^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja, E. A. Mccutchan	NDS 133, 1 (2016)	30-Sep-2015

1989Sm06, 1986Sm13: Ep=0.9-1.6 MeV and Ep<7 MeV. Measured Eγ, Iγ, γ yields, $\gamma(\theta)$ using Ge(Li) detector. γ-ray data reported for 45 resonances.

1986Bi03: Ep=0.6-2.3 MeV. Measured Eγ, Iγ, $\gamma\gamma$, γ yields using two Ge(Li) detectors; deduced $T_{1/2}$ using Doppler Shift Attenuation Method (DSAM).

1971Pi12: Measured Eγ, Iγ for 1087, 1102, 1109, 1118 and 1605 resonances; deduced lifetimes by DSAM.

2008Vo08: Ep=0.5 − 2.7 MeV. Measured Eγ, Iγ using NaI(Tl) spectrometer.

2008Vo03: Ep=1080-1125 keV and 1830-1900 keV. Measured Eγ, Iγ using Ge(Li) detector.

2011Ka24: Ep=1.0-3.0 MeV. Measured Eγ, Iγ using NaI(Tl) detector.

2014Ka35: Ep=1.0-3.0 MeV. Measured Eγ, Iγ using a NaI(Tl) detector.

Others:

1971Ko32, 1970Ko28 (also 1962Va31,1960Va07,1959Va07): Ep=0.8=3 MeV and Ep=1.07-11.12 MeV. Measured $\gamma(\theta)$, p$\gamma\gamma(\theta)$, deduced IAR. Eight resonances reported.

1967Bl26 (also 1964Bl19,1964Bl06,1967St30): 34 resonances reported from E(p)(lab)=1076 to 1196 keV, relative γ-ray intensities, α- particle decay of three resonances at 1086, 1102 and 1108 keV.

1961Ar10, 1964Ar13 (also 1962Ar04): 57 resonances reported by 1961Ar10. γ-ray branchings, summed $\gamma\gamma$ coin data and p$\gamma(\theta)$ for 1101, 1108 and 1118 resonances reported by 1964Ar13.

1963Co04: 70 resonances reported from E(p)(lab)=1029-1648 keV.

1963Ko22: 64 resonances reported from 763-1443 keV. γ rays reported from six resonances at 1091, 1106, 1112, 1123, 1311 and 1391 keV. Measured p$\gamma(\theta)$ for three transitions.

1948Br19: E=0.5-1.8 MeV. Three resonances observed at 900, 1050 and 1080 keV.

Additional information 1.

^{41}K Levels

E(level)†	J$^\pi$‡	$T_{1/2}$#	Comments
0	$3/2^+$		
980.51 *8*	$1/2^+$	76 fs *+21−4*	$T_{1/2}$: from 1971Pi12. Other: 1.0 to 2.6 ps (1986Bi03).
1293.66 *9*	$7/2^-$	8.3 ns *7*	
1559.92 *8*	$3/2^+$	0.34 ps *5*	J$^\pi$: $(1/2^+)$ (1971Pi12). $T_{1/2}$: other: 0.10 ps *+14−4* (1971Pi12).
1582.10 *6*	$3/2^-$	9.3 ps *4*	J$^\pi$: $(5/2^+)$ (1971Pi12). $T_{1/2}$: other: >0.10 ps (1971Pi12).
1592.99 *11*	$1/2^+$	≤0.24 ps	J$^\pi$: 1989Sm06 allow 3/2 also.
1677.1 *2*	$7/2^+$	>0.17 ps	J$^\pi$: $(5/2^+,7/2^+)$ (1971Pi12). $T_{1/2}$: from 1971Pi12.
1698.00 *2*	$5/2^+$	49 fs *28*	$T_{1/2}$: from 1971Pi12. Other: ≤0.64 ps (1986Bi03). E(level): from the Adopted Levels.
2143.8 *1*	$5/2^+$	≤0.18 ps	$T_{1/2}$: other: >0.11 ps (1971Pi12). J$^\pi$: 1989Sm06 allow $3/2^+$ also; $(5/2^+)$ (1971Pi12).
2166.73 *9*	$3/2^-$	1.94 ps *14*	J$^\pi$: (1/2,3/2) (1971Pi12). $T_{1/2}$: other: >0.10 ps (1971Pi12).
2316.8 *2*	$5/2^-$	≤0.21 ps	J$^\pi$: $(5/2^+,7/2^+)$ (1971Pi12).
2440.1 *2*	$(3/2,5/2^+)$		J$^\pi$: (1/2,3/2) (1971Pi12).
2494.6 *2*	$9/2^+$		E(level): from 1986Bi03.
2507.9 *4*	$7/2^+$		
2527 *1*	$11/2^+$		E(level): from 1986Bi03.
2593.38 *8*	$1/2^-,3/2^-$	7.6 fs *42*	$T_{1/2}$: from 1971Pi12. J$^\pi$: 1989Sm06 allow $1/2^-$ also; 1971Pi12 give $(3/2^-,5/2^-)$.
2674.3 *5*	$1/2^+$		E(level): 83% of the depopulating γ-intensity is unobserved.
2710.3 *2*	$3/2^+,5/2^+$		E(level): from 1986Bi03.
2712.4 *2*	$(7/2)^-$	≤0.54 ps	J$^\pi$: (5/2) (1971Pi12), $3/2^-$ (1989Sm06).

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
2756.2 *5*	5/2$^+$				
3047.0 *10*	1/2$^-$,3/2$^-$				
3141.3[@] *13*	(7/2$^-$),5/2$^-$				J$^\pi$: 1989Sm06 give 9/2$^+$,(5/2$^+$). E(level): 40% of the depopulating γ-intensity is unobserved.
3179.8 *2*	3/2$^+$,5/2$^+$				J$^\pi$: 1989Sm06 give 1/2,3/2,5/2,7/2$^-$.
3213.2 *2*	5/2$^-$				J$^\pi$: 1989Sm06 allow 3/2$^-$,7/2$^-$ also.
3229.8 *6*	(1/2$^+$,3/2,5/2$^+$)				J$^\pi$: 1989Sm06 allow 3/2$^+$,5/2$^+$ also.
3235.6 *2*	(3/2$^-$,5/2,7/2$^-$)				
3277.9 *5*	(1/2,3/2,5/2$^+$)				Additional information 2.
3450.1 *2*	5/2$^-$,7/2$^-$	4.2 fs *28*			T$_{1/2}$: from 1971Pi12. J$^\pi$: 1989Sm06 allow 3/2,5/2$^+$ also. 1971Pi12 give (5/2).
3488.5 *3*	(5/2)$^+$	<3.5 fs			T$_{1/2}$: from 1971Pi12. J$^\pi$: 1989Sm06 give (3/2,5/2)$^-$ also.
3571.9 *2*					E(level): from 1986Bi03.
3579.2 *5*					
3614.8 *10*					J$^\pi$: 1989Sm06 give 1/2,3/2,5/2.
3626.1 *5*					J$^\pi$: 1971Pi12 give (3/2,5/2). E(level): 50% of the depopulating γ-intensity is unobserved.
3651	(5/2,7/2$^-$)				E(level): observed only in 2008Vo03, as being populated from the decay of the 9622-keV level.
3740.1 *10*	1/2$^-$,3/2$^-$				J$^\pi$: 1989Sm06 give (1/2,3/2,5/2).
3761.54 *5*		4.9 fs *28*			T$_{1/2}$: from 1971Pi12. J$^\pi$: 1989Sm06 give 3/2$^+$,5/2$^+$,7/2$^+$. E(level): from the Adopted Levels.
3774.3 *5*	5/2$^-$,7/2$^-$				J$^\pi$: 1989Sm06 allow 3/2$^+$,5/2$^+$ also; 1971Pi12 give (5/2).
3861.3 *5*	(1/2,3/2,5/2$^+$)				J$^\pi$: 1971Pi12 give (1/2,3/2). E(level): uncertainty of 0.1 appears too low, increased to 0.5 by the evaluators based on the uncertainty of neighboring levels.
3911.7 *6*	1/2$^-$,3/2$^-$				Additional information 3.
4026.7 *5*					E(level): this level presumably differs from 4026.94 *6* in (n,γ) (1984Kr05) since the decay branchings differ significantly, *e.g.* no evidence of a 2470γ in (p,γ).
4164.7 *10*					Additional information 4.
4340.9 *5*	(1/2,3/2,5/2)				Additional information 5.
4674 *3*					E(level): from 1971Pi12.
4745.2 *5*	(5/2$^+$)				Additional information 6.
4848.5 *5*	(3/2)$^-$				Additional information 7.
4962.3 *5*	(1/2,3/2,5/2)				Additional information 8.
5101.2 *20*	1/2$^-$,3/2$^-$				Additional information 9.
5401.7 *5*	1/2$^-$,3/2$^-$				Additional information 10.
8300[&]			551[h]		
8552[&] *2*			763[b]		
8587[&] *1*			799[h]	0.34[h]	E(p)(lab): others: 799 (1961Ar10), 800 (1963Ko22).
8607[&] *1*			819[h]	0.25[h]	E(p)(lab): other: 819 (1961Ar10).
8643[&] *1*			854[h]	0.25[h]	E(p)(lab): others: 856 (1961Ar10), 855 (1963Ko22).
8674[&]			889[h]	0.08[h]	
8684[&] *1*			898[e]		E(p)(lab): doublet (1961Ar10). Other: 898 (1963Ko22).
8690[&] *1*			904[h]	0.7[h]	E(p)(lab): others: 904 (1961Ar10), 904 (1963Ko22).

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	Jπ[‡]	T$_{1/2}$[#]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
8697[&] *1*			911[h]	0.6[h]	E(p)(lab): others: 911 (1961Ar10), 913 (1963Ko22).
8705[&] *1*			920[e]		E(p)(lab): others: 921 (1963Ko22).
8724[&] *2*			939[b]		
8727[&] *1*			943[e]	0.18	E(p)(lab): others: 942 (1961Ar10), 943 (1963Ko22).
8735[&] *1*			950[h]	0.8[h]	E(p)(lab): others: 950 (1961Ar10), 950 (1963Ko22).
8747[&] *2*			960[e]	0.5	E(p)(lab): doublet (1961Ar10). E(p)(lab): others: 962 (1961Ar10), 965 (1963Ko22).
8758.5[&] *6*	(1/2,3/2,5/2)		974.3[c]	0.7 *2*	Jπ: γ to 1/2$^+$ disfavors 5/2$^-$. E(p)(lab): others: 972 (2008Vo08) 973 *1* (1961Ar10), 977 (1963Ko22). S(p,γ) eV: other: 1.0 (2008Vo08).
8770.1[&] *6*	(3/2,5/2$^+$)		986.2[c]	1.6 *3*	Jπ: γ's to 1/2$^+$,5/2$^+$ and 5/2$^-$. E(p)(lab): others: 984 (2008Vo08), 985 (1961Ar10), 988 (1963Ko22). S(p,γ) eV: other: 1.1 (2008Vo08).
8779[&] *1*			995[h]	0.6[h]	E(p)(lab): others: 995 (1961Ar10), 998 (1963Ko22).
8789.6[&] *10*			1006.2[c]	0.8[h]	E(p)(lab): others: 1004 (2008Vo08), 1005 (1961Ar10), 1008 (1963Ko22).
8803[&] *2*			1020[b]	1.0[h]	E(p)(lab): others: 1015 (2008Vo08), 1015 (1961Ar10 for a doublet).
8812[&] *1*			1029[h]	0.66[h]	E(p)(lab): others: 1029 (1961Ar10), 1028 (1963Ko22), 1029 (1963Co04).
8814.8[&] *6*			1032.0[c]		Additional information 11.
8831[&] *1*			1049[h]	0.3[h]	E(p)(lab): others: 1049 (1961Ar10).
8834[&] *1*			1052[h]	1.1[h]	E(p)(lab): others: 1052 (1961Ar10), 1055 (1963Ko22), 1050 (1963Co04).
8840[&] *2*			1058[b]		
8845.1[&] *6*			1063.0[c]	0.4[h]	E(p)(lab): others: 1061 (1961Ar10), 1066 (1963Ko22), 1058 (1963Co04), 1061 (2008Vo08).
8851.4[&] *6*	(1/2,3/2,5/2)		1069.5[c]	0.7 *2*	Jπ: γ to 1/2$^+$ disfavors 5/2$^-$. E(p)(lab): others: 1068 (1961Ar10), 1074 (1963Ko22), 1066 (1963Co04), 1068 (2008Vo08). S(p,γ) eV: other: 0.4 (2008Vo08).
8858.4[&] *4*			1076.7[d]	0.6[h]	E(p)(lab): others: 1074 (1961Ar10), 1079 (1963Ko22), 1074.6 (1970Ko28), 1072 (1963Co04), 1074 (2008Vo08).
8863.9[&] *4*			1082.3[d]	0.6[h]	E(p)(lab): others: 1081 (1961Ar10), 1086 (1963Ko22), 1081 (2008Vo08).
8864.5[&] *6*	(3/2,5/2$^+$)		1082.9[c]	1.0 *2*	Jπ: γ to 7/2$^-$ disfavors 3/2$^+$. Additional information 12.
8868.6[&] *6*	(3/2,5/2)	7.9 eV *19*	1087.1[c]	2.1 *3*	Jπ: 3/2$^-$ (1971Pi12). T$_{1/2}$: Γ from 1967Bl26; Γ$_p$/Γ=0.49 *16*, Γ$_\alpha$=0.032 eV *12* (1967Bl26), Γ$_\gamma$=1.7 eV (2008Vo03). E(p)(lab): others: 1086 (1961Ar10), 1091 (1963Ko22), 1086.2 (1970Ko28), 1086.5 3 (1967Bl26), 1092 (1963Co04), 1086 (2008Vo08). S(p,γ) eV: others: 3.6 (2008Vo08), 2.4 *4* (2008Vo03).
8877.4[&] *4*			1096.2[d]	0.4 *2*	E(p)(lab): doublet: 1096.2+1096.4. E(p)(lab): others: 1096 (1961Ar10), 1098 (1963Co04), 1096 (2008Vo03). S(p,γ) eV: from 2008Vo03.

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
8880.4[&] *4*			1099.3[d]		
8882.7 *3*	3/2$^{(-)}$	21.9 eV *25*	1101.7	8.0 *10*	T=5/2 J$^\pi$: p$\gamma(\theta)$ (1964Ar13). T$_{1/2}$: Γ from 1967Bl26. Γ_p/Γ=0.58 *8*, Γ_α=0.040 eV *10* (1967Bl26), Γ_γ=3.4 (2008Vo03). E(p)(lab): from 1967St30. 1102.4 *5* in 1989Sm06. Others: 1101 (1961Ar10), 1106 (1963Ko22), 1101.0 (1970Ko28,1971Ko32), 1101.8 3 (1967Bl26), 1104 (1963Co04), 1102 (2008Vo08,2008Vo03,2014Ka35). Possible IAR of 520 in ^{41}Ar. S(p,γ) eV: other: 8.0 (2008Vo08), 8.0 *5* (2008Vo03). Additional information 13.
8889.8[&] *6*	3/2,5/2$^+$	5.1 eV *8*	1108.9[c]	2.1 *3*	J$^\pi$: 1964Ar13 and 1971Pi12 give 3/2. T$_{1/2}$: Γ from 1967Bl26. Γ_p/Γ=0.70 *15*, Γ_α=0.019 eV *6* (1967Bl26), Γ_γ=1.1 (2008Vo03). E(p)(lab): others: 1108 (1961Ar10,2014Ka35), 1112 (1963Ko22), 1107.6 (1970Ko28), 1108.4 3 (1967Bl26), 1118 (2008Vo08). S(p,γ) eV: others: 3.1 (2008Vo08), 2.0 *3* (2008Vo03), 2.0 (2014Ka35).
8894.3[&] *4*			1113.5[d]		
8898.0[&] *4*			1117.3[d]		
8898.6[&] *4*			1117.9[d]		
8899.4[&] *4*	≥3/2		1118.7[d]		J$^\pi$: not 1/2 from p$\gamma(\theta)$ (1964Ar13), 1971Pi12 give 3/2 for 1118.4 *6* resonance. E(p)(lab): others: 1118 (1961Ar10, 2014Ka35), 1123 (1963Ko22), 1118.1 (1970Ko28), 1114 (1963Co04), 1118 (2008Vo03, reported as quadruplet). S(p,γ) eV: 2.2 *3* for quadruplet at 1118 keV (2008Vo03), 3.0 for level at 1118 keV (2014Ka35).
8900.4[&] *4*			1119.8[d]		
8910.9[&] *4*			1130.5[d]		
8917.3[&] *4*			1137.1[d]		
8918.9[&] *4*			1138.7[d]		
8920.1[&] *4*			1140.0[d]		E(p)(lab): others: 1139 (1961Ar10,2014Ka35), 1141 (1963Ko22), 1136 (1963Co04), 1139 (2008Vo08). S(p,γ) eV: 1.4 for level at 1139 keV (2014Ka35).
8922.0[&] *4*			1141.9[d]		
8926.9[&] *4*			1146.9[d]		
8930.2[&] *4*			1150.3[d]		
8932.0[&] *4*			1152.1[d]	1.0[h]	E(p)(lab): others: 1152 (1961Ar10,2008Vo08,2014Ka35), 1159 (1963Ko22), 1149 (1963Co04). S(p,γ) eV: other: 1.7 (2014Ka35).
8933.8[&] *4*			1154.0[d]		
8939.4[&] *4*			1159.7[d]		Additional information 14.
8942.4[&] *8*	(3/2,5/2)		1162.8[c]	0.9 *3*	J$^\pi$: γ to 1/2$^+$ disfavors 5/2$^-$. E(p)(lab): others: 1162 (1961Ar10,2008Vo08), 1164 (1963Ko22), 1162.8 3 (1967Bl26), 1161 (2014Ka35). S(p,γ) eV: others: 1.2 (2008Vo08), 0.7 (2014Ka35).
8945.0[&] *4*			1165.5[d]		
8948.3[&] *4*			1168.9[d]		Additional information 15.

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	Jπ[‡]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
8952.1[&] *4*		1172.8[d]		
8956.8[&] *4*		1177.6[d]		
8958.7[&] *8*	(1/2$^+$,3/2,5/2$^+$)	1179.5[c]	2.3 *5*	E(p)(lab): others: 1179 (1961Ar10), 1184 (1963Ko22), 1179.2 3 (1967Bl26), 1175 (1963Co04), 1177 (2014Ka35). S(p,γ) eV: other: 1.6 (2014Ka35).
8963.8[&] *4*		1184.7[d]		
8965.3[&] *4*		1186.3[d]	1.5[h]	E(p)(lab): others: 1186 (1961Ar10,2008Vo08), 1182 (1963Co04), 1184 (2014Ka35). S(p,γ) eV: other: 1.6 (2014Ka35).
8972.8[&] *4*		1194.0[d]	0.8[j]	E(p)(lab): others: 1194 (1961Ar10,2014Ka35), 1192 (1963Ko22), 1191 (1963Co04).
8974.5[&] *4*		1195.7[d]	0.6[h]	E(p)(lab): others: 1200 (1961Ar10,1963Ko22, 2008Vo08), 1196 (1963Co04), 1199 (2014Ka35). S(p,γ) eV: other: 0.4 (2014Ka35).
8982[&] *1*		1207[e]	1.2[h]	E(p)(lab): others: 1205 (1963Ko22), 1204 (1963Co04,2014Ka35), 1207 (2008Vo08). S(p,γ) eV: other: 0.5 (2014Ka35).
8996[&] *1*		1217[e]	0.3[h]	E(p)(lab): others: 1212 (1963Ko22), 1215 (1963Co04), 1217 (2008Vo08,2014Ka35). S(p,γ) eV: other: 0.6 (2014Ka35).
9000[&] *1*		1222[e]	0.4[j]	E(p)(lab): others: 1224 (1963Ko22), 1220 (1963Co04), 1221 (2014Ka35).
9007[&] *1*		1229[e]	0.4[j]	E(p)(lab): others: 1229 (1963Ko22,2014Ka35), 1226 (1963Co04).
9018.8[&] *6*	(1/2,3/2,5/2$^+$)	1241.1[c]	2.4 *5*	E(p)(lab): others: 1240 (1961Ar10), 1246 (1963Ko22), 1236 (1963Co04), 1238 (2014Ka35). S(p,γ) eV: other: 2.0 (2014Ka35).
9022.5[&] *6*		1244.9[c]	1.3[j]	E(p)(lab): others: 1244 (1961Ar10), 1250 (1963Ko22), 1247 (1963Co04), 1244 (2008Vo08), 1241 (2014Ka35).
9026[&] *1*		1249[e]	0.6[j]	Additional information 16.
9035[&] *1*		1258[e]	0.3[h]	E(p)(lab): others: 1265 (1963Ko22), 1258 (1963Co04, 2008Vo08), 1256 (2014Ka35).
9039[&] *1*		1262[e]	0.8[h]	E(p)(lab): others: 1269 (1963Ko22), 1263 (1963Co04), 1268 (2008Vo08), 1260 (2014Ka35).
9047.2[&] *6*		1270.2[c]	0.7[h]	E(p)(lab): others: 1268 (1961Ar10, 2008Vo08), 1275 (1963Ko22), 1274 (1963Co04), 1266 (2014Ka35).
9057.4[&] *6*		1280.7[c]	2.6[j]	Additional information 17.
9061.1[&] *6*		1284.5[c]	2.2[h]	E(p)(lab): others: 1283 (1961Ar10, 2008Vo08), 1293 (1963Ko22), 1263 (1963Co04).
9070.8[&] *6*	(3/2$^-$,5/2)	1294.4[c]	2.5 *5*	Jπ: γ to 1/2$^+$ disfavors 5/2$^-$. 7/2$^-$ is not completely excluded but very unlikely. E(p)(lab): others: 1293 (1961Ar10, 2008Vo08,2014Ka35), 1300 (1963Ko22,1963Co04). S(p,γ) eV: others: 1.1 (2008Vo08), 2.6 (2014Ka35).
9081.3[&] *6*	3/2	1305.2[c]	2.1 *5*	E(p)(lab): others: 1303 (1961Ar10, 2008Vo08), 1311 (1963Ko22), 1316 (1963Co04), 1302 (2011Ka24,2014Ka35). S(p,γ) eV: others: 1.4 (2008Vo08), 3.1 (2011Ka24), 3.9 (2014Ka35).
9099.2[&] *6*	(3/2,5/2)	1323.6[c]	0.8 *3*	Jπ: γ to 1/2$^+$ disfavors 5/2$^-$. E(p)(lab): others: 1321 (1961Ar10, 2008Vo08), 1318 (2014Ka35). S(p,γ) eV: others: 0.9 (2008Vo08), 1.3 (2014Ka35).
9107[&] *1*		1331[e]	2.3[h]	E(p)(lab): others: 1331 (1963Ko22,1963Co04), 1333 (2008Vo08), 1332 (2014Ka35).

