

A STRATIGRAPHIC INTERPRETATION OF SELECTED
FERROMANGANESE CRUSTS FROM SCHUMANN SEAMOUNT

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ABSTRACT

We sampled three ferromanganese crusts from Schumann Seamount in the Hawaiian Archipelago, ranging from 7-9.5 cm in thickness. The thickest crust, 9.5 cm, lies on a basalt substrate with an ^{40}Ar - ^{39}Ar age of 82 Myr (Sager and Pringle, 1987). The other two crusts have a continuous outer layer of ferromanganese surrounding an inner core of ferromanganese crust. All three crusts consists primarily of layers of ferromanganese oxides intermixed with phosphatized limestone and alumino-silicate debris, mostly quartz and plagioclase feldspars. Detailed concentration profiles of Co, Fe, Pt and other metals were used to determine correlations and stratigraphic distributions of these metals in the 95-mm thick crust. The profiles were then compared with those of other trace elements, major elements, and the mineralogy of the crust to establish chemical and isotopic time markers. This information was then applied to the two "pseudo-nodule" crusts to determine the applicability of these factors to other crusts on the same seamount.