Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 114, 1189 (2013)	1-Apr-2013

Q(β^-)=−14345.1 *12*; S(n)=17179.72 *14*; S(p)=11585.02 *10*; Q(α)=−9984.14 *1* 2012Wa38

Other reactions:
^{12}C(^{16}O,^{12}C^{12}C)α: 2001Fr19.
^{12}C(^{24}Mg,^{12}C^{16}O)^{8}Be: 2001Sh08.
^{16}O(^{16}O,α): 1963Ev03, 1966Le07, 1969Al01, 1982Ta02.
^{16}O(^{16}O,^{12}C^{16}O)α: 2001As01.
^{20}Ne(^{12}C,α): 1981Ku07, 1986Ku06, 1986Ku13.
^{24}Mg(^{6}Li,d): 1969Go17, 1974Dr07, 1975An13, 1975Ar21, 1983Ta08.
^{24}Mg(^{7}Li,t): 1969Go17, 1974Ro02.
^{24}Mg(^{12}C,^{8}Be): 1974Ho30, 1976Ma12.
^{24}Mg(^{16}O,^{12}C): 1972Ma36, 1975Er02, 1976Pe05, 1980Sa31, 1985Sa11.
^{24}Mg(^{24}Mg,^{20}Ne): 1987Sa05, 1989Le19.
^{25}Mg(^{3}He,γ): 1986Ha30.
^{25}Mg(^{12}C,^{9}Be): 1980Fo02.
^{26}Mg(^{3}He,n): 1969Bo18, 1970Br40, 1976Bo24, 1982Bo14.
^{26}Mg(^{3}He,nγ): 1977Mi01.
^{26}Mg(^{16}O,^{14}C): 1974Si24, 1976Ge07.
^{27}Al(α,t): 1975Du14, 1977Ne08, 1978Du05, 1978Le08, 1980Me01, 1981Be19, 1982Ya06, 1984Ci04, 1984Sk02, 1986Ch35.
^{27}Al(^{12}C,^{11}B): 1975Po02, 1989Wi07, 2012De22.
^{27}Al(^{13}C,^{12}B): 1988Vo08.
^{27}Al(^{16}O,^{15}N): 1973De38, 1976Ma51.
^{27}Al(^{19}F,^{18}O): 1976Mc07.
^{28}Si(d,d): 1980Cl06, 1980Ha14, 1980Ma10, 1981Ha02, 1982Cl01, 1983Cl06, 1983Vo08, 1987Nu01.
^{28}Si(t,t): 1982Sc21, 1986Pe13, 1987Pe09.
^{28}Si(^{3}He,^{3}He): 1978Fu06, 1982Ma04, 1982Ta05, 1982Ve13.
^{28}Si(α,α'): 1964We02, 1968Ro05, 1971Ha32, 1978Fu06, 1979Pa16, 1980Va10, 1981Kn05, 1981Ni06, 1981Va05, 1981Va09, 1982Bo14, 1983Or01, 1984Ja14, 1984Se02, 1985Lu04, 1986La28, 1987Ni04, 1989Ma50, 1990To04, 1992Wi13, 1994Ch36.
^{28}Si(HI,HI): 1979Be21, 1979Me04, 1980An16, 1980Ec04, 1980Sc12, 1981Br13, 1981Ni06, 1981Sc16, 1982Bo25, 1982Ec01, 1983Sh18, 1983Vi03, 1984Ch01, 1984Ko14, 1985Ba74, 1986Ci06, 1986Vi02, 1987Ni04, 1988Bi06, 1988Bu15, 1989Na11, 1990Fe03.
^{29}Si(^{3}He,α): 1970Pe05, 1972Fo06, 1985Po17.
^{29}Si(^{16}O,^{17}O): 1975Ts01.
^{32}S(d,^{6}Li): 1983Oe03.
^{32}S(^{3}He,^{7}Be): 1975Au01.

^{28}Si Levels

Cross Reference (XREF) Flags

A	^{28}Al β^- decay	G	^{14}N(^{16}O,pnγ)	M	^{28}Si(γ,γ),(e,e$'$)
B	^{28}P ε decay	H	^{24}Mg(α,γ)	N	^{28}Si(n,n$'\gamma$)
C	^{29}S β^+p decay	I	^{25}Mg(α,nγ)	O	^{28}Si(p,p$'$),^{27}Al(p,p): res
D	^{31}Ar β^+3p decay	J	^{27}Al(p,γ)	P	^{28}Si(^{6}Li,^{6}Li$'$)
E	^{32}Cl $\beta^+\alpha$ decay	K	^{27}Al(d,nγ),(d,n)	Q	^{29}Si(p,d),^{30}Si(p,t)
F	^{12}C(^{20}Ne,$\alpha\gamma$):SDB	L	^{27}Al(^{3}He,d)		

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Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[f]	XREF	Comments
0.0[j]	0^+	stable	ABCDEFGH JKLMNO Q	
1779.030[j] *11*	2^+	475 fs *17*	ABC F JKL PQ	μ=+1.12 *18*; Q=+0.16 *3* E(level): From ^{28}P ε decay. μ,Q: From 1989Ra17. $T_{1/2}$: From mean lifetime 686 fs *25*: weighted average of 720 fs *40* (1969Ha31), 689 fs *25* (1977Sc36), 667 fs *37* (1979Fo02), 697 fs *39* (1979Po01), 688 fs *26* (1980Sc25), and 648 fs *37* (1980Sp09): uncertainty − lowest experimental value. Other: 880 fs *130* (1990En02), 820 fs *190* and 1000 fs *+600−150*.
4617.86[j] *4*	4^+	37 fs *4*	BC F JKL NO Q	$T_{1/2}$: From mean lifetime 54 fs *6*: weighted average of 61 fs *10* (1968Gi05), 100 fs *20* (1969Li03), 58 fs *15* (1969Me14,1970Me04), 42 fs 10 (1970Al05,1974Da15), 54 fs *10* (1969Bi09), 39 fs *6* (1975Me14), 55 fs *15* (1968Ro05), 60 fs *20* (1969An08), 83 fs *14* (1971Ha32), 57 fs *7* (1972Bi04), 80 fs *20* (1975Kr09), 55 fs *8* (1983Mi32), and 84 fs *27* (1990En02): uncertainty − lowest experimental value. Other: mean lifetime 28 fs *5* (1989Ge09).
4979.92[m] *8*	0^+	35 fs *2*	B FG JKL NO Q	$T_{1/2}$: From mean lifetime 51 fs *3*: weighted average of 60 fs *20* (1969Li03), 41 fs *27* (1970Hu14,1971Hu04), 34 fs *12* (1969Bi09), 54 fs 13 (1978Da08), 81 fs *13* (1990En02), 65 fs *6* (1989Ge09), 47 fs *3* (^{16}O,pn) and 51 fs *4* (p,γ) (1993Ti02): uncertainty − lowest experimental value. Other: mean lifetime 31 fs *6* (1969Me14,1970Me04).
6276.20[k] *7*	3^+	0.78 ps *6*	B FG JKL NO Q	$T_{1/2}$: From mean lifetime 1.12 fs *9*: weighted average of 1.35 ps *20* (1968Gi05), 1.15 ps *13* (1969Li03), 1.10 ps *28* (1970Al05,1974Da15), 1.5 ps *4* (1970Hu14,1971Hu04), 0.81 ps *49* (1969Bi09), 1.3 ps *2* (1969An08), 1.35 ps *40* (1978Da08), 0.89 ps *9* (1983Mi32), 0.99 ps *23* (1990En02), 1.25 ps *15* (^{16}O,pn) and 1.26 ps *11* (p,γ) (1993Ti02): uncertainty − lowest experimental value. Other: mean lifetime 1.9 ps *2* (1989Ge09).
6690.74[l] *15*	0^+	147 fs *10*	F J L Q	$T_{1/2}$: From mean lifetime 212 fs *14* (1993Ti02). Others: 180 fs *40* (1969Li03), 88 fs *12* (1969Me14,1970Me04), 120 fs *30* (1970Al05,1974Da15), 100 fs *30* (1970Hu14,1971Hu04), 130 fs *30* (1975Me14), 125 fs *30* (1978Da08).
6878.79 *8*	3^-	1.9 ps *2*	JKL Q	$T_{1/2}$: From mean lifetime 2.7 ps *3*: weighted average of 2.3 ps *5* (1968Gi05), 2.7 ps *6* (1969Li03), 2.0 ps *15* (1970Al05,1974Da15), 2.4 ps *4* (1970Hu14,1971Hu04), 2.1 ps *4* (1970St10), 3.5 ps *3* (1972Na06): uncertainty − lowest experimental value. Other mean lifetimes: >1.8 (1969Me14,1970Me04), >3.7 (1990En02).
6887.65[k] *10*	4^+	33 fs *2*	FG JKLM PQ	$T_{1/2}$: From mean lifetime 48 fs *3*: weighted average of 70 fs *20* (1969Li03), 53 fs *10* (1969Me14,1970Me04), 44 fs *13* (1970Al05,1974Da15), 40 fs *8* (1975Me14), 67 fs *10* (1983Mi32), 27 fs *8* (1990En02), 47 fs *8* (^{16}O,pn) and 49 fs *3* (p,γ) (1993Ti02): uncertainty − lowest experimental value. Other mean lifetimes: 100 fs *40* (1968Ro05), >4 ps (1969An08).
7380.59[l] *9*	2^+	5 fs *2*	FG J L Q	$T_{1/2}$: From mean lifetime 7 fs *3*: using the limitation of relative statistical weight averaging method of data 13 fs *3* (1968Gi05), 7 fs *4* (1969Me14,1970Me04), 6 fs *5* (1970Al05,1974Da15), 6 fs *2* (1970Hu14,1971Hu04), 8 fs *3* (1975Me14), 7 fs *4* (1978Da08), 11.5 fs *15* (^{16}O,pn) and 4.4 fs *10* (p,γ) (1993Ti02). Other: mean lifetime lt15 fs (1990En02).
7416.26[l] *9*	2^+	29 fs *3*	B FG JKL Q	$T_{1/2}$: From mean lifetime 42 fs *4*: weighted average of 40 fs *7* (1968Gi05), 40 fs *8* (1970Al05,1974Da15), 39 fs *5* (1970Hu14,1971Hu04), 30 fs *5* (1975Me14), 44 fs *10* (1978Da08),

