

Table of Contents



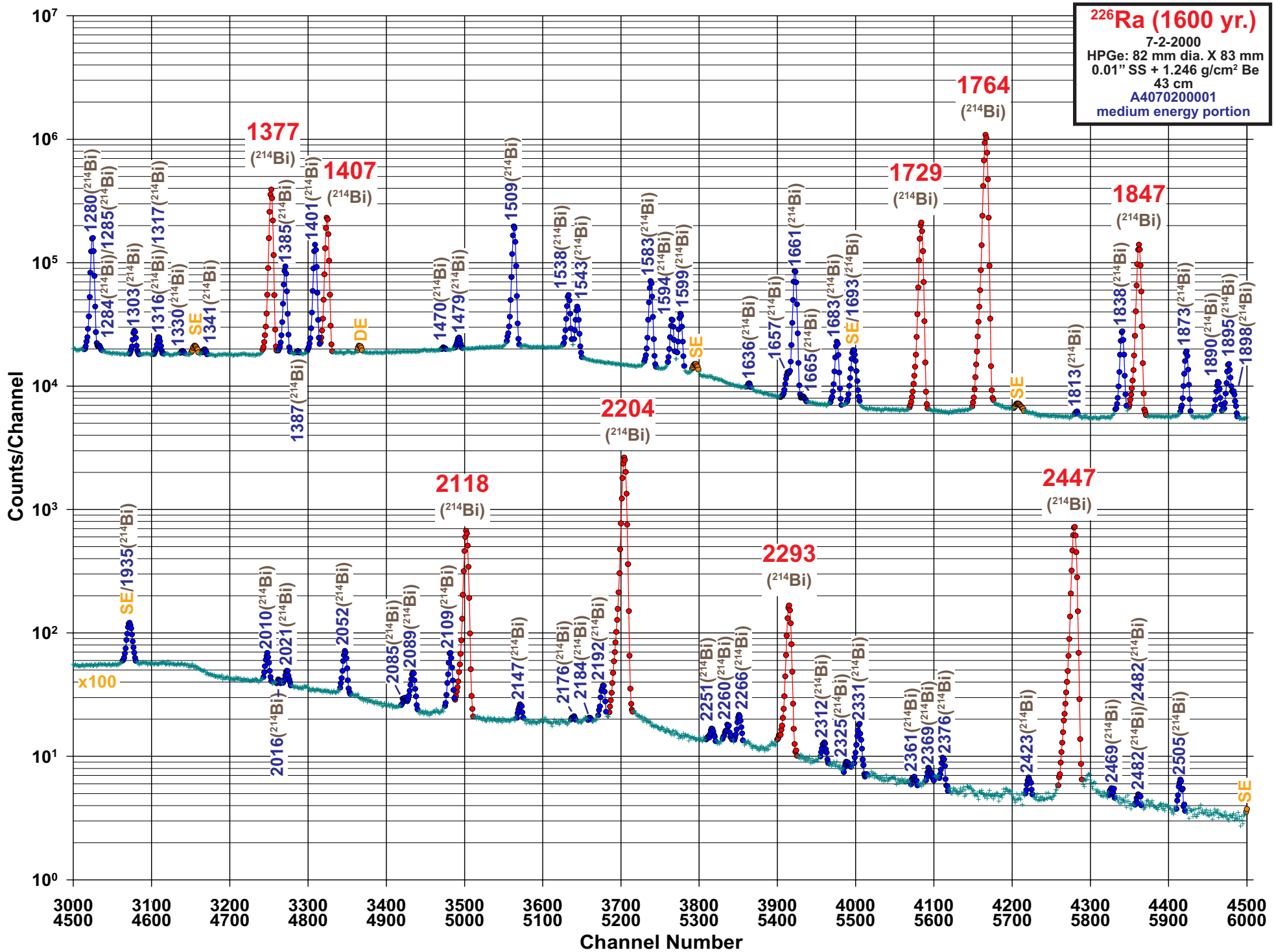
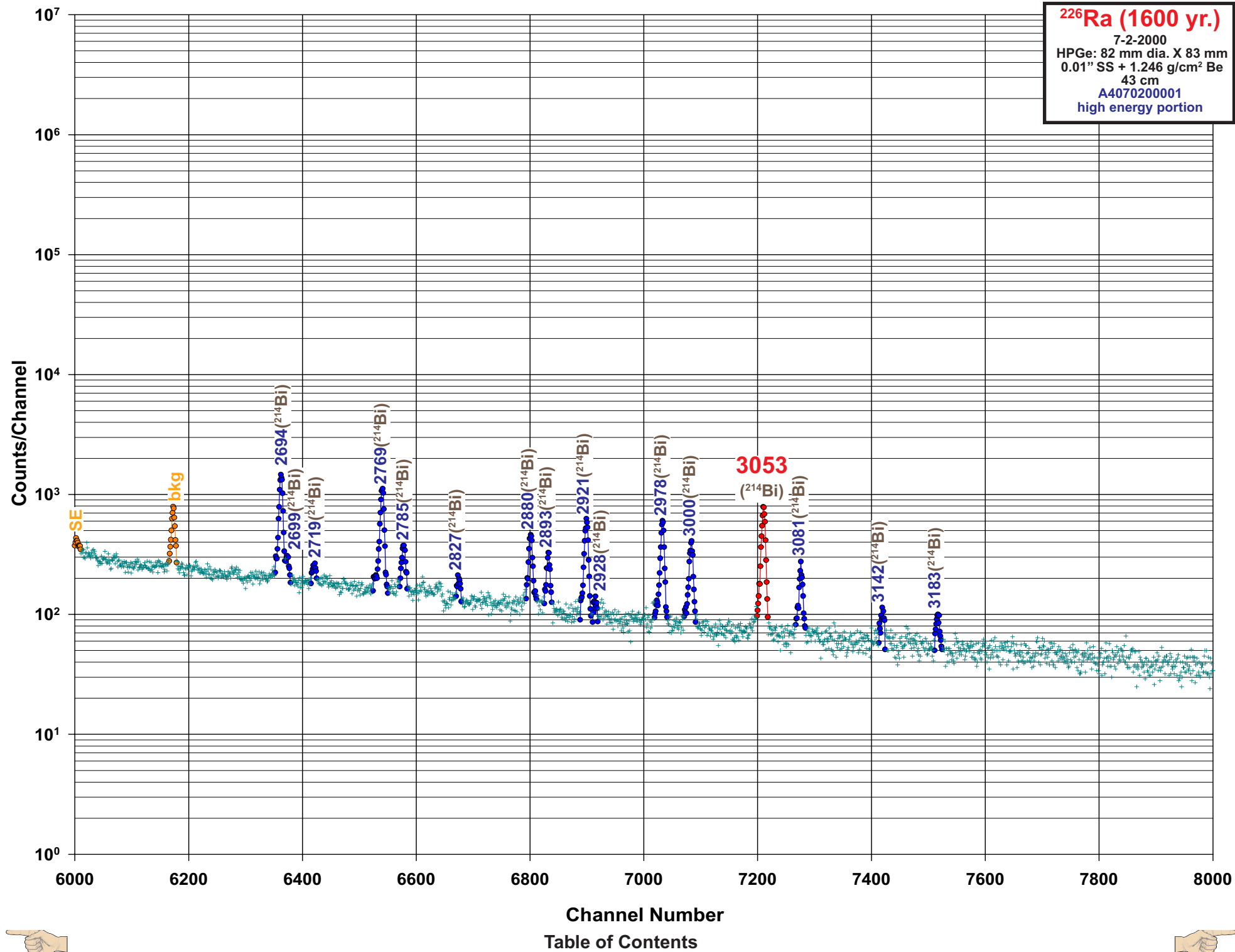
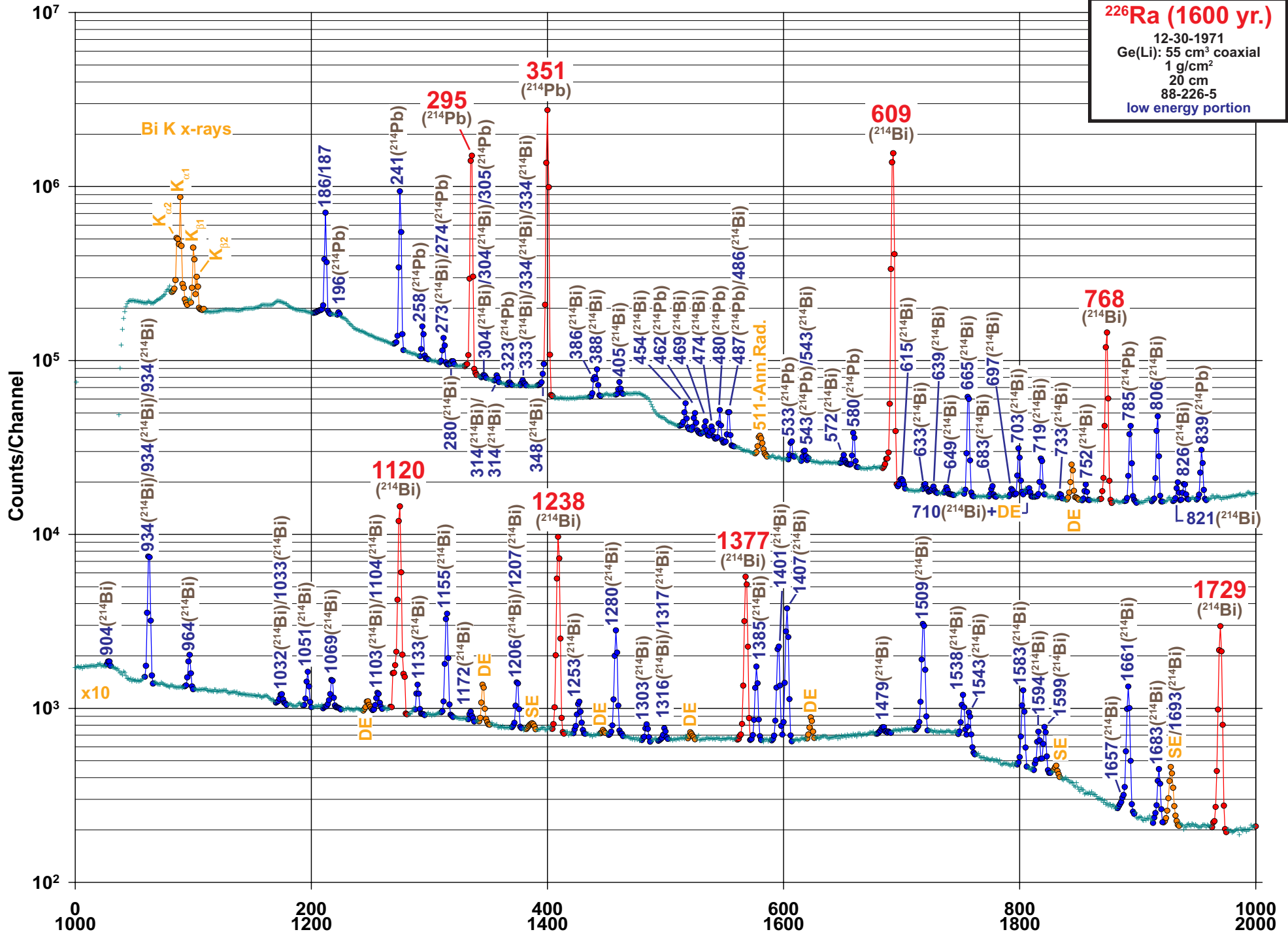


