Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 105,223 (2005)	22-Jun-2005

Q(β^-)=−1870.5 *4*; S(n)=9913.4 *13*; S(p)=11412 *6*; Q(α)=−6971.5 *13* 2012Wa38
Note: Current evaluation has used the following Q record $ −1870.5 *3* 9913.7 *16* 11412 *5* −6971.8 *16* 2003Au03.
Other reactions:
^{80}Se(e,e): 1988Kh02.
^{82}Se(γ,2n) GDR: 1976Ca06.
^{82}Se(n,3n): 1975FrZW.
Additional information 1.
^{80}Se(d,^{3}He): 1983Ro08 (g.s. proton occupation number for ^{80}Se).
^{79}Se(n,γ) resonances: 1979EnZZ, 1976Ca06, 1969Ma15, 1964Co31, 1962Ju01.
Mass measurements: 1985El01 (also 1984ElZY), 1977De20, 1964Ba03, 1963Ri07.
IBM description of even-even Se isotopes: 1996Ra44.
Nuclear structure theory (levels in ^{80}Se): 2004Da36.

^{80}Se Levels

Deformation parameters are available from (p,p′), (n,n′), (α,α′) and Coul. ex. datasets. Only selected values are given here. See (p,p′) for such data on many levels.

Cross Reference (XREF) Flags

A	^{80}As β^- decay (15.2 s)	F	^{80}Se(p,p′),(pol p,p′)	K	^{80}Se(α,α′)
B	Muonic atom	G	^{80}Se(p,p′γ),(α,α′γ)	L	Coulomb excitation
C	^{80}Br ε decay (17.68 min)	H	^{80}Se(n,n′)	M	^{82}Se(p,t)
D	^{78}Se(t,p)	I	^{80}Se(n,n′γ)	N	^{176}Yb(^{28}Si,Xγ),(^{30}Si,Xγ)
E	^{80}Se(γ,γ′)	J	^{80}Se(d,d′),(pol d,d)		

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[&]	XREF	Comments
0.0[b]	0$^+$	stable	ABCDEFGHIJKLMN	%2β^-=? <r^2>$^{1/2}$=4.1399 fm *19* (2004An14). 2β decay: theoretical calculations: 2005Do07, 2001Ka15, 2000Bo05. No experimental information is available. Additional information 2.
666.27[b] *7*	2$^+$	8.52 ps *21*	ABCDEFGHIJKLMN	B(E2)↑=0.253 *6* (2001Ra27); β_2=0.2318 *27* (2001Ra27) μ=0.87 *5* (1998Sp03) Q=−0.31 *7* (1977Le11,1989Ra17) J$^\pi$: L(t,p)=L(p,p′)=2. $T_{1/2}$: from B(E2) taken from evaluation of 2001Ra27. Other: 8.3 ps *8* (from (γ,γ′),1976KaYY). μ: transient-field technique in Coul. Ex. (1998Sp03). Other: 0.84 *24* (IMPAC in Coul. ex.,1969He11,1989Ra17). Q: reorientation effect in Coul. ex. (1977Le11). Other: −0.35 *12* (1976VoZY). β_2(p,p′)=0.21 (1993Mo05), 0.193 (1988Ba35,1986Og01), 0.22 *1* (1986MoZR), 0.229 *15* (1984De01), 0.195 *30* (1983Ma59), 0.210 *15* (1979Ma28), 0.234 (1970He10). β_2(n,n′)=0.225 (1990Go13), 0.244 *10* (1988Ba35,1984Ku09), 0.265 *20* or 0.293 *25* (1984De01), 0.25 (1979Ef01,1976La12). β_2(α,α′)=0.255 or 0.190 (1988Ba35). β_2(Coul. ex.)=0.232 *2* (1977Le11), 0.224 *2* (1974Ba80), 0.245 (1962St02).

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Adopted Levels, Gammas (continued)

