



Color pictures of sprites from non-dedicated observation on-board the International Space Station

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Very recently NASA astronauts took a new set of pictures from the International Space Station during night time in the frame of the NASA Crew Earth Observations program, giving a new opportunity to observe in color sprites and their parent lightning flashes. In about 20 hours of observations, non-directly dedicated to thunderstorm studies, fifteen sprites were observed from August 2011 to April 2012. Chromatic observations allow analyzing thoroughly the main components of the sprite radiation. The red and green emissions, observed in all the sprite images, are due to the radiation of the first positive band system of molecular nitrogen N₂. The blue emission, present in only 2 out of fifteen sprites, is produced by the radiation of bands of the second positive band system of N₂ and bands of the first negative band system of N₂₊ ions. It indicates the possible presence of ionization in these two sprites. The sprite brightness has been evaluated equivalent to the Jupiter one.