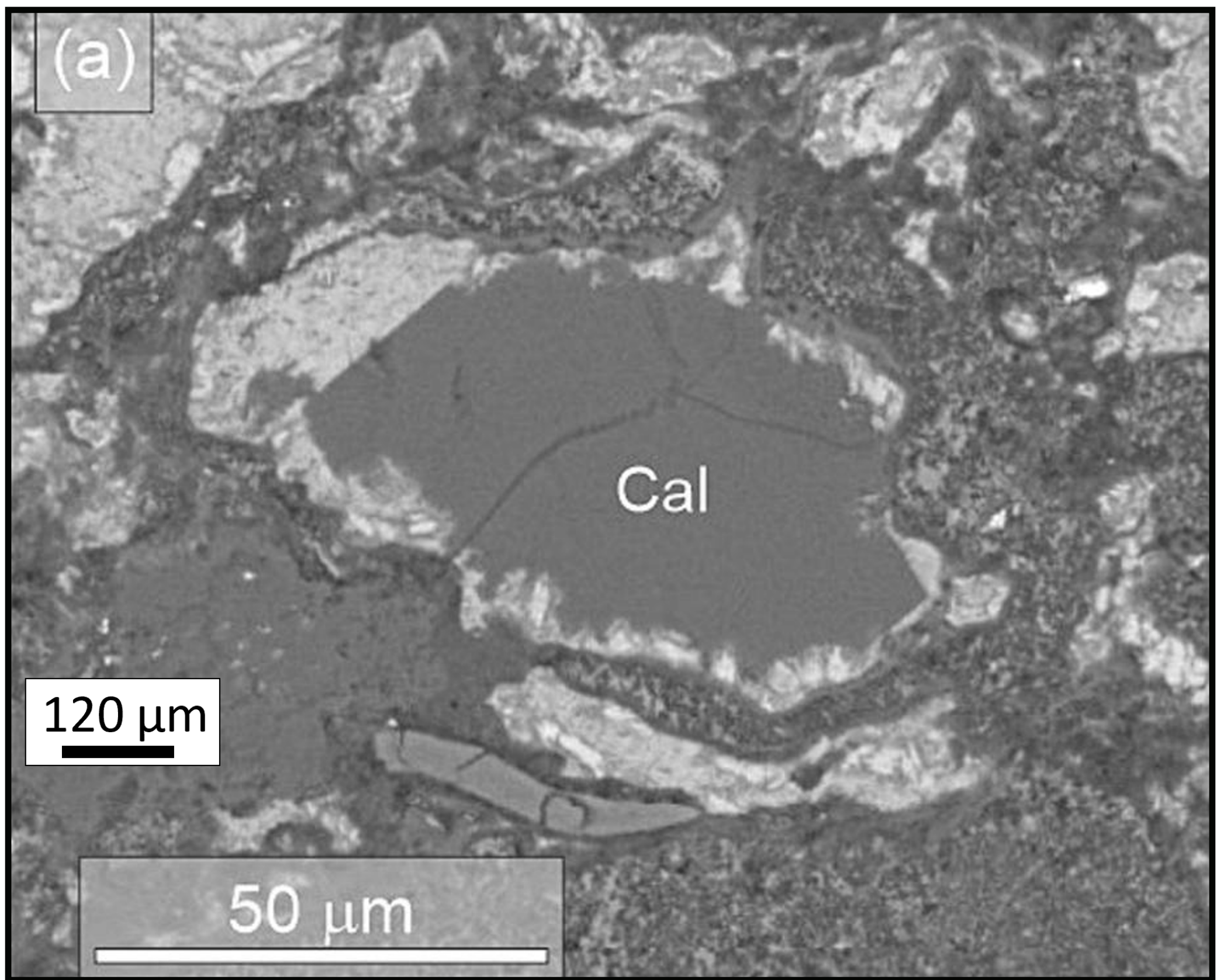




# Temperature and fluid composition during the aqueous alteration of CM carbonaceous chondrites

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Time & place: February 6, 2025 at 15h00. William-Olsson lecture hall, Geohuset

CM carbonaceous chondrites contain minor (<3–4 vol.%) amounts of carbonate minerals which formed during aqueous alteration of the meteorite's asteroidal parent bodies early in the history of the Solar System. They are key proxies to constrain the early aqueous and thermal evolution of these primitive asteroids. We measured the  $\Delta^{17}\text{O}$  and temperature (from carbonate clumped isotope thermometry) of the different carbonates from a suite of 6 meteorites covering a range in the extent of their aqueous alteration. We found that greater extent of alteration was linked to higher crystallization temperature for carbonates and lower  $\Delta^{17}\text{O}$ , which indicates that the carbonates observed in CM chondrites formed during initial heating of the planetesimals in a dominantly closed system.

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