^{49}Ti(p,n),(p,nγ) 1986Kh01,1974Fa09,1972Ma60

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows[a]	NDS 109, 1879 (2008)	14-Jul-2008

Target J$^\pi$=7/2$^-$.

1971Bl11: E=2-4 MeV. Measured γ's (Ge(Li) and low-energy photon system), $\gamma\gamma$'s (Ge(Li),NaI), and γ(t).

1972Ma60: E=2.0-3.3 MeV. Measured N's (tof, scin) and γ's and $\gamma(\theta)$.

1974An34: E=6 MeV. Measured γ's.

1974Fa09: measured γ's (E(p)=3.6-5.2 MeV) and α(K)exp's (mag spect) (θ=55° for γ's and ce's; E(p) At minimum energy to obtain measurable electron yield).

1986Kh01: E=5.74 MeV. Measured γ's and γ(t); high-purity≥, tof.

Others: 1986Fe04. See also 1995Bu23.

2393 state: No evidence was found by 1986Kh01 for any transitions from state or for the four gammas reported by 1974An34. 1986Kh01 suggest that the transitions reported by 1974An34 are due to impurities.

^{49}V Levels

E(level)	J$^\pi$	T$_{1/2}$[†]	Comments
0.0	7/2$^-$[‡]		
90.58 *8*	5/2$^-$[‡]	228[#] ps *13*	
152.82 *9*	3/2$^-$[‡]	19.90[#] ns *24*	
748.17 *13*	3/2$^+$[‡]	<33.3 ps	
1021.62 *15*	11/2$^-$	<33.3 ps	J$^\pi$: 11/2 from $\gamma(\theta)$ (1972Ma60). π=− from E2 γ to 7/2$^-$.
1140.37 *11*	5/2$^+$	<33.3 ps	J$^\pi$: D+Q γ to 3/2$^-$ and E1(+M2) γ to 7/2$^-$.
1155.29 *12*	9/2$^-$	<33.3 ps	J$^\pi$: D γ to 11/2$^-$ and E2 γ to 5/2$^-$.
1514.56 *18*	5/2$^-$	<33.3 ps	J$^\pi$: 5/2 from D+Q γ's to 3/2$^-$ and 7/2$^-$. π from Adopted Levels.
1602.61 *12*	5/2$^-$,7/2$^+$	<33.3 ps	J$^\pi$: D,E2 γ's to 9/2$^-$ and 3/2$^+$.
1643.2 *4*	≤7/2$^-$[@]	<33.3 ps	
1646.2 *5*	≤5/2	<33.3 ps	J$^\pi$: D,E2 γ's to 3/2$^+$ and 3/2$^-$.
1661.63 *20*	3/2,5/2	<33.3 ps	J$^\pi$: D,E2 γ's to 3/2$^+$ and 3/2$^-$ and D,Q γ to 7/2$^-$.
1994.6 *5*	1/2$^+$ to 7/2$^+$	<33.3 ps	J$^\pi$: D,E2 γ's to 5/2$^+$ and 3/2$^+$.
2178.2 *8*	3/2$^+$ to 9/2$^+$	<33.3 ps	J$^\pi$: E2 γ to 5/2$^+$ and D,Q γ to 7/2$^-$.
2181.9 *6*	5/2$^-$,7/2,9/2	<33.3 ps	J$^\pi$: D,E2 γ to 9/2$^-$ and D,Q γ to 5/2$^-$.
2233.7 *10*	≤7/2[@]	<33.3 ps	
2262.8 *9*	(15/2)$^-$[&]	<33.3 ps	
2263.7 *12*	≤7/2[@]	<33.3 ps	
2309.4 *10*	≤7/2[@]	<33.3 ps	
2353.1 *6*	7/2$^-$,9/2,11/2$^+$[a]	<33.3 ps	
2387.7 *8*	1/2$^-$ to 7/2$^+$	<33.3 ps	J$^\pi$: D,E2 γ to 3/2$^+$ and D,Q,E3 γ to 7/2$^-$.
2407.7 *6*	7/2,9/2,11/2$^+$	<33.3 ps	J$^\pi$: D,Q γ to 11/2$^-$ and D,Q,E3 γ to 5/2$^-$.
2671.1 *9*	7/2$^-$,9/2,11/2$^+$[a]	<33.3 ps	
2680.0?[b] *15*			
2726.7 *11*	(15/2)$^-$[&]	<33.3 ps	
2786.4 *6*	7/2$^-$,9/2,11/2$^+$[a]	<33.3 ps	
2796.6?[b] *15*			
2808.2 *7*	3/2 to 9/2$^+$	<33.3 ps	J$^\pi$: D,E2 γ to 5/2$^-$,7/2$^+$ and D,Q,E3 γ's to 3/2$^-$ and 7/2$^-$.
2810.5 *8*	3/2 to 9/2	<33.3 ps	J$^\pi$: D,E2 γ to 5/2$^-$,7/2,9/2, D,Q γ to 5/2$^+$, and D,Q,E3 γ to 7/2$^-$.
3017.2 *8*		<33.3 ps	
3134.3 *9*	7/2,9/2$^-$	<33.3 ps	J$^\pi$: D,Q γ to 11/2$^-$ and D,Q,E3 γ to 3/2$^+$.
3152.1?[b] *10*			
3239.5 *9*	7/2$^-$[‡]	<33.3 ps	
3303.1 *9*	3/2$^-$,5/2,7/2,9/2[‡]	<33.3 ps	

