

Small Carry-on Impactor Elucidates the Nature of Craters and the Evolution of our solar system

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Hayabusa-2, the Japanese next asteroid exploration mission, equips Small Carry-on Impactor (SCI) to launch a decimeter scale projectile on an asteroid surface. This is a novel apparatus to excavate the asteroid surface, and hopefully it will enable us to observe a fresh surface without space weathering and thermal alteration. Furthermore, we will be able to recover the asteroid sample excavated from several 10 cm depth at the deposit of the impact ejecta. The SCI impact on the asteroid is very good chance to examine the projectile scale on the crater scaling law in addition to the study on the gravity effect on the crater formation process. In this presentation, I will introduce the scientific goals of Hayabusa-2 mission using SCI and the scientific problems to be solved in the near future to maximize the scientific outputs of the SCI impact.

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