

Adopted Levels, Gammas 1988Aj01,1984Aj01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu and J. L. Godwin, et al.		NP A745 155 (2004)	31-Mar-2004

$Q(\beta^-)=-3648.06$ 7; $S(n)=8437.1$ 10; $S(p)=6586.7$ 4; $Q(\alpha)=-4461.1$ 4 2012Wa38

Note: Current evaluation has used the following Q record.

$Q(\beta^-)=-3648.0$ 6; $S(n)=8436.3$ 10; $S(p)=6585.9$ 6; $Q(\alpha)=-4461.0$ 4 2003Au03

See also Tables 10.6, 10.7 and 10.11 In 1988Aj01.

 ^{10}B LevelsCross Reference (XREF) Flags

A	^{10}Be β^- decay	N	$^9\text{Be}(p,d),(p,\alpha)$	Others:	
B	^{10}C β^+ decay	O	$^9\text{Be}(d,n\gamma),(d,n)$	AA	$^{11}\text{B}(^3\text{He},\alpha)$
C	$^6\text{Li}(\alpha,\gamma)$	P	$^9\text{Be}(^3\text{He},d)$	AB	$^{11}\text{B}(^7\text{Li},^8\text{Li})$
D	$^6\text{Li}(\alpha,\alpha),(\alpha,\alpha')$	Q	$^9\text{Be}(\alpha,t)$	AC	$^{12}\text{C}(\pi^+,\pi^+d),(\pi^-\pi^-d)$
E	$^6\text{Li}(\alpha,2\alpha)$	R	$^9\text{Be}(^7\text{Li},^6\text{He})$	AD	$^{12}\text{C}(p,^3\text{He})$
F	$^6\text{Li}(^6\text{Li},d)$	S	$^9\text{Be}(^{12}\text{C},^{11}\text{B})$	AE	$^{12}\text{C}(d,\alpha)$
G	$^7\text{Li}(^3\text{He},\gamma)$	T	$^{10}\text{B}(\gamma,n)$	AF	$^{12}\text{C}(\alpha,^6\text{Li})$
H	$^7\text{Li}(^3\text{He},n)$	U	$^{10}\text{B}(e,e)$	AG	$^{12}\text{C}(^{14}\text{N},^{16}\text{O})$
I	$^7\text{Li}(\alpha,n),(\alpha,n\gamma)$	V	$^{10}\text{B}(p,p)$	AH	$^{13}\text{C}(p,\alpha)$
J	$^7\text{Li}(^{12}\text{C},X)$	W	$^{10}\text{B}(d,d)$	AI	$^{14}\text{N}(d,^6\text{Li})$
K	$^9\text{Be}(p,\gamma)$ res	X	$^{10}\text{B}(^3\text{He},^3\text{He})$	AJ	$\text{Ag}(^{14}\text{N},\alpha^6\text{Li}),(^{14}\text{N},\text{P9BE})$
L	$^9\text{Be}(p,n)$ res	Y	$^{11}\text{B}(\gamma,n)$		
M	$^9\text{Be}(p,p),(p,pn),(p,p\alpha)$	Z	$^{11}\text{B}(p,d)$		