Table of Contents



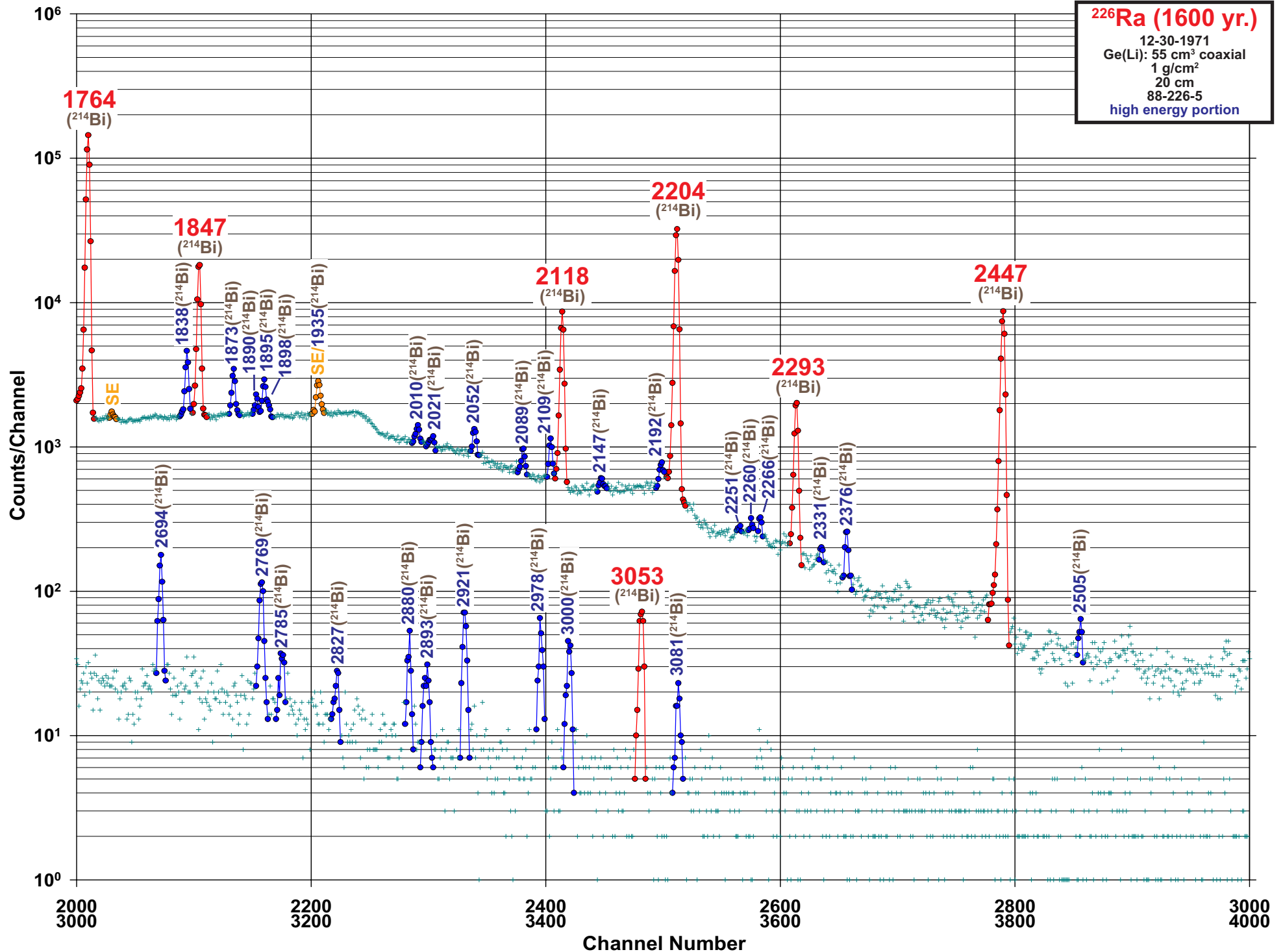


^{226}Ra (1600 yr.)
 12-30-1971
 Ge(Li): 55 cm³ coaxial
 1 g/cm²
 20 cm
 88-226-5
 low energy portion

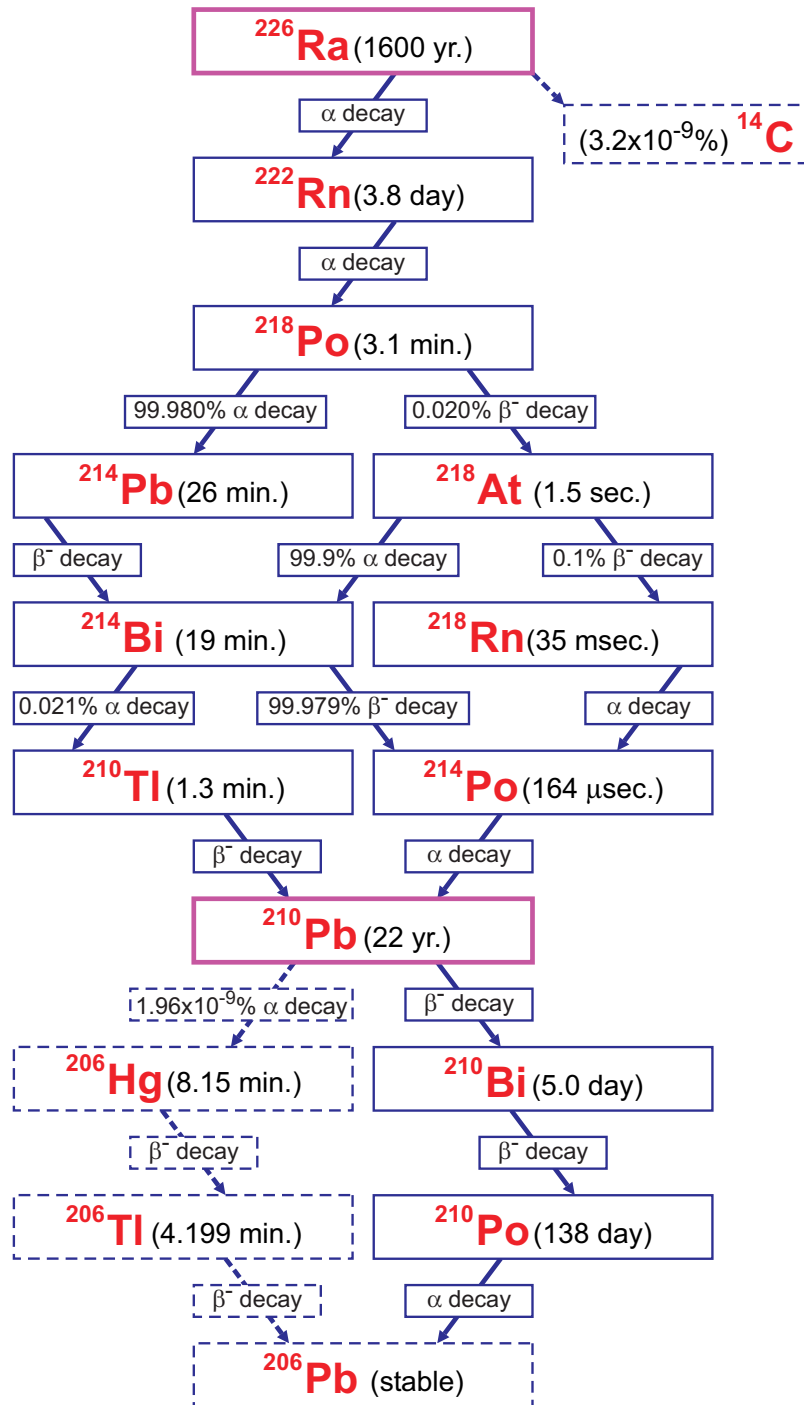


Channel Number
 Table of Contents

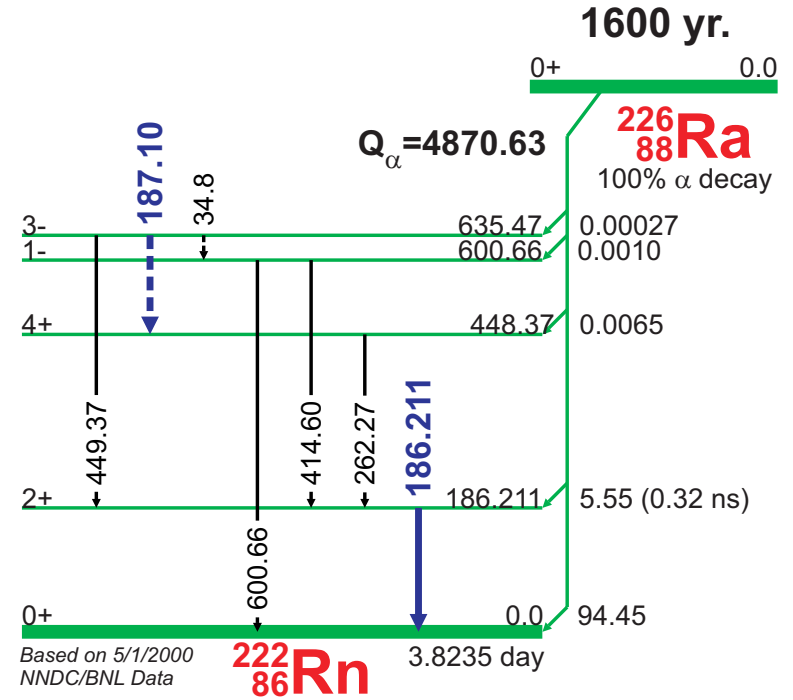




²²⁶Ra Decay Chain



²²⁶Ra (1600 yr.) Decay Scheme



GAMMA-RAY ENERGIES AND INTENSITIES

Nuclide: ²²⁶Ra Half Life: 1600(7) yr.

