Indian researcher, team spy stars switch on

Kalyan Ray

NEW DELHI: A Coimbatore-born young Indian, who learnt the basics of astronomy in a Bangalore institute four years ago, was party to spotting the signatures of the first star light, just 180 million years after Big Bang.

Nivedita Mahesh, a doctoral student at the Arizona State University, USA, is one of the five scientists who found the "cosmic dawn", when the first stars lit up the baby universe.

The discovery, being hailed as astronomy's biggest breakthrough since the prize catch of the gravity waves in 2015, continues to create ripples in the scientific circle worldwide, days after it was reported in the journal *Nature.*

Soon after the Big Bang around 13.8 billion years ago, the Universe entered into the 'Cosmic Dark Ages' as it cooled and expanded, since the atoms that formed were opaque to light. For more than 150 million years after the Big Bang, there was no light.

Nivedita Mahesh. FACEBOOK

Nivedita and her colleagues captured the faint afterglow of the first set of stars that came into being about 180 million years after the universe was born.

"We probe the cosmic period known as the Cosmic Dawn. It is when the dark ages ended with the birth of the first stars. By dark ages we mean that it was the time when there was no astrophysical sources to emit light. Therefore, we have detected one of the earliest possible signals from the first structures in the Universe," Nivetida told DH.

NIVEDITA TO DH: We probe the cosmic period known as the Cosmic Dawn. we have detected one of the earliest possible signals from the first structures in the Universe

By understanding the Cosmic Dawn, scientists will learn about the formation and properties of the first stars and infer more information about the dark ages too.

"We already understand star formation in our local universe but we expect it to be different for the first generation stars due to the different conditions they were formed in," she said.

Born and raised in Coimbatore, Tamil Nadu, Nivedita did her undergraduate studies in instrumentation engineering at PSG college of technology.

"My interest in astronomy began when I worked with (astrophysicist) Ravi Subrahmanyan at Raman Research Institute (2013-2014)," she said.

Nivedita received her Masters degree in Electrical Engineering from University of California, Los Angeles and Judd Bowman team at Arizona State University in August 2016.

The young Indian student, however, is not the lone Indian link to the seminal work as there are multiple Indian groups working on the theory and observational studies on the cosmic dawn.

In fact, a RRI team was preparing a similar experiment to independently track such a signal, Astronomical Society of India said in a press statement.

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