

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 152, 331 (2018)	1-Apr-2018

Q(β^-)=-8.03×10³ 7; S(n)=11057 22; S(p)=5552 17; Q(α)=847 24 2017Wa10
 S(2n)=19695 17; S(2p)=8944 24 (2017Wa10).

¹³⁶Nd Levels

Band assignments for normal deformed structures are from 1996Pe06, 1996Pe08, 1987Pa17 and 2002Me25; and for superdeformed structures from 1999Pe19, 1995Cl02 and 1987Be32.

Cross Reference (XREF) Flags

A	¹³⁶ Pm ϵ decay:E=Y	D	¹¹⁰ Pd(³⁰ Si,4n γ)
B	¹³⁶ Pm ϵ decay:E=x,Y	E	¹¹⁶ Cd(²⁴ Mg,4n γ)
C	¹³⁶ Pm ϵ decay:E=x		

E(level) [†]	J π [‡]	T _{1/2} [#]	XREF	Comments
0.0 ^{&}	0 ⁺	50.65 min 33	ABCDE	% ϵ +% β^+ =100 T _{1/2} : from 1975Br16 (average of 109 γ (t), ce(109 γ)(t), and ¹³⁶ Pr 552 γ +540 γ (t)). Other: 55.0 min 15 (1968Zh04).
373.75 ^{&} 16	2 ⁺		ABCDE	J π : E2 373.7 γ to 0 ⁺ ; band assignment.
862.45 ^l 16	2 ⁺		ABCDE	J π : E2+M1 488.7 γ to 2 ⁺ , E2 862.5 γ to 0 ⁺ .
976.46 ^{&} 21	4 ⁺	<8 ps	ABCDE	J π : E2 602.7 γ to 2 ⁺ ; band assignment.
1231.01 ^l 19	(3) ⁺		ABCDE	J π : E2+M1 857.2 γ to 2 ⁺ , 254.7 γ to 4 ⁺ ; band assignment.
1541.72 ^l 25	(4) ⁺		ABC E	J π : 565.2 γ to 4 ⁺ , 679.2 γ to 2 ⁺ ; band assignment.
1746.8 ^{&} 3	6 ⁺	<14 ps	AB DE	J π : E2 770.4 γ to 4 ⁺ ; band assignment.
1775.7 3			B	
1817.8 3			B	
1926.02 25			AB	
2035.7 ^a 3	(5 ⁻)		AB DE	J π : D 1059.5 γ to 4 ⁺ , configuration assignment.
2045.64 ^l 22	(5 ⁺)		AB DE	J π : 1069.1 γ to 4 ⁺ , 814.7 γ to (3) ⁺ ; band assignment.
2181.2 4			B	
2228.0 3	(3 ⁻ ,4,5,6 ⁺)		B	J π : 1251.3 γ to 4 ⁺ , 192.4 γ to (5 ⁻).
2346.2 3			AB	
2416.7 3			B	
2439.8 ^a 3	(7 ⁻)	21 ps 7	AB DE	J π : D 693.3 γ to 6 ⁺ , E2 404.4 γ to (5 ⁻); band assignment.
2483.8 ^b 3	(6 ⁻)		DE	J π : D 737.1 γ to 6 ⁺ , 448.0 γ to (5 ⁻); band assignment.
2522.9 3			B	
2632.8 ^{&} 3	8 ⁺	<7 ps	DE	J π : E2 886.0 γ to 6 ⁺ ; band assignment.
2757.8 ^b 3	(8 ⁻)		DE	J π : (Q) 273.9 γ to (6 ⁻), 317.9 γ to (7 ⁻); band assignment.
2941.0 ^a 3	(9 ⁻)	6 ps 2	DE	J π : E2 501.2 γ to (7 ⁻); band assignment.
3172.3 6			D	J π : 9 ⁻ proposed in ¹¹⁰ Pd(³⁰ Si,4n γ).
3244.3 ^b 4	(10 ⁻)		DE	J π : 303.3 γ to (9 ⁻), (Q) 486.5 γ to (8 ⁻); band assignment.
3278.7 ^g 4	(10 ⁺)		DE	J π : (Q) 645.8 γ to 8 ⁺ .
3296.3 ^e 4	10 ⁺	51 ps 6	DE	μ =+12 4 (1987Bi13) J π : E2 663.5 γ to 8 ⁺ , D 355.4 γ to (9 ⁻). μ : from IMPAD (1987Bi13).
3330.8 9			D	
3552.6 ^{&} 4	(10 ⁺)		DE	J π : (E2) 919.7 γ to 8 ⁺ ; band assignment.
3602.2 ^a 4	(11 ⁻)		DE	J π : (E2) 661.2 γ to (9 ⁻); band assignment.

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Adopted Levels, Gammas (continued) ^{136}Nd Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2} [#]	XREF	Comments
3686.4 ^e 4	12 ⁺	19 ps 3	DE	$\mu=+14$ 5 (1987Bi13) J ^π : E2 390.1 γ to 10 ⁺ ; band assignment. μ : from IMPAD (1987Bi13).
3765.0 11			D	J ^π : (11 ⁻) proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
3768.4 ^f 4	(10 ⁺)		DE	J ^π : Q 1135.7 γ to 8 ⁺ .
3781.8 ^h 9	(9 ⁻)		D	J ^π : 1149 γ to 8 ⁺ ; configuration assignment.
3828.0 11			D	
3997.4 ^g 5	(12 ⁺)		DE	J ^π : (Q) 718.6 γ to (10 ⁺); band assignment.
4001.8 ^h 10	(10 ⁻)		D	J ^π : 220 γ to (9 ⁻); band assignment.
4016.6 ^b 5	(12 ⁻)		DE	J ^π : 772.4 γ to (10 ⁻); band assignment.
4027.9 7			D	J ^π : 11 ⁽⁺⁾ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
4255.8 ^h 14	(11 ⁻)		D	J ^π : 254 γ to (10 ⁻); band assignment.
4320.1 ^f 4	(12 ⁺)		DE	J ^π : Q 552 γ to (10 ⁺); band assignment.
4347.4 8			D	J ^π : 12 ⁻ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
4347.8 ^e 4	(14 ⁺)	<4 ps	DE	J ^π : (E2) 661.3 γ to 12 ⁺ ; band assignment.
4387.2 7			D	J ^π : 12 ⁻ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
4426.4 ^a 4	(13 ⁻)		DE	J ^π : 410 γ to (12 ⁻), 824.3 γ to (11 ⁻); band assignment.
4454.6 ^d 5	(13 ⁺)		DE	J ^π : 768.7 γ to 12 ⁺ .
4546.9 9			D	J ^π : 12 ⁽⁺⁾ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
4549.8 ^h 18	(12 ⁻)		D	J ^π : 294 γ to (11 ⁻); band assignment.
4837.7 9			D	J ^π : 13 ⁺ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
4849.2 ^g 6	(14 ⁺)		DE	J ^π : (Q) 851.8 γ to (12 ⁺); band assignment.
4855.7 ^c 5	(14 ⁺)		DE	J ^π : Q 1169.2 γ to 12 ⁺ ; band assignment.
4894.8 ^h 20	(13 ⁻)		D	J ^π : 345 γ to (12 ⁻); band assignment.
4939.7 9			D	J ^π : 13 ⁺ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
5022.3 ^k 5	(14 ⁺)		DE	J ^π : 702.5 γ to (12 ⁺).
5022.5 ^b 6	(14 ⁻)		DE	J ^π : 1005.9 γ to (12 ⁻); band assignment.
5032.0 ^f 5	(14 ⁺)		DE	J ^π : 711.8 γ to (12 ⁺); band assignment.
5132.8 ^d 4	(15 ⁺)		DE	J ^π : D 784.9 γ to (14 ⁺), (Q) 678.4 γ to (13 ⁺); band assignment.
5192.2 ^e 5	(16 ⁺)		DE	J ^π : (Q) 844.3 γ to (14 ⁺); band assignment.
5305.8 ^h 23	(14 ⁻)		D	J ^π : 411 γ to (13 ⁻); band assignment.
5308.7 7			D	J ^π : 14 ⁻ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
5347.9 ^o 6	(13 ⁻)		D	J ^π : 1350 γ to 12 ⁺ .
5372.5 9			D	J ^π : 14 ⁻ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
5415.5 ^a 5	(15 ⁻)		DE	J ^π : 393 γ to (14 ⁻), 989 γ to (13 ⁻); band assignment.
5417.4 ^p 8	(14 ⁻)		D	J ^π : 229.3 γ from (15 ⁻), 538.0 γ from (16 ⁻); band assignment.
5531.4 ^o 7	(14 ⁻)		D	J ^π : 184 γ to (13 ⁻); band assignment.
5570.2 ^c 5	(16 ⁺)		DE	J ^π : Q 714.5 γ to (14 ⁺); band assignment.
5597.5 9			D	J ^π : 15 ⁽⁻⁾ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
5646.8 ^p 7	(15 ⁻)	0.64 ps 6	D	J ^π : 1221 γ to (13 ⁻), 664.9 γ from (17 ⁻); band assignment.
5695.5 ^k 5	(16 ⁺)		DE	J ^π : 673.1 γ to (14 ⁺); band assignment.
5727.7 9			D	J ^π : 15 ⁺ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
5730.6 ^o 7	(15 ⁻)	0.88 ps 4	D	J ^π : 199.6 γ to (14 ⁻), 382.0 γ to (13 ⁻); band assignment.
5759.8 ^h 25	(15 ⁻)		D	J ^π : 454 γ to (14 ⁻); band assignment.
5844.0 ^g 6	(16 ⁺)		DE	J ^π : (Q) 944.9 γ to (14 ⁺); band assignment.
5876.7 ^f 5	(16 ⁺)		DE	J ^π : Q 844.7 γ to (14 ⁺); band assignment.
5942.6 ^d 5	(17 ⁺)		DE	J ^π : D 750.4 γ to (16 ⁺), 809.9 γ to (15 ⁺); band assignment.
5955.4 ^p 7	(16 ⁻)	0.61 ps 7	D	J ^π : 757 γ from (18 ⁻); band assignment.
5978.8 ^o 7	(16 ⁻)	0.60 ps 6	D	J ^π : 248.1 γ to (15 ⁻), 447.7 γ to (14 ⁻); band assignment.
6007.9 ^q 9	(16 ⁺)		D	J ^π : 875 γ to (15 ⁺); bandhead assignment.

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Adopted Levels, Gammas (continued) ^{136}Nd Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2} [#]	XREF	Comments
6040.2 ^b 7	(16 ⁻)		DE	J ^π : (Q) 1017.7γ to (14 ⁻); band assignment.
6191.9 ^e 5	(18 ⁺)		DE	J ^π : Q 999.7γ to (16 ⁺); band assignment.
6231.0 ⁱ 8	(15 ⁺)		D	J ^π : 1382γ to (14 ⁺), 1393γ to (13 ⁺).
6238.9 ^q 7	(17 ⁺)		D	J ^π : 544γ to (16 ⁺), 1106γ to (15 ⁺); band assignment.
6261 ^h 3	(16 ⁻)		D	J ^π : 501γ to (15 ⁻); band assignment.
6275.4 10			D	J ^π : (16 ⁺) proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
6311.6 ^p 8	(17 ⁻)	0.49 ps 4	D	J ^π : 401.2γ from (18 ⁻); band assignment.
6323.1 ^o 8	(17 ⁻)	0.42 ps 5	D	J ^π : 344.4γ to (16 ⁻), 592.5γ to (15 ⁻); band assignment.
6348.3 ⁱ 10	(16 ⁺)		D	J ^π : 117γ to (15 ⁺); band assignment.
6360.4 ^a 5	(17 ⁻)		DE	J ^π : (Q) 944.8γ to (15 ⁻); band assignment.
6471.8 ^c 5	(18 ⁺)		DE	J ^π : (E2) 901.6γ to (16 ⁺).
6522.7 ^q 6	(18 ⁺)		DE	J ^π : 284γ to (17 ⁺), 827.1γ to (16 ⁺); band assignment.
6546.2 ^k 9	(18 ⁺)		D	J ^π : 851γ to (16 ⁺); band assignment.
6579.6 ⁱ 8	(17 ⁺)		D	J ^π : 231γ to (16 ⁺); band assignment.
6587.3 9			D	J ^π : 17 ⁺ proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
6675.7 ^b 7	(18 ⁻)		DE	J ^π : 635.5γ to (16 ⁻); band assignment.
6712.7 ^p 8	(18 ⁻)	0.39 ps 6	D	J ^π : 734γ to (16 ⁻), 389.6γ to (17 ⁻).
6756.2 ^g 7	(18 ⁺)		DE	J ^π : 912.2γ to (16 ⁺); band assignment.
6757.4 ^o 9	(18 ⁻)	0.35 ps 5	D	J ^π : 434.2γ to (17 ⁻), 778.6γ to (16 ⁻); band assignment.
6771.3 ^f 7	(18 ⁺)		DE	J ^π : 894.6γ to (16 ⁺); band assignment.
6867.9 ^q 8	(19 ⁺)		D	J ^π : 345γ to (18 ⁺), 629γ to (17 ⁺); band assignment.
6884.5 ⁱ 10	(18 ⁺)		D	J ^π : 305γ to (17 ⁺); band assignment.
6929.9 10			D	J ^π : (18 ⁺) proposed in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
6931.3 ^d 5	(19 ⁺)		DE	J ^π : 988.7γ to (17 ⁺); band assignment.
7028.5 ^m 10	(17 ⁻)		D	J ^π : Q 656.γ from (19 ⁻); band assignment.
7141.9 ^a 6	(19 ⁻)		DE	J ^π : 781.5γ to (17 ⁻), band assignment.
7148.9 ^p 10	(19 ⁻)	0.222 ps 35	D	J ^π : 435.8γ to (18 ⁻), 837.0γ to (17 ⁻); band assignment.
7222.7 ^o 10	(19 ⁻)	0.215 ps 35	D	J ^π : 465.5γ to (18 ⁻), 899.7γ to (17 ⁻); band assignment.
7255.8 ^q 9	(20 ⁺)		D	J ^π : 733γ to (18 ⁺), 388γ to (19 ⁺); band assignment.
7293.7 ⁱ 12	(19 ⁺)		D	J ^π : 409γ to (18 ⁺); band assignment.
7330.5 ^c 5	(20 ⁺)		D	J ^π : 858.7γ to (18 ⁺); band assignment.
7355.0 ^e 5	(20 ⁺)		D	J ^π : 1163γ to (18 ⁺); band assignment.
7533.2 ^b 8	(20 ⁻)		DE	J ^π : 857.5γ to (18 ⁻); band assignment.
7576.2 ^p 11	(20 ⁻)		D	J ^π : 427γ to (19 ⁻), 864γ to (18 ⁻); band assignment.
7647.7 9	(19 ⁻)		D	J ^π : D 1456γ to (18 ⁺); band head assignment.
7669.7 ⁱ 15	(20 ⁺)		D	J ^π : 376γ to (19 ⁺); band assignment.
7685.1 ^m 9	(19 ⁻)		D	J ^π : Q 656.6γ to (17 ⁻); band assignment.
7685.9 ^q 10	(21 ⁺)		D	J ^π : 717γ from (21 ⁻); band assignment.
7716.8 ^o 11	(20 ⁻)		D	J ^π : 494γ to (19 ⁻), 959γ to (18 ⁻); band assignment.
7732.2 ^g 12	(20 ⁺)		D	J ^π : 976γ to (18 ⁺); band assignment.
8021.1 ^p 12	(21 ⁻)		D	J ^π : 445γ to (20 ⁻), 872γ to (19 ⁻); band assignment.
8049.9 ^a 8	(21 ⁻)		DE	J ^π : 908γ to (19 ⁻); band assignment.
8050.7 ⁱ 18	(21 ⁺)		D	J ^π : 381γ to (20 ⁺); band assignment.
8063.9 10	(21 ⁻)		D	J ^π : 922γ to (19 ⁻).
8100.1 ^d 5	(21 ⁺)		D	J ^π : 1168.8γ to (19 ⁺); band assignment.
8148.8 ^q 11	(22 ⁺)		D	J ^π : 463γ to (21 ⁺), 893γ to (20 ⁺); band assignment.
8223.2 ^c 6	(22 ⁺)		D	J ^π : 892.7γ to (20 ⁺); band assignment.
8235.2 ^o 12	(21 ⁻)		D	J ^π : 518γ to (20 ⁻), 1013γ to (19 ⁻); band assignment.
8379.9 ^j 10	(22)		D	J ^π : 330γ to (21 ⁻). Assigned as positive parity in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$.
8401.9 ^m 9	(21 ⁻)		D	J ^π : Q 754.2γ to (19 ⁻).

