



The Double Star Mission

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The Double Star Programme (DSP) was first proposed by China in March, 1997 at the Fragrant Hill Workshop on Space Science, Beijing, organized by the Chinese Academy of Sciences. It is a first collaboration mission between China and ESA. The mission is made of two spacecraft to investigate the magnetospheric global processes and their response to the interplanetary disturbances in conjunction with the Cluster mission. The first spacecraft was launched on 29 December 2003 and the second one on 25 July 2004 on board two Chinese Long March 2C rockets. The first spacecraft was injected in an equatorial orbit of 570×79000 km altitude with a 28° inclination and the second in a polar orbit of 560×38000 km altitude. The orbits have been specially designed to complement the Cluster mission by maximizing the time when both Cluster and Double Star are in the same scientific regions. The two missions allow, for the first time, simultaneous observations of the Earth magnetosphere from six points in space. To facilitate the comparison of data, half of the Double Star payload is made of spare or duplicates of the Cluster instruments; the other half is made of Chinese instruments. The science operations are coordinated by the Chinese DSP Scientific Operations Centre (DSOC) in Beijing and the European Payload Operations Service (EPOS) at RAL, UK. The spacecraft and ground segment operations are performed by the DSP Operations and Management Centre (DOMC) and DSOC in China, using three ground station, in Beijing, Shanghai and Villafranca.