Adopted Levels, Gammas

History

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

Q(β^-)=−18110 *SY*; S(n)=19040 *10*; S(p)=5513.8 *5*; Q(α)=−9166.0 *3* 2012Wa38
ΔQ(β^-)=200 (syst) (2012Wa38).

^{26}Si Levels

Cross Reference (XREF) Flags

A	^{26}P ε decay	E	^{12}C(^{16}O,2nγ)	I	^{28}Si(p,p2nγ)
B	^{27}S β^+p decay	F	^{24}Mg(^{3}He,n)	J	^{28}Si(p,t)
C	^{1}H(^{25}Al,P)	G	^{24}Mg(^{3}He,nγ)	K	^{28}Si(α,^{6}He)
D	^{1}H(^{27}Si,^{26}Siγ)	H	Coulomb excitation	L	^{29}Si(^{3}He,^{6}He)

E(level)[†]	J$^\pi$[@]	T$_{1/2}$[f]	XREF	Comments
0.0	0$^+$	2.2453 s *7*	A DEFGH J L	%ε+%β^+=100 T=1 J$^\pi$: L=0 in ^{24}Mg(^{3}He,n). T$_{1/2}$: From 2010Ia01, the composite time decay of ^{26}Si (parent) and ^{26m}Al (daughter) was analyzed. The measurement described in 2010Ia01 disagrees with the other precision half-life measurement of 2008Ma39 (T$_{1/2}$=2.2283 s *27*). The authors of 2010Ia01 propose that the result of 2008Ma39 should be discarded since they did not correct for parent-daughter detection-efficiency differences. The β-decay mode 0$^+$(^{26}Si g.s.)→0$^+$(^{26m}Al 228.3-keV isomer) is a superallowed transition. Other values: 2.1 s *3* (1960Ro06), 2.1 s *1* (1963Fr10), 2.1 s *2* (1971Mo27), 2.202 s *23* (1972Ha58), 2.210 s *21* (1975Ha21), and 2.240 s *10* (1980Wi13).
1797.30 *10*	2$^+$[&]	440 fs *40*	AB DEFGH JKL	J$^\pi$: L=2 in ^{24}Mg(^{3}He,n). 1797.2γ E2 to 0$^+$. T$_{1/2}$: Average of 430 fs *42* (^{3}He,nγ) and 450 fs *40* (Coulomb Excitation). Uncertainty is the lowest input value. Other value: 970 fs *416* 1969Be31.
2787.05 *13*	2$^+$[&]	146 fs *35*	A DEFG JKL	J$^\pi$: L=2 in ^{24}Mg(^{3}He,n). 2787.5γ E2 to 0$^+$. T$_{1/2}$: Other value: 139 fs *111* (1969Be31).
3336.35 *22*	0$^+$[&]	1.52 ps *48*	DEFG JK	J$^\pi$: L=0 in ^{24}Mg(^{3}He,n). 1539.1γ E2 to 2$^+$. T$_{1/2}$: Other value: 1.87 ps *114* (1969Be31).
3757.56 *15*	(3$^+$)	<485 fs	A DEFG J	J$^\pi$: Proposed in 2007Se02 from $\gamma(\theta)$ measurements.
3842.2 *18*	(4$^+$)		A G	E(level): Weighted average of 3842.1 keV *20* (1969Be31) and 3842.2 keV *15* (2004Th09); adopted uncertainty from arithmetic mean. Level not observed in 2007Se02 and its existence considered doubtful based on mirror-nucleus (^{26}Mg) considerations and shell-model calculations. J$^\pi$: Proposed by 1969Be31 (^{3}He,nγ), based on n-γ correlations and observation of more than one depopulating γ-ray transitions. log *ft*=6.0 in ^{26}P ε decay from (3)$^+$ and also from theoretical predictions (2004Th09).
4139.06 *20*	2$^+$	35 fs *3*	A DEFG JKL	J$^\pi$: L=2 in (^{3}He,n). T$_{1/2}$: Other value: 76 fs *72* (1969Be31).
4187.77 *19*	(3$^+$)		A DEFG J L	XREF: L(4211). J$^\pi$: Proposed in 2004Pa42 (^{3}He,n), from comparison of measured differential cross sections with Hauser-Feshbach predictions. Also in 2007Se02 (^{16}O,2nγ).
4446.37 *18*	(4$^+$)[d]	<350 fs	DEFG JKL	J$^\pi$: 2648.7γ Q to 2$^+$ (both in 2007Se02 (^{16}O,2nγ) and 2015Do07

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Adopted Levels, Gammas (continued)

^{26}Si Levels (continued)

