^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, Huo Junde	NDS 87, 15 (1999)	1-Nov-1998

Target: ^{160}Gd. Projectile: ^{19}F, E=103, 105 MeV. Measured γ ray singles and $\gamma\gamma$ coin spectra. Detectors: the nordball array of 20 germanium hyperpure detectors. Assignment of γ rays to ^{174}Ta was based on observed coincidences with Ta x-rays and with well-known γ rays in ^{174}Ta. Multipole mixing ratios were deduced for the 240.7- and 116.3-keV γ rays from angular correlation measurements. This study supersedes that of 1994Su13.

^{174}Ta Levels

1994Su13 observed the g.s. rotational band up to $J^\pi=23^+$, in agreement with 1998Ba20. Other γ rays (also observed by 1998Ba20) were placed de-exciting a rotational band with a Configuration=(π 5/2[402]) + (ν 7/2[633]), not adopted in this evaluation.

E(level)	J^π†	E(level)	J^π†	E(level)	J^π†	E(level)	J^π†
0.0‡	3^+	703.79+x# *15*	11^+	1997.39+y[b] *12*	15^-	3711.5‡ *4*	(20^+)
0.0+x[a]	5^-	726.93+y[b] *8*	10^-	2013.34+x# *18*	16^+	3770.4+x *3*	(21^+)
0.0+y[b]	5^-	739.31+x[a] *10*	12^-	2055.80+x& *13*	17^-	3777.38 *22*	(21^+)
4.79+x# *13*	7^+	742.21+x& *12*	12^-	2201.04+x[a] *12*	18^-	3802.90+x& *17*	22^-
50.679+x[a] *20*	6^-	832.83‡ *10*	11^+	2204.33+x@ *16*	(17^+)	3861.60+x@ *19*	(22^+)
59.73+x@ *13*	7^+	863.17+x@ *14*	12^+	2301.88+y[b] *14*	16^-	3886.2+y[b] *3*	(21^-)
77.00‡ *8*	5^+	885.41‡ *16*	10^+	2322.29+x# *20*	17^+	4000.01+x[a] *16*	23^-
98.30+y[b] *5*	6^-	927.42+x# *15*	12^+	2336.31‡ *13*	17^+	4198.34+x& *18*	23^-
119.58+x[a] *3*	7^-	940.92+y[b] *8*	11^-	2374.73+x& *14*	18^-	4220.74+x@ *20*	(23^+)
141.87‡ *18*	(4^+)	956.82+x[a] *11*	13^-	2383.69‡ *23*	(16^+)	4233.0+y[b] *5*	(22^-)
157.09+x# *14*	8^+	960.90+x& *12*	13^-	2514.23+x@ *16*	(18^+)	4246.57+x *23*	(23^+)
157.50+x& *13*	8^-	1097.13+x@ *14*	13^+	2569.62+x[a] *13*	19^-	4364.87+x[a] *16*	(24^-)
163.94+x@ *13*	8^+	1140.13+x[a] *11*	14^-	2617.98+y[b] *15*	17^-	4442.8‡ *5*	(22^+)
202.24+x[a] *4*	8^-	1170.91+x# *16*	13^+	2646.78+x# *22*	(18^+)	4456.46‡ *17*	(23^+)
219.60+y[b] *6*	7^-	1176.63+y[b] *9*	12^-	2715.68+x& *15*	19^-	4463.64 *22*	(23^+)
240.72‡ *9*	7^+	1201.92+x& *12*	14^-	2835.26+x@ *17*	(19^+)	4569.55+x@ *22*	(24^+)
249.97+x& *12*	9^-	1256.25‡ *11*	13^+	2852.10+x[a] *13*	20^-	4585.42+x& *20*	(24^-)
297.37+x@ *14*	9^+	1305.91‡ *17*	(12^+)	2927.68+y[b] *19*	18^-	4595.6+y[b] *4*	(23^-)
302.28‡ *15*	6^+	1350.24+x@ *15*	14^+	2976.97+x# *24*	(19^+)	4605.78+x *24*	(24^+)
312.44+x[a] *10*	9^-	1414.28+x[a] *12*	15^-	2983.70‡ *14*	(19^+)	4801.40+x[a] *18*	(25^-)
321.70+x# *14*	9^+	1431.41+y[b] *10*	13^-	3025.2‡ *3*	(18^+)	4998.33+x& *23*	(25^-)
365.98+y[b] *6*	8^-	1435.11+x# *16*	14^+	3062.86+x& *15*	20^-	5216.32+x[a] *18*	(26^-)
383.48+x& *12*	10^-	1466.55+x& *12*	15^-	3166.59+x@ *17*	(20^+)	5218.4‡ *6*	(24^+)
428.76+x[a] *9*	10^-	1620.55+x@ *15*	15^+	3241.15+y[b] *24*	19^-	5274.16‡ *20*	(25^+)
461.13+x@ *14*	10^+	1628.42+x[a] *12*	16^-	3254.00+x[a] *14*	21^-	5408.78+x& *23*	(26^-)
493.16‡ *9*	9^+	1706.12+y[b] *11*	14^-	3307.1+x# *5*	(20^+)	5650.61+x[a] *21*	(27^-)
502.26+x# *14*	10^+	1714.81+x# *17*	15^+	3433.90+x& *16*	21^-	6127.79+x[a] *22*	(28^-)
534.59+y[b] *7*	9^-	1750.54+x& *13*	16^-	3508.71+x@ *18*	(21^+)	6139.73‡ *25*	(27^+)
548.44+x& *12*	11^-	1758.97‡ *12*	15^+	3558.9+y[b] *4*	(20^-)	6149.0 *3*	(27^+)
549.74+x‡ *15*	8^+	1806.91‡ *20*	(14^+)	3575.73+x[a] *14*	22^-	6558.61+x[a] *23*	(29^-)
590.06+x[a] *10*	11^-	1905.70+x@ *16*	16^+	3621.3+x#	(21^+)	7096.7+x[a] *3*	(30^-)
650.37+x@ *14*	11^+	1953.93+x[a] *12*	17^-	3694.93‡ *15*	(21^+)	7524.5+x[a] *3*	(31^-)

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^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45 (continued)

^{174}Ta Levels (continued)

† J^π assignments are based on rotational structure, coupled to specific configuration identification. Quasi-particle configuration assignments are based on a comparison of experimental ratios of γ-ray reduced transition probabilities (B(M1)/B(E2)) with theoretical values predicted for the expected configuration.
‡ Band(A): g.s. rotational band Configuration=(π 1/2[541])+(ν 1/2[521]).
# Band(B): $K^\pi=7^+$ rotational band Configuration=(π 9/2[514])+(ν 5/2[512]).
@ Band(C): $K^\pi=7^+$ rotational band Configuration=(π 7/2[404])+(ν 7/2[633]).
& Band(D): $K^\pi=8^-$ rotational band Configuration=(π 9/2[514])+(ν 7/2[633]).
a Band(E): $K^\pi=4^-$ rotational band Configuration=(π 1/2[541])+(ν 7/2[633]).
b Band(F): $K^\pi=5^-$ rotational band Configuration=(π 5/2[402])+(ν 5/2[512]).

