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GLOBALIZATION EXTENSION OF TRANSIENT LUMINOUS EVENTS FROM FORMOSAT-2  
OBSERVATION

**Abstract**

Since its launch on 20 May 2004, FORMOSAT-2 (FS2) is still the unique satellite to observe the transient luminous events (TLEs) from orbit. In nearly 9 years, the number and distribution of TLEs observed are summarized in Table 1. The instrument used for the observation of TLEs is called Imager of Sprites and Upper Atmospheric Lightning (ISUAL). This is the first time the observation results are presented in the International Astronautical Congress (IAC). Due to the orbital characteristics of FORMOSAT-2, unobserved gaps exist between each two orbits. In this paper, besides the presentation of above results, globalization extension of TLEs is performed based on FORMOSAT-2's observation. A rough estimation is about 1.5 times in number. Table 1 Statistics of the number of TLEs observed by FORMOSAT-2. [(Year, Elves, Sprites, Halos, Blue, Jets, Gigantic Jets, Total)] = [(2004, 588, 68, 67, 37, 0, 760), (2005, 1420, 217, 165, 124, 7, 1933), (2006, 2212, 201, 258, 239, 5, 2915), (2007, 2653, 255, 277, 398, 6, 3589), (2008, 2643, 188, 163, 507, 16, 3517), (2009, 3046, 261, 218, 510, 16, 4051), (2010, 3195, 250, 234, 697, 16, 4392), (2011, 3394, 300, 258, 718, 14, 4684), (2012, 2994, 216, 186, 637, 15, 4048), (Sub-Total, 2004-2012, 22145, 1956, 1826, 3867, 95, 29889)]