E_γ (keV)	σE_γ	I_γ	σI_γ	Level	
34.8	1.6			635.47	α
186.211	0.013	3.59	0.06	186.211	α
187.10	0.20			635.47	α
262.27	0.05	0.005 0	0.000 5	448.37	α
414.60	0.05	0.000 3		600.66	α
449.37	0.10	0.000 19		635.47	α
600.66	0.05	0.000 49		600.66	α

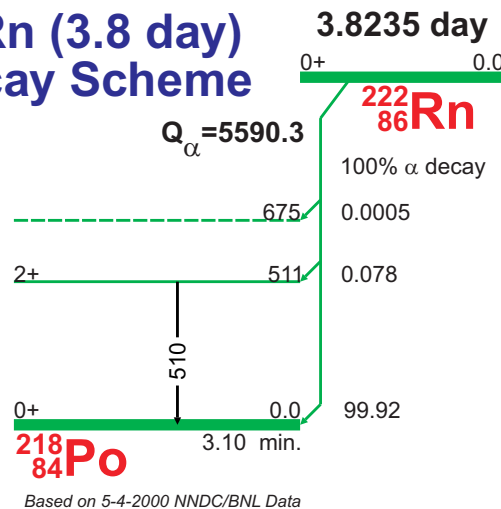
E_γ , σE_γ , I_γ , σI_γ Levels from ENSDF Database as of May 1, 2000

① These I_γ are per 100 Decays of ²²⁶Ra.

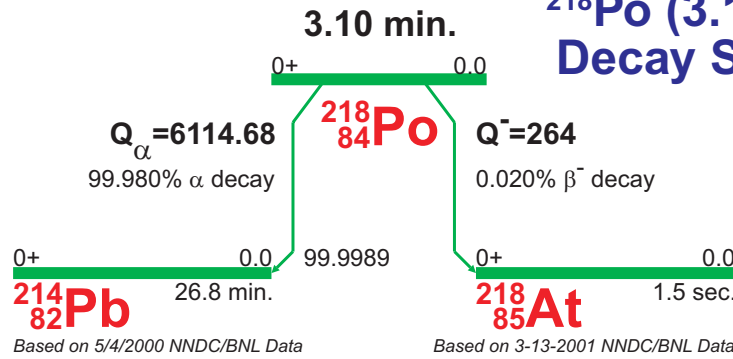
② Normalization factor is 1.0, and its uncertainty is taken to be 0.0.



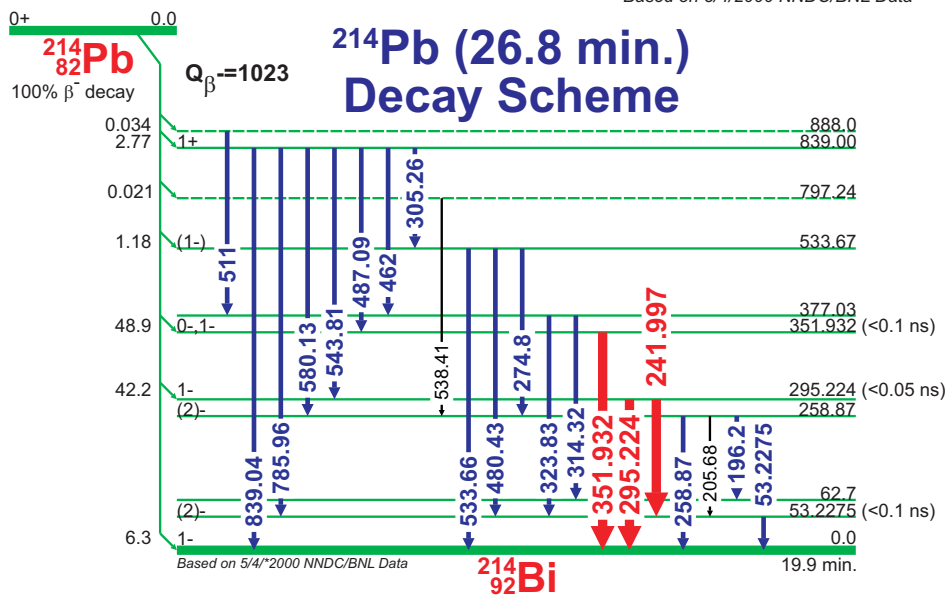
²²²Rn (3.8 day) Decay Scheme



²¹⁸Po (3.10 min.) Decay Scheme

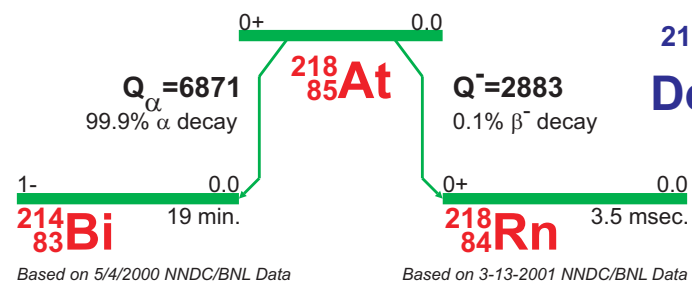


26.8 min.



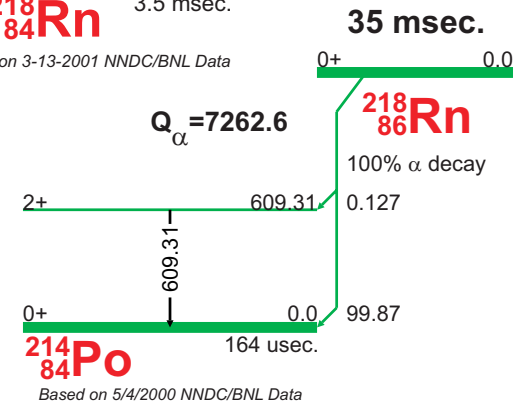
²¹⁴Pb (26.8 min.) Decay Scheme

1.5 sec.



²¹⁸At (1.5 sec.) Decay Scheme

²¹⁸Rn (35 msec.) Decay Scheme



GAMMA-RAY ENERGIES AND INTENSITIES

Nuclide: **²²²Rn** Half Life: 3.8235(3) day

E_γ (keV)	σE_γ	I_γ	σI_γ	Level	α
510	2	0.076		511	

E_γ , σE_γ , I_γ , σI_γ Levels from ENSDF Database as of May 4, 2000

① These I_γ are per 100 Decays of ²²²Rn.

② Normalization factor is 1.0, and its uncertainty is taken to be 0.0.

GAMMA-RAY ENERGIES AND INTENSITIES

Nuclide: **²¹⁸Po** Half Life: 3.10(2) min.

E_γ (keV)	σE_γ	I_γ	σI_γ	Level	α
No gamma's					

E_γ , σE_γ , I_γ , σI_γ Levels from ENSDF Database as of May 4, 2000

① no gamma rays produced

GAMMA-RAY ENERGIES AND INTENSITIES

Nuclide: **²¹⁴Pb** Half Life: 26.8(9) min.

E_γ , σE_γ , I_γ , σI_γ Levels- from ENSDF Database as of May 4, 2000

E_γ (keV)	σE_γ	I_γ	σI_γ	Level	β
9.5				62.7	β -
53.2275	0.0021	1.2	0.3	53.2275	β -
56.84				351.932	β -
62.7				62.7	β -
107.22	0.09	0.015	0.003		β -
118.16				377.03	β -
137.45	0.30	0.006	<		β -
141.3	0.6	0.004	<		β -
170.07	0.06	0.032	0.006		β -
181.5				533.67	β -
196.20	0.05	0.069	0.010	258.87	β -
205.68	0.09	0.0115	0.0014	258.87	β -
216.47	0.07	0.022	0.005		β -
238.4		0.015	<	533.67	β -
241.997	0.003	7.43	0.11	295.224	β -
258.87	0.04	0.524	0.011	258.87	β -
274.80	0.05	0.474	0.011	533.67	β -

① These I_γ are per 100 Decays of ²¹⁴Pb.

② Normalization factor is 1.0, and its uncertainty is taken to be 0.0.

E_γ (keV)	σE_γ	I_γ	σI_γ	Level	β
295.224	0.002	19.3	0.2	295.224	β -
298.76		0.02	<	351.932	β -
305.26	0.03	0.031	0.003	839.00	β -
314.32	0.07	0.078	0.001	377.03	β -
323.83	0.04	0.028	0.004	377.03	β -
351.932	0.002	37.6	0.4	351.932	β -
462.00	0.07	0.221	0.009	839.00	β -
480.43	0.02	0.320	0.011	533.67	β -
487.09	0.07	0.422	0.016	839.00	β -
511.0	0.4	0.032	0.010	888.0	β -
533.66	0.02	0.186	0.009	533.67	β -
538.41	0.08	0.020	0.003	797.24	β -
543.81	0.07	0.069	0.010	839.00	β -
580.13	0.03	0.352	0.014	839.00	β -
765.96	0.09	0.078	0.014		β -
785.96	0.09	1.07	0.08	839.00	β -
839.04	0.09	0.587	0.010	839.00	β -

GAMMA-RAY ENERGIES AND INTENSITIES

Nuclide: **²¹⁸At** Half Life: 1.5(3) sec.

