^{103}Rh(^{18}O,p3nγ) 1999Mo30

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	ENSDF	1-Mar-2009

E=85 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$(DCO) using an array of seven Compton-suppressed HPGe detectors.
They have derived the energy of the 11/2$^-$ state. They observe several linking γ between the 25/2$^+$ state at 3315.3 keV feeding the 23/2$^-$ state of the 11/2$^-$ band and levels of the band 3 built on the known 7/2$^+$ at 295.8.
See 1999Mo30 for suggested configurations of levels belonging to bands built on h11/2,d5/2,g7/2 states coupled to ^{116}Te core.

^{117}Te Levels

E(level)	J$^\pi$	T$_{1/2}$	E(level)	J$^\pi$	E(level)	J$^\pi$
0	1/2$^+$		2366.5[a] 4	19/2$^+$	4702.9[@] 5	33/2$^+$
274.20[d] 20	5/2$^+$		2609.1[f] 5	23/2$^-$	5014.8[&] 5	35/2$^+$
295.8[a] 3	7/2$^+$		2737.5[c] 6	21/2$^+$	5145.2 6	33/2$^+$
296.1[†] 5	11/2$^-$	104 ms	2903.0[d] 4	21/2$^+$	5214.4[@] 5	37/2$^+$
636.7[‡] 5	9/2$^-$		3111.4[a] 4	23/2$^+$	5284.3[e] 7	35/2$^-$
681.00[b] 25	7/2$^+$		3126.6 4	23/2$^+$	5291.4[c] 9	33/2$^+$
820.9[c] 3	9/2$^+$		3296.1[‡] 5	25/2$^-$	5378.5[f] 10	35/2$^-$
929.60[d] 25	9/2$^+$		3315.3[@] 5	25/2$^+$	5878.3[f] 6	39/2$^-$
966.6[†] 5	15/2$^-$		3347.5[e] 5	27/2$^-$	5924.2[@] 7	39/2
1042.6[a] 3	11/2$^+$		3428.9 6		6117.1 6	39/2$^-$
1093.7 5	13/2$^-$		3524.2[c] 7	25/2$^+$	6335.1[e] 8	37/2
1176.9[‡] 4	13/2$^-$		3597.8 4	27/2$^+$	6532.3 7	43/2$^-$
1186.6[b] 3	11/2$^+$		3618.1[f] 5	27/2$^-$	6845.5[f] 6	43/2$^-$
1415.9[c] 4	13/2$^+$		3719.2[&] 5	27/2$^+$	7362.2[#] 7	45/2$^+$
1480.9[d] 3	13/2$^+$		3744.6[d] 5	21/2$^+$	7443.8 8	45/2
1679.8[†] 5	19/2$^-$		3764.2 5	29/2$^+$	7458.8[e] 9	39/2
1696.6[a] 3	15/2$^+$		3934.4[a] 5	27/2$^+$	7594.9 8	45/2
1725.7[‡] 5	17/2$^-$		4173.2[@] 5	29/2$^+$	7821.2[f] 7	47/2$^-$
1787.0[b] 4	15/2$^+$		4299.9[e] 5	31/2$^-$	8309.9[#] 7	49/2$^+$
2021.2[c] 4	17/2$^+$		4366.2[c] 8	29/2$^+$	8885.1 8	51/2
2127.6[d] 4	17/2$^+$		4502.2[&] 5	31/2$^+$	9214.6[#] 8	53/2$^+$
2303.4[†] 5	23/2$^-$		4533.0[f] 8	31/2$^-$	9574.5 9	55/2
2344.1[‡] 5	21/2$^-$		4691.8 6	31/2	10426.1[#] 9	55/2

[†] Band(A): Band #1A, favored, α=−1/2. This band is associated with the configuration=(ν h$_{11/2}$)⊗(^{116}Te).
[‡] Band(a): band #1B, unfavored,α=+1/2.
[#] Band(B): Band #1, based on 45/2$^+$.
[@] Band(C): Band #1, based on 29/2$^+$.
[&] Band(D): band #2, based on 27/2$^+$.
[a] Band(E): Band #3, based on 7/2$^+$.
[b] Band(F): Band #4, based on 7/2$^+$.
[c] Band(G): Band #5, based on 9/2$^+$.
[d] Band(H): Band #6, based on 5/2$^+$.
[e] Band(I): Band #7, based on 27/2$^-$.
[f] Band(J): band based on 23/2$^-$.

