

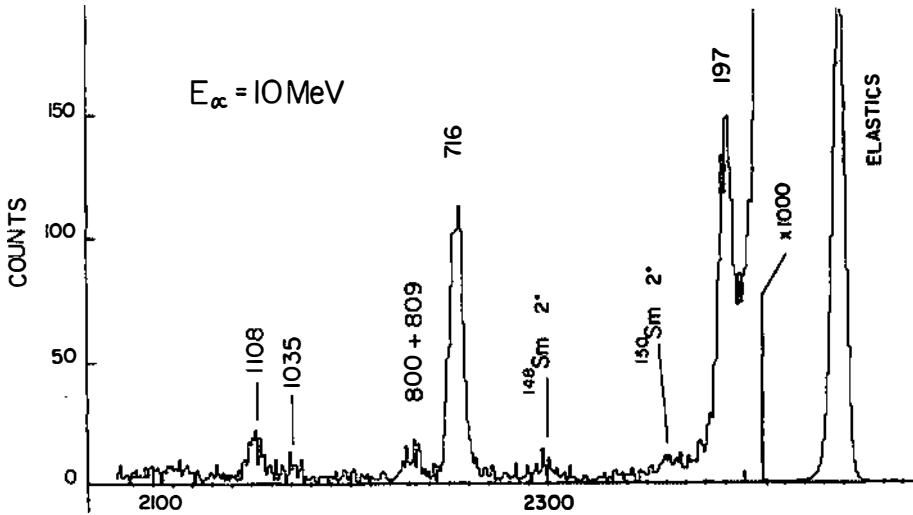
The Study of Coulomb Excitation in  $^{147}\text{Sm}$

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Inelastic and elastic scattering yields for  $^{147}\text{Sm}$  were measured for  $\alpha$ -particle beams of 8, 10 and 13 MeV obtained from the Australian National University tandem facility. Typical  $\alpha$ -particle energy spectra obtained are shown in fig. 1 at the angle  $\theta_{\alpha}=172^{\circ}$  and the energy  $E_{\alpha}=10$  MeV. The  $B(E2)$  values deduced for the transitions



$7/2_1^- + 5/2_1^-$ ,  $7/2_1^- + 3/2_1^-$ ,  $7/2_1^- + 11/2_1^-$ ,  $7/2_1^- + (3/2_2^-)$ ,  $7/2_1^- + (9/2_1^-)$ ,  $7/2_1^- + (3/2^- - 11/2^-)$  (1.108 keV) are 0.093 (0.011), 0.051 (0.004), 0.191 (0.007), 0.019 (0.005), 0.008 (0.002) and 0.105 (0.012)  $e^2 b^2$ , respectively. These results have been interpreted in the CVM as evidence for a new quasi- $f_{7/2}$  multiplet with two intruder states. Particular attention has been paid to the discussion of the theoretical crossing of the  $9/2_1^-$  and  $9/2_2^-$  states.