E_γ (keV)	σE_γ	I_γ	σI_γ	Level	α
No gamma's					

E_γ , σE_γ , I_γ , σI_γ Levels from ENSDF Database as of March 13, 2001

① no gamma rays produced

GAMMA-RAY ENERGIES AND INTENSITIES

Nuclide: **²¹⁸Rn** Half Life: 35(5) msec.

E_γ (keV)	σE_γ	I_γ	σI_γ	Level	α
609.31	0.06	0.124	0.007	609.31	

E_γ , σE_γ , I_γ , σI_γ Levels from ENSDF Database as of May 4, 2000

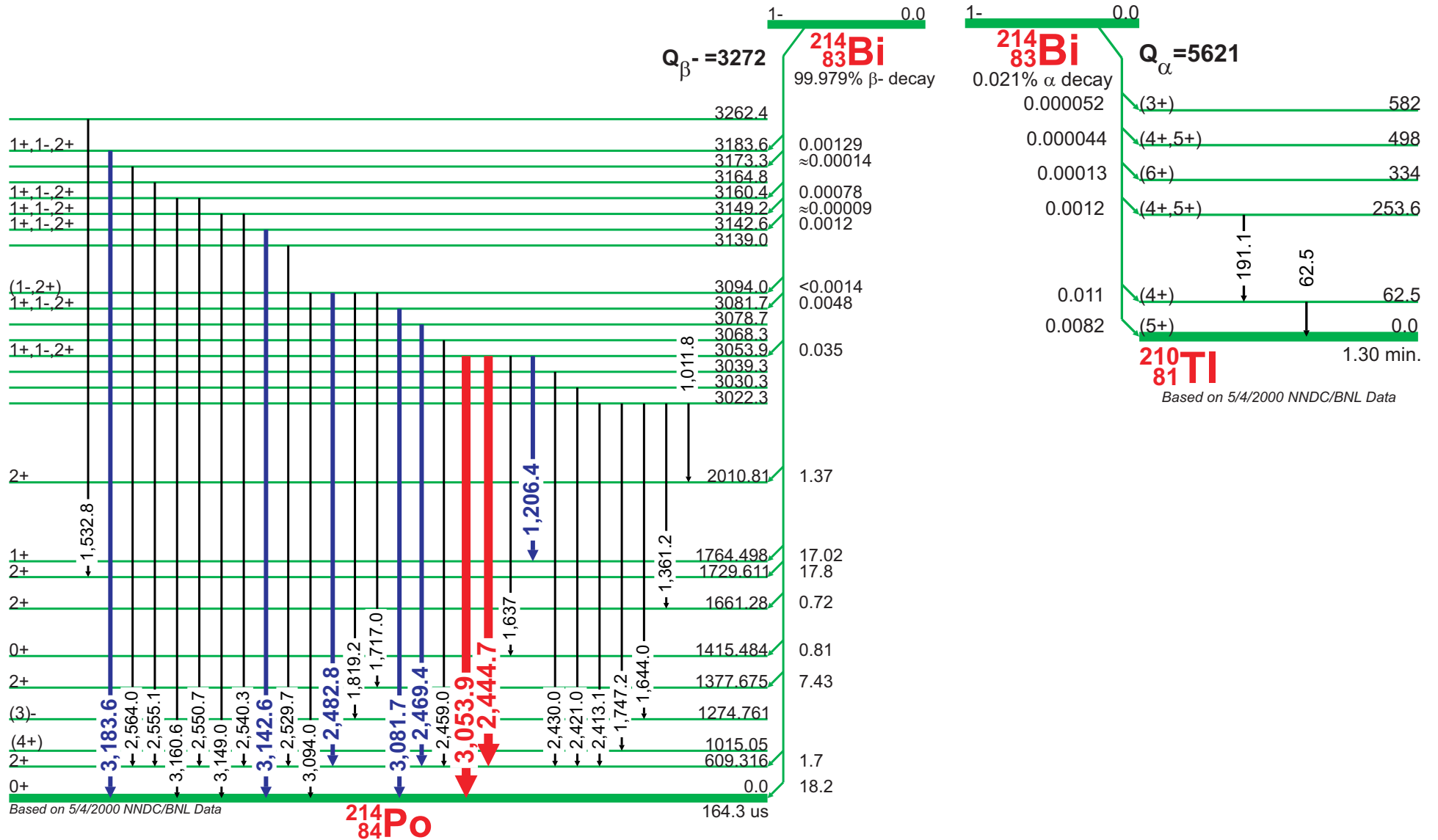
① These I_γ are per 100 Decays of ²¹⁸Rn.

② Normalization factor is 1.0, and its uncertainty is taken to be 0.0.

²¹⁴Bi (19.9 min.) Decay Scheme

Part 1 of 7 19.9 min.

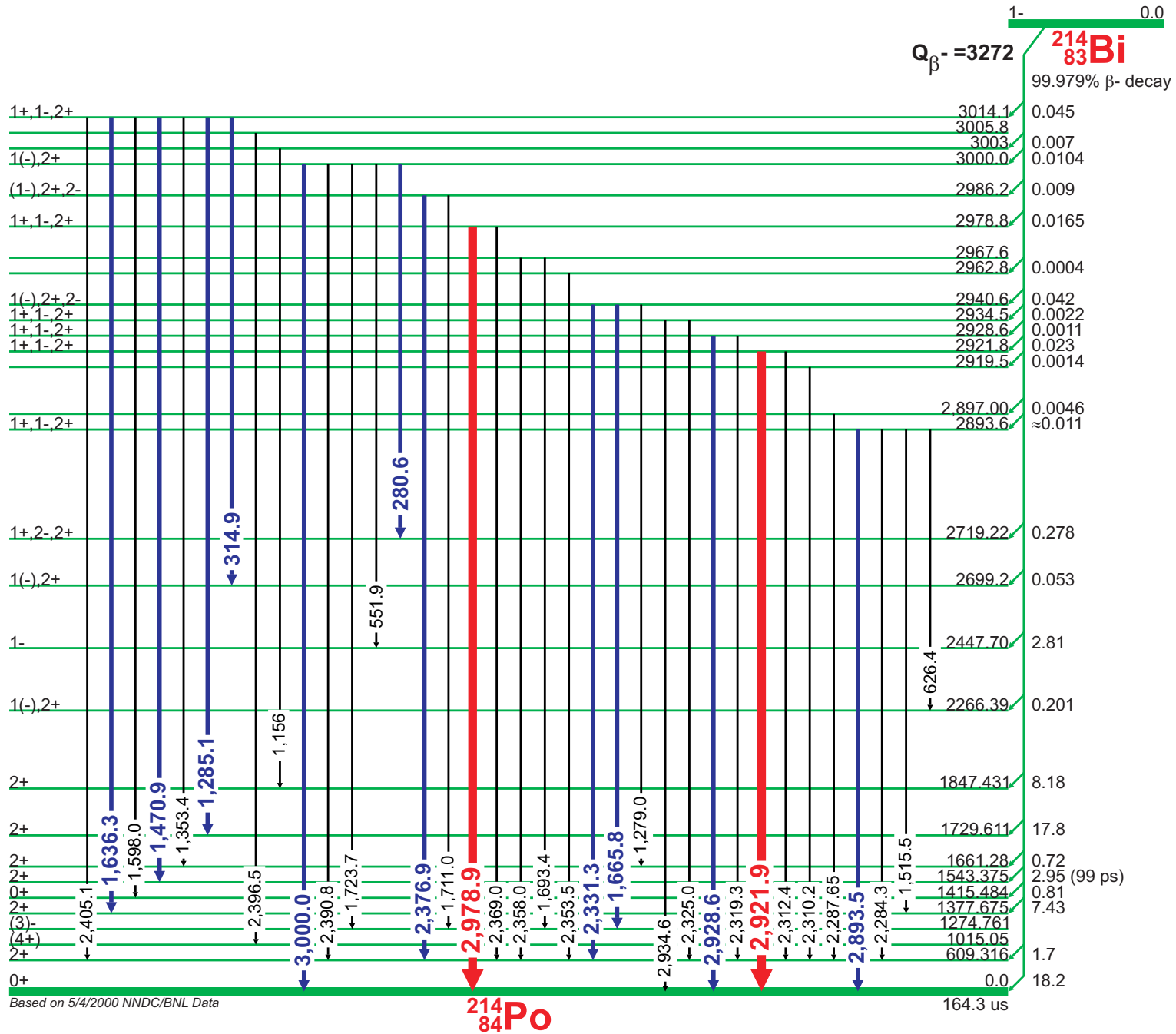
19.9 min.



²¹⁴Bi (19.9 min.) Decay Scheme

Part 2 of 7

19.9 min.



