(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Achterberg, O. A. Capurro, G. V. Marti	NDS 110, 1473 (2009)	31-May-2008

2003Ho03, 2001Ho15: High spin states populated in the reaction ^{159}Tb(^{24}Mg,5nγ) at E=131,133,136,141 MeV. Measured Eγ, Iγ, $\gamma\gamma$, DCO ratios, branching ratios, total internal conversion coefficients. Construction of $\gamma\gamma\gamma$-cubes, $\gamma\gamma$-multiplicity cubes and angular correlation matrices for different times, multiplicity, sum-energy, beam energy and detector position conditions. γ rays detected with the array GASP with 40 Compton-suppressed HPGe detectors, 80 BGO elements and γ ray multiplicity filter.

2001Zh27, 2000Zh36, 2001Zh12: High spin states in ^{178}Ir have been produced in the fusion-evaporation reaction ^{152}Sm(^{31}P,5nγ) ^{178}Ir at E=160 MeV and E=170 MeV (excitation function). Measured x-γ and γ-γ-t coincidences using an array of 11 HPGe detectors with BGO anti-Compton shields.

^{178}Ir Levels

The level scheme, the band arrangement, and the suggested configurations for the band structures are those proposed by 2003Ho03. For greater clarity the bands are shown listed by separating into favored and unfavored branches. The level scheme has been constructed with the help of coincidence relationships, energy sums and intensity ratios, and γ directional correlation ratios (DCO ratios). For a more detailed discussion of the structure of levels and bands see 2003Ho03 (also 2001Zh27, 2001Zh12, 2001Ho15, 2000Zh36).

B(M1)/B(E2) values have been estimated in 2003Ho03 based on their experimental Iγ branchings, and assuming δ^2=0. The E2 character for the second transition has been assumed on the basis of measured DCO ratios and/or rotational band membership (2003Ho03).

E(level)[‡]	J$^\pi$[†]	$T_{1/2}$	Comments
0.0+x			
81.8+x *3*			
0.0+y[@]	(7$^+$)		Bandhead for band A.
35.1+y[d] *4*	(5$^+$)		Bandhead for band D.
39.1+y *5*			E(level): This level is proposed as the initial level for the 81.8 keV γ ray in 2003Ho03. This indicates an E(lev)=−42.7+Y keV for the final level for that transition, below the 0.0+Y keV band A bandhead, which is the lowest among all such states in the level scheme. If the energy for the final level of the 81.8-kev transition is taken as the reference energy for the level scheme all energies listed in the level table have to be shifted upwards by a common offset of 42.7 keV. Notice that neither the 0.0+x nor the 0.0+Y states can be considered the actual ground state of the ^{178}Ir nucleus. See also the ε and α decay datasets.
140.1+y[b] *4*	(6$^+$)		Bandhead for band C.
140.50+y[l] *10*	(8$^-$)	≥4 ns	Bandhead for band I.
150.6+y[f] *6*	(5$^+$)		Bandhead for band E.
160.64+y[#] *18*	(8$^+$)		
206.5+y[d] *3*	(7$^+$)		
228.6+y[c] *3*	(7$^+$)		
249.4+y[p] *3*	(8$^-$)		Bandhead for band K.
250.69+y[m] *14*	(9$^-$)		
280.8+y[e] *6*	(6$^+$)		
340.23+y[@] *17*	(9$^+$)		B(M1,179.6)/B(E2,340.2)=1.29 *13* μ_N^2/(eb)^2.
345.8+y[b] *3*	(8$^+$)		B(M1,117.2)/B(E2,205.7)=0.33 *7* μ_N^2/(eb)^2.
359.1+y[q] *3*	(9$^-$)		
386.95+y[l] *16*	(10$^-$)		B(M1,136.2)/B(E2,246.4)=2.00 *25* μ_N^2/(eb)^2.
397.71+y[p] *25*	(10$^-$)		
429.9+y[f] *6*	(7$^+$)		B(M1,149.1)/B(E2,279.2)=0.90 *18* μ_N^2/(eb)^2.
484.8+y[d] *3*	(9$^+$)		

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(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)

^{178}Ir Levels (continued)

E(level)[‡]	Jπ[†]	Comments
501.0+y[c] *3*	(9+)	B(M1,155.2)/B(E2,272.4)=0.17 *3* μ_N^2/(eb)^2.
537.94+y[#] *18*	(10+)	B(M1,197.7)/B(E2,377.3)=0.70 *5* μ_N^2/(eb)^2.
546.71+y[m] *17*	(11−)	B(M1,159.9)/B(E2,296.3)=1.69 *38* μ_N^2/(eb)^2.
566.1+y[r] *4*		
574.4+y[j] *4*	(11+)	Bandhead for band G. E(level): The energy for the levels in this band is tentative, and based only on the suggested placement of the 187.5-keV transition connecting this bandhead to the (10−) level in band I (2003Ho03).
588.1+y[e] *6*	(8+)	B(M1,158.1)/B(E2,307.7)=1.37 *31* μ_N^2/(eb)^2.
610.8+y[g] *6*	(8+)	Bandhead for band F.
614.5+y[q] *3*	(11−)	B(M1,216.8)/B(E2,255.4)=0.29 *5* μ_N^2/(eb)^2.
675.7+y[b] *3*	(10+)	B(M1,175.0)/B(E2,329.8)=0.19 *4* μ_N^2/(eb)^2.
689.13+y[p] *24*	(12−)	B(M1,74.7)/B(E2,291.4)=0.14 *7* μ_N^2/(eb)^2.
735.06+y[l] *18*	(12−)	B(M1,188.8)/B(E2,347.9)=1.26 *10* μ_N^2/(eb)^2.
751.32+y[@] *19*	(11+)	B(M1,213.4)/B(E2,411.1)=0.59 *7* μ_N^2/(eb)^2.
755.2+y[r] *4*	(10+,11+)	Bandhead for band L.
758.7+y[f] *7*	(9+)	B(M1,170.7)/B(E2,328.7)=0.88 *30* μ_N^2/(eb)^2.
787.95+y *23*		
788.5+y[i] *4*	(12+)	
794.2+y[h] *7*	(9+)	
843.2+y[r] *3*		
860.4+y[d] *3*	(11+)	
884.7+y[c] *3*	(11+)	B(M1,209.0)/B(E2,383.7)=0.24 *6* μ_N^2/(eb)^2.
888.5+y *5*		
915.7+y[k] *3*		Bandhead for band H.
933.6+y *4*		
945.16+y[m] *18*	(13−)	B(M1,210.3)/B(E2,398.2)=0.83 *4* μ_N^2/(eb)^2.
949.0+y[e] *7*	(10+)	B(M1,190.4)/B(E2,360.8)=0.79 *12* μ_N^2/(eb)^2.
979.07+y[#] *20*	(12+)	B(M1,227.9)/B(E2,441.1)=0.47 *7* μ_N^2/(eb)^2.
990.6+y[q] *3*	(13−)	B(M1,301.5)/B(E2,376.0)=0.36 *4* μ_N^2/(eb)^2.
996.4+y[g] *7*	(10+)	B(M1,202.2)/B(E2,385.6)=1.15 *24* μ_N^2/(eb)^2.
1022.0+y[j] *4*	(13+)	B(M1,233.5)/B(E2,447.5)=0.93 *20* μ_N^2/(eb)^2.
1034.9+y[n] *4*	(12−)	Bandhead for band J.
1092.1+y[r] *3*		B(M1,248.8)/B(E2,337.0)=0.15 *2* μ_N^2/(eb)^2.
1110.3+y[b] *3*	(12+)	B(M1,225.7)/B(E2,434.6)=0.21 *3* μ_N^2/(eb)^2.
1121.4+y[p] *3*	(14−)	B(M1,130.9)/B(E2,432.3)=0.09 *2* μ_N^2/(eb)^2.
1160.0+y[f] *7*	(11+)	B(M1,211.1)/B(E2,401.3)=0.25 *11* μ_N^2/(eb)^2.
1161.0+y[a] *4*	(11+)	Bandhead for band B.
1164.0+y[k] *4*		
1176.42+y[l] *19*	(14−)	B(M1,231.3)/B(E2,441.4)=0.81 *5* μ_N^2/(eb)^2.
1184.9+y[s] *4*	(11−)	Bandhead for band M.
1210.2+y[o] *3*	(13−)	
1213.7+y[h] *7*	(11+)	B(M1,217.4)/B(E2,419.5)=0.97 *23* μ_N^2/(eb)^2.
1219.82+y[@] *20*	(13+)	B(M1,240.7)/B(E2,468.5)=0.40 *11* μ_N^2/(eb)^2.
1237.5+y[r] *3*		
1256.8+y[t] *4*		Bandhead for band N.
1257.39+y[&] *24*	(12+)	
1275.4+y[i] *4*	(14+)	B(M1,253.5)/B(E2,486.8)=0.53 *19* μ_N^2/(eb)^2.
1312.6+y[d] *4*	(13+)	

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(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)

^{178}Ir Levels (continued)

E(level)[‡]	Jπ[†]	Comments
1354.6+y[c] 3	(13+)	B(M1,244.1)/B(E2,470.0)=0.31 *12* μ_N^2/(eb)^2.
1388.0+y[e] 7	(12+)	B(M1,228.2)/B(E2,438.9)=0.53 *13* μ_N^2/(eb)^2.
1401.4+y[n] 3	(14−)	
1405.7+y[k] 4		B(M1,241.7)/B(E2,489.9)=2.6 *11* μ_N^2/(eb)^2.
1406.82+y[a] 23	(13+)	
1425.34+y[m] 20	(15−)	B(M1,249.0)/B(E2,480.1)=0.69 *6* μ_N^2/(eb)^2.
1446.4+y[g] 7	(12+)	B(M1,232.9)/B(E2,450.0)=0.85 *32* μ_N^2/(eb)^2.
1467.3+y[q] 3	(15−)	B(M1,345.9)/B(E2,476.8)=0.39 *3* μ_N^2/(eb)^2.
1473.06+y[#] 21	(14+)	B(M1,253.2)/B(E2,494.0)=0.30 *5* μ_N^2/(eb)^2.
1487.5+y[s] 4	(13−)	
1528.6+y[r] 3		
1534.73+y[&] 22	(14+)	B(M1,127.7)/B(E2,277.5)=0.37 *7* μ_N^2/(eb)^2.
1547.8+y[j] 5	(15+)	B(M1,272.5)/B(E2,525.8)=0.54 *14* μ_N^2/(eb)^2.
1611.5+y[o] 3	(15−)	
1629.2+y[b] 3	(14+)	
1634.3+y[f] 7	(13+)	B(M1,246.3)/B(E2,474.2)=0.37 *22* μ_N^2/(eb)^2.
1665.6+y[k] 4		
1671.0+y[p] 3	(16−)	
1691.06+y[l] 20	(16−)	B(M1,265.7)/B(E2,514.7)=0.63 *7* μ_N^2/(eb)^2.
1691.9+y[h] 7	(13+)	B(M1,245.6)/B(E2,478.1)=0.67 *34* μ_N^2/(eb)^2.
1705.9+y[t] 4		
1727.65+y[a] 21	(15+)	B(M1,192.9)/B(E2,321.0)=0.51 *13* μ_N^2/(eb)^2.
1750.01+y[@] 22	(15+)	B(M1,277.1)/B(E2,530.1)=0.34 *20* μ_N^2/(eb)^2.
1756.8+y[r] 4		
1824.4+y[d] 4	(15+)	
1837.6+y[n] 3	(16−)	B(M1,226.0)/B(E2,436.1)=0.39 *7* μ_N^2/(eb)^2.
1837.7+y[i] 5	(16+)	B(M1,290.0)/B(E2,562.2)=0.46 *27* μ_N^2/(eb)^2.
1861.6+y[s] 4	(15−)	
1892.8+y[e] 7	(14+)	
1903.7+y[c] 4	(15+)	
1913.26+y[&] 22	(16+)	B(M1,185.7)/B(E2,378.5)=0.28 *4* μ_N^2/(eb)^2.
1921.8+y[k] 4		
1951.4+y[g] 7	(14+)	B(M1,259.3)/B(E2,505.0)=0.73 *29* μ_N^2/(eb)^2.
1972.60+y[m] 21	(17−)	B(M1,281.7)/B(E2,547.2)=0.47 *6* μ_N^2/(eb)^2.
2019.90+y[#] 25	(16+)	B(M1,269.8)/B(E2,546.9)=0.23 *6* μ_N^2/(eb)^2.
2034.6+y[q] 3	(17−)	B(M1,363.6)/B(E2,567.3)=0.46 *4* μ_N^2/(eb)^2.
2056.0+y[r] 4		
2079.9+y[o] 3	(17−)	B(M1,242.3)/B(E2,468.5)=0.39 *14* μ_N^2/(eb)^2.
2142.8+y[j] 5	(17+)	B(M1,305.0)/B(E2,595.1)=0.79 *48* μ_N^2/(eb)^2.
2157.29+y[a] 22	(17+)	B(M1,244.1)/B(E2,429.6)=0.67 *15* μ_N^2/(eb)^2.
2167.9+y[f] 7	(15+)	
2181.9+y[t] 5		
2182.7+y[k] 5		
2200.7+y[b] 5	(16+)	
2223.1+y[h] 7	(15+)	
2268.84+y[l] 22	(18−)	B(M1,296.2)/B(E2,577.8)=0.60 *12* μ_N^2/(eb)^2.
2307.3+y[s] 4	(17−)	
2310.0+y[@] 3	(17+)	B(M1,290.1)/B(E2,559.8)=0.29 *13* μ_N^2/(eb)^2.

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(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)

^{178}Ir Levels (continued)

E(level)[‡]	Jπ[†]	Comments
2312.7+y[p] *3*	(18⁻)	
2337.7+y[n] *4*	(18⁻)	
2359.8+y[d] *4*	(17⁺)	
2370.1+y[r] *4*		
2376.75+y[&] *23*	(18⁺)	B(M1,219.5)/B(E2,463.5)=0.35 *3* μ_N^2/(eb)^2.
2451.9+y[e] *8*	(16⁺)	
2462.6+y[i] *6*	(18⁺)	
2467.2+y[k] *5*		
2475.6+y[c] *4*	(17⁺)	
2509.9+y[g] *7*	(16⁺)	
2580.81+y[m] *23*	(19⁻)	B(M1,312.1)/B(E2,608.2)=0.47 *9* μ_N^2/(eb)^2.
2609.7+y[o] *4*	(19⁻)	
2612.1+y[#] *4*	(18⁺)	B(M1,302.0)/B(E2,592.2)=0.27 *16* μ_N^2/(eb)^2.
2636.1+y[r] *5*		
2649.64+y[a] *24*	(19⁺)	B(M1,273.0)/B(E2,492.3)=0.49 *5* μ_N^2/(eb)^2.
2681.0+y[q] *4*	(19⁻)	
2692.4+y[t] *6*		
2745.4+y[k] *5*		
2754.5+y[b] *6*	(18⁺)	
2755.4+y[f] *8*	(17⁺)	
2795.4+y[j] *6*	(19⁺)	
2799.6+y[h] *8*	(17⁺)	
2817.1+y[s] *4*	(19⁻)	
2881.2+y[d] *5*	(19⁺)	
2895.7+y[n] *5*	(20⁻)	
2906.6+y[l] *3*	(20⁻)	B(M1,325.9)/B(E2,637.7)=0.55 *11* μ_N^2/(eb)^2.
2908.23+y[&] *24*	(20⁺)	B(M1,258.7)/B(E2,531.5)=0.29 *5* μ_N^2/(eb)^2.
2926.3+y[@] *4*	(19⁺)	
3001.2+y[c] *5*	(19⁺)	
3025.4+y[p] *4*	(20⁻)	
3049.6+y[e] *8*	(18⁺)	
3051.3+y[k] *5*		
3107.6+y[g] *8*	(18⁺)	
3142.3+y[i] *7*	(20⁺)	
3197.0+y[o] *5*	(21⁻)	
3205.87+y[a] *25*	(21⁺)	B(M1,297.7)/B(E2,556.2)=0.46 *10* μ_N^2/(eb)^2.
3229.1+y[r] *6*		
3247.6+y[#] *5*	(20⁺)	
3248.6+y[m] *3*	(21⁻)	B(M1,342.1)/B(E2,667.8)=0.50 *16* μ_N^2/(eb)^2.
3265.1+y[t] *7*		
3385.8+y[s] *4*	(21⁻)	
3392.9+y[q] *4*	(21⁻)	
3394.4+y[h] *8*	(19⁺)	
3453.9+y[d] *6*	(21⁺)	
3501.0+y[&] *3*	(22⁺)	B(M1,295.0)/B(E2,502.8)=0.34 *8* μ_N^2/(eb)^2.
3501.8+y[j] *7*	(21⁺)	
3510.0+y[n] *6*	(22⁻)	
3560.1+y[c] *6*	(21⁺)	