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Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$ f	XREF	Comments
				51 fs *4* (^{16}O,pn) and 50 fs *9* (p,γ) (1993Ti02): uncertainty – lowest experimental value. Other: mean lifetime 24 fs *4* (1969Me14,1970Me04).
7799.01 *9*	3^+	225 fs *10*	B JKL Q	$T_{1/2}$: From mean lifetime 325 fs *15*: weighted average of 310 fs *55* (1968Gi05), 300 fs *90* (1967Ca10), 300 fs *100* (1969Al01), 250 fs *75* (1975Me14), 300 fs *75* (1978Da08), 240 fs *45* (1990En02), and 340 fs *15* (p,γ) (1993Ti02): uncertainty – lowest experimental value. Others: mean lifetime 190 fs *30* (1969Me14,1970Me04), 150 fs *85* (1970Hu14,1971Hu04).
7933.45 *10*	2^+	11 fs *2*	B G JKL Q	$T_{1/2}$: From mean lifetime 16 fs *2*: weighted average of 15 fs *10* (1978Da08), 14 fs *2* (1990En02), 16 fs *2* (^{16}O,pn) and 17 fs *2* (p,γ) (1993Ti02): uncertainty – lowest experimental value. Others: mean lifetime 50 fs *25* (1969An08), 21 fs *10* (1970St10).
8258.74m *10*	$2^{(+)}$	10 fs *2*	B F J L Q	$T_{1/2}$: From mean lifetime 14 fs *4*: weighted average of 14 fs *6* (1968Gi05), 8 fs *6* (1970Hu14,1971Hu04), 12 fs *4* (1990En02), and 20 fs *5* (p,γ) (1993Ti02): uncertainty – lowest experimental value. Other: mean lifetime 26 fs *10* (1975Me14).
8328.38 *12*	1^+	347 fs *166*	JKL Q	$T_{1/2}$: From mean lifetime 500 fs *240*: unweighted average of 150 fs *85* (1970Hu14,1971Hu04), 380 fs *75* (1975Me14), and 960 fs *220* (1990En02).
8413.33 *10*	4^-	324 fs *55*	JKL	$T_{1/2}$: From mean lifetime 467 fs *80*: weighted average of 280 fs *80* (1968Gi05), 560 fs *150* (1969Me14,1970Me04), 490 fs *110* (1970Al05,1974Da15), 580 fs *400* (1970Hu14,1971Hu04), 890 fs *160* (1990En02), and 540 fs *110* (p,γ) (1993Ti02): uncertainty – lowest experimental value. Other: mean lifetime 230 fs *50* (1967Ca10).
8543.56j *20*	6^+	11.4 fs *10*	FG J	Jπ: From 1968No06 – ^{16}O(^{14}N,pnγ). $T_{1/2}$: From mean lifetime 16.4 fs *14* (1993Ti02). Others: 18 fs *7* (1974NeZZ), 18 fs *6* (1970Hu14,1971Hu04), <5 fs (1975Me14), 58 fs *12* (1969La13), 19 fs *8* (1975Di07), 15 fs *3* (1975Fr22), 31 fs *7* (1983Mi32), 38 fs *14* (1990En02).
8588.71 *10*	3^+	11 fs *2*	B JKL Q	$T_{1/2}$: From mean lifetime 16 fs *2*: weighted average of 25 fs *5* (1968Gi05), 13 fs *4* (1970Al05,1974Da15), 10 fs *3* (1970Hu14,1971Hu04), 12 fs *3* (1990En02), and 19 fs *2* (p,γ) (1993Ti02): uncertainty – lowest experimental value. Other mean lifetimes: 5 fs *2* (1975Me14), <10 fs (1967Ca10), <25 fs (1969An08).
8819 *9*			K	
8904.8 *4*	1^-	8 fs *2*	JKL Q	$T_{1/2}$: From mean lifetime 11 fs *3*: weighted average of 12 fs *4* (1969Me14,1970Me04) and 10 fs *3* (1975Me14): uncertainty – lower experimental value.
8945.20k *13*	5^+	58 fs *6*	FG JKL	$T_{1/2}$: From mean lifetime 84 fs *8*: weighted average of 67 fs *16* (1974NeZZ), 65 fs *12* (1970Al05,1974Da15), 110 fs *30* (1971Go41), 105 fs *15* (1975Me14), 104 fs *17* (1975Fr22), 100 fs *10* (1986Gl05), 89 fs *10* (1983Mi32), 96 fs *19* (1990En02), and 70 fs *8* (1993Ti02): uncertainty – lowest experimental value.
8953.3 *4*	$(0^+,1,2)$		J	Jπ: γ ray to 2^+ state at 1179 keV, γ ray feeding, and L(0) in 1982Bo14 (^{26}Mg(^{3}He,n)^{28}Si).
9164.68l *17*	(4^+)	28 fs *3*	F J	Jπ: From (p,γ) study in 1981Gl05. $T_{1/2}$: From mean lifetime 40 fs *5*: weighted average of 39 fs *7* (1968Gi05), 57 fs *10* (1970Hu14,1971Hu04), 37 fs *7* (1975Me14), 37 fs *5* (1981Gl05), and 65 fs *30* (1990En02): uncertainty – lowest experimental value.
9315.92 *10*	3^+	1.5 fs *6*	B JKL Q	T=1 $T_{1/2}$: From mean lifetime 2.2 fs *9*: unweighted average of 3.1 fs

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Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[f]	XREF	Comments
				15 (1990En02) and 1.3 fs *8* (1993Ti02). Other meanlives: <10 fs (1968Gi05), 15 fs *2* (1975An09), <5 (1969Me14,1970Me04), 13 fs *10* (1970Hu14,1971Hu04), <5 (1975Me14), 16 fs *4* (1983Mi32), and <30 fs (1977Mi01).
9381.55 *12*	2^+	1.1 fs *3*	B J L Q	T=1 $T_{1/2}$: From mean lifetime 1.6 fs *4*: average of 1.4 fs *4* (1990En02) and 1.8 fs *6* (1993Ti02), uncertainty from 1990En02. Other mean lifetimes: 12 fs *4* (1975An09), 5 fs *3* (1969Me14,1970Me04), <5 fs (1970Al05,1974Da15), <12 fs (1970Hu14,1971Hu04), <10 fs (1975Me14), 20 fs *+30−17* (1977Mi01).
9417.17 *14*	4^+	78 fs *12*	JKL	Jπ: From 1986Gl05 (p,γ), based on γ-ray decay and feeding. $T_{1/2}$: From mean lifetime 113 fs *18*: weighted average of 130 fs *65* (1970Hu14,1971Hu04), 160 fs *35* (1971Go41), 115 fs *25* (1975Me14), 99 fs *18* (1990En02): uncertainty − lowest experimental value.
9479.49 *11*	(2^+)[#]	6 fs *2*	B G J L	$T_{1/2}$: From mean lifetime 8 fs *3*: weighted average of 13 fs *6* (1990En02) and 7 fs *3* (1993Ti02).
9496.04 *15*	(1^+)[#]	5 fs *2*	J L	$T_{1/2}$: From mean lifetime 7 fs *3*: weighted average of 9 fs *3* (1969Me14,1970Me04) and 5 fs *2* (1975Me14).
9702.34 *12*	(5^-)	4 ps *1*	J L O	Jπ: L=3 in (^{3}He,d) and from 1975Ne03 (p,γ). $T_{1/2}$: From mean lifetime 4.8 ps *14* (1970Al05,1974Da15). Other: 8 ps *4* (1972Ba48).
9764.52 *11*	(3^-)	<2 fs	JKL O Q	$T_{1/2}$: From 1990En02.
9795.95[n] *14*	(2^+)[#]		B F J O	
9929.2 *17*	1^-		JKL O Q	E(level): Weighted average of data from (p,γ) and (p,p′). Jπ: L=1 in 1982Bo14 (^{26}Mg(^{3}He,n)^{28}Si). γ ray to 0^+.
10181.60 *12*	(3^-)	7 fs *2*	JKLM O Q	$T_{1/2}$: From 1975Me14. Other: <6 fs (1990En02).
10189.59 *20*	$(5^-,3^-)$	<21 fs	IJ	Jπ: From (α,nγ), based on n-γ angular correlation and mean lifetime measurements. γ ray to 3^-. $T_{1/2}$: From 1981Gl05.
10209.01 *20*	(3^+)[@]	10 fs *3*	B J O	$T_{1/2}$: From mean lifetime 14 fs *4*: weighted average of 15 fs *7* (1968Gi05), 13 fs *4* (1975Me14), and 17 fs *8* (1990En02).
10272.3 *8*	0^+	<42 fs	JKL O	T=1 E(level): Weighted average of data in (p,γ) and (p,p′). Jπ: L=0 in 1982Bo14 (^{26}Mg(^{3}He,n)^{28}Si). $T_{1/2}$: From 1977Mi01.
10310.92 *13*	(4^+)[@]	11 fs *4*	J L O	$T_{1/2}$: From 1975Me14.
10376.24 *12*	$(3^+,4^+)$[#]		J L O	T=1
10418.25 *22*	(5^+)[&]	18 fs *4*	G JK O	$T_{1/2}$: From mean lifetime 26 fs *6*: weighted average of 23 fs *7* (1970Al05,1974Da15), 27 fs *8* (1975Me14), 22 fs *6* (1983Mi32), 27 fs 11 (1990En02), 38 fs *10* (1993Ti02): uncertainty − lowest experimental value. Other: mean lifetime 28 fs *+21−7* (1974NeZZ).
10514.1 *3*	(2^+)[#]		H J M O	Jπ: From 1979Sc14 − (e,e′).
10541.0 *8*	(3^-)[#]		J L O	T=0 E(level): Weighted average of data in (p,γ) and (p,p′).
10596.18 *15*	(1^+)	388 as *83*	J LM O	T=0,1 Jπ: 1^+ in (e,e′). $T_{1/2}$: From mean lifetime 560 as *120*: weighted average of 420 as *160* (1984Be26) and 640 as *120* (1979Sc14): uncertainty from 1979Sc14. Other mean lifetimes: <5000 as (1975Me14), <4000 as (1990En02).
10668.05 *13*	$(2,3)^+$	15 fs *3*	b iJ o	T=0

