

## SUPPLEMENTARY INFORMATION

Supplementary figures to:

### **Brief oxygenation events in locally anoxic oceans during the Cambrian solves the animal breathing paradox**

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## 1. Supplementary figures

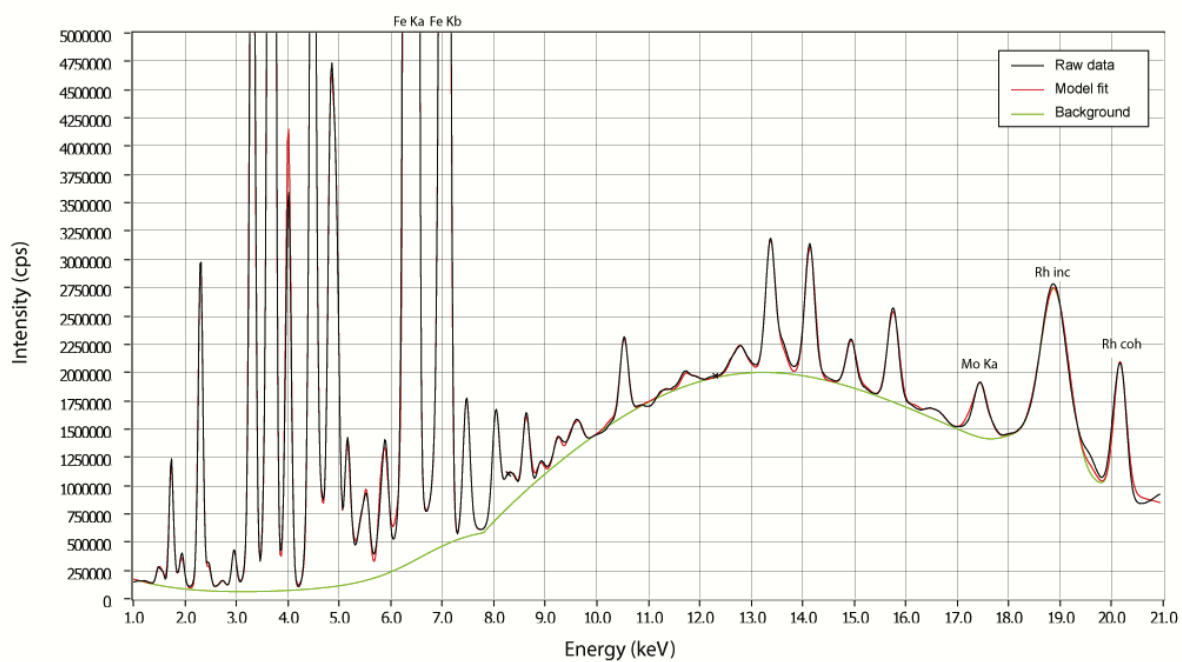


Figure S1. Characteristic XRF spectrum obtained with Itrax Core Scanning XRF. Molybdenum is detected at the Mo  $K\alpha$  absorption peak (17.4 keV), which is free of atomic interferences. Rh coh = rhodium coherent peak (elastic scattering), Rh inc = rhodium incoherent peak (inelastic scattering).

