Target isotope: $^{40}_{20}$Ca $I^{\pi}_{\circ} = 0^+$ *Abundance:* 96.94(16) % $S_{\rm p} = 1085.07(9)$ keV

$^{41}_{21}$Sc(p)

$E_\circ$ [keV]	$2J^\pi$	$2T$	$\Gamma_{\rm p}$ [eV]	$\gamma^2_{\rm p}$ [keV]	$S_{\rm p\gamma}$ [eV]	$(2J{+}1)\Gamma_{\gamma_\circ}$ [meV]	Γ [eV]	$E_{\rm cm}$ [keV]	E^* [keV]	Ref.		
647.28(5)	3^-				0.0036	5		631	1717(1)	87Zi02	01Il02	61Bu08
1036.3(5)	3^+							1011	2096(1)	87Zi02	90En08	
1363.2(5)	3^-				weak		200(100)	1330	2415(1)	87Zi02	90En08	
1540.87(12)	5^-				0.020(3)	26		1503	2588(1)	87Zi02	61Bu08	90En08
1621.39(12)	5^+				0.018(2)	28		1582	2667(1)	87Zi02	61Bu08	90En08
1675.24(13)	1^+				0.004(1)		400(200)	1634	2719(1)	87Zi02	90En08	
1842.66(14)	7^+		0.09(1)		0.280(30)	390		1798	2882(1)	87Zi02	79Pa16	61Bu08
1934.5(2)	$7^{\langle-\rangle}$				0.062(8)	80		1887	2972(1)	87Zi02	90En08	
1977(4)	$\langle 3\text{–}7^+\rangle$				weak			1929	3014(4)	87Zi02	90En08	
2152.9(2)	$9^+\langle 5^-\rangle$				0.200(30)	260		2100	3185(1)	87Zi02	90En08	
2385.0(4)	1^+		1800(200)	8.9	0.012(4)		$8(3)\cdot10^2$	2327	3411(1)	87Zi02	76Bi0A	90En08
2445.6(50)	1^-		$60(6)\cdot10^3$	597	weak		$60(6)\cdot10^3$	2386	3475(5)	76Bi0A		
2540.0(3)	$\langle 1\text{–}5\rangle^+$				0.023(5)			2478	3563(1)	87Zi02	90En08	
2658(3)	$\langle 3^-\text{–}7^-\rangle$				0.007	6		2593	3678(3)	68Yo04		
2677.4(3)	7^+				0.300(40)	560		2612	3697(1)	87Zi02	90En08	
2714.6(50)	1^-		$12(1)\cdot10^3$	70.0			$12(4)\cdot10^3$	2648	3732(5)	76Bi0A		
2759.9(50)	3^-		700(70)	3.77	weak		$5(2)\cdot10^2$	2693	3775(4)	76Bi0A		
2770.5(50)	5^+		200(20)	4.61	0.110(15)	150	$2(1)\cdot10^2$	2703	3781(1)	76Bi0A	90En08	87Zi02
2957(5)	$\langle 1\text{–}5\rangle^+$		4000	0.95			$4(2)\cdot10^2$	2885	3971	74Wi09	90En08	
3011.7(4)	7^-				0.08(1)	130		2938	4023(1)	87Zi02		
3019.3(6)	7^-				0.09(1)	200		2946	4031(1)	87Zi02		
3242(4)	5^+				1.00	310	100(50)	3163	4245(4)	75Ko13	78En02	90En08
3325(4)	5^+				0.14	160		3244	4329(4)	75Ko13	78En02	
3440(4)	$\langle 3^-\text{–}7\rangle$				0.17	100		3356	4440(4)	78En02		
3503(5)	3^+		1000(200)	6.4			$4(2)\cdot10^2$	3418	4503(5)	75Ko13		
3515(4)	9^+				0.36	500		3429	4514(4)	68Yo04		
3537(5)	3^-		$12(3)\cdot10^3$	21.9			$12(3)\cdot10^3$	3451	4536(5)	75Ko13		
3649(5)	1^-		$36(10)\cdot10^3$	58.7			$36(5)\cdot10^3$	3560	4645(5)	75Ko13		
3785(5)	3^+		$3(1)\cdot10^3$	13.3			$10(4)\cdot10^2$	3693	4778(5)	75Ko13		
3819(3)	$\langle 5^-,7^-,9^+\rangle$				0.41	560		3726	4811(3)	68Yo04		
3877(5)	5^+		2000(500)	8.0	0.03	42	$20(5)\cdot10^2$	3782	4868(5)	75Ko13	68Yo04	
3959(5)	5^+		1000(200)	3.7	0.38		$20(5)\cdot10^2$	3862	4948(5)	75Ko13		
3961(5)	5^-		2000(400)	41.5		530		3864	4949(5)	75Ko13		
4025(3)	7^-				0.74	1100		3926	5012(3)	68Yo04		
4037(5)	1^+		$6(2)\cdot10^3$	4.4			$6(2)\cdot10^3$	3939	5024(5)	75Ko13		
4052(1)	9^+		400(100)	71.5	2.40	3300	$4(2)\cdot10^2$	3953	5038(1)	75Ko13	68Yo04	
4089(5)	1^-		$3(1)\cdot10^3$	3.3			$20(5)\cdot10^2$	3989	5074(5)	75Ko13		
4100(2)	3^+		700(200)	2.2			$4(2)\cdot10^2$	4000	5100(2)	75Ko13		
4160(5)	3^-		$3(1)\cdot10^3$	7.2	0.01	20	$20(5)\cdot10^2$	4059	5140(5)	75Ko13	68Yo04	
4185(5)					1.20	1700		4083	5168(5)	68Yo04		
4219(7)					0.06	84		4116	5201(7)	68Yo04		
4244(9)					0.03	40		4140	5226(9)	68Yo04		
4346(7)					0.15	200		4240	5325(7)	68Yo04		
4378(5)	3^+		$3(1)\cdot10^3$	7.2			$6(3)\cdot10^2$	4271	5356(5)	75Ko13		
4397(5)	5^+		$7(2)\cdot10^3$	16	0.32	430	$10(3)\cdot10^3$	4290	5375(5)	75Ko13	68Yo04	

(continued) $^{41}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	$S_{\mathrm{p}\gamma}$ [eV]	Γ_{p_1} [eV]	Γ_{p_2} [eV]	Γ_{p_3} [eV]	$(2J{+}1)\Gamma_{\gamma_\circ}$ [meV]	Γ [eV]	E_cm [keV]	E^* [keV]	Ref.	
4419(5)	3^-		$4(1)\cdot10^3$	3.5						$5(2)\cdot10^3$	4311	5396(5)	75Ko13	
4443(5)	5^+		$18(5)\cdot10^3$	41						$18(4)\cdot10^3$	4335	5420(5)	75Ko13	
4516(5)	1^-		$12(4)\cdot10^3$	10						$10(3)\cdot10^3$	4406	5491(5)	75Ko13	
4519(2)	1^+		1000(200)	0.6						$10(3)\cdot10^2$	4409	5494(2)	75Ko13	
4547(5)	5^-		5000(200)	4.9	0.57				780	$\langle 60\cdot10^2\rangle$	4436	5521(5)	75Ko13	68Yo04
4561(5)	3^-		$20(5)\cdot10^3$	16	0.09				130	$20(4)\cdot10^3$	4450	5535(5)	75Ko13	68Yo04
4596(9)					0.18				250		4484	5569(9)	68Yo04	
4604(5)	$\langle 3{,}5\rangle^-$		$6(2)\cdot10^3$	12	0.12				170	$2(1)\cdot10^3$	4492	5577(5)	75Ko13	68Yo04
4681(2)	5^-		$3(1)\cdot10^3$	25	0.35				490	$10(3)\cdot10^2$	4567	5652(2)	75Ko13	68Yo04
4724(2)	1^-		1000(300)	0.7	0.06				82	100(50)	4609	5694(2)	75Ko13	68Yo04
4732(5)	1^-		$6(3)\cdot10^3$							$6(3)\cdot10^3$	4617	5702(5)	73EnVA	
4735(5)	1^-		$12(4)\cdot10^3$	8.8	1.40				86	$7(3)\cdot10^3$	4620	5705(5)	75Ko13	68Yo04
4739(5)	5^-		$12(4)\cdot10^3$	95	0.20				280		4623	5708(5)	75Ko13	68Yo04
4788(5)	3^-		$7(3)\cdot10^3$	5						$4(2)\cdot10^3$	4671	5756(5)	75Ko13	
4806(4)	$\langle 1\text{–}5\rangle^+$				0.90				1300		4689	5774(4)	76Fo01	68Yo04
4835(8)					0.12				180	100(50)	4717	5802(8)	68Yo04	
4843(4)					0.35				490		4725	5810(4)	76Fo01	68Yo04
4871(10)										$4(2)\cdot10^2$	4752	5837(10)	70Ma16	
4899(5)	5^+		2600		0.11				150	$20(7)\cdot10^2$	4780	5865(5)	74Tr06	68Yo04
4905(11)	$\langle 5{,}7\rangle^-$		8500		1.30			$\langle 4\rangle$	1800	$20(7)\cdot10^2$	4787	5872(11)	70Ma16	71Mi0A
4952(11)					0.15				210		4831	5916(11)	68Yo04	
4976(4)	3^+	3	55(5)		0.50						4855	5940(4)	74Tr06	76Fo01
5010(10)	5^-,7^-		1600						550	$16\cdot10^2$	4888	5970(10)	68Yo04	71Mi0A
5025(10)	3^-		5000			300				$50\cdot10^2$	4901	5987(10)	70Ma16	71Mi0A
5060(10)	1^+		20000							$20\cdot10^3$	4929	6014(10)	70Ma16	71Mi0A
5090(10)	3^-		5000			400				$50\cdot10^2$	4963	6048(10)	70Ma16	71Mi0A
5100(10)			$39(10)\cdot10^2$				x		320	$4(1)\cdot10^3$	4974	6059(11)	68Yo04	71Mi0A
5125(10)							x		78		5001	6086(10)	68Yo04	71Mi0A
5154(11)									440		5028	6113(11)	68Yo04	73EnVA
5158(11)									950		5032	6117(11)	68Yo04	73EnVA
5173(10)	3^+,5^+		2900							$29\cdot10^2$	5047	6132(10)	73EnVA	70Ma16
5195(10)	5^+		580				370		1200	$29\cdot10^2$	5062	6148(10)	68Yo04	71Mi0A
5245(10)	3^-		4000			200		30	4000	$65\cdot10^2$	5119	6204(10)	69Ma08	71Mi0A
5290(10)	3^-		25000				$\langle 60\rangle$	$\langle 40\rangle$	$25\cdot10^3$	$83\cdot10^2$	5152	6237(10)	69Ma08	71Mi0A
5304(10)			x								5175	6260(10)	69Ma08	70Ma16
5361(10)						x					5230	6315(10)	69Ma08	70Ma16
5373(10)						x	x				5242	6327(10)	69Ma08	70Ma16
5400(10)	1^+		25000				x	x		$25\cdot10^3$	5251	6336(10)	69Ma08	71Mi0A
5409(10)	5^+		196			1700	x	860		$28\cdot10^2$	5277	6362(10)	69Ma08	71Mi0A
5450(10)	$\langle 5^+\rangle$		310				$\langle 100\rangle$				5315	6400(10)	69Ma08	71Mi0A
5461(10)	5^+		6000			185	x	141		$6\cdot10^3$	5328	6413(10)	69Ma08	70Ma16
5486(10)	5^-		10400				153	262		$104\cdot10^2$	5352	6437(10)	69Ma08	70Ma16
5508(10)	$\langle 3^-\rangle$		4900					48		$49\cdot10^2$	5374	6459(10)	69Ma08	70Ma16
5521(10)			12100				x	x		$121\cdot10^2$	5386	6471(10)	69Ma08	70Ma16
5527(10)						x					5392	6477(10)	69Ma08	70Ma16

(continued) $^{41}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	$S_{\mathrm{p}\gamma}$ [eV]	Γ_{p_1} [eV]	Γ_{p_2} [eV]	Γ_{p_3} [eV]	Γ_{p_4} [eV]	Γ [eV]	E_cm [keV]	E^* [keV]	Ref.		
5558(10)								x			5422	6508(10)	69Ma08	70Ma16	
5566(10)	5^+		18800			206		308		$188{\cdot}10^2$	5430	6515(10)	69Ma08	70Ma16	
5574(10)						x					5438	6523(10)	69Ma08	70Ma16	
5586(10)	5^+		30				1270			$13{\cdot}10^2$	5450	6535(10)	69Ma08	70Ma16	
5625(10)	5^-		4500					143		$45{\cdot}10^2$	5488	6573(10)	69Ma08	70Ma16	
5635(10)			4500			x				$45{\cdot}10^2$	5498	6583(10)	69Ma08	70Ma16	
5645(10)	$\langle 1^-,3^-\rangle$					x					5507	6592(10)	69Ma08	70Ma16	
5664(10)	1^+		9500			x				$95{\cdot}10^2$	5526	6611(10)	69Ma08	70Ma16	
5678(10)	5^+		3200			x		195		$32{\cdot}10^2$	5540	6625(10)	69Ma08	70Ma16	
5698(10)						x		x			5559	6644(10)	69Ma08	70Ma16	
5705(10)	9^+		40				3570			$4{\cdot}10^3$	5568	6653(10)	69Ma08	70Ma16	
5749(10)	3^-		180			420		2600		$32{\cdot}10^2$	5609	6694(10)	69Ma08	70Ma16	
5758(10)	5^+		580			1570	1230	2760		$62{\cdot}10^2$	5618	6703(10)	69Ma08	70Ma16	
5787(10)								x			5646	6731(10)	69Ma08	70Ma16	
5801(10)	5^+		7200				243	121		$72{\cdot}10^2$	5660	6745(10)	69Ma08	70Ma16	
5810(10)							x	x			5668	6750(10)	69Ma08	70Ma16	
5843(10)	5^-		10400			x		240		$104{\cdot}10^2$	5700	6786(10)	69Ma08	70Ma16	
5887(10)	5^+		4100			30	78	77		$41{\cdot}10^2$	5743	6828(10)	69Ma08	70Ma16	
5902(10)	5^-		630				1360	4250		$63{\cdot}10^2$	5758	6843(10)	69Ma08	70Ma16	
5913(10)	3^-		9600					550		$96{\cdot}10^2$	5769	6854(10)	69Ma08	70Ma16	
5933(10)	$1^-,3^-$		x								5788	6873(10)	69Ma08	70Ma16	
5942(10)	9^+		150				x	790		$13{\cdot}10^2$	5797	6882(10)	69Ma08	70Ma16	
5957(10)										$34{\cdot}10^2$	5812	6897(10)	69Ma08	70Ma16	
5969(10)	5^-		6900							$69{\cdot}10^2$	5823	6908(10)	69Ma08	70Ma16	80Wa11
5984(10)	5^-		4500				72	203		$45{\cdot}10^2$	5838	6923(10)	69Ma08	70Ma16	80Wa11
6010(10)	$\langle 3^+,5^+\rangle$		26				1280			$13{\cdot}10^2$	5863	6950(10)	69Ma08	70Ma16	
6045(10)	5^+		21000				880			$22{\cdot}10^3$	5898	6983(10)	82Wa12	70Ma16	80Wa11
6061(10)	9^+		24				880	427		$13{\cdot}10^2$	5913	6998(10)	69Ma08	70Ma16	
6066(10)	$1^-,3^-$		<1000					x		$<1{\cdot}10^3$	5918	7003(10)	69Ma08	70Ma16	
6086(10)								x			5938	7023(10)	69Ma08	70Ma16	
6100(10)	5^+		260				2940			3200	5951	7036(10)	69Ma08	70Ma16	80Wa11
6134(10)	5^-		2800					2800		9300	5984	7069(10)	69Ma08	70Ma16	
6144(10)								x			5994	7079(10)	69Ma08	70Ma16	
6175(10)	5^+		5500				14300			19800	6024	7109(10)	69Ma08	70Ma16	82Wa12
6173(10)	$\langle 7^+,5^+\rangle$									3400	6022	7108(10)	69Ma08	70Ma16	
6190(10)	5^-							x		20000	6039	7124(10)	69Ma08	70Ma16	80Wa11
6190(10)	$3^+,1^-$					x				7700	6039	7120(10)	69Ma08	70Ma16	
6208(10)	5^+		1500			50	8000	2000		11000	6057	7142(10)	69Ma08	71Mi0A	
6230(10)									x	30000	6078	7163(10)	71Mi0A	80Wa11	
6270(10)	5^+		13000				13000			40000	6117	7202(10)	71Mi0A	80Wa11	82Wa12
6275(10)						x		x			6122	7203(10)	71Mi0A		
6310(10)	5^-		$\langle 3000\rangle$					$\langle 9000\rangle$		12000	6156	7241(10)	71Mi0A	80Wa11	
6335(10)						x					6180	7261(10)	71Mi0A		
6350(10)	5^+		3000				6000			12000	6195	7280(10)	71Mi0A	80Wa11	82Wa12
6365(10)	$\langle 7^+\rangle$		x						$\langle 30\rangle$		6210	7291(10)	71Mi0A		

(continued) $^{41}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ^2_p [keV]	$S_{\mathrm{p}\gamma}$ [eV]	Γ_{p_1} [eV]	Γ_{p_2} [eV]	Γ_{p_3} [eV]	Γ_{p_4} [eV]	Γ [eV]	E_cm [keV]	E^* [keV]	Ref.	
6370(10)						x		x		12000	6215	7300(10)	71Mi0A	80Wa11
6405(10)	5^+		23000							23000	6249	7334(10)	71Mi0A	80Wa11
6410(10)	5^-					x				20000	6254	7339(10)	71Mi0A	80Wa11
6420(10)	$\langle 5^+\rangle$		9000				1000			10000	6263	7334(10)	71Mi0A	
6425(10)	$\langle 9^+\rangle$		x						$\langle 150\rangle$	3000	6268	7349(10)	71Mi0A	
6455(10)						x	x	x			6298	7379(10)	71Mi0A	
6470(10)	$\langle 9^+\rangle$								$\langle 50\rangle$		6312	7393(10)	71Mi0A	
6480(10)	$\langle 5\rangle$						x				6322	7403(10)	71Mi0A	
6495(10)								x			6337	7418(10)	71Mi0A	
6545(10)	$\langle 3^+\rangle$		x			x	$\langle 700\rangle$	$\langle 1100\rangle$			6385	7466(10)	71Mi0A	
6550(10)			44000							44000	6390	7471(10)	71Mi0A	
6565(10)	$\langle 7^-,9^+\rangle$								x		6405	7486(10)	71Mi0A	
6570(10)							x	x			6410	7491(10)	71Mi0A	
6600(10)	$\langle 7^+\rangle$		x								6439	7520(10)	71Mi0A	
6615(10)	$\langle 3^+\rangle$		$\langle 7000\rangle$			400		700		8000	6454	7535(10)	71Mi0A	
6635(10)	3^-		11000					800	$\langle 10\rangle$	12000	6473	7554(10)	71Mi0A	
6650(10)	3^+		9000			400		600		10000	6488	7569(10)	71Mi0A	
6685(10)	$\langle 5^-\rangle$					$\langle 400\rangle$		$\langle 2000\rangle$			6522	7603(10)	71Mi0A	
6720(10)	$\langle 9^+\rangle$								30000	30000	6556	7637(10)	71Mi0A	multp
6730(10)	$\langle 5^+\rangle$						$\langle 1400\rangle$				6566	7647(10)	71Mi0A	
6740(10)	1^-		12000			15000	$\langle$x$\rangle$	9000			6576	7657(10)	71Mi0A	
6800(10)	3^-		15000			$\langle$x$\rangle$	$\langle$x$\rangle$	4000	$\langle$x$\rangle$	20000	6634	7715(10)	71Mi0A	
6825(10)	$\langle 3^+\rangle$					x					6659	7740(10)	71Mi0A	multp
6860(10)	7^-		3000				1800	30000		35000	6693	7774(10)	71Mi0A	
6900(10)	$\langle 1\rangle$					x					6732	7813(10)	71Mi0A	multp
6915(10)	5		26000				3000	4000		33000	6746	7827(10)	71Mi0A	
6940(10)	$\langle 9^+\rangle$		x						x	27000	6771	7852(10)	71Mi0A	
6960(10)	$\langle 1^-\rangle$		$\langle 15000\rangle$			$\langle$x$\rangle$	$\langle 2500\rangle$	$\langle 4500\rangle$		20000	6790	7871(10)	71Mi0A	
6980(10)							$\langle$x$\rangle$				6810	7891(10)	71Mi0A	
6990(10)	$\langle 1\rangle$					x	$\langle$x$\rangle$	x			6820	7901(10)	71Mi0A	
7025(10)									x		6854	7935(10)	71Mi0A	
7035(10)							x				6863	7944(10)	71Mi0A	
7050(10)						x					6878	7959(10)	71Mi0A	
7070(10)									x		6898	7979(10)	71Mi0A	
7095(10)	$\langle 3^-\rangle$		$\langle 10000\rangle$							25000	6922	8003(10)	71Mi0A	
7180(10)	$\langle 3^-\rangle$		$\langle 16000\rangle$			$\langle 10000\rangle$		$\langle 24000\rangle$	$\langle$x$\rangle$	$\langle 50000\rangle$	7005	8076(10)	71Mi0A	
7240(10)	$\langle 5^+\rangle$		$\langle 24000\rangle$				$\langle 22000\rangle$			$\langle 75000\rangle$	7063	8135(10)	71Mi0A	
7550(20)	$\langle 9^+\rangle$								$\langle 50\rangle$		7366	8451(20)	73Ta26	
7750(20)	$\langle 9^+\rangle$								$\langle 120\rangle$		7561	8646(20)	73Ta26	
7990(20)	$\langle 9^+\rangle$		8000	41					320	8000	7795	8880(20)	73Ta26	
8245(20)	$\langle 9^+\rangle$		17000	75					500	18000	8044	9129(20)	73Ta26	
8390(20)	$\langle 9^+\rangle$		9000	37					780	10000	8185	9270(20)	73Ta26	
8540(20)	$\langle 9^+\rangle$		10000	37					850	11000	8332	9417(20)	73Ta26	
8640(20)	$\langle 9^+\rangle$		14000	49					500	15000	8429	9514(20)	73Ta26	
8790(20)	$\langle 9^+\rangle$		16000	53					420	16000	8576	9661(20)	73Ta26	

(continued) **$^{41}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	$S_{p\gamma}$ [eV]	Γ_{p_1} [eV]	Γ_{p_2} [eV]	Γ_{p_3} [eV]	Γ_{p_4} [eV]	$(2J+1)\Gamma_{\gamma_\circ}$ [meV]	Γ [eV]	E_{cm} [keV]	E^* [keV]	Ref.
8830(20)	$\langle 9^+ \rangle$		12000	39					400		12000	8615	9700(20)	73Ta26
8950(20)	$\langle 9^+ \rangle$		13000	39					330		13000	8732	9817(20)	73Ta26

Additional data on this isotope can be found in [95Bu05, 83Te02, 80Al13, 77Ko10, 74Ba04, 74Mi16, 74Ve11, 73Ta26, 72Kl03, 70Ma16, 70Wh06, 66En04, 64Al07, 63Br04, 59Cl46].

For the resonance at $E_\circ$=4052 keV parameters $\omega\gamma$=1.2(2) eV, Γ_γ=0.24(4) eV are given [77Ko10].

For the resonances at $E_\circ$=3515–4952 keV $S_{p\gamma}$ from [68Yo04] are marked as doubled in [90En08].

For the low-energy resonances $(2J^\pi+1)\Gamma_{\gamma_\circ}$ and Γ are from the private communication of N.Brown in: [73EnVA].

Γ_{p_1}, Γ_{p_2}, Γ_{p_3}, Γ_{p_4} are partial widths for inelastic scattering leaving ^{40}Ca-nucleus at the excitations 3.35 Mev (0^+), 3.74 MeV (3^-), 3.91 MeV (2^+) and 4.48 MeV (5^-), respectively.

Additionally the estimations of the orbital moments of scattered protons are given in [71Mi0A].

Inelastic scattering widths given for the last 10 resonances correspond to the state of ^{40}Ca at E^*=5609 keV.

For resonances at $E_\circ$=647 and 1843 keV $\omega\gamma_{cm}$=1.8 and 140(15) meV are recommended in [01Il02].

Branching ratios of γ-transitions [87Zi02, 76Fo01, 90En08]. **$^{41}_{21}$Sc(p)**

E^* [keV]	$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_{cm} [keV]	Branching ratios Percentage												
E^*					0.0	1716	2096	2415	2588	2667	2719	2882	3013	3190	3360	3410	4250
$2J_f^\pi$					7^-	3^-	3^+	3^-	5^-	5^+	1^+	7^+					
1716.5	647.28	3^-			100												
2095.9		3^+															
2414.8	1363.2	3^-			<5	100	<8										
2588.1	1540.9	5^-			97.6	2.4(3)	<0.3										
2666.6	1621.4	5^+			95.8	4.2(8)	<0.6										
2719.2	1675.2	1^+			<7	100	<5										
2882.5	1842.7	7^+			99.92		0.08(3)										
2972.1	1934.5	7			100		<0.2										
3013	1977	$\langle 3$–$7 \rangle$			13(5)		87(5)										
3185.1	2152.9	9^+			100		<0.2	<0.2	<0.2		<0.3						
3358.1		7–11															
3411.5	2385.0	1^+			<2	100		<3	<2	<3	<3	<3					
3465	2445.6	1^-		50	<4	100											
3480		1^-		12.0													
3562.7	2540.0	$1,3,5^+$			<13	100											
3678	2658	3^-–7^-			64(12)	36(12)											
3696.7	2677.4	7^+			92(1)		1.0(1)	<0.1	<0.1	4.1(2)		3.1(4)	<0.1				
3731		1^-		12.0													
3774	2759.9	3^-			100												

(continued) **$^{41}_{21}$Sc(p)**

E^*	$E_\circ$	$2J^\pi$	$2T$	Γ_{cm}	Branching ratios												
[keV]	[keV]			[keV]	Percentage												
E^*					0.0	1716	2096	2415	2588	2667	2719	2882	3013	3190	3360	3410	4250
$2J_f^\pi$					7^-	3^-	3^+	3^-	5^-	5^+	1^+	7^+					
3780.7	2770.5	5^+			67(3)	20(1)	2(1)		1(1)	6(1)	1(1)	2(1)	1(1)				
3788		$3^+,5^+$		0.20													
3810		1^+–5^+															
3905																	
3968		1^+		4													
4023	3011.7	7^-			71(1)	2.3(6)	0.5(5)		2.0(5)	24(1)	<0.5	<0.7					
4030	3019.3	7^-			98(1)	2.0(6)	<0.2		<0.3			<0.4					
4245	3242	5^+			17(1)	0.2(2)	51(1)	0.6(2)	0.4(1)	4.3(3)	<0.1	12(1)	15(1)				
4328	3325	5^+			82(1)		<0.6	<0.9	19(1)	<1							
4441	3440	⟨3–7⟩			39(2)				<0.7	32(2)	<0.7	8(2)		21(2)			
4504		3^+		1.0													
4514		9^+															
4535		3^-		12													
4644		1^-		36													
4656		1^+–5^+															
4777		3^+		3													
4810		$5^-,9^+$															
4869		5^+		2.0													
4929		1^+–5^+															
4947		5^+		1.0													
4951		5^-		2.0													
5011		7^-															
5021		1^+		6													
5037		9^+		0.4	72(2)							26(2)			2.7(5)		
5939	4974	3^+	3	0.055			<13			17(4)						18	60(7)
5074		1^-		3													
5083		3^+		0.7													
5143		3^-		3													
5167																	
5200																	
5225																	
5324																	
5356		3^+		3													
5376		5^+		7													
5396		3^-		4													
5419		5^+		18													
5490		1^-		12													
5494		1^+		1.0													
5521		5^-		0.5													
5535		3^-		20													
5568																	
5578		$3^+,5^+$		6													

(continued) **$^{41}_{21}$Sc**(p)

E^*	$E_\circ$	$2J^\pi$	$2T$	Γ_{cm}	Branching ratios												
[keV]	[keV]			[keV]	Percentage												
E^*					0.0	1716	2096	2415	2588	2667	2719	2882	3013	3190	3360	3410	4250
$2J_f^\pi$					7^-	3^-	3^+	3^-	5^-	5^+	1^+	7^+					
5650		5^-		3													
5691		1^-		1.0													
5705		1^-		12													
5709		5^-		12													
5755		3^-		7													
5771		1^+–5^+															
5801																	
5810																	
5838		1^+,5^+		8.7													
5861		5^-															
5867		5^+		12.3													
5886		1^+–5^+															
5915																	
5971		5^-,7^-		4.2													
5986		3^-		8.7													
6013		1^+		26.7													
6036		1^+–5^+															
6047		3^-		12.1													
6085		1^+–5^+															
6112																	
6116																	
6131		3^+,5^+		2.9													
6148		5^+		2.9													
6203		3^-		6.5													
6236		5^-,7^-		8.3													
6259		1^+–5^+															
6314																	
6326																	
6335		1^+		27.9													
6361		5^+		2.8													
6399		3^+,5^+		8.1													
6414		5^+		6.0													
6435		5^-		10.4													
6458		$\langle 3^- \rangle$		4.9													
6469		5^-		12.1													
6474		1^+–5^+															
6507																	
6513		5^+		18.8													
6522																	
6533		5^+		1.3													
6572		5^-		4.5													
6585		1^-		4.5													

(continued) **$^{41}_{21}$Sc**(p)

E^* [keV]	$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_{cm} [keV]	Branching ratios Percentage												
E^*					0.0	1716	2096	2415	2588	2667	2719	2882	3013	3190	3360	3410	4250
$2J_f^\pi$					7^-	3^-	3^+	3^-	5^-	5^+	1^+	7^+					
6589		1^+															
6610		1^+		9.5													
6622		5^+		3.2													
6643																	
6651		9^+		4.0													
6691		3^-		3.2													
6700		5^+		6.2													
6730																	
6741		5^+		7.2													
6752																	
6772		$\langle 3^- \rangle$															
6783		5^-		10.4													
6824		5^+		4.1													
6841		5^-		6.3													
6857		3^-		9.6													
6872		1^-,3^-															
6880		9^+		1.3													
6893		1^+–5^+															
6895		$\langle 9^+ \rangle$		3.4													
6908		5^-		6.9													
6923		$\langle 5 \rangle^-$		4.5													
6947		1^+–5^+		1.3													
6970		5^+		20													
6996		9^+		1.3													
7004		$\langle 9^+ \rangle$		<1.0													
7022																	
7033		5^+		3.2													
7069		5^-		9.3													
7078																	
7107		5^+		19.8													
7113		3^-,5^-		14.0													
7123				7.7													
7142		5^+		12.0													
7177																	
7182		1^+–5^+															
7201		5^+		40													
7206																	
7216																	
7245		5^-		12													
7264																	
7279		5^+		9													
7297		$\langle 7^+ \rangle$															

(continued) **$^{41}_{21}$Sc**(p)

E^* [keV]	$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_{cm} [keV]	Branching ratios Percentage												
E^*					0.0	1716	2096	2415	2588	2667	2719	2882	3013	3190	3360	3410	4250
$2J_f^\pi$					7^-	3^-	3^+	3^-	5^-	5^+	1^+	7^+					
7313																	
7333		5^+		23													
7338		5^-															
7347		$\langle 5^+ \rangle$		10													
7352		$\langle 9^+ \rangle$		8													
7360		1^+–5^+															
7382																	
7396		$\langle 9^+ \rangle$															
7406		$\langle 5 \rangle$															
7421																	
7469		$\langle 3 \rangle^+$															
7474				44													
7489		7^-,9^+															
7494																	
7523		$\langle 7^+ \rangle$															
7538		$3^{\langle + \rangle}$		8													
7557		3^-		12													
7572		3^+		10													
7606		$\langle 5^- \rangle$															
7617		1^+–5^+															
7640		$\langle 9^+ \rangle$		30													
7650		$\langle 5^+ \rangle$															
7660		1^-		30													
7718		3^-		20													
7742		$\langle 3^+ \rangle$															
7777		7^-		35													
7815		$\langle 1 \rangle$															
7830		5^-		33													
7855		$\langle 9 \rangle^+$		27													
7874		$\langle 1^- \rangle$		20													
7894		1^+–5^+															
7903		$\langle 1 \rangle$															
7938																	
7947																	
7962																	
7981																	
8006		$\langle 3^- \rangle$		25													
8089		$\langle 3 \rangle^-$		50													
8147		$\langle 5^+ \rangle$		75													
8450		$\langle 9^+ \rangle$															
8645		$\langle 9^+ \rangle$															
8879		9^+		8													

