



Geologické roky Dionýza Štúra 2025 – 2027 *Geological Years of Dionýz Štúr 2025 – 2027*

Podujatie sa koná v rámci cyklu Geologické roky Dionýza Štúra pri príležitosti 200. výročia narodenia významného geológa európskeho formátu narodeného 2.4. 1827 v Beckove.
Miesto: Sála Dionýza Štúra, ŠGÚDŠ, Mlynská dolina 1, Bratislava. Čas: 18. 3. 2026 o 14:00

**Slovenská geologická spoločnosť, Štátny geologický ústav
Dionýza Štúra a Slovenská komisia pri UNESCO**
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**High-resolution sampling of recent Volcanic eruptions:
La Palma and Fagradalsfjall**





High-resolution sampling of recent Volcanic eruptions: La Palma and Fagradalsfjall

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Magma contains information on its source and on the processes the magma experienced en route to the surface. This information is, however, locked in the chemical and isotopic composition of minerals and groundmass. The recent basaltic eruptions on Iceland and in the Canary Islands have now given us the opportunity to study the evolution of individual rift eruptions in extreme detail. Time-resolved sampling of erupted products allows detection of mineralogical and chemical changes on a daily to weekly timescale and gives us the opportunity to correlate this information with seismic data and changes in eruptive style. This allows us to identify rapid changes in magma composition and interpret these changes in respect to magma sources, magma storage, and magma transport.

The recent eruptions at Fagradalsfjall have shown rapid compositional changes in major and trace elements during the eruption, which has been interpreted as reflecting different mantle components that are sampled during a single eruption. Stable isotopes such as oxygen remain virtually unchanged, however, through the 2021 to 2022 events. The 2021 Tajogaite eruption on La Palma also showed rapid changes in lava composition during the first weeks of the eruption. This together with the seismic record indicates that the eruption was initially fed from a crustal reservoir, but later from a deeper upper mantle reservoir. In contrast to Fagradalsfjall, initial magmas show variable oxygen isotope compositions. The implication of these commonalities and differences are discussed in full in this presentation.