Continued on next page (footnotes at end of table)

^{49}Ti(p,n),(p,nγ) 1986Kh01,1974Fa09,1972Ma60 (continued)

^{49}V Levels (continued)

E(level)	J^π	$T_{1/2}$[†]	Comments
3340.2 *12*		<33.3 ps	
3388.5 *9*	5/2,7/2	<33.3 ps	J^π: D,Q γ's to $9/2^-$ and $3/2^+$.
3462.9 *17*	(3/2PSYMBO<O9/2$^+$)[‡]	<33.3 ps	
3500.2 *10*		<33.3 ps	
3530.9 *7*	5/2,7/2,9/2$^+$	<33.3 ps	J^π: D,E2 γ to $7/2^-$,9/2,11/2$^+$ and D,Q,E3 γ's to $9/2^-$ and $3/2^-$.
3623.7 *20*	≤9/2[‡]	<33.3 ps	
3639.7 *9*	7/2,9/2	<33.3 ps	J^π: D,Q γ's to $5/2^-$ and $11/2^-$.
3665.5 *9*	(9/2,11/2,13/2$^+$)	<33.3 ps	J^π: $3/2^-$ to $13/2^+$ from D,E2 γ to $7/2^-$,9/2,11/2$^+$ and D,Q,E3 γ to $7/2^-$. D,Q γ to $(15/2)^-$.

[†] From 1986Kh01, except As noted. Upper limit on the mean lives for all transitions observed between 600 keV and 3.8 MeV was approximately 10 to 48 ps.

[‡] From the Adopted Levels.

[#] From 1976Wh01 (E=5 MeV. γ(t); ^{165}Ho,^{181}Ta(p,p'γ) used for reference lines). $T_{1/2}$(91) includes correction for feeding from 153 state. A measurement of $T_{1/2}$(91) In ε decay (1971Ch46) where feeding was taken into account gives 0.43 ns *2*. Two measurements of $T_{1/2}$(91) where feeding apparently was not taken into account are 0.45 ns *3* (1975Ha12. E=2.1 MeV, nγ(t)) and 0.33 ns *2* (1973Ok01) from ε decay. Evaluator accepts the suggestion of 1978Ha15 and tentatively adopts the value from 1976Wh01. Other $T_{1/2}$(153)=20 ns *2* (1971Bl11).

[@] D,Q γ's to $3/2^-$ or $3/2^-$ and $5/2^-$.

[&] E2 or D,E2 γ to $11/2^-$. Lack of feeding to states with J<11/2.

[a] D,E2 γ to $11/2^-$ and D,Q,E3 γ to $5/2^-$.

[b] Suggested by 1974An34. Existence not confirmed by 1986Kh01.

γ(^{49}V)

1967Me18: E=5.8 MeV. Measured α(K)exp′s and ce ratios (mag spect, NaI) and $\gamma(\theta)$ (NaI). α(K)exp′s from ^{137}Cs and ^{152}Eu decay used As standards. Coincidences shown on the drawing are based on data from 1971Bl11; E(p)=3.61 MeV, 75-105 and 125-160 keV gates.

RI(J) TV Unweighted average of the following branching ratios in percent:

E_γ	Adopted	1971Bl11	1972Ma60	1974An34	1986Kh01
392	5.6 *4*	5.2 *6*	5.9 *9*		
988	16.0 *10*	16.6 *15*	18.4 *5*	13.7 *17*	15.1 *10*
1050	24.4 *13*	26.4 *9*	26.8 *11*	20.4 *24*	21.3 *10*
1140	54.0 *23*	51.8 *13*	48.9 *6*	55.6 *36*	53.4 *10*

TVBranching ratios from 1974An34 and 1986Kh01 adjusted for contribution from 393γ.

E(L) TVAverage of the following gamma energies:

E_x	Adopted	1974An34	1986Kh01		E_x	Adopted	1974An34	1986Kh01	
1995	854.6 *7*	855 *1*	854.2 *10*	TVWeighted	2310	2217.9 *17*	2218 *3*	2217.8 *20*	TVWeighted
	1903.1 *11*	1902 *1*	1904.2 *10*	TVWeighted		2310.6 *14*	2310 *2*	2311.3 *20*	TVWeighted
2182	1026.5 *9*	1027 *2*	1026.4 *10*	TVWeighted	2408	2408.0 *12*	2408.0 *15*	2407.8 *20*	TVWeighted
	2089.8 *14*	2089 *2*	2090.7 *20*	TVWeighted	2812	2719.6 *15*	2721 *2*	2718.1 *20*	TVWeighted
	2181.6 *16*	2180.0 *15*	2183.2 *20*	TVUnweighted		2811.1 *17*	2809 *3*	2812.0 *20*	TVWeighted
2236	572.4 *25*	570.0 *15*	574.9 *10*	TVUnweighted	3134	1979.4 *17*	1981 *3*	1977.7 *10*	TVUnweighted
	2141.9 *19*	2140 *2*	2143.8 *20*	TVWeighted		3134.5 *19*	3135 *5*	3134.4 *20*	TVWeighted
	2232.8 *28*	2230.0 *15*	2235.6 *20*	TVUnweighted	3389	2638.9 *20*	2636 *3*	2639.9 *20*	TVUnweighted
2266	2110.8 *12*	2110.0 *15*	2112.1 *20*	TVWeighted	3463	3462.8 *17*	3463 *3*	3462.7 *20*	TVWeighted

