

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson, D. Symochko(a), M. Fadil(b), and J. K. Tuli		NDS 112,1949 (2011)	1-Jun-2010

$Q(\beta^-) = -4808.24$; $S(n) = 9828.4$; $S(p) = 7222.4$ 15; $Q(\alpha) = -806.10$ 2012Wa38

Note: Current evaluation has used the following Q record $-4.79\text{E}+3$ 3 9828 3 7222.4 15-810 10 2011AuZZ.

$Q(\beta^-n) = -13498.14$, $Q(\epsilon p) = -7802.8$ 17 2011AuZZ.

Values in 2003Au03: $Q(\beta^-) = 4800.3$, $S(n) = 9829.3$, $S(p) = 7223.3$ 15, $Q(\alpha) = -812.10$, $Q(\beta^-n) = -13498.14$, $Q(\epsilon p) = -7804.1$ 17.

Recent (1995-) theory/calculations/analysis: 2010Ne04, 2009Co20 2009Lo04, 2009SaZW, 2009Ti04, 2007An16, 2005Zi04,

2002Jo17, 1998Za04, 1998Po21, 1998Gr23, 1997Ho05, 1997Gu12, 1995Sm07, 1995Pi12.

1999Ma44, 1992Le09: measured optical isotope shift, derived $\Delta\langle r^2 \rangle$.

 ^{142}Nd LevelsCross Reference (XREF) Flags

A	$^{142}\text{Pr} \beta^-$ decay	F	$^{142}\text{Nd}(e, e')$	K	$^{141}\text{Pr}(^3\text{He}, d)$
B	$^{142}\text{Pm} \epsilon$ decay	G	$^{142}\text{Nd}(n, n'\gamma)$	L	$^{144}\text{Nd}(^{12}\text{C}, ^{14}\text{C})$
C	$^{146}\text{Sm} \alpha$ decay	H	$^{142}\text{Nd}(\gamma, \gamma')$	M	$^{144}\text{Sm}(^{14}\text{C}, ^{16}\text{O})$
D	$^{142}\text{Nd}(p, p'), (d, d')$	I	$^{143}\text{Nd}(d, t)$	N	(HI, xn γ)
E	$^{144}\text{Nd}(p, t)$	J	Coulomb excitation		

E(level) [‡]	J π [†]	T _{1/2} [#]	XREF	Comments
0.0	0 ⁺	stable	ABC E GHIJKLMN	
1575.780 10	2 ⁺	0.110 ps 2	AB DEFGHIJKLMN	$\mu = +1.69$ 15 (1991Ba38, 2005Sa24) T _{1/2} : from B(E2)=0.265 4 (1978Ki09) in Coul ex.
2083.940 20	3 ⁻	0.44 ps +37-14	A DEFG KLMN	T _{1/2} : from DSA in (n, n' γ).
2100.787 13	4 ⁺	28 ns 2	DEFG N	T _{1/2} : from (HI, xn γ).
2209.303 21	6 ⁺	16.5 μ s	D FG N	T _{1/2} : From 1964Kr02 $^{143}\text{Nd}(\gamma, n)$, but no uncertainty assigned Other: 18.6 μ s from 1969Iv02, a preliminary report.
2217.484 24	0 ⁺		B DE GH M	
2244 4	1 ⁻		D	
2340 25			K	
2384.339 20	2 ⁺	0.14 ps 3	B DEFGH K MN	
2437.170 20	4 ⁺		DEFG N	
2513.888 21	5 ⁺		G N	
2515 4	(1 ⁻)		D	
2529 3			E	
2547.279 15	3 ⁺		D G K N	J π : (1 ⁻) in (p, p'), (d, d').
2583.091 22	2 ⁺		D FG	J π : (4 ⁺) in (e, e').
2585.550 20	1 ⁽⁺⁾	>0.17 ps	B E GH	
2656 3	0 ⁺		E	Seen only $^{144}\text{Nd}(p, t)$.
2737.26 3	4 ⁺		D F N	J π : (5 ⁻) in (e, e').
2776 4	(1 ⁻)		DE K	XREF: E(2757)K(2800).
2845.86 5	2 ⁺	34 fs 7	B DEFGH	
2873 3	(4 ⁺)		E	
2886.31 4	6 ⁺		D FG N	
2958 3	0 ⁺		E	
2975.90 6	5 ⁻		D G N	
2983.1 10	0 ⁺		EF G L	
3009.97 5	4 ⁺		DEFG K N	J π : (3 ⁻) in (p, p'), (p, t) is ruled out in (n, n' γ).
3045.19 4	2 ⁺		B DEFGH	
3081.06 4	4 ⁺		DEFG	
3085.85 6	5 ⁺		G N	
3128.06 7	2 ⁺		B DEFGH	

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Adopted Levels, Gammas (continued) ^{142}Nd Levels (continued)

E(level) [‡]	J ^π [†]	T _{1/2} [#]	XREF	Comments
3242.62 6	7 ⁻		DE G K N	J ^π : from (³ He,d), (p,t), (p,p'). J ^π =(5,6 ⁺ ,7) in (n,n'γ).
3244.83 6	4 ⁻		G N	
3246 6	7 ⁻		F	
3248	4 ⁻		I	
3296.2 10	(5 ⁻)		DE G I K N	J ^π : (5 ⁻) in (p,p') and possibly in (p,t).
3318.73 6	4 ⁺		DEFG K	J ^π : from (e,e'). J ^π =1 ⁻ in (p,t).
3358.68 9	2 ⁺		B G K	
3365.26 6	(3 ⁻)		E G I	J ^π : from (d,t). (5 ⁻) in (p,t).
3408 4	6 ⁺		D F	
3414.24 8	(5 ⁻)		E G I N	J ^π : from (d,t).
3424.02 17	1 ⁻	1.55 fs 3	D GH	J ^π : from similarity of B(E1) for 1 ⁻ to 0 ⁺ with B(E1) for 3 ⁻ to 2 ⁺ transition, 1999Pi02 interpret this to be a quadrupole-octupole coupled two-phonon state additional support for J ^π from polarization (1990He03).
3439.81 11			G K N	
3448.54 13			G N	
3453.3 5	8 ⁺		G N	
3456.01 13	8 ⁻		G N	
3466.83? 9			G	Level introduced to accommodate strong 1382γ in (n,n'γ).
3470.31 11	2 ⁺		E G L	
3484.9 5	9 ⁻	1.6 ns 2	F N	μ=+9.5 12 (1991KaZQ) μ from g=+1.05 13 obtained from 1275γ(θ,t) in (α,4nγ) (1991KaZQ). Configuration=((π g _{7/2}) ⁻¹ (π h _{11/2}) ⁺¹) (1991KaZQ). T _{1/2} : from (HI,xnγ).
3499.17 22	(7 ⁻)		D G	
3511.9 4			G	
3519.94 16	(7 ⁺)		G N	
3541 4	(7 ⁻)		D	
3576.81 8	(3 ⁻)		DEFG I	
3579.11 6	2 ⁺		G K	
3584.2 3	(0 ⁺)		GH	
3598.31 10	5 ⁻		DE G I	
3633.2 4	6 ⁺		D G	
3670 25			K	J ^π : L(³ He,d)=0.
3675 4	6 ⁺		D	
3708.65 6	(5 ⁻)		E G I	XREF: I(3704).
3709.77 13	(3 ⁻)		D G I	XREF: I(3704).
3743.7 3	(1 ⁻ ,2 ⁺)		G K	
3757.6 5	1,2 ⁺		D G	
3763.2 5	(0 ⁺)		G	
3766.4 6	(8 ⁻)			N
3781.31 13	3 ⁻		D G I	
3785.0 3	1,2 ⁺		G	
3803.7 7	(4 ⁺)		D G	
3831.10 20	2 ⁻		G I	
3832.0 6	8 ⁺			N
3834 4	(0 ⁺)		D	
3861.18 18			G	N
3871.79 19			DE G I	J ^π : 3 ⁻ in (p,t), (4 ⁻ ,5 ⁻) in (p,p') but γ to 2 ⁺ makes 5 ⁻ unlikely.
3896.0 5	(2 ⁺)		E G	
3897 4	0 ⁺		D	
3908 4	(2 ⁻)		D I	J ^π : (2 ⁻ ,5 ⁻) in (p,p'),(d,d'). L(d,t)=2.
3918 5	(5 ⁻)		DE	J ^π : (2 ⁺ ,5 ⁻) in (p,t).
3923.3 10	(1 ⁻)		D G	
3925.0 6	10 ⁺	0.6 ns 1	N	μ=+7.9 24 (1991KaZQ)

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Adopted Levels, Gammas (continued) ^{142}Nd Levels (continued)

E(level) [‡]	J ^π [†]	T _{1/2} [#]	S	XREF	Comments
					μ from g=+0.79 24 obtained from 472 γ (θ ,t) in (α ,4n γ) (1991KaZQ). Configuration=((π d _{5/2}) ⁻² (π g _{7/2}) ⁺²) (1991KaZQ). T _{1/2} : from (HI,xn γ).
3939.1 7				D G	
3953.8 6	(8 ⁻)				N
3982.0 4	1			G	
3985.88 17				DE G	
4004 4	(4 ⁺)			DE K	
4053.8 4				G	
4068.9 3				DE G	N
4094.0 6	1 ⁽⁺⁾	4.1 fs 6		GH	
4104 4	4 ⁺			DE	
4127 4				D	
4144.9 6	1 ⁽⁻⁾	3.4 fs 5		GH	
4146 6	5 ⁻			DE	
4169 6	2 ⁺			E	
4174.4 4	(4 ⁺)			D G	
4189 6	1 ⁻			E	
4203.04 23	2 ⁺			D G	
4243.0 8	(9 ⁺)				N
4255.7 9	1,2 ⁺			E GH	
4269.1 8				G	
4272 4	5 ⁻			D	
4286 6	4 ⁺			E	
4286.4 11	3 ⁻			D G	
4298 4	(5 ⁻)			D	
4319.3 6				G	
4319.8 12	(9)				N
4326 4	6 ⁺			D	
4335.0 10	(1 ⁻)			G	
4346 4	6 ⁺			D	
4362.8 8				G	
4390.2 4	(1 ⁻)			D G	
4403 6	(4 ⁺)			E	
4423 6	(3 ⁻)			DE	
4456.1 3	3 ⁻			D G	
4464.3 8				D G	
4480 6	(4 ⁺ ,5 ⁻)			DE	J ^π : 4 ⁺ in (p,p'), 5 ⁻ in (p,t).
4500.1 17	2 ⁺			DE G	
4511.5 6	3 ⁻			D G	
4530 4				D	
4552.8 6				DE G	
4567 4	2 ⁺			D	
4581 4	2 ⁺			D	
4605.0 9	(10 ⁺)				N
4606.0 8	10 ⁻				N
4615 7	2 ⁺			E	
4617.5 13	(10)				N
4625 3	1	4.7 fs 8	0.097 16	D H	J ^π : from (γ , γ'). 3 ⁻ assigned earlier from (p,p').
4638 4	(2 ⁺)			D	
4662 4	5 ⁻			D	
4688 4	5 ⁻			DE	J ^π : (6 ⁺) in (p,t).
4707 4	3 ⁻			DE	J ^π : (1 ⁻ ,2 ⁺) in (p,t).
4716.6 7	11 ⁻				N
4725 4	(3 ⁻)			DE	J ^π : from (p,t).

