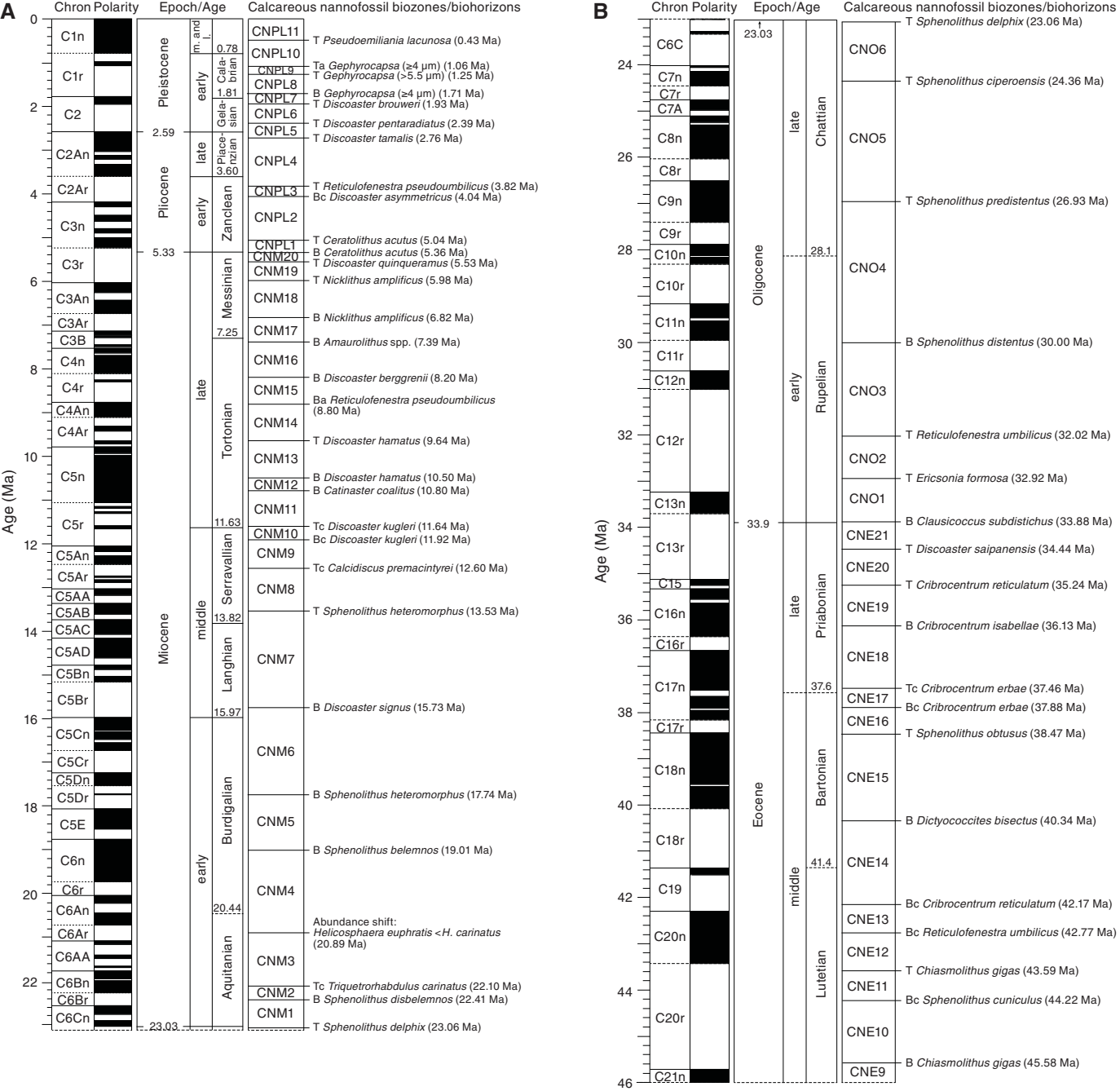
A
Chron
Polarity
Epoch/Age
Calcareous nannofossil biozones/biohorizons
Age (Ma)
C1n
C1r
C2
C2An
C2Ar
C3n
C3r
C3An
C3Ar
C3B
C4n
C4r
C4An
C4Ar
C5n
C5r
C5An
C5Ar
C5AA
C5AB
C5AC
C5AD
C5Bn
C5Br
C5Cn
C5Cr
C5Dn
C5Dr
C5E
C6n
C6r
C6An
C6Ar
C6AA
C6Bn
C6Br
C6Cn
Pleistocene
Pliocene
Miocene
m. and l.
