Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 195,368 (2024)	1-Dec-2023

Q(β^-)=−7052 *10*; S(n)=7946 *14*; S(p)=3214 *10*; Q(α)=5402 *14* 2021Wa16

^{191}Pb Levels

The adopted level scheme follows mostly the one proposed in 1998Fo02, and is based on Eγ, Iγ, $\gamma\gamma$ and $\gamma\gamma\gamma$ coincidences, and DCO (directional correlation) ratios. Other important contributions are the half-life and conversion coefficient measurements from 1999La06. While there is reasonable agreement between 1999La06 and 1998Fo02 about the band based on the 13/2$^+$ isomeric state, there are significant differences for the 15/2$^+$ band.

Cross Reference (XREF) Flags

A	^{191}Bi ε decay (12.4 s)	D	^{173}Yb(^{24}Mg,6nγ)
B	^{195}Po α decay (4.64 s)	E	^{180}W(^{16}O,5nγ)
C	^{195}Po α decay (1.92 s)		

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	3/2$^{(-)}$	1.33 min *8*	AB	%ε+%β^+=99.987 *5*; %α=0.013 *5* RMS charge radius: 5.4217 fm *26* (2004An14). J$^\pi$: From α decay hindrance factor of 2.4 *11* to the 3/2$^{(-)}$ g.s. of ^{187}Hg using the r$_0$(^{187}Hg)=1.4964 *71*, obtained from the r$_0$ of neighboring even-even isotopes of ^{187}Hg (2020Si16). Systematics of g.s. J$^\pi$ in ^{193}Pb, ^{195}Pb, ^{197}Pb, and ^{199}Pb, the low-spin isomer is expected to be the ground state. %α: Branching estimated by authors of 1974Ho26. T$_{1/2}$: From 1974Ho26 (K x-ray(t)). Other value: 1.3 min *3* (1974Le02).
55[#] *12*	(13/2$^+$)[‡]	2.18 min *8*	A CDE	%ε+%β^+=100; %α≈0.02 μ=−1.167 *7*; Q=+0.085 *5* Additional information 1. Isotope shift: δ<r^2> =−0.835 fm^2 *10*, relative to ^{208}Pb (1991Du07). E(level): From 2017Al34. Labeled as 0.0+x in the previous evaluation, (2007Va21). From mass excess measurements, x=55 keV *12* was deduced in 2017Al34. In 2021Ko07 (NUBASE): 58 keV *10*. J$^\pi$: From systematics and HF ~2.6 of the 6700α from the (13/2$^+$) parent state in ^{195}Po α decay (1.92 s). T$_{1/2}$: From 1981Mi11 (from several γ(t)). Other value: 2.03 min (1975UnZZ). %α from extrapolation of log E(α) vs log T$_{1/2}$(α) for 13/2$^+$ state in ^{187}Pb with slope chosen from that for adjacent sets of nuclides (1995Br38). μ: From 2019StZV, 1991Du07 (Collinear fast beam laser spectroscopy). Q: From 2016St14, 1991Du07 (Collinear fast beam laser spectroscopy (no Sternheimer correction)).
214.7 *5*	(5/2$^-$)		AB	J$^\pi$: 5/2$^-$ or 7/2$^-$, from population in the ^{195}Po α Decay (4.64 s) J$^\pi$=3/2$^{(-)}$ and ^{191}Bi ε Decay (12.4 s) J$^\pi$=(9/2$^-$) along with the hindrance factor of α decay. J$^\pi$=5/2$^-$ is proposed based on the systematics of the low-excitation energy levels in the neighboring odd-A Pb isotopes.
597.3 *5*	3/2$^{(-)}$		B	E(level): from energy reported in ^{195}Po α decay (4.64 s) dataset for the γ ray to the (3/2$^-$) g.s. J$^\pi$: Based on the E0 component of 597.2γ to 3/2$^{(-)}$ and the α decay hindrance factor of 2 from (3/2$^-$) (^{195}Po α decay (4.64 s)).
641.7 *11*	(3/2$^-$)		B	J$^\pi$: The hindrance factor of 12 from (3/2$^-$) state of ^{191}Po α decay is higher, yet expected (3/2$^-$) to be a likely spin assignment.

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Adopted Levels, Gammas (continued)

^{191}Pb Levels (continued)

