



Press conference after the return of the asteroid explorer, Hayabusa2, re-entry capsule

2020/12/6

JAXA Hayabusa2 Project



Hayabusa2 capsule separation operation



- The re-entry capsule separation was performed as scheduled and the re-entry capsule, parachute, and heat shield were all recovered.
- The spacecraft succeeding in leaving the Earth's sphere and entered an orbit that moves away from the Earth. We also began observations with the onboard science instruments.



Summary of capsule separation 1



Spacecraft-related

Event	Time (JST)	Earth distance (altitude)
Permission obtained from the CRSO (Commonwealth Return Safely Officer) to execute TCM-5.	12/5 11:40	
Capsule separation	12/5 14:30	220,000 km
TCM-5 (Trajectory control maneuver for Earth departure) : 1 st time	12/5 15:30	207,000 km
// : 2 nd time	12/5 16:00	198,000 km
// : 3 rd time	12/5 16:30	190,000 km
Spacecraft, enters shadow	12/6 1:56	110,000 km
Spacecraft, exit shadow	12/6 2:31	About 350 km
Communication resumes after broken link due to Earth proximity	12/6 3:15	190,000 km



Summary of capsule separation 2



Capsule related

Event	Time (JST)
Confirmation of light emission from the capsule	12/6 2:29
Reception of beacon radio waves from the capsule	12/6 2:32
Direction search for the capsule beacon radio waves from the field survey stations	12/6 2:54
Estimation of capsule landing site by directional search	12/6 3:07
Discover capsule and parachute by helicopter search	12/6 4:47
Capsule collection work begins at landing site	12/6 6:23
Capsule collection work is completed at landing site	12/6 7:32
Helicopter carrying the capsule arrives at the local headquarters and the capsule is carried into the building	12/6 8:03
Front heat shield discovered by helicopter search	12/6 11:13
Rear heat shield discovered by helicopter search	12/6 12:31
Transportation of rear and front heat shields to local headquarters	12/6 13:38



Summary of spacecraft operation from launch



■ Total flight time of spacecraft: 2195 days (2194d 13hr 32m)

- Launch : 2014/12/3 (Wed.) 13:22:04
- Capsule landing (=directional search) : 2020/12/6 2:54

■ Total flight distance: 5,240 million km

- Outbound : 3.1 billion km
- Asteroid vicinity. : 1.32 billion km
- Return : 820 million km



Observation of the re-entry capsule fireball



(credit : JAXA)

