

PR SENSE

Spreading Positive Vibrations

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Cover Story of the Month



Walking

In This Issue:

- P3** Editorial – Social Networking Sites and National Security
- P4** Announcement from DiJAI
- P5** Cover Story – Walking is the Best Medicine
- P8** Announcement – 4th Initiative of PreSense
- P10** Nobel Prize
- P12** Prince Toon
- P13** Hubble Space Telescope

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From the Desk of Editor-in-Chief



Greetings to the fraternity of readers of PreSense. It is a privilege to sit at the virtual desk of the Editor-in-Chief and 'pen' my first message to you from here.

PreSense has come a long way under the previous Editor-in-Chief, Shri Prime Point Srinivasan, and this translates into a greater challenge for the incumbent to hold the flag and raise it higher. I look forward to it, as an efficient and knowledgeable Editorial Team of eminent professionals and academicians, continues to be with me, and so also the mentorship of Prime Point Srinivasan, in his new role as Publisher and Managing Editor.

PreSense will continue to focus on good knowledge, invigorating news and views, valuable updates and inspiring stories. You will be pleased to know that your e-magazine does more than publish good stuff. It takes up essential and relevant issues published in PreSense, that need attention for the overall good of the society at large or even a sect of the society. Some of these issues are pursued right up, with the Members of Parliament, if necessary. The initiatives started by your e-magazine, viz. The Education Loan Task Force (ELTF), The Sansad Ratna Award, The Digital Journalists' Association of India (DiJAI) and The Digital Security Association of India (DiSAI) are also a medium to promote and facilitate socially beneficial opportunities, especially for a vibrant India through its young population.

As usual, this month too, we bring you an assortment of topics and articles that we hope, will stir your reading and awareness interest. Our Editorial discusses the security of the social networking medium and dwells upon the much-debated viewpoint about national security over personal privacy.

The cover story continues on the same theme as the previous month's, about healthy practices, from the perspective of traditional and Indian medicine. I hope you will enjoy reading all about 'walking' in this issue, and learn about the many facets of the wholesome exercise.

There is a write-up about the Hubble Space Telescope, which is making a great impact in bringing knowledge about the infinite Universe closer to our understanding.

Come December, which is just around the corner and we will have the world-renowned Nobel Prize Ceremony to be held in Europe. We have included a short write-up about the whys and wherefores of the noble Nobel Prize.

Of course, PreSense is not complete without the cartoon page and our mascot, Prince with his bit of 'wisecrack'.

I hope you will continue to enjoy reading this edition. Please take some time to pen your feedback and send it to editor@corpezine.com because your feedback is valuable.

Susan



Editorial

Are Social Networking Sites A Threat to Nation's Security?



Man is a social animal and is naturally communicative. And we find this nature especially pronounced in a country like India. Indians are generally outspoken, ready to share and care. For this reason, not surprisingly, the social networking sites have always been a big hit in India, possibly growing at a faster pace than anywhere else in the world. Along with its popularity, the social networking medium also runs a high security risk for the user, as no messaging service can be stated to be 100% safe, secure and impenetrable. A service considered secure today could prove to be vulnerable tomorrow. Technology professionals are constantly casting aspersions on the security mechanism available, and are never confident about the fool-proof security strength of any technology.

WhatsApp, in its official website says, "*confidentiality and security are laid down in our DNA*". It adds that from the very first day it helps "*you stay in touch with your friends, share vital information during a disaster, reunite divorced families...share personal moments ...we have built-in encryption*". It claims that the photos, videos, calls and documents shared over WhatsApp are protected against unauthorised access. It adds that it does not store the messages on its servers. But the flip side is that this very assurance raises the concern of governments and investigators, engaged in solving and arresting cyber-crime and combating cyber terrorism.

There have been interesting debates about security in social networking sites, especially WhatsApp. In fact, it is often speculated whether WhatsApp calls can be eavesdropped (i.e. intercepted and accessed) even though WhatsApp assures that the chats and calls are end-to-end encrypted. In technical parlance, it means that any chat message in WhatsApp travels in an encrypted mode, i.e. not in plain text. It can be decoded and understood only with the help of a specific decryption methodology only. The comfort one gets from this



assurance is that even if anyone tries to intercept using technology, he would not be able to read (i.e. understand) the message.