E(level)[†]	J$^{\pi}$	T$_{1/2}$	XREF	Comments
724.6 *5*	(13/2$^+$)		A C	E(level): From ^{195}Po 1.92 s α decay dataset, based on the γ-ray energy difference to the (13/2$^+$) isomeric level. J$^{\pi}$: From unhindered α decay of the ^{195}Po (1.92 s) isomeric (13/2$^+$) state, and 669.6γ E0 component to (13/2$^+$).
873.69[#] *5*	(17/2$^+$)[‡]		DE	J$^{\pi}$: Stretched Q 818.69γ to (13/2$^+$). Possible configuration: ν (i$_{13/2}$)$^{-1}$⊗(2$^+_1$,^{192}Pb).
948.49[b] *9*	(15/2$^+$)[‡]		DE	J$^{\pi}$: 893.49γ D to (13/2$^+$).
1172.5 *6*	(15/2$^+$,17/2$^+$)[‡]		D	
1261.9 *8*	(15/2$^+$,17/2$^+$)[‡]		D	
1356.50[#] *9*	(21/2$^+$)[‡]		DE	J$^{\pi}$: 482.83γ E2 to (17/2$^+$).
1425.01[b] *9*	(19/2$^+$)[‡]		DE	J$^{\pi}$: 476.52γ E2 to (15/2$^+$). Suggested configuration: ν (i$_{13/2}$)$^{-1}$⊗(4$^+_1$,^{192}Pb).
1486.7 *4*	(17/2$^-$)		D	J$^{\pi}$: 538.0γ D to (15/2$^+$), 612.0γ D to (17/2$^+$), and a non-M1 character for 224.7γ was expected for intensity balance at 1206.9+X (^{24}Mg,6nγ) (1998Fo02).
1695.77 *11*	(21/2$^-$)[‡]		DE	J$^{\pi}$: 270.78γ (E1) to (19/2$^+$), 339.25γ (E1) to (21/2$^+$).
1742.7 *6*			D	
1918.79[#] *12*	(25/2$^+$)[‡]		DE	J$^{\pi}$: 562.38γ E2 to (21/2$^+$).
2005.7[b] *4*	(23/2$^+$)[‡]		D	E(level),J$^{\pi}$: Third level in the (15/2$^+$) band according to 1998Fo02 in ^{173}Yb(^{24}Mg,6nγ). Authors of 1999La06 did not report the 580 and 649 keV transitions deexciting this level in (^{16}O,5nγ), presumably due to their low intensity, propose instead the 2081 keV level as member of the 15/2$^+$ band.
2137.69 *13*	(23/2$^+$)		DE	E(level): This level is proposed as the third member in the (15/2$^+$) based band (^{16}O,5nγ), in disagreement with data in (^{24}Mg,6nγ). J$^{\pi}$: 219.21γ M1 to (25/2$^+$). Other: J^{π}=21/2$^+$ on the rather weak basis of intensity balances in 1998Fo02 (^{24}Mg,6nγ).
2161.8 *4*	(25/2$^+$)		DE	J$^{\pi}$: γ to (21/2$^+$) and (23/2$^+$) and (25/2$^+$) states. E(level): In 1999La06 (^{16}O,5nγ) the level was quoted from 1998Fo02 (^{24}Mg,6nγ), including 24.3 and 243.0γ transitions.
2194.0 *10*			D	
2272.67 *12*	(25/2$^-$)[‡]		DE	J$^{\pi}$: 576.90γ (E2) γ to (21/2$^-$).
2346.5[a] *5*	(27/2$^+$)		DE	E(level): This is the lowest member of the (27/2$^+$)-based Dipole Band 2 proposed in 1998Fo02 (^{24}Mg,6nγ). J$^{\pi}$: 184.78γ M1 to (25/2$^+$).
2473.07 *16*	(29/2$^-$)	15 ns *4*	DE	J$^{\pi}$: 200.40γ E2 to (25/2$^-$). T$_{1/2}$: From 1999La06 (^{16}O,5nγ). Other: 6.5 ns *5* (2006IoZY).
2495.7 *5*	(27/2$^-$,29/2$^-$)	17 ns *4*	DE	J$^{\pi}$: 149.19γ E1 to (27/2$^+$). T$_{1/2}$: From 1999La06 (^{16}O,5nγ). Other: 7.5 ns *5* (2006IoZY).
2550.49[#] *20*	(29/2$^+$)[‡]		DE	J$^{\pi}$: 631.70γ Q to (25/2$^+$).
2568[&] *3*	(29/2$^-$)		D	This is the lowest member of the (29/2$^-$) based Dipole Band 1 proposed in 1998Fo02 (^{24}Mg,6nγ). E(level): The energy for this Dipole Band 1 band head, relative to the 13/2$^+$ isomeric level, is determined by that of an unobserved ≈72 keV transition. J$^{\pi}$: From systematics of similar dipole bands in neighboring Pb nuclei (^{24}Mg,6nγ) 1998Fo02.
2583.6 *8*			D	
2657.34[#] *25*	(33/2$^+$)	0.15 μs *+10−5*	E	E(level): Level proposed only in 1999La06 (^{16}O,5nγ) as an

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Adopted Levels, Gammas (continued)

^{191}Pb Levels (continued)

E(level)[†]	J^{π}	XREF	Comments
			additional member of the (13/2$^+$) band. J^{π}: 106.85γ E2 to (29/2$^+$). $T_{1/2}$: From 1999La06 (^{16}O,5nγ). Other: 0.33 μs *5* (2006IoZY).
2665.0[b] *9*	(27/2$^+$)[‡]	D	J^{π}: 659.3γ to (23/2$^+$) transition in sequence.
2683.7[a] *9*	(29/2$^+$)	D	J^{π}: 337.2γ to (27/2$^+$) in-band transition.
2802[&] *3*	(31/2$^-$)	D	J^{π}: 234.0γ to (29/2$^-$) in-band transition.
2807.2 *15*		D	
2835.2 *7*		D	
3059.2[a] *12*	(31/2$^+$)	D	J^{π}: 375.5γ to (29/2$^+$) in-band transition.
3185[&] *3*	(33/2$^-$)	D	J^{π}: 383.6γ to (31/2$^-$) in-band transition.
3190.0 *9*	(33/2$^+$)	D	J^{π}: 639.5γ to (29/2$^+$).
3241.7 *9*		D	
3274.7 *7*		D	
3318.4 *12*		D	
3381.4 *14*		D	
3429.0 *11*		D	
3469.1[a] *16*	(33/2$^+$)	D	J^{π}: 409.9γ to (31/2$^+$) in-band transition.
3595[&] *3*	(35/2$^-$)	D	J^{π}: 409.3γ to (33/2$^-$) in-band transition.
3615.8 *13*		D	
3858.5 *12*		D	
3873.2 *10*		D	
4021[&] *3*	(37/2$^-$)	D	J^{π}: 426.1γ to (35/2$^-$) in-band transition.
4088.9 *13*		D	
4367[&] *3*	(39/2$^-$)	D	J^{π}: 346.7γ to (35/2$^-$) in-band transition.
4462.8 *16*		D	
4486.8 *14*		D	
4682[&] *4*	(41/2$^-$)	D	J^{π}: 314.1γ to (39/2$^-$) in-band transition.
4920[&] *4*	(43/2$^-$)	D	J^{π}: 238.6γ to (41/2$^-$) in-band transition.
5197[&] *4*	(45/2$^-$)	D	J^{π}: 277.2γ to (45/2$^-$) in-band transition.

