^{76}Ge(p,nγ) 1983Ga06,1980Ki01,1980Fe04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Jun Chen and Ameenah R. Farhan	NDS 194,3 (2024)	8-Jan-2024

1983Ga06 (see also some theoretical discussion in 1995Fe05): E=3.2 MeV. Measured Eγ, Iγ, γγ-coin, ce.
1980Ki01: E=1.875-2.725 MeV. Excitation functions measured in steps of 25 keV. Level scheme from observation of γ-rays at threshold energies of (p,nγ) reaction. Statistical-model analysis using Hauser-Feshbach formalism.
1980Fe04 (also 1988FeZU,1984Fe05): E=1.8-2.7 MeV. Measured excitation functions at three energies, γ(θ), γγ-coin, nγ-coin. Statistical-model analysis using Hauser-Feshbach formalism.
Others: 1975Re06 and 1971BeWJ (μ and $T_{1/2}$ measurement using perturbed angular distribution (PAD) method following ^{76}Ge(p,n) reaction); 1971Ba69 (E=2.9 MeV, ce data); 1966Tu02 (E=2.11-3.07 MeV, γ, γγ-coin, γ(t) data).
The level scheme is from 1980Ki01 and γγ-coin data of 1983Ga06 and 1980Fe04 (also 1988FeZU).
2007Ki17, 2008Ki04: E=1.5-4.5 MeV, measured Eγ, Iγ, σ. astrophysical S factors.
2015CoZV: E(p)=6 MeV. Measured Eγ, Iγ, γγ(θ) and conversion electrons. Two experiments were carried out, gamma-ray experiments used YRAST array of 10 BGO Compton-suppressed HPGe clover detectors and two LEPS at WNSL accelerator laboratory, Yale University, and electron measurements using Super-E superconducting spectrometer at the Austrailian National University (ANU). A total of about 45 levels from 44.4 to 958.3 keV with J^π values, and mixing ratios of 15 transitions are listed in Tables 5.1 and 5.3. However, details of gamma-ray data are not available, as final analyses of these data were not completed according to private communications in June 2021 with W. Volker, supervisor of 2015CoZV thesis. No results from this work are included in this evaluation, due to preliminary nature of data presented in the thesis.

^{76}As Levels

The 322 level (from 1983Ga06 and 1980Fe04), 465 and 548 levels from 1980Ki01 have been discarded for lack of sufficient evidence from other studies and from (n,γ),E=thermal. A 235.6 level proposed by 1980Ki01 and 1988FeZU is now suggested at 280 keV by replacement of 235.6γ from 280 level rather than 235.6 level (see (n,γ),E=thermal).

E(level)[‡]	J^π[†]	$T_{1/2}$	Comments
0.0	2^-		
44.9 *2*	$(1)^+$	1.80 μs *4*	μ=+0.559 *5* (1975Re06,1971BeWJ) μ: perturbed angular distribution (PAD) method in (p,nγ) reaction, measured g factor=+0.559 *5*. $T_{1/2}$: from 1975Re06 (γ(t) method). Other: 2.1 μs *3* (1966Tu02).
86.7 *2*	1^+		J^π: excitation function consistent only with 1^+ (1980Ki01).
120.4 *2*	1^+		J^π: excitation consistent with 1^+ for 120 level and 1^- for 122 level (1980Ki01).
121.9 *2*	$(1)^-$		J^π: see comment on 120 level.
164.7 *2*	$(3)^-$		J^π: excitation function and γ(θ) consistent with 3,4 (1980Fe04).
203.4 *2*	$(0,1)^+$		J^π: excitation function (1980Ki01) consistent with 0^+,1^+.
210.7 *2*	$(4)^-$		J^π: excitation function (1980Ki01) is consistent with 4^- only.
264.7 *2*	1^+		J^π: based on excitation function of 264γ, 1980Fe04 give J=3 or 4, but 264γ may not deexcite this level (see (n,γ),E=thermal).
280.6 *4*	$(1,2)^+$		Level proposed by (n,γ),E=thermal by placement of 235.6γ from the 280.6 level rather than 235.6 level suggested by 1980Ki01 and 1988FeZU. J^π: excitation function of 235γ (1980Ki01) suggests 3^-.
300.7[@] *3*	$(2,3^+)$		
307.4 *2*	$(2)^+$		J^π: excitation function of 220γ (1980Fe04) consistent with 3 or 4 but 220γ may be doubly placed.
352.0 *2*	$(3)^-$		J^π: excitation function (1980Fe04) consistent with 3,4.
362.7 *2*	(2^-)		J^π: excitation function (1980Fe04) consistent with 3,4. But 364γ is doubly placed.
401.6 *2*	$(1,2)^+$		
448.4[@] *3*	$(1,2)^+$		J^π: excitation function (1980Fe04) consistent with 3,4.
460.2? *2*			
471.3[@] *2*	$(2)^-$		J^π: excitation function of 427γ (1980Fe04) consistent with 3,4. But this γ is doubly placed.
499.2 *2*	$(1^+,2^+)$		J^π: excitation function (1980Fe04) consistent with 2,3,4.

