

## Final project report

<i>Project ID</i>	2004/4.04
<i>Title</i>	Magnetostratigraphy and environmental magnetism of a Eocene sedimentary sequence from the Southern Ocean (ODP Site 738)
<i>Principal investigator</i>	Fabio Florindo
<i>Institution</i>	INGV
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<i>Duration</i>	2 years
<i>Assigned funding</i>	35.000,00 Euro

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### Activities and results (max 3000 characters)

We developed an integrated high-resolution magnetostratigraphy and an environmental magnetic record of Eocene/Oligocene sedimentary sequences from the Southern Ocean (ODP Site 738, 1165, 689, 690) which represent key sites from the Southern Ocean for both stratigraphic and paleoclimatic studies, and coeval sequences outcropping in central Italy (e.g., Massignano E/O stratotype section).

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### Products

#### A – papers in scientific magazines

1. Jovane L., Florindo, F., and Dinarès-Turell, J. (2004), Environmental magnetic record of paleoclimate change from the Eocene-Oligocene stratotype section, Massignano, Italy, *Geophys. Res. Lett.*, 31, doi: 10.1029/2004GL020554
2. Venuti, A., and F. Florindo, (2004). Magnetostratigraphy and environmental magnetism of two Quaternary deep-sea gravity cores from the west Pacific Southern Ocean, *Geochem. Geophys. Geosyst.*, 5(12), doi:10.1029/2004GC000810
3. Warnke, D.A., Richter, C., Florindo, F., Damuth, J.E., Balsam, W.L., Strand, K., Ruikka, M., Juntala, J., Theissen, K., and Quilty, P., (2004). HiRISC (High-Resolution Integrated Stratigraphy Committee) Pliocene-Pleistocene interval, 0-50 mbsf, at ODP Leg 188 Site 1165, Prydz Bay, Antarctica. In Cooper, A.K., O'Brien, P.E., and Richter, C. (Eds.), *Proc. ODP, Sci. Results*, 188: College Station, TX (Ocean Drilling Program), 1-38. doi:10.2973/odp.proc.sr.188.016.2004
4. Florindo F., G.S. Wilson, A.P. Roberts, L. Sagnotti, K.L. Verosub, (2005). Magnetostratigraphic chronology of a Late Eocene to early Miocene glacial marine succession from the Victoria Land Basin, Ross Sea, Antarctica, *Global and Planetary Changes*, doi:10.1016/j.gloplacha.2004.09.009, 207-236.
5. Jovane, L., F. Florindo, M. Sprovieri, H. Palike, (2006). Astronomic calibration of the late Eocene/early Oligocene Massignano section (central Italy), *Geochem. Geophys. Geosyst.*, 7, Q07012, doi:10.1029/2005GC001195.
6. Florindo, F., Roberts, A.P., (2005). Eocene-Oligocene magnetobiochronology of ODP Sites 689 and 690, Maud Rise, Weddell Sea, Antarctica, *Geological Society of America Bulletin*, doi: 10.1130/B25541.1, 117 (1/2), 46-66.
7. Barker, P.F. G.M. Filippelli, F. Florindo, E Martin, HD Scher., (2007). Onset and Role of the Antarctic Circumpolar Current, *Deep Sea Research II*, 54, 2388-2398.
8. Jovane, L., Sprovieri, M., Florindo, F., Acton, G., Coccioni, R., Dall'Antonia, B., and Dinarès-Turell, J., (2007). Eocene-Oligocene paleoceanographic changes in the stratotype section, Massignano, Italy: Clues from rock magnetism and stable isotopes, *J. Geophys. Res.*, 112, B11101, doi:10.1029/2007JB004963.
9. Jovane, L., Florindo, F., Coccioni, R., Dinares-Turell, J., Marsili, A., Monechi, S., Roberts, A.P., Sprovieri, M., (2007). The middle Eocene climatic optimum event in the Contessa Highway section, Umbrian Apennines, Italy, *Geological Society of America Bulletin*, doi:10.1130/B25917.1.
10. Roberts, A.P., Florindo, F., Villa, G., Chang, L., Jovane, L., Bohaty, S.M., Larrasoana, J.C., Heslop, D., and Fitz Gerald, J.D., Magnetotactic bacterial abundance in pelagic marine environments is limited by organic carbon flux and availability of dissolved iron, *Earth Planet. Sci. Lett.*, 310, 441-445, 2011.

#### B – book chapters

## Programma Nazionale di Ricerche in Antartide (PNRA)

1. Florindo, F., and Siebert, M., Antarctic Climate Evolution, in: Developments in Earth and Environmental Sciences series, Elsevier, Volume 8, pp 593.

### C - proceedings of international conferences

1. 2005 - "Long-term changes in Southern high-latitude ice sheets and climate, the Cenozoic history" Edited by Fabio Florindo and David M. Harwood and Gary S. Wilson, Global and Planetary Change (Elsevier), Vol. 45, issue 1-3, February 2005.
2. 2006 - "Cenozoic paleoenvironments: geologic record and models" (P.J. Barrett, F. Florindo, and A.K. Cooper eds.) Palaeoceanography, Palaeoclimatology, Palaeoecology (Elsevier), 231, 252 pp., 2006.
3. 2008 - "Antarctic cryosphere and Southern Ocean climate evolution (Cenozoic-Holocene)" (F. Florindo, A.M. Haywood, and A.E. Nelson eds.) Palaeoceanography, Palaeoclimatology, Palaeoecology (Elsevier), 260(1-2), 1-298, 2008.
4. 2008 - "Antarctica: A Keystone in a Changing World" Cooper A.K. et al (editors), Proceedings of the 10th International Symposium on Antarctic Earth Sciences, Santa Barbara, California August 26 to September 1, 2007. THE NATIONAL ACADEMIES PRESS Washington, D.C., 164 pp, 2008.

### D – proceedings of national meetings and conferences

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### E – thematic maps

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### F – patents, prototypes and data bases

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### G – exhibits, organization of conferences, editing and similar

1. 1st EGU General Assembly, Nice, FR. Convener of the session "Long-term changes in Southern high latitude ice sheets and climate, the Cenozoic history". April, 2004.
2. International Geological Congress (32 IGC), Florence, IT. Convener of the session "Cenozoic antarctic glacial history". August, 2004.
3. EUG General Assembly, Vienna, AT. Convener of the session on "Antarctic cryosphere and Southern Ocean climate evolution (Cenozoic-Holocene). April, 2005.
4. EUG General Assembly, Vienna, AT. Convener of the session on "Antarctic cryosphere and Southern Ocean climate evolution (Cenozoic-Holocene). April, 2006.
5. GEOITALIA, Rimini, IT. Convener of the session on "Evoluzione glaciale Cenozoica delle regioni polari ottenuta da studi geologici e geofisici". September, 2007.
6. EUG General Assembly, Vienna, AT. Convener of the session on "Antarctic cryosphere and Southern Ocean climate evolution (Cenozoic-Holocene). April, 2007.

### H - formation (PhD thesis, research fellowships, etc.)

1. 2003 - 2005: Ph.D. in Geophysics, "Università degli Studi di Bologna-ALMA MATER STUDIORUM", Dipartimento di Fisica. Title: "Magnetostratigraphy of marine sedimentary successions near some of the main paleoclimatic events of Paleogene" Student: Luigi Jovane

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## Research units

Fabio Florindo, INGV-Roma  
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## Programma Nazionale di Ricerche in Antartide (PNRA)

**Date:** 30 GENNAIO 2012

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