[†] From a least-squares adjustment to the γ-ray energies, except where oherwise noted. For total uncertainty for levels above 641.7 keV, propagate 12 keV in quadrature. These levels are based on the (13/2$^+$) isomeric state at 55 keV *12*.

[‡] The J^{π} value is interpreted by 1998Fo02 (^{24}Mg,6nγ) as a coupling of the $i_{13/2}$ neutron hole to states in the ^{192}Pb core.

[#] Band(A): Band 1 “Yrast quasiband” Band proposed in 1998Fo02 (^{24}Mg,6nγ), based on the 13/2$^+$ isomeric state, comprising a cascade of stretched E2 transitions. Built on the basis of DCO ratios, coincidence relationships and transition intensity data.

[@] Band(B): Band 2 (Second Yrast quasiband?) Band based on the 15/2$^+$ level, comprising a cascade of stretched E2 transitions (1998Fo02). Coincidence and intensity data support.

[&] Band(C): Dipole Band 1 Negative-parity band based on the (29/2$^-$) state, built on a cascade of (M1) transitions, supported by coincidence and intensity arguments (1998Fo02). Possible magnetic rotational (ΔJ=1) band. Suggested configuration=$\pi[s^{-2}_{1/2}h_{9/2}i_{13/2}]_{11^-}$ $\nu[i^{-1}_{13/2}]_{13/2^+}$ for the lower part of the band and $\pi[s^{-2}_{1/2}h_{9/2}i_{13/2}]_{11^-}$ $\nu[i^{-3}_{13/2}]_{33/2^+}$ above the backbend (1998Fo02).

[a] Band(D): Dipole Band 2 (?) Tentative positive-parity band above the (27/2$^+$) state, built on a cascade of (M1) transitions (1998Fo02). Support is provided by the existence of a similar sequence in ^{193}Pb, also based on a (27/2$^+$) level. Possible magnetic rotational band (?). Suggested configuration=$\pi[s^{-2}_{1/2}h^{2}_{9/2}]_{8^+}$ $\nu[i^{-1}_{13/2}]_{13/2^+}$ or $\pi[s^{-1}_{1/2}i_{13/2}]_{7^+}$ $\nu[i^{-1}_{13/2}]_{13/2^+}$ (1998Fo02).

[b] Seq.(E): second positive parity states based on 15/2$^+$, comprising a cascade of stretched Q (E2) transitions.

Adopted Levels, Gammas (continued)

