ASTROhead Cam

Multi-purpose camera with radiation hard design

Jena-Optronik’s ASTROhead Cam is a compact and lightweight space camera for demanding environments. Typical applications are:

- Navigation
- Inspection
- Orientation
- Space situational awareness

Based on proven heritage technologies of the ASTRO product family, Jena-Optronik developed the multi-purpose camera ASTROhead Cam. Being the first product world-wide that successfully flies with the innovative, highly integrated FaintStar image sensor, its application has set new standards for radiation hard designed space cameras in terms of both low mass and small envelope:

- ASTROhead Cam is configurable with various optical heads
- Multiple optical Heads can be combined with an optional electronic box
- Several optics are available for (very) narrow and wide field-of-view applications (5.5° x 5.5°, 19.5° full cone, or 68° full cone)

The first ASTROhead Cam flight set was launched on Northrop Grumman’s Mission Extension Vehicle MEV-1 in 2019 and docked successfully to the client satellite Intelsat 901 on February 25th, 2020.

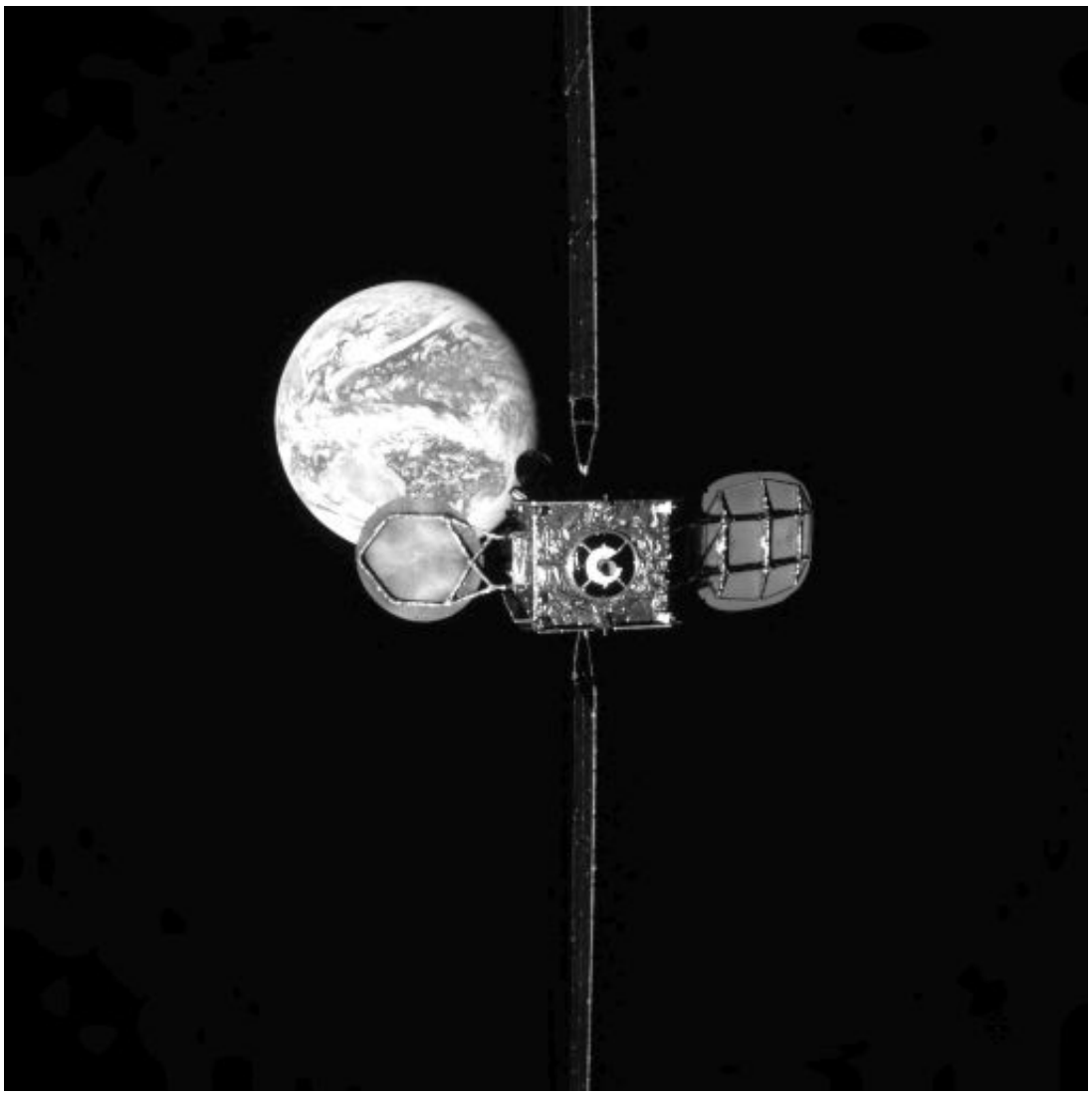
On April 12th 2021 MEV-2 successfully docked, for the first time ever, to a fully operational satellite in geostationary Orbit. The docking to Intelsat 10-02 was again fully supported by the ASTROhead Cam, which operated flawlessly during both MEV missions.

