

CALL FOR APPLICATIONS

IODP Expeditions 398: Hellenic Arc Volcanic Field

6 December 2022 to 5 February 2023

DEADLINE to apply: 1 November 2021

The European Consortium for Ocean Research Drilling (ECORD) offers you the unique opportunity to sail on Expedition 398 on-board the *JOIDES Resolution* in the framework of the International Ocean Discovery Program (IODP), an international research program for drilling at sea.

The Hellenic Arc Christiana-Santorini-Kolumbo (CSK) volcanic field, which includes Santorini caldera and its Late Bronze Age eruption, provides a unique opportunity to address how subduction-related volcanism impacts life. Better understanding of island-arc volcanism requires study of the processes that drive such volcanism, and how the volcanoes interact with the marine environment. What are the links between crustal tectonics, volcanic activity, and magma genesis? What are the dynamics and impacts of submarine explosive volcanism and caldera-forming eruptions? What are the reactions of marine ecosystems to volcanic eruptions? The rift basins around the CSK field, as well as Santorini caldera, contain volcano-sedimentary fills up to several hundreds of meters thick. We propose to drill six sites, four in the rift basins and two in Santorini caldera. Deep drilling is essential to characterize and interpret the depositional packages visible on seismic images, to chemically correlate primary volcanoclastic layers in the rift fills with their source volcanoes, to fill in gaps in onland volcanic records, to provide a precise chronostratigraphic framework for rift tectonic and sedimentary histories, and to characterize the subsurface microbial life.

There are five primary [1-5] and two secondary [6-7] scientific objectives:

1. Arc volcanism in an active rift environment: To reconstruct the volcanic history of the CSK volcanic field since the Pliocene by exploiting a >3.8 My marine volcano-sedimentary archive.
2. The volcano-tectonic connection: To reconstruct the subsidence and tectonic histories of the rift basins, and use the rift as a natural experiment for studying the relationship between CSK volcanism and major crustal tectonic events.
3. Arc magmatism in a region of extending crust: To document magma petrogenesis at the CSK volcanic field in space and time, and to seek effects of crustal thinning on magma storage, differentiation and crustal contamination.
4. Unravelling an iconic caldera-forming eruption: To document the processes, products and potential impacts of the late Bronze-Age eruption of Santorini.
5. Volcanic hazards from submarine silicic eruptions: To study the histories, dynamics and hazards of Kameni and Kolumbo submarine volcanoes.
6. Transition from continental to marine environments in the southern Aegean.
7. Biological systems reactions to volcanic eruptions and seawater acidification.

Expertise sought

We encourage applications from all qualified scientists. ESSAC is committed to a policy of broad participation and inclusion, and to providing a safe, productive, and welcoming environment for all program participants. Opportunities exist for researchers (including graduate students) in all shipboard specialties, including micropaleontologists, sedimentologists, volcanologists, petrologists, igneous geochemists, inorganic and organic geochemists, microbiologists, paleomagnetists, physical properties specialists, and borehole geophysicists. Good working knowledge of the English language is required.

The Application Process is open to scientists in all ECORD member countries. Please download the Apply to Sail general application forms from the ESSAC webpage:

<http://www.ecord.org/expeditions/apply-to-sail/>

Please, fill out all applicable fields and send it to the ESSAC office by email (essac@plymouth.ac.uk) with the following additional documents by the deadline of **1 November 2021**:

- A letter of interest outlining your specific expertise, previous involvement in DSDP/ ODP/ IODP expeditions, research interests, primary research goals of your proposed participation.
- CV and publication list.
- Early career researchers must additionally provide a letter of support from their host institution, including information on post-cruise science support.

All applications should state how you intend to achieve your proposed scientific objectives, with information on the funding scheme and support from your institution or national funding agencies. More information can be found under: <http://www.ecord.org/expeditions/apply-to-sail/>

In addition to the ESSAC application, all applicants must inform their national office or national delegate and send them a copy of their application documents. The national offices or national delegates can also provide information regarding travel support, post-cruise funding opportunities, etc.

See <http://www.ecord.org/about-ecord/about-us/> for a list of the national contact persons.

For further information or questions, please contact the ESSAC Office:

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