Continued on next page (footnotes at end of table)

^{76}Ge(p,nγ) 1983Ga06,1980Ki01,1980Fe04 (continued)

^{76}As Levels (continued)

E(level)‡	J$^{\pi}$†	Comments
504.5 *3*	$(2,3)^+$	
518.0 *2*	$(1^+,2^+)$	
543.2 *2*	$(2)^-$	J$^{\pi}$: excitation function (1980Fe04) consistent with 2,3,4.
549.6 *2*	$(1^-,2^-)$	
554.0 *2*	$(1,2,3)^+$	
624.7?@ *3*		
628.7 *4*	$(1^+,2^+)$	Level based on results in (n,γ),E=thermal.
637.1 *3*	$(1^+,2^+)$	Level based on (n,γ),E=thermal.
639.5 *5*	$(1^-,2^-)$	
669.9 *3*	$(1^+,2^+)$	J$^{\pi}$: excitation function (1980Fe04) is consistent with J=3.
681.0 *7*	(≤ 4)	
742.9# *8*	$(0^-$ to $3)$	
751.8 *4*	$(0^-,1,2)$	
785.4 *3*	$(\leq 3^+)$	
935.4# *4*	1^+	

† From the Adopted Levels, except where noted otherwise.

‡ From least-squares fit to Eγ values. Several γ-rays have multiple placements which makes accurate determination of level energies difficult.

From 1988FeZU.

@ Level not shown by 1988FeZU.

γ(^{76}As)

Experimental values of α(K) values given under comments are from 1983Ga06. The uncertainties range from 10% to 45%.

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ[‡]	α[c]	Comments
44.5[#] *7*		44.9	(1)$^+$	0.0	2$^-$	(E1)		0.821	
46.0[#] *7*		210.7	(4)$^-$	164.7	(3)$^-$				
86.9 *3*	100 *5*	86.7	1$^+$	0.0	2$^-$	D			Mult.: ce(K)/(ce(L)+ce(M))=9.5 *20* (1971Ba69) indicates mult=dipole. 1983Ga06 use this γ-ray (assumed as E1) to normalize the ce data for other transitions. For 86.9γ, the α(K) values corresponding to E1 and M1 multipolarity are within 10%.
116.6 *3*	23.5 *13*	203.4	(0,1)$^+$	86.7	1$^+$	M1+E2	0.22 *6*	0.077 *11*	α(K)=0.068 *9*; α(L)=0.0077 *12*; α(M)=0.00117 *18* α(N)=8.6×10^{-5} *12* α(K)exp=0.068 *7*
120.1 *3*	55 *4*	120.4	1$^+$	0.0	2$^-$	D			α(K)exp=0.044 *11* (1983Ga06) ce(K)/(ce(L)+ce(M))=9 *2* (1971Ba69).
122.1 *3*	53 *4*	121.9	(1)$^-$	0.0	2$^-$	M1+E2	0.33 *6*	0.084 *11*	α(K)=0.074 *10*; α(L)=0.0086 *13*; α(M)=0.00130 *19* α(N)=9.4×10^{-5} *13* α(K)exp=0.074 *9*
[x]127.4[f] *3*	6.7 *6*								The placement from 363 level by 1980Ki01 and 1988FeZU is not supported in results from (n,γ),E=thermal.
135.9[e@a] *6*	7.5[e] *20*	300.7	(2,3$^+$)	164.7	(3)$^-$				I_γ: total Iγ=11.8 *18*. Intensity divided on the basis of branching in (n,γ),E=thermal.
135.9[e@af] *6*	4.3[e] *27*	499.2	(1$^+$,2$^+$)	362.7	(2$^-$)				
141.4[e] *3*	≈0.4[e]	307.4	(2)$^+$	164.7	(3)$^-$				I_γ: estimated from (n,γ),E=thermal. Poor energy fit.
141.4[e] *3*	7.2[e] *6*	352.0	(3)$^-$	210.7	(4)$^-$				I_γ: based on (n,γ),E=thermal, all intensity is assigned from 352 level. A small fraction (≈0.4) may belong from 307 level.
142.5[@af] *7*	6.3 *12*	264.7	1$^+$	121.9	(1)$^-$				
144.3 *3*	14.0 *12*	264.7	1$^+$	120.4	1$^+$				
153.2[d] *3*	4.7[d] *4*	554.0	(1,2,3)$^+$	401.6	(1,2)$^+$	(M1+E2)		0.09 *7*	α(K)=0.08 *6*; α(L)=0.010 *7*; α(M)=0.0015 *11* α(N)=0.00011 *8* α(K)exp=0.044 *6* gives δ(E2/M1)=0.45 *8* for a possible doublet.
153.2[daf] *3*	4.7[d] *4*	624.7?		471.3	(2)$^-$				
157.4[eaf] *3*	[e]	518.0	(1$^+$,2$^+$)	362.7	(2$^-$)				E_γ,I_γ: based on (n,γ),E=thermal, this placement is questionable, and all of the intensity of this γ is placed from 629 level.
157.4[e] *3*	18.4[e] *16*	628.7	(1$^+$,2$^+$)	471.3	(2)$^-$	D+Q			α(K)exp=0.032 *3*