(continued) **$^{41}_{21}$Sc(p)**

E^* [keV]	$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_{cm} [keV]	Branching ratios Percentage											
E^*					0.0	1716	2096	2415	2588	2667	2719	2882	3013	3190	3360	3410	4250
$2J^\pi_f$					7^-	3^-	3^+	3^-	5^-	5^+	1^+	7^+					
9128		9^+		18													
9269		9^+		10													
9415		9^+		11													
9513		9^+		15													
9659		9^+		16													
9698		9^+		12													
9815		9^+		13													

Target isotope: $^{41}_{20}$Ca $I^\pi_\circ = 7/2^-$ $T_{1/2} = 1.03(3) \cdot 10^5$ yr $S_p = 4272.41(12)$ keV **$^{42}_{21}$Sc(p)**

E^* [keV]	$E_\circ$ [keV]	J^π	$S_{p\gamma}$ [eV]	E_{cm} [keV]	Ref.
0.0		0^+			02Nu0A
611.05(1)		$\langle 7\rangle^+$			02Nu0A
616.28(6)		$\langle 7\rangle^+$			02Nu0A
1490.43(4)		3^+			02Nu0A
1510.10(6)		$\langle 5^+\rangle$			02Nu0A
1586.31(2)		2^+			02Nu0A
1704(15)					02Nu0A
1846(2)		$\langle 3^+\rangle$			02Nu0A
1873.6(8)		0^+			02Nu0A
1888.9(6)		1^+			02Nu0A
2187.54(5)		$\langle 2,3\rangle^+$			02Nu0A
2222.7(6)		$\langle 1\rangle$			02Nu0A
2223.15(3)		$\langle 2^+,3^+\rangle$			02Nu0A
2269.13(3)		$\langle 1,2^+\rangle$			02Nu0A
2296.5(21)					02Nu0A
2389.06(5)		3^+			02Nu0A
2433.33(8)		$\langle 3,4,5\rangle^+$			02Nu0A
2455(2)		$\langle 1,2^+\rangle$			02Nu0A
2486.6(1)		2^+			02Nu0A
2507(5)		$\langle 1,2,3\rangle^+$			02Nu0A
2535(2)		$\langle 1,2^+\rangle$			02Nu0A
2587(2)		$\langle 1^+–5^+\rangle$			02Nu0A
2651.0(1)		$\langle 1^+,2\rangle$			02Nu0A
2669(5)					02Nu0A
2726(15)					02Nu0A
2795.3(3)		$\langle 5^+–9^+\rangle$			02Nu0A

(continued) $^{42}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$E_\circ$ [keV]	J^π	$S_{\mathrm{p}\gamma}$ [eV]	E_{cm} [keV]	Ref.
2815.4(1)		4^+			02Nu0A
2833(1)		$\langle 2^+,3,4^+\rangle$			02Nu0A
2847.6(4)		3^+			02Nu0A
2883(6)					02Nu0A
2910.4(4)		$\langle 3,4,5\rangle^+$			02Nu0A
2964					02Nu0A
2995.5(1)		$\langle 3,4,5\rangle^+$			02Nu0A
3022.8(2)		$\langle 4\rangle^-$			02Nu0A
3089.1(3)		5^+			02Nu0A
3146(5)					02Nu0A
3166(5)		$\langle 3,4,5\rangle^+$			02Nu0A
3182(10)					02Nu0A
3223.8(1)		$\langle 3^+,4,5^+\rangle$			02Nu0A
3242(4)		$\langle 5,6,7\rangle^+$			02Nu0A
3281(4)		$\langle 0\text{–}7\rangle^+$			02Nu0A
3321.4(1)		$\langle 1^+,2,3^+\rangle$			02Nu0A
3322.8(3)		$\langle 3^+,4,5^+\rangle$			02Nu0A
3345(4)					02Nu0A
3366(5)					02Nu0A
3393(1)		$\langle 1,2,3\rangle^+$			02Nu0A
3446(5)					02Nu0A
3468(5)					02Nu0A
3493(5)					02Nu0A
3512(5)					02Nu0A
3529(5)					02Nu0A
3580(4)					02Nu0A
3602(5)		$\langle 5,6,7\rangle^+$			02Nu0A
3668.7(3)					02Nu0A
3687.8(8)		1^+			02Nu0A
3719.3(4)		$\langle 5,6,7\rangle^+$			02Nu0A
3754(5)					02Nu0A
3775(5)					02Nu0A
3796(5)		3^+			02Nu0A
3855(5)					02Nu0A
3866(5)		1^+			02Nu0A
3887(6)		$\langle 3,4,5\rangle^+$			02Nu0A
3934(2)		$\langle 1,2,3\rangle^+$			02Nu0A
4022(5)					02Nu0A
4047.7(1)		$\langle 2,3,4\rangle$			02Nu0A
4067(10)		$\langle 3,4,5\rangle^+$			02Nu0A
4175(5)		$\langle 3,4,5\rangle^+$			02Nu0A
4204(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A
4246(5)					02Nu0A
4262(5)					02Nu0A
4276(5)					02Nu0A

(continued) $^{42}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$E_\circ$ [keV]	J^π	$S_{\mathrm{p}\gamma}$ [eV]	E_{cm} [keV]	Ref.	
4289(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A	
4370(5)					02Nu0A	
4391(10)		$\langle 1,2,3\rangle^+$			02Nu0A	
4410(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A	
4468.8(4)		$\langle 2,3\rangle^+$			02Nu0A	
4548(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A	
4582(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A	
4604(5)					02Nu0A	
4665(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A	
4704(5)					02Nu0A	
4725(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A	
4755(5)		$\langle 3,4,5\rangle^+$			02Nu0A	
4790(7)					02Nu0A	
4808(5)					02Nu0A	
4828(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A	
4875(6)		$\langle 1,2,3\rangle^+$			02Nu0A	
4971(5)					02Nu0A	
5001(5)		$\langle 1,2,3\rangle^+$			02Nu0A	
5028(5)					02Nu0A	
5048(5)		$\langle 3,4,5\rangle^+$			02Nu0A	
5084(5)					02Nu0A	
5120(5)		$\langle 1,2,3\rangle^+$			02Nu0A	
5140(5)					02Nu0A	
5305(5)					02Nu0A	
5326(5)					02Nu0A	
5352(5)					02Nu0A	
5370(5)					02Nu0A	
5380(5)					02Nu0A	
5436(5)					02Nu0A	
5475(5)					02Nu0A	
5520(5)					02Nu0A	
5572(5)					02Nu0A	
5635(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A	
5651(5)		$\langle 2\text{–}5\rangle^+$			02Nu0A	
5771(5)					02Nu0A	
5865(5)					02Nu0A	
5966(5)					02Nu0A	
5995.8(3)	1765.8(3)	$\langle 3,4\rangle^+$	3.3(8)	1724	89Ki11	02Nu0A
6076.41(8)	1848.41(12)	$\langle 1^+\text{–}4^+\rangle$	0.7(2)	1804	89Ki11	02Nu0A
6174.2(3)	1948.6(3)	$\langle 3,4\rangle^+$	5.5(14)	1902	89Ki11	02Nu0A
6253.4(2)	2029.8(3)	$\langle 3^+,4,5^+\rangle$	1.5(4)	1982	89Ki11	02Nu0A

Branching ratios of γ-transitions [90En08, 89Ki11]. Part 1. $^{42}_{21}\mathrm{Sc}(\mathrm{p})$

E^*	$E_\circ$	J^π	T	Branching ratios												
[keV]	[keV]			Percentage												
E^*				0.0	611	616	1490	1510	1586	1850	1890	2188	2223	2269	2389	2433	2487
J^π_f				0^+	1^+	7^+	3^+	5^+	2^+	3^+	1^+	X^+	1^+				
611.05		1^+	0	100													
616.28		7^+															
1490.4		3^+		<1	100	<1											
1510.1		5^+		<4	<1	100											
1586.3		2^+	1	9(1)	91(1)	<1											
1846		3^+			x				x								
1873.6		0^+	1	<8	100	<8											
1888.9		1^+	0	100													
2187.5		$\langle 2^+,3^+\rangle$	0	<2	5(2)		<2	<2	95(2)								
2222.7		1^+	0	≈50					≈50								
2223.15		$\langle 2^+,3^+\rangle$	0	<2	<2	<2	5(2)		95(2)								
2269.13		$\langle 1,2^+\rangle$		20(2)	22(3)	<1	<5	<5	52(5)		6(3)						
2389.06		3^+		<4	<4	<3	12(4)	88(4)	<2								
2433.33		3^+–5^+		<2	<2	<4	52(3)	48(3)	<2	<2							
2486.59		2^+	1	<10	77(5)	<5	23(5)	<5	<4	<4							
2650.98		$\langle 1,2\rangle$	0	<3	<3	<2	<3	<3	90(3)		10(3)						
2795.3		X^+				100											
2815.37		4^+	1	<1	<1	<1	34(2)	61(3)		5(3)	<2		<2				
2853.47		3^+	0						x								
2910.4		X^+					x										
2995.53		X^+		<3		<8		<4			<5		80(10)		20(10)		
3022.8		4^-						100									
3089.1		5^+				100											
3223.28		X^+		<4	<4	<2	<6	27(3)			<3		32(8)		41(3)		
3321.36		X^+		<5	50(10)	<4	50(10)	<6			<4		<6				
3322.8		$4,5^+$	1	<5	<4	<4	43(5)	75(5)			<3		<3				
3668.7																x	
3719.3		X^+		<2	<2	100	<6	<4	<2				<2				
3933.5		X^+							100								
4047.72		1–3	1												≈50		
4468.8		$2^+,3^+$							25(2)								
5995.8	1765.8						7(2)	16(2)	8(2)			2(1)	6(2)			3(1)	3(1)
6076.4	1848.4												29(2)	21(2)	17(2)		
6174.2	1948.6													21(2)			
6253.4	2029.8						7(2)	7(2)				30(2)	≈1			15(2)	

Branching ratios of γ-transitions [89Ki11, 90En08]. Part 2. **$^{42}_{21}$Sc(p)**

E^*	$E_\circ$	J^π	T	Branching ratios													
[keV]	[keV]			Percentage													
E^*				2651	2795	2815	2854	2910	2995	3023	3089	3224	3321	3323	3669	3719	4048	4469
J^π_f																		
4468.8		2^+,3^+						25(5)	50*									
5995.8	1765.8			4(1)		3(1)	4(1)			≈1	3(1)	13(2)					6(2)	21(5)*
6076.4	1848.4							4(1)		7(2)			10(2)		4(1)		4(1)	6(2)*
6174.2	1948.6				3(1)	9(2)			7(2)		3(1)	7(2)		8(2)		20(2)	18(5)*	4(1)
6253.4	2029.8			15(2)		3(1)	4(1)				4(1)							14(5)*

* transition to the unknown state

Target isotope: $^{42}_{20}$Ca $I^\pi_\circ = 0^+$ *Abundance:* 0.647(23) % $S_p = 4929.8(19)$ keV **$^{43}_{21}$Sc(p)**

$E_\circ$	$2J^\pi$	$2T$	Γ_p	γ^2_p	Γ	$\Gamma_{p'}$	θ^2_p	Rel.int.	Rel.int.	$S_{p\gamma}$	E_{cm}	E^*	Ref.		
[keV]			[eV]	[keV]	[eV]	[eV]	x100	γ_i	γ_j	[eV]	[keV]	[keV]			
786.0(10)									28		768	5698	63Du11		
809.2(10)									57		790	5720	63Du11		
825.6(10)									18		806	5736	63Du11		
844.4(10)									6		825	5755	63Du11		
877.8(10)									17		857	5787	63Du11		
889.0(10)									11		868	5798	63Du11		
891.1(10)									18		870	5800	63Du11		
904.8(10)									64		884	5814	63Du11		
918.3(10)									9		897	5827	63Du11		
941.2(10)									15		919	5849	63Du11		
962.5(10)									21		940	5870	63Du11		
980.7(10)									6		958	5888	63Du11		
1012.8(10)	3								100		989	5919	66Br21	63Du11	
1041.8(10)									91	0.67	1018	5947	77Di17	63Du11	
1066.4(10)									35		1042	5971	63Du11		
1072.9(10)									38		1048	5978	63Du11		
1109.1(10)									27		1083	6013	63Du11		
1115.4(10)									72		1090	6019	63Du11		
1121.5(10)									72		1095	6025	63Du11		
1125.0(10)									59		1099	6029	63Du11		
1132.9(10)									21		1107	6036	63Du11		
1138.1(10)									31		1112	6042	63Du11		
1157.1(10)	[5]								98		1130	6060	66Br21	63Du11	
1163.0(10)									28		1136	6066	63Du11		
1177.7(10)	1^-								25		1150	6080	66Br21	63Du11	
1182.6(10)									16		1155	6085	63Du11		
1201(2)								105	121	0.68	1173	6103	69Wa19	63Du11	77Di17

(continued) $^{43}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ^2_p [keV]	Γ [eV]	θ^2_p x100	Rel.int. γ_i	Rel.int. γ_j	$S_{\mathrm{p}\gamma}$ [eV]	E_cm [keV]	E^* [keV]	Ref.		
1214(2)							7			1186	6116	69Wa19	63Du11	
1226(2)							13	18		1197	6127	69Wa19	63Du11	
1234.8(5)							109	116	0.68(14)	1206	6136	69Wa19	63Du11	
1241.9(5)	3^-	3	125(15)	129.9	125(15)	14.5	148	182	0.92(18)	1213	6143	69Wa19	76Wi16	84Ka27
1245(2)							27	19		1216	6146	69Wa19	63Du11	
1250(2)							74	75		1221	6150	69Wa19	63Du11	
1274(2)							6			1244	6174	69Wa19		
1282(2)	[5]						42	52		1252	6182	69Wa19	66Br21	
1285(2)							91	100		1255	6185	69Wa19		
1290(2)							6			1260	6190	69Wa19		
1298(2)							121	132	0.74	1268	6198	69Wa19	77Di17	
1300(2)							14	37		1270	6200	69Wa19		
1310(2)							13	16		1280	6210	69Wa19		
1312(2)							91	145		1281	6211	69Wa19		
1318(2)							91	124	0.73	1287	6217	69Wa19	77Di17	
1323.9(30)	1^+	3	50(10)	10.99	50(10)					1293	6223	76Wi16	78En02	90En08
1329(2)							46	63		1298	6228	69Wa19		
1343(2)							7			1312	6242	69Wa19		
1345.8(10)							116	137		1315	6246	69Wa19		
1348.2(10)							36	48		1317	6252	69Wa19		
1364(2)							13	15		1332	6262	69Wa19		
1380.7(10)							59	77		1349	6280	69Wa19		
1387.0(10)							4	17		1355	6286	69Wa19		
1390.9(10)							34	28		1359	6290	69Wa19		
1392.8(10)										1360	6290	69Wa19		
1399.2(10)							71	74		1367	6300	69Wa19		
1415(2)							10	18		1382	6312	69Wa19		
1418(2)							22	22		1385	6315	69Wa19		
1423.8(5)							202	202	1.37(27)	1391	6320	69Wa19	66Br21	
1452(2)							70			1418	6348	69Wa19		
1459(2)							13			1425	6355	69Wa19		
1474(2)							20			1440	6370	69Wa19		
1478(2)							85			1444	6373	69Wa19		
1491(2)							3			1456	6386	69Wa19		
1500(2)							85			1465	6400	69Wa19		
1509(2)							53			1474	6404	69Wa19		
1515(2)							15			1480	6410	69Wa19		
1523.2(30)	1^+		15(5)	1.10			50			1488	6418	69Wa19	76Wi16	
1532(2)							49			1496	6426	69Wa19		
1538(2)							61			1502	6432	69Wa19		
1546.8(30)	1^+		15(5)	0.99			128			1511	6441	69Wa19	76Wi16	
1559(2)							22			1523	6453	69Wa19		
1567(2)							9			1531	6460	69Wa19		
1576(2)							56			1539	6469	69Wa19		
1586(2)							53			1549	6479	69Wa19		

(continued) $^{43}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ^2_p [keV]	Γ [eV]	$\Gamma_{\mathrm{p}'}$ [eV]	θ^2_p x100	Rel.int. γ_i	$S_{\mathrm{p}\gamma}$ [eV]	E_cm [keV]	E^* [keV]	Ref.		
1588(2)								53		1551	6481	69Wa19		
1600(2)								5		1563	6500	69Wa19		
1606(2)								92		1569	6498	69Wa19		
1610(2)								38		1573	6500	69Wa19		
1618.5(30)	1^+		15(5)	0.72				34		1581	6511	69Wa19	76Wi16	
1623(2)								23		1585	6515	69Wa19		
1643(2)								100		1605	6535	69Wa19		
1656(2)								6		1617	6547	69Wa19		
1660(2)								49		1621	6550	69Wa19		
1670.4(30)	1^-		180(20)	18.5				24		1633	6561	69Wa19	76Wi16	
1673.2(30)	1^+		15(5)	0.57				41		1634	6564	69Wa19	76Wi16	
1679.4(30)	1^+		10(5)	0.37				21		1640	6570	69Wa19	76Wi16	
1685(2)								58		1646	6576	69Wa19		
1693(2)								31		1654	6583	69Wa19		
1706(2)								75		1666	6596	69Wa19		
1714(2)								195		1674	6604	69Wa19		
1735(2)								99		1695	6624	69Wa19		
1740.7(30)	$\langle 1^- \rangle$		5(3)	40.3				51		1700	6630	69Wa19	76Wi16	
1762.2(30)	1^+		175(20)	4.72						1721	6651	76Wi16		
1776(2)								63		1735	6665	69Wa19		
1786(2)								47		1744	6674	69Wa19		
1789.2(30)	$\langle 1^- \rangle$		10(5)	0.68				64		1748	6677	69Wa19	76Wi16	
1792(2)								77		1750	6680	69Wa19		
1796.4(30)	1^+		15(5)	0.36						1755	6685	76Wi16		
1797(1)	1^-	1+3			125(10)		1.25	95		1755	6685	76Wi16	90En08	84Ka27
1806(2)								40		1764	6694	69Wa19		
1808.3(5)	1^-	1+3	45(10)	2.68	70(20)		0.78	255	2.18(44)	1766	6696	76Wi16	90En08	84Ka27
1822(3)	1^-	1+3	900(90)	50.7	$13(1)\cdot 10^2$		13.5	41		1780	6709	76Wi16	90En08	84Ka27
1825(2)	1^-,3^-		300(30)					16		1783	6712	69Wa19		
1829(2)								48		1786	6716	69Wa19		
1832(2)								127		1789	6719	69Wa19		
1843(2)								57		1800	6730	69Wa19		
1849.8(30)	3^-		45(10)	2.29				142		1807	6737	69Wa19	76Wi16	
1862(2)								33		1819	6749	69Wa19		
1873(2)								111		1829	6759	69Wa19		
1891.0(20)								163	1.47(29)	1848	6777	69Wa19		
1900(2)								63		1856	6800	69Wa19		
1909.7(30)	1^-		500(50)	20.6				148		1865	6795	69Wa19	76Wi16	
1910.0(30)	1^-		500(50)	20.6						1866	6795	76Wi16		
1916(2)								135		1871	6801	69Wa19		
1930.4(30)	1^+		30(7)	0.46				177		1886	6815	69Wa19	76Wi16	
1942.4(30)	3^-		40(10)	1.48				185		1897	6827	69Wa19	76Wi16	
1949(2)								47		1904	6834	69Wa19		
1965.6(30)	$\langle 3^+ \rangle$		10(5)	1.96				183		1920	6850	69Wa19	76Wi16	
1966.8(30)	1^-		25(7)	0.85						1921	6851	76Wi16		

(continued) **$^{43}_{21}$Sc**(p)

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	Γ [eV]	θ_p^2 x100	Rel.int. γ_i	$S_{p\gamma}$ [eV]	E_{cm} [keV]	E^* [keV]	Ref.			
1969.9(30)	$\langle 3^+ \rangle$		10(5)	1.93					1924	6854	76Wi16			
1971.0(30)	1^-		22(7)	0.74			113		1925	6855	69Wa19	76Wi16		
1975.1(30)	$\langle 3^+ \rangle$		13(5)	2.47			107		1929	6859	69Wa19	76Wi16		
1984.6(30)	1^+		45(10)	0.58			34		1938	6868	69Wa19	76Wi16		
1993(2)							183		1947	6876	69Wa19			
1996.7(30)	1^+		120(15)	1.50			52		1950	6880	69Wa19	76Wi16	77Di17	
2006(3)							4		1959	6889	69Wa19			
2016.8(30)	1^-		190(20)	5.52	310(10)	1.37	37		1970	6900	69Wa19	76Wi16	77Di17	74Ma39
2022(3)							37		1975	6905	69Wa19	77Di17		
2029.8(30)	1^+		240(25)	2.73	280(10)	0.53	221		1983	6912	69Wa19	76Wi16	77Di17	74Ma39
2036.6(5)							301	3.01(60)	1989	6919	69Wa19	77Di17		
2042(3)							30		1995	6924	69Wa19	77Di17		
2054.4(30)	1^+		150(15)	1.59	205(5)	0.4	110		2007	6937	69Wa19	76Wi16	77Di17	74Ma39
2061.9(30)	1^-		165(15)	4.19	214(5)	0.96	190		2014	6944	69Wa19	76Wi16	77Di17	74Ma39
2063(3)							87		2015	6945	69Wa19	77Di17		
2079(3)									2031	6960	77Di17			
2084.7(30)	$\langle 3^+ \rangle$		15(5)	1.95					2036	6966	76Wi16	77Di17		
2090(3)									2041	6970	77Di17			
2097.9(30)	$\langle 3^+ \rangle$		20(5)	2.49					2049	6979	76Wi16	77Di17		
2102.7(30)	$\langle 1^- \rangle$		8(5)	0.18					2054	6984	76Wi16	77Di17		
2110(3)									2061	6990	77Di17			
2115(3)									2066	6996	77Di17			
2119(3)									2070	7000	77Di17			
2123(3)									2074	7003	77Di17			
2133.5(30)	$\langle 3^- \rangle$		15(5)	0.31					2084	7014	76Wi16	77Di17		
2144.8(30)	$\langle 3^+ \rangle$		15(5)	1.61					2095	7025	76Wi16	77Di17		
2147.8(30)	1^-		150(15)	2.97	224(5)	0.72			2098	7028	76Wi16	77Di17	74Ma39	
2152.4(30)	1^+		10(5)	0.08					2102	7032	76Wi16	77Di17		
2157.6(30)	3^-		35(7)	0.67					2107	7037	76Wi16	77Di17		
2162(3)									2112	7042	77Di17			
2167.0(30)	$\langle 5^+ \rangle$		25(7)	2.50					2117	7046	76Wi16	77Di17		
2179(3)									2128	7058	77Di17			
2188.6(30)	1^+		800(80)	5.99					2138	7068	76Wi16	77Di17		
2196.2(30)	1^-		25(7)	0.43					2145	7075	76Wi16	77Di17		
2201(3)									2150	7080	77Di17			
2207.1(30)	1^-		300(30)	5.05					2156	7086	76Wi16	77Di17		
2216.1(30)	3^-		75(15)	1.23					2165	7094	76Wi16	77Di17		
2221.0(30)	1^+		50(10)	0.35					2169	7099	76Wi16	77Di17		
2230(3)									2178	7110	77Di17			
2239.1(30)	1^-		2500(250)	38.7					2187	7117	76Wi16	77Di17		
2245.8(30)	$\langle 3^+ \rangle$		10(5)	0.79					2194	7123	76Wi16	77Di17		
2247.5(30)	1^+		350(35)	2.28					2195	7125	76Wi16	77Di17		
2254.9(30)	$\langle 3^+ \rangle$		10(5)	0.77					2203	7132	76Wi16	77Di17		
2260.8(30)	3^-		600(60)	8.80					2208	7138	76Wi16	77Di17		
2263.0(30)	1^+		600(60)	3.77					2210	7140	76Wi16	77Di17		

(continued) $^{43}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ^2_p [keV]	Γ [eV]	$\Gamma_{\mathrm{p}'}$ [eV]	θ^2_p x100	Rel.int. γ_i	$S_{\mathrm{p}\gamma}$ [eV]	E_cm [keV]	E^* [keV]	Ref.		
2269(3)										2216	7146	77Di17		
2273.6(30)	$\langle 3^+\rangle$		25(7)	1.82						2221	7151	76Wi16	77Di17	
2279.0(30)	3^-		50(10)	0.70						2226	7156	76Wi16	77Di17	
2293.7(30)	1^-		600(60)	8.10						2240	7170	76Wi16	77Di17	
2297(3)										2244	7173	77Di17		
2300.2(30)	$\langle 5^-\rangle$		5(3)	3.37						2247	7177	76Wi16	77Di17	
2304(3)										2250	7180	77Di17		
2309.1(30)	$\langle 3^+\rangle$		10(5)	0.66						2255	7185	76Wi16	77Di17	
2322(3)										2268	7198	77Di17		
2335.5(30)	$\langle 1^-\rangle$		10(5)	0.12						2281	7211	76Wi16	77Di17	
2339.8(30)	$\langle 1^+\rangle$		5(3)	0.03						2285	7215	76Wi16	77Di17	
2347.7(30)	$\langle 3^+\rangle$		35(7)	2.07						2293	7223	76Wi16	77Di17	
2352.0(30)	$\langle 3^+\rangle$		10(5)	0.58						2297	7227	76Wi16	77Di17	
2356.2(30)	1^-		500(50)	5.81						2301	7231	76Wi16	77Di17	
2366.0(30)	$\langle 3^+\rangle$		10(5)	0.56						2311	7241	76Wi16	77Di17	
2372.9(30)	1^-		150(15)	1.68						2318	7248	76Wi16	77Di17	
2376.5(30)	$\langle 3^+\rangle$		15(5)	0.82						2321	7251	76Wi16	77Di17	
2381.0(30)	1^+		70(10)	0.34						2326	7255	76Wi16	77Di17	
2382.4(30)	3^-		30(7)	0.33						2327	7257	76Wi16	77Di17	
2392.1(30)	$\langle 3^+\rangle$		20(5)	1.05						2337	7266	76Wi16	77Di17	
2401(3)										2345	7275	77Di17		
2407.2(30)	$\langle 1^-\rangle$		10(5)	0.10						2351	7281	76Wi16	77Di17	
2411(3)										2355	7285	77Di17		
2416.2(30)	$\langle 3^+\rangle$		35(7)	1.73						2360	7290	76Wi16	77Di17	
2417.3(30)	$\langle 3^+\rangle$		25(7)	1.23						2361	7291	76Wi16	77Di17	
2421(3)										2365	7295	77Di17		
2428(3)										2372	7301	77Di17		
2434.4(30)	3^-		40(10)	0.39						2378	7308	76Wi16	77Di17	
2435.9(30)	1^-		1000(100)	9.69						2379	7309	76Wi16	77Di17	
2438.1(30)	$\langle 3^+\rangle$		5(3)	0.23						2381	7311	76Wi16	77Di17	
2442.8(30)	1^+		25(7)	0.11						2386	7316	76Wi16	77Di17	
2454.2(30)	1^-		3000(300)	27.9	2920(100)		4.22			2397	7327	76Wi16	77Di17	74Ma39
2456.8(30)	$\langle 3^+\rangle$		20(5)	0.89						2400	7330	76Wi16	77Di17	
2467.0(30)	1^+		600(60)	2.46	540(20)		0.4		3.59	2410	7339	76Wi16	77Di17	74Ma39
2477(3)										2419	7349	77Di17		
2482(3)										2424	7354	90En08	77Di17	
2493.3(30)	1^-		90(15)	0.77						2435	7365	76Wi16	77Di17	
2493.7(30)	1^+		100(15)	0.39		0.73(3)	0.09			2436	7367	76Wi16	77Di17	74Ma39
2498.0(30)	1^-		700(70)	5.93	676(5)		0.86			2440	7370	76Wi16	77Di17	74Ma39
2499.1(30)	1^-		40(10)	0.34						2441	7371	76Wi16	77Di17	
2507.0(30)	1^+		80(15)	0.30	85(5)		0.05			2449	7379	76Wi16	77Di17	74Ma39
2514.2(30)	$\langle 5^-\rangle$		5(3)	0.77						2456	7386	76Wi16	77Di17	
2519.1(30)	1^+		300(30)	1.12						2461	7390	76Wi16	77Di17	
2524.6(30)	3^+		40(10)	1.50					2.28	2466	7396	76Wi16	77Di17	
2531(3)										2472	7402	77Di17		

(continued) **$^{43}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	Γ [eV]	$\Gamma_{p'}$ [eV]	θ_p^2 x100	Rel.int. γ_i	$S_{p\gamma}$ [eV]	E_{cm} [keV]	E^* [keV]	Ref.		
2541.7(30)	1^-		225(25)	1.74						2483	7412	76Wi16	77Di17	
2543.9(30)	$\langle 3^+ \rangle$		5(3)	0.18						2485	7415	76Wi16	77Di17	
2548.9(30)	3^-		110(15)	0.84						2490	7420	76Wi16	77Di17	
2554.3(30)	5^+		30(7)	1.05						2495	7425	76Wi16	77Di17	
2559(3)										2499	7429	77Di17		
2563(3)										2503	7433	77Di17		
2569.9(30)	5^+		50(10)	1.69						2510	7440	76Wi16	77Di17	
2575.1(30)	1^+		400(40)	1.35						2515	7445	76Wi16	77Di17	
2578.6(30)	1^-		20(5)	0.14						2519	7449	76Wi16	77Di17	
2592.2(30)	$\langle 3^+ \rangle$		15(5)	0.48						2532	7462	76Wi16	77Di17	
2594.2(30)	3^-		20(5)	0.14						2534	7464	76Wi16	77Di17	
2602(3)										2541	7471	77Di17		
2607.4(30)	1^-		500(50)	3.40						2547	7477	76Wi16	77Di17	
2608.0(30)	$\langle 5^+ \rangle$		25(7)	0.77						2547	7477	76Wi16	77Di17	
2609.5(30)	3^-		30(7)	0.20						2549	7479	76Wi16	77Di17	
2614.8(30)	$\langle 5^- \rangle$		2(2)	0.54						2554	7484	76Wi16	77Di17	
2623.2(30)	1^+		175(20)	0.54						2562	7492	76Wi16	77Di17	
2629(3)										2568	7498	77Di17		
2633.4(30)	$\langle 5^- \rangle$		5(3)	1.28						2572	7502	76Wi16	77Di17	
2640.1(30)	3^-		70(10)	0.45						2579	7509	76Wi16	77Di17	
2643.8(30)	1^-		1000(100)	6.34						2582	7512	76Wi16	77Di17	
2643(3)	9^+	3							4.20	2582	7513	77Di17		
2649.4(30)	$\langle 5^+ \rangle$		15(5)	0.42						2588	7518	76Wi16	77Di17	
2654(3)										2592	7522	77Di17		
2659.6(30)	$\langle 3^- \rangle$		15(5)	0.09						2598	7528	76Wi16	77Di17	
2671.4(30)	3^-		550(55)	3.31						2609	7539	76Wi16	77Di17	
2672.3(30)	1^+		15(5)	0.04						2610	7540	76Wi16	77Di17	
2683(4)										2621	7550	77Di17		
2689.9(30)	$\langle 5^+ \rangle$		20(5)	0.51						2627	7557	76Wi16	77Di17	
2693.0(30)	3^-		150(15)	0.87						2630	7560	76Wi16	77Di17	
2697.0(30)	$\langle 3^+ \rangle$		15(5)	0.38						2634	7564	76Wi16	77Di17	
2703.2(30)	1^+		400(40)	1.08	380(30)		0.11			2640	7570	76Wi16	77Di17	74Ma39
2720.1(30)	1^-		125(15)	0.69	150(10)		0.12		2.93	2657	7587	76Wi16	77Di17	74Ma39
2729.2(30)	$\langle 3^+ \rangle$		15(5)	0.35						2666	7596	76Wi16	77Di17	
2730.6(30)	1^-		400(40)	2.16		0.91(5)	0.45			2667	7597	76Wi16	77Di17	74Ma39
2733.4(30)	1^+		80(15)	0.21	90(10)		0.04			2670	7600	76Wi16	77Di17	74Ma39
2738.4(30)	$\langle 3^+ \rangle$		15(5)	0.35						2675	7605	76Wi16	77Di17	
2741(4)										2677	7607	77Di17		
2748.3(30)	3^-		20(5)	0.10						2684	7614	76Wi16	77Di17	
2749.7(30)	$\langle 1^- \rangle$		10(5)	0.05						2686	7616	76Wi16	77Di17	
2753.7(30)	1^-		3500(350)	18.2		3.0(1)	0.56			2690	7620	76Wi16	77Di17	74Ma39
2755.1(30)	$\langle 3^+ \rangle$		10(5)	0.22						2691	7621	76Wi16	77Di17	
2760.2(30)	$\langle 3^+ \rangle$		15(5)	0.33	30(10)		0.1			2696	7626	76Wi16		
2761.6(30)	$\langle 5^+ \rangle$		20(5)	0.44						2697	7627	76Wi16	74Ma39	
2765.2(30)	3^-		185(20)	0.94		0.70(5)	0.23			2701	7631	76Wi16	74Ma39	