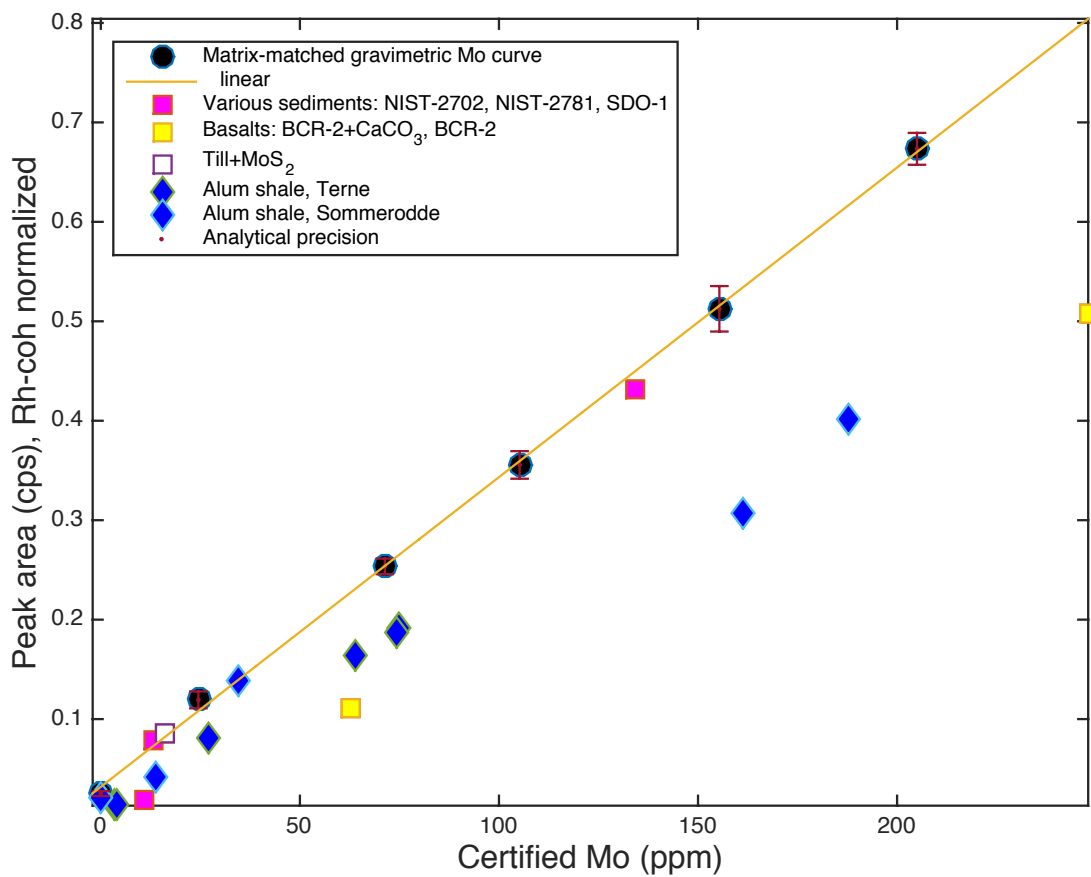


Figure S2. Calibration curves for Mo content in various reference materials. See legend and Methods for details.

