

This manuscript represents an important contribution to late Paleogene stratigraphy and chronology and should be published after some minor polishing and after addressing a few issues described below.

46 relatively ice-free warm world of the early Eocene: is there any firm proof of early Eocene continental ice? Delete "relatively".

49 Oberhänsli (you don't use Paelike)

52 delete extremely

55 of, not in the

62-63 clumsy and incorrect. Site 1218 represents one record, not several.

68 delete e.g.

69 low, not lower

70 sparser biostratigraphic control in the carbonate-poor interval.

77-78 ... of carbonate in middle to late Eocene ....allows tests and ...

79 delete e.g.

83 delete and

84 chrons, not Chrons

85 this study, not our

87 rewrite and delete we generated

91+93+98+102+ EVERYWHERE: delete "we" and rewrite

102 what a clumsy way to say it. rmc is the same as CCCSF-A. Most readers will be confused by "revised CCSF-A". Why don't you just say that you have replaced the shipboard CCCSF-A with "rmc", in order to avoid the long and awkward "rmc (revised CCSF-A)"?

139 ...1369 freeze-dried powered bulk...

202 spell out EOT; unclear if the E/O boundary, defined by the top of Hantkenina, has been observed where you place the EOT (cycles 84-85, see line 281). A comment about this would be useful.

230-231 al., not al,

265 S4, not S3

Figure 4 caption, explain blue line

288 Interesting to notice that lower bulk 13C corresponds to enhanced Si accumulation/preservation, which to some readers would seem counter-intuitive as lower bulk 13C may suggest lower photic zone productivity. Does lower bulk 13C implies increased carbonate dissolution at depth (causing the Si maxima)? A comment about this would be useful.

297 you must mean 88-89, not 85

305 lower bulk 13C corresponds to decreased Si and increased Ca; please address again the productivity/dissolution issue.

308 delete m revised CCSF-A

314 C16n, not C16

317 prominent 2.4 myr long eccentricity cycles (avoid the lazy "very")

321 in the 2.4 myr-long

366 delete very

377 Lourens reference is incorrect, also in the reference list

380 in the 2.4 myr-long (avoid the lazy "very")

383 spell out ETP; rewrite so as to get rid of "we"

386 delete very in both places

387-88-90 get rid of we

402 Here, the focus...

409 This new  
410-11 Based on the ... confident that the data set (all the personal boasting in this manuscript strongly uglifies the text)  
413 get rid of us and We (GO THROUGH THE ENTIRE TEXT AND GET RID OF ALL THE US-WE-OUR CRAP)  
418-22 Important sentence. Would be useful if you explained your 20 kyrs younger age relative to Brown's astronomical tuning from Massignano. Again, it would also be useful, and much appreciated by many, if you could address the Hantkenina issue: "The GSSP is at the base of a greenish grey marl bed 0.5 m thick. At this level, both the planktonic foraminifera Hantkenina and Cribrohantkenina, Eocene genera of the Hantkeninidae, become extinct." Episodes September 1993  
So, does the Hantkenina extinction fall precisely at the layer which you have dated to 33.89 Ma in any of the PEAT sites? If so, great, everyone will be happy. And you should add a statement to that effect. If not, you should address/discuss the difference/problem between Massignano and the PEAT sites.  
Furthermore, Pearson et al. (Geology 2008) placed the Hantkenina extinction on the 18O plateau from Tanzania (and Site 522), just after 18O step 1. Same 18O position of the E/O boundary in the PEAT sites?  
472 delete see  
475-76 delete the crap in front of the reference  
490 explain 33 in C21n.33, perhaps in a footnote  
516 with the 2.4 myr-long  
527 the 2.4 myr-long  
532 Pearson  
535 ice buildup at the poles; Arctic ice known is sea-ice. Perhaps: ephemeral ice buildup on Antarctica causing a sea level fall (ref) and cooling and seasonal sea-ice formation in the Arctic.  
540 A new stratigraphic framework has been assembled based on...  
551 in the equatorial Pacific. delete second half of sentence.  
558 middle, not mid  
559 the 2.4 myr-long eccentricity