^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 152, 1 (2018)	30-Sep-2017

Also includes (p,p),(p,n),(p,α):resonances.

1974Al05: (p,γ),(p,n) E=0.64-1.785 MeV protons were produced from the Utrecht 3-MV Van de Graaff. Targets were $BaCl_2$ (96% enriched in ^{37}Cl) on sodium-free tantalum backings. γ rays were detected with a Na(Tl) detector and four Ge(Li) detectors; neutrons were detected with a proportional counter filled with BF_3. Measured γ-ray yields, Eγ, Iγ, neutron yields. Deduced levels, resonances strengths, γ-ray branching ratios. Also (p,p),(p,α) E=1.165-1.700 MeV proton beams. Measured proton and α yields with surface-barrier silicon detectors. Deduced levels, resonance strengths.

1968En01: (p,γ) E=1.0-1.8 MeV proton beams were produced from the Utrecht 3-MV Van de Graaff. Targets were $BaCl_2$ (99% enriched). γ rays were detected with a Ge(Li) detector. Measured γ-ray yields, Eγ, Iγ, $\gamma(\theta)$, γ(pol), Doppler-shift attenuation. Deduced levels, J, π, $T_{1/2}$, resonance strengths, γ-ray multipolarities, branching and mixing ratios. Comparisons with available data.

1988Wa34: (p,γ) E=0.59-1.73 MeV proton beams were produced from the 2.5-MV Van de Graaff at Potchefstroom University for C.H.E. Targets were $BaCl_2$ (96% enriched). γ rays were detected with a Ge(Li) detector. Measured γ-ray yields, Eγ, Iγ, $\gamma(\theta)$. Deduced levels, J, π, resonance strengths, γ-ray branching ratios.

1974Al06 (same authors and lab as 1974Al05): (p,γ),(p,α) E=0.9-1.7 MeV proton beams. Measured $\alpha(\theta)$, $\gamma(\theta)$, Doppler-shift attenuation. Deduced levels, J, π, $T_{1/2}$, transition strengths. Comparisons with available data and shell-model calculations.

1967Bo03: (p,α) E=0.85-1.95 MeV protons were produced from the Utrecht 3-MV Van de Graaff. Target was $BaCl_2$ (99% enriched in ^{37}Cl). Reaction products were detected with surface-barrier silicon counters. Measured α yields, $\sigma(E_\alpha,\theta)$. Deduced levels, J, π, resonance strengths, formation and population parameters.

1984La24: (p,γ) E=0.94-1.73 MeV protons were produced from the 2.5-MV Van de Graaff at the University of Helsinki. Targets were 12 μg/cm^2 dose of ^{37}Cl ions implanted into Ta backings. γ rays were detected with a Ge(Li) detector. Measured Eγ, Iγ, Doppler-shift attenuation. Deduced $T_{1/2}$, γ-ray branching ratios and transition strengths. Comparisons with available data.

1966Er07: (p,γ) E=1.088 and 1.092 MeV. Measured Eγ, Iγ, p$\gamma(\theta)$, $\gamma\gamma(\theta)$, γ(pol). Deduced levels, J, π, mixing ratios.

1966Ka18: (p,α) E=1.342-3.016 MeV. Measured α yields. Deduced resonance strengths, widths. Report 40 resonances.

1961He19: (p,γ) E=0.2-0.7 MeV. Measured γ yields.

1961Ma28: (p,n) E=1.65-2.9 MeV. Measured neutron yields. Observed 91 resonances. No tabulated data for those resonances are reported.

1952Sc09: (p,n) E=1.64-2.51 MeV. Measured neutron yields. Report over 100 resonances.

Others:

(p,γ) resonances: 1979Pa16 (also 1980PaZP thesis), 1970Ke10, 1967Aw01, 1966En04, 1965Si15, 1964Si25, 1961Ku01, 1957To32, 1951Br95.

(p,p) resonances: 1968Bo07.

(p,n) resonances: 1951Br95.

(p,α) resonances: 1966Bo24, 1951Br95.

^{38}Ar Levels

Resonance strength $S_{px}=(2J+1)\Gamma_p\Gamma_x/\Gamma$, where x=$\gamma$, n or α. Experimental values are given in comments with $S_{p\gamma}$ and S_{pn} from 1974Al05 and $S_{p\alpha}$ from 1967Bo03, unless otherwise noted.

The correspondence of (p,α) and (p,γ) resonances is taken from 1974Al05 based on simultaneous yield measurements, except where noted.

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$ or Γ[#]	Comments
0	0^+		
2167.60 *6*	2^+	≥0.7[&] ps	E(level): weighted average of 2167.58 *6* (1974Al05) and 2167.68 *14* (1968En01).
3377.36 *23*	0^+	>0.35[&] ps	E(level): weighted average of 3377.45 *12* (1974Al05) and 3376.8 *3* (1968En01).
3810.09 *11*	3^-	74 fs *28*	E(level): weighted average of 3810.12 *11* (1974Al05) and 3810.0 *2* (1968En01). J$^\pi$: from $\gamma(\theta$,pol) in 1966Er07. $T_{1/2}$: weighted average of 76 fs *59* (1968En01) and 73 fs *28* (1984La24).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$ or Γ[#]	Comments
3936.61 *18*	2^+	33 fs *10*	E(level): weighted average of 3936.65 *18* (1974Al05) and 3936.3 *5* (1968En01). T$_{1/2}$: weighted average of 73 fs *21* (1968En01) and 31 fs *5* (1984La24).
4479.92 *14*	4^-	>0.42[&] ps	E(level): weighted average of 4479.98 *13* (1974Al05) and 4479.6 *3* (1968En01). J$^\pi$: from $\gamma(\theta$,pol) in 1966Er07.
4565.5 *2*	2^+	38 fs *11*	E(level): weighted average of 4565.4 *2* (1974Al05) and 4565.9 *5* (1968En01). T$_{1/2}$: weighted average of 33 fs *11* (1968En01) and 47 fs *14* (1984La24).
4585.2 *4*	5^-	>0.35[&] ps	E(level): weighted average of 4585.3 *4* (1974Al05) and 4585.0 *5* (1968En01). J$^\pi$: from $\gamma(\theta$,pol) in 1966Er07.
4710.3 *2*	0^+	>0.42 ps	E(level): weighted average of 4710.3 *2* (1974Al05) and 4709.6 *7* (1968En01). T$_{1/2}$: from 1974Al06.
4876.87 *14*	3^-	31 fs *6*	E(level): weighted average of 4876.84 *14* (1974Al05) and 4877.0 *3* (1968En01). J$^\pi$: from $\gamma(\theta$,pol) in 1968En01. T$_{1/2}$: weighted average of 32 fs *6* (1984La24), 31 fs *11* (1974Al06) and 27 fs *11* (1968En01).
5084.3 *5*	$(2)^-$	35 fs *10*	E(level): weighted average of 5084.4 *5* (1974Al05) and 5083.2 *17* (1968En01).
5157.3 *2*	2^+	22 fs *7*	E(level): from 1974Al05. T$_{1/2}$: weighted average of 28 fs *6* (1984La24) and 15 fs *7* (1974Al06).
5349.5 *2*	4^+	0.15 ps *5*	E(level): from 1974Al05. T$_{1/2}$: weighted average of 0.14 ps *6* (1984La24) and 0.15 ps *5* (1974Al06).
5513.38 *16*	3^-	0.19 ps *7*	E(level): weighted average of 5513.43 *16* (1974Al05) and 5512.9 *5* (1968En01). J$^\pi$: from Adopted Levels. J=3 from $\gamma(\theta)$ in 1968En01. T$_{1/2}$: weighted average of 0.18 ps *7* (1984La24) and 0.22 ps *11* (1974Al06). Other: >0.21 ps from 1968En01.
5552.21 *18*	$1^+,2^+$	11 fs *6*	E(level): from 1974Al05. T$_{1/2}$: weighted average of 13 fs *6* (1984La24) and 8 fs *6* (1974Al06).
5594.6 *6*	2^+	60 fs *18*	E(level): weighted average of 5594.7 *3* (1974Al05) and 5591 *2* (1968En01). T$_{1/2}$: weighted average of 49 fs *18* (1984La24) and 76 fs *21* (1974Al06).
5658.1 *5*	5^-	28 fs *4*	E(level): weighted average of 5658.3 *5* (1974Al05) and 5657.7 *6* (1968En01). J$^\pi$: from $\gamma(\theta$,pol) in 1966Er07. T$_{1/2}$: weighted average of 27 fs *4* (1984La24), 28 fs *8* (1974Al06) and 44 fs *15* (1968En01).
5733.9 *5*	1^-	<4 fs	E(level): from 1974Al05. T$_{1/2}$: from 1974Al06.
5824.9 *2*	3^-	0.24 ps *+62−14*	E(level): weighted average of 5824.9 *2* (1974Al05) and 5825.3 *20* (1968En01). T$_{1/2}$: from 1974Al06. Other: >125 fs (1984La24).
5857.5 *2*	$(2)^-$	15.2 fs *35*	E(level): weighted average of 5857.5 *2* (1974Al05) and 5853 *3* (1968En01). T$_{1/2}$: other: <11 fs (1974Al06).
5974.8 *2*	$(0^+$ to $3^-)$	>1.7 ps	E(level): weighted average of 5974.8 *2* (1974Al05) and 5975 *2* (1968En01). T$_{1/2}$: from 1974Al06.
6041.8 *3*	$(3^-,4^+)$	58 fs *12*	E(level): from 1974Al05. T$_{1/2}$: weighted average of 57 fs *12* (1984La24) and 62 fs *28* (1974Al06).
6053.1 *3*	(4^+)	71 fs *14*	E(level): from 1974Al05. T$_{1/2}$: weighted average of 72 fs *14* (1984La24) and 69 fs *28* (1974Al06).
6210.0 *10*	4^-	74 fs *23*	E(level): unweighted average of 6211.0 *2* (1974Al05) and 6209.0 *7* (1968En01). J$^\pi$: from $\gamma(\theta)$in 1968En01 and RUL. T$_{1/2}$: weighted average of 95 fs *30* (1984La24) and 62 fs *23* from 1968En01.
6213.8 *3*	(2^+)	5.4 fs *31*	T$_{1/2}$: weighted average of 5.0 fs *31* and 6.9 fs *56* (1974Al06).
6249.9 *3*	2^+	>111 fs	E(level): from 1974Al05.
6276.1 *4*	4^+	81 fs *35*	E(level): weighted average of 6276.1 *4* (1974Al05) and 6269.4 *20* (1968En01).
6338.6 *5*	$1^-,2^-,3^-$	<13 fs	E(level): from 1974Al05. T$_{1/2}$: from 1974Al06.
6353.5 *4*	1^-	3.6 fs *14*	E(level): weighted average of 6353.5 *4* (1974Al05) and 6352.5 *20* (1968En01). T$_{1/2}$: weighted average of 3.5 fs *14* (1984La24) and 4.2 fs *28* (1974Al06).
6408	6^+		
6476.6 *19*	$(0^+$ to $3^-)$	>0.17 ps	
6485.4 *7*	$(1^-$ to $4^+)$	29 fs *22*	E(level): weighted average of 6485.4 *7* (1974Al05) and 6485.5 *20* (1968En01).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
6495.8 *3*	(2⁻,3⁻)	10 fs *4*		E(level): from 1974Al05. $T_{1/2}$: weighted average of 11 fs *4* (1984La24) and 7.6 fs *69* (1974Al06).
6574.3 *5*	1⁻	<3.5 fs		$T_{1/2}$: from 1974Al06.
6601.18 *19*	4⁻	12.7 fs *21*		E(level): weighted average of 6601.17 *19* (1974Al05) and 6601.2 *4* (1968En01). Jπ: from γ(θ) and RUL (1968En01). $T_{1/2}$: weighted average of 12.5 fs *21* (1984La24), 11 fs *7* (1974Al06), and 17 fs *7* (1968En01).
6621.6 *4*	(1⁻,2,3⁻)	36 fs *12*		$T_{1/2}$: weighted average of 36 fs *12* (1984La24) and 35 fs *28* (1974Al06).
6673.5 *6*	(5)⁻	13.7 fs *35*		E(level): weighted average of 6673.5 *6* (1974Al05) and 6673.3 *15* (1968En01). $T_{1/2}$: weighted average of 12.5 fs *35* (1984La24) and 16 fs *5* (1974Al06).
6681.6 *5*	(0,1,2)	53 fs *19*		$T_{1/2}$: other: >28 fs (1974Al06).
6772.7 *5*	1⁻	<2.8 fs		E(level): from 1974Al05. $T_{1/2}$: from 1974Al06.
6824.0 *15*		17 fs *6*		E(level): from 1974Al05, unresolved doublet at 6824 (1974Al05,1988Wa34). $T_{1/2}$: other: <14 fs (1974Al06).
6824.1 *15*				E(level): unresolved doublet at 6824 (1974Al05,1988Wa34).
6853 *2*	(1,2⁺)			
6869.9 *5*				
6903.8 *9*	2⁻,3⁻	6.2 fs *21*		E(level): weighted average of 6904.0 *9* (1974Al05) and 6902 *3* (1968En01).
6947.9 *9*	(2⁺)			
7045 *2*	(3⁻,4⁺)			
7100.8 *5*		12 fs *5*		$T_{1/2}$: other: <2.8 fs (1974Al06).
7192.2 *5*				
7233.0 *17*				
7238 *2*	(2⁺)			
7288	6⁺	21 fs *10*		E(level): from 1984La24.
7289.6 *8*	(3⁻,4⁺)	>55 fs		
7329 *2*				
7350				E(level): from 1984La24.
7365 *2*				
7370 *2*				
7431.0 *3*		13 fs *8*		$T_{1/2}$: other: <13 fs (1974Al06).
7451 *2*				
7500				E(level): from 1984La24.
7538 *2*		43 fs *24*		
7681 *2*		10 fs *6*		
7893.4 *13*	(1⁺,2⁺)	<3.5 fs		
7992 *2*				
8800		<3.5 fs		E(level): from 1984La24.
9000				E(level): from 1984La24.
10631.3 *20*			400 *2*	Resonance listed in table 38.17 in 1990En08 (taken from Utrecht annual report of 1978 and a priv comm.; c.f. ref Va78h in 1990En08). Additional information 1.
10657.9 *5*		<300 eV	426.9 *5*	Γ: from 1961He19. E(p)(lab): from 1961He19.
10732.4 *6*		<300 eV	503.5 *6*	Γ: from 1961He19. E(p)(lab): from 1961He19.
10815.6 *9*			588.9 *9*	E(p)=588.9 and 589.5 form an unresolved doublet. E(p)(lab): from 1988Wa34.
10816.2 *9*			589.5 *9*	γ′s from resonance 589.5 are not resolved. E(p)(lab): from 1988Wa34.
10827.0 *6*	(2)		600.6 *6*	$S(_{p\gamma})$=0.14 *5* (1988Wa34) relative to the value 1.00 eV *13* (1979Pa16)

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				for E(p)=846.
				E(p)(lab): weighted average of 600.5 *6* (1961He19) and 600.7 *9* (1988Wa34).
10850.1 *7*	(2$^-$,3$^-$)		624.4 *7*	$S_{p\gamma}$=0.15 *5* (1988Wa34) relative to the value 1.00 eV *13* (1979Pa16)for Ep=846.
				E(p)(lab): weighted average of 624.2 *7* (1961He19) and 624.7 9 (1988Wa34).
10873.8 *5*	(0 to 4$^+$)		648.7 *5*	$S_{p\gamma}$=0.06 eV *2* (1974Al05).
10914.5 *5*	(1$^-$,2,3$^-$)	<0.2 keV	690.5 *5*	E(p)(lab): weighted average of 690.1 *7* (1961He19) and 690.7 *5* (1974Al05).
				$S_{p\gamma}$=0.23 eV *5* (1974Al05); Γ=140 eV *30* (1961He19).
10945.0 *5*	(1$^-$,2$^+$)	<0.2 keV	721.9 *5*	$S_{p\gamma}$=0.51 eV *11* (1974Al05).
10947.4 *5*	(2$^-$,3,4$^+$)	<0.2 keV	724.3 *5*	$S_{p\gamma}$=0.49 eV *11* (1974Al05).
				E(p)(lab): weighted average of 724.0 *15* (1961Ku01) and 724.3 *5* (1974Al05).
10962.3 *6*		<0.2 keV	739.6 *6*	$S_{p\gamma}$=0.07 eV *3*.
10963.3 *6*	2		740.7 *6*	J$^\pi$: spin from (p,$\gamma(\theta)$) (1988Wa34).
				E(p)(lab): weighted average of 740.7 *15* (1961Ku01) and 740.7 *6* (1974Al06).
				$S_{p\gamma}$=0.70 eV *14*.
10967.5 *6*			745.0 *6*	$S_{p\gamma}$=0.04 eV *2*.
10979.9 *6*			757.7 *6*	Probable doublet (1974Al05).
				$S_{p\gamma}$=0.10 eV *5*.
10988.2 *7*	(2)	<0.2 keV	766.2 *7*	J$^\pi$: from Adopted Levels. (2,3) from (p,$\gamma(\theta)$), (2,3$^-$) with 1967Bo03 combined (1988Wa34).
				E(p)(lab): weighted average of 766.1 *15* (1961Ku01) and 766.2 *7* (1974Al05).
				$S_{p\gamma}$=2.4 eV *5*.
11000.2 *6*			778.6 *6*	$S_{p\gamma}$=0.17 eV *5*.
11005.9 *6*			784.4 *6*	$S_{p\gamma}$=0.07 eV *3*.
11014.6 *6*			793.4 *6*	$S_{p\gamma}$=0.07 eV *3*.
11023.2 *6*			802.2 *6*	$S_{p\gamma}$=0.06 eV *4*.
11044.2 *6*		<0.2 keV	823.8 *6*	$S_{p\gamma}$=0.9 eV *2*.
				E(p)(lab): weighted average of 824.1 *15* (1961Ku01) and 823.5 *6* (1974Al06).
11045.2 *6*		<0.2 keV	824.8 *6*	$S_{p\gamma}$=0.19 eV *8*.
11051.5 *6*		<0.2 keV	831.3 *6*	$S_{p\gamma}$=0.09 eV *3*.
11053.7 *6*	(2,3$^-$)	<0.2 keV	833.5 *6*	J$^\pi$: from 1988Wa34 based on γ decays.
				$S_{p\gamma}$=0.13 eV *4*.
11059.2 *6*	(1,2$^+$)	<0.2 keV	839.2 *6*	$S_{p\gamma}$=0.10 eV *3*.
11066.1 *6*	(1$^+$,2,3$^-$)	<0.2 keV	846.3 *6*	$S_{p\gamma}$=1.06 eV *15* (1974Al05), 1.04 eV *15* (1968En01), 1.00 eV *13* (1979Pa16).
				E(p)(lab): weighted average of 846.8 *15* (1961Ku01) and 846.2 *6* (1974Al06).
11083.7 *6*			864.3 *6*	$S_{p\gamma}$=0.10 eV *4*.
11095.4 *6*			876.4 *6*	E(level): weighted average of 876.0 *11* (1967Bo03) and 876.5 *6* (1974Al05).
				J$^\pi$: π=natural from ^{37}Cl(p,α).
				$S_{p\gamma}\leq$0.07 eV *5* (1974Al05); $S_{p\alpha}$=0.8 eV (1967Bo03).
11096.9 *6*	(1$^-$,2$^+$,3$^-$)	<0.2 keV	877.9 *6*	E(level): weighted average of 877.5 *11* (1967Bo03) and 878.0 *6* (1974Al05).
				J$^\pi$: π=natural from ^{37}Cl(p,α).
				$S_{p\gamma}$=1.3 eV *3* (1974Al05); $S_{p\alpha}$=1.1 eV (1967Bo03).
11099.1 *6*			880.2 *6*	$S_{p\gamma}$=0.27 eV *8* (1974Al05).
				E(p)(lab): weighted average of 879.6 *15* (1961Ku018) and 880.3 *6* (1974Al05).
11106.9 *6*			888.2 *6*	
11107.1 *6*			888.4 *6*	For E(p)=888.2+888.4: $S_{p\gamma}$=0.21 eV *6*.

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
11112.9 *6*		<0.6[@] keV	894.3 *6*	Probable doublet (1974Al05). E(level): weighted average of 893.8 *11* (1967Bo03) and 894.4 *6* (1974Al05). Jπ: π=natural from ^{37}Cl(p,α). $S_{p\gamma}$=0.09 eV; $S_{p\alpha}$=1.5 eV.
11116.9 *6*	3⁻	<0.2 keV	898.4 *6*	Jπ: (p,α(θ)): A_2=+0.820 *8* (1967Bo03). $S_{p\gamma}$=0.41 eV; $S_{p\alpha}$=4.6 eV.
11122.9 *6*	3⁻		904.6 *6*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 904.0 *11* (1967Bo03) and 904.8 *6* (1974Al05). $S_{p\gamma}$=0.06 eV *2*; $S_{p\alpha}$=0.40 eV.
11124.9 *6*		<0.2 keV	906.7 *6*	$S_{p\gamma}$=0.12 eV *3*.
11135.0 *6*			917.0 *6*	$S_{p\gamma}$=0.23 eV *7*.
11136.4 *6*			918.5 *6*	$S_{p\gamma}$=0.19 eV *6*.
11144.4 *6*		<0.2 keV	926.7 *6*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 926.2 *11* (1967Bo03) and 926.8 *6* (1974Al05). $S_{p\gamma}$=0.20 eV *6*; $S_{p\alpha}$=2.6 eV.
11146.0 *6*		<0.6[@] keV	928.3 *6*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 927.7 *11* (1967Bo03) and 928.5 *6* (1974Al05). $S_{p\alpha}$=4.4 eV.
11146.9 *6*	(2,3⁻)		929.3 *6*	E(level): probable doublet in 1974Al05, not reported in 1988Wa34. $S_{p\gamma}$=2.3 eV *5*, not resolved from E(p)=928.5.
11157.6 *7*		<0.6[@] keV	940.3 *7*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 939.8 *12* (1967Bo03) and 940.5 *7* (1974Al05). $S_{p\gamma}$<0.05 eV; $S_{p\alpha}$=0.6 eV.
11161.0 *6*	(2⁻,3,4⁺)	<0.2 keV	943.7 *6*	$S_{p\gamma}$=0.48 eV *10*.
11167.6 *6*	(3⁻)	<0.2 keV	950.5 *6*	$S_{p\gamma}$=1.8 eV *2*.
11173.0 *6*	3⁻	<0.2 keV	956.1 *6*	Jπ: (1,2,3) from γ(θ) in 1988Wa34, 3⁻ from (p,α(θ)): A_2=+0.809 *5* (1967Bo03). E(p)(lab): weighted average of 955.6 *12* (1967Bo03) and 956.2 *6* (1974Al05). $S_{p\gamma}$=1.5 eV *3*; $S_{p\alpha}$=7 eV.
11182.6 *6*		<0.6[@] keV	965.9 *6*	E(p)(lab): weighted average of 965.0 *12* (1967Bo03) and 966.1 *6* (1974Al05). Jπ: π=natural from ^{37}Cl(p,α). $S_{p\gamma}$=0.10 *4* eV; $S_{p\alpha}$=0.8 eV.
11184.8 *6*	(2⁺,3⁻)	<0.2 keV	968.2 *6*	E(p)(lab): 968.0 *12* (1967Bo03), 968.2 *6* (1974Al05). Jπ: (2,3) from (p,γ(θ)) (1988Wa34) and π=natural from ^{37}Cl(p,α). $S_{p\gamma}$=3.6 eV *7*; $S_{p\alpha}$=0.25 eV.
11188.6 *6*		<0.6[@] keV	972.1 *6*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 971.5 *12* (1967Bo03) and 972.2 *6* (1974Al05). $S_{p\gamma}$=0.15 eV *6*; $S_{p\alpha}$=0.25 eV.
11197.6 *6*	(1⁻,2,3⁻)	<0.2 keV	981.3 *6*	Jπ: (1,2,3,4) from (p,γ(θ)) (1988Wa34). $S_{p\gamma}$=2.0 eV *4*.
11200.5 *6*			984.3 *6*	$S_{p\gamma}$=0.15 eV *8*.
11201.9 *6*	1⁻	<0.2 keV	985.8 *6*	Jπ: from (p,α(θ)): A_2=−0.92 *4* (1974Al05). E(p)(lab): weighted average of 985.5 *12* (1967Bo03) and 985.9 *6* (1974Al05). $S_{p\gamma}$=2.6 eV *5*; $S_{p\alpha}$=1.6 eV.
11204.3 *7*			988.2 *7*	Jπ: π=natural from ^{37}Cl(p,α).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				E(p)(lab): weighted average of 987.9 *12* (1967Bo03) and 988.3 *7* (1974Al05).
				$S_{p\gamma}$<0.10 eV; $S_{p\alpha}$=4.8 eV.
11210.4 *7*	(1$^-$,2,3$^-$)	<0.2 keV	994.5 *7*	$S_{p\gamma}$=2.5 eV *5*.
11214.7 *6*	(1$^-$,2$^+$)	<0.2 keV	998.9 *6*	J$^\pi$: from (p,$\alpha(\theta)$): A_2=−0.35 *3* (1967Bo03).
				E(p)(lab): weighted average of 998.4 *12* (1967Bo03) and 999.0 *6* (1974Al05).
				$S_{p\gamma}$=0.50 eV *11*; $S_{p\alpha}$=37 eV.
11216.4 *8*			1000.7 *8*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1000.3 *12* (1967Bo03) and 1000.8 *8* (1974Al05).
				$S_{p\gamma}$<0.04 eV; $S_{p\alpha}$=2.2 eV.
11217.9 *6*		<0.2 keV	1002.2 *6*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				$S_{p\gamma}$=0.15 eV *4*.
11226.0 *6*			1010.5 *6*	$S_{p\gamma}$=0.3 eV *2*.
11227.3 *3*	(1,2,3)	<0.2 keV	1011.9 *2*	J$^\pi$: from (p,$\gamma(\theta)$) (1988Wa34).
				E(p)(lab): used by 1974Al05 as a secondary energy standard.
				$S_{p\gamma}$=2.1 eV *4*.
11233.7 *6*	(2$^+$,3$^-$)	<0.2 keV	1018.4 *6*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1018.1 *20* (1967Bo03) and 1018.4 *6* (1974Al05); not reported in 1988Wa34.
				$S_{p\gamma}$=0.37 eV *9*; $S_{p\alpha}$=0.3 eV.
11244.8 *6*	(3$^+$)	<0.2 keV	1029.8 *6*	$S_{p\gamma}$=2.6 eV *5*.
11259.8 *6*		<0.6[@] keV	1045.2 *6*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1044.6 *12* (1967Bo03) and 1045.3 *6* (1974Al05).
				$S_{p\gamma}$=0.05 eV *3*; $S_{p\alpha}$=1.9 eV.
11262.4 *6*			1047.9 *6*	$S_{p\gamma}$=0.05 eV *3*.
11264.9 *6*		<0.2 keV	1050.5 *6*	$S_{p\gamma}$=0.38 eV *8*.
11268.1 *6*		<0.2 keV	1053.8 *6*	$S_{p\gamma}$=0.13 eV *3*.
11270.0 *6*	(1$^-$,3$^-$)	<0.6[@] keV	1055.7 *6*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.808 *6*, 1$^-$ less likely (1967Bo03).
				E(p)(lab): weighted average of 1055.0 *12* (1967Bo03) and 1055.9 *6* (1974Al05).
				$S_{p\gamma}$=0.3 eV *2*; $S_{p\alpha}$=1.9 eV.
11272.1 *6*		<0.2 keV	1057.9 *6*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				$S_{p\gamma}$=0.56 eV *14*.
11275.5 *6*	(1$^-$,2$^+$)	<0.6[@] keV	1061.4 *6*	E(p)(lab): weighted average of 1060.8 *12* (1967Bo03) and 1061.5 *6* (1974Al05).
				J$^\pi$: (p,$\alpha(\theta)$): A_2=−0.56 *4* (1967Bo03).
				$S_{p\alpha}$=12 eV.
11275.7 *6*		<0.2 keV	1061.6 *6*	E(level): probable doublet in 1974Al05.
				Γ for E(p)=1061.5.
				$S_{p\gamma}$=2.4 eV *5* (with E(p)=1061.5).
11283.9 *6*			1070.0 *6*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1069.5 *12* (1967Bo03) and 1070.1 *6* (1974Al05).
				$S_{p\gamma}$=0.19 eV *7*; $S_{p\alpha}$=0.9 eV.
11285.4 *6*		<0.2 keV	1071.5 *6*	$S_{p\gamma}$=1.7 eV *4*.
11287.2 *6*			1073.4 *6*	$S_{p\gamma}$=0.33 eV *18*.
11289.4 *6*		<0.2 keV	1075.6 *6*	$S_{p\gamma}$=1.8 eV *4*.
11291.5 *6*	(1$^-$,2$^+$)	<0.6[@] keV	1077.8 *6*	J$^\pi$: (p,$\alpha(\theta)$), A_2=+0.17 *3* (1967Bo03).
				E(p)(lab): weighted average of 1077.2 *13* (1967Bo03) and 1077.9 *6* (1974Al05).
				$S_{p\gamma}$<0.08 eV; $S_{p\alpha}$=10 eV.
11292.0 *6*			1078.3 *6*	
11302.4 *5*	5$^-$	<0.2 keV	1089.0 *5*	J$^\pi$: from $\gamma(\theta$,pol) in 1966Er07.

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				E(p)(lab): weighted average of 1089.0 *13* (1967Bo03), 1088.7 *5* (1968En01) and 1089.5 *6* (1974Al06). $S_{p\gamma}$=3.4 eV *7*; $S_{p\alpha}$=0.4 eV *2*; (2J+1)Γ_p<50 eV (1968Bo07); $S_{p\gamma}$=3.5 eV *5* (1968En01).
11306.3 *6*	(1$^-$,2$^+$)	<0.6[@] keV	1093.0 *6*	J$^{\pi}$: (p,$\alpha(\theta)$): A_2=−0.19 *2* (1967Bo03). E(p)(lab): weighted average of 1092.6 *13* (1967Bo03) and 1093.1 *6* (1974Al05). $S_{p\gamma}$=0.10 eV *7*; $S_{p\alpha}$=50 eV; (2J+1)Γ_p<50 eV (1968Bo07).
11307.6 *5*	5$^-$	<0.2 keV	1094.3 *5*	J$^{\pi}$: from $\gamma(\theta$,pol) in 1966Er07. E(p)(lab): weighted average of 1094.0 *5* (1968En01) and 1094.8 *6* (1974Al06). $S_{p\gamma}$=7.0 eV *14* (1974Al05), 7.0 eV *10* (1968En01).
11316.7 *6*	(1$^-$,3$^-$)	<0.2 keV	1103.7 *6*	J$^{\pi}$: (p,$\alpha(\theta)$): A_2=+0.808 *7*, 1$^-$ less likely (1967Bo03). E(p)(lab): weighted average of 1103.3 *13* (1967Bo03) and 1103.8 *6* (1974Al05). $S_{p\gamma}$=0.67 eV *14*; $S_{p\alpha}$=12 eV.
11318.7 *6*	(2$^+$)	<0.2 keV	1105.7 *6*	$S_{p\gamma}$=3.5 eV *7*.
11326.2 *6*		<0.2 keV	1113.5 *6*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). $S_{p\gamma}$=0.20 eV *7*; $S_{p\alpha}\approx$0.1 eV (1974Al05).
11327.3 *6*	(1$^-$,2$^+$)		1114.6 *6*	J$^{\pi}$: (p,$\alpha(\theta)$); A_2=+0.37 *5* (1967Bo03). E(p)(lab): weighted average of 1114.3 *13* (1967Bo03) and 1114.6 *6* (1974Al05). 1114.3 *13* in 1967Bo03 could be a triplet corresponding to 1113.5+1114.6+1115.6 in 1974Al05. $S_{p\gamma}$<0.07 eV; $S_{p\alpha}\approx$1.3 eV (1974Al05), 2.3 (1967Bo03).
11328.3 *6*		<0.2 keV	1115.6 *6*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). $S_{p\gamma}$=1.3 eV *3*; $S_{p\alpha}\approx$1.0 eV (1974Al05).
11330.1 *6*			1117.5 *6*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1118.2 *13* (1967Bo03) and 1117.4 *6* (1974Al05). $S_{p\gamma}$<1.9 eV; $S_{p\alpha}$=0.6 eV.
11330.5 *6*		<0.2 keV	1117.9 *6*	$S_{p\gamma}$=1.9 eV *4*.
11338.6 *6*	(2,3$^-$)	<0.2 keV	1126.2 *6*	J$^{\pi}$: (2,3) from (p,$\gamma(\theta)$), (2,3$^-$) with 1967Bo03 combined (1988Wa34). $S_{p\gamma}$=4.3 eV *8* B.
11348.9 *6*		<0.2 keV	1136.8 *6*	$S_{p\gamma}$=1.1 eV *2* (1974Al05), 0.8 eV *3* (1968En01). E(p)(lab): weighted average of 1136.4 *8* (1968En01) and 1137.0 *6* (1974Al06).
11350.6 *6*	3$^-$	<0.2 keV	1138.5 *6*	J$^{\pi}$: (p,$\gamma(\theta)$) and pol(γ) 1968En01; (p,$\alpha(\theta)$): A_2=+0.805 *3* (1967Bo03). E(p)(lab): weighted average of 1138.3 *13* (1967Bo03), 1138.5 *6* (1968En01) and 1138.6 *6* (1974Al05). Γ from (p,γ) (1974Al05); $S_{p\gamma}$=6.5 eV *13* (1974Al05), 7.3 eV *12* (1968En01); $S_{p\alpha}$=160 eV (1967Bo03); Γ_p=25 eV *8* (1968Bo07).
11354.6 *6*	3$^-$	<0.2 keV	1142.6 *6*	J$^{\pi}$: (p,$\alpha(\theta)$): A_2=+0.804 *5* (1967Bo03). E(p)(lab): weighted average of 1142.3 *13* (1967Bo03), 1142.5 *7* (1968En01), 1142.8 *6* (1974Al05). Γ from (p,γ) in 1974Al05; $S_{p\gamma}$=3.1 eV *6*; $S_{p\alpha}$=80 eV; Γ_p=12 eV *3* (1968Bo07).
11359.4 *6*			1147.6 *6*	$S_{p\gamma}$=0.05 eV *4*.
11361.9 *6*		<0.2 keV	1150.1 *6*	$S_{p\gamma}$=0.25 eV *8*.
11367.4 *7*	3$^-$	<0.2 keV	1155.8 *7*	J$^{\pi}$: (p,$\alpha(\theta)$): A_2=+0.805 *6* (1967Bo03). E(p)(lab): weighted average of 1155.6 *13* (1967Bo03) and 1155.9 *7* (1974Al05). $S_{p\gamma}$=0.78 eV *17*; $S_{p\alpha}$=60 eV.
11369.1 *7*			1157.5 *7*	$S_{p\gamma}$=0.12 eV *5*.
11373.7 *7*		<0.2 keV	1162.2 *7*	$S_{p\gamma}$=1.6 eV *3*.
11375.6 *7*	4$^+$	<0.6[@] keV	1164.2 *7*	J$^{\pi}$: (p,$\alpha(\theta)$): A_2=+1.008 *16*, A_4=+0.52 *12* (1967Bo03). E(p)(lab): weighted average of 1164.5 *13* (1967Bo03) and 1164.1 *7*

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				(1974Al05).
				$S_{p\gamma}$<0.16 eV; $S_{p\alpha}$=2.9 eV.
11375.9 *7*			1164.5 *7*	$S_{p\gamma}$=0.79 eV *17*.
11379.1 *7*	$(1^-,2^+)$	<0.2 keV	1167.8 *7*	J^{π}: (p,$\alpha(\theta)$): A_2=+0.45 *3* (1967Bo03).
				E(p)(lab): weighted average of 1168.1 *13* (1967Bo03) and 1167.7 *7* (1974Al05). Probable doublet in 1974Al05.
				$S_{p\gamma}$=1.4 eV *3*; $S_{p\alpha}$=6 eV.
11383.1 *7*			1171.9 *7*	
11383.4 *7*	$(1^-,2^+)$	<0.2 keV	1172.2 *7*	J^{π}: (p,$\alpha(\theta)$): A_2=−0.20 *3* (1967Bo03).
				E(p)(lab): weighted average of 1172.6 *13* (1967Bo03) and 1172.1 *7* (1974Al05).
				Γ for E(p)=1171.9.
				$S_{p\gamma}$=3.3 eV *7* (with E(p)=1171.9); $S_{p\alpha}$=17 eV.
11384.9 *7*	3^-		1173.8 *7*	J^{π}: (p,$\alpha(\theta)$): A_2=+0.804 *11* (1967Bo03).
				E(p)(lab): weighted average of 1174.0 *13* (1967Bo03) and 1173.8 *7* (1974Al05).
				$S_{p\gamma}$=1.2 eV *5*; $S_{p\alpha}$=50 eV.
11389.9 *7*		<0.2 keV	1178.9 *7*	$S_{p\gamma}$=0.28 eV *6* (1974Al05).
11393.1 *7*	3^-	<0.2 keV	1182.2 *7*	J^{π}: (p,$\alpha(\theta)$): A_2=+0.822 *7*, A_4=+0.027 *12*, A_6=−0.28 *5* (1967Bo03).
				E(p)(lab): weighted average of 1182.5 *13* (1967Bo03) and 1182.1 *7* (1974Al05).
				$S_{p\gamma}$=0.93 eV *19*; $S_{p\alpha}$=18 eV.
11399.5 *7*		<0.2 keV	1188.7 *7*	$S_{p\gamma}$=0.56 eV *12*.
11401.5 *7*		<0.2 keV	1190.8 *7*	$S_{p\gamma}$=1.4 eV *3*.
11409.3 *7*	$(2,3^-)$	<0.2 keV	1198.8 *7*	$S_{p\gamma}$=2.9 eV *6*.
11422.7 *7*			1212.6 *7*	J^{π}: π=natural from ^{37}Cl(p,α).
				$S_{p\gamma}$<0.3 eV; $S_{p\alpha}$=2.2 eV (from 1974Al05).
11423.9 *7*	$(2^+,3^-,4^+)$	<0.2 keV	1213.8 *7*	J^{π}: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1214.3 *13* (1967Bo03) and 1213.7 *7* (1974Al05). 1214.3 in 1967Bo03 could be a doublet corresponding to 1212.6+1213.7 in 1974Al05.
				$S_{p\gamma}$=5.0 eV *10*; $S_{p\alpha}$=2.2 eV (1974Al05), 4.4 eV (1967Bo03).
11428.9 *7*		<0.2 keV	1218.9 *7*	$S_{p\gamma}$=0.97 eV *19*.
11431.9 *7*		<0.2 keV	1222.0 *7*	$S_{p\gamma}$=0.44 eV *9*.
11435.9 *7*	$(2^+,3^-)$	<0.2 keV	1226.1 *7*	$S_{p\gamma}$=1.7 eV *3*.
11442.9 *7*			1233.3 *7*	J^{π}: π=natural from ^{37}Cl(p,α).
				E(p)(lab): seen in (p,γ) and (p,α) in 1974Al05. Other: 1235.5 *14* from (p,α) in 1967Bo03.
				$S_{p\gamma}$<0.15 eV; $S_{p\alpha}$=0.4 eV.
11443.6 *7*	(1,2,3)	<0.2 keV	1234.1 *7*	J^{π}: from (p,$\gamma(\theta)$).
				E(p)(lab): from (p,γ) in 1974Al05, not seen in (p,α) in 1974Al05.
				$S_{p\gamma}$=1.5 eV *3*.
11452.7 *7*		<0.2 keV	1243.4 *7*	J^{π}: π=natural from ^{37}Cl(p,α).
				E(p)(lab): from 1974Al05. Other: 1244.9 *14* (1967Bo03).
				$S_{p\gamma}$=1.6 eV *3*; $S_{p\alpha}$=3.8 eV.
11454.7 *7*			1245.5 *7*	$S_{p\gamma}$=0.4 eV *3*.
11455.5 *7*			1246.3 *7*	J^{π}: π=natural from ^{37}Cl(p,α).
				E(p)(lab): from 1974Al05. Other: 1247.8 *14* (1967Bo03).
				$S_{p\gamma}$<0.3 eV; $S_{p\alpha}$=2.3 eV.
11455.7 *7*			1246.5 *7*	$S_{p\gamma}$=0.3 eV *2*.
11461.4 *7*		<0.2 keV	1252.3 *7*	$S_{p\gamma}$=0.66 eV *13*.
11463.3 *7*		<0.2 keV	1254.3 *7*	$S_{p\gamma}$=1.4 eV *3*.
11466.2 *8*		<0.6 keV	1257.3 *8*	J^{π}: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1258.4 *14* (1967Bo03) and 1257.0 *8* (1974Al05).
				$S_{p\gamma}$<0.6 *3* eV; $S_{p\alpha}$=6 eV.
11471.2 *7*	$(1^-,2^+)$	<0.2 keV	1262.4 *7*	J^{π}: (p,$\alpha(\theta)$): A_2=−0.39 *6* (1967Bo03); (1,2) from (p,$\gamma(\theta)$) (1988Wa34).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				E(p)(lab): weighted average of 1263.5 *14* (1967Bo03), 1262.4 *15* (1968En01) and 1262.1 *7* (1974Al06).
				S$_{p\gamma}$=2.6 eV *5* (1974Al05), 3.8 eV *15* (1968En01); S$_{p\alpha}$=19 eV.
11478.4 *7*		<0.2 keV	1269.8 *7*	S$_{p\gamma}$=1.3 eV *3*.
11478.9 *7*	(1$^-$,3$^-$)	<0.6[@] keV	1270.3 *7*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=+0.800 *3*, 1$^-$ less likely (1967Bo03).
				E(p)(lab): weighted average of 1271.3 *14* (1967Bo03) and 1270.0 *7* (1974Al05); probable doublet in 1974Al05.
				S$_{p\alpha}$=33 eV.
				γ rays could be from 1269.8 resonance also.
11482.4 *7*			1273.9 *7*	E(p)(lab): weighted average of 1274.7 *14* (1967Bo03) and 1273.7 *7* (1974Al05).
				S$_{p\gamma}$=0.33 eV *19*; S$_{p\alpha}$=14 eV.
11483.4 *7*			1274.9 *7*	probable doublet (1974Al05).
				S$_{p\gamma}$=4.1 eV *9*.
11487.2 *7*	(1$^-$,3$^-$)	<0.6[@] keV	1278.8 *7*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=+0.798 *14*, 1$^-$ less likely (1967Bo03).
				E(p)(lab): weighted average of 1279.6 *14* (1967Bo03) and 1278.6 *7* (1974Al05).
				S$_{p\gamma}$=0.03 eV *2*; S$_{p\alpha}$=12 eV.
11493.6 *8*	2$^+$	<0.6[@] keV	1285.4 *8*	J$^{\pi}$: from (p,$\alpha(\theta)$): A$_2$=−0.18 *4*, A$_4$=−0.35 *6* (1967Bo03).
				E(p)(lab): weighted average of 1286.0 *14* (1967Bo03) and 1285.2 *8* (1974Al05).
				S$_{p\gamma}$<0.10 eV; S$_{p\alpha}$=12 eV.
11501.3 *7*	(1$^-$,2$^+$)	<0.2 keV	1293.3 *7*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=−0.336 *15* (1967Bo03); (1,2) from (p,$\gamma(\theta)$) in 1988Wa34.
				E(p)(lab): weighted average of 1293.8 *14* (1967Bo03) and 1293.2 *7* (1974Al05).
				S$_{p\gamma}$=1.3 eV *3*; S$_{p\alpha}$=48 eV.
11508.2 *7*	(1$^-$,2$^+$)	<0.6[@] keV	1300.4 *7*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=+0.18 *4* (1967Bo03).
				E(p)(lab): weighted average of 1300.8 *14* (1967Bo03) and 1300.3 *7* (1974Al05).
				S$_{p\gamma}$=0.08 eV *5*; S$_{p\alpha}$=15 eV.
11511.1 *7*			1303.4 *7*	S$_{p\gamma}$=2.4 eV *7*.
11511.7 *7*			1304.0 *7*	E(p)(lab): probable doublet in 1974Al05.
				S$_{p\gamma}$=2.1 eV *7*.
				γ's from 1303.4 resonance also.
11514.5 *7*	1$^-$	<0.2 keV	1306.9 *7*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=−0.632 *12*.
				E(p)(lab): weighted average of 1307.5 *14* (1967Bo03) and 1306.7 *7* (1974Al05).
				S$_{p\gamma}$=2.2 eV *5*; S$_{p\alpha}$=32 eV.
11518.6 *7*			1311.1 *7*	J$^{\pi}$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1311.6 *14* (1967Bo03) and 1311.0 *7* (1974Al05). 1311.6 in 1967Bo03 could be a doublet corresponding to 1311.0+1312.2 in 1974Al05.
				S$_{p\gamma}$=0.11 eV *7*; S$_{p\alpha}$=4.5 eV.
11519.7 *4*		<0.2 keV	1312.2 *3*	J$^{\pi}$: π=natural from ^{37}Cl(p,α).
				S$_{p\gamma}$=1.8 eV *4*; S$_{p\alpha}$≈1.0 eV (from 1974Al05).
11525.8 *7*		<0.2 keV	1318.5 *7*	S$_{p\gamma}$=0.5 eV *2*.
11527.6 *7*		<0.2 keV	1320.3 *7*	S$_{p\gamma}$=1.9 eV *4* (1974Al05), 4.0 eV *15* (1968En01).
				E(p)(lab): weighted average of 1320.3 *15* (1968En01) and 1320.3 *7* (1974Al06); 1968En01 observed on resonance at this energy, probable triplet with 1318.5, 1322.8.
11530.2 *7*	(1$^-$,2$^+$)	<0.2 keV	1323.0 *7*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=−0.01 *2* (1974Al06) gives 0$^+$,1$^-$,2$^+$, γ to g.s. excludes 0$^+$.
				E(p)(lab): weighted average of 1323.6 *14* (1967Bo03) and 1322.8 *7* (1974Al05).
				S$_{p\gamma}$=1.9 eV *4*; S$_{p\alpha}$=20 eV.
11531.9 *7*	3$^-$	<0.2 keV	1324.8 *7*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=+0.74 *3* (1974Al06).
				E(p)(lab): weighted average of 1325.4 *14* (1967Bo03) and 1324.7 *7*

