^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, A. A. Rodionov and S. Sakharov, Balraj Singh	NDS 104, 497 (2005)	10-Feb-2005

Parent: ^{132}I: E=0.0; $J^\pi=4^+$; $T_{1/2}$=2.295 h *13*; Q(β^-)=3581 *6*; %β^- decay=100.0

1978Ne08: Measured Eγ, Iγ. Results of Eγ and Iγ from previous studies (1971We15 and adopted values in 1970Ca04) combined with their own results and also with independent Iγ measurements from the Livermore group using a chemically-separated ^{132}I source. The authors give averaged Eγ and Iγ as adopted values. Earlier papers from the same laboratory with some of the same authors: 1973Si29, 1972CaYF, 1970Ha11, 1970Ca04 and 1970Ha11.

1973Si29: Detailed $\gamma\gamma$ coin data, which form the basis of the level scheme presented here.

1980Gi07: $\gamma\gamma(\theta)$, $\gamma(\theta)$; oriented nuclei; Ge(Li) detectors.

1971We15: measured Eγ, Iγ.

1970Ca04, 1970Ha11: Measured Eγ, Iγ, $\gamma\gamma$, ce with Ge(Li) detectors and magnetic spectrometer. 1970Ca04 combine their results for Eγ and Iγ with those from 1969He18 (also 1967He03), 1966Ar15 and 1967Yt01, and give weighted averaged results as adopted values. 1972CaYF reported experimental K-conversion coefficients for three transitions.

1970Ar12, 1969Ar05, 1967Ar12, 1967Yt01, 1966Ar15: measured Eγ, Iγ, $\gamma\gamma$.

1969He18, 1967He03: γ, ce.

Others:

1999Fo01: $\beta\gamma$ coin, deduced Q value.

1983So04: $\gamma\gamma(\theta)$ using Ge(Li) and NaI(Tl) combination.

1973De42: $\gamma\gamma(\theta$,H), deduced g factor.

1972Kr07, 1971Kr16: $\gamma(\theta)$, nuclear orientation; $\gamma\gamma(\theta)$ with Ge(Li) detectors.

1972Be90, 1969Fr05: $\gamma\gamma(\theta)$.

1965Jo13: Eγ, Iγ, ce, β, $\beta\gamma$.

1965Iv03: ce.

1965Bo23: $T_{1/2}$, ce.

1963Ha34, 1962Wi14: ce.

1962Ra04: $\gamma\gamma(\theta)$.

1961Ro04: γ, β, $\beta\gamma$, $\gamma\gamma$, $\gamma\gamma(\theta)$.

1961De17: γ, β, $\beta\gamma$, $\gamma\gamma$.

1954Fi36: γ, β, $\beta\gamma$, $\gamma\gamma$.

Additional information 1.

1951Ma76: γ, $\gamma\gamma$.

$T_{1/2}$(isotope): 1966Ma56, 1965An05, 1958Ke26, 1955Wa35, 1954Em27. Others: 1974Ca26, 1965Si17, 1965Bo23, 1962Wi14, 1957Aa04, 1939Ab02, 1939Ha13.

The level scheme is from detailed $\gamma\gamma$ coin study of 1973Si29, extension of that proposed earlier in $\gamma\gamma$ coin data of 1970Ha11, 1970Ar12 (also 1967Ar12) and earlier work.

^{132}Xe Levels

E(level)	J^π	E(level)	J^π	E(level)	J^π	E(level)	J^π
0.0	0^+	2187.27 *17*	2^+	2840.10 *12*	$4^{(+)}$	3192.78 *14*	(3^+)
667.7158 *20*	2^+	2303.46 *15*	(6^+)	2890.69 *11*	(4^+)	3213.95 *20*	$(3,4^+)$
1297.916 *13*	2^+	2350.63 *9*	5^+	2916.85 *13*	$(2^+,3,4^+)$	3226.72 *20*	(3,4,5)
1440.323 *10*	4^+	2394.99 *7*	4^+	2935.2 *4*		3237.2 *3*	$(3,4^+)$
1803.715 *16*	3^+	2424.78 *12*	3^+	2958.74 *19*	$(2^+,3,4^+)$	3260.9 *3*	$(3,4^+)$
1962.98 *6*	4^+	2583.78 *10*	5^+	3058.14 *11*	(3^+)	3320.4 *4*	$(3,4^+)$
1985.641 *5*	2^+	2588.69 *9*	(4^+)	3076.42 *17*	(3^+)	3353.4 *3*	$(4^+,5)$
2040.1? *4*	(5^-)	2613.44 *9*	5^+	3084.4 *5*	$(3,4^+)$	3385.2 *6*	$(3,4^+)$
2110.26 *6*	4^+	2669.99 *11*	3^+	3112.08 *20*	$(3,4^+)$		
2111.86 *16*	6^+	2754.44 *11*	(4^+)	3121.8 *3*	(4^+)		
2167.10 *15*	5^+	2838.85 *7*	5^+	3155.6 *3*	$(3^+,4^+)$		

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

β^- radiations

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(196 *6*)	3385.2	0.0035 *5*	7.51 *8*	av Eβ=53.6 *18*
(228 *6*)	3353.4	0.10 *2*	6.26 *10*	av Eβ=63.1 *19*
(261 *6*)	3320.4	0.015 *3*	7.27 *10*	av Eβ=73.3 *19*
(320 *6*)	3260.9	0.19 *4*	6.46 *10*	av Eβ=92.2 *20*
(344 *6*)	3237.2	0.069 *13*	7.00 *9*	av Eβ=99.9 *20*
(354 *6*)	3226.72	0.45 *6*	6.23 *7*	av Eβ=103.3 *20*
(367 *6*)	3213.95	0.22 *4*	6.59 *9*	av Eβ=107.5 *20*
(388 *6*)	3192.78	0.14 *2*	6.87 *7*	av Eβ=114.6 *21*
(425 *6*)	3155.6	0.18 *2*	6.89 *6*	av Eβ=127.2 *21*
(459 *6*)	3121.8	0.083 *11*	7.34 *6*	av Eβ=138.9 *21*
(469 *6*)	3112.08	0.16 *3*	7.09 *9*	av Eβ=142.2 *21*
(497 *6*)	3084.4	0.024 *5*	7.99 *10*	av Eβ=151.9 *22*
(505 *6*)	3076.42	0.75 *6*	6.52 *4*	av Eβ=154.8 *22*
(523 *6*)	3058.14	0.66 *6*	6.63 *5*	av Eβ=161.3 *22*
(664[‡] *6*)	2916.85	<0.10	>7.8	av Eβ=213.1 *23*
(690 *6*)	2890.69	0.90 *6*	6.91 *4*	av Eβ=223.0 *23*
(741 *6*)	2840.10	1.28 *5*	6.87 *2*	av Eβ=242.3 *23*
(742 *6*)	2838.85	13.0 *8*	5.86 *3*	av Eβ=242.7 *23*
(827 *6*)	2754.44	0.35 *4*	7.60 *5*	av Eβ=275.6 *24*
(911 *6*)	2669.99	3.4 *2*	6.77 *3*	av Eβ=309.1 *24*
(968 *6*)	2613.44	8.2 *4*	6.48 *3*	av Eβ=331.9 *25*
(992 *6*)	2588.69	2.73 *12*	7.00 *2*	av Eβ=341.9 *25*
(997 *6*)	2583.78	3.2 *2*	6.94 *3*	av Eβ=343.9 *25*
(1156 *6*)	2424.78	2.5 *2*	7.28 *4*	av Eβ=409.6 *26*
(1186 *6*)	2394.99	19.0 *5*	6.44 *2*	av Eβ=422.1 *26*
(1230 *6*)	2350.63	0.7 *2*	7.94 *13*	av Eβ=440.8 *26*
(1394[‡] *6*)	2187.27	<0.08	>9.1	av Eβ=510.5 *26*
(1414 *6*)	2167.10	0.8 *6*	8.1 *4*	av Eβ=519.2 *27*
(1471 *6*)	2110.26	9.1 *9*	7.12 *5*	av Eβ=543.8 *26*
(1541 *6*)	2040.1?	<0.12	>9.1	av Eβ=574.3 *27*
(1618 *6*)	1962.98	12.3 *6*	7.15 *2*	av Eβ=608.1 *27* E(decay): 1609 *25* (1961De17).
(1777[‡] *6*)	1803.715	0.5 *5*	8.7 *5*	av Eβ=678.6 *27*
(2141 *6*)	1440.323	19.0 *20*	7.44 *5*	av Eβ=841.8 *28* E(decay): 2156 *15* (1961De17), 2140 *30* (1961Ro04), 2118 *15* (1965Jo13).

