

Fitting Tables:¹³C target

1 ¹³C(d, p)¹⁴C

¹³ C(d, p) ¹⁴ C Q-value 5.95, E = 10, Ex = 0.00											
run	deg	E - dE			dE			Events		χ^2 /ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	1.5537e+01	3613	16	1.4054e-01	212	8.3	106	14	0.79	19786
0199	30.9		3583	0.4				355	19.0	22.93 / 35	128489
0188	35.9		3563	2.1				44	6.63	0.4058 / 1	36221
0189	35.9		3566	2.4				48	6.93	7.329 / 7	29548
0190	35.9		3561	64.4				29	5.39	3.172 / 19	29465
0191	41.8		3520	11.3				27	5.20	5.87 / 12	38811
0192	41.8		3524	10.1				28	5.29	4.997 / 15	39173
0193	41.8		3518	5.92				35	5.92	/	41030
0194	46.5		3488	19.7				41	6.40	6.439 / 21	40405
0195	46.5		3490	1.4				138	11.7	40.57 / 35	133944
0196	50.9		3457	0.8				149	12.2	32.21 / 35	121337
0197	55.9		3415	0.9				124.3	11.8	39.64 / 41	133841
0198	60.9		3374	0.8				168	13.6	23.02 / 37	155330
0222	60.9	1.4508e+01	3371	0.62	1.4853e-01	196	4.7	225	15	1.2	411998
0223	65.9	1.4322e+01	3319	0.85	1.5008e-01	198	5.2	153	13	1	502661
0221	70.9	1.4130e+01	3282	0.69	1.5172e-01	198	4.8	136	12	0.9	475716
0224	75.9	1.3935e+01	3237	1.3	1.5343e-01	200.7	9.4	103.6	12.6	40.54 / 34	586439
0220	80.9	1.3738e+01	3188	1.0	1.5519e-01	205.3	5.8	48.9	4.53	33.22 / 36	621105
0220	80.9		3188	0.1				145.6	13.5	31.84/34	621105
0225	85.9	1.3541e+01	3143	1.0	1.5699e-01	211.4	5.7	151.5	13.7	41.19 / 38	710184
0219	90.9	1.3346e+01	3098	0.9	1.5883e-01	210.9	4.7	165.4	14.0	54.73 / 46	773501
0219	90.9		3098	0.9				165.1	13.9	46.63/38	773501

$^{13}\text{C}(d, p)^{14}\text{C}^*$ 1st excited state Q-value 5.95, E = 10, Ex = 6.09

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	9.3134e+00	2168	4.3	2.1105e-01	352	3.5	597	158	2	19786
0199	30.9		2142	0.2				1827	43.3	47.78 / 32	128489
0188	35.9		2125	0.3				587.3	24.3	34.63 / 41	36221
0189	35.9		2125	0.3				452.6	21.3	36.31 / 40	29548
0190	35.9		2125	0.3				460.3	21.6	29.42 / 39	29465
0191	41.8		2092	0.4				485.9	28.9	37.75 / 36	38811
0192	41.8		2093	0.3				519	23.0	34.32 / 37	39173
0193	41.8		2093	0.3				543.2	23.3	47.56 / 43	41030
0194	46.5		2069	0.4				395.3	31.5	36.26 / 34	40405
0195	46.5		2069	0.2				1426	57.2	24.24 / 35	133944
0196	50.9		2039	0.2				820.6	28.7	58.35 / 48	121337
0197	55.9		2007	0.3				582.7	24.3	36.13 / 44	133841
0198	60.9		1973	0.5				356.5	19.4	40.25 / 35	155330
0222	60.9	8.4935e+00	1969	0.38	2.2666e-01	333	3	510	23	1.3	411998
0223	65.9	8.3462e+00	1928	0.35	2.2974e-01	337	2.7	557	24	1.3	502661
0221	70.9	8.1954e+00	1900	0.31	2.3299e-01	338	2.5	580	24	0.9	475716
0224	75.9	8.0425e+00	1864	0.3	2.3638e-01	341	3.0	931	30.6	52.75 / 60	586439
0220	80.9	7.8890e+00	1828	0.2	2.3990e-01	348.8	2.3	1164	34.2	47.77 / 51	621105
0220	80.9		1828	0.2				1165	34.4	34.58/36	621105
0225	85.9	7.7359e+00	1791	0.2	2.4352e-01	352.5	1.7	1475	38.5	67.26 / 56	710184
0219	90.9	7.5846e+00	1756	0.2	2.4721e-01	363.1	1.6	1695	41.2	76.65 / 64	773501
0219	90.9		1756	0.2				1692	41.2	62.88/55	773501

$^{13}\text{C}(\text{d}, \text{p})^{14}\text{C}^*$ 2nd excited state Q-value 5.95, E = 10, Ex = 6.59