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				(1974Al05).
				$S_{p\gamma}$=1.6 eV *5*; $S_{p\alpha}$=60 eV.
11534.2 *7*			1327.1 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				$S_{p\gamma}$=0.18 eV *8*; $S_{p\alpha}$=24 eV.
				E(p)(lab): weighted average of 1327.7 *14* (1967Bo03) and 1326.9 *7* (1974Al05).
11538.3 *7*		0.33 keV *11*	1331.3 *7*	Γ from 1974Al05.
11540.2 *7*	1$^-$	<0.6[@] keV	1333.3 *7*	J$^\pi$: (p,$\alpha(\theta)$): A_2=−0.732 *9* (1967Bo03).
				E(p)(lab): weighted average of 1334.2 *14* (1967Bo03) and 1333.1 *7* (1974Al05).
				$S_{p\gamma}$=0.29 eV *11*; $S_{p\alpha}$=230 eV.
				Γ=0.33 eV *11* from (p,γ) in 1974Al05, (2J+1)Γ_p=0.27 keV *11*, l_p=1 (1974Al05).
11544.5 *7*			1337.7 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1338.4 *14* (1967Bo03) and 1337.5 *7* (1974Al05).
				$S_{p\gamma}$=0.45 eV *16*; $S_{p\alpha}$=24 eV.
11545.3 *7*	(1$^-$,2$^+$,3$^-$)		1338.5 *7*	$S_{p\gamma}$=2.5 eV *5*.
11552.6 *7*	(1$^-$,2$^+$)	<0.2 keV	1346.0 *7*	J$^\pi$: (0$^+$,1$^-$,2$^+$) from (p,$\alpha(\theta)$): A_2=+0.06 *2*, A_4=−0.06 *3* (1974Al06); γ to g.s. excludes 0$^+$.
				E(p)(lab): weighted average of 1346.6 *14* (1967Bo03) and 1345.9 *7* (1974Al05). Other: 1342 (1966Ka18).
				Γ from (p,γ) in 1974Al05; $S_{p\gamma}$=2.5 eV *5*; $S_{p\alpha}$=180 eV; (2J+1)Γ_p=0.18 keV *7*, l_p=1 (1974Al05).
11558.1 *7*			1351.7 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1352.6 *14* (1967Bo03) and 1351.5 *7* (1974Al05). Other: 1356 (1966Ka18).
				$S_{p\gamma}$<0.3 eV; $S_{p\alpha}$=19 eV.
11558.4 *7*		<0.2 keV	1352.0 *7*	$S_{p\gamma}$=4.7 eV *10*.
11561.9 *7*		<0.2 keV	1355.6 *7*	$S_{p\gamma}$=2.1 eV *5*.
11569.2 *7*	(0$^-$ to 4$^+$)	<0.2 keV	1363.1 *7*	$S_{p\gamma}$=4.9 eV *10*.
11574.0 *7*			1368.0 *7*	$S_{p\gamma}$=0.11 eV *5*.
11578.1 *8*	(1$^-$,2$^+$)		1372.2 *8*	J$^\pi$: (p,$\alpha(\theta)$): A_2=−0.46 *7* (1967Bo03).
				E(p)(lab): weighted average of 1373.1 *15* (1967Bo03) and 1372.0 *8* (1974Al05).
				$S_{p\gamma}$<0.3 eV; $S_{p\alpha}$=6 eV.
11579.4 *7*	(1$^-$,2$^+$)	<0.2 keV	1373.6 *7*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.418 *13* (1967Bo03).
				E(p)(lab): weighted average of 1374.3 *15* (1967Bo03) and 1373.5 *7* (1974Al05).
				$S_{p\gamma}$=1.4 eV *5*; $S_{p\alpha}$=14 eV.
11581.2 *7*			1375.4 *7*	$S_{p\gamma}$=0.5 eV *3*.
11582.1 *7*			1376.3 *7*	$S_{p\gamma}$=1.7 eV *8*.
11592.9 *7*		<0.6[@] keV	1387.4 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α); (p,$\alpha(\theta)$): A_2=+0.92 *3*, A_4=+0.23 *4* (1967Bo03).
				E(p)(lab): weighted average of 1388.4 *15* (1967Bo03) and 1387.2 *7* (1974Al05).
				$S_{p\gamma}$=1.8 eV *5*; $S_{p\alpha}$=11 eV.
11593.7 *7*		<0.2 keV	1388.2 *7*	$S_{p\gamma}$=1.9 eV *5*.
11597.9 *7*	4$^+$	<0.2 keV	1392.6 *7*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+1.032 *9*, A_4=+0.59 *2*, A_6=+0.06 *3* (1967Bo03).
				E(p)(lab): weighted average of 1393.6 *15* (1967Bo03) and 1392.4 *7* (1974Al05).
				$S_{p\gamma}$=0.75 eV *16*; $S_{p\alpha}$=5 eV.
11599.6 *7*		<0.2 keV	1394.3 *7*	$S_{p\gamma}$=2.8 eV *6*.
11605.8 *7*		<0.2 keV	1400.7 *7*	$S_{p\gamma}$=0.92 eV *19*.
11607.3 *8*			1402.2 *8*	$S_{p\alpha}\approx$2 eV (1974Al05).
11608.3 *8*	(1$^-$,2$^+$)		1403.2 *8*	J$^\pi$: (p,$\alpha(\theta)$): A_2=−0.33 *5* (1967Bo03).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				E(p)(lab): weighted average of 1403.5 *15* (1967Bo03) and 1403.1 *8* (1974Al05).
				$S_{p\alpha}$≈4 eV (1974Al05), 6 eV from 1967Bo03.
11609.1 *7*			1404.1 *7*	$S_{p\gamma}$=0.19 eV *12*.
11612.5 *7*			1407.6 *7*	$S_{p\gamma}$=1.1 eV *2*.
11613.2 *7*			1408.3 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1409.0 *15* (1967Bo03) and 1408.2 *7* (1974Al05).
				$S_{p\alpha}$=50 eV.
11615.8 *7*	1$^-$	0.42 keV *16*	1410.9 *7*	J$^\pi$: (p,$\alpha(\theta)$): A_2=−0.887 *10* (1967Bo03).
				E(p)(lab): weighted average of 1411.7 *15* (1967Bo03) and 1410.7 *7* (1974Al05).
				Γ from (p,γ) in 1974Al05; $S_{p\gamma}$=0.8 eV *4*; $S_{p\alpha}$=150 eV; (2J+1)Γ_p=0.24 keV *11*, l_p=1 (1974Al05) Γ=0.7 eV *6* from 1967Bo03.
11618.1 *7*		<0.2 keV	1413.3 *7*	$S_{p\gamma}$=1.4 eV *3*.
11622.7 *7*		<0.2 keV	1418.0 *7*	$S_{p\gamma}$=2.2 eV *5*.
11623.5 *7*			1418.9 *7*	$S_{p\gamma}$=1.5 eV *4*.
11624.8 *7*	(1$^-$,2$^+$)	<0.6[@] keV	1420.2 *7*	J$^\pi$: (p,$\alpha(\theta)$): A_2=−0.29 *4* (1967Bo03).
				E(p)(lab): weighted average of 1421.4 *15* (1967Bo03) and 1419.9 *7* (1974Al05). Other: 1422 (1966Ka18).
				$S_{p\gamma}$=0.5 eV *2*; $S_{p\alpha}$=15 eV.
11641.1 *7*		<0.2 keV	1436.9 *7*	$S_{p\gamma}$=0.4 eV *1*.
11643.3 *7*	(1$^-$,2$^+$)	<0.6[@] keV	1439.2 *7*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.13 *3* (1967Bo03).
				E(p)(lab): from 1974Al05. Other: 1440.4 *15* (1967Bo03) could be a doublet corresponding to 1439.2+1439.3 in 1974Al05.
				$S_{p\alpha}$=60 eV.
11643.4 *7*			1439.3 *7*	$S_{p\gamma}$=7.4 eV *15* for 1439.2+1439.3.
11645.3 *7*			1441.2 *7*	$S_{p\gamma}$=0.4 eV *2*.
11647.0 *7*		<0.2 keV	1443.0 *7*	$S_{p\gamma}$=1.6 eV *4*.
11651.4 *7*			1447.5 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1448.3 *15* (1967Bo03) and 1447.3 *7* (1974Al05).
				$S_{p\gamma}$=0.2 eV *1*; $S_{p\alpha}$=3.3 eV.
11652.1 *7*		<0.2 keV	1448.2 *7*	$S_{p\gamma}$=2.2 eV *4*.
11653.9 *8*			1450.1 *8*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1451.0 *15* (1967Bo03) and 1449.8 *7* (1974Al05).
				$S_{p\gamma}$<0.4 eV; $S_{p\alpha}$=26 eV.
11656.6 *7*			1452.9 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1453.6 *15* (1967Bo03) and 1452.7 *7* (1974Al05).
				$S_{p\gamma}$=0.10 eV *7*; $S_{p\alpha}$=11 eV.
11660.0 *7*		<0.2 keV	1456.4 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1457.4 *15* (1967Bo03) and 1456.2 *7* (1974Al05).
				$S_{p\gamma}$=3.7 eV *8*; $S_{p\alpha}$=29 eV.
11661.4 *7*			1457.8 *7*	$S_{p\gamma}$=1.5 eV *4*.
11665.3 *7*			1461.8 *7*	$S_{p\gamma}$=0.27 eV *9*.
11666.6 *7*		<0.2 keV	1463.1 *7*	$S_{p\gamma}$=1.4 eV *3*.
11667.8 *7*		<0.2 keV	1464.4 *7*	$S_{p\gamma}$=3.7 eV *8*.
11670.7 *7*			1467.3 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α); (p,$\alpha(\theta)$): A_2=+0.47 *3* (1967Bo03).
				E(p)(lab): weighted average of 1468.4 *15* (1967Bo03) and 1467.1 *7* (1974Al05).
				$S_{p\gamma}$=0.5 eV *2*; $S_{p\alpha}$=60 eV.
11672.3 *7*	(2,3)	<0.2 keV	1469.0 *7*	J$^\pi$: from (p,$\gamma(\theta)$) (1988Wa34).
				$S_{p\gamma}$=2.9 eV *6*.

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
11679.6 *7*			1476.5 *7*	$S_{p\gamma}$=0.07 eV *5*.
11682.7 *7*	(4$^+$,5$^-$)	<0.2 keV	1479.7 *7*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+1.038 *16*, A_4=+0.61 *4*, A_6=+0.10 *5* and odd terms (1967Bo03); (p,$\gamma(\theta)$) (1974Al06). E(p)(lab): weighted average of 1481.1 *15* (1967Bo03) and 1479.4 *7* (1974Al05). Other: 1476 (1966Ka18). $S_{p\gamma}$=1.1 eV *2*; $S_{p\alpha}$=2.1 eV.
11685.5 *7*		<0.2 keV	1482.5 *7*	$S_{p\gamma}$=0.9 *2* eV.
11686.0 *7*	2$^+$	<0.2 keV	1483.1 *7*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.05 *4*, A_4=−0.57 *4* (1967Bo03). E(p)(lab): weighted average of 1483.9 *15* (1967Bo03) and 1482.9 *7* (1974Al05). $S_{p\gamma}$<0.5 eV; $S_{p\alpha}$=20 eV; Γ from (p,γ) in 1974Al05; (2J+1)Γ_p=0.9 keV *3*, l_p=1, (p,p) resonance could be double(1974Al05).
11686.9 *7*			1484.0 *7*	$S_{p\gamma}$=1.4 eV *3*.
11695.7 *7*		<0.2 keV	1493.0 *7*	$S_{p\gamma}$=4.7 eV *12*.
11701.8 *7*		<0.6[@] keV	1499.3 *7*	J$^\pi$: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1500.1 *16* (1967Bo03) and 1499.1 *7* (1974Al05). $S_{p\gamma}$=0.09 eV *5*; $S_{p\alpha}$=18 eV.
11703.5 *7*		<0.2 keV	1501.0 *7*	$S_{p\gamma}$=4.3 eV *9*.
11706.5 *7*		<0.2 keV	1504.1 *7*	$S_{p\gamma}$=2.1 eV *4*.
11709.2 *8*			1506.9 *8*	$S_{p\gamma}$=2.1 eV *5*.
11710.0 *8*			1507.7 *8*	$S_{p\gamma}$=1.6 eV *5*.
11712.3 *8*	4$^+$	<0.6[@] keV	1510.1 *8*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+1.051 *8*, A_4=+0.64 *3*, A_6=+0.13 *4* (1967Bo03). E(p)(lab): weighted average of 1510.8 *16* (1967Bo03) and 1509.9 *8* (1974Al05). $S_{p\gamma}$=0.45 eV *17*; $S_{p\alpha}$=15 eV.
11716.6 *8*		<0.6[@] keV	1514.5 *8*	J$^\pi$: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1515.5 *16* (1967Bo03) and 1514.3 *8* (1974Al05); probable doublet 1974Al05. $S_{p\gamma}$=1.9 eV *4*; $S_{p\alpha}$=9 eV.
11722.6 *8*			1520.7 *8*	$S_{p\gamma}$=3.8 eV *12*.
11723.4 *8*		<0.2 keV	1521.5 *8*	Γ from (p,γ) in 1974Al05; $S_{p\gamma}$=2.9 eV *11*; (2J+1)Γ_p=0.9 keV *3*, l_p=1 (1974Al05).
11724.1 *8*			1522.2 *8*	$S_{p\gamma}$=0.6 eV *3*.
11726.0 *8*			1524.1 *8*	$S_{p\gamma}$=0.65 eV *18*.
11727.8 *8*	2$^+$		1526.0 *8*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.414 *11*, A_4=−0.25 *5* (1967Bo03). E(p)(lab): from 1974Al05. Other: 1527.3 *16* (1967Bo03). $S_{p\gamma}$<0.3 eV; $S_{p\alpha}$=50 eV.
11728.2 *8*			1526.4 *8*	$S_{p\gamma}$=0.32 eV *11*.
11731.2 *8*	(4$^+$,5$^-$)	<0.6[@] keV	1529.5 *8*	Probable doublet (1974Al05). J$^\pi$: (p,$\alpha(\theta)$): A_2=+1.43 *15*, A_4=+0.58 *17* (1974Al06). E(p)(lab): weighted average of 1530.6 *16* (1967Bo03) and 1529.2 *8* (1974Al05). $S_{p\gamma}$=4.9 eV *10*; $S_{p\alpha}$=8 eV.
11736.5 *8*			1534.9 *8*	J$^\pi$: π=natural from ^{37}Cl(p,α); (p,$\alpha(\theta)$): A_2=+1.01 *3*, no odd terms (1967Bo03). E(p)(lab): from 1974Al05. Other: 1537.5 *16* (1967Bo03). $S_{p\gamma}$<0.2 eV; $S_{p\alpha}$=28 eV.
11737.1 *8*			1535.6 *8*	$S_{p\gamma}$=2.3 eV *5*.
11738.9 *8*			1537.4 *8*	$S_{p\gamma}$=8.7 eV *17*.
11739.3 *8*			1537.8 *8*	J$^\pi$: π=natural from ^{37}Cl(p,α); (p,$\alpha(\theta)$). E(p)(lab): weighted average of 1538.8 *16* (1967Bo03) and 1537.5 *8* (1974Al05). $S_{p\alpha}$=160 eV.
11742.9 *8*			1541.5 *8*	J$^\pi$: π=natural from ^{37}Cl(p,α).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				$S_{p\gamma}$=1.5 eV *4*; $S_{p\alpha}$≈20 eV (1974Al05).
11743.8 *8*	(1⁻,2⁺)	0.7[@] keV *6*	1542.4 *8*	Jπ: (p,α(θ)): A_2=+0.17 *2* (1967Bo03). E(p)(lab): weighted average of 1543.3 *16* (1967Bo03) and 1542.2 *8* (1974Al05). $S_{p\gamma}$<0.3 eV; $S_{p\alpha}$=370 eV; (2J+1)Γ_p=0.35 keV *14*, l_p=1 (1974Al05).
11748.5 *8*		<0.2 keV	1547.3 *8*	$S_{p\gamma}$=1.9 eV *4*.
11751.8 *8*			1550.7 *8*	$S_{p\gamma}$=0.33 eV *13*.
11755.6 *8*		<0.2 keV	1554.6 *8*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1555.6 *16* (1967Bo03) and 1554.3 *8* (1974Al05). Other: 1550 (1966Ka18). (p,α(θ)): A_2=+1.06 *3*, A_4=+0.09 *4* , A_6=−0.11 *4* (1974Al06) no solution. $S_{p\gamma}$=1.2 eV *2*; $S_{p\alpha}$=160 eV.
11758.7 *8*			1557.7 *8*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1558.7 *16* (1967Bo03) and 1557.4 *8* (1974Al05). $S_{p\gamma}$=0.30 eV *18*; $S_{p\alpha}$=340 eV; (2J+1)Γ_p=0.36 keV *18*, l_p=1 (1974Al05).
11765.1 *8*			1564.3 *8*	$S_{p\gamma}$=0.15 eV *10*.
11765.9 *8*			1565.1 *8*	$S_{p\gamma}$=1.4 eV *4*.
11766.4 *8*			1565.7 *8*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): from 1974Al05. Other: 1566.8 *16* (1967Bo03) could be a doublet corresponding to 1565.1+1565.7 in 1974Al05; 1566 (1966Ka18). $S_{p\gamma}$=0.5 eV *2*; $S_{p\alpha}$=18 eV (with 1565.1).
11767.7 *8*		<0.2 keV	1567.0 *8*	$S_{p\gamma}$=1.7 eV *4*.
11769.9 *8*			1569.2 *8*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1570.3 *17* (1967Bo03) and 1569.0 *8* (1974Al05). $S_{p\gamma}$=0.41 eV *16*; $S_{p\alpha}$=12 eV.
11772.9 *8*			1572.3 *8*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1573.2 *17* (1967Bo03) and 1572.1 *8* (1974Al05). $S_{p\gamma}$<0.07 eV; $S_{p\alpha}$=28 eV.
11775.0 *8*	4⁺	<0.2 keV	1574.5 *8*	(p,α(θ)): A_2=+0.94 *13*, A_4=+0.83 *20*, A_6=−0.26 *18* (1974Al06). E(p)(lab): weighted average of 1575.8 *17* (1967Bo03) and 1574.2 *8* (1974Al05). $S_{p\gamma}$=1.3 eV *3*; $S_{p\alpha}$=13 eV.
11780.7 *8*		<0.2 keV	1580.3 *8*	Γ from (p,γ) in 1974Al05; $S_{p\gamma}$=2.8 eV *6*; (2J+1)Γ_p=0.6 keV *2*, l_p=1 (1974Al05).
11784.1 *8*	(1⁻,3⁻)	<0.2 keV	1583.8 *8*	Jπ: (p,α(θ)): A_2=+0.806 *15* (1967Bo03). E(p)(lab): from 1974Al05. Other: 1584.8 *17* (1967Bo03) could be a doublet corresponding to 1583.8+1583.9 in 1974Al05. $S_{p\alpha}$=4.4 eV.
11784.2 *8*		<0.2 keV	1583.9 *8*	$S_{p\gamma}$=10.4 eV *20* (with E(p)=1583.8).
11788.1 *8*	2⁺		1587.9 *8*	Jπ: (p,α(θ)): A_2=−0.619 *16* (1967Bo03). E(p)(lab): weighted average of 1589.6 *17* (1967Bo03) and 1587.5 *8* (1974Al05). $S_{p\gamma}$<0.2 eV; $S_{p\alpha}$=3.3 eV.
11790.5 *8*		<0.2 keV	1590.4 *8*	$S_{p\gamma}$=2.3 eV *4*.
11791.0 *8*	1⁻	<0.6[@] keV	1590.9 *8*	Jπ: (p,α(θ)): A_2=−0.969 *11* (1967Bo03). E(p)(lab): weighted average of 1591.8 *17* (1967Bo03) and 1590.7 *8* (1974Al05). $S_{p\alpha}$=20 eV.
11794.5 *8*		<0.2 keV	1594.5 *8*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1595.0 *17* (1967Bo03) and 1594.4 *8* (1974Al05). $S_{p\gamma}$=3.0 eV *6*; $S_{p\alpha}$=1.6 eV.
11797.9 *8*		<0.2 keV	1598.0 *8*	$S_{p\gamma}$=2.0 eV *4*.

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
11800.1 *8*		<0.2 keV	1600.3 *8*	$S_{p\gamma}$=3.3 eV *7*.
11802.0 *8*		<0.2 keV	1602.2 *8*	$S_{p\gamma}$=1.6 eV *3*.
11805.9 *8*	3$^-$	<0.2 keV	1606.2 *8*	J$^\pi$: (1$^-$,3$^-$) from (p,$\alpha(\theta)$): A_2=+0.83 *5* (1967Bo03); (2,3) from (p,$\gamma(\theta)$) (1988Wa34). E(p)(lab): weighted average of 1607.3 *17* (1967Bo03) and 1606.0 *8* (1974Al05). $S_{p\gamma}$=3.1 eV *6*; $S_{p\alpha}$=31 eV.
11810.5 *8*			1611.0 *8*	J$^\pi$: π=natural from ^{37}Cl(p,α); (p,$\alpha(\theta)$): A_2=−0.6 *4*, A_4=−0.37 *16* and odd terms (1967Bo03). E(p)(lab): weighted average of 1611.9 *17* (1967Bo03) and 1610.8 *8* (1974Al05). $S_{p\gamma}$=0.11 eV *7*; $S_{p\alpha}$=140 eV.
11812.2 *8*		<0.2 keV	1612.7 *8*	$S_{p\gamma}$=1.5 eV *3*.
11814.9 *8*	(1$^-$)	<0.2 keV	1615.5 *8*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.885 *11* (1967Bo03). E(p)(lab): weighted average of 1616.2 *17* (1967Bo03) and 1615.3 *8* (1974Al05). $S_{p\gamma}$=0.61 eV *12*; $S_{p\alpha}$=220 eV Γ from (p,γ) in 1974Al05.
11819.1 *8*			1619.8 *8*	J$^\pi$: π=natural (p,$\alpha(\theta)$): A_2=−1.09 *5* and odd terms (1967Bo03). E(p)(lab): weighted average of 1620.6 *17* (1967Bo03) and 1619.6 *8* (1974Al05). Other: 1624 (1966Ka18). $S_{p\gamma}$=0.35 eV *8*; $S_{p\alpha}$=120 eV.
11823.1 *8*		<0.2 keV	1623.9 *8*	$S_{p\gamma}$=1.5 eV *3*.
11828.7 *8*			1629.7 *8*	$S_{p\gamma}$=0.29 eV *11*.
11832.0 *8*	3$^-$	<0.2 keV	1633.0 *8*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.739 *18*, A_4=−0.16 *4* (1967Bo03). E(p)(lab): weighted average of 1634.0 *17* (1967Bo03) and 1632.8 *8* (1974Al05). $S_{p\gamma}$=4.0 eV *8*; $S_{p\alpha}$=60 eV (1974Al05).
11835.0 *8*			1636.1 *8*	$S_{p\gamma}$=0.15 eV *8*.
11836.6 *8*			1637.8 *8*	$S_{p\gamma}$=0.23 eV *9*.
11840.3 *8*	2$^+$		1641.6 *8*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.083 *20*, A_4=−0.378 *14* (1967Bo03). E(p)(lab): weighted average of 1642.5 *18* (1967Bo03) and 1641.4 *8* (1974Al05). $S_{p\gamma}$=2.3 eV *8*; S_{pn}=9 eV *3*; $S_{p\alpha}$=500 eV.
11841.3 *8*			1642.6 *8*	$S_{p\gamma}$=0.9 eV *5*; S_{pn}=4 eV *2*.
11842.2 *8*			1643.5 *8*	S_{pn}<0.5 eV (1974Al05).
11842.5 *8*			1643.8 *8*	$S_{p\gamma}$=0.9 eV *5* (with E(p)=1643.5); S_{pn}<0.5 eV.
11844.1 *8*			1645.5 *8*	$S_{p\gamma}$=0.9 eV *5*; S_{pn}<0.2 eV.
11845.8 *8*			1647.2 *8*	J$^\pi$: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1648.0 *18* (1967Bo03) and 1647.0 *8* (1974Al05). Other: 1648 (1966Ka18). $S_{p\gamma}$=0.8 eV *4*; S_{pn}<0.2 eV; $S_{p\alpha}$=100 eV.
11849.7 *8*		<0.2 keV	1651.2 *8*	$S_{p\gamma}$=3.4 eV *8*; S_{pn}=6.5 eV *16*.
11851.3 *8*			1652.9 *8*	S_{pn}=10 eV *4*.
11851.9 *8*			1653.5 *8*	$S_{p\gamma}$=12 eV *3* (with E(p)=1652.9); s_{pn}=2 eV *1*.
11855.7 *8*			1657.4 *8*	$S_{p\gamma}$=0.7 eV *2*; S_{pn}<0.2 eV.
11861.2 *8*	(1$^-$,2$^+$)		1663.0 *8*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.354 *20* (1967Bo03). E(p)(lab): weighted average of 1663.4 *18* (1967Bo03) and 1662.9 *8* (1974Al05). $S_{p\alpha}$=4.6 eV, S_{pn}=4.7 eV *13*.
11861.7 *8*			1663.5 *8*	$S_{p\gamma}$=3.1 eV *6* (with E(p)=1662.9).
11864.7 *8*	(1$^-$,3$^-$)	<0.2 keV	1666.6 *8*	J$^\pi$: (p,$\alpha(\theta)$): A_2=+0.784 *1*, 1$^-$ less likely (1967Bo03). E(p)(lab): weighted average of 1667.4 *18* (1967Bo03) and 1666.4 *8* (1974Al05). Γ from (p,γ) in 1974Al05, Γ=1.0 eV *6* from 1967Bo03. $S_{p\gamma}$=3.9 eV *8*; S_{pn}<0.2 eV; $S_{p\alpha}$=130 eV.
11865.5 *8*			1667.5 *8*	$S_{p\gamma}$=1.0 eV *3*; S_{pn}<0.2 eV.
11873.8 *8*		<0.2 keV	1676.0 *8*	$S_{p\gamma}$=3.4 eV *7*; S_{pn}<0.2 eV.

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
11877.7 *8*		0.19 keV *12*	1680.0 *8*	Γ from (p,n) in 1974Al05; $S_{p\gamma}$=4.0 eV *10*; S_{pn}=29 eV *8*; (2J+1)Γ_p=1.8 keV *5*, l_p=1 (1974Al05).
11880.9 *8*	(1$^-$,3$^-$)	<0.3 keV	1683.3 *8*	J$^{\pi}$: (p,$\alpha(\theta)$): A_2=+0.820 *7*, 1$^-$ less likely (1967Bo03). E(p)(lab): weighted average of 1684.9 *18* (1967Bo03) and 1683.0 *8* (1974Al05). Γ from (p,n) in 1974Al05, Γ=1.1 eV *6* from 1967Bo03. $S_{p\gamma}$=4.1 eV *15*; S_{pn}=70 eV *30*; $S_{p\alpha}$=70 eV.
11882.3 *8*			1684.7 *8*	$S_{p\gamma}$=3.0 eV *12*; S_{pn}=33 eV *8*.
11887.8 *8*		0.50 keV *13*	1690.4 *8*	Γ from (p,n) in 1974Al05; $S_{p\gamma}$=16 eV *4*; S_{pn}=180 eV *50*; (2J+1)Γ_p=1.1 keV *3*, l_p=1 (1974Al05). Γ=1.5 keV from 1952Sc09 for E(p)=1690.8.
11890.2 *10*			1692.8 *10*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1693.9 *18* (1967Bo03) and 1692.5 *10* (1974Al05). Other: 1692 (1961Ma28). $S_{p\alpha}$=15 eV.
11891.5 *8*			1694.2 *8*	$S_{p\gamma}$=0.7 eV *6*; S_{pn}=9 eV *3*.
11894.7 *8*		<0.2 keV	1697.5 *8*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1698.2 *18* (1967Bo03) and 1697.4 *8* (1974Al05). $S_{p\gamma}$=0.7 eV *4*; S_{pn}=15 eV *4*; $S_{p\alpha}$=13 eV.
11898.0 *8*		<0.3 keV	1700.8 *8*	E(p)(lab): other: 1702.7 (1952Sc09). Γ from (p,n) in 1974Al05; $S_{p\gamma}$=4.2 eV *14*; S_{pn}=64 eV *14*.
11901.6 *10*			1704.5 *10*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1705.6 *18* (1967Bo03) and 1704.2 *10* (1974Al05). $S_{p\gamma}$<0.2 eV; S_{pn}<4 eV; $S_{p\alpha}$=100 eV.
11902.3 *8*		<0.2 keV	1705.3 *8*	$S_{p\gamma}$=0.28 eV *18*; S_{pn}<4 eV.
11904.6 *10*			1707.6 *10*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1708.7 *18* (1967Bo03) and 1707.3 *10* (1974Al05). $S_{p\alpha}$=1.10 keV (1967Bo03), Γ=3.9 eV *6* (1967Bo03).
11905.7 *8*			1708.8 *8*	$S_{p\gamma}$=1.1 eV *3*; S_{pn}<1 eV.
11916.3 *8*			1719.6 *8*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). E(p)(lab): weighted average of 1720.9 *18* (1967Bo03) and 1719.3 *8* (1974Al05). Other: 1716 (1966Ka18). $S_{p\gamma}$=3.1 eV *12*; S_{pn}<10 eV; $S_{p\alpha}$=170 eV.
11917.0 *8*		1.73 keV *14*	1720.4 *8*	Γ from (p,n) in 1974Al05; $S_{p\gamma}$<1.0 eV; S_{pn}=48 eV *11*.
11918.4 *8*			1721.8 *8*	E(p)(lab): other: 1723 (1961Ma28). $S_{p\gamma}$=1.9 eV *7*; S_{pn}<10 eV.
11922.8 *8*			1726.3 *8*	E(p)(lab): other: 1727.7 (1952Sc09). $S_{p\gamma}$=4.6 eV *13*; S_{pn}=86 eV *19*.
11927.9 *8*	4$^-$	<0.3 keV	1731.6 *8*	J$^{\pi}$: spin from (p,$\gamma(\theta)$), parity from polarization (1968En01). E(p)(lab): from 1974Al05. Other: 1732.3 *10* probable doublet in 1968En01. Γ from (p,γ) in 1974Al05; $S_{p\gamma}$=35 eV *7*; S_{pn}<10 eV; S_{pp}≈22 eV (1968Bo07).
11928.4 *8*	(1$^-$,2$^+$)	<0.2 keV	1732.1 *8*	J$^{\pi}$: (p,$\alpha(\theta)$): 1967Bo03: E(p)=1732.3 *18*; 1$^-$,2$^+$; A_2=+0.30 *3* (1967Bo03). E(p)(lab): weighted average of 1732.3 *18* (1967Bo03), 1732.3 *10* (1968En01) and 1732.0 *8* (1974Al06). 1968En01 observe one resonance with J=4, γ decays at this energy, probable doublet with Ep=1731.6. Others: 1733.2 (1952Sc09), 1735 (1961Ma28). S_{pn}=100 eV *20*; $S_{p\alpha}$=140 eV; $S_{p\gamma}$=47 eV *7* (1968En01).
11935.0 *8*	4$^+$	<0.2 keV	1738.8 *8*	J$^{\pi}$: (p,$\alpha(\theta)$) A_2=1.002 *14*, A_4=+0.50 *4*, A_6=−0.08 *6* (1967Bo03). E(p)(lab): weighted average of 1738.7 *18* (1967Bo03) and 1738.8 *8* (1974Al05). Others: 1739.8 (1952Sc09), 1738 (1966Ka18), 1741 (1961Ma28). $S_{p\gamma}$=3.0 eV *8*; S_{pn}=26 eV *6*; $S_{p\alpha}$=19 eV.
11940.2 *8*		0.51 keV *18*	1744.2 *8*	E(p)(lab): other: 1745.3 (1952Sc09).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				Γ from (p,n) in 1974Al05; $S_{p\gamma}$=13 eV *4*; S_{pn}=31 eV *8*.
11943.3 *8*			1747.4 *8*	$S_{p\gamma}$=0.7 eV *2*; S_{pn}=40 eV *20*.
11945.9 *8*		0.45 keV *16*	1750.0 *8*	E(p)(lab): other: 1950.1 (1952Sc09).
				Γ from (p,n) in 1974Al05; $S_{p\gamma}$=1.3 eV *10*; S_{pn}=70 eV *30*.
11949.0 *8*		<0.7 keV	1753.2 *8*	J$^{\pi}$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1753.7 *18* (1967Bo03) and 1753.1 *8* (1974Al05). Other: 1954.5 (1952Sc09), 1753 (1961Ma28).
				Γ from (p,n) in 1974Al05; $S_{p\gamma}$=6.3 eV *19*; S_{pn}=170 eV *40*; $S_{p\alpha}$=240 eV, Γ=1.3 eV *6* in 1967Bo03.
11957.4 *8*		<0.2 keV	1761.9 *8*	E(p)(lab): others: 1963.0 (1952Sc09), 1758 (1961Ma28).
				$S_{p\gamma}$=6.7 eV *19*; S_{pn}=170 eV *40*.
11966.3 *8*		<0.2 keV	1771.0 *8*	J$^{\pi}$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): weighted average of 1771.5 *18* (1967Bo03) and 1770.9 *8* (1974Al05). Other: 1767 (1961Ma28).
				$S_{p\gamma}$=15 eV *4*; S_{pn}=70 eV *60*; $S_{p\alpha}$=20 eV.
11967.8 *8*			1772.5 *8*	E(p)(lab): others: 1772.4 (1952Sc09), 1774 (1961Ma28).
				$S_{p\gamma}$=1.3 eV *9*; S_{pn}<30 eV.
				Γ=1.6 keV from 1952Sc09 for E(p)=1772.4.
11972.0 *8*			1776.9 *8*	$S_{p\gamma}$=2.4 eV *8*; S_{pn}=50 eV *20*.
11972.9 *8*	(1$^-$,3$^-$)	<0.6[@] keV	1777.8 *8*	J$^{\pi}$: (p,$\alpha(\theta)$): A_2=+0.811 *12*, 1$^-$ less likely (1967Bo03).
				E(p)(lab): weighted average of 1778.3 *18* (1967Bo03) and 1777.7 *8* (1974Al05). Other: 1777.6 (1952Sc09).
				$S_{p\gamma}$=1.5 eV *6*; S_{pn}=9 eV *6*; $S_{p\alpha}$=100 eV.
11977.8 *8*		<0.2 keV	1782.8 *8*	E(p)(lab): others: 1783.8 (1952Sc09), 1781 (1961Ma28).
				$S_{p\gamma}$=1.7 eV *6*; S_{pn}=57 eV *13*.
11982.1 *19*		<0.6[@] keV	1787.2[b] *19*	J$^{\pi}$: π=natural from ^{37}Cl(p,α); (p,$\alpha(\theta)$); A_2=+1.36 *20*, A_4=+0.31 *9* and odd terms (1967Bo03).
				E(p)(lab): others: 1788.0 (1952Sc09), 1786 (1961Ma28).
				$S_{p\alpha}$=80 eV.
11989.4		[c]	1794.7[c]	E(p)(lab): other: 1792 (1961Ma28).
11998.7 *19*		<0.6[@] keV	1804.3[b] *19*	J$^{\pi}$: π=natural from ^{37}Cl(p,α); (p,$\alpha(\theta)$); A_2=+0.74 *4*, A_4=+0.53 *6* (1967Bo03).
				E(p)(lab): others: 1803 (1966Ka18), 1803.7 (1952Sc09).
				$S_{p\alpha}$=34 eV.
				Γ<1.0 keV from 1952Sc09 for E(p)=1803.7.
12003.6		<1.0[c] keV	1809.3[c]	
12005.9 *19*	(1$^-$,3$^-$)	1.0[@] keV *6*	1811.7[b] *19*	J$^{\pi}$: (p,$\alpha(\theta)$): A_2=+0.807 *14* (1967Bo03).
				E(p)(lab): others: 1810 (1966Ka18), 1812.9 (1952Sc09).
				$S_{p\alpha}$=80 eV.
				Γ=1.6 keV from 1952Sc09 for E(p)=1812.9.
12011.9		<1.0[c] keV	1817.8[c]	
12013.9		1.6[c] keV	1819.9[c]	E(p)(lab): other: 1820 (1961Ma28).
12017.1 *19*			1823.2[b] *19*	J$^{\pi}$: π=natural from ^{37}Cl(p,α).
				E(p)(lab): others: 1824 (1961Ma28).
				$S_{p\alpha}$=4.9 eV.
12024.1 *19*	2$^+$	1.2[@] keV *6*	1830.4[b] *19*	E(p)(lab): others: 1834 (1966Ka18), 1831.8 (1952Sc09), 1828 (1961Ma28).
				J$^{\pi}$: (p,$\alpha(\theta)$): A_2=+0.06 *3*, A_4=−0.11 *3* (1967Bo03).
				$S_{p\alpha}$=310 eV.
				Γ=1.3 keV from 1952Sc09 for E(p)=1831.8, 3.5 keV from 1966Ka18 for E(p)=1834.
12028.5?		[c]	1834.9[c]	
12031.2		<1.0[c] keV	1837.7[c]	E(p)(lab): other: 1841 (1961Ma28).
12038.6 *19*	1$^-$		1845.3[b] *19*	J$^{\pi}$: (p,$\alpha(\theta)$): A_2=−0.53 *3* (1967Bo03).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				E(p)(lab): other: 1844.8 (1952Sc09). S$_{p\alpha}$=70 eV.
12042.0 *19*	(1$^-$,2$^+$)	1.5[@] keV *6*	1848.8[b] *19*	E(p)(lab): others: 1852 (1966Ka18), 1846.4 (1952Sc09). J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=+0.14 *3* (1967Bo03). S$_{p\alpha}$=410 eV. Γ=2.2 keV from 1952Sc09 for E(p)=1846.4, 8 keV from 1966Ka18 for E(p)=1852.
12043.2		2.5[c] keV	1850.0[c]	
12047.3?		2.2[c] keV	1854.2[c]	
12053.5 *19*	2$^+$	<0.6[@] keV	1860.6[b] *19*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=+0.70 *1*, A$_4$=−1.64 *4* (1967Bo03). E(p)(lab): other: 1857 (1961Ma28). S$_{p\alpha}$=90 eV.
12055.9?		[c]	1863.0[c]	E(p)(lab): other: 1865 (1961Ma28).
12060.7		1.6[c] keV	1868.0[c]	
12063.4 *19*			1870.7[b] *19*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). E(p)(lab): others: 1872 (1961Ma28), 1872.3 (1952Sc09). S$_{p\alpha}$=50 eV. Γ<1 keV from 1952Sc09 for E(p)=1872.3.
12067.4 *19*			1874.9[b] *19*	E(p)(lab): other: 1875.0 (1952Sc09). J$^{\pi}$: π=natural from ^{37}Cl(p,α). S$_{p\alpha}$=80 eV. Γ<1 keV from 1952Sc09 for E(p)=1875.0.
12071.0 *19*			1878.6[b] *19*	J$^{\pi}$: π=natural from ^{37}Cl(p,α). E(p)(lab): others: 1880 (1961Ma28), 1880.0 (1952Sc09). S$_{p\alpha}$=200 eV. Γ<1 keV from 1952Sc09 for E(p)=1880.0.
12076.2		[c]	1883.9[c]	
12078.1		[c]	1885.9[c]	
12081.5 *19*			1889.3[b] *19*	E(p)(lab): other: 1890.9 (1952Sc09). J$^{\pi}$: π=natural from ^{37}Cl(p,α). E(p)(lab): other: 1889 (1961Ma28), 1890.9 (1952Sc09). S$_{p\alpha}$=17 eV. Γ=2.3 keV from 1952Sc09 for E(p)=1890.9.
12085.5 *19*	1$^-$	2.1[@] keV *6*	1893.5[b] *19*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=+0.954 *15* (1967Bo03). E(p)(lab): others: 1896 (1966Ka18), 1894.7 (1952Sc09). S$_{p\alpha}$=42 eV. Γ=5.6 keV from 1966Ka18 for E(p)=1896.
12091.1?		[c]	1899.2[c]	
12094.3		[c]	1902.5[c]	E(p)(lab): other: 1901 (1961Ma28).
12097.5 *19*	2$^+$	3.0[@] keV *6*	1905.8[b] *19*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=0.00 *3*, A$_4$=−0.22 *4* (1967Bo03). S$_{p\alpha}$=160 eV.
12106.4		[c]	1914.9[c]	E(p)(lab): other: 1916 (1961Ma28).
12110.6 *19*		2.6[@] keV *6*	1919.2[b] *19*	J$^{\pi}$: π=natural from ^{37}Cl(p,α); (p,$\alpha(\theta)$); A$_2$=−1.24 *11*, odd terms (1967Bo03). E(p)(lab): other: 1918.3+1920.3 in 1952Sc09. S$_{p\alpha}$=80 eV.
12117.3 *19*	1$^-$	1.1[@] keV *6*	1926.1[b] *19*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=+1.00 *5* (1967Bo03). E(p)(lab): other: 1924 (1961Ma28), 1927.3 (1952Sc09). S$_{p\alpha}$=160 eV.
12122.6 *19*	(1$^-$,3$^-$)		1931.6[b] *20*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=+0.81 *3* (1967Bo03). S$_{p\alpha}$=140 eV. Γ=1.5 keV from 1952Sc09 for E(p)=1933.1.
12127.5 *19*	(1$^-$,2$^+$)	1.4[@] keV *6*	1936.6[b] *20*	J$^{\pi}$: (p,$\alpha(\theta)$): A$_2$=−0.32 *5* (1967Bo03).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
				E(p)(lab): others: 1935 (1961Ma28), 1933.1 (1952Sc09). $S_{p\alpha}$=260 eV. Γ=1.5 keV from 1952Sc09 for E(p)=1933.1.
12131.8		2.3[c] keV	1941.0[c]	
12136.1 *19*	1⁻	2.3[@] keV *6*	1945.4[b] *20*	Jπ: (p,α(θ)): A_2=−0.64 *2* (1967Bo03). E(p)(lab): others: 1946 (1961Ma28), 1946.1 (1952Sc09). $S_{p\alpha}$=160 eV. Γ=2.3 keV from 1952Sc09 for E(p)=1946.1.
12143.1 *19*		1.1[@] keV *6*	1952.6[b] *20*	Jπ: π=natural from ^{37}Cl(p,α). E(p)(lab): other: 1953.3 (1952Sc09). $S_{p\alpha}$=460 eV.
12146.2		[c]	1955.8[c]	
12149.7		[c]	1959.4[c]	
12153.1 *19*			1962.9[b] *20*	Jπ: π=natural from ^{37}Cl(p,α); (p,α(θ)); odd terms in p(θ). E(p)(lab): other: 1964.2 (1952Sc09). $S_{p\alpha}$=90 eV.
12159			1969[e]	
12169.1?		[c]	1979.3[c]	E(p)(lab): other: 1976 (1961Ma28).
12175.7		3.8[c] keV	1986.1[c]	E(p)(lab): others: 1987 (1961Ma28), 1983 (1966Ka18). Γ=7.8 keV from 1966Ka18 for E(p)=1983.
12179.7?		[c]	1990.2[c]	
12185.2		[c]	1995.9[c]	E(p)(lab): other: 1995 (1961Ma28).
12188.8		[c]	1999.6[c]	
12199.1		[c]	2010.1[c]	E(p)(lab): others: 2008 (1961Ma28), 2010 (1966Ka18). Γ=16 keV from 1966Ka18 for E(p)=2010.
12206.4		[c]	2017.6[c]	
12215.0		4.4[c] keV	2026.5[c]	E(p)(lab): other: 2023 (1961Ma28).
12230.1?		[c]	2042.0[c]	E(p)(lab): other: 2041 (1961Ma28).
12233.2		[c]	2045.2[c]	Γ=7.8 keV from 1966Ka18 for E(p)=2048.
12239.5		[c]	2051.6[c]	E(p)(lab): other: 2051 (1961Ma28).
12250.5		[c]	2063.0[c]	E(p)(lab): other: 2060 (1961Ma28).
12262.6?		[c]	2075.4[c]	E(p)(lab): other: 2074 (1961Ma28).
12267.4?		[c]	2080.3[c]	
12270.7?		[c]	2083.7[c]	Γ=3.3 keV from 1966Ka18 for E(p)=2086.
12275.6?		[c]	2088.7[c]	E(p)(lab): others: 2089 (1961Ma28), 2086 (1966Ka18). Γ=3.3 keV from 1966Ka18 for E(p)=2086.
12280.7?		[c]	2094.0[c]	
12284.4?		[c]	2097.8[c]	
12290.6?		[c]	2104.1[c]	E(p)(lab): others: 2104 (1961Ma28), 2102 (1966Ka18). Γ=3.3 keV from 1966Ka18 for E(p)=2102.
12298.2		[c]	2112.0[c]	
12309.4?		[c]	2123.5[c]	E(p)(lab): other: 2122 (1961Ma28).
12314.7?		[c]	2128.9[c]	Γ=7.8 keV from 1966Ka18 for E(p)=2127.
12320.6?		[c]	2135.0[c]	E(p)(lab): other: 2133 (1961Ma28).
12325			2140[e]	
12331.1?		[c]	2145.7[c]	
12334.0		[c]	2148.7[c]	
12343.8		[c]	2158.8[c]	E(p)(lab): other: 2159 (1961Ma28).
12350.5		[c]	2165.7[c]	Γ=14 keV from 1966Ka18 for E(p)=2162.
12357.3		[c]	2172.7[c]	
12364.1		[c]	2179.6[c]	Γ=10 keV from 1966Ka18 for E(p)=2180.
12368.9		[c]	2184.6[c]	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
12373.4	2.7[c] keV	2189.2[c]	E(p)(lab): other: 2191 (1961Ma28).
12394		2211	E(p)(lab): from 1974Al05. Others: 2208.6 (1952Sc09), 2210 (1966Ka18), 2207 (1961Ma28). Γ=11 keV from 1966Ka18 for E(p)=2210.
12397.6?	[c]	2214.1[c]	
12405		2222	E(p)(lab): from 1974Al05. Other: 2221.5 (1952Sc09).
12409.3	[c]	2226.1[c]	
12416		2233[e]	
12420.0	[c]	2237.1[c]	
12431.4?	[c]	2248.8[c]	E(p)(lab): other: 2246 (1961Ma28).
12438.0?	[c]	2255.6[c]	E(p)(lab): other: 2256 (1961Ma28).
12441.9	3.5[c] keV	2259.6[c]	
12447.6?	[c]	2265.4[c]	
12454		2272[e]	
12459.7	[c]	2277.9[c]	
12468.2	[c]	2286.6[c]	Γ=7.8 keV from 1966Ka18 for E(p)=2288.
12473		2292[e]	
12484.0	[c]	2302.8[c]	E(p)(lab): others: 2300 (1961Ma28), 2298 (1966Ka18). Γ=3.2 keV from 1966Ka18 for E(p)=2298.
12489.0	[c]	2308.0[c]	E(p)(lab): other: 2310 (1961Ma28).
12494.9	[c]	2314.0[c]	
12498		2318[e]	
12503.7	[c]	2323.1[c]	E(p)(lab): other: 2323 (1961Ma28).
12509.1	[c]	2328.6[c]	
12518		2338[e]	
12528.6	[c]	2348.6[c]	E(p)(lab): other: 2350 (1961Ma28).
12535.7?	[c]	2355.9[c]	
12540.0	[c]	2360.3[c]	
12544.7	[c]	2365.2[c]	E(p)(lab): other: 2364 (1961Ma28).
12550.2?	[c]	2370.8[c]	
12553.3	[c]	2374.0[c]	E(p)(lab): other: 2373 (1961Ma28).
12555.7?	[c]	2376.5[c]	
12557.7?	[c]	2378.5[c]	Γ=3.2 keV from 1966Ka18 for E(p)=2380.
12561.6	[c]	2382.5[c]	
12565.5	[c]	2386.5[c]	
12572.2	3.3[c] keV	2393.4[c]	E(p)(lab): others: 2392 (1961Ma28), 2396 (1966Ka18). Γ=16 keV from 1966Ka18 for E(p)=2396.
12577.7	4.1[c] keV	2399.1[c]	E(p)(lab): other: 2401 (1961Ma28).
12584.7?	2.5[c] keV	2406.3[c]	E(p)(lab): other: 2405 (1961Ma28).
12588.3	1.8[c] keV	2410.0[c]	
12593.0	1.8[c] keV	2414.8[c]	E(p)(lab): others: 2412 (1961Ma28), 2414 (1966Ka18). Γ=7.8 keV from 1966Ka18 for E(p)=2414.
12598.0	1.8[c] keV	2419.9[c]	
12601.4	[c]	2423.4[c]	E(p)(lab): others: 2423 (1961Ma28), 2426 (1966Ka18). Γ=3.3 keV from 1966Ka18 for E(p)=2426.
12611.3	3.1[c] keV	2433.6[c]	E(p)(lab): other: 2437 (1961Ma28).
12620.7	3.3[c] keV	2443.2[c]	Γ=8 keV from 1966Ka18 for E(p)=2446.
12626.0?	1.8[c] keV	2448.7[c]	E(p)(lab): others: 2450 (1961Ma28), 2446 (1966Ka18). Γ=8 keV from 1966Ka18 for E(p)=2446.
12631.2	2.4[c] keV	2454.0[c]	
12637.8	2.1[c] keV	2460.8[c]	E(p)(lab): other: 2461 (1961Ma28).
12642.3	4.3[c] keV	2465.4[c]	Γ=8 keV from 1966Ka18 for E(p)=2466.

