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## Marine Geophysical Studies of Western Margins of Luzon, Philippines

Dennis E. Hayes

Stephen D. Lewis

*Lamont-Doherty Geological Observatory*

*Columbia University*

*Palisades, New York*

Multichannel seismic reflection, gravity, and magnetic measurements were made during a reconnaissance study of the western margin of Luzon, between 15 and 19° north. Sixteen lines were run to investigate the along-strike variations in the nature of the accretionary prism and the style and intensity of deformation in the fore-arc region (West Luzon Trough).

There is an along-strike difference in the degree of deformation observed landward of the trench slope break. Subduction of the east-west-trending South China basin relict

spreading center at the Manila Trench near 16° north appears to roughly define the boundary between two contrasting tectonic regimes of the margin. South of this boundary, deposition of terrigenous sediments in the fore-arc region has occurred in relatively quiet tectonic setting. In contrast, north of the boundary, the sediments of the fore-arc region have been disturbed by ubiquitous faulting. Some of the faulting is probably associated with the offshore extensions of splays of the Philippine fault system. Furthermore, anticlinal folds, consistent in character and trend, are found both onshore and offshore along Lingayen Gulf near 16 and 17° north and probably formed in response to a common stress field.

MCS records reveal a basement ridge, trending northward from the western side of Lingayen Gulf, which we interpret as the likely offshore expression of the Zambales ophiolite exposed on land to the south.

We are attempting to reconstruct the tectonic evolution of this fore-arc region by extrapolating the limited stratigraphic information from onshore wells and outcrops onto the observed offshore seismic stratigraphy.

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