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
				S(p,γ) eV: other: 0.8 (2014Ka35).
9112.5[&] *6*	(3/2,5/2)	1337.2[c]	1.0 *3*	E(p)(lab): others: 1336 (1961Ar10), 1338 (1963Ko22), 1346 (1963Co04), 1338 (2014Ka35). S(p,γ) eV: other: 1.7 (2014Ka35).
9121[&]		1346[i]	1.2[i]	
9126.6[&] *6*		1351.6[c]	0.9[h]	E(p)(lab): others: 1349 (1961Ar10,1963Ko22, 2008Vo08), 1351 (1963Co04), 1352 (2014Ka35). S(p,γ) eV: other: 1.6 (2014Ka35).
9132.0[&] *6*		1357.2[c]	1.1[h]	E(p)(lab): others: 1358 (1961Ar10, 2008Vo08), 1356 (1963Co04), 1359 (2014Ka35). S(p,γ) eV: other: 1.1 (2014Ka35).
9138.4[&] *6*	(1/2$^+$,3/2,5/2$^+$)	1363.7[c]	1.5 *5*	E(p)(lab): others: 1365 (1961Ar10, 2008Vo08,2014Ka35), 1363 (1963Ko22), 1366 (1963Co04). S(p,γ) eV: others: 0.3 (2008Vo08), 1.0 (2014Ka35).
9144.8[&] *6*		1370.3[c]		E(p)(lab): others: 1368 (1961Ar10), 1370 (1963Ko22).
9148.1[&] *6*	(3/2,5/2$^+$)	1373.7[c]	1.2 *4*	J$^{\pi}$: 5/2$^-$ is not completely excluded but very unlikely. E(p)(lab): others: 1372 (1961Ar10, 2008Vo08), 1378 (1963Co04), 1371 (2014Ka35). S(p,γ) eV: other: 2.3 (2008Vo08), 1.1 (2014Ka35).
9156[&] *2*		1382[b]		
9158.3[&] *6*	(1/2$^-$,3/2,5/2)	1384.2[c]	1.9 *5*	J$^{\pi}$: γ to 1/2$^+$ disfavors 5/2$^-$. 7/2$^-$ is not completely excluded but very unlikely. E(p)(lab): others: 1386 (1963Ko22), 1385 (2014Ka35). 2008Vo08 give a resonance at Ep=1387 with S=5.6. S(p,γ) eV: other: 0.5 (2014Ka35).
9163.3[&] *6*		1389.3[c]		E(p)(lab): others: 1391 (1963Ko22), 1389 (1963Co04), 2008Vo08 give a resonance at Ep=1387 with S=5.6.
9167.7[&] *6*		1393.8[c]		Additional information 18.
9183.7[&] *6*	(3/2,5/2$^+$)	1410.2[c]	2.1 *5*	E(p)(lab): others: 1401 (1963Ko22), 1416 (1963Co04), 1408 (2008Vo08), 1406 (2014Ka35). S(p,γ) eV: others: 0.9 (2008Vo08), 2.1 (2014Ka35).
9195.3[&] *6*	(1/2,3/2,5/2,5/2$^+$)	1422.1[c]	2.4 *8*	E(p)(lab): others: 1417 (1963Ko22), 1420 (1963Co04), 1420 (2008Vo08), 1418 (2014Ka35). S(p,γ) eV: others: 0.7 (2008Vo08), 1.2 (2014Ka35).
9200.2[&] *6*	(3/2,5/2)$^+$	1427.1[c]	2.6 *9*	E(p)(lab): others: 1429 (1963Ko22), 1424 (1963Co04), 1428 (2008Vo08), 1425 (2014Ka35). S(p,γ) eV: others: 1.4 (2008Vo08), 2.5 (2014Ka35).
9202.8[&] *6*	(1/2$^+$,3/2,5/2$^+$)	1429.8[c]	2.2 *5*	E(p)(lab): others: 1433 (1963Ko22), 1434 (1963Co04,2008Vo08), 1431 (2014Ka35). S(p,γ) eV: others: 0.5 (2008Vo08), 0.4 (2014Ka35).
9209.0[&] *6*		1436.1[c]	3.0	E(p)(lab): others: 1437 (1963Ko22), 1441 (1963Co04, 2011Ka24,2014Ka35). S(p,γ) eV: from 2011Ka24. Other 3.7 (2014Ka35).
9219.6[&] *6*	(3/2,5/2$^+$)	1447.0[c]	2.2 *5*	E(p)(lab): others: 1443 (1963Ko22), 1449 (1963Co04,2014Ka35), 1444 (2008Vo08). S(p,γ) eV: others: 1.9 (2008Vo08), 0.9 (2014Ka35).
9226.4[&] *6*	(1/2,3/2,5/2,7/2,7/2$^-$)	1454.0[c]	1.0 *2*	E(p)(lab): others: 1454 (1963Co04,2014Ka35), 1458 (2008Vo08). S(p,γ) eV: others: 0.5 (2008Vo08), 1.9 (2014Ka35).
9232.0[&] *10*	(3/2,5/2$^+$)	1459.7[c]	1.8 *4*	E(p)(lab): others: 1463 (1963Co04), 1466 (2008Vo08), 1462 (2014Ka35). S(p,γ) eV: others: 1.3 (2008Vo08), 2.3 (2014Ka35).
9247[&] *3*		1475[f]	3.8[h]	E(p)(lab): others: 1477 (2008Vo08), 1474 (2014Ka35).

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
				S(p,γ) eV: other: 4.2 (2014Ka35).
9252[&] *3*		1480[f]	1.5[j]	E(p)(lab): other: 1484 (2014Ka35).
9262.5[&] *12*	(1/2$^+$,3/2,5/2$^+$)	1491.0[c]	1.0 *2*	E(p)(lab): others: 1486 (1963Co04), 1488 (2008Vo08), 1493 (2014Ka35). S(p,γ) eV: others: 0.8 (2008Vo08), 2.1 (2014Ka35).
9270.7[&] *6*	(3/2,5/2$^+$)	1499.4[c]	1.3 *4*	E(p)(lab): others: 1495 (1963Co04), 1496 (2008Vo08), 1501 (2014Ka35). S(p,γ) eV: others: 0.99 (2008Vo08), 1.8 (2014Ka35).
9277[&] *3*		1506[f]		
9281.0[&] *6*	(3/2$^-$,5/2$^+$)	1509.9[c]	2.4 *6*	E(p)(lab): others: 1509 (1963Co04), 1510 (2008Vo08). S(p,γ) eV: other: 1.2 (2008Vo08).
9284.7[&] *6*	(3/2,5/2$^+$)	1513.7[c]	2.2 *6*	E(p)(lab): others: 1515 (1963Co04), 1517 (2008Vo08), 1513 (2014Ka35). S(p,γ) eV: others: 1.3 (2008Vo08), 3.0 (2014Ka35).
9290.7[&] *6*	(1/2$^+$,3/2,5/2$^+$)	1519.9[c]	2.9 *8*	E(p)(lab): other: 1523 (1963Co04).
9301[&] *3*		1530[f]	5.6[h]	S(p,γ) eV: other: 4.8 for a level at Ep=1528 (2014Ka35).
9304[&] *3*		1533[f]		
9315[&] *3*		1545[f]	2.0[h]	E(p)(lab): others: 1552 (2008Vo08), 1542 (2014Ka35). S(p,γ) eV: other: 1.5 (2014Ka35).
9329.0[&] *6*		1559.2[c]	3.0[h]	E(p)(lab): others: 1554 (1963Co04), 1556 (2008Vo08), 1551 (2014Ka35). S(p,γ) eV: other: 4.2 (2014Ka35).
9333[&]		1563[j]	3.3[j]	
9340.3[&] *6*		1570.7[c]	2.6[h]	E(p)(lab): others: 1567 (1963Co04), 1571 (2008Vo08,2014Ka35). S(p,γ) eV: other: 0.9 (2014Ka35).
9344[&]		1574[i]	2.0[i]	
9348[&] *3*		1579[f]	2.6[h]	E(p)(lab): other: 1581 (2008Vo08,2014Ka35).
9353[&] *3*		1584[f]	4.9	E(p)(lab): other: 1583 (2011Ka24,2014Ka35). S(p,γ) eV: from 2011Ka24. Other: 6.7 (2014Ka35).
9361.0[&] *6*	5/2$^+$	1592.0[c]	5.2 *15*	E(p)(lab): others: 1600 (1971Ko32), 1598 (1963Co04), 1590 (2008Vo08), 1597 (2014Ka35). S(p,γ) eV: others: 4.1 (2008Vo08). 11.3 (2014Ka35).
9374.2	3/2$^-$	1605.4	8.5[h]	J$^{\pi}$: from 1971Ko32, 1971Pi12 give (3/2). Possible IAR of 1030 in ^{41}Ar. E(p)(lab): from 1971Pi12. Others: 1602 (1963Co04, 2008Vo08), 1600 (1971Ko32), 1597 (2011Ka24). S(p,γ) eV: other: 10.3 (2011Ka24).
9378[&] *3*		1609[f]	4.2[i]	E(p)(lab): other: 1608 (2014Ka35).
9382[&] *3*		1613[f]	4.7[h]	E(p)(lab): others: 1616 (2008Vo08), 1618 (2014Ka35). S(p,γ) eV: other: 3.9 (2014Ka35).
9394[&] *3*		1626[f]	4.1[h]	E(p)(lab): other: 1623 (2008Vo08), 1630 (2014Ka35). S(p,γ) eV: other: 4.5 (2014Ka35).
9406[&] *3*		1638[f]	2.7[h]	E(p)(lab): other: 1638 (2008Vo08).
9416[&] *3*		1648[f]	3.2[h]	E(p)(lab): others: 1648 (2008Vo08), 1649 (2014Ka35). Γ_{γ}=0.8 eV (2008Vo08). S(p,γ) eV: other: 1.2 (2014Ka35).
9420[&]		1652[h]	0.2[h]	S(p,γ) eV: other: 0.9 for a level at Ep=1654 (2014Ka35).
9424[&]		1656[h]	0.2[h]	Γ_{γ}=0.1 eV (2008Vo08). S(p,γ) eV: other: 1.2 for a level at Ep=1660 (2014Ka35).
9437[&]		1670[h]	0.5[h]	Γ_{γ}=0.1 eV (2008Vo08).

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	Jπ[‡]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
				S(p,γ) eV: other: 2.1 (2014Ka35).
9442[&]		1675[h]	2.6[h]	S(p,γ) eV: other: 1.7 for a level at Ep=1670 (2014Ka35).
9448[&]		1681[j]	1.6[j]	
9453[&]		1686[h]	0.9[h]	S(p,γ) eV: other: 2.6 for a level at Ep=1684 (2014Ka35).
9462[&]		1695[j]	5.7[j]	
9469[&]		1702[h]	2.7[h]	S(p,γ) eV: other: 1.1 for a level at Ep=1703 (2014Ka35).
9474[&]		1707[j]	1.6[j]	
9480[&]		1714[h]	2.4[h]	S(p,γ) eV: other: 2.4 for a level at Ep=1710 (2014Ka35).
9487[&]		1723[j]	6.9[j]	
9496[&]		1730[h]	7.8[h]	S(p,γ) eV: other: 2.5 for a level at Ep=1731 (2014Ka35).
9506[&]		1740[h]	13.8[h]	S(p,γ) eV: other: 3.3 for a level at Ep=1736 (2014Ka35).
9507[&]		1741[j]	0.9[j]	
9510[&]		1744[j]	2.1[j]	
9517[&]		1752[h]	0.5[h]	Γγ=0.3 eV (2008Vo08). S(p,γ) eV: other: 2.1 for a level at Ep=1749 (2014Ka35).
9527[&]		1762[h]	0.5[h]	S(p,γ) eV: other: 4.0 for a level at Ep=1757 (2014Ka35).
9529[&]		1764[h]	1.5[h]	Γγ=0.4 eV (2008Vo08). S(p,γ) eV: other: 4.2 for a level at Ep=1765 (2014Ka35).
9537[&]		1772[h]	1.0[h]	Γγ=0.5 eV (2008Vo08). S(p,γ) eV: other: 3.6 for a level at Ep=1773 (2014Ka35).
9543[&]		1778[h]	2.0[h]	S(p,γ) eV: other: 2.7 for a level at Ep=1780 (2014Ka35).
9550[&]		1785[h]	0.4[h]	S(p,γ) eV: other: 3.8 for a level at Ep=1786 (2014Ka35).
9559[&]		1795[h]	0.7[h]	Γγ=0.2 eV (2008Vo08). S(p,γ) eV: other: 6.3 for a level at Ep=1798 (2014Ka35).
9568[&]		1804[h]	4.6[h]	Γγ=2.4 eV (2008Vo08). S(p,γ) eV: other: 1.0 for a level at Ep=1803 (2014Ka35).
9573[&]		1808[j]	3.6[j]	
9578[&]		1814[h]	2.4[h]	Γγ=0.6 eV (2008Vo08). S(p,γ) eV: other: 1.6 for a level at Ep=1816 (2014Ka35).
9585[&]		1821[h]	0.6[h]	
9591[&]		1827[h]	1.2[h]	S(p,γ) eV: other: 1.8 for a level at Ep=1826 (2014Ka35).
9594[&]		1831[h]	1.2[h]	Γγ=0.3 eV (2008Vo08).
9602[&]	3/2−	1839[h]	3.9 *4*	Γγ=0.8 eV (2008Vo08), 1.0 (2008Vo03). Jπ: from γ(θ) in 2008Vo03. S(p,γ) eV: from 2008Vo03. Others: 3.2 (2008Vo08), 5.8 for a level at Ep=1835 (2011Ka24), 7.2 for a level at 1835 (2014Ka35).
9605[&]	3/2−	1842[h]	3.3[h] *3*	S(p,γ) eV: from 2008Vo03. Others: 3.0 (2008Vo08), 5.0 (2014Ka35). Γγ=0.8 (2008Vo03). Jπ: from γ(θ) in 2008Vo03.
9615[&]		1851[j]	3.0[j]	
9622[&]	3/2−	1859[h]	0.8 *2*	Γγ=0.2 eV (2008Vo08). S(p,γ) eV: from 2008Vo03. Others: 0.8 (2008Vo08), 1.7 for a level at Ep=1856 (2014Ka35). Jπ: from γ(θ) in 2008Vo03.
9632	3/2−	1870	2.8 *3*	E(p)(lab),Jπ: from 1971Ko32. This resonance exhibits a multiplet structure. Other: Ep=1875 (2003Vo08,2008Vo08) 1868 (2011Ka24,2014Ka35). Possible IAR of 1350 in ^{41}Ar. Γγ=1.0 eV (2008Vo08), 0.7 (2008Vo03). S(p,γ) eV: from 2008Vo03. Other: 3.9 (2008Vo08), 5.6 (2011Ka24), 6.9

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	Jπ[‡]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
				(2014Ka35).
9643[&]		1880[j]	1.2[j]	
9658[&]	3/2⁻	1896[h]	4.1 *4*	Γγ=1.1 eV (2008Vo08), 1.0 (2008Vo03). S(p,γ) eV: from 2008Vo03. Others: 4.4 (2008Vo08), 5.4 (2011Ka24), 6.6 (2014Ka35). Jπ: 3/2 from γ(θ) in 2008Vo03, π from consideration of RUL of depopulating transitions (2008Vo03). E(p)(lab): other: 1890 (2011Ka24,2014Ka35).
9671[&]		1909[h]	0.6[h]	Γγ=0.3 eV (2008Vo08). S(p,γ) eV: others: 5.9 for a level at Ep=1907 (2011Ka24), 7.3 for a level at Ep=1907 (2014Ka35).
9677[&]		1916[h]	4.0[h]	Γγ=3.0 eV (2008Vo08). S(p,γ) eV: others: 7.0 for a level at Ep=1917 (2011Ka24), 4.2 for a level at Ep=1917 (2014Ka35).
9687[&]		1926[h]	3.5[h]	Γγ=0.6 eV (2008Vo08).
9692[&]		1931[h]	0.7[h]	Γγ=0.4 eV (2008Vo08). S(p,γ) eV: other: 4.9 for a level at Ep=1934 (2011Ka24), 6.0 for a level at 1934 (2014Ka35).
9702[&]		1941[h]	2.1[h]	S(p,γ) eV: other: 2.6 (2014Ka35).
9708[&]		1947[h]	3.6[h]	S(p,γ) eV: other: 3.7 for a level at Ep=1950 (2014Ka35).
9712[&]		1951[h]	0.6[h]	S(p,γ) eV: other: 3.7 for a level at Ep=1953 (2014Ka35).
9719[&]		1959[h]	3.8[h]	Γγ=1.9 eV (2008Vo08). S(p,γ) eV: other: 3.5 for a level at Ep=1964 (2014Ka35).
9730[&]		1970[h]	0.9[h]	S(p,γ) eV: other: 1.4 for a level at Ep=1969 (2014Ka35).
9731[&]		1971[h]	0.9[h]	
9739[&]		1979[h]	1.1[h]	S(p,γ) eV: other: 4.2 for a level at Ep=1976 (2014Ka35).
9745[&]		1985[h]	5.0[h]	Γγ=2.5 eV (2008Vo08). S(p,γ) eV: other: 1.5 for a level at Ep=1988 (2014Ka35).
9755[&]		1996[h]	0.9[h]	S(p,γ) eV: other: 2.8 for a level at Ep=1993 (2014Ka35).
9762[&]		2003[h]	2.7[h]	Γγ=1.4 eV (2008Vo08). S(p,γ) eV: other: 1.3 for a level at Ep=2005 (2014Ka35).
9770[&]		2010[j]	3.6[j]	
9780[&]		2021[h]	5.5[h]	S(p,γ) eV: other: 2.9 for a level at Ep=2019 (2014Ka35).
9789[&]		2030[j]	10.1[j]	S(p,γ) eV: other: 8.2 (2011Ka24).
9797[&]		2039[h]	2.6[h]	Γγ=0.7 eV (2008Vo08).
9804[&]		2045[j]	3.0[j]	
9812[&]		2054[h]	2.3[h]	S(p,γ) eV: other: 6.2 for a level at Ep=2056 (2014Ka35).
9820[&]		2061[j]	4.9[j]	
9826[&]		2068[h]	1.5[h]	Γγ=0.8 eV (2008Vo08). S(p,γ) eV: other: 2.7 (2014Ka35).
9830[&]		2072[h]	1.2[h]	S(p,γ) eV: other: 1.9 for a level at Ep=2074 (2014Ka35).
9836[&]		2079[h]	1.3[h]	Γγ=0.7 eV (2008Vo08). S(p,γ) eV: other: 3.9 (2014Ka35).
9844[&]		2086[j]	3.9[j]	
9846[&]		2089[h]	2.3[h]	Γγ=0.6 eV (2008Vo08). S(p,γ) eV: other: 6.3 (2011Ka24), 7.7 (2014Ka35). E(p)(lab): other: 2090 (2011Ka24,2014Ka35).
9858[&]		2101[h]	1.5[h]	Γγ=0.4 eV (2008Vo08). S(p,γ) eV: other: 3.9 for a level at Ep=2100 (2014Ka35).

