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Ion cyclotron waves observed by Kaguya/LMAG around the moon in the Earth's magnetosphere

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Narrowband ion cyclotron waves as found by Apollo 15 and 14 Lunar Surface Magnetometers were detected in the magnetic field data obtained by MAP/LMAG magnetometer on board Kaguya at an altitude of 100 km above the moon in the tail lobe of the Earth's magnetosphere. The frequency of the waves was near the local proton cyclotron frequency. They had a significant compressional component. They were detected on the dayside, on the nightside, or above the terminator of the moon. Analysis of the waves detected by Kaguya would contribute the understanding of the moon-plasma interaction.

Keywords: ion cyclotron wave, Kaguya, LMAG, moon, cyclotron frequency, lobe