

NEW $^{142,144}\text{Nd}(n,\gamma)$ CROSS SECTIONS AND THE s-PROCESS ORIGIN OF THE Nd ANOMALIES IN PRESOLAR METEORIC SILICON CARBIDE GRAINS

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We have made improved measurements of the $^{142,144}\text{Nd}(n,\gamma)$ cross sections and investigated the s-process nucleosynthesis in the Ce-Nd-Sm region. Recently discovered anomalies of the Nd isotopes in silicon carbide grains from the Murchison meteorite have been interpreted in terms of pure s-process material from an AGB star. With previous cross section data the s-process origin could not be confirmed, whereas our new data convincingly support the interpretation that these isotopic anomalies were carried into the early solar system inside carbon dust particles that condensed in outflowing winds of presolar AGB stars.

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