Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, G. Mukherjee, A. A. Sonzogni	NDS 111,2555 (2010)	30-Jun-2009

Q(β^-)=4450 *7*; S(n)=6930 *10*; S(p)=9655 *7*; Q(α)=−5891 *11* 2012Wa38
Note: Current evaluation has used the following Q record 4451 7 *6931* 10 *9658* 10 −5888 11 2009AuZZ.
S(2n)=13127 *13*, S(2p)=23167 *10* (2009AuZZ).
α: Additional information 1.

^{95}Y Levels

Cross Reference (XREF) Flags

A ^{95}Sr β^- decay
B ^{235}U(n,Fγ)
C ^{96}Zr(d,^{3}He),(pol t,α)
D ^{248}Cm SF decay
E ^{252}Cf SF decay

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0.0	1/2$^-$#	10.3 min *1*	ABCDE	%β^-=100 μ=−0.16 *3* $T_{1/2}$: weighted average of 10.3 min *1* (1966La17, γ's; scin), 10.9 min *2* (1961Fr03, β's; NaI), 10.7 min *2* (1967Va03, β's; scin), 10.3 min *2* (1973Ca26,954γ; Ge(Li)), and 10.2 min *1* (1974Gr29. 4$\pi\beta$; scin). μ: using continuous beam laser spectroscopy (CBLS) technique (2007Ch07). $\Delta<r^2>(95,89)$=+0.723 fm^2, deduced from isotope shift (2007Ch07).
685.9 *3*	3/2$^-$#		ABC	
826.9 *4*	5/2$^-$#		ABCDE	
1087.6 *6*	9/2$^+$	52.6 μs *12*	ABCDE	J$^\pi$: 7/2$^-$,9/2$^+$ from $\sigma(\theta)$ and A(θ) in (pol t,α), from (M2) γ to 5/2$^-$. $T_{1/2}$: from ^{235}U(n,Fγ).
1630.9 *6*	(5/2$^-$)		A C	J$^\pi$: γ to 3/2$^-$ and possible γ to 9/2$^+$.
1827.8 *10*	(11/2$^+$)[d]		DE	
1889.8 *8*	5/2$^-$#		A C	
1963.4 *5*	(3/2$^-$,5/2$^-$)@		A C	XREF: C(1983).
2021.0 *5*	(3/2$^-$)@&		A C	
2046.6 *7*	(1/2$^-$,3/2$^-$)&a		A C	XREF: C(2041).
2173.4 *10*	(13/2)$^+$[d]		DE	
2207.6 *6*	(5/2$^-$,7/2$^-$)		A	J$^\pi$: 1/2,3/2,5/2$^-$ from log *ft*=7.5 (log $f^{1u}t$=9.0) from 1/2$^+$. Possible γ to 9/2$^+$.
2308[b] *10*	3/2$^-$#		C	
2408.5 *6*	(3/2$^-$,5/2$^-$)@		A	
2557.6 *7*	(1/2$^-$,3/2$^-$)[a]		A	
2614.6[b] *5*	(3/2$^-$,5/2$^-$)@		A C	XREF: C(2603).
2684.0[b] *6*	(1/2$^-$,3/2$^-$)		A C	XREF: C(2655).
2717.2 *6*	(1/2$^+$,3/2$^+$)		A	
2781.8 *6*	(3/2$^-$)[c]		A	
2855[b] *20*			C	
2906 *20*			C	
2933.4 *5*	(3/2$^+$)		A C	J$^\pi$: 1/2$^{(+)}$,3/2$^{(+)}$ from log *ft*=5.8 *1* from 1/2$^+$. γ to 5/2$^-$.
3116.8 *7*	(1/2$^-$,3/2$^-$)		A	
3142.5 *14*	(17/2$^-$)[d]	16 ns *3*	DE	$T_{1/2}$: from γ(t) gated on 969.1γ (2009Ur02).
3314.3 *17*	(19/2$^+$)[d]		DE	
3352.9 *5*	(3/2)		A	J$^\pi$: 1/2,3/2 from log *ft*=6.3 from 1/2$^+$. γ to (5/2$^-$).