$^{76}_{33}As_{43}$-3

γ(^{76}As) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
									E_γ: placement from (n,γ),E=thermal. All intensity assigned from 628.7 level. Mult.: if E1+M2 with δ=0.33 *4* from α_K(exp), it would require an isomeric $T_{1/2}$>1.3 μs; but M1+E2 with δ=0.29 *6* from α_K(exp) for 157γ to (2)$^-$ inconsistent with adopted π=(+), which would suggest (E1).
164.9 *3*	84 *15*	164.7	(3)$^-$	0.0	2$^-$	M1(+E2)	<0.3	0.028 *4*	α(K)=0.025 *4*; α(L)=0.0027 *5*; α(M)=0.00041 *7* α(N)=3.1×10^{-5} *5* A_2=−0.17 *3*; A_4=0.01 *3* (1980Fe04) α(K)exp=0.023 *4* (1983Ga06)
[x]174.8[#] *7*									
178.2 *3*	11.5 *9*	264.7	1$^+$	86.7	1$^+$	M1(+E2)	<0.25	0.0215 *22*	α(K)=0.0191 *19*; α(L)=0.00206 *23*; α(M)=0.00031 *4* α(N)=2.36×10^{-5} *24* α(K)exp=0.017 *3*
179.8[#] *7*	1.9	543.2	(2)$^-$	362.7	(2$^-$)				
186.0[e#a] *7*	0.9[e]	307.4	(2)$^+$	121.9	(1)$^-$				I_γ: based on (n,γ),E=thermal, all intensity is assigned from 307 level. Placement from 549 level is questionable.
186.0[e#f] *7*	[e]	549.6	(1$^-$,2$^-$)	362.7	(2$^-$)				
187.4[e] *3*	3.2[eb] *6*	307.4	(2)$^+$	120.4	1$^+$	(M1)		0.01701	α(K)=0.01513 *22*; α(L)=0.001612 *24*; α(M)=0.000246 *4* α(N)=1.86×10^{-5} *3* α(K)exp=0.014 *2* I_γ: total Iγ=7.4 *6*. Intensity is divided based on branching in (n,γ),E=thermal. α(K)exp gives δ(E2/M1)<0.15.
187.4[e] *3*	3.2[e] *6*	352.0	(3)$^-$	164.7	(3)$^-$	(M1)		0.01701	α(K)=0.01513 *22*; α(L)=0.001612 *24*; α(M)=0.000246 *4* α(N)=1.86×10^{-5} *3*
191.6 *3*	1.0 *2*	543.2	(2)$^-$	352.0	(3)$^-$	M1(+E2)	<0.8		α(K)exp=0.023 *11*
198.3[e@] *3*	9.0[e] *12*	362.7	(2$^-$)	164.7	(3)$^-$				I_γ: based on (n,γ),E=thermal, all intensity assigned from 362.7 level. Placement from 402 level is questionable.
198.3[e@af] *3*	[e]	401.6	(1,2)$^+$	203.4	(0,1)$^+$				
204.0[f] *5*	0.7 *2*	203.4	(0,1)$^+$	0.0	2$^-$				Based on (n,γ),E=thermal, this placement is questionable, it may deexcite 504 or 640 level.
210.8[e] *3*	6.3[e] *5*	210.7	(4)$^-$	0.0	2$^-$	E2		0.0492	α(K)=0.0434 *7*; α(L)=0.00494 *8*; α(M)=0.000750 *12* α(N)=5.42×10^{-5} *9* α(K)exp=0.039 *7* I_γ: based on (n,γ),E=thermal, all the intensity is assigned from 211 level. The placement from 518 level is questionable. α(K)exp gives δ(E2/M1)>1.3.
210.8[eaf] *3*	[e]	518.0	(1$^+$,2$^+$)	307.4	(2)$^+$				