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Adopted Levels, Gammas (continued) ^{136}Nd Levels (continued)

E(level) [†]	J ^{π‡}	T _{1/2} [#]	XREF	Comments
8466.7 ⁱ 21	(22 ⁺)		D	J ^π : 416γ to (21 ⁺); band assignment.
8509.1 ^p 12	(22 ⁻)		D	J ^π : 488γ to (21 ⁻), 933γ to (20 ⁻); band assignment.
8555.2 ^b 13	(22 ⁻)		D	J ^π : 1022γ to (20 ⁻); band assignment.
8622.2 ^e 7	(22 ⁺)		D	J ^π : 1267.2γ to (20 ⁺); band assignment.
8652.9 ^q 12	(23 ⁺)		D	J ^π : 504γ to (22 ⁺), 967γ to (21 ⁺); band assignment.
8754.9 ^j 13	(23)		D	J ^π : 375γ to (22); band assignment.
8777.0 ^o 13	(22 ⁻)		D	J ^π : 542γ to (21 ⁻), 1060γ to (20 ⁻); band assignment.
8795.2 ^g 16	(22 ⁺)		D	J ^π : 1063γ to (20 ⁺); band assignment.
8947.7 ⁱ 23	(23 ⁺)	0.062 ps 28	D	J ^π : 481γ to (22 ⁺); band assignment.
9020.1 ^p 13	(23 ⁻)		D	J ^π : 511γ to (22 ⁻), 999γ to (21 ⁻); band assignment.
9047.9 ^a 10	(23 ⁻)		D	J ^π : 998γ to (21 ⁻); 984γ to (21 ⁻); band assignment.
9164.9 ^j 13	(24)		D	J ^π : 410γ to (23), 785γ to (22); band assignment.
9172.1 ^c 6	(24 ⁺)		D	J ^π : 948.9γ to (22 ⁺); band assignment.
9178.9 ^q 13	(24 ⁺)		D	J ^π : 526γ to (23 ⁺), 1030γ to (22 ⁺); band assignment.
9196.9 ^m 11	(23 ⁻)		D	J ^π : Q 795.0γ to (21 ⁻); band assignment.
9342.0 ^o 16	(23 ⁻)		D	J ^π : 565γ to (22 ⁻); band assignment.
9492 ⁱ 3	(24 ⁺)	0.042 ps 21	D	J ^π : 544γ to (23 ⁺); band assignment.
9557.2 ^b 16	(24 ⁻)		D	J ^π : 1002γ to (22 ⁻); band assignment.
9569.1 ^p 14	(24 ⁻)		D	J ^π : 549γ to (23 ⁻), 1060γ to (22 ⁻); band assignment.
9617.9 ^j 14	(25)		D	J ^π : 453γ to (24), 863γ to (23); band assignment.
9745.9 ^q 13	(25 ⁺)		D	J ^π : 567γ to (24 ⁺), 1093γ to (23 ⁺); band assignment.
9893.5 ^a 11	(25 ⁻)		D	J ^π : 845.6γ to (23 ⁻); band assignment.
10054.8 ^m 12	(25 ⁻)		D	J ^π : 857.9γ to (23 ⁻); band assignment.
10092 ⁱ 3	(25 ⁺)		D	J ^π : 600γ to (24 ⁺); band assignment.
10108.9 ^j 17	(26)		D	J ^π : 491γ to (25); band assignment.
10190.5 ^c 6	(26 ⁺)		D	J ^π : 1018.4γ to (24 ⁺); band assignment.
10193.1 ^p 15	(25 ⁻)		D	J ^π : 624γ to (24 ⁻), 1173γ to (23 ⁻); band assignment.
10343.9 ^q 14	(26 ⁺)		D	J ^π : 598γ to (25 ⁺), 1165γ to (24 ⁺); band assignment.
10498.9 ^b 17	(26 ⁻)		D	J ^π : 941.7γ to (24 ⁻); band assignment.
10637.9 ^j 17	(27)		D	J ^π : 529γ to (26), 1020γ to (25); band assignment.
10763 ⁱ 3	(26 ⁺)		D	J ^π : 671γ to (25 ⁺); band assignment.
10784.9 ^a 11	(27 ⁻)		D	J ^π : 891.4γ to (25 ⁻); band assignment.
10968.9 ^q 15	(27 ⁺)		D	J ^π : 625γ to (26 ⁺), 1223γ to (25 ⁺); band assignment.
10973.2 ^m 13	(27 ⁻)		D	J ^π : 918.4γ to (25 ⁻); band assignment.
11277.4 ^c 7	(28 ⁺)		D	J ^π : 1086.9γ to (26 ⁺); band assignment.
11490.7 ^b 17	(28 ⁻)		D	J ^π : 991.8γ to (26 ⁻); band assignment.
11647.9 ^q 17	(28 ⁺)		D	J ^π : 1304γ to (26 ⁺); band assignment.
11784.0 ^a 11	(29 ⁻)		D	J ^π : 999.1γ to (27 ⁻); band assignment.
11956.9 ^m 13	(29 ⁻)		D	J ^π : 983.7γ to (27 ⁻); band assignment.
12335.9 ^q 18	(29 ⁺)		D	J ^π : 1367γ to (27 ⁺); band assignment.
12418.4 ^c 12	(30 ⁺)		D	J ^π : 1141g to (28 ⁺); band assignment.
12555.8 ^b 17	(30 ⁻)		D	J ^π : 1065.0g to (28 ⁻); band assignment.
12882.5 ^a 11	(31 ⁻)		D	J ^π : 1098.4γ to (29 ⁻); band assignment.
13007.0 ^m 14	(31 ⁻)		D	J ^π : Q 1050.1γ to (29 ⁻); band assignment.
13700.4 ^b 17	(32 ⁻)		D	J ^π : 1144.6γ to (30 ⁻); band assignment.
14069.6 ^a 11	(33 ⁻)		D	J ^π : 1187.1γ to (31 ⁻); band assignment.
14124.5 ^m 15	(33 ⁻)		D	J ^π : Q 1117.5γ to (31 ⁻); band assignment.
14926.0 ^b 18	(34 ⁻)		D	J ^π : 1225.6γ to (32 ⁻); band assignment.
15310.7 ^m 15	(35 ⁻)		D	J ^π : 1186.2γ to (33 ⁻); band assignment.
15355.3 ^a 12	(35 ⁻)		D	J ^π : 1285.7γ to (33 ⁻); band assignment.

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Adopted Levels, Gammas (continued) ^{136}Nd Levels (continued)

E(level) [†]	J^π [‡]	XREF	Comments
16226.4 ^b 18	(36 ⁻)	D	J^π : 1300.4 γ to (34 ⁻); band assignment.
16565.6 ^m 16	(37 ⁻)	D	J^π : Q 1254.9 γ to (35 ⁻); band assignment.
16743.6 ^a 13	(37 ⁻)	D	J^π : 1388 γ to (35 ⁻); band assignment.
17593.4 ^b 21	(38 ⁻)	D	J^π : 1367 γ to (36 ⁻); band assignment.
17890.9 ^m 16	(39 ⁻)	D	J^π : Q 1325.3 γ to (37 ⁻); band assignment.
19289.8 ^m 17	(41 ⁻)	D	J^π : Q 1398.9 γ to (39 ⁻); band assignment.
20766.4 ^m 18	(43 ⁻)	D	J^π : 1476.6 γ to (41 ⁻); band assignment.
22325.5 ^m 18	(45 ⁻)	D	J^π : 1559.1 γ to (43 ⁻); band assignment.
23970.0 ^m 20	(47 ⁻)	D	J^π : 1644.4 γ to (45 ⁻); band assignment.
25702.6 ^m 21	(49 ⁻)	D	J^π : 1732.6 γ to (47 ⁻); band assignment.
27517.6 ^m 23	(51 ⁻)	D	J^π : 1815 γ to (49 ⁻); band assignment.
6360+x ⁿ	J [@]	D	Additional information 1.
x+7269.10 ⁿ 20	J+2	D	
x+8269.4 ⁿ 3	J+4	D	
x+9348.8 ⁿ 3	J+6	D	
x+10500.9 ⁿ 4	J+8	D	
x+11723.3 ⁿ 6	J+10	D	
x+13007.9 ⁿ 8	J+12	D	
x+14371.9 ⁿ 13	J+14	D	
x+15812.9 ⁿ 16	J+16	D	
x+17338.0 ⁿ 19	J+18	D	

[†] From a least-squares fit to E_γ , by evaluator.

[‡] Based mainly on $\gamma(\theta)$, $\gamma\gamma(\theta)$ (DCO) and band associations in high-spin data. Explicit arguments provided in the comments.

Parentheses have been added by the evaluator due to lack of unambiguous arguments for some J^π assignments on the basis of available data.

From RDM or DSAM in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$, except where noted.

@ (15,16,17) suggested by feeding of 5415, 15⁻ and 6360, 17⁻ levels from coincidence data.

& Band(A): $K^\pi=0^+$, g.s. band.

^a Band(B): $\pi h_{11/2}\pi g_{7/2}$, $\alpha=0$. Configuration from 1987Pa17. See also detailed discussion by 1996Pe08 for issues associated with this configuration.

^b Band(C): $\pi h_{11/2}\pi g_{7/2}$, $\alpha=1$. Configuration from 1987Pa17. See also detailed discussion by 1996Pe08 for issues associated with this configuration.

^c Band(D): $\pi h_{11/2}^2 \nu h_{11/2}^2$. Possible triaxial shape (1996Pe08).

^d Band(E): Aligned $\pi h_{11/2}^2$ or $\nu h_{11/2}^2$. Assignment from 1996Pe08.

^e Band(F): Aligned $\pi h_{11/2}^2$ or $\nu h_{11/2}^2$.

^f Band(G): Band Based on 10⁺.

^g Band(H): Aligned $\nu h_{11/2}^2$.

^h Band(I): 4-qp, dipole band based on 9⁻. Configuration involves $\nu h_{11/2}\nu g_{7/2}\pi h_{11/2}^2$ (1996Pe06).

ⁱ Band(J): Possible magnetic-rotational band based on 15⁺. Configuration involves $\nu h_{11/2}\nu f_{7/2}\pi h_{11/2}^2$ (1996Pe06).

^j Band(K): 4-qp, dipole band based on 22. Suggested configuration of $\pi g_{7/2}^2 \pi h_{11/2}^2$ (1996Pe06) would then give positive parity.

^k Band(L): Band based on 14⁺.

^l Band(M): Possible $K^\pi=2^+$, γ band.

^m Band(N): SD-1 band (1999Pe19,1995CI02,1987Be32). Configuration= $\nu 1/2[660]\nu 1/2[541]$ or $\nu 1/2[660]\nu 1/2[530]$. Percent population=2.0 (1987Be32). See also 1997Ni04 for relative population of the band.

ⁿ Band(O): SD-2 band (1999Pe19,1995CI02). Percent population ≈ 0.4 (from an estimated 20% intensity of the yrast SD band)

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

 ^{136}Nd Levels (continued)

(1995Cl02)). See also 1997Ni04 for relative population of the band. First three transitions in this band at 893, 949 and 1018 reported by 1995Cl02 are assigned to normal-deformed levels by 1999Pe19. This band was suggested (1995Cl02) to be identical (at half points of the transition energies of SD-1 band) to the yrast SD band (SD-1) in ^{136}Nd . But this conclusion is rejected by 1999Pe19, based on newer set of low-energy gamma rays. Probable particle structure is suggested (1995Cl02) as excitation of a $3/2[541]$ proton to the $5/2[532]$ orbital.

^o Band(P): Band based on 13^- state. Band P and Q originally interpreted in 2002Me25 as chiral doublet. Lifetime measurements in 2008Mu18 yielding large differences in the transition probabilities in the two bands suggest that they are two different configurations undergoing band mixing.

^p Band(Q): Band based on 14^- state. See comment on Band P.

^q Band(R): 4-qp, dipole band based on 16^+ . Configuration involves $\nu h_{11/2} \nu f_{7/2} \pi h_{11/2}^2$ (1996Pe06).