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Adopted Levels, Gammas (continued)

^{95}Y Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$	XREF	Comments
3391.8 *5*	(3/2)[c]		A C	XREF: C(3405).
3507.4 *7*	(1/2$^-$,3/2$^-$)		A	
3576.6 *5*	(3/2$^+$)[c]		A	
3616.1 *5*	(1/2$^+$,3/2$^+$)		A	
3651.3 *7*	(1/2$^-$,3/2$^-$)		A	
3743.3 *10*	(1/2,3/2)		A	
3775.8 *19*	(21/2$^+$)[d]		DE	
3943.5 *6*	(1/2$^-$,3/2$^-$)[c]		A	
4075.1 *6*	(1/2$^+$,3/2$^+$)		A	J$^{\pi}$: log *ft*=5.7 *1* from 1/2$^+$.
4076.0 *19*	(21/2$^-$)[d]		DE	
4160.7 *8*	(3/2)[c]		A C	XREF: C(4150).
4190.4 *8*	(1/2,3/2)		A C	
4214.3 *6*	(1/2,3/2)		A	
4268.1 *7*	(1/2$^+$,3/2$^+$)		A	
4272.8 *20*	(23/2$^-$)[d]		E	
4339.9 *21*	(23/2$^+$)[d]		DE	
4348.3 *10*	(1/2$^-$,3/2$^-$)		A	
4360.3 *7*	(1/2$^-$,3/2$^-$)		A	
4420.6 *10*	(1/2$^-$,3/2$^-$)		A	
4563.4 *10*	(1/2$^-$,3/2$^-$)		A	
4901.6 *22*	(25/2$^+$)[d]		E	
4921.1 *21*	(23/2$^-$)[d]		DE	
5022.2 *21*	(27/2$^-$)[d]	65 ns *4*	DE	T$_{1/2}$: from ^{252}Cf SF decay (2009Ur02).
5810.2 *23*	(29/2$^-$,31/2$^-$)[d]		E	

[†] From least squares fit to γ-energies assuming $\Delta E\gamma$=1 keV when unknown, except otherwise noted.
[‡] J^{π} from log *ft*=5.9 to 6.9 from 1/2$^+$, except as noted; multipolarities were assumed to be D,E2 in deriving the spins and parities. See 1981PfZZ for other suggested spins and parities.
[#] J^{π} from $\sigma(\theta)$ and A(θ) in (pol t,α).
[@] $J^{\pi}\leq 5/2^-$ from log *ft*=7.0 to 7.4 (log $f^{1u}t\geq 8.5$) from 1/2$^+$. γ to 5/2$^-$.
[&] $J^{\pi}=3/2^-$ from $\sigma(\theta)$ and a(θ) in (pol t,α) for the doublet.
[a] J^{π} from log *ft*=7.2 to 7.4 (log $f^{1u}t\geq 8.5$) from 1/2$^+$.
[b] Groups observed at 2308, 2603, 2655, and 2855 in (pol t,α) were too broad to be a single state.
[c] J^{π}=1/2,3/2 from log *ft*=5.9 to 6.7 from 1/2$^+$. γ to 5/2$^-$.
[d] From $\gamma\gamma(\theta)$, Mγ if available, in high-spin datasets.

$\gamma(^{95}Y)$

All data are from β^- decay, except as noted.

E$_i$(level)	J$_i^{\pi}$	E$_{\gamma}$	I$_{\gamma}$	E$_f$	J$_f^{\pi}$	Mult.[†]	α	Comments
685.9	3/2$^-$	685.7	100	0.0	1/2$^-$			
826.9	5/2$^-$	141.0	0.51 *10*	685.9	3/2$^-$			
		826.8	100 *3*	0.0	1/2$^-$		0.00236 *4*	
1087.6	9/2$^+$	260.7	100 *3*	826.9	5/2$^-$	(M2)[‡]	0.0694	α(K)=0.0604 *9*; α(L)=0.00752 *11*; α(M)=0.001297 *19*; α(N)=0.0001731 *25* α(O)=1.151×10^{-5} *17*; α(N+..)=0.000185 *3* B(M2)(W.u.)=0.033 *1*

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Adopted Levels, Gammas (continued)

