Europe's 'Big Bang' observatory completes cosmic survey

January 16 2012

One of the designers of the first European cosmological satellite Planck, Jean-Michel Lamarre shows the model of satellite Planck (L) in Paris,in 2009. The 900-million-dollar orbital observatory has completed the biggest-ever search for remnants of the "Big Bang" that created the Universe, the European Space Agency said on Monday.

A 900-million-dollar orbital observatory has completed the biggest-ever search for remnants of the "Big Bang" that created the Universe, the European Space Agency said on Monday.

The main instrument on the Planck observatory failed on Saturday when -- as expected -- it ran out of coolant, ending a mission that had lasted twice its 15-month operational design, ESA said in a press release.

"Planck has been a wonderful mission; spacecraft and instruments have

been performing outstandingly well, creating a treasure trove of scientific data for us to work with," Jan Tauber, the agency's chief scientist for the Planck project, said.

Planck is designed to pick up tiny variations in temperature in microwave energy that was released after the Big Bang some 14 billion years ago.

Buried in this backwash of energy, known as the Cosmic Microwave Background (CMB), are telltales of how the Universe was formed, hundreds of millions of years before the first stars and galaxies.

Mission controllers had hoped for two complete surveys of the sky, and in the end Planck delivered five, ESA said proudly.

The observatory's other sensor, which looks at slightly lower CMB temperatures, should be able to operate for much of 2012, helping to calibrate data obtained from these five sweeps of the sky.

Early next year, scientists hope to release data culled from the first 15 months of observation. In 2014, all the mission's data will be available.

It will then fall to astophysicists to pore over the numbers. The outcome could determine the future of the many competing theories about what happened during the Big Bang.

"Planck's data will kill off whole families of models -- we just don't know which ones yet," said Jean-Loup Puget of France's University of Southern Paris.

Launched in May 2009, the mission, named after German 20th-century quantum physicist Max Planck, cost around 700 million euros (882 million dollars).

(c) 2012 AFP