The planetary rate of sprite events

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We propose a new formula to calculate the planetary rate of sprite events, based on the observations with sprite detectors. This formula uses the number of detected sprites, the detection efficiency and the false alarm rate of the detector and spatial and temporal effectiveness functions. The role of these elements in the formula is discussed for optical and non-optical recordings. We use the formula to calculate a planetary rate of sprite events ˜2.8 per minute with an accuracy of a factor ˜2-3 by use of observations reported in the litereature. The proposed formula can be used to calculate the occurrence rate of any physical event detected by remote sensing.