



ISRO's female scientists celebrate after the success of the Mars Orbiter Mission on 24th September 2014. Women account for only 20% of ISRO's total workforce.

Women in STEM in India

- Only 14.3% of science researchers in India are women – *The Global Gender Gap Report 2014, World Economic Forum.*
- Enrolment of women in graduate programs in pure sciences, 7.1 % in 1950-51 to 40% in 2009. 25-30% of science PhDs are women, but women in faculty positions make up only 15% - *2015 report by The Association of Academies and Societies of Sciences in Asia.*
- The Shanti Swarup Bhatnagar Prize, India's premier national science award, has been given to more than 500 scientists since its inception in 1958. Only 15 of them went to women.

- Out of 744 Indian National Science Academy Fellowships, only 3.2% went to women. Out of 841 Indian Academy of Sciences Fellowships, only 4.6% went to women. Out of 395 National Academy of Agricultural Sciences Fellowships, only 4% went to women - *The Inter Press Service 2009 report*
- “In the Indian IT and ITES industry, women now account for close to 30 per cent of the total workforce and this is expected to go up to 45 per cent by 2010.” - *NASSCOM-MERCER joint study on Gender Inclusivity in India: 2009*
- The percentage of women employed in the IT industry in India has actually decreased from 26% in 2010 to 22% in 2012 - *DataQuest's Best Employer Survey 2012*
- Participation of women in India's workforce fell from 33.7% in 1991 to 27% in 2012, *according to UN gender statistics.*



“Indian Women are blessed with a diverse personality. They respect the bond of marriage and care for their children. They are equally successful in their professional lives too.. They are astronauts, lawyers, sportsperson and administrators as well.. This is what my doodle depicts.” – *Google Doodle competition on Children’s Day 2013*

The layer below the creamy layer...

- The United Nations placed India at 132 out of 148 countries in its recent gender inequality index.
- Only one-third of the total Indian population with access to the Internet are women, says a survey conducted by Google in 2015.
- A man is 37% more likely to have access to a mobile phone than a woman - *India Connectivity Report, Cherie Blair Foundation for Women 2013*
- One in five women in India and Egypt believes the Internet is not “appropriate” for them. – Intel’s ‘Women and the Web’ Report 2013

FAT's study on Girls and STEM

- While performance in STEM subjects was poor for both girls and boys because of poor teaching and infrastructure in government schools, there was sharp difference in confidence on their abilities in STEM subject.
- Reasons for not being interested in STEM subjects varied between boys and girls.
- Load of household work, discouragement towards pursuing education/career, distance to school, lack of support, lack of information and guidance, haven't heard of women in STEM, financial struggles, were the top reasons for girls not opting for STEM.

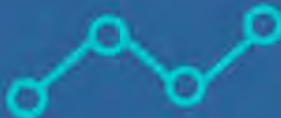
Why don't girls opt for STEM subjects in government schools?



What are STEM subjects?



Science



Technology



Engineering



Mathematics



STEM is taught in English after 10th. This is difficult for those who have always studied in Hindi medium.

Teachers don't teach

I have always been told that I should not be interested in STEM subjects. I have started believing in my inability.

Developed a fear of STEM subjects

We will get jobs easily as jobs requiring humanities are tailor-made for women.

STEM subjects seem more difficult, demanding and time-consuming than humanities

We rarely hear about women scientists/engineers, so we lack role-models in the field

My parents will never support me

We are told to fear STEM subjects even if we do well.

Boys are always encouraged to explore these subjects, even if they are not performing well in them. Girls are not.



एक दूरदर्शी दूर के पिण्डों को भी देख सकता है, जिन्हें हमारी नग्न आँखें नहीं देख सकती हैं। जब यह 100 करोड़ प्रकाश वर्ष दूर एक आकाशगंगा का चित्र लेता है तो हम उस आकाशगंगा को उसके 100 करोड़ वर्ष पूर्व के रूप में देखते हैं। जब उस आकाशगंगा से वह प्रकाश निकला था, उस समय डायनासोर पृथ्वी पर विचरण करते थे तथा मानव का कई करोड़ वर्षों तक पृथ्वी पर आये भी नहीं थे। दूरस्थ आकाशगंगाओं के अध्ययन द्वारा, हम उनके रूप को देख सकते हैं जब ब्रम्हाण्ड युवा था और आकाशगंगाओं का निर्माण हो रहा था। दूरदर्शी हमें समय में पीछे की यात्रा कराता है।

TRAVELING BACK IN TIME?

A Telescope can see objects even more distant than your eyes can. When it takes a picture of a galaxy 100 million light years away, we are seeing the galaxy as it looked 100 million years ago. At the time that light left that galaxy, dinosaurs still roamed Earth and humans would not appear for many millions of years! By looking at distant galaxies, we see what they looked like when the universe was much younger, as galaxies were first forming. The telescope takes us back in time.

THE BRIGHTEST STAR
 Eta Carinae has a mass of approximately 150 times that of the sun, and is about 4 million times brighter than our local star, making it one of the most massive and most luminous stars known. It is highly unstable, and prone to violent outbursts. The last of these occurred in 1841, when despite its distance (over 10,000 light years away) Eta Carinae briefly became the second brightest star in the sky.

तारों का फटना

V838 डबलवबमतवजपे ; ट838 डबदद के नवीनतम प्राप्त चित्रों में उसके चारों ओर उपस्थित धूल से भरे हुए बादलों की प्रदीप्ति में नाटकीय परिवर्तन दिखाता है।

STAR BURST

The latest image of the star V838 Monocerotis (V838 Mon) reveals dramatic changes in the illumination of surrounding dusty cloud structures.



कैट्स आई निहारिका

अब तक देखे गये ग्रहणी सन्तुल में एक निहारिका है, एनजीसी8543, जिसे 'कैट्स आई नेबुला' के नाम से भी जाना जाता है। यह अनुमानतः 1000 वर्ष पुराना है। निहारिका एक दृश्य 'जीवाश्म इतिहास' प्रस्तुत करता है तथा मृतप्राय तारों में बाद में होने वाले क्रमिक विकास को दर्शाता है।

CAT'S EYE NEBULA

This is one of the most complex planetary nebulae ever seen. NGC 6543, nicknamed the "Cat's Eye Nebula." Estimated to be 1,000 years old, the nebula is a visual "fossil record" of the dynamics and late evolution of a dying star.



usters
 Large
 northern
 ay we
 part of









10/01/2014

What we have learnt?

- They of course were not interested in a possibility they did not know existed!
- Intensive involvement is needed.
- School education needs a complete revamp.
- English language barrier needs to be broken.
- Parents are the biggest influencers and toughest to turn.
- Dangers of adolescence age biggest excuse to keep girls away from any opportunity.
- Understanding the patriarchal structures and negotiating within them is a skill that needs to be taught.
- Negotiations need to start at an early age.

Gayatri Buragohain

Feminist Approach to Technology (FAT)

134, 3rd Floor, Vinobapuri

Lajpat Nagar 2, New Delhi

India

Email: gayatri@fat-net.org

Website: www.fat-net.org