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

E(level)[†]	$T_{1/2}$ or Γ[#]	E(p)(lab)[a]	Comments
12656.2	2.4[c] keV	2479.7[c]	E(p)(lab): other: 2478 (1961Ma28).
12665.2	4.3[c] keV	2489.0[c]	E(p)(lab): other: 2488 (1961Ma28).
12669.6	4.3[c] keV	2493.5[c]	
12672.8	4.3[c] keV	2496.8[c]	E(p)(lab): other: 2496 (1961Ma28).
12681.7	4.3[c] keV	2505.9[c]	E(p)(lab): other: 2508 (1961Ma28).
12699		2524[e]	
12706		2531[e]	
12712		2537[e]	
12718	3.3[d] keV	2544[d]	
12727		2553[e]	
12741		2567[e]	
12746	5.6[d] keV	2572[d]	E(p)(lab): also from 1961Ma28.
12752		2578[e]	
12769	7.8[d] keV	2596[d]	E(p)(lab): other: 2595 (1961Ma28).
12787		2614[e]	
12798	19[d] keV	2626[d]	E(p)(lab): other: 2625 (1961Ma28).
12811		2639[e]	
12818		2646[e]	
12831		2660[e]	
12839	3.2[d] keV	2668[d]	E(p)(lab): other: 2672 (1961Ma28).
12847		2676[e]	
12862		2691[e]	
12877		2707[e]	
12894		2724[e]	
12900	12[d] keV	2730[d]	E(p)(lab): other: 2732 (1961Ma28).
12906		2737[e]	
12927		2758[e]	
12933		2764[e]	
12940		2772[e]	
12948		2780[e]	
12958	12[d] keV	2790[d]	E(p)(lab): also from 1961Ma28.
12976		2809[e]	
12994		2827[e]	
12999	3.3[d] keV	2832[d]	
13013		2847[e]	
13022		2856[e]	
13034		2868[e]	
13044		2878[e]	
13116	39[d] keV	2952[d]	
13178	21[d] keV	3016[d]	

[†] Bound states are from (p,γ) in 1974Al05, unless otherwise noted; excitation energy for resonances is obtained using E(level)=E(p)(c.m.)+S(p), where E(p)(c.m.) deduced from E(p)(lab) and S(p)=10242.25 *20* (2017Wa10: AME-2016).

[‡] From $\gamma(\theta)$, γ(pol) and RUL where arguments are given in comments, otherwise from Adopted Levels, unless otherwise noted.

[#] Half-lives from DSAM in 1984La24 and widths from 1974Al05, unless otherwise noted. The authors' assigned relative uncertainty in $T_{1/2}$ by DSAM due to stopping theory are 30% in 1984La24 and 25% in 1974Al06. Such uncertainties are not included in 1968En01 and thus a 25% uncertainty has been added in quadrature by the evaluator for the values from 1968En01.

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

^{38}Ar Levels (continued)

@ Γ from 1967Bo03.
& $T_{1/2}$ from 1968En01.
[a] From 1974Al05 up to E(p)=1783 keV, from 1967Bo03 above 1783 up to 1963, and from 1952Sc09 and 1966Ka18 above that, unless otherwise noted.
[b] From 1967Bo03.
[c] From 1952Sc09.
[d] From 1966Ka18.
[e] Read by the evaluator from the spectrum of neutron yields in Figure 1 of 1961Ma28.

$\gamma(^{38}Ar)$

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.[a]	δ[a]	Comments
2167.60	2^+	2167.61 *14*	100	0	0^+	E2		Mult.: A_2=+0.11 *3*, A_4=−0.01 *3*, or A_2=+0.23 *2*, A_4=−0.02 *2* (1968En01); A_2=+0.30 *2*, A_4=−0.09 *2*, or A_2=+0.32 *2*, A_4=−0.05 *2*, Pol=+0.14 *3* (1966Er07).
3377.36	0^+	1209.1 *3*	100	2167.60	2^+			
3810.09	3^-	1642.31 *14*	100	2167.60	2^+	E1(+M2)	+0.01 *2*	Mult.,δ: from $\gamma(\theta$,pol) in 1966Er07. A_2=−0.19 *2*, A_4=+0.00 *2*, Pol=+0.12 *2*, or A_2=−0.23 *2*, A_4=−0.01 *2* (1966Er07); A_2=−0.10 *3*, A_4=−0.02 *3*, or A_2=−0.05 *2*, A_4=−0.03 *2* (1968En01).
3936.61	2^+	559.2	<0.3	3377.36	0^+			I_γ: from 1988Wa34. Other: <0.5 (1974Al05).
		1769.0	6.5 *5*	2167.60	2^+			I_γ: weighted average of 6.2 *7* (1974Al05) and 6.7 *5* (1988Wa34).
		3936.1 *5*	93.5 *5*	0	0^+			I_γ: weighted average of 93.8 *7* (1974Al05) and 93.3 *5* (1988Wa34).
4479.92	4^-	669.58 *14*	100	3810.09	3^-	M1(+E2)	+0.01 *2*	Mult.,δ: from $\gamma(\theta$,pol) in 1966Er07. A_2=−0.18 *2*, A_4=−0.02 *2*, Pol=−0.17 *2*, or A_2=−0.22 *2*, A_4=−0.02 *2* (1966Er07); A_2=−0.14 *2*, A_4=−0.03 *2* (1968En01).
4565.5	2^+	628.9	1.9 *3*	3936.61	2^+			I_γ: weighted average of 2.0 *3* (1974Al05) and 1.8 *3* (1988Wa34).
		755.4	1.8 *3*	3810.09	3^-			I_γ: weighted average of 2.0 *3* (1974Al05) and 1.6 *3* (1988Wa34).
		1188.1	<0.8	3377.36	0^+			I_γ: from 1974Al05. Other: <2 (1988Wa34).
		2398.1 *5*	96.3 *4*	2167.60	2^+			I_γ: weighted average of 96.0 *4* (1974Al05) and 96.6 *4* (1988Wa34).
		4565	<2	0	0^+			I_γ: from 1974Al05. Other: <3 (1988Wa34).
4585.2	5^-	105.5 *4*	89.7 *10*	4479.92	4^-	M1(+E2)	−0.02 *3*	I_γ: from 1988Wa34. Other: 89.7 *10* (1974Al05). Mult.,δ: from $\gamma(\theta$,pol) in 1966Er07. A_2=−0.24 *3*, A_4=+0.01 *4* (1966Er07).
		774.9 *5*	9.9 *9*	3810.09	3^-	E2		I_γ: from 1988Wa34. Other: 10.0 *10* (1974Al05). Mult.: from $\gamma(\theta$,pol) in 1966Er07 and $\gamma(\theta)$ in 1968En01. A_2=+0.29 *2*, A_4=−0.09 *2*, Pol=+0.19 *9* (1966Er07); A_2=+0.31 *6*, A_4=−0.06 *6* (1968En01).
		2417.5	0.4 *1*	2167.60	2^+			I_γ: from 1988Wa34.
4710.3	0^+	773.3 *5*	100	3936.61	2^+			
4876.87	3^-	940.2	<2	3936.61	2^+			I_γ: other: <1 (1974Al05).
		1066.8 *3*	52.3 *4*	3810.09	3^-	M1(+E2)	+0.03 *7*	I_γ: other: 54 *2* (1974Al05). Mult.,δ: A_2=+0.32 *7*, A_4=−0.01 *7*, Pol=−0.18 *5* (1968En01).
		1499.5	<1	3377.36	0^+			I_γ: other: <2 (1974Al05).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[a]	δ[a]	Comments
4876.87	3$^-$	2709.4 *4*	47.7 *4*	2167.60	2$^+$	E1+M2	+0.10 *7*	I_γ: other: 46 *2* (1974Al05). Mult.,δ: A_2=−0.01 *9*, A_4=−0.01 *9* (1968En01).
		4877	<4	0	0$^+$			I_γ: other: <2 (1974Al05).
5084.3	(2)$^-$	1274.2	6.8 *5*	3810.09	3$^-$			I_γ: other: 6 *2* (1974Al05).
		2916.6	93.2 *5*	2167.60	2$^+$			I_γ: other: 94 *2* (1974Al05).
		5084	<5	0	0$^+$			I_γ: other: <7 (1974AL05).
5157.3	2$^+$	677.4	<2	4479.92	4$^-$			I_γ: from 1974Al05). Other: <3 (1988Wa34).
		1220.7	22 *3*	3936.61	2$^+$			I_γ: weighted average of 24 *2* (1974Al05) and 19 *2* (1988Wa34).
		1347.2	13 *2*	3810.09	3$^-$			I_γ: weighted average of 12.7 *16* (1974Al05) and 13 *2* (1988Wa34).
		2989.6	52 *2*	2167.60	2$^+$			I_γ: weighted average of 54 *3* (1974Al05) and 51 *2* (1988Wa34).
		5157	13 *4*	0	0$^+$			I_γ: unweighed average of 9.3 *19* (1974Al05) and 17 *3* (1988Wa34).
5349.5	4$^+$	869.6	<2	4479.92	4$^-$			I_γ: from 1974Al05 and 1988Wa34.
		1412.9	30.7 *16*	3936.61	2$^+$			I_γ: average of 32 *2* (1974Al05) and 29.5 *16* (1988Wa34).
		1539.4	8.3 *13*	3810.09	3$^-$			I_γ: average of 9.0 *13* (1974Al05) and 7.5 *13* (1988Wa34).
		3181.8	61 *3*	2167.60	2$^+$			I_γ: average of 59 *3* (1974Al05) and 63 *3* (1988Wa34).
		5349	<3	0	0$^+$			I_γ: from 1974Al05 and 1988Wa34.
5513.38	3$^-$	636.5	18.5 *6*	4876.87	3$^-$			I_γ: other: 23 *2* (1974Al05).
		947.9	<2	4565.5	2$^+$			I_γ: also from 1974Al05.
		1033.3 *4*	48.4 *18*	4479.92	4$^-$			I_γ: other: 37 *3* (1974Al05). A_2=+0.37 *7*, A_4=−0.07 *7* (1968En01).
		1576.7	<3	3936.61	2$^+$			I_γ: other: <1 (1974Al05).
		1703.2	6.9 *8*	3810.09	3$^-$			I_γ: other: 11 *4* (1974Al05).
		2136.0	<2	3377.36	0$^+$			I_γ: also from 1974Al05.
		3345.6	26.2 *20*	2167.60	2$^+$			I_γ: other: 29 *3* (1974Al05). A_2=−0.32 *10*, A_4=+0.07 *10* (1968En01).
		5513	<6	0	0$^+$			I_γ: other: <3 (1974Al05).
5552.21	1$^+$,2$^+$	986.7	21 *2*	4565.5	2$^+$			I_γ: average of 23 *2* (1974Al05) and 19 *3* (1988Wa34).
		1615.6	40 *3*	3936.61	2$^+$			I_γ: average of 39 *3* (1974Al05) and 42 *4* (1988Wa34).
		1742.1	<3	3810.09	3$^-$			I_γ: from 1974Al05. Other: <6 (1988Wa34).
		3384.4	27 *3*	2167.60	2$^+$			I_γ: average of 26 *3* (1974Al05) and 27 *3* (1988Wa34).
		5552	12 *3*	0	0$^+$			I_γ: average of 12 *3* (1974Al05) and 12 *3* (1988Wa34).
5594.6	2$^+$	1029.1	24 *2*	4565.5	2$^+$			I_γ: average of 23 *5* (1974Al05) and 24 *2* (1988Wa34).
		1114.7	<3	4479.92	4$^-$			I_γ: from 1974Al05 and 1988Wa34.
		1658.0	39 *3*	3936.61	2$^+$			I_γ: average of 37 *6* (1974Al05) and 41 *3* (1988Wa34).
		1784.5	<7	3810.09	3$^-$			I_γ: from 1988Wa34. Other: <9 (1974Al05).
		2217.2	15 *2*	3377.36	0$^+$			I_γ: average of 17 *3* (1974Al05) and 14 *2* (1988Wa34).
		5594	22 *3*	0	0$^+$			I_γ: average of 23 *3* (1974Al05) and 21 *3* (1988Wa34).
5658.1	5$^-$	1072.7 *3*	89.4 *5*	4585.2	5$^-$	M1(+E2)	−0.10 *9*	I_γ: average of 89.0 *9* (1974Al05) and 89.7 *5* (1988Wa34). Mult.,δ: from $\gamma(\theta$,pol) in 1966Er07. A_2=+0.30 *4*, A_4=−0.02 *4*, Pol=+0.29 *6*, or A_2=+0.30 *7*, A_4=−0.03 *7* (1966Er07).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[a]	δ[a]	Comments
5658.1	5^-	1178.2	8.4 *3*	4479.92	4^-			I_γ: average of 8.6 *7* (1974Al05) and 8.4 *3* (1988Wa34). A_2=−0.40 *20*, A_4=−0.03 *22* (1968En01).
		1721.4	<0.5	3936.61	2^+			I_γ: from 1974Al05). Other: <1 (1988Wa34).
		1848.0	2.2 *3*	3810.09	3^-			I_γ: average of 2.4 *3* (1974Al05) and 1.9 *4* (1988Wa34).
		3490.3	<0.5	2167.60	2^+			I_γ: from 1974Al05). Other: <1 (1988Wa34).
5733.9	1^-	5733	100	0	0^+			
5824.9	3^-	740.6	8.0 *9*	5084.3	$(2)^-$			I_γ: other: 11.3 *16* (1974Al05).
		948.0	18 *2*	4876.87	3^-			I_γ: other: 25 *3* (1974Al05).
		1345.0	19 *2*	4479.92	4^-			I_γ: other: 11.7 *16* (1974Al05).
		2014.8	32 *3*	3810.09	3^-			I_γ: other: 35 *3* (1974Al05).
		3657.1	23 *3*	2167.60	2^+			I_γ: other: 17 *3* (1974Al05).
		5824	<8	0	0^+			I_γ: other: <10 (1974Al05).
5857.5	$(2)^-$	980.6	9.0 *9*	4876.87	3^-			I_γ: other: 13 *2* (1974Al05).
		1292.0	<1	4565.5	2^+			I_γ: other: <7 (1974Al05).
		1920.8	<2	3936.61	2^+			I_γ: other: <9 (1974Al05).
		2047.4	81.9 *17*	3810.09	3^-			I_γ: other: 87 *2* (1974Al05).
		2480.1	<3	3377.36	0^+			I_γ: other: <10 (1974Al05).
		3689.7	9.1 *4*	2167.60	2^+			I_γ: other: <8 (1974Al05).
5974.8	(0^+ to 3^-)	817.5	5.6 *8*	5157.3	2^+			I_γ: from 1974Al05. Other: 5 *2* (1988Wa34).
		1409.3	19.3 *18*	4565.5	2^+			I_γ: from 1974Al05. Other: 26 *3* (1988Wa34).
		1494.8	<2	4479.92	4^-			I_γ: from 1974Al05. Other: <3 (1988Wa34).
		2038.1	11.1 *14*	3936.61	2^+			I_γ: from 1974Al05. Other: 15 *4* (1988Wa34).
		3807.0	64 *3*	2167.60	2^+			I_γ: from 1974Al05). Other: 54 *3* (1988Wa34).
		5974	<3	0	0^+			I_γ: from 1974Al05 and 1988Wa34.
6041.8	(3^-,4^+)	1164.9	<3	4876.87	3^-			I_γ: from 1974Al05. Other: <5 (1988Wa34).
		1456.6	10.5 *16*	4585.2	5^-			I_γ: from 1974Al05. Other: 17 *3* (1988Wa34).
		1476.3	<3	4565.5	2^+			I_γ: from 1974Al05. Other: <7 (1988Wa34).
		1561.8	32 *3*	4479.92	4^-			I_γ: from 1974Al05. Other: 42 *5* (1988Wa34).
		2231.6	58 *3*	3810.09	3^-			I_γ: from 1974Al05. Other: 41 *5* (1988Wa34).
		3874.0	<6	2167.60	2^+			I_γ: from 1974Al05 and 1988Wa34.
		6041	<3	0	0^+			I_γ: from 1974Al05. Other: <6 (1988Wa34).
6053.1	(4^+)	703.6	54 *3*	5349.5	4^+			I_γ: average of 57 *4* (1974Al05) and 51 *3* (1988Wa34).
		1487.6	17 *2*	4565.5	2^+			I_γ: average of 15 *2* (1974Al05) and 18 *2* (1988Wa34).
		1573.1	7 *2*	4479.92	4^-			I_γ: average of 8 *2* (1974Al05) and 6 *2* (1988Wa34).
		2116.4	22 *3*	3936.61	2^+			I_γ: average of 20 *3* (1974Al05) and 25 *4* (1988Wa34).
6210.0	4^-	1624.8	7.4 *9*	4585.2	5^-			I_γ: average of 7.1 *9* (1974Al05) and 9 *2* (1988Wa34).
		1729.4 *6*	92.6 *9*	4479.92	4^-	M1+E2	−0.32 *10*	I_γ: average of 92.9 *9* (1974Al05) and 91 *2* (1988Wa34). Mult.,δ: A_2=−0.03 *4*, A_4=−0.06 *4* and RUL (1968En01).
		2273.3	<1	3936.61	2^+			I_γ: other: <2 (1974Al05).
		4042.2	<2	2167.60	2^+			
		6209	<1	0	0^+			
6213.8	(2^+)	1733.8	<3	4479.92	4^-			I_γ: other: <6 (1974Al05).
		2277.1	12 *2*	3936.61	2^+			I_γ: other: 10 *3* (1974Al05).
		4046.0	18 *2*	2167.60	2^+			I_γ: other: 37 *5* (1974Al05).
		6213	70 *3*	0	0^+			I_γ: other: 53 *5* (1974Al05).

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[a]	δ[a]	Comments
6249.9	2^+	900.4	8.6 *13*	5349.5	4^+			I_γ: average of 8.7 *19* (1974Al05) and 8.5 *13* (1988Wa34).
		1092.6	5.4 *11*	5157.3	2^+			I_γ: average of 5.3 *19* (1974Al05) and 5.5 *11* (1988Wa34).
		1684.4	51 *4*	4565.5	2^+			I_γ: average of 45 *5* (1974Al05) and 54 *4* (1988Wa34).
		2313.2	<5	3936.61	2^+			I_γ: from 1974Al05. Other: <8 (1988Wa34).
		2439.7	<3	3810.09	3^-			I_γ: from 1988Wa34. Other: <5 (1974Al05).
		2872.4	10 *3*	3377.36	0^+			I_γ: average of 11 *4* (1974Al05) and 10 *3* (1988Wa34).
		4082.1	25 *4*	2167.60	2^+			I_γ: average of 30 *4* (1974Al05) and 22 *3* (1988Wa34).
		6249	<3	0	0^+			I_γ: from 1974Al05 and 1988Wa34.
6276.1	4^+	926.6	28 *4*	5349.5	4^+			I_γ: average of 32 *4* (1974Al05) and 25 *4* (1988Wa34).
		1796.1	8 *3*	4479.92	4^-			I_γ: average of 10 *2* (1974Al05) and 5 *2* (1988Wa34).
		2339.4	15 *4*	3936.61	2^+			I_γ: average of 11 *2* (1974Al05) and 19 *4* (1988Wa34).
		2465.9	<5	3810.09	3^-			I_γ: from 1974Al05 and 1988Wa34.
		2898.6	<3	3377.36	0^+			I_γ: other: <6 (1974Al05).
		4108.3	49 *3*	2167.60	2^+			I_γ: average of 47 *3* (1974Al05) and 51 *3* (1988Wa34).
		6276	<4	0	0^+			I_γ: from 1974Al05. Other: <5 (1988Wa34).
6338.6	$1^-,2^-,3^-$	1461.7	30 *4*	4876.87	3^-			I_γ: other: 14 *7* (1974Al05).
		2528.4	35 *4*	3810.09	3^-			I_γ: other: 41 *9* (1974Al05).
		2961.1	<6	3377.36	0^+			I_γ: other: <10 (1974Al05).
		4170.8	35 *4*	2167.60	2^+			I_γ: other: 45 *12* (1974Al05).
6353.5	1^-	6353	100	0	0^+			
6408	6^+	1823	100	4585.2	5^-			
6476.6	(0^+ to 3^-)	1599.7	<2	4876.87	3^-			
		1911.0	61 *2*	4565.5	2^+			I_γ: other: 100 (1974Al05).
		1996.6	<6	4479.92	4^-			
		2539.9	13[#] *2*	3936.61	2^+			
		2666.4	<7	3810.09	3^-			
		3099.1	<9	3377.36	0^+			
		4308.7	26[#] *2*	2167.60	2^+			
		6476	<8	0	0^+			
6485.4	(1^- to 4^+)	x[b]						I_γ: 39 *11* unknown (1974Al05).
		2548.7	<4	3936.61	2^+			
		2675.2	40 *5*	3810.09	3^-			I_γ: other: 25 *6* (1974Al05).
		3107.9	<4	3377.36	0^+			I_γ: other: <9 (1974Al05).
		4317.5	60 *5*	2167.60	2^+			I_γ: other: 36 *9* (1974Al05).
		6485	<6	0	0^+			I_γ: other: <4 (1974Al05).
6495.8	$(2^-,3^-)$	1618.9	18 *3*	4876.87	3^-			I_γ: average of 26 *5* (1974Al05) and 18 *3* (1988Wa34).
		1930.2	<2	4565.5	2^+			I_γ: other: <9 (1974Al05).
		2015.8	19 *2*	4479.92	4^-			I_γ: average of 18 *3* (1974Al05) and 19 *2* (1988Wa34).
		2559.1	13 *2*	3936.61	2^+			I_γ: average of 11 2 (1974Al05) and 13 *2* (1988Wa34).
		2685.6	42 *4*	3810.09	3^-			I_γ: average of 36 *3* (1974Al05) and 42 *4* (1988Wa34).
		3118.3	<2	3377.36	0^+			I_γ: other: <5 (1974Al05).
		4327.9	8 *2*	2167.60	2^+			I_γ: average of 9 *3* (1974Al05) and 8 *2* (1988Wa34).
		6495	<3	0	0^+			I_γ: other: <3 (1974Al05).
6574.3	1^-	x						I_γ: 32 *8* unknown (1974Al05).
		2094.3	<2	4479.92	4^-			I_γ: other: <10 (1974Al05).
		2637.6	<3	3936.61	2^+			I_γ: other: <10 (1974Al05).
		2764.1	<5	3810.09	3^-			I_γ: other: <10 (1974Al05).
		3196.8	<3	3377.36	0^+			I_γ: other: <10 (1974Al05).
		4406.4	21 *3*	2167.60	2^+			
		6574	79 *3*	0	0^+			I_γ: other: 68 *8* (1974Al05) with 32 *8* unknown.

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[a]	δ[a]	Comments
6601.18	4^-	1724.3	17.4 *17*	4876.87	3^-			I_γ: from 1974Al05.
		2015.9	2.4 *4*	4585.2	5^-			I_γ: from 1974Al05.
		2121.55 *21*	79.3 *19*	4479.92	4^-	M1(+E2)	−0.05 *8*	I_γ: 79.3 *19* (1974Al05). Mult.,δ: A_2=+0.22 *3*, A_4=−0.06 *4* and RUL(1968En01).
		2791.0	0.9 *3*	3810.09	3^-			I_γ: from 1974Al05.
6621.6	$(1^-,2,3^-)$	2056.0	31 *2*	4565.5	2^+			I_γ: average of 32 *2* (1988Wa34) and 26 *5* (1974Al05).
		2141.6	<4	4479.92	4^-			I_γ: other: <6 (1974Al05).
		2684.9	15 *2*	3936.61	2^+			I_γ: average of 15 *2* (1988Wa34) and 15 *4* (1974Al05).
		2811.4	15 *2*	3810.09	3^-			I_γ: average of 14 *2* (1988Wa34) and 19 *4* (1974Al05).
		4453.7	39 *3*	2167.60	2^+			I_γ: average of 39 *3* (1988Wa34) and 40 *5* (1974Al05).
		6621	<9	0	0^+			I_γ: from 1988Wa34 and 1974Al05.
6673.5	$(5)^-$	2088.2	83 *3*	4585.2	5^-			I_γ: other: 93 *2* (1974Al05). A_2=+0.25 *4*, A_4=+0.08 *5* (1974Al06).
		2193.5	17 *3*	4479.92	4^-			I_γ: other: 7 *2* (1974Al05).
		2736.8	<4	3936.61	2^+			I_γ: from 1988Wa34 and 1974Al05.
		6673	<8	0	0^+			I_γ: other: <9 (1974Al05).
6681.6	(0,1,2)	947.7	100	5733.9	1^-			
6772.7	1^-	2292.7	<7	4479.92	4^-			I_γ: other: <5 (1974Al05).
		2836.0	29 *5*	3936.61	2^+			I_γ: other: <6 (1974Al05).
		3395.2	<6	3377.36	0^+			I_γ: other: <8 (1974Al05).
		4604.8	<7	2167.60	2^+			I_γ: other: <6 (1974Al05).
		6772	71 *5*	0	0^+			I_γ: other: 100 (1974Al05).
6824.0		x						E_γ,I_γ: 25 *10* unknown, 17 *5* for a 2887γ to 3936 level in 1974Al05.
		2258.4	<6	4565.5	2^+			I_γ: other: 15 *5* (1974Al05).
		2344.0	<2	4479.92	4^-			
		3013.8	32 *5*	3810.09	3^-			I_γ: other; 15 *5* (1974Al05).
		3446.5	<8	3377.36	0^+			
		4656.1	68 *5*	2167.60	2^+			I_γ: other: 28 *5* (1974Al05).
		6823	<5	0	0^+			
6824.1		2258.5		4565.5	2^+			E_γ: reported in 1988Wa34.
		2887.4		3936.61	2^+			E_γ: reported in 1988Wa34.
		3013.9[b]		3810.09	3^-			E_γ: reported in 1988Wa34.
		4656.2[b]		2167.60	2^+			E_γ: reported in 1988Wa34.
6869.9		x	30					
		1993.0	20 *5*	4876.87	3^-			I_γ: other: 37 *7* (1974Al05).
		2304.3	<4	4565.5	2^+			
		2933.2	<4	3936.61	2^+			
		3059.7	30 *5*	3810.09	3^-			I_γ: other: 15 *6* (1974Al05).
		3492.4	<8	3377.36	0^+			
		4702.0	20 *5*	2167.60	2^+			I_γ: other: 48 *9* (1974Al05).
		6869	<9	0	0^+			I_γ: other: <10 (1974Al05).
6903.8	$2^-,3^-$	2423.8	8 *2*	4479.92	4^-			
		2967.1	17 *2*	3936.61	2^+			
		4735.9	75 *3*	2167.60	2^+			I_γ: other: 78 *10* (1974Al05). 1974Al05 report 22 *10* unknown.
6947.9	(2^+)	2071.0	<5	4876.87	3^-			
		2382.3	<9	4565.5	2^+			
		3137.7	<6	3810.09	3^-			
		3570.4	65 *3*	3377.36	0^+			I_γ: other: 100 (1974Al05).

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
6947.9	(2$^+$)	4780.0	35 *3*	2167.60	2$^+$	
		6947	<9	0	0$^+$	
7045	(3$^-$,4$^+$)	3235		3810.09	3$^-$	
7100.8		x	30			
		4932.9	70 *10*	2167.60	2$^+$	I_γ: other: 62 *10* (1974Al05). 1974Al05 report 38 *10* unknown.
7192.2		2315.3	17 *2*	4876.87	3$^-$	I_γ: other: 29 *8* (1974Al05). 1974Al05 report 45 *13* unknown.
		2626.6	<5	4565.5	2$^+$	
		2712.2	63 *4*	4479.92	4$^-$	
		3255.4	<3	3936.61	2$^+$	
		3381.9	20 *2*	3810.09	3$^-$	I_γ: other: 26 *10* (1974Al05).
		3814.6	<4	3377.36	0$^+$	
		5024.2	<4	2167.60	2$^+$	
		7191	<4	0	0$^+$	
7233.0		5065.0	100	2167.60	2$^+$	I_γ: from 1974Al05.
7238	(2$^+$)	x	50			
		7237	50 *5*	0	0$^+$	I_γ: other: 100 (1974Al05).
7288	6$^+$	1938		5349.5	4$^+$	E_γ: reported in 1984La24.
7289.6	(3$^-$,4$^+$)	x	37			
		3479.3	63 *5*	3810.09	3$^-$	
7329		3519		3810.09	3$^-$	
		5161		2167.60	2$^+$	
7370		x	50			
		7369	50 *10*	0	0$^+$	I_γ: other: 50 *13* (1974Al05), 50 *13* unknown.
7431.0		x	45			
		5263.0	55 *5*	2167.60	2$^+$	I_γ: other: 63 *8* (1974Al05), 37 *8* unknown.
7451		x	25			
		2574	20 *5*	4876.87	3$^-$	
		5283	55 *5*	2167.60	2$^+$	I_γ: other: 31 *11* (1974Al05), 69 *11* unknown.
7538		1485		6053.1	(4$^+$)	
		3058		4479.92	4$^-$	
7681		3201	60 *10*	4479.92	4$^-$	
		3871	<6	3810.09	3$^-$	
		5513	40 *10*	2167.60	2$^+$	I_γ: other: 33 *12* (1974Al05), 67 *12* unknown.
7893.4	(1$^+$,2$^+$)	7893	100	0	0$^+$	I_γ: other: 52 *15* (1974Al05), 48 *15* unknown.
7992		5824	100	2167.60	2$^+$	
8800		2758		6041.8	(3$^-$,4$^+$)	E_γ: reported in 1984La24.
10631.3		4773.5		5857.5	(2)$^-$	
		5546.6		5084.3	(2)$^-$	
10815.6		x	27			
		4042.7	4	6772.7	1$^-$	
		4241.0	15	6574.3	1$^-$	
		4461.8	44	6353.5	1$^-$	
		5081.3	10	5733.9	1$^-$	
		6249.5	<0.7	4565.5	2$^+$	
		6878.3	<0.7	3936.61	2$^+$	
		7004.8	<1	3810.09	3$^-$	
		7437.5	<1	3377.36	0$^+$	
		8646.9	<2	2167.60	2$^+$	
		10814	<0.9	0	0$^+$	
10827.0	(2)	x	40			
		3589	4.2	7238	(2$^+$)	
		4252.4	2.5	6574.3	1$^-$	
		4341.3	2.9	6485.4	(1$^-$ to 4$^+$)	
		4576.8	7.0	6249.9	2$^+$	
		4612.9	15	6213.8	(2$^+$)	
		5232.0	4.1	5594.6	2$^+$	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
10827.0	(2)	5313.2	2.2	5513.38	3^-	
		5669.2	5.5	5157.3	2^+	
		5949.6	6.2	4876.87	3^-	
		6260.9	<0.6	4565.5	2^+	
		6346.5	2.0	4479.92	4^-	
		6889.7	3.4	3936.61	2^+	
		7016.2	2.6	3810.09	3^-	
		7448.9	<0.7	3377.36	0^+	
		8658.3	1.4	2167.60	2^+	
		10825	1.0	0	0^+	
10850.1	$(2^-,3^-)$	x	15			
		2956.6	1.9	7893.4	$(1^+,2^+)$	
		3169	0.7	7681		
		3399	2.8	7451		
		3902.0	1.1	6947.9	(2^+)	
		3946.1	7.5	6903.8	$2^-,3^-$	
		4025.9	2.4	6824.0		
		4168.3	0.9	6681.6	(0,1,2)	
		4275.5	7.0	6574.3	1^-	
		4354.0	0.9	6495.8	$(2^-,3^-)$	
		4364.4	2.4	6485.4	$(1^-$ to $4^+)$	
		4511.2	5.1	6338.6	$1^-,2^-,3^-$	
		4599.9	3.6	6249.9	2^+	
		4639.8	1.1	6210.0	4^-	
		4808.0	0.9	6041.8	$(3^-,4^+)$	
		4992.2	4.3	5857.5	$(2)^-$	
		5024.8	1.1	5824.9	3^-	
		5115.8	2.9	5733.9	1^-	
		5336.3	2.1	5513.38	3^-	
		5692.3	0.9	5157.3	2^+	
		5765.3	1.8	5084.3	$(2)^-$	
		5972.7	2.4	4876.87	3^-	
		6284.0	1.0	4565.5	2^+	
		6369.6	<0.3	4479.92	4^-	
		6912.8	1.6	3936.61	2^+	
		7039.3	1.6	3810.09	3^-	
		7471.9	<0.4	3377.36	0^+	
		8681.4	27	2167.60	2^+	
		10848	<0.2	0	0^+	
10873.8	$(0$ to $4^+)$	x	27			
		3641	2.7	7233.0		
		4049.6	1.7	6824.0		
		4520.0	1.3	6353.5	1^-	
		4534.9	2.1	6338.6	$1^-,2^-,3^-$	
		5278.8	2.8	5594.6	2^+	
		5716.0	1.6	5157.3	2^+	
		5789.0	3.4	5084.3	$(2)^-$	
		6307.7	<0.8	4565.5	2^+	
		6393.3	<0.7	4479.92	4^-	
		6936.5	3.4	3936.61	2^+	
		7063.0	<0.1	3810.09	3^-	
		7495.6	<0.1	3377.36	0^+	
		8705.1	54	2167.60	2^+	
		10872	<0.2	0	0^+	
10914.5	$(1^-,2,3^-)$	x	10			I_γ: other: 48 (1974Al05).
		3681	4.2	7233.0		

