Target isotope: ${}^{70}_{32}$Ge $I^{\pi}_{\circ} = 0^{+}$ *Abundance:* 20.37(18) % $S_{\mathrm{p}} = 4620.8(40)$ keV

${}^{71}_{33}$**As**(p)

$E_{\circ}$ [keV]	$2J^{\pi}$	$2T$	Γ_{p} [keV]	Γ [keV]	E^{*}_{analog} [keV]	S_{pp}	S_{dp}	E_{cm} [keV]	E^{*} [keV]	Ref.
1382								1362	5983	75Li14
1414								1394	6015	75Li14
1552								1530	6151	75Li14
1674								1650	6271	75Li14
1798								1772	6393	75Li14
1886								1859	6480	75Li14
1913								1886	6507	75Li14
1954								1926	6547	75Li14
1995								1967	6587	75Li14
2014								1985	6606	75Li14
2030								2001	6622	75Li14
2078								2048	6669	75Li14
2173								2142	6763	75Li14
2235								2203	6824	75Li14
2279								2247	6867	75Li14
2301								2268	6889	75Li14
2335								2302	6923	75Li14
2398								2364	6985	75Li14
2414								2380	7001	75Li14
2434								2399	7020	75Li14
2461								2426	7047	75Li14
3631(10)	1^{-},3^{-}		0.3	8	812			3580	8201(11)	79Ra29 88Bh01
3815(10)	1^{+}		0.35	7	993			3761	8382(11)	79Ra29 88Bh01
3928(10)	1^{+}		0.50(6)	11.20(2)	1105	0.015(3)	0.100	3873	8494(11)	79Ra29 89El04 88Bh01
4080(30)	1^{+}	5	0.35	9	1304			4023	8643(30)	79Ra29
4102(30)	1^{+}	5			1304			4044	8665(30)	79Ra29
4118(30)	1^{+}	5	0.65	9	1304			4060	8681(30)	79Ra29
4137(30)	1^{+}	5	1.40	14	1304			4079	8700(30)	79Ra29
4176(30)	1^{+}	5	0.40	10	1304			4117	8738(30)	79Ra29
4353(30)	1^{+}		0.8	17	1523			4292	8913(30)	79Ra29
4370(30)								4308	8929(30)	72Ma64 88Bh01
4492(30)	1^{+}		0.6	12	1661	0.014(4)		4429	9050(30)	79Ra29 89El04 88Bh01
4510(30)								4446	9067(30)	72Ma64 88Bh01
4605(10)	1^{+}		0.55	12	1772	0.012(3)	0.013	4540	9161(11)	79Ra29 89El04 88Bh01
4800(30)	1^{+}							4732	9353(30)	72Ma64 88Bh01
4974(10)	3^{-}		0.99	18				4904	9525(11)	88Bh01 78Te03
5010(10)	1^{+}		1.4	17				4939	9560(11)	88Bh01 78Te03
5044(10)	5^{+}		0.8	25				4973	9594(11)	88Bh01 78Te03
5055(10)	1^{+}		18.9	65	2216	0.29(2)	0.250	4984	9605(11)	79Ra29 89El04 88Bh01
5068(10)	1^{+}		1.1	28				4997	9617(11)	88Bh01 78Te03
5088(30)								5016	9637(30)	72Ma64 88Bh01
5138(10)	5^{+}		2.1	21	2278			5066	9686(11)	88Bh01 78Te03
5220(30)	3^{+},5^{+}							5146	9767(30)	72Ma64 88Bh01
5365(30)	1^{+}							5289	9910(30)	72Ma64 88Bh01
5520(30)	3^{+},5^{+}							5442	10063(30)	72Ma64 88Bh01

(continued) $^{71}_{33}$**As**(p)

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [keV]	Γ [keV]	E^*_{analog} [keV]	S_{pp}	S_{dp}	E_{cm} [keV]	E^* [keV]	Ref.
5950(30)	1^+							5866	10487(30)	72Ma64 88Bh01
6060(30)	1^+							5975	10595(30)	72Ma64 88Bh01
6230(30)	3^+,5^+							6142	10763(30)	72Ma64 88Bh01
6400(30)	3^+,5^+							6310	10931(30)	72Ma64 88Bh01
6510(30)	1^+							6418	11039(30)	72Ma64 88Bh01
6600(30)	1^+							6507	11128(30)	72Ma64 88Bh01
7300(30)	1^+							7197	11818(30)	72Ma64 88Bh01

Additional data on this isotope can be found in [85El05, 79Sz06, 75Li14, 73Hs02].
Spectroscopic factors $(2J{+}1)S_{pp}$ instead of S_{pp}, $(2J{+}1)S_{dp}$ instead of S_{dp} [89El04].
Nonstatistical effects in resonance parameters were discussed in [71Te05, 74Ba04, 78Te03, 79Te04].
Isotope-spin $2T$=5 was assigned to the "sub-structure" resonances with the same ℓ=0 as of the analogue resonance (T=7/2). Parameters of the "gross-structure" resonance are: $E_\circ$=4131 keV ($2T$=7), Γ_p=4.65 keV,Γ=35 keV [79Ra29].

