

**Adopted Levels, Gammas**

| Type            | Author  | History Citation   | Literature Cutoff Date |
|-----------------|---------|--------------------|------------------------|
| Full Evaluation | N. Nica | NDS 111,525 (2010) | 19-Nov-2009            |

$Q(\beta^-) = -1.04 \times 10^4$  syst;  $S(n) = 1.439 \times 10^4$  15;  $S(p) = 1.93 \times 10^3$  11;  $Q(\alpha) = -4.24 \times 10^3$  11 [2012Wa38](#)

Note: Current evaluation has used the following Q record -10220 syst 14320 syst 1880 350 -4070 syst [2003Au03](#).

Uncertainties based on systematics are:  $\Delta Q(\beta^-) = 510$ ,  $\Delta S(n) = 510$ ,  $\Delta Q(\alpha) = 510$ .

$Q(\epsilon p) = 1570$  320.

Theory, calculations, systematics:

seniority mixing: [2006Es02](#), [2000Co26](#)

Gamow-Teller strength distribution: [2005Ju11](#), [2002Ro16](#)

shell model: [1998Co38](#), [1997He24](#)

dynamic collective model, log ft's: [2001ViZY](#)

binding energy: [1995Jo14](#)

analyzed data, deduced closed-shell s.p. Structure: [1999GrZR](#)

<sup>97</sup>Ag Levels

Cross Reference (XREF) Flags

**A** <sup>58</sup>Ni(<sup>46</sup>Ti, pα2nγ)

| E(level) <sup>†</sup>   | J <sup>π</sup> <sup>‡</sup> | T <sub>1/2</sub> | XREF     | Comments                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------|-----------------------------|------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.0 <sup>#</sup>        | (9/2 <sup>+</sup> )         | 25.5 s 3         | <b>A</b> | %ε=100<br>J <sup>π</sup> : J <sup>π</sup> based on shell model calculations ( <a href="#">2005Li58</a> , <a href="#">1990Al07</a> ) and analogy with odd-A N=50 isotopes ( <sup>91</sup> Nb to <sup>95</sup> Rh).<br>T <sub>1/2</sub> : weighted average (external unc.) of 25.9 s 4 ( <a href="#">1999Hu10</a> ) and 25.3 s 3 ( <a href="#">1997Sc30</a> ). |
| 1289.91 <sup>#</sup> 20 | (13/2 <sup>+</sup> )        |                  | <b>A</b> | J <sup>π</sup> : ΔJ=2, Q γ to (9/2 <sup>+</sup> ), g.s.                                                                                                                                                                                                                                                                                                      |
| 2052.9 <sup>#</sup> 3   | (17/2 <sup>+</sup> )        |                  | <b>A</b> | J <sup>π</sup> : ΔJ=2, Q γ to (13/2 <sup>+</sup> ), 1290.                                                                                                                                                                                                                                                                                                    |
| 2343.3 <sup>#</sup> 5   | (21/2 <sup>+</sup> )        | 1.8 ns 5         | <b>A</b> | J <sup>π</sup> : ΔJ=2, Q γ to (17/2 <sup>+</sup> ), 2053.<br>T <sub>1/2</sub> : centroid-shift method in ( <sup>46</sup> Ti, pα2nγ) ( <a href="#">2005Li58</a> ).                                                                                                                                                                                            |
| 4356.0 8                | (21/2 <sup>+</sup> )        |                  | <b>A</b> | J <sup>π</sup> : ΔJ=0, Q γ to (21/2 <sup>+</sup> ), 2343.                                                                                                                                                                                                                                                                                                    |
| 4915.2 <sup>#</sup> 7   | (23/2 <sup>+</sup> )        |                  | <b>A</b> | J <sup>π</sup> : ΔJ=1, D γ to (21/2 <sup>+</sup> ), 2343.                                                                                                                                                                                                                                                                                                    |
| 5252.4 11               | (23/2 <sup>+</sup> )        |                  | <b>A</b> | J <sup>π</sup> : ΔJ=1, D γ to (21/2 <sup>+</sup> ), 2343.                                                                                                                                                                                                                                                                                                    |
| 5822.0 8                |                             |                  | <b>A</b> |                                                                                                                                                                                                                                                                                                                                                              |
| 6221.2 <sup>#</sup> 7   | (27/2 <sup>+</sup> )        |                  | <b>A</b> | J <sup>π</sup> : ΔJ=2, Q γ to (23/2 <sup>+</sup> ), 4915.                                                                                                                                                                                                                                                                                                    |
| 6232.4 12               | (25/2 <sup>+</sup> )        |                  | <b>A</b> | J <sup>π</sup> : ΔJ=1, D γ to (23/2 <sup>+</sup> ), 5252.                                                                                                                                                                                                                                                                                                    |
| 6481.4 <sup>#</sup> 8   | (31/2 <sup>+</sup> )        | 3.7 ns 1         | <b>A</b> | J <sup>π</sup> : ΔJ=2, Q γ to (27/2 <sup>+</sup> ), 6221.<br>T <sub>1/2</sub> : from γ(t) ( <a href="#">2005Li58</a> ) in ( <sup>46</sup> Ti, pα2nγ) ( <a href="#">2005Li58</a> ).                                                                                                                                                                           |
| 6948.5 <sup>#</sup> 8   | (33/2 <sup>+</sup> )        |                  | <b>A</b> | J <sup>π</sup> : ΔJ=1, (D+Q) γ to (31/2 <sup>+</sup> ), 6481.                                                                                                                                                                                                                                                                                                |

