^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Jun Chen and Ameenah R. Farhan	NDS 194,3 (2024)	8-Jan-2024

Parent: ^{76}Br: E=0.0; $J^\pi=1^-$; $T_{1/2}$=16.14 h *20*; Q($\varepsilon+\beta^+$)=4963 *9*; %$\varepsilon+\beta^+$ decay=100

^{76}Br-J^π,$T_{1/2}$: From the Adopted Levels of ^{76}Br.

^{76}Br-Q($\varepsilon+\beta^+$): From 2021Wa16.

2018MoZZ: ^{76}Br source obtained from CARIBU facility at ANL. Measured Eγ, Iγ, $\gamma\gamma$-coin and $\gamma\gamma(\theta)$ using Gammasphere array of HPGe detectors. Deduced an extensive decay scheme, including several new levels, and with a total of 448 γ rays, all placed in the decay scheme, dwarfing the earlier, fairly detailed, known decay schemes, based on the placement of about 100 γ rays.

Previous studies:

1974Na17: ^{76}Br produced in bombardment of As with 40-MeV α particles, followed by chemical separation. Measured Eγ, Iγ, $\gamma\gamma$-coin using Ge detector and annular NaI(Tl) crystal for Compton suppression. Main impurity was from ^{77}Br decay. A total of 103 γ rays were reported, with six of these unplaced.

1974HeYW (also 1969Cl11): measured energies and intensities of 59 γ rays. No decay scheme was reported.

1974MuZB: measured Eγ, Iγ.

1969Dz01 (also 1970Dz09, 1971Dz08, 1975VyZX from the same group): measured Eγ, Iγ, $\gamma\gamma$-coin using Ge-Ge system, $\beta\gamma$-coin. A total of 125 γ rays were reported by 1969Dz01. In 1975VyZX, ten additional γ rays were reported.

Others:

2004Sh17 (also 2004Li62, 2005Sh59, 2007Ch89, 2013Sh07 containing results of the same experimental data and some of the spectroscopic figures as in 2004Sh17): measured Eγ, Iγ, $\gamma\gamma$-coin with Ge detectors. For singles data, a Compton-suppressed system with six NaI(Tl) detectors was used. A total of 139 γ rays were reported, with the claim of 37 new γ rays and 15 new levels; 18 γ rays were unplaced. There was large contamination from decays of ^{77}Br and ^{82}Br isotopes. Some internal inconsistencies exist in the data presented in this paper, for example a γ ray at 575.0 keV with Iγ=3.6 is assigned as a new transition from a newly populated level. But a strong γ ray of 574.6 keV is known to belong to ^{77}Br decay, implying that only a weak component of this line may belong to ^{76}Br decay. Some of the other new γ rays claimed were already reported in previous publications. The Iγ values for some of the γ rays are listed as exactly the same as in either previous studies or NDS evaluations, which casts some doubt about the independent nature of results presented in their papers.

2007Qa02: measurement of absolute intensity of positrons for applications in PET tomography.

1971La01: measured Eγ, Iγ, $\beta\gamma$-coin.

1971FuZP (thesis): measured Eγ, Iγ.

1962Ku06, 1960Bu22, 1959Gi46, 1955Th01, 1952Fu04: γ-ray studies.

γ and ce for E0 transitions: 1986Gi12, 1983Pa10.

β and $\beta\gamma$-coin studies: 1963Sa26, 1962Ku06, 1959Gi46.

$\gamma\gamma(\theta)$: 1982MuZV. Ge(Li)-NaI(Tl) system.

$\gamma(\theta$,H,temp): 1992Gr20 (also 1988Wh03,1988Gr26). $\gamma(\theta)$ of 1130γ and 2951γ used to deduce μ for ^{76}Br g.s.

Hyperfine fields in iron through NMR studies: 1993Oh09.

The ce data are from 1970Dz09 obtained with a magnetic spectrometer.

First detailed decay scheme was published by 1969Dz01. The level scheme presented here is from 2018MoZZ, which is based on previous level scheme by 1969Dz01 and 1974Na17, but greatly enhanced, with about 350 additional transitions.

^{76}Se Levels

Following levels proposed in different studies have been omitted here due to sufficient confirmation, the gamma rays proposed to emanate from these levels have either not been seen in 1974Na17 and 2018MoZZ or have been reassigned:

1969Dz01: 4065, 4163, 4440.

1971La01: 1883, 1942, 2048, 2890, 2990, 3910, 4140, 4420, 4570.

2004Sh17: 3312, 3527, 4438.

Continued on next page (footnotes at end of table)

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

^{76}Se Levels (continued)

E(level)†	Jπ‡	Comments
0.0	0^+	
559.12 *4*	2^+	
1122.26 *6*	0^+	
1216.32 *4*	2^+	
1330.95 *5*	4^+	
1689.22 *5*	3^+	
1787.83 *4*	2^+	
1791.66 *5*	0^+	Jπ: γγ(θ) (2018MoZZ).
2026.53 *7*	4^+	
2127.56 *4*	$(2)^+$	
2170.99 *5*	(0^+)	Jπ: γγ(θ) (2018MoZZ).
2429.49 *5*	3^-	
2515.06 *5*	2^+	
2558.80 *9*		
2604.46 *8*	$1^+,2^+$	
2655.76 *4*	1	
2670.31 *4*	2^-	
2812.46 *5*	(3^+)	
2817.59 *7*	(2^+)	
2829.68 *19*	(1,2)	
2859.95 *7*	4^-	
2869.65 *6*	$(1^+,2^+)$	
2950.495 *35*	1^+	
2975.25 *6*	$(2^+,3,4^+)$	
3069.94 *5*	2^+	
3105.86 *5*	(3^-)	
3160.40 *5*	(2^+)	
3192.14 *7*	$(3)^+$	
3220.01 *7*	$(2^+,3^+)$	
3260.16 *9*		
3267.91 *6*	$(2^+,3,4^+)$	
3269.16 *5*	$(1^-,2)$	
3295.70 *11*	$(1^+,2^+)$	
3297.05 *15*	$(1^+,2^+)$	
3351.80 *4*	$(2)^+$	
3377.2 *4*		
3459.46 *6*	(2^+)	
3466.65 *11*		
3553.17 *8*	(1,2)	
3556.48 *4*	(2^-)	
3604.46 *4*	1^+	
3637.19 *6*	(2^+)	
3652.19 *10*	$(1^+,2^+,3^+)$	
3716.79 *7*	(2)	
3880.84 *19*		
3915.77 *6*	(2^-)	
3930.29 *7*	$(1,2^+)$	
3970.76 *5*	(2^+)	
4046.16 *13*	1^+	
4084.00 *7*	$(1^-,2)$	
4086.80 *20*		
4151.72 *7*	(2)	
4174.65 *7*	(1,2)	
4199.52 *6*	$(1^-,2)$	
4205.67 *6*	$(1^-,2)$	
4249.38 *28*	(1,2)	

Continued on next page (footnotes at end of table)

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

^{76}Se Levels (continued)

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
4257.84 *18*	(1,2)	4438.03 *6*	$(1^+,2^+)$	4535.27 *8*		4723.4 *4*	
4299.26 *9*		4452.11 *11*	$(1^+,2^+)$	4576.23 *19*	(1,2)	4731.9 *4*	
4328.67 *8*	(1,2)	4473.69 *10*	(2^+)	4581.39 *11*		4795.14 *13*	(1,2)
4347.59 *33*	(1,2)	4489.58 *7*	(1,2)	4603.78 *11*	$(1,2)^+$		
4366.85 *11*		4523.77 *11*		4687.52 *11*			
4412.01 *5*	(2)	4533.27 *12*		4721.6 *4*			

† From a least-squares fit to Eγ data.
‡ From Adopted Levels.

ε,β^+ radiations

av Eβ: Additional information 1.

E(decay)	E(level)	Iβ+ ‡	Iε‡	Log *ft*	I(ε+β+)†‡	Comments
(168 *9*)	4795.14		0.0304 *21*	6.49 *9*	0.0304 *21*	εK=0.8691 *12*; εL=0.1095 *9*; εM+=0.02147 *26*
(231 *9*)	4731.9		0.0105 *7*	7.24 *7*	0.0105 *7*	εK=0.8734 *7*; εL=0.1059 *5*; εM+=0.02067 *17*
(240 *9*)	4723.4		0.0100 *7*	7.30 *7*	0.0100 *7*	εK=0.8738 *7*; εL=0.1056 *5*; εM+=0.02060 *17*
(241 *9*)	4721.6		0.0067 *4*	7.48 *7*	0.0067 *4*	εK=0.8739 *7*; εL=0.1055 *5*; εM+=0.02058 *17*
(276 *9*)	4687.52		0.010 *1*	7.42 *8*	0.010 *1*	εK=0.8752 *6*; εL=0.1044 *4*; εM+=0.02035 *16*
(359 *9*)	4603.78		0.0562 *24*	6.91 *5*	0.0562 *24*	εK=0.8773 *4*; εL=0.10271 *29*; εM+=0.01996 *13*
(382 *9*)	4581.39		0.130 *9*	6.60 *6*	0.130 *9*	εK=0.8777 *4*; εL=0.10238 *27*; εM+=0.01989 *12*
(387 *9*)	4576.23		0.0099 *12*	7.73 *+9−8*	0.0099 *12*	εK=0.8778 *4*; εL=0.10231 *27*; εM+=0.01986 *12*
(428 *9*)	4535.27		0.144 *6*	6.66 *5*	0.144 *6*	εK=0.8784 *4*; εL=0.10181 *24*; εM+=0.01976 *12*
(430 *9*)	4533.27		0.0300 *23*	7.34 *6*	0.0300 *23*	εK=0.8785 *4*; εL=0.10179 *24*; εM+=0.01976 *12*
(439 *9*)	4523.77		0.0279 *24*	7.40 *+7−6*	0.0279 *24*	εK=0.8786 *4*; εL=0.10169 *24*; εM+=0.01974 *12*
(473 *9*)	4489.58		0.29 *2*	6.45 *+6−5*	0.29 *2*	εK=0.8790 *4*; εL=0.10136 *22*; εM+=0.01966 *11*
(489 *9*)	4473.69		0.0298 *13*	7.46 *4*	0.0298 *13*	εK=0.8791 *4*; εL=0.10123 *22*; εM+=0.01963 *11*
(511 *9*)	4452.11		0.0314 *12*	7.48 *4*	0.0314 *12*	εK=0.8794 *4*; εL=0.10106 *21*; εM+=0.01959 *11*
(525 *9*)	4438.03		0.231 *9*	6.64 *4*	0.231 *9*	εK=0.8795 *3*; εL=0.10095 *21*; εM+=0.01956 *11*
(551 *9*)	4412.01		0.513 *20*	6.33 *4*	0.513 *20*	εK=0.87969 *34*; εL=0.10078 *20*; εM+=0.01953 *11*
(596 *9*)	4366.85		0.0258 *15*	7.70 *5*	0.0258 *15*	εK=0.88002 *33*; εL=0.10051 *19*; εM+=0.01947 *11*
(615 *9*)	4347.59		0.0069 *3*	8.30 *4*	0.0069 *3*	εK=0.88015 *32*; εL=0.10041 *19*; εM+=0.01945 *10*
(634 *9*)	4328.67		0.162 *8*	6.96 *4*	0.162 *8*	εK=0.88026 *32*; εL=0.10031 *18*; εM+=0.01942 *10*
(664 *9*)	4299.26		0.0437 *23*	7.57 *4*	0.0437 *23*	εK=0.88043 *31*; εL=0.10018 *18*; εM+=0.01939 *10*
(705 *9*)	4257.84		0.0147 *8*	8.09 *4*	0.0147 *8*	εK=0.88064 *31*; εL=0.10000 *18*; εM+=0.01936 *10*
(714 *9*)	4249.38		0.0110 *13*	8.23 *7*	0.0110 *13*	εK=0.88068 *31*; εL=0.09997 *17*; εM+=0.01934 *10*
(757 *9*)	4205.67		0.255 *17*	6.92 *5*	0.255 *17*	εK=0.88087 *30*; εL=0.09982 *17*; εM+=0.01931 *10*
(764 *9*)	4199.52		0.350 *12*	6.787 *34*	0.350 *12*	εK=0.88089 *30*; εL=0.09980 *17*; εM+=0.01931 *10*
(788 *9*)	4174.65		0.469 *22*	6.69 *4*	0.469 *22*	εK=0.88099 *30*; εL=0.09972 *17*; εM+=0.0193 *1*
(811 *9*)	4151.72		0.165 *8*	7.17 *4*	0.165 *8*	εK=0.88108 *30*; εL=0.09965 *17*; εM+=0.01928 *10*
(876 *9*)	4086.80		0.0236 *16*	8.08 *5*	0.0236 *16*	εK=0.88129 *29*; εL=0.09947 *16*; εM+=0.01924 *10*
(879 *9*)	4084.00		0.390 *18*	6.86 *4*	0.390 *18*	εK=0.88130 *29*; εL=0.09946 *16*; εM+=0.01924 *10*
(917 *9*)	4046.16		0.0216 *8*	8.158 *+34−33*	0.0216 *8*	εK=0.88141 *29*; εL=0.09937 *16*; εM+=0.01922 *10*
(992 *9*)	3970.76		1.32 *4*	6.441 *30*	1.32 *4*	εK=0.88160 *28*; εL=0.09922 *16*; εM+=0.01918 *10*
(1033 *9*)	3930.29		0.351 *12*	7.04 *2*	0.351 *12*	εK=0.8786 *88*; εL=0.1015 *10*; εM+=0.01989 *20*
(1047 *9*)	3915.77	2.01×10^{-11}	0.382 *17*	8.2 *+9−13*	0.382 *17*	av Eβ=15 *5*; εK=0.8748 *4*; εL=0.10494 *23*; εM+=0.02029 *11*

Continued on next page (footnotes at end of table)

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	Iβ^+ ‡	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)†‡	Comments
(1082 *9*)	3880.84	2.483×10^{-7}	0.028 *7*	8.19 *+14−11*	0.028 *7*	av Eβ=30 *4*; εK=0.88179 *28*; εL=0.09906 *15*; εM+=0.01915 *10*
(1246 *9*)	3716.79	7.4×10^{-4} *14*	0.239 *9*	7.383 *+32−31*	0.240 *9*	av Eβ=101 *4*; εK=0.8794 *6*; εL=0.09852 *16*; εM+=0.01903 *10*
(1311 *9*)	3652.19	0.00130 *19*	0.153 *8*	7.62 *4*	0.154 *8*	av Eβ=129 *4*; εK=0.8747 *11*; εL=0.09792 *19*; εM+=0.01892 *10*
(1326 *9*)	3637.19	0.0053 *7*	0.509 *19*	7.110 *+32−31*	0.514 *19*	av Eβ=135 *4*; εK=0.8731 *12*; εL=0.09772 *20*; εM+=0.01888 *10*
(1359 *9*)	3604.46	0.038 *5*	2.49 *8*	6.442 *29*	2.53 *8*	av Eβ=149 *4*; εK=0.8689 *16*; εL=0.09721 *23*; εM+=0.01878 *10*
(1407 *9*)	3556.48	0.072 *8*	2.83 *9*	6.417 *+29−28*	2.90 *9*	av Eβ=169 *4*; εK=0.8603 *22*; εL=0.09620 *28*; εM+=0.01858 *10*
(1410 *9*)	3553.17	0.0031 *4*	0.119 *7*	7.80 *4*	0.122 *7*	av Eβ=171 *4*; εK=0.8596 *22*; εL=0.09612 *29*; εM+=0.01857 *10*
(1496 *9*)	3466.65	8×10^{-4} *7*	0.014 *13*	8.8 *+9−3*	0.015 *13*	av Eβ=207 *4*; εK=0.836 *4*; εL=0.0934 *4*; εM+=0.01803 *11*
(1504 *9*)	3459.46	0.138 *12*	2.34 *11*	6.56 *+4−3*	2.48 *11*	av Eβ=210 *4*; εK=0.833 *4*; εL=0.0931 *4*; εM+=0.01797 *11*
(1586 *9*)	3377.2	3.4×10^{-4} *12*	0.0033 *13*	9.46 *+21−15*	0.0036 *13*	av Eβ=245 *4*; εK=0.799 *5*; εL=0.0892 *6*; εM+=0.01723 *13*
(1611 *9*)	3351.80	1.08 *7*	8.81 *32*	6.044 *30*	9.89 *33*	av Eβ=256 *4*; εK=0.787 *6*; εL=0.0878 *6*; εM+=0.01695 *13*
(1666 *9*)	3297.05	0.0019 *5*	0.0116 *31*	8.96 *+13−11*	0.0135 *31*	av Eβ=279 *4*; εK=0.756 *6*; εL=0.0844 *7*; εM+=0.01629 *14*
(1667 *9*)	3295.70	0.00402 *27*	0.0239 *12*	8.64 *+4−3*	0.0279 *12*	av Eβ=279 *4*; εK=0.755 *6*; εL=0.0843 *7*; εM+=0.01627 *14*
(1694 *9*)	3269.16	0.135 *10*	0.70 *5*	7.19 *4*	0.83 *5*	av Eβ=291 *4*; εK=0.739 *7*; εL=0.0825 *8*; εM+=0.01593 *15*
(1695 *9*)	3267.91	0.0033 *10*	0.017 *6*	8.81 *+17−13*	0.020 *6*	av Eβ=291 *4*; εK=0.739 *7*; εL=0.0824 *8*; εM+=0.01590 *15*
(1703 *9*)	3260.16	0.079 *5*	0.387 *18*	7.45 *+4−3*	0.466 *19*	av Eβ=295 *4*; εK=0.734 *7*; εL=0.0818 *8*; εM+=0.01580 *15*
(1771 *9*)	3192.14	0.0048 *16*	0.017 *7*	8.84 *+18−14*	0.022 *7*	av Eβ=324 *4*; εK=0.688 *8*; εL=0.0767 *9*; εM+=0.01482 *16*
(1803 *9*)	3160.40	1.67 *10*	5.12 *30*	6.38 *4*	6.79 *32*	av Eβ=338 *4*; εK=0.666 *8*; εL=0.0742 *9*; εM+=0.01433 *16*
(1857 *9*)	3105.86	0.0014 *4*	0.016 *5*	10.04 *+17−13*	0.017 *5*	av Eβ=387 *4*; εK=0.809 *3*; εL=0.0914 *4*; εM+=0.01766 *11*
(1893 *9*)	3069.94	7.1 *4*	15.2 *8*	5.952 *34*	22.3 *9*	av Eβ=377 *4*; εK=0.600 *8*; εL=0.0668 *9*; εM+=0.01290 *17*
(1988 *9*)	2975.25	0.0088 *32*	0.013 *7*	9.06 *+21−15*	0.022 *8*	av Eβ=418 *4*; εK=0.530 *8*; εL=0.0590 *9*; εM+=0.01138 *17*
(2013 *9*)	2950.495	6.01 *25*	8.3 *4*	6.269 *+32−31*	14.3 *5*	av Eβ=429 *4*; εK=0.512 *8*; εL=0.0570 *9*; εM+=0.01100 *17*
(2093 *9*)	2869.65	0.028 *4*	0.029 *7*	8.75 *+8−7*	0.057 *8*	av Eβ=464 *4*; εK=0.455 *8*; εL=0.0507 *9*; εM+=0.00978 *16*
(2133 *9*)	2829.68	0.0211 *26*	0.0199 *15*	8.94 *5*	0.041 *3*	av Eβ=482 *4*; εK=0.429 *8*; εL=0.0477 *9*; εM+=0.00921 *15*
(2145 *9*)	2817.59	0.026 *8*	0.024 *4*	8.87 *+10−9*	0.050 *9*	av Eβ=487 *4*; εK=0.421 *8*; εL=0.0468 *9*; εM+=0.00904 *15*
(2151 *9*)	2812.46	0.0079 *34*	0.027 *15*	10.05[1u] *+26−17*	0.035 *15*	av Eβ=517 *4*; εK=0.683 *6*; εL=0.0769 *7*; εM+=0.01487 *14*
(2293 *9*)	2670.31	0.65 *15*	0.39 *6*	7.71 *+9−8*	1.04 *16*	av Eβ=553 *4*; εK=0.335 *6*; εL=0.0372 *7*; εM+=0.00719 *13*
(2307# *9*)	2655.76					I($\varepsilon+\beta^+$): intensity balance gives −0.01 *9*, consistent with no ε feeding.