γ(^{174}Ta)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ
7 *4*		4.79+x	7^+	0.0+x	5^-		
50.68 *2*		50.679+x	6^-	0.0+x	5^-		
55.00 *2*		59.73+x	7^+	4.79+x	7^+		
(65)		141.87	(4^+)	77.00	5^+		
68.90 *2*		119.58+x	7^-	50.679+x	6^-		
77.00 *8*		77.00	5^+	0.0	3^+		
82.66 *2*	≥6.3	202.24+x	8^-	119.58+x	7^-		
92.47 *4*	≥13	249.97+x	9^-	157.50+x	8^-		
x97.70 *1*							
97.79 *1*	≥50	157.50+x	8^-	59.73+x	7^+		
98.29 *5*	≥4.9	98.30+y	6^-	0.0+y	5^-		
104.17 *5*	6.9 *16*	163.94+x	8^+	59.73+x	7^+		
110.22 *4*	10.5 *12*	312.44+x	9^-	202.24+x	8^-		
116.30 *4*	9.6 *5*	428.76+x	10^-	312.44+x	9^-	(D+Q)	−0.02 *+3−4*
121.27 *4*	6.1 *5*	219.60+y	7^-	98.30+y	6^-		
133.42 *5*	7.8 *4*	297.37+x	9^+	163.94+x	8^+		
133.53 *3*	27.0 *13*	383.48+x	10^-	249.97+x	9^-		
x133.83 *4*	≥4.7						
140.13 *6*	4.8 *3*	297.37+x	9^+	157.09+x	8^+		
(142)		141.87	(4^+)	0.0	3^+		
146.38 *4*	6.2 *3*	365.98+y	8^-	219.60+y	7^-		
148.93 *7*	6.2 *3*	739.31+x	12^-	590.06+x	11^-		
152.31 *4*	≥14	157.09+x	8^+	4.79+x	7^+		
152.48 *4*	≥5.4	157.50+x	8^-	4.79+x	7^+		
153.81 *14*	1.8 *2*	742.21+x	12^-	590.06+x	11^-		
157.74 *6*	3.3 *2*	321.70+x	9^+	163.94+x	8^+		
159.05 *4*	18 *4*	163.94+x	8^+	4.79+x	7^+		
160.41 *9*	10 *4*	302.28	6^+	141.87	(4^+)		
161.23 *5*	11.9 *5*	590.06+x	11^-	428.76+x	10^-		
163.46 *6*	6.5 *4*	461.13+x	10^+	297.37+x	9^+		
163.72 *3*	15.1 *22*	240.72	7^+	77.00	5^+		
164.73 *5*	6.1 *4*	321.70+x	9^+	157.09+x	8^+		
164.98 *3*	25.8 *9*	548.44+x	11^-	383.48+x	10^-		
168.50 *5*	4.7 *2*	534.59+y	9^-	365.98+y	8^-		
179.54 *18*	1.4 *2*	1140.13+x	14^-	960.90+x	13^-		
180.59 *4*	10.4 *5*	502.26+x	10^+	321.70+x	9^+		
182.92 *6*	5.4 *3*	1140.13+x	14^-	956.82+x	13^-		
188.85 *7*	7.0 *3*	650.37+x	11^+	461.13+x	10^+		
190.94 *5*	8.7 *4*	739.31+x	12^-	548.44+x	11^-		
192.67 *7*	4.2 *2*	726.93+y	10^-	534.59+y	9^-		
192.82 *24*	3.4 *4*	312.44+x	9^-	119.58+x	7^-		

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^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45 (continued)

$\gamma(^{174}Ta)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ
193.67 *4*	18.0 *7*	742.21+x	12^-	548.44+x	11^-		
201.42 *4*	8.9 *4*	703.79+x	11^+	502.26+x	10^+		
212.41 *16*	2.0 *2*	863.17+x	12^+	650.37+x	11^+		
212.91 *11*	2.5 *2*	940.92+y	11^-	726.93+y	10^-		
213.53 *24*	1.5 *2*	1628.42+x	16^-	1414.28+x	15^-		
214.48 *5*	12.4 *5*	956.82+x	13^-	742.21+x	12^-		
217.1 *5*	1.0 *2*	956.82+x	13^-	739.31+x	12^-		
218.63 *9*	4.1 *3*	960.90+x	13^-	742.21+x	12^-		
219.65 *10*	2.7 *3*	219.60+y	7^-	0.0+y	5^-		
221.44 *5*	10.3 *4*	960.90+x	13^-	739.31+x	12^-		
223.46 *6*	5.1 *3*	927.42+x	12^+	703.79+x	11^+		
225.35 *20*	4.9 *20*	302.28	6^+	77.00	5^+		
226.43 *9*	8.7 *6*	428.76+x	10^-	202.24+x	8^-		
226.50 *54*	<5.0	383.48+x	10^-	157.50+x	8^-		
233.82 *14*	2.0 *2*	1097.13+x	13^+	863.17+x	12^+		
235.86 *7*	4.1 *2*	1176.63+y	12^-	940.92+y	11^-		
237.74 *5*	13.0 *8*	297.37+x	9^+	59.73+x	7^+		
240.68 *5*	8.5 *4*	1201.92+x	14^-	960.90+x	13^-	D+Q	0.32 *+8−6*
243.30 *9*	3.4 *2*	1170.91+x	13^+	927.42+x	12^+		
244.77 *10*	3.8 *3*	1201.92+x	14^-	956.82+x	13^-		
246.4 *3*	1.0 *1*	2201.04+x	18^-	1953.93+x	17^-		
247.47 *6*	2.7 *3*	549.74+x	8^+				
252.29 *24*	1.3 *2*	1350.24+x	14^+	1097.13+x	13^+		
252.45 *3*	17.9 *7*	493.16	9^+	240.72	7^+		
254.19 *16*	2.0 *2*	1431.41+y	13^-	1176.63+y	12^-		
263.65 *13*	2.7 *2*	1435.11+x	14^+	1170.91+x	13^+		
264.28 *5*	9.9 *4*	1466.55+x	15^-	1201.92+x	14^-		
267.78 *8*	5.2 *4*	365.98+y	8^-	98.30+y	6^-		
269.82 *15*	0.2 *1*	1620.55+x	15^+	1350.24+x	14^+		
274.03 *8*	5.4 *3*	1414.28+x	15^-	1140.13+x	14^-		
274.9 *3*	1.1 *2*	1706.12+y	14^-	1431.41+y	13^-		
277.72 *6*	14.6 *7*	590.06+x	11^-	312.44+x	9^-		
279.25 *10*	3.3 *2*	1714.81+x	15^+	1435.11+x	14^+		
283.86 *6*	7.8 *4*	1750.54+x	16^-	1466.55+x	15^-		
284.36 *40*	0.8 *2*	1905.70+x	16^+	1620.55+x	15^+		
290.3 *9*	0.4 *2*	1997.39+y	15^-	1706.12+y	14^-		
297.17 *4*	15.6 *8*	461.13+x	10^+	163.94+x	8^+		
297.82 *17*	2.0 *2*	2013.34+x	16^+	1714.81+x	15^+		
298.10 *11*	5.2 *4*	548.44+x	11^-	249.97+x	9^-		
304.07 *13*	3.8 *3*	461.13+x	10^+	157.09+x	8^+		
305.05 *9*	4.4 *3*	2055.80+x	17^-	1750.54+x	16^-		
305.1 *4*	0.8 *2*	2301.88+y	16^-	1997.39+y	15^-		
308.76 *17*	1.2 *2*	549.74+x	8^+				
309.9 *3*	1.0 *2*	2927.68+y	18^-	2617.98+y	17^-		
310.59 *6*	16.1 *6*	739.31+x	12^-	428.76+x	10^-		
313.35 *14*	5.6 *4*	742.21+x	12^-	428.76+x	10^-		
313.8 *5*	0.7 *2*	3241.15+y	19^-	2927.68+y	18^-		
314.86 *8*	7.6 *4*	534.59+y	9^-	219.60+y	7^-		
316.6 *5*	0.7 *2*	2617.98+y	17^-	2301.88+y	16^-		
316.95 *12*	3.4 *3*	321.70+x	9^+	4.79+x	7^+		
318.70 *9*	3.8 *2*	2374.73+x	18^-	2055.80+x	17^-		
325.40 *10*	3.9 *2*	1953.93+x	17^-	1628.42+x	16^-		
335.64 *6*	6.6 *4*	885.41	10^+				
337.33 *14*	4.2 *4*	502.26+x	10^+	163.94+x	8^+		
339.67 *4*	18.8 *6*	832.83	11^+	493.16	9^+		
340.67 *12*	2.9 *2*	2715.68+x	19^-	2374.73+x	18^-		