$^{76}_{33}$As$_{43}$-4

γ(^{76}As) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ[‡]	α[c]	Comments
220.5[e] *3*	4.2[e] *10*	264.7	1$^+$	44.9	(1)$^+$	(M1)		0.01123	α(K)=0.01000 *15*; α(L)=0.001060 *16*; α(M)=0.0001618 *24* α(N)=1.228×10^{-5} *18* I_γ: total=8.4 *6*. Intensity split equally between two locations.
220.5[e] *3*	4.2[e] *10*	307.4	(2)$^+$	86.7	1$^+$	(M1)		0.01123	α(K)=0.01000 *15*; α(L)=0.001060 *16*; α(M)=0.0001618 *24* α(N)=1.228×10^{-5} *18* α(K)exp=0.012 *3* α(K)exp gives δ(E2/M1)<0.5.
225.1[&]		742.9	(0$^-$ to 3)	518.0	(1$^+$,2$^+$)				
233.9[a#] *4*		499.2	(1$^+$,2$^+$)	264.7	1$^+$				I_γ: from branching in (n,γ),E=thermal, expected Iγ=3.0 *5*.
235.6 *3*	13.0 *9*	280.6	(1,2)$^+$	44.9	(1)$^+$	M1(+E2)	<0.35	0.0108 *13*	α(K)=0.0096 *12*; α(L)=0.00102 *13*; α(M)=0.000156 *20* α(N)=1.18×10^{-5} *14* A_2=+0.24 *4*; A_4=+0.05 *4* (1980Fe04) α(K)exp=0.0092 *14* Placement based on (n,γ),E=thermal.
241.3 *3*	5.5 *4*	362.7	(2$^-$)	121.9	(1)$^-$				
245.7[eaf] *3*	[e]	448.4	(1,2)$^+$	203.4	(0,1)$^+$				
245.7[e] *3*	2.5[e] *3*	554.0	(1,2,3)$^+$	307.4	(2)$^+$				I_γ: based on (n,γ),E=thermal, all intensity is placed from 554 level. Placement from 449 level is questionable.
255.4[af] *3*	3.7 *4*	460.2?		203.4	(0,1)$^+$				E_γ: complex γ. From branching in (n,γ),E=thermal. Iγ=1.8 may belong to a 256γ from 300.7 level.
263.6[ef] *3*	[e]	264.7	1$^+$	0.0	2$^-$				
263.6[e] *3*	14.5[e] *10*	307.4	(2)$^+$	44.9	(1)$^+$	D			I_γ: based on (n,γ),E=thermal, all intensity assigned from 307 level. The placement from 265 level is questionable. α(K)exp=0.0047 *6* for doublet. δ(E2/M1)=0.19 *7*. Agreement of α(K)exp with mult=M1 (with δ(E2/M1)=0) is marginal.
281.0 *3*	7.5 *5*	401.6	(1,2)$^+$	120.4	1$^+$	D			α(K)exp=0.0042 *10* δ(M2/E1)<0.3 from α(K)exp. Agreement of α(K)exp with mult=M1 (δ(E2/M1)=0) is poor.
296.5[eaf] *3*	[e]	460.2?		164.7	(3)$^-$				
296.5[e] *3*	3.6[e] *4*	499.2	(1$^+$,2$^+$)	203.4	(0,1)$^+$				I_γ: based on (n,γ),E=thermal, all intensity placed from 499 level. Placement from 460 level is questionable.
300.7[@a] *3*	2.3 *6*	300.7	(2,3$^+$)	0.0	2$^-$				
306.4 *3*	2.0 *3*	307.4	(2)$^+$	0.0	2$^-$				
328.1[a] *5*	3.2 *4*	448.4	(1,2)$^+$	120.4	1$^+$				
339.6[e] *3*	8.6[e] *6*	504.5	(2,3)$^+$	164.7	(3)$^-$	E1			α(K)exp=0.0020 *4* α(K)exp gives δ(M2/E1)<0.2. I_γ: from $\gamma\gamma$-coin and from (n,γ),E=thermal, all intensity is assigned from 504 level. Placement from 543 level is questionable.

