

$^{134}\text{Ba}(n,\gamma) \text{E=th}$ **1993Bo01**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Alexander A. Rodionov And Yuri L. Khazov		NDS 109, 517 (2008)	22-Jan-2008

1993Bo01 (also **1993Bo30**): measured E_γ , I_γ , $\gamma\gamma$ coin, Ge detector.

Others: **1993Ch21**, **1969Gr31**, **1967Ba56**.

1999Bo14 and **1997Su29**: $\gamma\gamma$ cascades analyzed, but no explicit data given.

Additional information 1.

The γ -ray energies and cross section data have been measured at Budapest reactor facility with low background conditions during 1999-2003. Detailed reports of this work are available on the following (IAEA and LBNL) websites: www-nds.iaea.org/pgaa/pgaa7/index.html and ie.lbl.gov/pgadatabase/pgaa.htm. See also IAEA publication **2007ChZX** and a book by G. Molnar: Handbook of Prompt Gamma Activation Analysis. In this work 21 secondary and 2 primary γ rays are assigned to capture in ^{134}Ba . The relative intensities (deduced from measured cross sections) of many of these γ rays in this work are not in agreement with those from **1993Bo01**.

 ^{135}Ba Levels

E(level)	$J^\pi^\dagger$	E(level)	$J^\pi^\dagger$	E(level)	$J^\pi^\dagger$	E(level)	$J^\pi^\dagger$
0.0	$3/2^+$	1238.81 9	(5/2)	2149.2? 7	(1/2,3/2)	3092.68 25	(1/2,3/2)
220.969 17	$1/2^+$	1298.62 10	(1/2 ⁺ ,3/2 ⁺)	2396.6 3	(1/2 ⁺ ,3/2)	3154.1 3	(1/2 ⁻ ,3/2 ⁻)
268.21 5	$11/2^-$	1445.6 10	$7/2^-$	2447.77 20	$1/2^-,3/2^-$	3169.2 3	(1/2,3/2)
480.550 25	$5/2^+$	1584.49 7	(3/2) ⁻	2579.2 3	(1/2 ⁺ ,3/2)	3294.0 4	(1/2,3/2)
587.825 23	$3/2^+$	1609.25 11	(1/2 ⁺ ,3/2 ⁺)	2658.5 3	(1/2,3/2)	3510.3 3	(1/2,3/2)
714.19 6	(7/2 ⁻)	1670.61 15	(3/2) ⁻	2687.96 24	(1/2,3/2)	3632.5 5	(1/2,3/2)
855.04 3	$3/2^+$	1719.46 9	(1/2 ⁺ ,3/2 ⁺)	2710.74 24	(1/2 ⁻ ,3/2 ⁻)	3786.0 3	(1/2,3/2)
874.54 5	$7/2^+$	1787.36 18	(5/2) ⁻	2730.03 14	$1/2^-,3/2^-$	3929.7? 6	
910.33 4	$1/2^+$	1964.85 17	(1/2 ⁺ ,3/2 ⁺)	2873.0 3	(1/2,3/2)	4072.3? 6	
979.95 5	$3/2^+,5/2^+$	1991.13 20	(3/2,5/2)	2888.1 6	(1/2,3/2)	(6971.82 [#] 12)	$1/2^+^\ddagger$
1213.69 7	(3/2)	1997.55 10	(1/2) ⁻	2897.1 4	(1/2 ⁺ ,3/2)		
1225.81 7	(3/2)	2077.18 13	(1/2 ⁻ ,3/2 ⁻)	3085.81 22	$1/2^-,3/2^-$		

[†] From 'Adopted Levels', unless otherwise stated.

[‡] s-wave capture in 0^+ , g.s. (^{134}Ba).

[#] S(n)=6971.96 10 (**2003Au03**).

 $\gamma(^{135}\text{Ba})$

I_γ normalization: intensities are given by **1993Bo01** as per 100 neutron captures. The total γ -ray intensity feeding to g.s. gives the same result. From Budapest measured cross sections reported in LBNL and IAEA websites, normalization factor=0.5, but full details of these measurements are not available. It is difficult to make a direct comparison in view of the many differences found between the γ -ray intensities from Budapest work (see LBNL website above) and from **1993Bo01**.

