^{75}As(α,2nγ) E=27 MeV 1993Do14

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	30-Sep-2020

1993Do14: ^{75}As(α,2nγ) E=27 MeV. Other reactions used: ^{73}Ge(^{7}Li,3nγ) and ^{74}Ge(^{7}Li,4nγ) E=35 MeV. Measured γ, $\gamma\gamma$, $\gamma(\theta)$.

^{77}Br Levels

E(level)[†]	Jπ[‡]	$T_{1/2}$	Comments
0.0[#]	3/2$^-$		
105.63[&] *17*	9/2$^+$	4.28 min *10*	%IT=100 $T_{1/2}$: from the Adopted Levels.
129.55 *18*	5/2$^+$		
161.89[@] *15*	5/2$^-$		
167.0[d] *4*	(3/2)$^-$		
275.94 *24*	(3/2)$^+$		
417.54[a] *23*	7/2$^{(+)}$		
424.5[d] *4*	5/2$^-$		
575.75[#] *15*	7/2$^-$		
639.80[&] *22*	(13/2)$^+$		
649.0 *5*	(5/2)$^-$		
781.1[d] *4*	(7/2$^-$)		
782.27[b] *23*	(9/2)$^+$		
790.54[@] *19*	(9/2)$^-$		
947.4[a] *3*	(11/2$^+$)		
1093.5 *4*	(11/2$^+$)		
1274.20[#] *21*	(11/2)$^-$		
1286.6[d] *5*	(9/2$^-$)		
1304.5[b] *3*	(13/2)$^+$		
1481.9[&] *3*	(17/2)$^+$		
1538.6[@] *3*	(13/2$^-$)		
1602.9 *6*			
1644.7 *5*	(13/2$^+$)		
1746.8[a] *3*	(15/2$^+$)		
1826.7 *3*	(15/2$^+$)		
2021.7[#] *4*	(15/2$^-$)		
2046.4[b] *4*	(17/2)$^+$		
2339.5[@] *4*	(17/2$^-$)		
2550.1[&] *4*	(21/2)$^+$		
2647.7[a] *6*	(19/2$^+$)		
2792.6[#] *4*	(19/2$^-$)		
2926.5 *5*	(19/2$^+$)		
2931.6[c] *4*	(17/2$^-$)		
3037.4[b] *11*	(21/2$^+$)		
3200.6[@] *4*	(21/2$^-$)		
3219.6[c] *4*	(19/2$^-$)		
3609.9[c] *4*	(21/2$^-$)		
3729.4[#] *6*	(23/2$^-$)		
3773.8[&] *6*	(25/2$^+$)		

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^{75}As(α,2nγ) E=27 MeV 1993Do14 (continued)

^{77}Br Levels (continued)

E(level)[†]	J$^\pi$[‡]
4149.8[c] 5	(23/2$^-$)
4246.6[@] 11	(25/2$^-$)

[†] From least-squares fit to Eγ data.
[‡] From the Adopted Levels.
[#] Band(A): g.s. band,α=−1/2.
[@] Band(a): g.s. band,α=+1/2.
[&] Band(B): $\nu g_{9/2}$,α=+1/2.
[a] Band(b): $\nu g_{9/2}$,α=−1/2.
[b] Band(C): Band based on (9/2)$^+$.
[c] Band(D): Band based on (17/2$^-$), 3-qp. Possible configuration=$\pi g_{9/2}\otimes\nu g_{9/2}\otimes\nu(p_{1/2}$ or $p_{3/2}$ or $\nu f_{5/2}$) (1993Do14). Similar bands are seen in ^{79}Br and ^{81}Br.
[d] Band(E): Band based on (3/2)$^-$.

γ(^{77}Br)

