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**PETROLOGICAL AND COSMOCHEMICAL
EVIDENCE FOR FORMATION OF EL3
CHONDRITES BY CONDENSATION FROM A
SOLAR GAS AT HIGH C/O RATIOS.**

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We report petrological, REE abundance in
oldhamite, C- and N-isotopic compositions of
graphite books (in chondrules) and graphite
feathers (in FeNi nodules) and of N-isotopic
signature of sinoite (Si₂N₂O) in primitive EL3
Almahata Sitta asteroid fragments MS-17 and MS-
177. We establish for the 1st time a double track
condensation sequence: (1) CaS ⇌ sinoite ⇌ enstatite.
Here enstatite largely consumed sinoite and (2)
CaS ⇌ sinoite ⇌ feathery graphite evidencing abrupt
increase in the C/O ratio (0.83-1.03) of the solar gas.
REE patterns of CaS are flat with negative Eu
anomalies indicative of condensation from an REE
fractionated nebular gas. δ¹³C of graphite books (-8
to -2‰) and feathery graphite (-24 to -10‰) depict a
clear dichotomy in the same meteorite thus refuting
formation by impact melting or sulfidation. δ¹⁵N‰

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of sinoite in FeNi is -24.9‰ in both fragments.

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