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^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45 (continued)

$\gamma(^{174}Ta)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π
345.17 *11*	4.8 *3*	502.26+x	10^+	157.09+x	8^+
346.64 *21*	1.7 *2*	3062.86+x	20^-	2715.68+x	19^-
353.11 *4*	27.0 *10*	650.37+x	11^+	297.37+x	9^+
356.03 *14*	4.6 *4*	739.31+x	12^-	383.48+x	10^-
358.96 *11*	6.3 *4*	742.21+x	12^-	383.48+x	10^-
361.27 *7*	7.5 *4*	726.93+y	10^-	365.98+y	8^-
366.67 *7*	13.0 *6*	956.82+x	13^-	590.06+x	11^-
368.29 *25*	1.5 *2*	3802.90+x	22^-	3433.90+x	21^-
368.4 *3*	1.3 *2*	2569.62+x	19^-	2201.04+x	18^-
370.76 *18*	4.8 *4*	960.90+x	13^-	590.06+x	11^-
371.07 *20*	2.1 *3*	3433.90+x	21^-	3062.86+x	20^-
382.26 *7*	9.1 *5*	703.79+x	11^+	321.70+x	9^+
392.9 *3*	1.4 *2*	885.41	10^+	493.16	9^+
393.6 *3*	1.1 *2*	4198.34+x	23^-	3802.90+x	22^-
398.22 *8*	8.9 *4*	1140.13+x	14^-	742.21+x	12^-
400.88 *5*	23.3 *9*	1140.13+x	14^-	739.31+x	12^-
401.64 *19*	2.4 *2*	3254.00+x	21^-	2852.10+x	20^-
402.05 *4*	21.9 *9*	863.17+x	12^+	461.13+x	10^+
405.85 *6*	8.8 *4*	940.92+y	11^-	534.59+y	9^-
408.25 *12*	5.8 *4*	956.82+x	13^-	548.44+x	11^-
412.58 *8*	8.4 *4*	960.90+x	13^-	548.44+x	11^-
420.50 *7*	6.1 *3*	1305.91	(12^+)	885.41	10^+
423.42 *4*	16.6 *6*	1256.25	13^+	832.83	11^+
424.08 *25*	1.2 *1*	4000.01+x	23^-	3575.73+x	22^-
425.35 *7*	8.6 *4*	927.42+x	12^+	502.26+x	10^+
446.78 *4*	25.6 *9*	1097.13+x	13^+	650.37+x	11^+
449.48 *6*	10.0 *4*	1176.63+y	12^-	726.93+y	10^-
453.18 *13*	4.9 *3*	1414.28+x	15^-	960.90+x	13^-
457.62 *6*	14.4 *6*	1414.28+x	15^-	956.82+x	13^-
460.08 *9*	9.2 *5*	1201.92+x	14^-	742.21+x	12^-
463.05 *25*	3.1 *3*	1201.92+x	14^-	739.31+x	12^-
467.16 *7*	9.3 *5*	1170.91+x	13^+	703.79+x	11^+
487.06 *5*	19.4 *8*	1350.24+x	14^+	863.17+x	12^+
488.27 *4*	28.0 *10*	1628.42+x	16^-	1140.13+x	14^-
490.59 *6*	9.8 *4*	1431.41+y	13^-	940.92+y	11^-
501.00 *10*	4.0 *3*	1806.91	(14^+)	1305.91	(12^+)
502.72 *4*	13.1 *5*	1758.97	15^+	1256.25	13^+
505.88 *5*	9.9 *5*	1466.55+x	15^-	960.90+x	13^-
507.76 *7*	9.6 *4*	1435.11+x	14^+	927.42+x	12^+
510.35 *16*	4.6 *4*	1466.55+x	15^-	956.82+x	13^-
523.44 *4*	17.8 *7*	1620.55+x	15^+	1097.13+x	13^+
529.46 *7*	8.7 *4*	1706.12+y	14^-	1176.63+y	12^-
539.73 *6*	12.3 *6*	1953.93+x	17^-	1414.28+x	15^-
544.02 *8*	7.4 *4*	1714.81+x	15^+	1170.91+x	13^+
548.76 *8*	9.5 *5*	1750.54+x	16^-	1201.92+x	14^-
555.47 *5*	14.1 *6*	1905.70+x	16^+	1350.24+x	14^+
566.01 *8*	7.7 *4*	1997.39+y	15^-	1431.41+y	13^-
572.59 *5*	18.2 *7*	2201.04+x	18^-	1628.42+x	16^-
576.78 *11*	4.3 *3*	2383.69	(16^+)	1806.91	(14^+)
577.33 *5*	11.6 *4*	2336.31	17^+	1758.97	15^+
578.47 *10*	6.6 *4*	2013.34+x	16^+	1435.11+x	14^+
583.78 *5*	11.6 *5*	2204.33+x	(17^+)	1620.55+x	15^+
589.32 *7*	10.3 *5*	2055.80+x	17^-	1466.55+x	15^-
595.74 *9*	6.9 *4*	2301.88+y	16^-	1706.12+y	14^-
607.48 *12*	4.8 *4*	2322.29+x	17^+	1714.81+x	15^+
608.53 *5*	13.1 *5*	2514.23+x	(18^+)	1905.70+x	16^+

