



Business meeting of the

INTERNATIONAL SUBCOMMISSION ON CRETACEOUS STRATIGRAPHY

<https://cretaceous.stratigraphy.org/>

at the STRATI 2026 conference in Suzhou, China

Tuesday 30 June 2026, 17.00–18.30

Kunshan Crown International Exhibition Hotel Room 776

Officers

Chair: Ian Jarvis: Kingston University London, UK. E-mail: ian.jarvis@kingston.ac.uk

Vice-Chair: Francesca Falzoni, Consiglio Nazionale delle Ricerche, Milano, Italy. E-mail: francesca.falzoni@cnr.it

Secretary: Zofia Dubicka, University of Warsaw, Poland. E-mail: z.dubicka@uw.edu.pl

AGENDA

1. Welcome by the Chair Ian Jarvis

2. SCS Membership (*I. Jarvis*)

Introduction of new voting members for the term 2026–2030

3. Valanginian GSSP Golden Spike Ceremony

Update on preparation for the Valanginian GSSP Ceremony (autumn 2027) (*I. Jarvis*)

4. News on the Valanginian, Hauterivian and Albian GSSPs (*I. Jarvis*)

Protection and application for authorization to collect samples

5. Cretaceous SABS - Standard Auxiliary Boundary Stratotype (*I. Jarvis*)

6. Updates on the activities of the Working Groups

6.1. Berriasian WG (*J. Grabowski*)

6.2. Maastrichtian WG (*S. Voigt*)

7. Any other business (*I. Jarvis*)

7.1. Access Issues at the Cenomanian GSSP (Mont Risou, southern France)

7.2. Proposal for the Aptian GSSP at Cau (Spain)

Participants:

Officers: Ian Jarvis (*Chair*), Francesca Falzoni (*Vice-Chair, on-line*), Zofia Dubicka (*Secretary, on-line*)

Voting and Corresponding Members: Sietske Batenburg (Utrecht University; on-line), James Crampton (The Herenga Waka Victoria University of Wellington; on-line), Delphine Desmares (Sorbonne Université, Paris; on-line), Bruno Granier (Univ. Brest; on-line), Takashi Hasegawa (Kanazawa University), Maria Rose Petrizzo (University of Milan), Shin-Ichi Sano (University of Toyama), Reishi Takashima (Tohoku University Museum), Michael Wagreich (University of Vienna; on-line), Markus Wilmsen (Senckenberg Naturhistorische Sammlungen, Dresden; on-line), Erik Wolfgring (University of Vienna, Austria); Dangpeng Xi (China University of Geosciences).

Chairs of the WGs: Jacek Grabowski (Polish Geological Institute, National Research Institute; on-line),

Opening at 05:00 PM (Beijing/Shanghai Time)

1. Welcome of the Chair Ian Jarvis

2. SCS Membership (*I. Jarvis*)

- The Chair presented the new Voting Members of the Cretaceous Subcommission for the term 2026–2030: Gianluca Frija (Università degli Studi di Ferrara, Italy), Agata Jurkowska (AGH University of Kraków), Ottilia Szives (Geological Survey, Budapest, Hungary), Erik Wolfgring (University of Vienna, Austria)

3. Valanginian GSSP Golden Spike Ceremony (*I. Jarvis*)

- Update on preparation for the Valanginian GSSP Ceremony (autumn 2027)

The Valanginian GSSP (Vergol section, France) was ratified by the IUGS in December 2024. The official paper on the Valanginian GSSP by Reboulet et al. (2025) is now published in Episodes and available online <https://www.episodes.org/journal/view.html?volume=48&number=4&spage=479&vmd=Full>

The golden spike ceremony for the Valanginian GSSP, which was originally scheduled for mid-2026, has not yet taken place. The infrastructure development of the Vergol section and public access to the site are still under discussion within the municipality of Montbrun-les-Bains, the department of Drôme, and the Baronnies Provençales Regional Nature Park. Funding for this development (including the design, manufacture, and installation of signs and media, the construction of stone walls, and the creation of parking spaces) is proving challenging due to French government budget cuts.

