^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 114, 841 (2013)	30-Jun-2013

1991Sa22: (p,nγ) E=3-4 MeV. Measured γ, γ(θ), excitation functions, $T_{1/2}$ by DSA using a 70 cm^3 coaxial HPGe detector (1.8 keV resolution).

1974Su03: (p,nγ) E=2.0-3.6, 4.5, 5.0 MeV. Measured γ, ce, excitation functions using a 14 cm^3 coaxial Ge(Li) detector (3 keV resolution) for γ and a double focusing magnetic spectrometer for ce (1% momentum resolution).

1974Ag05: (p,nγ) E=1.5-5.0 MeV. Measured γ, γγ, ce, γce, γ(θ) for 112γ, 141γ and 377γ, $T_{1/2}$(level) by γγ(t) or γce(t), measurements at threshold energies.

1970Fi03: (p,n) E=3.4, 4.5 MeV. Measured neutron spectrum using ToF and scintillators. A total of 43 levels reported up to 2297 keV excitation. Below 1700, all levels match (within 10 keV) levels from (p,nγ).

Others: 1961Lo03, 1964Jo11, 1966Tu02, 1974Ba75, 1979Ka20, 1983Ra02, 1984HeZV.

^{75}Se Levels

The following levels reported by 1974Su03 have been omitted (the levels up to 1239 as a result of the doublet of levels at 286, 293 keV): 579, 770, 853, 889, 1067, 1178, 1239, 1369, 1411, 1554. A level at 1161 proposed by 1974Ag05 is also omitted due to the reassignment of 1048.7γ from 1048 level.

E(level)	J^{π}[†]	$T_{1/2}$[‡]	Comments
0.0	$5/2^+$		
112.40 *6*	$7/2^+$[&]	0.69[a] ns *12*	
132.56 *13*	$9/2^+$	5.3[a] ns *6*	
286.53 *6*	$3/2^-$	1.35[a] ns *15*	
292.98 *9*	$(1/2)^-$[@]	30.0 ns *4*	$T_{1/2}$: from γ(t) (1968Ri14). Other: 31 ns *2* (1974Ag05). 1968Ri14 assigned this $T_{1/2}$ to the 287 level, but it actually corresponds to the 293 level.
427.86 *6*	$5/2^-$[&]		
585.83 *9*	$3/2^-$		
610.56 *14*	$1/2^+$[&]		
628.41 *9*	$5/2^+$		
663.87 *10*	$5/2^-$[&]		
747.61 *10*	$7/2^-$[&]		
777.25 *8*	$5/2^-$		
789.75 *9*	$7/2^{(+)}$		J^{π}: ΔJ=1, (M1+E2) γ to $5/2^+$ and γ to $9/2^+$.
840.08 *9*	$3/2^+$		J^{π}: 7/2,9/2 given by 1991Sa22 is ruled out by M1 transitions to $1/2^+$ and $5/2^+$.
859.47 *8*	$3/2^-$		
895.8 *3*	$1/2^-$,$3/2^-$		
952.91 *25*	$5/2^+$,7/2		
962.40 *9*	$3/2^-$		
1003.86 *8*	$5/2^+$	0.054 ps *+29−18*	$T_{1/2}$: from DSA for 1003.6γ.
1020.48 *18*	$1/2^-$,$3/2^-$		
1047.62 *16*	$5/2^-$,$7/2^-$	0.11 ps *+10−3*	$T_{1/2}$: from DSA for 1047.9γ.
1074.49 *10*	$5/2^-$	0.073 ps *+45−24*	$T_{1/2}$: from DSA for 1073.8γ.
1088.16 *22*	$(7/2^+)$[@]	0.2 ps *+10−1*	$T_{1/2}$: from DSA for 975.0γ.
1144.71 *10*	$3/2^+$,$5/2^+$	0.09 ps *+6−3*	$T_{1/2}$: from DSA for 1144.6γ.
1184.37 *17*	1/2,3/2,5/2		
1189.2? *3*			Level proposed by 1974Ag05 only.
1198.88 *15*	$(5/2^-)$[@]	0.13 ps *+17−6*	$T_{1/2}$: from DSA for 912.3γ.
1245.20 *22*	$3/2^-$	0.25 ps *+69−10*	$T_{1/2}$: from DSA for 1245.1γ. J^{π}: 1991Sa22 propose 3/2,5/2,7/2; but 7/2 is ruled out by a definite γ (see (n,γ)) to $(1/2)^-$.
1260.1 *4*		0.044 ps *+18−12*	$T_{1/2}$: from DSA for 1259.7γ.

Continued on next page (footnotes at end of table)

^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03 (continued)

^{75}Se Levels (continued)

E(level)	Jπ†	T1/2‡	Comments
1301.8 *3*	(5/2,7/2)@	0.14 ps *+10−5*	T1/2: from DSA for 1301.7γ.
1380.2 *3*			
1406.66 *21*	(5/2−,7/2−)		
1438.8 *4*	(7/2+)@	0.037 ps *+13−8*	T1/2: from DSA for 1438.7γ.
1456.58 *22*	(5/2−)@	0.19 ps *+18−7*	T1/2: from DSA for 1455.9γ.
1491.33 *14*	(7/2−)@	0.10 ps *+6−3*	T1/2: from DSA for 1491.6γ. Jπ: parity from Adopted Levels, based on 906.1γ to 3/2−. Positive parity in 1991Sa22 is in conflict with implied M2 γ to 3/2−.
1550.12 *20*	(7/2+,9/2+)@	0.064 ps *+21−17*	T1/2: from DSA for 1437.0γ and 1550.3γ (weighted average).
1561.15 *16*	(7/2−)@	0.083 ps *+31−21*	T1/2: from DSA for 1448.9γ and 1561.8γ (weighted average).
1589.22 *15*	5/2+	0.050 ps *+15−8*	T1/2: from DSA for 1476.9γ and 1588.9γ (weighted average).
1652.60 *16*	(5/2+)@	0.026 ps *+14−7*	T1/2: from DSA for 1224.7γ and 1652.4γ (weighted average).
1667.82 *18*	(5/2−)@	0.037 ps *+18−12*	T1/2: from DSA for 1038.9γ.
1733# *10*			
1764# *10*	(5/2−,7/2−)		
1813# *10*	1/2−,3/2−		
1903# *10*			
1947# *10*			
1976# *10*	1/2,3/2,5/2+		
2032# *10*	3/2+,5/2+		
2072# *10*			
2093# *10*			
2117# *10*			
2159# *10*			
2235# *10*			
2266# *10*			
2297# *10*			

† From Adopted Levels, unless stated otherwise.
‡ From DSA (1991Sa22), unless otherwise stated.
# From (p,n) only (1970Fi03).
@ From 1991Sa22 on the basis of γ(θ) data, parity is based on less likelihood of M2 transitions in this mass region.
& Assignment also agrees with excitation functions analysis using Hauser-Feshbach calculation (1974Su03).
a From γγ(t) or γce(t) (1974Ag05).

