

Fig. 2: Datings of LO of *P. siakensis* and FO of *N. acostaensis* in Mediterranean and low latitudes.

HRI 2

EVENTS

ASTRONOMICAL AGE

planktonic foraminifera

	MEDITERRANEAN	ATLANTIC
<i>N. acostaensis</i> (d/s)	9.54	-
<i>N. acostaensis</i> FRO	10.55	-
<i>N. atlantica</i> TLO	10.85	-
<i>N. atlantica</i> FO	11.12	-
<i>G. nephentes</i> FO	-	11.64*
<i>P. siakensis</i> LO	11.21	10.43*
<i>G. decoraperta</i> FRO	-	11.19*
<i>G. foshi</i> (s.l.)	-	11.91*
<i>Gs. subquadratus</i> LCO	11.54	11.55*
<i>Gs. o. obliquus</i> FRO	11.54	11.17
<i>N. acostaensis</i> FO	11.80	9.89*
<i>P. partimlabiata</i> LO	11.8	-

calcareous nannoplankton

<i>D. neohamatus</i> / <i>D. hamatus</i> X	-	9.77
<i>D. neohamatus</i> FO	9.83	10.45
<i>D. hamatus</i> FO	10.15	10.48
<i>H. stalis</i> FCO	10.72	-
<i>C. coalitus</i> FO	10.74	10.79
<i>H. walberdorsfensis</i> LCO	10.74	-
<i>C. miopelagicus</i> LRO	10.98	10.94
<i>D. kugeri</i> LCO	11.60	11.60
<i>D. kugeri</i> FCO	11.89	11.88

Tab. 1: Astronomical ages of bioevents.

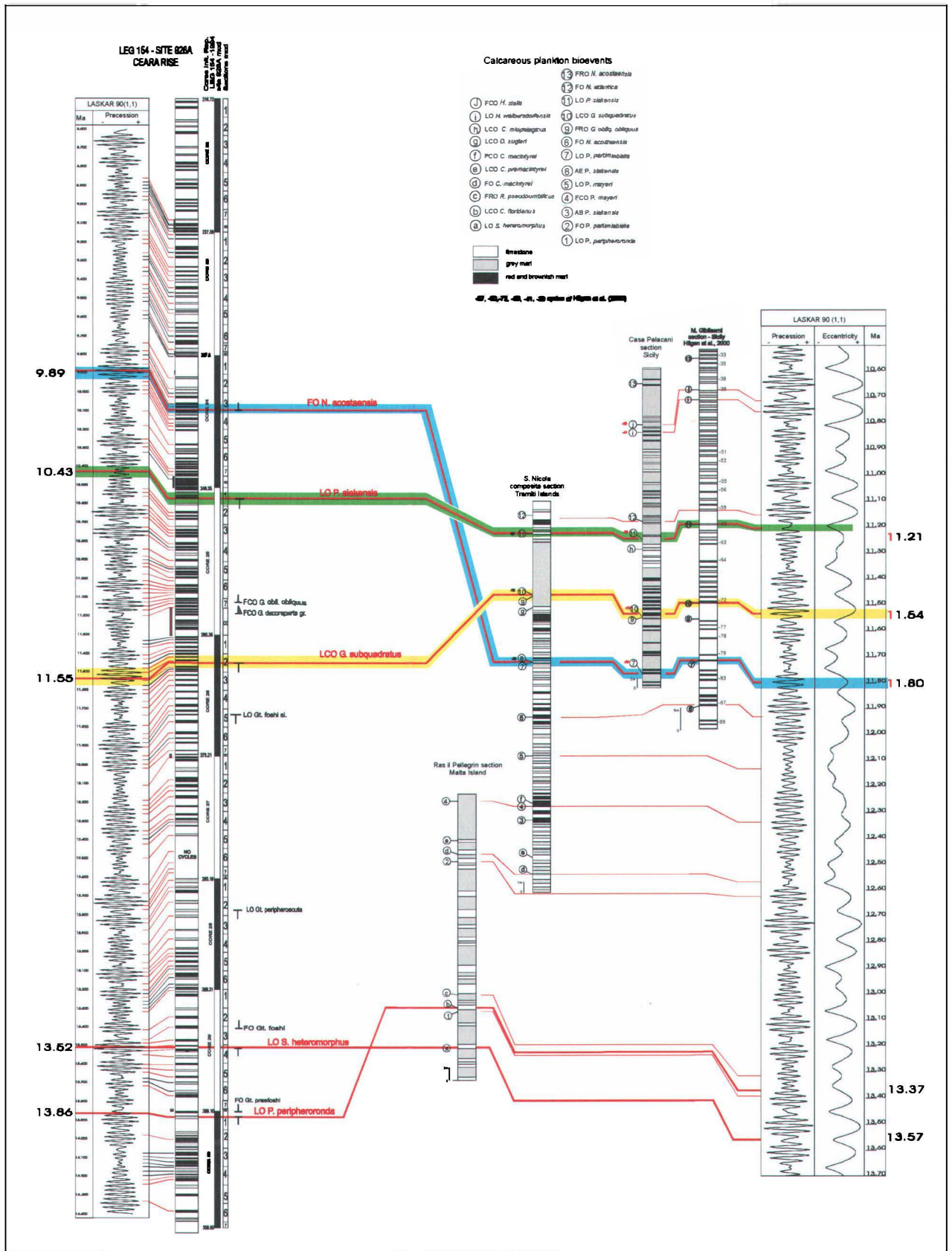


Fig. 3: Correlation of Leg 154 Ceara Rise (TURCO et al. 2001, IACCARINO et al. submitted) with Mediterranean sections focussing on HRI 2.

