The Planck Mission

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Abstract

Planck (http://www.esa.int/Planck) is an astronomical satellite part of the Scientific Programme of the European Space Agency, which is designed to image the anisotropies of the Cosmic Microwave Background (CMB) over the whole sky, with unprecedented sensitivity (${{\Delta T}\over T} \sim 2^{-6}$) and angular resolution ($\sim$5 arcminutes). Planck will provide a major source of information relevant to several cosmological and astrophysical issues, such as testing theories of the early universe and the origin of cosmic structure. The ability to measure to high accuracy the angular power spectrum of the CMB fluctuations will allow the determination of fundamental cosmological parameters with an uncertainty better than a few percent. In addition to the main cosmological goals of the mission, the Planck sky survey will be used to study in detail the very sources of emission which ``contaminate" the signal due to the CMB, and will result in a wealth of information on the properties of extragalactic sources, and on the dust and gas in our own galaxy. The ability of Planck to measure polarization across a wide frequency range (30-350 GHz), with high precision and accuracy, and over the whole sky, will provide unique insight into specific cosmological questions, but also into the properties of the interstellar medium.

Planck was launched together with Herschel on 14 May 2009. By August 2011, it will have completed almost three full sky surveys. In January 2011 the first data products and scientific results were released to the public. I will present an overview of the Planck mission, its scientific objectives, the key elements of its technical design, current status, and first scientific results.

7. References

http://www.rssd.esa.int