

Mars Ion and Neutral Particles Analyzer (MINPA) for Chinese Mars Mission

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The Chinese Mars Mission is targeting to launch before the year of 2021. Part of the scientific objective of the mission is to study the particle loss from Mars. The mission includes a lander on the Mars and an orbiter circling around the Mars. The Mars Ions and Neutral Particle Analyzer (MINPA) onboard the orbiter will monitor both ions and neutrals including protons, oxygen ions and some proton atoms flowing out of the Mars as a result of the interaction with incoming solar wind. Composed of an electrostatic analyzer and a time-of-flight chamber, the detector will be able to measure the energy spectrum and flux for different charged and neutral atom and molecules. The qualification model is completed and tested with ions beams and some neutral atom beams with both the testing facility in National Space Science Center, and that in University of Bern, Swiss. The results obtained showed that the instrument has the capability to separate different the ions species and monitoring the neutrals.