^{161}Dy(^{28}Si,4nγ) 1988Ha19

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 106, 619 (2005)	1-Nov-2005

1988Ha19: ^{161}Dy(^{28}Si,4nγ),E=135-160 MeV; 95% enriched ^{161}Dy. Measured Eγ, Iγ, $\gamma\gamma$ coin, $\gamma(\theta)$ for θ=12°, 33°, and 90°. Detector: the "Chateau de Cristal" 4π system, consisting of 38 BaF2 counters acting as sum-energy and multiplicity filter, and 12 escape-suppressed Ge(Li) detectors. Measured angular correlation and linear polarization coefficients.

^{185}Hg Levels

E(level)	J$^{\pi}$[†]	T$_{1/2}$[‡]	Comments
0.0[#]	1/2$^-$	49.1 s *10*	
26.1			
34[@] *8*	(7/2)$^-$		E(level): from ^{185}Hg IT decay (49 s) (1982Bo27). E=38 keV given in level scheme by 1988Ha19.
96[#]	(5/2$^-$)		
99[a] *8*	13/2$^+$	21.6 s *15*	E(level): from ^{185}Hg IT decay (49 s) (1982Bo27). E=103 keV given in level scheme by 1988Ha19.
141[@]	(9/2)$^-$		
212[&]	(9/2$^+$)		
281[@]	(11/2)$^-$		
329[#]	(9/2$^-$)		
412[&]	(11/2$^+$)		
436[@]	(13/2)$^-$		
479[a]	(17/2)$^+$		
541[&]	(17/2)$^+$		
549[&]	(15/2$^+$)		
613[@]	(15/2)$^-$		
634[#]	(13/2$^-$)		
806[@]	(17/2)$^-$		
906.8[&]	(19/2)$^+$		
1015[#]	(17/2$^-$)		
1020[@]	(19/2)$^-$		
1030[&]	(21/2)$^+$		
1093[a]	(21/2$^+$)		
1248[@]	(21/2)$^-$		
1359[&]	(23/2)$^+$		
1461[#]	(21/2$^-$)		
1496[@]	(23/2)$^-$		
1514[&]	(25/2)$^+$		
1753[@]	(25/2)$^-$		
1886[&]	(27/2)$^+$		
1955[#]	(25/2$^-$)		
2030[@]	(27/2)$^-$		
2052[&]	(29/2)$^+$		
2310[@]	(29/2)$^-$		
2478[&]	(31/2)$^+$		
2480[#]	(29/2$^-$)		
2612[@]	(31/2)$^-$		

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^{161}Dy(^{28}Si,4nγ) 1988Ha19 (continued)

^{185}Hg Levels (continued)

E(level)	J^π†	E(level)	J^π†	E(level)	E(level)
2648&	$(33/2)^+$	3236@	$(35/2)^-$	3810	4177
2909@	$(33/2)^-$	3295&	$(37/2)^+$	3867	4581?
3028#	$(33/2^-)$	3533@	$(37/2^-)$	3899	4703?
3123&	$(35/2^+)$	3617		3983	

† From 1988Ha19, based on γ(q), $\gamma\gamma$-coin. and band structures.
‡ From Adopted Levels.
# Band(A): 1/2(521) rotational band. Prolate shape.
@ Band(B): 7/2(514) rotational band. Prolate shape.
& Band(C): 9/2(624) rotational band. Prolate shape.
a Band(D): $K^\pi=13/2^+$, decoupled rotational band. configuration=$i_{13/2}$. Prolate shape.

γ(^{185}Hg)

P=linear polarization from 1988Ha19.