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$\gamma(^{117}Te)$

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	Comments
21.6		295.8	$7/2^+$	274.20	$5/2^+$		
121.4 *4*	39	3719.2	$27/2^+$	3597.8	$27/2^+$	M1,E2	Mult.: DCO=1.2.
166.5 *4*	74	3764.2	$29/2^+$	3597.8	$27/2^+$	M1,E2	Mult.: DCO=0.5.
199.6 *2*	74	5214.4	$37/2^+$	5014.8	$35/2^+$	M1,E2	Mult.: DCO=0.4.
238.9 *4*	16	6117.1	$39/2^-$	5878.3	$39/2^-$	M1,E2	Mult.: DCO=1.6.
248.6 *2*	19	929.60	$9/2^+$	681.00	$7/2^+$	M1,E2	Mult.: DCO=0.5.
274.2 *2*	750	274.20	$5/2^+$	0	$1/2^+$	E2	Mult.: DCO=1.0.
282.4 *2*	140	3597.8	$27/2^+$	3315.3	$25/2^+$	M1,E2	Mult.: DCO=0.7.
301.9 *4*	45	3597.8	$27/2^+$	3296.1	$25/2^-$	E1	Mult.: DCO=0.6.
305.6 *4*	56	2609.1	$23/2^-$	2303.4	$23/2^-$	M1,E2	Mult.: DCO=1.0.
311.9 *4*	58	5014.8	$35/2^+$	4702.9	$33/2^+$	M1,E2	Mult.: DCO=0.4.
340.8 *4*	9	636.7	$9/2^-$	296.1	$11/2^-$	M1,E2	Mult.: DCO=0.7.
365.7 *4*	27	1186.6	$11/2^+$	820.9	$9/2^+$	M1,E2	Mult.: DCO=0.7.
385.2 *4*	56	681.00	$7/2^+$	295.8	$7/2^+$	M1,E2	Mult.: DCO=1.2.
403.8 *4*	25	3719.2	$27/2^+$	3315.3	$25/2^+$	M1,E2	Mult.: DCO=0.9.
406.8 *2*	160	681.00	$7/2^+$	274.20	$5/2^+$	M1,E2	Mult.: DCO=0.6.
409.0 *4*	17	4173.2	$29/2^+$	3764.2	$29/2^+$	M1,E2	Mult.: DCO=1.2.
415.2 *4*	53	6532.3	$43/2^-$	6117.1	$39/2^-$	E2	Mult.: DCO=1.0.
416.7 *2*	46	3764.2	$29/2^+$	3347.5	$27/2^-$	E1	Mult.: DCO=0.6.
453.4 *4*	21	5145.2	$33/2^+$	4691.8	31/2	M1,E2	Mult.: DCO=0.3.
471.3 *4*	27	3597.8	$27/2^+$	3126.6	$23/2^+$	E2	Mult.: DCO=1.1.
486.5 *4*	77	3597.8	$27/2^+$	3111.4	$23/2^+$	E2	Mult.: DCO=1.2.
488.7 *4*	25	8309.9	$49/2^+$	7821.2	$47/2^-$	E1	Mult.: DCO=0.5.
499.6 *2*	210	5878.3	$39/2^-$	5378.5	$35/2^-$	E2	Mult.: DCO=1.0.
505.6 *2*	79	1186.6	$11/2^+$	681.00	$7/2^+$	E2	Mult.: DCO=1.2.
510.0 *2*	70	1696.6	$15/2^+$	1186.6	$11/2^+$	E2	Mult.: DCO=1.1.