[†] Absolute intensity per 100 decays.
[‡] Existence of this branch is questionable.

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

$\gamma(^{132}Xe)$

Iγ normalization: From ΣI(γ+ce)=100 to g.s.

α(exp)=Ice/Iγ normalized to 667.7, 772.6 and 809.5 E2 transitions. Ice(K) from 1970Ca04 and 1972CaYF. 1970Ca04 obtained averaged results from their measurements and those from 1969He18, 1965Jo13, 1965B023 and 1963Ha34.

γ(θ): oriented nuclei (1980Gi07).

A_2 and A_4 values from γ(θ,T) and γγ(θ) are from 1980Gi07, unless otherwise stated. In γγ(θ), the last Eγ stated In the cascade corresponds to the gate position.

A 351.8γ with Iγ=0.08 *2* reported In 1970Ca04 is either an energy error or from background (1978Ne08). IT is not seen In γγ coin data of 1973Si29, thus omitted here.

The following γ's from 1970Ca04 have been omitted since these are not confirmed In later studies: 1016.2 *20* (0.05 *3*), 1065.5 *7* (0.034 *11*), 1503.6 *6* (0.009), 1738.0 (<0.018), 1747.0 (<0.018), 1803 (<0.002).

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[c]	α[e]	Comments
136.7[f] *4*	0.08[f] *1*	2303.46	(6$^+$)	2167.10	5$^+$	M1,E2		0.48 *13*	
136.7[f] *4*	0.08[f] *1*	2890.69	(4$^+$)	2754.44	(4$^+$)	M1,E2		0.48 *13*	α(K)exp=0.31 *14*
147.4 *1*	0.24 *2*	2110.26	4$^+$	1962.98	4$^+$	M1		0.279	α(K)= 0.2399; α(L)= 0.0314; α(M)=0.00633; α(N+..)=0.00160 α(K)exp=0.14 *3*
183.6 *3*	0.14 *2*	2350.63	5$^+$	2167.10	5$^+$	M1,E2		0.18 *4*	α(K)exp=0.15 *4*
[x]194.3[&] *5*	0.09[&]								I_γ: ≤0.08 (1978Ne08).
234.3 *6*	0.03 *1*	3192.78	(3$^+$)	2958.74	(2$^+$,3,4$^+$)				
[x]241.2[@&] *5*	0.05[&]								I_γ: 0.25 *2* (1978Ne08).
250.8[f] *6*	0.018[f] *5*	2838.85	5$^+$	2588.69	(4$^+$)				
250.8[f] *6*	0.018[f] *5*	2840.10	4$^{(+)}$	2588.69	(4$^+$)				
255.1[g] *2*	0.24[g] *2*	2838.85	5$^+$	2583.78	5$^+$	M1,E2			α(K)exp=0.061 *15*
255.1[g] *3*	<0.02[g]	3213.95	(3,4$^+$)	2958.74	(2$^+$,3,4$^+$)				
262.9 *1*	1.30 *10*	2613.44	5$^+$	2350.63	5$^+$	M1+E2	−0.16 *5*	0.0583	α(K)=0.05016 *5*; α(L)=0.00653 *6*; α(M)=0.00131; α(N+..)=0.00033 α(K)exp=0.047 *7* γ(θ): A_2=−0.34 *4*, A_4=−0.06 *6*.
278.4[f] *4*	0.04[f] *1*	3213.95	(3,4$^+$)	2935.2					
278.4[f] *4*	0.04[f] *1*	3237.2	(3,4$^+$)	2958.74	(2$^+$,3,4$^+$)				
284.9 *1*	0.72 *7*	2394.99	4$^+$	2110.26	4$^+$	M1+E2	−0.26 *3*	0.0473	α(K)=0.04057; α(L)=0.00533 *3*; α(M)=0.00107; α(N+..)=0.00027 α(K)exp=0.034 *7* γ(θ): A_2=−0.235 *23*, A_4=−0.02 *14*.
[x]296.5[&] *6*	≈0.016[&]								I_γ: ≤0.02 (1978Ne08).
302.0[&h] *7*	≈0.005[&]	3192.78	(3$^+$)	2890.69	(4$^+$)				
306.7[f] *4*	0.10[f] *2*	2110.26	4$^+$	1803.715	3$^+$				

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

$\gamma(^{132}Xe)$ (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[c]	α[e]	Comments
306.7[f] 4	0.10[f] 2	2890.69	(4$^+$)	2583.78	5$^+$				
310.1[f] 4	0.09[f] 2	2613.44	5$^+$	2303.46	(6$^+$)				
310.1[f] 4	0.09[f] 2	3226.72	(3,4,5)	2916.85	(2$^+$,3,4$^+$)				
316.7 4	0.13 2	3155.6	(3$^+$,4$^+$)	2838.85	5$^+$				
343.7 4	0.09 2	3260.9	(3,4$^+$)	2916.85	(2$^+$,3,4$^+$)				
355.2[fh] 4	0.05[f] 2	2394.99	4$^+$	2040.1?	(5$^-$)				
355.2[fh] 4	0.05[f] 2	3192.78	(3$^+$)	2838.85	5$^+$				
363.34[‡] 5	0.5 1	1803.715	3$^+$	1440.323	4$^+$	(M1+E2)	+1.10 20	0.0239	α(K)=0.02023 25; α(L)=0.00292 3; α(M)=0.00059; α(N+..)=0.00015 Additional information 5. δ: other: −0.23 2 (1983So04). $\gamma(\theta)$: A_2=+1.11 7, A_4=+0.2 11. (363γ)(773γ)(θ): A_2=−0.12 2, A_4=−0.02 4 (1983So04).
[x]376.6 4	0.010 5								
387.9[f] 3	0.30[f] 5	2350.63	5$^+$	1962.98	4$^+$	(M1+E2)			δ: −1.54 22 or −0.45 8. $\gamma(\theta)$: A_2=+0.94 3, A_4=+0.26 24.
387.9[f] 3	0.30[f] 5	3058.14	(3$^+$)	2669.99	3$^+$				
387.9[f] 3	0.30[f] 5	3226.72	(3,4,5)	2838.85	5$^+$				
[x]402.6[&] 6	0.023[&]								I_γ: ≤0.02 (1978Ne08).
416.8 3	0.48 5	2583.78	5$^+$	2167.10	5$^+$	(M1+E2)	−1.70 23	0.0158	α(K)=0.01335 16; α(L)=0.00194; α(M)=0.00040 $\gamma(\theta)$: A_2=+0.336 20, A_4=−0.33 9.
431.8 3	0.48 5	2394.99	4$^+$	1962.98	4$^+$	(M1+E2)	+0.06 4	0.01616	α(K)=0.01394; α(L)=0.00177; α(M)=0.00036 $\gamma(\theta)$: A_2=+0.477 23, A_4=−0.01 16.
445.0[&h] 6	0.1[&]	2840.10	4$^{(+)}$	2394.99	4$^+$				I_γ: ≤0.1 (1978Ne08).
446.2 3	0.61 5	2613.44	5$^+$	2167.10	5$^+$	M1,E2			α(K)exp=0.012 4
473.6 4	0.17 4	2583.78	5$^+$	2110.26	4$^+$				
478.2 4	0.17 4	2588.69	(4$^+$)	2110.26	4$^+$				
488.0[f] 4	0.42[f] 5	2838.85	5$^+$	2350.63	5$^+$				
488.0[f] 4	0.42[f] 5	3076.42	(3$^+$)	2588.69	(4$^+$)	(M1+E2)	+0.69 72		$\gamma(\theta)$: A_2=−0.56 15, A_4=0.0 7. δ: −0.03 to +1.40.
505.79[‡] 3	5.0 2	1803.715	3$^+$	1297.916	2$^+$	M1+E2	+7.5 6	0.00882	α(K)=0.00740; α(L)=0.00107 α(K)exp=0.0063 9 Additional information 6. δ: others: −0.1 to −3 (1972Kr07), −1.3 4 (1971Kr16). Alternative δ=+0.40 2 (1980Gi07) from $\gamma(\theta)$ is inconsistent with $\gamma\gamma(\theta)$ data. $\gamma(\theta)$: A_2=−0.366 24, A_4=+0.4 24. (506γ)[630γ](668γ)(θ): A_2=+0.13 3, A_4=+0.04 4 (1971Kr16).
522.65 9	16.2 5	1962.98	4$^+$	1440.323	4$^+$	M1+E2	−0.09 1	0.01014	α(K)=0.00869; α(L)=0.00109