Continued on next page (footnotes at end of table)

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	Iβ^+ ‡	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)†‡	Comments
(2359 *9*)	2604.46	0.05 *4*	0.027 *14*	8.89 *+32−19*	0.08 *4*	av Eβ=582 *4*; εK=0.302 *6*; εL=0.0336 *7*; εM+=0.00648 *12*
(2404 *9*)	2558.80	0.235 *9*	0.110 *4*	8.306 *+29−28*	0.345 *10*	av Eβ=602 *4*; εK=0.281 *6*; εL=0.0312 *6*; εM+=0.00603 *11*
(2448 *9*)	2515.06	0.09 *4*	0.039 *12*	8.78 *+18−13*	0.13 *4*	av Eβ=622 *4*; εK=0.263 *5*; εL=0.0292 *6*; εM+=0.00563 *10*
(2534# *9*)	2429.49	0.08794	0.10 *19*	≥9.4	0.19 *19*	av Eβ=686 *4*; εK=0.474 *7*; εL=0.0531 *7*; εM+=0.01026 *13*
(2792 *9*)	2170.99	0.033 *14*	0.0071 *25*	9.63 *+20−14*	0.040 *14*	av Eβ=778 *4*; εK=0.1560 *31*; εL=0.01731 *34*; εM+=0.00334 *6*
(2937 *9*)	2026.53	0.035 *10*	0.042 *19*	11.93 *+16−12*	0.077 *21*	av Eβ=891 *4*; εK=0.478 *6*; εL=0.0540 *7*; εM+=0.01043 *12*
(3175 *9*)	1787.83	0.53 *13*	0.062 *14*	8.80 *+12−10*	0.59 *13*	av Eβ=953 *4*; εK=0.0927 *17*; εL=0.01028 *19*; εM+=0.00198 *3*
(3274# *9*)	1689.22					I($\varepsilon+\beta^+$): intensity balance gives −0.4 *5*, consistent with no ε feeding.
(3632 *9*)	1330.95	0.25 *4*	0.091 *11*	12.15 *7*	0.34 *4*	av Eβ=1206 *4*; εK=0.236 *4*; εL=0.0266 *4*; εM+=0.00513 *7*
(3747# *9*)	1216.32					I($\varepsilon+\beta^+$): intensity balance gives −1.0 *11*, consistent with no ε feeding.
(3841 *9*)	1122.26	2.20 *17*	0.114 *9*	8.70 *4*	2.31 *17*	av Eβ=1263 *4*; εK=0.0436 *7*; εL=0.00483 *8*; εM+=9.31×10^{-4} *14*
(4404 *9*)	559.12	21.5 *9*	0.647 *28*	8.071 *28*	22.1 *9*	av Eβ=1528 *4*; εK=0.0258 *4*; εL=0.00286 *4*; εM+=5.52×10^{-4} *8*
(4963 *9*)	0.0	4.9 *10*	0.094 *19*	9.01 *+11−9*	5 *1*	E(decay): 4462 *50* (1971Dz08). av Eβ=1794 *4*; εK=0.01662 *24*; εL=0.001839 *27*; εM+=3.54×10^{-4} *5* E(decay): 5002 *20* (1971Dz08). I($\varepsilon+\beta^+$): a 5% *1* $\varepsilon+\beta^+$ branch to the g.s. is deduced from the ratio Iβ(g.s.)/Iβ(559 level)=0.22 *3* (1971Dz08) and intensity balance at each level in the decay scheme.

† From γ+ce intensity balance at each level.
‡ Absolute intensity per 100 decays.
# Existence of this branch is questionable.

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$

Iγ normalization: A 5% *1* $\varepsilon+\beta^+$ branch to the g.s. is deduced from the ratio Iβ(g.s.)/Iβ(559 level)=0.22 *3* (1971Dz08) and intensity balance at each level in the decay scheme. Results are consistent with ratio I$\gamma(\gamma^{\pm})$/Iγ(559γ)=1.45 *5* (1971Dz08). Measured positron emission intensity=58.2% *19* (2007Qa02), compared with 56.6% *16* in the decay scheme presented here.

The following Eγ(Iγ) reported by different groups have been omitted here by the evaluators for lack of confirmation in 1974Na17 where the spectral quality is the best of all the studies:

2004Sh17: 498(0.22) (from 2670 level); 505.0(0.31) (from 3160 level); 834.1(0.10), 1068.6(0.12) (from 4020 level); 1089.1(0.08) (from 3604 level); 1122.6(0.05), 1152.0(0.12) (from 3970 level); 1461(0.18), 1518.6(0.12) (from 4174 level); 1827.9(0.15) (from 2951 level); 1981.5(0.05) (from 3312 level); 2329.3(0.08), 2411.1(0.08), 2655.6(0.12), 2808.2(0.20), 2843.4(0.20), 2862.4(0.10), 2984.8(0.08), 3637.0(0.10), 3671.2(0.03), 4084.9(0.02), 4534(0.007), 4577(0.007).

1974MuZB: 209.7(0.08), 281.4(0.22), 309.2(0.19), 318.4(0.18), 575.1(1.3), 1069.1(0.42).

1971La01: 248, 832.0(4.5), 1050, 1074, 1088, 1161, 1342(0.8), 1489(3.9), 1661, 1689.5, 1997, 2555, 3625, 3860, 3910, 3940, 4140, 4420, 4570.

1969Dz01 (or in 1970Dz09, 1971Dz08, 1975VyZX): 498(0.22) (from 2670 level); 505.0(0.31) (from 3160 level; same values listed in 2004Sh17); 546.5(0.22) (in 1975VyZX); 636(0.10); 641(0.19) (from 2429 level); 797(0.10) and 913 (0.07) (both from 2127 level); 812.5(0.19); 897(0.23), 1280(0.10) and 3072(0.06) (all from 3070 level); 923 and 1661(0.19) (from 3351 level); 1161(0.22) (from 2950 level); 1060(0.06); 1145(0.08), 1193(0.14); 1253(0.11) and 1538(0.23) (all from 4606 level); 1271(0.08); 1288(0.07) (from 3459 level); 1298(0.12); 1308(0.25) (from 2429 level); 1324(0.06) and 1532(0.08) (both from 2655 level); 1461(0.18); 1642(0.18); 1661(0.19) (from 3351 level); 1882(0.18); 1901(0.16); 1991(0.11); 2338(0.12) (from 3556 level); 2235(0.18); 2299(0.19); 2627(0.17) (from 2631 level); 2757(0.10) (from 3971 level); 2837(0.15); 2947(1.5); 3064(0.10); 3508(0.08); 3881(0.02) (from 4436 level); 4065(0.03); 4084(0.02). Some of these γ rays are from 1975VyZX, but some others are not listed in this communication.

1969Cl11: 831.1, 1488.5, 1578.7, 2281.2, 2329.2, 2334.0, 2348.7, 2439.0, 2617.6, 3023.4.

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[†]	Comments
163.35 *11*	0.0253 *19*	3269.16	$(1^-,2)$	3105.86	(3^-)			
191.44 *30*	0.035 *27*	3351.80	$(2)^+$	3160.40	(2^+)			
191.68 *15*	0.0085 *17*	3459.46	(2^+)	3267.91	$(2^+,3,4^+)$			
209.92 *10*	0.0716 *33*	3160.40	(2^+)	2950.495	1^+			
239.11 *10*	0.063 *20*	2026.53	4^+	1787.83	2^+	[E2]	0.0333 *5*	α(K)=0.0293 *4*; α(L)=0.00335 *5*; α(M)=0.000520 *7* α(N)=4.25×10^{-5} *6* E_γ: poor fit, level energy difference=238.70.
257.63 *12*	0.0130 *21*	3069.94	2^+	2812.46	(3^+)			
267.47 *36*	0.0025 *5*	3459.46	(2^+)	3192.14	$(3)^+$			
287.32 *25*	0.0202 *19*	3556.48	(2^-)	3269.16	$(1^-,2)$			
288.68 *20*	0.0013 *4*	3556.48	(2^-)	3267.91	$(2^+,3,4^+)$			
290.79 *35*	0.0066 *7*	3160.40	(2^+)	2869.65	$(1^+,2^+)$			
294.60 *17*	0.0138 *30*	2950.495	1^+	2655.76	1			
302.00 *17*	0.0172 *16*	2429.49	3^-	2127.56	$(2)^+$	[E1]	0.00313 *4*	α(K)=0.00279 *4*; α(L)=0.000291 *4*; α(M)=4.52×10^{-5} *6* α(N)=3.83×10^{-6} *5*

$^{76}_{34}Se_{42}$-6

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
309.77 *12*	0.201 *9*	3260.16		2950.495	1^+	[D,E2]			
318.74 *10*	0.135 *6*	3269.16	$(1^-,2)$	2950.495	1^+				
335.85 *10*	0.0861 *27*	2127.56	$(2)^+$	1791.66	0^+	[E2]		0.01006 *14*	α(K)=0.00891 *13*; α(L)=0.000986 *14*; α(M)=0.0001531 *21* α(N)=1.270×10^{-5} *18*
336.61 *12*	0.0316 *75*	3556.48	(2^-)	3220.01	$(2^+,3^+)$				
339.62 *10*	0.298 *65*	2127.56	$(2)^+$	1787.83	2^+	[M1+E2]		0.0070 *27*	α(K)=0.0062 *24*; α(L)=6.8×10^{-4} *27*; α(M)=1.1×10^{-4} *4* α(N)=8.8×10^{-6} *34*
347.88 *10*	0.0509 *67*	3160.40	(2^+)	2812.46	(3^+)				
353.68 *17*	0.0113 *9*	3459.46	(2^+)	3105.86	(3^-)				
358.14 *10*	0.270 *14*	1689.22	3^+	1330.95	4^+	[M1+E2]		0.0059 *21*	α(K)=0.0053 *19*; α(L)=5.7×10^{-4} *22*; α(M)=8.9×10^{-5} *33* α(N)=7.5×10^{-6} *27*
382.92 *44*	0.0113 *30*	2170.99	(0^+)	1787.83	2^+	[E2]		0.00647 *9*	α(K)=0.00574 *8*; α(L)=0.000629 *9*; α(M)=9.76×10^{-5} *14* α(N)=8.14×10^{-6} *12*
387.66 *49*	0.0042 *8*	2515.06	2^+	2127.56	$(2)^+$				
389.50 *18*	0.0172 *22*	3459.46	(2^+)	3069.94	2^+				
399.59 *52*	0.410 *26*	3069.94	2^+	2670.31	2^-				
401.30 *11*	0.0482 *34*	3351.80	$(2)^+$	2950.495	1^+				
403.14 *10*	0.0475 *50*	2429.49	3^-	2026.53	4^+				
414.14 *10*	0.0215 *17*	3069.94	2^+	2655.76	1				
430.67 *11*	0.0260 *66*	2859.95	4^-	2429.49	3^-	M1+E2	−0.7 *+4−12*	0.0031 *9*	α(K)=0.0028 *8*; α(L)=2.9×10^{-4} *9*; α(M)=4.6×10^{-5} *14* α(N)=3.9×10^{-6} *11*
438.37 *14*	0.641 *60*	2127.56	$(2)^+$	1689.22	3^+				
450.83 *13*	0.0272 *21*	3556.48	(2^-)	3105.86	(3^-)				
456.75 *16*	0.0256 *35*	3269.16	$(1^-,2)$	2812.46	(3^+)				
456.82 *11*	0.0871 *41*	1787.83	2^+	1330.95	4^+				
472.84 *11*	2.52 *12*	1689.22	3^+	1216.32	2^+	M1+E2	+3.20 *+27−24*	0.00316 *5*	α(K)=0.00281 *4*; α(L)=0.000303 *5*; α(M)=4.71×10^{-5} *7* α(N)=3.95×10^{-6} *6* (473γ)(1216γ)(θ): A_2=+0.029, A_4=−0.051; δ=+3.20 *+27−24* (2018MoZZ).
482.72 *29*	0.0080 *6*	4199.52	$(1^-,2)$	3716.79	(2)				
484.82 *33*	0.0301 *25*	2655.76	1	2170.99	(0^+)				
486.44 *10*	0.161 *11*	3556.48	(2^-)	3069.94	2^+				
490.03 *12*	0.480 *31*	3160.40	(2^+)	2670.31	2^-				
504.54 *10*	0.316 *15*	3160.40	(2^+)	2655.76	1				
527.83 *79*	0.0160 *31*	2655.76	1	2127.56	$(2)^+$				
531.36 *37*	0.0036 *4*	3637.19	(2^+)	3105.86	(3^-)				
539.25 *14*	0.0123 *11*	3351.80	$(2)^+$	2812.46	(3^+)				

$^{76}_{34}Se_{42}$-7

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
559.12 *10*	100 *2*	559.12	2^+	0.0	0^+	E2		1.97×10^{-3} *3*	α(K)=0.001747 *24*; α(L)=0.0001872 *26*; α(M)=2.91×10^{-5} *4* α(N)=2.452×10^{-6} *34*
563.21 *10*	4.95 *22*	1122.26	0^+	559.12	2^+	E2		1.92×10^{-3} *3*	α(K)=0.001710 *24*; α(L)=0.0001832 *26*; α(M)=2.85×10^{-5} *4* α(N)=2.399×10^{-6} *34* I_γ: others: 3.90 *20* in 1974Na17, 12.0 *15* in 1974HeYW (probably an impurity), 5.6 3 in 1975VyZX and 4.8 8 in 2004Sh17. (563γ)(559γ)(θ): A_2=+0.269, A_4=+0.815 (2018MoZZ). (563γ)(559γ)(θ): A_2=+0.207 *11*, A_4=+0.90 *5* (1982MuZV).
571.47 *11*	0.290 *18*	1787.83	2^+	1216.32	2^+	(M1(+E2))	+0.13 *12*	1.83×10^{-3} *3*	α(K)=0.001628 *25*; α(L)=0.0001742 *27*; α(M)=2.71×10^{-5} *4* α(N)=2.283×10^{-6} *35* (571γ)(1216γ)(θ): A_2=−0.171, A_4=+0.274; δ=+6.8 *+41−20* (2018MoZZ).
575.30 *11*	1.28 *11*	1791.66	0^+	1216.32	2^+	(E2)		1.81×10^{-3} *3*	α(K)=0.001607 *23*; α(L)=0.0001719 *24*; α(M)=2.67×10^{-5} *4* α(N)=2.253×10^{-6} *32* (575γ)(1216γ)(θ): A_2=+0.332, A_4=+0.948 (2018MoZZ).
581.20 *11*	0.0180 *25*	3556.48	(2^-)	2975.25	$(2^+,3,4^+)$				
598.78 *10*	0.902 *58*	3269.16	$(1^-,2)$	2670.31	2^-				
604.33 *10*	0.435 *20*	3260.16		2655.76	1				
[x]604.4[@] *3*	0.20[@] *2*								
605.97 *14*	0.0347 *65*	3556.48	(2^-)	2950.495	1^+				
613.35 *10*	0.107 *5*	3269.16	$(1^-,2)$	2655.76	1				
640.46 *31*	0.0351 *63*	3069.94	2^+	2429.49	3^-				
647.05 *33*	0.0061 *12*	3459.46	(2^+)	2812.46	(3^+)				
647.79 *20*	0.0068 *25*	3915.77	(2^-)	3267.91	$(2^+,3,4^+)$				
649.76 *40*	0.0074 *5*	4366.85		3716.79	(2)				
657.09 *10*	22.2 *9*	1216.32	2^+	559.12	2^+	E2+M1(+E0)	+5.2 *2*	1.23×10^{-3} *2*	α(K)exp=1.67×10^{-3} *15* (1970Dz09); α(K)exp=1.04×10^{-3} *6* (1986Gi12) α(K)=0.001090 *15*; α(L)=0.0001158 *16*; α(M)=1.801×10^{-5} *25* α(N)=1.524×10^{-6} *21* (657γ)(559γ)(θ): A_2=−0.161, A_4=+0.242; δ=+7.5

$^{76}_{34}Se_{42}$-8

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
									+987–42 (2018MoZZ). (657γ)(559γ)(θ): A_2=−0.186 *10*, A_4=+0.130 *16* (1982MuZV). These values give δ=+6 *1* or +0.65 *5*. ce(K)(E0/E2)≤0.058 (1986Gi12). X(E0/E2)≤0.14, ρ(E0)≤0.41 (1986Gi12).
665.40 *10*	0.983 *42*	1787.83	2^+	1122.26	0^+	[E2]			
681.44 *10*	0.694 *45*	3351.80	$(2)^+$	2670.31	2^-				
686.81 *12*	0.0259 *18*	3556.48	(2^-)	2869.65	$(1^+,2^+)$				
695.21 *45*	0.0268 *87*	2026.53	4^+	1330.95	4^+	E2+M1	+1.7 *+6–1*	0.000999 *27*	α(K)=0.000889 *24*; α(L)=9.39×10^{-5} *26*; α(M)=1.46×10^{-5} *4* α(N)=1.240×10^{-6} *33*
695.70 *33*	0.050 *12*	3915.77	(2^-)	3220.01	$(2^+,3^+)$				
695.95 *10*	0.756 *38*	3351.80	$(2)^+$	2655.76	1				
696.39 *10*	0.082 *50*	3556.48	(2^-)	2859.95	4^-				
701.64 *10*	0.0692 *62*	3970.76	(2^+)	3269.16	$(1^-,2)$				
701.66 *12*	0.0181 *31*	3652.19	$(1^+,2^+,3^+)$	2950.495	1^+				
721.22 *11*	0.0053 *4*	4438.03	$(1^+,2^+)$	3716.79	(2)				
723.37 *25*	0.0526 *66*	2515.06	2^+	1791.66	0^+				
724.15 *11*	0.0242 *13*	4328.67	(1,2)	3604.46	1^+				
727.04 *10*	0.684 *30*	2515.06	2^+	1787.83	2^+	M1+E2	+0.22 *5*	0.000756 *11*	α(K)=0.000674 *10*; α(L)=7.03×10^{-5} *11*; α(M)=1.095×10^{-5} *16* α(N)=9.37×10^{-7} *14* (727γ)(1787γ)(θ): A_2=+0.110, A_4=+0.068; δ=+0.188 *52* (2018MoZZ).
730.74 *11*	0.92 *11*	3160.40	(2^+)	2429.49	3^-				
734.78 *14*	0.0063 *5*	3604.46	1^+	2869.65	$(1^+,2^+)$				
738.88 *13*	0.0087 *8*	3556.48	(2^-)	2817.59	(2^+)				
740.12 *12*	0.212 *20*	2429.49	3^-	1689.22	3^+	(E1+M2)	−0.21 *12*	0.00040 *9*	α(K)=0.00036 *8*; α(L)=3.7×10^{-5} *8*; α(M)=5.8×10^{-6} *13* α(N)=5.0×10^{-7} *11*
744.40 *45*	0.0067 *6*	3556.48	(2^-)	2812.46	(3^+)				
747.28 *13*	0.123 *9*	3351.80	$(2)^+$	2604.46	$1^+,2^+$				
750.94 *20*	0.0044 *11*	3970.76	(2^+)	3220.01	$(2^+,3^+)$				
767.61 *14*	0.0036 *4*	3637.19	(2^+)	2869.65	$(1^+,2^+)$				
771.74 *11*	1.07 *5*	1330.95	4^+	559.12	2^+	E2		0.000800 *11*	α(K)=0.000712 *10*; α(L)=7.52×10^{-5} *11*; α(M)=1.170×10^{-5} *16* α(N)=9.93×10^{-7} *14*
778.84 *12*	0.0318 *60*	3970.76	(2^+)	3192.14	$(3)^+$				
779.48 *10*	0.0367 *36*	2950.495	1^+	2170.99	(0^+)				
789.09 *10*	0.713 *45*	3459.46	(2^+)	2670.31	2^-				
790.18 *22*	0.0384 *72*	3220.01	$(2^+,3^+)$	2429.49	3^-				