(continued) $^{43}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ^2_p [keV]	Γ [eV]	$\Gamma_{\mathrm{p}'}$ [eV]	θ^2_p x100	Rel.int. γ_i	Rel.int. γ_j	$S_{\mathrm{p}\gamma}$ [eV]	E_cm [keV]	E^* [keV]	Ref.
2774.1(30)	3^-		20(5)	0.10							2710	7639	76Wi16
2778.9(30)	$\langle 3^+ \rangle$		15(5)	0.32							2714	7644	76Wi16
2781.0(30)	$\langle 3^+ \rangle$		15(5)	0.32							2716	7646	76Wi16
2794.5(30)	3^-		50(10)	0.24							2729	7659	76Wi16
2802.0(30)	1^+		500(50)	1.17							2737	7667	76Wi16
2803.4(30)	1^+		600(60)	1.40							2738	7668	76Wi16
2811.3(30)	3^-		50(10)	0.24							2746	7676	76Wi16
2819.4(30)	$\langle 5^- \rangle$		18(5)	2.90							2754	7684	76Wi16
2829.2(30)	1^-		60(10)	0.27							2763	7693	76Wi16
2839.5(30)	$\langle 5^+ \rangle$		8(5)	0.15							2774	7703	76Wi16
2844.7(30)	1^+		100(10)	0.22							2779	7708	76Wi16
2847.5(30)	1^-		700(70)	3.10							2781	7711	76Wi16
2851.3(30)	$\langle 5^- \rangle$		15(5)	2.24							2785	7715	76Wi16
2858.4(30)	1^-		25(7)	0.11							2792	7722	76Wi16
2870.7(30)	$\langle 5^+ \rangle$		20(5)	0.35							2804	7734	76Wi16
2875.4(30)	1^-		75(15)	0.32							2809	7738	76Wi16
2875.6(30)	1^+		25(7)	0.05							2809	7739	76Wi16
2881.5(30)	3^-		700(70)	2.93							2815	7744	76Wi16
2884.6(30)	1^-		40(10)	0.17							2818	7747	76Wi16
2888.8(30)	1^-		25(7)	0.10							2822	7751	76Wi16
2891.4(30)	$\langle 5^+ \rangle$		25(7)	0.42							2824	7754	76Wi16
2898.5(30)	$\langle 5^+ \rangle$		25(7)	0.42							2831	7761	76Wi16
2898.9(30)	1^-		35(7)	0.14							2832	7761	76Wi16
2907.2(30)	1^+		650(65)	1.32							2840	7769	76Wi16
2922.9(30)	$\langle 3^+ \rangle$		15(5)	0.24							2855	7785	76Wi16
2923.5(30)	$\langle 5^- \rangle$		5(3)	0.63							2856	7785	76Wi16
2936.0(30)	$\langle 5^+ \rangle$		30(7)	0.47							2868	7798	76Wi16
2942.2(30)	1^+		125(15)	0.24							2874	7804	76Wi16
2945.9(30)	3^-		115(15)	0.44							2877	7807	76Wi16
2946.4(30)	1^-		35(7)	0.13							2878	7808	76Wi16
2949.6(30)	$\langle 3^+ \rangle$		5(3)	0.08							2881	7811	76Wi16
2954.5(30)	$\langle 5^+ \rangle$		10(5)	0.15							2886	7816	76Wi16
2957.6(30)	1^+		200(20)	0.38							2889	7819	76Wi16
2958.0(30)	1^+		80(15)	0.15							2889	7819	76Wi16
2959.5(30)	$\langle 5^+ \rangle$		20(5)	0.30							2891	7821	76Wi16
2968.8(30)	1^-		25(7)	0.09							2900	7830	76Wi16
2969.6(30)	3^-		240(25)	0.88							2901	7830	76Wi16
2971.3(30)	$\langle 5^- \rangle$		3(3)	0.34							2902	7832	76Wi16
2972.1(30)	$\langle 3^+ \rangle$		30(7)	0.44							2903	7833	76Wi16
2975.6(30)	$\langle 5^- \rangle$		8(5)	0.90							2906	7836	76Wi16
2977.4(30)	$\langle 3^+ \rangle$		25(7)	0.36							2908	7838	76Wi16
2980.9(30)	1^+		200(20)	0.37							2912	7841	76Wi16
2983.3(30)	3^-		120(15)	0.43							2914	7844	76Wi16
2990.2(30)	3^-		75(15)	0.27							2921	7851	76Wi16
2999.1(30)	1^-		225(25)	0.79							2929	7859	76Wi16

(continued) $^{43}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ^2_p [keV]	Γ [eV]	$\Gamma_{\mathrm{p}'}$ [eV]	θ^2_p x100	Rel.int. γ_i	Rel.int. γ_j	$S_{\mathrm{p}\gamma}$ [eV]	E_cm [keV]	E^* [keV]	Ref.
2999.8(30)	1^-		30(7)	0.11							2930	7860	76Wi16
3001.6(30)	$\langle 3^+ \rangle$		20(5)	0.28							2932	7862	76Wi16
3008.7(30)	3^-		50(10)	0.17							2939	7869	76Wi16
3060(3)	3^+		150(20)			1.0(3)	0.7				2989	7920	74Ma39
3067(3)	1^-		420(50)			15.2(5)	0.2				2996	7926	74Ma39
3074(3)	1^+		270(20)			5.6(5)	0.06				3003	7932	74Ma39
3083(3)	1^+		1360(60)			32(1)	0.31				3011	7941	74Ma39
3096(3)	1^-		160(10)			3.4(5)	0.07				3024	7954	74Ma39
3103(3)	1^-		150(10)			187(5)	0.06				3031	7961	74Ma39
3157(3)	1^-		260(10)			13(1)	0.1				3084	8013	74Ma39
3163(3)	3^+		30(10)			3.6(2)	0.04				3089	8019	74Ma39
3178(3)	3^+		80(10)			1.7(2)	0.1				3104	8034	74Ma39
3189(3)	3^+		40(10)			1.6(2)	0.05				3115	8045	74Ma39
3192(3)	1^+		140(10)			5.5(1)	0.03				3118	8048	74Ma39
3206(3)	1^-		300(10)			30(1)	0.1				3131	8061	74Ma39
3210(3)	3^-		90(10)			2.6(2)	0.03				3135	8070	74Ma39
3216(3)	3^-		800(10)			81(1)	0.26				3141	8071	74Ma39
3220(3)	9^+				55(5)		5.3				3145	8070	74Ma39

Additional data on this isotope can be found in [84Ka27, 79Ch29, 78Di0A, 71Ga40, 71Po03, 70Ma13, 70Ba51, 68Br27, 68So11, 65Br0A, 65Br31, 64Br29, 63Du11].

Approximately 185 proton resonances in the energy region $E_\circ$=900–1500 keV were identified in reaction ^{43}Ca(p,γ)^{44}Sc [71PoZP].

For strong resonances located at $E_\circ$=1066, 1132, 1144 and 1289 keV branching ratios were studied.

Relative γ-intensities from [69Wa19] (γ_i in the first column) were normalized to the value from [63Du11] (γ_j) for the resonance at $E_\circ$=1423.8 keV.

γ-decay of IAR resonance at $E_\circ$=1241.9 keV was studied in [71Ga40].

Branching ratios of γ-transitions [90En08, 77Di17, 02Nu0A]. Part 1. $^{43}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$2J^\pi$	$2T$	$E_\circ$ [keV]	Branching ratios Percentage										Ref.
E^*				0.0	151	472	845	855	888	1158	1179	1337	1408	
$2J^\pi_\mathrm{f}$				7^-	3^+	3^-	5^-	1^+	5^+	3^+	3^-	7^+	7^-	
151.4(2)	3^+			100										
472.3(2)	3^-			96(1)	4(1)									
845.2(1)	5^-			100		<5								
855.1(3)	1^+				80(2)	20(2)								
880.3(2)	5^+			2(1)	98(1)	<5								
1158.4(3)	3^+				54(5)	2(1)	<3	24(5)	20(3)					
1178.9(5)	3^-			16(2)		72(3)	12(2)							

(continued) **$^{43}_{21}$Sc(p)**

E^* [keV]	$2J^\pi$	$2T$	$E_\circ$ [keV]	Branching ratios Percentage									Ref.
E^*			0.0	151	472	845	855	888	1158	1179	1337	1408	
$2J_f^\pi$			7^-	3^+	3^-	5^-	1^+	5^+	3^+	3^-	7^+	7^-	
1336.8(2)	7^+		19(2)	63(2)				18(2)					
1408.0(1)	7^-		82(2)		5(1)	13(2)							
1650.8(3)	5^+		14(2)	56(3)			3(1)	7(2)	20(2)				
1810.7(4)	3^-			10(3)	35(4)		16(4)			39(5)			
1829.9(2)	11^-		100										
1882.6(4)	$\langle 5,9\rangle^-$		100										
1931.4(4)	9^+							79(7)			21(7)		
1962.9(2)	$\langle 3,5\rangle^-$				84(2)				3(1)	13(2)			
2094.3(3)	3^-			17(3)	11(3)	11(2)	18(2)	10(2)		33(3)			
2106.0(4)	$\langle 3,5\rangle$							75(3)	25(3)				
2114.3(9)				56(5)				44(5)					
2141.7(6)	$3^-,5^+$		$\langle$x$\rangle$	25(2)	17(2)		4(2)	34(3)	5(2)	2(1)			
2242.6(4)	$\langle 3–7\rangle^-$		18		57	25							
2288.3(1)	5^-		94.9(7)	2.0(4)	0.9(5)	1.2(3)						1.0(2)	
2335.4(1)	$\langle 5\rangle^-$		100										
2382.7(5)	$3^{\langle+\rangle}$						31						
2458.6(1)	$\langle 5,9\rangle^-$		100										
2552.5(6)	$\langle 11^+\rangle$										39(3)		
2580.0(3)	$\langle 5\rangle$			52(6)				21(4)	27(5)				
2635.4(6)	$9^-,11^-$		60									23	
2657(10)	1^+					x							
2670.3(5)	3^-				22(3)		49(2)	21(4)		8(2)			
2760.0(1)	$\langle 5,9\rangle^-$		100										
2795.2(5)	X^-		45			39						16	
2810.7(5)	$\langle 5–9\rangle$		19(5)								46(5)		
2840.0(5)	$\langle 5,7\rangle^+$		38					$\langle$x$\rangle$			44		
2846.2(15)			100										
2861.0(15)	$\langle 1–5\rangle^+$			33(3)				44(2)	10(3)	7(2)			
2875(2)				x									
2984.9(10)	$\langle 3,5\rangle$			38(3)		22(3)		27(2)		13(3)			
2987.4(2)	15^-												
3123.2(3)	$\langle 19\rangle^-$												
3140.6(7)	$\langle 13\rangle^+$												
3158.8(13)	$\langle 3–7\rangle$		42	37				21					
3197.6(18)					100								
3259.8(5)	$\langle 7,9\rangle^-$		96										
3292.9(11)	7^-					32		10		26			
3327.2(12)	$\langle 3–11\rangle$		x										
3332(2)	$\langle 1–5\rangle$		$\langle$x$\rangle$		9(2)	14(3)			21(2)	48(2)			
3375.2(5)	$\langle 7,9\rangle^-$		23								12	30	
3451.5(6)	$\langle 5\rangle^+$							27					
3463.3(14)	5^-			73(3)				27(3)					

(continued) **$^{43}_{21}$Sc(p)**

E^*	$2J^\pi$	$2T$	$E_\circ$	Branching ratios									Ref.
[keV]			[keV]	Percentage									
E^*				0.0	151	472	845	855	888	1158	1179	1337	1408	
$2J_f^\pi$				7^-	3^+	3^-	5^-	1^+	5^+	3^+	3^-	7^+	7^-	
3480(10)	$\langle 13\rangle^+$													
3503(2)	7^-			50(5)			50(5)							
3613(10)														
3631.5(10)	5^-–9^-			x										
3645.4(18)									24(5)		38(5)			
3683(2)	$\langle 3$–$7\rangle$				55(4)		31(3)		14(2)					
3700(10)	$\langle 5$–$19\rangle$													
3733.8(18)							x						x	
3754.7(8)	$\langle 15\rangle^+$													
3757(2)	$\langle 3$–$7\rangle$			30(5)	70(5)									
3806.6(7)	7^-					22(3)			63(3)			15(4)		
3843(2)	$\langle 9\rangle$						x							
3860(2)	$\langle 7\rangle$				x									
3894(8)														
3939(10)	5^-,7^-													
3949(10)	$\langle 13\rangle^+$													
4007(2)	$\langle 3,5\rangle^+$				30(5)	15(4)		30(6)	25(6)					
4038(2)	7^-					40(8)								
4138(10)	$\langle 3$–$17\rangle$													
4157(2)	$\langle 9$–$13\rangle$													
4211(10)	9^+,13^+													
4236(6)	7^-													
4276(8)														
4371(2)	5^-,7^-								11(3)			41(4)	20(5)	
4382(9)	5^-,7^-													
4430(2)									30(4)	30(5)	40(6)			
4455(2)	$\langle 5,9\rangle$			100										
5517.3(10)	$\langle 19\rangle^+$													
5530(10)	1^-,3^-													
5641(5)	1^-,3^-													
5720(9)	1^-,3^-													
5822(9)														
5871(10)														
5919(2)	3		1013		15	10	15		10	$\langle 10\rangle$	5			65Br31
5947*			1045		9	9		9		3	21			77Di17
5976(12)														
6032(10)	1^-,3^-													
6079(10)														
6105(10)	3^-,5^+		1201	3	63	1	2	1			2	5	3	77Di17
6143(2)	3^-	3	1234		17	4	4	3	7	9	11			69Wa19
6149			1241	2	14	3	10	19	2	3	13			69Wa19
6198*			1299		16		3	15	25					77Di17

(continued) $^{43}_{21}\mathrm{Sc}(\mathrm{p})$

E^* [keV]	$2J^\pi$	$2T$	$E_\circ$ [keV]	Branching ratios Percentage										Ref.
E^*				0.0	151	472	845	855	888	1158	1179	1337	1408	
$2J_f^\pi$				7^-	3^+	3^-	5^-	1^+	5^+	3^+	3^-	7^+	7^-	
6217(2)	3^-,5^+		1319	4	4	8	50		3			<1	1	77Di17
6222(10)	1^+	3												
6261*			1346		30		25		10		5			65Br31
6282(10)														
6325			1421		60		5		5		5			65Br31
6384(10)														
6428.7(9)	$\langle 23^+ \rangle$													90En08
6444(10)														
6685(2)**	1^-	1+3	1797		24	7		6	8		9			74Ma39
6696(2)	5													
6710(2)**	1^-	1+3	1803		10	5								74Ma39
6811(10)														
6917(10)			2038	7			63		2				3	77Di17
7339*			2471	10	17				31	2	2	2		77Di17
7354.9(10)	$\langle 25^+ \rangle$													90En08
7396*			2523	1	25	2	4	5	8	10	4	1	1	77Di17
7512*			2643	13			2			3				77Di17
7513*														
7587*			2720	2	37				40					77Di17

Additional data on this isotope can be found in [74Ma39, 71Ga40, 69Wa19, 65Br31].
* This state is not included in compilation [02Nu0A] (see the isotope table for references).
** These two states with J^π=1/2$^-$ are considered here as that discussed in [74Ma39].

Branching ratios of γ-transitions [90En08, 77Di17, 02Nu0A]. Part 2. $^{43}_{21}\mathrm{Sc}(\mathrm{p})$

E^* [keV]	$E_\circ$ [keV]	Branching ratios Percentage															
E^*		1651	1811	1830	1884	1931	1962	2094	2106	2114	2141	2289	2336	2383	2552	2580	2671
$2J_f^\pi$																	
2141.7		13(2)															
2382.7		69															
2552.5						61(3)											
2635.4				17													
2810.7									35(4)								
2861.0		6(2)															
2987.4				100													
3140.6						100											

(continued) $^{43}_{21}\mathbf{Sc}(\mathrm{p})$

E^*	$E_\circ$	Branching ratios															
[keV]	[keV]	Percentage															
E^* $2J_f^\pi$		1651	1811	1830	1884	1931	1962	2094	2106	2114	2141	2289	2336	2383	2552	2580	2671
3259.8				4													
3292.9						32											
3332			6(2)				2(1)										
3375.2				19	16												
3451.5			73														
3645.4		25(3)					13(4)										
3733.8												x					
4038						60(8)											
4371		13(4)							15(3)								
5919	1013	10										⟨10⟩				5	5
5947*	1045	14	1				7	2		1	2	1	1			3	
6105	1201								3		8						
6143	1234	6					17	12			4					6	
6149	1241		2				5	6									6
6198*	1299	12					3	13			4		5				
6217	1319		3					2	1		2						5
6222																	
6261*	1346	x					10	5			15						
6282																	
6325	1421							5									
6685**	1797						10	19								3	14***
6710**	1803						11	59									
6917	2038				3												
7339*	2471	6								2							
7396*	2523	2	2							7	1			1		1	
7512*	2643				2	59									2		
7587*	2720										5						

Additional data on this isotope can be found in [74Ma39, 71Ga40, 69Wa19, 65Br31].
* This state is not included in the compilation [02Nu0A] (see the isotope table for references).
** These two states with J^π=1/2$^-$ are considered here as that discussed in [74Ma39]
*** Transitions to the unknown states.

Branching ratios of γ-transitions [90En08, 77Di17, 02Nu0A]. Part 3. $^{43}_{21}\mathbf{Sc}(\mathrm{p})$

E^*	$E_\circ$	Branching ratios															
[keV]	[keV]	Percentage															
E^*		2796	2811	2841	2846	2860	2875	2988	3123	3141	3160	3261	3292	3328	3331	3374	3452
$2J^\pi_\mathrm{f}$																	
3123.2								100									
3754.7										100							
5517.3									100								
5919	1013												5				
5947*	1045												4		13		
6105	1201			<1	1			1			1						6
6149	1241							7					4				
6217	1319					6		4									3
6261*	1346												x				
6325	1421							10									
6428.7									7(1)								
6710	1803							15									
6917	2038	2					2					4		4			
7339*	2471										6						
7396*	2523	1				2	2										3
7512*	2643		2	2													
7587*	2720					1										2	3

Additional data on this isotope can be found in [74Ma39, 71Ga40, 69Wa19, 65Br31].
* This state is not included in the compilation [02Nu0A] (see the isotope table for references).

Branching ratios of γ-transitions [90En08, 77Di17, 02Nu0A]. Part 4. $^{43}_{21}\mathbf{Sc}(\mathrm{p})$

E^*	$E_\circ$	Branching ratios																Ref.
[keV]	[keV]	Percentage																
E^*		3463	3503	3645	3683	3734	3757	3807	3843	3860	4007	4038	4371	4430	4464	5520	6429	
$2J^\pi_\mathrm{f}$																		
6105	1201								1									77Di17
6149	1241							4										69Wa19
6198*	1299					4												77Di17
6217	1319			3						1								77Di17
6325	1421							10										65Br31
6917	2038								2						8			77Di17
7339*	2471			3	3			12	6	4								77Di17
7396*	2523	3					2					7		5				77Di17

(continued) **$^{43}_{21}$Sc(p)**

E^*	$E_\circ$	Branching ratios															Ref.
[keV]	[keV]	Percentage															
E^*		3463	3503	3645	3683	3734	3757	3807	3843	3860	4007	4038	4371	4430	4464	5520	6429	
$2J^\pi_f$																		
7512*	2643							6			2		7					77Di17
7587*	2720		2		7									1				77Di17

Additional data on this isotope can be found in [74Ma39, 71Ga40, 69Wa19, 65Br31].
* This state is not included in the compilation [02Nu0A] (see the isotope table for references).

Target isotope: $^{43}_{20}$Ca $I^\pi_\circ = 7/2^-$ *Abundance:* 0.135(10) % $S_p = 6696.3(17)$ keV **$^{44}_{21}$Sc(p)**

$E_\circ$	J^π	T	Γ_p	γ^2_p	Γ	$\Gamma_{p'}$	θ^2_p	Rel.int.	E^*	Ref.
[keV]			[eV]	[keV]	[eV]	[eV]	x100	γ_i	[keV]	
1066(2)									7735	71PoZP
1132(2)									7799	71PoZP
1144(2)									7814	71PoZP
1289(2)									7952	71PoZP

In the enery range of $E_\circ$=900–1500 keV 185 resonances in reaction ^{44}Ca(p,γ) were found in [71PoZP]. Positions of four strong resonances are given in the table.

Branching ratios of γ-transitions [95Bu05, 71PoZP]. Part 1 **$^{44}_{21}$Sc(p)**

E^*	$E_\circ$	J^π	Branching ratios									
[keV]	[keV]		Percentage									
E^*			0.0	68	146	235	271	350	425	531	631	642
J^π_f			2^+	1^-	0^-	2^-	6^+	4^+	3^-	3	4^-	
67.868*		1^-	100									
146.22*		0^-	0.093(6)	≈100								
234.7(1)*		2^-	69(2)	31(2)	<2							
270.9(2)*		6^+	98.80(7)									
349.8(1)*		4^+	100									
424.8(1)*		3^-	16(2)	58(2)		26(2)						
531.2(2)*		3	39(2)	10(2)		49(2)		2(1)				
630.9(1)*		4^-				43(2)		48(2)	9(1)			
642**												
666.7(4)*		1^+	100									
725(15)*		$\langle+\rangle$										

(continued) **$^{44}_{21}$Sc(p)**

E^* [keV]	$E_\circ$ [keV]	J^π	Branching ratios Percentage									
E^*			0.0	68	146	235	271	350	425	531	631	642
J^π_f			2^+	1^-	0^-	2^-	6^+	4^+	3^-	3	4^-	
763.1(4)*		3^+	93(2)			7(2)						
830**												
874**												
968.0(3)		$\langle 7\rangle^+$					100					
986.7(4)*		3^+	100									
1006.3(4)*		$\langle 3,4^-\rangle$				18(6)		19(8)	33(5)		30(7)	
1027**												
1050(2)*		$\langle 3,5\rangle^+$						100				
1106**												
1142(5)												
1185.8(7)*		3^+	40(6)					60(6)				
1197.3(1)*		$4^+,5^-$					31(5)	x	27(6)		42(5)	
1303(10)												
1326(1)*		3^+	44(5)					56(5)				
1427(1)*		2^-	43(3)	17(2)	<10	16(4)			24(4)			
1507(2)*		$\langle 2–5\rangle^+$										
1532(2)*		5^+					66	23				11
1567(2)*		3^-	43									
1595(2)*		$\langle 2–5\rangle^+$										
1648.3(5)				x								
1651.6(5)			x									
1680.6(5)*				x								11
1685(3)		$\langle 4,6\rangle^-$										
1731(2)												
1767.6(5)*		3^+	36	16				29				
1811(2)*				20				50				
1866(2)*		$\langle 3,5\rangle^+$	13	19		15		40			13	
1903(2)*						51					49	
1957(4)		$\langle 2–5\rangle^+$										
1986(4)		$\langle 3,4\rangle^-$										
2031(2)*		4^-								58		
2104(2)*		X^-						45				
2115(2)*								65			35	
2179(2)*		$\langle 2,4\rangle^+$	50							50		
2213(4)		4^-										
2241(4)		2^+										
2291(2)*		$\langle 2–5\rangle^+$		8		92						
2333(2)*		$\langle 1–6\rangle^-$	25				55	20				
2383(4)												
2424(2)*		$\langle 2–5\rangle^+$				12						88
2474(6)		$\langle 2–5\rangle^+$										
2490(3)		4^-										

(continued) $^{44}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$E_\circ$ [keV]	J^π	Branching ratios Percentage									
E^*			0.0	68	146	235	271	350	425	531	631	642
J^π_f			2^+	1^-	0^-	2^-	6^+	4^+	3^-	3	4^-	
2524(3)*		$\langle 1\text{–}6\rangle^-$					100					
2556(10)												
2582(3)*		$\langle 3,4\rangle^-$	43	10				12				
2615(3)*		$\langle 3,4\rangle^-$										
2634(3)*							51	49				
2671.3(4)*		$\langle 9\rangle^+$			56							44
2703(3)*		$\langle 2\text{–}5\rangle^+$	36					13			40	
2751(10)*		$\langle 3,4\rangle^-$						100				
2783(3)		0^+										
2845(6)												
2878(9)												
2915(3)*		$\langle 2,3\rangle^+$						52				
2980(3)*		$\langle 3,4\rangle^-$										
2999(3)*		$\langle 3,4\rangle^-$	40									
3035(10)												
3049(10)												
3071(8)		$2^+\text{–}5^+$										
3097(10)		$2^+\text{–}5^+$										
3152(10)		$\langle + \rangle$										
3176(8)												
3204(7)												
3281(15)		$2^+\text{–}5^+$										
3321(15)												
3370(14)		$2^+\text{–}5^+$										
3427(11)		$2^+\text{–}5^+$										
3439(15)												
3483(12)		$2^+\text{–}5^+$										
3566.8(4)		$\langle 11\rangle^+$										
3568(6)												
3626(10)		$2^+\text{–}5^+$										
3851(6)		$2^+\text{–}5^+$										
3967(12)		$\langle + \rangle$										
3975.1(4)												
4024(13)												
4038(14)		$\langle + \rangle$										
4053(15)												
4087(7)		$2^+\text{–}5^+$										
4113(1)		10–12										
4150(10)		$\langle + \rangle$										
4185(10)												
4254(11)		$2^+\text{–}5^+$										
4293(15)		$2^+\text{–}5^+$										

(continued) $^{44}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$E_\circ$ [keV]	J^π	Branching ratios Percentage									
E^*			0.0	68	146	235	271	350	425	531	631	642
J^π_f			2^+	1^-	0^-	2^-	6^+	4^+	3^-	3	4^-	
4363(11)		2^+–5^+										
4391(14)		0^+–7^+										
4461(14)		2^+–5^+										
4500(16)												
4533(10)		2^+–5^+										
4595(10)												
4622(12)												
4645(14)												
4697(10)		2^+–5^+										
4746(14)		1^-–6^-										
4762(10)												
4820(10)		2^+–5^+										
5012(15)												
5277(10)												
5336(6)												
5526(13)		0^+–7^+										
5553(11)		1^-–6^-										
5608(5)												
5716(13)												
7735	1066		1	2		4		4	3	2	6	10***
7799	1132		<1	4				3	<1	<1	3	10***
7814	1144	4^+	1	<1		1	2	3	<1	1	3	10***
7952	1289						1	12	3	3	2	10***

* present in the spectrum known from the resonance capture [71PoZP]
** present only in the spectrum given in [71PoZP], not included in ENSDF [95Bu05]
*** transition to the unknown state
Branching ratios for the levels with E^*>1500 keV are from [71PoZP].

Branching ratios of γ-transitions. Part 2. $^{44}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$E_\circ$ [keV]	J^π	Branching ratios Percentage												
E^*			667	745	763	830	874	987	1006	1027	1050	1106	1186	1197	1326
J^π_f			1^+		3^+			3^+			X^+		3^+		3^+
1507(2)*		$\langle 2$–$5\rangle^+$		100											
1567(2)*		3^-					57								
1595(2)*		$\langle 2$–$5\rangle^+$			38			62							

(continued) $^{44}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$E_\circ$ [keV]	J^π	Branching ratios Percentage												
E^*			667	745	763	830	874	987	1006	1027	1050	1106	1186	1197	1326
J^π_f			1^+		3^+			3^+			X^+		3^+		3^+
1680.6(5)*			15		33										
1811(2)*													30		
2031(2)*		4^-											42		
2104(2)*		X^-				17						23			15
2615(3)*		$\langle 3,4\rangle^-$			100										
2999(3)*		$\langle 3,4\rangle^-$				60									
7735	1066					2			2				6	2	2
7799	1132				4			2	2	1	1		10	1	1
7814	1144	4^+		<1	2		2	3	3		2		4	3	2
7952	1289			<1	1	2			3	<1	4	1	8	2	3

* present in the spectrum known from the resonance capture [71PoZP]
Branching ratios for the levels with E^*>1500 keV are from [71PoZP].