E(level)	J^π	$T_{1/2}$	XREF	Comments
0.0	3^+	stable	ABC FG I K OPQRS VWX Z	XREF: Others: AA, AB, AC, AD, AE, AF, AG, AH, AI $\mu=+1.80064478$ 6; $Q=+0.08472$ 56; $T=0$
718.380 11	1^+	0.7070 ns 34	BC FG I K OPQRS UVWX Z	XREF: Others: AA, AB, AC, AD, AE, AF, AG, AH, AI %IT=100 $\mu=+0.63$ 12; $T=0$; $\Gamma_\gamma=6.453\times 10^{-7}$ eV 32 E(level): from ^{10}C β decay (1989Ba28). The value 718.35 keV 4 was given In (1984Aj01) with No reference. Other values are given In ^{10}C β -decay, $^7\text{Li}(\alpha,n)$ and $^{10}\text{B}(p,p)$.
1740.05 4	0^+	4.9 fs 21	BC I K OPQRS UV X Z	Γ : from $^{10}\text{B}(p,p)$. XREF: Others: AA, AB, AC, AD, AH %IT=100 $T=1$; $\Gamma_\gamma=0.094$ eV 40 E(level): from ^{10}C β -decay. Other less significant values are given In ^{10}C β -decay, $^7\text{Li}(\alpha,n)$ and $^{10}\text{B}(p,p)$.
2154.27 45	1^+	1.48 ps 14	C F I K OPQRS UVWX Z	Γ : from $^6\text{Li}(\alpha,\gamma)$. XREF: Others: AA, AB, AC, AD, AE, AF, AG, AH, AI %IT=100 $T=0$; $\Gamma_\gamma=3.1\times 10^{-4}$ eV 2 E(level): from weighted average of values from $^7\text{Li}(\alpha,n)$ and $^{10}\text{B}(p,p)$.
3587.13 48	2^+	102 fs 7	C FG K OPQ UVWXYZ	Γ : from weighted average of values from $^6\text{Li}(\alpha,\gamma)$, $^7\text{Li}(\alpha,n)$, $^9\text{Be}(d,n)$ and $^{11}\text{B}(^3\text{He},\alpha)$. The value 2.7 ps 7 from $^{10}\text{B}(p,p)$ was excluded. XREF: Others: AA, AD, AE, AF, AG, AH, AI %IT=100

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Adopted Levels, Gammas 1988Aj01,1984Aj01 (continued) ^{10}B Levels (continued)

