(HI,xnγ) 2002Bu16,2004Ka32,1998Do04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 105, 223 (2005)	22-Jun-2005

Reactions include: ^{24}Mg(^{58}Ni,pnγ); ^{54}Fe(^{28}Ni,pnγ); ^{58}Ni(^{24}Mg,pnγ); Ni(^{92}Mo,X).

2002Bu16, 1995Bu33: ^{58}Ni(^{24}Mg,pnγ), E=180 MeV. Measured γ, $\gamma\gamma$ using GASP spectrometer consisting of 40 Compton-suppressed HPGe detectors and an 80 BGO-elements inner ball in conjunction with the ISIS silicon ball and a recoil-mass spectrometer.

2004Ka32: ^{54}Fe(^{28}Ni,pnγ) E=90 MeV. Measured $\gamma\gamma$, lifetimes using the FSU array of three Compton-suppressed Ge detectors consisting of 4-crystal Clover detectors and seven single-crystal detectors. Lifetimes were measured using the Doppler-shift attenuation method (DSAM) for experimental line shapes that were measured at both 35° and 145° whenever possible. The DSAM applied to this experiment involved a comparison of the decay time of the recoiling nuclei with their slowing-down time in a thick target.

2000Do10,1998Do04: ^{24}Mg(^{58}Ni,pnγ), E=190 MeV. Measured γ, $\gamma\gamma$, and lifetimes using three HPGe detectors and a low-energy photon spectrometer (LEPS). A 4.7 s *3* isomer discovered.

2001Re11: ^{54}Fe(^{28}Si,pnγ), E=85 MeV, mass separation using recoil-mass spectrometer. Measured prompt and delayed γ and $\gamma\gamma$ using the Clarion array to measure the prompt γ-rays and a focal plane clover Ge detector to measure delayed γ-rays in conjunction with RMS (Isomer decay tagging technique).

2000Pi05: ^{24}Mg(^{58}Ni,pnγ), E=200 MeV. Measured γ, $\gamma\gamma$, $T_{1/2}$ using three Si(Li) detectors for conversion electron spectroscopy and two segmented Ge clover detectors for γ-ray detection.

2000Ch07: Ni(^{92}Mo,X) E=60 MeV/nucleon. Measured half-life of a microsecond isomer at 311 keV.

All data are from 2002Bu16, unless otherwise stated.

^{80}Y Levels

E(level)[†]	J^π[@]	$T_{1/2}$[‡]	Comments
0[&]	(4⁻)	30.1 s *5*	$T_{1/2}$,J^π: from 1998Do04.
228.5[i] *1*	(1⁻)	4.7 s *3*	%ε+%β⁺=19 *2*; %IT=81 *1* (1998Do04,2000Do10) E(level),$T_{1/2}$,J^π: from 1998Do04.
257.1[a] *8*	(5⁻)		J^π: from 1998Do04.
312.6[g] *9*	(2⁺)	4.7 μs *3*	$T_{1/2}$: From 2000Ch07.
324.2[h] *8*	2⁻		
443.6 *11*			
455.6[f] *10*	(3⁺)		
460.7[i] *8*	3⁻		
570.0[&] *7*	6⁻		
648.7[g] *9*	(4⁺)		
663.7[h] *10*	4⁻		
676.1 *11*			
878.8[i] *11*	5⁻		
886.6[f] *10*	(5⁺)		
937.5[a] *9*	7⁻		
1059.3[d] *9*	(6⁺)		
1175.8[e] *9*	(6⁺)		
1185.7[g] *10*	(6⁺)		
1207.1[h] *12*	6⁻		
1290.2[c] *9*	(7⁺)		
1358.6[&] *10*	8⁻	0.79 ps *+42−21*	
1488.7[i] *13*	7⁻		
1490.5[d] *9*	(8⁺)		
1509.6[f] *10*	(7⁺)		

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(HI,xnγ) 2002Bu16,2004Ka32,1998Do04 (continued)

^{80}Y Levels (continued)

E(level)[†]	Jπ[@]	$T_{1/2}$[‡]	E(level)[†]	Jπ[@]	$T_{1/2}$[‡]
1764.6[e] *10*	(8+)		5438.3[h] *21*	(14−)	
1823.9[c] *10*	(9+)		5446.6[a] *21*	15−	0.11 ps *6*
1825.1[a] *11*	9−	0.35 ps *+6−5*	5603.5[b] *21*	(15)	
1916.2[g] *11*	(8+)		5681.8[i] *23*	(15−)	
1957.3[h] *13*	8−		5874.9[f] *20*	(15+)	
2267.9[d] *11*	(10+)		5999.1[d] *19*	(16+)	0.06 ps *+20−3*
2305.6[i] *14*	9−	0.8 ps *+26−4*	6097.6[&] *21*	16−	0.12 ps *8*
2323.3[f] *12*	(9+)	0.73 ps *+35−19*	6242.8[c] *20*	(17+)	0.08 ps *+17−6*
2350.9[&] *12*	10−	0.17 ps *+6−5*	6433.3[e] *23*	(16+)	
2615.4[c] *12*	(11+)	0.66 ps *+53−22*	6654.9[a] *23*	(17−)	<0.25[#] ps
2618.5[e] *14*	(10+)		6784.9[g] *21*	(16+)	
2867.1[g] *13*	(10+)	0.30 ps *+12−8*	6968.5[h] *23*	(16−)	
2901.1[a] *15*	11−	0.12 ps *+7−5*	7034.2[b] *23*	(17)	
2916.3[h] *15*	10−	<0.41[#] ps	7089.7[i] *25*	(17−)	
3298.6[d] *13*	(12+)	0.17 ps *10*	7422.6[f] *22*	(17+)	
3328.4[f] *14*	(11+)	<0.23[#] ps	7450.2[&] *24*	18−	0.17 ps *+12−9*
3333.0[i] *17*	11−	0.30 ps *+18−11*	7528.1[d] *22*	(18+)	<0.14[#] ps
3531.0[&] *16*	12−	0.11 ps *+8−5*	7789.1[c] *22*	(19+)	<0.14[#] ps
3628.2[c] *14*	(13+)	0.19 ps *4*	8029.2[a] *25*	(19−)	
3689.7[e] *18*	(12+)		8036.1[e] *25*	(18+)	
4013.9[g] *15*	(12+)	<0.26[#] ps	8568.7[b] *25*	(19)	
4090.0[h] *18*	(12−)		9001[&] *3*	(20−)	<0.08[#] ps
4146.0[a] *18*	13−	0.15 ps *+7−6*	9148.9[d] *24*	(20+)	
4442.7[i] *20*	13−	<0.22[#] ps	9496.1[c] *25*	(21+)	
4509.6[f] *17*	(13+)	<0.19[#] ps	9613[a] *3*	(21−)	
4558.9[d] *16*	(14+)	0.12 ps *+11−10*	10663[&] *3*	(22−)	
4842.6[&] *19*	14−	0.12 ps *+10−7*	10918[d] *3*	(22+)	
4848.5[c] *17*	(15+)	0.12 ps *+9−6*	11379[c] *3*	(23+)	
4973.7[e] *20*	(14+)		11401[a] *3*	(23−)	
5323.5[g] *18*	(14+)		12460[&] *3*	(24−)	