4. News on the Valanginian, Hauterivian and Albian GSSPs (*I. Jarvis*)

- Protection and application for authorization to collect samples

In an effort to protect and monitor the GSSPs located in the Department of Drôme, southeastern France, local authorities have introduced a new protective procedure. While access for scientific study and the collection of rock and fossil samples remains open to the international scientific community, it is now mandatory to submit an application and obtain official authorization prior to the visit. The application must be submitted at least 4–6 months in advance. This permission must be granted by the Drôme Department and the Baronnies Provençales Regional Nature Park. The application form is available on the Cretaceous Subcommittee website at <https://cretaceous.stratigraphy.org/news/authorization%20GSSPs>

5. Cretaceous SABS - Standard Auxiliary Boundary Stratotype (*I. Jarvis*)

- Background

SABS were approved in 2022 by the ICS as a formal replacement for the Auxiliary Stratotype Point to support GSSPs (Head et al., 2023, *Episodes*). SABS provide a detailed, complementary expression of the boundary interval without designating a specific point. More than one SABS may support a single GSSP and will be subordinate to that GSSP. SABS are very useful to extend the correlation potential of a GSSP between continents, marine and non-marine sections, palaeobiogeographic provinces, climatic zones, depositional facies, and a variety of preservation states.

- Current Cretaceous SABS

For more recently designated GSSPs, - SABS have been proposed which provide supplementary information and improve the use of GSSPs for international correlations.

Campanian GSSP: Bottaccione (Gubbio, Italy) (Gale et al., 2023)

<https://doi.org/10.18814/epiiugs/2022/022048>

SABS: Seaford Head (England), Bocieniec (Poland), Postalm (Austria), Smoky Hill, Kansas (USA), Tepeyac (Mexico).

Coniacian GSSP: Salzgitter-Salder (Germany) (Walaszczyk et al., 2022)

<https://doi.org/10.18814/epiiugs/2022/022048>

SABS: Słupia Nadbrzeżna (Poland), Střeleč (Czech Republic), El Rosario (Mexico).

Valanginian GSSP: Vergol (SE France) (Reboullet et al., 2025)

<https://doi.org/10.18814/epiiugs/2025/025028>

SABS: Cañada Luenga (Spain).

- Future Outlook and Call for Proposals

There is certainly room to re-study older GSSPs and to designate new SABS over the coming years. There is a specific scope for non-marine SABS, as there are currently no non-marine Cretaceous GSSPs or SABS. Therefore, if anyone has specific ideas targeting specific stratigraphic intervals or geographic areas with potential SABS to propose, the SCS stands ready to establish dedicated working groups to evaluate these proposals and oversee their designation.

- **Ratification Process of SABS**

From a procedural standpoint, the SABS framework offers a significantly streamlined pathway:

- SABS do not require the formal ratification system of the International Union of Geological Sciences (IUGS).
- They are reviewed and ratified directly at the Subcommission level.
- While they require a documentation package similar in rigor to a GSSP, the overall approval process is substantially shorter and simpler.

6. Updates on the activities of the Working Groups

6.1. Berriasian Working Group (*Jacek Grabowski*)

- a) A special issue of the journal *Cretaceous Research* titled “*Jurassic-Cretaceous boundary interval: global correlation and palaeoenvironmental background*”, managed by guest editors: J. Grabowski (Poland) and K. Stoykova (Bulgaria), and Editor-In-Chief of the CR journal M.R. Petrizzo, was launched in October 2024, featuring 9 accepted manuscripts and 7 currently under review, all of which present critical data concerning this stratigraphic interval.
 - b) Progress on the definition and global correlation of the Jurassic/Cretaceous boundary – Berriasian Working Group
- The Berriasian Working Group (BWG) abandons the classic boundary definition based on the *Calpionella alpina* subzone; this event is no longer regarded as a primary marker. The *Calpionella alpina* Event was classically defined by an increase in the relative abundance of small, spherical specimens of *C. alpina*. However, this event is not suitable as a primary marker for several reasons:
 - (1) The base of the *C. alpina* Subzone cannot be verified on traditional range charts.
 - (2) The identification is highly subjective; when studied by different specialists, the *Alpina* Event in the same section is not always placed at the same stratigraphic level. For instance, in the Brodno section (Slovakia), this event has been placed at four different stratigraphic levels depending on the authors. In addition, three 'explosions' of small *C. alpina* have been recorded in a recent study of the Brodno section (Grabowski et al., in review). Furthermore, the morphological transition exhibits a noisy character
 - (3) The internal structure of the *Alpina* Event is poorly recognized, with only two to three fully quantitative studies published in the last 30 years.

(4) Although the calpionellid assemblages in the upper part of the *Crassicollaria* Zone and the lower part of the *Calpionella* Zone are theoretically distinct, high-resolution analyses show that establishing the zonal (J/K) boundary is difficult without detailed quantitative data.