Branching ratios of γ-transitions. Part 3. $^{44}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$E_\circ$ [keV]	J^π	Branching ratios Percentage											Com.
			1427	1507	1532	1567	1595	1661	1767	1811	1866	1903	2031	E^*, keV J^π_f
7735	1066		9	2	1			3	11	3			3	
7799	1132		2	20	2		3	5	2		<1	<1		
7814	1144	4^+	2	2	1	2	1	2	3	2	3	2	3	
7952	1289		1	5	2		<1	4			1	1	2	

Branching ratios of γ-transitions. Part 4. **$^{44}_{21}$Sc(p)**

E^*	$E_\circ$	J^π	Branching ratios											Com.
[keV]	[keV]		Percentage											
			2179	2291	2333	2424	2524	2582	2615	2634	2684	2703	2769	E^*, keV J^π_f
7735	1066				3		2	4				4		
7799	1132		3		3	2		<1		10		2		
7814	1144	4^+	1	1	5	2	2	3	1	2	1	2	2	
7952	1289			1	3	2	3	7		<1			<1	

Target isotope: $^{44}_{20}$Ca $I^\pi_\circ = 0^+$ *Abundance:* 2.09(11) % $S_p = 6889.22(91)$ keV **$^{45}_{21}$Sc(p)**

$E_\circ$	$2J^\pi$	ℓ	Γ_p	γ^2_p	Rel.int.	$2s_{p'}$	ℓ	$E_\circ$	I_γ	$\Gamma_{p'}$	$\gamma^2_{p'}$	$2s_{p'}$	ℓ	$\Gamma_{p'}$	$\gamma^2_{p'}$	E_{cm}	E^*	Ref.	
[keV]			[eV]	[keV]	γ_i			[keV]	γ_i	[eV]	[keV]			[eV]	[keV]	[keV]	[keV]		
								644.1	2										74Sc02
								706.1	10										74Sc02
								716.3	5										74Sc02
								722.1	6										74Sc02
								729.6	15										74Sc02
								743.5	2										74Sc02
								760.6	14										74Sc02
								763.6	22										74Sc02
								768.0	6										74Sc02
								781.6	30										74Sc02
793.7(10)					80			790.7	32							776	7665(1)	63Du10	74Sc02
801.3(10)					70			797.5	31							784	7673(1)	63Du10	74Sc02
								805.1	30										74Sc02
838.1(10)					130			840.6	50							820	7709(1)	63Du10	74Sc02
839.9(10)					40			incl								821	7711(1)	63Du10	74Sc02
843.6(10)					40			incl								825	7714(1)	63Du10	74Sc02
850.7(10)					290			855.7	60							832	7721(1)	63Du10	74Sc02
860.6(10)					130			864.4	30							842	7731(1)	63Du10	74Sc02
870.1(10)					80											851	7740(1)	63Du10	
879.9(10)					50			880.4								860	7750(1)	63Du10	74Sc02
881.0(10)					60			882.0								861	7751(1)	63Du10	74Sc02
885.5(10)					60			886.0								866	7755(1)	63Du10	74Sc02
								895.7	10										74Sc02
902.9(10)					320			906.2	80							883	7772(1)	63Du10	74Sc02
906.6(10)					130											887	7776(1)	63Du10	
911.2(10)					80			912.7	5							891	7780(1)	63Du10	74Sc02
918.7(10)					170			920.9	25							898	7788(1)	63Du10	74Sc02
928.9(10)					80											908	7798(1)	63Du10	
939.6(10)					290											919	7808(1)	63Du10	

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ	γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
944.8(10)					290													924	7813(1)	63Du10
953.6(10)					120													932	7822(1)	63Du10
954.8(10)					140													934	7823(1)	63Du10
960.7(10)					480													939	7829(1)	63Du10
975.7(10)					230													954	7843(1)	63Du10
978.2(10)					160													957	7846(1)	63Du10
982.5(10)					50													961	7850(1)	63Du10
992.6(10)					370													971	7860(1)	63Du10
1002.7(10)					50													980	7870(1)	63Du10
1005.0(10)					210													983	7872(1)	63Du10
1006.9(10)					200													985	7874(1)	63Du10
1013.8(10)					190													991	7881(1)	63Du10
1015.2(10)					190													993	7882(1)	63Du10
1019.6(10)					60													997	7886(1)	63Du10
1029.8(10)					400													1007	7896(1)	63Du10
1032.8(10)					480													1010	7899(1)	63Du10
1045.4(10)					370													1022	7911(1)	63Du10
1049.8(10)					⟨60⟩													1027	7916(1)	63Du10
1063.1(10)					150													1040	7929(1)	63Du10
1065.7(10)					2100													1042	7931(1)	63Du10
1068.3(10)					1960													1045	7934(1)	63Du10
1073.1(10)					480													1049	7939(1)	63Du10
1077.6(10)					190													1054	7943(1)	63Du10
1079.1(10)					190													1055	7944(1)	63Du10
1082.2(10)					500													1058	7947(1)	63Du10
1085.4(10)					600													1061	7951(1)	63Du10
1095.6(10)					90													1071	7961(1)	63Du10
1102.5(10)					60													1078	7967(1)	63Du10
1106.1(10)					450													1082	7971(1)	63Du10
1110.5(10)					100													1086	7975(1)	63Du10
1115.6(10)					380													1091	7980(1)	63Du10
1118.1(10)					380													1093	7983(1)	63Du10
1125.7(10)					220													1101	7990(1)	63Du10
1129.4(10)					220													1104	7994(1)	63Du10
1135.9(10)					1000													1111	8000(1)	63Du10
1142.2(10)					210													1117	8006(1)	63Du10
1144.1(10)					700													1119	8008(1)	63Du10
1148.5(10)					1220													1123	8012(1)	63Du10
1154.8(10)					220													1129	8018(1)	63Du10
1156.7(10)					600													1131	8020(1)	63Du10
1160.0(10)					350													1134	8023(1)	63Du10
1161.3(10)					1170													1136	8025(1)	63Du10
1166.4(10)					560													1141	8030(1)	63Du10
1169.5(10)					500													1144	8033(1)	63Du10
1173.2(10)					340													1147	8036(1)	63Du10

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.		
1181.9(10)					⟨70⟩							1156	8045(1)	63Du10		
1184.0(10)					1900							1158	8047(1)	63Du10		
1188.1(10)					⟨200⟩							1162	8051(1)	63Du10		
1195.4(10)					530							1169	8058(1)	63Du10		
1202.6(10)					370							1176	8065(1)	63Du10		
1204.1(10)					370							1177	8067(1)	63Du10		
1207.2(10)					450							1180	8070(1)	63Du10		
1215.1(10)					2250							1188	8077(1)	63Du10		
1217.8(10)					290							1191	8080(1)	63Du10		
1224.0(10)					420							1197	8086(1)	63Du10		
1226.4(10)					1170							1199	8088(1)	63Du10		
1232.6(10)					450							1205	8094(1)	63Du10		
1234.7(10)					240							1207	8097(1)	63Du10		
1238.0(10)					240							1210	8100(1)	63Du10		
1245.3(10)					5300							1218	8107(1)	63Du10		
1250.4(10)					640							1223	8112(1)	63Du10		
1251.1(4)	3^-		36(9)		640						1.3(4)	1223	8113(1)	63Du10	73Be39	83Bu21
1253.7(10)			20(15)		2540							1226	8115(1)	63Du10	73Be39	83Bu21
1263.2(10)					1750							1235	8124(1)	63Du10		
1267.6(4)	3^-		22(7)		4290						0.87(24)	1239	8129(1)	63Du10	73Be39	83Bu21
1270.7(10)					480							1243	8132(1)	63Du10		
1272.9(10)					560							1245	8134(1)	63Du10		
1277.6(10)					240							1249	8138(1)	63Du10		
1280.1(10)					560							1252	8141(1)	63Du10		
1284.3(10)					360							1256	8145(1)	63Du10		
1290.9(10)					400							1262	8151(1)	63Du10		
1293.3(10)					1490							1265	8154(1)	63Du10		
1299.4(10)					400							1271	8160(1)	63Du10		
1304.1(10)					90							1275	8164(1)	63Du10		
1308.2(10)					420							1279	8168(1)	63Du10		
1309.9(10)					⟨270⟩							1281	8170(1)	63Du10		
1316.4(10)					630							1287	8176(1)	63Du10		
1318.2(10)					630							1289	8178(1)	63Du10		
1331.6(10)					770							1302	8191(1)	63Du10		
1334.7(10)					770							1305	8194(1)	63Du10		
1337.1(10)					770							1307	8197(1)	63Du10		
1339.8(10)					270							1310	8199(1)	63Du10		
1346.2(10)					530							1312	8201(1)	63Du10		
1349.3(10)					1320							1319	8209(1)	63Du10	83Bu21	68So11
1352.1(10)					270							1322	8211(1)	63Du10	83Bu21	64Er05
1356.0(10)					500							1326	8215(1)	63Du10	83Bu21	68So11
1359.0(10)					500							1329	8218(1)	63Du10	83Bu21	68So11
1366.5(10)					700							1336	8225(1)	68So11	83Bu21	
1367.4(10)					1150							1337	8226(1)	63Du10	83Bu21	68So11
1374.9(10)					550							1344	8234(1)	68So11	83Bu21	

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$	$2J^\pi$	ℓ	Γ_p	γ^2_p	Rel.int.	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$	I_γ	$\Gamma_{\mathrm{p}'}$	$\gamma^2_{\mathrm{p}'}$	Γ_γ	E_cm	E^*	Ref.		
[keV]			[eV]	[keV]	γ_i			[keV]	γ_i	[eV]	[keV]	[eV]	[keV]	[keV]			
1377.0(10)					1000								1346	8236(1)	68So11	83Bu21	
1381.9(10)					650								1351	8240(1)	68So11	83Bu21	
1389.2(10)					1000								1358	8248(1)	68So11	83Bu21	
1393.5(10)					500								1363	8252(1)	68So11	83Bu21	
1394.8(10)					750								1364	8253(1)	68So11	83Bu21	64Er05
1397(3)					650								1366	8255(3)	68So11	83Bu21	
1398.8(10)					1300								1368	8257(1)	68So11	83Bu21	
1406.1(10)					425								1375	8264(1)	68So11	83Bu21	
1410.2(10)					200								1379	8268(1)	68So11	83Bu21	
1412.8(10)					500								1381	8271(1)	68So11	83Bu21	
1414.0(10)					900								1383	8272(1)	68So11	83Bu21	
1420.1(10)					200								1389	8278(1)	68So11	83Bu21	
1423.4(10)					450								1392	8281(1)	68So11	83Bu21	
1445(5)													1413	8302(5)	64Er05	83Bu21	
1470(5)													1440	8330(5)	64Er05	83Bu21	
1500(5)													1500	8400(5)	64Er05	83Bu21	
1530(5)													1500	8390(5)	64Er05	83Bu21	
1560(5)													1530	8410(5)	64Er05	83Bu21	
1583.0(50)	1^-		40(10)	5.57									1548	8437(5)	75Wi09	71De25	
1612.2(50)	$\langle 1^- \rangle$		20(5)	2.43									1576	8466(5)	75Wi09	71De25	
1623.6(50)	3^-		12(5)	1.38								0.42	1588	8477(5)	75Wi09	76Wi12	
1632.4(50)	$\langle 3^- \rangle$		25(7)	2.78								0.17	1596	8486(5)	75Wi09	76Wi12	68Br27
1646.0(50)	3^-		80(15)	8.36								0.45	1609	8499(5)	75Wi09	76Wi12	68Br27
1651.7(50)	3^-		400(40)	40.8								0.41	1615	8505(5)	75Wi09	76Wi12	68Br27
1664.6(50)	3^-		60(10)	5.79								0.34	1628	8518(5)	75Wi09	76Wi12	68Br27
1668.1(50)	3^-		30(7)	2.85								0.32	1631	8521(5)	75Wi09	76Wi12	68Br27
1677.4(50)	$\langle 3^- \rangle$		7(5)	0.65								0.16	1640	8530(5)	75Wi09	76Wi12	68Br27
1678.2(50)	$\langle 3^- \rangle$		5(3)	0.46								0.16	1641	8531(5)	75Wi09	76Wi12	
1682.2(50)	$\langle 3^- \rangle$		10(5)	0.90								0.11	1645	8535(5)	75Wi09	76Wi12	
1684.3(50)	1^+		30(7)	1.01									1647	8536(5)	75Wi09		
1692.5(50)	$\langle 3^- \rangle$		10(5)	0.87								0.32	1655	8541(5)	75Wi09	76Wi12	
1702.2(50)	$\langle 1^- \rangle$		10(5)	0.82								0.28	1664	8554(5)	75Wi09	76Wi12	
1730.3(50)	1^-		50(10)	3.67								0.13	1692	8582(5)	75Wi09	76Wi12	
1741.8(50)	$\langle 1^- \rangle$		15(5)	1.05								0.12	1703	8593(5)	75Wi09	76Wi12	
1748.8(50)	1^-		40(10)	2.74									1710	8599(5)	75Wi09		
1767.1(50)	1^-		40(10)	2.54								0.37	1728	8618(5)	75Wi09	76Wi12	
1777.3(50)	1^+		15(5)	0.36									1738	8627(5)	75Wi09		
1780.4(50)	$\langle 1^- \rangle$		10(5)	0.61									1741	8630(5)	75Wi09		
1792.8(50)	1^+		20(5)	0.45									1753	8642(5)	75Wi09		
1800.1(50)	$\langle 1^- \rangle$		15(5)	0.84									1760	8649(5)	75Wi09		
1810.1(50)	$\langle 1^- \rangle$		25(7)	1.35								0.79	1770	8660(5)	75Wi09	76Wi12	
1817.0(50)	1^-		5(3)	0.26						3		0.23	1777	8667(5)	75Wi09	76Wi12	
1826.8(50)	$\langle 1^- \rangle$		15(5)	0.76								0.19	1786	8676(5)	75Wi09	76Wi12	
1849.2(50)	1^-		35(7)	1.64						2		0.51	1808	8698(5)	75Wi09	76Wi12	
1858.6(50)	1^+		10(5)	0.18									1817	8707(5)	75Wi09		

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.	
1864.8(50)	1^-		15(5)	0.66						3				0.46	1823	8713(5)	75Wi09	76Wi12
1869.3(50)	1^-		25(7)	1.09						5				0.85	1828	8718(5)	75Wi09	76Wi12
1884.6(50)	1^+		50(10)	0.82											1843	8732(5)	75Wi09	
1889.2(50)	1^-		60(10)	2.44										0.33	1847	8737(5)	75Wi09	76Wi12
1903.2(50)	1^-		10(5)	0.39						9				0.91	1861	8751(5)	75Wi09	76Wi12
1908.6(50)	1^-		100(15)	3.81						6				0.28	1866	8756(5)	75Wi09	76Wi12
1911.3(50)	1^+		30(7)	0.45											1869	8758(5)	75Wi09	
1920.7(50)	1^-		50(10)	1.83						21				1.61	1878	8768(5)	75Wi09	76Wi12
1922.2(50)	1^+		60(10)	0.88											1880	8769(5)	75Wi09	
1940.2(50)	1^+		15(5)	0.21											1897	8786(5)	75Wi09	
1942.8(50)	$\langle 3^- \rangle$		10(5)	0.34											1900	8789(5)	75Wi09	
1949.3(50)	1^-		75(15)	2.49						42				0.56	1906	8796(5)	75Wi09	76Wi12
1958.8(50)	1^+		20(5)	0.26											1915	8805(5)	75Wi09	
1962.3(50)	1^-		35(7)	1.11						8				0.32	1919	8809(5)	75Wi09	76Wi12
1968.8(50)	1^-		20(5)	0.62						4				1.38	1925	8815(5)	75Wi09	76Wi12
1979.9(50)	1^-		10(5)	0.30						38				0.52	1936	8826(5)	75Wi09	76Wi12
1983.7(50)	1^+		20(5)	0.24											1940	8829(5)	75Wi09	
1993.7(50)	1^-		400(40)	11.5						18				0.29	1949	8839(5)	75Wi09	76Wi12
1998.9(50)	1^+		35(7)	0.41											1955	8844(5)	75Wi09	
2000.6(50)	1^-		35(7)	0.99						5				0.10	1956	8846(5)	75Wi09	76Wi12
2019.4(50)	1^-		175(20)	4.65						10				0.28	1975	8847(5)	75Wi09	76Wi12
2010.8(50)	1^+		40(10)	0.45											1966	8855(5)	75Wi09	
2023.6(50)	1^+		29(7)	0.31											1979	8868(5)	75Wi09	
2027.3(50)	1^-		240(25)	6.25						99				0.40	1982	8872(5)	75Wi09	76Wi12
2034.1(50)	1^+		11(5)	0.12											1989	8878(5)	75Wi09	
2042.8(50)	1^-		53(10)	1.31						267				0.50	1997	8887(5)	75Wi09	76Wi12
2045.6(50)	1^-		350(35)	8.60						207				0.31	2000	8890(5)	75Wi09	76Wi12
2048.9(50)	1^-		63(10)	1.53						180				0.61	2003	8893(5)	75Wi09	76Wi12
2049.9(50)	1^+		16(5)	0.16											2004	8894(5)	75Wi09	
2059.2(50)	3^-		40(10)	0.94											2013	8903(5)	75Wi09	
2066.3(51)	1^+		70(10)	0.67											2020	8910(5)	75Wi09	
2065.8(50)	1^-		242(25)	5.60						568				0.75	2020	8910(5)	75Wi09	76Wi12
2075.0(50)	1^-		35(7)	0.79						68				0.86	2029	8919(5)	75Wi09	76Wi12
2080.9(50)	1^+		30(7)	0.28											2035	8924(5)	75Wi09	
2084.4(50)	1^+		70(15)	0.64											2038	8927(5)	75Wi09	
2093.2(50)	1^-		64(10)	1.37						82				0.28	2047	8937(5)	75Wi09	76Wi12
2106.2(50)	1^-		19(5)	0.39						150				0.55	2059	8949(5)	75Wi09	76Wi12
2107.8(50)	$\langle 3^- \rangle$		25(7)	0.51											2061	8950(5)	75Wi09	
2107.4(50)	1^-		15(5)	0.31						220				0.61	2061	8951(5)	75Wi09	76Wi12
2118.3(50)	1^+		125(15)	1.05											2071	8960(5)	75Wi09	
2120.0(50)	1^-		60(10)	1.19						66				0.29	2073	8963(5)	75Wi09	76Wi12
2123.0(50)	$\langle 3^- \rangle$		25(7)	0.49											2076	8965(5)	75Wi09	
2124.2(50)	1^-		30(7)	0.59						61				0.81	2077	8967(5)	75Wi09	76Wi12
2126.1(50)	1^+		55(10)	0.45											2079	8968(5)	75Wi09	
2141.8(50)	1^-		48(10)	0.89						16				0.55	2094	8984(5)	75Wi09	76Wi12

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.	
2147.8(50)	1^+		43(10)	0.33											2100	8989(5)	75Wi09	
2155.9(50)	1^-		40(10)	0.72						24				0.26	2108	8998(5)	75Wi09	76Wi12
2157.3(50)	1^+		10(5)	0.08											2109	8999(5)	75Wi09	
2166.8(50)	$\langle 3^- \rangle$		10(5)	0.17											2119	9008(5)	75Wi09	
2170.0(50)	1^+		131(15)	0.96											2122	9011(5)	75Wi09	
2174.8(50)	1^+		40(10)	0.29											2127	9016(5)	75Wi09	
2177.1(50)	1^-		11(5)	0.19						165				0.38	2129	9019(5)	75Wi09	76Wi12
2178.3(50)	$\langle 3^- \rangle$		10(5)	0.17											2130	9019(5)	75Wi09	
2182.2(50)	1^-		57(10)	0.95											2134	9023(5)	75Wi09	
2189.0(50)	$\langle 1^- \rangle$		17(5)	0.28											2140	9030(5)	75Wi09	
2193.1(50)	1^+		73(10)	0.51											2144	9034(5)	75Wi09	
2193.5(50)	1^+		10(5)	0.07											2145	9034(5)	75Wi09	
2195.1(50)	$\langle 3^- \rangle$		5(3)	0.08											2146	9036(5)	75Wi09	
2197.7(50)	1^+		20(5)	0.14											2149	9038(5)	75Wi09	
2207.9(50)	1^-		40(10)	0.61											2159	9048(5)	75Wi09	
2215.5(50)	1^+		140(15)	0.92											2166	9056(5)	75Wi09	
2219.4(50)	3^-		48(10)	0.73											2170	9059(5)	75Wi09	
2219.8(50)	$\langle 1^- \rangle$		8(5)	0.12											2171	9060(5)	75Wi09	
2224.4(50)	1^-		75(15)	1.12											2175	9064(5)	75Wi09	
2229.6(50)	$\langle 3^- \rangle$		5(3)	0.07											2180	9069(5)	75Wi09	
2235.7(50)	1^+		130(15)	0.82											2186	9075(5)	75Wi09	
2237.6(50)	$\langle 1^- \rangle$		15(5)	0.22											2188	9077(5)	75Wi09	
2240.0(50)	1^+		800(80)	4.98											2190	9079(5)	75Wi09	
2241.8(50)	3^-		45(10)	0.64											2192	9081(5)	75Wi09	
2243.1(50)	$\langle 1^- \rangle$		15(5)	0.21											2193	9083(5)	75Wi09	
2249.5(50)	1^+		35(7)	0.21											2200	9089(5)	75Wi09	
2251.9(50)	$\langle 5^+ \rangle$		5(3)	0.35											2202	9091(5)	75Wi09	76Bi0A
2252.3(50)	1^-		40(10)	0.56											2202	9092(5)	75Wi09	
2253.1(50)	$\langle 3^- \rangle$		10(5)	0.14											2203	9092(5)	75Wi09	
2255.0(50)	1^-		28(7)	0.39											2205	9094(5)	75Wi09	
2261.3(50)	1^+		13(5)	0.08											2211	9100(5)	75Wi09	
2266.6(50)	1^-		173(20)	2.32											2216	9106(5)	75Wi09	
2269.4(50)	$\langle 5^+ \rangle$		9(5)	0.60											2219	9108(5)	75Wi09	76Bi0A
2272.9(50)	1^+		12(5)	0.07											2222	9112(5)	75Wi09	
2273.7(50)	$\langle 5^+ \rangle$		5(3)	0.33											2223	9112(5)	75Wi09	76Bi0A
2279.7(50)	$\langle 1^- \rangle$		15(5)	0.19											2229	9118(5)	75Wi09	
2280.3(50)	1^-		40(10)	0.52											2230	9119(5)	75Wi09	
2286.1(50)	$\langle 5^+ \rangle$		7(5)	0.45											2235	9125(5)	75Wi09	76Bi0A
2288.9(50)	1^+		15(5)	0.08											2238	9127(5)	75Wi09	
2293.9(50)	1^+		15(5)	0.08											2243	9132(5)	75Wi09	
2294.6(50)	$\langle 5^+ \rangle$		5(3)	0.31											2244	9133(5)	75Wi09	76Bi0A
2297.3(50)	$\langle 5^+ \rangle$		5(3)	0.31											2246	9136(5)	75Wi09	76Bi0A
2299.7(50)	1^-		70(10)	0.87											2249	9138(5)	75Wi09	
2306.9(50)	1^-		35(7)	0.43											2256	9145(5)	75Wi09	
2312.5(50)	1^+		10(5)	0.05											2261	9150(5)	75Wi09	

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	E_cm [keV]	E^* [keV]	Ref.		
2315.0(50)	$\langle 5^+\rangle$		15(5)	0.87						0.9	1.75	2264	9153(5)	85Mi0A	75Wi09	76Bi0A
2317.5(50)	1^-		50(10)	0.59								2266	9155(5)	75Wi09		
2320.0(50)	1^+		35(7)	0.18								2268	9158(5)	75Wi09		
2323.3(50)	1^-		30(7)	0.35								2272	9161(5)	75Wi09		
2326.6(50)	1^-		35(7)	0.41								2275	9164(5)	75Wi09		
2330.4(50)	1^+		100(15)	0.51								2279	9168(5)	75Wi09		
2338.3(50)	1^-		40(10)	0.45								2286	9176(5)	75Wi09		
2341.9(50)	1^+		100(15)	0.50								2290	9179(5)	75Wi09		
2343.6(50)	$\langle 3^-\rangle$		10(5)	0.11								2292	9181(5)	75Wi09		
2346.4(50)	1^-		40(10)	0.44								2294	9184(5)	75Wi09		
2347.0(50)	3^-		40(10)	0.44								2295	9184(5)	75Wi09		
2353.2(50)	3^-		30(7)	0.33								2301	9190(5)	75Wi09		
2357.5(50)	1^+		5(3)	0.02								2305	9194(5)	75Wi09		
2358.2(50)	1^+		15(5)	0.07								2306	9195(5)	75Wi09		
2361.0(50)	$\langle 5^+\rangle$		7(5)	0.36								2309	9198(5)	75Wi09	76Bi0A	
2363.9(50)	$\langle 5^+\rangle$		8(5)	0.41								2311	9201(5)	75Wi09	76Bi0A	
2368.1(50)	1^+		50(10)	0.24								2316	9205(5)	75Wi09		
2368.6(50)	1^-		500(50)	5.25								2316	9205(5)	75Wi09		
2375.0(50)	3^+		8	0.37						3	2.96	2322	9211(5)	85Mi0A		
2377.3(50)	$\langle 1^-\rangle$		15(5)	0.15								2325	9214(5)	75Wi09		
2380.1(50)	$\langle 3^-\rangle$		5(3)	0.05								2327	9216(5)	75Wi09		
2380.5(50)	$\langle 3^-\rangle$		15(5)	0.15								2328	9217(5)	75Wi09		
2389.9(50)	$\langle 5^+\rangle$		3(2)	0.14								2337	9226(5)	75Wi09	76Bi0A	
2390.5(50)	$\langle 3^-\rangle$		10(5)	0.10								2337	9227(5)	75Wi09		
2393.5(50)	5^+		5(3)	0.24						3	2.70	2340	9230(5)	85Mi0A	75Wi09	
2395.2(50)	1^+		10(5)	0.04								2342	9231(5)	75Wi09		
2401.1(50)	$\langle 1^-\rangle$		15(5)	0.15								2348	9237(5)	75Wi09		
2402.6(50)	$\langle 1^-\rangle$		5(3)	0.05								2349	9238(5)	75Wi09		
2403.9(50)	1^-		250(25)	2.42								2351	9240(5)	75Wi09		
2411.2(50)	$\langle 3^-\rangle$		20(5)	0.19								2358	9247(5)	75Wi09		
2413.7(50)	1^-		50(10)	0.47								2360	9249(5)	75Wi09		
2415.6(50)	1^+		40(10)	0.17								2362	9251(5)	75Wi09		
2421.9(50)	1^+		40(10)	0.17								2368	9257(5)	75Wi09		
2424.7(50)	1^-		350(35)	3.24								2371	9260(5)	75Wi09		
2433.2(50)	3^+		12	0.51						2	1.78	2379	9268(5)	85Mi0A		
2438.3(50)	$\langle 1^-\rangle$		10(5)	0.09								2384	9273(5)	75Wi09		
2441.2(50)	$\langle 3^-\rangle$		25(7)	0.22								2387	9276(5)	75Wi09		
2445.4(50)	1^+		175(20)	0.71								2391	9280(5)	75Wi09		
2448.2(50)	3^+,5^+		3(2)	0.13								2394	9283(5)	75Wi09		
2455.5(50)	1^-		100(15)	0.87								2401	9290(5)	75Wi09		
2456.8(50)	1^+		100(15)	0.39								2402	9291(5)	75Wi09		
2458.3(50)	3^-		45(10)	0.39								2404	9293(5)	75Wi09		
2458.7(50)	1^+		15(5)	0.06								2404	9293(5)	75Wi09		
2459.9(50)	$\langle 1^-\rangle$		5(3)	0.04								2405	9295(5)	75Wi09		
2460.7(50)	$\langle 3^-\rangle$		15(5)	0.13								2406	9295(5)	75Wi09		

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$	$2J^\pi$	ℓ	Γ_p	γ^2_p	Rel.int.	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$	I_γ	$\Gamma_{\mathrm{p}'}$	$\gamma^2_{\mathrm{p}'}$	$2s_{\mathrm{p}'}$	ℓ	E_cm	E^*	Ref.	
[keV]			[eV]	[keV]	γ_i			[keV]	γ_i	[eV]	[keV]			[keV]	[keV]		
2463.8(50)	1^+		100(15)	0.39										2409	9298(5)	75Wi09	
2467.3(50)	1^-		85(15)	0.72										2413	9302(5)	75Wi09	
2472.7(50)	1^-		150(15)	1.25										2418	9307(5)	75Wi09	
2474.3(50)	5^+		3(2)	0.11						0.9	0.25			2419	9309(5)	85Mi0A	75Wi09
2475.0(50)	5^+		3	0.11						3	0.71			2420	9309(5)	85Mi0A	
2482.0(50)	$\langle 1^- \rangle$		5(3)	0.04										2427	9316(5)	75Wi09	
2483.8(50)	1^+		20(5)	0.08										2429	9318(5)	75Wi09	
2485.2(50)	$\langle 3^- \rangle$		15(5)	0.12										2430	9319(5)	75Wi09	
2490.8(50)	$\langle 3^- \rangle$		10(5)	0.08										2435	9325(5)	75Wi09	
2496.5(50)	1^-		85(15)	0.67										2441	9330(5)	75Wi09	
2497.7(50)	1^-		40(10)	0.32										2442	9331(5)	75Wi09	
2503.6(50)	3^+,5^+		7(5)	0.25										2448	9337(5)	75Wi09	
2508.4(50)	1^-		35(7)	0.27										2453	9342(5)	75Wi09	
2508.4(50)	3^-		18	0.13						4	2.03			2453	9342(5)	85Mi0A	
2509.4(50)	$\langle 1^- \rangle$		20(5)	0.15										2454	9343(5)	75Wi09	
2509.4(50)	3^-		10	0.08						0.7	0.38			2454	9343(5)	85Mi0A	
2513.1(50)	3^+		3	0.10						3	1.30			2457	9347(5)	85Mi0A	
2515.3(50)	3^+,5^+		8(5)	0.28										2459	9348(5)	75Wi09	
2515.7(50)	1^+		60(10)	0.21										2460	9349(5)	75Wi09	
2517.7(50)	$\langle 1^- \rangle$		10(5)	0.08										2462	9351(5)	75Wi09	
2517.7(50)	3^-		5	0.04						0.6	0.32			2462	9351(5)	85Mi0A	
2518.7(50)	5^+		13(5)	0.45						2	0.97			2463	9351(5)	85Mi0A	75Wi09
2519.6(50)	1^-		50(10)	0.38										2464	9352(5)	75Wi09	
2520.8(50)	1^+		150(15)	0.53										2465	9354(5)	75Wi09	
2522.4(50)	3^+		23	0.77						2	0.98			2466	9355(5)	85Mi0A	
2522.5(50)	3^-		35(7)	0.26						1	0.49			2466	9355(5)	85Mi0A	75Wi09
2525.3(50)	3^+,5^+		7(5)	0.24										2469	9358(5)	75Wi09	
2529.3(50)	5^+		7(5)	0.23						3	1.47			2473	9362(5)	85Mi0A	75Wi09
2530.3(50)	3^+,5^+		3(2)	0.10										2474	9363(5)	75Wi09	
2531.7(50)	1^-		70(10)	0.52										2475	9364(5)	75Wi09	
2533.7(50)	1^+		200(20)	0.69										2477	9366(5)	75Wi09	
2534.7(50)	1^+		20(5)	0.07										2478	9367(5)	75Wi09	
2545.5(50)	3^-		10(5)	0.07						2	0.69			2489	9378(5)	85Mi0A	75Wi09
2549.7(50)	5^+		10(5)	0.32						2	0.95			2493	9382(5)	85Mi0A	75Wi09
2550.3(50)	1^+		50(10)	0.17										2494	9382(5)	75Wi09	
2554.3(50)	3^-		115(15)	0.80						1	0.58			2498	9386(5)	85Mi0A	75Wi09
2554.9(50)	3^-		10(5)	0.36						0.9	0.36			2498	9387(5)	85Mi0A	75Wi09
2557.1(50)	3^-		3	0.02						3	1.01			2500	9390(5)	85Mi0A	75Wi09
2558.9(50)	1^-		60(10)	0.42										2502	9391(5)	75Wi09	
2561.9(50)	1^+		20(5)	0.07										2505	9394(5)	75Wi09	
2563.1(50)	3^-		20(5)	0.14						2	0.95			2506	9395(5)	85Mi0A	75Wi09
2564.6(50)	$\langle 1^- \rangle$		10(5)	0.17										2508	9397(5)	75Wi09	
2565.6(50)	3^+,5^+		10(5)	0.31										2509	9398(5)	75Wi09	
2566.0(50)	3^-		50(10)	0.34						5	2.03			2509	9398(5)	85Mi0A	75Wi09
2566.8(50)	3^+		5	0.14						7	3.83			2510	9399(5)	85Mi0A	

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	E_cm [keV]	E^* [keV]	Ref.	
2569.5(50)	5^+		10(5)	0.30						2	0.55			2512	9402(5)	85Mi0A	75Wi09
2575.5(50)	3^+,5^+		7(5)	0.21										2518	9408(5)	75Wi09	
2575.9(50)	3^+,5^+		3(2)	0.09										2519	9408(5)	75Wi09	
2577.4(50)	1^+		50(10)	0.16										2520	9409(5)	75Wi09	
2578.5(50)	3^+,5^+		10(5)	0.30										2521	9410(5)	75Wi09	
2581.8(50)	3^-		5(3)	0.03						1	0.34			2524	9414(5)	85Mi0A	75Wi09
2582.8(50)	1^+		72(10)	0.23										2525	9415(5)	75Wi09	
2586.4(50)	1^+		50(10)	0.16										2529	9418(5)	75Wi09	
2587.2(50)	3^-		60(10)	0.39						6	1.84			2530	9419(5)	85Mi0A	75Wi09
2591.1(50)	3^-		15	0.10						1	0.36			2534	9423(5)	85Mi0A	75Wi09
2594.9(50)	1^+		125(15)	0.38										2537	9427(5)	75Wi09	
2597.5(50)	3^-		20(5)	0.13						7	2.23			2540	9429(5)	85Mi0A	75Wi09
2598.7(50)	$\langle 1^- \rangle$		5(3)	0.03										2541	9430(5)	75Wi09	
2599.7(50)	$\langle 1^- \rangle$		20(5)	0.13										2542	9431(5)	75Wi09	
2600.2(50)	1^-		35(10)	0.35										2542	9432(5)	75Wi09	
2602.6(50)	5^+		23(5)	0.65						6	2.51			2545	9434(5)	85Mi0A	75Wi09
2610.1(50)	5^+		7(5)	0.19						5	1.99			2552	9441(5)	85Mi0A	75Wi09
2614.7(50)	3^-		160(15)	0.99						20	5.88			2557	9446(5)	85Mi0A	75Wi09
2615.7(50)	1^-		400(40)	2.50										2558	9447(5)	75Wi09	
2619.5(50)	1^+		80(15)	0.24										2561	9451(5)	75Wi09	
2620.2(50)	3^-		75(15)	0.46						2	0.45			2562	9451(5)	85Mi0A	75Wi09
2622.5(50)	3^-		140(15)	0.85						12	3.40			2564	9453(5)	85Mi0A	75Wi09
2624.5(50)	1^-		200(20)	1.23										2566	9455(5)	75Wi09	
2630.4(50)	3^-		160(15)	0.96						34	9.16			2572	9461(5)	85Mi0A	75Wi09
2631.0(50)	3^-		125(15)	0.75						13	3.37			2573	9462(5)	85Mi0A	75Wi09
2631.8(50)	3^-		60(10)	0.36						10	2.68			2573	9463(5)	85Mi0A	75Wi09
2632.7(50)	1^+		20(5)	0.06										2574	9463(5)	75Wi09	
2639.2(50)	3^+		15	0.39						10	1.37			2581	9470(5)	85Mi0A	
2640.3(50)	3^-		80(15)	0.47						17	4.36			2582	9471(5)	85Mi0A	75Wi09
2644.4(50)	5^+		10(5)	0.26						14	4.33			2586	9475(5)	85Mi0A	75Wi09
2646.1(50)	1^-		190(20)	1.12										2587	9477(5)	75Wi09	
2647.9(50)	1^-		220(20)	1.29										2589	9478(5)	75Wi09	
2648.0(50)	1^+		25(7)	0.07										2589	9478(5)	75Wi09	
2650.3(50)	5^+		7(5)	0.18						1	0.41			2591	9481(5)	85Mi0A	75Wi09
2651.8(50)	1^+		40(10)	0.11										2593	9482(5)	75Wi09	
2652.4(50)	3^-		60(10)	0.35						3	0.72			2594	9483(5)	85Mi0A	75Wi09
2655.1(50)	1^-		60(10)	0.35										2596	9485(5)	75Wi09	
2656.1(50)	1^-		125(15)	0.72										2597	9486(5)	75Wi09	
2661.4(50)	3^+		15	0.37						3	2.83			2602	9492(5)	85Mi0A	
2662.9(50)	5^+		25	0.62						4	1.03			2604	9493(5)	85Mi0A	
2666.6(50)	1^-		150(15)	0.85										2607	9497(5)	75Wi09	
2668.2(50)	1^-		70(10)	0.40										2609	9498(5)	75Wi09	
2673.6(50)	1^-		350(35)	1.96										2614	9503(5)	75Wi09	
2673.9(50)	1^+		75(15)	0.20										2615	9504(5)	75Wi09	
2677.6(50)	1^+		250(25)	0.67										2618	9507(5)	75Wi09	

