

Coulomb excitation **1999Ib01,2000PrZX**

1999Ib01: $^{197}\text{Au}(^{35}\text{Al}, ^{35}\text{Al}')$ Nuclei of interest were produced via the projectile fragmentation of a 70-MeV/nucleon, ^{48}Ca primary beam from the NSCL K1200 cyclotron impinging on a 285-mg/cm²-thick ^9Be target. The secondary cocktail beam was selected by the A1200 separator and impinged on a 532 mg/cm² ^{197}Au target. The position and direction of each incident beam particle were measured using two upstream parallel-plate avalanche counters (PPAC). Scattered beam particles $\theta_{\text{lab}} < 3.8^\circ$ were detected using a downstream position-sensitive plastic phoswich detector in coincidence with γ rays detected using an array of 38 cylindrical NaI(Tl) detectors centered around the ^{197}Au target. Measured Doppler-corrected E_γ , I_γ , and excitation cross sections. Deduced levels and E2 transition probabilities for ^{35}Al , ^{37}Si , ^{39}P , ^{41}S , ^{43}S , and ^{45}Cl .

2000PrZX: $^{197}\text{Au}(^{35}\text{Al}, ^{35}\text{Al}')$ The same experimental setup as **1999Ib01** with a 80-MeV/nucleon ^{48}Ca primary beam. Scattered beam particles $\theta_{\text{c.m.}} < 3.3^\circ$ were detected.

 ^{35}Al Levels

<u>E(level)</u>	<u>J^{π}</u>	<u>Comments</u>
0	(5/2) ⁺	J ^{π} : From the Adopted Levels.
1020 9		E(level): From measured E_γ . B(E2) \uparrow =0.0142 52 (1999Ib01). B(E1) \uparrow \leq 0.00020 9, B(E2) \uparrow \leq 0.0125 56, B(M1) \uparrow \leq 0.0024 11, and 5/2 ⁺ →3/2 ⁺ σ =30 mb 14 (2000PrZX). The multiplicities are assumed.

 $\gamma(^{35}\text{Al})$

<u>E_i(level)</u>	<u>E_{γ}</u>	<u>I_{γ}</u>	<u>E_f</u>	<u>J^{π}_f</u>	<u>Comments</u>
1020	1020 9	100	0	(5/2) ⁺	E _{γ} : Weighted average of 1006 19 (1999Ib01) and 1023 9 (2000PrZX). 2000PrZX reports E _{γ} =1023 8 in Table 4.9 and E _{γ} =1023 9 in Table 4.10.

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Intensities: % photon branching from each level

