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Study of ¹⁹Ne levels of Importance to ¹⁸F production in Novae¹ P.D. O'MALLEY, M.E. HOWARD, J.A. CIZEWSKI, Rutgers, D.W. BARDAYAN, M.S. SMITH, ORNL, K.Y. CHAE, S.T. PITTMAN, S.H. AHN, U. of Tenn., R.L. KOZUB, Tenn. Tech. U., M. MATOS, B. MOAZEN, LSU — ¹⁸F is a relatively long-lived radioactive product of novae and its decay series is a direct probe of novae burning. The ¹⁸F(p, α)¹⁵O reaction dominates ¹⁸F destruction in novae but the rate is uncertain because the properties of important ¹⁹Ne levels have never been experimentally determined. There are several levels with uncertain spins and excitation energies that have only been estimated before. At ORNL, the ²⁰Ne(p,d)¹⁹Ne reaction was measured to study these important levels by using a 30 MeV beam of protons from the HRIBF tandem accelerator was used to bombard a carbon target implanted with ²⁰Ne and outgoing particles were detected in a silicon strip detector array. Data will be shown and analysis discussed.

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