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
10914.5	$(1^-,2,3^-)$	3813.5	3.6	7100.8		
		4010.5	1.6	6903.8	$2^-,3^-$	
		4044.4	1.5	6869.9		
		4090.3	3.2	6824.0		
		4292.6	2.1	6621.6	$(1^-,2,3^-)$	
		4428.8	7.3	6485.4	$(1^-$ to $4^+)$	
		4560.7	4.5	6353.5	1^-	
		5056.6	3[@]	5857.5	$(2)^-$	
		5089.2	0.3	5824.9	3^-	
		5319.5	7[@]	5594.6	2^+	
		5400.7	6[@]	5513.38	3^-	
		5829.7	4.5	5084.3	$(2)^-$	
		6037.1	5[@]	4876.87	3^-	
		6348.4	5.4	4565.5	2^+	
		6977.2	2[@]	3936.61	2^+	
		7103.7	13[@]	3810.09	3^-	
		8745.8	16[@]	2167.60	2^+	
10945.0	$(1^-,2^+)$	x	21			
		3264	0.5	7681		
		4041.0	2.8	6903.8	$2^-,3^-$	
		4370.4	1.2	6574.3	1^-	
		4448.9	1.5	6495.8	$(2^-,3^-)$	
		4591.2	2.2	6353.5	1^-	
		4606.1	4.3	6338.6	$1^-,2^-,3^-$	
		4694.8	1.7	6249.9	2^+	
		5210.7	3.0	5733.9	1^-	
		5350.0	2.6	5594.6	2^+	
		5392.4	0.9	5552.21	$1^+,2^+$	
		5431.2	1.7	5513.38	3^-	
		5787.2	2.7	5157.3	2^+	
		6067.6	18	4876.87	3^-	
		6378.9	7.8	4565.5	2^+	
		7007.7	1.4	3936.61	2^+	
		7134.2	4.0	3810.09	3^-	
		7566.8	<0.4	3377.36	0^+	
		8776.3	20	2167.60	2^+	
		10943	2.7	0	0^+	
10947.4	$(2^-,3,4^+)$	x	23			
		3266	1.5	7681		
		4077.3	2.0	6869.9		
		4123.2	1.5	6824.0		
		4737.1	1.5	6210.0	4^-	
		5089.5	1.5	5857.5	$(2)^-$	
		5433.6	6.0	5513.38	3^-	
		5862.6	3.0	5084.3	$(2)^-$	
		6381.3	18	4565.5	2^+	
		6466.9	5.0	4479.92	4^-	
		7010.1	<0.7	3936.61	2^+	
		7136.6	9.0	3810.09	3^-	
		7569.2	<0.4	3377.36	0^+	
		8778.7	28	2167.60	2^+	
		10946	<0.2	0	0^+	
10963.3	2	x	32			I_γ: other: 45 (1974Al05).
		3069.8	0.7	7893.4	$(1^+,2^+)$	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
10963.3	2	3282	0.8	7681		
		3532.1	1.7	7431.0		
		3593	1.1	7370		
		3634	2.0	7329		
		3730.1	0.8	7233.0		
		4015.2	3.8	6947.9	(2^+)	
		4059.3	4[@]	6903.8	$2^-,3^-$	A_2=−0.26 *12*, A_4=+0.22 *15* (1988Wa34).
		4139.1	15[@]	6824.0		
		4190.4	0.3	6772.7	1^-	
		4388.7	4[@]	6574.3	1^-	A_2=−0.11 *9*, A_4=+0.06 *11* (1988Wa34).
		4609.5	11[@]	6353.5	1^-	A_2=−0.28 *5*, A_4=+0.13 *6* (1988Wa34).
		4713.1	2[@]	6249.9	2^+	
		4749.2	1.0	6213.8	(2^+)	
		5105.4	1.6	5857.5	$(2)^-$	
		5138.0	0.5	5824.9	3^-	
		5229.0	2[@]	5733.9	1^-	
		5449.5	1.8	5513.38	3^-	
		5613.4	0.3	5349.5	4^+	
		5805.5	6[@]	5157.3	2^+	A_2=+0.21 *16*, A_4=+0.33 *22* (1988Wa34).
		6085.9	5[@]	4876.87	3^-	
		6397.2	5[@]	4565.5	2^+	
		7585.1	1[@]	3377.36	0^+	
		8794.6	0.4	2167.60	2^+	
10988.2	(2)	x	15			I_γ: other: 14 (1974Al05).
		4040.1	1.2	6947.9	(2^+)	
		4084.2	2[@]	6903.8	$2^-,3^-$	
		4118.1	4[@]	6869.9		Eγ=4366, Iγ=6 reported in 1974Al05 but not in 1988Wa34.
		4649.3	1.8	6338.6	$1^-,2^-,3^-$	
		4777.9	0.5	6210.0	4^-	
		5130.3	3[@]	5857.5	$(2)^-$	A_2=−0.12 *11*, A_4=−0.08 *14* (1988Wa34).
		5162.9	2[@]	5824.9	3^-	
		5435.6	2[@]	5552.21	$1^+,2^+$	
		5474.4	1[@]	5513.38	3^-	
		5830.4	1[@]	5157.3	2^+	
		5903.4	1[@]	5084.3	$(2)^-$	
		6110.8	1[@]	4876.87	3^-	
		6422.1	10[@]	4565.5	2^+	
		6507.7	1.0	4479.92	4^-	
		7050.9	4[@]	3936.61	2^+	A_2=−0.21 *8*, A_4=−0.01 *10* (1988Wa34).
		7177.4	5[@]	3810.09	3^-	A_2=−0.11 *11*, A_4=−0.15 *13* (1988Wa34).
		7610.0	44[@]	3377.36	0^+	A_2=−0.26 *1*, A_4=−0.05 *2* (1988Wa34).
		10986	1.3	0	0^+	
11053.7	$(2,3^-)$	x	39			
		3373	0.6	7681		
		3725	0.7	7329		
		3764	1.9	7289.6	$(3^-,4^+)$	
		3820.5	2.6	7233.0		
		4431.8	5.8	6621.6	$(1^-,2,3^-)$	
		4714.8	3.4	6338.6	$1^-,2^-,3^-$	
		4843.4	1.3	6210.0	4^-	

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11053.7	(2,3$^-$)	5011.5	11	6041.8	(3$^-$,4$^+$)	
		5195.8	3.0	5857.5	(2)$^-$	
		5458.7	1.3	5594.6	2$^+$	
		5539.9	3.4	5513.38	3$^-$	
		5895.9	5.5	5157.3	2$^+$	
		6487.6	2.2	4565.5	2$^+$	
		6573.2	<0.9	4479.92	4$^-$	
		7116.4	<0.9	3936.61	2$^+$	
		7242.9	4.0	3810.09	3$^-$	
		7675.5	<0.6	3377.36	0$^+$	
		8885.0	11	2167.60	2$^+$	
		11052	3.3	0	0$^+$	
11059.2	(1,2$^+$)	x	17			
		4111.1	1.4	6947.9	(2$^+$)	
		4484.6	3.2	6574.3	1$^-$	
		5324.9	2.8	5733.9	1$^-$	
		5506.6	1.1	5552.21	1$^+$,2$^+$	
		5974.4	1.5	5084.3	(2)$^-$	
		6348.3	2.0	4710.3	0$^+$	
		6493.1	2.5	4565.5	2$^+$	
		7121.9	<0.9	3936.61	2$^+$	
		7248.4	<0.7	3810.09	3$^-$	
		7681.0	1.5	3377.36	0$^+$	
		8890.5	14	2167.60	2$^+$	
		11057	53	0	0$^+$	
11066.1	(1$^+$,2,3$^-$)	x	10			I_γ: other: 14 (1974Al05).
		3696	3[@]	7370		
		3828	2[@]	7238	(2$^+$)	
		3965.1	0.9	7100.8		
		4118.0	0.7	6947.9	(2$^+$)	
		4241.8	11[@]	6824.0		
		4570.0	5[@]	6495.8	(2$^-$,3$^-$)	
		4580.4	2[@]	6485.4	(1$^-$ to 4$^+$)	
		4815.9	0.9	6249.9	2$^+$	
		4852.0	1.0	6213.8	(2$^+$)	
		5208.2	1.1	5857.5	(2)$^-$	
		5240.8	2[@]	5824.9	3$^-$	
		5331.8	1.3	5733.9	1$^-$	
		5471.1	7[@]	5594.6	2$^+$	
		5513.5	1.3	5552.21	1$^+$,2$^+$	
		5552.3	1[@]	5513.38	3$^-$	
		6188.7	5[@]	4876.87	3$^-$	
		6355.2	1[@]	4710.3	0$^+$	
		6500.0	3[@]	4565.5	2$^+$	
		6585.6	1.3	4479.92	4$^-$	
		7128.8	14[@]	3936.61	2$^+$	
		7255.3	2[@]	3810.09	3$^-$	
		8897.4	27[@]	2167.60	2$^+$	
		11064	1[@]	0	0$^+$	
11096.9	(1$^-$,2$^+$,3$^-$)	x	28			I_γ: other: 42 (1974Al05).
		3203.4	0.7	7893.4	(1$^+$,2$^+$)	
		3768	2.8	7329		

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11096.9	$(1^-,2^+,3^-)$	3807	0.9	7289.6	$(3^-,4^+)$	
		3995.9	0.8	7100.8		
		4192.9	0.6	6903.8	$2^-,3^-$	
		4226.7	1.2	6869.9		
		4272.6	1.0	6824.0		
		4522.3	4.8	6574.3	1^-	
		4611.2	0.6	6485.4	$(1^-$ to $4^+)$	
		4743.1	3.8	6353.5	1^-	
		4758.0	5[@]	6338.6	$1^-,2^-,3^-$	
		4846.7	0.9	6249.9	2^+	
		4882.8	2[@]	6213.8	(2^+)	
		5239.0	13[@]	5857.5	$(2)^-$	
		5271.6	0.8	5824.9	3^-	
		5362.6	2.3	5733.9	1^-	
		5501.9	4[@]	5594.6	2^+	
		5544.3	0.5	5552.21	$1^+,2^+$	
		5583.1	6[@]	5513.38	3^-	
		5746.9	0.4	5349.5	4^+	
		5939.1	6[@]	5157.3	2^+	
		6012.1	1.2	5084.3	$(2)^-$	
		6530.8	3.5	4565.5	2^+	
		7159.6	3[@]	3936.61	2^+	
		7286.1	3[@]	3810.09	3^-	
		7718.7	0.8	3377.36	0^+	
		8928.2	15[@]	2167.60	2^+	
		11095	1[@]	0	0^+	
11146.9	$(2,3^-)$	x	31			All branchings are from 1974Al05.
		4661.2	3	6485.4	$(1^-$ to $4^+)$	
		4793.1	2	6353.5	1^-	
		4808.0	2	6338.6	$1^-,2^-,3^-$	
		4896.7	3	6249.9	2^+	
		4932.8	5	6213.8	(2^+)	
		5321.6	2	5824.9	3^-	
		5551.9	4	5594.6	2^+	
		5594.2	1	5552.21	$1^+,2^+$	
		5633.1	1	5513.38	3^-	
		5796.9	1	5349.5	4^+	
		6580.8	2	4565.5	2^+	
		6666.4	2	4479.92	4^-	
		7209.6	2	3936.61	2^+	
		7336.0	3	3810.09	3^-	
		8978.2	29	2167.60	2^+	
		11145	7	0	0^+	
11161.0	$(2^-,3,4^+)$	x	11			I_γ: other: 32 (1974Al05).
		4559.5	2.5	6601.18	4^-	
		4675.3	4.8	6485.4	$(1^-$ to $4^+)$	
		4684.1	3[@]	6476.6	$(0^+$ to $3^-)$	
		4950.7	2.3	6210.0	4^-	
		5335.7	3[@]	5824.9	3^-	
		5608.3	1.6	5552.21	$1^+,2^+$	
		5647.2	1.9	5513.38	3^-	
		6076.2	8.8	5084.3	$(2)^-$	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11161.0	$(2^-,3,4^+)$	7223.7	32[@]	3936.61	2^+	
		7350.1	2	3810.09	3^-	I_γ: other: 4 (1974Al05).
		8992.3	26[@]	2167.60	2^+	
11167.6	(3^-)	4297.4	1.9	6869.9		
		4394.6	0.5	6772.7	1^-	
		4593.0	0.9	6574.3	1^-	
		4828.7	0.1	6338.6	$1^-,2^-,3^-$	
		4917.4	0.5	6249.9	2^+	
		4957	0.5	6210.0	4^-	
		5309.7	1.0	5857.5	$(2)^-$	
		5342.3	0.4	5824.9	3^-	
		5433.3	0.3	5733.9	1^-	
		5572.6	1.7	5594.6	2^+	
		5653.8	2.1	5513.38	3^-	
		6082.8	0.5	5084.3	$(2)^-$	
		6290.2	2.8	4876.87	3^-	
		6601.5	<0.1	4565.5	2^+	
		6687.0	<0.1	4479.92	4^-	
		7230.3	2.2	3936.61	2^+	
		7356.7	<0.3	3810.09	3^-	
		7789.4	<0.3	3377.36	0^+	
		8998.9	84	2167.60	2^+	I_γ: other: 78 (1974Al05), 22 unknown.
		11166	0.6	0	0^+	
11173.0	3^-	x	18			I_γ: other: 19 (1974Al05).
		3492	1.1	7681		
		3722	1.0	7451		
		3741.8	4[@]	7431.0		
		3883	2[@]	7289.6	$(3^-,4^+)$	
		3980.6	3[@]	7192.2		
		4072.0	3[@]	7100.8		
		4128	1.3	7045	$(3^-,4^+)$	
		4349	4[@]	6824.0		
		4551.1	2[@]	6621.6	$(1^-,2,3^-)$	
		4571.5	0.4	6601.18	4^-	I_γ: other: 2 (1974Al05).
		4676.9	9[@]	6495.8	$(2^-,3^-)$	A_2=+0.29 *12*, A_4=+0.10 *15* (1988Wa34).
		4959	1.1	6213.8	(2^+)	
		4963	1[@]	6210.0	4^-	
		5119.5	1[@]	6053.1	(4^+)	
		5130.8	2[@]	6041.8	$(3^-,4^+)$	A_2=−0.14 *30*, A_4=+0.05 *40* (1988Wa34). 1974Al05 report Eγ=5315 (to 5858 level), Iγ=3, not reported in 1988Wa34.
		5578.0	3[@]	5594.6	2^+	
		6015.2	2[@]	5157.3	2^+	
		6295.6	11[@]	4876.87	3^-	A_2=+0.30 *6*, A_4=+0.16 *8* (1988Wa34).
		6606.9	0.8	4565.5	2^+	
		6692.4	1[@]	4479.92	4^-	
		7235.6	2[@]	3936.61	2^+	
		7362.1	2[@]	3810.09	3^-	A_2=+0.36 *12*, A_4=+0.22 *15* (1988Wa34).
		7794.8	0.3	3377.36	0^+	
		9004.3	24[@]	2167.60	2^+	A_2=−0.29 *5*, A_4=+0.11 *6* (1988Wa34).
11184.8	$(2^+,3^-)$	4236.6	1[@]	6947.9	(2^+)	

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11184.8	$(2^+,3^-)$	4314.6	2[@]	6869.9		
		4562.9	0.7	6621.6	$(1^-,2,3^-)$	
		4610.2	1.2	6574.3	1^-	
		5632.1	2[@]	5552.21	$1^+,2^+$	
		5671.0	8[@]	5513.38	3^-	A_2=+0.04 *3*, A_4=−0.04 *4* (1988Wa34).
		6027.0	4[@]	5157.3	2^+	
		6100.0	1[@]	5084.3	$(2)^-$	
		6307.4	2[@]	4876.87	3^-	
		7247.4	5[@]	3936.61	2^+	
		7373.9	2[@]	3810.09	3^-	
		9016.0	66[@]	2167.60	2^+	A_2=+0.08 *1*, A_4=−0.04 *1* (1988Wa34).
		11183	0.5	0	0^+	
11197.6	$(1^-,2,3^-)$	x	17			I_γ: other: 24 (1974Al05).
		3205	3[@]	7992		
		3964.4	1.3	7233.0		
		4373.3	8[@]	6824.0		
		4424.6	1[@]	6772.7	1^-	
		4843.8	4	6353.5	1^-	I_γ: other: 2 (1974Al05).
		4858.7	2[@]	6338.6	$1^-,2^-,3^-$	
		4947.4	3[@]	6249.9	2^+	
		5339.7	7[@]	5857.5	$(2)^-$	A_2=+0.12 *7*, A_4=−0.04 *8* (1988Wa34).
		5372.3	4[@]	5824.9	3^-	A_2=+0.14 *15*, A_4=+0.06 *25* (1988Wa34).
		5463.3	4[@]	5733.9	1^-	
		5602.6	3[@]	5594.6	2^+	
		5683.8	3[@]	5513.38	3^-	
		6039.8	4[@]	5157.3	2^+	A_2=+0.34 *11*, A_4=+0.04 *13* (1988Wa34).
		6112.8	3.4	5084.3	$(2)^-$	
		6320.2	0.2	4876.87	3^-	
		6631.5	4[@]	4565.5	2^+	
		7260.2	4[@]	3936.61	2^+	
		7386.7	3[@]	3810.09	3^-	
		9028.8	21[@]	2167.60	2^+	A_2=+0.36 *2*, A_4=−0.04 *3* (1988Wa34).
11201.9	1^-	3210	0.7	7992		
		3308.3	0.5	7893.4	$(1^+,2^+)$	
		3968.7	0.5	7233.0		
		4377.6	3[@]	6824.0		
		4428.9	0.7	6772.7	1^-	
		4520.0	1.5	6681.6	(0,1,2)	I_γ: other: 2 (1974Al05).
		4627.3	0.8	6574.3	1^-	
		4725.0	6[@]	6476.6	$(0^+$ to $3^-)$	
		4848.1	0.9	6353.5	1^-	
		4951.7	0.7	6249.9	2^+	
		5344.0	2.1	5857.5	$(2)^-$	
		5467.6	1.1	5733.9	1^-	
		5606.9	1.8	5594.6	2^+	
		6044.1	1.0	5157.3	2^+	
		6117.1	3.3	5084.3	$(2)^-$	
		6635.8	4[@]	4565.5	2^+	
		7264.5	11[@]	3936.61	2^+	

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11201.9	1^-	7391.0	0.6	3810.09	3^-	
		7823.7	0.9	3377.36	0^+	
		9033.1	5[@]	2167.60	2^+	
		11200	56[@]	0	0^+	
11210.4	$(1^-,2,3^-)$	x	11			I_γ: other: 16 (1974Al05).
		3316.8	1.0	7893.4	$(1^+,2^+)$	
		3921	1.1	7289.6	$(3^-,4^+)$	
		3977.2	0.8	7233.0		
		4262.2	2[@]	6947.9	(2^+)	
		4386.1	0.5	6824.0		
		4437.4	0.6	6772.7	1^-	
		4635.8	0.9	6574.3	1^-	
		4996.2	0.9	6213.8	(2^+)	
		5352.5	0.9	5857.5	$(2)^-$	
		5385.1	0.3	5824.9	3^-	
		5476.1	1.1	5733.9	1^-	
		5657.7	3[@]	5552.21	$1^+,2^+$	
		5696.6	0.5	5513.38	3^-	
		6644.3	2[@]	4565.5	2^+	
		7273.0	2.6	3936.61	2^+	I_γ: other: 6 (1974Al05).
		9041.6	71[@]	2167.60	2^+	
11214.7	$(1^-,2^+)$	x	16			I_γ: other: 18 (1974Al05).
		6056.9	4[@]	5157.3	2^+	
		6503.8	5[@]	4710.3	0^+	
		6648.6	19[@]	4565.5	2^+	
		7277.3	2.3	3936.61	2^+	
		9045.9	10[@]	2167.60	2^+	
		11213	44[@]	0	0^+	
11227.3	(1,2,3)	x	22			I_γ: other: 29 (1974Al05).
		3235	1.4	7992		I_γ: other: 2 (1974Al05).
		3776	0.8	7451		
		3796.1	0.6	7431.0		
		3937	1.4	7289.6	$(3^-,4^+)$	
		3994.1	2.0	7233.0		
		4279.1	0.9	6947.9	(2^+)	
		4403.0	2[@]	6824.0		
		4605.4	5[@]	6621.6	$(1^-,2,3^-)$	A_2=−0.35 *7*, A_4=+0.06 *8* (1988Wa34).
		4731.2	2[@]	6495.8	$(2^-,3^-)$	
		4741.6	0.6	6485.4	$(1^-$ to $4^+)$	
		4888.4	2[@]	6338.6	$1^-,2^-,3^-$	
		4977.0	0.6	6249.9	2^+	
		5013.1	7[@]	6213.8	(2^+)	A_2=−0.30 *16*, A_4=+0.08 *19* (1988Wa34).
		5369.4	2[@]	5857.5	$(2)^-$	
		5402.0	0.4	5824.9	3^-	
		5493.0	0.5	5733.9	1^-	
		5674.6	3[@]	5552.21	$1^+,2^+$	
		5877.3	0.2	5349.5	4^+	
		6069.5	4[@]	5157.3	2^+	
		6142.5	1[@]	5084.3	$(2)^-$	
		6349.9	2[@]	4876.87	3^-	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

γ(^{38}Ar) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11227.3	(1,2,3)	6661.2	7[@]	4565.5	2^+	A_2=−0.30 *13*, A_4=+0.04 *15* (1988Wa34).
		7289.9	1[@]	3936.61	2^+	
		7416.4	10[@]	3810.09	3^-	A_2=−0.12 *8*, A_4=−0.08 *10* (1988Wa34).
		9058.5	20[@]	2167.60	2^+	
		11226	1[@]	0	0^+	
11233.7	(2^+,3^-)	x	28			
		4659.1	3	6574.3	1^-	all branchings are from 1974Al05.
		5258.5	5	5974.8	(0^+ to 3^-)	
		5575.2	3	5658.1	5^-	
		6075.9	2	5157.3	2^+	
		6148.9	2	5084.3	$(2)^-$	
		6667.6	3	4565.5	2^+	
		9064.9	9	2167.60	2^+	
		11232	45	0	0^+	
11244.8	(3^+)	x	19			I_γ: other: 35 (1974Al05).
		3875	4.0	7370		
		4011.6	0.8	7233.0		
		4143.8	3.3	7100.8		
		4200	6[@]	7045	(3^-,4^+)	
		4420.5	6[@]	6824.0		
		4759.1	3[@]	6485.4	(1^- to 4^+)	
		4905.9	1.6	6338.6	1^-,2^-,3^-	
		4968.4	3[@]	6276.1	4^+	
		4994.5	3[@]	6249.9	2^+	
		5030.6	6.5	6213.8	(2^+)	
		5034.4	9[@]	6210.0	4^-	
		5191.3	3[@]	6053.1	(4^+)	
		6367.4	6[@]	4876.87	3^-	
		6764.2	8[@]	4479.92	4^-	
		7307.4	2[@]	3936.61	2^+	
		7433.9	6[@]	3810.09	3^-	
		9076.0	10[@]	2167.60	2^+	
11264.9		x	34			
		4316.7	3	6947.9	(2^+)	
		4491.9	17	6772.7	1^-	
		4690.3	7	6574.3	1^-	
		4911.1	11	6353.5	1^-	
		5014.6	2	6249.9	2^+	
		5439.6	2	5824.9	3^-	
		5530.6	9	5733.9	1^-	
		5751.1	4	5513.38	3^-	
		6387.5	7	4876.87	3^-	
		6784.3	1	4479.92	4^-	
		7454.0	3	3810.09	3^-	
11268.1		x	14			
		3978	1	7289.6	(3^-,4^+)	
		4223	1	7045	(3^-,4^+)	
		4646.2	5	6621.6	(1^-,2,3^-)	
		4693.5	1	6574.3	1^-	
		4782.4	1	6485.4	(1^- to 4^+)	
		4914.3	3	6353.5	1^-	
		4929.2	1	6338.6	1^-,2^-,3^-	

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π
11268.1		5053.9	5	6213.8	(2^+)
		5533.8	1	5733.9	1^-
		5673.0	5	5594.6	2^+
		5715.4	8	5552.21	$1^+,2^+$
		5754.3	2	5513.38	3^-
		6110.3	5	5157.3	2^+
		6183.3	2	5084.3	$(2)^-$
		6390.7	3	4876.87	3^-
		7330.7	11	3936.61	2^+
		9099.3	31	2167.60	2^+
11272.1		x	45		
		3902	3	7370	
		4776.0	2	6495.8	$(2^-,3^-)$
		5061.7	6	6210.0	4^-
		5446.8	2	5824.9	3^-
		5677.0	5	5594.6	2^+
		5922.1	2	5349.5	4^+
		6394.7	2	4876.87	3^-
		6706.0	9	4565.5	2^+
		7334.7	13	3936.61	2^+
		7461.2	3	3810.09	3^-
		9103.3	8	2167.60	2^+
11275.7		x	2		
		4174.7	1	7100.8	
		4593.8	1	6681.6	(0,1,2)
		4653.8	1	6621.6	$(1^-,2,3^-)$
		4790.0	4	6485.4	(1^- to 4^+)
		4921.9	2	6353.5	1^-
		4936.8	1	6338.6	$1^-,2^-,3^-$
		5061.5	2	6213.8	(2^+)
		5300.5	13	5974.8	(0^+ to 3^-)
		5417.8	2	5857.5	$(2)^-$
		5541.4	1	5733.9	1^-
		5680.6	1	5594.6	2^+
		5723.0	1	5552.21	$1^+,2^+$
		6190.9	1	5084.3	$(2)^-$
		6564.8	2	4710.3	0^+
		6709.6	2	4565.5	2^+
		7338.3	3	3936.61	2^+
		7897.5	6	3377.36	0^+
		9106.9	5	2167.60	2^+
		11274	49	0	0^+
11285.4		x	35		
		3915	2	7370	
		4461.1	3	6824.0	
		5427.5	3	5857.5	$(2)^-$
		5935.4	1	5349.5	4^+
		9116.6	56	2167.60	2^+
11289.4		x	37		
		4385.3	1	6903.8	$2^-,3^-$
		4465.1	3	6824.0	
		4714.8	3	6574.3	1^-
		5775.5	6	5513.38	3^-
		5939.4	1	5349.5	4^+
		6204.6	2	5084.3	$(2)^-$
		6411.9	3	4876.87	3^-

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[a]	δ[a]	Comments
11289.4		6808.8	3	4479.92	4^-			
		7352.0	12	3936.61	2^+			
		7478.5	1	3810.09	3^-			
		9120.6	28	2167.60	2^+			
11302.4	5^-	4257	0.7[&]	7045	$(3^-,4^+)$			all branchings are from 1988Wa34.
		4628.6	4.8[&]	6673.5	$(5)^-$			A_2=+0.40 *10*, A_4=+0.11 *10* (1968En01).
		4700.9	3.5[&]	6601.18	4^-			A_2=−0.30 *10*, A_4=+0.10 *11* (1968En01).
		4894	0.8[&]	6408	6^+			
		5092.0	2.9[&]	6210.0	4^-			A_2=−0.30 *20*, A_4=+0.15 *22* (1968En01).
		5643.8	27[&]	5658.1	5^-	M1+E2	−0.19 *6*	Mult.,δ: A_2=+0.30 *3*, A_4=−0.02 *3*, Pol=+0.06 *3* (1966Er07).
		6716.6	59[&]	4585.2	5^-	M1(+E2)	−0.03 *6*	Mult.,δ: A_2=+0.38 *3*, A_4=−0.03 *3*, Pol=+0.06 *3* (1966Er07).
		6736.3	<0.1[&]	4565.5	2^+			
		6821.8	1.3[&]	4479.92	4^-			
		7365.0	<0.1[&]	3936.61	2^+			
		7491.5	<0.1[&]	3810.09	3^-			
		7924.2	<0.1[&]	3377.36	0^+			
		9133.6	<0.1[&]	2167.60	2^+			
		11301	<0.1[&]	0	0^+			
11307.6	5^-	4633.8	4[@]	6673.5	$(5)^-$			A_2=+0.40 *7*, A_4=+0.02 *8* (1974Al06).
		4706.1	1[@]	6601.18	4^-			
		4899[b]	0.4	6408	6^+			I_γ: from 1988Wa34.
		5097.2	1[@]	6210.0	4^-			
		5649.0	40[@]	5658.1	5^-	M1+E2	−0.13 *6*	Mult.,δ: A_2=+0.33 *3*, A_4=−0.02 *3*, Pol=+0.05 *2* (1966Er07).
		6721.8	54[@]	4585.2	5^-	M1(+E2)	−0.03 *6*	Mult.,δ: A_2=+0.38 *3*, A_4=−0.04 *3*, Pol=+0.05 *2* (1966Er07); A_2=+0.40 *7*, A_4=+0.02 *8* (1974Al06).
		6827.0	0.3[@]	4479.92	4^-			I_γ: from 1988Wa34.
		9138.8	0.6[@]	2167.60	2^+			I_γ: from 1988Wa34.
11316.7	$(1^-,3^-)$	x	26					
		3865	4	7451				
		4027	3	7289.6	$(3^-,4^+)$			
		4215.6	3	7100.8				
		4271	2	7045	$(3^-,4^+)$			
		4412.6	3	6903.8	$2^-,3^-$			
		4492.4	2	6824.0				
		4715.2	4	6601.18	4^-			
		5066.4	4	6249.9	2^+			
		5106.3	5	6210.0	4^-			
		5263.2	1	6053.1	(4^+)			
		5274.5	11	6041.8	$(3^-,4^+)$			
		5658.1	2	5658.1	5^-			
		5721.6	4	5594.6	2^+			
		5966.7	5	5349.5	4^+			
		6158.9	7	5157.3	2^+			
		6439.2	4	4876.87	3^-			
		6730.9	4	4585.2	5^-			
		6836.1	1	4479.92	4^-			
		7379.3	2	3936.61	2^+			

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11316.7	$(1^-,3^-)$	9147.9	3	2167.60	2^+	
11318.7	(2^+)	x	26[&]			I_γ: other: 45 (1974Al05).
		3867	0.9[&]	7451		
		4085.5	0.7[&]	7233.0		
		4370.5	0.6[&]	6947.9	(2^+)	
		4494.4	2.0[&]	6824.0		
		4822.6	1.3[&]	6495.8	$(2^-,3^-)$	
		4833.0	3[@]	6485.4	$(1^-$ to $4^+)$	
		4979.7	2.3[&]	6338.6	$1^-,2^-,3^-$	
		5104.5	1.6[&]	6213.8	(2^+)	
		5460.8	3.8[&]	5857.5	$(2)^-$	
		5493.4	1.1[&]	5824.9	3^-	
		5584.4	0.8[&]	5733.9	1^-	
		5723.6	8[@]	5594.6	2^+	
		5968.7	0.5[&]	5349.5	4^+	
		6160.9	2.9[&]	5157.3	2^+	
		6233.9	1[@]	5084.3	$(2)^-$	
		6441.2	0.4[&]	4876.87	3^-	
		6607.8	7[@]	4710.3	0^+	
		6838.1	0.6[&]	4479.92	4^-	
		7381.3	4[@]	3936.61	2^+	
		7507.8	1.0[&]	3810.09	3^-	
		9149.9	29[@]	2167.60	2^+	
		11317	3[@]	0	0^+	
11328.3		x	37			
		5117.9	2	6210.0	4^-	
		5286.1	10	6041.8	$(3^-,4^+)$	
		5669.7	3	5658.1	5^-	
		5978.3	2	5349.5	4^+	
		6450.8	13	4876.87	3^-	
		7517.4	32	3810.09	3^-	
		9159.5	1	2167.60	2^+	
11330.5		x	24			
		4460.3	3	6869.9		
		6172.7	4	5157.3	2^+	
		6245.6	3	5084.3	$(2)^-$	
		6453.0	18	4876.87	3^-	
		6764.4	5	4565.5	2^+	
		7393.1	9	3936.61	2^+	
		7519.6	3	3810.09	3^-	
		9161.7	31	2167.60	2^+	
11338.6	$(2,3^-)$	4434.5	1[@]	6903.8	$2^-,3^-$	
		4842.5	1.0[&]	6495.8	$(2^-,3^-)$	
		4852.9	1[@]	6485.4	$(1^-$ to $4^+)$	
		5124.4	1[@]	6213.8	(2^+)	
		5480.7	1[@]	5857.5	$(2)^-$	
		5513.3	9[@]	5824.9	3^-	
		5785.9	0.6[&]	5552.21	$1^+,2^+$	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[a]	δ[a]	Comments
11338.6	(2,3$^-$)	5824.7	2[@]	5513.38	3$^-$			
		6180.8	4[@]	5157.3	2$^+$			
		6253.7	5[@]	5084.3	(2)$^-$			
		6461.1	7[@]	4876.87	3$^-$			A_2=−0.09 *5*, A_4=−0.01 *6* (1988Wa34).
		7401.2	1[@]	3936.61	2$^+$			
		9169.8	68[@]	2167.60	2$^+$			A_2=+0.09 *1*, A_4=−0.05 *2* (1988Wa34).
		11337	0.4[&]	0	0$^+$			
11348.9		6471.4	16	4876.87	3$^-$			all γ-ray branching ratios from 1968En01.
		6868.3	69	4479.92	4$^-$			
		7411.5	5	3936.61	2$^+$			
		9180.1	10	2167.60	2$^+$			
11350.6	3$^-$	3358	0.7[&]	7992				
		3899	2.1[&]	7451				
		4061	1.5[&]	7289.6	(3$^-$,4$^+$)			
		4158.2	1.2[&]	7192.2				
		4249.5	2.6[&]	7100.8				
		4305	1.4[&]	7045	(3$^-$,4$^+$)			
		4446.5	3.4[&]	6903.8	2$^-$,3$^-$			
		4749.1	2.3[&]	6601.18	4$^-$			
		4854.5	5.8[&]	6495.8	(2$^-$,3$^-$)			
		5074.1[b]	3	6276.1	4$^+$			E_γ,I_γ: from 1968En01 only. Not reported by 1988Wa34. Possible doublet in 1974Al06: probable doublet.
		5140.2	2	6210.0	4$^-$			E_γ,I_γ: from 1968En01 only.
		5297.1	1.1[&]	6053.1	(4$^+$)			
		5525.3	2.4[&]	5824.9	3$^-$			
		5836.7	1.7[&]	5513.38	3$^-$			
		6000.6	0.4[&]	5349.5	4$^+$			
		6265.7	4.3[&]	5084.3	(2)$^-$			
		6473.1	30[&]	4876.87	3$^-$	M1+E2	−0.16 *10*	Mult.,δ: A_2=+0.20 *5*, A_4=+0.02 *5*, Pol=−0.15 *7* (1968En01).
		6784.4	2.9[&]	4565.5	2$^+$			
		6870.0	1.7[&]	4479.92	4$^-$			
		7413.2	0.5[&]	3936.61	2$^+$			
		7539.7	19[&]	3810.09	3$^-$	M1+E2	−0.20 *10*	Mult.,δ: A_2=+0.16 *6*, A_4=−0.05 *6* (1968En01).
		7972.3	<0.1[&]	3377.36	0$^+$			
		9181.8	15[&]	2167.60	2$^+$	E1(+M2)	+0.04 *7*	Mult.,δ: A_2=−0.30 *2*, A_4=+0.01 *2* (1968En01).
		11349	<0.1[&]	0	0$^+$			
11354.6	3$^-$	4753.1	3	6601.18	4$^-$			I_γ: from 1968En01.
		6477.1	10	4876.87	3$^-$			I_γ: from 1968En01.
		7543.7	9	3810.09	3$^-$			I_γ: from 1968En01.
		9185.8	78	2167.60	2$^+$			I_γ: from 1968En01.
11367.4	3$^-$	x	47					
		4134.2	3	7233.0				
		4765.9	3	6601.18	4$^-$			
		5509.5	3	5857.5	(2)$^-$			
		5542.1	2	5824.9	3$^-$			
		5853.5	9	5513.38	3$^-$			

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π
11367.4	3^-	6489.9	10	4876.87	3^-
		7430.0	6	3936.61	2^+
		7556.5	2	3810.09	3^-
		9198.6	15	2167.60	2^+
11373.7		x	21		
		4003	2	7370	
		4469.6	3	6903.8	2^-,3^-
		4549.4	10	6824.0	
		4799.1	3	6574.3	1^-
		4888.0	3	6485.4	(1^- to 4^+)
		5123.4	3	6249.9	2^+
		5159.5	2	6213.8	(2^+)
		5515.8	2	5857.5	$(2)^-$
		5639.4	2	5733.9	1^-
		5778.6	3	5594.6	2^+
		6215.9	1	5157.3	2^+
		6288.8	1	5084.3	$(2)^-$
		6496.2	20	4876.87	3^-
		6807.5	1	4565.5	2^+
		7562.8	3	3810.09	3^-
		9204.9	20	2167.60	2^+
11379.1	(1^-,2^+)	x	31		
		4145.9	3	7233.0	
		4893.4	1	6485.4	(1^- to 4^+)
		5102.6	3	6276.1	4^+
		5128.8	1	6249.9	2^+
		5164.9	10	6213.8	(2^+)
		5336.9	7	6041.8	(3^-,4^+)
		5521.2	2	5857.5	$(2)^-$
		5553.8	6	5824.9	3^-
		5784.0	2	5594.6	2^+
		5826.4	4	5552.21	1^+,2^+
		5865.2	2	5513.38	3^-
		6029.1	1	5349.5	4^+
		6294.2	2	5084.3	$(2)^-$
		6812.9	4	4565.5	2^+
		6898.5	9	4479.92	4^-
		7441.7	6	3936.61	2^+
		8000.8	1	3377.36	0^+
		9210.3	5	2167.60	2^+
11393.1	3^-	x	37		
		4103	1	7289.6	(3^-,4^+)
		4791.6	2	6601.18	4^-
		5879.2	2	5513.38	3^-
		6235.3	1	5157.3	2^+
		6308.2	1	5084.3	$(2)^-$
		6515.6	14	4876.87	3^-
		6912.5	3	4479.92	4^-
		7582.2	2	3810.09	3^-
		9224.3	37	2167.60	2^+
11401.5		x	30		
		6243.6	6	5157.3	2^+
		6690.6	7	4710.3	0^+
		6835.3	33	4565.5	2^+
		7464.1	6	3936.61	2^+
		7590.6	6	3810.09	3^-

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11401.5		11400	12	0	0^+	
11409.3	$(2,3^-)$	x	7[&]			I_γ: other: 19 (1974Al05).
		4461.1	0.4[&]	6947.9	(2^+)	
		4636.3	1.1[&]	6772.7	1^-	
		4834.7	0.6[&]	6574.3	1^-	
		4923.6	2[@]	6485.4	$(1^-$ to $4^+)$	
		5055.4	2.1[&]	6353.5	1^-	
		5132.8	3[@]	6276.1	4^+	
		5159.0	0.7[&]	6249.9	2^+	
		5198.9	0.6[&]	6210.0	4^-	
		5551.4	1.2[&]	5857.5	$(2)^-$	
		5584.0	1.8[&]	5824.9	3^-	
		5674.9	0.7[&]	5733.9	1^-	
		5814.2	5[@]	5594.6	2^+	
		5856.6	5[@]	5552.21	$1^+,2^+$	
		5895.4	0.7[&]	5513.38	3^-	
		6059.3	0.8[&]	5349.5	4^+	
		6251.4	6[@]	5157.3	2^+	
		6324.4	6[@]	5084.3	$(2)^-$	
		6531.8	0.8[&]	4876.87	3^-	
		6843.1	25[@]	4565.5	2^+	
		7471.9	6[@]	3936.61	2^+	
		7598.4	2[@]	3810.09	3^-	
		9240.5	21[@]	2167.60	2^+	
		11407	0.2[&]	0	0^+	
11423.9	$(2^+,3^-,4^+)$	x	9[&]			I_γ: other: 11 (1974Al05).
		3992.7	2[@]	7431.0		
		4190.7	1.4[&]	7233.0		
		4599.6	6[@]	6824.0		
		4802.0	1[@]	6621.6	$(1^-,2,3^-)$	
		4849.3	1[@]	6574.3	1^-	
		4927.8	3[@]	6495.8	$(2^-,3^-)$	
		5070.0	1[@]	6353.5	1^-	
		5209.7	3[@]	6213.8	(2^+)	
		5598.6	2[@]	5824.9	3^-	
		5828.8	1[@]	5594.6	2^+	
		5871.2	6[@]	5552.21	$1^+,2^+$	
		5910.0	8[@]	5513.38	3^-	
		6266.0	1[@]	5157.3	2^+	
		6546.4	0.3[&]	4876.87	3^-	
		6857.7	0.7[&]	4565.5	2^+	
		6943.3	1[@]	4479.92	4^-	
		7486.5	4[@]	3936.61	2^+	
		7613.0	2[@]	3810.09	3^-	
		9255.1	47[@]	2167.60	2^+	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11428.9		x	23			
		3748	3	7681		
		4139	2	7289.6	$(3^-,4^+)$	
		4195.7	1	7233.0		
		4524.8	2	6903.8	$2^-,3^-$	
		4604.6	4	6824.0		
		5152.4	14	6276.1	4^+	
		5375.4	7	6053.1	(4^+)	
		5603.6	4	5824.9	3^-	
		5876.2	1	5552.21	$1^+,2^+$	
		5915.0	1	5513.38	3^-	
		6078.9	3	5349.5	4^+	
		6271.0	1	5157.3	2^+	
		6344.0	1	5084.3	$(2)^-$	
		6551.4	1	4876.87	3^-	
		6862.7	4	4565.5	2^+	
		6948.3	1	4479.92	4^-	
		7491.5	3	3936.61	2^+	
		7618.0	18	3810.09	3^-	
		9260.1	6	2167.60	2^+	
11431.9		x	56			
		6865.7	9	4565.5	2^+	
		8053.6	3	3377.36	0^+	
		9263.1	5	2167.60	2^+	
		11430	27	0	0^+	
11435.9	$(2^+,3^-)$	x	22[&]			I_γ: other: 39 (1974Al05).
		3542.3	0.4[&]	7893.4	$(1^+,2^+)$	
		3755	1.5[&]	7681		
		3985	11[@]	7451		
		4107	4[@]	7329		
		4198	1[@]	7238	(2^+)	
		4487.7	2.2[&]	6947.9	(2^+)	
		4583	4[@]	6853	$(1,2^+)$	
		4611.6	0.4[&]	6824.0		
		4662.9	2[@]	6772.7	1^-	
		4814.0	8[@]	6621.6	$(1^-,2,3^-)$	
		4861.3	2[@]	6574.3	1^-	
		4939.8	3.6[&]	6495.8	$(2^-,3^-)$	
		5082.0	0.7[&]	6353.5	1^-	
		5096.9	0.7[&]	6338.6	$1^-,2^-,3^-$	
		5159.4	1.1[&]	6276.1	4^+	
		5185.6	2[@]	6249.9	2^+	
		5221.7	0.7[&]	6213.8	(2^+)	
		5578.0	0.7[&]	5857.5	$(2)^-$	
		5610.6	0.6[&]	5824.9	3^-	
		5701.5	2[@]	5733.9	1^-	
		5883.2	3[@]	5552.21	$1^+,2^+$	
		5922.0	0.8[&]	5513.38	3^-	
		6351.0	2[@]	5084.3	$(2)^-$	
		6558.4	4[@]	4876.87	3^-	

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11435.9	$(2^+,3^-)$	6725.0	0.3[&]	4710.3	0^+	
		6850.0	1.7[&]	4585.2	5^-	
		6869.7	0.4[&]	4565.5	2^+	
		7498.5	2[@]	3936.61	2^+	
		7625.0	9[@]	3810.09	3^-	
		9267.1	5[@]	2167.60	2^+	
		11434	0.8[&]	0	0^+	
11443.6	(1,2,3)	x	21[&]			I_γ: other: 32 (1974Al05).
		4114	7[@]	7329		
		4154	2.2[&]	7289.6	$(3^-,4^+)$	
		4842.1	1.7[&]	6601.18	4^-	
		4957.9	1.8[&]	6485.4	$(1^-$ to $4^+)$	
		5229.4	1.4[&]	6213.8	(2^+)	
		5390.1	1.6[&]	6053.1	(4^+)	
		5401.4	2.6[&]	6041.8	$(3^-,4^+)$	
		5848.5	5[@]	5594.6	2^+	
		6566.1	10[@]	4876.87	3^-	A_2=+0.40 *11*, A_4=−0.18 *13* (1988Wa34).
		6877.4	11[@]	4565.5	2^+	
		7506.2	10[@]	3936.61	2^+	
		7632.7	7[@]	3810.09	3^-	
		9274.8	18[@]	2167.60	2^+	A_2=−0.41 *7*, A_4=−0.02 *8* (1988Wa34).
11461.4		x	38			
		3567.8	5	7893.4	$(1^+,2^+)$	
		4228.1	7	7233.0		
		4360.3	2	7100.8		
		4779.5	8	6681.6	(0,1,2)	
		5603.5	6	5857.5	$(2)^-$	
		5727.0	5	5733.9	1^-	
		5866.3	2	5594.6	2^+	
		5908.7	4	5552.21	$1^+,2^+$	
		6303.5	8	5157.3	2^+	
		6895.2	3	4565.5	2^+	
		7650.5	3	3810.09	3^-	
		8083.1	2	3377.36	0^+	
		9292.6	2	2167.60	2^+	
		11460	5	0	0^+	
11471.2	$(1^-,2^+)$	3577.6	1.5[&]	7893.4	$(1^+,2^+)$	
		4646.9	1[@]	6824.0		
		4849.3	1[@]	6621.6	$(1^-,2,3^-)$	
		4896.6	2[@]	6574.3	1^-	
		5117.3	9[@]	6353.5	1^-	
		5132.2	0.9[&]	6338.6	$1^-,2^-,3^-$	
		5257.0	2[@]	6213.8	(2^+)	
		5613.3	4[@]	5857.5	$(2)^-$	
		5876.1	1.4[&]	5594.6	2^+	
		6386.3	3[@]	5084.3	$(2)^-$	
		6760.3	1[@]	4710.3	0^+	
		6905.0	36[@]	4565.5	2^+	A_2=+0.03 *9*, A_4=−0.04 *10* (1988Wa34).

