

¹⁶⁷Er(α,t) 1973Pr06

| Type | Author | History Citation | Literature Cutoff Date |
|-----------------|-----------------|----------------------|------------------------|
| Full Evaluation | Coral M. Baglin | NDS 111, 1807 (2010) | 15-Jun-2010 |

J^π(¹⁶⁷Er)=7/2⁺.

1973Pr06: E(α)=25 MeV; θ=90°; metallic Er target, enriched to 91.1% in ¹⁶⁷Er; measured E(level) (split-pole mag spect, FWHM=20), differential cross sections.

¹⁶⁸Tm Levels

| E(level) | J ^π † | dσ/dΩ(θ=90°) μb/sr‡ | Comments |
|---------------------|-------------------------------------|---------------------|--|
| 0& | 3 ⁺ | 9.2 | |
| ≈49 | | ≈1.0 | |
| 64& 2 | 4 ⁺ | 7.0 | |
| ≈74 | | ≈1.2 | |
| 146 ^a 2 | 4 ⁺ | 13.2 | |
| ≈185 | | ≈4.1 | |
| 200 2 | 3 ⁻ & 4 ⁻ # | 11.6 | |
| ≈230 ^a | 5 ⁺ | 9 | |
| ≈246 | 5 ⁻ # | 10 | |
| 311 2 | 6 ⁻ & 7 ⁺ # @ | 18.6 | Large cross section indicates level is probable doublet comprised of both assigned configurations. |
| 333 ^b 2 | 4 ⁻ | 8.7 | |
| 364 2 | | 0.7 | |
| 390 2 | 7 ⁻ # | 2.4 | |
| 449 ^b 2 | 5 ⁻ | 3.1 | |
| 494 2 | | 2.0 | |
| 519 2 | | 3.8 | |
| 564 ^b 2 | 6 ⁻ | 2.9 | |
| 609 2 | | 3.7 | |
| 631 2 | | 3.8 | |
| 675 2 | | 1.3 | |
| 699 ^b 2 | 7 ⁻ | 1.8 | |
| 731 2 | 6 ⁺ | 15.4 | probable Configuration=((ν 7/2[633])+(π 5/2[402])). |
| 759 2 | | 2.4 | |
| 815 ^c 2 | 1 ⁺ | 5.1 | |
| 846 ^c 2 | 2 ⁺ | 4.4 | |
| 888 ^c 2 | 3 ⁺ | 2.5 | |
| 938 2 | | 0.9 | |
| 966 2 | | 1.2 | |
| 1001 2 | | 2.7 | |
| 1130 2 | | 0.8 | |
| 1161 2 | | 3.8 | |
| 1322 2 | | 1.1 | |
| 1343 2 | | 1.0 | |
| 1390 ^d 2 | 4 ⁻ | 2.5 | |
| 1414 2 | | 1.2 | |
| 1440 ^e 2 | 3 ⁻ | 2 | |
| 1461 2 | | 1.9 | |
| 1482 ^d 2 | 5 ⁻ | 1.7 | |
| 1501 2 | | 0.9 | |
| 1540 ^e 2 | 4 ⁻ | 0.7 | |

Continued on next page (footnotes at end of table)

$^{167}\text{Er}(\alpha, \text{t})$ 1973Pr06 (continued) ^{168}Tm Levels (continued)

| <u>E(level)</u> | <u>J^π</u> [†] | <u>$d\sigma/d\Omega(\theta=90^\circ)$</u> $\mu\text{b}/\text{sr}$ [‡] |
|-------------------|--|---|
| 1563 | 2 | 1.1 |
| 1590 ^d | 2 6 ⁻ | 1 |

[†] From cross sections and model arguments (authors' values). See ^{168}Tm Adopted Levels for evaluator's assignments.

[‡] $d\sigma/d\Omega$ At 90° for $E\alpha=25$ MeV; uncertainty $\approx 10\%$.

Configuration= $((\nu 7/2[633])-(\pi 1/2[541]))$.

@ Configuration= $((\nu 7/2[633])+(\pi 7/2[404]))$.

& Band(A): $K^\pi=3^+$ band. Configuration= $((\nu 7/2[633])-(\pi 1/2[411]))$.

^a Band(B): $K^\pi=4^+$ band. Configuration= $((\nu 7/2[633])+(\pi 1/2[411]))$.

^b Band(C): $K^\pi=4^-$ band. Configuration= $((\nu 7/2[633])+(\pi 1/2[541]))$.

^c Band(D): $K^\pi=1^+$ band. Configuration= $((\nu 7/2[633])-(\pi 5/2[402]))$.

^d Band(E): $K^\pi=4^-$ band. Configuration= $((\nu 7/2[633])+(\pi 1/2[530]))$.

^e Band(F): $K^\pi=3^-$ band. Configuration= $((\nu 7/2[633])-(\pi 1/2[530]))$.

$^{167}\text{Er}(\alpha,t)$ 1973Pr06Band(E): $K^\pi=4^-$ band6⁻ 1590Band(F): $K^\pi=3^-$ band4⁻ 15405⁻ 14823⁻ 14404⁻ 1390Band(D): $K^\pi=1^+$ band3⁺ 8882⁺ 8461⁺ 815Band(C): $K^\pi=4^-$ band7⁻ 6996⁻ 5645⁻ 4494⁻ 333Band(B): $K^\pi=4^+$ band5⁺ \approx 2304⁺ 146Band(A): $K^\pi=3^+$ band4⁺ 643⁺ 0