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
9863[&]	2106[j]	3.4[j]	
9868[&]	2111[h]	2.7[h]	Γ_γ=1.4 eV (2008Vo08).
9874[&]	2117[j]	3.1[j]	
9877[&]	2120[j]	2.9[j]	
9883[&]	2127[h]	0.8[h]	Γ_γ=0.2 eV (2008Vo08). S(p,γ) eV: other: 2.8 (2014Ka35).
9889[&]	2133[j]	3.4[j]	
9896[&]	2140[j]	2.6[j]	
9900[&]	2144[h]	1.3[h]	Γ_γ=0.3 eV (2008Vo08). S(p,γ) eV: other: 3.9 (2014Ka35).
9905[&]	2149[j]	9.6[j]	S(p,γ) eV: other: 7.8 (2011Ka24).
9918[&]	2163[h]	2.6[h]	S(p,γ) eV: other: 6.3 for a level at Ep=2169 (2014Ka35).
9937[&]	2182[h]	3.6[h]	S(p,γ) eV: other: 4.1 for a level at Ep=2180 (2014Ka35).
9942[&]	2187[j]	1.1[j]	
9946[&]	2191[j]	4.7[j]	
9952[&]	2197[h]	1.2[h]	S(p,γ) eV: other: 5.5 for a level at Ep=2200 (2014Ka35).
9955[&]	2201[h]	1.5[h]	S(p,γ) eV: other: 3.0 for a level at Ep=2205 (2014Ka35).
9960[&]	2206[h]	1.3[h]	Γ_γ=0.7 eV (2008Vo08). S(p,γ) eV: other: 6.5 for a level at Ep=2209 (2011Ka24), 8.2 for a level at Ep=2209 (2014Ka35).
9968[&]	2214[h]	1.4[h]	Γ_γ=0.7 eV (2008Vo08). S(p,γ) eV: other: 4.7 for a level at Ep=2220 (2011Ka24), 5.8 for a level at Ep=2220 (2014Ka35).
9979[&]	2225[h]	3.7[h]	Γ_γ=1.9 eV (2008Vo08). S(p,γ) eV: other: 2.5 for a level at Ep=2229 (2014Ka35).
9991[&]	2237[h]	1.5[h]	S(p,γ) eV: other: 1.9 for a level at Ep=2235 (2014Ka35).
9995[&]	2241[h]	1.3[h]	S(p,γ) eV: other: 4.8 for a level at Ep=2244 (2014Ka35).
10001[&]	2248[h]	0.7[h]	Γ_γ=0.4 eV (2008Vo08).
10009[&]	2255[j]	6.7[j]	S(p,γ) eV: other: 5.5 (2011Ka24).
10013[&]	2260[h]	1.4[h]	Γ_γ=0.4 eV (2008Vo08). S(p,γ) eV: other: 2.8 for a level at Ep=2259 (2014Ka35).
10019[&]	2266[j]	2.2[j]	
10026[&]	2273[h]	4.0[h]	Γ_γ=2.0 eV (2008Vo08). S(p,γ) eV: other: 5.5 (2014Ka35).
10034[&]	2281[j]	2.2[j]	
10046[&]	2293[h]	1.4[h]	Γ_γ=0.4 eV (2008Vo08). S(p,γ) eV: other: 4.3 for a level at Ep=2290 (2014Ka35).
10050[&]	2298[j]	2.3[j]	
10052[&]	2300[h]	1.4[h]	Γ_γ=0.4 eV (2008Vo08). S(p,γ) eV: other: 3.7 for a level at Ep=2301 (2014Ka35).
10059[&]	2307[j]	4.9[j]	E(p)(lab),S(p,γ) eV: S=1.6 for a level at Ep=2312 (2008Vo03).
10068[&]	2316[j]	4.4[j]	E(p)(lab),S(p,γ) eV: S=1.6 for a level at Ep=2312 (2008Vo03).
10074[&]	2322[h]	0.7[h]	Γ_γ=0.35 eV (2008Vo08). S(p,γ) eV: other: 2.3 (2014Ka35).
10078[&]	2326[j]	7.0[j]	E(p)(lab),S(p,γ) eV: S=2.3 for a level at Ep=2330 (2008Vo03). S(p,γ) eV: other: 5.7 (2011Ka24).
10085[&]	2333[j]	4.8[j]	E(p)(lab),S(p,γ) eV: S=2.3 for a level at Ep=2330 (2008Vo03).
10091[&]	2339[h]	2.9[h]	E(p)(lab),S(p,γ) eV: S=4.1 for a level at Ep=2337 (2008Vo03).

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^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
10094[&]	2343[j]	1.8[j]	
10098[&]	2347[h]	3.2[h]	Γ_γ=1.6 eV (2008Vo08). E(p)(lab),S(p,γ) eV: S=4.2 for a level at Ep=2348 (2008Vo03).
10108[&]	2357[h]	4.3[h]	Γ_γ=2.2 eV (2008Vo08). E(p)(lab): other: 2360 (2011Ka24,2014Ka35). S(p,γ) eV: others: 6.8 (2011Ka24), 8.9 (2014Ka35).
10119[&]	2368[h]	2.4[h]	E(p)(lab),S(p,γ) eV: S=2.3 for a level at Ep=2369 (2008Vo03).
10128[&]	2377[j]	11.7[j]	E(p)(lab),S(p,γ) eV: S=1.3 for a level at Ep=2380 (2008Vo03). S(p,γ) eV: other: 9.3 (2011Ka24).
10133[&]	2382[j]	2.9[j]	E(p)(lab),S(p,γ) eV: S=1.3 for a level at Ep=2380 (2008Vo03).
10140[&]	2390[j]	8.4[j]	S(p,γ) eV: other: 6.8 (2011Ka24).
10146[&]	2396[j]	4.4[j]	
10150[&]	2400[h]	3.8[h]	Γ_γ=1.9 eV (2008Vo08). S(p,γ) eV: other: 4.5 (2014Ka35).
10159[&]	2409[j]	4.9[j]	
10164[&]	2414[h]	2.0[h]	Γ_γ=1.0 eV (2008Vo08). S(p,γ) eV: other: 7.7 for a level at Ep=2413 (2014Ka35).
10172[&]	2422[h]	3.3[h]	Γ_γ=1.7 eV (2008Vo08). E(p)(lab): others: 2421 (2011Ka24,2014Ka35). S(p,γ) eV: others: 11.4 (2011Ka24), 14.0 (2014Ka35).
10179[&]	2430[j]	5.8[j]	
10185[&]	2436[h]	3.2[h]	Γ_γ=1.6 eV (2008Vo08). S(p,γ) eV: other: 4.2 (2014Ka35).
10191[&]	2442[j]	4.6[j]	
10193[&]	2444[h]	2.5[h]	Γ_γ=0.6 eV (2008Vo08). S(p,γ) eV: other: 7.5 for a level at Ep=2445 (2014Ka35).
10198[&]	2449[j]	1.7[j]	
10207[&]	2458[h]	2.2[h]	Γ_γ=0.6 eV (2008Vo08). S(p,γ) eV: other: 5.6 for a level at Ep=2461 (2014Ka35).
10215[&]	2466[h]	1.1[h]	Γ_γ=0.6 eV (2008Vo08). S(p,γ) eV: other: 5.6 for a level at Ep=2467 (2014Ka35).
10220[&]	2472[h]	4.0[h]	Γ_γ=2.0 eV (2008Vo08). E(p)(lab): other: 2474 (2011Ka24,2014Ka35). S(p,γ) eV: other: 3.6 (2011Ka24), 7.5 (2014Ka35).
10228[&]	2480[j]	5.3[j]	
10234[&]	2486[h]	11.6[h]	Γ_γ=2.9 eV (2008Vo08). S(p,γ) eV: other: 4.2 (2014Ka35).
10248[&]	2500[h]	2.6[h]	Γ_γ=1.3 eV (2008Vo08). E(p)(lab): other: 2494 (2011Ka24,2014Ka35). S(p,γ) eV: other: 3.1 (2011Ka24), 7.5 (2014Ka35).
10257[&]	2509[j]	6.7[j]	
10261[&]	2513[h]	2.5[h]	Γ_γ=1.3 eV (2008Vo08). E(p)(lab),S(p,γ) eV: S=9.2 for level at Ep=2515 (2011Ka24), S=13.5 for level at Ep=2515 (2014Ka35).
10267[&]	2519[h]	2.0[h]	Γ_γ=1.0 eV (2008Vo08). E(p)(lab),S(p,γ) eV: S=9.2 for level at Ep=2515 (2011Ka24), S=3.9 for level at Ep=2523 (2014Ka35).
10276[&]	2529[j]	1.5[j]	
10281[&]	2535[h]	3.0[h]	Γ_γ=0.8 eV (2008Vo08). S(p,γ) eV: other: 1.1 (2014Ka35).

Continued on next page (footnotes at end of table)

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
10285[&]	2539[j]	2.1[j]	
10295[&]	2549[h]	5.0[h]	Γ_γ=0.3 eV (2008Vo08). E(p)(lab): other: 2544 (2011Ka24, 2014Ka35). S(p,γ) eV: other: 5.9 (2011Ka24), 7.5 (2014Ka35).
10299[&]	2552[j]	4.2[j]	
10315[&]	2569[h]	9.0[h]	Γ_γ=0.5 eV (2008Vo08). E(p)(lab): other: 2562 (2011Ka24,2014Ka35). S(p,γ) eV: other: 4.9 (2011Ka24), 6.0 (2014Ka35).
10325[&]	2580[j]	0.9[j]	
10330[&]	2584[h]	2.0[h]	Γ_γ=0.5 eV (2008Vo08). E(p)(lab),S(p,γ) eV: S=5.2 for level at Ep-2586 (2011Ka24), S=6.7 for level at Ep-2586 (2014Ka35).
10333[&]	2588[h]	1.4[h]	Γ_γ=0.7 eV (2008Vo08). E(p)(lab),S(p,γ) eV: S=5.2 for level at Ep-2586 (2011Ka24), S=6.7 for level at Ep-2586 (2014Ka35).
10339[&]	2594[h]	1.6[h]	Γ_γ=0.8 eV (2008Vo08).
10343[&]	2598[j]	2.7[j]	
10344[&]	2599[j]	5.3[j]	
10354[&]	2609[h]	4.5[h]	Γ_γ=1.1 eV (2008Vo08). S(p,γ) eV: other: 5.7 (2014Ka35).
10361[&]	2617[h]	1.6[h]	S(p,γ) eV: other: 5.3 (2014Ka35).
10372[&]	2627[h]	9.0[h]	S(p,γ) eV: others: 5.1 (2011Ka24), 6.2 (2014Ka35).
10376[&]	2631[j]	7.3[j]	S(p,γ) eV: other: 5.9 (2011Ka24).
10386[&]	2641[j]	13.1[j]	S(p,γ) eV: other: 8.3 (2011Ka24).
10391[&]	2646[h]	10.0[h]	
10397[&]	2653[h]	1.6[h]	
10403[&]	2659[j]	11.8[j]	E(p)(lab): other: 2661 (2008Vo03). S(p,γ) eV: other: 1.6 (2008Vo03).
10409[&]	2665[j]	6.2[j]	E(p)(lab): other: 2667 (2008Vo03). S(p,γ) eV: other: 1.4 (2008Vo03).
10417[&]	2673[j]	5.7[j]	
10421[&]	2677[j]	3.1[j]	
10429[&]	2686[j]	2.5[j]	
10440[&]	2698[j]	7.7[j]	S(p,γ) eV: other: 4.3 (2011Ka24).
10460[&]	2718[j]	5.2[j]	
10472[&]	2730[j]	3.5[j]	
10484[&]	2742[j]	1.7[j]	
10488[&]	2746[j]	5.0[j]	
10498[&]	2756[j]	12.6[j]	S(p,γ) eV: other: 14.0 (2011Ka24).
10514[&]	2773[j]	6.6[j]	
10528[&]	2787[j]	10.7[j]	
10538[&]	2797[j]	10.8[j]	
10550[&]	2810[j]	11.0[j]	S(p,γ) eV: other: 10.2 (2011Ka24).
10558[&]	2818[j]	11.0[j]	S(p,γ) eV: other: 7.2 (2011Ka24).
10566[&]	2826[j]	6.3[j]	
10574[&]	2835[j]	5.7[j]	
10604[&]	2866[j]	7.6[j]	

Continued on next page (footnotes at end of table)

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

^{41}K Levels (continued)

E(level)[†]	E(p)(lab)[a]	S(p,γ) eV[g]	Comments
10614[&]	2876[j]	6.0[j]	
10623[&]	2884[j]	11.0[j]	S(p,γ) eV: other: 6.8 (2011Ka24).
10629[&]	2891[j]	5.4[j]	
10635[&]	2897[j]		
10642[&]	2905[j]		
10646[&]	2909[j]		
10655[&]	2918[j]		
10659[&]	2922[j]	11.8[j]	
10663[&]	2926[i]	7.0[i]	E(p)(lab): other: 2931 (2014Ka35).
10672[&]	2935[j]	11.2[j]	
10678[&]	2941[j]	8.6[j]	E(p)(lab): other: 2939 (2011Ka24). S(p,γ) eV: other: 6.8 (2011Ka24).
10682[&]	2945[j]	9.9[j]	E(p)(lab): other: 2949 (2011Ka24). S(p,γ) eV: other: 6.0 (2011Ka24).
10691[&]	2954[j]	5.1[j]	
10694[&]	2958[j]		

[†] From 1986Sm13 for bound levels, except where noted.
[‡] From Adopted Levels for bound levels (up to 5402 keV) and from 1989Sm06 for levels (above 8 MeV) deduced from proton resonances, except where noted.
[#] From DSAM. Values are from 1986Bi03, except where noted.
[@] According to Adopted Levels, there are two levels near this energy one depopulated by 633γ+647γ and the other by 1848γ.
[&] Deduced from proton resonance. Excitation energy=S(p)+E(p)(c.m.), where S(p)=7808.619 *5* (2012Wa38).
[a] E(p)(lab) in keV. The uncertainty in E(p)(lab) is about the same as in the excitation energy.
[b] From 1963Ko22.
[c] From 1989Sm06.
[d] From 1967Bl26.
[e] From 1961Ar10.
[f] From 1963Co04.
[g] (2J+1)$\Gamma_p\Gamma_\gamma/\Gamma$, from 1989Sm06, except where noted.
[h] From 2008Vo08.
[i] From 2011Ka24.
[j] From 2014Ka35.

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$

$\gamma\gamma$ coin information is from 1986Bi03.

Relative γ-ray intensities of resonances (1967Bl26)

E(p)(lab) keV	Iγ	E(p)(lab) keV	Iγ
1076.7	0.03	1140.0	0.09
1082.3	0.12	1141.9	0.08
1082.9	0.05	1146.9	0.05
1086.5	0.43	1150.3	0.04
1096.2 a	(0.04)a	1152.1	0.09
1096.4 a	(0.04)a	1154.0	0.10
1099.3	0.06	1159.7	0.04
1101.8	1.00	1162.8	0.10
1108.4	0.37	1165.6	0.02
1113.5	0.04	1168.9	0.07
1117.3	0.08	1172.8	0.03
1117.9	0.10	1177.6	0.08
1118.7	0.16	1179.2	
1119.8	0.07	1184.7	0.06
1130.5	0.01	1186.3	0.07
1137.1	0.02	1194.0	0.07
1138.7	0.03	1195.7	0.05

a: unresolved doublet

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π
980.51	1/2$^+$	980.5	100	0	3/2$^+$
1293.66	7/2$^-$	1293.6	100	0	3/2$^+$
1559.92	3/2$^+$	579.4	16.0 *10*	980.51	1/2$^+$
		1559.9	84.0 *10*	0	3/2$^+$
1582.10	3/2$^-$	288.4[&]		1293.66	7/2$^-$
		601.6	14.4 *8*	980.51	1/2$^+$
		1582.1	85.6 *8*	0	3/2$^+$
1592.99	1/2$^+$	612.5	36.5 *13*	980.51	1/2$^+$
		1593.0	63.5 *13*	0	3/2$^+$
1677.1	7/2$^+$	383.4[f]	<7	1293.66	7/2$^-$
		696.6[f]	<4	980.51	1/2$^+$
		1677.1	100	0	3/2$^+$
1698.00	5/2$^+$	404.3[f]	<4	1293.66	7/2$^-$
		717.5[f]	<3	980.51	1/2$^+$
		1698.0	100	0	3/2$^+$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Comments
2143.8	5/2$^+$	445.8[&]		1698.00	5/2$^+$	
		466.7[f]	<5	1677.1	7/2$^+$	
		550.8[f]	<4	1592.99	1/2$^+$	
		561.7[f]	<3	1582.10	3/2$^-$	
		583.9	25 *5*	1559.92	3/2$^+$	
		1163.3	4.4 *10*	980.51	1/2$^+$	γ not seen in (n,γ).
		2143.7	70 *4*	0	3/2$^+$	
2166.73	3/2$^-$	489.6[f]	<7	1677.1	7/2$^+$	
		573.7	<15	1592.99	1/2$^+$	
		584.6	6.2 *7*	1582.10	3/2$^-$	I_γ: other: 20 *8* (1971Pi12). In 1986Sm13, the intensity in may have been influenced by a 584 line in background.
		606.8[&]		1559.92	3/2$^+$	
		873.1[f]	<10	1293.66	7/2$^-$	
		1186.2	53.7 *18*	980.51	1/2$^+$	
		2166.7	40.1 *16*	0	3/2$^+$	
2316.8	5/2$^-$	639.7[f]	<8	1677.1	7/2$^+$	
		734.7[f]	<9	1582.10	3/2$^-$	
		1023.1	100	1293.66	7/2$^-$	
		1336.3[f]	<7	980.51	1/2$^+$	
2440.1	(3/2,5/2$^+$)	742.1[&]		1698.00	5/2$^+$	
		763.0[f]	<6[a]	1677.1	7/2$^+$	
		847.1[&]		1592.99	1/2$^+$	
		858.0[f]	<5	1582.10	3/2$^-$	
		880.2	8.5 *23*	1559.92	3/2$^+$	
		1146.4[f]	<6	1293.66	7/2$^-$	
		1459.6[&]		980.51	1/2$^+$	
		2440.0	91.5 *23*	0	3/2$^+$	
2494.6	9/2$^+$	817.5[&]		1677.1	7/2$^+$	
2507.9	7/2$^+$	809.9[f]	<7	1698.00	5/2$^+$	
		830.8	48.7 *12*	1677.1	7/2$^+$	
		925.8[f]	<7	1582.10	3/2$^-$	
		948.0	8.6 *6*	1559.92	3/2$^+$	
		1214.2	10.9 *6*	1293.66	7/2$^-$	
		1527.4[f]	<7	980.51	1/2$^+$	
		2507.8	31.8 *12*	0	3/2$^+$	
2527	11/2$^+$	849.9[&]		1677.1	7/2$^+$	
2593.38	1/2$^-$,3/2$^-$	895.4[f]	<1[b]	1698.00	5/2$^+$	
		916.3[f]	<1	1677.1	7/2$^+$	

$^{41}_{19}K_{22}$-15

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
2593.38	1/2$^-$,3/2$^-$	1000.4[f]	<3	1592.99	1/2$^+$	
		1011.3	88 *2*	1582.10	3/2$^-$	
		1033.4[f]	<1.5	1559.92	3/2$^+$	
		1612.8[f]	<1	980.51	1/2$^+$	
		2593.3	12 *2*	0	3/2$^+$	
2674.3	1/2$^+$	997.2[f]	<8	1677.1	7/2$^+$	
		1081.3[f]	<4	1592.99	1/2$^+$	
		1092.2[f]	<9	1582.10	3/2$^-$	
		1114.4[f]	<15[a]	1559.92	3/2$^+$	
		1380.6[f]	<13	1293.66	7/2$^-$	
		1693.8[&]		980.51	1/2$^+$	
		2674.2	17 *5*	0	3/2$^+$	
2710.3	3/2$^+$,5/2$^+$	566.5[&]		2143.8	5/2$^+$	
		1117.3[&]		1592.99	1/2$^+$	
		1729.8[&]		980.51	1/2$^+$	
2712.4	(7/2)$^-$	395.6[&]		2316.8	5/2$^-$	
		1014.4[&]	20 *20*	1698.00	5/2$^+$	I_γ: from 1971Pi12.
		1130.3	26 *8*	1582.10	3/2$^-$	
		1418.7	74 *8*	1293.66	7/2$^-$	
2756.2	5/2$^+$	612.4	15 *8*	2143.8	5/2$^+$	
		1058.2	12 *3*	1698.00	5/2$^+$	
		1079.1	4 *1*	1677.1	7/2$^+$	
		1196.3	11 *3*	1559.92	3/2$^+$	
		2756.1	58 *7*	0	3/2$^+$	
3047.0	1/2$^-$,3/2$^-$	453.6[&]		2593.38	1/2$^-$,3/2$^-$	
		1454.0	18 *6*	1592.99	1/2$^+$	
		1464.9[&]		1582.10	3/2$^-$	
		2066.4[f]	*a*	980.51	1/2$^+$	
		3046.9	82 *6*	0	3/2$^+$	
3141.3	(7/2$^-$),5/2$^-$	633.4[&]		2507.9	7/2$^+$	
		646.7[&]		2494.6	9/2$^+$	
		1847.6	60 *20*	1293.66	7/2$^-$	
3179.8	3/2$^+$,5/2$^+$	1619.8	24 *5*	1559.92	3/2$^+$	
		3179.7	76 *5*	0	3/2$^+$	
3213.2	5/2$^-$	1919.5	100	1293.66	7/2$^-$	
3229.8	(1/2$^+$,3/2,5/2$^+$)	1669.8	45 *12*	1559.92	3/2$^+$	
		2249.2	33 *8*	980.51	1/2$^+$	
		3229.7	22 *8*	0	3/2$^+$	
3235.6	(3/2$^-$,5/2,7/2$^-$)	918.8	18 *6*	2316.8	5/2$^-$	