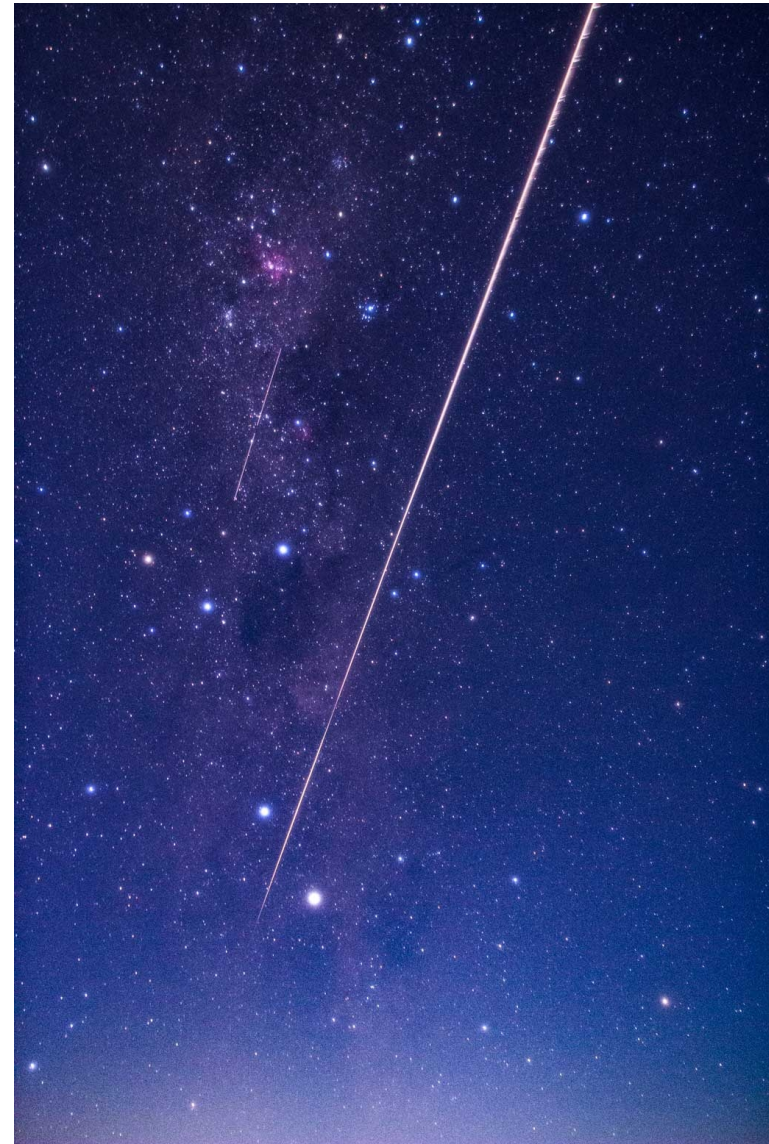
Fireball taken from Coober Pedy



Observation of the re-entry capsule fireball

Fireball taken from Coober Pedy

(credit: JAXA)





Observation of the re-entry capsule fireball



(credit: JAXA)

Fireball taken from Coober Pedy



Observation of the re-entry capsule fireball



(credit: JAXA)

Fireball taken from Coober Pedy



Observation of the re-entry capsule fireball



(movie)

(credit: JAXA)

Fireball taken from Coober Pedy



Discovery of re-entry capsule



(credit : JAXA)



Discovery of re-entry capsule



(credit: JAXA)



Discovery of re-entry capsule



(credit : JAXA)