511.5 *2*	311	5214.4	$37/2^+$	4702.9	$33/2^+$	E2	Mult.: DCO=1.0.
512.7 *4*	70	5014.8	$35/2^+$	4502.2	$31/2^+$	E2	Mult.: DCO=1.0.
516.7 *2*	131	7362.2	$45/2^+$	6845.5	$43/2^-$	E1	Mult.: DCO=0.5.
525.1 *2*	126	820.9	$9/2^+$	295.8	$7/2^+$	M1,E2	Mult.: DCO=0.5.
529.7 *2*	383	4702.9	$33/2^+$	4173.2	$29/2^+$	E2	Mult.: DCO=1.0.
540.2 *4*	13	1176.9	$13/2^-$	636.7	$9/2^-$	E2	Mult.: DCO=1.1.
546.7 *2*	28	820.9	$9/2^+$	274.20	$5/2^+$	E2	Mult.: DCO=1.3.
548.6 *4*	17	1725.7	$17/2^-$	1176.9	$13/2^-$	E2	Mult.: DCO=1.0.
551.3 *2*	28	1480.9	$13/2^+$	929.60	$9/2^+$	E2	Mult.: DCO=1.2.
575.2 *4*	40	8885.1	51/2	8309.9	$49/2^+$	D	Mult.: DCO=0.4.
579.6 *4*	27	2366.5	$19/2^+$	1787.0	$15/2^+$	E2	Mult.: DCO=1.0.
595.0 *2*	110	1415.9	$13/2^+$	820.9	$9/2^+$	E2	Mult.: DCO=1.1.
600.4 *2*	90	1787.0	$15/2^+$	1186.6	$11/2^+$	E2	Mult.: DCO=1.2.
605.3 *2*	116	2021.2	$17/2^+$	1415.9	$13/2^+$	E2	Mult.: DCO=1.1.
607.9 *4*	56	3719.2	$27/2^+$	3111.4	$23/2^+$	E2	Mult.: DCO=1.4.
618.1 *4*	47	2344.1	$21/2^-$	1725.7	$17/2^-$	E2	Mult.: DCO=1.2.
623.6 *2*	1000	2303.4	$23/2^-$	1679.8	$19/2^-$		Mult.: DCO=1.2.
631.8 *4*	27	1725.7	$17/2^-$	1093.7	$13/2^-$	E2	Mult.: DCO=0.9.
646.7 *2*	32	2127.6	$17/2^+$	1480.9	$13/2^+$	E2	Mult.: DCO=1.3.
654.0 *2*	223	1696.6	$15/2^+$	1042.6	$11/2^+$	E2	Mult.: DCO=1.2.
654.1 *2*	90	6532.3	$43/2^-$	5878.3	$39/2^-$	E2	Mult.: DCO=1.0.
655.4 *2*	36	929.60	$9/2^+$	274.20	$5/2^+$	E2	Mult.: DCO=1.2.
660.0 *2*	19	1480.9	$13/2^+$	820.9	$9/2^+$	E2	Mult.: DCO=1.0.
663.8		5878.3	$39/2^-$	5214.4	$37/2^+$		E_γ: from level scheme only.
664.2 *4*	14	2344.1	$21/2^-$	1679.8	$19/2^-$	M1,E2	Mult.: DCO=0.6.
670.0 *2*	283	2366.5	$19/2^+$	1696.6	$15/2^+$	E2	Mult.: DCO=1.2.
670.5 *2*	1800	966.6	$15/2^-$	296.1	$11/2^-$	E2	Mult.: DCO=1.2.
689.4 *4*	37	9574.5	55/2	8885.1	51/2	E2	Mult.: DCO=0.9.
706.1 *4*	51	3315.3	$25/2^+$	2609.1	$23/2^-$	E1	Mult.: DCO=0.6.

