The Oracle of Delphi

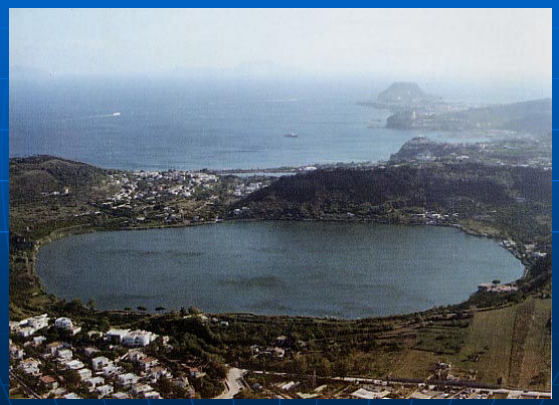
Geological Perspectives

CC 3.32, Lecture 5

Phlegraean Fields and Mythology

Lake Avernus

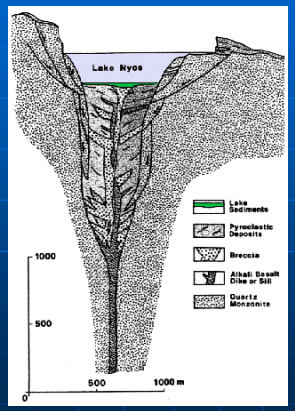
(from Greek *aornos* = birdless)

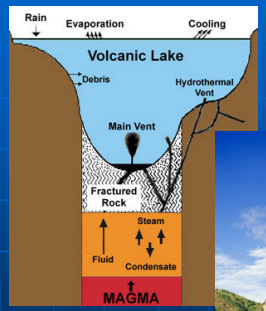


Lake Nyos, Cameroon

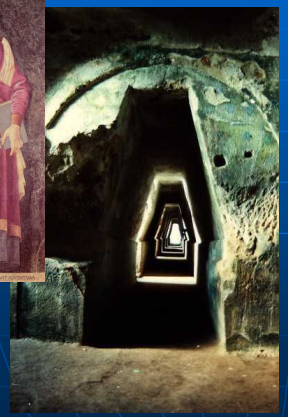
- Lake Nyos lies in the crater of a volcano that formed in an explosive eruption 400 years ago
- August 21, 1986 lake Nyos emitted a cubic kilometer of carbon dioxide
- 1,800 people were suffocated

Degassing Lake Nyos

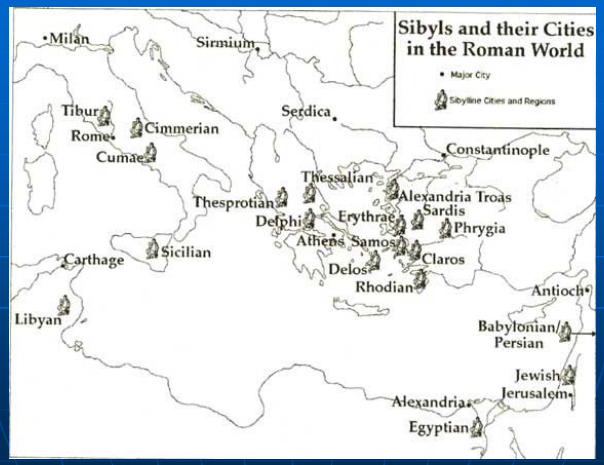




The Sybil of Cuma



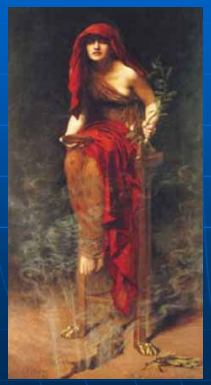
- Priestess of Apollo at Greek settlement of Cumae
- She wrote her prophesies on oak leaves which she arranged at the entrance to her cave
- In Virgil's *Aeneid* the Sybil guided Aeneas to the underworld



