

$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Shaofei Zhu and E. A. Mccutchan		NDS 175, 1 (2021)	1-May-2021

Parent:  $^{214}\text{Bi}$ :  $E=0.0$ ;  $J^\pi=1^-$ ;  $T_{1/2}=19.71$  min 2;  $Q(\beta^-)=3269$  11;  $\% \beta^-$  decay=99.9790 13

$^{214}\text{Bi}$ - $Q(\beta^-)$ : from 2021Wa16.

2004Mo07, 2002De03, 1998Mo14: Radioactivity  $^{226}\text{Ra}(\alpha)$ ; measured  $E_\gamma$ , relative and absolute  $I_\gamma$ , X-ray spectra; Ge(Li), HPGe detectors.  $\alpha$ -spectra with 20 keV resolution using ZnS scintillator.

2002MoZP: Radioactivity  $^{226}\text{Ra}(\alpha)$ ; measured  $E_\gamma$ ,  $I_\gamma$ ; Compton suppressed spectrometer, planar HPGe detector.

2000Sa32: Radioactivity  $^{226}\text{Ra}(\alpha)$ ; measured  $E_\gamma$ ,  $I_\gamma$ ; HPGe detector.

1994Mo06, 1993Di09, 1990Mo08, 1982Ak03: Radioactivity  $^{226}\text{Ra}(\alpha)$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ ; planar HPGe detector and Ge(Li) detectors.

1989Si17, 1989Ta15, 1986Ta16: Radioactivity  $^{226}\text{Ra}(\alpha)$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ ,  $\gamma\gamma(\theta)$ ; Ge detectors with anti-Compton arrangement.

Others:

For ce measurements, see 1975HaZA, 1967Ma51, 1960Lu07, 1960Ma05, 1957Ni11 and 1954MI77.

For additional  $E_\gamma$ ,  $I_\gamma$  measurements, see 2003K115,1991Li11,1983OI01, 1983Sc13, 1982Fa10, 1977Zo01, 1975Ha31, 1972CIZS, 1971DiZI, 1969Li10, 1969Gr33, 1969Gu15, 1969La03, 1969Li10, 1969Wa27, 1969La03, 1968Yt01, 1967Ma51, 1967Ar20, 1967Bu17, 1966Hu03, 1964Ew04, 1960Lu07, 1958Bi87, 1958Dz94, 1958Dz94, 1954MI77, 1952Mu45, 1949Ma75.

X rays(Bi):

$I(K\alpha_1 \text{ x ray})=0.97\%$  7;  $I(K\alpha_2 \text{ x ray})=0.53\%$  3 (2004Mo07). Other:  $I(K\alpha \text{ x ray})=1.77\%$  5 (1983Sc13).

$I(K\beta \text{ x ray})=0.44\%$  5 (2004Mo07).

$\alpha$ : Additional information 1.

 $^{214}\text{Po}$  Levels

The decay level scheme is mainly from  $\gamma\gamma$  coincidences of 1989Si17 and 1994Mo06.

E(level) <sup>†</sup>	$J^\pi$ <sup>‡</sup>	$T_{1/2}$	Comments
0.0	0 <sup>+</sup>	163.46 $\mu\text{s}$ 4	$T_{1/2}$ : from the Adopted Levels.
609.318 5	2 <sup>+</sup>		
1015.041 20	(4 <sup>+</sup> )		
1274.765 9	3 <sup>-</sup>		
1377.681 7	2 <sup>+</sup>		
1415.498 8	0 <sup>+</sup>	99 ps 3	$T_{1/2}$ : from 1979Be12; other: 0.23 ns 19 (1959Tu44).
1543.370 9	2 <sup>+</sup>		
1661.282 14	2 <sup>+</sup>		
1712.93 8	(3 <sup>+</sup> )		
1729.613 7	2 <sup>+</sup>		
1742.99 3	0 <sup>(+)</sup>		
1764.520 8	1 <sup>+</sup>		
1847.446 9	2 <sup>+</sup>		
1890.306 13	(2) <sup>+</sup>		
1994.639 13	1 <sup>-</sup>		
2010.831 13	(2) <sup>+</sup>		
2017.315 9	0 <sup>+</sup>		
2088.44 5	(1,2) <sup>+</sup>		
2118.535 10	1 <sup>+</sup>		
2147.86 5	(1 <sup>-</sup> ,2 <sup>+</sup> )		
2192.536 16	(2) <sup>+</sup>		
2204.103 23	1 <sup>+</sup>		
2208.69 4	(2 <sup>-</sup> ,3)		
2266.41 4	2 <sup>+</sup>		
2293.362 19	(1 <sup>+</sup> ,2 <sup>+</sup> )		

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$^{214}\text{Bi}$   $\beta^-$  decay [1994Mo06](#),[1989Si17](#) (continued) $^{214}\text{Po}$  Levels (continued)

E(level) <sup>†</sup>	J <sup>π</sup> <sup>‡</sup>	Comments
2348.3 7	(1,2 <sup>+</sup> )	
2360.97 17	(1,2 <sup>+</sup> )	
2423.25 6	(1,2 <sup>+</sup> )	
2447.701 19	1 <sup>-</sup>	
2482.460 17	(1 <sup>-</sup> ,2 <sup>+</sup> )	
2505.34 9	(1 <sup>-</sup> ,2 <sup>+</sup> )	
2508.12 4	(0 <sup>+</sup> )	
2544.92 11		
2553.0 5		
2562.4 5		
2604.68 6	(2 <sup>+</sup> )	
2630.84 9	(1,2 <sup>+</sup> )	
2662.33 9	(2 <sup>+</sup> )	
2694.62 5	(1 <sup>-</sup> ,2 <sup>+</sup> )	
2698.60 7	(1,2) <sup>+</sup>	E(level): from <a href="#">1989Si17</a> . Proposed as two levels at 2698.31 and 2699.12 keV in <a href="#">1993Di09</a> and <a href="#">1994Mo06</a> .
2719.26 5	1 <sup>+</sup>	
2728.617 23	(0 <sup>+</sup> ,1,2)	
2769.91 13	(1,2 <sup>+</sup> )	
2785.97 9	(1,2 <sup>+</sup> )	
2794.1 6		
2802.54 19		
2826.82 14	(1,2 <sup>+</sup> )	
2860.93 13	(1,2 <sup>+</sup> )	
2869.63 17	(2 <sup>-</sup> ,3 <sup>-</sup> )	
2880.36 14	(1 <sup>-</sup> ,2 <sup>+</sup> )	
2893.60 11	(1,2 <sup>+</sup> )	
2896.98 23		
2919.5 3		
2921.89 11	(1,2 <sup>+</sup> )	
2928.55 22	(1,2 <sup>+</sup> )	
2934.54 18	(1,2 <sup>+</sup> )	
2940.67 10	(1 <sup>-</sup> ,2 <sup>+</sup> )	
2962.8 7		
2967.6 5		
2978.93 12	(1,2 <sup>+</sup> )	
2986.22 13	(2 <sup>-</sup> ,3)	
3000.00 14	(1 <sup>-</sup> ,2 <sup>+</sup> )	
3003.4 10		
3005.8 6		
3014.11 15	(1,2 <sup>+</sup> )	
3022.3 3	(2 <sup>-</sup> ,3,4 <sup>+</sup> )	
3030.3 6		
3039.3 6		
3053.88 18	(1,2 <sup>+</sup> )	
3068.3 8		
3078.7 6		
3081.84 25	(1,2 <sup>+</sup> )	
3093.48 23	(1 <sup>-</sup> ,2 <sup>+</sup> )	
3139.0 8		
3142.6 4	(1,2 <sup>+</sup> )	
3149.2 5	(1,2 <sup>+</sup> )	
3160.4 5	(1,2 <sup>+</sup> )	
3164.4 8		
3173.3 6		

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$^{214}\text{Bi}$   $\beta^-$  decay **1994Mo06,1989Si17** (continued) $^{214}\text{Po}$  Levels (continued)

<u>E(level)<sup>†</sup></u>	<u>J<math>\pi^{\ddagger}</math></u>
3183.6 4	(1,2 <sup>+</sup> )
3262.4 8	

<sup>†</sup> From a least squares fit to E $\gamma$ 's by evaluators. 1.0-keV uncertainty assumed when not reported.

<sup>‡</sup> From the Adopted Levels.

 $\beta^-$  radiations

<u>E(decay)</u>	<u>E(level)</u>	<u>I<math>\beta^-</math><sup>†</sup></u>	<u>Log ft</u>	<u>Comments</u>
(85 II)	3183.6	0.0016 3	6.57 20	av E $\beta$ =22.0 30
(96 II)	3173.3	0.00014 9	7.8 4	av E $\beta$ =24.8 30
(109 II)	3160.4	0.00086 17	7.16 17	av E $\beta$ =28.3 31
(120 II)	3149.2	8.63 $\times 10^{-5}$ 4	8.29 13	av E $\beta$ =31.4 31
(126 II)	3142.6	0.0021 4	6.97 15	av E $\beta$ =33.2 31
(176 II)	3093.48	0.0088 17	6.79 13	av E $\beta$ =47.0 32
(187 II)	3081.84	0.0082 20	6.91 14	av E $\beta$ =50.3 32
(215 II)	3053.88	0.037 5	6.44 10	av E $\beta$ =58.4 33
(255 II)	3014.11	0.040 6	6.64 9	av E $\beta$ =70.2 33
(266 II)	3003.4	0.007 3	7.46 20	av E $\beta$ =73.4 34
(269 II)	3000.00	0.0102 10	7.31 8	av E $\beta$ =74.4 34
(283 II)	2986.22	0.0091 9	7.43 7	av E $\beta$ =78.6 34
(290 II)	2978.93	0.0164 7	7.21 6	av E $\beta$ =80.8 34
(306 II)	2962.8	0.00036 14	8.94 18	av E $\beta$ =85.7 34
(328 II)	2940.67	0.049 5	6.91 7	av E $\beta$ =92.5 35
(334 II)	2934.54	0.00214 21	8.29 7	av E $\beta$ =94.4 35
(340 II)	2928.55	0.00109 9	8.61 6	av E $\beta$ =96.3 35
(347 II)	2921.89	0.0227 13	7.32 6	av E $\beta$ =98.4 35
(350 II)	2919.5	0.0014 9	8.5 3	av E $\beta$ =99.1 35
(372 II)	2896.98	0.0045 5	8.12 7	av E $\beta$ =106.2 35
(375 II)	2893.60	0.033 5	7.27 8	av E $\beta$ =107.3 35
(389 II)	2880.36	0.0113 14	7.78 7	av E $\beta$ =111.5 35
(399 II)	2869.63	0.014 3	7.73 11	av E $\beta$ =114.9 36
(408 II)	2860.93	0.032 6	7.40 9	av E $\beta$ =117.7 36
(442 II)	2826.82	0.043 13	7.38 14	av E $\beta$ =128.8 36
(466 II)	2802.54	0.0082 14	8.18 9	av E $\beta$ =136.7 37
(483 II)	2785.97	0.048 6	7.46 7	av E $\beta$ =142.2 37
(499 II)	2769.91	0.063 9	7.39 7	av E $\beta$ =147.5 37
(540 II)	2728.617	0.542 22	6.57 4	av E $\beta$ =161.4 38
(550 II)	2719.26	0.273 12	6.89 4	av E $\beta$ =164.6 38
(570 II)	2698.60	0.103 7	7.37 4	av E $\beta$ =171.6 38
(574 II)	2694.62	0.249 15	7.00 4	av E $\beta$ =173.0 38
(607 II)	2662.33	0.125 11	7.38 5	av E $\beta$ =184.1 38
(638 II)	2630.84	0.037 8	7.98 10	av E $\beta$ =195.0 39
(664 II)	2604.68	0.20 5	7.30 12	av E $\beta$ =204.2 39
(707 II)	2562.4	0.00018 9	10.44 22	av E $\beta$ =219.1 40
(716 II)	2553.0	9.09 $\times 10^{-5}$ 4	10.758 23	av E $\beta$ =222.5 40
(724 II)	2544.92	0.033 6	8.21 9	av E $\beta$ =225.4 40
				I $\beta^-$ : since I( $\gamma$ +ce)(36.8 $\gamma$ ) is not known, the given I $\beta$ may be considered a lower limit.
(761 II)	2508.12	0.130 11	7.69 5	av E $\beta$ =238.6 40
				I $\beta^-$ : may be considered as an upper limit because of unknown intensity of the 36.8 $\gamma$ feeding from the 2545-keV level.
(764 II)	2505.34	0.174 10	7.57 4	av E $\beta$ =239.6 40

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$^{214}\text{Bi}$   $\beta^-$  decay **1994Mo06,1989Si17** (continued) $\beta^-$  radiations (continued)

E(decay)	E(level)	$I\beta^-^\dagger$	Log $ft$	Comments
(787 <i>11</i> )	2482.460	1.28 4	6.75 3	av $E\beta=247.8$ 40
(821 <i>11</i> )	2447.701	2.78 6	6.478 23	av $E\beta=260.5$ 41
(846 <i>11</i> )	2423.25	0.084 6	8.04 4	av $E\beta=269.5$ 41
(908 <i>11</i> )	2360.97	0.024 5	8.69 10	av $E\beta=292.5$ 41
(921 <i>11</i> )	2348.3	0.00014 9	10.9 3	av $E\beta=297.2$ 42
(976 <i>11</i> )	2293.362	0.563 16	7.433 22	av $E\beta=317.8$ 42
(1003 <i>11</i> )	2266.41	0.192 12	7.94 4	av $E\beta=328.0$ 42
				$I\beta^-$ : since the transition intensity of the 61.0 $\gamma$ is not known, its possible contribution is not included in $I\beta$ calculation.
(1060 <i>11</i> )	2208.69	0.22 3	7.97 7	av $E\beta=350.0$ 43
(1065 <i>11</i> )	2204.103	5.56 5	6.573 17	av $E\beta=351.8$ 42
(1076 <i>11</i> )	2192.536	0.866 12	7.397 17	av $E\beta=356.1$ 43
(1121 <i>11</i> )	2147.86	0.46 3	7.73 4	av $E\beta=373.3$ 43
(1150 <i>11</i> )	2118.535	4.33 4	6.801 16	av $E\beta=384.7$ 43
(1181 <i>11</i> )	2088.44	0.081 9	8.57 5	av $E\beta=396.4$ 43
				$I\beta^-$ : since $I(\gamma+ce)(71.1\gamma)$ is not known, any contribution from the 71.1 $\gamma$ could not be included in calculation of $I\beta$ to 2088.41 level.
(1252 <i>11</i> )	2017.315	2.460 15	7.179 15	av $E\beta=424.2$ 44
				$I\beta^-$ : since $I(\gamma+ce)(71.1\gamma)$ from the 2088.41 level is not known, its intensity could not be subtracted in calculation of $I\beta$ to the 2017.30 level.
(1258 <i>11</i> )	2010.831	1.433 11	7.422 15	av $E\beta=426.7$ 44
(1274 <i>11</i> )	1994.639	1.192 21	7.522 16	av $E\beta=433.1$ 44
(1379 <i>11</i> )	1890.306	1.589 17	7.521 14	av $E\beta=474.5$ 44
(1422 <i>11</i> )	1847.446	8.16 5	6.859 13	av $E\beta=491.6$ 44
(1504 <i>11</i> )	1764.520	16.90 11	6.634 13	av $E\beta=524.9$ 45
(1526 <i>11</i> )	1742.99	0.138 16	8.74 6	av $E\beta=533.6$ 45
(1539 <i>11</i> )	1729.613	17.55 10	6.654 12	av $E\beta=539.0$ 45
(1556 $^\ddagger$ <i>11</i> )	1712.93	0.153 16	9.57 <sup>1u</sup> 5	av $E\beta=529.3$ 43
(1608 <i>11</i> )	1661.282	0.57 5	8.21 4	av $E\beta=566.8$ 45
(1726 <i>11</i> )	1543.370	3.09 4	7.593 12	av $E\beta=614.9$ 46
(1854 <i>11</i> )	1415.498	0.90 5	8.25 3	av $E\beta=667.6$ 46
(1891 <i>11</i> )	1377.681	7.22 8	7.374 11	av $E\beta=683.3$ 46
(1994 <i>11</i> )	1274.765	0.06 4	9.5 3	av $E\beta=726.1$ 46
(2254 <i>11</i> )	1015.041	0.079 13	9.63 8	av $E\beta=835.0$ 47
(2660 $^\ddagger$ <i>11</i> )	609.318	0.55 8	9.06 7	av $E\beta=1007.1$ 47
(3269 <i>11</i> )	0.0	19.2 4	7.872 11	av $E\beta=1268.4$ 48
				E(decay): measured values: 3275 keV 15 (1960Lu07), 3260 keV 30 (1956Da06), 3180 keV 90 (1955Ri54), 3170 keV (1952Wa33, 1941Co04).

 $^\dagger$  For absolute intensity per 100 decays, multiply by 0.999790 13. $^\ddagger$  Existence of this branch is questionable.

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po)

I<sub>γ</sub> normalization: Deduced from I<sub>γ</sub>(609)=45.45 19 (weighted average of 45.0 7 (1983OI01), 44.6 5 (1983Sc13), 46.1 5 (1991Li11), 44.8 6 (1998Mo14), 45.57 18 (2004Mo07)) per 100 <sup>214</sup>Bi β<sup>-</sup> decays with <sup>226</sup>Ra or <sup>222</sup>Rn in equilibrium.

E <sub>γ</sub>	I <sub>γ</sub> <sup>@</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult.	α	Comments
(36.8 <sup>†</sup> 2)		2544.92		2508.12	(0 <sup>+</sup> )			E <sub>γ</sub> : from 1993Di09 and 1994Mo06, based on coincident analysis, no γ transitions observed.
(61.0 <sup>†</sup> 8)		2266.41	2 <sup>+</sup>	2204.103	1 <sup>+</sup>	[M1+E2]	40 32	α(L)=30 23; α(M)=8 6; α(N)=2.0 16; α(O)=0.39 30; α(P)=0.036 25 E <sub>γ</sub> : from 1993Di09 and 1994Mo06, based on coincident analysis, no γ transitions observed.
(71.1 <sup>†</sup> 2)		2088.44	(1,2 <sup>+</sup> )	2017.315	0 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06, based on coincident analysis, no γ transitions observed.
(104.4 <sup>†</sup> 2)		1994.639	1 <sup>-</sup>	1890.306	(2) <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06, based on coincident analysis, no γ transitions observed.
221.5 <sup>‡</sup> 2	0.006 2	1764.520	1 <sup>+</sup>	1543.370	2 <sup>+</sup>	[M1,E2]	0.7 4	α(K)=0.5 4; α(L)=0.157 10; α(M)=0.0391 6; α(N)=0.01005 17; α(O)=0.00202 10 α(P)=0.00023 5 E <sub>γ</sub> : weighted average of 221.57 24 (1982Ak03) and 221 1 (1989Si17). I <sub>γ</sub> : from 1989Si17; others: 0.012 (1982Ak03) and 0.130 13 (2000Sa32).
230 <sup>#‡</sup> 1	0.0064 21	1994.639	1 <sup>-</sup>	1764.520	1 <sup>+</sup>	[E1]	0.0585 10	α(K)=0.0474 8; α(L)=0.00848 15; α(M)=0.00200 4; α(N)=0.000510 9; α(O)=0.0001036 18 α(P)=1.230×10 <sup>-5</sup> 22 E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : weighted average of 0.0064 21 (1989Si17) and 0.0063 21 (2000Sa32).
230.66 <sup>#†</sup> 14		2423.25	(1,2 <sup>+</sup> )	2192.536	(2) <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
247.2 <sup>†</sup> 8		2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	2447.701	1 <sup>-</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
252.79 6	0.027 4	2017.315	0 <sup>+</sup>	1764.520	1 <sup>+</sup>	[M1]	0.810 11	α(K)=0.658 9; α(L)=0.1154 16; α(M)=0.0272 4; α(N)=0.00701 10; α(O)=0.001466 21 α(P)=0.0001895 27 E <sub>γ</sub> : weighted average of 252.56 30 (1982Ak03), 253 1 (1989Si17) and 252.80 6 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.033 7 (1982Ak03), 0.028 4 (1994Mo06) and 0.019 7 (2000Sa32); other: 0.006 2 (1989Si17).
255.16 <sup>†</sup> 10		2447.701	1 <sup>-</sup>	2192.536	(2) <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
268.60 6	0.035 4	1543.370	2 <sup>+</sup>	1274.765	3 <sup>-</sup>	[E1]	0.0405 6	α(K)=0.0330 5; α(L)=0.00578 8; α(M)=0.001362 19; α(N)=0.000347 5; α(O)=7.08×10 <sup>-5</sup> 10 α(P)=8.50×10 <sup>-6</sup> 12 E <sub>γ</sub> : weighted average of 268.57 20 (1982Ak03), 269.0 7 (1989Si17) and 268.60 6 (1993Di09,1994Mo06).

