

Program	Duration	Eligibility	Career Prospects Employment Opportunities
B.Lib.I.Sc.	1 Year	Graduate in any discipline	School/ College/ University/ district/ State / National Libraries, Bank, Govt. Services, NGO's, Research
M.Lib.I.Sc.- Int.	2 Years	Graduate in any Discipline	
M.Lib.I.Sc.	1 Year	Graduate with B.Lib.I.Sc	

Nursing

Program	Duration	Eligibility	Career Prospects Employment Opportunities
GNM	3 years	10+2 with English and must have obtained a minimum aggregated score of 40% marks for the general candidates for any stream •35% SC/St candidates marks required from any stream • Age should be 17-35 (and for SC/ST 5 years relaxation) • Boys & Girls both are eligible	Hospitals(Government /Private), NUHM, NRHM, NRLM, Healthcare consultancy firm, Hospitality industry, Medico-legal consultancy firm, Insurance sector (Government/ Private)

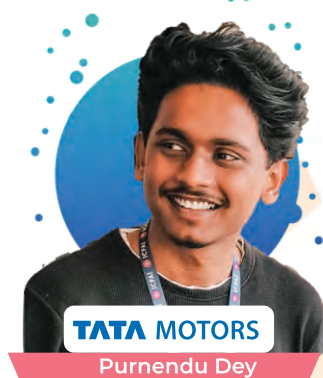
P.hD

Program	Duration	Eligibility	Career Prospects Employment Opportunities
Engineering (CE, CSE, ME, ECE,EE), Science (Physics, Chemistry,Mathematics),Allied Health Sciences (Molecular Biology, Clinical Bacteriology, Clinical Biochemistry), Management (OB, HR, Marketing, Finance), Economics, Commerce, Law, English, Psychology, Education, Spl. Education, Sociology, Physical Education, Political Science, Philosophy	4 years	A two-year postgraduate degree or equivalent from a recognized Institution, with 55% marks or equivalent CGPA in concerned subject. or A regular, full time M.Phil degree from any recognized University	Faculty position, Scientist, Post-doc researcher

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- Well-equipped workshop / 3D printers
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- Separate hostel for boys and girls
- Full campus is under CCTV surveillance
- Yoga for all
- Medical center featuring on-site residential doctors and nurses.
- 24 x7 Ambulance service
- Gymnasium / Outdoor gym

- ICAI University Tripura is having its professional football club named ICAI FC
- 24 Hours power generator back-up etc.
- Full campus is covered by JIO Wi-Fi, ICAI **Wi-Fi 6**

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- French & Chinese Language as Elective Course for all Programs
- Setup Virtual Lab in Collaboration with IIT, Delhi.

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