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Room:IC

Time:May 26 18:15-18:30

## Search for Hayabusa Re-entry Capsule and Parachute after Landing by the Formosat-2 Remote Sensing Instrument

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Hayabusa is the Japanese asteroid sample return mission launched in 2003. The sampling capsule reentered the earth atmosphere at approximately 11.20pm 13th June (JST). The capsule was discovered around 23:56 p.m. and retrieved in the Woomera Protected area, Australia. at 16:08 on June 14th, 2010 (JST). The expected landing area was imaged by using Remote Sensing Instrument (RSI) on Formosat-2 satellite in the morning of Jun 13th and 14th to find the capsule and parachute on the ground. Several change detection techniques have been applied to the image pair, but no significant variation was found on the actual location of the capsule and parachute identified on the airborne images. We demonstrate from this experiment, however, that satellite imaging could be a contingency plan for capsule retrieval of future sample return missions if we utilize a space-borne sensor with sub-meter spatial resolution and accurate radiometric calibration.

Keywords: hayabusa, remote sensing, change detection, asteroid