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Adopted Levels, Gammas (continued) ^{142}Nd Levels (continued)

E(level) [‡]	J ^π [†]	T _{1/2} [#]	S	XREF	Comments
4744 4	(0 ⁺)			D	
4752 4	6 ⁺			D	
4798 4	3 ⁻			DE	
4818 7	(2 ⁺ ,3 ⁻)			E	
4838 4	(3 ⁻)			D	
4847 4				D	
4862 4				D	
4892 4	3 ⁻			DE	J ^π : (4 ⁺) in (p,t).
4901.5 10	1	5.8 fs 10	0.078 14	H	
4908 4	(3 ⁻ ,4 ⁺)			D	
4971 4				D	
4986.2 9	(11 ⁻)				N
4993 4	4 ⁺			D	
5040 4	3 ⁻			D	
5054 4				D	
5087.5 7	(11 ⁻)				N
5089 4	3 ⁻			D	
5102 4	(0 ⁺ ,1 ⁻)			D	
5130 4	(3 ⁻)			D	
5145 4	2 ⁺			D	
5164.5 9	1 ⁽⁻⁾	7.4 fs 14	0.062 12	D H	
5172 4	(3 ⁻)			D	
5182.2 12	(11)				N
5193 4				D	
5202.3 7	(12 ⁻)				N
5219.6 8	1	2.2 fs 3	0.21 3	H	
5228 4	4 ⁺			D	
5252 4	2 ⁺			D	
5259.5 8	(13 ⁻)				N
5266 4	4 ⁺			D	
5277 4	2 ⁺			D	
5307.1 8	(12 ⁻)				N
5315.8					N
5322 4				D	
5332 4	3 ⁻			D	
5355 4	(2 ⁺ ,3 ⁻)			D	
5377 4	0 ⁺			D	
5381.7 10	1	6.6 fs 15		H	
5412.8 7	1 ⁽⁻⁾	3.2 fs 6		D H	Parity suggested from (p,p').
5432.8 7	1	3.3 fs 5		D H	
5437.8					N
5446.7 11					N
5468.2 8	(13 ⁻)				N
5471 4				D	
5496 4				D	
5511 4	3 ⁻			D	
5513.6					N
5523.3 7	(3 ⁻ ,1)	1.0 fs 15		D H	3 ⁻ proposed from (p,p'),(d,d').
5551.2 8	1	2.9 fs 5		D H	
5586.8 12	1	4.3 fs 9		H	
5650.8					N
5660.7 13	1	3.0 fs 6		H	
5713.9 14	1	3.7 fs 7		H	
5728.4 9					N
5733.1 11	1	3.4 fs 7		H	
5745.5 8	(14 ⁻)				N

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Adopted Levels, Gammas (continued)

^{142}Nd Levels (continued)				
E(level) ‡	J π †	T _{1/2} #	XREF	Comments
5824.6 8	1	1.9 fs 3	H	
5862.7 13	1	3.4 fs 7	H	
5912.3 7	1	0.88 fs 14	H	
5956.2 9	1	4.5 fs 10	H	
5995.9 8	1	1.50 fs 24	H	
6016.1 8	1	1.45 fs 23	H	
6034.9 7	1	0.89 fs 14	H	
6047.5 8	1	1.48 fs 24	H	
6149.7 7	1	0.52 fs 8	H	
6171.5 7	1	0.52 fs 8	H	
6223.8 8	1	0.85 fs 13	H	
6246.5 9	(14 ⁺)			N
6322.4 6	1	0.36 fs 5	H	
6364.0 11	1	0.51 fs 8	H	
6440.3 9	(14 ⁺)			N
6555.3 10	1	2.0 fs 4	H	
6562.4 7	1	1.07 fs 18	H	
6586.9 11	1	1.22 fs 23	H	
6596.5 11	1	1.18 fs 21	H	
6605.9 11				N
6615.5 13	1	1.8 fs 4	H	
6618.2 9				N
6626.0 10	1	0.96 fs 17	H	
6652.9 12	1	2.2 fs 5	H	
6656.0 9	(15 ⁺)			N
6678.2 9	1	1.23 fs 21	H	
6733.6 10	1	0.89 fs 15	H	
6759.6 11				N
6802.6 10	1	1.23 fs 22	H	
6815.5 10				N
6878.0 5	1 ⁻	1.34 fs 16	H	T _{1/2} : from (γ, γ') (1974Te01).
6887.7 10				N
6932.0 13	1	1.6 fs 3	H	
7005.1 11	(15 ⁺)			N
7068.7 8	1	0.42 fs 7	H	
7113.8 9	1	0.56 fs 9	H	
7122.7 10				N
7129.4 10	(16 ⁺)			N E(level): may be a doublet with strong 473.7 γ and 314.0 γ from 7128.9 level and 124.1 γ and 241.2 γ from 7128.0 level.
7184.1 8				N
7402.9 10				N
7650.5 11				N
7751.3 12				N
7759.7 12				N
7901.4 11				N
7920.9 9	(16 ⁺)			N
8077.3 12				N
8152.2 10				N
8408.7 13				N
8517.7 14				N
8525.0 11	(18 ⁺)			N
8912.6 14				N
9257.3 17				N
9533.2 15	(20 ⁺)			N
9661.1 20				N
10343.4 18	(22 ⁺)			N
11079.7 21	(24 ⁺)			N

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Adopted Levels, Gammas (continued)

 ^{142}Nd Levels (continued)

<u>E(level)[‡]</u>	<u>XREF</u>
11487.0 23	N
12158.7 25	N

[†] Mostly from (n,n'γ) based on γ(θ), γ(linear pol), see [1996Go29](#) for detailed arguments. J^π for levels seen in reactions (p,p'),(d,d'), (p,t), or (HI,xnγ) alone are as given in those reactions.

[‡] Levels connected by γ are from least-squares fit to Eγ, assuming ΔEγ=1 where uncertainty not known.

[#] From (γ,γ') ([2006Vo11](#)), unless given others.

Adopted Levels, Gammas (continued)

$\gamma(^{142}\text{Nd})$

Data from (n,n' γ), unless given otherwise.

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
1575.780	2 ⁺	1575.771 10	100.0	0.0	0 ⁺	E2		0.001003 14	B(E2)(W.u.)=12.03 22 $\alpha(\text{K})=0.000772$ 11; $\alpha(\text{L})=0.0001005$ 14; $\alpha(\text{M})=2.12\times 10^{-5}$ 3; $\alpha(\text{N}+..)=0.000109$ $\alpha(\text{N})=4.74\times 10^{-6}$ 7; $\alpha(\text{O})=7.19\times 10^{-7}$ 10; $\alpha(\text{P})=4.69\times 10^{-8}$ 7; $\alpha(\text{IPF})=0.0001037$ 15
2083.940	3 ⁻	508.15 2	100 9	1575.780	2 ⁺	(E1)		0.00380 6	B(E1)(W.u.)=0.004 4 $\alpha(\text{K})=0.00326$ 5; $\alpha(\text{L})=0.000424$ 6; $\alpha(\text{M})=8.92\times 10^{-5}$ 13; $\alpha(\text{N}+..)=2.31\times 10^{-5}$ 4 $\alpha(\text{N})=1.99\times 10^{-5}$ 3; $\alpha(\text{O})=3.00\times 10^{-6}$ 5; $\alpha(\text{P})=1.89\times 10^{-7}$ 3 Mult.: B(E1)= 7.5×10^{-3} 35 (1999Pi02).
		(2084.0 1)	≈ 0.1765	0.0	0 ⁺	E3		0.001135 16	$\alpha(\text{K})=0.000805$ 12; $\alpha(\text{L})=0.0001076$ 15; $\alpha(\text{M})=2.27\times 10^{-5}$ 4; $\alpha(\text{N}+..)=0.000199$ $\alpha(\text{N})=5.09\times 10^{-6}$ 8; $\alpha(\text{O})=7.73\times 10^{-7}$ 11; $\alpha(\text{P})=5.00\times 10^{-8}$ 7; $\alpha(\text{IPF})=0.000193$ 3
2100.787	4 ⁺	16.9		2083.940	3 ⁻				
		525.009 10	100.0	1575.780	2 ⁺				
2209.303	6 ⁺	108.52 2	100.0	2100.787	4 ⁺				
2217.484	0 ⁺	641.704 22	100.0	1575.780	2 ⁺	E2		0.00618 9	$\alpha(\text{K})=0.00519$ 8; $\alpha(\text{L})=0.000785$ 11; $\alpha(\text{M})=0.0001678$ 24; $\alpha(\text{N}+..)=4.31\times 10^{-5}$ 6 $\alpha(\text{N})=3.73\times 10^{-5}$ 6; $\alpha(\text{O})=5.52\times 10^{-6}$ 8; $\alpha(\text{P})=3.10\times 10^{-7}$ 5 Mult.: from ¹⁴² Pm ϵ decay. $\rho^2=17\times 10^{-3}$ 6 (1999Wo07).
		2219 2		0.0	0 ⁺	E0			
2384.339	2 ⁺	808.555 23 2384.32 3	20.4 10 100 6	1575.780 0.0	2 ⁺ 0 ⁺	D+Q E2	+0.16 +6-5	0.000894 13	B(E2)(W.u.)=0.99 23 $\alpha(\text{K})=0.000361$ 5; $\alpha(\text{L})=4.58\times 10^{-5}$ 7; $\alpha(\text{M})=9.61\times 10^{-6}$ 14; $\alpha(\text{N}+..)=0.000477$ 7 $\alpha(\text{N})=2.15\times 10^{-6}$ 3; $\alpha(\text{O})=3.28\times 10^{-7}$ 5; $\alpha(\text{P})=2.19\times 10^{-8}$ 3; $\alpha(\text{IPF})=0.000475$ 7
2437.170	4 ⁺	336.383 17 352.95 20 861.32 6	100 7 1.7 7 9.4 7	2100.787 2083.940 1575.780	4 ⁺ 3 ⁻ 2 ⁺	D+Q	-0.09 3		
2513.888	5 ⁺	76.6 304.589 17 413.098 22		2437.170 2209.303 2100.787	4 ⁺ 6 ⁺ 4 ⁺	D+Q D+Q			
		446.501 19 971.494 13	100 5 98 5	1575.780	2 ⁺	D+Q	-0.038 10 -0.08 2 -0.07 2		
2583.091	2 ⁺	1007.309 24	58 4	1575.780	2 ⁺	D+Q	-0.28 3		