<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06](#),[1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
273.79 5	0.28 3	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	2208.69	(2 <sup>-</sup> ,3)			I <sub>γ</sub> : weighted average of 0.031 8 ( <a href="#">1982Ak03</a> ), 0.06 2 ( <a href="#">1989Si17</a> ), 0.035 4 ( <a href="#">1994Mo06</a> ) and 0.059 28 ( <a href="#">2000Sa32</a> ). E <sub>γ</sub> : weighted average of 273.5 5 ( <a href="#">1969Li10</a> ), 273.76 24 ( <a href="#">1982Ak03</a> ), 273.7 4 ( <a href="#">1989Si17</a> ) and 273.80 5 ( <a href="#">1993Di09</a> , <a href="#">1994Mo06</a> ).
280.6 <sup>†</sup> 4		3000.00	(1 <sup>-</sup> ,2 <sup>+</sup> )	2719.26	1 <sup>+</sup>			I <sub>γ</sub> : weighted average of 0.25 5 ( <a href="#">1982Ak03</a> ), 0.38 6 ( <a href="#">1989Si17</a> ), 0.27 3 ( <a href="#">1994Mo06</a> ) and 0.29 10 ( <a href="#">2000Sa32</a> ). E <sub>γ</sub> : from <a href="#">1993Di09</a> and <a href="#">1994Mo06</a> .
280.97 5	0.14 2	2728.617	(0 <sup>+</sup> ,1,2)	2447.701	1 <sup>-</sup>			E <sub>γ</sub> : weighted average of 281.1 6 ( <a href="#">1969Li10</a> ), 281.00 20 ( <a href="#">1982Ak03</a> ), 280.94 12 ( <a href="#">1989Si17</a> ) and 280.97 5 ( <a href="#">1993Di09</a> , <a href="#">1994Mo06</a> ).
282.0 <sup>†</sup> 4	0.021 8	2826.82	(1,2 <sup>+</sup> )	2544.92				I <sub>γ</sub> : weighted average of 0.13 2 ( <a href="#">1982Ak03</a> ), 0.17 3 ( <a href="#">1989Si17</a> ), 0.13 2 ( <a href="#">1994Mo06</a> ) and 0.17 4 ( <a href="#">2000Sa32</a> ). E <sub>γ</sub> : weighted average of 282.04 36 ( <a href="#">1982Ak03</a> ) and 282.0 4 ( <a href="#">1993Di09</a> , <a href="#">1994Mo06</a> ).
<sup>x</sup> 286.9 6	0.0060 11							I <sub>γ</sub> : from <a href="#">1982Ak03</a> . E <sub>γ</sub> : from <a href="#">1969Li10</a> . I <sub>γ</sub> : from <a href="#">2000Sa32</a> .
297.81 <sup>†</sup> 24		2010.831	(2 <sup>+</sup> )	1712.93	(3 <sup>+</sup> )			E <sub>γ</sub> : from <a href="#">1993Di09</a> and <a href="#">1994Mo06</a> . I <sub>γ</sub> (297.81γ)+I <sub>γ</sub> (297.80γ in <sup>210</sup> Pb)=0.058 10 ( <a href="#">2000Sa32</a> ) and 0.046 11 ( <a href="#">1993Di09</a> ).
304.00 <sup>#†</sup> 4	0.057 5	2508.12	(0 <sup>+</sup> )	2204.103	1 <sup>+</sup>			E <sub>γ</sub> : weighted average of 304.05 4 ( <a href="#">1982Ak03</a> ) and 303.97 3 ( <a href="#">1993Di09</a> , <a href="#">1994Mo06</a> ).
304.43 <sup>#‡</sup> 12	0.075 25	1847.446	2 <sup>+</sup>	1543.370	2 <sup>+</sup>	[M1,E2]	0.30 18	I <sub>γ</sub> : from 0.069 15 ( <a href="#">1982Ak03</a> ), 0.055 5 ( <a href="#">1993Di09</a> , <a href="#">1994Mo06</a> ) and 0.065 20 ( <a href="#">2000Sa32</a> ). α(K)=0.23 17; α(L)=0.055 14; α(M)=0.0135 27; α(N)=0.0035 7; α(O)=0.00071 17 α(P)=8.4×10 <sup>-5</sup> 30 E <sub>γ</sub> : from <a href="#">1989Si17</a> . I <sub>γ</sub> : from <a href="#">2000Sa32</a> .
314.9 <sup>†</sup> 8		3014.11	(1,2 <sup>+</sup> )	2698.60	(1,2) <sup>+</sup>			E <sub>γ</sub> : from <a href="#">1993Di09</a> and <a href="#">1994Mo06</a> .
333.37 8	0.14 1	1994.639	1 <sup>-</sup>	1661.282	2 <sup>+</sup>	[E1]	0.02466 35	α(K)=0.02014 28; α(L)=0.00345 5; α(M)=0.000810 11; α(N)=0.0002069 29 α(O)=4.24×10 <sup>-5</sup> 6; α(P)=5.16×10 <sup>-6</sup> 7 E <sub>γ</sub> : weighted average of 333.35 24 ( <a href="#">1982Ak03</a> ), 333.61 12 ( <a href="#">1989Si17</a> ) and 333.31 6 ( <a href="#">1993Di09</a> , <a href="#">1994Mo06</a> ).
334.80 <sup>#†</sup> 8	0.071 8	2423.25	(1,2 <sup>+</sup> )	2088.44	(1,2 <sup>+</sup> )			I <sub>γ</sub> : weighted average of 0.16 3 ( <a href="#">1982Ak03</a> ), 0.21 4 ( <a href="#">1989Si17</a> ), 0.14 1 ( <a href="#">1994Mo06</a> ) and 0.13 3 ( <a href="#">2000Sa32</a> ). E <sub>γ</sub> : weighted average of 334.87 19 ( <a href="#">1982Ak03</a> ) and 334.78 8 ( <a href="#">1993Di09</a> , <a href="#">1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.072 14 ( <a href="#">1982Ak03</a> ), 0.066 8 ( <a href="#">1993Di09</a> , <a href="#">1994Mo06</a> ) and 0.090 17 ( <a href="#">2000Sa32</a> ).

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<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06,1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
334.9 <sup>#‡</sup> 5	0.12 2	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	2147.86	(1 <sup>-</sup> ,2 <sup>+</sup> )			E <sub>γ</sub> : from <a href="#">1989Si17</a> . I <sub>γ</sub> : from <a href="#">1989Si17</a> .
<sup>x</sup> 338.5 6	0.25 9							E <sub>γ</sub> : from <a href="#">1969Li10</a> . I <sub>γ</sub> : from <a href="#">2000Sa32</a> .
348.92 6	0.23 5	1764.520	1 <sup>+</sup>	1415.498	0 <sup>+</sup>	[M1]	0.335 5	α(K)=0.273 4; α(L)=0.0475 7; α(M)=0.01118 16; α(N)=0.00288 4; α(O)=0.000603 8 α(P)=7.79×10 <sup>-5</sup> 11 E <sub>γ</sub> : weighted average of 348.8 5 ( <a href="#">1989Si17</a> ) and 348.92 6 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.17 4 ( <a href="#">1989Si17</a> ), 0.34 5 ( <a href="#">1994Mo06</a> ) and 0.20 5 ( <a href="#">2000Sa32</a> ).
351.9 <sup>‡</sup> 5	0.15 2	1729.613	2 <sup>+</sup>	1377.681	2 <sup>+</sup>	[M1+E2]	0.20 12	α(K)=0.16 11; α(L)=0.035 11; α(M)=0.0086 23; α(N)=0.0022 6; α(O)=4.5×10 <sup>-4</sup> 14 α(P)=5.4×10 <sup>-5</sup> 22 E <sub>γ</sub> ,I <sub>γ</sub> : from <a href="#">1989Si17</a> .
356.05 16	0.015 4	2017.315	0 <sup>+</sup>	1661.282	2 <sup>+</sup>	[E2]	0.0769 11	α(K)=0.0457 6; α(L)=0.02335 33; α(M)=0.00601 8; α(N)=0.001542 22; α(O)=0.000303 4 α(P)=3.12×10 <sup>-5</sup> 4 E <sub>γ</sub> : weighted average of 356.5 5 ( <a href="#">1989Si17</a> ) and 356.00 17 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : from <a href="#">1989Si17</a> .
<sup>x</sup> 363.50 14	0.017 5							E <sub>γ</sub> : weighted average of 363.47 12 ( <a href="#">1993Di09</a> ) and 364.2 6 ( <a href="#">1975Ha31</a> ). I <sub>γ</sub> : from <a href="#">1993Di09</a> .
<sup>x</sup> 375.65 24	0.009 3							Assignment to <sup>214</sup> Bi β <sup>-</sup> decay is not established. E <sub>γ</sub> : weighted average of 375.59 15 ( <a href="#">1993Di09</a> ) and 376.6 6 ( <a href="#">1975Ha31</a> ). I <sub>γ</sub> : from <a href="#">2000Sa32</a> .
386.77 5	0.65 4	1764.520	1 <sup>+</sup>	1377.681	2 <sup>+</sup>	[M1,E2]	0.16 10	α(K)=0.12 8; α(L)=0.027 9; α(M)=0.0065 20; α(N)=0.0017 5; α(O)=3.4×10 <sup>-4</sup> 11 α(P)=4.1×10 <sup>-5</sup> 18 E <sub>γ</sub> : weighted average of 386.8 8 ( <a href="#">1969Li10</a> ), 386.72 19 ( <a href="#">1982Ak03</a> ), 387.0 3 ( <a href="#">1989Si17</a> ) and 386.77 5 ( <a href="#">1993Di09,1994Mo06</a> ). Other: 386.9 10 ( <a href="#">1967Ma51</a> ). I <sub>γ</sub> : weighted average of 0.64 10 ( <a href="#">1982Ak03</a> ), 0.79 13 ( <a href="#">1989Si17</a> ), 0.63 5 ( <a href="#">1994Mo06</a> ) and 0.70 15 ( <a href="#">2000Sa32</a> ).
388.89 5	0.85 1	2118.535	1 <sup>+</sup>	1729.613	2 <sup>+</sup>	[M1]	0.2497 35	α(K)=0.2034 28; α(L)=0.0353 5; α(M)=0.00832 12; α(N)=0.002141 30; α(O)=0.000448 6 α(P)=5.80×10 <sup>-5</sup> 8 E <sub>γ</sub> : weighted average of 388.8 8 ( <a href="#">1969Li10</a> ), 388.98 19 ( <a href="#">1982Ak03</a> ), 389.1 3 ( <a href="#">1989Si17</a> ) and 388.88 5 ( <a href="#">1993Di09,1994Mo06</a> ). Other: 389.0 10 ( <a href="#">1967Ma51</a> ). I <sub>γ</sub> : weighted average of 0.87 12 ( <a href="#">1982Ak03</a> ), 0.90 11 ( <a href="#">1989Si17</a> ), 0.85 1 ( <a href="#">1994Mo06</a> ) and 0.86 4 ( <a href="#">2000Sa32</a> ).
394.04 <sup>‡&amp;</sup> 8	0.029 3	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	2088.44	(1,2 <sup>+</sup> )			E <sub>γ</sub> : weighted average of 394.00 19 ( <a href="#">1982Ak03</a> ), 394.0 10 ( <a href="#">1989Si17</a> )

<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06,1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
396.02 6	0.059 7	2604.68	(2 <sup>+</sup> )	2208.69	(2 <sup>-</sup> ,3)			and 394.05 8 ( <a href="#">1993Di09</a> ). I <sub>γ</sub> : weighted average of 0.033 4 ( <a href="#">1982Ak03</a> ), 0.019 8 ( <a href="#">1989Si17</a> ), 0.024 3 ( <a href="#">2000Sa32</a> ) and 0.032 3 ( <a href="#">1993Di09</a> ). E <sub>γ</sub> : weighted average of 396.3 6 ( <a href="#">1969Li10</a> ), 396.05 17 ( <a href="#">1982Ak03</a> ), 396.01 12 ( <a href="#">1989Si17</a> ) and 396.01 8 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.060 9 ( <a href="#">1982Ak03</a> ), 0.066 13 ( <a href="#">1989Si17</a> ), 0.059 7 ( <a href="#">1993Di09</a> ) and 0.053 10 ( <a href="#">2000Sa32</a> ).
405.72 2	0.37 2	1015.041	(4 <sup>+</sup> )	609.318	2 <sup>+</sup>	(E2)	0.0541 8	α(K)=0.0344 5; α(L)=0.01478 21; α(M)=0.00377 5; α(N)=0.000968 14; α(O)=0.0001913 27 α(P)=2.018×10 <sup>-5</sup> 28 E <sub>γ</sub> : weighted average of 405.9 4 ( <a href="#">1969Li10</a> ), 405.82 17 ( <a href="#">1982Ak03</a> ), 405.74 3 ( <a href="#">1989Si17</a> ) and 405.71 2 ( <a href="#">1993Di09,1994Mo06</a> ). Mult.: from γγ(E2)(θ): A <sub>2</sub> =+0.10 5, A <sub>4</sub> =-0.056 ( <a href="#">1989Ta15</a> ). I <sub>γ</sub> : weighted average of 0.38 5 ( <a href="#">1982Ak03</a> ), 0.36 2 ( <a href="#">1989Si17</a> ), 0.37 2 ( <a href="#">1994Mo06</a> ) and 0.39 3 ( <a href="#">2000Sa32</a> ).
422.0 <sup>†</sup> 8 <sup>x</sup> 426.5 5	0.027 8	2869.63	(2 <sup>-</sup> ,3 <sup>-</sup> )	2447.701	1 <sup>-</sup>			E <sub>γ</sub> : from <a href="#">1993Di09</a> and <a href="#">1994Mo06</a> . E <sub>γ</sub> : from <a href="#">1969Li10</a> . I <sub>γ</sub> : from <a href="#">2000Sa32</a> .
428.07 8	0.025 3	2192.536	(2) <sup>+</sup>	1764.520	1 <sup>+</sup>			E <sub>γ</sub> : weighted average of 428.0 5 ( <a href="#">1989Si17</a> ) and 428.07 8 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.023 6 ( <a href="#">1989Si17</a> ) and 0.025 3 ( <a href="#">2000Sa32</a> ); other: <0.0023 ( <a href="#">1994Mo06</a> ).
<sup>x</sup> 439.36 9	0.025 5							E <sub>γ</sub> : weighted average of 439.47 24 ( <a href="#">1982Ak03</a> ), 439.34 8 ( <a href="#">1993Di09</a> ) and 440.4 6 ( <a href="#">1969Li10</a> ). I <sub>γ</sub> : weighted average of 0.033 5 ( <a href="#">1982Ak03</a> ), 0.026 5 ( <a href="#">1993Di09</a> ) and 0.015 5 ( <a href="#">2000Sa32</a> ).
452.91 <sup>†</sup> 9	0.067 8	2447.701	1 <sup>-</sup>	1994.639	1 <sup>-</sup>	[M1+E2]	0.10 6	α(K)=0.08 5; α(L)=0.017 7; α(M)=0.0040 15; α(N)=0.0010 4; α(O)=2.1×10 <sup>-4</sup> 8; α(P)=2.6×10 <sup>-5</sup> 12 E <sub>γ</sub> : weighted average of 452.88 20 ( <a href="#">1982Ak03</a> ) and 452.92 10 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.068 11 ( <a href="#">1982Ak03</a> ) and 0.067 8 ( <a href="#">1993Di09,1994Mo06</a> ).
454.80 3	0.64 3	1729.613	2 <sup>+</sup>	1274.765	3 <sup>-</sup>	[E1]	0.01251 18	α(K)=0.01028 14; α(L)=0.001705 24; α(M)=0.000399 6; α(N)=0.0001020 14 α(O)=2.103×10 <sup>-5</sup> 29; α(P)=2.60×10 <sup>-6</sup> 4 E <sub>γ</sub> : weighted average of 455.0 3 ( <a href="#">1969Li10</a> ), 455.26 17 ( <a href="#">1982Ak03</a> ), 454.77 12 ( <a href="#">1989Si17</a> ) and 454.79 2 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.69 3 ( <a href="#">1989Si17</a> ), 0.64 3 ( <a href="#">1994Mo06</a> ) and 0.59 3 ( <a href="#">2000Sa32</a> ).
461.06 11	0.095 14	2204.103	1 <sup>+</sup>	1742.99	0 <sup>(+)</sup>	[M1]	0.1581 22	α(K)=0.1289 18; α(L)=0.02229 31; α(M)=0.00525 7; α(N)=0.001351 19; α(O)=0.000283 4 α(P)=3.66×10 <sup>-5</sup> 5 E <sub>γ</sub> : weighted average of 460.97 24 ( <a href="#">1982Ak03</a> ), 460.9 5 ( <a href="#">1989Si17</a> ) and



<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
469.76 4	0.290 17	1847.446	2 <sup>+</sup>	1377.681	2 <sup>+</sup>	[M1,E2]	0.09 6	461.09 11 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.078 13 (1982Ak03), 0.085 21 (1989Si17), 0.14 2 (1994Mo06) and 0.10 3 (2000Sa32). α(K)=0.07 5; α(L)=0.015 6; α(M)=0.0036 13; α(N)=9.4×10 <sup>-4</sup> 35; α(O)=1.9×10 <sup>-4</sup> 8 α(P)=2.4×10 <sup>-5</sup> 11 E <sub>γ</sub> : weighted average of 470.0 3 (1969Li10), 469.78 16 (1982Ak03), 469.69 12 (1989Si17) and 469.76 4 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.30 5 (1982Ak03), 0.288 17 (1989Si17), 0.27 2 (1994Mo06) and 0.34 3 (2000Sa32).
474.43 5	0.213 20	2204.103	1 <sup>+</sup>	1729.613	2 <sup>+</sup>	[M1+E2]	0.09 6	α(K)=0.07 5; α(L)=0.015 6; α(M)=0.0035 13; α(N)=9.1×10 <sup>-4</sup> 34; α(O)=1.9×10 <sup>-4</sup> 7 α(P)=2.3×10 <sup>-5</sup> 11 E <sub>γ</sub> : weighted average of 474.6 3 (1969Li10), 474.46 17 (1982Ak03), 474.38 10 (1989Si17) and 474.44 5 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.23 4 (1982Ak03), 0.26 3 (1989Si17), 0.22 2 (1994Mo06) and 0.190 20 (2000Sa32).
485.93 <sup>†</sup> 11	0.050 9	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	2208.69	(2 <sup>-</sup> ,3)			E <sub>γ</sub> : weighted average of 485.95 24 (1982Ak03) and 485.92 11 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.052 11 (1982Ak03) and 0.048 9 (1993Di09,1994Mo06).
486.6 3	0.049 20	2147.86	(1 <sup>-</sup> ,2 <sup>+</sup> )	1661.282	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 486.3 5 (1989Si17) and 486.7 3 (1993Di09,1994Mo06). Other: 487.1 15 (1967Ma51). I <sub>γ</sub> : weighted average of 0.064 21 (1989Si17) and 0.035 20 (2000Sa32); other: <0.012 (1994Mo06).
487.7 <sup>†</sup> 3	0.061 20	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	1994.639	1 <sup>-</sup>			E <sub>γ</sub> : weighted average of 487.25 20 (1969Li10) and 487.95 13 (1993Di09,1994Mo06). I <sub>γ</sub> : from 1993Di09 and 1994Mo06.
494.21 9	0.024 3	2698.60	(1,2) <sup>+</sup>	2204.103	1 <sup>+</sup>			E <sub>γ</sub> : weighted average of 494.31 20 (1982Ak03), 494.6 10 (1989Si17) and 494.19 9 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.031 5 (1982Ak03), 0.019 6 (1989Si17), 0.031 4 (1994Mo06) and 0.019 3 (2000Sa32).
496.89 <sup>†</sup> 18	0.015 4	2508.12	(0 <sup>+</sup> )	2010.831	(2 <sup>+</sup> )			E <sub>γ</sub> : weighted average of 496.88 24 (1982Ak03) and 496.90 18 (1993Di09,1994Mo06).
501.97 12	0.040 5	2266.41	2 <sup>+</sup>	1764.520	1 <sup>+</sup>	[M1+E2]	0.08 5	I <sub>γ</sub> : from 1982Ak03, 1993Di09 and 1994Mo06. α(K)=0.06 4; α(L)=0.013 5; α(M)=0.0030 12; α(N)=7.8×10 <sup>-4</sup> 30; α(O)=1.6×10 <sup>-4</sup> 6; α(P)=2.0×10 <sup>-5</sup> 9 E <sub>γ</sub> : weighted average of 501.96 20 (1982Ak03), 502.2 6 (1989Si17) and 501.96 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.041 7 (1982Ak03), 0.039 9 (1989Si17), 0.040 5 (1994Mo06) and 0.035 19 (2000Sa32).
519.90 <sup>†</sup> 5	0.036 4	2728.617	(0 <sup>+</sup> ,1,2)	2208.69	(2 <sup>-</sup> ,3)			E <sub>γ</sub> : weighted average of 519.93 20 (1982Ak03) and 519.90 5 (1993Di09,1994Mo06).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
524.60 7	0.037 4	2728.617	(0 <sup>+</sup> ,1,2)	2204.103	1 <sup>+</sup>			I <sub>γ</sub> : weighted average of 0.035 6 (1982Ak03), 0.036 4 (1994Mo06) and 0.039 11 (2000Sa32). E <sub>γ</sub> : weighted average of 524.61 20 (1982Ak03), 525.0 6 (1989Si17) and 524.59 8 (1993Di09,1994Mo06).
528.30 <sup>‡</sup> 8	0.016 6	1543.370	2 <sup>+</sup>	1015.041	(4 <sup>+</sup> )			I <sub>γ</sub> : weighted average of 0.038 6 (1982Ak03), 0.034 13 (1989Si17), 0.037 4 (1994Mo06) and 0.039 13 (2000Sa32). E <sub>γ</sub> : weighted average of 528.42 24 (1982Ak03), 528 1 (1989Si17) and 528.29 8 (1993Di09).
536.78 4	0.142 19	2266.41	2 <sup>+</sup>	1729.613	2 <sup>+</sup>	[M1+E2]	0.07 4	I <sub>γ</sub> : weighted average of 0.025 5 (1982Ak03), 0.009 4 (1989Si17) and 0.022 11 (2000Sa32). α(K)=0.053 33; α(L)=0.010 4; α(M)=0.0025 10; α(N)=6.4×10 <sup>-4</sup> 26; α(O)=1.3×10 <sup>-4</sup> 6 α(P)=1.6×10 <sup>-5</sup> 8 E <sub>γ</sub> : weighted average of 536.6 8 (1969Li10), 536.83 19 (1982Ak03), 536.94 20 (1989Si17) and 536.77 4 (1993Di09,1994Mo06).
542.81 7	0.161 22	2204.103	1 <sup>+</sup>	1661.282	2 <sup>+</sup>	[M1+E2]	0.06 4	I <sub>γ</sub> : weighted average of 0.14 2 (1982Ak03), 0.154 19 (1989Si17), 0.14 2 (1994Mo06) and 0.12 3 (2000Sa32). α(K)=0.051 32; α(L)=0.010 4; α(M)=0.0024 10; α(N)=6.2×10 <sup>-4</sup> 25; α(O)=1.3×10 <sup>-4</sup> 5 α(P)=1.6×10 <sup>-5</sup> 8 E <sub>γ</sub> : weighted average of 542.97 24 (1982Ak03), 543.4 5 (1989Si17) and 542.78 7 (1993Di09,1994Mo06).
547.21 17	0.075 7	2208.69	(2 <sup>-</sup> ,3)	1661.282	2 <sup>+</sup>			I <sub>γ</sub> : weighted average of 0.14 2 (1982Ak03), 0.183 19 (1989Si17), 0.13 2 (1994Mo06) and 0.27 4 (2000Sa32). E <sub>γ</sub> : weighted average of 547.05 17 (1982Ak03), 547.1 3 (1989Si17), 547.61 24 (1993Di09,1994Mo06).
551.9 <sup>†</sup> 8		3000.00	(1 <sup>-</sup> ,2 <sup>+</sup> )	2447.701	1 <sup>-</sup>			I <sub>γ</sub> : weighted average of 0.08 1 (1982Ak03), 0.070 15 (1989Si17), 0.074 7 (2000Sa32); other: <0.008 (1993Di09,1994Mo06). E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
572.77 7	0.171 13	1847.446	2 <sup>+</sup>	1274.765	3 <sup>-</sup>	[E1]	0.00779 11	α(K)=0.00642 9; α(L)=0.001042 15; α(M)=0.0002433 34; α(N)=6.22×10 <sup>-5</sup> 9 α(O)=1.287×10 <sup>-5</sup> 18; α(P)=1.610×10 <sup>-6</sup> 23 E <sub>γ</sub> : weighted average of 572.6 4 (1969Li10), 572.74 19 (1982Ak03), 572.83 15 (1989Si17) and 572.76 7 (1993Di09,1994Mo06).
579.14 <sup>†</sup> 16		1994.639	1 <sup>-</sup>	1415.498	0 <sup>+</sup>	[E1]	0.00762 11	I <sub>γ</sub> : weighted average of 0.17 2 (1982Ak03), 0.177 13 (1989Si17), 0.16 2 (1994Mo06) and 0.16 4 (2000Sa32). α(K)=0.00629 9; α(L)=0.001019 14; α(M)=0.0002377 33; α(N)=6.08×10 <sup>-5</sup> 9 α(O)=1.258×10 <sup>-5</sup> 18; α(P)=1.574×10 <sup>-6</sup> 22 E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
581.9 <sup>†</sup> 8		2785.97	(1,2 <sup>+</sup> )	2204.103	1 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
595.24 7	0.038 3	2010.831	(2 <sup>+</sup> )	1415.498	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 595.24 24 (1982Ak03), 596.0 8 (1989Si17) and