γ(^{75}Se)

A_2 and A_4 values are from 1991Sa22. 1974Ag05 reported γ(θ) for 112γ, 141γ and 377γ.

Relative intensities of γ rays from 1974Su03 at E=3.6 MeV

Eγ	Iγ	Eγ	Iγ
6.2 5 a		650.2 5	3.7 3
20.9 5 a		657.2 5	5.7 3
112.5 1	100.0	659.7 5	1.51 15
121.8 10 c	0.53 9	669.9 5 bc	1.7 3
133.2 3	1.64 11		
141.4 1	49.50 20	676.8 1 b	16.3 10
191.3 5	2.43 16	701.8 5	1.1 3
211.2 3	4.71 16	734.0 2	8.9 3
229.4 3	1.99 16	747.4 3	3.0 3
236.1 2	4.3 3	760.4 5 c	4.1 3
285.0 4 a		771.2 4 b	5.1 4
286.6 1	257.0 4	789.8 1	21.1 4
		813.7 5 c	1.5 3
292.8 1	34.19 21	840.2 1	19.6 4
299.0 3	4.69 19	869.2 5	2.06 25
309.3 5	1.03 17	874.0 5	4.4 3
315.8 5	6.10 18	891.5 1	9.5 3
319.7 1	15.02 23	897.7 2	3.3 3
325.8 5	2.57 18	912.2 2	8.0 3
341.6 5 c	0.78 16	922.1 10 c	1.14 25
349.4 1	5.54 10	952.4 2 b	9.0 3
370.9 4 a		962.2 1 b	13.0 4
377.3 1	21.7 3	975.0 2	2.7 3
409.8 4 a		978.8 2 b	4.2 3
427.8 1	30.4 3	1003.8 1	5.7 4
431.5 1	13.30 24		
461.1 3	4.17 23	1049.7 3	2.3 3
468.8 6 bc	1.7 3	1076.9 4 a	
484.3 1	5.43 22	1144.7 1	9.8 3
487.8 5	2.46 19	1189.4 5 c	1.2 3
		1224.4 5 c	1.7 4
490.7 1	7.23 20	1245.3 3	2.2 4
495.4 5 c	1.83 19	1259.7 5 c	1.1 3
515.9 1	29.4 4	1301.6 5	1.9 4
535.1 2 b	2.6 3	1380.0 5 b	2.4 4
551.9 10	1.7 3	1437.7 5	3.0 5
566.9 3	1.8 3	1448.5 5	2.4 4
573.1 1 b	14.3 3	1490.6 2	5.8 5
586.3 2 c	2.2 3		
598.5 6	4.2 3		
609.3 5	26.3 4		
611.1 5			
619.5 2	5.0 3		

$^{75}_{34}Se_{41}$-3

		628.5 2	9.2 3						
		631.9 4 c	1.68 15						
		635.7 4 c	1.23 20						
		647.0 5	1.83 25						

a: from 1974Ag05
b: doublet (1974Su03)
c: assigned to an impurity by 1974Su03, reassigned to ^{75}Se (evaluators) based on (n,γ) results

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[&]	Comments
112.40	7/2$^+$	112.5 *1*	100	0.0	5/2$^+$	M1+E2	−0.27 *5*	0.105 *12*	α(K)=0.093 *10*; α(L)=0.0109 *14*; α(M)=0.00169 *22*; α(N)=0.000138 *17* δ: weighted average of 0.24 *5* (from $\gamma(\theta)$ (1991Sa22)), 0.27 *6* (from α(K)exp=0.092 *10* (1974Ag05)), 0.35 *6* (from α(K)exp=0.109 *14* (1974Su03)). α(L)exp + α(M)exp=0.0138 *8* (1974Su03). A_2=−0.360 *22*, A_4=0.00 *3*.
132.56	9/2$^+$	20.9 *5*	14 *5*	112.40	7/2$^+$				E_γ,I_γ: from 1974Ag05.
		133.2 *3*	100	0.0	5/2$^+$	E2		0.287 *5*	α(K)=0.250 *4*; α(L)=0.0316 *6*; α(M)=0.00489 *9*; α(N)=0.000383 *7* Additional information 1. Mult.: from α(K)exp=0.27 *3* (1974Ag05); α(K)exp=0.31 *4*, α(L)exp + α(M)exp=0.042 *5* (1974Su03). A_2=+0.33 *5*, A_4=−0.08 *6*.
286.53	3/2$^-$	154.3[a] *3*	0.04	132.56	9/2$^+$	[E3]		1.09	
		286.6 *1*	100	0.0	5/2$^+$	E1		0.00362 *5*	α=0.00362 *5*; α(K)=0.00323 *5*; α(L)=0.000337 *5*; α(M)=5.23×10^{-5} *8*; α(N)=4.43×10^{-6} *7* Mult.: from α(K)exp=0.0033 *6* (1974Su03), 0.0031 *2* (1974Ag05).
292.98	(1/2)$^-$	6.2[d] *4*		286.53	3/2$^-$				
427.86	5/2$^-$	141.4 *1*	53.6 *19*	286.53	3/2$^-$	M1+E2	−0.11 *9*	0.042 *5*	α(K)=0.037 *5*; α(L)=0.0041 *6*; α(M)=0.00064 *9*; α(N)=5.4×10^{-5} *7* Mult.: from α(K)exp=0.035 *4*, δ<0.15 (1974Ag05) and α(K)exp=0.050 *5*, δ=0.30 *7* (1974Su03). α(L)exp + α(M)exp=0.0065 *6* (1974Su03). I_γ: 57.6 *23* (1974Su03), 59 (1974Ag05). A_2=−0.37 *3*, A_4=+0.09 *4*.
		315.8 *5*	7.5 *3*	112.40	7/2$^+$	(E1)		0.00277 *4*	α=0.00277 *4*; α(K)=0.00246 *4*; α(L)=0.000258 *4*; α(M)=4.00×10^{-5} *6*; α(N)=3.38×10^{-6} *5* I_γ: 7.09 *21* (1974Su03), 6 (1974Ag05). Mult.: from α(K)exp=0.0033 *12* (1974Su03).
		427.8 *1*	38.9 *14*	0.0	5/2$^+$	E1		0.001231 *18*	α=0.001231 *18*; α(K)=0.001097 *16*; α(L)=0.0001143 *16*; α(M)=1.775×10^{-5} *25* I_γ: 35.3 *4* (1974Su03), 35 (1974Ag05). Mult.: from α(K)exp=0.0012 *3* (1974Su03), 0.0011 *1* (1974Ag05). A_2=−0.08 *4*, A_4=0.00 *5*.
585.83	3/2$^-$	292.8 *1*	87.3 *31*	292.98	(1/2)$^-$	M1(+E2)	−0.07 *8*	0.00625 *20*	α=0.00625 *20*; α(K)=0.00556 *17*; α(L)=0.000592 *20*; α(M)=9.2×10^{-5} *3*; α(N)=7.85×10^{-6} *25* I_γ: 83.2 *5* (1974Su03), 84 (1974Ag05).

