

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, F. G. Kondev		NDS 124, 157 (2015)	1-Aug-2014

Q(β⁻)=-7037 13; S(n)=10181 11; S(p)=765 12; Q(α)=2957 12 2012Wa38

¹¹²I Levels

Cross Reference (XREF) Flags

A ⁵⁸Ni(⁵⁸Ni,3pnγ)

E(level) [†]	J ^π	T _{1/2}	XREF	Comments
0.0	(1 ⁺)	3.34 s 8	A	%ε+%β ⁺ ≈100; %α≈0.0012; %εp=0.88 10; %εα=0.104 12 %α: from 1978Ro19. %εp,%εα: from %εp/%α=735 80 and %εp/%εα=8.5 2 in 1985Ti02. J ^π : from the predicted π1/2 ⁺ [420](d _{5/2}) and ν3/2 ⁺ [422](g _{7/2}) orbitals near the Fermi surface in 1997Mo25. Note, that J ^π =1/2 ⁺ and configuration=π1/2 ⁺ [420](d _{5/2}) in ¹⁰⁹ I. Assignment is tentative. T _{1/2} : weighted average of 3.42 s 11 from β+p(t) in 1985Ti02, 2.80 s 25 from β+α(t) in 1985Ti02, 3.3 s 2 from K _α (t) in 1977Ki11, 3.3 s 3 from 688.9γ(t) and 786.9γ(t) in 1977Ki11, and 3.7 s 3 from p(t) in 1977Ki11. configuration: probably π1/2 ⁺ [420](d _{5/2})⊗ν3/2 ⁺ [422](g _{7/2}). The assignment is tentative.
55.0 5			A	
124.3 3			A	
188.7 4			A	
245.9 5			A	
291.5 4			A	
296.4? 5			A	
350.7? 4			A	
440.9 4			A	
576.6? 5			A	
643.4 4			A	
853.0 5			A	
1186.0 [‡] 6			A	
1737.7 [‡] 7			A	
1841.0 7			A	
2380.3 [‡] 7			A	
3082.9 [‡] 8			A	
3137.2 8			A	
3816.6 [‡] 9			A	
4665.1 9			A	
4812.5 [‡] 9			A	
5727.3 9			A	
5799.6 [‡] 9			A	
6625.9 [‡] 10			A	
7371.8 [‡] 10			A	
7990.6 [‡] 11			A	
8712.2 [‡] 11			A	
x [#]		>25 ps	A	Additional information 1. T _{1/2} : from 1998StZY.
133.0+x [#] 8			A	

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Adopted Levels, Gammas (continued)

^{112}I Levels (continued)

E(level) [†]	XREF	E(level) [†]	XREF	E(level) [†]	XREF
551.9+x [#] 9	A	1310.1+x [#] 10	A	2936.5+x [#] 14	A
656.1+x [#] 8	A	1988.6+x [#] 14	A	2984.6+x [#] 17	A
1254.6+x [#] 12	A	2067.4+x [#] 12	A	3899.6+x [#] 20	A
				4899.6+x [#] 22	A

[†] From a least-squares fit to E_γ.

[‡] Band(A): Member of a ΔJ=2 band. Probable configuration=πg_{7/2}⊗vh_{11/2}.

[#] Band(B): Member of a ΔJ=2/ΔJ=1 band. Probable configuration=πh_{11/2}⊗vh_{11/2}.

γ(^{112}I)