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	E_cm [keV]	E^* [keV]	Ref.	
2678.0(50)	1^+		150(15)	0.40										2618	9508(5)	75Wi09	
2684.5(50)	1^-		40(10)	0.22										2625	9514(5)	75Wi09	
2684.5(50)	3^-		20	0.11						4	0.76			2625	9514(5)	85Mi0A	
2687.9(50)	1^+		30(7)	0.08										2628	9517(5)	75Wi09	
2688.2(50)	1^+		10(5)	0.03										2629	9518(5)	75Wi09	
2690.4(50)	1^+		90(15)	0.24										2631	9520(5)	75Wi09	
2692.0(50)	5^+		20(5)	0.46						1	0.46			2632	9521(5)	85Mi0A	75Wi09
2696.3(50)	$\langle 1^- \rangle$		10(5)	0.05										2636	9526(5)	75Wi09	
2698.7(50)	1^+		40(10)	0.10										2639	9528(5)	75Wi09	
2699.4(50)	3^+,5^+		15(5)	0.35										2639	9529(5)	75Wi09	
2700.3(50)	1^-		90(15)	0.48										2640	9530(5)	75Wi09	
2709.9(50)	5^+		10	0.22						6	1.13			2650	9539(5)	85Mi0A	
2712.5(50)	1^-		75(15)	0.39										2652	9541(5)	75Wi09	
2717.3(50)	1^+		90(15)	0.23										2657	9546(5)	75Wi09	
2721.0(50)	$\langle 1^- \rangle$		15(5)	0.08										2661	9550(5)	75Wi09	
2721.0(50)	3^-		8	0.04						2	0.30			2661	9550(5)	85Mi0A	
2722.4(50)	5^+		7(5)	0.15						1	0.15			2662	9551(5)	85Mi0A	75Wi09
2723.2(50)	1^+		15(5)	0.04										2663	9552(5)	75Wi09	
2727.8(50)	1^-		35(7)	0.18										2667	9556(5)	75Wi09	
2728.5(50)	1^-		140(15)	0.71										2668	9557(5)	75Wi09	
2731.4(50)	$\langle 1^- \rangle$		25(7)	0.13										2671	9560(5)	75Wi09	
2732.5(50)	1^-		55(10)	0.28										2672	9561(5)	75Wi09	
2732.5(50)	3^-		28	0.14						2	0.25			2672	9561(5)	85Mi0A	
2735.2(50)	5^+		7(5)	0.15						1	0.22			2674	9564(5)	85Mi0A	75Wi09
2737.4(50)	3^+		11	0.22						3	0.57			2677	9566(5)	85Mi0A	
2739.8(50)	5^+		13(5)	0.27						1	0.28			2679	9568(5)	85Mi0A	75Wi09
2740.5(50)	$\langle 1^- \rangle$		15(5)	0.07										2680	9569(5)	75Wi09	
2741.7(50)	1^-		30(7)	0.15										2681	9570(5)	75Wi09	
2741.7(50)	3^-		15	0.07						2	0.28			2681	9570(5)	85Mi0A	
2742.7(50)	3^+		15	0.31						20	1.98			2682	9571(5)	85Mi0A	
2746.2(50)	1^-		175(20)	0.86										2685	9574(5)	75Wi09	
2747.2(50)	1^+		10(5)	0.02										2686	9575(5)	75Wi09	
2748.6(50)	5^+		3(2)	0.06						2	0.23			2688	9577(5)	85Mi0A	75Wi09
2750.1(50)	3^+,5^+		10(5)	0.20										2689	9578(5)	75Wi09	
2753.6(50)	1^+		10(5)	0.02										2692	9582(5)	75Wi09	
2755.3(50)	3^+,5^+		3(2)	0.07										2694	9583(5)	75Wi09	
2760.3(50)	1^-		30(7)	0.14										2699	9588(5)	75Wi09	
2761.6(50)	5^+		12(5)	0.24						7	0.63			2700	9590(5)	85Mi0A	75Wi09
2764.8(50)	1^-		450(50)	2.15										2703	9593(5)	75Wi09	
2767.4(50)	1^+		300(30)	0.70										2706	9595(5)	75Wi09	
2768.6(50)	5^+		33	0.66						4	0.70			2707	9596(5)	85Mi0A	
2771.3(50)	1^+		20(5)	0.05										2710	9599(5)	75Wi09	
2774.7(50)	3^-		60(15)	0.28						1	0.16			2713	9602(5)	85Mi0A	75Wi09
2775.0(50)	1^+		15(5)	0.03										2713	9603(5)	75Wi09	
2777.3(50)	5^+		8	0.15						8	0.39			2716	9605(5)	85Mi0A	

(continued)

$^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	E_cm [keV]	E^* [keV]	Ref.	
2779.5(50)	3^+,5^+			0.04										2718	9607(5)	75Wi09	
2782.7(50)	$\langle 1^- \rangle$		25(5)	0.12										2721	9610(5)	75Wi09	
2785.2(50)	5^+		15(5)	0.29						4	0.50			2723	9613(5)	85Mi0A	75Wi09
2787.6(50)	1^-		35(10)	0.16										2726	9615(5)	75Wi09	
2787.6(50)	3^-		18	0.08						4	0.45			2726	9615(5)	85Mi0A	
2789.5(50)	5^+		27	0.50						8	0.75			2728	9617(5)	85Mi0A	
2790.0(50)	$\langle 1^- \rangle$		20(7)	0.09										2728	9617(5)	75Wi09	
2792.3(50)	5^+		40(10)	0.75						1	0.16			2730	9620(5)	85Mi0A	75Wi09
2793.4(50)	$\langle 1^- \rangle$		25(10)	0.11										2731	9621(5)	75Wi09	
2793.4(50)	3^-		13	0.06						13	1.52			2731	9621(5)	85Mi0A	
2794.6(50)	1^-		30(10)	0.14										2733	9622(5)	75Wi09	
2794.6(50)	3^-		15	0.07						2	0.22			2733	9622(5)	85Mi0A	
2796.5(50)	$\langle 1^- \rangle$		25(10)	0.11										2734	9624(5)	75Wi09	
2796.5(50)	3^-		13	0.06						0.8	0.10			2734	9624(5)	85Mi0A	
2798.3(50)	1^+		20(7)	0.04										2736	9625(5)	75Wi09	
2799.2(50)	5^+		37(10)	0.68						2	0.26			2737	9626(5)	85Mi0A	75Wi09
2802.7(50)	1^+		500(60)	1.11										2740	9630(5)	75Wi09	
2804.9(50)	1^-		250(30)	1.11										2743	9632(5)	75Wi09	
2804.9(50)	3^-		125	0.55						2	0.22			2743	9632(5)	85Mi0A	
2805.6(50)	3^-		75(20)	0.33						5	0.61			2743	9633(5)	85Mi0A	75Wi09
2809.3(50)	$\langle 1^- \rangle$		10(5)	0.04										2747	9636(5)	75Wi09	
2809.3(50)	3^-		5	0.02						8	0.85			2747	9636(5)	85Mi0A	
2810.5(50)	1^+		90(20)	0.20										2748	9637(5)	75Wi09	
2811.5(50)	5^+		13	0.24						5	0.64			2749	9638(5)	85Mi0A	
2812.9(50)	5^+		15(5)	0.27						18	1.74			2750	9640(5)	85Mi0A	75Wi09
2822.9(50)	3^-		35(10)	0.15						2	0.26			2760	9649(5)	85Mi0A	75Wi09
2824.1(50)	5^+		13	0.23						16	1.68			2761	9651(5)	85Mi0A	
2826.4(50)	1^-		60(15)	0.26										2764	9653(5)	75Wi09	
2827.7(50)	$\langle 1^- \rangle$		10(5)	0.04										2765	9654(5)	75Wi09	
2830.1(50)	1^+		30(10)	0.06										2767	9656(5)	75Wi09	
2830.9(50)	3^+,5^+		15(5)	0.26										2768	9657(5)	75Wi09	
2835.4(50)	$\langle 1^- \rangle$		15(5)	0.06										2772	9662(5)	75Wi09	
2840.2(50)	1^-		150(20)	0.63										2777	9666(5)	75Wi09	
2842.2(50)	3^-		95(20)	0.39						10	0.94			2779	9668(5)	85Mi0A	75Wi09
2843.4(50)	5^+		4	0.07						2	0.39			2780	9669(5)	85Mi0A	
2843.8(50)	$\langle 1^- \rangle$		10(5)	0.04										2781	9670(5)	75Wi09	
2843.8(50)	3^-		5	0.02						2	0.23			2781	9670(5)	85Mi0A	
2845.1(50)	3^-		30(10)	0.12						9	0.86			2782	9671(5)	85Mi0A	75Wi09
2846.7(50)	5^+		40(10)	0.67						14	0.88			2783	9673(5)	85Mi0A	75Wi09
2848.4(50)	3^+		15	0.25						4	1.34			2785	9674(5)	85Mi0A	
2849.0(50)	1^+		450(50)	0.94										2786	9675(5)	75Wi09	
2853.6(50)	3^+		20	0.33						15	1.20			2790	9679(5)	85Mi0A	
2856.4(50)	1^-		45(15)	0.18										2793	9682(5)	75Wi09	
2857.1(50)	$\langle 1^- \rangle$		10(5)	0.04										2794	9683(5)	75Wi09	
2857.1(50)	3^-		10	0.04						15	1.36			2794	9683(5)	85Mi0A	

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	E_cm [keV]	E^* [keV]	Ref.	
2860.2(50)	5^+		10	0.16						6	0.62			2797	9686(5)	85Mi0A	
2860.6(50)	5^+		8(5)	0.13						9	1.23			2797	9686(5)	85Mi0A	75Wi09
2862.1(50)	3^-		15(5)	0.06						12	1.03			2799	9688(5)	85Mi0A	75Wi09
2864.4(50)	3^-		35(10)	0.14						2	0.19			2801	9690(5)	85Mi0A	75Wi09
2865.0(50)	1^+		180(25)	0.37										2801	9691(5)	75Wi09	
2865.5(50)	1^-		350(40)	1.41										2802	9691(5)	75Wi09	
2868.1(50)	$\langle 1^- \rangle$		10(5)	0.04										2804	9694(5)	75Wi09	
2869.0(50)	$\langle 1^- \rangle$		10(5)	0.04										2805	9695(5)	75Wi09	
2869.5(50)	5^+		10	0.16						3	0.22			2806	9695(5)	85Mi0A	
2871.1(50)	1^+		325(35)	0.66										2807	9697(5)	75Wi09	
2872.8(50)	3^-		20(7)	0.08						16	1.36			2809	9698(5)	85Mi0A	75Wi09
2874.4(50)	5^+		7(5)	0.11						0.7	0.12			2811	9700(5)	85Mi0A	75Wi09
2876.6(50)	3^+		15(5)	0.24						8	0.31			2813	9702(5)	85Mi0A	75Wi09
2876.9(50)	3^+,5^+		7(5)	0.11										2813	9702(5)	75Wi09	
2877.4(50)	1^-		25(10)	0.10										2814	9703(5)	75Wi09	
2880.1(50)	5^+		20(7)	0.32						2	0.10			2816	9705(5)	85Mi0A	75Wi09
2881.6(50)	1^-		140(20)	0.55										2818	9707(5)	75Wi09	
2881.6(50)	3^-		70	0.27						3	0.28			2818	9707(5)	85Mi0A	
2885.6(50)	1^-		115(20)	0.45										2822	9711(5)	75Wi09	
2887.2(50)	1^+		175(25)	0.35										2823	9712(5)	75Wi09	
2888.0(50)	3^+,5^+		35(10)	0.55										2824	9713(5)	75Wi09	
2888.9(50)	3^+,5^+		15(5)	0.23										2825	9714(5)	75Wi09	
2889.3(50)	1^+		70(15)	0.14										2825	9714(5)	75Wi09	
2889.7(50)	3^-		60(15)	0.23						12	0.99			2826	9715(5)	85Mi0A	75Wi09
2894.4(50)	5^+		15(5)	0.23						1	0.13			2830	9719(5)	85Mi0A	75Wi09
2897.0(50)	1^-		50(15)	0.19										2833	9722(5)	75Wi09	
2897.8(50)	5^+		30	0.46						10	0.92			2833	9723(5)	85Mi0A	
2899.6(50)	1^+		40(10)	0.08										2835	9724(5)	75Wi09	
2900.9(50)	5^+		10	0.15						4	0.30			2836	9726(5)	85Mi0A	
2902.9(50)	3^+		40(10)	0.60						10	0.85			2838	9728(5)	85Mi0A	75Wi09
2904.0(50)	$\langle 1^- \rangle$		10(5)	0.04										2839	9729(5)	75Wi09	
2906.1(50)	1^-		40(10)	0.15										2842	9731(5)	75Wi09	
2906.1(50)	3^-		20	0.08						6	0.47			2842	9731(5)	85Mi0A	
2916.2(50)	1^-		40(10)	0.15										2851	9741(5)	75Wi09	
2916.2(50)	3^-		20	0.07						4	0.25			2851	9741(5)	85Mi0A	
2922.7(50)	1^-		40(10)	0.15										2858	9747(5)	75Wi09	
2928.3(50)	1^+		500(60)	0.94										2863	9752(5)	75Wi09	
2930.0(50)	1^+		350(40)	0.66										2865	9754(5)	75Wi09	
2930.3(50)	1^+		75(15)	0.14										2865	9754(5)	75Wi09	
2930.5(50)	$\langle 1^- \rangle$		25(5)	0.09										2865	9755(5)	75Wi09	
2930.5(50)	3^-		13	0.05						16	1.07			2865	9755(5)	85Mi0A	
2931.0(50)	5^+		35(10)	0.50						11	1.20			2866	9755(5)	85Mi0A	75Wi09
2931.2(50)	1^-		60(15)	0.22										2866	9755(5)	75Wi09	
2935.6(50)	5^+		7(5)	0.10						4	0.36			2870	9760(5)	85Mi0A	75Wi09
2937.8(50)	5^+		5(3)	0.07						6	0.43			2873	9762(5)	85Mi0A	75Wi09

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ_p^2 [keV]	Rel.int. γ_i	$2s_{p'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{p'}$ [eV]	$\gamma_{p'}^2$ [keV]	$2s_{p'}$	ℓ	$\Gamma_{p'}$ [eV]	$\gamma_{p'}^2$ [keV]	E_{cm} [keV]	E^* [keV]	Ref.
2938.7(50)	1^+		15(5)	0.03												2873	9763(5)	75Wi09
2940.2(50)	1^-		75(20)	0.27												2875	9764	75Wi09
2944.1(50)	1^-		50(15)	0.18												2879	9768	75Wi09
2944.1(50)	3^-		25	0.09						14	0.91					2879	9768	85Mi0A
2945.6(50)	5^+		11	0.16						6	0.23					2880	9769	85Mi0A
2947.1(50)	1^+		120(20)	0.22												2882	9771	75Wi09
2949.3(50)	1^-		50(15)	0.18												2884	9773	75Wi09
2949.3(50)	3^-		25	0.09						3	0.17					2884	9773	85Mi0A
2950.2(50)	5^+		7(5)	0.09						0.6	0.10					2885	9774	85Mi0A
2950.9(50)	3^+		8	0.11						13	1.30					2885	9775	85Mi0A
2952.5(50)	$\langle 1^- \rangle$		10(5)	0.04												2887	9776	75Wi09
2952.5(50)	3^-		8	0.03						23	1.42					2887	9776	85Mi0A
2954.1(50)	1^-		125(20)	0.44												2889	9778	75Wi09
2954.5	3	2	30	0.408		3	0			10	0.24							89Sm0A
2955.7	5	2	15	0.203		5	0			10	0.24							89Sm0A
2956.1	1	0	225	0.405														89Sm0A
2956.5	3	1	150	0.520		3	1			13	0.80	5	1	15	0.92			89Sm0A
2958.4	1	1	40	0.138														89Sm0A
2961.0	3	2	14	0.188														89Sm0A
2963.7	5	2	7	0.093		5	0			10	0.23							89Sm0A
2964.6	3	2	20	0.267		3	0			5	0.12							89Sm0A
2965.6	1	0	265	0.471														89Sm0A
2966.2	5	2	12	0.159		5	0			7	0.16							89Sm0A
2966.9	1	1	75	0.256		3	1			20	1.18							89Sm0A
2968.3	1	1	75	0.255														89Sm0A
2969.7	5	2	18	0.238														89Sm0A
2974.2	5	2	50	0.655		5	0			30	0.67							89Sm0A
2975.9	5	2	7	0.091														89Sm0A
2976.8	1	1	50	0.168														89Sm0A
2978.7	5	2	12	0.156		5	0			12	0.26							89Sm0A
2979.7	1	1	35	0.117		3	1			40	2.25							89Sm0A
2980.3	3	1	60	0.201														89Sm0A
2981.3	5	2	20	0.258		5	0			40	0.87							89Sm0A
2981.9	1	0	140	0.244														89Sm0A
2983.0	5	2	18	0.232		5	0			18	0.39							89Sm0A
2984.2	5	2	12	0.154														89Sm0A
2984.7	1	1	20	0.066														89Sm0A
2986.0	1	0	235	0.407														89Sm0A
2988.0	3	2	25	0.319		3	0			75	1.60							89Sm0A
2988.8	3	2	15	0.191														89Sm0A
2990.9	5	2	6	0.076		5	0			10	0.21							89Sm0A
2991.4	5	2	15	0.190														89Sm0A
2992.6	1	1	30	0.098		3	1			100	5.4							89Sm0A
2995.1	1	1	1400	4.590														89Sm0A
2995.7	3	1	25	0.081		3	1			25	1.32	5	1	25	1.32			89Sm0A

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
2999.5	1	0	15	0.025															89Sm0A
3000.8	5	2	20	0.249		5	0			30	0.61								89Sm0A
3001.3	3	1	45	0.146		3	1			30	1.56	5	1	30	1.57				89Sm0A
3002.5	5	2	70	0.872		5	0			10	0.20								89Sm0A
3003.5	1	0	25	0.042		3	2			15	4.55	5	2	15	4.55				89Sm0A
3003.8	1	1	100	0.323															89Sm0A
3005.7	3	1	200	0.645															89Sm0A
3007.6	3	1	15	0.048		3	1			10	0.51	5	1	10	0.51				89Sm0A
3010.6	1	1	125	0.400															89Sm0A
3011.5	3	1	60	0.192															89Sm0A
3012.6	3	2	20	0.244															89Sm0A
3013.4	3	1	20	0.063															89Sm0A
3014.9	5	2	15	0.182															89Sm0A
3016.2	5	2	17	0.206															89Sm0A
3017.1	5	2	20	0.242		5	0			10	0.19								89Sm0A
3017.7	1	0	55	0.091															89Sm0A
3018.9	1	1	50	0.158		3	1			20	0.97								89Sm0A
3019.4	5	2	15	0.181															89Sm0A
3019.6	5	2	25	0.302		5	0			20	0.38								89Sm0A
3019.8	5	2	35	0.422															89Sm0A
3021.6	5	2	20	0.240		5	0			20	0.38								89Sm0A
3022.8	5	2	10	0.120															89Sm0A
3023.0	1	0	40	0.066															89Sm0A
3025.2	3	2	30	0.358		3	0			50	0.94								89Sm0A
3026.3	1	0	60	0.099		3	2			40	11.08	5	2	40	11.1				89Sm0A
3027.1	1	1	40	0.125		3	1			100	4.72								89Sm0A
3027.4	1	1	180	0.563															89Sm0A
3030.2	3	1	12	0.037															89Sm0A
3030.2	3	1	12	0.037		3	1			15	0.70								89Sm0A
3031.3	1	1	18	0.056															89Sm0A
3034.7	3	2	10	0.117															89Sm0A
3039.1	5	2	20	0.233		5	0			10	0.18								89Sm0A
3040.1	1	0	100	0.162															89Sm0A
3041.6	1	1	20	0.061															89Sm0A
3042.3	5	2	17	0.197		5	0			10	0.18								89Sm0A
3044.3	1	1	15	0.045															89Sm0A
3046.8	1	0	275	0.443		3	2			20	5.11	5	2	20	5.11				89Sm0A
3047.8	3	1	30	0.091		3	1			20	0.88	5	1	20	0.88				89Sm0A
3048.1	5	2	25	0.287															89Sm0A
3049.3	3	1	18	0.054		3	1			10	0.44	5	1	10	0.44				89Sm0A
3051.6	5	2	3	0.034															89Sm0A
3053.4	5	2	3	0.034															89Sm0A
3054.4	3	2	35	0.397															89Sm0A
3055.1	3	1	27	0.081		3	1			40	1.71	5	1	40	1.71				89Sm0A
3056.6	1	0	225	0.358															89Sm0A

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3058.7	5	2	3	0.033															89Sm0A
3062.0	1	0	40	0.063															89Sm0A
3064.5	5	2	25	0.279		5	0			10	0.17								89Sm0A
3065.9	1	0	500	0.788		3	2			20	4.75	5	2	20	4.75				89Sm0A
3066.5	3	2	30	0.333															89Sm0A
3067.3	5	2	7	0.077															89Sm0A
3071.0	3	1	150	0.441															89Sm0A
3072.1	3	1	105	0.308		5	1			30	1.21								89Sm0A
3073.2	5	2	10	0.110															89Sm0A
3074.4	1	0	25	0.039															89Sm0A
3076.9	3	1	300	0.875															89Sm0A
3078.1	1	1	250	0.728															89Sm0A
3078.7	3	2	35	0.381															89Sm0A
3079.5	5	2	50	0.544		5	0			10	0.16								89Sm0A
3082.4	3	2	8	0.086															89Sm0A
3083.2	3	1	450	1.302		3	1			150	5.82	5	1	75	2.91				89Sm0A
3084.7	1	1	50	0.144															89Sm0A
3087.2	1	1	25	0.071															89Sm0A
3088.0	5	2	7	0.075															89Sm0A
3089.9	5	2	45	0.481															89Sm0A
3090.9	1	1	150	0.429															89Sm0A
3092.3	1	0	250	0.382															89Sm0A
3093.4	3	1	30	0.085		3	1			15	0.56	5	1	15	0.56				89Sm0A
3095.6	1	1	20	0.056															89Sm0A
3096.0	3	2	12	0.126															89Sm0A
3097.0	3	1	150	0.426															89Sm0A
3099.0	3	2	15	0.157		3	0			20	0.30								89Sm0A
3102.5	3	2	8	0.083															89Sm0A
3103.2	1	0	60	0.090															89Sm0A
3103.8	3	2	10	0.104															89Sm0A
3105.9	3	2	25	0.260															89Sm0A
3106.5	1	1	115	0.322															89Sm0A
3109.5	1	0	50	0.074															89Sm0A
3113.5	1	0	25	0.037															89Sm0A
3113.7	5	2	25	0.256															89Sm0A
3114.0	3	1	125	0.346		3	1			15	0.52	5	1	25	0.87				89Sm0A
3119.1	5	2	5	0.050															89Sm0A
3119.9	1	0	40	0.059															89Sm0A
3120.7	5	2	15	0.152		5	0			50	0.69								89Sm0A
3121.2	3	2	25	0.253															89Sm0A
3122.3	3	2	10	0.101															89Sm0A
3123.9	3	1	50	0.136															89Sm0A
3124.5	5	2	10	0.100		5	0			50	0.68								89Sm0A
3125.0	1	0	20	0.029															89Sm0A
3126.8	3	1	20	0.054															89Sm0A

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3127.0	1	0	175	0.257															89Sm0A
3129.1	1	1	1500	4.080															89Sm0A
3132.1	5	2	8	0.079															89Sm0A
3133.9	5	2	30	0.297		5	0			5	0.07								89Sm0A
3135.2	3	2	75	0.742		3	0			35	0.46								89Sm0A
3137.0	1	0	15	0.021															89Sm0A
3141.6	3	1	80	0.214		3	1			40	1.26	3	3	40	79.6				89Sm0A
3142.6	5	2	8	0.078		5	0			4	0.051								89Sm0A
3143.4	3	1	40	0.106		3	1			15	0.476	5	1	10	0.32				89Sm0A
3145.1	2	2	25	0.243		3	0			40	0.513								89Sm0A
3145.5	1	1	50	0.133															89Sm0A
3145.7	1	0	225	0.324															89Sm0A
3147.1	3	2	25	0.242															89Sm0A
3148.0	3	1	40	0.106		3	1			70	2.190								89Sm0A
3148.2	1	1	200	0.530															89Sm0A
3148.7	3	1	125	0.331		3	1			100	3.122	5	1	40	1.25				89Sm0A
3150.0	5	2	20	0.193															89Sm0A
3150.1	3	1	100	0.264		3	1			10	0.310	5	1	15	0.47				89Sm0A
3151.5	3	2	25	0.240															89Sm0A
3151.7	1	0	150	0.214															89Sm0A
3153.3	1	0	300	0.429															89Sm0A
3154.0	3	2	15	0.143															89Sm0A
3154.7	1	1	200	0.525		3	1			150	4.594								89Sm0A
3155.4	1	1	60	0.157		3	1			25	0.764								89Sm0A
3156.1	5	2	30	0.286		5	0			30	0.373								89Sm0A
3157.5	5	2	15	0.143		5	0			25	0.309								89Sm0A
3158.5	5	2	20	0.190		5	0			40	0.493								89Sm0A
3159.8	1	1	1250	3.265															89Sm0A
3160.4	5	2	50	0.474		5	0			25	0.306								89Sm0A
3161.1	1	1	500	1.303															89Sm0A
3162.6	1	1	60	0.156															89Sm0A
3163.1	3	2	70	0.661		3	0			50	0.609								89Sm0A
3163.5	3	1	100	0.259		5	1			15	0.446								89Sm0A
3163.9	3	1	60	0.155															89Sm0A
3164.1	1	0	150	0.211															89Sm0A
3164.4	5	2	125	1.179		5	0			40	0.485								89Sm0A
3167.3	5	2	75	0.704		5	0			40	0.481								89Sm0A
3170.2	1	1	500	1.288															89Sm0A
3170.8	1	1	75	0.193															89Sm0A
3174.8	3	1	40	0.102															89Sm0A
3175.5	1	0	500	0.697															89Sm0A
3176.0	3	2	12	0.111															89Sm0A
3176.6	5	2	12	0.110		5	0			30	0.351								89Sm0A
3180.9	3	2	20	0.183		3	0			40	0.462								89Sm0A
3182.3	1	1	115	0.291		3	1			25	0.701								89Sm0A

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3183.5	1	0	100	0.138															89Sm0A
3184.5	3	2	15	0.136															89Sm0A
3185.3	1	1	1500	3.791															89Sm0A
3185.7	1	0	400	0.551															89Sm0A
3186.1	5	2	40	0.364															89Sm0A
3186.6	3	2	100	0.909															89Sm0A
3189.6	3	1	20	0.050		3	1			15	0.411	3	3	35	57.6				89Sm0A
3191.3	1	0	225	0.308															89Sm0A
3191.7	3	2	23	0.207															89Sm0A
3193.5	5	2	18	0.161															89Sm0A
3194.8	3	1	20	0.049		3	1			15	0.404	3	3	30	48.4				89Sm0A
3196.4	1	0	300	0.409															89Sm0A
3197.0	5	2	15	0.134															89Sm0A
3197.4	5	2	10	0.089															89Sm0A
3199.1	1	1	60	0.148															89Sm0A
3200.4	3	1	25	0.061		3	1			15	0.397	5	1	5	0.13				89Sm0A
3201.1	3	2	10	0.088		3	0			20	0.218								89Sm0A
3202.0	1	1	500	1.237															89Sm0A
3202.4	1	0	40	0.054		3	2			40	5.778	5	2	40	5.78				89Sm0A
3202.9	1	1	40	0.098															89Sm0A
3204.9	1	1	30	0.073															89Sm0A
3205.5	5	2	60	0.529		5	0			150	1.617								89Sm0A
3207.8	1	1	30	0.073															89Sm0A
3208.2	1	0	150	0.202															89Sm0A
3211.8	5	2	45	0.393															89Sm0A
3212.5	3	1	35	0.085															89Sm0A
3214.6	3	2	15	0.130															89Sm0A
3215.7	5	2	10	0.086															89Sm0A
3216.0	1	1	100	0.243		3	1			100	2.529								89Sm0A
3217.3	1	0	700	0.933															89Sm0A
3219.4	3	1	25	0.060															89Sm0A
3219.9	5	2	50	0.431		5	0			75	0.776								89Sm0A
3220.9	3	1	75	0.181		3	1			30	0.747								89Sm0A
3222.6	1	1	200	0.482															89Sm0A
3223.2	1	1	3500	8.431															89Sm0A
3224.6	1	0	100	0.132															89Sm0A
3225.2	5	2	45	0.384															89Sm0A
3225.6	5	2	30	0.256															89Sm0A
3226.1	5	2	30	0.256															89Sm0A
3226.8	3	1	100	0.239															89Sm0A
3227.7	5	2	40	0.340		5	0			50	0.506								89Sm0A
3230.1	1	0	2000	2.632															89Sm0A
3232.5	5	2	20	0.169															89Sm0A
3233.2	3	1	40	0.095															89Sm0A
3234.4	1	1	5000	11877															89Sm0A