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	8.7919e+00	—	—	2.2070e-01	—	—	—	—	—	19786
0199	30.9		not found								128489
0188	35.9		not found								36221
0189	35.9		not found								29548
0190	35.9		not found								29465
0191	41.8		not found								38811
0192	41.8		not found								39173
0193	41.8		not found								41030
0194	46.5		not found								40405
0195	46.5		not found								133944
0196	50.9		not found								121337
0197	55.9		not found								133841
0198	60.9		not found								155330
0222	60.9	7.9916e+00	—	—	2.3753e-01	—	—	—	—	—	411998
0223	65.9	7.8479e+00	—	—	2.4085e-01	—	—	—	—	—	502661
0221	70.9	7.7010e+00	—	—	2.4436e-01	—	—	—	—	—	475716
0224	75.9	7.5521e+00	—	—	2.4802e-01	—	—	—	—	—	586439
0220	80.9	7.4026e+00	—	—	2.5183e-01	—	—	—	—	—	621105
0220	80.9		—								621105
0225	85.9	7.2536e+00	—	—	2.5574e-01	—	—	—	—	—	710184
0219	90.9	7.1065e+00	—	—	2.5974e-01	—	—	—	—	—	773501
0219	90.9		—								773501

$^{13}\text{C}(\text{d}, \text{p})^{14}\text{C}^*$ 3rd excited state Q-value 5.95, E = 10, Ex = 6.73

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	8.6455e+00	2014	2.4	2.2358e-01	354	1.6	621	74	1.5	19786
0199	30.9		1987	0.1				5240	72.8	61.35 / 37	128489
0188	35.9		1971	0.2				1077	42.8	31.24 / 42	36221
0189	35.9		1971	0.2				925	30.5	39.26 / 42	29548
0190	35.9		1971	0.3				846.2	29.2	84.94 / 86	29465
0191	41.8		1938	0.3				688.7	26.3	54.69 / 36	38811
0192	41.8		1939	0.3				713.6	32.1	34.99 / 42	39173
0193	41.8		1938	0.3				817.5	28.7	57.52 / 47	41030
0194	46.5		1917	0.4				530.9	42.1	41.45 / 33	40405
0195	46.5		1916	0.2				1993	44.2	56.41 / 45	133944
0196	50.9		1888	0.2				1036	32.3	26.94 / 32	121337
0197	55.9		1856	0.3				1026	32.6	47.88 / 36	133841
0198	60.9		1824	0.2				1148	33.9	48.85 / 46	155330
0222	60.9		1820	0.2		365	1.1	1546	40	1.1	411998
0223	65.9		1781	0.2		355	1.7	1801	43	1.4	502661
0221	70.9		1753	0.19		373	1.1	1689	41	0.98	475716
0224	75.9	7.4145e+00	1718	0.2	2.5152e-01	368.6	1.5	1890	43.5	63.92 / 46	586439
0220	80.9	7.2661e+00	1683	0.2	2.5541e-01	377.7	1.5	1899	42.9	51.03 / 53	621105
0220	80.9		1683	0.2				2023	45.4	48.08 / 49	621105
0225	85.9	7.1183e+00	1647	0.2	2.5942e-01	382.1	1.6	1914	44.0	126.7 / 119	710184
0219	90.9	6.9723e+00	1614	0.2	2.6351e-01	390.7	1.5	1626	50.8	86.31 / 54	773501
0219	90.9		1614	0.2				1724	42.8	47.93 / 32	773501

$^{13}\text{C}(d,p)^{14}\text{C}^*$ 4th excited state Q-value 5.95, E = 10, Ex = 6.90

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	8.4674e+00			2.2720e-01						19786
0199	30.9		1944	0.4				860.9	64.6	92.17 / 84	128489
0188	35.9		1929	0.7				213.7	29.6	24.75 / 34	36221
0189	35.9		1928	0.4				236.5	15.5	44.56 / 44	29548
0190	35.9		1927	0.9				202.5	14.9	84.94 / 86	29465
0191	41.8		1898	0.8				157.9	20.7	66.11 / 80	38811
0192	41.8		1898	0.5				171.2	17.2	91.76 / 83	39173
0193	41.8		1897	0.6				150.4	17.8	75.97 / 86	41030
0194	46.5		1876	0.6				123.3	15.6	58.61 / 81	40405
0195	46.5		1875	0.4				590.3	81.6	71.04 / 74	133944
0196	50.9		1846	0.5				265.9	25.8	104 / 83	121337
0197	55.9		1815	1.3				207.5	23.2	67.01 / 57	133841
0198	60.9		1782	0.7				97.75	15.96	96.08 / 85	155330
0222	60.9	7.8507e+00	1780	0.7	2.4079e-01	365	1.1	203	18	1.5	411998
0223	65.9	7.7081e+00	1743	0.76	2.4419e-01	368	5.2	188	17	1.1	502661
0221	70.9	7.5623e+00	1715	1	2.4777e-01	373	1.1	207	22	1	475716
0224	75.9	7.2472e+00	1680	0.7	2.5591e-01	371.3	3.9	266	81.9	59.5 / 49	586439
0220	80.9	7.1002e+00	1644	0.5	2.5992e-01	382.1	7.4	321.4	50.0	72.67 / 60	621105
0220	80.9		1645	0.5				428.7	23.9	69.04/54	621105
0225	85.9	6.9538e+00	1610	0.6	2.6404e-01	391.5	2.8	538.1	34.3	126.7 / 119	710184
0219	90.9	6.8093e+00	1577	0.7	2.6825e-01	394.2	3.9	924	275.9	74.68 / 59	773501
0219	90.9		1576	0.4				626.6	30.4	81.76/59	773501