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[#]	α(exp)[@]	Comments
90.58	5/2$^-$	90.5[&] *1*	100[a]	0.0	7/2$^-$	M1[b]		0.0346 *22*	α(K)exp=0.0308 *21*; K/LM=7.95 *48*; K/L=11.87 *42*; L/M=2.11 *28* (1967Me18) δ: note that 1967Me18 adopt $\delta\approx-0.5$ from their $\gamma(\theta)$ data. This is discrepant both with their ce data and with comparison to RUL.
152.82	3/2$^-$	62.2[&] *3*	40.8[a] *19*	90.58	5/2$^-$	D			
		152.8[&] *1*	59.2[a] *19*	0.0	7/2$^-$	E2[b]		0.078 *5*	α(K)exp=0.069 *5*; K/LM=7.93 *27* (1967Me18)
748.17	3/2$^+$	595.4[c] *2*	54.0[c] *8*	152.82	3/2$^-$	D,E2			
		657.5[c] *2*	46.0[c] *8*	90.58	5/2$^-$	D,E2			
1021.62	11/2$^-$	1021.7[c] *2*	100	0.0	7/2$^-$	E2		1.14×10^{-4} *15*	Mult.: from $\gamma(\theta)$ (1972Ma60) and α(exp).
1140.37	5/2$^+$	392.2[c] *2*	5.6 *4*	748.17	3/2$^+$	D+Q[#]	$<$0.0		
		987.5[c] *3*	16.0 *10*	152.82	3/2$^-$	D(+Q)[#]	−0.11 *18*		
		1049.7[c] *2*	24.4 *13*	90.58	5/2$^-$	E1(+M2)	+0.18 *5*	6.1×10^{-5} *13*	Mult.: from $\gamma(\theta)$ (1972Ma60) and α(exp).

		1140.4[c] *2*	54.0 *23*	0.0	7/2$^-$	E1(+M2)	4.6×10^{-5} *7*	δ<+0.17>−0.03 Mult.: from γ(θ) (1972Ma60) and α(exp).
1155.29	9/2$^-$	133.8[&] *2*	2.9[&] *6*	1021.62	11/2$^-$	D		

γ(^{49}V) (continued)

E_i(level)	J^{π}_i	E_{γ}[†]	I_{γ}[†]	E_f	J^{π}_f	Mult.[‡]	δ[#]	α(exp)[@]	Comments
1155.29	9/2⁻	1064.6[c] *2*	22.4[&] *4*	90.58	5/2⁻	E2[b]		1.20×10⁻⁴ *20*	
		1155.3[c] *2*	74.7[&] *7*	0.0	7/2⁻	M1+E2	−0.32 *10*	7.8×10⁻⁵ *9*	Mult.: from γ(θ) (1972Ma60) and α(exp).
1514.56	5/2⁻	766[an] *1*	17[d] *5*	748.17	3/2⁺	D,E2			
		1361.5[c] *3*	46.4[d] *10*	152.82	3/2⁻	D+Q[#]	+0.8 *+20−7*		
		1423.9[c] *3*	9.4[d] *5*	90.58	5/2⁻	D+Q[#]	−0.6 *+5−21*		
		1514.8[c] *3*	27.1[d] *13*	0.0	7/2⁻	D+Q[#]	>0.0		
1602.61	5/2⁻,7/2⁺	447.4[c] *3*	0.9[c] *4*	1155.29	9/2⁻	D,E2		8.2×10⁻⁴ *34*	
		462.2[c] *2*	7.5[c] *9*	1140.37	5/2⁺	D,E2		7.1×10⁻⁴ *8*	
		854.5[c] *3*	8.6[c] *18*	748.17	3/2⁺	D,E2			
		1512.0[c] *3*	55.6[c] *11*	90.58	5/2⁻	D,E2			
		1602.6[c] *2*	27.4[c] *11*	0.0	7/2⁻	D,Q			
1643.2	≤7/2⁻	1490.4[c] *4*	100	152.82	3/2⁻	D,E2			
1646.2	≤5/2	898.2[c] *5*	40 *4*	748.17	3/2⁺	D,E2			unplaced by 1972Ma60.
		1492.6 *10*	60 *5*	152.82	3/2⁻	D,E2			
1661.63	3/2,5/2	912.3 *10*	5 *1*	748.17	3/2⁺	D,E2			
		1508.7[&] *5*	34 *1*	152.82	3/2⁻	D,E2			
		1571.1[c] *2*	52 *1*	90.58	5/2⁻	D+E2	<0.0		Mult.,δ: D+Q, <0.0, if J(1662)=3/2 (1972Ma60).
		1661.4 *10*	9 *1*	0.0	7/2⁻	D,Q			1661γ placed by 1974An34 As deexciting 2409 state.
1994.6	1/2⁺ to 7/2⁺	854.6 *7*	29[e] *7*	1140.37	5/2⁺	D,E2			
		1246.8 *10*	15.7[e] *15*	748.17	3/2⁺	D,E2			
		1841.4 *10*	34.3[e] *15*	152.82	3/2⁻	D,Q			
		1903.1 *11*	21.4[e] *15*	90.58	5/2⁻	D,Q			
2178.2	3/2⁺ to 9/2⁺	575.1[fn]	7[g] *1*	1602.61	5/2⁻,7/2⁺	D,E2			
		1037.7 *10*	23.3[g] *17*	1140.37	5/2⁺	E2[b]		1.41×10⁻⁴ *26*	
		(1157.9 *10*)	10 *1*	1021.62	11/2⁻				E_{γ}: from (α,pγ).
		2178.4 *20*	59.8[g] *9*	0.0	7/2⁻	D,Q			
2181.9	5/2⁻,7/2,9/2	1026.5 *9*	25[h] *1*	1155.29	9/2⁻	D,E2			
		2089.8 *14*	66[h] *1*	90.58	5/2⁻	D,Q			
		2181.6 *16*	9[h] *1*	0.0	7/2⁻				
2233.7	≤7/2	572.4 *25*	14 *1*	1661.63	3/2,5/2	D,E2			
		2081.1 *20*	17 *1*	152.82	3/2⁻	D,Q			
		2141.9 *19*	64 *1*	90.58	5/2⁻	D,Q			
		2232.8 *28*	5 *1*	0.0	7/2⁻				
2262.8	(15/2)⁻	1241.2 *10*	100	1021.62	11/2⁻	E2[b]		9.1×10⁻⁵ *15*	
2263.7	≤7/2	2110.8[i] *12*	100	152.82	3/2⁻	D,Q			
2309.4	≤7/2	2155.2 *20*	36 *2*	152.82	3/2⁻	D,Q			
		2217.9 *17*	42 *2*	90.58	5/2⁻	D,Q			
		2310.6 *14*	22 *2*	0.0	7/2⁻				