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
								595.23 7 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.035 7 (1982Ak03), 0.038 4 (1994Mo06) and 0.039 6 (2000Sa32); other: 0.26 6 (1989Si17). E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
598.5 <sup>†</sup> 8		2802.54		2204.103	1 <sup>+</sup>			
600.0 <sup>‡</sup> 5	0.017 6	2719.26	1 <sup>+</sup>	2118.535	1 <sup>+</sup>	[M1+E2]	0.050 29	α(K)=0.040 24; α(L)=0.0077 33; α(M)=0.0018 8; α(N)=4.7×10 <sup>-4</sup> 20; α(O)=1.0×10 <sup>-4</sup> 4 α(P)=1.2×10 <sup>-5</sup> 6 E <sub>γ</sub> ,I <sub>γ</sub> : from 1989Si17.
609.321 7	100	609.318	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2	0.02038 29	α(K)=0.01487 21; α(L)=0.00416 6; α(M)=0.001030 14; α(N)=0.000265 4; α(O)=5.33×10 <sup>-5</sup> 7 α(P)=6.06×10 <sup>-6</sup> 8 E <sub>γ</sub> : weighted average of 609.31 16 (1982Ak03), 609.32 2 (1989Si17), 609.313 7 (1993Di09,1994Mo06) and 609.329 7 (2002MoZP). Other: 609.37 16 (1952Mu45), 609 3 (1967Bu17) and 609.3 3 (1967Ma51). Mult.: from α(K)exp=0.0152 5; K/L=3.63 20; K/M≈11.5 (1960Lu07); other: α(K)exp=0.015 (1967Ma51); K/L=3.43 10 and K/M=9.2 10 (1960Ma05).
615.76 6	0.12 2	1890.306	(2) <sup>+</sup>	1274.765	3 <sup>-</sup>			E <sub>γ</sub> : weighted average of 615.8 6 (1969Li10), 615.49 36 (1982Ak03), 615.78 6 (1989Si17) and 615.68 13 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.13 5 (1982Ak03), 0.15 6 (1989Si17), 0.12 2 (1994Mo06) and 0.11 3 (2000Sa32).
617.02 <sup>‡</sup> 13	0.059 6	1994.639	1 <sup>-</sup>	1377.681	2 <sup>+</sup>	[E1]	0.00672 9	α(K)=0.00555 8; α(L)=0.000894 13; α(M)=0.0002085 29; α(N)=5.34×10 <sup>-5</sup> 7 α(O)=1.105×10 <sup>-5</sup> 15; α(P)=1.386×10 <sup>-6</sup> 19 E <sub>γ</sub> : weighted average of 617.01 13 (1993Di09), 616.99 36 (1982Ak03) and 617.1 3 (1989Si17). I <sub>γ</sub> : weighted average of 0.066 44 (1982Ak03), 0.053 6 (1993Di09), 0.075 26 (1989Si17), and 0.077 11 (2000Sa32).
626.4 <sup>‡</sup> 6	0.009 3	2893.60	(1,2) <sup>+</sup>	2266.41	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : from 2000Sa32; other: ≈0.005 (1989Si17).
630.81 <sup>†</sup> 7	0.036 4	2719.26	1 <sup>+</sup>	2088.44	(1,2) <sup>+</sup>			E <sub>γ</sub> : weighted average of 630.93 17 (1982Ak03) and 630.79 7 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.039 6 (1982Ak03) and 0.035 4 (1993Di09,1994Mo06).
631.2 <sup>‡</sup> 4	0.039 5	2360.97	(1,2) <sup>+</sup>	1729.613	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : weighted average of 0.036 13 (1989Si17), 0.039 5 (2000Sa32).
633.09 5	0.122 10	2010.831	(2) <sup>+</sup>	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 633.6 4 (1969Li10), 633.17 17 (1982Ak03), 633.14 10 (1989Si17) and 633.06 5 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.12 2 (1982Ak03), 0.130 13 (1989Si17), 0.11 1 (1994Mo06) and 0.130 10 (2000Sa32).
634.77 <sup>†</sup> 16	0.014 5	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	1847.446	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 634.84 24 (1982Ak03) and 634.72 21

<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06,1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
639.61 10	0.070 10	2017.315	0 <sup>+</sup>	1377.681	2 <sup>+</sup>	[E2]	0.01832 26	(1993Di09,1994Mo06). I <sub>γ</sub> : from 1994Mo06. α(K)=0.01352 19; α(L)=0.00363 5; α(M)=0.000896 13; α(N)=0.0002301 32 α(O)=4.65×10 <sup>-5</sup> 7; α(P)=5.33×10 <sup>-6</sup> 7 E <sub>γ</sub> : weighted average of 639 1 (1969Li10), 639.62 17 (1982Ak03), 639.37 20 (1989Si17) and 639.67 10 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.061 11 (1982Ak03), 0.068 11 (1989Si17), 0.065 10 (1994Mo06) and 0.085 10 (2000Sa32). E <sub>γ</sub> : weighted average of 649.4 4 (1969Li10), 649.22 17 (1982Ak03), 649.18 7 (1989Si17) and 649.23 10 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.114 15 (1982Ak03), 0.128 15 (1989Si17), 0.13 2 (1994Mo06) and 0.10 3 (2000Sa32).
649.20 5	0.121 15	2192.536	(2) <sup>+</sup>	1543.370	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06. I <sub>γ</sub> : from 1994Mo06. E <sub>γ</sub> : weighted average of 658.61 24 (1982Ak03), 658.8 5 (1989Si17) and 658.86 21 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.037 8 (1982Ak03), 0.019 6 (1989Si17), 0.046 8 (1994Mo06) and 0.030 8 (2000Sa32). α(K)=0.031 19; α(L)=0.0059 26; α(M)=0.0014 6; α(N)=3.6×10 <sup>-4</sup> 15; α(O)=7.5×10 <sup>-5</sup> 33 α(P)=9.E-6 5 E <sub>γ</sub> : weighted average of 660.74 24 (1982Ak03), 661.4 6 (1989Si17) and 660.89 14 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.077 13 (1982Ak03), 0.09 4 (1989Si17), 0.11 2 (1994Mo06) and 0.120 10 (2000Sa32). α(K)=0.00479 7; α(L)=0.000767 11; α(M)=0.0001788 25; α(N)=4.58×10 <sup>-5</sup> 6 α(O)=9.48×10 <sup>-6</sup> 13; α(P)=1.193×10 <sup>-6</sup> 17 E <sub>γ</sub> : weighted average of 665.6 2 (1969Li10), 665.47 16 (1982Ak03), 665.453 22 (1989Si17), 665.49 9 (1993Di09,1994Mo06) and 665.444 10 (2002MoZP). Other: 670 4 (1967Bu17) and 665.8 5 (1967Ma51). Mult.: from γγ(E2)(θ): A <sub>2</sub> =-0.08 5, A <sub>4</sub> =+0.10 6 (1986Ta16) and α(K)exp=0.0046 17 deduced from I(ce)665γ/I(ce)609γ=0.010 4 (1960Lu07). I <sub>γ</sub> : weighted average of 3.36 37 (1982Ak03), 3.39 11 (1989Si17), 3.51 20 (1994Mo06), 3.42 8 (1998Mo14), 3.33 10 (2000Sa32), 3.386 21 (2002MoZP) and 3.42 6 (2004Mo07). E <sub>γ</sub> : weighted average of 677.41 21 (1982Ak03) and 677.41 15 (1993Di09,1994Mo06). I <sub>γ</sub> : from 1982Ak03, 1993Di09 and 1994Mo06. α(K)=0.00456 6; α(L)=0.000728 10; α(M)=0.0001696 24; α(N)=4.34×10 <sup>-5</sup> 6
651.50 <sup>†</sup> 16	<0.004	2662.33	(2 <sup>+</sup> )	2010.831	(2 <sup>+</sup> )			
658.76 21	0.031 6	2423.25	(1,2 <sup>+</sup> )	1764.520	1 <sup>+</sup>			
660.87 14	0.104 11	2204.103	1 <sup>+</sup>	1543.370	2 <sup>+</sup>	[M1+E2]	0.039 22	
665.446 9	3.390 19	1274.765	3 <sup>-</sup>	609.318	2 <sup>+</sup>	E1	0.00579 8	
677.41 <sup>†</sup> 15	0.012 5	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	2017.315	0 <sup>+</sup>			
683.21 6	0.180 19	2447.701	1 <sup>-</sup>	1764.520	1 <sup>+</sup>	[E1]	0.00551 8	

<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06,1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
687.56 21	0.015 4	2698.60	(1,2) <sup>+</sup>	2010.831	(2 <sup>+</sup> )			α(O)=9.00×10 <sup>-6</sup> 13; α(P)=1.133×10 <sup>-6</sup> 16 E <sub>γ</sub> : weighted average of 683.3 5 (1969Li10), 683.13 17 (1982Ak03), 683.22 6 (1989Si17) and 683.2 9 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.18 3 (1982Ak03), 0.171 19 (1989Si17), 0.18 2 (1994Mo06) and 0.190 20 (2000Sa32). E <sub>γ</sub> : weighted average of 687.51 24 (1982Ak03), 687.7 6 (1989Si17) and 687.58 21 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.016 5 (1982Ak03), 0.013 6 (1989Si17), 0.015 4 (1994Mo06) and 0.014 5 (2000Sa32).
693.1 ‡& 2	0.012 4	2423.25	(1,2) <sup>+</sup>	1729.613	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 693.3 8 (1969Li10), 693.00 24 (1982Ak03) and 693.3 5 (1989Si17). I <sub>γ</sub> : weighted average of 0.012 5 (1982Ak03), 0.013 6 (1989Si17) and 0.012 4 (2000Sa32).
697.89 10	0.132 16	1712.93	(3 <sup>+</sup> )	1015.041	(4 <sup>+</sup> )	[M1,E2]	0.034 19	α(K)=0.027 16; α(L)=0.0051 23; α(M)=0.0012 5; α(N)=3.1×10 <sup>-4</sup> 13; α(O)=6.5×10 <sup>-5</sup> 29 α(P)=8.E-6 4 E <sub>γ</sub> : weighted average of 698.4 4 (1969Li10), 697.83 17 (1982Ak03), 697.90 25 (1989Si17) and 697.87 10 (1993Di09, 1994Mo06). I <sub>γ</sub> : weighted average of 0.14 2 (1982Ak03), 0.081 15 (1989Si17), 0.14 2 (1994Mo06) and 0.150 10 (2000Sa32).
699.86 † 18	0.040 9	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	1994.639	1 <sup>-</sup>			E <sub>γ</sub> : weighted average of 699.94 27 (1982Ak03) and 699.82 18 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.044 9 (1982Ak03) and 0.035 10 (1993Di09,1994Mo06).
703.10 4	1.06 4	2118.535	1 <sup>+</sup>	1415.498	0 <sup>+</sup>	[M1]	0.0519 7	α(K)=0.0424 6; α(L)=0.00725 10; α(M)=0.001703 24; α(N)=0.000438 6; α(O)=9.17×10 <sup>-5</sup> 13 α(P)=1.188×10 <sup>-5</sup> 17 E <sub>γ</sub> : weighted average of 703.1 2 (1969Li10), 703.06 16 (1982Ak03), 703.11 4 (1989Si17) and 703.09 9 (1993Di09,1994Mo06). Other: 703.2 8 (1967Ma51). I <sub>γ</sub> : weighted average of 1.08 15 (1982Ak03), 1.02 4 (1989Si17), 1.11 7 (1994Mo06) and 1.12 8 (2000Sa32).
704.96 25	0.103 21	2447.701	1 <sup>-</sup>	1742.99	0 <sup>(+)</sup>	[E1]	0.00519 7	α(K)=0.00429 6; α(L)=0.000684 10; α(M)=0.0001593 22; α(N)=4.08×10 <sup>-5</sup> 6 α(O)=8.45×10 <sup>-6</sup> 12; α(P)=1.066×10 <sup>-6</sup> 15 E <sub>γ</sub> : weighted average of 704.9 5 (1989Si17) and 704.97 25 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.094 21 (1989Si17), 0.11 3 (1994Mo06) and 0.113 29 (2000Sa32).
708.95 23	0.027 3	2719.26	1 <sup>+</sup>	2010.831	(2 <sup>+</sup> )			E <sub>γ</sub> : weighted average of 709.12 30 (1982Ak03) and 708.7 6 (1989Si17) and 708.89 23 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.031 9 (1982Ak03), 0.030 9 (1989Si17), 0.042 11 (1994Mo06) and 0.025 3 (2000Sa32).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>δ</u>	<u>α</u>	<u>Comments</u>
710.27 <sup>†</sup> & 8 710.69 10	0.163 4	2423.25 2088.44	(1,2 <sup>+</sup> ) (1,2 <sup>+</sup> )	1712.93 1377.681	(3 <sup>+</sup> ) 2 <sup>+</sup>				E <sub>γ</sub> : from 1993Di09 and 1994Mo06. E <sub>γ</sub> : weighted average of 710.8 6 (1969Li10), 710.66 17 (1982Ak03), 710.8 2 (1989Si17) and 710.67 10 (1993Di09,1994Mo06). Other: 710 4 (1967Bu17). I <sub>γ</sub> : weighted average of 0.16 2 (1982Ak03), 0.162 4 (1989Si17), 0.16 2 (1994Mo06) and 0.170 9 (2000Sa32).
719.86 3	0.90 3	1994.639	1 <sup>-</sup>	1274.765	3 <sup>-</sup>	E2		0.01424 20	α(K)=0.01075 15; α(L)=0.00264 4; α(M)=0.000646 9; α(N)=0.0001659 23; α(O)=3.37×10 <sup>-5</sup> 5 α(P)=3.93×10 <sup>-6</sup> 6 E <sub>γ</sub> : weighted average of 719.9 2 (1969Li10), 719.87 17 (1982Ak03), 719.86 3 (1989Si17) and 719.91 12 (1993Di09,1994Mo06). Other: 720.2 8 (1967Ma51). I <sub>γ</sub> : weighted average of 0.90 13 (1982Ak03), 0.87 4 (1989Si17), 0.91 8 (1994Mo06) and 0.91 3 (2000Sa32). Mult.: from α(K)exp=0.0099 (1967Ma51).
723.01 12	0.080 9	2266.41	2 <sup>+</sup>	1543.370	2 <sup>+</sup>	E2		0.01411 20	α(K)=0.01066 15; α(L)=0.00261 4; α(M)=0.000638 9; α(N)=0.0001639 23; α(O)=3.33×10 <sup>-5</sup> 5 α(P)=3.89×10 <sup>-6</sup> 5 E <sub>γ</sub> : weighted average of 722.93 19 (1982Ak03), 723.4 3 (1989Si17) and 722.98 12 (1993Di09,1994Mo06). Mult.: α(K)exp=0.010 4 (1960Lu07). I <sub>γ</sub> : weighted average of 0.075 11 (1982Ak03), 0.10 5 (1989Si17), 0.073 9 (1994Mo06) and 0.107 15 (2000Sa32).
<sup>x</sup> 727 1	0.08 3								E <sub>γ</sub> : from 1969Li10. I <sub>γ</sub> : from 2000Sa32.
733.81 10	0.089 8	2728.617	(0 <sup>+</sup> ,1,2)	1994.639	1 <sup>-</sup>				E <sub>γ</sub> : weighted average of 734.3 6 (1969Li10), 733.90 17 (1982Ak03), 733.65 10 (1989Si17) and 733.92 10 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.086 12 (1982Ak03), 0.102 13 (1989Si17), 0.085 8 (1994Mo06) and 0.092 17 (2000Sa32).
740.77 13	0.095 5	2118.535	1 <sup>+</sup>	1377.681	2 <sup>+</sup>	[M1,E2]		0.029 16	α(K)=0.024 13; α(L)=0.0044 19; α(M)=0.0010 4; α(N)=2.7×10 <sup>-4</sup> 11; α(O)=5.6×10 <sup>-5</sup> 24 α(P)=7.0×10 <sup>-6</sup> 33 E <sub>γ</sub> : weighted average of 740.83 20 (1982Ak03), 741.5 10 (1989Si17) and 740.73 13 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.11 2 (1982Ak03), 0.09 4 (1989Si17), 0.088 13 (1994Mo06) and 0.095 5 (2000Sa32).
752.84 3	0.29 2	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	1729.613	2 <sup>+</sup>				E <sub>γ</sub> : weighted average of 753.0 3 (1969Li10), 752.84 17 (1982Ak03), 752.84 3 (1989Si17) and 752.86 9 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.30 4 (1982Ak03), 0.29 3 (1989Si17), 0.28 2 (1994Mo06) and 0.28 4 (2000Sa32).
768.360 7	10.76 3	1377.681	2 <sup>+</sup>	609.318	2 <sup>+</sup>	M1+E2	3.81 13	0.01429 24	α(K)=0.01105 19; α(L)=0.00245 4; α(M)=0.000595 9;

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
								α(N)=0.0001529 23; α(O)=3.12×10 <sup>-5</sup> 5 α(P)=3.74×10 <sup>-6</sup> 6 E <sub>γ</sub> : weighted average of 768.4 2 (1969Li10), 768.36 16 (1982Ak03), 768.361 18 (1989Si17), 768.356 10 (1993Di09,1994Mo06) and 768.362 7 (2002MoZP). Other: 768.8 5 (1967Ma51) and 770 4 (1967Bu17). Mult.,δ: α(K)exp=0.0112 8; K/L=4.1 5 (1960Lu07); others: K/L=3.95 20 and K/M=10.5 15 (1960Ma05); K/L=4.6 12 (1957Ni11); α(K)exp=0.011 (1967Ma51); γγ(E2)(θ): A <sub>2</sub> =-0.29 6, A <sub>4</sub> =0.36 10 (1986Ta16). I <sub>γ</sub> : weighted average of 11.9 17 (1982Ak03), 10.60 19 (1989Si17), 10.91 8 (1994Mo06), 10.83 22 (1998Mo14), 10.39 31 (2000Sa32), 10.77 3 (2002MoZP) and 10.68 5 (2004Mo07).
769.7 <sup>‡</sup> 5	0.064 21	2147.86	(1 <sup>-</sup> ,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. Other: 768.8 5 (1967Ma51). I <sub>γ</sub> : from 1989Si17.
786.35 16	0.70 9	2447.701	1 <sup>-</sup>	1661.282	2 <sup>+</sup>	[E1]	0.00422 6	α(K)=0.00350 5; α(L)=0.000552 8; α(M)=0.0001285 18; α(N)=3.29×10 <sup>-5</sup> 5; α(O)=6.83×10 <sup>-6</sup> 10 α(P)=8.65×10 <sup>-7</sup> 12 E <sub>γ</sub> : weighted average of 786.1 4 (1969Li10), 786.1 4 (1989Si17) and 786.43 16 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.68 20 (1989Si17) and 0.70 10 (2000Sa32). α(K)=0.0315 4; α(L)=0.00536 8; α(M)=0.001260 18; α(N)=0.000324 5; α(O)=6.79×10 <sup>-5</sup> 10 α(P)=8.80×10 <sup>-6</sup> 12 E <sub>γ</sub> : weighted average of 787.85 30 (1982Ak03), 789.0 5 (1989Si17) and 788.2 5 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.057 14 (1982Ak03), 0.026 6 (1989Si17), 0.041 8 (1994Mo06) and 0.020 10 (2000Sa32). E <sub>γ</sub> ,I <sub>γ</sub> : from 2000Sa32.
788.2 3	0.032 6	2204.103	1 <sup>+</sup>	1415.498	0 <sup>+</sup>	[M1]	0.0385 5	α(K)=0.00867 12; α(L)=0.001972 28; α(M)=0.000480 7; α(N)=0.0001232 17 α(O)=2.512×10 <sup>-5</sup> 35; α(P)=2.98×10 <sup>-6</sup> 4 E <sub>γ</sub> : weighted average of 806.2 2 (1969Li10), 806.17 17 (1982Ak03), 806.174 18 (1989Si17), 806.18 9 (1993Di09,1994Mo06) and 806.181 10 (2002MoZP). Other: 806.5 5 (1967Ma51). Mult.: from α(K)exp=0.0073 12 (1960Lu07); other: α(K)exp=0.083 (1967Ma51); K/L=3.0 15 (1957Ni11); γγ(E2)(θ): A <sub>2</sub> =0.22 3, A <sub>4</sub> =1.27 4 (1986Ta16). I <sub>γ</sub> : weighted average of 2.92 43 (1982Ak03), 2.67 6 (1989Si17), 2.90 22 (1994Mo06), 2.81 24 (1998Mo14), 2.76 11 (2000Sa32), 2.777 14 (2002MoZP) and 2.791 20 (2004Mo07).
<sup>x</sup> 803.1 806.179 10	0.010 3 2.778 14	1415.498	0 <sup>+</sup>	609.318	2 <sup>+</sup>	E2	0.01127 16	E <sub>γ</sub> : weighted average of 815 1 (1969Li10), 814.86 19 (1982Ak03), 815.08 15 (1989Si17) and 814.86 11 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.087 13 (1982Ak03), 0.087 15 (1989Si17), 0.081 8 (1994Mo06) and 0.110 20 (2000Sa32).
814.92 11	0.086 8	2192.536	(2) <sup>+</sup>	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 821.2 3 (1969Li10), 821.17 17 (1982Ak03), 821.18 3
821.18 3	0.36 3	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	1661.282	2 <sup>+</sup>			

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
826.41 11	0.23 3	2204.103	1 <sup>+</sup>	1377.681	2 <sup>+</sup>	[M1+E2]	0.022 12	(1989Si17) and 821.19 10 (1993Di09,1994Mo06). Other: 821.7 10 (1967Ma51) and 825 5 (1967Bu17). I <sub>γ</sub> : weighted average of 0.37 6 (1982Ak03), 0.33 3 (1989Si17), 0.36 3 (1994Mo06) and 0.37 3 (2000Sa32). α(K)=0.018 10; α(L)=0.0033 14; α(M)=7.8×10 <sup>-4</sup> 33; α(N)=2.0×10 <sup>-4</sup> 9; α(O)=4.2×10 <sup>-5</sup> 18 α(P)=5.3×10 <sup>-6</sup> 25 E <sub>γ</sub> : weighted average of 826 1 (1969Li10), 826.40 19 (1982Ak03), 826.2 3 (1989Si17) and 826.44 11 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.29 4 (1982Ak03), 0.200 15 (1989Si17), 0.28 3 (1994Mo06) and 0.29 4 (2000Sa32).
832.37 11	0.062 6	1847.446	2 <sup>+</sup>	1015.041	(4 <sup>+</sup> )			E <sub>γ</sub> : weighted average of 832.0 6 (1969Li10), 832.35 19 (1982Ak03), 832.35 20 (1989Si17) and 832.39 11 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.064 10 (1982Ak03), 0.049 11 (1989Si17), 0.062 6 (1994Mo06) and 0.080 13 (2000Sa32).
840.4 <sup>‡</sup> 5	0.021 6	2604.68	(2 <sup>+</sup> )	1764.520	1 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : weighted average of 0.019 6 (1989Si17) and 0.025 8 (2000Sa32).
847.14 <sup>†</sup> 11	0.055 7	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	1847.446	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 847.07 19 (1982Ak03) and 847.16 11 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.052 12 (1982Ak03), 0.057 7 (1994Mo06) and 0.053 15 (2000Sa32).
866.0 <sup>†</sup> 8		2630.84	(1,2 <sup>+</sup> )	1764.520	1 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
872.95 19	0.038 9	2147.86	(1 <sup>-</sup> ,2 <sup>+</sup> )	1274.765	3 <sup>-</sup>			E <sub>γ</sub> : weighted average of 872.51 36 (1982Ak03), 873.0 5 (1989Si17) and 873.07 19 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.032 10 (1982Ak03), 0.036 13 (1989Si17), 0.042 9 (1994Mo06) and 0.040 10 (2000Sa32).
878.02 <sup>†</sup> 12	0.024 6	2293.362	(1 <sup>+</sup> ,2 <sup>+</sup> )	1415.498	0 <sup>+</sup>			E <sub>γ</sub> : weighted average 877.91 36 (1982Ak03) and 878.03 12 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.022 7 (1982Ak03) and 0.026 6 (1993Di09,1994Mo06).
891.8 <sup>†</sup> 3		2604.68	(2 <sup>+</sup> )	1712.93	(3 <sup>+</sup> )			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
904.35 9	0.16 2	2447.701	1 <sup>-</sup>	1543.370	2 <sup>+</sup>	[E1]	0.00326 5	α(K)=0.00270 4; α(L)=0.000423 6; α(M)=9.83×10 <sup>-5</sup> 14; α(N)=2.517×10 <sup>-5</sup> 35; α(O)=5.23×10 <sup>-6</sup> 7 α(P)=6.66×10 <sup>-7</sup> 9 E <sub>γ</sub> : weighted average of 904.1 5 (1969Li10), 904.30 17 (1982Ak03), 904.25 25 (1989Si17) and 904.38 9 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.15 2 (1982Ak03), 0.23 3 (1989Si17), 0.14 2 (1994Mo06) and 0.16 4 (2000Sa32).
915.73 15	0.053 6	2293.362	(1 <sup>+</sup> ,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 915.68 24 (1982Ak03), 915.8 4 (1989Si17) and 915.74 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.070 14 (1982Ak03), 0.049 13 (1989Si17), 0.065 8 (1994Mo06) and 0.043 6 (2000Sa32).