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^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45 (continued)

γ(^{174}Ta) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π
615.75 *6*	11.5 *5*	2569.62+x	19^-	1953.93+x	17^-
620.58 *10*	7.1 *4*	2617.98+y	17^-	1997.39+y	15^-
623.11 *20*	3.1 *3*	3241.15+y	19^-	2617.98+y	17^-
624.26 *8*	8.6 *4*	2374.73+x	18^-	1750.54+x	16^-
625.77 *16*	3.7 *3*	2927.68+y	18^-	2301.88+y	16^-
630.93 *6*	10.0 *4*	2835.26+x	(19^+)	2204.33+x	(17^+)
631.2 *3*	1.9 *3*	3558.9+y	(20^-)	2927.68+y	18^-
633.44 *13*	5.1 *3*	2646.78+x	(18^+)	2013.34+x	16^+
641.52 *17*	2.3 *2*	3025.2	(18^+)	2383.69	(16^+)
644.30 *13*	3.8 *3*	3621.3+x	(21^+)	2976.97+x	(19^+)
645.05 *20*	2.1 *2*	3886.2+y	(21^-)	3241.15+y	19^-
647.39 *5*	10.1 *4*	2983.70	(19^+)	2336.31	17^+
651.02 *5*	14.2 *6*	2852.10+x	20^-	2201.04+x	18^-
652.36 *6*	9.9 *4*	3166.59+x	(20^+)	2514.23+x	(18^+)
654.68 *12*	4.3 *3*	2976.97+x	(19^+)	2322.29+x	17^+
660.02 *9*	7.3 *4*	2715.68+x	19^-	2055.80+x	17^-
660.35 *46*	1.2 *2*	3307.1+x	(20^+)	2646.78+x	(18^+)
673.45 *6*	8.7 *4*	3508.71+x	(21^+)	2835.26+x	(19^+)
674.08 *22*	2.2 *2*	4233.0+y	(22^-)	3558.9+y	(20^-)
684.46 *7*	8.7 *4*	3254.00+x	21^-	2569.62+x	19^-
686.33 *29*	1.1 *2*	3711.5	(20^+)	3025.2	(18^+)
688.16 *8*	8.5 *4*	3062.86+x	20^-	2374.73+x	18^-
695.01 *8*	7.1 *3*	3861.60+x	(22^+)	3166.59+x	(20^+)
707.95 *11*	4.7 *3*	4569.55+x	(24^+)	3861.60+x	(22^+)
709.38 *20*	2.2 *2*	4595.6+y	(23^-)	3886.2+y	(21^-)
711.23 *6*	7.8 *3*	3694.93	(21^+)	2983.70	(19^+)
712.03 *10*	4.7 *2*	4220.74+x	(23^+)	3508.71+x	(21^+)
718.27 *8*	8.6 *4*	3433.90+x	21^-	2715.68+x	19^-
723.20 *6*	9.7 *4*	3575.73+x	22^-	2852.10+x	20^-
731.27 *29*	1.1 *2*	4442.8	(22^+)	3711.5	(20^+)
737.86 *15*	2.9 *2*	4246.57+x	(23^+)	3508.71+x	(21^+)
739.95 *10*	5.7 *3*	3802.90+x	22^-	3062.86+x	20^-
744.18 *14*	3.6 *2*	4605.78+x	(24^+)	3861.60+x	(22^+)
746.07 *8*	7.1 *4*	4000.01+x	23^-	3254.00+x	21^-
761.53 *7*	6.2 *3*	4456.46	(23^+)	3694.93	(21^+)
764.61 *9*	6.8 *3*	4198.34+x	23^-	3433.90+x	21^-
768.71 *16*	2.3 *2*	4463.64	(23^+)	3694.93	(21^+)
775.61 *25*	1.3 *2*	5218.4	(24^+)	4442.8	(22^+)
782.52 *9*	6.6 *3*	4585.42+x	(24^-)	3802.90+x	22^-
789.53 *7*	8.1 *3*	4364.87+x	(24^-)	3575.73+x	22^-
793.68 *17*	2.1 *2*	3770.4+x	(21^+)	2976.97+x	(19^+)
793.68 *17*	2.1 *2*	3777.38	(21^+)	2983.70	(19^+)
799.98 *14*	4.3 *3*	4998.33+x	(25^-)	4198.34+x	23^-
801.39 *8*	6.9 *3*	4801.40+x	(25^-)	4000.01+x	23^-
817.70 *11*	2.9 *2*	5274.16	(25^+)	4456.46	(23^+)
823.35 *12*	4.5 *3*	5408.78+x	(26^-)	4585.42+x	(24^-)
849.21 *10*	5.2 *3*	5650.61+x	(27^-)	4801.40+x	(25^-)
851.45 *9*	5.3 *3*	5216.32+x	(26^-)	4364.87+x	(24^-)
865.57 *14*	2.3 *1*	6139.73	(27^+)	5274.16	(25^+)
874.84 *16*	2.0 *1*	6149.0	(27^+)	5274.16	(25^+)
908.00 *11*	4.1 *2*	6558.61+x	(29^-)	5650.61+x	(27^-)
911.47 *11*	4.1 *2*	6127.79+x	(28^-)	5216.32+x	(26^-)
965.86 *14*	2.9 *2*	7524.5+x	(31^-)	6558.61+x	(29^-)
968.91 *17*	2.3 *2*	7096.7+x	(30^-)	6127.79+x	(28^-)

[x] γ ray not placed in level scheme.

