

Imaging of the Earth and the Moon by High-definition television system (HDTV) on board KAGUYA/SELENE.

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High-Definition Television(HDTV) on board the lunar explorer KAGUYA/SELENE is the world's first high-definition video imaging system developed by NHK and JAXA for autonomous operation on the spacecraft. HDTV consists of the telephoto camera and the wide-angle camera, which are designed to capture the earth-rise from the lunar horizon as well as lunar prominent surface feature.

As of February, 2008, HDTV has succeeded in obtaining about fifty video sequences including the Earth-rise, the Earth-set, and prominent features on the Moon such as Aristarchus and Copernicus. The HDTV's original objectives are public outreach and education, however, since HDTV takes the images at a short time interval and in the oblique view, potential applications for lunar science such as photometric studies or geological studies based on the detailed observation of the crater walls or the side of mountains, are considered. This paper presents the specification of the HDTV, the data obtained up to this point, and the preliminary report on the potential application of HDTV data for lunar science.