γ(^{49}V) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α(exp)[@]	Comments
2353.1	7/2$^-$,9/2,11/2$^+$	1197.8 *10*	5[j] *1*	1155.29	9/2$^-$	D,Q		
		1331.5 *10*	32[j] *1*	1021.62	11/2$^-$	D,E2	1.04×10^{-4} *23*	
		2262.2[i] *20*	6 *1*	90.58	5/2$^-$	D,Q,E3		
		2353.6 *20*	56[j] *1*	0.0	7/2$^-$	D,Q		
2387.7	1/2$^-$ to 7/2$^+$	1638.7 *10*	46 *2*	748.17	3/2$^+$	D,E2		1636γ placed by 1974An34 As deexciting 3152 state.
		2235.6 *20*	12 *2*	152.82	3/2$^-$			
		2298.1 *20*	30 *3*	90.58	5/2$^-$	D,Q		
		2388.9 *20*	12 *2*	0.0	7/2$^-$	D,Q,E3		
2407.7	7/2,9/2,11/2$^+$	1252.5 *10*	13 *1*	1155.29	9/2$^-$	D,E2		
		1385.7 *10*	5 *1*	1021.62	11/2$^-$	D,Q		
		2316.4 *20*	11 *1*	90.58	5/2$^-$	D,Q,E3		
		2408.0 *12*	71 *1*	0.0	7/2$^-$	D,Q		
2671.1	7/2$^-$,9/2,11/2$^+$	1649.3 *10*	90 *1*	1021.62	11/2$^-$	D,E2		
		2579.2 *20*	4 *1*	90.58	5/2$^-$	D,Q,E3		
		2672.8 *20*	6 *1*	0.0	7/2$^-$			
2680.0?		1526[akn] *2*	50[a] *6*	1155.29	9/2$^-$			
		1657[akn] *2*	50[a] *6*	1021.62	11/2$^-$			
2726.7	(15/2)$^-$	1705.0 *10*	100	1021.62	11/2$^-$	D,E2		
2786.4	7/2$^-$,9/2,11/2$^+$	1184.3 *10*	3 *1*	1602.61	5/2$^-$,7/2$^+$	D,Q		
		1631.2 *10*	24 *1*	1155.29	9/2$^-$	D,Q		
		1764.1 *10*	45 *1*	1021.62	11/2$^-$	D,E2		
		2697.2 *20*	4 *1*	90.58	5/2$^-$	D,Q,E3		
		2785.0 *20*	24 *1*	0.0	7/2$^-$			
2796.6?		1775.0[akn] *15*	38[a] *6*	1021.62	11/2$^-$			
		2796[akn] *4*	62[a] *6*	0.0	7/2$^-$			
2808.2	3/2 to 9/2$^+$	1206.6 *10*	11 *2*	1602.61	5/2$^-$,7/2$^+$	D,E2		
		1666.7 *10*	10 *2*	1140.37	5/2$^+$	D,Q		
		2655.7 *20*	37 *3*	152.82	3/2$^-$			
		2808.5 *20*	42 *3*	0.0	7/2$^-$			
2810.5	3/2 to 9/2	628.4 *10*	14.3[l] *18*	2181.9	5/2$^-$,7/2,9/2	D,E2		
		1673[an] *2*	10.7[l] *26*	1140.37	5/2$^+$	D,Q		
		2719.6 *15*	42.9[l] *18*	90.58	5/2$^-$			
		2811.1 *17*	32.1[l] *18*	0.0	7/2$^-$	D,Q,E3		
3017.2		1414.1 *10*	9 *1*	1602.61	5/2$^-$,7/2$^+$	D,Q		
		2865.2 *20*	40 *2*	152.82	3/2$^-$			
		2927.1 *20*	37 *2*	90.58	5/2$^-$			
		3017.2 *20*	14 *2*	0.0	7/2$^-$			
3134.3	7/2,9/2$^-$	1979.4 *17*	16[h] *1*	1155.29	9/2$^-$	D,Q		
		2112.1 *20*	14 *1*	1021.62	11/2$^-$	D,Q		
		2385.7 *20*	7 *1*	748.17	3/2$^+$	D,Q,E3		
		3043.5 *20*	22 *1*	90.58	5/2$^-$			
		3134.5 *19*	41[h] *1*	0.0	7/2$^-$			