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Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[f]	XREF	Comments
				$T_{1/2}$: From 1990En02.
10668.34 *11*	$4^{+\#}$	18 fs *3*	b iJ L o	T=0 $T_{1/2}$: From mean lifetime 26 fs *5*: weighted average of 22 fs *7* (1975Me14), 27 fs *6* (1990En02), and 31 fs *8* (1993Ti02).
10724.7 *4*	(1^+)	624 as *110*	J LM O	T=0,1 Jπ: 1^+ in (e,e′). $T_{1/2}$: From 1979Sc14. Other: <5545 as (1990En02).
10778 *2*	1^+ to $5^{+\#}$		JK	
10805.5 *10*	(2^+)		H J M O	Jπ: 2^+ in (e,e′).
10883.45 *14*	$(2,3^+)$[a]		H J O	T=1
10900.42 *15*	(1^+)[a]	83 as *7*	J LM O	T=1 $T_{1/2}$: From mean lifetime 120 as *10*: weighted average of 87 as *23* (1966Li08), 93 as *25* (1984Be26), and 131 as *10* (1979Sc14). Uncertainty − lowest experimental value. Other mean lifetime <7000 as (1990En02).
10915.6 *7*	(3^-)[@]		HIJ L O	
10944.0[n] *3*	(4^+)[@]	15 fs *10*	F HIJ O	$T_{1/2}$: From 1990En02.
10952.8 *3*	1 to $4^{\#}$		H J O	
10994 *2*	$(1,2^+)^{\#}$		H J O	E(level): Weighted average of data in (p,γ) and (p,p′).
11078.52 *14*	(3^-)[@]		H J O	
11100.0 *10*	(6^+)[&]	11.0 fs *10*	G IJ O	E(level): Weighted average of data in (p,γ), (p,p′), and (α,nγ). $T_{1/2}$: From 1993Ti02. Other: <11 fs (1981Gl05).
11142 *1*	(2^+)		H J M O	T=0 Jπ: 2^+ in (e,e′).
11195.22 *13*	(4^+)[@]		H J O	T=0
11242 *6*			K	
11265 *3*	(3^-)[@]		IJ O	T=0
11295.6 *2*	(1^-)	<150[g] eV	H J O	T=0 E(level),Jπ: From (α,γ).
11331.9[k] *9*	6^+	<21 fs	F IJ O	E(level): Weighted average of data from (p,γ), (p,p′), and (α,nγ). Jπ: From (p,γ), based on the γ-ray angular distribution, linear polarization, and transition rates. $K^\pi=3^+$ band member. $T_{1/2}$: From 1986Gl05.
11388 *3*			O	
11432.63 *18*	(2^+)[a]	<21 fs	JK o	T=0,1 $T_{1/2}$: From 1977Mi01.
11434.50 *22*	(4^-)[a]	14 fs *4*	JK o	T=0,1 $T_{1/2}$: From 1970Al05. Other: 87 fs *+90−42* (1977Mi01).
11446.00 *16*	(1^+)	17.6 as *8*	J M O	T=1 Jπ: 1^+ in (e,e′). $T_{1/2}$: From mean lifetime 27.7 fs *15*: weighted average of 24 fs *4* (1966Li08), 31 fs *6* (1969Fa11), 28.1 fs *35* (1984Be26), and 28.0 fs *15* (1979Sc14): uncertainty − lowest experimental value. Other mean lifetime: 73 as *16* (1978Ma23).
11510.4[l] *10*	(6^+)[@]	9 fs *2*	FG IJ	T=0 $T_{1/2}$: From 1993Ti02. Other: <21 fs (1981Gl05).
11515.5 *2*	(2^+)	<200[g] eV	B H O	T=0 E(level),Jπ: From (α,γ).

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Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[f]	XREF	Comments
11572.0 *7*	(4,5$^+$)[@]		J o	
11576 *2*	(6$^-$)[a]	235 fs *70*	IJKL o	T=0 E(level): Weighted average of 11577 keV *2* (p,γ), 11577 keV *3* − 1981Gl05 (α,nγ), and 11574 keV *3* (p,p′). $T_{1/2}$: From mean lifetime 351 fs *70*: weighted average of 340 fs *100* (1973Ne11), 220 fs *70* (1970Al05,1974Da15), and 530 fs *80* (1973Mi24): uncertainty − lowest experimental value.
11584.62 *19*	(3$^-$)	<200[g] eV	H J O	T=0 Jπ: From (α,γ). 9803.74γ to 2$^+$ state.
11656.9 *3*	(2$^+$)	0.18[i] eV *7*	B H L O	T=0 E(level),Jπ: From (α,γ).
11669.7 *2*	(1$^-$)	0.46[i] eV *10*	H L O	T=0 E(level),Jπ: From (α,γ).
11778.7 *2*	(2$^+$)	<5[i] eV	h L o	T=0,1 E(level),Jπ: From (α,γ).
11778.9 *10*	(5$^+$)[@]		h J o	E(level): From (α,γ).
11780.7 *9*	(0$^+$ to 4$^+$)		J o	
11799.8 *4*	(2,3)$^-$	<35 eV	J L O	
11867.2 *4*	(4$^+$)	59 eV *14*	J L O	T=1 Γ from 1990En08. Other: <5 eV quoted from a private communication in 1998En04.
11899.9 *2*	4$^+$	<40[i] eV	H J L O	T=0,(1)
11933.5 *7*	5[@]		B IJ O	T=0
11975.7 *3*	(3$^-$,4$^+$)	<40 eV	H J L O	T=0,1 Γ − from Table 28.16 in 1990En08.
11986 *2*	(1 to 3)		J O	
12015.8 *5*	(2$^+$,3)[a]		J O	
12022.7 *2*	(5$^-$)	<250[g] eV	H O	T=0
12071.1 *1*	(2$^+$)	1.4[i] eV	B H J M o	T=0
12073.3 *1*	(2$^-$)	<80 eV	J L o	
12152.0 *10*	(6$^+$)	<7 fs	IJ O	Jπ,$T_{1/2}$: From (α,nγ).
12174.6 *1*	(5$^+$,3$^-$,4)[a]	9 fs *2*	J O	$T_{1/2}$: From 1972An10.
12182.0 *3*	(1$^-$)[b]	<250[g] eV	H O	T=0
12194.7 *1*	(3$^-$)[b]	6.7 eV *5*	H J L O	T=0
12204 *2*	(6$^-$,4$^-$)[c]	<21 fs	I O	T=0 E(level): Weighted average of data from (p,p′) and (α,nγ). $T_{1/2}$: From (α,nγ).
12216.3 *1*	(2$^-$)	<30 eV	J L O	T=0
12240.1 *1*	(3$^+$)	<80[g] eV	J L o	
12240.9 *3*	(4$^+$)[b]	<250[g] eV	H L o	T=0
12265.8 *23*	(0,1)$^+$		K	Jπ,E(level): L=0 in (^{3}He,n) and also 12270 keV *30* (1982Bo14).
12289.5 *3*	(2$^+$)[b]	13 eV *3*	B H J	T=0 Γ from 1973Na10 and 1980Fu02.
12295.2 *1*	(2,3)$^+$[d]	<60 eV	J O	
12301.4 *1*	(0$^+$,1$^-$,2$^+$)	<80[g] eV	H J L O	T=0 Jπ: From (p,γ) − 1995Br17.
12318.3 *1*	(2$^-$)[d]	<40 eV	J O	T=0
12324.8 *1*	(4$^+$)[d]	<50 eV	J O	
12331.0 *1*	(1$^+$)	<80[g] eV	J M O	T=1 Jπ: From (γ,γ),(e,e′).
12441.1 *1*	(2$^+$)	18 eV *3*	B H J M O	T=0

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[f]	XREF	Comments
				Jπ: From (e,e′), (α,γ), spectroscopic strength.
12475.0 *1*	(4+)	<80[g] eV	H J O	T=0
12488.8 *1*	(3−)[e]	100 eV *20*	H J L O	T=0
12541.5 *1*	(3+)[e]	70 eV *14*	J L O	T=1
12551.2 *1*	(4+)[b]	1.4[i] eV	B H J O	T=0
12573.7 *1*	(2+)[e]	110 eV *22*	B J L O	T=1
12635.8 *1*	(2,3)+[d]	<60[g] eV	J O	T=0
12643.1 *1*	(5−)[@]	<80[g] eV	J L O	
12663.7 *1*	(4−)[e]	700 eV *70*	J L O	T=1
12715.0 *1*	(0+,1+)	<100[g] eV	B J O	T=0 Jπ: From re-interpretation (by evaluator in 1998En04) of γ-decay in 1975Me14. L=0 is reported from the observed (p,p$_1$) yield in 1975Me14.
12726.2 *1*	(2+)[d]	250 eV *5*	B H J M O	T=0
12742.5 *5*	(3−)[e]	5.4 keV *5*	J L O	T=0,1
12754.8 *1*	(1,2)+	<100[g] eV	J O	T=0,1
12802.7 *1*	(3−)[e]	100 eV *20*	J L O	T=0
12805.3 *4*	(1−,2+)[b]	<350[g] eV	H	T=0
12815.4 *5*	(1−)[b]	3.5 keV *10*	H o	T=0 Γ from (α,γ).
12816.7 *1*	(5+)	<100[g] eV	J o	T=0
12855.1 *1*	(4+)	30 eV *6*	H J L O	T=0,1
12862[n]	(6+)	<350 eV	F H L	T=0 E(level): From Eγ. Other: 12859.1 *3* (α,γ). Jπ: γ to (4+) and member of the g.s. oblate band. Γ from (α,γ).
12866.5 *1*	(2+,3+)	35 eV *5*	J O	T=0
12900.4 *1*	(4+)[&]	550 eV *60*	B H J o	T=0
12902.0 *2*	(2+)	<200[g] eV	H J o	T=0 Jπ: From (p,p′).
12917.3 *1*	(2,3)+[#]	780 eV *80*	J L O	T=1
12923.8 *1*	(3+)	600 eV *60*	h J O	T=1
12924.0 *3*	(2+)	200 eV *40*	h J O	T=0
12974.2 *3*	(1−)	250 eV *50*	H J O	T=0
12976 *2*	(0+)	5.2 keV *16*	H	T=0 Γ from 1982Cs01.
12990.0 *2*	(3,4)−	2.3 keV *2*	J L O	T=0
12994 *3*	(5,6,7)+	16 fs *3*	FG I	Jπ: 7+ in (^{20}Ne,αγ). $T_{1/2}$: From (^{16}O,pn). Other: <11 fs (α,nγ).
13014 *3*			O	
13033.5 *1*	(3+)	550 eV *60*	J O	T=0
13039.8 *5*	(0+)	3.2 keV *10*	H	T=0,1 Γ from 1982Cs01.
13050.4 *2*	(2−)	3.7 keV *4*	J L O	
13094.1 *1*	(4+)	20 eV *3*	B H J O	Other Γ: 45 eV (1978Ma23).
13103.9 *10*			J	
13104.4 *10*		2.4 keV *3*	J O	XREF: O(13106.1).
13105.9 *4*		130 eV *3*	H J O	T=0
13114.9 *10*	(3,4+)	<200[g] eV	J L O	T=0+1
13116.8 *10*			J	T=0
13121 *3*		<350 eV	H	Γ from ^{24}Mg(α,γ).
13173.3 *1*	(3−)	340 eV *70*	J O	T=0
13188.6 *5*	(2+)	1.9 keV *2*	J L O	T=0+1
13190.0 *2*	(1+)	450 eV *50*	J L O	T=0