E_γ	$I_\gamma^\#$	$E_i(\text{level})$	J_i^π	E_f	J_f^π
220.96 2	36.1 4	220.969	$1/2^+$	0.0	$3/2^+$
268.20 5	1.38 5	268.21	$11/2^-$	0.0	$3/2^+$
322.4 4	0.26 2	910.33	$1/2^+$	587.825	$3/2^+$
366.84 3	3.67 6	587.825	$3/2^+$	220.969	$1/2^+$
374.49 3	2.52 5	855.04	$3/2^+$	480.550	$5/2^+$
413.03 7	0.80 4	1997.55	(1/2) ⁻	1584.49	(3/2) ⁻
445.98 3	5.93 13	714.19	(7/2 ⁻)	268.21	$11/2^-$
480.54 3	17.45 17	480.550	$5/2^+$	0.0	$3/2^+$
587.83 3	11.82 14	587.825	$3/2^+$	0.0	$3/2^+$

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¹³⁴ Ba(n,γ) E=th 1993Bo01 (continued)						
<u>γ(¹³⁵Ba) (continued)</u>						
E _γ	I _γ [#]	E _i (level)	J _i ^π	E _f	J _f ^π	Comments
626	<0.2	1213.69	(3/2)	587.825	3/2 ⁺	
634.06 5	3.03 8	855.04	3/2 ⁺	220.969	1/2 ⁺	
638.01 11	0.73 6	1225.81	(3/2)	587.825	3/2 ⁺	
^x 684.2 3	0.22 3					
689.35 10	1.51 7	910.33	1/2 ⁺	220.969	1/2 ⁺	
^x 703.3 8	0.35 8					
710.72 13	0.81 6	1298.62	(1/2 ⁺ ,3/2 ⁺)	587.825	3/2 ⁺	
^x 720.74 [†] 10	0.34 8					
732 ^a	0.2	1445.6	7/2 ⁻	714.19	(7/2 ⁻)	This transition is considered uncertain since it is not reported in (n,n'γ) where the 1446 level is fed strongly.
739.4 [@] 4	0.18 [@] 4	1719.46	(1/2 ⁺ ,3/2 ⁺)	979.95	3/2 ⁺ ,5/2 ⁺	
739.4 [@] 4	0.18 [@] 4	1964.85	(1/2 ⁺ ,3/2 ⁺)	1225.81	(3/2)	
745.37 22	0.55 7	1225.81	(3/2)	480.550	5/2 ⁺	
758.31 ^{&a} 16	0.51 ^{&} 11	979.95	3/2 ⁺ ,5/2 ⁺	220.969	1/2 ⁺	E _γ : level-energy difference=758.97.
758.31 ^{&} 16	≈0.12 ^{&}	1238.81	(5/2)	480.550	5/2 ⁺	I _γ : γ assigned (by evaluators) with both 980 and 1239 levels on the basis of 'adopted gammas'. Total I _γ =0.63 11 split in two places based on branching ratios in 'adopted gammas'.