^{80}Se Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$[&]	XREF	Comments
1449.35 *7*	2^+	1.95 ps *7*	A DEFGHIJKL	μ=0.70 *20* (1998Sp03) μ: transient-field technique in Coul. Ex. (1998Sp03). 1449 and 1479 are unresolved in (α,α'). J^{π}: L(p,p′)=2 and $\gamma\gamma(\theta)$ in (γ,γ'). β_2(p,p′)=0.047 (from β_2R=0.25 (1986Og01)), 0.082 *20* or 0.065 *5* (1986MoZR). β_2(α,α')=0.05 (1988Ba35). β_2(Coul. ex.)=0.054 (1974Ba80). $T_{1/2}$: other: 0.2 ps *+24−3* (DSAM in (n,n′γ)).
1478.82 *9*	0^+	11.4 ps *17*	A C EFGHIJKL	XREF: F(?). J^{π}: (812γ)(666γ)(θ) in ^{80}Br decay. Parity from log *ft*=5.3 *5* from 1^+.
1701.45[b] *11*	4^+	0.66 ps *2*	FGHIJKL N	μ=2.7 *10* (1998Sp03) μ: transient-field technique in Coul. Ex. (1998Sp03). J^{π}: L(p,p′)=4. β_4(p,p′)=−0.033 (from β_4R=−0.18 (1986Og01)), −0.026 *8* or −0.034 *10* (1983Ma59). Others: 1984De01, 1986MoZR. β_4(α,α')=0.07 or −0.02 (1988Ba35). $T_{1/2}$: other: 0.7 ps *+10−4* (DSAM in (n,n′γ)).
1873.40 *12*	$(0)^+$		A DEFG IJ	J^{π}: L(t,p)=0 but L(p,p′)=2. $\gamma\gamma(\theta)$ in (γ,γ') gives J=0 or 2; 0^+ supported by comparison of experimental and theoretical yields in (n,n′γ).
1959.82 *9*	2^+	0.38 ps *+22−12*	A D FG IJ L	J^{π}: $\gamma\gamma(\theta)$ in (γ,γ') and L(p,p′)=2. $T_{1/2}$: from DSAM in (n,n′γ). Other: 2.8 ps *+14−7* or 7 ps *+9−3* (from B(E2) in Coul. ex.).
2121.12 *14*	(3^+)		D FG IJ	XREF: D(2150?)J(2150). J^{π}: from comparison of experimental and theoretical yields in (n,n′γ).
2311.29 *9*	(2^+)	0.152 ps *+28−14*	A EFG Ij	J^{π}: from comparison of experimental and theoretical yields in (n,n′γ).
2344.17 *9*	$(1^+,2^+)$	0.35 ps *+17−10*	D FG Ij	J^{π}: L(t,p)=(2); 1^+ from comparison of experimental and theoretical yields in (n,n′γ).
2494.77 *23*	(4^+)	1.1 ps *7*	FG Ij	J^{π}: L(p,p′)=4.
2513.57 *10*	(2^+)	0.048 ps *7*	A DEFG Ij	XREF: F(?). J^{π}: L(t,p)=1, but $\gamma\gamma(\theta)$ in (γ,γ') suggests J=2; 2^+ also supported from comparison of experimental and theoretical yields in (n,n′γ).
2627.40 *19*	(0^+)		E I	J^{π}: primary transition in (γ,γ') from $1^{(-)}$; 0^+ from comparison of experimental and theoretical yields in (n,n′γ).
2716.65 *11*	3^-	0.38 ps *14*	D FGHIJ L	B(E3)↑=0.030 *10* (2002Ki06) J^{π}: L(p,p′)=L(t,p)=3. B(E3) adopted in evaluation by 2002Ki06 from (p,p′) (1993Mo05, 1986Og01,1979Ma28). Other: B(E3)=0.0084 *14* from Coul. ex. (1974Ba80). Average β_3(from inelastic scattering)=0.154 from β_3(α,α')=0.161 (1988Ba35); β_3(n,n′)=0.151 *10* (from b3r=0.78 *5*,1984Ku09); β_3(p,p′)=0.163 (1993Mo05), 0.124 (deduced by 1988Ba35 from 1986Og01), 0.144 (deduced by 1988Ba35 from 1984De01), 0.17 *1* (1986MoZR), 0.167 (1979Ma28). β_3(from B(E3) in Coul. ex.)=0.083.
2774.3 *10*	$(1,2^+)$[@]		A	
2787? *5*			F	
2814.50 *16*	$(2^+,1^+)$		EF Ij	XREF: F(2819). J^{π}: 2^+ from $\gamma\gamma(\theta)$ in (γ,γ') and L(p,p′)=(2); 1^+ from comparison of experimental and theoretical yields in (n,n′γ).
2825.55 *23*	(6^+)		Ij	J^{π}: γ to 4^+. 6^+ from comparison of experimental and

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Adopted Levels, Gammas (continued)

