

$^{147}\text{Sm}(\text{d,t})$ 1975Oe01,1975Si03

Type	Author	History	Citation	Literature Cutoff Date
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$J^\pi(^{147}\text{Sm})=7/2^-$.

1975Oe01: $^{147}\text{Sm}(\text{d,t})$, E=17 MeV; measured $\sigma(E_t, \theta)$. ^{146}Sm ; deduced levels, L, S, J^π . Tandem, Enge split-pole spectrograph, DWBA analysis.

1975Si03: $^{147}\text{Sm}(\text{d,t})$, E=14 MeV; measured E_t at 30° . ^{146}Sm ; deduced levels. Enge split-pole spectrograph, FWHM $\approx$ 10 keV.

 ^{146}Sm Levels

E(level) [†]	J^π [‡]	$d\sigma/d\Omega$ (mb/sr) [#]	L	C^2S [@]	Comments
0.0	0 to 7^+	2.24	3	0.56	
747	2 to 5^+	0.50,0.43	1,3	0.05,0.14	E(level): 745 (1975Si03).
1381	0 to 7^+	1.50	3	0.62	E(level): 1380 (1975Si03).
1648	2 to 5^+	0.08,0.32	1,3	0.14,0.01	E(level): 1652 (1975Si03).
1792	1 to 7^+	0.04,0.02	3,5	0.02,0.09	
1811	0 to 7^+	1.66	3	0.82	E(level): 1819 (1975Si03).
1913 ^{&}		0.02			
1936 ^a					
1980 ^a					
2024 ^{&}		0.04			
2045 ^d	$3^-, 4^-$	0.10	0	0.02	E(level): 2050 (1975Si03).
2078 ^a					
2103 ^a					
2156	$3^-, 4^-$	0.24	0	0.05	E(level): 2162 (1975Si03).
2224 ^{&}		0.05			
2269	2 to 5^+	0.45	1	0.06	
2278 ^c					
2329 ^{&}		0.02			
2354 ^a					
2402	$3^-, 4^-$	0.06	0	0.01	E(level), J^π : 2409 keV, $J=2^+$ (1975Si03).
2439	2 to 5^+	0.36	1	0.05	E(level): 2444 (1975Si03).
2514	$3^-, 4^-$	0.32	0	0.07	E(level): 2516 (1975Si03).
2533	2 to 5^+	0.08,0.16	1,3	0.16,0.11	E(level): 2535 (1975Si03).
2596 ^{&b}		0.04			
2646 ^a					
2652 ^a					
2682 ^a					
2711 ^a					
2787	(1 to 6^-)	0.07	(2)	0.04	E(level): 2790 (1975Si03).
2829	$3^-, 4^-$	0.04	0	0.01	
2856 ^{&}		0.04			
2899	2 to 5^+	0.29	1	0.05	
2903 ^a					E(level): 2904 (1975Si03).
2933 ^{&}		0.06			E(level): 2938 (1975Si03).
2971	$3^-, 4^-$	0.20	0	0.06	E(level): 2975 (1975Si03).
2995 ^{&}		0.03			
3017 ^{&}		0.08			E(level): 3017 (1975Si03).
3069 ^b	2 to 5^+	0.22	1	0.04	E(level): 3074 (1975Si03).
3101 ^a					
3138	1 to 6^-	0.36	2	0.25	E(level): 3141 (1975Si03).
3188 ^{&}		0.12			E(level): 3186 (1975Si03).

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$^{147}\text{Sm}(\text{d,t})$ **1975Oe01,1975Si03** (continued) ^{146}Sm Levels (continued)

E(level) [†]	J ^{π‡}	dσ/dΩ (mb/sr) [#]	L	C ² S [@]	Comments
3224	(1 to 9 ⁺)	0.15	(5)	0.89	
3244 ^{&}		0.12			E(level): 3231 (1975Si03).
3269 ^a					
3335 ^{&}		0.08			
3367	3 ⁻ ,4 ⁻	0.78	0	0.26	E(level): 3374 (1975Si03).
3395	3 ⁻ ,4 ⁻	0.60	0	0.21	E(level): 3398 (1975Si03).
3425 ^{&}		0.60			E(level): 3433 (1975Si03).
3438	3 ⁻ ,4 ⁻	0.52	0	0.18	E(level): 3442 (1975Si03).
3473 ^{&}		0.08			
3496 ^b	1 to 6 ⁻	1.22	2	1.03	E(level): 3500 (1975Si03).
3526 ^b	3 ⁻ ,4 ⁻	0.14	0	0.05	
3551 ^{&b}		0.06			
3588	3 ⁻ ,4 ⁻	0.62	0	0.23	E(level): 3591 (1975Si03).
3603	3 ⁻ ,4 ⁻	0.68	0	0.26	E(level): 3604 (1975Si03).
3615 ^c					
3639 ^{&}		0.12			E(level): 3645 (1975Si03).
3677 ^{&}		0.17			E(level): 3683 (1975Si03).
3724	3 ⁻ ,4 ⁻	0.12	0	0.05	
3766	3 ⁻ ,4 ⁻	0.60	0	0.25	E(level): 3773 (1975Si03).
3792	3 ⁻ ,4 ⁻	0.68	0	0.29	E(level): 3794 (1975Si03).
3835	3 ⁻ ,4 ⁻	0.08	0	0.04	
3873 ^{&}		0.04			
3896 ^{&}		0.02			
3922	3 ⁻ ,4 ⁻	0.13	0	0.05	
3952 ^{&}		0.06			
3989	3 ⁻ ,4 ⁻	0.29	0	0.14	E(level): 3990 (1975Si03).
4031 ^{&}		0.06			
4058 ^{&}		0.20			E(level): 4065 (1975Si03).
4087	3 ⁻ ,4 ⁻	0.12	0	0.06	
4116 ^{&}		0.10			E(level): 4120 (1975Si03).
4149 ^{&}		0.04			
4174	(1 to 9 ⁺)	0.09	(5)	0.93	
4250 ^{&}		0.05			
4291 ^{&}		0.08			
4331 ^{&}		0.06			
4341 ^{&}		0.10			
4360 ^{&}		0.07			
4374 ^{&}		0.09			
4407 ^{&}		0.15			
4415 ^{&}		0.10			
4443 ^{&}		0.08			
4486 ^a					

[†] From **1975Oe01**; ΔE=0.1% or 3 keV whichever is larger. ΔE=5-15 keV in **1975Si03** measurements.[‡] As assigned in **1975Oe01** from DWBA analysis.[#] dσ/dΩ in unit of mb/sr (max. value from **1975Oe01**).

 $^{147}\text{Sm}(\text{d,t})$ **1975Oe01,1975Si03 (continued)**

 ^{146}Sm Levels (continued)

@ From [1975Oe01](#).

& From [1975Oe01](#). Those level with no L value could not be assigned to a unique L transfer or plausible L mixture.

^a Level weakly populated, $(\text{d}\sigma/\text{d}\Omega)_{\text{max}} \leq 0.03$ mb/sr. The levels that are not excited in other studies, were not included by the evaluators in the Adopted Levels.

^b One of states of unresolved doublet.

^c The state determined in [1975Si03](#) only.

^d Doublet; for L=1 $(\text{d}\sigma/\text{d}\Omega)_{\text{max}}=0.12$, $\text{C}^2\text{S}=0.02$, $J^\pi=2$ to 5^+ .