^x 782.7 [‡]						
855.05 5	2.23 6	855.04	3/2 ⁺	0.0	3/2 ⁺	
864.5 4	0.24 6	1719.46	(1/2 ⁺ ,3/2 ⁺)	855.04	3/2 ⁺	
874.54 5	2.12 7	874.54	7/2 ⁺	0.0	3/2 ⁺	
^x 899.75 23	0.25 6					
910.32 4	4.06 13	910.33	1/2 ⁺	0.0	3/2 ⁺	
^x 913.6 [‡]						
931.1 3	0.4	3510.3	(1/2,3/2)	2579.2	(1/2 ⁺ ,3/2)	
956.33 16	1.74 7	1670.61	(3/2 ⁻)	714.19	(7/2 ⁻)	
965	0.1	1445.6	7/2 ⁻	480.550	5/2 ⁺	
979.94 5	3.64 12	979.95	3/2 ⁺ ,5/2 ⁺	0.0	3/2 ⁺	
993.6 [‡]		1213.69	(3/2)	220.969	1/2 ⁺	
1021.36 15	0.72 5	1609.25	(1/2 ⁺ ,3/2 ⁺)	587.825	3/2 ⁺	
1054.39 20	0.52 11	1964.85	(1/2 ⁺ ,3/2 ⁺)	910.33	1/2 ⁺	
^x 1067.1 4	0.39 5					
1073.16 17	0.88 6	1787.36	(5/2 ⁻)	714.19	(7/2 ⁻)	
1077.36 21	0.33 5	1298.62	(1/2 ⁺ ,3/2 ⁺)	220.969	1/2 ⁺	
1090.2 ^a 5	0.31 5	1964.85	(1/2 ⁺ ,3/2 ⁺)	874.54	7/2 ⁺	
1101.6 [@] 3	0.47 [@] 5	2710.74	(1/2 ⁻ ,3/2 ⁻)	1609.25	(1/2 ⁺ ,3/2 ⁺)	
1101.6 [@] 3	0.47 [@] 5	3092.68	(1/2,3/2)	1991.13	(3/2,5/2)	
1120.48 23	0.34 8	2730.03	1/2 ⁻ ,3/2 ⁻	1609.25	(1/2 ⁺ ,3/2 ⁺)	
1128.2 5	0.35 7	1609.25	(1/2 ⁺ ,3/2 ⁺)	480.550	5/2 ⁺	
1142.6 3	0.38 6	1997.55	(1/2) ⁻	855.04	3/2 ⁺	
^x 1159.3 5	0.27 12					
1213.68 7	2.68 13	1213.69	(3/2)	0.0	3/2 ⁺	
1225.78 8	2.28 13	1225.81	(3/2)	0.0	3/2 ⁺	
1238.79 [@] 10	1.07 [@] 12	1238.81	(5/2)	0.0	3/2 ⁺	
1238.79 [@] 10	1.07 [@] 12	1719.46	(1/2 ⁺ ,3/2 ⁺)	480.550	5/2 ⁺	
1298.97 18	0.33 9	1298.62	(1/2 ⁺ ,3/2 ⁺)	0.0	3/2 ⁺	
^x 1321.8 4	0.34 6					
^x 1345.8 3	0.37 11					
1363.48 7	11.64 14	1584.49	(3/2) ⁻	220.969	1/2 ⁺	
1388.23 26	0.45 9	1609.25	(1/2 ⁺ ,3/2 ⁺)	220.969	1/2 ⁺	
1403	0.4	1991.13	(3/2,5/2)	587.825	3/2 ⁺	