^{80}Se Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$[&]	XREF	Comments
				theoretical yields in (n,n′γ).
2826.99 *11*	(2^+)	0.18 ps *4*	E G Ij	J^{π}: $\gamma\gamma(\theta)$ in (γ,γ') and γ to 0^+. Parity from reduced strength for E1 transition in (γ,γ').
2836.3 *10*	$(1,2^+)$[@]		A j	
2895.5[b] *10*	(6^+)[a]		N	
2947.54 *15*	$(2^+,4^+)$	0.18 ps *+11−6*	F I	J^{π}: L(p,p′)=(2); 4^+ from comparison of experimental and theoretical yields in (n,n′γ).
2998? *5*			F	
3025.17 *16*	$(1^+,2^+)$[@]	0.049 ps *14*	A G I	J^{π}: 1^+ from comparison of experimental and theoretical yields in (n,n′γ).
3033 *4*	(4^+)		F J	J^{π}: L(p,p′)=4.
3036 *10*	(6^+)		d	J^{π}: L(t,p)=(2+6). E(level): doublet in (t,p).
3037.74 *13*	$(1^+,2^+)$	0.13 ps *+9−5*	d I	J^{π}: L(t,p)=(2+6) and γ to 0^+; 1^+ from comparison of experimental and theoretical yields in (n,n′γ).
3125.79 *16*	(2^+)[#]	0.028 ps *14*	EF I	$T_{1/2}$: from DSAM in (n,n′γ) (1989Do14); not given by 1999Ko46.
3160 *9*	0^+		D	J^{π}: L(t,p)=0.
3176.92 *19*	$(1,2^+)$[@]		F I	
3199.4 *3*	(2)[#]		EF I	XREF: F(?).
3224.28 *19*	(1,2)	0.070 ps *28*	I	J^{π}: γ to $0^{(+)}$.
3226 *4*	(4^+)		F	J^{π}: L(p,p′)=4.
3248.3 *5*	(2^+)[#]		E	
3280.4 *4*	$(1,2^+)$[@]		d I	
3284 *4*	(3^-)		d F	J^{π}: L(p,p′)=3.
3314? *5*			F j	
3316.4 *10*	(0)[#]		EF j	XREF: F(?).
3349.95 *20*	(1^+)		E I	J^{π}: from $\gamma\gamma(\theta)$ in (γ,γ').
3354 *4*	(3^-)		D F J	XREF: J(3370). J^{π}: L(p,p′)=3 and L(t,p)=(3).
3390.75 *24*	(2^+)		DEF j	XREF: j(3370). J^{π}: L(t,p)=(2).
3441.88 *22*	(0^+)[#]		EF I	J^{π}: L(p,p′)=2 but $\gamma\gamma(\theta)$ in (γ,γ') suggests 0^+.
3491 *5*			D F	XREF: D(3484).
3567 *5*			F	
3606.4 *3*	(2)[#]		A E	
3619.7 *4*	$(0^+,2^+)$[#]		dEF	XREF: d(3635). J^{π}: L(t,p)=0 for a 3635 group suggests $J^{\pi}=0^+$ for 3620 or 3640 level, but L(p,p′)=(2) suggests 2^+.
3635.5[b] *15*	(8^+)[a]		N	
3640 *5*			d F	XREF: d(3635).
3655.4 *10*	(0,1,2)		E	J^{π}: primary transition from $1^{(-)}$.
3675 *5*			F	
3727.2 *5*	(0,1,2)		A	J^{π}: log *ft*=6.1 from $1^{(+)}$.
3753 *4*	(3^-)		d F j	XREF: d(3760). J^{π}: L(p,p′)=3. Also L(t,p)=(3) for a 3760 *10* group.
3774? *5*			d F j	XREF: d(3760).
3813.7 *4*	(6^+)		I	J^{π}: γ to 4^+; comparison of experimental and theoretical yields in (n,n′γ).
3814.9 *5*	(8^+)		I	
3826 *5*			F	
3845? *10*			F	

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Adopted Levels, Gammas (continued)

^{80}Se Levels (continued)

E(level)†	Jπ‡	XREF	Comments
3870.0 *4*	(1⁻)	DEF	Jπ: L(t,p)=(1).
3931 *4*	(2⁺)	F	Jπ: L(p,p′)=(2).
3951.9 *4*	(2⁺)	EF	XREF: F(3960). Jπ: L(p,p′)=(2) for a 3960 *4* group.
3976 *8*	(1⁻)	D	Jπ: L(t,p)=(1).
3996 *4*	(5⁻)	F	Jπ: L(p,p′)=5.
4039 *4*		F	
4047.1 *5*	(2⁺)	D I	XREF: D(4063). Jπ: L(t,p)=(2).
4062.2 *4*	(0⁺)#	EF	XREF: F(?).
4129 *8*	0⁺	D	Jπ: L(t,p)=0.
4130 *4*	(3⁻)	F	Jπ: L(p,p′)=3.
4173 *4*	2⁺	D F J	XREF: J(4180). Jπ: L(t,p)=2.
4225 *4*		F	
4247 *7*	2⁺	D	Jπ: L(t,p)=2.
4295 *4*		F	
4322 *4*	(2⁺)	D F	Jπ: L(t,p)=(2).
4352 *4*	2⁺	D F	Jπ: L(t,p)=2.
4420 *4*	(2⁺)	F	Jπ: L(p,p′)=(2).
4436.6 *4*	(5⁻)	F I	Jπ: L(p,p′)=5.
4464 *5*	(1⁻)	D	Jπ: L(t,p)=1.
4511 *4*	(4⁺)	F	Jπ: L(p,p′)=4.
4570 *4*		F	
4673.5[b] *18*	(10⁺)[a]	N	
4682 *4*	(4⁺)	D F	XREF: D(4712). Jπ: L(p,p′)=4.
4950 *4*		F	
4993 *4*		F	
5180 *30*		D	
5325 *4*	(3⁻)	F	Jπ: L(p,p′)=3.
7818.52 *9*	1⁽⁻⁾	E	Jπ: γ to 0⁺. Parity from reduced strength for E1 transition in (γ,γ′).