$^{132}_{54}Xe_{78}$-4

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

$\gamma(^{132}Xe)$ (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[c]	α[e]	Comments
									α(K)exp=0.0079 *4* δ: others: −0.23 *16* (1983So04), −0.28 to −0.54 (1980Gi07); −0.25 *15* (1971Kr16). $\gamma(\theta)$: A_2=−0.369 *8*, A_4=−0.042 *25*. Additional information 8. (523γ)[773γ](668γ)(θ): A_2=+0.27 *5*, A_4=−0.06 *7*. (523γ)(773γ)(θ): A_2=+0.270 *20*, A_4=+0.028 *24*.
535.4 *3*	0.52 *5*	2838.85	5^+	2303.46	(6^+)	(M1+E2)	+0.09 *2*	0.00956	α(K)=0.00819; α(L)=0.00103 $\gamma(\theta)$: A_2=+0.30 *3*, A_4=+0.02 *6*.
539.7[fh] *4*	0.11[f] *2*	2890.69	(4^+)	2350.63	5^+				
539.7[fh] *4*	0.11[f] *2*	3121.8	(4^+)	2583.78	5^+				
547.2 *2*	1.15 *8*	2350.63	5^+	1803.715	3^+	E2		0.00708	α(K)=0.00596; α(L)=0.00084 α(K)exp≤0.004 $\gamma(\theta)$: A_2=−0.416 *24*, A_4=−0.22 *10*.
559.7 *4*	0.09 *2*	2669.99	3^+	2110.26	4^+				
572.5[fh] *4*	0.06[f] *2*	2613.44	5^+	2040.1?	(5^-)				
572.5[fh] *4*	0.06[f] *2*	3155.6	$(3^+,4^+)$	2583.78	5^+				
591.1[f] *6*	0.07[f] *3*	2394.99	4^+	1803.715	3^+				
591.1[f] *6*	0.07[f] *3*	3260.9	$(3,4^+)$	2669.99	3^+				
600.0[f] *6*	0.13[f] *3*	2040.1?	(5^-)	1440.323	4^+				
600.0[f] *6*	0.13[f] *3*	3213.95	$(3,4^+)$	2613.44	5^+				
[x]609.8[#a] *5*	0.04[a] *1*								
620.9 *2*	0.4 *2*	2583.78	5^+	1962.98	4^+				
621.2 *3*	1.6 *2*	2424.78	3^+	1803.715	3^+	M1(+E2)			α(K)exp=0.0088 *23*
630.19[‡] *2*	13.5 *4*	1297.916	2^+	667.7158	2^+	M1+E2	+4.07 *16*	0.00497	α(K)=0.00420; α(L)=0.00057 α(K)exp=0.0044 *3* Additional information 2. δ: others: +6.1 *+65−25* (1983So04); +4.5 *+20−10* (1980Gi07); +2 *+3−2* (1972Kr07); +5.3 *+21−10* (1971Kr16). Alternative δ=−0.180 *9* from $\gamma(\theta)$ (1980Gi07) is inconsistent with $\gamma\gamma(\theta)$ data. $\gamma(\theta)$: A_2=−0.187 *12*, A_4=−0.2 *9* (1980Gi07); A_2=+0.45 *32* (1972Kr07). (630γ)(668γ)(θ): A_2=−0.27 *3*, A_4=+0.26 *5*.
[x]642.4[&] *5*	0.035[&]								I_γ: ≤0.04 (1978Ne08).
650.5 *2*	2.6 *2*	2613.44	5^+	1962.98	4^+	M1+E2	−0.36 *3*	0.00580	α(K)=0.00497; α(L)=0.00063 α(K)exp=0.0067 *27* Additional information 16. $\gamma(\theta)$: A_2=+0.85 *3*, A_4=+0.10 *4*.
[x]659.0[#] *7*	≤0.2								
667.714[‡] *2*	100	667.7158	2^+	0.0	0^+	E2		0.00421	α(K)=0.00356; α(L)=0.00048

$^{132}_{54}Xe_{78}$-5

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

$\gamma(^{132}Xe)$ (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[c]	α[e]	Comments
									α(K)exp=0.0035 *2* $\gamma(\theta)$: $B_2U_2A_2$=−0.052 *5*, $B_4U_4A_4$=−0.009 *6* (1972Kr07).
669.8 *2*	4.7 *6*	2110.26	4^+	1440.323	4^+	M1+E2			α(K)exp=0.0052 *16* δ: +0.86 *16* or +0.05 *9*. $\gamma(\theta)$: A_2=−0.47 *6*, A_4=−0.24 *26*.
671.4 *2*	3.5 *10*	2111.86	6^+	1440.323	4^+	E2		0.00415	α(K)=0.00351; α(L)=0.00048 α(K)exp=0.0060 *25*
684.4[@h] *2*	0.04 *1*	2669.99	3^+	1985.641	2^+				E_γ,I_γ: average of 1971We15 and livermore data In 1978Ne08. Iγ=0.16 In spectrum of 1978Ne08.
687.8 *5*	0.04 *2*	3112.08	$(3,4^+)$	2424.78	3^+				
706.4 *7*	≈0.02	2669.99	3^+	1962.98	4^+				
727.0 *3*	2.2 *6*	2167.10	5^+	1440.323	4^+	M1+E2			I_γ: 3.2 *6* for 727.0 and 2.2 *6* for 727.2 quoted In 1978Ne08 are reverse of those In 1973Si29, from which the values are ADOPTED. α(K)exp=0.0032 *7* for a doublet: 727.0+727.2.
727.2 *3*	3.2 *6*	2838.85	5^+	2111.86	6^+	M1+E2			α(K)exp=0.0032 *7* for a doublet. δ: 1971Kr16 give −0.32 *4*, but 727γ is a doublet: 727.0+727.2. Additional information 20. (727γ)[671γ](773γ)(θ): A_2=+0.11 *4*, A_4=0.00 *5* (1971Kr16).
728.4 *2*	1.6 *4*	2838.85	5^+	2110.26	4^+	(M1+E2)	−4.1 *4*		$\gamma(\theta)$: A_2=+0.45 *4*, A_4=+0.53 *17*.
771.7[h]	0.02 *2*	2958.74	$(2^+,3,4^+)$	2187.27	2^+				E_γ,I_γ: from 1973Si29.
772.60[‡] *1*	76.6 *13*	1440.323	4^+	667.7158	2^+	E2		0.00294	α(K)=0.00250; α(L)=0.00033 α(K)exp=0.0028 *2*; α(L)exp=0.00040 *9*; α(M)exp=0.00018 *4* Additional information 4. $\gamma(\theta)$: $B_2U_2A_2$=−0.063 *5*, $B_4U_4A_4$=−0.007 *6* (1972Kr07). (773γ)(668γ)(θ): A_2=+0.092 *11*, A_4=+0.023 *16*.
780.0 *2*	1.20 *4*	2583.78	5^+	1803.715	3^+	(E2)		0.00288	α(K)=0.00244; α(L)=0.00032 $\gamma(\theta)$: A_2=−0.421 *19*, A_4=−0.24 *8*.
784.4 *4*	0.39 *4*	2588.69	(4^+)	1803.715	3^+	(M1+E2)	+1.2 *5*	0.0032 *3*	α(K)=0.00277 *23*; α(L)=0.00036 δ: +0.72 to +1.72. $\gamma(\theta)$: A_2=−0.77 *7*, A_4=+0.20 *26*.
791.2 *4*	0.10 *2*	2754.44	(4^+)	1962.98	4^+				
809.5 *2*	2.6 *3*	2613.44	5^+	1803.715	3^+	E2		0.00263	α(K)=0.00224; α(L)=0.00030 α(K)exp=0.0032 *7* $\gamma(\theta)$: A_2=−0.429 *23*, A_4=−0.25 *10*. Additional information 17.
812.0 *2*	5.6 *4*	2110.26	4^+	1297.916	2^+	E2		0.00262	α(K)=0.00223; α(L)=0.00029 α(K)exp=0.0023 *3* $\gamma(\theta)$: A_2=−0.450 *10*, A_4=−0.36 *6*. (812γ)[630γ](668γ)(θ): A_2=+0.04 *5*, A_4=+0.05 *7*. (812γ)(630γ)(θ): A_2=+0.07 *6*, A_4=+0.02 *8*. Additional information 10.
831.3 *5*	0.025 *10*	3226.72	(3,4,5)	2394.99	4^+				

