

OLLI SG 492

Plate Tectonics

Session 7 - October 31, 2022

Today's Meeting

- Finish consideration of hot spots and Yellowstone.
- Overview of the tectonic activity in the Mediterranean.
- Overview of the plate movements affecting the geology of the Mediterranean.
- Focus on the tectonics that shaped Italy.

Formation of the Mediterranean

300 Million Years of Plate Tectonics

- Christopher Scotese animation - [Plate Tectonics of Europe](#)

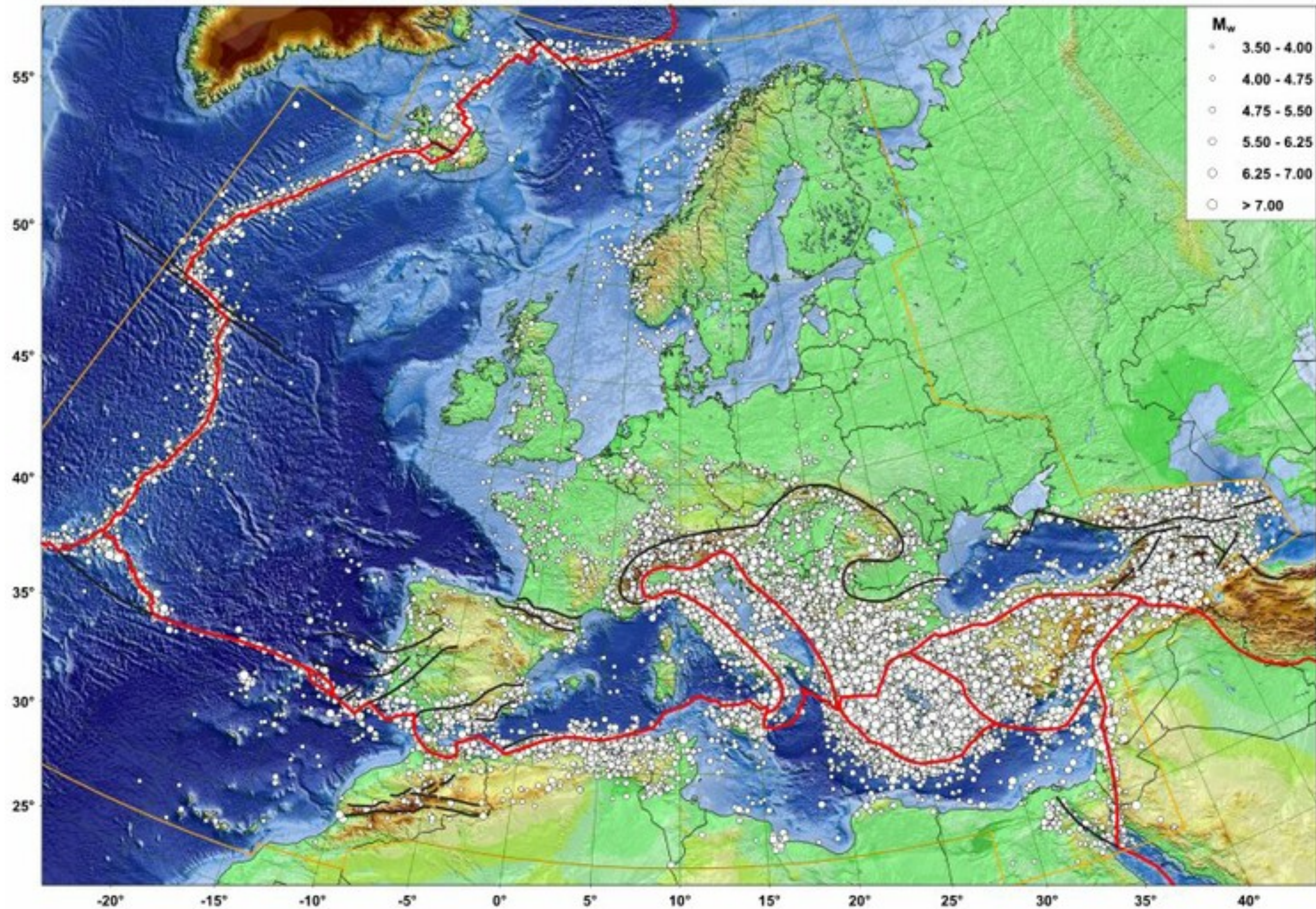
The Geology of the Mediterranean

“The Mediterranean region is geologically among the most complex regions on Earth. Plate tectonics, the theory that explains the formation of continents and oceans, assumes that the various plates of the Earth do not internally deform when they move with respect to each other along large fault zones. However, in the Mediterranean region, and especially Turkey, that is not the case. 'It is quite simply **a geological mess**: everything is curved, broken, and stacked. Compared to this, the Himalayas, for example, represent a rather simple system. There you can follow several large fault lines across a distance of more than 2000 km.”

Douwe van Hinsbergen, Professor of Global Tectonics and Paleogeography at Utrecht University's Department of Earth Sciences.