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

γ(^{41}K) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
3235.6	(3/2$^-$,5/2,7/2$^-$)	1941.9	82 *6*	1293.66	7/2$^-$	
3277.9	(1/2,3/2,5/2$^+$)	3277.8	100	0	3/2$^+$	
3450.1	5/2$^-$,7/2$^-$	1752.1[f]	<4	1698.00	5/2$^+$	
		1857.1[f]	<5	1592.99	1/2$^+$	
		2156.4	100	1293.66	7/2$^-$	
		2469.5[f]	<4	980.51	1/2$^+$	
		3449.9[f]	<2	0	3/2$^+$	I_γ: other: <5 (1971Pi12). 58% given by 1970Ko28 is probably due to a line from background.
3488.5	(5/2)$^+$	1790.5	9.6 *15*	1698.00	5/2$^+$	
		1811.4[f]	<2	1677.1	7/2$^+$	
		1895.5	3.2 *10*	1592.99	1/2$^+$	
		1906.4[f]	<3	1582.10	3/2$^-$	
		1928.5[f]	<5	1559.92	3/2$^+$	
		2194.8	3.0 *10*	1293.66	7/2$^-$	
		2507.9	5.2 *12*	980.51	1/2$^+$	
		3488.3	79 *6*	0	3/2$^+$	
3571.9		1894.8[&]		1677.1	7/2$^+$	
3579.2		1435.4[&]		2143.8	5/2$^+$	
		2019.2[&]		1559.92	3/2$^+$	
		3579.0	100	0	3/2$^+$	
3614.8		2021.8	16 *4*	1592.99	1/2$^+$	
		2032.6	29 *5*	1582.10	3/2$^-$	
		3614.6	55 *9*	0	3/2$^+$	
3626.1		2043.9	50 *10*	1582.10	3/2$^-$	
3740.1	1/2$^-$,3/2$^-$	2157.9	50 *10*	1582.10	3/2$^-$	
		3739.9	50 *10*	0	3/2$^+$	
3761.54		1005.3	5 *2*	2756.2	5/2$^+$	
		1266.9[f]	<3[b]	2494.6	9/2$^+$	
		2063.5	7 *2*	1698.00	5/2$^+$	
		2084.4[f]	<5	1677.1	7/2$^+$	
		2179.4[f]	<2	1582.10	3/2$^-$	
		2201.6	17 *4*	1559.92	3/2$^+$	
		2780.9[f]	<6	980.51	1/2$^+$	
		3761.4	71 *10*	0	3/2$^+$	
3774.3	5/2$^-$,7/2$^-$	2192.1	15 *5*	1582.10	3/2$^-$	
		2480.6	55 *10*	1293.66	7/2$^-$	
		2793.7[f]	[b]	980.51	1/2$^+$	
		3774.1	30 *10*	0	3/2$^+$	
3861.3	(1/2,3/2,5/2$^+$)	2301.3	42 *4*	1559.92	3/2$^+$	Iγ(2301)/Iγ(3861)=24 *8*/76 *8* (1971Pi12).
		2880.7	7 *2*	980.51	1/2$^+$	
		3861.1	51 *4*	0	3/2$^+$	

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π
3911.7	$1/2^-,3/2^-$	2931.1	80 *6*	980.51	$1/2^+$
		3911.5	20 *6*	0	$3/2^+$
4026.7		1709.9	40 *7*	2316.8	$5/2^-$
		2732.9	60 *7*	1293.66	$7/2^-$
4164.7		2466.6	25 *8*	1698.00	$5/2^+$
		2487.5	75 *8*	1677.1	$7/2^+$
4340.9	(1/2,3/2,5/2)	4340.7	100	0	$3/2^+$
4674		4674[e]	100[e]	0	$3/2^+$
4745.2	$(5/2^+)$	2250.5[f]	*b*	2494.6	$9/2^+$
		2428.3	8 *3*	2316.8	$5/2^-$
		2578.4	27 *7*	2166.73	$3/2^-$
		3047.1	28 *5*	1698.00	$5/2^+$
		3068.0[f]	*b*	1677.1	$7/2^+$
		3163.0	17 *6*	1582.10	$3/2^-$
		4744.9	20 *6*	0	$3/2^+$
4848.5	$(3/2)^-$	2704.6	38 *10*	2143.8	$5/2^+$
		4848.2	62 *10*	0	$3/2^+$
4962.3	(1/2,3/2,5/2)	4962.0	100	0	$3/2^+$
5101.2	$1/2^-,3/2^-$	2784.3	55 *15*	2316.8	$5/2^-$
		5100.9	45 *15*	0	$3/2^+$
5401.7	$1/2^-,3/2^-$	3084.8	16 *5*	2316.8	$5/2^-$
		5401.3	84 *5*	0	$3/2^+$
8758.5	(1/2,3/2,5/2)	5018.1	9.6	3740.1	$1/2^-,3/2^-$
		5528.3	8.7	3229.8	$(1/2^+,3/2,5/2^+)$
		6045.6	6.4	2712.4	$(7/2)^-$
		6164.6	6.1	2593.38	$1/2^-,3/2^-$
		6317.9	9.6	2440.1	$(3/2,5/2^+)$
		6591.2	8.0	2166.73	$3/2^-$
		7164.8	6.4	1592.99	$1/2^+$
		7175.7	19	1582.10	$3/2^-$
		7197.9	19	1559.92	$3/2^+$
		7777.2	3.4	980.51	$1/2^+$
		8757.5	3.8	0	$3/2^+$
8770.1	$(3/2,5/2^+)$	3807.6	2.2	4962.3	(1/2,3/2,5/2)
		3921.4	0.6	4848.5	$(3/2)^-$
		4743.1	5.0	4026.7	
		4908.5	2.8	3861.3	$(1/2,3/2,5/2^+)$
		5143.7	3.3	3626.1	
		5155.0	2.8	3614.8	
		5539.9	4.2	3229.8	$(1/2^+,3/2,5/2^+)$
		5722.7	1.2	3047.0	$1/2^-,3/2^-$
		6095.3	10	2674.3	$1/2^+$
		6176.2	2.2	2593.38	$1/2^-,3/2^-$

$^{41}_{19}K_{22}$-18

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Comments
8770.1	(3/2,5/2$^+$)	6329.5	3.2	2440.1	(3/2,5/2$^+$)	
		6452.8	5.4	2316.8	5/2$^-$	
		6602.8	4.4	2166.73	3/2$^-$	
		7071.4	1.6	1698.00	5/2$^+$	
		7176.4	15	1592.99	1/2$^+$	
		7187.3	6.1	1582.10	3/2$^-$	
		7788.8	18	980.51	1/2$^+$	
		8769.1	12	0	3/2$^+$	
8789.6		5163.2	6.3	3626.1		
		5576.0	15	3213.2	5/2$^-$	
		6076.7	17	2712.4	(7/2)$^-$	
		6349.0	6.3	2440.1	(3/2,5/2$^+$)	
		6622.3	6.6	2166.73	3/2$^-$	
		7090.9	9.7	1698.00	5/2$^+$	
		7229.0	27	1559.92	3/2$^+$	
		7808.3	5.5	980.51	1/2$^+$	
		8788.6	6.6	0	3/2$^+$	
8851.4	(1/2,3/2,5/2)	4106.0	7.7	4745.2	(5/2$^+$)	
		5236.2	14	3614.8		
		5621.2	10	3229.8	(1/2$^+$,3/2,5/2$^+$)	
		6257.5	5.0	2593.38	1/2$^-$,3/2$^-$	
		6684.1	9.2	2166.73	3/2$^-$	
		7268.6	4.6	1582.10	3/2$^-$	
		7870.1	4.5	980.51	1/2$^+$	
		8850.4	45	0	3/2$^+$	
8864.5	(3/2,5/2$^+$)	3763.1	2.1	5101.2	1/2$^-$,3/2$^-$	
		5002.9	6.6	3861.3	(1/2,3/2,5/2,5/2$^+$)	
		5284.9	1.3	3579.2		
		5586.2	1.3	3277.9	(1/2,3/2,5/2,5/2$^+$)	
		5817.1	2.5	3047.0	1/2$^-$,3/2$^-$	
		6151.6	2.1	2712.4	(7/2)$^-$	
		6697.2	6.0	2166.73	3/2$^-$	
		7270.8	12	1592.99	1/2$^+$	
		7281.7	7.0	1582.10	3/2$^-$	
		7303.9	45	1559.92	3/2$^+$	
		7570.1	2.1	1293.66	7/2$^-$	
		7883.2	12	980.51	1/2$^+$	
8868.6	(3/2,5/2)	3466.7	1.6	5401.7	1/2$^-$,3/2$^-$	
		4841.6	2.9	4026.7		
		5242.1	6.0	3626.1		I_γ: other: 9 (1971Pi12).
		5379.7	1.7	3488.5	(5/2)$^+$	
		5590.3	1.8	3277.9	(1/2,3/2,5/2,5/2$^+$)	
		5821.2	2.6	3047.0	1/2$^-$,3/2$^-$	I_γ: other: 5 (1971Pi12).

$^{41}_{19}K_{22}$-19

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
8868.6	(3/2,5/2)	6155.7	1.1	2712.4	$(7/2)^-$	
		6274.7	18	2593.38	$1/2^-,3/2^-$	I_γ: other: 20 (1971Pi12). A_2=−0.67 *8* A_4=+0.18 *10*.
		6551.2	2.8	2316.8	$5/2^-$	I_γ: other: 4 (1971Pi12).
		6701.3	1.2	2166.73	$3/2^-$	I_γ: other: 3 (1971Pi12).
		7285.8	21	1582.10	$3/2^-$	I_γ: other: 16 (1971Pi12). A_2=+0.14 *8* A_4=−0.09 *9*.
		7887.3	3.3	980.51	$1/2^+$	I_γ: other: 5 (1971Pi12).
		8867.6	36	0	$3/2^+$	I_γ: other: 38 (1971Pi12). A_2=+0.36 *6* A_4=+0.03 *7*.
8882.7	$3/2^{(-)}$	3480.8	2.1	5401.7	$1/2^-,3/2^-$	
		3920.2	1.0	4962.3	(1/2,3/2,5/2)	
		4137.3	1.9	4745.2	$(5/2^+)$	
		4541.6[e]	3[e]	4340.9	(1/2,3/2,5/2)	I_γ: branch from 1971Pi12 only.
		4855.7	2.3	4026.7		
		5021.1	5.7	3861.3	$(1/2,3/2,5/2^+)$	I_γ: others: 8 (1971Pi12), 18 (1964Ar13).
		5108.1	2.3	3774.3	$5/2^-,7/2^-$	I_γ: other: 2 (1971Pi12).
		5256.2	2.0	3626.1		I_γ: other: 3 (2008Vo03).
		5432.2	13	3450.1	$5/2^-,7/2^-$	I_γ: others: 14 (1971Pi12), 16 (2008Vo03). A_2=−0.02 *5* A_4=−0.03 *6* (1989Sm06).
		5604.4	1.8	3277.9	$(1/2,3/2,5/2^+)$	
		5669.1	1.7	3213.2	$5/2^-$	I_γ: other: 2 (2008Vo03).
		5702.5	0.9	3179.8	$3/2^+,5/2^+$	
		6126.0	1.4	2756.2	$5/2^+$	I_γ: other: 2 (2008Vo03).
		6169.8	1.3	2712.4	$(7/2)^-$	I_γ: other: 2 (2008Vo03).
		6207.9	1.8	2674.3	$1/2^+$	I_γ: other: 2 (2008Vo03).
		6288.8	23	2593.38	$1/2^-,3/2^-$	I_γ: others: 28 (1971Pi12), 29 (2008Vo03). A_2=−0.41 *2* A_4=+0.03 *3* (1989Sm06).
		6715.4	1.7	2166.73	$3/2^-$	I_γ: other: 3 (1971Pi12).
		7184.0	0.7	1698.00	$5/2^+$	I_γ: other: 1 (1971Pi12).
		7299.9	29	1582.10	$3/2^-$	I_γ: others: 34 (1971Pi12), 36 (2008Vo03). A_2=+0.27 *2* A_4=−0.11 *2* (1989Sm06). Γ_γ=2.3 eV *5* (1971Ko32).
		7588.3[f]	3	1293.66	$7/2^-$	I_γ: from 1964Ar13 only.
		7901.4	5.6	980.51	$1/2^+$	I_γ: others: 6 (1971Pi12), 7 (2008Vo03). A_2=−0.33 *7* A_4=−0.12 *8* (1989Sm06).
		8881.7	0.8	0	$3/2^+$	I_γ: others: 1 (1971Pi12), 1 (2008Vo03). A_2=+0.35 *6* A_4=+0.05 *18* (1989Sm06).
8889.8	$3/2,5/2^+$	3487.9	1.7	5401.7	$1/2^-,3/2^-$	
		4548.6	1.5	4340.9	(1/2,3/2,5/2)	I_γ: other: <3 (1971Pi12).
		5115.2	1.5	3774.3	$5/2^-,7/2^-$	
		5310.2[ef]	<3[e]	3579.2		I_γ: branch from 1971Pi12 only.

$^{41}_{19}K_{22}$-20

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

γ(^{41}K) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Comments
8889.8	3/2,5/2$^+$	5439.3	5.0	3450.1	5/2$^-$,7/2$^-$	I_γ: other: 6 (1971Pi12). A_2=+0.02 *24* A_4=+0.11 *31* (1989Sm06).
		5653.8	1.5	3235.6	(3/2$^-$,5/2,7/2$^-$)	
		5709.6	5.2	3179.8	3/2$^+$,5/2$^+$	
		6133.1	2.5	2756.2	5/2$^+$	
		6176.9	2.9	2712.4	(7/2)$^-$	
		6295.9	15	2593.38	1/2$^-$,3/2$^-$	I_γ: other: 20 (1971Pi12). A_2=−0.49 *9* A_4=−0.06 *11* (1989Sm06).
		6745.4	1.7	2143.8	5/2$^+$	
		7191.4[e]	3[e]	1698.00	5/2$^+$	I_γ: branch from 1971Pi12 only.
		7307.0	14	1582.10	3/2$^-$	I_γ: other: 8 (1971Pi12). A_2=+0.12 *10* A_4=−0.03 *12* (1989Sm06).
		7595.4[f]	2	1293.66	7/2$^-$	I_γ: branch from 1964Ar13 only.
		7908.5	7.5	980.51	1/2$^+$	I_γ: other: 9 (1971Pi12).
		8888.8	40	0	3/2$^+$	I_γ: other: 43 (1971Pi12). A_2=+0.56 *5* A_4=−0.13 *7* (1989Sm06).
8899.4	≥3/2	5037.8	9[#]	3861.3	(1/2,3/2,5/2$^+$)	I_γ: branch not reported by 1971Pi12.
		5319.8[e]	9[e]	3579.2		I_γ: other: 7 (1964Ar13).
		5669.2	7[#]	3229.8	(1/2$^+$,3/2,5/2$^+$)	I_γ: branch not reported by 1971Pi12.
		6305.5[e]	6[e]	2593.38	1/2$^-$,3/2$^-$	I_γ: other: 11 (1964Ar13).
		6732.4[e]	34[e]	2166.73	3/2$^-$	I_γ: other: 15 (1964Ar13).
		7316.6[e]	33[e]	1582.10	3/2$^-$	I_γ: other: 27 (1964Ar13).
		7605.0	3[#]	1293.66	7/2$^-$	I_γ: branch not reported by 1971Pi12.
		7918.1[e]	7[e]	980.51	1/2$^+$	I_γ: other: 11 (1964Ar13).
		8898.4[e]	11[e]	0	3/2$^+$	I_γ: other: 11 (1964Ar13).
8942.4	(3/2,5/2)	4915.4	7.5	4026.7		
		6185.7	13	2756.2	5/2$^+$	
		6348.5	4.8	2593.38	1/2$^-$,3/2$^-$	
		6625.0	22	2316.8	5/2$^-$	
		6775.1	7.3	2166.73	3/2$^-$	
		6798.0	13	2143.8	5/2$^+$	
		7381.8	14	1559.92	3/2$^+$	
		7961.1	12	980.51	1/2$^+$	
		8941.4	6.4	0	3/2$^+$	
8958.7	(1/2$^+$,3/2,5/2$^+$)	4931.7	4.5	4026.7		
		5343.5	7.4	3614.8		
		6283.9	15	2674.3	1/2$^+$	
		6791.4	2.7	2166.73	3/2$^-$	
		6814.3	3.3	2143.8	5/2$^+$	
		7260.0	4.7	1698.00	5/2$^+$	
		7365.0	14	1592.99	1/2$^+$	
		7375.9	20	1582.10	3/2$^-$	

$^{41}_{19}K_{22}$-21

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Comments
8958.7	(1/2$^+$,3/2,5/2$^+$)	7398.1	7.9	1559.92	3/2$^+$	
		7977.4	16	980.51	1/2$^+$	
		8957.6	4.5	0	3/2$^+$	
9018.8	(1/2,3/2,5/2$^+$)	5278.3	1.6	3740.1	1/2$^-$,3/2$^-$	
		5392.3	1.1	3626.1		
		6305.9	1.2	2712.4	(7/2)$^-$	
		6344.0	5.2	2674.3	1/2$^+$	
		6578.1	2.2	2440.1	(3/2,5/2$^+$)	
		6851.5	2.5	2166.73	3/2$^-$	
		7425.1	1.3	1592.99	1/2$^+$	
		7436.0	1.8	1582.10	3/2$^-$	
		7458.2	1.1	1559.92	3/2$^+$	
		8037.4	38	980.51	1/2$^+$	A_2=−0.06 *27* A_4=−0.15 *34* (1989Sm06).
		9017.7	44	0	3/2$^+$	A_2=−0.13 *26* A_4=−0.03 *32* (1989Sm06).
9022.5		5282.0	5.3	3740.1	1/2$^-$,3/2$^-$	
		5786.5	4.5	3235.6	(3/2$^-$,5/2,7/2$^-$)	
		5975.0	7.6	3047.0	1/2$^-$,3/2$^-$	
		6265.8	4.8	2756.2	5/2$^+$	
		6705.1	4.5	2316.8	5/2$^-$	
		6878.1	14	2143.8	5/2$^+$	
		7439.7	5.3	1582.10	3/2$^-$	
		7728.1	40	1293.66	7/2$^-$	
		8041.1	14	980.51	1/2$^+$	
9070.8	(3/2$^-$,5/2)	4905.8	2.6	4164.7		
		5890.5	5.6	3179.8	3/2$^+$,5/2$^+$	
		6023.3	0.9	3047.0	1/2$^-$,3/2$^-$	
		6357.9	8.0	2712.4	(7/2)$^-$	
		6903.4	7.5	2166.73	3/2$^-$	
		7477.1	21	1592.99	1/2$^+$	
		7488.0	6.6	1582.10	3/2$^-$	
		7510.1	6.6	1559.92	3/2$^+$	
		7776.3	26	1293.66	7/2$^-$	
		8089.4	3.2	980.51	1/2$^+$	
		9069.7	12	0	3/2$^+$	
9081.3	3/2	4335.9	1.3	4745.2	(5/2$^+$)	
		5169.3	3.1	3911.7	1/2$^-$,3/2$^-$	
		5466.1	3.2	3614.8		
		5851.1	2.8	3229.8	(1/2$^+$,3/2,5/2$^+$)	
		6033.8	2.1	3047.0	1/2$^-$,3/2$^-$	
		6324.6	2.1	2756.2	5/2$^+$	
		6487.4	5.5	2593.38	1/2$^-$,3/2$^-$	
		7487.6	4.4	1592.99	1/2$^+$	
		7498.5	9.0	1582.10	3/2$^-$	

$^{41}_{19}K_{22}$-22

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Comments
9081.3	3/2	7520.6	26	1559.92	$3/2^+$	A_2=+0.25 *8* A_4=+0.04 *11* (1989Sm06).
		7786.8	1.5	1293.66	$7/2^-$	
		8099.9	16	980.51	$1/2^+$	A_2=−0.06 *12* A_4=−0.11 *15* (1989Sm06).
		9080.2	23	0	$3/2^+$	A_2=−0.12 *10* A_4=+0.11 *13* (1989Sm06).
9099.2	(3/2,5/2)	6658.5	4.2	2440.1	$(3/2,5/2^+)$	
		6781.8	11	2316.8	$5/2^-$	
		6931.8	5.8	2166.73	$3/2^-$	
		6954.8	6.8	2143.8	$5/2^+$	
		7400.5	14	1698.00	$5/2^+$	
		7505.5	16	1592.99	$1/2^+$	
		7538.5	23	1559.92	$3/2^+$	
		7804.7	4.1	1293.66	$7/2^-$	
		8117.8	4.1	980.51	$1/2^+$	
		9098.1	11	0	$3/2^+$	
9112.5	(3/2,5/2)	5882.2	3.6	3229.8	$(1/2^+,3/2,5/2^+)$	
		5932.2	4.4	3179.8	$3/2^+,5/2^+$	
		6065.0	2.8	3047.0	$1/2^-,3/2^-$	
		6355.8	2.3	2756.2	$5/2^+$	
		6671.8	2.9	2440.1	$(3/2,5/2^+)$	
		6795.1	2.5	2316.8	$5/2^-$	
		6945.1	3.9	2166.73	$3/2^-$	
		6968.1	4.6	2143.8	$5/2^+$	
		7434.7	1.8	1677.1	$7/2^+$	
		7529.7	8.8	1582.10	$3/2^-$	
		7551.8	22	1559.92	$3/2^+$	
		7818.0	2.4	1293.66	$7/2^-$	
		8131.1	11	980.51	$1/2^+$	
		9111.4	27	0	$3/2^+$	
9138.4	$(1/2^+,3/2,5/2^+)$	5523.2	7.2	3614.8		
		6425.5	5.1	2712.4	$(7/2)^-$	
		6697.7	10	2440.1	$(3/2,5/2^+)$	
		6971.0	4.3	2166.73	$3/2^-$	
		6994.0	10	2143.8	$5/2^+$	
		7439.7	4.8	1698.00	$5/2^+$	
		7544.7	15	1592.99	$1/2^+$	
		7555.6	4.6	1582.10	$3/2^-$	
		7577.7	14	1559.92	$3/2^+$	
		8157.0	13	980.51	$1/2^+$	
		9137.3	12	0	$3/2^+$	
9144.8		7584.1	19	1559.92	$3/2^+$	
		8163.4	44	980.51	$1/2^+$	
		9143.7	37	0	$3/2^+$	
9148.1	$(3/2,5/2^+)$	6391.4	10	2756.2	$5/2^+$	