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(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)

^{178}Ir Levels (continued)

E(level)[‡]	Jπ[†]	Comments
3587.0+y[@] *5*	(21+)	
3603.8+y[l] *3*	(22−)	B(M1,355.0)/B(E2,697.2)=0.54 *31* μ_N^2/(eb)^2.
3787.7+y[p] *4*	(22−)	
3821.8+y[a] *3*	(23+)	B(M1,321.0)/B(E2,615.9)=0.38 *10* μ_N^2/(eb)^2.
3838.9+y[o] *6*	(23−)	
3852.8+y[r] *7*		
3876.1+y[i] *7*	(22+)	
3899.6+y[t] *7*		
3929.3+y[#] *6*	(22+)	
3975.3+y[m] *3*	(23−)	B(M1,371.3)/B(E2,726.7)=0.77 *44* μ_N^2/(eb)^2.
4013.8+y[s] *4*	(23−)	
4095.1+y[d] *7*	(23+)	
4147.6+y[q] *4*	(23−)	
4151.2+y[&] *3*	(24+)	B(M1,329.8)/B(E2,650.1)=0.38 *13* μ_N^2/(eb)^2.
4177.9+y[n] *7*	(24−)	
4262.4+y[j] *7*	(23+)	
4271.8+y *6*		
4358.4+y[l] *4*	(24−)	
4497.1+y[a] *4*	(25+)	B(M1,346.0)/B(E2,675.3)=0.40 *16* μ_N^2/(eb)^2.
4506.5+y[r] *7*		
4533.7+y[o] *7*	(25−)	
4575.9+y[p] *5*	(24−)	
4578.2+y[t] *8*		
4663.2+y[i] *8*	(24+)	
4695.6+y[s] *5*	(25−)	
4756.9+y[m] *4*	(25−)	
4798.5+y[d] *7*	(25+)	
4858.4+y[&] *5*	(26+)	
4898.4+y[n] *7*	(26−)	
5074.7+y[j] *8*	(25+)	
5164.8+y[l] *5*	(26−)	
5196.5+y[r] *8*		
5232.0+y[a] *5*	(27+)	
5279.2+y[t] *8*		
5279.6+y[o] *7*	(27−)	
5404.3+y[p] *6*	(26−)	
5431.0+y[s] *6*	(27−)	
5498.6+y[i] *8*	(26+)	
5556.4+y[d] *8*	(27+)	
5589.4+y[m] *5*	(27−)	
5622.3+y[&] *6*	(28+)	
5668.7+y[n] *8*	(28−)	
6017.8+y[l] *6*	(28−)	
6024.7+y[a] *6*	(29+)	
6073.4+y[o] *8*	(29−)	
6209.9+y[s] *7*	(29−)	
6357.5+y[d] *8*	(29+)	
6442.2+y[&] *6*	(30+)	
6454.6+y[m] *6*	(29−)	

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(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)

^{178}Ir Levels (continued)

E(level)[‡]	Jπ[†]	E(level)[‡]	Jπ[†]	E(level)[‡]	Jπ[†]
6486.9+y[n] *8*	(30^-)	7039.6+y[s] *8*	(31^-)	7766.8+y[a] *8*	(33^+)
6871.4+y[a] *6*	(31^+)	7194.3+y[d] *9*	(31^+)	8235.7+y[&] *10*	(34^+)
6913.4+y?[o] *9*	(31^-)	7314.6+y[&] *8*	(32^+)	8703.8+y[a] *10*	(35^+)
				9200.7+y[&] *11*	(36^+)

[†] From 2003Ho03, based on linking transition multipolarities, rotational band arguments, and assuming increasing J with increasing E(level).
[‡] From least-squares fit by evaluators to Eγ′s from 2003Ho03.
[#] Band(A): Band A0 $\pi h_{11/2}9/2^-[514]\otimes\nu 5/2^-[512]$ α=0. Uncompressed band, as deduced in 2003Ho03 from their K^1_{eff}=7.5 value, which also excludes the $\pi h_{9/2}$, $\pi i_{13/2}$, $\nu i_{13/2}$ orbitals.
[@] Band(a): Band A1 $\pi h_{11/2}9/2^-[514]\otimes\nu 5/2^-[512]$ α=1. See also comments for Band A0.
[&] Band(B): Band B0 $\pi i_{13/2}1/2^+[660]\otimes\nu i_{13/2}7/2^+[633]$ α=0.
[a] Band(b): Band B1 $\pi i_{13/2}1/2^+[660]\otimes\nu i_{13/2}7/2^+[633]$ α=1.
[b] Band(C): Band C0 $\pi h_{9/2}1/2^-[541]\otimes\nu 5/2^-[512]$ α=0. Compressed band due to the $\pi h_{9/2}$ orbital, as shown by the K^1_{eff}=2.1 value obtained in 2003Ho03 for the 6^+state.
[c] Band(c): Band C1 $\pi h_{9/2}1/2^-[541]\otimes\nu 5/2^-[512]$ α=1. See also comments for Band C0.
[d] Band(D): Band D $\pi h_{9/2}1/2^-[541]\otimes\nu 1/2^-[521]$ α=1. Favored, doubly decoupled, positive parity band. Highly compressed band due to strong Coriolis effects in the $\pi h_{9/2}$ orbital, as deduced in 2003Ho03 from their K^2_{eff}=1.7 value.
[e] Band(E): Band E0 $\pi h_{11/2}\otimes\nu 1/2^-[521]$ α=0. Uncompressed band, as shown by the K^1_{eff}=5.9 value for the first observed states (2003Ho03).
[f] Band(e): Band E1 $\pi h_{11/2}\otimes\nu 1/2\mp[521]$ α=1. See also comments for Band E0.
[g] Band(F): Band F0 $\pi h_{11/2}\otimes\nu 7/2^-[514]$ α=0. Uncompressed band, with K^1_{eff}=8.7 for the first observed states (2003Ho03).
[h] Band(f): Band F1 $\pi h_{11/2}\otimes\nu 7/2^-[514]$ α=1. See also comments for Band F0.
[i] Band(G): Band G0 $\pi 5/2^+[402]\otimes\nu i_{13/2}$ α=0.
[j] Band(g): Band G1 $\pi 5/2^+[402]\otimes\nu i_{13/2}$ α=1.
[k] Band(H): Band H Suggested configurations for this weak band are either $\pi 5/2^+[402]\otimes(\nu i_{13/2})^2\otimes\nu 5/2^-[512]$ or $\pi 5/2^+[402]\otimes(\nu i_{13/2})^2\otimes\nu 1/2^-[521]$ (2003Ho03).
[l] Band(I): Band I0 $\pi h_{11/2}9/2^-[514]\otimes\nu i_{13/2}7/2^+[633]$ α=0. Slightly compressed band with K^1_{eff}=3.2, due to the $\nu i_{13/2}$ state (2003Ho03).
[m] Band(i): Band I1 $\pi h_{11/2}9/2^-[514]\otimes\nu i_{13/2}7/2^+[633]$ α=1. See also comments for Band I0.
[n] Band(J): Band J0 $\pi i_{13/2}\otimes\nu 5/2^-[512]$ α=0.
[o] Band(j): Band J1 $\pi i_{13/2}\otimes\nu 5/2^-[512]$ α=1.
[p] Band(K): Band K0 $\pi h_{9/2}1/2^-[541]\otimes\nu i_{13/2}7/2^+[633]$ α=0. Highly compressed band, with an K^2_{eff}=0.6, arising from both valence nucleon orbitals (2003Ho03).
[q] Band(k): Band K1 $\pi h_{9/2}1/2^-[541]\otimes\nu i_{13/2}7/2^+[633]$ α=1. See also comments for Band K0.
[r] Band(L): Band L $\pi h_{9/2}1/2^-[541]\otimes\nu 7/2^-[514]$.
[s] Band(M): Band M $\pi i_{13/2}1/2^+[660]\otimes\nu 1/2^-[521]$ α=1.
[t] Band(N): Band N Weak band, no configuration suggested.

γ(^{178}Ir)

DCO values are defined as DCO=$I\gamma(\theta_1)_{gate=\theta_2}/I\gamma(\theta_2)_{gate=\theta_1}$, where θ_1=(31.7°, 36°, 144°, 148.3°), and θ_2=90° (2003Ho03). In the geometry of the GASP array, gating on stretched quadrupole γ rays yields DCO≈1 for stretched quadrupole transitions, and DCO≈0.6 for pure stretched dipoles.
Experimental total conversion coefficients α_T have been deduced by 2003Ho03 from their intensity balances.

E_γ[@]	I_γ[‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[†]	δ[#]	α[&]	Comments
38.6 *3*		397.71+y	(10⁻)	359.1+y	(9⁻)				
74.7 *3*	3.1 *12*	689.13+y	(12⁻)	614.5+y	(11⁻)				
81.8 *3*		81.8+x		0.0+x		M1(+E2)		10.81 *22*	α_T(exp)=19 *10*. Theory: α_T(M1)=10.87, α_T(E2)=10.75.
88.4 *3*	5.3 *21*	228.6+y	(7⁺)	140.1+y	(6⁺)				DCO=0.55 *31*.
96.5 *3*	4.8 *19*	1257.39+y	(12⁺)	1161.0+y	(11⁺)				
101.0 *3*	9.1 *36*	140.1+y	(6⁺)	39.1+y		M1(+E2)		5.2 *8*	α_T(exp)=9 *4*. Theory: α_T(M1)=5.95, α_T(E2)=4.43.
109.6 *2*	29 *7*	359.1+y	(9⁻)	249.4+y	(8⁻)				DCO=0.47 *17*.
110.2 *1*	42 *11*	250.69+y	(9⁻)	140.50+y	(8⁻)				DCO=0.88 *12*.
111.5 *3*	13.6 *34*	150.6+y	(5⁺)	39.1+y		M1(+E2)		3.7 *8*	α_T(exp)=7 *3*. Theory: α_T(M1)=4.48, α_T(E2)=2.97.
117.2 *3*	12.1 *30*	345.8+y	(8⁺)	228.6+y	(7⁺)				DCO=0.59 *27*.
127.7 *2*	28 *7*	1534.73+y	(14⁺)	1406.82+y	(13⁺)				
127.9 *3*	2.8 *11*	915.7+y		787.95+y		M1(+E2)		2.4 *7*	α_T(exp)=2.5 *15*. Theory: α_T(M1)=3.03, α_T(E2)=1.74.
130.2 *3*	13.6 *34*	280.8+y	(6⁺)	150.6+y	(5⁺)				
130.9 *3*	1.6 *7*	1121.4+y	(14⁻)	990.6+y	(13⁻)				
136.2 *1*	52 *8*	386.95+y	(10⁻)	250.69+y	(9⁻)				DCO=0.73 *7*.
139.0 *3*	3.8 *15*	484.8+y	(9⁺)	345.8+y	(8⁺)	M1(+E2)		1.8 *6*	α_T(exp)=2.4 *9*. Theory: α_T(M1)=2.39, α_T(E2)=1.27.
139.2 *3*		345.8+y	(8⁺)	206.5+y	(7⁺)				
140.5 *1*	100	140.50+y	(8⁻)	0.0+y	(7⁺)	E1(+M2)	−0.07 *7*	0.24 *22*	B(E1)(W.u.)<1.8×10^{-5}; B(M2)(W.u.)<62 DCO=0.70 *6*. Theory: α_T(E1)=0.167, α_T(M2)=15.32. 2003Ho03 estimate a hindrance factor of ≥4.0x10^4 for this transition, compared to the Weisskopf estimate. Mult.: From isomeric character of the 140.5 keV level, intensity balance and DCO ratio (2003Ho03).
146.8 *3*	4.8 *19*	397.71+y	(10⁻)	250.69+y	(9⁻)	(M1,E2)		1.5 *5*	α_T(exp)=1.0 *6*. Theory: α_T(M1)=2.05, α_T(E2)=1.03.
148.3 *2*	20 *5*	397.71+y	(10⁻)	249.4+y	(8⁻)				
149.1 *3*	14.0 *35*	429.9+y	(7⁺)	280.8+y	(6⁺)				
149.3 *2*	29 *7*	1406.82+y	(13⁺)	1257.39+y	(12⁺)				
155.2 *3*	13.7 *34*	501.0+y	(9⁺)	345.8+y	(8⁺)	M1+E2	−0.20 *18*	1.71 *9*	DCO=0.44 *11*. Theory: α_T(M1)=1.75, α_T(E2)=0.842.
158.1 *3*	11.3 *28*	588.1+y	(8⁺)	429.9+y	(7⁺)				
159.9 *1*	58 *9*	546.71+y	(11⁻)	386.95+y	(10⁻)				DCO=0.76 *7*.
160.7 *3*		160.64+y	(8⁺)	0.0+y	(7⁺)				DCO=0.78 *10*.
163.3 *3*	6.0 *24*	1913.26+y	(16⁺)	1750.01+y	(15⁺)	M1(+E2)		1.1 *4*	DCO=0.57 *24*. α_T(exp)=1.5 *3*. Theory: α_T(M1)=1.52, α_T(E2)=0.701.
170.7 *3*	5.8 *23*	758.7+y	(9⁺)	588.1+y	(8⁺)				

$^{178}_{77}Ir_{101}$-7

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)

$\gamma(^{178}Ir)$ (continued)

