the Rock Magnet News
For Rockhounds Juniors, Teens & Greyhounds

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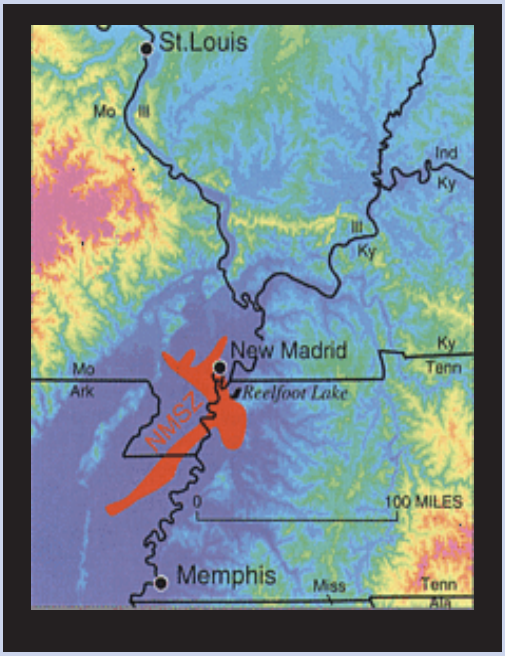
FAMOUS NORTH AMERICAN FAULT ZONES

Historic

The San Andreas Fault

The San Andreas Fault is a continental transform fault that runs a length of roughly 810 miles (1,300 km) through California in the United States. The fault's motion is right-lateral strike-slip (horizontal motion). It forms the tectonic boundary between the Pacific Plate and the North American Plate.

The fault was first identified in Northern California by UC Berkeley geology professor Andrew Lawson in 1895 and named by him after a small lake which lies in a linear valley formed by the fault just south of San Francisco, the Laguna de San Andreas. After the 1906 San Francisco Earthquake, Lawson also discovered that the San Andreas Fault stretched southward into southern California.



The New Madrid Fault

The New Madrid Seismic Zone (pronounced /nju: 'mædrɪd/), sometimes called the New Madrid Fault Line, is a major seismic zone and a prolific source of intraplate earthquakes (earthquakes within a tectonic plate) in the southern and mid-western United States, stretching to the southwest from New Madrid, Missouri.

The New Madrid fault system was responsible for the 1811–1812 New Madrid earthquakes and may have the potential to produce large earthquakes in the future. Since 1812 frequent smaller earthquakes were recorded in the area.

Earthquakes that occur in the New Madrid Seismic Zone potentially threaten parts of seven American states: Illinois, Indiana, Missouri, Arkansas, Kentucky, Tennessee and Mississippi.

wikipedia

Pre-Historic Fault

Cameron's Line
Ordovician Suture Fault

Question: Could any part of the Hudson Valley be Part of this Suture Fault?

Advanced Vocabulary:

Allochthonous:

A large block of rock which has been moved from its original site of formation, usually by low angle thrust faulting.

Autochthonous:

Rock that originates from where found, in situ typically describes natural material or processes prior to transport. For example, in situ is used in relation to the distinction between weathering and erosion, the difference being that erosion requires a transport medium (such as wind, ice, or water), whereas weathering occurs in situ. Geochemical processes are also often described as occurring to material in situ.

Cameron's Line

Cameron's Line is a Ordovician suture fault in the northeast United States which formed as part of the continental collision known as the Taconic orogeny around 450 mya. Named after Eugene N. Cameron, who first described it in the 1950s, it ties together the North American continental craton, the prehistoric Taconic Island volcanic arc, and the bottom of the ancient Iapetus Ocean.

Cameron's line has been identified in western Connecticut near Ridgefield before it heads into the Bronx, along the East River in Manhattan, through New York Bay, Staten Island and into New Jersey.

The basement rocks of the Manhattan Formation located on the western side of Cameron's line are metamorphosed sedimentary rocks. They were formed in roughly this location (autochthonous) and have been tectonically stable over a large period of time. The other side of the line has allochthonous rocks formed elsewhere, which have experienced great tectonic movement in a westward direction on top of the underlying bedrock.

Near New York City, the eastern side of the line is the Hartland Formation, the remains of the volcanic island arc underneath Cretaceous and Pleistocene layers. The nearby Newark Basin in New Jersey is similar to a layer underneath the Cretaceous period rocks in this region

The position of the line in New York City and especially in Manhattan is subject to much debate and contradictory data. Due to the violent nature of the Taconic Orogeny, the line has been folded and eroded several times. The material in the line is described as "highly laminated, migmatized, complexly folded- and annealed zones of commingled mylonitic rocks".

