



SPECIAL CALL FOR APPLICATIONS

Biostratigraphy (calcareous nannofossils and planktonic foraminifera) and Stratigraphic Correlation/Seismology

Expedition 398: Hellenic Arc Volcanic Field

11 December 2022 to 10 February 2023

DEADLINE to apply: 4 April 2022

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 onshore 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.

For more information on the expedition science objectives and the JOIDES Resolution expedition schedule, see <http://iodp.tamu.edu/scienceops/>. This site includes links to individual expedition web pages with the original IODP proposals and expedition planning information.

General expedition information:

https://www.iodp.tamu.edu/scienceops/expeditions/hellenic_arc_volcanic_field.html

Proposal link: https://www.iodp.tamu.edu/scienceops/precruise/hellenicarc/932-Full_Druitt_web.pdf

Who Should Apply: We encourage applications from all qualified scientists (including graduate students) in
(1) calcareous nannofossil or planktic foraminifera biostratigraphy and
(2) seismology/stratigraphic correlation (ability to provide stratigraphic correlation using conventional physical properties data as well as core-log-seismic integration).

ECORD is committed to a policy of broad participation and inclusion, and to providing a safe and welcoming environment for all participants. Good working knowledge of the English language is required.

COVID-19 Protocol: The JRSO has created a protocol to safely operate during the COVID-19 pandemic. If pandemic conditions have not improved by late 2022, the expedition may need to sail with a reduced shipboard contingent. However, all participants will maintain their designation as science party members regardless of whether they sail or not, and will have equal access to all expedition data and core materials. The protocol is available here: http://iodp.tamu.edu/scienceops/JR_COVID-Mitigation-Protocols.pdf.

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@inogs.it) with the following additional documents by the deadline of **4 April 2022**:

1. **A letter of interest** outlining your specific expertise, previous involvement in DSDP/ ODP/ IODP expeditions, research interests, primary research goals of your proposed participation.

2. **CV and publication list.**
3. **Young 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:

ECORD Science Support & Advisory Committee

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