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

$\gamma(^{132}Xe)$ (continued)

E_γ[†]	I_γ[†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[c]	α[e]	Comments
847.9 *5*	0.017 *5*	2958.74	(2$^+$,3,4$^+$)	2110.26	4$^+$				
863.0 *2*	0.57 *5*	2303.46	(6$^+$)	1440.323	4$^+$	(E2)		0.00227	α(K)=0.00194; α(L)=0.00025 $\gamma(\theta)$: A_2=−0.382 *25*, A_4=−0.18 *11*.
866.0[f] *6*	0.036[f] *14*	2669.99	3$^+$	1803.715	3$^+$				
866.0[f] *6*	0.036[f] *14*	3260.9	(3,4$^+$)	2394.99	4$^+$				
876.6 *2*	1.05 *4*	2840.10	4$^{(+)}$	1962.98	4$^+$	(M1+E2)	−1.2 *5*	0.00251	α(K)=0.00214 *18*; α(L)=0.00027 δ: from (877γ)[523γ](773γ)(θ): A_2=+0.13 *7*, A_4=+0.15 *11* (1983So04).
886.1 *5*	0.025 *8*	3237.2	(3,4$^+$)	2350.63	5$^+$				
888.7[f] *5*	0.035[f] *8*	2187.27	2$^+$	1297.916	2$^+$				I_γ: (n,γ) results suggest that most of the intensity of 889γ is from 2187 level.
888.7[f] *5*	0.035[f] *8*	3076.42	(3$^+$)	2187.27	2$^+$				
904.4 *5*	0.013 *4*	2890.69	(4$^+$)	1985.641	2$^+$				
910.1 *2*	0.94 *3*	2350.63	5$^+$	1440.323	4$^+$	(M1+E2)	−1.27 *22*	0.00228 *7*	α(K)=0.00195 *6*; α(L)=0.00025 $\gamma(\theta)$: A_2=+1.02 *6*, A_4=+0.29 *12*. (910γ)[773γ](668γ)(θ): A_2=−0.32 *20*, A_4=+0.05 *31*. (910γ)(773γ)(θ): A_2=−0.33 *12*, A_4=−0.11 *16*. Additional information 12.
927.4 *3*	0.42 *4*	2890.69	(4$^+$)	1962.98	4$^+$	(M1+E2)	−0.27 *6*	0.00255	α(K)=0.00219; α(L)=0.00027 $\gamma(\theta)$: A_2=−0.22 *5*, A_4=−0.10 *15*.
947.2 *6*	0.045 *14*	3058.14	(3$^+$)	2110.26	4$^+$				
954.55 *9*	17.8 *5*	2394.99	4$^+$	1440.323	4$^+$	M1+E2	−0.07 *1*	0.00243	α(K)=0.00208; α(L)=0.00026 α(K)exp=0.0020 *2* δ: others: −0.03 *3* (1983So04); −0.12 *6* (1980Gi07); −0.15 *5* (1971Kr16). $\gamma(\theta)$: A_2=−0.386 *6*, A_4=−0.03 *4*. Additional information 13. (955γ)[773γ](668γ)(θ): A_2=+0.28 *4*, A_4=+0.01 *6*. (955γ)(773γ)(θ): A_2=+0.222 *13*, A_4=+0.005 *16*.
965.8 *5*	0.035 *8*	3076.42	(3$^+$)	2110.26	4$^+$				
984.2 *2*	0.60 *4*	2424.78	3$^+$	1440.323	4$^+$	(M1+E2)	−0.28 *1*	0.00222	α(K)=0.00191; α(L)=0.00024 $\gamma(\theta)$: A_2=−0.214 *7*, A_4=+0.01 *4*.
995.8 *5*	0.03 *1*	2958.74	(2$^+$,3,4$^+$)	1962.98	4$^+$				
1002.5[f] *6*	0.026[f] *7*	3112.08	(3,4$^+$)	2110.26	4$^+$				
1002.5[f] *6*	0.026[f] *7*	3353.4	(4$^+$,5)	2350.63	5$^+$				
1005.4 *6*	0.016 *5*	3192.78	(3$^+$)	2187.27	2$^+$				
1009.0 *4*	0.047 *7*	3121.8	(4$^+$)	2111.86	6$^+$				
1035.0 *2*	0.52 *5*	2838.85	5$^+$	1803.715	3$^+$	(E2)		0.00152	α(K)=0.00130; α(L)=0.00017 $\gamma(\theta)$: A_2=−0.43 *3*, A_4=−0.25 *19*.
1049.6 *4*	0.047 *12*	3353.4	(4$^+$,5)	2303.46	(6$^+$)				
1081.8[f] *4*	0.035[f] *8*	3121.8	(4$^+$)	2040.1?	(5$^-$)				
1081.8[f] *4*	0.035[f] *8*	3192.78	(3$^+$)	2110.26	4$^+$				

$^{132}_{54}Xe_{78}$-7

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

$\gamma(^{132}Xe)$ (continued)

E_γ[†]	I_γ[†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[c]	α[e]	Comments
1086.2 *4*	0.08 *2*	2890.69	(4$^+$)	1803.715	3$^+$				
1096.9 *4*	0.045 *8*	2394.99	4$^+$	1297.916	2$^+$				
1112.4 *4*	0.066 *15*	2916.85	(2$^+$,3,4$^+$)	1803.715	3$^+$				
1126.5[f] *4*	0.05[f] *2*	2424.78	3$^+$	1297.916	2$^+$				
1126.5[f] *4*	0.05[f] *2*	3112.08	(3,4$^+$)	1985.641	2$^+$				
1136.00[‡] *2*	3.05 *14*	1803.715	3$^+$	667.7158	2$^+$	M1+E2	+0.34 *2*	0.00159	α(K)=0.00137; α(L)=0.00017 α(K)exp=0.0015 *3* Additional information 7. δ: others: +0.45 *5* (1983So04); +0.22 *+15−11* (1980Gi07); +0.9 *3* (1971Kr16). $\gamma(\theta)$: A_2=−0.29 *3*, A_4=−0.01 *7*. (1136γ)(668γ)(θ): A_2=+0.09 *8*, A_4=+0.18 *12*.
1143.3 *2*	1.37 *6*	2583.78	5$^+$	1440.323	4$^+$	M1+E2	−0.20 *2*	0.00160	α(K)=0.00137; α(L)=0.00017 α(K)exp=0.0021 *4* δ: others: −0.04 *+4−9* (1971Kr16); −0.22 *11* (1980Gi07). $\gamma(\theta)$: A_2=+0.64 *3*, A_4=+0.03 *4*. (1143γ)[773γ](668γ)(θ): A_2=−0.24 *12*, A_4=−0.16 *18*. (1143γ)(773γ)(θ): A_2=−0.21 *8*, A_4=+0.04 *10*. Additional information 14.
1147.8 *5*	0.27 *5*	2588.69	(4$^+$)	1440.323	4$^+$				
1172.9 *2*	1.10 *7*	2613.44	5$^+$	1440.323	4$^+$	M1+E2	−0.57 *2*	0.00143	α(K)=0.00123; α(L)=0.00015 α(K)exp=0.0012 *4* δ: others: −0.6 *4* or −2.0 *+9−60* (1983So04); −0.53 *+22−11* (1980Gi07); −0.40 *15* (1971Kr16). $\gamma(\theta)$: A_2=+1.025 *12*, A_4=+0.16 *6*. (1173γ)[773γ](668γ)(θ): A_2=−0.48 *14*, A_4=+0.16 *28*. (1173γ)(773γ)(θ): A_2=−0.42 *11*, A_4=−0.16 *14*. Additional information 18.
[x]1206.7[&@] *6*	0.017[&]								I_γ: 0.12 (1978Ne08).
[x]1212.3[#] *4*	0.012 *3*								
1242.6[&h] *7*	0.012[&]	3353.4	(4$^+$,5)	2110.26	4$^+$				I_γ: ≤0.009 (1978Ne08).
1254.1 *4*	0.060 *7*	3058.14	(3$^+$)	1803.715	3$^+$	(M1+E2)	+1.71 *9*	0.00109	α(K)=0.00093; α(L)=0.00012 $\gamma(\theta)$: A_2=−0.319 *23*, A_4=−0.26 *13*.
1263.6 *5*	0.027 *6*	3226.72	(3,4,5)	1962.98	4$^+$				
1272.8 *4*	0.17 *2*	3076.42	(3$^+$)	1803.715	3$^+$	(M1+E2)	+1.89 *13*	0.00105	α(K)=0.00090; α(L)=0.00011 $\gamma(\theta)$: A_2=−0.28 *3*, A_4=−0.42 *15*.
1290.8 *2*	1.14 *5*	2588.69	(4$^+$)	1297.916	2$^+$	(E2)		0.00096	α(K)=0.00082; α(L)=0.00010 Additional information 15. $\gamma(\theta)$: A_2=−0.455 *12*, A_4=−0.31 *9*. (1291γ)[630γ](668γ)(θ): A_2=+0.09 *11*, A_4=−0.12 *12*. (1291γ)(630γ)(θ): A_2=+0.17 *13*, A_4=+0.10 *16*.
1295.1 *2*	1.90 *7*	1962.98	4$^+$	667.7158	2$^+$	(E2)		0.00095	α(K)=0.00081; α(L)=0.00010

