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POLARIZED PROTON INDUCED REACTIONS ON LITHIUM ISOTOPES
AROUND 14 MEV

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Differential cross sections, analyzing powers, and double differential cross sections were measured for ${}^6\text{Li}(p,x)$ reactions at 14.0 MeV and for ${}^7\text{Li}(p,x)$ reactions at 12.0, 14.0 and 16.0 MeV. The three-body breakup reactions of ${}^6\text{Li}(p,d)\text{p}\alpha$, ${}^6\text{Li}(p,\alpha)\text{pd}$ and ${}^7\text{Li}(p,t)\text{p}\alpha$ were intensively studied in order to understand their reaction mechanisms, which must be similar in the neutron induced reactions. Moreover, the contribution of the four-body ${}^6\text{Li}(p,2p)\text{n}\alpha$ breakup reaction in the ${}^6\text{Li}(p,xp)$ reaction has been estimated and analyzed on the basis of the sequential decay processes. The optical potential of the p- ${}^7\text{Li}$ system has been discussed.

Keywords: Differential Cross Sections, Analyzing Powers, 12.0, 14.0, 16.0 MeV, ${}^6\text{Li}$, ${}^7\text{Li}$, Double Differential Cross Sections

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14 MeV 近傍におけるリチウム同位体の偏極陽子による反応

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14 MeV における ${}^7\text{Li}$ (p, x) 反応および 12, 14, 16 MeV における ${}^7\text{Li}$ (p, x) 反応の微分断面積、偏極分解能、二重微分断面積を測定した。 ${}^7\text{Li}$ (p, d) p α , ${}^7\text{Li}$ (p, α) p d, ${}^7\text{Li}$ (p, t) p α 三体崩壊反応については、反応機構を詳細に検討した。その結果、対応する中性子誘起反応にも有効である。また、 ${}^7\text{Li}$ (p, xp) 反応における、 ${}^7\text{Li}$ (p, 2p) n α 四体崩壊反応の寄与を測定して、順次崩壊過程に基づく解析を行った。p - Li 系の光学ポテンシャルについても議論を行った。

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1. Introduction

In the previous report[1], we have emphasized the importance of the nuclear data for $^{6,7}\text{Li}$ isotopes: Especially, tritium production cross sections and double differential cross sections (DDX) of inelastic scattering are related to the tritium breeding ratio and neutron transport in the fusion reactor blanket. Precise measurements were recently reported on the $^{7}\text{Li}(\text{n},\text{t})$ reaction and $^{6}\text{Li}(\text{n},\text{n}')$ scattering[2-5] to refine their nuclear data. Moreover, an evaluated data library JENDL-3 has very recently become available for the development of fusion reactors. In the evaluation of nuclear data for lithium isotopes, experimental data were treated by means of rather simple theories[6], because of difficulties in theoretical analyses of reactions including three-body breakup processes. It is highly necessary to establish nuclear theories for evaluation of reactions involving lithium isotopes.

Precise double differential cross sections and analyzing powers have to be measured for study of their adoptability of recently developed theories[7,8] to the reactions. Proton induced reactions are preferable to the purpose, being superior in precision against neutron induced reactions. Experimental data of polarized proton induced reactions on the lithium isotopes, however, are very scarce even in an energy region of 10-18 MeV. Hence, systematic studies of the scattering and reaction on the lithium isotopes by use of polarized proton beams will give valuable information for modelling of nuclear reactions for lithium isotopes.

We have previously reported the data of differential cross sections and analyzing powers for the proton scattering on $^{6,7}\text{Li}$, and of their double differential cross sections of the (p,p') inelastic scattering at 14 MeV. The optical potential parameters including the spin dependent terms of V_{so} , r_{so} and a_{so} were determined for the elastic scattering. Since the differential cross sections and analyzing powers for the inelastic scattering could not be reproduced by use of the optical potentials with standard energy dependence, we searched the optical potential parameters for the exit channels. This indicates that low excited states of the isotopes have rather different properties from the ground one. It may be due to the fact that the excited states of $^{6,7}\text{Li}$ can decay into more than two particles. Furthermore, the double differential cross sections, the continuum energy spectra, were reasonably reproduced using the DWBA calculation for the discretized continuum states, which have obtained by a microscopic d- α and t- α cluster model.

In this report, we will describe experimental data of $^{6,7}\text{Li}(\text{p},\text{x})$ reactions measured around 14 MeV and their theoretical interpretation. In Section 2 and 3, the experimental procedure and results will be given, and theoretical analyses of the results will be presented in Section 4. The measured data will be summarized in numerical form in Appendices.

2. Experimental Procedure

As previously described[1], polarized and unpolarized proton beams from the tandem Van de Graaff accelerator at Kyushu University were used for measurements of ${}^6,7\text{Li}(\text{p},\text{x})$ reactions around 14.0 MeV. Emitted particles were detected with a counter telescope, which consisted of 15.5 μm and 75 μm thick transmission-type Si (ΔE) detectors and a 2000 μm thick Si (E) detector; the solid angle of the counter telescope was 0.297 msr. Energy spectra were measured separately in a low energy region (1 MeV - several MeV) and in a high energy region (above 2.5 MeV), so that good particle identification could be obtained in each energy region. The lowest energy in the measurement was 1.0 MeV for protons, 1.3 MeV for deuterons, 1.5 MeV for tritons, and 4.7 MeV for alphas. The over-all energy resolution for protons was about 95 keV in fwhm, which was mainly due to the kinematical spreading. The measurements were carried out at every 10° from 10° to 160° and 165° . The targets used were self-supporting Li metallic foils of about 1 mg/cm² thick (enrichment : 95.59% for ${}^6\text{Li}$, and 99.99% for ${}^7\text{Li}$).

The beam polarization, which was monitored with a polarimeter at the down stream of the scattering chamber, was 0.83 in average during the measurements. The polarimeter consisted of a ${}^4\text{He}$ gas target and a pair of $\Delta E+E$ Si detectors fixed at $\pm 113^\circ$ with respect to the beam direction[9], where the analyzing power of ${}^4\text{He}$ was known to be 1.00 - 0.98 for 12 - 16 MeV protons[10].

3. Experimental Results

3.1 ${}^6\text{Li}(\text{p},\text{d})\text{p}\alpha$ reaction

This three-body breakup reaction is in the charge symmetry to the neutron induced ${}^6\text{Li}(\text{n},\text{d})\text{n}\alpha$ reaction. Figure 1 presents the double differential cross sections (DDX) measured at the incident energy of 14 MeV. A broad peak due to the p- α final state interaction (FSI) is clearly seen in the high energy region in the spectra. In addition, the spectra for forward angles are affected by the d- α FSI in the low energy region; the interacting d- α system may come from decays of the 1st and 3rd excited states of ${}^6\text{Li}$. These FSIs are dominant as well as the direct three-body breakup process. The analyzing powers were measured as a function of deuteron energy; an example of them will be shown in Section 4.1.

3.2 ${}^6\text{Li}(\text{p},{}^3\text{He})\alpha$ and ${}^6\text{Li}(\text{p},\alpha)\text{pd}$ reactions

Figure 2 shows the obtained differential cross sections and analyzing powers of the ${}^6\text{Li}(\text{p},{}^3\text{He})\alpha$ reaction. Since the reaction is similar to the ${}^6\text{Li}(\text{n},\text{t})\alpha$ reaction, these cross sections are compared in the figure. While the angular distributions have a similar shape, the cross sections for the ${}^6\text{Li}(\text{n},\text{t})\alpha$ reaction[2] are slightly higher than those for the ${}^6\text{Li}(\text{p},{}^3\text{He})\alpha$ reaction.

These data were obtained in simultaneous measurements of ${}^3\text{He}$ and α . The double differential cross sections of these particles are presented in Fig.3. Two sharp peaks in the spectra correspond to ${}^3\text{He}$ and α from the two-body reaction. The continuum region of the spectra is attributable to the ${}^6\text{Li}(\text{p},\alpha)\text{pd}$ reaction. Hence, the p-d FSI may contribute in this region.

3.3 ${}^6\text{Li}(\text{p},2\text{p})n\alpha$ reaction

In the ${}^6\text{Li}(\text{p},\text{p}')$ continuum spectra reported previously[1], the contribution from the ${}^6\text{Li}(\text{p},2\text{p})$ reaction seemed to be dominant in the low energy region. It is due to that ${}^6\text{Li}$ may easily decay into p , n and α . The four-body breakup reaction is, therefore, included in the continuum spectra of the ${}^6\text{Li}(\text{p},\text{p}')$ scattering. This four-body breakup reaction is also in the charge symmetry to the ${}^6\text{Li}(\text{n},2\text{n})\text{p}\alpha$ reaction which contributes to neutron slowing down in the fusion reactor blanket. In order to estimate the contribution of the ${}^6\text{Li}(\text{p},2\text{p})$ reaction into the (p,p') continuum spectra, we have measured the p-p correlation spectra in several kinematical conditions. For the measurement we used another counter telescope fixed at 50° in the same reaction plane. The obtained correlation spectra shown in Fig.4(a) are for the fixed counter telescope, and those shown in Fig.4(b) for the turnable counter telescope. The ${}^6\text{Li}(\text{p},2\text{p})$ spectrum which is obtained by integration of the correlation spectra over the angle well reproduces the low energy part of the ${}^6\text{Li}(\text{p},\text{p}')$ scattering DDX spectra, as shown in Fig.5. Thus, the ${}^6\text{Li}(\text{p},2\text{p})n\alpha$ reaction dominates the proton DDX at low energies.

3.4 ${}^7\text{Li}(\text{p},\text{d}){}^6\text{Li}^*$ reaction

This reaction is not in the charge symmetry to the neutron induced reaction of ${}^7\text{Li}(\text{n},\text{d}){}^6\text{He} \rightarrow 2\text{n} + \alpha$. The ${}^7\text{Li}(\text{p},\text{d}){}^6\text{Li}^*$ reaction is, however, interesting to understand the reaction mechanism of lithium isotopes. Here, we only summarize the measured data. Figure 6 shows the differential cross sections and analyzing powers for the ground state and the 1st and 2nd excited states of ${}^6\text{Li}$. Theoretical calculations will be discussed in Section 4.3. It should be noted that double differential cross sections of deuteron spectra (shown in Fig.7) include the contribution from the ${}^7\text{Li}(\text{p},\text{d})\text{d}\alpha$ and ${}^7\text{Li}(\text{p},\text{d})\text{n}\alpha$ reactions.

3.5 ${}^7\text{Li}(\text{p},\text{t})\text{p}\alpha$ reaction

This reaction, which is in the charge symmetry to the ${}^7\text{Li}(\text{n},\text{t})\text{n}\alpha$ tritium breeding reaction, has been measured to study the reaction mechanism. The double differential cross sections of this reaction are presented in Fig.8. As similarly to the ${}^6\text{Li}(\text{p},\text{d})\text{p}\alpha$ reaction, the p- α FSI and t- α FSI effects are clearly found in the spectrum.

3.6 Energy dependence of ${}^7\text{Li}(\text{p},\text{p}')$ scattering

This scattering has been measured at 12 and 16 MeV for a study of the energy dependence of the optical potential. In the previous report we presented the data of this scattering at 14 MeV. In Fig.9 the differential cross sections and analyzing powers are shown for comparison with each other.

3.7 Errors

Errors in the differential cross sections were estimated as described in the previous report[1]. A systematic uncertainty of about 10% due to the target thickness have to be taken into account in the absolute values. This uncertainty is not included in the errors indicated in figures and tables. Errors in the DDX for energy bins, which are given in numerical form in Appendices, are statistical only. Concerning errors in the analyzing powers, errors for the discrete peaks measured with polarized and unpolarized beams and for the beam polarization were taken into account. Details are given in the previous report[1].

4. Theoretical Analyses and Discussion

4.1 Three-body breakup reactions

In the presently studied reactions, three-body breakup reactions are predominant, as seen in the ${}^6,{}^7\text{Li}(\text{p},\text{p}')$ scattering spectra, because ${}^6,{}^7\text{Li}$ have typical d- α and t- α cluster structures. Since analyses based on the Faddeev formalism were not available for three-body breakup reactions containing composite particles, we applied the final state interaction (FSI) model for the ${}^6\text{Li}(\text{p},\text{d})\text{p}\alpha$, ${}^6\text{Li}(\text{p},\alpha)\text{pd}$ and ${}^7\text{Li}(\text{p},\text{t})\text{p}\alpha$ reactions.

(1) ${}^6\text{Li}(\text{p},\text{d})\text{p}\alpha$ reaction

The calculated results are compared with the measured spectrum in Fig.10(a). The energy spectra are well reproduced by the calculation based on the FSI model. The p- α FSI is evident in high energies, and the d- α FSIs corresponding to decays from the 1st and 3rd excited states of ${}^6\text{Li}$ contribute in low and intermediate energies. Since the absolute value of cross sections cannot be obtained in the FSI frame work, their contributions were extracted by fits of the calculated spectra to the measured one. In Fig.10(b) angular distributions

present the contributions from the p- α and d- α FSIs and from the direct three-body breakup process. At forward angles the p- α FSI is dominant, and the direct three-body breakup largely contributes around 30°, and then decreases smoothly. The d- α FSI contributions decrease with increase in angle. The empirically determined contributions for these processes are to be useful when analyses become possible on the basis of the Faddeev formalism for the three-body breakup reactions including composite particles. The observed analyzing powers as a function of energy are useful to criticize the theoretical calculations. It should be noted that the analyzing powers change evidently around the FSI energy regions, as shown in the lower part of Fig.10(a).

(2) ${}^6\text{Li}(\text{p},\alpha)\text{pd}$ reaction

This reaction is the same as the ${}^6\text{Li}(\text{p},\text{d})\text{p}\alpha$ reaction discussed above, but the observed particle is different. Hence, similar analyses to the above can be applied. The result obtained on the basis of the FSI model is compared with the spectrum measured at 20° in Fig.11. The p-d FSI contributes over the whole energy region in the spectrum as well as the direct three-body breakup process. On the other hand, the p- α FSI, as a decay from the 1st excited state of ${}^6\text{Li}$, enhances in the middle of the spectrum; the shape of this part of the spectrum is well reproduced by the FSI model. Large negative analyzing powers were observed in the high energy end of the spectrum.

(3) ${}^7\text{Li}(\text{p},\text{t})\text{p}\alpha$ reaction

As shown in Fig.12, the observed peak in the high energy end and the bump in the middle of the spectrum are well explained by the p- α and t- α FSIs. In energies lower than 4 MeV, however, the spectrum could not be reproduced. It may be due to that the t- α FSI was only considered to the 2nd excited state ($7/2^-$) of ${}^7\text{Li}$ in the present calculation. As shown in the lower part of the spectra, the measured analyzing powers change significantly around the FSI region.

4.2 ${}^6\text{Li}(\text{p},2\text{p})\text{n}\alpha$ reaction

Possible processes leading the ${}^6\text{Li}(\text{p},2\text{p})$ reaction can be listed as follows:

$\text{p} + {}^6\text{Li} \rightarrow {}^6\text{Li}^* + \text{p}_1:$	${}^6\text{Li}^* \rightarrow \text{d}^* + \alpha:$	$\text{d}^* \rightarrow \text{n} + \text{p}_2.$	1
${}^5\text{Li} + \text{d}^*:$	${}^5\text{Li} \rightarrow \text{p}_1 + \alpha:$	$\text{d}^* \rightarrow \text{n} + \text{p}_2.$	2
${}^3\text{He}^* + \alpha:$	${}^3\text{He}^* \rightarrow \text{p}_1 + \text{d}^*:$	$\text{d}^* \rightarrow \text{n} + \text{p}_2.$	3
$\text{p}_1 + \text{d}^* + \alpha:$	$\text{d}^* \rightarrow \text{n} + \text{p}_2.$		4
$\text{p}_1 + \text{p}_2 + {}^5\text{He}:$	${}^5\text{He} \rightarrow \text{n} + \alpha.$		5
$\text{p}_1 + \text{p}_2 + \text{n} + \alpha.$			6

These processes are composed of two-body sequential decay reactions, three-body breakup reactions followed by two-body sequential decay processes, and a four-body direct breakup reaction. In the present work, these processes were calculated on the basis of the phase space model, where the sequential decays were assumed to be affected by the final state

interactions[11]. The calculated ${}^6\text{Li}(p,2p)$ reaction spectra are presented and compared with the measured ${}^6\text{Li}(p,p')$ spectra in Fig.13. Processes 4 and 1 are dominant in the reaction. Referring the previous calculation on the basis of the DWBA for the discretized continuum states[1], we can find that the spectra are explained by the processes through the discretized continuum states and the sequential decays.

This theoretical calculation was applied to the ${}^6\text{Li}(n,n')$ scattering[12] in order to confirm this interpretation. As shown in Fig.14, the fit is ameliorated in the low energy region.

4.3 Two-body reactions

The two-body reaction of ${}^6\text{Li}(p,{}^3\text{He})\alpha$ was compared with a finite range DWBA calculation for the pickup and knockout processes in the cluster model, in which ${}^6\text{Li}$ was assumed to consist of $\alpha+d$ and ${}^3\text{He}+t$ systems[13]. This DWBA calculation reproduces fairly well the present differential cross sections.

The angular distribution and analyzing powers of the ${}^7\text{Li}(p,d){}^6\text{Li}^*$ reaction could not be reproduced by means of DWBA, especially its analyzing powers; the calculated results are shown by solid lines in Fig.6. This may be due to that the excited states of ${}^6\text{Li}^*$ have not the same characteristics as the ground state: As discussed previously for the ${}^6\text{Li}(p,p'){}^6\text{Li}^*$ scattering, different exit channel optical potentials should be taken into account for the excited states.

4.4 Optical potentials for ${}^7\text{Li}(p,p')$ scattering at 12, 14 and 16 MeV

The energy dependence of the optical potential parameters around 14 MeV can be discussed on the basis of the analyses of the elastic and inelastic scattering in the p- ${}^7\text{Li}$ system. The data were analyzed by the same theoretical methods as described in the previous report[1]. Here, the obtained parameters are summarized in Table 1.

In Fig.9, solid lines indicate the results from the spherical optical model and DWBA calculations, and dashed lines those from the coupled channel calculations. As described previously[1], although both cross sections and analyzing powers for the elastic scattering are very well fitted, those for the inelastic scattering are not well reproduced even by means of the coupled channel calculations. Concerning the energy dependences of the parameters of V_0 and W_s that were derived by the spherical optical model, the gradients of V_0 and W_s for the CM proton energy were obtained to be -1.29 and -1.13, respectively. These gradients are different from those given for the neutron scattering by Dave and Gould (-0.001 for V_0 and +1.113 for W_s)[14].

Since the 2nd excited state (4.63 MeV, $7/2^-$) of ${}^7\text{Li}$ can decay into t and α , the optical potential for the exit channel may be different from that of the entrance channel. In order to reproduce well the analyzing powers for the excited states, largely modified optical

potentials should be used for the exit channel. Distinct differences are found in the diffuseness a_i of the absorption term and in the spin dependent terms of V_{so} , r_{so} and a_{so} . As shown in Fig.15, the fit to the analyzing powers are ameliorated, but the differential cross sections are not so well reproduced at backward angles. The optical potential was similarly derived for the 1st excited state (0.478 MeV, $1/2^-$), though this state does not decay into particles. The fits are similar to those for the 2nd excited state. The spin dependent parameter V_{so} for this state was required to be 0 MeV in order to obtain better fit to the analyzing powers. The attempt to obtain better fits in the analyzing powers for the low excited states suggests that the excited states may have much different properties from the ground one.

5. Summary

Differential cross sections, analyzing powers, and double differential cross sections were measured for ${}^6\text{Li}(p,x)$ reactions at 14.0 MeV and for ${}^7\text{Li}(p,x)$ reactions at 12.0, 14.0 and 16.0 MeV. The three-body breakup reactions of ${}^6\text{Li}(p,d)p\alpha$, ${}^6\text{Li}(p,\alpha)pd$ and ${}^7\text{Li}(p,t)p\alpha$ were intensively studied in order to understand their reaction mechanisms. Theoretical analyses based on the FSI model well reproduces the energy spectra, though the model cannot provide the absolute cross sections. Moreover, the contribution of the four-body ${}^6\text{Li}(p,2p)n\alpha$ breakup reaction in the ${}^6\text{Li}(p,xp)$ reaction was estimated on the basis of the sequential decay processes. The sequential decay processes should also be taken into account for analyses of the ${}^6\text{Li}(n,xn)$ reaction spectra. Concerning the optical potential of the p- ${}^7\text{Li}$ system, the theoretical method previously reported was applied to extract the potential parameters for the exit channel, where the excited states of ${}^7\text{Li}$ may spread largely due to the breakup process. This type of study on the proton scattering may be valuable for modelling of nuclear reactions and for evaluation of neutron scattering[15].

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Table 1 Optical potential parameters for ^7Li at 12, 14, and 16 MeV

Spherical optical model (ECIS79).

	V_0 (MeV)	r_0 (fm)	a_0 (fm)	W_s (MeV)	r_i (fm)	a_i (fm)	V_{so} (MeV)	r_{so} (fm)	a_{so} (fm)
12 MeV	52.59	1.211	0.770	12.353	1.506	0.294	5.051	1.291	0.358
14 MeV	50.30	1.288	0.640	9.463	1.186	0.513	9.249	1.188	0.507
16 MeV	48.64	1.297	0.603	8.881	1.207	0.550	7.707	1.236	0.402

DWBA (DWUCK).

Modified optical potential parameters for the exit channel of the 1st excited state.

	V_0 (MeV)	r_0 (fm)	a_0 (fm)	W_s (MeV)	r_i (fm)	a_i (fm)	V_{so} (MeV)	r_{so} (fm)	a_{so} (fm)
12 MeV	45	1.1	0.70	8.0	1.5	0.5	0	-	-
14 MeV	40	1.1	0.70	8.0	1.5	0.5	0	-	-
16 MeV	35	1.1	0.70	9.0	1.5	0.5	0	-	-

DWBA (DWUCK).

Modified optical potential parameters for the exit channel of the 2nd excited state.

	V_0 (MeV)	r_0 (fm)	a_0 (fm)	W_s (MeV)	r_i (fm)	a_i (fm)	V_{so} (MeV)	r_{so} (fm)	a_{so} (fm)
12 MeV	48	3.5	1.0	10.0	2.0	1.2	10	4.0	2.0
14 MeV	35	3.5	2.0	8.0	2.0	1.5	10	4.0	2.0
16 MeV	25	3.5	2.2	6.0	2.0	2.0	10	4.0	2.0

Coupled channel method (ECIS79).

	V_0 (MeV)	r_0 (fm)	a_0 (fm)	W_s (MeV)	r_i (fm)	a_i (fm)	V_{so} (MeV)	r_{so} (fm)	a_{so} (fm)	β_2	χ_σ^2/N	χ_A^2/N
12 MeV	49.62	1.134	0.544	1.940	1.765	0.700	5.906	1.082	0.333	0.985	28.32	4.97
14 MeV	52.23	1.127	0.583	2.529	1.571	0.732	6.565	1.141	0.432	0.961	26.96	2.81
16 MeV	52.56	1.130	0.575	2.957	1.296	0.766	6.250	1.112	0.371	0.985	24.61	1.84

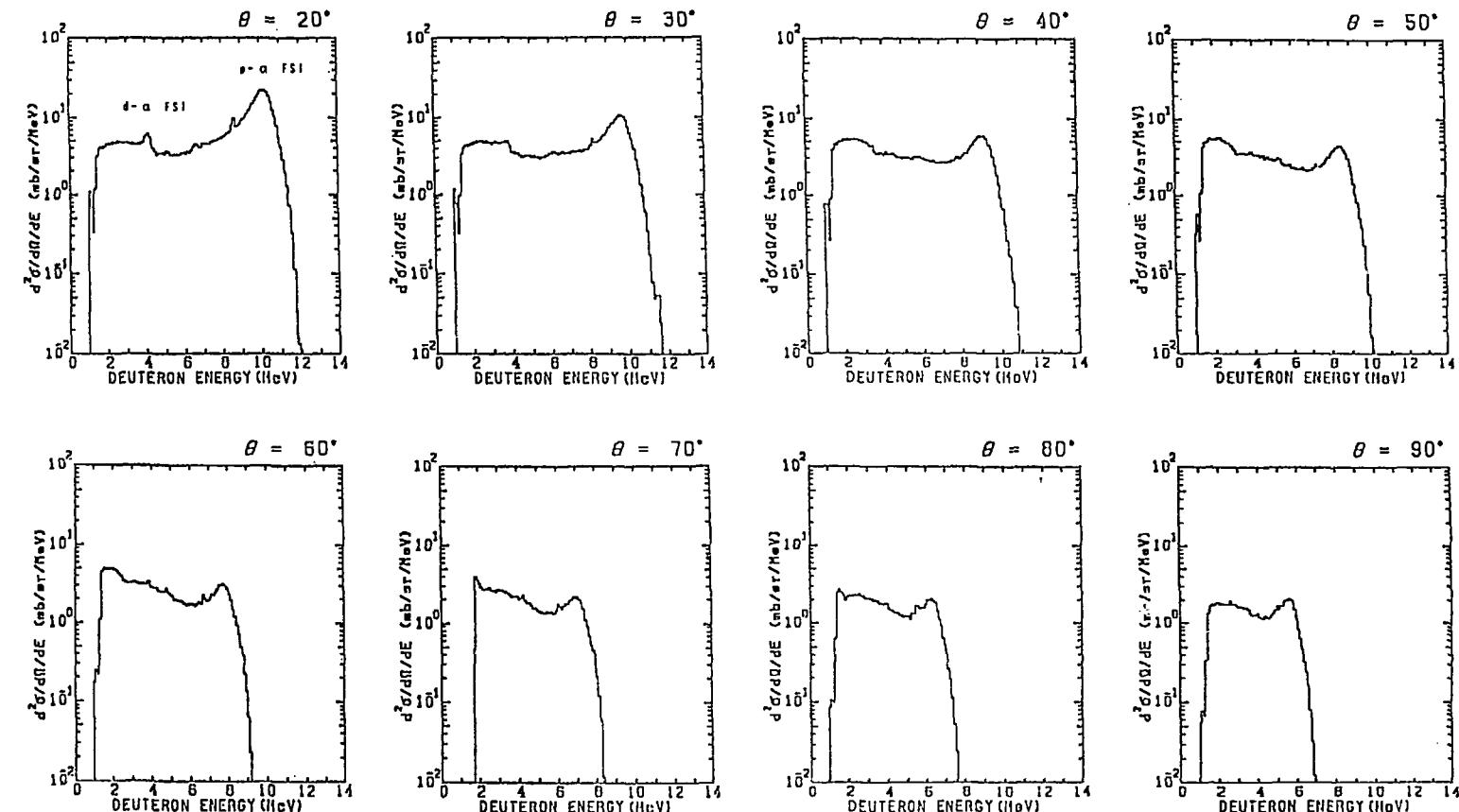


Fig.1 Double differential cross sections of the ${}^6\text{Li}(\text{p},\text{d})\text{p}\alpha$ reaction at 14 MeV.

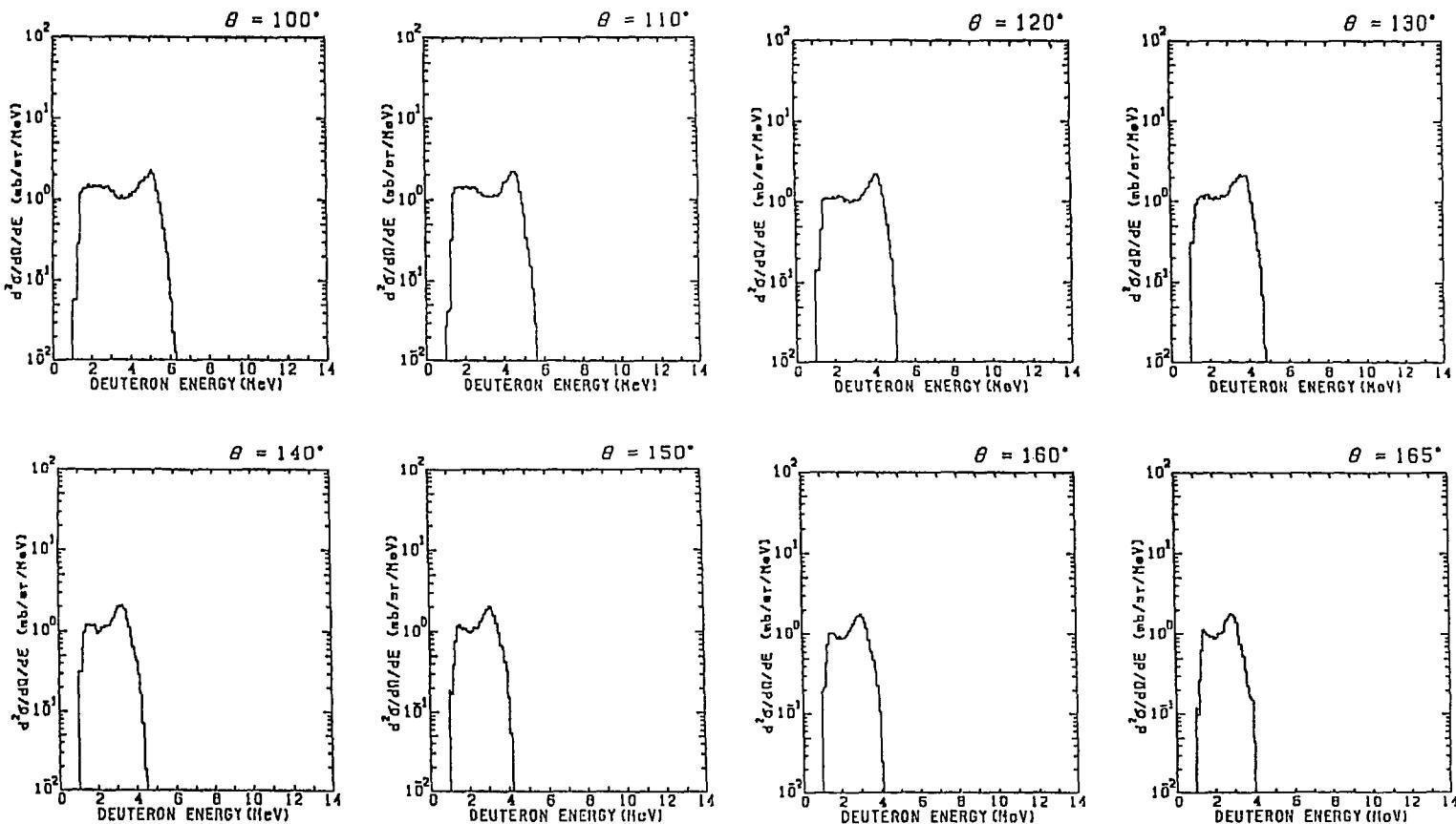


Fig.1 Continued.

