

BHUBANESWAR: In a significant discovery, astronomers from National Institute of Science Education and Research (NISER), Bhubaneswar, claimed to have uncovered the place where baby exoplanets begin to form in the galaxy.

The team led by Liton Majumdar, a faculty at the School of Earth and Planetary Sciences (SEPS), NISER, has observed the earliest stages of exoplanet formation outside the solar system by using the Atacama large millimeter/submillimeter array (ALMA), an advanced telescope with 66 high-precision antennae that can observe electromagnetic radiation at millimetre and submillimetre wavelengths.

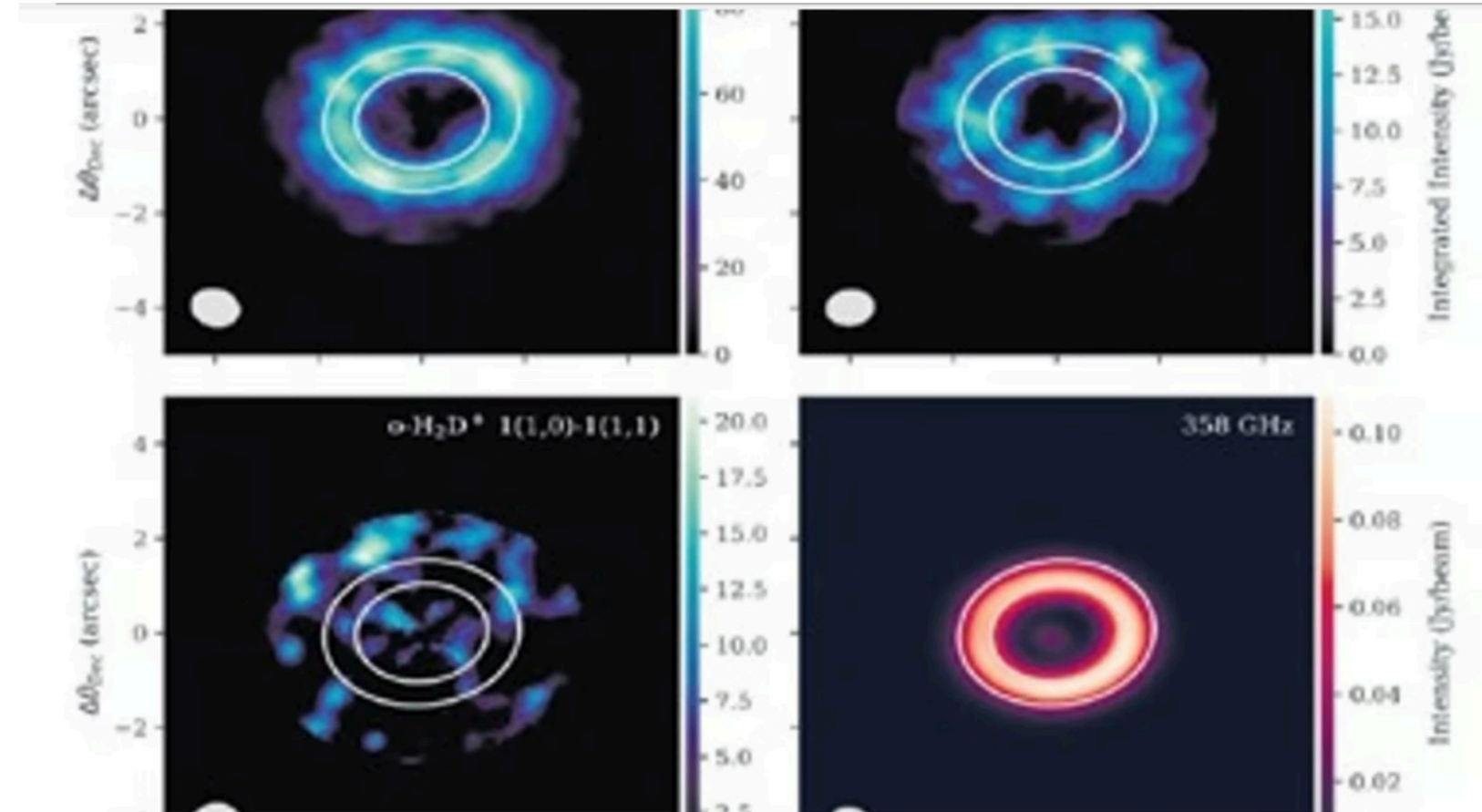
Estimated to be one to five million years old, this young system has been enveloped in a swirling ring of dust and gas – the raw material that fuels the birth of baby exoplanets. Although exoplanets can form in binary or multi-star systems, direct evidence of the process of their formation has been difficult to capture until now.

Principal investigator Majumdar and his PhD student Parashmoni Kashyap led the team that zoomed in on the most massive circumbinary disk ever detected around T Tauri stars, which are less than about 10 million years old, uncovering where baby exoplanets begin to form.

Utilising ALMA's high-resolution capabilities, they have pinpointed emissions from key molecules like diazenylium (N_2H^+), one of the few molecular ions observed in interstellar clouds, and DCO^+ , one of the most common deuterated molecules in cold molecular cloud, providing a clear view of the cold, dense regions of the GG Tau A disk where exoplanets begin to emerge.

Odisha

NISER scientists zero in on exoplanet formation



Observed molecular emissions (panels 1 to 3) and dust thermal emission (panel 4) from the GG Tau A disk Photo | Express

Article Published In:

The New Indian Express, 10.10.2024



THE NEW
**INDIAN
EXPRESS**

SCAN ME