<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>δ</u>	<u>α</u>	<u>Comments</u>
917.7 <sup>†</sup> 3	0.010 7	2192.536	(2) <sup>+</sup>	1274.765	3 <sup>-</sup>				E <sub>γ</sub> : weighted average of 917.73 36 (1982Ak03) and 917.73 29 (1993Di09,1994Mo06).
930.2 2	0.058 17	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	1764.520	1 <sup>+</sup>				I <sub>γ</sub> : from 1982Ak03 and 1994Mo06. E <sub>γ</sub> : weighted average of 930.5 5 (1989Si17) and 930.15 17 (1993Di09,1994Mo06).
934.056 8	6.81 3	1543.370	2 <sup>+</sup>	609.318	2 <sup>+</sup>	M1+E2	0.37 24	0.0228 25	I <sub>γ</sub> : weighted average of 0.043 11 (1989Si17), 0.10 2 (1993Di09,1994Mo06) and 0.08 3 (2000Sa32). α(K)=0.0187 21; α(L)=0.00319 31; α(M)=0.00075 7; α(N)=0.000193 19; α(O)=4.0×10 <sup>-5</sup> 4 α(P)=5.2×10 <sup>-6</sup> 5 E <sub>γ</sub> : weighted average of 934.0 2 (1969Li10), 934.052 20 (1989Si17), 934.061 12 (1993Di09,1994Mo06) and 934.054 8 (2002MoZP). Mult.,δ: from α(K)exp=0.0188 9; K/L=5.3 7 (1960Lu07); K/L=5.4 3 (1957Ni11); others: α(K)exp=0.0188 (1967Ma51); γγ(E2)(θ): A <sub>2</sub> =0.41 6, A <sub>4</sub> =0.06 8 (1986Ta16).
934.1 2	0.107 21	2208.69	(2 <sup>-</sup> ,3)	1274.765	3 <sup>-</sup>				I <sub>γ</sub> : weighted average of 7.0 9 (1982Ak03), 6.87 13 (1989Si17), 6.81 14 (1998Mo14), 6.88 5 (1994Mo06), 6.70 20 (2000Sa32), 6.83 4 (2002MoZP) and 6.78 3 (2004Mo07). E <sub>γ</sub> : weighted average of 934.0 5 (1989Si17) and 934.10 20 (1993Di09,1994Mo06). I <sub>γ</sub> : from 1989Si17.
934.5 <sup>‡</sup> 5	0.021 6	2698.60	(1,2) <sup>+</sup>	1764.520	1 <sup>+</sup>				E <sub>γ</sub> ,I <sub>γ</sub> : from 1989Si17.
938.65 <sup>†</sup> 16	0.028 8	2785.97	(1,2) <sup>+</sup>	1847.446	2 <sup>+</sup>				E <sub>γ</sub> : weighted average of 938.64 20 (1982Ak03) and 938.65 16 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.030 8 (1982Ak03) and 0.028 8 (1993Di09,1994Mo06).
939.6 <sup>‡</sup> 5	0.043 9	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	1543.370	2 <sup>+</sup>				E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : weighted average of 0.038 13 (1989Si17) and 0.045 9 (2000Sa32).
943.33 12	0.036 6	2604.68	(2 <sup>+</sup> )	1661.282	2 <sup>+</sup>				E <sub>γ</sub> : weighted average of 943.31 20 (1982Ak03), 943.3 4 (1989Si17) and 943.34 12 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.034 8 (1982Ak03), 0.036 13 (1989Si17), 0.037 6 (1994Mo06) and 0.050 26 (2000Sa32).
949.8 <sup>†</sup> 3	0.011 5	2662.33	(2 <sup>+</sup> )	1712.93	(3 <sup>+</sup> )				E <sub>γ</sub> : weighted average of 949.81 36 (1982Ak03) and 949.83 50 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.009 6 (1982Ak03) and 0.012 5 (1993Di09,1994Mo06).
952.2 <sup>†</sup> 8	0.013 5	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	1742.99	0 <sup>(+)</sup>				E <sub>γ</sub> ,I <sub>γ</sub> : from 1993Di09 and 1994Mo06.
961.66 17	0.023 3	2505.34	(1 <sup>-</sup> ,2 <sup>+</sup> )	1543.370	2 <sup>+</sup>				E <sub>γ</sub> : weighted average of 961.84 36 (1982Ak03), 962 1 (1989Si17) and 961.61 17 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.046 12 (1982Ak03), 0.021 10 (1989Si17), 0.03 2 (1994Mo06) and 0.022 3 (2000Sa32).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
964.08 3	0.82 4	2728.617	(0 <sup>+</sup> ,1,2)	1764.520	1 <sup>+</sup>			E <sub>γ</sub> : weighted average of 964.1 3 (1969Li10), 964.10 17 (1982Ak03), 964.08 3 (1989Si17) and 964.11 10 (1993Di09,1994Mo06). Other: 964.8 10 (1967Ma51). I <sub>γ</sub> : weighted average of 0.82 10 (1982Ak03), 0.83 4 (1989Si17), 0.80 5 (1994Mo06) and 0.80 7 (2000Sa32).
965.00 <sup>‡</sup> 10	0.023 7	2508.12	(0 <sup>+</sup> )	1543.370	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. Placement from 965γ and 934γ coincidence (1989Si17). Possible placement between the 2694- and 1729-keV levels from the energy fit (1994Mo06). I <sub>γ</sub> : weighted average of 0.021 10 (1989Si17) and 0.024 7 (2000Sa32).
965.00 <sup>†</sup> 10		2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	1729.613	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
976.18 12	0.033 5	2719.26	1 <sup>+</sup>	1742.99	0 <sup>(+)</sup>			E <sub>γ</sub> : weighted average of 976.18 19 (1982Ak03) and 976.2 10 (1989Si17) and 976.18 12 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.029 8 (1982Ak03), 0.049 26 (1989Si17), 0.033 5 (1994Mo06) and 0.035 13 (2000Sa32).
<sup>x</sup> 989.29 17	0.017 6							E <sub>γ</sub> : weighted average of 989.04 36 (1982Ak03) and 989.34 17 (1993Di09). I <sub>γ</sub> : weighted average of 0.009 6 (1982Ak03) and 0.022 5 (1993Di09).
991.56 <sup>†</sup> 19	0.021 5	2266.41	2 <sup>+</sup>	1274.765	3 <sup>-</sup>	[E1]	0.00276 4	α(K)=0.002293 32; α(L)=0.000356 5; α(M)=8.27×10 <sup>-5</sup> 12; α(N)=2.119×10 <sup>-5</sup> 30 α(O)=4.41×10 <sup>-6</sup> 6; α(P)=5.63×10 <sup>-7</sup> 8 E <sub>γ</sub> : weighted average of 991.83 36 (1982Ak03) and 991.49 19 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.015 7 (1982Ak03), 0.022 5 (1993Di09,1994Mo06) and 0.050 22 (2000Sa32).
1011.8 <sup>†</sup> 8		3022.3	(2 <sup>-</sup> ,3,4 <sup>+</sup> )	2010.831	(2 <sup>+</sup> )			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
1013.4 <sup>‡</sup> 10	0.029 8	2860.93	(1,2 <sup>+</sup> )	1847.446	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17, not assigned to <sup>214</sup> Po in 1993Di09. I <sub>γ</sub> : weighted average of 0.021 13 (1989Si17) and 0.034 11 (2000Sa32).
1021.4 3	0.033 6	2785.97	(1,2 <sup>+</sup> )	1764.520	1 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1020.5 6 (1989Si17) and 1021.53 19 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.026 13 (1989Si17), 0.034 6 (1994Mo06) and 0.036 15 (2000Sa32).
1032.39 8	0.14 2	2447.701	1 <sup>-</sup>	1415.498	0 <sup>+</sup>	[E1]	0.00257 4	α(K)=0.002134 30; α(L)=0.000331 5; α(M)=7.68×10 <sup>-5</sup> 11; α(N)=1.966×10 <sup>-5</sup> 28 α(O)=4.09×10 <sup>-6</sup> 6; α(P)=5.23×10 <sup>-7</sup> 7 E <sub>γ</sub> : weighted average of 1032.5 6 (1969Li10), 1032.37 8 (1989Si17) and 1032.46 17 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.21 4 (1989Si17), 0.13 1 (1994Mo06) and 0.17 3 (2000Sa32).
1033.31 18	0.045 7	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	1661.282	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1033.2 10 (1989Si17) and 1033.31 18 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.051 13 (1989Si17) and 0.043 7 (2000Sa32).
1038.0 <sup>‡</sup> 6	0.017 4	2698.60	(1,2) <sup>+</sup>	1661.282	2 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1989Si17.
1038.0 <sup>†</sup> 2	0.018 3	2802.54		1764.520	1 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1993Di09 and 1994Mo06; other: 0.030 10 (2000Sa32).

<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06,1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
1045.73 16	0.047 6	2423.25	(1,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1045.4 6 ( <a href="#">1989Si17</a> ) and 1045.76 17 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.029 15 ( <a href="#">1989Si17</a> ), 0.051 6 ( <a href="#">1994Mo06</a> ) and 0.037 20 ( <a href="#">2000Sa32</a> ).
1051.96 3	0.688 22	1661.282	2 <sup>+</sup>	609.318	2 <sup>+</sup>	[M1,E2]	0.012 6	α(K)=0.010 5; α(L)=0.0018 7; α(M)=4.2×10 <sup>-4</sup> 17; α(N)=1.1×10 <sup>-4</sup> 4; α(O)=2.3×10 <sup>-5</sup> 9 α(P)=2.9×10 <sup>-6</sup> 13 E <sub>γ</sub> : weighted average of 1052.0 3 ( <a href="#">1969Li10</a> ), 1051.96 3 ( <a href="#">1989Si17</a> ) and 1051.97 15 ( <a href="#">1993Di09, 1994Mo06</a> ). Other: 1052.4 1.5 ( <a href="#">1967Ma51</a> ). I <sub>γ</sub> : weighted average of 0.68 3 ( <a href="#">1989Si17</a> ), 0.66 5 ( <a href="#">1994Mo06</a> ) and 0.72 4 ( <a href="#">2000Sa32</a> ).
(1058.1 <sup>‡</sup> )	0.018 6	2719.26	1 <sup>+</sup>	1661.282	2 <sup>+</sup>	[M1+E2]	0.012 6	α(K)=0.010 5; α(L)=0.0018 7; α(M)=4.2×10 <sup>-4</sup> 17; α(N)=1.1×10 <sup>-4</sup> 4; α(O)=2.2×10 <sup>-5</sup> 9 α(P)=2.8×10 <sup>-6</sup> 12 E <sub>γ</sub> : from <a href="#">1989Si17</a> , not assigned to <sup>214</sup> Po in <a href="#">1993Di09</a> . I <sub>γ</sub> : from <a href="#">2000Sa32</a> .
(1062.4 <sup>‡</sup> )	0.028 17	2826.82	(1,2 <sup>+</sup> )	1764.520	1 <sup>+</sup>			E <sub>γ</sub> : from <a href="#">1989Si17</a> , assigned to <sup>210</sup> Pb in <a href="#">1993Di09</a> . I <sub>γ</sub> : from <a href="#">2000Sa32</a> ; other: <0.021 ( <a href="#">1989Si17</a> ).
1067.4 3	0.056 13	2728.617	(0 <sup>+</sup> ,1,2)	1661.282	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1066.9 8 ( <a href="#">1989Si17</a> ) and 1067.50 27 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.062 26 ( <a href="#">1989Si17</a> ), 0.055 20 ( <a href="#">1994Mo06</a> ) and 0.051 24 ( <a href="#">2000Sa32</a> ).
1069.97 8	0.60 4	2447.701	1 <sup>-</sup>	1377.681	2 <sup>+</sup>	[E1]	2.41×10 <sup>-3</sup> 3	α(K)=0.002003 28; α(L)=0.000310 4; α(M)=7.19×10 <sup>-5</sup> 10; α(N)=1.842×10 <sup>-5</sup> 26 α(O)=3.84×10 <sup>-6</sup> 5; α(P)=4.91×10 <sup>-7</sup> 7 E <sub>γ</sub> : weighted average of 1070.0 3 ( <a href="#">1969Li10</a> ), 1069.96 8 ( <a href="#">1989Si17</a> ) and 1070.01 16 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.62 4 ( <a href="#">1989Si17</a> ), 0.56 4 ( <a href="#">1994Mo06</a> ) and 0.65 6 ( <a href="#">2000Sa32</a> ).
(1087.4 <sup>‡</sup> )	0.033 15	2630.84	(1,2 <sup>+</sup> )	1543.370	2 <sup>+</sup>			E <sub>γ</sub> : from <a href="#">1989Si17</a> ; assigned to <sup>210</sup> Pb in <a href="#">1993Di09</a> . I <sub>γ</sub> : from <a href="#">2000Sa32</a> .
1103.70 19	0.21 3	1712.93	(3 <sup>+</sup> )	609.318	2 <sup>+</sup>	[M1,E2]	0.011 5	α(K)=0.009 4; α(L)=0.0016 6; α(M)=3.7×10 <sup>-4</sup> 15; α(N)=1.0×10 <sup>-4</sup> 4; α(O)=2.0×10 <sup>-5</sup> 8 α(P)=2.6×10 <sup>-6</sup> 11 E <sub>γ</sub> : weighted average of 1104.0 4 ( <a href="#">1969Li10</a> ), 1103.7 3 ( <a href="#">1989Si17</a> ), 1103.64 19 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.21 11 ( <a href="#">1989Si17</a> ), 0.21 3 ( <a href="#">1994Mo06</a> ) and 0.24 7 ( <a href="#">2000Sa32</a> ).
1104.68 19	0.168 9	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1104.0 4 ( <a href="#">1969Li10</a> ), 1104.8 3 ( <a href="#">1989Si17</a> ) and 1104.79 19 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.17 1 ( <a href="#">1989Si17</a> ), 0.16 3 ( <a href="#">1994Mo06</a> ) and 0.16 3 ( <a href="#">2000Sa32</a> ).

<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06,1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>δ</u>	<u>α</u>	<u>Comments</u>
1108.8 <sup>‡</sup>	0.015 5	2769.91	(1,2 <sup>+</sup> )	1661.282	2 <sup>+</sup>				E <sub>γ</sub> : from <a href="#">1989Si17</a> , not assigned to <sup>214</sup> Po in <a href="#">1993Di09</a> . I <sub>γ</sub> : from <a href="#">2000Sa32</a> .
1118.9 <sup>‡</sup> 5	0.085 21	2662.33	(2 <sup>+</sup> )	1543.370	2 <sup>+</sup>				E <sub>γ</sub> ,I <sub>γ</sub> : from <a href="#">1989Si17</a> .
1120.294 6	32.79 10	1729.613	2 <sup>+</sup>	609.318	2 <sup>+</sup>	M1+E2	0.37 20	0.0144 12	α(K)=0.0118 10; α(L)=0.00199 16; α(M)=0.00047 4; α(N)=0.000120 9; α(O)=2.52×10 <sup>-5</sup> 20 α(P)=3.26×10 <sup>-6</sup> 27 E <sub>γ</sub> : weighted average of 1120.4 2 ( <a href="#">1969Li10</a> ), 1120.276 22 ( <a href="#">1989Si17</a> ), 1120.287 10 ( <a href="#">1993Di09,1994Mo06</a> ) and 1120.301 8 ( <a href="#">2002MoZP</a> ). Other: 1120.8 5 ( <a href="#">1967Ma51</a> ), 1120 3 ( <a href="#">1967Bu17</a> ) and 1120 2 ( <a href="#">1969La03</a> ). Mult.,δ: from α(K)exp=0.00118 5; K/L=6.0 4 ( <a href="#">1960Lu07</a> ); K/L=5.6 2 ( <a href="#">1957Ni11</a> ); others: α(K)exp=0.0154 ( <a href="#">1967Ma51</a> ); γγ(E2)(θ): A <sub>2</sub> =0.109 6, A <sub>4</sub> =0.011 11 ( <a href="#">1986Ta16</a> ). I <sub>γ</sub> : weighted average of 32.6 6 ( <a href="#">1989Si17</a> ), 33.13 22 ( <a href="#">1994Mo06</a> ), 33.1 6 ( <a href="#">1998Mo14</a> ), 32.3 10 ( <a href="#">2000Sa32</a> ), 32.77 12 ( <a href="#">2002MoZP</a> ) and 32.74 10 ( <a href="#">2004Mo07</a> ).
1130.38 20	0.081 9	2508.12	(0 <sup>+</sup> )	1377.681	2 <sup>+</sup>				E <sub>γ</sub> : weighted average of 1130.8 4 ( <a href="#">1989Si17</a> ) and 1130.29 19 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.10 2 ( <a href="#">1989Si17</a> ), 0.078 9 ( <a href="#">1994Mo06</a> ) and 0.080 11 ( <a href="#">2000Sa32</a> ).
1133.66 3	0.56 2	1742.99	0 <sup>(+)</sup>	609.318	2 <sup>+</sup>	(E2)		0.00578 8	α(K)=0.00462 6; α(L)=0.000888 12; α(M)=0.0002120 30; α(N)=5.45×10 <sup>-5</sup> 8 α(O)=1.123×10 <sup>-5</sup> 16; α(P)=1.385×10 <sup>-6</sup> 19 E <sub>γ</sub> : weighted average of 1133.8 3 ( <a href="#">1969Li10</a> ), 1133.66 3 ( <a href="#">1989Si17</a> ) and 1133.73 15 ( <a href="#">1993Di09,1994Mo06</a> ). I <sub>γ</sub> : weighted average of 0.55 2 ( <a href="#">1989Si17</a> ), 0.56 3 ( <a href="#">1994Mo06</a> ) and 0.57 3 ( <a href="#">2000Sa32</a> ). Mult.: γγ(E2)(θ): A <sub>2</sub> =0.54 10, A <sub>4</sub> =1.1 2 ( <a href="#">1989Si17</a> ). α(K)=0.0104 9; α(L)=0.00177 13; α(M)=0.000415 31; α(N)=0.000107 8; α(O)=2.23×10 <sup>-5</sup> 17 α(P)=2.89×10 <sup>-6</sup> 23 E <sub>γ</sub> : weighted average of 1155.3 2 ( <a href="#">1969Li10</a> ), 1155.19 2 ( <a href="#">1989Si17</a> ), 1155.22 13 ( <a href="#">1993Di09,1994Mo06</a> ) and 1155.214 9 ( <a href="#">2002MoZP</a> ). Other: 1155.5 7 ( <a href="#">1967Ma51</a> ), 1150 4 ( <a href="#">1967Bu17</a> ) and 1155 2 ( <a href="#">1969La03</a> ). Mult.,δ: from α(K)exp=0.0104 12 ( <a href="#">1960Lu07</a> ); others: α(K)exp=0.0091 ( <a href="#">1967Ma51</a> ); γγ(E2)(θ): A <sub>2</sub> =-0.54 3, A <sub>4</sub> =-0.02 6 ( <a href="#">1986Ta16</a> ). I <sub>γ</sub> : weighted average of 3.67 11 ( <a href="#">1989Si17</a> ), 3.5 4 ( <a href="#">1994Mo06</a> ), 3.61 10 ( <a href="#">1998Mo14</a> ), 3.4 7 ( <a href="#">2000Sa32</a> ), 3.595 17 ( <a href="#">2002MoZP</a> ) and 3.59 3 ( <a href="#">2004Mo07</a> ).
1155.210 8	3.595 17	1764.520	1 <sup>+</sup>	609.318	2 <sup>+</sup>	M1+E2	+0.48 18	0.0127 10	
1155.6 <sup>‡</sup> 5	0.034 9	2698.60	(1,2) <sup>+</sup>	1543.370	2 <sup>+</sup>				E <sub>γ</sub> ,I <sub>γ</sub> : from <a href="#">1989Si17</a> .