²¹⁴Po

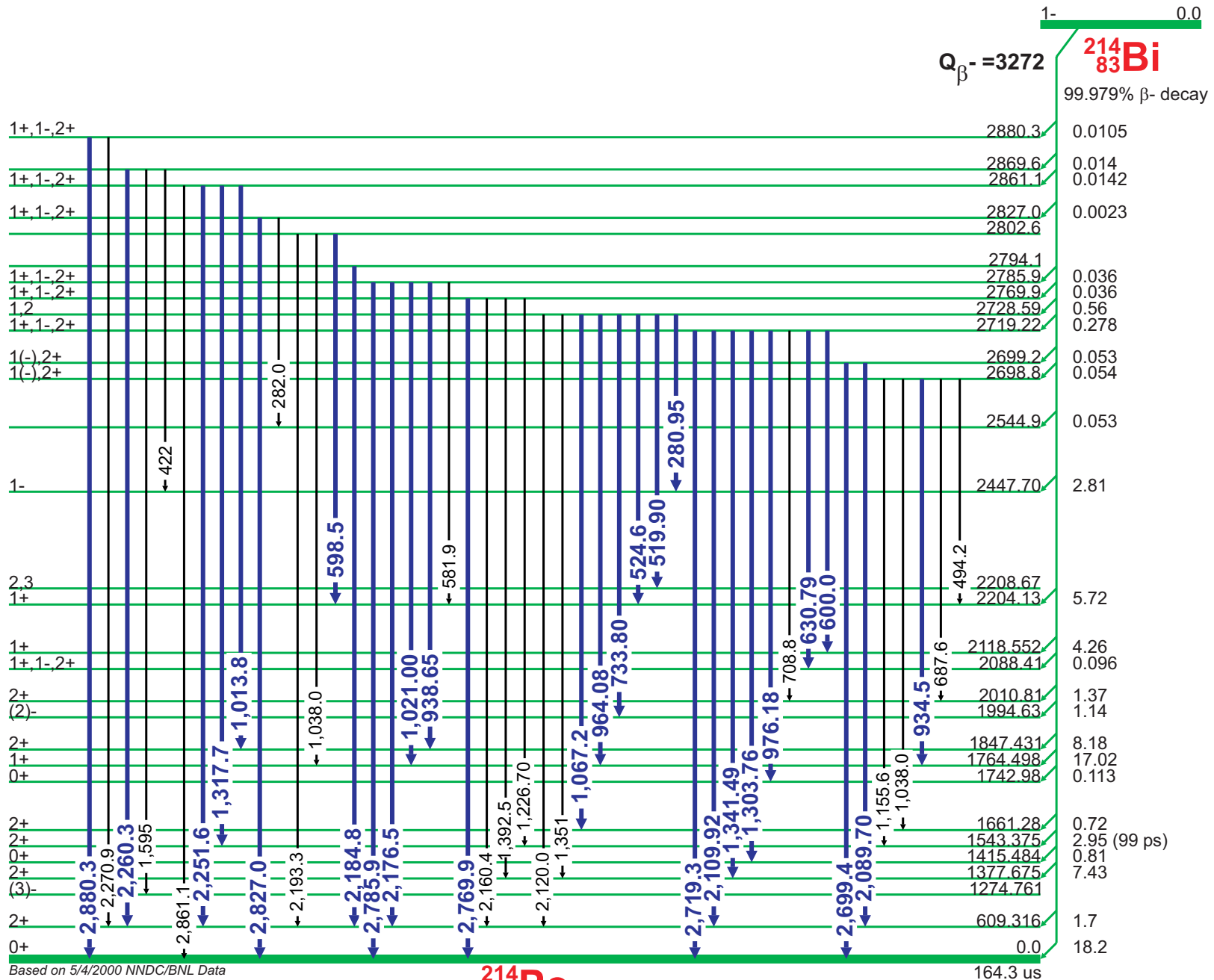
164.3 us



²¹⁴Bi (19.9 min.) Decay Scheme

Part 3 of 7

19.9 min.



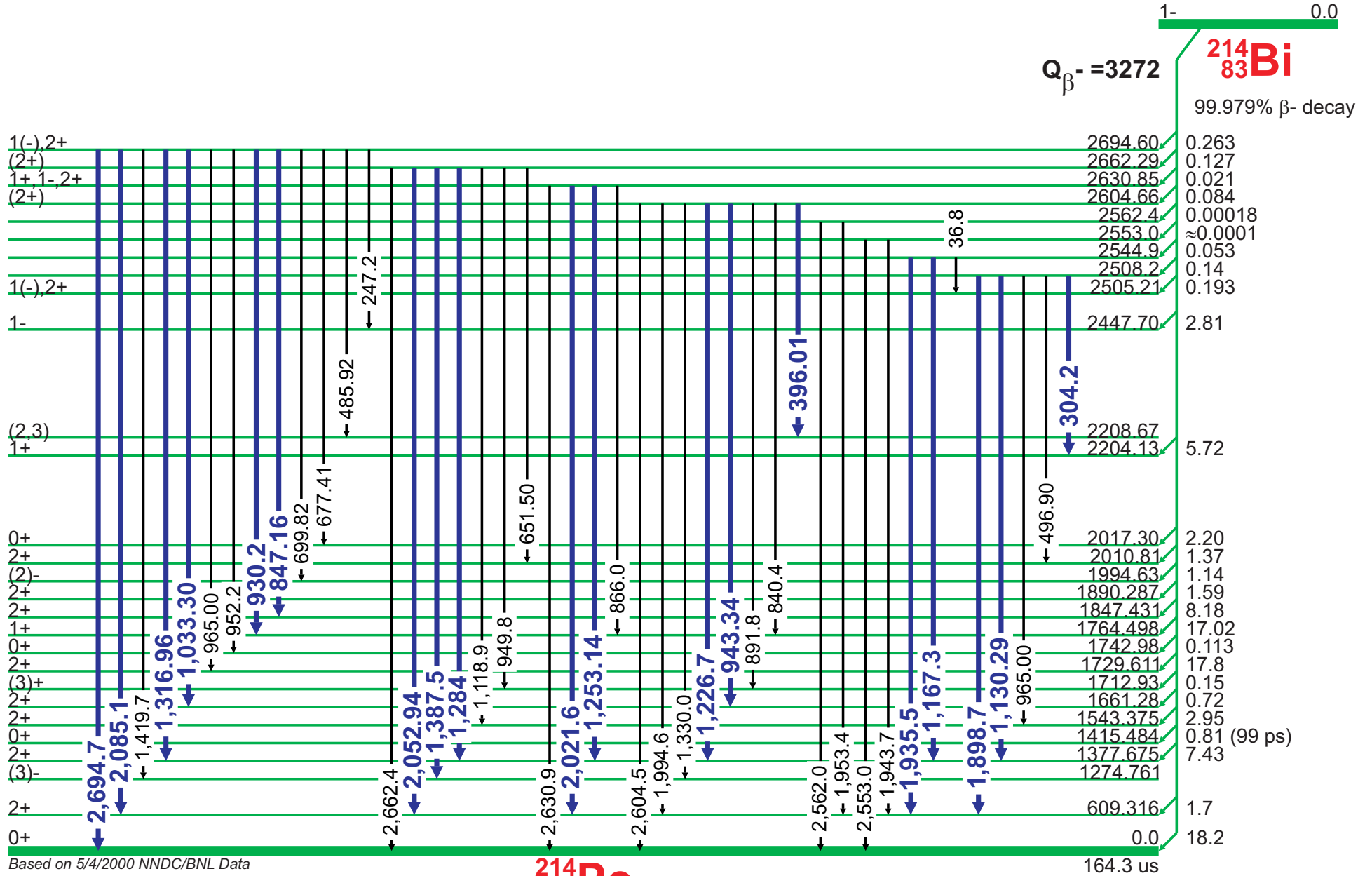
²¹⁴Po



²¹⁴Bi (19.9 min.) Decay Scheme

Part 4 of 7

19.9 min.

