Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, E. A. Mccutchan	NDS 165, 1 (2020)	1-Mar-2020

Q(β^-)=−9448.0 *40*; S(n)=13229.0 *50*; S(p)=6836 *24*; Q(α)=−4628 *5* 2017Wa10
S(2n)=23629 *5*; S(2p)=11122 *6*.
α: Additional information 1.

^{90}Mo Levels

Cross Reference (XREF) Flags

A	^{90}Tc ε decay (8.7 s)	F	^{92}Mo(p,t)
B	^{90}Tc ε decay (50.7 s)	G	^{90}Zr(^{3}He,3nγ)
C	^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ)	H	^{9}Be(^{124}Xe,Xγ)
D	^{66}Zn(^{28}Si,2p2nγ)	I	^{59}Co(^{35}Cl,2p2nγ)
E	^{58}Ni(^{40}Ca,α4pγ)		

E(level)[#]	J$^\pi$	T$_{1/2}$[@]	XREF	Comments
0.0[†]	0$^+$	5.56 h *9*	ABCDEFGHI	%ε+%β^+=100 T$_{1/2}$: weighted average of 5.67 h *5* (1966Pe10), 5.60 h *15* (1965Gr29), 5.32 h *7* (1969Ol01), and 5.7 h *2* (1953Di08).
948.02[†] *9*	2$^+$		ABCDEFGHI	J$^\pi$: from L(p,t)=2.
1896.53 *13*	2$^+$		C FG	J$^\pi$: from L(p,t)=2.
1979 *5*	0$^+$		F	J$^\pi$: from L(p,t)=0.
2002.12[†] *11*	4$^+$		BCDEFGHI	J$^\pi$: from L(p,t)=4.
2432.63 *17*	3$^-$		C FG	J$^\pi$: from L(p,t)=3.
2450 *5*	0$^+$		F	J$^\pi$: from L(p,t)=0.
2534.1 *7*	(2$^+$)		FG	XREF: F(2528). J$^\pi$: D(+Q) 1586.2γ to 2$^+$, possible 2534γ to 0$^+$.
2548.82 *12*	5$^-$	16 ps *3*	BCDEFGH	μ=5.5 *14* J$^\pi$: from L(p,t)=5. μ: From IMPAD (ion-implantation perturbed angular distribution) (1994We09,2014StZZ).
2613 *5*	2$^+$		F	J$^\pi$: from L(p,t)=2.
2706 *5*			F	
2811.69[†] *12*	6$^+$		BCDE GHI	J$^\pi$: E2 809.6γ to 4$^+$, assignment to ground state sequence.
2859.21[‡] *13*	5$^-$		BC FG	J$^\pi$: from L(p,t)=5.
2874.81[†] *15*	8$^+$	1.14 μs *5*	CDEFGHI	Q=0.61 *3*; μ=−1.391 *14* J$^\pi$: systematics of half-lives for J^π=8$^+$ member of g.s. rotational band in ^{88}Zr and ^{86}Sr. L(p,t)=(6) is in disagreement. 63γ to 6$^+$. T$_{1/2}$: weighted average of 1.14 μs *5* (1978Ha52), 1.05 μs *10* (1971Is04) and 1.15 μs *5* (2017Pa35), 1.14 μs *5* (2019Ha26, and 1.17 μs *+11−7* (2004Ch35). μ: from TDPAD (time-differential perturbed angular distribution) (1978Ha52, 2014StZZ). Q: from TDPAD (time-differential perturbed angular distribution) (1985Ra09, 2016St14).
2901.23 *19*	(4$^-$)		C FG	J$^\pi$: 468.6γ to 3$^-$.
2946.89 *14*	(6$^+$)		BC G	J$^\pi$: 944.8γ to 4$^+$, 135.2γ to 6$^+$.
3037.6 *10*			B	
3074 *7*	3$^-$		F	J$^\pi$: from L(p,t)=3.
3106.20 *16*	8$^+$	4.9 ps *13*	CDE G I	J$^\pi$: 231γ M1+E2 ΔJ=0 transition to 8$^+$.
3147.9 *10*	2$^+$		FG	J$^\pi$: from L(p,t)=2.
3150.0 *5*			B	E(level): possible ε+β^+ feeding from J^π=8$^+$ suggests that this level is different from the 3148 level.

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Adopted Levels, Gammas (continued)

^{90}Mo Levels (continued)

E(level)[#]	Jπ	T1/2[@]	XREF	Comments
3185 *7*			F	
3293.86 *22*			BC FG	Jπ: feeding from 8+ parent in ^{90}Tc ε decay would suggest J=7,8,9. However, 1291.4γ to 4+ and 482.3γ to 6+ suggests J=4+,5,6+.
3355 *7*			F	
3367.38[‡] *13*	7−	<0.69 ps	CDE G	Jπ: E2 818.6γ to 5−, assignment to negative parity sequence.
3446.22 *19*	(7−)		C G	Jπ: (E2) 897.4γ to 5−.
3494 *7*			F	
3514 *7*			F	
3539.8 *8*			B	
3659.73 *16*	(7−)		C G	Jπ: (E2) 800.5γ to 5−.
3683 *7*			F	
3736 *7*			F	
3834 *7*			F	
3936 *7*			F	
4078.91[†] *16*	10+	14.6 ps *28*	CDE G I	Jπ: E2 972.7γ to 8+, assignment to ground state sequence.
4094.8 *5*			B	
4175.4 *8*			B	
4192.52 *15*	10+	<3.5 ps	CDE G I	Jπ: E2 1317.7γ to 8+.
4297.75[‡] *15*	9−	9.7 ps *21*	CDE G	Jπ: E2 930.3γ to 7−.
4357.5 *10*			B	
4555.86[†] *15*	12+	526 ps *3*	CDE G I	μ=6.0 *7* μ: from g-factor=0.50 *6*, by IMPAD (ion-implantation perturbed angular distribution) (1994We09,2014StZZ). Jπ: E2 476.95γ to 10+.
4594.25 *25*	(9,10)		C G	Jπ: D(+Q) 296.5γ to 9−.
4789.37 *18*	10		C G	Jπ: D+Q 491.7γ to 9−.
4842.02[‡] *15*	11−	39 ps *2*	CDE G	μ=+4.6 *14* μ: from g-factor=0.42 *13*, by IMPAD (ion-implantation perturbed angular distribution) (1994We09,2014StZZ). T1/2: other: < 0.7 ps from (^{28}Si,2p2nγ). Jπ: E2 544.2γ to 9−.
4895.14 *18*	(11)		C G	Jπ: 105.8γ to (10).
5377.24 *17*	(13+)	1.8 ps *3*	CDE G I	Jπ: D+Q 821.4γ to 12+. T1/2: weighted average of 1.0 ps *3* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ) and 1.94 ps *13* from ^{59}Co(^{35}Cl,2p2nγ).
5499.42 *16*	(12)		C	Jπ: D 657.4γ to 11−.
5621.6 *3*	(14+)		D	Jπ: D 244.2γ to (13+).
5625.02[†] *17*	14+	0.76 ps *7*	CDE I	T1/2: from ^{59}Co(^{35}Cl,2p2nγ), uncertainty increased by evaluators. Others: 2.7 ps *1* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ) and 4.8 ps *14* from (^{28}Si,2p2nγ). Jπ: E2 1069.1γ to 12+.
5699.65[‡] *16*	13−	1.4 ps *4*	CDE	Jπ: E2 857.7γ to 11−. T1/2: other: < 0.7 ps in (^{28}Si,2p2nγ).
5863.75 *16*	(13)		C	Jπ: 364.4γ to (12).
5903.74 *18*	14+	1.5 ps *3*	C E I	Jπ: M1+E2 526.5γ to 13+. T1/2: weighted average of 1.7 ps *4* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ) and 1.39 ps *28* from ^{59}Co(^{35}Cl,2p2nγ).
6064.89 *19*	(13)		C	Jπ: 565.5γ to (12).
6148.16 *18*	15+	0.721 ps *49*	CDE I	T1/2: from ^{59}Co(^{35}Cl,2p2nγ). Others: <0.3 ps from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ) and <1.4 ps in (^{28}Si,2p2nγ). Jπ: M1+E2 244.5γ to 14+.
6475.91 *16*	14−	1.5 ps *10*	C E	Jπ: M1+E2 776.2γ to 13−.
6643.13[‡] *16*	15−	1.3 ps *1*	CDE	Jπ: E2 943.3γ to 13−.