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$^{134}\text{Ba}(\text{n},\gamma) \text{E=th}$ 1993Bo01 (continued)						
$\gamma(^{135}\text{Ba})$ (continued)						
E_γ	$I_\gamma^\#$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
1415.41 27	0.45 7	3085.81	$1/2^-, 3/2^-$	1670.61	$(3/2^-)$	
^x 1426.0 4	0.39 8					
^x 1442.7 7	0.25 10					
1468.6 ^a 5	0.29 7	2447.77	$1/2^-, 3/2^-$	979.95	$3/2^+, 5/2^+$	E_γ : 1486.6 in 1993Bo01 seems a misprint.
^x 1472.1 5	0.23 7					
1489.2 3	0.60 12	2077.18	$(1/2^-, 3/2^-)$	587.825	$3/2^+$	
1498.1 3	0.60 11	3169.2	$(1/2, 3/2)$	1670.61	$(3/2^-)$	
1510.62 22	0.42 8	1991.13	$(3/2, 5/2)$	480.550	$5/2^+$	
^x 1543.8 3	0.41 6					
^x 1557.9 6	0.21 10					
^x 1571.52 21	0.65 7					
1584.4 [‡]		1584.49	$(3/2)^-$	0.0	$3/2^+$	
1592.8 8	0.10 5	2447.77	$1/2^-, 3/2^-$	855.04	$3/2^+$	
1609.7 4	0.39 8	1609.25	$(1/2^+, 3/2^+)$	0.0	$3/2^+$	
^x 1613.7 [‡]						
1720.01 22	0.66 30	1719.46	$(1/2^+, 3/2^+)$	0.0	$3/2^+$	
1776.6 5	1.11 14	1997.55	$(1/2)^-$	220.969	$1/2^+$	
1856.23 18	1.64 13	2077.18	$(1/2^-, 3/2^-)$	220.969	$1/2^+$	
1860.4 7	0.46 6	2447.77	$1/2^-, 3/2^-$	587.825	$3/2^+$	
^x 1873.0 4	0.58 14					E_γ : other: 1874.4 3 (1993Ch21).
^x 1877.2 7	0.43 10					
1916.4 4	0.40 11	2396.6	$(1/2^+, 3/2)$	480.550	$5/2^+$	
^x 1936.3 4	0.63 13					
^x 1961.0 [‡]						
1964.9 5	0.38 13	1964.85	$(1/2^+, 3/2^+)$	0.0	$3/2^+$	
2077.22 25	1.42 15	2077.18	$(1/2^-, 3/2^-)$	0.0	$3/2^+$	
2098.3 7	1.03 11	2579.2	$(1/2^+, 3/2)$	480.550	$5/2^+$	
2142.19 21	0.91 8	2730.03	$1/2^-, 3/2^-$	587.825	$3/2^+$	
2177.1 [@] 5	0.28 [@] 8	2658.5	$(1/2, 3/2)$	480.550	$5/2^+$	
2177.1 [@] 5	0.28 [@] 8	3786.0	$(1/2, 3/2)$	1609.25	$(1/2^+, 3/2^+)$	
^x 2198.4 [‡]						
2227.0	0.54	2447.77	$1/2^-, 3/2^-$	220.969	$1/2^+$	
^x 2239.7 4	0.51 15					
^x 2267.0 4	0.32 6					
^x 2282.6 4	0.37 5					
^x 2289.0 5	0.26 5					
2309.5 5	0.20 7	2897.1	$(1/2^+, 3/2)$	587.825	$3/2^+$	
2396.2 8	0.18 7	2396.6	$(1/2^+, 3/2)$	0.0	$3/2^+$	
2416.5 11	0.18 8	2897.1	$(1/2^+, 3/2)$	480.550	$5/2^+$	
^x 2422.4 10	0.19 8					
2438.8 4	0.27 8	3294.0	$(1/2, 3/2)$	855.04	$3/2^+$	
2447.68 24	3.52 12	2447.77	$1/2^-, 3/2^-$	0.0	$3/2^+$	
^x 2460.7 6	0.24 9					
2467.2 3	0.56 10	2687.96	$(1/2, 3/2)$	220.969	$1/2^+$	
2489.3 5	0.48 9	2710.74	$(1/2^-, 3/2^-)$	220.969	$1/2^+$	
2510.8 7	0.26 7	2730.03	$1/2^-, 3/2^-$	220.969	$1/2^+$	Placement from $\gamma\gamma$ (1993Bo30).
^x 2519.6 [‡]						
^x 2529.0 5	0.39 9					
^x 2558.0 8	0.18 7					
2566.0 4	0.68 8	3154.1	$(1/2^-, 3/2^-)$	587.825	$3/2^+$	
2579.4 5	0.28 7	2579.2	$(1/2^+, 3/2)$	0.0	$3/2^+$	
^x 2621.4 4	0.85 16					
^x 2638.0 8	0.38 14					
2652.3 4	1.28 15	2873.0	$(1/2, 3/2)$	220.969	$1/2^+$	