[†] From least-squares fit to Eγ′s, assuming Δ(Eγ)= 0.3 keV for each γ ray, when quoted to tenth of a keV, otherwise 1 keV is assumed.
[‡] From DSAM (2004Ka32) for all levels above 313 keV.
[#] Effective half-life (2004Ka32), not corrected for side feeding.
[@] As proposed by 2002Bu16 based on γ(θ), γγ(θ)(DCO) data and band assignments.
[&] Band(A): π5/2[422]ν3/2[301], α=0.
[a] Band(a): π5/2[422]ν3/2[301], α=1.
[b] Band(B): Band based on (15).
[c] Band(C): π5/2[422]ν5/2[422], α=1.
[d] Band(c): π5/2[422]ν5/2[422], α=0.
[e] Band(D): $\pi g_{9/2}\nu g_{9/2}$.
[f] Band(E): π5/2[422]ν1/2[431], α=1.
[g] Band(e): π5/2[422]ν1/2[431], α=0.
[h] Band(F): Band based on 2−, α=0. Several configurations contribute: π5/2[422]ν3/2[301]; π1/2[431]ν3/2[301];

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(HI,xnγ) 2002Bu16,2004Ka32,1998Do04 (continued)

^{80}Y Levels (continued)

π3/2[301]ν1/2[431].
[i] Band(f): Band based on 1⁻, α=1. Several configurations contribute: π5/2[422]ν3/2[301]; π1/2[431]ν3/2[301]; π3/2[301]ν1/2[431].

γ(^{80}Y)

DCO's are from 2002Bu16 and correspond to gates on ΔJ=2, Q transitions, unless stated otherwise.

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ	Comments
84		312.6	(2⁺)	228.5	(1⁻)			E_γ: from 1998Do04.
95.5	27 *3*	324.2	2⁻	228.5	(1⁻)	D		A_2=−0.12 *3*, A_4=−0.07 *6*.
114.1	1.0 *4*	1290.2	(7⁺)	1175.8	(6⁺)			
136.2	32 *3*	460.7	3⁻	324.2	2⁻	D		A_2=−0.16 *4*, A_4=−0.06 *6*.
143.0	20.0 *25*	455.6	(3⁺)	312.6	(2⁺)	D		DCO=0.8 *2*. A_2=−0.14 *2*, A_4=−0.07 *3*.
186.3	3.3 *1*	443.6		257.1	(5⁻)			
192.9	23.1 *12*	648.7	(4⁺)	455.6	(3⁺)	D		DCO=1.1 1 (dipole gated). A_2=−0.09 *3*, A_4=−0.02 *3*.
200.0	8.7 *9*	1490.5	(8⁺)	1290.2	(7⁺)	D		A_2=−0.59 *4*, A_4=+0.06 *8*.
203.0	27.2 *14*	663.7	4⁻	460.7	3⁻	D		A_2=−0.17 *5*, A_4=−0.05 *8*.
215.1	24.1 *15*	878.8	5⁻	663.7	4⁻	D		A_2=−0.18 *5*, A_4=+0.02 *9*.
228.5 *1*		228.5	(1⁻)	0	(4⁻)	M3(+E4)	<0.65	Mult.,δ: From α(K)exp= 0.50 *7* (2001No07), 0.47 *15* (2000Pi05). E_γ: from 1998Do04.
231.0	14.6 *6*	1290.2	(7⁺)	1059.3	(6⁺)	D		DCO=1.2 *2* (dipole gated). A_2=−0.36 *5*, A_4=+0.04 *9*.
232.4[†]	2.1[†] *8*	676.1		443.6				
232.5[†]	3.1[†] *10*	460.7	3⁻	228.5	(1⁻)			
237.9	15 *3*	886.6	(5⁺)	648.7	(4⁺)	D		DCO=1.0 *1* (dipole gated). A_2=−0.14 *3*, A_4=0.00 *5*.
257.0	100 *3*	257.1	(5⁻)	0	(4⁻)	D		DCO=1.0 *1* (dipole gated). A_2=−0.12 *3*, A_4=+0.06 *5*.
281.6	10.9 *10*	1488.7	7⁻	1207.1	6⁻	D		A_2=−0.23 *3*, A_4=+0.07 *5*.
289.0	7.7 *1*	1175.8	(6⁺)	886.6	(5⁺)	D		DCO=0.5 *3*. A_2=−0.04 *4*, A_4=+0.01 *7*.
299.2	6.5 *1*	1185.7	(6⁺)	886.6	(5⁺)	D		DCO=0.9 *4*. A_2=−0.05 *4*, A_4=+0.02 *8*.
304.7	1.2 *1*	1490.5	(8⁺)	1185.7	(6⁺)	(Q)		DCO=0.5 *3* (dipole gated). A_2=+0.17 *22*, A_4=−0.01 *36*.
312.9	11.8 *14*	570.0	6⁻	257.1	(5⁻)	D		DCO=0.6 *1*. A_2=−0.17 *5*, A_4=+0.13 *10*.
315.0	2.6 *1*	1490.5	(8⁺)	1175.8	(6⁺)	(Q)		A_2=+0.22 *9*, A_4=+0.23 *15*. Sign of A_4 is inconsistent with ΔJ=2,Q transition.
323.9	3.5 *1*	1509.6	(7⁺)	1185.7	(6⁺)	D		DCO=1.0 *3* (dipole gated). A_2=−0.26 *11*, A_4=+0.10 *21*.
328.2	17.7 *15*	1207.1	6⁻	878.8	5⁻	D		A_2=−0.22 *3*, A_4=−0.01 *45*.
329.5	1.7 *4*	3628.2	(13⁺)	3298.6	(12⁺)			
333.5	24.8 *16*	1823.9	(9⁺)	1490.5	(8⁺)	D		DCO=0.6 *1*. A_2=−0.51 *5*, A_4=+0.07 *10*.
333.7	2.4 *9*	1509.6	(7⁺)	1175.8	(6⁺)	D+Q		A_2=−0.38 *4*, A_4=+0.14 *7*.
336.1	0.7 *1*	648.7	(4⁺)	312.6	(2⁺)	(Q)		A_2=+0.18 *12*, A_4=+0.10 *16*.
339.7	2.7 *3*	663.7	4⁻	324.2	2⁻	(Q)		A_2=+0.19 *9*, A_4=−0.04 *13*.
347.6	8.0 *7*	2615.4	(11⁺)	2267.9	(10⁺)	D		DCO=0.6 *1*. A_2=−0.46 *6*, A_4=+0.15 *10*.
348.4	3.3 *4*	2305.6	9⁻	1957.3	8⁻	D		A_2=−0.24 *6*, A_4=−0.09 *9*.
367.6	3.1 *12*	937.5	7⁻	570.0	6⁻			
383.0	2.1 *1*	1059.3	(6⁺)	676.1				
406.6	3.1 *1*	1916.2	(8⁺)	1509.6	(7⁺)			
406.8	1.6 *5*	2323.3	(9⁺)	1916.2	(8⁺)			
418.0	7.2 *4*	878.8	5⁻	460.7	3⁻	(Q)		A_2=+0.28 *14*, A_4=+0.07 *21*.