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Adopted Levels, Gammas (continued)

^{90}Mo Levels (continued)

E(level)[#]	Jπ	$T_{1/2}$[@]	XREF	Comments
				$T_{1/2}$: other: < 0.7 ps in (^{28}Si,2p2nγ).
6746.10[†] *18*	16$^+$	2.0 ps *3*	CDE I	Jπ: M1+E2 598.0γ to 15$^+$. $T_{1/2}$: weighted average of 3.6 ps *7* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ) and 1.91 ps *14* from ^{59}Co(^{35}Cl,2p2nγ).
7027.0? *4*	17		D	Jπ: D+Q 280.9γ to 16$^+$.
7170.98 *19*	(16$^+$)		C	Jπ: 1545.9γ to 14$^+$.
7385.59 *19*	16$^-$	6.6 ps *15*	C E	Jπ: M1+E2 742.5γ to 15$^-$.
7515.01[‡] *19*	17$^-$	7.4 ps *3*	CDE	$T_{1/2}$: Other: 5.5 ps *7* from (^{28}Si,2p2nγ). Jπ: E2 872.0γ to 15$^-$.
7629.61 *21*	(16)		C	Jπ: (D+Q) 1481.4γ to 15$^+$.
7682.4? *4*	(18)		D	Jπ: (D+Q) 167.4γ to 17$^-$.
8066.77 *19*	17$^+$	0.60 ps *4*	C E	Jπ: E2 1918.6γ to 15$^+$.
8123.55[‡] *20*	(18$^-$)		C E	Jπ: D+Q 608.5γ to 17$^-$; assignment to negative parity sequence.
8281.85 *22*	(17$^+$)		C	Jπ: 2133.7γ to 15$^+$.
8525.30[†] *19*	18$^+$	0.16 ps *2*	C E	Jπ: E2 1779.2γ to 16$^+$.
8616.84 *20*	(17$^+$)		C	Jπ: 1870.7γ to 16$^+$, 2468.6γ to 15$^+$.
8678.44[‡] *23*	(19$^-$)		C E	Jπ: D 554.9γ to (18$^-$), assignment to negative-parity sequence.
9079.18 *20*	(18$^-$)		C	Jπ: 1564.1γ to 17$^-$, 1693.6γ to 16$^-$.
9136.60 *19*	(18$^+$)		C E	Jπ: (E2) 2390.5γ to 16$^+$.
9319.01 *20*	(19$^-$)		C E	Jπ: (E2) 1803.97γ to 17$^-$.
9443.90 *20*	(19$^+$)		C E	Jπ: D+Q 918.6γ to 18$^+$, 1377.0γ to 17$^+$.
9739.38 *19*	(19$^+$)		C E	Jπ: (E2) 1672.5γ to 17$^+$.
9787.96[†] *21*	(20$^+$)		C E	Jπ: (E2) 1262.7γ to 18$^+$.
9995.04 *21*	(20$^-$)		C E	Jπ: D+Q 676.0γ to (19$^-$), 1871.6γ to (18$^-$).
10235.14 *20*	20$^+$	0.21 ps *6*	C E	Jπ: E2 1709.9γ to 18$^+$.
10477.36 *21*	(20$^+$)		C E	Jπ: 738.0γ to (19$^+$), 1952.0γ to 18$^+$.
10537.91 *25*	(21)		C E	Jπ: D 542.9γ to (20$^-$).
10855.61 *20*	21$^+$	0.90 ps *14*	C E	Jπ: M1+E2 620.5γ to 20$^+$.
11135.76[†] *21*	22$^+$	<0.07 ps	C	Jπ: M1+E2 280.2γ to 21$^+$.
11269.3 *7*	(21)		E	Jπ: 2590γ to (19).
11577.07 *23*	(22$^+$)		C E	Jπ: E2 1789.1γ to (20$^+$).
11735.5 *5*			E	
12016.61 *23*	23$^+$	<1.2 ps	C E	Jπ: E2 1161.0γ to 21$^+$.
12257.7 *10*			E	
12383.6 *3*	(23)		C E	Jπ: (E2) 1845.7γ to (21).
14279.8 *10*			E	
14412.1 *10*			E	
14486.6 *10*			E	

[†] Seq.(A): Ground state sequence.
[‡] Seq.(B): Negative-parity sequence.
[#] From a least-squares fit to Eγ, by evaluators.
[@] From recoil distance Doppler-shift and Doppler-shift attenuation methods in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), except where noted.

Adopted Levels, Gammas (continued)

γ(^{90}Mo)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
948.02	2+	948.01 *9*	100	0.0	0+	E2		8.74×10^{-4}	α(K)=0.000768 *11*; α(L)=8.74×10^{-5} *13*; α(M)=1.559×10^{-5} *22*; α(N)=2.37×10^{-6} *4* α(O)=1.317×10^{-7} *19* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
1896.53	2+	948.50 *10*		948.02	2+	[M1+E2]		8.87×10^{-4} *19*	α(K)=0.000780 *17*; α(L)=8.79×10^{-5} *14*; α(M)=1.569×10^{-5} *25*; α(N)=2.39×10^{-6} *4*; α(O)=1.35×10^{-7} *4*
		1896.8		0.0	0+	[E2]		4.64×10^{-4}	α(K)=0.000183 *3*; α(L)=2.02×10^{-5} *3*; α(M)=3.60×10^{-6} *5*; α(N)=5.49×10^{-7} *8*; α(O)=3.15×10^{-8} *5* E_γ: from (^{3}He,3nγ).
2002.12	4+	1054.10 *7*	100	948.02	2+	E2		6.86×10^{-4}	α(K)=0.000603 *9*; α(L)=6.82×10^{-5} *10*; α(M)=1.217×10^{-5} *17*; α(N)=1.85×10^{-6} *3*; α(O)=1.035×10^{-7} *15*
2432.63	3−	536.10 *10*	57 *5*	1896.53	2+				I_γ: from (^{3}He,3nγ).
		1484.7	100 *16*	948.02	2+	E1+M2	−0.12 *8*	3.97×10^{-4} *11*	α(K)=0.000151 *13*; α(L)=1.66×10^{-5} *14*; α(M)=2.96×10^{-6} *25*; α(N)=4.5×10^{-7} *4*; α(O)=2.59×10^{-8} *22* E_γ,I_γ: from (^{3}He,3nγ). Mult.,δ: D+Q from γγ(θ) in (^{3}He,3nγ), Δπ=yes from level scheme.
2534.1	(2+)	1586.2	100	948.02	2+	D(+Q)	−0.13 *22*		E_γ,I_γ,Mult.,δ: from (^{3}He,3nγ).
		2534	≤5.6	0.0	0+				E_γ,I_γ: from (^{3}He,3nγ).
2548.82	5−	546.69 *4*	100	2002.12	4+	E1		1.20×10^{-3}	α(K)=0.001055 *15*; α(L)=0.0001178 *17*; α(M)=2.10×10^{-5} *3*; α(N)=3.19×10^{-6} *5* α(O)=1.783×10^{-7} *25* B(E1)(W.u.)=1.29×10^{-4} *+30−20* Mult.: D from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=yes from level scheme.
2811.69	6+	262.84 *17*	4.9 *3*	2548.82	5−	E1		0.00790	α(K)=0.00695 *10*; α(L)=0.000785 *11*; α(M)=0.0001397 *20*; α(N)=2.11×10^{-5} *3* α(O)=1.145×10^{-6} *17* Mult.: D from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=yes from level scheme. I_γ: weighted average of 3.8 *12* from ^{90}Tc ε decay (50.7 s), 5.0 *3* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), 12.5 *5* from ^{66}Zn(^{28}Si,2p2nγ), 8.9 *16* (^{40}Ca,α4pγ), and 4.6 *4* from (^{3}He,3nγ).
		809.57 *6*	100 *3*	2002.12	4+	E2		1.28×10^{-3}	α(K)=0.001122 *16*; α(L)=0.0001289 *18*; α(M)=2.30×10^{-5} *4*; α(N)=3.49×10^{-6} *5*; α(O)=1.92×10^{-7} *3*
2859.21	5−	310.39 *6*	100 *11*	2548.82	5−				I_γ: from (^{3}He,3nγ).
		857.10 *12*	≈30	2002.12	4+				I_γ: from (^{3}He,3nγ). Other <125 in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ).
2874.81	8+	63.15 *9*	100	2811.69	6+	[E2]		6.30	α(K)=4.64 *7*; α(L)=1.369 *21*; α(M)=0.250 *4*; α(N)=0.0343 *6*;