Adopted Levels, Gammas (continued)

$\gamma(^{142}\text{Nd})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
2583.091	2 ⁺	2583.06 4	100 6	0.0	0 ⁺	E2		0.000932 13	$\alpha(\text{K})=0.000313$ 5; $\alpha(\text{L})=3.96\times 10^{-5}$ 6; $\alpha(\text{M})=8.31\times 10^{-6}$ 12; $\alpha(\text{N}+..)=0.000570$ 8 $\alpha(\text{N})=1.86\times 10^{-6}$ 3; $\alpha(\text{O})=2.84\times 10^{-7}$ 4; $\alpha(\text{P})=1.90\times 10^{-8}$ 3; $\alpha(\text{IPF})=0.000568$ 8
2585.550	1 ⁽⁺⁾	1009.768 18	100 6	1575.780	2 ⁺	D+Q			
		2585.49 8	21 3	0.0	0 ⁺				
2737.26	4 ⁺	190.07 8	10.3 13	2547.279	3 ⁺	D+Q			
		223.42 12	9.3 13	2513.888	5 ⁺	D+Q			
		636.460 25	100 6	2100.787	4 ⁺	D+Q	-0.08 4		
2845.86	2 ⁺	1270.03 17	7.1 9	1575.780	2 ⁺	D+Q			
		2845.83 5	100 6	0.0	0 ⁺	E2		0.000994 14	B(E2)(W.u.)=1.9 5 $\alpha(\text{K})=0.000265$ 4; $\alpha(\text{L})=3.33\times 10^{-5}$ 5; $\alpha(\text{M})=6.98\times 10^{-6}$ 10; $\alpha(\text{N}+..)=0.000689$ 10 $\alpha(\text{N})=1.563\times 10^{-6}$ 22; $\alpha(\text{O})=2.39\times 10^{-7}$ 4; $\alpha(\text{P})=1.603\times 10^{-8}$ 23; $\alpha(\text{IPF})=0.000687$ 10
2886.31	6 ⁺	372.45 7	27.2 17	2513.888	5 ⁺				
		676.99 4	100 7	2209.303	6 ⁺	D+Q	-0.13 4		
2975.90	5 ⁻	538.63 10	28.3 22	2437.170	4 ⁺	D+Q	+0.02 2		
		875.2 2	100 7	2100.787	4 ⁺	D+Q	+0.01 3		
		891.99 7	<30.14	2083.940	3 ⁻				
2983.1	0 ⁺	1407.3 [‡]	100.0	1575.780	2 ⁺				
3009.97	4 ⁺	909.16 8	18.8 18	2100.787	4 ⁺	D+Q			
		925.93 [#] 13	<9.643 [#]	2083.940	3 ⁻				
		1434.20 5	100 6	1575.780	2 ⁺	E2		0.001133 16	$\alpha(\text{K})=0.000924$ 13; $\alpha(\text{L})=0.0001214$ 17; $\alpha(\text{M})=2.56\times 10^{-5}$ 4; $\alpha(\text{N}+..)=6.16\times 10^{-5}$ $\alpha(\text{N})=5.72\times 10^{-6}$ 8; $\alpha(\text{O})=8.68\times 10^{-7}$ 13; $\alpha(\text{P})=5.61\times 10^{-8}$ 8; $\alpha(\text{IPF})=5.50\times 10^{-5}$ 8
3045.19	2 ⁺	961.23 5	42 4	2083.940	3 ⁻				
		1469.53 9	63 4	1575.780	2 ⁺	D+Q			
		3045.11 8	100 5	0.0	0 ⁺	E2		0.001047 15	$\alpha(\text{K})=0.000235$ 4; $\alpha(\text{L})=2.95\times 10^{-5}$ 5; $\alpha(\text{M})=6.19\times 10^{-6}$ 9; $\alpha(\text{N}+..)=0.000776$ 11 $\alpha(\text{N})=1.386\times 10^{-6}$ 20; $\alpha(\text{O})=2.12\times 10^{-7}$ 3; $\alpha(\text{P})=1.425\times 10^{-8}$ 20; $\alpha(\text{IPF})=0.000774$ 11
3081.06	4 ⁺	871.8 3	11.5 21	2209.303	6 ⁺				
		980.3 3	19 4	2100.787	4 ⁺				
		1505.27 4	100 6	1575.780	2 ⁺	E2		0.001060 15	$\alpha(\text{K})=0.000842$ 12; $\alpha(\text{L})=0.0001101$ 16; $\alpha(\text{M})=2.32\times 10^{-5}$ 4; $\alpha(\text{N}+..)=8.41\times 10^{-5}$ $\alpha(\text{N})=5.19\times 10^{-6}$ 8; $\alpha(\text{O})=7.88\times 10^{-7}$ 11; $\alpha(\text{P})=5.11\times 10^{-8}$ 8; $\alpha(\text{IPF})=7.81\times 10^{-5}$ 11
3085.85	5 ⁺	648.65 10	9.2 16	2437.170	4 ⁺				

Adopted Levels, Gammas (continued)

$\gamma(^{142}\text{Nd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
3085.85	5 ⁺	876.6 2	100 10	2209.303	6 ⁺	D+Q			
		985.07 7	31 4	2100.787	4 ⁺	D+Q			
3128.06	2 ⁺	1027.35 20	11.7 21	2100.787	4 ⁺				
		1044.17 12	19 4	2083.940	3 ⁻				
		1552.24 10	100 6	1575.780	2 ⁺	D+Q			
		3127.97 16	44 3	0.0	0 ⁺	E2		0.001070 15	$\alpha(\text{K})=0.000225$ 4; $\alpha(\text{L})=2.82\times 10^{-5}$ 4; $\alpha(\text{M})=5.90\times 10^{-6}$ 9; $\alpha(\text{N}+..)=0.000811$ 12 $\alpha(\text{N})=1.322\times 10^{-6}$ 19; $\alpha(\text{O})=2.02\times 10^{-7}$ 3; $\alpha(\text{P})=1.361\times 10^{-8}$ 19; $\alpha(\text{IPF})=0.000810$ 12
3242.62	7 ⁻	1033.31 5	<100.00	2209.303	6 ⁺	E1		0.000879 13	$\alpha(\text{K})=0.000758$ 11; $\alpha(\text{L})=9.58\times 10^{-5}$ 14; $\alpha(\text{M})=2.01\times 10^{-5}$ 3; $\alpha(\text{N}+..)=5.22\times 10^{-6}$ 8 $\alpha(\text{N})=4.49\times 10^{-6}$ 7; $\alpha(\text{O})=6.83\times 10^{-7}$ 10; $\alpha(\text{P})=4.49\times 10^{-8}$ 7
3244.83	4 ⁻	1160.88 5	100.0	2083.940	3 ⁻	D+Q			
3296.2	(5 ⁻)	1212.24 [‡]	<100.0	2083.940	3 ⁻				
3318.73	4 ⁺	881.51 7	34 8	2437.170	4 ⁺				
		934.6 [#] 4	<6.829 [#]	2384.339	2 ⁺				
		1217.98 8	100 5	2100.787	4 ⁺	D+Q			
		1234.9 [#] 5	<13.41 [#]	2083.940	3 ⁻				
3358.68	2 ⁺	1274.9 [@] 2	58 8	2083.940	3 ⁻				
		1782.89 9	100 12	1575.780	2 ⁺	D+Q			
		3358.6 4	63 6	0.0	0 ⁺	E2		0.001135 16	$\alpha(\text{K})=0.000199$ 3; $\alpha(\text{L})=2.49\times 10^{-5}$ 4; $\alpha(\text{M})=5.21\times 10^{-6}$ 8; $\alpha(\text{N}+..)=0.000906$ 13 $\alpha(\text{N})=1.168\times 10^{-6}$ 17; $\alpha(\text{O})=1.785\times 10^{-7}$ 25; $\alpha(\text{P})=1.204\times 10^{-8}$ 17; $\alpha(\text{IPF})=0.000905$ 13
3365.26	(3 ⁻)	1789.47 6	100.0	1575.780	2 ⁺				
3414.24	(5 ⁻)	900.4 4	8.5 25	2513.888	5 ⁺				
		1313.44 8	100 8	2100.787	4 ⁺	D+Q	+0.11 3		
3424.02	1 ⁻	1339.9 2	<3.611	2083.940	3 ⁻	E2		0.001261 18	B(E2)(W.u.)=3.E+1 3 $\alpha(\text{K})=0.001055$ 15; $\alpha(\text{L})=0.0001395$ 20; $\alpha(\text{M})=2.94\times 10^{-5}$ 5; $\alpha(\text{N}+..)=3.69\times 10^{-5}$ $\alpha(\text{N})=6.58\times 10^{-6}$ 10; $\alpha(\text{O})=9.97\times 10^{-7}$ 14; $\alpha(\text{P})=6.40\times 10^{-8}$ 9; $\alpha(\text{IPF})=2.93\times 10^{-5}$ 5
		1848.6 3	3.1 9	1575.780	2 ⁺	E1		0.000794 12	B(E1)(W.u.)=0.00061 21 $\alpha(\text{K})=0.000278$ 4; $\alpha(\text{L})=3.45\times 10^{-5}$ 5; $\alpha(\text{M})=7.22\times 10^{-6}$ 11; $\alpha(\text{N}+..)=0.000475$ 7 $\alpha(\text{N})=1.616\times 10^{-6}$ 23; $\alpha(\text{O})=2.47\times 10^{-7}$ 4; $\alpha(\text{P})=1.650\times 10^{-8}$ 24; $\alpha(\text{IPF})=0.000473$ 7
		3424.2	100 6	0.0	0 ⁺	E1		0.001527 22	B(E1)(W.u.)=0.0031 6