$^{41}_{19}K_{22}$-23

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π
9148.1	(3/2,5/2$^+$)	6435.2	18	2712.4	(7/2)$^-$
		6554.2	7.1	2593.38	1/2$^-$,3/2$^-$
		6830.7	5.9	2316.8	5/2$^-$
		7003.7	30	2143.8	5/2$^+$
		7449.4	5.0	1698.00	5/2$^+$
		8166.7	11	980.51	1/2$^+$
		9147.0	13	0	3/2$^+$
9158.3	(1/2$^-$,3/2,5/2)	5928.0	1.7	3229.8	(1/2$^+$,3/2,5/2$^+$)
		6840.9	7.6	2316.8	5/2$^-$
		6990.9	19	2166.73	3/2$^-$
		8176.9	5.7	980.51	1/2$^+$
		9157.2	66	0	3/2$^+$
9163.3		5136.3	6.1	4026.7	
		5301.6	17	3861.3	(1/2,3/2,5/2$^+$)
		5388.6	5.4	3774.3	5/2$^-$,7/2$^-$
		5983.0	8.8	3179.8	3/2$^+$,5/2$^+$
		6406.6	34	2756.2	5/2$^+$
		6722.6	1.0	2440.1	(3/2,5/2$^+$)
		6845.9	2.2	2316.8	5/2$^-$
		6995.9	2.4	2166.73	3/2$^-$
		7018.9	1.7	2143.8	5/2$^+$
		7464.6	3.6	1698.00	5/2$^+$
		7580.4	3.1	1582.10	3/2$^-$
		7602.6	4.6	1559.92	3/2$^+$
		8181.9	2.3	980.51	1/2$^+$
		9162.2	7.8	0	3/2$^+$
9167.7		5427.2	5.1	3740.1	1/2$^-$,3/2$^-$
		5889.3	2.5	3277.9	(1/2,3/2,5/2$^+$)
		6411.0	11	2756.2	5/2$^+$
		6454.8	14	2712.4	(7/2)$^-$
		6727.0	12	2440.1	(3/2,5/2$^+$)
		6850.3	5.0	2316.8	5/2$^-$
		7000.3	2.9	2166.73	3/2$^-$
		7023.3	8.5	2143.8	5/2$^+$
		7469.0	10	1698.00	5/2$^+$
		7574.0	5.2	1592.99	1/2$^+$
		7584.8	10	1582.10	3/2$^-$
		7607.0	7.7	1559.92	3/2$^+$
		9166.6	6.1	0	3/2$^+$
9183.7	(3/2,5/2$^+$)	5322.0	3.6	3861.3	(1/2,3/2,5/2$^+$)
		5947.6	6.6	3235.6	(3/2$^-$,5/2,7/2$^-$)
		6508.8	9.6	2674.3	1/2$^+$
		6743.0	3.7	2440.1	(3/2,5/2$^+$)
9183.7	(3/2,5/2$^+$)	6866.3	4.8	2316.8	5/2$^-$
		7016.3	3.0	2166.73	3/2$^-$
		7485.0	1.5	1698.00	5/2$^+$
		7505.9	1.5	1677.1	7/2$^+$
		7590.0	16	1592.99	1/2$^+$
		7623.0	2.5	1559.92	3/2$^+$
		7889.2	1.4	1293.66	7/2$^-$
		8202.3	4.8	980.51	1/2$^+$
		9182.6	41	0	3/2$^+$
9195.3	(1/2,3/2,5/2$^+$)	5283.2	3.8	3911.7	1/2$^-$,3/2$^-$
		5568.8	3.0	3626.1	
		6147.8	12	3047.0	1/2$^-$,3/2$^-$
		7027.9	8.4	2166.73	3/2$^-$
		7601.6	3.6	1592.99	1/2$^+$
		7634.6	8.2	1559.92	3/2$^+$
		8213.9	42	980.51	1/2$^+$
		9194.2	19	0	3/2$^+$
9200.2	(3/2,5/2)$^+$	5288.1	1.3	3911.7	1/2$^-$,3/2$^-$
		5573.7	2.9	3626.1	
		5585.0	2.3	3614.8	
		5921.8	3.3	3277.9	(1/2,3/2,5/2$^+$)
		6487.2	6.4	2712.4	(7/2)$^-$
		6525.3	4.6	2674.3	1/2$^+$
		6759.5	13	2440.1	(3/2,5/2$^+$)
		6882.8	2.6	2316.8	5/2$^-$
		7032.8	3.7	2166.73	3/2$^-$
		7055.7	2.6	2143.8	5/2$^+$
		7501.5	1.7	1698.00	5/2$^+$
		7522.4	4.5	1677.1	7/2$^+$
		7606.5	17	1592.99	1/2$^+$
		7639.5	26	1559.92	3/2$^+$
		9199.1	8.1	0	3/2$^+$
9202.8	(1/2$^+$,3/2,5/2$^+$)	5576.3	2.1	3626.1	
		6446.1	4.2	2756.2	5/2$^+$
		6489.8	5.0	2712.4	(7/2)$^-$
		6527.9	5.4	2674.3	1/2$^+$
		7035.4	0.9	2166.73	3/2$^-$
		7058.3	1.4	2143.8	5/2$^+$
		7504.1	6.2	1698.00	5/2$^+$
		7609.1	30	1592.99	1/2$^+$
		8221.4	41	980.51	1/2$^+$
		9201.7	3.8	0	3/2$^+$
9209.0		7041.6	25	2166.73	3/2$^-$

$^{41}_{19}K_{22}$-24

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π
9209.0		7615.3	11	1592.99	$1/2^+$
		7626.1	13	1582.10	$3/2^-$
		7648.3	31	1559.92	$3/2^+$
		9207.9	20	0	$3/2^+$
9219.6	$(3/2,5/2^+)$	4257.1	5.2	4962.3	(1/2,3/2,5/2)
		5593.1	3.0	3626.1	
		6039.3	1.9	3179.8	$3/2^+,5/2^+$
		6172.1	1.3	3047.0	$1/2^-,3/2^-$
		6462.9	1.0	2756.2	$5/2^+$
		6902.2	1.8	2316.8	$5/2^-$
		7075.1	9.4	2143.8	$5/2^+$
		7520.9	8.4	1698.00	$5/2^+$
		7636.7	28	1582.10	$3/2^-$
		8238.2	17	980.51	$1/2^+$
		9218.5	23	0	$3/2^+$
9226.4	$(1/2,3/2,5/2,7/2^-)$	4480.9	3.2	4745.2	$(5/2^+)$
		5314.3	5.4	3911.7	$1/2^-,3/2^-$
		5364.7	1.6	3861.3	$(1/2,3/2,5/2^+)$
		5599.9	5.7	3626.1	
		5611.2	6.9	3614.8	
		5948.0	2.2	3277.9	$(1/2,3/2,5/2^+)$
		5996.1	2.1	3229.8	$(1/2^+,3/2,5/2^+)$
		6178.9	1.6	3047.0	$1/2^-,3/2^-$
		6632.4	6.3	2593.38	$1/2^-,3/2^-$
		6785.7	7.4	2440.1	$(3/2,5/2^+)$
		7059.0	8.6	2166.73	$3/2^-$
		7527.7	2.7	1698.00	$5/2^+$
		7632.6	3.1	1592.99	$1/2^+$
		7643.5	11	1582.10	$3/2^-$
		7665.7	11	1559.92	$3/2^+$
		8245.0	8.2	980.51	$1/2^+$
		9225.3	13	0	$3/2^+$
9232.0	$(3/2,5/2^+)$	5370.3	1.4	3861.3	$(1/2,3/2,5/2^+)$
		5491.5	4.7	3740.1	$1/2^-,3/2^-$
		5605.5	2.7	3626.1	
		5781.5	1.6	3450.1	$5/2^-,7/2^-$
		5953.6	1.8	3277.9	$(1/2,3/2,5/2^+)$
		6001.7	3.4	3229.8	$(1/2^+,3/2,5/2^+)$
		6051.7	3.4	3179.8	$3/2^+,5/2^+$
		6184.5	0.9	3047.0	$1/2^-,3/2^-$
		6519.0	4.6	2712.4	$(7/2)^-$
		6557.1	3.1	2674.3	$1/2^+$
		6791.3	12	2440.1	$(3/2,5/2^+)$
9232.0	$(3/2,5/2^+)$	6914.6	2.3	2316.8	$5/2^-$
		7087.5	3.4	2143.8	$5/2^+$
		7533.3	1.1	1698.00	$5/2^+$
		7638.2	1.8	1592.99	$1/2^+$
		7649.1	20	1582.10	$3/2^-$
		7671.3	5.4	1559.92	$3/2^+$
		8250.6	5.4	980.51	$1/2^+$
		9230.9	21	0	$3/2^+$
9262.5	$(1/2^+,3/2,5/2^+)$	5400.8	7.2	3861.3	$(1/2,3/2,5/2^+)$
		6032.2	5.7	3229.8	$(1/2^+,3/2,5/2^+)$
		6505.7	6.0	2756.2	$5/2^+$
		6668.5	4.7	2593.38	$1/2^-,3/2^-$
		7563.8	4.7	1698.00	$5/2^+$
		7668.7	18	1592.99	$1/2^+$
		7679.6	12	1582.10	$3/2^-$
		7701.8	6.7	1559.92	$3/2^+$
		8281.1	15	980.51	$1/2^+$
		9261.4	20	0	$3/2^+$
9270.7	$(3/2,5/2^+)$	6513.9	3.4	2756.2	$5/2^+$
		6557.7	13	2712.4	$(7/2)^-$
		6595.8	4.7	2674.3	$1/2^+$
		6676.7	2.9	2593.38	$1/2^-,3/2^-$
		6953.3	14	2316.8	$5/2^-$
		7103.3	21	2166.73	$3/2^-$
		7571.9	9.1	1698.00	$5/2^+$
		7676.9	3.7	1592.99	$1/2^+$
		7687.8	2.9	1582.10	$3/2^-$
		7710.0	1.3	1559.92	$3/2^+$
		8289.3	8.0	980.51	$1/2^+$
		9269.6	16	0	$3/2^+$
9281.0	$(3/2^-,5/2^+)$	5419.3	9.8	3861.3	$(1/2,3/2,5/2^+)$
		6524.2	6.0	2756.2	$5/2^+$
		6568.0	5.5	2712.4	$(7/2)^-$
		6606.1	9.8	2674.3	$1/2^+$
		6840.3	4.1	2440.1	$(3/2,5/2^+)$
		6963.6	11	2316.8	$5/2^-$
		7113.6	11	2166.73	$3/2^-$
		7582.2	7.6	1698.00	$5/2^+$
		7720.3	20	1559.92	$3/2^+$
		7986.5	3.6	1293.66	$7/2^-$
		8299.6	4.6	980.51	$1/2^+$
		9279.9	7.0	0	$3/2^+$
9284.7	$(3/2,5/2^+)$	6527.9	3.7	2756.2	$5/2^+$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
9284.7	(3/2,5/2$^+$)	6571.7	5.6	2712.4	(7/2)$^-$	
		6609.8	4.1	2674.3	1/2$^+$	
		6967.3	2.4	2316.8	5/2$^-$	
		7140.2	4.1	2143.8	5/2$^+$	
		7585.9	1.2	1698.00	5/2$^+$	
		7606.8	2.3	1677.1	7/2$^+$	
		7701.8	7.6	1582.10	3/2$^-$	
		8303.3	25	980.51	1/2$^+$	
		9283.6	44	0	3/2$^+$	
9290.7	(1/2$^+$,3/2,5/2$^+$)	5429.0	3.0	3861.3	(1/2,3/2,5/2$^+$)	
		5711.1	3.4	3579.2		
		6243.2	4.8	3047.0	1/2$^-$,3/2$^-$	
		6533.9	1.0	2756.2	5/2$^+$	
		6577.7	4.7	2712.4	(7/2)$^-$	
		6615.8	2.5	2674.3	1/2$^+$	
		6696.7	3.6	2593.38	1/2$^-$,3/2$^-$	
		6850.0	3.6	2440.1	(3/2,5/2$^+$)	
		7123.3	2.6	2166.73	3/2$^-$	
		7146.2	2.5	2143.8	5/2$^+$	
		7696.9	25	1592.99	1/2$^+$	
		7730.0	12	1559.92	3/2$^+$	
		8309.3	3.3	980.51	1/2$^+$	
		9289.6	28	0	3/2$^+$	
9361.0	5/2$^+$	5910.4		3450.1	5/2$^-$,7/2$^-$	E_γ: from 1971Ko32.
		6147.3	2.6	3213.2	5/2$^-$	
		6313.5	2.2	3047.0	1/2$^-$,3/2$^-$	
		6648.0	8.1	2712.4	(7/2)$^-$	
		6686.1	4.6	2674.3	1/2$^+$	
		6767.0	2.2	2593.38	1/2$^-$,3/2$^-$	
		7193.6	3.4	2166.73	3/2$^-$	
		7683.1	6.0	1677.1	7/2$^+$	
		7778.1	11	1582.10	3/2$^-$	
		8066.5	13	1293.66	7/2$^-$	
		8379.6	19	980.51	1/2$^+$	
		9359.9	28	0	3/2$^+$	
9374.2	3/2$^-$	4700[e]	6[e]	4674		
		5612.4[e]	15[e]	3761.54		
		5885.3[e]	22[e]	3488.5	(5/2)$^+$	1971Ko32 show the most intense transition to 3450 level, not to the 3488 level as in 1971Pi12.
		5924[@]		3450.1	5/2$^-$,7/2$^-$	Γ_γ=2.3 eV *5* (1971Ko32).
		6194.0[e]	8[e]	3179.8	3/2$^+$,5/2$^+$	
		6661.4[e]	8[e]	2712.4	(7/2)$^-$	
		6780.4[e]	3[e]	2593.38	1/2$^-$,3/2$^-$	

$^{41}_{19}K_{22}$-26

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

γ(^{41}K) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	δ	Comments
9374.2	3/2$^-$	6933.7[e f]	<3[e]	2440.1	(3/2,5/2$^+$)			
		7056.9[e]	3[e]	2316.8	5/2$^-$			
		7229.9[e]	4[e]	2143.8	5/2$^+$			
		7791.5[e]	5[e]	1582.10	3/2$^-$			
		7813.7[e]	8[e]	1559.92	3/2$^+$			
		8079.8[e f]	<2[e]	1293.66	7/2$^-$			
		8393.0[e]	7[e]	980.51	1/2$^+$			
		9373.1[e]	11[e]	0	3/2$^+$			
9602	3/2$^-$	6152[c]	3[d]	3450.1	5/2$^-$,7/2$^-$			
		6422[c]	6[d]	3179.8	3/2$^+$,5/2$^+$			
		6460[c]	7[d]	3141.3	(7/2$^-$),5/2$^-$			
		6846[c]	1[d]	2756.2	5/2$^+$			
		6890[c]	3[d]	2712.4	(7/2)$^-$			
		6892[c]	3[d]	2710.3	3/2$^+$,5/2$^+$			
		7162[c]	8[d]	2440.1	(3/2,5/2$^+$)			
		7286[c]	3[d]	2316.8	5/2$^-$			
		7435[c]	5[d]	2166.73	3/2$^-$			
		7458[c]	9[d]	2143.8	5/2$^+$			
		7903[c]	4[d]	1698.00	5/2$^+$			
		8009[c]	2[d]	1592.99	1/2$^+$			
		8020[c]	3[d]	1582.10	3/2$^-$			
		8042[c]	5[d]	1559.92	3/2$^+$	E1(+M2)	0.4 *4*	Mult.,δ: A_2=−0.4 *7*, A_4=0.3 *8* (2008Vo03).
		8308[c]	10[d]	1293.66	7/2$^-$	E2+M3	0.52 *24*	Mult.,δ: A_2=0.16 *26*, A_4=0.15 *30* (2008Vo03).
		8622[c]	3[d]	980.51	1/2$^+$	E1+M2	0.58 *15*	Mult.,δ: A_2=−0.72 *23*, A_4=0.6 *3* (2008Vo03).
		9602[c]	25[d]	0	3/2$^+$	E1+M2	0.14 *12*	Mult.,δ: A_2=0.08 *13*, A_4=0.03 *12* (2008Vo03).
9605	3/2$^-$	6155[c]	5[d]	3450.1	5/2$^-$,7/2$^-$			
		6392[c]	1[d]	3213.2	5/2$^-$			
		6557[c]	2[d]	3047.0	1/2$^-$,3/2$^-$			
		7289[c]	10[d]	2316.8	5/2$^-$			
		7438[c]	14[d]	2166.73	3/2$^-$			
		7461[c]	7[d]	2143.8	5/2$^+$			
		8012[c]	3[d]	1592.99	1/2$^+$			
		8023[c]	4[d]	1582.10	3/2$^-$			
		8045[c]	4[d]	1559.92	3/2$^+$	E1+M2	−2.4 *22*	Mult.,δ: A_2=0.4 *5*, A_4=−0.6 *5* (2008Vo03).
		8625[c]	12[d]	980.51	1/2$^+$	E1+M2	0.58 *15*	Mult.,δ: A_2=−0.72 *23*, A_4=0.6 *3* (2008Vo03).

$^{41}_{19}K_{22}$-27

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03 (continued)

$\gamma(^{41}K)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	δ	Comments
9605	3/2$^-$	9605[c]	38[d]	0	3/2$^+$			
9622	3/2$^-$	5971[c]	12[d]	3651	(5/2,7/2$^-$)			
		7182[c]	11[d]	2440.1	(3/2,5/2$^+$)			
		7923[c]	15[d]	1698.00	5/2$^+$			
		8040[c]	8[d]	1582.10	3/2$^-$			
		8062[c]	22[d]	1559.92	3/2$^+$			
		8328[c]	8[d]	1293.66	7/2$^-$			
		8642[c]	9[d]	980.51	1/2$^+$			
		9622[c]	15[d]	0	3/2$^+$			
9632	3/2$^-$	7465[c]	46[d]	2166.73	3/2$^-$			Γ_γ=4.6 eV *7* (1971Ko32).
		7933[c]	14[d]	1698.00	5/2$^+$			
		8039[c]	4[d]	1592.99	1/2$^+$			
		8050[c]	3[d]	1582.10	3/2$^-$			
		8072[c]	4[d]	1559.92	3/2$^+$			
		8337[c]	3[d]	1293.66	7/2$^-$			Γ_γ=2.3 eV *5* (1971Ko32).
		8652[c]	15[d]	980.51	1/2$^+$	E1+M2	1.0 *6*	Mult.,δ: A_2=−0.5 *20*, A_4=0.24 *24* (2008Vo03).
		9632[c]	11[d]	0	3/2$^+$	E1+M2	−0.18 *23*	Γ_γ=6.4 eV *7* (1971Ko32). Mult.,δ: A_2=0.04 *20*, A_4=−0.3 *3* (2008Vo03).
9658	3/2$^-$	6948[c]	4.6[d]	2710.3	3/2$^+$,5/2$^+$			
		7342[c]	8.3[d]	2316.8	5/2$^-$			
		7514[c]	3.0[d]	2143.8	5/2$^+$			
		8076[c]	11.2[d]	1582.10	3/2$^-$	E1(+M2)	−5 *10*	Mult.,δ: A_2=0.2 *4*, A_4=0.0 *5* (2008Vo03).
		8098[c]	3.8[d]	1559.92	3/2$^+$			
		8678[c]	52.6[d]	980.51	1/2$^+$	E1(+M2)	0.0 *5*	Mult.,δ: A_2=−0.2 *8*, A_4=−0.1 *9* (2008Vo03).
		9658[c]	16.5[d]	0	3/2$^+$	E1+M2	−2.0 *12*	Mult.,δ: A_2=0.36 *19*, A_4=0.16 *19* (2008Vo03).

[†] Level-energy differences with recoil removed. The level schemes are essentially from 1989Sm06 for resonances and 1986Sm13 for bound levels.
[‡] From 1986Sm13 and 1989Sm06.
[#] Branching ratios from 1118 resonance are reported by 1964Ar13 and 1971Pi12. There are four resonances reported by 1967Bl26 close to 1118 keV: 1117.3, 1117.9, 1118.7 and 1119.8 keV. The branchings reported by 1964Ar13 and 1971Pi12 are arbitrarily assigned (evaluators) to 1118.7 resonance since it is the most intense of all the four. But in principle the γ rays could be associated with any or all of the four resonances.
[@] Transition from 1971Ko32.
[&] Transition from level scheme of 1986Bi03.
[a] Large branch reported in (p,p′γ) (1986St10) is thought to be from background.