γ(^{95}Y) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α	Comments
1087.6	9/2$^+$	401.8	1.10 *10*	685.9	3/2$^-$	(E3)[‡]		B(E3)(W.u.)=2.7 *3*
1630.9	(5/2$^-$)	543.4[#]	1.50	1087.6	9/2$^+$			
		945.0	100 *12*	685.9	3/2$^-$			
1827.8	(11/2$^+$)	740.2	100	1087.6	9/2$^+$			E_γ: From ^{252}Cf SF decay.
1889.8	5/2$^-$	1062.8	100	826.9	5/2$^-$			
1963.4	(3/2$^-$,5/2$^-$)	1136.6	5.5	826.9	5/2$^-$			
		1277.4	100 *12*	685.9	3/2$^-$			
2021.0	(3/2$^-$)	1194.0	10.0	826.9	5/2$^-$			
		1335.4	100 *13*	685.9	3/2$^-$			
		2020.0	40	0.0	1/2$^-$			
2046.6	(1/2$^-$,3/2$^-$)	1360.9	100 *14*	685.9	3/2$^-$			
		2046.4	64 *10*	0.0	1/2$^-$			
2173.4	(13/2)$^+$	345.6	47 *4*	1827.8	(11/2$^+$)			
		1085.8	100 *6*	1087.6	9/2$^+$	E2		
2207.6	(5/2$^-$,7/2$^-$)	576.6	100 *12*	1630.9	(5/2$^-$)			
		1120.0[#]	15.0	1087.6	9/2$^+$			
2408.5	(3/2$^-$,5/2$^-$)	1581.4	22.0	826.9	5/2$^-$			
		1722.5	100 *14*	685.9	3/2$^-$			
2557.6	(1/2$^-$,3/2$^-$)	1872.0	100	685.9	3/2$^-$			
		2557.2	40	0.0	1/2$^-$			
2614.6	(3/2$^-$,5/2$^-$)	406.9	10.0	2207.6	(5/2$^-$,7/2$^-$)			
		651.3	6.0	1963.4	(3/2$^-$,5/2$^-$)			
		724.6	15.0	1889.8	5/2$^-$			
		983.8	100 *12*	1630.9	(5/2$^-$)			
		1928.5	8.0	685.9	3/2$^-$			
2684.0	(1/2$^-$,3/2$^-$)	2684.0	100	0.0	1/2$^-$			
2717.2	(1/2$^+$,3/2$^+$)	2031.5	10.3 *15*	685.9	3/2$^-$			
		2717.3	100 *12*	0.0	1/2$^-$			
2781.8	(3/2$^-$)	1954.8	9.0	826.9	5/2$^-$			
		2096.1	12 *6*	685.9	3/2$^-$			
		2781.8	100 *14*	0.0	1/2$^-$			
2933.4	(3/2$^+$)	970.0	2.00	1963.4	(3/2$^-$,5/2$^-$)			
		1302.5	2.00	1630.9	(5/2$^-$)			
		2106.3	2.00	826.9	5/2$^-$			
		2247.6	93 *11*	685.9	3/2$^-$			
		2933.1	100 *12*	0.0	1/2$^-$			
3116.8	(1/2$^-$,3/2$^-$)	2430.8	45	685.9	3/2$^-$			
		3116.8	100 *16*	0.0	1/2$^-$			
3142.5	(17/2$^-$)	969.1	100	2173.4	(13/2)$^+$	(M2)[‡]	0.001569 *22*	α(K)=0.001385 *20*; α(L)=0.0001543 *22*; α(M)=2.64×10^{-5} *4* α(O)=2.49×10^{-7} *4*; α(N+..)=3.80×10^{-6} B(M2)(W.u.)=0.17 *1* Mult.: Q from (969γ)(1086γ)(θ), M2 from isomer half-life.
3314.3	(19/2$^+$)	171.8	100	3142.5	(17/2$^-$)	(E1)		Mult.: ΔJ=1, dipole from (172γ)(1086γ)(θ); consistent with J^π assignment.
3352.9	(3/2)	419.5	9.0	2933.4	(3/2$^+$)			
		668.6	14.0	2684.0	(1/2$^-$,3/2$^-$)			
		1145.4	12.0	2207.6	(5/2$^-$,7/2$^-$)			
		2667.4	19.0	685.9	3/2$^-$			

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Adopted Levels, Gammas (continued)