E_γ [@]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [†]	δ [#]	α [&]	Comments
171.4 *2*	18 *5*	206.5+y	(7+)	35.1+y	(5+)				DCO=0.85 *9*.
175.0 *3*	7.3 *29*	675.7+y	(10+)	501.0+y	(9+)				
175.1 *3*		1210.2+y	(13−)	1034.9+y	(12−)				
179.6 *2*	37 *9*	340.23+y	(9+)	160.64+y	(8+)	M1+E2	+0.26 *11*	1.12 *4*	DCO=0.82 *11*. Theory: α_T(M1)=1.16, α_T(E2)=0.50.
180.0 *3*	2.8 *11*	1534.73+y	(14+)	1354.6+y	(13+)	M1(+E2)		0.8 *4*	DCO=0.68 *15*. α_T(exp)=1.0 *3*. Theory: α_T(M1)=1.15, α_T(E2)=0.496.
181.0 *3*	4.9 *20*	610.8+y	(8+)	429.9+y	(7+)	M1(+E2)		0.8 *4*	α_T(exp)=1.2 *4*. Theory: α_T(M1)=1.13, α_T(E2)=0.487.
183.3 *3*	5.8 *23*	794.2+y	(9+)	610.8+y	(8+)				
184.9 *3*	0.68 *27*	860.4+y	(11+)	675.7+y	(10+)				DCO=0.71 *28*.
185.7 *2*	27 *7*	1913.26+y	(16+)	1727.65+y	(15+)				DCO=0.52 *12*.
187.5[b] *3*		574.4+y	(11+)	386.95+y	(10−)				This γ ray has been placed tentatively as connecting the band G bandhead to the (10−) state in band I (2003Ho03).
188.8 *1*	56 *9*	735.06+y	(12−)	546.71+y	(11−)	M1+E2	+0.19 *6*	0.987 *20*	DCO=0.76 *6*. Theory: α_T(M1)=1.01, α_T(E2)=0.420.
189.0 *3*	2.2 *9*	755.2+y	(10+,11+)	566.1+y					
190.4 *3*	6.0 *24*	949.0+y	(10+)	758.7+y	(9+)				
191.0 *3*	2.4 *10*	675.7+y	(10+)	484.8+y	(9+)				
191.1 *3*		1401.4+y	(14−)	1210.2+y	(13−)				
192.9 *2*	23 *6*	1727.65+y	(15+)	1534.73+y	(14+)				
197.7 *2*	30 *8*	537.94+y	(10+)	340.23+y	(9+)				
202.2 *3*	7.3 *29*	996.4+y	(10+)	794.2+y	(9+)				
204.1 *3*		1671.0+y	(16−)	1467.3+y	(15−)				
205.7 *3*	5.7 *23*	345.8+y	(8+)	140.1+y	(6+)				
209.0 *3*	9.0 *36*	884.7+y	(11+)	675.7+y	(10+)				DCO=0.61 *13*.
210.2 *3*	4.3 *17*	1611.5+y	(15−)	1401.4+y	(14−)				
210.3 *2*	35 *9*	945.16+y	(13−)	735.06+y	(12−)				DCO=0.72 *14*.
211.1 *3*	2.3 *9*	1160.0+y	(11+)	949.0+y	(10+)				
213.4 *2*	27 *7*	751.32+y	(11+)	537.94+y	(10+)				DCO=0.78 *24*.
214.1 *3*	7.3 *35*	788.5+y	(12+)	574.4+y	(11+)				
216.8 *2*	19 *5*	614.5+y	(11−)	397.71+y	(10−)	M1+E2	−0.16 *14*	0.68 *3*	DCO=0.46 *9*. Theory: α_T(M1)=0.686, α_T(E2)=0.263.
217.4 *3*	6.7 *27*	1213.7+y	(11+)	996.4+y	(10+)				
219.5 *2*	22 *6*	2376.75+y	(18+)	2157.29+y	(17+)	M1(+E2)	−0.34 *14*	0.62 *4*	DCO=0.38 *6*. Theory: α_T(M1)=0.662, α_T(E2)=0.253.
225.7 *3*	4.0 *16*	1110.3+y	(12+)	884.7+y	(11+)				
226.0 *3*	4.7 *19*	1837.6+y	(16−)	1611.5+y	(15−)				
227.9 *2*	19 *5*	979.07+y	(12+)	751.32+y	(11+)				DCO=1.06 *31*.
228.2 *3*	0.52 *21*	1388.0+y	(12+)	1160.0+y	(11+)				
231.3 *2*	28 *7*	1176.42+y	(14−)	945.16+y	(13−)				DCO=0.78 *15*.
232.9 *3*	6.8 *28*	1446.4+y	(12+)	1213.7+y	(11+)				
233.5 *3*	11.2 *28*	1022.0+y	(13+)	788.5+y	(12+)				

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)

γ(^{178}Ir) (continued)

E_γ[@]	I_γ[‡]	E_i(level)	J^π_i	E_f	J^π_f	Comments
240.7 *2*	16.3 *41*	1219.82+y	(13$^+$)	979.07+y	(12$^+$)	DCO=1.03 *28*.
241.7 *3*	7.5 *30*	1405.7+y		1164.0+y		
242.3 *3*	4.8 *19*	2079.9+y	(17$^-$)	1837.6+y	(16$^-$)	
244.1 *3*	5.5 *22*	1354.6+y	(13$^+$)	1110.3+y	(12$^+$)	
244.1 *2*	31 *8*	2157.29+y	(17$^+$)	1913.26+y	(16$^+$)	DCO=0.51 *8*.
245.6 *3*	4.2 *17*	1691.9+y	(13$^+$)	1446.4+y	(12$^+$)	
245.8 *3*		1406.82+y	(13$^+$)	1161.0+y	(11$^+$)	
246.3 *3*		1634.3+y	(13$^+$)	1388.0+y	(12$^+$)	
246.4 *3*	6.5 *26*	386.95+y	(10$^-$)	140.50+y	(8$^-$)	
248.3 *3*	9.1 *36*	1164.0+y		915.7+y		
248.8 *3*	2.6 *10*	1092.1+y		843.2+y		
249.0 *2*	24 *6*	1425.34+y	(15$^-$)	1176.42+y	(14$^-$)	DCO=0.86 *27*.
251.3 *3*		1184.9+y	(11$^-$)	933.6+y		
253.2 *3*	7.6 *30*	1473.06+y	(14$^+$)	1219.82+y	(13$^+$)	DCO=1.26 *44*.
253.5 *3*	5.8 *23*	1275.4+y	(14$^+$)	1022.0+y	(13$^+$)	
254.3 *3*	3.6 *15*	1727.65+y	(15$^+$)	1473.06+y	(14$^+$)	
255.4 *3*	5.0 *20*	614.5+y	(11$^-$)	359.1+y	(9$^-$)	
256.2 *3*	5.7 *23*	1921.8+y		1665.6+y		
258.0 *3*		2337.7+y	(18$^-$)	2079.9+y	(17$^-$)	
258.5 *3*		1892.8+y	(14$^+$)	1634.3+y	(13$^+$)	
258.7 *3*	6.9 *28*	2908.23+y	(20$^+$)	2649.64+y	(19$^+$)	DCO=0.67 *19*.
259.3 *3*	3.0 *12*	1951.4+y	(14$^+$)	1691.9+y	(13$^+$)	
260.0 *3*		1665.6+y		1405.7+y		
261.0 *3*		2182.7+y		1921.8+y		
265.7 *2*	16.4 *41*	1691.06+y	(16$^-$)	1425.34+y	(15$^-$)	DCO=0.88 *17*.
269.8 *3*	2.1 *9*	2019.90+y	(16$^+$)	1750.01+y	(15$^+$)	
271.6 *3*		2223.1+y	(15$^+$)	1951.4+y	(14$^+$)	
272.0 *3*		2609.7+y	(19$^-$)	2337.7+y	(18$^-$)	
272.4 *2*	22 *6*	501.0+y	(9$^+$)	228.6+y	(7$^+$)	
272.5 *3*	2.5 *10*	1547.8+y	(15$^+$)	1275.4+y	(14$^+$)	
273.0 *2*	20 *5*	2649.64+y	(19$^+$)	2376.75+y	(18$^+$)	DCO=0.50 *9*.
274.5[a] *3*		1629.2+y	(14$^+$)	1354.6+y	(13$^+$)	
274.5[a] *3*		1903.7+y	(15$^+$)	1629.2+y	(14$^+$)	
275.1 *3*		2167.9+y	(15$^+$)	1892.8+y	(14$^+$)	
277.1 *3*	7.4 *30*	1750.01+y	(15$^+$)	1473.06+y	(14$^+$)	
277.5 *1*	41 *10*	1534.73+y	(14$^+$)	1257.39+y	(12$^+$)	
278.2 *3*	2.3 *9*	2745.4+y		2467.2+y		
278.3 *2*	28 *7*	484.8+y	(9$^+$)	206.5+y	(7$^+$)	DCO=1.02 *13*.
279.2 *3*	5.5 *22*	429.9+y	(7$^+$)	150.6+y	(5$^+$)	
281.7 *3*	12.0 *30*	1972.60+y	(17$^-$)	1691.06+y	(16$^-$)	DCO=0.91 *21*.
284.3 *3*		2451.9+y	(16$^+$)	2167.9+y	(15$^+$)	
284.5 *3*		2467.2+y		2182.7+y		
286.9 *3*		2509.9+y	(16$^+$)	2223.1+y	(15$^+$)	

γ(^{178}Ir) (continued)

Eγ[@]	Iγ[‡]	Ei(level)	J^{π}_{i}	E_f	J^{π}_{f}	Comments
289.9[b] 3		2799.6+y	(17⁺)	2509.9+y	(16⁺)	
290.0 3	1.1 5	1837.7+y	(16⁺)	1547.8+y	(15⁺)	
290.1 3	1.1 5	2310.0+y	(17⁺)	2019.90+y	(16⁺)	
291.1 3		1528.6+y		1237.5+y		
291.4 1	77 12	689.13+y	(12⁻)	397.71+y	(10⁻)	DCO=1.05 17.
294.4 3	3.4 14	501.0+y	(9⁺)	206.5+y	(7⁺)	
295.0 3	5.4 22	3501.0+y	(22⁺)	3205.87+y	(21⁺)	
296.2 3	11.5 29	2268.84+y	(18⁻)	1972.60+y	(17⁻)	
296.3 3	13.4 34	546.71+y	(11⁻)	250.69+y	(9⁻)	
296.4 3		1184.9+y	(11⁻)	888.5+y		
297.7 3	9.1 37	3205.87+y	(21⁺)	2908.23+y	(20⁺)	
301.5 2	23 6	990.6+y	(13⁻)	689.13+y	(12⁻)	DCO=0.40 3.
302.0 3	1.1 5	2612.1+y	(18⁺)	2310.0+y	(17⁺)	
302.4 3	0.21 8	689.13+y	(12⁻)	386.95+y	(10⁻)	
302.6 3	12.1 30	1487.5+y	(13⁻)	1184.9+y	(11⁻)	DCO=0.95 25.
303.7 3		2755.4+y	(17⁺)	2451.9+y	(16⁺)	
305.0 3	1.5 6	2142.8+y	(17⁺)	1837.7+y	(16⁺)	
306.0 3	2.4 10	3051.3+y		2745.4+y		
307.7 3	4.0 16	588.1+y	(8⁺)	280.8+y	(6⁺)	
308.1[b] 3		3107.6+y	(18⁺)	2799.6+y	(17⁺)	
312.1 3	7.3 29	2580.81+y	(19⁻)	2268.84+y	(18⁻)	DCO=1.20 51.
314.1 3		2926.3+y	(19⁺)	2612.1+y	(18⁺)	
315.0 3	2.9 12	1534.73+y	(14⁺)	1219.82+y	(13⁺)	
316.7 3		566.1+y		249.4+y	(8⁻)	
321.0 2	15.2 38	1727.65+y	(15⁺)	1406.82+y	(13⁺)	
321.0 3	3.5 14	3821.8+y	(23⁺)	3501.0+y	(22⁺)	
325.9 3	4.6 18	2906.6+y	(20⁻)	2580.81+y	(19⁻)	
328.7 3	3.6 14	758.7+y	(9⁺)	429.9+y	(7⁺)	
329.8 2	19 5	675.7+y	(10⁺)	345.8+y	(8⁺)	
329.8 3	2.2 9	4151.2+y	(24⁺)	3821.8+y	(23⁺)	
329.9 3	1.9 8	610.8+y	(8⁺)	280.8+y	(6⁺)	
337.0 3	3.4 14	1092.1+y		755.2+y	(10⁺,11⁺)	
340.2 2	15.6 39	340.23+y	(9⁺)	0.0+y	(7⁺)	DCO=0.98 11.
342.1 3	5.6 23	3248.6+y	(21⁻)	2906.6+y	(20⁻)	
345.9 2	21 5	1467.3+y	(15⁻)	1121.4+y	(14⁻)	DCO=0.51 9.
346.0 3	0.94 38	4497.1+y	(25⁺)	4151.2+y	(24⁺)	
347.9 2	24 6	735.06+y	(12⁻)	386.95+y	(10⁻)	
355.0 3	4.1 17	3603.8+y	(22⁻)	3248.6+y	(21⁻)	
359.3 3	1.2 5	860.4+y	(11⁺)	501.0+y	(9⁺)	
359.8 3	1.6 7	4147.6+y	(23⁻)	3787.7+y	(22⁻)	
360.8 3	4.7 19	949.0+y	(10⁺)	588.1+y	(8⁺)	
363.6 3	10.6 27	2034.6+y	(17⁻)	1671.0+y	(16⁻)	DCO=0.38 17.
364.3 3	0.94 38	794.2+y	(9⁺)	429.9+y	(7⁺)	

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)

γ(^{178}Ir) (continued)

E_γ [@]	I_γ [‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [†]	α [&]	Comments
366.7 *3*		1401.4+y	(14$^-$)	1034.9+y	(12$^-$)			
367.6 *3*	4.0 *16*	3392.9+y	(21$^-$)	3025.4+y	(20$^-$)			
368.3 *3*	7.9 *32*	2681.0+y	(19$^-$)	2312.7+y	(18$^-$)			
371.3 *3*	3.3 *13*	3975.3+y	(23$^-$)	3603.8+y	(22$^-$)			
372.9 *3*	1.0 *4*	1257.39+y	(12$^+$)	884.7+y	(11$^+$)			
373.2 *3*	0.94 *38*	1727.65+y	(15$^+$)	1354.6+y	(13$^+$)			
374.2 *3*	10.2 *26*	1861.6+y	(15$^-$)	1487.5+y	(13$^-$)			DCO=1.15 *16*.
375.6 *2*	22 *6*	860.4+y	(11$^+$)	484.8+y	(9$^+$)			DCO=1.01 *7*.
376.0 *3*	11.8 *30*	990.6+y	(13$^-$)	614.5+y	(11$^-$)			
377.3 *2*	29 *8*	537.94+y	(10$^+$)	160.64+y	(8$^+$)			
378.5 *1*	83 *13*	1913.26+y	(16$^+$)	1534.73+y	(14$^+$)			DCO=1.07 *16*.
383.1 *3*	2.2 *9*	4358.4+y	(24$^-$)	3975.3+y	(23$^-$)			
383.7 *2*	24 *6*	884.7+y	(11$^+$)	501.0+y	(9$^+$)			DCO=1.05 *21*.
385.6 *3*	4.5 *18*	996.4+y	(10$^+$)	610.8+y	(8$^+$)			
394.3 *3*	1.7 *7*	1237.5+y		843.2+y				
396.1 *3*	2.0 *8*	755.2+y	(10$^+$,11$^+$)	359.1+y	(9$^-$)			
398.2 *2*	31 *8*	945.16+y	(13$^-$)	546.71+y	(11$^-$)			DCO=0.86 *10*.
398.5 *3*	2.1 *9*	4756.9+y	(25$^-$)	4358.4+y	(24$^-$)			
401.3 *3*	7.0 *28*	1160.0+y	(11$^+$)	758.7+y	(9$^+$)			
401.4 *3*		1611.5+y	(15$^-$)	1210.2+y	(13$^-$)			
407.1 *3*	8.3 *33*	2157.29+y	(17$^+$)	1750.01+y	(15$^+$)			DCO=0.82 *22*.
411.1 *2*	38 *10*	751.32+y	(11$^+$)	340.23+y	(9$^+$)			DCO=0.98 *27*.
419.5 *3*	6.1 *25*	1213.7+y	(11$^+$)	794.2+y	(9$^+$)			
424.6 *3*	3.7 *15*	1534.73+y	(14$^+$)	1110.3+y	(12$^+$)	(E2)	0.0359	DCO=0.91 *36*.
427.8 *3*	1.6 *7*	1312.6+y	(13$^+$)	884.7+y	(11$^+$)			
429.6 *2*	33 *8*	2157.29+y	(17$^+$)	1727.65+y	(15$^+$)			DCO=0.89 *29*.
429.7 *3*		1184.9+y	(11$^-$)	755.2+y	(10$^+$,11$^+$)			
432.3 *1*	80 *12*	1121.4+y	(14$^-$)	689.13+y	(12$^-$)			DCO=1.10 *6*.
434.6 *2*	18 *5*	1110.3+y	(12$^+$)	675.7+y	(10$^+$)			DCO=1.06 *26*.
436.1 *3*	11.5 *29*	1837.6+y	(16$^-$)	1401.4+y	(14$^-$)			
436.5 *3*	14.6 *37*	1528.6+y		1092.1+y				
438.9 *3*	1.0 *40*	1388.0+y	(12$^+$)	949.0+y	(10$^+$)			
440.3 *3*	1.5 *6*	1913.26+y	(16$^+$)	1473.06+y	(14$^+$)			
441.1 *2*	39 *10*	979.07+y	(12$^+$)	537.94+y	(10$^+$)			DCO=0.86 *14*.
441.4 *2*	33 *8*	1176.42+y	(14$^-$)	735.06+y	(12$^-$)			DCO=0.90 *24*.
445.5 *3*		843.2+y		397.71+y	(10$^-$)			
445.8 *3*	7.5 *30*	2307.3+y	(17$^-$)	1861.6+y	(15$^-$)			DCO=0.86 *22*.
447.5 *3*	11.8 *30*	1022.0+y	(13$^+$)	574.4+y	(11$^+$)			
449.0 *3*		1705.9+y		1256.8+y				
450.0 *3*	8.1 *32*	1446.4+y	(12$^+$)	996.4+y	(10$^+$)			
452.2 *2*	19 *5*	1312.6+y	(13$^+$)	860.4+y	(11$^+$)			DCO=1.21 *10*.
463.5 *1*	88 *13*	2376.75+y	(18$^+$)	1913.26+y	(16$^+$)			DCO=0.96 *9*.
468.5 *1*	45 *11*	1219.82+y	(13$^+$)	751.32+y	(11$^+$)			DCO=1.03 *20*.

