were magnetite and closely related minerals, but some samples from member 2 are characterized by presence of iron hydroxydes. In the studied section different lithologies are characterized by different NRM and K values. AMS of samples from the Member 2 (beds E2-E9) is characterized by nearly equal distribution of K1 axis suggesting weak hydrodynamics with only a little influence of bottom currents from NW to SE, but some samples are showing anomalous distribution of axis suggesting active hydrodynamics. Palaeomagnetic data are relatively poor, as in other strongly condensed successions. As follow from Zijderveld diagrams, nearly all samples are characterized by presence of low coercitivity remanent magnetization and characteristic remanent magnetization (ChRM); the latter was used for determination of magnetic polarity. ChRM was recognized in 7 samples only, but even such a preliminary data permits to recognize succession of magnetic polarity zones, which could be correlated with the both Nordvik succession and Standard succession. Two reverse polarity zones, which are corresponding to lower part of the middle Volgian Nikitini Zone and upper Fulgens to Catenulatum upper Volgian zones could be ascribed to M20r and M19r respectively. These results fit well with biostratigraphic correlation of Eganovo and Nodrvik successions.

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33. Interhemispheric time scale for the Hauterivian and its implications for the carbon cycle in the Berriasian-Barremian times

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Discrepancies in the ages and durations of the Berriasian to Barremian stages still exist between geological data and the proposed geological time scale 2016 (OGG *et al.*, 2016; LENA *et al.*, 2018). The Hauterivian Stage suffers from these discrepancies as its duration is proposed at 3.92 myr (OGG *et al.*, 2016), while astrochronology in the Tethysian area (SE France and SE Spain) led to a duration of 5.9 ± 0.4 myr (MARTINEZ *et al.*, 2015). In order to reconcile these durations, we investigated the Agrio Formation in the Neuquén Basin (Argentina). A total of 2,200 samples were collected every 0.25 cm and measured in magnetic susceptibility with a Kappabridge KLY-2. From spectral analyses realised on these MS signals, it appears that the 100-kyr eccentricity is continuously recorded throughout the Agrio Formation, allowing duration calculations. In addition, a new U-Pb age measured on zircons was provided in the upper part of the Agrio Formation using the CA-ID-TIMS method. Thus, four U-Pb ages are now available in

the Agrio Formation measured with the U-Pb CA-ID-TIMS (AGUIRRE-URRETA *et al.*, 2015, 2017). Notably, the astrochronological durations fit with three of the U-Pb ages. A fourth age appears 300 kyr elder than suggested by astrochronology, which may be due to protracted crystallization of zircons in the magmatic chamber. This new data in the Agrio Formation, together with correlations to the Tethysian area, highlights a revision to the duration of the Hauterivian Stage of 5.22 ± 0.11 myr starting at 131.29 ± 0.25 Ma and ending at 126.07 ± 0.25 Ma. The previous overestimate of the duration of the Hauterivian Stage was likely due to distortion of the 405-kyr eccentricity in the sedimentary record, as recent studies document (LAURIN *et al.*, 2017; MARTINEZ, 2018). Thanks to these revised ages and previous astsochronological frameworks, we were able to revise the ages and durations of stages from the late Berriasian to the Barremian-Aptian boundary. A synthesis of $\delta^{13}C$ measured on belemnites (MARTINEZ & DERA, 2015) indicate a clear 2.4-myr cycle in the carbon cycle record which fit with the main paleoceanographic events. Higher amplitudes of this cycle are notably observed during major volcanic episodes, suggesting that acceleration of the hydraulic cycle lead to a reinforcement of the long-MILANKOVITCH cycles.

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34. Early Cretaceous neritic carbonate community and facies response to palaeonvironmental and sea-level changes: New evidences from the Apennine carbonate platform of southern Italy

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The early Cretaceous marine sedimentary record is punctuated by several crises of carbonate production and perturbations of the global carbon cycle (WEISSERT & ERBA 2004; FÖLLMI & GODET 2013). The earliest of these crises occurred during the Valanginian period. In the northern Tethysian domain, this crisis entailed the demise of carbonate platforms and major changes in carbonate producer communities. High trophic conditions are mirrored by the shift to an heterozoan neritic community that started close to the Berriasian/Valanginian boundary and persisted up to the early Barremian. Fossil assemblages, combined with lithofacies characteristics, are here used to reconstruct the Valanginian-Barremian palaeoenvironmental history of the San Lorenzello section, belonging to the Apennine Carbonate Platform (APC) of southern Italy. Unlike coeval northern Tethysian carbonate platforms, this platform did not record any drowning event during the Valanginian-Barremian. However, it responded to palaeoenvironmental perturbations by biofacies changes that are here investigated.