γ(^{95}Y) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	Comments
3352.9	(3/2)	3352.8	100 *15*	0.0	$1/2^-$		
3391.8	(3/2)	458.4	30	2933.4	$(3/2^+)$		
		708.4	19.0	2684.0	$(1/2^-,3/2^-)$		
		777.3	100 *13*	2614.6	$(3/2^-,5/2^-)$		
		1184.0	27	2207.6	$(5/2^-,7/2^-)$		
		1370.5	15.0	2021.0	$(3/2^-)$		
		1428.3	57	1963.4	$(3/2^-,5/2^-)$		
		2564.9	6.0	826.9	$5/2^-$		
		2705.8	38 *7*	685.9	$3/2^-$		
3507.4	$(1/2^-,3/2^-)$	2821.4	80	685.9	$3/2^-$		
		3507.5	100	0.0	$1/2^-$		
3576.6	$(3/2^+)$	961.6	44	2614.6	$(3/2^-,5/2^-)$		
		1612.7	25.0	1963.4	$(3/2^-,5/2^-)$		
		2749.7	35 *6*	826.9	$5/2^-$		
		2891.0	100 *14*	685.9	$3/2^-$		
		3577.0	44	0.0	$1/2^-$		
3616.1	$(1/2^+,3/2^+)$	899.2	11.0	2717.2	$(1/2^+,3/2^+)$		
		931.9	3.0	2684.0	$(1/2^-,3/2^-)$		
		1207.3	8.0	2408.5	$(3/2^-,5/2^-)$		
		2930.5	22.0	685.9	$3/2^-$		
		3616.1	100 *14*	0.0	$1/2^-$		
3651.3	$(1/2^-,3/2^-)$	2965.0	100	685.9	$3/2^-$		
		3651.6	63	0.0	$1/2^-$		
3743.3	(1/2,3/2)	3743.2	100	0.0	$1/2^-$		
3775.8	$(21/2^+)$	461.5	14 *2*	3314.3	$(19/2^+)$		
3943.5	$(1/2^-,3/2^-)$	3116.6	100	826.9	$5/2^-$		
		3257.6	40	685.9	$3/2^-$		
		3943.4	60	0.0	$1/2^-$		
4075.1	$(1/2^+,3/2^+)$	2112.0	4.0	1963.4	$(3/2^-,5/2^-)$		
		3388.9	11.0	685.9	$3/2^-$		
		4075.1	100 *15*	0.0	$1/2^-$		
4076.0	$(21/2^-)$	761.7	100	3314.3	$(19/2^+)$		
4160.7	(3/2)	3334.2	60	826.9	$5/2^-$		
		3474.3	100	685.9	$3/2^-$		
4190.4	(1/2,3/2)	2168.7	100	2021.0	$(3/2^-)$		
		4191.0	20.0	0.0	$1/2^-$		
4214.3	(1/2,3/2)	2251.0	75	1963.4	$(3/2^-,5/2^-)$		
		3528.0	100	685.9	$3/2^-$		
		4214.4	100	0.0	$1/2^-$		
4268.1	$(1/2^+,3/2^+)$	3582.2	15.0	685.9	$3/2^-$		
		4268.0	100 *18*	0.0	$1/2^-$		
4272.8	$(23/2^-)$	196.8	100 *14*	4076.0	$(21/2^-)$		
		497.0	79 *10*	3775.8	$(21/2^+)$		
4339.9	$(23/2^+)$	564.1	100	3775.8	$(21/2^+)$		
4348.3	$(1/2^-,3/2^-)$	4348.2	100	0.0	$1/2^-$		
4360.3	$(1/2^-,3/2^-)$	3674.5	100	685.9	$3/2^-$		
		4360.0	80	0.0	$1/2^-$		
4420.6	$(1/2^-,3/2^-)$	4420.5	100	0.0	$1/2^-$		
4563.4	$(1/2^-,3/2^-)$	3877.5	100	685.9	$3/2^-$		
4901.6	$(25/2^+)$	561.8	100	4339.9	$(23/2^+)$		
4921.1	$(23/2^-)$	1145.3	100	3775.8	$(21/2^+)$		
5022.2	$(27/2^-)$	101.2	57 *9*	4921.1	$(23/2^-)$	(E2)[‡]	B(E2)(W.u.)=0.85 *9*
		120.6	26 *4*	4901.6	$(25/2^+)$	(E1)[‡]	B(E1)(W.u.)=3.8×10^{-07} *6*
		682.3	100 *13*	4339.9	$(23/2^+)$	(M2)[‡]	B(M2)(W.u.)=0.77 *9*