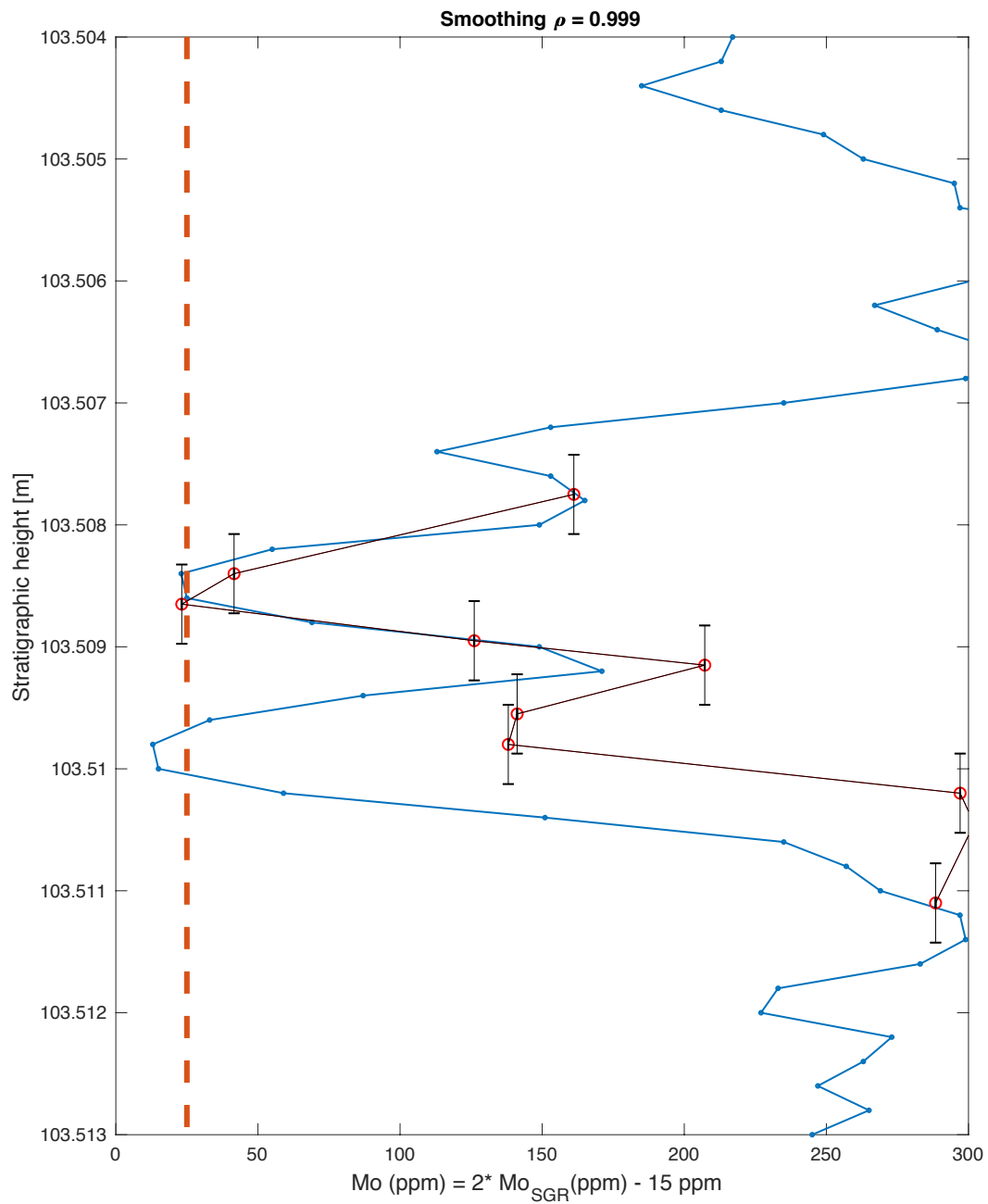


Figure S3. Molybdenum contents measured by XRF (core interior, 100 sec/scan, blue curve) and high precision ID-ICP-MS data obtained at Royal Holloway University of London<sup>40</sup> (red circles) for the two consecutive oxygenation events called ‘C2E5E6.