$^{90}_{42}Mo_{48}$-4

Adopted Levels, Gammas (continued)

γ(^{90}Mo) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									α(O)=0.000618 *9* B(E2)(W.u.)=2.84 *13*
2901.23	(4$^-$)	468.60 *10*	100	2432.63	3$^-$				
2946.89	(6$^+$)	135.18 *8*	≈50	2811.69	6$^+$				I_γ: from (^{3}He,3nγ). Other 80 *50* in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), 14.2 *22* in ^{90}Tc ε decay (50.7 s).
		944.80 *14*	100 *12*	2002.12	4$^+$				I_γ: from (^{3}He,3nγ).
3037.6		1035.5[#] *10*	100[#]	2002.12	4$^+$				
3106.20	8$^+$	231.43 *8*	100	2874.81	8$^+$	M1+E2	−0.04 *+10−40*	0.026 *6*	α(K)=0.023 *5*; α(L)=0.00267 *69*; α(M)=4.8×10^{-4} *13*; α(N)=7.3×10^{-5} *18*; α(O)=4.1×10^{-6} *7* B(M1)(W.u.)=0.35 *+9−12*
3147.9	2$^+$	715.3	100	2432.63	3$^-$				E_γ: from (^{3}He,3nγ).
3150.0		1147.9[#] *5*	100[#]	2002.12	4$^+$				
3293.86		482.26 *20*	100 *7*	2811.69	6$^+$				E_γ: weighted average of 481.7 *3* (^{90}Tc ε Decay (50.7 s)), 482.40 *15* (^{58}Ni(^{3}Ar,4pγ),(^{35}Cl,3pγ)), 482.4 *10* (^{90}Zr(^{3}He,3nγ)).
		1291.4 *5*	54 *5*	2002.12	4$^+$				E_γ,I_γ: from ^{90}Tc ε decay (50.7 s).
3367.38	7$^-$	508.20 *15*	≤13	2859.21	5$^-$	[E2]		0.00452	α(K)=0.00395 *6*; α(L)=0.000473 *7*; α(M)=8.45×10^{-5} *12*; α(N)=1.271×10^{-5} *18*; α(O)=6.65×10^{-7} *10*
		555.65 *9*	30.8 *21*	2811.69	6$^+$	E1		1.15×10^{-3}	α(K)=0.001016 *15*; α(L)=0.0001134 *16*; α(M)=2.02×10^{-5} *3*; α(N)=3.07×10^{-6} *5* α(O)=1.717×10^{-7} *24* I_γ: other: 15.5 *19* in (^{3}He,3nγ). Mult.: D from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=yes from level scheme.
		818.56 *10*	100 *7*	2548.82	5$^-$	E2		1.24×10^{-3}	α(K)=0.001092 *16*; α(L)=0.0001254 *18*; α(M)=2.24×10^{-5} *4*; α(N)=3.39×10^{-6} *5*; α(O)=1.87×10^{-7} *3* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
3446.22	(7$^-$)	897.40 *15*	100	2548.82	5$^-$	(E2)[@]		9.95×10^{-4}	α(K)=0.000874 *13*; α(L)=9.98×10^{-5} *14*; α(M)=1.780×10^{-5} *25*; α(N)=2.70×10^{-6} *4* α(O)=1.497×10^{-7} *21*
3539.8		592.9[#] *8*	100[#]	2946.89	(6$^+$)				
3659.73	(7$^-$)	292.30 *24*	100 *8*	3367.38	7$^-$				
		800.52 *15*	60 *4*	2859.21	5$^-$	(E2)[@]		1.31×10^{-3}	α(K)=0.001154 *17*; α(L)=0.0001327 *19*; α(M)=2.37×10^{-5} *4*; α(N)=3.59×10^{-6} *5*; α(O)=1.97×10^{-7} *3*
4078.91	10$^+$	972.73 *8*	100	3106.20	8$^+$	E2		8.23×10^{-4}	α(K)=0.000724 *11*; α(L)=8.22×10^{-5} *12*; α(M)=1.467×10^{-5} *21*; α(N)=2.23×10^{-6} *4* α(O)=1.241×10^{-7} *18*

$^{90}_{42}Mo_{48}$-5

Adopted Levels, Gammas (continued)

γ(^{90}Mo) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									B(E2)(W.u.)=1.86 *+45−29* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
4094.8		801.2[#] *5*	100[#] *15*	3293.86					
		2091.7[#] *9*	68[#] *15*	2002.12	4^+				
4175.4		1363.7[#] *8*	100[#]	2811.69	6^+				
4192.52	10^+	113.64 *8*	1.8 *3*	4078.91	10^+				I_γ: others: 5.7 *6* in (^{40}Ca,α4pγ), ≈ 70 in (^{3}He,3nγ).
		1086.37 *12*	1.36 *21*	3106.20	8^+	[E2]		6.41×10^{-4}	α(K)=0.000564 *8*; α(L)=6.37×10^{-5} *9*; α(M)=1.136×10^{-5} *16*; α(N)=1.726×10^{-6} *25*; α(O)=9.68×10^{-8} *14*
		1317.68 *7*	100 *14*	2874.81	8^+	E2		4.54×10^{-4}	α(K)=0.000373 *6*; α(L)=4.18×10^{-5} *6*; α(M)=7.45×10^{-6} *11*; α(N)=1.133×10^{-6} *16*; α(O)=6.42×10^{-8} *9* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
4297.75	9^-	638.00 *15*	3.12 *23*	3659.73	(7^-)	(E2)		0.00237	α(K)=0.00208 *3*; α(L)=0.000243 *4*; α(M)=4.35×10^{-5} *6*; α(N)=6.56×10^{-6} *10*; α(O)=3.53×10^{-7} *5* B(E2)(W.u.)=0.70 *+21−14* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
		930.34 *9*	100 *7*	3367.38	7^-	E2		9.13×10^{-4}	α(K)=0.000803 *12*; α(L)=9.14×10^{-5} *13*; α(M)=1.631×10^{-5} *23*; α(N)=2.48×10^{-6} *4* α(O)=1.376×10^{-7} *20* B(E2)(W.u.)=3.4 *+10−6* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
4357.5		2355.3[#] *10*	100[#]	2002.12	4^+				
4555.86	12^+	363.33[#] *4*	58 *4*	4192.52	10^+	E2		0.01282	α(K)=0.01114 *16*; α(L)=0.001390 *20*; α(M)=0.000249 *4*; α(N)=3.71×10^{-5} *6*; α(O)=1.84×10^{-6} *3* B(E2)(W.u.)=2.57 *12* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL. I_γ: weighted average of 54 *8* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), 64.3 *11* from ^{66}Zn(^{28}Si,2p2nγ), 53.6 *9* (^{40}Ca,α4pγ). Other: 7.0 *7* from (^{3}He,3nγ).
		476.95[#] *10*	100 *1*	4078.91	10^+	E2		0.00546	α(K)=0.00477 *7*; α(L)=0.000575 *8*; α(M)=0.0001028 *15*; α(N)=1.543×10^{-5} *22* α(O)=8.00×10^{-7} *12* B(E2)(W.u.)=1.142 *30* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
4594.25	(9,10)	296.50 *20*	100	4297.75	9^-	D(+Q)	−0.2 *+4−3*	0.0143 *18*	