On the flip side, however, this privacy of messages (which cannot be intercepted by anyone) can be a major threat to the security of a country. It is often criticised that terrorists and anti-nationals use these private networking media to exchange security-threatening messages and instructions among themselves. Fortunately, there are software tools that can be used for mobile data recovery. These tools can also access WhatsApp data including stored text and pictures, even if they have been 'deleted'.

Of late, there have been many other messenger services emerging, to compete with WhatsApp, such as Telegram, which is gaining popularity. Telegram initially came up with the unique feature of self-deleting the message in the recipient's device too, within a few seconds after the message is sent and received at the other end. Recently, WhatsApp too added this facility of 'delete' or 'revoke' *after* the message has been sent. Although it is touted as a useful tool, it is an added nightmare for cyber-crime investigators because the evidence of messages exchanged between criminals and terrorists could then be destroyed.

And so, the debate continues on the question: "Which is supreme – the priority of the nation's security and sovereignty, OR individual data privacy"? The judiciary has repeatedly held that the nation's security is always supreme and of paramount importance, compared to individual privacy and data security. With the Data Privacy Act being discussed for immediate introduction, one hopes that the legislative provisions will be in place, removing ambiguity in the interpretation of what individual privacy is, and what national security and sovereignty is. India, as a nation in its fast-paced progress in the digital world, anxiously awaits.

By V. Rajendran, Editor

DiJAI Invites Amateur Writers in English and Tamil

The Digital Journalists' Association of India (DiJAI – www.dijai.in) invites non-professionals and students with writing skills in English and Tamil, to contribute their work/articles on any topic, for scrutiny, for publishing in the digital portal, digitalpresense.com. Outstanding contributions would be considered for inclusion in the e-magazine, PreSense. In this regard, the Editorial Team's decision in the matter will be final.



DiJAI is an initiative of the e-magazine, PreSense, formed in March 2016, with the objective of supporting the professional skills of digital journalism among professionals. The Indian Institute of Technology (IIT), Madras is its knowledge partner. In July 2017, DiJAI launched the Student Forum in two city colleges for women, in Chennai, to encourage potential and prospective writers among the students, and help hone their writing skills.

It is under this initiative that DiJAI is extending this opportunity to all non-professional writers to write to us if they are interested in getting associated with DiJAI. Those interested may please write to dijai.india@gmail.com.

K. Srinivasan, Founder & Chairman, Digital Journalists Association of India (DiJAI)



Cover Story

Walking is the Best Medicine – Benefits of Barefoot and 8-Shaped Walking

In October 2009, in an exclusive interview for PreSense, the former President of India, Dr A.P.J. Abdul Kalam suggested a three-dimensional approach for health care viz. 1) a one-hour walk, 2) fibrous vegetarian food and 3) meditation. His interview was republished in the October 2017 issue of PreSense.

The Siddha and Ayurveda systems emphasise the importance of walking. Dr D. Velayudham, a well-known Siddha practitioner and Secretary General of Indian Siddha Medical Association (ISMA) says that even 5000 years ago, *Siddhas* (ascetics) recommended a 'mild walk' (குறு நடை in Tamil) after a meal. "Though modern science may suggest any walk only on an empty stomach or two hours after a meal, I am confident that this will also be accepted in future just as many other traditional practices of Indian medicine have been accepted by modern science, after initial reluctance and rejection", Dr Velayudham added.



Walking is a natural and automatic human function, from the time the toddler instinctively straightens himself up from all fours, to wobble his way towards steady footsteps. Walking is a way of life. However, the modern man seems to walk less than he should, with transport vehicles, elevators, escalators, walkalators and upright mobility scooters taking over the role of the human legs and feet, for mobility. What was excitement for the toddler and his family, becomes a mundane activity that modern grown-ups do less of.

According to Dr M. Arul, Chairman of the ARMA Medical Foundation, Chennai, walking can be broadly classified for two purposes viz. 1) general fitness and preventive healthcare, and 2) therapeutic purpose to address specific problems like obesity, high blood pressure, cardiac issues, diabetes, etc. Hippocrates, the Greek physician and "Father of Medicine" seemed to know this when he said 2400 years ago, "Walking is man's best medicine".

