



FIRE: WP3 Petrogenesis & Geochemistry

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AL1: Volcanic structure

- 1 paper submitted to *Lithos* - *The 2014-15 eruption and the short-term geochemical evolution of the Fogo volcano (Cape Verde): evidence for small-scale mantle heterogeneity*. Based on data from the early stages of the 2014 eruption (up to 5 Dec, 2014).
- Field work at Fogo was carried out to increase the rock and ultramafic enclaves sampling from lava flows of the 2014 eruption (Feb. 2017) – interaction with WP8 to obtain a time controlled sampling

AL1: Volcanic structure

- Results up to know:

- Isotopic compositions different from rocks of the last 2 eruptions mantle → source heterogeneity

- Geothermobarometry points to magma chambers 18 – 31 km (mantle);

- Fumarole materials are less diverse than those from the 1995 eruption



AL2: Eruption Dynamics

- Sampling of fumarole materials
 - November 2016 (WP9)
 - February 2017 - with temperature measurements.
- Powder materials and fragments, were photographed at the stereomicroscope and selected for XRD, which has already been initiated.



AL3: Strategies for Risk Mitigation

- Not yet



Challenges/issues encountered/anticipated

- Attempt to write a proposal for submission (until March 1) to the ESRF synchrotron in Grenoble/France [not be viable according to scientists of the ESRF, due to the combination of techniques (XRD, XRF) and micro-beam characteristics].
- To get enough EPMA time



Plans for coming months

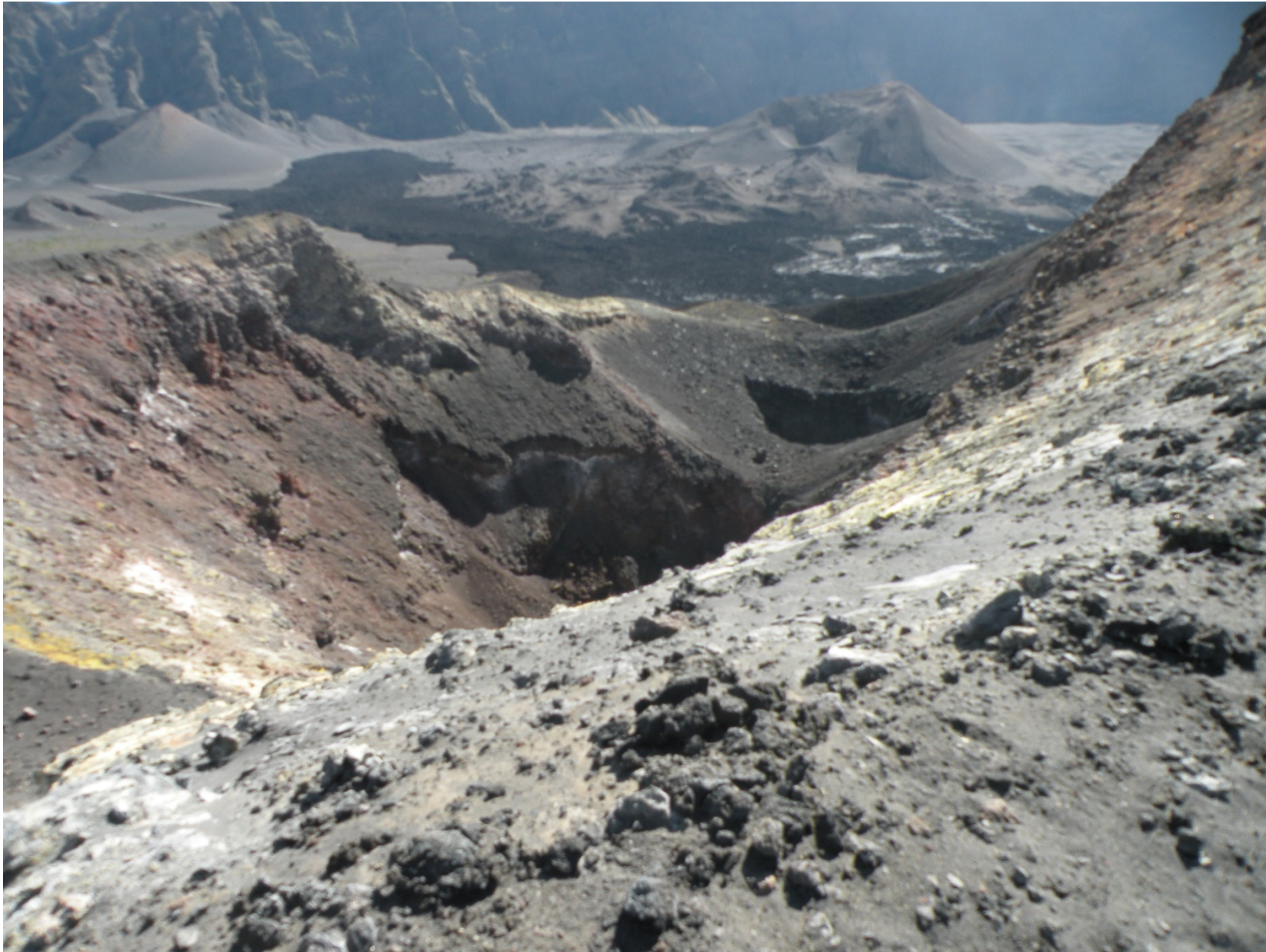
- Sampling of selected dykes and lava flows at the Bordeira wall for geochronology and geochemistry (in collaboration with WP2)
- Increase the analytical data
 - EPMA analysis of rock pheno and megacrysts and nodules minerals (LNEG)
 - Whole rock oxide and trace element analysis
- Submit a consistent proposal to the ESRF in the next application for beam time (till September 10).