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Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[f]	XREF	Comments
13204.6 *1*	$(2,3)^+$	210 eV *40*	J O	T=0
13208.5 *2*	2	<200[g] eV	J O	T=0
13229.7 *5*	(2^+)	1.1 keV *1*	H J O	T=0
13230.7 *10*	(6^+)		J	
13234 *2*	(0^+)	3.0 keV *9*	H	T=0 Γ from ^{24}Mg(α,γ).
13246.9 *6*	(5^-)	200 eV *40*	h J L O	T=1
13247.7 *6*	(3^-)	9.6 keV *10*	h J L O	T=0
13271.6 *5*	(2^-)	6.6 keV *7*	J O	
13318.2 *3*	$(3,4)^-$	1.2 keV *1*	J O	
13320.5 *1*	(1^+)	450 eV *60*	J O	T=1
13360.8 *5*	(4^+)	550 eV *60*	H J O	T=0
13415.3 *5*	(4^+)	140 eV *30*	JK O	T=0
13423.3 *5*	(1^-)	20 keV *1*	H JK O	T=0+1
13425.4 *4*	(5^+)	80 eV *20*	J O	T=1
13467 *3*			K	
13478.6 *5*	(2^-)	4.0 keV *4*	J O	
13483.7 *5*	(2^+)	1.5 keV *2*	JK O	T=0+1
13491.8 *6*	(3^-)	31 keV *3*	H J O	T=0
13500 *2*			K	
13510.0 *20*			K	
13546.7 *6*	(2^+)	8.5 keV *9*	JK O	T=0
13557.1 *1*	$(5^+,4^+)$	150 eV *30*	JK O	T=0+1
13560.3 *9*	(3^+)	1.8 keV *2*	J O	
13569.0 *7*	$(5^-,4^+)$[#&]		JK	
13582.3 *5*	(6^+)	<28 fs	hIJ	T=0 $T_{1/2}$: From 1981Gl05.
13604 *4*			h K	
13611.6 *8*	$(4^+,5^-)$[#&]		JK	
13616.1 *8*	(2^-)	11 keV *1*	J O	
13626.0 *15*			K	
13636.3 *7*	(3^+)	570 eV *60*	JK O	XREF: K(13633.0).
13639.9 *10*	(2^+)	5.7 keV *6*	H JK O	T=0
13640.4 *10*	$(1^-,2^+)$	120 eV *20*	J O	T=0 Jπ: From re-interpretation (by evaluator in 1998En04) of γ-decay in 1975Me14.
13663.2 *7*	$(3,4)^-$	450 eV *50*	J O	
13668.1 *5*	(4^+)	250 eV *50*	JK O	T=0
13678.7 *7*	(2^+)	1.3 keV *2*	H J O	T=0
13686.4 *5*	$(2^+$ to $4^+)$		JK	
13706.6 *5*	$(2,3)^+$	500 eV *50*	JK O	XREF: K(13703.0).
13708.6 *10*	(4^+)	190 eV *40*	H J O	T=0
13710.2[k] *10*	7^+		F J	Jπ: γ to 6^+, member of the $K^\pi=3^+$ band.
13711.8 *5*	(3^-)	20 keV *2*	JK O	
13734.7 *6*	(1^-)	35 keV *4*	JK O	
13744 *2*	$(4^-$ to $7^-)$	<21 fs	I K	E(level): Weighted average of data from (p,p′) and (d,nγ). $T_{1/2}$: From 1981Gl05.
13789.4 *7*	(3^-)	2.7 keV *3*	JK O	
13798 *2*			K	
13805.9 *8*	(4^+)	150 eV *30*	J O	T=0
13812.9 *8*	(1^-)	3.7 keV *4*	H JKL O	T=0 XREF: H(13816)K(13810.6).
13814.4 *10*	(3^+)	320 eV *30*	J O	T=0
13821 *2*			K	
13830.4 *8*	(3,4)	2.2 keV *2*	H JK O	

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Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[f]	XREF	Comments
13860.6 *15*	(3⁻)	3.9 keV *4*	JK O	T=0 XREF: K(13864).
13874.0 *12*	(3⁻)	7.1 keV *7*	H JK O	T=0,1
13889.3 *8*	(3 to 6)⁻	35 eV *7*	JK O	
13901.7 *11*	(1⁻)	2.7 keV *3*	H J L O	T=0
13941.0 *10*	(2⁺)	5.2 keV *5*	H JK O	T=0
13968.2 *7*	(4⁺)	250 eV *50*	Jk O	T=0
13972.4 *7*	(2⁺)	2.5 keV *3*	H Jk O	T=0
13979.9 *7*	(4⁺)	2.6 keV *3*	H Jk O	T=1
13982.6 *7*	(6⁻)	300 eV *60*	JkL O	
13984.1 *7*	(2⁺)	380 eV *60*	Jk O	T=0
14012.4 *10*	(4⁺)	100[h] eV *2*	J O	
14024 *3*	(1⁻)	16 keV *2*	H O	
14037 *3*	(3⁻,2⁻)	45 keV *5*	O	
14048 *3*	(5,4)⁺	1.2 keV *1*	O	
14049 *3*	(2⁺)	2.4 keV *2*	O	
14065 *3*	(2⁺)	6.1 keV *6*	H O	
14075 *3*	(2⁻)	47 keV *5*	O	
14089 *3*	(3⁻)	4.3 keV *4*	H O	
14094 *3*	(1⁺)	12 keV *1*	O	
14095 *3*	(4⁺)	830 eV *80*	O	
14102.8 *10*	(5⁻)	240 eV *20*	J O	
14159 *3*	(4,3)⁻	13 keV *1*	K O	XREF: K(14151.8).
14163.7 *10*	(5⁺)		J	
14198.6 *10*	(3⁺)	1.1 keV *1*	J O	
14207.5 *10*	(4⁺)	1.0 keV *1*	J O	
14210 *3*	(2⁻)	20 keV *2*	O	
14212.1 *10*	(5⁺)	600 eV *60*	J O	
14227 *3*	(3⁺)	2.1 keV *2*	O	
14245 *3*	(3⁻)	41 keV *4*	h O	
14245.4 *10*	(7⁺)		h J	
14247 *3*	(2⁺)	26 keV *3*	h K O	
14272 *3*			K	
14287.6 *25*			K	
14294 *3*	(2⁺)	2.0 keV *2*	O	
14298 *3*	(4⁺)	1.4 keV *1*	K O	XREF: K(14300.0).
14306 *3*	(1⁻)	74 keV *7*	O	
14308 *5*	(2⁺)		H	
14318 *4*			K	
14328 *3*	(4⁺)	620 eV *120*	O	
14331.7 *10*	(5⁺)	70 eV *15*	JK O	
14338 *5*			H	
14346.2 *10*	(4⁻)	2.3 keV *2*	JK O	XREF: K(14349.0)O(14349).
14356 *3*	(6⁻)	4.0 keV *2*	J O	T=1 Jπ: From an M1 transition to 11576 keV level ((p,γ)−1975Ne03). $T_{1/2}$: Γ from 1983Sn02.
14358 *3*	(4⁺)	3.5 keV *4*	k O	
14358 *3*	(2⁻)	43 keV *4*	k O	
14375 *3*	(2⁺)	27 keV *3*	K O	
14391 *3*	(0⁺)	9.0 keV *9*	O	
14392.9 *10*	(3⁺)	560 eV *60*	J O	
14402.0 *10*	(4⁻)	430 eV *40*	JK O	XREF: K(14398.0).
14417.3 *20*			K	
14434 *3*	(3⁺)	19 keV *2*	K O	
14471.2 *10*	(6⁻)	180 eV *40*	J O	

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Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[f]	XREF	Comments
14478.0 *20*			K	
14493 *3*	(2^+)	23 keV *2*	k o	
14493 *3*	(3^+)	5.9 keV *6*	k o	
14515 *3*	(3^-)	950 eV *100*	O	
14523 *3*	(3^-)	11 keV *1*	K O	
14535 *1*		<2 keV	JK	
14542 *1*		4 keV *2*	J	
14550.5 *10*	(3^+,4)	<2 keV	J	
14554.5 *10*	(2^+)	6 keV *2*	J	
14561 *3*			K	
14572.0 *10*	5	<2 keV	J	
14577.4 *10*	(2^+)	<2 keV	J	
14625 *4*			K	
14633.3 *10*	(5^+)	<2 keV	J	
14643[j] *3*	8^+		F IJK	Jπ: γ to 6^+, member of the g.s. oblate band.
14650 *1*		10 keV *2*	J	
14687 *1*		4 keV *2*	J	
14709 *4*			K	
14722.0 *10*	(4^+,5)	<2 keV	J	
14728 *1*		13 keV *2*	J	
14741.6 *10*	(3^+ to 5^+)	<2 keV	J	
14762 *1*		6 keV *2*	JK	XREF: K(14756).
14766 *1*		<2 keV	J	
14785 *3*			K	
14799 *1*		<2 keV	J	
14802.6 *10*	(4^+)	<2 keV	J	
14854 *1*		5 keV *2*	JK	
14860 *1*		4 keV *2*	J	
14864 *1*		4 keV *2*	J	
14897 *1*		<2 keV	J	
14904 *1*		<2 keV	J	
14926 *1*		10 keV *2*	J	
14954.2 *10*	(3,4^+)	10 keV *2*	J	
15006 *1*		<3 keV	J	
15021 *1*		<2 keV	J	
15027.1 *10*	(5)	<5 keV	J	
15034 *1*		5 keV *2*	J	
15051 *1*	(0 to 6)$^-$	<2 keV	J	
15076 *1*		4 keV *2*	J	
15085 *1*		<3 keV	J	
15113 *1*		5 keV *2*	J	
15127.0 *10*	(5^-)	<2 keV	J	
15153 *1*		5 keV *2*	J	
15182.7 *10*	6	<2 keV	J	
15227 *1*	(0^+)	90 eV *15*	H J	T=2
15239.5 *10*	(4)	<2 keV	J	
15243 *1*		<2 keV	J	
15250 *1*		<3 keV	J	
15264 *1*		4 keV *2*	J	
15267 *1*		4 keV *2*	J	
15272 *1*		<2 keV	J	
15292 *1*		<2 keV	J	
15357 *1*		<3 keV	J	
15386 *1*		<2 keV	J	
15402.5 *10*	(5)	<2 keV	J	

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Adopted Levels, Gammas (continued)

^{28}Si Levels (continued)

E(level)[†]	Jπ[‡]	XREF
15494 *10*	$(0 \text{ to } 6)^-$	L
15914.8 *10*	(6^+)	J

† From (p,γ), except otherwise noted.
‡ From L values in (d,n), (p,d), and (^{3}He,d), and γ-ray transitions, except otherwise noted. Additional arguments are presented as comments and footnotes. For resonance states (above 11780 keV), spin/parity assignments are based on available data from (p,γ):resonance strength, (e,e′), (p,p′), (α,γ) studies, along with the L values from (^{3}He,d).
# From γ-ray decay.
@ From (p,γ), based on γ(θ) measurements.
& From (p,γ), based on the γ-ray angular distribution, linear polarization, and transition rates.
a From γ-ray decay and γ-ray feeding.
b From (α,γ), based on γ-ray angular distribution measurements.
c From (α,nγ), based on n-γ angular correlation and mean lifetime.
d From spectroscopic strength in (p,γ): Resonance and/or based on the α_0 or α_1 decay.
e From 1984Ne03 and 1984Ne04 in (p,p): Resonance.
f $T_{1/2}$ or Γ. Γ from 1984Ne03 or 1984Ne04, except otherwise noted. For levels at 14535 keV and above – Γ quoted from 1995Br16.
g Γ from 1978Ma23.
h Γ – from 1995Br16.
i Γ – From Table 28.17 in 1990En08.
j Band(A): Oblate band based on g.s.
k Band(B): $K^\pi=3^+$ band.
l Band(C): Prolate band based on 0^+.
m Band(D): Vibrational band.
n Band(E): SD band based on 2^+.