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3235.4	5	2	10	0.084															89Sm0A
3236.9	1	1	200	0.473															89Sm0A
3238.9	1	1	1750	4.133															89Sm0A
3239.6	1	0	75	0.097															89Sm0A
3242.9	5	2	40	0.332															89Sm0A
3243.0	1	0	300	0.389															89Sm0A
3244.7	3	2	40	0.331															89Sm0A
3248.7	5	2	15	0.123															89Sm0A
3250.0	5	2	10	0.082															89Sm0A
3251.3	3	2	15	0.123															89Sm0A
3251.5	1	0	125	0.160		3	2			15	1.835	5	2	15	1.835				89Sm0A
3251.8	5	2	15	0.123															89Sm0A
3254.1	5	2	13	0.106		5	0			30	0.282								89Sm0A
3257.2	1	0	25	0.032															89Sm0A
3259.9	1	1	30	0.069		3	1			15	0.332								89Sm0A
3260.6	3	2	25	0.202		3	0			25	0.231								89Sm0A
3261.8	1	1	50	0.114		3	1			25	0.551								89Sm0A
3262.2	1	0	250	0.318															89Sm0A
3262.6	3	2	20	0.161		3	0			30	0.276								89Sm0A
3265.6	1	1	300	0.685															89Sm0A
3266.9	5	2	20	0.160															89Sm0A
3267.6	1	1	15	0.034															89Sm0A
3268.5	5	2	25	0.199		5	0			50	0.453								89Sm0A
3269.2	1	1	300	0.682															89Sm0A
3270.2	1	0	100	0.126															89Sm0A
3272.5	1	1	250	0.566															89Sm0A
3273.6	1	1	40	0.090															89Sm0A
3279.1	5	2	15	0.117															89Sm0A
3279.4	1	0	125	0.156															89Sm0A
3279.9	3	2	20	0.157															89Sm0A
3280.4	1	1	35	0.078															89Sm0A
3282.5	3	1	20	0.044		3	1			50	1.039	3	3	50	57.986				89Sm0A
3283.2	1	0	30	0.037															89Sm0A
3284.1	1	1	45	0.100															89Sm0A
3286.5	3	2	15	0.116		3	0			30	0.259								89Sm0A
3289.0	1	1	75	0.166															89Sm0A
3290.1	3	2	20	0.154															89Sm0A
3293.9	3	2	25	0.192															89Sm0A
3294.1	1	0	275	0.339															89Sm0A
3294.6	3	2	35	0.268															89Sm0A
3295.8	5	2	14	0.107															89Sm0A
3295.8	3	2	20	0.153															89Sm0A
3296.0	1	0	125	0.153															89Sm0A
3296.5	5	2	14	0.107															89Sm0A
3299.2	3	2	15	0.114															89Sm0A

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3299.8	1	0	35	0.042															89Sm0A
3302.7	3	1	75	0.163		3	1			60	0.110	5	1	50	0.090				89Sm0A
3305.0	1	0	350	0.427		3	2			15	0.150	5	2	15	0.150				89Sm0A
3306.2	1	0	20	0.024		3	2			15	0.150	5	2	15	0.150				89Sm0A
3308.4	1	0	10	0.012															89Sm0A
3310.6	3	2	15	0.112															89Sm0A
3313.5	3	1	60	0.129		3	1			15	0.023	5	1	15	0.023				89Sm0A
3314.4	3	1	50	0.107		3	1			20	0.037	5	1	15	0.028				89Sm0A
3315.2	1	0	1250	1.510		3	2			20	0.199	5	2	20	0.199				89Sm0A
3316.7	1	1	20	0.043															89Sm0A
3317.8	1	1	40	0.085															89Sm0A
3320.0	3	1	85	0.182		3	1			10	0.018	5	1	10	0.018				89Sm0A
3321.5	1	0	30	0.036		3	2			30	0.292	5	2	30	0.292				89Sm0A
3322.8	1	0	150	0.179															89Sm0A
3323.4	3	1	30	0.064		3	1			30	0.555	5	1	25	0.463				89Sm0A
3324.8	5	2	15	0.109		5	0			20	0.156								89Sm0A
3325.3	1	0	600	0.718		3	2			30	2.894	5	2	30	2.894				89Sm0A
3325.5	1	1	45	0.095															89Sm0A
3326.9	5	2	50	0.365		5	0			5	0.039								89Sm0A
3327.1	1	1	125	0.265															89Sm0A
3327.7	1	1	50	0.106															89Sm0A
3330.2	3	2	20	0.145		3	0			10	0.077								89Sm0A
3330.5	1	1	20	0.042															89Sm0A
3331.1	3	2	15	0.108		3	0			10	0.077								89Sm0A
3333.2	3	2	50	0.362		3	0			15	0.115								89Sm0A
3336.2	5	2	25	0.180		5	2			25	2.331								89Sm0A
3336.5	1	0	50	0.059															89Sm0A
3337.2	3	2	15	0.107		3	0			30	0.228								89Sm0A
3338.5	3	2	10	0.071		3	0			15	0.113								89Sm0A
3339.8	3	2	40	0.286		3	0			25	0.188								89Sm0A
3341.2	1	0	150	0.176															89Sm0A
3343.5	1	0	150	0.176															89Sm0A
3343.7	1	1	75	0.156															89Sm0A
3344.2	3	2	25	0.178		3	0			50	0.373								89Sm0A
3345.2	5	2	10	0.071		5	0			20	0.149								89Sm0A
3347.5	3	2	275	1.949		3	2			20	1.800	5	2	40	3.600				89Sm0A
3351.3	3	2	15	0.105		5	2			15	1.334	5	4	15					89Sm0A
3351.4	1	1	50	0.103		3	1			100	1.715								89Sm0A
3353.0	3	2	50	0.351															89Sm0A
3353.2	1	0	450	0.524															89Sm0A
3353.7	5	2	14	0.098															89Sm0A
3354.1	3	2	15	0.105															89Sm0A
3356.3	3	2	25	0.174															89Sm0A
3358.9	3	2	30	0.209															89Sm0A
3359.1	1	0	350	0.405		3	2			25	2.175	5	2	25	2.175				89Sm0A

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3359.5	3	2	35	0.243															89Sm0A
3360.5	3	2	10	0.069															89Sm0A
3361.4	1	1	40	0.081															89Sm0A
3362.7	1	1	35	0.071															89Sm0A
3363.5	3	1	115	0.234															89Sm0A
3364.7	5	2	25	0.172		5	0			15	0.106								89Sm0A
3366.8	1	1	25	0.050															89Sm0A
3367.3	3	2	65	0.447		3	2			25	2.118	5	2	75	6.355				89Sm0A
3367.8	3	1	50	0.101		3	1			80	1.312	5	1	20	0.328				89Sm0A
3369.6	1	0	10	0.011		3	2			10	0.841	5	2	10	0.841				89Sm0A
3371.9	1	0	50	0.057															89Sm0A
3372.8	3	2	30	0.204		3	0			15	0.104								89Sm0A
3374.2	1	1	40	0.080		3	1			40	0.645								89Sm0A
3376.0	3	2	50	0.339															89Sm0A
3376.3	1	0	1000	1.140		3	2			25	2.061	5	2	25	2.061				89Sm0A
3376.9	3	2	40	0.271															89Sm0A
3379.1	5	2	40	0.270															89Sm0A
3380.3	1	0	100	0.113		3	2			20	1.629	5	2	20	1.629				89Sm0A
3385.5	3	1	50	0.099		3	1			15	0.234	5	1	25	0.391				89Sm0A
3386.5	1	0	15	0.016															89Sm0A
3388.0	5	2	50	0.333		5	0			25	0.167								89Sm0A
3389.8	1	0	1350	1.520		3	2			20	1.583	5	2	20	1.583				89Sm0A
3390.9	1	0	50	0.056		3	2			20	1.578	5	2	20	1.578				89Sm0A
3394.6	3	1	75	0.147		3	1			75	1.146								89Sm0A
3395.1	3	2	20	0.132		3	2			40	3.117	5	2	40	3.117				89Sm0A
3396.0	1	1	25	0.049															89Sm0A
3398.4	1	1	40	0.078															89Sm0A
3400.4	5	2	15	0.098															89Sm0A
3402.7	3	2	20	0.130		3	0			30	0.194								89Sm0A
3403.7	5	2	15	0.97		5	0			30	0.194								89Sm0A
3404.1	1	0	80	0.088															89Sm0A
3404.4	5	2	100	0.652		5	0			10	0.064								89Sm0A
3406.0	1	1	30	0.058		3	1			30	0.445								89Sm0A
3407.0	3	2	75	0.487															89Sm0A
3408.0	1	1	250	0.484															89Sm0A
3410.0	1	0	40	0.044		3	2			40	2.982	5	2	40	2.982				89Sm0A
3410.4	3	2	30	0.193		3	0			50	0.318								89Sm0A
3412.9	1	1	150	0.288		3	1			200	2.915								89Sm0A
3413.1	1	0	200	0.220															89Sm0A
3416.4	3	2	100	0.640															89Sm0A
3417.0	3	2	50	0.320		3	0			60	0.376								89Sm0A
3417.3	1	0	250	0.274															89Sm0A
3418.4	1	1	50	0.095															89Sm0A
3419.0	3	2	200	1.277		3	0			30	0.19*	3	2	30	2.178				89Sm0A
3420.3	3	2	15	0.095															89Sm0A

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3421.2	5	2	40	0.254		5	0			30	0.186								89Sm0A
3422.0	3	2	25	0.158		3	0			25	0.155								89Sm0A
3422.8	1	0	1300	1.420		3	2			50	3.591	5	2	50	3.591				89Sm0A
3423.4	5	2	20	0.126															89Sm0A
3423.7	1	1	35	0.066		3	1			35	0.496								89Sm0A
3424.0	3	2	14	0.088															89Sm0A
3424.4	1	1	20	0.038															89Sm0A
3426.5	3	1	50	0.094		3	1			25	0.351	5	1	25	0.351				89Sm0A
3427.0	5	2	17	0.107		5	0			30	0.183								89Sm0A
3428.1	3	2	20	0.126		5	2			40	2.829								89Sm0A
3431.6	1	1	50	0.094		3	1			50	0.694								89Sm0A
3432.0	1	0	100	0.108		3	2			100	6.992	5	2	100	6.992				89Sm0A
3432.4	1	1	850	1.602															89Sm0A
3432.9	5	2	10	0.062		5	0			10	0.060								89Sm0A
3435.3	3	2	15	0.093															89Sm0A
3435.9	1	1	250	0.469															89Sm0A
3436.6	1	1	100	0.187															89Sm0A
3438.2	1	1	50	0.093															89Sm0A
3438.6	1	0	125	0.134															89Sm0A
3439.0	5	2	25	0.155															89Sm0A
3439.6	1	1	125	0.233															89Sm0A
3444.0	3	2	60	0.369		3	0			25	0.147								89Sm0A
3444.7	3	1	70	0.130															89Sm0A
3445.0	1	0	100	0.107		3	2			25	1.683	5	2	25	1.683				89Sm0A
3445.2	5	2	50	0.307		5	0			10	0.058								89Sm0A
3449.0	3	2	50	0.305															89Sm0A
3449.2	1	0	450	0.480															89Sm0A
3449.8	5	2	12	0.073															89Sm0A
3450.6	1	1	100	0.184															89Sm0A
3451.0	1	0	50	0.053		3	2			40	2.647	5	2	40	2.647				89Sm0A
3452.1	3	2	20	0.121															89Sm0A
3453.4	3	2	15	0.091		3	0			45	0.259								89Sm0A
3454.4	1	1	25	0.046		3	1			50	0.656								89Sm0A
3456.7	1	0	150	0.159															89Sm0A
3456.9	1	1	75	0.137															89Sm0A
3457.4	1	1	150	0.275															89Sm0A
3458.6	3	2	300	1.811		3	0			100	0.570								89Sm0A
3459.9	3	2	50	0.301															89Sm0A
3460.1	1	0	500	0.528															89Sm0A
3460.7	3	2	30	0.180															89Sm0A
3461.9	3	1	100	0.182		3	1			80	1.030	5	1	80	1.030				89Sm0A
3464.2	3	2	150	0.898		3	0			100	0.563								89Sm0A
3464.4	1	0	300	0.315															89Sm0A
3464.5	3	1	75	0.136															89Sm0A
3465.4	5	2	18	0.107															89Sm0A

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3466.4	3	1	30	0.054															89Sm0A
3467.9	3	2	125	0.744		3	0			100	0.559								89Sm0A
3468.3	1	1	100	0.181															89Sm0A
3468.9	1	1	150	0.271															89Sm0A
3471.6	5	2	8	0.047															89Sm0A
3472.2	5	2	45	0.266		5	0			50	0.276								89Sm0A
3473.8	3	2	50	0.295															89Sm0A
3475.1	3	1	40	0.072		3	1			100	1.246								89Sm0A
3476.7	5	2	20	0.117		5	0			30	0.164								89Sm0A
3478.8	1	0	125	0.130		3	2			50	3.058	5	2	50	3.058				89Sm0A
3481.4	5	2	10	0.058		5	0			30	0.162								89Sm0A
3485.6	3	1	25	0.044		3	1			50	0.607	5	1	50	0.607				89Sm0A
3486.2	3	2	30	0.174															89Sm0A
3486.4	1	0	400	0.413															89Sm0A
3487.1	5	2	15	0.087															89Sm0A
3488.8	1	1	500	0.887															89Sm0A
3490.6	5	2	8	0.046		5	0			5	0.026								89Sm0A
3492.1	3	1	17	0.030		3	1			15	0.179	5	1	15	0.179				89Sm0A
3493.1	3	1	35	0.061															89Sm0A
3493.4	1	0	40	0.041		3	2			60	3.523	5	2	60	3.523				89Sm0A
3494.8	3	2	40	0.229		5	2			25	1.462								89Sm0A
3496.2	1	1	60	0.105															89Sm0A
3497.0	5	2	100	0.572		5	0			80	0.419								89Sm0A
3497.8	3	1	250	0.439		3	1			25	0.295	5	1	25	0.295				89Sm0A
3498.7	5	2	20	0.114															89Sm0A
3499.7	1	0	175	0.178															89Sm0A
3500.8	1	1	75	0.131															89Sm0A
3503.6	3	1	50	0.087		3	1			70	0.814	5	1	50	0.581				89Sm0A
3504.2	3	2	20	0.113		3	0			20	0.103								89Sm0A
3504.6	3	2	20	0.113		3	0			20	0.103								89Sm0A
3506.3	3	2	25	0.141		3	2			25	1.416	5	2	25	1.416				89Sm0A
3508.6	3	2	25	0.140		3	0			25	0.127								89Sm0A
3510.7	3	2	125	0.702		3	0			30	0.152								89Sm0A
3511.4	1	0	175	0.177															89Sm0A
3512.6	1	1	40	0.069															89Sm0A
3513.8	1	1	60	0.103															89Sm0A
3515.2	1	0	125	0.126															89Sm0A
3516.5	1	1	350	0.603		3	1			75	0.846								89Sm0A
3517.7	5	2	8	0.044															89Sm0A
3518.4	3	1	100	0.172		3	1			100	1.123	5	1	100	1.123				89Sm0A
3521.9	1	1	70	0.119		3	1			100	1.114								89Sm0A
3525.3	3	2	10	0.055															89Sm0A
3526.0	1	0	35	0.034		3	2			50	2.684	5	2	50	2.684				89Sm0A
3526.6	5	2	20	0.109		5	0			40	0.197								89Sm0A
3527.6	1	1	30	0.051															89Sm0A

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3529.8	3	2	75	0.410		3	2			40	2.125	5	2	80	4.250				89Sm0A
3530.6	1	1	350	0.594		3	1			100	1.091								89Sm0A
3533.5	3	2	40	0.217		3	0			75	0.364								89Sm0A
3534.4	1	1	200	0.338															89Sm0A
3534.6	1	0	450	0.446		3	2			75	3.934	5	2	75	3.934				89Sm0A
3534.7	3	1	180	0.304															89Sm0A
3537.6	1	0	25	0.024															89Sm0A
3540.7	5	2	4	0.021															89Sm0A
3542.0	1	1	100	0.167															89Sm0A
3543.9	1	1	20	0.033															89Sm0A
3547.0	1	0	25	0.024															89Sm0A
3547.7	1	1	40	0.066															89Sm0A
3550.0	3	2	40	0.213															89Sm0A
3550.1	1	0	300	0.293		3	2			10	0.503	5	2	10	0.503				89Sm0A
3550.3	3	1	50	0.083															89Sm0A
3552.8	3	2	75	0.398		3	0			25	0.116								89Sm0A
3555.7	3	2	20	0.105		3	0			40	0.185								89Sm0A
3556.9	5	2	45	0.237		5	0			40	0.185								89Sm0A
3558.8	1	0	75	0.072															89Sm0A
3559.1	5	2	40	0.210		5	0			150	0.690								89Sm0A
3560.7	1	1	50	0.082		3	1			25	0.254								89Sm0A
3562.9	3	2	30	0.157		3	0			20	0.091								89Sm0A
3565.0	3	1	25	0.041															89Sm0A
3566.9	1	1	75	0.122															89Sm0A
3568.2	3	1	60	0.098															89Sm0A
3568.8	3	2	12	0.062															89Sm0A
3569.1	1	1	20	0.032															89Sm0A
3570.7	5	2	12	0.062															89Sm0A
3571.9	3	1	50	0.081															89Sm0A
3573.5	3	1	175	0.284		3	1			125	1.236	5	1	125	1.236				89Sm0A
3576.4	3	1	80	0.129		3	1			150	1.473	5	1	30	0.294				89Sm0A
3578.1	1	0	300	0.287															89Sm0A
3578.7	5	2	25	0.128		5	0			50	0.221								89Sm0A
3580.6	3	1	35	0.056		3	1			75	0.729	5	1	75	0.729				89Sm0A
3581.4	3	2	20	0.102															89Sm0A
3585.9	3	2	125	0.635		3	0			200	0.873								89Sm0A
3586.0	1	0	500	0.475															89Sm0A
3586.2	3	1	80	0.128															89Sm0A
3588.0	5	2	150	0.760		5	0			40	0.170								89Sm0A
3589.1	1	1	400	0.640		3	1			100	0.950								89Sm0A
3589.6	1	0	50	0.047															89Sm0A
3591.6	1	0	50	0.047															89Sm0A
3591.9	5	2	50	0.252		5	0			200	0.860								89Sm0A
3592.4	1	1	500	0.798		3	1			50	0.430								89Sm0A
3595.7	5	2	60	0.300															89Sm0A

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3597.3	3	2	15	0.075															89Sm0A
3598.1	5	2	10	0.050															89Sm0A
3598.5	3	1	60	0.095		3	1			150	1.400	5	1	150	1.400				89Sm0A
3598.7	1	0	300	0.282															89Sm0A
3600.3	1	1	250	0.395		3	1			50	0.465								89Sm0A
3602.4	1	0	150	0.140															89Sm0A
3604.0	1	1	350	0.552		3	1			350	3.232								89Sm0A
3606.2	3	2	135	0.667		3	0			75	0.314								89Sm0A
3608.3	5	2	15	0.074															89Sm0A
3608.8	5	2	10	0.049															89Sm0A
3610.1	3	2	45	0.221		3	0			20	0.083								89Sm0A
3610.7	1	1	125	0.195															89Sm0A
3613.3	1	1	35	0.054		3	1			25	0.226								89Sm0A
3613.9	3	2	17	0.083															89Sm0A
3614.9	3	2	10	0.048															89Sm0A
3615.4	3	1	225	0.351		3	1			25	0.225	6	1	25	0.225				89Sm0A
3616.6	3	1	40	0.062															89Sm0A
3616.9	5	2	10	0.048															89Sm0A
3617.6	3	2	40	0.195		3	0			50	0.204								89Sm0A
3618.3	1	1	25	0.038															89Sm0A
3619.1	5	2	35	0.170		5	0			50	0.204								89Sm0A
3620.0	3	2	25	0.121															89Sm0A
3620.7	5	2	5	0.024															89Sm0A
3622.0	3	1	50	0.077		3	1			50	0.443								89Sm0A
3622.6	3	2	90	0.435		3	0			80	0.324								89Sm0A
3624.0	1	1	1000	1.547		3	1			100	0.883								89Sm0A
3625.2	3	1	25	0.038															89Sm0A
3625.6	3	2	25	0.120		3	0			75	0.302								89Sm0A
3626.6	3	2	50	0.240		3	0			40	0.161	5	2	40	1.649				89Sm0A
3627.9	1	1	20	0.030															89Sm0A
3629.0	3	2	20	0.096		3	0			20	0.080								89Sm0A
3630.2	1	1	25	0.038															89Sm0A
3631.0	1	0	359	0.321		3	2			50	2.038	5	2	50	2.038				89Sm0A
3631.3	3	2	50	0.239															89Sm0A
3631.9	3	2	20	0.095															89Sm0A
3632.1	1	0	350	0.320															89Sm0A
3632.9	1	1	250	0.383		3	1			100	0.866								89Sm0A
3633.9	1	1	25	0.038		3	1			25	0.216								89Sm0A
3634.7	5	2	4	0.019															89Sm0A
3635.7	5	2	20	0.095		5	0			30	0.118	5	2	30	1.208				89Sm0A
3636.6	3	2	60	0.285		3	0			40	0.158								89Sm0A
3637.2	3	2	20	0.095															89Sm0A
3637.6	1	1	1500	2.290		3	1			50	0.429								89Sm0A
3638.8	1	0	50	0.045															89Sm0A
3642.9	5	2	30	0.141															89Sm0A

(continued) **$^{45}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3643.4	3	1	200	0.303															89Sm0A
3643.7	1	0	1300	1.181															89Sm0A
3643.9	3	1	150	0.227															89Sm0A
3645.2	1	0	800	0.725		3	2			250	9.834								89Sm0A
3646.3	1	1	1500	2.271		3	1			250	2.105								89Sm0A
3648.2	3	2	20	0.093		3	0			50	0.193								89Sm0A
3650.1	3	2	10	0.046		3	0			20	0.077								89Sm0A
3651.0	5	2	20	0.093		5	0			40	0.153								89Sm0A
3652.7	3	2	20	0.093															89Sm0A
3654.3	1	0	50	0.045															89Sm0A
3654.8	1	1	50	0.075		3	1			50	0.413								89Sm0A
3656.9	1	1	25	0.037															89Sm0A
3657.9	5	2	35	0.162															89Sm0A
3659.8	1	0	300	0.269															89Sm0A
3660.4	1	1	25	0.037		3	1			100	0.817								89Sm0A
3663.1	5	2	45	0.207															89Sm0A
3663.6	5	2	100	0.459		5	0			75	0.281								89Sm0A
3665.4	3	2	25	0.114		3	0			100	0.374								89Sm0A
3666.2	3	2	35	0.160															89Sm0A
3666.3	3	1	300	0.445		3	1			400	3.228	5	1	100	0.807				89Sm0A
3668.1	1	1	25	0.037		3	1			50	0.402								89Sm0A
3669.4	1	0	50	0.044															89Sm0A
3669.9	3	2	75	0.342															89Sm0A
3670.1	1	0	750	0.667															89Sm0A
3570.6	5	2	10	0.045															89Sm0A
3671.5	1	0	125	0.111															89Sm0A
3672.1	1	1	400	0.591		3	1			600	4.784								89Sm0A
3672.5	5	2	10	0.045															89Sm0A
3673.0	1	1	30	0.044															89Sm0A
3674.4	1	1	50	0.073															89Sm0A
3679.4	3	2	125	0.563															89Sm0A
3680.4	1	1	50	0.073		3	1			50	0.391								89Sm0A
3682.5	3	1	50	0.073		3	1			75	0.585								89Sm0A
3683.4	1	1	700	1.023		3	1			200	1.557								89Sm0A
3684.0	1	0	45	0.039															89Sm0A
3686.4	5	2	65	0.290															89Sm0A
3686.9	1	0	800	0.703															89Sm0A
3697.1	3	1	60	0.087															89Sm0A
3687.7	5	2	45	0.200		5	0			100	0.359								89Sm0A
3688.7	1	1	100	0.145															89Sm0A
3691.0	1	1	75	0.108															89Sm0A
3691.3	3	1	50	0.072		3	1			100	0.766	5	1	100	0.766				89Sm0A
3692.1	1	0	100	0.087															89Sm0A
3694.4	1	1	250	0.361		3	1			100	0.761								89Sm0A
3697.2	1	0	500	0.436															89Sm0A

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	ℓ	Γ_p [eV]	γ^2_p [keV]	Rel.int. γ_i	$2s_{\mathrm{p}'}$	ℓ	$E_\circ$ [keV]	I_γ γ_i	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$2s_{\mathrm{p}'}$	ℓ	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
3698.1	5	2	30	0.132		5	0			50	0.176								89Sm0A
3699.7	3	2	30	0.131															89Sm0A
3700.1	1	1	45	0.064															89Sm0A
3700.7	3	2	40	0.175		3	0			80	0.280								89Sm0A
3701.2	1	1	50	0.071															89Sm0A
3701.7	1	0	100	0.086															89Sm0A
3703.2	3	2	150	0.656		3	0			150	0.523								89Sm0A
3705.3	1	0	100	0.086		3	2			50	1.696	5	2	50	1.696				89Sm0A
3706.8	1	0	400	0.346		3	2			100	3.381	5	2	100	3.381				89Sm0A
3708.6	3	2	100	0.434		3	0			50	0.172								89Sm0A
3709.5	1	0	30	0.025															89Sm0A
3709.9	1	1	50	0.071															89Sm0A
3710.9	3	2	350	1.517		3	0			500	1.721								89Sm0A
3712.5	5	2	20	0.086															89Sm0A

Additional data on this isotope can be found in [86Mi27, 83Bu21, 83Sh22, 82Sh12, 79Mi02, 79Ch29, 78La09, 75Wi10, 74Sc02, 74Sc07, 72Ek02, 68Br27, 68Ga11, 63Du10, 62Du0A].

* additional exit channel in this resonance with $2s$=5, ℓ=2, $\Gamma_{\mathrm{p}'}$=60 eV, $\gamma^2_{\mathrm{p}'}$=4357 eV

The triplet of states with $E_\circ$=840.6, 842.9 and 845.4 keV was unresolved in [74Sc02].

The relative intensities correspond to the thick target yield of γ-quanta with the energies greater than 1.5 MeV; intensities of uncertain resonances are given in parentheses.

Spectra from resonances at $E_\circ$=1583, 1619, 1640, 1650, 1658 and 1757 keV were measured in [72Ek02, 71De25, 67Er06], spectra from resonances at $E_\circ$=842, 856 and 906 keV – in [74Sc02].

The resonances with J^π=3/2$^-$ around 1652 keV correspond to the analog state in ^{45}Ca.

Parameters of IAR gross-structure $E_\circ$=2110(10) and 2250(10) keV (Γ=10 and 8.8 keV, $(2J{+}1)\Gamma_\mathrm{p}$=2.0(8) and 2.8(6) keV) were given in [66Ga14].

Additional data on partial radiative widths of resonances [76Wi12] are given separately.

In the overlapping energy region $E_\circ$=2950–3000 keV of two measurements at TUNL [75Wi09] and [89Sm0A] a small shift in resonance positions is due to the difference in the energy scales.

Energies $E_\circ$ and relative intensities (in number of counts per 15μC of accelerator current) from [74Sc02] are given in Supplement; systematic shift of 3 keV in the resonance energies relative to that in [63Du10] was noticed in [74Sc02].

Parameters of radiative transitions from ℓ=1 resonances. $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	Γ_γ [meV]	$\Gamma_{\gamma,12\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,376\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,543\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,721\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,938\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,1067\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,1302\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,2341\ \mathrm{keV}}$ [meV]	Ref.
1623.6	3$^-$	420	59	23	62	21	45	51		11	76Wi12
1632.4	$\langle 3^- \rangle$	170	4		10			25			76Wi12
1646.0	3$^-$	450	30	87	41	105		43		39	76Wi12
1651.7	3$^-$	410	29	32	20	66	172	18		24	76Wi12
1664.6	3$^-$	340	3	21		29	151			25	76Wi12

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	Γ_γ [meV]	$\Gamma_{\gamma,12\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,376\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,543\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,721\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,938\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,1067\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,1302\ \mathrm{keV}}$ [meV]	$\Gamma_{\gamma,2341\ \mathrm{keV}}$ [meV]	Ref.
1668.1	3^-	320	58	41		96				19	76Wi12
1677.4	$\langle 3^-\rangle$	160	15	7	34	11		17			76Wi12
1678.2	$\langle 3^-\rangle$	160	3	6			5			18	76Wi12
1682.2	$\langle 3^-\rangle$	110			52		9	21			76Wi12
1692.5	$\langle 3^-\rangle$	320	6	7	51	32	62	39			76Wi12
1702.2	$\langle 1^-\rangle$	280	14	6			11	31			76Wi12
1730.3	1^-	130	12	14				53			76Wi12
1741.8	$\langle 1^-\rangle$	120	12	11			30	18			76Wi12
1767.1	1^-	370	45	125					15		76Wi12
1810.1	$\langle 1^-\rangle$	790					58	22			76Wi12
1817.0	1^-	230	59	13			6				76Wi12
1826.8	$\langle 1^-\rangle$	190	27	14			42	33	18		76Wi12
1849.2	1^-	510	84	42			18	137			76Wi12
1864.8	1^-	460	32	27			33		99		76Wi12
1869.3	1^-	850	237	62			51				76Wi12
1889.2	1^-	330	17	27			26	17	56		76Wi12
1903.2	1^-	910	706				58		34		76Wi12
1908.6	1^-	280*	164	14			8	26			76Wi12
1920.7	1^-	1610	108	179			290	89	319		76Wi12
1949.3	1^-	560	7	12			13	37	345		76Wi12
1962.3	1^-	320	51				26		160		76Wi12
1968.8	1^-	1380	805								76Wi12
1979.9	1^-	520*	53	27			31	64	67		76Wi12
1993.7	1^-	290	37				209				76Wi12
2000.6	1^-	100*	13	6							76Wi12
2019.4	1^-	280	57	59				31	65		76Wi12
2027.3	1^-	400	18	74			75	35	115		76Wi12
2042.8	1^-	500	167						24		76Wi12
2045.6	1^-	310	9	81			83		88		76Wi12
2048.9	1^-	610	62	139			53	70	16		76Wi12
2065.8	1^-	750	42	309				38			76Wi12
2075.0	1^-	860*	454	33			49		79		76Wi12
2093.2	1^-	280	5				72		28		76Wi12
2106.2	1^-	550	40	9					307		76Wi12
2107.4	1^-	610	13	25				17	23		76Wi12
2120.0	1^-	290	183	64							76Wi12
2124.2	1^-	810	183	17			106				76Wi12
2141.8	1^-	550		230			117	33	43		76Wi12
2155.9	1^-	260	27				123		25		76Wi12
2177.1	1^-	380	120				13				76Wi12

* doublet

Partial radiative widths of transitions to the corresponding low-lying states are discussed in [76Wi12].