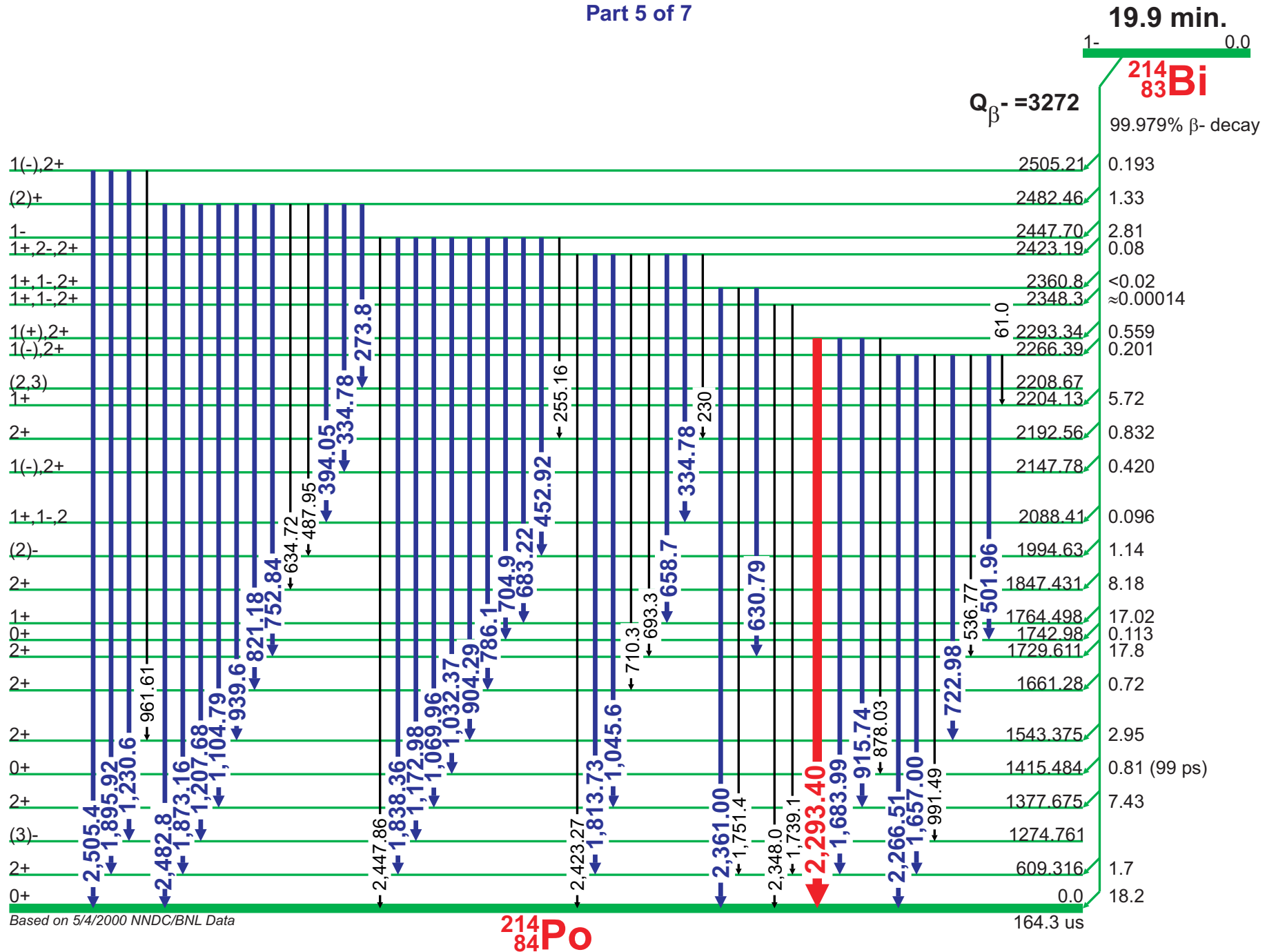


164.3 us



²¹⁴Bi (19.9 min.) Decay Scheme

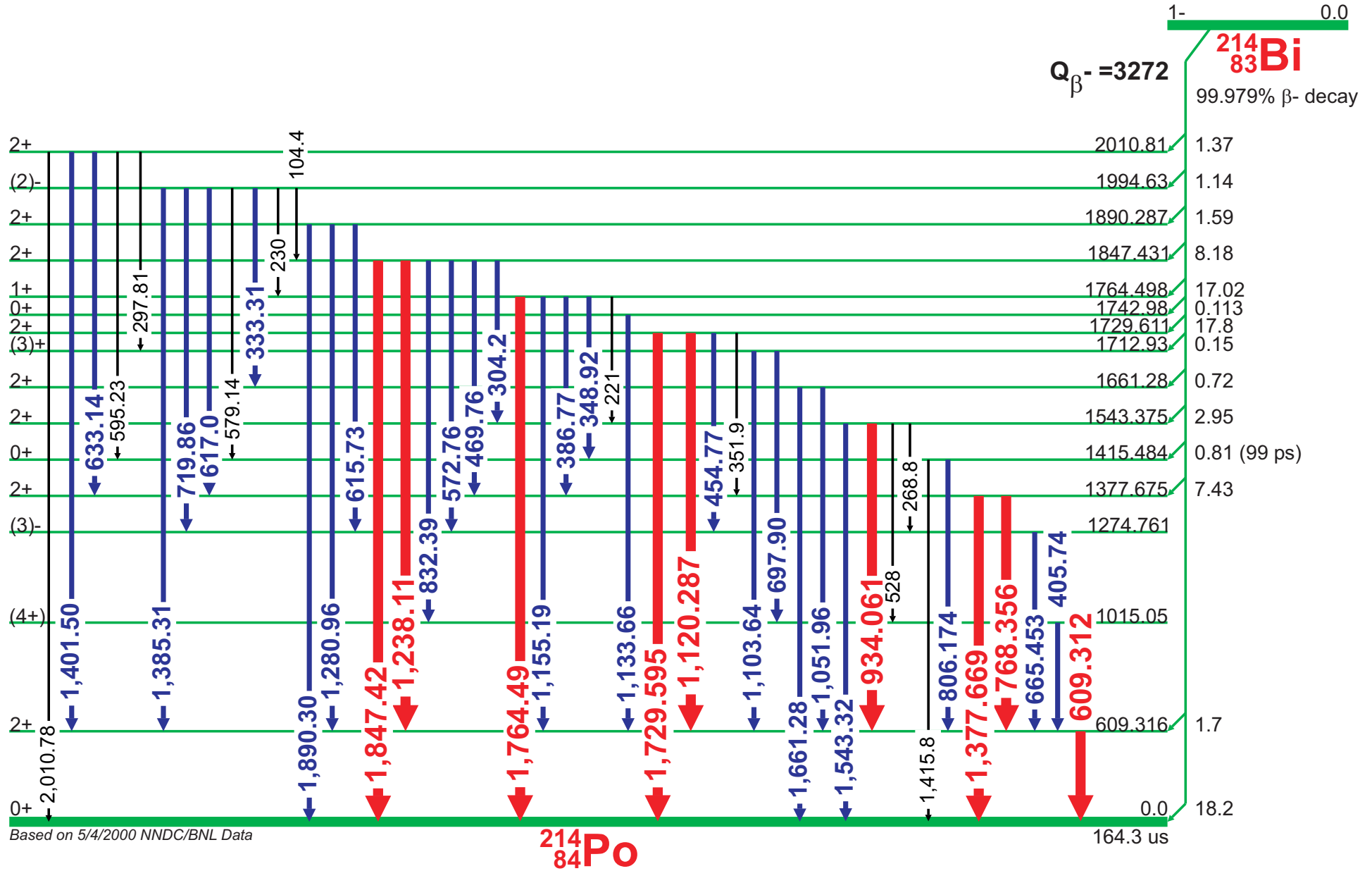
Part 5 of 7



²¹⁴Bi (19.9 min.) Decay Scheme

Part 7 of 7

19.9 min.



²¹⁴Po

164.3 us



GAMMA-RAY ENERGIES AND INTENSITIES (page 1 of 5)

Nuclide: **²¹⁴Bi**E_γ, σE_γ, I_γ, σI_γ, Levels- from ENSDF Database as of May 4, 2000

Half Life: 19.9(4) min.

E _γ (keV)	σ E _γ	^① I _γ	^② σ I _γ	Level	
36.8	0.2			2,544.9	β-
61.0	0.8			2,266.39	β-
62.5				62.5	α
71.1	0.2			2,088.41	β-
104.4	0.2			1,994.63	β-
191.1				253.6	α
221	1	0.003	0.001	1,764.498	β-
230	1	0.004		2,423.19	β-
230	1		1,994.63	β-	
247.2	0.8			2,694.60	β-
252.80	0.06	0.003	0.001	2,017.30	β-
255.16	0.10			2,447.70	β-
268.8	0.2	0.02	0.01	1,543.375	β-
273.80	0.05	0.15	0.03	2,482.46	β-
280.6	0.4			3,000.0	β-
280.95	0.05	0.060	0.010	2,728.59	β-
282.0	0.4			2,827.0	β-
297.81	0.24			2,010.81	β-
304.2	0.2	0.042		2,508.2	β-
304.2	0.2		1,847.431	β-	
314.9	0.8			3,014.1	β-
333.31	0.06	0.08	0.02	1,994.63	β-
334.78	0.08	0.034		2,482.46	β-
334.78	0.08		2,423.19	β-	
348.92	0.06	0.12	0.04	1,764.498	β-
351.9	0.5	0.07	0.01	1,729.611	β-
356.00	0.17	0.007	0.002	2,017.30	β-
363.47	0.12	0.007 8	0.002 3		β-
375.59	0.15	0.004 6	0.001 9		β-
386.77	0.05	0.31	0.03	1,764.498	β-
388.88	0.05	0.37	0.04	2,118.552	β-
394.05	0.08	0.014 8	0.0014	2,482.46	β-
396.01	0.08	0.029	0.006	2,604.66	β-

E _γ (keV)	σ E _γ	^① I _γ	^② σ I _γ	Level	
405.74	0.03	0.17	0.01	1,015.05	β-
422.0	0.8			2,869.6	β-
428.0	0.5	0.002 3	<	2,192.56	β-
439.34	0.08	0.012	0.003		β-
452.92	0.10	0.031	0.004	2,447.70	β-
454.77	0.12	0.30	0.02	1,729.611	β-
461.0	0.2	0.053	0.009	2,204.13	β-
469.76	0.07	0.129	0.010	1,847.431	β-
474.41	0.05	0.110	0.009	2,204.13	β-
485.92	0.11	0.022	0.004	2,694.60	β-
486.7	0.3	0.006	<	2,147.78	β-
487.95	0.13	0.028	0.009	2,482.46	β-
494.2	0.4	0.012	0.003	2,698.8	β-
496.90	0.18	0.006 9	0.001 9	2,508.2	β-
501.96	0.15	0.018	0.003	2,266.39	β-
519.90	0.05	0.016	0.002	2,728.59	β-
524.6	0.2	0.017	0.002	2,728.59	β-
528	1	0.004	0.002	1,543.375	β-
536.77	0.04	0.068	0.009	2,266.39	β-
543.0	0.2	0.084	0.009	2,204.13	β-
547.6	0.3	0.004	<	2,208.67	β-
551.9	0.8			3,000.0	β-
572.76	0.07	0.074	0.010	1,847.431	β-
579.14	0.16			1,994.63	β-
581.9	0.8			2,785.9	β-
595.23	0.07	0.017	0.002	2,010.81	β-
598.5	0.8			2,802.6	β-
600.0	0.5	0.008	0.003	2,719.22	β-
609.312	0.007	46.1	0.5	609.316	β-
615.73	0.10	0.06	0.02	1,890.287	β-
617.0	0.2	0.034	0.012	1,994.63	β-
626.4	0.6	0.005	≈	2,893.6	β-
630.79	0.07	0.018	≤	2,719.22	β-

① These I_γ are per 100 Decays of ²¹⁴Bi.

② Normalization factor is 1.0, and its uncertainty is taken to be 0.0.



GAMMA-RAY ENERGIES AND INTENSITIES (page 2 of 5)

Nuclide: **²¹⁴Bi**E_γ, σE_γ, I_γ, σI_γ, Levels- from ENSDF Database as of May 4, 2000

Half Life: 19.9(4) min.

E _γ (keV)	σ E _γ	① I _γ	② σ I _γ	Level	
630.79	0.07	0.018	≤	2,360.8	β-
633.14	0.10	0.055	0.005	2,010.81	β-
634.72	0.21	0.006 5	0.002 3	2,482.46	β-
639.67	0.10	0.030	0.005	2,017.30	β-
649.18	0.07	0.060	0.007	2,192.56	β-
651.50	0.16	0.002	<	2,662.29	β-
658.7	0.2	0.015	0.006	2,423.19	β-
661.1	0.2	0.047	0.009	2,204.13	β-
665.453	0.022	1.46	0.03	1,274.761	β-
677.41	0.15	0.006	0.003	2,694.60	β-
683.22	0.06	0.081	0.009	2,447.70	β-
687.6	0.3	0.006 9	0.001 9	2,698.8	β-
693.3	0.5	0.006	0.003	2,423.19	β-
697.90	0.25	0.051	0.014	1,712.93	β-
699.82	0.18	0.016	0.005	2,694.60	β-
703.11	0.04	0.472	0.012	2,118.552	β-
704.9	0.3	0.047	0.010	2,447.70	β-
708.8	0.3	0.017	0.004	2,719.22	β-
710.3	0.3			2,423.19	β-
710.67	0.10	0.075	0.002	2,088.41	β-
719.86	0.03	0.379	0.011	1,994.63	β-
722.98	0.12	0.035	0.009	2,266.39	β-
733.80	0.15	0.043	0.006	2,728.59	β-
740.73	0.18	0.04	≈	2,118.552	β-
752.84	0.03	0.130	0.010	2,482.46	β-
768.356	0.010	4.94	0.06	1,377.675	β-
769.7	0.5	0.03	0.01	2,147.78	β-
786.1	0.4	0.31	0.09	2,447.70	β-
788.6	0.5	0.015	0.003	2,204.13	β-
806.174	0.018	1.22	0.02	1,415.484	β-
815.00	0.10	0.038	0.004	2,192.56	β-
821.18	0.03	0.158	0.015	2,482.46	β-
826.3	0.2	0.11	0.02	2,204.13	β-