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	α[‡]	Comments
(24.2)	129.55	5/2$^+$	105.63	9/2$^+$	(E2)	145.7	α(K)=82.2 *12*; α(L)=54.3 *8*; α(M)=8.60 *12*; α(N)=0.590 *9* Eγ,Mult.: from Adopted Gammas.
105.6 *2*	105.63	9/2$^+$	0.0	3/2$^-$	E3		Mult.: from the Adopted dataset.
129.6 *2*	129.55	5/2$^+$	0.0	3/2$^-$			
146.4 *2*	275.94	(3/2)$^+$	129.55	5/2$^+$			
161.8 *2*	161.89	5/2$^-$	0.0	3/2$^-$			
166.9 *5*	167.0	(3/2)$^-$	0.0	3/2$^-$			
214.6 *3*	790.54	(9/2)$^-$	575.75	7/2$^-$			
257.6 *5*	424.5	5/2$^-$	167.0	(3/2)$^-$			
264.5 *5*	1538.6	(13/2$^-$)	1274.20	(11/2)$^-$			
265 *1*	1746.8	(15/2$^+$)	1481.9	(17/2)$^+$			
275.8 *5*	275.94	(3/2)$^+$	0.0	3/2$^-$			
288 *1*	417.54	7/2$^{(+)}$	129.55	5/2$^+$			
288.0 *2*	3219.6	(19/2$^-$)	2931.6	(17/2$^-$)	D+Q		A$_2$=−0.56 *4*; A$_4$=+0.01 *6*
307.6 *3*	947.4	(11/2$^+$)	639.80	(13/2)$^+$			
311 *1*	1093.5	(11/2$^+$)	782.27	(9/2)$^+$			
311.9 *2*	417.54	7/2$^{(+)}$	105.63	9/2$^+$	D		A$_2$=−0.25 *3*; A$_4$=−0.06 *4*
317[#] *1*	1602.9		1286.6	(9/2$^-$)			
317.9 *5*	2339.5	(17/2$^-$)	2021.7	(15/2$^-$)			
344.2 *5*	1826.7	(15/2$^+$)	1481.9	(17/2)$^+$			
356.5 *5*	781.1	(7/2$^-$)	424.5	5/2$^-$			
357 *1*	1304.5	(13/2)$^+$	947.4	(11/2$^+$)			
364.6 *5*	782.27	(9/2)$^+$	417.54	7/2$^{(+)}$			
372.9 *5*	649.0	(5/2)$^-$	275.94	(3/2)$^+$			
390.3 *2*	3609.9	(21/2$^-$)	3219.6	(19/2$^-$)	D+Q		A$_2$=−0.66 *4*; A$_4$=+0.01 *6*
408.1 *5*	3200.6	(21/2$^-$)	2792.6	(19/2$^-$)			
413.8 *2*	575.75	7/2$^-$	161.89	5/2$^-$			
424.7 *5*	424.5	5/2$^-$	0.0	3/2$^-$			
453.5 *5*	1093.5	(11/2$^+$)	639.80	(13/2)$^+$			
483.6 *3*	1274.20	(11/2)$^-$	790.54	(9/2)$^-$			
505.3 *5*	1286.6	(9/2$^-$)	781.1	(7/2$^-$)			
520[#] *1*	649.0	(5/2)$^-$	129.55	5/2$^+$			

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^{75}As(α,2nγ) E=27 MeV 1993Do14 (continued)

