

The final impact tests of Small Carry-on Impactor(SCI) equipped on HAYABUSA-2

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HAYABUSA-2(the next Japanese Asteroid Sample Return Explorer) is now at the final integrated test. Before this test, all sub-systems experienced final test individually. The Small Carry-on Impactor:SCI has been adopted the new sub-system of HAYABUSA-2, it is one of the self forging fragment which will be able to eject the 2kg projectile by 2km/sec velocity by detonation.

In this paper we show the outline and results of the final performance test of the SCI explosive part on Oct. 2013. The test bodies have been made by the same rot of flight model, and experienced environmental stress tests. The projectiles formed explosion impacted on the sand target and made craters.

A point of view of understanding of impact phenomena, these tests are larger scale impact experiments than those made in laboratory, between space scale and laboratory scale. Therefore we observed and measured the crater formation processes by two high-speed video cameras, an infrared video camera, accelerometers, geophones, and digital handy video cameras. We succeeded to obtain five cratering processes.

Keywords: HAYABUSA-2, Small Carry-on Impactor, impact experiment, crater, explosion