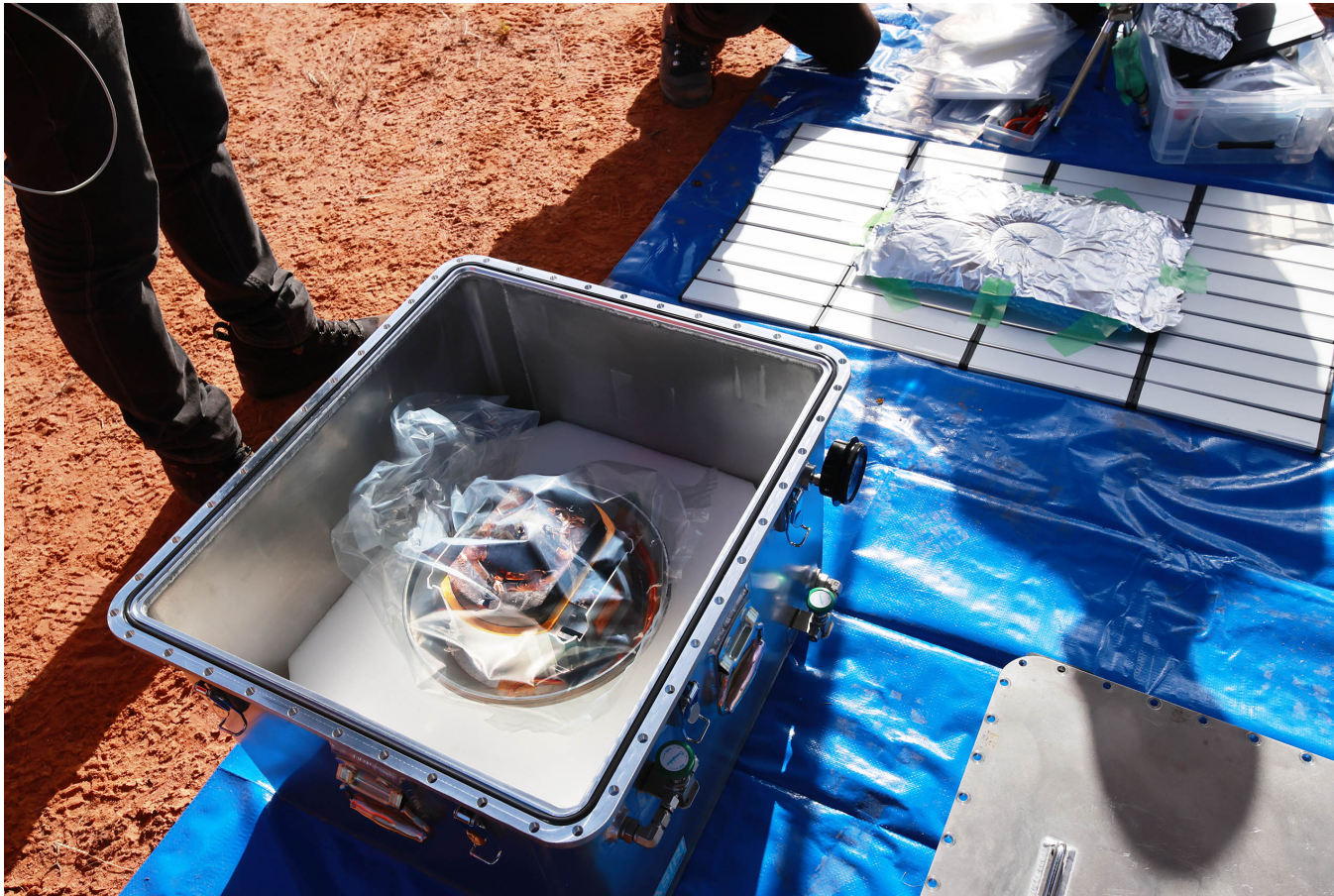
Discovery of re-entry capsule



(credit : JAXA)



Discovery of re-entry capsule



(credit : JAXA)

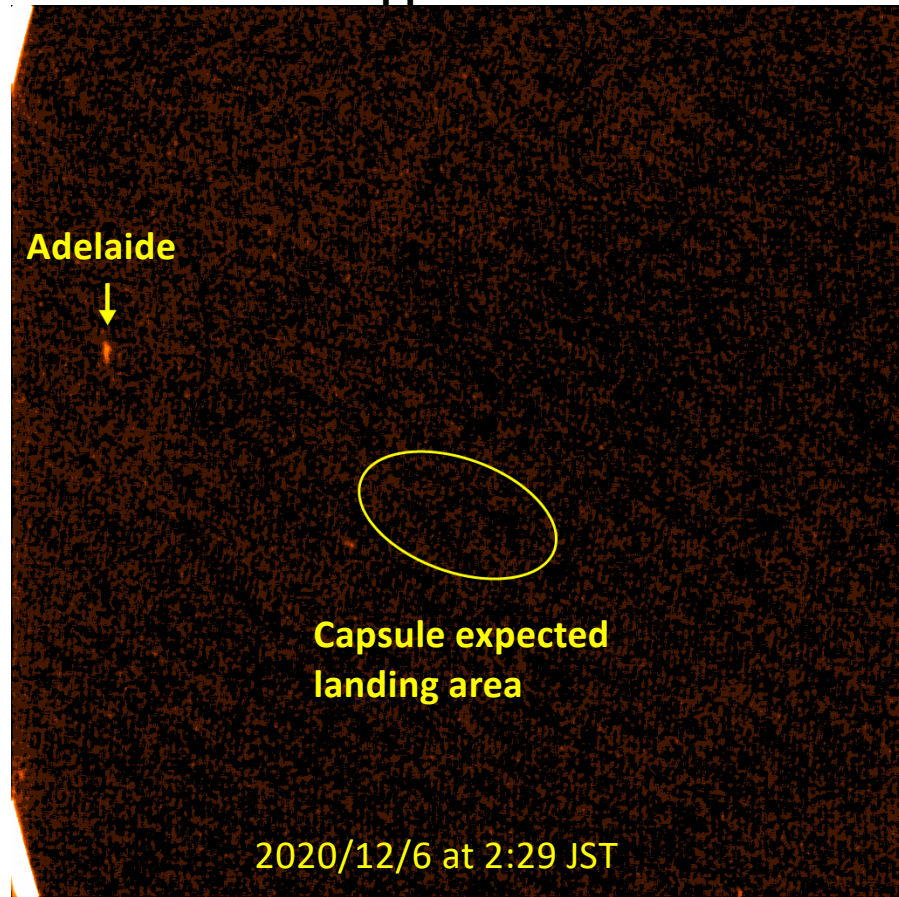


Imaging with ONC-W2: “Earth, I’m home”



Australia, taken 2 minutes before the
closest approach to Earth

Distribution of city lights at the same time



Credit: JAXA, Chiba Institute of Technology, University of Tokyo, Kochi University, Rikkyo
University, Nagoya University, Meiji University, University of Aizu, AIST
2020/12/6

