

$^{208}\text{Pb}(^{36}\text{S}, ^{35}\text{Si}\gamma)$ 2010WaZT

2010WaZT,2010Wa20: A 215-MeV $^{36}\text{S}^9$ beam was produced from the XTU-Tandem ALPI-superconducting linear accelerator complex at the INFN Legnaro National Laboratory, Italy. The target was $300\text{ }\mu\text{g}/\text{cm}^2$ 99.7% enriched ^{208}Pb with $20\text{ }\mu\text{g}/\text{cm}^2$ carbon backing. Projectile-like fragments produced in binary grazing reactions were separated and identified by the PRISMA spectrometer. γ rays were detected using the CLARA array of 22 escape-suppressed Ge clover detectors covering the azimuthal angles from 98° to 180° . Measured E_γ with Doppler corrections, I_γ , and $(^{35}\text{Si})\gamma$ -coin. Deduced levels. Compared with shell-model calculations.

 ^{35}Si Levels

<u>$E(\text{level})^\dagger$</u>	<u>J^π^\ddagger</u>
0	$(7/2^-)$
910 1	$(3/2^-)$
974 1	$(3/2^+)$

† From a least-squares fit to γ -ray energies.

‡ As given in [2010WaZT](#), based on shell-model calculations.

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

<u>E_γ^\dagger</u>	<u>I_γ^\dagger</u>	<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>
910 1	100 25	910	$(3/2^-)$	0	$(7/2^-)$
974 ‡ 1	21 10	974	$(3/2^+)$	0	$(7/2^-)$

† From [2010WaZT](#).

‡ Placement of transition in the level scheme is uncertain.

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Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
- $I_\gamma < 10\% \times I_\gamma^{\max}$
- $I_\gamma > 10\% \times I_\gamma^{\max}$
- - - - - γ Decay (Uncertain)

Level Scheme

Intensities: Relative I_γ

