

Adopted Levels, Gammas 1990Aj01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu		NP A880,88 (2012)	1-Jan-2011

$Q(\beta^-)=11509.3$ 5; $S(n)=501.64$ 25; $S(p)=20164$ 13; $Q(\alpha)=-8321$ 8 [2012Wa38](#)

Note: Current evaluation has used the following Q record 11509.24 48 501.62 24 20165 13-8314.8 82 [2011AuZZ](#).

 ^{11}Be LevelsCross Reference (XREF) Flags

A	^{11}Li β^- decay:8.75 ms	I	$^9\text{Be}(^{15}\text{N},^{13}\text{N})$	Q	$^{11}\text{B}(d,^2\text{He})$
B	$^1\text{H}(^{11}\text{Li},^{11}\text{Be}), ^2\text{H}(^{11}\text{Li},^{11}\text{Be})$	J	$^9\text{Be}(^{16}\text{O},^{14}\text{O})$	R	$^{11}\text{B}(t,^3\text{He})$
C	$^1\text{H}(^{11}\text{Be},^{11}\text{Be}')$	K	$^{10}\text{Be}(n,\gamma)$	S	$^{11}\text{B}(^7\text{Li},^7\text{Be})$
D	$^9\text{Be}(t,p)$	L	$^{10}\text{Be}(d,p)$	T	$^{12}\text{C}(^7\text{Li},^8\text{B})$
E	$^9\text{Be}(^6\text{He},\alpha)$	M	$^{11}\text{B}(E,E'\pi^+)$	U	$\text{C}(^{12}\text{Be},^{11}\text{Be})$
F	$^9\text{Be}(^{12}\text{Be},\gamma^{11}\text{Be})$	N	$^{11}\text{B}(\mu^-, \gamma)$	V	$^{13}\text{C}(^6\text{Li},^8\text{B})$
G	$^9\text{Be}(^{13}\text{C},^{11}\text{C})$	O	$^{11}\text{B}(\pi^-, \gamma)$	W	$^{197}\text{Au}(^{11}\text{Be},^{11}\text{Be}')$
H	$^9\text{Be}(^{14}\text{N},^{12}\text{N})$	P	$^{11}\text{B}(n,p)$	X	$^{208}\text{Pb}(^{11}\text{Be},^{11}\text{Be}')$

E(level)	J^π	$T_{1/2}$	XREF	Comments
0	$1/2^+$	13.76 s 7	CDEFGH JKLMNOP STUVWX	$\% \beta^- = 100$ $T = 3/2; \mu = -1.6814$ 4 $T = 3/2$ μ : From $\mu = -1.6813$ 5 (2009No02) and $\mu = -1.6816$ 8 (1999Ge18,2000Ne11). Γ : From weighted average of 13.81 s 8 (1970Al21) and 13.57 s 15 (1959Wi49).
320.04 10	$1/2^-$	115 fs 10	A CDEFGH JKLMNO QRSTUVWX	$\%IT = 100$ E(level): Γ : from $^9\text{Be}(p,t)$. Also see $E_x = 320.5$ keV 5 from $^{11}\text{B}(\mu, \gamma)$.
1783 4	$5/2^+$	100 keV 10	CDE GH J L STU	$\%n \approx 100$ E(level): from $^9\text{Be}(t,p)$. Also see $E_x = 1770$ keV 20 from $^{11}\text{B}(^7\text{Li},^7\text{Be})$. Γ : From $^{11}\text{B}(^7\text{Li},^7\text{Be})$.
2654 10	$3/2^-$	206 keV 8	A CDE GH J M QRS UV	$\%n \approx 100$ E(level): from weighted average of $E_x = 2650$ keV 10 from $^9\text{Be}(t,p)$ and $E_x = 2670$ keV 20 from $^{11}\text{B}(^7\text{Li},^7\text{Be})$. Γ : From weighted average of $\Gamma = 214$ keV 12 from $^9\text{Be}(t,p)$ and $\Gamma = 200$ keV 10 from $^{11}\text{B}(^7\text{Li},^7\text{Be})$.
3400 6	$3/2^-$	122 keV 8	A CD H J ST	$\%n \approx 100$ E(level): from weighted average of $E_x = 3399$ keV 6 from $^9\text{Be}(t,p)$ and $E_x = 3410$ keV 20 from $^{11}\text{B}(^7\text{Li},^7\text{Be})$. Γ : From weighted average of $\Gamma = 113$ keV 11 from $^9\text{Be}(t,p)$ and $\Gamma = 130$ keV 10 from $^{11}\text{B}(^7\text{Li},^7\text{Be})$.
3889 1	$(3/2^+, 5/2^-)$	<8 keV	A CD J QRS	$\%n = ?$ J: also see $\geq 7/2$ from $^9\text{Be}(t,p)$. E(level): from weighted average of $E_x = 3888$ keV 1 from $^9\text{Be}(t,p)$ and $E_x = 3890$ keV 1 from ^{11}Li decay (2005Hi03). Γ : From $^9\text{Be}(t,p)$.

