

Time variability of [OI] 630nm emission from Enceladus torus

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There are many icy atoms and moleculars in Saturn's inner magnetosphere. This materials distribute like a torus, so called enceladus torus.

We successfully detected the forbidden line emission of atomic oxygen [OI] 630 nm at Enceladus torus by ground-based observation carried out in May, 2011.

We had assumed that main process for this emission is electron impact excitation. But other process like as photo dissociation of molecules as H₂O and OH are not ignorable. So we continued the observation to understand featur of [OI] 630 nm emission on the torus. Long term observation will show many hint about relation between the emission and environment. However, lack of high-quality data restricted the data point against time.

Now we improved the analysis method and it enabled us to use mid-high quality data. The additional usable data was used for derivation of emission.

In this presentation, I will report results of new analysis.

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