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Analysis of Reasons of the Geomagnetic Storm on December 1-2 2023 from Interplanetary Scintillation Observations at the BSA LPI Radio Telescope

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The results of the analysis of interplanetary scintillation observation data obtained by the radio telescope Big Scanning Antenna of the Lebedev Physical Institute (BSA LPI) before, during and after the magnetic storm that occurred on December 1-2, 2023 are presented. The observational data are compared with model calculations for corotating and propagating large-scale disturbances. The results of observations of scintillating radio sources indicate that the magnetic storm that took place was caused by a superposition of two types of large-scale solar wind disturbances. On the day before the start of the magnetic storm, signs of interaction between the Earth's magnetosphere and the corotating region of multi-velocity solar wind flows were observed, whereas later signs of magnetosphere disturbance by coronal mass ejection spreading after the M9.8 solar flare on November 28, 2023 were observed.

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