<u>E(level)</u>	<u>J^{π}</u>	<u>T_{1/2}</u>	<u>XREF</u>							<u>Comments</u>
4774.0 5	3 ⁺	7.8 eV 12	C	FG	IJ	OPQ	VW	Z	T=0; $\Gamma_\gamma=4.28\times 10^{-3}$ eV 37 E(level): from $^{10}\text{B}(p,p)$. Γ : from weighted average of values from $^6\text{Li}(\alpha,\gamma)$, $^6\text{Li}(^6\text{Li},d)$, $^9\text{Be}(p,d)$, $^9\text{Be}(d,n)$, $^{10}\text{B}(p,p)$ and $^{11}\text{B}(^3\text{He},\alpha)$. XREF: Others: AA, AD, AE, AF, AH, AI, AJ %IT=0.23; % α =99.8 T=0; $\Gamma_\gamma=0.018$ eV 2 E(level): from $^{10}\text{B}(p,p)$; other values have No significance In a weighted average.	
5110.3 6	2 ⁻	0.978 keV 66	C		JK	OPQ	V	X	Γ : from $^6\text{Li}(\alpha,\gamma)$. XREF: Others: AA, AE %IT=3.3 $\times 10^{-3}$; % α ≈ 100 T=0; $\Gamma_\gamma=3.28\times 10^{-2}$ eV 53 E(level): from $^{10}\text{B}(p,p)$. See other values In $^9\text{Be}(d,n)$, $^{11}\text{B}(^3\text{He},\alpha)$ and $^{12}\text{C}(d,\alpha)$.	
5163.9 6	2 ⁺	1.79 eV 40	C		K	OPQ	UV	YZ	Γ : from $^6\text{Li}(\alpha,\gamma)$. XREF: Others: AA, AD, AH %IT ≈ 84 ; % $\alpha=16$ T=1; $\Gamma_\gamma=1.51$ eV 27 E(level): from $^{10}\text{B}(p,p)$. see other values In $^9\text{Be}(d,n)$ and $^{11}\text{B}(^3\text{He},\alpha)$.	
5182 8	1 ⁺	110 keV 10	CD		JK	OPQ	VW	Z	Γ : from $^6\text{Li}(\alpha,\gamma)$. %IT=5.4 $\times 10^{-5}$; % α ≈ 100 T=0; $\Gamma_\gamma=0.06$ eV 2 E(level): from weighted average of values from $^6\text{Li}(\alpha,\gamma)$, $^6\text{Li}(\alpha,\alpha)$ and $^{11}\text{B}(^3\text{He},\alpha)$.	
5919.5 6	2 ⁺	5.82 keV 6	CD		JK	OPQ	UVWX		Γ : from $^{10}\text{B}(p,p)$; also see 200 keV 30 from $^6\text{Li}(\alpha,\gamma)$ and $\Gamma<10$ keV from $^6\text{Li}(\alpha,\alpha)$. XREF: Others: AA, AD, AE, AF, AH %IT=2.4 $\times 10^{-3}$; % α ≈ 100 T=0; $\Gamma_\gamma=0.14$ eV 2 E(level): from $^{10}\text{B}(p,p)$; see other values In $^9\text{Be}(d,n)$ and $^{11}\text{B}(^3\text{He},\alpha)$.	
6024.9 5	4 ⁺	0.052 keV 19	CD		J	OPQ	UVWX	Z	Γ : from $^6\text{Li}(\alpha,\alpha)$. See other value In $^6\text{Li}(\alpha,\gamma)$. XREF: Others: AA, AE, AF, AH, AI %IT=0.21; % α =99.79 $\Gamma_\gamma=0.11$ eV 2 E(level): from weighted average of values from $^6\text{Li}(\alpha,\alpha)$, $^{10}\text{B}(p,p)$ and $^{11}\text{B}(^3\text{He},\alpha)$.	
6129.1 25	3 ⁻	1.52 keV 8	D		J	OPQ	UVWX		Γ : from weighted average of values from $^6\text{Li}(\alpha,\gamma)$ and $^6\text{Li}(\alpha,\alpha)$. XREF: Others: AA, AE %IT<1.4; %d ≈ 3.1 ; % α >95.5 $\Gamma_\gamma\leq 21$ eV E(level): the two significant values, 6132.3 keV 9 from $^6\text{Li}(\alpha,\alpha)$ and 6127.2 keV 7 from $^{10}\text{B}(p,p)$, are not In agreement. The evaluator adopts the weighted average, but has enlarged the uncertainty.	
6560.1 10	(4) ⁻	25.2 keV 11	D		J	OPQ	UVWX	Z	Γ : from $^6\text{Li}(\alpha,\alpha)$ (1981He05). Also see $\Gamma=2.36$ keV 3 from $^6\text{Li}(\alpha,\alpha)$ reported In (1967Me08). XREF: Others: AA, AD, AE, AJ %IT ≥ 0 ; % α ≈ 100	

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Adopted Levels, Gammas 1988Aj01,1984Aj01 (continued) ^{10}B Levels (continued)

