

# Elements

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## Olivine

Guest Editors: **Emily C. First, Philipp Ruprecht, and Benoît Welsch**

Olivine from Soppat, Kohistan, Pakistan (4.9 × 4.5 × 3.9 cm olivine crystal, on magnetite substrate). The vibrant, dramatic olive-green color of this specimen is tied to its iron content. As a fundamental building block of our planet, and being virtually ubiquitous in the universe, olivine is a textbook mineral for the study of defects, diffusion, deformation, crystallization, weathering, and more. **SAMPLE AND PHOTO: RUDOLF WATZL.**



### Olivine—The Little Green Science Machine

Benoît Welsch, Emily C. First, Philipp Ruprecht, and Michael C. Jollands



### Hide and Seek—Trace Element Incorporation and Diffusion in Olivine

Michael C. Jollands, Ralf Dohmen, and José Alberto Padrón-Navarta



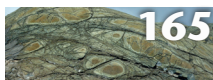
### Deforming the Upper Mantle—Olivine Mechanical Properties and Anisotropy

Sylvie Demouchy, Qin Wang, and Andréa Tommasi



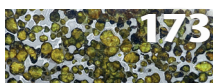
### Olivine Exit Interviews—Piecing Together Magmatic Puzzles

Philipp Ruprecht and Benoît Welsch



### Olivine—The Alteration Rock Star

Oliver Plümpner and Juerg Matter



### Galaxy of Green

Emily C. First, Christopher Kremer, Myriam Telus, and David Trang

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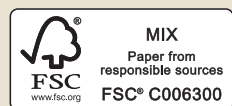
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