$^{178}_{77}$Ir$_{101}$-11

$\gamma(^{178}Ir)$ (continued)

E_γ[@]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	α[&]	Comments
468.5 3	13.3 33	2079.9+y	(17⁻)	1611.5+y	(15⁻)			
470.0 2	20 5	1354.6+y	(13⁺)	884.7+y	(11⁺)			DCO=1.08 20.
474.2 3		1634.3+y	(13⁺)	1160.0+y	(11⁺)			
476.0 3		2181.9+y		1705.9+y				
476.8 2	22 6	1467.3+y	(15⁻)	990.6+y	(13⁻)			DCO=1.13 27.
477.7 3	4.0 16	1092.1+y		614.5+y	(11⁻)			
478.1 3	7.5 30	1691.9+y	(13⁺)	1213.7+y	(11⁺)			
480.1 2	40 10	1425.34+y	(15⁻)	945.16+y	(13⁻)			DCO=0.95 21.
486.8 3	12.5 31	1275.4+y	(14⁺)	788.5+y	(12⁺)			
489.9 3	4.1 17	1405.7+y		915.7+y				
492.3 1	41 10	2649.64+y	(19⁺)	2157.29+y	(17⁺)			
494.0 2	32 8	1473.06+y	(14⁺)	979.07+y	(12⁺)			
500.0 3	14.4 36	2337.7+y	(18⁻)	1837.6+y	(16⁻)			
501.5 3	3.3 13	1665.6+y		1164.0+y				
504.8 3		1892.8+y	(14⁺)	1388.0+y	(12⁺)			
505.0 3	5.5 22	1951.4+y	(14⁺)	1446.4+y	(12⁺)			
507.9 2	22 6	1727.65+y	(15⁺)	1219.82+y	(13⁺)	(E2)	0.0229	DCO=0.86 9.
509.9 3	7.1 29	2817.1+y	(19⁻)	2307.3+y	(17⁻)			DCO=0.90 16.
510.5 3		2692.4+y		2181.9+y				
511.8 2	17.2 43	1824.4+y	(15⁺)	1312.6+y	(13⁺)			DCO=1.05 10.
514.7 2	35 9	1691.06+y	(16⁻)	1176.42+y	(14⁻)			DCO=1.04 8.
516.2 3		1921.8+y		1405.7+y				
517.0 3		2182.7+y		1665.6+y				
519.0 3	9.3 37	1629.2+y	(14⁺)	1110.3+y	(12⁺)			
519.2 3	6.4 26	1756.8+y		1237.5+y				
521.4 3	8.3 33	2881.2+y	(19⁺)	2359.8+y	(17⁺)			DCO=1.09 12.
522.0 3	12.0 30	1406.82+y	(13⁺)	884.7+y	(11⁺)			
525.6 3	0.68 27	3001.2+y	(19⁺)	2475.6+y	(17⁺)			
525.8 3	6.4 26	1547.8+y	(15⁺)	1022.0+y	(13⁺)			
527.3 3	9.7 39	2056.0+y		1528.6+y				
528.7 3	6.5 26	915.7+y		386.95+y	(10⁻)			
529.8 3	10.6 27	2609.7+y	(19⁻)	2079.9+y	(17⁻)			
530.1 2	30 8	1750.01+y	(15⁺)	1219.82+y	(13⁺)			
531.3 3		2223.1+y	(15⁺)	1691.9+y	(13⁺)			
531.5 1	41 10	2908.23+y	(20⁺)	2376.75+y	(18⁺)			DCO=0.92 13.
533.5 3		2167.9+y	(15⁺)	1634.3+y	(13⁺)			
535.4 3	12.5 31	2359.8+y	(17⁺)	1824.4+y	(15⁺)			DCO=1.17 15.
537.3 3	9.4 38	787.95+y		250.69+y	(9⁻)			
538.0 3	7.3 29	1528.6+y		990.6+y	(13⁻)			
545.3 3		2467.2+y		1921.8+y				
546.9 2	16.3 41	2019.90+y	(16⁺)	1473.06+y	(14⁺)			
547.2 2	39 10	1972.60+y	(17⁻)	1425.34+y	(15⁻)			DCO=0.98 9.
548.3 3	9.5 38	1237.5+y		689.13+y	(12⁻)			

$\gamma(^{178}$Ir) (continued)

E_γ[@]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Comments
549.1 *3*	4.1 *16*	1903.7+y	(15⁺)	1354.6+y	(13⁺)	
549.5 *1*	60 *9*	1671.0+y	(16⁻)	1121.4+y	(14⁻)	DCO=0.99 *13*.
553.8 *3*		2754.5+y	(18⁺)	2200.7+y	(16⁺)	
556.2 *2*	28 *7*	3205.87+y	(21⁺)	2649.64+y	(19⁺)	DCO=1.07 *24*.
558.0 *3*	7.7 *31*	2895.7+y	(20⁻)	2337.7+y	(18⁻)	
558.4 *3*		2509.9+y	(16⁺)	1951.4+y	(14⁺)	
558.9 *3*	0.7 *29*	3560.1+y	(21⁺)	3001.2+y	(19⁺)	
559.2 *3*		2451.9+y	(16⁺)	1892.8+y	(14⁺)	
559.8 *3*	5.8 *23*	2310.0+y	(17⁺)	1750.01+y	(15⁺)	DCO=0.91 *21*.
562.2 *3*	3.8 *15*	1837.7+y	(16⁺)	1275.4+y	(14⁺)	
562.8 *3*		2745.4+y		2182.7+y		
567.3 *2*	20 *5*	2034.6+y	(17⁻)	1467.3+y	(15⁻)	DCO=1.12 *13*.
568.8 *3*	5.3 *21*	3385.8+y	(21⁻)	2817.1+y	(19⁻)	DCO=1.07 *28*.
571.5 *3*	7.7 *31*	2200.7+y	(16⁺)	1629.2+y	(14⁺)	
572.0 *3*	2.6 *10*	2475.6+y	(17⁺)	1903.7+y	(15⁺)	
572.7 *3*		3265.1+y		2692.4+y		
572.7 *3*	6.3 *25*	3453.9+y	(21⁺)	2881.2+y	(19⁺)	DCO=0.98 *14*.
574.5 *3*		933.6+y		359.1+y	(9⁻)	
575.7 *3*		3392.9+y	(21⁻)	2817.1+y	(19⁻)	
576.5 *3*		2799.6+y	(17⁺)	2223.1+y	(15⁺)	
577.8 *2*	33 *8*	2268.84+y	(18⁻)	1691.06+y	(16⁻)	DCO=0.97 *14*.
580.1 *3*	7.6 *31*	2636.1+y		2056.0+y		
582.5 *3*	4.3 *17*	2310.0+y	(17⁺)	1727.65+y	(15⁺)	
584.0 *3*		3051.3+y		2467.2+y		
587.3 *3*		2755.4+y	(17⁺)	2167.9+y	(15⁺)	
587.3 *3*	6.0 *24*	3197.0+y	(21⁻)	2609.7+y	(19⁻)	
588.9 *3*	2.8 *11*	2056.0+y		1467.3+y	(15⁻)	
592.2 *3*	7.3 *29*	2612.1+y	(18⁺)	2019.90+y	(16⁺)	
592.8 *2*	32 *8*	3501.0+y	(22⁺)	2908.23+y	(20⁺)	
593.0 *3*	5.3 *21*	3229.1+y		2636.1+y		
594.8 *3*		3394.4+y	(19⁺)	2799.6+y	(17⁺)	
595.1 *3*	3.5 *14*	2142.8+y	(17⁺)	1547.8+y	(15⁺)	
597.6 *3*		3107.6+y	(18⁺)	2509.9+y	(16⁺)	
597.7 *3*		3049.6+y	(18⁺)	2451.9+y	(16⁺)	
608.2 *2*	29 *7*	2580.81+y	(19⁻)	1972.60+y	(17⁻)	DCO=1.13 *20*.
613.2 *3*	4.3 *17*	2370.1+y		1756.8+y		
614.3 *3*	4.8 *19*	3510.0+y	(22⁻)	2895.7+y	(20⁻)	
615.9 *2*	16.6 *42*	3821.8+y	(23⁺)	3205.87+y	(21⁺)	
616.3 *3*	3.6 *15*	2926.3+y	(19⁺)	2310.0+y	(17⁺)	
618.8 *3*		1184.9+y	(11⁻)	566.1+y		
621.0 *3*	0.78 *31*	4013.8+y	(23⁻)	3392.9+y	(21⁻)	
623.7 *3*		3852.8+y		3229.1+y		
624.9 *3*	3.9 *16*	2462.6+y	(18⁺)	1837.7+y	(16⁺)	

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γ(^{178}Ir) (continued)

E_γ [@]	I_γ [‡]	E_i(level)	J^π_i	E_f	J^π_f	Comments
628.0 *3*	3.8 *15*	4013.8+y	(23⁻)	3385.8+y	(21⁻)	
634.5 *3*		3899.6+y		3265.1+y		
635.2 *3*	5.0 *20*	1756.8+y		1121.4+y	(14⁻)	
635.5 *3*	4.0 *16*	3247.6+y	(20⁺)	2612.1+y	(18⁺)	
637.7 *2*	17.6 *44*	2906.6+y	(20⁻)	2268.84+y	(18⁻)	DCO=1.08 *12*.
641.2 *3*	5.0 *20*	4095.1+y	(23⁺)	3453.9+y	(21⁺)	DCO=1.21 *44*.
641.7 *2*	39 *10*	2312.7+y	(18⁻)	1671.0+y	(16⁻)	DCO=1.11 *17*.
641.9 *3*	4.2 *17*	3838.9+y	(23⁻)	3197.0+y	(21⁻)	
642.2 *3*		1256.8+y		614.5+y	(11⁻)	
646.3 *2*	19 *5*	2681.0+y	(19⁻)	2034.6+y	(17⁻)	DCO=0.91 *21*.
650.1 *3*	12.9 *32*	4151.2+y	(24⁺)	3501.0+y	(22⁺)	
651.2 *3*	1.9 *8*	2475.6+y	(17⁺)	1824.4+y	(15⁺)	
652.6 *3*	3.0 *12*	2795.4+y	(19⁺)	2142.8+y	(17⁺)	
653.7 *3*		4506.5+y		3852.8+y		
660.7 *3*	2.0 *8*	3587.0+y	(21⁺)	2926.3+y	(19⁺)	
663.6 *5*		1210.2+y	(13⁻)	546.71+y	(11⁻)	
666.2 *3*		1611.5+y	(15⁻)	945.16+y	(13⁻)	
667.8 *2*	26 *7*	3248.6+y	(21⁻)	2580.81+y	(19⁻)	DCO=1.08 *20*.
667.9 *3*	3.9 *16*	4177.9+y	(24⁻)	3510.0+y	(22⁻)	
675.3 *3*	8.5 *34*	4497.1+y	(25⁺)	3821.8+y	(23⁺)	DCO=0.99 *19*.
678.6 *3*		4578.2+y		3899.6+y		
679.7 *3*	3.1 *13*	3142.3+y	(20⁺)	2462.6+y	(18⁺)	
681.4[b] *3*		3051.3+y		2370.1+y		
681.7 *3*	2.0 *8*	3929.3+y	(22⁺)	3247.6+y	(20⁺)	
681.8 *3*	2.4 *10*	4695.6+y	(25⁻)	4013.8+y	(23⁻)	
684.8 *5*	2.2 *9*	4271.8+y		3587.0+y	(21⁺)	
690.0 *3*		5196.5+y		4506.5+y		
694.8 *3*	2.3 *9*	4533.7+y	(25⁻)	3838.9+y	(23⁻)	
697.2 *2*	19 *5*	3603.8+y	(22⁻)	2906.6+y	(20⁻)	DCO=1.10 *19*.
699.3 *3*	3.9 *16*	2370.1+y		1671.0+y	(16⁻)	
701.0 *3*		5279.2+y		4578.2+y		
703.4 *3*	2.7 *11*	4798.5+y	(25⁺)	4095.1+y	(23⁺)	
704.6 *3*	1.7 *7*	3385.8+y	(21⁻)	2681.0+y	(19⁻)	DCO=0.95 *33*.
706.4 *3*	4.0 *16*	3501.8+y	(21⁺)	2795.4+y	(19⁺)	
707.2 *3*	6.6 *27*	4858.4+y	(26⁺)	4151.2+y	(24⁺)	
711.9 *3*		3392.9+y	(21⁻)	2681.0+y	(19⁻)	
712.3 *3*		1401.4+y	(14⁻)	689.13+y	(12⁻)	
712.8 *3*		3025.4+y	(20⁻)	2312.7+y	(18⁻)	DCO=0.96 *15*.
720.5 *3*	2.6 *11*	4898.4+y	(26⁻)	4177.9+y	(24⁻)	
726.7 *3*	11.7 *29*	3975.3+y	(23⁻)	3248.6+y	(21⁻)	DCO=1.10 *22*.
733.8 *3*	3.0 *12*	3876.1+y	(22⁺)	3142.3+y	(20⁺)	
734.9 *3*	5.7 *23*	5232.0+y	(27⁺)	4497.1+y	(25⁺)	
735.4 *3*	1.7 *7*	5431.0+y	(27⁻)	4695.6+y	(25⁻)	

$\gamma(^{178}Ir)$ (continued)

E_γ [@]	I_γ [‡]	E_i(level)	J^π_i	E_f	J^π_f	Comments
745.9 *3*		5279.6+y	(27⁻)	4533.7+y	(25⁻)	
754.6 *3*	7.6 *31*	4358.4+y	(24⁻)	3603.8+y	(22⁻)	DCO=1.10 *18*.
754.8 *3*		4147.6+y	(23⁻)	3392.9+y	(21⁻)	
757.9 *3*	1.3 *5*	5556.4+y	(27⁺)	4798.5+y	(25⁺)	
760.6 *3*		4262.4+y	(23⁺)	3501.8+y	(21⁺)	
762.2 *3*	12.1 *30*	3787.7+y	(22⁻)	3025.4+y	(20⁻)	
763.9 *3*	4.0 *16*	5622.3+y	(28⁺)	4858.4+y	(26⁺)	
770.3 *3*	1.1 *5*	5668.7+y	(28⁻)	4898.4+y	(26⁻)	
778.9 *3*	0.94 *38*	6209.9+y	(29⁻)	5431.0+y	(27⁻)	
781.7 *3*	6.8 *27*	4756.9+y	(25⁻)	3975.3+y	(23⁻)	
787.1 *3*		4663.2+y	(24⁺)	3876.1+y	(22⁺)	
788.2 *3*	3.6 *15*	4575.9+y	(24⁻)	3787.7+y	(22⁻)	
792.7 *3*	2.6 *11*	6024.7+y	(29⁺)	5232.0+y	(27⁺)	
793.8 *3*		6073.4+y	(29⁻)	5279.6+y	(27⁻)	
798.5 *3*	3.3 *13*	1487.5+y	(13⁻)	689.13+y	(12⁻)	
801.1 *3*	0.78 *31*	6357.5+y	(29⁺)	5556.4+y	(27⁺)	
806.4 *3*	4.8 *19*	5164.8+y	(26⁻)	4358.4+y	(24⁻)	
812.3 *3*		5074.7+y	(25⁺)	4262.4+y	(23⁺)	
818.2 *3*		6486.9+y	(30⁻)	5668.7+y	(28⁻)	
819.9 *3*	1.6 *7*	6442.2+y	(30⁺)	5622.3+y	(28⁺)	
828.4 *3*		5404.3+y	(26⁻)	4575.9+y	(24⁻)	
829.7 *3*	0.78 *31*	7039.6+y	(31⁻)	6209.9+y	(29⁻)	
832.5 *3*	2.8 *11*	5589.4+y	(27⁻)	4756.9+y	(25⁻)	
835.4 *3*		5498.6+y	(26⁺)	4663.2+y	(24⁺)	
836.8 *3*	0.73 *29*	7194.3+y	(31⁺)	6357.5+y	(29⁺)	
840.0[b] *3*		6913.4+y?	(31⁻)	6073.4+y	(29⁻)	
846.7 *3*	1.4 *6*	6871.4+y	(31⁺)	6024.7+y	(29⁺)	
853.0 *3*		6017.8+y	(28⁻)	5164.8+y	(26⁻)	
865.2 *3*		6454.6+y	(29⁻)	5589.4+y	(27⁻)	
872.4 *3*	0.31 *13*	7314.6+y	(32⁺)	6442.2+y	(30⁺)	
895.4 *3*		7766.8+y	(33⁺)	6871.4+y	(31⁺)	
921.1 *3*		8235.7+y	(34⁺)	7314.6+y	(32⁺)	
937.0 *3*		8703.8+y	(35⁺)	7766.8+y	(33⁺)	
965.0 *3*		9200.7+y	(36⁺)	8235.7+y	(34⁺)	
1016.8 *5*		1705.9+y		689.13+y	(12⁻)	

† Deduced from intensity balances, DCO ratios, and/or internal conversion coefficients determined in 2003Ho03.