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$^{134}\text{Ba}(\text{n},\gamma) \text{E=th}$ **1993Bo01 (continued)** $\gamma(^{135}\text{Ba})$ (continued)

E_γ	I_γ #	$E_i(\text{level})$	J_i^π	E_f	J_f^π
2659.2 4	1.14 15	2658.5	(1/2,3/2)	0.0	3/2 ⁺
2687.7 5	0.36 11	2687.96	(1/2,3/2)	0.0	3/2 ⁺
2710.9 6	0.49 10	2710.74	(1/2 ⁻ ,3/2 ⁻)	0.0	3/2 ⁺
^x 2724.1 7	0.36 9				
2730.2 3	2.57 15	2730.03	1/2 ⁻ ,3/2 ⁻	0.0	3/2 ⁺
^x 2737.9 13	0.19 11				
^x 2753.9 5	0.17 8				
^x 2831.4 4	0.16 6				
^x 2845.9 6	0.27 8				
^x 2851.6 [‡]					
2864.7 4	0.84 17	3085.81	1/2 ⁻ ,3/2 ⁻	220.969	1/2 ⁺
2872.2 @ 5	1.29 @ 26	2873.0	(1/2,3/2)	0.0	3/2 ⁺
2872.2 @ 5	1.29 @ 26	3092.68	(1/2,3/2)	220.969	1/2 ⁺
2888.1 6	0.23 7	2888.1	(1/2,3/2)	0.0	3/2 ⁺
2899.5 ^a 5	0.41 8	(6971.82)	1/2 ⁺	4072.3?	
^x 2909.2 [‡]					
^x 2970.5 7	0.24 8				
^x 2973.7 [‡]					
^x 2990.1 7	0.31 10				
^x 3008.0 5	0.55 10				
^x 3015.6 8	0.19 7				
3042.1 ^a 5	0.69 10	(6971.82)	1/2 ⁺	3929.7?	
3085.1 10	0.36 4	3085.81	1/2 ⁻ ,3/2 ⁻	0.0	3/2 ⁺
^x 3089.5 [‡]					
3094.0 10	0.52 6	3092.68	(1/2,3/2)	0.0	3/2 ⁺
^x 3108.8 4	0.87 10				
3153.7 13	0.10 5	3154.1	(1/2 ⁻ ,3/2 ⁻)	0.0	3/2 ⁺
3173.4 ^a 5	0.41 6	3169.2	(1/2,3/2)	0.0	3/2 ⁺
3184.8 8	0.18 6	(6971.82)	1/2 ⁺	3786.0	(1/2,3/2)
3197.7 4	0.43 8	3786.0	(1/2,3/2)	587.825	3/2 ⁺
^x 3294.1 [‡]					
3298.0 ^a 6	0.76 15	3294.0	(1/2,3/2)	0.0	3/2 ⁺
^x 3320.5 4	0.81 10				
^x 3333.2 5	0.56 8				
3339.9 6	0.14 7	(6971.82)	1/2 ⁺	3632.5	(1/2,3/2)
^x 3350.3 9	0.17 7				
^x 3372.4 [‡]					
^x 3393.5 6	0.11 6				
3412.2 6	0.24 6	3632.5	(1/2,3/2)	220.969	1/2 ⁺
^x 3426.4 7	0.21 6				
^x 3446.7 6	0.34 6				
^x 3453.3 7	0.25 6				
3461.7 4	0.73 8	(6971.82)	1/2 ⁺	3510.3	(1/2,3/2)
3511.8 12	0.22 9	3510.3	(1/2,3/2)	0.0	3/2 ⁺
^x 3541.9 9	0.16 6				
^x 3552.0 8	0.19 6				
^x 3599.8 [‡]					
^x 3623.4 6	0.27 7				
3677.4 6	0.42 13	(6971.82)	1/2 ⁺	3294.0	(1/2,3/2)
3801.4 5	0.35 6	(6971.82)	1/2 ⁺	3169.2	(1/2,3/2)
3817.2 5	1.53 17	(6971.82)	1/2 ⁺	3154.1	(1/2 ⁻ ,3/2 ⁻)
^x 3853.5 8	3.6 9				
3880.1 5	0.66 10	(6971.82)	1/2 ⁺	3092.68	(1/2,3/2)

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$^{134}\text{Ba}(\text{n},\gamma)\text{E=th}$ **1993Bo01 (continued)** $\gamma(^{135}\text{Ba})$ (continued)