$^{75}_{34}Se_{41}$-4

^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03 (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[&]	Comments
									Mult.: from α(K)exp=0.0059 *4* (1974Ag05), δ=0.21 *+10−21* and α(K)exp=0.0092 *10* δ=0.77 *20* (1974Su03). δ=−0.07 *8* or −4.5 *9* (1991Sa22), but the latter value is not supported by α(K)exp. α(L)exp + α(M)exp=0.0011 *3* (1974Su03). A_2=−0.07 *3*, A_4=+0.01 *5*.
585.83	3/2−	299.0 *3*	7.8 *3*	286.53	3/2−	M1(+E2)	0.4 *4*	0.0072 *24*	α=0.0072 *24*; α(K)=0.0064 *21*; α(L)=0.00069 *24*; α(M)=0.00011 *4*; α(N)=9.E−6 *3* Iγ: 11.4 *5* (1974Su03), 11 (1974Ag05). Mult.,δ: from α(K)exp=0.0062 *18* (1974Ag05). Other: α(K)exp=0.0128 *20* (1974Su03) δ>1.5.
		586.3 *2*	4.9 *2*	0.0	5/2+				Iγ: 5.4 *7* (1974Su03), 5 (1974Ag05). Additional information 2.
610.56	1/2+	611.1 *5*	100	0.0	5/2+				
628.41	5/2+	341.6[e] *5*	1.9 *4*	286.53	3/2−				Iγ: from 1974Su03.
		495.4 *5*	6.6 *2*	132.56	9/2+				Additional information 3. Iγ: 4.4 *5* (1974Su03), 8 (1974Ag05).
		515.9 *1*	71.0 *25*	112.40	7/2+	M1		0.001614 *23*	α=0.001614 *23*; α(K)=0.001438 *21*; α(L)=0.0001510 *22*; α(M)=2.35×10^{-5} *4*; α(N)=2.01×10^{-6} Iγ: 71.6 *9* (1974Su03), 70 (1974Ag05). Mult.: from α(K)exp=0.0013 *2* (1974Ag05), δ<0.3. A_2=+0.011 *20*, A_4=+0.012 *20*.
		628.5 *2*	22.4 *8*	0.0	5/2+	D+Q			Iγ: 22.2 *8* (1974Su03), 22 (1974Ag05). δ(Q/D)=+0.07 *6* or +1.5 *3*. A_2=+0.091 *20*, A_4=+0.020 *21*.
663.87	5/2−	236.1 *2*	16.6 *6*	427.86	5/2−	M1(+E2)	+0.07 *6*	0.0107 *4*	α(K)=0.0095 *3*; α(L)=0.00102 *4*; α(M)=0.000159 *5*; α(N)=1.35×10^{-5} *5* Iγ: 15.6 *9* (1974Su03), 10 (1974Ag05). Mult.: from α(K)exp=0.0074 *22* (1974Su03), δ≈0. δ: δ=+0.07 *6* or +2.0 *5* from γ(θ) (1991Sa22). δ=2.0 is not supported by α(K)exp. A_2=+0.091 *21*, A_4=+0.004 *22*.
		370.9 *4*	0.33	292.98	(1/2)−	(E2)		0.00720 *11*	α=0.00720 *11*; α(K)=0.00638 *10*; α(L)=0.000700 *11*; α(M)=0.0001088 *16*; α(N)=9.06×10^{-6} Eγ: from 1991Sa22 and 1974Ag05, γ not reported by 1974Su03. Iγ: from Adopted Gammas. Iγ=0.04 (1991Sa22), 6 (1974Ag05). Mult.: α(K)exp=0.0053 *20* (1974Ag05) gives M1,E2, but ΔJ$^\pi$ requires E2.
		377.3 *1*	77.7 *22*	286.53	3/2−	M1+E2	−0.75 *18*	0.0046 *4*	α=0.0046 *4*; α(K)=0.0041 *4*; α(L)=0.00044 *4*; α(M)=6.8×10^{-5} *7*; α(N)=5.8×10^{-6} *5* Iγ: 78.4 *10* (1974Su03), 78 (1974Ag05). Mult.: from α(K)exp=0.0028 *5* (1974Ag05) (δ<0.35), 0.0037 *4* (1974Su03) (δ=0.55 *18*). A_2=−0.241 *22*, A_4=+0.006 *22*.
		551.9 *10*	4.2 *2*	112.40	7/2+				Additional information 4. Iγ: 6.0 *10* (1974Su03), 6 (1974Ag05).