† From least-squares fit to Eγ′s for levels populated in γ-ray studies. For others weighted averages of values available from different reactions have been taken.

‡ Above 2 MeV excitation energy, J^π′s deduced from L(p,p′) are given in parentheses due to high level density, ambiguity in level correspondence between different reactions, and tentative nature of L value.

From $\gamma\gamma(\theta)$ in (γ,γ′). Parity is from a comparison of reduced strengths for E1 and M1 transitions with systematics of known E1 and M1 transitions in this mass region. The reduced strengths have been calculated by 1973Sz04 from relative intensities corrected for energy dependence, average level spacing and partial widths for the g.s. and the excited levels J^π assignments based on (γ,γ′) study are considered tentative; first, because $\gamma(\theta)$ data are reported at only two angles and, second because transitions are assumed pure dipole with no quadrupole admixture.

@ γ to 0⁺.

& From B(E2) values in Coul. ex. for levels below 1900 keV. Above this, values are from DSA method in (n,n′γ) (1999Ko46).

a Systematics of yrast sequences in even-even nuclides populated in heavy-ion reactions.

b Band(A): Yrast sequence.

Adopted Levels, Gammas (continued)

$\gamma(^{80}Se)$

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[&]	Comments
666.27	2+	666.15 *10*	100	0.0	0+	E2[a]		B(E2)(W.u.)=24.7 *6*
1449.35	2+	783.1 *1*	66.6 *10*	666.27	2+	E2+M1	−5 +*2*−*6*	B(M1)(W.u.)=0.0004 *3*; B(E2)(W.u.)=18.5 *10* Mult.,δ: from $\gamma(\theta)$ in Coul. ex. δ=−0.71 +*12*−*17* is also possible but less likely from systematics of second 2+ states in even-even nuclei.
		1449.4 *1*	100 *3*	0.0	0+	[E2]		B(E2)(W.u.)=1.33 *7*
1478.82	0+	812.4 *1*	100	666.27	2+	E2[a]		B(E2)(W.u.)=6.9 *11*
1701.45	4+	1035.1 *1*	100	666.27	2+	E2		B(E2)(W.u.)=35.2 *11*
1873.40	(0)+	1207.1 *1*	100	666.27	2+			
1959.82	2+	1293.7 *2*	100 *5*	666.27	2+	M1+E2	−1.1 +*6*−*11*	δ: from M1 and E2 matrix elements in Coul. Ex. (1995Ka29). Other: −0.31 *5* or +10 +*10*−*2* from $\gamma(\theta)$ in (n,n′γ).
		1959.9 *1*	55 *5*	0.0	0+	[E2]		B(E2)(W.u.)=0.9 +*3*−*6*
2121.12	(3+)	671.7 *2*	15 *3*	1449.35	2+			
		1454.9 *2*	100 *8*	666.27	2+			
2311.29	(2+)	861.9 *1*	15 *5*	1449.35	2+			
		1645.0 *1*	100 *12*	666.27	2+	D+Q		δ: +1.95 *7* or −0.09 +*2*−*6* from $\gamma(\theta)$ in (n,n′γ).
2344.17	(1+,2+)	470.5 *4*	55 *9*	1873.40	(0)+			
		894.8[‡] *1*	100 *9*	1449.35	2+			
		1677.9[‡] *1*	55 *9*	666.27	2+			
		2344[‡] *1*	9.1 *18*	0.0	0+			
2494.77	(4+)	793.0 *3*	100 *30*	1701.45	4+	M1+E2	+1.1 *1*	B(M1)(W.u.)=0.012 *9*; B(E2)(W.u.)=28 *21* δ: from $\gamma(\theta)$ in (n,n′γ) and $T_{1/2}$(2495 level).
		1046[‡b]	≈3	1449.35	2+	[E2]		
		1828.8 *3*	53 *5*	666.27	2+	[E2]		B(E2)(W.u.)=0.4 *3*
2513.57	(2+)	813.3[@b] *2*		1701.45	4+			
		1035.7[b] *4*	≈40	1478.82	0+			Reported in (γ,γ') only. The placement is considered suspect since with the quoted intensity in (γ,γ'), it would have been seen in ^{80}As β^- decay and in (n,n′γ).
		1063.8 *4*	4.3 *14*	1449.35	2+			
		1847.3 *1*	100 *9*	666.27	2+			
		2513.4 *2*	4.3 *14*	0.0	0+	[E2]		B(E2)(W.u.)=0.17 *7*
2627.40	(0+)	1178.2[‡] *2*	100	1449.35	2+			
2716.65	3−	405.1 *3*	7.7 *23*	2311.29	(2+)	[E1]		B(E1)(W.u.)=0.0010 *5*
		1015.1 *2*	7.7 *15*	1701.45	4+	[E1]		B(E1)(W.u.)=6.E−5 *3*
		2050.4 *1*	100 *8*	666.27	2+	[E1]		B(E1)(W.u.)=0.00010 *4*
		(2716.6)	0.15 *7*	0.0	0+	[E3]		B(E3)(W.u.)=10 *6* I_γ: deduced (evaluator) from $T_{1/2}$ and B(E3) for 2717 level.
2774.3	(1,2+)	2774.2 *10*	100	0.0	0+			
2814.50	(2+,1+)	2148.0[‡] *3*	29 *14*	666.27	2+			
		2814.6 *2*	100 *14*	0.0	0+			E_γ: from (γ,γ'). Eγ=2817.7 in (n,n′γ).
2825.55	(6+)	1124.1 *2*	100	1701.45	4+			
2826.99	(2+)	2160.7 *1*	100 *15*	666.27	2+			
		2826.9 *3*	7.7 *24*	0.0	0+	[E2]		B(E2)(W.u.)=0.061 *25*
2836.3	(1,2+)	2836.2 *10*	100	0.0	0+			

