

Volcanoes, Landslides and Giant Tsunamis: From Plato to Computer Simulations

**Thursday
October 2, 2003
5:30 PM**

at the
**University of Pennsylvania Museum of Archaeology and
Anthropology**
3260 South Street, Philadelphia
www.museum.upenn.edu

*Co-sponsored by
The Center for Ancient Studies
The Institute for Environmental Studies
The University of Pennsylvania Museum of Archaeology and Anthropology*

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This program is made possible through the generosity of Mr. and Mrs. A. Bruce Mainwaring.

Volcanoes, Landslides and Giant Tsunamis: From Plato to Computer Simulations

Simon Day, University College of London

From the Minoan eruption of Santorini in around 1635 BC, through the 1883 AD eruption of Krakatoa and the 1888 AD collapse of Ritter Island in New Guinea, island volcanoes have been the source of many tsunami waves in the historical record. These events have given rise to legends of floods and vanished islands in cultures as varied as Classical Greece (the Atlantis legend) and Melanesia (the legends of the vanished islands of Yomba and Kuwae). Geological evidence has revealed, however, that even larger tsunamis may be produced by giant landslides at oceanic island volcanoes such as those of Hawaii and the Canary Islands. The deposits from these landslides may have volumes as great as 5000 km³, extend up to 200 km across the ocean floor, and contain individual blocks as much as 30 km across and 2 km high. Even average-sized landslides of this type are around 100 times larger than the largest historical landslides at island volcanoes, but they appear to be triggered by apparently small and innocuous eruptions of the source volcanoes once these have become incipiently unstable. Computer models, validated by comparison with the observations of tsunami waves produced by historical volcano collapses such as that at Ritter Island, indicate that the tsunami waves produced by these giant landslides can be 20-40 meters high as they sweep onto coastal areas at transoceanic distances. The effect of an oceanic island collapse upon the modern world might be comparable to that of the Santorini eruption on the Minoan civilization.

Free lecture; Reception with cash bar to follow; \$25 non-members; \$20 members.
Information: 215/898-4890

Introduction

Dr. Jeremy A. Sabloff, The Williams Director
University of Pennsylvania Museum of Archaeology and Anthropology

Lecture

Simon Day
University College of London

Discussants

Dr. Fred Scatena, Professor of Earth and Environmental Science
University of Pennsylvania

Dr. Robert Giegengack, Davidson Kennedy Professor of Earth and Environmental Science
University of Pennsylvania

Closing Remarks

Dr. Jeremy A. Sabloff

Question and Answer period

7:30 p.m. Reception (separate fee)

Program Reservation —

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Name:
Daytime Phone:
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Please reserve the following for Thursday, October 2, 2003
_____ @ lecture. Free
_____ @ reception. \$25 per person. \$20 Museum members
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