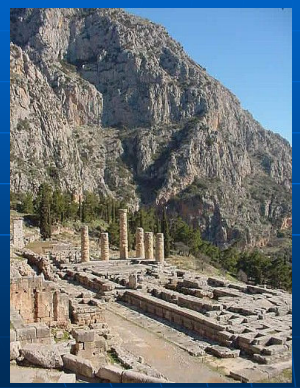
Map of the Mediterannean

Location of Delphi

The Oracle of Delphi



Sanctuary of Apollo



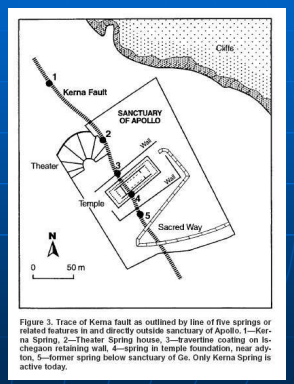
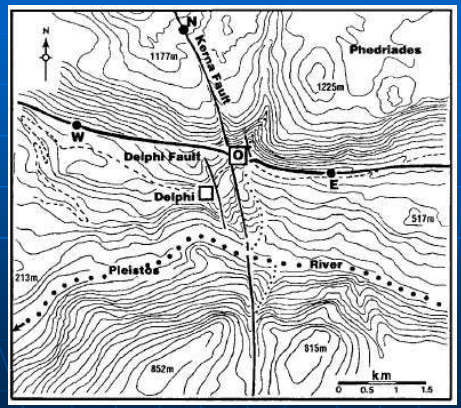


Figure 3. Trace of Kerna fault as outlined by line of five springs or related features in and directly outside sanctuary of Apollo. 1—Kerna Spring, 2—Theater Spring house, 3—travertine coating on ischegaon retaining wall, 4—spring in temple foundation, near adyton, 5—former spring below sanctuary of Ge. Only Kerna Spring is active today.

Delphi: Intersection of Faults

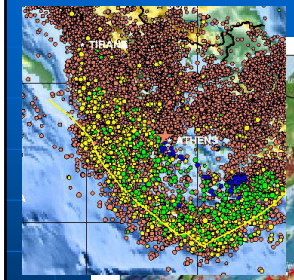


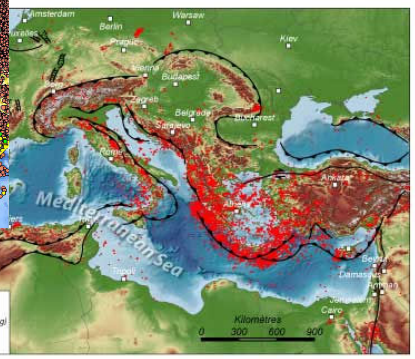
Fluid Flow on Faults

Figure 3. Tectonic scarp along the Delphi fault, in correspondence with the Kerna spring. The highest methane microseepage flux occurs at the base of this scarp.

Figure 2. View of the Temple of Apollo and the site of the measurements in the Adyton (left); gas flux measurement by closed chamber on the soil inside the temple (right).

Earthquakes of the Mediterranean





Tectonic Plates

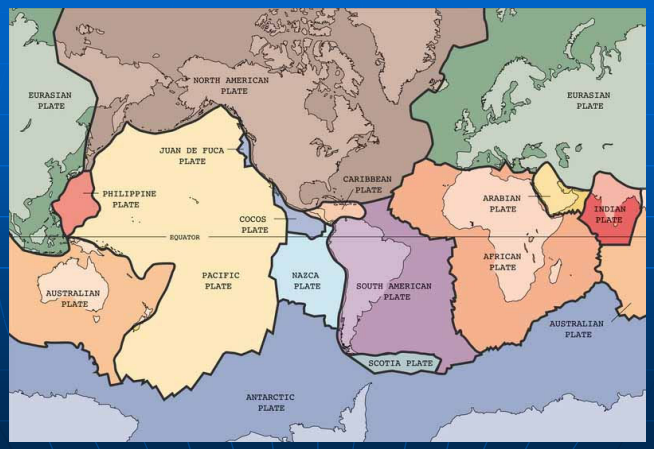
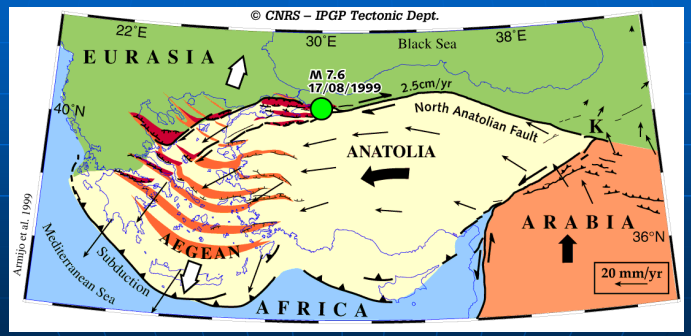