Wikipedia, the free encyclopedia

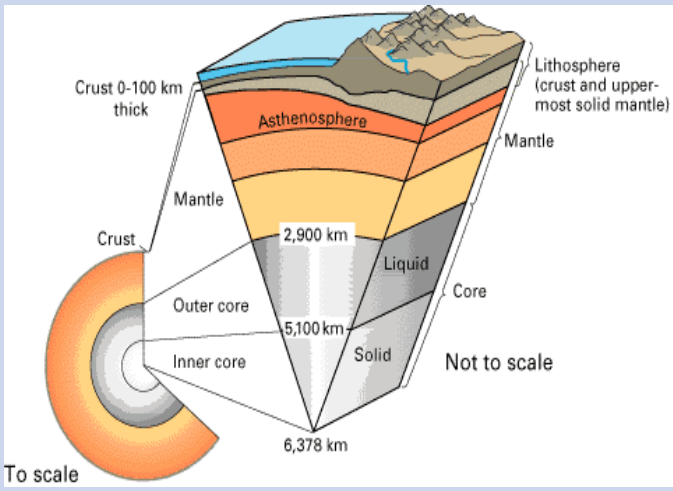
normal fault

reverse fault

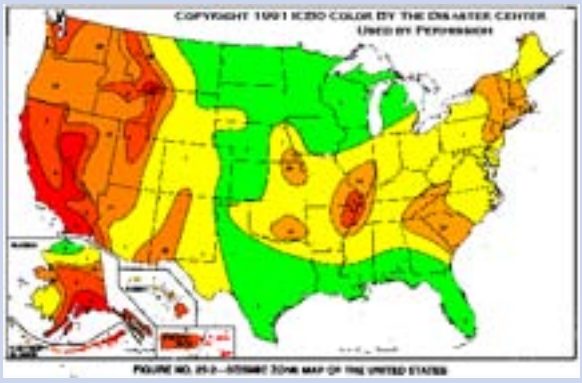
DID YOU FEEL THAT!

Our planet's tectonic plates move slowily,* stressing the rock under us. When the tension is too great the rock breaks creating a fault, a fracture. This movement of the rock is felt as an earthquake.

* (fingernail growth speed)



The Earth's Tectonic Plates made up of both continental and oceanic crust move slowly. Most scientists believe the convection motion that drives the plates resting on the Asthenosphere is the result of heat loss from the Earth's Core.



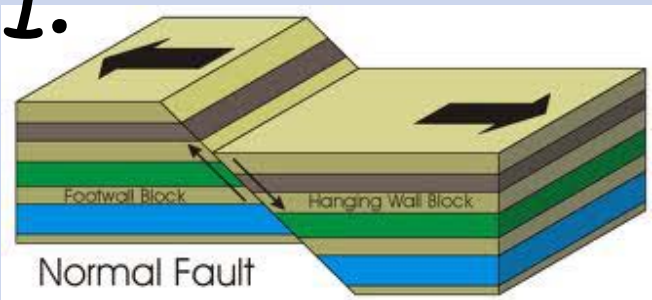
Where there are earthquakes there are faults and where there is a fault there is earth displacement and some degree earthquakes. If you live in the red, orange or yellow zones you can start collecting fault photgraphs and information.

finding faults!

Faults are defined as fractures in rocks along which differential displacement has occurred. Dip-slip faults are those involving movement of rocks in non-horizontal directions. Strike-slip faults involve movement of rocks in horizontal directions.

Which faults are DIP-SLIP and which faults are STRIKE-SLIP faults???

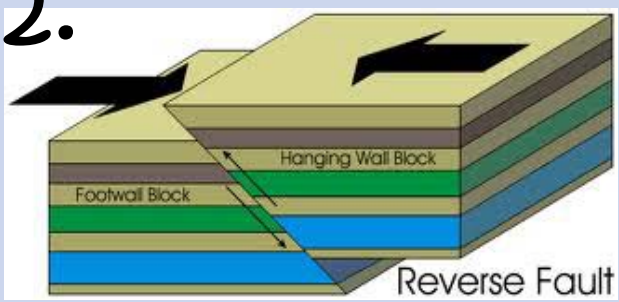
1.



Describe this Fault !

Is It #1,2,3, or# 4 ?.

2.



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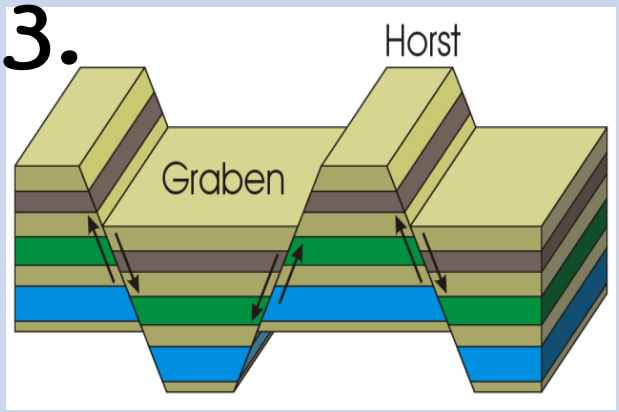

Study the fault models to assist you with the identification of faults in the field.

Are there any faults where you live or visit? It is more difficult to determine what kind of fault it is in nature.

Learn to follow the strata to the break to determine - is it? either a normal, reverse, transverse or drop down fault as seen in the diagram of the Horst & Graben.

4.