$^{13}\text{C}(\text{d}, \text{p})^{14}\text{C}^*$ 5th + $^{12}\text{C}(\text{d}, \text{p})^{13}\text{C}^*$ 2nd excited state Q-value 5.95, E = 10, Ex = 7.01

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	8.3520e+00			2.2962e-01						19786
0199	30.9									/	128489
0195	46.5		1849	1.1				177	69.7	71.01 / 74	133944
0196	50.9		1818	0.9				93.5	28.4	104 / 83	121337
0197	55.9		1787	1.5				127.5	20.5	67.01 / 57	133841
0198	60.9		1757	0.9				104.1	16.3	96.08 / 85	155330
0222	60.9	7.6794e+00	1754	0.74	2.4488e-01	365	1.1	205	18	1.5	411998
0223	65.9	7.5381e+00	1715	0.6	2.4837e-01			222.1	23.2	64.85 / 60	502661
0221	70.9	7.3936e+00	1687	1	2.5206e-01	373	1.1	249	22	1	475716
0224	75.9	7.1388e+00	1659	8.8	2.5885e-01	392.8	4.3	271.8	102.0	59.5 / 49	586439
0220	80.9	6.9927e+00	1616	0.6	2.6293e-01	394.1	3.2	277.4	30.6	72.67 / 60	621105
0220	80.9		1616	0.6				339.3	23.4	69.04/54	621105
0225	85.9	6.8473e+00	1581	1.0	2.6713e-01	401.4	4.0	358.5	30.0	126.7 / 119	710184
0219	90.9	6.7037e+00	1549	0.8	2.7142e-01	407	4.3	471.5	105.4	74.68 / 59	773501
0219	90.9		1549	0.8				360.4	25.9	81.76/59	773501

$^{13}\text{C}(\text{d}, \text{p})^{14}\text{C}^*$ 6th excited state Q-value 5.95, E = 10, Ex = 7.34

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0199	30.9		1838	0.1				4021	63.4	80.9/47	128489
0188	35.9		1822	0.2				913.8	30.5	45.28 / 43	36221
0189	35.9		1822	0.3				669.4	26.0	43.55 / 45	29548
0190	35.9		1821	0.3				697.4	26.5	51.29 / 40	29465
0191	41.8		1791	0.3				534.8	23.2	44.85/39	38811
0192	41.8		1791	0.4				629.2	50.5	29.64/31	39173
0193	41.8		1791	0.3				633.3	25.4	29.23/36	41030
0194	46.5		1769	0.3				453.7	21.5	34.14 /34	40405
0195	46.5		1769	0.2				1598	40.0	53.41 / 53	133944
0196	50.9		1741	0.2				1039	32.3	46.96 / 44	121337
0197	55.9		1711	0.2				948.9	30.9	34.55 / 36	133841
0198	60.9		1679	0.2				922.9	30.4	50.28 / 43	155330
0222	60.9	7.5684e+00	1676	0.2	2.4762e-01			1263	35.6	31.07 / 42	411998
0223	65.9	7.4279e+00	1638	0.2	2.5117e-01			1318	36.3	55.8 / 51	502661
0221	70.9	7.2843e+00	1611	0.2	2.5493e-01			1137	33.8	37.1 / 43	475716
0224	75.9	6.8131e+00	1578	0.2	2.6814e-01	396	2.1	1174	37.1	87.32 / 82	586439
0220	80.9	6.6698e+00	1543	0.2	2.7246e-01	406.2	2.6	1129	39.0	52.51 / 67	621105
0220	80.9		1543	0.2				1184	36.8	64.26/70	621105
0225	85.9	6.5271e+00	1510	0.3	2.7691e-01	414.4	2.5	1052	41.3	70.28 / 61	710184
0219	90.9	6.3863e+00	1476	0.3	2.8146e-01	418.2	2.1	951.1	37.9	44.45 / 60	773501
0219	90.9		1476	0.3				844.1	42.3	43.7/45	773501

$^{13}\text{C}(\text{d}, \text{p})^{14}\text{C}^*$ 7th excited state Q-value 5.95, E = 10, Ex = 8.31

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0199	30.9		1599	0.7				206.6	14.5	132.4 / 84	128489
0195	46.5		1531	0.6				159.1	12.8	39.64 / 42	133944
0196	50.9		1506	0.7				132.8	11.9	54.47 / 51	121337
0197	55.9		1477	1.1				165.4	16.4	26.87 / 38	133841
0198	60.9		1448	1.0				172.1	14.1	45.58 / 62	155330
0222	60.9	7.5684e+00	1445	0.8	2.4762e-01			204.4	15.1	85.19 / 63	411998
0223	65.9	7.4279e+00	1409	0.5	2.5117e-01			238.4	15.5	78.19 / 70	502661
0221	70.9	7.2843e+00	1383	0.7	2.5493e-01			197.2	15.1	53.68 / 41	475716
0224	75.9	5.8494e+00	1352	0.8	3.0041e-01	442.1	4.3	256.8	17.3	77.64 / 65	586439
0220	80.9	5.7145e+00	1319	0.6	3.0562e-01	451.8	6.0	263	16.3	87.86 / 86	621105
0220	80.9		1320	0.9				238.6	54.7	17.12/34	621105
0225	85.9	5.5804e+00	1287	0.6	3.1099e-01	463.6	4.9	211.9	16.1	56.62 / 62	710184
0219	90.9	5.4481e+00	1255	0.7	3.1650e-01	470	6.0	241.1	15.8	85.62 / 71	773501
0219	90.9		1255	0.7				240.7	15.8	44.17/44	773501