‡ From 2003Ho03. The uncertainties for the γ-ray intensities have been assigned by the evaluators, following suggestions in 2003Ho03, 2001Zh27, as follows: ΔIγ=40% (Iγ<10), ΔIγ=25% (10<=Iγ<50), ΔIγ=15% (50<=Iγ).

The mixing ratios (δ) quoted in the table are values deduced by 2003Ho03 from their experimental DCO ratios.

$^{178}_{77}Ir_{101}$-15

γ(^{178}Ir) (continued)

[@] From 2003Ho03. Eγ uncertainties assigned by the evaluators based on relevant comments in 2003Ho03 and 2001Zh27.

[&] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[a] Multiply placed.

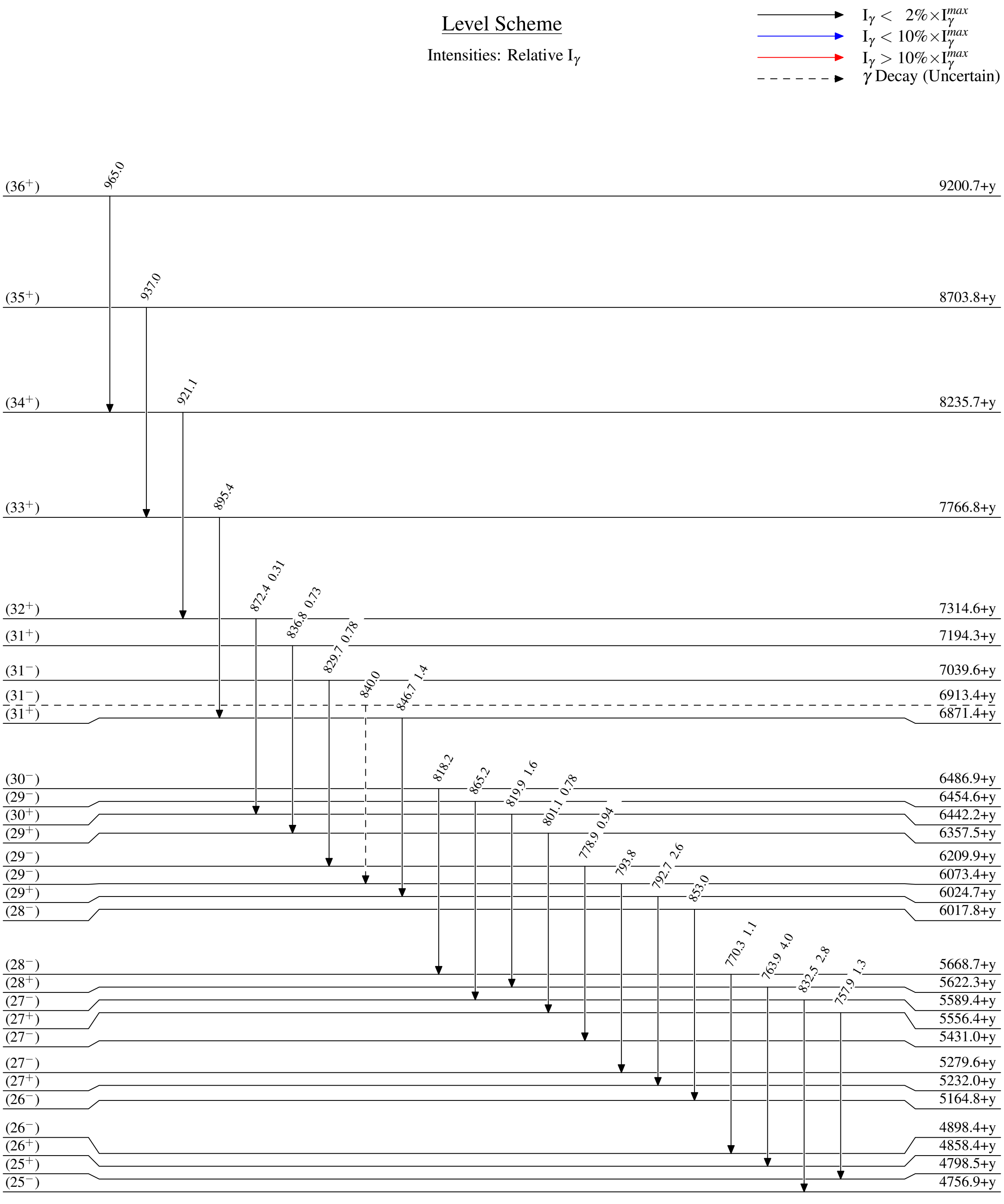
[b] Placement of transition in the level scheme is uncertain.

$^{178}_{77}Ir_{101}$-16

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme

Intensities: Relative I_γ



$^{178}_{77}Ir_{101}$

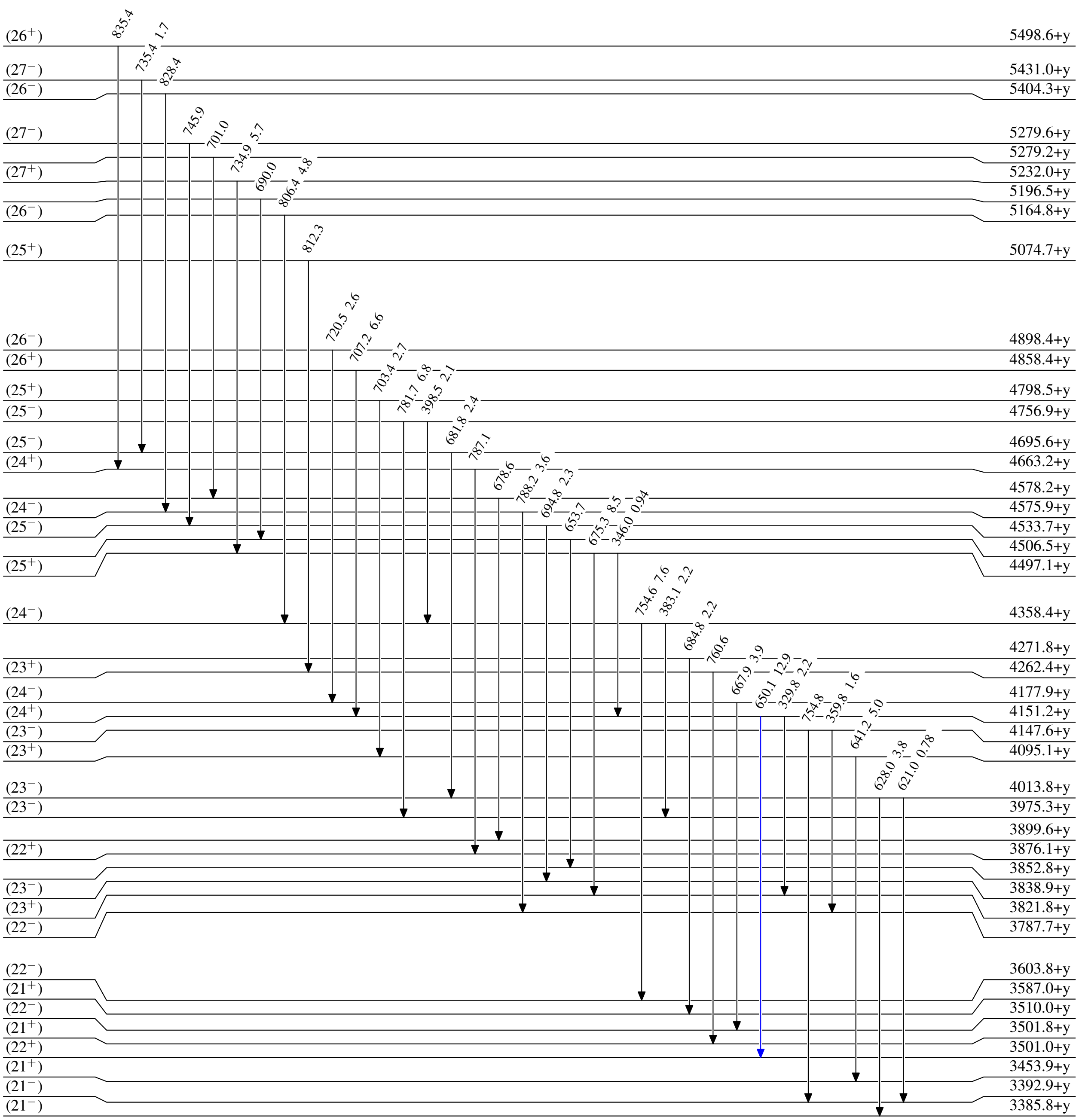
(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