Branching ratios of γ-transitions [75Li14, 02Nu0A]. $^{71}_{33}$**As**(p)

E^* [keV]	$2J^\pi$	$E_\circ$ [keV]	Branching ratios Percentage																	
E^*			0	145	510	829	870	924	991	1007	1243	1413	1467	1490	1533	1609	1974	2360	2657	2947
$2J^\pi_f$			5^-	$\langle1\rangle^-$	$\langle3\rangle^-$	3^-	$\langle5\rangle^-$	$\langle7\rangle$		X^-	X^-	X^-								
143.49	$\langle1\rangle^-$		100																	
147.41	$\langle3\rangle^-$		100																	
6621		2030	1.0	23.1	5.7	5.0	5.1	3.5	7.7	5.6	4.4	6.4	1.0	7.1	2.5	5.7	2.2	4.3	4.5	4.2
7018		2434	3.3	17.4	5.5	4.7	6.2	4.7	8.8	6.9	4.4	5.3	3.5	5.0	1.0	5.8	3.4	4.2	4.1	4.8

Target isotope: $^{72}_{32}$Ge $I^\pi_\circ = 0^+$ *Abundance:* 27.31(26) % S_p = 5659.7(36) keV $^{73}_{33}$**As**(p)

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [keV]	Γ [keV]	$\Gamma_{p'}$ [keV]	E^*_{analog} [keV]	S_{pp}	E_{cm} [keV]	E^* [keV]	Ref.
2694(8)**								2657	8317(8)	62Ne02
2868(8)**								2829	8488(8)	62Ne02
2926(8)**								2886	8546(8)	62Ne02
3118(8)**								3075	8735(8)	62Ne02
3341(5)**								3295	8955(5)	62Ne02 78Kl05
3356(5)*								3310	8970(5)	78Kl05
3366(5)*								3320	8980(5)	78Kl05

(continued) $^{73}_{33}$**As**(p)

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [keV]	Γ [keV]	$\Gamma_{p'}$ [keV]	E^*_{analog} [keV]	S_{pp}	E_{cm} [keV]	E^* [keV]	Ref.		
3375(3)*	5^+			⟨12.5⟩		13		3329	8988(3)	93Ki25	72Be13	78Kl05
3392(5)*								3346	9005(5)			78Kl05
3426(15)**				⟨22.5⟩		65		3379	9039(15)	62Ne02	72Be13	
3731(15)**	3^-			⟨12.5⟩		364		3680	9340(15)	62Ne02	72Be13	93Ki25
3761(15)				⟨12.5⟩		400		3709	9369(15)		72Be13	
3811(5)*								3759	9418(5)			78Kl05
3865(3)*				⟨7.0⟩		515		3812	9472(3)		72Be13	78Kl05
3931(15)**				⟨10.0⟩		570		3877	9537(15)	62Ne02	72Be13	
4034(15)				⟨10.0⟩		673		3979	9638(15)		72Be13	
4086(15)						725		4030	9690(15)		72Be13	
4166(15)						805		4109	9769(15)		72Be13	
4221(15)						860		4163	9823(15)		72Be13	
4261(15)				⟨12.0⟩		900		4203	9862(15)		72Be13	
4295(3)**				⟨13.3⟩		930		4236	9896(3)	62Ne02	72Be13	78Kl05
4402(3)**	3^-			⟨12.5⟩		1043		4342	10001(3)	93Ki25	72Be13	78Kl05
4491(15)						1130		4429	10089(15)		72Be13	
4541(15)						1180		4479	10138(15)		72Be13	
4611(15)				⟨11.3⟩		1250		4548	10208(15)		72Be13	
4671(15)						1310		4607	10267(15)		72Be13	
5002(3)	1^+					1599		4933	10593(3)	93Ki25		78Kl05
5021(15)	5^+					1623		4952	10612(15)	93Ki25		
5082(8)**								5012	10672(8)	62Ne02		
5091(15)**	1^+					1742		5021	10681(15)	62Ne02	93Ki25	
5420(8)**								5346	11005(8)	62Ne02		
5489(8)**								5414	11073(8)	62Ne02		
5656(8)**								5579	11238(8)	62Ne02		
5715(8)**								5637	11296(8)	62Ne02		
5809(8)**								5729	11389(8)	62Ne02		
5908(8)**								5827	11487(8)	62Ne02		

Additional data on this isotope can be found in [93Ki25, 87Ki13, 79Gi03, 79Sz06, 75Sc44, 72Gi08, 69Be33, 62Ne02].
 * Relative intensities of the direct γ-transitions from the resonances are given in [78Kl05].
 ** Maxima marked in [62Ne02] in the excitation function for population of the first excited state of ^{72}Ge by inelastic scattering.