Plate Motions in the Eastern Mediterranean



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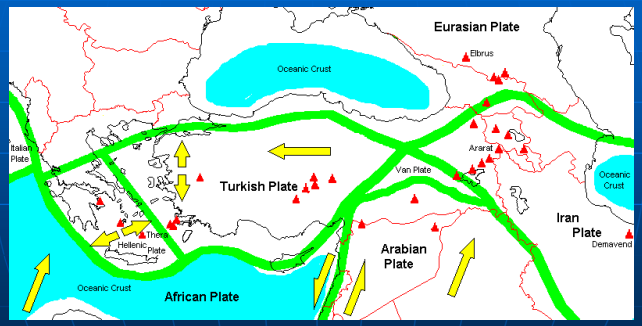

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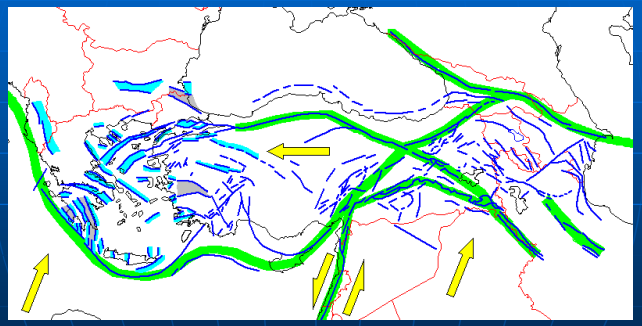


Rift Zones of the Peloponnese Region

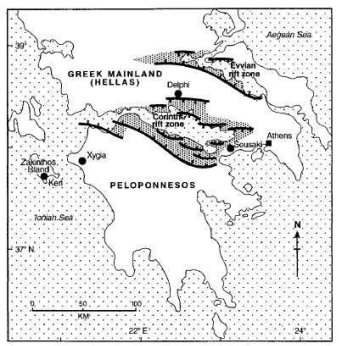
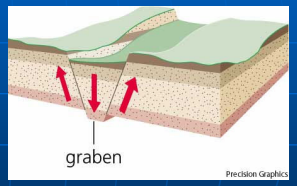


Figure 1. Tectonic setting of Delphi and schematic representation of Corinth and Evvian rift zones. Keri, Xygia, and Sousaki represent sites of hydrocarbon gas emissions mentioned in text.



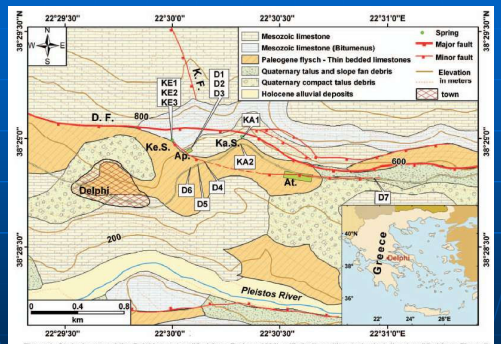


Figure 1. Geologic map of the Delphi area (modified from Zachos, 1964), with fault position and orientation (modified from Piccardi, 2000). KE1–KE3 (Kerna spring), D1–D3 (Temple of Apollo, Adyton), D4–D7 (WNW-ESE–trending subsidiary fault), and KA1–KA2 (Kastalia spring) are the gas sampling and flux measurement points (see also Tables 1 and 2). D.F.—Delphi fault; K.F.—Kerna fault; Ke.S.—Kerna spring; Ka.S.—Kastalia spring; Ap.—Temple of Apollo; At.—shrine of Athena.