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### **On the alleged unique disruption of an asteroid over Walnumfjelled, East Antarctica**

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The absence of craters on the ice sheet does not necessarily indicate that the particles found at the Walnumfjellet (WN), Queen Maud Land (QML) [1], are a result of a chondrite asteroid explosion in the air since (1) the existence of ice-covered volcanoes in QML has been predicted [2]; the Earth's mantle composition is chondritic as well, (2) for the WN particles: all characteristics are close to the terrestrial fractionation line [1]; the low  $\delta^{18}\text{O}$  is close to the inland ice value [1]; the high NiO contents [1] could indicate pyroxenite veins of the peridotite source and could be related to the initial ancient plume spread beneath Antarctica [3], (3) the orientation of dikes under the ice in QML shows similar angles (25–90°) as the angles of the asteroid explosion jet (15–90°) modelled by [1], (4) the airburst simulation for the Tunguska event by [4], used as the analog by [1], was incorrect: the vapor jet could not spread east of the epicentre since no airglows were in this area [5].

[1] Ginneken, M. et al. (2021) doi10.1126/sciadv.abc1008.

[2] Klokočník, J. et al. (2016) Annals of Geophysics 59, S0539, doi: 10.4401/ag-7102, 17–21. [3] Sushchevskaya, N. et al. (2011), ISBN: 9789533074344, 73. [4] Boslough, M. & Crawford, D. (2008) Int. J. Impact Eng. 35, 1441.

+ [5] German, B. (2021) ISBN: 9783981952629, 128–129. +

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