

Abstract Submitted
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A new source of neutrons for weak s-process nucleosynthesis BRIAN BUCHER, University of Notre Dame, JUSTIN BROWNE, SERGIO ALMARAZ-CALDERON, ADAM ALONGI, AKAA AYANGEAKAA, ANDREAS BEST, MANOEL COUDER, JAMES DEBOER, XIAO FANG, WENTING LU, MASAHIRO NOTANI, DARSHANA PATEL, NANCY PAUL, AMY ROBERTS, RASHI TALWAR, WANPENG TAN, XIAODONG TANG — $^{12}\text{C}(^{12}\text{C},n)$ is a potential neutron source for the weak s-process occurring in convective shell carbon burning of massive stars. This reaction has been measured only twice previously and at high energy relative to the astrophysical energy range. Recent studies at the University of Notre Dame indicate the existence of a low-energy resonance which could drastically affect the astrophysical reaction rate. The precise location of this resonance is critically important for the rate determination. A summary of our findings will be presented and the astrophysical implications will be discussed.

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