$^{76}_{34}Se_{42}$-9

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
796.15 *19*	0.0050 *9*	3466.65		2670.31	2^-				
796.44 *26*	0.0213 *47*	2127.56	$(2)^+$	1330.95	4^+				
803.59 *10*	0.845 *39*	3459.46	(2^+)	2655.76	1				
809.89 *12*	0.0042 *4*	3915.77	(2^-)	3105.86	(3^-)				
809.99 *10*	0.061 *17*	2026.53	4^+	1216.32	2^+	E2		0.000706 *10*	α(K)=0.000628 *9*; α(L)=6.63×10^{-5} *9*; α(M)=1.031×10^{-5} *14* α(N)=8.75×10^{-7} *12*
810.32 *18*	0.0290 *23*	3970.76	(2^+)	3160.40	(2^+)				
816.29 *13*	0.0045 *7*	4084.00	$(1^-,2)$	3267.91	$(2^+,3,4^+)$				
816.47 *17*	0.0143 *24*	2604.46	$1^+,2^+$	1787.83	2^+				
822.92 *31*	0.0332 *56*	2950.495	1^+	2127.56	$(2)^+$				
825.47 *53*	0.0227 *27*	2515.06	2^+	1689.22	3^+				
836.62 *10*	0.525 *26*	3351.80	$(2)^+$	2515.06	2^+				
845.76 *17*	0.0380 *37*	3915.77	(2^-)	3069.94	2^+				
847.51 *11*	0.0124 *12*	2975.25	$(2^+,3,4^+)$	2127.56	$(2)^+$				
859.45 *12*	0.0137 *20*	4412.01	(2)	3553.17	(1,2)				E_γ: poor fit, level energy difference=858.83.
864.00 *11*	0.0354 *42*	2655.76	1	1791.66	0^+				
864.16 *70*	0.0100 *24*	4084.00	$(1^-,2)$	3220.01	$(2^+,3^+)$				
864.93 *11*	0.0132 *10*	3970.76	(2^+)	3105.86	(3^-)				
867.73 *15*	0.433 *10*	2655.76	1	1787.83	2^+	D(+Q)	+0.013 *20*		I_γ: uncertainty of 0.001 in 2018MoZZ increased to 0.010 by evaluators. (868γ)(1787γ)(θ): A_2=−0.265, A_4=+0.033; δ=+0.013 *20* (2018MoZZ).
882.23 *10*	0.578 *60*	2670.31	2^-	1787.83	2^+	(E1)		2.9×10^{-4} *8*	α(K)=2.6×10^{-4} *7*; α(L)=2.7×10^{-5} *7*; α(M)=4.2×10^{-6} *12* α(N)=3.6×10^{-7} *10*
886.14 *12*	0.496 *32*	3556.48	(2^-)	2670.31	2^-				
897.57 *11*	0.0321 *17*	3553.17	(1,2)	2655.76	1				
900.71 *10*	0.167 *8*	3556.48	(2^-)	2655.76	1				
900.82 *14*	0.125 *8*	3970.76	(2^+)	3069.94	2^+				
911.11 *13*	0.0677 *20*	2127.56	$(2)^+$	1216.32	2^+				
922.21 *11*	0.0427 *63*	3351.80	$(2)^+$	2429.49	3^-				
934.26 *12*	0.129 *10*	3604.46	1^+	2670.31	2^-				
936.04 *26*	0.0364 *49*	4489.58	(1,2)	3553.17	(1,2)				
937.73 *13*	0.0078 *12*	4205.67	$(1^-,2)$	3267.91	$(2^+,3,4^+)$				
942.15 *11*	0.361 *24*	3069.94	2^+	2127.56	$(2)^+$	(M1(+E2))	+0.04 *5*	0.000431 *6*	α(K)=0.000384 *5*; α(L)=3.99×10^{-5} *6*; α(M)=6.21×10^{-6} *9* α(N)=5.32×10^{-7} *7* (942γ)(2127γ)(θ): A_2=+0.221, A_4=+0.016; δ=+0.039 *+51−53* (2018MoZZ).
945.27 *18*	0.050 *13*	4412.01	(2)	3466.65					

$^{76}_{34}Se_{42}$-10

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	$I_{(\gamma+ce)}$[a]	Comments
948.70 *13*	0.0770 *37*	3604.46	1^+	2655.76	1					
954.35 *28*	0.0533 *27*	2170.99	(0^+)	1216.32	2^+					
965.33 *15*	0.0119 *15*	3915.77	(2^-)	2950.495	1^+					
966.78 *11*	0.0213 *15*	3637.19	(2^+)	2670.31	2^-					
976.89 *16*	0.0144 *15*	4328.67	(1,2)	3351.80	$(2)^+$					
979.0 *17*	0.0019 *3*	4084.00	$(1^-,2)$	3105.86	(3^-)					
980.1 *13*	0.0131 *31*	4199.52	$(1^-,2)$	3220.01	$(2^+,3^+)$					
980.88 *13*	0.466 *44*	2670.31	2^-	1689.22	3^+					
981.24 *20*	0.0588 *60*	3637.19	(2^+)	2655.76	1					
985.62 *10*	0.072 *17*	4205.67	$(1^-,2)$	3220.01	$(2^+,3^+)$					
995.41 *13*	0.0537 *69*	3970.76	(2^+)	2975.25	$(2^+,3,4^+)$					
999.96 *10*	0.0651 *46*	3604.46	1^+	2604.46	$1^+,2^+$					
1005.06 *22*	0.0490 *54*	2127.56	$(2)^+$	1122.26	0^+					
1020.32 *11*	0.0320 *19*	3970.76	(2^+)	2950.495	1^+					
1029.89 *15*	0.97 *11*	3459.46	(2^+)	2429.49	3^-					
1032.66 *11*	1.12 *7*	3160.40	(2^+)	2127.56	$(2)^+$					
1041.18 *32*	0.0552 *35*	2829.68	(1,2)	1787.83	2^+					
1055.90 *13*	0.0026 *18*	3915.77	(2^-)	2859.95	4^-					
1060.51 *25*	0.0061 *5*	3930.29	$(1,2^+)$	2869.65	$(1^+,2^+)$					
1060.87 *10*	0.0574 *29*	3716.79	(2)	2655.76	1					
1089.42 *10*	0.137 *7*	3604.46	1^+	2515.06	2^+					
1093.62 *10*	0.0260 *20*	4199.52	$(1^-,2)$	3105.86	(3^-)					
1098.54 *37*	0.0082 *7*	2429.49	3^-	1330.95	4^+					
1098.81 *15*	0.0115 *13*	4366.85		3267.91	$(2^+,3,4^+)$					
1101.07 *11*	0.0976 *66*	3970.76	(2^+)	2869.65	$(1^+,2^+)$					
1103.25 *10*	0.0419 *78*	3915.77	(2^-)	2812.46	(3^+)					
1107.17 *11*	0.0027 *4*	4299.26		3192.14	$(3)^+$					
1122.12 *43*	0.0171 *57*	3637.19	(2^+)	2515.06	2^+					
1122.3 *3*		1122.26	0^+	0.0	0^+	E0			0.00082	E_γ,$I_{(\gamma+ce)}$: from 1986Gi12. I(γ+ce) is per 100 decays of ^{76}Br. ce(K)(1122)/ce(K)(563γ)=0.12 *2* (1986Gi12); ce(K)(1122)/Ig(563)= 0.00026 *44* (1983Pa10). X(E0/E2)=0.023 *4* (1986Gi12); ρ(E0)=0.17 *4* (1986Gi12), 0.19 *4* (1983Pa10).
1123.07 *17*	0.0595 *67*	2812.46	(3^+)	1689.22	3^+					
1124.33 *13*	0.0027 *2*	3295.70	$(1^+,2^+)$	2170.99	(0^+)					
1127.15 *23*	0.236 *33*	3556.48	(2^-)	2429.49	3^-					
1129.92 *10*	6.60 *27*	1689.22	3^+	559.12	2^+	M1+E2	+1.08 *10*	0.000315 *4*		α(K)exp=2.83×10^{-4} *34* (1986Gi12) α(K)=0.000279 *4*; α(L)=2.91×10^{-5} *4*; α(M)=4.52×10^{-6} *6*

$^{76}_{34}Se_{42}$-11

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
									α(N)=3.86×10^{-7} *5*; α(IPF)=1.695×10^{-6} *30* (1130γ)(559γ)(θ): A_2=+0.147, A_4=−0.046; δ=+1.89 *+19−18* (2018MoZZ). (1130γ)(559γ)(θ): A_2=+0.237 *29*, A_4=+0.065 (1982MuZV). Deduced δ=+0.45 to +1.5.
1133.70 *61*	0.0222 *12*	4084.00	(1$^-$,2)	2950.495	1$^+$				
1136.10 *71*	0.0033 *7*	4086.80		2950.495	1$^+$				
1137.74 *10*	0.0656 *51*	4489.58	(1,2)	3351.80	(2)$^+$				
1141.62 *14*	0.0284 *24*	3269.16	(1$^-$,2)	2127.56	(2)$^+$				
1143.89 *12*	0.0314 *23*	4412.01	(2)	3267.91	(2$^+$,3,4$^+$)				
1146.32 *64*	0.0042 *10*	4366.85		3220.01	(2$^+$,3$^+$)				
1153.14 *10*	0.0983 *80*	3970.76	(2$^+$)	2817.59	(2$^+$)				
1158.27 *10*	0.0425 *32*	3970.76	(2$^+$)	2812.46	(3$^+$)				
1158.68 *13*	0.210 *26*	2950.495	1$^+$	1791.66	0$^+$				
1170.73 *24*	0.0084 *12*	2859.95	4$^-$	1689.22	3$^+$				
1180.71 *10*	0.175 *12*	3351.80	(2)$^+$	2170.99	(0$^+$)				
1191.79 *10*	0.0320 *76*	4412.01	(2)	3220.01	(2$^+$,3$^+$)				
1213.05 *10*	2.50 *20*	2429.49	3$^-$	1216.32	2$^+$	(E1+M2)	+0.025 *20*	0.0001821 *26*	α(K)=0.0001136 *17*; α(L)=1.169×10^{-5} *17*; α(M)=1.818×10^{-6} *27* α(N)=1.556×10^{-7} *23*; α(IPF)=5.48×10^{-5} *8* (1213γ)(559γ): A_2=+0.031 *5*, A_4=+0.009 *11* (1982MuZV).
1216.23 *10*	12.1 *6*	1216.32	2$^+$	0.0	0$^+$	E2		0.000281 *4*	α(K)=0.0002408 *34*; α(L)=2.508×10^{-5} *35*; α(M)=3.90×10^{-6} *5* α(N)=3.33×10^{-7} *5*; α(IPF)=1.091×10^{-5} *15*
1219.73 *59*	0.0159 *20*	4412.01	(2)	3192.14	(3)$^+$				
1224.19 *12*	0.422 *27*	3351.80	(2)$^+$	2127.56	(2)$^+$				
1225.07 *18*	0.0383 *89*	3880.84		2655.76	1				
1228.64 *10*	2.99 *12*	1787.83	2$^+$	559.12	2$^+$	M1+E2	−0.51 *5*	0.000261 *4*	α(K)=0.0002237 *31*; α(L)=2.316×10^{-5} *33*; α(M)=3.60×10^{-6} *5* α(N)=3.09×10^{-7} *4*; α(IPF)=9.85×10^{-6} *15* (1229γ)(559γ)(θ): A_2=+0.366, A_4=+0.047; δ=−0.186 *+46−52* (2018MoZZ). (1229γ)(559γ)(θ): A_2=+0.230 *22*, A_4=+0.08 *5* (1982MuZV). Deduced δ=−2.5 *2* or +0.02 *2*, which disagrees with δ value from ^{76}As β^-.
1232.56 *12*	0.181 *15*	1791.66	0$^+$	559.12	2$^+$	(E2)		0.000276 *4*	α(K)=0.0002340 *33*; α(L)=2.435×10^{-5} *34*; α(M)=3.79×10^{-6} *5* α(N)=3.23×10^{-7} *5*; α(IPF)=1.376×10^{-5} *19* (1232γ)(559γ)(θ): A_2=+0.309, A_4=+0.824 (2018MoZZ).

$^{76}_{34}Se_{42}$-12

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
1245.49 *32*	0.0122 *11*	3915.77	(2^-)	2670.31	2^-				
1249.15 *25*	0.0154 *14*	4199.52	$(1^-,2)$	2950.495	1^+				
1255.15 *44*	0.0404 *54*	4205.67	$(1^-,2)$	2950.495	1^+				
1255.89 *72*	0.0050 *23*	4523.77		3267.91	$(2^+,3,4^+)$				
1259.87 *19*	0.0276 *20*	3930.29	$(1,2^+)$	2670.31	2^-				
1265.30 *78*	0.0045 *16*	4533.27		3267.91	$(2^+,3,4^+)$				
1271.45 *12*	0.0169 *14*	4084.00	$(1^-,2)$	2812.46	(3^+)				
1277.59 *15*	0.0243 *38*	4438.03	$(1^+,2^+)$	3160.40	(2^+)				
1286.04 *11*	0.0746 *74*	2975.25	$(2^+,3,4^+)$	1689.22	3^+				
1298.60 *12*	0.0067 *3*	2515.06	2^+	1216.32	2^+				
1300.48 *12*	0.198 *13*	3970.76	(2^+)	2670.31	2^-				
1304.1 *10*	0.0035 *8*	4523.77		3220.01	$(2^+,3^+)$				
1313.70 *81*	0.0040 *21*	4581.39		3267.91	$(2^+,3,4^+)$				
1314.70 *11*	0.101 *12*	3970.76	(2^+)	2655.76	1				
1329.77 *30*	0.0061 *5*	4199.52	$(1^-,2)$	2869.65	$(1^+,2^+)$				
1335.66 *34*	0.0013 *2*	4205.67	$(1^-,2)$	2869.65	$(1^+,2^+)$				
1342.03 *12*	0.0772 *51*	4412.01	(2)	3069.94	2^+				
1342.30 *14*	0.358 *9*	2558.80		1216.32	2^+				
1349.0 *13*	0.0051 *4*	4299.26		2950.495	1^+				
1372.27 *13*	0.846 *34*	3160.40	(2^+)	1787.83	2^+				
1380.56 *8*	4.13 *39*	3069.94	2^+	1689.22	3^+				E_γ: weighted average of 1380.57 *24* (2018MoZZ), 1380.56 *8* (1974Na17).
1388.08 *11*	0.0090 *10*	4205.67	$(1^-,2)$	2817.59	(2^+)				
1388.13 *27*	0.0664 *33*	2604.46	$1^+,2^+$	1216.32	2^+				
1392.96 *56*	0.0142 *24*	2515.06	2^+	1122.26	0^+				
1393.21 *10*	0.0387 *32*	4205.67	$(1^-,2)$	2812.46	(3^+)				
1400.74 *18*	0.0120 *11*	3915.77	(2^-)	2515.06	2^+				
1413.70 *14*	0.0077 *7*	4084.00	$(1^-,2)$	2670.31	2^-				
1416.48 *49*	0.0028 *5*	4086.80		2670.31	2^-				
1420.92 *49*	0.0205 *74*	4581.39		3160.40	(2^+)				
1428.61 *57*	0.0165 *98*	4084.00	$(1^-,2)$	2655.76	1				
1428.91 *10*	0.420 *27*	3556.48	(2^-)	2127.56	$(2)^+$				
1431.9 *22*	0.0037 *12*	4086.80		2655.76	1				
1433.53 *10*	0.0627 *42*	3604.46	1^+	2170.99	(0^+)				
1439.34 *11*	0.964 *40*	2655.76	1	1216.32	2^+	D+Q	−0.043 *19*		$(1439\gamma)(1216\gamma)(\theta)$: A_2=−0.202, A_4=−0.045; δ=−0.043 *19* (2018MoZZ).
1440.7 *12*	0.0014 *2*	4046.16	1^+	2604.46	$1^+,2^+$				
1453.83 *10*	1.28 *9*	2670.31	2^-	1216.32	2^+	(E1+M2)	+0.045 *19*	0.000309 *4*	α(K)=8.34×10^{-5} *13*; α(L)=8.57×10^{-6} *13*; α(M)=1.333×10^{-6} *20* α(N)=1.141×10^{-7} *17*; α(IPF)=0.0002151 *30* $(1454\gamma)(1216\gamma)(\theta)$: A_2=+0.217, A_4=+0.022; δ=+0.045 *19* (2018MoZZ).