<u>E(level)</u>	<u>J^π</u>	<u>T_{1/2}</u>	<u>XREF</u>					<u>Comments</u>
6875 5	1 ⁻	120 keV 4	C	JK	MNO			E(level): from $^6\text{Li}(\alpha,\alpha)$. See other values In $^9\text{Be}(\text{d,n})$, $^{10}\text{B}(\text{p,p})$ and $^{11}\text{B}(^3\text{He},\alpha)$. Γ : from weighted average of values from $^6\text{Li}(\alpha,\alpha)$, $^{10}\text{B}(\text{p,p})$ and $^{11}\text{B}(^3\text{He},\alpha)$. $\%IT=1.24\times 10^{-3}$; $\%p>0$; $\%d>0$; $\%a>0$ $\Gamma_\gamma=1.49$ eV 54; T=0&1 E(level): from weighted average of values from $^9\text{Be}(\text{p},\gamma)$ and $^9\text{Be}(\text{d,n})$. Γ : from weighted average of values from $^6\text{Li}(\alpha,\gamma)$ and $^9\text{Be}(\text{p},\gamma)$.
7004 5	3 ⁺	98 keV 6	D	J	NO	Q	VWX	XREF: Others: AA, AE, AI $\%p>0$; $\%d>0$; $\%a>0$ T=(0). E(level): from weighted average of values from $^6\text{Li}(\alpha,\text{n})$, $^9\text{Be}(\text{d,n})$, $^{10}\text{B}(\text{p,p})$ and $^{11}\text{B}(^3\text{He},\alpha)$. Γ : from weighted average of values from $^6\text{Li}(\alpha,\text{n})$, $^{10}\text{B}(\text{p,p})$ and $^{11}\text{B}(^3\text{He},\alpha)$.
7428 5	1 ⁻	94 keV 9	C	K	MN	Q		J ^π : from $^{11}\text{B}(^3\text{He},2\alpha)$. $\%IT=5.1\times 10^{-3}$; $\%p>0$; $\%d>0$; $\%a>0$ T=0&1 $\Gamma_\gamma=4.76$ eV 70 E(level): from weighted average of values from $^6\text{Li}(\alpha,\gamma)$ and $^9\text{Be}(\text{p},\gamma)$. Γ : from weighted average of values from $^6\text{Li}(\alpha,\gamma)$ and $^9\text{Be}(\text{p},\gamma)$.
7470 4	2 ⁺	65 keV 10		K	M	O	Q Uv x	J ^π : In (2004Ti06) spin assignments for E _x =7430, 7470 and 7480 are J ^π =1 ⁻ , 2 ⁺ , 2 ⁻ , respectively. In (1988Aj01) the corresponding values are J ^π =2 ⁽⁻⁾ , 1 ⁺ , and 2 ⁺ , however, discussion In (1956Mo90, 1956We37, 1959Ma20, 1962El06, 1964Ho02, 1969Mo29, 1973Ro24, 2004Ti06) favors the assignments of (2004Ti06). XREF: Others: AA, AH $\%p\approx 100$; $\%IT=1.8\times 10^{-2}$ $\Gamma_\gamma=11.7$ eV 7 E(level): from $^9\text{Be}(\text{p},\gamma)$ and $^9\text{Be}(\text{p,p})$. Γ : from $^9\text{Be}(\text{p,p})$.
7479 2	2 ⁻	74 keV 4		K	M	Q	v x	J ^π : In (2004Ti06) spin assignments for E _x =7430, 7470 and 7480 are J ^π =1 ⁻ , 2 ⁺ , 2 ⁻ , respectively. In (1988Aj01) the corresponding values are J ^π =2 ⁽⁻⁾ , 1 ⁺ , and 2 ⁺ , however, discussion In (1956Mo90, 1956We37, 1959Ma20, 1962El06, 1964Ho02, 1969Mo29, 1973Ro24, 2004Ti06) favors the assignments of (2004Ti06). XREF: Others: AA, AH $\%IT=7.2\times 10^{-3}$; $\%p>0$ $\Gamma_\gamma=5.3$ eV 25; T=1 E(level): Γ : from $^9\text{Be}(\text{p},\gamma)$ and $^9\text{Be}(\text{p,p})$.
7559.9 4	0 ⁺	2.65 keV 18		JK	M	O	Q	J ^π : In (2004Ti06) spin assignments for E _x =7430, 7470 and 7480 are J ^π =1 ⁻ , 2 ⁺ , 2 ⁻ , respectively. In (1988Aj01) the corresponding values are J ^π =2 ⁽⁻⁾ , 1 ⁺ , and 2 ⁺ , however, discussion In (1956Mo90, 1956We37, 1959Ma20, 1962El06, 1964Ho02, 1969Mo29, 1973Ro24, 2004Ti06) favors the assignments of (2004Ti06). XREF: Others: AA

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Adopted Levels, Gammas 1988Aj01,1984Aj01 (continued) ^{10}B Levels (continued)