The ASTROhead Cam for MEV (mission name: Visual Sensor Suite VSS) consisted of six optical heads with a fully redundant electronic box.

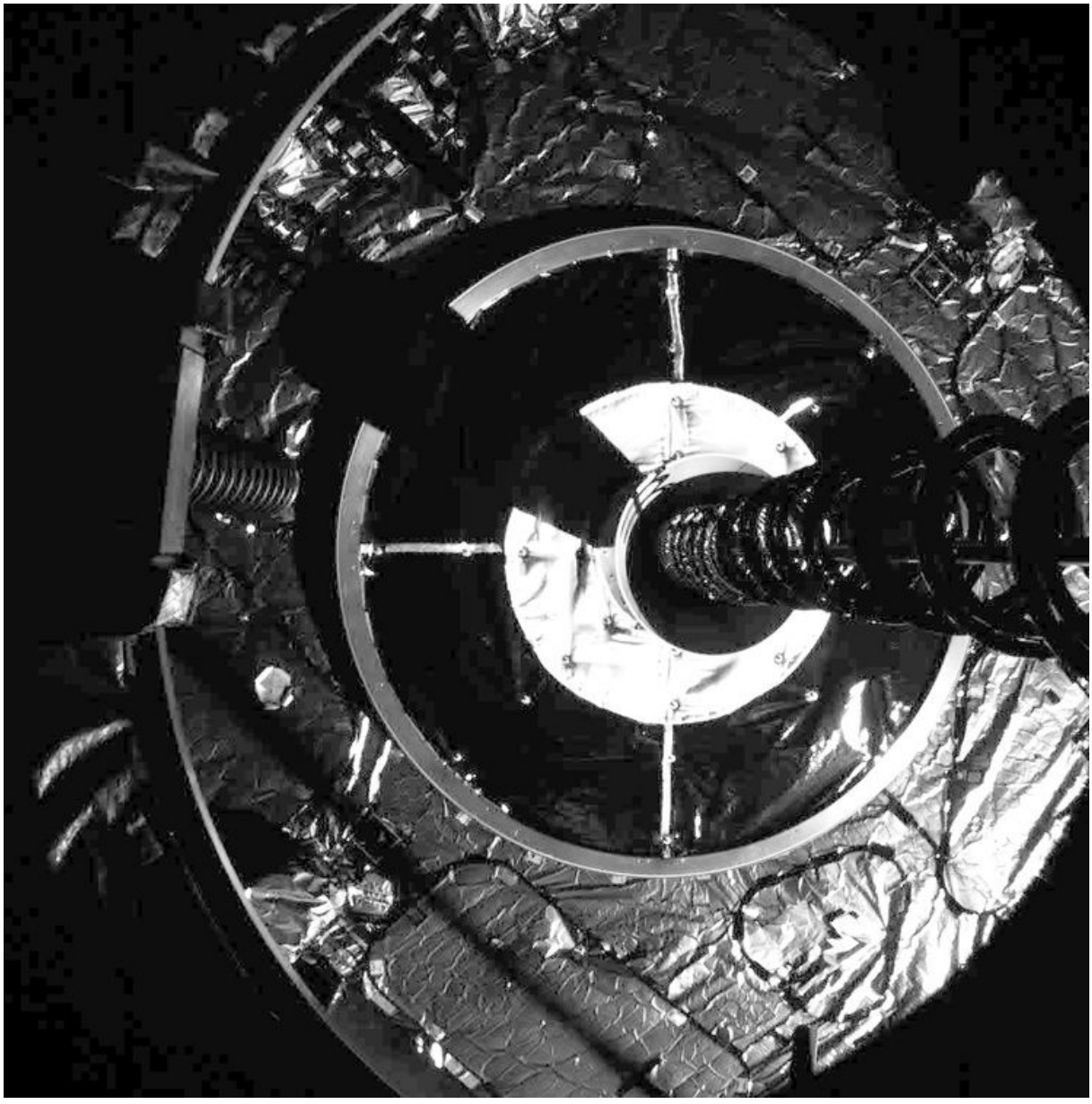
Furthermore, an ASTROhead Cam with a mission-specific, adapted optics has been delivered as payload Asteroid Framing Camera (short AFC) on the HERA spacecraft for the ESA scientific mission to the asteroid Didymos.