Mediterranean Today

Earthquake Distribution



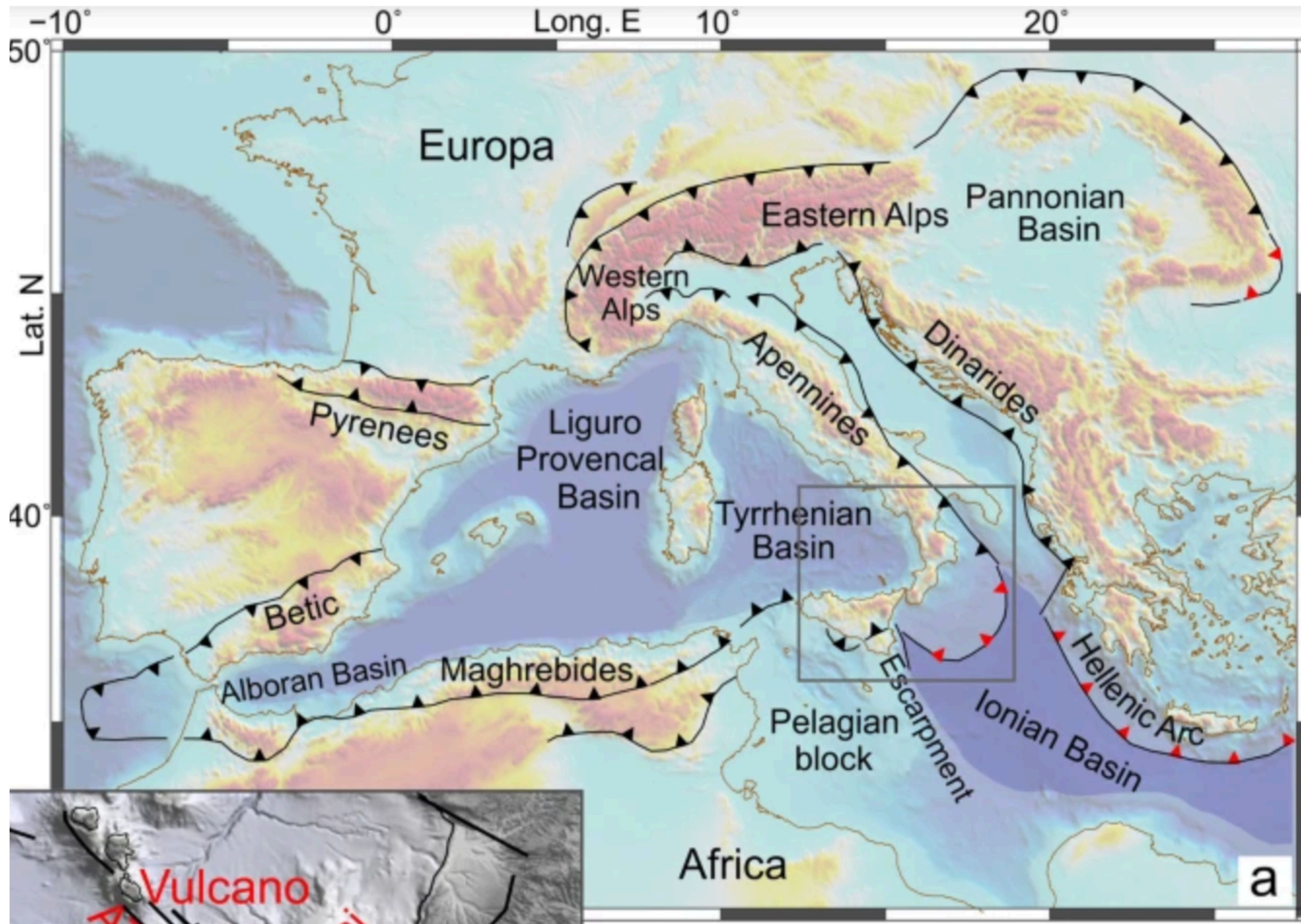
Mediterranean Today