<u>E(level)</u>	<u>J^π</u>	<u>T_{1/2}</u>	<u>XREF</u>		<u>Comments</u>
					%IT=0.23; %p>0 Γ _γ =6.24 eV 63; T=1 E(level): from $^9\text{Be}(p,\gamma)$. Also see 7562 keV 2 from $^9\text{Be}(p,p)$. Γ: from $^9\text{Be}(p,\gamma)$. %p=30; %d>0; %α>0 T=(0). E(level): from $^9\text{Be}(p,p)$. Γ: from weighted average of values from $^9\text{Be}(p,p)$ and $^9\text{Be}(p,d)$.
7666? 27	(1 ⁺)	247 keV 19	J	MN	
7750 30	2 ⁻	210 keV 60	K	M O Q	XREF: Others: AA %p≈65; %IT≈2.6×10 ⁻³ Γ _γ =5.6 eV 11 T=(0). E(level): Γ: from $^9\text{Be}(p,\gamma)$. %p≈90; %α>0
7811 17	1 ⁻	260 keV 30	J		E(level): Γ: from $^9\text{Be}(p,p)$ also see E _x =7870 keV 10 with Γ=240 keV 50 In $^{11}\text{B}(^3\text{He},\alpha)$. %α>0
7960 70		285 keV 91	J		E(level): Γ: from $^7\text{Li}(^{12}\text{C},\alpha^6\text{Li})$. %IT>0; %p≈7; %d>0
8070 50	2 ⁺	0.8 MeV 2		MNO U	E(level): Γ: from $^9\text{Be}(d,n)$. XREF: Others: AI %p>0; %d>0
8680?	(1 ⁺ ,2 ⁺)	≈220 keV	E	N	E(level): from average of 8656 keV from $^9\text{Be}(p,p)$, 8700 keV from $^9\text{Be}(p,d)$ and 8680 keV from $^{14}\text{N}(d,^6\text{Li})$. Γ: from $^9\text{Be}(p,d)$; also see Γ≈300 keV from $^9\text{Be}(p,p)$. XREF: Others: AD %n>0; %p=85; %α>0 T=1
8887 3	3 ⁻	96 keV 4	J	LMN Q	E(level): Γ: from weighted average of values In $^9\text{Be}(p,p)$ and $^9\text{Be}(p,n)$ and $^9\text{Be}(p,d)$. XREF: Others: AD %IT=1.3×10 ⁻³ ; %p=35; %α>0 T=1; Γ _γ =0.5 eV
8895 1	2 ⁺	39 keV 1	JK	MN Q U	E(level): Γ: from weighted average of values In $^9\text{Be}(p,\gamma)$ and $^9\text{Be}(p,p)$ and $^9\text{Be}(p,d)$. %α>0 T=0.
9580? 60		257 keV 64	J		E(level): Γ: from $^7\text{Li}(^{12}\text{C},X)$. %n>0; %p>0; %α>0 T=(1).
9700?		≈630 keV	E	L N	E(level): Γ: from $^9\text{Be}(p,n)$. XREF: Others: AA %IT>0; %n>0; %p>0
10825 9	(2 ⁺ ,3 ⁺ ,4 ⁺)	0.35 MeV 7	KLMN	U	E(level): from $^9\text{Be}(p,n)$. Also see $^9\text{Be}(p,p)$ and $^{11}\text{B}(^3\text{He},\alpha)$. Γ: from weighted average of values In $^9\text{Be}(p,p)$ and $^{11}\text{B}(^3\text{He},\alpha)$. XREF: Others: AA %IT>0; %α>0
11511 30		316 keV 44	N	U Z	E(level): from weighted average of values from $^{11}\text{B}(p,d)$ and $^{11}\text{B}(^3\text{He},\alpha)$. Also see $^9\text{Be}(p,n)$.

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Adopted Levels, Gammas 1988Aj01,1984Aj01 (continued)

