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## **Development of Micro Deployable Came (DCAM) Series for IKAROS and HAYABUSA2**

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Japan Aerospace Exploration Agency(JAXA) developed two micro deployable camera system DCAM1 and DCAM2 for small solar power sail demonstrator IKAROS(Interplanetary Kite-craft Accelerated by Radiation Of the Sun) in 2010. IKAROS was launched on May 21st, 2010, and extremely small camera system succeeded in conducting a very challenging mission that the full view of IKAROS deployed the solar power sail by DCAM1 and DCAM2, in a viewpoint from several 10s m.

In 2014, JAXA also developed a new micro deployable camera system, DCAM3 as a successor of DCAM series for a small asteroid explore probe “HAYABUSA2”, and launched them on Dec. 3rd, 2014. We plan extremely challenging missions, which is an impact experiment on a surface of small asteroid using Small Carry-on Impactor system : “SCI”, and a remote observation of the impact experiment by DCAM3. In HAYABUSA2 mission, JAXA aim at the world’s first mission, that is, artificial crater creation experiment using SCI and the DCAM3’s remote observation mission.

The shape of DCAM3 is a cylindrical of approximately 80mm in diameter and 80mm in length. The most remarkable characteristic of DCAM3 is to be assembled 2 independent systems of imagers and transmitter systems. DCAM3 has an analog camera subsystem to send an analog video signal of low resolution and a digital camera subsystem to send a high-resolution image data independently. We aim at acquiring a new scientific knowledge from a high-resolution image of an impact phenomenon. In this presentation, we will make a report of the on-orbit result of IKAROS’s DCAM1 and DCAM2 experiment. Furthermore, we will report the DCAM3’s development result and our mission plan of DCAM3 experiment.