

Hot flow anomalies and smallest scale limb compression detected by Kaguya around the moon in the solar wind

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The short-period magnetic enhancements detected by Kaguya around the moon in the solar wind were categorized into 2 groups, hot flow anomalies and limb compressions. Hot flow anomalies are known to be generated by the solar wind ions reflected at the Earth's bow shock, channeled back upstream along the current sheet when the motional electric field points toward the current sheet on both sides, and the magnetic fields bounding the expanding region are compressed. The same mechanism is expected at the moon reflecting the solar wind ions.

The limb compression was observed at the terminator region in a reduced dynamic pressure of the solar wind with the magnetic field flaring away from the moon. Differently from the previously reported limb compression, there was no major magnetic anomalies below the spacecraft nor the magnetic field lines at the detection of the magnetic enhancement with no directional change. The scale size was smaller than the orbital separation in the next revolution of Kaguya, so it was not detected recurrently.

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