

## GSSP for the Miocene - Pliocene Boundary.

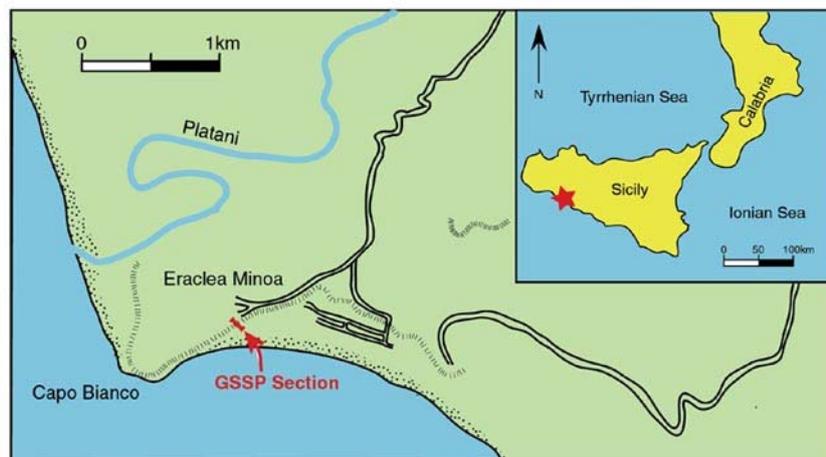
### Definition:

The base of the Pliocene Series is defined as the base of the Trubi Formation. The age of the Zanclean and Pliocene GSSP at the base of the stage is 5.33 Ma in the orbitally calibrated time scale, and lies within the lowermost reversed episode of the Gilbert Chron (C3n.4r), below the Thvera normal subchron.

### Location:

The Eraclea Minoa Section is located on the southern coast of Sicily (Italy)(latitude 37°23'30"N, longitude 13°16'50"E) at the base of the Trubi Formation. The section is represented on the Carta Topografica d'Italia in the 1:25,000 series, Foglio 266 (Sciaccia), Quadrante II, Tavoleta S.O. Capo Bianco. The Eraclea Minoa Section crops out continuously in a steep wave-cut bluff, approximately 30m high and 500m long behind the community of Eraclea Minoa.

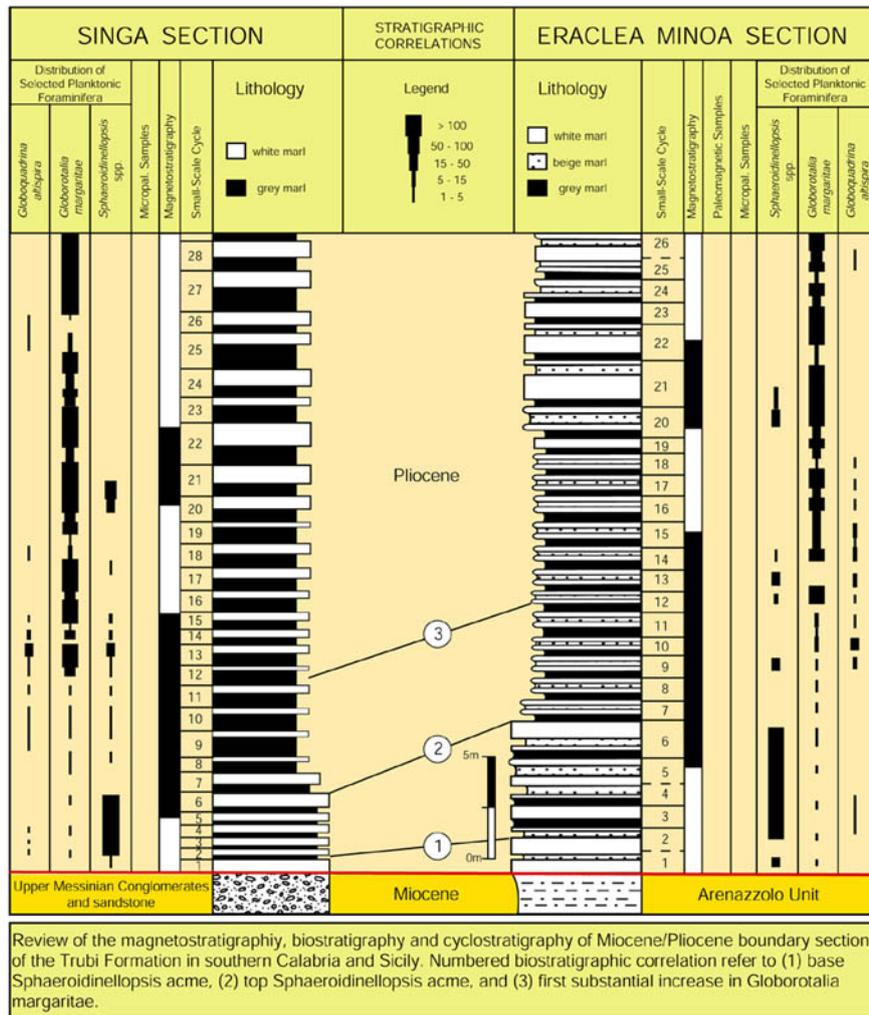
### Location of the GSSP for the Miocene - Pliocene Boundary at Eraclea Minoa, Sicily, Italy



### Sedimentology:

The basal Zanclean contact is where white Trubi marl rests on dark brown Arenazzolo sands and marls.

# Litho- and Biostratigraphy of the Miocene - Pliocene Boundary Strata of Eraclea Minoa, Italy



## Primary Markers:

The base of the carbonate bed marking the small-scale stratigraphic cycle 1 at the base of the Zanclean Stage in the Eraclea Minoa section corresponds to insolation cycle 510 counted from the present, with an astrochronologic age of 5.33 Ma.

## Secondary Markers:

### *Paleomagnetism:*

The base of the Thvera magnetic event (C3n.4n) dated to 5.236 Ma and only 96 kys (5 precession cycles) younger than the proposed GSSP is a useful marker for the boundary in continental, igneous and non-cyclic marine deposits as well as being a good anchor point for cyclostratigraphic or isotopic calibration of the boundary itself.

### *Nannofossils:*

First occurrence of *Ceratolithus acutus* calibrated at 5.37 Ma in the equatorial Atlantic Ocean.

Disappearance of *Triquetrorhabdulus rugosus* calibrated at 5.23 Ma in the Mediterranean and equatorial Atlantic Ocean.

Last occurrence of *Discoaster quinqueramus*, although not recorded in the Mediterranean, it is dated in Chron Cr3 at 5.537 Ma outside the Mediterranean.

*Foraminifera:*

The *Sphaeroidinellopsis* Acme Zone (first 10 precession-related lithologic cycles of the Zanclean) and the first common occurrence of *Globorotalia margaritae* at the top of the zone have been shown to be of purely local significance. Two sinistral shifts of *N. acostaensis* have been reported from Cycle 2 and 3 that may have more value for global correlation.

**References:**

Van Couvering, J. A., Castradori, D., Cita, M. B., Hilgen, F. J., and Rio, D., 2000. The base of the Zanclean Stage and of the Pliocene Series. *Episodes* **23/3**, p. 179 - 187.