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11471.2	(1$^-$,2$^+$)	7533.8	2[@]	3936.61	2$^+$	
		7660.3	2[@]	3810.09	3$^-$	
		8092.9	6[@]	3377.36	0$^+$	
		9302.4	3[@]	2167.60	2$^+$	
		11469	28[@]	0	0$^+$	A_2=+0.18 *5*, A_4=−0.03 *7* (1988Wa34); A_2=+0.146 *18*,A_4=+0.05 *3* (1974Al06).
11478.9	(1$^-$,3$^-$)	x	48			
		4109	2	7370		
		4654.6	5	6824.0		
		4877.4	4	6601.18	4$^-$	
		4982.7	1	6495.8	(2$^-$,3$^-$)	
		5202.4	1	6276.1	4$^+$	
		5264.7	4	6213.8	(2$^+$)	
		5268.5	2	6210.0	4$^-$	
		5425.4	2	6053.1	(4$^+$)	
		5436.7	6	6041.8	(3$^-$,4$^+$)	
		5621.0	1	5857.5	(2)$^-$	
		5653.5	1	5824.9	3$^-$	
		5820.3	1	5658.1	5$^-$	
		5883.8	7	5594.6	2$^+$	
		5965.0	1	5513.38	3$^-$	
		6321.0	5	5157.3	2$^+$	
		6394.0	1	5084.3	(2)$^-$	
		6601.4	2	4876.87	3$^-$	
		6912.7	1	4565.5	2$^+$	
		7541.5	1	3936.61	2$^+$	
		9310.1	4	2167.60	2$^+$	
11501.3	(1$^-$,2$^+$)	4070.1	1.0[&]	7431.0		
		4553.1	0.8[&]	6947.9	(2$^+$)	
		4677.0	2[@]	6824.0		
		4819.4	6[@]	6681.6	(0,1,2)	Eγ=4879 (to 6622 level), Iγ=1 also reported in 1974Al05 but not in in 1988Wa34.
		5290.9	0.2[&]	6210.0	4$^-$	
		5526.1	0.6[&]	5974.8	(0$^+$ to 3$^-$)	
		5766.9	0.6[&]	5733.9	1$^-$	
		6343.4	9[@]	5157.3	2$^+$	
		6416.4	6[@]	5084.3	(2)$^-$	
		6790.3	13[@]	4710.3	0$^+$	
		6935.1	22[@]	4565.5	2$^+$	A_2=+0.03 *14*, A_4=−0.16 *16* (1988Wa34).
		7563.9	8[@]	3936.61	2$^+$	
		8123.0	9[@]	3377.36	0$^+$	A_2=+0.26 *7*, A_4=−0.05 *10* (1974Al06).
		11499	22[@]	0	0$^+$	A_2=+0.08,9 A_4=−0.05 *11* (1988Wa34).
11511.7		x	30			
		4141	2	7370		
		4182	2	7329		
		4222	3	7289.6	(3$^-$,4$^+$)	
		4319.2	1	7192.2		
		5025.9	1	6485.4	(1$^-$ to 4$^+$)	
		5235.2	1	6276.1	4$^+$	
		5301.3	1	6210.0	4$^-$	
		5458.2	1	6053.1	(4$^+$)	

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π
11511.7		5469.5	2	6041.8	$(3^-,4^+)$
		5653.7	4	5857.5	$(2)^-$
		5997.8	2	5513.38	3^-
		6161.7	1	5349.5	4^+
		6353.8	8	5157.3	2^+
		6426.8	5	5084.3	$(2)^-$
		6945.5	1	4565.5	2^+
		7031.1	2	4479.92	4^-
		7574.3	4	3936.61	2^+
		7700.8	2	3810.09	3^-
		9342.9	25	2167.60	2^+
		11510	2	0	0^+
11514.5	1^-	x	19		
		6356.6	2	5157.3	2^+
		6429.6	2	5084.3	$(2)^-$
		6948.3	3	4565.5	2^+
		9345.7	13	2167.60	2^+
		11513	61	0	0^+
11519.7		x	50		
		4649.5	3	6869.9	
		4746.7	3	6772.7	1^-
		4897.8	5	6621.6	$(1^-,2,3^-)$
		5023.5	2	6495.8	$(2^-,3^-)$
		5305.5	12	6213.8	(2^+)
		6361.8	8	5157.3	2^+
		6434.8	3	5084.3	$(2)^-$
		6953.5	4	4565.5	2^+
		7582.3	3	3936.61	2^+
		7708.8	6	3810.09	3^-
		9350.9	1	2167.60	2^+
11527.6		x	66		
		5313.4	2	6213.8	(2^+)
		5552.4	4	5974.8	$(0^+$ to $3^-)$
		6816.6	2	4710.3	0^+
		7590.2	10	3936.61	2^+
		8149.3	5	3377.36	0^+
		9358.8	11	2167.60	2^+
11530.2	$(1^-,2^+)$	x	19		
		6819.2	6	4710.3	0^+
		7592.8	5	3936.61	2^+
		8151.9	12	3377.36	0^+
		11528	58	0	0^+
11540.2	1^-	x	22		
		5186.3	2	6353.5	1^-
		7602.8	10	3936.61	2^+
		8161.9	2	3377.36	0^+
		9371.4	25	2167.60	2^+
		11538	39	0	0^+
11545.3	$(1^-,2^+,3^-)$	x	42		
		5687.3	4	5857.5	$(2)^-$
		5810.9	5	5733.9	1^-
		6031.4	3	5513.38	3^-
		9376.5	38	2167.60	2^+
		11543	8	0	0^+
11552.6	$(1^-,2^+)$	x	21		
		4728.3	4	6824.0	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11552.6	$(1^-,2^+)$	4779.6	1	6772.7	1^-	
		4930.7	2	6621.6	$(1^-,2,3^-)$	
		5056.4	3	6495.8	$(2^-,3^-)$	
		5577.4	4	5974.8	$(0^+$ to $3^-)$	
		5694.6	1	5857.5	$(2)^-$	
		5727.2	1	5824.9	3^-	
		5957.5	5	5594.6	2^+	
		6675.1	1	4876.87	3^-	
		6986.4	6	4565.5	2^+	
		7741.7	1	3810.09	3^-	
		8174.3	2	3377.36	0^+	
		9383.8	8	2167.60	2^+	
		11551	40	0	0^+	
11569.2	$(0^-$ to $4^+)$	x	14[&]			I_γ: other: 19 (1974Al05).
		4335.9	0.7[&]	7233.0		
		4621.0	0.7[&]	6947.9	(2^+)	
		4665.1	1.0[&]	6903.8	$2^-,3^-$	
		4994.5	1[@]	6574.3	1^-	
		5834.8	1[@]	5733.9	1^-	
		5974.1	2[@]	5594.6	2^+	
		6055.3	2[@]	5513.38	3^-	
		6411.3	1.3[&]	5157.3	2^+	
		6484.3	1[@]	5084.3	$(2)^-$	
		6691.7	1.1[&]	4876.87	3^-	
		7003.0	4[@]	4565.5	2^+	
		7631.8	3[@]	3936.61	2^+	
		7758.3	3[@]	3810.09	3^-	
		9400.3	64[@]	2167.60	2^+	
11597.9	4^+	x	55			
		4693.8	2	6903.8	$2^-,3^-$	
		5555.7	7	6041.8	$(3^-,4^+)$	
		5772.5	4	5824.9	3^-	
		5939.3	8	5658.1	5^-	
		6720.4	17	4876.87	3^-	
		7117.3	6	4479.92	4^-	
		9429.0	1	2167.60	2^+	
11599.6		x	31			
		4651.4	3	6947.9	(2^+)	
		4746	2	6853	$(1,2^+)$	
		4775.3	2	6824.0		
		5349.3	3	6249.9	2^+	
		5741.6	2	5857.5	$(2)^-$	
		7033.4	18	4565.5	2^+	
		7662.2	4	3936.61	2^+	
		9430.7	34	2167.60	2^+	
		11598	1	0	0^+	
11605.8		x	39			
		4832.8	3	6772.7	1^-	
		5630.6	11	5974.8	$(0^+$ to $3^-)$	
		6447.9	14	5157.3	2^+	
		7039.6	9	4565.5	2^+	
		9436.9	19	2167.60	2^+	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11605.8		11604	5	0	0^+	
11652.1		x	40			
		4418.8	2	7233.0		
		4551.0	1	7100.8		
		4781.9	4	6869.9		
		5155.9	2	6495.8	$(2^-,3^-)$	
		5313.1	3	6338.6	$1^-,2^-,3^-$	
		5441.7	3	6210.0	4^-	
		5794.1	3	5857.5	$(2)^-$	
		6057.0	3	5594.6	2^+	
		6138.2	1	5513.38	3^-	
		6302.0	1	5349.5	4^+	
		6774.6	11	4876.87	3^-	
		7085.9	2	4565.5	2^+	
		7171.5	2	4479.92	4^-	
		7714.6	8	3936.61	2^+	
		7841.1	6	3810.09	3^-	
		9483.2	8	2167.60	2^+	
11672.3	(2,3)	x	11[&]			I_γ: other: 29 (1974Al05).
		3991	0.9[&]	7681		
		4382	1.3[&]	7289.6	$(3^-,4^+)$	
		4479.8	0.9[&]	7192.2		
		4571.2	0.9[#&]	7100.8		
		4627[b]	[&]	7045	$(3^-,4^+)$	
		4848.0	3[@]	6824.0		
		5050.3	1.3[&]	6621.6	$(1^-,2,3^-)$	
		5070.8	3[@]	6601.18	4^-	
		5176.1	5[@]	6495.8	$(2^-,3^-)$	
		5186.5	1.5[&]	6485.4	$(1^-$ to $4^+)$	
		5333.3	2.1[&]	6338.6	$1^-,2^-,3^-$	I_γ: other: 4 (1974Al05).
		5395.8	4[@]	6276.1	4^+	
		5422.0	1.2[&]	6249.9	2^+	
		5458.1	8[@]	6213.8	(2^+)	
		5618.8	8[@]	6053.1	(4^+)	
		5630.1	1.9[&]	6041.8	$(3^-,4^+)$	
		5814.3	1.0[&]	5857.5	$(2)^-$	
		5846.9	1.4[&]	5824.9	3^-	
		6158.4[b]	1.1[&]	5513.38	3^-	
		6322.2[b]	0.9[&]	5349.5	4^+	
		6514.4	1.5[&]	5157.3	2^+	
		6587.4	10[@]	5084.3	$(2)^-$	
		6794.8	2.4[&]	4876.87	3^-	
		7106.1	1.3[&]	4565.5	2^+	
		7191.6	3[@]	4479.92	4^-	A_2=+0.14 *7*, A_4=+0.02 *9* (1988Wa34).
		7734.8	3[@]	3936.61	2^+	
		7861.3	17[@]	3810.09	3^-	A_2=+0.13 *3*, A_4=−0.04 *3* (1988Wa34).
		9503.4	3[@]	2167.60	2^+	A_2=−0.11 *5*, A_4=−0.27 *6* (1988Wa34).
11682.7	$(4^+,5^-)$	x	28			
		4392.8	3	7289.6	$(3^-,4^+)$	

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^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
11682.7	$(4^+,5^-)$	5406.2	3	6276.1	4^+	
		5432.4	5	6249.9	2^+	
		5629.2	2	6053.1	(4^+)	
		5640.5	2	6041.8	$(3^-,4^+)$	
		5857.3	11	5824.9	3^-	A_2=−0.13 *11*, A_4=+0.10 *16* (1974Al06).
		6168.8	2	5513.38	3^-	
		6332.6	25	5349.5	4^+	A_2=+0.40 *8*, A_4=+0.02 *10* (1974Al06).
		6805.2	3	4876.87	3^-	
		7096.8	3	4585.2	5^-	
		7116.5	2	4565.5	2^+	
		7871.7	11	3810.09	3^-	A_2=−0.24 *4*, A_4=+0.06 *5* (1974Al06).
11703.5		x	36			
		3711	2	7992		
		4022	3	7681		
		4165	1	7538		
		4470.2	3	7233.0		
		4602.4	3	7100.8		
		4799.4	4	6903.8	$2^-,3^-$	
		4879.2	2	6824.0		
		5081.5	1	6621.6	$(1^-,2,3^-)$	
		5102.0	1	6601.18	4^-	
		5217.7	1	6485.4	$(1^-$ to $4^+)$	
		5427.0	1	6276.1	4^+	
		5489.3	1	6213.8	(2^+)	
		5649.9	8	6053.1	(4^+)	
		6189.6	1	5513.38	3^-	
		6353.4	5	5349.5	4^+	
		6826.0	8	4876.87	3^-	
		7117.6	2	4585.2	5^-	
		7137.3	2	4565.5	2^+	
		7222.8	3	4479.92	4^-	
		7766.0	10	3936.61	2^+	
		7892.5	2	3810.09	3^-	
11716.6		x	29			
		5094.6	2	6621.6	$(1^-,2,3^-)$	
		5230.8	1	6485.4	$(1^-$ to $4^+)$	
		5377.6	1	6338.6	$1^-,2^-,3^-$	
		5502	4	6213.8	(2^+)	
		5506	1	6210.0	4^-	
		5674.3	1	6041.8	$(3^-,4^+)$	
		5741.3	1	5974.8	$(0^+$ to $3^-)$	
		5982.2	3	5733.9	1^-	
		6558.7	6	5157.3	2^+	
		6839.1	8	4876.87	3^-	
		7005.6	1	4710.3	0^+	
		7779.1	6	3936.61	2^+	
		7905.6	1	3810.09	3^-	
		8338.3	2	3377.36	0^+	
		9548	4	2167.60	2^+	
		11715	29	0	0^+	
11731.2	$(4^+,5^-)$	x	33			
		4827.1	5	6903.8	$2^-,3^-$	
		4906.9	8	6824.0		
		5454.7	2	6276.1	4^+	
		5517.0	3	6213.8	(2^+)	
		5677.6	15	6053.1	(4^+)	

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π
11731.2	$(4^+,5^-)$	5688.9	3	6041.8	$(3^-,4^+)$
		5905.8	2	5824.9	3^-
		6072.6	4	5658.1	5^-
		6136.1	5	5594.6	2^+
		6381.1	2	5349.5	4^+
		6853.7	2	4876.87	3^-
		7145.3	1	4585.2	5^-
		7165.0	11	4565.5	2^+
		7250.5	1	4479.92	4^-
		7793.7	1	3936.61	2^+
		7920.2	1	3810.09	3^-
		9562.3	1	2167.60	2^+
11755.6		x	47		
		5541.4	2	6213.8	(2^+)
		6160.5	2	5594.6	2^+
		6241.7	7	5513.38	3^-
		7189.4	5	4565.5	2^+
		7274.9	12	4479.92	4^-
		7818.1	10	3936.61	2^+
		7944.6	1	3810.09	3^-
		9586.7	14	2167.60	2^+
11775.0	4^+	x	39		
		4094	10	7681	
		4237	7	7538	
		4487	15	7288	6^+
		5498.5	8	6276.1	4^+
		5721.4	11	6053.1	(4^+)
		6261.1	2	5513.38	3^-
		7189.1	4	4585.2	5^-
		7964.0	3	3810.09	3^-
		9606.1	1	2167.60	2^+
11780.7		x	29		
		4490.8	8	7289.6	$(3^-,4^+)$
		5284.5	2	6495.8	$(2^-,3^-)$
		5426.8	3	6353.5	1^-
		5955.3	4	5824.9	3^-
		6185.6	3	5594.6	2^+
		6266.8	6	5513.38	3^-
		6622.8	19	5157.3	2^+
		7843.2	10	3936.61	2^+
		7969.7	2	3810.09	3^-
		9611.8	14	2167.60	2^+
11790.5		x	51		
		4886.4	2	6903.8	$2^-,3^-$
		5294.3	2	6495.8	$(2^-,3^-)$
		5580.1	6	6210.0	4^-
		5736.9	2	6053.1	(4^+)
		5748.2	3	6041.8	$(3^-,4^+)$
		5932.5	3	5857.5	$(2)^-$
		6195.4	7	5594.6	2^+
		6276.6	10	5513.38	3^-
		7079.5	1	4710.3	0^+
		7224.3	5	4565.5	2^+
		7853.0	1	3936.61	2^+
		7979.5	5	3810.09	3^-
		9621.6	1	2167.60	2^+

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Comments
11790.5		11789	1	0	0^+	
11794.5		x	53			
		6280.6	3	5513.38	3^-	
		9625.6	44	2167.60	2^+	
11797.9		x	43			
		5301.7	4	6495.8	$(2^-,3^-)$	
		5583.7	6	6213.8	(2^+)	
		5755.6	7	6041.8	$(3^-,4^+)$	
		5939.9	3	5857.5	$(2)^-$	
		6202.8	5	5594.6	2^+	
		6284.0	11	5513.38	3^-	
		7231.7	9	4565.5	2^+	
		7860.4	2	3936.61	2^+	
		7986.9	8	3810.09	3^-	
		9629.0	2	2167.60	2^+	
11800.1		x	19			
		5942.1	6	5857.5	$(2)^-$	
		6065.7	5	5733.9	1^-	
		6715.2	4	5084.3	$(2)^-$	
		7233.9	4	4565.5	2^+	
		9631.2	19	2167.60	2^+	
		11798	43	0	0^+	
11805.9	3^-	x	39&			I_γ: other: 51 (1974Al05).
		4374.6	1.1&	7431.0		
		5555.6	3@	6249.9	2^+	
		5752.3	0.9&	6053.1	(4^+)	
		6210.8	4.0&	5594.6	2^+	
		6455.8	2.2&	5349.5	4^+	
		6648.0	1.2&	5157.3	2^+	
		6721.0	3@	5084.3	$(2)^-$	
		6928.4	3@	4876.87	3^-	
		7239.7	23@	4565.5	2^+	
		7325.2	2@	4479.92	4^-	A_2=−0.11 *14*, A_4=−0.02 *17* (1988Wa34).
		7868.4	7@	3936.61	2^+	A_2=−0.26 *8*, A_4=−0.02 *8* (1988Wa34).
		7994.9	2.6&	3810.09	3^-	
		9637.0	8@	2167.60	2^+	
11812.2		x	38			
		9643.3	2	2167.60	2^+	
		11810	60	0	0^+	
11823.1		x	72			
		5221.5	12	6601.18	4^-	
		5546.6	2	6276.1	4^+	
		5572.8	5	6249.9	2^+	
		5612.7	3	6210.0	4^-	
		5997.7	2	5824.9	3^-	
		6164.5	1	5658.1	5^-	
		7237.2	3	4585.2	5^-	
11832.0	3^-	x	61			
		6954.4	5	4876.87	3^-	
		7246.1	6	4585.2	5^-	
		7265.8	4	4565.5	2^+	
		7894.5	7	3936.61	2^+	

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[a]	δ[a]	Comments
11832.0	3$^-$	8021.0	3	3810.09	3$^-$			
		9663.1	14	2167.60	2$^+$			
11873.8		x	39					
		5597.3	2	6276.1	4$^+$			
		5820.2	4	6053.1	(4$^+$)			
		6015.8	3	5857.5	(2)$^-$			
		6715.9	2	5157.3	2$^+$			
		6788.8	7	5084.3	(2)$^-$			
		6996.2	11	4876.87	3$^-$			
		7307.5	5	4565.5	2$^+$			
		7393.1	9	4479.92	4$^-$			
		7936.3	2	3936.61	2$^+$			
		9704.9	16	2167.60	2$^+$			
11887.8		x	40					
		6292.6	2	5594.6	2$^+$			
		6335.0	2	5552.21	1$^+$,2$^+$			
		6729.9	4	5157.3	2$^+$			
		6802.8	7	5084.3	(2)$^-$			
		7950.3	21	3936.61	2$^+$			
		9718.9	24	2167.60	2$^+$			
11905.7		x	67					
		5304.1	5	6601.18	4$^-$			
		6247.0	8	5658.1	5$^-$			
		7028.1	8	4876.87	3$^-$			
		7319.7	9	4585.2	5$^-$			
		8094.7	3	3810.09	3$^-$			
11927.9	4$^-$	2928	0.5 *2*	9000				I_γ: from 1984La24.
		3128	1.6 *1*	8800				I_γ: from 1984La24.
		4428	1.1 *2*	7500				I_γ: from 1984La24.
		4496.6	0.2 *1*	7431.0				I_γ: from 1984La24.
		4578	0.5 *2*	7350				I_γ: from 1984La24.
		4638	0.5 *2*	7289.6	(3$^-$,4$^+$)			I_γ: from 1984La24.
		5023.7	0.9 *2*	6903.8	2$^-$,3$^-$			I_γ: from 1984La24. Other: 1.0 (1988Wa34).
		5057.6	0.5 *3*	6869.9				I_γ: from 1984La24.
		5326.3	32.7 *6*	6601.18	4$^-$	M1(+E2)	+0.05 *8*	Mult.,δ: A_2=+0.31 *2*, A_4=+0.04 *3*, Pol=−0.35 *18* (1968En01). I_γ: from 1984La24. Other: 26 (1988Wa34).
		5651.3	1.1 *3*	6276.1	4$^+$			I_γ: from 1984La24.
		5717	22.2 *5*	6210.0	4$^-$	M1(+E2)	−0.02 *8*	Mult.,δ: A_2=+0.28 *3*, A_4=+0.01 *3*, Pol=−0.65 *30* (1968En01). I_γ: from 1984La24. Other: 18 (1988Wa34).
		5874.3	0.5 *2*	6053.1	(4$^+$)			I_γ: from 1984La24.
		6102.5	0.6 *3*	5824.9	3$^-$			I_γ: from 1984La24.
		6269.2	5.3 *4*	5658.1	5$^-$			I_γ: from 1984La24. Other: 4.7 (1988Wa34).
		6413.9	10.1 *7*	5513.38	3$^-$	D(+Q)	−0.03 *9*	Mult.,δ: A_2=−0.24 *4*, A_4=+0.01 *4* (1968En01). I_γ: from 1984La24. Other: 8.2 (1988Wa34).
		6577.8	0.8 *3*	5349.5	4$^+$			I_γ: from 1984La24. Other: 1.2 (1988Wa34).
		7050.3	3.7 *4*	4876.87	3$^-$			I_γ: from 1984La24. Other: 3.0 (1988Wa34).
		7341.9	6.6 *4*	4585.2	5$^-$	M1+E2	−0.20 *10*	Mult.,δ: A_2=+0.14 *4*, A_4=+0.05 *5* (1968En01). I_γ: from 1984La24. Other: 5.3 (1988Wa34).
		7361.6	1.4 *3*	4565.5	2$^+$			I_γ: from 1984La24.
		7447.2	6.9 *4*	4479.92	4$^-$	M1(+E2)	−0.10 *10*	I_γ: from 1984La24. Other: 5.8 (1988Wa34). Mult.,δ: A_2=+0.24 *5*, A_4=+0.05 *5* (1968En01).
		7990.4	0.2 *1*	3936.61	2$^+$			I_γ: from 1984La24. Other: <0.5 (1988Wa34).
		8116.9	1.9 *2*	3810.09	3$^-$			I_γ: from 1984La24. Other: 1.8 (1988Wa34).
		8549.5	<0.7	3377.36	0$^+$			I_γ: from 1988Wa34.

Continued on next page (footnotes at end of table)

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 (continued)

$\gamma(^{38}Ar)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Comments
11927.9	4^-	9759.0	1.0 *3*	2167.60	2^+	I_γ: from 1984La24.
		11926	<0.1	0	0^+	I_γ: from 1988Wa34.
12394		x	51			
		6183	11	6210.0	4^-	
		6352	1	6041.8	$(3^-,4^+)$	
		6735	1	5658.1	5^-	
		6880	24	5513.38	3^-	
		7516	8	4876.87	3^-	
		7808	3	4585.2	5^-	
		8583	1	3810.09	3^-	
12405		x	48			
		6194	15	6210.0	4^-	
		6579	2	5824.9	3^-	
		6891	20	5513.38	3^-	
		7527	5	4876.87	3^-	
		7819	4	4585.2	5^-	
		7924	5	4479.92	4^-	
		8594	1	3810.09	3^-	

† From 1968En01 where given with uncertainties, otherwise from level-energy differences. γ transitions are from 1988Wa34 up to 11245 level and from 1974Al05 above that level, unless otherwise noted.

‡ From 1988Wa34 up to 11245 level and from 1974Al05 above that level, unless otherwise noted. Where values are available in both 1974Al05 and 1988Wa34, averages are taken if they are in agreement or the more precise values are taken if there is discrepancy.

Branching ratio is uncertain (1988Wa34).

@ Values are from 1974Al05. 1988Wa34 state that their values for these γ rays are in good agreement with those in 1974Al05 and thus adopt those values to deduce the complete set of branchings by including additional γ rays that were observed in 1988Wa34 but not in 1974Al05 to account for part of unknown branchings reported in 1974Al05.

& From 1988Wa34.

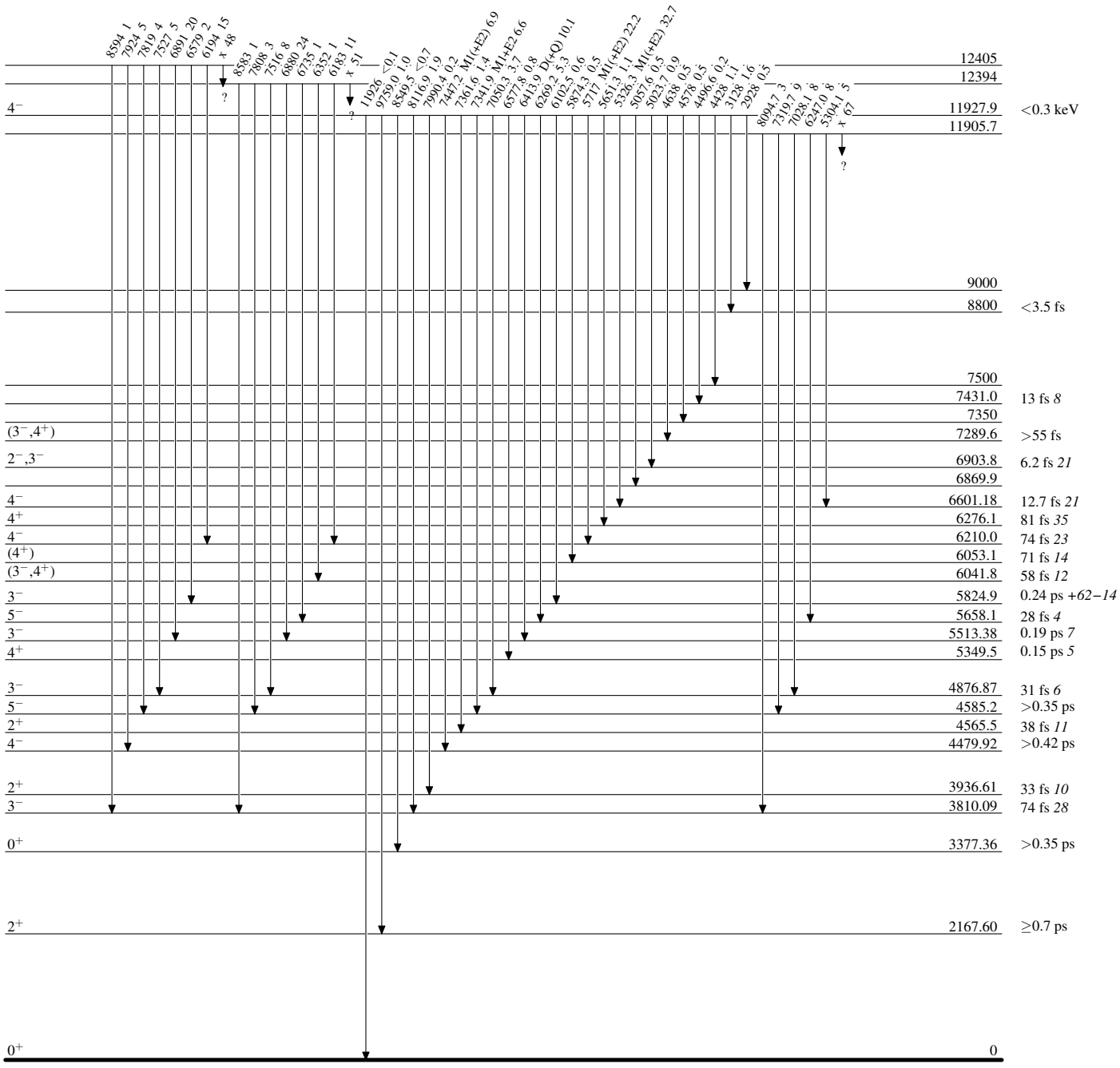
a From measured $\gamma(\theta)$, γ(pol) and RUL. See each comment for details. Data are from 1968En01 and 1966Er07.

b Placement of transition in the level scheme is uncertain.

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme

Intensities: % photon branching from each level

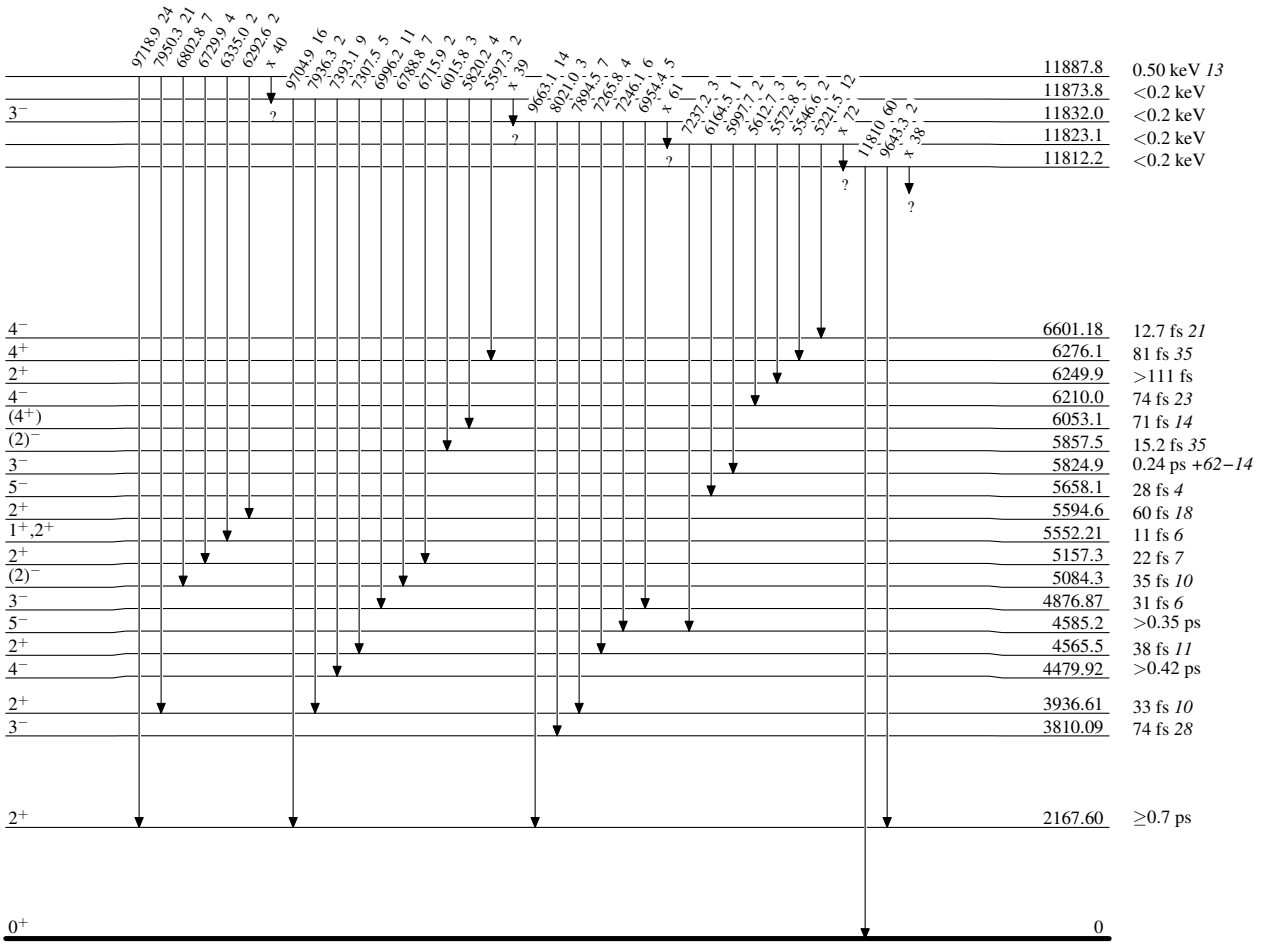


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

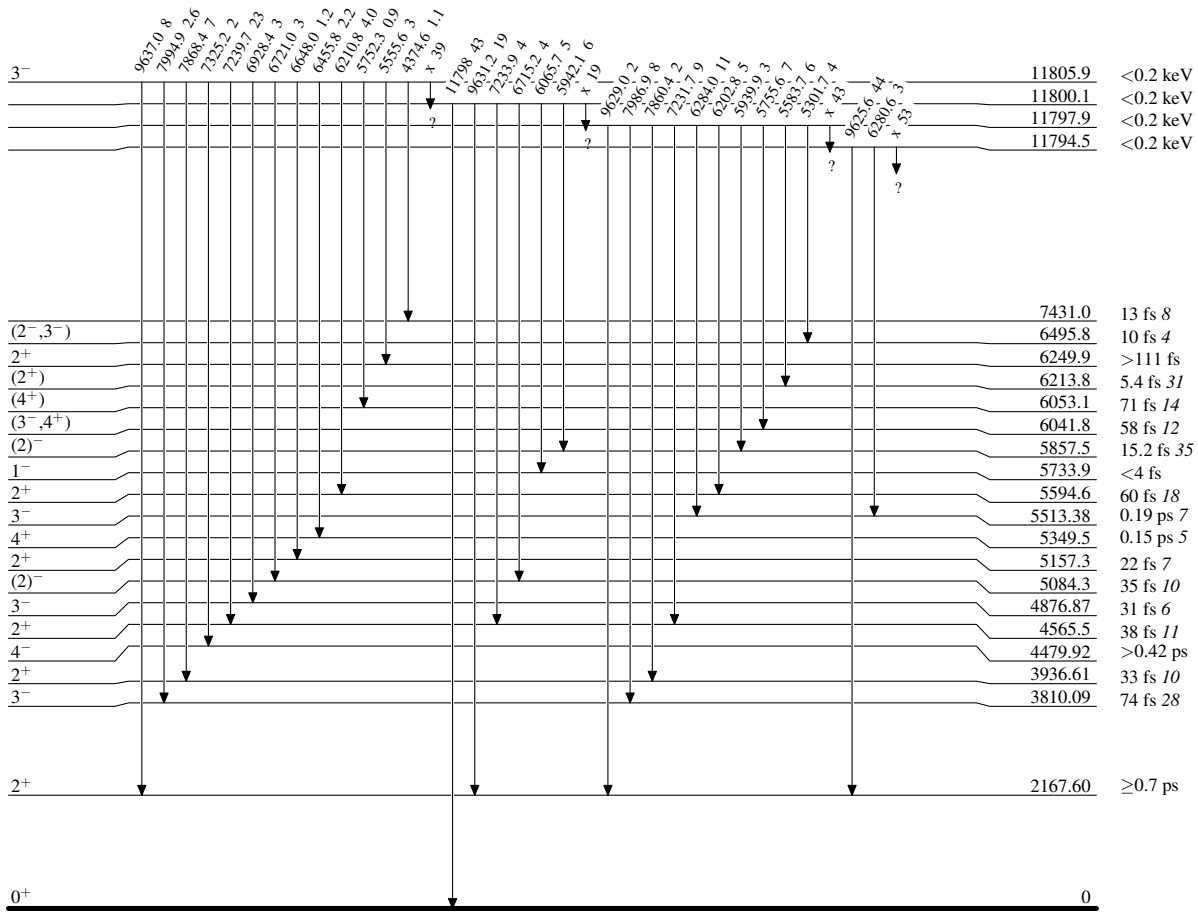


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

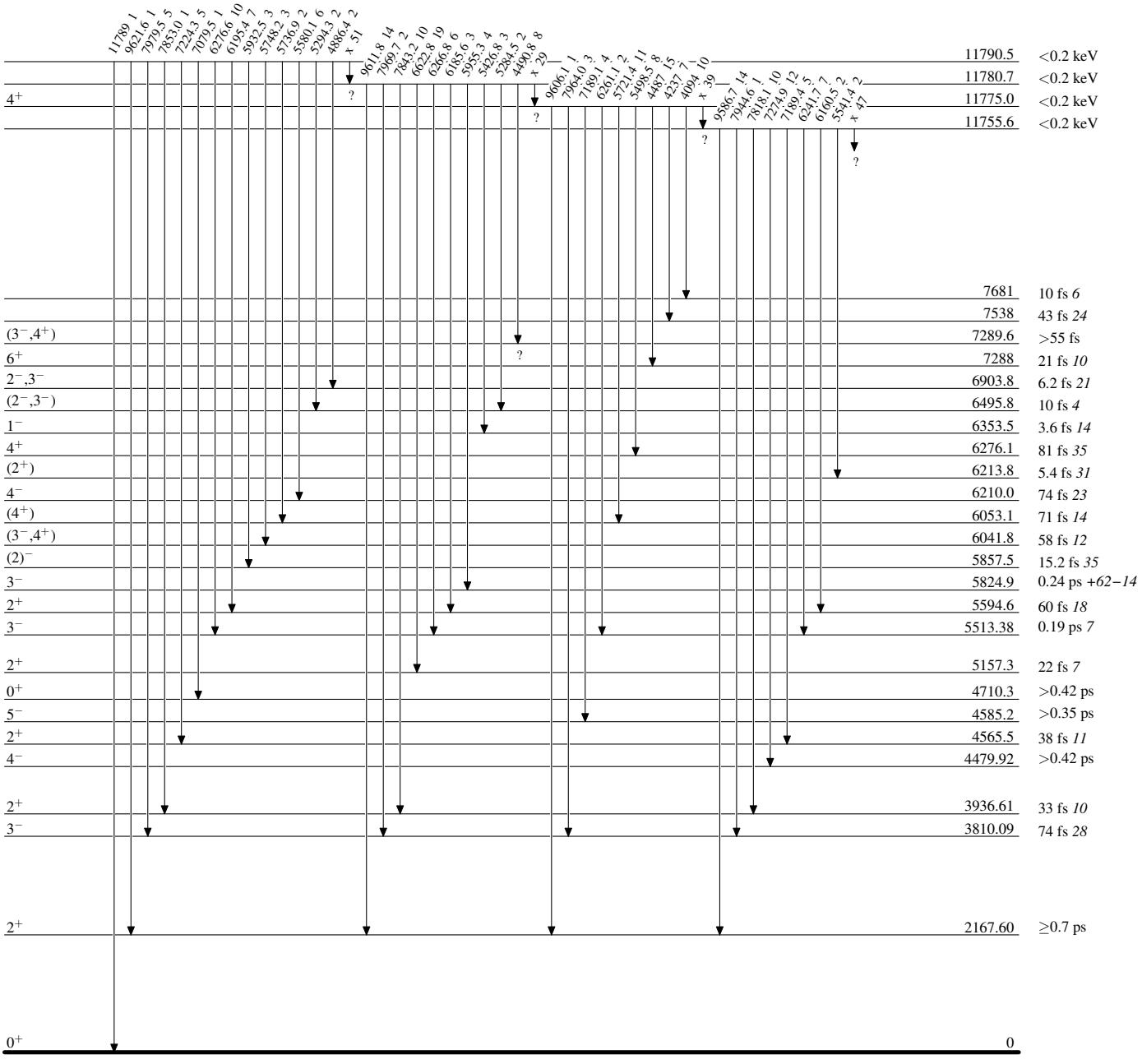


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

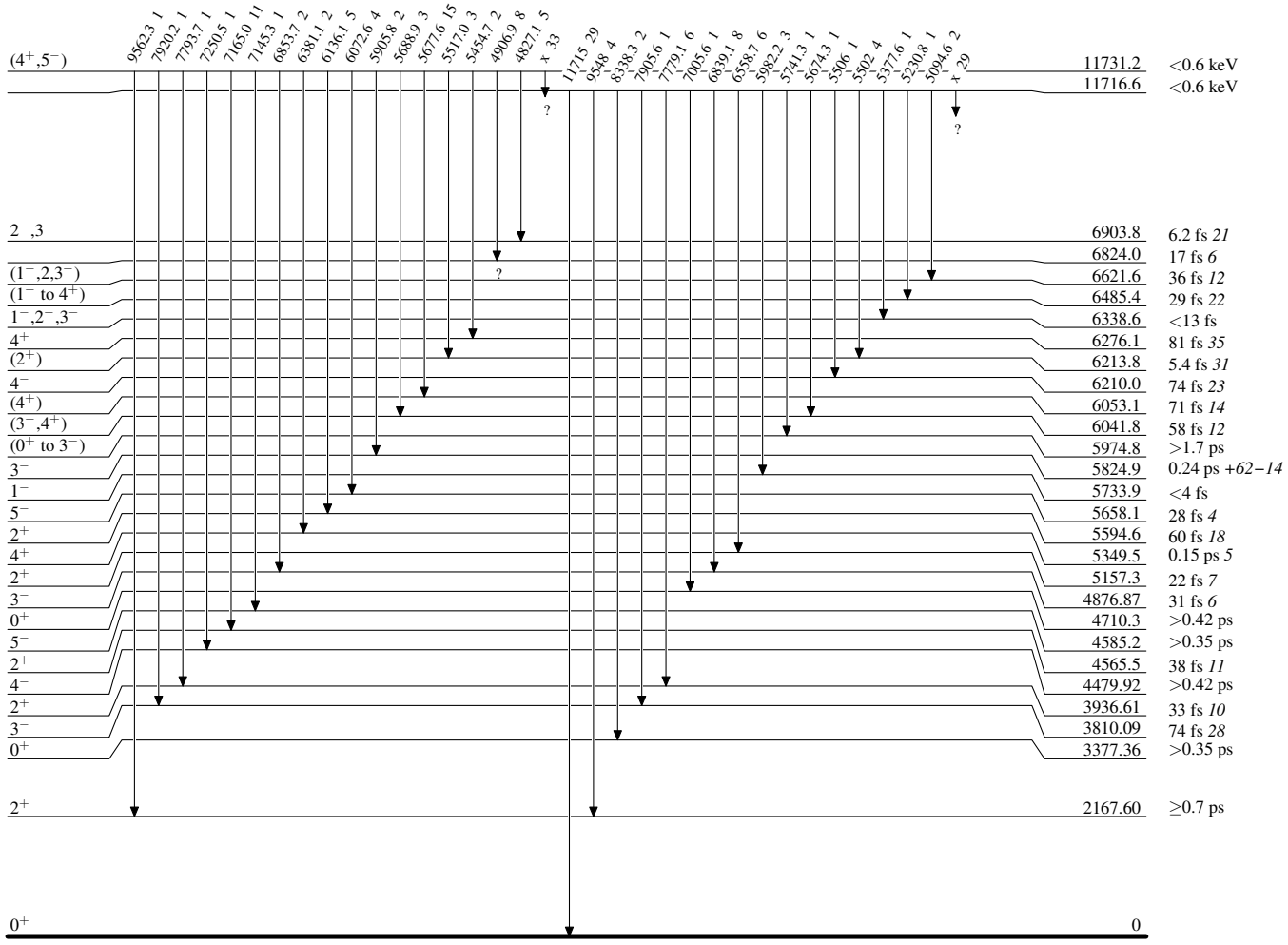


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

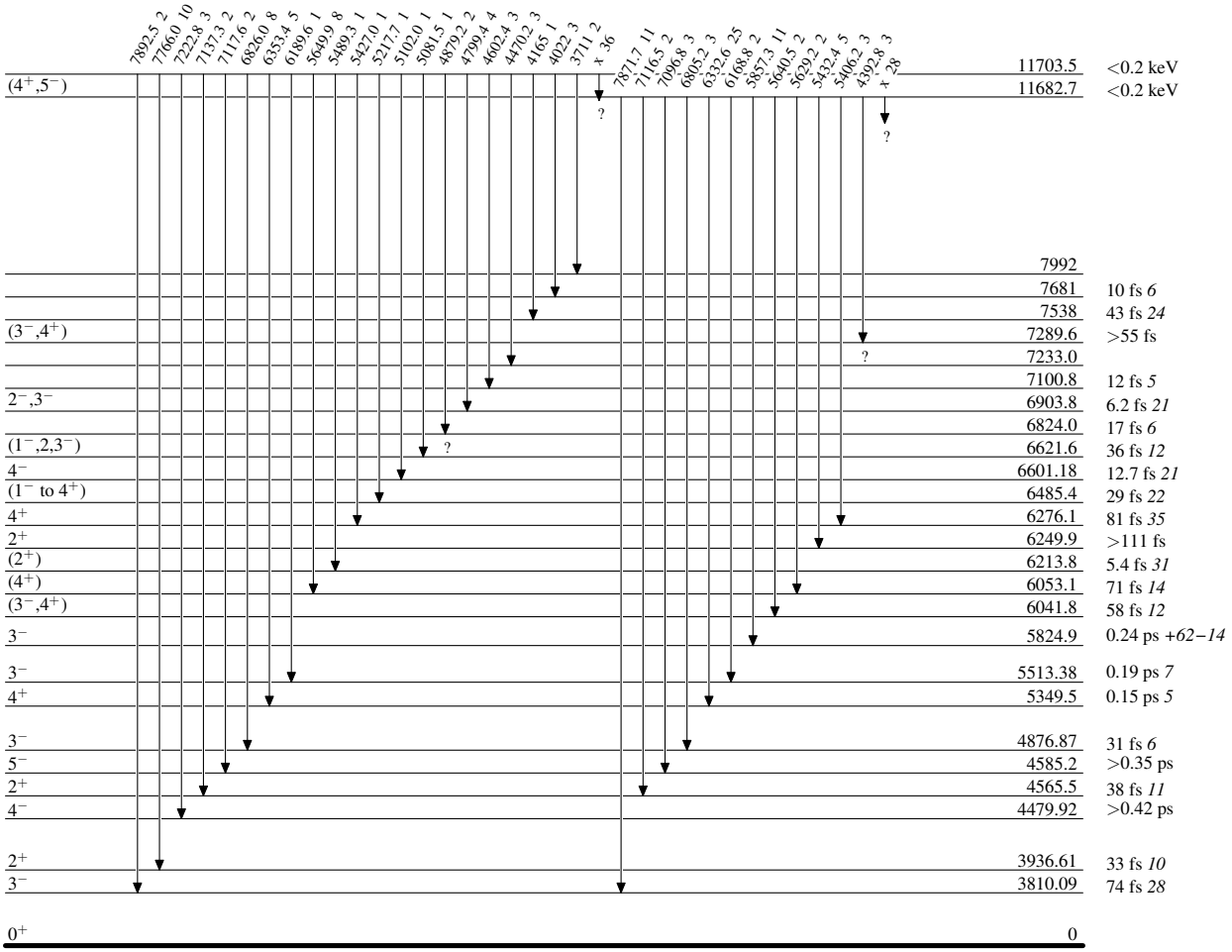


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level



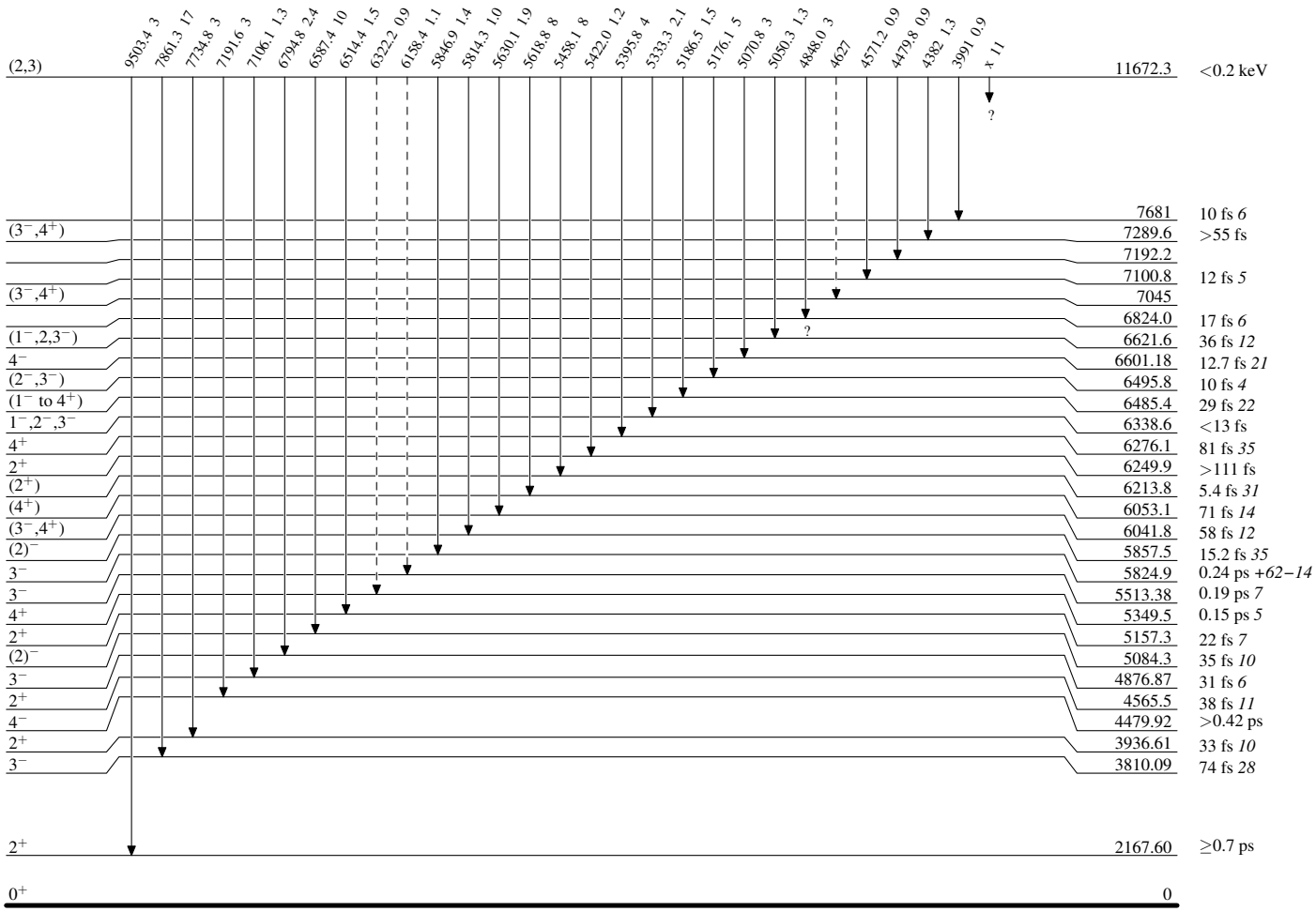
$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34 Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)

