^{150}Nd(^{12}C,4nγ) 2003Ha45

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 141, 1 (2017)	1-Feb-2017

E=64 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$(DCO) using GEMINI array with 12 HPGe detectors with BGO Compton suppressors.

^{158}Dy Levels

Nomenclature for quasiparticle labels:
A: ν5/2[642], α=+1/2.
B: ν5/2[642], α=−1/2.
E: ν3/2[521], α=+1/2.
F: ν3/2[521], α=−1/2.
X: ν11/2[505], α=+1/2.
Y: ν11/2[505], α=−1/2.

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0#	0^+	2475.9@ 19	(10^-)	3699.1@ 24	(16^-)	5483@ 3	(22^-)
98.7# 10	2^+	2511.4a 21	(10^-)	3780.3# 25	18^+	5794b 3	(22^-)
316.8# 15	4^+	2600.1b 21	(10^-)	3876.4b 23	(16^-)	5812& 3	$23^{(-)}$
637.3# 17	6^+	2611.5# 21	14^+	3902.8& 23	$17^{(-)}$	5821# 3	24^+
1043.2# 18	8^+	2758.2c 21	(11^-)	4157.0c 24	(17^-)	6160c 3	(23^-)
1314.1 17	5^+	2806.7@ 20	(12^-)	4243@ 3	(18^-)	6178@ 3	(24^-)
1518.9# 19	10^+	2886.1& 21	$13^{(-)}$	4406# 3	20^+	6519b 3	(24^-)
1761.9a 17	(6^-)	2939.8b 22	(12^-)	4455.1b 24	(18^-)	6543& 3	$25^{(-)}$
2048.2# 20	12^+	2984.5a 23		4490.5& 25	$19^{(-)}$	6613# 4	26^+
2095.9a 18	(8^-)	3143.8c 22	(13^-)	4768.3c 25	(19^-)	6924@ 4	(26^-)
2208.3 21		3189.5# 23	16^+	4839@ 3	(20^-)	7456# 4	28^+
2230.8@ 19	(8^-)	3216.7@ 21	(14^-)	5085# 3	22^+	7720@ 4	(28^-)
2361.1b 19	(8^-)	3368.1& 22	$15^{(-)}$	5097.0b 25	(20^-)	8558@ 4	(30^-)
2451.9& 21	$11^{(-)}$	3368.4b 23	(14^-)	5128& 3	$21^{(-)}$		
2467.2c 21	(9^-)	3612.3c 23	(15^-)	5439c 3	(21^-)		

† From least-squares fit to Eγ values assuming 1 keV uncertainty for each γ ray.
‡ Deduced by 2003Ha45 based on DCO ratio measurements and physical arguments (can differ from J^π values in Adopted Levels, Gammas dataset).
# Band(A): g.s. band. AB crossing at frequency of ≈0.28 MeV.
@ Band(B): ν5/2[642]⊗ν3/2[521], α=0. AE band.
& Band(C): ν5/2[642]⊗ν3/2[521], α=1. AF band.
a Band(D): (6^-) band.
b Band(E): ν5/2[642]⊗ν11/2[505], α=0. AX band.
c Band(e): ν5/2[642]⊗ν11/2[505], α=1. AY band.

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$\gamma(^{158}Dy)$

DCO ratios are plotted in figure 3 of 2003Ha45 (the uncertainties of many of these are quite large) where about half of the points (the open circles) are not explained and where there is no clear assignment of the DCO values to the Eγ energies. As a consequence the multipolarities of the transitions and the J^π assignments on the level scheme can not be checked independently.

