

Abstract Submitted  
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**Production and Decay of Element 114 Isotopes with the BGS (LBNL) and TASCA (GSI)** JACKLYN GATES, Lawrence Berkeley National Laboratory — During the last 10 years, the Dubna Gas Filled Recoil Separator (DGFRS) group has published numerous reports of the production and decay of superheavy elements (SHE) with  $Z=112-118$  in  $^{48}\text{Ca}$  irradiations of actinide targets. Recently the production of element 114 in the  $^{242}\text{Pu}(^{48}\text{Ca},3-4n)$  reaction was verified at the Lawrence Berkeley National Laboratory using the Berkeley Gas-filled Separator (BGS). Later experiments at the BGS successfully extended the region of known SHE nuclides along the neutron-deficient side using the  $^{242}\text{Pu}(^{48}\text{Ca},5n)^{285}114$  reaction. Almost concurrently with the BGS, the TransActinide Separator and Chemistry Apparatus at the GSI Helmholtzzentrum für Schwerionenforschung investigated the  $^{244}\text{Pu}(^{48}\text{Ca},34n)$  reaction and observed cross sections on the order of 10 pb for the production of element 114 when the more neutron-rich  $^{244}\text{Pu}$  target was used. An alpha-decay branch in  $^{281}\text{Ds}$  was also discovered, leading to the new nucleus  $^{277}\text{Hs}$ . Cross sections, decay modes and decay properties all agree with those published by the DGFRS group. Implications of these results on the field of heavy elements will be discussed.

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