Volcano Distribution



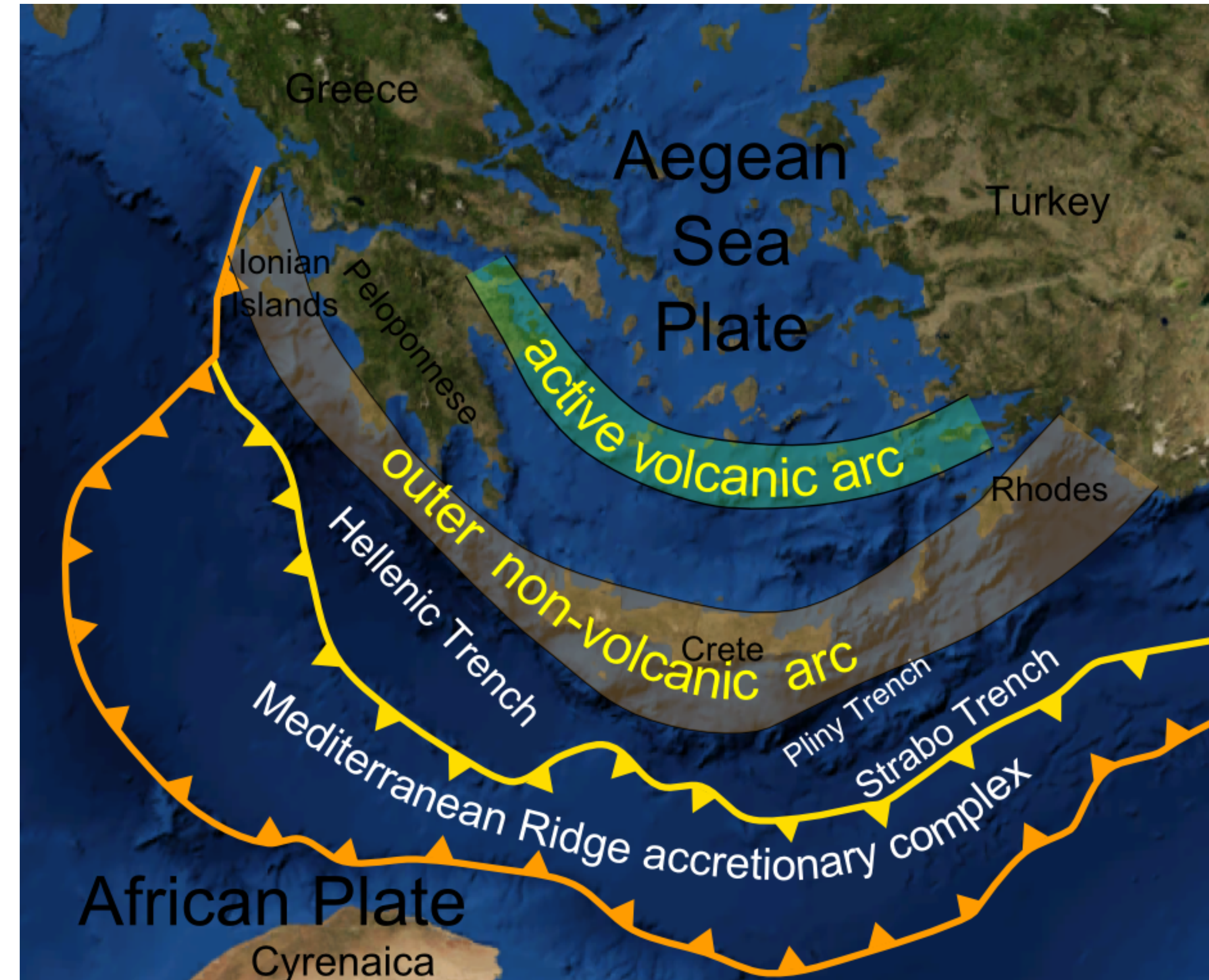
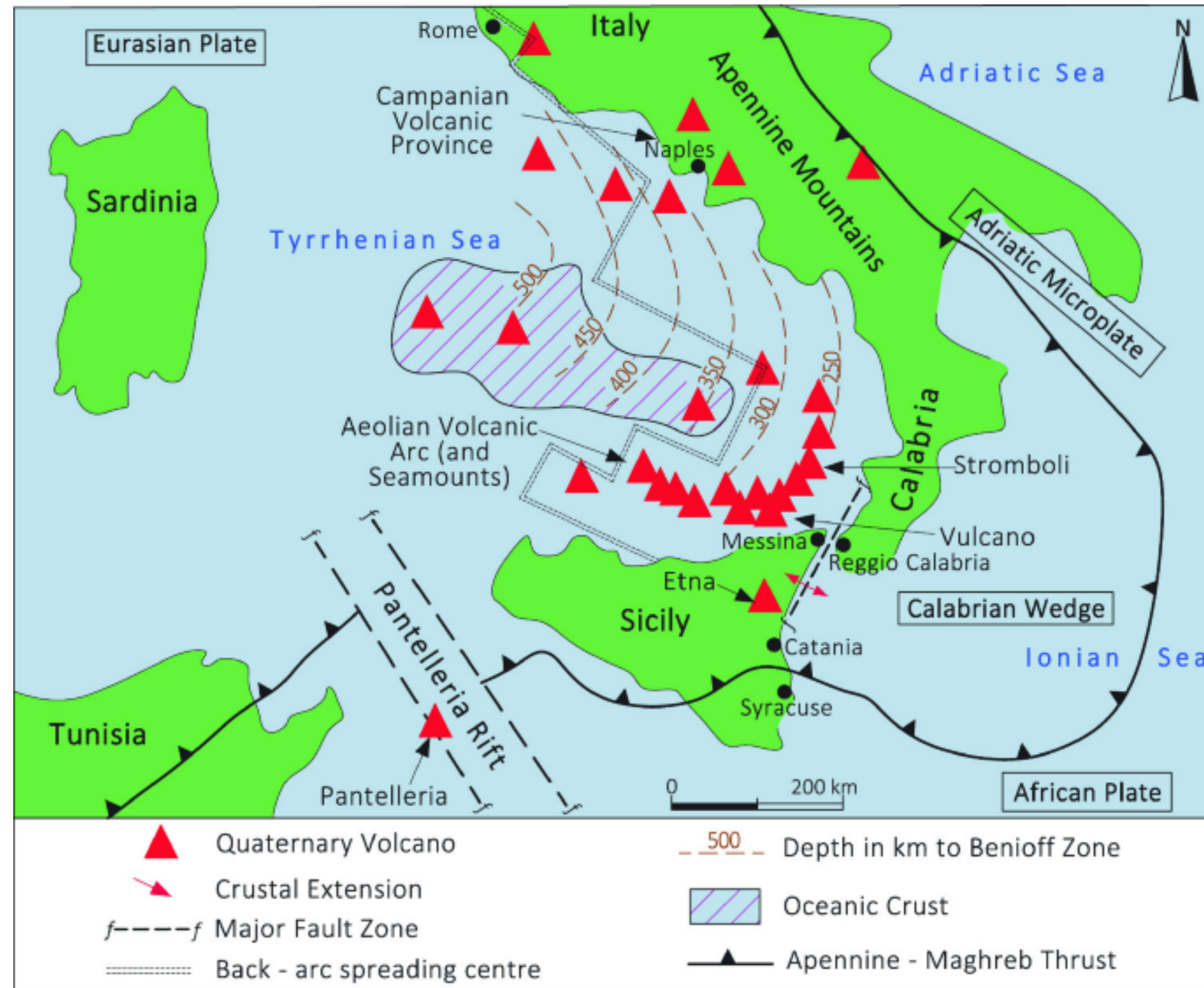
Mediterranean Today