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Adopted Levels, Gammas (continued)

$\gamma(^{80}Se)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. &	Comments
2895.5	(6^+)	1194		1701.45	4^+		
2947.54	$(2^+,4^+)$	826.4 *2*	50 *17*	2121.12	(3^+)		
		1498.1 *2*	100 *33*	1449.35	2^+		
		2281.4 *3*	67 *33*	666.27	2^+		
3025.17	$(1^+,2^+)$	1577.6‡ *3*	50 *17*	1449.35	2^+		E_γ: poor fit. Level-energy difference=1575.8.
		2358.2 *2*	100 *25*	666.27	2^+		E_γ: level-energy difference=2358.86.
		3024.8 *3*	30 *20*	0.0	0^+		
3037.74	$(1^+,2^+)$	1078.6 *2*	100 *20*	1959.82	2^+		E_γ: level-energy difference=1077.9.
		1558.7 *2*	80 *20*	1478.82	0^+		
		1587.9 *2*	56 *12*	1449.35	2^+		
3125.79	(2^+)	1677.0‡b *5*	≈1	1449.35	2^+		
		2459.3 *2*	100	666.27	2^+		
3176.92	$(1,2^+)$	1697.8 *5*	70 *20*	1478.82	0^+		
		3176.9 *2*	100 *20*	0.0	0^+		
3199.4	(2)	3199.5‡ *5*	100	0.0	0^+		
3224.28	(1,2)	1522.8 *2*	100 *13*	1701.45	4^+		
		1745.5 *3*	43 *22*	1478.82	0^+		
3280.4	$(1,2^+)$	2614.5 *5*	73 *21*	666.27	2^+		
		3280.0 *5*	100 *27*	0.0	0^+		
3349.95	(1^+)	3348.4 *5*	100	0.0	0^+		
3390.75	(2^+)	1909.9 *5*	100 *20*	1478.82	0^+		E_γ: poor fit. Level-energy difference=1911.9.
		1941.9 *5*	100 *20*	1449.35	2^+		
3441.88	(0^+)	1097‡ *1*	80 *20*	2344.17	$(1^+,2^+)$		
		2775.9 *3*	100 *30*	666.27	2^+		
3606.4	(2)	2156.9# *5*	100 *50*	1449.35	2^+		
		2940.3# *10*	100 *50*	666.27	2^+		
3619.7	$(0^+,2^+)$	2953.7 *5*	100	666.27	2^+		
3635.5	(8^+)	740		2895.5	(6^+)		
3727.2	(0,1,2)	1415.9 *5*	100 *50*	2311.29	(2^+)		
		3060.8b *20*	50 *50*	666.27	2^+		
3813.7	(6^+)	2112.2 *3*	100	1701.45	4^+		
3814.9	(8^+)	989.3 *4*	100	2825.55	(6^+)		
3870.0	(1^-)	2391.9 *5*	100	1478.82	0^+		
3951.9	(2^+)	3286.1 *5*	100	666.27	2^+		
4047.1	(2^+)	2597.7 *5*	100	1449.35	2^+		
4062.2	(0^+)	2612.7 *5*	100	1449.35	2^+		
4436.6	(5^-)	1941.8 *3*	100	2494.77	(4^+)		
4673.5	(10^+)	1038		3635.5	(8^+)		
7818.52	$1^{(-)}$	3756.1 *4*	4.3 *4*	4062.2	(0^+)	(E1)	
		3866.9 *4*	3.0 *5*	3951.9	(2^+)		
		3949.1 *5*	3.0 *4*	3870.0	(1^-)		
		4163 *1*	1.3 *3*	3655.4	(0,1,2)		
		4199.1 *5*	2.8 *3*	3619.7	$(0^+,2^+)$		
		4212.0 *4*	3.7 *3*	3606.4	(2)		
		4376.8 *3*	5.2 *4*	3441.88	(0^+)		
		4427.1 *3*	8.5 *3*	3390.75	(2^+)	(E1)	
		4468.2 *2*	9.2 *4*	3349.95	(1^+)	(E1)	
		4502 *1*	2.2 *4*	3316.4	(0)		
		4570.1 *5*	7.3 *3*	3248.3	(2^+)	(E1)	
		4619.1 *3*	5.5 *3*	3199.4	(2)		
		4692.4 *2*	12.5 *3*	3125.79	(2^+)	(E1)	
		4991.4 *2*	12.4 *4*	2826.99	(2^+)	(E1)	
		5004.3 *5*	3.5 *3*	2814.50	$(2^+,1^+)$		
		5191.6 *4*	1.0 *3*	2627.40	(0^+)		

