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**A closer look at the schlieren features of harzburgite NWA 5480**

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Thought to originate from the differentiated asteroid, 4Vesta, the harzburgitic diogenite NWA 5480 can be divided into two main zones: Zone A dominated by relatively coarse-grained olivine; Zone B displaying orthopyroxene schlieren-structures interspersed with finer-grained olivine crystals. The two zones are also texturally distinct in terms of grain size and morphology. EBSD analysis[1] has revealed that both zones underwent solid-state plastic deformation clearly distinct from that typically undergone by cumulate rocks in a magma chamber and most likely caused during large-scale downwellings into a still partially molten mantle. Within Zone A, lattice-preferred orientation (LPO) of the olivine crystals occurred according to the pencil glide slip system at 1273-1523 K. Zone B reveals an LPO similar to that of Zone A, but less pronounced and rotated by about 90° within the foliation relative to Zone A, suggesting a second distinct phase of deformation. Here we take a closer look at the schlieren features of Zone B and compare them to the results for Zone A to learn more about the complex deformation history of this diogenite.

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[1] Tkalcec et al. (2013) Nature Geoscience 6:93-97.

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