Cyclostratigraphy Newsletter, June 2024

Hello and welcome to Cyclostratigraphy Newsletter number 11,

This newsletter includes news on the TIMES initiative, the cyclostratigraphy.org website, research opportunities, conferences and publications.
You are very much invited to get in touch if you have news, publications, job opportunities or events that you would like to see included in the next newsletter.
Best wishes,

Sietske Batenburg, sbatenburg@ub.edu

1. TIMES

A new initiative is launched to establish and coordinate a new international network to synchronize age models of scientific ocean drill cores and outcrops spanning the last 100 million years; the Time Integrated Matrix for Earth Sciences – **TIMES**.

A message from the initiator, Thomas Westerhold:

“Regional changes are becoming critically important if we want to understand climate change and contribute to better estimate future warming. Disentangling the behavior of the climate system regionally, requires quantification and differentiation of all of the involved processes. This can only be achieved when geological data are synchronized in time on Milankovitch cycle level, through very precise and accurate age models. The ability to synchronize regional records across the globe has become critical as climate models and regional climate reconstruction reached a level where the timing of the records is essential.

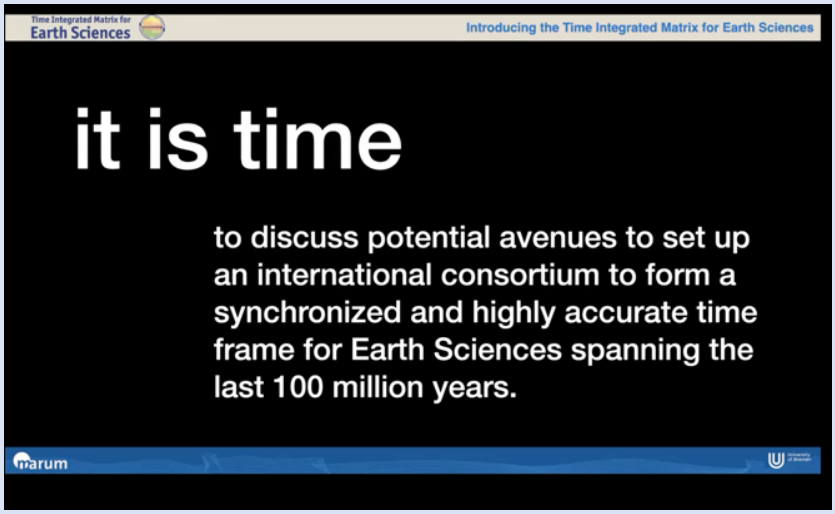


Fig 1. Screenshot from the informative meeting introducing the TIMES initiative

We need an international, well-coordinated effort to revise and recalibrate biostratigraphy, magnetostratigraphy, chemostratigraphy and radioisotopic dating using the synchronization tool of astrochronology. Synthesizing climate proxy data with orbital and sub-orbital scale resolution to enable regional and global syntheses of spatial and temporal climate variability for the last 100 million years requires this action. Cross-pollination of expertise is required to adopt new age models to existing sites with key climate proxy archives.

Approaches to overcoming existing conflicts, supporting ECRs, and community building are needed to ensure longevity of efforts. Therefore, we propose to build an internationally coordinated Time Integrated Matrix for Earth Sciences (TIMES) program. Several initiatives already exist, and smaller groups started to revisit drill sites already (Miocene ODP 704B just this week by a Magellan Workshop at MARUM) improving age models. However I think there is a need to link these efforts and support them by building a overarching well coordinate framework starting in 2025, operating for 10 years, and leading to a final synchronized age model for key proxy records in 2035."

Do you want to stay informed about the initiative? Contact Thomas Westerhold to be included on the mailing list for the TIMES effort: twesterhold@marum.de.

2. Cyclostratigraphy website

The information on the cyclostratigraphy.org website keeps expanding!

The teaching materials now contain three lectures on cyclostratigraphy.