E_γ†	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	Comments
(8 *8*)		34	$(7/2)^-$	26.1			E_γ: from ^{185}Hg IT decay (21 s) (1982Bo27).
(26.1)		26.1		0.0	$1/2^-$		E_γ: from ^{185}Hg IT decay (21 s) (1982Bo27).
96	@	96	$(5/2^-)$	0.0	$1/2^-$	(Q)[a]	
107.2	@	141	$(9/2)^-$	34	$(7/2)^-$	(D+Q)[a]	
136.8	8.3	549	$(15/2^+)$	412	$(11/2^+)$	(Q)	A_2=0.15 *10*.
139.9	3.3	281	$(11/2)^-$	141	$(9/2)^-$	D+Q	A_2=−0.35 *10*.
152	@	1514	$(25/2)^+$	1359	$(23/2)^+$	(D+Q)[a]	
155	1.5&	436	$(13/2)^-$	281	$(11/2)^-$	(D+Q)[a]	
165[c]	@	2052	$(29/2)^+$	1886	$(27/2)^+$	(D+Q)[a]	
177	1.5&	613	$(15/2)^-$	436	$(13/2)^-$	(D+Q)[a]	
194	@	806	$(17/2)^-$	613	$(15/2)^-$	(D+Q)[a]	
200	3&	412	$(11/2^+)$	212	$(9/2^+)$	(D+Q)[a]	
213	@	1020	$(19/2)^-$	806	$(17/2)^-$	(D+Q)[a]	
228	@	1248	$(21/2)^-$	1020	$(19/2)^-$	(D+Q)[a]	
233.5	16	329	$(9/2^-)$	96	$(5/2^-)$	Q	A_2=0.3 *1*.
246.5	16	281	$(11/2)^-$	34	$(7/2)^-$	E2	A_2=0.2 *1*, P=0.47 *16*.
247	@	1496	$(23/2)^-$	1248	$(21/2)^-$	(D+Q)[a]	
294.6	25	436	$(13/2)^-$	141	$(9/2)^-$	E2	A_2=0.40 *15*, P=0.32 *11*.
304.3	21	634	$(13/2^-)$	329	$(9/2^-)$	E2	A_2=0.26 *12*, P=0.10 *3*.
313	5&	412	$(11/2^+)$	99	$13/2^+$	(D+Q)[a]	
329	8&	1359	$(23/2)^+$	1030	$(21/2)^+$	(D+Q)[a]	
332.1	24	613	$(15/2)^-$	281	$(11/2)^-$	E2	A_2=0.36 *12*, P=0.41 *14*.
358	8&	906.8	$(19/2)^+$	549	$(15/2^+)$	(Q)[a]	
366	9&	906.8	$(19/2)^+$	541	$(17/2)^+$	(D+Q)[a]	
370.7	20	806	$(17/2)^-$	436	$(13/2)^-$	E2	A_2=0.30 *8*, P=0.40 *14*.
373	3&	1886	$(27/2)^+$	1514	$(25/2)^+$	(D+Q)[a]	
380.5	15	479	$(17/2)^+$	99	$13/2^+$	(Q)[a]	
381.5	20	1015	$(17/2^-)$	634	$(13/2^-)$	E2	A_2=0.3 *1*, P=0.70 *25*.

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^{161}Dy(^{28}Si,4nγ) 1988Ha19 (continued)

$\gamma(^{185}Hg)$ (continued)

