

Correction to “A geomagnetic record over the last 3.5 million years from deep-tow magnetic anomaly profiles across the Central Indian Ridge”

by Gaud Pouliquen, Yves Gallet, Jérôme Dyment, Philippe Patriat, and Chiori Tamura

In the paper “A geomagnetic record over the last 3.5 million years from deep-tow magnetic anomaly profiles across the Central Indian Ridge” by Gaud Pouliquen, Yves Gallet, Jérôme Dyment, Philippe Patriat, and Chiori Tamura (*Journal of Geophysical Research*, 106(B6), 10,941–10,960, 2001), the order of the authors was incorrect and should be as shown above. Also, some sentences were mixed at the end of the abstract. The corrected abstract is given below.

Abstract. High-resolution records of the geomagnetic field intensity over the last 3.5 Myr provided by paleomagnetic analyses of marine sediments and volcanics have shown the occurrence of short-lived low field intensity features associated with excursions or short polarity intervals. In order to evaluate the ability of marine magnetic anomalies to record the same geomagnetic events, we have collected six deep-tow (~500 m above the seafloor) and several sea surface magnetic anomaly profiles from the Central Indian Ridge across the Brunhes, Matuyama, and Gauss chrons (i.e., from the ridge axis to anomaly 2A). After removal of topography, latitude, and azimuth effects, we converted distances into time sequences using well-dated polarity reversal anomalies as tie points. We calculated the average signal to test the robustness of the short-wavelength anomalies. The resulting stacked profile is very similar to stacked sea surface and downward continued profiles from the Central Indian Ridge, the East Pacific Rise, and the Pacific-Antarctic Ridge. Our results suggest that in addition to polarity reversals, geomagnetic field intensity variations represent the major contributor to the detailed shape of recent marine magnetic anomalies in investigated areas. We observe a dense succession of microanomalies that are correlated to previously suggested geomagnetic events (subchrons or excursions) within the Brunhes and Matuyama chrons. A new small-scale magnetic anomaly, likely generated by several closely spaced excursions (Ontong Java 1 and 2, and Gilsa), is found after the Olduvai chron. The near-bottom results support the existence of three geomagnetic features between the Gauss-Matuyama boundary and Olduvai. They also suggest three geomagnetic events during the C2A.1n subchron within the Gauss chron. This study emphasizes the potential of deep-tow magnetic surveys in detecting fluctuations in geomagnetic field intensity and, in particular, short-lived excursions, a poorly constrained part of the geomagnetic field temporal variation spectrum.

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