$^{75}_{34}Se_{41}$-5

^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03 (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[&]	Comments
663.87	5/2⁻	663.9[a] *3*	1.5 *1*	0.0	5/2⁺				
747.61	7/2⁻	137.1[a] *3*	2.4 *1*	610.56	1/2⁺	[E3]		1.86	
		319.7 *1*	66.3 *22*	427.86	5/2⁻	M1+E2	+1.38 *10*	0.0095 *3*	α=0.0095 *3*; α(K)=0.00845 *25*; α(L)=0.00093 *3*; α(M)=0.000145 *5*; α(N)=1.20×10^{-5} *4* I_γ: 64.3 *10* (1974Su03), 69 (1974Ag05). δ: other: 0.45 *22* from α(K)exp=0.0056 *8* (1974Su03). A_2=+0.25 *4*, A_4=+0.02 *4*.
		461.1 *3*	23.5 *9*	286.53	3/2⁻	E2		0.00355 *5*	α=0.00355 *5*; α(K)=0.00315 *5*; α(L)=0.000341 *5*; α(M)=5.30×10^{-5} *8*; α(N)=4.44×10^{-6} *7* I_γ: 17.8 *10* (1974Su03), 23 (1974Ag05). Mult.: from α(K)exp=0.0032 *5* (1974Ag05), 0.0046 *12* (1974Su03).
		635.7 *4*	8.7 *3*	112.40	7/2⁺				I_γ: 5.3 *9* (1974Su03).
		747.4 *3*	9.1 *3*	0.0	5/2⁺				I_γ: 12.6 *12* (1974Su03), 8 (1974Ag05).
777.25	5/2⁻	191.3 *5*	10.5 *4*	585.83	3/2⁻				I_γ: 11.8 *8* (1974Su03), 12 (1974Ag05).
		349.4 *1*	27.7 *10*	427.86	5/2⁻	M1+E2	+3.27 *9*	0.00839 *12*	α=0.00839 *12*; α(K)=0.00743 *11*; α(L)=0.000819 *12*; α(M)=0.0001271 *19*; α(N)=1.057×10^{-5} I_γ: 26.9 *5* (1974Su03), 22 (1974Ag05). Mult.: from α(K)exp=0.0035 *13* (1974Ag05), δ<0.7. A_2=+0.031 *4*, A_4=+0.005 *4*.
		484.3 *1*	29.7 *10*	292.98	(1/2)⁻				I_γ: 26.3 *11* (1974Su03), 28 (1974Ag05).
		490.7 *1*	32.1 *11*	286.53	3/2⁻	D+Q			I_γ: 35.0 *10* (1974Su03), 38 (1974Ag05). δ(Q/D)=+0.08 *2* or +3.49 *9*. A_2=−0.034 *5*, A_4=−0.002 *5*.
789.75	7/2(+)	657.2 *5*	13.2 *7*	132.56	9/2⁺				I_γ: from 1974Su03. Iγ=23.5 *8* (1991Sa22).
		677.1[c] *3*	37.8 *23*	112.40	7/2⁺				I_γ: from 1974Su03 for a doublet. Iγ=1.7 (1991Sa22) disagrees. Additional information 5.
		789.8 *1*	49.0 *9*	0.0	5/2⁺	(M1+E2)	−0.84 *6*	0.000679 *11*	α=0.000679 *11*; α(K)=0.000605 *10*; α(L)=6.34×10^{-5} *10*; α(M)=9.86×10^{-6} *16*; α(N)=8.41×10^{-7} *1* I_γ: from 1974Su03. Iγ=74.8 *26* (1991Sa22). A_2=−0.32 *5*, A_4=−0.02 *5*. Additional information 6.
840.08	3/2⁺	211.2 *3*	16.9 *6*	628.41	5/2⁺	M1		0.01407	α(K)=0.01250 *18*; α(L)=0.001342 *20*; α(M)=0.000209 *3*; α(N)=1.78×10^{-5} *3* I_γ: 17.9 *6* (1974Su03), 16 (1974Ag05). Mult.,δ: from α(K)exp=0.016 *4* (1974Su03), δ=0.34 *+20−34*.
		229.4 *3*	6.8 *2*	610.56	1/2⁺	M1		0.01141	α(K)=0.01014 *15*; α(L)=0.001085 *16*; α(M)=0.0001691 *25*; α(N)=1.438×10^{-5} *21* I_γ: 7.6 *6* (1974Su03), 7 (1974Ag05). Mult.: from α(K)exp=0.009 *3* (1974Su03), δ<0.3.
		840.2 *1*	76.3 *23*	0.0	5/2⁺	(D+Q)			I_γ: 74.6 *5* (1974Su03), 77 (1974Ag05).

$^{75}_{34}Se_{41}$-6

^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03 (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[&]	Comments
									δ: δ=+1.4 *3* for J=7/2 and δ=+0.12 *2* for J=9/2 (1991Sa22). But the most probable J=3/2. A_2=+0.26 *4*, A_4=+0.02 *4*.
859.47	3/2$^-$	195.3[a] *3*	1.4 *1*	663.87	5/2$^-$				
		431.5 *1*	57.1 *20*	427.86	5/2$^-$	M1(+E2)	0.4 *4*	0.0027 *5*	α=0.0027 *5*; α(K)=0.0024 *5*; α(L)=0.00026 *5*; α(M)=4.0×10^{-5} *8*; α(N)=3.4×10^{-6} *7* I_γ: 45.3 *8* (1974Su03), 51 (1974Ag05). Mult.,δ: from α(K)exp=0.0024 *4* (1974Ag05). Other: 0.6 *+16−6* from α(K)exp=0.0026 *10* (1974Su03).
		566.9 *3*	5.1 *2*	292.98	(1/2)$^-$				I_γ: 6.0 *9* (1974Su03), 9 (1974Ag05).
		573.1 *1*	33.6 *12*	286.53	3/2$^-$	M1,E2		0.0015 *3*	α=0.0015 *3*; α(K)=0.00138 *25*; α(L)=0.00015 *3*; α(M)=2.3×10^{-5} *5*; α(N)=1.9×10^{-6} *4* I_γ: 48.8 *5* (1974Su03), 40 (1974Ag05). Mult.: from α(K)exp=0.0016 *4* (1974Ag05).
		859.3[a] *3*	2.8 *1*	0.0	5/2$^+$				
895.8	1/2$^-$,3/2$^-$	309.3 *5*	4.6 *2*	585.83	3/2$^-$				Additional information 7. I_γ: 3.5 *6* (1974Su03).
		468.8 *6*	16.2 *6*	427.86	5/2$^-$				Additional information 8. I_γ: 5.9 *9* (1974Su03).
		609.3 *5*	79.2 *28*	286.53	3/2$^-$				I_γ: 90.6 *15* (1974Su03).
952.91	5/2$^+$,7/2	525.0[a] *3*	2.3 *1*	427.86	5/2$^-$				
		953.0 *4*	98 *14*	0.0	5/2$^+$				E_γ: from 1974Ag05. Eγ=952.1 (1991Sa22), 952.4 *2* (1974Su03) for a doublet.
962.40	3/2$^-$	122.3[c] *3*	1.0 *1*	840.08	3/2$^+$				E_γ: 121.8 *10* (1974Su03). I_γ: 1.6 *3* (1974Su03).
		535.1 *2*	7.0 *11*	427.86	5/2$^-$				E_γ: doublet. I_γ: 7.6 *8* (1974Su03) for a doublet.
		669.9 *5*	4.9 *8*	292.98	(1/2)$^-$				Additional information 9. I_γ: from 1974Su03.
		676.2[c] *3*	51.1 *18*	286.53	3/2$^-$				E_γ: 676.8 *1* (1974Su03) for a doublet, 676.1 *4* (1974Ag05). I_γ: 47.8 *30* (1974Su03) for a doublet.
		962.2 *1*	40.9 *14*	0.0	5/2$^+$				I_γ: 38.2 *4* (1974Su03).
1003.86	5/2$^+$	871.4[c] *3*	11.3 *4*	132.56	9/2$^+$				E_γ: 869.2 *5* (1974Su03) for a doublet. I_γ: 12.0 *15* for a doublet (1974Su03).
		891.5 *1*	55.0 *20*	112.40	7/2$^+$				I_γ: 55.1 *19* (1974Su03), 69 (1974Ag05).
		1003.8 *1*	33.7 *12*	0.0	5/2$^+$				I_γ: 33.0 *23* (1974Su03), 31 (1974Ag05).
1020.48	1/2$^-$,3/2$^-$	409.8 *3*	3.3 *1*	610.56	1/2$^+$				E_γ: from 1974Ag05 and 1991Sa22, γ not reported by 1974Ag05.
		734.0 *2*	97 *3*	286.53	3/2$^-$				
1047.62	5/2$^-$,7/2$^-$	619.5 *2*	47.3 *17*	427.86	5/2$^-$	D+Q			I_γ: 44.2 *27* (1974Su03). δ(Q/D)=+0.22 *7* or +2.36 *11* for J=7/2. A_2=−0.22 *3*, A_4=−0.02 *3*.
		761.3[c] *3*	30.0 *11*	286.53	3/2$^-$	(D+Q)			E_γ: 761.2 *4* (1974Ag05) from a 1189 level, 760.4 *5* (1974Su03). I_γ: 35.8 *28* (1974Su03). But no such transition reported in (n,γ).

