

Analyses of Dust Impact Data in the Inner Solar System Detected by Mars Dust Counter on Board Nozomi Spacecraft

Asako Yoshida[1]

[1] Earth and Planetary Sci., Tokyo Univ

From the launch of Nozomi in July 1998 till the damage of communication system at the end of April 2002, Nozomi detected 96 dust impacts. Those data shows different part of our Solar system. Firstly in near Earth environment in parking orbit for 6 months in 1998. When the spacecraft was in the parking orbit from July to December 1998, Nozomi performed 2 lunar flybys and Ni-MH burn heading to Mars. After the incident, Nozomi was forced to change its orbital plan. Then went into heliocentric orbit for 4 years with an eccentric orbit whose perihelion and aphelion are at the Earth's orbit and at the Mars' orbit, respectively. In this paper those data taken during heliocentric orbit are mainly analyzed.

Since Nozomi stayed in the same orbit for 4 years, comparison of those data is possible.

Graph1 shows the monthly impact number of the dust from 1998 to 2002. While in the circumterrestrial orbit, this impact even number shows the difference to that of heliocentric orbit. Mass and velocity distribution shows the characteristics of low velocity (Sasaki et al. 2002)

From 1999 to 2002 impact number seems to be random, but number increase rapidly in June 2000 and number of impact seems to decrease in 2001, therefore we look each year carefully to determine the cause.