 $^{13}\text{C}(\text{d}, \text{p})^{14}\text{C}^*$ 8,9th excited state Q-value 5.95, E = 10, Ex = 9.75,9.80

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	ch	error	energy	ch	error	count	error		
0224	75.9	4.3937,4.3424e+00	1000	1.2	3.6927,3.7233e-01	561.4	2.8	256.5	25.9	125.6 / 141	586439
0220	80.9	4.2719,4.2211e+00	971.7	1.0	3.7663,3.7979e-01	571.1	8.4	204.9	22.7	192.6 / 191	621105
0225	85.9	4.1510,4.1006e+00	942.2	1.2	3.8425,3.8752e-01	590.5	3.7	186.8	24.4	88.26 / 113	710184
0219	90.9	4.0320,3.9820e+00	915.6	1.0	3.9208,3.9547e-01	595.6	2.3	267.4	28.0	269 / 237	773501

 $^{13}\text{C}(\text{d}, \text{p})^{14}\text{C}^*$ 10,11th excited state Q-value 5.95, E = 10, Ex = 10.4,10.5

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	ch	error	energy	ch	error	count	error		
0224	75.9	3.7205,3.6156e+00	842.9	0.9	4.1429,4.2239e-01	638.3	3.2	383.9	35.9	97.53 / 94	586439
0220	80.9	3.6048,3.5008e+00	815.2	0.9	4.2325,4.3166e-01	656.6	2.5	479.9	41.3	112 / 124	621105
0225	85.9	3.4899,3.3869e+00	787.4	1.0	4.3256,4.4129e-01	675.2	2.0	484.4	40.4	138.8 / 94	710184
0219	90.9	3.3769,3.2748e+00	762.3	0.8	4.4216,4.5123e-01	685.7	2.0	494.9	36.9	206.3 / 134	773501

2 $^{13}\text{C}(\text{d}, \text{d})^{13}\text{C}$

$^{13}\text{C}(\text{d}, \text{d})^{13}\text{C}$, $^{12}\text{C}(\text{d}, \text{d})^{12}\text{C}$?, $^{16}\text{O}(\text{d}, \text{d})^{16}\text{O}$? Q-value 0.00, E = 10, Ex = 0.00

run	deg	E - dE			dE			Events		χ^2/ndf
		energy	channel	error	energy	channel	error	count	error	
0200	25.9	9.3347e+00	2195	0.78	3.5859e-01	538	0.71	7263	208	1.7
0199	30.9		2138	0.1				2.312e+004	157	174 / 84
0188	35.9		2112	0.2				1378	37.1	89.16 / 54(16Odd,12Cdd と分離)
0189	35.9		2111	0.2				1218	35.0	52.63 / 46(16Odd,12Cdd と分離)
0190	35.9		2111	0.3				1184	38.7	54.28 / 57(16Odd,12Cdd と分離)
0191	41.8		2061	0.3				1100	37.1	79.16/70(16Odd,12Cdd と分離)
0192	41.8		2060	0.2				1200	38.4	74.22/70(16Odd,12Cdd と分離)
0193	41.8		2061	5.2				1226	35.0	52.46/56(16Odd,12Cdd と分離)
0194	46.5		2027	0.3				2029	64.9	40.5 / 54
0195	46.5		2027	0.2				7221	176.5	87.2 / 68
0196	50.9		1982	0.1				8661	105.7	36.26 / 37
0197	55.9		1935	0.1				9207	101.3	57.8 / 47
0198	60.9		1887	0.1				8240	93.3	54.38 / 46
0222	60.9	8.1254e+00	1883	0.11	3.9658e-01	609	0.63	10367	109	2.6
0223	65.9	7.9123e+00	1824	0.12	4.0421e-01	620	0.73	7831	89	1.5
0221	70.9	7.6957e+00	1782	0.14	4.1230e-01	638	0.89	4717	69	1.4
0224	75.9	7.4776e+00	1730	0.2	4.2081e-01	646.5	1.2	3055	58.2	123 / 109
0220	80.9	7.2600e+00	1679	0.2	4.2970e-01	662.9	1.7	1702	41.3	74.96 / 68
0220	80.9		1679	0.2				1834	42.9	56.25/55
0225	85.9	7.0447e+00	1627	0.3	4.3890e-01	680.9	2.5	1080	40.1	62.34 / 80
0219	90.9	6.8334e+00	1578	0.3	4.4836e-01	701	3.3	830.8	28.9	70.25 / 73
0219	90.9		1578	0.3				840.8	29.1	46.66/45