E(level)[†]	J^{π}[@]	$T_{1/2}$[f]	XREF	Comments
				(^{3}He,nγ)). Other assignment: 2^+ in 2004Pa42 (^{3}He,n) from comparison of measured differential cross sections with Hauser-Feshbach predictions.
4796.9 *8*	(4^+)		DE G J	J^{π}: 2999.4γ Q to 2^+.
4811.0 *10*	(2^+)	<69 fs	DEFG JKL	J^{π}: Proposed in 2004Pa42 (^{3}He,n), from comparison of measured differential cross sections with Hauser-Feshbach predictions.
4831.2 *4*	(0^+)		E G J	J^{π}: Proposed in 2010Ma43 (p,t), from measured angular distributions and DWBA analysis. Also L=0(+L>0) in (^{3}He,n) for doublet.
5147.5 *8*	2^+		DEFG JKL	J^{π}: L=2 in (p,t).
5229? *12*	(2^+)		J	E(level): Level only observed in 1972Pa02 (p,t). 2010Ma43 (p,t) doubt its existence and claim observation in 1972Pa02 is likely from an overlap of the 5145.7- and 5289.0-keV levels obscured by the tail of the ^{10}C (g.s.) impurity peak at the same position. J^{π}: From shell-model calculations and mirror nuclei considerations (1996Il01).
5289.04 *18*	4^+		DEFG JKL	J^{π}: L=4 in (^{3}He,n).
5517.79 *23*	(4^+)		DEFG JKL	J^{π}: L=(4) in (p,t). Also in 2004Pa42 (^{3}He,n) from comparison of measured differential cross sections with Hauser-Feshbach predictions. $J^{\pi}=4^+$ in 2016Ch09 on basis of angular distributions in 2007Se02.
5676.2 *3*	1^+		DEFG J L	$\Gamma_{\gamma}=1.2\times10^{-4}$ keV (2009Pe04); other value $\$\Gamma_p=1.3\times10^{-12}$ keV\$ $\Gamma_{\gamma}=1.1\times10^{-4}$ keV (2006Ba65). J^{π}: From comparison of measured differential cross sections with Hauser-Feshbach predictions in 2004Pa42 (^{3}He,n). ΔJ=1 from angular distribution measurements of γ-ray transitions and feeding of 2^+ state (2015Do07 – (^{3}He,nγ)).
5890.1 *3*	0^+		G K	J^{π}: Proposed in 2015Do07 (^{3}He,nγ), based on isotropic distribution of γ rays and absence of 0^- analogue states in ^{26}Al and ^{26}Mg. Also in 2014Ko41.
5929.4[#] *8*	3^+[d]		A F JK	XREF: F(5912)K(5918). E(level): Other values: 5912 keV *4* ((^{3}He,n)–2004Pa42), 5916 keV *2* (2006Ba65–(p,t)), and 5918 keV *8* ((α,^{6}He) 2008Kw01). 2016Ch09 recommend an excitation energy of 5927.6 keV *10* from weighted average of particle reactions from references mentioned therein. J^{π}: From angular distribution measurements of tritons in smaller angles and comparison with the mirror ^{26}Mg nucleus (2006Ba65 (p,t)). Also 3^+ in 2004Pa42 (^{3}He,n) and in ^{26}P ε decay (2004Th09). Other measurements have generally converged on 3^+ assignment (2016Ch09). $\Gamma_p=2.9\times10^{-3}$ keV *10*\$ $\Gamma_{\gamma}=9.2\times10^{-5}$ keV (2009Pe04); other values: $\Gamma_p=2.3\times10^{-3}$ keV, $\Gamma_{\gamma}=3.3\times10^{-5}$ keV (2006Ba65); Γ_{γ}/Γ_p=0.014 *4*(stat) *+5−4* (literature) based on the beta-delayed proton-decay branching ratio=17.96% *90* through this level (2004Th09), and total absolute γ-decay intensity Iγ=0.25% *7*(stat) *+8−7*(literature) from this level deduced from 1742γ branching=71% *+13−19* from the ^{26}Mg mirror level (2009Wr01). Further using Γ_p=2.9 eV *10* from 2009Pe04, the deduced Γ_{γ}=40 meV *11*(stat) *+19−18* (literature) and the resonance strength $\omega\gamma$=23 meV *6*(stat) *+11−10* (literature).
5945.9[‡] *40*	(0^+)[de]		F J L	E(level): Weighted average of 5946 keV *4* (2004Pa42), 5946 keV *4* (2006Ba65), 5945 keV *8* (2002Ca24), and 5946 keV *4* (2009Pe04). Uncertainty from most precise measurement. 2016Ch09 (a review) adopted a value of 5949.7 keV *53* from literature data mentioned therein. J^{π}: From comparison of measured differential cross sections at two different energies with Hauser-Feshbach predictions in 2004Pa42 (^{3}He,n). Shell-model calculations (1996Il01) predict 0^+ or 4^+ for this state. Mirror-nucleus considerations with ^{26}Mg allow for a 4^+ assignment (2016Ch09). However, Hauser-Feshbach calculations in 2004Pa42 rule out a J=4 assignment. $\Gamma_{\gamma}=5.7\times10^{-6}$ keV (2009Pe04); other value $\$\Gamma_p=1.9\times10^{-5}$ keV\$ $\Gamma_{\gamma}=8.8\times10^{-6}$ keV (2006Ba65). $\Gamma_p/(\Gamma_p+\Gamma_{\gamma})$=0.91 *10* (2010Ch44).