Adopted Levels, Gammas (continued)

$\gamma(^{142}\text{Nd})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
$\alpha(\text{K})=0.0001093$ 16; $\alpha(\text{L})=1.341\times 10^{-5}$ 19; $\alpha(\text{M})=2.80\times 10^{-6}$ 4; $\alpha(\text{N}+..)=0.001401$ $\alpha(\text{N})=6.28\times 10^{-7}$ 9; $\alpha(\text{O})=9.60\times 10^{-8}$ 14; $\alpha(\text{P})=6.49\times 10^{-9}$ 9; $\alpha(\text{IPF})=0.001401$ 20 Mult.: $\text{B}(\text{E}1)=5.8\times 10^{-3}$ 12 (1999Pi02).									
3439.81		925.93 [#] 13	<49.09 [#]	2513.888	5 ⁺				
		1002.4 4	10 4	2437.170	4 ⁺				
		1339.03 17	100 14	2100.787	4 ⁺				
3448.54		934.6 [#] 4	<18.30 [#]	2513.888	5 ⁺				
		1239.24 13	100 11	2209.303	6 ⁺				
3453.3	8 ⁺	210.6		3242.62	7 ⁻				
		1243.9		2209.303	6 ⁺	E2		0.001440 21	$\alpha(\text{K})=0.001222$ 18; $\alpha(\text{L})=0.0001629$ 23; $\alpha(\text{M})=3.44\times 10^{-5}$ 5; $\alpha(\text{N}+..)=2.06\times 10^{-5}$ $\alpha(\text{N})=7.69\times 10^{-6}$ 11; $\alpha(\text{O})=1.163\times 10^{-6}$ 17; $\alpha(\text{P})=7.41\times 10^{-8}$ 11; $\alpha(\text{IPF})=1.163\times 10^{-5}$ 17
3456.01	8 ⁻	213.39 12	100.0	3242.62	7 ⁻				
3466.83?		1382.88 8	100.0	2083.940	3 ⁻				
3470.31	2 ⁺	1386.49 17	87 10	2083.940	3 ⁻				
		1894.39 16	52 7	1575.780	2 ⁺				
		3470.3 3	100 11	0.0	0 ⁺	E2		0.001166 17	$\alpha(\text{K})=0.000188$ 3; $\alpha(\text{L})=2.35\times 10^{-5}$ 4; $\alpha(\text{M})=4.93\times 10^{-6}$ 7; $\alpha(\text{N}+..)=0.000950$ 14 $\alpha(\text{N})=1.103\times 10^{-6}$ 16; $\alpha(\text{O})=1.687\times 10^{-7}$ 24; $\alpha(\text{P})=1.139\times 10^{-8}$ 16; $\alpha(\text{IPF})=0.000949$ 14
3484.9	9 ⁻	28.7		3456.01	8 ⁻				
		31.5		3453.3	8 ⁺				
		242.4		3242.62	7 ⁻				
		1275.5		2209.303	6 ⁺				
3499.17	(7 ⁻)	1289.86 21	<100.0	2209.303	6 ⁺				
3511.9		3511.9 4	100.0	0.0	0 ⁺				
3519.94	(7 ⁺)	1006.1		2513.888	5 ⁺				
		1310.63 16		2209.303	6 ⁺				
3576.81	(3 ⁻)	1475.99 11	67 7	2100.787	4 ⁺	D+Q	-0.15 9		
		1492.94 13	74 9	2083.940	3 ⁻				
		2000.9 2	100 9	1575.780	2 ⁺	D+Q	+0.26 4		
3579.11	2 ⁺	1194.75 [#] 5	<27.36 [#]	2384.339	2 ⁺				
		2003.5 8	45 20	1575.780	2 ⁺				
		3579.8 4	100 8	0.0	0 ⁺	E2		0.001199 17	$\alpha(\text{K})=0.0001785$ 25; $\alpha(\text{L})=2.23\times 10^{-5}$ 4; $\alpha(\text{M})=4.67\times 10^{-6}$ 7; $\alpha(\text{N}+..)=0.000993$ 1 $\alpha(\text{N})=1.046\times 10^{-6}$ 15; $\alpha(\text{O})=1.599\times 10^{-7}$ 23; $\alpha(\text{P})=1.080\times 10^{-8}$ 16; $\alpha(\text{IPF})=0.000992$ 14

Adopted Levels, Gammas (continued)

$\gamma(^{142}\text{Nd})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments
3584.2	(0 ⁺)	2008.5 3	100.0	1575.780	2 ⁺			
3598.31	5 ⁻	1497.5 3	26 6	2100.787	4 ⁺			
		1514.36 10	100 6	2083.940	3 ⁻	E2	0.001052 15	$\alpha(\text{K})=0.000833$ 12; $\alpha(\text{L})=0.0001088$ 16; $\alpha(\text{M})=2.29\times 10^{-5}$ 4; $\alpha(\text{N}+..)=8.72\times 10^{-5}$ $\alpha(\text{N})=5.13\times 10^{-6}$ 8; $\alpha(\text{O})=7.78\times 10^{-7}$ 11; $\alpha(\text{P})=5.06\times 10^{-8}$ 7; $\alpha(\text{IPF})=8.13\times 10^{-5}$ 12
3633.2	6 ⁺	1423.9 [#] 4	<100.0 [#]	2209.303	6 ⁺			
3708.65	(5) ⁻	1194.75 [#] 5	<45.83 [#]	2513.888	5 ⁺			
		1608.0 3	100 17	2100.787	4 ⁺			
3709.77	(3) ⁻	1625.82 12	100.0	2083.940	3 ⁻	D+Q		
3743.7	(1 ⁻ ,2 ⁺)	1659.8 3	100 20	2083.940	3 ⁻			
		3743.2 11	22 10	0.0	0 ⁺			
3757.6	1,2 ⁺	2182.0 6	36 13	1575.780	2 ⁺			
		3757.3 6	100 20	0.0	0 ⁺			
3763.2	(0 ⁺)	2187.4 5	100.0	1575.780	2 ⁺			
3766.4	(8 ⁻)	281.3		3484.9	9 ⁻			
		310.3		3456.01	8 ⁻			
		524.1		3242.62	7 ⁻			
3781.31	3 ⁻	1234.9 [#] 5	<41.98 [#]	2547.279	3 ⁺			
		1697.25 14	100 11	2083.940	3 ⁻			
		2205.7 3	66 12	1575.780	2 ⁺			
3785.0	1,2 ⁺	1400.7 3	60 21	2384.339	2 ⁺			
		2210.4 [@] 8	6. $\times 10^1$ 3	1575.780	2 ⁺			
		3784.6 10	100 18	0.0	0 ⁺			
3803.7	(4 ⁺)	1289.9 [@] 2	<92.86	2513.888	5 ⁺			
		1719.7 7	100 15	2083.940	3 ⁻			
3831.10	2 ⁻	1747.0 3	100 13	2083.940	3 ⁻			
		2255.41 25	64 10	1575.780	2 ⁺			
3832.0	8 ⁺	312.2		3519.94	(7 ⁺)			
		378.5		3453.3	8 ⁺			
		945.8		2886.31	6 ⁺			
3861.18		1423.9 [#] 4	<39.64 [#]	2437.170	4 ⁺			
		1760.6 12	21 11	2100.787	4 ⁺			
		2285.40 20	100 11	1575.780	2 ⁺			
3871.79		1770.9 3	65 22	2100.787	4 ⁺			
		2296.05 23	100 13	1575.780	2 ⁺			
3896.0	(2 ⁺)	1811.5 6	28 12	2083.940	3 ⁻			
		2319.84 [‡]	<100.0	1575.780	2 ⁺			
		3896.8 7	35 9	0.0	0 ⁺			

Adopted Levels, Gammas (continued)

$\gamma(^{142}\text{Nd})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments	
3923.3	(1 ⁻)	2347.50 [‡]	<100.0	1575.780	2 ⁺	E2	0.01380	$\alpha(\text{K})=0.01139$ 16; $\alpha(\text{L})=0.00190$ 3; $\alpha(\text{M})=0.000410$ 6; $\alpha(\text{N}+..)=0.0001047$ 15 $\alpha(\text{N})=9.09\times 10^{-5}$ 13; $\alpha(\text{O})=1.321\times 10^{-5}$ 19; $\alpha(\text{P})=6.64\times 10^{-7}$ 10	
3925.0	10 ⁺	440.1		3484.9	9 ⁻				
		471.6		3453.3	8 ⁺				
3939.1	(8 ⁻)	3939.0 7	100.0	0.0	0 ⁺				
3953.8		433.9		3519.94	(7 ⁺)				
		468.7		3484.9	9 ⁻				
		497.9		3456.01	8 ⁻				
3982.0	1	1765.1 4	41 17	2217.484	0 ⁺				
		3981.1 5	100 17	0.0	0 ⁺				
3985.88		1885.0 3	54 9	2100.787	4 ⁺				
		2410.12 20	100 8	1575.780	2 ⁺				
4053.8		1969.2 4	1.0×10 ² 4	2083.940	3 ⁻				
		2479.1 6	36 20	1575.780	2 ⁺				
		4055.3 13	47 22	0.0	0 ⁺				
4068.9	1 ⁽⁺⁾	2493.1 3	100.0	1575.780	2 ⁺				
4094.0		(2519)	<100.0	1575.780	2 ⁺				
		4093.7 6	100.0	0.0	0 ⁺	(M1)	0.001462 21	$\alpha(\text{K})=0.0001377$ 20; $\alpha(\text{L})=1.728\times 10^{-5}$ 25; $\alpha(\text{M})=3.63\times 10^{-6}$ 5; $\alpha(\text{N}+..)=0.001303$ $\alpha(\text{N})=8.13\times 10^{-7}$ 12; $\alpha(\text{O})=1.244\times 10^{-7}$ 18; $\alpha(\text{P})=8.45\times 10^{-9}$ 12; $\alpha(\text{IPF})=0.001302$ 19	
4144.9	1 ⁽⁻⁾	1928.6 ^{‡@}	<93.75	2217.484	0 ⁺	(E1)	0.00180 3	$\alpha(\text{K})=8.37\times 10^{-5}$ 12; $\alpha(\text{L})=1.023\times 10^{-5}$ 15; $\alpha(\text{M})=2.14\times 10^{-6}$ 3; $\alpha(\text{N}+..)=0.001701$ 24 $\alpha(\text{N})=4.79\times 10^{-7}$ 7; $\alpha(\text{O})=7.33\times 10^{-8}$ 11; $\alpha(\text{P})=4.97\times 10^{-9}$ 7; $\alpha(\text{IPF})=0.001700$ 24	
		2569	<100.0	1575.780	2 ⁺				
		4144.9 6	100 13	0.0	0 ⁺				
4174.4	(4 ⁺)	2598.6 4	100.0	1575.780	2 ⁺				
4203.04	2 ⁺	1818.8 3	100 19	2384.339	2 ⁺				
		2119.1 4	71 20	2083.940	3 ⁻				
		2626.6 7	51 13	1575.780	2 ⁺				
4243.0	(9 ⁺)	317.8		3925.0	10 ⁺				
		411 [@]		3832.0	8 ⁺				
		790		3453.3	8 ⁺				
4255.7	1,2 ⁺	4255.6 9	100.0	0.0	0 ⁺				
4269.1		2694.1 11	75 25	1575.780	2 ⁺				
		4268.3 10	1.0×10 ² 3	0.0	0 ⁺				
4286.4	3 ⁻	2710.6 11	100.0	1575.780	2 ⁺				
4319.3		2743.4 6	1.0×10 ² 4	1575.780	2 ⁺				
		4320.2 19	6.×10 ¹ 3	0.0	0 ⁺				