$^{13}\text{C}(\text{d}, \text{d})^{13}\text{C}^*$ 1st excited state Q-value 0.00, E = 10, Ex = 3.09

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	6.1188e+00			4.8392e-01						19786
0199	30.9		1389	0.7				291.6	29.4	57.83/75	128489
0188	35.9		1363	1.1				114.2	11.9	29.1 / 34	36221
0189	35.9		1363	3.2				123.6	21.7	27.6397/43	29548
0190	35.9		1364	2.4				88.2	10.2	26.7 / 35	29465
0191	41.8		1322	3.35				102.0	15.4	16.24/27	38811
0192	41.8		1321	1.57				69.0	9.1	25.65/31	39173
0193	41.8		1322	4.55				112.2	18.3	26.22/35	41030
0194	46.5		1295	2.0				60.8	9.4	12.7 /16	40405
0195	46.5		1294	0.9				186.6	14.7	58.254 / 49	133944
0196	50.9		1255	1.4				155.7	15.76	49.8142 / 50	121337
0197	55.9		1213	1.0				131.6	12.59	35.46 / 38	133841
0198	60.9		1171	0.9				116.2	11.7	25.598/ 32	155330
0222	60.9	5.0712e+00	1168	0.73	5.4882e-01	864	6.2	185	14	1.3	411998
0223	65.9	4.8863e+00	1117	0.81	5.6212e-01	877	5.2	162	13	0.97	502661
0221	70.9	4.7035e+00	1081	0.95	5.7634e-01	904	5.6	156	14	1.1	475716
0224	75.9	4.5178e+00	1039	0.7	5.9140e-01	918.4	5.3	237.1	15.6	45.77 / 49	586439
0220	80.9	4.3330e+00	992.2	0.7	6.0725e-01	960.7	6.3	200.7	14.6	46.28 / 40	621105
0220	80.9		992.2	0.7				201.8	14.6	47.01/40	621105
0225	85.9	4.1508e+00	949.5	0.7	6.2380e-01	976.8	4.3	267.8	16.8	52.58 / 51	710184
0219	90.9	3.9725e+00	907	0.6	6.4096e-01	1020	3.8	291.2	17.2	51.63 / 57	773501
0219	90.9		907	0.63				293.4	17.3	45.23/49	773501

$^{13}\text{C}(d,d)^{13}\text{C}^*$ 2nd excited state Q-value 0.00, E = 10, Ex = 3.68

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	5.4789e+00	1265	2.2	5.2144e-01	823	1.3	2704	145	1.1	19786
0199	30.9		1239	0.3				1441	42.46	144/94	128489
0188	35.9		1215	0.60				295.8	18.0	93.08 / 93	36221
0189	35.9		1216	0.69				234.5	15.9	78.96/84	29548
0190	35.9		1216	0.54				220.9	15.3	113.7 /90	29465
0191	41.8		1173	0.66				235.8	16.0	91.19/85	38811
0192	41.8		1174	0.57				262.1	16.5	85.0/80	39173
0193	41.8		1175	0.5				257.3	16.3	90.57/85	41030
0194	46.5		1147	0.7				254.9	16.5	104.37 /95	40405
0195	46.5		1146	0.3				813.8	28.92	117.1 / 101	133944
0196	50.9		1107	0.4				708.9	27.32	70.51 / 79	121337
0197	55.9		1068	0.4				646.3	25.92	71.78 / 78	133841
0198	60.9		1028	0.4				702.5	27.3	106.57 / 83	155330
0222	60.9	4.4631e+00	1023	0.39	5.9600e-01	918	113	913	33	0.79	411998
0223	65.9	4.2863e+00	975	0.31	6.1140e-01	968	2	1071	34	0.96	502661
0221	70.9	4.1073e+00	940	0.32	6.2790e-01	990	2.2	1000	32	1.1	475716
0224	75.9	3.9277e+00	897.6	0.3	6.4543e-01	1019	3.1	1109	36.0	120.7 / 117	586439
0220	80.9	3.7491e+00	855.3	0.3	6.6394e-01	1052	2.7	1160	41.2	78.96 / 99	621105
0220	80.9		854.62	0.33				1226	36.8	94.01/91	621105
0225	85.9	3.5730e+00	812.2	0.4	6.8332e-01	1081	3.0	1093	37.6	95.54 / 110	710184
0219	90.9	3.4008e+00	771.1	0.3	7.0349e-01	1128	2.8	1200	39.4	63.28 / 96	773501
0219	90.9		771.2	0.34				1256	36.9	64.19/83	773501

$^{13}\text{C}(d, d)^{13}\text{C}^*$ 3rd excited state Q-value 0.00, E = 10, Ex = 3.85