Adopted Levels, Gammas (continued)

E _i (level)	J _i ^π	γ(¹³⁶ Nd)						Comments
		E _γ [†]	I _γ [†]	E _f	J _f ^π	Mult. [‡]	α ^b	
373.75	2 ⁺	373.7 2	100	0.0	0 ⁺	E2	0.0268	α(K)=0.0217 3; α(L)=0.00401 6; α(M)=0.000870 13; α(N)=0.000192 3; α(O)=2.75×10 ⁻⁵ 4 α(P)=1.233×10 ⁻⁶ 18
862.45	2 ⁺	488.7@ 2	98@ 4	373.75	2 ⁺	E2+M1 ^a	0.016 4	α(K)=0.013 4; α(L)=0.0020 3; α(M)=0.00042 5; α(N)=9.3×10 ⁻⁵ 12; α(O)=1.39×10 ⁻⁵ 21 α(P)=8.3×10 ⁻⁷ 23
		862.5@ 2	100@ 8	0.0	0 ⁺	E2 ^a	0.00309	α(K)=0.00262 4; α(L)=0.000370 6; α(M)=7.87×10 ⁻⁵ 11; α(N)=1.754×10 ⁻⁵ 25; α(O)=2.63×10 ⁻⁶ 4 α(P)=1.584×10 ⁻⁷ 23
976.46	4 ⁺	602.7 2	100	373.75	2 ⁺	E2&	0.00723	α(K)=0.00605 9; α(L)=0.000931 13; α(M)=0.000199 3; α(N)=4.43×10 ⁻⁵ 7; α(O)=6.53×10 ⁻⁶ 10 α(P)=3.60×10 ⁻⁷ 5 B(E2)(W.u.)>21
1231.01	(3) ⁺	254.7@ 4	2.1@ 4	976.46	4 ⁺	<i>a</i>		
		368.7@ 2	28@ 2	862.45	2 ⁺	<i>a</i>		
		857.2@ 2	100@ 2	373.75	2 ⁺	E2+M1 ^a	0.0040 9	α(K)=0.0034 8; α(L)=0.00046 9; α(M)=9.8×10 ⁻⁵ 18; α(N)=2.2×10 ⁻⁵ 4; α(O)=3.3×10 ⁻⁶ 7 α(P)=2.1×10 ⁻⁷ 6
1541.72	(4) ⁺	565.2@ 3	34@ 10	976.46	4 ⁺	<i>a</i>		
		679.2@ 2	100@ 10	862.45	2 ⁺	<i>a</i>		
1746.8	6 ⁺	770.4 2	100	976.46	4 ⁺	E2&	0.00400	α(K)=0.00338 5; α(L)=0.000488 7; α(M)=0.0001039 15; α(N)=2.31×10 ⁻⁵ 4; α(O)=3.45×10 ⁻⁶ 5 α(P)=2.03×10 ⁻⁷ 3 B(E2)(W.u.)>3.6
1775.7		1401.9@ 3	100	373.75	2 ⁺			
1817.8		586.9@ 3	100@ 14	1231.01	(3) ⁺	<i>a</i>		
		955.2@ 3	100@ 30	862.45	2 ⁺	<i>a</i>		
1926.02		695.0@ 2	100	1231.01	(3) ⁺			
2035.7	(5) ⁻	1059.5# 3	100	976.46	4 ⁺	D		
2045.64	(5) ⁺	503.7@ 4	4.6@ 12	1541.72	(4) ⁺	<i>a</i>		
		814.7@ 2	100@ 5	1231.01	(3) ⁺	<i>a</i>		
		1069.1@ 3	15.9@ 20	976.46	4 ⁺	<i>a</i>		
2181.2		1204.7@ 3	100	976.46	4 ⁺			
2228.0	(3 ⁻ ,4,5,6 ⁺)	192.4@ 2	75@ 17	2035.7	(5) ⁻	<i>a</i>		
		1251.3@ 3	100@ 25	976.46	4 ⁺	<i>a</i>		
2346.2		300.6@ 2	100@ 4	2045.64	(5) ⁺	<i>a</i>		

I_γ: others: 8.5 12 in ¹³⁶Pm ε decay; E=y and 26.8 24 ¹¹⁶Cd(²⁴Mg,4n_γ).

Adopted Levels, Gammas (continued)

$\gamma(^{136}\text{Nd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	α^b	Comments
2346.2		420.2@ 2	32@ 4	1926.02		<i>a</i>		
2416.7		371.1@ 2	100	2045.64	(5 ⁺)			
2439.8	(7 ⁻)	404.1# 3	29.4# 9	2035.7	(5 ⁻)	E2	0.0213	$\alpha(\text{K})=0.01740$ 25; $\alpha(\text{L})=0.00310$ 5; $\alpha(\text{M})=0.000671$ 10; $\alpha(\text{N})=0.0001483$ 21 $\alpha(\text{O})=2.13\times 10^{-5}$ 3; $\alpha(\text{P})=9.98\times 10^{-7}$ 15 B(E2)(W.u.)=14 5 Mult.: Q from $\gamma(\theta)$, M2 ruled out by comparison to RUL.
		693.1# 3	100.0# 14	1746.8	6 ⁺	E1	0.00193	$\alpha(\text{K})=0.001662$ 24; $\alpha(\text{L})=0.000213$ 3; $\alpha(\text{M})=4.48\times 10^{-5}$ 7; $\alpha(\text{N})=1.001\times 10^{-5}$ 14 $\alpha(\text{O})=1.515\times 10^{-6}$ 22; $\alpha(\text{P})=9.76\times 10^{-8}$ 14 B(E1)(W.u.)= 2.8×10^{-5} 10 Mult.: D from $\gamma\gamma(\theta)$ in ¹¹⁰ Pd(³⁰ Si,4n γ); $\Delta\pi$ =yes from level scheme.
2483.8	(6 ⁻)	438.1# 4	59# 9	2045.64	(5 ⁺)			
		448.0# 5	77# 9	2035.7	(5 ⁻)			
		737.1# 5	100# 18	1746.8	6 ⁺	D		
2522.9		1660.4@ 3	100	862.45	2 ⁺			
2632.8	8 ⁺	886.0 2	100	1746.8	6 ⁺	E2&	0.00291	$\alpha(\text{K})=0.00247$ 4; $\alpha(\text{L})=0.000347$ 5; $\alpha(\text{M})=7.38\times 10^{-5}$ 11; $\alpha(\text{N})=1.645\times 10^{-5}$ 23; $\alpha(\text{O})=2.47\times 10^{-6}$ 4 $\alpha(\text{P})=1.494\times 10^{-7}$ 21 B(E2)(W.u.)>3.5
2757.8	(8 ⁻)	273.9# 3	66# 4	2483.8	(6 ⁻)	(Q)		
		317.9# 3	100# 4	2439.8	(7 ⁻)			
2941.0	(9 ⁻)	501.2 2	100	2439.8	(7 ⁻)	E2&	0.01170	$\alpha(\text{K})=0.00969$ 14; $\alpha(\text{L})=0.001583$ 23; $\alpha(\text{M})=0.000341$ 5; $\alpha(\text{N})=7.55\times 10^{-5}$ 11 $\alpha(\text{O})=1.102\times 10^{-5}$ 16; $\alpha(\text{P})=5.68\times 10^{-7}$ 8 B(E2)(W.u.)=71 24
3172.3		414		2757.8	(8 ⁻)			
		732		2439.8	(7 ⁻)			
3244.3	(10 ⁻)	303.3# 3	31# 3	2941.0	(9 ⁻)			
		486.5# 3	100# 4	2757.8	(8 ⁻)	(E2)	0.01268	$\alpha(\text{K})=0.01048$ 15; $\alpha(\text{L})=0.001731$ 25; $\alpha(\text{M})=0.000373$ 6; $\alpha(\text{N})=8.26\times 10^{-5}$ 12 $\alpha(\text{O})=1.203\times 10^{-5}$ 17; $\alpha(\text{P})=6.13\times 10^{-7}$ 9 Mult.: (Q) from intensity ratios in ¹¹⁶ Cd(²⁴ Mg,4n γ), E2 from assumed band structure.
3278.7	(10 ⁺)	645.8# 3	100	2632.8	8 ⁺	(Q)		
3296.3	10 ⁺	123		3172.3				
		355.4# 3	35.9# 9	2941.0	(9 ⁻)	E1	0.00886	$\alpha(\text{K})=0.00759$ 11; $\alpha(\text{L})=0.001003$ 15; $\alpha(\text{M})=0.000211$ 3; $\alpha(\text{N})=4.71\times 10^{-5}$ 7; $\alpha(\text{O})=7.05\times 10^{-6}$ 10 $\alpha(\text{P})=4.33\times 10^{-7}$ 7 B(E1)(W.u.)= 2.9×10^{-5} 4 Mult.: D from $\gamma\gamma(\theta)$ in ¹¹⁰ Pd(³⁰ Si,4n γ), $\Delta\pi$ =yes from level scheme.
		663.5# 3	100.0# 21	2632.8	8 ⁺	E2	0.00570	$\alpha(\text{K})=0.00479$ 7; $\alpha(\text{L})=0.000718$ 10; $\alpha(\text{M})=0.0001533$ 22; $\alpha(\text{N})=3.41\times 10^{-5}$ 5;

Adopted Levels, Gammas (continued)

$\gamma(^{136}\text{Nd})$ (continued)

<u>E_i(level)</u>	<u>J_i^{π}</u>	<u>E_{γ}^{\dagger}</u>	<u>I_{γ}^{\dagger}</u>	<u>E_f</u>	<u>J_f^{π}</u>	<u>Mult.^{\ddagger}</u>	<u>α^b</u>	<u>Comments</u>
								$\alpha(\text{O})=5.05\times 10^{-6}$ 7 $\alpha(\text{P})=2.86\times 10^{-7}$ 4 B(E2)(W.u.)=1.52 19 Mult.: Q from $\gamma(\theta)$, M2 ruled out by comparison to RUL.
3330.8		698		2632.8	8 ⁺			
3552.6	(10 ⁺)	919.7 [#] 3	100	2632.8	8 ⁺	(E2)	0.00268	$\alpha(\text{K})=0.00228$ 4; $\alpha(\text{L})=0.000318$ 5; $\alpha(\text{M})=6.75\times 10^{-5}$ 10; $\alpha(\text{N})=1.506\times 10^{-5}$ 22; $\alpha(\text{O})=2.26\times 10^{-6}$ 4 $\alpha(\text{P})=1.379\times 10^{-7}$ 20 Mult.: (Q) from intensity ratios in ¹¹⁶ Cd(²⁴ Mg,4n γ), E2 from assumed band structure.
3602.2	(11 ⁻)	358		3244.3	(10 ⁻)			
		661.2 [#] 3	100	2941.0	(9 ⁻)	(E2)	0.00575	$\alpha(\text{K})=0.00483$ 7; $\alpha(\text{L})=0.000724$ 11; $\alpha(\text{M})=0.0001547$ 22; $\alpha(\text{N})=3.44\times 10^{-5}$ 5; $\alpha(\text{O})=5.10\times 10^{-6}$ 8 $\alpha(\text{P})=2.88\times 10^{-7}$ 4 Mult.: (Q) from intensity ratios in ¹¹⁶ Cd(²⁴ Mg,4n γ), E2 from assumed band structure.
3686.4	12 ⁺	390.1 2	100	3296.3	10 ⁺	E2&	0.0236	$\alpha(\text{K})=0.0192$ 3; $\alpha(\text{L})=0.00347$ 5; $\alpha(\text{M})=0.000754$ 11; $\alpha(\text{N})=0.0001665$ 24; $\alpha(\text{O})=2.39\times 10^{-5}$ 4 $\alpha(\text{P})=1.097\times 10^{-6}$ 16 B(E2)(W.u.)=78 13
3765.0		824	100	2941.0	(9 ⁻)			
3768.4	(10 ⁺)	1135.7 3	100	2632.8	8 ⁺	Q		
3781.8	(9 ⁻)	1149	100	2632.8	8 ⁺			
3828.0		887	100	2941.0	(9 ⁻)			
3997.4	(12 ⁺)	718.6 [#] 3	100	3278.7	(10 ⁺)	(E2)	0.00470	$\alpha(\text{K})=0.00397$ 6; $\alpha(\text{L})=0.000582$ 9; $\alpha(\text{M})=0.0001242$ 18; $\alpha(\text{N})=2.76\times 10^{-5}$ 4; $\alpha(\text{O})=4.11\times 10^{-6}$ 6 $\alpha(\text{P})=2.38\times 10^{-7}$ 4 Mult.: (Q) from intensity ratios in ¹¹⁶ Cd(²⁴ Mg,4n γ), E2 from assumed band structure.
4001.8	(10 ⁻)	220		3781.8	(9 ⁻)			
		671		3330.8				
4016.6	(12 ⁻)	772.4 [#] 5	100	3244.3	(10 ⁻)			
4027.9		749	100	3278.7	(10 ⁺)			
4255.8	(11 ⁻)	254	100	4001.8	(10 ⁻)			
4320.1	(12 ⁺)	292		4027.9				
		551.8 [#] 3	29 [#] 3	3768.4	(10 ⁺)	(E2)	0.00907	$\alpha(\text{K})=0.00755$ 11; $\alpha(\text{L})=0.001194$ 17; $\alpha(\text{M})=0.000256$ 4; $\alpha(\text{N})=5.69\times 10^{-5}$ 8; $\alpha(\text{O})=8.35\times 10^{-6}$ 12 $\alpha(\text{P})=4.46\times 10^{-7}$ 7 Mult.: Q from $\gamma\gamma(\theta)$ in ¹¹⁶ Cd(²⁴ Mg,4n γ); E2 from assumed band structure.
4347.4		767.5 [#] 3	100 [#] 3	3552.6	(10 ⁺)			
		745	100	3602.2	(11 ⁻)			

Adopted Levels, Gammas (continued)