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

E <sub>γ</sub>	I <sub>γ</sub> <sup>@</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult.	α	Comments
1156.6 <sup>‡</sup> 1 1167.26 18	0.015 6 0.027 4	3003.4 2544.92		1847.446 1377.681	2 <sup>+</sup> 2 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1989Si17. E <sub>γ</sub> : weighted average of 1166.9 10 (1989Si17) and 1167.27 18 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.026 9 (1989Si17), 0.027 4 (1994Mo06) and 0.028 10 (2000Sa32).
1173.01 10	0.120 11	2447.701	1 <sup>-</sup>	1274.765	3 <sup>-</sup>	[E2]	0.00542 8	α(K)=0.00434 6; α(L)=0.000824 12; α(M)=0.0001965 28; α(N)=5.05×10 <sup>-5</sup> 7 α(O)=1.041×10 <sup>-5</sup> 15; α(P)=1.289×10 <sup>-6</sup> 18 E <sub>γ</sub> : weighted average of 1172.9 6 (1969Li10), 1173.05 10 (1989Si17) and 1172.90 17 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.13 3 (1989Si17), 0.098 12 (1994Mo06) and 0.132 9 (2000Sa32).
1206.4 <sup>†</sup> 8 1207.68 3	1.00 4	3053.88 2482.460	(1,2 <sup>+</sup> ) (1 <sup>-</sup> ,2 <sup>+</sup> )	1847.446 1274.765	2 <sup>+</sup> 3 <sup>-</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06. E <sub>γ</sub> : weighted average of 1207.8 3 (1969Li10), 1207.68 3 (1989Si17) and 1207.72 12 (1993Di09,1994Mo06). Other: 1207.8 8 (1967Ma51) and 1208 2 (1967Bu17). I <sub>γ</sub> : weighted average of 1.00 4 (1989Si17), 0.98 6 (1994Mo06) and 1.04 7 (2000Sa32).
1226.7 <sup>†</sup> 3	0.28 11	2604.68	(2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06. I <sub>γ</sub> : from 1994Mo06.
1226.8 <sup>‡</sup> 6	0.066 19	2769.91	(1,2 <sup>+</sup> )	1543.370	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : weighted average of 0.058 19 (1989Si17) and 0.074 20 (2000Sa32).
1230.6 4	0.018 8	2505.34	(1 <sup>-</sup> ,2 <sup>+</sup> )	1274.765	3 <sup>-</sup>			E <sub>γ</sub> : weighted average of 1230.5 10 (1989Si17) and 1230.65 38 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.047 24 (1989Si17), 0.015 6 (1994Mo06) and 0.08 4 (2000Sa32).
1238.122 10	12.83 4	1847.446	2 <sup>+</sup>	609.318	2 <sup>+</sup>	M1	0.01201 17	α(K)=0.00984 14; α(L)=0.001653 23; α(M)=0.000388 5; α(N)=9.97×10 <sup>-5</sup> 14 α(O)=2.090×10 <sup>-5</sup> 29; α(P)=2.71×10 <sup>-6</sup> 4 E <sub>γ</sub> : weighted average of 1238.2 2 (1969Li10), 1238.11 3 (1989Si17), 1238.110 12 (1993Di09,1994Mo06) and 1238.131 10 (2002MoZP). Other: 1240 4 (1967Bu17) and 1238 2 (1969La03). Mult.: α(K)exp=0.0113 11, K/L=6.1 +1.2-0.9 (1960Lu07); K/L=5.7 3 (1957Ni11); others: α(K)exp=0.0089 (1967Ma51); γγ(E2)(θ): A <sub>2</sub> =0.272 9, A <sub>4</sub> =0.00 2 (1986Ta16). I <sub>γ</sub> : weighted average of 12.84 13 (1989Si17), 12.87 9 (1994Mo06), 12.97 25 (1998Mo14), 12.7 4 (2000Sa32), 12.83 6 (2002De03), 12.80 4 (2002MoZP) and 12.85 5 (2004Mo07).
1253.14 <sup>†</sup> 12 1279.0 <sup>‡</sup> 7	0.029 5	2630.84 2940.67	(1,2 <sup>+</sup> ) (1 <sup>-</sup> ,2 <sup>+</sup> )	1377.681 1661.282	2 <sup>+</sup> 2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06. E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : weighted average of 0.026 6 (1989Si17) and 0.037 10 (2000Sa32).
1280.976 12	3.158 16	1890.306	(2 <sup>+</sup> )	609.318	2 <sup>+</sup>	M1	0.01102 15	α(K)=0.00901 13; α(L)=0.001513 21; α(M)=0.000355 5; α(N)=9.13×10 <sup>-5</sup>

<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06,1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
								13 α(O)=1.913×10 <sup>-5</sup> 27; α(P)=2.483×10 <sup>-6</sup> 35 E <sub>γ</sub> : weighted average of 1281.1 2 (1969Li10), 1280.96 2 (1989Si17), 1281.05 14 (1993Di09,1994Mo06) and 1280.981 12 (2002MoZP). Other: 1280 5 (1967Bu17) and 1281 2 (1969La03). Mult.: from α(K)exp=0.0094 9 (1960Lu07); others: α(K)exp=0.0082 (1967Ma51); γγ(E2)(θ): A <sub>2</sub> =0.30 8, A <sub>4</sub> =0.08 12 (1986Ta16). I <sub>γ</sub> : weighted average of 3.20 11 (1989Si17), 3.17 17 (1994Mo06), 3.19 11 (1998Mo14), 3.15 11 (2000Sa32), 3.159 16 (2002MoZP) and 3.15 3 (2004Mo07).
1284 <sup>‡</sup> 1	0.026 2	2662.33	(2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : weighted average of 0.026 2 (1989Si17) and 0.020 7 (2000Sa32).
1285.1 <sup>‡</sup> 5	0.035 9	3014.11	(1,2 <sup>+</sup> )	1729.613	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17, not assigned to <sup>214</sup> Po in 1993Di09. I <sub>γ</sub> : weighted average of 0.036 9 (1989Si17) and 0.033 9 (2000Sa32).
1303.75 8	0.23 2	2719.26	1 <sup>+</sup>	1415.498	0 <sup>+</sup>	M1	0.01054 15	α(K)=0.00861 12; α(L)=0.001446 20; α(M)=0.000339 5; α(N)=8.72×10 <sup>-5</sup> 12 α(O)=1.827×10 <sup>-5</sup> 26; α(P)=2.372×10 <sup>-6</sup> 33 E <sub>γ</sub> : weighted average of 1303.8 4 (1969Li10) and 1303.76 8 (1989Si17) and 1303.73 14 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.26 2 (1989Si17), 0.21 2 (1994Mo06) and 0.20 5 (2000Sa32). Mult.: from α(K)exp=0.015 (1967Ma51).
1316.99 15	0.18 2	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1317.1 3 (1969Li10), 1316.96 15 (1989Si17) and 1316.99 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.19 2 (1989Si17), 0.16 2 (1994Mo06) and 0.20 3 (2000Sa32).
1317.7 <sup>†</sup> 4 (1321.5 <sup>‡</sup> )	0.010 5	2860.93 2698.60	(1,2 <sup>+</sup> ) (1,2) <sup>+</sup>	1543.370 1377.681	2 <sup>+</sup> 2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06. E <sub>γ</sub> : from 1989Si17, assigned to <sup>210</sup> Pb in 1993Di09. I <sub>γ</sub> : from 2000Sa32.
1329.94 17	0.026 3	2604.68	(2 <sup>+</sup> )	1274.765	3 <sup>-</sup>			E <sub>γ</sub> : weighted average of 1330.0 6 (1989Si17) and 1329.93 17 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.024 13 (1989Si17), 0.026 3 (1994Mo06) and 0.039 17 (2000Sa32).
1341.49 16	0.047 6	2719.26	1 <sup>+</sup>	1377.681	2 <sup>+</sup>	[M1+E2]	0.0070 28	α(K)=0.0057 23; α(L)=1.0×10 <sup>-3</sup> 4; α(M)=2.3×10 <sup>-4</sup> 8; α(N)=5.9×10 <sup>-5</sup> 22; α(O)=1.2×10 <sup>-5</sup> 5 α(P)=1.6×10 <sup>-6</sup> 6 E <sub>γ</sub> : weighted average of 1341.5 3 (1989Si17) and 1341.49 16 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.049 26 (1989Si17), 0.046 6 (1994Mo06) and 0.059 29 (2000Sa32).
1351 <sup>‡&amp;</sup> 1	0.015 4	2728.617	(0 <sup>+</sup> ,1,2)	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : weighted average of 0.021 11 (1989Si17) and 0.014 4 (2000Sa32).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>δ</u>	<u>α</u>	<u>Comments</u>
1353.0 <sup>‡</sup> 8	0.0098 25	3014.11	(1,2 <sup>+</sup> )	1661.282	2 <sup>+</sup>				E <sub>γ</sub> : from 1989Si17, assigned to <sup>210</sup> Pb in 1993Di09. I <sub>γ</sub> : from 1989Si17.
1361.2 <sup>†</sup> 8		3022.3	(2 <sup>-</sup> ,3,4 <sup>+</sup> )	1661.282	2 <sup>+</sup>				E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
1370.5	0.022 5	2785.97	(1,2 <sup>+</sup> )	1415.498	0 <sup>+</sup>				E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : from 2000Sa32; other: <0.021 (1989Si17). α(K)=0.00324 5; α(L)=0.000585 8; α(M)=0.0001385 19; α(N)=3.56×10 <sup>-5</sup> 5; α(O)=7.37×10 <sup>-6</sup> 10 α(P)=9.24×10 <sup>-7</sup> 13
1377.669 12	8.77 3	1377.681	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2		0.00404 6	E <sub>γ</sub> : weighted average of 1377.7 2 (1969Li10), 1377.65 3 (1989Si17), 1377.669 12 (1993Di09,1994Mo06) and 1377.671 12 (2002MoZP). Other: 1380 4 (1967Bu17) and 1378 2 (1969La03). Mult.: from α(K)exp=0.0026 6 (1960Lu07); other: 0.0027 (1967Ma51). I <sub>γ</sub> : weighted average of 8.72 19 (1989Si17), 8.82 12 (1994Mo06), 8.91 18 (1998Mo14), 8.52 25 (2000Sa32), 8.79 3 (2002MoZP) and 8.72 4 (2004Mo07).
1385.310 14	1.762 16	1994.639	1 <sup>-</sup>	609.318	2 <sup>+</sup>	D			E <sub>γ</sub> : weighted average of 1385.4 3 (1969Li10), 1385.31 3 (1989Si17), 1385.30 11 (1993Di09,1994Mo06) and 1385.310 14 (2002MoZP). Other: 1380 4 (1967Bu17) and 1385 2 (1969La03). I <sub>γ</sub> : weighted average of 1.68 6 (1989Si17), 1.81 3 (1994Mo06), 1.76 5 (2000Sa32) and 1.755 16 (2002MoZP). Mult.: from γγ(E2)(θ): A <sub>2</sub> =0.19 10, A <sub>4</sub> =-0.21 19 (1986Ta16).
1387.5 <sup>†</sup> 2		2662.33	(2 <sup>+</sup> )	1274.765	3 <sup>-</sup>				E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
1392.5 <sup>‡</sup> & 4	0.037 15	2769.91	(1,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>				E <sub>γ</sub> : from 1989Si17, assigned to <sup>210</sup> Pb in 1993Di09. I <sub>γ</sub> : weighted average of 0.041 19 (1989Si17) and 0.035 15 (2000Sa32).
1401.515 13	2.933 13	2010.831	(2 <sup>+</sup> )	609.318	2 <sup>+</sup>	(M1+E2)	+1.6 5	0.0053 8	α(K)=0.0043 7; α(L)=0.00074 11; α(M)=0.000175 25; α(N)=4.5×10 <sup>-5</sup> 7; α(O)=9.4×10 <sup>-6</sup> 14 α(P)=1.19×10 <sup>-6</sup> 19 E <sub>γ</sub> : weighted average of 1401.6 3 (1969Li10), 1401.50 4 (1989Si17), 1401.52 11 (1993Di09,1994Mo06) and 1401.516 13 (2002MoZP). Other: 1402 2 (1969La03). Mult.,δ: from γγ(E2)(θ): A <sub>2</sub> =-0.37 2, A <sub>4</sub> =0.25 4 (1986Ta16). I <sub>γ</sub> : weighted average of 3.01 9 (1989Si17), 2.91 16 (1994Mo06), 2.96 9 (1998Mo14), 3.0 4 (2000Sa32), 2.934 13 (2002MoZP) and 2.927 20 (2004Mo07).
1407.988 12	5.256 19	2017.315	0 <sup>+</sup>	609.318	2 <sup>+</sup>	(E2)		0.00389 5	α(K)=0.00312 4; α(L)=0.000559 8; α(M)=0.0001323 19; α(N)=3.40×10 <sup>-5</sup> 5; α(O)=7.04×10 <sup>-6</sup> 10 α(P)=8.84×10 <sup>-7</sup> 12

<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06,1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>δ</u>	<u>α</u>	<u>I<sub>(γ+ce)</sub><sup>@</sup></u>	<u>Comments</u>
1415.495 10		1415.498	0 <sup>+</sup>	0.0	0 <sup>+</sup>	E0			1.12 3	<p>E<sub>γ</sub>: weighted average of 1408.0 2 (<a href="#">1969Li10</a>), 1407.98 4 (<a href="#">1989Si17</a>), 1407.99 11 (<a href="#">1993Di09,1994Mo06</a>) and 1407.989 12 (<a href="#">2002MoZP</a>). Other: 1407 4 (<a href="#">1967Bu17</a>) and 1408 2 (<a href="#">1969La03</a>).</p> <p>Mult.: from γγ(E2)(θ) (<a href="#">1986Ta16</a>).</p> <p>I<sub>γ</sub>: weighted average of 5.37 9 (<a href="#">1989Si17</a>), 5.37 6 (<a href="#">1994Mo06</a>), 5.38 12 (<a href="#">1998Mo14</a>), 5.5 5 (<a href="#">2000Sa32</a>), 5.23 3 (<a href="#">2002De03</a>), 5.250 19 (<a href="#">2002MoZP</a>) and 5.24 4 (<a href="#">2004Mo07</a>).</p> <p>E<sub>γ</sub>: from level-energy difference. ce measurement: 1415.9 (<a href="#">1954MI77, 1960Lu07</a>).</p> <p>I<sub>(γ+ce)</sub>: weighted average of 1.14 4 from I(ce(K) 1415)/I(ce(K) 609γ)=25.0/45.0 I5=0.651 19 (<a href="#">1960Lu07</a>) with α(K)/α(tot)(1415)=0.8536 and α(K)(609γ)=0.01489 2I; and 1.08 5 from I(ce(L) 1415)/I(ce(K) 609γ)=4.76 20/45.0 I5=0.106 4 (<a href="#">1960Lu07</a>) with α(L)/α(tot)(1415)=0.1465 and α(K)(609γ)=0.01489 2I.</p>
1419.70 29	0.011 2	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	1274.765	3 <sup>-</sup>					<p>Mult.: from ce measurement <a href="#">1960Lu07</a>.</p> <p>E<sub>γ</sub>: weighted average of 1419.7 6 (<a href="#">1989Si17</a>) and 1419.70 29 (<a href="#">1993Di09,1994Mo06</a>).</p> <p>I<sub>γ</sub>: weighted average of 0.011 2 (<a href="#">1989Si17</a>), 0.011 3 (<a href="#">1994Mo06</a>) and 0.013 3 (<a href="#">2000Sa32</a>).</p>
(1448.85 <sup>±</sup> 24)	0.04 2	2826.82	(1,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>					<p>E<sub>γ</sub>: from <a href="#">1989Si17</a>, not assigned to <sup>214</sup>Po in <a href="#">1993Di09</a>.</p> <p>I<sub>γ</sub>: from <a href="#">2000Sa32</a>; other: &lt;0.021 (<a href="#">1989Si17</a>).</p>
1471.1 <sup>±</sup> 6	0.0035 15	3014.11	(1,2 <sup>+</sup> )	1543.370	2 <sup>+</sup>					<p>E<sub>γ</sub>: from <a href="#">1989Si17</a>, not assigned to <sup>214</sup>Po in <a href="#">1993Di09</a>.</p> <p>I<sub>γ</sub>: from <a href="#">2000Sa32</a>.</p>
1479.19 12	0.122 17	2088.44	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>					<p>E<sub>γ</sub>: weighted average of 1479.2 7 (<a href="#">1969Li10</a>), 1479.22 12 (<a href="#">1989Si17</a>) and 1479.15 14 (<a href="#">1993Di09,1994Mo06</a>). Other: 1480 2 (<a href="#">1969La03</a>).</p> <p>I<sub>γ</sub>: weighted average of 0.149 17 (<a href="#">1989Si17</a>), 0.11 1 (<a href="#">1994Mo06</a>) and 0.14 3 (<a href="#">2000Sa32</a>).</p>
(1481.3 <sup>±</sup> )	0.0020 7	3142.6	(1,2 <sup>+</sup> )	1661.282	2 <sup>+</sup>					<p>E<sub>γ</sub>: from <a href="#">1989Si17</a>, assigned to <sup>210</sup>Pb in <a href="#">1993Di09</a>.</p> <p>I<sub>γ</sub>: from <a href="#">2000Sa32</a>; other: &lt;0.011 (<a href="#">1989Si17</a>).</p>
(1483.5 <sup>±</sup> )	0.028 10	2860.93	(1,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>					<p>E<sub>γ</sub>: from <a href="#">1989Si17</a>, assigned to <sup>210</sup>Pb in <a href="#">1993Di09</a>.</p> <p>I<sub>γ</sub>: from <a href="#">2000Sa32</a>; other: &lt;0.021 (<a href="#">1989Si17</a>).</p>