E _γ (keV)	σ E _γ	① I _γ	② σ I _γ	Level	
832.39	0.11	0.028	0.003	1,847.431	β-
840.4	0.5	0.009	0.003	2,604.66	β-
847.16	0.11	0.026	0.003	2,694.60	β-
866.0	0.8			2,630.85	β-
873.07	0.19	0.018	0.005	2,147.78	β-
878.03	0.12	0.012	0.003	2,293.34	β-
891.8	0.3			2,604.66	β-
904.29	0.10	0.085	0.020	2,447.70	β-
915.74	0.15	0.026	0.006	2,293.34	β-
917.8	0.3	0.005	0.003	2,192.56	β-
930.2	0.2	0.033	0.013	2,694.60	β-
934.061	0.012	3.03	0.04	1,543.375	β-
934.1	0.2	0.05	0.01	2,208.67	β-
934.5	0.5	0.010	0.003	2,698.8	β-
938.65	0.16	0.013	0.004	2,785.9	β-
939.6	0.5	0.018	0.006	2,482.46	β-
943.34	0.12	0.017	0.006	2,604.66	β-
949.8	0.5	0.005 5	0.002 3	2,662.29	β-
952.2	0.8	0.006 0	0.002 3	2,694.60	β-
961.61	0.17	0.012	0.006	2,505.21	β-
964.08	0.03	0.362	0.017	2,728.59	β-
965.00	0.10			2,694.60	β-
965.00	0.10	0.010	0.005	2,508.2	β-
976.18	0.12	0.019	0.004	2,719.22	β-
989.34	0.17	0.010	0.003		β-
991.49	0.19	0.010	0.003	2,266.39	β-
1,011.8	0.8			3,022.3	β-
1,013.8	0.2	0.008 3	0.001 4	2,861.1	β-
1,021.0	0.5	0.014	0.003	2,785.9	β-
1,032.37	0.08	0.078	0.020	2,447.70	β-
1,033.3	0.2	0.024	0.006	2,694.60	β-
1,038.0	0.3			2,802.6	β-
1,038.0	0.3	0.008 3	0.001 4	2,698.8	β-

① These I_γ are per 100 Decays of ²¹⁴Bi.

② Normalization factor is 1.0, and its uncertainty is taken to be 0.0.



GAMMA-RAY ENERGIES AND INTENSITIES (page 3 of 5)

Nuclide: **²¹⁴Bi**E_γ, σE_γ, I_γ, σI_γ, Levels- from ENSDF Database as of May 4, 2000

Half Life: 19.9(4) min.

E _γ (keV)	σE _γ	^① I _γ	^② σI _γ	Level	
1,045.6	0.2	0.026	0.003	2,423.19	β-
1,051.96	0.03	0.315	0.011	1,661.28	β-
1,067.2	0.3	0.027	0.010	2,728.59	β-
1,069.96	0.08	0.275	0.015	2,447.70	β-
1,103.64	0.19	0.10	0.04	1,712.93	β-
1,104.79	0.19	0.077	0.004	2,482.46	β-
1,118.9	0.5	0.04	0.01	2,662.29	β-
1,120.287	0.010	15.1	0.2	1,729.611	β-
1,130.29	0.19	0.040	0.005	2,508.2	β-
1,133.66	0.03	0.248	0.013	1,742.98	β-
1,155.19	0.02	1.63	0.02	1,764.498	β-
1,155.6	0.5	0.016	0.004	2,698.8	β-
1,156	1	0.007	0.003	3,003	β-
1,167.3	0.2	0.012	0.002	2,544.9	β-
1,172.98	0.10	0.051	0.006	2,447.70	β-
1,206.4	0.8			3,053.9	β-
1,207.68	0.03	0.451	0.016	2,482.46	β-
1,226.7	0.3	0.018		2,769.9	β-
1,226.7	0.3			2,604.66	β-
1,230.6	0.4	0.015	0.008	2,505.21	β-
1,238.110	0.012	5.79	0.08	1,847.431	β-
1,253.14	0.12			2,630.85	β-
1,279.0	0.7	0.012	0.003	2,940.6	β-
1,280.96	0.02	1.43	0.02	1,890.287	β-
1,284	1	0.011	0.001	2,662.29	β-
1,285.1	0.5	0.017	0.004	3,014.1	β-
1,303.76	0.08	0.112	0.007	2,719.22	β-
1,316.96	0.15	0.080	0.010	2,694.60	β-
1,317.7	0.4			2,861.1	β-
1,330.0	0.2	0.011	0.002	2,604.66	β-
1,341.49	0.16	0.022	0.003	2,719.22	β-
1,351	1			2,728.59	β-
1,353.4	0.8			3,014.1	β-

E _γ (keV)	σE _γ	^① I _γ	^② σI _γ	Level	
1,361.2	0.8			3,022.3	β-
1,377.669	0.012	4.00	0.06	1,377.675	β-
1,385.31	0.03	0.757	0.018	1,994.63	β-
1,387.5	0.2			2,662.29	β-
1,392.5	0.4	0.019	0.009	2,769.9	β-
1,401.50	0.04	1.27	0.02	2,010.81	β-
1,407.98	0.04	2.15	0.05	2,017.30	β-
1,415.8				1,415.484	β-
1,419.7	0.3	0.005 1	0.001 3	2,694.60	β-
1,470.9	0.3	0.009 2	0.001 4	3,014.1	β-
1,479.15	0.14	0.051	0.005	2,088.41	β-
1,509.228	0.015	2.11	0.04	2,118.552	β-
1,515.5	0.3	0.006 9	0.001 0	2,893.6	β-
1,532.8	0.8			3,262.4	β-
1,538.50	0.06	0.376	0.014	2,147.78	β-
1,543.32	0.06	0.20	0.05	1,543.375	β-
1,583.22	0.04	0.690	0.015	2,192.56	β-
1,594.73	0.08	0.25	0.04	2,204.13	β-
1,595	1	0.005	0.003	2,869.6	β-
1,598.0	0.5	0.006	0.003	3,014.1	β-
1,599.31	0.06	0.23	0.06	2,208.67	β-
1,636.3	0.2	0.012	0.002	3,014.1	β-
1,637	1	0.006	0.003	3,053.9	β-
1,644.0	0.8			3,022.3	β-
1,657.00	0.19	0.046	0.005	2,266.39	β-
1,661.28	0.06	1.15	0.03	1,661.28	β-
1,665.8	0.2	0.008 3	0.001 4	2,940.6	β-
1,683.99	0.04	0.216	0.006	2,293.34	β-
1,693.4	0.8			2,967.6	β-
1,711.0	0.8	0.001 8	0.000 9	2,986.2	β-
1,717.0	0.8			3,094.0	β-
1,723.7	0.8			3,000.0	β-
1,729.595	0.015	2.92	0.04	1,729.611	β-

① These I_γ are per 100 Decays of ²¹⁴Bi.

② Normalization factor is 1.0, and its uncertainty is taken to be 0.0.



GAMMA-RAY ENERGIES AND INTENSITIES (page 4 of 5)

Nuclide: **²¹⁴Bi**E_γ, σE_γ, I_γ, σI_γ, Levels- from ENSDF Database as of May 4, 2000

Half Life: 19.9(4) min.

E _γ (keV)	σE _γ	^① I _γ	^② σI _γ	Level	
1,739.1	0.8			2,348.3	β-
1,747.2	0.8			3,022.3	β-
1,751.4	0.8	0.000 9	0.000 5	2,360.8	β-
1,764.494	0.014	15.4	0.2	1,764.498	β-
1,813.73	0.14	0.011	0.001	2,423.19	β-
1,819.2	0.4	0.001 4	<	3,094.0	β-
1,838.36	0.05	0.36	0.02	2,447.70	β-
1,847.420	0.025	2.11	0.03	1,847.431	β-
1,873.16	0.06	0.219	0.007	2,482.46	β-
1,890.30	0.15	0.08	0.03	1,890.287	β-
1,895.92	0.14	0.16	0.02	2,505.21	β-
1,898.7	0.4	0.057	0.006	2,508.2	β-
1,935.5	0.2	0.041	0.020	2,544.9	β-
1,943.7	0.8			2,553.0	β-
1,953.4	0.6			2,562.4	β-
1,994.6	0.6	0.005	0.003	2,604.66	β-
2,010.78	0.12	0.047	0.003	2,010.81	β-
2,016.7				2,017.30	β-
2,021.6	0.2	0.020	0.003	2,630.85	β-
2,052.94	0.12	0.069	0.005	2,662.29	β-
2,085.1	0.2	0.009 1	0.000 8	2,694.60	β-
2,089.7	0.2	0.050	0.006	2,699.2	β-
2,109.92	0.12	0.088	0.004	2,719.22	β-
2,118.55	0.03	1.14	0.03	2,118.552	β-
2,120.0	1.0	0.007	0.002	2,728.59	β-
2,147.9	0.2	0.014	0.002	2,147.78	β-
2,160.4	0.3	0.001 8	0.000 5	2,769.9	β-
2,176.5	0.2	0.003 2	0.000 5	2,785.9	β-
2,184.8	0.6			2,794.1	β-
2,192.58	0.16	0.034	0.003	2,192.56	β-
2,193.3	0.6			2,802.6	β-
2,204.21	0.04	5.08	0.04	2,204.13	β-
2,251.6	0.2	0.005 5	0.000 5	2,861.1	β-