Parameters of analogue resonances in proton scattering. $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	E_cm [keV]	E^*_analog [keV]	S_pp	S_dp	E^* [keV]	Ref.
1652(2)*	3^-		670	1615	1904	0.32	0.64	8505(2)	75Wi09
2038(5)	1^-		1627	1993	2251	0.24	0.18	8882(5)	75Wi09
2242(2)	1^+		949	2192	2396	0.033	0.055	9081(2)	75Wi09
2628(1)	3^-		1069	2570	2847	0.036	0.115	9459(1)	75Wi09

* fit to a pure Lorentzian shape; parameters of the analog states were fitted as in [76Bi0A]

Parameters of inelastic proton scattering for resonances with J^π=3/2$^-$. $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$\Gamma_{\mathrm{p}'}$ [eV]	$\gamma^2_{\mathrm{p}'}$ [keV]	$\gamma^2_{\mathrm{s}13}$ [keV]	$\gamma^2_{\mathrm{s}15}$ [keV]	$\gamma_{\mathrm{s}13}\gamma_{\mathrm{s}15}$ [keV]	E^* [keV]	Ref.	
2508.4	3^-	4	2.03	0.39	1.64	–0.80	9341.9(50)	85Mi0A	
2509.4	3^-	0.7	0.38	0.01	0.37	0.05	9342.9(50)	85Mi0A	
2517.7	3^-	0.6	0.32	0.05	0.27	0.11	9351.0(50)	85Mi0A	
2522.5	3^-	1	0.49	0.16	0.32	–0.23	9355.7(50)	85Mi0A	75Wi09
2545.5	3^-	2	0.69	0.45	0.24	–0.33	9378.2(50)	85Mi0A	75Wi09
2554.3	3^-	1	0.58	0.06	0.52	0.18	9386.8(50)	85Mi0A	75Wi09
2554.9	3^-	0.9	0.36	0.06	0.29	–0.14	9387.3(50)	85Mi0A	75Wi09
2557.1	3^-	3	1.01	0.88	0.14	0.35	9389.5(50)	85Mi0A	75Wi09
2563.1	3^-	2	0.95	0.01	0.94	0.08	9395.4(50)	85Mi0A	75Wi09
2566.0	3^-	5	2.03	1.01	1.02	1.02	9398.2(50)	85Mi0A	75Wi09
2581.8	3^-	1	0.34	0.05	0.29	0.12	9413.6(50)	85Mi0A	75Wi09
2587.2	3^-	6	1.84	0.92	0.93	0.92	9418.9(50)	85Mi0A	75Wi09
2591.1	3^-	1	0.36	0.03	0.33	0.11	9422.7(50)	85Mi0A	75Wi09
2597.5	3^-	7	2.23	1.11	1.12	1.12	9429.0(50)	85Mi0A	75Wi09
2614.7	3^-	20	5.88	2.65	3.23	2.93	9445.8(50)	85Mi0A	75Wi09
2620.2	3^-	2	0.45	0.29	0.16	0.21	9451.2(50)	85Mi0A	75Wi09
2622.5	3^-	12	3.40	2.63	0.77	1.42	9453.4(50)	85Mi0A	75Wi09
2630.4	3^-	34	9.16	5.65	3.51	4.45	9461.2(50)	85Mi0A	75Wi09
2631.0	3^-	13	3.37	2.20	1.17	1.60	9461.8(50)	85Mi0A	75Wi09
2631.8	3^-	10	2.68	2.09	0.58	1.11	9462.5(50)	85Mi0A	75Wi09
2640.3	3^-	17	4.36	1.80	2.56	2.15	9470.8(50)	85Mi0A	75Wi09
2652.4	3^-	3	0.72	0.28	0.44	0.35	9482.7(50)	85Mi0A	75Wi09
2684.5	3^-	4	0.76	0.36	0.40	–0.38	9514.1(50)	85Mi0A	
2721.0	3^-	2	0.30	0.20	0.09	–0.14	9549.8(50)	85Mi0A	
2732.5	3^-	2	0.25	0.00	0.25	0.02	9561.0(50)	85Mi0A	
2741.7	3^-	2	0.28	0.22	0.06	–0.12	9570.0(50)	85Mi0A	
2774.7	3^-	1	0.16	0.09	0.08	–0.08	9602.3(50)	85Mi0A	75Wi09
2787.6	3^-	4	0.45	0.35	0.10	–0.19	9614.9(50)	85Mi0A	
2793.4	3^-	13	1.52	0.72	0.80	–0.76	9620.5(50)	85Mi0A	
2794.6	3^-	2	0.22	0.16	0.06	–0.10	9621.7(50)	85Mi0A	
2796.5	3^-	0.8	0.10	0.03	0.06	–0.05	9623.6(50)	85Mi0A	

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$\Gamma_{p'}$ [eV]	$\gamma^2_{p'}$ [keV]	γ^2_{s13} [keV]	γ^2_{s15} [keV]	$\gamma_{s13}\gamma_{s15}$ [keV]	E^* [keV]	Ref.	
2804.9	3^-	2	0.22	0.14	0.08	–0.10	9631.8(50)	85Mi0A	
2805.6	3^-	5	0.61	0.39	0.22	–0.29	9632.5(50)	85Mi0A	75Wi09
2809.3	3^-	8	0.85	0.26	0.59	–0.39	9636.1(50)	85Mi0A	
2822.9	3^-	2	0.26	0.10	0.16	0.13	9649.4(50)	85Mi0A	75Wi09
2842.2	3^-	10	0.94	0.10	0.84	–0.29	9668.3(50)	85Mi0A	75Wi09
2843.8	3^-	2	0.23	0.01	0.22	0.04	9669.8(50)	85Mi0A	
2845.1	3^-	9	0.86	0.53	0.32	–0.41	9671.1(50)	85Mi0A	75Wi09
2857.1	3^-	15	1.36	0.54	0.82	–0.67	9682.8(50)	85Mi0A	
2862.1	3^-	12	1.03	0.38	0.65	–0.50	9687.7(50)	85Mi0A	75Wi09
2864.4	3^-	2	0.19	0.01	0.18	0.04	9690.0(50)	85Mi0A	75Wi09
2872.8	3^-	16	1.36	0.68	0.68	–0.68	9698.2(50)	85Mi0A	75Wi09
2881.6	3^-	3	0.28	0.00	0.28	0.02	9706.8(50)	85Mi0A	
2889.7	3^-	12	0.99	0.01	0.98	0.12	9714.7(50)	85Mi0A	75Wi09
2906.1	3^-	6	0.47	0.00	0.46	0.04	9730.7(50)	85Mi0A	
2916.2	3^-	4	0.25	0.00	0.25	0.03	9740.6(50)	85Mi0A	
2930.5	3^-	16	1.07	0.14	0.93	–0.36	9754.6(50)	85Mi0A	
2944.1	3^-	14	0.91	0.01	0.91	0.07	9767.9(50)	85Mi0A	
2949.3	3^-	3	0.17	0.06	0.11	0.08	9773.0(50)	85Mi0A	
2952.5	3^-	23	1.42	0.52	0.90	–0.68	9776.1(50)	85Mi0A	
2964.6	3^-	17	1.00	0.59	0.41	–0.49	9787.9(50)	85Mi0A	
2985.7	3^-	35	1.90	1.47	0.43	–0.80	9808.6(50)	85Mi0A	
3001.1	3^-	2	0.09	0.02	0.07	–0.04	9823.6(50)	85Mi0A	75Wi09
3001.5	3^-	8	0.42	0.09	0.33	–0.17	9824.0(50)	85Mi0A	75Wi09
Average				0.57	0.62	0.18		85Mi0A	

Given here total inelastic reduced widths $\gamma^2_{p'}$, inelastic reduced widths for different channels and amplitude products were used in [82Sh12] for comparison with the Statistical Model.

Parameters of inelastic proton scattering for resonances with $J^\pi=3/2^+$. $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$\gamma^2_{p'}$ [keV]	γ^2_{s03} [keV]	γ^2_{s23} [keV]	γ^2_{s25} [keV]	$\gamma_{s03}\gamma_{s23}$ [keV]	$\gamma_{s03}\gamma_{s25}$ [keV]	$\gamma_{s23}\gamma_{s25}$ [keV]	E^* [keV]	Ref.
2375.0	3^+	2.96	1.13	0.82	1.01	0.96	1.07	0.91	9211.4(50)	85Mi0A
			1.08	1.03	1.77	1.06	–1.38	–1.35		85Mi0A
2433.2	3^+	1.78	0.52	0.29	0.97	0.39	0.71	0.53	9268.3(50)	85Mi0A
			0.49	0.41	1.41	0.45	–0.83	–0.76		85Mi0A
2513.1	3^+	1.30	0.53	0.31	0.46	0.40	0.50	0.38	9346.5(50)	85Mi0A
			0.51	0.39	0.78	0.45	–0.63	–0.55		85Mi0A
2522.4	3^+	0.98	0.30	0.01	0.68	–0.05	–0.45	0.07	9355.6(50)	85Mi0A
			0.29	0.00	0.74	–0.04	0.47	–0.06		85Mi0A
2566.8	3^+	3.83	0.77	0.04	3.02	–0.17	–1.53	0.35	9399.0(50)	85Mi0A
			0.76	0.02	3.33	–0.13	1.59	–0.27		85Mi0A

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$\gamma^2_{\mathrm{p}'}$ [keV]	$\gamma^2_{\mathrm{s}03}$ [keV]	$\gamma^2_{\mathrm{s}23}$ [keV]	$\gamma^2_{\mathrm{s}25}$ [keV]	$\gamma_{\mathrm{s}03}\gamma_{\mathrm{s}23}$ [keV]	$\gamma_{\mathrm{s}03}\gamma_{\mathrm{s}25}$ [keV]	$\gamma_{\mathrm{s}23}\gamma_{\mathrm{s}25}$ [keV]	E^* [keV]	Ref.
2639.2	3^+	1.37	0.89	0.22	0.25	–0.45	–0.47	0.24	9469.8(50)	85Mi0A
			0.88	0.18	0.58	–0.40	0.71	–0.32		85Mi0A
2661.4	3^+	2.83	0.10	1.68	1.05	0.41	0.32	1.33	9491.5(50)	85Mi0A
			0.05	2.76	0.86	0.38	–0.21	–1.54		85Mi0A
2737.4	3^+	0.57	0.16	0.24	0.17	0.20	0.16	0.20	9565.8(50)	85Mi0A
			0.15	0.32	0.29	0.22	–0.21	–0.30		85Mi0A
2742.7	3^+	1.98	1.07	0.15	0.76	0.39	0.90	0.33	9571.0(50)	85Mi0A
			1.05	0.19	1.07	0.45	–1.06	–0.45		85Mi0A
2848.4	3^+	1.34	0.08	0.72	0.55	0.23	0.20	0.63	9674.3(50)	85Mi0A
			0.05	1.18	0.56	0.24	–0.16	–0.81		85Mi0A
2853.6	3^+	1.20	0.48	0.52	0.20	0.50	0.31	0.32	9679.4(50)	85Mi0A
			0.46	0.64	0.42	0.54	–0.44	–0.52		85Mi0A
2876.6	3^+	0.31	0.24	0.02	0.05	0.07	0.11	0.03	9701.9(50)	85Mi0A
			0.24	0.02	0.08	0.07	–0.14	–0.04		85Mi0A
2902.9	3^+	0.85	0.27	0.26	0.32	–0.27	–0.29	0.29	9727.6(50)	85Mi0A
			0.25	0.12	0.80	–0.17	0.44	–0.31		85Mi0A
2950.9	3^+	1.30	0.25	0.01	1.04	0.04	0.51	0.08	9774.5(50)	85Mi0A
			0.24	0.01	1.13	0.05	–0.52	–0.12		85Mi0A
2994.0	3^+	3.31	0.75	1.00	1.56	0.87	1.08	1.25	9816.7(50)	85Mi0A
			0.67	1.52	2.27	1.01	–1.23	–1.86		85Mi0A

Given here total inelastic reduced widths $\gamma^2_{\mathrm{p}'}$, inelastic reduced widths for different channels and amplitude products were used in [82Sh12] for comparison with the Statistical Model.

Parameters of inelastic proton scattering for resonances with $J^\pi=5/2^+$. $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$\gamma^2_{\mathrm{p}'}$ [keV]	$\gamma^2_{\mathrm{s}05}$ [keV]	$\gamma^2_{\mathrm{s}23}$ [keV]	$\gamma^2_{\mathrm{s}25}$ [keV]	$\gamma_{\mathrm{s}05}\gamma_{\mathrm{s}23}$ [keV]	$\gamma_{\mathrm{s}05}\gamma_{\mathrm{s}25}$ [keV]	$\gamma_{\mathrm{s}23}\gamma_{\mathrm{s}25}$ [keV]	E^* [keV]	Ref.
2315.0	5^+	1.75	0.60	0.00	1.15	0.04	0.83	0.05	9152.8(50)	85Mi0A
2393.5	5^+	2.70	1.00	1.34	0.36	–1.16	0.60	–0.69	9229.5(50)	85Mi0A
2474.3	5^+	0.25	0.20	0.03	0.01	–0.08	0.05	–0.02	9308.5(50)	85Mi0A
2475.0	5^+	0.71	0.69	0.02	0.00	0.10	–0.02	0.00	9309.2(50)	85Mi0A
2518.7	5^+	0.97	0.37	0.42	0.18	0.39	0.26	0.28	9351.9(50)	85Mi0A
2529.3	5^+	1.47	0.47	0.28	0.72	0.36	0.58	0.45	9362.3(50)	85Mi0A
2549.7	5^+	0.95	0.30	0.08	0.57	0.15	0.42	0.21	9382.3(50)	85Mi0A
2569.5	5^+	0.55	0.17	0.29	0.08	–0.23	0.12	–0.16	9401.6(50)	85Mi0A
2602.6	5^+	2.51	0.58	1.69	0.24	–0.99	0.37	–0.64	9434.0(50)	85Mi0A
2610.1	5^+	1.99	0.48	0.90	0.61	0.66	0.54	0.74	9441.3(50)	85Mi0A
2644.4	5^+	4.33	1.03	3.29	0.01	1.84	0.08	0.14	9474.9(50)	85Mi0A
2650.3	5^+	0.41	0.11	0.00	0.30	0.01	0.18	0.10	9480.6(50)	85Mi0A
2662.9	5^+	1.03	0.26	0.69	0.08	0.43	–0.14	–0.23	9492.9(50)	85Mi0A
2692.0	5^+	0.46	0.06	0.09	0.31	0.07	0.13	0.16	9521.4(50)	85Mi0A

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$\gamma^2_{\mathrm{p}'}$ [keV]	$\gamma^2_{\mathrm{s}05}$ [keV]	$\gamma^2_{\mathrm{s}23}$ [keV]	$\gamma^2_{\mathrm{s}25}$ [keV]	$\gamma_{\mathrm{s}05}\gamma_{\mathrm{s}23}$ [keV]	$\gamma_{\mathrm{s}05}\gamma_{\mathrm{s}25}$ [keV]	$\gamma_{\mathrm{s}23}\gamma_{\mathrm{s}25}$ [keV]	E^* [keV]	Ref.
2709.9	5^+	1.13	0.34	0.62	0.17	0.46	0.24	0.33	9538.9(50)	85Mi0A
2722.4	5^+	0.15	0.06	0.01	0.09	0.02	0.07	0.02	9551.1(50)	85Mi0A
2735.2	5^+	0.22	0.06	0.05	0.11	–0.05	–0.08	0.07	9563.6(50)	85Mi0A
2739.8	5^+	0.28	0.05	0.23	0.00	0.11	–0.01	–0.03	9568.1(50)	85Mi0A
2748.6	5^+	0.23	0.09	0.03	0.12	–0.05	0.10	–0.06	9576.7(50)	85Mi0A
2761.6	5^+	0.63	0.36	0.26	0.01	–0.31	0.06	–0.05	9589.5(50)	85Mi0A
2768.6	5^+	0.70	0.15	0.11	0.44	0.13	0.26	0.22	9596.3(50)	85Mi0A
2777.3	5^+	0.39	0.38	0.00	0.00	0.02	0.03	0.00	9604.8(50)	85Mi0A
2785.2	5^+	0.50	0.15	0.27	0.09	0.20	0.11	0.15	9612.5(50)	85Mi0A
2789.5	5^+	0.75	0.35	0.38	0.01	0.37	0.07	0.07	9616.7(50)	85Mi0A
2792.3	5^+	0.16	0.05	0.10	0.01	0.07	–0.02	–0.02	9619.5(50)	85Mi0A
2799.2	5^+	0.26	0.07	0.05	0.14	0.06	0.10	0.08	9626.2(50)	85Mi0A
2811.5	5^+	0.64	0.16	0.01	0.46	0.05	0.27	0.08	9638.2(50)	85Mi0A
2812.9	5^+	1.74	0.68	0.44	0.62	0.55	0.65	0.52	9639.6(50)	85Mi0A
2824.1	5^+	1.68	0.57	1.00	0.10	0.76	0.24	0.32	9650.6(50)	85Mi0A
2843.4	5^+	0.39	0.05	0.03	0.30	0.04	0.13	0.10	9669.4(50)	85Mi0A
2846.7	5^+	0.88	0.47	0.29	0.12	0.37	0.24	0.19	9672.7(50)	85Mi0A
2860.2	5^+	0.62	0.17	0.15	0.31	0.16	0.23	0.21	9685.9(50)	85Mi0A
2860.6	5^+	1.23	0.26	0.61	0.35	–0.40	0.30	–0.46	9686.3(50)	85Mi0A
2869.5	5^+	0.22	0.10	0.12	0.00	0.11	0.01	0.01	9695.0(50)	85Mi0A
2874.4	5^+	0.12	0.02	0.06	0.05	–0.03	0.03	–0.05	9699.7(50)	85Mi0A
2880.1	5^+	0.10	0.04	0.05	0.00	0.05	0.00	–0.01	9705.3(50)	85Mi0A
2894.4	5^+	0.13	0.03	0.04	0.06	0.04	0.04	0.05	9719.3(50)	85Mi0A
2897.8	5^+	0.92	0.25	0.42	0.24	–0.33	0.25	–0.32	9722.6(50)	85Mi0A
2900.9	5^+	0.30	0.11	0.16	0.02	0.13	0.05	0.06	9725.7(50)	85Mi0A
2931.0	5^+	1.20	0.23	0.96	0.00	–0.47	0.02	–0.05	9755.1(50)	85Mi0A
2935.6	5^+	0.36	0.08	0.19	0.09	–0.12	0.08	–0.13	9759.6(50)	85Mi0A
2937.8	5^+	0.43	0.12	0.11	0.20	0.12	0.16	0.15	9761.7(50)	85Mi0A
2945.6	5^+	0.23	0.15	0.06	0.02	–0.09	–0.05	0.03	9769.4(50)	85Mi0A
2950.2	5^+	0.10	0.01	0.09	0.00	–0.03	–0.01	0.02	9773.9(50)	85Mi0A
2960.7	5^+	1.17	0.14	0.48	0.55	–0.26	0.28	–0.51	9784.1(50)	85Mi0A
2963.5	5^+	0.99	0.15	0.39	0.45	–0.24	0.26	–0.42	9786.9(50)	85Mi0A
2970.7	5^+	0.44	0.05	0.01	0.38	–0.02	0.13	–0.07	9793.9(50)	85Mi0A
2980.3	5^+	1.68	0.58	0.19	0.91	0.33	0.72	0.42	9803.3(50)	85Mi0A
2982.1	5^+	0.63	0.07	0.47	0.09	–0.18	–0.08	0.21	9805.1(50)	85Mi0A
2984.7	5^+	0.65	0.20	0.02	0.43	0.07	0.30	0.09	9807.6(50)	85Mi0A
2987.3	5^+	1.48	0.42	1.02	0.05	0.65	–0.14	–0.22	9810.1(50)	85Mi0A
2989.0	5^+	1.33	0.22	0.60	0.52	–0.36	0.34	–0.56	9811.8(50)	85Mi0A
2990.3	5^+	0.49	0.02	0.12	0.35	0.05	0.08	0.20	9813.1(50)	85Mi0A
Average	5^+		0.26	0.36	0.24	0.07	0.18	0.02		85Mi0A

Given here total inelastic reduced widths $\gamma^2_{\mathrm{p}'}$, inelastic reduced widths for different channels and amplitude products were used in [82Sh12] for comparison with the Statistical Model.

Branching ratios of γ-transitions [74Sc02, 02Nu0A]. Part 1. $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

E^*	$E_\circ$	$2J^\pi$	Γ_{cm}	Branching ratios								
[keV]	[keV]		[eV]	Percentage								
E^*				0.0	12.4	377	543	720	939	974	1068	1237
$2J_{\mathrm{f}}^\pi$				7^-	3^+	3^-	5^+	5^-	1^+	7^+	3^-	11^-
12.40(5)		3^+		100								
376.5(1)		3^-		8.62	91.38							
543.1(1)		5^+		40.6(8)	59.4(8)	<1.1						
720.1(1)		5^-		96.5(5)	3.5(5)							
939.2(2)		1^+			82.7(6)	17.3(6)						
974.4(2)		7^+		58.6(3)	30.0(22)		11.4(10)					
1067.6(4)		3^-		2.9(6)	4.9(34)	64.5(25)		27.7(23)				
1236.7(3)		11^-		100								
1303.2(2)		3^+			36		64					
1408.9(2)		$\langle 7\rangle^-$		100								
1433.5(2)		9^+										
1472.5(9)		$\langle 7^+\rangle$										
1556.2(5)		$\langle 3\rangle^-$				5			7		88	
1662.0(4)		9^-										
1716(30)												
1800.0(5)		5^+		19	60		21					
1900.7(3)												
1930.6(3)		1–5										
1935.5(10)												
1935.5												
2031.2(7)		11^+								100		
2093.0(5)		5		82		6					12	
2106.2(5)												
2106.3(1)		15^-										
2138.4(5)		3^-,5										
2151.0(5)		1–5			90							
2152.0												
2221.8(5)		3^-,5										
2224.2(5)		5^+,7^+										
2288.5(6)		7^-,9										
2303.8(5)		$\langle 5^-\rangle$			27	35					38	
2321.5(10)		3–7										
2341.0(4)		$\langle 7^-\rangle$										
2352.2(5)		3^-,5			25			45			9	
2385(7)												
2531.0(5)		1–5			36		50					
2563.2(3)		$\langle 13^+\rangle$										
2590.0(6)		3–7		64		34						
2601.4(5)		1–5				30					54	
2634(7)												
2700(7)												
2747.0(10)		5^-,7^-										

(continued) **$^{45}_{21}$Sc**(p)

E^*	$E_\circ$	$2J^\pi$	Γ_{cm}	Branching ratios								
[keV]	[keV]		[eV]	Percentage								
E^*				0.0	12.4	377	543	720	939	974	1068	1237
$2J_f^\pi$				7^-	3^+	3^-	5^+	5^-	1^+	7^+	3^-	11^-
2778.7(8)		1–5				68		32				
2860.7		1–5										
2895.2(5)		1–5					100					
2903.8(7)		3^+,5^+					38				62	
2943(7)		$\langle 5\rangle^+$										
2964.0(15)		3^+,5^+										
2979.8(18)		3^-				48						
3025.5(6)		1^-,3^-						79				
3059(7)												
3092.0(8)		1–5					42				58	
3104		$\langle 3,5\rangle$										
3111.2(8)		7^+										
3136.3(7)		X^-										100
3159.1(5)												
3198(9)												
3224(7)												
3283(7)		$\langle X^+\rangle$										
3294.8(8)		$\langle 15^+\rangle$										
3329(7)		X^+										
3349(7)		$\langle X^+\rangle$										
3366.4(8)		$\langle 5\rangle^-$										
3400(8)		1^-,3^-										
3443(7)		X^+										
3457		$\langle 5\rangle^-$										
3462.1(8)		5^-,7^-				100						
3475		3^+,5^+										
3487.4(8)		3^-		30		36		34				
3525.2(8)		3^-,5		70								
3548.5(8)		1–7			43		57					
3569.8(8)		$\langle 17^-\rangle$										
3581(15)		X^-										
3584(1)		1–5							100			
3606(7)		X^+										
3692.9(1)		$\langle 19^-\rangle$										
3714.3(8)		1–5										
3722.3(10)		$[3^-]$				100						
4084.9(10)		1^-,3^-							100			
7711.0(18)*	842				7	5	6	10	30		3	
7713.2(18)												
7715.7(18)												
7724.9*	856	$3^{\langle -\rangle}$			1	9	13	6	3		3	
7775.1*	906	$3^{\langle +\rangle}$			4	4	4	4	14		3	

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

E^*	$E_\circ$	$2J^\pi$	Γ_{cm}	Branching ratios								
[keV]	[keV]		[eV]	Percentage								
E^*				0.0	12.4	377	543	720	939	974	1068	1237
$2J_f^\pi$				7^-	3^+	3^-	5^+	5^-	1^+	7^+	3^-	11^-
8112.3**	1251.1	3^-	37(9)		11		9	6	7			
8119			20									
8128.4**	1267.5	3^-	23(7)		4		6	2				
8498.3		3^-	80(15)									
8503.9***	1652	3^-	400(40)	9	7	24	3	13	11	0.5		
				60(20)		150(50)						
8516.5		3^-	60(10)									

* γ-ray spectra from the resonances measured in [74Sc02].
** γ-ray spectra from the resonances measured in [73Be39].
*** γ-ray spectra from the resonances measured in [72Ek02, 71De25, 67Er06]; estimations of partial radiative widths (in meV) from [71De25] are given in the second line; differential γ-yield from the resonances at 1583, 1619, 1640, 1650, 1658 and 1757 keV was measured [71De25].

Branching ratios of γ-transitions [74Sc02, 02Nu0A]. Part 2. $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

E^*	$E_\circ$	$2J^\pi$	Γ_{cm}	Branching ratios												
[keV]	[keV]		[eV]	Percentage												
E^*				1303	1409	1433	1556	1800	2031	2093	2151	2303	2341	2352	2531	2590
$2J_f^\pi$				3^+	$\langle 7\rangle^-$		$\langle 3\rangle^-$	5^+	11^+	5		$\langle 5^-\rangle$	$\langle 7^-\rangle$		1-5	3-7
2151.0(5)		1–5		10												
2352.2(5)		3^-,5					21									
2531.0(5)		1–5		14												
2601.4(5)		1–5					16									
2979.8(18)		3^-					52									
3025.5(6)		1^-,3^-								21						
3111.2(8)		7^+							100							
3366.4(8)		$\langle 5\rangle^-$			100											
3525.2(8)		3^-,5					30									
3714.3(8)		1–5					61			39						
7711.0(18)*	842			1						2	1	2		1	3	3
7724.9*	856	$3^{\langle -\rangle}$		0.5			0.5			6	3	9			5	5
7775.1*	906	$3^{\langle +\rangle}$		1			3	1		2	4	3		6	2	
8112.3**	1251.1	3^-	37(9)						20							
8128.4**	1267.5	3^-	23(7)						18							

(continued) $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

E^*	$E_\circ$	$2J^\pi$	Γ_{cm}	Branching ratios												
[keV]	[keV]		[eV]	Percentage												
E^*				1303	1409	1433	1556	1800	2031	2093	2151	2303	2341	2352	2531	2590
$2J_{\mathrm{f}}^\pi$				3^+	$\langle 7\rangle^-$		$\langle 3\rangle^-$	5^+	11^+	5		$\langle 5^-\rangle$	$\langle 7^-\rangle$		1-5	3-7
8498.3		3^-	80(15)													
8503.9***	1652	3^-	400(40)	1.5	4			7				1.5		5		

* γ-ray spectra from resonances measured in [74Sc02].
** γ-ray spectra from resonances measured in [73Be39].
*** γ-ray spectra from resonances measured in [72Ek02, 71De25, 67Er06]; estimations of partial radiative widths (in meV) from [71De25] are given in the second line; differential γ-yield from the resonances at 1583, 1619, 1640, 1650, 1658 and 1757 keV was measured [71De25].

Branching ratios of γ-transitions [74Sc02, 02Nu0A]. Part 3. $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

E^*	$E_\circ$	$2J^\pi$	Γ_{cm}	Branching ratios												
[keV]	[keV]		[eV]	Percentage												
E^*				2601	2747	2779	2895	2904	2964	2981	3026	3092	3099	3111	3136	3366
$2J_{\mathrm{f}}^\pi$																
7711.0(18)*	842			1		7	2	1		5		1				2
7724.9*	856	$3^{\langle -\rangle}$		3		6	4					4			3	4
7775.1*	906	$3^{\langle +\rangle}$		4		1	1	5	1	2	4	1	3	2		1
8112.3**	1251.1	3^-	37(9)									22			12	13
8503.9***	1652	3^-	400(40)	5	$\langle 1\rangle$					$\langle 1\rangle$						

* γ-ray spectra from resonances measured in [74Sc02].
** γ-ray spectra from resonances measured in [73Be39].
*** γ-ray spectra from resonances measured in [72Ek02, 71De25, 67Er06].

Branching ratios of γ-transitions [74Sc02, 02Nu0A]. Part 4. $^{45}_{21}\mathbf{Sc}(\mathrm{p})$

E^*	$E_\circ$	$2J^\pi$	Γ_{cm}	Branching ratios												
[keV]	[keV]		[eV]	Percentage												
E^*				3462	3487	3525	3549	3584	3714	3722	3864	3883	3983	4085	4502	4674
$2J_{\mathrm{f}}^\pi$																
7711.0(18)*	842				1					9						
7724.9*	856	$3^{\langle -\rangle}$								5			3			
7775.1*	906	$3^{\langle +\rangle}$		2	3	2	2	2	5		3			1		

(continued) **$^{45}_{21}$Sc(p)**

E^* [keV]	$E_\circ$ [keV]	$2J^\pi$	Γ_{cm} [eV]	Branching ratios Percentage											
E^* $2J_f^\pi$				3462	3487	3525	3549	3584	3714	3722	3864	3883	3983	4085	4502	4674
8112.3**	1251.1	3^-	37(9)									22			12	13
8128.4**	1267.5	3^-	23(7)									26			24	20
8503.9***	1652	3^-	400(40)													

* γ-ray spectra from resonances measured in [74Sc02].
** γ-ray spectra from resonances measured in [73Be39].
*** γ-ray spectra from resonances measured in [72Ek02, 71De25, 67Er06].