<sup>214</sup>Bi β<sup>-</sup> decay [1994Mo06,1989Si17](#) (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>δ</u>	<u>α</u>	<u>Comments</u>
1509.211 10	4.68 3	2118.535	1 <sup>+</sup>	609.318	2 <sup>+</sup>	(M1+E2)	-0.056 22	0.00733 10	α(K)=0.00591 8; α(L)=0.000989 14; α(M)=0.0002317 33; α(N)=5.96×10 <sup>-5</sup> 8 α(O)=1.249×10 <sup>-5</sup> 18; α(P)=1.623×10 <sup>-6</sup> 23 E <sub>γ</sub> : weighted average of 1509.3 3 (1969Li10), 1509.19 4 (1989Si17), 1509.228 15 (1993Di09,1994Mo06) and 1509.198 14 (2002MoZP). Other: 1510 4 (1967Bu17) and 1510 2 (1969La03). Mult.,δ: from γγ(E2)(θ): A <sub>2</sub> =-0.19 2, A <sub>4</sub> =0.01 4 (1986Ta16). I <sub>γ</sub> : weighted average of 4.75 13 (1989Si17), 4.76 5 (1994Mo06), 4.75 15 (1998Mo14), 4.63 15 (2000Sa32), 4.61 6 (2002De03), 4.67 3 (2002MoZP) and 4.63 6 (2004Mo07).
(1515.7 <sup>±</sup> )	0.039 10	2893.60	(1,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>				E <sub>γ</sub> : from 1989Si17, not assigned to <sup>214</sup> Po in 1993Di09. I <sub>γ</sub> : from 2000Sa32; other: <0.021 (1989Si17).
1532.8 8		3262.4		1729.613	2 <sup>+</sup>				E <sub>γ</sub> : from 1993Di09.
1538.53 6	0.96 5	2147.86	(1 <sup>-</sup> ,2 <sup>+</sup> )	609.318	2 <sup>+</sup>	D(+Q)			E <sub>γ</sub> : weighted average of 1538.7 3 (1969Li10), 1538.50 6 (1989Si17) and 1538.66 14 (1993Di09,1994Mo06). Mult.: from γγ(E2)(θ): A <sub>2</sub> =-0.21 5, A <sub>4</sub> =0.01 6 (1989Si17). I <sub>γ</sub> : weighted average of 0.90 13 (1989Si17), 0.95 6 (1994Mo06) and 0.98 5 (2000Sa32).
1543.33 6	0.68 3	1543.370	2 <sup>+</sup>	0.0	0 <sup>+</sup>	[E2]		0.00333 5	α(K)=0.00265 4; α(L)=0.000463 6; α(M)=0.0001093 15; α(N)=2.81×10 <sup>-5</sup> 4; α(O)=5.83×10 <sup>-6</sup> 8 α(P)=7.36×10 <sup>-7</sup> 10 E <sub>γ</sub> : weighted average of 1543.3 4 (1969Li10), 1543.32 6 (1989Si17) and 1543.38 13 (1993Di09,1994Mo06). Other: 1541 15 (1966Hu03), 1540 4 (1967Bu17) and 1544 2 (1969La03). I <sub>γ</sub> : weighted average of 0.77 11 (1989Si17), 0.68 4 (1994Mo06) and 0.67 3 (2000Sa32).
1583.203 17	1.557 13	2192.536	(2) <sup>+</sup>	609.318	2 <sup>+</sup>	M1		0.00655 9	α(K)=0.00524 7; α(L)=0.000875 12; α(M)=0.0002051 29; α(N)=5.28×10 <sup>-5</sup> 7 α(O)=1.106×10 <sup>-5</sup> 15; α(P)=1.437×10 <sup>-6</sup> 20 E <sub>γ</sub> : weighted average of 1583.3 3 (1969Li10), 1583.22 4 (1989Si17), 1583.21 12 (1993Di09,1994Mo06) and 1583.200 17 (2002MoZP). Other: 1585 4 (1967Bu17) and 1584 2 (1969La03). Mult.: from α(K)exp=0.0062 9 (1960Lu07); others: α(K)exp=0.0091 (1967Ma51); γγ(E2)(θ): A <sub>2</sub> =0.38 3, A <sub>4</sub> =0.10 6 (1986Ta16). I <sub>γ</sub> : weighted average of 1.56 6 (1989Si17), 1.58 8 (1994Mo06), 1.64 17 (2000Sa32) and 1.556 13 (2002MoZP).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
1594.75 8	0.60 4	2204.103	1 <sup>+</sup>	609.318	2 <sup>+</sup>	[M1+E2]	0.0048 16	α(K)=0.0038 13; α(L)=6.5×10 <sup>-4</sup> 21; α(M)=1.5×10 <sup>-4</sup> 5; α(N)=3.9×10 <sup>-5</sup> 13; α(O)=8.2×10 <sup>-6</sup> 27 α(P)=1.0×10 <sup>-6</sup> 4 E <sub>γ</sub> : weighted average of 1594.8 4 (1969Li10), 1594.73 8 (1989Si17) and 1594.80 12 (1993Di09,1994Mo06). Other: 1595 2 (1969La03). I <sub>γ</sub> : weighted average of 0.58 4 (1989Si17), 0.61 4 (1994Mo06) and 0.63 10 (2000Sa32).
1594.8 3	0.011 6	2869.63	(2 <sup>-</sup> ,3 <sup>-</sup> )	1274.765	3 <sup>-</sup>			E <sub>γ</sub> : weighted average of 1595 1 (1989Si17) and 1594.79 30 (1993Di09,1994Mo06). I <sub>γ</sub> : from 1989Si17.
1598.0 <sup>‡</sup> 5	0.013 6	3014.11	(1,2 <sup>+</sup> )	1415.498	0 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1989Si17.
1599.56 12	0.72 4	2208.69	(2 <sup>-</sup> ,3)	609.318	2 <sup>+</sup>	D+Q		E <sub>γ</sub> : weighted average of 1599.5 4 (1969Li10), 1599.3 6 (1989Si17) and 1599.58 12 (1993Di09,1994Mo06). Mult.: from γγ(E2)(θ): A <sub>2</sub> =0.27 6, A <sub>4</sub> =-0.12 6 (1989Si17). I <sub>γ</sub> : weighted average of 0.72 4 (1989Si17), 0.72 4 (1994Mo06) and 0.73 7 (2000Sa32).
1636.36 19	0.025 4	3014.11	(1,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1636.6 4 (1989Si17) and 1636.25 19 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.041 13 (1989Si17), 0.024 3 (1994Mo06) and 0.06 3 (2000Sa32).
1637 <sup>‡</sup> 1	0.015 6	3053.88	(1,2 <sup>+</sup> )	1415.498	0 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : weighted average of 0.013 6 (1989Si17) and 0.020 10 (2000Sa32).
1644.0 <sup>†</sup> 8		3022.3	(2 <sup>-</sup> ,3,4 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
1657.04 18	0.11 1	2266.41	2 <sup>+</sup>	609.318	2 <sup>+</sup>	[M1+E2]	0.0044 15	α(K)=0.0035 12; α(L)=5.9×10 <sup>-4</sup> 19; α(M)=1.4×10 <sup>-4</sup> 4; α(N)=3.6×10 <sup>-5</sup> 11; α(O)=7.4×10 <sup>-6</sup> 24 α(P)=9.6×10 <sup>-7</sup> 32 E <sub>γ</sub> : weighted average of 1657.4 6 (1989Si17) and 1657.00 19 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.16 7 (1989Si17), 0.10 1 (1994Mo06) and 0.14 3 (2000Sa32).
1661.274 17	2.301 14	1661.282	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2	0.00296 4	α(K)=0.002319 32; α(L)=0.000399 6; α(M)=9.40×10 <sup>-5</sup> 13; α(N)=2.414×10 <sup>-5</sup> 34 α(O)=5.02×10 <sup>-6</sup> 7; α(P)=6.36×10 <sup>-7</sup> 9 E <sub>γ</sub> : weighted average of 1661.4 2 (1969Li10), 1661.28 6 (1989Si17), 1661.29 11 (1993Di09,1994Mo06) and 1661.272 17 (2002MoZP). Other: 1662 4 (1967Bu17) and 1661 2 (1969La03). I <sub>γ</sub> : weighted average of 2.49 9 (1989Si17), 2.33 12 (1994Mo06), 2.38 10 (1998Mo14), 2.37 22 (2000Sa32), 2.299 14 (2002MoZP) and 2.28 3 (2004Mo07). Mult.: from α(K)exp=0.0026 (1967Ma51).
1665.86 19	0.019 6	2940.67	(1 <sup>-</sup> ,2 <sup>+</sup> )	1274.765	3 <sup>-</sup>			E <sub>γ</sub> : weighted average of 1667.0 15 (1989Si17) and 1665.84 19 (1993Di09,1994Mo06).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
1676.1 <sup>‡</sup>	<0.005	3053.88	(1,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 0.013 6 (1989Si17), 0.018 3 (1994Mo06) and 0.046 9 (2000Sa32).
1684.012 23	0.48 3	2293.362	(1 <sup>+</sup> ,2 <sup>+</sup> )	609.318	2 <sup>+</sup>	(M1+E2)	0.0043 14	E <sub>γ</sub> ,I <sub>γ</sub> : from 1989Si17, assigned to <sup>210</sup> Pb in 1993Di09. α(K)=0.0034 11; α(L)=5.7×10 <sup>-4</sup> 18; α(M)=1.3×10 <sup>-4</sup> 4; α(N)=3.4×10 <sup>-5</sup> 11; α(O)=7.2×10 <sup>-6</sup> 23 α(P)=9.2×10 <sup>-7</sup> 30
1693.4 <sup>†</sup> 8		2967.6		1274.765	3 <sup>-</sup>			E <sub>γ</sub> : weighted average of 1684.1 3 (1969Li10), 1683.99 4 (1989Si17), 1683.96 14 (1993Di09,1994Mo06) and 1684.020 23 (2002MoZP). Other: 1685 6 (1967Bu17) and 1685 2 (1969La03).
1711.0 <sup>&amp;</sup> 8	0.004 2	2986.22	(2 <sup>-</sup> ,3)	1274.765	3 <sup>-</sup>			I <sub>γ</sub> : weighted average of 0.51 4 (1989Si17), 0.49 3 (1994Mo06) and 0.43 4 (2000Sa32); other: 1.556 13 (2002MoZP). Mult.: from γγ(E2)(θ): A <sub>2</sub> =-0.05 6, A <sub>4</sub> =-0.03 7 (1989Si17).
1717.0 8	0.012 3	3093.48	(1 <sup>-</sup> ,2 <sup>+</sup> )	1377.681	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
1723.7 <sup>†</sup> 8		3000.00	(1 <sup>-</sup> ,2 <sup>+</sup> )	1274.765	3 <sup>-</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
1729.595 15	6.32 7	1729.613	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2	0.00278 4	I <sub>γ</sub> : from 1993Di09 and 1994Mo06; others: <0.021 (1989Si17) and 0.05 1 (2000Sa32). E <sub>γ</sub> : from 1993Di09 and 1994Mo06. α(K)=0.002157 30; α(L)=0.000368 5; α(M)=8.66×10 <sup>-5</sup> 12; α(N)=2.225×10 <sup>-5</sup> 31 α(O)=4.63×10 <sup>-6</sup> 6; α(P)=5.88×10 <sup>-7</sup> 8
1739.1 <sup>†</sup> 8		2348.3	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1729.8 2 (1969Li10), 1729.60 5 (1989Si17), 1729.595 15 (1993Di09,1994Mo06) and 1729.592 19 (2002MoZP). Other: 1730 4 (1967Bu17) and 1730 2 (1969La03). Mult.: from α(K)exp=0.0028 4 (1960Lu07) and 0.002 (1967Ma51).
1747.2 <sup>†</sup> 8		3022.3	(2 <sup>-</sup> ,3,4 <sup>+</sup> )	1274.765	3 <sup>-</sup>			I <sub>γ</sub> : weighted average of 6.61 13 (1989Si17), 6.60 4 (1994Mo06), 6.27 15 (1998Mo14), 6.33 15 (2000Sa32), 6.25 3 (2002MoZP) and 6.22 3 (2004Mo07).
1751.6 7	0.010 8	2360.97	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06. E <sub>γ</sub> : from 1993Di09 and 1994Mo06. E <sub>γ</sub> : weighted average of 1752 1 (1989Si17) and 1751.44 74 (1993Di09,1994Mo06). I <sub>γ</sub> : unweighted average of 0.017 9 (1989Si17) and 0.002 1 (1993Di09,1994Mo06).
1764.491 14	33.64 11	1764.520	1 <sup>+</sup>	0.0	0 <sup>+</sup>	M1	0.00512 7	α(K)=0.00397 6; α(L)=0.000661 9; α(M)=0.0001549 22; α(N)=3.98×10 <sup>-5</sup> 6; α(O)=8.35×10 <sup>-6</sup> 12 α(P)=1.086×10 <sup>-6</sup> 15 E <sub>γ</sub> : weighted average of 1764.6 2 (1969Li10), 1764.51 5 (1989Si17), 1764.494 14 (1993Di09,1994Mo06) and 1764.485 14 (2002MoZP). Other: 1764 2 (1967Bu17) and 1764 2 (1969La03).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
<sup>x</sup> 1782.1 10 1813.73 14	0.024 2	2423.25	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			Mult.: from α(K)exp=0.0040 3 (1960Lu07); other: 0.0036 (1967Ma51). I <sub>γ</sub> : weighted average of 34.5 6 (1989Si17), 34.48 25 (1994Mo06), 33.9 7 (1998Mo14), 33.3 10 (2000Sa32), 33.63 9 (2002MoZP) and 33.5 1 (2004Mo07). I <sub>γ</sub> : 0.035 12 from 1969Li10 and 0.011 3 from 2000Sa32. E <sub>γ</sub> : weighted average of 1813.7 4 (1989Si17) and 1813.73 14 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.026 11 (1989Si17), 0.024 2 (1994Mo06) and 0.020 10 (2000Sa32).
1819.2 <sup>†</sup> 4 1838.36 5	<0.003 0.77 3	3093.48 2447.701	(1 <sup>-</sup> ,2 <sup>+</sup> ) 1 <sup>-</sup>	1274.765 609.318	3 <sup>-</sup> 2 <sup>+</sup>	[E1]	1.36×10 <sup>-3</sup> 2	E <sub>γ</sub> ,I <sub>γ</sub> : from 1993Di09 and 1994Mo06. α(K)=0.000800 11; α(L)=0.0001206 17; α(M)=2.79×10 <sup>-5</sup> 4; α(N)=7.15×10 <sup>-6</sup> 10 α(O)=1.495×10 <sup>-6</sup> 21; α(P)=1.933×10 <sup>-7</sup> 27 E <sub>γ</sub> : weighted average of 1838.6 3 (1969Li10), 1838.36 5 (1989Si17) and 1838.33 11 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.83 4 (1989Si17), 0.74 3 (1994Mo06) and 0.77 4 (2000Sa32).
1847.433 17	4.46 3	1847.446	2 <sup>+</sup>	0.0	0 <sup>+</sup>	[E2]	2.53×10 <sup>-3</sup> 4	α(K)=0.001916 27; α(L)=0.000323 5; α(M)=7.59×10 <sup>-5</sup> 11; α(N)=1.948×10 <sup>-5</sup> 27 α(O)=4.06×10 <sup>-6</sup> 6; α(P)=5.17×10 <sup>-7</sup> 7 E <sub>γ</sub> : weighted average of 1847.6 3 (1969Li10), 1847.44 5 (1989Si17), 1847.40 11 (1993Di09,1994Mo06) and 1847.432 17 (2002MoZP). Other: 1850 4 (1967Bu17) and 1848 2 (1969La03). I <sub>γ</sub> : weighted average of 4.61 15 (1989Si17), 4.57 6 (1994Mo06), 4.51 12 (1998Mo14), 4.35 13 (2000Sa32), 4.42 3 (2002MoZP) and 4.46 3 (2004Mo07).
1873.16 5	0.47 2	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1873.4 3 (1969Li10), 1873.16 6 (1989Si17) and 1873.10 12 (1993Di09,1994Mo06). Other: 1873 2 (1967Bu17). I <sub>γ</sub> : weighted average of 0.49 4 (1989Si17), 0.46 2 (1994Mo06) and 0.51 5 (2000Sa32).
1890.30 14	0.184 23	1890.306	(2) <sup>+</sup>	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1890.4 4 (1969Li10), 1890.35 15 (1989Si17) and 1890.25 14 (1993Di09,1994Mo06). Other: 1890 2 (1969La03). I <sub>γ</sub> : weighted average of 0.194 23 (1989Si17), 0.17 6 (1994Mo06) and 0.17 3 (2000Sa32).
1896.05 14	0.33 2	2505.34	(1 <sup>-</sup> ,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1896.7 4 (1969Li10), 1896.3 3 (1989Si17) and 1895.92 14 (1993Di09,1994Mo06). Other: 1896 2 (1969La03). I <sub>γ</sub> : weighted average of 0.38 4 (1989Si17), 0.31 2 (1994Mo06) and 0.35 4 (2000Sa32).
1898.68 16	0.11 2	2508.12	(0 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1898.7 4 (1989Si17) and 1898.68 16 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.14 5 (1989Si17), 0.11 2 (1994Mo06) and 0.10 3 (2000Sa32).
1935.58 20	0.067 7	2544.92		609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 1935.8 4 (1989Si17) and 1935.52 20

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>I<sub>(γ+ce)</sub><sup>@</sup></u>	<u>Comments</u>
									(1993Di09,1994Mo06). I <sub>γ</sub> : from 1993Di09 and 1994Mo06; others: 0.11 5 (1989Si17) and 0.16 4 (2000Sa32).
1943.7 <sup>†</sup> 8		2553.0		609.318	2 <sup>+</sup>				E <sub>γ</sub> : from 1994Mo06.
1953.4 <sup>†</sup> 6		2562.4		609.318	2 <sup>+</sup>				E <sub>γ</sub> : from 1994Mo06.
1994.6 6	0.015 6	2604.68	(2 <sup>+</sup> )	609.318	2 <sup>+</sup>				E <sub>γ</sub> : weighted average of 1994.7 15 (1969Li10), 1994.7 15 (1989Si17) and 1994.6 6 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.013 7 (1989Si17) and 0.020 10 (2000Sa32).
<sup>x</sup> 2004.5 10	0.005 2								E <sub>γ</sub> : from 1969Li10. I <sub>γ</sub> : from 2000Sa32; other: ≈0.003 from 1969Li10.
2010.80 12	0.097 5	2010.831	(2 <sup>+</sup> )	0.0	0 <sup>+</sup>				E <sub>γ</sub> : weighted average of 2011.0 6 (1969Li10), 2010.71 15 (1989Si17) and 2010.85 12 (1993Di09,1994Mo06). Other: 2011 2 (1969La03). I <sub>γ</sub> : weighted average of 0.106 11 (1989Si17), 0.100 5 (1994Mo06) and 0.093 5 (2000Sa32).
2017.309 12		2017.315	0 <sup>+</sup>	0.0	0 <sup>+</sup>	E0		0.012 2	E <sub>γ</sub> : from level-energy difference. ce measurement: 2016.7 (1954M177, 1960Lu07). I <sub>(γ+ce)</sub> : from I(ce(K) 2017)/I(ce(K) 609γ)=0.31 5/45.0 15=0.0069 11 (1960Lu07) with α(K)/α(tot)(2017)=0.8556 and α(K)(609γ)=0.01489 21; other: 1.0 (1954M177).
2021.52 12	0.047 5	2630.84	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>				E <sub>γ</sub> : weighted average of 2021.8 3 (1989Si17) and 2021.47 12 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.041 16 (1989Si17), 0.045 5 (1994Mo06) and 0.057 11 (2000Sa32).
2052.96 12	0.151 10	2662.33	(2 <sup>+</sup> )	609.318	2 <sup>+</sup>				E <sub>γ</sub> : weighted average of 2053.2 3 (1969Li10), 2052.94 15 and 2052.94 12 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.151 15 (1989Si17), 0.15 1 (1994Mo06) and 0.16 3 (2000Sa32).
2085.19 15	0.018 1	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	609.318	2 <sup>+</sup>				E <sub>γ</sub> : weighted average of 2084.2 12 (1969Li10), 2085.0 5 (1989Si17) and 2085.22 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.021 6 (1989Si17) and 0.018 1 (1994Mo06).
2089.65 15	0.100 6	2698.60	(1,2) <sup>+</sup>	609.318	2 <sup>+</sup>	M1	0.00365 5		α(K)=0.00257 4; α(L)=0.000427 6; α(M)=9.99×10 <sup>-5</sup> 14; α(N)=2.57×10 <sup>-5</sup> 4; α(O)=5.39×10 <sup>-6</sup> 8 α(P)=7.01×10 <sup>-7</sup> 10 E <sub>γ</sub> : weighted average of 2089.7 7 (1969Li10), 2089.51 15 (1989Si17) and 2089.79 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.121 13 (1989Si17), 0.096 5 (1994Mo06) and 0.12 3 (2000Sa32).
2109.98 12	0.188 10	2719.26	1 <sup>+</sup>	609.318	2 <sup>+</sup>	[M1+E2]	0.0029 7		Mult.: >M2 suggested by α(K)exp=0.036 (1967Ma51). It is unlikely based on the decay pattern; however E1 or E2 ruled out. α(K)=0.0020 5; α(L)=3.3×10 <sup>-4</sup> 8; α(M)=7.8×10 <sup>-5</sup> 20;

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
								α(N)=2.0×10 <sup>-5</sup> 5; α(O)=4.2×10 <sup>-6</sup> 11 α(P)=5.4×10 <sup>-7</sup> 14 E <sub>γ</sub> : weighted average of 2110.4 3 (1969Li10), 2109.90 12 (1989Si17) and 2109.96 14 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.189 17 (1989Si17), 0.19 1 (1994Mo06) and 0.17 3 (2000Sa32).
2118.513 25	2.545 20	2118.535	1 <sup>+</sup>	0.0	0 <sup>+</sup>	M1	0.00356 5	α(K)=0.002483 35; α(L)=0.000412 6; α(M)=9.65×10 <sup>-5</sup> 14; α(N)=2.481×10 <sup>-5</sup> 35 α(O)=5.20×10 <sup>-6</sup> 7; α(P)=6.77×10 <sup>-7</sup> 9 E <sub>γ</sub> : weighted average of 2118.7 3 (1969Li10), 2118.54 8 (1989Si17), 2118.551 30 (1993Di09,1994Mo06) and 2118.483 25 (2002MoZP). Other: 2119 (1960Lu07) and 2119 2 (1969La03). Mult.: from α(K)exp=0.0033 7 (1960Lu07); other: 0.0032 (1967Ma51). I <sub>γ</sub> : weighted average of 2.62 6 (1989Si17), 2.56 3 (1994Mo06), 2.55 8 (1998Mo14), 2.65 25 (2000Sa32), 2.536 20 (2002De03), 2.548 21 (2002MoZP) and 2.537 20 (2004Mo07).
2120.0 <sup>‡</sup> 10	0.015 4	2728.617	(0 <sup>+</sup> ,1,2)	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. Other: 2119 2 (1969La03). I <sub>γ</sub> : from 1989Si17.
2148.00 12	0.030 3	2147.86	(1 <sup>-</sup> ,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2147.7 10 (1969Li10), 2147.8 4 (1989Si17) and 2148.02 12 (1993Di09,1994Mo06). Other: 2150 7 (1967Bu17) and 2148 2 (1969La03). I <sub>γ</sub> : weighted average of 0.034 6 (1989Si17), 0.029 2 (1994Mo06) and 0.050 10 (2000Sa32).
2160.4 <sup>†</sup> 3	0.004 1	2769.91	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06. I <sub>γ</sub> : from 1994Mo06; other: 0.026 1 (2000Sa32).
2176.52 19	0.011 4	2785.97	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2176.8 6 (1989Si17) and 2176.49 19 (1993Di09,1994Mo06). I <sub>γ</sub> : unweighted average of 0.007 1 (1994Mo06) and 0.015 6 (2000Sa32); other: ≈0.0085 (1989Si17).
2184.8 <sup>†</sup> 6		2794.1		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2192.58 16	0.086 9	2192.536	(2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2192.5 5 (1969Li10), 2192.6 2 (1989Si17) and 2192.58 16 (1993Di09,1994Mo06). Other: 2193 2 (1969La03). I <sub>γ</sub> : weighted average of 0.132 23 (1989Si17), 0.073 6 (1994Mo06) and 0.093 5 (2000Sa32).
2193.3 <sup>†</sup> 6		2802.54		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2204.10 4	10.82 5	2204.103	1 <sup>+</sup>	0.0	0 <sup>+</sup>	M1	0.00333 5	α(K)=0.002243 31; α(L)=0.000372 5; α(M)=8.70×10 <sup>-5</sup> 12; α(N)=2.239×10 <sup>-5</sup> 31 α(O)=4.69×10 <sup>-6</sup> 7; α(P)=6.11×10 <sup>-7</sup> 9 E <sub>γ</sub> : weighted average of 2204.3 3 (1969Li10), 2204.12 7 (1989Si17), 2204.215 40 (1993Di09,1994Mo06) and 2204.051 23 (2002MoZP). Other: 2204 2 (1967Bu17) and 2204 2 (1969La03).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
								Mult.: from α(K)exp=0.0029 3 (1960Lu07); other: 0.0026 (1967Ma51). I <sub>γ</sub> : weighted average of 10.83 19 (1989Si17), 11.02 9 (1994Mo06), 10.89 24 (1998Mo14), 11.1 3 (2000Sa32), 10.75 9 (2002MoZP) and 10.76 5 (2004Mo07).
2251.55 15	0.012 1	2860.93	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2251.2 4 (1989Si17) and 2251.60 15 (1993Di09,1994Mo06).
2260.32 20	0.019 1	2869.63	(2 <sup>-</sup> ,3 <sup>-</sup> )	609.318	2 <sup>+</sup>			I <sub>γ</sub> : weighted average of 0.015 9 (1989Si17) and 0.012 1 (1994Mo06). E <sub>γ</sub> : weighted average of 2259.7 4 (1989Si17) and 2260.39 13 (1993Di09,1994Mo06).
2266.52 13	0.037 2	2266.41	2 <sup>+</sup>	0.0	0 <sup>+</sup>	[E2]	2.00×10 <sup>-3</sup> 3	I <sub>γ</sub> : weighted average of 0.019 9 (1989Si17), 0.019 1 (1994Mo06) and 0.020 3 (2000Sa32). α(K)=0.001327 19; α(L)=0.0002170 30; α(M)=5.07×10 <sup>-5</sup> 7; α(N)=1.302×10 <sup>-5</sup> 18 α(O)=2.72×10 <sup>-6</sup> 4; α(P)=3.49×10 <sup>-7</sup> 5 E <sub>γ</sub> : weighted average of 2266.4 6 (1969Li10), 2266.6 3 (1989Si17) and 2266.51 13 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.038 6 (1989Si17), 0.037 2 (1993Di09,1994Mo06) and 0.034 4 (2000Sa32).
2270.9 4	0.0029 5	2880.36	(1 <sup>-</sup> ,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2284.33 18	0.011 1	2893.60	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			I <sub>γ</sub> : from 1993Di09 and 1994Mo06; other: 0.010 5 (2000Sa32). E <sub>γ</sub> : weighted average of 2284.4 7 (1989Si17) and 2284.33 18 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.011 1 (1989Si17), 0.011 1 (1994Mo06) and 0.011 3 (2000Sa32).
2287.65 <sup>†</sup> 23	0.010 1	2896.98		609.318	2 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2293.38 3	0.679 10	2293.362	(1 <sup>+</sup> ,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2293.7 3 (1969Li10), 2293.36 12 (1989Si17), 2293.45 12 (1993Di09,1994Mo06) and 2293.37 3 (2002MoZP). Other: 2292 4 (1967Bu17) and 2293 2 (1969La03). I <sub>γ</sub> : weighted average of 0.70 4 (1989Si17), 0.67 3 (1994Mo06), 0.72 6 (2000Sa32) and 0.677 10 (2002MoZP).
2310.2 <sup>†</sup> 3	0.003 2	2919.5		609.318	2 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2312.45 15	0.020 2	2921.89	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2312.5 10 (1969Li10), 2312.2 4 (1989Si17) and 2312.48 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.026 6 (1989Si17), 0.019 2 (1994Mo06) and 0.018 5 (2000Sa32).
2319.3 <sup>&amp;</sup> 3	0.0009 3	2928.55	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2325.18 25	0.0037 4	2934.54	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			I <sub>γ</sub> : from 1994Mo06; other: <0.0021 (1989Si17) and 0.005 1 (2000Sa32). E <sub>γ</sub> : weighted average of 2324.8 10 (1989Si17) and 2325.20 25 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0043 21 (1989Si17), 0.0037 4 (1994Mo06); other: 0.009 3 (2000Sa32).
2331.38 12	0.051 7	2940.67	(1 <sup>-</sup> ,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2331.7 4 (1969Li10), 2331.3 3 (1989Si17) and 2331.36 12 (1993Di09,1994Mo06).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
								I <sub>γ</sub> : weighted average of 0.047 6 (1989Si17), 0.048 3 (1994Mo06) and 0.076 7 (2000Sa32).
2348.0 <sup>†</sup> 13	0.0003 2	2348.3	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1994Mo06.
2353.5 <sup>†</sup> 7	0.0008 3	2962.8		609.318	2 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2358.0 <sup>†</sup> 6		2967.6		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2360.99 19	0.0036 5	2360.97	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2360.9 6 (1989Si17) and 2361.00 19 (1993Di09,1994Mo06).
								I <sub>γ</sub> : weighted average of 0.0041 13 (1989Si17), 0.0033 3 (1994Mo06) and 0.0060 10 (2000Sa32).
2369.56 17	0.006 1	2978.93	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2369.3 6 (1989Si17) and 2369.58 17 (1993Di09,1994Mo06).
								I <sub>γ</sub> : weighted average of 0.006 1 (1994Mo06) and 0.008 3 (2000Sa32); other: 0.0064 (1989Si17).
2376.89 13	0.020 2	2986.22	(2 <sup>-</sup> ,3)	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2377.2 5 (1969Li10), 2377.0 2 (1989Si17) and 2376.83 13 (1993Di09,1994Mo06).
								I <sub>γ</sub> : weighted average of 0.025 4 (1989Si17), 0.019 1 (1994Mo06) and 0.034 7 (2000Sa32).
2390.82 21	0.0035 3	3000.00	(1 <sup>-</sup> ,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2390.9 6 (1989Si17) and 2390.81 21 (1993Di09,1994Mo06).
								I <sub>γ</sub> : weighted average of 0.0043 13 (1989Si17), 0.0034 3 (1994Mo06) and 0.006 3 (2000Sa32).
2396.5 <sup>†</sup> 6		3005.8		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2405.1 5	0.0009 3	3014.11	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
								I <sub>γ</sub> : from 1993Di09 and 1994Mo06; others: ≈0.0021 (1989Si17) and 0.0040 10 (2000Sa32).
2413.1 <sup>†</sup> 4		3022.3	(2 <sup>-</sup> ,3,4 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2421.0 <sup>†</sup> 6		3030.3		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2423.32 13	0.011 1	2423.25	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2423.7 6 (1969Li10), 2423.5 3 (1989Si17) and 2423.27 13 (1993Di09,1994Mo06).
								I <sub>γ</sub> : weighted average of 0.013 2 (1989Si17), 0.010 1 (1994Mo06) and 0.018 4 (2000Sa32).
2430.0 <sup>†</sup> 6		3039.3		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2444.7 7	0.017 5	3053.88	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2444.6 7 (1989Si17) and 2444.9 8 (1993Di09,1994Mo06).
								I <sub>γ</sub> : weighted average of 0.017 9 (1989Si17) and 0.017 5 (2000Sa32).
2447.69 3	3.40 2	2447.701	1 <sup>-</sup>	0.0	0 <sup>+</sup>	E1	1.42×10 <sup>-3</sup> 2	α(K)=0.000503 7; α(L)=7.52×10 <sup>-5</sup> 11; α(M)=1.735×10 <sup>-5</sup> 24; α(N)=4.45×10 <sup>-6</sup> 6; α(O)=9.31×10 <sup>-7</sup> 13
								α(P)=1.210×10 <sup>-7</sup> 17
								E <sub>γ</sub> : weighted average of 2448.0 3 (1969Li10), 2447.71 10 (1989Si17), 2447.860 100 (1993Di09,1994Mo06) and 2447.67 3 (2002MoZP). Other: 2448 2 (1969La03).



γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>δ</u>	<u>Comments</u>
								I <sub>γ</sub> : weighted average of 3.37 4 (1989Si17), 3.42 3 (1994Mo06), 3.46 9 (1998Mo14), 3.30 10 (2000Sa32), 3.41 4 (2002MoZP) and 3.40 2 (2004Mo07). Mult.: from α(K)exp≈0.0004 (1960Lu07) and α(K)exp≈0.0003 (1967Ma51).
2459.0 <sup>†</sup> 8		3068.3		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2469.4 <sup>†</sup> 6		3078.7		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2472.9	0.0050 17	3081.84	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17, assigned to <sup>210</sup> Pb in 1993Di09. I <sub>γ</sub> : from 2000Sa32; other: <0.0021 (1989Si17).
2482.8 4	0.0022 4	2482.460	(1 <sup>-</sup> ,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2482.8 4 (1989Si17) and 2482.7 4 (1993Di09,1994Mo06). Other: 2482 3 (1967Bu17).
2482.8 <sup>‡</sup> 4	0.0045 19	3093.48	(1 <sup>-</sup> ,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			I <sub>γ</sub> : weighted average of 0.0043 19 (1989Si17) and 0.0021 4 (1994Mo06).
2505.46 13	0.0124 21	2505.34	(1 <sup>-</sup> ,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1989Si17. E <sub>γ</sub> : weighted average of 2505.6 4 (1969Li10), 2505.6 2 (1989Si17) and 2505.39 13 (1993Di09,1994Mo06). Other: 2505 3 (1969La03).
								I <sub>γ</sub> : weighted average of 0.0128 21 (1989Si17), 0.012 1 (1994Mo06) and 0.025 7 (2000Sa32).
2529.7 <sup>†</sup> 8		3139.0		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2540.3 <sup>†</sup> 8		3149.2	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2550.6 7	0.0007 2	3160.4	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2551.0 10 (1989Si17) and 2550.4 7 (1993Di09,1994Mo06). I <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2553.0 <sup>†</sup> 6	≈0.0002	2553.0		0.0	0 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1994Mo06.
2555.1 <sup>†</sup> 8		3164.4		609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2562.0 <sup>†</sup> 6	0.0004 2	2562.4		0.0	0 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1994Mo06.
2564.0 <sup>†</sup> 6	0.0003 2	3173.3		609.318	2 <sup>+</sup>			E <sub>γ</sub> ,I <sub>γ</sub> : from 1993Di09 and 1994Mo06.
2574.2 <sup>‡</sup>	<0.0011	3183.6	(1,2 <sup>+</sup> )	609.318	2 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17, assigned to <sup>210</sup> Pb in 1993Di09. I <sub>γ</sub> : from 1989Si17.
2604.5 5	0.0009 2	2604.68	(2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2604.5 10 (1989Si17) and 2604.5 5 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0010 3 (1989Si17) and 0.0008 2 (1994Mo06).
2630.9 3	0.0019 4	2630.84	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2630.9 5 (1989Si17) and 2630.90 28 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0021 11 (1989Si17), 0.0018 3 (1994Mo06) and 0.0050 17 (2000Sa32).
2662.4 7	0.0005 1	2662.33	(2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2662.0 10 and 2662.6 7 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0010 3 (1989Si17), 0.0006 2 (1994Mo06) and 0.0004 1 (2000Sa32).
2694.66 13	0.066 3	2694.62	(1 <sup>-</sup> ,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2695.1 4 (1969Li10), 2694.8 2 (1989Si17) and 2694.55 13 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.070 4 (1989Si17), 0.066 3 (1994Mo06) and 0.062 4 (2000Sa32).
2699.21 20	0.0061 5	2698.60	(1,2) <sup>+</sup>	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2699.5 10 (1969Li10), 2699.4 3 (1989Si17) and 2699.12 20 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0064 19 (1989Si17) and 0.0061 5 (1994Mo06).

<sup>214</sup>Bi β<sup>-</sup> decay **1994Mo06,1989Si17** (continued)

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.</u>	<u>α</u>	<u>Comments</u>
2719.32 19	0.0039 4	2719.26	1 <sup>+</sup>	0.0	0 <sup>+</sup>	[M1]	0.00256 4	α(K)=0.001308 18; α(L)=0.0002158 30; α(M)=5.05×10 <sup>-5</sup> 7; α(N)=1.299×10 <sup>-5</sup> 18 α(O)=2.72×10 <sup>-6</sup> 4; α(P)=3.55×10 <sup>-7</sup> 5 E <sub>γ</sub> : weighted average of 2719.4 10 (1969Li10), 2719.4 3 (1989Si17) and 2719.28 19 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0043 11 (1989Si17) and 0.0038 4 (1994Mo06).
2769.92 15	0.054 3	2769.91	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2770.3 4 (1969Li10), 2770.0 2 (1989Si17) and 2769.83 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.055 4 (1989Si17), 0.053 3 (1994Mo06) and 0.048 15 (2000Sa32).
2785.93 15	0.012 1	2785.97	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2786.1 4 (1969Li10), 2786.1 2 (1989Si17) and 2785.81 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.013 2 (1989Si17), 0.012 1 (1994Mo06) and 0.030 11 (2000Sa32).
2826.96 19	0.0053 6	2826.82	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2827.6 10 (1969Li10), 2827.0 3 (1989Si17) and 2826.92 19 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0064 6 (1989Si17), 0.0048 4 (1994Mo06) and 0.011 6 (2000Sa32).
2861.1 4	0.0009 2	2860.93	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2860.9 8 (1989Si17) and 2861.1 4 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0007 4 (1989Si17), 0.0009 2 (1994Mo06) and 0.0008 5 (2000Sa32).
2880.35 14	0.022 3	2880.36	(1 <sup>-</sup> ,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2280.7 4 (1969Li10), 2280.4 3 (1989Si17) and 2280.29 14 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.019 3 (1989Si17), 0.020 2 (1994Mo06) and 0.030 3 (2000Sa32).
2893.59 14	0.013 1	2893.60	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2893.7 4 (1969Li10), 2893.6 2 (1989Si17) and 2893.46 14 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.015 3 (1989Si17), 0.012 1 (1994Mo06) and 0.017 3 (2000Sa32).
2921.97 15	0.030 2	2921.89	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2922.2 4 (1969Li10), 2922.1 2 (1989Si17) and 2921.86 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.034 2 (1989Si17), 0.029 1 (1994Mo06) and 0.035 4 (2000Sa32).
2928.53 22	0.0024 2	2928.55	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2928.7 8 (1989Si17) and 2928.52 22 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0021 13 (1989Si17), 0.0024 2 (1994Mo06).
2934.54 25	0.0010 2	2934.54	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2934.9 8 (1989Si17) and 2934.51 25 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0012 5 (1989Si17), 0.012 listed as a typo from Priv. Comm. from B. Singh with Y. A. Akovali, May 1995), 0.0010 2 (1994Mo06) and 0.005 3 (2000Sa32).
2940.0	0.008 3	2940.67	(1 <sup>-</sup> ,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : from 1989Si17. I <sub>γ</sub> : from 2000Sa32; other: <0.0004 (1989Si17).
2978.94 15	0.030 1	2978.93	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>			E <sub>γ</sub> : weighted average of 2979.0 4 (1969Li10), 2978.8 2 (1989Si17) and 2979.01 15 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.031 2 (1989Si17), 0.030 1 (1994Mo06) and 0.034 7 (2000Sa32).

γ(<sup>214</sup>Po) (continued)

<u>E<sub>γ</sub></u>	<u>I<sub>γ</sub><sup>@</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Comments</u>
3000.0 2	0.019 2	3000.00	(1 <sup>-</sup> ,2 <sup>+</sup> )	0.0	0 <sup>+</sup>	E <sub>γ</sub> : weighted average of 3000.1 4 (1969Li10), 3000.0 2 (1989Si17) and 2999.8 3 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.019 4 (1989Si17), 0.019 1 (1994Mo06) and 0.030 5 (2000Sa32).
3053.9 2	0.046 5	3053.88	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>	E <sub>γ</sub> : weighted average of 3054.0 4 (1969Li10), 3053.9 2 (1989Si17) and 3053.8 5 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.049 4 (1989Si17), 0.041 2 (1994Mo06) and 0.057 3 (2000Sa32).
3081.79 25	0.013 4	3081.84	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>	E <sub>γ</sub> : weighted average of 3081.7 4 (1969Li10), 3081.7 3 (1989Si17) and 3081.89 25 (1993Di09,1994Mo06). I <sub>γ</sub> : unweighted average of 0.0085 17 (1989Si17), 0.011 1 (1994Mo06) and 0.020 4 (2000Sa32).
3094.0 4	0.0013 4	3093.48	(1 <sup>-</sup> ,2 <sup>+</sup> )	0.0	0 <sup>+</sup>	E <sub>γ</sub> : weighted average of 3093.9 8 (1989Si17) and 3094.0 4 (1993Di09,1994Mo06). I <sub>γ</sub> : unweighted average of 0.0021 4 (1989Si17), 0.0008 1 (1994Mo06) and 0.0010 3 (2000Sa32).
<sup>x</sup> 3136.3 10	0.0008 3					E <sub>γ</sub> : from 1969Li10. I <sub>γ</sub> : from 2000Sa32.
3142.6 4	0.0027 3	3142.6	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>	E <sub>γ</sub> : weighted average of 3142.5 7 (1969Li10), 3142.6 4 (1989Si17) and 3142.5 4 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0043 13 (1989Si17), 0.0026 2 (1994Mo06) and 0.0060 28 (2000Sa32).
3149.0 <sup>†</sup> 5	≈0.00019	3149.2	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>	E <sub>γ</sub> ,I <sub>γ</sub> : from 1993Di09 and 1994Mo06.
3160.7 6	0.0012 3	3160.4	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>	E <sub>γ</sub> : weighted average of 3161.2 10 (1969Li10), 3160.5 7 (1989Si17) and 3160.6 6 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0021 5 (1989Si17), 0.0010 2 (1994Mo06) and 0.0030 17 (2000Sa32).
3183.6 4	0.0030 5	3183.6	(1,2 <sup>+</sup> )	0.0	0 <sup>+</sup>	E <sub>γ</sub> : weighted average of 3182.8 10 (1969Li10), 3183.6 4 (1989Si17) and 3183.6 4 (1993Di09,1994Mo06). I <sub>γ</sub> : weighted average of 0.0042 11 (1989Si17), 0.0028 2 (1994Mo06) and 0.0060 10 (2000Sa32).
<sup>x</sup> 3233.2 24	0.0005 3					E <sub>γ</sub> : from 1993Di09; other: ≈3233.3 (1975Ha31). I <sub>γ</sub> : from 2000Sa32.
<sup>x</sup> 3269.7 15	0.0004 3					E <sub>γ</sub> : from 1993Di09; others: ≈3269.7 (1975Ha31). I <sub>γ</sub> : from 2000Sa32.

<sup>†</sup> Placed in level scheme only by 1994Mo06 based on γγ coincidence.

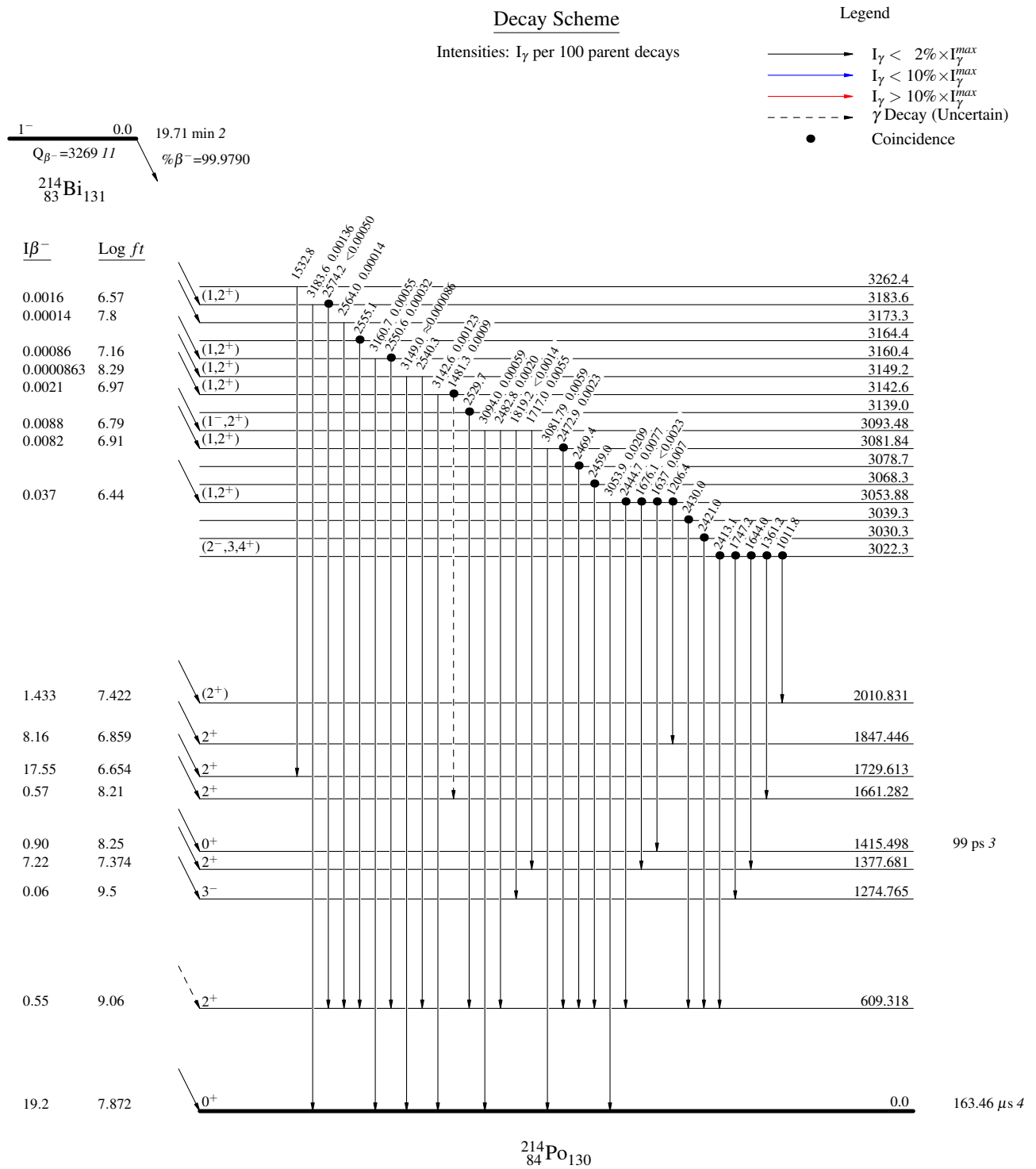
<sup>‡</sup> Placed in level scheme only by 1989Si17 based on γγ coincidence.

# Possible multiply-placed transitions.

@ For absolute intensity per 100 decays, multiply by 0.4544 19.

& Placement of transition in the level scheme is uncertain.

<sup>x</sup> γ ray not placed in level scheme.

$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

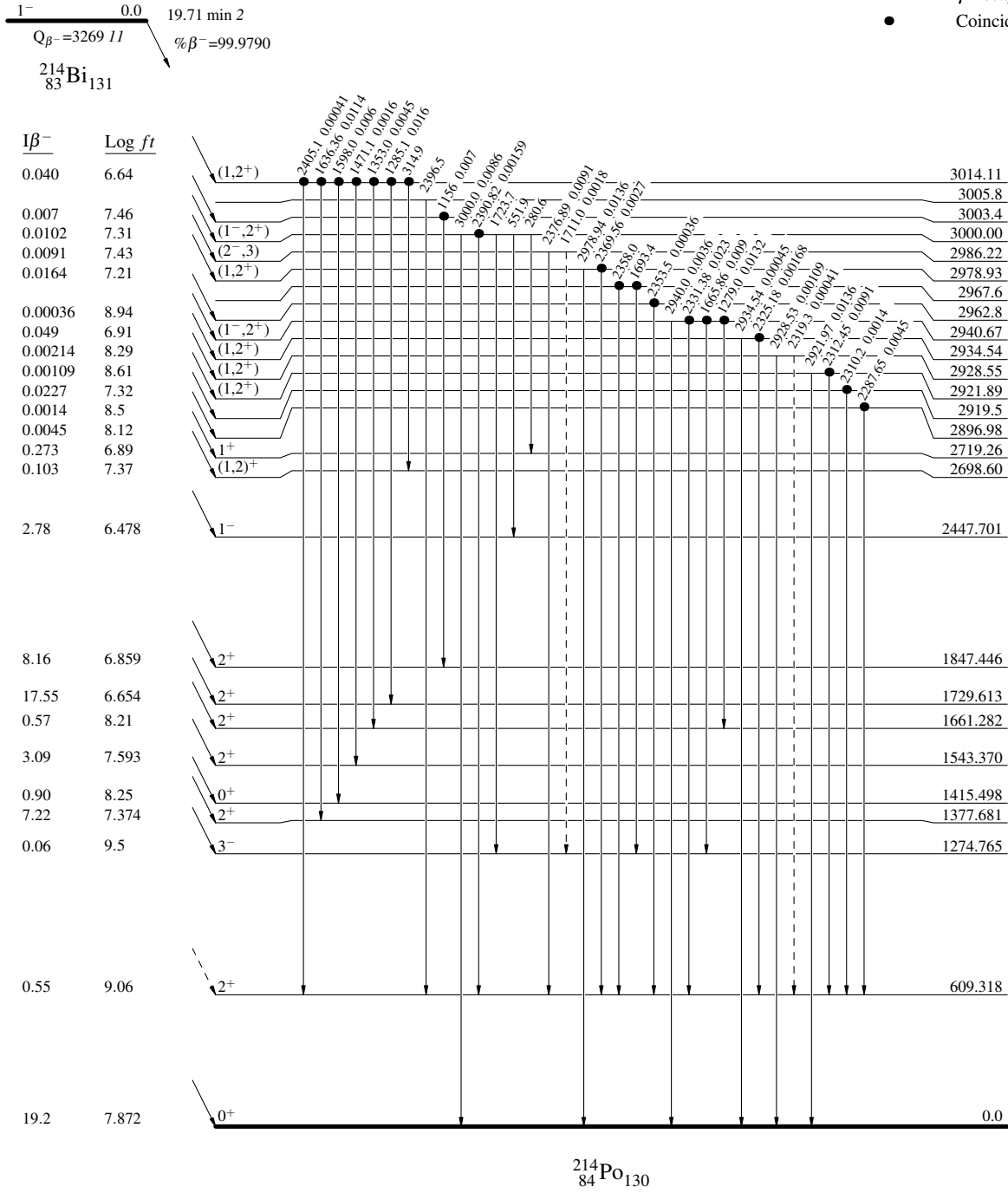
$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

Decay Scheme (continued)

Legend

Intensities:  $I_\gamma$  per 100 parent decays

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



99 ps 3

163.46  $\mu$ s 4

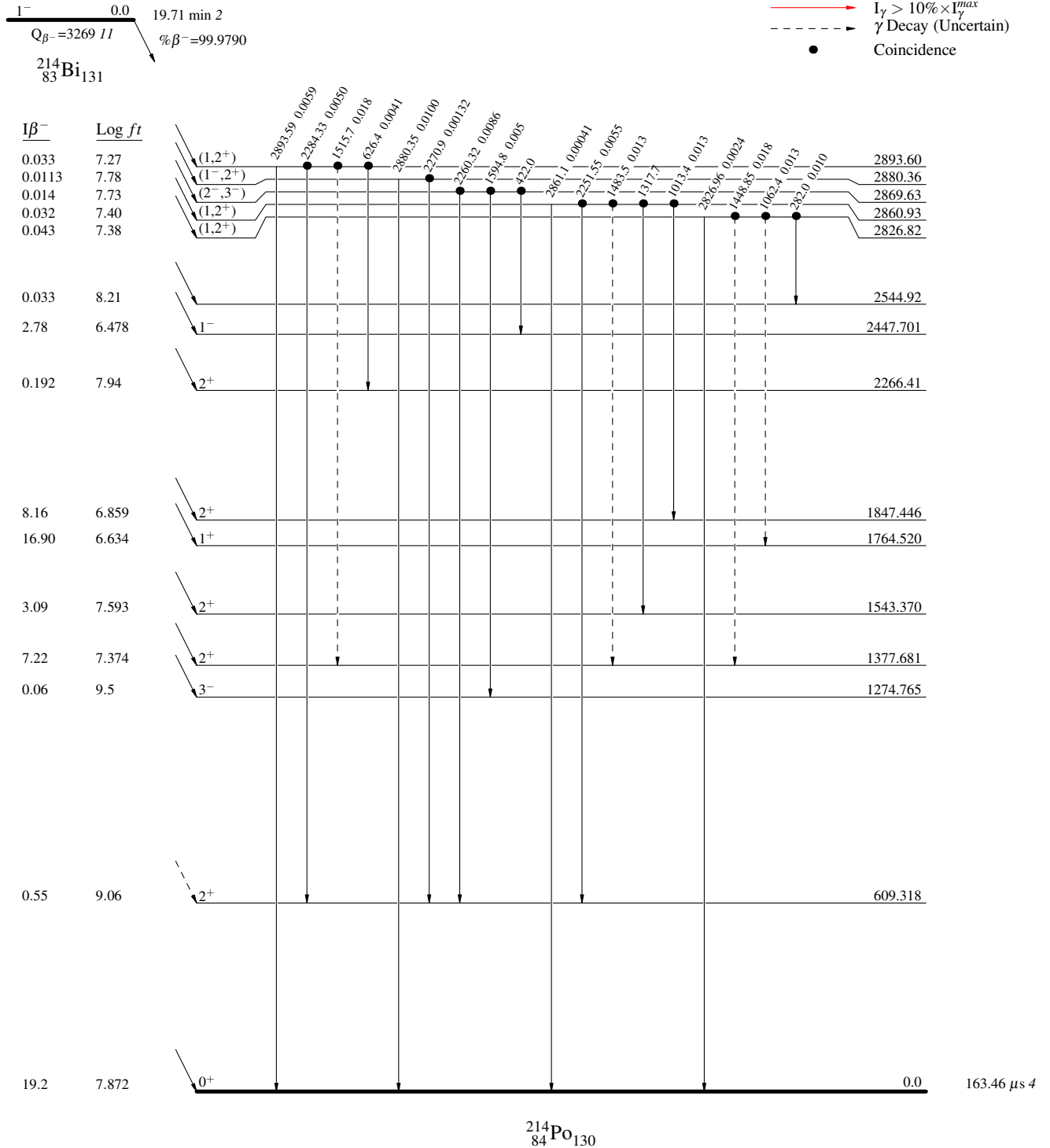
$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

