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Primordial noble gases in the unquillibrated ordinary chondrite Krymka.

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Primordial noble gases in meteorites were incorporated during the early stages of the solar system. The widespread primordial noble gases in phase Q are defined as the trapped noble gases released from HCl-HF-resistant residues of meteorites by treatment with oxidizing acids. We have previously used our in-vacuo etching line to characterize the noble gas isotopes of phase Q [1]. We here extend this work by presenting the first noble gas results from in-vacuo HNO₃-etching of a HCl-HF-resistant residue of the unequillibrated ordinary chondrite Krymka (LL3.2). Krymka is the least equilibrated ordinary chondrite that we have analyzed using this technique.

Preliminary results show possibly an unexpected contribution of the presolar HL-component in Ne in the HNO₃ etch steps of Krymka. Most steps extracted by mild etching are dominated by Ne-Q. Later steps, extracted using more harsh etching, may instead be dominated by Ne-HL. The last steps also show a considerable contribution from cosmogenic He and Ne.

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[1] Busemann, H. et al. (2000) MAPS 35, 949–973.

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