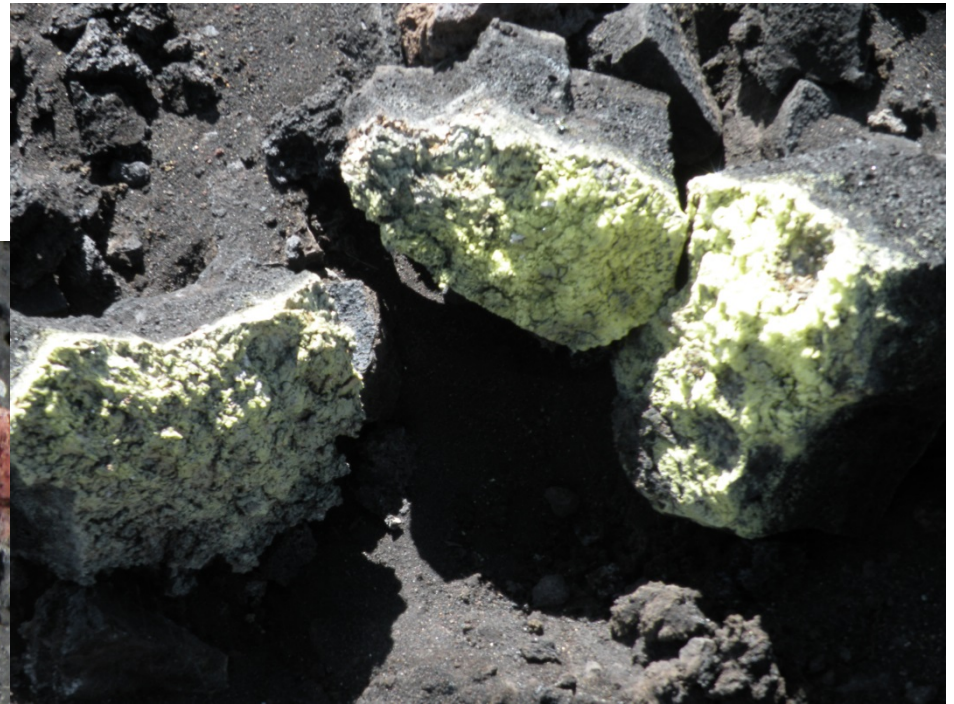
Plans for coming months

- Study the fumarole materials samples by scanning electron microscope -SEM (LNEG-Lumiar). Not foreseen in the project.
- Lecture at LNEG (T. Silva), about the mineralogy of incrustations and sublimates (still no date yet).
- Submission of a paper for publication (ISI Journal).

Pictures



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