^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45

Level Scheme

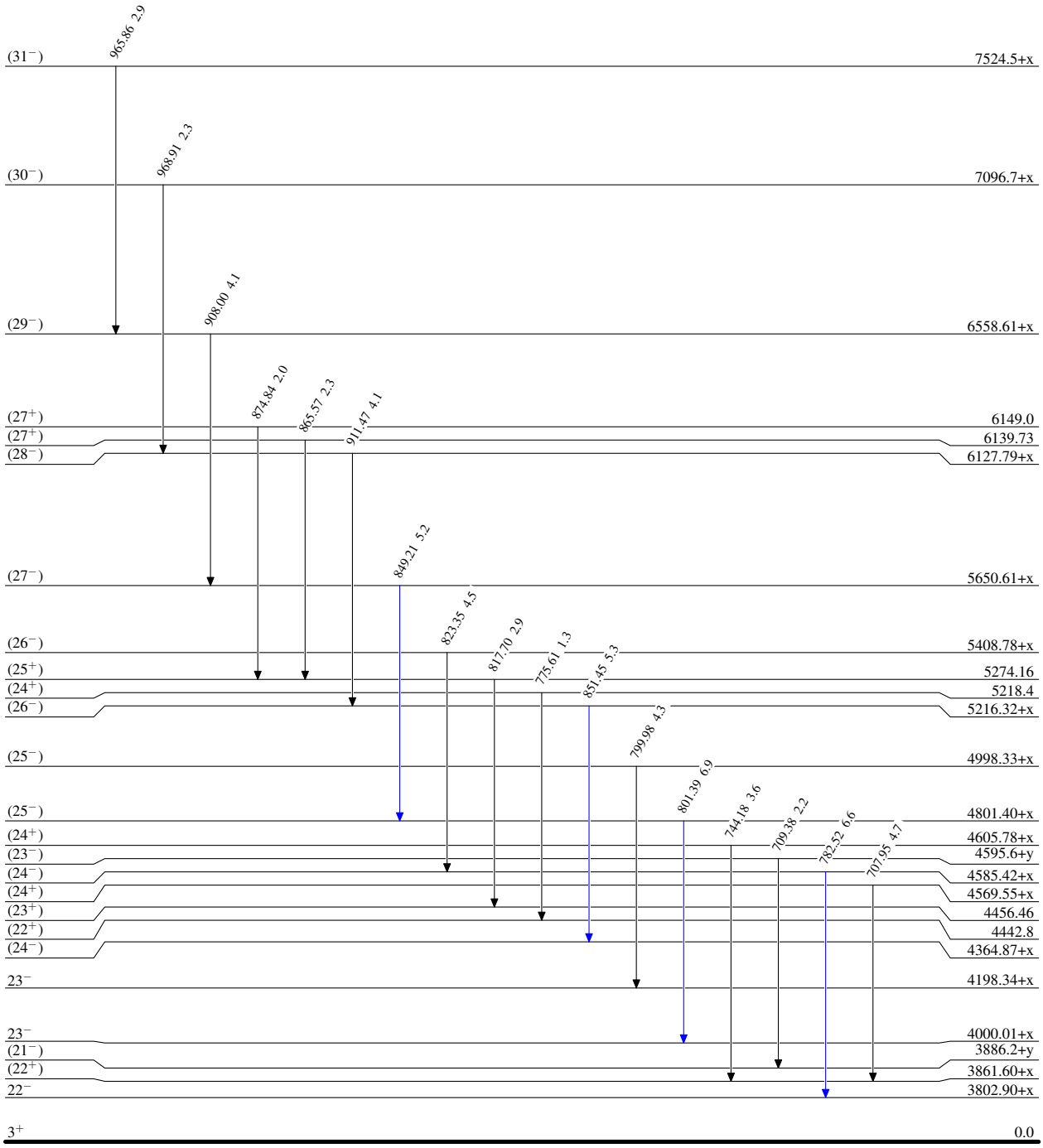
Intensities: Type not specified

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{174}_{73}Ta_{101}$

^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45

Level Scheme (continued)

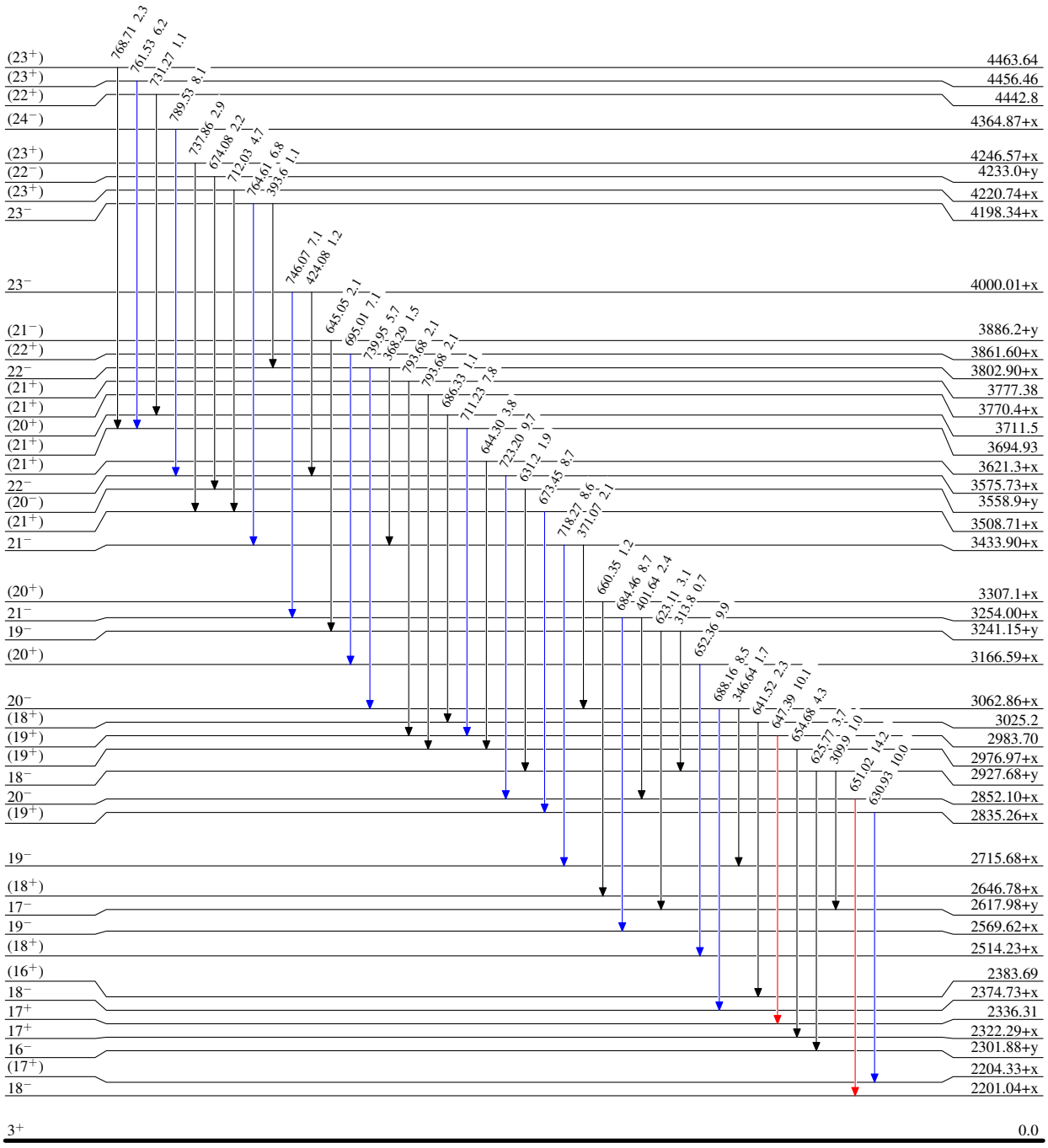
Intensities: Type not specified

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{174}_{73}Ta_{101}$

^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45

Level Scheme (continued)