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(HI,xnγ) 2002Bu16,2004Ka32,1998Do04 (continued)

$\gamma(^{80}Y)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
421.2	3.0 *4*	1358.6	8^-	937.5	7^-		
431.1	6.0 *2*	886.6	(5^+)	455.6	(3^+)		DCO=0.9 *2*.
431.3	35.9 *6*	1490.5	(8^+)	1059.3	(6^+)	(Q)	DCO=0.8 *3* (dipole gated). A_2=+0.12 *3*, A_4=−0.04 *4*.
443.9	2.7 *4*	2267.9	(10^+)	1823.9	(9^+)		
461.2	0.9 *2*	3328.4	(11^+)	2867.1	(10^+)		
466.6	1.9 *6*	1825.1	9^-	1358.6	8^-		
468.6	7.4 *4*	1957.3	8^-	1488.7	7^-	D+Q	A_2=−0.11 *6*, A_4=+0.23 *10*.
474.2	3.8 *14*	1764.6	(8^+)	1290.2	(7^+)	D+Q	A_2=−0.93 *6*, A_4=+0.21 *9*.
489.9	3.7 *1*	1059.3	(6^+)	570.0	6^-	(D)	DCO=1.6 *6* (dipole gated). A_2=+0.24 *3*, A_4=−0.03 *7*. Mult.: A_2 and A_4 consistent with ΔJ=0, dipole transition.
525.9	0.5 *1*	2350.9	10^-	1825.1	9^-		DCO=1.6 *6* (dipole gated).
527.1	5.6 *2*	1175.8	(6^+)	648.7	(4^+)	(Q)	A_2=+0.25 *10*, A_4=+0.05 *16*.
533.7	6.3 *6*	1823.9	(9^+)	1290.2	(7^+)	(Q)	A_2=+0.34 *11*, A_4=−0.14 *11*.
537.0	3.3 *1*	1185.7	(6^+)	648.7	(4^+)	(Q)	DCO=1.2 *3* (dipole gated). A_2=+0.20 *10*, A_4=−0.02 *17*.
543.4	7.1 *2*	1207.1	6^-	663.7	4^-		
543.7	0.6 *2*	2867.1	(10^+)	2323.3	(9^+)		A_2=+0.26 *6*, A_4=−0.02 *8*.
553.0	4.7 *2*	1490.5	(8^+)	937.5	7^-	D	A_2=−0.15 *4*, A_4=+0.10 *12*.
570.1	39 *4*	570.0	6^-	0	(4^-)	(Q)	A_2=+0.12 *5*, A_4=+0.06 *8*.
578.9	2.6 *2*	1764.6	(8^+)	1185.7	(6^+)		DCO=1.2 *5* (dipole gated).
588.9	5.2 *2*	1764.6	(8^+)	1175.8	(6^+)	(Q)	A_2=+0.26 *6*, A_4=−0.09 *9*.
609.9	11.6 *14*	1488.7	7^-	878.8	5^-		
610.7	2.2 *5*	2916.3	10^-	2305.6	9^-		
623.0	6.3 *13*	1509.6	(7^+)	886.6	(5^+)	(Q)	DCO=1.7 *9* (dipole gated). A_2=+0.23 *13*, A_4=−0.01 *16*.
680.6	35.0 *8*	937.5	7^-	257.1	(5^-)	(Q)	A_2=+0.19 *3*, A_4=−0.05 *5*.
683.4	1.0 *3*	3298.6	(12^+)	2615.4	(11^+)		
685.3	0.6 *3*	4013.9	(12^+)	3328.4	(11^+)		
720.1	5.3 *8*	1290.2	(7^+)	570.0	6^-		
730.5	2.9 *1*	1916.2	(8^+)	1185.7	(6^+)		DCO=0.8 *3* (dipole gated). A_2=+0.14 *19*, A_4=−0.2 *3*.
750.2	6.5 *4*	1957.3	8^-	1207.1	6^-	(Q)	A_2=+0.28 *5*, A_4=−0.08 *9*.
777.3	25.4 *6*	2267.9	(10^+)	1490.5	(8^+)	(Q)	A_2=+0.29 *3*, A_4=−0.1 *5*.
788.4	22.7 *11*	1358.6	8^-	570.0	6^-	(E2)	DCO=1.8 *1* (dipole gated). A_2=+0.24 *5*, A_4=−0.03 *7*.
791.5	25 *6*	2615.4	(11^+)	1823.9	(9^+)	(E2)	A_2=+0.25 *6*, A_4=+0.01 *10*.
802.1	46 *5*	1059.3	(6^+)	257.1	(5^-)	D	DCO=0.5 *1*. A_2=−0.28 *8*, A_4=+0.16 *13*.
813.8	4.1 *16*	2323.3	(9^+)	1509.6	(7^+)		A_2=+0.2 *3*, A_4=−0.3 *5*.
816.8	11.9 *6*	2305.6	9^-	1488.7	7^-		
853.9	10 *4*	2618.5	(10^+)	1764.6	(8^+)	Q	A_2=+0.29 *6*, A_4=−0.24 *9*.
887.6	31.8 *8*	1825.1	9^-	937.5	7^-	E2	A_2=+0.24 *3*, A_4=−0.17 *5*.
951.0	3.8 *12*	2867.1	(10^+)	1916.2	(8^+)		
959.0	4.6 *8*	2916.3	10^-	1957.3	8^-	(E2)	A_2=+0.35 *7*, A_4=−0.01 *10*.
992.3	19.9 *14*	2350.9	10^-	1358.6	8^-	E2	DCO=0.9 *2*. A_2=+0.26 *6*, A_4=−0.24 *9*.
1005.0	3.9 *3*	3328.4	(11^+)	2323.3	(9^+)	(E2)	A_2=+0.27 *10*, A_4=+0.01 *15*.
1012.8	22 *5*	3628.2	(13^+)	2615.4	(11^+)	(E2)	A_2=+0.46 *6*, A_4=+0.11 *8*. Sign of A_4 is inconsistent with ΔJ=2,Q transition.
1027.4	7.8 *5*	3333.0	11^-	2305.6	9^-	(E2)	A_2=+0.35 *7*, A_4=−0.15 *11*.
1030.6	17 *4*	3298.6	(12^+)	2267.9	(10^+)	(E2)	DCO=0.8 *2*. A_2=+0.39 *7*, A_4=+0.04 *9*.
1071.2	4.9 *4*	3689.7	(12^+)	2618.5	(10^+)	(Q)	A_2=+0.28 *17*, A_4=−0.26 *26*.
1076.0	23 *7*	2901.1	11^-	1825.1	9^-	(E2)	A_2=+0.49 *4*, A_4=+0.20 *7*. Sign of A_4 is inconsistent with ΔJ=2,Q transition.
1109.7	3.2 *4*	4442.7	13^-	3333.0	11^-	E2	A_2=+0.24 *6*, A_4=−0.30 *9*.
1147.0	2.9 *5*	4013.9	(12^+)	2867.1	(10^+)		
1173.7	2.6 *4*	4090.0	(12^-)	2916.3	10^-		
1180.1[‡]	14.0[‡] *12*	3531.0	12^-	2350.9	10^-	(E2)	A_2=+0.35 *8*, A_4=−0.14 *12* for doublet.
1181.2[‡]	1.80[‡] *20*	4509.6	(13^+)	3328.4	(11^+)		
1208.2	4.4 *7*	6654.9	(17^-)	5446.6	15^-		
1220.3	15.1 *9*	4848.5	(15^+)	3628.2	(13^+)	(E2)	A_2=+0.30 *6*, A_4=+0.10 *9*.