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{80}Se)$ (continued)

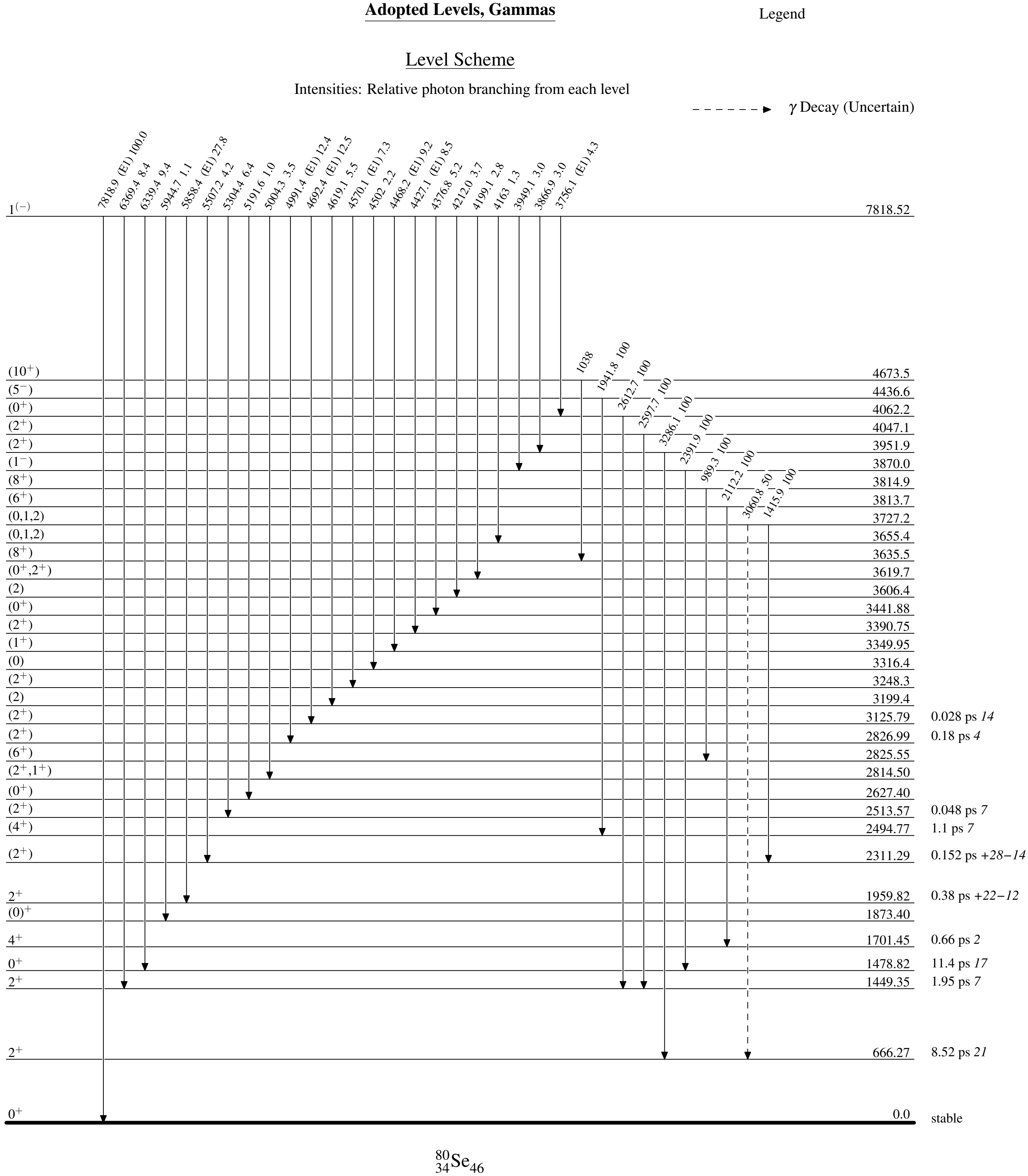
E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[&]
7818.52	$1^{(-)}$	5304.4 *3*	6.4 *3*	2513.57	(2^+)	
		5507.2 *7*	4.2 *5*	2311.29	(2^+)	
		5858.4 *2*	27.8 *3*	1959.82	2^+	(E1)
		5944.7 *8*	1.1 *2*	1873.40	$(0)^+$	
		6339.4 *1*	9.4 *2*	1478.82	0^+	
		6369.4 *3*	8.4 *2*	1449.35	2^+	
		7818.9 *5*	100.0 *5*	0.0	0^+	(E1)