$^{75}_{34}Se_{41}$-7

^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03 (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	Comments
							δ(Q/D)=+0.78 *5* or +2.74 *10* for J=5/2. A_2=+0.140 *20*, A_4=−0.004 *20*.
1047.62	5/2⁻,7/2⁻	1048.0[c] *3*	22.7 *30*	0.0	5/2⁺	D+Q	E_γ: 1048.7 *4* (1974Ag05) from a 1161 level, 1049.7 *3* (1974Su03). I_γ: 20.0 *28* (1974Su03) for 1049.7γ. But no such transition in (n,γ). δ(Q/D)=+0.09 *2* for J=7/2 and>+23 for J=5/2. A_2=−0.047 *6*, A_4=−0.006 *6*.
1074.49	5/2⁻	284.6[c] *3*	0.4	789.75	7/2⁽⁺⁾		E_γ: 285.0 *4* (1974Ag05).
		326.5[c] *3*	15 *2*	747.61	7/2⁻		E_γ: 325.8 *5* (1974Su03) for a doublet. I_γ: from Adopted Gammas. Iγ=0.4 (1991Sa22).
		487.8 *5*	18.0 *6*	585.83	3/2⁻		E_γ: 488.9 (1991Sa22).
		647.0 *5*	6.0 *2*	427.86	5/2⁻		
		781.3[a] *3*	14.2 *5*	292.98	(1/2)⁻		
		962.2 *1*	52 *7*	112.40	7/2⁺		
		1074.3[a] *3*	10.0 *4*	0.0	5/2⁺		E_γ: 1076.9 *4* (1974Ag05) from a 1189 level.
1088.16	(7/2⁺)	975.8[c] *3*	93 *3*	112.40	7/2⁺	(D+Q)	E_γ: 975.0 *2* (1974Su03) from 1561 level. δ(Q/D)=+0.06 *7* or +0.96 *10*. A_2=+0.161 *23*, A_4=+0.010 *23*.
		1088.1[a] *3*	7.4 *3*	0.0	5/2⁺		
1144.71	3/2⁺,5/2⁺	1032.3[a] *3*	3.0 *1*	112.40	7/2⁺		
		1144.7 *1*	97 *3*	0.0	5/2⁺	(D+Q)	δ(Q/D)=+0.07 *2* or +1.33 *15*. A_2=+0.116 *17*, A_4=+0.008 *17*.
1184.37	1/2,3/2,5/2	325.2[c] *3*	20.2 *30*	859.47	3/2⁻		E_γ: 325.8 *5* (1974Su03). I_γ: 25.4 *18* (1974Su03) for a doublet.
		598.5 *6*	43.9 *15*	585.83	3/2⁻		I_γ: 41.7 *34* (1974Su03).
		897.7 *2*	35.9 *13*	286.53	3/2⁻		I_γ: 33.0 *31* (1974Su03).
1189.2?		761.2[bf] *4*		427.86	5/2⁻		E_γ: 761.3 (1991Sa22) from 1048 level, 760.4 *5* (1974Su03).
		1076.9[bf] *4*		112.40	7/2⁺		E_γ: 1074.3 (1991Sa22) from 1074 level, γ not reported by 1974Su03.
1198.88	(5/2⁻)	535.1 *2*	15.5 *6*	663.87	5/2⁻		E_γ: doublet. I_γ: 16.5 *17* (1974Su03) for a doublet.
		771.2 *4*	30.0 *11*	427.86	5/2⁻	D+Q	I_γ: 32.6 *23* (1974Su03). δ(Q/D)=+0.11 *1* or +1.23 *11*. A_2=−0.101 *14*, A_4=−0.007 *15*.
		912.2 *2*	54.5 *19*	286.53	3/2⁻	D+Q	I_γ: 50.9 *19* (1974Su03). δ(Q/D)=−0.09 *2* or −2.50 *15*. A_2=−0.118 *17*, A_4=−0.008 *17*.
1245.20	3/2⁻	659.7 *5*	11.8 *12*	585.83	3/2⁻		I_γ: from 1974Su03. Iγ=0.1 (1991Sa22).
		951.8 *4*	70.7 *25*	292.98	(1/2)⁻		E_γ: from 1974Ag05. Eγ=952.4 *2* (1974Su03) for a doublet. I_γ: from 1974Su03. Iγ=0.1 (1991Sa22), 60 (1974Ag05).
		1245.3 *3*	17.5 *31*	0.0	5/2⁺	(D+Q)	I_γ: from 1974Su03. Iγ=100 (1991Sa22), 40 (1974Ag05). δ(Q/D)=+0.28 *7* or +0.73 *11* for J=5/2 and δ=+4.01 *11* for J=7/2. A_2=+0.151 *22*, A_4=+0.010 *22*.
1260.1		631.9 *4*	79.8 *28*	628.41	5/2⁺	D+Q	E_γ: 630.9 (1991Sa22). I_γ: 60 *5* (1974Su03), 83 (1974Ag05).