Target isotope: $^{46}_{20}$Ca $I_\circ^\pi = 0^+$ *Abundance:* 0.004(3) % $S_p = 8485.7(13)$ keV **$^{47}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	I_γ	Γ_γ [eV]	E_{cm} [keV]	E^* [keV]	Ref.
995.53					0.15		974	9459.9	71ViZU
1003.44					0.19		982	9467.6	71ViZU
1004.02					0.12		982	9468.2	71ViZU
1004.96					0.50		983	9469.1	71ViZU
1005.42					0.25		984	9469.5	71ViZU
1011.20					0.38		989	9475.2	71ViZU
1016.53					0.33		995	9480.4	71ViZU
1017.94					0.44		996	9481.8	71ViZU
1025.94					0.54		1004	9489.6	71ViZU
1028.77					0.11		1007	9492.4	71ViZU
1030.19					0.39		1008	9493.8	71ViZU
1032.08							1010	9495.6	71ViZU
1032.90					0.18		1011	9496.4	71ViZU
1034.09					0.64		1012	9497.6	71ViZU
1035.39							1013	9498.9	71ViZU
1040.13					0.15		1018	9503.5	71ViZU
1048.21					0.73		1026	9511.4	71ViZU
1049.76							1027	9512.9	71ViZU
1051.79					0.85		1029	9514.9	71ViZU
1054.89							1032	9517.9	71ViZU
1055.97							1033	9519.0	71ViZU
1057.04					0.45		1034	9520.0	71ViZU
1058.00					1.44		1035	9521.0	71ViZU
1059.32							1037	9522.3	71ViZU
1061.35					0.59		1039	9524.3	71ViZU
1062.55					0.04		1040	9525.4	71ViZU
1066.99					0.10		1044	9529.8	71ViZU

(continued) $^{47}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	I_γ	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
1068.32							1045	9531.1	71ViZU
1071.32					0.08		1048	9534.0	71ViZU
1072.53							1050	9535.2	71ViZU
1073.01					0.36		1050	9535.7	71ViZU
1077.23							1054	9539.8	71ViZU
1085.70					1.10		1062	9548.1	71ViZU
1086.67							1063	9549.0	71ViZU
1087.64					0.20		1064	9550.0	71ViZU
1088.97					0.16		1066	9551.3	71ViZU
1091.04					1.69		1068	9553.3	71ViZU
1094.20					0.34		1071	9556.4	71ViZU
1094.57							1071	9556.8	71ViZU
1096.27					0.06		1073	9558.4	71ViZU
1097.49					0.73		1074	9559.6	71ViZU
1098.59							1075	9560.7	71ViZU
1101.03					0.36		1077	9563.1	71ViZU
1102.74					0.30		1079	9564.8	71ViZU
1105.79					0.46		1082	9567.7	71ViZU
1109.83					0.28		1086	9571.7	71ViZU
1114.74					0.91		1091	9576.5	71ViZU
1115.97							1092	9577.7	71ViZU
1120.27					0.09		1096	9581.9	71ViZU
1121.63					1.10		1098	9583.2	71ViZU
1124.09					0.10		1100	9585.7	71ViZU
1125.33							1101	9586.9	71ViZU
1126.19					0.23		1102	9587.7	71ViZU
1128.41							1104	9589.9	71ViZU
1132.00					2.48		1108	9593.4	71ViZU
1133.73					0.35		1109	9595.1	71ViZU
1135.96					0.31		1112	9597.3	71ViZU
1136.20							1112	9597.5	71ViZU
1142.17					0.38		1118	9603.3	71ViZU
1143.17							1119	9604.3	71ViZU
1144.66					0.10		1120	9605.8	71ViZU
1146.40					1.50		1122	9607.5	71ViZU
1149.39					0.45		1125	9610.4	71ViZU
1150.52					0.27		1126	9611.5	71ViZU
1159.39					0.18		1135	9620.2	71ViZU
1160.39					1.85		1135	9621.2	71ViZU
1163.15					0.40		1138	9623.9	71ViZU
1164.66					0.89		1140	9625.4	71ViZU
1166.92							1142	9627.6	71ViZU
1170.31					0.96		1145	9630.9	71ViZU
1171.70							1147	9632.2	71ViZU
1172.45					1.21		1147	9633.0	71ViZU

(continued) $^{47}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	I_γ	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
1174.72							1150	9635.2	71ViZU
1175.23							1150	9635.7	71ViZU
1179.90							1155	9640.3	71ViZU
1184.58					0.66		1159	9644.8	71ViZU
1186.86							1161	9647.1	71ViZU
1191.04							1165	9651.2	71ViZU
1192.57					0.30		1167	9652.7	71ViZU
1198.29					0.60		1173	9658.3	71ViZU
1203.13					0.52		1177	9663.0	71ViZU
1208.37					0.72		1182	9668.1	71ViZU
1209.39					0.73		1183	9669.1	71ViZU
1212.85							1187	9672.5	71ViZU
1213.36					0.52		1187	9673.0	71ViZU
1214.64					1.50		1189	9674.3	71ViZU
1218.62					1.27		1192	9678.2	71ViZU
1220.29					0.65		1194	9679.8	71ViZU
1221.83							1196	9681.3	71ViZU
1223.76					0.57		1197	9683.2	71ViZU
1225.18					0.27		1199	9684.6	71ViZU
1226.72							1200	9686.1	71ViZU
1228.01					1.27		1202	9687.3	71ViZU
1232.65					0.71		1206	9691.9	71ViZU
1233.95					0.20		1207	9693.2	71ViZU
1236.27					0.14		1210	9695.4	71ViZU
1238.80					0.72		1212	9697.9	71ViZU
1240.29					0.75		1214	9699.4	71ViZU
1241.19					0.30		1215	9700.2	71ViZU
1241.84							1215	9700.9	71ViZU
1243.14					0.27		1216	9702.2	71ViZU
1246.51					0.22		1220	9705.4	71ViZU
1248.59					0.64		1222	9707.5	71ViZU
1250.02					0.23		1223	9708.9	71ViZU
1251.06					0.22		1224	9709.9	71ViZU
1251.58					0.70		1225	9710.4	71ViZU
1253.92					0.10		1227	9712.7	71ViZU
1256.27							1229	9715.0	71ViZU
1257.57					0.12		1231	9716.3	71ViZU
1259.79					0.13		1233	9718.4	71ViZU
1260.97							1234	9719.6	71ViZU
1261.75					0.70		1235	9720.4	71ViZU
1263.32					1.30		1236	9721.9	71ViZU
1266.98							1240	9725.5	71ViZU
1268.55					0.36		1241	9727.0	71ViZU
1273.41					0.10		1246	9731.8	71ViZU
1274.32					1.80		1247	9732.7	71ViZU

(continued) $^{47}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	I_γ	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
1275.90					0.53		1249	9734.2	71ViZU
1276.69					0.56		1249	9735.0	71ViZU
1277.61					0.20		1250	9735.9	71ViZU
1279.58					1.13		1252	9737.8	71ViZU
1283.14					0.57		1256	9741.3	71ViZU
1285.91							1258	9744.0	71ViZU
1287.49					1.40		1260	9745.5	71ViZU
1288.81							1261	9746.8	71ViZU
1289.47					0.18		1262	9747.5	71ViZU
1292.77					1.56		1265	9750.7	71ViZU
1293.30					1.14		1266	9751.2	71ViZU
1294.62					0.06		1267	9752.5	71ViZU
1295.68					0.25		1268	9753.6	71ViZU
1299.13					0.79		1271	9756.9	71ViZU
1302.58					0.75		1275	9760.3	71ViZU
1303.64							1276	9761.4	71ViZU
1304.57							1277	9762.3	71ViZU
1305.70					0.10		1278	9763.4	71ViZU
1307.36					0.74		1279	9765.0	71ViZU
1308.16					0.31		1280	9765.8	71ViZU
1309.76					0.10		1282	9767.3	71ViZU
1311.49							1283	9769.0	71ViZU
1312.42					0.69		1284	9769.9	71ViZU
1315.62					0.41		1287	9773.1	71ViZU
1316.15					0.48		1288	9773.6	71ViZU
1318.29					0.76		1290	9775.7	71ViZU
1319.30					0.12		1291	9776.7	71ViZU
1321.76					0.71		1293	9779.1	71ViZU
1323.10					1.50		1295	9780.4	71ViZU
1323.90					0.22		1295	9781.2	71ViZU
1325.64							1297	9782.9	71ViZU
1326.85					1.38		1298	9784.1	71ViZU
1327.65					0.66		1299	9784.8	71ViZU
1328.99							1300	9786.2	71ViZU
1331.81					0.36		1303	9788.9	71ViZU
1332.35							1304	9789.4	71ViZU
1333.56					0.04		1305	9790.7	71ViZU
1334.09					0.14		1305	9791.1	71ViZU
1334.90					0.46		1306	9791.9	71ViZU
1335.97					1.10		1307	9793.0	71ViZU
1337.59							1309	9794.6	71ViZU
1340.55					0.46		1312	9797.5	71ViZU
1341.76					0.73		1313	9798.7	71ViZU
1343.24					0.55		1314	9800.1	71ViZU
1344.59					0.09		1316	9801.4	71ViZU

(continued) $^{47}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	I_γ	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
1345.40					0.09		1317	9802.2	71ViZU
1346.21					0.14		1317	9803.0	71ViZU
1347.02					0.31		1318	9803.8	71ViZU
1348.37					0.32		1319	9805.1	71ViZU
1349.32					1.32		1320	9806.1	71ViZU
1350.80					0.73		1322	9807.5	71ViZU
1353.24					0.44		1324	9809.9	71ViZU
1356.76					0.05		1328	9813.3	71ViZU
1357.84					0.21		1329	9814.4	71ViZU
1361.09					0.14		1332	9817.6	71ViZU
1359.33							1330	9815.8	71ViZU
1361.09					0.69		1332	9817.6	71ViZU
1362.45					0.90		1333	9818.9	71ViZU
1363.27					0.06		1334	9819.7	71ViZU
1363.95					0.21		1335	9820.4	71ViZU
1364.62					0.09		1335	9821.0	71ViZU
1365.44							1336	9821.8	71ViZU
1366.26							1337	9822.6	71ViZU
1368.57							1339	9824.9	71ViZU
1370.06							1341	9826.3	71ViZU
1374.15							1345	9830.3	71ViZU
1375.11					0.75		1346	9831.3	71ViZU
1376.33					0.90		1347	9832.5	71ViZU
1378.24					0.46		1349	9834.4	71ViZU
1379.34					1.28		1350	9835.4	71ViZU
1380.70					0.26		1351	9836.8	71ViZU
1381.93					0.10		1352	9838.0	71ViZU
1382.89					0.28		1353	9838.9	71ViZU
1383.98					1.86		1354	9840.0	71ViZU
1386.45					3.44		1357	9842.4	71ViZU
1387.82					0.34		1358	9843.7	71ViZU
1392.21					1.10		1362	9848.0	71ViZU
1394.40					0.15		1364	9850.2	71ViZU
1395.50					1.14		1366	9851.2	71ViZU
1396.05					0.23		1366	9851.8	71ViZU
1397.43					1.42		1367	9853.1	71ViZU
1397.98							1368	9853.7	71ViZU
1399.21							1369	9854.9	71ViZU
1400.04					0.49		1370	9855.7	71ViZU
1401.42					0.33		1371	9857.0	71ViZU
1403.48					0.73		1373	9859.1	71ViZU
1404.31					0.16		1374	9859.9	71ViZU
1405.96					0.89		1376	9861.5	71ViZU
1406.55					0.13		1378	9864.0	71ViZU
1407.89					0.39		1378	9863.4	71ViZU

(continued) $^{47}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	I_γ	Γ_γ [eV]	E_cm [keV]	E^* [keV]	Ref.
1409.55					0.90		1379	9865.0	71ViZU
1411.48							1381	9866.9	71ViZU
1412.31					1.36		1382	9867.7	71ViZU
1416.32					0.32		1386	9871.6	71ViZU
1418.82					0.56		1388	9874.1	71ViZU
1420.62					0.18		1390	9875.8	71ViZU
1421.45					0.14		1391	9876.6	71ViZU
1423.11					1.40		1393	9878.3	71ViZU
1424.22					1.42		1394	9879.3	71ViZU
1426.45					0.66		1396	9881.5	71ViZU
1427.14					0.54		1397	9882.2	71ViZU
1428.95					0.08		1398	9884.0	71ViZU
1429.64							1399	9884.6	71ViZU
1430.62					0.56		1400	9885.6	71ViZU
1433.46					0.18		1403	9888.4	71ViZU
1436.05					0.28		1405	9890.9	71ViZU
1437.86					0.80		1407	9892.7	71ViZU
1439.25					5.00		1408	9894.1	71ViZU
1445.40							1414	9900.1	71ViZU
1446.24					0.14		1415	9900.9	71ViZU
1448.34					0.64		1417	9902.9	71ViZU
1448.76					1.04		1418	9903.4	71ViZU
1449.74					0.66		1419	9904.3	71ViZU
1450.16							1419	9904.7	71ViZU
1451.54					0.46		1420	9906.1	71ViZU
1453.94							1423	9908.4	71ViZU
1458.29							1427	9912.7	71ViZU
1459.69					2.66		1428	9914.1	71ViZU
1461.10					0.10		1430	9915.4	71ViZU
1461.66					1.90		1430	9916.0	71ViZU
1463.07					0.18		1432	9917.4	71ViZU
1466.45					1.24		1435	9920.7	71ViZU
1467.85					0.78		1436	9922.0	71ViZU
1468.70					0.36		1437	9922.9	71ViZU
1471.24					0.10		1440	9925.4	71ViZU
1471.80					0.12		1440	9925.9	71ViZU
1473.35							1442	9927.4	71ViZU
1474.91					0.96		1443	9928.9	71ViZU
1476.04					0.2		1444	9930.1	71ViZU
1479.01					0.38		1447	9933.0	71ViZU
1480.28					2.74		1449	9934.2	71ViZU
1482.69					1.24		1451	9936.6	71ViZU
1483.68					0.68		1452	9937.5	71ViZU
1486.79					0.46		1455	9940.6	71ViZU
1489.35					0.10		1457	9943.1	71ViZU

(continued) **$^{47}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [eV]	γ_p^2 [keV]	I_γ	Γ_γ [eV]	E_{cm} [keV]	E^* [keV]	Ref.		
1491.90					1.44		1460	9945.6	71ViZU		
1493.58							1462	9947.2	71ViZU		
1493.61					1.14		1462		71ViZU		
1494.46					0.24		1462	9948.1	71ViZU		
1495.46					2.32		1463	9949.1	71ViZU		
1497.16					0.64		1465	9950.7	71ViZU		
1499.58					0.82		1467	9953.1	71ViZU		
1500.72					0.92		1469	9954.2	71ViZU		
1504.14					0.58		1472	9957.6	71ViZU		
1505.00					0.16		1473	9958.4	71ViZU		
1506.43					0.14		1474	9959.8	71ViZU		
1509.00					0.62		1477	9962.3	71ViZU		
1510.57					0.30		1478	9963.8	71ViZU		
1514.14							1482	9967.3	71ViZU		
1515.58					0.36		1483	9968.7	71ViZU		
1518.73					0.46		1486	9971.8	71ViZU		
1520.45					2.80		1488	9973.5	71ViZU		
1522.46					0.20		1490	9975.5	71ViZU		
1525.90					0.18		1493	9978.8	71ViZU		
1527.34					1.06		1495	9980.3	71ViZU		
1527.77							1495	9980.7	71ViZU		
1529.93					0.38		1497	9982.8	71ViZU		
1533.24					0.68		1500	9986.0	71ViZU		
1536.41					0.12		1503	9989.1	71ViZU		
1537.13					1.06		1504	9989.8	71ViZU		
1539.37					3.12		1506	9992.0	71ViZU		
1839.9(20)	$\langle 3^- \rangle$		100(20)	4.45		0.40(25)	1801	10286(2)	75Vi02		
1848.0(20)	$\langle 3^- \rangle$		20(10)	0.86		0.20(10)	1809	10294(2)	75Vi02		
1852.9(20)	$\langle 3^- \rangle$		90(30)	3.82		0.17(25)	1814	10299(2)	75Vi02		
1857.2(20)	$\langle 3^- \rangle$		20(10)	0.84		0.16(30)	1818	10303(2)	75Vi02		
1858.4(20)	3^-	7	150(40)	6.24		0.50(30)	1819	10305(2)	75Vi02	77Ha45	71Vi06
1859.4(20)	$\langle 3^- \rangle$		30(20)	1.24		0.09(20)	1820	10305(2)	75Vi02		
1860.9(20)	3^-	7	600(60)	24.75		1.36(55)	1821	10307(2)	75Vi02	77Ha45	71Vi06
1862.0(20)	$\langle 3^- \rangle$		80(40)	3.29		0.14(20)	1822	10308(2)	75Vi02		
1863.4(20)	3^-	7	400(50)	16.36		1.22(50)	1824	10309(2)	75Vi02	77Ha45	71Vi06
1870.9	$\langle 3^- \rangle$		70(30)	2.79		0.43(25)	1831	10317	75Vi02		
1873.5	$\langle 3^- \rangle$		130(30)	5.13		0.43(25)	1834	10319	75Vi02		
1877.3	$\langle 3^- \rangle$		50(20)	1.95		0.27(15)	1837	10323	75Vi02		
1896.1	$\langle 3^- \rangle$		100(20)	3.66		0.34(35)	1856	10341	75Vi02		
2586(10)	1^+						2531	11017(10)	67Ga05		
2768(10)	1^-		$67(13)\cdot10^2$				2709	11195(10)	67Ga05		
3948(25)	1^-		$60(12)\cdot10^3$				3864	12350(25)	67Ga05		

Additional data on this isotope can be found in [77Ha45].
Branching ratios of the E_p=1860 and 1862 keV ^{46}Ca(p,γ)^{47}Sc resonances are given in [71Vi06].
It is reported [86Bu04] about 500 resonances in ^{46}Ca(p,γ) reaction [71ViZU, 71Vi06].

Partial radiative widths [75Vi02]. $^{47}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$2J^\pi$	$t_{1/2}$ [fs]	E^* [keV]	Γ_{γ_i} [meV]	Γ_{γ_i} [meV]	Γ_{γ_i} [meV]	Com.	Ref.
ENSDF [02Nu0A]			[75Vi02]	1858 10304	1861 10307	1863 10309	$E_\circ$, keV E^*, keV	75Vi02
0.0	7^-		0.0	10	241	49		75Vi02
766.83(9)	$\langle 3\rangle^+$	$272(8)\cdot10^6$	767	8	21	35		75Vi02
807.89(8)	3^-	$15(4)\cdot10^3$	808	9	67	73		75Vi02
1123(12)								
1145(2)								
1146.99(4)	11^-	3200(1100)						
1297.12(8)	5^-	62(21)	1297	32	26	67		75Vi02
1316(3)								
1391.3(3)	1^+	9000(3000)	1391	10	135	74		75Vi02
1404.4(3)	5^+	970(280)	1405	18	23	31		75Vi02
1639(12)								
1717(12)								
1745(20)								
1797.6(3)	$3–7^-$	210(60)	1797	21	96	27		75Vi02
1798(6)	1^+							
1857.1(3)	5^-	300(60)						
1878.2(7)	9^-	120(60)						
2002.3(3)	3^+	400(90)	2003	6	31	40		75Vi02
2148.2(5)		>2000						
2207.5(3)	$\langle 7^-\rangle$	80(40)	2207	12	21	62		75Vi02
2232(5)	7^-							
2381.3(8)	5^+	<170						
2408.6(16)	7^-,9	210(110)						
2410.3(10)								
2499.4(7)	7^-	<150	2499		18	20		75Vi02
2529.4(9)	1^+	<210	2528		29	13		75Vi02
2641.9(5)		320(70)						
2650(2)			2650		33	15		75Vi02
2810(2)	1^-,3^-		2810	15	9	62		75Vi02
2836(2)	1^-,3^-		2836	21	16	30		75Vi02
2909(2)			2909	10	20	39		75Vi02
2941(2)			2941	15	60	45		75Vi02
3070(7)								
3102(2)	X^-							
3135(8)	$\langle X^-\rangle$		3133	28	28	31		75Vi02
3205(2)	1^-,3^-		3205	12	28	9		75Vi02
3250(5)	7^-							
3256(3)	1^-,3^-							
3262(2)	1^-,3^-		3262	6		38		75Vi02
3290(2)			3290	11	24	19		75Vi02
3302.5(10)		70(30)						
3413(2)	X^-							

(continued) $^{47}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$2J^\pi$	$t_{1/2}$ [fs]	E^* [keV]	Γ_{γ_i} [meV]	Γ_{γ_i} [meV]	Γ_{γ_i} [meV]	Com.	Ref.
ENSDF				1858	1861	1863	$E_\circ$, keV	75Vi02
[02Nu0A]			[75Vi02]	10304	10307	10309	E^*, keV	
3484(4)	$\langle X^- \rangle$							
3537(4)	7^-							
3576(2)			3576	18	15	20		75Vi02
3656(2)								
3728(2)			3728	9		11		75Vi02
3804(4)	$3^+,5^+$							
3860(5)	1^+							
3867.0(11)		210(60)						
3958(5)	$3^+,5^+$							
4008(6)	X^-							
4019(2)			4019	12	42	30		75Vi02
4031(5)	$5^-,7^-$							
4085(2)	3^-		4085	9	13	31		75Vi02
4099(2)			4099	6	21	15		75Vi02
4111(3)								
4191(2)								
4257(3)								
4275(5)	$1^-,3^-$							
4291(7)								
4355(2)	7^-							
4378(5)	$1^-,3^-$							
4389(5)	$3^+,5^+$							
4408(2)			4408		8	11		75Vi02
4475(2)			4475	6	10	6		75Vi02
4505(9)								
4515(5)	$1^-,3^-$							
4553(2)	$3^+,5^+$		4553	44		14		75Vi02
4609(2)	1^+		4609	18	37	26		75Vi02
4617(3)	7^-							
4631(2)	$1^-,3^-$		4631		18	34		75Vi02
4690(2)			4690	8	31	22		75Vi02
4721(2)			4721	27	24			75Vi02
4753(7)								
4792(2)			4792		38	18		75Vi02
4802(2)			4802		31	42		75Vi02
4810(5)	7^-							
4817(5)	$3^+,5^+$							
4831(2)			4831	5	36	21		75Vi02
4860(7)								
4908(10)	$5^-,7^-$							
4956(2)			4956	16	23	35		75Vi02
4998(2)			4998	15	15	20		75Vi02

(continued) $^{47}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$2J^\pi$	$t_{1/2}$ [fs]	E^* [keV]	Γ_{γ_i} [meV]	Γ_{γ_i} [meV]	Γ_{γ_i} [meV]	Com.	Ref.
ENSDF				1858	1861	1863	$E_\circ$, keV	75Vi02
[02Nu0A]			[75Vi02]	10304	10307	10309	E^*, keV	
5030(10)	1^-,3^-							
5050(8)								
5108(6)								
5151(2)	X^-		5151	12	48	36		75Vi02
5252(3)								
5306(5)								
5317(7)	7^-							
5319(10)	1^-,3^-							
5361(5)								
5381(3)	7^-							
5415(10)	1^-,3^-							
5473(5)								
5509(2)			5509	12	37	30		75Vi02
5525(10)	1^-,3^-							
5542(6)								
5561(4)	7^-							
5571(7)	1^-,3^-							
5600(2)			5600	19	45	48		75Vi02
5659(6)								
5685(4)								
5719(4)								
5760(6)								
5824(2)	1^-,3^-							
5855(3)								
5893(4)	X^-							
5946(4)	3^+,5^+							
5987(9)								
6010(6)	7^-							
6040(10)	3^+,5^+							
6096(5)	7^-							
6133(9)								
6184(3)								
6223(5)								
6262(8)	7^-							
6339(3)								
6361(4)								
6383(2)			6383	20	58	42		75Vi02
6410(2)								
6441(6)								
6486(3)								
6523(5)	1^-,3^-							
6546(5)								

(continued) **$^{47}_{21}$Sc(p)**

E^* [keV]	$2J^\pi$	$t_{1/2}$ [fs]	E^* [keV]	Γ_{γ_i} [meV]	Γ_{γ_i} [meV]	Γ_{γ_i} [meV]	Com.	Ref.
ENSDF				1858	1861	1863	$E_\circ$, keV	75Vi02
[02Nu0A]			[75Vi02]	10304	10307	10309	E^*, keV	
6584(2)			6584	17	10	12		75Vi02
6621(8)								
6686(7)								
6724(2)			6724	28	24	26		75Vi02
6786(7)								
6801(4)								
6863(3)								
6876(6)								
6964(5)	3^+,5^+							
7117(5)								
7427(6)								
7523(10)	1^-,3^-							
7683(7)								
7807(5)								
10300(5)	$\langle 3^- \rangle$							
10302(5)	$\langle 3^- \rangle$							
10305(5)	$\langle 3^- \rangle$							
Γ_p, eV				150	600	400		75Vi02
Γ_γ, meV				560	1530	1330		75Vi02

Relative intensities of primary γ-rays from these three states are adopted in [95Bu05].
Proton and total radiative widths of corresponding proton resonances are given in two last lines.

Target isotope: $^{48}_{20}$Ca $I^\pi_\circ = 0^+$ *Abundance:* 0.187(21) % $S_p = 9626.5(32)$ keV **$^{49}_{21}$Sc(p)**

$E_\circ$ [keV]	$2J^\pi$	Γ_p [eV]	Γ [eV]	Γ_n [eV]	Rel.int. γ_i	E^*_{analog} [keV]	E_{cm} [keV]	E^* [keV]	Ref.	
799.6(10)					26		783	10410(3)	66Du04	
811.2(10)					67		795	10421(3)	66Du04	
825.4(10)					40		809	10435(3)	66Du04	
860.9(10)					10		843	10470(3)	66Du04	
890.6(10)					15		872	10499(3)	66Du04	
898.0(10)					10		880	10506(3)	66Du04	doublt
903.9(10)					5		886	10512(3)	66Du04	
910.8(10)					13		892	10519(3)	66Du04	
917.8(10)					43		899	10526(3)	66Du04	
921.9(10)					22		903	10530(3)	66Du04	
936.9(10)					56		918	10544(3)	66Du04	

(continued) $^{49}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	Γ_p [eV]	Γ [eV]	Γ_n [eV]	Rel.int. γ_i	E^*_analog [keV]	E_cm [keV]	E^* [keV]	Ref.		
946.5(10)					61		927	10554(3)	66Du04		
954.7(10)					10		935	10562(3)	66Du04		
964.4(10)					108		945	10571(3)	66Du04		
978.3(10)					10		958	10585(3)	66Du04		
982.5(10)					45		962	10589(3)	66Du04		
993.5(10)					33		973	10600(3)	66Du04		
1004.4(10)					18		984	10610(3)	66Du04		
1011.9(10)					192		991	10618(3)	66Du04		
1030.3(20)							1009	10636(4)	66Du05		
1035.2(10)					265		1014	10641(3)	66Du04		
1038.9(10)					30		1018	10644(3)	66Du04		
1045.4(10)					152		1024	10651(3)	66Du04		
1057.7(10)					49		1036	10663(3)	66Du04		
1063.7(10)					13		1042	10669(3)	66Du04		
1069.5(10)					52		1048	10674(3)	66Du04		
1082.1(20)							1060	10687(4)	66Du05		
1082.6(10)					72		1061	10687(3)	66Du04		
1101.5(10)					85		1079	10706(3)	66Du04		
1108.4(10)					134		1086	10712(3)	66Du04		
1116.8(10)					176		1094	10721(3)	66Du04		
1124.8(20)							1102	10728(4)	66Du05		
1129.1(10)					206		1106	10733(3)	66Du04		
1136.1(10)					127		1113	10739(3)	66Du04		
1142.8(10)					60		1120	10746(3)	66Du04		
1154.7(20)							1131	10758(4)	66Du05		
1159.4(20)							1136	10762(4)	66Du05		
1160.6(10)					38d		1137	10763(3)	66Du04		
1166.4(10)					85		1143	10769(3)	66Du05	66Du04	
1173.3(10)					217		1149	10776(3)	66Du04		
1177.1(10)					95		1153	10780(3)	66Du05	66Du04	
1183.9(10)					188		1160	10786(3)	66Du05	66Du04	
1185.7(20)*							1162	10788(4)	66Du05		
1192.6(10)					17		1168	10795(3)	66Du05	66Du04	
1197.1(20)*							1173	10799(4)	66Du05		
1201.9(10)					24		1177	10804(3)	66Du05	66Du04	
1211.3(10)					94		1187	10813(3)	66Du05	66Du04	
1216.6(10)					166		1192	10818(3)	66Du05	66Du04	
1221.9(10)					108		1197	10824(3)	66Du04		
1223.7(10)					134		1199	10825(3)	66Du05	66Du04	
1236.6(10)					42		1211	10838(3)	66Du05	66Du04	
1252.0(10)					27		1226	10853(3)	66Du05	66Du04	
1255.7(10)					12		1230	10857(3)	66Du05	66Du04	doublt
1272.9(10)					42		1247	10873(3)	66Du05	66Du04	
1278.4(10)					113		1252	10879(3)	66Du05	66Du04	
1285.7(10)					288		1259	10886(3)	66Du05	66Du04	

(continued) $^{49}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	Γ_p [eV]	Γ [eV]	Γ_n [eV]	Rel.int. γ_i	E^*_analog [keV]	E_cm [keV]	E^* [keV]	Ref.			
1294.6(10)					145		1268	10895(3)	66Du05	66Du04		
1302.7(20)*							1276	10903(4)	66Du05			
1309.3(10)					102		1283	10909(3)	66Du05	66Du04		
1316.0(20)*							1289	10916(4)	66Du05			
1320.4(20)*							1294	10920(4)	66Du05			
1325.5(20)*							1298	10925(4)	66Du05			
1329.3(10)					26		1302	10929(3)	66Du05	66Du04		
1332.9(20)*							1306	10932(4)	66Du05			
1339.6(10)					414		1312	10939(3)	66Du05	66Du04		
1350.2(10)					94		1323	10949(3)	66Du04			
1356.0(10)					53		1328	10955(3)	66Du04			
1360.9(10)					194		1333	10960(3)	66Du04			
1372.9(10)					84		1345	10971(3)	66Du04			
1384.2(10)					102		1356	10983(3)	66Du04			
1388.2(10)					105		1360	10986(3)	66Du04			
1393.9(10)					52		1366	10992(3)	66Du04			
1407.5(10)					32		1379	11005(3)	66Du04			
1413.2(10)					41		1384	11011(3)	66Du04			
1420.4(10)					87		1391	11018(3)	66Du04			
1423.9(10)					123		1395	11021(3)	66Du04			
1431.0(10)					123		1402	11028(3)	66Du04			
1436.7(10)					42		1407	11034(3)	66Du04			
1938(2)	1^-	10		20			1898	11525(4)	69Wi03			
1947(2)	1^+	25		5			1907	11534(4)	69Wi03			
1948(2)	$\langle 3^- \rangle$	50(50)		70(70)			1908	11536(3)	72Ga09	68Vi01	69Wi03	95Bu23
1956(2)	1^-	15		120			1916	11543(3)	72Ga09		69Wi03	95Bu23
1959(2)**	3^-	100(50)		400(200)			1919	11546(3)	72Ga09	68Vi01	69Wi03	95Bu23
1962(2)	$\langle 3^- \rangle$	5		10			1922	11548(3)	72Ga09		69Wi03	95Bu23
1964(2)**	3^-	400(100)		220(60)			1924	11550(3)	72Ga09	68Vi01	69Wi03	95Bu23
1974(2)**	3^-	1200(300)	4.8(5)	320(80)		0.0	1934	11560(3)	72Ga09	68Vi01	69Wi03	95Bu23
1982(2)**	$\langle 3^- \rangle$	50(50)	$\langle 100 \rangle$	50(50)			1942	11568(3)	72Ga09	68Vi01	69Wi03	95Bu23
1991(2)**	$\langle 3^- \rangle$	40(40)	290(140)	250(130)			1950	11577(3)	72Ga09	68Vi01	69Wi03	95Bu23
1996	$\langle 3^- \rangle$	20(20)	170(80)	150(80)			1955	11582(3)	72Ga09	68Vi01	69Wi03	95Bu23
3941(40)***	$\langle 1^- \rangle$					2023.2	3861	13487	95Bu23			
4012(40)***	$\langle 1^- \rangle$					2023.2	3931	13557	95Bu23			
4027(6)	$\langle 1 \rangle^-$	$151(2)\cdot10^3$	$226(3)\cdot10^3$	$52(1)\cdot10^3$		2023.2	3943	13571(5)	95Bu23	82Si19		
5594(10)	5^-	2300	$13(1)\cdot10^3$			3586.5	5480	15107	79Na10	95Bu23	86Bu09	
5974(10)	$\langle 3 \rangle^-$	1160	$19(2)\cdot10^3$			3861	5852	15480	79Na10	95Bu23	86Bu09	
6041(5)							5918	15544(4)	95Bu23			
6056(5)**	5^-	$24(5)\cdot10^3$	$31(8)\cdot10^3$			3991.5	5932	15562(6)	79Na10	86Di01	95Bu23	86Bu09
6081	5						5957	15583(4)	95Bu23			
6100	5						6000	15600(4)	95Bu23			
6118(5)**	9^+	2700(800)	$18(5)\cdot10^3$			4010	5993	15620(6)	79Na10	86Di01	95Bu23	86Bu09
6161	5						6036	15662(4)	95Bu23			
6379(10)	3^+	1030	$20(2)\cdot10^3$			4277.5	6249	15876	79Na10	95Bu23	86Bu09	

(continued) $^{49}_{21}\mathbf{Sc}(\mathrm{p})$

$E_\circ$ [keV]	$2J^\pi$	Γ_p [eV]	Γ [eV]	Γ_n [eV]	Rel.int. γ_i	E^*_analog [keV]	E_cm [keV]	E^* [keV]	Ref.		
6529(10)	5^+	5440	$26(3)\cdot10^3$			4416.5	6396	16023	79Na10	95Bu23	86Bu09
7023(10)	7^+	1330	$15(2)\cdot10^3$			4885	6880	16507	79Na10	95Bu23	86Bu09
7518(10)	9^+	1450	$19(2)\cdot10^3$			5397	7365	16992	79Na10	95Bu23	86Bu09
8200(10)	5^+	8210	$108(11)\cdot10^3$			6090	8000	17661	79Na10	95Bu23	86Bu09
8702	$3^+,5^+$					⟨6690⟩	8525	18151	95Bu23	86Bu09	
8901	$3^+,5^+$					⟨6900⟩	8720	18346	95Bu23	86Bu09	

Additional data on this isotope can be found in [82Si19, 79Zy01, 75Ga10, 70Ma08, 67Ch06, 66Jo03, 64Du01].

* This resonance was observed only in (p,nγ) reaction.

** Partial radiative widths are given in [73Ad05, 73Ad06, 76Di04].

*** The expected value observed only in reactions with other particles (d, α, etc. [95Bu23]).

For the resonances at $E_\circ$=1974 and 4027 keV Γ_γ is given instead of Γ.

The values Γ [82Si19] are results of the independent fit and are not the sum of the other widths.

Five resonances at E_cm=1935 keV, 1945 keV, 3860 keV (all ℓ_p=1), 5952 keV and 5994 keV (both ℓ_p=3) were observed in [66Jo03].

Somewhat different parameters (Γ_p, Γ_n as well as Γ_γ) for ten resonances at E_p=1948–1996 keV are given in [68Vi01, 72Ga09].

Partial radiative widths [73Ad06]. $^{49}_{21}\mathbf{Sc}(\mathrm{p})$

E^* [keV]	$2J^\pi$	$E_\circ$ [keV]	Partial radiative widths [meV]															
E^*			0.0	2228	2371	3085	3516	3808	3991	4072	4738	6306	6415	6502	6728	6985	7063	7193	7228
$2J^\pi_\mathrm{f}$			7^-	1^+	3^+	3^-	3^-	7^-	1^+	5^-	5^-	5^-	7^-	3	3^-	5^-	1^-	5	5
11536	⟨3^-⟩	1950																	
11543		1959	5	16	25	10	23	22	27	25	40	38	71	58	87	69	59	58	41
11546	3^-	1964		66	36	85	81	63	51	156	80	71	124	196	214	303	160	118	131
11548																			
11550	3^-	1975	127	82	59	34	58	146	147	259	182	67	292	538	431	593	331	246	268
11560	3^-	1982	4	3	4	5	16	16	14	39	43	42	55	66	64	40	34	28	48
11568	3^-	1991		6		28	29	48	34	54	30	40	31	53	42	36	41	26	42
11577	⟨3^-⟩	1996																	
11582	⟨3^-⟩																		

γ-ray spectra from resonances at E_cm=5933 and 5992 keV with Γ=39(5) and 18(5) keV and $\Gamma_{\gamma_\circ}$=17(5) and 22(11) eV were measured in [76Di04]; γ-transitions after capture at resonance at E^*=11559 keV are given in [73Ad05].