If one intends to start walking for therapeutic reasons, one needs to consult the physician before doing so. Dr Arul adds that the benefits of physical activity depend on three elements: intensity, duration, and frequency of the exercise. A morning walk on an empty stomach will address hypertension and risks of heart attack and stroke, because walking strengthens the heart and improves cardiovascular health. It also burns fat. A minimum of 20 minutes of walk every day is essential for an average adult. Before the walk, it is advisable to visit the washroom to clear one's system, and avoid any toxin getting accumulated during the walk. It is preferable to drink sufficient water to avoid dehydration.

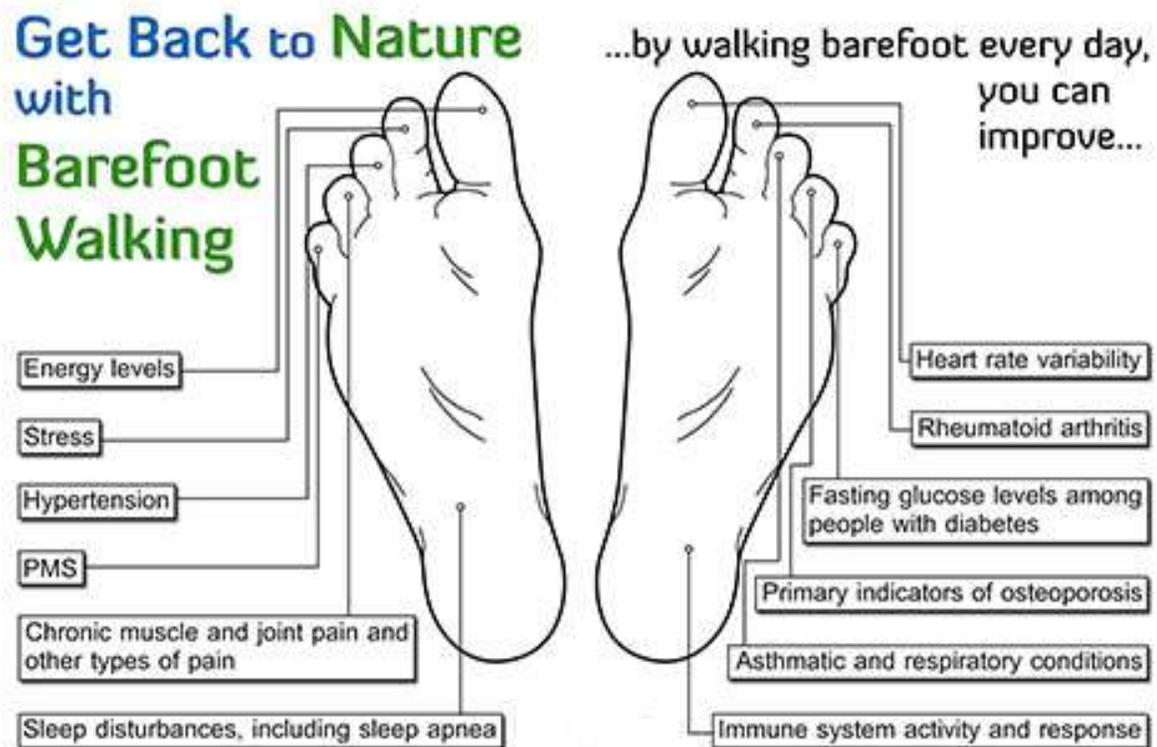
Dr Arul says, "Generally, the pulse rate is around 72 bpm (beats per minute) for any normal person in normal conditions. It is likely to increase during walking. The walker should walk at a comfortable pace. He should ensure that he maintains the pulse rate well below 120



bpm to avoid any problems". He also observed that the difference between natural walking and treadmill walking is that in natural walking, the body is in motion on stationary ground, whereas on a treadmill, the ground is in motion and the body is stationed. He fears that with treadmill walking, there is the risk of the development of arthritis in the long run.

It is preferable to walk in an open space like a park or even inside the house with proper ventilation. After a regular walk in the forward direction, 'walking backwards' for about 50-100 steps is recommended. Walking backwards, also known as 'retro-walk' helps in the use of the muscles and movements that are otherwise rarely used.

