

Fitting Tables

1 ^{27}Al target

$^{27}\text{Al}(d, d)^{27}\text{Al}$ Q-value 0.0, E = 10, Ex = 0.00										
run	deg	E - dE			dE			Events		χ^2/ndf
		energy	channel	error	energy	channel	error	count	error	
0140	35.9	9.3624e+00	2114	0.1	3.5781e-01	565.2	0.4	34200	848	1.45984
0139	40.9	9.2818e+00	2092	0.2	3.6009e-01	541.6	0.4	41040	1453	1.16091
0141	45.9	9.1932e+00	2068	0.5	3.6262e-01	578.2	0.6	41720	2528	1.79283
0165	49.1	9.1328e+00	2055	0.1	3.6437e-01	576.6	0.4	30520	761	1.85753
0142	50.9	9.0977e+00	2110	2.4	3.6540e-01	583.4	0.7	3344000	325503	1.01125
0143	55.9	8.9961e+00	2070	5.5	3.6841e-01	592.0	1.0	27060	7444	1.25997
0144	60.9	8.8893e+00	2114	4.8	3.7163e-01	602.7	1.4	2958000	294439	1.59359
0152	65.9	8.7785e+00	1980	0.1	3.7503e-01	594.2	0.7	29400	767	1.58511
0153	70.9	8.6644e+00	1951	0.2	3.7861e-01	600.4	0.8	23590	1297	1.52574
0154	75.9	8.5483e+00	1922	0.1	3.8233e-01	607.6	1.0	20370	1316	0.901168
0155	80.9	8.4309e+00	1891	0.2	3.8617e-01	615.2	1.2	13150	343	1.18469
0156	85.9	8.3133e+00	1860	0.3	3.9011e-01	624.8	1.1	15890	936	0.869374
0157	90.9	8.1964e+00	2068	0.5	3.9411e-01	578.2	0.6	41720	2528	1.79283

$^{27}\text{Al}(d, d)^{27}\text{Al}$, 1st excited state Q-value 0.0, E = 10, Ex = 0.84

run	deg	E - dE			dE			Events			χ^2/ndf
		energy	channel	error	energy	channel	error	count	error		
0140	35.9	8.5065e+00	1909	2.3	3.8369e-01	594.8	16	113.1	60.5	1.0436	
0139	40.9	8.4287e+00	1833	1.8	3.9208e-01	577	4.9	9037	833.1	0.968936	
0141	45.9	8.3435e+00	1822	3.0	3.8909e-01	632.3	4.5	385.7	89	1.25824	
0142	50.9	8.2515e+00	1498	6.5	3.9221e-01	722.6	8.0	130.5	57.2	1.5937	
0143	55.9	8.1537e+00	1492	13.5	3.9559e-01	721.4	15.5	9496	7895.0	1.08037	
0152	65.9	7.9443e+00	1779	0.8	4.0304e-01	645	5.2	672.7	71.2	0.731675	
0153	70.9	7.8347e+00	1754	0.6	4.0707e-01	632.1	13.2	810	75.4	0.876526	

 $^{27}\text{Al}(d, d)^{27}\text{Al}$, 2nd excited state Q-value 0.0, E = 10, Ex = 1.01

run	deg	E - dE			dE			Events			χ^2/ndf
		energy	channel	error	energy	channel	error	count	error		
0140	35.9	8.3324e+00	1867	1.7	3.8946e-01	622.6	2.1	492.9	167	1.0436	
0139	40.9	8.2553e+00	1575	8.6	3.9208e-01	679.3	4.0	164100	56375	1.26536	
0141	45.9	8.1707e+00	1522	3.8	3.9500e-01	705.9	1.9	152.2	37.6	0.846703	
0142	50.9	8.0794e+00	1309	2.7	3.9820e-01	776.5	32.5	349.2	69.5	1.15937	
0143	55.9	7.9824e+00	1187	34.6	4.0167e-01	849.8	28.0	164300	112527	1.08037	
0152	65.9	7.7748e+00	1739	0.5	4.0931e-01	675.4	4.8	993.4	51.3	0.731675	
0153	70.9	7.6661e+00	1713	0.5	4.1344e-01	623.5	3.2	1611	90.5	0.876526	

 $^{27}\text{Al}(d, d)^{27}\text{Al}$, 3rd excited state Q-value 0.0, E = 10, Ex = 0.84

run	deg	E - dE			dE			Events			χ^2/ndf
		energy	channel	error	energy	channel	error	count	error		
0140	35.9	7.0941e+00	1448	2.3	4.3675e-01	740.3	40.5	2196	324.1	1.22693	
0139	40.9	7.0214e+00	1431	5.3	4.3992e-01	760	18.5	350.4	391.7	0.974446	
0141	45.9	7.3851e+00	1331	2.1	4.4346e-01	812.5	5.4	623.8	45.3	0.846703	
0152	65.9	6.5691e+00	1452	0.9	4.6083e-01	754.3	3.1	1599	426.4	0.997886	
0153	70.9	6.4669e+00	1427	0.6	4.6586e-01	761.2	3.6	3023	421.3	0.728456	

$^{27}\text{Al}(\text{d}, \text{d})^{27}\text{Al}$, 4th excited state Q-value 0.0, E = 10, Ex = 2.73										
run	deg	E - dE			dE			Events		
		energy	channel	error	energy	channel	error	count	error	χ^2/ndf
0140	35.9	6.5511e+00	1372	1.5	4.6171e-01	776.2	4.1	2730	391.6	1.22693
0152	65.9	8.2515e+00	1324	0.8	3.9221e-01	771.1	9.5	1410	376.4	1.24133
0153	70.9	5.9413e+00	1299	0.9	4.9373e-01	837.1	3.5	624.7	183.0	1.0304

$^{27}\text{Al}(\text{d}, \text{d})^{27}\text{Al}$, 5th excited state Q-value 0.0, E = 10, Ex = 2.98										
run	deg	E - dE			dE			Events		
		energy	channel	error	energy	channel	error	count	error	χ^2/ndf
0152	65.9	5.7848e+00	1258	0.5	5.0274e-01	832.4	9.4	3924	239.3	1.24133
0153	70.9	5.6870e+00	1233	0.4	5.0856e-01	846.4	4.7	2625	158.2	1.0304

$^{27}\text{Al}(\text{d}, \text{d})^{27}\text{Al}$, 7th excited state Q-value 0.0, E = 10, Ex = 3.68										
run	deg	E - dE			dE			Events		
		energy	channel	error	energy	channel	error	count	error	χ^2/ndf
0152	65.9	5.0618e+00	1023	5.0	5.4949e-01	902.2	18.8	107	34.1	0.7881
0153	70.9	4.9680e+00	853.4	2.7	5.5626e-01	1048	8.3	643.5	177.1	1.17741

$^{27}\text{Al}(\text{d}, \text{d})^{27}\text{Al}$, 8th excited state Q-value 0.0, E = 10, Ex = 3.96										
run	deg	E - dE			dE			Events		
		energy	channel	error	energy	channel	error	count	error	χ^2/ndf
0152	65.9	4.7692e+00	878.2	1.8	5.7121e-01	1045	4.1	454.4	56.7	0.7881