Continued on next page (footnotes at end of table)

^{103}Rh(^{18}O,p3nγ) 1999Mo30 (continued)

γ(^{117}Te) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	Comments
709.8 *4*	72	5924.2	39/2	5214.4	37/2$^+$	D	Mult.: DCO=0.5.
713.0 *2*	1490	1679.8	19/2$^-$	966.6	15/2$^-$	E2	Mult.: DCO=1.0.
716.3 *4*	87	2737.5	21/2$^+$	2021.2	17/2$^+$	E2	Mult.: DCO=1.3.
738.4 *4*	71	3347.5	27/2$^-$	2609.1	23/2$^-$	E2	Mult.: DCO=1.0.
744.9 *2*	175	3111.4	23/2$^+$	2366.5	19/2$^+$	E2	Mult.: DCO=1.2.
746.8 *2*	250	1042.6	11/2$^+$	295.8	7/2$^+$	E2	Mult.: DCO=1.2.
759.1 *4*	18	1725.7	17/2$^-$	966.6	15/2$^-$	M1,E2	Mult.: DCO=0.6.
760.1 *2*	107	3126.6	23/2$^+$	2366.5	19/2$^+$	E2	Mult.: DCO=1.2.
775.4 *2*	35	2903.0	21/2$^+$	2127.6	17/2$^+$	E2	Mult.: DCO=1.0.
783.0 *2*	142	4502.2	31/2$^+$	3719.2	27/2$^+$	E2	Mult.: DCO=1.1.
786.7 *4*	57	3524.2	25/2$^+$	2737.5	21/2$^+$	E2	Mult.: DCO=1.1.
797.8 *4*	26	1093.7	13/2$^-$	296.1	11/2$^-$		
807.8 *4*	36	3934.4	27/2$^+$	3126.6	23/2$^+$	E2	Mult.: DCO=1.5.
823.0 *4*	48	3934.4	27/2$^+$	3111.4	23/2$^+$	E2	Mult.: DCO=1.2.
829.9 *4*	35	7362.2	45/2$^+$	6532.3	43/2$^-$	E1	Mult.: DCO=0.5.
841.6 *2*	12	3744.6	21/2$^+$	2903.0	21/2$^+$	E2	Mult.: DCO=1.2.
842.0 *4*	44	4366.2	29/2$^+$	3524.2	25/2$^+$	E2	Mult.: DCO=1.0.
845.6 *2*	230	5378.5	35/2$^-$	4533.0	31/2$^-$	E2	Mult.: DCO=1.0.
857.9 *2*	391	4173.2	29/2$^+$	3315.3	25/2$^+$	E2	Mult.: DCO=1.0.
881.0 *4*	13	1176.9	13/2$^-$	296.1	11/2$^-$		
902.7 *2*	95	6117.1	39/2$^-$	5214.4	37/2$^+$	E1	Mult.: DCO=0.5.
904.4 *2*	90	4502.2	31/2$^+$	3597.8	27/2$^+$	E2	Mult.: DCO=1.1.
904.7 *4*	26	9214.6	53/2$^+$	8309.9	49/2$^+$	E2	Mult.: DCO=1.1.
911.5 *4*	43	7443.8	45/2	6532.3	43/2$^-$	D	Mult.: DCO=0.4.
914.9 *2*	260	4533.0	31/2$^-$	3618.1	27/2$^-$	E2	Mult.: DCO=0.9.
925.2 *4*	28	5291.4	33/2$^+$	4366.2	29/2$^+$	E2	Mult.: DCO=1.1.
927.6 *4*	50	4691.8	31/2	3764.2	29/2$^+$	D	Mult.: DCO=0.5.
929.2 *2*	339	2609.1	23/2$^-$	1679.8	19/2$^-$	E2	Mult.: DCO=0.9.
947.7 *2*	124	8309.9	49/2$^+$	7362.2	45/2$^+$	E2	Mult.: DCO=1.0.
951.7 *4*	28	3296.1	25/2$^-$	2344.1	21/2$^-$	E2	Mult.: DCO=1.1.
952.4 *2*	104	4299.9	31/2$^-$	3347.5	27/2$^-$	E2	Mult.: DCO=1.0.
967.2 *2*	211	6845.5	43/2$^-$	5878.3	39/2$^-$	E2	Mult.: DCO=1.1.
975.8 *4*	75	7821.2	47/2$^-$	6845.5	43/2$^-$	E2	Mult.: DCO=0.8.
984.4 *4*	52	5284.3	35/2$^-$	4299.9	31/2$^-$	E2	Mult.: DCO=0.9.
993.3 *4*	9	3296.1	25/2$^-$	2303.4	23/2$^-$		
1009.0 *2*	219	3618.1	27/2$^-$	2609.1	23/2$^-$	E2	Mult.: DCO=1.0.
1011.8 *2*	552	3315.3	25/2$^+$	2303.4	23/2$^-$	E1	Mult.: DCO=0.5.
1044.0 *2*	190	3347.5	27/2$^-$	2303.4	23/2$^-$	E2	Mult.: DCO=1.0.
1050.8 *4*	31	6335.1	37/2	5284.3	35/2$^-$	D	Mult.: DCO=0.6.
1062.6 *4*	27	7594.9	45/2	6532.3	43/2$^-$	D	Mult.: DCO=0.5.
1078.7 *4*	17	5378.5	35/2$^-$	4299.9	31/2$^-$	(E2)	Mult.: no DCO given by the authors.
1123.7 *4*	12	7458.8	39/2	6335.1	37/2	D	Mult.: DCO=0.6.
1125.5 *4*	43	3428.9		2303.4	23/2$^-$	D	Mult.: DCO=0.3.
1185.5 *4*	23	4533.0	31/2$^-$	3347.5	27/2$^-$	E2	Mult.: DCO=1.0.
1211.5 *4*	22	10426.1	55/2	9214.6	53/2$^+$	D	Mult.: DCO=0.6.
1314.6 *4*	55	3618.1	27/2$^-$	2303.4	23/2$^-$	E2	Mult.: DCO=0.9.
1381.0 *4*	8	5145.2	33/2$^+$	3764.2	29/2$^+$	E2	Mult.: DCO=1.0.

