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KPLO X-BAND COMMUNICATION LINK STATUS ANALYSIS FOR NORMAL OPERATION

Abstract

This paper is about the analysis result of the initial communication link state of X-band communication, which is one-way communication equipment for large capacity information transmission among KPLO communication equipment. KPLO X-band communication is a system that transmits data at a maximum speed of 8.5Mbps by radiating RF from an X-band 6W output transmitter using a high-gain antenna (HGA). After KPLO separated from the launch vehicle, initial communication started a past of 24 hours after separation, and the path to the moon followed the BLT path, traveling from the Earth to the sun at L1 for about 1.56 million km, and then returning to the moon. In this process, in order to receive X-band data, the center frequency change and the symbol rate change were detected in the ground station, and this change will be mentioned through this paper. After arrival on the moon, it was confirmed that KPLO sat well on the moon and satisfies the conditions for normal operation, as stable communication characteristics appeared for about a month during the initial stabilization operation period.