γ(^{28}Si)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.[b]	δ	Comments
1779.030	2^+	1778.969[‡] *11*	100	0.0	0^+	E2		B(E2)(W.u.)=13.2 *5*
4617.86	4^+	2838.29[‡] *15*	100	1779.030	2^+	(E2)		B(E2)(W.u.)=16.4 *18*
4979.92	0^+	3200.7[‡] *5*	100	1779.030	2^+	E2		B(E2)(W.u.)=9.5 *6*
6276.20	3^+	1658.2	13.4 *4*	4617.86	4^+			
		4496.92[‡] *25*	100.0 *4*	1779.030	2^+	(M1+E2)	−0.14 *2*	B(M1)(W.u.)=0.000269 *21*; B(E2)(W.u.)=0.0013 *4* δ: From 1974Da15. Other: −0.12 *5* (1963Br15).
6690.74	0^+	4910.8 *5*	100	1779.030	2^+	E2		B(E2)(W.u.)=0.267 *19*
6878.79	3^-	2260.7	3.9 *6*	4617.86	4^+	(E1)		B(E1)(W.u.)=9.1×10^{-7} *17*
		5098.8	39.0 *15*	1779.030	2^+			
		6877.0	100.0 *16*	0.0	0^+	[E3]		B(E3)(W.u.)=13.2 *15*
6887.65	4^+	2269.6	1.31 *9*	4617.86	4^+			
		5107.6	100.00 *9*	1779.030	2^+	(E2)		B(E2)(W.u.)=0.96 *6*
7380.59	2^+	2400.5	0.47 *16*	4979.92	0^+	E2		B(E2)(W.u.)=0.8 *5*
		5600.4	100.0 *8*	1779.030	2^+			
		7378.5	57.3 *8*	0.0	0^+	E2		B(E2)(W.u.)=0.37 *15*
7416.26	2^+	5636.0	6.4 *22*	1779.030	2^+			

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Adopted Levels, Gammas (continued)

γ(^{28}Si) (continued)

E_i(level)	J_i^π	E_γ †	I_γ @	E_f	J_f^π	Mult. [b]	δ	Comments
7416.26	2^+	7414.2	100.0 *22*	0.0	0^+	E2		B(E2)(W.u.)=0.162 *18*
7799.01	3^+	911.3	0.21 *3*	6887.65	4^+			
		1522.7	49.5 *17*	6276.20	3^+			
		3180.8	2.00 *13*	4617.86	4^+			
		6018.6	100.0 *17*	1779.030	2^+			
7933.45	2^+	1657.1	2.9 *15*	6276.20	3^+			
		2953.2	4.81 *24*	4979.92	0^+	E2		B(E2)(W.u.)=1.8 *4*
		3315.2	5.65 *24*	4617.86	4^+	(E2)		B(E2)(W.u.)=1.20 *23*
		6153.0	6.61 *24*	1779.030	2^+			
		7931.0	100.0 *18*	0.0	0^+	E2		B(E2)(W.u.)=0.27 *5*
8258.74	$2^{(+)}$	3278.4	24.3 *15*	4979.92	0^+	E2		B(E2)(W.u.)=5.0 *11*
		3640.4	5.7 *15*	4617.86	4^+	(E2)		B(E2)(W.u.)=0.70 *24*
		6478.1	100 *3*	1779.030	2^+			
		8256.1	12.9 *22*	0.0	0^+	E2		B(E2)(W.u.)=0.026 *7*
8328.38	1^+	2052.0	28 *4*	6276.20	3^+			
		6547.7	45 *9*	1779.030	2^+			
		8325.7	100 *9*	0.0	0^+	M1		B(M1)(W.u.)=6.E−5 *4*
8413.33	4^-	1534.5	100.0 *8*	6878.79	3^-	(M1+E2)	−0.17 *1*	B(M1)(W.u.)=0.0146 *25*; B(E2)(W.u.)=0.91 *19* δ: From 1974Da15. Other: −0.18 *4* (1981Gl05).
		3794.9	3.50 *25*	4617.86	4^+			
		6632.6	21.3 *8*	1779.030	2^+	(M2+E3)	+2.5 *2*	B(M2)(W.u.)=0.019 *5*; B(E3)(W.u.)=21 *4* δ: From 1974Da15.
8543.56	6^+	3925.1 *3*	100	4617.86	4^+	[E2]		B(E2)(W.u.)=10.6 *10*
8588.71	3^+	789.7	0.59 *10*	7799.01	3^+	[M1]		B(M1)(W.u.)=0.021 *6*
		1700.9	0.34 *23*	6887.65	4^+			
		2312.3	7.85 *23*	6276.20	3^+			
		3970.3	4.89 *23*	4617.86	4^+			
		6807.9	100.0 *5*	1779.030	2^+			
8904.8	1^-	7123.8	100 *6*	1779.030	2^+	[E1]		B(E1)(W.u.)=0.00013 *4*
		8901.8	89 *6*	0.0	0^+	[E1]		B(E1)(W.u.)=6.1×10^{-5} *16*
8945.20	5^+	2057.4	64 *4*	6887.65	4^+	(M1+E2)	>25	B(M1)(W.u.)<3.1×10^{-5}; B(E2)(W.u.)>18 δ: From 1986Gl05.
		4326.6	100 *4*	4617.86	4^+	(M1+E2)	+7 *+7−2*	B(M1)(W.u.)=6.E−5 *+12−6*; B(E2)(W.u.)=0.76 *10* δ: From 1995Br17.
8953.3	$(0^+,1,2)$	7172.3	100	1779.030	2^+			
9164.68	(4^+)	1748.3	9.8 *11*	7416.26	2^+	[E2]		B(E2)(W.u.)=11.1 *18*
		1784.0	29.3 *22*	7380.59	2^+	[E2]		B(E2)(W.u.)=30 *4*
		2276.8	6.3 *7*	6887.65	4^+			
		2285.7	4.1 *7*	6878.79	3^-	[E1]		B(E1)(W.u.)=4.2×10^{-5} *9*
		4546.0	67.0 *9*	4617.86	4^+			
		7383.6	100 *5*	1779.030	2^+	[E2]		B(E2)(W.u.)=0.084 *11*
9315.92	3^+	727.2	0.8 *3*	8588.71	3^+			
		1516.8	2.4 *6*	7799.01	3^+			
		3039.4	37 *3*	6276.20	3^+	(M1+E2)	−0.2 *2*	B(M1)(W.u.)=0.13 *6*; B(E2)(W.u.)=3 *+6−3* δ: From 1978Da08.
		7534.7	100 *3*	1779.030	2^+	(M1+E2)	+0.01 *1*	B(M1)(W.u.)=0.024 *10*; B(E2)(W.u.)=0.00022 *+45−22* δ: From 1978Ma23. Other: +0.08 *6* (1978Da08).
9381.55	2^+	1122.7	0.60 *18*	8258.74	$2^{(+)}$	(M1)		B(M1)(W.u.)=0.08 *3*
		1448.0	3.14 *23*	7933.45	2^+	(M1)		B(M1)(W.u.)=0.18 *6*
		1965.1	0.12 *7*	7416.26	2^+			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

γ(^{28}Si) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.[b]	δ	Comments
9381.55	2+	3105.0	4.48 *23*	6276.20	3+	(M1)		B(M1)(W.u.)=0.027 *8*
		7600.3	100.0 *13*	1779.030	2+	(M1+E2)	+0.09 *5*	B(M1)(W.u.)=0.040 *11*; B(E2)(W.u.)=0.03 *+4−3* δ: From 1978Ma23.
		9378.2	3.7 *4*	0.0	0+	(E2)		B(E2)(W.u.)=0.046 *14*
9417.17	4+	1483.6	27 *4*	7933.45	2+	(E2)		B(E2)(W.u.)=23 *5*
		1618.1	100 *6*	7799.01	3+			
		2000.8	13 *9*	7416.26	2+			
		2036.4	1.2 *2*	7380.59	2+	(E2)		B(E2)(W.u.)=0.21 *5*
		2529.3	18.8 *6*	6887.65	4+			
		3140.6	3.1 *2*	6276.20	3+			
		4798.4	36.3 *14*	4617.86	4+			
		7635.9	33.3 *10*	1779.030	2+	(E2)		B(E2)(W.u.)=0.0079 *13*
9479.49	(2+)	2063.1	0.58 *7*	7416.26	2+			
		2098.7	0.71 *24*	7380.59	2+			
		4498.8	5.3 *18*	4979.92	0+	(E2)		B(E2)(W.u.)=0.46 *22*
		4860.7	7.5 *4*	4617.86	4+	(E2)		B(E2)(W.u.)=0.44 *15*
		7698.2	3.04 *15*	1779.030	2+			
		9476.1	100.0 *24*	0.0	0+	(E2)		B(E2)(W.u.)=0.21 *7*
9496.04	(1+)	7714.7	18 *5*	1779.030	2+			
		9492.6	100 *5*	0.0	0+	(M1)		B(M1)(W.u.)=0.0044 *18*
9702.34	(5−)	1288.9	100 *5*	8413.33	4−	(M1+E2)	<+2.0	B(M1)(W.u.)>0.00017; B(E2)(W.u.)<3.6 δ: From 1981Gl05.
		2814.4	15.6 *23*	6887.65	4+			
		2823.2	51.1 *23*	6878.79	3−	(E2)		B(E2)(W.u.)=0.036 *10*
		5083.5	33.3 *23*	4617.86	4+			
		7920.9	22.2 *23*	1779.030	2+	(E3)		B(E3)(W.u.)=0.33 *9*
9764.52	(3−)	2885.4	0.57 *16*	6878.79	3−			
		3487.9	2.6 *3*	6276.20	3+	(E1)		B(E1)(W.u.)>0.00022
		7983.1	100.0 *3*	1779.030	2+	(E1)		B(E1)(W.u.)>0.00070
9795.95	(2+)	3105[#]		6690.74	0+			I_γ: γ-ray branching not available.
		4815.1	7.2 *4*	4979.92	0+			
		8014.5	78 *2*	1779.030	2+			
		9792.3	100 *2*	0.0	0+	(E2)		
9929.2	1−	9925.4	100	0.0	0+	(E1)		
10181.60	(3−)	1016.9	31.0 *14*	9164.68	(4+)	(E1)		B(E1)(W.u.)=0.022 *7*
		3904.8	10 *3*	6276.20	3+	(E1)		B(E1)(W.u.)=0.00012 *6*
		5562.6	100 *3*	4617.86	4+	(E1)		B(E1)(W.u.)=0.00043 *13*
10189.59	(5−,3−)	3310.4	100	6878.79	3−			
10209.01	(3+)	2792.5	4.7 *20*	7416.26	2+			
		5590.0	29 *7*	4617.86	4+	(E2)		B(E2)(W.u.)=0.45 *18*
		8427.3	100 *7*	1779.030	2+			
10272.3	0+	1943.8	70 *3*	8328.38	1+	M1		B(M1)(W.u.)>0.029
		8490.5	100 *3*	1779.030	2+	E2		B(E2)(W.u.)>0.036
10310.92	(4+)	4034.1	20 *6*	6276.20	3+			
		5691.8	100 *10*	4617.86	4+			
		8529.1	80 *12*	1779.030	2+			
10376.24	(3+,4+)	1787.4	75 *4*	8588.71	3+			
		3488.1	21 *4*	6887.65	4+			
		4099.4	100 *11*	6276.20	3+			
		5757.1	79 *7*	4617.86	4+			
		8594.4	70 *5*	1779.030	2+			
10418.25	(5+)	2619.0	6.2 *11*	7799.01	3+	(E2)		B(E2)(W.u.)=2.3 *7*
		3530.1	11.4 *7*	6887.65	4+			
		4141.4	100 *3*	6276.20	3+	(E2)		B(E2)(W.u.)=3.7 *9*

