

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 134, 149 (2016)	15-Apr-2015

$Q(\beta^-) = -4430 \pm 30$; $S(n) = 9220 \pm 30$; $S(p) = 2880 \pm 30$; $Q(\alpha) = 3960 \pm 30$ [2012Wa38](#)

For discussion of effects of deformation on decay patterns, see [2015Bo01](#).

 ^{183}Ir LevelsCross Reference (XREF) Flags

- A** ^{183}Pt ε decay (43 s)
B ^{187}Au α decay
C $^{168}\text{Er}(^{19}\text{F}, 4n\gamma)$
D $^{185}\text{Re}(\alpha, 6n\gamma)$

E(level) [†]	J^π [‡]	$T_{1/2}$	XREF	Comments
0.0@	5/2 ⁻ &	58 min 6	A CD	$\% \varepsilon + \% \beta^+ = 100$ $\mu = 2.36 \pm 8$ (1992Bo39) $\% \varepsilon + \% \beta^+$: $\% \alpha < 0.1$ from systematics of lighter Ir isotopes. μ : from static nuclear orientation with γ detection. Other: 1992Ro21 . $\langle r^2 \rangle^{1/2}(\text{charge}) = 5.39 \text{ fm}$ <i>II</i> (2004An14). $T_{1/2}$: unweighted average of 55 min 7 (1961Di04) and 60 min 6 (1961La05). J^π : $\log ft = 6.1$ to 2274 level in ^{183}Os which must have $J^\pi \geq 7/2^-$, $\log ft = 7.2$ to 453 level in ^{183}Os which must have $J^\pi \leq 3/2^-$.
15.8@ 3	9/2 ⁻ &		A CD	
119.0 9			C	
184.4@ 11	13/2 ⁻ &		CD	
307.0# 9	5/2 ⁺		C	
328.96 24	7/2 ⁻		A	
412.0# 12	(7/2 ⁺)		C	
492.8@ 15	17/2 ⁻ &		CD	
542.0# 12	(9/2 ⁺)		C	
645.34 ^u 24	9/2 ⁻		A	J^π : $\log ft \leq 4.7$ from 7/2 ⁻ typical of unhindered allowed decay In this mass region between ν 7/2[514] and π 9/2[514] states.
695.0# 13	(11/2 ⁺)		C	
869.0# 14	(13/2 ⁺)		C	
917.3@ 18	21/2 ⁻ &		CD	
1059.0# 14	(15/2 ⁺)		C	
1262.0# 15	(17/2 ⁺)		C	
1425.4@ 21	25/2 ⁻ &		CD	
1475.0# 16	(19/2 ⁺)		C	
1691.0# 16	(21/2 ⁺)		C	
1916.0# 17	(23/2 ⁺)		C	
1976.2@ 23	29/2 ⁻ &		CD	
2142.0# 18	(25/2 ⁺)		C	
2388.0# 18	(27/2 ⁺)		C	
2538.1@ 25	33/2 ⁻ &		CD	
2635.0# 19	(29/2 ⁺)		C	
2909.0# 19	(31/2 ⁺)		C	

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Adopted Levels, Gammas (continued) ^{183}Ir Levels (continued)

E(level) [†]	J ^π [‡]	XREF	E(level) [†]	J ^π [‡]	XREF	E(level) [†]	J ^π [‡]	XREF
3118 [@] 3	37/2 ⁻ &	CD	4095.0 [#] 21	(39/2 ⁺)	C	5212 [@] 4	49/2 ⁻ &	C
3181.0 [#] 20	(33/2 ⁺)	C	4401.0 [#] 22	(41/2 ⁺)	C	5434? [#] 3	(47/2 ⁺)	C
3481.0 [#] 20	(35/2 ⁺)	C	4438 [@] 3	45/2 ⁻ &	C	6062 [@] 4	53/2 ⁻ &	C
3743 [@] 3	41/2 ⁻ &	CD	4752.0 [#] 24	(43/2 ⁺)	C	6985? [@] 4	57/2 ⁻ &	C
3774.0 [#] 21	(37/2 ⁺)	C	5052.0? [#] 24	(45/2 ⁺)	C			

[†] From least-squares fit to adopted E_γ , assigning 1 keV uncertainty to E_γ data for which the authors failed to state an uncertainty.

[‡] From band assignments, except As noted.

[#] Band(A): 5/2[402] band. Band parameters: $E_0=267$, $\alpha=15.3$, $\beta=-30$ ($J=5/2, 7/2, 9/2, 11/2$).

[@] Band(B): 1/2[541] band. Band parameters: $E_0=255$, $\alpha=18.3$, $a=+7.5$ ($J=1/2$ through $7/2$).