E _γ (keV)	σE _γ	^① I _γ	^② σI _γ	Level	
2,260.3	0.2	0.008 7	0.000 5	2,869.6	β-
2,266.51	0.13	0.018	0.001	2,266.39	β-
2,270.9	0.4	0.001 3	0.000 4	2,880.3	β-
2,284.3	0.2	0.005 1	0.000 5	2,893.6	β-
2,287.65	0.23	0.004 6	0.000 5	2,897.0	β-
2,293.40	0.12	0.305	0.009	2,293.34	β-
2,310.2	0.3	0.001 4	0.001 0	2,919.5	β-
2,312.4	0.2	0.009	0.002	2,921.8	β-
2,319.3	0.3	0.000 4	0.000 2	2,928.6	β-
2,325.0	0.3	0.001 7	0.000 2	2,934.5	β-
2,331.3	0.2	0.022 1	0.001 4	2,940.6	β-
2,348.0	1.3	0.000 14	0.000 10	2,348.3	β-
2,353.5	0.7	0.000 4	0.000 2	2,962.8	β-
2,358.0	0.6			2,967.6	β-
2,361.00	0.19	0.001 7	0.000 2	2,360.8	β-
2,369.0	0.4	0.002 7	0.000 5	2,978.8	β-
2,376.9	0.2	0.008 8	0.001 2	2,986.2	β-
2,390.8	0.2	0.001 6	0.000 4	3,000.0	β-
2,396.5	0.6			3,005.8	β-
2,405.1	0.5	0.000 41	0.000 14	3,014.1	β-
2,413.1	0.4			3,022.3	β-
2,421.0	0.6			3,030.3	β-
2,423.27	0.13	0.004 6	0.000 5	2,423.19	β-
2,430.0	0.6			3,039.3	β-
2,444.7	0.8	0.008	0.004	3,053.9	β-
2,447.86	0.10	1.57	0.02	2,447.70	β-
2,459.0	0.8			3,068.3	β-
2,469.4	0.6			3,078.7	β-
2,482.8	0.4			3,094.0	β-
2,482.8	0.4	0.001 5	0.000 6	2,482.46	β-
2,505.4	0.2	0.005 7	0.000 5	2,505.21	β-
2,529.7	0.8			3,139.0	β-
2,540.3	0.8			3,149.2	β-

① These I_γ are per 100 Decays of ²¹⁴Bi.

② Normalization factor is 1.0, and its uncertainty is taken to be 0.0.



GAMMA-RAY ENERGIES AND INTENSITIES (page 5 of 5)

Nuclide: **²¹⁴Bi**E_γ, σE_γ, I_γ, σI_γ, Levels- from ENSDF Database as of May 4, 2000

Half Life: 19.9(4) min.

E _γ (keV)	σ E _γ	^① I _γ	^② σ I _γ	Level	
2,550.7	0.7	0.000 46	0.000 10	3,160.4	β-
2,553.0	0.6	0.000 1	≈	2,553.0	β-
2,555.1	0.8			3,164.8	β-
2,562.0	0.6	0.000 18	0.000 09	2,562.4	β-
2,564.0	0.6	0.000 14	0.000 10	3,173.3	β-
2,604.5	0.5	0.000 40	0.000 05	2,604.66	β-
2,630.9	0.3	0.000 8	0.000 2	2,630.85	β-
2,662.4	1.0	0.000 3	0.000 1	2,662.29	β-
2,694.7	0.2	0.031	0.002	2,694.60	β-
2,699.4	0.3	0.002 8	0.000 3	2,699.2	β-
2,719.3	0.2	0.001 8	0.000 2	2,719.22	β-
2,769.9	0.2	0.025	0.002	2,769.9	β-
2,785.9	0.2	0.005 5	0.000 9	2,785.9	β-
2,827.0	0.2	0.002 3	0.000 2	2,827.0	β-
2,861.1	0.4	0.000 38	0.000 10	2,861.1	β-
2,880.3	0.2	0.009 2	0.000 3	2,880.3	β-

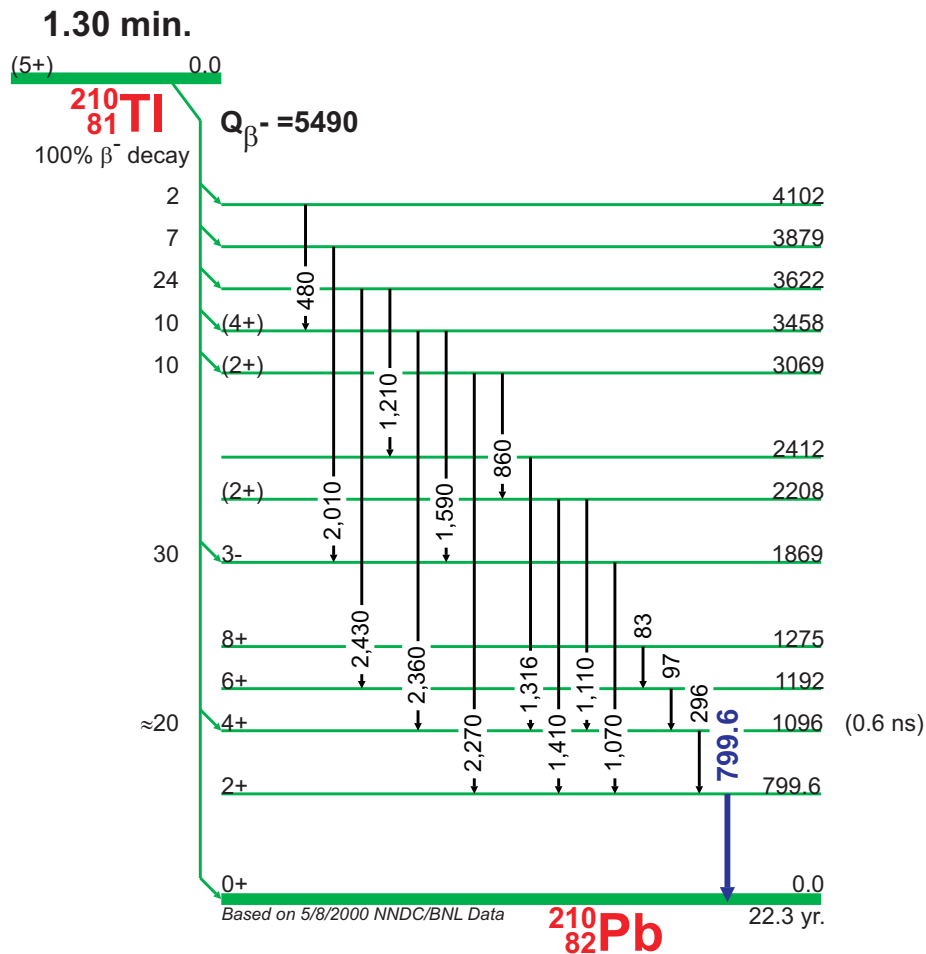
E _γ (keV)	σ E _γ	^① I _γ	^② σ I _γ	Level	
2,893.5	0.2	0.006 0	0.000 5	2,893.6	β-
2,921.9	0.2	0.014	0.002	2,921.8	β-
2,928.6	0.3	0.001 1	0.000 2	2,928.6	β-
2,934.6	0.3	0.000 46	0.000 10	2,934.5	β-
2,978.9	0.2	0.013 8	0.000 5	2,978.8	β-
3,000.0	0.2	0.008 8	0.001 2	3,000.0	β-
3,053.9	0.2	0.021	0.002	3,053.9	β-
3,081.7	0.3	0.004 8	0.000 5	3,081.7	β-
3,094.0	0.4	0.000 44	0.000 08	3,094.0	β-
3,142.6	0.4	0.001 2	0.000 2	3,142.6	β-
3,149.0	0.5	0.000 088	≈	3,149.2	β-
3,160.6	0.6	0.000 32	0.000 10	3,160.4	β-
3,183.6	0.4	0.001 29	0.000 10	3,183.6	β-
3,233.2	2.4	0.000 10	≈		β-
3,269.7	1.5	0.000 06	≈		β-

① These I_γ are per 100 Decays of ²¹⁴Bi.

② Normalization factor is 1.0, and its uncertainty is taken to be 0.0.



²¹⁰Tl (1.3 min.) Decay Scheme



GAMMA-RAY ENERGIES AND INTENSITIES

Nuclide: **²¹⁰Tl**

Half Life: 1.3(3) min.

E _γ (keV)	σ E _γ	① I _γ	② σ I _γ	Level
83	30	2.0	0.4	1,275 β-
97	30	4	2	1,192 β-
296	3	80	10	1,096 β-
356	10	4	2	β-
382	10	3	2	β-
480	20	2	1	4,102 β-
670	20	2	1	β-
799.6	0.3	100		799.6 β-
860	30	7	2	3,069 β-
910	30	3	2	β-
1,070	10	12	5	1,869 β-
1,110	20	7	2	2,208 β-
1,210	20	17	4	3,622 β-
1,316	13	21	5	2,412 β-
1,410	20	5	2	2,208 β-
1,490	20	2	1	β-
1,540	30	2	1	β-
1,590	30	2	1	3,458 β-
1,650	30	2	1	β-
2,010	30	7	2	3,879 β-
2,090	30	5	2	β-
2,270	13	3	2	3,069 β-
2,360	30	8	3	3,458 β-
2,430	30	9	3	3,622 β-

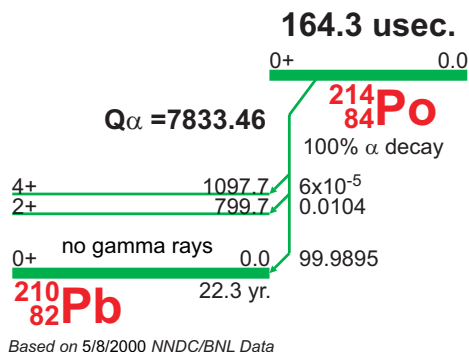
E_γ, σE_γ, I_γ, σI_γ. Levels from ENSDF Database as of May 8, 2000

① These I_γ are per 100 Decays of ²¹⁰Tl.

For ²¹⁴Bi parent, multiply these values by 0.021%

② For total uncertainty add 0.003% systematic component in quadrature, based on the normalization factor 0.99896(3).

²¹⁴Po (164 usec.) Decay Scheme



GAMMA-RAY ENERGIES AND INTENSITIES

Nuclide: **²¹⁴Po**

Half Life: 164.3(20) usec.

E _γ (keV)	σ E _γ	① I _γ	② σ I _γ	Level
No gamma rays				

E_γ, σE_γ, I_γ, σI_γ. Levels from ENSDF Database as of May 8, 2000