$^{132}_{54}Xe_{78}$-8

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

$\gamma(^{132}Xe)$ (continued)

E_γ[†]	I_γ[†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[c]	α[e]	Comments
									$\gamma(\theta)$: A_2=−0.437 *8*, A_4=−0.31 *5*. (1295γ)(668γ)(θ): A_2=+0.12 *9*, A_4=+0.26 *14*. Additional information 9.
1297.91[‡] *2*	0.90 *7*	1297.916	2^+	0.0	0^+				Additional information 3.
1314.0 *5*	0.060 *9*	2754.44	(4^+)	1440.323	4^+				
1317.918[‡] *6*	0.120 *15*	1985.641	2^+	667.7158	2^+	(M1+E2)	−0.16 *6*		α(K)=0.00100; α(L)=0.00012 δ: +3.7 *+10−6* is inconsistent with that from $\gamma\gamma(\theta)$ In (n,γ). $\gamma(\theta)$: A_2=−0.22 *7*, A_4=−0.2 *7*.
[x]1360.0 *5*	0.006 *2*								
1372.07 *13*	2.5 *1*	2669.99	3^+	1297.916	2^+	M1+E2	−0.13 *1*	0.00107	α(K)=0.00092; α(L)=0.00011 α(K)exp=0.0010 *2* Additional information 19. $\gamma(\theta)$: A_2=+0.583 *6*, A_4=+0.009 *25*. (1372γ)[630γ](668γ)(θ): A_2=−0.07 *5*, A_4=+0.01 *7* (1971Kr16).
1390.7[@h] *7*	0.015 *10*	3353.4	$(4^+,5)$	1962.98	4^+				
1398.57 *10*	7.1 *2*	2838.85	5^+	1440.323	4^+	M1+E2	+0.07 *1*	0.00103	α(K)=0.00088; α(L)=0.00011 α(K)exp=0.00095 *10* δ: others: +0.04 *2* (1983So04); +0.08 *3* (1980Gi07); +0.07 *2* (1971Kr16). $\gamma(\theta)$: A_2=+0.162 *12*, A_4=0.00 *6*. (1399γ)[773γ](668γ)(θ): A_2=−0.06 *4*, A_4=+0.04 *6*. (1399γ)(773γ)(θ): A_2=−0.009 *23*, A_4=−0.01 *3*. Additional information 21.
1410.6 *3*	0.044 *7*	3213.95	$(3,4^+)$	1803.715	3^+				
1442.56 *10*	1.42 *5*	2110.26	4^+	667.7158	2^+	E2		0.00076	α(K)=0.00066 α(K)exp=0.0014 *8* Additional information 11. $\gamma(\theta)$: A_2=−0.455 *10*, A_4=−0.32 *7*. (1443γ)(668γ)(θ): A_2=+0.16 *11*, A_4=−0.28 *16*.
1450.0 *5*	0.008 *2*	2890.69	(4^+)	1440.323	4^+				
1456.5 *2*	0.050 *7*	2754.44	(4^+)	1297.916	2^+				
1476.7 *2*	0.132 *9*	2916.85	$(2^+,3,4^+)$	1440.323	4^+				
1519.6 *2*	0.080 *5*	2187.27	2^+	667.7158	2^+	(M1+E2)			δ: +2.4 *5* or −0.03 *7*. $\gamma(\theta)$: A_2=−0.39 *9*, A_4=−0.2 *8*.
[x]1531.9 *5*	0.006 *2*								
1542.3 *6*	0.016 *2*	2840.10	$4^{(+)}$	1297.916	2^+				
[x]1559.0 *4*	0.009 *2*								
1592.9 *3*	0.048 *4*	2890.69	(4^+)	1297.916	2^+				
1617.9 *2*	0.010 *5*	3058.14	(3^+)	1440.323	4^+				
1618.9 *3*	0.007 *5*	2916.85	$(2^+,3,4^+)$	1297.916	2^+				
1636.5[f] *6*	0.012[f] *4*	2935.2		1297.916	2^+				

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

$\gamma(^{132}Xe)$ (continued)

E_γ [†]	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[c]	Comments
1636.5[f] 6	0.012[f] 4	3076.42	(3$^+$)	1440.323	4$^+$			
[x]1639.1 5	0.008 2							
1644.0 6	0.013 4	3084.4	(3,4$^+$)	1440.323	4$^+$			
1661.4 5	0.016 3	2958.74	(2$^+$,3,4$^+$)	1297.916	2$^+$			
1671.3 4	0.022 4	3112.08	(3,4$^+$)	1440.323	4$^+$			
[x]1679.3 6	0.006 2							
1715.4 4	0.056 4	3155.6	(3$^+$,4$^+$)	1440.323	4$^+$			
[x]1720.6 5	0.055 4							
1727.2 4	0.068 6	2394.99	4$^+$	667.7158	2$^+$	(E2)		$\gamma(\theta)$: A_2=−0.47 *8*, A_4=−0.3 *5*.
1752.3 7	0.025 8	3192.78	(3$^+$)	1440.323	4$^+$			
1757.4 2	0.30 3	2424.78	3$^+$	667.7158	2$^+$	(M1+E2)	+0.10 *1*	$\gamma(\theta)$: A_2=+0.153 *24*, A_4=+0.03 *12*.
1760.4 6	0.06 2	3058.14	(3$^+$)	1297.916	2$^+$			
[x]1768.5 8	0.025 8							
1778.5 4	0.080 8	3076.42	(3$^+$)	1297.916	2$^+$			
1786.5[f] 6	0.011[f] 2	3084.4	(3,4$^+$)	1297.916	2$^+$			
1786.5[f] 6	0.011[f] 2	3226.72	(3,4,5)	1440.323	4$^+$			
1814.0 5	0.016 4	3112.08	(3,4$^+$)	1297.916	2$^+$			
[x]1830.1 5	0.028 5							
1879.2 5	0.014 3	3320.4	(3,4$^+$)	1440.323	4$^+$			
1913.7 5	0.03 1	3353.4	(4$^+$,5)	1440.323	4$^+$			
1921.08 12	1.25 6	2588.69	(4$^+$)	667.7158	2$^+$	(E2)		$\gamma(\theta)$: A_2=−0.453 *4*, A_4=−0.33 *3*.
[x]1925.7[#] 10	0.002 1							
[x]1939.5 7	0.005 2							
1985.625[‡] 6	0.012 2	1985.641	2$^+$	0.0	0$^+$			
2002.2 5	1.15 8	2669.99	3$^+$	667.7158	2$^+$	(M1+E2)	−0.73 *11*	$\gamma(\theta)$: A_2=+1.086 *7*, A_4=+0.19 *3*.
2086.82 15	0.26 2	2754.44	(4$^+$)	667.7158	2$^+$	(E2)		$\gamma(\theta)$: A_2=−0.445 *20*, A_4=−0.31 *12*.
2172.68 15	0.21 2	2840.10	4$^{(+)}$	667.7158	2$^+$	(E2)		$\gamma(\theta)$: A_2=−0.46 *3*, A_4=−0.28 *17*.
2187.0 6	0.007 3	2187.27	2$^+$	0.0	0$^+$			
[x]2204.2[#a] 6	0.003[a] 2							
2223.17 15	0.12 2	2890.69	(4$^+$)	667.7158	2$^+$	(E2)		$\gamma(\theta)$: A_2=−0.46 *4*, A_4=−0.29 *21*.
2249.1 3	0.034 2	2916.85	(2$^+$,3,4$^+$)	667.7158	2$^+$			
2290.6 6	0.0036 8	2958.74	(2$^+$,3,4$^+$)	667.7158	2$^+$			
[x]2304.4[&] 8	≈0.015[&]							I_γ: 0.0018 *6* (1978Ne08).
2390.48 15	0.19 2	3058.14	(3$^+$)	667.7158	2$^+$			
2408.6 4	0.0095 8	3076.42	(3$^+$)	667.7158	2$^+$			
2417.1[@h] 4	0.0014 6	3084.4	(3,4$^+$)	667.7158	2$^+$			E_γ,I_γ: from 1978Ne08. Iγ=0.01 (1971We15).
2444.0 6	0.0057 8	3112.08	(3,4$^+$)	667.7158	2$^+$			
2454.8 4	0.0021 5	3121.8	(4$^+$)	667.7158	2$^+$			
2487.8 6	0.0008 2	3155.6	(3$^+$,4$^+$)	667.7158	2$^+$			
2525.14 15	0.040 4	3192.78	(3$^+$)	667.7158	2$^+$	(M1+E2)	+0.46 *5*	$\gamma(\theta)$: A_2=−0.45 *6*, A_4=+1.1 *3*.
2546.5 6	0.0016 5	3213.95	(3,4$^+$)	667.7158	2$^+$			