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Adopted Levels, Gammas 1990Aj01 (continued) ^{11}Be Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF		Comments
3955 1	$3/2^-$	10 keV 5	A CD FGH	S UV	%n=? E(level): Γ : from $^9\text{Be}(t,p)$. Also see $E_x=3949$ keV 2 in $^9\text{Be}(^{12}\text{Be},^{10}\text{Be}^*(3869)+n)$.
5255 3	$5/2^-$	45 keV 10	A CDE GH		%n=? E(level): Γ : from $^9\text{Be}(t,p)$.
5400				Q	E(level): from $^{11}\text{B}(d,^2\text{He})$.
5849 10	$1/2^+$	139 keV 17	D G		%n=? E(level): Γ : from $^9\text{Be}(t,p)$.
5980 40			H		E(level): from $^9\text{Be}(^{14}\text{N},^{12}\text{N})$.
6050 40		320 keV 40		S	E(level): Γ : from $^{11}\text{B}(^7\text{Li},^7\text{Be})$.
6300				Q	E(level): from $^{11}\text{B}(d,^2\text{He})$.
6510 50		120 keV 50	D		%n=? E(level): Γ : from $^9\text{Be}(t,p)$.
6705 21	$(7/2^-)$	40 keV 20	DE GH	M	%n=? E(level): Γ : from $^9\text{Be}(t,p)$.
7030 50	$(5/2^-)$	0.30 MeV 10	A D		J^π : from level spacing systematics, see $^9\text{Be}(^{13}\text{C},^{11}\text{C})$.
7100				J Q	%n=? E(level): Γ : from $^9\text{Be}(t,p)$.
8020 20	$3/2^-$	230 keV 55	A		E(level): from $^9\text{Be}(^{16}\text{O},^{14}\text{O})$. Also see $E_x=7.3$ MeV from $^{11}\text{B}(d,^2\text{He})$.
8200	$3/2^-$			Q	E(level): Γ : from ^{11}Li β decay (2005Hi03), also see $E_x=8030$ keV 70 (2004Sa46).
8813 25	$3/2^-, (9/2^-)$	0.20 MeV 5	A DE GH		E(level): from $^{11}\text{B}(d,^2\text{He})$.
					%n=? E(level): from weighted average of $E_x=8815$ keV 31 from $^9\text{Be}(t,p)$ and $E_x=8810$ keV 40 from ^{11}Li decay (2004Sa46).
					Γ : From $^9\text{Be}(t,p)$.
					J^π : $=9/2^-$ from level spacing systematics, see $^9\text{Be}(^{13}\text{C},^{11}\text{C})$.
9.4×10^3 5		7.0 MeV 5		PQRS	E(level): Γ : from $^{11}\text{B}(^7\text{Li},^7\text{Be})$. Other values $E_x=9.0$ MeV from $^{11}\text{B}(n,p)$, $E_x=9.2$ MeV from $^{11}\text{B}(d,^2\text{He})$ and $E_x=8940$ MeV from $^{11}\text{B}(t,^3\text{He})$.
9.6×10^3			G	M Q	Unweighted average of $E_x=9.3$ MeV from $^9\text{Be}(^{13}\text{C},^{11}\text{C})$, $E_x=9.4$ MeV from $^{11}\text{B}(e,e'\pi^+)$ and $E_x=10.2$ MeV from $^{11}\text{B}(d,^2\text{He})$.
10590 50	$5/2^-$	210 keV 40	A DE		%n=?; % α =? E(level): from $^9\text{Be}(t,p)$.
10730	$(11/2^-)$		GHI		E(level): from $E_x=10.7$ MeV from $^9\text{Be}(^{16}\text{O},^{14}\text{O})$, $E_x=10.73$ from $^9\text{Be}(^{13}\text{C},^{11}\text{C})$, $E_x=10.7$ from $^9\text{Be}(^{16}\text{O},^{14}\text{O})$, $E_x=10.8$ from $^9\text{Be}(^{14}\text{N},^{12}\text{N})$ and $^9\text{Be}(^{15}\text{N},^{13}\text{N})$.
					J^π : from level spacing systematics, see $^9\text{Be}(^{13}\text{C},^{11}\text{C})$.
12000			GH	M PQ	E(level): from $^9\text{Be}(^{13}\text{C},^{11}\text{C})$, $^{11}\text{B}(e,e'\pi^+)$, $^{11}\text{B}(n,p)$ and $^{11}\text{B}(d,^2\text{He})$; possibly two states.
13200?				Q	E(level): from $^{11}\text{B}(d,^2\text{He})$.
13600	$(13/2^-)$		GHI		From $^9\text{Be}(^{13}\text{C},^{11}\text{C})$. Also see $^9\text{Be}(^{14}\text{N},^{12}\text{N})$ and $^9\text{Be}(^{15}\text{N},^{13}\text{N})$.