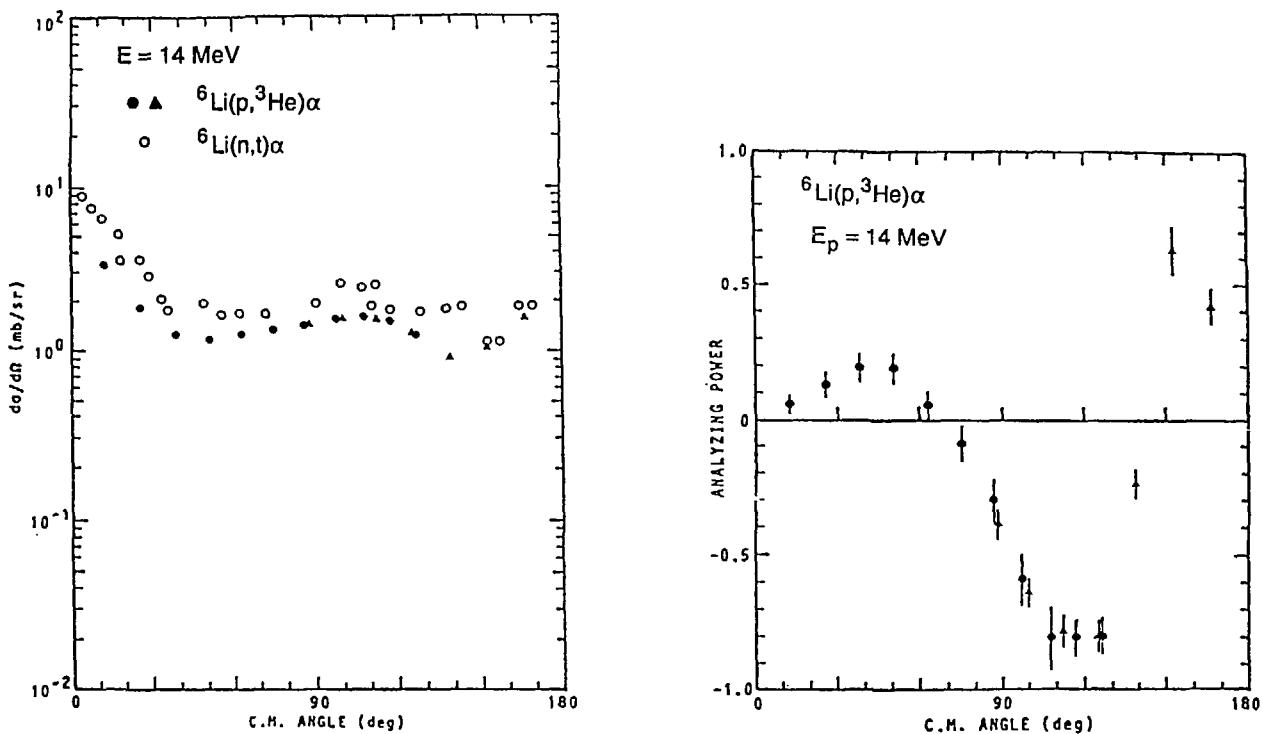


Fig.2 Differential cross sections and analyzing powers of the ${}^6\text{Li}(p,{}^3\text{He})\alpha$ reaction at 14 MeV.
Solid symbols are the measured data of this reaction, and open circles those of the ${}^6\text{Li}(n,t)\alpha$ reaction.

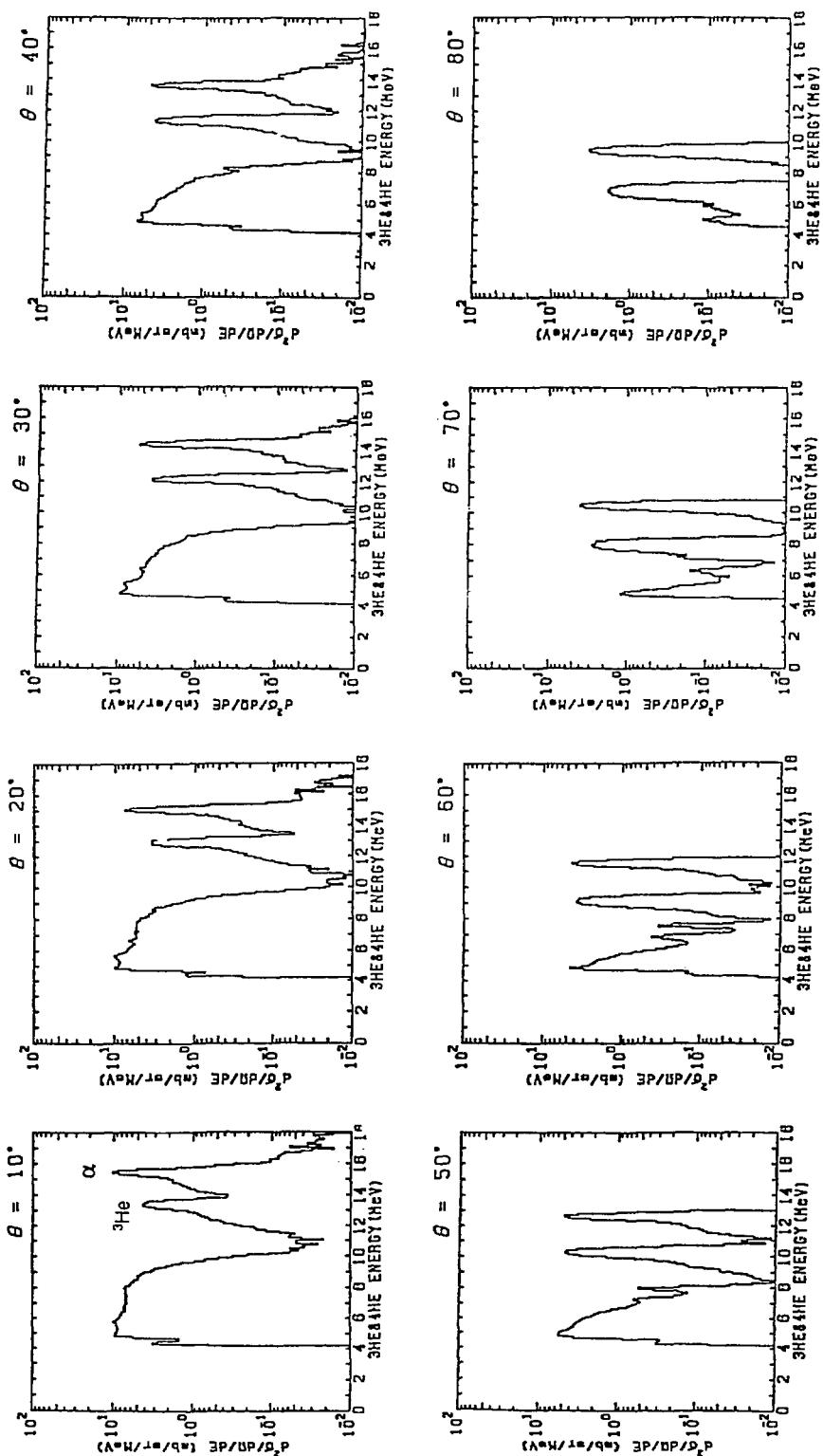


Fig.3 Double differential cross sections of the ${}^6\text{Li}(p,\alpha)\text{pd}$ reaction at 14 MeV. The two peaks seen in the high energy side are attributable to ${}^3\text{He}$ and α -particles from the ${}^6\text{Li}(p,{}^3\text{He})\alpha$ reaction. The continuum part is due to α -particles from the three-body breakup ${}^6\text{Li}(p,\alpha)\text{pd}$ reaction.

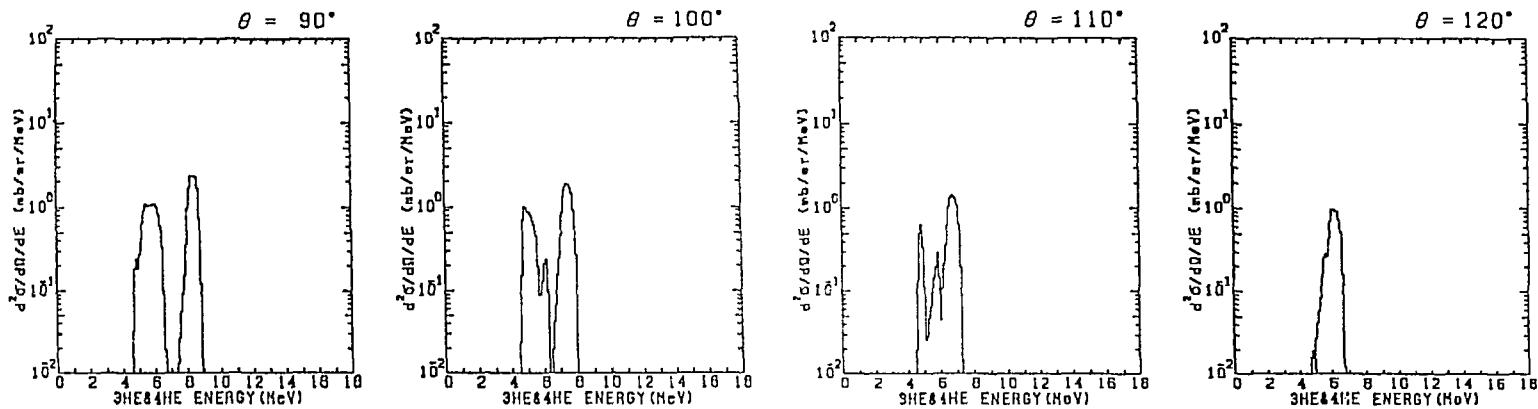


Fig.3 Continued.

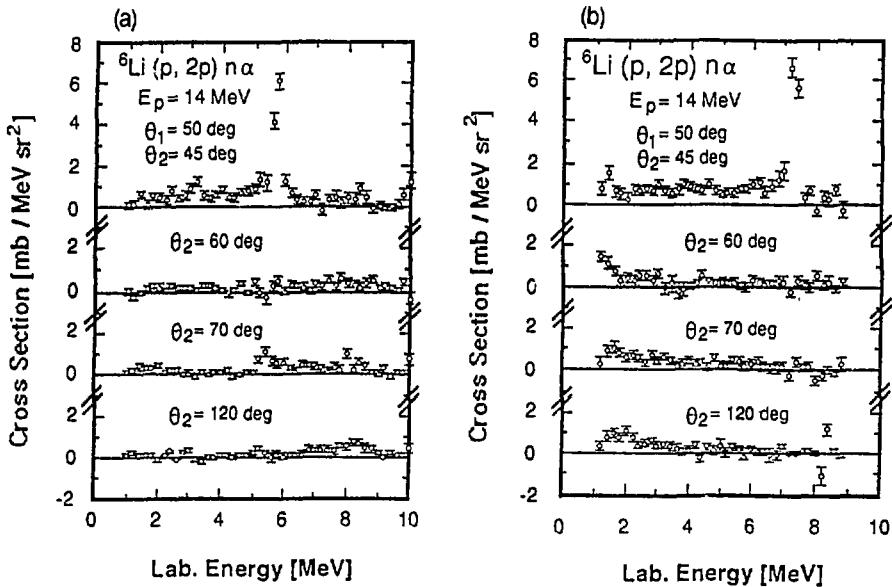


Fig.4 Two-proton correlation spectra of the ${}^6\text{Li}(p,2p)n\alpha$ reaction at 14 MeV.
 (a) Spectra for the fixed (50°) counter telescope, and (b) for the turnable counter telescope.

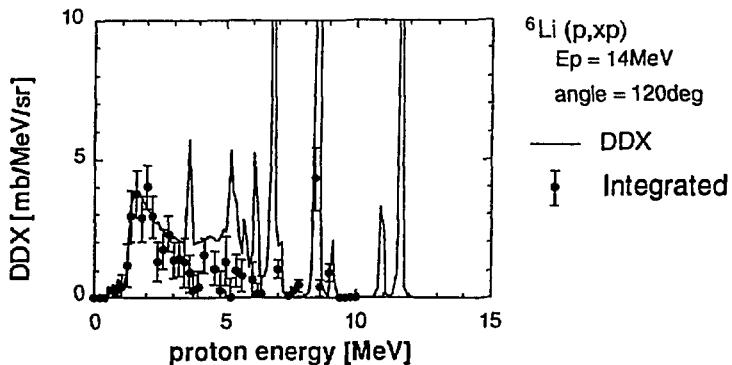


Fig.5 Contribution of the ${}^6\text{Li}(p,2p)n\alpha$ reaction in the ${}^6\text{Li}(p,xp)$ reaction at 14 MeV. Points were obtained by integration of the correlation spectra shown in Fig.4.

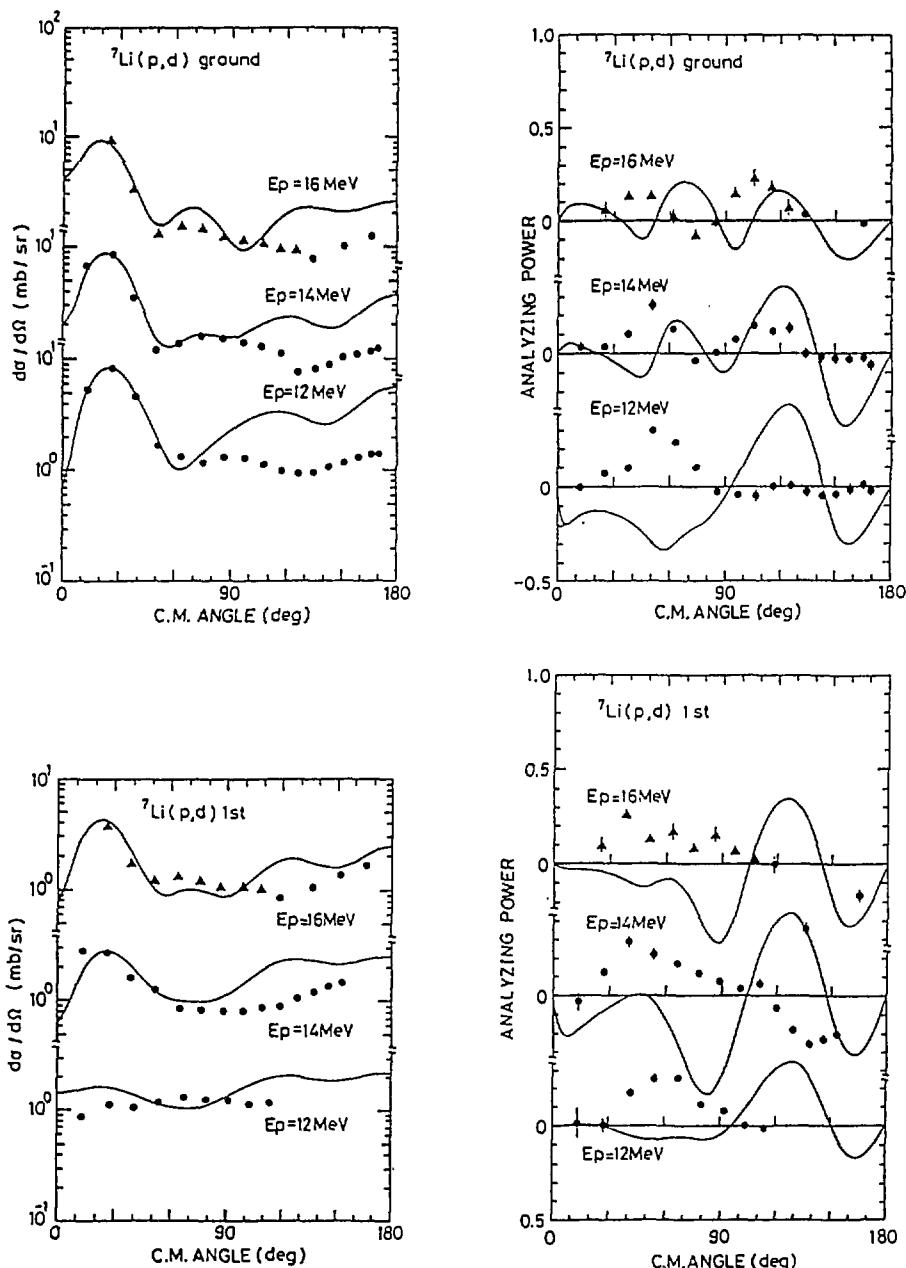


Fig.6 Differential cross sections and analyzing powers of the ${}^7\text{Li}(p,d){}^6\text{Li}^*$ reaction at 12, 14 and 16 MeV. Solid lines are theoretical results of the DWBA calculation.

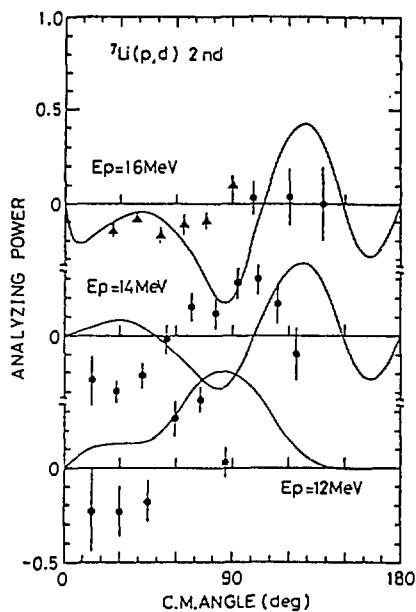
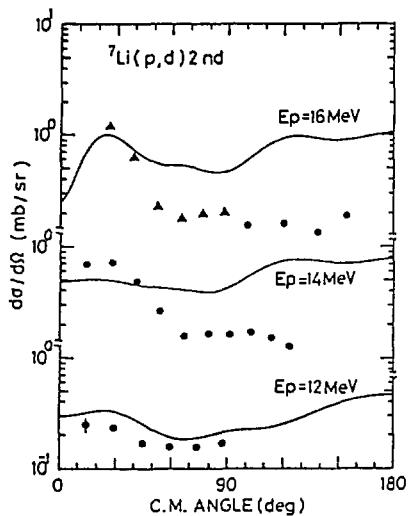


Fig.6 Continued.

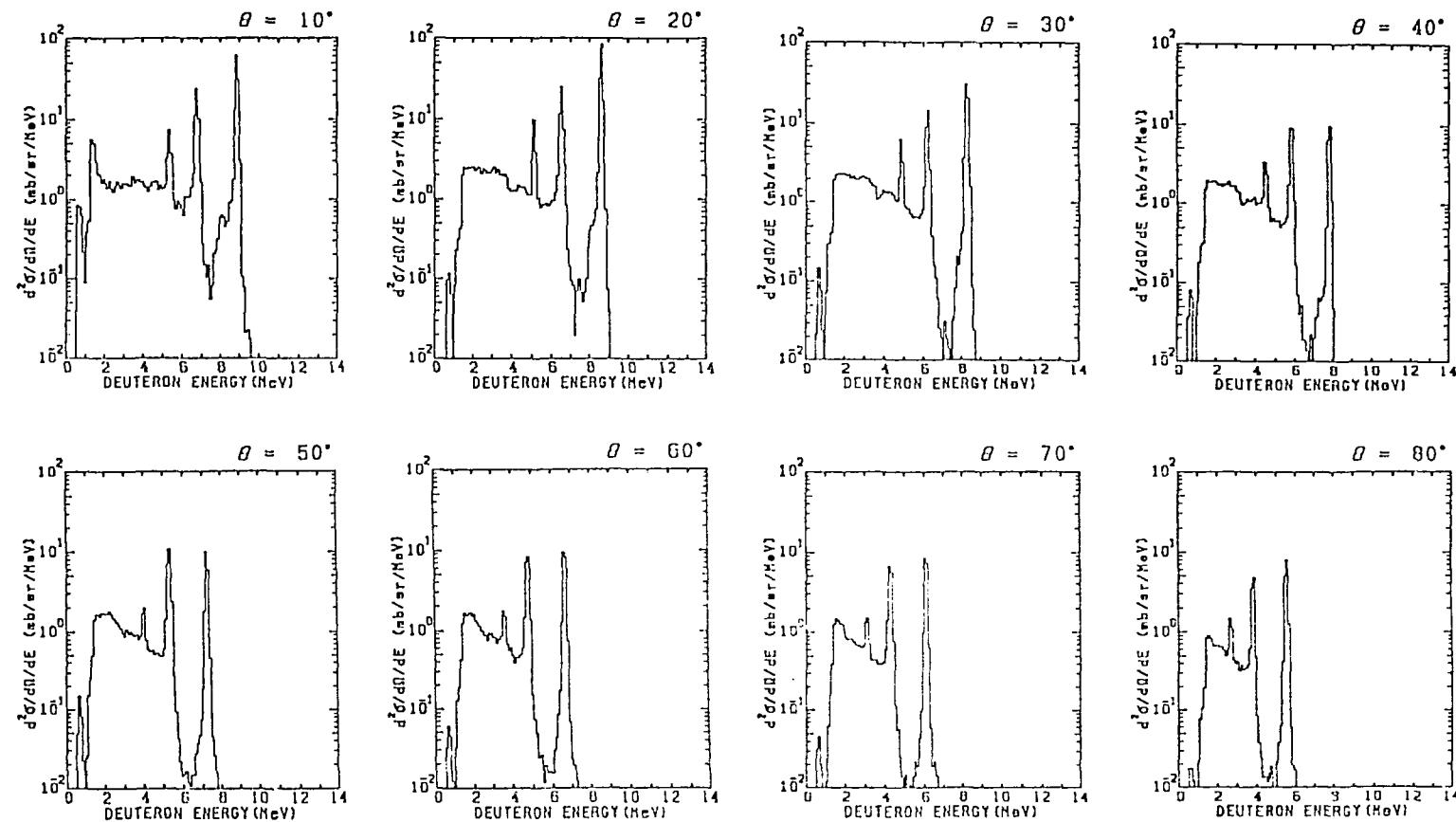


Fig.7 Double differential cross sections of the ${}^7\text{Li}(p,d)$ reaction at 14 MeV.
The continuum part contains the ${}^7\text{Li}(p,d)d\alpha$ reaction.

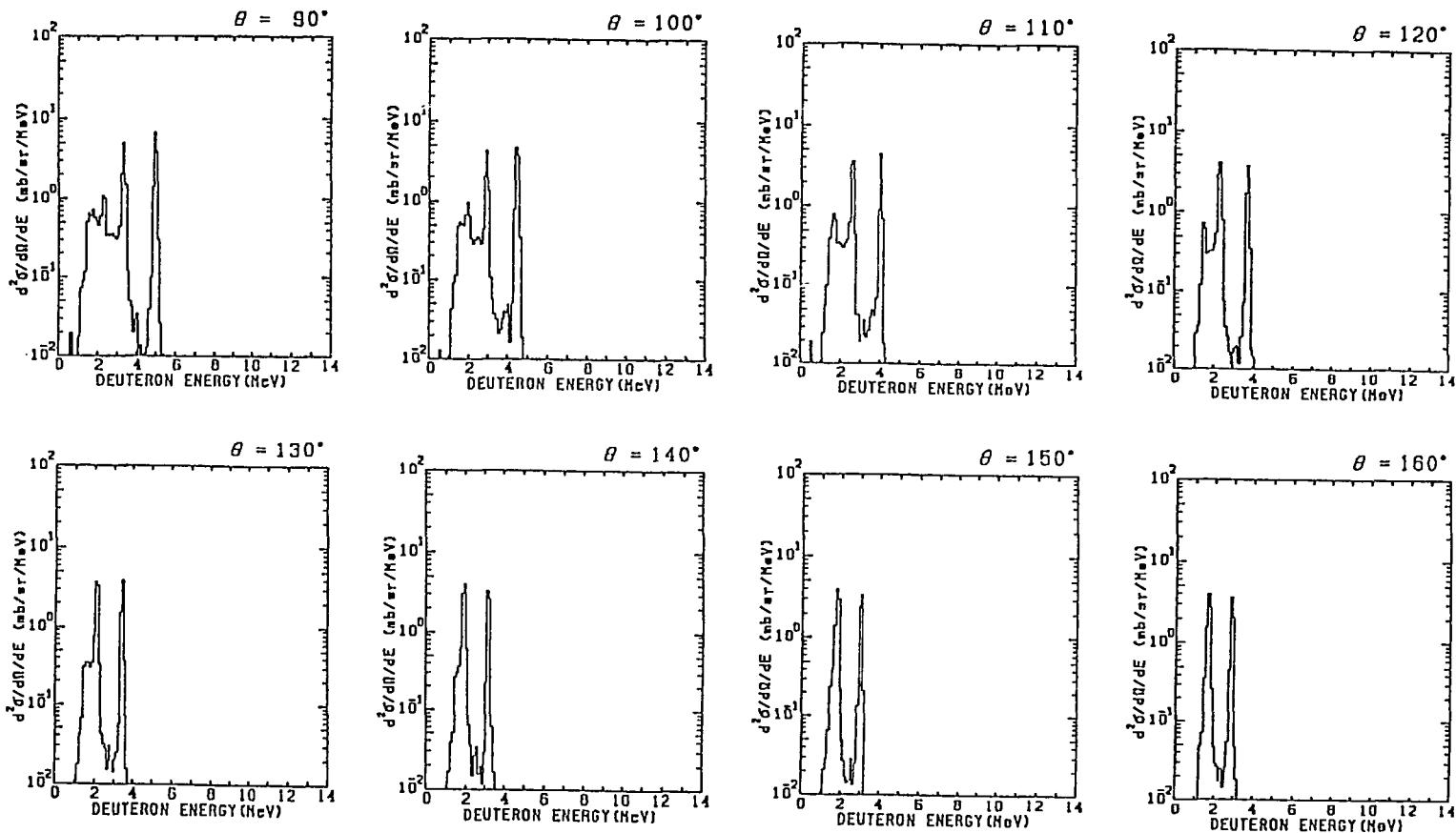


Fig.7 Continued.

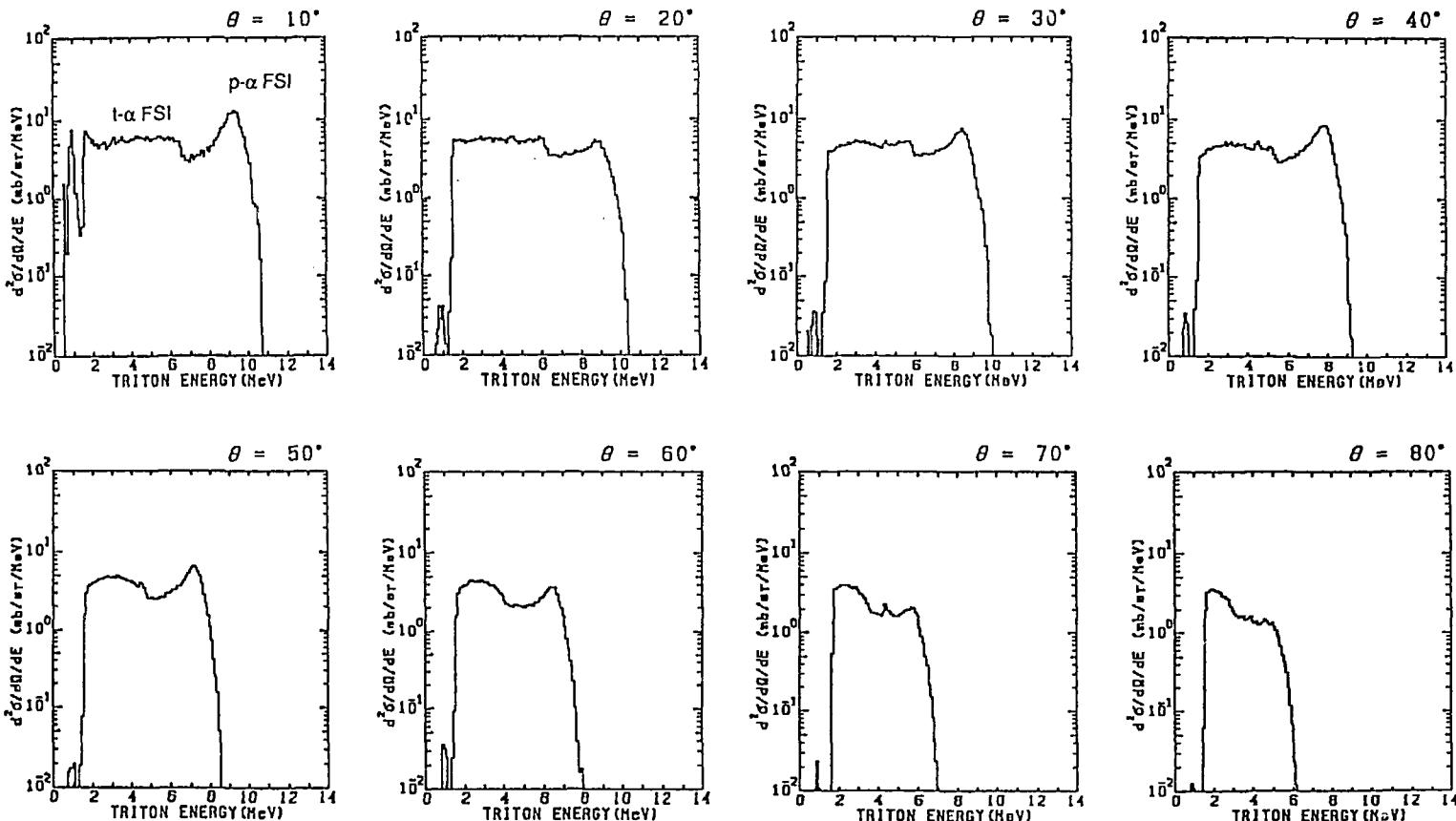


Fig.8 Double differential cross sections of the ${}^7\text{Li}(\text{p},\text{t})\text{p}\alpha$ reaction at 14 MeV.