<u>^{10}B Levels (continued)</u>						
<u>E(level)</u>	<u>J^π</u>	<u>$T_{1/2}$</u>	<u>XREF</u>		<u>Comments</u>	
12564 26	(0 ⁺ ,1 ⁺ ,2 ⁺)	106 keV 26	K	M U		Γ : from $^{11}\text{B}(^3\text{He},\alpha)$. XREF: Others: AA %IT>0; %p>0
13494 50	(0 ⁺ ,1 ⁺ ,2 ⁺)	300 keV 50	K		U	E(level): Γ : from $^{11}\text{B}(^3\text{He},\alpha)$. XREF: Others: AA %IT>0; %p>0
14.34×10 ³ I		0.8 MeV 2	D	K	Z	E(level): Γ : from $^{11}\text{B}(^3\text{He},\alpha)$. XREF: Others: AA %IT>0; %p>0; % α >0 E(level): from weighted average of values from $^{11}\text{B}(p,d)$ and $^{11}\text{B}(^3\text{He},\alpha)$. Γ : from $^{11}\text{B}(^3\text{He},\alpha)$.
18.2×10 ³ ? [†] 2		1.5 MeV 3				XREF: Others: AA
18430	2 ⁻	340 keV	G			E(level): Γ : from $^{11}\text{B}(^3\text{He},\alpha)$. %IT>0; % ³ He>0 T=1
18800	2 ⁺ ,1 ⁺	<600 keV	G			E(level): Γ : from $^7\text{Li}(^3\text{He},\gamma)$. %IT>0; % ³ He>0; % α <13.4
19290	2 ⁻	190 keV 14	GH			E(level): Γ : from $^7\text{Li}(^3\text{He},\gamma)$. %IT>0; %n>0; %p>0; % ³ He>0; % α <10.5 T=1
20.1×10 ³ I	1 ⁻	350 keV 20	GH		T	E(level): from weighted average of values from $^7\text{Li}(^3\text{He},\gamma)$ and $^7\text{Li}(^3\text{He},n)$. Γ : from weighted average of values from $^7\text{Li}(^3\text{He},\gamma)$ and $^7\text{Li}(^3\text{He},n)$. %IT>0; %n>0; %p>0; % ³ H>0; % ³ He>0; % α >0 T=1
21100?			G			E(level): from $^{10}\text{B}(\gamma,n)$. Γ : from weighted average of values from $^7\text{Li}(^3\text{He},\gamma)$ and $^7\text{Li}(^3\text{He},n)$. %IT>0; % ³ He>0
23.1×10 ³ I					T	E(level): from $^7\text{Li}(^3\text{He},\gamma)$. %IT>0; %n>0 Γ : broad. E(level): from $^{10}\text{B}(\gamma,n)$.

[†] Decay mode not specified.

 $\gamma(^{10}\text{B})$

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ[†]</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.</u>	<u>δ</u>	<u>Comments</u>
718.380	1 ⁺	718.353 19	100 [‡]	0.0	3 ⁺	E2		$\Gamma_\gamma=6.453\times 10^{-7}$ eV 32; B(E2)(W.u.)=3.240 16
1740.05	0 ⁺	1021.7	100 [‡]	718.380	1 ⁺	M1		$\Gamma_\gamma=0.094$ eV 40; B(M1)(W.u.)=4.2 18
		1740.0	<0.2 [‡]	0.0	3 ⁺			
2154.27	1 ⁺	414.1	51.6 [‡] 16	1740.05	0 ⁺	M1		$\Gamma_\gamma=1.59\times 10^{-4}$ eV 16; B(M1)(W.u.)=0.107 11
		1435.8	27.3 [‡] 9	718.380	1 ⁺	M1+E2	-3.75 55	$\Gamma_\gamma=8.5\times 10^{-5}$ eV 8; B(M1)(W.u.)=9.1×10 ⁻⁵ 27; B(E2)(W.u.)=12.2 13
		2154.1	21.1 [‡] 16	0.0	3 ⁺	E2		$\Gamma_\gamma=6.52\times 10^{-5}$ eV 79; B(E2)(W.u.)=1.33 16

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Adopted Levels, Gammas 1988Aj01,1984Aj01 (continued)