$^{41}_{19}K_{22}$-28

$\gamma(^{41}K)$ (continued)

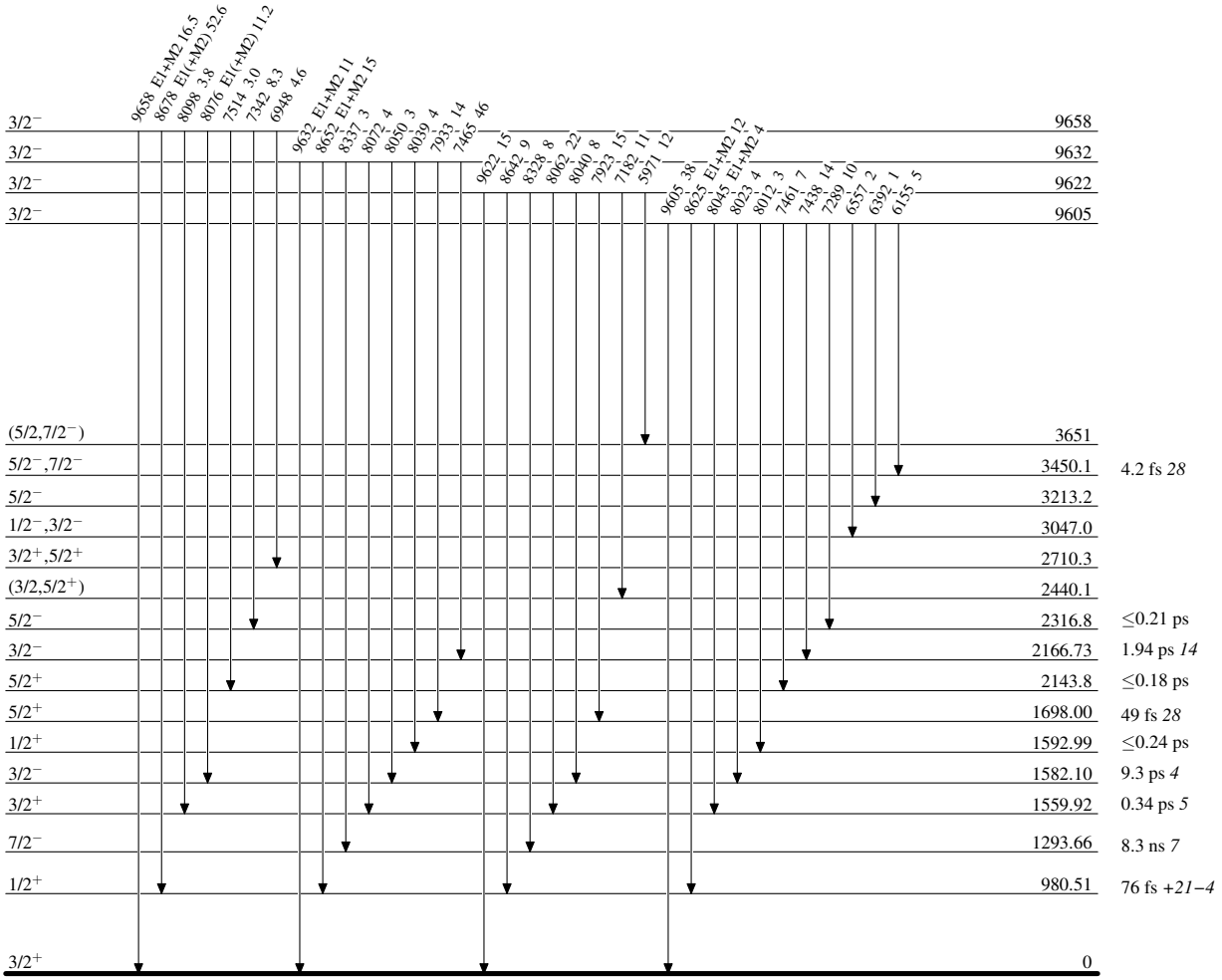
[b] Large branch in (n,γ), but either very weak or absent in (p,γ).
[c] From 2008Vo03. Eγ is from level energy difference.
[d] From 2008Vo03.
[e] From 1971Pi12.
[f] Placement of transition in the level scheme is uncertain.

$^{41}_{19}K_{22}$-29

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme

Intensities: % photon branching from each level



$^{41}_{19}K_{22}$

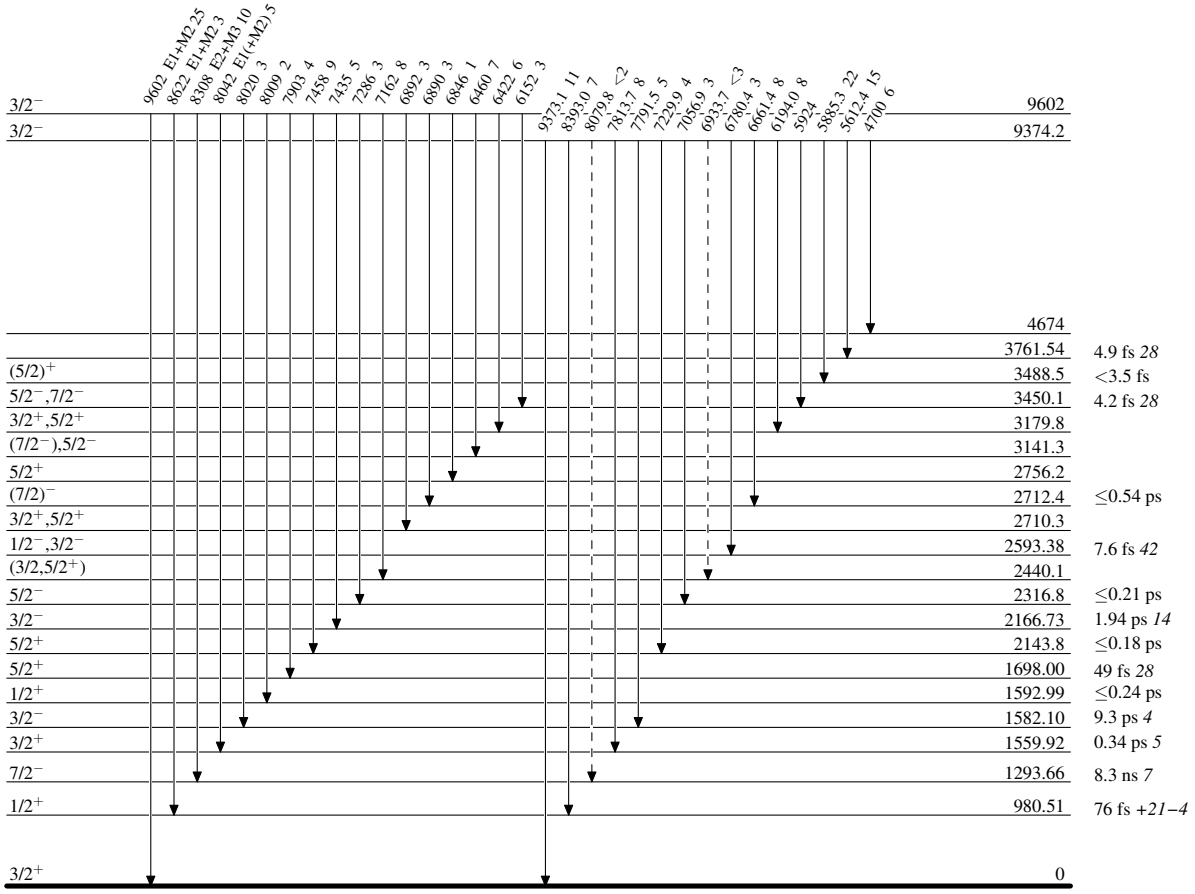
^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)

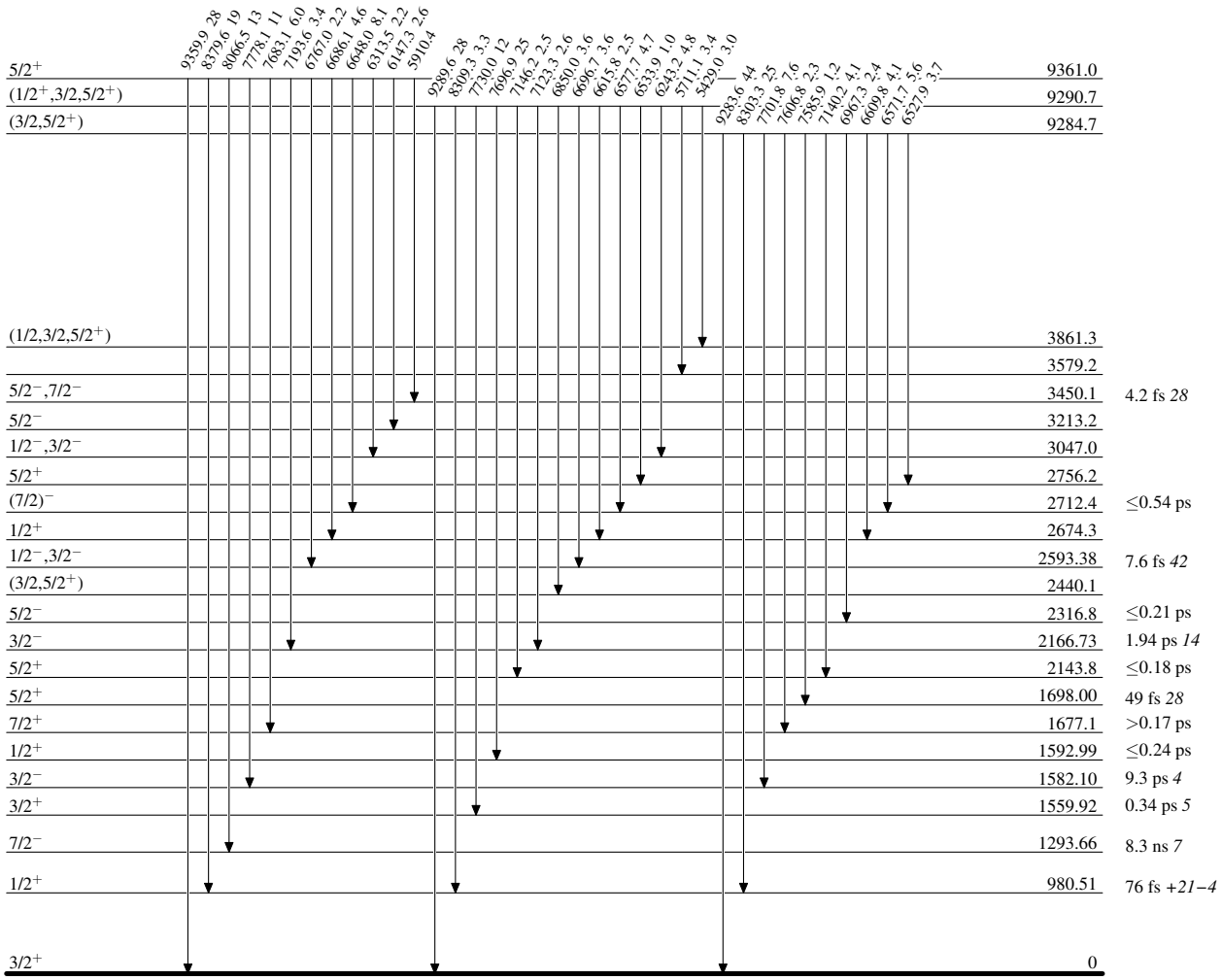


$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme (continued)

Intensities: % photon branching from each level

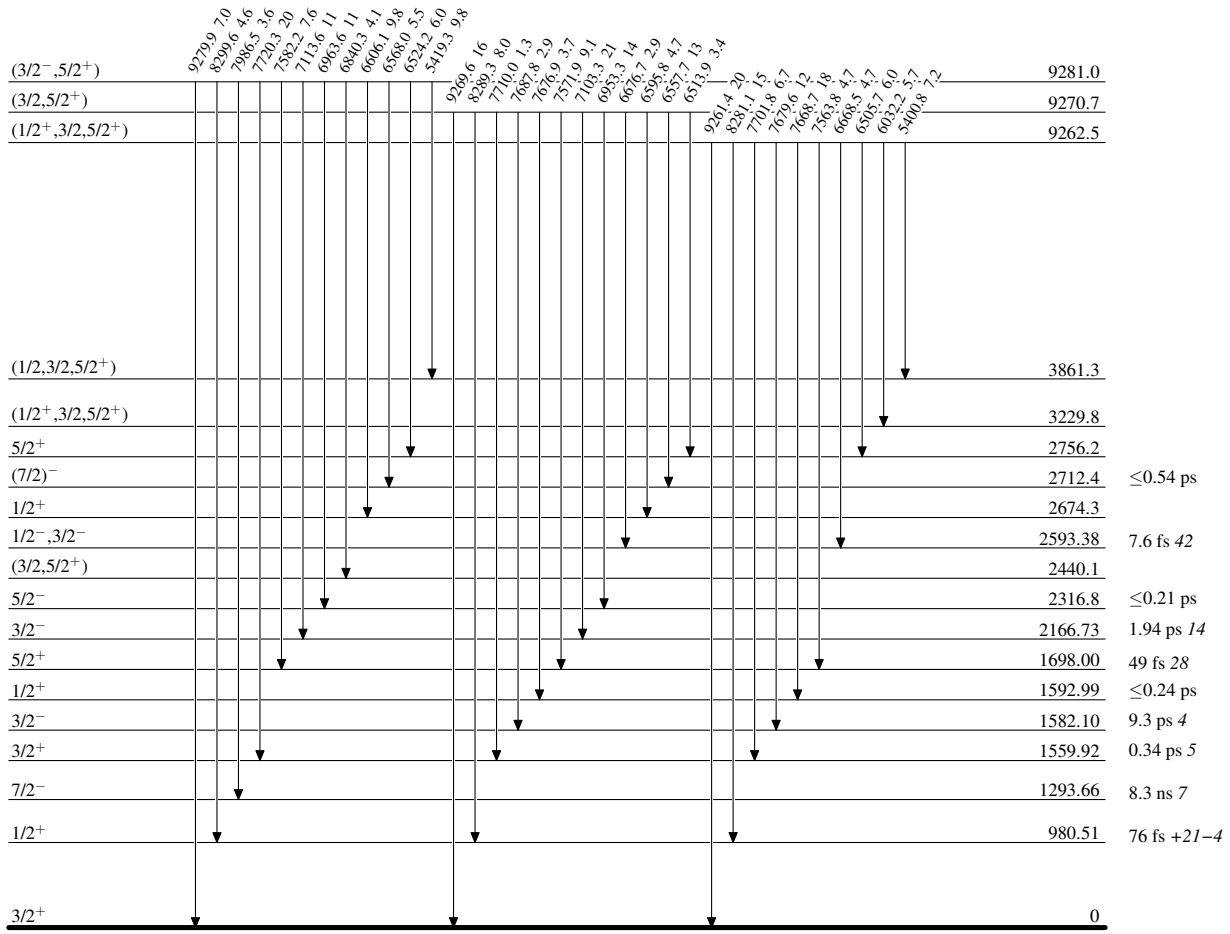


$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme (continued)

Intensities: % photon branching from each level

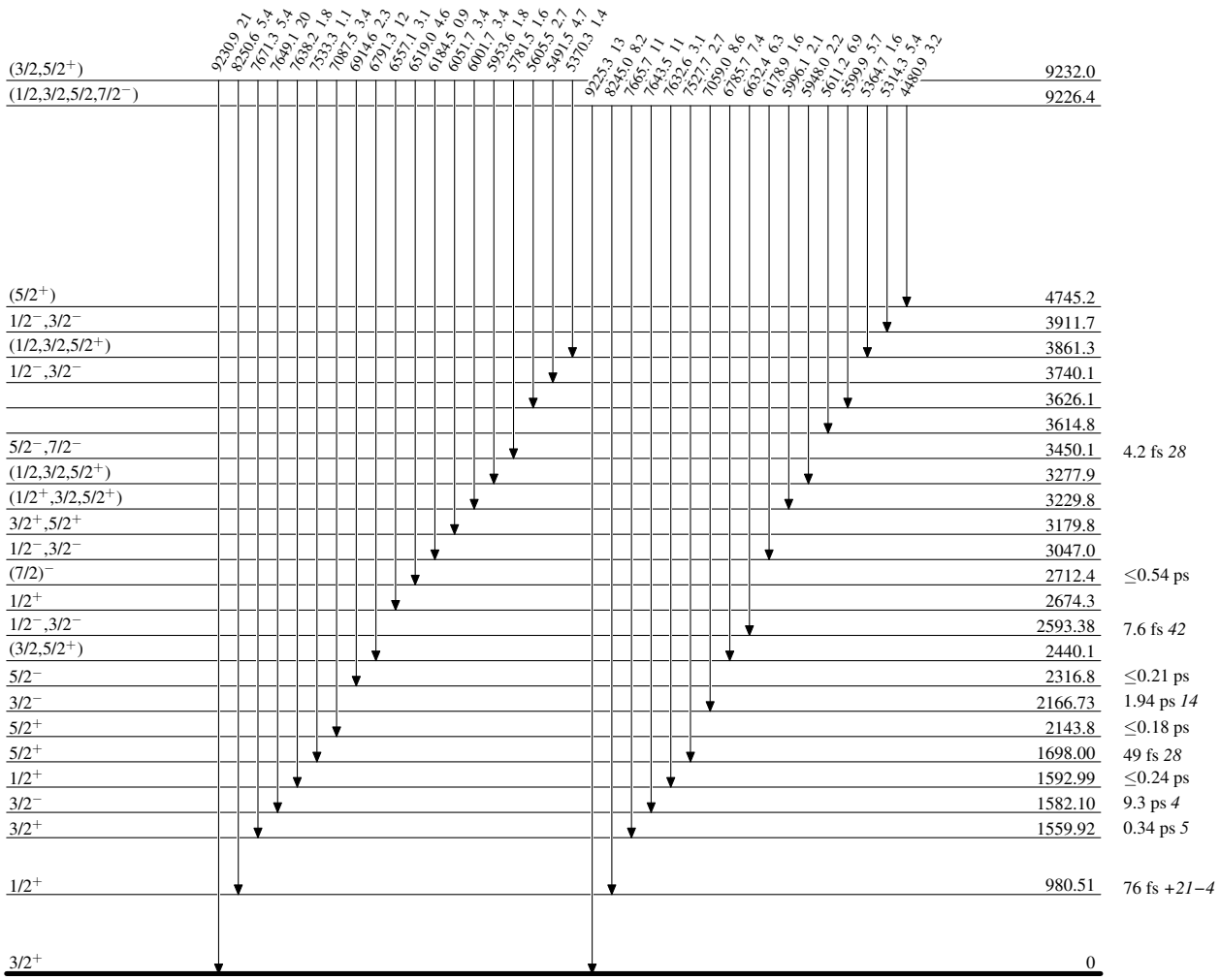


$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme (continued)

Intensities: % photon branching from each level

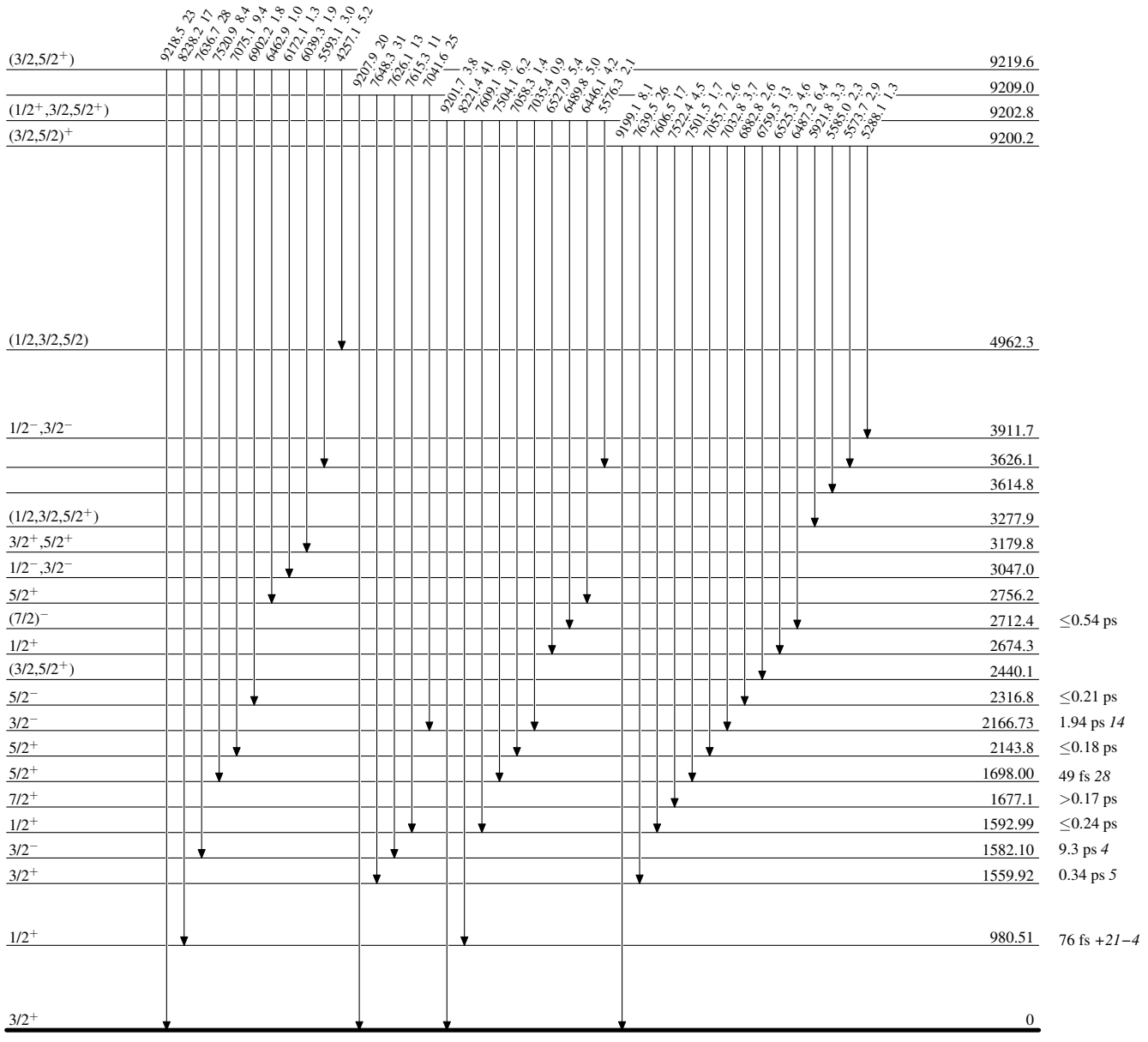


$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme (continued)

