**Partial differentiation of the CV parent body supported by the paleomagnetic study of 21 CV3 meteorites**

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Based chiefly on the paleomagnetic record of Allende [1] and Kaba [2] CV3 meteorites, as well as modeling [3], it has been proposed that the CV parent body may be partially differentiated, with a chondritic shell overlying a differentiated interior [1, 2, 3]. However, this paradigm shift has raised a number of concerns, particularly about the interpretation and significance of the paleomagnetic data [4, 5, 6].

We present here new paleomagnetic data obtained on 21 CV3 meteorites from the ANSMET collection. The parent body thermal metamorphism of the same meteorites was investigated using Raman spectroscopy [7]. For each meteorite, at least one sample was studied using alternating field demagnetization and associated paleointensity techniques. On a selection of meteorites we used thermal demagnetization and associated paleointensity techniques. Both methods show that most studied samples possess a stable paleomagnetic record.

Overall, this paleomagnetic study points to the presence of a stable magnetic field of several µT during cooling of the CV parent body following the peak of thermal metamorphism, supporting the interpretation of paleomagnetic data obtained on Allende [1] and Kaba [2]. The best explanation for such a strong field is the existence of a metallic core generating a dynamo field, implying partial differentiation of the CV parent body.

**References:** [1] Carporzen L. et al. 2011. *PNAS* 108:6386-6389 ; [2] Gattacceca J. et al. 2016. *EPSL* 455:166-175 ; [3] Elkins-Tanton L.T. et al. 2011. *EPSL* 305:1-10; [4] O'Brien et al. 2016. LPSC, abstract 2913. [5] Tarduno et al. 2017. LPSC, abstract 2850 ; [6] Kletetschka G. et al. 2018. *EPSL* 487:1-8 ; [7] Bonal L. et al. 2016 *GCA* 189: 312-337.