

Current status and science objectives of the Ion Spectrum Analyzer (ISA) on board the NOZOMI satellite

Yoshifumi Saito[1], Hajime Hayakawa[1]

[1] ISAS

ISA (Ion Spectrum Analyzer) on board the NOZOMI satellite was designed to measure low energy ions (about 10eV/q to 16keV/q) around Mars. After measuring the solar wind and the plasmas around the Earth and the Moon between August and December 1998, ISA has been nearly continuously observing the solar wind ions. In order to prevent the partial degradation of the detector, ISA measures the full 3-D distribution functions including the main component of the solar wind for 20 minutes every 4 hours between August 1999 and March 2000, and for 1 hour every 14 hours after April 2000. For the rest of the period ISA mainly observes the alpha particles. ISA also measures the interstellar Helium pickup ions. By modifying the onboard program, ISA is now in the special mode for measuring the interstellar Helium pickup ions. In this mode, 3-dimensional ion distribution functions are added for about 10minutes. After arriving at Mars, ISA will resolve 1) Solar Wind - Mars Interaction, 2) the structure of the Martian ionosphere and magnetosphere, and 3) the mechanism of the oxygen ion outflow in the Martian tail.