Correlation problems of HRI 3:

The *Globorotalia peripheroronda* LO and *Sphenolithus heteromorphus* LO are the two events proposed to define the Langhian/Serravallian boundary (RIO et al. 1997) (Fig. 4).

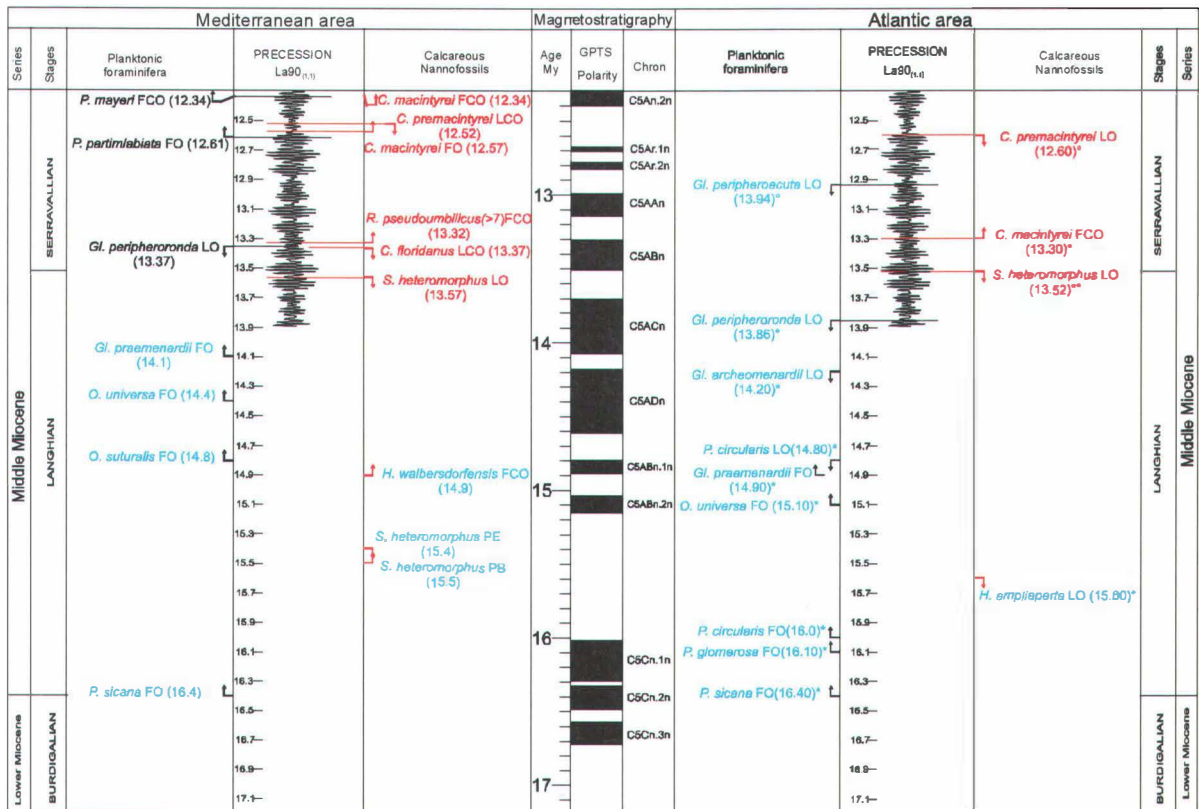


Fig. 4: Comparison of the Mediterranean with the Atlantic area of planktonic foraminifera and calcareous nannofossil events in HRI 3.

Lack of high-resolution integrated stratigraphy (cyclostratigraphy, magnetostratigraphy and calcareous plankton biostratigraphy) in good marine successions encompassing the Langhian/Serravallian and Burdigalian/Langhian boundaries

Conclusions:

The problems are far from being solved.

The LO of *G. peripheroronda* is diachronous between the Mediterranean and extra-Mediterranean area; on the contrary, the LO of *S. heteromorphus* (13.57 / 13.52 Ma) is up to now an almost synchronous event (Fig. 5).

High-resolution integrated stratigraphy (cyclostratigraphy, magnetostratigraphy and plankton biostratigraphy) is fundamental to solve the correlation problems of this time interval.

In the Langhian stratotype (Cessole section - Piedmont Tertiary Basin) all steps from *G. praeorbulina* to *G. orbulina* occur, raising correlation problems with Paratethys sections.