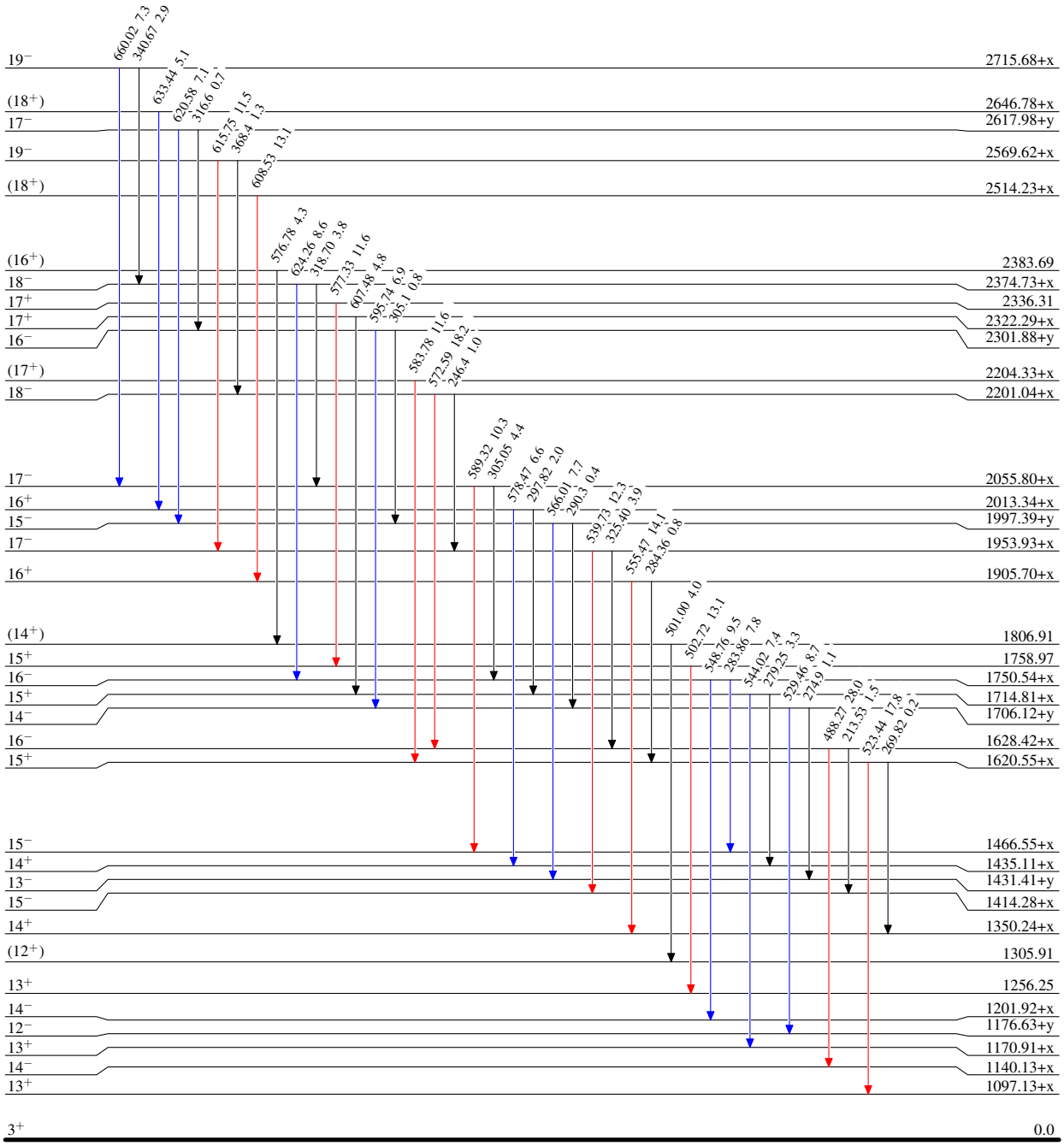
Intensities: Type not specified

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

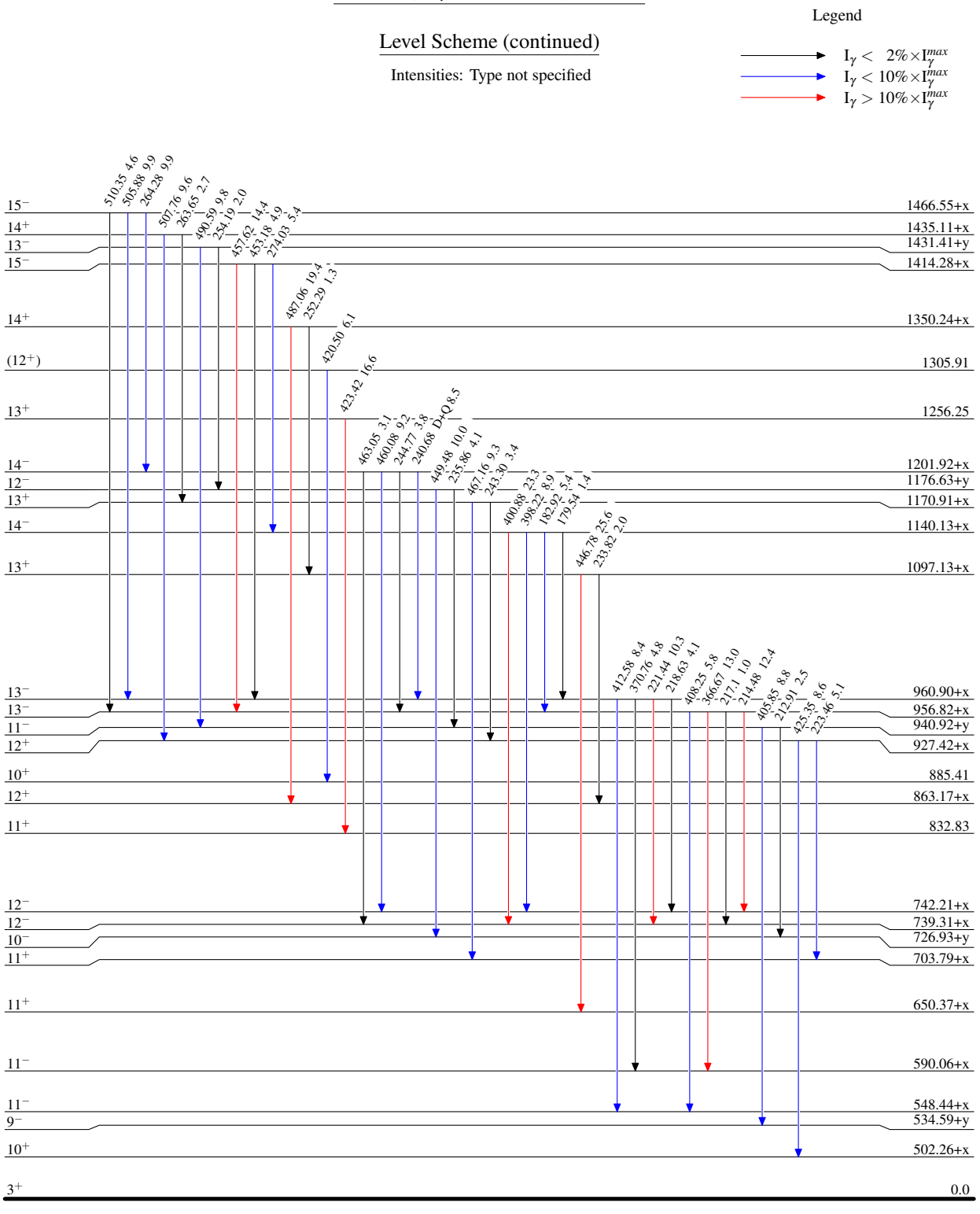


$^{174}_{73}Ta_{101}$

^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45

Level Scheme (continued)

