

Interplanetary Dust Around Venus

Jayesh Pabari

Physical Research Laboratory, Ahmedabad

Interplanetary Dust Particles (IDPs) are found everywhere in the solar system and Venus, being a member of it, is not the exception. The dust is originated from asteroid belt and leave the belt over long time. Smaller particles (less than 0.1 micron) are swept out from the system, while bigger particles spiral in toward the sun. Their orbits are affected by the sun over geological time. During their inward travel, they encounter various planets. Since, the mars is nearest to the belt, more dust is expected at mars. If the particles are not captured by mars, they continue travel further and reach earth and then Venus, in similar way. The study of IDP is important as it leaves metal ions in the atmosphere, due to ablation. The metal ions, generated by the dust, affect atmospheric conductivity. The IDP was measured at earth, but there are no measurements of IDP around venus. There were some measurements of dust in the interplanetary space between earth and venus. To understand the dust flux at venus, a Venus Orbiter Dust EXperiment (VODEX) is proposed for future venus orbiter. An impact ionization dust detector can be used to measure the IDP. This talk will cover the interplanetary dust around venus, its importance and also its detection technique.