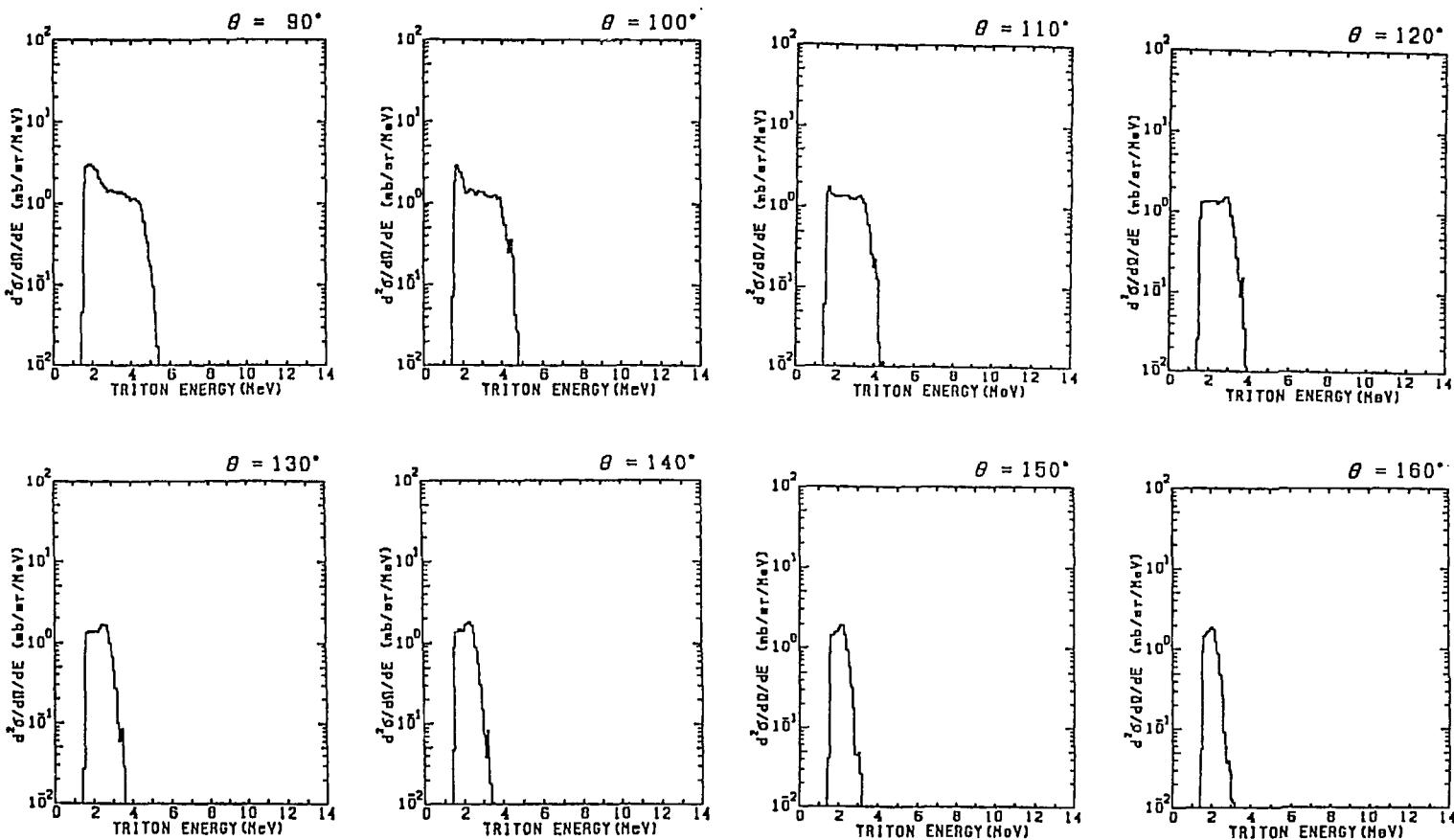


Fig.8 Continued.

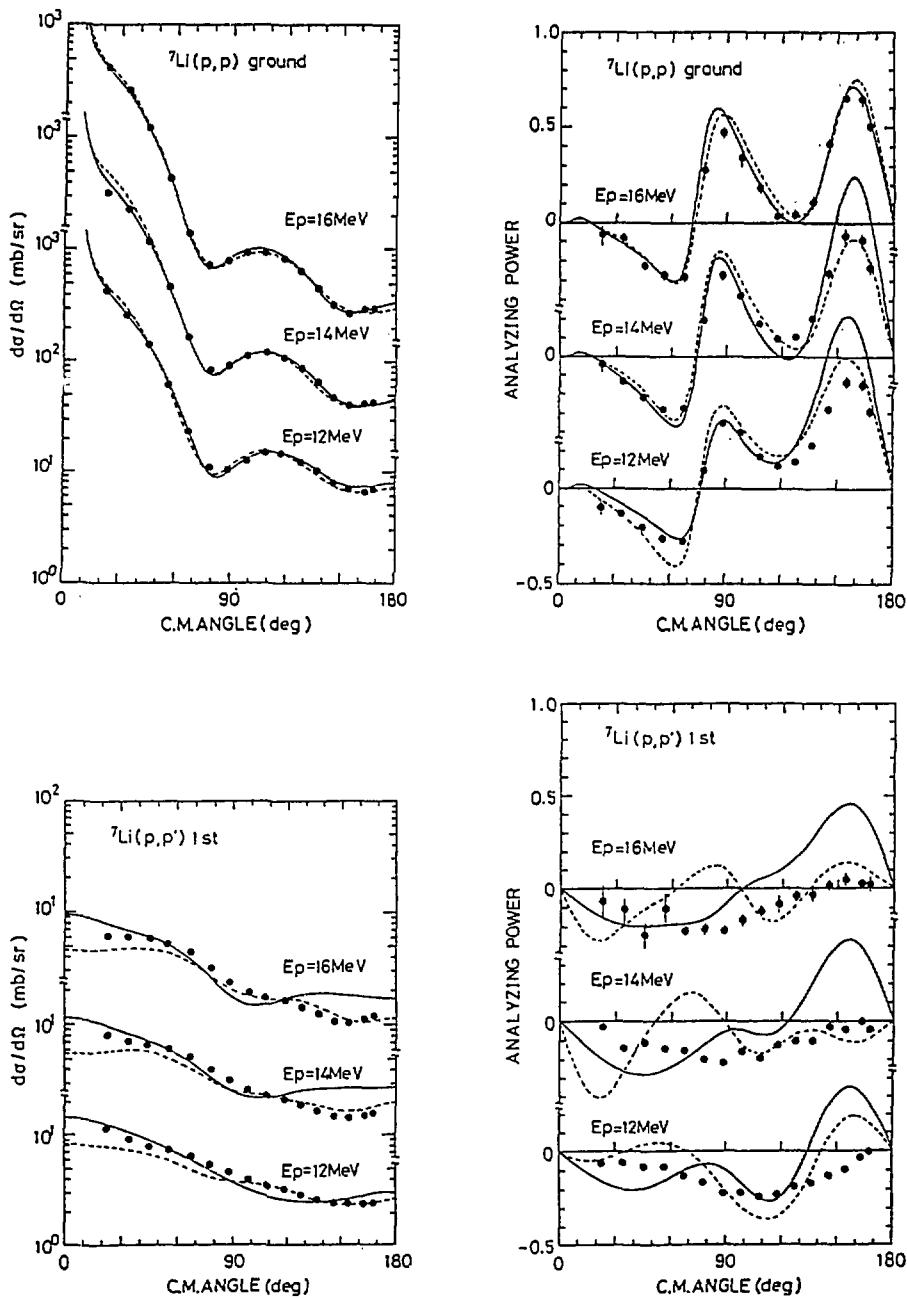


Fig.9 Differential cross sections and analyzing powers of the ${}^7\text{Li}(p,p')$ scattering at 12, 14 and 16 MeV. Solid lines are theoretical results of the spherical optical model and DWBA calculation, and dashed lines those of the coupled channel calculation.

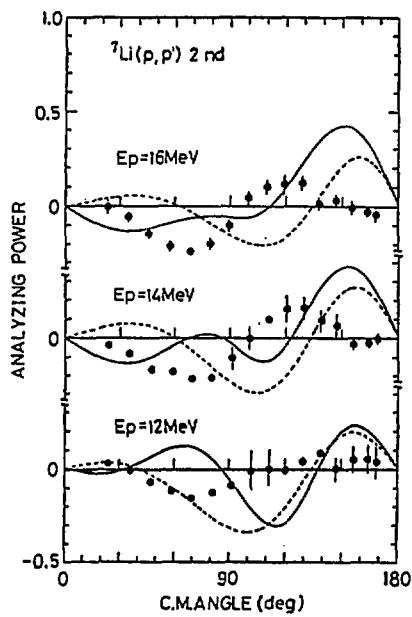
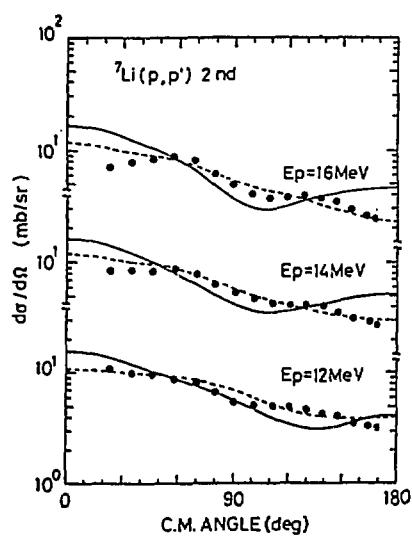


Fig.9 Continued.

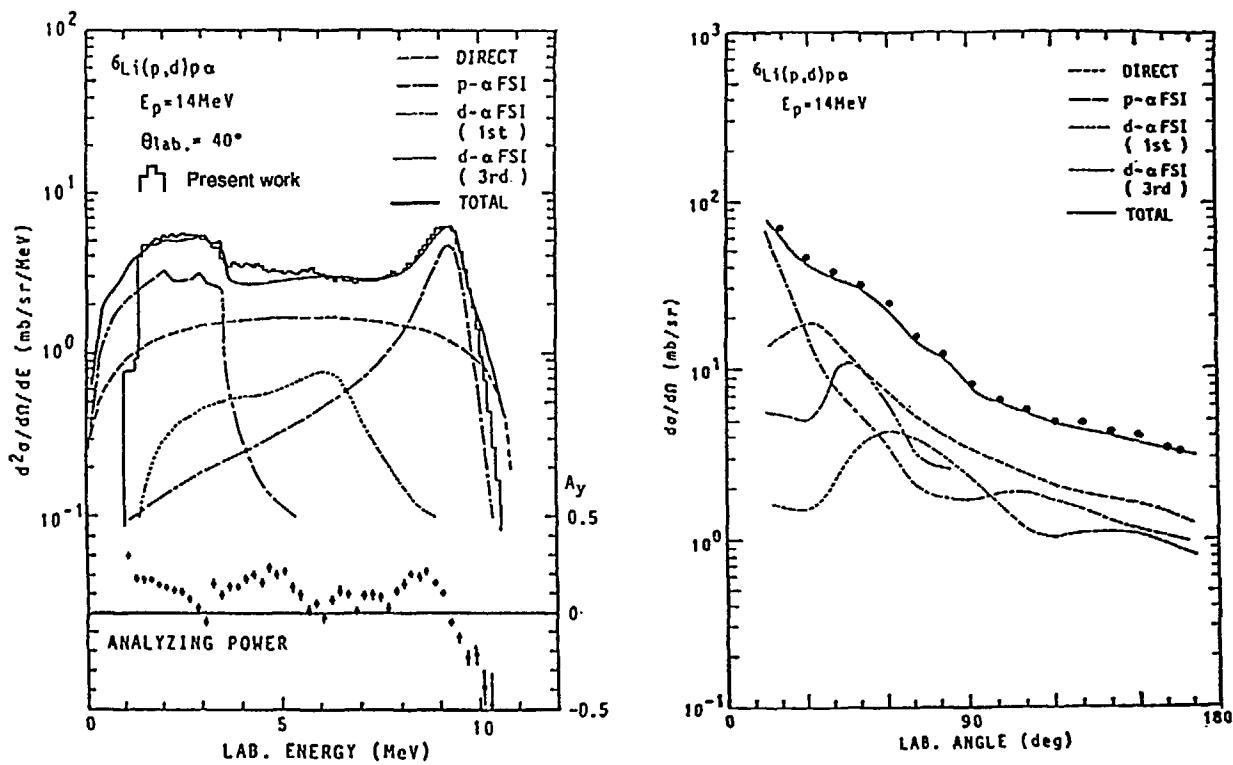


Fig.10 (a) Theoretical results obtained by the FSI model for the ${}^6\text{Li}(p,d)\text{p}\alpha$ reaction. Analyzing powers are shown as a function of energy. (b) Angular distributions of the p- α , d- α FSI and direct breakup components.

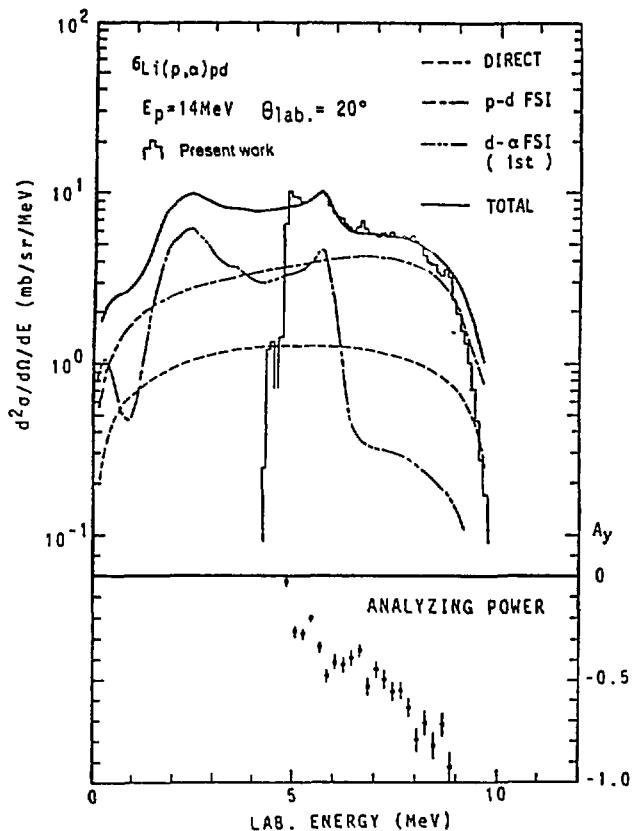


Fig.11 Theoretical results obtained by the FSI model for the ${}^6\text{Li}(p,\alpha)\text{pd}$ reaction. Analyzing powers are shown as a function of energy.

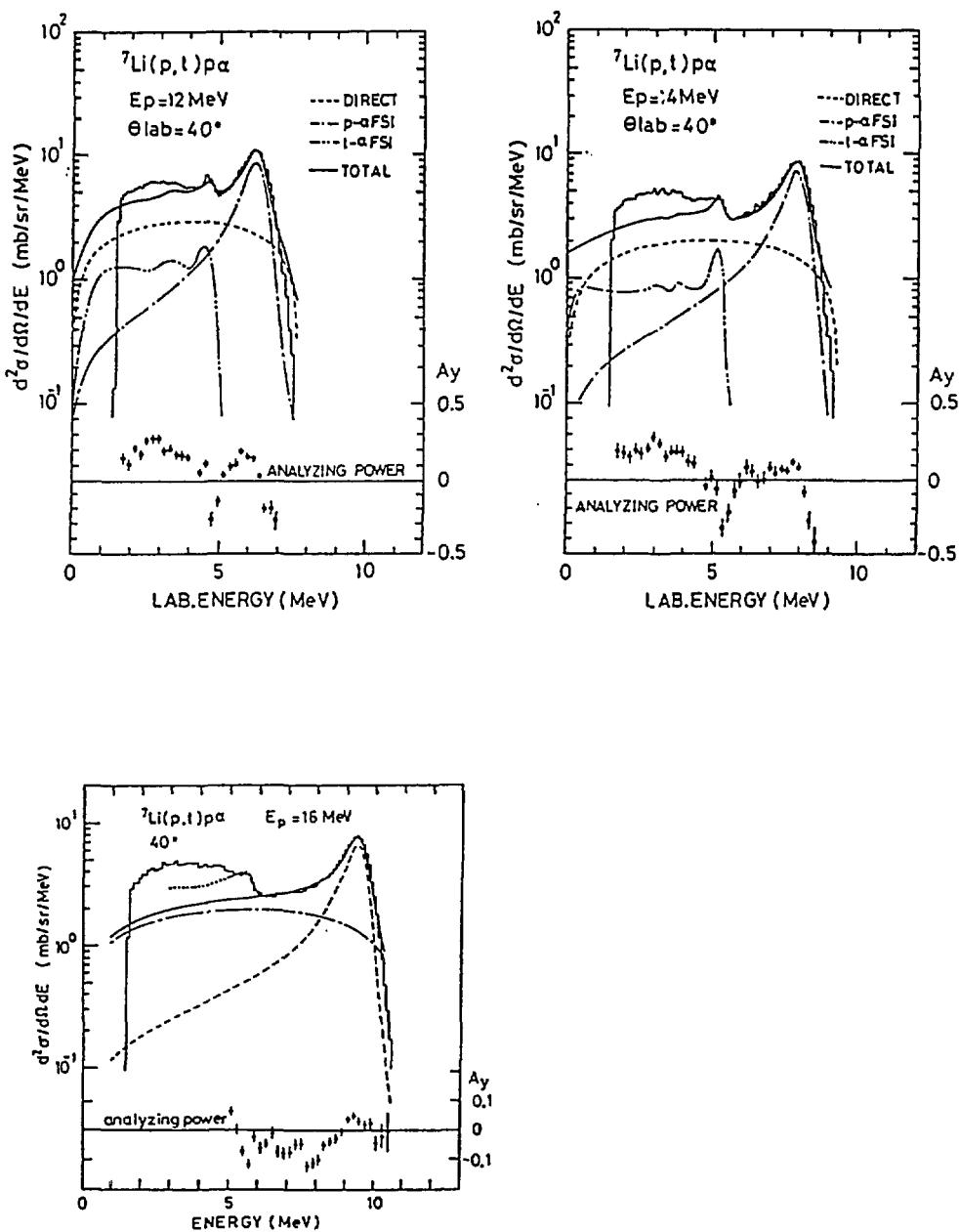


Fig.12 Theoretical results obtained by the FSI model for the ${}^7\text{Li}(p,t)p\alpha$ reaction. Analyzing powers are shown as a function of energy.

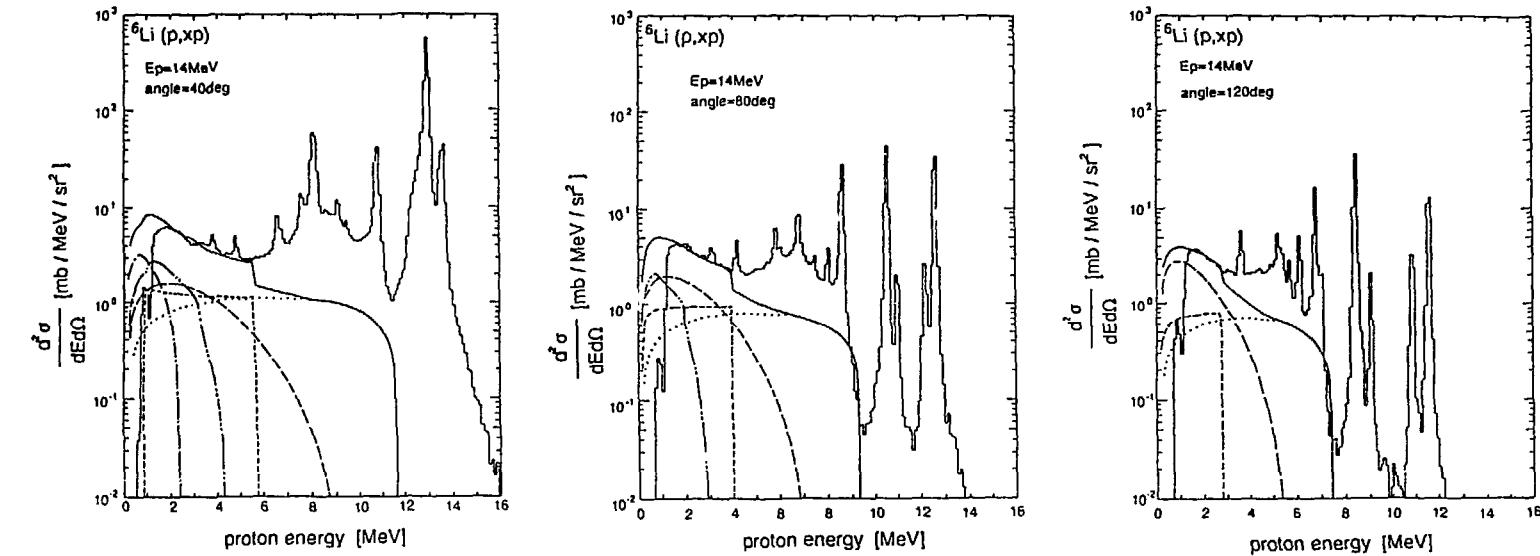


Fig.13 Theoretical results obtained by the sequential decays with FSI model for the ${}^6\text{Li}(p,2p)\text{n}\alpha$ reaction.

The results are compared with the ${}^6\text{Li}(p,\text{xp})$ continuum spectrum. Dotted lines indicate the spectrum of p₁ from the process 4, long dashed lines the spectrum of p₂ from the process 4, dot-dashed lines the spectrum from the process 1 through the 3rd excited state of ${}^6\text{Li}$, double dot-dashed lines the spectrum from the process 1 through the 5th excited state of ${}^6\text{Li}$, short dashed lines the spectrum from the process 2, and solid lines their sum.

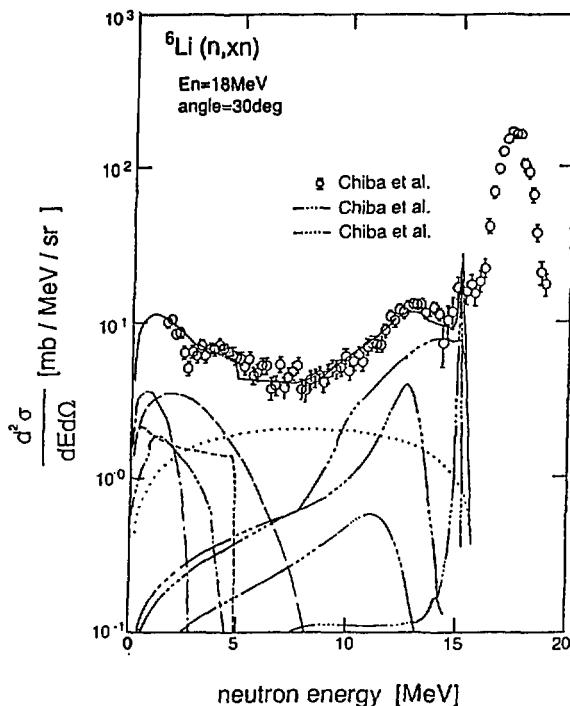


Fig. 14 Theoretical results for the ${}^6\text{Li}(\text{n},2\text{n})\text{p}\alpha$ reaction compared with the ${}^6\text{Li}(\text{n},\text{xn})$ continuum spectrum at 18 MeV[12]. Legends are the same as Fig.13.

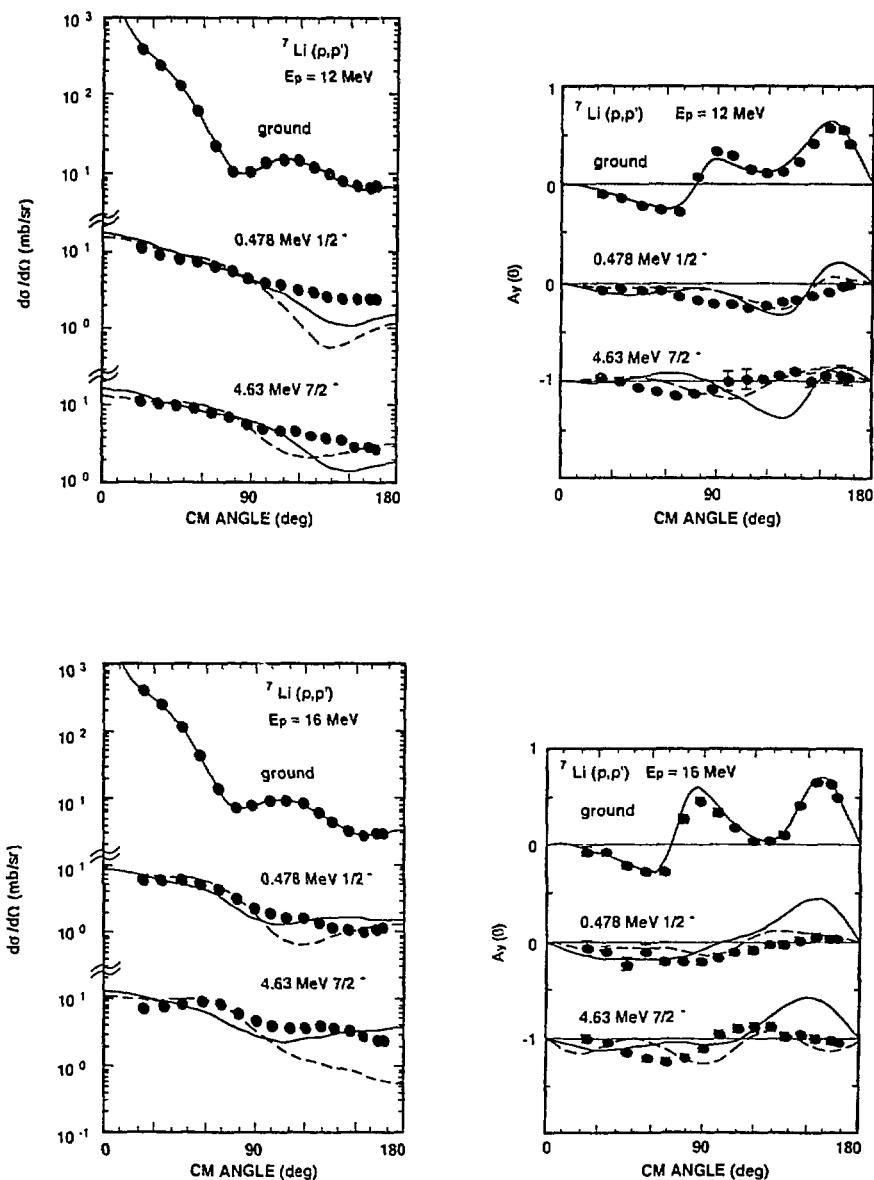


Fig.15 Effect of the modified optical potential for the exit channels of the ${}^7\text{Li}(p,p')$ scattering at 12 and 16 MeV. Solid lines indicate the results of the spherical optical model and DWBA calculation and dashed lines that of DWBA calculation with modified potential for the exit channels. The potential parameters are summarized in Table 1.

Appendices:

The numerical data given in the appendices are available in a floppy disk.

- Appendix 1 Double differential cross sections of the ${}^6\text{Li}(\text{p},\text{d})\text{p}\alpha$ reaction at 14 MeV.
- Appendix 2 Differential cross sections and analyzing powers of the ${}^6\text{Li}(\text{p},{}^3\text{He})\alpha$ reaction at 14 MeV.
- Appendix 3 Double differential cross sections of the ${}^6\text{Li}(\text{p},\alpha)\text{pd}$ reaction including the ${}^6\text{Li}(\text{p},{}^3\text{He})\alpha$ reaction at 14 MeV.
- Appendix 4 Differential cross sections and analyzing powers of the ${}^7\text{Li}(\text{p},\text{d}){}^6\text{Li}^*$ reaction at 12, 14 and 16 MeV.
- Appendix 5 Double differential cross sections of the ${}^7\text{Li}(\text{p},\text{d})$ reaction at 14 MeV.
- Appendix 6 Double differential cross sections of the ${}^7\text{Li}(\text{p},\text{t})$ reaction at 14 MeV.
- Appendix 7 Differential cross sections and analyzing powers of the ${}^7\text{Li}(\text{p},\text{p}'){}^7\text{Li}^*$ scattering at 12 and 16 MeV.

Appendix 1 Double differential cross sections (mb/sr/MeV) of the ${}^6\text{Li}(\text{p},\text{d})\text{p}\alpha$ reaction at 14 MeV.