$^{76}_{34}Se_{42}$-13

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	Comments
1455.63 *10*	0.138 *7*	3970.76	(2^+)	2515.06	2^+			
1461.42 *12*	0.0331 *16*	4412.01	(2)	2950.495	1^+			
1466.13 *35*	0.0053 *10*	3637.19	(2^+)	2170.99	(0^+)			
1471.10 *7*	3.85 *36*	3160.40	(2^+)	1689.22	3^+			E_γ: weighted aveage of 1470.99 *11* (2018MoZZ), 1471.14 *7* (1974Na17).
1476.91 *10*	0.0185 *29*	3604.46	1^+	2127.56	$(2)^+$			
1481.34 *11*	0.0381 *35*	4151.72	(2)	2670.31	2^-			
1481.48 *16*	0.0241 *28*	2812.46	(3^+)	1330.95	4^+			
1481.59 *20*	0.0074 *7*	4299.26		2817.59	(2^+)			
1486.67 *13*	0.0015 *4*	2817.59	(2^+)	1330.95	4^+			
1495.89 *13*	0.0379 *20*	4151.72	(2)	2655.76	1			
1501.99 *24*	0.0052 *4*	4452.11	$(1^+,2^+)$	2950.495	1^+			
1502.94 *10*	0.0600 *58*	3192.14	$(3)^+$	1689.22	3^+			
1504.32 *10*	0.101 *7*	4174.65	(1,2)	2670.31	2^-			
1509.23 *16*	0.0082 *42*	3297.05	$(1^+,2^+)$	1787.83	2^+			
1509.44 *11*	0.0629 *45*	3637.19	(2^+)	2127.56	$(2)^+$			
1518.79 *10*	0.0899 *44*	4174.65	(1,2)	2655.76	1			
1528.72 *10*	0.030 *18*	2859.95	4^-	1330.95	4^+	(E1(+M2))	<0.1	
1530.32 *43*	0.0023 *4*	3220.01	$(2^+,3^+)$	1689.22	3^+			
1533.25 *20*	0.0786 *31*	2655.76	1	1122.26	0^+	D		
1539.05 *30*	0.0143 *8*	4489.58	(1,2)	2950.495	1^+			
1541.25 *11*	0.0361 *59*	3970.76	(2^+)	2429.49	3^-			
1542.28 *38*	0.0037 *3*	4412.01	(2)	2869.65	$(1^+,2^+)$			
1543.69 *15*	0.0157 *10*	4199.52	$(1^-,2)$	2655.76	1			
1549.99 *14*	0.0288 *16*	4205.67	$(1^-,2)$	2655.76	1			
1559.98 *10*	0.741 *62*	3351.80	$(2)^+$	1791.66	0^+			
1564.10 *57*	0.0366 *17*	3351.80	$(2)^+$	1787.83	2^+			
1568.25 *10*	1.43 *8*	2127.56	$(2)^+$	559.12	2^+			(1568γ)(559γ)(θ): A_2=+0.244, A_4=−0.014; δ=+0.004 *+94−103* (2018MoZZ).
1568.63 *14*	0.0248 *34*	4084.00	$(1^-,2)$	2515.06	2^+			
1578.57 *14*	0.0105 *11*	3267.91	$(2^+,3,4^+)$	1689.22	3^+			
1584.72 *10*	0.0718 *34*	4535.27		2950.495	1^+			
1596.19 *50*	0.250 *11*	2812.46	(3^+)	1216.32	2^+			
1599.21 *25*	0.0737 *56*	4412.01	(2)	2812.46	(3^+)			
1601.11 *48*	0.114 *7*	2817.59	(2^+)	1216.32	2^+			
1605.80 *88*	0.0041 *6*	4581.39		2975.25	$(2^+,3,4^+)$			
1611.71 *12*	0.328 *13*	2170.99	(0^+)	559.12	2^+			(1611γ)(559γ)(θ): A_2=+0.285, A_4=+0.894 (2018MoZZ).
1628.81 *28*	0.0241 *17*	4299.26		2670.31	2^-			
1636.56 *10*	0.0331 *17*	4151.72	(2)	2515.06	2^+			
1643.28 *28*	0.0056 *10*	4299.26		2655.76	1			
1644.28 *12*	0.0068 *7*	2975.25	$(2^+,3,4^+)$	1330.95	4^+			
1653.18 *10*	0.0738 *34*	2869.65	$(1^+,2^+)$	1216.32	2^+			

$^{76}_{34}Se_{42}$-14

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
1653.91 *63*	0.0034 *4*	4523.77		2869.65	$(1^+,2^+)$				
1654.57 *21*	0.120 *15*	4084.00	$(1^-,2)$	2429.49	3^-				
1659.66 *30*	0.0213 *10*	4174.65	(1,2)	2515.06	2^+				
1671.78 *16*	0.138 *6*	3459.46	(2^+)	1787.83	2^+				
1672.95 *10*	0.182 *9*	4328.67	(1,2)	2655.76	1				
1684.40 *12*	0.0123 *7*	4199.52	$(1^-,2)$	2515.06	2^+				
1711.26 *12*	0.0093 *15*	4523.77		2812.46	(3^+)				
1722.24 *12*	0.0488 *72*	4151.72	(2)	2429.49	3^-				
1733.96 *19*	0.0429 *57*	2950.495	1^+	1216.32	2^+				
1736.92 *17*	0.0048 *5*	4687.52		2950.495	1^+				
1741.51 *10*	0.193 *13*	4412.01	(2)	2670.31	2^-				
1756.42 *11*	0.0525 *27*	4412.01	(2)	2655.76	1				
1758.90 *12*	0.0051 *5*	2975.25	$(2^+,3,4^+)$	1216.32	2^+				
1759.34 *13*	0.0019 *2*	3930.29	$(1,2^+)$	2170.99	(0^+)				
1768.52 *10*	0.375 *15*	3556.48	(2^-)	1787.83	2^+				
1769.93 *41*	0.0612 *58*	3459.46	(2^+)	1689.22	3^+				
1770.02 *10*	0.0684 *94*	4199.52	$(1^-,2)$	2429.49	3^-				
1772.95 *59*	0.0051 *4*	4723.4		2950.495	1^+				
1774.80 *10*	0.0281 *17*	3105.86	(3^-)	1330.95	4^+				
1776.22 *11*	0.091 *12*	4205.67	$(1^-,2)$	2429.49	3^-				
1781.37 *40*	0.0098 *6*	4731.9		2950.495	1^+				
1782.38 *11*	0.0130 *5*	4438.03	$(1^+,2^+)$	2655.76	1				
1787.81 *11*	0.777 *22*	1787.83	2^+	0.0	0^+				
1787.99 *32*	0.0800 *64*	3915.77	(2^-)	2127.56	$(2)^+$				
1796.56 *21*	0.0039 *3*	4452.11	$(1^+,2^+)$	2655.76	1				
1802.65 *11*	0.0405 *28*	3930.29	$(1,2^+)$	2127.56	$(2)^+$				
1803.44 *13*	0.0074 *7*	4473.69	(2^+)	2670.31	2^-				
1812.92 *12*	0.050 *13*	3604.46	1^+	1791.66	0^+				
1816.71 *12*	0.0545 *27*	3604.46	1^+	1787.83	2^+				
1817.96 *19*	0.0073 *9*	4473.69	(2^+)	2655.76	1				
1819.27 *12*	0.0133 *11*	4489.58	(1,2)	2670.31	2^-				
1828.22 *39*	0.076 *23*	2950.495	1^+	1122.26	0^+				
1830.80 *15*	0.0276 *23*	3160.40	(2^+)	1330.95	4^+				E_γ: poor fit, level energy difference=1829.43.
1833.61 *25*	0.0183 *14*	4438.03	$(1^+,2^+)$	2604.46	$1^+,2^+$				
1833.87 *10*	0.148 *7*	4489.58	(1,2)	2655.76	1				
1845.58 *16*	0.197 *17*	3637.19	(2^+)	1791.66	0^+				
1848.72 *72*	0.0517 *29*	3637.19	(2^+)	1787.83	2^+				
1853.64 *9*	23.2 *10*	3069.94	2^+	1216.32	2^+	M1+E2	+0.035 *4*	0.000313 *4*	α(K)exp=0.95×10^{-4} *18* (1970Dz09) α(K)=0.0001013 *14*; α(L)=1.043×10^{-5} *15*; α(M)=1.623×10^{-6} *23*

$^{76}_{34}Se_{42}$-15

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
									α(N)=1.393×10^{-7} *19*; α(IPF)=0.0001994 *28* E_γ: weighted average of 1853.45 *11* (2018MoZZ), 1853.68 *5* (1974Na17). (1854γ)(1216γ)(θ): A_2=+0.224, A_4=+0.003; δ=+0.035 *4* (2018MoZZ). (1854γ)[657γ](559γ)(θ): A_2=+0.086 *24*, A_4=+0.02 *4* (1982MuZV).
1861.17 *12*	0.0068 *5*	3192.14	(3)$^+$	1330.95	4$^+$				
1862.81 *13*	0.0148 *11*	4533.27		2670.31	2$^-$				
1867.35 *10*	0.211 *20*	3556.48	(2$^-$)	1689.22	3$^+$				
1870.24 *15*	0.100 *5*	2429.49	3$^-$	559.12	2$^+$	(E1+M2)	+0.17 *3*	0.000589 *9*	α(K)=5.91×10^{-5} *16*; α(L)=6.06×10^{-6} *16*; α(M)=9.42×10^{-7} *25* α(N)=8.08×10^{-8} *22*; α(IPF)=0.000523 *9*
1875.23 *16*	0.0031 *12*	4687.52		2812.46	(3$^+$)				
1879.55 *12*	0.124 *6*	4535.27		2655.76	1				
1888.95 *36*	0.0256 *15*	3220.01	(2$^+$,3$^+$)	1330.95	4$^+$				
1889.77 *11*	0.0192 *14*	3105.86	(3$^-$)	1216.32	2$^+$				
1896.96 *34*	0.0022 *5*	4412.01	(2)	2515.06	2$^+$				
1906.26 *35*	0.0031 *5*	4576.23	(1,2)	2670.31	2$^-$				
1911.10 *12*	0.0093 *10*	4581.39		2670.31	2$^-$				
1918.41 *45*	0.0060 *5*	4046.16	1$^+$	2127.56	(2)$^+$				
1921.1 *12*	0.0035 *14*	4576.23	(1,2)	2655.76	1				
1922.89 *10*	0.0691 *35*	4438.03	(1$^+$,2$^+$)	2515.06	2$^+$				
1929.05 *11*	0.0354 *18*	3716.79	(2)	1787.83	2$^+$				
1936.77 *10*	0.0463 *45*	3267.91	(2$^+$,3,4$^+$)	1330.95	4$^+$				
1944.18 *10*	0.654 *27*	3160.40	(2$^+$)	1216.32	2$^+$	(M1(+E2))	+0.05 *6*		(1944γ)(1216γ)(θ): A_2=+0.213, A_4=−0.061; δ=+0.047 *+54−56* (2018MoZZ).
1948.48 *19*	0.0054 *4*	4603.78	(1,2)$^+$	2655.76	1				
1955.77 *11*	0.389 *20*	2515.06	2$^+$	559.12	2$^+$	(M1+E2)	−0.21 *+5−6*	0.000348 *5*	α(K)=9.18×10^{-5} *13*; α(L)=9.45×10^{-6} *13*; α(M)=1.471×10^{-6} *21* α(N)=1.262×10^{-7} *18*; α(IPF)=0.000245 *4* (1955γ)(559γ)(θ): A_2=+0.375, A_4=+0.053. Mult.: adopted value from δ=−0.205 *+53−60* (2018MoZZ).
1963.00 *34*	0.0108 *11*	3652.19	(1$^+$,2$^+$,3$^+$)	1689.22	3$^+$				
1976.16 *19*	0.0103 *8*	3192.14	(3)$^+$	1216.32	2$^+$				
1982.31 *46*	0.0328 *55*	4412.01	(2)	2429.49	3$^-$				
1982.95 *56*	0.0054 *13*	4795.14	(1,2)	2812.46	(3$^+$)				
1999.74 *10*	0.112 *5*	2558.80		559.12	2$^+$				
2003.79 *20*	0.0111 *8*	4174.65	(1,2)	2170.99	(0$^+$)				
2008.33 *83*	0.0022 *3*	4523.77		2515.06	2$^+$				
2017.14 *46*	0.0025 *3*	4687.52		2670.31	2$^-$				

$^{76}_{34}Se_{42}$-16

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
2028.04 *54*	0.0181 *18*	3716.79	(2)	1689.22	3^+				
2045.49 *70*	0.232 *10*	2604.46	$1^+,2^+$	559.12	2^+	M1+E2	−3.0 *+14−60*		(2045γ)(559γ)(θ): A_2=+0.206, A_4=+0.538; δ=−3.0 *+14−60* (2018MoZZ).
2047.10 *21*	0.0996 *83*	4174.65	(1,2)	2127.56	$(2)^+$				
2051.79 *23*	0.0168 *10*	3267.91	$(2^+,3,4^+)$	1216.32	2^+				
2072.05 *22*	0.0863 *60*	4199.52	$(1^-,2)$	2127.56	$(2)^+$				
2087.00 *28*	0.0011 *1*	4257.84	(1,2)	2170.99	(0^+)				
2096.63 *20*	2.04 *10*	2655.76	1	559.12	2^+	D(+Q)	−0.043 *+43−42*		(2096γ)(559γ)(θ): A_2=−0.202, A_4=−0.045; δ=−0.043 *+43−42* (2018MoZZ).
2103.93 *60*	0.0074 *21*	4533.27		2429.49	3^-				
2111.11 *20*	3.59 *14*	2670.31	2^-	559.12	2^+	(E1+M2)	+0.047 *12*	0.000758 *11*	α(K)=4.64×10^{-5} *7*; α(L)=4.75×10^{-6} *7*; α(M)=7.39×10^{-7} *11* α(N)=6.33×10^{-8} *9*; α(IPF)=0.000706 *10* (2111γ)(559γ)(θ): A_2=+0.214, A_4=−0.012; δ=+0.047 *12* (2018MoZZ).
2121.95 *38*	0.0140 *17*	4249.38	(1,2)	2127.56	$(2)^+$				
2127.69 *20*	0.239 *20*	2127.56	$(2)^+$	0.0	0^+				
2135.63 *8*	1.33 *13*	3351.80	$(2)^+$	1216.32	2^+	(M1+E2)	−0.042 *10*	0.000411 *6*	α(K)=7.83×10^{-5} *11*; α(L)=8.05×10^{-6} *11*; α(M)=1.252×10^{-6} *18* α(N)=1.075×10^{-7} *15*; α(IPF)=0.000323 *5* E_γ: weighted average of 2135.55 *20* (2018MoZZ), 2135.64 *8* (1974Na17). (2135γ)(1216γ)(θ): A_2=−0.203, A_4=−0.004; δ=−0.042 *10* (2018MoZZ).
2139.93 *26*	0.0090 *4*	4795.14	(1,2)	2655.76	1				
2142.50 *21*	0.0163 *10*	3930.29	$(1,2^+)$	1787.83	2^+				
2152.17 *35*	0.0062 *18*	4581.39		2429.49	3^-				
2160.80 *41*	0.0049 *18*	3377.2		1216.32	2^+				
2174.66 *30*	0.0102 *7*	3297.05	$(1^+,2^+)$	1122.26	0^+				
2183.01 *20*	0.252 *11*	3970.76	(2^+)	1787.83	2^+				
2226.68 *20*	0.0846 *81*	3915.77	(2^-)	1689.22	3^+				
2229.91 *22*	0.0325 *24*	3351.80	$(2)^+$	1122.26	0^+				
2239.60 *24*	0.0066 *8*	4366.85		2127.56	$(2)^+$				
2250.64 *23*	0.0018 *3*	3466.65		1216.32	2^+				
2253.38 *26*	0.0599 *69*	2812.46	(3^+)	559.12	2^+				
2258.06 *23*	0.0108 *5*	4046.16	1^+	1787.83	2^+				
2258.55 *63*	0.0753 *43*	2817.59	(2^+)	559.12	2^+				
2267.05 *20*	0.0111 *9*	4438.03	$(1^+,2^+)$	2170.99	(0^+)				
2284.54 *24*	0.0116 *10*	4412.01	(2)	2127.56	$(2)^+$				
2296.07 *26*	0.0174 *5*	4084.00	$(1^-,2)$	1787.83	2^+				
2298.95 *22*	0.0224 *14*	4086.80		1787.83	2^+				

$^{76}_{34}Se_{42}$-17

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
2310.65 *25*	0.132 *6*	2869.65	$(1^+,2^+)$	559.12	2^+				
2310.69 *27*	0.0537 *70*	4438.03	$(1^+,2^+)$	2127.56	$(2)^+$				
[x]2310.7[@] *10*	0.10[@] *1*								
2337.37 *26*	0.0357 *19*	3553.17	(1,2)	1216.32	2^+				
2339.53 *21*	0.100 *4*	3556.48	(2^-)	1216.32	2^+				
2356.89 *21*	0.0041 *5*	4046.16	1^+	1689.22	3^+				
2364.10 *23*	0.0229 *14*	4151.72	(2)	1787.83	2^+				
2365.29 *27*	0.0149 *22*	4795.14	(1,2)	2429.49	3^-				
2383.45 *20*	0.085 *13*	4174.65	(1,2)	1791.66	0^+				
2386.77 *33*	0.161 *19*	4174.65	(1,2)	1787.83	2^+				
2391.32 *6*	7.03 *28*	2950.495	1^+	559.12	2^+	M1+E2	−0.058 *+4−5*	0.000509 *7*	α(K)exp=0.72×10^{-4} *24* (1970Dz09) α(K)=6.41×10^{-5} *9*; α(L)=6.58×10^{-6} *9*; α(M)=1.024×10^{-6} *14* α(N)=8.79×10^{-8} *12*; α(IPF)=0.000437 *6* E_γ: weighted average of 2391.42 *20* (2018MoZZ) and 2391.29 *6* (1974Na17). (2391γ)(559γ)(θ): A_2=−0.184, A_4=−0.008; δ=−0.058 *+4−5* (2018MoZZ).
2411.79 *20*	0.0573 *28*	4199.52	$(1^-,2)$	1787.83	2^+				
2416.30 *21*	0.0074 *7*	2975.25	$(2^+,3,4^+)$	559.12	2^+				
2421.08 *20*	0.0388 *19*	3637.19	(2^+)	1216.32	2^+				
2429.68 *20*	0.0612 *50*	2429.49	3^-	0.0	0^+	[E3]		0.000437 *6*	α(K)=9.90×10^{-5} *14*; α(L)=1.025×10^{-5} *14*; α(M)=1.596×10^{-6} *22* α(N)=1.367×10^{-7} *19*; α(IPF)=0.000326 *5*
2431.38 *24*	0.0390 *20*	3553.17	(1,2)	1122.26	0^+				
2436.05 *27*	0.0137 *11*	3652.19	$(1^+,2^+,3^+)$	1216.32	2^+				
2454.00 *52*	0.0204 *16*	4581.39		2127.56	$(2)^+$				
2462.82 *20*	0.0437 *43*	4151.72	(2)	1689.22	3^+				
2470.0 *11*	0.0068 *5*	4257.84	(1,2)	1787.83	2^+				
2482.60 *20*	0.170 *7*	3604.46	1^+	1122.26	0^+				
2510.86 *8*	2.58 *12*	3069.94	2^+	559.12	2^+	(M1+E2)	+0.069 *6*	0.000557 *8*	α(K)=5.88×10^{-5} *8*; α(L)=6.04×10^{-6} *8*; α(M)=9.40×10^{-7} *13* α(N)=8.07×10^{-8} *11*; α(IPF)=0.000491 *7* E_γ: weighted average of 2510.92 *22* (2018MoZZ), 2510.85 *8* (1974Na17). (2510γ)(559γ)(θ): A_2=+0.198, A_4=+0.002; δ=+0.069 *6* (2018MoZZ).
2515.16 *59*	0.219 *9*	3637.19	(2^+)	1122.26	0^+				
2546.97 *20*	0.0891 *47*	3105.86	(3^-)	559.12	2^+				
2601.36 *20*	1.03 *4*	3160.40	(2^+)	559.12	2^+	(M1+E2)	+0.149 *22*		(2601γ)(559γ)(θ): A_2=+0.138, A_4=+0.032; δ=+0.149 *22* (2018MoZZ).

$^{76}_{34}Se_{42}$-18

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
2604.10 *41*	0.0021 *1*	2604.46	$1^+,2^+$	0.0	0^+				
2624.11 *20*	0.0397 *22*	4412.01	(2)	1787.83	2^+				
2633.31 *25*	0.0060 *8*	3192.14	$(3)^+$	559.12	2^+				
2650.64 *44*	0.0090 *14*	4438.03	$(1^+,2^+)$	1787.83	2^+				
2655.93 *21*	0.157 *7*	2655.76	1	0.0	0^+				
2660.91 *40*	0.147 *28*	3220.01	$(2^+,3^+)$	559.12	2^+				
2670.57 *38*	0.0082 *11*	2670.31	2^-	0.0	0^+	[M2]		0.000460 *6*	α(K)=8.79×10^{-5} *12*; α(L)=9.07×10^{-6} *13*; α(M)=1.412×10^{-6} *20* α(N)=1.212×10^{-7} *17*; α(IPF)=0.000362 *5*
2677.57 *28*	0.0034 *4*	4366.85		1689.22	3^+				
2698.18 *21*	0.0152 *18*	4489.58	(1,2)	1791.66	0^+				
2699.08 *20*	0.0394 *35*	3915.77	(2^-)	1216.32	2^+				
2709.26 *20*	0.0394 *29*	3267.91	$(2^+,3,4^+)$	559.12	2^+				
2714.09 *20*	0.0586 *39*	3930.29	$(1,2^+)$	1216.32	2^+				
2722.99 *21*	0.0098 *10*	4412.01	(2)	1689.22	3^+				
2737.07 *24*	0.0242 *13*	3295.70	$(1^+,2^+)$	559.12	2^+				
2746.09 *47*	0.0060 *9*	4533.27		1787.83	2^+				
2754.54 *20*	0.0264 *27*	3970.76	(2^+)	1216.32	2^+				
2792.72 *6*	8.34 *33*	3351.80	$(2)^+$	559.12	2^+	M1+E2	−0.060 *19*	0.000670 *9*	α(K)exp=0.56×10^{-4} *14* (1970Dz09) α(K)=4.90×10^{-5} *7*; α(L)=5.03×10^{-6} *7*; α(M)=7.82×10^{-7} *11* α(N)=6.72×10^{-8} *9*; α(IPF)=0.000615 *9* E_γ: weighted average of 2792.68 *22* (2018MoZZ), 2792.72 *6* (1974Na17). (2792γ)(559γ)(θ): A_2=−0.181, A_4=+0.010; δ=−0.060 *19* (2018MoZZ).
2808.17 *22*	0.0716 *29*	3930.29	$(1,2^+)$	1122.26	0^+				
2815.79 *34*	0.0125 *21*	4603.78	$(1,2)^+$	1787.83	2^+				
2817.20 *28*	0.0007 *1*	2817.59	(2^+)	0.0	0^+				
2829.99 *24*	0.0003 *1*	2829.68	(1,2)	0.0	0^+				
2830.11 *23*	0.0071 *4*	4046.16	1^+	1216.32	2^+				
2835.30 *45*	0.0030 *4*	4523.77		1689.22	3^+				
2869.71 *22*	0.0323 *15*	2869.65	$(1^+,2^+)$	0.0	0^+				
2900.53 *20*	0.615 *25*	3459.46	(2^+)	559.12	2^+				
2907.28 *24*	0.064 *12*	3466.65		559.12	2^+				
2950.54 *5*	12.8 *5*	2950.495	1^+	0.0	0^+	(M1)		0.000731 *10*	α(K)exp=0.59×10^{-4} *12* (1970Dz09) α(K)=4.47×10^{-5} *6*; α(L)=4.58×10^{-6} *6*; α(M)=7.13×10^{-7} *10* α(N)=6.12×10^{-8} *9*; α(IPF)=0.000681 *10* E_γ: weighted average of 2950.41 *20* (2018MoZZ) and 2950.55 *5* (1974Na17).