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	5.2921e+00			5.3361e-01						19786
0199	30.9		1195	0.52				1223	40.4	144/94	128489
0188	35.9		1169	1.2				187.7	15.9	93.08 / 93	36221
0189	35.9		1173	0.79				159.6	13.3	78.96/84	29548
0190	35.9		1171	1.3				155.5	14.2	113.74 /90	29465
0191	41.8		1131	0.94				183.8	14.5	91.2/85	38811
0192	41.8		1131	0.73				144.9	12.4	85/80	39173
0193	41.8		1133	0.97				257.3	16.3	90.57/85	41030
0194	46.5		1102	1.02				140.6	13.1	104.4 /95	40405
0195	46.5		1104	0.45				537.6	23.7	117.1 / 101	133944
0196	50.9		1065	0.49				432.9	21.8	70.5 / 79	121337
0197	55.9		1025	0.50				362.1	19.53	71.79/ 78	133841
0198	60.9		986	0.48				390.1	20.42	106.6 / 83	155330
0222	60.9	4.2854e+00	982	0.57	6.1149e-01	967	29	451	24	0.79	411998
0223	65.9	4.1103e+00	933	0.49	6.2761e-01	1009	4.5	425	22	0.96	502661
0221	70.9	3.9330e+00	899	0.57	6.4490e-01	1031	4.2	372	21	1.1	475716
0224	75.9	3.7551e+00	858.4	0.7	6.6330e-01	1051	6.7	324.4	23.5	120.7 / 117	586439
0220	80.9	3.5782e+00	814.9	0.6	6.8273e-01	1085	11.5	381.5	24.7	78.96 / 99	621105
0220	80.9		815.1	0.63				436.6	23.53	94.01/91	621105
0225	85.9	3.4038e+00	774.1	0.8	7.0312e-01	1121	4.1	347.7	25.6	95.54 / 110	710184
0219	90.9	3.2332e+00	732.6	0.6	7.2435e-01	1161	9.0	427.7	31.6	63.28 / 96	773501
0219	90.9		732.2	0.518				450.0	23.52	64.19/83	773501

3 $^{13}\text{C}(\text{d}, \text{t})^{12}\text{C}$

$^{13}\text{C}(\text{d}, \text{t})^{13}\text{C}$ Q-value 1.31, E = 10, Ex = 0.00											
run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	1.0312e+01			4.4939e-01						19786
0199	30.9		2356	0.3				703.9	26.6	33.53/44	128489
0188	35.9		2317	0.8				174.8	13.6	42.55 / 44	36221
0189	35.9		2321	0.8				140.8	12.1	14.49/21	29548
0190	35.9		2320	1.1				140.1	13.2	30.4 / 40	29465
0191	41.8		2256	0.9				174.5	13.7	64.83/41	38811
0192	41.8		2254	0.8				202.3	14.6	33.06/42	39173
0193	41.8		2256	0.7				219	15.2	53.67/47	41030
0194	46.5		2209	1.63				110.8	13.2	32.24 /34	40405
0195	46.5		2210	0.4				529.7	23.2	56.74 / 48	133944
0196	50.9		2151	0.6				320.8	18.2	45.1/52	121337
0197	55.9		2089	0.8				220.8	15.7	34.31 / 49	133841
0198	60.9		2027	1.0				182.8	14.8	43.88 /43	155330
0222	60.9	8.7264e+00	2023	0.98	5.0520e-01	792	7.5	205	15	1.1	411998
0223	65.9	8.4505e+00	1944	0.66	5.1652e-01	806	3.8	313	18	1.1	502661
0221	70.9	8.1710e+00	1892	0.68	5.2856e-01	823	3.8	269	17	1.1	475716
0224	75.9	7.8907e+00	1825	0.7	5.4127e-01	848.7	4.9	351.4	19.3	60.29 / 54	586439
0220	80.9	7.6123e+00	1758	0.7	5.5458e-01	872.8	3.4	341.8	18.9	59.02 / 58	621105
0220	80.9		1759	0.7				355.6	19.2	50.12/54	621105
0225	85.9	7.3379e+00	1694	0.6	5.6840e-01	892.5	6.0	394.1	20.1	55.85 / 59	710184
0219	90.9	7.0699e+00	1631	0.6	5.8267e-01	917.2	5.0	396.4	20.5	41.01 / 47	773501
0219	90.9		1631	0.6				404.3	20.4	44.59 / 50	773501

$^{13}\text{C}(d, t)^{13}\text{C}^*$ 1st excited state Q-value 1.31, E = 10, Ex = 4.44

