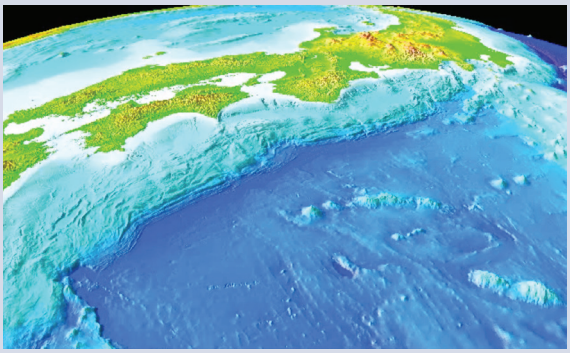
ABOUT THIS ISSUE

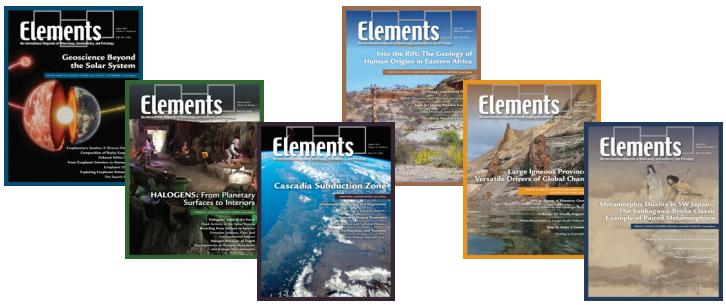
Subduction, where one plate dives beneath another, controls long-term whole-Earth cycling of rocks, fluids, and energy. Plates subduct faster than they heat up, making them the coldest parts of the Earth's interior. Fluids released from these cold plates rise into hotter overlying rocks, forming magma that feeds surface volcanism. Cold deep conditions associated with subduction complemented by hot shallow conditions under volcanic arcs are reflected in the presence of pairs of metamorphic belts, representing sites of ancient subduction.



This issue of *Elements* guides readers through a premier example of paired metamorphism: the Cretaceous Sanbagawa-Ryoke metamorphic pair of Japan. Estimates of pressure, temperature, the age and duration of metamorphism, and the tectonic framework in which metamorphism took place help us to develop quantitative models—both for the evolution of SW Japan and subduction systems in general.

FAREWELL BECKY LANGE

This issue of *Elements* marks the sixth and final theme published under the editorial leadership of Becky Lange (University of Michigan, USA). Becky has served *Elements* as the Principal Editor of Petrology since 2021, and will be replaced this year by Tom Sisson (United States Geological Survey). In addition to this issue on "Metamorphic Duality in SW Japan—The Sanbagawa-Ryoke Classic Example of Paired Metamorphism," Becky also handled "Geoscience Beyond the Solar System" (August 2021, v17n4); "Halogens: From Planetary Surfaces to Interiors" (February 2022, v18n1); "Cascadia Subduction Zone" (August 2022, v18n4); "Into the Rift: The Geology of Human Origins in Eastern Africa" (April 2023, v19n2); and "Large Igneous Provinces: Versatile Drivers of Global Change" (October 2023, v19n5). Please join us in thanking Becky and wishing her well in all of her future endeavors.



NEW INTERACTIVE EVENTS CALENDAR

Dozens of geoscience events are organized each year—conferences, short courses, workshops, field trips, and more. In an effort to promote event participation, facilitate widespread event announcements, and minimize double-bookings, *Elements* has launched an interactive events calendar on its website in cooperation with its 18 professional member societies.

Geoscience events can be found on the calendar pages—or by using a search filter to narrow down your preferences, such as professional society or country. Most importantly, **you can easily add your own events** to the calendar for the world to see. Once approved by the site administrator, your event will have its own landing page with your event's details, logo, site map, and more. Visit **https://www.elementsmagazine.org/events** to learn more or contact the Editorial Team at editor@elementsmagazine.org.

Conferences are an excellent venue for brainstorming how you and your colleagues can design your own thematic Elements issue on your favorite geoscience topic. To learn more, visit www.elementsmagazine.org/publish-in-elements/. We look forward to connecting with you, both virtually and at upcoming events!

Janne Blichert-Toft, **Sumit Chakraborty**, **Tom Sisson**, and **Esther Posner**

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It is no surprise, therefore, that as an undergraduate student of geology in the early 1980s, I was frequently introduced to the contributions of Japanese earth scientists, whether the topic was seismology (the Wadati-Benioff zone), igneous petrology (MacDonald and Katsura 1964; cited >2000 times, distinguishing alkaline versus tholeiitic basalts), or metamorphic petrology (Miyashiro 1961; cited >1400 times, identifying paired metamorphic belts). I also learned about Miyashiro's insights into the origins of ophiolites, which are slices of oceanic crust that have been uplifted and thrust onto the margins of continental crust. Miyashiro (1973) was the first to demonstrate that most ophiolites were examples of oceanic crust that had been modified by subduction (i.e., island arcs). This trend continued into my graduate studies when I began to immerse myself in the experimental petrology and mineral physics literature. I soon became aware of the pioneering advantages of the Kawai-type multi-anvil press (Kawai and Endo 1970), later improved by Ohtani et al. (1989) through the use of sintered diamond anvils.

But it is the contribution made by Miyashiro (1961) that is most relevant to this current issue of *Elements* on the Sanbagawa-Ryoke paired metamorphic belts of Japan. It was Miyashiro's early recognition of two completely different *T*–*P* gradients preserved in side-by-side metamorphic belts, together with the seismic Wadati-Benioff zone, that played an outsized role in validating the emerging theory of plate tectonics in the late 1960s. In this issue of *Elements*, we continue to learn surprising and significant details regarding this most famous of paired metamorphic belts, including evidence of remarkably rapid rates at which material is subducted and then returned to the surface. This issue is yet another reminder of how much the earth science community has benefitted from Japanese ingenuity and innovation.

Becky Lange
Principal Editor

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