Adopted Levels, Gammas (continued)

<u>$\gamma(^{142}\text{Nd})$ (continued)</u>							Comments
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.</u>	
4319.8	(9)	553 @ 866.5		3766.4 3453.3	(8 ⁻) 8 ⁺		
4335.0	(1 ⁻)	4334.9 10	100.0	0.0	0 ⁺		
4362.8		4362.7 8	100.0	0.0	0 ⁺		
4390.2	(1 ⁻)	1807.0 4 4390.4 9	100 22 43 18	2583.091 0.0	2 ⁺ 0 ⁺		
4456.1	3 ⁻	2372.1 3	100.0	2083.940	3 ⁻		
4464.3		2888.5 8	100.0	1575.780	2 ⁺		
4500.1	2 ⁺	2924.3 17	100.0	1575.780	2 ⁺		
4511.5	3 ⁻	2427.6 7	100 23	2083.940	3 ⁻		
		2935.5 12	31 15	1575.780	2 ⁺		
4552.8		2452.4 10	87 16	2100.787	4 ⁺		
		2976.9 6	100 19	1575.780	2 ⁺		
4605.0	(10 ⁺)	362.1 1119.9		4243.0 3484.9	(9 ⁺) 9 ⁻		
4606.0	10 ⁻	1149.9		3456.01	8 ⁻		
4617.5	(10)	374.5		4243.0	(9 ⁺)		
4625	1	4625 3	100.0	0.0	0 ⁺		
4716.6	11 ⁻	791.6 1231.8		3925.0 3484.9	10 ⁺ 9 ⁻		
4901.5	1	4901.4 10	100.0	0.0	0 ⁺		
4986.2	(11 ⁻)	1501.3		3484.9	9 ⁻		
5087.5	(11 ⁻)	1162.4 1602.5		3925.0 3484.9	10 ⁺ 9 ⁻		
5164.5	1 ⁽⁻⁾	5164.4 9		0.0	0 ⁺		
5182.2	(11)	1257.2		3925.0	10 ⁺		
5202.3	(12 ⁻)	114.6 486.3 596.1		5087.5 4716.6 4606.0	(11 ⁻) 11 ⁻ 10 ⁻		
5219.6	1	5219.5 8		0.0	0 ⁺		
5259.5	(13 ⁻)	172.1 542.8		5087.5 4716.6	(11 ⁻) 11 ⁻		
		1334.5		3925.0	10 ⁺		
5307.1	(12 ⁻)	105.2 320.9 590.3		5202.3 4986.2 4716.6	(12 ⁻) (11 ⁻) 11 ⁻	[E3]	Suggested placement would require it to be an E3.
5381.7	1	5381.6 10		0.0	0 ⁺		
5412.8	1 ⁽⁻⁾	5412.7 7		0.0	0 ⁺		
5432.8	1	5432.7 7		0.0	0 ⁺		
5446.7		187.1		5259.5	(13 ⁻)		
5468.2	(13 ⁻)	161.1		5307.1	(12 ⁻)		

Adopted Levels, Gammas (continued)

$\gamma(^{142}\text{Nd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π
5468.2	(13 ⁻)	265.9	5202.3	(12 ⁻)
5523.3	(3 ⁻ ,1)	5523.2 7	0.0	0 ⁺
5551.2	1	5551.1 8	0.0	0 ⁺
5586.8	1	5586.7 12	0.0	0 ⁺
5660.7	1	5660.6 13	0.0	0 ⁺
5713.9	1	5713.8 14	0.0	0 ⁺
5728.4		260.1	5468.2	(13 ⁻)
		468.9	5259.5	(13 ⁻)
		526.1	5202.3	(12 ⁻)
5733.1	1	5733.0 11	0.0	0 ⁺
5745.5	(14 ⁻)	277.5	5468.2	(13 ⁻)
		486.0	5259.5	(13 ⁻)
		543.2	5202.3	(12 ⁻)
5824.6	1	5824.5 8	0.0	0 ⁺
5862.7	1	5862.6 13	0.0	0 ⁺
5912.3	1	5912.2 7	0.0	0 ⁺
5956.2	1	5956.1 9	0.0	0 ⁺
5995.9	1	5995.8 8	0.0	0 ⁺
6016.1	1	6016.0 8	0.0	0 ⁺
6034.9	1	6034.8 7	0.0	0 ⁺
6047.5	1	6047.4 8	0.0	0 ⁺
6149.7	1	6149.6 7	0.0	0 ⁺
6171.5	1	6171.4 7	0.0	0 ⁺
6223.8	1	6223.7 8	0.0	0 ⁺
6246.5	(14 ⁺)	987.0	5259.5	(13 ⁻)
6322.4	1	6322.2 6	0.0	0 ⁺
6364.0	1	6363.8 11	0.0	0 ⁺
6440.3	(14 ⁺)	972.3	5468.2	(13 ⁻)
		1180.7	5259.5	(13 ⁻)
6555.3	1	6555.1 10	0.0	0 ⁺
6562.4	1	6562.2 7	0.0	0 ⁺
6586.9	1	6586.7 11	0.0	0 ⁺
6596.5	1	6596.3 11	0.0	0 ⁺
6605.9		1346.4	5259.5	(13 ⁻)
6615.5	1	6615.3 13	0.0	0 ⁺
6618.2		872.7	5745.5	(14 ⁻)
		890.0	5728.4	
		1150.1	5468.2	(13 ⁻)
6626.0	1	6625.8 10	0.0	0 ⁺
6652.9	1	6652.7 12	0.0	0 ⁺
6656.0	(15 ⁺)	215.9	6440.3	(14 ⁺)
		409.6	6246.5	(14 ⁺)

Adopted Levels, Gammas (continued)

<u>$\gamma(^{142}\text{Nd})$ (continued)</u>							Comments
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.</u>	
6656.0	(15 ⁺)	910.4		5745.5	(14 ⁻)		
6678.2	1	6678.0 9		0.0	0 ⁺		
6733.6	1	6733.4 10		0.0	0 ⁺		
6759.6		141.4		6618.2			
6802.6	1	6802.4 10		0.0	0 ⁺		
6815.5		1070.1		5745.5	(14 ⁻)		
6878.0	1 ⁻	3295	8	3584.2	(0 ⁺)		From (1974Te01).
		4294	8	2585.550	1 ⁽⁺⁾		From (1974Te01).
		4661	3	2217.484	0 ⁺		From (1974Te01).
		6877	100	0.0	0 ⁺	E1	B(E1)(W.u.)=0.00048 6 $\alpha(\text{IPF})=0.00251$ 4
6887.7		1159.1		5728.4			
6932.0	1	6931.8 13		0.0	0 ⁺		
7005.1	(15 ⁺)	564.6		6440.3	(14 ⁺)		
7068.7	1	7068.5 8		0.0	0 ⁺		
7113.8	1	7113.6 9		0.0	0 ⁺		
7122.7		1654.3		5468.2	(13 ⁻)		
		1863.3		5259.5	(13 ⁻)		
7129.4	(16 ⁺)	124.1		7005.1	(15 ⁺)		
		241.2		6887.7			
		314.0		6815.5			
		473.7		6656.0	(15 ⁺)		
7184.1		565.9		6618.2			
		578.3		6605.9			
		937.7		6246.5	(14 ⁺)		
		1438.6		5745.5	(14 ⁻)		
		1716.0		5468.2	(13 ⁻)		
		1737.4		5446.7			
		1924.4		5259.5	(13 ⁻)		
7402.9		218.8		7184.1			
		643.2		6759.6			
		1657.3		5745.5	(14 ⁻)		
7650.5		247.5		7402.9			
		466.5		7184.1			
7751.3		100.8		7650.5			
		348.6		7402.9			
7759.7		1000.1		6759.6			
7901.4		1013.7		6887.7			
		1655.0		6246.5	(14 ⁺)		
7920.9	(16 ⁺)	791.3		7129.4	(16 ⁺)		
		1033.5		6887.7			
		1105.4		6815.5			

Adopted Levels, Gammas (continued)