## Decay Scheme (continued)

Intensities:  $I_\gamma$  per 100 parent decays

## Legend

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



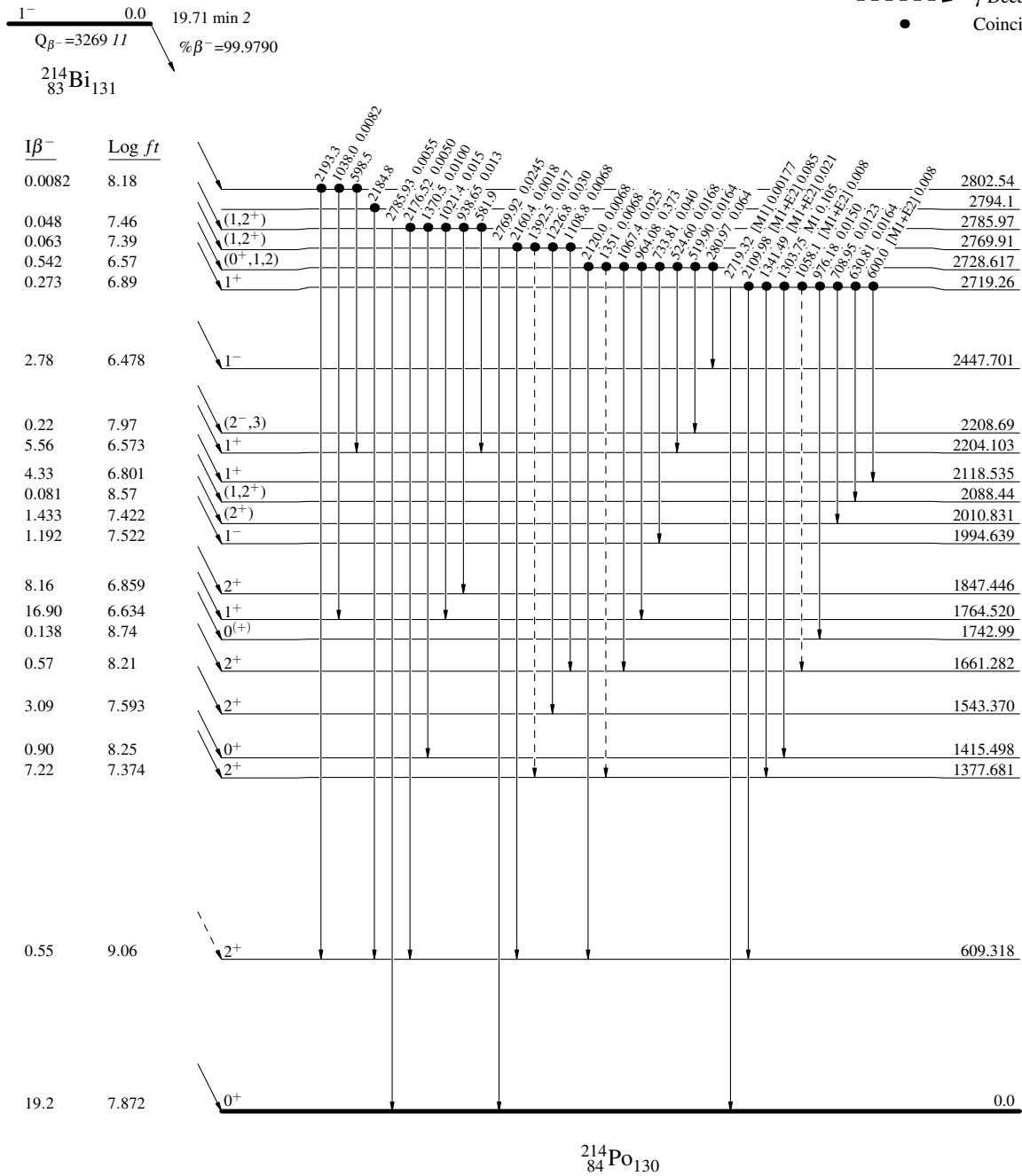
$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

Decay Scheme (continued)

Intensities:  $I_\gamma$  per 100 parent decays

Legend

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



99 ps 3

163.46  $\mu$ s 4

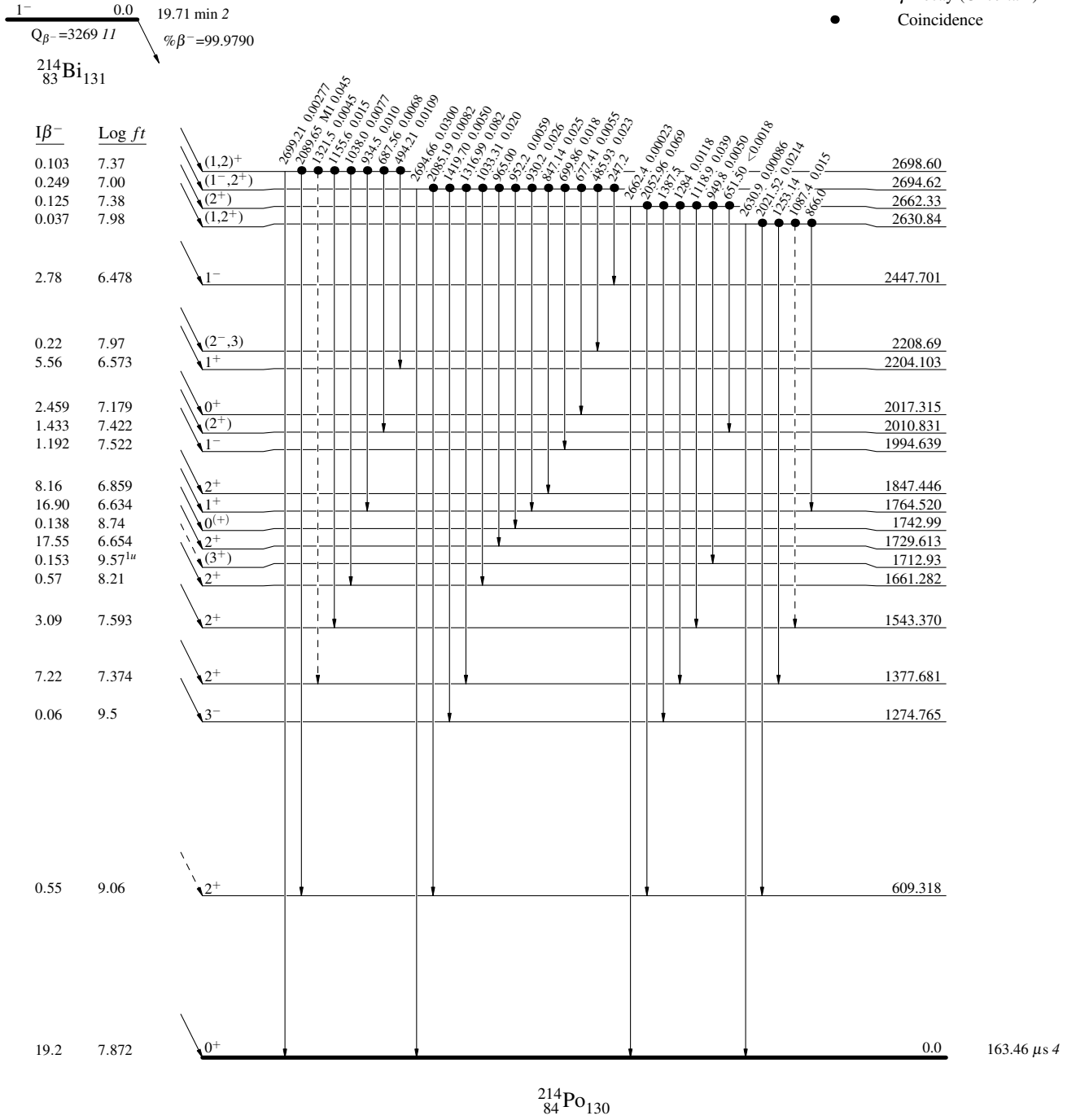
$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

Decay Scheme (continued)

Legend

Intensities:  $I_\gamma$  per 100 parent decays

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





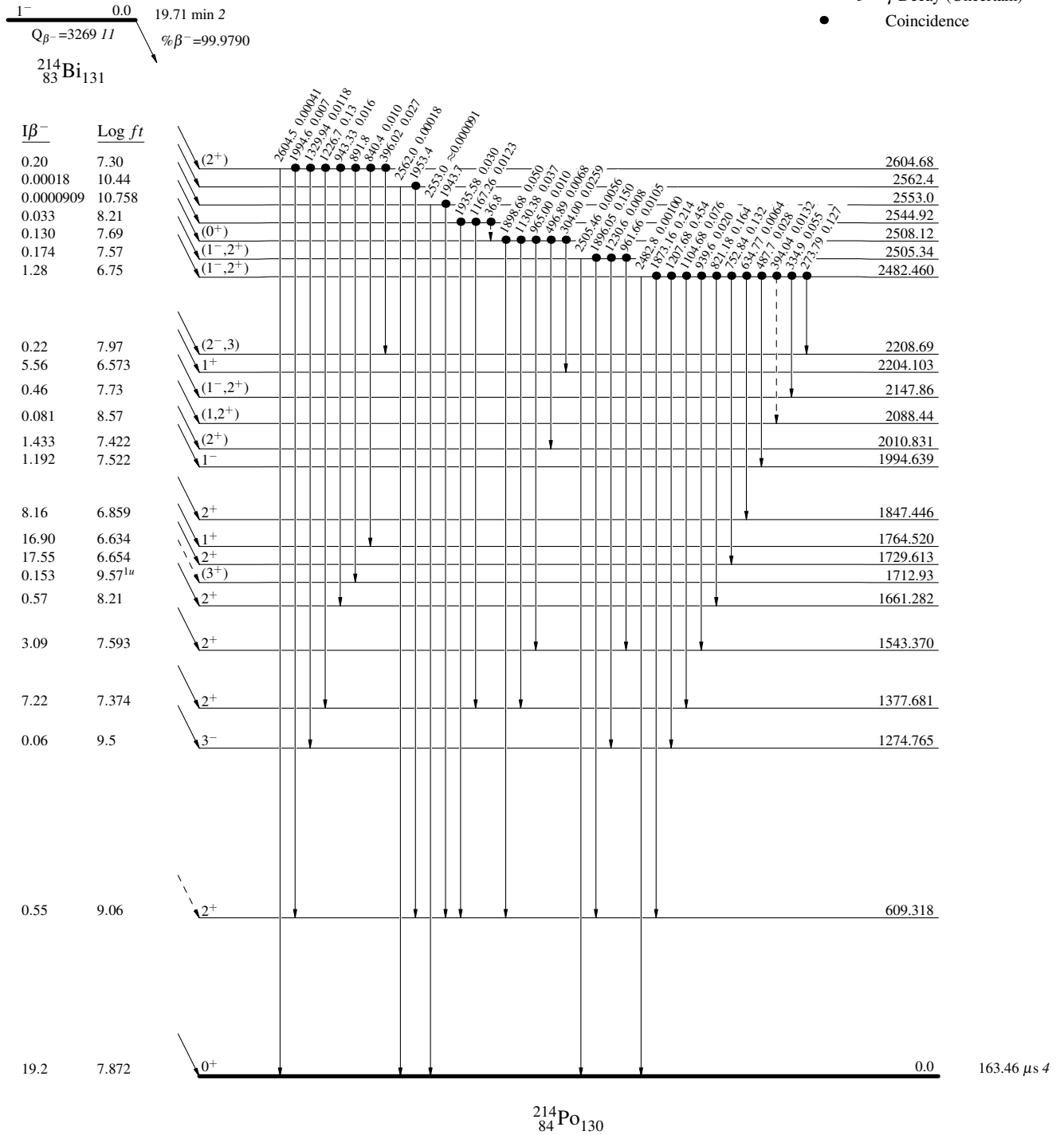
$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

Decay Scheme (continued)

Intensities:  $I_\gamma$  per 100 parent decays

Legend

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



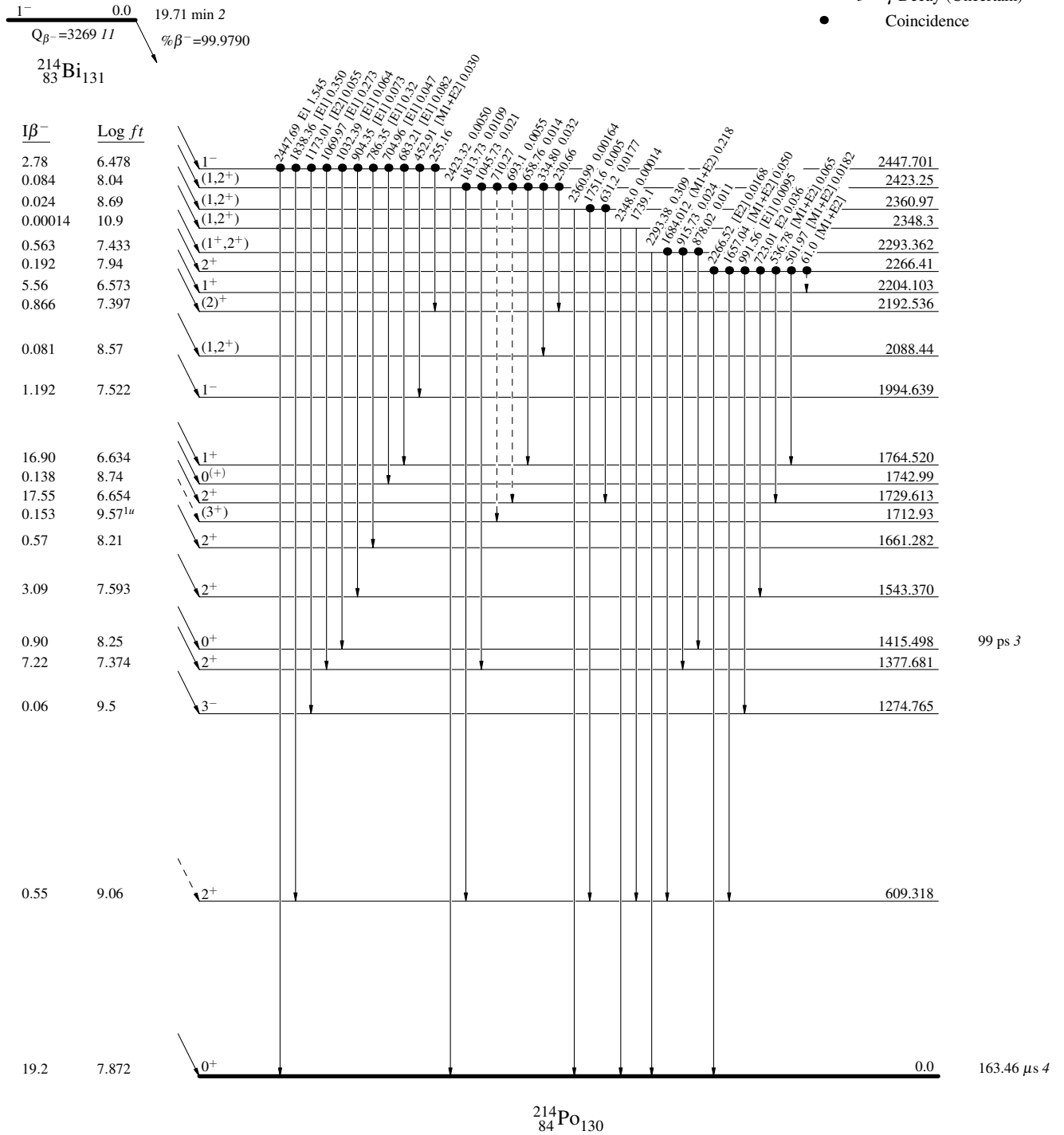
$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

Decay Scheme (continued)

Intensities:  $I_\gamma$  per 100 parent decays

Legend

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



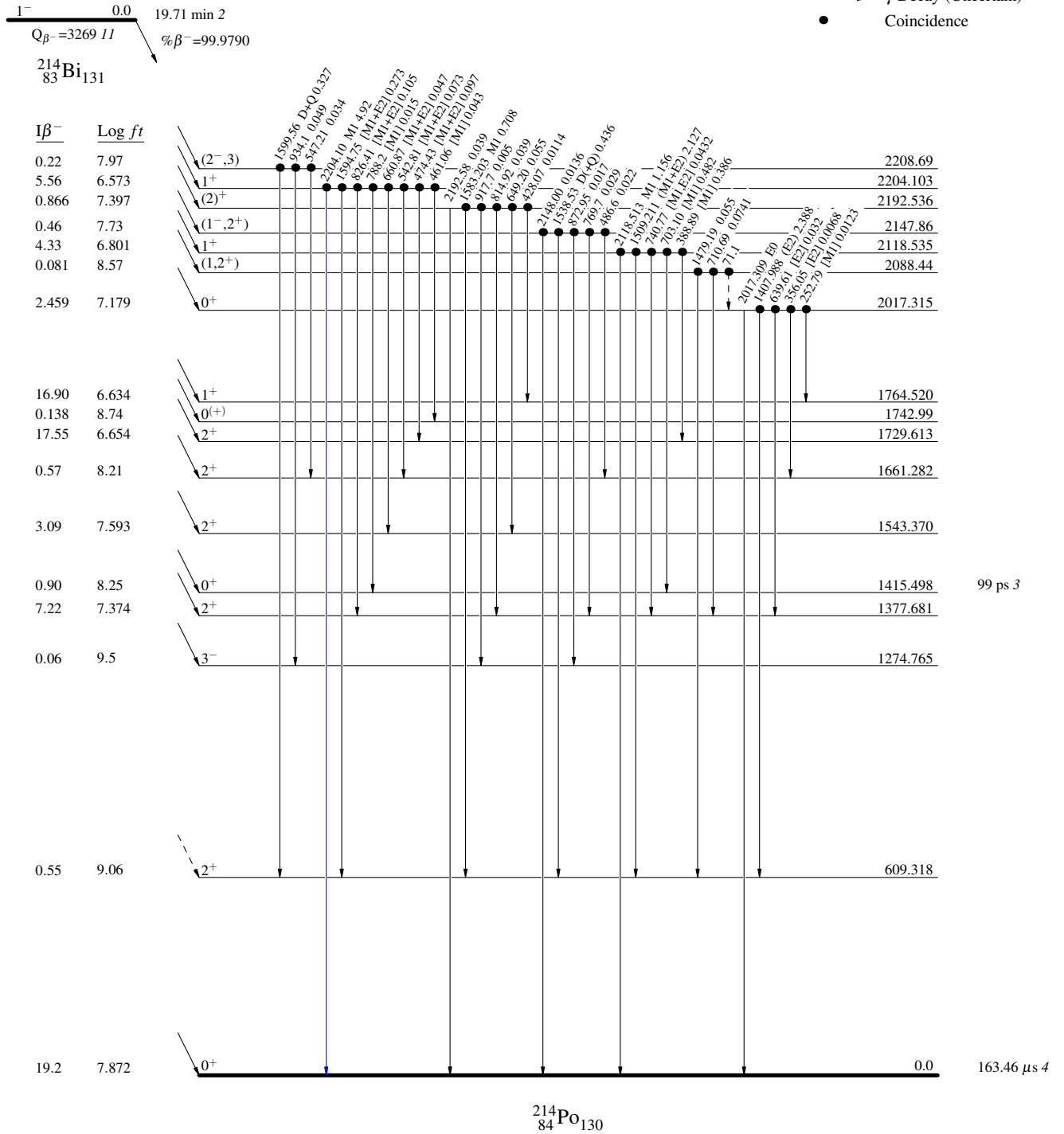
$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

Decay Scheme (continued)

Legend

Intensities:  $I_\gamma$  per 100 parent decays

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



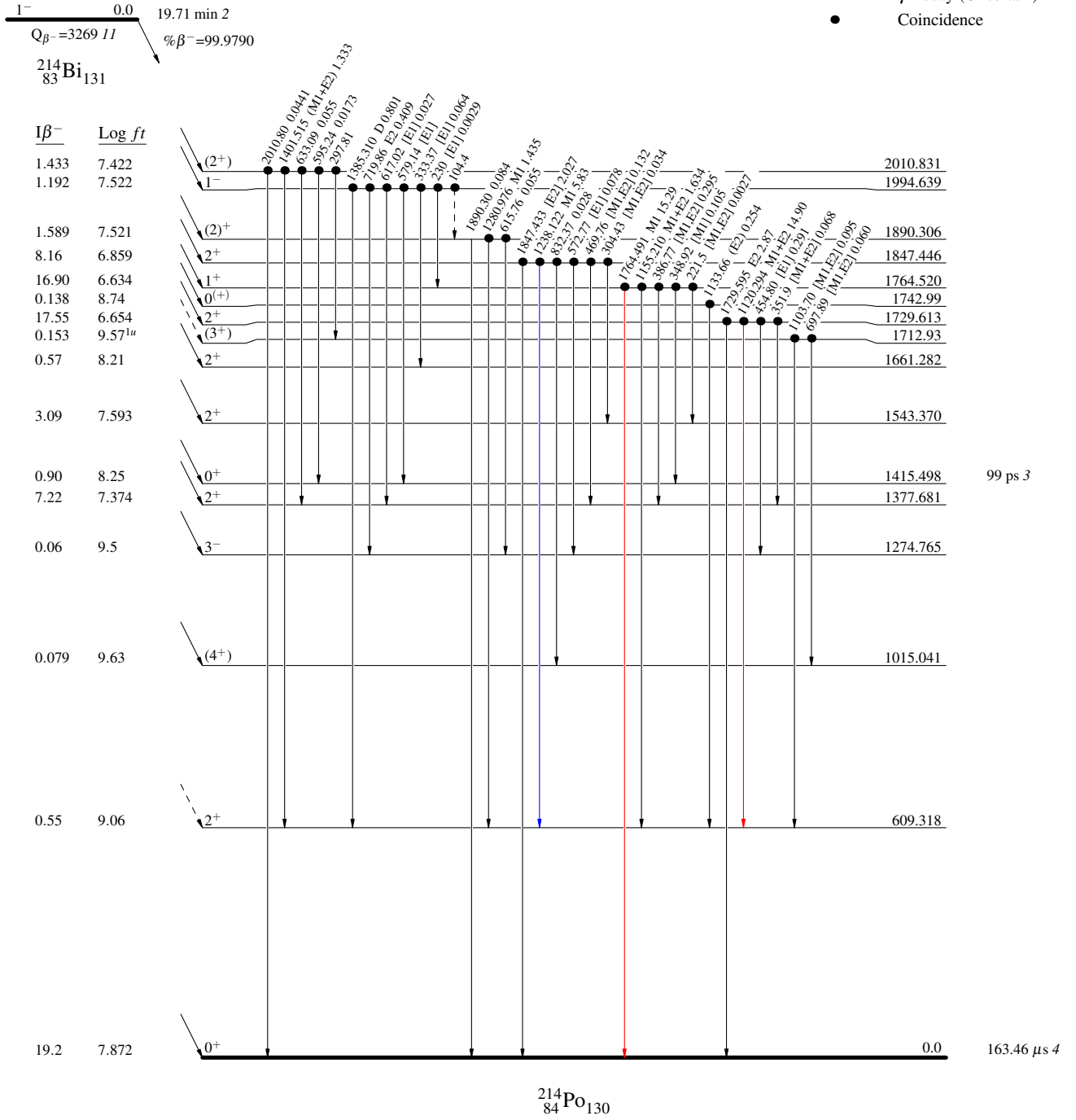
$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

Decay Scheme (continued)

Intensities:  $I_\gamma$  per 100 parent decays

Legend

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



$^{214}\text{Bi}$   $\beta^-$  decay 1994Mo06,1989Si17

## Decay Scheme (continued)

Intensities:  $I_\gamma$  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

