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Distinction between the Chelyabinsk meteorite 2013 event and the Tunguska phenomenon

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The Tunguska 1908 phenomenon had following characteristics [1]: (1) for few days before explosion at the Tunguska area magnetic pulsations and a displacement of sky polarization minima were registered, (2) for the first three nights after the explosion, skies of Eurasia were exceptionally bright, (3) the epicenter of the explosion is the middle of the palaeovolcanic crater that associates with the mantle plume, (4) the Tunguska site lacks important impact markers such as craters, shocked minerals and breccias, (5) despite enormous efforts of the expeditions, the main puzzle is the absence of remnants of space body in/on the ground in the affected region. For comparison: the 2013 Chelyabinsk meteorite, which disintegrated higher than altitude of the Tunguska blast, left many remnants on a surface. However, the magnetic pulsations, the sky polarization anomalies and the phenomenal continuous airglows before or after explosion were not observed. Thus, there are no bases to claim that both phenomena were similar and the Tunguska event was an encounter of the Earth with a fragment of comet/asteroid. We present the tectonic version.

+ [1] German, B. (2010) EPSC 5, 430.

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