$^{76}_{34}Se_{42}$-19

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ (continued)

$\gamma(^{76}Se)$ (continued)

E_γ[‡]	I_γ[‡&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	Comments
2983.39 *20*	0.0470 *26*	4199.52	$(1^-,2)$	1216.32	2^+			
2989.94 *69*	0.0128 *20*	4205.67	$(1^-,2)$	1216.32	2^+			
2994.27 *20*	0.102 *6*	3553.17	(1,2)	559.12	2^+			
2997.40 *8*	1.53 *6*	3556.48	(2^-)	559.12	2^+			E_γ: weighted average of 2997.53 *20* (2018MoZZ), 2997.38 *8* (1974Na17).
3042.4 *15*	0.0075 *7*	4257.84	(1,2)	1216.32	2^+			
3045.51 *20*	0.0570 *64*	3604.46	1^+	559.12	2^+			
3052.38 *26*	0.0292 *41*	4174.65	(1,2)	1122.26	0^+			
3070.08 *20*	0.0150 *9*	3069.94	2^+	0.0	0^+			
3078.56 *21*	0.0219 *10*	3637.19	(2^+)	559.12	2^+			
3082.92 *21*	0.0147 *18*	4299.26		1216.32	2^+			
3092.95 *20*	0.167 *10*	3652.19	$(1^+,2^+,3^+)$	559.12	2^+			(3093γ)(559γ)(θ): A_2=+0.152, A_4=+0.041; δ=+0.132 *31* (2018MoZZ).
3131.30 *56*	0.0076 *4*	4347.59	(1,2)	1216.32	2^+			
3150.67 *26*	0.0021 *4*	4366.85		1216.32	2^+			
3157.64 *20*	0.237 *10*	3716.79	(2)	559.12	2^+	D(+Q)	+0.004 *+34−35*	(3157γ)(559γ)(θ): A_2=+0.247, A_4=+0.036; δ=+0.004 *+34−35* (2018MoZZ).
3195.52 *20*	0.0267 *17*	4412.01	(2)	1216.32	2^+			
3221.81 *20*	0.0157 *9*	4438.03	$(1^+,2^+)$	1216.32	2^+			
3235.88 *22*	0.0051 *3*	4452.11	$(1^+,2^+)$	1216.32	2^+			
3257.58 *21*	0.0070 *4*	4473.69	(2^+)	1216.32	2^+			
3296.14 *20*	0.0111 *4*	3295.70	$(1^+,2^+)$	0.0	0^+			
3307.29 *21*	0.0116 *12*	4523.77		1216.32	2^+			
3315.98 *52*	0.0033 *3*	4438.03	$(1^+,2^+)$	1122.26	0^+			
3351.94 *22*	0.258 *10*	3351.80	$(2)^+$	0.0	0^+			
3356.87 *20*	0.138 *7*	3915.77	(2^-)	559.12	2^+			
3364.74 *32*	0.0113 *9*	4581.39		1216.32	2^+			
3366.2 *19*	0.0146 *8*	4489.58	(1,2)	1122.26	0^+			
3371.00 *20*	0.155 *10*	3930.29	$(1,2^+)$	559.12	2^+			
3386.81 *22*	0.0058 *4*	4603.78	$(1,2)^+$	1216.32	2^+			
3411.55 *20*	0.452 *19*	3970.76	(2^+)	559.12	2^+			
3453.80 *27*	0.0023 *2*	4576.23	(1,2)	1122.26	0^+			
3470.50 *50*	0.0030 *2*	4687.52		1216.32	2^+			
3481.69 *22*	0.0080 *4*	4603.78	$(1,2)^+$	1122.26	0^+			
3507.05 *54*	0.0044 *6*	4723.4		1216.32	2^+			
3515.7 *11*	0.0045 *6*	4731.9		1216.32	2^+			
3524.99 *20*	0.290 *12*	4084.00	$(1^-,2)$	559.12	2^+			
3553.53 *96*	0.0072 *18*	3553.17	(1,2)	0.0	0^+			
3603.99 *8*	2.65 *8*	3604.46	1^+	0.0	0^+			E_γ: weighted average of 3604.00 *20* (2018MoZZ), 3603.99 *8* (1974Na17). E_γ: poor fit, level energy difference=3604.37.
3615.08 *22*	0.0096 *12*	4174.65	(1,2)	559.12	2^+			

$^{76}_{34}Se_{42}$-20

$\gamma(^{76}Se)$ (continued)

E_γ ‡	I_γ ‡&	E_i(level)	J_i^π	E_f	J_f^π	Comments
3639.99 *20*	0.122 *6*	4199.52	$(1^-,2)$	559.12	2^+	
3646.17 *21*	0.0456 *22*	4205.67	$(1^-,2)$	559.12	2^+	
3672.54 *22*	0.0029 *2*	4795.14	(1,2)	1122.26	0^+	
3698.41 *26*	0.0035 *4*	4257.84	(1,2)	559.12	2^+	
3853.03 *45*	0.0002 *1*	4412.01	(2)	559.12	2^+	
3878.09 *23*	0.0010 *2*	4438.03	$(1^+,2^+)$	559.12	2^+	
3892.32 *20*	0.0180 *11*	4452.11	$(1^+,2^+)$	559.12	2^+	
3913.93 *21*	0.0189 *11*	4473.69	(2^+)	559.12	2^+	
3929.96 *40*	0.101 *6*	3930.29	$(1,2^+)$	0.0	0^+	
3930.06 *40*	0.0480 *33*	4489.58	(1,2)	559.12	2^+	
3974.67 *41*	0.0082 *4*	4533.27		559.12	2^+	
4021.65 *40*	0.101 *9*	4581.39		559.12	2^+	
4043.89 *40*	0.0171 *13*	4603.78	$(1,2)^+$	559.12	2^+	
4127.74 *50*	0.0003 *1*	4687.52		559.12	2^+	
4162.34 *41*	0.0091 *5*	4721.6		559.12	2^+	
4163.45 *98*	0.0041 *4*	4723.4		559.12	2^+	
4174.22 *40*	0.0322 *25*	4174.65	(1,2)	0.0	0^+	
4235.89 *41*	0.0079 *6*	4795.14	(1,2)	559.12	2^+	
4249.06 *41*	0.0010 *2*	4249.38	(1,2)	0.0	0^+	
4257.79 *43*	0.0011 *1*	4257.84	(1,2)	0.0	0^+	
4328.36 *42*	0.0006 *1*	4328.67	(1,2)	0.0	0^+	
4347.40 *41*	0.0018 *1*	4347.59	(1,2)	0.0	0^+	
[x]4432.0[@] *20*	0.08[@] *5*					E_γ: others: 4440 *3* (1969Dz01, 1975VyZX); 4437.7 *10* in 2004Sh17.
4437.33 *40*	0.0919 *54*	4438.03	$(1^+,2^+)$	0.0	0^+	
4451.81 *40*	0.0107 *6*	4452.11	$(1^+,2^+)$	0.0	0^+	
4488.56 *40*	0.0048 *5*	4489.58	(1,2)	0.0	0^+	
4575.70 *40*	0.0046 *5*	4576.23	(1,2)	0.0	0^+	
4603.27 *40*	0.0279 *14*	4603.78	$(1,2)^+$	0.0	0^+	
4794.96 *40*	0.0013 *1*	4795.14	(1,2)	0.0	0^+	

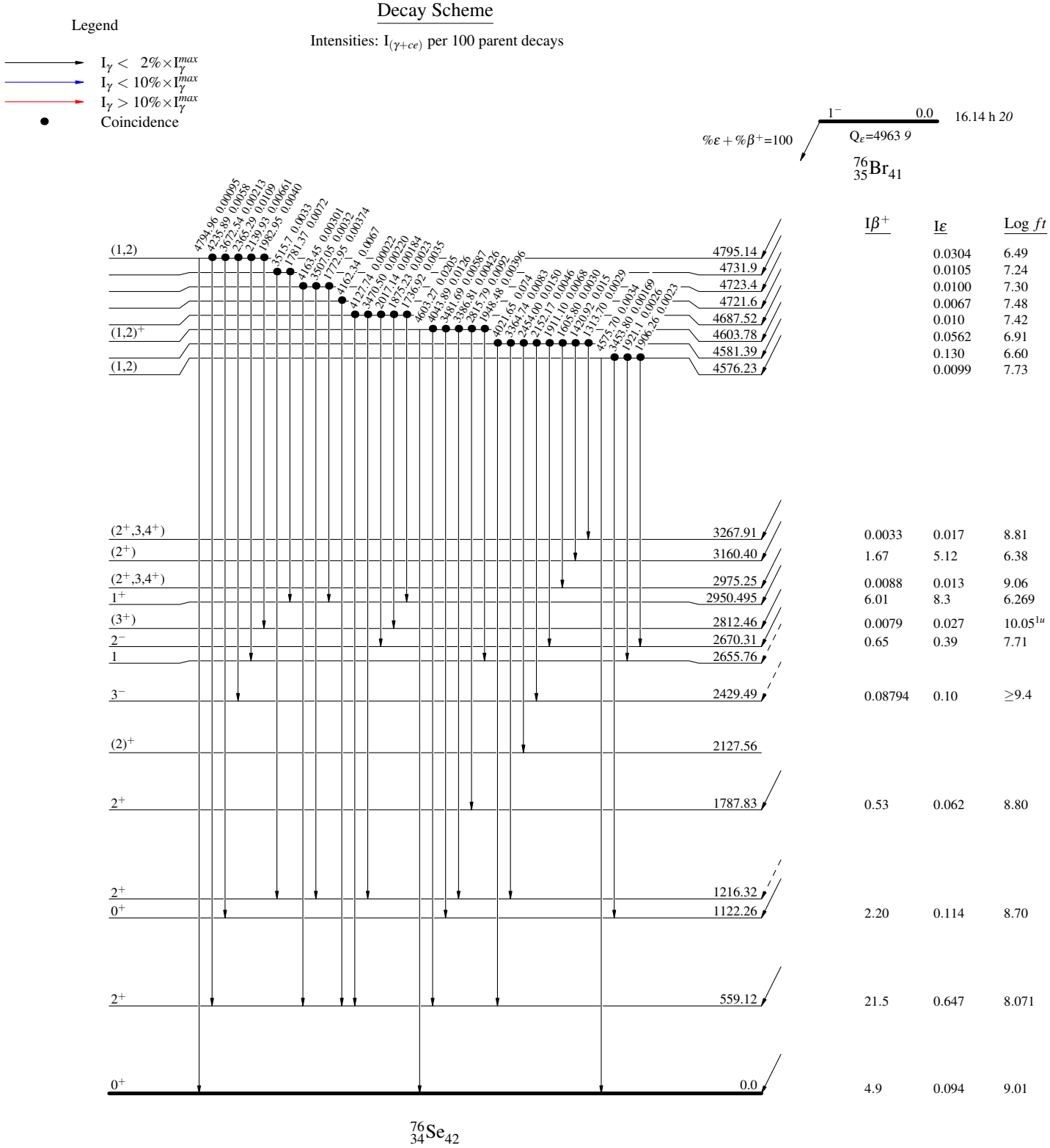
† Additional information 2.
‡ From 2018MoZZ, unless otherwise stated. Values are also available in 1974Na17, 2004Sh17, 1969Dz01, 1969Cl11 but are less complete and less precise.
# From Adopted Gammas. Some adopted values are taken from this dataset deduced based on $\gamma\gamma(\theta)$ and ce data as given under comments.
@ From 1974Na17.
& For absolute intensity per 100 decays, multiply by 0.734 *13*.
[a] Absolute intensity per 100 decays.
[x] γ ray not placed in level scheme.

$^{76}_{34}Se_{42}$-21

^{76}Br ε+β$^+$ decay (16.14 h) 2018MoZZ

Decay Scheme

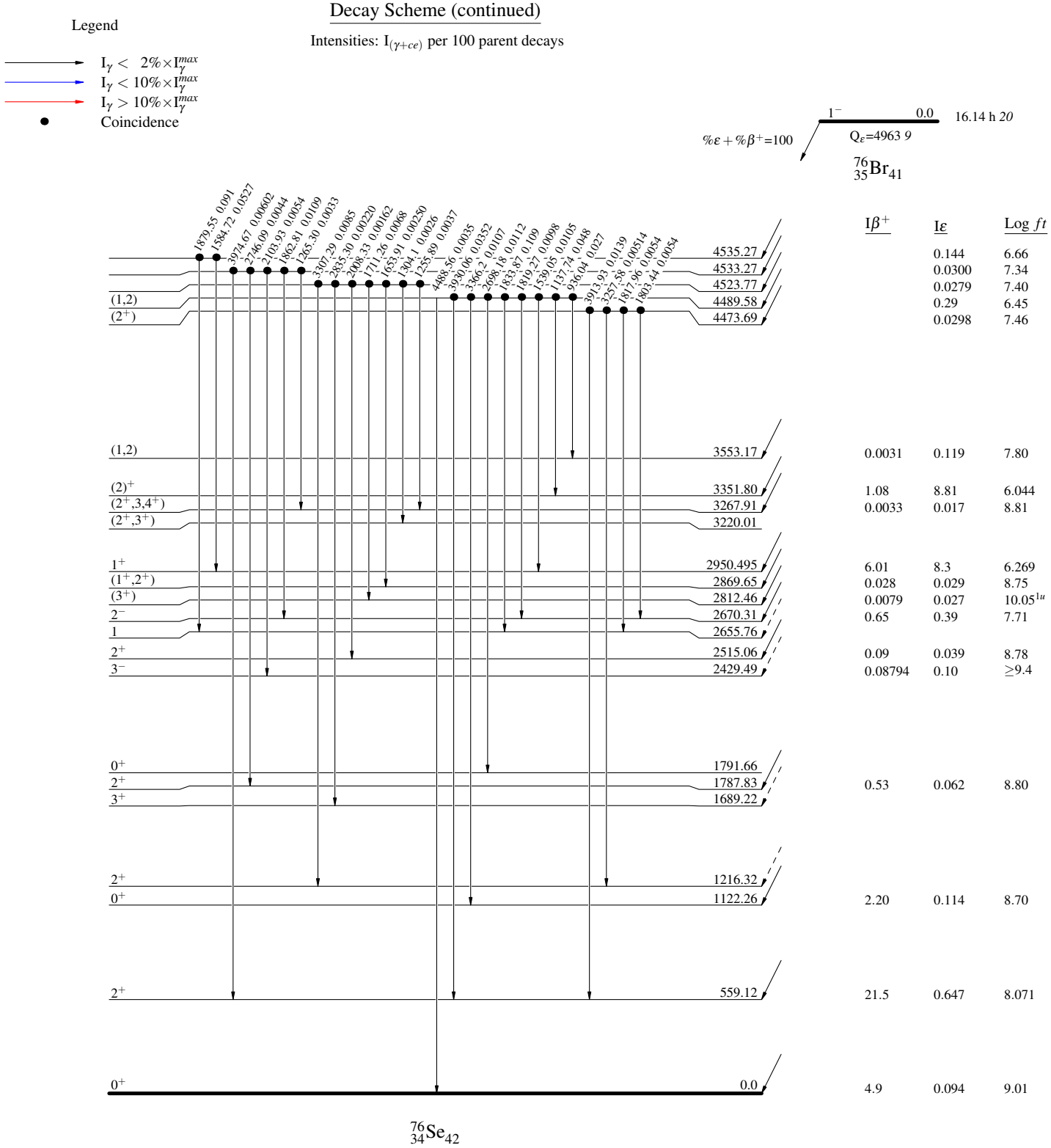
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

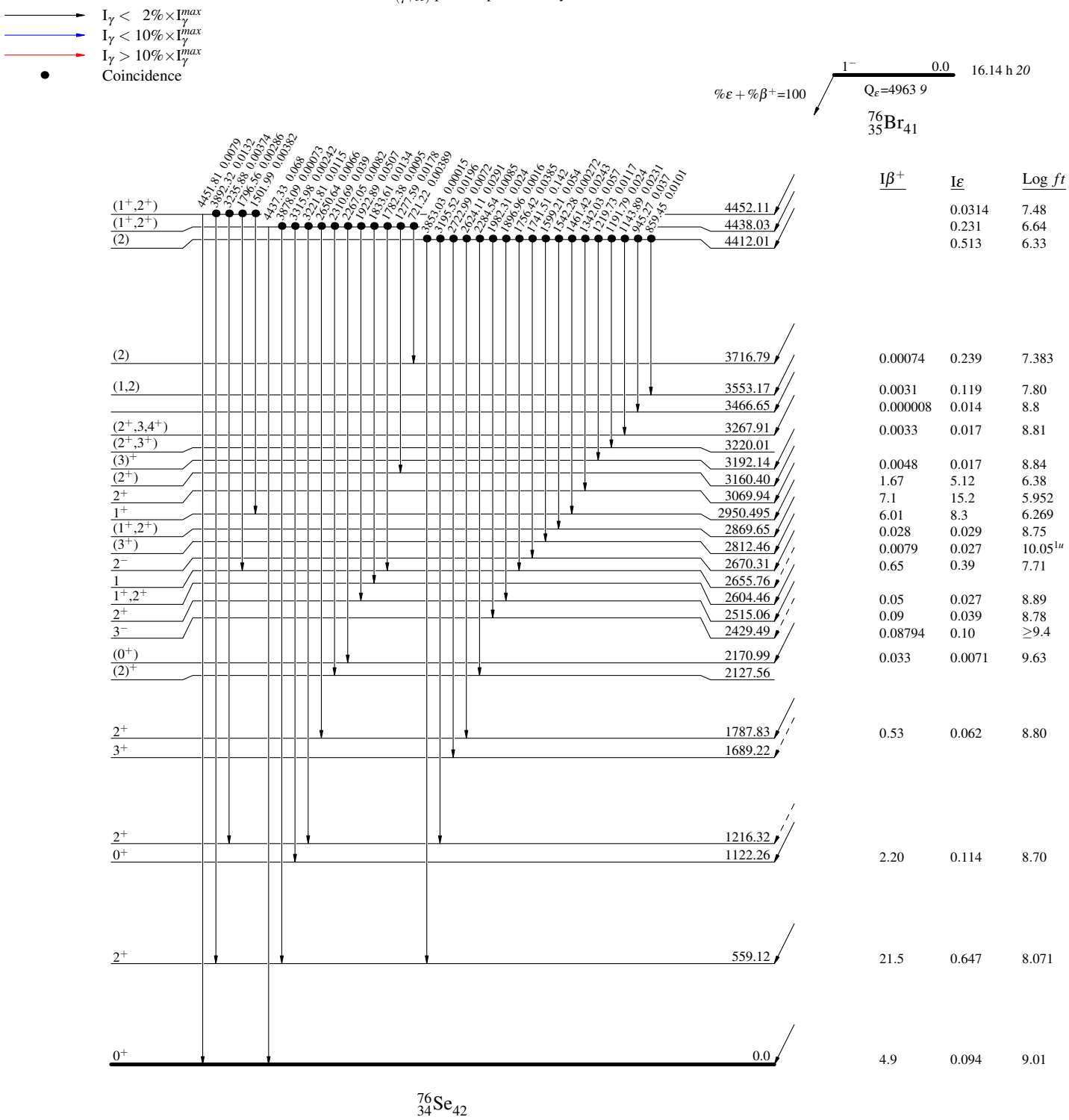


	Iβ⁺	Iε	Log *ft*
4535.27		0.144	6.66
4533.27		0.0300	7.34
4523.77		0.0279	7.40
4489.58		0.29	6.45
4473.69		0.0298	7.46
3553.17	0.0031	0.119	7.80
3351.80	1.08	8.81	6.044
3267.91	0.0033	0.017	8.81
3220.01			
2950.495	6.01	8.3	6.269
2869.65	0.028	0.029	8.75
2812.46	0.0079	0.027	10.05[1u]
2670.31	0.65	0.39	7.71
2655.76			
2515.06	0.09	0.039	8.78
2429.49	0.08794	0.10	≥9.4
1791.66			
1787.83	0.53	0.062	8.80
1689.22			
1216.32			
1122.26	2.20	0.114	8.70
559.12	21.5	0.647	8.071
0.0	4.9	0.094	9.01

