

$^{38}\text{Ar}(\alpha,\gamma)$:resonances 1967Na10

| Type | Author | History | Citation | Literature Cutoff Date |
|-----------------|--|---------|-------------------|------------------------|
| Full Evaluation | Jun Chen [#] and Balraj Singh | | NDS 135, 1 (2016) | 31-May-2016 |

1967Na10: E=3-6 MeV alpha beam was produced from the Pennsylvania State University 6 MV Van de Graaff accelerator.

Enriched ^{38}Ar target. γ -rays were detected with a NaI anti-coincidence spectrometer. Measured $\sigma(\theta)$. Deduced levels, J^π , Γ_γ .

Others:

1976Fo04,1974Fo04: E=6-15 MeV. Measured $\sigma(\theta)$ for the giant dipole resonances.

 ^{42}Ca Levels

All data are from 1967Na10.

| E(level) [‡] | J^π [†] | $(2J+1)\Gamma_\alpha\Gamma_\gamma/\Gamma$ | Measured E_α (lab) | E(level) [‡] | J^π [†] | $(2J+1)\Gamma_\alpha\Gamma_\gamma/\Gamma$ | Measured E_α (lab) |
|-----------------------|----------------------|---|---------------------------|-----------------------|----------------------|---|---------------------------|
| 9115 5 | | 0.43 eV | 3158 5 | 10673 5 | 1 ⁻ | 1.32 eV | 4880 5 |
| 9191 5 | | 0.42 eV | 3242 5 | 10700 5 | | 0.98 eV | 4910 5 |
| 9280 5 | 1 ⁻ | 1.49 eV | 3340 5 | 10726 5 | 1 ⁻ | 1.74 eV | 4938 5 |
| 9367 5 | | 0.78 eV | 3436 5 | 10783 5 | 1 ⁻ | 2.54 eV | 5001 5 |
| 9426 5 | | 1.48 eV | 3501 5 | 10805 5 | 1 ⁻ | 4.29 eV | 5026 5 |
| 9470 5 | | 0.83 eV | 3551 5 | 10842 5 | 1 ⁻ | 5.37 eV | 5067 5 |
| 9561 5 | | 0.76 eV | 3651 5 | 10884 5 | 1 ⁻ | 2.89 eV | 5113 5 |
| 9635 5 | | 0.53 eV | 3732 5 | 10905 5 | 1 ⁻ | 2.69 eV | 5136 5 |
| 9672 5 | | 0.47 eV | 3773 5 | 10916 5 | 1 ⁻ | 2.69 eV | 5148 5 |
| 9699 5 | | 0.75 eV | 3803 5 | 10968 5 | | 0.85 eV | 5206 5 |
| 9723 5 | | 0.75 eV | 3830 5 | 10985 5 | | 0.90 eV | 5225 5 |
| 9757 5 | | 2.05 eV | 3867 5 | 11013 5 | 1 ⁻ | 3.46 eV | 5255 5 |
| 9784 5 | | 0.75 eV | 3897 5 | 11048 5 | | 1.28 eV | 5294 5 |
| 9870 5 | | 1.44 eV | 3992 5 | 11076 5 | 1 ⁻ | 1.91 eV | 5325 5 |
| 9947 5 | | 1.74 eV | 4077 5 | 11108 5 | 1 ⁻ | 1.68 eV | 5361 5 |
| 10038 5 | | 0.62 eV | 4178 5 | 11149 5 | 1 ⁻ | 2.51 eV | 5406 5 |
| 10205 5 | | 0.85 eV | 4362 5 | 11185 5 | 1 ⁻ | 0.99 eV | 5446 5 |
| 10231 5 | | 0.57 eV | 4391 5 | 11223 5 | 1 ⁻ | 2.63 eV | 5488 5 |
| 10282 5 | 1 ⁻ | 2.81 eV | 4448 5 | 11279 5 | | 1.05 eV | 5550 5 |
| 10314 5 | | 1.23 eV | 4483 5 | 11301 5 | | 1.21 eV | 5574 5 |
| 10358 5 | 1 ⁻ | 2.23 eV | 4532 5 | 11336 5 | 1 ⁻ | 8.10 eV | 5613 5 |
| 10389 5 | | 0.99 eV | 4566 5 | 11378 5 | 1 ⁻ | 2.43 eV | 5659 5 |
| 10453 5 | | 1.68 eV | 4637 5 | 11399 5 | | 0.62 eV | 5682 5 |
| 10500 5 | 1 ⁻ | 2.13 eV | 4688 5 | 11441 5 | 1 ⁻ | 1.65 eV | 5729 5 |
| 10527 5 | | 0.50 eV | 4718 5 | 11489 5 | 1 ⁻ | 2.84 eV | 5782 5 |
| 10561 5 | | 0.53 eV | 4756 5 | 11519 5 | | 0.66 eV | 5815 5 |
| 10588 5 | | 1.16 eV | 4786 5 | 11545 5 | 1 ⁻ | 1.59 eV | 5843 5 |
| 10612 5 | | 0.83 eV | 4812 5 | 11612 5 | | 2.00 eV | 5918 5 |
| 10633 5 | | 3.65 eV | 4835 5 | 11661 5 | | 0.59 eV | 5972 5 |
| 10652 5 | | 0.45 eV | 4857 5 | | | | |

[†] From angular distributions of the ground-state γ -rays from resonant states (1967Na10).

[‡] Excitation energy of resonance= $S(\alpha)+E\alpha(\text{C.M.})$ with $E\alpha(\text{C.M.})$ deduced from $E\alpha(\text{lab})$. $S(\alpha)=6257.34$ 25 (2012Wa38).