$^{132}_{54}Xe_{78}$-10

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07 (continued)

$\gamma(^{132}Xe)$ (continued)

E_γ †	I_γ †d	E_i(level)	J_i^π	E_f	J_f^π	Comments
2569.8 *4*	0.005 *1*	3237.2	(3,4$^+$)	667.7158	2$^+$	
2593.8 *8*	0.0012 *3*	3260.9	(3,4$^+$)	667.7158	2$^+$	
x2603.2 *5*	0.0015 *3*					
x2607.2 *6*	0.0010 *3*					
x2614.5#a *4*	0.0036a *12*					
2653.8 *6*	0.0010 *3*	3320.4	(3,4$^+$)	667.7158	2$^+$	
x2690.8 *7*	0.0010 *3*					
2717.5 *6*	0.0035 *5*	3385.2	(3,4$^+$)	667.7158	2$^+$	
x2757.8 *7*	0.0009 *4*					
x2766.1& *8*	0.0004&					I_γ: <0.0004 (1978Ne08).

† Adopted values from 1978Ne08, unless otherwise stated. The adopted values in 1978Ne08 are from a weighted average of results of their own measurements, from 1971We15 and averaged results in 1970Ca04. The values in 1970Ca04 were an average of their results and from 1969He18, 1967He03, 1967Yt01 and 1966Ar15.

‡ From ^{132}Cs ε decay. Corresponding values from ^{132}I decay agree but are less precise.

Uncertain γ ray.

@ Since intensities reported by different groups differ significantly, this γ May Be suspect.

& From 1971We15, considered As uncertain.

a May Be from background.

b From α(K)exp. The assignments given in parentheses are implied from $\Delta(J^\pi)$ and $\gamma\gamma(\theta)$ and/or $\gamma(\theta,T)$ data.

c From $\gamma(\theta,T)$ data of 1980Gi07, unless otherwise stated.

d For absolute intensity per 100 decays, multiply by 0.987.

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

f Multiply placed with undivided intensity.

g Multiply placed with intensity suitably divided.

h Placement of transition in the level scheme is uncertain.

x γ ray not placed in level scheme.