[†] From DCO ratios. For ΔJ=2, quadrupole gating transition, DCO ratio ≈1 for ΔJ=2, quadrupole; ≈0.6 for ΔJ=1, dipole; and ≈0.5 to 2.5 for ΔJ=1, D+Q transition. Q are assumed to be E2, D+Q as M1+E2 and D as E1.

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Level Scheme

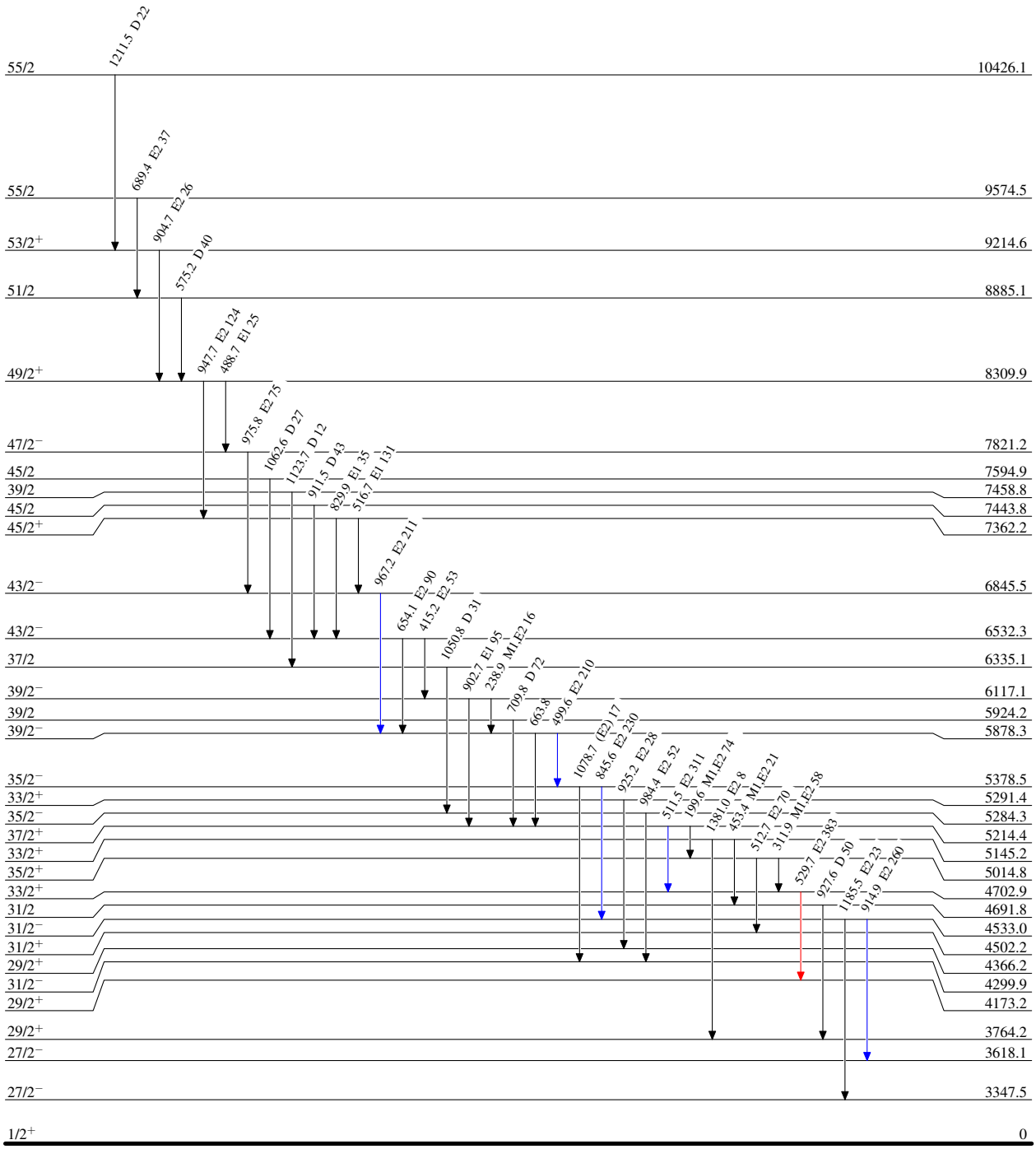
