Preliminary results on Miocene–Pliocene calcareous nannofossils from the Rio Grande Rise and Vema Channel (DSDP Leg 72, Sites 516A and 518, SW Atlantic Ocean): Biostratigraphy and palaeoecological inferences

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Fluctuations in the global carbon cycle and deep ocean circulation were typical during the Neogene, which resulted in a gradual worldwide cooling and the subsequent establishment of large ice sheets in Antarctica (Zachos et al., 2001). Some disruptive events stand out during this interval, such as the Miocene climate optimum (Herold et al., 2012), the Messinian salinity crisis (Hodell et al., 1994) and the Isthmus of Panama closure (Wright & Miller, 1996). The Rio Grande Rise, an aseismic feature in the southwestern Atlantic, is a critical area for understanding the displacement history of thermohaline systems because four of these systems are present in modern local hydrography, with the input of Antarctic bottom water enabled by the Vema Channel (Barker et al., 1983). Forty-six samples of calcareous oozes were recovered from DSDP Leg 72 (Hole 516A and Site 518). Slides were prepared through gravity settling, and qualitative analyses were conducted using petrographic microscopy and scanning electron microscopy, with the aim of refining the biostratigraphic framework and detecting possible palaeoecological fluctuations. Three hundred specimens were counted per sample, and 75 taxa were identified. Four biozones (NN16, NN15, NN14 and NN11) and one subzone (NN11b) were detected at both sites. Three biozones (NN13, NN12 and NN10) and one subzone (NN11a) were only found in Hole 516A, while biozones NN6 and NN5 were found only at Site 518. High relative abundance values were observed for discoasterids and reticulofenestrids, which, when associated with *Pontosphaera* spp., *Syphosphaera* spp. and the *Calcidiscus leptoporus* group, might indicate tropical assemblages and thus stable and oligotrophic conditions. Many preservational morphotypes of discoasterids were found throughout the section. Additional samples from Site 516 are currently being analysed.

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