Intensities: Relative I_γ

Legend

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

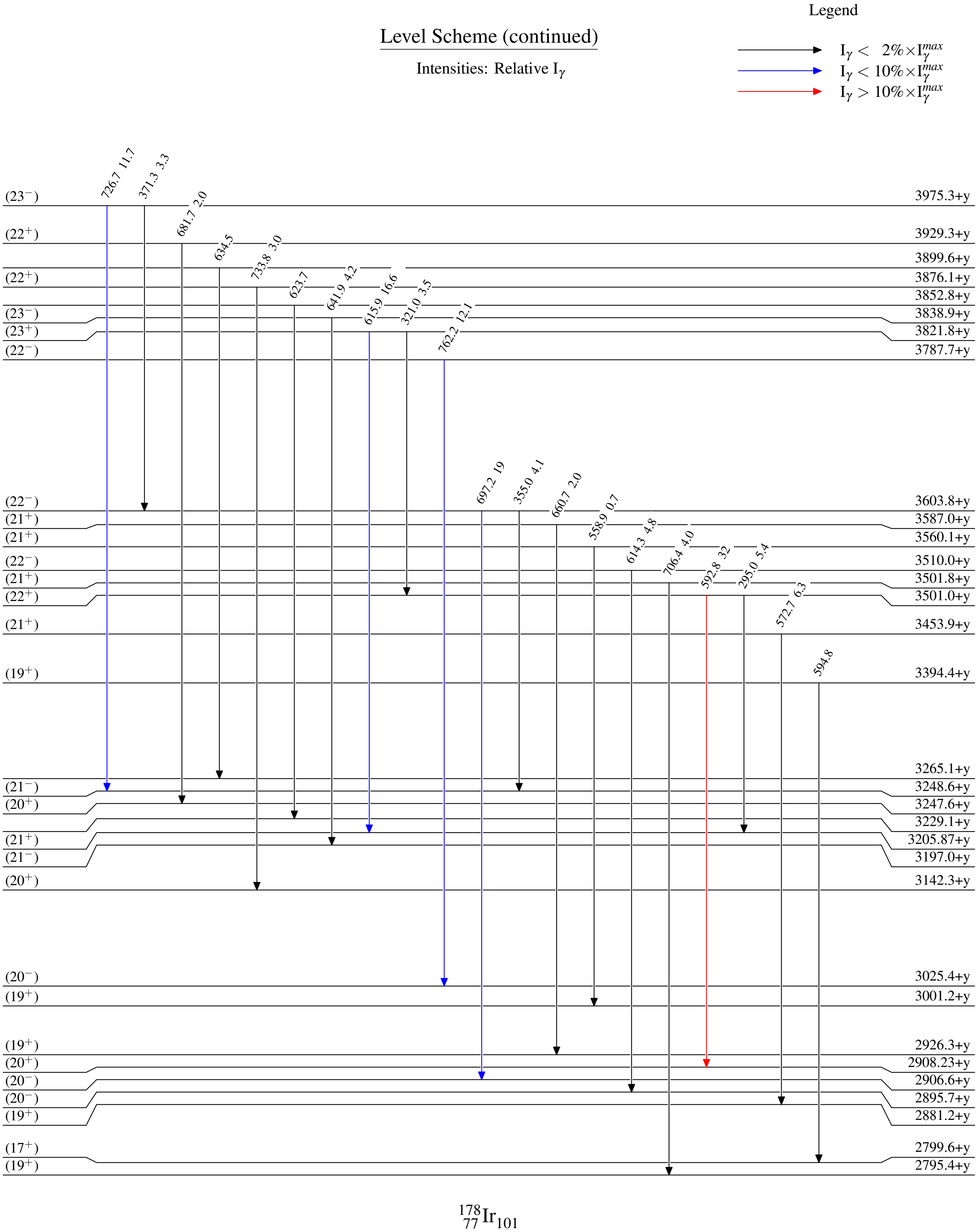


$^{178}_{77}Ir_{101}$

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

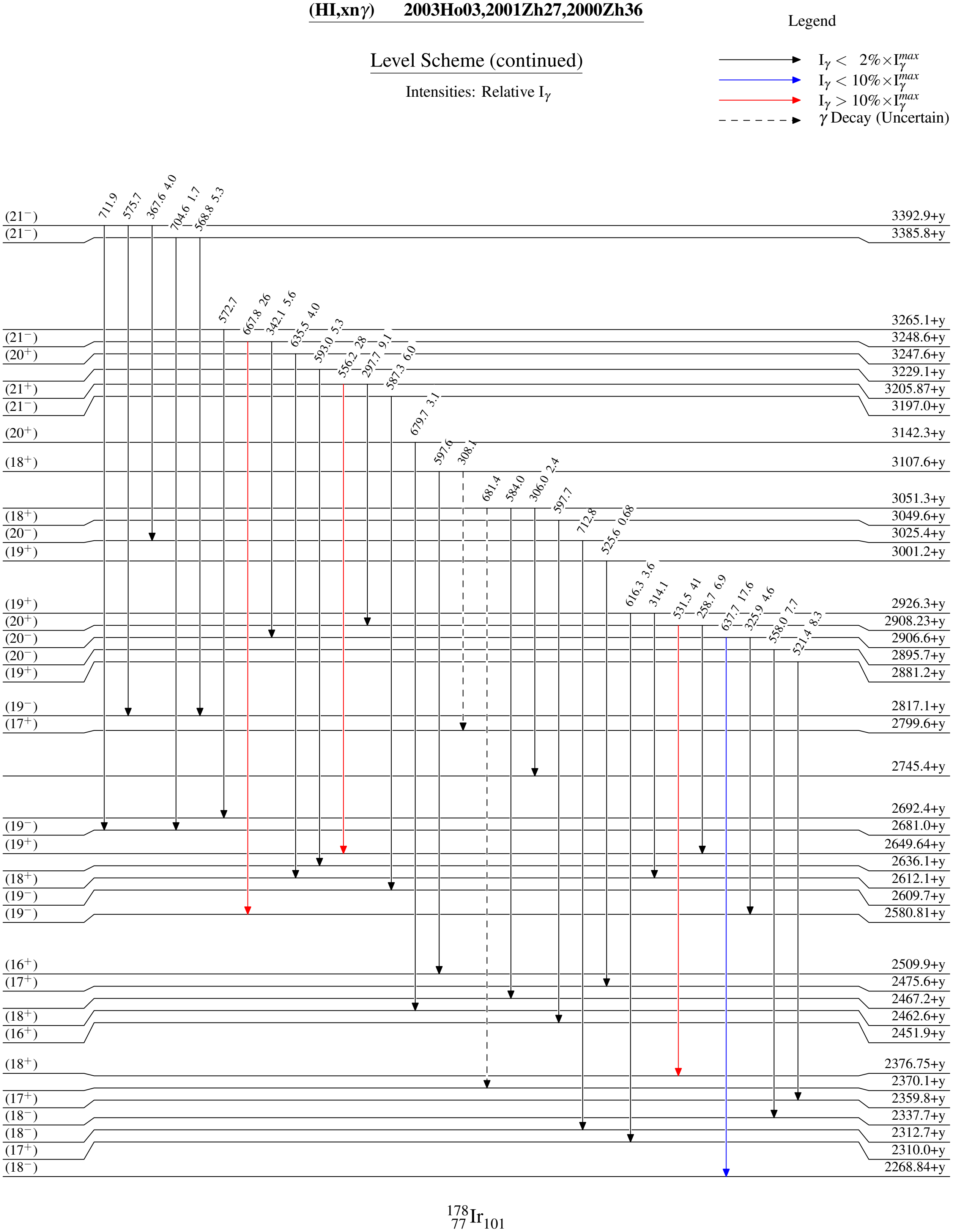
Intensities: Relative I_γ



(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

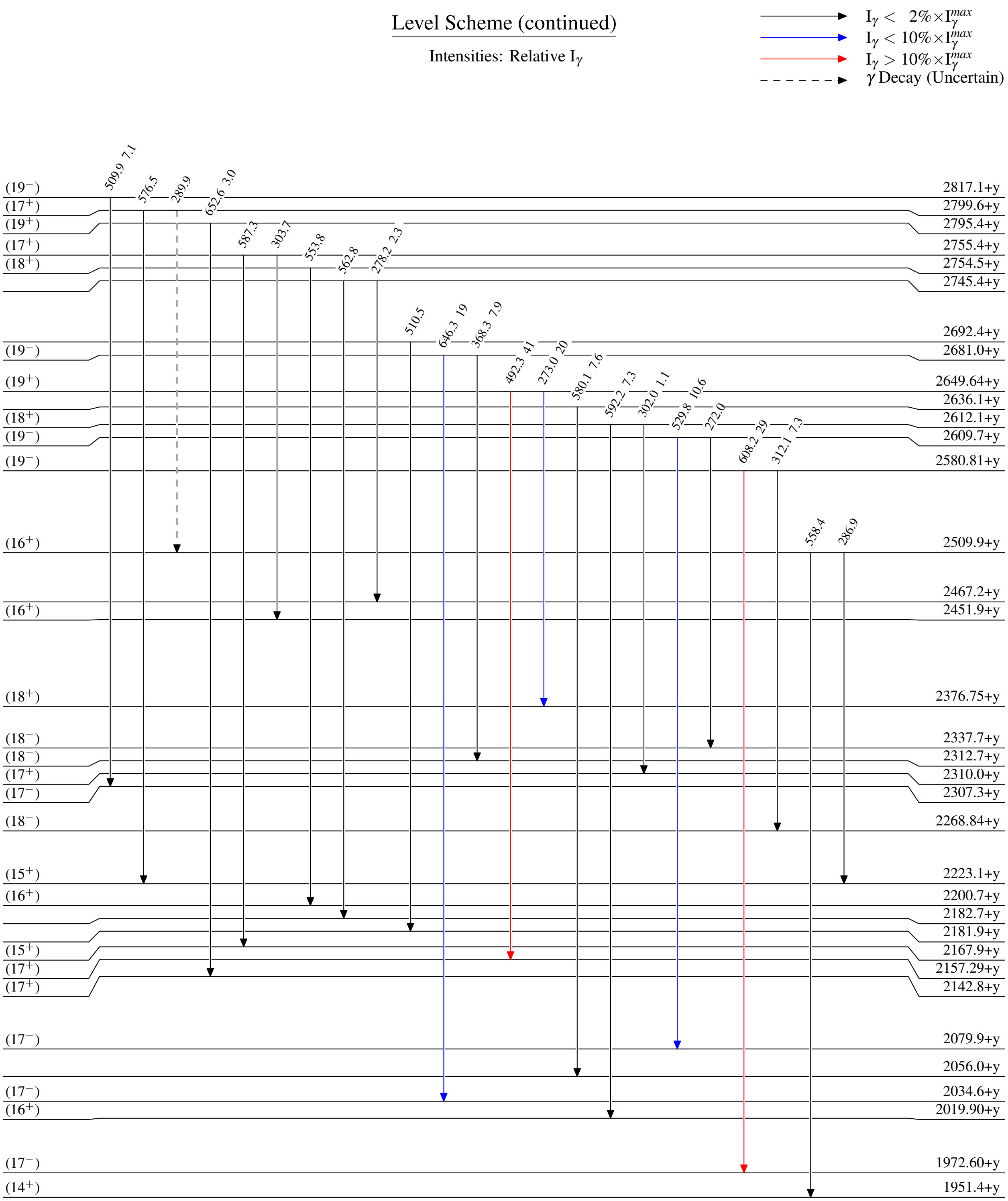
Intensities: Relative I_γ



(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

Intensities: Relative I_γ

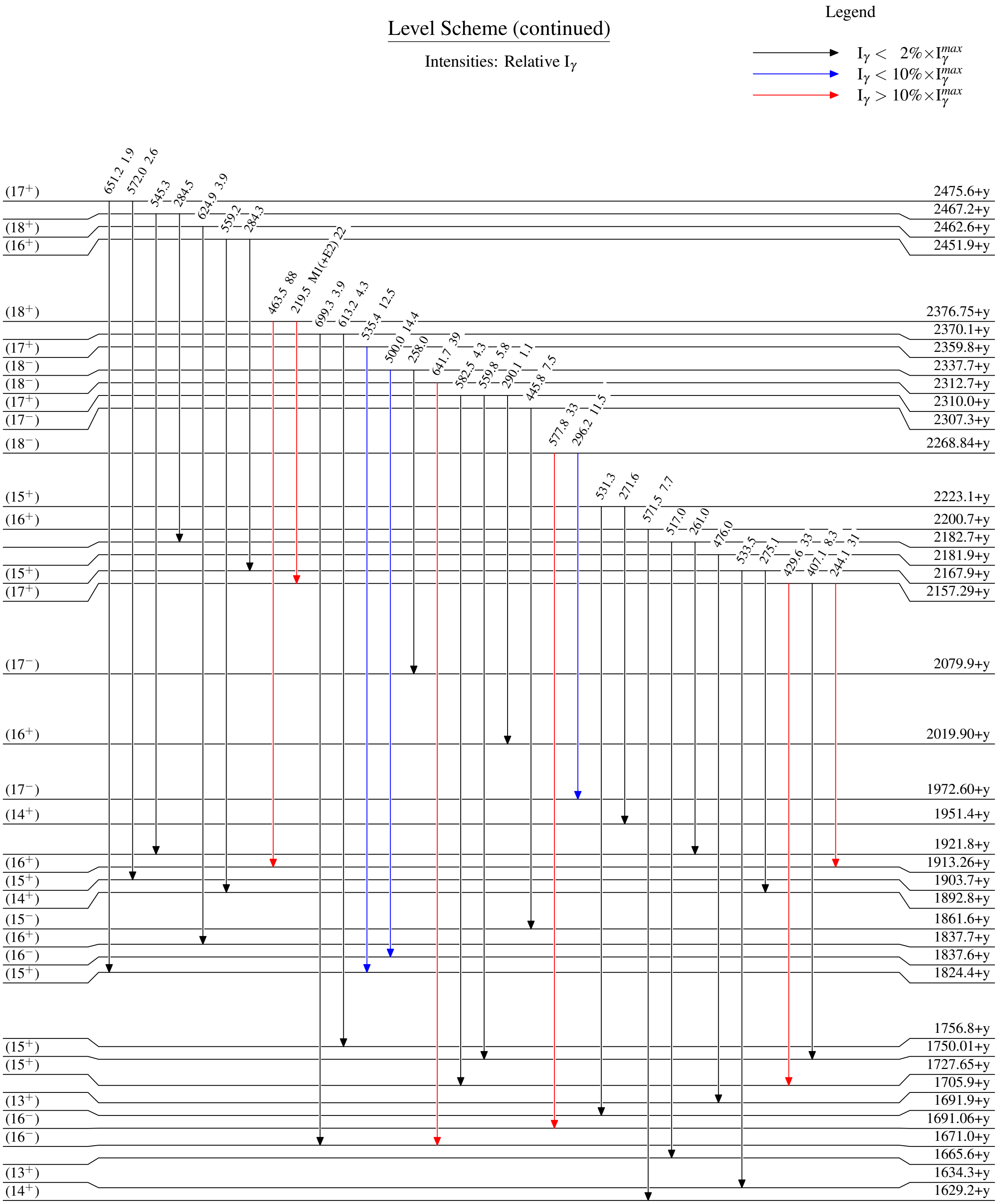


$^{178}_{77}Ir_{101}$

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

Intensities: Relative I_γ



$^{178}_{77}Ir_{101}$

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

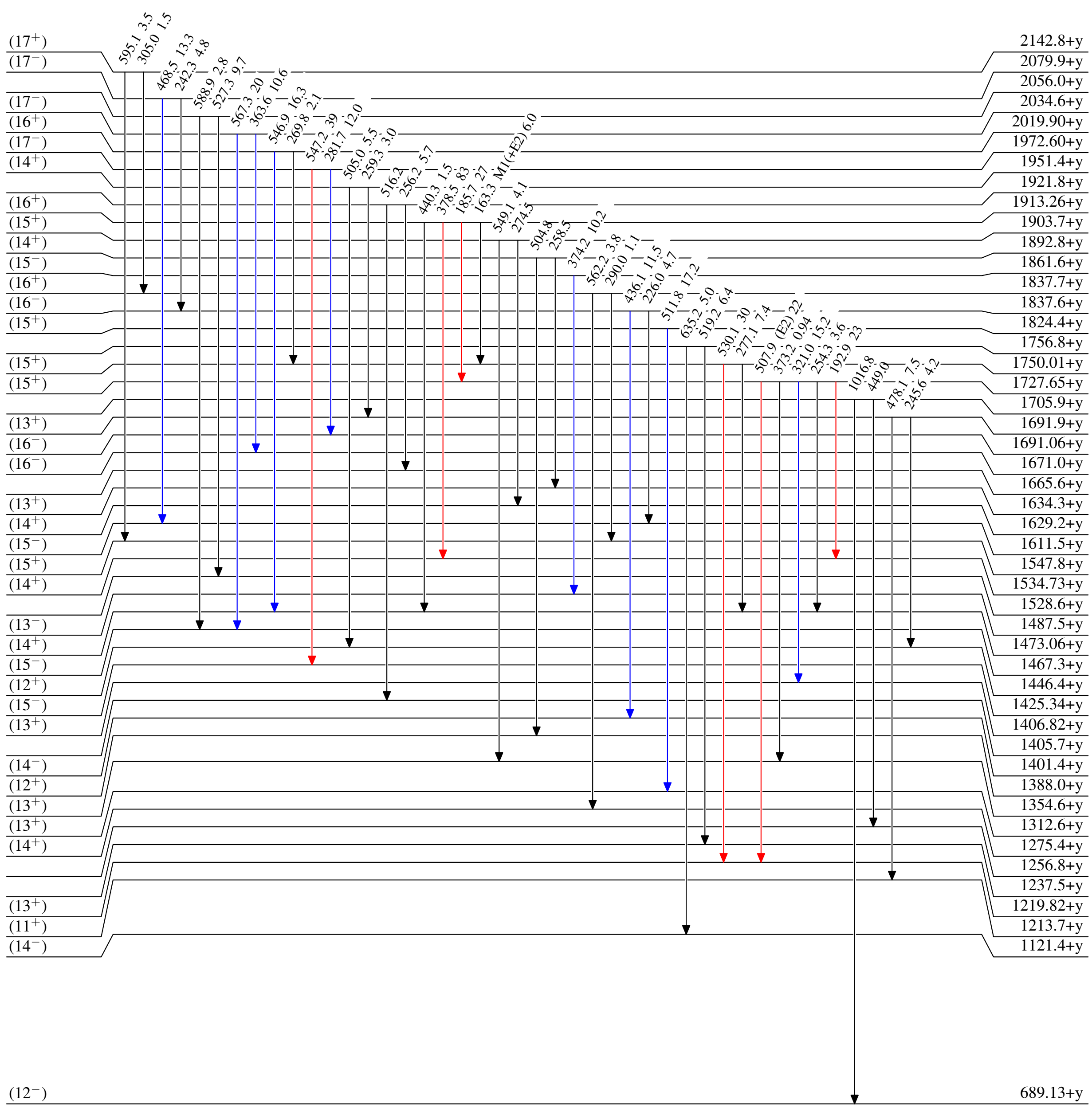
Intensities: Relative I_γ

Legend

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

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

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



$^{178}_{77}Ir_{101}$

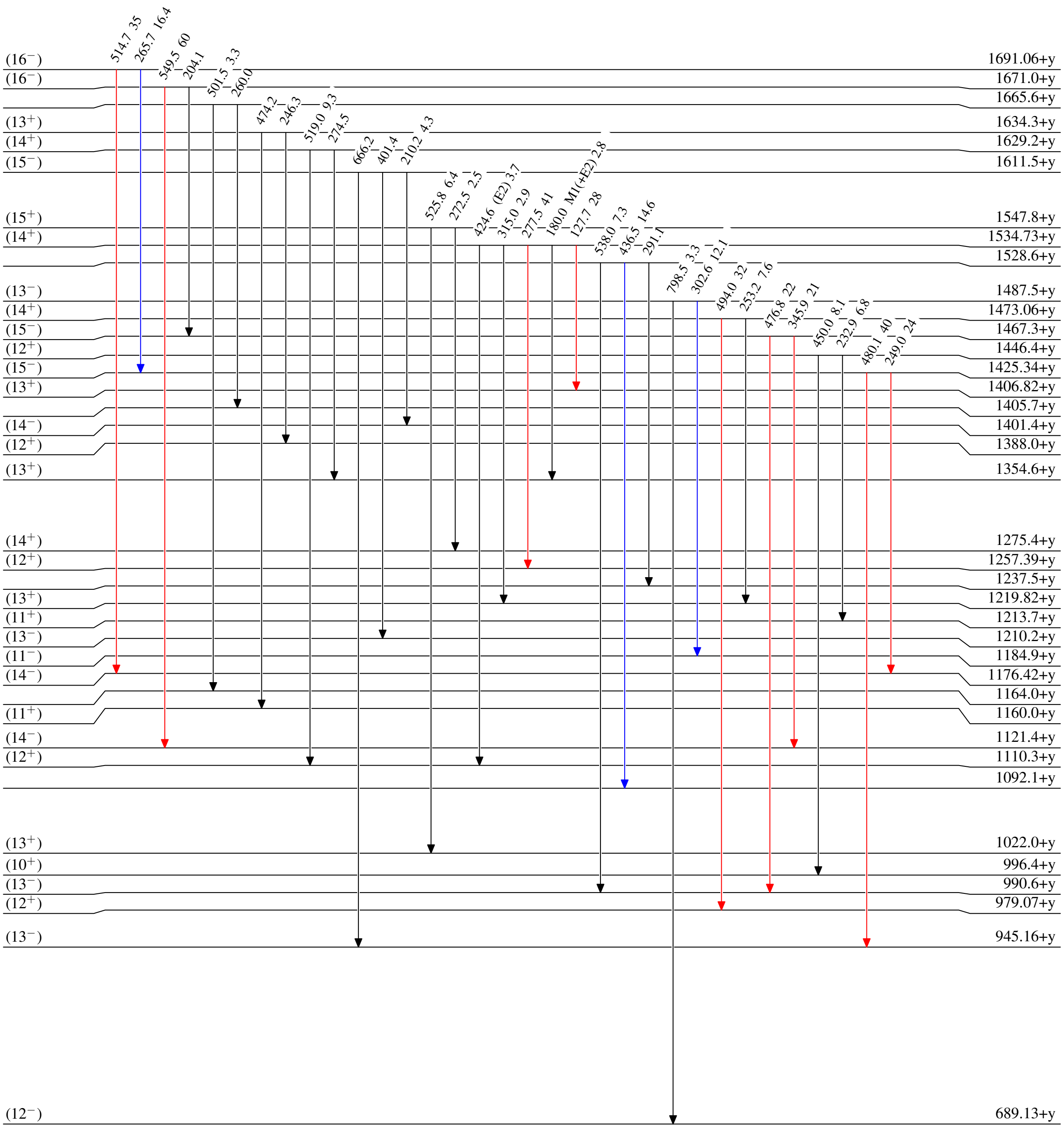
(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