E_γ	$I_\gamma^\#$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
3886.4 5	0.86 12	(6971.82)	1/2 ⁺	3085.81	1/2 ⁻ , 3/2 ⁻	
^x 3903.5 9	0.26 9					
^x 3982.4 10	0.31 11					
^x 3998.6 [‡]						
^x 4022.8 13	0.24 11					
^x 4063.1 [‡]						
4075.1 6	1.16 23	(6971.82)	1/2 ⁺	2897.1	(1/2 ⁺ , 3/2)	
4083.9 15	0.39 21	(6971.82)	1/2 ⁺	2888.1	(1/2, 3/2)	
4098.3 5	1.03 22	(6971.82)	1/2 ⁺	2873.0	(1/2, 3/2)	
^x 4114.4 10	0.17 7					
^x 4120.7 [‡]						
^x 4132.6 10	0.18 6					
^x 4178.8 6	0.32 6					
4241.8 5	2.89 22	(6971.82)	1/2 ⁺	2730.03	1/2 ⁻ , 3/2 ⁻	
4261.0 7	0.79 16	(6971.82)	1/2 ⁺	2710.74	(1/2 ⁻ , 3/2 ⁻)	
4284.4 [‡] 6	0.82 21	(6971.82)	1/2 ⁺	2687.96	(1/2, 3/2)	E_γ : other: 4287.0 6 (1993Bo01).
4313.7 5	1.08 10	(6971.82)	1/2 ⁺	2658.5	(1/2, 3/2)	
^x 4330.0 11	0.17 7					
4392.8 15	0.55 29	(6971.82)	1/2 ⁺	2579.2	(1/2 ⁺ , 3/2)	
^x 4423.0 [‡]						
^x 4452.5 [‡]						
4524.0 5	3.51 24	(6971.82)	1/2 ⁺	2447.77	1/2 ⁻ , 3/2 ⁻	
4575.8 6	0.22 6	(6971.82)	1/2 ⁺	2396.6	(1/2 ⁺ , 3/2)	
^x 4770.3 [‡]						
^x 4773.6 [‡]						
4822.5 ^a 7		(6971.82)	1/2 ⁺	2149.2?	(1/2, 3/2)	E_γ : from 1993Ch21 only. $I_\gamma(\text{S(n)}/E_\gamma)^3=1.8\ 3$.
^x 4826.6 6	0.35 6					
4894.7 5	2.39 21	(6971.82)	1/2 ⁺	2077.18	(1/2 ⁻ , 3/2 ⁻)	
4972.9 5	0.93 14	(6971.82)	1/2 ⁺	1997.55	(1/2) ⁻	
5006.5 8	0.46 13	(6971.82)	1/2 ⁺	1964.85	(1/2 ⁺ , 3/2 ⁺)	
5252.0 11	0.71 8	(6971.82)	1/2 ⁺	1719.46	(1/2 ⁺ , 3/2 ⁺)	
5300.7 5	1.49 17	(6971.82)	1/2 ⁺	1670.61	(3/2) ⁻	
5362.9 7	0.33 8	(6971.82)	1/2 ⁺	1609.25	(1/2 ⁺ , 3/2 ⁺)	
5387.2 4	5.8 4	(6971.82)	1/2 ⁺	1584.49	(3/2) ⁻	
^x 5390.4 [‡]						
^x 5601.3 [‡]						
5673.0 6	0.37 8	(6971.82)	1/2 ⁺	1298.62	(1/2 ⁺ , 3/2 ⁺)	
5745.3 8	0.23 6	(6971.82)	1/2 ⁺	1225.81	(3/2)	
^x 5837.6 [‡]						
^x 5894.2 [‡]						
6383.8 5	0.42 7	(6971.82)	1/2 ⁺	587.825	3/2 ⁺	
6972.0 4	0.93 7	(6971.82)	1/2 ⁺	0.0	3/2 ⁺	