$^{49}_{23}V_{26}$-6

γ(^{49}V) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]
3152.1?		2012.0[akn] *15*	62[a] *6*	1140.37	5/2+	
		2131.0[akn] *15*	38[a] *6*	1021.62	11/2−	
3239.5	7/2−	1725.2 *10*	31 *1*	1514.56	5/2−	D,Q
		3148.9 *20*	61 *1*	90.58	5/2−	
		3238.2 *20*	8 *1*	0.0	7/2−	
3303.1	3/2−,5/2,7/2,9/2	1121.0 *10*	28 *3*	2181.9	5/2−,7/2,9/2	D,E2
		3213.5 *20*	21 *3*	90.58	5/2−	
		3302.6 *20*	52 *2*	0.0	7/2−	
3340.2		1106.3 *10*	27 *3*	2233.7	≤7/2	D,E2
		3341.2 *20*	73 *2*	0.0	7/2−	
3388.5	5/2,7/2	602.3 *10*	14.5[m] *32*	2786.4	7/2−,9/2,11/2+	D,E2
		1745[an] *2*	5.3[m] *11*	1643.2	≤7/2−	D,Q
		2233.7 *20*	18.5[m] *16*	1155.29	9/2−	D,Q
		2638.9 *20*	47.6[m] *16*	748.17	3/2+	D,Q
		3296[an] *2*	14[m] *6*	90.58	5/2−	
3462.9	(3/2PSYMBO<O9/2+)	1862.0[n] *15*	[l]	1602.61	5/2−,7/2+	
		3462.8 *17*		0.0	7/2−	
3500.2		1092.2 *10*	45 *8*	2407.7	7/2,9/2,11/2+	D,E2
		3500.9 *20*	55 *4*	0.0	7/2−	
3530.9	5/2,7/2,9/2+	1178.4 *10*	25 *1*	2353.1	7/2−,9/2,11/2+	D,E2
		1348.4 *10*	14 *1*	2181.9	5/2−,7/2,9/2	D,E2
		2015.6 *20*	13 *1*	1514.56	5/2−	D,Q
		2375.7 *20*	5 *1*	1155.29	9/2−	
		3378.5 *20*	34 *1*	152.82	3/2−	D,Q,E3
		3531.0 *20*	9 *1*	0.0	7/2−	
3623.7	≤9/2	2483.3 *20*	100	1140.37	5/2+	D,Q
3639.7	7/2,9/2	1461.5 *10*	7 *2*	2178.2	3/2+ to 9/2+	D,Q
		2123.8 *20*	27 *3*	1514.56	5/2−	D,Q
		2618.1 *20*	54 *3*	1021.62	11/2−	D,Q
		3640.8 *20*	12 *1*	0.0	7/2−	
3665.5	(9/2,11/2,13/2+)	1312.1 *10*	23 *2*	2353.1	7/2−,9/2,11/2+	D,E2
		1402.7 *10*	11 *2*	2262.8	(15/2)−	D,Q
		3666.7 *20*	65 *2*	0.0	7/2−	D,Q,E3

[†] From 1986Kh01, except As noted. % photon branching ratio from each state.
[‡] From comparison to RUL (evaluator), except As noted.
[#] From γ(θ) (1972Ma60).
[@] From 1974Fa09, except for α(exp)(90.5γ, 152.8γ) which are from 1967Me18. Both references use a calibrated ce-γ system.
[&] From 1971Bl11.

γ(^{49}V) (continued)

[a] From 1974An34.

[b] From α(exp) (1974Fa09). 1974Fa09 used preliminary lifetime information from (α,pγ), reported later by 1975Ha12, to exclude the possibility of E1+M2 when there was overlap between M1+E2 and E1+M2.

[c] From 1972Ma60. Results from 1971Bl11 are consistent. Iγ(595γ)/Iγ(658γ)=66% 1/34% 1 and Iγ(462γ):Iγ(854γ):Iγ(1512γ):Iγ(1603γ)=29% 1:12% 1:40% 1:19% 1 (1986Kh01) and Iγ(462γ):Iγ(854γ):Iγ(1512γ):Iγ(1603γ)=11.0 *5*:4.0 *7*:27 *2*:5 *1* (1974An34) are discrepant. See the discussion In the Adopted Gammas.

[d] From Iγ(766γ)/Iγ(1362γ)=3.0 *5*/8 *1* (1974An34) and Iγ(1362γ):Iγ(1424γ):Iγ(1514γ)=56.0% 12:11.3% 6:32.7% 15 (1972Ma60). Iγ(1362γ):Iγ(1424γ):Iγ(1514γ)=56.3% 10:11.3% 4:32.4% 7 (1971Bl11) are consistent but Iγ(1362γ):Iγ(1424γ):Iγ(1514γ)=8 *1*:4.0 *5*:6.0 *5* (1974An34) and Iγ(1362γ):Iγ(1424γ):Iγ(1514γ)=58% 1:16% 1:26% 1 (1986Kh01) are discrepant.

[e] From Iγ(855γ)/Iγ(1903γ)=4.0 *7*/3.0 *4* (1974An34) and Iγ(1247γ):Iγ(1841γ):Iγ(1902γ)=22% 2:48% 2:30% 2 (1986Kh01).

[f] From 1974Fa09.