E_γ	E_i(level)	J_i^π	E_f	J_f^π	E_γ	E_i(level)	J_i^π	E_f	J_f^π
98.7	98.7	2^+	0.0	0^+	534.7	3902.8	$17^{(-)}$	3368.1	$15^{(-)}$
106.2	2467.2	(9^-)	2361.1	(8^-)	543.6	4243	(18^-)	3699.1	(16^-)
132.9	2600.1	(10^-)	2467.2	(9^-)	544.5	4157.0	(17^-)	3612.3	(15^-)
152.8	2361.1	(8^-)	2208.3		563.3	2611.5	14^+	2048.2	12^+
157.9	2758.2	(11^-)	2600.1	(10^-)	578.0	3189.5	16^+	2611.5	14^+
181.4	2939.8	(12^-)	2758.2	(11^-)	578.8	4455.1	(18^-)	3876.4	(16^-)
203.9	3143.8	(13^-)	2939.8	(12^-)	587.7	4490.5	$19^{(-)}$	3902.8	$17^{(-)}$
218.1	316.8	4^+	98.7	2^+	590.8	3780.3	18^+	3189.5	16^+
224.4	3368.4	(14^-)	3143.8	(13^-)	596.0	4839	(20^-)	4243	(18^-)
239	2600.1	(10^-)	2361.1	(8^-)	599.3	2361.1	(8^-)	1761.9	(6^-)
244.0	3612.3	(15^-)	3368.4	(14^-)	605	3216.7	(14^-)	2611.5	14^+
245.1	2475.9	(10^-)	2230.8	(8^-)	611.3	4768.3	(19^-)	4157.0	(17^-)
264.4	3876.4	(16^-)	3612.3	(15^-)	626.0	4406	20^+	3780.3	18^+
265.0	2361.1	(8^-)	2095.9	(8^-)	637.2	5128	$21^{(-)}$	4490.5	$19^{(-)}$
280.8	4157.0	(17^-)	3876.4	(16^-)	641.8	5097.0	(20^-)	4455.1	(18^-)
291.0	2758.2	(11^-)	2467.2	(9^-)	644.7	5483	(22^-)	4839	(20^-)
298.1	4455.1	(18^-)	4157.0	(17^-)	670.5	5439	(21^-)	4768.3	(19^-)
313.3	4768.3	(19^-)	4455.1	(18^-)	678.5	5085	22^+	4406	20^+
320.5	637.3	6^+	316.8	4^+	684.0	5812	$23^{(-)}$	5128	$21^{(-)}$
328.6	5097.0	(20^-)	4768.3	(19^-)	694.7	6178	(24^-)	5483	(22^-)
330.9	2806.7	(12^-)	2475.9	(10^-)	696.7	5794	(22^-)	5097.0	(20^-)
333.8	2095.9	(8^-)	1761.9	(6^-)	713.4	3902.8	$17^{(-)}$	3189.5	16^+
340.0	2939.8	(12^-)	2600.1	(10^-)	721.6	6160	(23^-)	5439	(21^-)
341.4	5439	(21^-)	5097.0	(20^-)	725.0	6519	(24^-)	5794	(22^-)
354.9	5794	(22^-)	5439	(21^-)	731.5	6543	$25^{(-)}$	5812	$23^{(-)}$
379.9	2475.9	(10^-)	2095.9	(8^-)	735.8	5821	24^+	5085	22^+
385.5	3143.8	(13^-)	2758.2	(11^-)	745.7	6924	(26^-)	6178	(24^-)
406.0	1043.2	8^+	637.3	6^+	756.6	3368.1	$15^{(-)}$	2611.5	14^+
410.2	3216.7	(14^-)	2806.7	(12^-)	758.5	2806.7	(12^-)	2048.2	12^+
415.5	2511.4	(10^-)	2095.9	(8^-)	792.0	6613	26^+	5821	24^+
428.6	3368.4	(14^-)	2939.8	(12^-)	796.1	7720	(28^-)	6924	(26^-)
434.2	2886.1	$13^{(-)}$	2451.9	$11^{(-)}$	837.8	2886.1	$13^{(-)}$	2048.2	12^+
447.7	1761.9	(6^-)	1314.1	5^+	838	8558	(30^-)	7720	(28^-)
468.6	3612.3	(15^-)	3143.8	(13^-)	843.7	7456	28^+	6613	26^+
469	2230.8	(8^-)	1761.9	(6^-)	932.9	2451.9	$11^{(-)}$	1518.9	10^+
473.1	2984.5		2511.4	(10^-)	957.2	2475.9	(10^-)	1518.9	10^+
475.8	1518.9	10^+	1043.2	8^+	997.3	1314.1	5^+	316.8	4^+
481.8	3368.1	$15^{(-)}$	2886.1	$13^{(-)}$	1052.8	2095.9	(8^-)	1043.2	8^+
482.4	3699.1	(16^-)	3216.7	(14^-)	1124.6	1761.9	(6^-)	637.3	6^+
507.9	3876.4	(16^-)	3368.4	(14^-)	1187.6	2230.8	(8^-)	1043.2	8^+
529.2	2048.2	12^+	1518.9	10^+					