From ENSDF

γ(^{76}As) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ[‡]	α[c]	Comments
339.6[eaf] 3	[e]	543.2	(2)$^-$	203.4	(0,1)$^+$				
352.1 3	9.3 7	352.0	(3)$^-$	0.0	2$^-$	M1			α(K)exp=0.0027 5
357.1[a] 3	6.3 5	401.6	(1,2)$^+$	44.9	(1)$^+$	M1+E2	0.7 3		α(K)exp=0.0042 7
360.7[a] 10	5.4	448.4	(1,2)$^+$	86.7	1$^+$				E_γ: from 1980Fe04. I_γ: deduced from (n,γ),E=thermal. 1980Fe04 give Iγ(361γ)/RI(328γ)=3.3.
363.5 3	12.3 9	362.7	(2$^-$)	0.0	2$^-$	(M1)			α(K)exp=0.0026 4 α(K)exp gives δ(E2/M1)<0.15.
378.7[e] 3	7.6[eb] 12	499.2	(1$^+$,2$^+$)	120.4	1$^+$	(M1)			α(K)exp=0.0022 4 I_γ: total Iγ=16.6 11.
378.7[e] 3	9.0[eb] 16	543.2	(2)$^-$	164.7	(3)$^-$	(M1)			
383.8[ef] 3	[e]	504.5	(2,3)$^+$	120.4	1$^+$				E_γ,I_γ: based on (n,γ),E=thermal, placement from 504 level is questionable, and all of the intensity of this γ is placed from 785 level.
383.8[e] 3	5.5[e] 5	785.4	(≤3$^+$)	401.6	(1,2)$^+$				E_γ: placement based on (n,γ),E=thermal.
[x]392.2[@] 7	1.1 4								
402.2[ef] 3	[e]	401.6	(1,2)$^+$	0.0	2$^-$				I_γ: all of the intensity of this γ is placed from 448 level.
402.2[e] 3	9.1[e] 7	448.4	(1,2)$^+$	44.9	(1)$^+$	M1(+E2)	<0.5		α(K)exp=0.0021 6 E_γ,I_γ: placement based on (n,γ),E=thermal. Placement from 402 level is not supported by (n,γ),E=thermal.
412.3 3	4.2 4	499.2	(1$^+$,2$^+$)	86.7	1$^+$				
426.8[ea] 3	6.0[eb] 10	471.3	(2)$^-$	44.9	(1)$^+$				
426.8[e] 3	6.0[eb] 10	549.6	(1$^-$,2$^-$)	121.9	(1)$^-$	(M1)		0.00225	α(K)exp=0.0019 4 α(K)=0.00200 3; α(L)=0.000209 3; α(M)=3.19×10^{-5} 5 α(N)=2.43×10^{-6} 4 V gives δ(E2/M1)<0.5. I_γ: total Iγ=12.1 8.
456.3[af] 4	1.6 3	543.2	(2)$^-$	86.7	1$^+$				E_γ: based on (n,γ),E=thermal, this placement is questionable.
460.6[ef] 4	[e]	460.2?		0.0	2$^-$				I_γ: all of the intensity of this γ is placed from 504 level.
460.6[e] 4	2.5[e] 5	504.5	(2,3)$^+$	44.9	(1)$^+$				E_γ,I_γ: placement based on (n,γ),E=thermal. All intensity assigned from 504 level. Placement from 460 level is questionable.
463.4 3	8.0 8	549.6	(1$^-$,2$^-$)	86.7	1$^+$				
470.8[ea] 3	12.5[eb] 16	471.3	(2)$^-$	0.0	2$^-$	(M1)			α(K)exp=0.0016 5 I_γ: total Iγ=18.1 16. α(K)exp gives δ(E2/M1)<0.9.
470.8[e] 3	5.6[eb] 16	518.0	(1$^+$,2$^+$)	44.9	(1)$^+$	(M1)			E_γ: poor fit. Level-energy difference=473.1.
499.0[f] 6	1.3 5	499.2	(1$^+$,2$^+$)	0.0	2$^-$				E_γ: this γ is not reported in (n,γ),E=thermal.

