

Abstracts of Additional Tectonics Session Papers

Regional Trends and Tectonic Framework, Northeast Pacific

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Regional compilation of geology, tectonics, gravity, magnetics, and physiographic and oceanographic data have been prepared for the Northeast Quadrant of the Circum-Pacific Map Series. The maps clearly show the gross structural pattern from the cratonic interior, through platform deposits, orogenic belts, and continental shelf and slope to the deep ocean. Three major areas with a basic structural pattern can be identified: the cratonic interior, the Cordilleran orogene, and the Pacific Ocean.

From the shield, under the bordering platform cover, and throughout the Cordillera, dominant northeasterly structural

grain is clearly evident on regional maps, particularly gravity and magnetics. These trends are interpreted to present fundamental structural features, old lines of weakness of the crystalline basement which had a varying controlling effect on the structural development of the Cordillera. Also, as the Pacific margin developed through time, this dominant trend was propagated westward and upward, overprinting its control on the younger trends.

The northeast Pacific Ocean has a very distinctive pattern of spreading centers, fracture zones, and magnetic anomalies. The most dominant structural feature is the east-northeast-trending fracture zones. The Pacific margin of the Americas consists of various blocks of post-Triassic accretionary terrane. Structural trends, volcanism, earthquake epicenters, and crustal thickness suggest a transverse segmentation of the Cordilleran orogene. The accretion and segmentation are believed to be a result of the interaction of the Americas and Pacific plates with an inherited east-northeast structural grain overprinted on the younger orogenic trends.