$\gamma(^{191}Pb)$

E_i(level)	J^π_i	E_γ[†]	I_γ[c]	E_f	J^π_f	Mult.[d]	α[f]	Comments
214.7	$(5/2^-)$	214.8[‡] *5*		0.0	$3/2^{(-)}$			
597.3	$3/2^{(-)}$	383[‡] *1*	9[‡] *2*	214.7	$(5/2^-)$			
		597.2[‡] *5*	100[‡]	0.0	$3/2^{(-)}$	E0+M1+E2	0.6 *3*	Mult.: From measured total conversion coefficient ^{195}Po α Decay (4.64 s) (2002Va13). α: Measured value in 2010Co13 ^{195}Po α Decay (4.64 s).
641.7	$(3/2^-)$	427[‡] *1*	100	214.7	$(5/2^-)$			
724.6	$(13/2^+)$	669.6[‡] *5*	100	55	$(13/2^+)$	E0+M1+E2	0.8 *3*	Mult.: From measured conversion coefficient in ^{195}Po (1.92 s) α decay. α: Measured value in ^{195}Po (1.92 s) α decay.
873.69	$(17/2^+)$	818.69[@] *5*	100	55	$(13/2^+)$	Q[e]		E_γ: weighted average of 818.5 *2* from (^{24}Mg,6nγ) and 818.70 *5* from (^{16}O,5nγ). Mult.: Other: (E2) in (^{16}O,5nγ), but no conversion coefficient datum is available.
948.49	$(15/2^+)$	893.49 *10*	100	55	$(13/2^+)$	D[e]		E_γ: weighted average of 893.4 *4* from (^{24}Mg,6nγ) and 893.50 *10* from (^{16}O,5nγ). Mult.: Other: (M1) in (^{16}O,5nγ), but no conversion coefficient datum is available.
1172.5	$(15/2^+,17/2^+)$	1117.3 *8*	100	55	$(13/2^+)$			
1261.9	$(15/2^+,17/2^+)$	1206.7 *10*	100	55	$(13/2^+)$			
1356.50	$(21/2^+)$	482.83[@] *8*	100	873.69	$(17/2^+)$	E2	0.0320 *4*	α(K)=0.02237 *31*; α(L)=0.00724 *10*; α(M)=0.001804 *25* α(N)=0.000457 *6*; α(O)=8.61×10^{-5} *12*; α(P)=6.62×10^{-6} *9* E_γ: Weighted average of 482.5 *2* from (^{24}Mg,6nγ) and 482.85 *5* from (^{16}O,5nγ).
1425.01	$(19/2^+)$	476.52[&] *11*	100 *6*	948.49	$(15/2^+)$	E2	0.0330 *5*	α(K)=0.02300 *32*; α(L)=0.00755 *11*; α(M)=0.001882 *26* α(N)=0.000476 *7*; α(O)=8.98×10^{-5} *13*; α(P)=6.86×10^{-6} *10* E_γ: weighted average of 476.1 *4* from (^{24}Mg,6nγ) and 476.55 *10* from (^{16}O,5nγ).
		551.29 *15*	61 *6*	873.69	$(17/2^+)$	[M1]	0.0834 *12*	α(K)=0.0684 *10*; α(L)=0.01149 *16*; α(M)=0.00269 *4* α(N)=0.000682 *10*; α(O)=0.0001361 *19*; α(P)=1.459×10^{-5} *20* E_γ: weighted average of 551.2 *6* from (^{24}Mg,6nγ) and 551.30 *15* from (^{16}O,5nγ). I_γ: weighted average of 59 *6* from (^{24}Mg,6nγ) and 69 *13* from (^{16}O,5nγ). Mult.: Suggested (M1) in (^{16}O,5nγ) (1999La06), but no supporting data was provided.

$^{191}_{82}Pb_{109}$-4

γ(^{191}Pb) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[c]	E_f	J^π_f	Mult.[d]	α[f]	Comments
1486.7	(17/2⁻)	224.7 *10*	16 *4*	1261.9	(15/2⁺,17/2⁺)			
		314.0 *8*	50 *10*	1172.5	(15/2⁺,17/2⁺)			
		538.0 *8*	52 *10*	948.49	(15/2⁺)	D		
		612.9 *8*	100 *20*	873.69	(17/2⁺)	D[e]		
1695.77	(21/2⁻)	208.7 *6*	43 *4*	1486.7	(17/2⁻)			
		270.78[#] *10*	51 *6*	1425.01	(19/2⁺)	(E1)	0.0375 *5*	α(K)=0.0307 *4*; α(L)=0.00525 *7*; α(M)=0.001226 *17* α(N)=0.000309 *4*; α(O)=5.98×10^{-5} *8*; α(P)=5.47×10^{-6} *8* I_γ: weighted average of 49 *4* from (^{24}Mg,6nγ) and 66 *10* from (^{16}O,5nγ).
		339.25[#] *10*	100 *9*	1356.50	(21/2⁺)	(E1)	0.02227 *31*	α(K)=0.01828 *26*; α(L)=0.00305 *4*; α(M)=0.000712 *10* α(N)=0.0001794 *25*; α(O)=3.50×10^{-5} *5*; α(P)=3.29×10^{-6} *5*
1742.7		868.8 *8*	100	873.69	(17/2⁺)			
1918.79	(25/2⁺)	562.38[@] *10*	100	1356.50	(21/2⁺)	E2	0.02228 *31*	α(K)=0.01626 *23*; α(L)=0.00456 *6*; α(M)=0.001124 *16* α(N)=0.000285 *4*; α(O)=5.41×10^{-5} *8*; α(P)=4.43×10^{-6} *6* E_γ: weighted average of 562.1 *4* from (^{24}Mg,6nγ) and 562.40 *10* from (^{16}O,5nγ),
2005.7	(23/2⁺)	580.6[&] *4*	100 *9*	1425.01	(19/2⁺)	Q[e]		
		649.1 *8*	21 *4*	1356.50	(21/2⁺)			
2137.69	(23/2⁺)	131.6 *10*	<4.2	2005.7	(23/2⁺)			
		219.21 *18*	67 *7*	1918.79	(25/2⁺)	M1	1.014 *14*	α(K)=0.828 *12*; α(L)=0.1422 *20*; α(M)=0.0333 *5* α(N)=0.00847 *12*; α(O)=0.001688 *24*; α(P)=0.0001804 *26* E_γ: weighted average of 219.25 *15* from (^{16}O,5nγ) and 218.5 *6* from (^{24}Mg,6nγ). I_γ: Other: 95 *15* (^{16}O,5nγ).
		394.8 *8*	22 *4*	1742.7				
		712.56 *19*	52 *6*	1425.01	(19/2⁺)	[E2]	0.01323 *19*	α(K)=0.01012 *14*; α(L)=0.002364 *33*; α(M)=0.000574 *8* α(N)=0.0001453 *20*; α(O)=2.80×10^{-5} *4*; α(P)=2.484×10^{-6} *35* E_γ: weighted average of 212.60 *20* from (^{16}O,5nγ) and 212.2 *6* from (^{24}Mg,6nγ). I_γ: Other: 100 *30* (^{16}O,5nγ). Mult.: Suggested (E2) in 1999La06 (^{16}O,5nγ), but no supporting is available.
		781.08 *14*	100 *8*	1356.50	(21/2⁺)	D[e]		E_γ: weighted average of 781.10 *15* from (^{16}O,5nγ) and 780.9 *4* from (^{24}Mg,6nγ). I_γ: Other: 46 *10* (^{16}O,5nγ). Mult.: Other: (M1) in (^{16}O,5nγ), but no supporting data is available.
2161.8	(25/2⁺)	(≈24.3)		2137.69	(23/2⁺)			The existence of this unobserved γ transition is required by coincidence data in ^{173}Yb(^{24}Mg,6nγ) dataset (1998Fo02).