$^{90}_{42}Mo_{48}$-6

Adopted Levels, Gammas (continued)

γ(^{90}Mo) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	δ ‡	α	Comments
4789.37	10	491.66 *14*	100	4297.75	9⁻	D+Q		0.0045 *5*	
4842.02	11⁻	544.22 *9*	100 *2*	4297.75	9⁻	E2		0.00370	α(K)=0.00324 *5*; α(L)=0.000385 *6*; α(M)=6.88×10^{-5} *10*; α(N)=1.036×10^{-5} *15*; α(O)=5.47×10^{-7} *8* B(E2)(W.u.)=8.7 *7* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
		649.64 *16*	47 *10*	4192.52	10⁺	E1		8.07×10^{-4}	α(K)=0.000712 *10*; α(L)=7.92×10^{-5} *11*; α(M)=1.410×10^{-5} *20*; α(N)=2.14×10^{-6} *3* α(O)=1.207×10^{-7} *17* B(E1)(W.u.)=1.00×10^{-5} *+15−17* I_γ: weighted average of 63.9 *22* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), 34.3 *19* (^{40}Ca,α4pγ), and 46 *6* from (^{3}He,3nγ). Mult.: D from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=yes from level scheme.
4895.14	(11)	105.78 *9*	100	4789.37	10				
5377.24	(13⁺)	821.37 *9*	100	4555.86	12⁺	M1+E2	0.09 *4*	1.24×10^{-3}	α(K)=0.001088 *16*; α(L)=0.0001218 *17*; α(M)=2.17×10^{-5} *3*; α(N)=3.32×10^{-6} *5*; α(O)=1.90×10^{-7} *3* B(M1)(W.u.)=0.0219 *+44−32*; B(E2)(W.u.)=0.28 *+33−19* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
5499.42	(12)	604.33 *15*	52 *7*	4895.14	(11)	(D+Q)		0.00266 *16*	
		657.41 *5*	100 *26*	4842.02	11⁻	D			
5621.6	(14⁺)	244.2 *3*	100	5377.24	(13⁺)	D			
5625.02	14⁺	247.75 *8*	100 *2*	5377.24	(13⁺)	M1(+E2)	0.04 *5*	0.0220 *4*	α(K)=0.0193 *3*; α(L)=0.00223 *4*; α(M)=0.000400 *7*; α(N)=6.08×10^{-5} *10*; α(O)=3.41×10^{-6} *6* B(M1)(W.u.)=1.07 *10* Mult.: D(+Q) from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		1069.12 *21*	77 *2*	4555.86	12⁺	E2		6.64×10^{-4}	α(K)=0.000585 *9*; α(L)=6.60×10^{-5} *10*; α(M)=1.178×10^{-5} *17*; α(N)=1.79×10^{-6} *3*; α(O)=1.003×10^{-7} *14* B(E2)(W.u.)=9.6 *+10−8* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL. I_γ: from (^{40}Ca,α4pγ). Other: 95 *14* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ).
5699.65	13⁻	857.52 *15*	100 *3*	4842.02	11⁻	E2		1.11×10^{-3}	α(K)=0.000975 *14*; α(L)=0.0001116 *16*; α(M)=1.99×10^{-5} *3*; α(N)=3.02×10^{-6} *5* α(O)=1.668×10^{-7} *24* B(E2)(W.u.)=23 *+9−5* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.

$^{90}_{42}Mo_{48}$-7

Adopted Levels, Gammas (continued)

γ(^{90}Mo) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	δ‡	α	Comments
5699.65	13$^-$	1143.78 *10*	55 *2*	4555.86	12$^+$	E1		2.73×10^{-4}	α(K)=0.000227 *4*; α(L)=2.50×10^{-5} *4*; α(M)=4.46×10^{-6} *7*; α(N)=6.79×10^{-7} *10*; α(O)=3.88×10^{-8} *6* B(E1)(W.u.)=5.7×10^{-5} *+22−13* I_γ: weighted average of 54 *8* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), 52 *4* from (^{28}Si,2p2nγ) and 57 *3* from (^{40}Ca,α4pγ). Mult.: D from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=yes from level scheme.
5863.75	(13)	364.36 *8*	100	5499.42	(12)				
5903.74	14$^+$	526.53 *8*	100	5377.24	(13$^+$)	M1+E2	0.13 *5*	0.00343	α(K)=0.00302 *5*; α(L)=0.000342 *5*; α(M)=6.11×10^{-5} *9*; α(N)=9.30×10^{-6} *14*; α(O)=5.29×10^{-7} *8* B(M1)(W.u.)=0.099 *+25−17*; B(E2)(W.u.)=6 *+6−4* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), E1+M2 excluded by comparison to RUL.
6064.89	(13)	365.20 *20*	100 *25*	5699.65	13$^-$				
		565.50 *30*	28.8 *25*	5499.42	(12)				
6148.16	15$^+$	244.46 *8*	58 *9*	5903.74	14$^+$	M1+E2	0.12 *3*	0.0231	α(K)=0.0203 *4*; α(L)=0.00236 *5*; α(M)=0.000422 *8*; α(N)=6.40×10^{-5} *12*; α(O)=3.57×10^{-6} *6* B(M1)(W.u.)=0.46 *6*; B(E2)(W.u.)=1.2×10^2 *+7−5* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), E1+M2 excluded by comparison to RUL. I_γ: weighted average of 44 *3* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ) and 64 *2* from (^{40}Ca,α4pγ).
		523.11 *10*	100 *2*	5625.02	14$^+$	M1+E2	0.11 *3*	0.00348	α(K)=0.00306 *5*; α(L)=0.000347 *5*; α(M)=6.20×10^{-5} *9*; α(N)=9.44×10^{-6} *14*; α(O)=5.37×10^{-7} *8* B(M1)(W.u.)=0.081 *7*; B(E2)(W.u.)=3.8 *+24−18* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), E1+M2 excluded by comparison to RUL.
		526.4 *3*	100 *2*	5621.6	(14$^+$)	(M1+E2)	0.11 *3*	0.00343	α(K)=0.00302 *5*; α(L)=0.000342 *5*; α(M)=6.10×10^{-5} *9*; α(N)=9.30×10^{-6} *14*; α(O)=5.29×10^{-7} *8* B(M1)(W.u.)=0.080 *6*; B(E2)(W.u.)=3.7 *+22−18* I_γ: weighted average of 100 *15* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ) and 100 *2* from (^{40}Ca,α4pγ). Other: 39 *3* from (^{28}Si,2p2nγ). Mult.: (D+Q) from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), E1+M2 excluded by comparison to RUL.
6475.91	14$^-$	411.00 *13*	14 *3*	6064.89	(13)	D			
		612.10 *8*	4.3 *3*	5863.75	(13)				
		776.24 *6*	100 *12*	5699.65	13$^-$	M1+E2	3.1 *+10−7*	1.42×10^{-3}	α(K)=0.001245 *18*; α(L)=0.0001431 *21*; α(M)=2.56×10^{-5} *4*; α(N)=3.87×10^{-6} *6*; α(O)=2.13×10^{-7} *3* B(M1)(W.u.)=0.0025 *+35−13*; B(E2)(W.u.)=43 *+47−19* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), E1+M2 excluded by comparison to RUL.