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Adopted Levels, Gammas (continued)

$\gamma(^{95}Y)$ (continued)

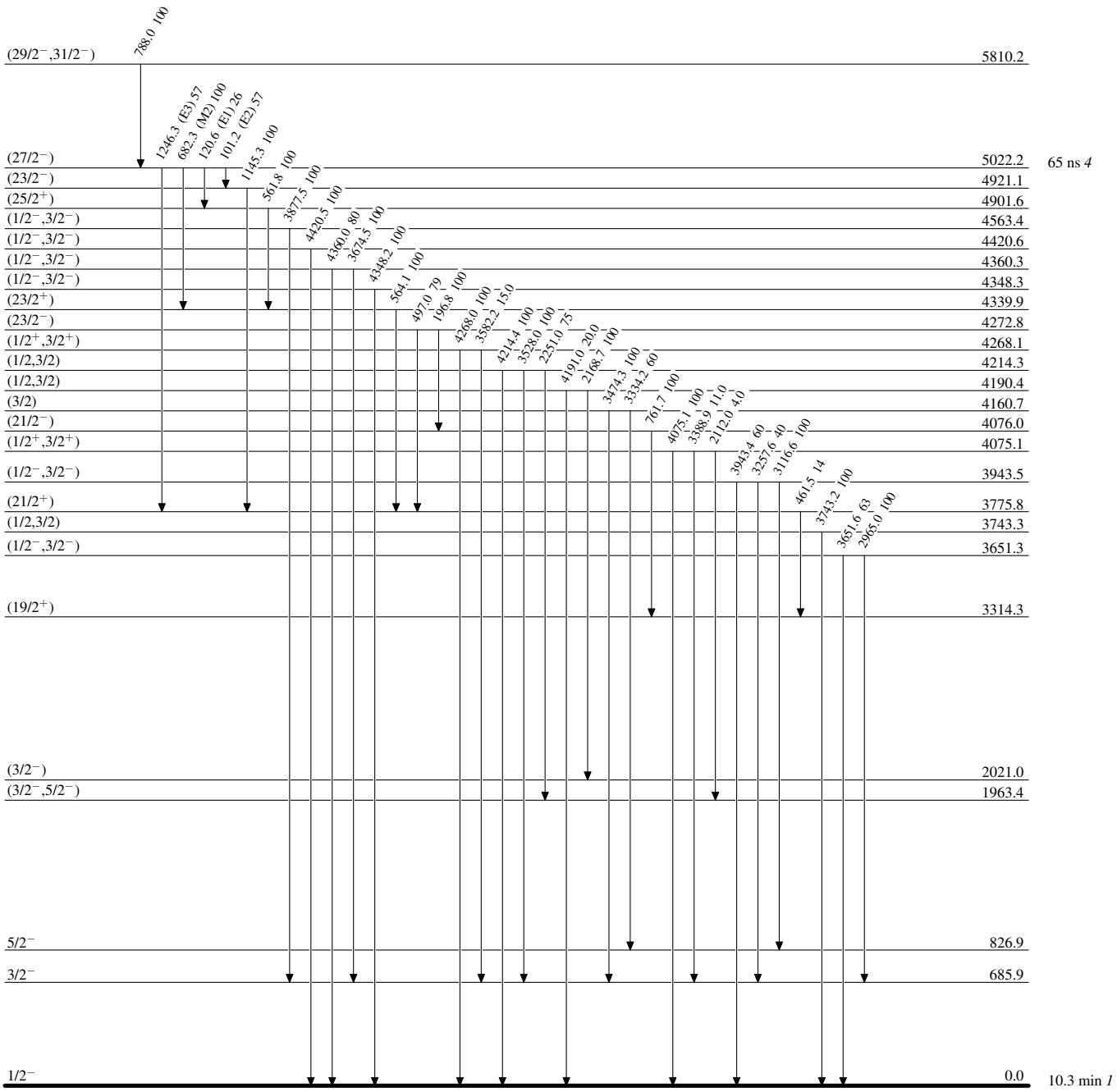
E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	Comments
5022.2	$(27/2^-)$	1246.3	57 *9*	3775.8	$(21/2^+)$	(E3)[‡]	B(E3)(W.u.)=2.0 *3*
5810.2	$(29/2^-,31/2^-)$	788.0	100	5022.2	$(27/2^-)$		