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Adopted Levels, Gammas (continued)

$\gamma(^{28}Si)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ @	E_f	J_f^π	Mult. b	Comments
10418.25	(5^+)	5799.1	19 *3*	4617.86	4^+		
10514.1	(2^+)	5533.0	7.3 *11*	4979.92	0^+		
		8732.1	100 *2*	1779.030	2^+		
		10510.0	51 *2*	0.0	0^+	E2	
10541.0	(3^-)	3661.7	52 *13*	6878.79	3^-		
		8759.0	100 *13*	1779.030	2^+		
10596.18	(1^+)	2267.6	5.7 *17*	8328.38	1^+		
		3179.5	7 *3*	7416.26	2^+		
		5615.1	23 *7*	4979.92	0^+	(M1)	B(M1)(W.u.)=0.054 *21*
		10592.0	100 *7*	0.0	0^+	(M1)	B(M1)(W.u.)=0.035 *8*
10668.05	$(2,3)^+$	1352.1	100 *7*	9315.92	3^+	(M1)	B(M1)(W.u.)=0.29 *7*
		2734.3	2.2 *7*	7933.45	2^+		
		3251.4	22.9 *15*	7416.26	2^+		
		3287.1	4.3 *9*	7380.59	2^+		
		3780.0	13.9 *11*	6887.65	4^+		
		4391.1	11 *3*	6276.20	3^+		
		8886.0	49 *7*	1779.030	2^+		
10668.34	4^+	1251.1	0.88 *17*	9417.17	4^+		
		1286.7	0.76 *23*	9381.55	2^+	(E2)	B(E2)(W.u.)=5.3 *19*
		1352.4	100 *7*	9315.92	3^+	(M1)	B(M1)(W.u.)=0.19 *4*
		1723.0	1.9 *4*	8945.20	5^+		
		2079.5	13.3 *4*	8588.71	3^+		
		2124.6	0.86 *15*	8543.56	6^+	(E2)	B(E2)(W.u.)=0.48 *12*
		2409.4	1.73 *19*	8258.74	$2^{(+)}$		
		2734.6	14.1 *4*	7933.45	2^+	(E2)	B(E2)(W.u.)=2.2 *4*
		2869.0	3.8 *3*	7799.01	3^+		
		3251.7	30.2 *11*	7416.26	2^+		
		3287.3	1.0 *3*	7380.59	2^+		
		3780.1	3.5 *4*	6887.65	4^+		
		4391.4	49.4 *17*	6276.20	3^+		
		6049.1	18.4 *13*	4617.86	4^+		
		8886.3	15.3 *7*	1779.030	2^+		
10724.7	(1^+)	10720.3	100	0.0	0^+	(M1)	B(M1)(W.u.)=0.029 *6*
10778	1^+ to 5^+	4501	100	6276.20	3^+		
10883.45	$(2,3^+)$	3466.7	5.7 *16*	7416.26	2^+		
		9101.2	100 *7*	1779.030	2^+		
10900.42	(1^+)	9118.2	47 *5*	1779.030	2^+		
		10895.9	100 *5*	0.0	0^+	(M1)	B(M1)(W.u.)=0.133 *16*
10915.6	(3^-)	1599.6	16 *3*	9315.92	3^+		
		6296.2	19 *4*	4617.86	4^+		
		9133.4	100 *4*	1779.030	2^+		
10944.0	(4^+)	2685.0	26 *4*	8258.74	$2^{(+)}$		
		3527.3	42 *6*	7416.26	2^+		
		3562.9	21 *4*	7380.59	2^+		
		9161.8	100 *6*	1779.030	2^+		
10952.8	1 to 4	9170.5	100	1779.030	2^+		
10994	$(1,2^+)$	9212	100	1779.030	2^+		
11078.52	(3^-)	1696.9	20 *3*	9381.55	2^+		
		1762.5	34 *3*	9315.92	3^+		
		3661.8	49 *3*	7416.26	2^+		
		4801.4	83 *3*	6276.20	3^+		
		9296.2	100 *3*	1779.030	2^+		
11100.0	(6^+)	6480.5	100	4617.86	4^+	(E2)	B(E2)(W.u.)=0.89 *9*
11142	(2^+)	3725	32[a] *5*	7416.26	2^+		
		3761	73[a] *7*	7380.59	2^+		

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Adopted Levels, Gammas (continued)

γ(^{28}Si) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.[b]	δ	Comments
11142	(2$^+$)	6523	23[a] *2*	4617.86	4$^+$			
		9360	100[a] *9*	1779.030	2$^+$			
11195.22	(4$^+$)	1399.2	13 *6*	9795.95	(2$^+$)			
		1879.2	21 *8*	9315.92	3$^+$			
		3814.1	23 *6*	7380.59	2$^+$			
		4918.1	26 *6*	6276.20	3$^+$			
		6575.7	74 *13*	4617.86	4$^+$			
		9412.8	100 *16*	1779.030	2$^+$			
11265	(3$^-$)	1083.4	4.4 *19*	10181.60	(3$^-$)			
		9482.5	100 *4*	1779.030	2$^+$			
		11260.1	13 *4*	0.0	0$^+$			
11295.6	(1$^-$)	4416	4.1[a] *14*	6878.79	3$^-$			
		4604	3.0[a] *14*	6690.74	0$^+$			
		6314	3.4[a] *14*	4979.92	0$^+$			
		9513	26[a] *3*	1779.030	2$^+$			
		11291	100[a] *7*	0.0	0$^+$			
11331.9	6$^+$	2386.5	16 *4*	8945.20	5$^+$			
		4443.5	7.4 *25*	6887.65	4$^+$	(E2)		B(E2)(W.u.)>0.18
		6712.3	100 *4*	4617.86	4$^+$	(E2)		B(E2)(W.u.)>0.32
11432.63	(2$^+$)	2843.6	59.6 *4*	8588.71	3$^+$			
		3173.5	5.6 *13*	8258.74	2$^{(+)}$			
		3498.7	10.2 *15*	7933.45	2$^+$			
		3633.1	9.6 *17*	7799.01	3$^+$			
		4015.8	5.6 *15*	7416.26	2$^+$			
		4051.4	6.5 *17*	7380.59	2$^+$			
		9650.0	100 *2*	1779.030	2$^+$			
		11427.6	19.3 *4*	0.0	0$^+$			
11434.50	(4$^-$)	2118.4	100 *2*	9315.92	3$^+$			
		3020.8	13 *2*	8413.33	4$^-$			
		4546.1	51 *5*	6887.65	4$^+$			
		5157.3	70 *4*	6276.20	3$^+$	(E1)		B(E1)(W.u.)=0.00011 *4*
11446.00	(1$^+$)	11441.0	100	0.0	0$^+$	(M1)		B(M1)(W.u.)=0.84 *4*
11510.4	(6$^+$)	2345.5	36 *7*	9164.68	(4$^+$)	(E2)		B(E2)(W.u.)=37 *11*
		4621.9	100 *7*	6887.65	4$^+$	(E2)		B(E2)(W.u.)=3.4 *9*
		6890.7	36 *4*	4617.86	4$^+$	(E2)		B(E2)(W.u.)=0.17 *5*
11572.0	(4,5$^+$)	4683.5	100.0 *2*	6887.65	4$^+$			
		6952.3	17.0 *2*	4617.86	4$^+$			
11576	(6$^-$)	1874	100.0[&] *22*	9702.34	(5$^-$)			
		3032	7.5[&] *22*	8543.56	6$^+$	(E1)		B(E1)(W.u.)=8.E−6 *4*
11584.62	(3$^-$)	9801.9	100	1779.030	2$^+$			
11778.9	(5$^+$)	7158.9	100	4617.86	4$^+$	(M1+E2)	−0.02 *3*	δ: From 1995Br17.
11933.5	5	5044.9	6 *2*	6887.65	4$^+$			
		7313.6	100 *2*	4617.86	4$^+$			
11986	(1 to 3)	10203	100	1779.030	2$^+$			
12152.0	(6$^+$)	5263.3	100	6887.65	4$^+$			
12204	(6$^-$,4$^-$)	2014	9.9[&] *22*	10189.59	(5$^-$,3$^-$)			
		3790	100.0[&] *22*	8413.33	4$^-$			
12862	(6$^+$)	1919[#]		10944.0	(4$^+$)			
		3700[#]		9164.68	(4$^+$)			
		5977[#]		6887.65	4$^+$			
		8247[#]		4617.86	4$^+$			
12994	(5,6,7)$^+$	4450	100	8543.56	6$^+$			
13710.2	7$^+$	5166[#]	100	8543.56	6$^+$			