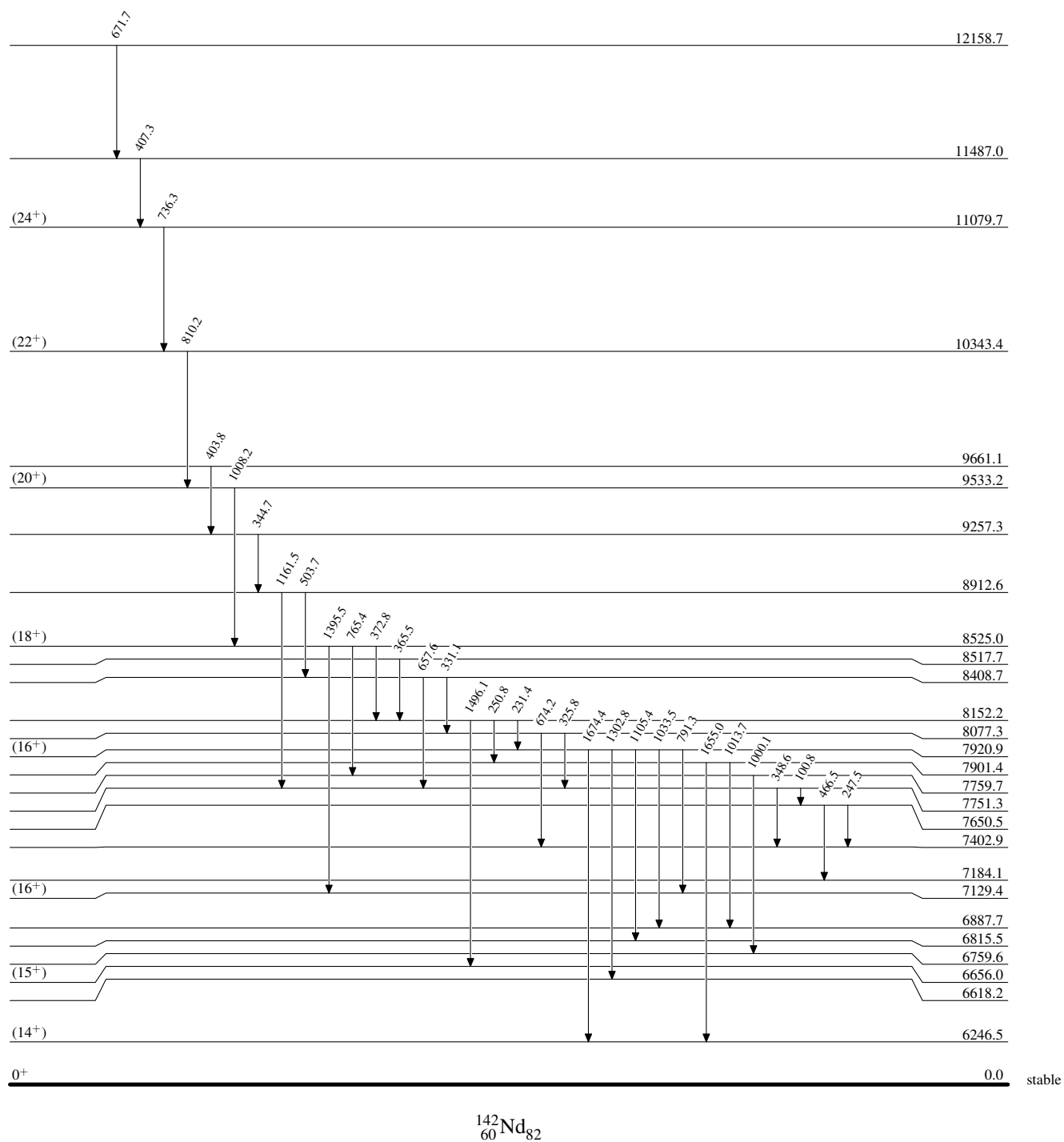
$\gamma(^{142}\text{Nd})$ (continued)

<u>E_i(level)</u>	<u>E_{γ}</u>	<u>E_f</u>	<u>J_f^{π}</u>	<u>E_i(level)</u>	<u>J_i^{π}</u>	<u>E_{γ}</u>	<u>E_f</u>	<u>J_f^{π}</u>	<u>E_i(level)</u>	<u>J_i^{π}</u>	<u>E_{γ}</u>	<u>E_f</u>	<u>J_f^{π}</u>
7920.9	1302.8	6618.2		8408.7		657.6	7751.3		9533.2	(20 ⁺)	1008.2	8525.0	(18 ⁺)
	1674.4	6246.5	(14 ⁺)	8517.7		365.5	8152.2		9661.1		403.8	9257.3	
8077.3	325.8	7751.3		8525.0	(18 ⁺)	372.8	8152.2		10343.4	(22 ⁺)	810.2	9533.2	(20 ⁺)
	674.2	7402.9				765.4	7759.7		11079.7	(24 ⁺)	736.3	10343.4	(22 ⁺)
8152.2	231.4	7920.9	(16 ⁺)			1395.5	7129.4	(16 ⁺)	11487.0		407.3	11079.7	(24 ⁺)
	250.8	7901.4		8912.6		503.7	8408.7		12158.7		671.7	11487.0	
	1496.1	6656.0	(15 ⁺)			1161.5	7751.3						
8408.7	331.1	8077.3		9257.3		344.7	8912.6						

† [Additional information 1.](#)
‡ Unresolved multiplet.
Multiply placed with undivided intensity.
@ Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas**Level Scheme**

