

Tracing the connectivity of magnetic flux ropes to solar surface with 100~ keV electrons associated with CME on July 14 2000

Akihumi Ihara[1], Tadayoshi Doke[2], Nobuyuki Hasebe[3], Jun Kikuchi[3], Masanori Kobayashi[4], Kiyoshi Maezawa[5], Katsuaki Nagata[6], Takeshi Takashima[7], NOZOMI EIS Team Takashima Takeshi

[1] ISAS, [2] Adv. Res. Inst. for Sci. and Eng., Waseda Univ., [3] Adv. Res. Inst. for Sci. and Eng., Waseda Univ., [4] RISE, Waseda Univ., [5] Dept of Physics, Nagoya Univ, [6] Fac of Engineering, Tamagawa Univ, [7] Astronomy and Astro. Phys. Sci, Nagoya Univ.

On July 12, 2000, a magnetic flux rope was ejected from solar surface associated with CME. Two days after, Electron and Ion Spectrometer (EIS) onboard Nozomi observed unidirectional field-aligned electrons (100 keV ~) through the magnetic flux rope. From its intensity, we consider that these electrons were accelerated by a large solar flare occurred on July 14 (Bastille event). This concludes that either footpoint of magnetic field included in the magnetic flux rope has been connected to solar surface until the flare time for two days.

At that time, Nozomi was about 1 AU distant from the Sun, but 1 AU far from the Earth. From the analysis of solar energetic electron data near the Earth, we can confirm the connectivity or the structure of the magnetic flux rope associated with CME events.

On July 12, 2000, a magnetic flux rope was ejected from solar surface associated with CME. Two days after, Electron and Ion Spectrometer (EIS) onboard Nozomi observed unidirectional field-aligned electrons (100 keV ~) through the magnetic flux rope. From its intensity, we consider that these electrons were accelerated by a large solar flare occurred on July 14 (Bastille event). This concludes that either footpoint of magnetic field included in the magnetic flux rope has been connected to solar surface until the flare time for two days.

At that time, Nozomi was about 1 AU distant from the Sun, but 1 AU far from the Earth. From the analysis of solar energetic electron data near the Earth, we can confirm the connectivity or the structure of the magnetic flux rope associated with CME events.