E_γ †	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	Comments
407.4	24	1020	$(19/2)^-$	613	$(15/2)^-$	E2	A_2=0.3 *1*, P=0.6 *2*.
419[c]	@	1514	$(25/2)^+$	1093	$(21/2^+)$	(Q)[a]	
427	3&	2478	$(31/2)^+$	2052	$(29/2)^+$	(D+Q)[a]	
428.4	10	906.8	$(19/2)^+$	479	$(17/2)^+$	M1+E2	A_2=−0.23 *6*, P=−0.03 *10*.
441.9[b]	80[b]	541	$(17/2)^+$	99	$13/2^+$	E2	A_2=0.3 *1*, P=0.5 *1*.
441.9[b]	20[b]	1248	$(21/2)^-$	806	$(17/2)^-$	(Q)	
445.3	20	1461	$(21/2^-)$	1015	$(17/2^-)$	E2	A_2=0.3 *1*, P=0.5 *2*.
452.0	24	1359	$(23/2)^+$	906.8	$(19/2)^+$	E2	A_2=0.19 *7*, P=0.1 *1*.
475.4	24	1496	$(23/2)^-$	1020	$(19/2)^-$	E2	A_2=0.2 *1*, P=0.3 *1*.
483.8	47	1514	$(25/2)^+$	1030	$(21/2)^+$	E2	A_2=0.3 *1*, P=0.42 *13*.
489.4	63	1030	$(21/2)^+$	541	$(17/2)^+$	E2	A_2=0.3 *1*, P=0.45 *11*.
494.1	19	1955	$(25/2^-)$	1461	$(21/2^-)$	E2	A_2=0.5 *2*, P=0.26 *8*.
504.5	17	1753	$(25/2)^-$	1248	$(21/2)^-$	E2	A_2=0.26 *15*, P=0.8 *3*.
525.8	10	2480	$(29/2^-)$	1955	$(25/2^-)$	(Q)[a]	
527.3	18	1886	$(27/2)^+$	1359	$(23/2)^+$	E2	A_2=0.3 *1*, P=0.26 *9*.
533.8	22	2030	$(27/2)^-$	1496	$(23/2)^-$	E2	A_2=0.3 *1*, P=0.35 *13*.
537.7	36	2052	$(29/2)^+$	1514	$(25/2)^+$	E2	A_2=0.3 *1*, P=0.14 *5*.
547	8&	3028	$(33/2^-)$	2480	$(29/2^-)$	(Q)[a]	
557.2	15	2310	$(29/2)^-$	1753	$(25/2)^-$	Q	A_2=0.2 *1*.
582.6	15	2612	$(31/2)^-$	2030	$(27/2)^-$	E2	A_2=0.3 *1*, P=0.5 *2*.
589.8	5	3617		3028	$(33/2^-)$		
591.7	12	2478	$(31/2)^+$	1886	$(27/2)^+$	(Q)[a]	
596.3	21	2648	$(33/2)^+$	2052	$(29/2)^+$	Q	A_2=0.2 *1*.
599.1	15	2909	$(33/2)^-$	2310	$(29/2)^-$	Q	A_2=0.12 *7*.
614	4&	1093	$(21/2^+)$	479	$(17/2)^+$	(Q)[a]	
622.8	13	3236	$(35/2)^-$	2612	$(31/2)^-$	Q	A_2=0.3 *1*.
623.5	8	3533	$(37/2^-)$	2909	$(33/2)^-$	(Q)[a]	
631	5	3867		3236	$(35/2)^-$		
644.2	3	4177		3533	$(37/2^-)$		
644.8	6	3123	$(35/2^+)$	2478	$(31/2)^+$	(Q)[a]	
646.9	10	3295	$(37/2)^+$	2648	$(33/2)^+$	Q	A_2=0.2 *1*.
663.2	3	3899		3236	$(35/2)^-$		
682[c]	@	4581?		3899			
687.0	3	3810		3123	$(35/2^+)$		
687.5	5	3983		3295	$(37/2)^+$		
720[c]	@	4703?		3983			

† Uncertainties are 0.2 to 0.5 keV, depending on Iγ.
‡ Relative uncertainties are 10 to 30%.
# From $\gamma(\theta)$ and linear polarization measurements, and from assumed band structure and systematics.
@ Weak.
& Complex line, Iγ is from coincidence data.
[a] From angular distribution and linear polarization, but the respective coefficients are not reported.
[b] Multiply placed with intensity suitably divided.
[c] Placement of transition in the level scheme is uncertain.