##### 6Li(p,d) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 20 deg [POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)									
1.0 /	1.10E+00 (5.31E-03)	6.91E-01 (2.94E-02)	3.30E-01 (1.10E-01)	1.18E+00 (5.52E-02)	3.11E+00 (9.04E-02)	3.92E+00 (1.02E-01)	4.04E+00 (1.03E-01)	3.99E+00 (1.02E-01)	4.16E+00 (1.05E-01)	4.42E+00 (1.08E-01)
2.0 /	4.50E+00 (1.09E-01)	4.59E+00 (1.10E-01)	4.56E+00 (1.09E-01)	4.75E+00 (1.12E-01)	4.66E+00 (1.11E-01)	4.84E+00 (1.13E-01)	4.76E+00 (1.12E-01)	4.77E+00 (1.12E-01)	4.66E+00 (1.11E-01)	4.76E+00 (1.12E-01)
3.0 /	4.77E+00 (1.12E-01)	4.42E+00 (1.10E-01)	4.53E+00 (1.09E-01)	4.44E+00 (1.10E-01)	4.51E+00 (1.09E-01)	4.57E+00 (1.10E-01)	4.52E+00 (1.09E-01)	4.62E+00 (1.10E-01)	4.74E+00 (1.12E-01)	5.40E+00 (1.35E-01)
4.0 /	5.86E+00 (1.40E-01)	6.12E+00 (1.43E-01)	5.49E+00 (1.35E-01)	4.04E+00 (1.16E-01)	3.54E+00 (1.08E-01)	3.20E+00 (1.03E-01)	3.37E+00 (1.06E-01)	3.32E+00 (1.05E-01)	3.41E+00 (1.06E-01)	3.25E+00 (1.04E-01)
5.0 /	3.54E+00 (1.09E-01)	3.49E+00 (1.08E-01)	3.30E+00 (1.05E-01)	3.18E+00 (1.03E-01)	3.27E+00 (1.04E-01)	3.20E+00 (1.03E-01)	3.30E+00 (1.05E-01)	3.30E+00 (1.05E-01)	3.45E+00 (1.07E-01)	3.43E+00 (1.07E-01)
6.0 /	3.30E+00 (1.05E-01)	3.53E+00 (1.08E-01)	3.42E+00 (1.07E-01)	3.65E+00 (1.10E-01)	4.10E+00 (1.17E-01)	4.40E+00 (1.21E-01)	4.33E+00 (1.20E-01)	4.71E+00 (1.17E-01)	4.10E+00 (1.17E-01)	4.57E+00 (1.23E-01)
7.0 /	4.42E+00 (1.21E-01)	4.52E+00 (1.23E-01)	4.50E+00 (1.22E-01)	4.44E+00 (1.21E-01)	4.72E+00 (1.25E-01)	4.89E+00 (1.20E-01)	4.96E+00 (1.28E-01)	4.95E+00 (1.28E-01)	5.18E+00 (1.31E-01)	5.36E+00 (1.33E-01)
8.0 /	5.41E+00 (1.34E-01)	5.49E+00 (1.38E-01)	5.93E+00 (1.40E-01)	6.24E+00 (1.44E-01)	6.44E+00 (1.46E-01)	7.85E+00 (1.62E-01)	9.72E+00 (1.30E-01)	7.58E+00 (1.59E-01)	7.78E+00 (1.61E-01)	8.14E+00 (1.65E-01)
9.0 /	8.98E+00 (1.73E-01)	9.43E+00 (1.77E-01)	9.99E+00 (1.57E-01)	1.12E+01 (1.93E-01)	1.24E+01 (2.03E-01)	1.35E+01 (2.11E-01)	1.48E+01 (2.22E-01)	1.59E+01 (2.30E-01)	1.81E+01 (2.45E-01)	1.96E+01 (2.55E-01)
10.0 /	2.13E+01 (2.66E-01)	2.21E+01 (2.71E-01)	2.20E+01 (2.70E-01)	2.10E+01 (2.64E-01)	1.87E+01 (2.50E-01)	1.57E+01 (2.29E-01)	1.27E+01 (2.05E-01)	1.03E+01 (1.85E-01)	7.75E+00 (1.61E-01)	5.40E+00 (1.34E-01)
11.0 /	4.09E+00 (1.17E-01)	2.80E+00 (9.65E-02)	1.92E+00 (7.99E-02)	1.25E+00 (6.45E-02)	7.27E-01 (4.92E-02)	3.19E-01 (3.26E-02)	1.13E-01 (1.94E-02)	3.34E-02 (1.05E-02)	1.34E-02 (6.68E-03)	

##### 6Li(p,d) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 30 deg [POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)									
1.0 /	1.17E+00 (4.48E-02)	7.78E-01 (3.45E-02)	3.21E-01 (2.35E-02)	9.62E-01 (4.06E-02)	3.39E+00 (7.62E-02)	3.76E+00 (8.25E-02)	4.27E+00 (8.56E-02)	4.25E+00 (8.55E-02)	4.39E+00 (8.68E-02)	4.47E+00 (8.76E-02)
2.0 /	4.59E+00 (8.87E-02)	4.80E+00 (9.08E-02)	4.68E+00 (8.97E-02)	4.92E+00 (9.19E-02)	4.85E+00 (9.13E-02)	4.94E+00 (9.21E-02)	4.80E+00 (9.08E-02)	4.85E+00 (9.13E-02)	4.81E+00 (9.09E-02)	4.74E+00 (9.02E-02)
3.0 /	4.58E+00 (8.87E-02)	4.70E+00 (9.06E-02)	4.83E+00 (9.11E-02)	4.78E+00 (9.06E-02)	4.49E+00 (8.97E-02)	4.71E+00 (8.99E-02)	4.72E+00 (9.01E-02)	4.26E+00 (9.04E-02)	4.97E+00 (1.06E-01)	4.22E+00 (9.74E-02)
4.0 /	3.62E+00 (9.01E-02)	3.50E+00 (8.86E-02)	3.45E+00 (8.80E-02)	3.39E+00 (8.72E-02)	3.19E+00 (8.46E-02)	3.08E+00 (8.31E-02)	3.14E+00 (8.40E-02)	3.23E+00 (8.51E-02)	3.18E+00 (8.45E-02)	3.21E+00 (8.49E-02)
5.0 /	3.04E+00 (8.26E-02)	3.14E+00 (8.39E-02)	3.08E+00 (8.29E-02)	3.04E+00 (8.25E-02)	2.96E+00 (8.14E-02)	3.04E+00 (8.25E-02)	3.07E+00 (8.30E-02)	3.16E+00 (8.42E-02)	3.20E+00 (8.47E-02)	3.32E+00 (8.63E-02)
6.0 /	3.35E+00 (8.66E-02)	3.52E+00 (8.88E-02)	3.51E+00 (8.87E-02)	3.40E+00 (8.73E-02)	3.25E+00 (8.53E-02)	3.39E+00 (8.72E-02)	3.50E+00 (8.86E-02)	3.40E+00 (8.73E-02)	3.36E+00 (8.66E-02)	3.44E+00 (8.76E-02)
7.0 /	3.35E+00 (8.67E-02)	3.47E+00 (8.83E-02)	3.55E+00 (8.93E-02)	3.49E+00 (8.84E-02)	3.55E+00 (8.92E-02)	3.44E+00 (9.03E-02)	3.52E+00 (8.89E-02)	3.49E+00 (9.10E-02)	3.40E+00 (9.23E-02)	3.42E+00 (9.25E-02)
8.0 /	3.86E+00 (9.32E-02)	4.32E+00 (9.84E-02)	5.19E+00 (1.08E-01)	4.79E+00 (1.04E-01)	4.73E+00 (1.03E-01)	4.82E+00 (1.04E-01)	5.09E+00 (1.07E-01)	5.44E+00 (1.10E-01)	5.79E+00 (1.14E-01)	6.17E+00 (1.18E-01)
9.0 /	6.83E+00 (1.24E-01)	7.36E+00 (1.29E-01)	8.19E+00 (1.36E-01)	8.50E+00 (1.38E-01)	9.31E+00 (1.44E-01)	9.98E+00 (1.50E-01)	1.06E+01 (1.55E-01)	1.04E+01 (1.53E-01)	1.03E+01 (1.52E-01)	9.29E+00 (1.44E-01)
10.0 /	7.62E+00 (1.31E-01)	6.26E+00 (1.19E-01)	5.21E+00 (1.06E-01)	3.86E+00 (9.33E-02)	2.81E+00 (7.94E-02)	2.09E+00 (6.95E-02)	1.33E+00 (5.47E-02)	9.74E-01 (4.67E-02)	6.06E-01 (3.69E-02)	3.45E-01 (2.78E-02)
11.0 /	1.73E-01 (1.97E-02)	7.85E-02 (1.33E-02)	4.73E-02 (1.05E-02)	5.37E-02 (1.10E-02)	5.38E-02 (1.10E-02)	2.47E-02 (7.44E-03)				

***** 61.1(p,d) DDX (error) 111 Ep = 14 MeV LAB. ANGLE = 40 deg

{ POL = NON }

<i>Energy / eV</i>	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9									
0.0 / 0.0E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00									
1.0 / 3.69E-01	5.14E-02	7.81E-01	3.14E-02	2.59E-01	1.82E-02	9.07E-01	3.41E-02	3.85E-00	7.07E-02	4.56E+00	7.65E-02	4.54E+00	7.63E-02	4.83E+00	7.87E-02	4.97E+00	7.98E-02	4.95E+00	7.96E-02
2.0 / 5.74E+00	1.819E-02	5.15E+00	8.12E-02	5.36E+00	8.29E-02	5.19E+00	8.15E-02	5.30E+00	8.24E-02	5.37E+00	8.29E-02	5.38E+00	8.23E-02	5.29E+00	8.24E-02	5.21E+00	8.17E-02	5.13E+00	6.11E-02
3.0 / 4.90E+00	7.92E-02	4.95E+00	7.96E-02	4.67E+00	7.73E-02	4.42E+00	7.53E-02	4.37E+00	7.48E-02	3.72E+00	6.91E-02	3.45E+00	6.64E-02	3.35E+00	6.55E-02	3.56E+00	6.75E-02	3.46E+00	6.62E-02
4.0 / 3.29E+00	6.67E-02	5.15E+00	6.89E-02	3.38E+00	6.76E-02	3.30E+00	6.68E-02	3.43E+00	6.87E-02	3.33E+00	6.71E-02	3.20E+00	6.88E-02	3.11E+00	6.49E-02	3.13E+00	6.51E-02	3.06E+00	6.44E-02
5.0 / 3.08E+00	4.45E-02	3.05E+00	6.42E-02	3.09E+00	6.45E-02	3.02E+00	6.39E-02	2.92E+00	6.29E-02	3.13E+00	6.49E-02	3.14E+00	6.52E-02	3.11E+00	6.49E-02	3.20E+00	6.58E-02	3.01E+00	6.39E-02
6.0 / 3.01E+00	6.38E-02	2.89E+00	6.26E-02	2.785E+00	6.21E-02	2.85E+00	6.21E-02	2.77E+00	6.06E-02	2.86E+00	6.22E-02	2.69E+00	6.03E-02	2.66E+00	6.00E-02	2.62E+00	6.01E-02	2.65E+00	5.99E-02
7.0 / 2.700E+00	6.04E-02	2.71E+00	6.06E-02	2.68T+00	6.03E-02	2.71E+00	6.05E-02	2.68E+00	6.02E-02	2.79E+00	6.15E-02	2.79E+00	6.14E-02	2.98E+00	6.35E-02	3.10E+00	6.48E-02	3.00E+00	6.31E-02
8.0 / 3.05E+00	6.43E-02	3.27E+00	6.65E-02	3.45E+00	6.84E-02	3.47E+00	6.85E-02	3.83E+00	7.20E-02	4.22E+00	7.55E-02	4.52E+00	7.82E-02	4.93E+00	8.17E-02	5.27E+00	8.44E-02	5.72E+00	8.20E-02
9.0 / 5.92E+00	8.75E-02	5.94E+00	8.96E-02	5.90E+00	8.93E-02	5.49E+00	8.82E-02	4.55E+00	7.85E-02	4.04E+00	7.40E-02	3.14E+00	6.51E-02	2.42E+00	5.73E-02	1.83E+00	4.98E-02	1.36E+00	4.29E-02
10.0 / 9.48E-01	3.58E-02	6.76E-01	3.02E-02	4.27E-01	2.04E-02	2.67E-01	1.90E-02	1.68E-01	1.51E-02	8.09E-02	1.04E-02	3.90E-02	2.26E-02	3.80E-02	7.17E-03				

{ POL = NON 1

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00	{ 0.00E+00}								
3.19E-01	{ 2.02E-02}	{ 5.72E-01}	{ 2.71E-02}	{ 2.40E-01}	{ 1.82E-02}	{ 1.07E+00}	{ 3.69E-02}	{ 4.27E+00}	{ 7.37E-02}	{ 4.84E+00}
5.45E+00	{ 8.34E-02}	{ 5.53E+00}	{ 8.40E-02}	{ 5.67E+00}	{ 8.50E-02}	{ 5.61E+00}	{ 8.46E-02}	{ 5.29E+00}	{ 8.22E-02}	{ 5.17E+00}
1.0 /	{ 7.03E-02}	{ 3.50E+00}	{ 6.86E-02}	{ 3.43E+00}	{ 6.61E-02}	{ 3.55E+00}	{ 6.73E-02}	{ 3.53E+00}	{ 6.71E-02}	{ 3.48E+00}
3.68E+00	{ 7.03E-02}	{ 3.50E+00}	{ 6.86E-02}	{ 3.43E+00}	{ 6.61E-02}	{ 3.55E+00}	{ 6.73E-02}	{ 3.53E+00}	{ 6.66E-02}	{ 3.43E+00}
4.0 /	{ 7.61E-02}	{ 3.35E+00}	{ 6.69E-02}	{ 3.37E+00}	{ 6.71E-02}	{ 3.26E+00}	{ 6.59E-02}	{ 3.32E+00}	{ 6.65E-02}	{ 3.06E+00}
5.0 /	{ 2.85E-02}	{ 6.16E-02}	{ 2.91E+00}	{ 6.23E-02}	{ 3.08E+00}	{ 8.41E-02}	{ 2.94E+00}	{ 6.26E-02}	{ 2.63E+00}	{ 5.92E-02}
6.0 /	{ 2.30E-02}	{ 5.54E-02}	{ 2.27E+00}	{ 5.50E-02}	{ 2.20E+00}	{ 5.42E-02}	{ 2.23E+00}	{ 5.45E-02}	{ 2.21E+00}	{ 5.43E-02}
7.0 /	{ 2.16E-02}	{ 5.37E-02}	{ 2.32E+00}	{ 5.57E-02}	{ 2.41E+00}	{ 5.90E-02}	{ 2.44E+00}	{ 5.70E-02}	{ 2.37E+00}	{ 5.62E-02}
8.0 /	{ 3.56E+00}	{ 6.89E-02}	{ 3.87E+00}	{ 7.19E-02}	{ 4.11E+00}	{ 7.41E-02}	{ 4.24E+00}	{ 7.52E-02}	{ 4.55E+00}	{ 7.79E-02}
9.0 /	{ 1.96E+00}	{ 5.11E-02}	{ 1.44E+00}	{ 4.38E-02}	{ 1.02E+00}	{ 3.69E-02}	{ 8.32E-01}	{ 3.33E-02}	{ 5.12E-01}	{ 2.61E-02}
10.0 /	{ 1.17E-02}	{ 3.18E-02}	{ 1.17E+00}	{ 3.18E-02}	{ 1.02E+00}	{ 3.69E-02}	{ 8.32E-01}	{ 3.33E-02}	{ 5.12E-01}	{ 2.27E-02}

SLI (n,d) RDX (error) 6.5 ER = 14 Nov LAB-ANGLE = 60 deg

{ POL = NON 1

GLi(p,d) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 70 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }									
1.0 /	0.00E+00 { 0.00E+00 }	4.67E-01 { 2.43E-02 }	3.97E+00 { 7.09E-02 }	3.57E+00 { 6.72E-02 }						
2.0 /	3.28E+00 { 6.44E-02 }	2.96E+00 { 6.12E-02 }	2.75E+00 { 5.90E-02 }	2.74E+00 { 5.89E-02 }	2.80E+00 { 5.95E-02 }	2.88E+00 { 6.03E-02 }	2.71E+00 { 5.86E-02 }	2.71E+00 { 5.73E-02 }	2.46E+00 { 5.73E-02 }	2.69E+00 { 5.83E-02 }
3.0 /	2.75E+00 { 5.90E-02 }	2.70E+00 { 5.84E-02 }	2.76E+00 { 5.81E-02 }	2.56E+00 { 5.68E-02 }	2.46E+00 { 5.58E-02 }	2.37E+00 { 5.48E-02 }	2.21E+00 { 5.29E-02 }	2.26E+00 { 5.35E-02 }	2.22E+00 { 5.30E-02 }	2.20E+00 { 5.27E-02 }
4.0 /	7.06E+00 { 5.21E-02 }	2.13E+00 { 5.31E-02 }	2.30E+00 { 5.51E-02 }	1.97E+00 { 5.10E-02 }	1.84E+00 { 4.93E-02 }	1.82E+00 { 4.91E-02 }	1.72E+00 { 4.76E-02 }	1.59E+00 { 4.59E-02 }	1.58E+00 { 4.57E-02 }	1.47E+00 { 4.40E-02 }
5.0 /	1.45E+00 { 4.37E-02 }	1.42E+00 { 4.33E-02 }	1.37E+00 { 4.25E-02 }	1.36E+00 { 4.23E-02 }	1.40E+00 { 4.30E-02 }	1.37E+00 { 4.26E-02 }	1.42E+00 { 4.34E-02 }	1.36E+00 { 4.24E-02 }	1.36E+00 { 4.24E-02 }	1.42E+00 { 4.40E-02 }
6.0 /	1.78E+00 { 4.05E-02 }	1.66E+00 { 4.68E-02 }	1.56E+00 { 4.54E-02 }	1.68E+00 { 4.71E-02 }	1.82E+00 { 4.90E-02 }	1.79E+00 { 4.86E-02 }	1.95E+00 { 5.07E-02 }	2.04E+00 { 5.19E-02 }	2.19E+00 { 5.37E-02 }	2.13E+00 { 5.30E-02 }
7.0 /	2.18E+00 { 5.36E-02 }	2.00E+00 { 5.14E-02 }	1.85E+00 { 4.95E-02 }	1.53E+00 { 4.50E-02 }	1.11E+00 { 3.02E-02 }	9.37E-01 { 3.52E-02 }	6.98E-01 { 3.04E-02 }	5.40E-01 { 2.67E-02 }	4.52E-01 { 2.46E-02 }	3.09E-01 { 2.02E-02 }
8.0 /	2.12E-01 { 1.67E-02 }	1.21E-01 { 1.26E-02 }	5.84E-02 { 8.78E-03 }	1.18E-02 { 3.94E-03 }						

GLi(p,d) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 80 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }									
1.0 /	8.40E-02 { 1.03E-02 }	1.05E-01 { 1.15E-02 }	9.95E-02 { 1.12E-02 }	6.26E-01 { 2.80E-02 }	2.50E+00 { 5.60E-02 }	2.72E+00 { 5.85E-02 }	2.47E+00 { 5.57E-02 }	2.29E+00 { 5.36E-02 }	1.96E+00 { 4.96E-02 }	2.18E+00 { 5.23E-02 }
2.0 /	2.20E+00 { 5.26E-02 }	2.23E+00 { 5.28E-02 }	2.22E+00 { 5.27E-02 }	2.27E+00 { 5.33E-02 }	2.26E+00 { 5.32E-02 }	2.35E+00 { 5.43E-02 }	2.24E+00 { 5.30E-02 }	2.23E+00 { 5.29E-02 }	2.10E+00 { 5.13E-02 }	2.08E+00 { 5.11E-02 }
3.0 /	2.06E+00 { 5.09E-02 }	2.04E+00 { 5.06E-02 }	1.95E+00 { 4.95E-02 }	1.94E+00 { 4.93E-02 }	1.89E+00 { 4.87E-02 }	1.77E+00 { 4.71E-02 }	1.79E+00 { 4.73E-02 }	1.75E+00 { 4.69E-02 }	1.78E+00 { 4.72E-02 }	1.78E+00 { 4.72E-02 }
4.0 /	1.52E+00 { 4.48E-02 }	1.46E+00 { 4.38E-02 }	1.42E+00 { 4.33E-02 }	1.36E+00 { 4.23E-02 }	1.38E+00 { 4.26E-02 }	1.27E+00 { 4.09E-02 }	1.25E+00 { 4.06E-02 }	1.19E+00 { 3.96E-02 }	1.23E+00 { 4.03E-02 }	1.23E+00 { 4.02E-02 }
5.0 /	1.23E+00 { 4.03E-02 }	1.13E+00 { 3.86E-02 }	1.30E+00 { 4.14E-02 }	1.31E+00 { 4.16E-02 }	1.67E+00 { 4.69E-02 }	1.63E+00 { 4.64E-02 }	1.53E+00 { 4.49E-02 }	1.57E+00 { 4.55E-02 }	1.57E+00 { 4.55E-02 }	1.74E+00 { 4.80E-02 }
6.0 /	1.99E+00 { 5.12E-02 }	2.01E+00 { 5.15E-02 }	2.05E+00 { 5.20E-02 }	1.92E+00 { 5.03E-02 }	1.81E+00 { 4.88E-02 }	1.41E+00 { 4.32E-02 }	1.12E+00 { 3.84E-02 }	9.34E-01 { 3.51E-02 }	6.46E-01 { 2.97E-02 }	5.31E-01 { 2.65E-02 }
7.0 /	4.18E-01 { 2.35E-02 }	2.60E-01 { 1.85E-02 }	1.97E-01 { 1.61E-02 }	1.11E-01 { 1.21E-02 }	5.29E-02 { 8.35E-03 }	2.44E-02 { 5.67E-03 }				

GLi(p,d) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 90 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }									
1.0 /	5.50E-02 { 8.30E-03 }	7.69E-02 { 9.81E-03 }	6.11E-02 { 9.17E-03 }	3.44E-01 { 2.07E-02 }	1.34E+00 { 4.09E-02 }	1.62E+00 { 4.50E-02 }	1.70E+00 { 4.62E-02 }	1.71E+00 { 4.42E-02 }	1.78E+00 { 4.73E-02 }	1.84E+00 { 4.80E-02 }
2.0 /	1.74E+00 { 4.67E-02 }	1.79E+00 { 4.73E-02 }	1.75E+00 { 4.68E-02 }	1.74E+00 { 4.67E-02 }	1.73E+00 { 4.66E-02 }	1.89E+00 { 4.87E-02 }	1.74E+00 { 4.66E-02 }	1.73E+00 { 4.45E-02 }	1.69E+00 { 4.40E-02 }	1.59E+00 { 4.46E-02 }
3.0 /	1.62E+00 { 4.51E-02 }	1.58E+00 { 4.45E-02 }	1.54E+00 { 4.39E-02 }	1.57E+00 { 4.43E-02 }	1.50E+00 { 4.33E-02 }	1.33E+00 { 4.09E-02 }	1.24E+00 { 3.94E-02 }	1.24E+00 { 3.94E-02 }	1.27E+00 { 3.99E-02 }	1.31E+00 { 4.06E-02 }
4.0 /	1.19E+00 { 3.86E-02 }	1.16E+00 { 3.94E-02 }	1.15E+00 { 3.90E-02 }	1.21E+00 { 4.00E-02 }	1.16E+00 { 3.92E-02 }	1.16E+00 { 3.91E-02 }	1.24E+00 { 4.20E-02 }	1.34E+00 { 4.20E-02 }	1.45E+00 { 4.38E-02 }	1.65E+00 { 4.67E-02 }
5.0 /	1.48E+00 { 4.42E-02 }	1.66E+00 { 4.67E-02 }	1.66E+00 { 4.68E-02 }	1.89E+00 { 4.93E-02 }	1.98E+00 { 5.11E-02 }	2.05E+00 { 5.20E-02 }	2.00E+00 { 5.13E-02 }	1.87E+00 { 4.96E-02 }	1.49E+00 { 4.43E-02 }	1.13E+00 { 3.86E-02 }
6.0 /	8.25E-01 { 3.30E-02 }	6.29E-01 { 2.88E-02 }	4.68E-01 { 2.40E-02 }	3.26E-01 { 2.07E-02 }	2.36E-01 { 1.77E-02 }	1.60E-01 { 1.45E-02 }	8.03E-02 { 1.03E-02 }	3.24E-02 { 4.53E-03 }	1.24E-02 { 4.05E-03 }	

GLi(p,d) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 100 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }									
1.0 /	5.48E-02 { 8.38E-03 }	5.92E-02 { 8.71E-03 }	5.70E-02 { 8.55E-03 }	2.86E-01 { 1.91E-02 }	1.21E+00 { 3.94E-02 }	1.34E+00 { 4.14E-02 }	1.35E+00 { 4.16E-02 }	1.37E+00 { 4.20E-02 }	1.51E+00 { 4.40E-02 }	1.42E+00 { 4.24E-02 }
2.0 /	1.42E+00 { 4.27E-02 }	1.47E+00 { 4.35E-02 }	1.44E+00 { 4.30E-02 }	1.44E+00 { 4.29E-02 }	1.49E+00 { 4.37E-02 }	1.40E+00 { 4.24E-02 }	1.38E+00 { 4.21E-02 }	1.43E+00 { 4.29E-02 }	1.43E+00 { 4.32E-02 }	1.34E+00 { 4.14E-02 }
3.0 /	1.23E+00 { 3.98E-02 }	1.26E+00 { 4.03E-02 }	1.13E+00 { 3.80E-02 }	1.05E+00 { 3.68E-02 }	1.02E+00 { 3.62E-02 }	1.12E+00 { 3.80E-02 }	1.02E+00 { 3.61E-02 }	1.04E+00 { 3.66E-02 }	1.03E+00 { 3.67E-02 }	1.17E+00 { 3.93E-02 }
4.0 /	1.08E+00 { 3.70E-02 }	1.23E+00 { 4.03E-02 }	1.23E+00 { 4.03E-02 }	1.36E+00 { 4.23E-02 }	1.60E+00 { 4.59E-02 }	1.66E+00 { 4.68E-02 }	1.72E+00 { 4.76E-02 }	1.87E+00 { 4.97E-02 }	1.86E+00 { 4.96E-02 }	2.09E+00 { 5.25E-02 }
5.0 /	2.23E+00 { 5.42E-02 }	2.06E+00 { 5.21E-02 }	1.71E+00 { 4.75E-02 }	1.27E+00 { 4.09E-02 }	9.00E-01 { 3.44E-02 }	6.69E-01 { 2.97E-02 }	4.35E-01 { 2.39E-02 }	3.05E-01 { 2.00E-02 }	2.20E-01 { 1.70E-02 }	1.05E-01 { 1.18E-02 }
6.0 /	5.95E-02 { 8.86E-03 }	2.27E-02 { 5.46E-03 }	1.25E-02 { 4.05E-03 }							

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    ELLIPSE GL1(p,d)  DDX (error) Ep = 14 MeV LAB. ANGLE = 110 deg | POL = NON |
energy/   0.0      0.1      0.2      0.3      0.4      0.5      0.6      0.7      0.8      0.9
0.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00)
1.0 / 2.79E-02 ( 6.27E-03) 4.27E-02 ( 7.70E-03) 4.49E-02 ( 8.04E-03) 3.20E-01 ( 2.17E-02) 1.20E+00 ( 4.11E-02) 1.41E+00 ( 4.45E-02) 1.41E+00 ( 4.45E-02) 1.45E+00 ( 4.51E-02) 1.45E+00 ( 4.51E-02) 1.42E+00 ( 4.47E-02) 1.36E+00 ( 4.36E-02)
2.0 / 1.45E-02 ( 4.52E-02) 1.46E+00 ( 4.53E-02) 1.40E+00 ( 4.45E-02) 1.38E+00 ( 4.41E-02) 1.40E+00 ( 4.44E-02) 1.45E+00 ( 4.52E-02) 1.37E+00 ( 4.40E-02) 1.24E+00 ( 4.18E-02) 1.25E+00 ( 4.19E-02) 1.15E+00 ( 4.02E-02)
3.0 / 1.13E+00 ( 3.99E-02) 1.10E+00 ( 3.93E-02) 1.09E+00 ( 3.91E-02) 1.08E+00 ( 3.89E-02) 1.07E+00 ( 3.89E-02) 1.15E+00 ( 4.02E-02) 1.13E+00 ( 3.98E-02) 1.14E+00 ( 3.88E-02) 1.22E+00 ( 4.01E-02) 1.36E+00 ( 4.24E-02)
4.0 / 1.60E+00 ( 4.59E-02) 1.66E+00 ( 4.68E-02) 1.78E+00 ( 4.85E-02) 1.97E+00 ( 5.10E-02) 2.19E+00 ( 5.37E-02) 2.18E+00 ( 5.37E-02) 2.08E+00 ( 5.23E-02) 1.69E+00 ( 4.72E-02) 1.25E+00 ( 4.05E-02) 8.92E-01 ( 3.43E-02)
5.0 / 6.40E-01 ( 2.90E-02) 3.46E-01 ( 2.14E-02) 2.50E-01 ( 1.82E-02) 1.55E-01 ( 1.43E-02) 8.13E-02 ( 1.04E-02) 3.05E-02 ( 6.34E-03)

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***** GLI(p,d) DDX (error). #1 Ep = 14 MeV LAB.ANGL = 120 deg [ POL = NON ]
energy   0.0      0.1      0.2      0.3      0.4      0.5      0.6      0.7      0.8      0.9
0.0 / 0.00E+00 { 0.00E+00 } 0.00E+00 { 0.00E+00 }
1.0 / 1.40E-01 { 1.34E-02 } 1.40E-01 { 1.34E-02 } 1.98E-01 { 1.59E-02 } 4.55E-01 { 2.41E-02 } 1.05E+00 { 3.45E-02 } 1.11E+00 { 3.77E-02 } 1.09E+00 { 3.72E-02 } 1.11E+00 { 3.76E-02 } 1.06E+00 { 3.68E-02 } 1.15E+00 { 3.83E-02 }
2.0 / 1.11E+00 { 3.75E-02 } 1.11E+00 { 3.79E-02 } 1.20E+00 { 3.90E-02 } 1.15E+00 { 3.82E-02 } 1.15E+00 { 3.80E-02 } 9.95E-01 { 3.56E-02 } 1.07E+00 { 3.69E-02 } 1.06E+00 { 3.67E-02 } 9.85E-01 { 3.54E-02 } 1.01E+00 { 3.59E-02 }
3.0 / 1.05E+00 { 3.65E-02 } 1.02E+00 { 3.60E-02 } 1.03E+00 { 3.61E-02 } 1.01E+00 { 3.70E-02 } 1.20E+00 { 3.90E-02 } 1.30E+00 { 4.07E-02 } 1.48E+00 { 4.34E-02 } 1.54E+00 { 4.43E-02 } 1.77E+00 { 4.03E-02 } 1.99E+00 { 5.12E-02 }
4.0 / 2.19E+00 { 5.37E-02 } 2.18E+00 { 5.36E-02 } 2.05E+00 { 5.20E-02 } 1.59E+00 { 4.58E-02 } 1.20E+00 { 3.98E-02 } 8.54E-01 { 3.36E-02 } 5.21E-01 { 2.62E-02 } 3.29E-01 { 2.08E-02 } 1.97E-01 { 1.61E-02 } 9.11E-02 { 1.10E-02 }
5.0 / 4.20E-02 { 7.44E-03 }

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***** 6Li(p,d)  DDX (error) *** Ep = 14 MeV      LAB.ANGLE = 130 deg      [ POL = NON ]
energy/   0.0          0.1          0.2          0.3          0.4          0.5          0.6          0.7          0.8          0.9
0.0 /  0.00E+00 { 0.00E+00} 0.00E+00 { 0.00E+00}
1.0 /  3.08E-01 { 2.14E-02} 3.03E-01 { 2.15E-02} 6.33E-01 { 3.11E-02} 9.37E-01 { 3.28E-02} 1.10E+00 { 4.10E-02} 1.14E+00 { 4.16E-02} 1.17E+00 { 4.22E-02} 1.06E+00 { 4.02E-02} 1.20E+00 { 4.27E-02} 1.22E+00 { 4.31E-02}
2.0 /  1.11E+00 { 4.10E-02} 1.12E+00 { 4.13E-02} 1.05E+00 { 3.99E-02} 1.16E+00 { 4.20E-02} 1.08E+00 { 4.01E-02} 1.09E+00 { 4.07E-02} 1.19E+00 { 4.36E-02} 1.14E+00 { 4.16E-02} 1.20E+00 { 4.27E-02} 1.23E+00 { 4.33E-02}
3.0 /  1.36E+00 { 4.55E-02} 1.60E+00 { 4.93E-02} 1.76E+00 { 5.17E-02} 1.78E+00 { 5.20E-02} 1.96E+00 { 5.49E-02} 2.17E+00 { 5.75E-02} 2.10E+00 { 5.64E-02} 2.10E+00 { 5.26E-02} 2.02E+00 { 5.27E-02} 1.82E+00 { 4.91E-02}
4.0 /  1.33E+00 { 4.13E-02} 9.72E-01 { 3.59E-02} 6.05E-01 { 2.83E-02} 4.15E-01 { 2.34E-02} 2.51E-01 { 1.82E-02} 1.55E-01 { 1.43E-02} 7.06E-02 { 9.65E-03} 1.54E-02 { 4.51E-03}