Subduction Zones and Faults



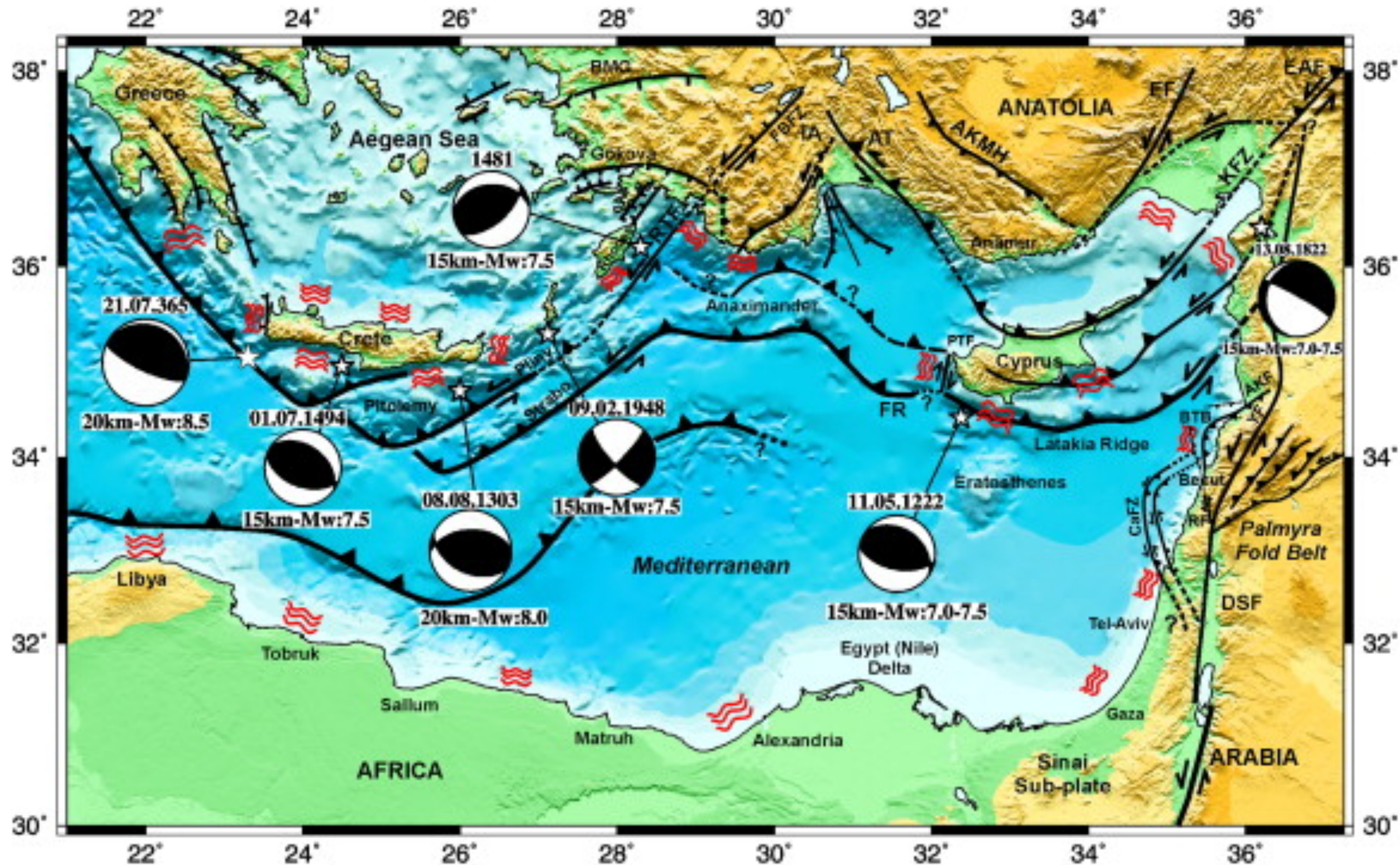
Mediterranean Today

Subduction Zones

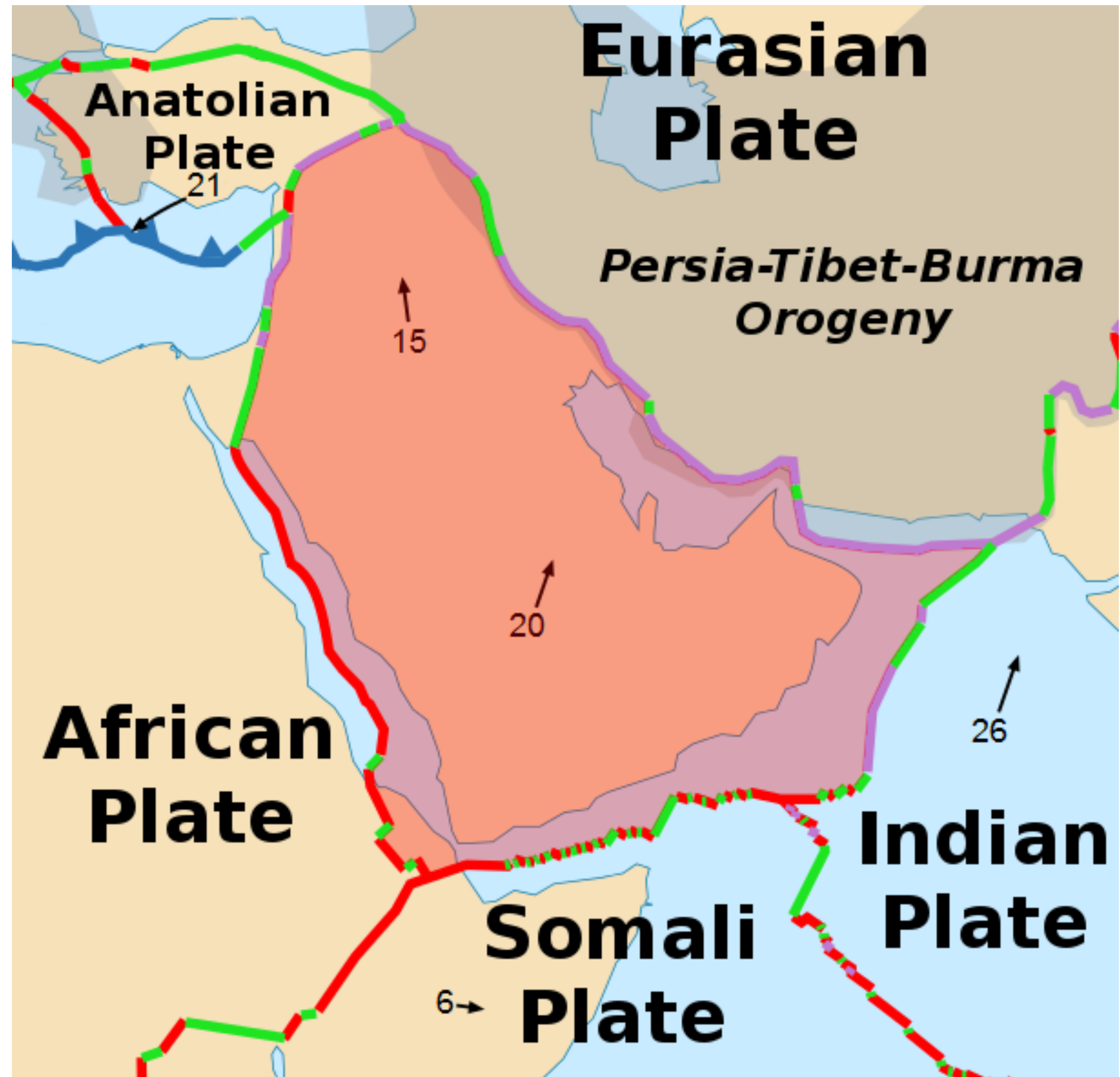


Mediterranean Today

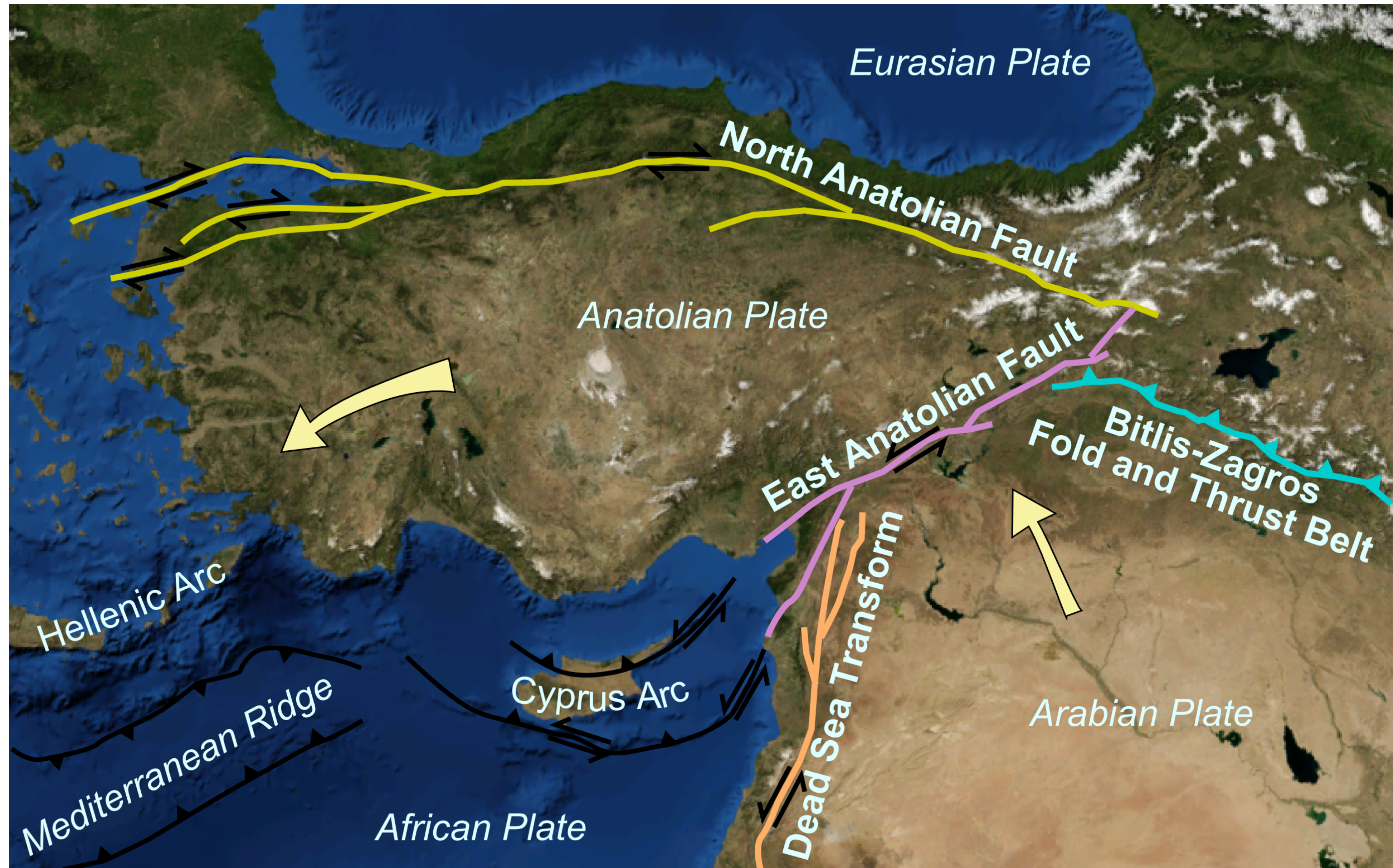
Subduction Zones