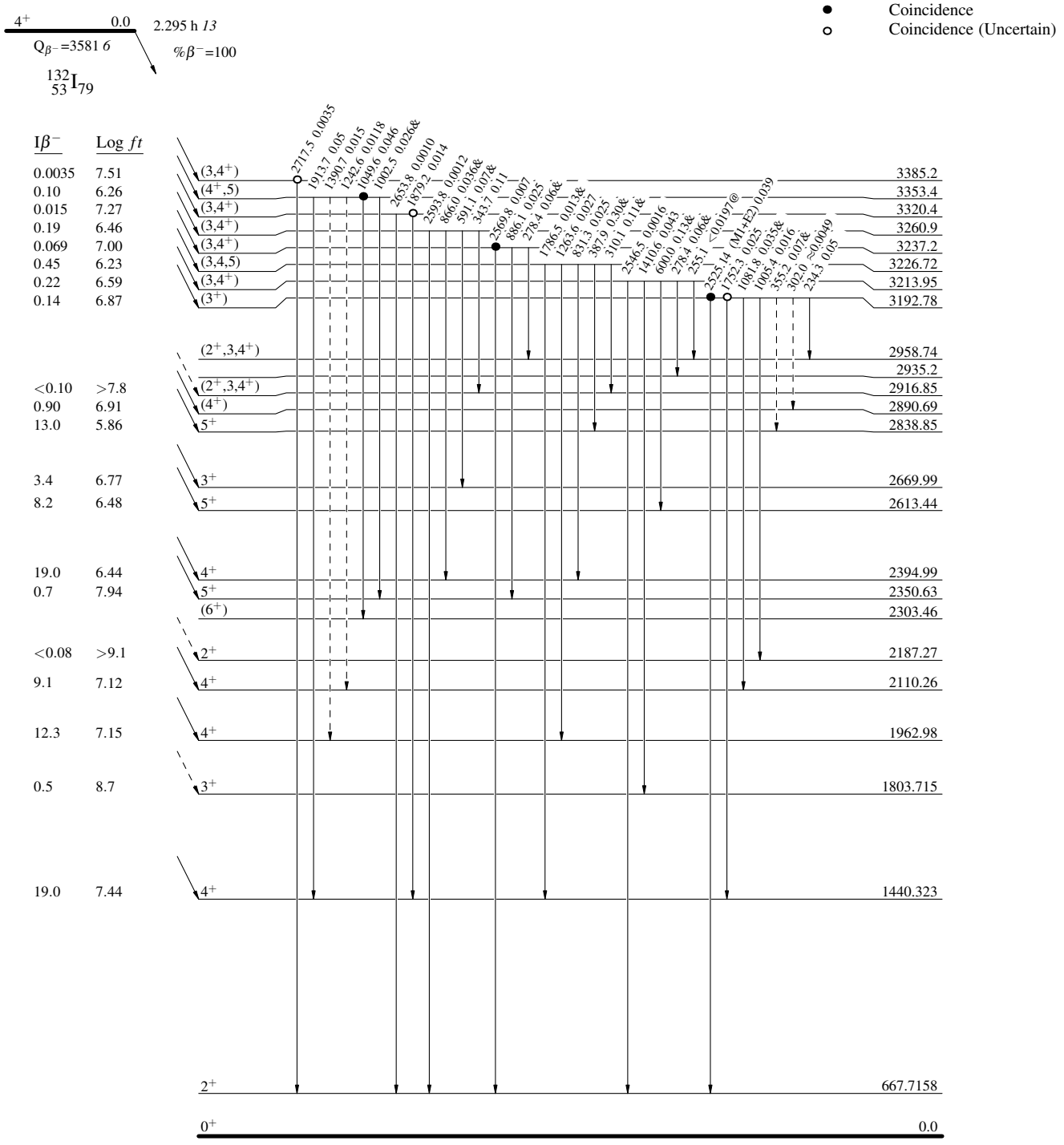
$^{132}_{54}Xe_{78}$-11

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

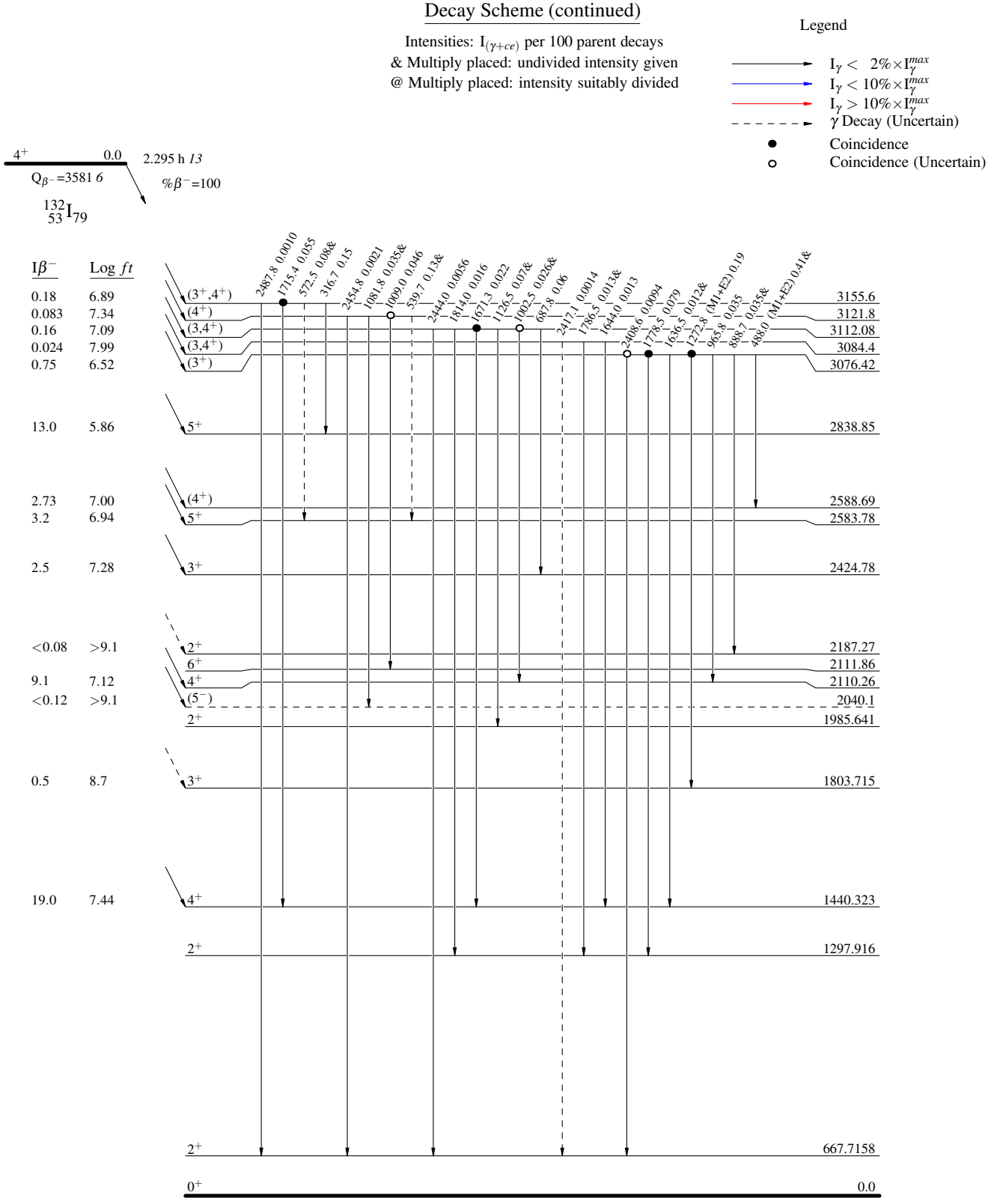
Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)
Coincidence
Coincidence (Uncertain)



^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
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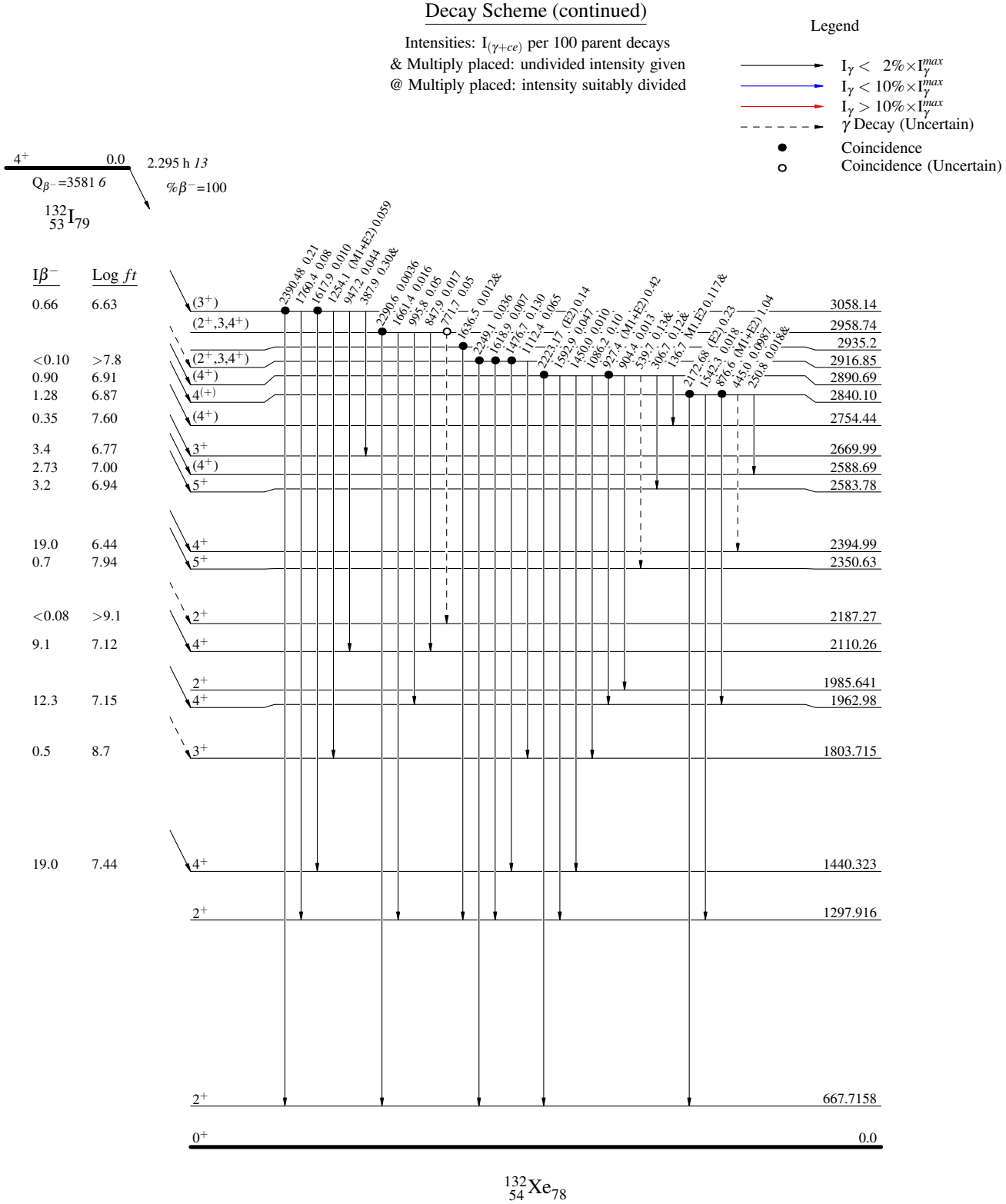