^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03 (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	Comments
								δ(Q/D)>+10 for J=5/2 and +0.07 *3* for J=7/2. A_2=−0.049 *7*, A_4=−0.003 *7*.
1260.1		1259.7 *5*	20.2 *7*	0.0	5/2$^+$	D+Q		I_γ: 40 *10* (1974Su03), 17 (1974Ag05). δ(Q/D)=−0.27 *7* or −1.88 *11* for J=7/2. A_2=−0.29 *4*, A_4=−0.02 *4*.
1301.8	(5/2,7/2)	874.0 *5*	70.3 *25*	427.86	5/2$^-$	D+Q		I_γ: 58 *4* (1974Su03). δ(Q/D)=−0.74 *7* or −6.04 *22* for J=5/2 and δ=+0.05 *5* for J=7/2. A_2=−0.068 *9*, A_4=−0.004 *10*.
		1189.4 *5*	4.2 *2*	112.40	7/2$^+$			I_γ: 16 *4* (1974Su03).
		1301.6 *5*	25.5 *9*	0.0	5/2$^+$	D+Q		I_γ: 25 *5* (1974Su03). δ(Q/D)=−0.21 *3* or −2.48 *11* for J=7/2. A_2=−0.24 *4*, A_4=−0.02 *4*.
1380.2		1380.2[c] *3*	100	0.0	5/2$^+$			Additional information 10.
1406.66	(5/2$^-$,7/2$^-$)	978.8 *2*	100	427.86	5/2$^-$			
1438.8	(7/2$^+$)	650.2 *5*	72.5 *25*	789.75	7/2$^{(+)}$	(D+Q)	−1.5 *3*	I_γ: 55 *4* (1974Su03). A_2=+0.145 *23*, A_4=−0.029 *25*.
		1437.7 *5*	27.5 *10*	0.0	5/2$^+$	(D+Q)	+2.90 *10*	E_γ: doublet. I_γ: 45 *7* (1974Su03) for a doublet. A_2=+0.24 *3*, A_4=+0.04 *3*.
1456.58	(5/2$^-$)	871.4[a] *3*	88 *3*	585.83	3/2$^-$	D+Q		E_γ: 869.2 *5* (1974Su03) for a doublet. δ(Q/D)=−0.20 *2* or −1.88 *9*. A_2=−0.166 *23*, A_4=−0.012 *24*.
		1455.9[a] *3*	11.5 *4*	0.0	5/2$^+$			
1491.33	(7/2$^-$)	906.1[a] *3*	5.7 *2*	585.83	3/2$^-$			
		1063.9[a] *3*	6.8 *2*	427.86	5/2$^-$			
		1359.3[a] *3*	4.5 *2*	132.56	9/2$^+$			
		1490.6 *2*	83.0 *29*	0.0	5/2$^+$	D+Q		E_γ: 1491.6 (1991Sa22). δ(Q/D)=−0.29 *4* or −1.60 *14* for 7/2. Additional information 11. A_2=−0.33 *5*, A_4=−0.01 *5*.
1550.12	(7/2$^+$,9/2$^+$)	921.5[c] *3*	28.0 *11*	628.41	5/2$^+$	D+Q		E_γ: 922.1 *10* (1974Su03). δ: +0.21 *4* for J=7/2. A_2=+0.021 *3*, A_4=+0.003 *3*.
		1437.7 *5*	41.4 *15*	112.40	7/2$^+$	D+Q		E_γ: doublet. δ(Q/D)=+0.73 *5* or +9.50 *10* for J=7/2. A_2=−0.069 *10*, A_4=−0.011 *10*.
		1550.3[a] *3*	30.6 *11*	0.0	5/2$^+$	(D+Q)		δ(Q/D)=+1.20 *22* for J=7/2 and δ=+4.7 *1* for J=9/2. A_2=+0.34 *5*, A_4=+0.03 *5*.
1561.15	(7/2$^-$)	701.8 *5*	64.0 *23*	859.47	3/2$^-$	(Q)		I_γ: 15 *4* (1974Su03). A_2=+0.22 *3*, A_4=0.00 *3* gives δ(O/Q)=+0.19 *6*.
		813.7 *5*	11.7 *4*	747.61	7/2$^-$			I_γ: 19 *4* (1974Su03).
		975.0 *2*		585.83	3/2$^-$			I_γ: 35 *4* for a doublet (1974Su03).
		1448.5 *5*	18.8 *7*	112.40	7/2$^+$			I_γ: 31 *6* (1974Su03).

$^{75}_{34}Se_{41}$-9

^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03 (continued)

γ(^{75}Se) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	δ[@]	Comments
1561.15	(7/2⁻)	1561.8[a] *3*	5.5 *2*	0.0	5/2⁺			
1589.22	5/2⁺	978.8 *2*	76 *11*	610.56	1/2⁺			
		1456.7[a] *3*	3.6 *1*	132.56	9/2⁺			
		1476.7[a] *3*	10.7 *4*	112.40	7/2⁺			
		1588.9[a] *3*	9.4 *3*	0.0	5/2⁺			
1652.60	(5/2⁺)	1042.1[a] *3*	22.1 *8*	610.56	1/2⁺			δ(Q/D)=+0.07 *3* or −4.0 *1*. A_2=+0.154 *21*, A_4=+0.001 *22*.
		1066.9[a] *3*	17.9 *6*	585.83	3/2⁻			
		1224.7 *3*	21.6 *8*	427.86	5/2⁻	(D+Q)		I_γ: from 1991Sa22. Eγ=1224.4 *5* (1974Su03). δ(Q/D)=+0.04 *4* or +1.60 *10*. A_2=+0.118 *17*, A_4=+0.008 *17*.
		1652.4[a] *3*	38.4 *13*	0.0	5/2⁺	D+Q	+0.50 *8*	A_2=−0.027 *3*, A_4=−0.003 *4*.
1667.82	(5/2⁻)	828.3[a] *3*	26.9 *10*	840.08	3/2⁺			
		1038.9[a] *3*	21.6 *8*	628.41	5/2⁺	(D+Q)		δ(Q/D)=+0.05 *3* or +1.51 *7*. A_2=+0.121 *17*, A_4=+0.008 *17*.
		1381.2[c] *3*	51 *8*	286.53	3/2⁻	(D+Q)	+0.74 *4*	E_γ: 1380.0 *5* (1974Su03) for a doublet. A_2=+0.19 *3*, A_4=+0.01 *3*.

[†] From 1974Su03, unless otherwise stated. The values given by 1974Ag05 and 1991Sa22 (figure 1) are in good agreement with these, although, some of the Eγ′s in 1991Sa22 differ by as much as 1 keV. Eγ′s given in table I of 1991Sa22 are level-energy differences.

[‡] Photon branching ratios from 1991Sa22, unless otherwise stated. Branchings from 1974Su03 and 1974Ag05 are given under comments. See table above for relative intensities from 1974Su03.