$\gamma(^{136}\text{Nd})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	α^b	Comments	
4347.8	(14 ⁺)	661.3 [#] 3	100	3686.4	12 ⁺	(E2)	0.00574	$\alpha(\text{K})=0.00483$ 7; $\alpha(\text{L})=0.000724$ 11; $\alpha(\text{M})=0.0001547$ 22; $\alpha(\text{N})=3.44\times 10^{-5}$ 5; $\alpha(\text{O})=5.10\times 10^{-6}$ 8 $\alpha(\text{P})=2.88\times 10^{-7}$ 4 B(E2)(W.u.)>27	
4387.2		785	100	3602.2	(11 ⁻)				
4426.4	(13 ⁻)	410		4016.6	(12 ⁻)				
		824.3 [#] 3		3602.2	(11 ⁻)				
4454.6	(13 ⁺)	768.7 6	100	3686.4	12 ⁺				
4546.9		519	100	4027.9					
4549.8	(12 ⁻)	294	100	4255.8	(11 ⁻)				
4837.7		840		3997.4	(12 ⁺)				
4849.2	(14 ⁺)	851.8 [#] 3	100	3997.4	(12 ⁺)	(E2)	0.00318	$\alpha(\text{K})=0.00270$ 4; $\alpha(\text{L})=0.000382$ 6; $\alpha(\text{M})=8.11\times 10^{-5}$ 12; $\alpha(\text{N})=1.81\times 10^{-5}$ 3; $\alpha(\text{O})=2.71\times 10^{-6}$ 4 $\alpha(\text{P})=1.627\times 10^{-7}$ 23 Mult.: (Q) from $\gamma\gamma(\theta)$ in $^{116}\text{Cd}(^{24}\text{Mg},4n\gamma)$; E2 from assumed band structure.	
4855.7	(14 ⁺)	1169.2 3	100	3686.4	12 ⁺	(E2)	1.62×10^{-3}	$\alpha(\text{K})=0.001383$ 20; $\alpha(\text{L})=0.000186$ 3; $\alpha(\text{M})=3.93\times 10^{-5}$ 6; $\alpha(\text{N})=8.78\times 10^{-6}$ 13 $\alpha(\text{O})=1.326\times 10^{-6}$ 19; $\alpha(\text{P})=8.39\times 10^{-8}$ 12 Mult.: Q from $\gamma\gamma(\theta)$ in $^{110}\text{Pd}(^{30}\text{Si},4n\gamma)$; E2 from assumed band structure.	
4894.8	(13 ⁻)	345	100	4549.8	(12 ⁻)				
4939.7		942	100	3997.4	(12 ⁺)				
5022.3	(14 ⁺)	702.5 [#] 3	100	4320.1	(12 ⁺)				
5022.5	(14 ⁻)	1005.9 [#] 3	100	4016.6	(12 ⁻)				
5032.0	(14 ⁺)	711.8 3	100	4320.1	(12 ⁺)				
5132.8	(15 ⁺)	678.4 4	100 3	4454.6	(13 ⁺)	(Q)		$I_\gamma: I_\gamma(678)/I_\gamma(785)=0.74$ 11 in $^{116}\text{Cd}(^{24}\text{Mg},4n\gamma)$.	
		784.9 2	70 30	4347.8	(14 ⁺)	D			
5192.2	(16 ⁺)	844.3 [#] 3	100	4347.8	(14 ⁺)	(Q)			
5305.8	(14 ⁻)	411	100	4894.8	(13 ⁻)				
5308.7		882		4426.4	(13 ⁻)				
		922		4387.2					
		961		4347.4					
5347.9	(13 ⁻)	801		4546.9					
		1028		4320.1	(12 ⁺)				
		1350		3997.4	(12 ⁺)				
5372.5		985	100	4387.2					
5415.5	(15 ⁻)	393		5022.5	(14 ⁻)				
		989.1 [#] 3		4426.4	(13 ⁻)				
		1066 ^C		4347.8	(14 ⁺)				
5417.4	(14 ⁻)	1030		4387.2					
		1070		4347.4					

Adopted Levels, Gammas (continued)

$\gamma(^{136}\text{Nd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	α^b	Comments
5531.4	(14 ⁻)	184 1184		5347.9 (13 ⁻) 4347.8 (14 ⁺)				
5570.2	(16 ⁺)	714.5 2 1222.6 4	100 30 100 40	4855.7 (14 ⁺) 4347.8 (14 ⁺)		Q Q		
5597.5		748	100	4849.2 (14 ⁺)				
5646.8	(15 ⁻)	229.3 274.0 338.0 1221	100 5 23 3 43 5	5417.4 (14 ⁻) 5372.5 5308.7 4426.4 (13 ⁻)				
5695.5	(16 ⁺)	663.3 [#] 5 673.1 [#] 3	72 [#] 21 100 [#] 7	5032.0 (14 ⁺) 5022.3 (14 ⁺)				
5727.7		878	100	4849.2 (14 ⁺)				
5730.6	(15 ⁻)	199.6 382.0	100 5 7.5 11	5531.4 (14 ⁻) 5347.9 (13 ⁻)		[E2]	0.0251	$\alpha(\text{K})=0.0204$ 3; $\alpha(\text{L})=0.00372$ 6; $\alpha(\text{M})=0.000809$ 12; $\alpha(\text{N})=0.0001785$ 25; $\alpha(\text{O})=2.56\times 10^{-5}$ 4 $\alpha(\text{P})=1.161\times 10^{-6}$ 17 B(E2)(W.u.)=133 22
5759.8	(15 ⁻)	454	100	5305.8 (14 ⁻)				
5844.0	(16 ⁺)	994.9 [#] 3	100	4849.2 (14 ⁺)		(Q)		
5876.7	(16 ⁺)	844.7 2	100	5032.0 (14 ⁺)		(E2)	0.00324	$\alpha(\text{K})=0.00275$ 4; $\alpha(\text{L})=0.000389$ 6; $\alpha(\text{M})=8.27\times 10^{-5}$ 12; $\alpha(\text{N})=1.84\times 10^{-5}$ 3; $\alpha(\text{O})=2.76\times 10^{-6}$ 4 $\alpha(\text{P})=1.657\times 10^{-7}$ 24 Mult.: Q from $\gamma(\theta)$ in (³⁰ Si,4n γ); E2 from assumed band structure.
5942.6	(17 ⁺)	750.4 2 809.9 3	86 29 100 43	5192.2 (16 ⁺) 5132.8 (15 ⁺)		D		
5955.4	(16 ⁻)	224.7 308.7 538.0	6.1 12 100 5 15.9 12	5730.6 (15 ⁻) 5646.8 (15 ⁻) 5417.4 (14 ⁻)		[E2]	0.00969	$\alpha(\text{K})=0.00806$ 12; $\alpha(\text{L})=0.001285$ 18; $\alpha(\text{M})=0.000276$ 4; $\alpha(\text{N})=6.12\times 10^{-5}$ 9; $\alpha(\text{O})=8.97\times 10^{-6}$ 13 $\alpha(\text{P})=4.75\times 10^{-7}$ 7 B(E2)(W.u.)=64 10
5978.8	(16 ⁻)	248.1 381 447.7	100 3 11.1 11	5730.6 (15 ⁻) 5597.5 5531.4 (14 ⁻)		[E2]	0.01595	$\alpha(\text{K})=0.01310$ 19; $\alpha(\text{L})=0.00223$ 4; $\alpha(\text{M})=0.000483$ 7; $\alpha(\text{N})=0.0001068$ 15 $\alpha(\text{O})=1.547\times 10^{-5}$ 22; $\alpha(\text{P})=7.60\times 10^{-7}$ 11 B(E2)(W.u.)=126 19
6007.9	(16 ⁺)	875	100	5132.8 (15 ⁺)				
6040.2	(16 ⁻)	1017.7 [#] 3	100	5022.5 (14 ⁻)		(Q)		
6191.9	(18 ⁺)	999.7 2	100	5192.2 (16 ⁺)		(E2)	0.00224	$\alpha(\text{K})=0.00191$ 3; $\alpha(\text{L})=0.000263$ 4; $\alpha(\text{M})=5.56\times 10^{-5}$ 8; $\alpha(\text{N})=1.242\times 10^{-5}$ 18; $\alpha(\text{O})=1.87\times 10^{-6}$ 3 $\alpha(\text{P})=1.156\times 10^{-7}$ 17 Mult.: Q from $\gamma\gamma(\theta)$ in ¹¹⁰ Pd(³⁰ Si,4n γ); E2 from assumed band structure.

Adopted Levels, Gammas (continued)

$\gamma(^{136}\text{Nd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	α^b	Comments
6231.0	(15 ⁺)	1291 1382 1393		4939.7 4849.2 (14 ⁺) 4837.7				
6238.9	(17 ⁺)	231 544 1106		6007.9 (16 ⁺) 5695.5 (16 ⁺) 5132.8 (15 ⁺)				
6261	(16 ⁻)	501		5759.8 (15 ⁻)				
6275.4		1426	100	4849.2 (14 ⁺)				
6311.6	(17 ⁻)	332.8 356.2 664.9	47 5 100 5 14.5 16	5978.8 (16 ⁻) 5955.4 (16 ⁻) 5646.8 (15 ⁻)		[E2]	0.00567	$\alpha(\text{K})=0.00476$ 7; $\alpha(\text{L})=0.000714$ 10; $\alpha(\text{M})=0.0001524$ 22; $\alpha(\text{N})=3.39\times 10^{-5}$ 5; $\alpha(\text{O})=5.02\times 10^{-6}$ 7 $\alpha(\text{P})=2.85\times 10^{-7}$ 4 B(E2)(W.u.)=19 3
6323.1	(17 ⁻)	344.4 367.8 592.5	100 6 15.2 15 36 3	5978.8 (16 ⁻) 5955.4 (16 ⁻) 5730.6 (15 ⁻)		[E2]	0.00755	$\alpha(\text{K})=0.00631$ 9; $\alpha(\text{L})=0.000977$ 14; $\alpha(\text{M})=0.000209$ 3; $\alpha(\text{N})=4.65\times 10^{-5}$ 7; $\alpha(\text{O})=6.85\times 10^{-6}$ 10 $\alpha(\text{P})=3.75\times 10^{-7}$ 6 B(E2)(W.u.)=106 16
6348.3	(16 ⁺)	117	100	6231.0 (15 ⁺)				
6360.4	(17 ⁻)	944.8 [#] 3 1168.4 [#] 3	84 [#] 8 100 [#] 8	5415.5 (15 ⁻) 5192.2 (16 ⁺)		(Q)		
6471.8	(18 ⁺)	901.6 2 1279.7 9	100 33 56 33	5570.2 (16 ⁺) 5192.2 (16 ⁺)		(E2)	0.00280 1.37 $\times 10^{-3}$	$\alpha(\text{K})=0.00238$ 4; $\alpha(\text{L})=0.000333$ 5; $\alpha(\text{M})=7.08\times 10^{-5}$ 10; $\alpha(\text{N})=1.578\times 10^{-5}$ 23; $\alpha(\text{O})=2.37\times 10^{-6}$ 4 $\alpha(\text{P})=1.439\times 10^{-7}$ 21 Mult.: Q from $\gamma\gamma(\theta)$ in ¹¹⁰ Pd(³⁰ Si,4n γ); E2 from assumed band structure. $\alpha(\text{K})=0.001155$ 17; $\alpha(\text{L})=0.0001535$ 22; $\alpha(\text{M})=3.24\times 10^{-5}$ 5; $\alpha(\text{N})=7.24\times 10^{-6}$ 11 $\alpha(\text{O})=1.096\times 10^{-6}$ 16; $\alpha(\text{P})=7.01\times 10^{-8}$ 10 Mult.: Q from $\gamma\gamma(\theta)$ in ¹¹⁰ Pd(³⁰ Si,4n γ); E2 from assumed band structure.
6522.7	(18 ⁺)	284 827.1 [#] 3		6238.9 (17 ⁺) 5695.5 (16 ⁺)				
6546.2	(18 ⁺)	851	100	5695.5 (16 ⁺)				
6579.6	(17 ⁺)	231 304 736 852		6348.3 (16 ⁺) 6275.4 5844.0 (16 ⁺) 5727.7				
6587.3		744 859		5844.0 (16 ⁺) 5727.7				
6675.7	(18 ⁻)	635.5 [#] 3	100	6040.2 (16 ⁻)				
6712.7	(18 ⁻)	389.6	33 4	6323.1 (17 ⁻)				

Adopted Levels, Gammas (continued)

$\gamma(^{136}\text{Nd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	α^b	Comments
6712.7	(18 ⁻)	401.2 734 757.4	100 11 42 4	6311.6 (17 ⁻) 5978.8 (16 ⁻) 5955.4 (16 ⁻)				
						[E2]	0.00416	$\alpha(\text{K})=0.00351$ 5; $\alpha(\text{L})=0.000509$ 8; $\alpha(\text{M})=0.0001085$ 16; $\alpha(\text{N})=2.42\times 10^{-5}$ 4; $\alpha(\text{O})=3.60\times 10^{-6}$ 5 $\alpha(\text{P})=2.11\times 10^{-7}$ 3 B(E2)(W.u.)=34 7
6756.2	(18 ⁺)	912.2 [#] 3	100	5844.0 (16 ⁺)				
6757.4	(18 ⁻)	434.2 445.8 778.6	100 10 26 3 11.0 14	6323.1 (17 ⁻) 6311.6 (17 ⁻) 5978.8 (16 ⁻)				
						[E2]	0.00390	$\alpha(\text{K})=0.00330$ 5; $\alpha(\text{L})=0.000475$ 7; $\alpha(\text{M})=0.0001012$ 15; $\alpha(\text{N})=2.25\times 10^{-5}$ 4; $\alpha(\text{O})=3.36\times 10^{-6}$ 5 $\alpha(\text{P})=1.98\times 10^{-7}$ 3 B(E2)(W.u.)=10.9 23
6771.3	(18 ⁺)	894.6 4	100	5876.7 (16 ⁺)				
6867.9	(19 ⁺)	322 345 629		6546.2 (18 ⁺) 6522.7 (18 ⁺) 6238.9 (17 ⁺)				
6884.5	(18 ⁺)	297 305		6587.3 6579.6 (17 ⁺)				
6929.9		343 350		6587.3 6579.6 (17 ⁺)				
6931.3	(19 ⁺)	988.7 2	100	5942.6 (17 ⁺)				
7141.9	(19 ⁻)	781.5 [#] 4 950		6360.4 (17 ⁻) 6191.9 (18 ⁺)				
7148.9	(19 ⁻)	435.8 837.0	100 10 20.5 24	6712.7 (18 ⁻) 6311.6 (17 ⁻)				
						[E2]	0.00331	$\alpha(\text{K})=0.00280$ 4; $\alpha(\text{L})=0.000398$ 6; $\alpha(\text{M})=8.46\times 10^{-5}$ 12; $\alpha(\text{N})=1.89\times 10^{-5}$ 3; $\alpha(\text{O})=2.82\times 10^{-6}$ 4 $\alpha(\text{P})=1.691\times 10^{-7}$ 24 B(E2)(W.u.)=25 6
7222.7	(19 ⁻)	465.5 899.7	100 10 13.6 23	6757.4 (18 ⁻) 6323.1 (17 ⁻)				
						[E2]	0.00282	$\alpha(\text{K})=0.00239$ 4; $\alpha(\text{L})=0.000335$ 5; $\alpha(\text{M})=7.11\times 10^{-5}$ 10; $\alpha(\text{N})=1.586\times 10^{-5}$ 23; $\alpha(\text{O})=2.38\times 10^{-6}$ 4 $\alpha(\text{P})=1.446\times 10^{-7}$ 21 B(E2)(W.u.)=13 4
7255.8	(20 ⁺)	388 733		6867.9 (19 ⁺) 6522.7 (18 ⁺)				
7293.7	(19 ⁺)	364 409		6929.9 6884.5 (18 ⁺)				
7330.5	(20 ⁺)	858.7 2 1138		6471.8 (18 ⁺) 6191.9 (18 ⁺)				
7355.0	(20 ⁺)	1163.1 2		6191.9 (18 ⁺)				
7533.2	(20 ⁻)	857.5 [#] 4	100	6675.7 (18 ⁻)				