γ(^{76}As) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	Comments
517.5[e@f] *6*	[e]	518.0	(1⁺,2⁺)	0.0	2⁻			
517.5[e] *6*	2.0[eb] *10*	637.1	(1⁺,2⁺)	120.4	1⁺			
517.5[e@] *6*	3.7[eb] *12*	639.5	(1⁻,2⁻)	121.9	(1)⁻			I_γ: based on (n,γ),E=thermal, intensity is split between 637 and 640 levels. Placement form 517 level is questionable.
542.0 *9*	0.7 *6*	543.2	(2)⁻	0.0	2⁻			
550.1[ef] *3*	[e]	549.6	(1⁻,2⁻)	0.0	2⁻			Based on (n,γ),E=thermal, this placement is questionable.
550.1[e] *3*	20.8[e] *13*	637.1	(1⁺,2⁺)	86.7	1⁺	M1+E2	1.0 *+13−6*	α(K)exp=0.0014 *2* I_γ: based on (n,γ),E=thermal, all intensity is assigned from 637 level.
554.1 *3*	4.6 *4*	554.0	(1,2,3)⁺	0.0	2⁻			
582.4[&]		785.4	(≤3⁺)	203.4	(0,1)⁺			
[x]608.5[@] *7*	1.2 *4*							
624.9[daf] *4*	2.2[d] *5*	624.7?		0.0	2⁻			
624.9[df] *4*	2.2[d] *5*	669.9	(1⁺,2⁺)	44.9	(1)⁺			E_γ: this placement not supported by (n,γ),E=thermal.
629.8[@] *8*	2.2 *11*	751.8	(0⁻,1,2)	121.9	(1)⁻			
639.3[#] *7*	1.8	639.5	(1⁻,2⁻)	0.0	2⁻			
665.5[#] *7*	4.2	751.8	(0⁻,1,2)	86.7	1⁺			
669.9[@] *4*	5.2 *15*	669.9	(1⁺,2⁺)	0.0	2⁻			
681.0[#] *7*	1.0	681.0	(≤4)	0.0	2⁻			
706.9[#] *7*	1.3	751.8	(0⁻,1,2)	44.9	(1)⁺			
742.7[&]		742.9	(0⁻ to 3)	0.0	2⁻			
751.4[#] *7*	2.6	751.8	(0⁻,1,2)	0.0	2⁻			
785.0[#] *7*	2.3	785.4	(≤3⁺)	0.0	2⁻			
848.7[#] *3*	1.3	935.4	1⁺	86.7	1⁺			
935.7[&]		935.4	1⁺	0.0	2⁻			

[†] From 1983Ga06, unless otherwise stated. Iγ values are at 3.2 MeV.

[‡] Deduced from ce data of 1983Ga06. For Eγ<600, the mult is assumed as M1+E2 rather than E1+M2 when ce data give δ(M2/E1)>0.1. For adopted multipolarities, see the Adopted Gammas.

[#] From 1980Ki01. Uncertainty=0.7 (evaluators). Intensity at E(p)=2.725 MeV.

[@] From 1980Fe04. Intensity at E(p)=2.5 MeV.

[&] From 1988FeZU.

[a] This placement not given by 1988FeZU.

[b] Approximate intensity division (evaluators) based on (n,γ),E=thermal.

[c] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned

γ(^{76}As) (continued)

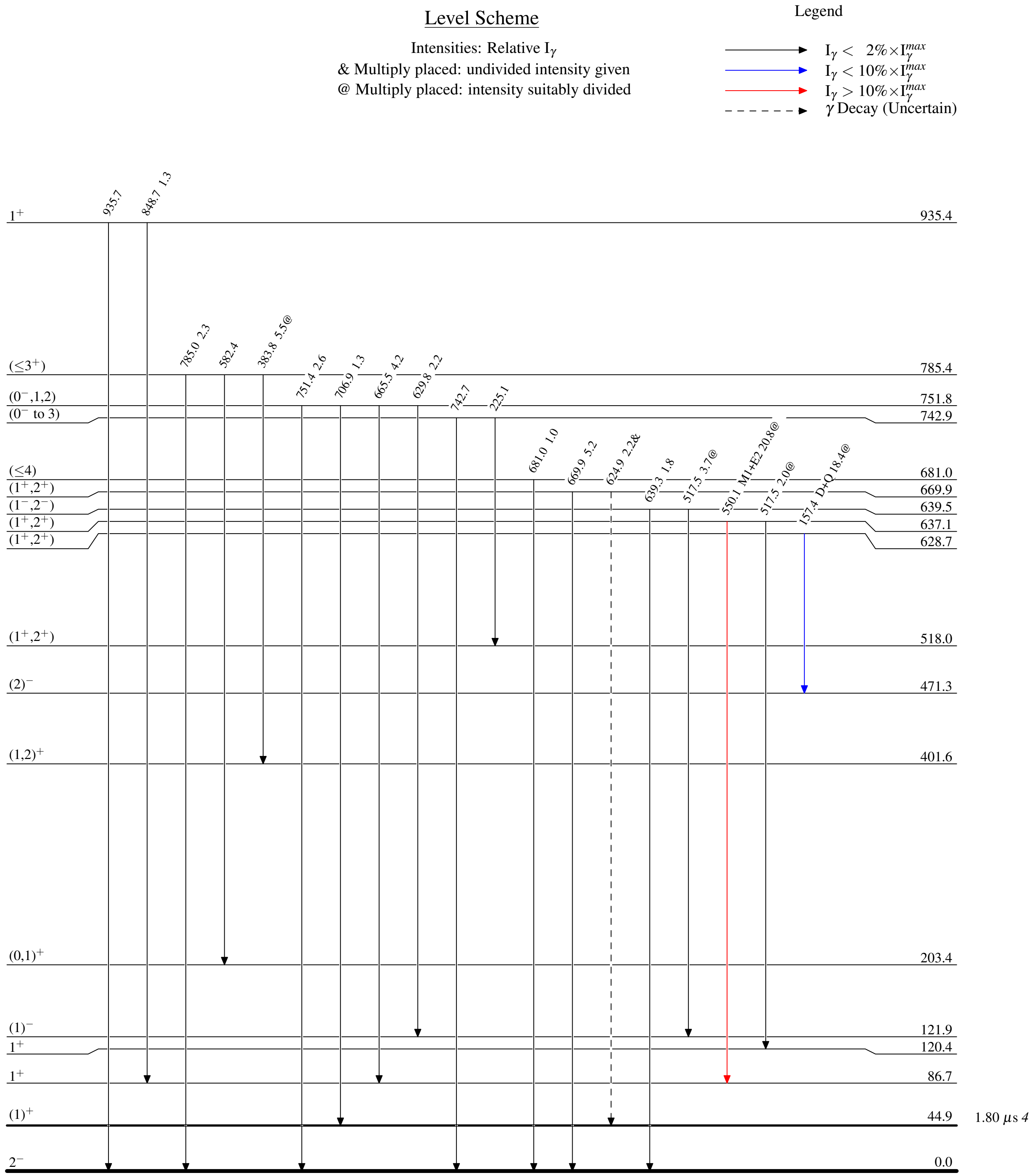
multipolarities, and mixing ratios, unless otherwise specified.
[d] Multiply placed with undivided intensity.
[e] Multiply placed with intensity suitably divided.
[f] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