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Adopted Levels, Gammas (continued)

^{26}Si Levels (continued)

E(level)[†]	J^{π}[@]	$T_{1/2}$[f]	XREF	Comments
6101			K	
6295.3 *24*	2^+		A C F JK	XREF: F(6312). E(level): Weighted average from 6295.7 keV *24* (2010Ma43), 6292 keV *8* (2005ShZY), and 6295 keV *6* (2004Th09). Uncertainty from most precise measurement. J^{π}: L=2 in (^{3}He,n). $\Gamma_p/(\Gamma_p+\Gamma_\gamma)$=0.88 *20* determined from 6300+6380-keV doublet peak in 2010Ch44.
6382.7 *29*	(2^+)		A C F JK	E(level): Weighted average from 6379.5 keV *29* (2010Ma43), 6388 keV *4* (2004Pa42), and 6384 keV *5* (2004Th09). Uncertainty from most precise measurement. J^{π}: L=(2) in (p,t). $\Gamma_p/(\Gamma_p+\Gamma_\gamma)$=0.88 *20* determined from 6300+6380-keV doublet peak in 2010Ch44.
6461.1 *28*	0^+		C F J	E(level): Weighted average of 6456.2 *28* (2010Ma43 – (p,t)), 6471 *4* (2004Pa42) and 6470 *30* (1982Bo14) both from (^{3}He,n). J^{π}: L=0 in (^{3}He,n) 1982Bo14. Measured differential cross sections and Hauser-Feshbach calculations support $J^{\pi}=0^+$ (2004Pa42).
6765 *5*			A	
6787 *4*	3^-		C F JK	E(level): Weighted average of 6785 *5* (2010Ma43), 6787 *4* (2002Ba25), 6786 *29* (1972Pa02) from (p,t) and 6788 *4* (2004Pa42), 6780 *30* (1982Bo14) from (^{3}He,n). J^{π}: L=3 in (^{3}He,n). $\Gamma_p/(\Gamma_p+\Gamma_\gamma)$=1.21 *24* (2010Ch44).
6810 *8*			K	
6880 *30*	(0^+)[d]		C F	E(level): From (^{3}He,n). J^{π}: L=(0) in (^{3}He,n) (1982Bo14). [5^+] mirror nucleus assignment in 2010Ma43 (p,t).
7018 *6*	(3^+)[a]		C JK	E(level): From 2008Kw01 – (α,^{6}He). J^{π}: From mirror assignment in 2010Ma43 (p,t). $\Gamma_p/(\Gamma_p+\Gamma_\gamma)$=1.04 *25* (2010Ch44).
7154 *4*	2^+	2.7 keV *1*	C F JK	E(level): Weighted average from 7152 keV *4* (2004Pa42), 7151 keV *5* (2010Ma43), 7161 keV *6* (2008Kw01), 7162 keV *24* (2012Ch04), 7147 keV *27* (2014Ju02), 7160 keV *10* (2002Ba25), 7150 keV *30* (1982Bo14), and 7150 keV *15* (1972Pa02). Uncertainty from most precise measurement. J^{π}: L=2 in (^{3}He,n). $T_{1/2}$: Other value from R-matrix fit in 2012Ch04: 7 keV *4*. $\Gamma_p/(\Gamma_p+\Gamma_\gamma)$=1.04 *25* (2010Ch44).
7198 *6*	(5^+)[a]		JK	E(level): Weighted average from 7199 keV *6* (2005ShZY) and (tentative) 7197 keV *8* (2010Ma43). Uncertainty from most precise measurement. J^{π}: From mirror assignment in 2010Ma43 (p,t).
7418.4 *23*	(4^+)[d]	1.1 keV *1*	C F JK	E(level): Weighted average from 7425 keV *4* (2004Pa42), 7415.2 keV *23* (2010Ma43), 7429 keV *7* (2008Kw01), 7402 keV *45* (2012Ch04), and 7401 keV *28* (2014Ju02). Uncertainty from most precise measurement. J^{π}: From R-matrix analysis and proton-resonance cross sections in 2014Ju02 (^{25}Al,P), also in 2010Ma43 (p,t) from DWBA and mirror nucleus assignment. (0^+) from L=(0) in 1982Bo14 (^{3}He,n); (2^+) from angular-distribution measurements 2002Ba25 (L=2), 2^+ from R-matrix analysis and measured differential cross sections (2012Ch04). $T_{1/2}$: Other value: 6 keV *4* (2012Ch04) – from R-matrix fitting. $\Gamma_p/(\Gamma_p+\Gamma_\gamma)$=1.31 *27* determined from 7425+7498-keV doublet peak in 2010Ch44.
7496.4 *40*	2^+	15.9 keV *3*	A C F JK	E(level): Weighted average from 7493 keV *4* (2004Pa42), 7498 keV *4* (2006Ba65), 7480 keV *20* (2008Kw01), 7501 keV *5* (2004Th09), 7484 keV *24* (2012Ch04), and 7484 keV *28* (2014Ju02). Uncertainty – lowest