[#] From ce data of 1974Su03 and 1974Ag05 and/or γ(θ) data of 1991Sa22. Mult=D+Q corresponds to ΔJ=1 implied by negative A_2 and mult=(D+Q) corresponds to ΔJ=0 or 2 implied by positive A_2 in γ(θ).

[@] From γ(θ) data of 1991Sa22, unless otherwise stated.

[&] Additional information 12.

[a] Reported by 1991Sa22 only. Eγ from figure 1 of 1991Sa22. Uncertainty of 0.3 keV assigned by the evaluators.

[b] From 1974Ag05.

[c] From figure 1 of 1991Sa22, uncertainty of 0.3 keV assigned by the evaluators.

[d] γ reported by 1974Ag05 from γγ coincidence of 3-20 keV γ rays (detected in a krypton filled proportional counter) with 286.6γ detected in a NaI(Tl) detector.

[e] From table 1 of 1974Su03 where it was assigned to an impurity. Based on (n,γ) results, this γ ray is reassigned (evaluators) to ^{75}Se.

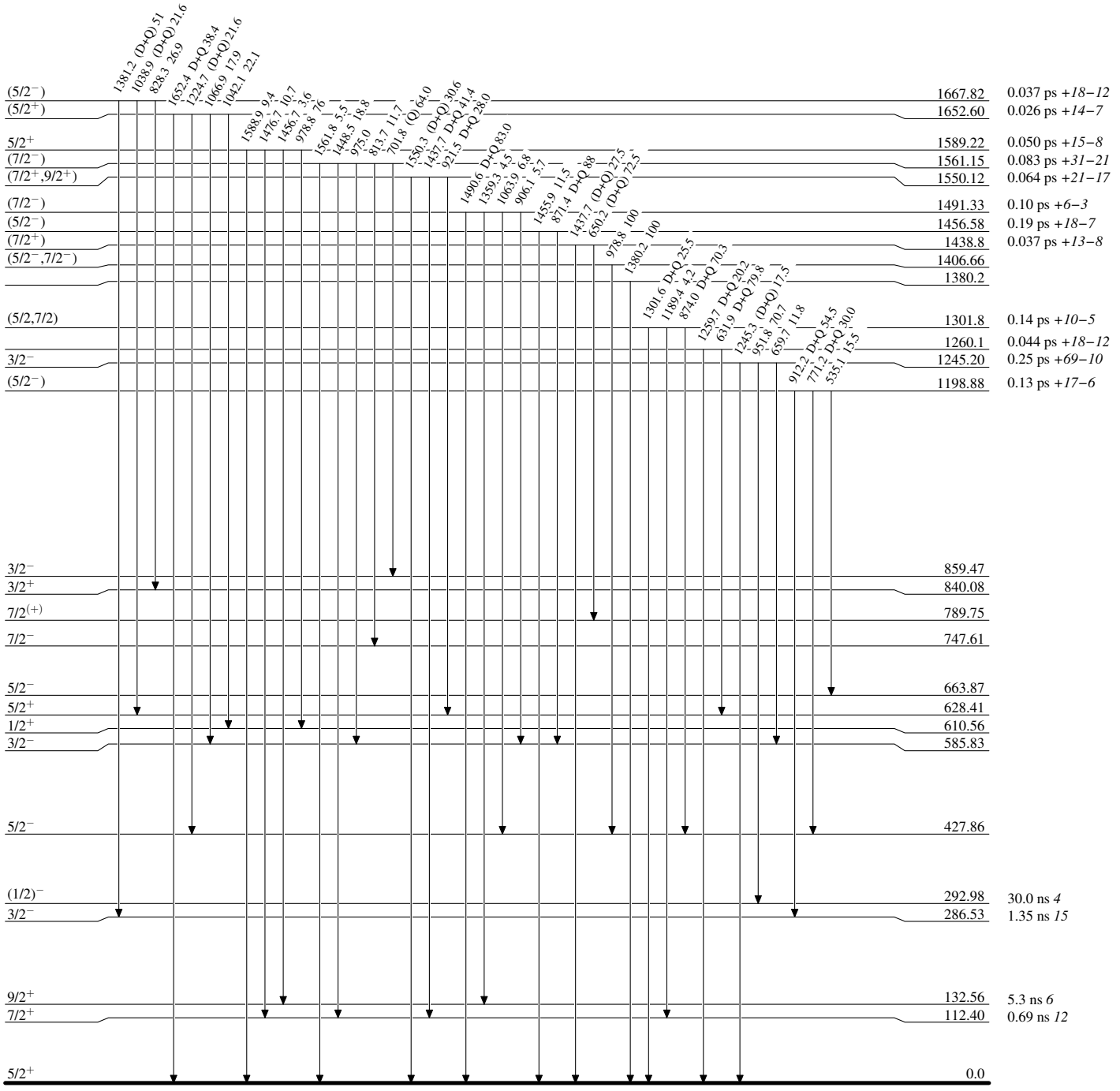
[f] Placement of transition in the level scheme is uncertain.