Adopted Levels, Gammas (continued)

$\gamma(^{136}\text{Nd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	α^b	Comments
7576.2	(20 ⁻)	427		7148.9 (19 ⁻)				
		864		6712.7 (18 ⁻)				
7647.7	(19 ⁻)	1456 1	100	6191.9 (18 ⁺)		D		
7669.7	(20 ⁺)	376	100	7293.7 (19 ⁺)				
7685.1	(19 ⁻)	656.6 3	100 29	7028.5 (17 ⁻)		Q		
		1493 1	43 21	6191.9 (18 ⁺)				
7685.9	(21 ⁺)	430		7255.8 (20 ⁺)				
		818		6867.9 (19 ⁺)				
7716.8	(20 ⁻)	494		7222.7 (19 ⁻)				
		959		6757.4 (18 ⁻)				
7732.2	(20 ⁺)	976	100	6756.2 (18 ⁺)				
8021.1	(21 ⁻)	445		7576.2 (20 ⁻)				
		872		7148.9 (19 ⁻)				
8049.9	(21 ⁻)	908.0 [#] 5	100	7141.9 (19 ⁻)				
8050.7	(21 ⁺)	381	100	7669.7 (20 ⁺)				
8063.9	(21 ⁻)	922	100	7141.9 (19 ⁻)				
8100.1	(21 ⁺)	1168.8 2	100	6931.3 (19 ⁺)				
8148.8	(22 ⁺)	463		7685.9 (21 ⁺)				
		893		7255.8 (20 ⁺)				
8223.2	(22 ⁺)	892.7 2	100	7330.5 (20 ⁺)				
8235.2	(21 ⁻)	518		7716.8 (20 ⁻)				
		1013		7222.7 (19 ⁻)				
8379.9	(22)	316		8063.9 (21 ⁻)				
		330		8049.9 (21 ⁻)				
8401.9	(21 ⁻)	716.7 7	100 30	7685.1 (19 ⁻)				
		754.2 3	29 8	7647.7 (19 ⁻)		Q		
8466.7	(22 ⁺)	416	100	8050.7 (21 ⁺)				
8509.1	(22 ⁻)	488		8021.1 (21 ⁻)				
		933		7576.2 (20 ⁻)				
8555.2	(22 ⁻)	1022	100	7533.2 (20 ⁻)				
8622.2	(22 ⁺)	1267.2 5	100	7355.0 (20 ⁺)				
8652.9	(23 ⁺)	504		8148.8 (22 ⁺)				
		967		7685.9 (21 ⁺)				
8754.9	(23)	375	100	8379.9 (22)				
8777.0	(22 ⁻)	542		8235.2 (21 ⁻)				
		1060		7716.8 (20 ⁻)				
8795.2	(22 ⁺)	1063	100	7732.2 (20 ⁺)				
8947.7	(23 ⁺)	481	100	8466.7 (22 ⁺)	[M1]	0.0202	$\alpha(\text{K})=0.01725$ 25; $\alpha(\text{L})=0.00231$ 4; $\alpha(\text{M})=0.000488$ 7; $\alpha(\text{N})=0.0001093$ 16 $\alpha(\text{O})=1.666 \times 10^{-5}$ 24; $\alpha(\text{P})=1.098 \times 10^{-6}$ 16 $B(\text{M1})(\text{W.u.})=3.1$ 15	
9020.1	(23 ⁻)	511		8509.1 (22 ⁻)				
		999		8021.1 (21 ⁻)				
9047.9	(23 ⁻)	984		8063.9 (21 ⁻)				

Adopted Levels, Gammas (continued)

γ(¹³⁶Nd) (continued)

E _i (level)	J ^π _i	E _γ [†]	I _γ [†]	E _f	J ^π _f	Mult. [‡]	α ^b	Comments
9047.9	(23 ⁻)	998		8049.9	(21 ⁻)			
9164.9	(24)	410		8754.9	(23)			
		785		8379.9	(22)			
9172.1	(24 ⁺)	948.9 2	100	8223.2	(22 ⁺)			
9178.9	(24 ⁺)	526		8652.9	(23 ⁺)			
		1030		8148.8	(22 ⁺)			
9196.9	(23 ⁻)	795.0 5	100	8401.9	(21 ⁻)	Q		
9342.0	(23 ⁻)	565	100	8777.0	(22 ⁻)			
9492	(24 ⁺)	544	100	8947.7	(23 ⁺)	[M1]	0.01481	α(K)=0.01268 18; α(L)=0.001688 24; α(M)=0.000357 5; α(N)=7.99×10 ⁻⁵ 12 α(O)=1.219×10 ⁻⁵ 17; α(P)=8.05×10 ⁻⁷ 12 B(M1)(W.u.)=3.2 16
9557.2	(24 ⁻)	1002	100	8555.2	(22 ⁻)			
9569.1	(24 ⁻)	549		9020.1	(23 ⁻)			
		1060		8509.1	(22 ⁻)			
9617.9	(25)	453		9164.9	(24)			
		863		8754.9	(23)			
9745.9	(25 ⁺)	567		9178.9	(24 ⁺)			
		1093		8652.9	(23 ⁺)			
9893.5	(25 ⁻)	845.6 2	100	9047.9	(23 ⁻)			
10054.8	(25 ⁻)	857.9 5	100	9196.9	(23 ⁻)			
10092	(25 ⁺)	600	100	9492	(24 ⁺)			
10108.9	(26)	491	100	9617.9	(25)			
10190.5	(26 ⁺)	1018.4 2	100	9172.1	(24 ⁺)			
10193.1	(25 ⁻)	624		9569.1	(24 ⁻)			
		1173		9020.1	(23 ⁻)			
10343.9	(26 ⁺)	598		9745.9	(25 ⁺)			
		1165		9178.9	(24 ⁺)			
10498.9	(26 ⁻)	941.7 2	100	9557.2	(24 ⁻)			
10637.9	(27)	529		10108.9	(26)			
		1020		9617.9	(25)			
10763	(26 ⁺)	671	100	10092	(25 ⁺)			
10784.9	(27 ⁻)	891.4 2	100	9893.5	(25 ⁻)			
10968.9	(27 ⁺)	625		10343.9	(26 ⁺)			
		1223		9745.9	(25 ⁺)			
10973.2	(27 ⁻)	918.4 6	100	10054.8	(25 ⁻)			
11277.4	(28 ⁺)	1086.9 2	100	10190.5	(26 ⁺)			
11490.7	(28 ⁻)	991.8 2	100	10498.9	(26 ⁻)			
11647.9	(28 ⁺)	1304	100	10343.9	(26 ⁺)			
11784.0	(29 ⁻)	999.1 2	100	10784.9	(27 ⁻)			
11956.9	(29 ⁻)	983.7 3	100	10973.2	(27 ⁻)			
12335.9	(29 ⁺)	1367	100	10968.9	(27 ⁺)			
12418.4	(30 ⁺)	1141	100	11277.4	(28 ⁺)			
12555.8	(30 ⁻)	1065.0 2	100	11490.7	(28 ⁻)			

Adopted Levels, Gammas (continued)

$\gamma(^{136}\text{Nd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π
12882.5	(31 ⁻)	1098.4 2	100	11784.0	(29 ⁻)		20766.4	(43 ⁻)	1476.6 5	100	19289.8	(41 ⁻)
13007.0	(31 ⁻)	1050.1 4	100	11956.9	(29 ⁻)	Q	22325.5	(45 ⁻)	1559.1 5	100	20766.4	(43 ⁻)
13700.4	(32 ⁻)	1144.6 2	100	12555.8	(30 ⁻)		23970.0	(47 ⁻)	1644.4 7	100	22325.5	(45 ⁻)
14069.6	(33 ⁻)	1187.1 2	100	12882.5	(31 ⁻)		25702.6	(49 ⁻)	1732.6 7	100	23970.0	(47 ⁻)
14124.5	(33 ⁻)	1117.5 4	100	13007.0	(31 ⁻)	Q	27517.6?	(51 ⁻)	1815 ^c 1	100	25702.6	(49 ⁻)
14926.0	(34 ⁻)	1225.6 5	100	13700.4	(32 ⁻)		x+7269.10	J+2	909.1 2		6360+x	J
15310.7	(35 ⁻)	1186.2 4	100	14124.5	(33 ⁻)		x+8269.4	J+4	1000.3 2		x+7269.10	J+2
15355.3	(35 ⁻)	1285.7 5	100	14069.6	(33 ⁻)		x+9348.8	J+6	1079.4 2		x+8269.4	J+4
16226.4	(36 ⁻)	1300.4 5	100	14926.0	(34 ⁻)		x+10500.9	J+8	1152.1 2		x+9348.8	J+6
16565.6	(37 ⁻)	1254.9 4	100	15310.7	(35 ⁻)	Q	x+11723.3	J+10	1222.4 5		x+10500.9	J+8
16743.6	(37 ⁻)	1388.3 5	100	15355.3	(35 ⁻)		x+13007.9	J+12	1284.6 5		x+11723.3	J+10
17593.4	(38 ⁻)	1367 ^c	100	16226.4	(36 ⁻)		x+14371.9	J+14	1364 1		x+13007.9	J+12
17890.9	(39 ⁻)	1325.3 5	100	16565.6	(37 ⁻)	Q	x+15812.9	J+16	1441 1		x+14371.9	J+14
19289.8	(41 ⁻)	1398.9 4	100	17890.9	(39 ⁻)	Q	x+17338.0	J+18	1525 ^c 1		x+15812.9	J+16

[†] From ¹¹⁰Pd(³⁰Si,4n γ), except where noted.

[‡] From $\gamma\gamma(\theta)$ (DCO), $\gamma(\theta)$ and asymmetry ratios (at two angles) in high-spin studies. Mult=Q refers to $\Delta J=2$ transition and mult=D refers to $\Delta J=1$ transition.

From ¹¹⁶Cd(²⁴Mg,4n γ).

@ From ¹³⁶Pm (E=x,y) ϵ decay.

& Q from $\gamma\gamma(\theta)$ in ¹¹⁰Pd(³⁰Si,4n γ), E2 from assumed band structure.

^a From $\alpha(\text{K})\text{exp}$ in ¹³⁶Pm (E=x,y) ϵ decay.

^b Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

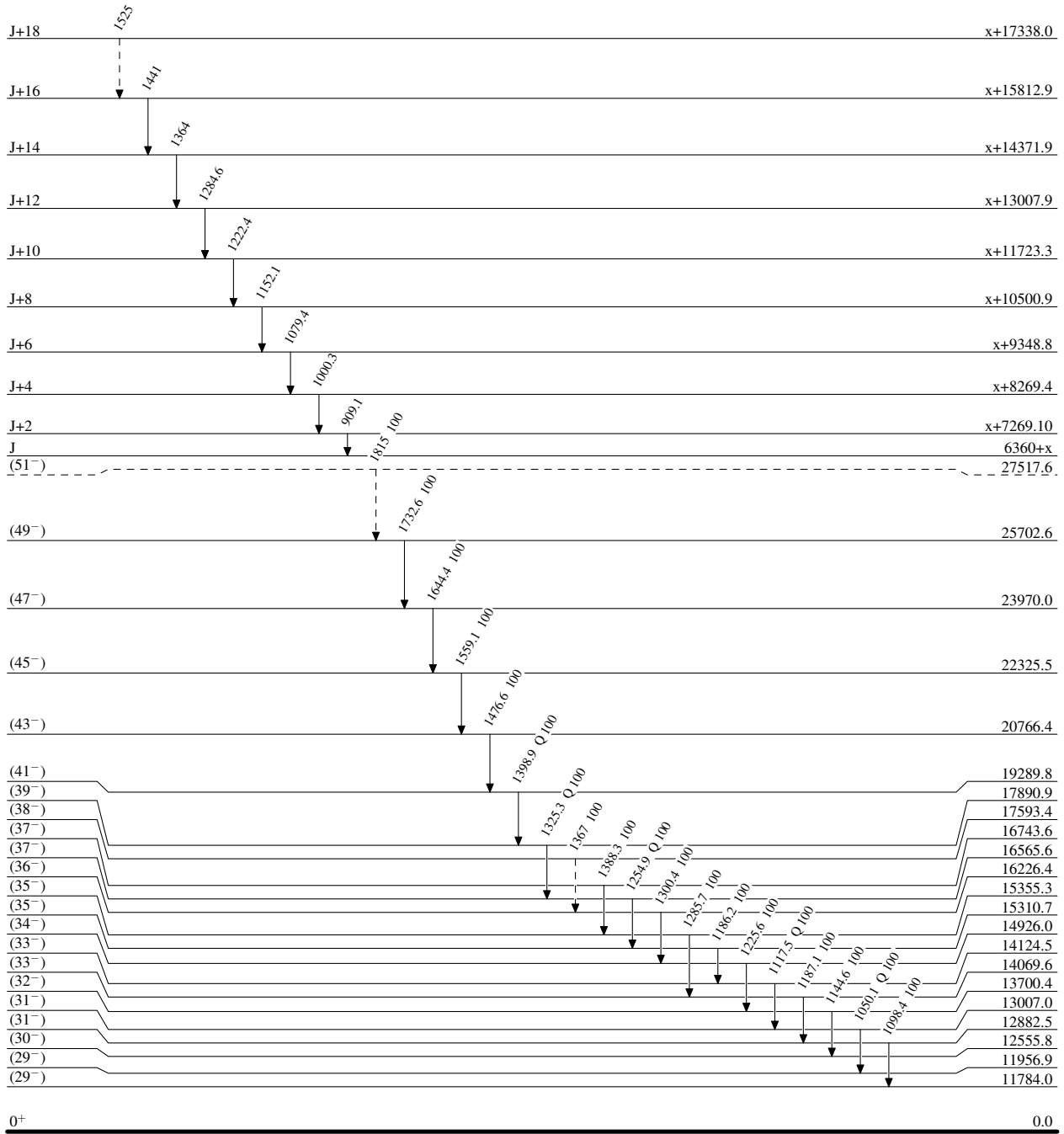
^c Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Legend