[g] From Iγ(1038γ)=28% 2 and Iγ(2178γ)=72% 1 (1986Kh01) and Iγ(575γ)=7% 1 and Iγ(1157γ)=10% 1 from (α,pγ). Iγ(575γ)=9.4% 10, Iγ(1037γ)=36% 3, and Iγ(2178γ)=55% 4 (1974Fa09).

[h] Iγ(1981γ)/Iγ(3135γ)=7 *1*/9 *3* and Iγ(1027γ):Iγ(2089γ):Iγ(2187γ)=4.0 *5*:27 *5*:21 *3* (1974An34) discrepant.

[i] 2110 and 2263 γ′s placed by 1974An34 As deexciting the 2263 state. Alternate placement from 2264 state suggested by 1995Bu23.

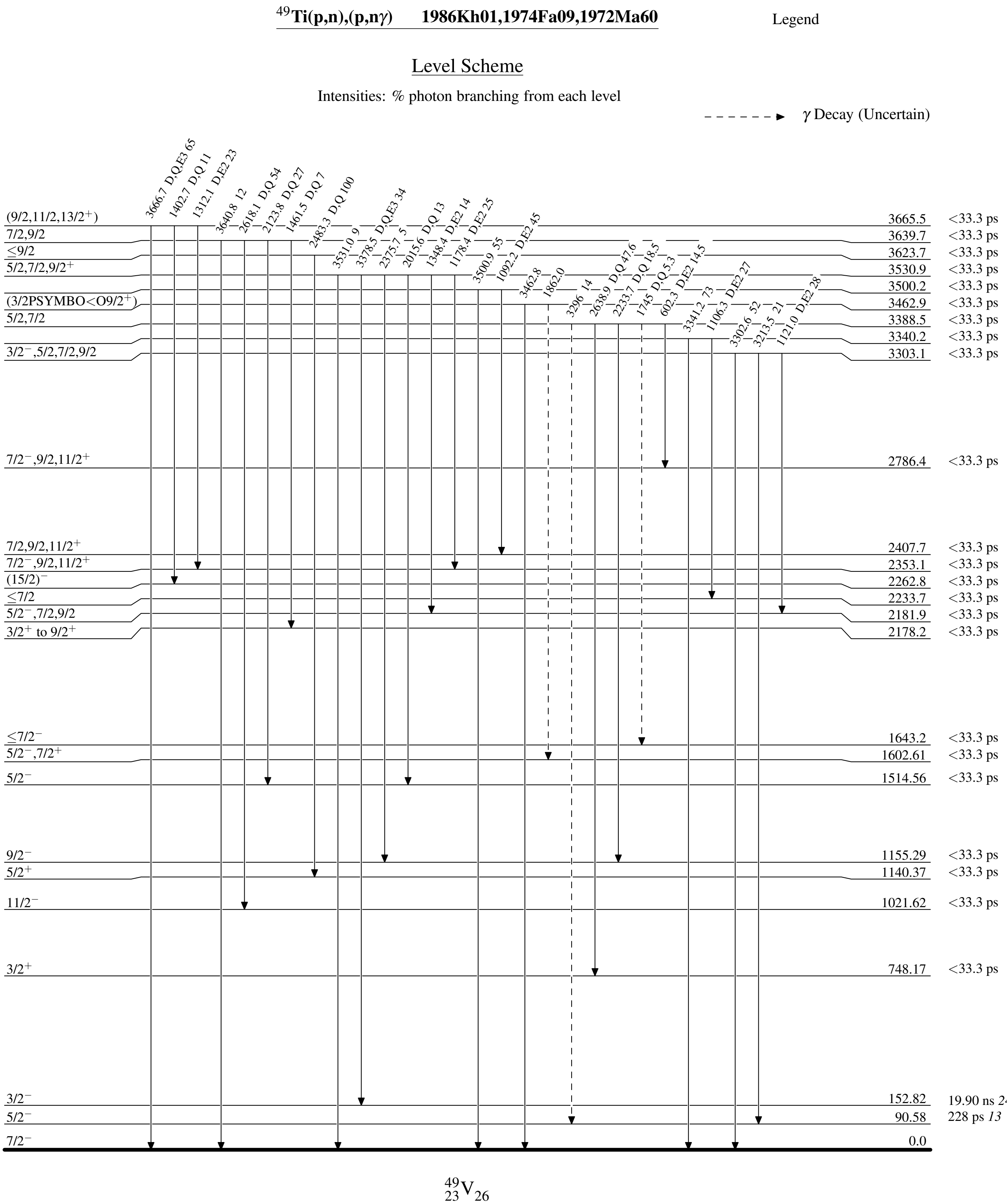
[j] Iγ(1332γ)/Iγ(2354γ)=26 *6*/17 *2* (1974An34) discrepant but Iγ(1200Iγ):Iγ(1333γ):Iγ(2354γ)=7.4% 6:37% 2:56% 2 (1974Fa09) consistent.

[k] See footnote on associated state excitation energy.

[l] From Iγ(1673γ)/Iγ(2721γ)=2.0 *4*/8 *1* (1974An34) and Iγ(628γ):Iγ(2720γ):Iγ(2811γ)=16% 2:48% 2:36% 2 (1986Kh01).

[m] From Iγ(1745γ):Iγ(2636γ):Iγ(3296γ)=3.0 *5*:27 *3*:8 *3* (1974An34) and Iγ(602γ):Iγ(2234γ):Iγ(2639γ)=18% 4:23% 2:59% 2 (1986Kh01).

