Adopted Levels, Gammas

Q(β^-)=10470 *40*; S(n)=2470 *40*; S(p)=18680 *40*; Q(α)=−13690 *40* 2021Wa16
S(2n)=10020 *40*, S(2p)=33930 *40*, Q(β^-n)=2090 *40* (2021Wa16).
Isotope discovery (2012Th10): ^{232}Th(^{40}Ar,X) at Dubna (1971Ar32).
^{35}Si production:
2015Mo17: ^{9}Be(^{40}Ar,X) at E(^{40}Ar)=95 MeV/nucleon at RIKEN. Measured angular distributions and transverse momentum distributions of fragments. Deduced formulation for the width of transverse momentum distribution as a function of fragment velocity.
2012Kw02: ^{9}Be,^{nat}Ni,^{181}Ta(^{40}Ar,X) at E(^{40}Ar)=140 MeV/nucleon at NSCL. Measured fragmentation cross sections, parallel momentum transfers, and widths. Compared with empirical formula EPAX, and predictions from internuclear cascade and deep inelastic models using Monte Carlo ISABEL-GEMINI and DIT-GEMINI codes.
2012Zh06: ^{9}Be,^{181}Ta(^{40}Ar,X) at E(^{40}Ar)=57 MeV/nucleon at HIRFL. Measured momentum distributions and production cross sections of fragments. Observed competition between projectile fragmentation and other mechanisms. Compared with EPAX, abrasion- ablation, and HIPSE models. Studied target dependence of fragment cross sections.
2007No13: ^{9}Be(^{40}Ar,X) at E(^{40}Ar)=100 MeV/nucleon at RIKEN. Measured fragment momentum distributions and production cross sections.
2006Ro34: ^{2}H(^{42}S,X) at E(^{42}S)=99.8 MeV/nucleon at NSCL. Measured production cross sections.
1997Fo01: ^{208}Pb(^{37}Cl,X) at E(^{37}Cl)=230 MeV at Legnaro. Measured yields.
^{35}Si decay measurements:
1986Du07,1986HuZW,1987DuZU,1988DuZS,1988DuZT: ^{9}Be(^{40}Ar,X) at GANIL. Measured $T_{1/2}$ and β^--delayed γ rays.
2007Ne14: Polarized ^{35}Si from ^{9}Be(^{36}S,X) 1n pickup at GANIL. ^{35}Si g.s. magnetic moment and g-factor using β-NMR.
^{35}Si radius measurements:
2006Kh08: ^{35}Si produced by ^{181}Ta(^{48}Ca,X) fragmentation at E(^{48}Ca)=60.3 MeV/nucleon at GANIL. Measured energy-integrated reaction cross sections at 30-65 MeV/nucleon using a silicon telescope as both active target and detector. Deduced reduced strong absorption radii, isospin dependence, and possible halo structure or large deformation.
1999Ai02: Si(^{35}Si,X) at NSCL. Measured energy-integrated reaction cross sections at E=38-80 MeV/ nucleon. Deduced strong absorption radii.
^{35}Si mass measurements: 1986Fi06, 1986Sm05, 1984Ma49.
Theoretical calculations (binding energies, deformation, quadrupole moments, radii, levels, J^π, etc.): 2011Ka03, 2009No01, 2008Wi11, 2007Ch82, 2004Kh16, 1999Du05, 1994Mo37, 1994Po05, 1987Wa10, 1986Wo02.

^{35}Si Levels

Cross Reference (XREF) Flags

A ^{35}Al β^- decay (38.1 ms)
B ^{36}Al β^-n decay (12.0 ms)
C ^{37}Al β^-2n decay (11.4 ms)
D ^{2}H(^{34}Si,pγ)
E ^{9}Be(^{36}Si,^{35}Siγ)

E(level)†	J$^\pi$	$T_{1/2}$	XREF	Comments
0	(7/2)$^-$	0.78 s *12*	ABCDE	%β^-=100; %β^-n<5 (1995ReZZ,2008ReZZ) μ=(−)1.638 *4* (2007Ne14,2019StZV) μ: β-NMR (2007Ne14). J$^\pi$: L(^{2}H(^{34}Si,p))=L(^{36}Si,^{35}Si)=3 from 0$^+$ and $\nu f_{7/2}$ configuration from shell model. $T_{1/2}$: From $\beta\gamma$(t) (1988DuZS,1988DuZT). Other: 0.87 s *17* (1986Du07). Reduced strong absorption radius r_0^2=1.261 fm^2 *35* from the energy-integrated σ of Si(^{35}Si,X) (2006Kh08) and r_0^2=1.258 fm^2 *92* from the energy-integrated σ of Si(^{35}Si,X) (1999Ai02).
909.95 *23*	(3/2)$^-$	55 ps *14*	ABCDE	J$^\pi$: L(^{2}H(^{34}Si,p))=L(^{36}Si,^{35}Si)=1 from 0$^+$ and $\nu p_{3/2}$ configuration from shell model. $T_{1/2}$: From analysis of broadened line shapes in (^{36}Si,^{35}Siγ).
973.88 *18*	(3/2$^+$)	5.9 ns *6*	A E	J$^\pi$: $\nu d_{3/2}$ configuration from shell model and 715γ from 1688, 1/2$^+$.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{35}Si Levels (continued)