$^{90}_{42}Mo_{48}$-8

Adopted Levels, Gammas (continued)

γ(^{90}Mo) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
6643.13	15$^-$	167.11 *9*	38 *2*	6475.91	14$^-$	M1+E2		0.125 *64*	α(K)=0.107 *53*; α(L)=0.0151 *88*; α(M)=0.0027 *16*; α(N)=4.0×10^{-4} *23*; α(O)=1.70×10^{-5} *75* I$_\gamma$: weighted average of 39 *5* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ) and 37 *2* from (^{40}Ca,α4pγ). Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		779.43 *6*	7 *3*	5863.75	(13)	E2		1.40×10^{-3}	α(K)=0.001233 *18*; α(L)=0.0001421 *20*; α(M)=2.54×10^{-5} *4*; α(N)=3.84×10^{-6} *6*; α(O)=2.11×10^{-7} *3* B(E2)(W.u.)=2.1 *9* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
		943.5 *2*	100 *3*	5699.65	13$^-$	E2		8.84×10^{-4}	α(K)=0.000777 *11*; α(L)=8.84×10^{-5} *13*; α(M)=1.577×10^{-5} *22*; α(N)=2.39×10^{-6} *4* α(O)=1.332×10^{-7} *19* B(E2)(W.u.)=11.8 *12* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
		1018.10 *12*	58 *11*	5625.02	14$^+$	E1		3.20×10^{-4}	α(K)=0.000282 *4*; α(L)=3.12×10^{-5} *5*; α(M)=5.55×10^{-6} *8*; α(N)=8.45×10^{-7} *12*; α(O)=4.81×10^{-8} *7* B(E1)(W.u.)=6.9×10^{-5} *11* Mult.: D from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=yes from level scheme. I$_\gamma$: weighted average of 42 *6* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), 41 *4* from (^{28}Si,2p2nγ) and 72 *3* from (^{40}Ca,α4pγ).
6746.10	16$^+$	598.00 *10*	100	6148.16	15$^+$	M1+E2	3.4 *5*	0.00281	α(K)=0.00246 *4*; α(L)=0.000289 *5*; α(M)=5.17×10^{-5} *8*; α(N)=7.80×10^{-6} *12*; α(O)=4.18×10^{-7} *6* B(M1)(W.u.)=0.0041 *+17−10*; B(E2)(W.u.)=142 *+24−20* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), E1+M2 excluded by comparison to RUL.
7027.0?	17	280.9[a] *3*	100[a]	6746.10	16$^+$	(D+Q)			
7170.98	(16$^+$)	1267.15 *17*	40 *8*	5903.74	14$^+$				
		1545.92 *18*	100 *16*	5625.02	14$^+$				
7385.59	16$^-$	742.46 *14*	100	6643.13	15$^-$	M1+E2	3.1 *8*	1.59×10^{-3}	α(K)=0.001392 *20*; α(L)=0.0001605 *24*; α(M)=2.87×10^{-5} *5*; α(N)=4.34×10^{-6} *7*; α(O)=2.38×10^{-7} *4* B(M1)(W.u.)=8×10^{-4} *+7−3*; B(E2)(W.u.)=14.3 *+41−31* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), E1+M2 excluded by comparison to RUL.
7515.01	17$^-$	129.41 *7*	16.3 *10*	7385.59	16$^-$	M1(+E2)	0.14 *14*	0.130 *19*	α(K)=0.113 *16*; α(L)=0.014 *3*; α(M)=0.0025 *6*; α(N)=0.00037 *8*; α(O)=1.99×10^{-5} *22* B(M1)(W.u.)=0.142 *+9−14*

$^{90}_{42}Mo_{48}$-9

Adopted Levels, Gammas (continued)

γ(^{90}Mo) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
								Mult.: D(+Q) from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
								I_γ: from (^{40}Ca,α4pγ). Other: 15 *4* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ).
7515.01	17$^-$	768.89 *10*	36.0 *15*	6746.10	16$^+$	E1	5.61×10^{-4}	α(K)=0.000495 *7*; α(L)=5.49×10^{-5} *8*; α(M)=9.77×10^{-6} *14*; α(N)=1.486×10^{-6} *21*; α(O)=8.41×10^{-8} *12*
								B(E1)(W.u.)=2.33×10^{-5} *13*
								Mult.: D from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=yes from level scheme.
								I_γ: weighted average of 33.1 *23* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), 38 *3* from (^{28}Si,2p2nγ) and 36.8 *15* from (^{40}Ca,α4pγ).
		872.0 *3*	100 *2*	6643.13	15$^-$	E2	1.07×10^{-3}	α(K)=0.000936 *14*; α(L)=0.0001070 *15*; α(M)=1.91×10^{-5} *3*; α(N)=2.90×10^{-6} *4*
								α(O)=1.602×10^{-7} *23*
								B(E2)(W.u.)=4.10 *18*
								Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
7629.61	(16)	458.70 *20*	≈100	7170.98	(16$^+$)			
		1481.40 *15*	35 *5*	6148.16	15$^+$	(D+Q)		
7682.4?	(18)	167.4[a] *3*	100[a]	7515.01	17$^-$	(D+Q)		
8066.77	17$^+$	437.20 *31*	12 *2*	7629.61	(16)			
		895.73 *8*	8.6 *13*	7170.98	(16$^+$)			
		1320.75 *11*	31 *11*	6746.10	16$^+$			I_γ: weighted average of 24 *3* from ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ) and 49 *5* from (^{40}Ca,α4pγ).
		1918.60 *20*	100 *4*	6148.16	15$^+$	E2	4.70×10^{-4}	α(K)=0.000179 *3*; α(L)=1.98×10^{-5} *3*; α(M)=3.52×10^{-6} *5*; α(N)=5.38×10^{-7} *8*; α(O)=3.08×10^{-8} *5*
								B(E2)(W.u.)=1.00 *+11−9*
								Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
8123.55	(18$^-$)	608.54 *9*	100	7515.01	17$^-$	D+Q	0.00261 *15*	
8281.85	(17$^+$)	2133.70 *20*	100	6148.16	15$^+$			
8525.30	18$^+$	458.59 *9*	100 *17*	8066.77	17$^+$	M1+E2	0.0055 *7*	α(K)=0.0048 *6*; α(L)=0.00056 *9*; α(M)=0.000101 *16*; α(N)=1.52×10^{-5} *23*; α(O)=8.2×10^{-7} *9*
								Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		1779.20 *17*	16.7 *22*	6746.10	16$^+$	E2	4.35×10^{-4}	α(K)=0.000206 *3*; α(L)=2.28×10^{-5} *4*; α(M)=4.07×10^{-6} *6*; α(N)=6.20×10^{-7} *9*; α(O)=3.55×10^{-8} *5*
								B(E2)(W.u.)=1.18 *+31−22*
								Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
								I_γ: other: 48 *4* from (^{40}Ca,α4pγ).
8616.84	(17$^+$)	335.00 *15*	100 *16*	8281.85	(17$^+$)			
		1446.0 *3*	40 *6*	7170.98	(16$^+$)			

$^{90}_{42}Mo_{48}$-10

Adopted Levels, Gammas (continued)

