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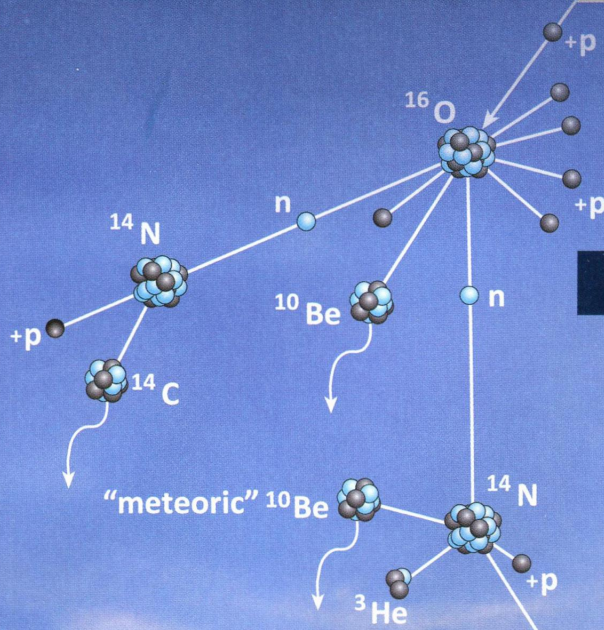
Elements

October 2014
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An International Magazine of Mineralogy, Geochemistry, and Petrology

Cosmogenic Nuclides

FRIEDHELM VON BLANCKENBURG and JANE K. WILLENBRING, Guest Editors



Dates and Rates of Earth-Surface Change

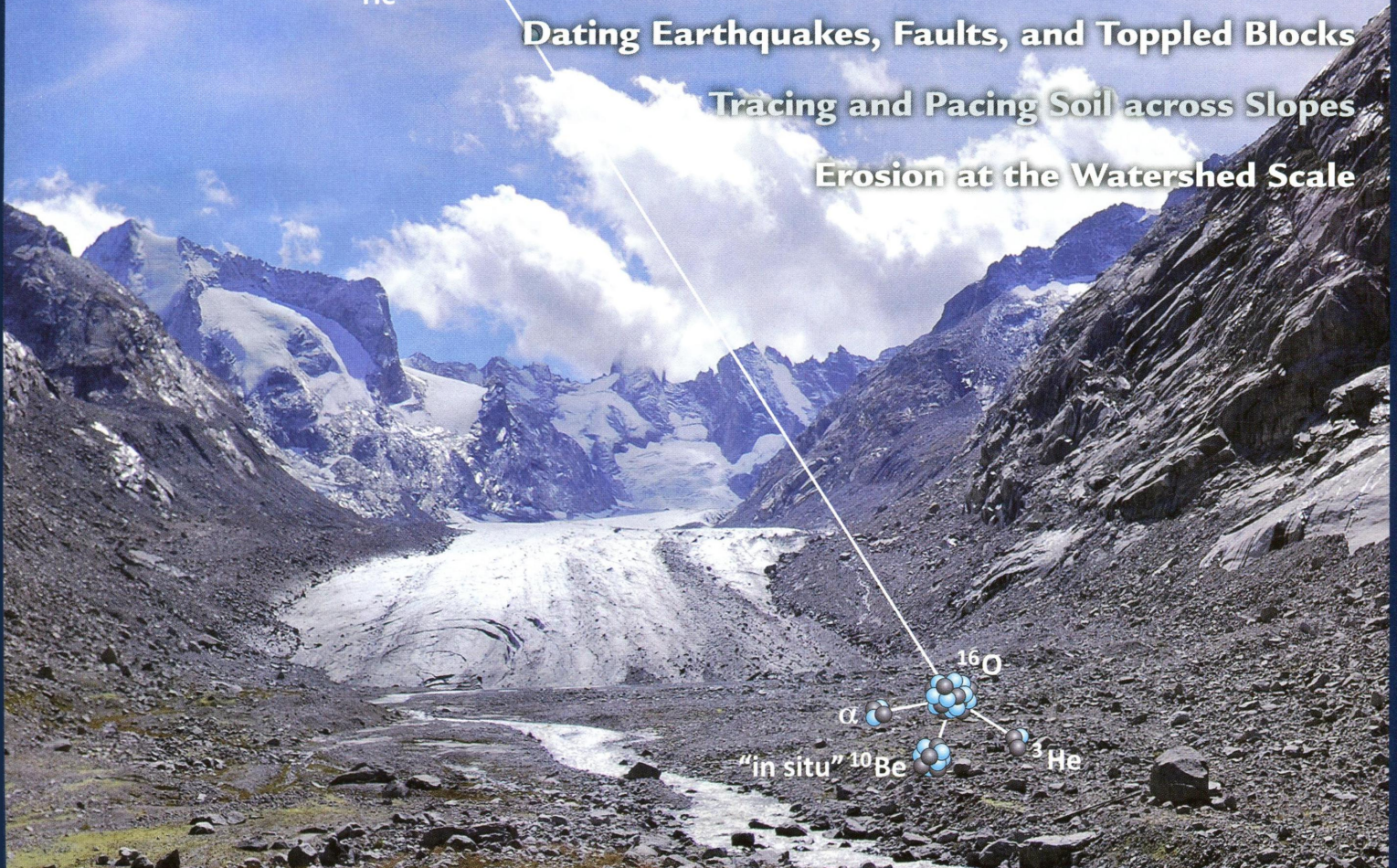
Nuts and Bolts of
Cosmogenic Nuclide Production

Dating Disappearing Ice

Dating Earthquakes, Faults, and Toppled Blocks

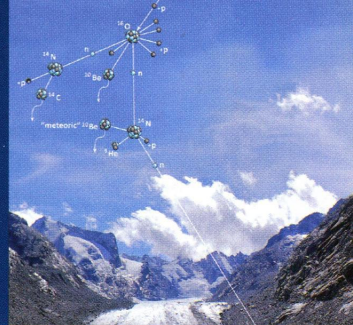
Tracing and Pacing Soil across Slopes

Erosion at the Watershed Scale



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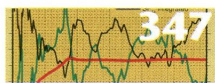
Cosmogenic Nuclides

Guest Editors: **Friedhelm von Blanckenburg** and **Jane K. Willenbring**



Cosmogenic Nuclides: Dates and Rates of Earth-Surface Change

Friedhelm von Blanckenburg and Jane K. Willenbring



The Nuts and Bolts of Cosmogenic Nuclide Production

Tibor J. Dunai and Nathaniel A. Lifton



Dating Disappearing Ice with Cosmogenic Nuclides

Susan Ivy-Ochs and Jason P. Briner



Cosmogenic Nuclide Dating of Earthquakes, Faults, and Toppled Blocks

Lucilla C. Benedetti and Jérôme van der Woerd



Tracing and Pacing Soil Across Slopes

Jean L. Dixon and Clifford S. Riebe



Cosmogenic Nuclides and Erosion at the Watershed Scale

Darryl E. Granger and Mirjam Schaller

ABOUT THE COVER:

High-energy cosmic particles hit molecules in the Earth's atmosphere where they initiate a cascade of secondary cosmic rays. These particles produce "meteoric" cosmogenic nuclides in the atmosphere, and "in situ" cosmogenic nuclides when they arrive at the Earth's surface. The accumulation and radioactive decay of these nuclides serve as "clocks" of Earth-surface change. The background shows the Forno glacier, Swiss Central Alps. IMAGE: FRIEDHELM VON BLANCKENBURG, JANE WILLENBRING, AND MANUELA DZIGGEL

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