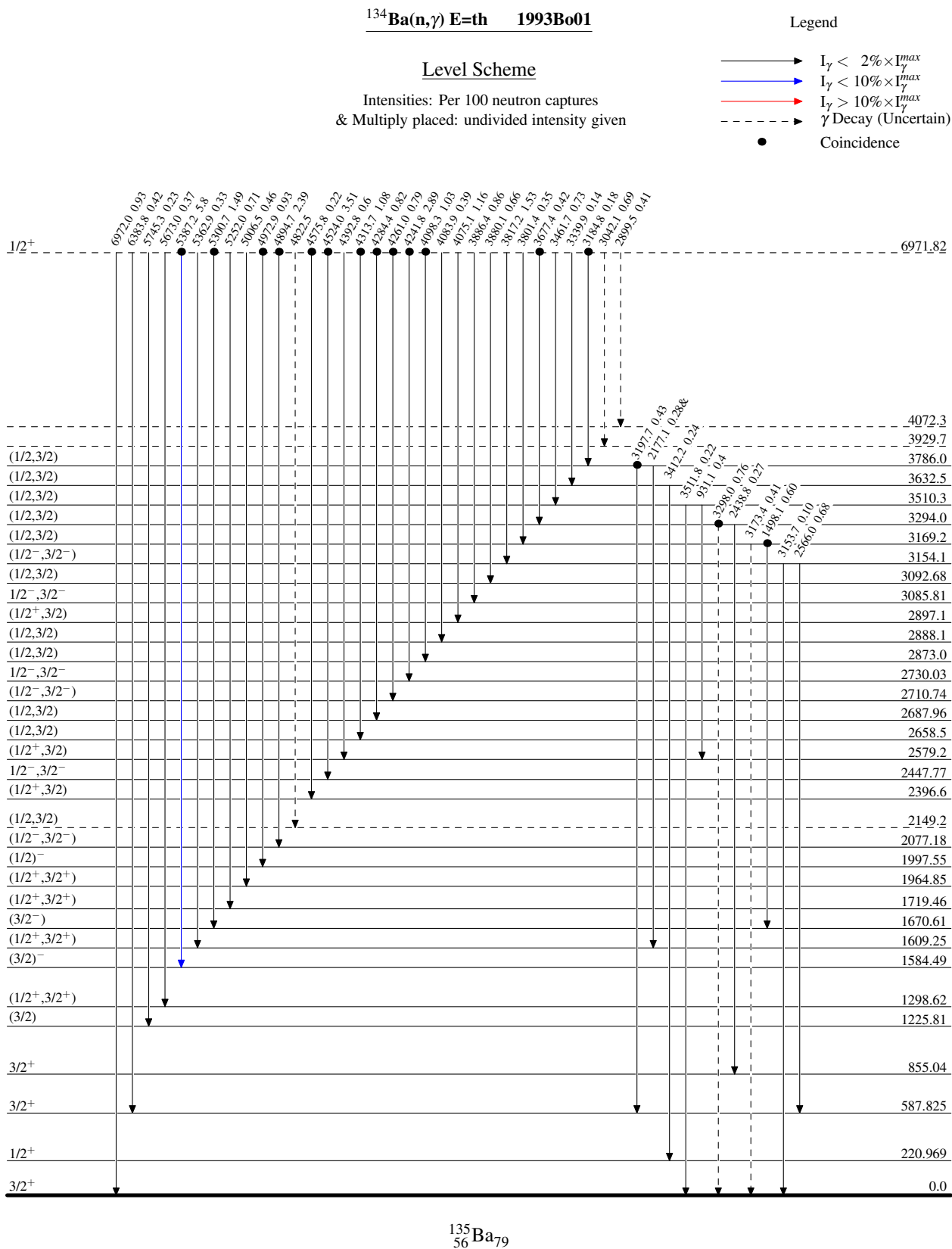
† From **1993Ch21**.‡ From **1993Bo30**.

Intensity per 100 neutron captures.

@ Multiply placed with undivided intensity.

& Multiply placed with intensity suitably divided.

^a Placement of transition in the level scheme is uncertain.^x γ ray not placed in level scheme.