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(HI,xnγ) 2002Bu16,2004Ka32,1998Do04 (continued)

γ(^{80}Y) (continued)

E_γ	I_γ	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	Comments
1239.1	2.6 *5*	5681.8	(15$^-$)	4442.7	13$^-$		
1244.9	17.5 *13*	4146.0	13$^-$	2901.1	11$^-$	(E2)	A_2=+0.31 *5*, A_4=+0.08 *8*.
1255.0	5.3 *10*	6097.6	16$^-$	4842.6	14$^-$	(E2)	A_2=+0.48 *29*, A_4=−0.2 *4*.
1260.3	9.9 *10*	4558.9	(14$^+$)	3298.6	(12$^+$)		A_2=+0.36 *13*, A_4=−0.06 *19*.
1284.0	1.6 *3*	4973.7	(14$^+$)	3689.7	(12$^+$)	(Q)	A_2=+0.57 *22*, A_4=+0.09 *34*.
1300.6	7.2 *5*	5446.6	15$^-$	4146.0	13$^-$	(E2)	A_2=+0.45 *9*, A_4=+0.09 *12*.
1309.6	2.6 *4*	5323.5	(14$^+$)	4013.9	(12$^+$)		
1311.5	8.4 *10*	4842.6	14$^-$	3531.0	12$^-$	(E2)	A_2=+0.20 *8*, A_4=+0.06 *13*.
1348.3	1.5 *2*	5438.3	(14$^-$)	4090.0	(12$^-$)		
1352.6	5.4 *7*	7450.2	18$^-$	6097.6	16$^-$	(E2)	A_2=+0.27 *14*, A_4=−0.20 *22*.
1365.3	1.5 *3*	5874.9	(15$^+$)	4509.6	(13$^+$)		
1374.3	2.6 *4*	8029.2	(19$^-$)	6654.9	(17$^-$)		
1394.3	7.9 *5*	6242.8	(17$^+$)	4848.5	(15$^+$)		
1407.9	0.9 *3*	7089.7	(17$^-$)	5681.8	(15$^-$)		
1430.6	2.4 *4*	7034.2	(17)	5603.5	(15)		
1440.1	5.6 *8*	5999.1	(16$^+$)	4558.9	(14$^+$)	(E2)	A_2=+0.45 *8*, A_4=+0.18 *11*. Sign of A_4 is inconsistent with ΔJ=2,Q transition.
1457.5	4.8 *7*	5603.5	(15)	4146.0	13$^-$	(Q)	A_2=+0.37 *15*, A_4=+0.19 *23*.
1459.6	1.7 *4*	6433.3	(16$^+$)	4973.7	(14$^+$)		
1461.4	1.3 *3*	6784.9	(16$^+$)	5323.5	(14$^+$)		
1529.0	2.8 *6*	7528.1	(18$^+$)	5999.1	(16$^+$)		
1530.2	0.6 *3*	6968.5	(16$^-$)	5438.3	(14$^-$)		
1534.5	1.8 *4*	8568.7	(19)	7034.2	(17)		
1546.3	4.5 *5*	7789.1	(19$^+$)	6242.8	(17$^+$)		
1547.7	0.9 *2*	7422.6	(17$^+$)	5874.9	(15$^+$)		
1550.4	3.2 *6*	9001	(20$^-$)	7450.2	18$^-$		
1583.5	1.3 *3*	9613	(21$^-$)	8029.2	(19$^-$)		
1602.8	0.8 *3*	8036.1	(18$^+$)	6433.3	(16$^+$)		
1620.8	1.3 *4*	9148.9	(20$^+$)	7528.1	(18$^+$)		
1662.5	1.3 *5*	10663	(22$^-$)	9001	(20$^-$)		
1707.0	1.7 *4*	9496.1	(21$^+$)	7789.1	(19$^+$)		
1768.9	0.5 *3*	10918	(22$^+$)	9148.9	(20$^+$)		
1788	0.6 *4*	11401	(23$^-$)	9613	(21$^-$)		
1797.0	0.6 *4*	12460	(24$^-$)	10663	(22$^-$)		
1882.6	0.8 *4*	11379	(23$^+$)	9496.1	(21$^+$)		