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***** 6Li(p,d) DDX (error) *** Ep = 14 MeV      LAB.ANGLE = 150 deg      [ POL = NON ]
energy/   0.0          0.1          0.2          0.3          0.4          0.5          0.6          0.7          0.8          0.9
0.0 /  0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00)
1.0 /  1.87E-01 ( 1.61E-02) 1.49E-01 ( 1.33E-02) 3.95E-01 ( 2.33E-02) 7.55E-01 ( 3.23E-02) 1.15E+00 ( 3.98E-02) 1.21E+00 ( 4.08E-02) 1.11E+00 ( 3.92E-02) 1.05E+00 ( 3.83E-02) 1.09E+00 ( 3.88E-02) 1.02E+00 ( 3.76E-02)
2.0 /  9.77E-01 ( 3.71E-02) 9.72E-01 ( 3.76E-02) 1.02E+00 ( 3.75E-02) 1.10E+00 ( 3.91E-02) 1.06E+00 ( 3.85E-02) 1.15E+00 ( 3.98E-02) 1.33E+00 ( 4.28E-02) 1.45E+00 ( 4.48E-02) 1.67E+00 ( 4.80E-02) 1.83E+00 ( 5.07E-02)
3.0 /  1.89E+00 ( 5.11E-02) 2.05E+00 ( 5.37E-02) 1.81E+00 ( 5.00E-02) 1.57E+00 ( 4.66E-02) 1.28E+00 ( 4.20E-02) 9.62E-01 ( 3.65E-02) 6.86E-01 ( 3.08E-02) 6.52E-01 ( 2.93E-02) 4.29E-01 ( 2.38E-02) 3.33E-01 ( 2.09E-02)
4.0 /  1.56E-01 ( 1.43E-02) 5.32E-02 ( 8.7E-03)

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##### GLi(p,d) DDX (error) ## Ep = 14 MeV LAB. ANGLE = 160 deg [ POL = NON ]
energy/    0.0      0.1      0.2      0.3      0.4      0.5      0.6      0.7      0.8      0.9
0.0 / 0.00E+00 { 0.00E+00} 0.00E+00 { 0.00E+00}
1.0 / 1.90E-01 { 1.51E-02} 2.12E-01 { 1.63E-02} 4.30E-01 { 2.32E-02} 7.29E-01 { 3.02E-02} 1.01E+00 { 3.56E-02} 1.02E+00 { 3.57E-02} 1.01E+00 { 3.56E-02} 9.42E-01 { 3.47E-02} 8.72E-01 { 3.30E-02} 9.43E-01 { 3.44E-02}
2.0 / 8.68E-01 { 3.30E-02} 9.04E-01 { 3.36E-02} 8.96E-01 { 3.35E-02} 9.51E-01 { 3.45E-02} 1.07E+00 { 3.65E-02} 1.20E+00 { 3.87E-02} 1.31E+00 { 4.06E-02} 1.48E+00 { 4.31E-02} 1.65E+00 { 4.54E-02} 1.68E+00 { 4.56E-02}
3.0 / 1.74E+00 { 4.67E-02} 1.59E+00 { 4.46E-02} 1.40E+00 { 4.19E-02} 1.16E+00 { 3.81E-02} 8.50E-01 { 3.26E-02} 6.02E-01 { 2.74E-02} 4.68E-01 { 2.42E-02} 3.51E-01 { 2.15E-02} 2.30E-01 { 1.74E-02} 1.07E-01 { 1.19E-02}
4.0 / 2.52E-02 { 5.76E-03}

##### GLi(p,d) DDX (error) ## Ep = 14 MeV LAB. ANGLE = 165 deg [ POL = NON ]
energy/    0.0      0.1      0.2      0.3      0.4      0.5      0.6      0.7      0.8      0.9
0.0 / 0.00E+00 { 0.00E+00} 0.00E+00 { 0.00E+00}
1.0 / 1.21E-01 { 1.23E-02} 9.44E-02 { 1.10E-02} 2.64E-01 { 1.82E-02} 4.34E-01 { 2.81E-02} 1.14E+00 { 3.77E-02} 1.94E+00 { 3.61E-02} 9.87E-01 { 3.51E-02} 5.65E-01 { 3.42E-02} 9.10E-01 { 3.32E-02} 9.31E-01 { 3.41E-02}
2.0 / 8.68E-01 { 3.29E-02} 8.96E-01 { 3.35E-02} 1.01E+00 { 3.55E-02} 1.05E+00 { 3.62E-02} 1.41E+00 { 4.19E-02} 1.48E+00 { 4.30E-02} 1.67E+00 { 4.56E-02} 1.79E+00 { 4.72E-02} 1.75E+00 { 4.68E-02}
3.0 / 1.63E+00 { 4.52E-02} 1.38E+00 { 4.16E-02} 9.61E-01 { 3.66E-02} 2.50E-01 { 3.06E-02} 5.33E-01 { 2.58E-02} 3.46E-01 { 2.08E-02} 2.30E-01 { 1.69E-02} 1.62E-01 { 1.42E-02} 1.67E-01 { 1.44E-02} 4.47E-02 { 7.67E-03}

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Appendix 2 Differential cross sections and analyzing powers of the ${}^6\text{Li}(\text{p},{}^3\text{He})\alpha$ reaction at 14 MeV.
 Data for which Lab. angles are not given are obtained from the data of recoiled α -particles.

θ lab. (deg)	θ c.m. (deg)	$d\sigma / d\Omega$ (mb/sr)	Analyzing Power
9.797	12.796	3.318E+00 \pm 9.736E-02	0.05592 \pm 0.03582
19.726	25.682	1.805E+00 \pm 6.412E-02	0.12649 \pm 0.04672
29.674	38.427	1.226E+00 \pm 5.073E-02	0.19228 \pm 0.05524
39.641	50.951	1.183E+00 \pm 5.062E-02	0.18484 \pm 0.05623
49.635	63.180	1.255E+00 \pm 5.376E-02	0.04874 \pm 0.06098
59.640	75.022	1.344E+00 \pm 5.777E-02	-0.09006 \pm 0.06809
69.671	86.425	1.427E+00 \pm 6.206E-02	-0.30145 \pm 0.08117
	87.838	1.418E+00 \pm 6.088E-02	-0.38660 \pm 0.05631
79.724	97.330	1.531E+00 \pm 6.735E-02	-0.58947 \pm 0.09893
	99.750	1.551E+00 \pm 6.146E-02	-0.63309 \pm 0.05628
89.795	107.698	1.589E+00 \pm 7.195E-02	-0.80540 \pm 0.11825
	112.256	1.556E+00 \pm 5.931E-02	-0.77902 \pm 0.06089
99.047	116.719	1.481E+00 \pm 7.294E-02	-0.80550 \pm 0.06671
	125.273	1.278E+00 \pm 5.080E-02	-0.79581 \pm 0.06203
108.993	125.891	1.270E+00 \pm 6.983E-02	-0.79775 \pm 0.06940
	138.674	9.148E-01 \pm 4.032E-02	-0.23783 \pm 0.03862
	152.359	1.046E+00 \pm 4.304E-02	0.63267 \pm 0.09601
	166.222	1.573E+00 \pm 5.539E-02	0.42253 \pm 0.06958

Appendix 3 Double differential cross sections (mb/sr/MeV) of the ${}^6\text{Li}(\text{p},\alpha)\text{pd}$ reaction including the the ${}^6\text{Li}(\text{p},{}^3\text{He})\alpha$ reaction at 14 MeV.