$^{75}_{34}Se_{41}$-10

^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03

Level Scheme

Intensities: % photon branching from each level



$^{75}_{34}Se_{41}$

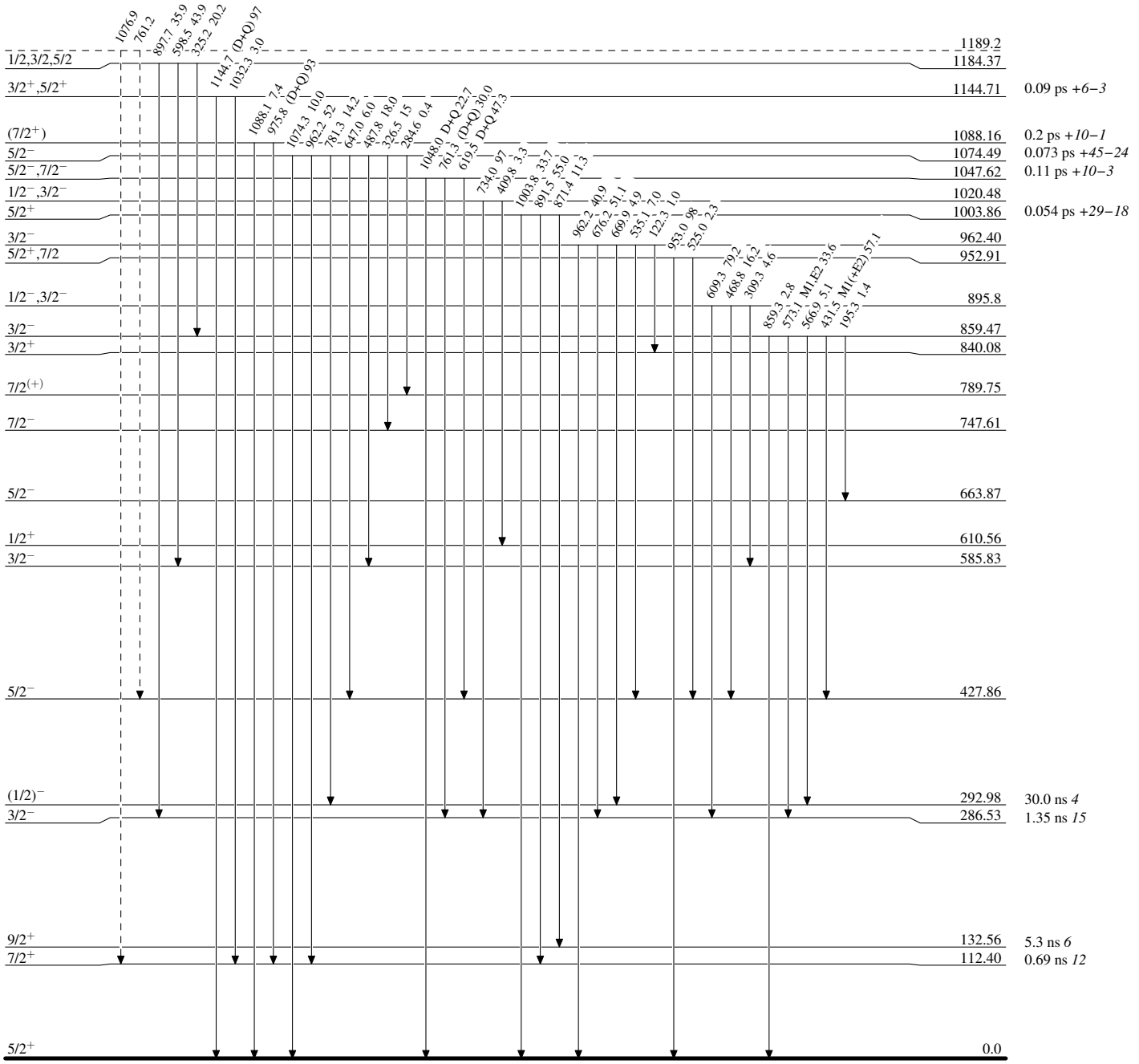
^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

- - - - - - ► γ Decay (Uncertain)

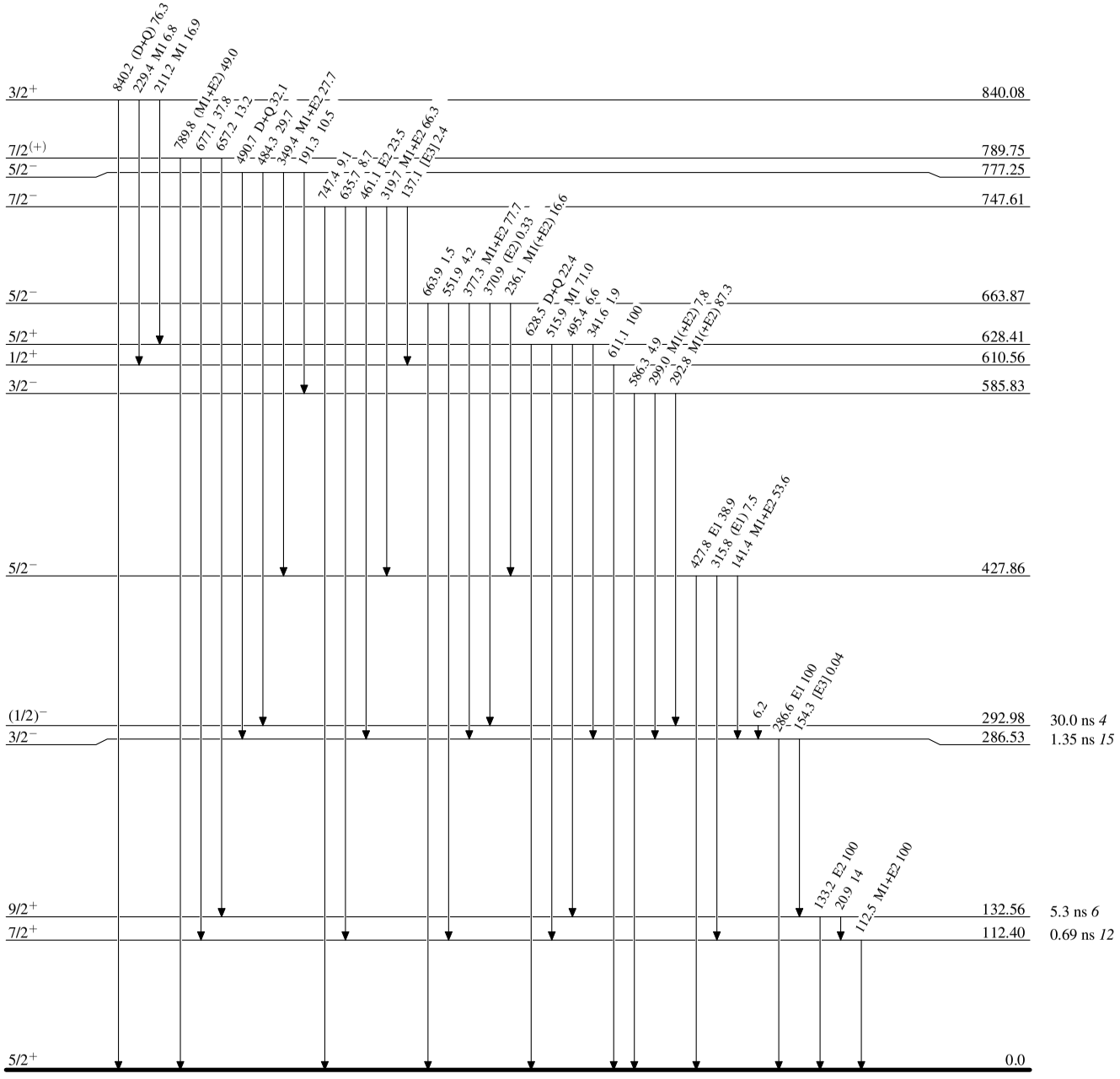


$^{75}_{34}Se_{41}$

^{75}As(p,nγ),(p,n) 1991Sa22,1974Su03,1970Fi03

Level Scheme (continued)

Intensities: % photon branching from each level



$^{75}_{34}Se_{41}$