

²³⁸U(¹⁸O,¹⁶Oγ) 2005Is07

| Type | Author | History | Citation | Literature Cutoff Date |
|-----------------|-------------------------|---------|----------------------|------------------------|
| Full Evaluation | Balraj Singh, E. Browne | | NDS 109, 2439 (2008) | 31-Jul-2008 |

2005Is07 (also 2007Is11): E=200 MeV. Natural U target. Measured E_γ, I_γ, γγ, (¹⁶O)γ coin using seven Ge detectors and four sets of ΔE-E Si detectors.

²⁴⁰U Levels

| E(level) [†] | J ^π [#] | Comments |
|---------------------------|-----------------------------|---------------------------|
| 0 [@] | 0 ⁺ | |
| 45 ^{‡@} 1 | 2 ⁺ | Additional information 1. |
| 150.60 [@] 10 | 4 ⁺ | |
| 313.19 [@] 14 | 6 ⁺ | |
| 528.69 [@] 18 | 8 ⁺ | |
| 792.9 [@] 3 | 10 ⁺ | |
| 847.0 ^{&} 4 | 3 ⁻ | |
| 944.7 ^{&} 3 | 5 ⁻ | |
| 1087.7 ^{&} 3 | 7 ⁻ | |
| 1100.5 [@] 4 | 12 ⁺ | |
| 1276.1 ^{&} 4 | 9 ⁻ | |

[†] From least-squares fit to E_γ's.

[‡] From 'Adopted Levels'.

[#] As proposed by 2005Is07 and 2007Is11 based on band assignments. The assignments are the same in 'Adopted Levels', except that all are in parentheses there, due to lack of strong supporting arguments.

[@] Band(A): K^π=0⁺, g.s. band.

[&] Band(B): K^π=0⁻, octupole band.

γ(²⁴⁰U)

| E _γ | I _γ | E _i (level) | J _i ^π | E _f | J _f ^π | Mult. | α [†] | I _(γ+ce) | Comments |
|----------------------|----------------|------------------------|-----------------------------|----------------|-----------------------------|-------|-----------------------|---------------------|---|
| (45 1) | | 45 | 2 ⁺ | 0 | 0 ⁺ | [E2] | 6.0×10 ² 7 | | α(L)=4.4×10 ² 6; α(M)=122 15; α(N+..)=42 5 α(N)=33 4; α(O)=7.6 9; α(P)=1.22 15; α(Q)=0.0029 3 |
| 105.6 1 | 8.5 8 | 150.60 | 4 ⁺ | 45 | 2 ⁺ | [E2] | 10.34 | 97 8 | α(L)=7.53 11; α(M)=2.09 3; α(N+..)=0.719 11 α(N)=0.567 9; α(O)=0.1304 20; α(P)=0.0214 4; α(Q)=8.98×10 ⁻⁵ 13 |
| 162.6 1 | 37.2 20 | 313.19 | 6 ⁺ | 150.60 | 4 ⁺ | [E2] | 1.663 | 100 6 | α(K)=0.205 3; α(L)=1.063 16; α(M)=0.294 5; α(N+..)=0.1012 15 α(N)=0.0798 12; α(O)=0.0184 3; α(P)=0.00305 5; α(Q)=2.23×10 ⁻⁵ 4 |
| 215.5 1 | 31.3 13 | 528.69 | 8 ⁺ | 313.19 | 6 ⁺ | [E2] | 0.569 | 50 2 | α(K)=0.1367 20; α(L)=0.316 5; α(M)=0.0867 13; α(N+..)=0.0299 5 α(N)=0.0235 4; α(O)=0.00544 8; α(P)=0.000912 13; α(Q)=1.029×10 ⁻⁵ 15 |
| ^x 239.0 2 | 7.8 7 | | | | | | | | |
| ^x 241.4 3 | 5.3 4 | | | | | | | | |
| 264.1 2 | 13.3 9 | 792.9 | 10 ⁺ | 528.69 | 8 ⁺ | [E2] | 0.282 | 17 1 | α(K)=0.0951 14; α(L)=0.1370 20; |

Continued on next page (footnotes at end of table)