$\gamma(^{77}Br)$ (continued)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
522.2 *3*	1304.5	$(13/2)^+$	782.27	$(9/2)^+$		A_2=+0.26 *4*; A_4=−0.01 *5*
529.9 *3*	947.4	$(11/2^+)$	417.54	$7/2^{(+)}$		
534.2 *2*	639.80	$(13/2)^+$	105.63	$9/2^+$		
539.9 *3*	4149.8	$(23/2^-)$	3609.9	$(21/2^-)$	D+Q	A_2=−0.70 *10*; A_4=+0.19 *17*
551.0 *5*	1644.7	$(13/2^+)$	1093.5	$(11/2^+)$		
575.8 *2*	575.75	$7/2^-$	0.0	$3/2^-$		
591.9 *3*	2931.6	$(17/2^-)$	2339.5	$(17/2^-)$		A_2=+0.4 *2*
613.8 *5*	781.1	$(7/2^-)$	167.0	$(3/2)^-$		
619.1 *5*	781.1	$(7/2^-)$	161.89	$5/2^-$		
628.7 *2*	790.54	$(9/2)^-$	161.89	$5/2^-$		
653.0 *5*	782.27	$(9/2)^+$	129.55	$5/2^+$		
653 *1*	1746.8	$(15/2^+)$	1093.5	$(11/2^+)$		
664.7 *5*	1304.5	$(13/2)^+$	639.80	$(13/2)^+$		
676 *1*	1093.5	$(11/2^+)$	417.54	$7/2^{(+)}$		
676.6 *2*	782.27	$(9/2)^+$	105.63	$9/2^+$		A_2=+0.15 *3*; A_4=−0.04 *5*
685.1 *5*	790.54	$(9/2)^-$	105.63	$9/2^+$		
698.5 *2*	1274.20	$(11/2)^-$	575.75	$7/2^-$		
741.8 *3*	2046.4	$(17/2)^+$	1304.5	$(13/2)^+$		
748 *1*	1538.6	$(13/2^-)$	790.54	$(9/2)^-$		
748 *1*	2021.7	$(15/2^-)$	1274.20	$(11/2)^-$		
770.9 *2*	2792.6	$(19/2^-)$	2021.7	$(15/2^-)$		
799.2 *3*	1746.8	$(15/2^+)$	947.4	$(11/2^+)$		
800.8 *2*	2339.5	$(17/2^-)$	1538.6	$(13/2^-)$		
821.7 *5*	1602.9		781.1	$(7/2^-)$		
841 *1*	947.4	$(11/2^+)$	105.63	$9/2^+$		
842.1 *2*	1481.9	$(17/2)^+$	639.80	$(13/2)^+$		
861.1 *2*	3200.6	$(21/2^-)$	2339.5	$(17/2^-)$		
862.5 *5*	1286.6	$(9/2^-)$	424.5	$5/2^-$		
879.5 *5*	1826.7	$(15/2^+)$	947.4	$(11/2^+)$		
898.5 *5*	1538.6	$(13/2^-)$	639.80	$(13/2)^+$		
901 *1*	2647.7	$(19/2^+)$	1746.8	$(15/2^+)$		
936 *1*	3729.4	$(23/2^-)$	2792.6	$(19/2^-)$		
987.9 *5*	1093.5	$(11/2^+)$	105.63	$9/2^+$		
991 *1*	3037.4	$(21/2^+)$	2046.4	$(17/2)^+$		
1005.1 *5*	1644.7	$(13/2^+)$	639.80	$(13/2)^+$		
1046 *1*	4246.6	$(25/2^-)$	3200.6	$(21/2^-)$		
1068.2 *2*	2550.1	$(21/2)^+$	1481.9	$(17/2)^+$		
1099.4 *5*	2926.5	$(19/2^+)$	1826.7	$(15/2^+)$		
1107.2 *3*	1746.8	$(15/2^+)$	639.80	$(13/2)^+$		
1165.7 *5*	2647.7	$(19/2^+)$	1481.9	$(17/2)^+$		
1179.5 *5*	3729.4	$(23/2^-)$	2550.1	$(21/2)^+$		
1186.8 *3*	1826.7	$(15/2^+)$	639.80	$(13/2)^+$		
1198.9 *5*	1304.5	$(13/2)^+$	105.63	$9/2^+$		
1223.7 *5*	3773.8	$(25/2^+)$	2550.1	$(21/2)^+$		
1310.4 *5*	2792.6	$(19/2^-)$	1481.9	$(17/2)^+$		
1382.0 *5*	2021.7	$(15/2^-)$	639.80	$(13/2)^+$		
1393.0 *3*	2931.6	$(17/2^-)$	1538.6	$(13/2^-)$		A_2=+0.33 *15*
1407 *1*	2046.4	$(17/2)^+$	639.80	$(13/2)^+$		
1444.9 *5*	2926.5	$(19/2^+)$	1481.9	$(17/2)^+$		
1737.7 *4*	3219.6	$(19/2^-)$	1481.9	$(17/2)^+$	D	A_2=−0.46 *11*; A_4=−0.03 *18*

† Uncertainties are given by 1993Do14 only for the transitions with A_2 and A_4 coefficients measured. For other transitions, the evaluator has assigned following uncertainties: 0.2 for strong lines, 0.3 for medium intensity, and 0.5 or 1 for weak lines, as

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^{75}As(α,2nγ) E=27 MeV 1993Do14 (continued)

$\gamma(^{77}Br)$ (continued)

shown in the level scheme by 1993Do14.

‡ 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.

Placement of transition in the level scheme is uncertain.