This camera configuration supports both far range object detection during the approach, as well as surface imaging during close fly-by.

It is optimized for both high accuracy line-of-sight navigation and spatially resolved, fully illuminated surface images as scientific by-product.



Source: http://www.jena-optronik.com



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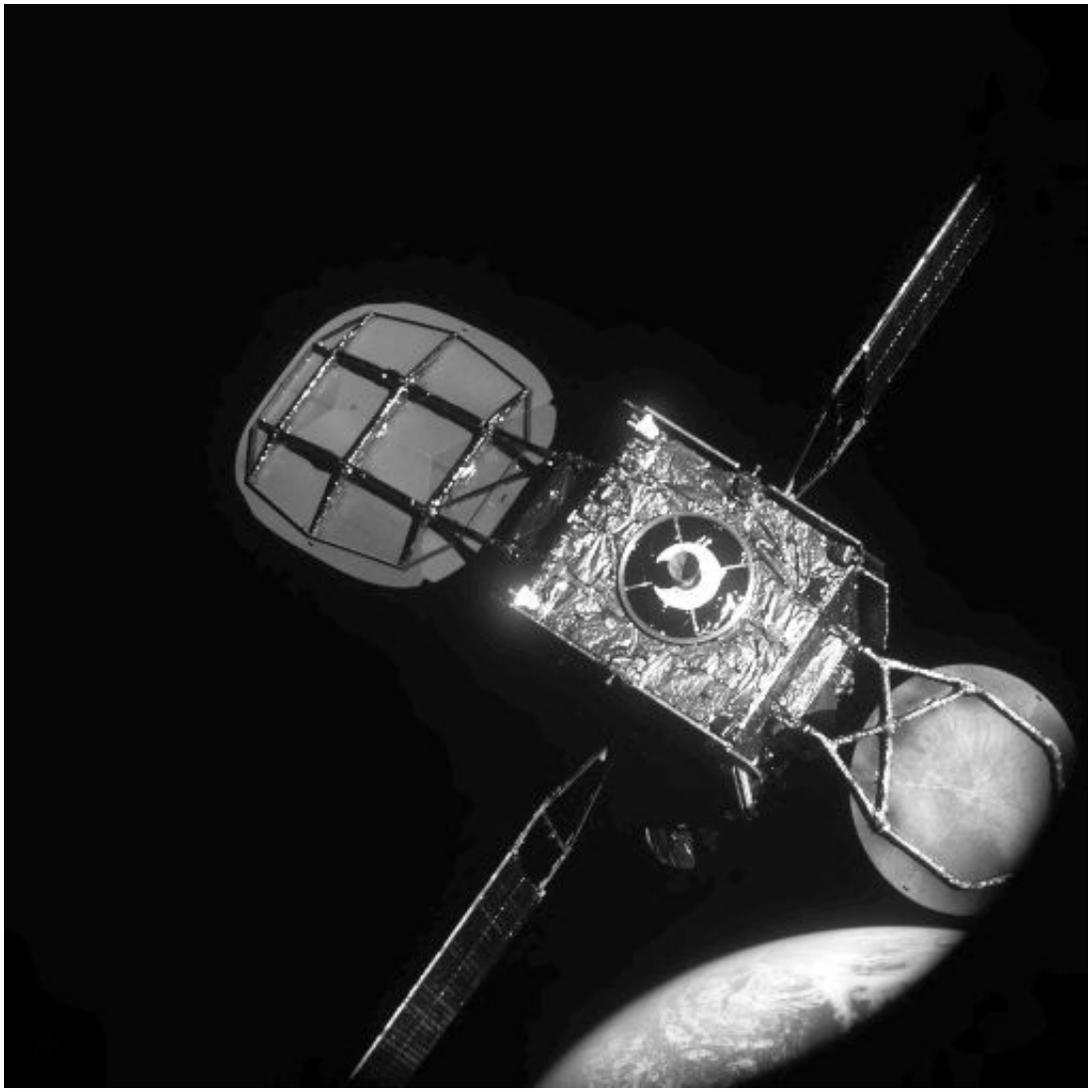

