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A megacryst- and xenolith-rich camptonite basalt from Ushuaia, Tierra del Fuego, Argentina

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A MEGACRYST- AND XENOLITH-RICH CAMPTONITE BASALT FROM USHUAIA, TIERRA DEL FUEGO, ARGENTINA

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Isolated pods of volcanic breccias with alkaline composition are hosted in the metaturbidites of the Yahgan Formation to west of Ushuaia, Isla Grande de Tierra del Fuego, Argentina. The briefly exposed outcrops are almost partially covered by bushy vegetation, whence identification of its scarce apparitions is hampered. Field features display sinuous chilled margins with pinch and swell phenomena or show uneven shape with irregular branching and segmentation into discrete blobs. Pods of breccias, possibly components of a pipe-cluster, seem to represent incipient explosion of the melt that would given rise to a fully developed vent. Unique horned ends may occur, which totally preclude any tectonic explanation for the off-set, even in an Andean folded environment. Country rocks are not apparently altered by contact around the igneous boulders. The former may perhaps have acted as a long-lives feeder to lavas, so allowing the hostess to heat up graduatelly.
The rock is constituted by macrocrysts of cognated kaersutite (146 $\pm$5 Ma) and K-feldspar (127 $\pm$4 Ma), phenochrysts of olivine and Ti-augite in a groundmass of the same minerals, with plagioclase and feldspathoids. Texture is mostly aphyric and richly porphyritic both, with fine-grained black matrix. Carbonation is common as secondary alteration. Alkali metasomatism is marked by developing of kaersutite, feldspathoids and zeolites.
The presence of xenoliths, mainly of lherzolitic, pyroxenitic and wehrlitic composition, is the most prominent characteristic of these eruptive bodies (Acevedo, 2016).
The geochemical plotting of Ce/Yb ratio vs Sm contents shown these rocks not belong to a specified field in the lamprophyre branches.
On the other hand, from a petrographic and petrologic outlook, the mineral arrangement places this rock as a broad volatile-enriched alkali basalt or camptonite that reflects the mantle upwelling during the stage of horizontal extension of the back-arc basin in middle times of the Jurassic-Cretaceous transition in Tierra del Fuego.

References

Acevedo, R.D. 2016. Alkali basalts and enclosed ultramafic xenoliths near Ushuaia, Tierra del Fuego, Argentina. SpringerPlus, 5(1): 1-5.