Level Scheme

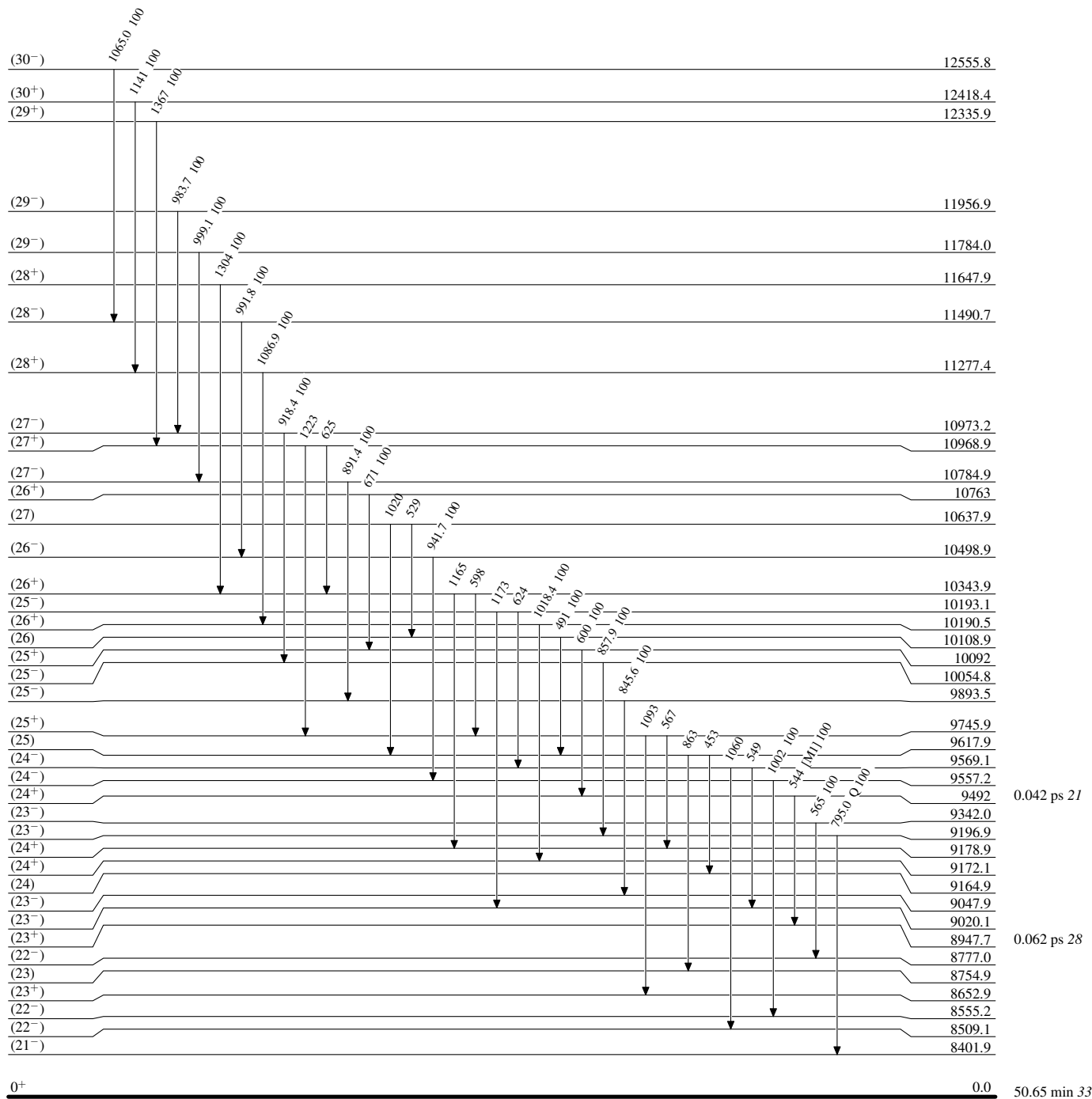
Intensities: Relative photon branching from each level

-----▶ γ Decay (Uncertain)

50.65 min 33

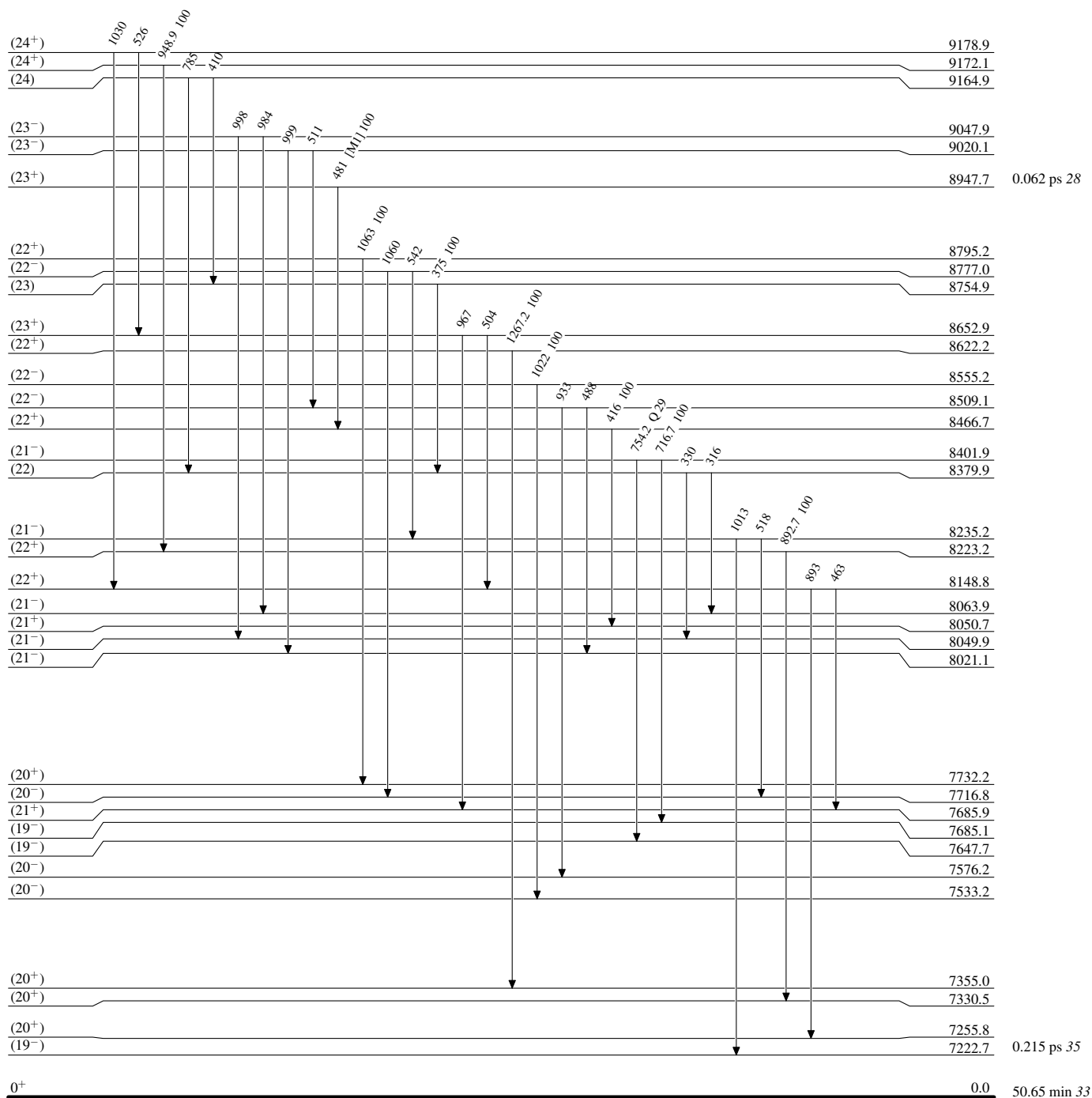
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



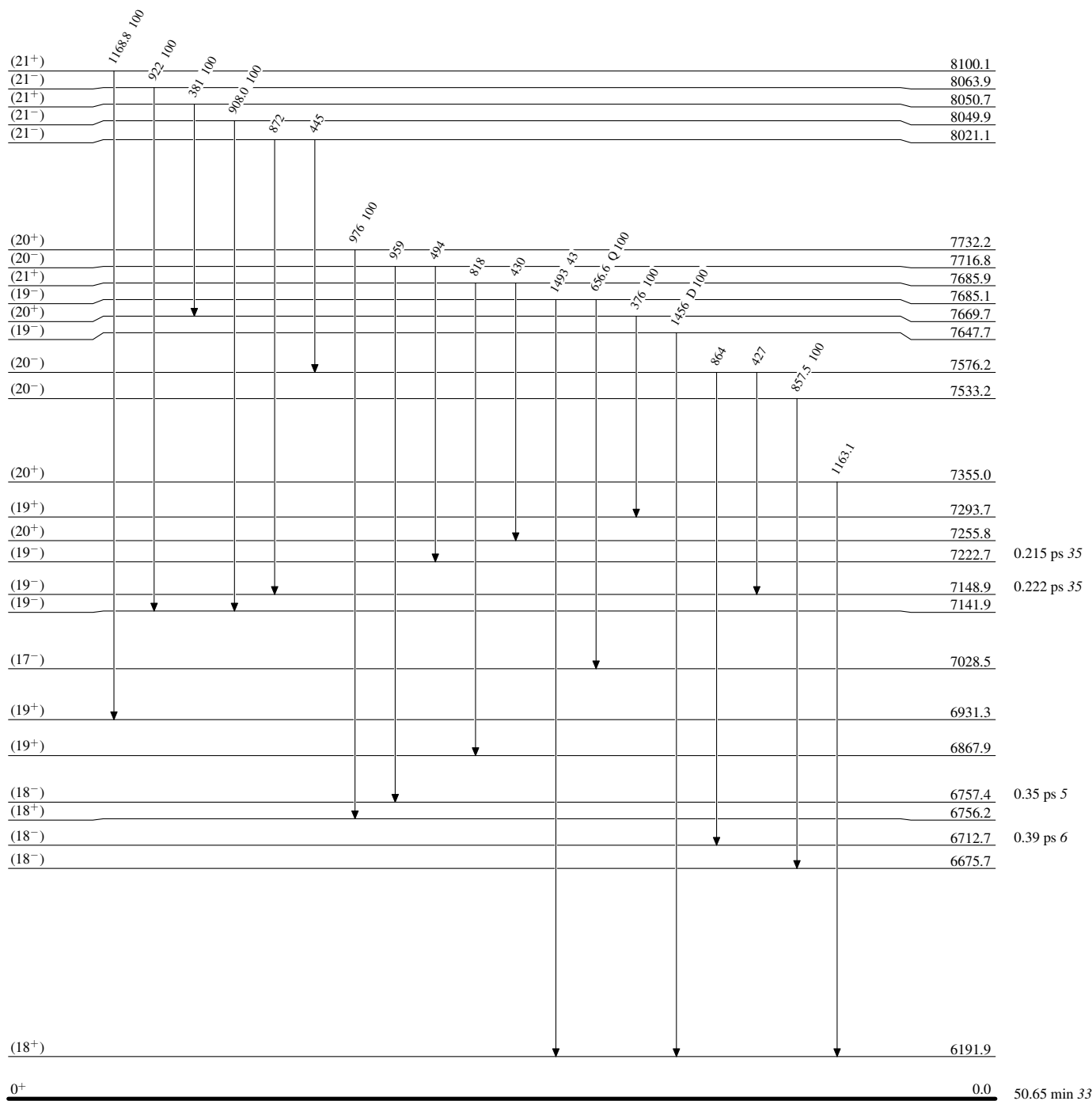
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



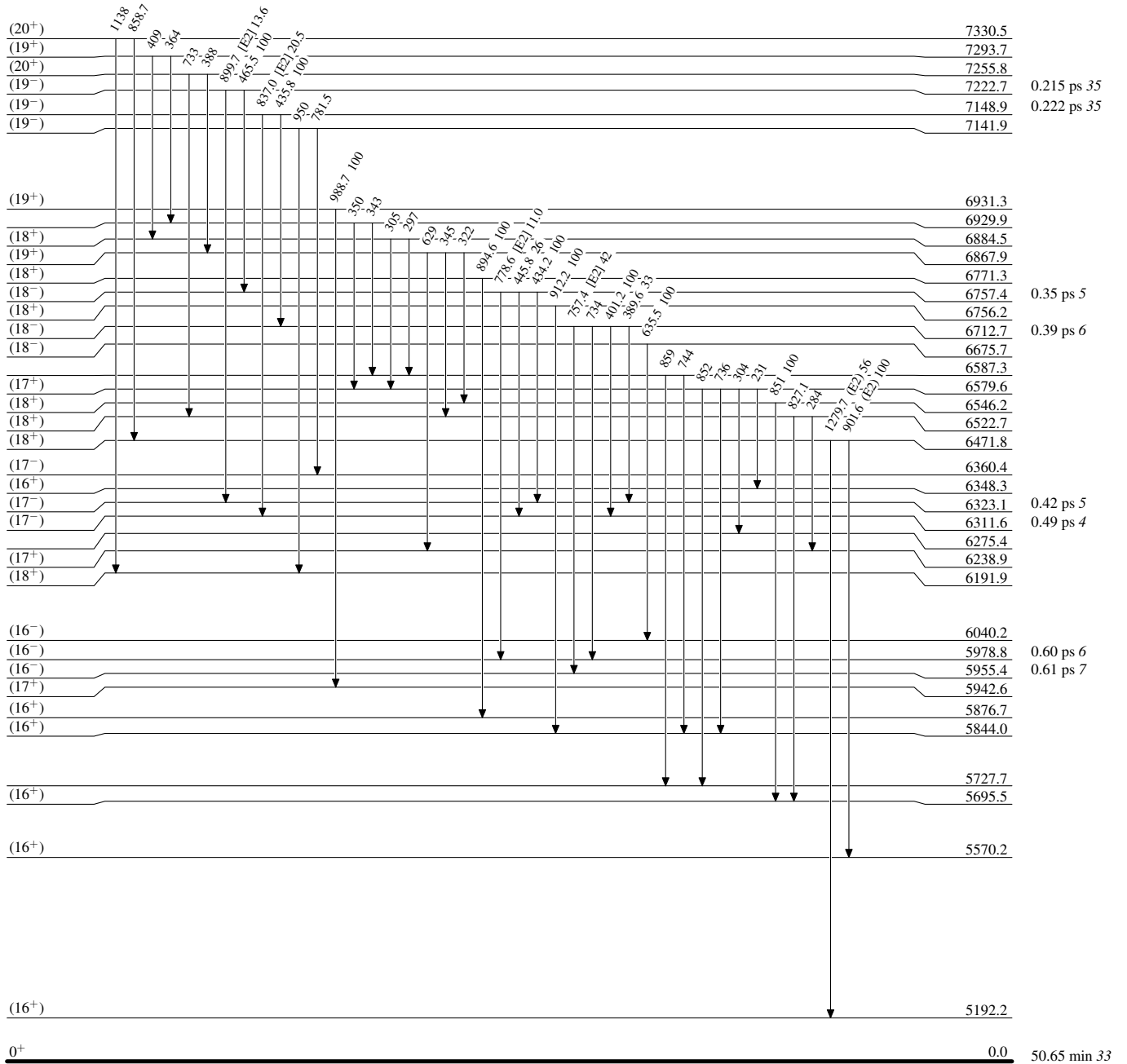
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level

