

Circum-Martian Dust Monitor with a large detection area

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Some previous works predict that the dust ring (or, dust torus) exists around Mars. To detect the dust particles in the dust ring that was not even discovered yet, we propose a dust sensor with a large detection area of 1 m² or more, Circum-Martian Dust Monitor or CMDM to Martian Moons Explorer as JAXA's future plan. CMDM is under study of phase A1 now. CMDM aims detection or lowering the upper limit of the amount of the dust that composes the Martian dust ring by investigating whether the amount of the dust around Mars is significantly large compared with the interplanetary space dust. In this paper, we describe about CMDM with a large detection area but small impact to spacecraft system resource.