$\gamma(^{10}\text{B})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult.	δ	Comments
3587.13	2 ⁺	1432.7	14 [‡] 2	2154.27	1 ⁺	M1+E2	-0.38 9	$\Gamma_\gamma=6.1\times 10^{-4}$ eV 10; B(M1)(W.u.)= 8.5×10^{-3} 15; B(E2) $\downarrow=11.9$ 54
		1846.7	<0.3 [‡]	1740.05	0 ⁺			
		2868.3	67 [‡] 3	718.380	1 ⁺	M1+E2	9.09 8	$\Gamma_\gamma=2.85\times 10^{-3}$ eV 27; B(E2)(W.u.)=13.9 14; B(M1) $\downarrow<5\times 10^{-4}$
		3586.4	19 [‡] 3	0.0	3 ⁺	M1+E2	1.5 6	$\Gamma_\gamma=8.2\times 10^{-4}$ eV 23; B(M1)(W.u.)= 2.6×10^{-4} 15; B(E2)(W.u.)=0.90 28
4774.0	3 ⁺	4054.8	99.5 [‡] 1	718.380	1 ⁺	E2		$\Gamma_\gamma=1.79\times 10^{-2}$ eV 15; B(E2)(W.u.)=15.4 13
		4772.8	0.5 [‡] 1	0.0	3 ⁺	M1+E2		$\Gamma_\gamma=0.9\times 10^{-4}$ eV 2; B(M1)(W.u.) $<4.8\times 10^{-5}$; B(E2)(W.u.) $<4.2\times 10^{-2}$
5110.3	2 ⁻	3369.6	5 [‡] 5	1740.05	0 ⁺	M2		$\Gamma_\gamma=1.8\times 10^{-3}$ eV 18; B(M2)(W.u.) <120
		4390.9	31 [‡] 7	718.380	1 ⁺	E1		$\Gamma_\gamma=1.0\times 10^{-2}$ eV 3; B(E1)(W.u.)= 3.7×10^{-4} 11
		5108.9	64 [‡] 7	0.0	3 ⁺	E1		$\Gamma_\gamma=2.1\times 10^{-2}$ eV 4; B(E1)(W.u.)= 5.0×10^{-4} 10
5163.9	2 ⁺	1576.7	7.8 [‡] 3	3587.13	2 ⁺	M1		$\Gamma_\gamma=0.12$ eV 3; B(M1)(W.u.)=1.41 38 δ : 0.00 2 (1979Ke08).
		3009.1	65.3 [‡] 9	2154.27	1 ⁺	M1		$\Gamma_\gamma=0.98$ eV 26; B(M1)(W.u.)=1.71 46 δ : 0.02 3 (1979Ke08).
		3423.1	<0.5 [‡]	1740.05	0 ⁺	E2		$\Gamma_\gamma=7.5\times 10^{-3}$ eV; B(E2)(W.u.) <15
		4444.4	22.6 [‡] 6	718.380	1 ⁺	M1		$\Gamma_\gamma=0.34$ eV 9; B(M1)(W.u.)=0.18 5 δ : 0.03 3 (1979Ke08).
		5162.5	4.4 [‡] 4	0.0	3 ⁺	M1+E2	0.12 5	$\Gamma_\gamma=0.067$ eV 18; B(M1)(W.u.)= 2.3×10^{-2} 6; B(E2)(W.u.) <0.7 δ : 0.12 5 (1979Ke08).
5182	1 ⁺	3439.2	≈ 100 [‡]	1740.05	0 ⁺	M1		$\Gamma_\gamma=6\times 10^{-2}$ eV 3; B(M1)(W.u.)= 7.0×10^{-2} 35
5919.5	2 ⁺	5199.7	18 [‡] 5	718.380	1 ⁺	M1		$\Gamma_\gamma=0.025$ eV 7; B(M1)(W.u.)= 8.6×10^{-3} 24
		5917.6	82 [‡] 5	0.0	3 ⁺	M1		$\Gamma_\gamma=0.112$ eV 22; B(M1)(W.u.)= 2.6×10^{-2} 5
6024.9	4 ⁺	6023.1	≈ 100 [‡]	0.0	3 ⁺	M1+E2	-3.16 12	$\Gamma_\gamma=0.114$ eV 15; B(M1)(W.u.)= 2.3×10^{-2} 4; B(E2)(W.u.)=12.4 18 I_γ : other γ -ray branches $<3\%$.