Intensities: Type not specified



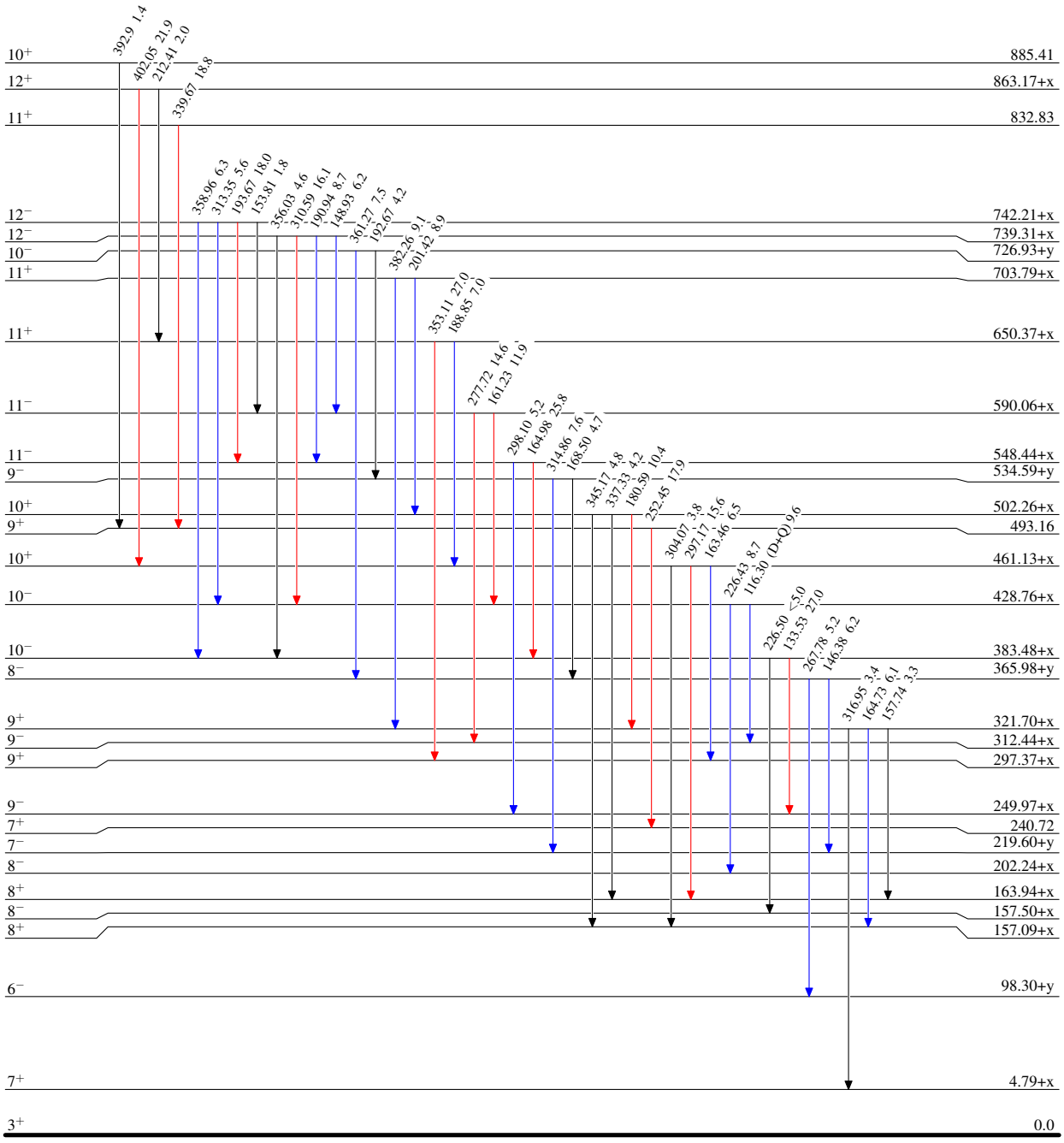
$^{174}_{73}Ta_{101}$

^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45

Level Scheme (continued)