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##### GLi(p,3He&alpha) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 10 deg [ POL = NON ]
energy/ 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9
0.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00)
1.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00)
2.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00)
3.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00)
4.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 4.42E-01 ( 4.88E-02) 3.24E+00 ( 1.10E-01) 2.83E+00 ( 1.02E-01) 1.51E+00 ( 7.49E-02) 1.47E+00 ( 7.37E-02) 5.75E+00 ( 1.45E-01) 9.42E+00 ( 1.07E-01) 9.24E+00 ( 1.05E-01)
5.0 / 9.07E+00 ( 1.43E-01) 8.74E+00 ( 1.80E-01) 8.74E+00 ( 1.80E-01) 8.91E+00 ( 1.82E-01) 8.89E+00 ( 1.81E-01) 9.11E+00 ( 1.84E-01) 9.12E+00 ( 1.84E-01) 9.49E+00 ( 1.90E-01) 9.08E+00 ( 1.85E-01) 8.74E+00 ( 1.80E-01)
6.0 / 8.59E+00 ( 1.75E-01) 8.08E+00 ( 1.73E-01) 7.80E+00 ( 1.70E-01) 7.48E+00 ( 1.49E-01) 7.12E+00 ( 1.42E-01) 7.44E+00 ( 1.46E-01) 7.15E+00 ( 1.43E-01) 7.28E+00 ( 1.64E-01) 2.17E+00 ( 1.43E-01) 6.79E+00 ( 1.69E-01)
7.0 / 8.84E+00 ( 1.59E-01) 7.10E+00 ( 1.62E-01) 7.00E+00 ( 1.61E-01) 7.08E+00 ( 1.62E-01) 6.80E+00 ( 1.59E-01) 6.92E+00 ( 1.46E-01) 7.15E+00 ( 1.43E-01) 7.02E+00 ( 1.61E-01) 6.97E+00 ( 1.61E-01) 7.27E+00 ( 1.64E-01)
8.0 / 6.91E+00 ( 1.60E-01) 4.23E+00 ( 1.52E-01) 6.06E+00 ( 1.50E-01) 5.47E+00 ( 1.45E-01) 5.56E+00 ( 1.44E-01) 4.94E+00 ( 1.35E-01) 4.88E+00 ( 1.34E-01) 4.99E+00 ( 1.36E-01) 4.54E+00 ( 1.30E-01) 4.14E+00 ( 1.24E-01)
9.0 / 5.31E+00 ( 1.11E-01) 3.05E+00 ( 1.06E-01) 2.67E+00 ( 9.94E-02) 2.15E+00 ( 8.92E-02) 1.81E+00 ( 8.10E-02) 1.40E+00 ( 7.20E-02) 9.34E-01 ( 5.88E-02) 6.96E-01 ( 5.08E-02) 4.75E-01 ( 4.19E-02) 3.04E-01 ( 3.36E-02)
10.0 / 2.01E+01 ( 2.75E-02) 1.08E-01 ( 2.00E-02) 5.79E-02 ( 1.47E-02) 4.46E-02 ( 1.29E-02) 5.74E-02 ( 1.46E-02) 3.74E-02 ( 1.10E-02) 4.06E-02 ( 1.23E-02) 2.57E-02 ( 9.76E-03) 4.79E-02 ( 1.13E-02) 4.81E-02 ( 1.33E-02)
11.0 / 2.20E-02 ( 9.02E-03) 4.15E-02 ( 1.24E-02) 5.86E-02 ( 1.47E-02) 5.70E-02 ( 1.45E-02) 4.99E-02 ( 1.36E-02) 7.48E-02 ( 1.69E-02) 1.15E-01 ( 2.07E-02) 1.57E-01 ( 2.41E-02) 1.67E-01 ( 2.40E-02) 2.47E-01 ( 3.03E-02)
12.0 / 2.91E-01 ( 3.32E-02) 3.97E-01 ( 3.83E-01) 4.44E-01 ( 4.06E-02) 6.11E-01 ( 4.76E-02) 6.38E-01 ( 4.86E-02) 6.97E-01 ( 5.08E-02) 7.39E-01 ( 5.44E-02) 0.71E-01 ( 5.68E-02) 9.64E-01 ( 5.98E-02) 1.17E+00 ( 6.58E-02)
13.0 / 1.80E+00 ( 8.17E-02) 3.02E+00 ( 1.04E-01) 3.07E+00 ( 1.20E-01) 4.29E+00 ( 1.26E-01) 4.05E+00 ( 1.23E-01) 3.73E+00 ( 1.18E-01) 2.30E+00 ( 9.22E-02) 8.82E-01 ( 5.72E-02) 3.74E-01 ( 3.73E-02) 3.46E-01 ( 3.68E-02)
14.0 / 5.36E-01 ( 4.46E-02) 7.02E-01 ( 5.10E-02) 8.81E-01 ( 5.71E-02) 9.55E-01 ( 5.95E-02) 1.08E+00 ( 6.33E-02) 1.20E+00 ( 6.68E-02) 1.37E+00 ( 7.14E-02) 1.47E+00 ( 7.39E-02) 1.80E+00 ( 8.17E-02) 1.80E+00 ( 8.17E-02)
15.0 / 2.04E+00 ( 8.69E-02) 2.69E+00 ( 9.97E-02) 4.84E+00 ( 1.34E-01) 8.47E+00 ( 1.77E-01) 1.01E+01 ( 1.94E-01) 8.89E+00 ( 1.82E-01) 5.07E+00 ( 1.37E-01) 1.63E+00 ( 7.76E-02) 5.32E-01 ( 4.44E-02) 3.02E-01 ( 3.34E-02)
16.0 / 1.36E-01 ( 2.25E-02) 1.94E-01 ( 1.97E-02) 1.05E-01 ( 1.88E-02) 8.09E-02 ( 1.75E-02) 8.39E-02 ( 1.76E-02) 7.46E-02 ( 1.69E-02) 7.07E-02 ( 1.62E-02) 4.20E-02 ( 1.26E-02) 3.08E-02 ( 1.07E-02) 1.66E-02 ( 7.84E-03)
17.0 / 5.83E-02 ( 1.47E-02) 2.34E-02 ( 9.14E-03) 3.55E-02 ( 1.15E-02) 2.81E-02 ( 1.02E-02) 2.69E-02 ( 9.99E-03) 2.27E-02 ( 9.08E-03) 2.54E-02 ( 9.71E-03) 2.80E-02 ( 1.02E-02) 1.70E-02 ( 7.93E-03) 1.36E-02 ( 7.10E-03)
18.0 / 1.02E-02 ( 8.20E-03) 1.97E-02 ( 8.55E-03) 2.26E-02 ( 9.15E-03) 1.52E-02 ( 7.51E-03) 1.22E-02 ( 6.75E-03) 4.41E-02 ( 1.28E-02) 2.77E-02 ( 1.01E-02) 1.74E-02 ( 8.03E-03) 1.51E-02 ( 7.48E-03) 1.74E-02 ( 8.02E-03)
19.0 / 1.53E-02 ( 7.54E-03) 2.18E-02 ( 8.98E-03) 1.77E-02 ( 8.09E-03)
```

GLi(p,3He& α) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 20 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)									
1.0 /	0.00E+00 (0.00E+00)									
2.0 /	0.00E+00 (0.00E+00)									
3.0 /	0.00E+00 (0.00E+00)									
4.0 /	0.00E+00 (0.00E+00)	0.00E+00 (0.00E+00)	2.42E-01 (2.51E-02)	1.20E+00 (5.57E-02)	1.30E+00 (5.75E-02)	7.23E-01 (4.32E-02)	1.41E+00 (6.03E-02)	6.39E+00 (1.28E-01)	7.75E+00 (1.59E-01)	9.27E+00 (1.55E-01)
5.0 /	8.91E+00 (1.52E-01)	8.65E+00 (1.49E-01)	8.64E+00 (1.49E-01)	8.76E+00 (1.50E-01)	9.17E+00 (1.54E-01)	9.38E+00 (1.56E-01)	9.48E+00 (1.60E-01)	9.10E+00 (1.53E-01)	7.93E+00 (1.43E-01)	7.33E+00 (1.38E-01)
6.0 /	6.96E+00 (1.32E-01)	6.38E+00 (1.28E-01)	6.12E+00 (1.26E-01)	5.74E+00 (1.22E-01)	6.04E+00 (1.25E-01)	6.58E+00 (1.30E-01)	5.97E+00 (1.24E-01)	5.47E+00 (1.19E-01)	5.48E+00 (1.19E-01)	5.48E+00 (1.19E-01)
7.0 /	5.40E+00 (1.18E-01)	5.67E+00 (1.21E-01)	5.26E+00 (1.16E-01)	5.59E+00 (1.20E-01)	5.39E+00 (1.18E-01)	5.32E+00 (1.17E-01)	5.36E+00 (1.18E-01)	5.31E+00 (1.17E-01)	5.33E+00 (1.12E-01)	5.01E+00 (1.14E-01)
8.0 /	4.85E+00 (1.12E-01)	4.20E+00 (1.04E-01)	3.79E+00 (9.89E-02)	3.70E+00 (9.77E-02)	3.32E+00 (9.26E-02)	3.14E+00 (9.00E-02)	3.43E+00 (9.41E-02)	3.10E+00 (8.95E-02)	2.29E+00 (2.69E-02)	1.92E+00 (7.03E-02)
9.0 /	1.49E+00 (6.20E-02)	1.29E+00 (5.77E-02)	9.92E-01 (5.06E-02)	7.04E-01 (4.26E-02)	4.59E-01 (3.44E-02)	2.70E-01 (2.64E-02)	1.70E-01 (2.10E-02)	7.09E-02 (1.35E-02)	3.81E-02 (9.99E-03)	2.20E-02 (7.53E-03)
10.0 /	1.94E-02 (7.07E-03)	1.35E-02 (5.86E-03)	2.10E-02 (7.36E-03)	2.11E-02 (7.38E-03)	1.96E-02 (7.12E-03)	1.23E-02 (5.62E-03)	1.33E-02 (5.86E-03)	9.92E-03 (5.06E-03)	1.30E-02 (5.28E-03)	3.35E-02 (2.99E-03)
11.0 /	3.58E-02 (9.60E-03)	2.04E-02 (7.25E-03)	3.81E-02 (9.96E-03)	3.59E-02 (9.36E-03)	6.56E-02 (1.30E-02)	8.60E-02 (1.49E-02)	9.82E-02 (1.59E-02)	1.24E-01 (1.19E-02)	1.43E-01 (1.92E-02)	1.73E-01 (2.11E-02)
12.0 /	2.31E-01 (2.47E-02)	2.18E-01 (2.37E-02)	2.89E-01 (2.73E-02)	3.40E-01 (2.96E-02)	4.56E-01 (3.43E-02)	4.40E-01 (4.04E-02)	1.42E+00 (6.04E-02)	2.61E+00 (8.21E-02)	3.42E+00 (9.39E-02)	3.43E+00 (9.40E-02)
13.0 /	3.40E+00 (9.36E-02)	2.15E+00 (7.45E-02)	7.08E-01 (4.27E-02)	1.41E-01 (1.91E-02)	5.44E-02 (1.18E-02)	6.19E-02 (1.26E-02)	1.05E-01 (1.64E-02)	1.57E-01 (2.01E-02)	1.96E-01 (2.25E-02)	2.35E-01 (2.45E-02)
14.0 /	2.73E-01 (2.65E-02)	2.54E-01 (2.56E-02)	2.58E-01 (2.58E-02)	3.58E-01 (3.04E-02)	4.37E-01 (3.36E-02)	4.95E-01 (3.51E-02)	6.84E-01 (4.20E-02)	9.91E-01 (5.06E-02)	2.35E+00 (7.78E-02)	5.51E+00 (1.19E-01)
15.0 /	7.45E+00 (1.39E-01)	6.45E+00 (1.29E-01)	3.09E+00 (8.92E-02)	6.46E-01 (4.08E-02)	1.24E-01 (1.79E-02)	5.91E-02 (1.24E-02)	4.44E-02 (1.07E-02)	4.53E-02 (1.08E-02)	4.70E-02 (8.10E-02)	4.61E-02 (1.09E-02)
16.0 /	5.34E-02 (1.17E-02)	2.34E-02 (7.77E-03)	5.20E-02 (1.16E-02)	2.94E-02 (8.71E-03)	1.04E-02 (5.19E-03)	2.77E-02 (8.45E-03)	1.79E-02 (6.80E-03)	3.04E-02 (8.85E-03)	2.64E-02 (8.25E-03)	1.87E-02 (6.94E-03)

GLi(p,3He& α) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 30 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)									
1.0 /	0.00E+00 (0.00E+00)									
2.0 /	0.00E+00 (0.00E+00)									
3.0 /	0.00E+00 (0.00E+00)									
4.0 /	0.00E+00 (0.00E+00)	0.00E+00 (0.00E+00)	8.85E-02 (1.23E-02)	4.19E-01 (2.68E-02)	4.42E-01 (2.75E-02)	3.70E-01 (2.51E-02)	1.27E+00 (4.67E-02)	6.29E+00 (1.04E-01)	9.15E+00 (1.25E-01)	8.48E+00 (1.20E-01)
5.0 /	7.92E+00 (1.16E-01)	7.43E+00 (1.13E-01)	7.50E+00 (1.13E-01)	7.81E+00 (1.16E-01)	8.19E+00 (1.18E-01)	2.65E+00 (1.14E-01)	4.56E+00 (1.06E-01)	5.60E+00 (9.78E-02)	5.14E+00 (9.38E-02)	4.91E+00 (9.16E-02)
6.0 /	4.88E+00 (9.13E-02)	4.82E+00 (9.03E-02)	4.65E+00 (8.91E-02)	4.99E+00 (9.21E-02)	5.11E+00 (9.34E-02)	4.52E+00 (8.79E-02)	4.38E+00 (8.65E-02)	4.32E+00 (8.59E-02)	4.17E+00 (8.44E-02)	3.93E+00 (8.15E-02)
7.0 /	3.86E+00 (8.13E-02)	3.72E+00 (7.97E-02)	3.31E+00 (7.52E-02)	3.33E+00 (7.55E-02)	3.07E+00 (7.24E-02)	3.07E+00 (7.24E-02)	2.91E+00 (7.06E-02)	2.67E+00 (6.75E-02)	2.59E+00 (6.45E-02)	2.16E+00 (6.07E-02)
8.0 /	1.85E+00 (5.63E-02)	1.63E+00 (5.28E-02)	1.46E+00 (5.04E-02)	1.40E+00 (4.89E-02)	1.37E+00 (4.84E-02)	9.89E-01 (4.41E-02)	6.84E-01 (3.42E-02)	4.59E-01 (2.80E-02)	3.58E-01 (2.47E-02)	1.72E-01 (1.72E-02)
9.0 /	1.07E-01 (1.35E-02)	4.01E-02 (9.07E-03)	2.16E-02 (6.08E-03)	0.59E-03 (3.83E-03)	1.21E-02 (4.54E-03)	5.03E-03 (2.93E-03)	5.31E-03 (3.01E-03)	1.16E-02 (4.45E-03)	7.28E-03 (3.55E-03)	4.86E-03 (2.55E-03)
10.0 /	1.42E-02 (4.93E-03)	1.43E-02 (4.94E-03)	7.43E-03 (3.56E-03)	5.13E-03 (2.96E-03)	1.60E-02 (5.23E-03)	1.48E-02 (5.03E-03)	2.05E-02 (5.92E-03)	2.21E-02 (6.23E-03)	4.23E-02 (8.51E-03)	5.24E-02 (9.44E-03)
11.0 /	5.77E-02 (9.93E-03)	5.70E-02 (9.87E-03)	8.11E-02 (1.18E-02)	9.95E-02 (1.30E-02)	9.50E-02 (1.27E-02)	1.12E-01 (1.39E-02)	1.91E-01 (1.81E-02)	2.66E-01 (2.13E-02)	6.54E-01 (3.34E-02)	2.21E+00 (4.15E-02)
12.0 /	3.65E+00 (7.95E-02)	3.76E+00 (8.01E-02)	2.94E+00 (7.09E-02)	1.80E+00 (5.55E-02)	5.56E-01 (3.08E-02)	5.70E-02 (9.87E-03)	2.17E-02 (6.09E-03)	1.31E-02 (4.74E-03)	1.48E-02 (5.03E-03)	2.52E-02 (6.56E-03)
13.0 /	4.41E-02 (8.68E-03)	5.38E-02 (9.59E-03)	7.85E-02 (1.16E-02)	7.76E-02 (1.15E-02)	8.51E-02 (1.21E-02)	8.20E-02 (1.18E-02)	8.16E-01 (1.41E-02)	1.57E-01 (1.64E-02)	1.55E-01 (1.63E-02)	2.22E-01 (1.95E-02)
14.0 /	3.99E-01 (2.61E-02)	1.63E+00 (5.28E-02)	4.11E+00 (8.39E-02)	5.45E+00 (9.65E-02)	4.61E+00 (8.88E-02)	1.99E+00 (5.03E-02)				

6Li(p,3He& α) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 40 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)									
1.0 /	0.00E+00 (0.00E+00)									
2.0 /	0.00E+00 (0.00E+00)									
3.0 /	0.00E+00 (0.00E+00)									
4.0 /	0.00E+00 (0.00E+00)	1.28E-03 (1.28E-03)	3.83E-02 (1.00E-02)	4.22E-01 (2.32E-02)	4.59E-01 (4.22E-02)	3.32E-01 (7.02E-02)	1.05E+00 (3.66E-02)	4.43E+00 (7.52E-02)	6.82E+00 (9.34E-02)	6.30E+00 (6.98E-02)
5.0 /	5.84E+00 (8.68E-02)	5.89E+00 (8.68E-02)	6.17E+00 (8.85E-02)	4.08E+00 (8.82E-02)	3.32E+00 (8.25E-02)	4.75E+00 (7.79E-02)	4.53E+00 (7.41E-02)	4.33E+00 (7.15E-02)	4.04E+00 (7.19E-02)	
6.0 /	3.95E+00 (7.11E-02)	3.99E+00 (7.15E-02)	3.75E+00 (6.92E-02)	3.49E+00 (6.68E-02)	3.13E+00 (6.32E-02)	2.92E+00 (6.11E-02)	2.74E+00 (5.92E-02)	2.48E+00 (5.63E-02)	2.24E+00 (5.35E-02)	2.24E+00 (5.36E-02)
7.0 /	1.96E+00 (5.01E-02)	1.81E+00 (4.81E-02)	1.50E+00 (4.39E-02)	1.35E+00 (4.15E-02)	1.33E+00 (4.12E-02)	1.11E+00 (3.78E-02)	7.63E-01 (3.12E-02)	5.47E-01 (2.45E-02)	4.55E-01 (2.41E-02)	
8.0 /	3.65E-01 (2.16E-02)	5.01E-01 (2.53E-02)	5.71E-01 (2.70E-02)	2.65E-01 (1.84E-02)	9.96E-02 (1.13E-02)	5.76E-02 (8.59E-03)	3.85E-02 (7.02E-03)	1.36E-02 (4.17E-03)	1.70E-02 (4.71E-03)	9.23E-03 (3.43E-03)
9.0 /	8.95E-03 (3.58E-03)	9.52E-03 (3.49E-03)	9.61E-03 (3.51E-03)	2.00E-02 (5.05E-03)	8.44E-03 (3.29E-03)	1.48E-02 (4.35E-03)	1.37E-02 (4.18E-03)	1.56E-02 (4.47E-03)	3.01E-02 (6.20E-03)	4.96E-02 (7.98E-03)
10.0 /	6.58E-02 (9.18E-03)	6.67E-02 (9.24E-03)	7.28E-02 (1.09E-02)	1.23E-01 (1.25E-02)	1.20E-01 (1.24E-02)	1.35E-01 (1.32E-02)	1.81E-01 (1.52E-02)	2.24E-01 (1.69E-02)	3.16E-01 (2.01E-02)	4.78E-01 (2.42E-02)
11.0 /	1.21E+00 (3.93E-02)	2.70E+00 (5.94E-02)	4.14E+00 (7.29E-02)	4.27E+00 (7.39E-02)	3.89E+00 (7.05E-02)	2.62E+00 (5.79E-02)	8.30E-01 (3.26E-02)	1.09E-01 (1.10E-02)	2.39E-02 (5.55E-03)	2.05E-02 (5.12E-03)
12.0 /	2.89E-02 (4.08E-03)	2.48E-02 (5.43E-03)	3.38E-02 (6.58E-03)	4.45E-02 (2.55E-03)	8.30E-02 (1.03E-02)	8.36E-02 (1.03E-02)	9.10E-02 (1.08E-02)	9.93E-02 (1.13E-02)	1.18E-01 (1.23E-02)	1.26E-01 (1.27E-02)
13.0 /	1.72E-01 (1.48E-02)	1.73E-01 (1.49E-02)	3.06E-01 (1.98E-02)	6.72E-01 (2.93E-02)	2.14E+00 (5.23E-02)	4.22E+00 (7.35E-02)	4.86E+00 (7.89E-02)	3.32E+00 (6.51E-02)	1.11E+00 (3.77E-02)	1.79E-01 (1.51E-02)

6Li(p,3He& α) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 50 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)									
1.0 /	0.00E+00 (0.00E+00)									
2.0 /	0.00E+00 (0.00E+00)									
3.0 /	0.00E+00 (0.00E+00)									
4.0 /	0.00E+00 (0.00E+00)	0.00E+00 (0.00E+00)	6.84E-02 (9.33E-03)	3.11E-01 (1.99E-02)	3.03E-01 (1.94E-02)	2.81E-01 (1.89E-02)	8.54E-01 (3.30E-02)	3.60E+00 (6.77E-02)	5.55E+00 (8.41E-02)	5.41E+00 (8.30E-02)
5.0 /	5.28E+00 (8.21E-02)	4.88E+00 (7.89E-02)	4.13E+00 (7.26E-02)	3.87E+00 (7.02E-02)	3.54E+00 (6.72E-02)	3.47E+00 (6.65E-02)	3.32E+00 (6.51E-02)	3.19E+00 (6.37E-02)	2.93E+00 (6.12E-02)	2.22E+00 (5.89E-02)
6.0 /	2.52E+00 (5.62E-02)	2.71E+00 (5.19E-02)	1.94E+00 (4.91E-02)	2.17E+00 (4.66E-02)	1.36E+00 (4.37E-02)	1.38E+00 (3.88E-02)	9.51E-01 (3.48E-02)	7.28E-01 (3.05E-02)	6.50E-01 (2.88E-02)	5.69E-01 (2.69E-02)
7.0 /	5.06E-01 (2.54E-02)	5.49E-01 (2.45E-02)	6.05E-01 (2.70E-02)	3.85E-01 (2.21E-02)	1.90E-01 (1.55E-02)	1.46E-01 (1.37E-02)	1.27E-01 (1.27E-02)	1.64E-01 (1.45E-02)	3.55E-01 (2.13E-02)	5.35E-01 (2.41E-02)
8.0 /	1.59E-01 (1.42E-02)	3.71E-02 (6.88E-03)	1.92E-02 (4.95E-03)	1.10E-02 (3.35E-03)	9.57E-03 (3.49E-03)	1.51E-02 (4.38E-03)	1.08E-02 (4.07E-03)	2.00E-02 (5.05E-03)	2.25E-02 (5.36E-03)	3.44E-02 (6.62E-03)
9.0 /	4.94E-02 (7.95E-03)	5.08E-02 (8.04E-03)	7.95E-02 (1.01E-02)	1.23E-01 (1.25E-02)	1.37E-01 (1.32E-02)	1.78E-01 (1.51E-02)	2.16E-01 (1.66E-02)	3.34E-01 (2.06E-02)	6.00E-01 (2.76E-02)	1.36E+00 (4.21E-02)
10.0 /	2.18E+00 (6.16E-02)	4.18E+00 (7.30E-02)	4.54E+00 (7.61E-02)	4.35E+00 (7.44E-02)	3.29E+00 (6.48E-02)	1.48E+00 (4.34E-02)	2.22E-01 (1.84E-02)	4.38E-02 (7.47E-03)	1.37E-02 (4.18E-03)	2.65E-02 (5.81E-03)
11.0 /	2.20E-02 (5.39E-03)	3.15E-02 (3.83E-03)	3.80E-02 (4.89E-03)	3.78E-02 (6.94E-03)	5.18E-02 (6.13E-03)	7.26E-02 (9.62E-03)	8.15E-02 (1.02E-02)	9.05E-02 (1.07E-02)	1.26E-01 (3.27E-02)	1.35E-01 (3.31E-02)
12.0 /	1.56E-01 (1.41E-02)	2.09E-01 (1.63E-02)	3.22E-01 (2.03E-02)	7.71E-01 (3.14E-02)	2.24E+00 (5.35E-02)	4.26E+00 (7.39E-02)	4.78E+00 (7.80E-02)	3.30E+00 (6.49E-02)	1.04E+00 (3.64E-02)	1.22E-01 (1.25E-02)

GLi(p,3He& α) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 60 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }									
1.0 /	0.00E+00 { 0.00E+00 }									
2.0 /	0.00E+00 { 0.00E+00 }									
3.0 /	0.00E+00 { 0.00E+00 }									
4.0 /	0.00E+00 { 0.00E+00 }	0.00E+00 { 0.00E+00 }	1.65E-02 { 4.84E-03 }	1.72E-01 { 1.74E-02 }	1.51E-01 { 1.38E-02 }	1.39E-01 { 1.33E-02 }	1.28E-01 { 2.82E-02 }	2.98E+00 { 6.14E-02 }	4.43E+00 { 7.49E-02 }	3.22E+00 { 6.38E-02 }
5.0 /	2.58E+00 { 5.71E-02 }	2.33E+00 { 5.42E-02 }	2.20E+00 { 5.78E-02 }	2.01E+00 { 5.12E-02 }	1.70E+00 { 4.63E-02 }	1.45E+00 { 4.28E-02 }	1.27E+00 { 3.92E-02 }	1.06E+00 { 3.66E-02 }	7.47E-01 { 3.02E-02 }	5.33E-01 { 2.40E-02 }
6.0 /	3.70E-01 { 2.16E-02 }	2.72E-01 { 1.85E-02 }	1.89E-01 { 1.55E-02 }	1.49E-01 { 1.37E-02 }	1.45E-01 { 1.36E-02 }	1.47E-01 { 1.45E-02 }	1.27E-01 { 1.70E-02 }	3.12E-01 { 1.99E-02 }	4.21E-01 { 2.31E-02 }	2.90E-01 { 1.91E-02 }
7.0 /	9.41E-02 { 2.41E-02 }	4.14E-02 { 2.41E-02 }	1.97E-02 { 6.97E-03 }	4.01E-02 { 1.21E-03 }	1.34E-01 { 1.30E-02 }	3.41E-01 { 2.06E-02 }	2.36E-01 { 1.73E-02 }	3.81E-02 { 6.95E-03 }	1.67E-02 { 4.59E-03 }	1.36E-02 { 4.14E-03 }
8.0 /	3.71E-02 { 6.85E-03 }	6.05E-02 { 8.75E-03 }	7.38E-02 { 9.66E-03 }	8.37E-02 { 1.03E-02 }	1.26E-01 { 1.26E-02 }	1.98E-01 { 1.58E-02 }	5.82E-01 { 2.20E-02 }	8.48E-01 { 3.26E-02 }	2.10E+00 { 5.05E-02 }	3.28E+00 { 6.44E-02 }
9.0 /	3.72E+00 { 6.86E-02 }	3.65E+00 { 6.80E-02 }	3.46E+00 { 6.44E-02 }	2.54E+00 { 5.67E-02 }	9.92E-01 { 3.55E-02 }	1.63E-01 { 1.44E-02 }	1.81E-02 { 4.79E-03 }	2.14E-02 { 5.20E-03 }	2.30E-02 { 5.39E-03 }	1.93E-02 { 4.94E-03 }
10.0 /	1.37E-02 { 1.41E-03 }	2.46E-02 { 5.58E-03 }	1.31E-02 { 4.07E-03 }	1.69E-02 { 4.62E-03 }	3.21E-02 { 6.43E-03 }	5.56E-02 { 8.71E-03 }	3.89E-02 { 7.02E-03 }	6.16E-02 { 9.25E-03 }	8.02E-02 { 1.01E-02 }	1.08E-01 { 1.77E-02 }
11.0 /	1.58E-01 { 1.42E-02 }	3.22E-01 { 2.02E-02 }	7.95E-01 { 3.13E-02 }	2.32E+00 { 5.41E-02 }	3.86E+00 { 6.98E-02 }	4.33E+00 { 7.40E-02 }	3.57E+00 { 6.72E-02 }	1.56E+00 { 4.45E-02 }	2.25E-01 { 1.69E-02 }	

GLi(p,3He& α) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 70 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }									
1.0 /	0.00E+00 { 0.00E+00 }									
2.0 /	0.00E+00 { 0.00E+00 }									
3.0 /	0.00E+00 { 0.00E+00 }									
4.0 /	0.00E+00 { 0.00E+00 }	0.00E+00 { 0.00E+00 }	1.64E-02 { 4.55E-03 }	2.31E-02 { 5.39E-03 }	4.40E-02 { 7.61E-03 }	2.53E-01 { 1.78E-02 }	9.02E-01 { 3.37E-02 }	1.17E+00 { 3.84E-02 }	1.06E+00 { 3.45E-02 }	
5.0 /	6.45E-01 { 2.85E-02 }	4.15E-01 { 2.28E-02 }	2.80E-01 { 1.88E-02 }	2.18E-01 { 1.66E-02 }	1.33E-01 { 1.29E-02 }	9.59E-02 { 1.10E-02 }	9.02E-01 { 3.37E-02 }	1.17E+00 { 3.84E-02 }	1.06E+00 { 3.45E-02 }	
6.0 /	4.79E-02 { 9.79E-03 }	8.44E-02 { 1.03E-02 }	1.14E-01 { 1.20E-02 }	1.52E-01 { 1.38E-02 }	1.18E-01 { 1.22E-02 }	6.17E-02 { 8.81E-03 }	2.40E-02 { 5.49E-03 }	2.40E-02 { 5.11E-03 }	1.41E-02 { 4.22E-03 }	1.93E-02 { 4.93E-03 }
7.0 /	6.98E-02 { 9.37E-03 }	1.81E-01 { 1.52E-02 }	2.32E-01 { 1.47E-02 }	1.73E-01 { 1.47E-02 }	2.90E-01 { 1.91E-02 }	6.96E-01 { 2.96E-02 }	1.38E+00 { 4.17E-02 }	2.19E+00 { 5.25E-02 }	2.62E+00 { 5.74E-02 }	2.72E+00 { 5.85E-02 }
8.0 /	2.47E+00 { 5.57E-02 }	2.51E+00 { 5.62E-02 }	1.78E+00 { 4.73E-02 }	1.07E-01 { 2.98E-02 }	1.18E-01 { 1.21E-02 }	1.52E-02 { 4.37E-03 }	1.12E-02 { 3.74E-03 }	4.06E-03 { 2.26E-03 }	1.08E-02 { 3.68E-03 }	7.82E-03 { 3.14E-03 }
9.0 /	1.11E-02 { 3.73E-03 }	8.37E-03 { 3.25E-03 }	9.51E-03 { 3.46E-03 }	1.14E-02 { 3.79E-03 }	1.51E-02 { 4.36E-03 }	1.98E-02 { 4.97E-03 }	2.58E-02 { 5.68E-03 }	2.68E-02 { 5.81E-03 }	4.25E-02 { 7.31E-03 }	7.51E-02 { 9.72E-03 }
10.0 /	1.71E-01 { 1.47E-02 }	5.14E-01 { 2.54E-02 }	1.69E+00 { 4.62E-02 }	3.48E+00 { 7.26E-02 }	3.94E+00 { 7.04E-02 }	3.79E+00 { 6.91E-02 }	2.45E+00 { 5.56E-02 }	6.54E-01 { 2.87E-02 }		

GLi(p,3He& α) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 80 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }									
1.0 /	0.00E+00 { 0.00E+00 }									
2.0 /	0.00E+00 { 0.00E+00 }									
3.0 /	0.00E+00 { 0.00E+00 }									
4.0 /	1.17E-01 { 1.21E-02 }	8.86E-02 { 1.05E-02 }	5.34E-02 { 8.18E-03 }	4.20E-02 { 7.26E-03 }	5.12E-02 { 8.01E-03 }	5.7AE-02 { 8.50E-03 }	7.22E-02 { 9.51E-03 }	8.50E-02 { 1.03E-02 }	9.38E-02 { 1.08E-02 }	1.17E-01 { 1.21E-02 }
5.0 /	8.75E-02 { 1.05E-02 }	1.15E-01 { 1.20E-02 }	2.58E-01 { 1.80E-02 }	4.63E-01 { 2.41E-02 }	8.95E-01 { 3.35E-02 }	1.39E+00 { 4.16E-02 }	1.70E+00 { 4.61E-02 }	1.79E+00 { 4.74E-02 }	1.89E+00 { 4.87E-02 }	1.84E+00 { 4.81E-02 }
6.0 /	1.78E+00 { 4.72E-02 }	1.47E+00 { 4.30E-02 }	9.79E-01 { 3.50E-02 }	3.34E-01 { 2.05E-02 }	4.59E-02 { 7.59E-03 }	6.93E-03 { 2.95E-03 }	2.15E-03 { 1.64E-03 }	5.37E-03 { 2.59E-03 }	6.27E-03 { 2.80E-03 }	9.90E-03 { 3.34E-03 }
8.0 /	6.33E-03 { 2.82E-03 }	5.76E-03 { 2.69E-03 }	9.09E-03 { 3.38E-03 }	7.24E-03 { 3.01E-03 }	8.44E-03 { 3.25E-03 }	1.69E-02 { 4.60E-03 }	1.42E-02 { 4.22E-03 }	3.58E-02 { 6.70E-03 }	7.20E-02 { 9.50E-03 }	1.97E-01 { 1.57E-02 }
9.0 /	4.86E-01 { 2.47E-02 }	1.44E+00 { 4.25E-02 }	2.62E+00 { 5.73E-02 }	3.22E+00 { 6.36E-02 }	3.29E+00 { 6.42E-02 }	2.62E+00 { 5.94E-02 }	1.77E+00 { 4.71E-02 }	4.01E-01 { 2.24E-02 }		

Appendix 4-1 Differential cross sections and analyzing powers of the ${}^7\text{Li}(\text{p},\text{d}){}^6\text{Li}^*$ reaction at 12 MeV.

${}^6\text{Li}$ ground (1 +)			${}^6\text{Li}$ 1st (2.185 Mev 3 +)			${}^6\text{Li}$ 2nd (3.562 Mev 0 +)		
θ c.m. (deg)	$d\sigma/d\Omega$ (mb/sr)	Analyzing Power	θ c.m. (deg)	$d\sigma/d\Omega$ (mb/sr)	Analyzing power	θ c.m. (deg)	$d\sigma/d\Omega$ (mb/sr)	Analyzing Power
12.9	5.38 ± 0.12	0.0037 ± 0.018	13.8	0.890 ± 0.040	0.013 ± 0.078	15.0	0.245 ± 0.030	- 0.222 ± 0.217
25.8	8.40 ± 0.17	0.063 ± 0.010	27.6	1.11 ± 0.032	0.0094 ± 0.039	30.0	0.230 ± 0.017	- 0.234 ± 0.129
38.6	4.51 ± 0.096	0.098 ± 0.012	41.2	1.05 ± 0.027	0.176 ± 0.027	44.8	0.171 ± 0.010	- 0.175 ± 0.109
51.2	1.59 ± 0.036	0.299 ± 0.020	54.5	1.11 ± 0.029	0.251 ± 0.027	59.2	0.159 ± 0.010	0.264 ± 0.092
63.4	1.28 ± 0.029	0.235 ± 0.018	67.4	1.24 ± 0.028	0.257 ± 0.021	73.1	0.160 ± 0.008	0.366 ± 0.067
75.2	1.15 ± 0.026	0.102 ± 0.018	79.8	1.22 ± 0.028	0.111 ± 0.019	86.4	0.171 ± 0.009	0.032 ± 0.082
86.5	1.28 ± 0.029	- 0.024 ± 0.018	91.5	1.20 ± 0.028	0.075 ± 0.020			
97.3	1.26 ± 0.029	- 0.040 ± 0.020	102.6	1.14 ± 0.027	- 0.0096 ± 0.022			
107.6	1.13 ± 0.027	- 0.044 ± 0.022	113.0	1.18 ± 0.029	- 0.019 ± 0.023			
117.5	1.01 ± 0.025	- 0.0002 ± 0.024						
126.7	0.990 ± 0.025	0.0040 ± 0.026						
135.3	0.999 ± 0.026	- 0.026 ± 0.027						
143.5	1.09 ± 0.028	- 0.050 ± 0.026						
151.3	1.18 ± 0.030	- 0.037 ± 0.026						
158.8	1.29 ± 0.033	- 0.011 ± 0.026						
166.0	1.34 ± 0.034	0.0049 ± 0.027						
169.6	1.36 ± 0.035	- 0.018 ± 0.027						

Appendix 4-2 Differential cross sections and analyzing powers of the $^7\text{Li}(\text{p},\text{d})^6\text{Li}^*$ reaction at 14 MeV.

$\theta_{\text{c.m.}}$ (deg)	$d\sigma/d\Omega$ (nb/sr)	ground (1 +)	${}^6\text{Li}$	1st (2.185 Mev 3 +)	Analyzing power	$\theta_{\text{c.m.}}$ (deg)	$d\sigma/d\Omega$ (nb/sr)	${}^6\text{Li}$	2nd (3.562 Mev 0 +)	Analyzing Power
12.8	6.78 ± 0.16	0.032 ± 0.027	13.3	2.70 ± 0.077	- 0.038 ± 0.045	13.9	0.693 ± 0.051	- 0.235 ± 0.132		
25.5	8.37 ± 0.18	0.035 ± 0.013	26.6	2.62 ± 0.064	0.122 ± 0.023	27.8	0.719 ± 0.026	- 0.30 ± 0.060		
38.1	3.59 ± 0.079	0.100 ± 0.028	39.8	1.60 ± 0.039	0.289 ± 0.031	41.5	0.491 ± 0.018	- 0.215 ± 0.067		
50.5	1.18 ± 0.029	0.255 ± 0.031	52.6	1.27 ± 0.031	0.216 ± 0.031	54.9	0.266 ± 0.012	- 0.017 ± 0.076		
62.6	1.30 ± 0.029	0.128 ± 0.017	65.1	0.882 ± 0.021	0.163 ± 0.021	67.8	0.159 ± 0.0081	0.152 ± 0.074		
74.2	1.51 ± 0.033	- 0.034 ± 0.017	77.2	0.856 ± 0.021	0.118 ± 0.022	80.3	0.160 ± 0.0086	0.115 ± 0.080		
85.5	1.48 ± 0.033	0.0092 ± 0.017	88.7	0.818 ± 0.020	0.075 ± 0.024	92.1	0.162 ± 0.0092	0.276 ± 0.074		
96.3	1.37 ± 0.031	0.075 ± 0.018	99.6	0.834 ± 0.022	0.036 ± 0.026	103.2	0.168 ± 0.0095	0.291 ± 0.076		
106.5	1.27 ± 0.030	0.145 ± 0.020	109.9	0.890 ± 0.023	0.063 ± 0.025	113.6	0.151 ± 0.010	0.174 ± 0.105		
116.4	1.11 ± 0.027	0.116 ± 0.025	119.8	0.901 ± 0.023	- 0.062 ± 0.027	123.4	0.130 ± 0.011	- 0.100 ± 0.138		
125.6	0.776 ± 0.020	0.131 ± 0.031	128.8	1.05 ± 0.029	- 0.173 ± 0.028					
131.4	0.828 ± 0.022	- 0.0023 ± 0.029	137.3	1.20 ± 0.031	- 0.257 ± 0.026					
142.7	0.901 ± 0.024	- 0.018 ± 0.029	145.3	1.34 ± 0.034	- 0.230 ± 0.026					
150.6	1.03 ± 0.027	- 0.026 ± 0.028	152.8	1.47 ± 0.038	- 0.202 ± 0.026					
156.3	1.08 ± 0.028	- 0.023 ± 0.028								
165.7	1.14 ± 0.030	- 0.020 ± 0.028								
169.3	1.20 ± 0.031	- 0.053 ± 0.027								

Appendix 4-3 Differential cross sections and analyzing powers of the $^7\text{Li}(\text{p},\text{d})^6\text{Li}^*$ reaction at 16 MeV.

$\theta_{\text{c.m.}}$ (deg)	${}^6\text{Li}$ ground (1+)		${}^6\text{Li}$ 1st (2.185 Mev 3+)		${}^6\text{Li}$ 2nd (3.562 Mev 0+)			
	$d\sigma/d\Omega$ (nb/sr)	Analyzing Power	$\theta_{\text{c.m.}}$ (deg)	$d\sigma/d\Omega$ (nb/sr)	Analyzing Power	$d\sigma/d\Omega$ (nb/sr)	Analyzing Power	
25.2	9.34 ± 0.189	0.056 ± 0.037	26.0	3.56 ± 0.074	0.098 ± 0.039	26.7	1.16 ± 0.026	- 0.146 ± 0.037
37.7	3.31 ± 0.068	0.135 ± 0.026	39.9	1.64 ± 0.035	0.265 ± 0.027	40.0	0.627 ± 0.015	- 0.073 ± 0.032
50.0	1.31 ± 0.027	0.141 ± 0.026	51.5	1.22 ± 0.026	0.135 ± 0.026	52.9	0.232 ± 0.0075	- 0.168 ± 0.045
61.9	1.51 ± 0.031	0.020 ± 0.036	63.8	1.31 ± 0.028	0.168 ± 0.041	65.5	0.183 ± 0.0067	- 0.111 ± 0.059
73.6	1.44 ± 0.030	- 0.073 ± 0.026	75.7	1.24 ± 0.026	0.086 ± 0.026	77.6	0.198 ± 0.0071	- 0.090 ± 0.048
84.8	1.25 ± 0.027	0.001 ± 0.036	87.1	1.09 ± 0.023	0.155 ± 0.041	89.2	0.213 ± 0.0073	- 0.092 ± 0.060
95.5	1.15 ± 0.025	0.150 ± 0.027	97.9	1.06 ± 0.023	0.070 ± 0.027	100.3	0.157 ± 0.0088	- 0.030 ± 0.083
105.6	1.10 ± 0.024	0.232 ± 0.044	108.2	1.05 ± 0.023	0.031 ± 0.038	120.4	0.161 ± 0.011	- 0.037 ± 0.152
115.5	0.984 ± 0.023	0.184 ± 0.030	118.1	0.894 ± 0.023	- 0.0064 ± 0.040	137.9	0.136 ± 0.012	- 0.0046 ± 0.192
124.8	0.946 ± 0.026	0.071 ± 0.041	135.9	1.05 ± 0.027	- 0.337 ± 0.037	153.2	0.190 ± 0.017	
133.8	0.798 ± 0.021	0.028 ± 0.041	151.7	1.32 ± 0.034				
150.2	1.02 ± 0.027	-----	166.2	1.64 ± 0.042	- 0.165 ± 0.032			
165.4	1.23 ± 0.032	- 0.016 ± 0.034						

Appendix 5 Double differential cross sections (mb/sr/MeV) of the $^7\text{Li}(\text{p},\text{d})$ reaction at 14 MeV.

[POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00}	8.37E-01 { 1.22E-01}	8.01E-01 { 1.19E-01}	6.30E-01 { 1.06E-01}	2.16E-01 { 6.20E-02}	8.88E-02 { 3.97E-02}				
1.0 /	3.87E-01 { 8.29E-02}	5.38E-01 { 9.77E-02}	3.16E+00 { 2.37E-02}	5.69E+00 { 3.38E-01}	4.94E+00 { 2.94E-01}	3.09E+00 { 2.34E-01}	2.09E+00 { 1.92E-01}	1.98E+00 { 1.87E-01}	1.63E+00 { 1.70E-01}	1.82E+00 { 1.80E-01}
2.0 /	1.57E+00 { 1.67E-01}	1.40E+00 { 1.57E-01}	1.70E+00 { 1.73E-01}	1.35E+00 { 1.55E-01}	1.25E+00 { 1.49E-01}	1.44E+00 { 1.60E-01}	1.64E+00 { 1.70E-01}	1.53E+00 { 1.65E-01}	1.37E+00 { 1.56E-01}	1.58E+00 { 1.68E-01}
3.0 /	1.53E+00 { 1.65E-01}	1.55E+00 { 1.66E-01}	1.52E+00 { 1.64E-01}	1.48E+00 { 1.62E-01}	1.57E+00 { 1.67E-01}	1.72E+00 { 1.75E-01}	1.76E+00 { 1.77E-01}	1.64E+00 { 1.70E-01}	1.65E+00 { 1.71E-01}	
4.0 /	1.49E+00 { 1.63E-01}	1.41E+00 { 1.58E-01}	1.25E+00 { 1.49E-01}	1.46E+00 { 1.59E-01}	1.61E+00 { 1.67E-01}	1.61E+00 { 1.67E-01}	1.70E+00 { 1.72E-01}	1.31E+00 { 1.50E-01}	1.52E+00 { 1.62E-01}	1.32E+00 { 1.51E-01}
5.0 /	1.36E+00 { 1.54E-01}	1.52E+00 { 1.62E-01}	3.25E+00 { 2.37E-01}	7.27E+00 { 3.55E-01}	3.64E+00 { 2.51E-01}	9.40E-01 { 1.28E-01}	7.47E-01 { 1.14E-01}	9.25E-01 { 1.27E-01}	8.56E-01 { 1.22E-01}	7.45E-01 { 1.14E-01}
6.0 /	6.17E-01 { 1.03E-01}	1.07E+00 { 1.36E-01}	1.06E+00 { 1.35E-01}	1.07E+00 { 1.36E-01}	2.11E+00 { 1.91E-01}	1.12E+01 { 4.15E-01}	2.40E+00 { 6.45E-01}	9.95E+00 { 4.15E-01}	1.60E+00 { 1.46E-01}	
7.0 /	2.72E-01 { 6.86E-02}	1.52E-01 { 5.12E-02}	1.03E-01 { 4.22E-02}	1.48E-01 { 5.06E-02}	5.61E-02 { 3.12E-02}	8.33E-02 { 3.80E-02}	2.08E-01 { 6.00E-02}	2.32E-01 { 6.34E-02}	3.14E-01 { 7.38E-02}	5.88E-01 { 1.01E-01}
8.0 /	6.21E-01 { 1.04E-01}	5.79E-01 { 1.00E-01}	4.50E-01 { 8.03E-02}	5.28E-01 { 9.56E-02}	8.93E-01 { 1.24E-01}	9.49E-01 { 1.28E-01}	1.76E+00 { 1.75E-01}	1.34E+01 { 4.81E-01}	6.04E+01 { 1.02E+00}	3.08E+01 { 7.30E-01}
9.0 /	3.06E+00 { 2.30E-01}	1.05E-01 { 4.27E-02}	7.73E-02 { 3.66E-02}	2.14E-02 { 1.93E-02}	2.24E-02 { 1.91E-02}	1.73E-02 { 1.73E-02}	4.19E-02 { 2.69E-02}			

[POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}	5.50E-03 { 6.16E-03}	9.83E-02 { 2.61E-02}	1.16E-01 { 2.83E-02}	6.35E-02 { 2.09E-02}	0.00E+00 { 0.00E+00}	
1.0 /	8.19E-02 { 2.38E-02}	2.29E-01 { 3.98E-02}	3.16E-01 { 4.67E-02}	4.25E-01 { 5.42E-02}	2.01E+00 { 1.18E-01}	2.51E+00 { 1.32E-01}	2.38E+00 { 1.28E-01}	2.46E+00 { 1.30E-01}	2.53E+00 { 1.32E-01}	2.47E+00 { 1.31E-01}
2.0 /	2.56E+00 { 1.33E-01}	2.20E+00 { 1.25E-01}	2.40E+00 { 1.29E-01}	2.49E+00 { 1.31E-01}	2.13E+00 { 1.21E-01}	2.43E+00 { 1.30E-01}	2.31E+00 { 1.26E-01}	2.14E+00 { 1.22E-01}	2.14E+00 { 1.22E-01}	2.20E+00 { 1.23E-01}
3.0 /	2.34E+00 { 1.27E-01}	2.53E+00 { 1.32E-01}	2.17E+00 { 1.22E-01}	2.34E+00 { 1.27E-01}	2.05E+00 { 1.19E-01}	1.98E+00 { 1.17E-01}	2.06E+00 { 1.19E-01}	1.88E+00 { 1.14E-01}	1.36E+00 { 9.68E-02}	1.23E+00 { 9.20E-02}
4.0 /	1.25E+00 { 9.28E-02}	1.29E+00 { 9.45E-02}	1.27E+00 { 9.90E-02}	1.49E+00 { 1.07E-01}	1.45E+00 { 1.05E-01}	1.41E+00 { 1.05E-01}	1.39E+00 { 1.04E-01}	1.21E+00 { 9.68E-02}	1.11E+00 { 9.28E-02}	1.10E+00 { 9.24E-02}
5.0 /	2.99E+00 { 1.52E-01}	9.61E+00 { 2.73E-01}	3.92E+00 { 1.74E-01}	1.02E+00 { 8.89E-02}	7.77E-01 { 7.76E-02}	8.49E-01 { 8.11E-02}	8.38E-01 { 8.06E-02}	8.77E-01 { 8.24E-02}	8.06E-01 { 7.90E-02}	8.64E-01 { 8.18E-02}
6.0 /	9.53E-01 { 8.59E-02}	9.42E-01 { 9.42E-02}	1.02E+00 { 9.66E-02}	1.98E+00 { 1.24E-01}	1.16E+01 { 3.00E-01}	2.49E+01 { 4.39E-01}	7.25E+00 { 2.37E-01}	8.41E+00 { 8.07E-02}	2.32E+01 { 4.24E-02}	1.43E-01 { 3.32E-02}
7.0 /	9.26E-02 { 2.68E-02}	8.15E-02 { 2.51E-02}	1.95E-02 { 1.23E-02}	6.93E-02 { 2.32E-02}	9.77E-02 { 2.75E-02}	6.86E-02 { 2.31E-02}	5.09E-02 { 1.99E-02}	6.90E-02 { 2.31E-02}	1.00E-01 { 2.79E-02}	2.48E-01 { 4.38E-02}
8.0 /	4.00E-01 { 5.57E-02}	4.59E-01 { 5.96E-02}	5.30E-01 { 6.41E-02}	7.23E-01 { 7.48E-02}	2.13E+00 { 1.28E-01}	3.20E+01 { 4.98E-01}	8.39E+01 { 8.06E-01}	1.70E+01 { 3.62E-01}	7.21E-01 { 7.47E-02}	7.35E-02 { 2.39E-02}
9.0 /	3.85E-02 { 1.73E-02}	2.34E-02 { 1.35E-02}								

[POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00}	2.14E-02 { 8.60E-03}	1.46E-01 { 2.24E-02}	7.54E-02 { 1.62E-02}	2.39E-02 { 9.09E-03}	0.00E+00 { 0.00E+00}				
1.0 /	7.18E-02 { 1.58E-02}	2.88E-01 { 3.16E-02}	2.99E-01 { 3.21E-02}	4.06E-01 { 3.75E-02}	1.92E+00 { 8.14E-02}	2.20E+00 { 8.72E-02}	2.21E+00 { 8.74E-02}	2.26E+00 { 8.84E-02}	2.22E+00 { 8.76E-02}	2.25E+00 { 8.82E-02}
2.0 /	2.21E+00 { 8.75E-02}	2.19E+00 { 8.71E-02}	2.21E+00 { 8.75E-02}	1.98E+00 { 8.28E-02}	2.11E+00 { 8.55E-02}	1.94E+00 { 8.19E-02}	1.95E+00 { 8.21E-02}	1.96E+00 { 8.22E-02}	2.06E+00 { 8.44E-02}	2.13E+00 { 8.59E-02}
3.0 /	2.10E+00 { 8.52E-02}	1.98E+00 { 8.28E-02}	1.98E+00 { 8.28E-02}	1.74E+00 { 7.76E-02}	1.61E+00 { 7.46E-02}	1.55E+00 { 7.31E-02}	1.11E+00 { 6.19E-02}	1.13E+00 { 6.26E-02}	1.23E+00 { 6.51E-02}	1.39E+00 { 6.92E-02}
4.0 /	1.30E+00 { 6.49E-02}	1.32E+00 { 6.75E-02}	1.37E+00 { 7.99E-02}	1.34E+00 { 7.89E-02}	1.23E+00 { 7.58E-02}	1.08E+00 { 7.10E-02}	1.04E+00 { 6.95E-02}	2.08E+00 { 9.84E-02}	6.26E+00 { 1.71E-01}	3.25E+00 { 1.23E-01}
5.0 /	9.00E-01 { 6.48E-02}	8.47E-01 { 6.28E-02}	8.19E-01 { 6.18E-02}	7.26E-01 { 5.82E-02}	6.50E-01 { 5.50E-02}	6.60E-01 { 5.55E-02}	6.61E-01 { 5.55E-02}	6.33E-01 { 5.43E-02}	7.11E-01 { 5.76E-02}	8.12E-01 { 6.15E-02}
6.0 /	1.57E+00 { 8.56E-02}	8.95E+00 { 2.04E-01}	1.42E+01 { 2.57E-01}	2.61E+00 { 1.10E-01}	3.71E-01 { 4.16E-02}	1.62E-01 { 2.74E-02}	1.11E-01 { 2.27E-02}	6.03E-02 { 1.48E-02}	2.64E-02 { 1.11E-02}	1.97E-02 { 9.59E-03}
7.0 /	5.77E-03 { 5.18E-03}	3.15E-02 { 1.21E-02}	1.86E-02 { 9.32E-03}	1.40E-02 { 8.07E-03}	6.43E-03 { 5.47E-03}	3.28E-02 { 1.24E-02}	8.18E-02 { 1.95E-02}	2.05E-01 { 3.09E-02}	1.61E-01 { 2.74E-02}	2.52E-01 { 3.43E-02}
8.0 /	4.11E-01 { 4.37E-02}	3.63E+00 { 1.30E-01}	3.01E+01 { 3.74E-01}	2.02E+01 { 3.07E-01}	1.55E+00 { 8.49E-02}	8.45E-02 { 1.98E-02}	2.46E-02 { 1.07E-02}	1.36E-01 { 7.96E-03}	9.32E-03 { 6.59E-03}	

7Li(p,d) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 40 deg

[POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)	3.65E-02 (1.12E-02)	8.13E-02 (1.68E-02)	6.53E-02 (1.50E-02)	3.46E-03 (3.46E-03)	0.00E+00 (0.00E+00)				
1.0 /	5.81E-02 (1.42E-02)	1.80E-01 (2.50E-02)	2.90E-01 (3.16E-02)	3.12E-01 (3.28E-02)	1.51E+00 (7.21E-02)	1.96E+00 (8.23E-02)	1.05E+00 (8.00E-02)	1.88E+00 (8.06E-02)	1.90E+00 (8.11E-02)	1.92E+00 (8.14E-02)
2.0 /	1.81E+00 (7.91E-02)	1.71E+00 (7.69E-02)	1.79E+00 (7.86E-02)	1.66E+01 (7.57E-02)	1.80E+00 (7.89E-02)	1.72E+00 (7.72E-02)	1.92E+00 (8.14E-02)	1.68E+00 (7.73E-02)	1.68E+00 (7.62E-02)	1.66E+00 (7.58E-02)
3.0 /	1.45E+00 (7.07E-02)	1.41E+00 (6.97E-02)	1.10E+00 (6.16E-02)	9.83E-01 (5.83E-02)	1.02E+00 (5.95E-02)	1.14E+00 (6.28E-02)	1.07E+00 (6.06E-02)	1.09E+00 (6.14E-02)	1.14E+00 (6.27E-02)	1.19E+00 (6.42E-02)
4.0 /	9.80E-01 (5.82E-02)	1.02E+00 (5.98E-02)	1.02E+00 (5.97E-02)	1.19E+00 (6.44E-02)	3.44E+00 (1.07E-01)	2.34E+00 (9.03E-02)	8.98E-01 (5.40E-02)	6.05E-01 (4.60E-02)	6.65E-01 (4.82E-02)	6.03E-01 (4.59E-02)
5.0 /	5.98E-01 (4.57E-02)	6.14E-01 (4.63E-02)	5.07E-01 (4.21E-02)	5.53E-01 (4.41E-02)	5.86E-01 (4.52E-02)	6.76E-01 (4.86E-02)	1.73E+00 (7.77E-02)	9.15E+00 (7.79E-01)	8.86E+00 (7.76E-01)	9.11E+00 (6.22E-02)
6.0 /	1.69E-01 (2.43E-02)	7.11E-02 (1.58E-02)	4.05E-02 (1.19E-02)	5.29E-02 (1.36E-02)	1.91E-02 (8.17E-03)	1.89E-02 (8.13E-03)	1.58E-02 (6.94E-03)	5.33E-03 (4.31E-03)	2.26E-02 (8.88E-03)	1.05E-02 (6.05E-03)
7.0 /	2.00E-02 (8.35E-03)	3.74E-02 (1.14E-02)	6.46E-02 (1.50E-02)	5.07E-02 (1.43E-02)	6.75E-02 (1.54E-02)	9.08E-02 (1.78E-02)	5.01E-01 (4.18E-02)	6.33E+00 (1.49E-01)	9.62E+00 (1.03E-01)	1.07E+00 (6.10E-02)
