

<sup>26</sup>Si β<sup>+</sup> decay    **1980Wi13,1975Ha21**

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia and A. M. Hurst	NDS 134,1 (2016)	1-Feb-2016

Parent: <sup>26</sup>Si: E=0.0; J<sup>π</sup>=0<sup>+</sup>; T<sub>1/2</sub>=2.2453 s 7; Q(β<sup>+</sup>)=5069.14 8; %β<sup>+</sup> decay=100

Others: [2008Ma39,1971Mo27](#).

[1980Wi13](#): <sup>26</sup>Si was produced from <sup>24</sup>Mg(<sup>3</sup>He,n)<sup>26</sup>Si reaction, E=12.0 MeV; Ge(Li) detector; Measured: E<sub>γ</sub>, I<sub>γ</sub>, deduced beta feeding.

[1975Ha21](#): <sup>26</sup>Si was produced from <sup>24</sup>Mg(<sup>3</sup>He,n)<sup>26</sup>Si reaction, E=12.0 MeV; Ge(Li) detector; Measured: E<sub>γ</sub>, I<sub>γ</sub>, deduced beta feeding.

<sup>26</sup>Al Levels

E(level)	J <sup>π</sup>	T <sub>1/2</sub>
0.0	5 <sup>+</sup>	7.17×10 <sup>5</sup> y 24
228.305 13	0 <sup>+</sup>	6.3460 s 8
416.852 3	3 <sup>+</sup>	
1057.739 12	1 <sup>+</sup>	
1759.034 8	2 <sup>+</sup>	
1850.62 3	1 <sup>+</sup>	
2071.64 4	1 <sup>+</sup>	
2740.03 3	1 <sup>+</sup>	
3723.81 4	1 <sup>+</sup>	

ε,β<sup>+</sup> radiations

E(decay)	E(level)	Iβ <sup>+</sup> †	Iε†	Log ft	I(ε+β <sup>+</sup> )†	Comments
(1345.3 10)	3723.81	<0.00050	<0.00080	>4.2	<0.0013	av Eβ=128.373 36; εK=0.5609 2; εL=0.04984 2; εM+=0.003995 2
(2329.1 10)	2740.03	0.0608 25	0.00099 4	4.54 2	0.0618 25	av Eβ=548.75; εK=0.014570 3; εL=0.0012934 3; εM+=0.0001037
(2997.5 10)	2071.64	0.289 11	0.00132 5	4.63 2	0.290 11	av Eβ=854.96; εK=0.0041644 6; εL=0.0003696; εM+=2.9622×10 <sup>-5</sup> 4
(3218.5 10)	1850.62	2.72 7	0.00905 25	3.86 1	2.73 7	av Eβ=958.24; εK=0.0030266 4; εL=0.0002686; εM+=2.1528×10 <sup>-5</sup> 3
(4011.4 10)	1057.739	21.9 4	0.0289 6	3.54 1	21.9 4	av Eβ=1334.29; εK=0.001203; εL=0.0001068; εM+=8.558×10 <sup>-6</sup>
(4840.8 10)	228.305	75.0 5	0.0477 6	3.49 1	75.0 5	av Eβ=1733.91; εK=0.0005807; εL=5.152×10 <sup>-5</sup> ; εM+=4.129×10 <sup>-6</sup>

† Absolute intensity per 100 decays.

γ(<sup>26</sup>Al)

I<sub>γ</sub> normalization: From 829γ absolute intensity, deduced relative to 511γ intensity in [1975Ha21](#).

E <sub>γ</sub>	I <sub>γ</sub> ‡@	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult.	α <sup>#</sup>	Comments
416.848	<3.67	416.852	3 <sup>+</sup>	0.0	5 <sup>+</sup>	[E2]	3.70×10 <sup>-4</sup>	α(K)=0.000345 5; α(L)=2.35×10 <sup>-5</sup> 4; α(M)=1.246×10 <sup>-6</sup> 18 I <sub>γ</sub> : deduced from intensity balance at 416.9 level (transition not reported).
829.3† 4	1000 5	1057.739	1 <sup>+</sup>	228.305	0 <sup>+</sup>	M1		

Continued on next page (footnotes at end of table)

$^{26}\text{Si } \beta^+$  decay **1980Wi13,1975Ha21** (continued)