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	5.8805e+00			6.5668e-01						19786
0199	30.9		1325	0.41				407.2	20.3	40.92/41	128489
0188	35.9		1292	1.7				86.27	13.62	18.25/30	36221
0189	35.9		1292	2.6				92.77	15.89	25.66/35	29548
0190	35.9		1295	12.0				132.37	80.32	22.93/31	29465
0191	41.8		1237	1.25				120.5	12.28	29.35/39	38811
0192	41.8		1238	1.30				94.22	11.66	29.56/39	39173
0193	41.8		1238	2.33				138.4	16.9	33.96/48	41030
0194	46.5		1202	2.2				126.0	17.5	46.83 /45	40405
0195	46.5		1201	0.5				386.3	20.0	51.29/44	133944
0196	50.9		1150	0.67				323.4	18.4	41.872 /50	121337
0197	55.9		1097	0.69				371.3	21.0	33.29/ 39	133841
0198	60.9		1043	1.02				355.4	19.54	128.17/66	155330
0222	60.9	4.5444e+00	1040	0.56	7.6887e-01	1222	4	428	22	1.1	411998
0223	65.9	4.3150e+00	976	0.51	7.9244e-01	1269	3.8	518	23	1	502661
0221	70.9	4.0837e+00	932	0.5	8.1783e-01	1307	3.3	471	22	1.6	475716
0224	75.9	3.8527e+00	874.6	0.5	8.4497e-01	1357	3.3	616.6	25.0	77.32 / 78	586439
0220	80.9	3.6239e+00	822.7	0.5	8.7379e-01	1402	3.5	663.7	25.9	95.66 / 70	621105
0220	80.9		821.8	0.418				591.81	24.47	71.86/58	621105
0225	85.9	3.3993e+00	768.4	0.4	9.0417e-01	1447	2.9	693.2	26.5	51.62 / 56	710184
0219	90.9	3.1804e+00	716.4	0.5	9.3598e-01	1513	6.2	639.2	25.5	66.03 / 61	773501
0219	90.9		716.2	0.466				646.0	25.6	68.37 /64	773501

4 $^{13}\text{C}(\text{d}, \alpha)^{11}\text{B}$

$^{13}\text{C}(\text{d}, \alpha)^{11}\text{B}$ Q-value 5.17, E = 10, Ex = 0.00											
run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	1.1860e+01	2751	6.3	1.9163e+00	3257	163				19786
0199	30.9		2668	0.8				588.4	24.5	135.6/104	128489
0188	35.9		2613	3.7				167.5	24.5	47.69 / 70	36221
0189	35.9		2614	11.5				133	11.5	fit 不可	29548
0190	35.9		2613	2.6				121	13.0	39.63 / 40	29465
0191	41.8		2519	2.4				128.9	12.0	29.7/32	38811
0192	41.8		2518	2.6				120.1	11.8	20.54/30	39173
0193	41.8		2521	5.9				124.9	20.9	49.12/40	41030
0194	46.5		2456	2.6				92.3	10.1	26.17 / 36	40405
0195	46.5		2455	1.3				304.8	17.8	36.49 / 32	133944
0196	50.9		2367	1.6				202.1	14.7	46.63 / 50	121337
0197	55.9		2282	3.2				236.6	22.1	81.08 / 87	133841
0198	60.9		2184	1.9				322.4	20.3	85.84 / 99	155330
0222	60.9	9.5921e+00	2182	1.2	2.1865e+00	3714	8.4	449	21	0.67	411998
0223	65.9	9.1908e+00	2068	1.2	2.2429e+00	3811	5.9	503	23	0.95	502661
0221	70.9	8.7817e+00	1988	1.6	2.3036e+00	3922	8.8	400	21	0.89	475716
0224	75.9	8.3685e+00	1880	2.0	2.3685e+00	4040	8.0	426.7	24.0	111.9 / 114	586439
0220	80.9	7.9546e+00	1784	2.2	2.4373e+00	4182	12.3	358	22.5	122.9 / 125	621105
0220	80.9		1783	2.0				341.1	21.2	101.6/100	621105
0225	85.9	7.5433e+00	1681	2.1	2.5100e+00	4293	16.1	352.4	21.4	123.1 / 124	710184
0219	90.9	7.1373e+00	1583	1.9	2.5861e+00	4452	6.9	409.8	23.3	122.1 / 125	773501
0219	90.9		1582	1.3				812	40.9	88.85/71	773501

$^{13}\text{C}(d, \alpha)^{11}\text{B}^*$ 1st excited state Q-value 5.17, E = 10, Ex = 2.12

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	9.7862e+00	2270	42	2.1602e+00	3641	75				19786
0199	30.9		2171	1.7				396.9	22.2	87.9/99	128489
0188	35.9		2138	31.6				110	10.5	21.89 / 62	36221
0189	35.9		2118	5.3				63.4	10.3	23.32/38	29548
0190	35.9		2131	6.0				55.2	11.8	20.9 / 30	29465
0191	41.8		2025	5.7				86.5	12.5	21.68/22	38811
0192	41.8		2032	2.5				73.7	8.9	17.79/20	39173
0193	41.8		2024	7.0				89.6	18.4	28.92/21	41030
0194	46.5		1963	5.5				89.3	13.0	20.36 / 37	40405
0195	46.5		1965	1.9				218.7	15.3	38.98 / 39	133944
0196	50.9		1875	2.4				154	12.8	57.17 / 37	121337
0197	55.9		1787	5.0				123.2	14.8	47.78 / 44	133841
0198	60.9		1697	8.3				235.5	53.6	37.44 / 83	155330
0222	60.9	7.5683e+00	1689	1.7	2.5054e+00	4280	19	216	15	0.67	411998
0223	65.9	7.1735e+00	1577	1.8	2.5792e+00	4454	10	268	16	0.95	502661
0221	70.9	6.7700e+00	1501	2.3	2.6592e+00	4575	12	231	4.2	0.89	475716
0224	75.9	6.3610e+00	1393	2.9	2.7457e+00	4708	11.9	333.2	23.8	108.3 / 141	586439
0220	80.9	5.9496e+00	1289	2.0	2.8385e+00	4923	17.7	202.1	12.2	82.27 / 79	621105
0220	80.9		1288	2.0				630.5	37.0	76.19/72	621105
0225	85.9	5.5385e+00	1192	1.8	2.9378e+00	5075	14.0	386.3	19.9	47.35 / 58	710184
0219	90.9	5.1302e+00	1088	3.3	3.0434e+00	5294	17.2	377.5	26.1	91.58 / 135	773501
0219	90.9		1087	2.2				599.3	35.8	110/85	773501