$^{238}\text{U}(^{18}\text{O}, ^{16}\text{O}\gamma)$ **2005Is07 (continued)** $\gamma(^{240}\text{U})$ (continued)

| E_γ | I_γ | $E_i(\text{level})$ | J_i^π | E_f | J_f^π | Mult. | α^\dagger | $I_{(\gamma+ce)}$ | Comments |
|------------|------------|---------------------|-----------------|--------|-----------------|-------|------------------|-------------------|--|
| 307.6 3 | 2.8 7 | 1100.5 | 12 ⁺ | 792.9 | 10 ⁺ | [E2] | 0.174 | 3 1 | $\alpha(\text{M})=0.0373$ 6; $\alpha(\text{N}+..)=0.01288$ 19 $\alpha(\text{N})=0.01013$ 15; $\alpha(\text{O})=0.00235$ 4; $\alpha(\text{P})=0.000398$ 6; $\alpha(\text{Q})=6.17\times 10^{-6}$ 9 $\alpha(\text{K})=0.0716$ 11; $\alpha(\text{L})=0.0754$ 11; $\alpha(\text{M})=0.0204$ 3; $\alpha(\text{N}+..)=0.00704$ 11 $\alpha(\text{N})=0.00553$ 8; $\alpha(\text{O})=0.001286$ 19; $\alpha(\text{P})=0.000220$ 4; $\alpha(\text{Q})=4.29\times 10^{-6}$ 6 |
| 482.5 7 | 2.5 8 | 1276.1 | 9 ⁻ | 792.9 | 10 ⁺ | | | | |
| 558.9 7 | 1.9 9 | 1087.7 | 7 ⁻ | 528.69 | 8 ⁺ | | | | |
| 631.6 5 | 5.1 10 | 944.7 | 5 ⁻ | 313.19 | 6 ⁺ | | | | |
| 696.4 5 | 4.4 10 | 847.0 | 3 ⁻ | 150.60 | 4 ⁺ | | | | |
| 747.5 3 | 7.1 10 | 1276.1 | 9 ⁻ | 528.69 | 8 ⁺ | | | | |
| 774.5 3 | 7.9 11 | 1087.7 | 7 ⁻ | 313.19 | 6 ⁺ | | | | |
| 794.0 3 | 8.1 12 | 944.7 | 5 ⁻ | 150.60 | 4 ⁺ | | | | |
| 801.9 5 | 5.2 10 | 847.0 | 3 ⁻ | 45 | 2 ⁺ | | | | |
| *991.9 5 | 8.0 11 | | | | | | | | |

[†] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

^x γ ray not placed in level scheme.