Barefoot Walking



Energy which is a vital life force, flows in the human body. In India, this energy is called 'prana' and in China it is called 'chi'. Death occurs when *prana* or *chi* ceases in the body. This vital energy runs through a meridian system, similar to blood vessels. The ends of these meridians are located in the feet. Barefoot walking stimulates and 'massages' these meridians and in turn, the organs, thus invigorating life's energy flow. This stimulation is especially effective if barefoot walking is done on uneven terrain because of the acupressure effect on the soles of the feet.

It was observed in a study published in the Journal of the American Geriatrics Society that senior adults who regularly walked on cobblestone terrain, displayed improved blood pressure readings when compared to those who walked on regular, flat surface. Their



physical and mental health scores too showed improvement. Barefoot walking is as essential for health as the sun is for Vitamin D. Walking on cobblestones also gives the feet the opportunity to use the full set of muscles of the feet involved in walking, as they manoeuvre the uneven terrain, thus improving the health of the feet. (Diabetic patients are advised to consult their doctors before undertaking barefoot walking).

Grounding/Earthing

When the feet are placed directly on the ground or on earth, it is called 'grounding' or 'earthing'. The earth contains abundant negative charge. This electron-rich charge is



believed to serve as a good source and supply of antioxidants and free-radical destroying electrons that are absorbable by the soles of the feet, from the ground. This conviction is expressed by Dr James Oschman, a doctorate in biology from the University of Pittsburgh and an expert in the field of energy medicine, based on reports found in the literature and practices of different cultures across the world. Several studies conducted till date support the concept that grounding or earthing the human body, either by

barefoot contact with the ground, or by sleeping on the ground, could be as essential an element for health as sunshine, clean air and water, good food and exercise.

It is interesting to note that what we wear on our feet while walking on the ground determines whether we stay grounded or not. Rubber and plastic soles insulate our body from the earth, just as they do with electric wires. Leather-soles or barefoot on sand, grass, soil, concrete or ceramic tile, aid in being grounded and connected with the electrons of Mother Earth.

8 (Eight)-Shaped Walking

We know that in a motor driving test for issue of driving licence, the examiner expects the candidate driver to be able to manoeuvre the vehicle in an 8-shape. Driving in an 8-shape requires concentration and motor skills. The same logic applies in 8-shaped walking.

“This type of walking can help cure Arthritis, Blood pressure issues, Cardiac problems, and Diabetes, and Elevated cholesterol is brought to normal level. I call this the ‘ABCDE’ benefit.”

Dr A.V. Srinivasan, a well-known neurologist and President of the Indian Academy of Neurologists explains, “Ancient Siddha literature speaks about 8-shaped walking. This type of walking can help cure Arthritis, Blood pressure issues, Cardiac problems, and Diabetes, and Elevated cholesterol is brought to normal level. I call this the ‘ABCDE’ benefit. This

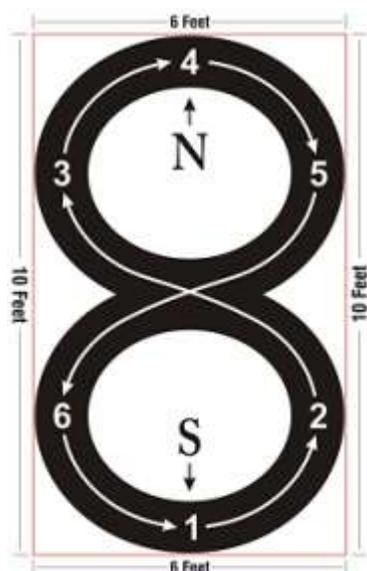
type of walking also helps dyslexic children to improve concentration and motor co-ordination. These observations are based only on one’s experience. Unfortunately, no scientific research has been done on 8-shaped walking to substantiate these statements”. Siddha expert, Dr D. Velayudham also agrees that ancient *Siddhas* recognised the importance of 8-shaped walking. “The twists and turns in 8-shaped walking has health benefits to people of all age groups”, he says. In the Western countries, it is known as ‘infinity walking’.



How to Practise 8-Shaped Walking

8-shaped walking can be practised anywhere. It can be practised in the house itself where proper ventilation is available. A space of 10 feet by 8 feet is required. Two chairs or two objects can be placed 5 feet apart, in a north-south direction. The walker starts walking from a southerly direction towards the north, beginning in the middle, between the 2 chairs and walking around the chairs in a figure-8 pattern.