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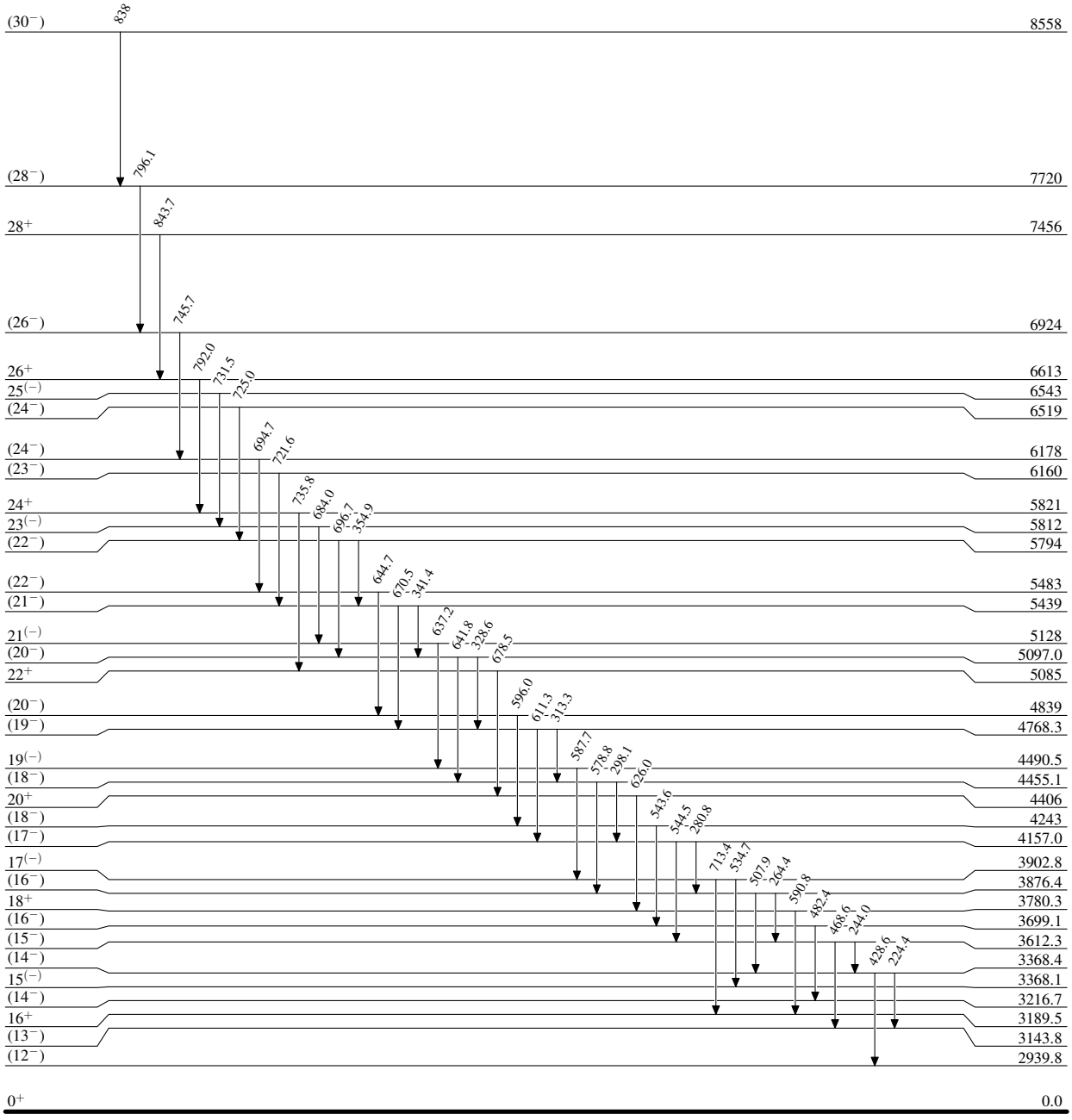
Level Scheme



