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Examining the E_x=7262 and 7249 keV States of Fluorine-19 with the ^{15}N$(\alpha,\gamma)^{19}$F Reaction[1] GRAHAM O'DONNELL, Florida State University, DAN BARDAYAN, JACOB ALLEN, PATRICK O'MALLEY, DREW BLANKSTEIN, CHEVELLE BOOMERSHINE, SYDNEY COIL, RICHARD JAMES DEBOER, AUGUST GULA, SAMUEL HENDERSON, SHANE MOYLAN, DAN ROBERTSON, ED STECH, University of Notre Dame — Properties of important neon-19 levels affect the production of the radioisotope fluorine-18 in novae and can be constrained from studies of the mirror nucleus fluorine-19. The $^{15}\mathrm{N}(\alpha,\gamma)^{19}\mathrm{F}$ reaction has been used to study the astrophysically important but under-examined region of ^{19}F between E_x=7.0-7.3 MeV (E_α=3.9-4.2 MeV). A previously known ^{19}F state at E_x=7.262 MeV was studied and a new higher spin state was discovered near 7.249 MeV. Measured information for these states include branching ratios and resonance strengths from which the gamma decay widths were extracted. Preliminary results will be presented.

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