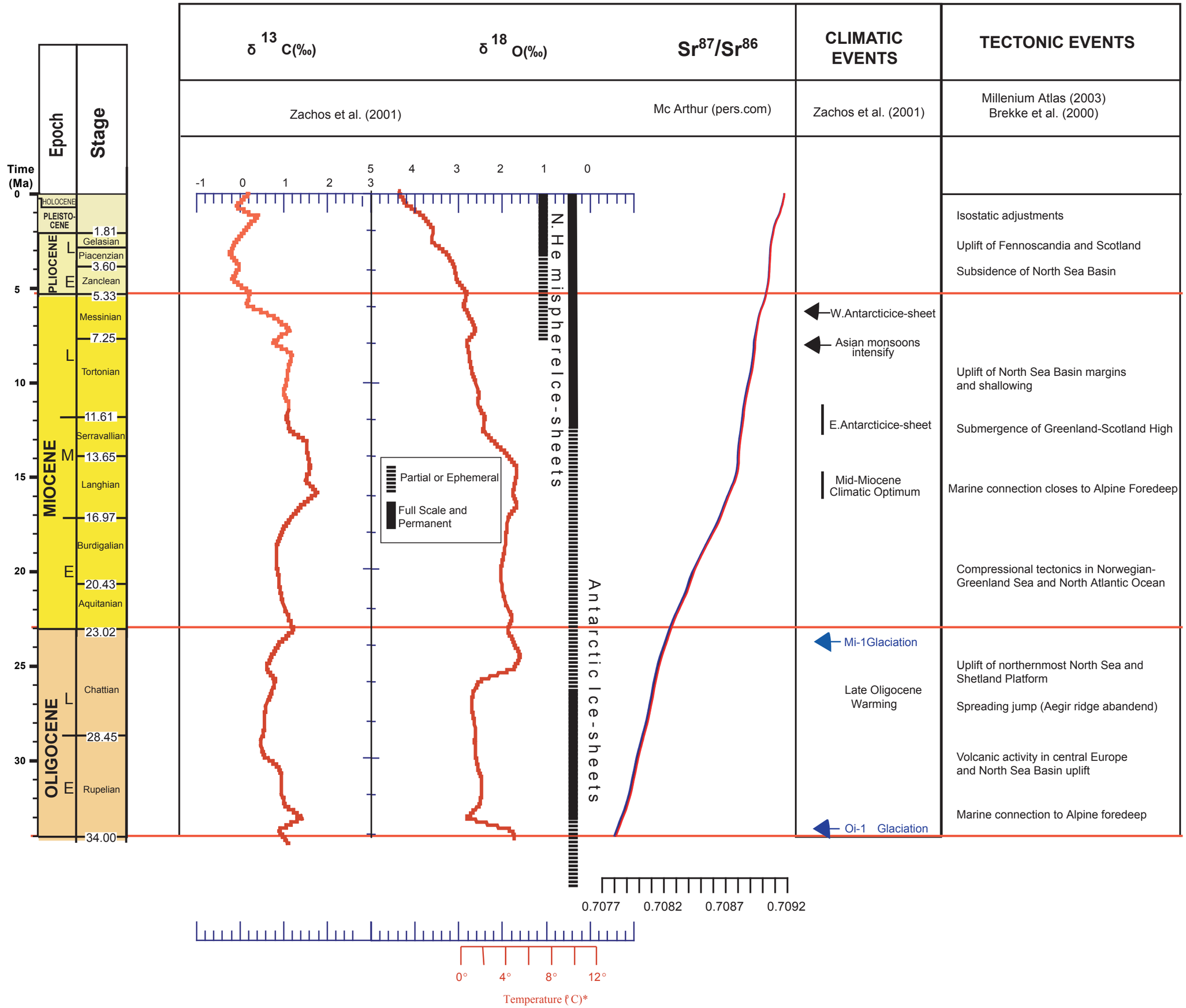
Time (Ma)
Epoch
Stage
HOLOCENE
PLEISTO-CENE
PLIOCENE
MIOCENE
OLIGOCENE
L
E
M
1.81
Gelasian
Piacenzian
3.60
Zanclean
5.33
Messinian
7.25
Tortonian
11.61
Serravallian
13.65
Langhian
16.97
Burdigalian
20.43
Aquitanian
23.02
Chattian
28.45
Rupelian
34.00
δ 13 C(‰)
Zachos et al. (2001)
δ 18 O(‰)
Sr87/Sr86
Mc Arthur (pers.com)
N. Hemisphere Ice-sheets
Antarctic Ice-sheets
Partial or Ephemeral
Full Scale and Permanent
0.7077
0.7082
0.7087
0.7092
0°
4°
8°
12°
Temperature (°C)*
CLIMATIC EVENTS
Zachos et al. (2001)
W.Antarcticice-sheet
Asian monsoons intensify
E.Antarcticice-sheet
Mid-Miocene Climatic Optimum
Mi-1Glaciation
Late Oligocene Warming
Oi-1 Glaciation
TECTONIC EVENTS
Millenium Atlas (2003)
Brekke et al. (2000)
Isostatic adjustments
Uplift of Fennoscandia and Scotland
Subsidence of North Sea Basin
Uplift of North Sea Basin margins and shallowing
Submergence of Greenland-Scotland High
Marine connection closes to Alpine Foredeep
Compressional tectonics in Norwegian-Greenland Sea and North Atlantic Ocean
Uplift of northernmost North Sea and Shetland Platform
Spreading jump (Aegir ridge abandend)
Volcanic activity in central Europe and North Sea Basin uplift
Marine connection to Alpine foredeep