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Adopted Levels, Gammas (continued)

^{26}Si Levels (continued)

E(level)[†]	J^{π}[@]	$T_{1/2}$[f]	XREF	Comments
				input value. J^{π}: L=2 in (^{3}He,n). $T_{1/2}$: Other value: 46 keV *11* (2012Ch04) – from R-matrix fitting. $\Gamma_p/(\Gamma_p+\Gamma_\gamma)$=1.31 *27* determined from 7425+7498-keV doublet peak in 2010Ch44.
7522 *12*	(5^-)[a]		J	
7606 *6*			A	
7674.2 *40*	(2^+)[a]	30.1 keV *5*	C JK	E(level): Weighted average from 7661 keV *12* (2006Ba65), 7676 keV *4* (2008Kw01), and 7654 keV *29* (2014Ju02). Uncertainty – lowest input value.
7701.1 *30*	(3^-)[a]	41[g] keV *6*	C F JK	E(level): Weighted average from 7694 keV *4* (2004Pa42), 7701 keV *12* (2006Ba65), 7705 keV *3* (2005ShZY), and 7704 keV *13* (2012Ch04). Uncertainty – lowest input value. J^{π}: 3^- in (^{3}He,n) – 2004Pa42 and mirror assignment [3^-] in (2010Ma43) (p,t). But 3^+ from R-matrix fit in 2012Ch04 (^{25}Al,P). $\Gamma_p/(\Gamma_p+\Gamma_\gamma)$=1.18 *23* (2010Ch44).
7886.2 *40*	(1^-)[a]	22.8 keV *13*	C F JK	E(level): Weighted average from 7899 keV *4* (2004Pa42), 7886 keV *4* (2008Kw01), 7874 keV *4* (2010Ch44), and 7866 keV *29* (2014Ju02). Uncertainty – lowest input value. $\Gamma_p/(\Gamma_p+\Gamma_\gamma)$=1.11 *22* (2010Ch44).
7921 *3*			K	
7962 *5*			A	
8008 *14*	(3^+)	4.5 keV *3*	C	E(level): Weighted average from 7977 keV *30* (2014Ju02) and 8015 keV *14* (2012Ch04). Uncertainty – lowest input value. J^{π}: Extracted from R-Matrix fit to experimental cross sections in 2012Ch04. Other assignment: $(2^+,3^+)$ from R-matrix fit in 2014Ju02. $T_{1/2}$: Other value: 15 keV *5* (2012Ch04) – from R-matrix fitting.
8144 *21*	$(1^-,2^+)$[b]		A C F	E(level): Weighted average from 8156 keV *21* (2004Th09) and 8120 keV *30* (1982Bo14). Uncertainty – lowest input value. Tentative level at 8166 keV *7* (2010Ch44 – (p,t)) not used in average.
8222 *5*	(1^-)[a]		J	J^{π}: mirror assignment as described in 2010Ma43.
8254 *5*			A	
8269 *4*	(2^+)[a]		J	
8282 *6*			K	
8356 *12*	(3^+)	27 keV *8*	C	J^{π}: From R-matrix fit to proton resonances in ^{1}H(^{25}Al,P) 2012Ch04.
8431 *6*			K	
8558 *17*	(2^+)[a]		A F JK	E(level): Weighted average from 8557 keV *4* (2010Ma43), 8563 keV *17* (2004Th09), and 8570 keV *30* keV (1982Bo14). Uncertainty from arithmetic mean of associated uncertainties. J^{π}: mirror assignment as described in 2010Ma43. Other value $(1^-,2^+)$ in 1982Bo14.
8689 *21*	$(1^-,2^+)$[b]		F J	E(level): Weighted average from 8700 keV *30* (1982Bo14) and 8687 keV *12* (2010Ma43). Uncertainty from arithmetic mean of associated uncertainties. Level was recorded as tentative observation in 2010Ma43. J^{π}: Other: [4^+] from mirror assignment described in 2010Ma43.
8806 *5*			K	
8952 *7*			K	
8989 *7*	(4^+)[a]		J	
9067 *5*			K	
9124? *8*			J	
9170 *30*	$(1^-,2^+)$[b]		F	
9247 *8*			K	
9316 *5*	(4^+)[c]		J	E(level): Mirror state in ^{26}Mg at 9579 keV *3* (1986Al06,2011Ma46).
9373.3 *7*			A K	E(level): Weighted average from 9374 keV *7* (2005ShZY) and 9370