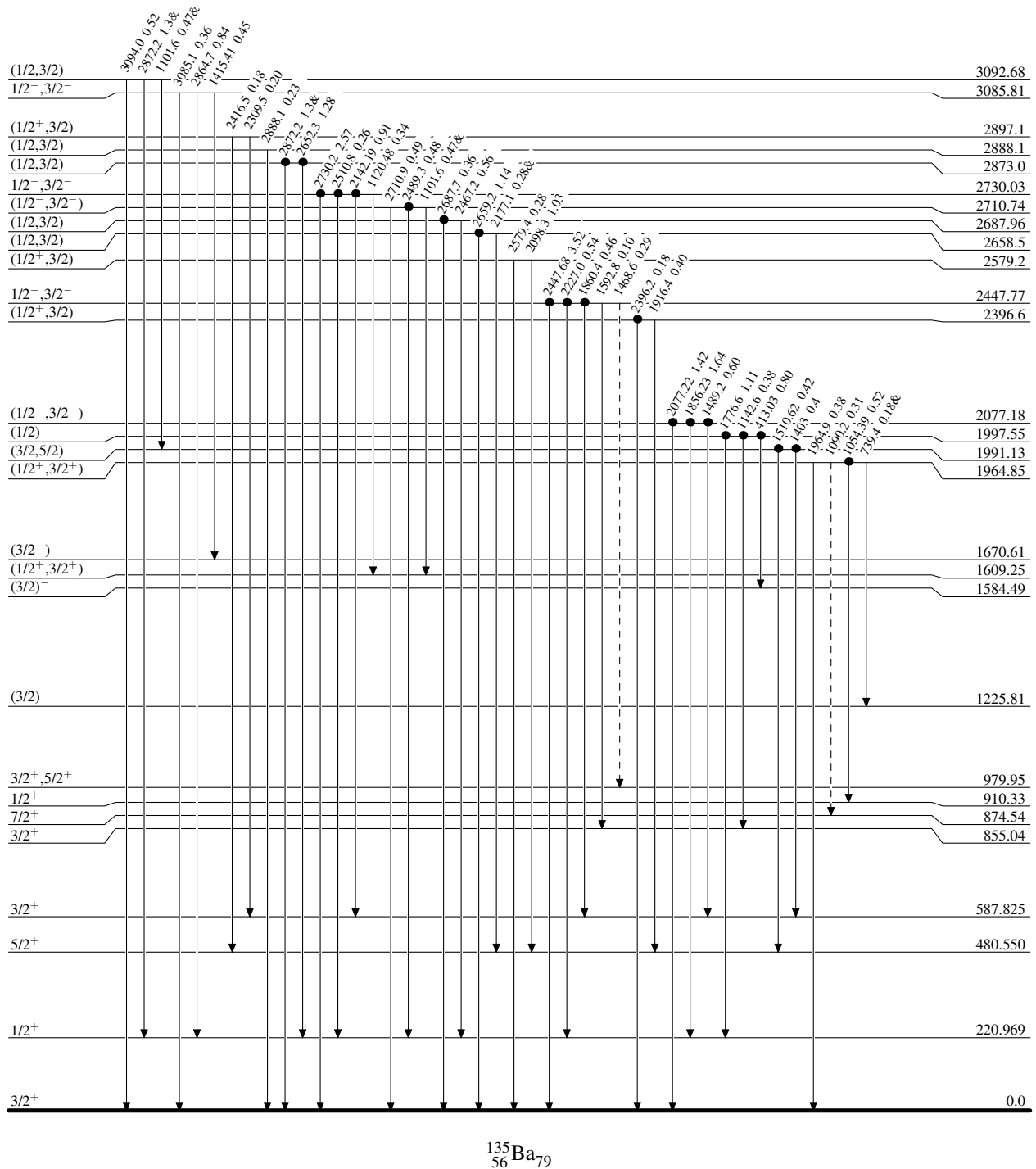
$^{134}\text{Ba}(n,\gamma) \text{E=th}$ 1993Bo01

Legend

Level Scheme (continued)

Intensities: Per 100 neutron captures
& Multiply placed: undivided intensity given

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



$^{134}\text{Ba}(n,\gamma) \text{E=th}$ 1993Bo01

Level Scheme (continued)

Intensities: Per 100 neutron captures
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

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