$^{13}\text{C}(d, \alpha)^{11}\text{B}^*$ 2nd excited state Q-value 5.17, E = 10, Ex = 4.44

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	7.3572e+00	1506	23	2.5415e+00	4445	95				19786
0199	30.9		1590	2.0				348.4	21.8	207.5/244	128489
0188	35.9		1536	3.6				95.6	10.2	59.11 / 59	36221
0189	35.9		1539	3.9				79.82	9.48	42.53/44	29548
0190	35.9		1540	4.2				100.9	11.7	45.54 / 59	29465
0191	41.8		1440	2.5				105.7	10.5	50.56/49	38811
0192	41.8		1452	2.3				97.0	9.8	33.01/41	39173
0193	41.8		1444	2.7				129.5	11.7	37.21/43	41030
0194	46.5		1384	2.5				104.3	10.7	49.09 / 42	40405
0195	46.5		1381	1.4				354.8	19.0	66.55 / 58	133944
0196	50.9		1289	1.7				317.2	27.9	75.41 / 60	121337
0197	55.9		1203	2.6				234	2.52	52.76 / 61	133841
0198	60.9		1104	2.1				242.4	5.1	72.98 / 58	155330
0222	60.9	5.1537e+00	1103	2.5	3.0371e+00	5404	16	381	21	1	411998
0223	65.9	4.7499e+00	981	2.4	3.1487e+00	5497	14	386	20	1	502661
0221	70.9	4.3327e+00	891	2.2	3.2726e+00	5696	16	258	16	1.5	475716
0224	75.9	3.9039e+00	775.7	2.2	3.4100e+00	5966	18.9	249	17.3	71.21 / 73	586439
0220	80.9	3.4649e+00	658.2	2.6	3.5625e+00	6307	13.3	345	19.1	75.35 / 73	621105
0220	80.9		661.8	3.0				322.8	3.2	100.8/71	621105
0225	85.9	3.0161e+00	550.6	3.1	3.7320e+00	6551	29.0	461	27.4	72.59 / 74	710184
0219	90.9	2.5571e+00	491	4.1	3.9209e+00	6700?	—	102.8	10.4	39.88 / 42	773501
0219	90.9		483.9	2.8				158.1	13.4	57.01/35	773501

$^{13}\text{C}(d, \alpha)^{11}\text{B}^*$ 3rd excited state Q-value 5.17, E = 10, Ex = 5.02

run	deg	E - dE			dE			Events		χ^2/ndf	FC
		energy	channel	error	energy	channel	error	count	error		
0200	25.9	6.7326e+00	995	44	2.6669e+00	5532	31				19786
0199	30.9		1439	2.0				323.4	20.8	207.5/244	128489
0188	35.9		1388	4.5				81	11.5	59.11 / 59	36221
0189	35.9		1382	4.7				69	10.5	42.53/44	29548
0190	35.9		1388	5.5				82.7	12.2	45.54 / 59	29465
0191	41.8		1290	4.1				100.8	11.0	50.56/49	38811
0192	41.8		1296	3.3				94.9	10.7	33.01/41	39173
0193	41.8		1294	3.9				97.4	10.6	37.21/43	41030
0194	46.5		1219	9.9				82.3	12.9	49.09 / 42	40405
0195	46.5		1226	1.9				316.8	17.9	66.55 / 58	133944
0196	50.9		1134	2.4				208	14.8	75.41 / 60	121337
0197	55.9		1036	2.6				176.9	13.6	52.76 / 61	133841
0198	60.9		937.1	3.3				171.8	13.7	72.98 / 58	155330
0222	60.9	4.4925e+00	938	3.4	3.2241e+00	5404	16	252	17	1	411998
0223	65.9	4.0797e+00	812	2.5	3.3524e+00	5901	24	266	17	1	502661
0221	70.9	3.6503e+00	719	3.3	3.4966e+00	6158	17	220	17	1.5	475716
0224	75.9	3.2052e+00	615.9	2.7	3.6588e+00	6350?	—	135.7	13.9	71.21 / 73	586439
0220	80.9	2.7441e+00	515.7	2.7	3.8419e+00	6700?	—	162.9	13.7	22.67 / 24	621105
0220	80.9		510.5	2.6				183.2	14.6	100.8/71	621105
0225	85.9	2.2654e+00	—	—	4.0500e+00	—	—	—	—	—	710184
0219	90.9	1.7658e+00	—	—	4.2885e+00	—	—	—	—	—	773501
0219	90.9									/	773501