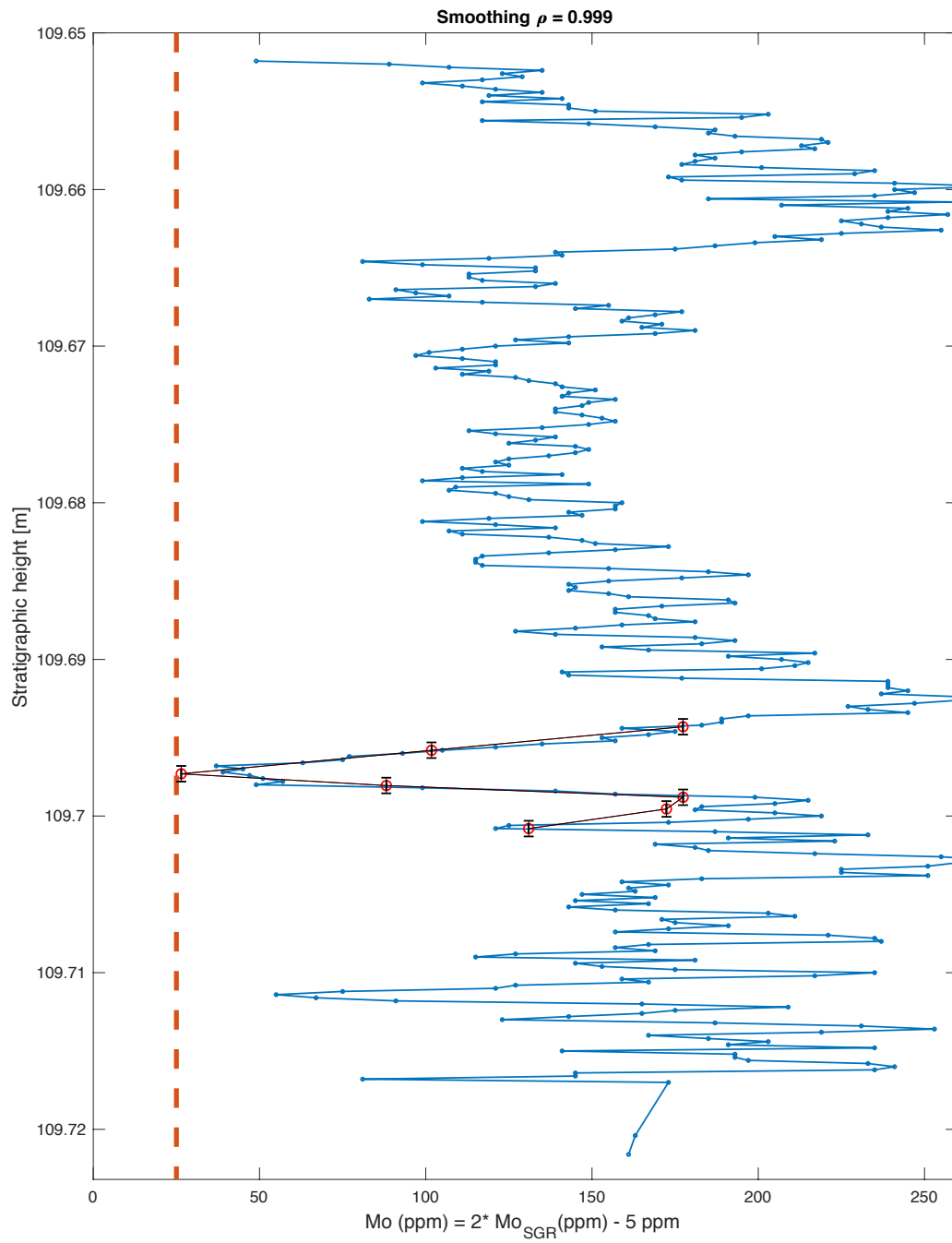


Figure S4. Molybdenum contents measured by XRF (core interior, 100 sec/scan, blue curve) and high precision ID-ICP-MS data obtained at Royal Holloway University of London<sup>40</sup> (red circles) for oxygenation event 'C9E6'.

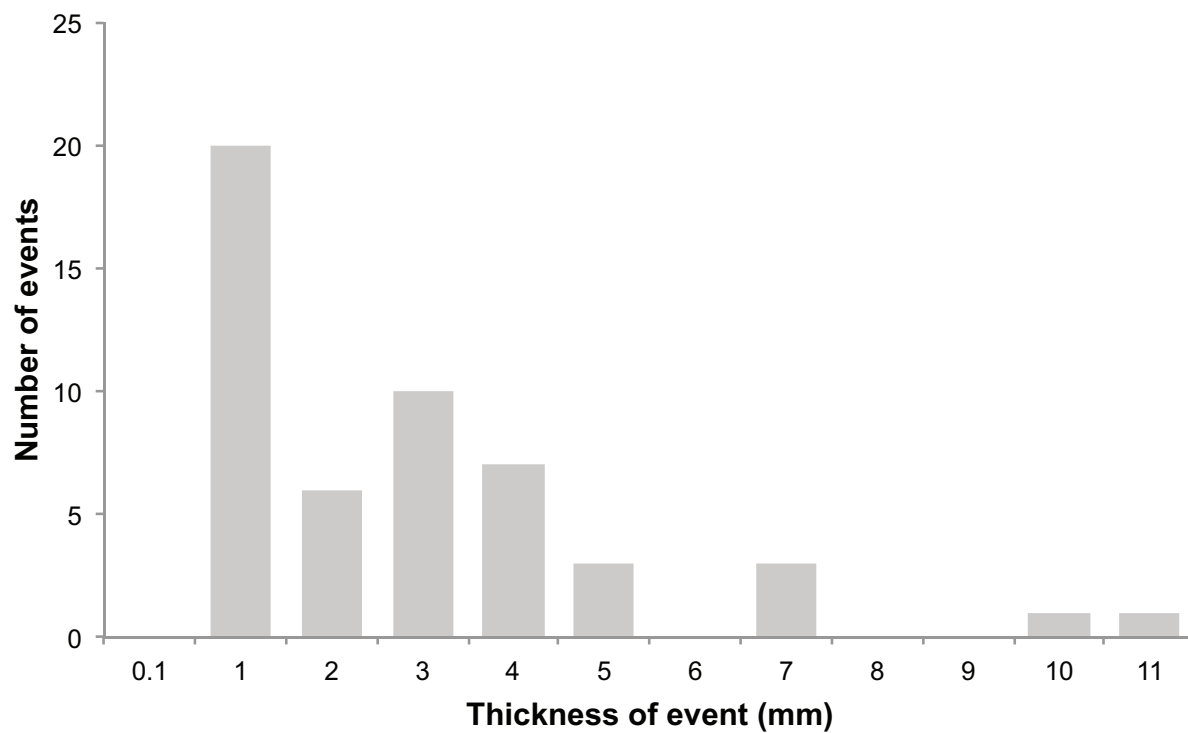


Figure S5. Histogram of oxygenation event thickness for the 51 oxygenation events in the studied interval of the Billegrav-2 drill core.

