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Fluorine Abundances in Carbon Stars

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The fragile nature of the lone stable isotope of fluorine, 19 F, makes the light, odd-Z element fluorine a useful probe of the processes occurring in stellar interiors. Fluorine enhancements have been observed in asymptotic giant branch (AGB) stars, and the observed excess of fluorine in AGB stars relies heavily on measurements of stars with a C/O ratio of ~1. We determine the abundance of fluorine in ten Galactic carbon stars (3 N-type, 6 R-type, and 2 J-type) with C/O ratios greater than 1.1 using spectra obtained with the high-resolution spectrograph iSHELL (R~75,000) on the NASA Infrared Telescope Facility (IRTF). We compare the observed fluorine abundances to theoretical models and investigate the relation between fluorine abundance and s-process element enhancement in our sample stars.

Author: BRADY, Kristin E.

Presenter: BRADY, Kristin E.