Intensities: Relative I_γ

Legend

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

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

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



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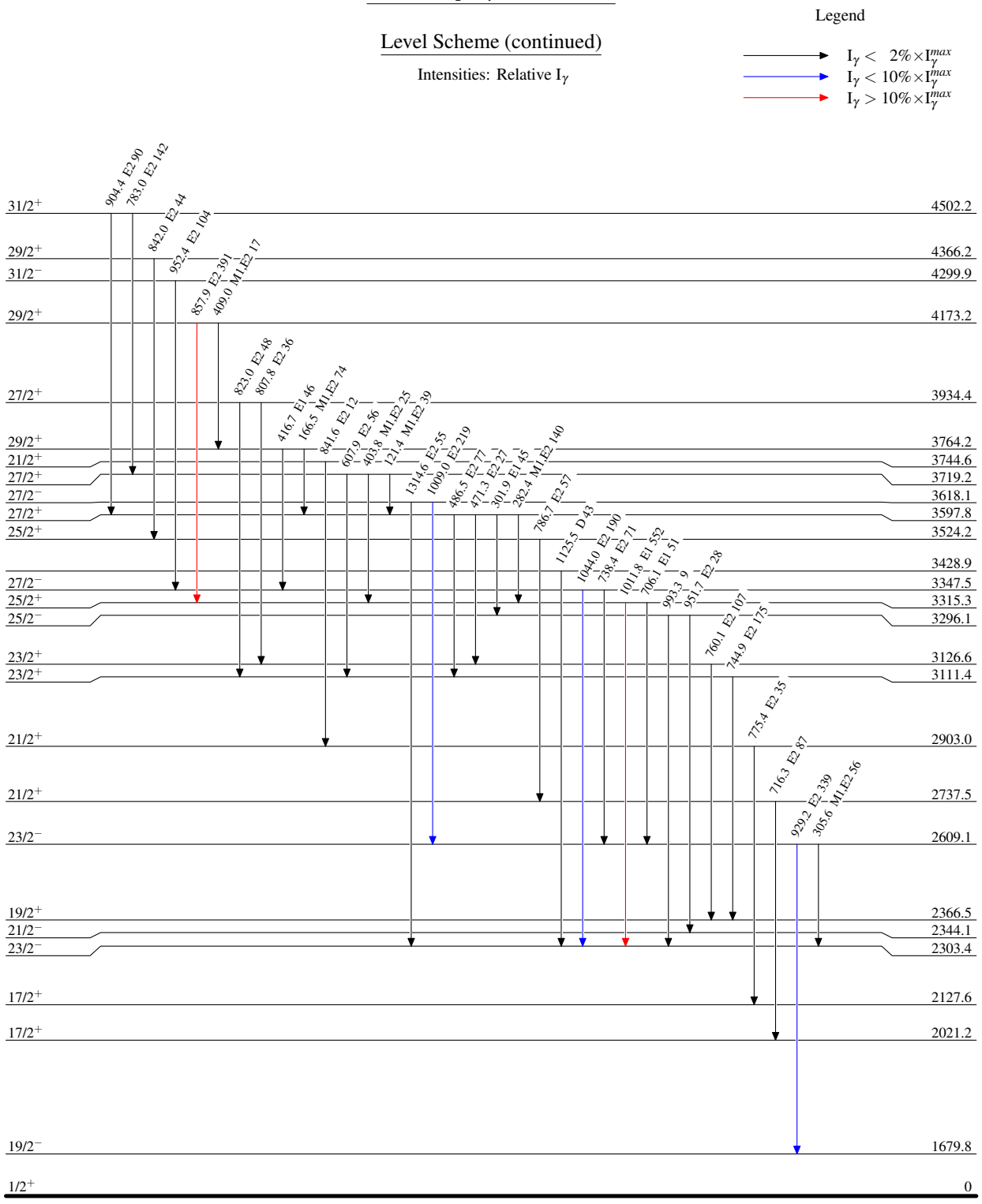
Level Scheme (continued)