[†] Weighted averages taken when data of comparable precision are available from more than one dataset.
[‡] Reported in $(n,n'\gamma)$ only.
[#] Reported in ^{80}As β^- only.
[@] Reported in $(p,p'\gamma)$ only.
[&] From $\gamma(\theta)$ in $(n,n'\gamma)$ and RUL deduced from $T_{1/2}$. Mult=E1 for transitions from 7819 level is from $\gamma(\theta)$ in (γ,γ') and transition strengths.
[a] From $(813\gamma)(666\gamma)(\theta)$ in ^{80}Br ε decay and $T_{1/2}$ (levels).
[b] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



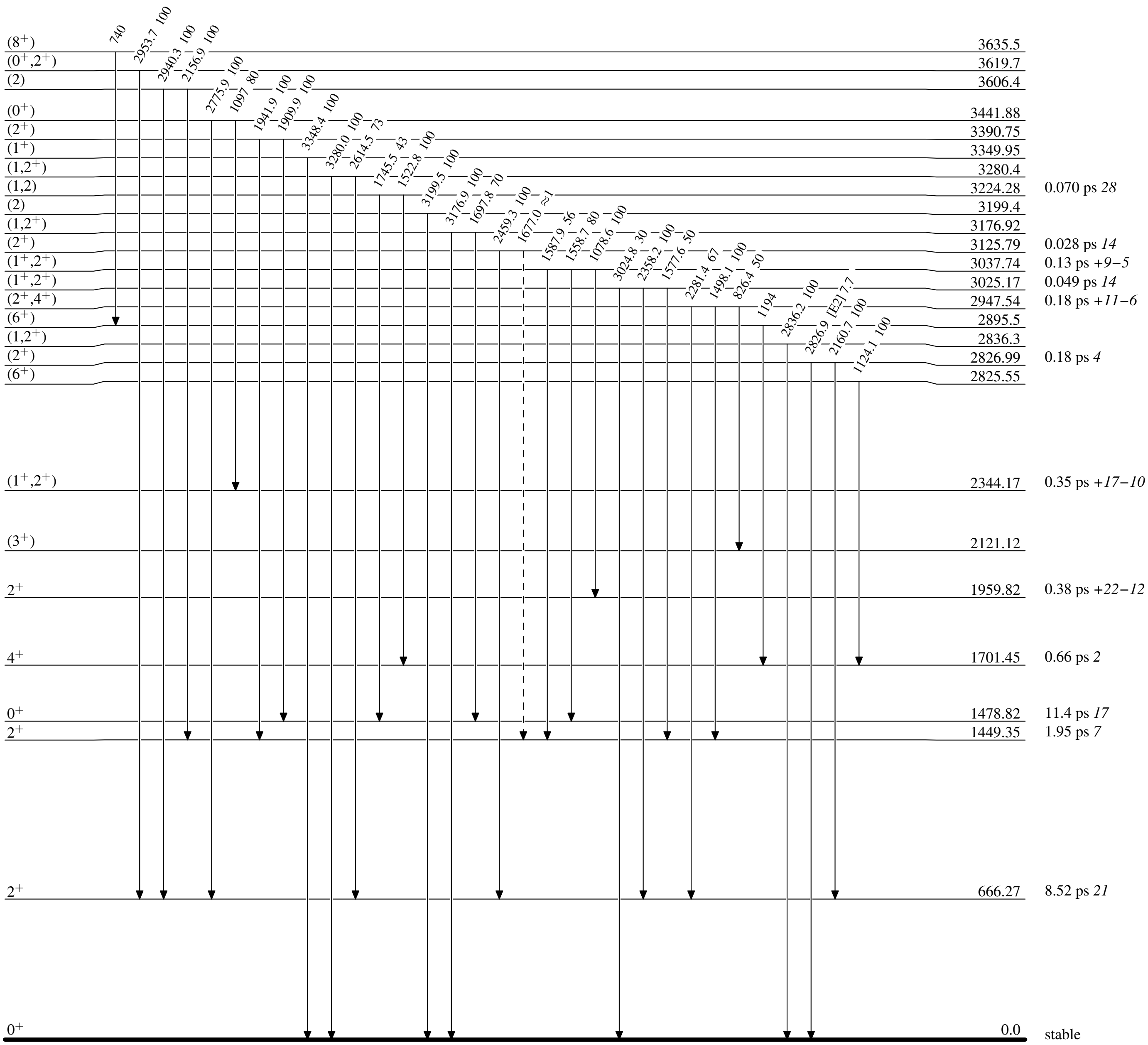
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{80}_{34}Se_{46}$

