

XV. REMANENT MAGNETIZATION MEASUREMENT OF PISTON CORE P150

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Remanent magnetization of a piston core 12 m long obtained during GH79-3 cruise was measured every 8.8 cm by a SCT C113 type cryogenic magnetometer after alternative field demagnetization of 50 Oe (5 mT). Samples were taken every 2.2 cm from the working half of the core. A measurement was made on every 4th sample and another measurement was made between two measured samples if a clear change appeared between them.

The sampling site of the core was at lat. 27°30.2'N, long. 144°53.0'E and the water depth was 5,475 m. The IGRF (International Geomagnetic Reference Field) value at the site is as follows;

Total geomagnetic intensity	=	40234 nT (gamma)
Declination	=	-2.5° (clockwise from N)
Inclination	=	36.5° (downward)

Results

Measured data are shown in Fig. XV-1, as intensity, declination and inclination distribution. Inclination varies between 35° to 45°, which coincides reasonably with the inclination of the IGRF at the site, as mentioned above, although it seems to be a little higher.

Although the inclination does not show any magnetically reversed events, there is a depression of intensity at a depth of 10.2 m where the intensity of samples decreases to one third of the adjacent values. It may show a short geomagnetic event. The longest event in the Brunhes normal epoch is thought to be the Blake event (about 100,000 year B.P.). The sedimentation rate is calculated to be 102 mm/1,000 year. From another viewpoint, if the intensity pattern corresponds to the fluctuation of geomagnetic intensity whose period is thought to have been 6,000 year during those years, the depression at 10.2 m may be still the Blake event because the fluctuation of intensity is 50 to 60 cm in this core and six thousand multiplied with the number of 10.2 m divided by 55 cm gives a value of approximately 110,000 years. But the intensity is not yet normalized with SIRM (Saturated Isothermal Remanent Magnetization) or other factors and further study is needed.

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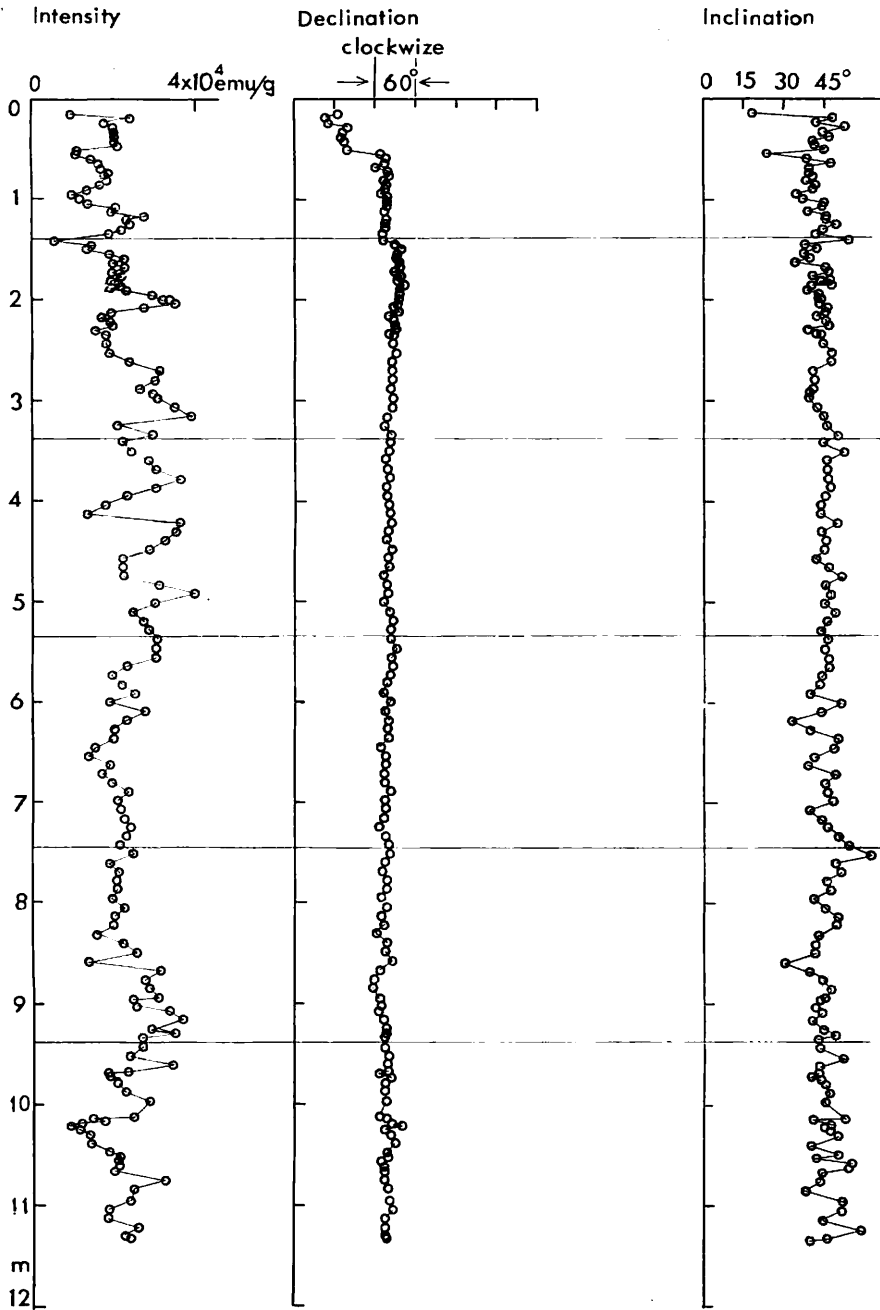


Fig. XV-1 Distribution of intensity, declination and inclination v.s. the depth from sea bottom. The core was cut into six short cores and their horizontal direction was not maintained. So the declination was rotated and connected among the short cores. The horizontal orientation was not measured and the declination was relative one.