† 232.4 and 232.5 form a doublet. Eγ=232.4 and and Iγ=2.1 *8* are quoted by 2002Bu16 for both placements. But in the RADWARE file submitted by the authors of 2002Bu16 and available on web (http://radware.phy.ornl.gov/nd/), values quoted for the transition from 460.7 level are Eγ=232.5, Iγ=3.1 *10*. The latter values from RADWARE file are given.

‡ 1180.1 and 1181.2 form a doublet. Eγ=1180.1 and and Iγ=14.0 *12* are quoted by 2002Bu16 for both placements. But in the RADWARE file submitted by the authors of 2002Bu16 and available on web (http://radware.phy.ornl.gov/nd/), a separate value is quoted for the transition from 4509.6 level, which is much weaker than the transition from 3531.0 level. The value for the weaker line from RADWARE file is given.

From γ(θ) data of 2002Bu16. The mult=Q when γ(θ) data are consistent with ΔJ=2, quadrupole; and mult=D or D+Q when γ(θ) are consistent with ΔJ=1 or In some rare cases with ΔJ=0. RUL for E2 and M2 are used when level lifetimes are known.

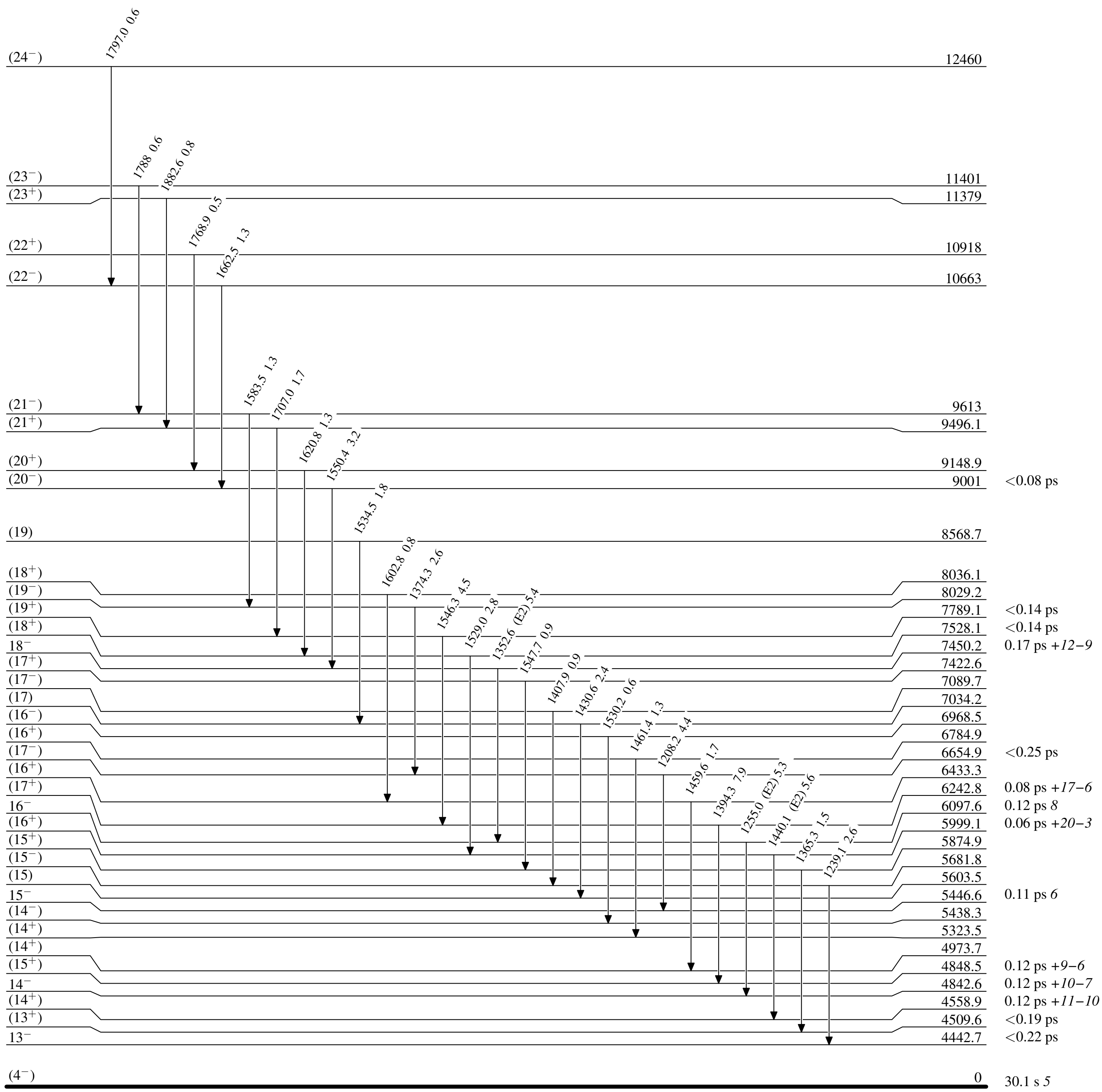
(HI,xnγ) 2002Bu16,2004Ka32,1998Do04

Legend

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

Level Scheme

Intensities: Relative I_γ

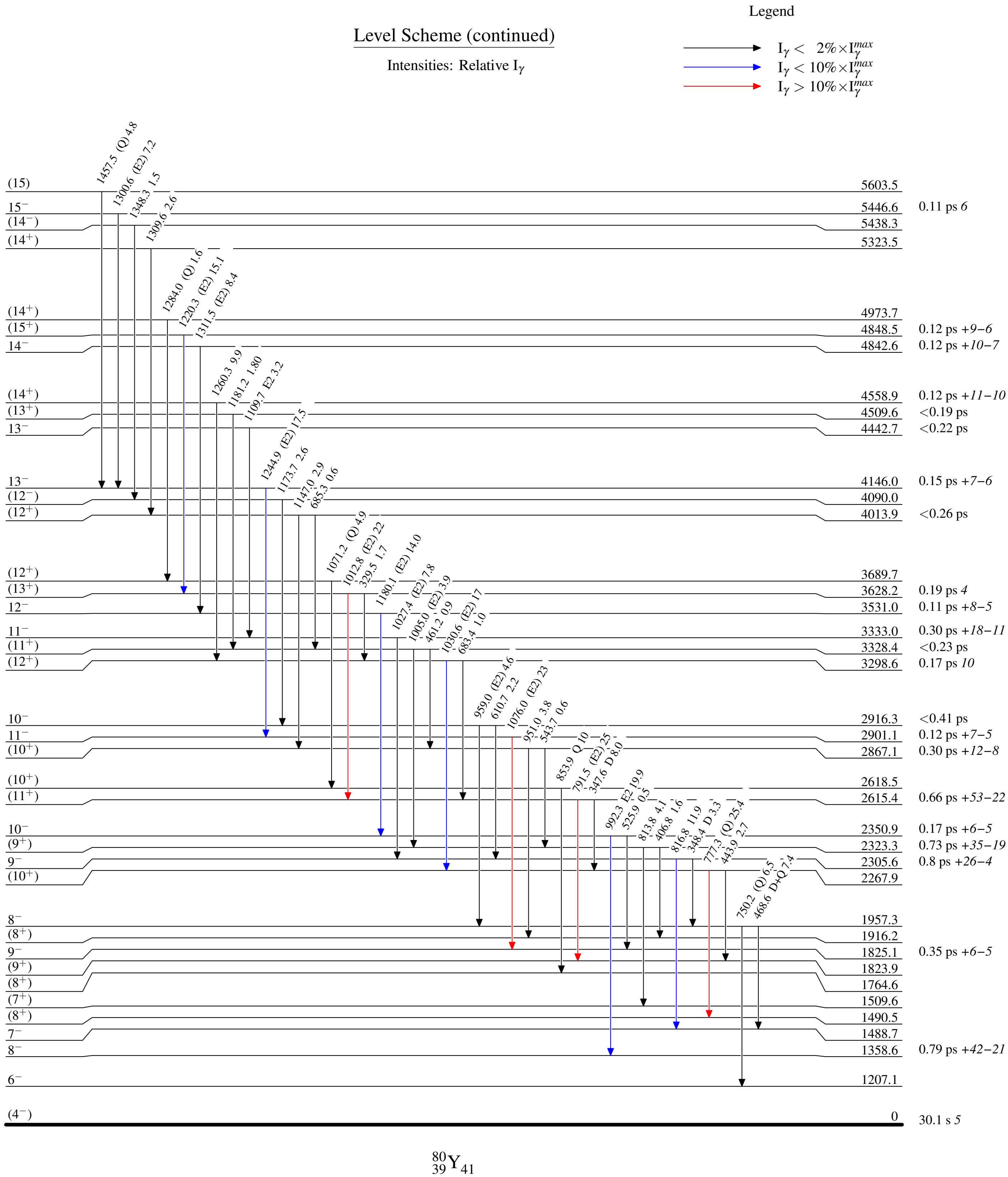


$^{80}_{39}Y_{41}$

(HI,xnγ) 2002Bu16,2004Ka32,1998Do04

Level Scheme (continued)