Intensities: Type not specified

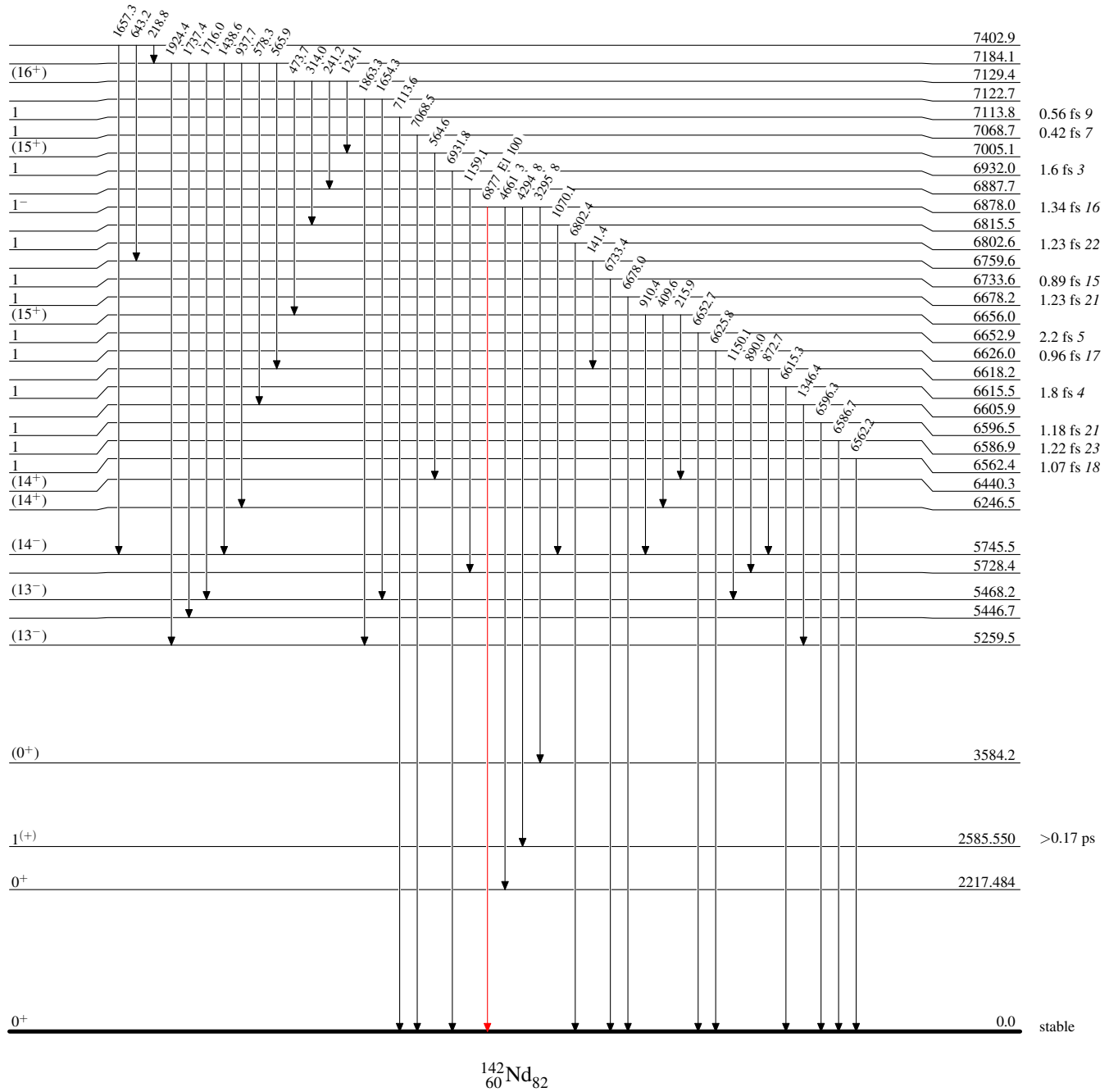


Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Type not specified

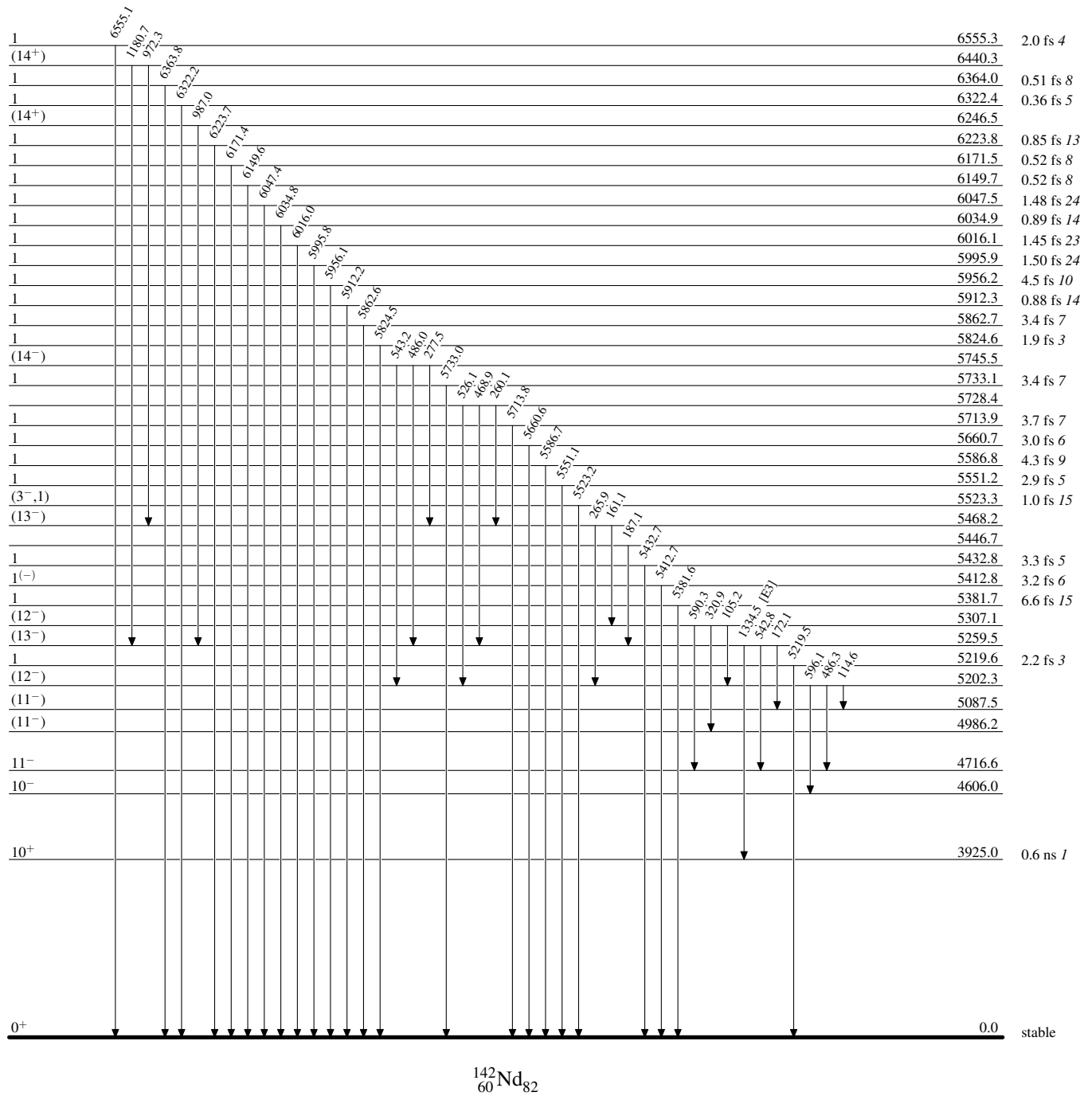
Legend

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\max}$



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

Intensities: Type not specified



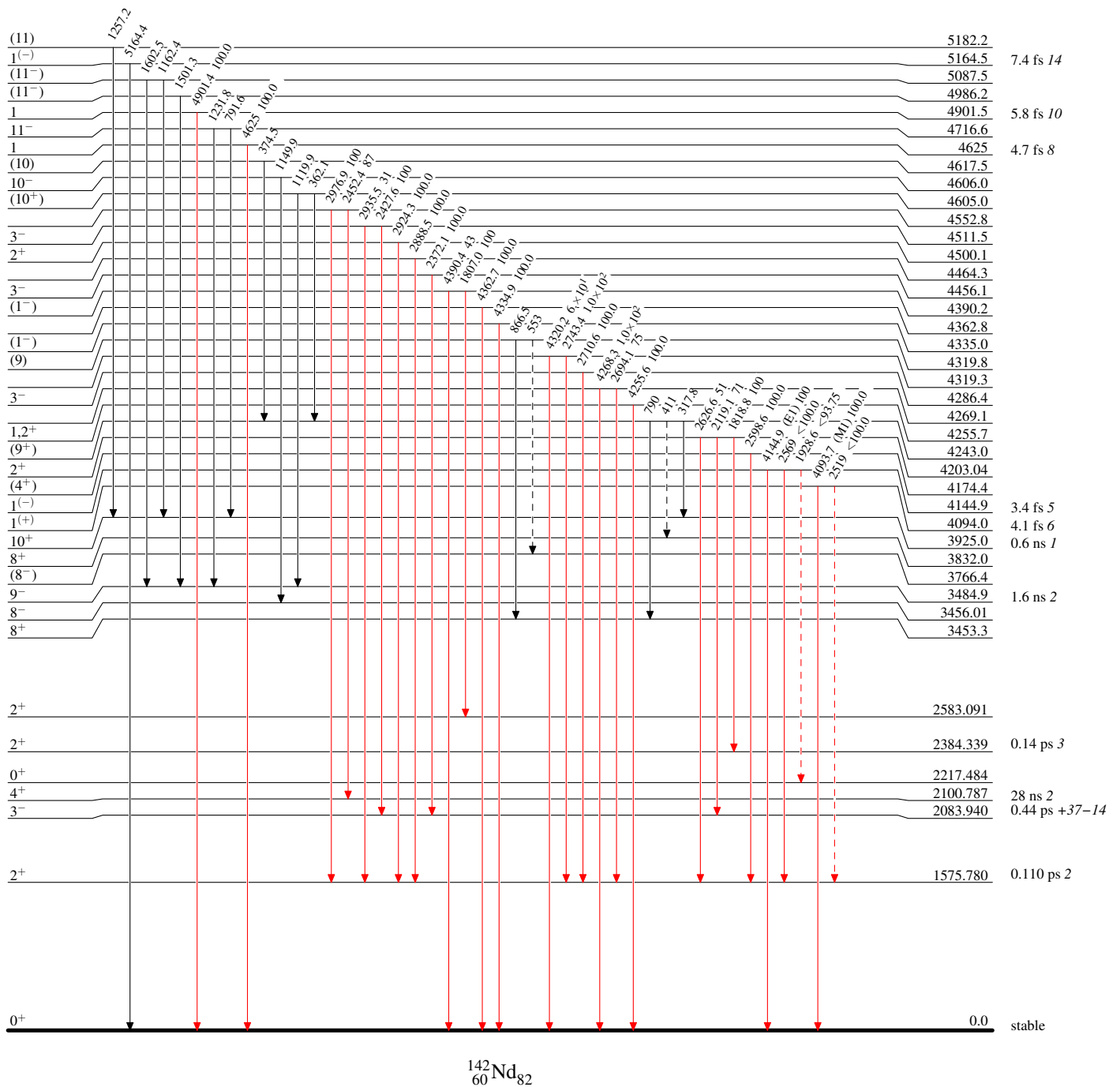
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Type not specified

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

 $^{142}_{60}\text{Nd}_{82}$

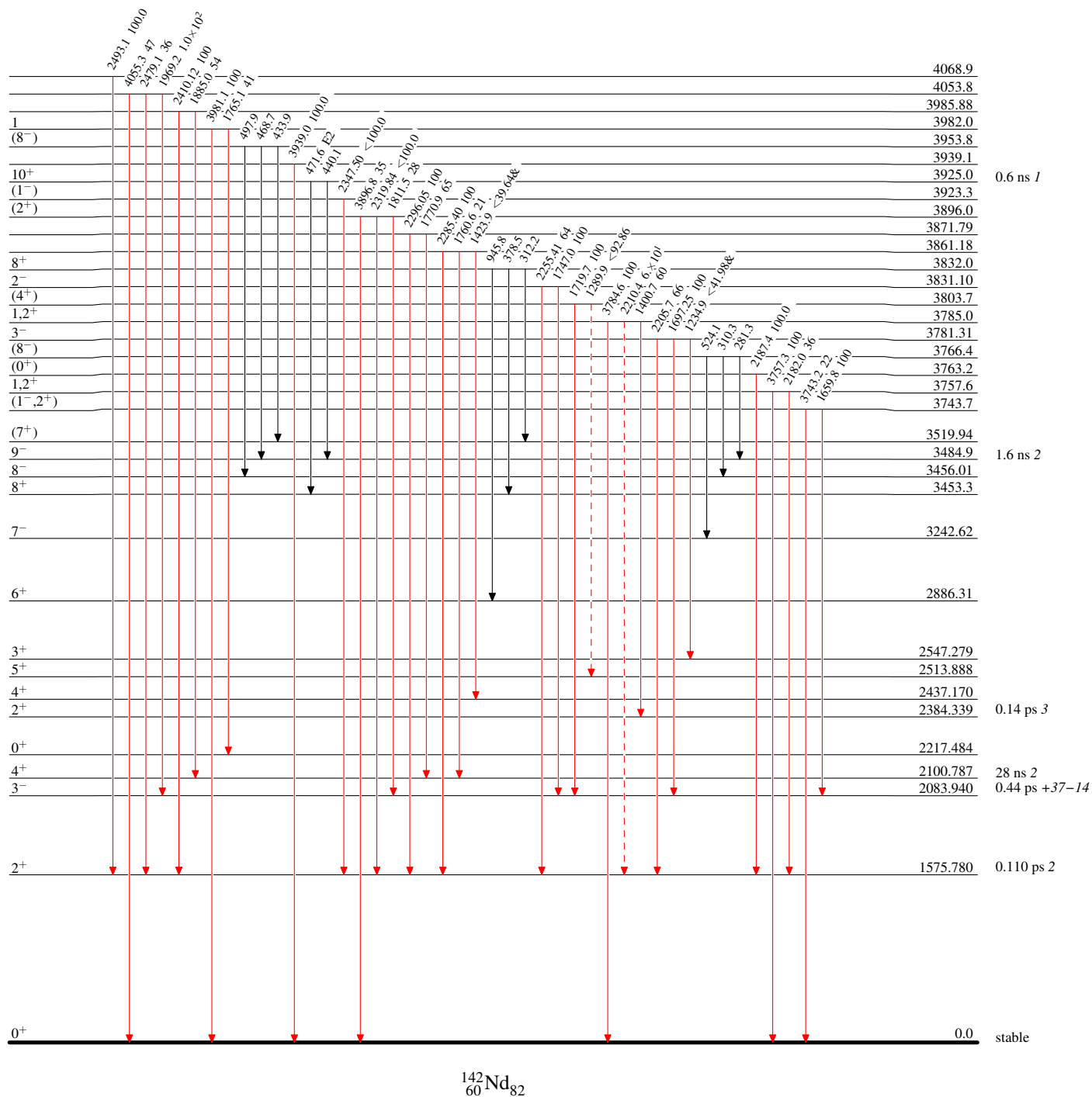
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given

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)