X-polarised light

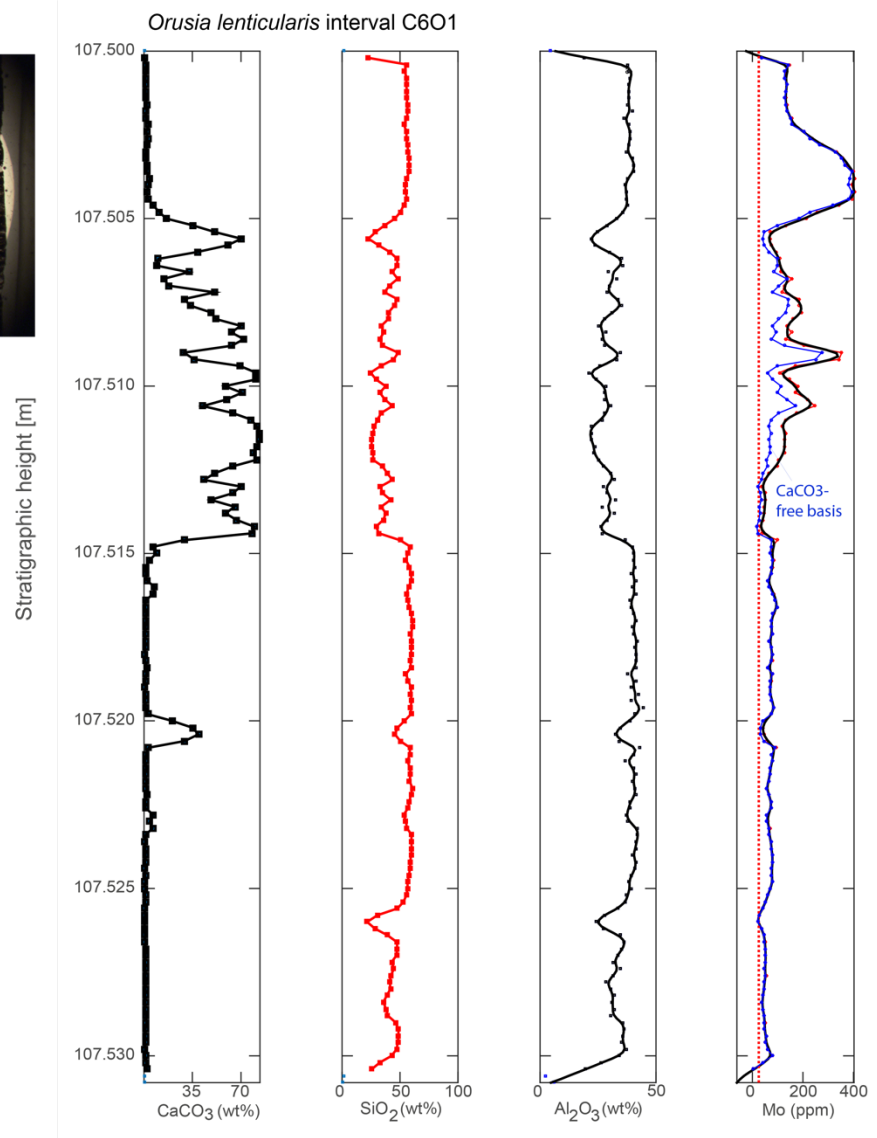
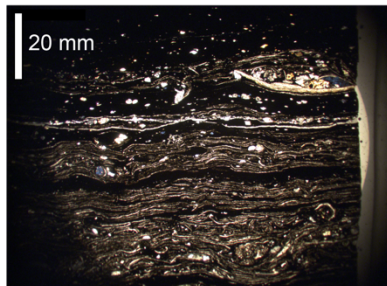


Figure S6. Stratigraphic Mo curve for the fossiliferous interval 107.50–107.53 m ('C601').