

Paris, 29 March 2017
PR050 – 2017

CNES stratospheric balloons Three major flight campaigns in 2017 for exceptional astrophysics experiments

Three major stratospheric science balloon campaigns are planned this year to fly novel astrophysics experiments in the field of Universe science. CNES and French research laboratories have acquired world-renowned expertise in stratospheric ballooning and associated science instrument payloads.

Three major stratospheric science balloon flight campaigns—Austral 2017, EUSO Balloon and FIREBALL—in preparation at CNES are set to make this year an exceptional one for astrophysics ballooning.

Austral 2017 has just got underway in the southern hemisphere. Teams from CNES and the IRAP astrophysics and planetology research are putting the finishing touches to the PILOT (Polarized Instrument for LOng wavelengTh) science gondola in Alice Springs, Australia. The science goal is to measure the polarized emission of interstellar dust grains in order to map the direction of our galaxy's magnetic field, thus paving the way for future cosmology missions. After a first successful campaign in the northern hemisphere in 2015, PILOT is ready to launch again as soon as weather conditions are right.

EUSO Balloon, a second innovative exploratory mission, has also started in Wanaka, New Zealand. EUSO (Extreme Universe Space Observatory) is designed to validate a technique for detecting ultra-high-energy cosmic rays penetrating Earth's atmosphere. The aim is to test the prototype of an ultra-sensitive, ultra-fast optical instrument, to measure background ultraviolet radiation and to attempt to detect air showers for the first time. The first EUSO flight was accomplished in August 2014 from Timmins in Canada with a 400,000-m³ CNES stratospheric balloon to an altitude of 40 kilometres. For this second flight, EUSO will be carried aloft by a 532,000-m³ U.S. superpressure balloon (SPB) for an expected 100 days.

Lastly, the FIREBALL mission (Faint Intergalactic Redshifted Emission Balloon) to study the warm-hot intergalactic medium (WHIM) is set to fly from Fort Sumner in New Mexico this September. The intergalactic medium is the source of gas from which galaxies are born and grow. The energy released by this hot gas, thought to account for 50% of ordinary matter in the cosmos, is extremely tenuous and can therefore only be measured by highly innovative instruments. The FIREBALL project is being led by Caltech and the LAM astrophysics laboratory in Marseille, which has extensive expertise in UV balloon astronomy and is supplying the complete spectrograph. The CNES balloon team is supplying the carbon-fibre pointed gondola and NASA will be conducting the flight with a 1,200,000-m³ balloon.

Contacts

Fabienne Lissak
Press office

Tel. +33 (0)1 44 76 78 37
Tel. +33 (0)1 44 76 76 88

fabienne.lissak@cnes.fr
cnes-presse@cnes.fr

presse.cnes.fr