E _i (level)	E _γ [†]	I _γ [†]	E _f	J _f ^π	Mult. [‡]	Comments
124.3	124.3 3	100	0.0	(1 ⁺)		
188.7	64.6 3	100	124.3			
245.9	190.6 3	100	55.0			
291.5	167.0 3		124.3			
	236.8 3		55.0			
296.4?	241.4 3	100	55.0			
350.7?	226.4 3	100	124.3			
440.9	194.9 3		245.9			
	252.4 3		188.7			
576.6?	280.2 3	100	296.4?			
643.4	202.6 3	100 10	440.9	(D)	Mult.: R _{DCO} =0.77 11 (1995Pa26).	
	292.7 3	41 3	350.7?			
	352.0 3	55 7	291.5			
	397.3 3	45 3	245.9			
853.0	209.6 3	100	643.4	(D)	Mult.: R _{DCO} =0.85 10 (1995Pa26).	
	276.4 3	16.3 13	576.6?			
1186.0	333.0 3	100	853.0	(D)	Mult.: R _{DCO} =0.64 7 (1995Pa26).	
1737.7	551.7 3	100	1186.0	E2	Mult.: R _{DCO} =1.03 7 (1995Pa26).	
1841.0	655.0 3	100	1186.0			
2380.3	642.6 3	100	1737.7	E2	Mult.: R _{DCO} =1.04 8 (1995Pa26).	
3082.9	702.6 3	100	2380.3	E2	Mult.: R _{DCO} =1.04 8 (1995Pa26).	
3137.2	756.9 3	100	2380.3			
3816.6	733.7 3	100	3082.9	E2	Mult.: R _{DCO} =1.13 14 (1995Pa26).	
4665.1	848.0 3	100	3816.6			
4812.5	996.4 3	100	3816.6	E2	Mult.: R _{DCO} =1.20 21 (1995Pa26).	
5727.3	915.2 3	100 7	4812.5			
	1061.7 3	71 7	4665.1			
5799.6	987.0 3	100	4812.5	E2	Mult.: R _{DCO} =0.99 15 (1995Pa26).	
6625.9	826.3 3	100	5799.6			
7371.8	745.9 3	100	6625.9			
7990.6	618.8 3	100	7371.8			
8712.2	721.6 3	100	7990.6			
133.0+x	133 [#] 1	100	x	(M1+E2) [#]		
551.9+x	552 [#] 1	100	x	(E2) [#]		
656.1+x	523 [#] 1		133.0+x	(E2) [#]		
	656 [#] 1		x	(M1+E2) [#]		
1254.6+x	703 [#] 1	100	551.9+x	(E2) [#]		
1310.1+x	654 [#] 1		656.1+x	(E2) [#]		

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Adopted Levels, Gammas (continued) $\gamma(^{112}\text{I})$ (continued)

$E_i(\text{level})$	E_γ^\dagger	I_γ^\dagger	E_f	Mult. [‡]	$E_i(\text{level})$	E_γ^\dagger	I_γ^\dagger	E_f	Mult. [‡]
1310.1+x	758 [#] 1		551.9+x	(M1+E2) [#]	2936.5+x	948 [#] 1		1988.6+x	(M1+E2) [#]
1988.6+x	734 [#] 1	100	1254.6+x	(E2) [#]	2984.6+x	996 [#] 1	100	1988.6+x	(E2) [#]
2067.4+x	757 [#] 1		1310.1+x	(E2) [#]	3899.6+x	915 [#] 1	100	2984.6+x	(E2) [#]
	813 [#] 1		1254.6+x	(M1+E2) [#]	4899.6+x	1000 [#] 1	100	3899.6+x	(E2) [#]
2936.5+x	869 [#] 1		2067.4+x	(E2) [#]					

[†] From 1995Pa26, unless otherwise noted.

[‡] From angular correlations and DCO measurements in 1995Pa26, unless otherwise noted. For the chosen geometry, R_{DCO} approx. equals to 1 for stretched quadrupole transitions and approx. 0.65 for stretched dipole transitions (1995Pa26).

[#] From 1998SZY. Uncertainty in E_γ is estimated by the evaluators.