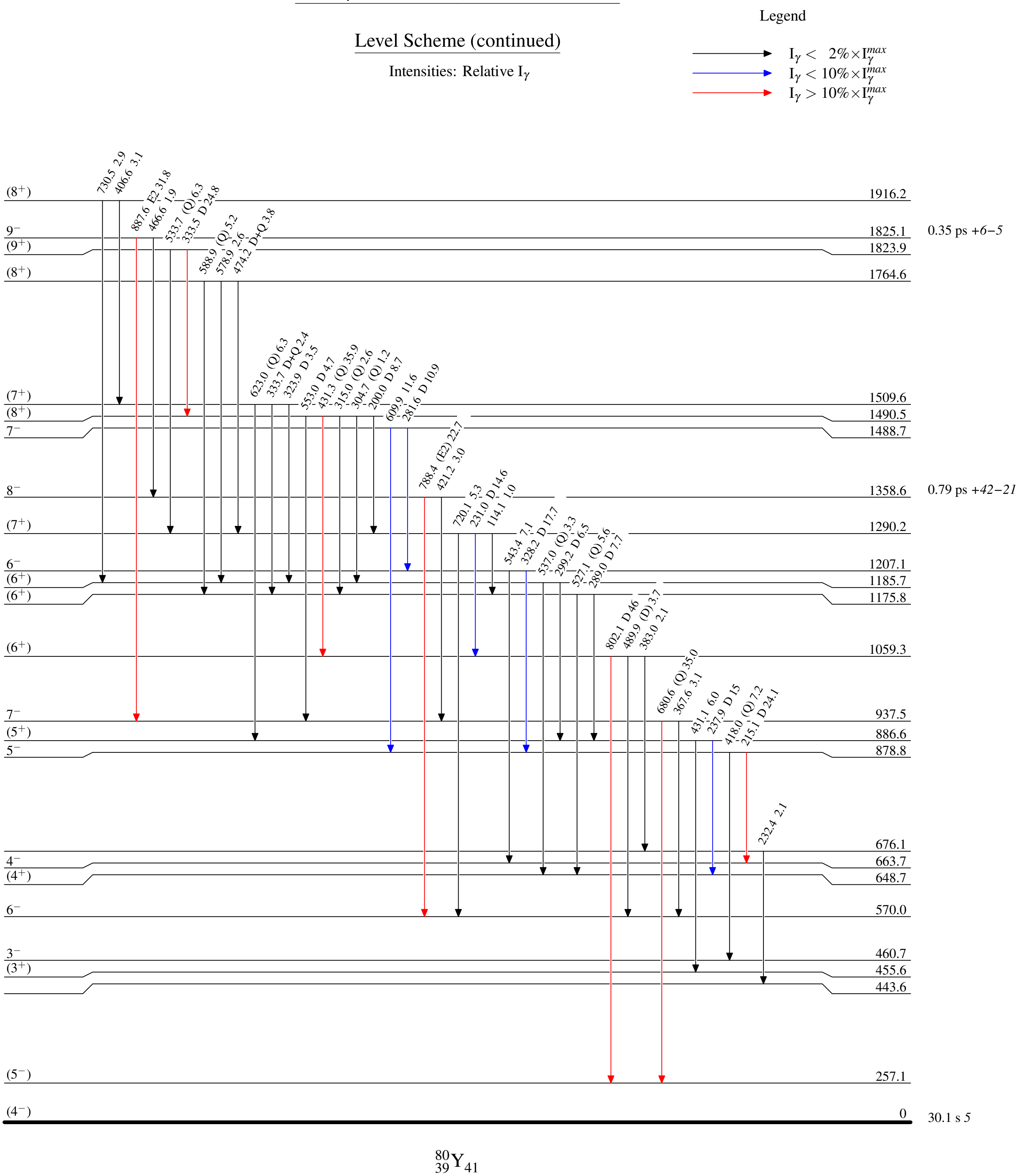
Intensities: Relative I_γ



(HI,xnγ) 2002Bu16,2004Ka32,1998Do04

Level Scheme (continued)

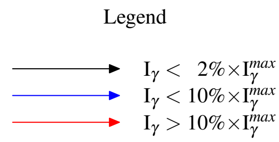
Intensities: Relative I_γ

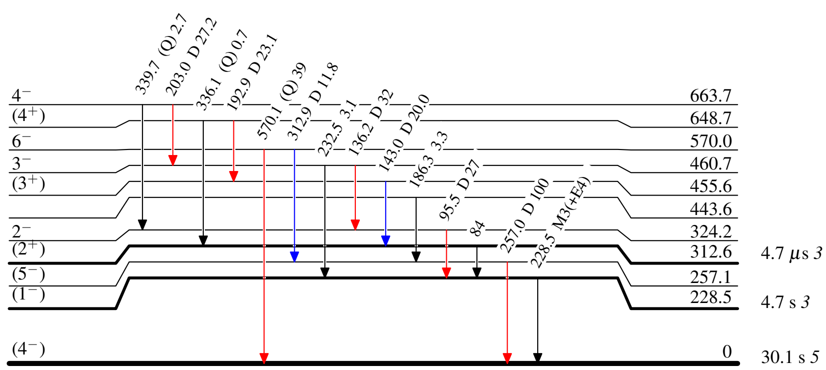


(HI,xnγ) 2002Bu16,2004Ka32,1998Do04

Level Scheme (continued)