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Adopted Levels, Gammas 1990Aj01 (continued) ^{11}Be Levels (continued)

<u>E(level)</u>	<u>J^π</u>	<u>$T_{1/2}$</u>	<u>XREF</u>		<u>Comments</u>	
16.30×10^3	10	0.7 MeV	<i>1</i>	A	M	J^π : from level spacing systematics, see $^9\text{Be}(^{13}\text{C}, ^{11}\text{C})$. E(level): from ^{11}Li decay (2009Ma31). Also see $E_x=16.4$ MeV from $^{11}\text{B}(e, e'\pi^+)$.
17500					M	E(level): from $^{11}\text{B}(e, e'\pi^+)$.
18.19×10^3	14	1.5 MeV	<i>4</i>	A	G	$\%n=?; \%^3\text{H}=?; \% \alpha=?$ E(level): from weighted average of ^{11}Li decay $E_x=18.15$ MeV <i>15</i> (1997Bo03) and $E_x=18.35$ MeV <i>30</i> (2009Ma72). Γ : From (2009Ma72). Also see $\Gamma \approx 0.5$ MeV (1984La27) and $\Gamma=1.6$ MeV <i>6</i> (2009Ma31).
$18.6 \times 10^3?$	$(15/2^-)$				G	E(level): from $^9\text{Be}(^{13}\text{C}, ^{11}\text{C})$. J^π : from level spacing systematics, see $^9\text{Be}(^{13}\text{C}, ^{11}\text{C})$.
21.16×10^3	2	490 keV	<i>70</i>	B		$T=5/2$ From $^1\text{H}(^{11}\text{Li}, ^{11}\text{Be})$ and $^2\text{H}(^{11}\text{Li}, ^{11}\text{Be})$. From $^9\text{Be}(^{13}\text{C}, ^{11}\text{C})$ and $^9\text{Be}(^{15}\text{N}, ^{13}\text{N})$. J^π : from level spacing systematics, see $^9\text{Be}(^{13}\text{C}, ^{11}\text{C})$.
21500	$(17/2^-)$				G I	From $^9\text{Be}(^{13}\text{C}, ^{11}\text{C})$.
25000	$(19/2^-)$				G	From $^9\text{Be}(^{13}\text{C}, ^{11}\text{C})$. J^π : from level spacing systematics, see $^9\text{Be}(^{13}\text{C}, ^{11}\text{C})$.

 $\gamma(^{11}\text{Be})$

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ^\dagger</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.</u>	<u>Comments</u>
320.04	$1/2^-$	320.04	<i>10</i>	100.	0	$1/2^+$	E1 $\Gamma_\gamma=3.97 \times 10^{-3}$ eV <i>35</i> ; $B(E1)(\text{W.u.})=0.360$ <i>31</i>

\dagger From level energy difference; recoil correction applied.

Adopted Levels, Gammas 1990Aj01**Level Scheme**

Intensities: Type not specified