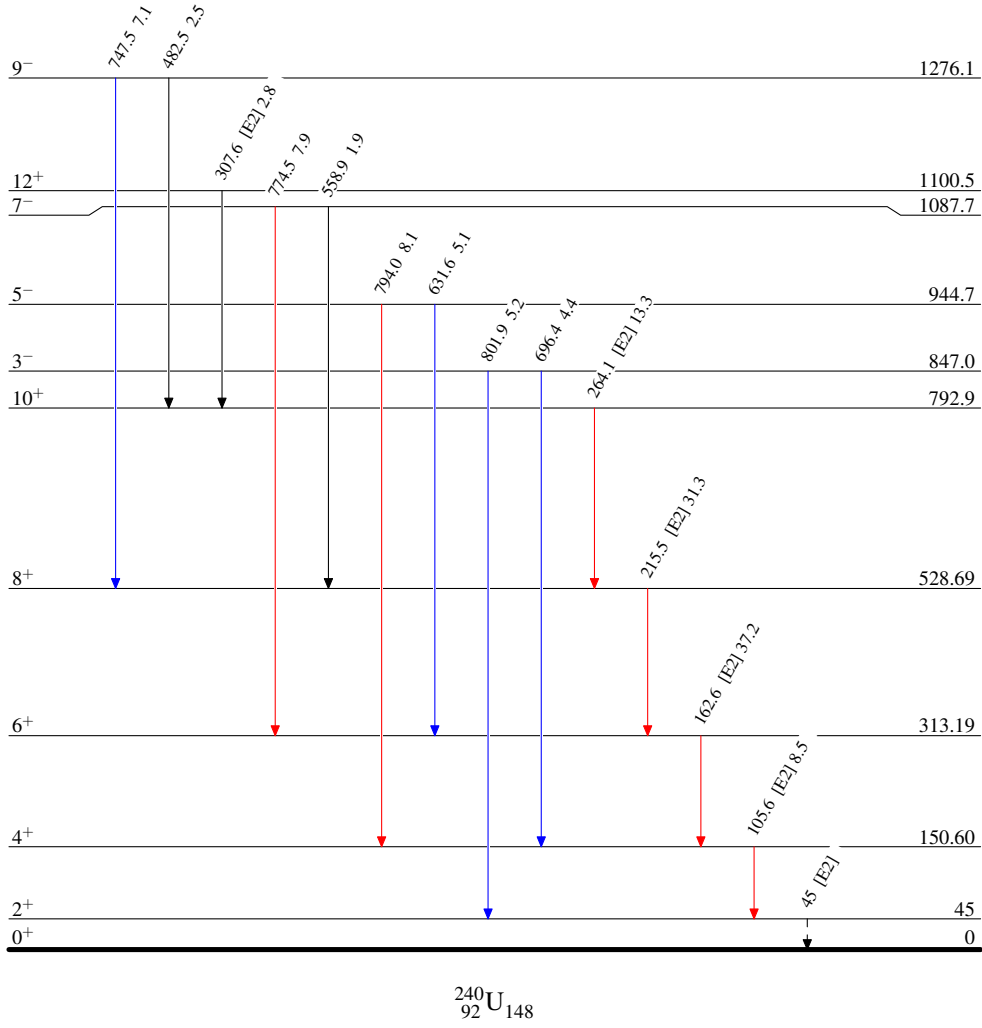
$^{238}\text{U}(^{18}\text{O}, ^{16}\text{O}\gamma)$ 2005Is07

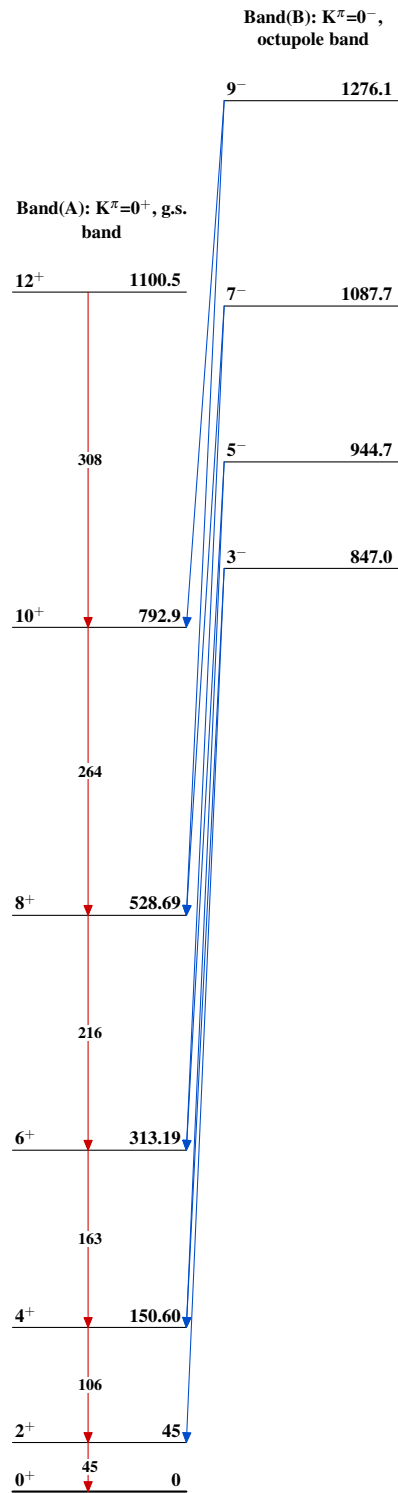
Legend

Level Scheme

Intensities: Relative I_γ

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



$^{238}\text{U}(^{18}\text{O}, ^{16}\text{O}\gamma)$ 2005Is07 $^{240}_{92}\text{U}_{148}$