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Adopted Levels, Gammas (continued)

^{26}Si Levels (continued)

E(level)[†]	J^{π}[@]	XREF	Comments
			keV *15* (2004Th09). Uncertainty from most precise experimental result.
9433 *4*		A	
9606.1 *9*	(2^+)[c]	JK	E(level): Weighted average from 9605 keV *10* (2011Ma46) and 9607 keV *9* (2005ShZY). Uncertainty from most precise experimental result. Mirror state in ^{26}Mg at 9856.52 keV *6* (1986Al06,2011Ma46).
9725 *7*		A	
9762 *4*	(5^-)[c]	J	E(level): Mirror state in ^{26}Mg at 10040 keV *2* (1986Al06,2011Ma46).
9802 *7*		K	
9910.2 *20*	(0^+)[c]	JK	E(level): Mean and adopted uncertainty from arithmetic average of 9903.4 keV *20* (2011Ma46) and 9917 keV *2* (2005ShZY). Mirror state in ^{26}Mg at 10159 keV *3* (1986Al06,2011Ma46).
10070 *8*		K	
10296.9 *60*		A K	E(level): Weighted average of 10294 keV *7* (2005ShZY) and 10299 keV *6* (2004Th09). Uncertainty − lowest input value.
10405 *5*		A J	XREF: J(10436).
10688 *9*		A J	XREF: J(10660).
10827 *8*		A J	XREF: J(11010).
13015 *4*	(3^+)	A	T=2 E(level): Highest T=2 level proposed at 13080 keV *15* in 1983Ca06. J^{π}: From ^{26}P ε decay (2004Th09).

[†] Up to 5929.4 − from a least-squares fit to γ-ray energies, except for 3842.2-, 5229-, and 5913.8-keV levels. 1763.5γ from 5517.79-keV level poorly fit to the level scheme and omitted during the fitting procedure and also uncertainty tripled for 988.9γ from 2787 keV level.

[‡] The existence of this level as a separate resonance is called into question in 2015Do07 due to lack of evidence in their (^{3}He,nγ) measurement and also argue that 5946 keV level might the same level as that at 5929.4 keV. This inference is refuted in 2016Ch09 on the basis of (^{3}He,nγ) (2004Pa42) and (p,t) (2010Ma43) measurements that have populated both this resonance and the 5929.4-keV resonance simultaneously.

[#] A value of 5926.9 keV *6* may be obtained from the weighted average of 5927 keV *4* (2010Ch44), 5921 keV 12 (2010Ma43), 5912 keV *4* (2004Pa42), 5916 keV *2* (2002Ba25), 5928.7 keV *7* (2013Be41), 5929 keV *5* (2004Th09), and 5918 keV *8* (2008Kw01). Other values not used in averaging: 5914 keV *2* (200Ba25) and 5914 keV *4* (2009Pe04) for reasons outlined in Sect. IV of 2016Ch09, and 5910 keV *30* (1982Bo14) owing to its large uncertainty overlapping with neighboring resonances. Both the adopted and weighted values are statistically consistent with the suggested value of 5927.6 keV *10* reported in the reanalysis of 2016Ch09.

[@] Taken from 2004Pa42 except where noted. Assignments established by comparison of measured differential cross sections with Hauser-Feshbach calculations.

[&] Deduced from comparison between measured angular distributions and DWBA calculations in 1982Bo14.

[a] Deduced from mirror assignments with ^{26}Mg presented in Fig. 7 in 2010Ma43.

