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^{19}F(p,γ): Putting a Lid on the CNO Cycle AARON COUTURE, MANOËL COUDER, JOACHIM GÖRRES, HYE-YOUNG LEE, EDWARD STECH, ELIZABETH STRANDBERG, University of Notre Dame, ETHAN UBERSEDER, Earlham College, CLAUDIO UGALDE, WANPENG TAN, MICHAEL WIESCHER, University of Notre Dame — The cold CNO cycle in massive stars (M>3M$_\odot$) has long been considered a closed cycle. The ^{19}F(p,γ)^{20}Ne reaction represents the only possible path for breakout and depletion of catalytic material. In addition, the corresponding production of Ne would be important for later stellar burning cycles. The strong background from ^{19}F(p,$\alpha_2\gamma$)^{16}O has prevented detailed measurements of the ^{19}F(p,γ)^{20}Ne reaction from being made in the past. A new series of measurements investigating low energy resonances and interference terms have been made at Notre Dame. The results and predictions of the new resonance parameters and their effects on the CNO cycle will be discussed.

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