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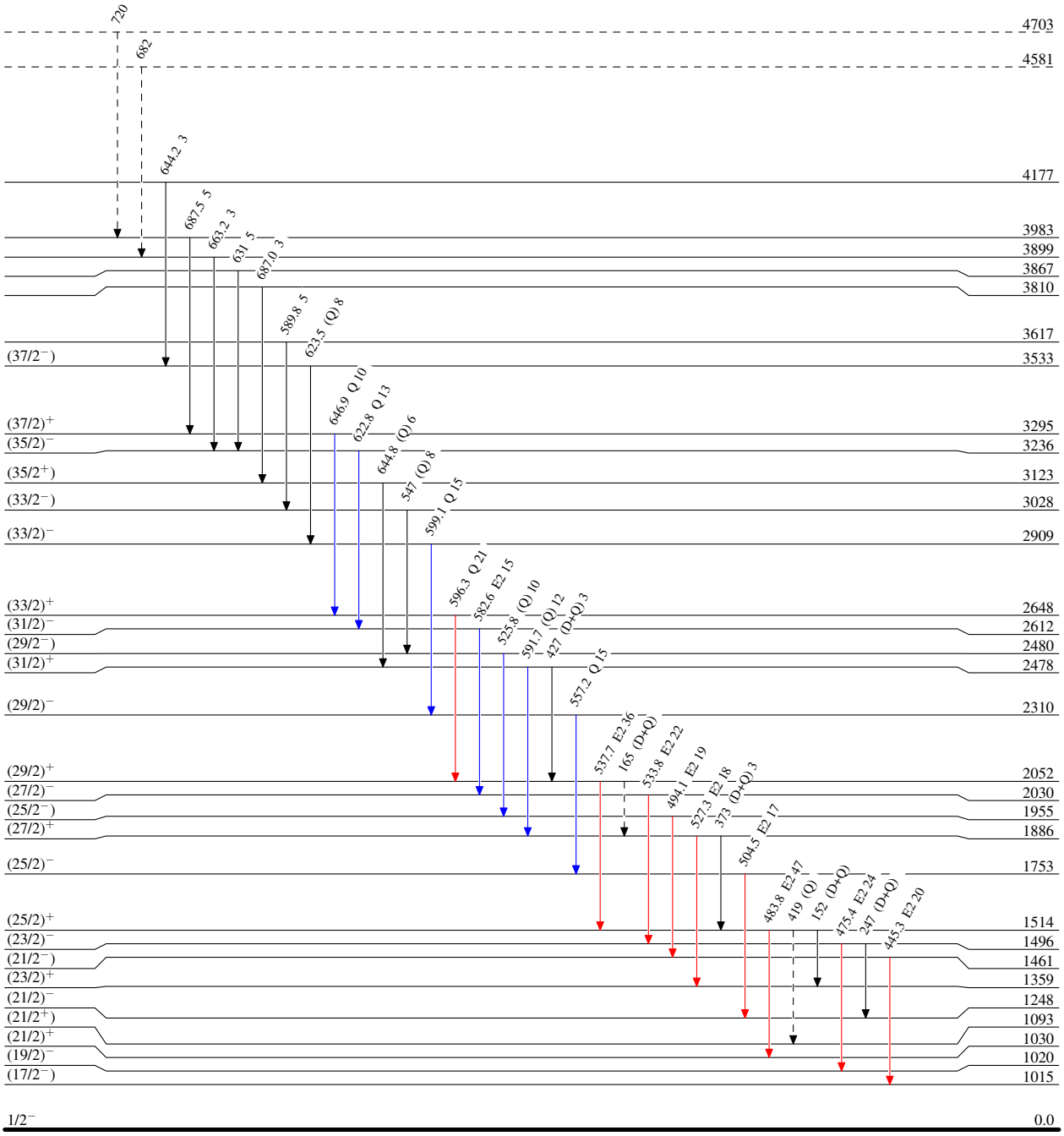
Level Scheme

