

**AAPG Annual Meeting  
March 10-13, 2002  
Houston, Texas**

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## **Global Tectonics as Viewed from Manned Spacecraft**

Astronauts have been using cameras to photograph the earth from the earliest earth orbital flights. To date, nearly 400,000 pictures have been taken and are available on the internet at [eol.jsc.nasa.gov](http://eol.jsc.nasa.gov). These pictures have been taken for a variety of reasons: The focus of this talk is on tectonic features that are beautifully displayed by the oblique views across or along major tectonic units.

Most transform faults are shown on maps as relatively straight lines, when from orbit, views along them show the subtle (to dramatic) kinks that occur along them. Sharp changes in direction distinguishes the various segments of the Dead Sea fault, whereas the Chaman fault is a long smoothly curved boundary. The restraining bend in the San Andreas fault in the Transverse Ranges is well shown.

The base of the Himalaya marks the surface boundary between the Indian Plate and the overriding Asian Plate. The western end is marked by the addition of the Kohistan volcanic arc at the front of the collision. This makes a major indentation that is marked by the deep gorges of the Indus and Gilgit Rivers. The Chaman and Karakoram faults frame a wedge that drives the Pamirs ahead of the Kohistan arc. This wedge drives the Tibetan Plateau to the east resulting in having the steepest slopes being along the eastern margin of the plateau. The eastern edge of the Himalaya is marked by the Salween, Mekong, and Yangtse Rivers that lie in adjacent parallel valleys. They drain the southeastern quadrant of the Tibetan Plateau and constitute a long ramp from the plateau to sea level.