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

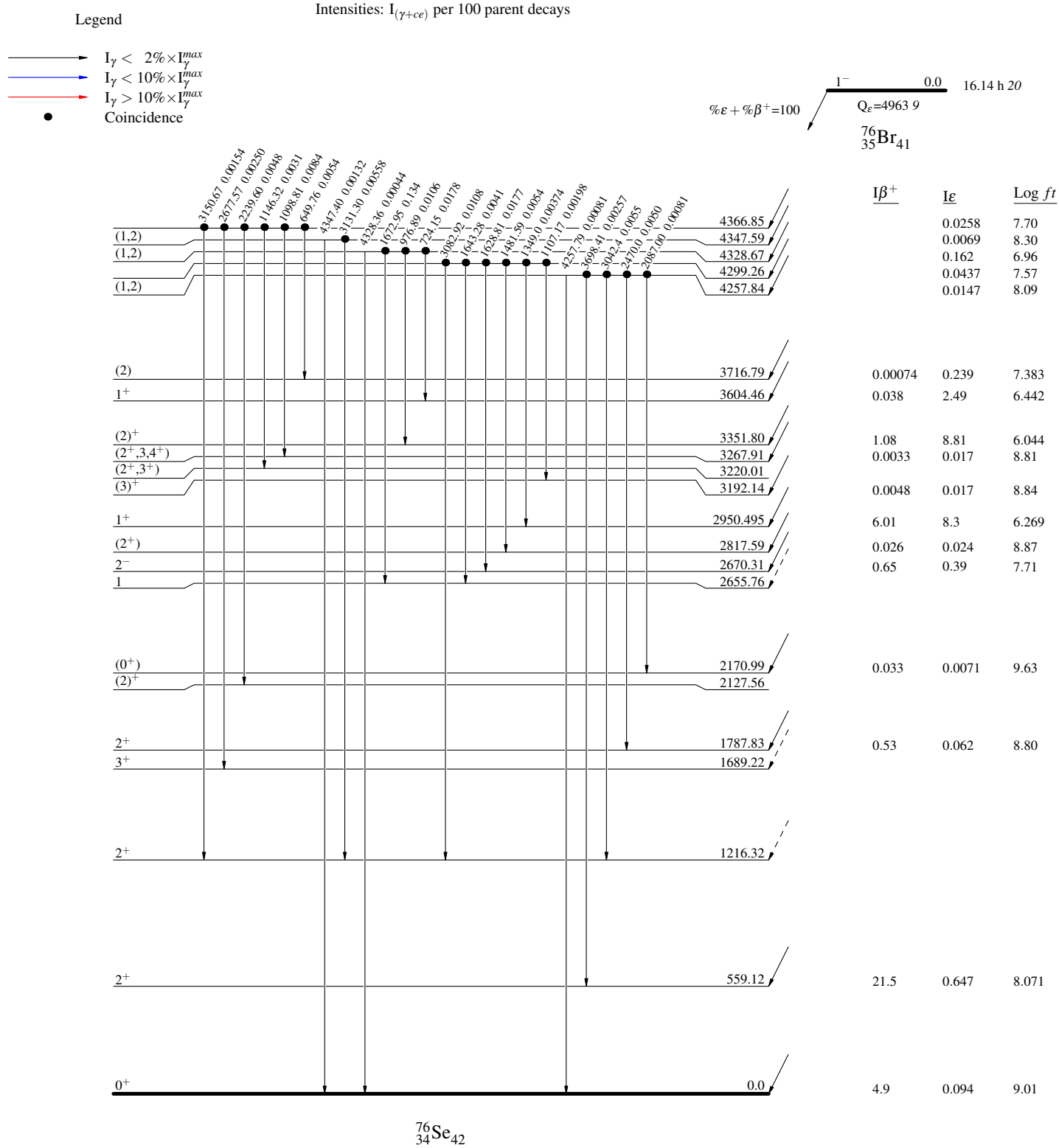
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

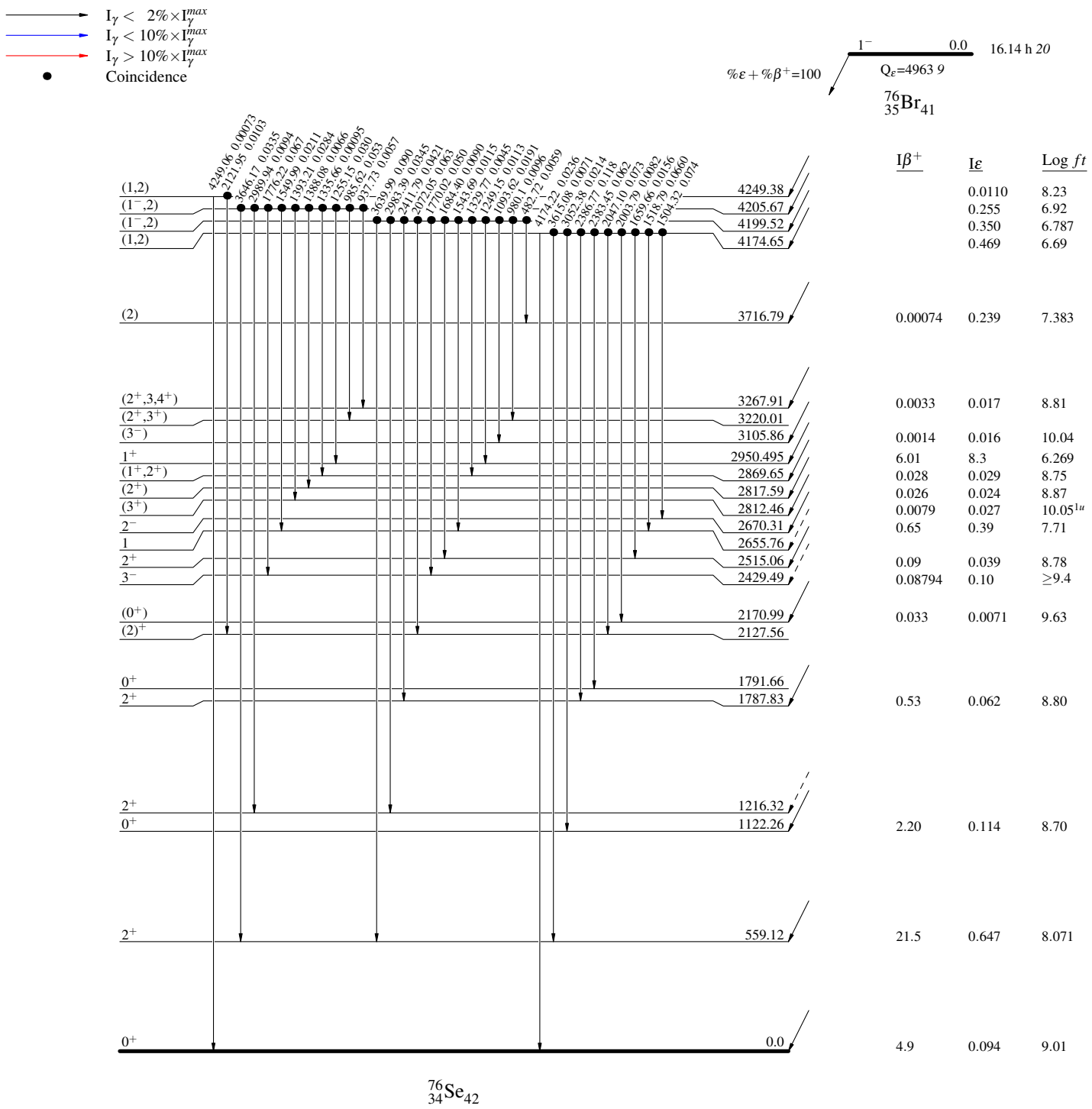


	Iβ⁺	Iε	Log *ft*
4366.85		0.0258	7.70
4347.59		0.0069	8.30
4328.67		0.162	6.96
4299.26		0.0437	7.57
4257.84		0.0147	8.09
3716.79	0.00074	0.239	7.383
3604.46	0.038	2.49	6.442
3351.80	1.08	8.81	6.044
3267.91	0.0033	0.017	8.81
3220.01			
3192.14	0.0048	0.017	8.84
2950.495	6.01	8.3	6.269
2817.59	0.026	0.024	8.87
2670.31	0.65	0.39	7.71
2655.76			
2170.99	0.033	0.0071	9.63
2127.56			
1787.83	0.53	0.062	8.80
1689.22			
1216.32			
559.12	21.5	0.647	8.071
0.0	4.9	0.094	9.01

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



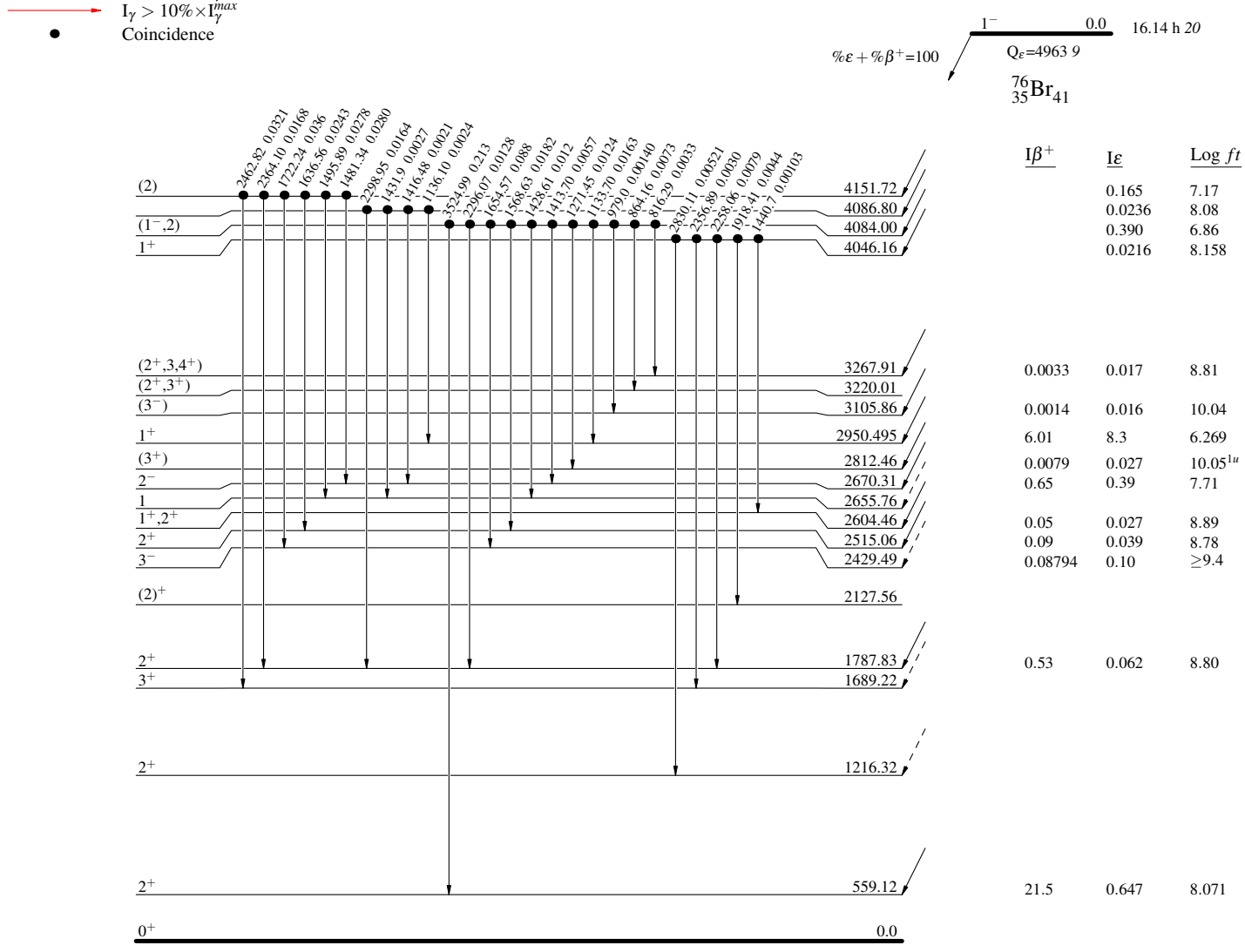
	Iβ⁺	Iε	Log *ft*
4249.38		0.0110	8.23
4205.67		0.255	6.92
4199.52		0.350	6.787
4174.65		0.469	6.69
3716.79	0.00074	0.239	7.383
3267.91	0.0033	0.017	8.81
3220.01			
3105.86	0.0014	0.016	10.04
2950.495	6.01	8.3	6.269
2869.65	0.028	0.029	8.75
2817.59	0.026	0.024	8.87
2812.46	0.0079	0.027	10.05[1u]
2670.31	0.65	0.39	7.71
2655.76			
2515.06	0.09	0.039	8.78
2429.49	0.08794	0.10	≥9.4
2170.99	0.033	0.0071	9.63
2127.56			
1791.66			
1787.83	0.53	0.062	8.80
1216.32			
1122.26	2.20	0.114	8.70
559.12	21.5	0.647	8.071
0.0	4.9	0.094	9.01

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

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

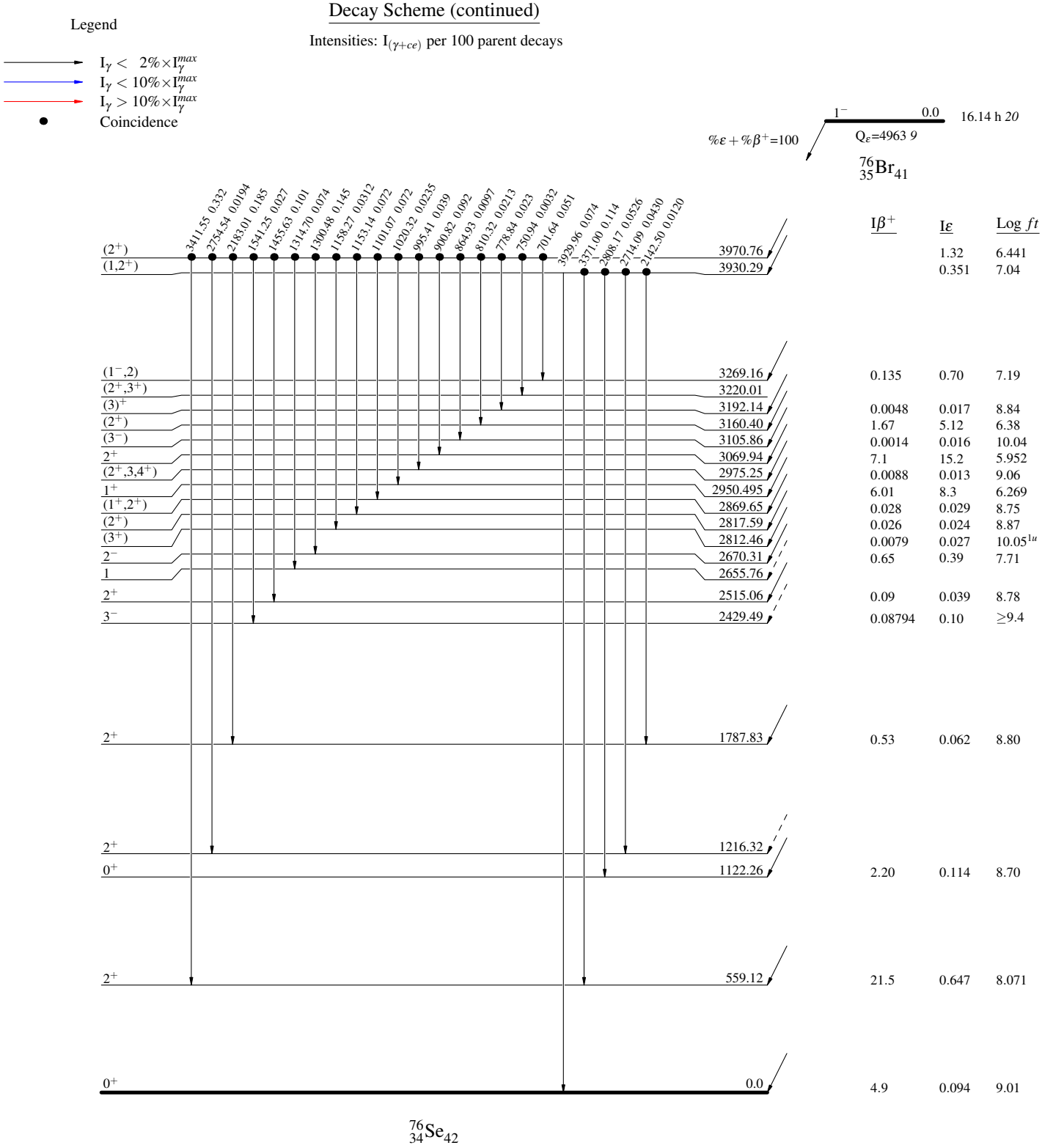


	Iβ⁺	Iε	Log *ft*
4151.72		0.165	7.17
4086.80		0.0236	8.08
4084.00		0.390	6.86
4046.16		0.0216	8.158
3267.91	0.0033	0.017	8.81
3220.01			
3105.86	0.0014	0.016	10.04
2950.495	6.01	8.3	6.269
2812.46	0.0079	0.027	10.05[1u]
2670.31	0.65	0.39	7.71
2655.76			
2604.46	0.05	0.027	8.89
2515.06	0.09	0.039	8.78
2429.49	0.08794	0.10	≥9.4
2127.56			
1787.83	0.53	0.062	8.80
1689.22			
1216.32			
559.12	21.5	0.647	8.071
0.0			