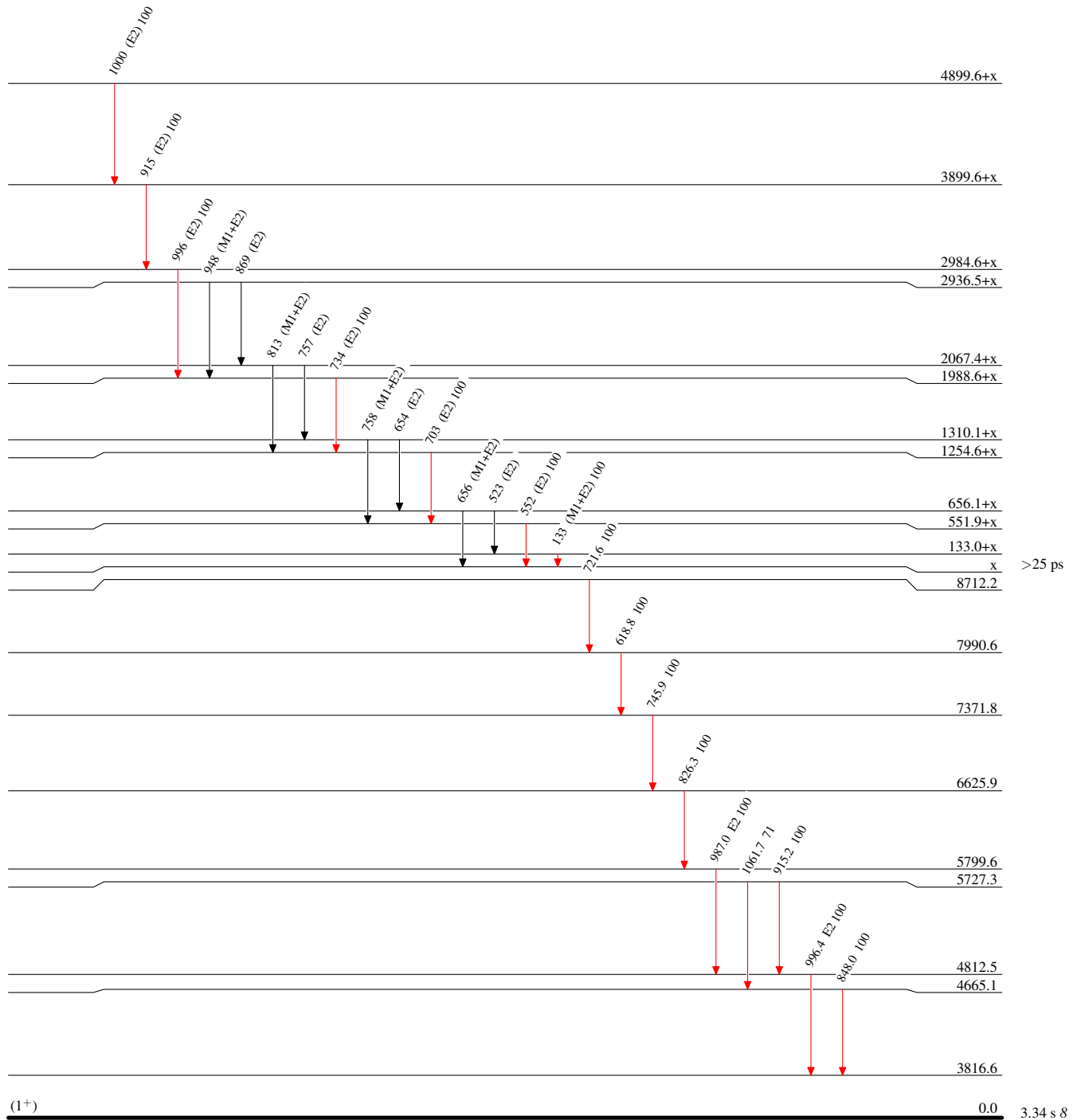
Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