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Adopted Levels, Gammas (continued)

$\gamma(^{28}Si)$ (continued)

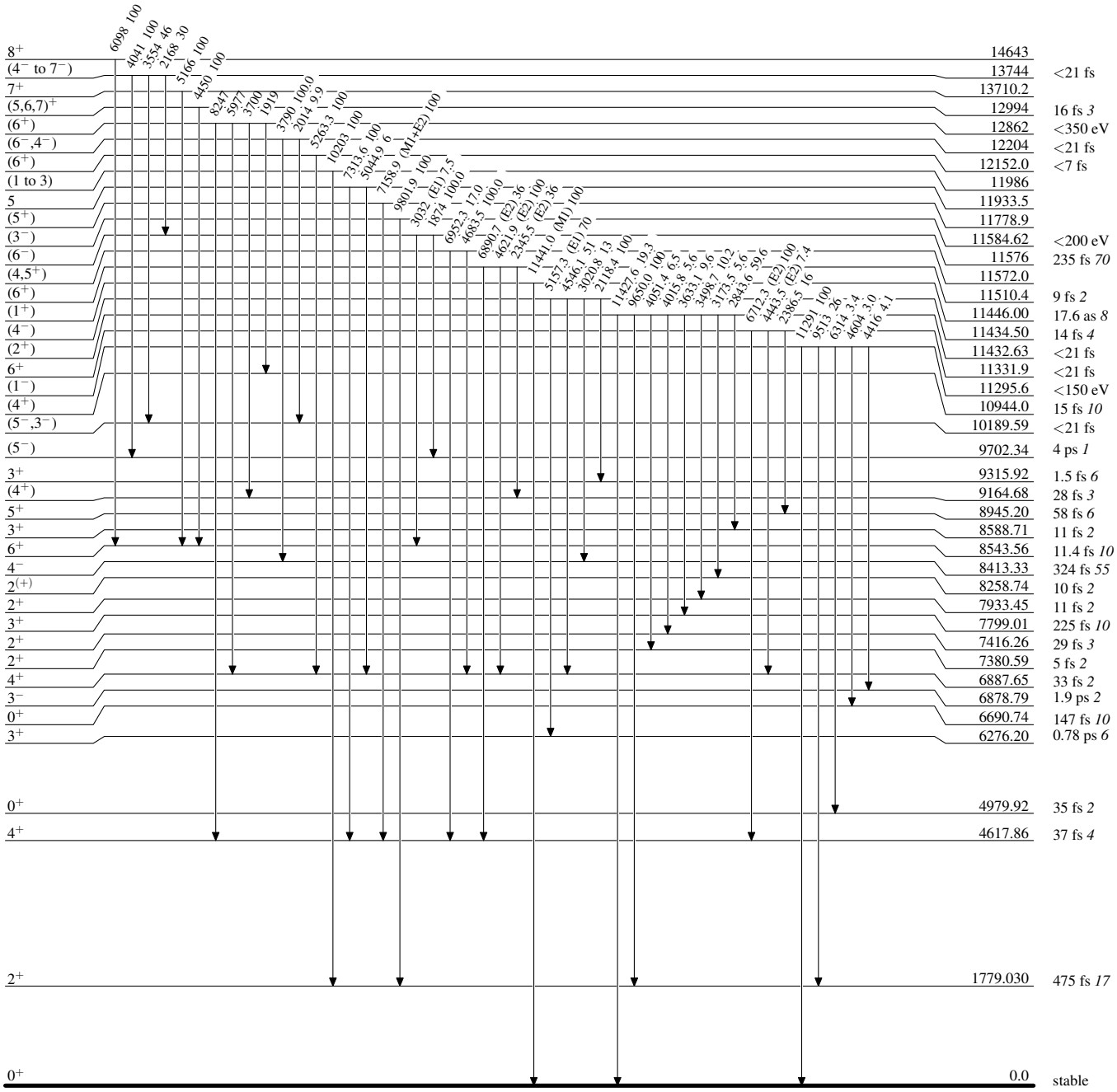
E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π
13744	(4^- to 7^-)	2168	30[&] *6*	11576	(6^-)
		3554	46[&] *6*	10189.59	(5^-,3^-)
		4041	100[&] *9*	9702.34	(5^-)
14643	8^+	6098[#]	100	8543.56	6^+

[†] Calculated by the evaluator from level energy differences, except otherwise noted. Recoil energy has been subtracted.
[‡] From ^{28}P ε decay.
[#] From (^{20}Ne,$\alpha\gamma$).
[@] From (p,γ), except otherwise noted. In some cases, weighted averages of data from (p,γ) and (^{28}P ε decay-1982Wa05) are presented.
[&] From (α,nγ).
[a] From (α,γ).
[b] Assigned by the evaluator based on γ-ray angular distribution measurements, RUL, mixing ratio, ΔJ^π, etc.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

