Distribution of oxygen isotopes in a type-C CAI of the Allende meteorite

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Oxygen isotopes of individual minerals in a type-C CAI of the Allende meteorite have been measured by SIMS. Values of (delta 17OSMOW,delta 18OSMOW) for spinel and fassaite are enriched in 16O, i. e, (-48.5permil,-48.3permil) and (-38.5permil,-35.8permil), respectively. Values of (delta 17OSMOW,delta 18OSMOW) for anorthite and melilite are similar to the terrestrial value, i. e, (+2.7permil,+5.7permil) and (+2.5permil,+8.4permil) , respectively. The oxygen isotope distribution in the CAI results in mixing between 16O-rich end-member (CAI's precursor) and 16O-normal end-member(nebula gas). Therefore, the oxygen isotopes of spinl represent the value of CAI precursors. the oxygen isotopes of anorthite and melilite represent the value of the solar nebula gas.