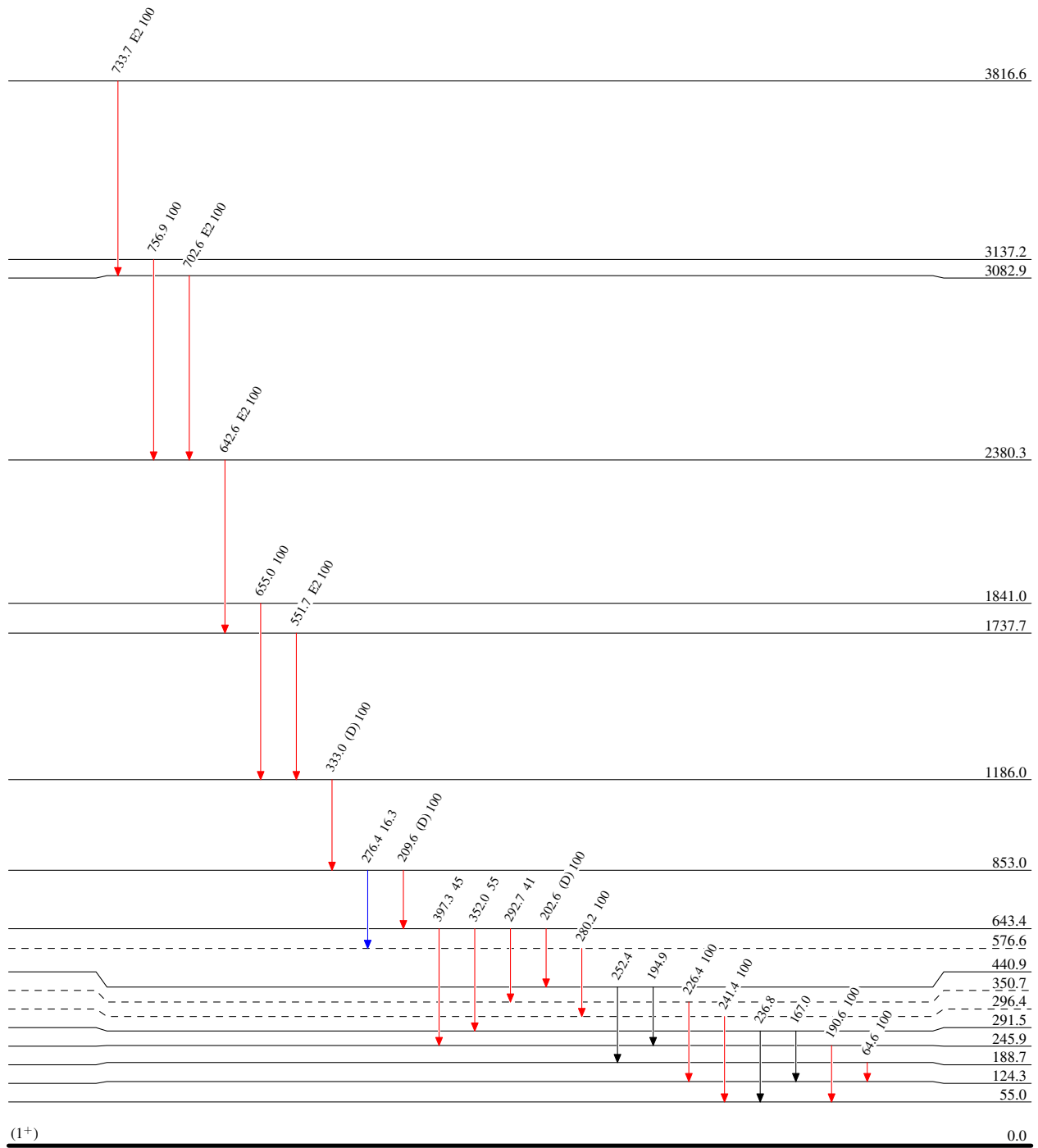
Adopted Levels, Gammas

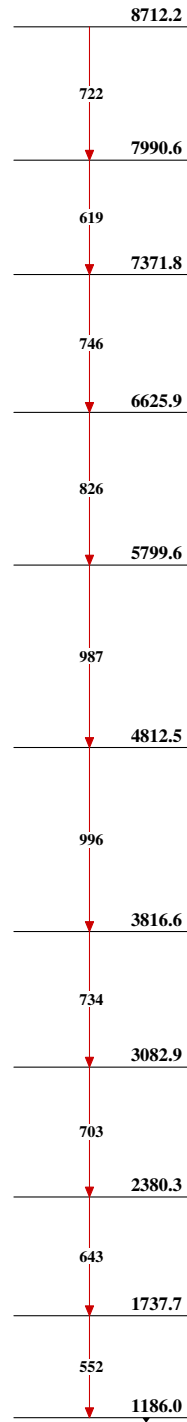
Level Scheme (continued)

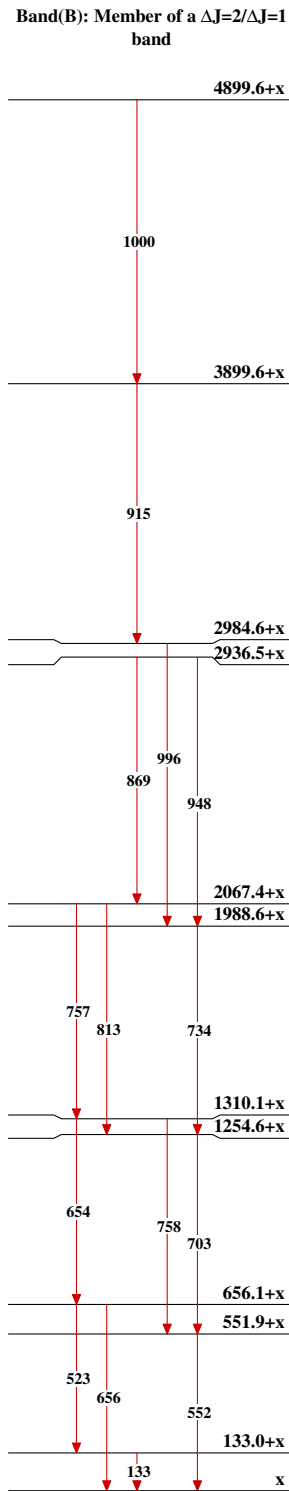
Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



Adopted Levels, Gammas**Band(A): Member of a
 $\Delta J=2$ band** $^{112}_{53}\text{I}_{59}$

Adopted Levels, Gammas (continued) $^{112}_{53}\text{I}_{59}$