 $^{142}_{60}\text{Nd}_{82}$

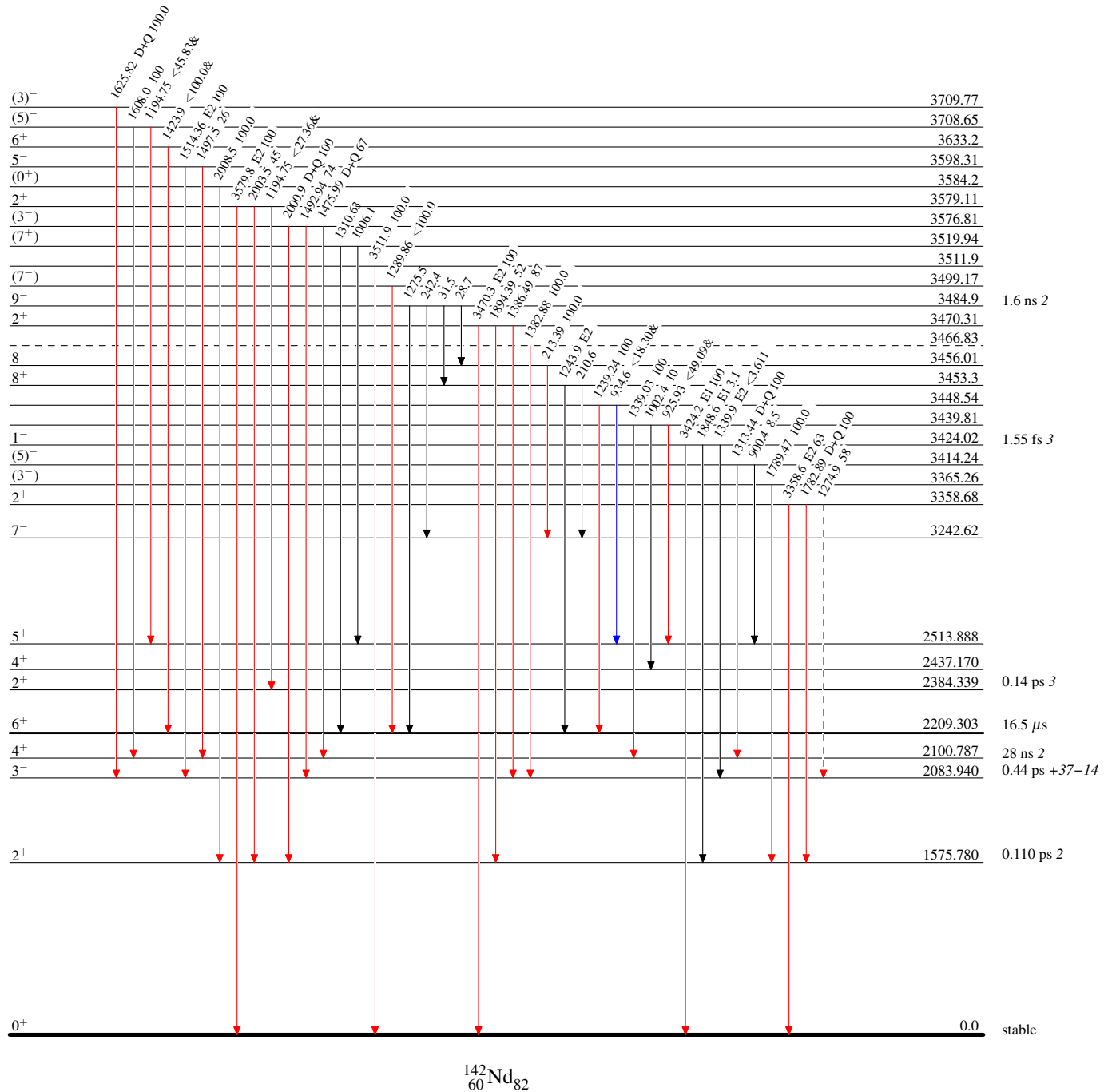
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given

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)



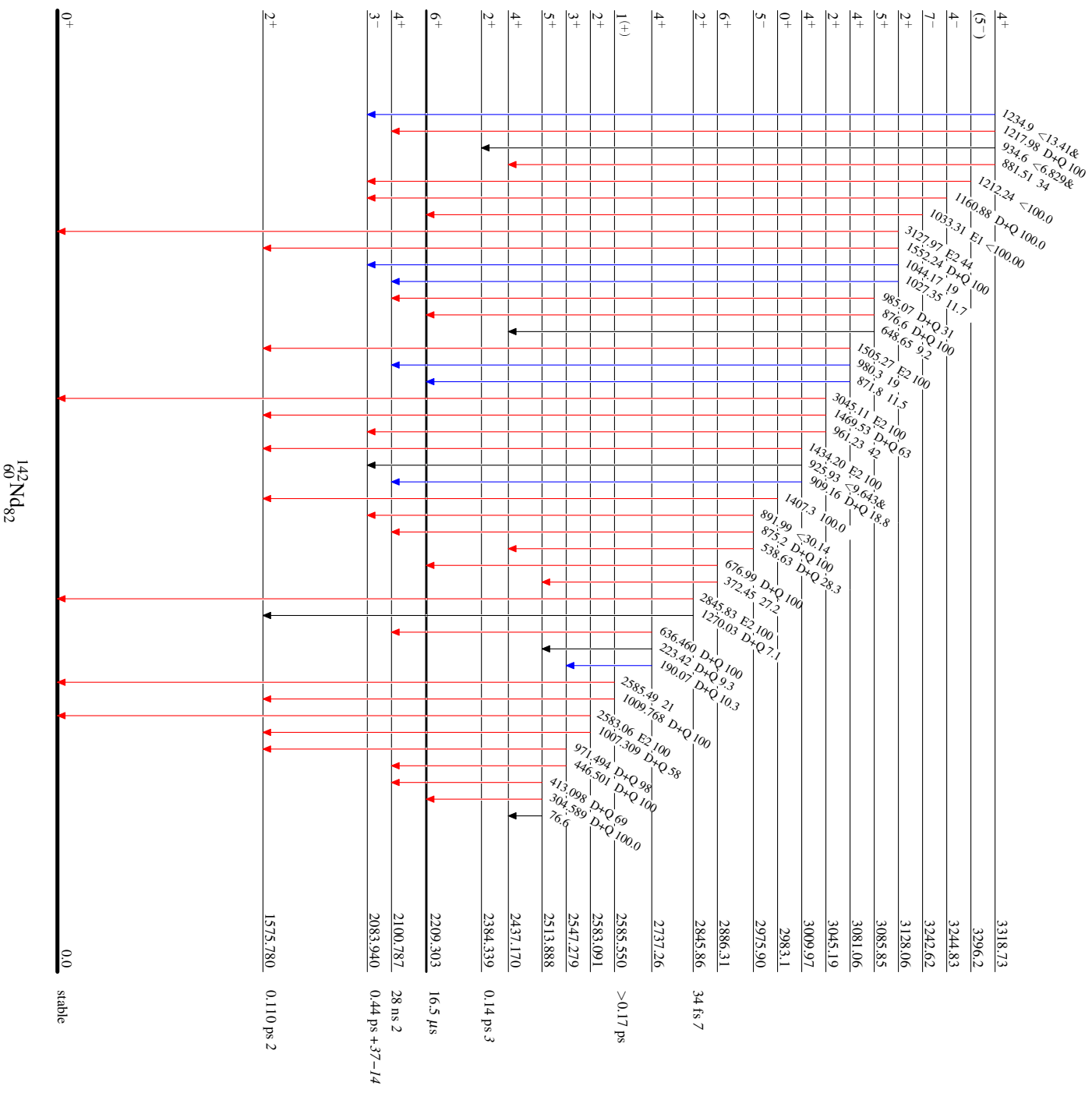
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given

Legend

$I_\gamma < 2\% \times I_{\gamma_{\max}}$
 $I_\gamma < 10\% \times I_{\gamma_{\max}}$
 $I_\gamma > 10\% \times I_{\gamma_{\max}}$

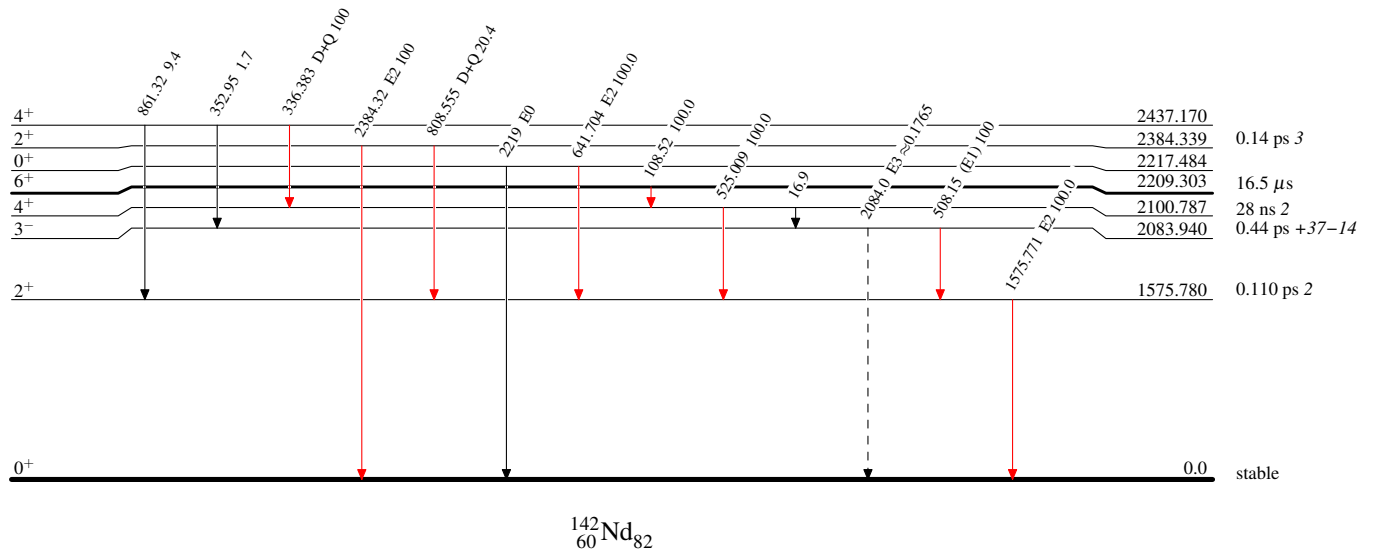


Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Type not specified
& Multiply placed: undivided intensity given

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)

 $^{142}_{60}\text{Nd}_{82}$