A 20-30 minutes' walk at a comfortable pace provides optimum results. For a 30-minute walk, the direction of the walk should be changed after 15 minutes. For example, if one starts the walk in a south-north direction, then after 15 minutes, one should reverse the direction to a north-south direction. It is advisable not to be distracted as engaging in a personal or mobile conversation, during the walk. Siddha doctors recommend listening to soothing music or chanting of divine *mantras* for positive energy. Pregnant ladies and Cancer patients should avoid this type of walking.



According to various studies, regular walking provides 34 benefits to the human beings. Siddha experts say that 8-shaped walking gives four times more benefits than regular walking.

So, let us stay grounded and keep walking – in regular, retro and 8-shaped patterns, for wholesome health. Obviously, Charles Dickens, the great English author too knew what he was talking about when he said, “The sum of the whole is this: Walk and be happy; walk and be healthy. The best way to lengthen our days is to walk steadily and with a purpose”.

(Disclaimer: The content is not intended to be a substitute for professional medical advice, diagnosis, or treatment. It is only to create awareness about 'walking'. Readers are advised to seek the advice of their physician or any other qualified health provider, based on medical condition.)

By K. Srinivasan, Publisher & Managing Editor, and Susan Koshy, Editor-in-Chief



We are happy to announce that Dr Prabhakar Krishnamurthy, an eminent Professor of Management is joining our Editorial Team from this month as 'Editorial Advisor'. He has served many reputed Management Schools for more than 35 years. He is one of the few experts in India on 'Social Forecasting'. He will be guiding the Editorial Team on Management and Economics related topics.

PreSense welcomes him on board.

Editor-in-Chief



Announcement

E-Magazine PreSense Launches Its Fourth Initiative, 'Digital Security Association of India' (DiSAI)



The e-Magazine, PreSense is pleased to announce the launch of its fourth initiative called Digital Security Association of India (DiSAI) earlier in November 2017. DiSAI is a non-profit Public Trust and NGO (Non-Government Organisation), with Trustees on its board, holding expertise in technology and the academic field.

V. Rajendran, Editor of PreSense, is the Founder and Chairman of DiSAI. Prof. Dr R. Jagannathan, Editorial Advisor of PreSense, and former Vice-Chancellor of the Middle East University, UAE and the American Medical University, West Indies, will be the President of the new initiative.

PreSense was started in March 2006 as a monthly digital e-Magazine, on the suggestion of former President of India, Dr Abdul Kalam, to promote positive vibrations through its initiatives. PreSense has so far published 128 editions till October 2017. PreSense is successfully managing its three earlier initiatives viz. Education Loan Task Force (ELTF – to facilitate the redressal of genuine problems faced by student borrowers of the Education Loan), Sansad Ratna Awards (recognising outstanding Indian Parliamentarians) and Digital Journalists Association of India (DiJAI – to promote potential and prospective digital journalists through its forum).

Why DiSAI?

Presently, the world is talking about Computer Security, Network Security, Internet Security, System Security, Information security and Cyber Security. With technology penetration in all walks of life, impacting human life globally, safety and security of data in communication including the other aspects associated with life namely, ethical security, societal security, and legal security assume greater significance. DiSAI will embark on a new journey in this direction focussing in this niche area of digital security, involving all the stake holders in the area.

Those interested in getting associated with the initiative, irrespective of their location, may email to Shri V Rajendran, Chairman, DiSAI at info@disai.in or disai.india@gmail.com.

Editorial Team



International

The Nobel Prize, The Most Coveted Prize on Earth, Awarded for "The Greatest Benefit to Mankind"

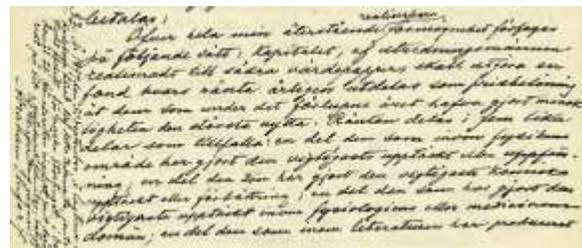


Alfred Nobel (1833 - 1896)

On 27th November 1895, a year before his death, Alfred Nobel signed the famous will which would implement some of the goals to which he had devoted much of his life. Nobel stipulated in his will that most of his estate of more than SEK (Swedish Krona) 31 million (today approximately SEK 1,702 million) should be converted into a fund and invested in "safe securities". The income from the investments was to be "distributed annually in the form of prizes to those who, during the preceding year, have conferred the greatest benefit to mankind." This prize is the Nobel Prize.