Credit: Chiba Institute of Technology (created with JAXA/ISAS/C-SODA FLOW)

Hayabusa2 Press Conference

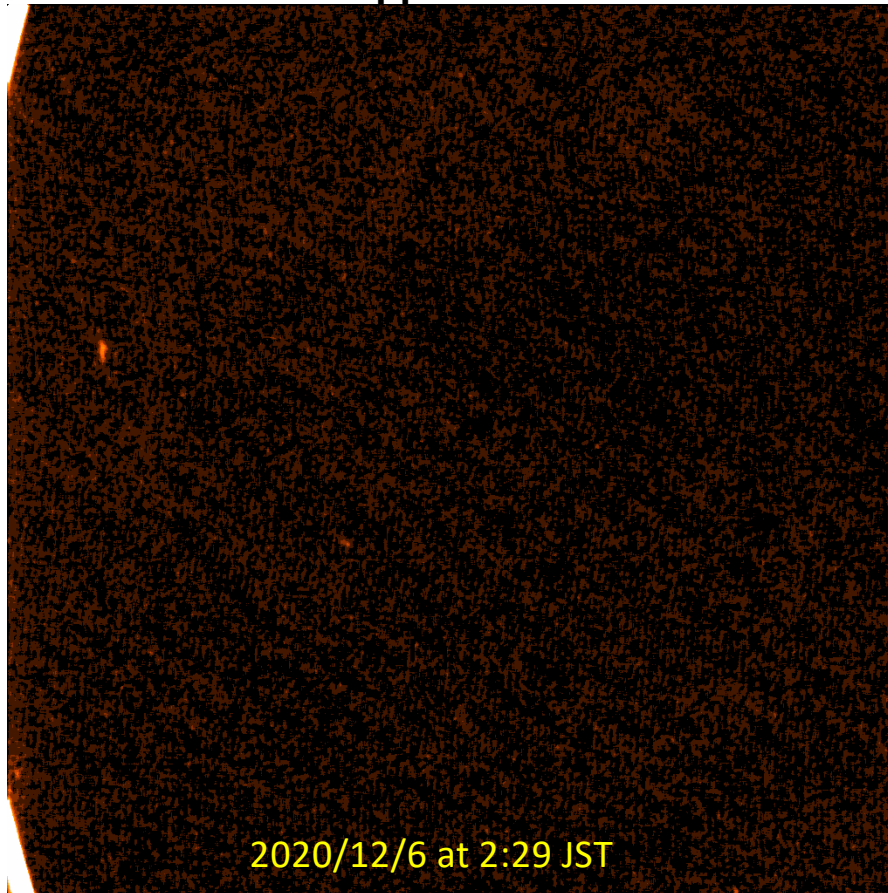


Imaging with ONC-W2: “Earth, I’m home”



Australia, taken 2 minutes before the
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Distribution of city lights at the same time



Credit: JAXA, Chiba Institute of Technology, University of Tokyo, Kochi University, Rikkyo

Credit: Chiba Institute of Technology (created with JAXA/ISAS/C-SODA FLOW)