Intensities: Relative I_γ

Legend

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

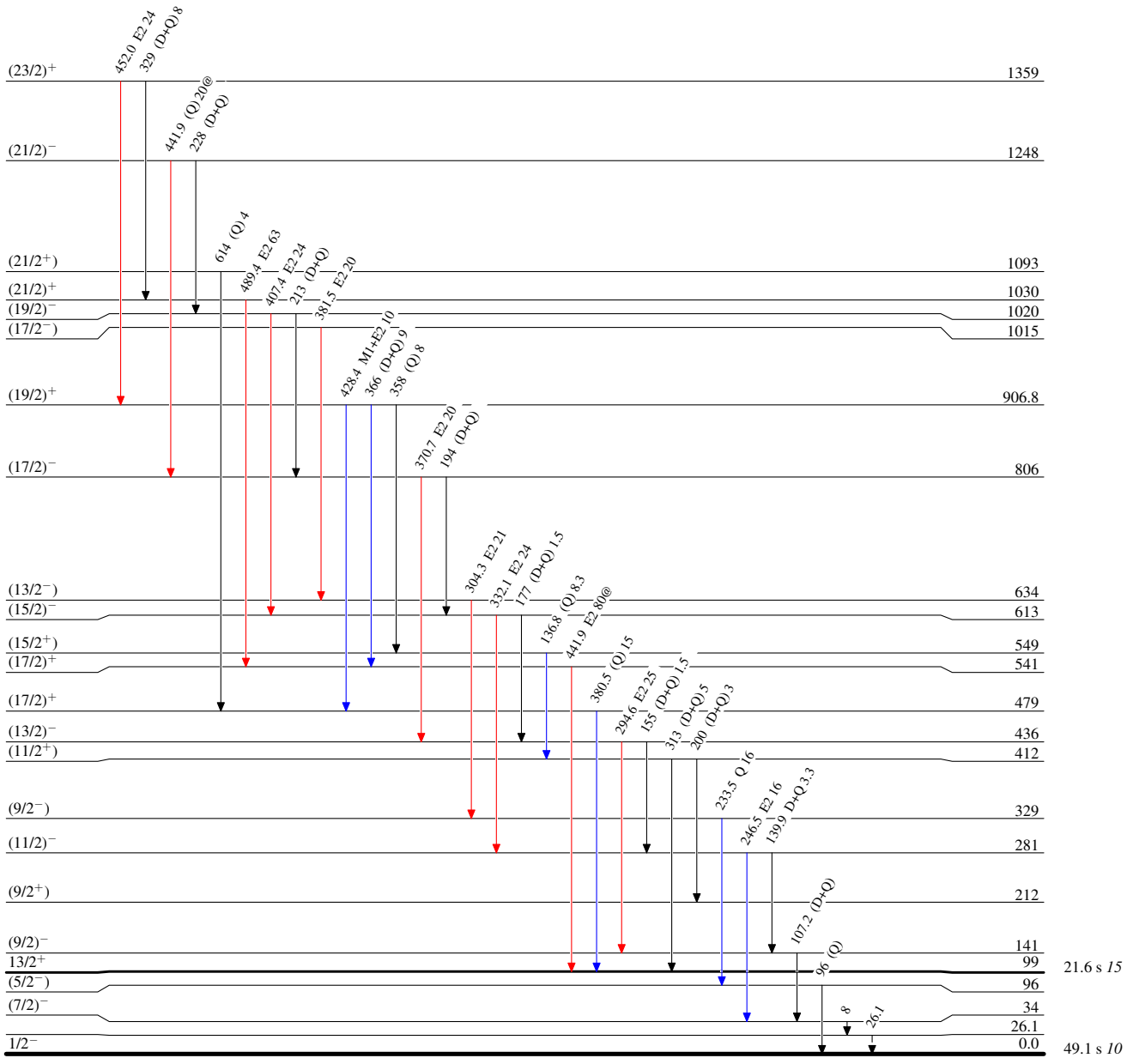


$^{185}_{80}Hg_{105}$

^{161}Dy(^{28}Si,4nγ) 1988Ha19