The Nobel Prize was first awarded in 1901 on the fifth death anniversary of Alfred Nobel. The award is since being given on an annual basis under a number of categories, in recognition of advances in the fields of physics, chemistry, physiology or medicine, literature and peace. There are five Nobel Committees responsible for the selection of the awardees for the Nobel Prize, one for each Nobel Prize. Four of these Committees for physics, chemistry, physiology or medicine and literature are in Sweden, while the fifth Nobel Committee for the Nobel Peace Prize is in Norway.

Physics was the category for the prize, which Alfred Nobel mentioned first in his will. At the end of the nineteenth century, many people considered physics as the foremost of the sciences, and perhaps Nobel saw it this way as well. His own research was also closely tied to physics.



Alfred Nobel's will

At the Awards' ceremony, each recipient, or laureate, receives a gold medal, a diploma and a sum of money, which is decided by the Nobel Foundation. As of now, each prize is worth US \$1.2 million. The Nobel Laureates take centre-stage in Stockholm on 10th December every year, when they receive the Nobel Medal, the Nobel Diploma and a document confirming the Nobel Prize amount, from King Carl XVI Gustaf of Sweden. In Oslo, the Nobel Peace Prize Laureates receive their Nobel Peace Prize from the Chairman of the Norwegian Nobel Committee in the presence of King Harald V of Norway. An important part of the



ceremony is the presentation of lectures by the Nobel Laureates. In Stockholm, the lectures are presented days before the Nobel Prize Award Ceremony. In Oslo, the Nobel Laureates deliver their lectures during the Nobel Peace Prize Award Ceremony.

The Selection Process



Nobel Medal

Nomination forms are sent by the Nobel Committee to about 3,000 individuals, usually in the month of September of the year before the prizes are awarded. These individuals are generally all the living Nobel laureates and prominent academics working in the relevant area, globally. The deadline for the return of the nomination forms is 31st January of the year of the award. No person can nominate himself for the Nobel Prize.

The Nobel Committee nominates about 300 potential laureates from these forms and any additional names. The nominees are not publicly named, nor are they told that they are being considered for the prize. All the nomination records for a prize are sealed for 50 years from the year of the awarding of the prize. The nominee, if his name is leaked, will be dropped from being considered for the prize.

The Nobel Committee then prepares a report reflecting the advice of experts in the relevant fields. This, along with the list of the preliminary candidates, is submitted to the prize-awarding institutions. The institutions meet to choose the laureate or laureates in each field by a majority vote. Their decision, which cannot be appealed, is announced immediately after the vote.

A maximum of three laureates and two different works may be selected per award. Except for the Peace Prize, which can be awarded to institutions, the awards can only be given to individuals. The Nobel prizes are not awarded posthumously.

The 2017 Nobel Prizes were awarded in recognition of the following:

Category	In Recognition of
Physics	For detecting gravitational waves
Chemistry	For developing cryo-microscopy
Physiology/Medicine	For discovering the mechanism of human circadian rhythm
Literature	For writing novels of great emotional force
Economics	For contributions in understanding behavioural economics
Peace	For drawing attention to the catastrophic consequences of use of nuclear weapons

So far 923 laureates have been awarded the Nobel Prize since 1901. Among them, only 12 are Indians, even though India has a population of 132 crore (1.32 billion), out of a global population of 760 crore (7.60 billion).

It is hoped that the new education policy of the Government of India will help in grooming potential Nobel Prize Laureates in the near future.

By Dr R. Jagannathan, Editorial Advisor





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By- Triambak Sharma



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Technology

The Hubble Space Telescope and the Expanding Universe

This article about the Hubble Space Telescope, is dedicated to the astronomer, Edwin Hubble (November 20, 1889 – September 28, 1953) after whom the telescope is named. This credit was given to Hubble because he was the first to make the discovery in 1925 that "The Universe is Expanding". This theory was put forward by him at a time when scientists



believed that the Universe was finite. (Hubble's notion of an 'expanding universe' formed the basis of the Big Bang Theory, which states that the universe began with an intense burst of energy at a single moment in time, and has been expanding ever since.) The Hubble Space Telescope, launched in 1990, was expected to take pictures of the distant galaxies to expand our knowledge about the expanding universe, and the scientists found it befitting to name it after the pioneer scientist, Edward Hubble.