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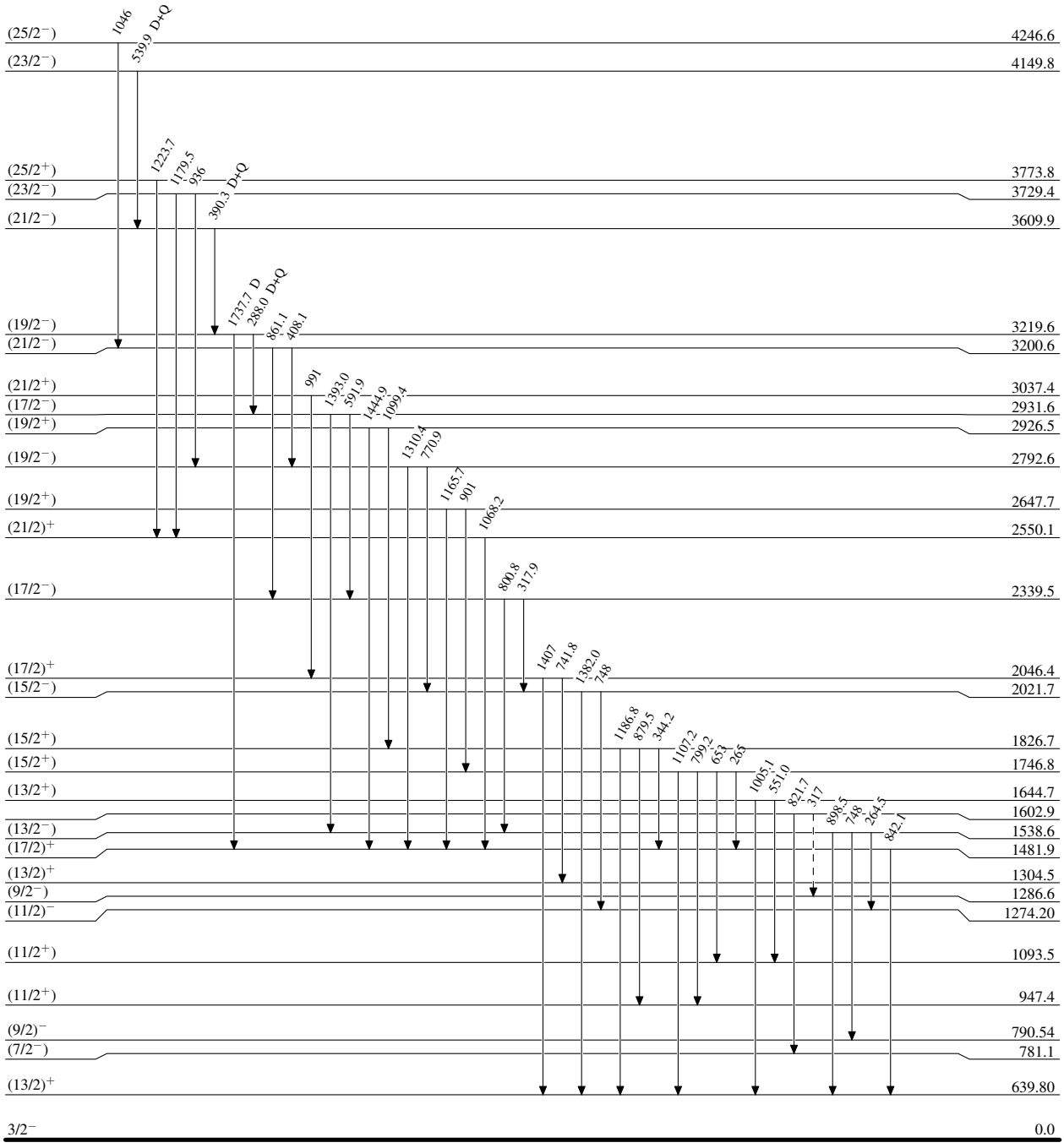
Level Scheme

Legend

– – – – – – ► γ Decay (Uncertain)



