

**Letters of Intent: Lau Basin**  
**Target Date: August 15, 2002**

**Collaborative Research: Investigating the interrelationships between crustal structure, volcanism, and hydrothermal activity along the backarc East Lau Spreading Center**

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Start Date: Oct. 1, 2003

Duration: 2 years

We will submit a proposal Aug. 15 to survey the East Lau Spreading Center (ELSC) from its northern end to the southern end of the Valu Fa Ridge (VFR). The planned survey consists of (1) nested resolution/coverage sidescan sonar imagery and bathymetry surveys with deep-towed 120 (DSL120a) and 30 kHz (IMI-30) systems and (2) concurrent hydrothermal and water chemistry surveys employing Miniature Autonomous Plume Recorders (MAPR's), and NOAA's Vents In-Situ chemical Analyzer (VISA). The survey will examine the interrelationships between seafloor faulting, volcanism, and hydrothermal systems on a single backarc spreading center as it evolves from S to N along the gradient from magmatically robust and strongly arc-influenced characteristics to a melt-depleted but more mid-ocean ridge-like character. The survey data will also determine the most promising hydrothermal and petrologic targets for more detailed study which will be made immediately available to subsequent cruises.