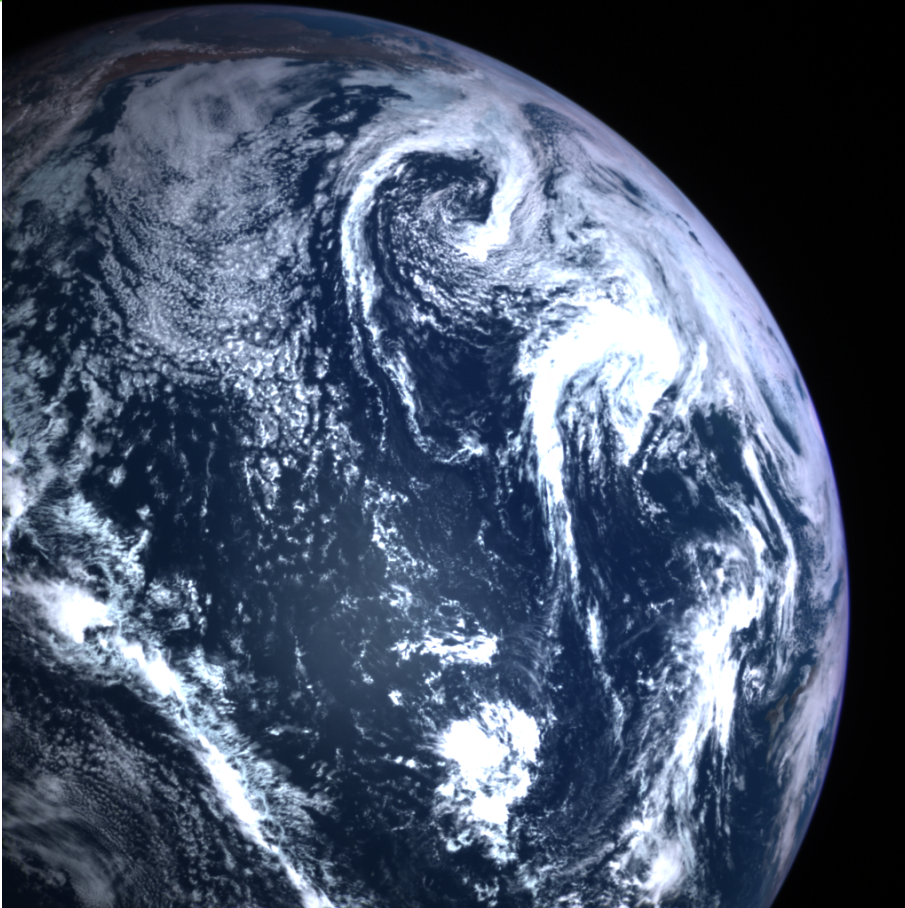
University, Nagoya University, Meiji University, University of Aizu, AIST

2020/12/6

Hayabusa2 Press Conference



Imaging with ONC-T: 「Earth, I'm going」



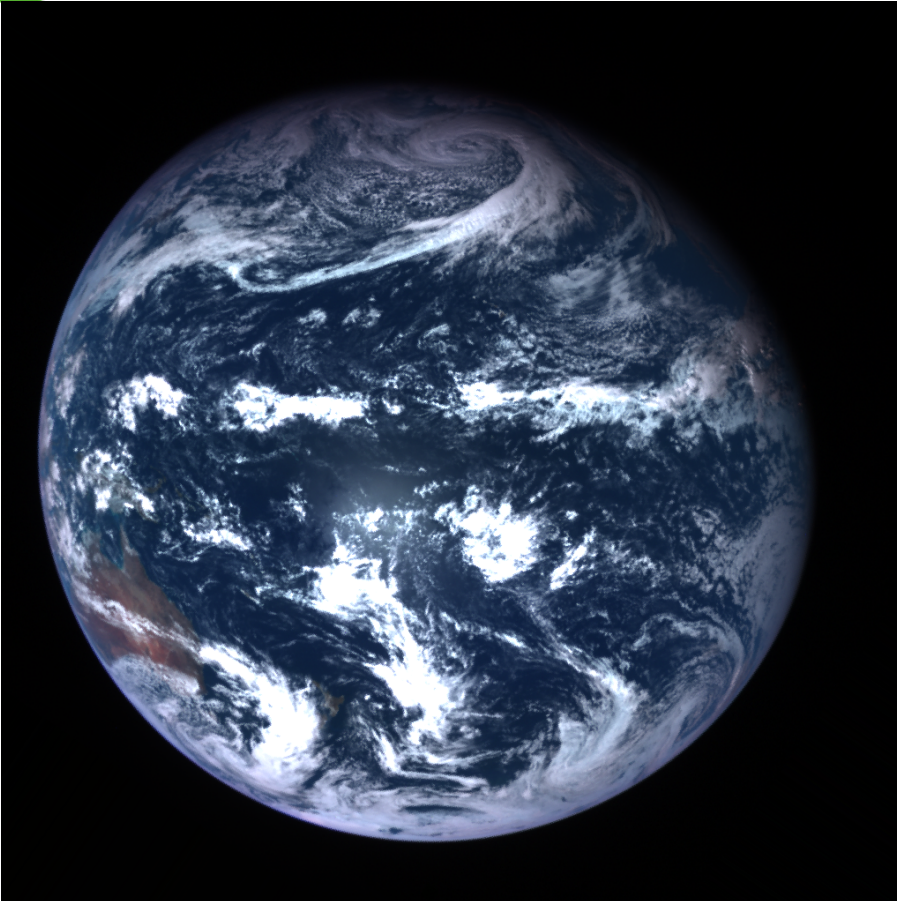
Earth color image immediately after reconnecting

- Distance to Earth center: 88, 000 km
- Time: 12/6 (Sun.) 6:30am JST
(Approx. 4 hours after closest approach to Earth)
- South pole is visible on the upper-right of the screen, the west coast of South America is at the top.