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



49Ti(p,n),(p,nγ) 1986Kh01,1974Fa09,1972Ma60
Legend
Level Scheme
Intensities: % photon branching from each level
γ Decay (Uncertain)
(9/2,11/2,13/2+) 3665.5 <33.3 ps
7/2,9/2 3639.7 <33.3 ps
≤9/2 3623.7 <33.3 ps
5/2,7/2,9/2+ 3530.9 <33.3 ps
3500.2 <33.3 ps
(3/2PSYMBO<O9/2+) 3462.9 <33.3 ps
5/2,7/2 3388.5 <33.3 ps
3340.2 <33.3 ps
3/2−,5/2,7/2,9/2 3303.1 <33.3 ps
7/2−,9/2,11/2+ 2786.4 <33.3 ps
7/2,9/2,11/2+ 2407.7 <33.3 ps
7/2−,9/2,11/2+ 2353.1 <33.3 ps
(15/2)− 2262.8 <33.3 ps
≤7/2 2233.7 <33.3 ps
5/2−,7/2,9/2 2181.9 <33.3 ps
3/2+ to 9/2+ 2178.2 <33.3 ps
≤7/2− 1643.2 <33.3 ps
5/2−,7/2+ 1602.61 <33.3 ps
5/2− 1514.56 <33.3 ps
9/2− 1155.29 <33.3 ps
5/2+ 1140.37 <33.3 ps
11/2− 1021.62 <33.3 ps
3/2+ 748.17 <33.3 ps
3/2− 152.82 19.90 ns 24
5/2− 90.58 228 ps 13
7/2− 0.0
3666.7 D,Q,E3 65
1402.7 D,Q 11
1312.1 D,E2 23
3640.8 12
2618.1 D,Q 54
2123.8 D,Q 27
1461.5 D,Q 7
2483.3 D,Q 100
3531.0 9
3378.5 D,Q,E3 34
2375.7 5
2015.6 D,Q 13
1348.4 D,E2 14
1178.4 D,E2 25
3500.9 55
1092.2 D,E2 45
3462.8
1862.0
3296 14
2638.9 D,Q 47.6
2233.7 D,Q 18.5
1745 D,Q 5.3
602.3 D,E2 14.5
3341.2 73
1106.3 D,E2 27
3302.6 52
3213.5 21
1121.0 D,E2 28
49 23V26

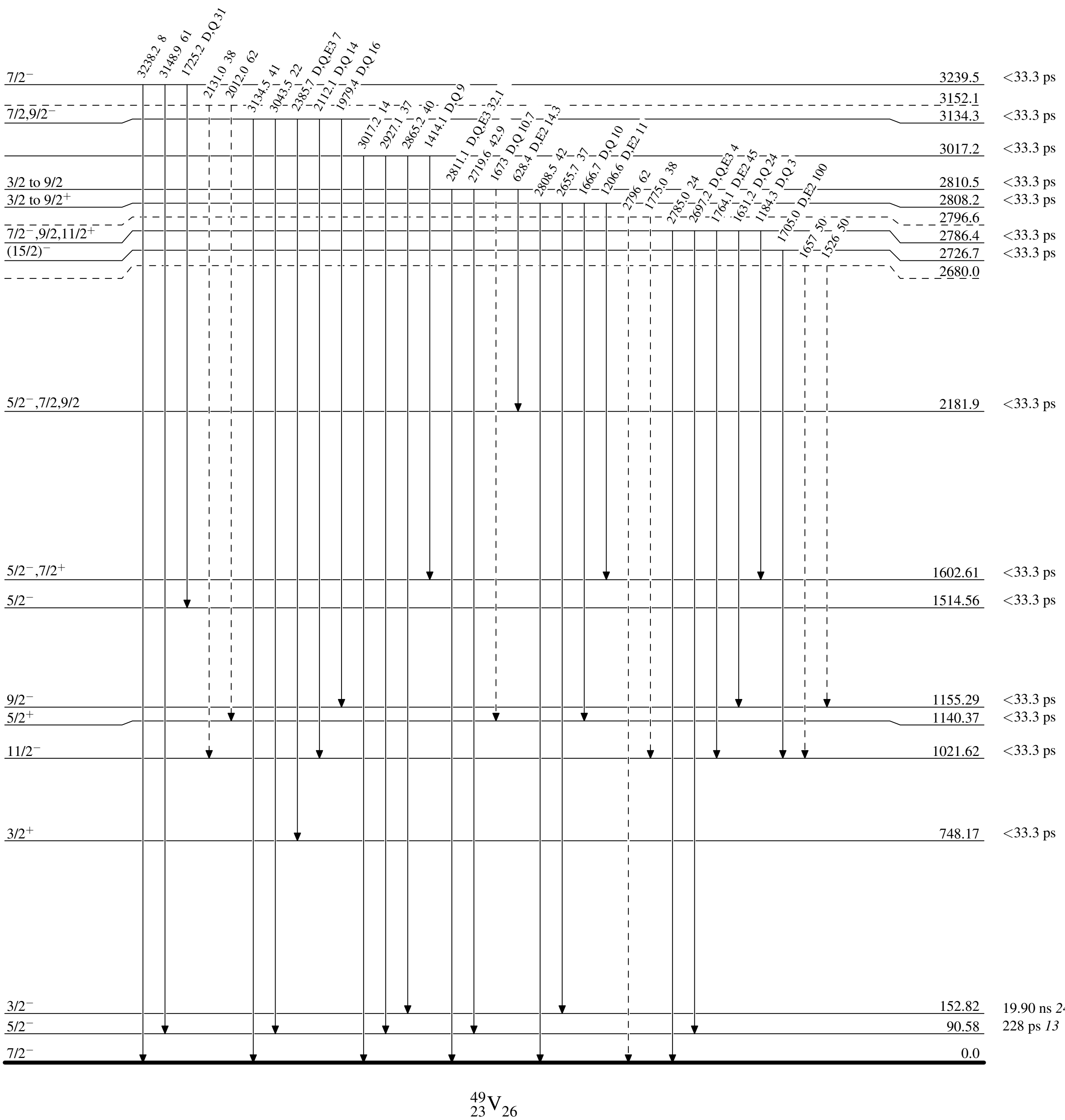
^{49}Ti(p,n),(p,nγ) 1986Kh01,1974Fa09,1972Ma60