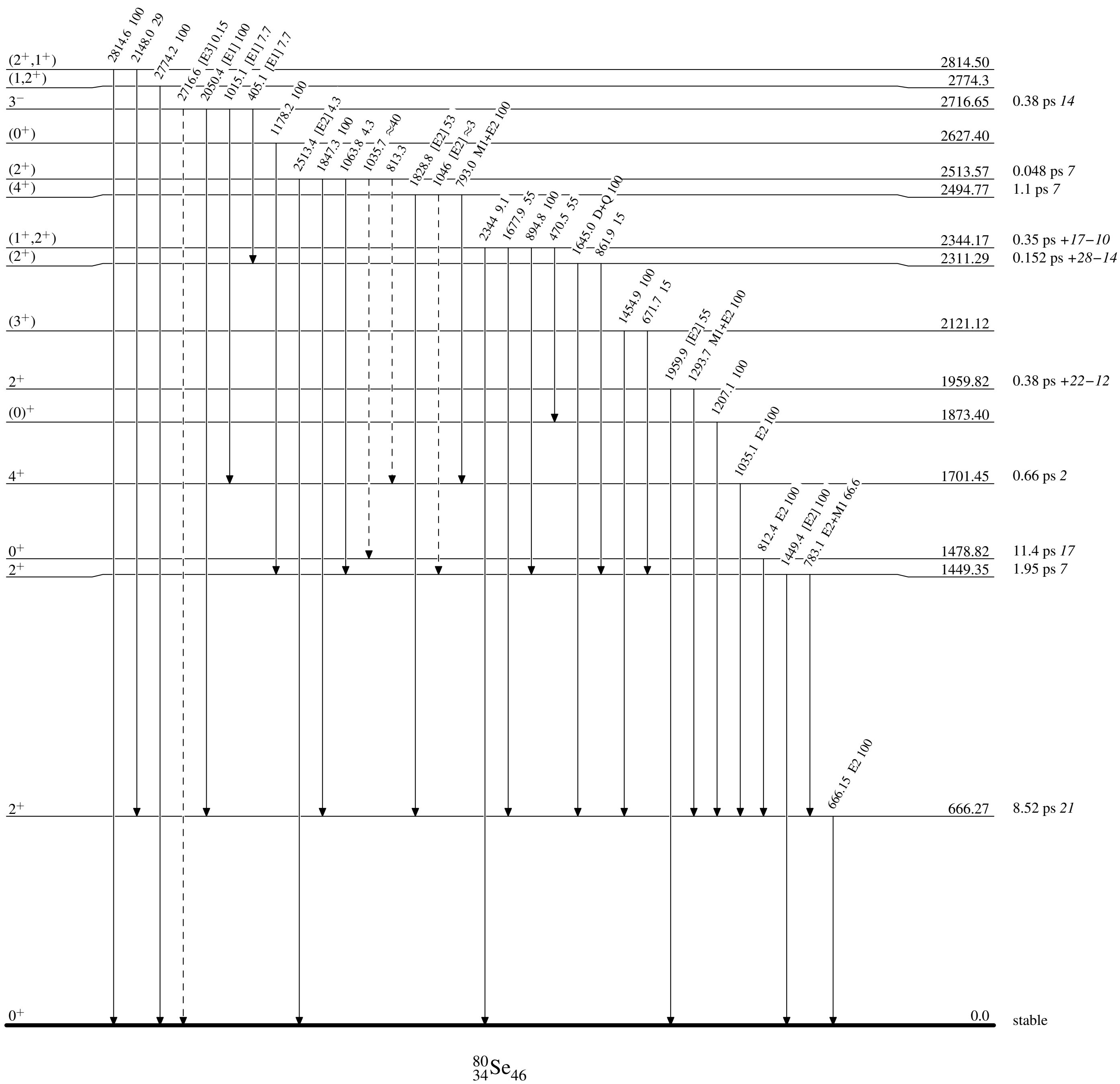
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



Adopted Levels, Gammas