^{76}Br ε+β$^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

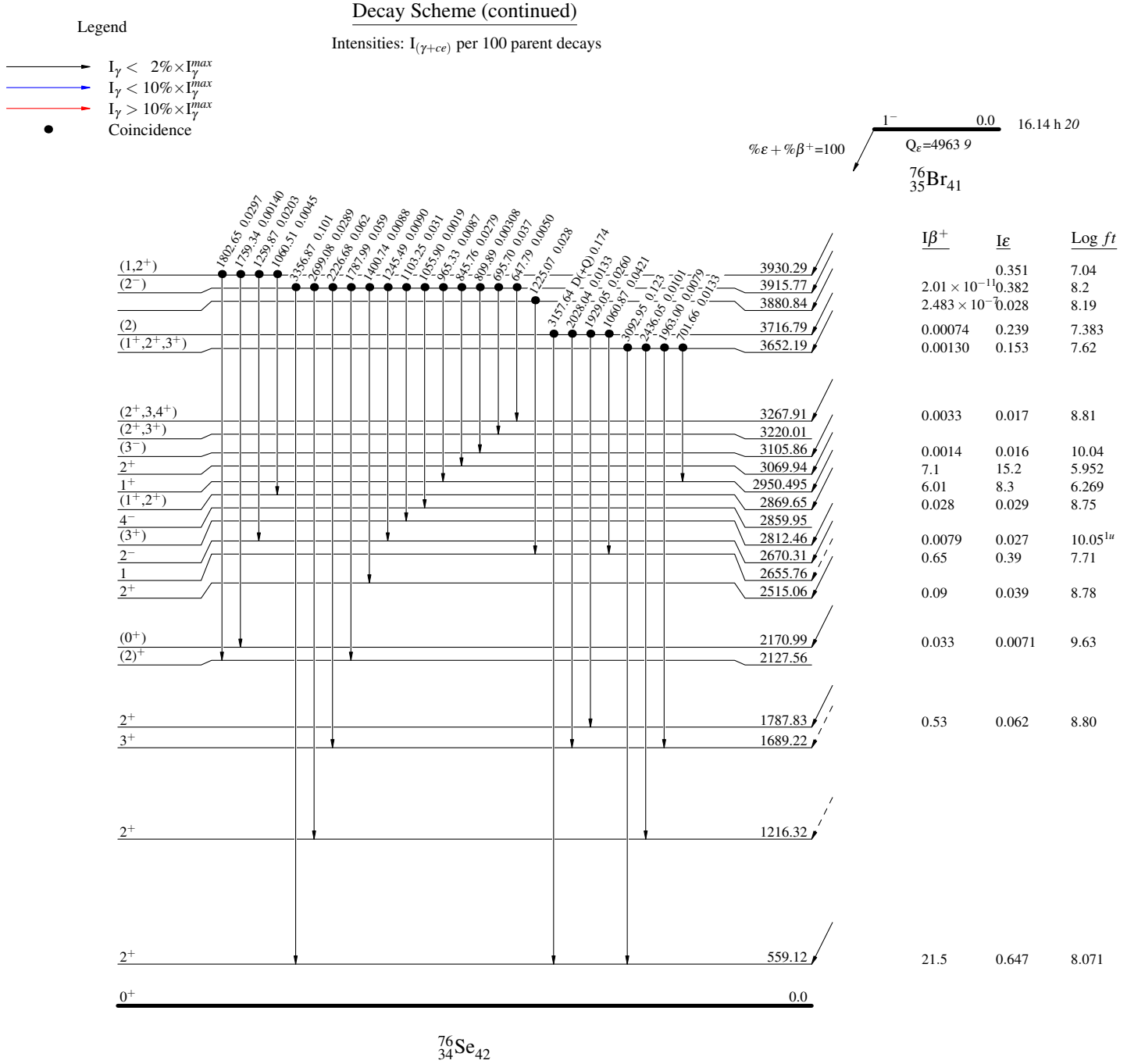


	Iβ+	Iε	Log *ft*
3970.76		1.32	6.441
3930.29		0.351	7.04
3269.16	0.135	0.70	7.19
3220.01			
3192.14	0.0048	0.017	8.84
3160.40	1.67	5.12	6.38
3105.86	0.0014	0.016	10.04
3069.94	7.1	15.2	5.952
2975.25	0.0088	0.013	9.06
2950.495	6.01	8.3	6.269
2869.65	0.028	0.029	8.75
2817.59	0.026	0.024	8.87
2812.46	0.0079	0.027	10.05[1u]
2670.31	0.65	0.39	7.71
2655.76			
2515.06	0.09	0.039	8.78
2429.49	0.08794	0.10	≥9.4
1787.83	0.53	0.062	8.80
1216.32			
1122.26	2.20	0.114	8.70
559.12	21.5	0.647	8.071
0.0	4.9	0.094	9.01

^{76}Br ε+β$^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



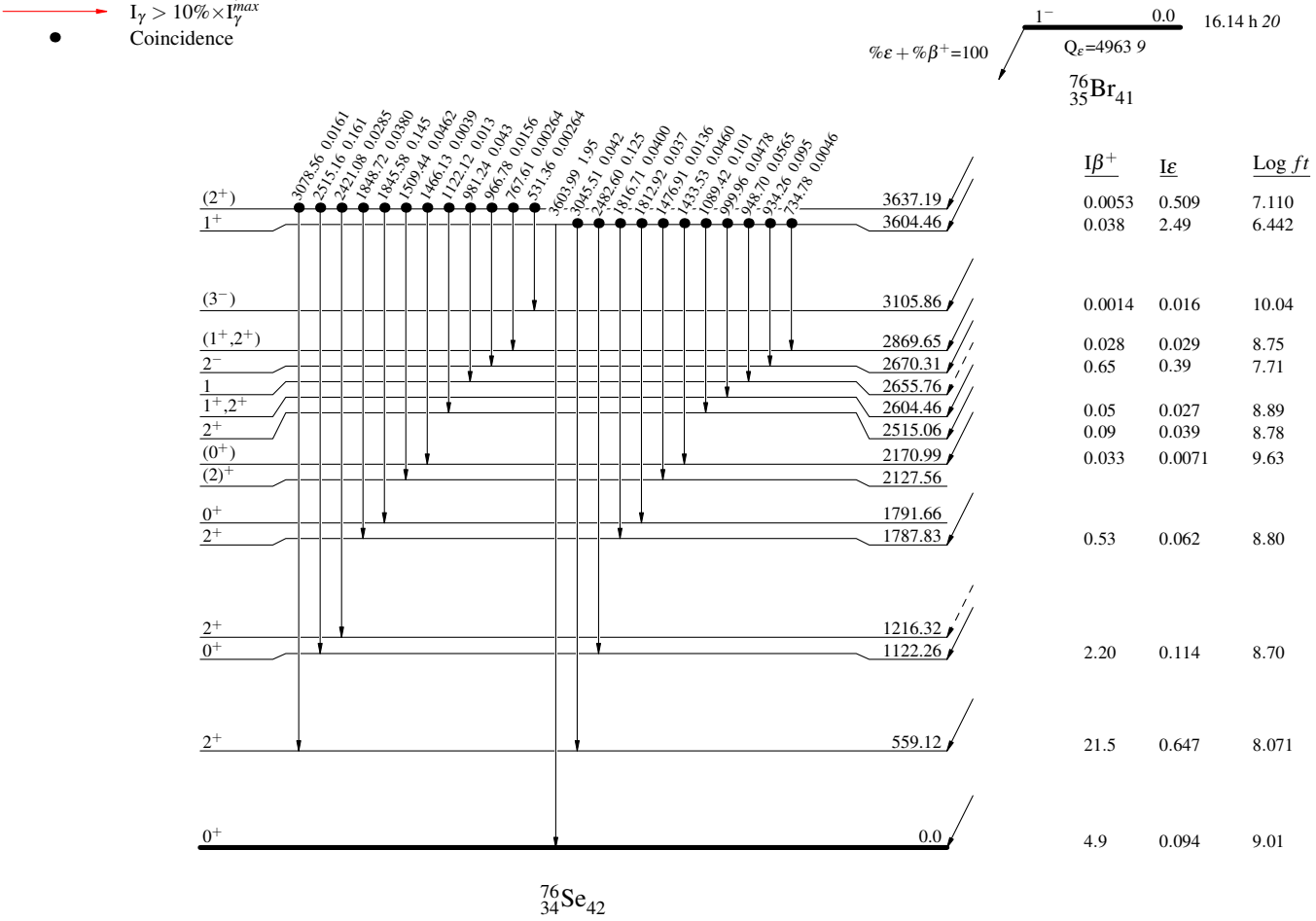
	Iβ$^+$	Iε	Log *ft*
		0.351	7.04
	2.01×10^{-11}	0.382	8.2
	2.483×10^{-7}	0.028	8.19
	0.00074	0.239	7.383
	0.00130	0.153	7.62
	0.0033	0.017	8.81
	0.0014	0.016	10.04
	7.1	15.2	5.952
	6.01	8.3	6.269
	0.028	0.029	8.75
	0.0079	0.027	10.05[1u]
	0.65	0.39	7.71
	0.09	0.039	8.78
	0.033	0.0071	9.63
	0.53	0.062	8.80
	21.5	0.647	8.071

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

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

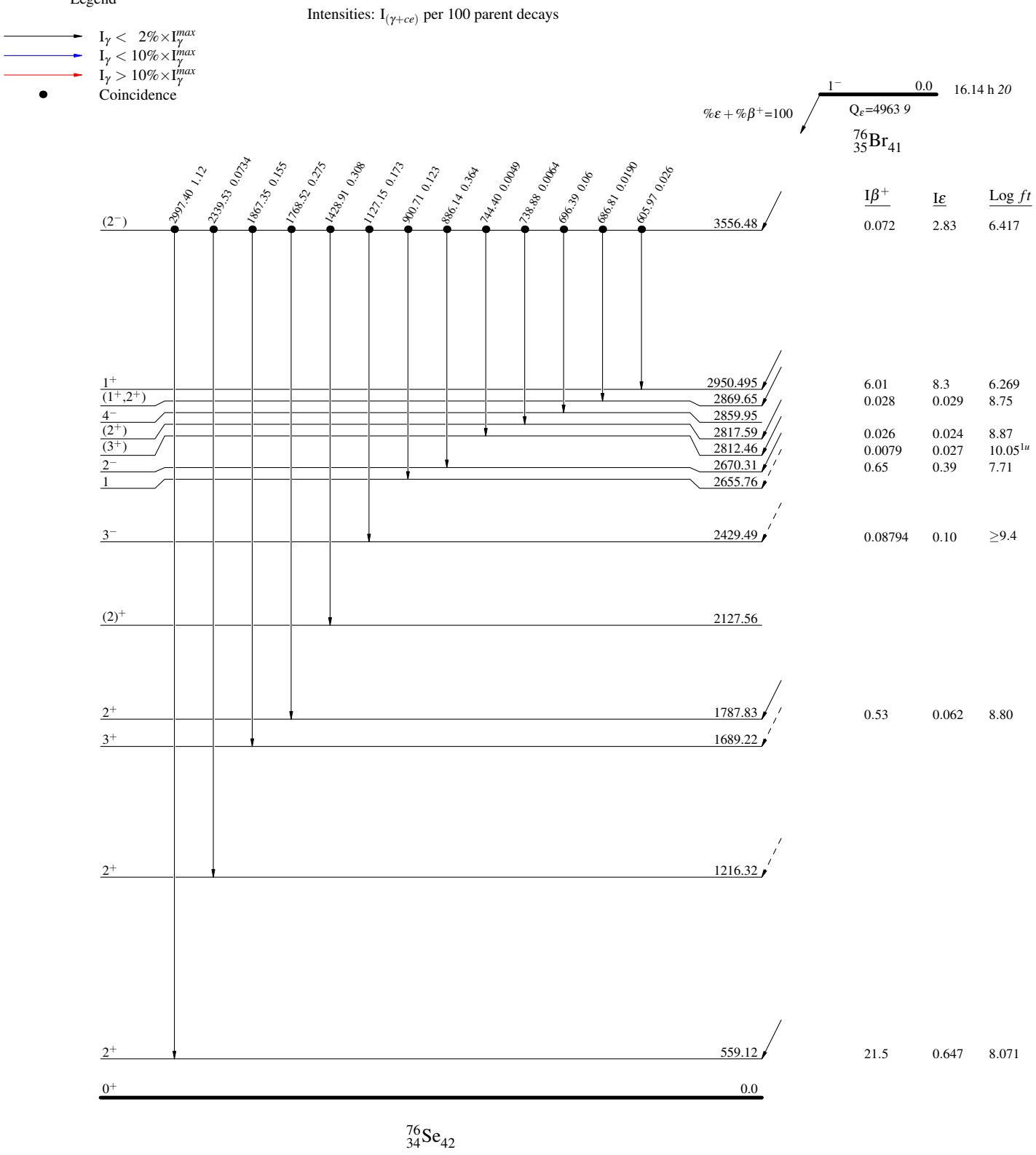


	Iβ⁺	Iε	Log *ft*
3637.19	0.0053	0.509	7.110
3604.46	0.038	2.49	6.442
3105.86	0.0014	0.016	10.04
2869.65	0.028	0.029	8.75
2670.31	0.65	0.39	7.71
2655.76			
2604.46	0.05	0.027	8.89
2515.06	0.09	0.039	8.78
2170.99	0.033	0.0071	9.63
2127.56			
1791.66			
1787.83	0.53	0.062	8.80
1216.32			
1122.26	2.20	0.114	8.70
559.12	21.5	0.647	8.071
0.0	4.9	0.094	9.01

^{76}Br ε+β$^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

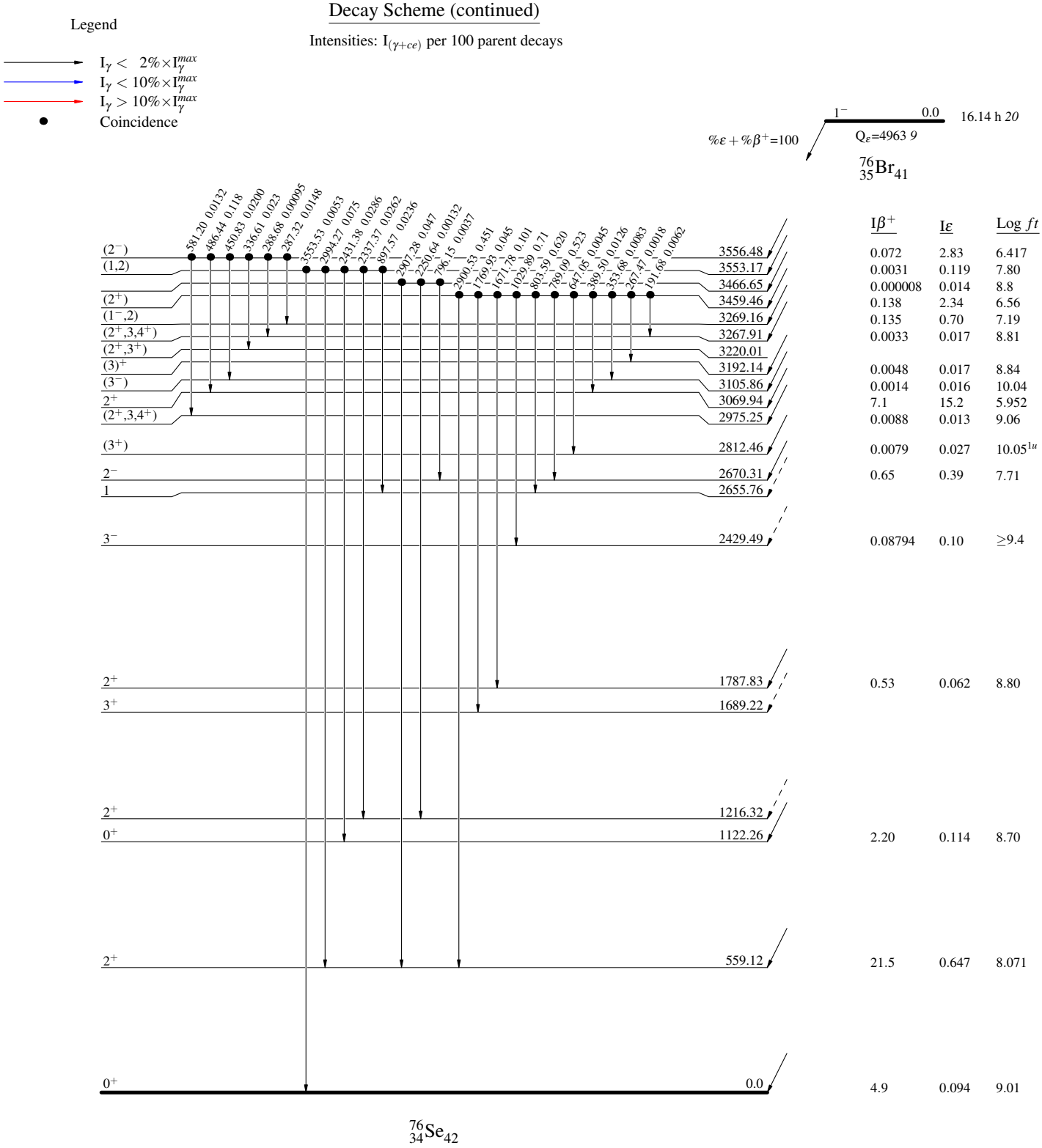


	Iβ+	Iε	Log *ft*
3556.48	0.072	2.83	6.417
2950.495	6.01	8.3	6.269
2869.65	0.028	0.029	8.75
2859.95			
2817.59	0.026	0.024	8.87
2812.46	0.0079	0.027	10.05[1u]
2670.31	0.65	0.39	7.71
2655.76			
2429.49	0.08794	0.10	≥9.4
2127.56			
1787.83	0.53	0.062	8.80
1689.22			
1216.32			
559.12	21.5	0.647	8.071
0.0			