 $^{136}_{60}\text{Nd}_{76}$

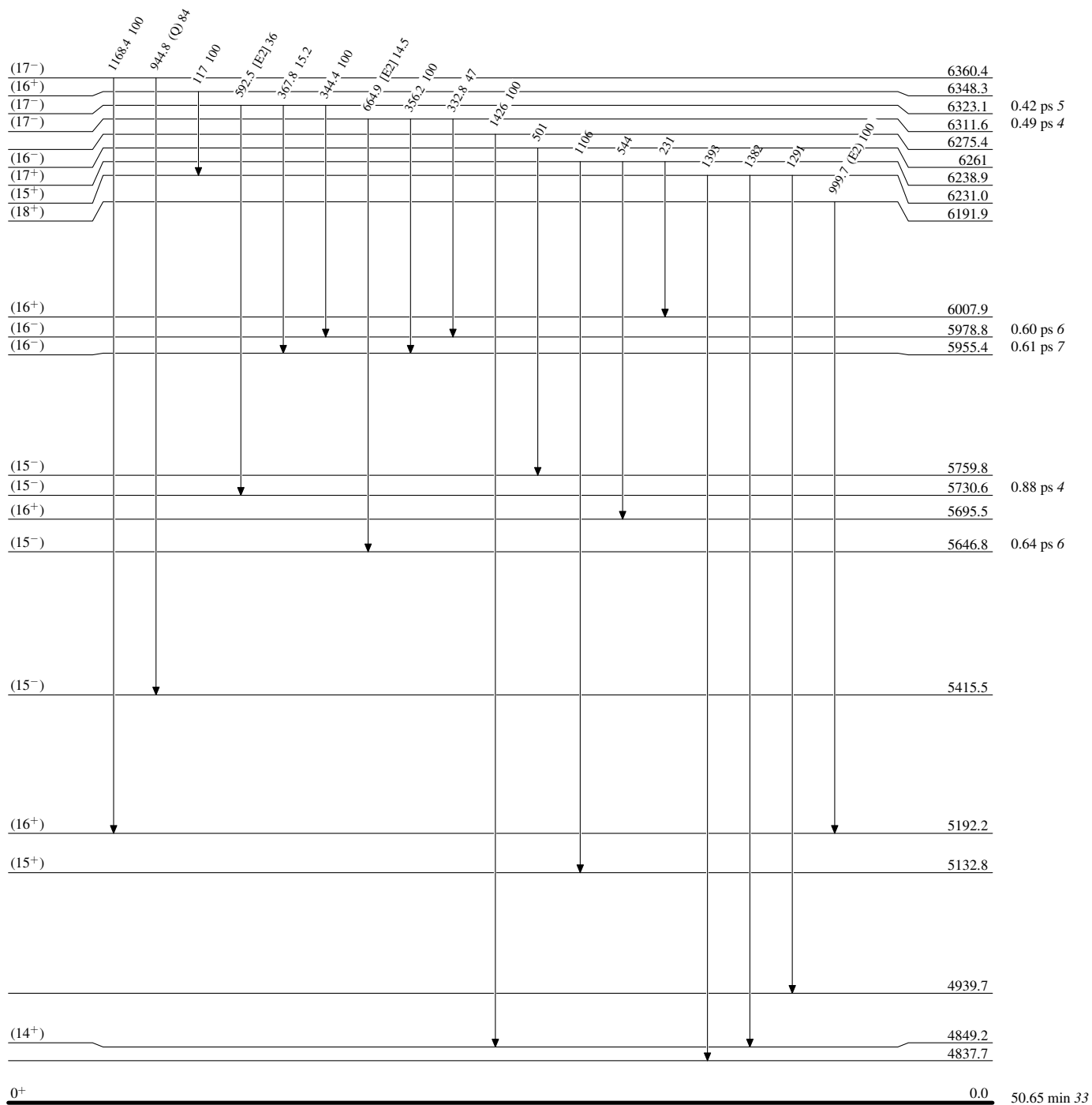
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level

 $^{136}_{60}\text{Nd}_{76}$

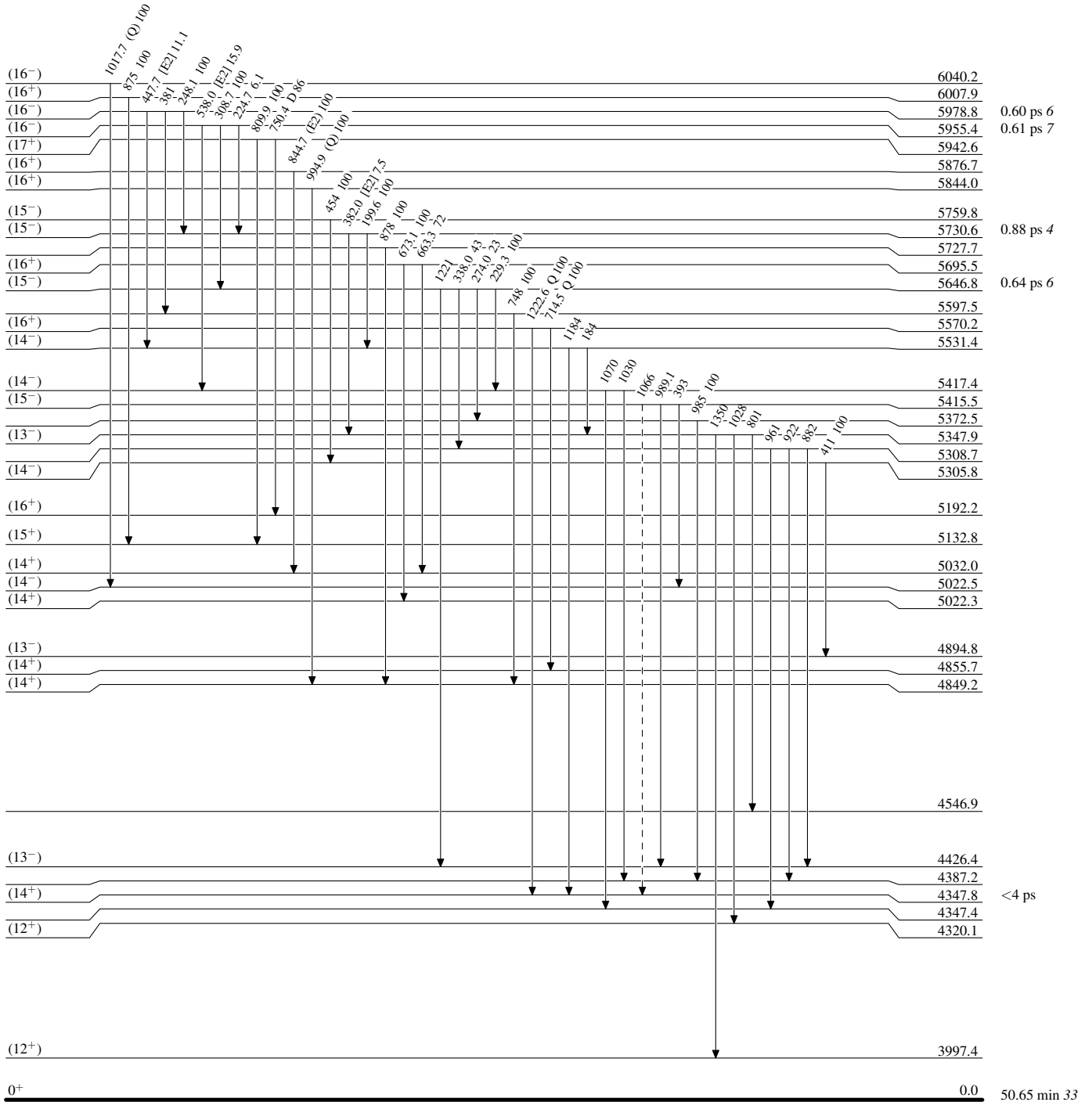
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

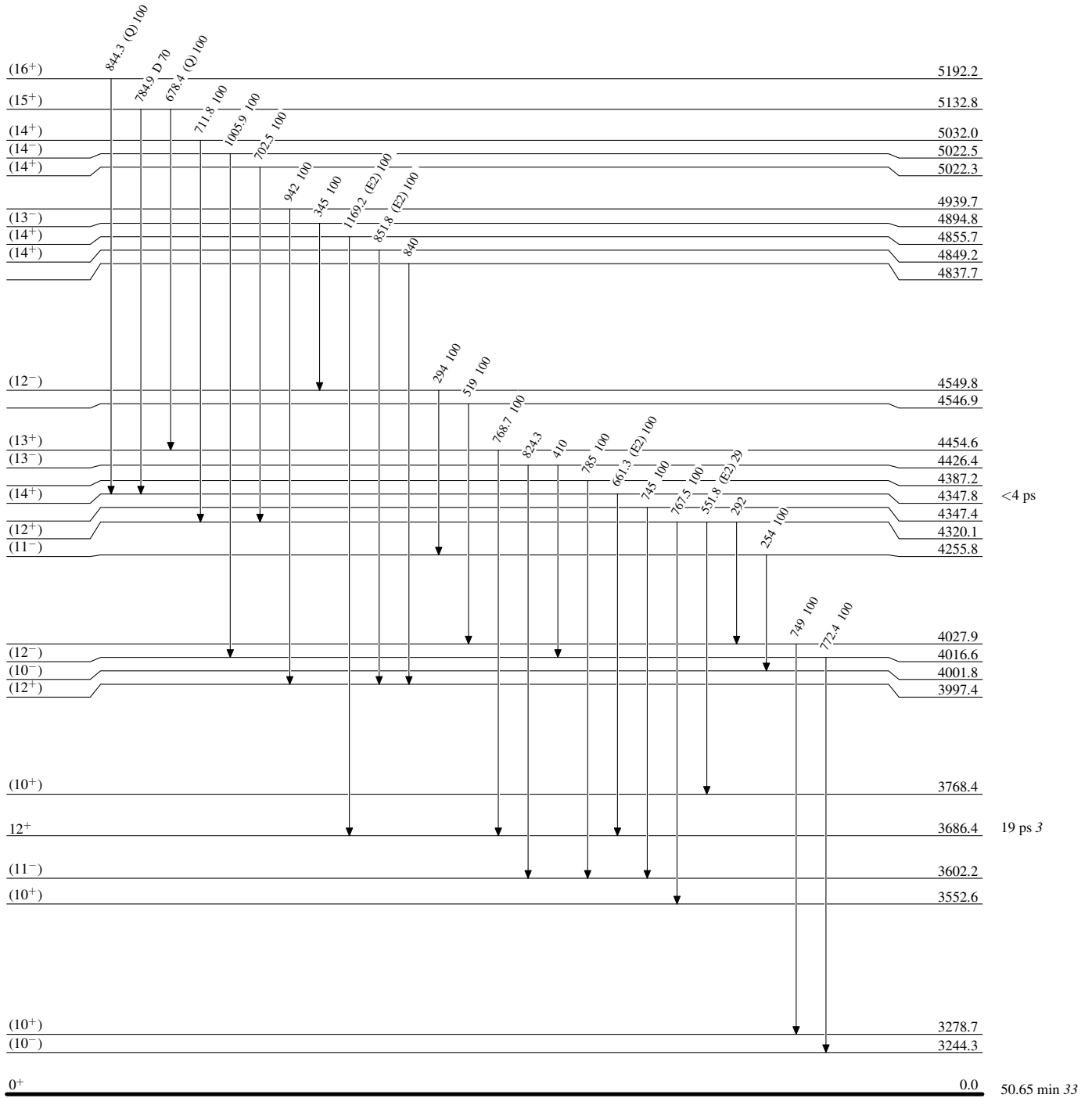
-----▶ γ Decay (Uncertain)