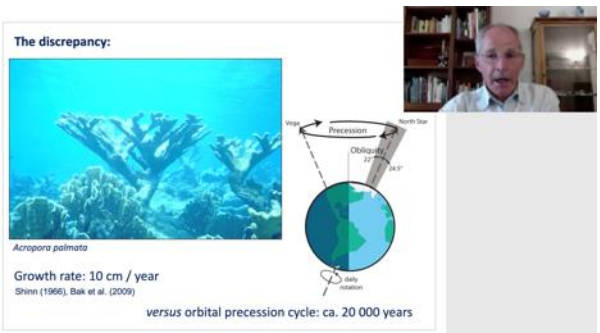


Fig 2. Screenshot from the 2nd lecture

In the second lecture, André Strasser, an expert in shallow-marine tropical to sub-tropical carbonate systems, talks about *Orbital cycles and time-distribution in shallow-marine sequences*.

In the latest lecture, Graham Weedon, an expert in power spectra and associated statistical tests, discusses *Avoiding false detection of regular cyclicity: Updating the methods for locating confidence levels on power spectra*.

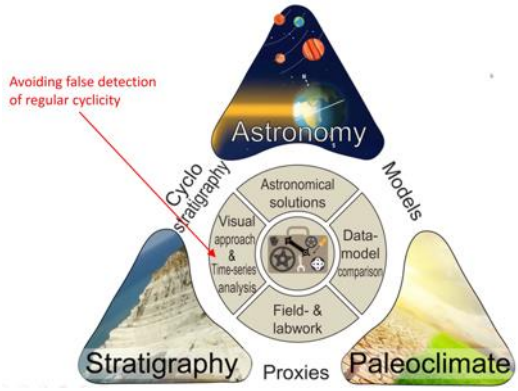
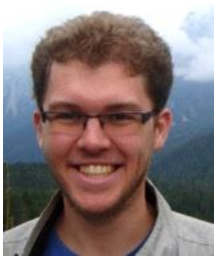


Fig 3. Position of the 3rd lecture

The first CycloPod podcast of 2024 is a live episode with Pierre Josso, from the BGS at Keyworth, and Tim van Peer, from the University of Leicester. Tune in to hear about their exploits investigating the origins and implications of Milankovitch cyclicity in the Pb-isotope data from an Atlantic deep-sea iron manganese nodule from offshore West Africa (Josso et al., 2021, EPSL).



3. Conferences and workshops

The second workshop for the Cyclostratigraphy Intercomparison Project, CIP2.0, will take place from 8 to 10 July 2024 in Brussels, Belgium. Registration is full.

The International Association of Sedimentologists IAS Conference 2024 will take place in Aberdeen from 25 – 27 June 2024. Registration is possible on-line or on-site.

Goldschmidt2024, in Chicago from 18 to 23 August, will have several contribution touching on topics related to cyclostratigraphy, including monsoon dynamics using triple oxygen isotopes, black carbon, or lipid biomarkers, the origin of the moon, and the influence of astronomical parameters on temperatures and nutrient cycling (nitrogen, phosphorous) and on the habitability of Earth-like planets. Early registration is open until 1 July.

The XI Baltic Stratigraphical Conference will take place from August 19–21 in Tartu and Arbavere, Estonia, with a fieldtrip focused on Ordovician-Silurian carbonate deposition from 22–25 August. Contact the organisers for late registration.

GSA Connects 2024 will take place in Anaheim, California, USA, from 22–25 September. There will be sessions on the Mesozoic Earth System and Timescale (T2), Dating the Quaternary (T35), Oceans and Climates through earth History(T119), a Cushman Foundation Symposium (T120), and much more. The deadline for abstracts is 18 June.

The 37th International Geological Congress IGC2024 will take place from 25 to 30 August 2024 in Busan, Republic of Korea.

AGU24, the annual meeting of the American Geophysical Union, is scheduled for 9–13 December in Washington, D.C., USA.
Abstract submission will open soon, and submissions are accepted until 31 July.

3. Research opportunities

Durham University is looking for a PhD candidate to research the climatic change on the Greenland Ice Sheet over the Late Cenozoic. Application deadline is 30 June.