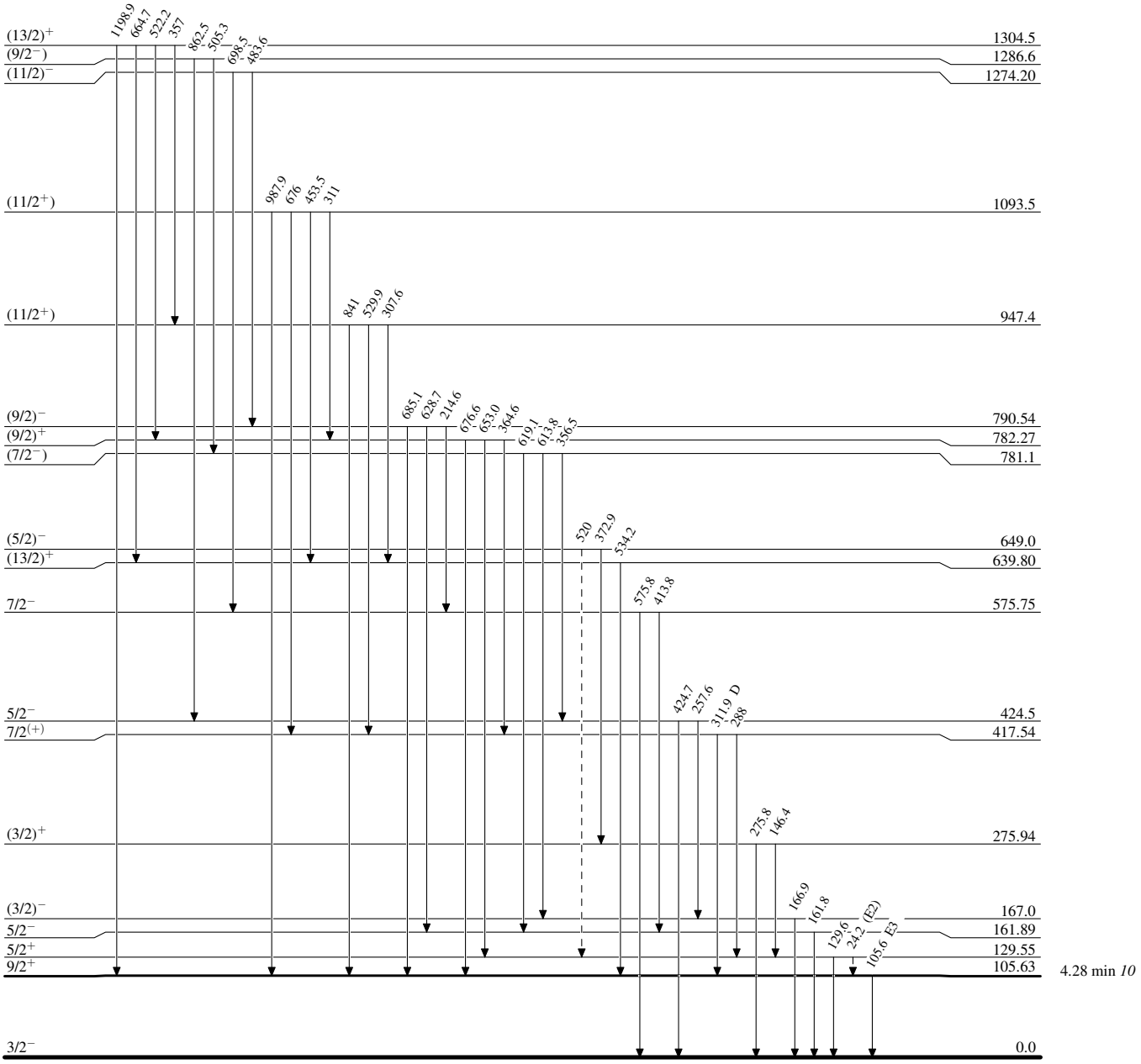
$^{77}_{35}Br_{42}$

Legend

^{75}As(α,2nγ) E=27 MeV 1993Do14

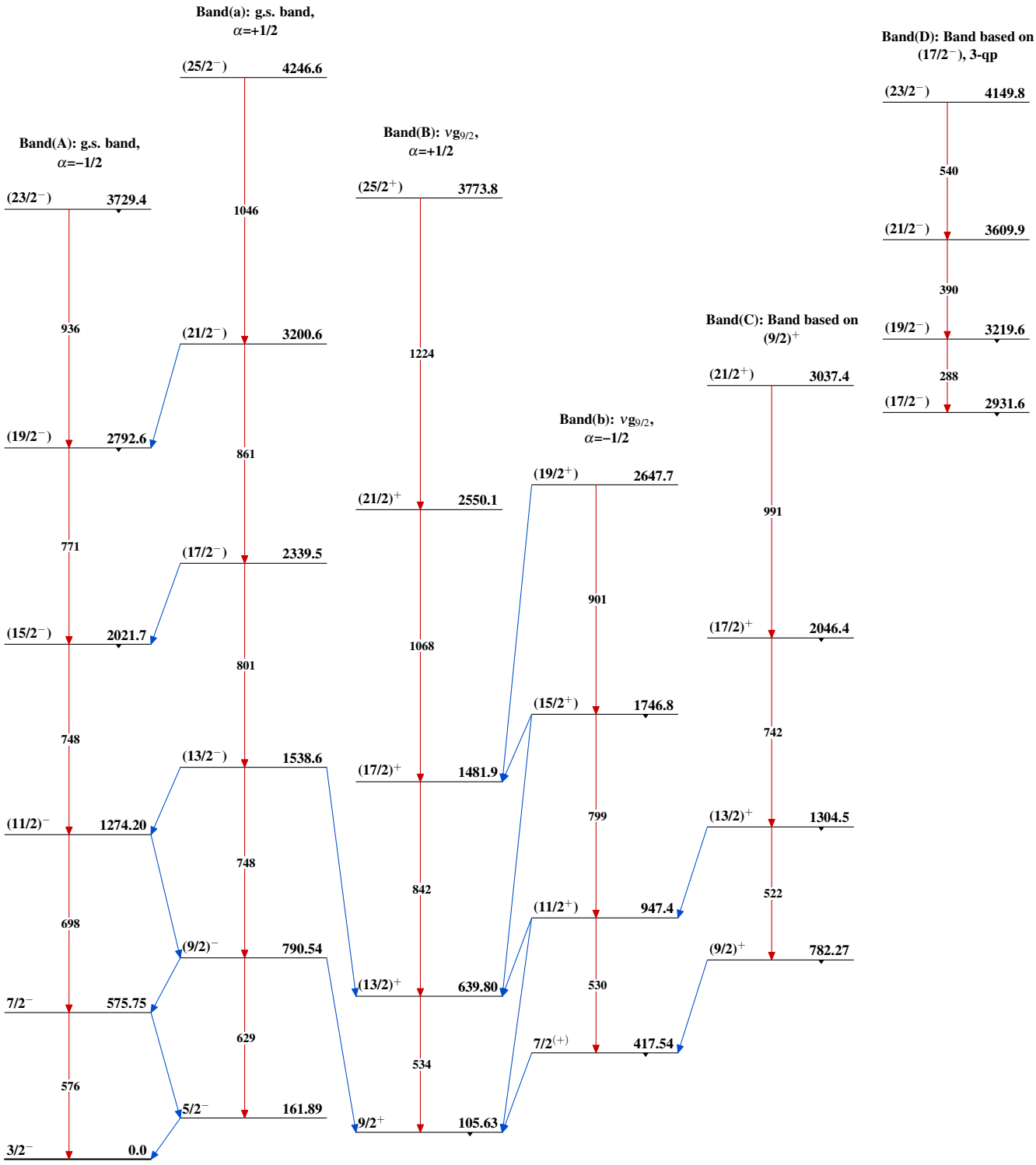
Level Scheme (continued)

γ Decay (Uncertain)



