

Abstract Submitted
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Mass Measurements of Heavy ^{252}Cf Fission Fragments Near the r -Process Path with the Canadian Penning Trap¹ J. VAN SCHELT, U. of Chicago, D. LASCAR, Northwestern U., G. SAVARD, J.A. CLARK, J.P. GREENE, A.F. LEVAND, T. SUN, B.J. ZABRANSKY, ANL, S. CALDWELL, M. STERNBERG, U. of Chicago, J. FALLIS, K.S. SHARMA, U. of Manitoba, R.E. SEGEL, Northwestern U., G. LI, McGill U. — Precision mass measurements of nuclides near the astrophysical r -process path are vital to reduce the uncertainties in the relevant neutron separation energies and the consequent abundance predictions. Before moving to CARIBU, the Canadian Penning Trap mass spectrometer at Argonne National Laboratory undertook a series of mass measurements of spontaneous fission products from a $150\ \mu\text{Ci}$ ^{252}Cf source in a previous large-volume gas catcher. Masses of 38 neutron-rich nuclides ranging from $Z = 51$ to 64 were measured, many of which were closer to the r -process path than had previously been measured for these elements. Systematic deviations from the AME 2003 are seen over a wide range of elements, and possible effects of these deviations on the r process will be discussed. These measurements are being extended to even higher neutron excess at CARIBU.

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