<sup>†</sup> From least-squares fit to Eγ's.

<sup>‡</sup> Positive parity was assumed in (<sup>46</sup>Ti, pα2nγ) dataset ([2005Li58](#)) for all the states (based on shell-model calculations and systematics); spins are assumed to increase with excitation energy.

<sup>#</sup> Band(A): Yrast cascade.

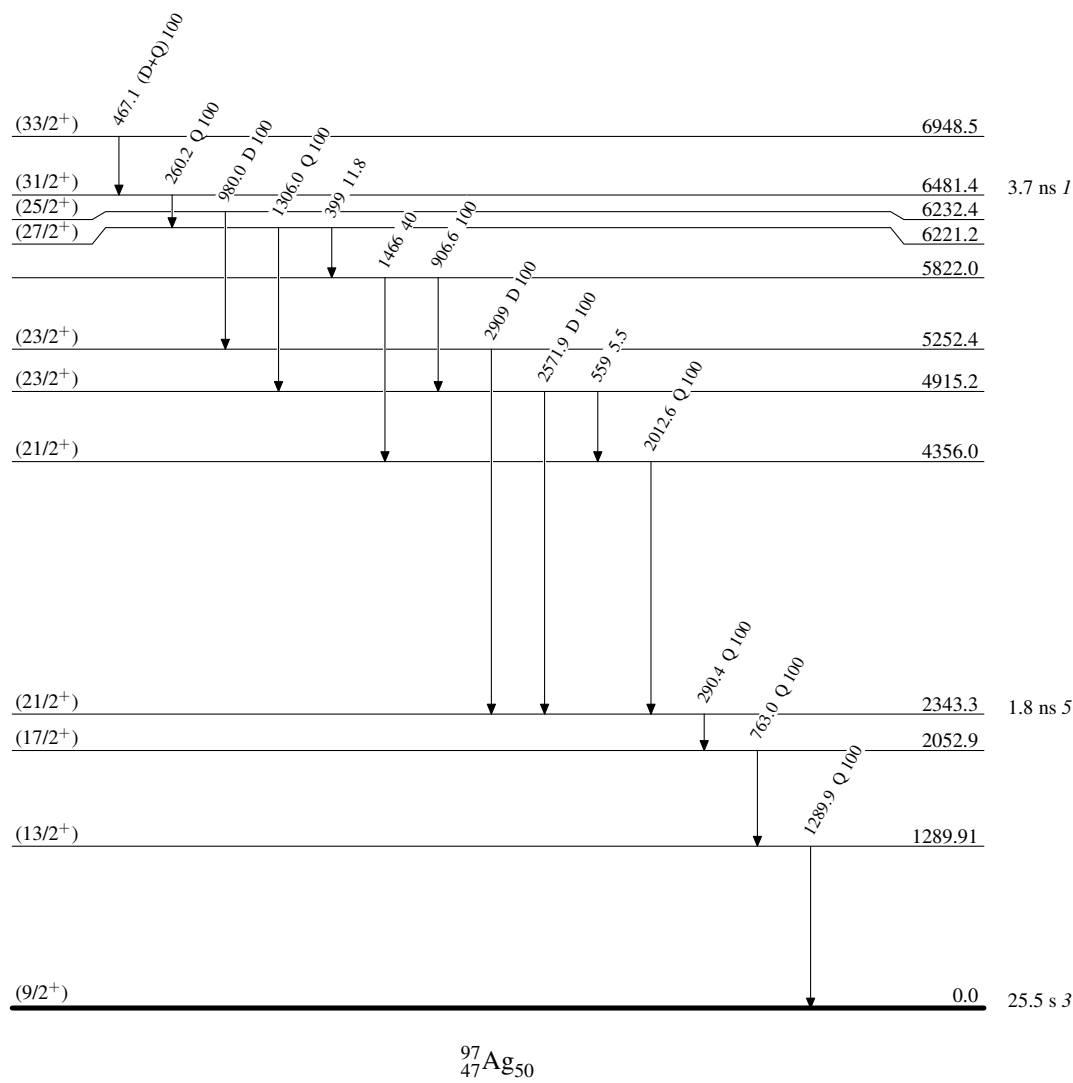
**Adopted Levels, Gammas (continued)**

| $\gamma(^{97}\text{Ag})$ |                      |            |            |         |                      |                    | Comments                                                   |
|--------------------------|----------------------|------------|------------|---------|----------------------|--------------------|------------------------------------------------------------|
| $E_i(\text{level})$      | $J_i^\pi$            | $E_\gamma$ | $I_\gamma$ | $E_f$   | $J_f^\pi$            | Mult. <sup>†</sup> |                                                            |
| 1289.91                  | (13/2 <sup>+</sup> ) | 1289.9 2   | 100        | 0.0     | (9/2 <sup>+</sup> )  | Q                  |                                                            |
| 2052.9                   | (17/2 <sup>+</sup> ) | 763.0 2    | 100        | 1289.91 | (13/2 <sup>+</sup> ) | Q                  |                                                            |
| 2343.3                   | (21/2 <sup>+</sup> ) | 290.4 3    | 100        | 2052.9  | (17/2 <sup>+</sup> ) | Q                  |                                                            |
| 4356.0                   | (21/2 <sup>+</sup> ) | 2012.6 8   | 100        | 2343.3  | (21/2 <sup>+</sup> ) | Q                  | Mult.: consistent with $\Delta J=0$ transition (2005Li58). |
| 4915.2                   | (23/2 <sup>+</sup> ) | 559 1      | 5.5 18     | 4356.0  | (21/2 <sup>+</sup> ) |                    |                                                            |
|                          |                      | 2571.9 5   | 100 16     | 2343.3  | (21/2 <sup>+</sup> ) | D                  |                                                            |
