TIFR Science News

TIFR Balloon Carries into Stratosphere an Atmospheric Probe developed by Telangana Social Welfare School Students

TIFR Balloon Facility, Hyderabad (TIFR-BF) launched SWAEROSAT-1—a payload developed by a team of 15 students from the Telangana Social Welfare Residential Educational Institutions (TSWREIS) run by the Telangana Government—in a high altitude balloon at 02:40 am IST on 19 July 2019. SWAEROSAT-1 was designed to study cosmic radiation and ozone layer concentration at various altitudes and compare it to the global standards.

These students hail from poor families whose parents are below the poverty line. Students from TSWREIS approached TIFR-BF in mid-June with their payload and a request to launch it near the Stratosphere. The SWAEROSAT-1 payload consisted of gas concentration profiler (ozone sensor), radiation profiler (Geiger-Muller tube detector) and temperature-pressure sensors. After examining the payload, TIFR-BF agreed to launch it in one of the scheduled balloon launches.

SWAEROSAT-1 payload during low temperature tests in dry ice.

TIFR-BF used a zero pressure plastic balloon to carry the 800 grams SWAEROSAT-1 payload that reached its designated maximum altitude of 25.5 km in a span of about one and a half hours after launch. The payload was allowed to float for 34 min at the same altitude for data collection and the balloon flight was terminated at 0423 hrs. The payload safely landed with the help of a parachute near Gulbarga, Karnataka and the instrument was handed over to the representatives of TSWREIS for data analysis. The SWAEROSAT-1 payload was launched by TIFR-BF team as a piggy back payload along with main experimental payloads to fulfil the aspirations of millions of marginalized communities in the country. “TIFR-BF is regularly popularizing science among school and college students especially those with underprivileged background by offering opportunities to design scientific experiments on their own and experience the fruits of their efforts. This will encourage more youth to enter the scientific fields.” said Prof. D. K. Ojha, Chairperson, TIFR Balloon Facility Committee.

Prof. Sandip P. Trivedi, Director, Tata Institute of Fundamental Research said, “I am very happy to hear that this payload developed by students from the Telangana Social Welfare Residential Educational School has been launched by the TIFR Balloon Facility. I am sure the students will continue to be engaged with the science in the future and similar projects will also be undertaken with more schools, so that the infectious excitement of science and the excellent balloons which are produced in the Balloon Facility can be used to inspire young students in our country.”

TSWREIS Students with SWAEROSAT-1 payload (inflation of zero pressure plastic balloon in background).

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