Is a whole-mantle convection the key to solving the Tunguska 1908 problem?

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It is generally accepted that the Tunguska event in Siberia on 30 June, 1908 resulted from an explosion of cosmic body. However, there is no common agreement that this bolide really existed. Moreover, registered ultra low frequency (ULF) magnetic oscillations in Kiel, Germany on 27-30 June 1908 [1] had a correlate with the ‘acoustic halo’ (ULF) of a solar flare [2].

Large low-shear velocity provinces (LLSVPs) are linked to so-called blobs located atop the Earth's outer core [3]. It was shown the Earth's D"-layer core-mantle boundary was perturbed by both the solar flare and an anomalous lunar-solar tide during the Tunguska 1908 event [2]. Therefore, gravitational/magnetic lunar-solar perturbations could have triggered a plume/hotspot/LIP activation by means of a LLSVPs convection.

It was suggested that planetary hotspots chains are interconnected [4]. Indeed, during the Tunguska event brightest glows were observed over the Eifel volcano and more weak one over the Yellowstone volcano (both volcanoes are associated with hotspots) [5]. In addition, day by day a slowly lifting of the earth round the diabase stones was registered in Tasmania from 7 June till 29 June, 1908 [6]. This lifting was independent from atmospheric temperature variations and terminated as soon as a blast took place in the caldera of Tunguska paleovolcano on 30 June, 1908 [5, 6]. Observations in Tasmania remained a mystery for a long time. Recently scientists discovery the Cosgrove hotspot had moved from Eastern Australia to Tasmania [7]. In our opinion, the Cosgrove did not lose its activity fully 9 My ago as previously assumed: the Darwin crater in Tasmania originated about of 803 ka years and large volume ejected glasses in/around this small crater contradicts to the impact origin [5, 8]. Therefore, we consider the underground activation of Cosgrove hotspot as a cause of surface uplift in Tasmania from 7 to 30 June 1908.

As in Tasmania, moving mantle hotspots were registered in Eastern Siberia [9]. Probably, hotspots in Tasmania (near Pacific LLSVPs) and in the Tunguska basin (near Perm LLSVPs) are interconnected. Because common hotspots thermal energy was released in/by the Tunguska paleovolcano explosion on 30 June 1908, the fluidal pressure of the Cosgrove hotspot under Tasmania was reduced, resulting in the termination of surface uplift. Since meteorites could not have caused the earth uplift in Tasmania, the impact hypothesis for the Tunguska phenomenon can be excluded. All data favor an endogenic origin of this event due to lunar-solar perturbations and the whole-mantle convection.