$^{191}_{82}$Pb$_{109}$-5

Adopted Levels, Gammas (continued)

γ(^{191}Pb) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[c]	E_f	J^π_f	Mult.[d]	α[f]	Comments
								Mult.: Considering J^π for the initial and final states in (^{24}Mg,6nγ) 1998Fo02, an E2 multipolarity, or higher, is expected for this γ ray. On the other hand, a M1 character is suggested in 1999La06 ^{180}W(^{16}O,5nγ), based on the ratio of reduced transition probabilities. E_γ: The energy is estimated from energy sum relations provided by the proposed level scheme in (^{24}Mg,6nγ) dataset (1998Fo02).
2161.8	(25/2$^+$)	156.0 *10*	<6.7	2005.7	(23/2$^+$)			
		243.0 *6*	100 *9*	1918.79	(25/2$^+$)	D[e]		
		805.2 *6*	73 *7*	1356.50	(21/2$^+$)			
2194.0		498.2 *10*	100	1695.77	(21/2$^-$)			
2272.67	(25/2$^-$)	576.90[#] *5*	100	1695.77	(21/2$^-$)	(E2)	0.02102 *29*	α(K)=0.01543 *22*; α(L)=0.00423 *6*; α(M)=0.001041 *15* α(N)=0.000264 *4*; α(O)=5.02×10^{-5} *7*; α(P)=4.15×10^{-6} *6*
2346.5	(27/2$^+$)	184.78 *15*	100	2161.8	(25/2$^+$)	M1	1.635 *23*	α(K)=1.334 *19*; α(L)=0.2298 *33*; α(M)=0.0539 *8* α(N)=0.01369 *19*; α(O)=0.00273 *4*; α(P)=0.000292 *4* E_γ: weighted average of 184.6 *4* from (^{24}Mg,6nγ) and 184.80 *15* from (^{16}O,5nγ).
2473.07	(29/2$^-$)	200.40[#] *10*	100	2272.67	(25/2$^-$)	E2	0.425 *6*	B(E2)(W.u.)=1.25 *+45−27* α(K)=0.1676 *24*; α(L)=0.1920 *27*; α(M)=0.0502 *7* α(N)=0.01266 *18*; α(O)=0.002290 *32*; α(P)=0.0001151 *16*
2495.7	(27/2$^-$,29/2$^-$)	(≈23.6)		2473.07	(29/2$^-$)			Unobserved transition. See discussion in the (^{24}Mg,6nγ) dataset.
		149.19 *5*	100	2346.5	(27/2$^+$)	E1	0.1614 *23*	B(E1)(W.u.)=3.1×10^{-6} *+10−6* α(K)=0.1300 *18*; α(L)=0.02402 *34*; α(M)=0.00564 *8* α(N)=0.001415 *20*; α(O)=0.000270 *4*; α(P)=2.245×10^{-5} *31* E_γ: weighted average of 148.8 *4* from (^{24}Mg,6nγ) and 149.20 *5* from (^{16}O,5nγ).
2550.49	(29/2$^+$)	631.70[#@] *15*	100	1918.79	(25/2$^+$)	Q[e]		α(K)=0.01286 *18*; α(L)=0.00328 *5*; α(M)=0.000802 *12*; α(N+..)=0.000245 *4* α(N)=0.000203 *3*; α(O)=3.89×10^{-5} *6*; α(P)=3.32×10^{-6} *5* Mult.: Other: Suggested (E2) in 1999La06 (^{16}O,5nγ), but no supporting is available.
2568	(29/2$^-$)	(72 *5*)		2495.7	(27/2$^-$,29/2$^-$)			Unobserved transition, expected from systematics (see (^{24}Mg,6nγ) dataset).
		(≈94.6)		2473.07	(29/2$^-$)			E_γ: The energy for this unobserved γ ray is estimated from energy sum relations provided by the proposed level scheme in (^{24}Mg,6nγ) (1998Fo02), and assuming that the energy value for the 72 keV γ ray is correct.
2583.6		664.8 *8*	100	1918.79	(25/2$^+$)			

