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Photograph of the Month

# Dehydration-induced brittle vein in a serpentinite mylonite

The vein contains olivine (light brown), clinohumite (dark red), clinopyroxene and opaque oxides. The host rock is an antigorite mylonite with a strong mineral stretching lineation oriented at high angle to the vein margins (elongate blue crystal aggregates). The vein assemblage records a prograde dehydration with respect to the host rock and metamorphic conditions have been estimated at $P = 2$–$2.5$ GPa and $T = 550$–$600$ °C, i.e. eclogite facies (Scambelluri et al., 1995, Geology; Messiga et al., 1995, European Journal of Mineralogy). The curved vein tips, sharp vein margins and narrow apophyses attest to the brittle origin of the vein fracture. Prograde dehydration of the serpentinite in a subduction zone led to brittle hydrofracture. Fluid-filled cracks (now preserved as veins) in subducting slabs exert a major influence on seismic anisotropy, and can produce trench-parallel orientations of *P* and fast *S* waves above the dehydration window (Healy et al., 2009, Earth and Planetary Science Letters).

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