8.0 /	4.88E-02 (1.30E-02)	1.61E-02 (7.51E-03)								

7Li(p,d) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 50 deg

[POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)	4.88E-02 (9.19E-03)	1.53E-01 (1.62E-02)	8.08E-02 (1.18E-02)	2.22E-02 (4.20E-03)	3.02E-03 (2.29E-03)				
1.0 /	2.44E-02 (6.50E-03)	1.56E-01 (1.64E-02)	2.53E-01 (2.09E-02)	4.87E-01 (2.70E-02)	1.42E+00 (4.95E-02)	1.66E+00 (5.36E-02)	1.64E+00 (5.33E-02)	1.56E+00 (5.19E-02)	1.72E+00 (5.45E-02)	1.67E+00 (5.38E-02)
2.0 /	1.67E-00 (5.37E-02)	1.68E+00 (5.39E-02)	1.66E+00 (5.57E-02)	1.56E+00 (5.36E-02)	1.49E+00 (5.07E-02)	1.39E+00 (4.91E-02)	1.31E+00 (4.76E-02)	1.19E+00 (4.55E-02)	1.08E+00 (4.33E-02)	9.48E-01 (4.05E-02)
3.0 /	8.78E-01 (3.90E-02)	1.07E+00 (4.29E-02)	9.45E-01 (4.04E-02)	9.83E-01 (4.13E-02)	9.29E-01 (4.01E-02)	8.91E-01 (3.93E-02)	9.04E-01 (3.96E-02)	7.91E-01 (3.70E-02)	8.62E-01 (3.84E-02)	1.70E+00 (5.43E-02)
4.0 /	1.96E+00 (5.83E-02)	7.71E-01 (3.67E-02)	5.81E-01 (3.17E-02)	5.60E-01 (3.11E-02)	5.73E-01 (3.15E-02)	5.08E-01 (2.97E-02)	5.22E-01 (3.02E-02)	5.14E-01 (2.99E-02)	4.76E-01 (2.88E-02)	4.82E-01 (2.90E-02)
5.0 /	6.01E-01 (3.24E-02)	1.42E+00 (4.97E-02)	6.83E+00 (1.09E-01)	1.07E+01 (1.37E-01)	2.36E+00 (6.42E-02)	2.70E-01 (2.17E-02)	9.41E-02 (1.28E-02)	4.20E-02 (8.56E-03)	2.16E-02 (6.13E-03)	1.44E-02 (5.00E-03)
6.0 /	1.50E-02 (5.11E-03)	1.61E-02 (5.29E-03)	1.20E-02 (4.58E-03)	1.07E-02 (4.32E-03)	1.48E-02 (5.07E-03)	1.47E-02 (5.06E-03)	2.78E-02 (6.96E-03)	3.68E-02 (8.01E-03)	4.69E-02 (9.03E-03)	7.49E-02 (1.14E-02)
7.0 /	1.85E-01 (1.80E-02)	1.82E+00 (5.63E-02)	9.79E+00 (1.31E-01)	5.84E+00 (1.01E-01)	4.61E-01 (2.83E-02)	4.50E-02 (8.85E-03)	2.59E-02 (6.72E-03)	1.55E-02 (5.20E-03)	7.38E-03 (3.59E-03)	

7Li(p,d) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 60 deg

[POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)	3.19E-02 (7.41E-03)	5.94E-02 (1.01E-02)	4.50E-02 (8.79E-03)	1.23E-02 (4.60E-03)	2.56E-03 (2.10E-03)				
1.0 /	3.22E-02 (7.43E-03)	1.29E-01 (1.49E-02)	1.91E-01 (1.81E-02)	4.29E-01 (2.71E-02)	1.24E+00 (4.61E-02)	1.64E+00 (5.31E-02)	1.55E+00 (5.17E-02)	1.58E+00 (5.20E-02)	1.68E+00 (5.38E-02)	1.53E+00 (5.12E-02)
2.0 /	1.62E-00 (5.27E-02)	1.31E+00 (4.78E-02)	1.23E+00 (4.59E-02)	1.13E+00 (4.40E-02)	9.83E-01 (4.11E-02)	8.01E-01 (3.89E-02)	8.64E-01 (3.85E-02)	7.53E-01 (3.60E-02)	9.11E-01 (3.96E-02)	9.07E-01 (3.95E-02)
3.0 /	8.40E-01 (3.80E-02)	8.11E-01 (3.73E-02)	6.98E-01 (3.46E-02)	7.79E-01 (3.66E-02)	8.50E-01 (3.82E-02)	1.76E+00 (5.50E-02)	1.50E+00 (5.08E-02)	6.83E-01 (3.42E-02)	5.53E-01 (3.08E-02)	6.16E-01 (3.25E-02)
4.0 /	4.81E-01 (2.08E-02)	9.39E-01 (2.60E-02)	4.50E-01 (2.81E-02)	4.56E-01 (2.81E-02)	4.95E-01 (2.93E-02)	5.96E-01 (3.21E-02)	1.44E+00 (5.00E-02)	6.91E+00 (1.01E-01)	0.24E+00 (1.19E-01)	1.36E+00 (4.86E-02)
5.0 /	1.56E-01 (1.65E-02)	7.51E-02 (1.14E-02)	4.96E-02 (9.27E-03)	2.42E-02 (6.47E-03)	2.61E-02 (6.72E-03)	1.88E-02 (4.51E-03)	1.89E-02 (5.71E-03)	1.54E-02 (5.16E-03)	1.58E-02 (5.22E-03)	1.51E-02 (5.11E-03)
6.0 /	1.51E-02 (5.12E-03)	3.00E-02 (7.20E-03)	4.28E-02 (8.61E-03)	8.51E-02 (1.21E-02)	1.74E-01 (1.74E-02)	1.27E+00 (4.69E-02)	9.31E+00 (1.27E-01)	7.88E+00 (1.17E-01)	7.52E-01 (3.61E-02)	6.80E-02 (1.09E-02)
7.0 /	2.33E-02 (6.36E-03)	1.90E-02 (5.74E-03)	1.25E-02 (4.66E-03)	5.61E-03 (3.12E-03)	3.97E-03 (2.59E-03)					

7Li(p,d) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 70 deg

[POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)	3.15E-02 (7.39E-03)	4.57E-02 (8.89E-03)	2.02E-02 (5.91E-03)	7.25E-03 (3.54E-03)	1.73E-03 (1.73E-03)				
1.0 /	1.19E-02 (4.55E-03)	6.13E-02 (1.03E-02)	1.57E-01 (1.65E-02)	3.92E-01 (2.60E-02)	1.24E+00 (4.64E-02)	1.45E+00 (5.02E-02)	1.40E+00 (4.93E-02)	1.28E+00 (4.72E-02)	1.24E+00 (4.68E-02)	1.06E+00 (4.29E-02)
2.0 /	8.57E-01 (3.85E-02)	8.08E-01 (3.74E-02)	8.17E-01 (3.76E-02)	8.23E-01 (3.77E-02)	7.54E-01 (3.61E-02)	6.94E-01 (3.47E-02)	6.87E-01 (3.45E-02)	6.62E-01 (3.39E-02)	6.51E-01 (3.36E-02)	6.73E-01 (3.41E-02)
3.0 /	1.30E+00 (4.73E-02)	1.50E+00 (5.10E-02)	7.20E-01 (3.53E-02)	4.39E-01 (2.76E-02)	4.47E-01 (2.78E-02)	4.38E-01 (2.75E-02)	3.88E-01 (2.59E-02)	3.85E-01 (2.58E-02)	3.95E-01 (2.62E-02)	4.14E-01 (2.68E-02)
4.0 /	6.05E-01 (3.24E-02)	1.44E+00 (5.00E-02)	6.65E+00 (1.07E-01)	5.69E+00 (9.91E-02)	7.75E-01 (3.68E-02)	1.16E-01 (1.41E-02)	5.62E-02 (9.85E-03)	2.49E-02 (6.55E-03)	1.39E-02 (4.89E-03)	9.46E-03 (4.04E-03)
5.0 /	1.47E-02 (5.04E-03)	1.11E-02 (4.39E-03)	1.11E-02 (4.38E-03)	7.45E-03 (3.59E-03)	1.40E-02 (4.92E-03)	2.20E-02 (6.17E-03)	1.89E-02 (5.72E-03)	4.45E-02 (8.77E-03)	9.94E-02 (1.31E-02)	9.97E-01 (4.15E-02)
6.0 /	8.41E+00 (1.21E-01)	7.38E+00 (1.13E-01)	6.48E-01 (3.35E-02)	5.99E-02 (1.02E-02)	1.98E-02 (5.70E-03)	2.17E-02 (6.13E-03)	1.40E-02 (4.91E-03)	4.68E-03 (2.84E-03)	8.23E-03 (3.77E-03)	

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7Li(p,d) DDX (error) #### Ep = 14 MeV LAB. ANGLE = 80 deg

[POL = NON]

***** 3.1(p,d) RDX (error) ***** ER = 14 MeV LAB-ANGLE = 90 deg

{ POL = NON

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00									
1.0 /	1.76E-02	5.52E-03	7.31E-02	1.13E-02	8.84E-02	1.24E-02	1.17E-01	1.42E-02	5.12E-01	2.98E-02
2.0 /	4.60E-01	2.82E-02	5.92E-01	3.20E-02	1.07E-00	4.30E-02	9.77E-01	4.16E-02	3.40E-01	2.43E-02
3.0 /	3.37E-01	2.42E-02	4.48E-01	2.79E-02	2.00E+00	5.88E-02	5.03E+00	9.33E-02	1.49E+00	5.07E-02
4.0 /	3.44E-02	7.72E-03	9.42E-03	4.05E-03	1.39E-02	4.91E-03	1.05E-02	4.26E-03	1.08E-02	4.32E-03
5.0 /	3.87E-07	B.18E-02	3.07E-01	2.79E-07	2.65E-07	6.76E-01	1.05E-07	4.26E-03	5.77E-03	3.46E-07

***** ZLi (n,d) RDX (GEGE) ***** Ep = 14 MeV LAB-ANGLE = 100 deg

[POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9		
0.0 /	0.00E+00	{ 0.00E+00 }										
1.0 /	1.02E-02	{ 4.20E-03 }	{ 8.64E-03 }	{ 9.21E-02 }	{ 1.26E-02 }	{ 1.14E-01 }	{ 1.40E-02 }	{ 4.78E-01 }	{ 2.81E-02 }	{ 5.29E-01 }	{ 3.02E-02 }	
2.0 /	6.48E-01	{ 3.34E-02 }	{ 3.36E-01 }	{ 2.41E-02 }	{ 2.91E-01 }	{ 2.24E-02 }	{ 3.25E-01 }	{ 2.37E-02 }	{ 3.52E-01 }	{ 2.47E-02 }	{ 3.27E-01 }	{ 2.38E-02 }
3.0 /	1.34E+00	{ 4.82E-02 }	{ 1.08E-01 }	{ 1.36E-02 }	{ 5.75E-02 }	{ 9.98E-03 }	{ 7.35E-02 }	{ 8.04E-03 }	{ 3.26E-02 }	{ 7.50E-03 }	{ 2.10E-02 }	{ 6.63E-03 }
4.0 /	4.88E-02	{ 9.18E-03 }	{ 1.68E-02 }	{ 5.39E-03 }	{ 5.18E-02 }	{ 9.47E-03 }	{ 8.04E-02 }	{ 3.71E-02 }	{ 4.80E-02 }	{ 9.11E-02 }	{ 3.72E-00 }	{ 8.02E-02 }

111111 ZLi(p,d) - DDY (arrow) 111 Ep = 14 MeV LAB ANGLE = 110 deg

[ROI = NON]

***** 3Li(p,d) - DDX (energy) ***** EP = 14 MeV LAB ANGLE = 132 deg

L ROI = NON

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00									
1.0 /	5.10E-03	2.96E-03	2.91E-02	7.08E-03	1.60E-02	7.87E-03	1.20E-01	1.44E-02	7.28E-01	3.54E-02
2.0 /	3.92E-01	2.60E-02	5.41E-01	3.05E-02	2.81E+00	6.75E-02	4.03E+00	B.33E-02	7.81E-01	3.67E-02
3.0 /	1.63E-02	5.30E-03	1.87E-02	5.68E-03	2.02E-02	5.89E-03	1.17E-02	4.49E-03	2.63E-02	6.73E-03
4.0 /	1.44E-04	4.98E-03	1.56E-03	2.98E-03						

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##### 7Li(p,d) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 130 deg [POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00}	3.45E-03 { 2.44E-03}	3.45E-03 { 2.44E-03}	1.72E-03 { 1.72E-03}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}				
1.0 /	1.70E-03 { 1.71E-03}	1.77E-02 { 5.52E-03}	4.17E-02 { 8.48E-03}	6.70E-02 { 1.08E-02}	3.09E-01 { 2.31E-02}	3.54E-01 { 2.47E-02}	3.52E-01 { 2.46E-02}	2.98E-01 { 2.27E-02}	3.52E-01 { 2.46E-02}	7.70E-01 { 3.64E-02}
2.0 /	3.77E+00 { 8.06E-02}	3.34E+00 { 7.59E-02}	3.34E-01 { 2.40E-02}	4.24E-02 { 8.56E-03}	3.16E-02 { 7.38E-03}	2.75E-02 { 6.88E-03}	1.52E-02 { 5.12E-03}	3.05E-02 { 7.25E-03}	1.94E-02 { 5.79E-03}	1.41E-02 { 4.94E-03}
3.0 /	2.07E-02 { 5.97E-03}	2.48E-02 { 6.54E-03}	5.68E-02 { 9.90E-03}	1.53E+00 { 5.14E-02}	3.90E+00 { 8.20E-02}	3.71E-01 { 2.53E-02}	1.57E-02 { 5.20E-03}	2.75E-03 { 2.18E-03}		

##### 7Li(p,d) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 140 deg [POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00}	5.20E-03 { 3.00E-03}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}				
1.0 /	3.41E-03 { 2.43E-03}	1.68E-02 { 5.40E-03}	3.81E-02 { 8.13E-03}	5.18E-02 { 9.48E-03}	2.62E-01 { 2.13E-02}	3.04E-01 { 2.30E-02}	3.68E-01 { 2.53E-02}	6.37E-01 { 3.32E-02}	3.05E+00 { 7.27E-02}	3.96E+00 { 8.28E-02}
2.0 /	6.17E-01 { 3.27E-02}	6.44E-02 { 1.03E-02}	3.52E-02 { 7.81E-03}	1.50E-02 { 5.09E-03}	2.62E-02 { 6.73E-03}	3.35E-02 { 7.62E-03}	1.56E-02 { 5.21E-03}	1.99E-02 { 5.87E-03}	1.17E-02 { 4.51E-03}	2.90E-02 { 7.08E-03}
3.0 /	2.19E-01 { 1.95E-02}	3.26E+00 { 7.52E-02}	2.62E+00 { 6.74E-02}	6.14E-02 { 1.03E-02}	1.64E-02 { 5.34E-03}	1.12E-02 { 4.41E-03}				

##### 7Li(p,d) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 150 deg [POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00}	1.72E-03 { 1.72E-03}	1.72E-03 { 1.72E-03}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}				
1.0 /	6.79E-03 { 3.42E-03}	2.12E-02 { 6.05E-03}	2.88E-02 { 7.05E-03}	6.46E-02 { 1.06E-02}	2.41E-01 { 2.04E-02}	4.08E-01 { 2.65E-02}	1.39E+00 { 4.89E-02}	3.97E+00 { 8.28E-02}	2.99E+00 { 7.10E-02}	2.20E-01 { 1.95E-02}
2.0 /	4.86E-02 { 9.16E-03}	2.66E-02 { 6.77E-03}	1.69E-02 { 5.40E-03}	1.40E-02 { 4.92E-03}	1.52E-02 { 5.11E-03}	2.77E-02 { 6.91E-03}	1.34E-02 { 4.81E-03}	2.48E-02 { 6.54E-03}	1.33E-01 { 1.52E-02}	7.45E+00 { 6.50E-02}
3.0 /	3.32E+00 { 7.51E-02}	2.10E-01 { 1.91E-02}	3.59E-03 { 2.49E-03}							

##### 7Li(p,d) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 160 deg [POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00}	3.42E-03 { 2.42E-03}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}	0.00E+00 { 0.00E+00}					
1.0 /	6.80E-03 { 3.41E-03}	7.24E-03 { 3.52E-03}	4.70E-02 { 8.96E-03}	7.15E-02 { 1.11E-02}	3.52E-01 { 2.45E-02}	1.58E+00 { 5.19E-02}	3.93E+00 { 8.19E-02}	2.73E+00 { 6.03E-02}	2.63E-01 { 2.12E-02}	4.66E-02 { 8.92E-03}
2.0 /	2.83E-02 { 6.96E-03}	2.64E-02 { 6.72E-03}	1.73E-02 { 5.44E-03}	2.53E-02 { 6.57E-03}	1.45E-02 { 4.97E-03}	2.57E-02 { 6.62E-03}	5.37E-02 { 9.57E-03}	4.53E-01 { 2.78E-02}	3.59E+00 { 7.83E-02}	2.04E+00 { 5.90E-02}
3.0 /	4.61E-02 { 8.07E-03}	1.79E-02 { 5.53E-03}	8.63E-03 { 3.84E-03}							

##### 7Li(p,d) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 165 deg [POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00}	3.45E-03 { 2.44E-03}	4.67E-04 { 8.97E-04}	2.98E-03 { 2.27E-03}	0.00E+00 { 0.00E+00}					
1.0 /	1.19E-02 { 4.54E-03}	2.12E-02 { 6.05E-03}	3.37E-02 { 7.62E-03}	1.15E-01 { 1.41E-02}	4.97E-01 { 2.93E-02}	2.57E+00 { 6.66E-02}	3.79E+00 { 8.09E-02}	1.79E+00 { 5.56E-02}	1.10E-01 { 1.38E-02}	4.84E-02 { 9.14E-03}
2.0 /	3.81E-02 { 8.11E-03}	2.43E-02 { 6.47E-03}	2.51E-02 { 6.58E-03}	2.39E-02 { 6.43E-03}	2.54E-02 { 6.62E-03}	3.42E-02 { 7.68E-03}	1.12E-01 { 1.39E-02}	1.77E+00 { 5.52E-02}	3.84E+00 { 8.14E-02}	6.17E-01 { 3.26E-02}
3.0 /	1.93E-02 { 5.77E-03}	9.99E-03 { 4.15E-03}								

600 600 (00)

510 510 (00)

420 420 (00)

330 330 (00)

240 240 (00)

150 150 (00)

60 60 (00)

Appendix 6 Double differential cross sections (mb/sr/MeV) of the $^7\text{Li}(p,t)$ reaction at 14 MeV.

[POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)	1.54E+00 (2.14E-01)	1.92E-01 (7.55E-02)	1.51E+00 (2.12E-01)	4.80E+00 (3.78E-01)	7.56E+00 (4.74E-01)				
1.0 /	3.75E+00 (3.34E-01)	1.18E+00 (1.87E-01)	5.59E-01 (1.29E-01)	3.34E-01 (9.96E-02)	4.34E-01 (1.14E-01)	3.59E+00 (3.27E-01)	7.46E+00 (4.71E-01)	6.64E+00 (4.44E-01)	6.06E+00 (4.24E-01)	5.24E+00 (3.95E-01)
2.0 /	5.82E+00 (4.16E-01)	4.93E+00 (3.83E-01)	5.12E+00 (3.90E-01)	4.48E+00 (3.65E-01)	5.00E+00 (3.65E-01)	3.78E+00 (3.89E-01)	5.38E+00 (4.00E-01)	4.39E+00 (3.61E-01)	4.80E+00 (3.78E-01)	5.10E+00 (3.89E-01)
3.0 /	5.53E+00 (4.05E-01)	6.08E+00 (4.25E-01)	5.10E+00 (3.89E-01)	5.28E+00 (3.96E-01)	5.69E+00 (4.11E-01)	6.18E+00 (4.28E-01)	5.61E+00 (4.08E-01)	5.31E+00 (3.97E-01)	5.29E+00 (3.96E-01)	5.43E+00 (4.02E-01)
4.0 /	5.88E+00 (4.18E-01)	5.74E+00 (4.13E-01)	5.93E+00 (4.20E-01)	6.33E+00 (4.34E-01)	5.89E+00 (4.18E-01)	6.08E+00 (4.25E-01)	5.92E+00 (4.19E-01)	5.75E+00 (4.13E-01)	6.20E+00 (4.29E-01)	5.81E+00 (4.16E-01)
5.0 /	5.43E+00 (3.06E-01)	5.76E+00 (3.15E-01)	5.84E+00 (3.18E-01)	5.89E+00 (3.19E-01)	6.26E+00 (3.29E-01)	6.12E+00 (3.25E-01)	5.78E+00 (3.16E-01)	5.45E+00 (3.07E-01)	5.76E+00 (3.16E-01)	6.05E+00 (3.25E-01)
6.0 /	5.54E+00 (3.09E-01)	5.94E+00 (3.20E-01)	5.34E+00 (3.04E-01)	5.29E+00 (3.02E-01)	5.34E+00 (3.04E-01)	4.55E+00 (2.82E-01)	3.44E+00 (2.44E-01)	3.48E+00 (2.45E-01)	2.92E+00 (2.27E-01)	3.15E+00 (2.33E-01)
7.0 /	2.89E+00 (2.24E-01)	3.55E+00 (2.48E-01)	3.11E+00 (2.32E-01)	3.46E+00 (2.45E-01)	3.56E+00 (2.47E-01)	3.49E+00 (2.45E-01)	4.11E+00 (2.66E-01)	3.41E+00 (2.43E-01)	4.06E+00 (2.65E-01)	4.44E+00 (2.77E-01)
8.0 /	3.92E+00 (2.60E-01)	4.69E+00 (2.85E-01)	4.66E+00 (2.84E-01)	5.41E+00 (3.06E-01)	5.89E+00 (3.19E-01)	6.78E+00 (3.42E-01)	7.69E+00 (3.64E-01)	8.19E+00 (3.76E-01)	9.14E+00 (3.97E-01)	9.91E+01 (4.17E-01)
9.0 /	1.19E+01 (4.53E-01)	1.17E+01 (4.50E-01)	1.21E+01 (4.56E-01)	1.29E+01 (4.73E-01)	1.22E+01 (4.59E-01)	1.07E+01 (4.30E-01)	8.29E+00 (3.78E-01)	6.87E+00 (3.45E-01)	6.10E+00 (3.25E-01)	4.28E+00 (2.72E-01)
10.0 /	5.66E+00 (2.52E-01)	2.83E+00 (2.21E-01)	1.73E+00 (1.73E-01)	8.57E-01 (1.22E-01)	7.87E-01 (1.16E-01)	4.56E-01 (8.87E-02)	1.61E-01 (5.28E-02)	2.67E-02 (2.15E-02)	1.73E-02 (1.73E-02)	

[POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)	5.84E-03 (6.35E-03)	1.38E-02 (9.77E-03)	2.07E-02 (1.20E-02)	4.14E-02 (1.69E-02)	2.76E-02 (1.38E-02)				
1.0 /	4.15E-02 (1.69E-02)	1.38E-02 (9.77E-03)	6.91E-03 (6.91E-03)	3.47E-02 (1.55E-02)	1.67E-01 (3.39E-02)	3.37E+00 (1.53E-01)	5.43E+00 (1.94E-01)	5.18E+00 (1.89E-01)	5.34E+00 (1.92E-01)	5.40E+00 (1.93E-01)
2.0 /	5.24E+00 (1.90E-01)	5.38E+00 (1.93E-01)	4.93E+00 (1.85E-01)	5.24E+00 (1.90E-01)	5.17E+00 (1.89E-01)	5.30E+00 (1.91E-01)	5.37E+00 (1.92E-01)	5.53E+00 (1.95E-01)	5.67E+00 (1.97E-01)	5.55E+00 (1.96E-01)
3.0 /	5.88E+00 (2.02E-01)	5.30E+00 (1.91E-01)	5.72E+00 (1.91E-01)	5.58E+00 (1.96E-01)	5.86E+00 (2.01E-01)	5.66E+00 (1.98E-01)	5.07E+00 (1.87E-01)	5.69E+00 (1.98E-01)	5.58E+00 (1.96E-01)	5.30E+00 (1.91E-01)
4.0 /	5.73E+00 (1.99E-01)	5.34E+00 (1.92E-01)	5.46E+00 (1.94E-01)	4.96E+00 (1.85E-01)	5.71E+00 (1.99E-01)	5.92E+00 (2.02E-01)	5.95E+00 (2.03E-01)	5.50E+00 (1.95E-01)	5.23E+00 (1.90E-01)	4.88E+00 (1.84E-01)
5.0 /	5.24E+00 (2.01E-01)	5.20E+00 (2.00E-01)	4.96E+00 (1.96E-01)	5.28E+00 (2.02E-01)	5.52E+00 (2.05E-01)	5.46E+00 (2.05E-01)	5.08E+00 (1.98E-01)	5.61E+00 (2.08E-01)	5.36E+00 (2.03E-01)	5.91E+00 (2.13E-01)
6.0 /	5.72E+00 (2.10E-01)	5.65E+00 (2.09E-01)	4.58E+00 (1.88E-01)	4.14E+00 (1.79E-01)	3.39E+00 (1.62E-01)	3.46E+00 (1.63E-01)	3.52E+00 (1.65E-01)	3.43E+00 (1.63E-01)	3.44E+00 (1.63E-01)	3.28E+00 (1.59E-01)
7.0 /	3.28E+00 (1.59E-01)	3.47E+00 (1.64E-01)	3.73E+00 (1.69E-01)	3.52E+00 (1.65E-01)	3.45E+00 (1.63E-01)	3.52E+00 (1.65E-01)	3.59E+00 (1.66E-01)	3.91E+00 (1.74E-01)	3.72E+00 (1.69E-01)	3.81E+00 (1.71E-01)
8.0 /	3.82E+00 (1.72E-01)	3.89E+00 (1.73E-01)	4.11E+00 (1.78E-01)	4.07E+00 (1.77E-01)	4.39E+00 (1.84E-01)	4.39E+00 (1.84E-01)	4.95E+00 (1.95E-01)	5.41E+00 (2.04E-01)	4.95E+00 (1.95E-01)	5.19E+00 (2.00E-01)
9.0 /	5.21E+00 (2.00E-01)	4.31E+00 (1.82E-01)	4.22E+00 (1.80E-01)	3.36E+00 (1.61E-01)	2.87E+00 (1.49E-01)	2.25E+00 (1.32E-01)	1.85E+00 (1.20E-01)	1.50E+00 (1.08E-01)	1.02E+00 (9.99E-02)	7.17E-01 (7.44E-02)
10.0 /	5.33E-01 (6.41E-02)	3.52E-01 (5.71E-02)	1.86E-01 (3.02E-01)	4.93E-02 (1.95E-02)	7.11E-03 (7.11E-03)					

[POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 (0.00E+00)	2.12E-02 (8.56E-03)	5.05E-03 (4.18E-03)	2.42E-02 (9.15E-03)	3.65E-02 (1.12E-02)	3.46E-02 (1.09E-02)				
1.0 /	1.13E-02 (6.25E-03)	1.64E-02 (7.53E-03)	0.00E+00 (0.00E+00)	3.46E-02 (1.09E-02)	8.72E-02 (1.74E-02)	2.26E+00 (8.84E-02)	3.72E+00 (1.16E-01)	3.88E+00 (1.16E-01)	4.08E+00 (1.19E-01)	4.12E+00 (1.19E-01)
2.0 /	4.40E+00 (1.23E-01)	4.40E+00 (1.23E-01)	4.74E+00 (1.28E-01)	4.58E+00 (1.26E-01)	4.58E+00 (1.28E-01)	5.00E+00 (1.31E-01)	4.77E+00 (1.28E-01)	5.04E+00 (1.32E-01)	5.09E+00 (1.33E-01)	
3.0 /	5.34E+00 (1.36E-01)	5.24E+00 (1.35E-01)	5.04E+00 (1.32E-01)	5.03E+00 (1.32E-01)	5.26E+00 (1.35E-01)	4.96E+00 (1.31E-01)	5.03E+00 (1.32E-01)	4.81E+00 (1.29E-01)	4.73E+00 (1.28E-01)	4.82E+00 (1.29E-01)
4.0 /	4.62E+00 (1.26E-01)	4.56E+00 (1.26E-01)	4.49E+00 (1.25E-01)	4.35E+00 (1.23E-01)	4.86E+00 (1.30E-01)	5.30E+00 (1.35E-01)	4.86E+00 (1.30E-01)	4.59E+00 (1.26E-01)	4.05E+00 (1.29E-01)	4.59E+00 (1.26E-01)
5.0 /	4.72E+00 (1.48E-01)	4.90E+00 (1.50E-01)	5.14E+00 (1.54E-01)	5.07E+00 (1.53E-01)	5.04E+00 (1.53E-01)	5.13E+00 (1.54E-01)	5.25E+00 (1.56E-01)	5.15E+00 (1.54E-01)	4.73E+00 (1.48E-01)	3.88E+00 (1.34E-01)
6.0 /	3.42E+00 (1.26E-01)	3.55E+00 (1.28E-01)	3.46E+00 (1.26E-01)	3.47E+00 (1.27E-01)	3.71E+00 (1.31E-01)	3.67E+00 (1.30E-01)	3.58E+00 (1.29E-01)	3.52E+00 (1.27E-01)	3.46E+00 (1.30E-01)	3.66E+00 (1.30E-01)
7.0 /	3.81E+00 (1.33E-01)	4.04E+00 (1.37E-01)	4.05E+00 (1.37E-01)	4.24E+00 (1.40E-01)	4.36E+00 (1.42E-01)	4.43E+00 (1.43E-01)	4.61E+00 (1.46E-01)	4.81E+00 (1.49E-01)	5.07E+00 (1.53E-01)	5.45E+00 (1.59E-01)
8.0 /	5.94E+00 (1.66E-01)	6.51E+00 (1.73E-01)	6.83E+00 (1.78E-01)	7.07E+00 (1.81E-01)	7.65E+00 (1.88E-01)	7.02E+00 (1.80E-01)	6.64E+00 (1.75E-01)	5.60E+00 (1.61E-01)	4.38E+00 (1.42E-01)	3.70E+00 (1.31E-01)
9.0 /	2.69E+00 (1.11E-01)	1.84E+00 (9.22E-02)	1.32E+00 (7.00E-02)	1.00E+00 (6.81E-02)	7.24E-01 (5.78E-02)	4.85E-01 (4.73E-02)	2.45E-01 (3.36E-02)	1.59E-01 (2.71E-02)	2.53E-02 (1.08E-02)	1.85E-02 (9.24E-03)
10.0 /	5.93E-03 (5.23E-03)									

600 - 16 N [R(EV)]

##### 7Li(p,t)		DDX (error)		Ep = 14 MeV		LAB. ANGLE = 40 deg		[POL = NON]						
energy	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	
0.0 /	0.00E+00	(0.00E+00)	0.00E+00	(0.00E+00)	0.00E+00	(0.00E+00)	9.73E-04	(1.83E-03)	6.91E-03	(4.89E-03)	2.23E-02	(8.78E-03)	3.46E-02	(1.09E-02)
1.0 /	1.04E-02	(5.98E-03)	0.00E+00	(0.00E+00)	6.10E-03	(4.59E-03)	3.89E-02	(1.16E-02)	9.01E-02	(1.76E-02)	9.77E+00	(8.26E-02)	3.45E+00	(1.00E-01)
2.0 /	4.32E+00	(1.32E-01)	4.24E+00	(1.21E-01)	4.28E+00	(1.22E-01)	4.60E+00	(1.26E-01)	4.69E+00	(1.27E-01)	4.72E+00	(1.28E-01)	4.70E+00	(1.28E-01)
3.0 /	4.12E+00	(1.28E-01)	5.05E+00	(1.32E-01)	5.30E+00	(1.35E-01)	4.82E+00	(1.29E-01)	4.72E+00	(1.28E-01)	5.04E+00	(1.32E-01)	4.87E+00	(1.30E-01)
4.0 /	4.42E+00	(1.24E-01)	4.34E+00	(1.22E-01)	4.20E+00	(1.21E-01)	4.16E+00	(1.20E-01)	4.90E+00	(1.30E-01)	5.42E+00	(1.37E-01)	4.71E+00	(1.26E-01)
5.0 /	4.17E+00	(1.20E-01)	4.69E+00	(1.27E-01)	4.27E+00	(1.22E-01)	3.75E+00	(1.14E-01)	3.23E+00	(1.06E-01)	7.94E+00	(1.01E-01)	2.81E+00	(9.97E-02)
6.0 /	3.29E+00	(1.07E-01)	3.37E+00	(1.08E-01)	3.30E+00	(1.07E-01)	3.46E+00	(1.10E-01)	3.85E+00	(1.16E-01)	3.72E+00	(1.13E-01)	4.09E+00	(1.19E-01)
7.0 /	4.07E+00	(1.30E-01)	5.18E+00	(1.34E-01)	5.65E+00	(1.40E-01)	6.32E+00	(1.48E-01)	6.87E+00	(1.54E-01)	7.30E+00	(1.59E-01)	8.25E+00	(1.69E-01)
8.0 /	7.39E+00	(1.64E-01)	6.71E+00	(1.52E-01)	5.23E+00	(1.35E-01)	3.90E+00	(1.16E-01)	2.86E+00	(9.95E-02)	9.19E+00	(8.14E-02)	1.49E+00	(7.19E-02)
9.0 /	1.78E-01	(2.52E-02)	4.78E-02	(1.29E-02)	1.74E-02	(7.76E-03)					9.25E-01	(5.66E-02)	5.05E-01	(4.18E-02)

[POL = NON]										
energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00	(0.00E+00)	5.19E-03	(3.00E-03)						
1.0 /	1.99E-02	(5.07E-03)	2.50E-03	(2.11E-03)	1.73E-03	(1.73E-03)	1.91E-02	(5.75E-03)	7.56E-02	(1.14E-02)
2.0 /	4.11E+00	(8.43E-02)	4.20E+00	(8.53E-02)	4.40E+00	(8.72E-02)	4.49E+00	(8.81E-02)	4.60E+00	(8.92E-02)
3.0 /	4.88E+00	(9.19E-02)	4.65E+00	(8.97E-02)	4.95E+00	(9.25E-02)	4.84E+00	(9.15E-02)	4.64E+00	(8.96E-02)
4.0 /	4.07E+00	(8.39E-02)	3.95E+00	(8.27E-02)	3.86E+00	(8.17E-02)	3.60E+00	(7.90E-02)	4.04E+00	(8.36E-02)
5.0 /	2.60E+00	(6.71E-02)	2.59E+00	(6.70E-02)	2.57E+00	(6.67E-02)	2.51E+00	(6.59E-02)	2.65E+00	(6.77E-02)
6.0 /	3.21E+00	(7.46E-02)	3.33E+00	(7.59E-02)	3.38E+00	(7.66E-02)	3.63E+00	(7.93E-02)	3.71E+00	(8.02E-02)
7.0 /	6.39E+00	(1.05E-01)	5.57E+00	(1.07E-01)	6.35E+00	(1.05E-01)	5.72E+00	(9.95E-02)	4.99E+00	(9.30E-02)
8.0 /	7.25E-01	(3.54E-02)	4.18E-01	(2.69E-02)	2.48E-01	(2.07E-02)	1.54E-01	(1.63E-02)	4.97E-02	(9.28E-03)

7Li(p,t) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 70 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }	2.53E-03 { 2.09E-03 }	1.04E-02 { 4.75E-03 }	2.34E-02 { 6.36E-03 }	0.00E+00 { 0.00E+00 }					
1.0 /	0.00E+00 { 0.00E+00 }	5.35E-01 { 3.04E-02 }	3.51E+00 { 7.19E-02 }	3.62E+00 { 7.92E-02 }	3.78E+00 { 8.03E-02 }					
2.0 /	3.76E+00 { 8.07E-02 }	3.94E+00 { 8.26E-02 }	3.96E+00 { 8.28E-02 }	3.94E+00 { 8.26E-02 }	3.78E+00 { 8.31E-02 }	3.78E+00 { 8.09E-02 }	3.69E+00 { 7.99E-02 }	3.63E+00 { 7.92E-02 }	3.74E+00 { 8.05E-02 }	3.49E+00 { 7.77E-02 }
3.0 /	3.21E+00 { 7.46E-02 }	3.13E+00 { 7.36E-02 }	2.93E+00 { 7.12E-02 }	2.72E+00 { 6.82E-02 }	2.35E+00 { 6.38E-02 }	1.95E+00 { 5.81E-02 }	1.77E+00 { 5.53E-02 }	1.73E+00 { 5.47E-02 }	1.76E+00 { 5.52E-02 }	1.72E+00 { 5.46E-02 }
4.0 /	1.71E+00 { 5.44E-02 }	1.62E+00 { 5.30E-02 }	1.81E+00 { 5.59E-02 }	2.25E+00 { 6.74E-02 }	1.89E+00 { 5.73E-02 }	1.82E+00 { 5.61E-02 }	1.70E+00 { 5.43E-02 }	1.59E+00 { 5.25E-02 }	1.64E+00 { 5.33E-02 }	1.59E+00 { 5.24E-02 }
5.0 /	1.65E+00 { 5.34E-02 }	1.73E+00 { 5.47E-02 }	1.80E+00 { 5.58E-02 }	1.91E+00 { 5.74E-02 }	1.93E+00 { 5.77E-02 }	1.96E+00 { 5.82E-02 }	2.10E+00 { 6.03E-02 }	2.04E+00 { 5.94E-02 }	1.79E+00 { 5.57E-02 }	1.65E+00 { 5.34E-02 }
6.0 /	1.15E+00 { 4.45E-02 }	8.93E-01 { 3.93E-02 }	7.32E-01 { 3.56E-02 }	4.94E-01 { 2.92E-02 }	3.82E-01 { 2.57E-02 }	2.14E-01 { 1.92E-02 }	1.54E-01 { 1.63E-02 }	8.21E-02 { 1.19E-02 }	2.36E-02 { 6.38E-03 }	9.24E-03 { 4.00E-03 }
7.0 /	4.50E-03 { 2.81E-03 }									

7Li(p,t) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 80 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }	5.13E-03 { 2.97E-03 }	1.25E+02 { 4.65E-03 }	9.96E-03 { 4.14E-03 }						
1.0 /	5.17E-03 { 2.99E-03 }	1.72E-03 { 1.72E-03 }	0.00E+00 { 0.00E+00 }	1.52E-03 { 2.47E-03 }	6.23E-02 { 1.04E-02 }	1.95E+00 { 5.81E-02 }	3.35E+00 { 7.60E-02 }	3.38E+00 { 7.64E-02 }	3.50E+00 { 7.77E-02 }	3.59E+00 { 7.87E-02 }
2.0 /	3.50E+00 { 7.76E-02 }	3.35E+00 { 7.61E-02 }	3.41E+00 { 7.67E-02 }	3.24E+00 { 7.47E-02 }	2.97E+00 { 7.15E-02 }	2.96E+00 { 7.15E-02 }	2.74E+00 { 6.68E-02 }	2.66E+00 { 6.77E-02 }	2.18E+00 { 6.14E-02 }	1.89E+00 { 5.71E-02 }
3.0 /	1.74E+00 { 5.48E-02 }	1.68E+00 { 5.38E-02 }	1.57E+00 { 5.21E-02 }	1.60E+00 { 5.26E-02 }	1.65E+00 { 5.34E-02 }	1.56E+00 { 5.09E-02 }	1.45E+00 { 5.01E-02 }	1.53E+00 { 5.13E-02 }	1.62E+00 { 5.28E-02 }	1.40E+00 { 4.92E-02 }
4.0 /	1.34E+00 { 4.81E-02 }	1.39E+00 { 4.90E-02 }	1.25E+00 { 4.64E-02 }	1.29E+00 { 4.71E-02 }	1.39E+00 { 4.87E-02 }	1.48E+00 { 5.06E-02 }	1.44E+00 { 4.98E-02 }	1.31E+00 { 4.76E-02 }	1.25E+00 { 4.65E-02 }	1.36E+00 { 4.86E-02 }
5.0 /	1.20E+00 { 4.56E-02 }	1.07E+00 { 4.29E-02 }	8.97E-01 { 3.94E-02 }	6.71E-01 { 3.41E-02 }	5.19E-01 { 3.00E-02 }	4.20E-01 { 2.69E-02 }	3.09E-01 { 2.31E-02 }	2.01E-01 { 1.86E-02 }	1.18E-01 { 1.43E-02 }	6.79E-02 { 1.08E-02 }
6.0 /	2.27E-02 { 6.27E-03 }	1.19E-02 { 4.54E-03 }	6.15E-03 { 3.26E-03 }							

7Li(p,t) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 90 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }	1.72E-03 { 1.72E-03 }	0.00E+00 { 0.00E+00 }	3.06E-03 { 2.28E-03 }	5.62E-03 { 3.11E-03 }					
1.0 /	1.72E-03 { 1.72E-03 }	0.00E+00 { 0.00E+00 }	2.64E-03 { 2.13E-03 }	4.26E-03 { 2.71E-03 }	4.59E-02 { 8.89E-03 }	1.77E+00 { 5.53E-02 }	2.81E+00 { 6.97E-02 }	2.92E+00 { 7.09E-02 }	2.97E+00 { 7.15E-02 }	2.67E+00 { 7.03E-02 }
2.0 /	2.81E+00 { 6.96E-02 }	2.65E+00 { 6.76E-02 }	2.51E+00 { 6.57E-02 }	2.00E+00 { 5.87E-02 }	1.78E+00 { 5.54E-02 }	1.61E+00 { 5.27E-02 }	1.57E+00 { 5.15E-02 }	1.37E+00 { 4.86E-02 }	1.44E+00 { 4.98E-02 }	1.44E+00 { 4.98E-02 }
3.0 /	1.42E+00 { 4.95E-02 }	1.38E+00 { 4.87E-02 }	1.37E+00 { 4.86E-02 }	1.31E+00 { 4.76E-02 }	1.39E+00 { 4.89E-02 }	1.33E+00 { 4.78E-02 }	1.21E+00 { 4.57E-02 }	1.20E+00 { 4.55E-02 }	1.10E+00 { 4.35E-02 }	
4.0 /	1.13E+00 { 4.41E-02 }	1.17E+00 { 4.49E-02 }	1.10E+00 { 4.36E-02 }	1.05E+00 { 4.26E-02 }	9.90E-01 { 4.13E-02 }	8.26E-01 { 3.77E-02 }	7.17E-01 { 3.21E-02 }	4.01E-01 { 2.63E-02 }	3.32E-01 { 2.39E-02 }	2.00E-01 { 1.86E-02 }
5.0 /	1.69E-01 { 1.71E-02 }	9.47E-02 { 1.28E-02 }	4.52E-02 { 8.93E-03 }	1.72E-02 { 5.45E-03 }	2.61E-03 { 2.12E-03 }	3.49E-03 { 2.45E-03 }	.52E-03 { 2.09E-03 }			

7Li(p,t) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 100 deg [POL = NON]

energy/	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0 /	0.00E+00 { 0.00E+00 }	2.12E-03 { 1.91E-03 }	3.89E-03 { 2.59E-03 }	2.61E-03 { 2.12E-03 }	5.17E-03 { 2.99E-03 }					
1.0 /	1.73E-03 { 1.73E-03 }	8.79E-04 { 1.23E-03 }	0.46E-04 { 1.21E-03 }	3.45E-03 { 2.44E-03 }	7.21E-02 { 1.12E-02 }	1.83E+00 { 5.62E-02 }	2.84E+00 { 7.00E-02 }	2.64E+00 { 6.75E-02 }	2.37E+00 { 6.40E-02 }	2.03E+00 { 5.92E-02 }
2.0 /	1.55E+00 { 5.14E-02 }	1.32E+00 { 4.78E-02 }	1.34E+00 { 4.81E-02 }	1.47E+00 { 5.03E-02 }	1.43E+00 { 4.97E-02 }	1.38E+00 { 4.88E-02 }	1.27E+00 { 4.67E-02 }	1.41E+00 { 4.92E-02 }	1.35E+00 { 4.82E-02 }	1.37E+00 { 4.86E-02 }
3.0 /	1.40E+00 { 4.91E-02 }	1.26E+00 { 4.66E-02 }	1.22E+00 { 4.58E-02 }	1.21E+00 { 4.57E-02 }	1.18E+00 { 4.51E-02 }	1.23E+00 { 4.60E-02 }	1.27E+00 { 4.67E-02 }	1.14E+00 { 4.43E-02 }	1.17E+00 { 4.50E-02 }	9.07E-01 { 3.96E-02 }
4.0 /	6.89E-01 { 3.45E-02 }	5.44E-01 { 3.06E-02 }	3.59E-01 { 2.49E-02 }	2.50E-01 { 2.08E-02 }	3.58E-01 { 2.49E-02 }	2.27E-01 { 1.98E-02 }	4.28E-02 { 6.59E-03 }	2.62E-02 { 6.72E-03 }	7.82E-03 { 3.67E-03 }	

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##### 7Li(p,t) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 110 deg [ POL = NON ]
energy/ 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9
0.0 / 0.00E+00 ( 0.00E+00) 5.17E-03 ( 2.99E-03) 5.17E-03 ( 2.99E-03) 1.72E-03 ( 1.72E-03)
1.0 / 1.72E-03 ( 1.72E-03) 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 6.90E-03 ( 3.45E-03) 6.06E-02 ( 1.02E-02) 1.50E+00 ( 5.09E-02) 1.76E+00 ( 5.51E-02) 1.41E+00 ( 4.94E-02) 1.39E+00 ( 4.90E-02) 1.34E+00 ( 4.81E-02)
2.0 / 1.30E+00 ( 4.74E-02) 1.36E+00 ( 4.84E-02) 1.33E+00 ( 4.79E-02) 1.37E+00 ( 4.86E-02) 1.37E+00 ( 4.86E-02) 1.38E+00 ( 4.88E-02) 1.33E+00 ( 4.79E-02) 1.26E+00 ( 4.66E-02) 1.28E+00 ( 4.69E-02) 1.23E+00 ( 4.61E-02)
3.0 / 1.24E+00 ( 4.43E-02) 1.32E+00 ( 4.78E-02) 1.36E+00 ( 4.84E-02) 1.26E+00 ( 4.66E-02) 1.12E+00 ( 4.39E-02) 8.32E-01 ( 3.79E-02) 6.05E-01 ( 3.23E-02) 4.81E-01 ( 2.88E-02) 2.61E-01 ( 2.12E-02) 1.78E-01 ( 1.75E-02)
4.0 / 2.30E-01 ( 1.99E-02) 1.29E-01 ( 1.49E-02) 2.06E-02 ( 5.96E-03) 7.26E-03 ( 3.54E-03) 1.19E-02 ( 4.53E-03) 3.62E-04 ( 7.90E-04)

##### 7Li(p,t) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 120 deg [ POL = NON ]
energy/ 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9
0.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 3.44E-03 ( 2.43E-03) 1.72E-03 ( 1.72E-03) 1.72E-03 ( 1.72E-03) 1.72E-03 ( 1.72E-03) 0.00E+00 ( 0.00E+00)
1.0 / 1.72E-03 ( 1.72E-03) 1.72E-03 ( 1.72E-03) 0.00E+00 ( 0.00E+00) 1.72E-03 ( 1.72E-03) 2.58E-02 ( 6.66E-03) 8.28E-01 ( 3.77E-02) 1.30E+00 ( 4.73E-02) 1.30E+00 ( 4.72E-02) 1.36E+00 ( 4.84E-02) 1.32E+00 ( 4.77E-02)
2.0 / 1.37E+00 ( 4.85E-02) 1.36E+00 ( 4.83E-02) 1.38E+00 ( 4.86E-02) 1.36E+00 ( 4.84E-02) 1.24E+00 ( 4.63E-02) 1.36E+00 ( 4.84E-02) 1.34E+00 ( 4.81E-02) 1.43E+00 ( 4.95E-02) 1.53E+00 ( 5.13E-02) 1.54E+00 ( 5.15E-02)
3.0 / 1.29E+00 ( 4.71E-02) 8.97E-01 ( 3.93E-02) 6.77E-01 ( 3.41E-02) 4.93E-01 ( 2.91E-02) 2.74E-01 ( 2.17E-02) 1.41E-01 ( 1.55E-02) 8.75E-02 ( 1.23E-02) 1.53E-01 ( 1.62E-02) 3.56E-02 ( 7.83E-03) 1.18E-02 ( 4.50E-03)
4.0 / 7.44E-03 ( 3.58E-03)

##### 7Li(p,t) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 130 deg [ POL = NON ]
energy/ 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9
0.0 / 0.00E+00 ( 0.00E+00) 1.72E-03 ( 1.72E-03) 0.00E+00 ( 0.00E+00)
1.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 3.45E-03 ( 2.44E-03) 2.72E-02 ( 6.85E-03) 7.93E-01 ( 3.70E-02) 1.31E+00 ( 4.76E-02) 1.34E+00 ( 4.81E-02) 1.38E+00 ( 4.89E-02) 1.35E+00 ( 4.83E-02)
2.0 / 1.40E+00 ( 4.91E-02) 1.37E+00 ( 4.87E-02) 1.36E+00 ( 4.85E-02) 1.51E+00 ( 5.10E-02) 1.65E+00 ( 5.33E-02) 1.67E+00 ( 5.36E-02) 1.62E+00 ( 5.29E-02) 1.35E+00 ( 4.83E-02) 9.85E-01 ( 4.12E-02) 6.67E-01 ( 3.39E-02)
3.0 / 4.46E-01 ( 2.77E-02) 2.74E-01 ( 2.17E-02) 1.01E-01 ( 1.32E-02) 5.95E-02 ( 1.01E-02) 8.56E-02 ( 1.21E-02) 2.88E-02 ( 7.05E-03) 2.93E-03 ( 2.25E-03) 5.74E-03 ( 3.15E-03)

##### 7Li(p,t) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 140 deg [ POL = NON ]
energy/ 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9
0.0 / 0.00E+00 ( 0.00E+00) 1.72E-03 ( 1.72E-03)
1.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 4.73E-02 ( 9.03E-03) 8.63E-01 ( 3.86E-02) 1.35E+00 ( 4.93E-02) 1.35E+00 ( 4.82E-02) 1.48E+00 ( 5.05E-02) 1.43E+00 ( 4.96E-02)
2.0 / 1.42E+00 ( 4.95E-02) 1.67E+00 ( 5.37E-02) 1.71E+00 ( 5.43E-02) 1.81E+00 ( 5.58E-02) 1.64E+00 ( 5.31E-02) 1.31E+00 ( 4.75E-02) 8.94E-01 ( 3.93E-02) 5.62E-01 ( 3.11E-02) 3.05E-01 ( 2.29E-02) 1.51E-01 ( 1.61E-02)
3.0 / 7.44E-02 ( 1.13E-02) 3.85E-02 ( 8.19E-03) 8.26E-02 ( 1.19E-02) 1.81E-02 ( 5.58E-03) 1.03E-02 ( 4.22E-03) 6.90E-03 ( 3.45E-03) 3.45E-03 ( 2.44E-03)

##### 7Li(p,t) DDX (error) #### Ep = 14 MeV LAB.ANGLE = 150 deg [ POL = NON ]
energy/ 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9
0.0 / 0.00E+00 ( 0.00E+00) 1.72E-03 ( 1.72E-03)
1.0 / 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 4.07E-02 ( 8.38E-03) 8.67E-01 ( 3.87E-02) 1.43E+00 ( 4.97E-02) 1.47E+00 ( 5.03E-02) 1.56E+00 ( 5.19E-02) 1.61E+00 ( 5.27E-02)
2.0 / 1.74E+00 ( 5.48E-02) 1.90E+00 ( 5.72E-02) 1.89E+00 ( 5.71E-02) 1.46E+00 ( 5.01E-02) 9.29E-01 ( 4.00E-02) 5.83E-01 ( 3.17E-02) 3.16E-01 ( 2.33E-02) 1.76E-01 ( 1.74E-02) 4.58E-02 ( 8.89E-03) 4.44E-02 ( 8.76E-03)
3.0 / 4.83E-02 ( 9.13E-03) 2.63E-02 ( 6.74E-03) 9.07E-03 ( 3.95E-03) 8.83E-03 ( 3.90E-03) 9.31E-03 ( 4.01E-03)

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##### 7Li(p,t) DDX (error) ### Ep = 14 MeV LAB. ANGLE = 160 deg [ POL = NON ]
energy/    0.0      0.1      0.2      0.3      0.4      0.5      0.6      0.7      0.8      0.9
0.0 / 0.00E+00 ( 0.00E+00) 1.71E-03 ( 1.71E-03) 0.00E+00 ( 0.00E+00)
1.0 / 3.42E-03 ( 2.42E-03) 0.00E+00 ( 0.00E+00) 1.31E-03 ( 1.49E-03) 3.82E-03 ( 2.55E-03) 5.59E-02 ( 9.77E-03) 9.42E-01 ( 4.01E-02) 1.46E+00 ( 4.99E-02) 1.55E+00 ( 5.15E-02) 1.67E+00 ( 5.34E-02) 1.80E+00 ( 5.55E-02)
2.0 / 1.85E+00 ( 5.63E-02) 1.78E+00 ( 5.49E-02) 1.26E+00 ( 4.64E-02) 8.81E-01 ( 3.88E-02) 4.89E-01 ( 2.89E-02) 2.60E-01 ( 2.11E-02) 9.04E-02 ( 1.24E-02) 3.69E-02 ( 7.93E-03) 3.98E-02 ( 8.24E-03) 2.87E-02 ( 7.00E-03)
3.0 / 1.30E-02 ( 4.72E-03) 1.18E-02 ( 4.48E-03) 4.05E-03 ( 2.63E-03) 2.38E-04 ( 6.37E-04)
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##### 7Li(p,t) DDX (error) ### Ep = 14 MeV LAB. ANGLE = 165 deg [ POL = NON ]
energy/    0.0      0.1      0.2      0.3      0.4      0.5      0.6      0.7      0.8      0.9
0.0 / 0.00E+00 ( 0.00E+00) 1.72E-03 ( 1.72E-03) 0.00E+00 ( 0.00E+00) 3.45E-03 ( 2.44E-03)
1.0 / 1.72E-03 ( 1.72E-03) 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 0.00E+00 ( 0.00E+00) 3.84E-02 ( 8.14E-03) 9.00E-01 ( 3.94E-02) 1.40E+00 ( 4.92E-02) 1.40E+00 ( 4.91E-02) 1.81E+00 ( 5.59E-02) 1.93E+00 ( 5.76E-02)
2.0 / 1.89E+00 ( 5.70E-02) 1.50E+00 ( 5.09E-02) 1.08E+00 ( 4.32E-02) 6.51E-01 ( 3.35E-02) 3.37E-01 ( 2.41E-02) 1.57E-01 ( 1.65E-02) 4.57E-02 ( 8.88E-03) 1.72E-02 ( 5.45E-03) 5.47E-02 ( 9.71E-03) 3.75E-02 ( 8.04E-03)
3.0 / 1.13E-02 ( 4.41E-03)
```