Legend

Level Scheme (continued)

Intensities: % photon branching from each level

- - - - ▶ γ Decay (Uncertain)



^{49}Ti(p,n),(p,nγ) 1986Kh01,1974Fa09,1972Ma60

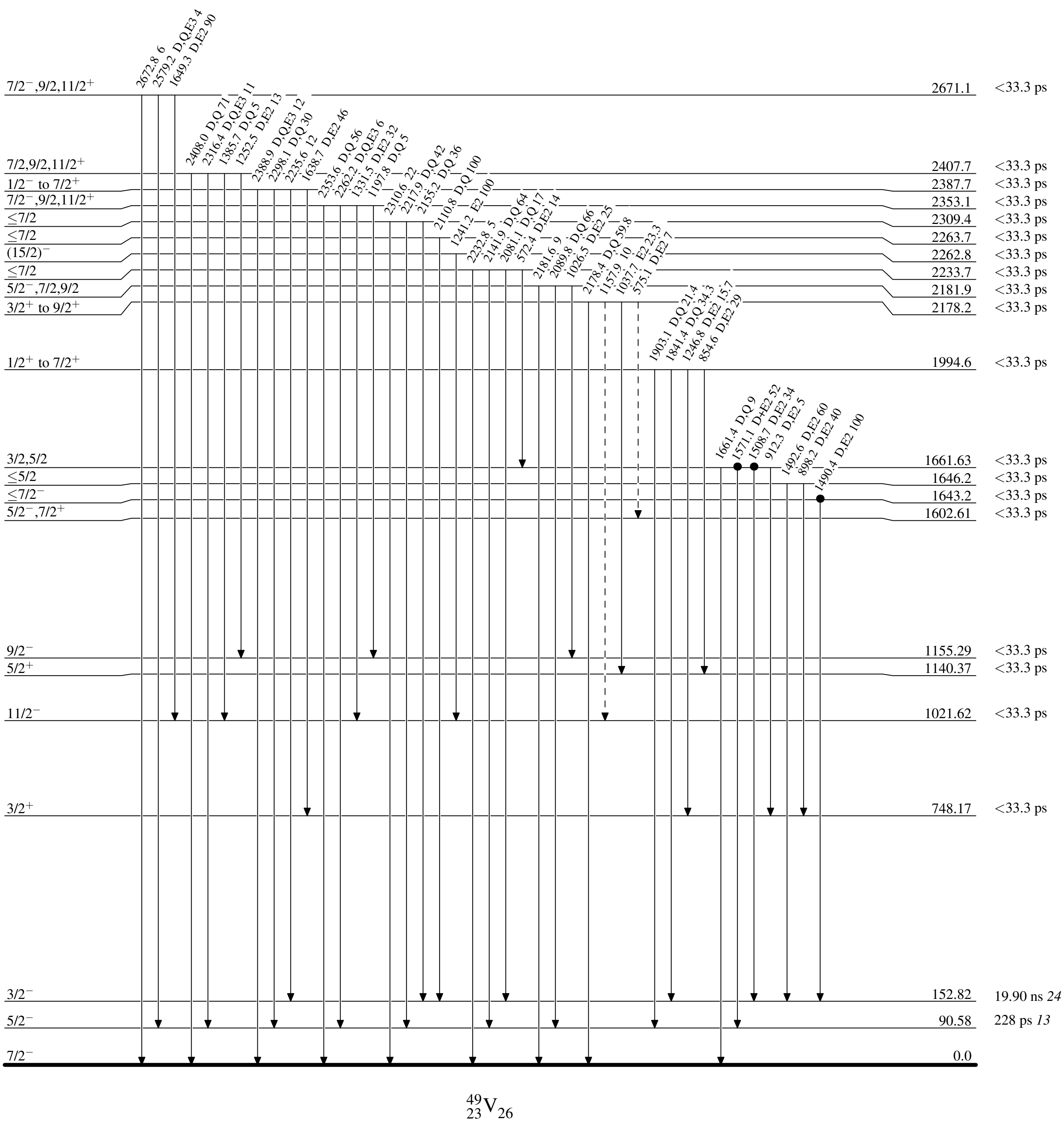
Level Scheme (continued)

Intensities: % photon branching from each level

Legend

γ Decay (Uncertain)

Coincidence



^{49}Ti(p,n),(p,nγ) 1986Kh01,1974Fa09,1972Ma60

Level Scheme (continued)

Intensities: % photon branching from each level

Legend: γ Decay (Uncertain); ● Coincidence