Target isotope: $^{74}_{32}$Ge $I^\pi_\circ = 0^+$ *Abundance:* 36.73(15) % $S_p = 6899.42(95)$ keV $^{75}_{33}$**As**(p)

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [keV]	Γ [keV]	E^*_{analog} [keV]	S_{pp}	S_{dp}	E_{cm} [keV]	E^* [keV]	Ref.				
3568(3)	1^-		2.1*	24(5)	0.0	0.39	0.37	3520	10420(9)	78Kl05	67Co04	77Dr01	66Ga14	90Fa07
3660(5)								3611	10511(9)	78Kl05				

(continued) $^{75}_{33}$**As**(p)

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [keV]	Γ [keV]	E^*_analog [keV]	S_pp	S_dp	E_cm [keV]	E^* [keV]	Ref.
3789(3)	⟨9$^+$⟩			40(5)	200			3738	10638(10)	78Kl05 67Co04 90Fa07
3819(3)	⟨1$^-$⟩			22(5)	253			3768	10667(9)	78Kl05 67Co04 90Fa07
4154(3)	⟨3$^-$⟩		⟨1.2⟩	17(5)	581	0.068		4099	10998(8)	78Kl05 67Co04 77Dr01 67Ha02 90Fa07
4183(3)	⟨3$^+$⟩		⟨1.0⟩	15(5)	584	0.13		4127	11027(8)	78Kl05 67Co04 77Dr01 67Ha02 90Fa07
4223(5)	5$^-$							4167	11066(9)	78Kl05
4248(15)								4191	11091(15)	67Co04 67Ha02 90Fa07
4280(3)	⟨1$^+$⟩		⟨1.5⟩	21(5)	675	0.031	0.022	4223	11122(8)	78Kl05 67Co04 77Dr01 67Ha02 90Fa07
4494(3)	⟨1$^-$⟩		⟨3.2⟩	17(5)	885	0.047	0.080	4434	11333(8)	78Kl05 67Co04 77Dr01 67Ha02 90Fa07
4743(10)	⟨3$^-$⟩		⟨0.9⟩	16(5)	1133	0.022		4670	11569(15)	67Co04 77Dr01 67Ha02 90Fa07
5009(3)	⟨5$^+$⟩		⟨0.4⟩	23(5)	1396	0.017		4942	11842(7)	78Kl05 67Co04 77Dr01 67Ha02 90Fa07
5038(15)								4971	11870(15)	78Kl05 90Fa07
5051(3)	1$^+$		⟨22⟩	47(5)	1511	0.22	0.19	4984	11883(7)	78Kl05 67Co04 77Dr01 67Ha02 90Fa07
5126(3)	5$^+$		⟨2.1⟩	36(5)	1534	0.080	0.045	5058	11957(7)	78Kl05 67Co04 77Dr01 67Ha02 90Fa07
5289(10)	3$^+$,5$^+$		⟨3.0⟩	34(5)		⟨0.1⟩	⟨0.17⟩	5208	12107(15)	67Co04 77Dr01 67Ha02 90Fa07
5445(15)								5372	12272(15)	90Fa07
5585(15)								5511	12410(15)	90Fa07
5835(15)								5757	12657(15)	90Fa07
5961(15)								5882	12781(15)	90Fa07
6135(15)								6053	12953(15)	90Fa07
6251(15)								6168	13067(15)	90Fa07
6468(15)								6382	13281(15)	90Fa07

Additional data on this isotope can be found in [79Sz06, 75Sc44].
* $(2J^\pi{+}1)\Gamma_\mathrm{p}$=4.4(9) keV and $(2J^\pi{+}1)S_\mathrm{pp}$=0.74 are given in [66Ga14].

Branching ratios of γ-transitions [74Wa08, 02Nu0A]. Part 1. $^{75}_{33}$**As**(p)

E^* [keV]	$2J^\pi$	$E_\circ$ [keV]	Branching ratios Percentage												Com.
			0 3$^-$	199 1$^-$	265 3$^-$	280 5$^-$	304 9$^+$	401 5$^+$	469 X$^-$	572 5$^-$	585 X$^-$	618 X$^-$	865	1065	E^*,keV $2J^\pi_\mathrm{f}$
198.606(1)	1$^-$		100												
264.658(1)	3$^-$		98.1	1.9											
279.543(1)	5$^-$		100												
303.924(1)	9$^+$		98			2									
400.658(1)	5$^+$		13		64	19	4								
468.75(17)	1$^-$,3$^-$		100												
572.37(15)	5$^-$		92	7	0.4										
585(7)	1$^-$,3$^-$														
617.69(12)	1$^-$,3$^-$		28	65	7	2									
821.66(13)	7$^-$		86		0.6	8				6					