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

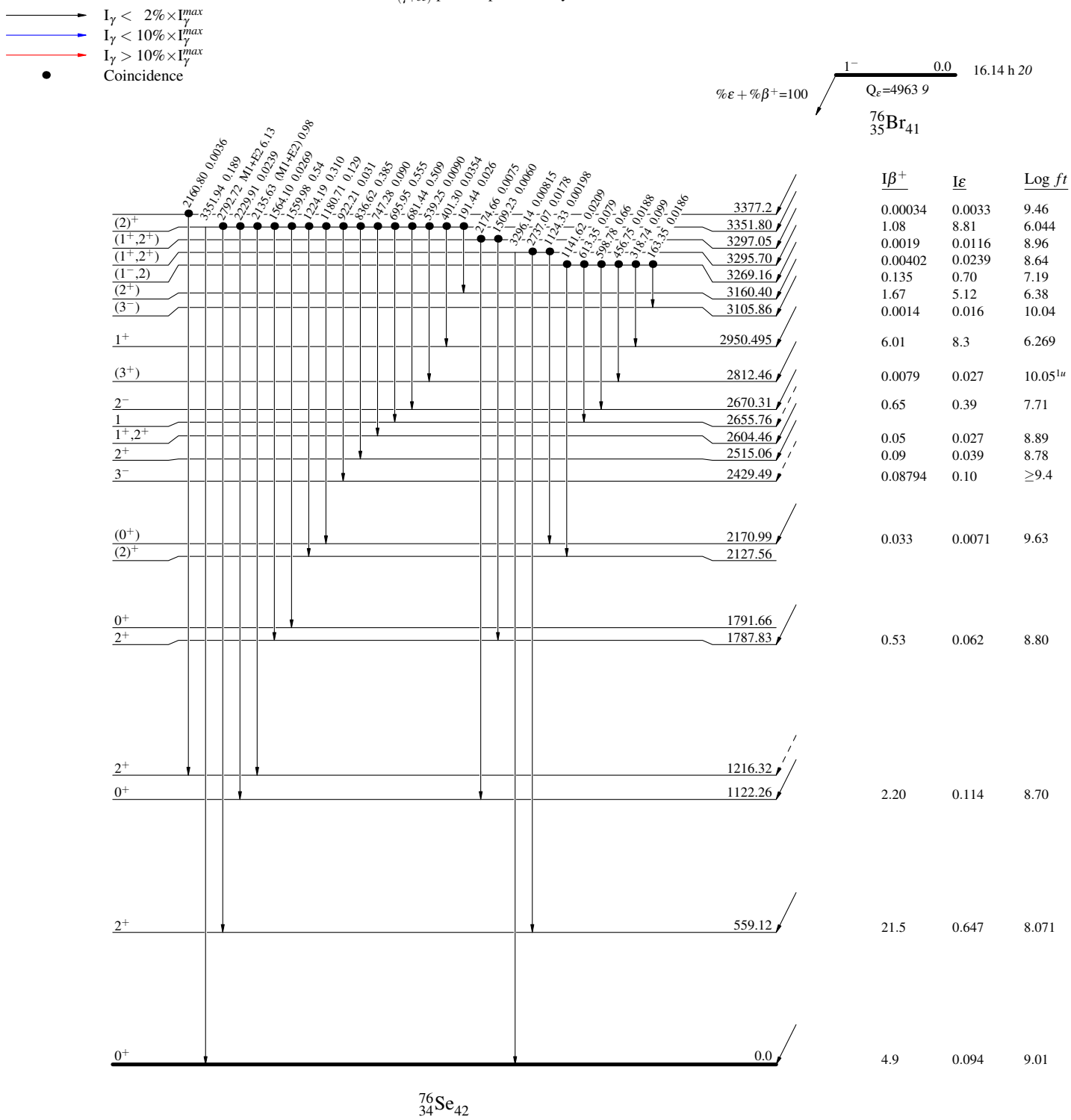


	Iβ⁺	Iε	Log *ft*
(2⁻) 3556.48	0.072	2.83	6.417
(1,2) 3553.17	0.0031	0.119	7.80
3466.65	0.000008	0.014	8.8
(2⁺) 3459.46	0.138	2.34	6.56
(1⁻,2) 3269.16	0.135	0.70	7.19
(2⁺,3,4⁺) 3267.91	0.0033	0.017	8.81
(2⁺,3⁺) 3220.01			
(3)⁺ 3192.14	0.0048	0.017	8.84
(3⁻) 3105.86	0.0014	0.016	10.04
2⁺ 3069.94	7.1	15.2	5.952
(2⁺,3,4⁺) 2975.25	0.0088	0.013	9.06
(3⁺) 2812.46	0.0079	0.027	10.05[1u]
2⁻ 2670.31	0.65	0.39	7.71
1 2655.76			
3⁻ 2429.49	0.08794	0.10	≥9.4
2⁺ 1787.83	0.53	0.062	8.80
3⁺ 1689.22			
2⁺ 1216.32			
0⁺ 1122.26	2.20	0.114	8.70
2⁺ 559.12	21.5	0.647	8.071
0⁺ 0.0	4.9	0.094	9.01

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

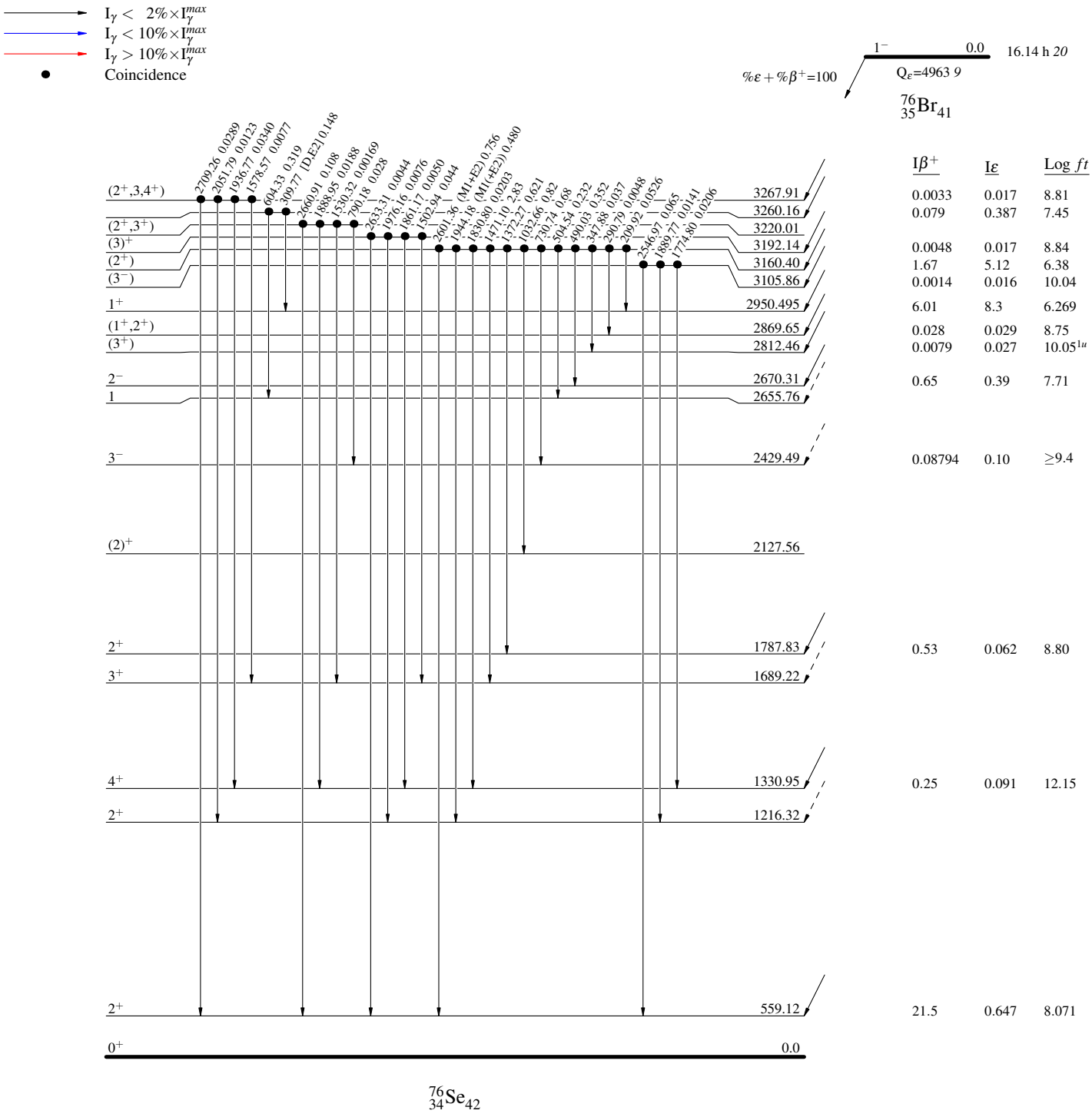
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



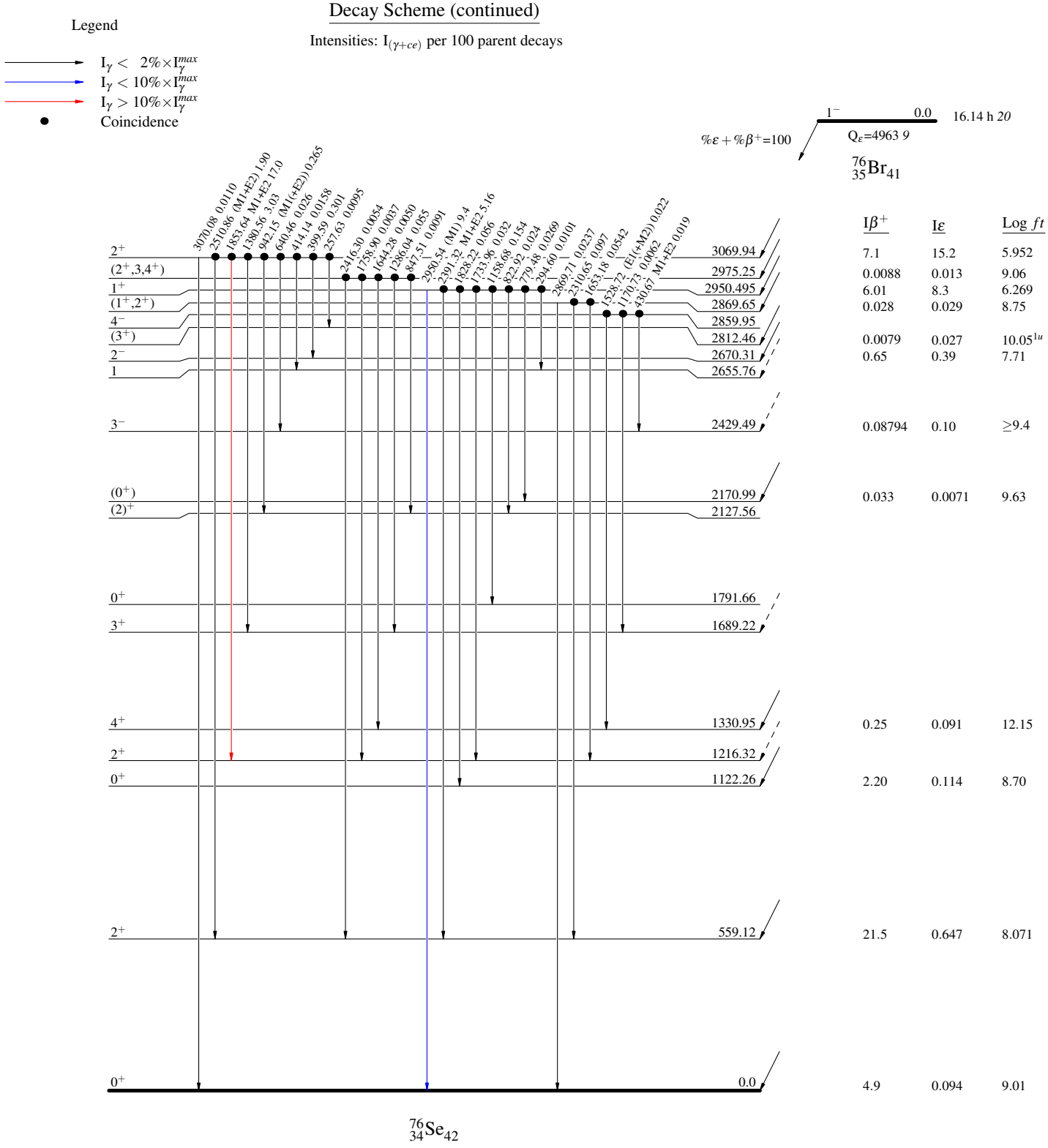
	Iβ⁺	Iε	Log *ft*
3267.91	0.0033	0.017	8.81
3260.16	0.079	0.387	7.45
3220.01			
3192.14	0.0048	0.017	8.84
3160.40	1.67	5.12	6.38
3105.86	0.0014	0.016	10.04
2950.495	6.01	8.3	6.269
2869.65	0.028	0.029	8.75
2812.46	0.0079	0.027	10.05[1u]
2670.31	0.65	0.39	7.71
2655.76			
2429.49	0.08794	0.10	≥9.4
2127.56			
1787.83	0.53	0.062	8.80
1689.22			
1330.95	0.25	0.091	12.15
1216.32			
559.12	21.5	0.647	8.071
0.0			

$^{76}_{34}Se_{42}$

^{76}Br ε+β$^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

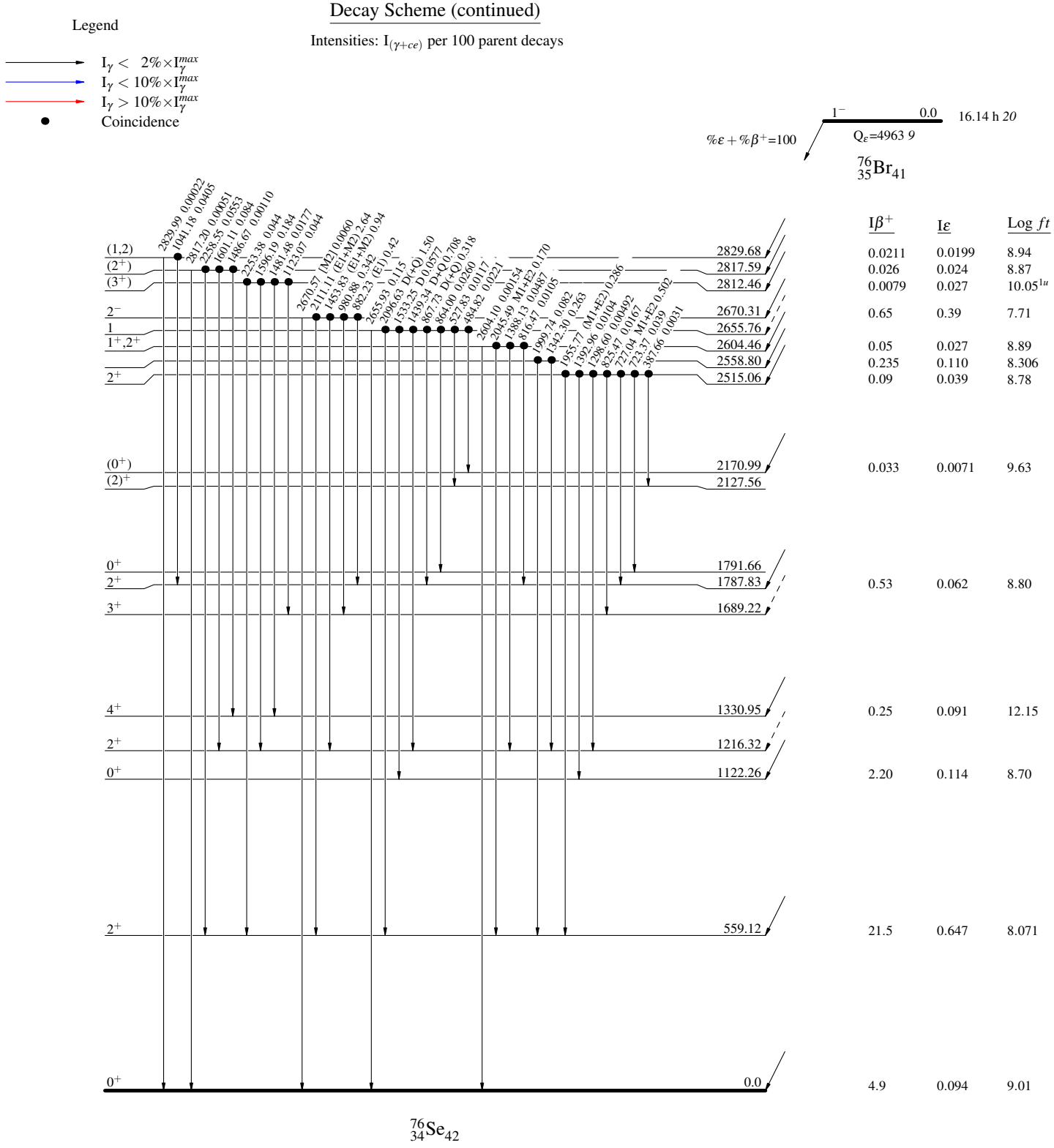
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



^{76}Br ε+β$^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

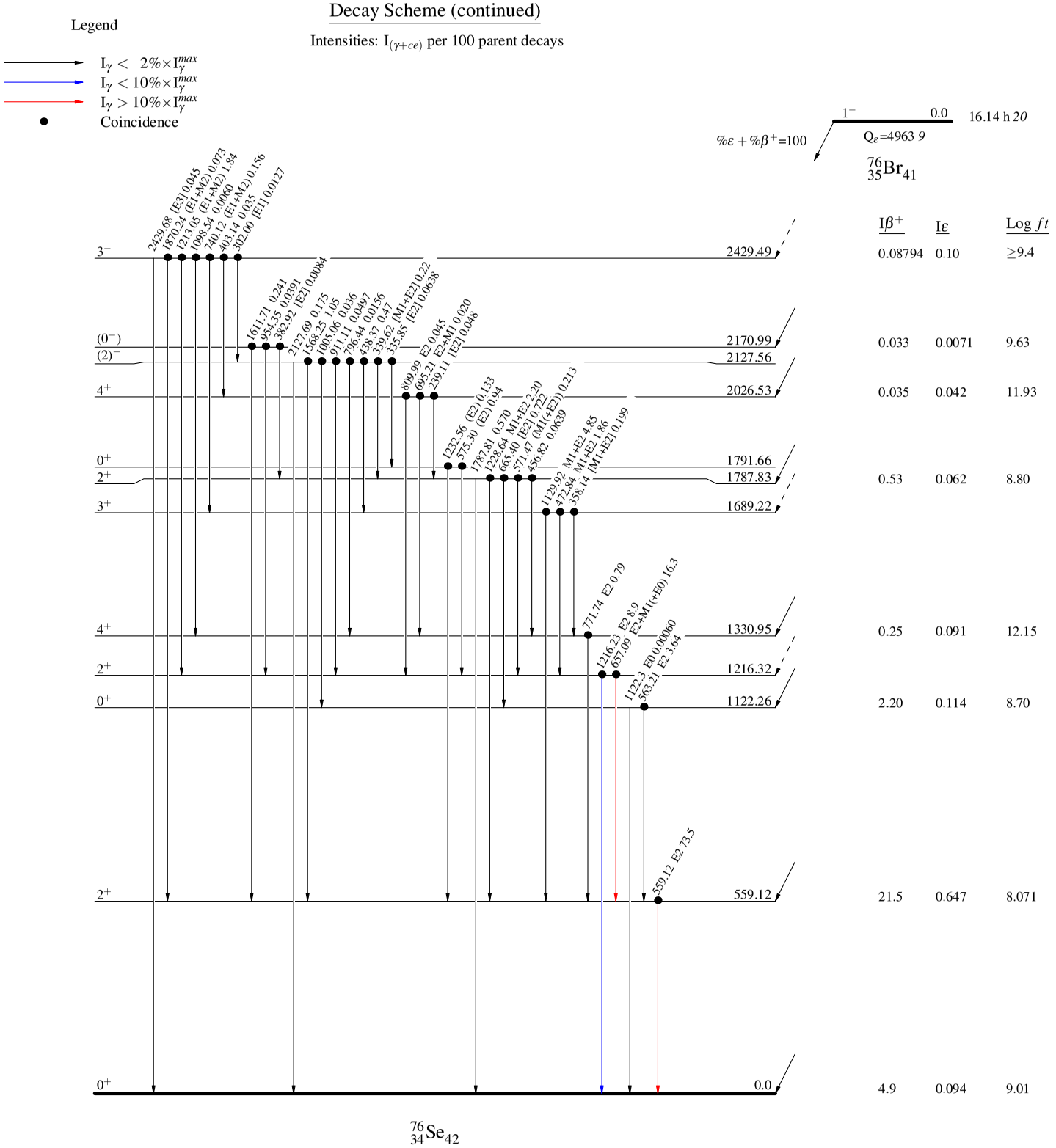


	Iβ$^+$	Iε	Log *ft*
2829.68	0.0211	0.0199	8.94
2817.59	0.026	0.024	8.87
2812.46	0.0079	0.027	10.05[1u]
2670.31	0.65	0.39	7.71
2604.46	0.05	0.027	8.89
2558.80	0.235	0.110	8.306
2515.06	0.09	0.039	8.78
2170.99	0.033	0.0071	9.63
1787.83	0.53	0.062	8.80
1330.95	0.25	0.091	12.15
1122.26	2.20	0.114	8.70
559.12	21.5	0.647	8.071
0.0	4.9	0.094	9.01

^{76}Br $\varepsilon+\beta^+$ decay (16.14 h) 2018MoZZ

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



$^{76}_{34}Se_{42}$