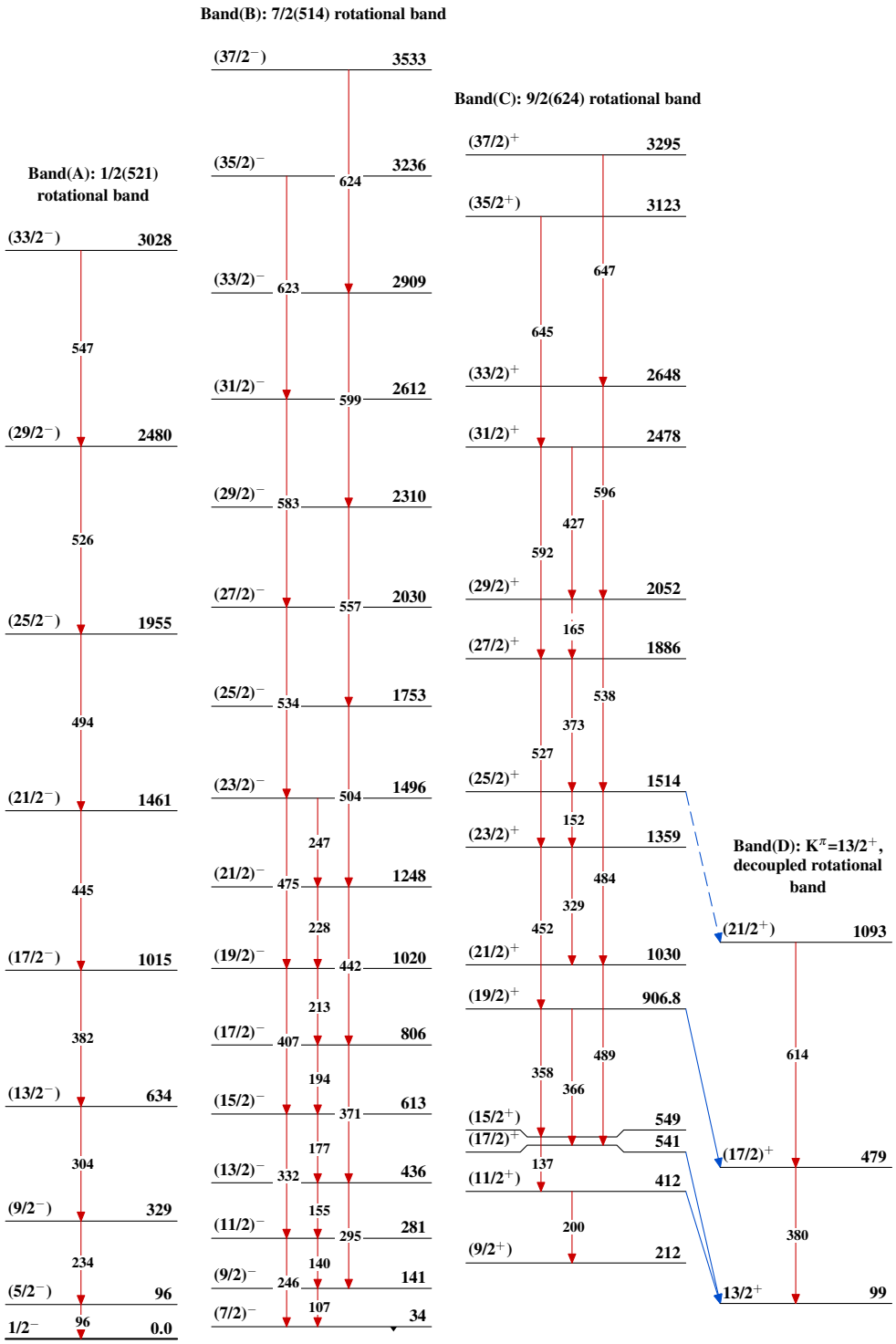
Level Scheme (continued)

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided



$^{185}_{80}Hg_{105}$

$^{161}Dy(^{28}Si,4n\gamma)$ 1988Ha19



$^{185}_{80}Hg_{105}$