Intensities: Relative I_γ



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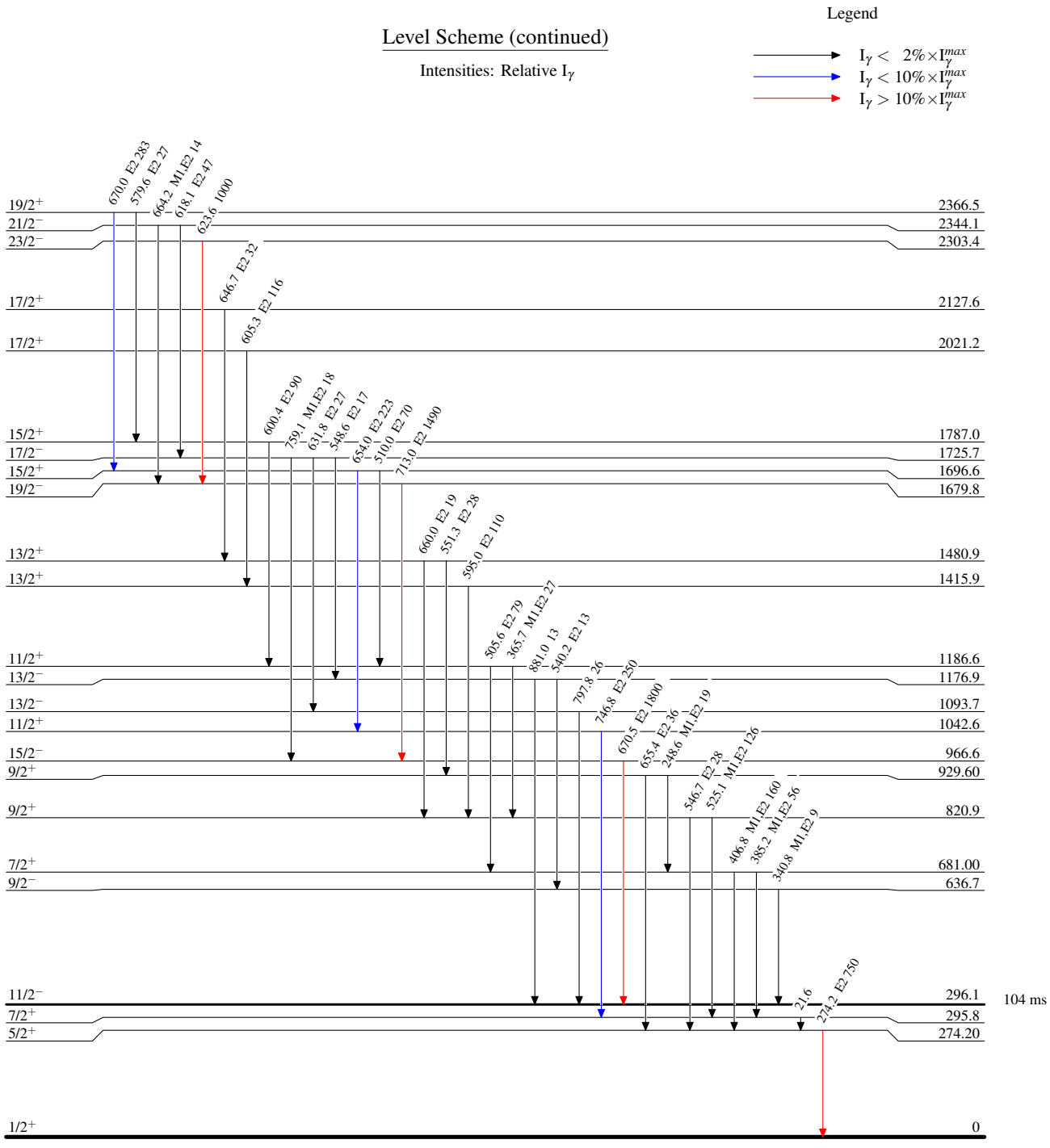
Level Scheme (continued)