[b] Based on comparison of measured angular distributions with DWBA calculations in 1982Bo14.

[c] Based on mirror assignments with ^{26}Mg described in 1986Al06 and 2011Ma46.

[d] Conflicting spin-parity assignments. See comments.

[e] 2002Ca24 argue for a 3^+ assignment in (^{3}He,^{6}He) on the basis that other 0^+ states are only weakly populated in their measurement. However, 2002Ca24 note “a small high energy shoulder on the peak, making it slightly wider at the base, suggests that another state lies there.” Evaluators note: It appears that the reported peak at 5945 keV *8* in 2002Ca24 is a doublet of 5929+5946 and the 3^+ assignment probably related to the 5929 keV state. 2016Ch09 suggest a similar view for this spin-parity assignment. However, from recent measurements, 2015Do07 (^{3}He,nγ) propose the first 0^+ state above proton separation energy at 5890 keV and note that there is no theoretical prediction or experimental evidence for T=1 states in analogue nuclei ^{26}Al and ^{26}Mg for two closely spaced 0^+ states in this region and the existence of this level as a separate resonance is called into question. However, 2016Ch09 argued that both this level and the 5890.1-keV level may have 0^+ assignments due to particle

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Adopted Levels, Gammas (continued)

^{26}Si Levels (continued)

excitations into a different shell and suggest for additional experimental and theoretical work.

[f] From (^{3}He,nγ), deduced using the Doppler-shift attenuation method except where noted; widths deduced from R-matrix fits to differential cross-sections for ^{1}H(^{25}Al,P) measured in 2014Ju02 except where noted.

[g] Width deduced from R-matrix fits to differential cross-sections for ^{1}H(^{25}Al,P) measured in 2012Ch04.

γ(^{26}Si)

E_i(level)	J^π_i	E_γ[†]	I_γ[&]	E_f	J^π_f	Mult.[c]	δ[f]	Comments
1797.30	2+	1797.2 *1*	100	0.0	0+	E2		B(E2)(W.u.)=15.3 *15* Mult.: Deduced from measured A_2/A_4 anisotropy coefficients from 1797.2γ to g.s. (2007Se02).
2787.05	2+	988.9 *1*	100.0[a] *27*	1797.30	2+	M1+E2	+0.21 *10*	B(M1)(W.u.)=0.100 *25*; B(E2)(W.u.)=25 *24* δ: The other value −3.7(18) (1968Ro18) is rejected in both 1968Ro18 and 1969Be31 on the basis of unlikely transition probability implications.
		2787.0 *2*	48.9[a] *27*	0.0	0+	E2		B(E2)(W.u.)=1.7 *4* I_γ: Others: 67 *5* (2015Do07) and 1.35 *20* (2014Ko41) both in (^{3}He,nγ).
3336.35	0+	549.3[#]	<2[b]	2787.05	2+	[d]		
		1539.0 *2*	100 *19*	1797.30	2+	E2[d]		B(E2)(W.u.)=10 *5*
3757.56	(3+)	970.5 *1*	82 *4*	2787.05	2+	(M1+E2)		Mult.: From (^{3}He,nγ) – 1969Be31. I_γ: Others: 47 *4* (2014Ko41) and 43 *14* (1969Be31) both in (^{3}He,nγ).
		1960.1 *2*	100 *4*	1797.30	2+	(M1+E2)		Mult.: From (^{3}He,nγ) – 1969Be31.
3842.2	(4+)	1055.1[#]	<15[b]	2787.05	2+	[d]		
		2044.8[#]	100[b] *28*	1797.30	2+			E_γ: Measured in γ-γ coincidence (1969Be31). $\Delta I\gamma$: Derived from 2004Th09.
4139.06	2+	802.7[#]	<12[b]	3336.35	0+			
		1351.5 *4*	4.9[b] *8*	2787.05	2+			I_γ: From 2014Ko41. Other: 11 *5* (2015Do07) both in (^{3}He,nγ).
		2341.8 *2*	100.0 *21*	1797.30	2+	M1+E2[e]		I_γ: From 2014Ko41. Other: 100 *4* (2015Do07) both in (^{3}He,nγ).
		4141[‡] *3*	11.8 *59*	0.0	0+	[E2]		B(E2)(W.u.)=0.28 *15* I_γ: From 2007Se02 (^{16}O,2nγ). Other: 25 *13* (1969Be31) in (^{3}He,nγ).
4187.77	(3+)	1400.5 *2*	100.0 *59*	2787.05	2+	D		I_γ: From 2007Se02 (^{16}O,2nγ). Other: 61 *5* (2015Do07) (^{3}He,nγ). Evaluators adopt as the strongest branch along with supporting evidence in 2014Ko41 (^{3}He,nγ).
		2390.3 *3*	57.4 *59*	1797.30	2+	D		I_γ: From 2007Se02 (^{16}O,2nγ). Other: 100 *5* (2015Do07) (^{3}He,nγ). Evaluators adopt this as a weaker branch along with supporting evidence in 2014Ko41 (^{3}He,nγ).
4446.37	(4+)	1658.3[@] *14*	10 *5*	2787.05	2+			
		2648.7 *2*	100.0 *22*	1797.30	2+	(E2)		B(E2)(W.u.)>2.3
4796.9	(4+)	2999.4 *8*	100	1797.30	2+	Q[e]		E_γ: Average of data from 2007Se02 (^{16}O,2nγ), and 2015Do07, 2014Ko41 both in (^{3}He,nγ).
4811.0	(2+)	2023.9 *10*	100 *12*	2787.05	2+	D+Q[e]		E_γ: Average of data from 2007Se02