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
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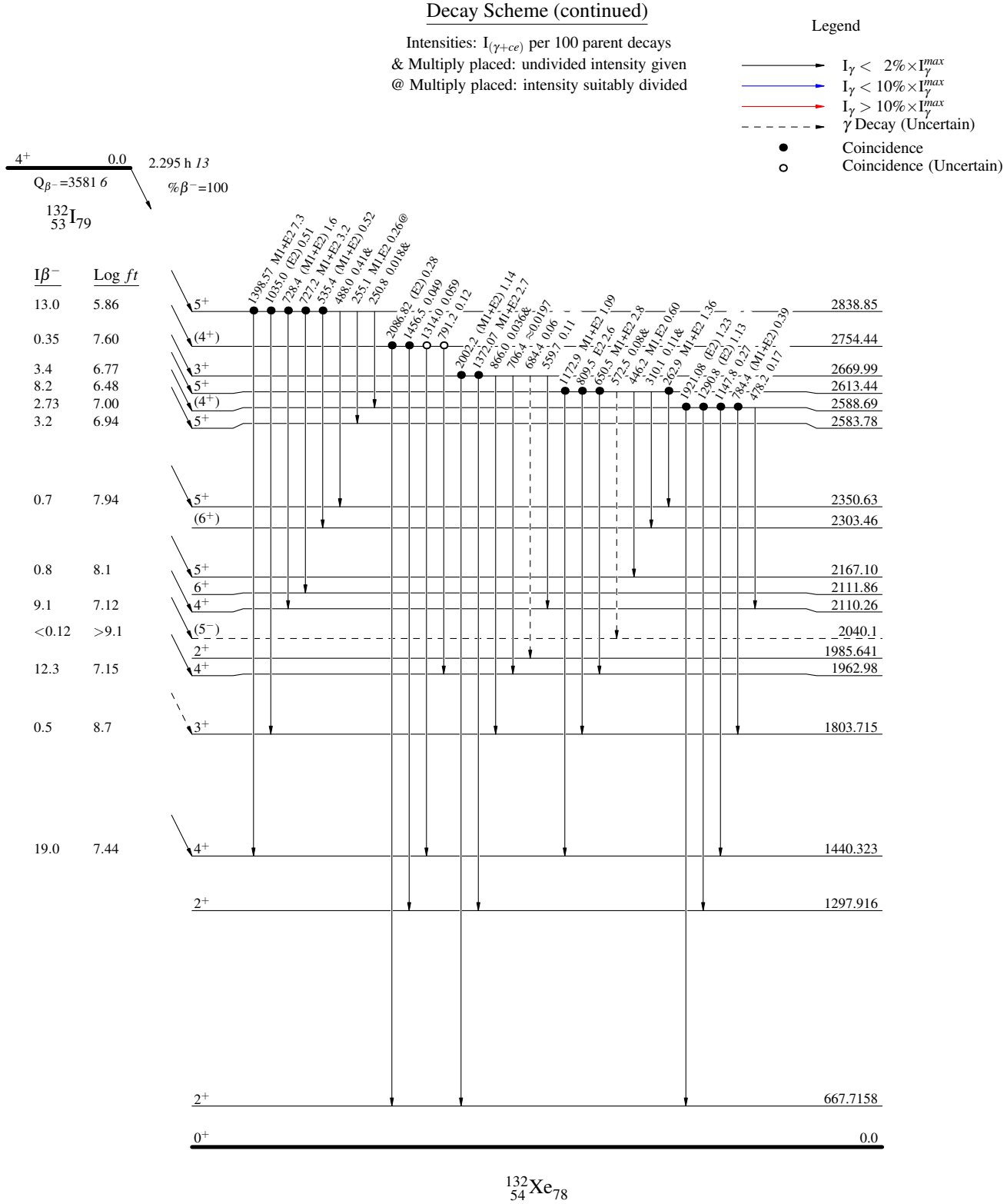

^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
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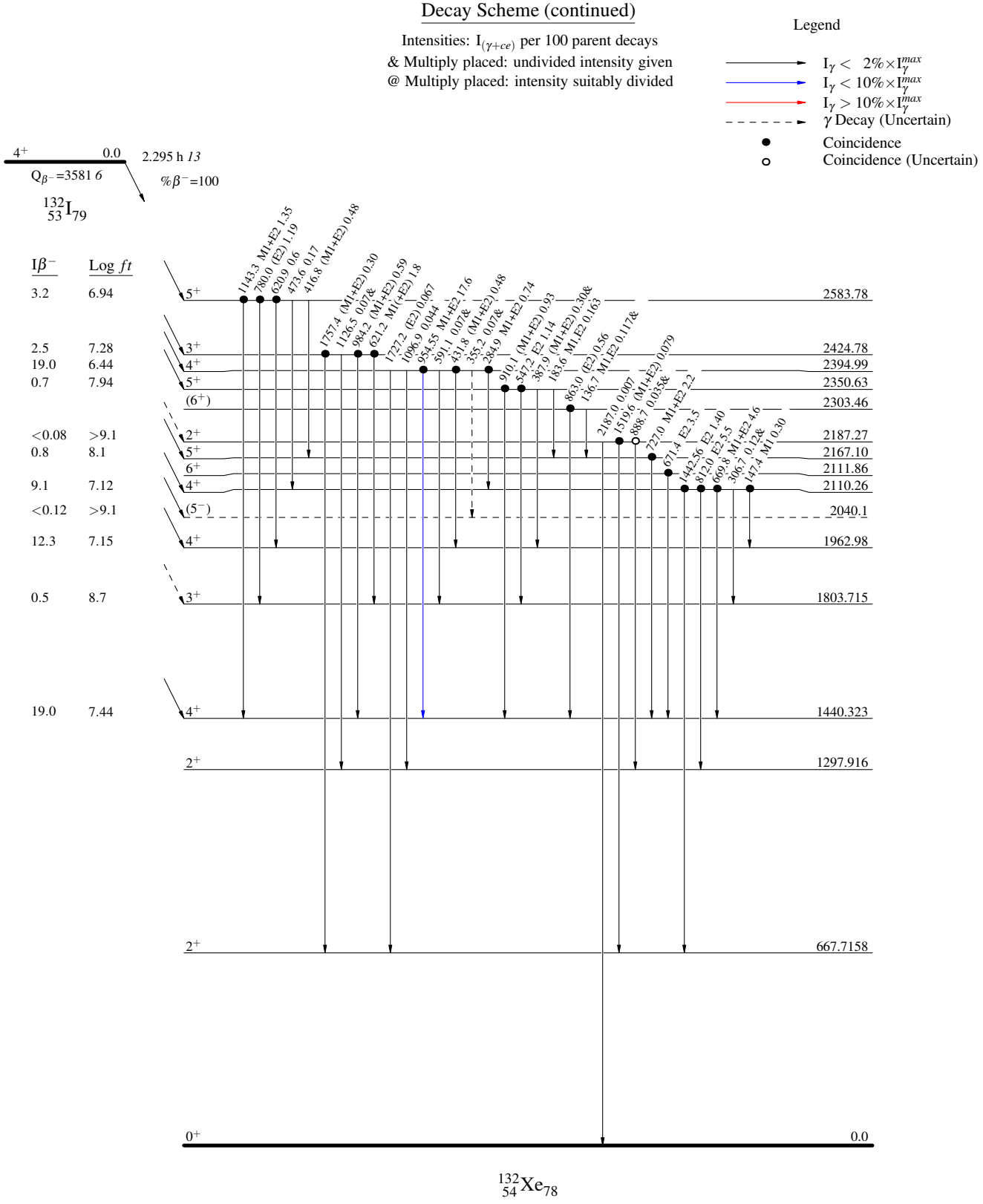
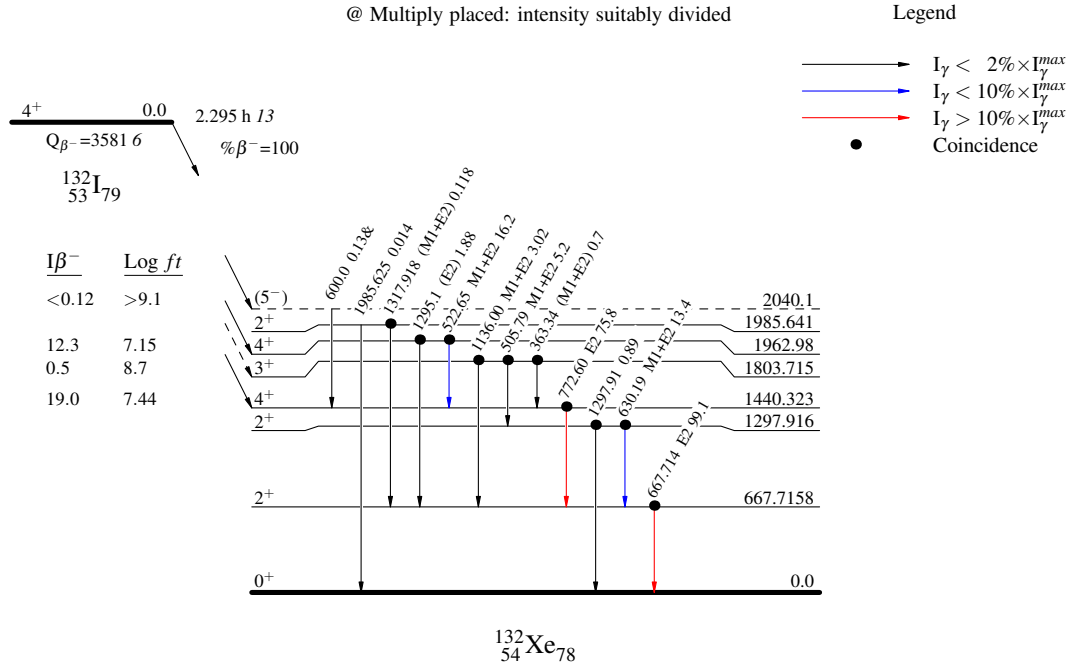


^{132}I β^- decay (2.295 h) 1978Ne08,1973Si29,1980Gi07

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{132}_{54}Xe_{78}$