

^{11}Be β^- decay 1982Mi08

Type	Author	History	Citation	Literature Cutoff Date
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Parent: ^{11}Be : $E=0.0$; $J^\pi=1/2^+$; $T_{1/2}=13.76$ s 7; $Q(\beta^-)=11509.24$ 48; $\% \beta^-$ decay=100

1981AI03: $^{11}\text{Be}(\beta^-)$, measured β -delayed E_α , β -delayed $E(^7\text{Li})$, $\alpha\gamma$ -coin. Deduced log ft β -branching. ^{11}B level deduced α -branching.

1970AI21: ^{11}Be , measured $T_{1/2}$.

1971AI07: ^{11}Be ; measured $T_{1/2}$, E_γ , I_γ , delayed α -spectra, α - γ coin; deduced log ft. ^{11}B deduced levels, γ -branching.

1971AIZT: ^{11}Be ; measured E_γ , I_γ , E_α , I_α ; deduced log ft. ^{11}B deduced levels, J , π .

1980DeZF: ^{11}Li ; measured E_β , I_β , β -delayed (particle) (particle)-coin. ^{11}Be deduced new decay modes. ^{11}Be levels deduced β -branching.

1982Mi08: ^{11}Be ; measured E_γ , I_γ , γ - γ -coin; deduced log ft. ^{11}B levels deduced β -, γ -branching.

1982Wa18: $^{11}\text{Be}(\beta^-)$; measured β - γ -coin, Doppler shift; deduced β ν -asymmetry, meson exchange effects.

Based on (1982Mi08), which is the most complete study of populated states and observed transitions; see also Tables 11.15 (1980Aj01) and 11.13 (1985Aj01).

 ^{11}B Levels

E(level)	J^π^\dagger	Comments
0	$3/2^-$	
2124.693 27	$1/2^-$	
4444.89 50	$5/2^-$	
5020.31 30	$3/2^-$	
6791.80 30	$1/2^+$	Branching Ratio to the 4445 level <0.04%.
7285.51 43	$5/2^+$	
7977.84 42	$3/2^+$	Branching ratios to 4445 level <0.06%, the 5020 level <0.09%, and the 6792 level <0.10%.
9876 8	$3/2^+$	

† From Adopted Levels.

 β^- radiations

E(decay)	E(level)	$I\beta^-^{\ddagger}$	Log ft	Comments
(1633 8)	9876	3.1 4	4.23 6	av $E\beta=674.1$ 37 $I\beta^-$: from the relative intensities of the γ -rays and $I\alpha/I\beta(2125)$ of (1981AI03): apparently 0.10. Measurements in (1981AI03) determined the 9876 keV ^{11}B level decays 87.4% 12 to $7\text{LI}_{\text{g.s.}}$ and 12.6% 12 to $7\text{LI}^*(480)$.
(3531.4 12)	7977.84	4.00 30	5.57 4	av $E\beta=1576.49$ 31
(4223.7 12)	7285.51	<0.03	>8.0	av $E\beta=1913.55$ 32
(4717.4 12)	6791.80	6.47 45	5.93 3	av $E\beta=2155.16$ 28
(6488.9 12)	5020.31	0.282 20	7.93 3	av $E\beta=3027.29$
(7064.4 12)	4444.89	0.054 4	8.83 4	av $E\beta=3312.91$ 35 log $f^1 t=10.93$ 3.
(9384.6 11)	2124.693	31.4 18	6.644 25	av $E\beta=4461.49$
(11509.2 15)	0	54.7 20	6.826 16	av $E\beta=5516.51$ $I\beta^-$: from the relative intensities of the γ -rays and $I\beta(2125)/I\beta(\text{total})=0.355$ 18.

† Adopted by (1982Mi08); based on their work and on the earlier work on feeding of the $E_x=9876$ keV state which alpha-decays.

‡ Absolute intensity per 100 decays.

^{11}Be β^- decay **1982Mi08** (continued) $\gamma(^{11}\text{B})$

$E_i(\text{level})$	J_i^π	E_γ	I_γ^\dagger	E_f	J_f^π
2124.693	1/2 ⁻	2124.473 27	100	0	3/2 ⁻
4444.89	5/2 ⁻	4443.90 50	100	0	3/2 ⁻
5020.31	3/2 ⁻	2895.30 40	14.4 6	2124.693	1/2 ⁻
		5018.98 40	85.6 6	0	3/2 ⁻
6791.80	1/2 ⁺	1771.31 30	4.0 3	5020.31	3/2 ⁻
		4665.90 40	28.5 11	2124.693	1/2 ⁻
		6789.81 50	67.5 11	0	3/2 ⁻
7285.51	5/2 ⁺	7282.92	87.0 20	0	3/2 ⁻
7977.84	3/2 ⁺	692.31 10	0.85 4	7285.51	5/2 ⁺
		5851.47 42	53.2 12	2124.693	1/2 ⁻
		7974.73	46.2 11	0	3/2 ⁻

[†] Adopted by (1982Mi08); based on their work and on the branching ratios given in (1980Aj01).

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Decay Scheme

Intensities: % photon branching from each level