Intensities: Relative I_γ

Legend

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



$^{178}_{77}Ir_{101}$

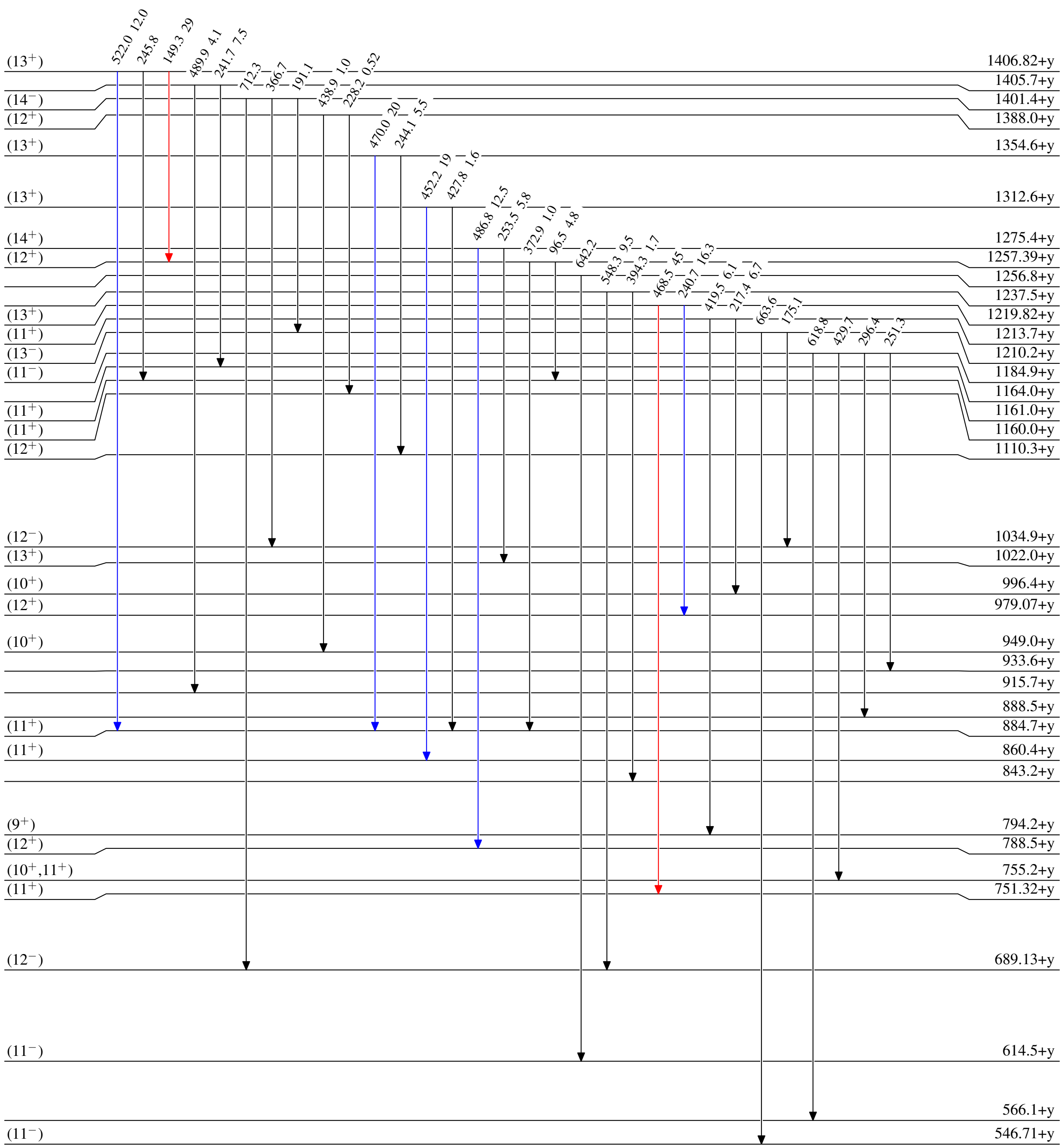
(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

Intensities: Relative I_γ

Legend

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

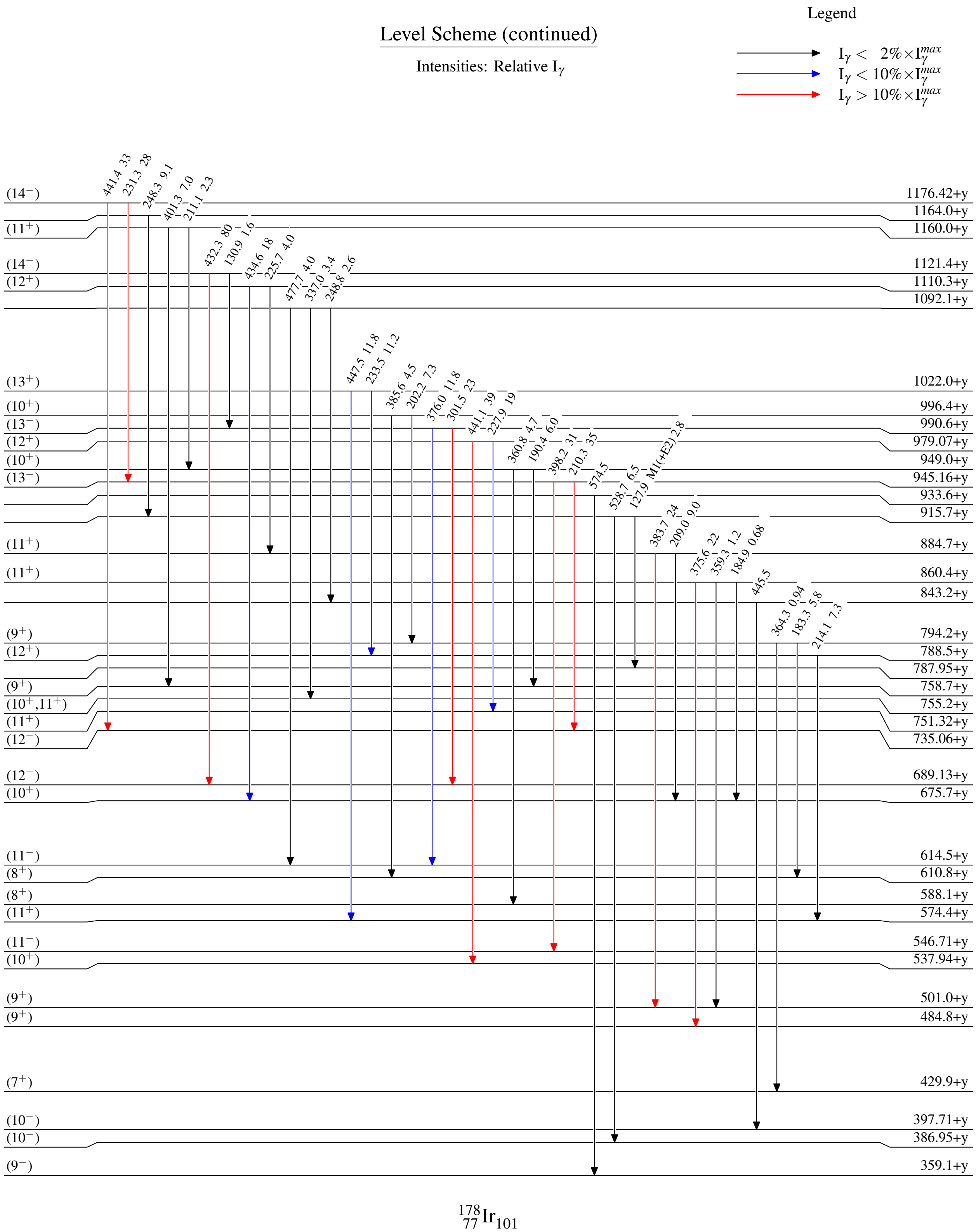


$^{178}_{77}Ir_{101}$

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

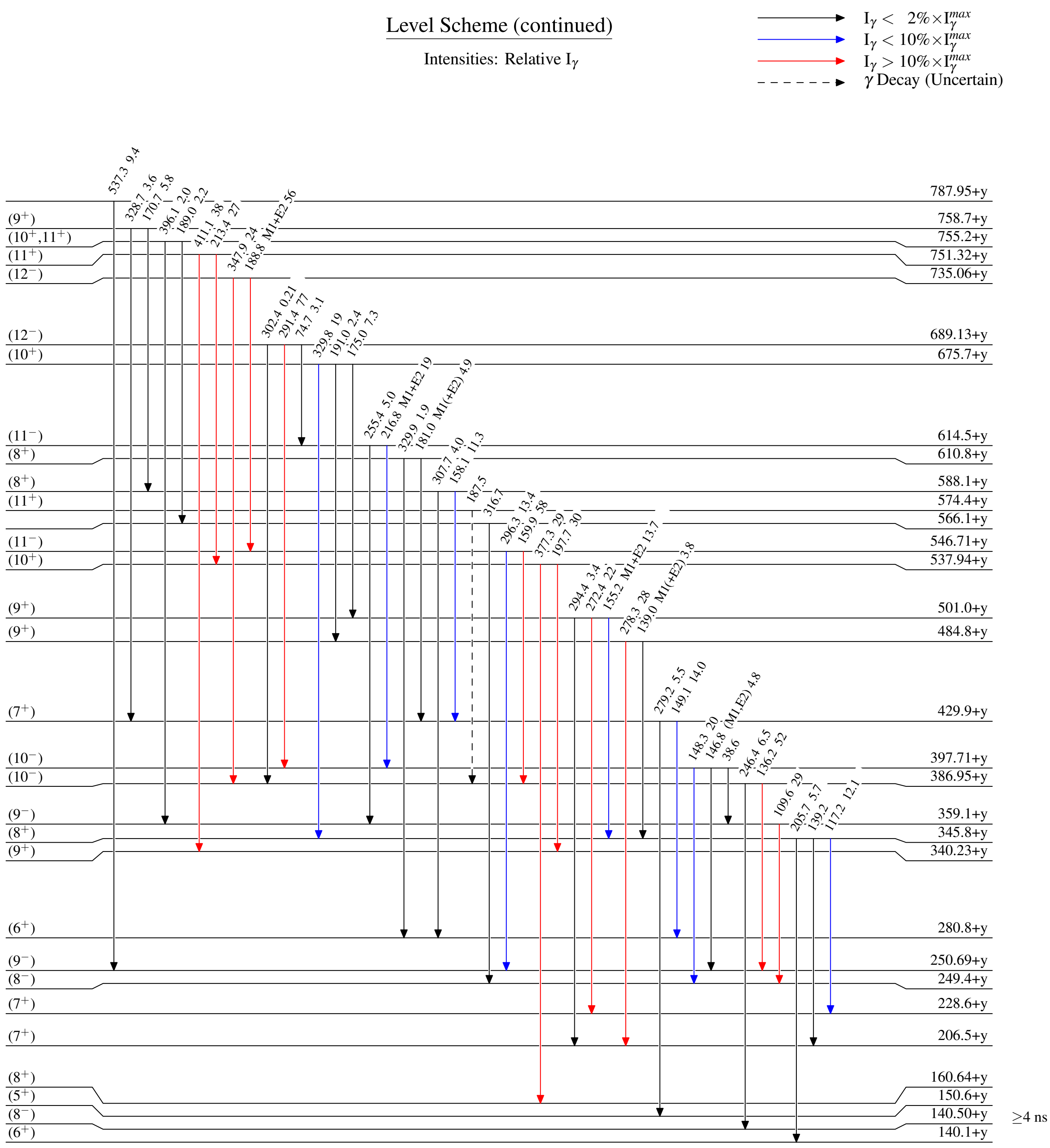
Intensities: Relative I_γ



(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

Intensities: Relative I_γ



$^{178}_{77}Ir_{101}$

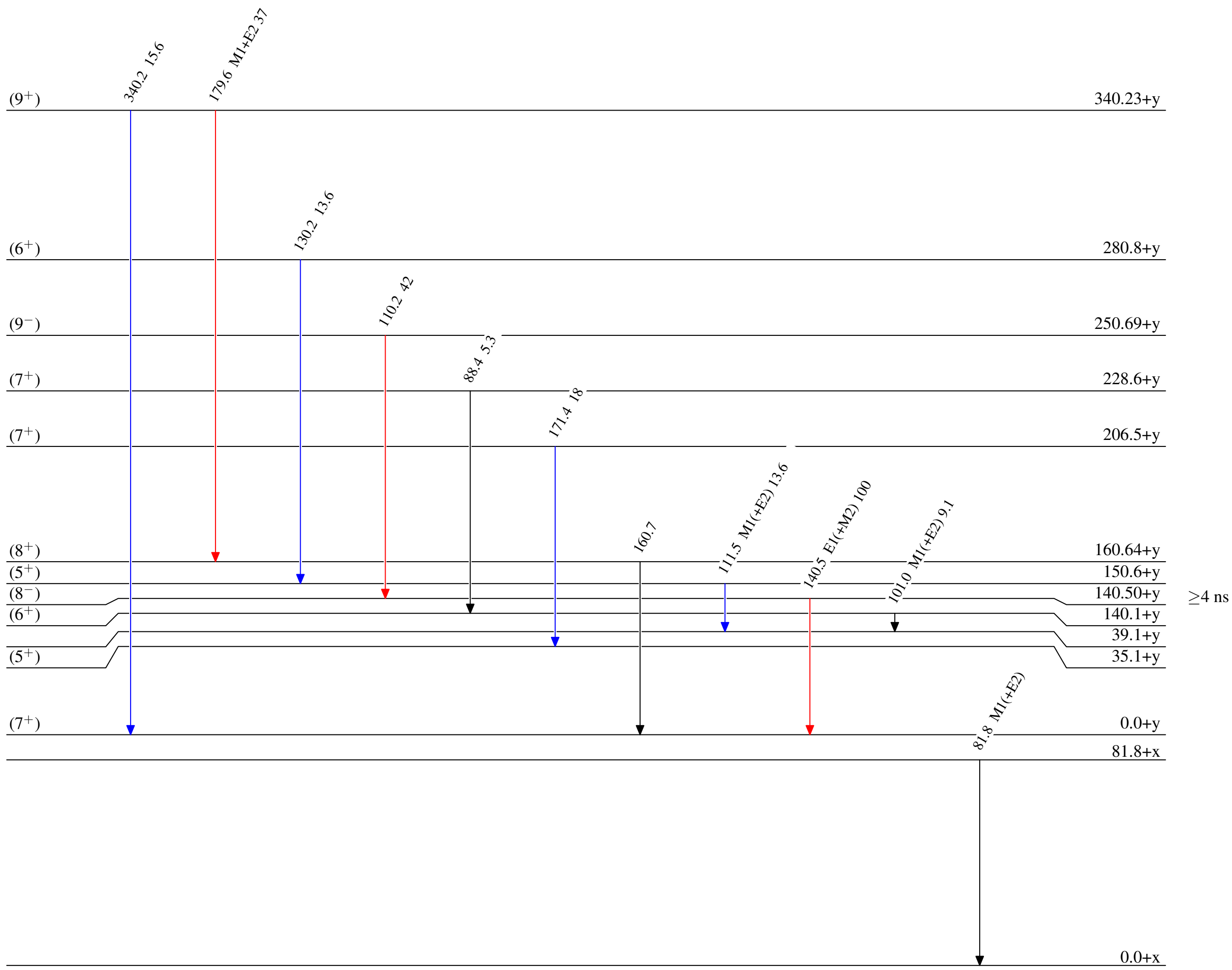
(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36