(5) The subzonal division in the underlying *Crassicollaria* Zone is not standardized; in particular, the uppermost *Crassicollaria colomi* Subzone requires revision or potentially even cancellation.

Overall, the base of the *C. alpina* Subzone is difficult to locate precisely (on a bed-by-bed basis) even in well-studied, calpionellid-rich sections.

Consequently, this stratigraphic level does not meet the strict criteria required for a primary marker of a system boundary.

(6) Decision on the primary marker is not yet made.

- Most BWG members agree on shifting the boundary downward into the classically defined Tithonian stage, within the *Crassicollaria* calpionellid Zone.
- One of the proxies for the new position of the J/K boundary might be located between magnetochron M20n1r and the base of M19r, which is placed within the present-day upper Tithonian. There are many bioevents within this interval recognized such as: FO of *C. grandalpina* (calpionellid), FO of *P. andreaei* (Tethyan ammonite), FO of *S. proxima* (c-dinocyst), FO of *N. globulus minor* (calcareous nannofossil, base of NJT17 Zone). This interval broadly correlates with middle and upper Volgian and with American ammonites. The primary markers are not yet selected. There are good candidates among calpionellids, calcareous nannos, ammonites or magnetostratigraphic markers.
- The working group successfully correlated Tethyan calpionellid, calcareous dinocyst, calcareous nannoplankton, ammonite, belemnite, and radiolarian zones, alongside climatic variations, sea-level changes, and magnetozones, while also establishing a robust correlation between Tethyan and Boreal stages (Grabowski et al., 2026; *Cretaceous Research*). Additionally, buchiid bivalves (Rogov et al., 2024) and tectonostratigraphic megasequences (TMS1–TMS3) (Verreussel et al., 2018) may provide important supra-regional correlative value.
- The new J/K boundary in the Boreal domain is approximated to the middle/upper Volgian boundary. Correlation with the Volgian stage relies primarily on magnetostratigraphy. Unfortunately, there is only one site with reliable published magnetostratigraphy – Nordvik section (Northern Siberia). In Russia, the potential new J/K boundary placed between magnetochron M20n1r and M19r additionally correlates with the disappearance of Dorsoplanitidae ammonites. These ammonite events can be easily correlated between European part of Russia, Siberia, Greenland, and Spitsbergen,
- Correlation with Sub-Boreal sections (southern England) utilizes ammonites, organic-walled dinoflagellate cysts (dinocysts), radiolarians, and sequence stratigraphy.
- The position of the J/K boundary in South America (Neuquén Basin) should be traced along the base or within the lower part of the *Corongoceras alternans* ammonite Zone. The section has a big advantage of being calibrated radiometrically which is not the case in the Western Tethys.
- The current GSSP candidates include the Torre de' Busi section (Lombardian Basin, Italy) and the Bosso section (central Apennines, Italy).

In the Torre de' Busi section, several paleoecological events and trends have been recorded, including an increase in calpionellid abundance, a decrease in radiolarians, and a shift in calcareous nannofossil assemblages from *Polycostella–Conusphaera* to *Nannoconus*-

dominated assemblages. The integrated stratigraphic record in the Torre de Busi section is advanced, however as the calpionellid preservation state is rather poor, the BWG seriously considers the Bosso section.

The Bosso section (central Apennines) still requires some important stratigraphic revisions (calpionellids, calcareous dinocysts and nannofossil), and additional orbital stratigraphic study. These activities are scheduled for 2026–27.

6.2. Maastrichtian Working Group (*Silke Voigt*)

- Ratified in 2001, the GSSP section at Tercis (SW France) was defined using the arithmetic mean of 12 biostratigraphic criteria rather than a single primary marker. Despite its known problems with microfossil preservation and diagenesis, Tercis serves as an excellent intermediate section that enables high-resolution carbon isotope correlation between the boreal chalk sea and Tethyan sections.

- Recent Progress in the Stratigraphic Correlation of the Tercis GSSP

During the past year, members of the Maastrichtian WG focused primarily on the coherence of stratigraphic data interpretation. At Tercis, WG members developed a robust interpretation scheme for the newly highly resolved carbonate carbon isotope ($\delta^{13}\text{C}_{\text{carb}}$) curve (Voigt et al., in prep). Detailed features of the CMBE (Campanian–Maastrichtian Boundary Event) carbon isotope excursion have been revised and can be reliably correlated with:

- 1) the palaeomagnetic Chron boundaries at Gubbio, Italy and Sopela, Spain; accordingly, the base of Chron C31r is within carbon isotope event CMBE-4 and can be projected to Tercis with an uncertainty of ± 2 m,
- 2) Boreal chalk sections, particularly the extended Stevns-1 core allowing for the integration of the boreal nannofossil zonation, and indirectly also for macrofossil zonation (ammonites, belemnites),
- 3) a new $\delta^{13}\text{C}_{\text{carb}}$ record for the Vistula section, Poland (Walaszczyk et al. in prep.), which enables the integration of inoceramid and belemnite zonation, and to
- 4) the astrochronology of the Basque–Cantabrian Basin utilizing new $\delta^{13}\text{C}_{\text{carb}}$ data from Sopela, Spain and Bidart, France (Batenburg et al. 2013, 2014, and in prep.)

A second key result is the identification of early Maastrichtian cyclicity at Tercis, based on time-series analysis of XRF-derived elemental abundances, which suggests a dominance of obliquity (Thibault, in Voigt et al., in prep.).

Third, A. Bornemann (in Voigt et al., in prep.) refined the top occurrences of the calcareous nannofossils *Ukiplanarius gothicus* and *Ukiplanarius trifidus* at 126.2 m, a position that falls within the uncertainty range of previous studies. The top of *U. trifidus* lies within CMBE-4.

- The primary marker candidates

Based on the present state of research, the WG identified three horizons at Tercis with the potential for a primary marker definition:

-Level 3 at 126.2 m (all heights according to the scale of Voigt et al. 2012)

The primary marker is the highest occurrence of the calcareous nannofossil *Uniplanarius trifidus* located within the midst of the CMBE-4 carbon isotope event. Secondary markers are the base of Chron C31r immediately above the HO of *U. trifidus* and the CMBE-4 $\delta^{13}\text{C}$ -maximum.

-Level 2 at 107.8 m

-The primary marker is the top of CMBE-2, which marks the end of the negative CMBE carbon isotope excursion. This level corresponds to the present Boreal CMB definition (Niebuhr et al. 2011). Secondary markers are the shift towards the *Endocostea* inoceramid lineage with the LO of *Endocostea typica*, the LO of the ammonite *P. neubergicus*, the LO of the belemnite *Belemnella obtusa* and the HO of the dinocyst *R. evittigratia*.

-Level 1 at 102.8 m

Primary marker is the $\delta^{13}\text{C}_{\text{carb}}$ minimum within CMBE-2. The level corresponds almost to the present GSSP level. Secondary markers are the LO of the inoceramid *E. typica*, the LO of the ammonite *P. neubergicus*, the appearance of the calcareous nannofossil *A. cymbiformis* var. N, the LO of the dinocyst *G. expansa*, and the HO of the dinocyst *R. truncigerum*.

- Potential Maastrichtian SABS

The successions of the Contessa Highway section, the Stevns-1 core, the Kronsmoor section and the Vistula section are useful supplementary sites to support the definition of a primary marker.

- Planned Activities for the Near Future

A new field trip is planned to Tercis by I. Walaszczyk in September 2026 to reassess the record of inoceramids. The inoceramids are, with the turnover towards the *Endocostea* lineage (LO *Endocostea typica*), a useful biostratigraphic marker to synchronize Campanian–Maastrichtian sections in Europe and North America.

The new results will be summarized in a set of publications, dealing with the new carbon isotope stratigraphy and cyclostratigraphy at Tercis (Voigt et al. in prep), the astrochronological correlation between sections around the Bay of Biscay (Zumaia, Sopela, Bidart) and Tercis (Batenburg et al. in prep.) and the integrated stratigraphy of the Vistula section (Walaszczyk et al. in prep.).

7. Any other business (*I. Jarvis*)

7.1. Access Issues at the Cenomanian GSSP (Mont Risou, southern France)

Access to the Cenomanian GSSP in southern France (Mont Risou, east of Rosans, Hautes-Alpes) remains restricted because it is situated on private property. At the time of ratification, the land

ownership and boundary status were not fully understood. To address this issue, Stéphane Reboulet is currently collaborating with local authorities to resolve the access restrictions to the outcrop.

7.2. Proposal for the Aptian GSSP at Cau (Spain)

Progress has been made on processing the Aptian GSSP at the Cau section (Spain). The Aptian GSSP proposal, prepared by the Aptian WG, was distributed to all SCS members for discussion. Following comments and feedback, it was returned to the authors. The updated and revised version will soon be circulated to all voting members of the SCS for voting.

No additional items were raised.

Closure at 18:15 (Beijing/Shanghai Time)