[†] From comparison to RUL and α(K)exp in β^- decay, unless otherwise stated.
[‡] Multipolarity assumed by authors (2009Ur02) and is found to be consistent with Weisskopf estimate for a spherical nucleus.
[#] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{95}_{39}Y_{56}$

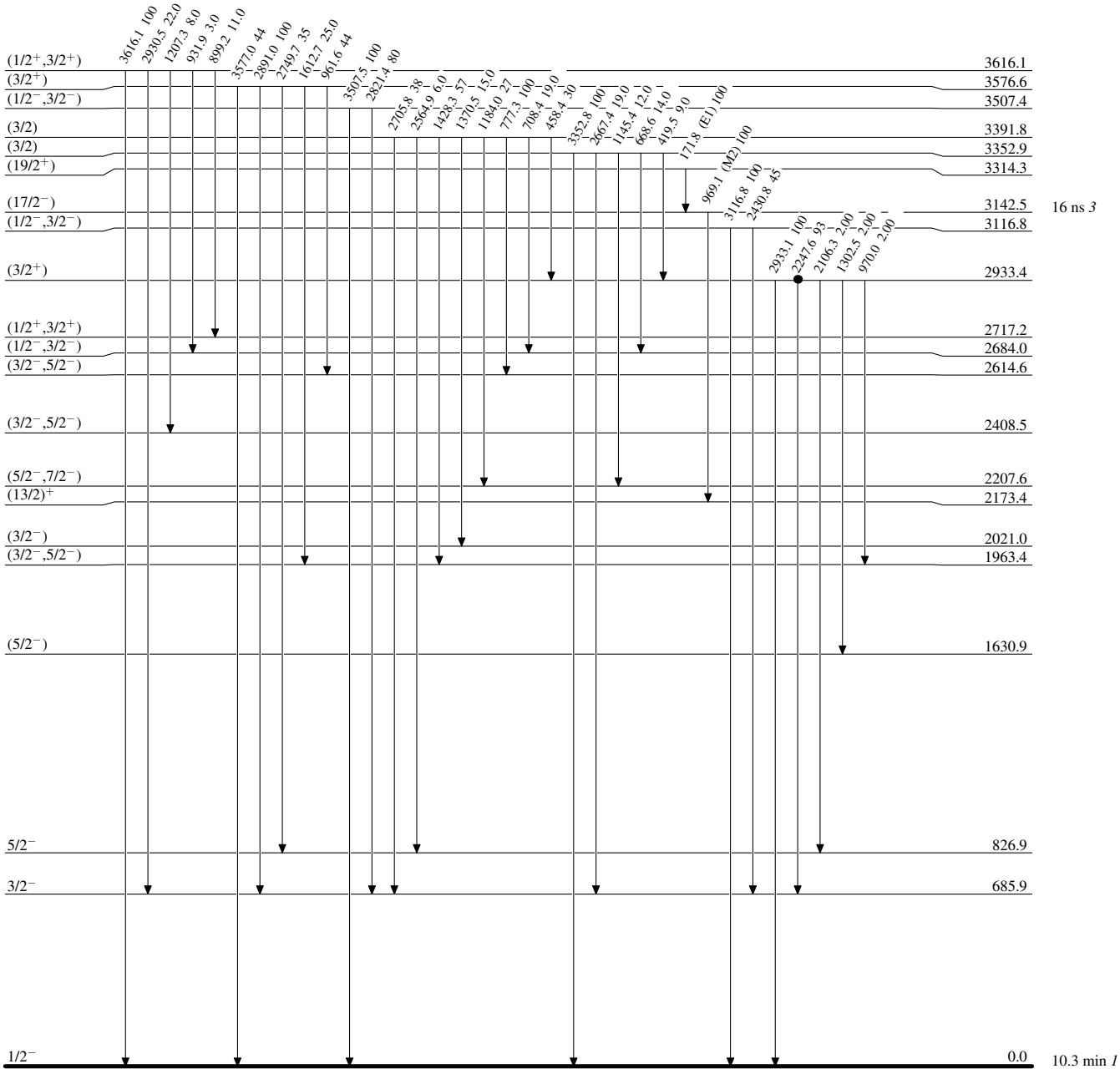
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