γ(^{90}Mo) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
8616.84	(17$^+$)	1870.70 *15*	100 *16*	6746.10	16$^+$			
		2468.55 *19*	48 *6*	6148.16	15$^+$			
8678.44	(19$^-$)	554.90 *20*	100	8123.55	(18$^-$)	D		
9079.18	(18$^-$)	1564.10 *20*	<63	7515.01	17$^-$			
		1693.60 *10*	100 *25*	7385.59	16$^-$			
9136.60	(18$^+$)	519.70 *30*	100 *15*	8616.84	(17$^+$)	(M1+E2)	0.0039 *4*	α(K)=0.0034 *3*; α(L)=0.00040 *5*; α(M)=7.1×10^{-5} *9*; α(N)=1.07×10^{-5} *12*; α(O)=5.8×10^{-7} *4* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		2390.46 *7*	35 *8*	6746.10	16$^+$	(E2)[@]	6.32×10^{-4}	α(K)=0.0001206 *17*; α(L)=1.324×10^{-5} *19*; α(M)=2.36×10^{-6} *4*; α(N)=3.60×10^{-7} *5*; α(O)=2.07×10^{-8} *3*
9319.01	(19$^-$)	239.83 *9*	15 *4*	9079.18	(18$^-$)			
		640.60 *20*	11 *2*	8678.44	(19$^-$)			
		1195.45 *10*	13 *4*	8123.55	(18$^-$)	(M1+E2)	5.41×10^{-4} *16*	α(K)=0.000471 *15*; α(L)=5.26×10^{-5} *14*; α(M)=9.38×10^{-6} *25*; α(N)=1.43×10^{-6} *4*; α(O)=8.1×10^{-8} *3* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		1803.97 *11*	100 *24*	7515.01	17$^-$	(E2)[@]	4.41×10^{-4}	α(K)=0.000201 *3*; α(L)=2.22×10^{-5} *4*; α(M)=3.96×10^{-6} *6*; α(N)=6.04×10^{-7} *9*; α(O)=3.46×10^{-8} *5*
9443.90	(19$^+$)	918.59 *7*	100 *15*	8525.30	18$^+$	(M1+E2)	9.53×10^{-4} *19*	α(K)=0.000839 *17*; α(L)=9.46×10^{-5} *14*; α(M)=1.689×10^{-5} *25*; α(N)=2.57×10^{-6} *4*; α(O)=1.45×10^{-7} *4* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		1377.00 *20*	2.4 *9*	8066.77	17$^+$			
9739.38	(19$^+$)	602.77 *10*	100 *4*	9136.60	(18$^+$)	(M1+E2)	0.00263 *15*	α(K)=0.00231 *13*; α(L)=0.000267 *20*; α(M)=4.8×10^{-5} *4*; α(N)=7.2×10^{-6} *5*; α(O)=3.98×10^{-7} *15* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		1214.10 *10*	23 *3*	8525.30	18$^+$			
		1672.52 *14*	25 *3*	8066.77	17$^+$	(E2)[@]	4.17×10^{-4}	α(K)=0.000232 *4*; α(L)=2.57×10^{-5} *4*; α(M)=4.59×10^{-6} *7*; α(N)=6.99×10^{-7} *10*; α(O)=3.99×10^{-8} *6*
9787.96	(20$^+$)	344.00 *12*	100 *15*	9443.90	(19$^+$)	(M1+E2)	0.012 *3*	α(K)=0.0109 *25*; α(L)=0.00132 *36*; α(M)=2.36×10^{-4} *64*; α(N)=3.54×10^{-5} *93*; α(O)=1.8×10^{-6} *4* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		1262.70 *10*	42 *6*	8525.30	18$^+$	(E2)[@]	4.82×10^{-4}	α(K)=0.000408 *6*; α(L)=4.57×10^{-5} *7*; α(M)=8.15×10^{-6} *12*; α(N)=1.240×10^{-6} *18*; α(O)=7.01×10^{-8} *10*
9995.04	(20$^-$)	676.03 *9*	100 *23*	9319.01	(19$^-$)	(M1+E2)	0.00197 *7*	α(K)=0.00173 *6*; α(L)=0.000198 *10*; α(M)=3.54×10^{-5} *17*; α(N)=5.38×10^{-6} *23*; α(O)=2.99×10^{-7} *6* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.

$^{90}_{42}Mo_{48}$-11

Adopted Levels, Gammas (continued)

γ(^{90}Mo) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
9995.04	(20$^-$)	1871.6 *5*	19 *6*	8123.55	(18$^-$)				
10235.14	20$^+$	495.71 *11*	100 *14*	9739.38	(19$^+$)	M1(+E2)	0.14 *23*	0.00396 *11*	α(K)=0.00348 *10*; α(L)=0.000396 *13*; α(M)=7.07×10^{-5} *24*; α(N)=1.08×10^{-5} *4*; α(O)=6.11×10^{-7} *14* B(M1)(W.u.)=0.43 *+15−13*; B(E2)(W.u.)=4×10^{1} *+26−3* Mult.: D(+Q) from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		1709.86 *11*	96 *13*	8525.30	18$^+$	E2		4.23×10^{-4}	α(K)=0.000223 *4*; α(L)=2.47×10^{-5} *4*; α(M)=4.39×10^{-6} *7*; α(N)=6.70×10^{-7} *10*; α(O)=3.83×10^{-8} *6* B(E2)(W.u.)=3.8 *+15−9* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded by comparison to RUL.
10477.36	(20$^+$)	738.00 *20*	70 *30*	9739.38	(19$^+$)				
		1952.00 *20*	100 *13*	8525.30	18$^+$				
10537.91	(21)	542.9 *2*	≤109	9995.04	(20$^-$)	D			
		1859.45 *15*	100 *22*	8678.44	(19$^-$)				
10855.61	21$^+$	378.25 *8*	6.9 *13*	10477.36	(20$^+$)				
		620.47 *4*	100 *14*	10235.14	20$^+$	M1+E2	0.16 *9*	0.00234	α(K)=0.00206 *3*; α(L)=0.000232 *4*; α(M)=4.14×10^{-5} *7*; α(N)=6.32×10^{-6} *10*; α(O)=3.60×10^{-7} *5* B(M1)(W.u.)=0.093 *+16−14*; B(E2)(W.u.)=7 *+10−5* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), E1+M2 excluded from comparison to RUL.
11135.76	22$^+$	280.15 *3*	100	10855.61	21$^+$	M1+E2	0.12 *+8−6*	0.0162 *5*	α(K)=0.0143 *4*; α(L)=0.00165 *5*; α(M)=0.000295 *9*; α(N)=4.48×10^{-5} *13*; α(O)=2.51×10^{-6} *6* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), E1+M2 excluded from comparison to RUL.
11269.3	(21)	2590.0[&] *10*	100[&]	8678.44	(19$^-$)				
11577.07	(22$^+$)	1789.12 *20*	100	9787.96	(20$^+$)	E2		4.37×10^{-4}	α(K)=0.000204 *3*; α(L)=2.26×10^{-5} *4*; α(M)=4.03×10^{-6} *6*; α(N)=6.14×10^{-7} *9*; α(O)=3.51×10^{-8} *5* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded from comparison to RUL.
11735.5		879.9[&] *5*	100[&]	10855.61	21$^+$	&			
12016.61	23$^+$	439.54 *8*	2.9 *3*	11577.07	(22$^+$)				I_γ: other: 16 *3* in (^{40}Ca,α4pγ).