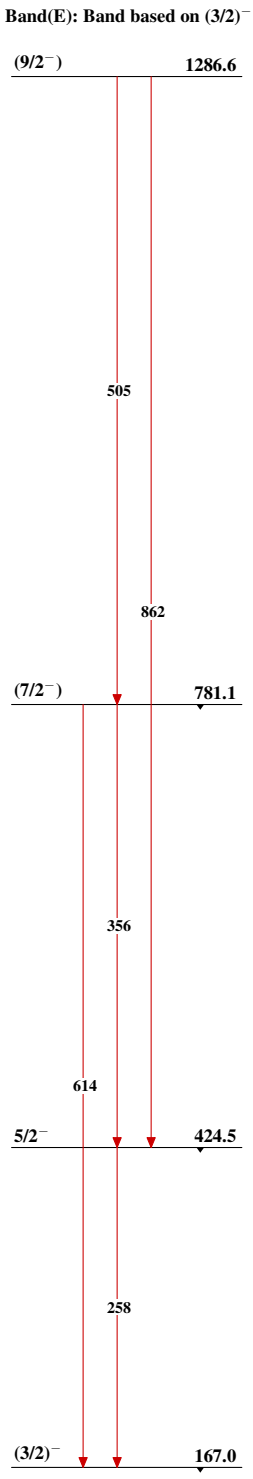
$^{77}_{35}Br_{42}$

^{75}As(α,2nγ) E=27 MeV 1993Do14



$^{77}_{35}Br_{42}$

^{75}As(α,2nγ) E=27 MeV 1993Do14 (continued)



$^{77}_{35}Br_{42}$