● Coincidence



$^{95}_{39}Y_{56}$

Adopted Levels, Gammas

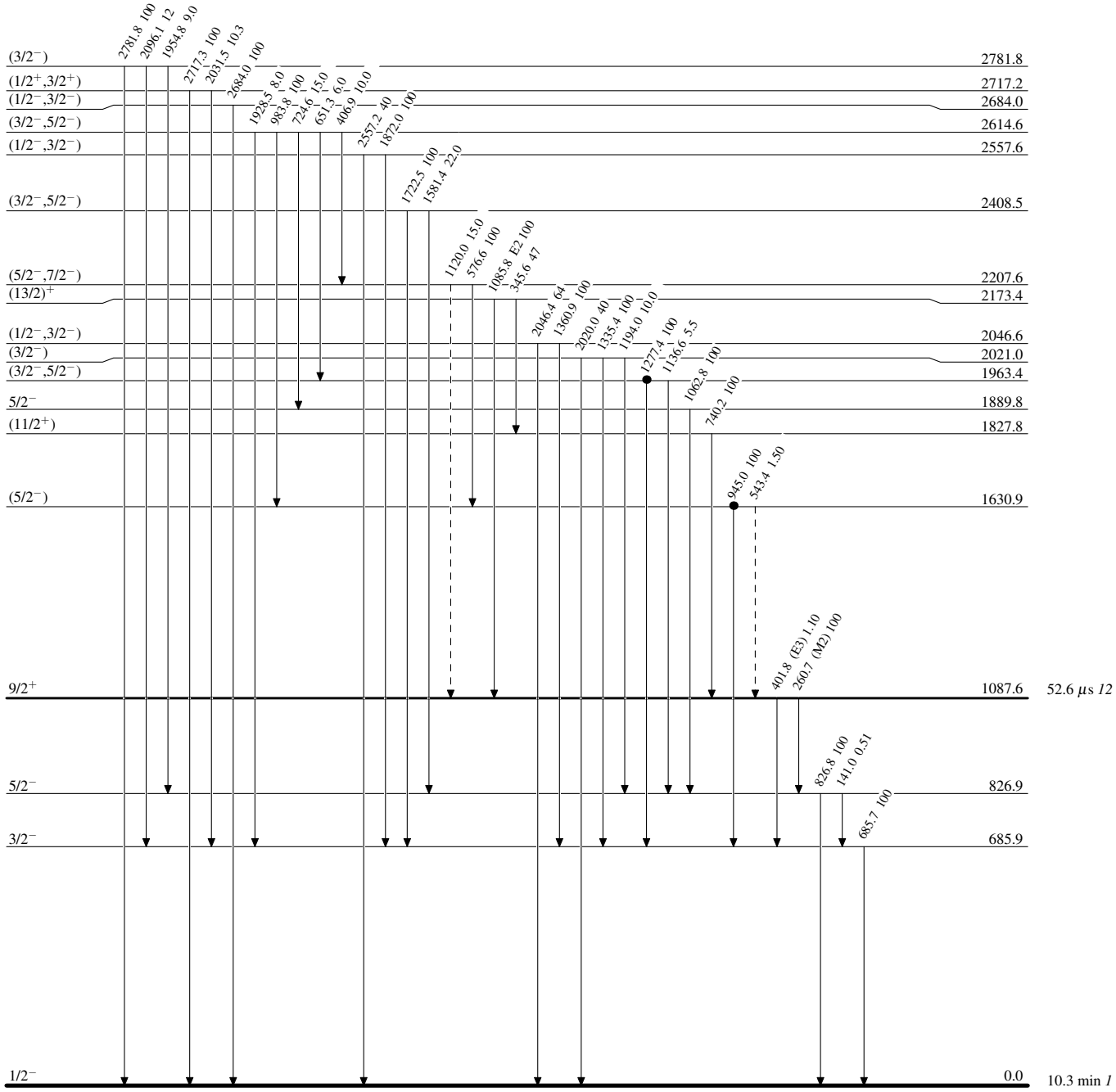
Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)

● Coincidence



$^{95}_{39}Y_{56}$