

The Brazilian scientific balloon program

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The Brazilian scientific balloon program is based almost entirely at the National Institute for Space Research -INPE, which has a facility for research and development of scientific balloon systems such as telemetry, command, power supply, separation and flight train devices, ballast control systems, ATC transponders, shock absorbers and especially different launching techniques. The Balloon Launching Center of INPE operates since the early 70s, when the first launches were performed in cooperation with French groups for astronomical gamma-ray observations. Since then, the center was involved in a large numbers of international collaborations with France, Japan, United Kingdom, USA, Italy, Germany and Tasmania. INPE's high-energy astrophysics group developed several X and Gamma-ray experiments that were launched in balloons since the early 80s. The most complex of these payloads is the MASCO experiment, launched in 2004. It consists in a 2-ton experiment with a large gamma-ray imaging coded-mask telescope and an attitude control system developed at INPE. Currently, the high-energy group is developing a prototype balloon experiment for the MIRAX satellite, named protoMIRAX. Other scientists at INPE have also used balloons for cosmic rays, geophysics and atmospheric electricity experiments.

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