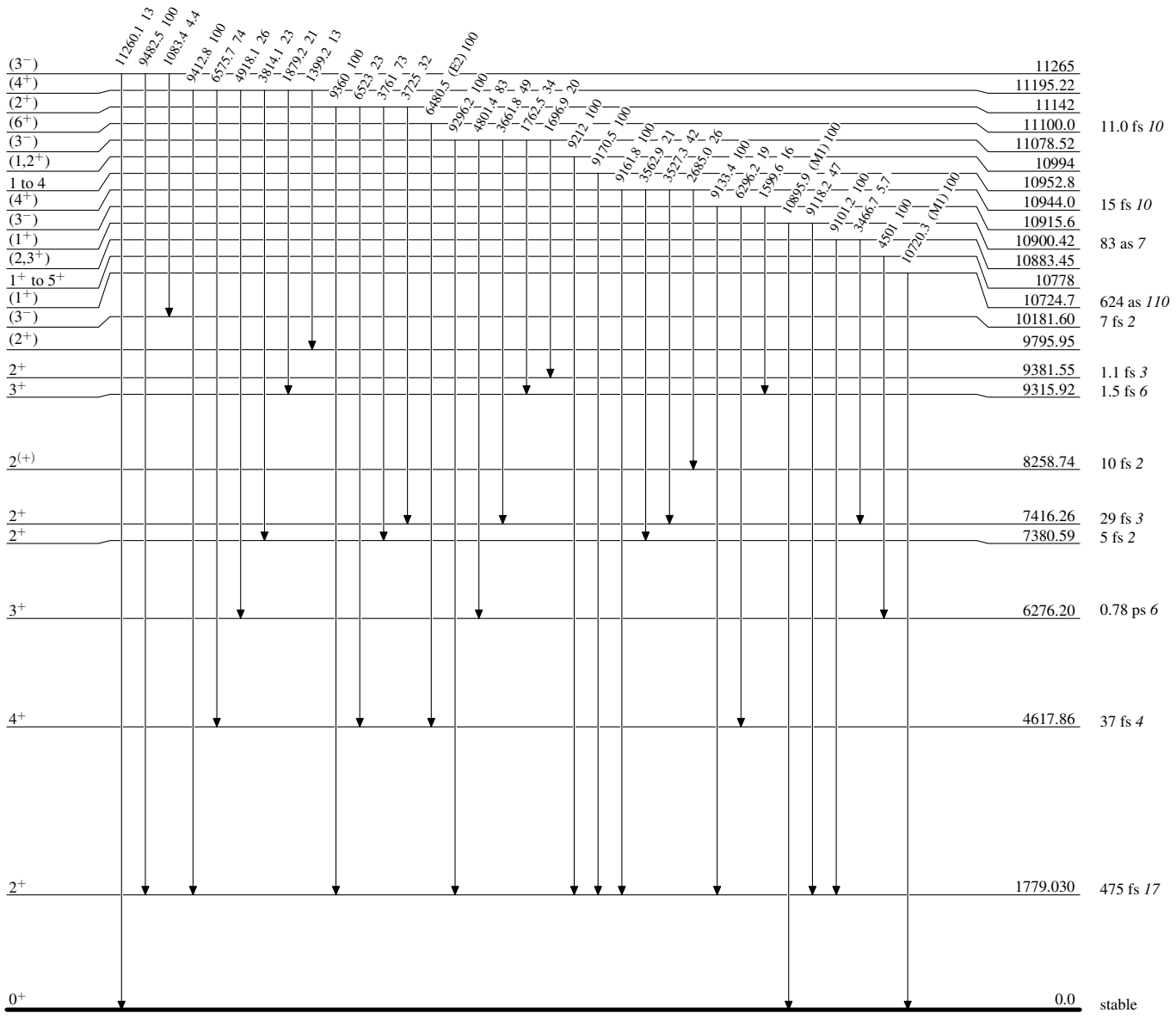


$^{28}_{14}Si_{14}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

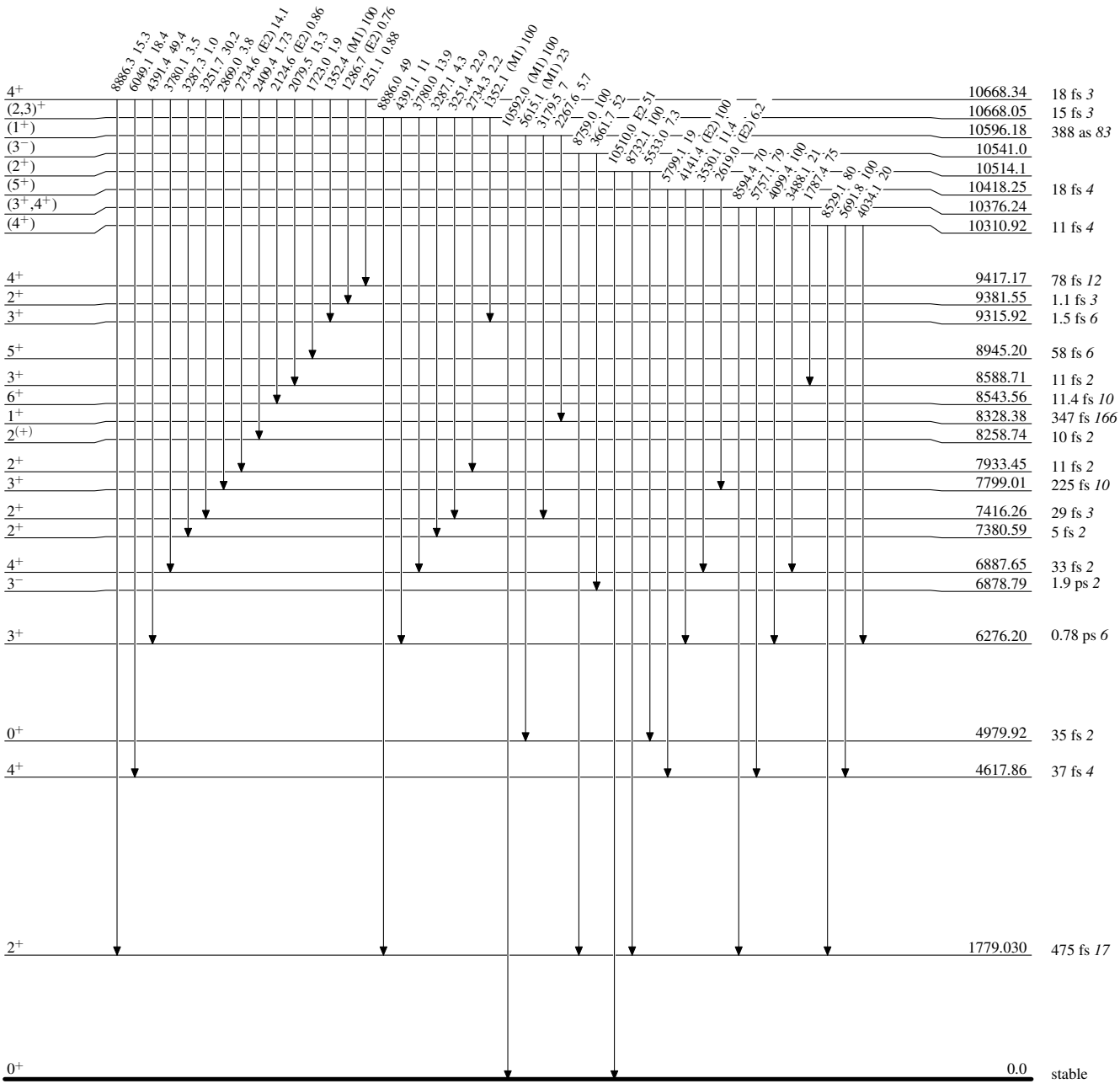


$^{28}_{14}Si_{14}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

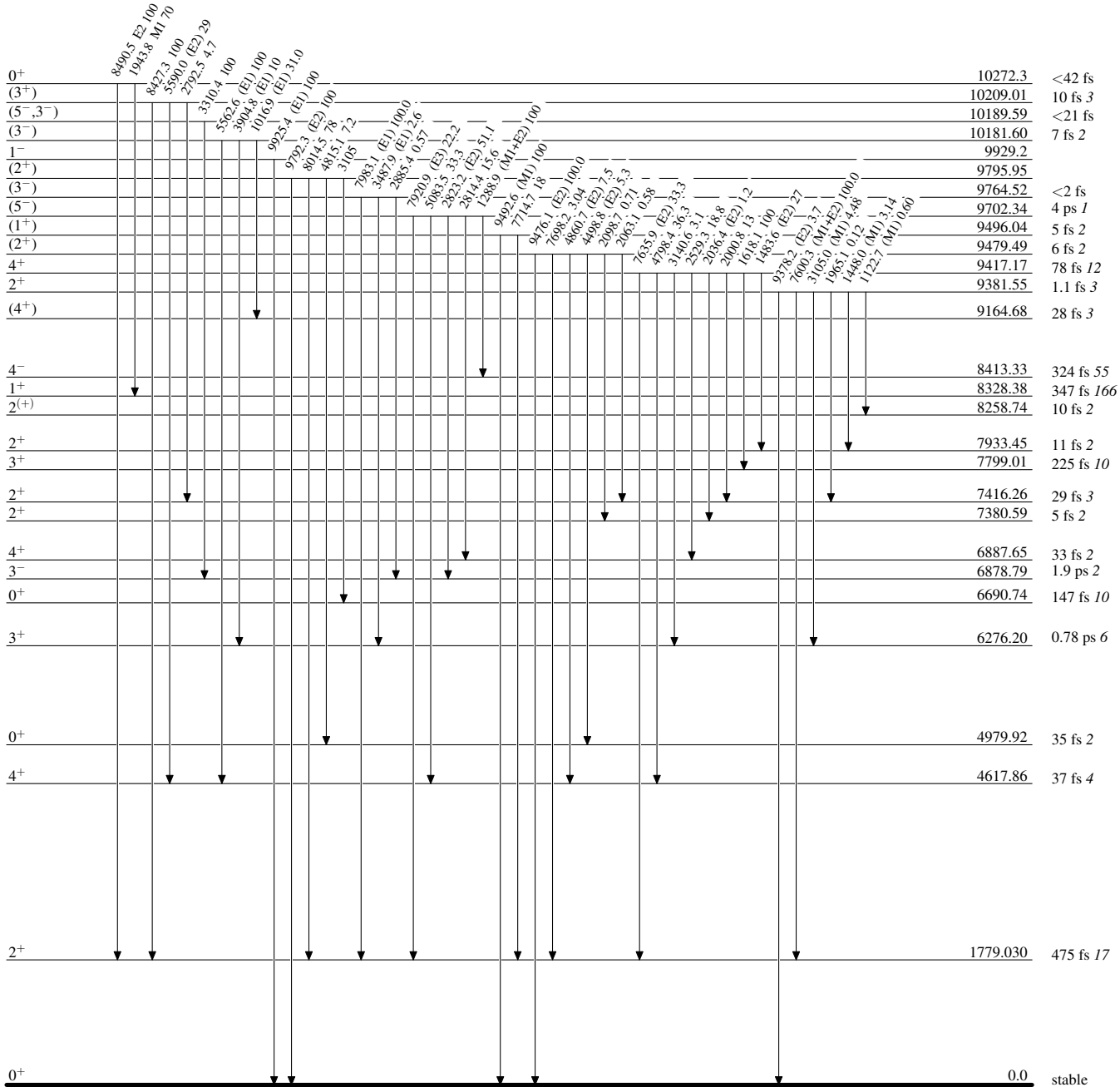


$^{28}_{14}Si_{14}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

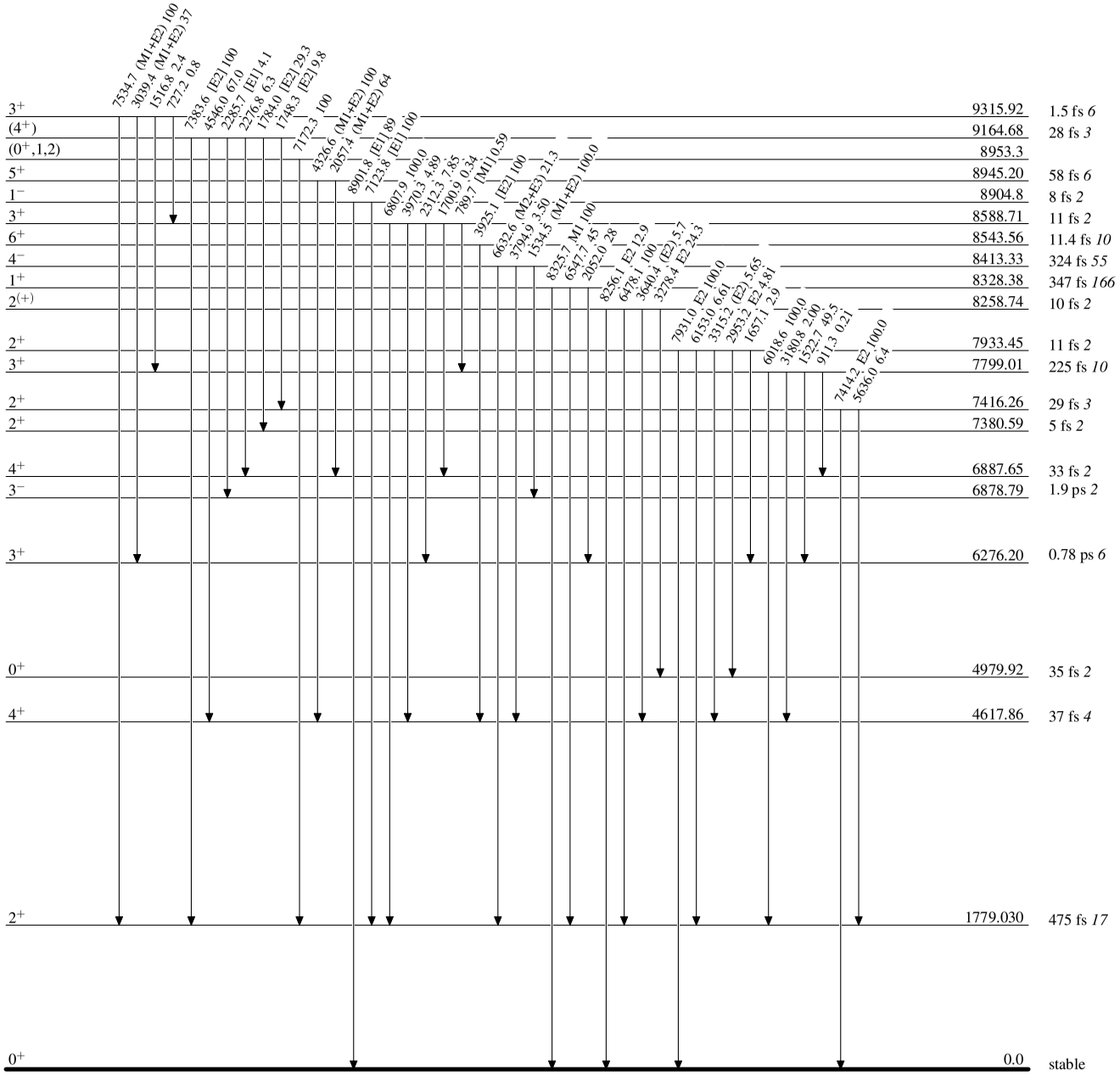


$^{28}_{14}Si_{14}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

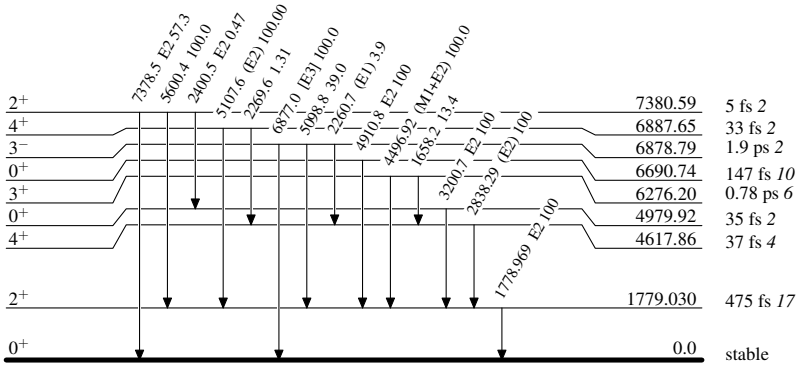


$^{28}_{14}Si_{14}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{28}_{14}Si_{14}$

Adopted Levels, Gammas