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γ(^{191}Pb) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[c]	E_f	J^π_f	Mult.[d]	α[f]	Comments
2657.34	(33/2+)	106.85[#@] *15*	100	2550.49	(29/2+)	E2	4.77 *7*	B(E2)(W.u.)=0.72 *+37−27* α(K)=0.512 *7*; α(L)=3.17 *5*; α(M)=0.838 *13* α(N)=0.2114 *33*; α(O)=0.0377 *6*; α(P)=0.001504 *23* E_γ: Not reported in 1998Fo02 (^{24}Mg,6nγ).
2665.0	(27/2+)	659.3[&] *8*	100	2005.7	(23/2+)			
2683.7	(29/2+)	337.2[b] *8*	100	2346.5	(27/2+)			
2802	(31/2−)	234.0[a] *6*	100	2568	(29/2−)	D[e]		
2807.2		613.2 *10*	100	2194.0				
2835.2		562.4 *8*	100	2272.67	(25/2−)			
3059.2	(31/2+)	375.5[b] *8*	100	2683.7	(29/2+)			
3185	(33/2−)	383.6[a] *8*	100	2802	(31/2−)			
3190.0	(33/2+)	639.5 *8*	100	2550.49	(29/2+)			
3241.7		768.7 *10*	100	2473.07	(29/2−)			
3274.7		439.4 *10*	67 *17*	2835.2				
		801.7 *8*	100 *25*	2473.07	(29/2−)			
3318.4		653.4 *8*	100	2665.0	(27/2+)			
3381.4		716.4 *10*	100	2665.0	(27/2+)			
3429.0		878.5 *10*	100	2550.49	(29/2+)			
3469.1	(33/2+)	409.9[b] *10*	100	3059.2	(31/2+)			
3595	(35/2−)	409.3[a] *8*	100 *22*	3185	(33/2−)			
		792.9 *10*	22 *7*	2802	(31/2−)			
3615.8		425.8 *10*	100	3190.0	(33/2+)			
3858.5		583.8 *10*	100	3274.7				
3873.2		598.4 *10*	100 *29*	3274.7				
		631.5 *10*	<71	3241.7				
4021	(37/2−)	426.1[a] *5*	100 *16*	3595	(35/2−)			
		835.5 *10*	26 *11*	3185	(33/2−)			
4088.9		898.9 *10*	100	3190.0	(33/2+)			
4367	(39/2−)	346.7[a] *10*	100	4021	(37/2−)			
4462.8		604.3 *10*	100	3858.5				
4486.8		613.6 *10*	100	3873.2				
4682	(41/2−)	314.1[a] *10*	100	4367	(39/2−)			
4920	(43/2−)	238.6[a] *10*	100	4682	(41/2−)			
5197	(45/2−)	277.2[a] *10*	100	4920	(43/2−)			

† From (^{24}Mg,6nγ), except where otherwise noted.

‡ From ^{195}Po α Decay (4.64 s).

\# From (^{16}O,5nγ).

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Adopted Levels, Gammas (continued)

$\gamma(^{191}Pb)$ (continued)

[@] Transition connecting levels in Yrast Quasi Band 1.

[&] Transition connecting levels in Yrast Quasi Band 2.

[a] Transition connecting levels in Dipole Band 1.

[b] Transition connecting levels in Dipole Band 2.

[c] From (^{24}Mg,6nγ) (1998Fo02), except where otherwise noted.

[d] From (^{16}O,5nγ), based on the determined conversion coefficient, except where otherwise noted.

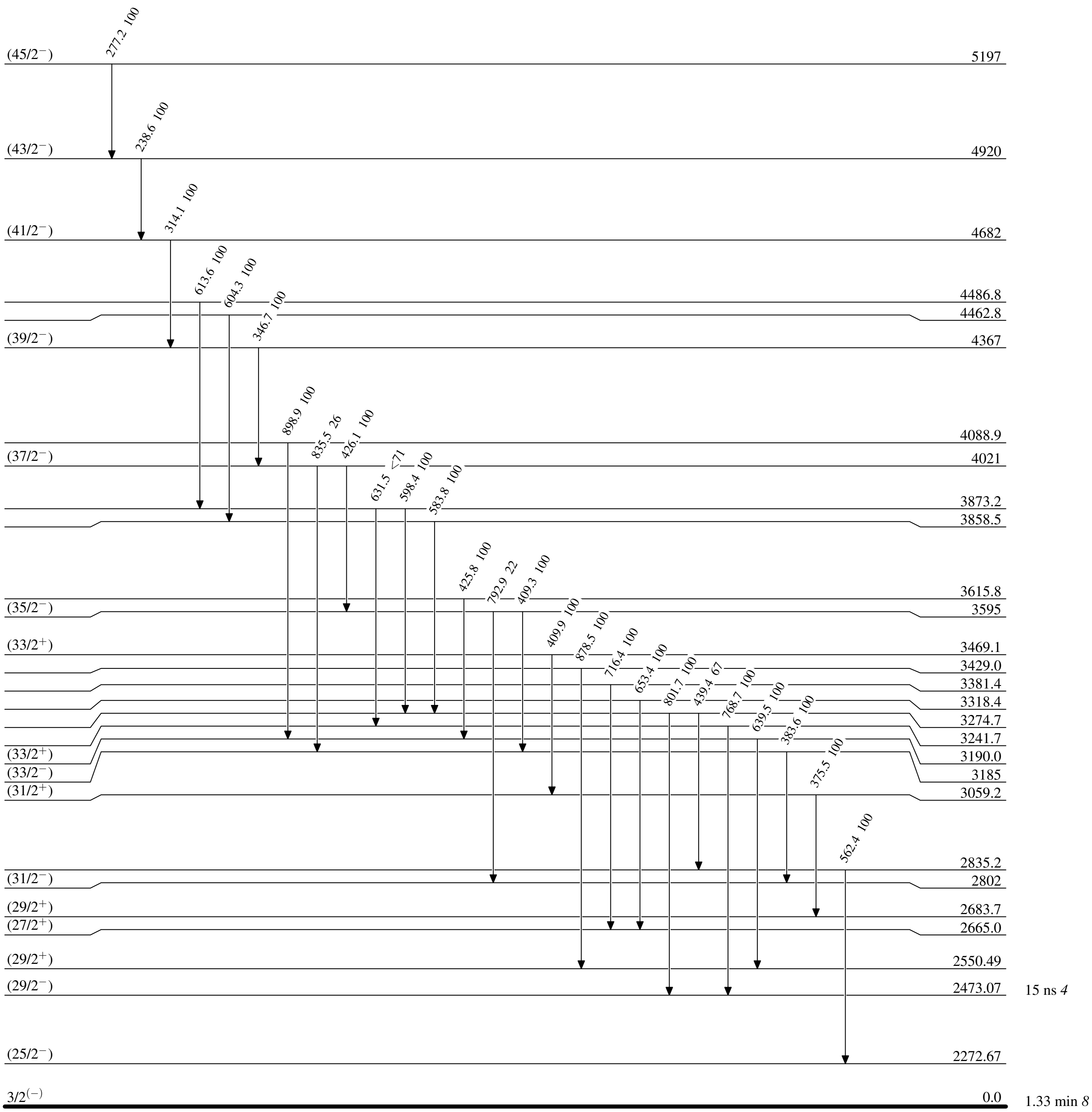
[e] From (^{24}Mg,6nγ), based on DCO ratio. D or Q is assigned by the evaluator, if only based on DCO ratio.