$^{90}_{42}Mo_{48}$-12

Adopted Levels, Gammas (continued)

γ(^{90}Mo) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	α	Comments
12016.61	23$^+$	880.80 *19*	100 *14*	11135.76	22$^+$	M1+E2	1.05×10^{-3} *2*	α(K)=0.000923 *16*; α(L)=0.0001043 *15*; α(M)=1.86×10^{-5} *3*; α(N)=2.83×10^{-6} *4*; α(O)=1.60×10^{-7} *4* Mult.: D+Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), Δπ=no from level scheme.
		1161.00 *20*	13 *3*	10855.61	21$^+$	E2	5.58×10^{-4}	α(K)=0.000488 *7*; α(L)=5.49×10^{-5} *8*; α(M)=9.79×10^{-6} *14*; α(N)=1.488×10^{-6} *21*; α(O)=8.38×10^{-8} *12* Mult.: Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), M2 excluded from comparison to RUL.
12257.7		1719.8& *10*	100&	10537.91	(21)	&		
12383.6	(23)	1113.5& *10*	49& *7*	11269.3	(21)	&		
		1845.68 *10*	100	10537.91	(21)	(E2)@	4.50×10^{-4}	α(K)=0.000193 *3*; α(L)=2.13×10^{-5} *3*; α(M)=3.79×10^{-6} *6*; α(N)=5.78×10^{-7} *8*; α(O)=3.31×10^{-8} *5*
14279.8		2263.2& *10*	100&	12016.61	23$^+$	&		
14412.1		2028.5& *10*	100&	12383.6	(23)	&		
14486.6		2470.0& *10*	100&	12016.61	23$^+$	&		

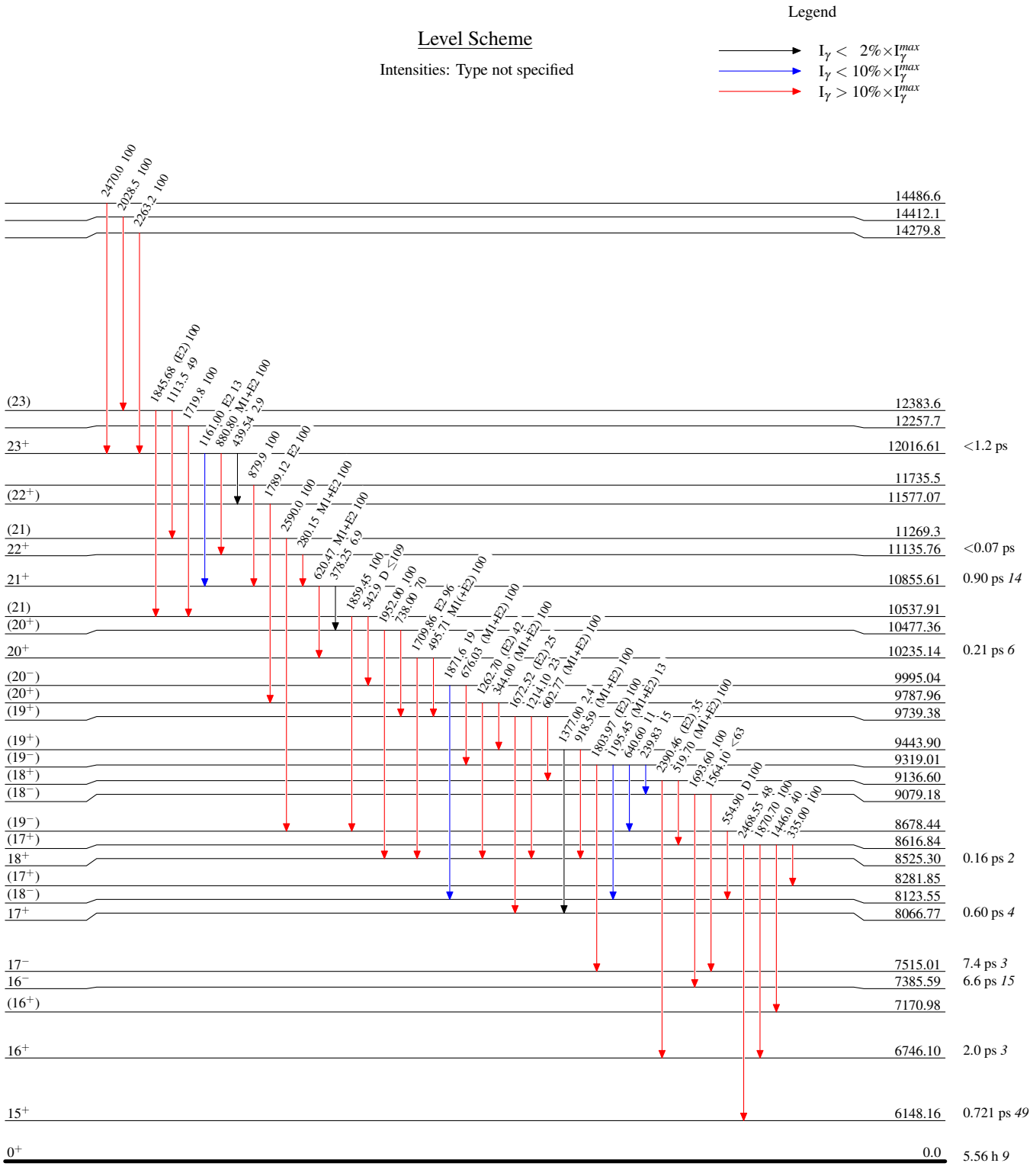
† From ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), except where noted.
‡ From γ(θ) and DCO ratios in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl, 3pγ), except where noted.
# From ^{90}Tc ε decay (50.7 s).
@ Stretched Q from R(DCO) in ^{58}Ni(^{36}Ar,4pγ),(^{35}Cl,3pγ), assumed E2.
& From ^{58}Ni(^{40}Ca,α4pγ).
a From ^{66}Zn(^{28}Si,2p2nγ).

