

Magnetotail Science with Double Star and Cluster

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Double Star is an international collaboration between the China National Space Agency (CNSA) and the European Space Agency (ESA), which has produced and launched two magnetospheric research spacecraft, TC-1 and TC-2. TC-1 was launched in late December 2003, and is in a near-equatorial highly elliptical orbit, with apogee at 13.4 Earth radii. TC-2 was launched in late July 2004 into a polar orbit with apogee at 7.1 Earth radii, initially at a high magnetic latitude. These orbits were designed so that the magnetic local time of their apogees coincides closely with that of ESA's Cluster flotilla. Cluster, launched in 2000, is also in a polar orbit, but with apogee at about 19.6 Earth radii. We introduce these spacecraft and their scientific payload, and explain how the mission design aims to facilitate magnetotail science by enabling simultaneous coordinated observations at different distances along the magnetotail. We intend to present some early results.

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