The Hubble Space Telescope (HST) is the world's first Space Telescope. It was launched on April 24, 1990. The observations by HST are carried out in visible, infrared and ultraviolet light, from its vantage point 600 km above the Earth. These observations that are sent back to Earth, have led to breakthrough in astrophysics, by clearly showing that the Universe is an infinite body. It even gave the accurate rate of expansion of the Universe.

HST is 43.5 feet long, weighs 24,500 pounds and cost \$4.5 billion at the time of its launch in 1990. Four major organisations were associated with its construction, the target selection and the data processing phases:

- The HST was built by the United States Space Agency NASA, with contributions from the European Space Agency.
- The Space Telescope Science Institute (STScI, USA) selects HST's targets, and processes the resulting data.
- The Goddard Space Flight Centre (USA) controls the spacecraft.

Being in the orbit for over two decades, the observations from the Telescope have produced nearly 50 terabytes of data, and the astronomers using data from HST, have published more than 9,400 scientific papers, making it one of the most productive scientific instruments ever built.

Some of the valuable results derived from the observations from HST are:

- creating a 3-D map of mysterious dark matter.
- discovering Nix and Hydra, two moons of Pluto.
- helping determine the rate of the universe's expansion.
- discovering that nearly every major galaxy is anchored by a black hole.
- helping refine the age of the universe.

HST is best seen from areas of the earth that are between the latitudes of 28.5 degrees North and 28.5 degrees South. This is because HST's orbit is inclined to the equator at 28.5



degrees. Therefore, the northern parts of Australia have better chances of sighting the HST, flying right overhead.

A few interesting facts about HST are that:

- it takes approximately 95 minutes to complete 1 orbit, at a speed of approximately 17,000 metres per hour,
- every week, 140 gigabytes (1,40,000 MB) of raw science data is transmitted by it,
- it generates approximately 5500 watts using the sun as its energy source, and
- the extreme stability and accuracy of the HST is shown in its ability to lock onto a target without deviating more than 7/1000th of an arcsecond, or about the width of a human hair seen at a distance of 1 mile.

The James Webb Space Telescope (JWST), which is built in co-ordination by NASA, the European Space Agency and the Canadian Space Agency, is going to be the scientific successor of the HST. JWST's capabilities will enable a broad range of investigations across the fields of astronomy and cosmology, and its launch is scheduled for 2019.

by Sukruti Narayanan, Editorial Team Member

The Expanding Universe

What does "The Universe is Expanding" mean? It means the galaxies outside of our own galaxy, are moving away from us, and the ones that are farthest away are moving the fastest.

The universe has no centre, and everything is moving away from everything else. If one can imagine a grid of space with a galaxy, every million light years or so, after the passage of time, this grid will stretch out so that the galaxies are spread to every two million light years, and so on, possibly into infinity. The universe encompasses everything in existence, from the smallest atom to the largest galaxy; The universe was formed about 13.7 billion years ago in the Big Bang. It has since been expanding. What we are familiar with and have knowledge of, is the Observable Universe, which is the region around Earth from which light has had time to reach us.

A famous analogy to explain the expanding universe is imagining the universe like a loaf of raisin bread dough. As the bread rises and expands, the raisins move farther away from each other, but they are still stuck in the dough. In the case of the universe, there may be raisins out there that we cannot see any more because they have moved away so far that their light has never reached Earth. Fortunately, we have gravity at our local level to keep our raisins (our galaxy) together.

American astronomer, Edwin Hubble first proved that the universe is expanding. He proved the direct relationship between the speeds of distant galaxies and their distances from Earth. This is known as Hubble's Law. The single number that describes the rate of the cosmic expansion, relating the apparent recession velocities (rate at which the galaxies are moving away, typically from Earth) of external galaxies to their distance, is called the Hubble Constant. The Hubble Space Telescope was thus named after this great pioneer.

by Sukruti Narayanan, Editorial Team Member



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