(continued) **$^{75}_{33}$As**(p)

E^* [keV]	$2J^\pi$	$E_\circ$ [keV]	Branching ratios Percentage												Com.
			0 3^-	199 1^-	265 3^-	280 5^-	304 9^+	401 5^+	469 X^-	572 5^-	585 X^-	618 X^-	865	1065	E^*,keV $2J_f^\pi$
859.8(4)	1^+														
865.0(4)	$\langle 1^-–5^- \rangle$														
886.4(5)															
1043.4(6)	7^-					8	29	71							
1063.3(5)	3^-				32	53				10					
1074.5(7)	3^-		93	7											
1080.8(8)	$\langle 5^+ \rangle$														
1096.3(7)	$\langle 7,9^- \rangle$														
1100.2(6)	$\langle 1 \rangle$														
1126.7(6)	$\langle 1^+ \rangle$														
1128.9(9)	$1^-,3^-$		[100]												
1172.0(6)	$\langle 11 \rangle$														
1203.6(6)	3^-		70			8			22						
1264(3)															
1302.3(7)	5^+														
1309.4(4)	5^-														
1349.3(6)	3^-		67					19	14						
1370.8(7)	$\langle 3^- \rangle$														
1420.2(5)	$\langle 5^- \rangle$		13		8	44									
1430.5(6)	$3^{\langle + \rangle}$		43	7				21							
1503.4(5)	$3^{\langle + \rangle}$		9	57				9							
1579.8(7)	1^-														
1595(10)															
1606.4(5)	3^-		59	18					14						
1808(2)	$7^+,9^+$				[18]		[14]	[20]							
2061(3)							[35]							[40]	
2066.9(6)	$\langle 1^-,3^+ \rangle$														
2098(3)			[27]				[15]	[12]					[19]		
2175.8(10)	1		x		x										
2663(4)								[23]							
2683(4)			[28]	[28]	[22]				[10]				[20]		
2798(5)															
2920(5)															
2938(4)							[15]								
9399		2531	4.7	6.2	5.2	2.6	1.6	2.4	4.5	4.2		4.7	3.9		

All branching ratios and E^* for states seen in γ-transitions [74Wa08] are from [02Nu0A].
Parameters of transitions to the states with E^* greater than 1060 keV can be found in [02Nu0A].

Branching ratios of γ-transitions [74Wa08, 02Nu0A]. Part 2.

$^{75}_{33}$As(p)

E^* [keV]	$2J^\pi$	$E_\circ$ [keV]	Branching ratios Percentage														Com.
			1205	1351	1422	1432	1504	1605	1808	1874	2061	2180	2572	2663	2683	2938	E^*,keV $2J^\pi_f$
2061(3)			20														
2938(4)				18		14											
9399		2531	2.1	5.5	3.7	1.9	2.1	3.7	4.2	4.1	6.0	6.2	2.4	4.9	5.2	6.7	

All branching ratios and E^* for states seen in γ-transitions are from [74Wa08].

Target isotope: $^{76}_{32}$Ge $I^\pi_\circ = 0^+$ *Abundance:* 7.83(7) % $S_p = 7992.3(18)$ keV

$^{77}_{33}$As(p)

$E_\circ$ [keV]	$2J^\pi$	$2T$	Γ_p [keV]	Γ [keV]	E^*_{analog} [keV]	S_{pp}	S_{dp}	E_{cm} [keV]	E^* [keV]	Ref.
4126(5)	1^-			30(5)	160			4077(5)	12063(7)	97Fa12 66Ha16 67Co04 78Kl05
4190(5)	9^+				225			4135(5)	12126(7)	97Fa12 78Kl05
4496(5)	$\langle 5^+\rangle$			26(5)	510			4433(3)	12428(7)	97Fa12 66Ha16 67Co04 78Kl05
4615(5)	3^-			27(5)	629			4551(3)	12546(7)	97Fa12 66Ha16 67Co04 78Kl05
4875(5)	$\langle 5^+\rangle$			26(5)	884			4811(3)	12802(7)	97Fa12 66Ha16 67Co04 78Kl05
5001(5)				42(5)	1021			4931(3)	12924(7)	97Fa12 66Ha16 67Co04 78Kl05
5180(15)				80(7)	1189			5101(12)	13094(7)	97Fa12 66Ha16 67Co04
5329(15)				56(5)	1386			5250(7)	13243(7)	97Fa12 66Ha16 67Co04
5518(15)	$\langle 1^+\rangle$				1536			5446(10)	13439(7)	97Fa12
5780(15)				72(5)	1804			5704(10)	13697(7)	97Fa12 66Ha16