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{26}Si)$ (continued)

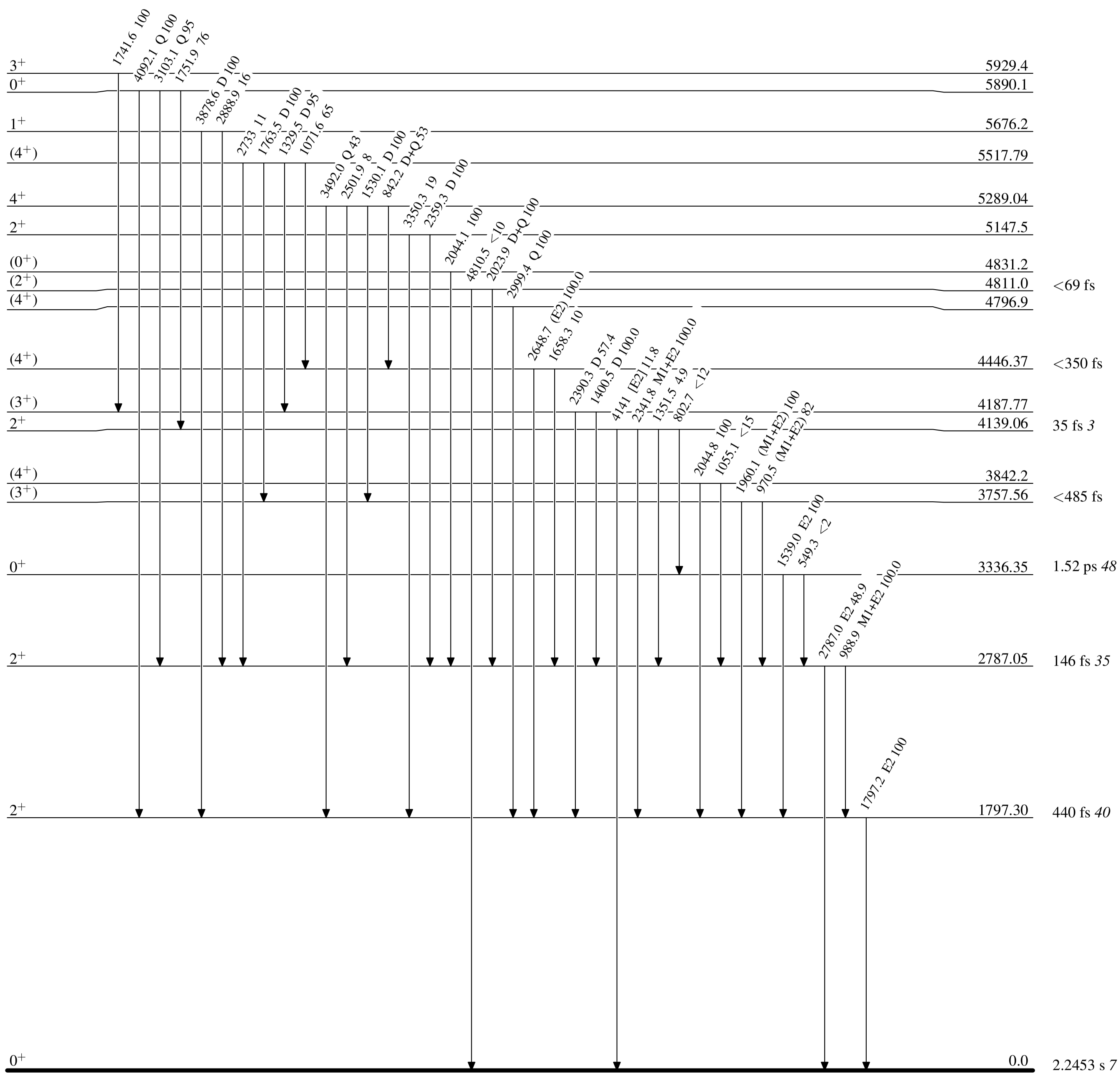
E_i(level)	J^π_i	E_γ[†]	I_γ[&]	E_f	J^π_f	Mult.[c]	Comments
							(^{16}O,2nγ), and 2015Do07, 2014Ko41 both in (^{3}He,nγ).
4811.0	(2$^+$)	4810.5[#]	<10[b]	0.0	0$^+$		
4831.2	(0$^+$)	2044.1 *3*	100	2787.05	2$^+$		
5147.5	2$^+$	2359.3[@] *15*	100 *4*	2787.05	2$^+$	D[e]	
		3350.3[@] *8*	19 *5*	1797.30	2$^+$		
5289.04	4$^+$	842.2 *2*	53 *7*	4446.37	(4$^+$)	D+Q[e]	
		1530.1 *10*	100 *7*	3757.56	(3$^+$)	D[e]	E_γ: Average of data from 2007Se02 (^{16}O,2nγ), and 2015Do07, 2014Ko41 both in (^{3}He,nγ).
		2501.9[@] *10*	8 *9*	2787.05	2$^+$		
		3492.0[@] *2*	43 *9*	1797.30	2$^+$	Q[e]	
5517.79	(4$^+$)	1071.6 *2*	65 *11*	4446.37	(4$^+$)		
		1329.5 *3*	95 *11*	4187.77	(3$^+$)	D[e]	
		1763.5 *8*	100 *11*	3757.56	(3$^+$)	D[e]	E_γ: Average of data from 2007Se02 (^{16}O,2nγ), and 2015Do07, 2014Ko41 both in (^{3}He,nγ).
		2733 *3*	11 *14*	2787.05	2$^+$		E_γ: From 2007Se02 (^{16}O,2nγ). Other: 2736.3 *10* (2015Do07) (^{3}He,nγ) – weak transition.
5676.2	1$^+$	2888.9[@] *9*	16 *7*	2787.05	2$^+$		
		3878.6 *3*	100 *5*	1797.30	2$^+$	D[e]	
5890.1	0$^+$	1751.9[@] *10*	76 *14*	4139.06	2$^+$		
		3103.1[@] *4*	95 *14*	2787.05	2$^+$	Q[e]	
		4092.1[@] *4*	100 *14*	1797.30	2$^+$	Q[e]	E_γ: a γ at 4094 keV *4* was also observed in 1969Be31 and tentatively assigned to deexcite a level at 4094 keV, with additional weaker γ rays. However, this state was not established in subsequent coincidence measurements in 2007Se02 (^{16}O,2nγ), 2015Do07 (^{3}He,nγ), and 2014Ko41 (^{3}He,nγ), suggesting it is likely to have been misplaced in 1969Be31.
5929.4	3$^+$	1741.6 *7*	100	4187.77	(3$^+$)		E_γ: From ^{26}P ε decay.