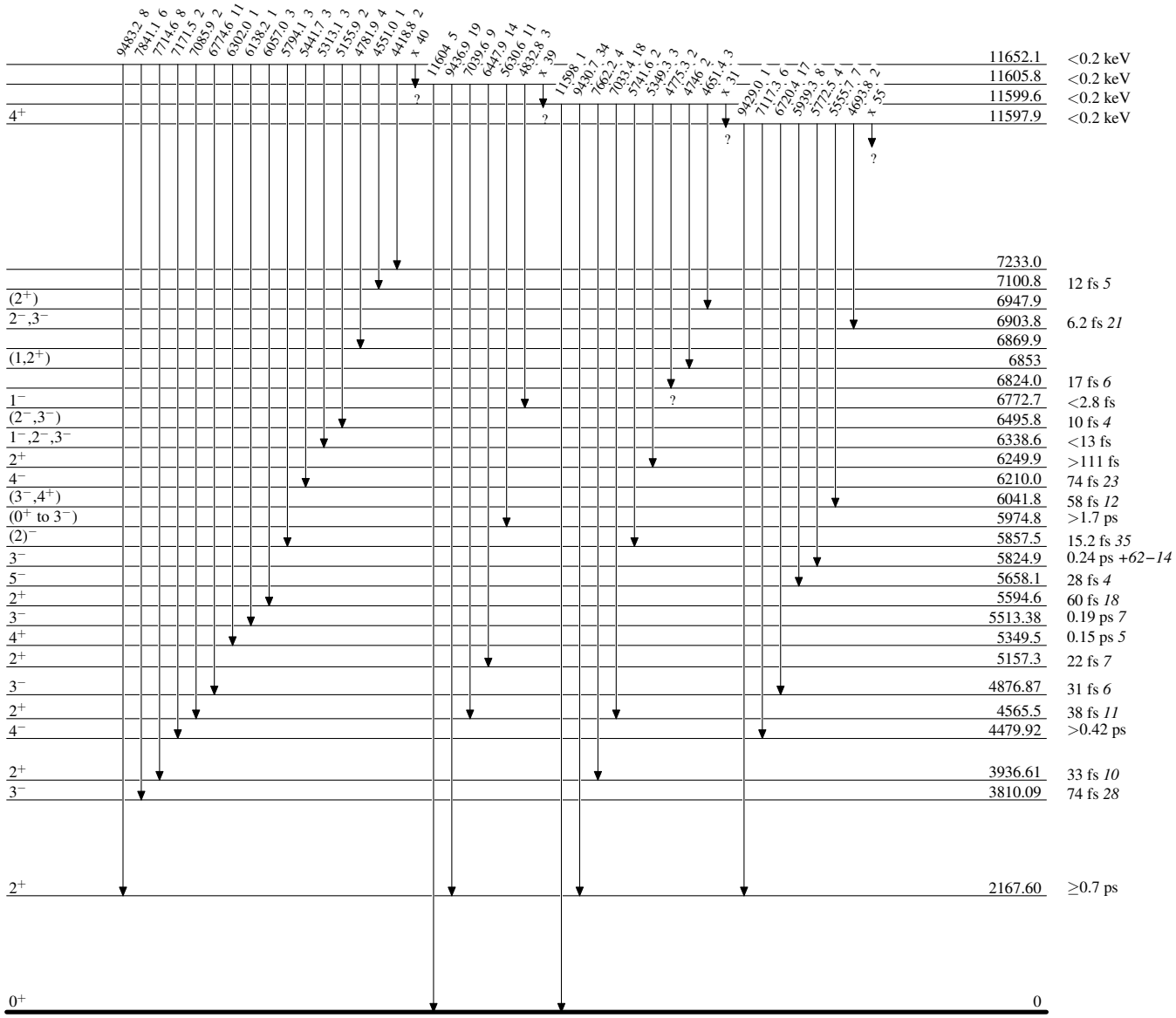


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

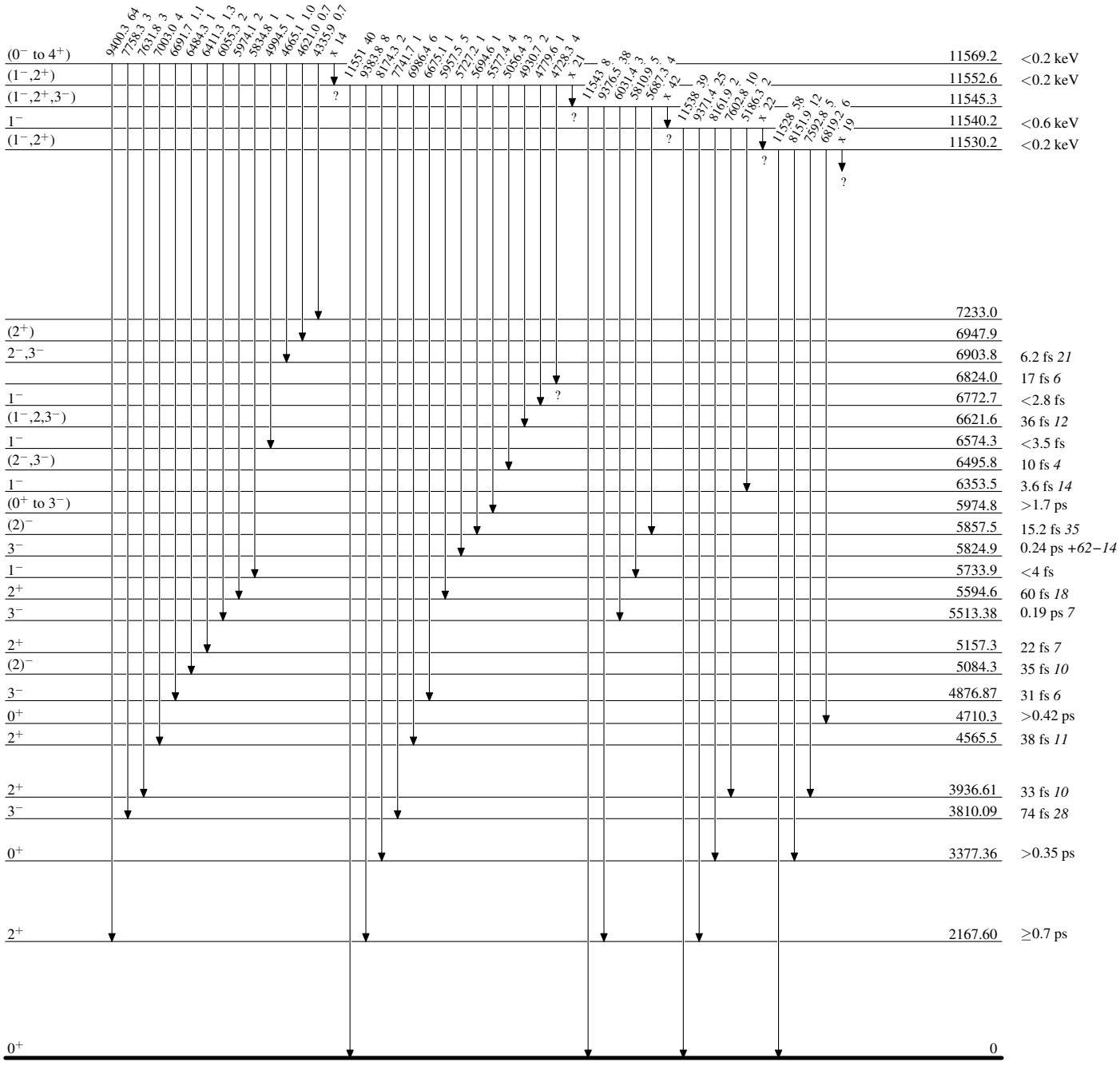


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

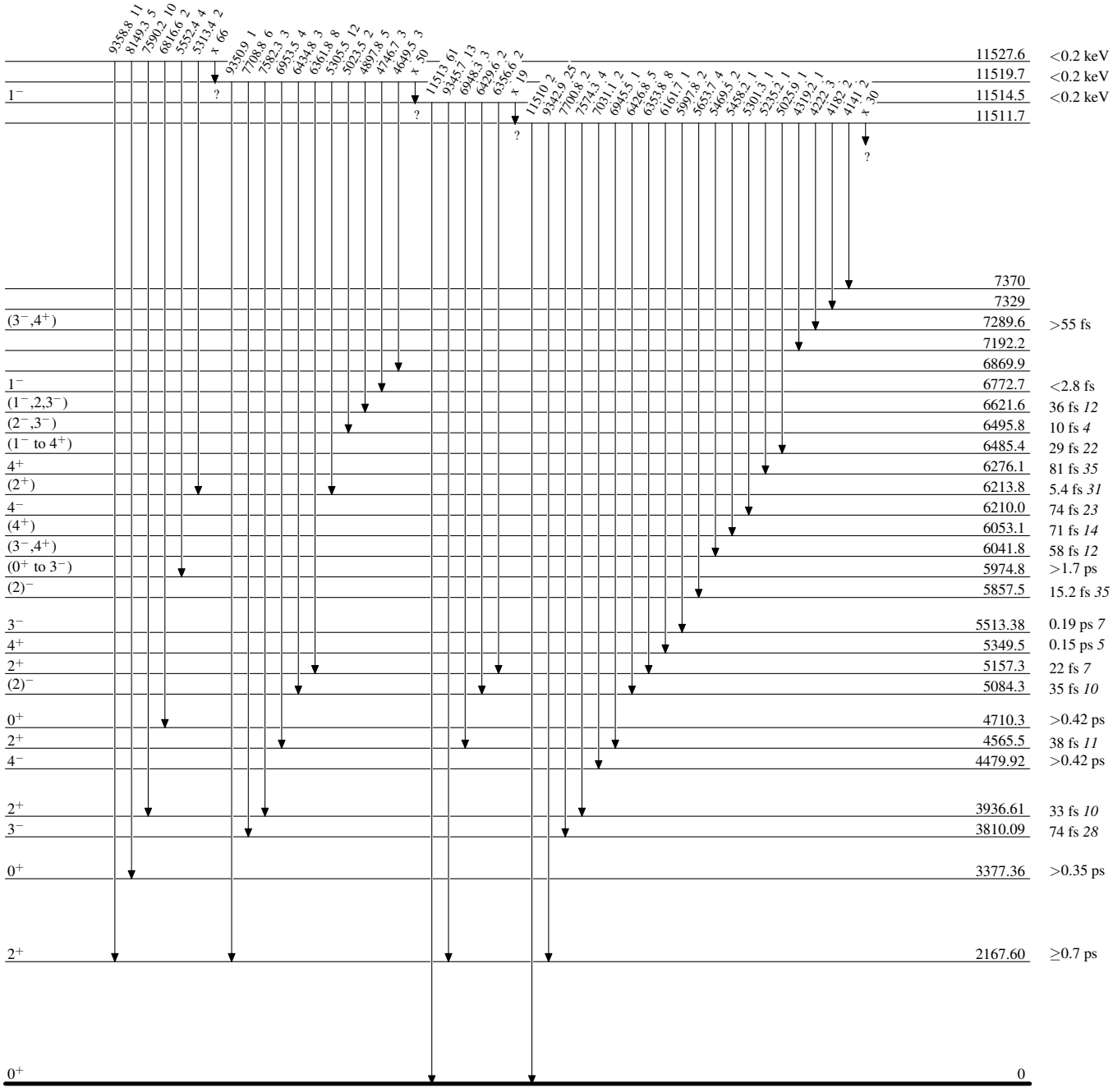


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

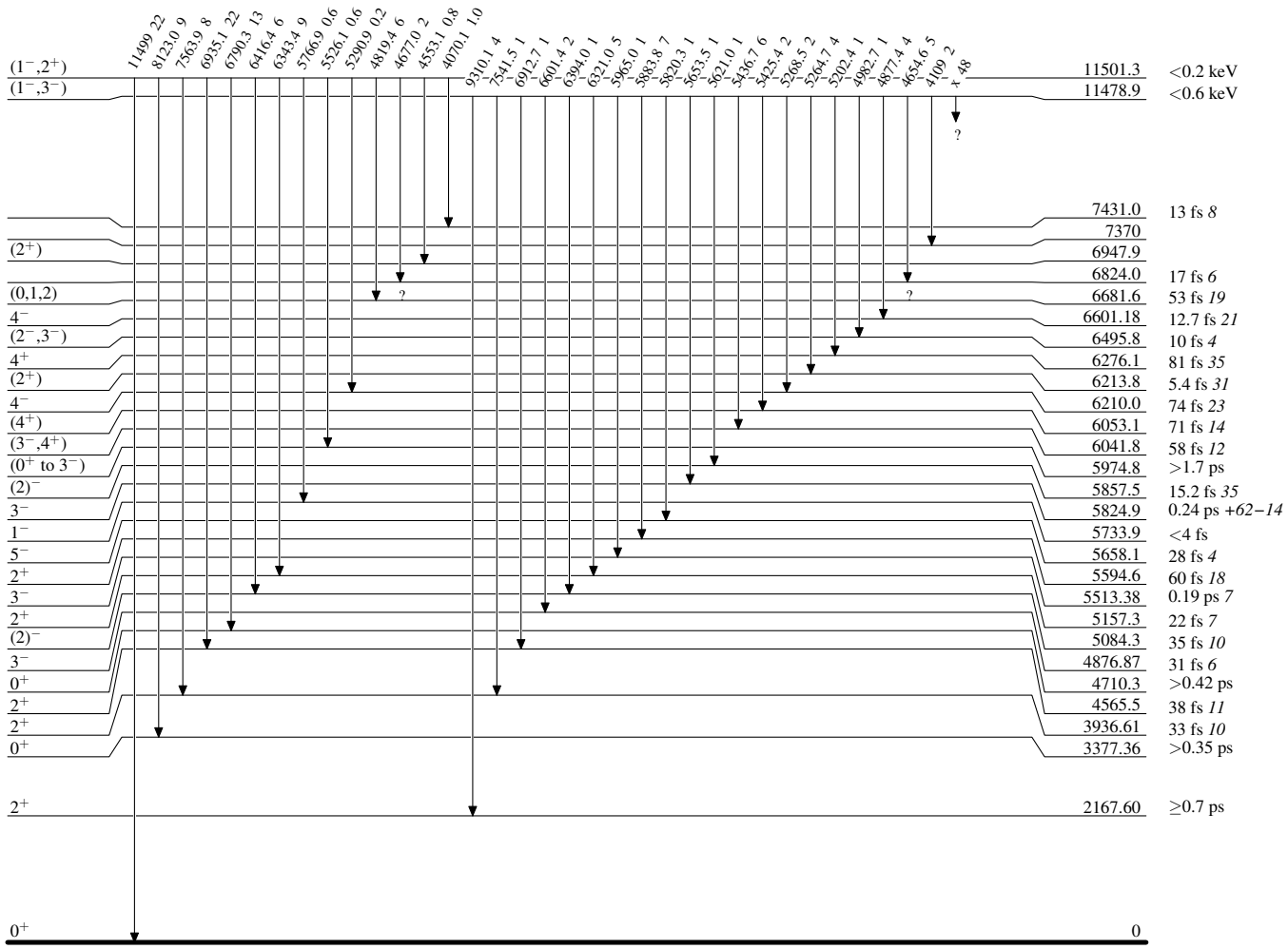
Intensities: % photon branching from each level



^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

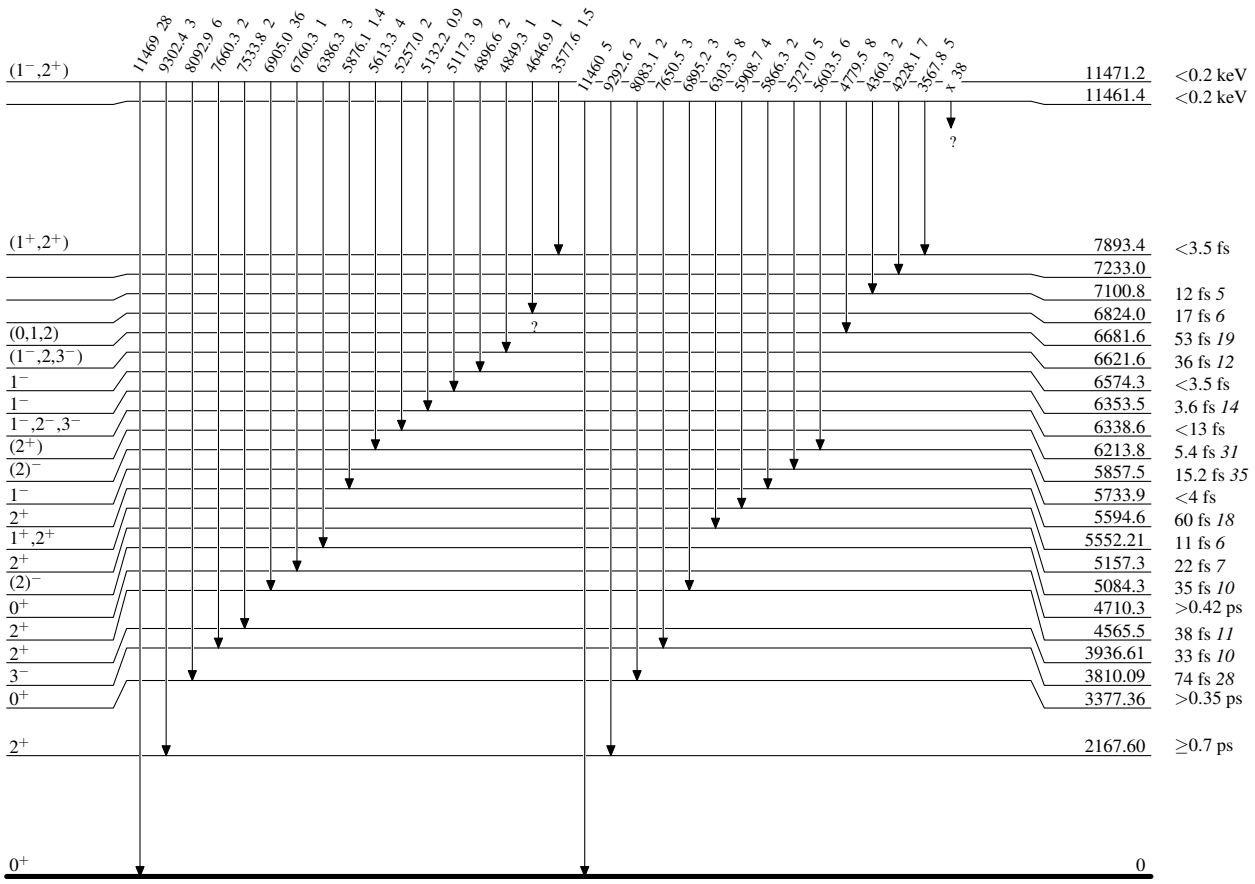


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

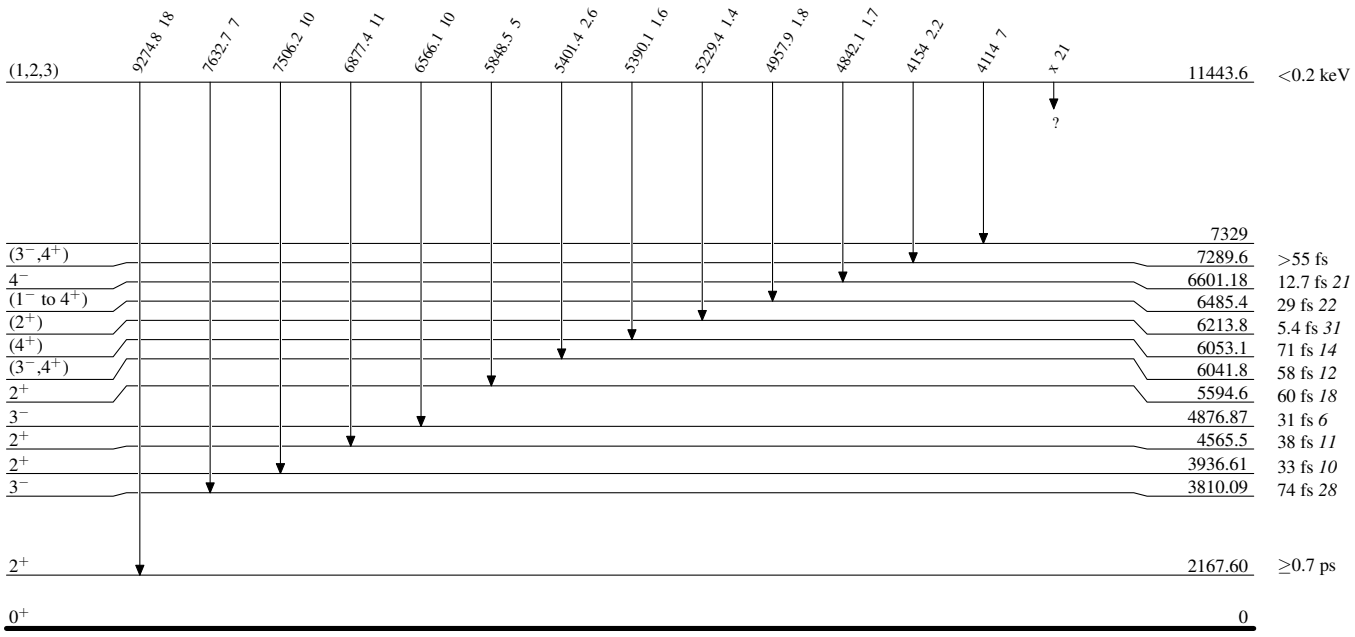


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

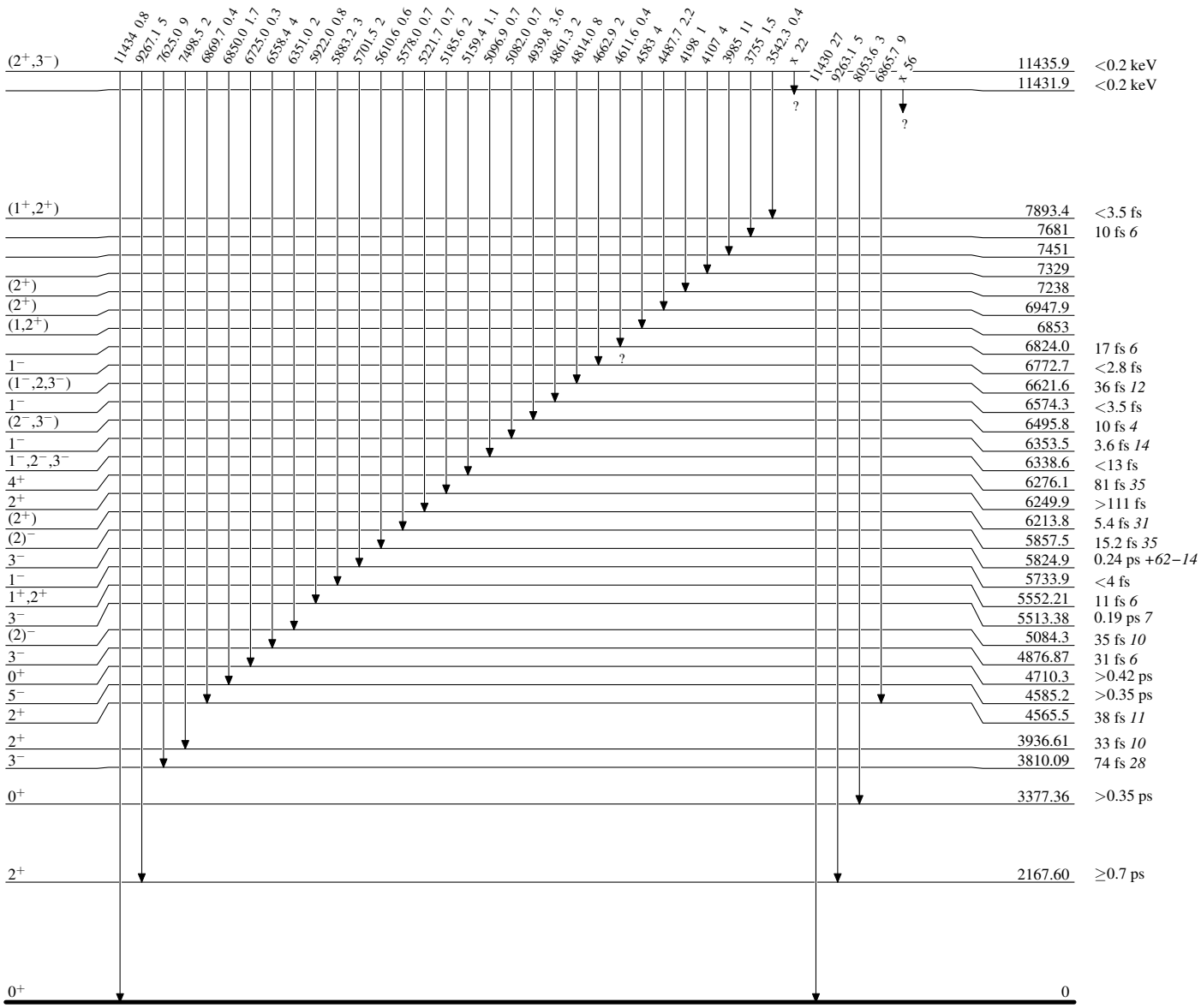


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

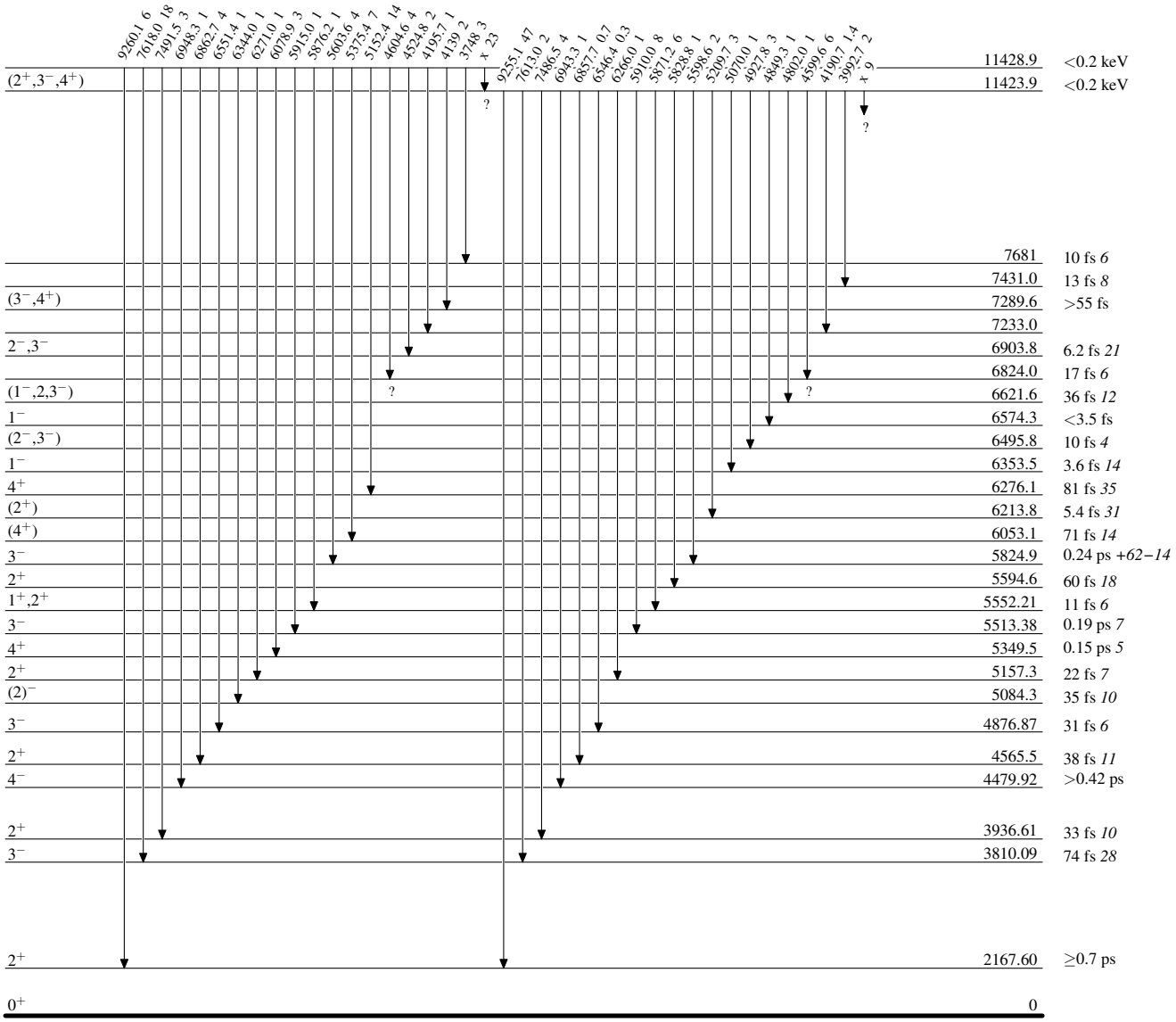


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

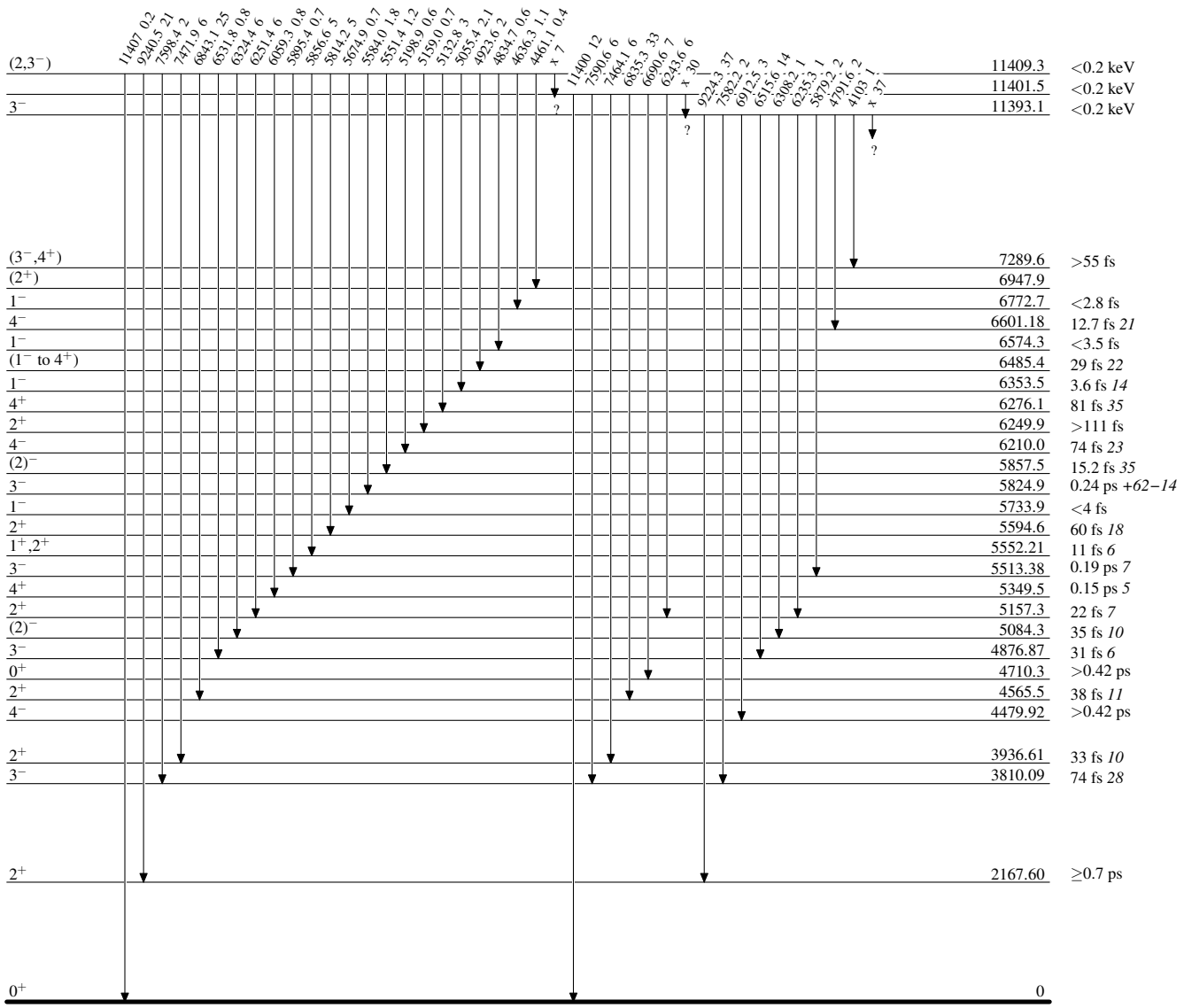
Intensities: % photon branching from each level



^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

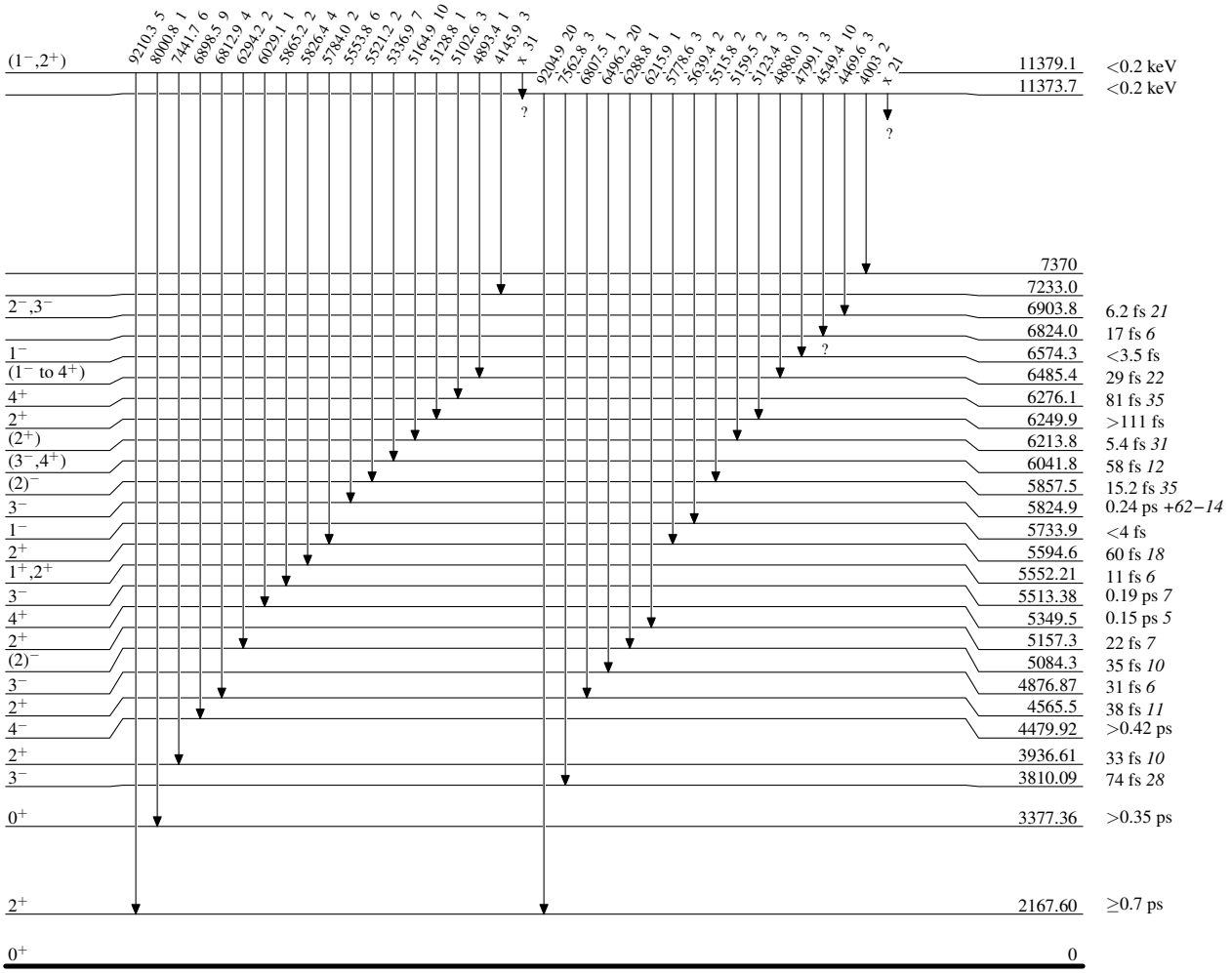
Intensities: % photon branching from each level