Applications are open for NASA Postdoctoral Fellowships in the USA until 1 July.

A postdoctoral position in Ocean, Atmosphere, and Climate Dynamics is available at Yale University. General fields of research include ocean and atmosphere circulation, ocean-atmosphere interactions, the ocean's role in climate, climate variability and change.

The University of Aarhus is recruiting a Professor in Sedimentology and Stratigraphy, working on palaeoenvironmental/palaeoclimatic reconstructions to better understand the dynamics and temporal aspects of the Earth's surface evolution. The application deadline is 1 July.

The University of Tokyo in Japan is looking for a Full Professor Position in Earth and Planetary Sciences. The application deadline is 30 August.

The Scripps Institution for Oceanography in San Diego, USA, is inviting applications for the position of Assistant Professor in Paleomagnetism/Marine Geophysics, until 31 December.

4. Publications

A special publication in Cretaceous Research will focus on **Proceedings in the astrochronology of the Cretaceous**. A message from the guest editors:

Dear colleagues,

Mathieu Martinez, Sietske Batenburg and Chao Ma propose to organize a special volume dedicated to the Proceedings in the astrochronology of the Cretaceous. The objective of this special volume is to gather recent developments in astrochonology of the Cretaceous with the ultimate aim of providing a **consistent astronomical time scale for the whole of the Cretaceous**. This tuned time scale (with remaining challenges identified) would be a joint effort of all authors contributing to the special volume.

We warmly welcome your manuscripts before 15 December 2024 and are grateful for your contributions. For details, please contact M. Martinez, mathieu.martinez@univ-rennes.fr.

Sincerely,

Mathieu Martinez (University of Rennes, France)
Sietske Batenburg (University of Barcelona, Spain)
Chao Ma (Chengdu University of Technology, China)

A selection of recent papers in the field of cyclostratigraphy and orbital forcing:

Laskar J., Farhat M., Lantink M.L., Auclair-Desrotour P., Boué G., and Sinnesael M. (2024): Did atmospheric thermal tides cause a daylength locking in the Precambrian? A review on recent results. Sedimentologika, v. 2(1), 1-15.

Leu, K., Zeeden, C., Ulfers, A., Abadi, M.S., Vinnepand, M., Ruhl, M., Hesselbo, S. and Wonik, T., 2024. Astronomical calibration of the Early Jurassic Sinemurian Stage based on cyclostratigraphic studies of downhole logging data in the Prees 2 borehole (Cheshire Basin, UK). Newsletters on Stratigraphy.

Lucas, J.R., Batenburg, S.J., Hillegonds, D.J., Mabry, J.C., Jenkyns, H.C., Ballentine, C.J. and Robinson, S.A., 2024. Helium-isotope constraints on palaeoceanographic change and sedimentation rates during precession cycles (Cenomanian Scaglia Bianca Formation, central Italy). Sedimentology. https://doi.org/10.1111/sed.13197

Martínez-Braceras, N., Payros, A., Dinarès-Turell, J., Rosales, I., Arostegi, J. and Silva-Casal, R., 2024. Orbitally forced environmental changes during the accumulation of a Pliensbachian (Lower Jurassic) black shale in northern Iberia. Climate of the Past Discussions, 2024, pp.1-44.

Zeebe, R. E. and Lantink, M. L. A secular solar system resonance that disrupts the dominant cycle in Earth's orbital eccentricity (g2-g5): Implications for astrochronology. The Astronomical Journal, 2024.

Zeebe, R.E. and Lantink, M.L., 2024. Milanković forcing in deep time. Paleoceanography and Paleoclimatology, 39(5), p.e2024PA004861.

A selection of articles will be included in the next newsletter. If you would you like to see your work included in a future newsletter, or if you want to share other news, get in touch.

Feel free and encouraged to distribute this newsletter further. If you know of conferences, workshops, job opportunities, or if you would like to share other news related to cyclostratigraphy, please do not hesitate to email. Subscribe or unsubscribe from this newsletter by writing to sbatenburg@ub.edu. The newsletter will be available for download on www.cyclostratigraphy.org.