Intensities: % photon branching from each level

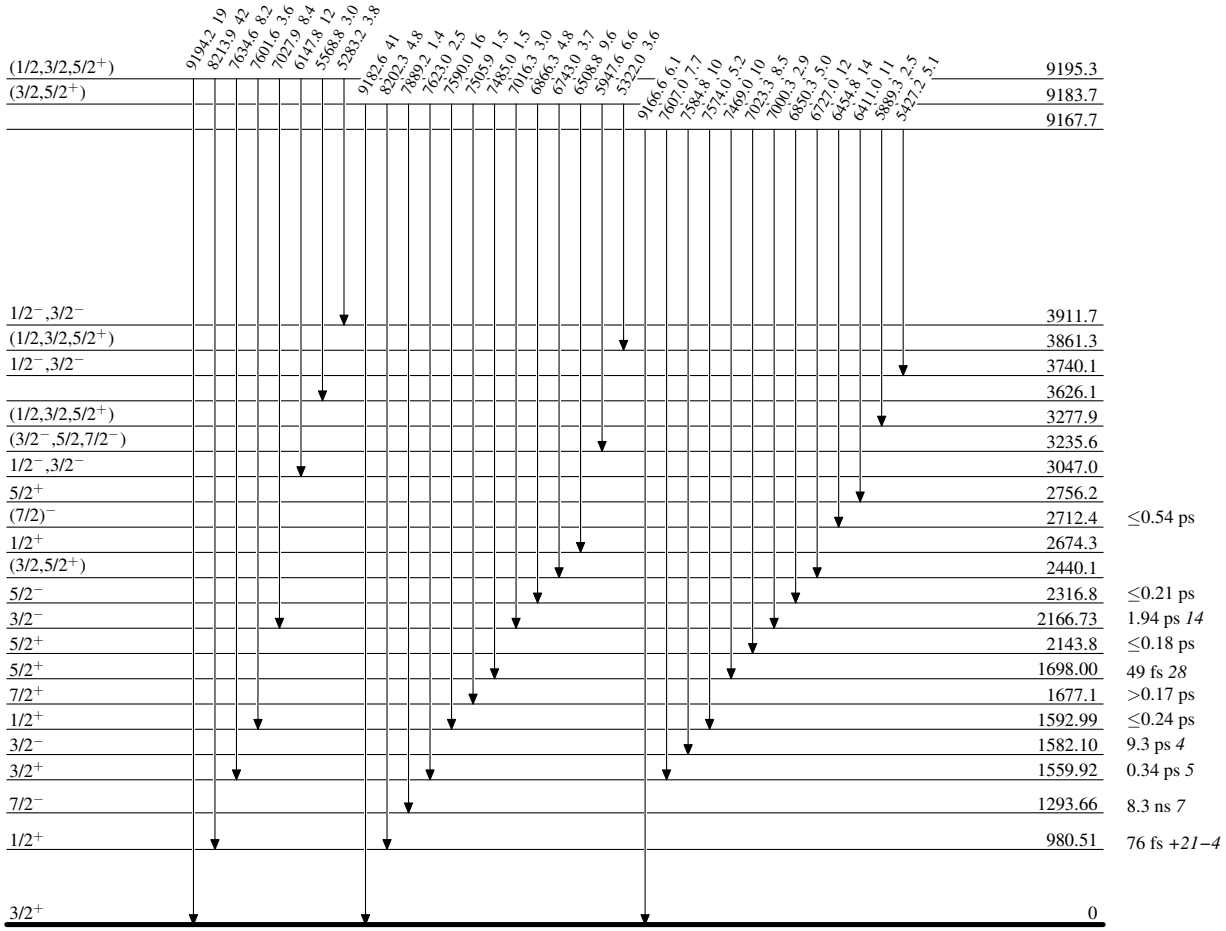


$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme (continued)

Intensities: % photon branching from each level

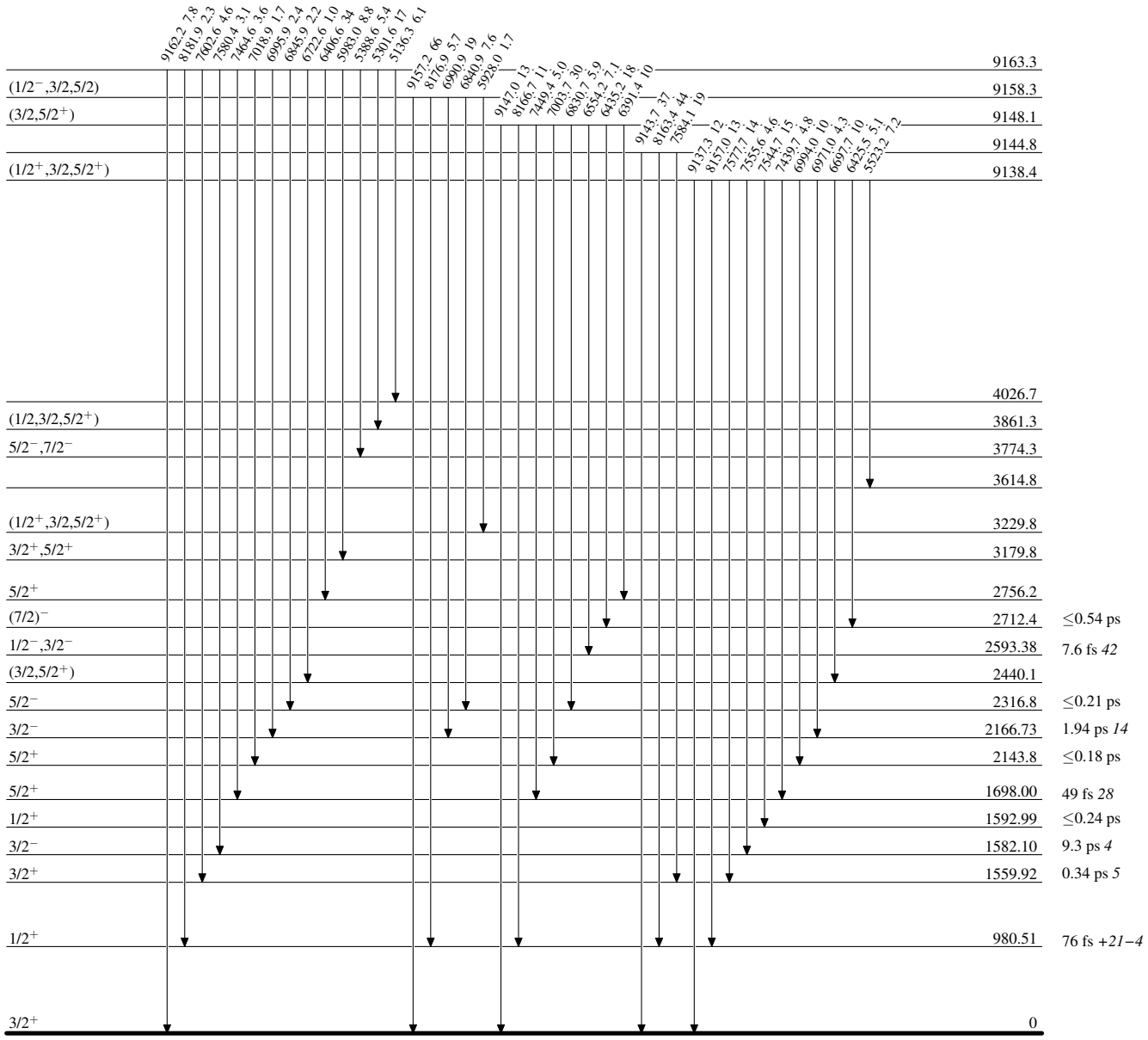


$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme (continued)

Intensities: % photon branching from each level

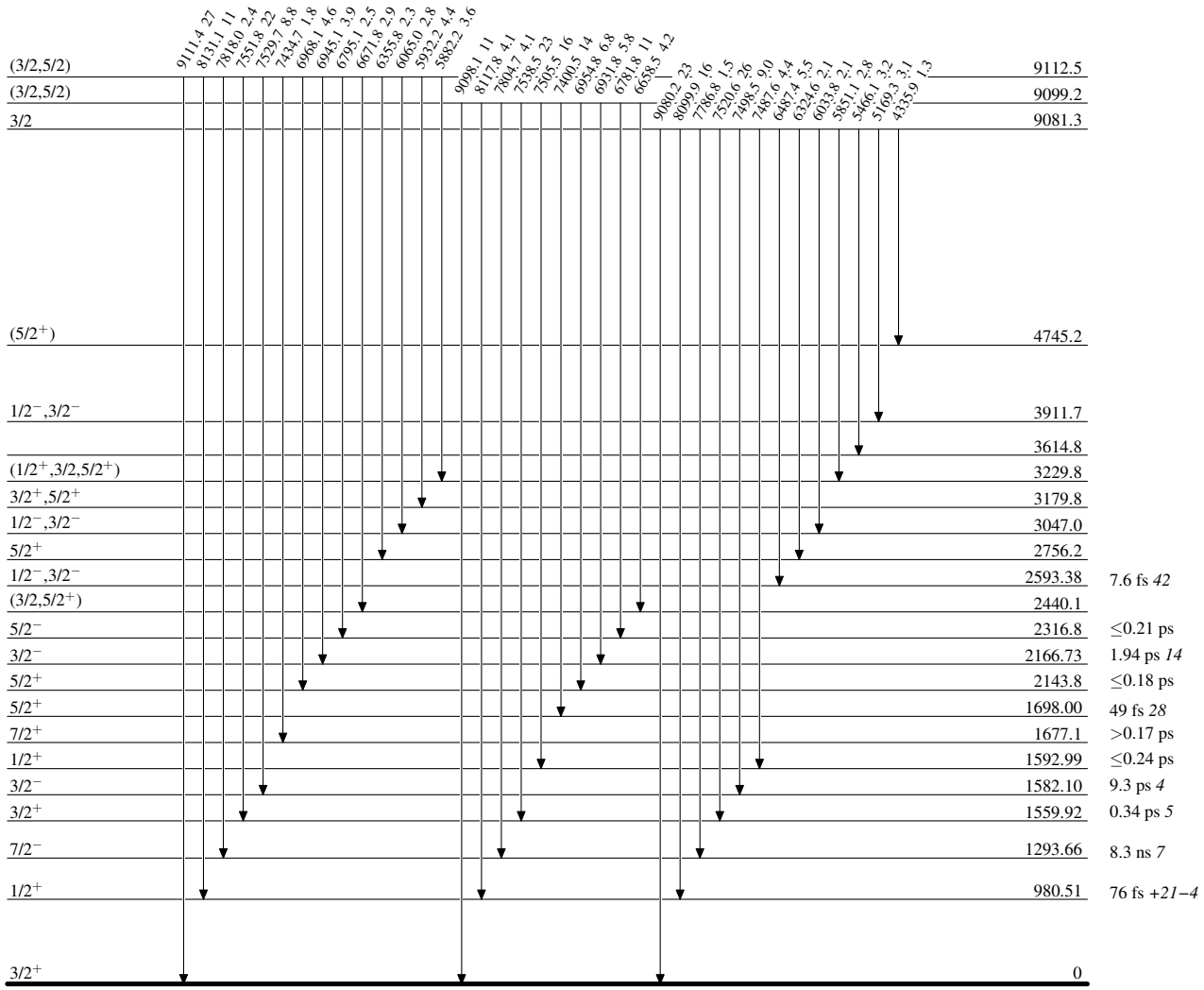


$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme (continued)

Intensities: % photon branching from each level

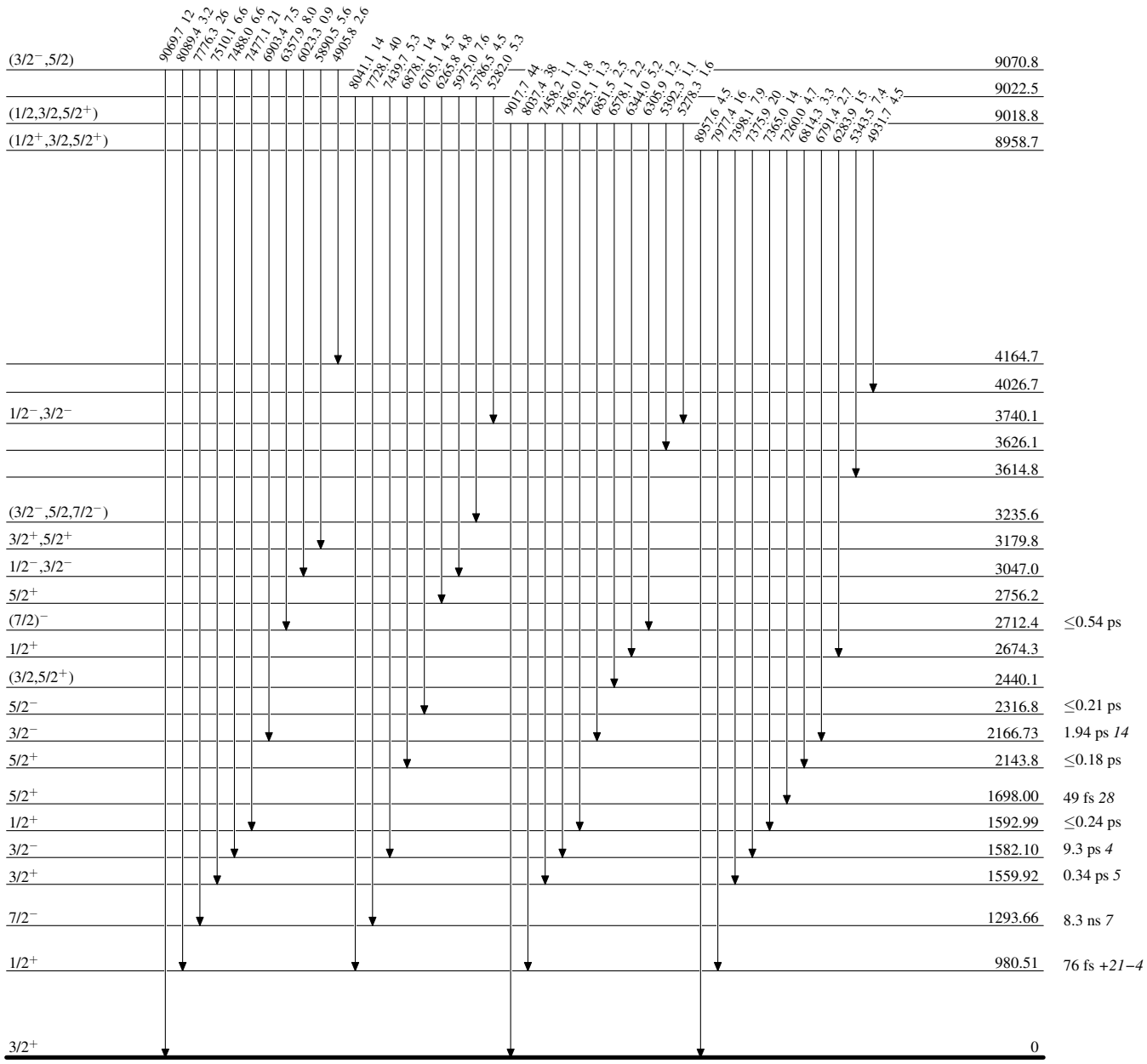


$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme (continued)

Intensities: % photon branching from each level



$^{41}_{19}K_{22}$

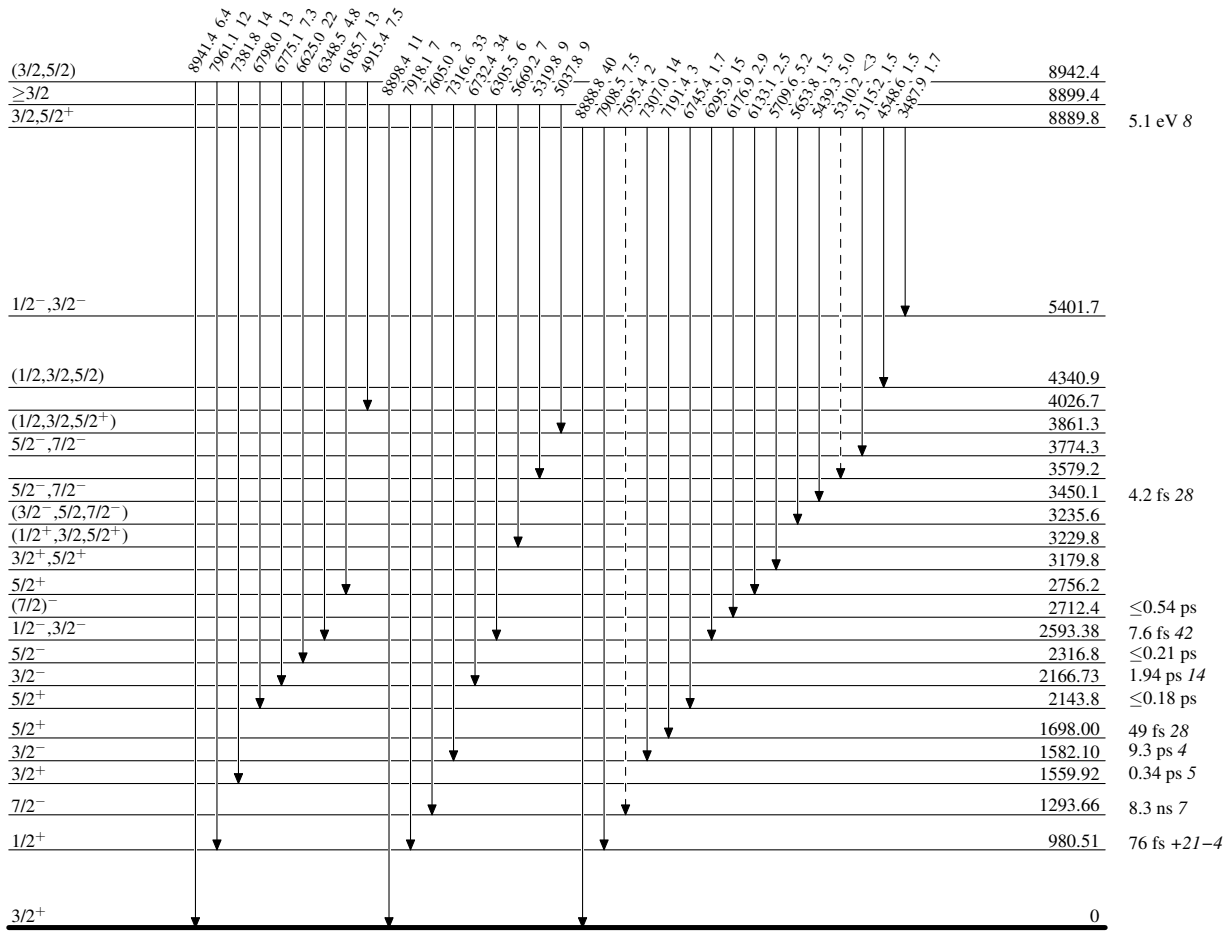
^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)