& Definite J^π assigned to members of 1/2[541] band based on smooth progression of level energies and independently-established J^π (g.s.)= $5/2^-$ and multipolarity=E2 for intraband 9/2 to 5/2 16.0 γ .

^a Band(C): 9/2[514] band.

 $\gamma(^{183}\text{Ir})$

$E_i(\text{level})$	J_i^π	E_γ [‡]	I_γ [#]	E_f	J_f^π	Mult. [@]	α [†]	Comments
15.8	9/2 ⁻	16.0	100	0.0	5/2 ⁻	E2	2.98×10^4	E_γ : from ε decay; uncertainty unstated by authors. Mult.: from sub-shell ratios (2000Ro41). possibly the unplaced 118.5-keV E2(+M1) γ from ε decay.
119.0		119	100	0.0	5/2 ⁻			
184.4	13/2 ⁻	168.6 &	100	15.8	9/2 ⁻	(E2)	0.625	
307.0	5/2 ⁺	188		119.0				
		307		0.0	5/2 ⁻			
328.96	7/2 ⁻	313.2 ^a 3	78 6	15.8	9/2 ⁻	[M1,E2]	0.17 9	
		329.0 ^a 3	100 7	0.0	5/2 ⁻			
412.0	(7/2 ⁺)	105	100	307.0	5/2 ⁺			
492.8	17/2 ⁻	308.4 &	100	184.4	13/2 ⁻	(E2)	0.0874	
542.0	(9/2 ⁺)	130		412.0	(7/2 ⁺)			
		235		307.0	5/2 ⁺			
645.34	9/2 ⁻	316.4 ^a 3	53 4	328.96	7/2 ⁻	[M1,E2]	0.16 9	
		629.6 ^a 3	100 7	15.8	9/2 ⁻	[M1,E2]	0.027 13	
		645.3 ^a 3	23.0 16	0.0	5/2 ⁻	[E2]	0.01307	
695.0	(11/2 ⁺)	153		542.0	(9/2 ⁺)			
		283		412.0	(7/2 ⁺)			
869.0	(13/2 ⁺)	174		695.0	(11/2 ⁺)			
		327		542.0	(9/2 ⁺)			
917.3	21/2 ⁻	424.5 &	100	492.8	17/2 ⁻	(E2)	0.0359	
1059.0	(15/2 ⁺)	190		869.0	(13/2 ⁺)			
		364		695.0	(11/2 ⁺)			
1262.0	(17/2 ⁺)	203		1059.0	(15/2 ⁺)			
		393		869.0	(13/2 ⁺)			
1425.4	25/2 ⁻	508.1 &	100	917.3	21/2 ⁻	(E2)	0.0228	
1475.0	(19/2 ⁺)	213		1262.0	(17/2 ⁺)			
		416		1059.0	(15/2 ⁺)			
1691.0	(21/2 ⁺)	216		1475.0	(19/2 ⁺)			

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Adopted Levels, Gammas (continued)

$\gamma(^{183}\text{Ir})$ (continued)							
$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	$I_\gamma^\#$	E_f	J_f^π	Mult. @	$\alpha^\dagger$
1691.0	(21/2 ⁺)	429		1262.0	(17/2 ⁺)		
1916.0	(23/2 ⁺)	225		1691.0	(21/2 ⁺)		
		441		1475.0	(19/2 ⁺)		
1976.2	29/2 ⁻	550.8&	100	1425.4	25/2 ⁻	(E2)	0.0188
2142.0	(25/2 ⁺)	226		1916.0	(23/2 ⁺)		
		451		1691.0	(21/2 ⁺)		
2388.0	(27/2 ⁺)	246		2142.0	(25/2 ⁺)		
		472		1916.0	(23/2 ⁺)		
2538.1	33/2 ⁻	561.9&	100	1976.2	29/2 ⁻	(E2)	0.0179
2635.0	(29/2 ⁺)	247		2388.0	(27/2 ⁺)		
		493		2142.0	(25/2 ⁺)		
2909.0	(31/2 ⁺)	274		2635.0	(29/2 ⁺)		
		521		2388.0	(27/2 ⁺)		
3118	37/2 ⁻	579.5&	100	2538.1	33/2 ⁻	(E2)	0.01670
3181.0	(33/2 ⁺)	272		2909.0	(31/2 ⁺)		
		546		2635.0	(29/2 ⁺)		
3481.0	(35/2 ⁺)	300		3181.0	(33/2 ⁺)		
		572		2909.0	(31/2 ⁺)		
3743	41/2 ⁻	625.9&	100	3118	37/2 ⁻	(E2)	0.01400
3774.0	(37/2 ⁺)	293		3481.0	(35/2 ⁺)		
		593		3181.0	(33/2 ⁺)		
4095.0	(39/2 ⁺)	321		3774.0	(37/2 ⁺)		
		614		3481.0	(35/2 ⁺)		
4401.0?	(41/2 ⁺)	306 ^b		4095.0	(39/2 ⁺)		
		627		3774.0	(37/2 ⁺)		
4438	45/2 ⁻	695	100	3743	41/2 ⁻		
4752.0	(43/2 ⁺)	657	100	4095.0	(39/2 ⁺)		
5052.0?	(45/2 ⁺)	651 ^b	100	4401.0?	(41/2 ⁺)		
5212	49/2 ⁻	774	100	4438	45/2 ⁻		
5434?	(47/2 ⁺)	682 ^b	100	4752.0	(43/2 ⁺)		
6062	53/2 ⁻	850	100	5212	49/2 ⁻		
6985?	57/2 ⁻	923 ^b	100	6062	53/2 ⁻		