^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level



$^{38}_{18}Ar_{20}$

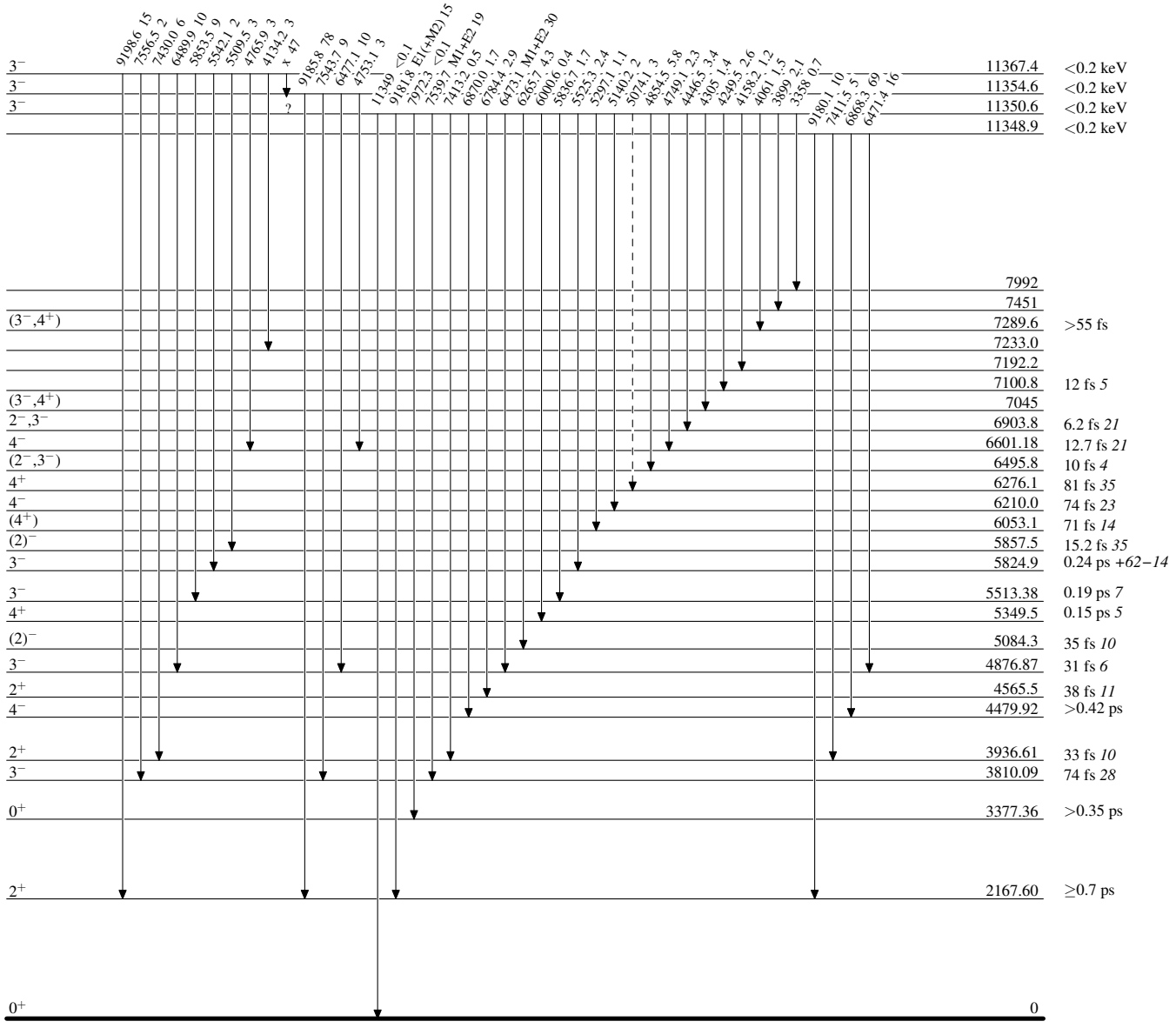
^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)

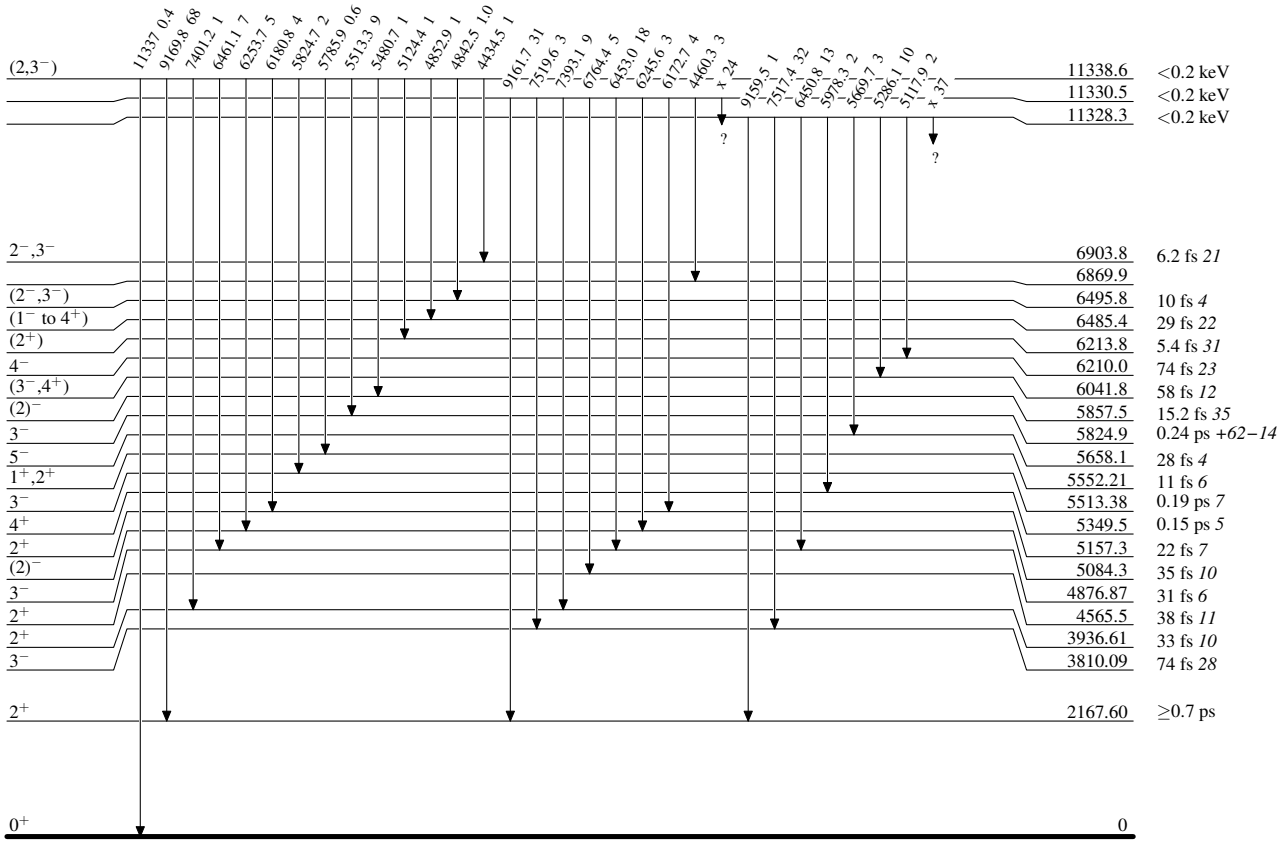


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

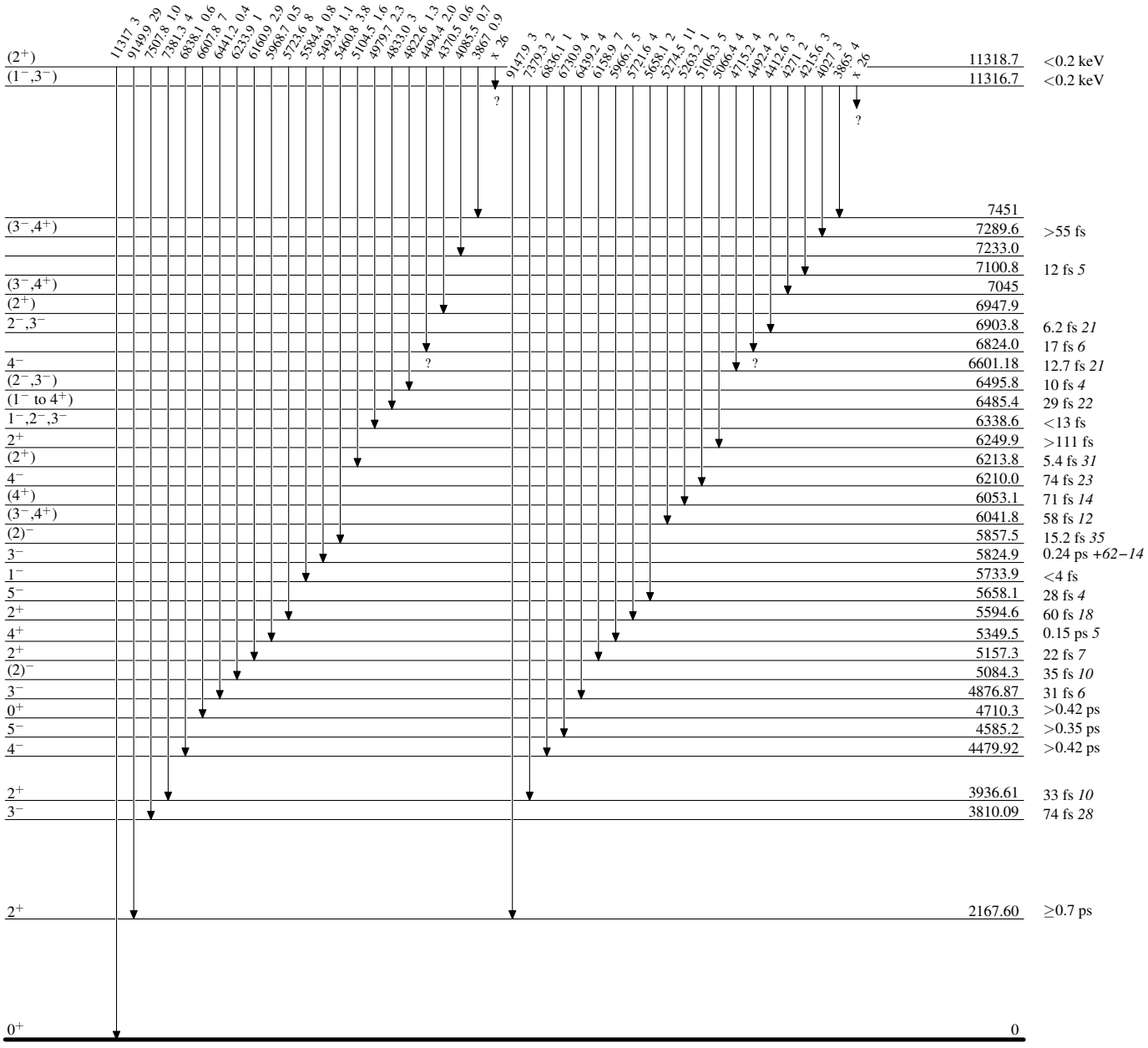


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level



$^{38}_{18}Ar_{20}$

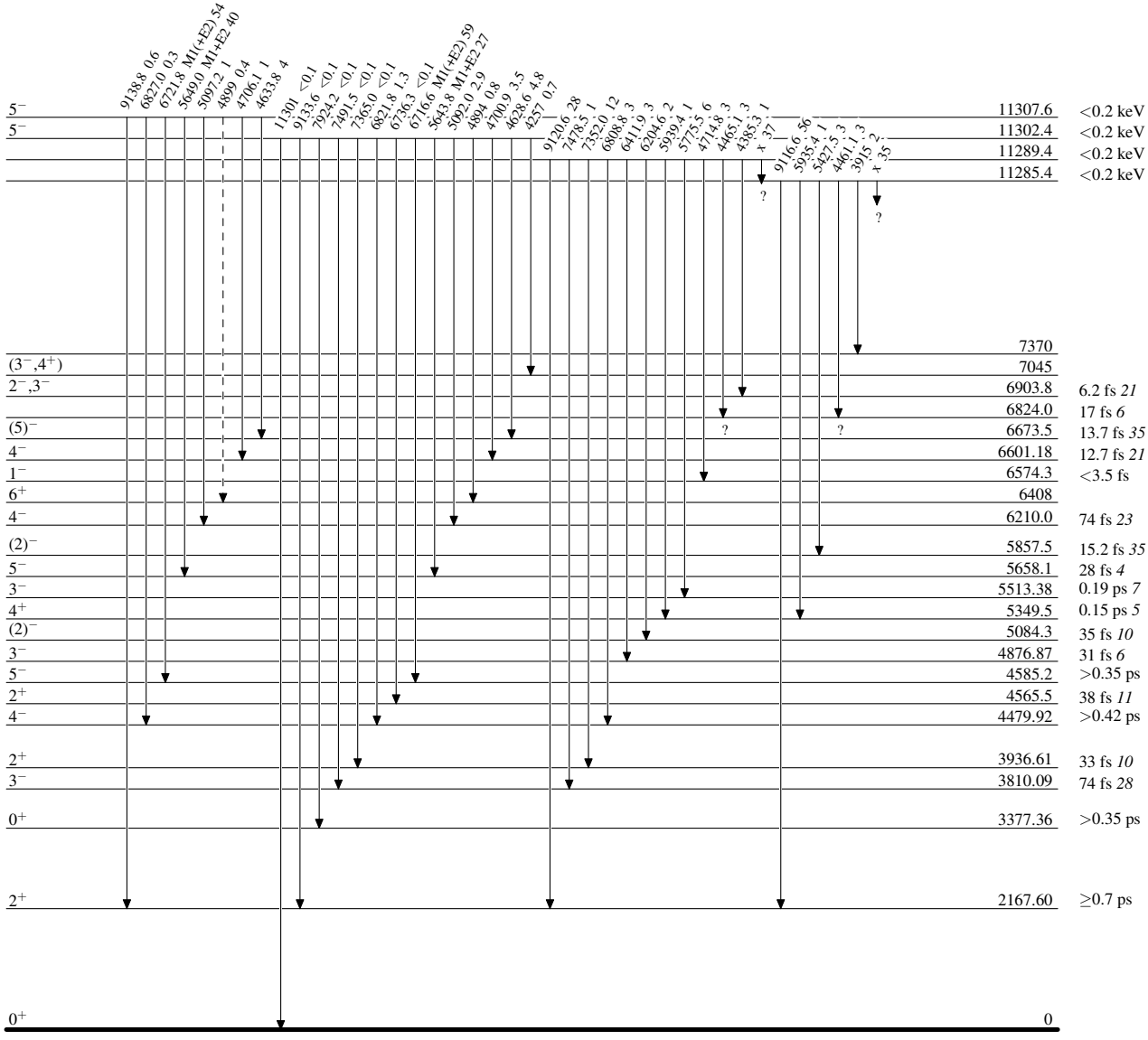
^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)