$^{41}_{19}K_{22}$

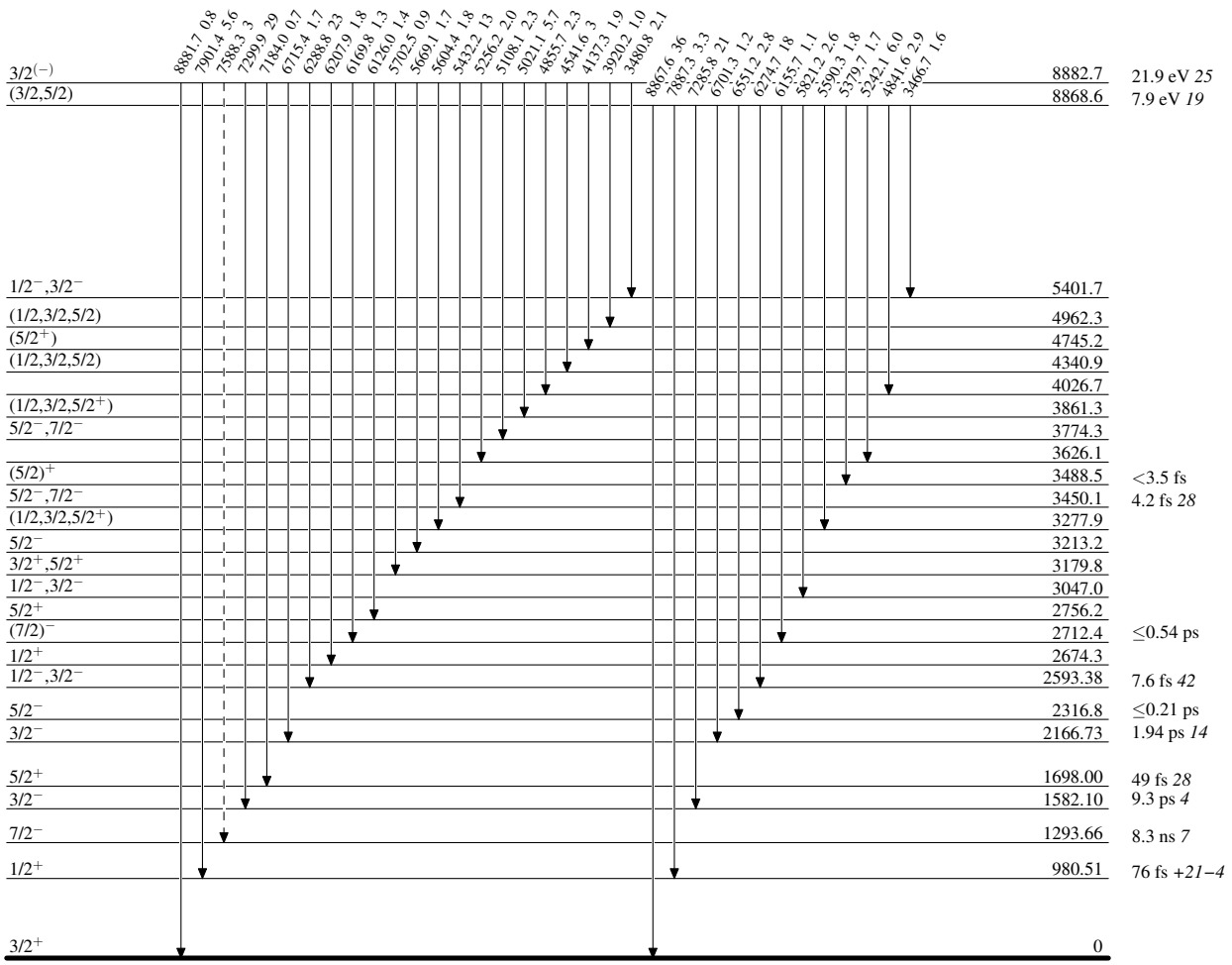
^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)

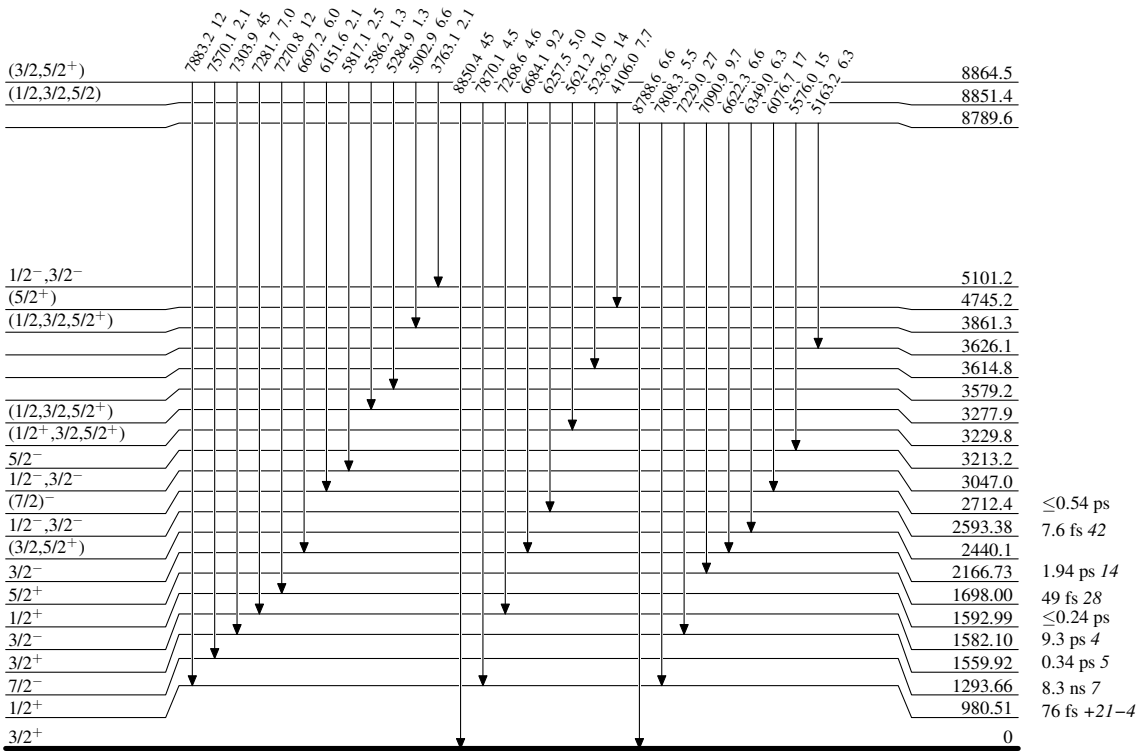


$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Level Scheme (continued)

Intensities: % photon branching from each level



$^{41}_{19}K_{22}$

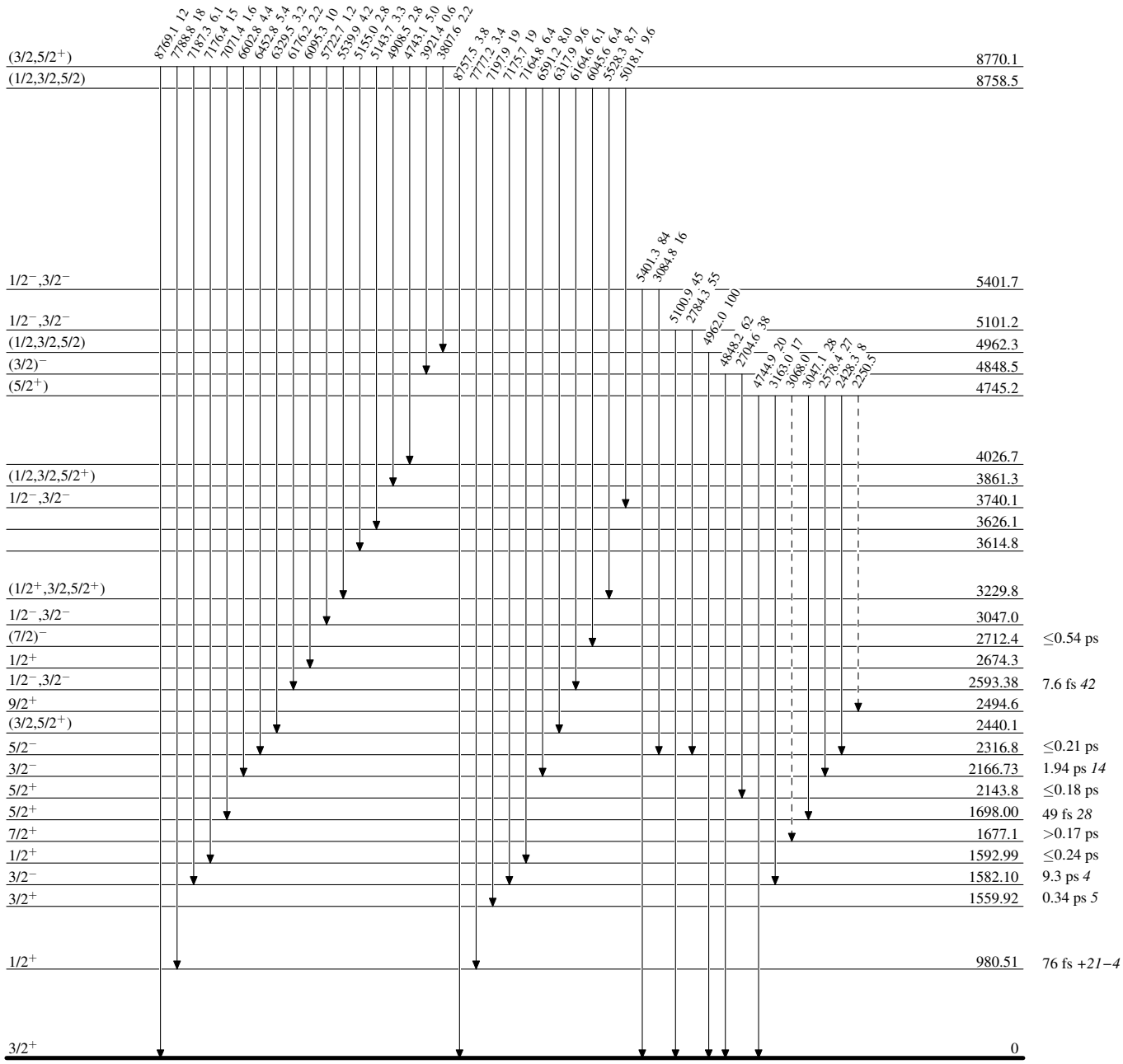
^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)



$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

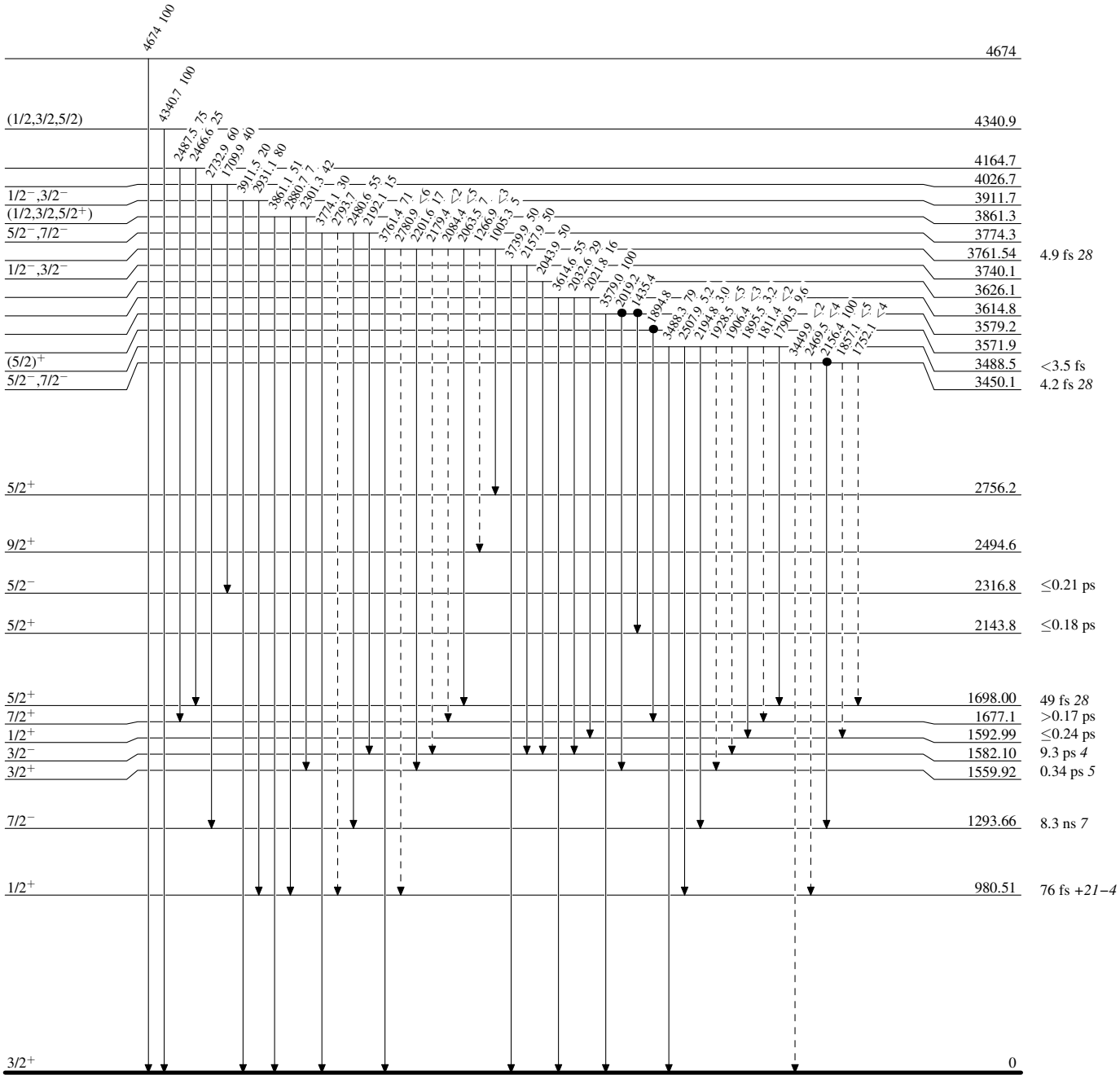
Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)

Coincidence



$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

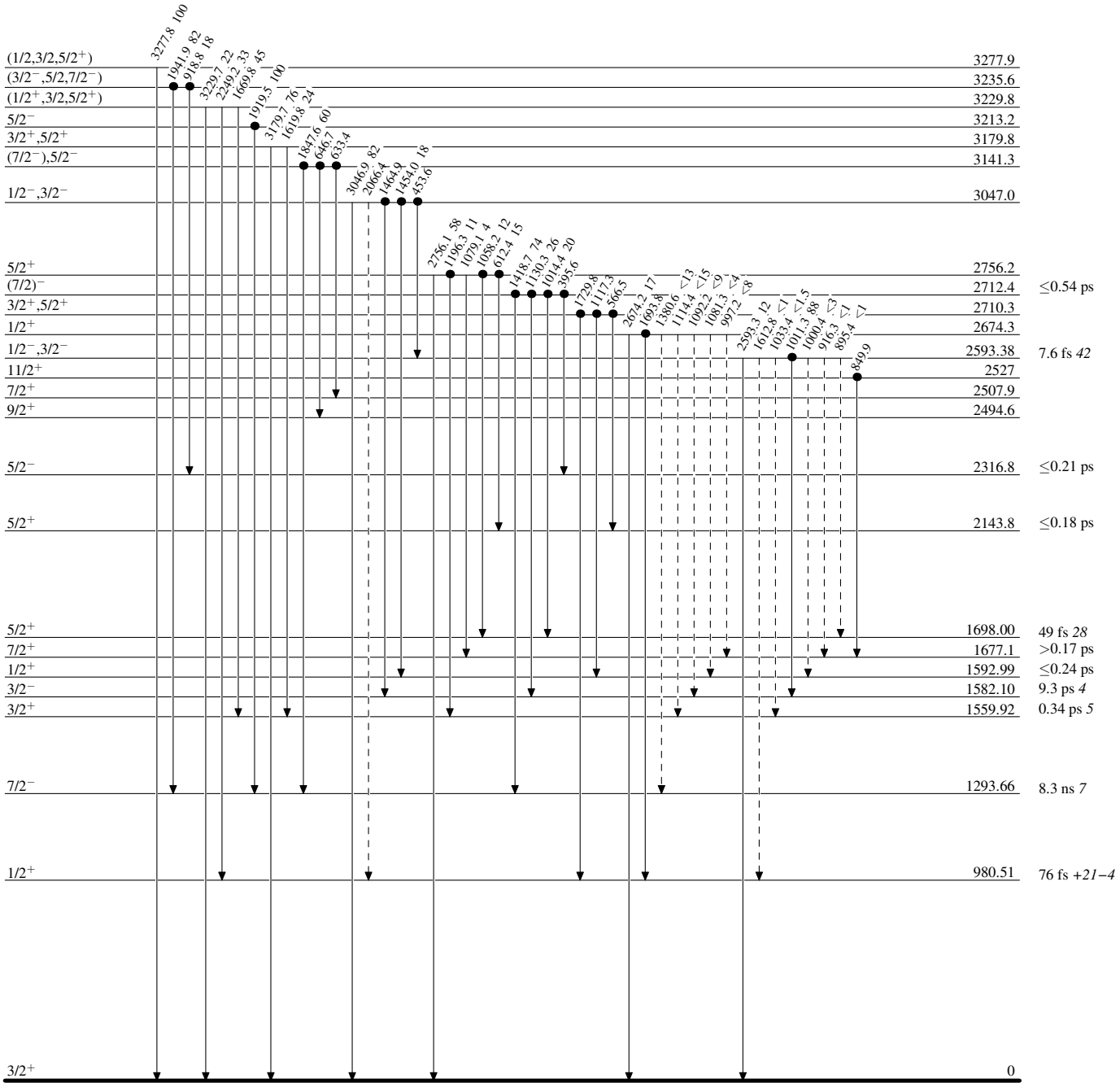
Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)

Coincidence



$^{41}_{19}K_{22}$

^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

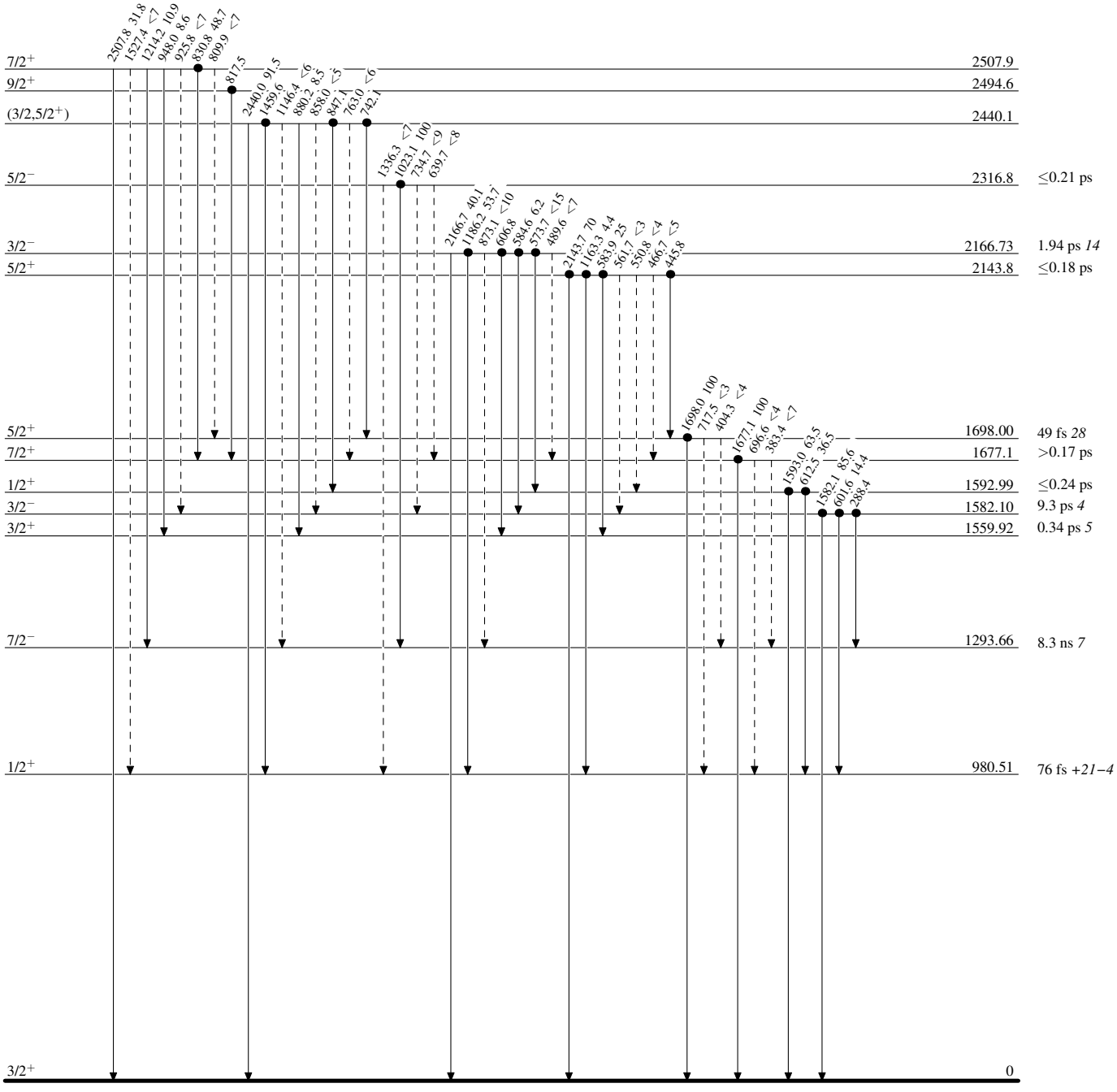
Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)

Coincidence



$^{41}_{19}K_{22}$

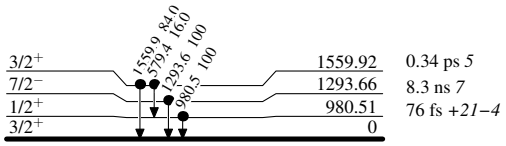
^{40}Ar(p,γ) 1989Sm06,1986Sm13,1986Bi03

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

● Coincidence



$^{41}_{19}K_{22}$