Intensities: Type not specified

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

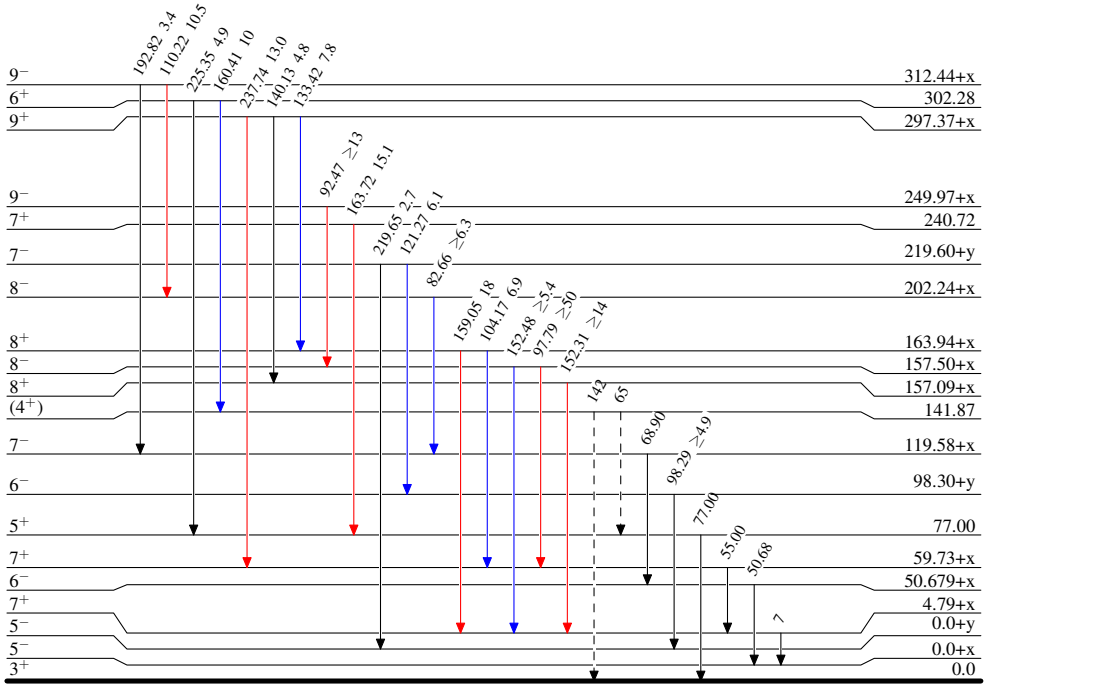


$^{174}_{73}Ta_{101}$

^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45

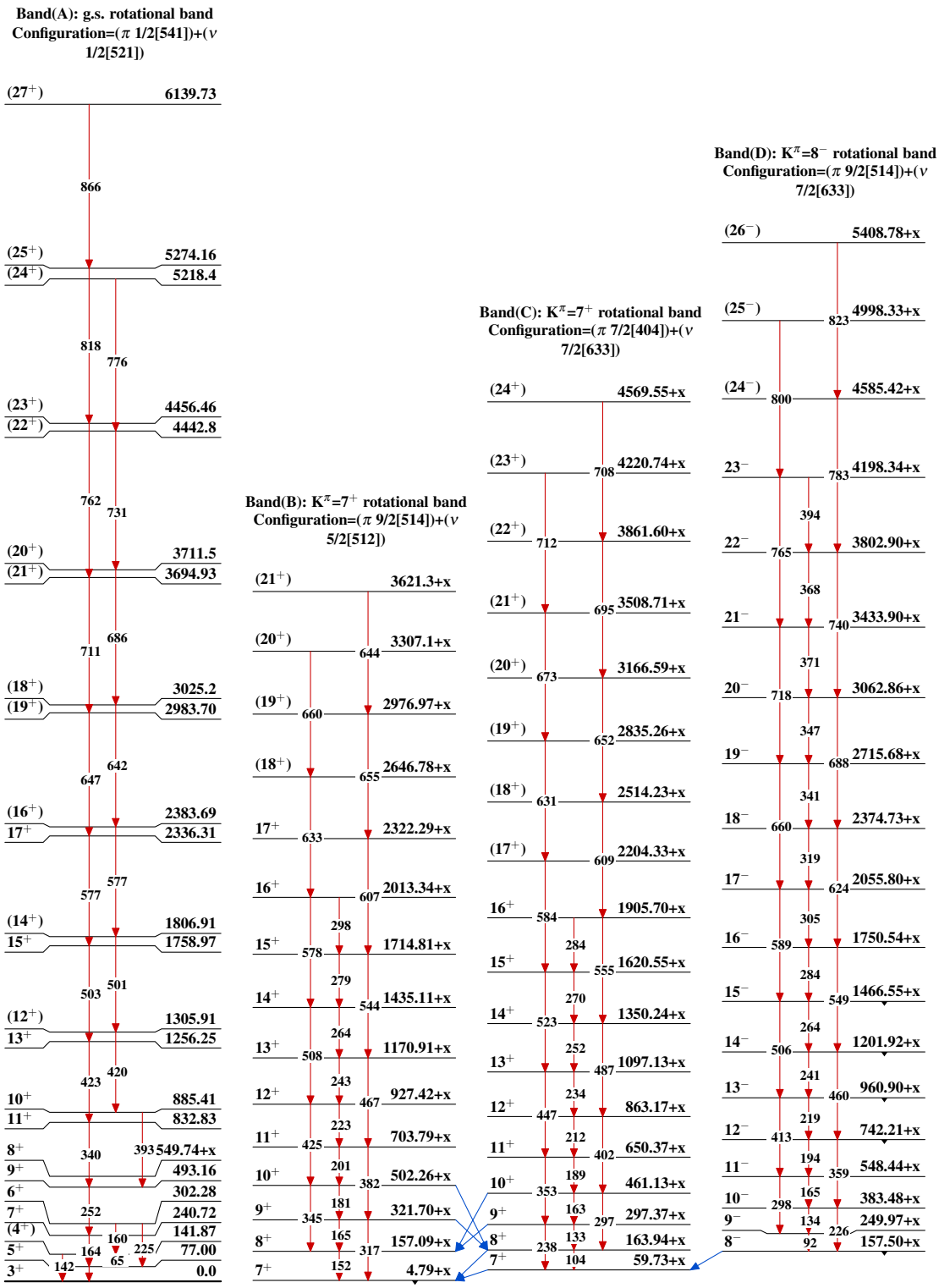
Level Scheme (continued)

Intensities: Type not specified



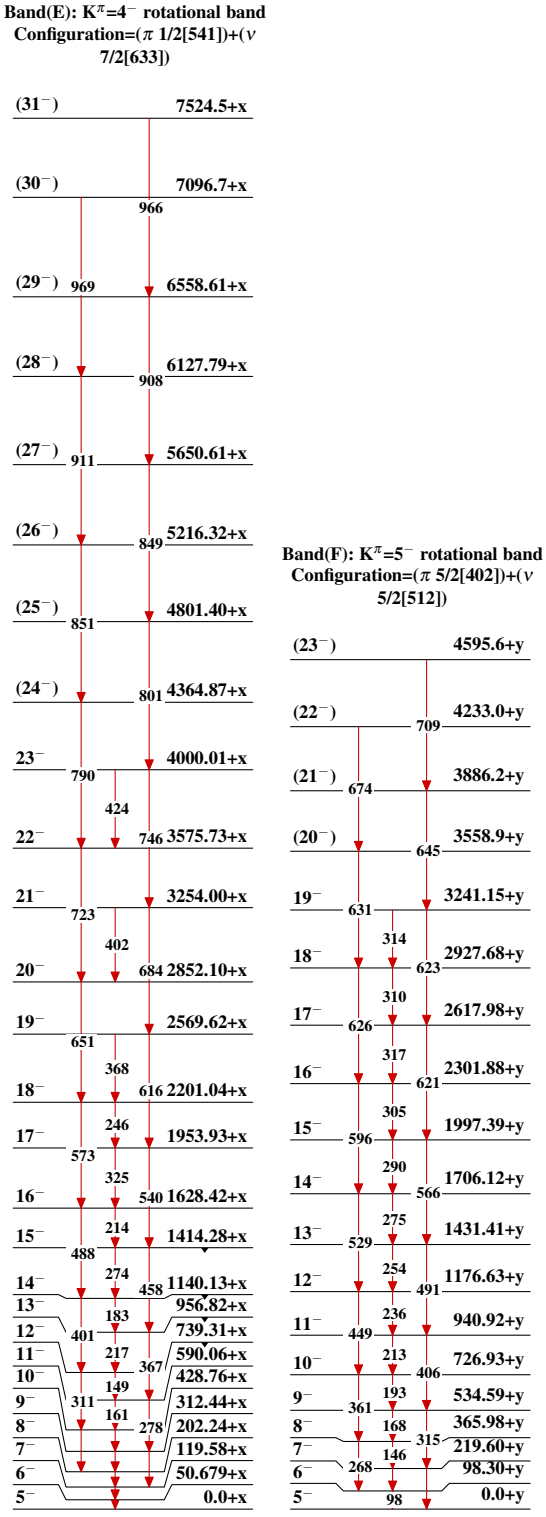
$^{174}_{73}Ta_{101}$

^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45



$^{174}_{73}Ta_{101}$

^{160}Gd(^{19}F,5nγ) 1998Ba20,1997Ba45 (continued)



$^{174}_{73}Ta_{101}$