Adopted Levels, Gammas

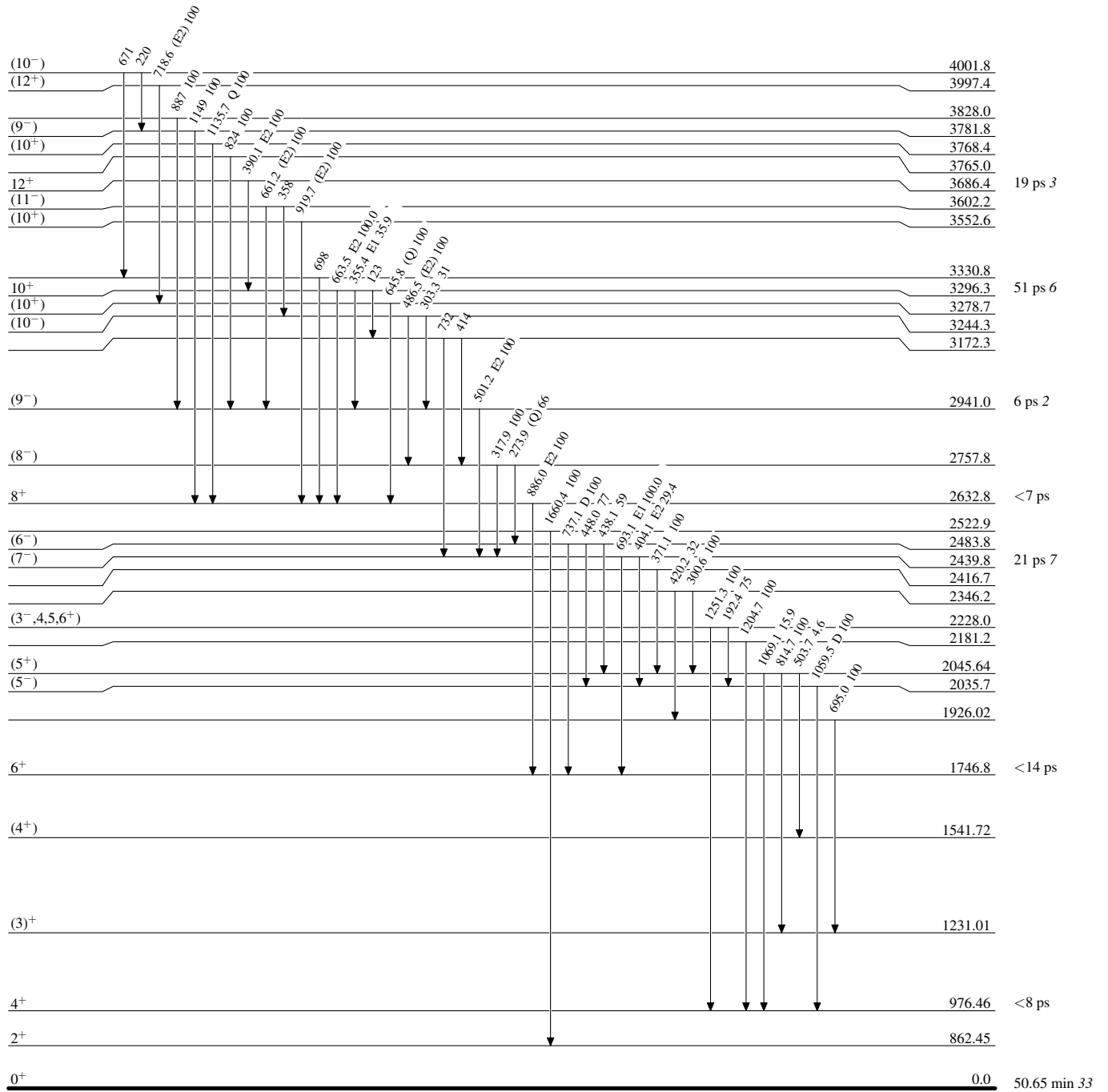
Level Scheme (continued)

Intensities: Relative photon branching from each level



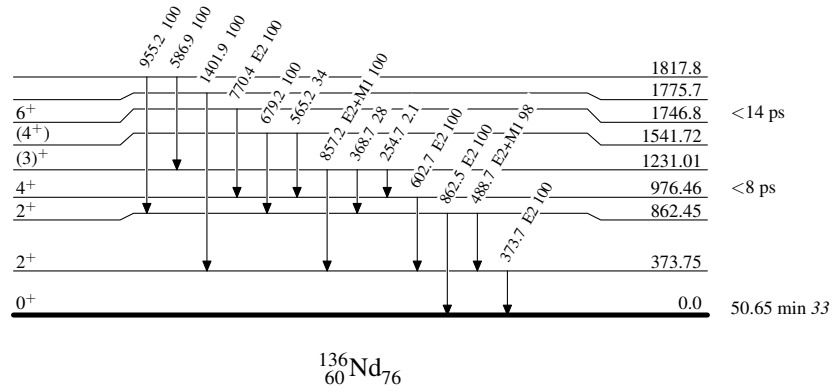
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level

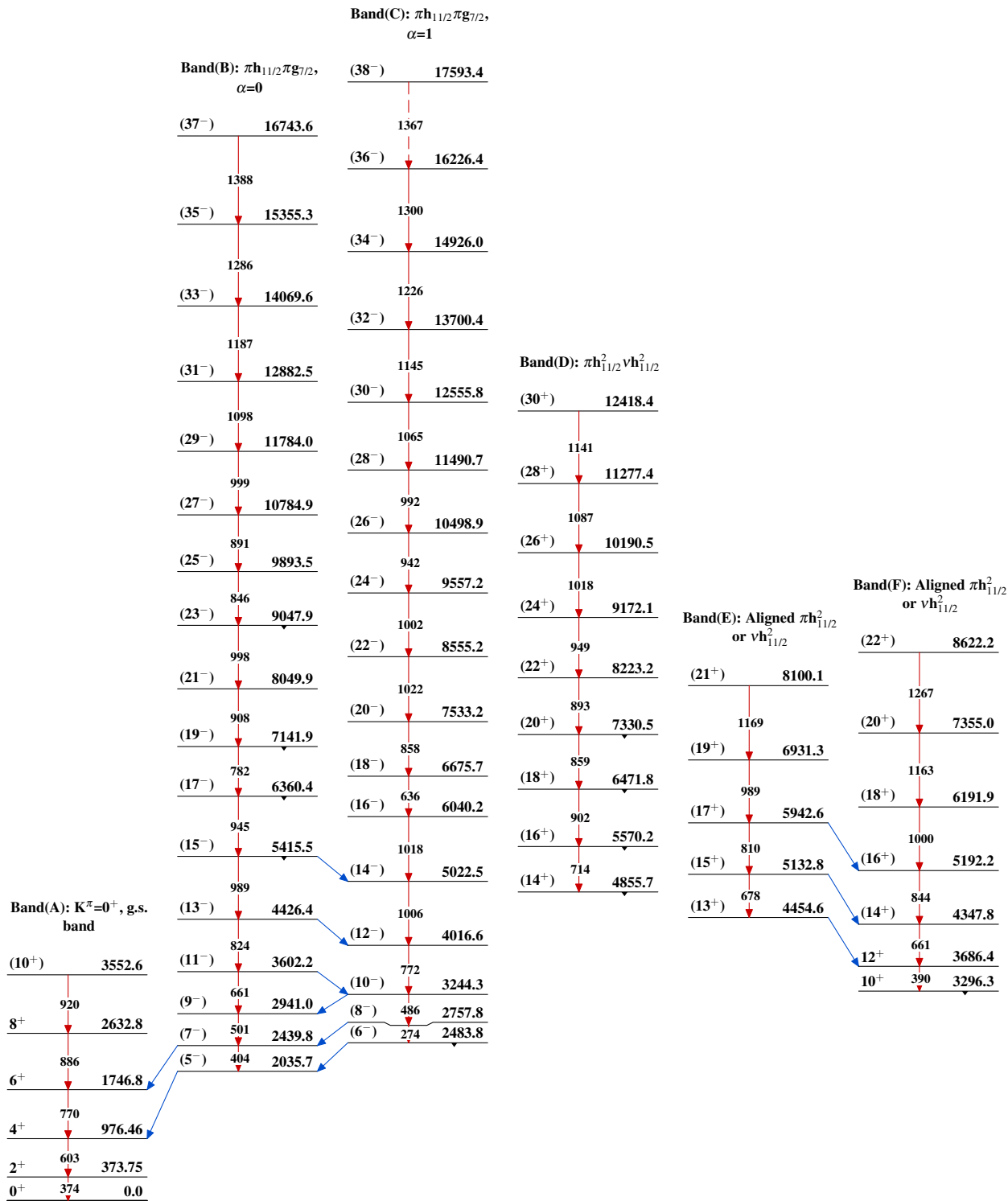


Adopted Levels, GammasLevel Scheme (continued)

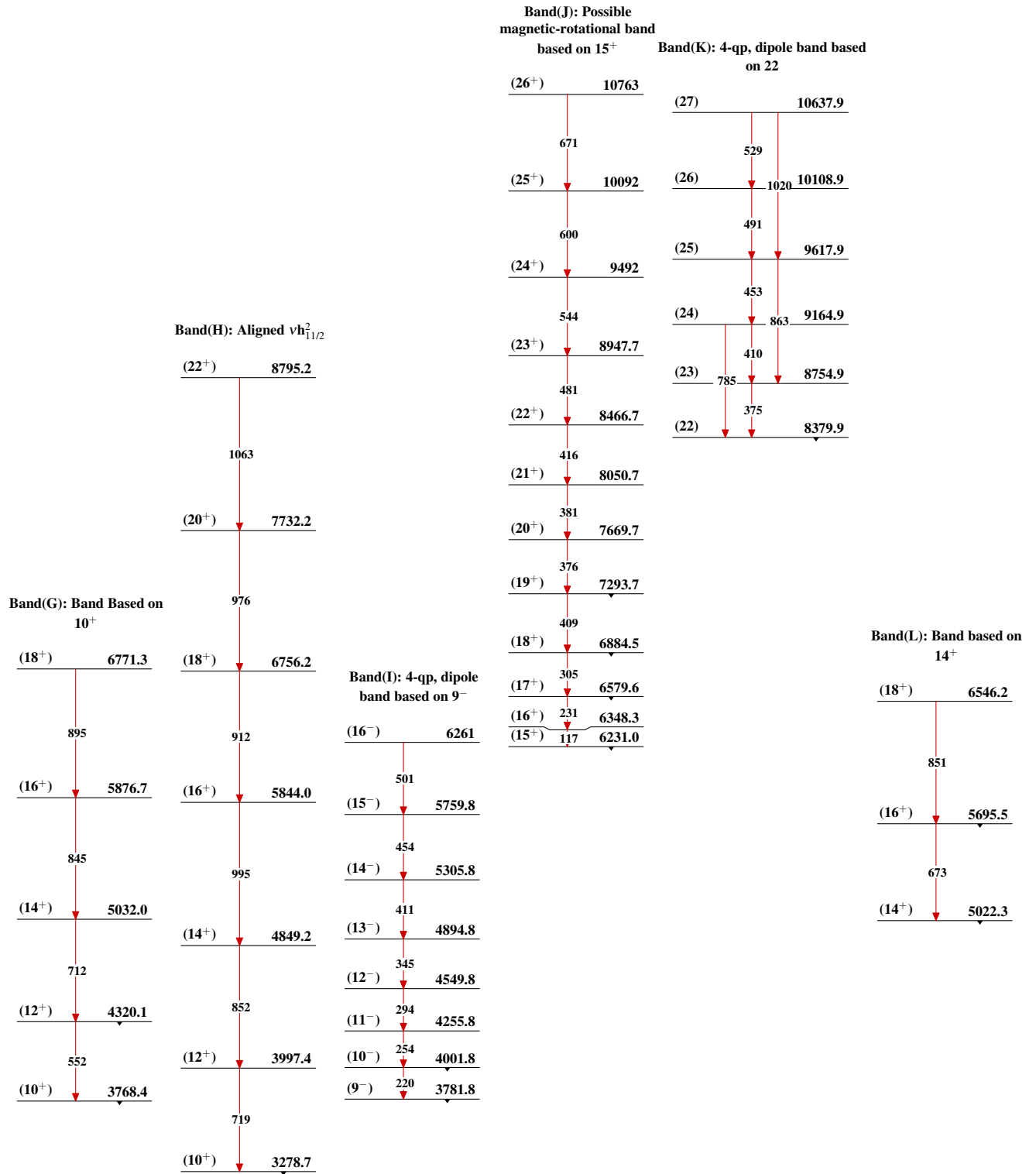
Intensities: Relative photon branching from each level

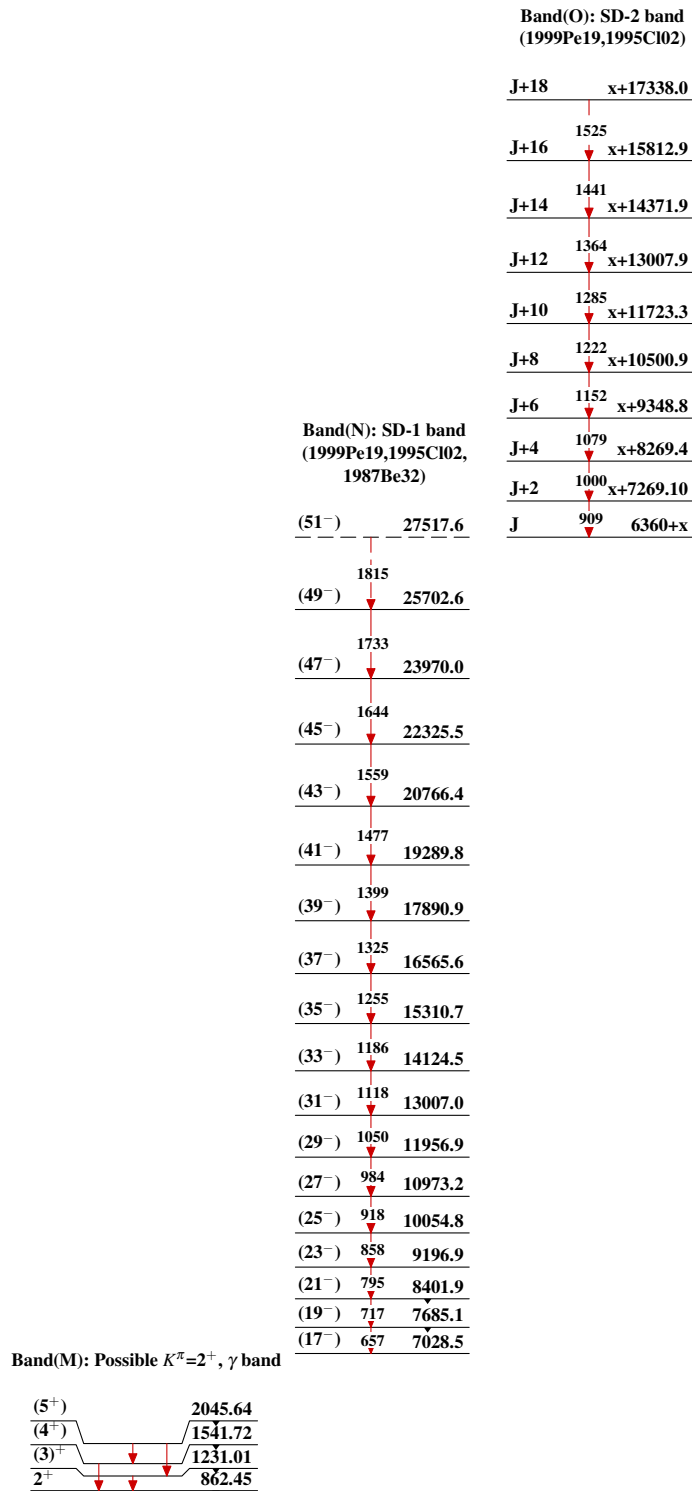


Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)

Adopted Levels, Gammas (continued)