$^{76}_{33}$As$_{43}$-8

$^{76}Ge(p,n\gamma)$ **1983Ga06,1980Ki01,1980Fe04**

Level Scheme

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{76}_{33}As_{43}$

$^{76}Ge(p,n\gamma)$ 1983Ga06,1980Ki01,1980Fe04

Level Scheme (continued)

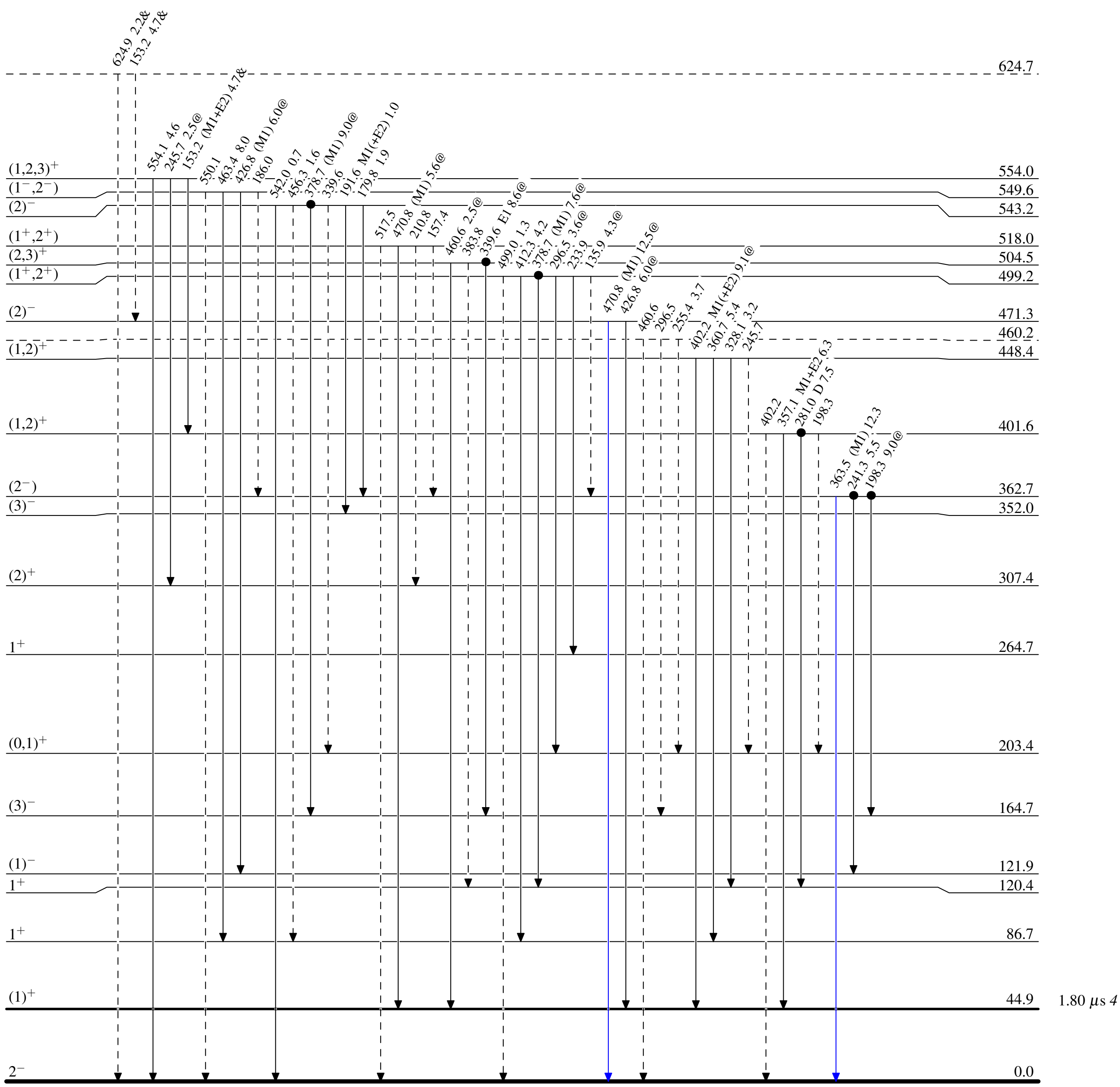