Intensities: Relative I_γ



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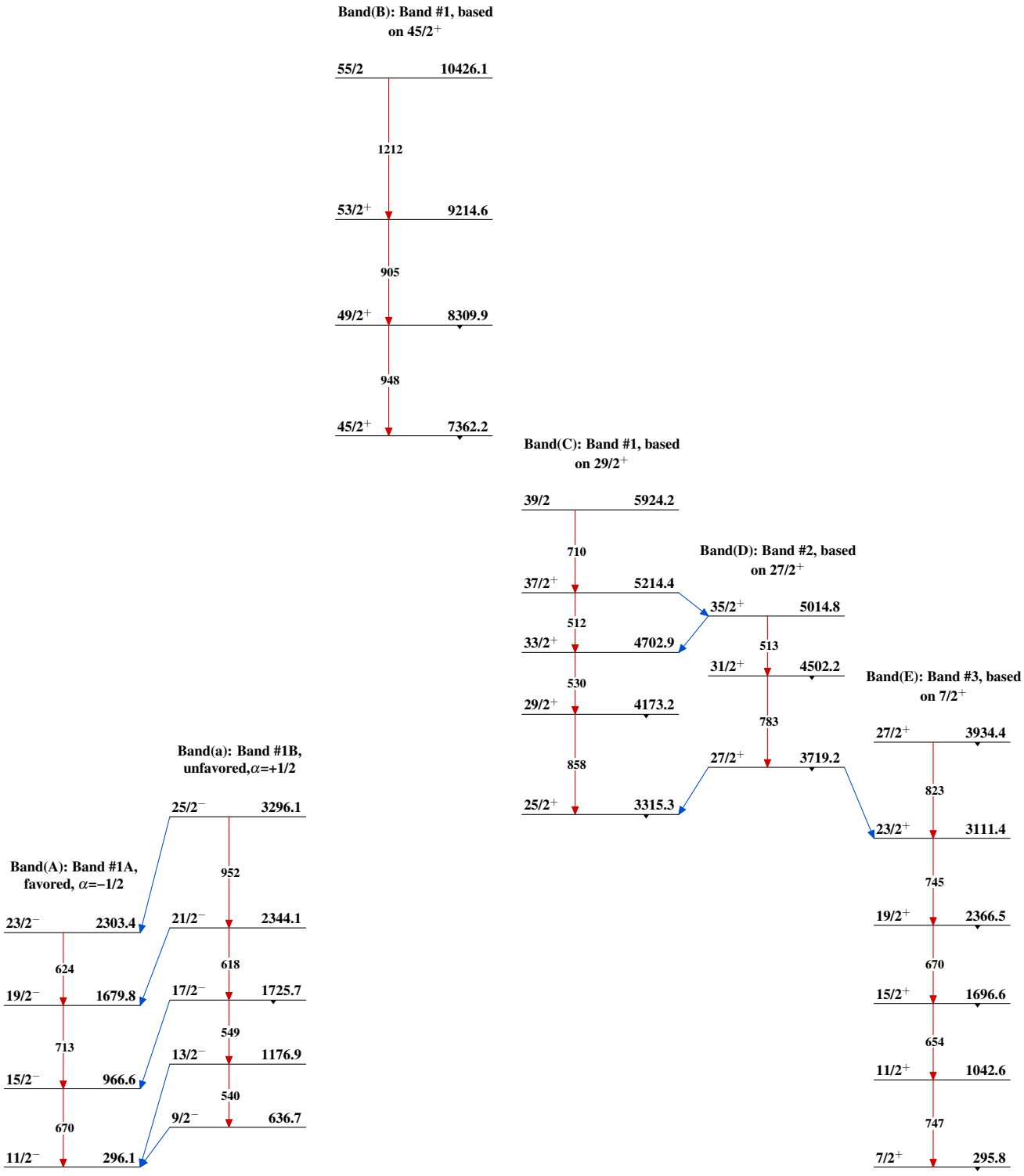

$^{117}_{52}Te_{65}$

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