$^{158}_{66}Dy_{92}$

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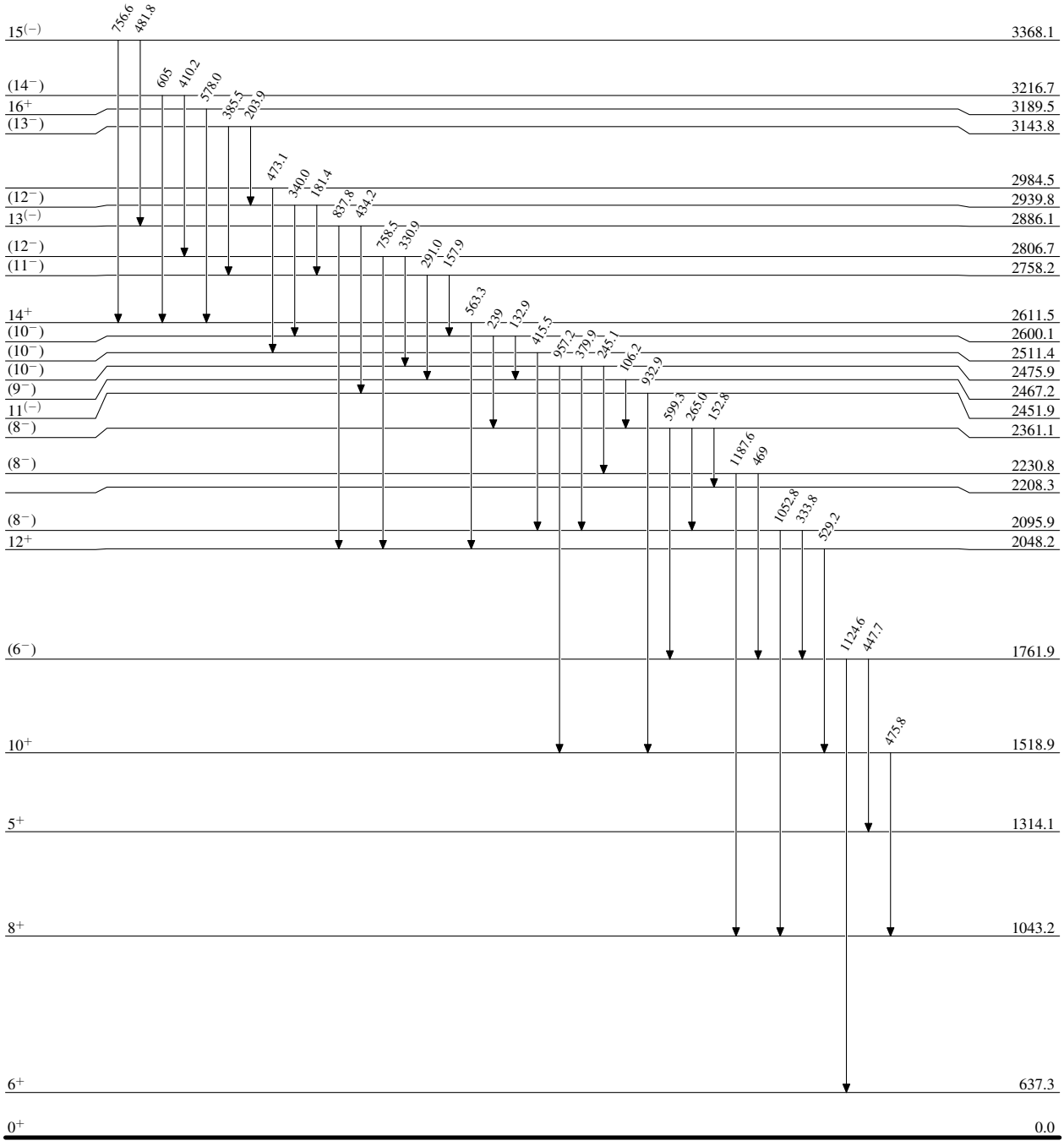
Level Scheme (continued)



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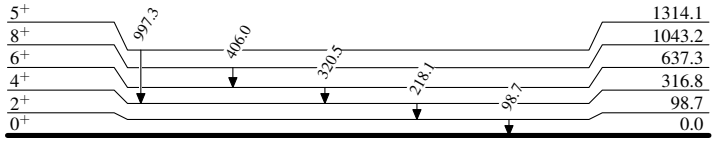
Level Scheme (continued)



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