E(level)†	Jπ	XREF	Comments
			$T_{1/2}$: From $\beta\gamma$(t) in ^{35}Al β^- decay.
1689.4 *28*	1/2+	E	Jπ: L(^{36}Si,^{35}Si)=0 from 0+.
1970 *6*		E	
2044 *5*	(1/2)−	DE	Jπ: L(^{2}H(^{34}Si,p))=1 from 0+ and $\nu p_{1/2}$ configuration from shell model.
2168.2 *4*	(5/2+)	A E	Jπ: L(^{36}Si,^{35}Si)=2,3 from 0+ and from shell model. A possible isobaric analog state in ^{35}P with L(^{1}H(^{34}Si,p))=2 from R-matrix analysis in 2012Im01.
2275 *6*		E	
2377 *7*		E	
3140		A	
3450		A	
3611? *8*		E	XREF: E(?)
3770		A	
5190		A	
≈5500	(5/2)−	D	E(level): A broad level at ≈5500 deduced from E_p in ^{2}H(^{34}Si,p). Jπ: L(^{2}H(^{34}Si,p))=3 from 0+ and $\nu f_{5/2}$ configuration from shell model.
5760		A	
6330		A	
7360		A	
7690		A	

† From a least-squares fit to γ-ray energies for levels connected with γ transitions; from ^{35}Al β^--delayed neutron decays for other levels, unless otherwise noted.

γ(^{35}Si)

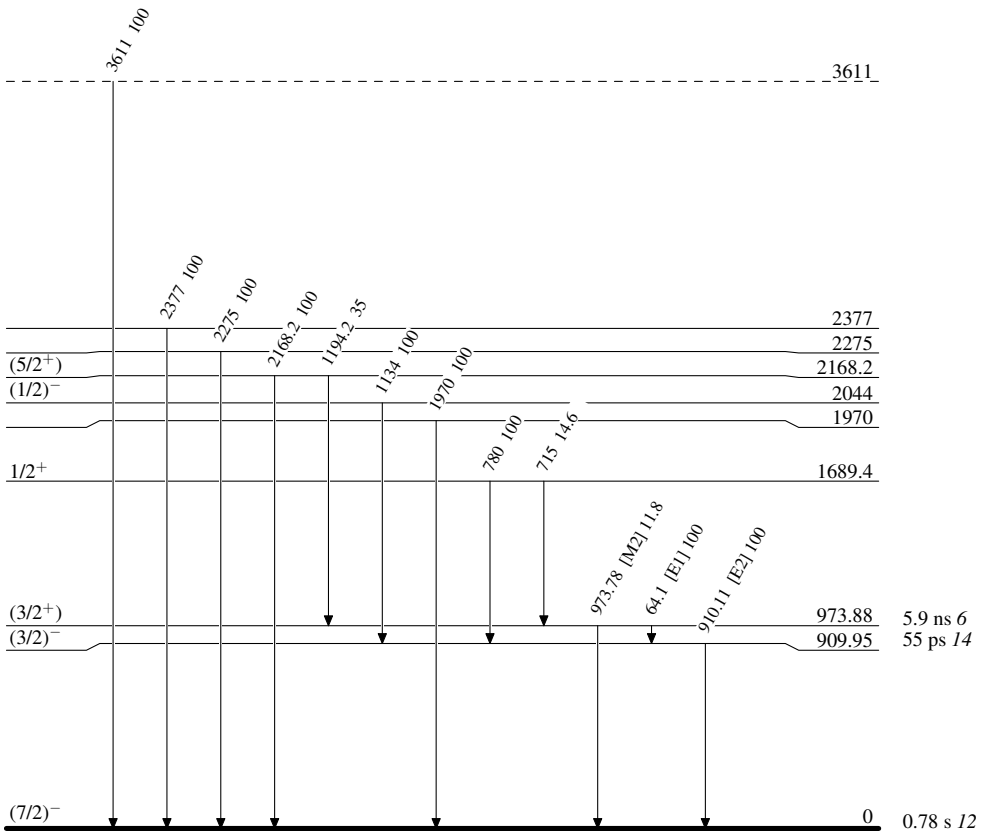
E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.	α#	Comments
909.95	(3/2)−	910.11 *30*	100	0	(7/2)−	[E2]	4.13×10^{-5} *6*	B(E2)(W.u.)=2.4 *+8−5* E_γ: Others: 910 *3* from ^{2}H(^{34}Si,γ) and 908 *4* from (^{36}Si,^{35}Siγ).
973.88	(3/2+)	64.1 *3*	100	909.95	(3/2)−	[E1]	0.0368 *8*	B(E1)(W.u.)=3.52×10^{-4} *+41−34*
		973.78 *20*	11.8 *24*	0	(7/2)−	[M2]	5.05×10^{-5} *7*	B(M2)(W.u.)=0.057 *+13−12*
1689.4	1/2+	715‡ *4*	14.6‡ *16*	973.88	(3/2+)			
		780‡ *4*	100‡ *8*	909.95	(3/2)−			
1970		1970‡ *6*	100‡	0	(7/2)−			
2044	(1/2)−	1134‡ *5*	100	909.95	(3/2)−			E_γ: Other: 1134 *6* from ^{2}H(^{34}Si,pγ). I_γ: From (^{36}Si,^{35}Siγ) and ^{2}H(^{34}Si,pγ).
2168.2	(5/2+)	1194.2 *4*	35 *8*	973.88	(3/2+)			
		2168.2 *6*	100 *20*	0	(7/2)−			E_γ: Other: 2164 *6* from (^{36}Si,^{35}Siγ).
2275		2275‡ *6*	100‡	0	(7/2)−			
2377		2377‡ *7*	100‡	0	(7/2)−			
3611?		3611‡ *8*	100‡	0	(7/2)−			

† From ^{35}Al β^- decay, unless otherwise noted.
‡ From ^{9}Be(^{36}Si,^{35}Siγ).
# Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with "Frozen Orbitals" approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{35}_{14}Si_{21}$