Image courtesy of JAXA, AIST, University of Tokyo, Kochi University, Rikkyo University, Nagoya University, Chiba Institute of Technology, Meiji University, University of Aizu



Imaging with ONC-T: 「Earth, I'm going」



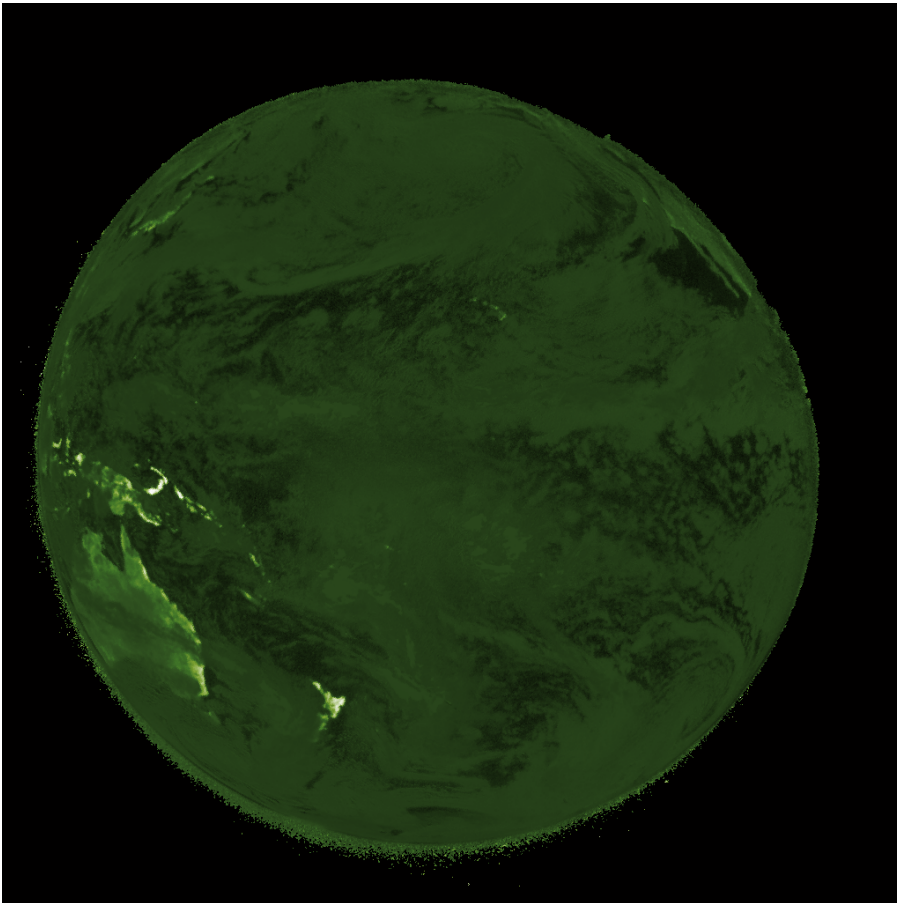
Earth color image immediately after restart

- Distance to Earth center: 130, 000 km
- Time: 12/6 (Sun.) 8:50am JST
(Approx. 6.5 hours after closest approach to Earth)
- Australia appears towards the lower-left, and the equator crosses the center of the screen from left to right. A row of clouds can be seen above and below the more cloud-free equatorial zone

Image courtesy of JAXA, AIST, University of Tokyo, Kochi University, Rikkyo University, Nagoya University, Chiba Institute of Technology, Meiji University, University of Aizu



Imaging with ONC-T: 「Earth, I'm going」



Earth vegetation image immediately after restart

- Distance to Earth center: 130, 000 km
- Time: 12/6 (Sun.) 8:50am JST
(Approx. 6.5 hours after closest approach to Earth)
- Australia appears towards the lower-left, and the equator crosses the center of the screen from left to right. A row of clouds can be seen above and below the more cloud-free equatorial zone

Image courtesy of JAXA, AIST, University of Tokyo, Kochi University, Rikkyo University, Nagoya University, Chiba Institute of Technology, Meiji University, University of Aizu