

MAGNETIZATION OF THE OCEANIC CRUST: APPLICATIONS TO CRUSTAL FORMATION AND EARTH'S MAGNETIC FIELD

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Earth's magnetic field reversals are preserved in ocean crust and provide a template for the geomagnetic polarity time scale. The reversal data are remarkably useful in delineating the tectonic history of the world's ocean basins. By studying the magnetization of oceanic crust, we also learn about seafloor spreading and past behavior of Earth's magnetic field. For example, results from recent drilling into the lower crust provide information on the tectonic and magmatic processes active at slow spreading ridges. Clues to past fluctuations in earth's magnetic field are revealed by direct paleo-intensity estimates from the extrusive layer as well as from analysis of near-bottom magnetic anomaly data. Drawing on both geophysical and drilling data from a variety of sites, Dr. Gee will illustrate how magnetic data are refining our view of crustal accretion and beginning to answer basic questions about geomagnetic field behavior. Dr. Gee sailed as a paleomagnetist on ODP Legs 121 (Indian Ocean), 144, (NW Pacific), 153 (Mid-Atlantic Ridge), and 176 (Indian Ocean).