| 5252.4                   | (23/2 <sup>+</sup> ) | 2909 1     | 100        | 2343.3  | (21/2 <sup>+</sup> ) | D                  |                                                            |
| 5822.0                   |                      | 906.6 8    | 100 40     | 4915.2  | (23/2 <sup>+</sup> ) |                    |                                                            |
|                          |                      | 1466 1     | 40 20      | 4356.0  | (21/2 <sup>+</sup> ) |                    |                                                            |
| 6221.2                   | (27/2 <sup>+</sup> ) | 399 1      | 11.8 20    | 5822.0  |                      |                    |                                                            |
|                          |                      | 1306.0 3   | 100 14     | 4915.2  | (23/2 <sup>+</sup> ) | Q                  |                                                            |
| 6232.4                   | (25/2 <sup>+</sup> ) | 980.0 5    | 100        | 5252.4  | (23/2 <sup>+</sup> ) | D                  |                                                            |
| 6481.4                   | (31/2 <sup>+</sup> ) | 260.2 3    | 100        | 6221.2  | (27/2 <sup>+</sup> ) | Q                  |                                                            |
| 6948.5                   | (33/2 <sup>+</sup> ) | 467.1 3    | 100        | 6481.4  | (31/2 <sup>+</sup> ) | (D+Q)              | Mult.: mixed (D+Q), $\Delta J=1$ $\gamma$ (2005Li58).      |

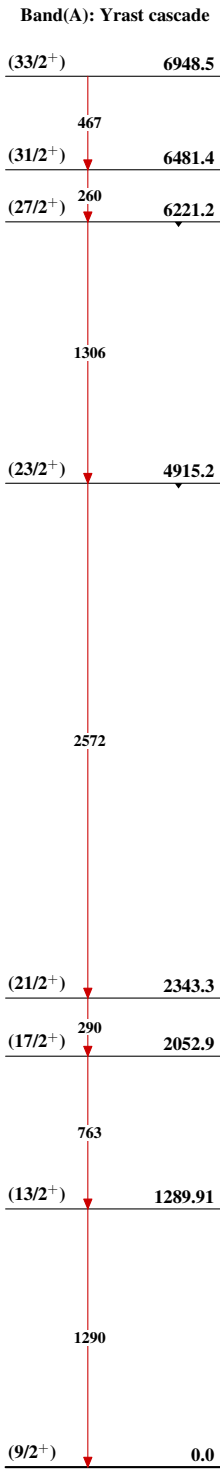
<sup>†</sup> Based on angular correlations in ( $^{46}\text{Ti}, p\alpha 2n\gamma$ ) dataset (2005Li58); Q transitions are  $\Delta J=2$  transitions, and D transitions are  $\Delta J=1$  transitions.

**Adopted Levels, Gammas****Level Scheme**

Intensities: Relative photon branching from each level



Adopted Levels, Gammas



$^{97}_{47}\text{Ag}_{50}$