6875	1 ⁻	953.5	3.5 [‡] 10	5919.5	2 ⁺	E1		$\Gamma_\gamma=0.054$ eV 21; B(E1)(W.u.)=0.20 8
		1708.9	3 [‡] 1	5163.9	2 ⁺	E1		$\Gamma_\gamma=0.046$ eV 19; B(E1)(W.u.)= 2.9×10^{-2} 12
		1762.5	4 [‡] 1	5110.3	2 ⁻	M1		$\Gamma_\gamma=0.062$ eV 22; B(M1)(W.u.)=0.054 19
		4717.5	13 [‡] 1	2154.27	1 ⁺	E1		$\Gamma_\gamma=0.20$ eV 5; B(E1)(W.u.)= 6.0×10^{-3} 15
		5131.4	53 [‡] 2	1740.05	0 ⁺	E1		$\Gamma_\gamma=0.82$ eV 20; B(E1)(W.u.)= 1.9×10^{-2} 5
		6152.6	20 [‡] 2	718.380	1 ⁺	E1		$\Gamma_\gamma=0.31$ eV; B(E1)(W.u.)= 4.2×10^{-3} 11
		6872	<4.6 [‡]	0.0	3 ⁺	M2		$\Gamma_\gamma<0.09$ eV; B(M2)(W.u.) >84
7428	1 ⁻	2317	32 [‡]	5110.3	2 ⁻	M1		$\Gamma_\gamma=1.52$ eV 38; B(M1)(W.u.)=5.8 15
		5272	22 [‡]	2154.27	1 ⁺	E1		$\Gamma_\gamma=1.03$ eV 30; B(E1)(W.u.)= 2.2×10^{-2} 7
		5686	<5 [‡]	1740.05	0 ⁺	E1		$\Gamma_\gamma<0.23$ eV; B(E1)(W.u.) $<4.0\times 10^{-3}$
		6707	46 [‡]	718.380	1 ⁺	E1		$\Gamma_\gamma=2.21$ eV 50; B(E1)(W.u.)= 2.3×10^{-2} 5
7559.9	0 ⁺	2380	14 [‡] 2	5182	1 ⁺	M1		$\Gamma_\gamma=0.87$ eV 15; B(M1)(W.u.)=3.1 6
		5404.0	9 [‡] 2	2154.27	1 ⁺	M1		$\Gamma_\gamma=0.32$ eV 11; B(M1)(W.u.)=0.10 3
		6839.1	77 [‡] 5	718.380	1 ⁺	M1		$\Gamma_\gamma=4.8$ eV 6; B(M1)(W.u.)=0.72 9
7750	2 ⁻	2639	4.8 [‡]	5110.3	2 ⁻	M1		$\Gamma_\gamma=0.27$ eV 14; B(M1)(W.u.)=0.70 35
		4162	3.4 [‡]	3587.13	2 ⁺	E1		$\Gamma_\gamma=0.19$ eV 11; B(E1)(W.u.)= 8.3×10^{-3} 48
		5594	3.7 [‡]	2154.27	1 ⁺	E1		$\Gamma_\gamma=0.21$ eV 11; B(E1)(W.u.)=3.8 20
		7028	11 [‡]	718.380	1 ⁺	E1		$\Gamma_\gamma=0.64$ eV 29; B(E1)(W.u.)= 5.8×10^{-3} 26

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas 1988Aj01,1984Aj01 (continued) $\gamma(^{10}\text{B})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ</u> [†]	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.</u>	<u>Comments</u>
7750	2 ⁻	7746	77 [‡]	0.0	3 ⁺	E1	$\Gamma_\gamma=4.3$ eV 11; B(E1)(W.u.)= 2.9×10^{-2} 8
8895	2 ⁺	8890		0.0	3 ⁺	E2	$\Gamma_\gamma=0.5$ eV 2; B(E2)(W.u.)=8.5 34

[†] From level energy difference; recoil correction applied.

[‡] % branching ratios from Table 10.19 and 10.20 of (2004Ti06).

Adopted Levels, Gammas 1988Aj01,1984Aj01

Level Scheme

Intensities: % photon branching from each level

