

$^{175}\text{Lu}(\alpha,3n\gamma)$  1978Du06,1971Go21

| Type            | Author        | History<br>Citation | Literature Cutoff Date |
|-----------------|---------------|---------------------|------------------------|
| Full Evaluation | M. S. Basunia | NDS 107, 791 (2006) | 15-Sep-2005            |

**1978Du06:** Target:  $^{175}\text{Lu}$ , E=39, 43 MeV. Measured  $E\gamma$ ,  $I\gamma$  (not reported),  $\gamma(\theta)$ ,  $\gamma\gamma$  coin,  $\gamma(t)$  in the ns range. Detectors: Ge(Li), LEPS.

**1971Go21:** Target:  $^{175}\text{Lu}$ , E=29 MeV and above. Measured  $E\gamma$ ,  $\gamma(t)$ . Detector: NaI(Tl).

 $^{176}\text{Ta}$  Levels

| E(level) <sup>†</sup> | J <sup>π</sup> <sup>#</sup>                       | T <sub>1/2</sub> | Comments                          |
|-----------------------|---------------------------------------------------|------------------|-----------------------------------|
| 0.0                   | (1) <sup>-</sup>                                  |                  |                                   |
| 0.0+x                 | 7 <sup>+</sup>                                    |                  |                                   |
| 50 <sup>‡</sup> 5     | (2) <sup>-</sup>                                  |                  |                                   |
| 70 <sup>‡</sup> 6     | (1 <sup>-</sup> ,2 <sup>-</sup> ,3 <sup>-</sup> ) |                  |                                   |
| 105 <sup>‡</sup> 8    | ( <sup>+</sup> )                                  | 1.1 ms <i>I</i>  | T <sub>1/2</sub> : From 1971Go21. |
| 186.6+x 10            | 8 <sup>-</sup>                                    |                  |                                   |
| 249.7+x 15            | 9 <sup>-</sup>                                    |                  |                                   |
| 384.1+x 17            | 10 <sup>-</sup>                                   |                  |                                   |
| 554.6+x 17            | 11 <sup>-</sup>                                   |                  |                                   |
| 753.6+x 17            | 12 <sup>-</sup>                                   |                  |                                   |
| 978.6+x 18            | 13 <sup>-</sup>                                   |                  |                                   |
| 1226.7+x 19           | 14 <sup>-</sup>                                   |                  |                                   |

<sup>†</sup> From a least squares fit to the  $\gamma$ -rays assuming  $\Delta E = 1$  keV for all  $\gamma$ -ray energies. 63.1 $\gamma$  was not observed in 1978Du06, so level energies above 186.6+x keV level are 63.1 keV lower in 1978Du06 than this dataset.

<sup>‡</sup> Level structure assigned by evaluator comparing with the 1.1 ms isomeric decay proposed in 1978Du06, populated by (d,2n $\gamma$ ) and (p,n $\gamma$ ) reactions.

<sup>#</sup> From Adopted Levels.

 $\gamma(^{176}\text{Ta})$ 

| E <sub><math>\gamma</math></sub> <sup>†</sup> | E <sub>i</sub> (level) | J <sup>π</sup> <sub>i</sub>                       | E <sub>f</sub> | J <sup>π</sup> <sub>f</sub>                       | Comments                                                             |
|-----------------------------------------------|------------------------|---------------------------------------------------|----------------|---------------------------------------------------|----------------------------------------------------------------------|
| ≈20 <sup>‡</sup>                              | 70                     | (1 <sup>-</sup> ,2 <sup>-</sup> ,3 <sup>-</sup> ) | 50             | (2 <sup>-</sup> )                                 |                                                                      |
| 35 <sup>‡</sup> 5                             | 105                    | ( <sup>+</sup> )                                  | 70             | (1 <sup>-</sup> ,2 <sup>-</sup> ,3 <sup>-</sup> ) |                                                                      |
| 50 <sup>‡</sup> 5                             | 50                     | (2 <sup>-</sup> )                                 | 0.0            | (1) <sup>-</sup>                                  |                                                                      |
| 63.1                                          | 249.7+x                | 9 <sup>-</sup>                                    | 186.6+x        | 8 <sup>-</sup>                                    | E <sub><math>\gamma</math></sub> : 63.1 $\gamma$ from adopted level. |
| 134.1                                         | 384.1+x                | 10 <sup>-</sup>                                   | 249.7+x        | 9 <sup>-</sup>                                    |                                                                      |
| 170.2                                         | 554.6+x                | 11 <sup>-</sup>                                   | 384.1+x        | 10 <sup>-</sup>                                   |                                                                      |
| 186.6                                         | 186.6+x                | 8 <sup>-</sup>                                    | 0.0+x          | 7 <sup>+</sup>                                    |                                                                      |
| 199.2                                         | 753.6+x                | 12 <sup>-</sup>                                   | 554.6+x        | 11 <sup>-</sup>                                   |                                                                      |
| 225.2                                         | 978.6+x                | 13 <sup>-</sup>                                   | 753.6+x        | 12 <sup>-</sup>                                   |                                                                      |
| 248.1                                         | 1226.7+x               | 14 <sup>-</sup>                                   | 978.6+x        | 13 <sup>-</sup>                                   |                                                                      |
| 305.2                                         | 554.6+x                | 11 <sup>-</sup>                                   | 249.7+x        | 9 <sup>-</sup>                                    |                                                                      |
| 369.3                                         | 753.6+x                | 12 <sup>-</sup>                                   | 384.1+x        | 10 <sup>-</sup>                                   |                                                                      |
| 424.0                                         | 978.6+x                | 13 <sup>-</sup>                                   | 554.6+x        | 11 <sup>-</sup>                                   |                                                                      |
| 473.1                                         | 1226.7+x               | 14 <sup>-</sup>                                   | 753.6+x        | 12 <sup>-</sup>                                   |                                                                      |

<sup>†</sup> From 1978Du06, except as noted.

<sup>‡</sup> From 1971Go21.

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Level Scheme