$\gamma(^{26}\text{Al})$ (continued)								
$E_\gamma$	$I_\gamma^{\ddagger\text{@}}$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult.	$\alpha^\#$	Comments
1342.145	<0.98	1759.034	2 <sup>+</sup>	416.852	3 <sup>+</sup>			
1433.73	<0.96	1850.62	1 <sup>+</sup>	416.852	3 <sup>+</sup>	[E2]	$7.67 \times 10^{-5}$ 11	$\alpha(\text{K})=1.064 \times 10^{-5}$ 15; $\alpha(\text{L})=7.24 \times 10^{-7}$ 11; $\alpha(\text{M})=3.85 \times 10^{-8}$ 6 $\alpha(\text{IPF})=6.53 \times 10^{-5}$ 10
1622.0 <sup>†</sup> 7	124.5 23	1850.62	1 <sup>+</sup>	228.305	0 <sup>+</sup>	M1	$1.09 \times 10^{-4}$	$\alpha(\text{K})=6.98 \times 10^{-6}$ 10; $\alpha(\text{L})=4.75 \times 10^{-7}$ 7; $\alpha(\text{M})=2.53 \times 10^{-8}$ 4 $\alpha(\text{IPF})=0.0001016$ 15 $I_\gamma$ : Others: 134 5 ( <b>1975Ha21</b> ); 149 16 ( <b>1971Mo27</b> ).
1654.73	1.5 3	2071.64	1 <sup>+</sup>	416.852	3 <sup>+</sup>	[E2]	$1.61 \times 10^{-4}$	$\alpha(\text{K})=7.94 \times 10^{-6}$ 12; $\alpha(\text{L})=5.40 \times 10^{-7}$ 8; $\alpha(\text{M})=2.88 \times 10^{-8}$ 4 $\alpha(\text{IPF})=0.0001528$ 22
1844.2 20	11.79 27	2071.64	1 <sup>+</sup>	228.305	0 <sup>+</sup>	M1	$1.88 \times 10^{-4}$	$\alpha(\text{K})=5.64 \times 10^{-6}$ 8; $\alpha(\text{L})=3.84 \times 10^{-7}$ 6; $\alpha(\text{M})=2.04 \times 10^{-8}$ 3 $\alpha(\text{IPF})=0.000182$ 3 $I_\gamma$ : Others: 16 3 ( <b>1975Ha21</b> ); 13 3 ( <b>1971Mo27</b> ).
2323.07	<0.28	2740.03	1 <sup>+</sup>	416.852	3 <sup>+</sup>	[E2]	$4.77 \times 10^{-4}$	$\alpha(\text{K})=4.26 \times 10^{-6}$ 6; $\alpha(\text{L})=2.90 \times 10^{-7}$ 4; $\alpha(\text{M})=1.542 \times 10^{-8}$ 22 $\alpha(\text{IPF})=0.000473$ 7
2511.59	2.82 10	2740.03	1 <sup>+</sup>	228.305	0 <sup>+</sup>	M1	$4.62 \times 10^{-4}$	$\alpha(\text{K})=3.46 \times 10^{-6}$ 5; $\alpha(\text{L})=2.35 \times 10^{-7}$ 4; $\alpha(\text{M})=1.253 \times 10^{-8}$ 18 $\alpha(\text{IPF})=0.000458$ 7
2665.92	<0.15	3723.81	1 <sup>+</sup>	1057.739	1 <sup>+</sup>			
3495.25	<0.045	3723.81	1 <sup>+</sup>	228.305	0 <sup>+</sup>	M1	$8.50 \times 10^{-4}$	$\alpha(\text{K})=2.13 \times 10^{-6}$ 3; $\alpha(\text{L})=1.445 \times 10^{-7}$ 21; $\alpha(\text{M})=7.70 \times 10^{-9}$ 11 $\alpha(\text{IPF})=0.000848$ 12

<sup>†</sup> From Adopted Gammas.

<sup>‡</sup> From **1980Wi13** except where noted. The existence and/or intensities of extremely weak transitions from **1980Wi13** are not in agreement with adopted data. The impact of these transitions on the decay scheme is insignificant.

# **Additional information 1.**

@ For absolute intensity per 100 decays, multiply by 0.0218 8.

$^{26}\text{Si } \beta^+ \text{ decay } 1980\text{Wi13,1975Ha21}$

Decay Scheme

Legend

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

Intensities:  $I_\gamma$  per 100 parent decays