[f] Additional information 2.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



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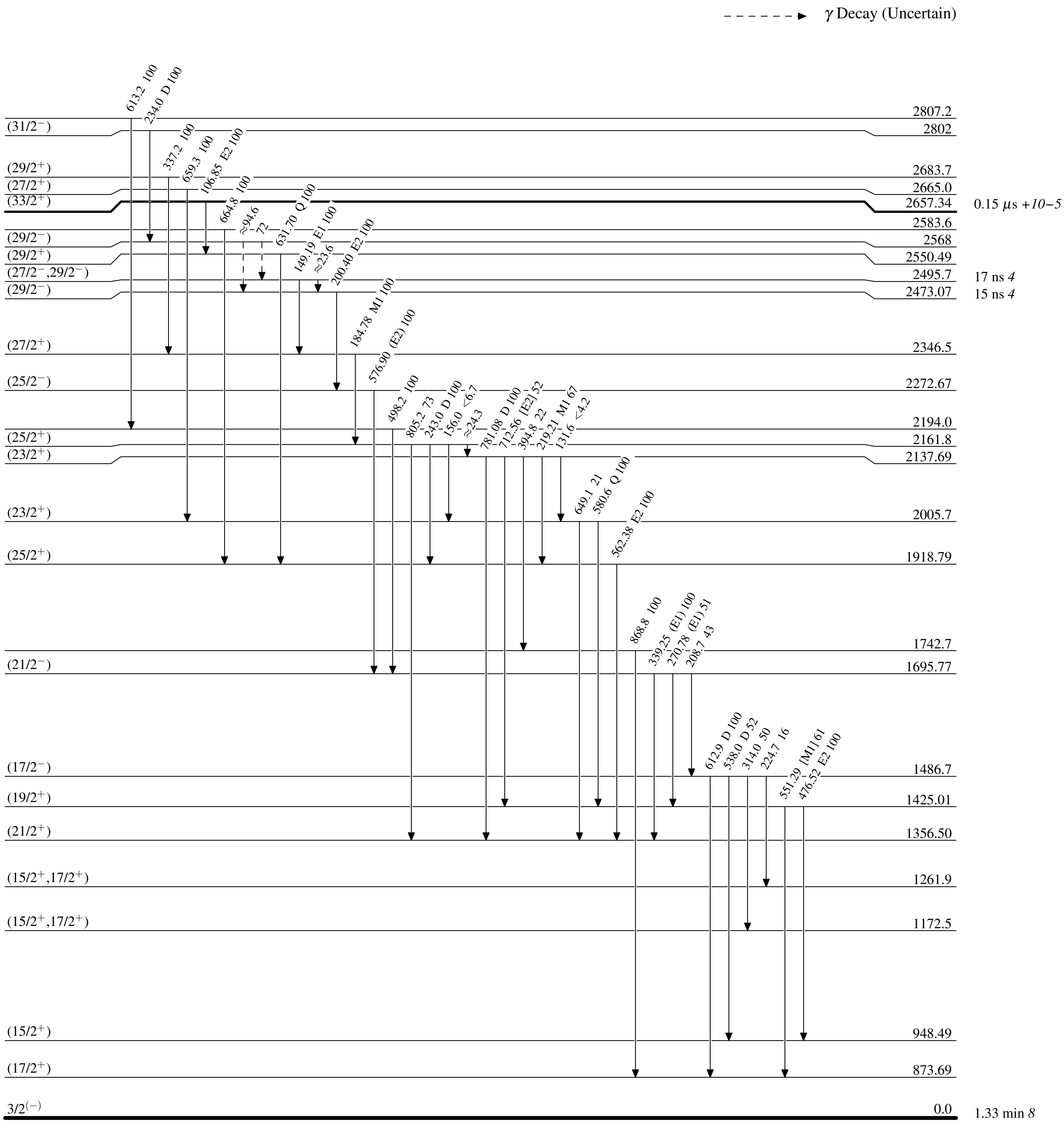
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend



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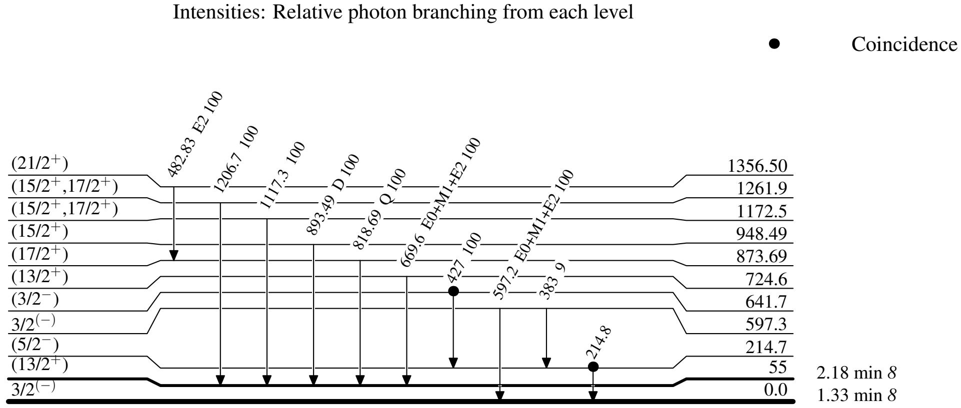
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



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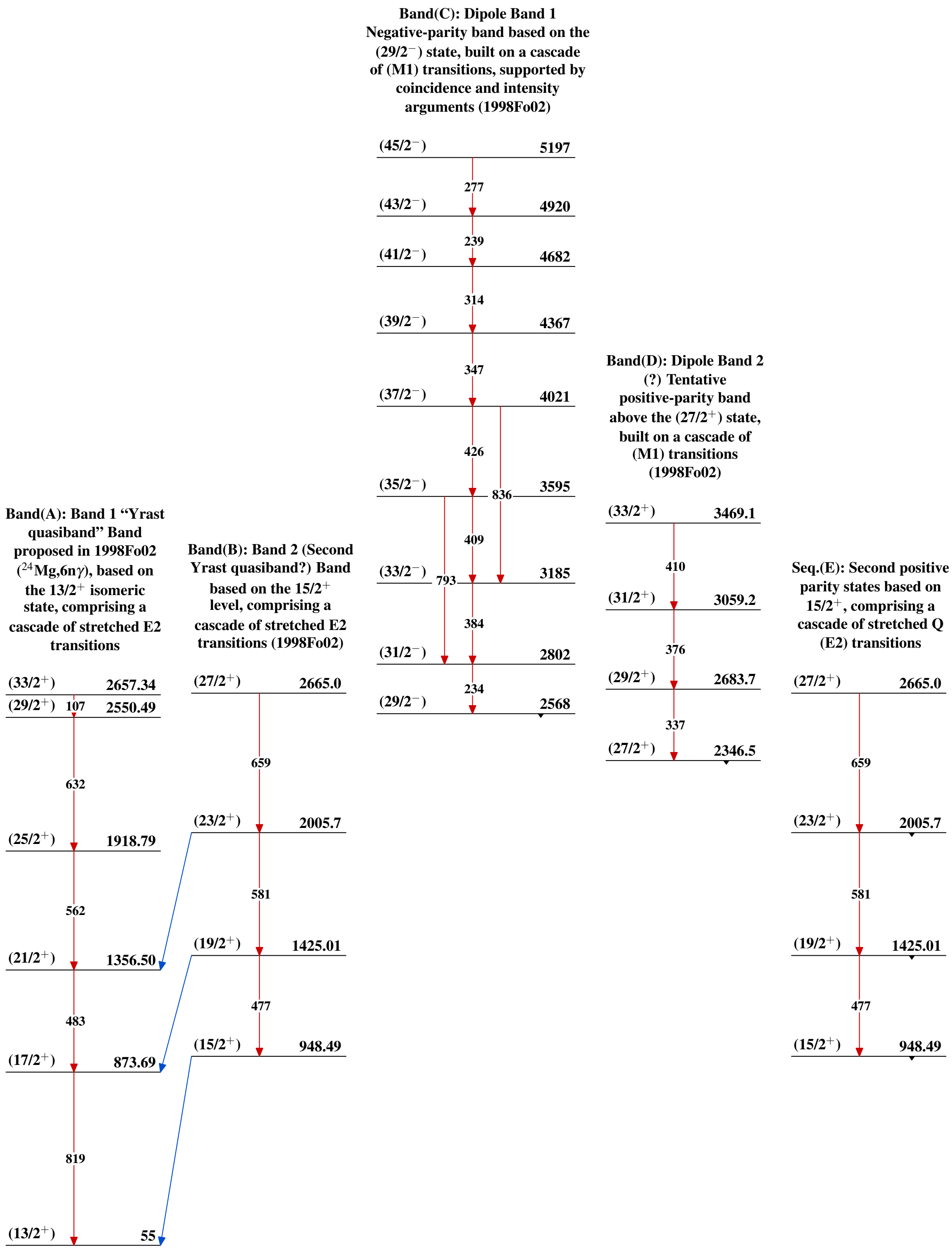
Adopted Levels, Gammas



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