[†] Additional information 1.

[‡] From ($^{19}\text{F}, 4n\gamma$), except As noted; uncertainty unstated by authors.

[#] From ε decay (43 s), except As noted.

[@] From unenumerated $\gamma(\theta)$ In ($\alpha, 6n\gamma$), assigning $\Delta\pi=(\text{No})$ for intraband transitions.

[&] From ($\alpha, 6n\gamma$); uncertainty unstated by authors.

^a From ε decay (43 s).

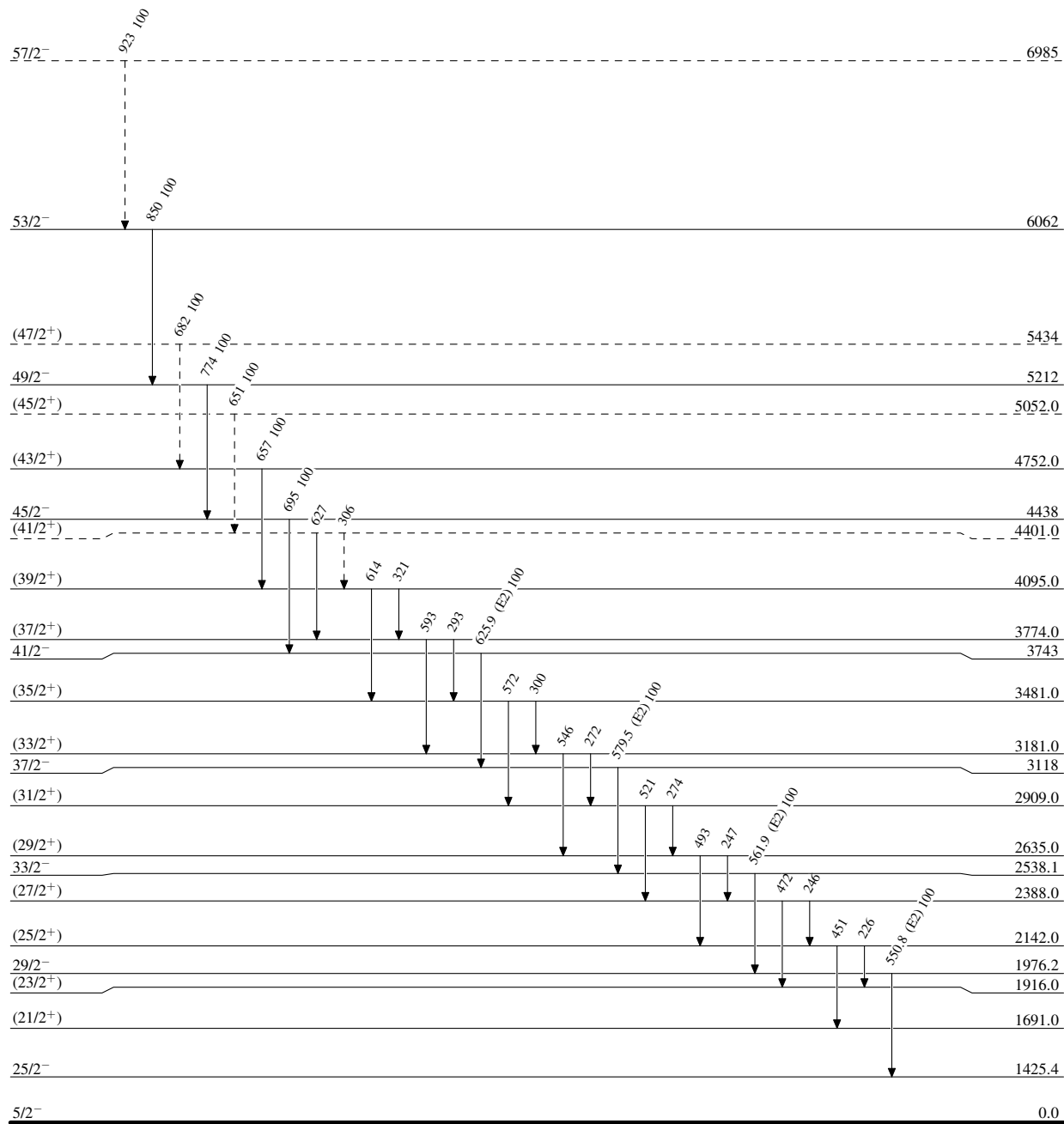
^b Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Legend