early
late
early
late
early
middle
early
Cala-brian
Gela-sian
Piace-nzian
Zanclean
Messinian
Tortonian
Serravallian
Langhian
Burdigalian
Aquitanian
0.78
1.81
2.59
3.60
5.33
7.25
11.63
13.82
15.97
20.44
23.03
CNPL11
CNPL10
CNPL9
CNPL8
CNPL7
CNPL6
CNPL5
CNPL4
CNPL3
CNPL2
CNPL1
CNM20
CNM19
CNM18
CNM17
CNM16
CNM15
CNM14
CNM13
CNM12
CNM11
CNM10
CNM9
CNM8
CNM7
CNM6
CNM5
CNM4
CNM3
CNM2
CNM1
T Pseudoemiliania lacunosa (0.43 Ma)
Ta Gephyrocapsa (≥4 µm) (1.06 Ma)
T Gephyrocapsa (>5.5 µm) (1.25 Ma)
B Gephyrocapsa (≥4 µm) (1.71 Ma)
T Discoaster brouweri (1.93 Ma)
T Discoaster pentaradiatus (2.39 Ma)
T Discoaster tamalis (2.76 Ma)
T Reticulofenestra pseudoumbilicus (3.82 Ma)
Bc Discoaster asymmetricus (4.04 Ma)
T Ceratolithus acutus (5.04 Ma)
B Ceratolithus acutus (5.36 Ma)
T Discoaster quinqueramus (5.53 Ma)
T Nicklithus amplificus (5.98 Ma)
B Nicklithus amplificus (6.82 Ma)
B Amaurolithus spp. (7.39 Ma)
B Discoaster berggrenii (8.20 Ma)
Ba Reticulofenestra pseudoumbilicus (8.80 Ma)
T Discoaster hamatus (9.64 Ma)
B Discoaster hamatus (10.50 Ma)
B Catinaster coalitus (10.80 Ma)
Tc Discoaster kugleri (11.64 Ma)
Bc Discoaster kugleri (11.92 Ma)
Tc Calcidiscus premacintyrei (12.60 Ma)
T Sphenolithus heteromorphus (13.53 Ma)
B Discoaster signus (15.73 Ma)
B Sphenolithus heteromorphus (17.74 Ma)
B Sphenolithus belemnos (19.01 Ma)
Abundance shift:
Helicosphaera euphratis < H. carinatus
(20.89 Ma)
Tc Triquetrorhabdulus carinatus (22.10 Ma)
B Sphenolithus disbelemnos (22.41 Ma)
T Sphenolithus delphix (23.06 Ma)
B
Chron
Polarity
Epoch/Age
Calcareous nannofossil biozones/biohorizons
Age (Ma)
C6C
C7n
C7r
C7A
C8n
C8r
C9n
C9r
C10n
C10r
C11n
C11r
C12n
C12r
C13n
C13r
C15
C16n
C16r
C17n
C17r
C18n
C18r
C19
C20n
C20r
C21n
Oligocene
Eocene
late
early
late
middle
Chattian
Rupelian
Priabonian
Bartonian
Lutetian
23.03
28.1
33.9
37.6
41.4
CNO6
CNO5
CNO4
CNO3
CNO2
CNO1
CNE21
CNE20
CNE19
CNE18
CNE17
CNE16
CNE15
CNE14
CNE13
CNE12
CNE11
CNE10
CNE9
T Sphenolithus delphix (23.06 Ma)
T Sphenolithus ciperoensis (24.36 Ma)
T Sphenolithus predistentus (26.93 Ma)
B Sphenolithus distentus (30.00 Ma)
T Reticulofenestra umbilicus (32.02 Ma)
T Ericsonia formosa (32.92 Ma)
B Clausicoccus subdistichus (33.88 Ma)
T Discoaster saipanensis (34.44 Ma)
T Cribrocentrum reticulatum (35.24 Ma)
B Cribrocentrum isabellae (36.13 Ma)
Tc Cribrocentrum erbae (37.46 Ma)
Bc Cribrocentrum erbae (37.88 Ma)
T Sphenolithus obtusus (38.47 Ma)
B Dictyococcites bisectus (40.34 Ma)
Bc Cribrocentrum reticulatum (42.17 Ma)
Bc Reticulofenestra umbilicus (42.77 Ma)
T Chiasmolithus gigas (43.59 Ma)
Bc Sphenolithus cuniculus (44.22 Ma)
B Chiasmolithus gigas (45.58 Ma)