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STUDIES OF THE MARINE CRUSTAL MAGNETIZATION AT INTERMEDIATE WAVELENGTHS

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The marine data set can be filtered at intermediatae wavelengths to provide a data set which complements the satellite fields of Magsat, TSS and GRM.

Separation of core and crustal souces is difficult in the $10 \leq N \leq 16$ transition spectrum. The GRM (epoch 1992.0) will return a high resolution data set which will complement the Magsat (epoch 1980.0) and the sea surface data set (epoch 1970.0). The three fields are separated by a decade each, hence the analysis of westward drift components may help to separate the crustal from main field components within the anomaly transition spectrum.

The filtered marine data set provides a high resolution data set which is closer to the source bodies than satellite survey data. However, the GRM and TSS could provide the necessary resolution to match the filtered sea surface field. The added resolution will help determine the nature of crustal magnetizations which give rise to the intermediate wavelength field.

From an analysis of Magsat and the sea surface field we have found that remanent magnetization is an important component over the oceans. Crustal deformation and plate motions therefore result in magnetization vectors which differ significantly from the present day field directions. Induced magnetization or VRM are important components over the oceanic plateaus and spreading centers.

Areas of study which will profit from the development of a filtered surface field and the acquisition of low altitude satellite data include the diagenesis of the oceanic crust away from the spreading centers, paleointensity of the geomagnetic field, crustal deformation and crustal heterogeneity.