[†] Weighted average of data from 2007Se02 (^{16}O,2nγ), and 2015Do07, 2014Ko41 both in (^{3}He,nγ), except where noted. Uncertainty from the most precise measurement.
[‡] From 2007Se02 (^{16}O,2nγ).
[#] From level energy differences, recoil energy subtracted. Placement in 1969Be31 (^{3}He,nγ).
[@] From 2015Do07 (^{3}He,nγ).
[&] From 2015Do07 (^{3}He,nγ), except where noted.
[a] From 2007Se02 (^{16}O,2nγ).
[b] Limits are proposed in Table 4 of 1969Be31, corresponding to the Doppler-shift attenuation measurement (DSAM) for ^{24}Mg(^{3}He,nγ).
[c] Inferred from deduced anisotropy coefficients for the angular distributions measured in the fusion-evaporation reaction ^{12}C(^{16}O,2nγ) from 2007Se02, except where noted or from $\gamma(\theta)$ measurements in 2015Do07 (^{3}He,nγ).
[d] From measured gamma-transition widths deduced using Doppler-shift attenuation method for ^{24}Mg(^{3}He,nγ) in 1969Be31.
[e] In (^{3}He,nγ), assigned by evaluators based on $\gamma(\theta)$ data in 2015Do07 and RUL (if applicable).
[f] From ^{24}Mg(^{3}He,nγ), based on n-γ angular-correlation measurements in 1968Ro18.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{26}_{14}Si_{12}$