$^{90}_{42}Mo_{48}$-13

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

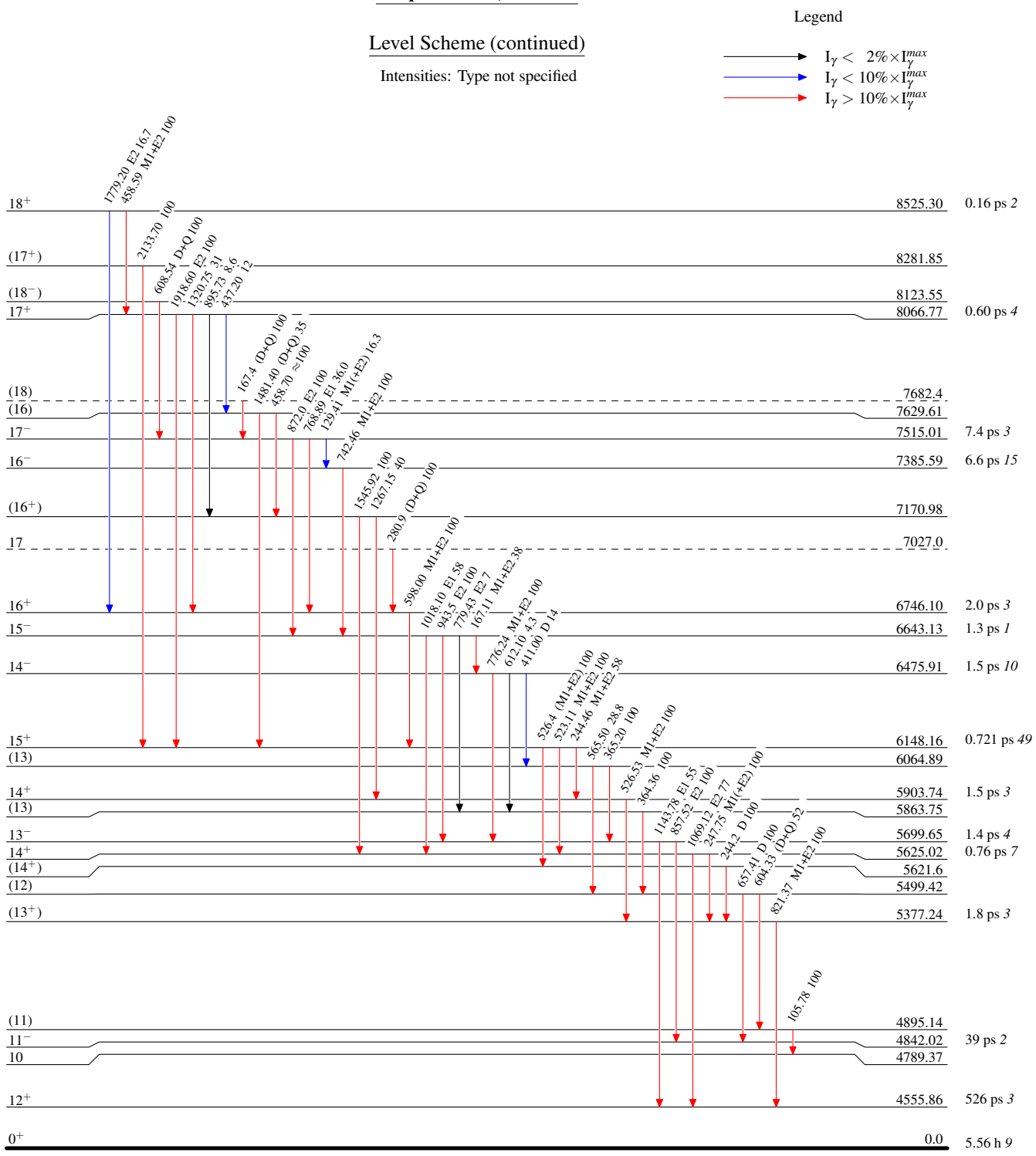


$^{90}_{42}Mo_{48}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

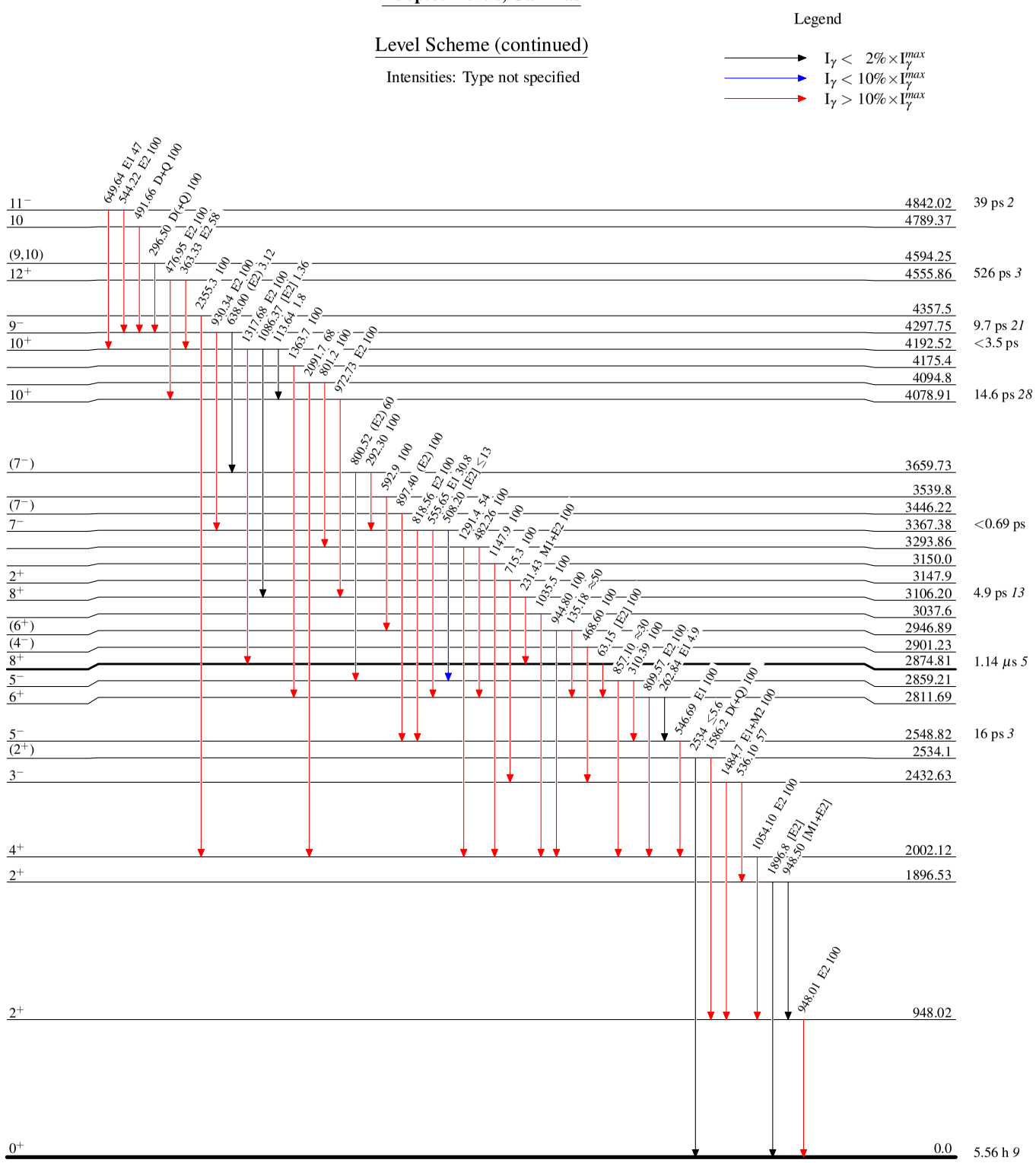


$^{90}_{42}Mo_{48}$

Adopted Levels, Gammas

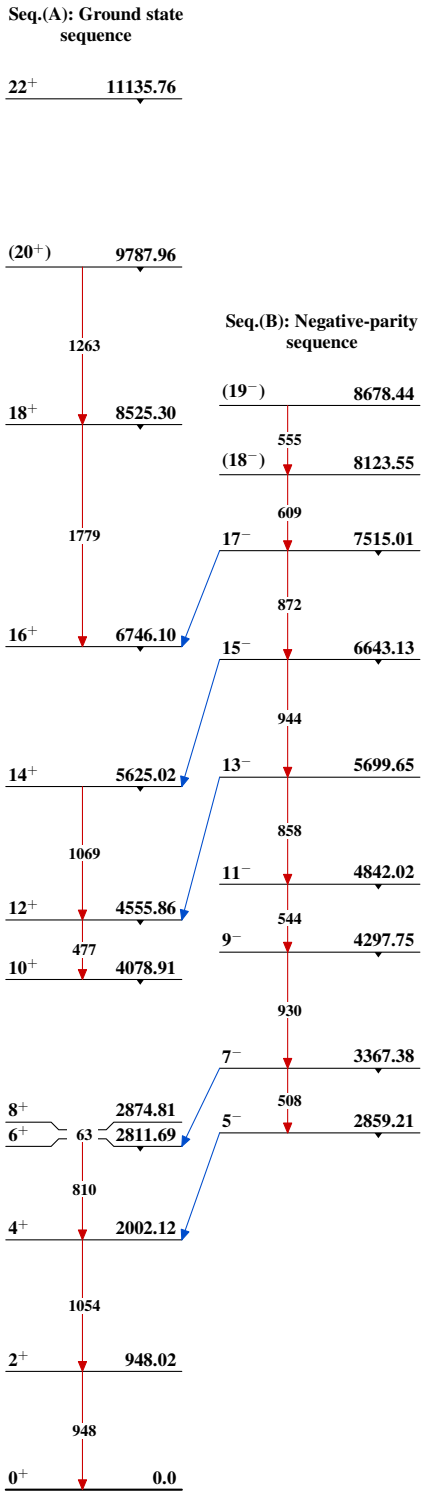
Level Scheme (continued)

Intensities: Type not specified



$^{90}_{42}Mo_{48}$

Adopted Levels, Gammas



$^{90}_{42}Mo_{48}$