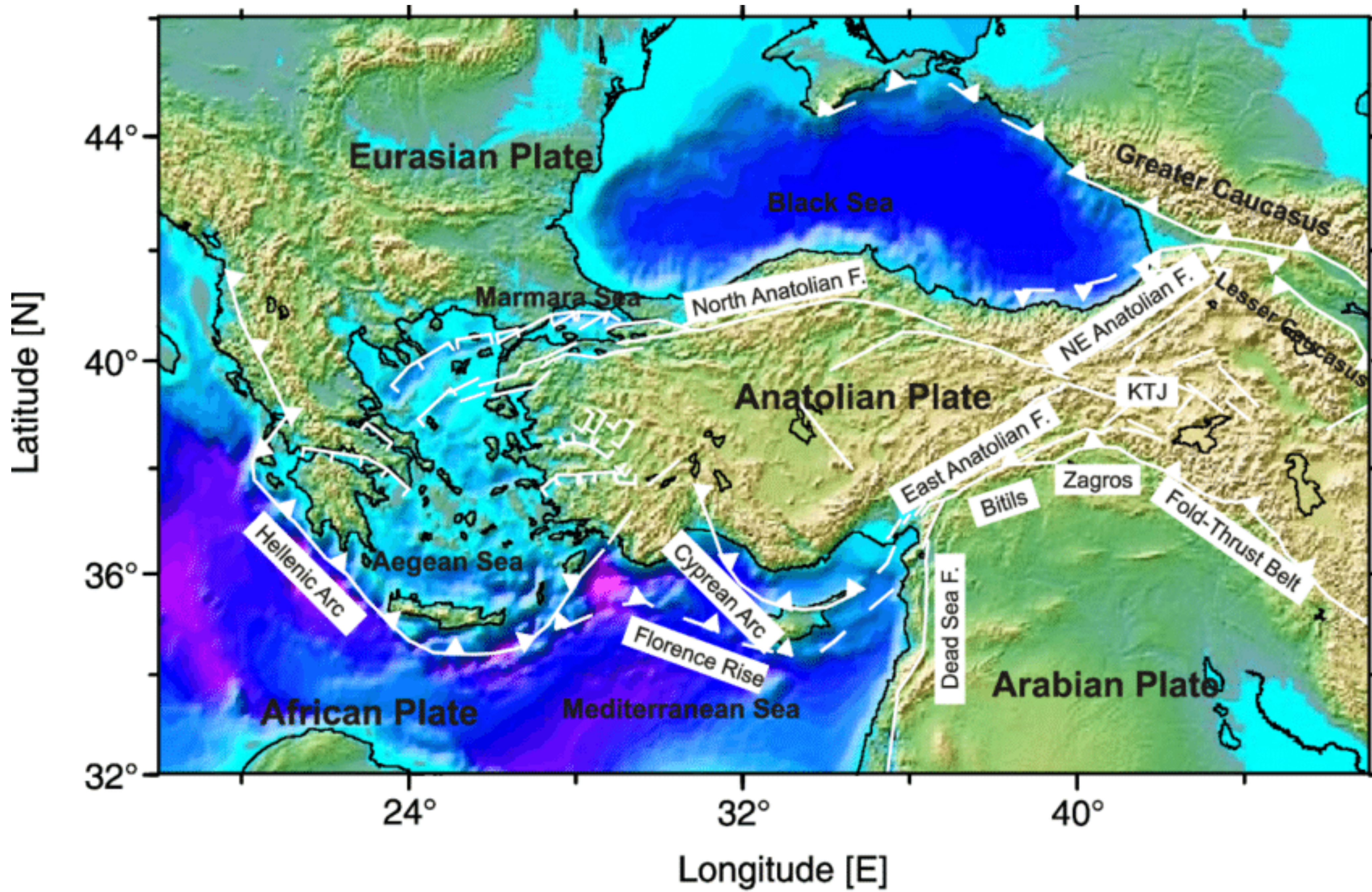
Eastern Mediterranean Plates



Anatolian Plate Major Faults

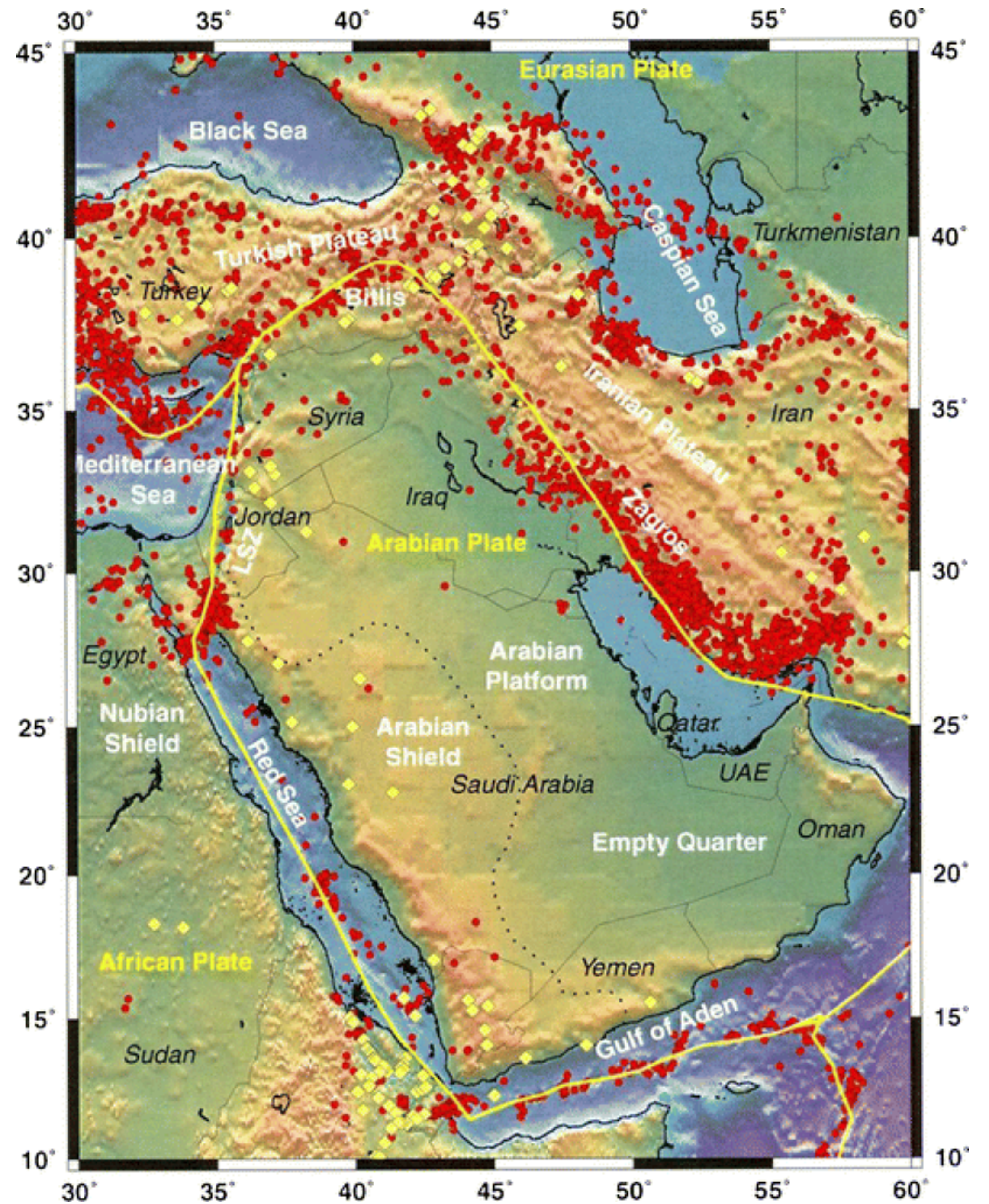


Anatolian Plate Major Faults

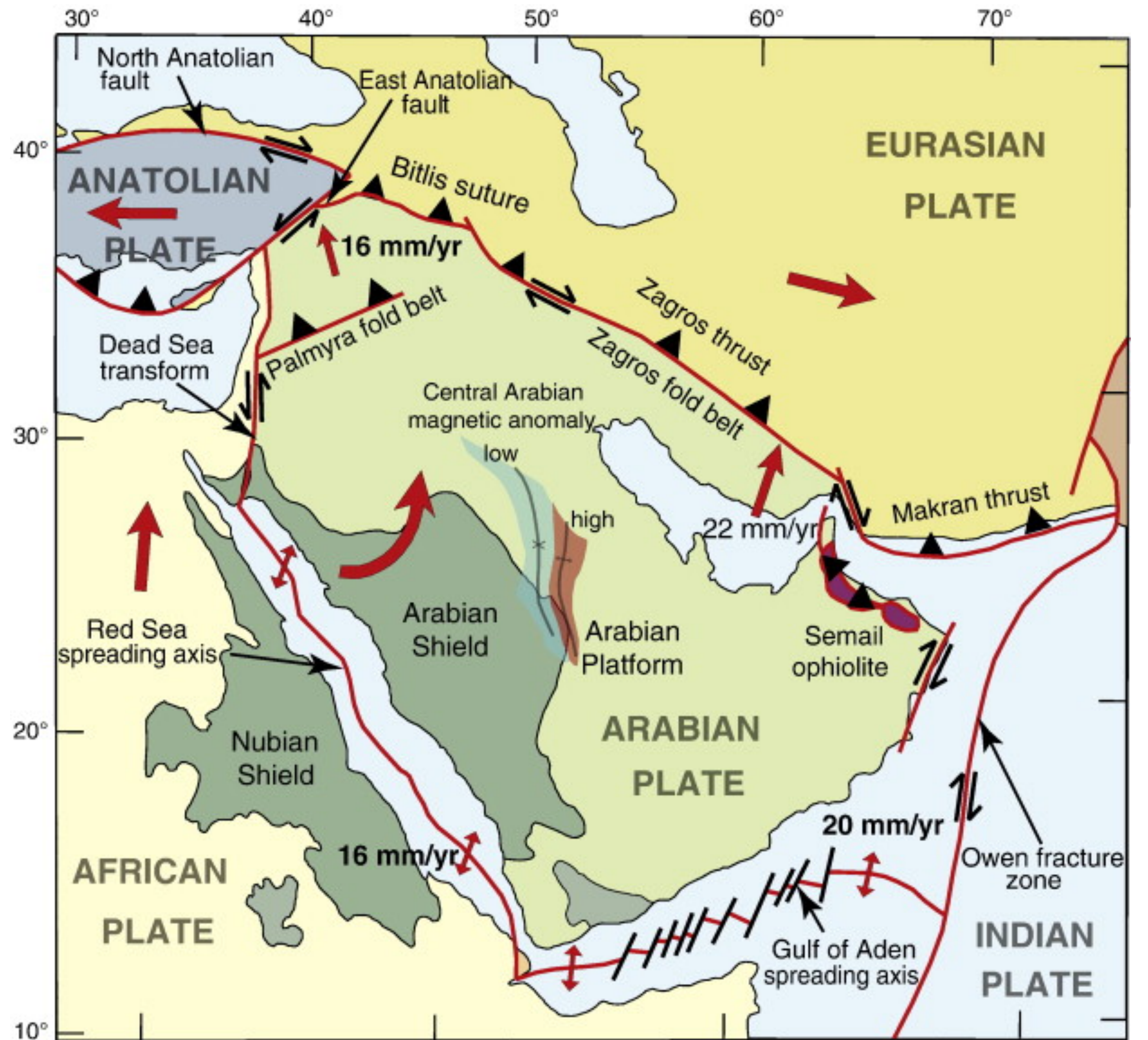


Arabian Plate

Overview

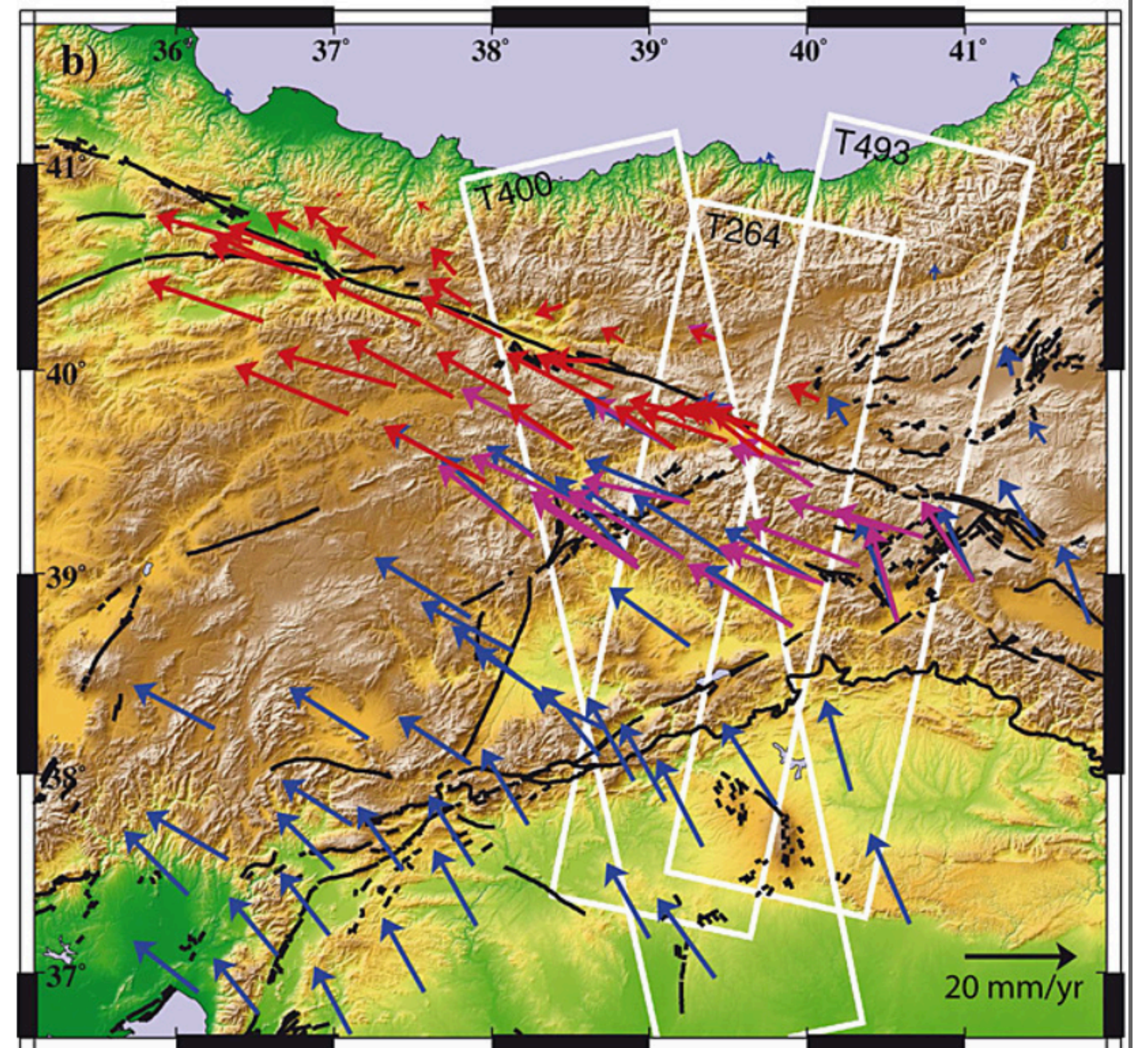
