

India's first micro satellite by students launched from Hyderabad

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HYDERABAD: Hyderabad added yet another feather in its scientific cap with the successful launch of India's first student-led [micro satellite](#) from the balloon facility of the [Tata Institute of Fundamental Research](#) (TIFR) in the city in the early hours of Saturday. The balloon facility is located on the [ECIL](#) campus and the micro satellite will help in understanding cancer-causing [cosmic radiation](#) that constantly bombards the earth.

The micro satellite was developed by undergraduate students of BITS Pilani, Goa campus, under project Apeiro. The micro satellite is aimed at detecting and measuring cosmic radiation in stratosphere, one of the layers of atmosphere surrounding the earth.

According to officials, the study is important to understand the biologically harmful cosmic radiation incident on the earth from outer space. Extended exposure to this radiation leads to an increased risk of cancer and tissue damage. A thorough understanding of this radiation is essential to develop predictive and preventive mechanisms against their impact.

The experiment was conducted using [high altitude ballooning](#) technique. This method allows studies in the near-space environment with the help of a zero-pressure plastic balloon which lifts the experimental payload to desired altitude. The experimental payload consisted of a cosmic radiation detector made with a combination of scintillator and photomultiplier tubes.

This detector system was supported by an on-board high and low voltage power supply systems along with data acquisition systems. The TIFR in the city is one of the few institutes in the world

capable of supporting such kind of a flight. The balloon and all other flight equipment required for the flight of the Project Apeiro payload were developed entirely at this facility.

The payload was launched at 2:12 am February 2 and achieved a first float altitude at 24.8 km. The second float altitude was achieved at 26.7 km. "This flight sets history by successfully completing the country's first near-space experiment completely developed by students," says an official statement.

The student team comprised Sanket Deshpande, Lucky Kapoor, Shivangi Kamat, Vibhav Joshi and Pankaj Tiple. The project mentor is Dr B Satyanarayana of TIFR, Mumbai. Prof Devendra Ojha, chairperson of TIFR Balloon Facility, Hyderabad, Suneel Kumar, scientist-in-charge, TIFR Balloon Facility, and Srihari Menon of University of Pennsylvania, USA, were also part of the project.