Intensities: Relative I_γ

& 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

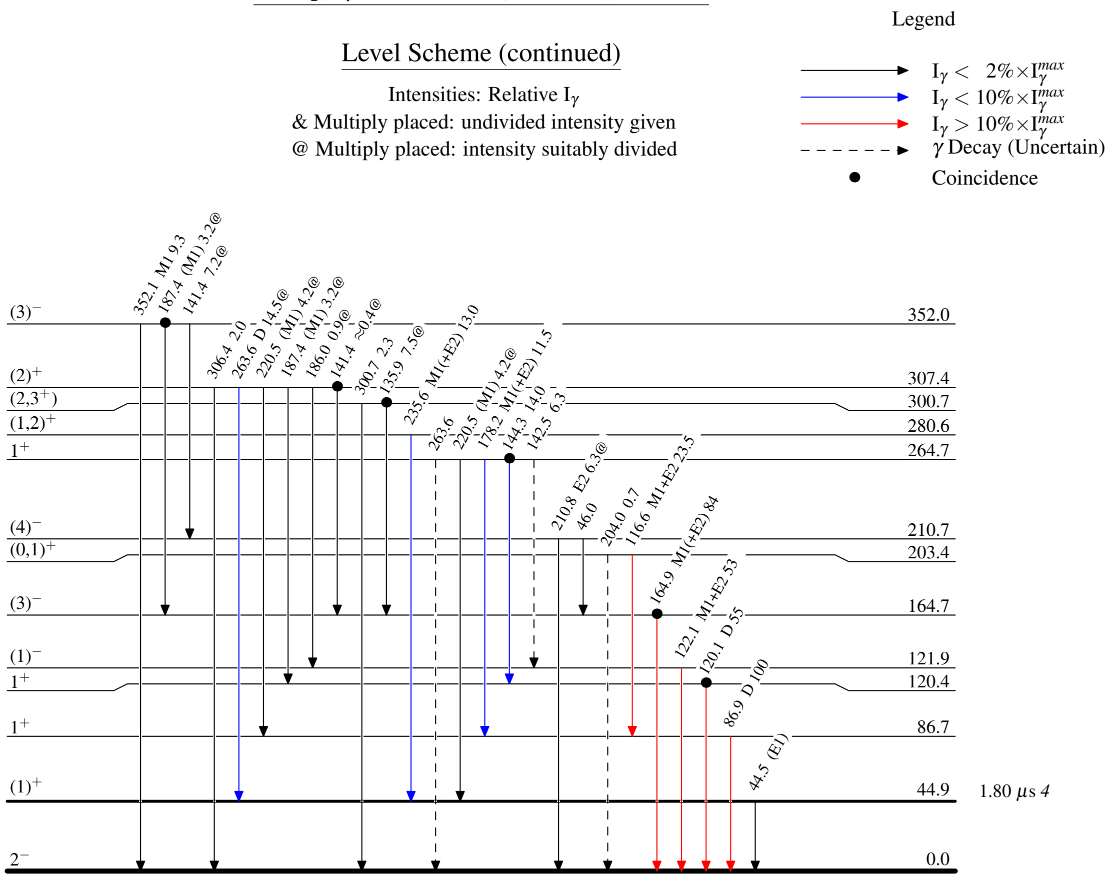


$^{76}_{33}As_{43}$

^{76}Ge(p,nγ) 1983Ga06,1980Ki01,1980Fe04

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{76}_{33}As_{43}$