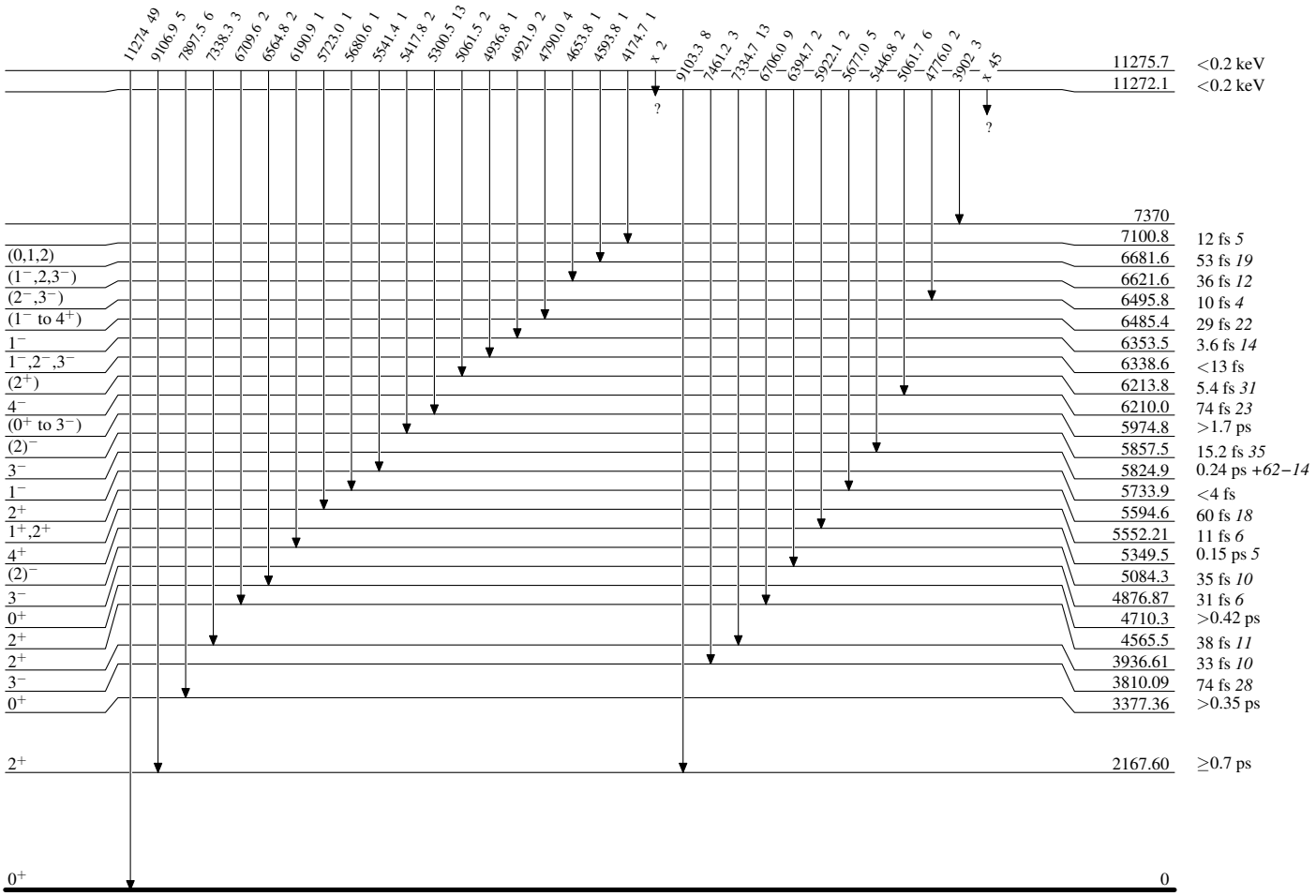


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

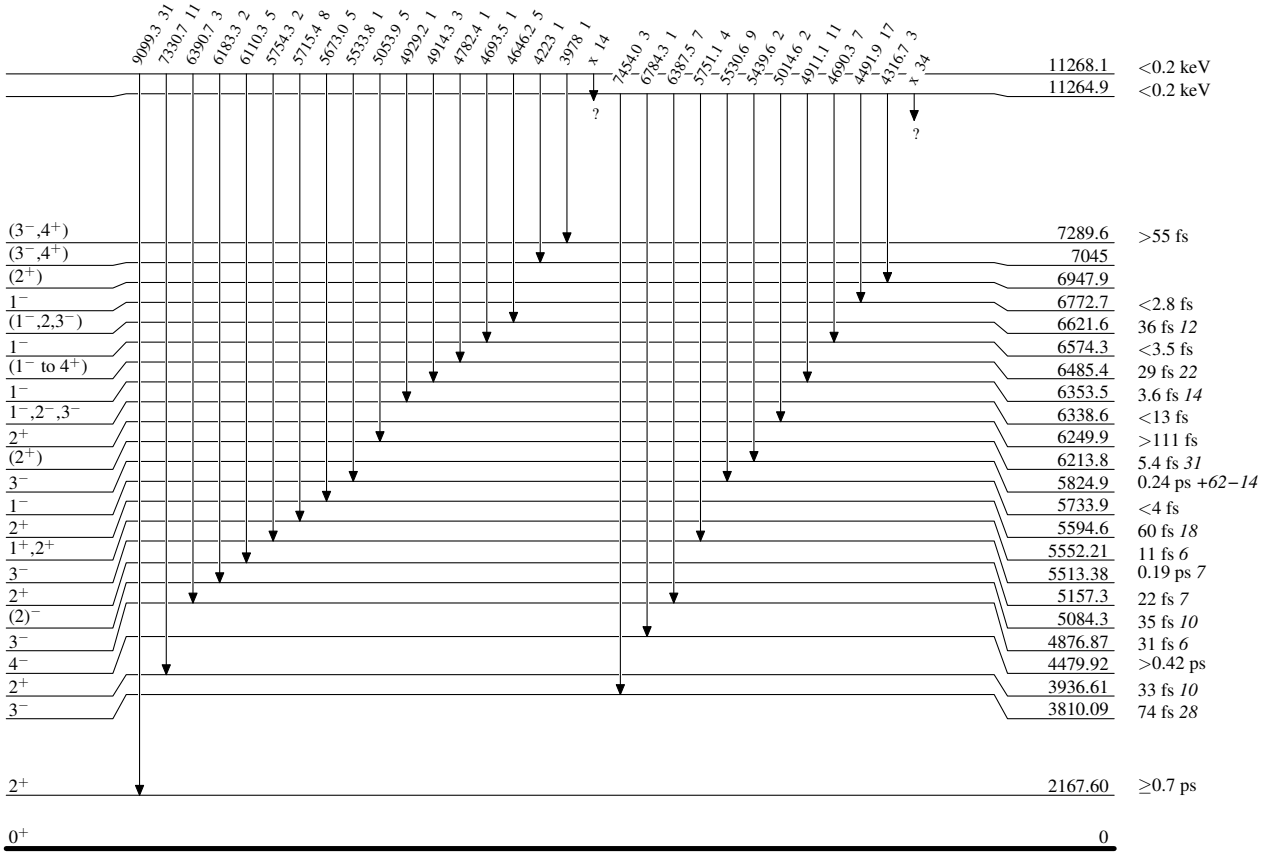


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

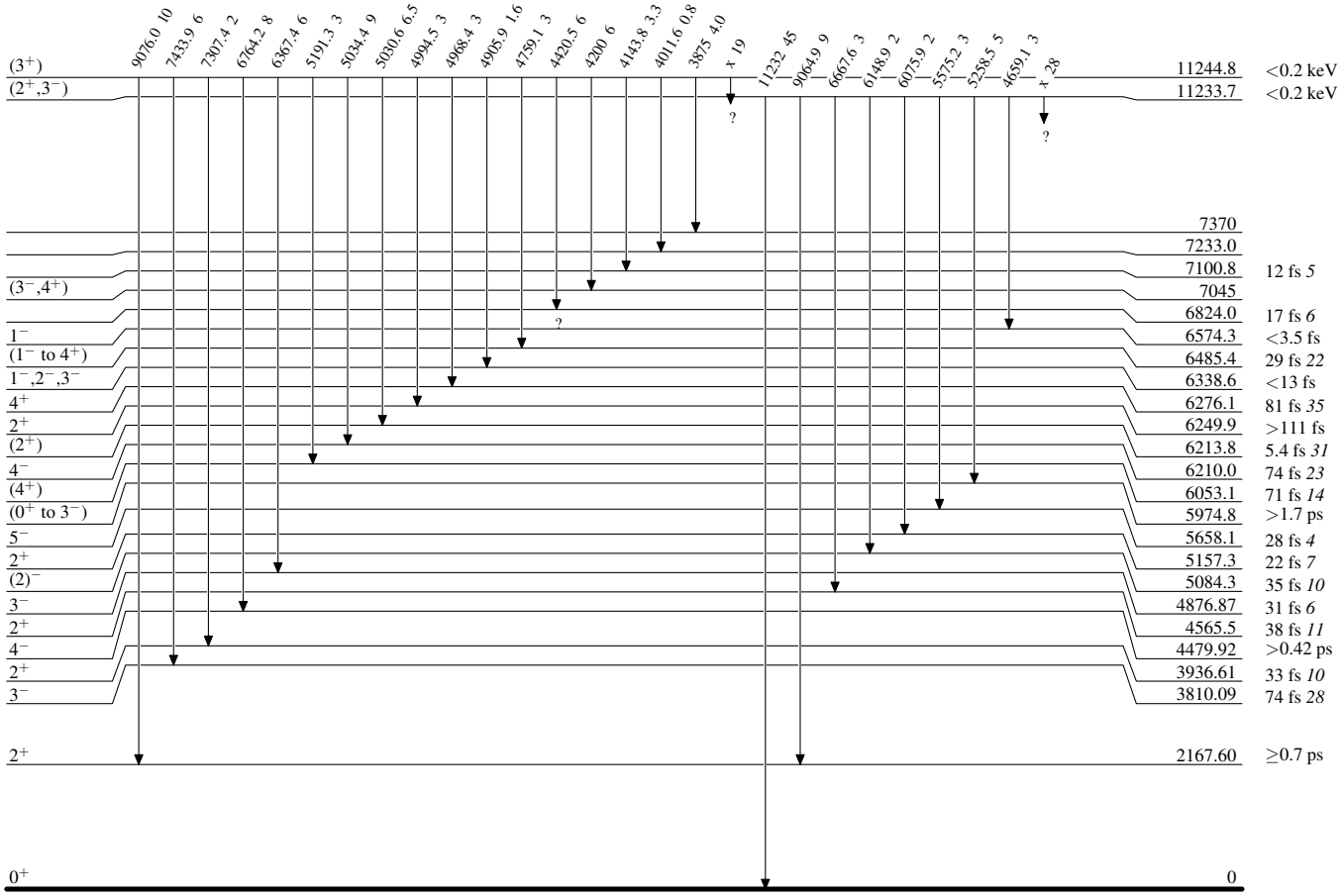


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

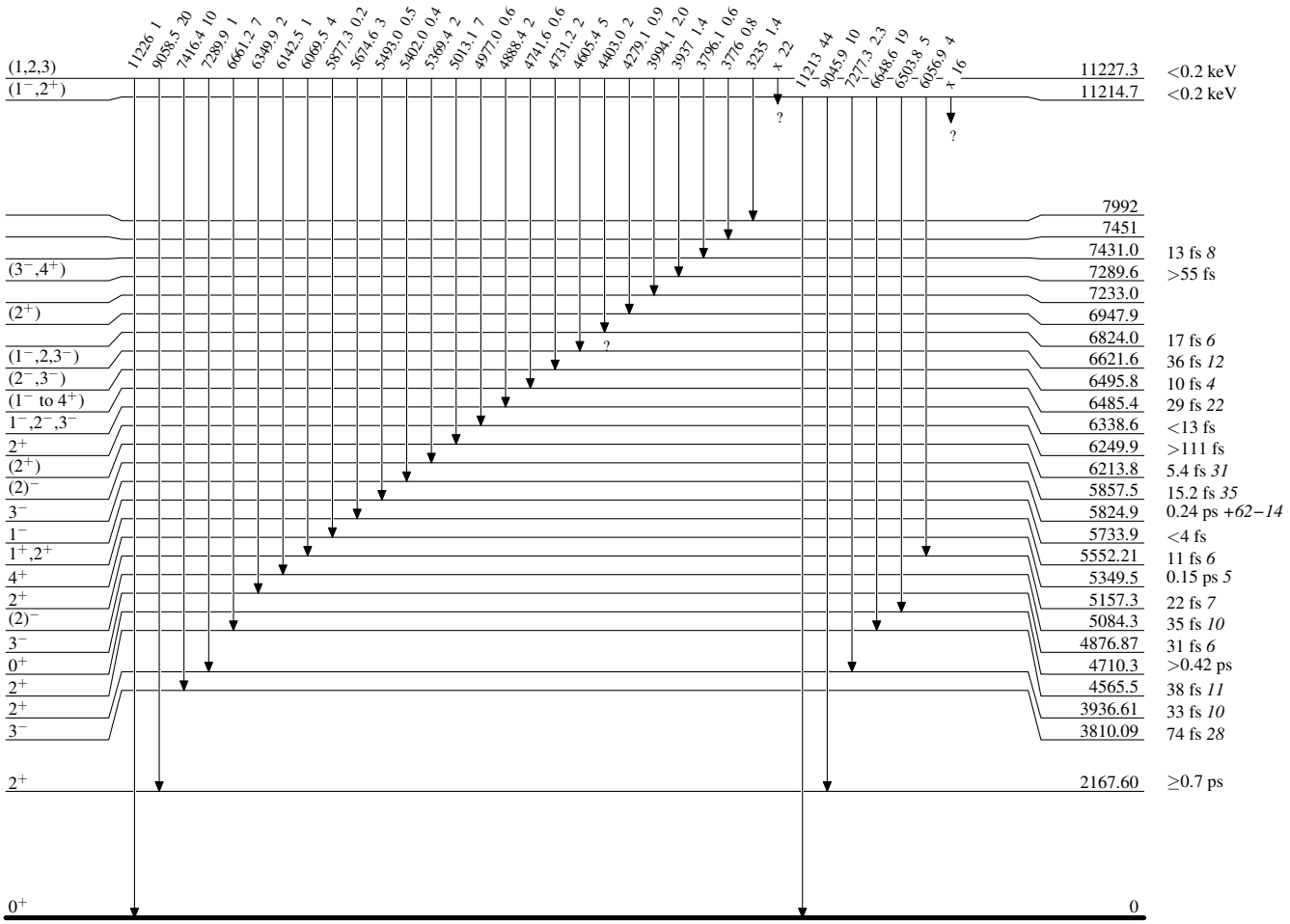


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

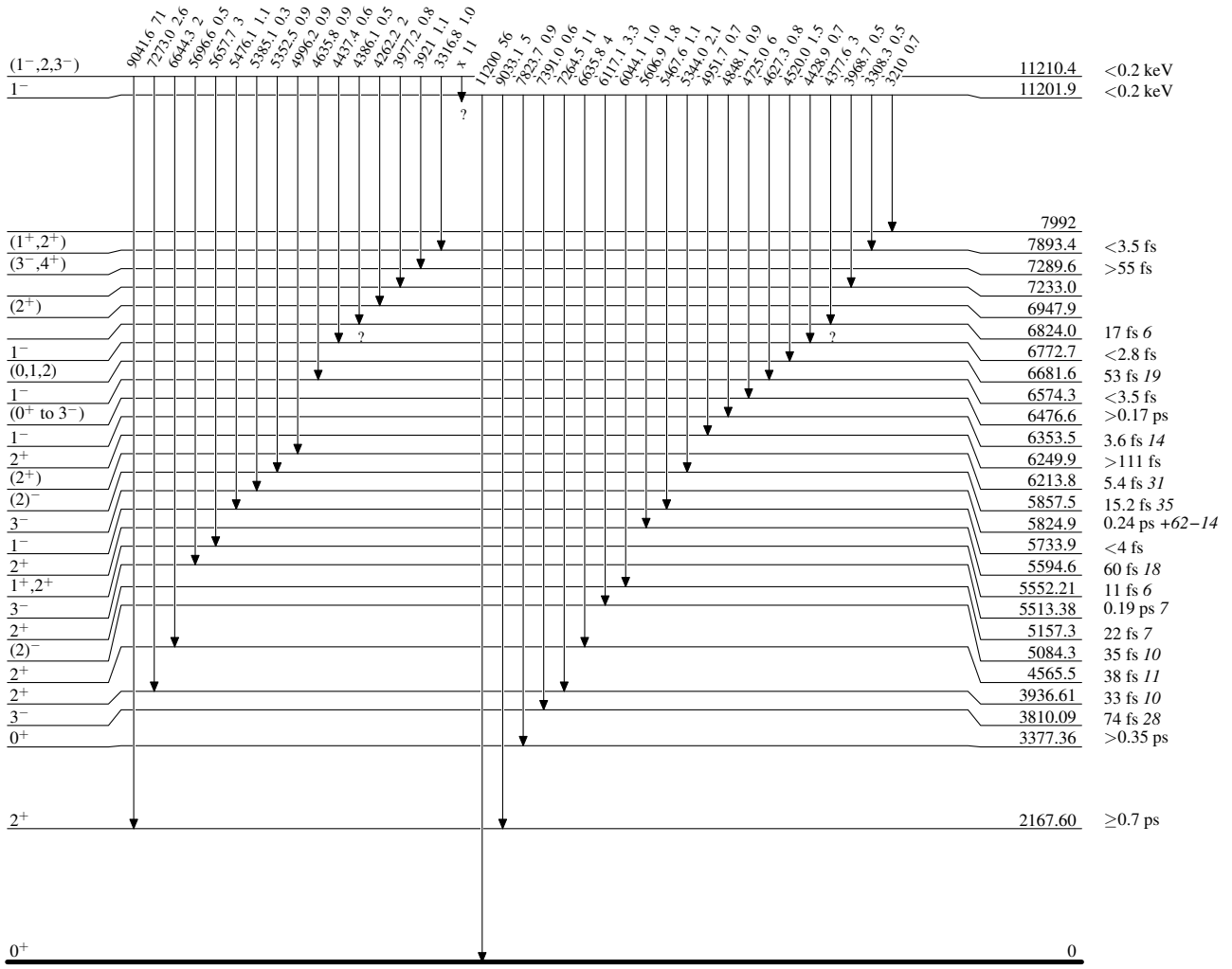


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

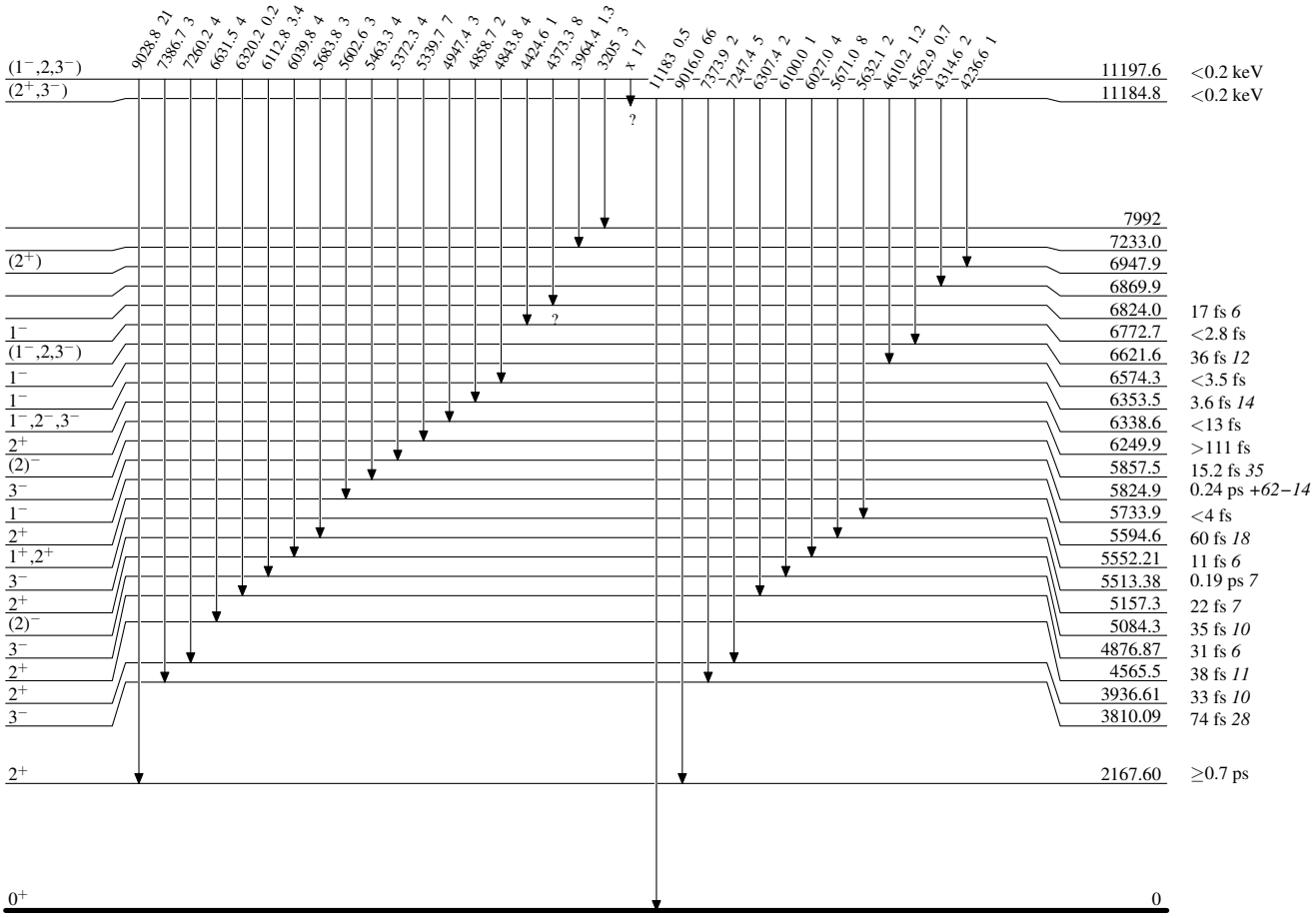


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

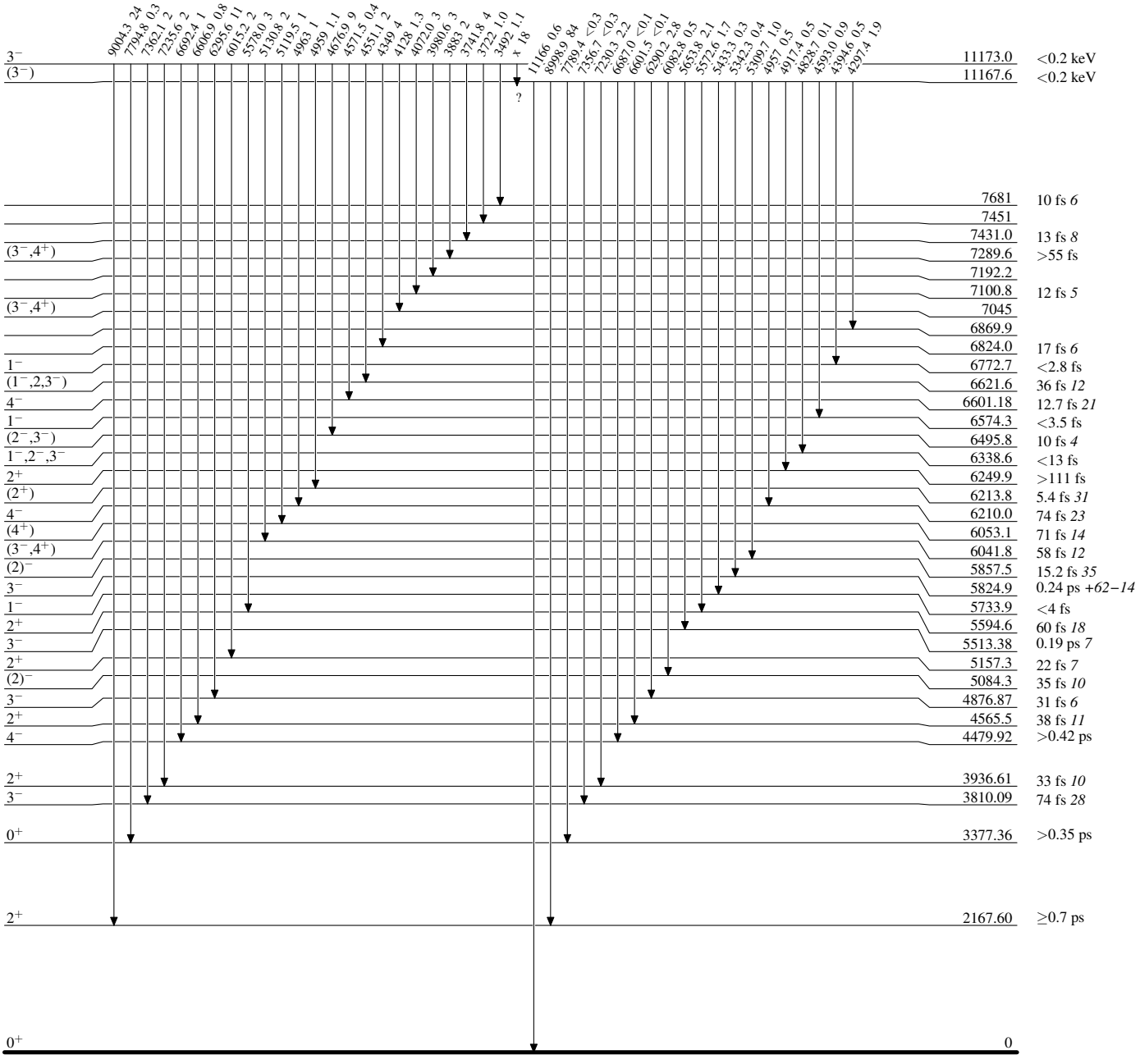


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

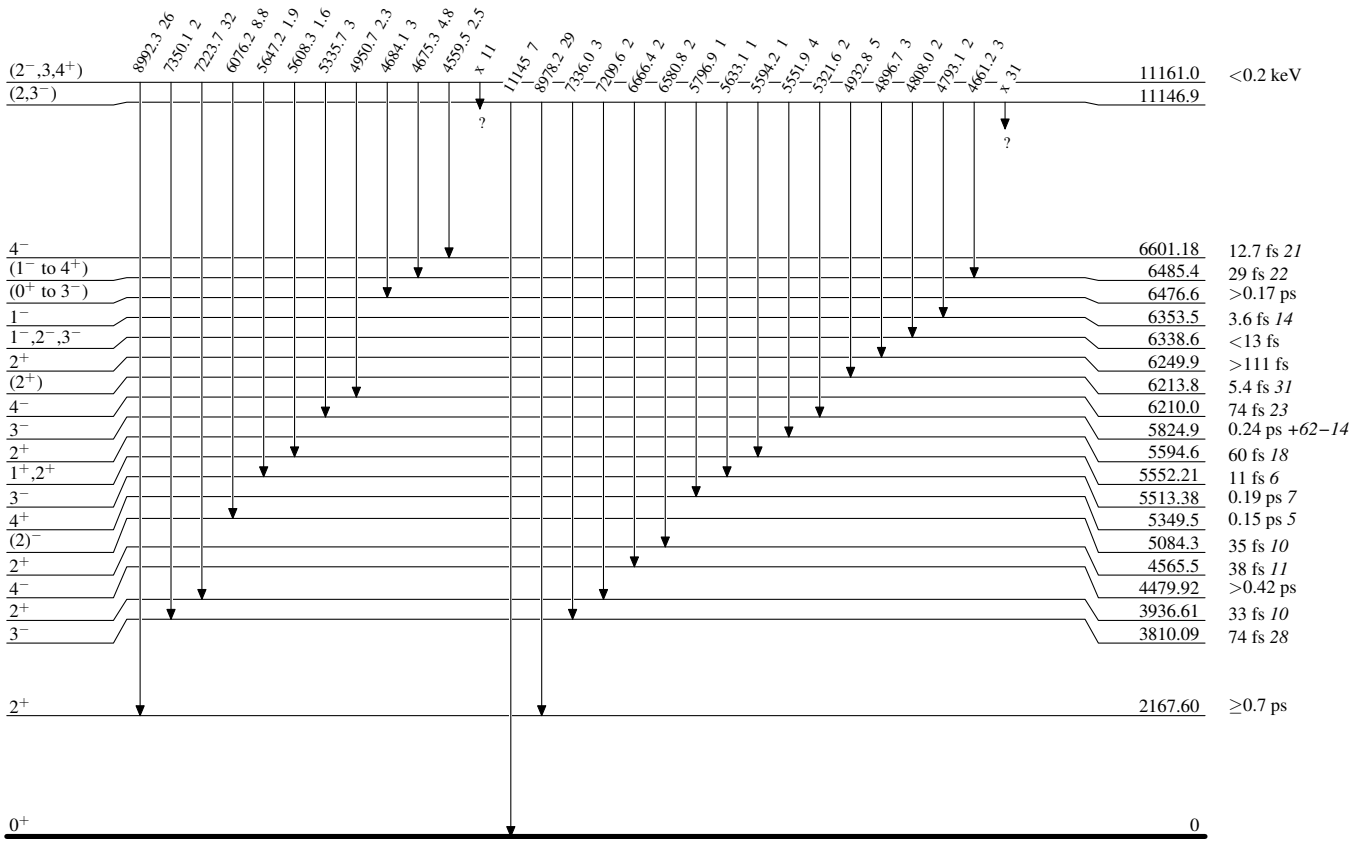


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

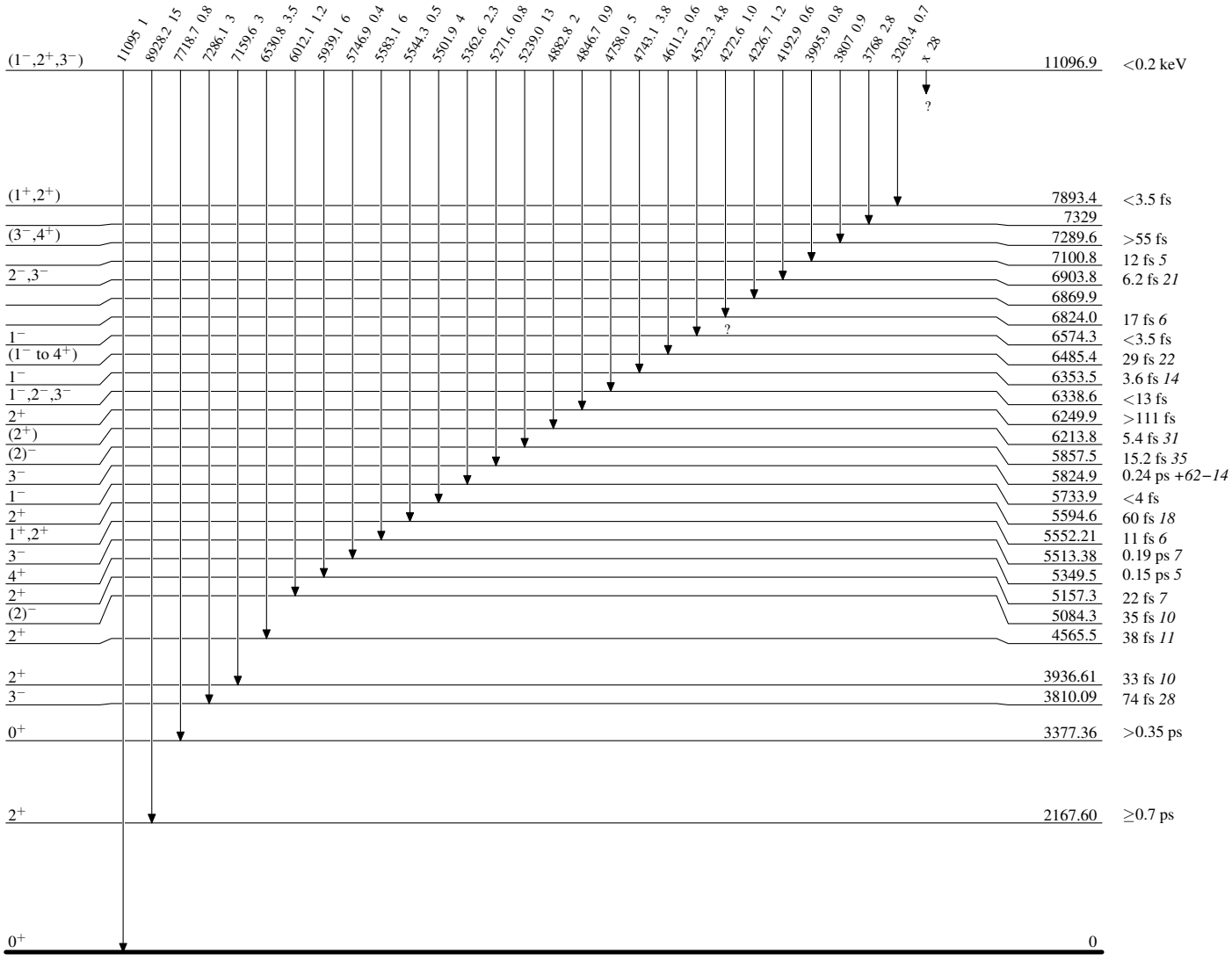


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

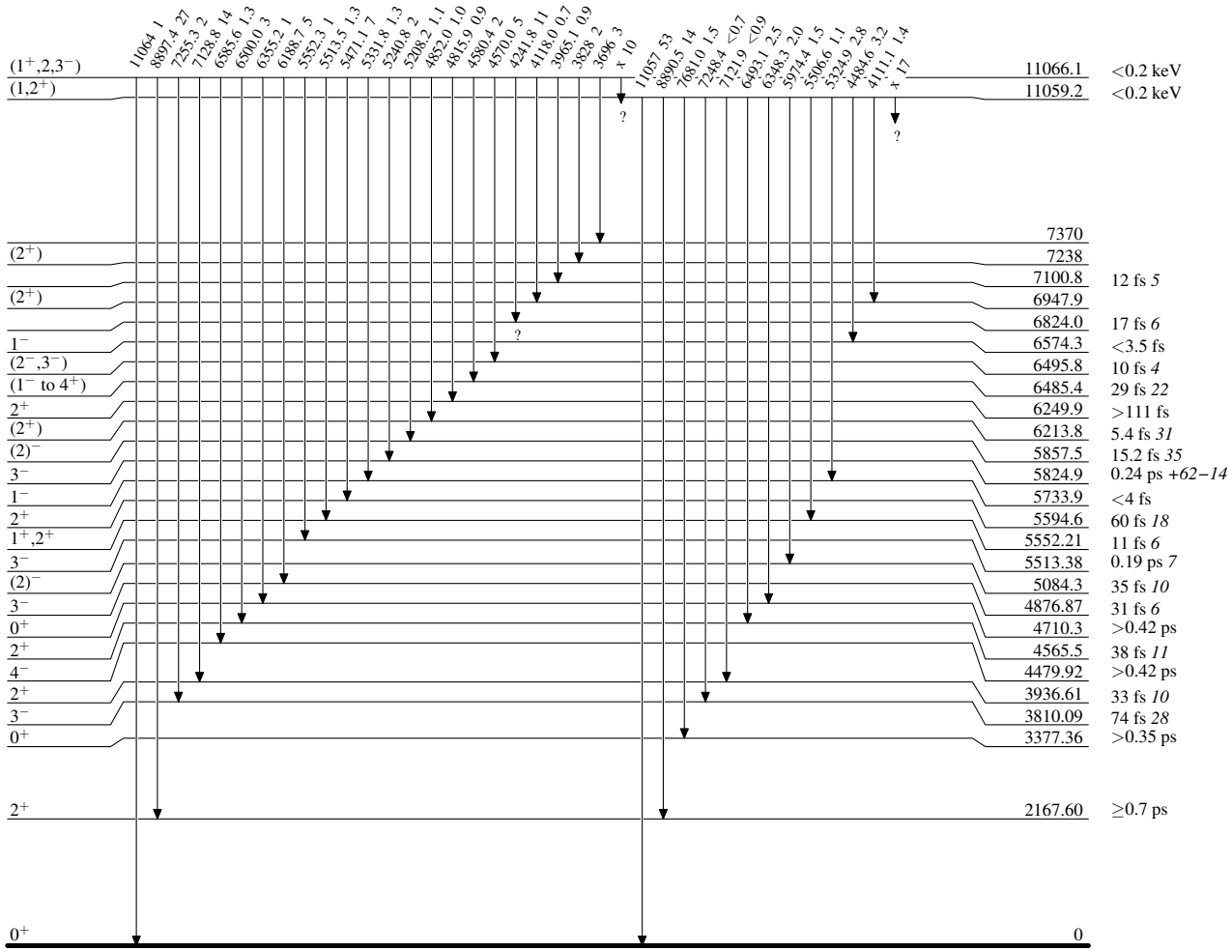


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

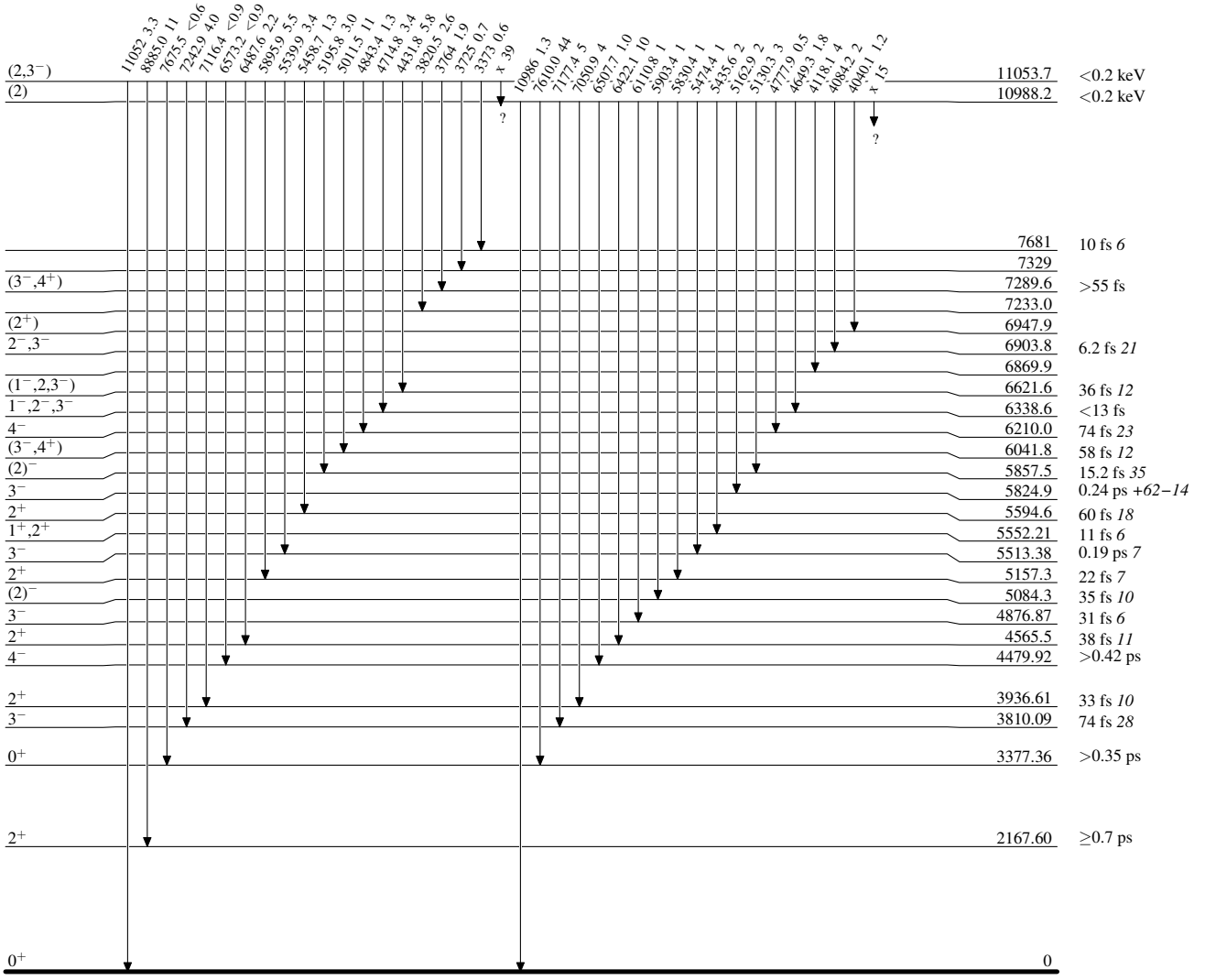


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

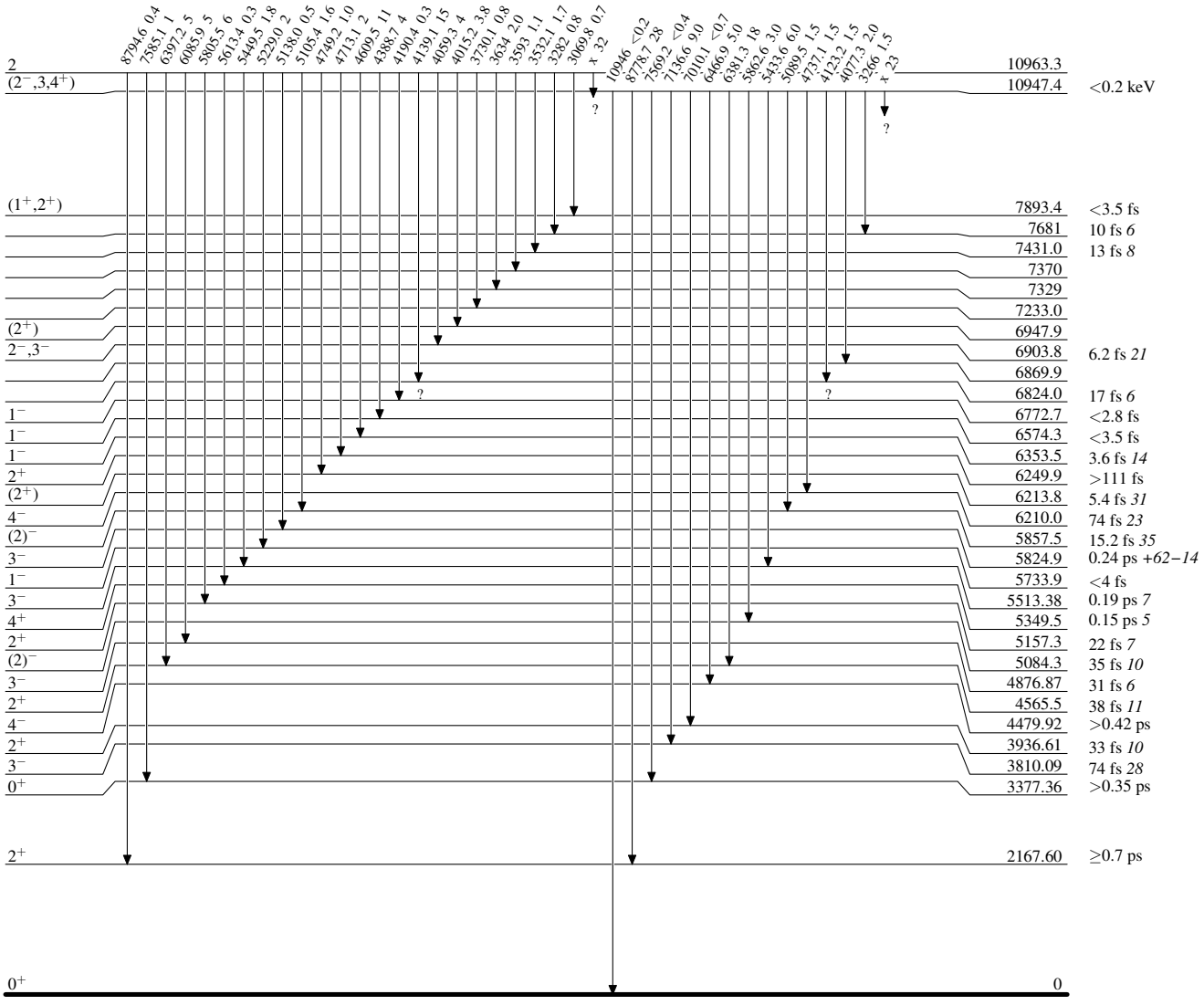


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

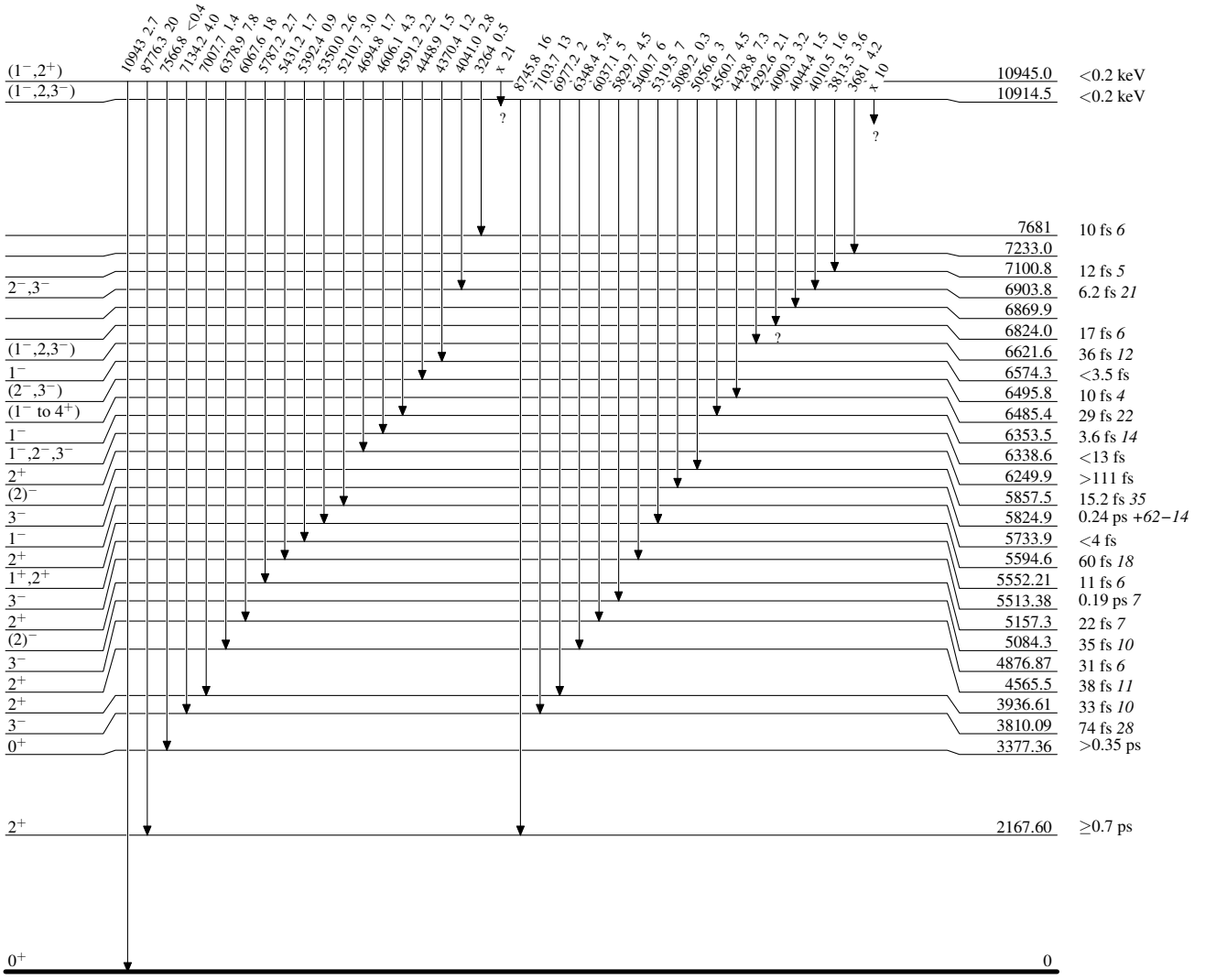
Intensities: % photon branching from each level



^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

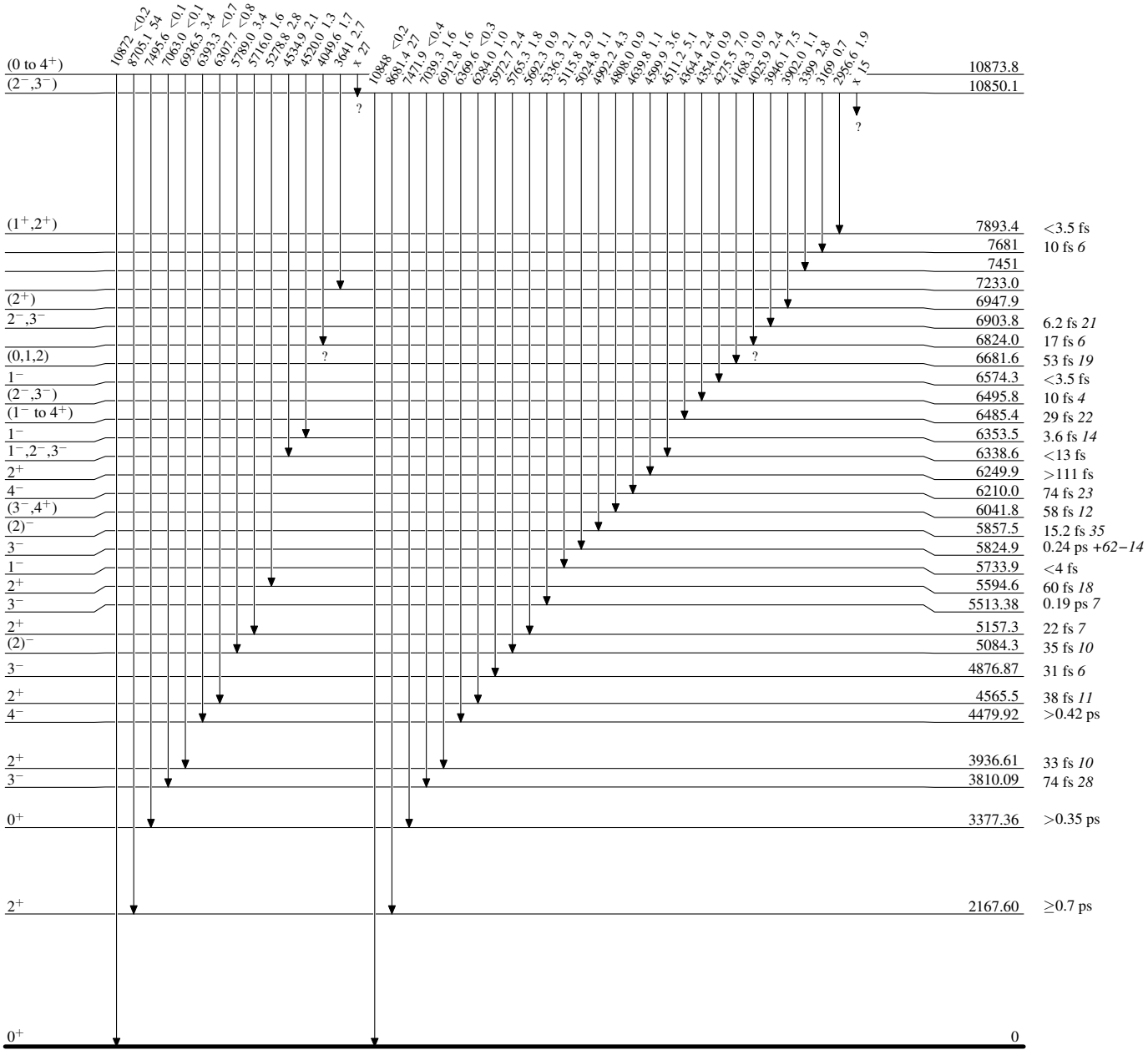


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

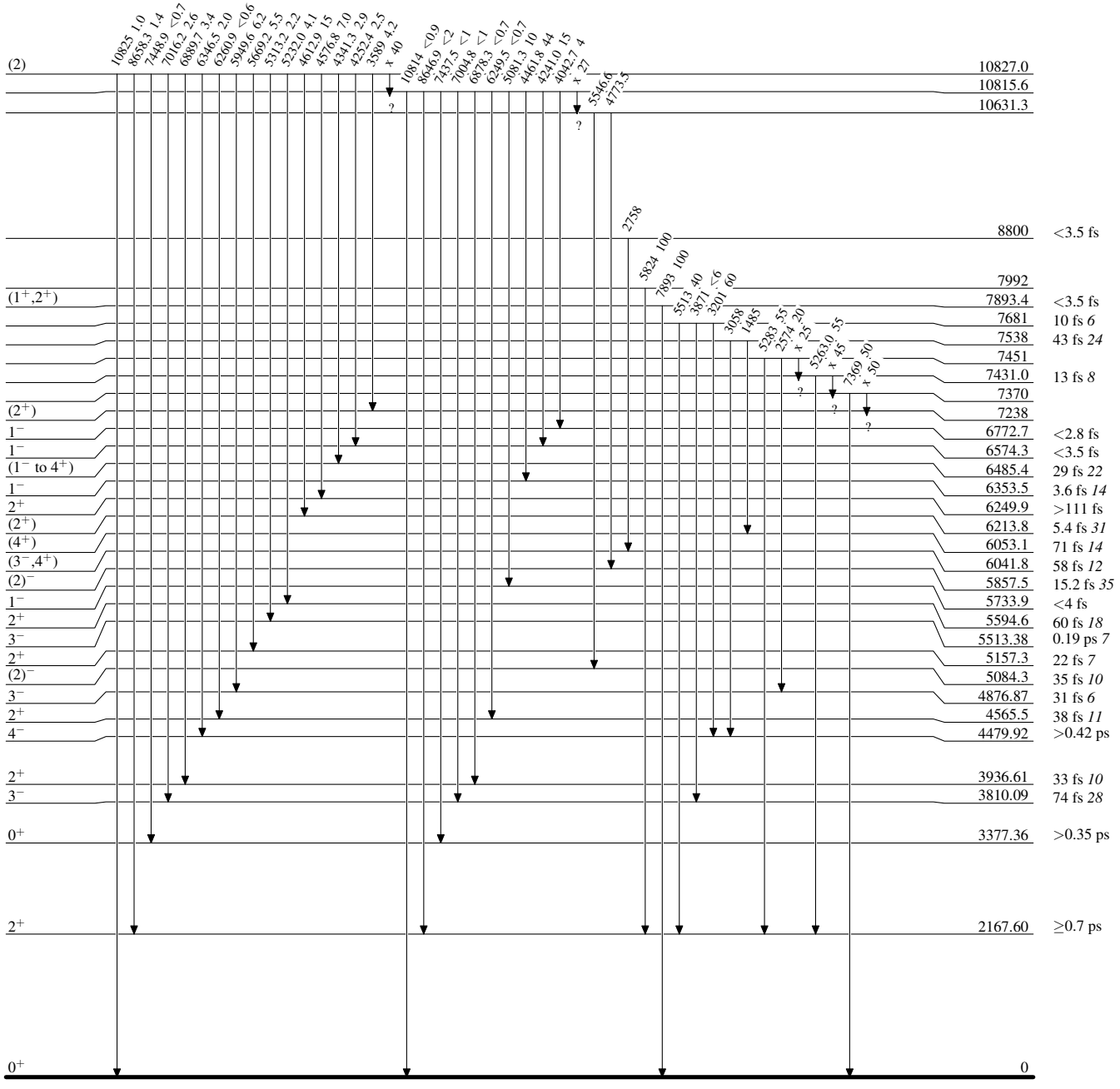


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level



$^{38}_{18}Ar_{20}$

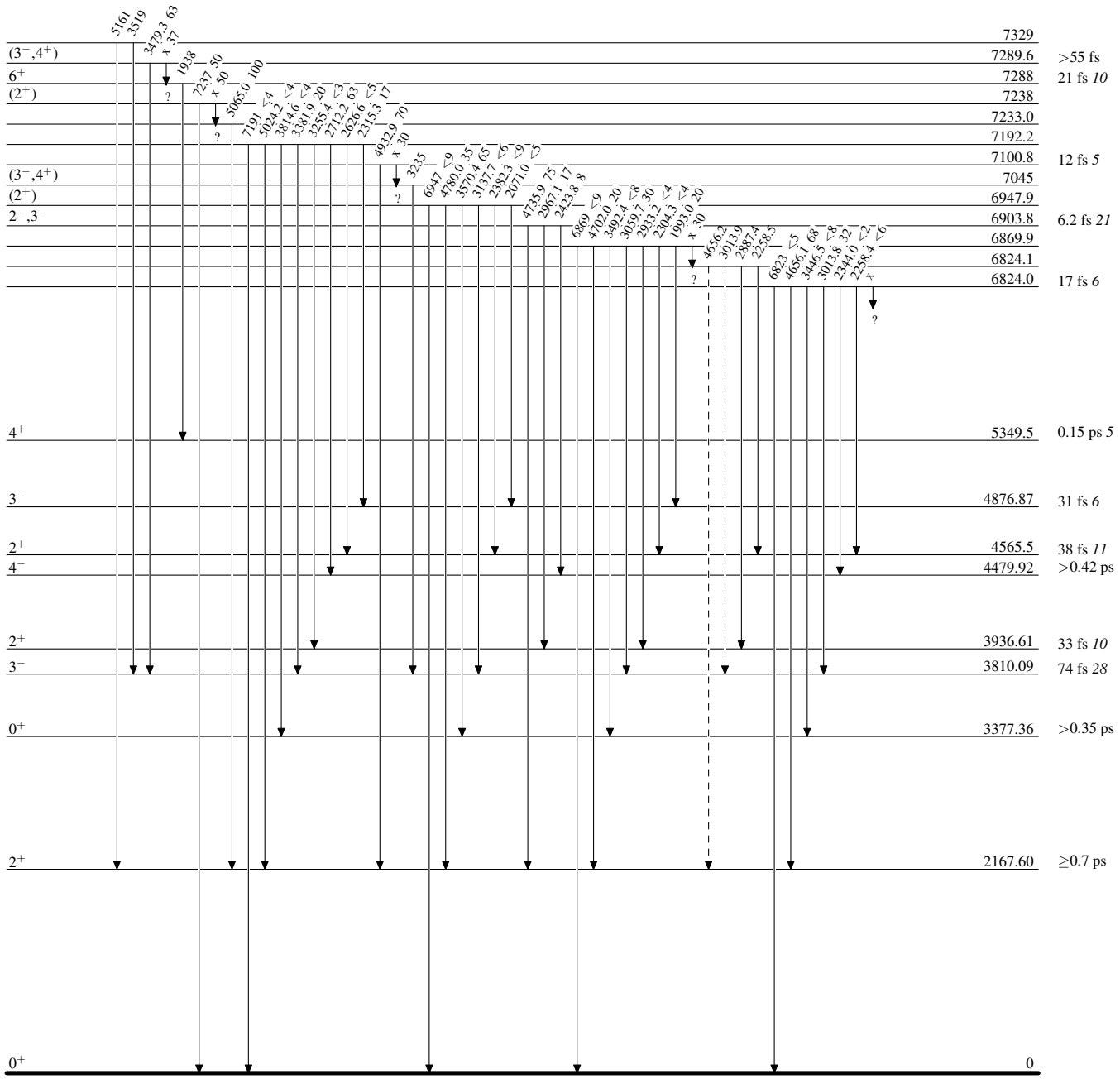
^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

γ Decay (Uncertain)



$^{38}_{18}Ar_{20}$

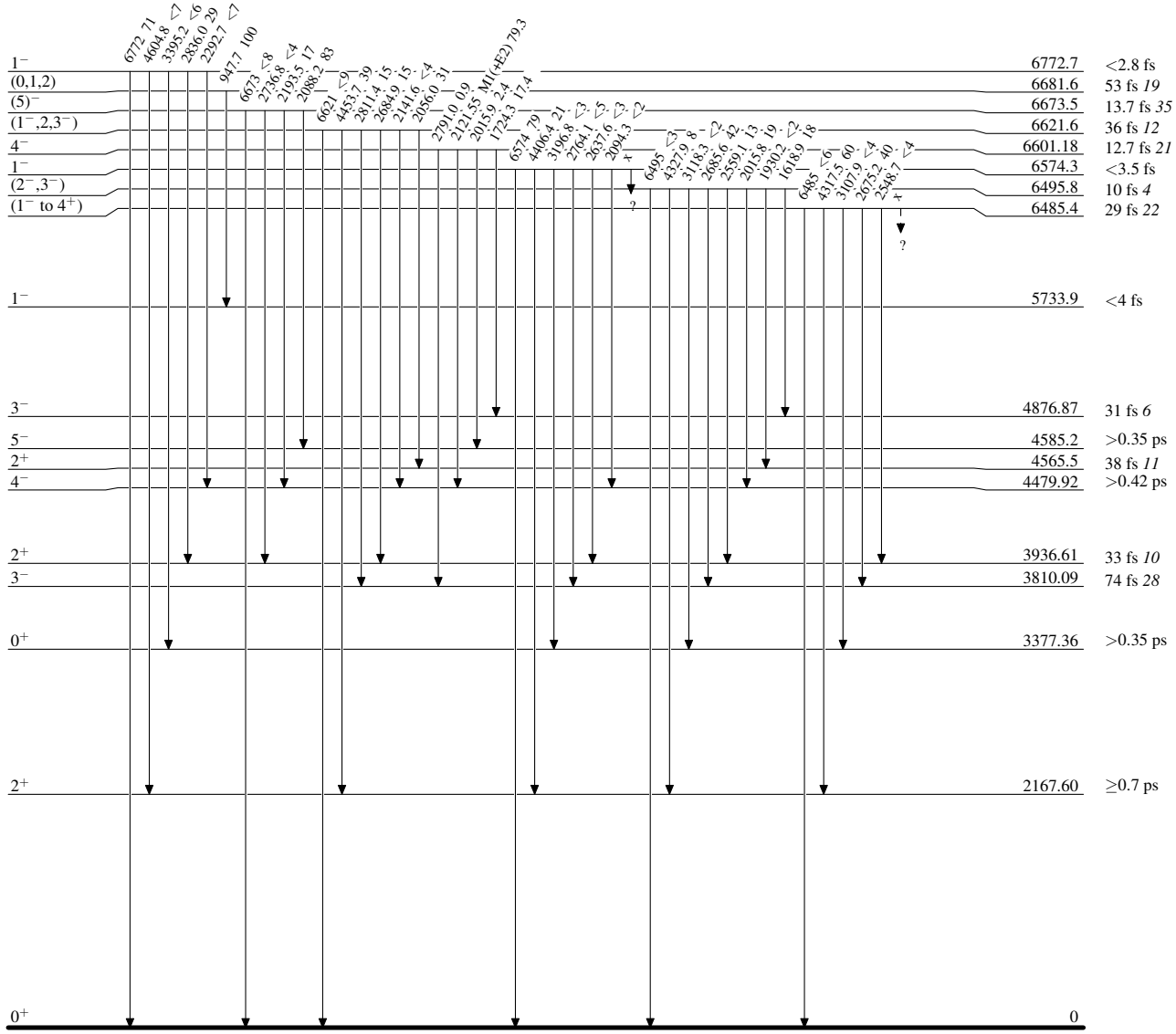
^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

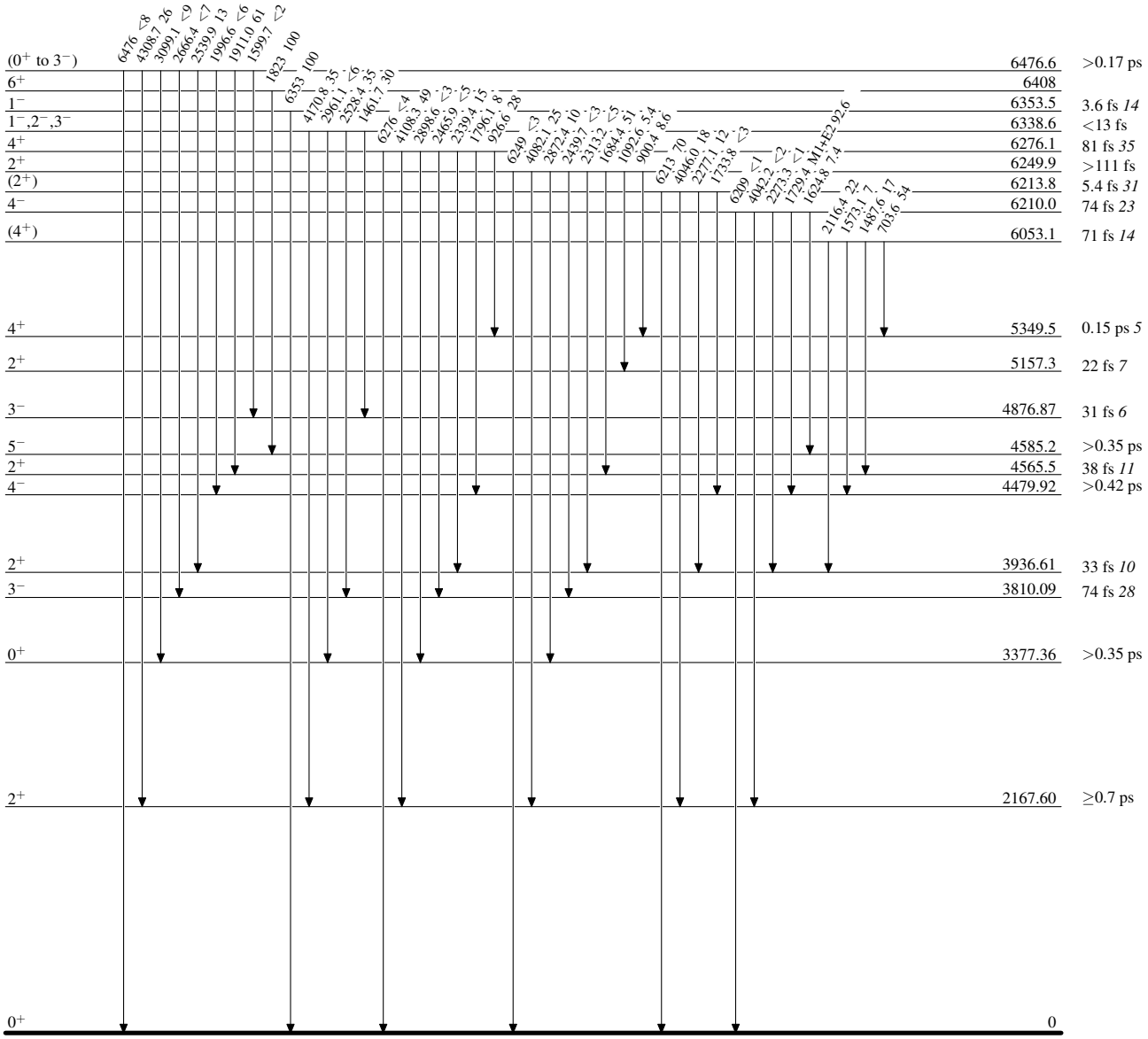
- - - - - - ► γ Decay (Uncertain)



^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

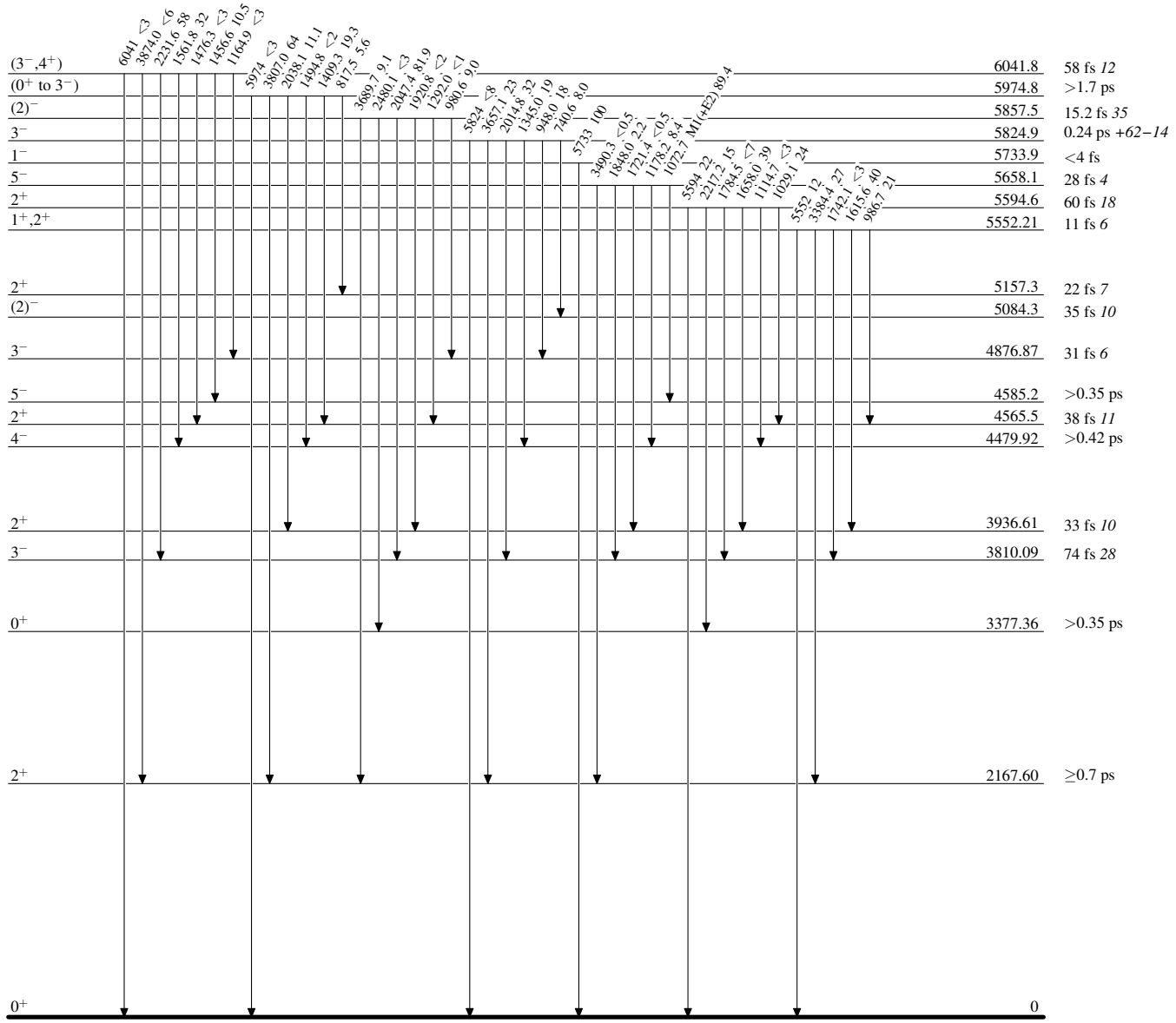


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level

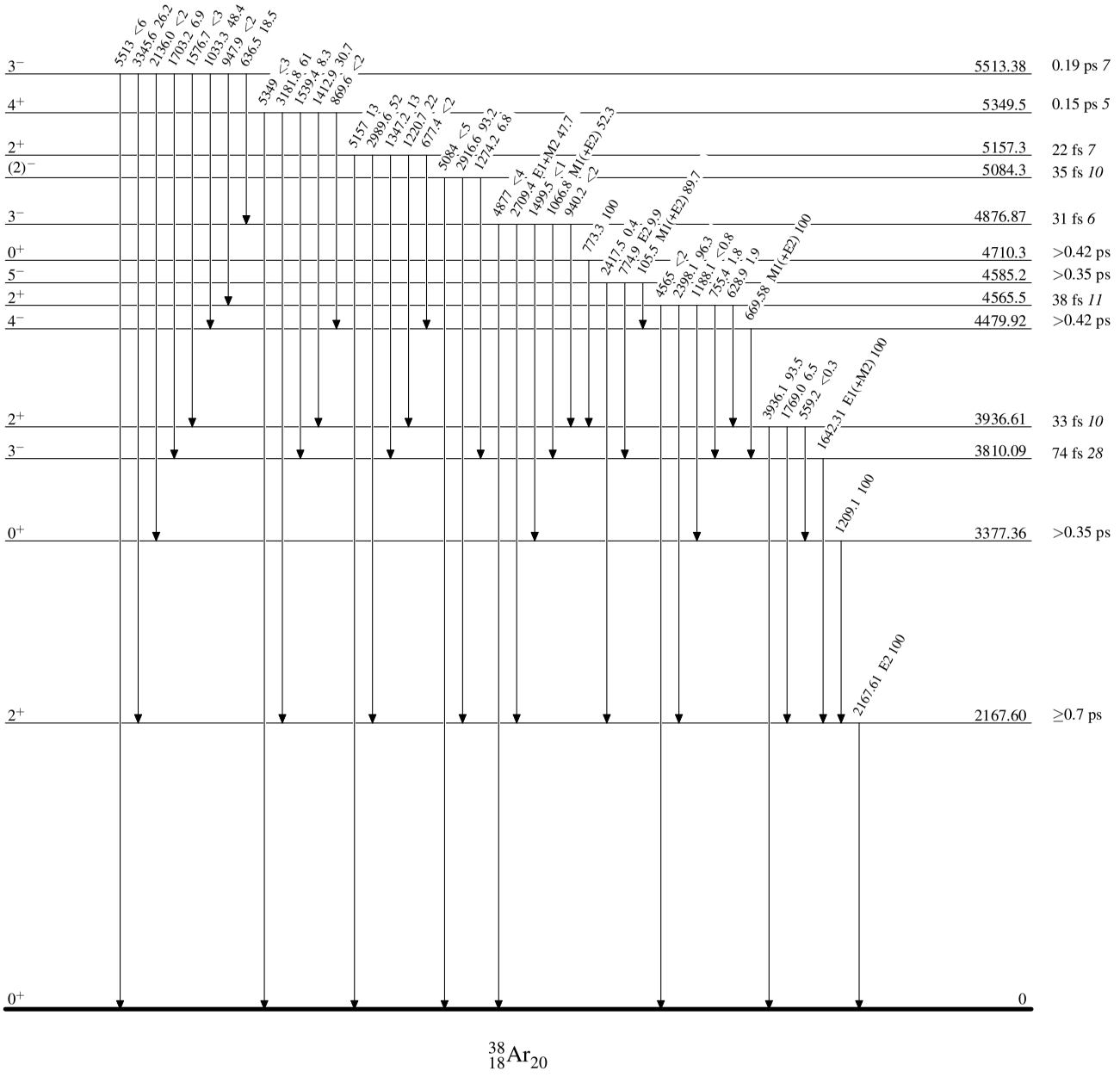


$^{38}_{18}Ar_{20}$

^{37}Cl(p,γ):resonances 1974Al05,1968En01,1988Wa34

Level Scheme (continued)

Intensities: % photon branching from each level



$^{38}_{18}Ar_{20}$