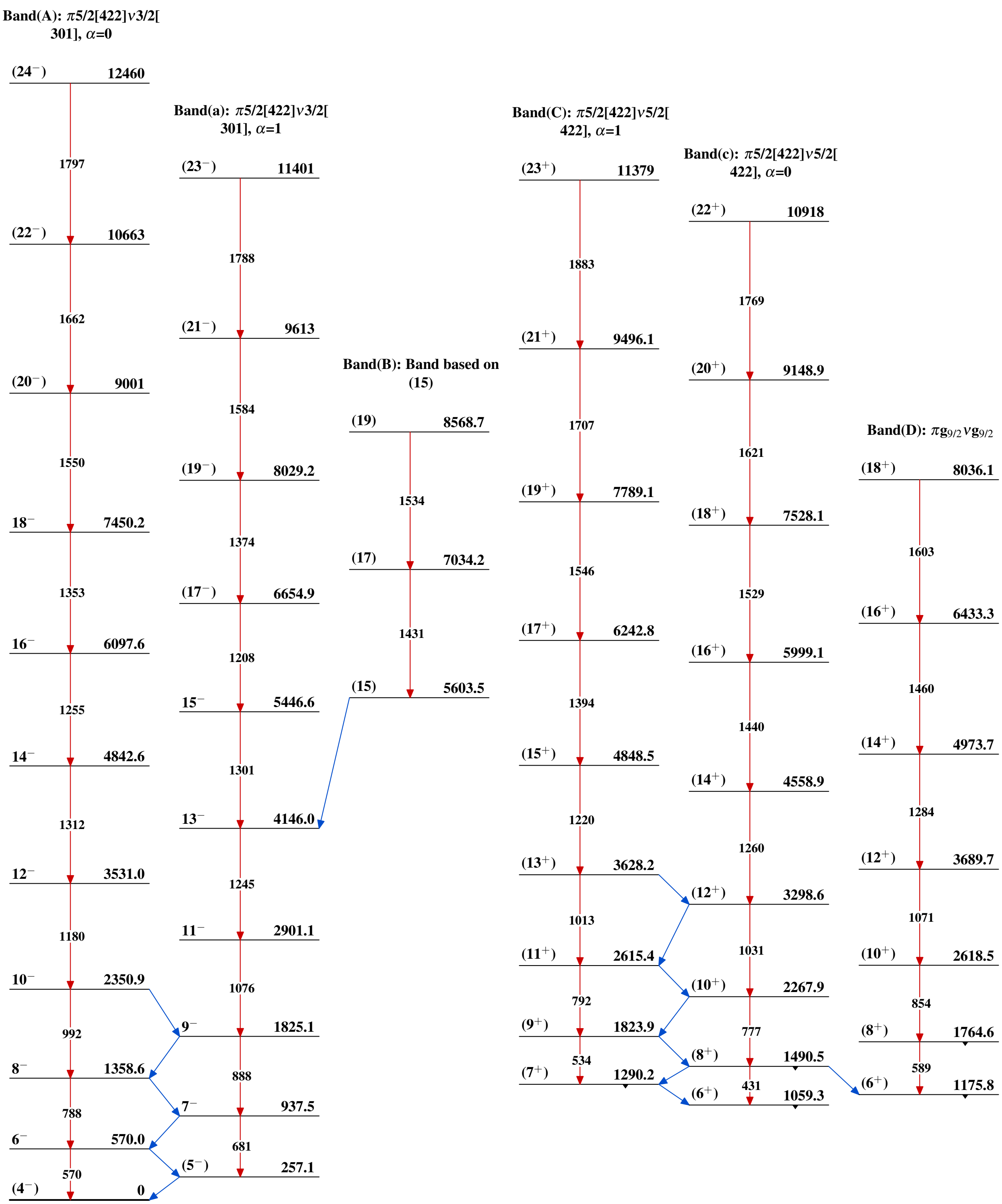
Intensities: Relative I_γ





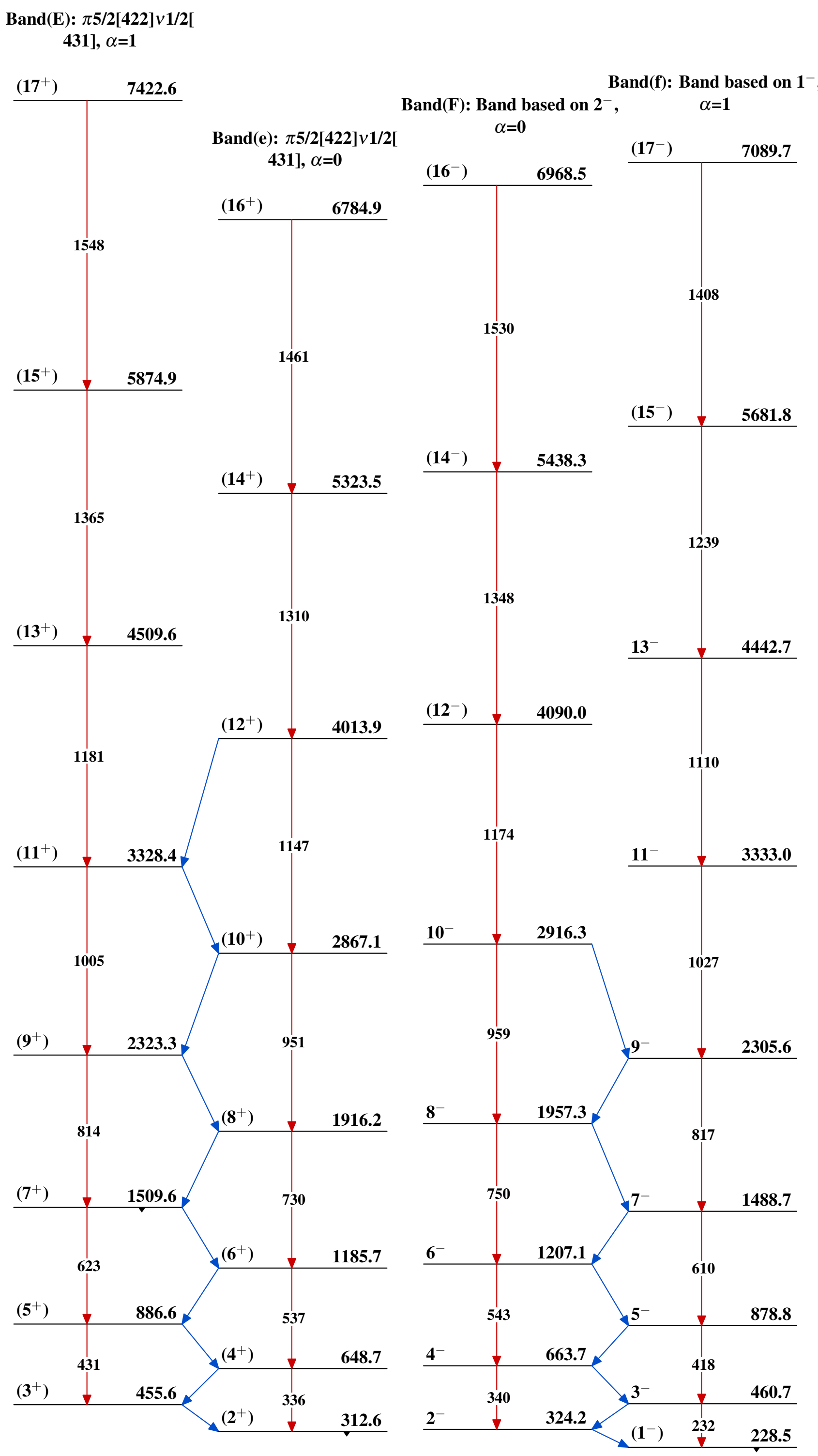
$^{80}_{39}Y_{41}$

(HI,xnγ) 2002Bu16,2004Ka32,1998Do04



$^{80}_{39}Y_{41}$

(HI,xnγ) 2002Bu16,2004Ka32,1998Do04 (continued)



$^{80}_{39}Y_{41}$