



TATA INSTITUTE OF FUNDAMENTAL RESEARCH

NATIONAL SCIENCE DAY 2023

PUBLIC LECTURE

# “Listening” to the universe with the Giant Metrewave Radio Telescope

**Prof. Jayaram Chengalur**  
Director, TIFR

**Sunday Feb. 26, 2023, 3:30 p.m.**  
**Homi Bhabha Auditorium, TIFR**



For centuries human beings have been awed by the splendor of the night sky, with its milky band of stars, the wandering planets, and an occasional dramatically-tailed comet. The invention of the telescope led to further discoveries, such as nebulae, and a zoo of galaxies. All of these discoveries were made using observations in a very narrow range of electromagnetic waves - visible light. There are several celestial objects that mainly emit radio waves. These began to be discovered and studied about a hundred years ago, with the invention of the radio telescope.

In this talk I will briefly discuss how radio telescopes work, in the particular context of the Giant Metrewave Radio Telescope (GMRT). The GMRT, built and operated by NCRA-TIFR, is located between Pune and Nashik. It is one of the most sensitive radio telescopes in the world at its wavelengths of operation. The telescope has recently been upgraded, greatly improving its sensitivity. I will also present a number of recent results obtained using data from this telescope.

*Prof. Jayaram Chengalur*, Distinguished Professor and Director at Tata Institute of Fundamental Research, is a highly acclaimed Radio Astronomer. He is a Fellow of the Indian Academy of Sciences, the National Academy of Sciences, India, and the Indian National Science Academy.

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