Level Scheme (continued)

Intensities: Relative I_γ

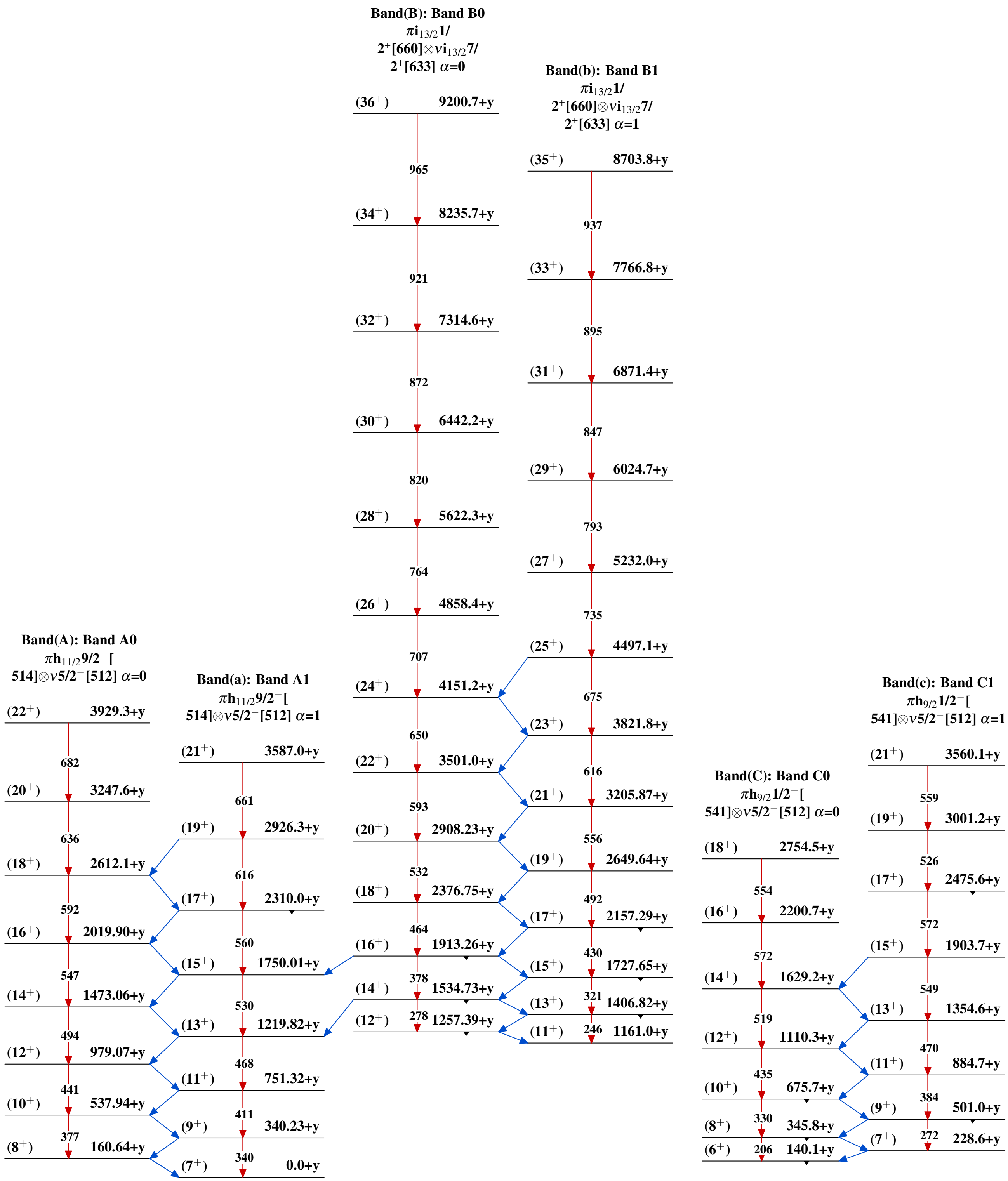
Legend

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



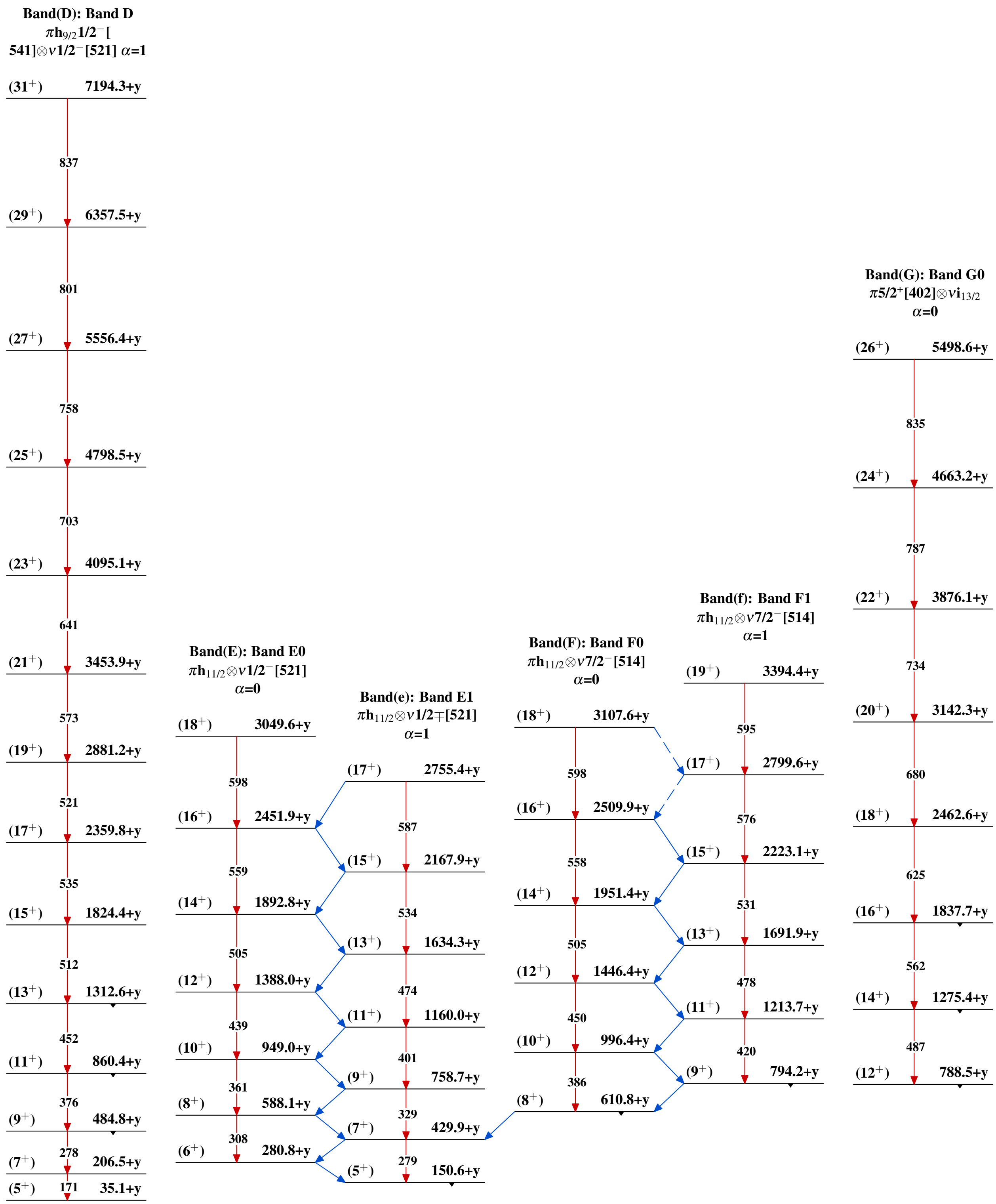
$^{178}_{77}Ir_{101}$

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36



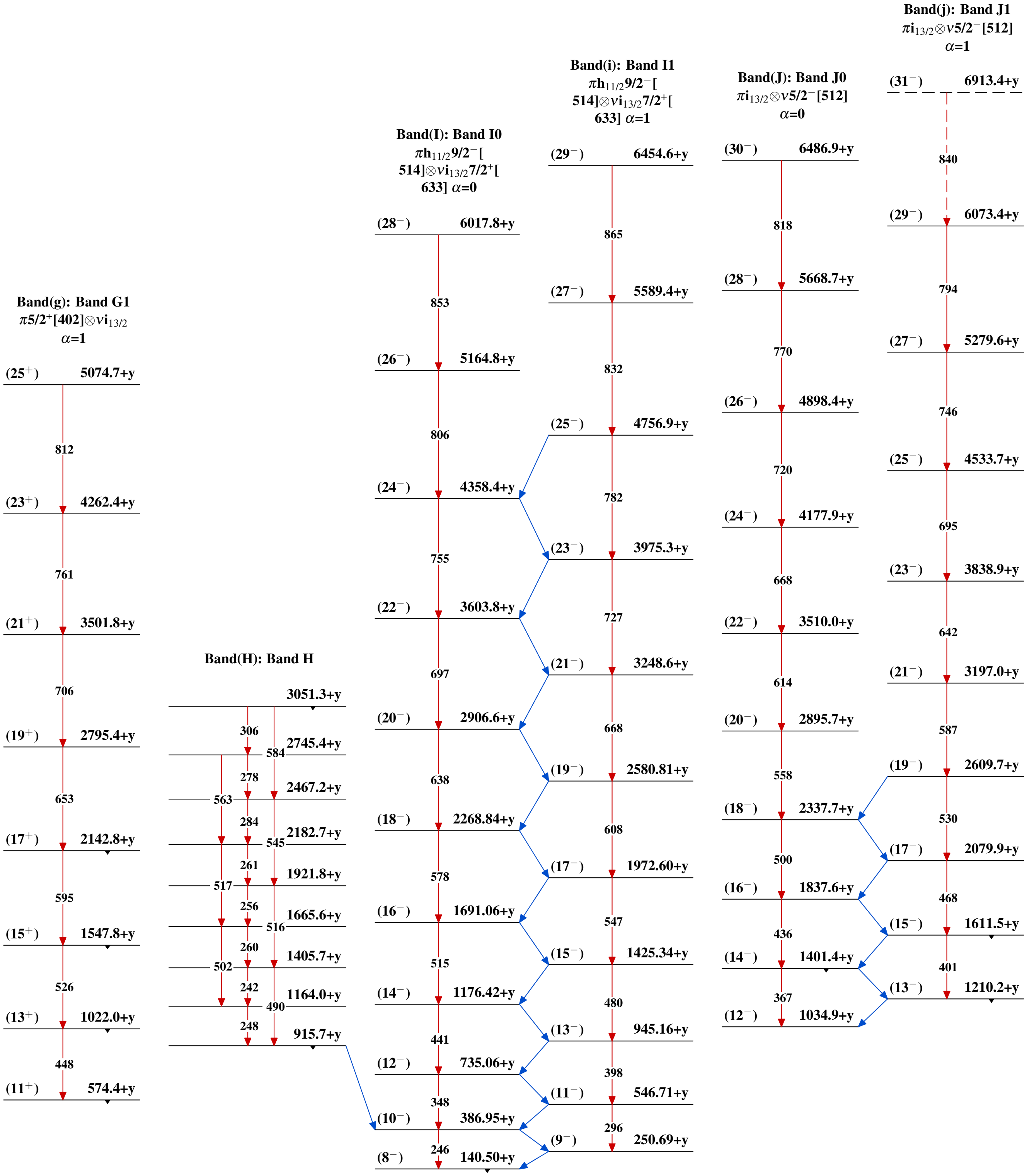
$^{178}_{77}Ir_{101}$

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)



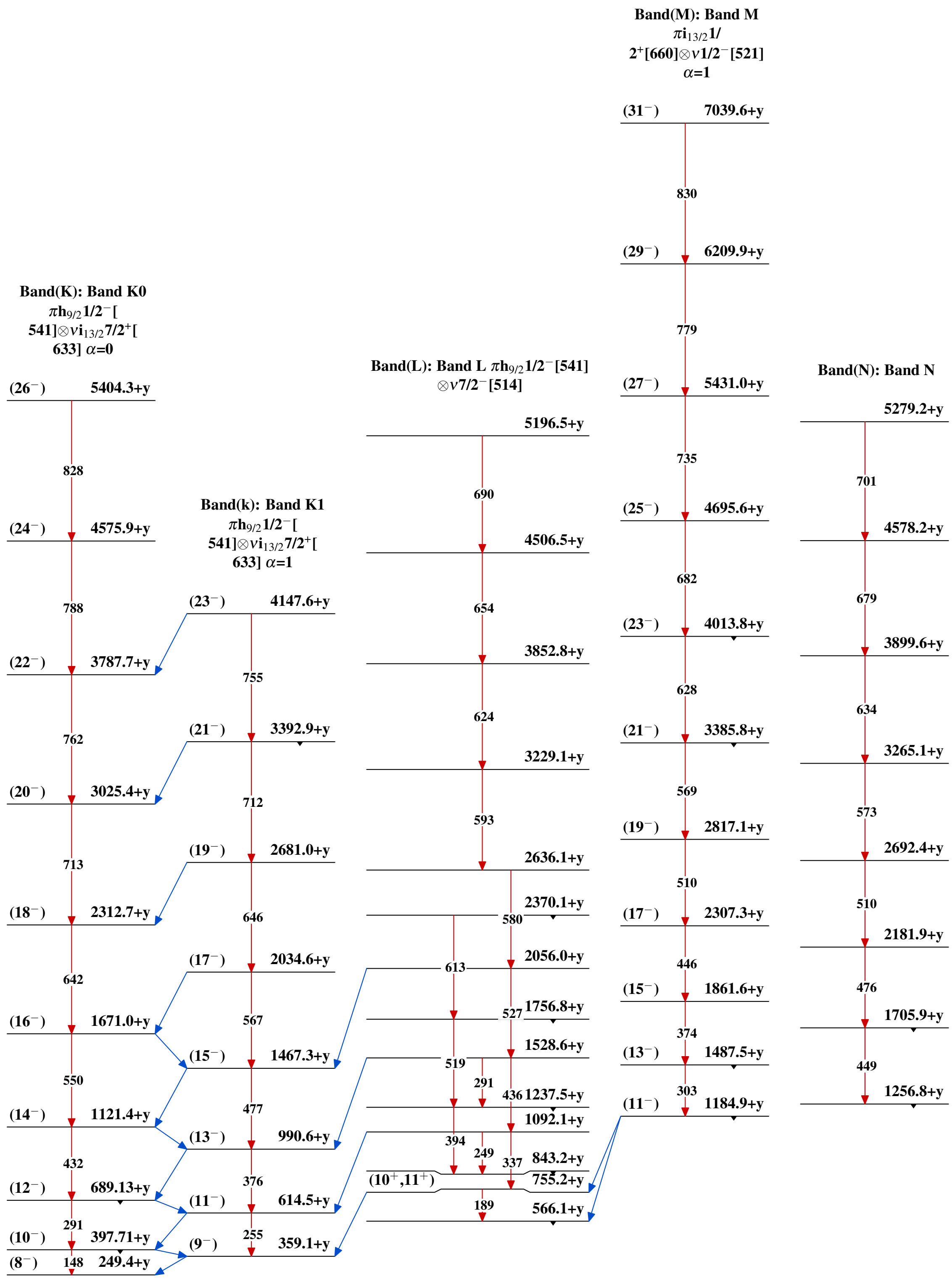
$^{178}_{77}Ir_{101}$

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)



$^{178}_{77}Ir_{101}$

(HI,xnγ) 2003Ho03,2001Zh27,2000Zh36 (continued)



$^{178}_{77}Ir_{101}$