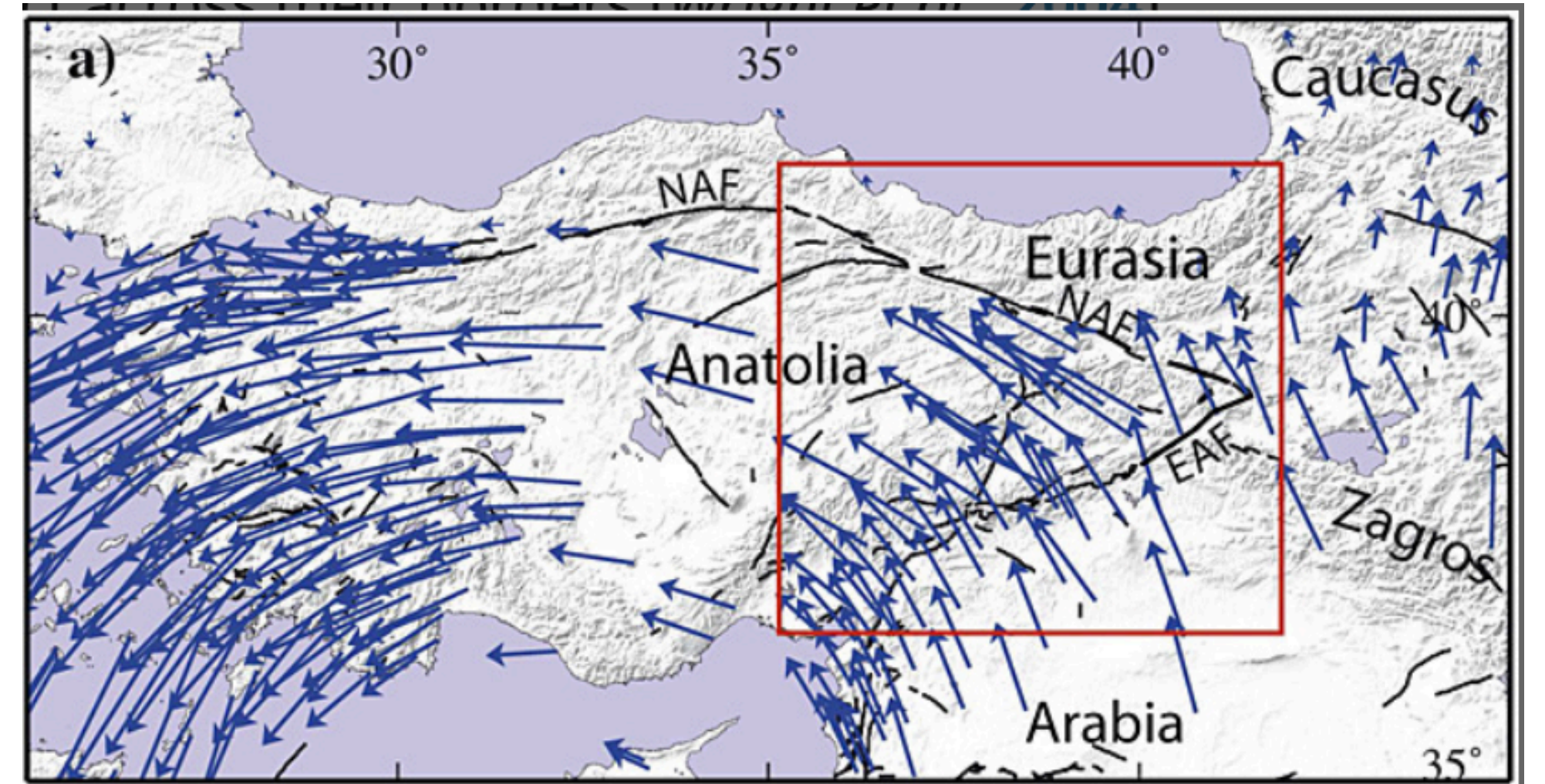


Arabian Plate Plate Interaction



Arabian Plate

Interaction With Anatolian Plate



**The Dramatic
Scenery of
Italy**

Stromboli



**The Dramatic Scenery
of Italy
Mt. Etna**



The Dramatic Scenery of Italy

Campi Flegrei - The End of the Neanderthals?



The Dramatic Scenery of Italy

Earthquakes and Volcanos

- Video on [Geology of Italy](#)
 - Clip 1 - 4:25 to 8:03
 - Clip 2 - 23:25 to 34:41
 - Clip 3 - 36:40 to 37:20
 - Clip 4 - 39:58 to 47:30

**New
Developments
Greater Adria**

140 million years ago



New Developments

Greater Adria

- Washington Post article on [Greater Adria](#).
- Utrecht University article on [Greater Adria](#).

Next Up

- India and the Himalayas.
- The Pacific Rim