

$^{158}\text{Dy}(p,t)$  1977Ko04

Type	Author	History Citation	Literature Cutoff Date
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## Additional information 1.

**1977Ko04:**  $^{158}\text{Dy}(p,t)$ ,  $E(p)=29.9$  MeV. Enriched (>99%) target, deposited on  $60 \mu\text{g}/\text{cm}^2$  C backing. Tritons analyzed in a Q3d spectrometer and detected in a 60-cm long position-sensitive proportional counter. FWHM $\approx$ 12 keV. Differential cross sections measured at  $5^\circ$  intervals from  $\theta=10^\circ$  to  $60^\circ$  (laboratory angles).

**1976Ko25:** Similar, but less extensive, information than is given in **1977Ko04**.

 $^{156}\text{Dy}$  Levels

E(level) <sup>†</sup>	$J^\pi$ <sup>‡</sup>	L <sup>#</sup>	S&a	Comments
0 <sup>b</sup>	0 <sup>+</sup>	0	605	
138 <sup>b</sup>	5 2 <sup>+</sup>	2	141	
404 <sup>b</sup>	5 4 <sup>+</sup>	4	10	
674 <sup>c</sup>	5 0 <sup>+</sup>	0	142	
770 <sup>b</sup>	8 6 <sup>+</sup>	6	4.6	
829 <sup>c</sup>	5 2 <sup>+</sup>	2	21	
891 <sup>d</sup>	5 2 <sup>+</sup>	2	491	
1088 <sup>c</sup>	8 4 <sup>+</sup>	4	4.1	
1166 <sup>d</sup>	5 4 <sup>+</sup>	4	10	
1208 <sup>b</sup>	8 8 <sup>+</sup>	(8)	5.2	
1371	5 3 <sup>-</sup>	3	39	
1385	5 2 <sup>+</sup>	(3)	16	$J^\pi$ : Assigned (3 <sup>-</sup> ) by <b>1977Ko04</b> , from L=(3).
1408	8 (3 <sup>-</sup> )	(3)	3.9	
1483	8 (3 <sup>-</sup> )	(3)	4.9	
1520	5 2 <sup>+</sup>	2	46	Assigned as a “ $\beta$ - $\gamma$ ” bandhead by <b>1977Ko04</b> , based largely on the relatively large (p,t) cross section.
1610	8 (3 <sup>-</sup> )	(3)	2.0	L: <b>1977Ko04</b> suggest L=0, but point out that this is strongly influenced by only one data point.
1635	8 (4 <sup>+</sup> )	(4)	3.2	Assigned as a $K^\pi=4^+$ bandhead by <b>1977Ko04</b> . For another proposed configuration, see the Adopted Levels data set.
1778	5 (3 <sup>-</sup> )	(3)	10	
1798	5 4 <sup>+</sup>	4	23	
1844	6 (4 <sup>+</sup> )	(5)	14	$J^\pi$ : Value differs from the reported L value.
1874	6 (2 <sup>+</sup> )	(2) <sup>@</sup>	8.0	
1884	9 (5 <sup>-</sup> )	(5) <sup>@</sup>	4.6	
1934	6 (3 <sup>-</sup> )	(3)	6.1	
1956	9 (3 <sup>-</sup> )	(3)	3.4	
2009	9 4 <sup>+</sup>	@	5.2	L: L=3 assigned by <b>1977Ko04</b> .
2032	6 2 <sup>+</sup>	2	11	
2052	9 (3 <sup>-</sup> )	(3) <sup>@</sup>	4.9	
2094	6 (5 <sup>-</sup> )	(5)	22	
2103	9 (4 <sup>+</sup> )		2.2	$J^\pi$ : <b>1977Ko04</b> do not assign an L value.
2146	6 (5 <sup>-</sup> )	(5)	12	
2174	7 (3 <sup>-</sup> )	(3) <sup>@</sup>	10	L: Angular distribution is well described by L=3. If this is the same as the 2169 level in $^{156}\text{Ho}$ $\varepsilon$ decay (56 min), and the band-structure arguments there are correct, then $J^\pi$ would be 3 <sup>+</sup> .
2193	7 4 <sup>+</sup>	4	26	
2217	7 2 <sup>+</sup>	(0)	8.0	L: <b>1977Ko04</b> suggest L=0, but point out that this is strongly influenced by only one data point.
2250	7 2 <sup>+</sup>	2	49	

<sup>†</sup> Uncertainties are assigned by the evaluator based on a general statement of the authors (**1977Ko04**) that the level energies are

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 $^{158}\text{Dy}(p,t)$  **1977Ko04 (continued)**

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 $^{156}\text{Dy}$  Levels (continued)

believed accurate to within 5 keV or 0.3%, whichever is greater, for groups with total strength  $\geq 1\%$  of that of the g.s.

‡ From the Adopted Values, unless noted otherwise. 1977Ko04 state that their assignments for levels below 1375 keV are from other experiments. In many cases, the adopted values are from this data set alone and are derived from the L values.

# From 1977Ko04 and based on angular distributions. Below 1375 keV the  $J^\pi$  were taken from previous studies, therefore, these measured angular distributions were available to test the calculated ones.

@ Value given on the angular-distribution figures, but not included in their table of L values.

& Label= $I_t(\mu\text{b})$ .

<sup>a</sup> Summed intensity over all angles studied. These values are believed accurate to better than 25% (1977Ko04).

<sup>b</sup> Band(A):  $K^\pi=0^+$  g.s. band.

<sup>c</sup> Band(B): First excited  $K^\pi=0^+$  band.

<sup>d</sup> Band(C):  $K^\pi=2^+$   $\gamma$ -vibrational band.

$^{158}\text{Dy}(\text{p,t})$  **1977Ko04****Band(A):  $K^\pi=0^+$  g.s.  
band** $8^+$       1208**Band(C):  $K^\pi=2^+$   
 $\gamma$ -vibrational band** $4^+$       1166**Band(B): First excited  
 $K^\pi=0^+$  band** $4^+$       1088 $2^+$       891 $2^+$       829 $6^+$       770 $0^+$       674 $4^+$       404 $2^+$       138 $0^+$       0 $^{156}_{66}\text{Dy}_{90}$