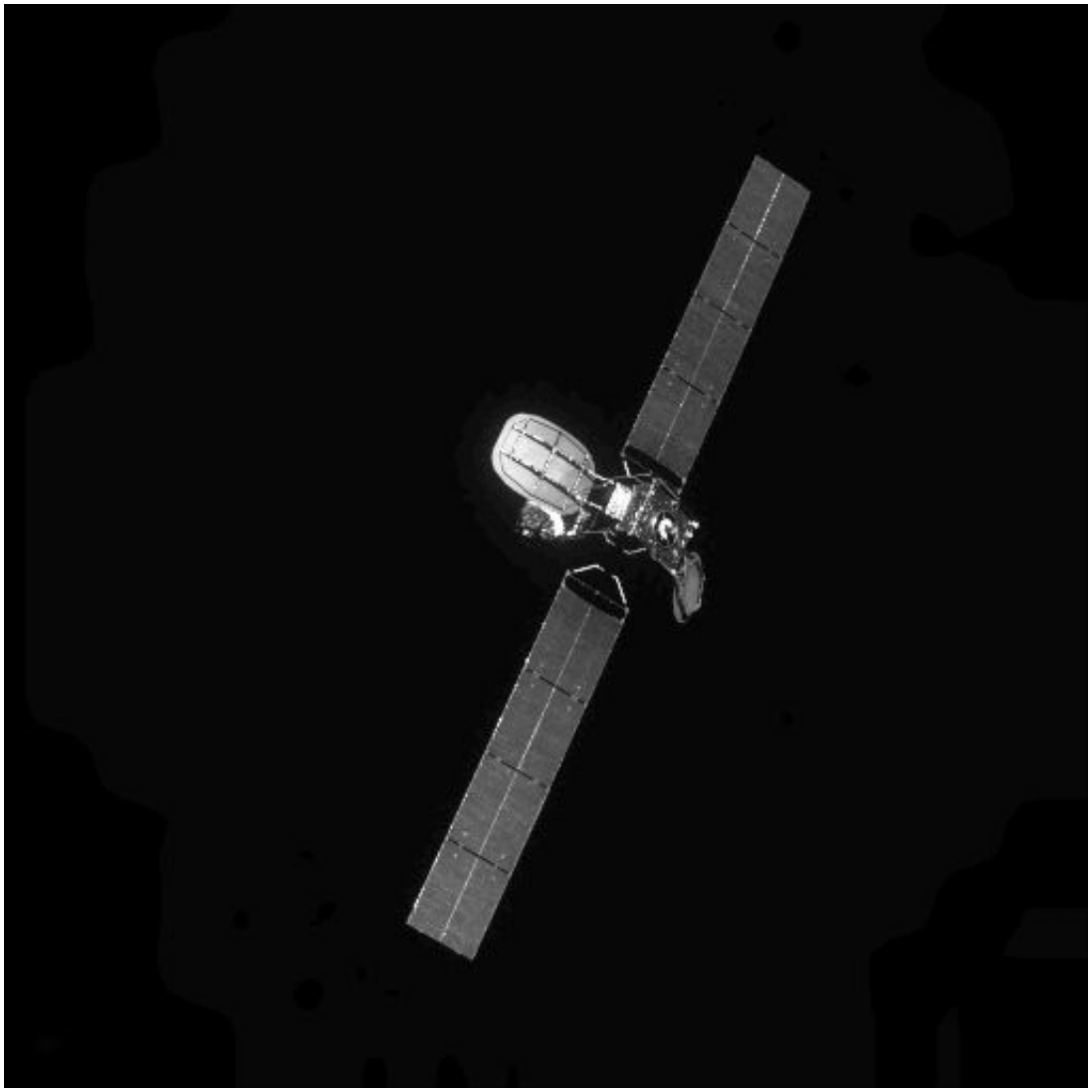

View of IS-901 satellite from Mission Extension Vehicle-1 © Northrop Grumman

The VSS incorporates two ASTROhead camera versions with different fields of view as well as a common electronic control unit (Optical Head Controller Box). If needed this unit processes the data of up to six cameras complementing the ASTROhead to a complete navigational camera system., ASTROhead can be adapted to meet different customer requirements thanks to the modular design approach.

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