Level Scheme

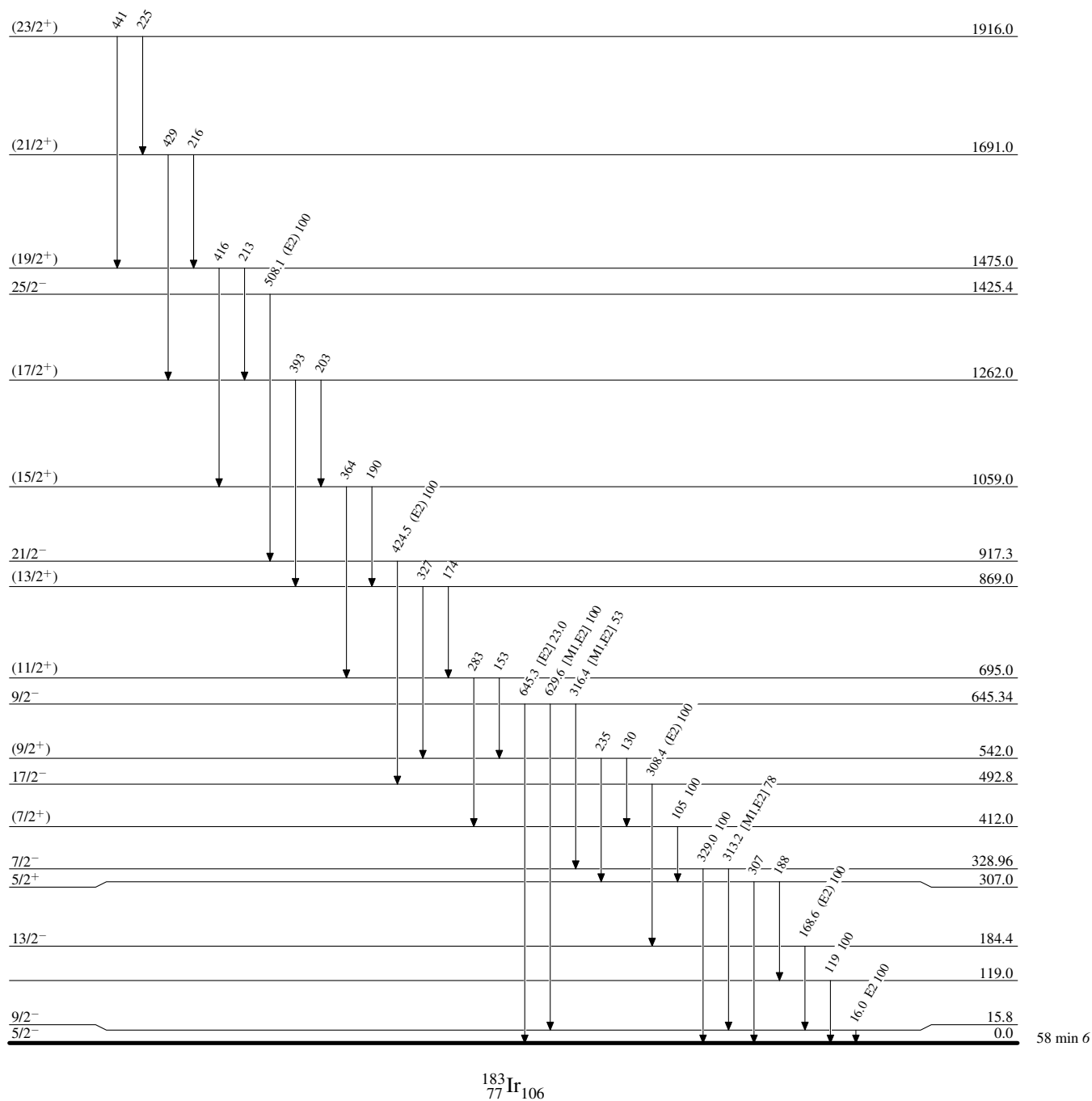
Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain) $^{183}_{77}\text{Ir}_{106}$

58 min 6

Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level



Adopted Levels, Gammas