Appendix 7-1 Differential cross sections and analyzing powers of the $^7\text{Li}(\text{p},\text{p}')^7\text{Li}^*$ reaction at 12 MeV.

^7Li ground (3/2 -)			^7Li 1st (0.478 MeV 1/2 -)			^7Li 2nd (4.63 MeV 7/2 -)		
θ c.m. (deg)	$d\sigma/d\Omega$ (mb/sr)	Analyzing Power	θ c.m. (deg)	$d\sigma/d\Omega$ (mb/sr)	Analyzing power	θ c.m. (deg)	$d\sigma/d\Omega$ (mb/sr)	Analyzing Power
22.7	423.6 ± 12.0	- 0.103 ± 0.036	22.8	11.3 ± 0.26	- 0.061 ± 0.017	23.7	10.8 ± 0.24	0.035 ± 0.014
34.0	261.7 ± 5.2	- 0.135 ± 0.007	34.1	9.22 ± 0.20	- 0.059 ± 0.014	35.4	9.80 ± 0.21	- 0.0085 ± 0.013
45.2	138.3 ± 2.8	- 0.205 ± 0.011	45.3	7.84 ± 0.16	- 0.076 ± 0.011	47.0	9.63 ± 0.21	- 0.064 ± 0.015
56.2	61.9 ± 1.2	- 0.261 ± 0.013	56.4	7.22 ± 0.15	- 0.075 ± 0.009	58.4	8.80 ± 0.18	- 0.110 ± 0.011
67.1	23.6 ± 0.48	- 0.271 ± 0.015	67.2	6.45 ± 0.13	- 0.129 ± 0.011	69.5	8.15 ± 0.17	- 0.150 ± 0.013
77.7	11.1 ± 0.23	0.092 ± 0.007	77.9	5.51 ± 0.11	- 0.165 ± 0.013	80.3	6.96 ± 0.15	- 0.122 ± 0.012
88.1	10.7 ± 0.22	0.352 ± 0.018	88.3	4.63 ± 0.097	- 0.218 ± 0.016	90.8	5.70 ± 0.12	- 0.083 ± 0.012
98.2	13.8 ± 0.28	0.305 ± 0.016	98.4	4.04 ± 0.085	- 0.216 ± 0.017	101.0	5.17 ± 0.31	- 0.0037 ± 0.098
108.2	15.2 ± 0.31	0.173 ± 0.011	108.4	3.60 ± 0.077	- 0.241 ± 0.016	111.0	5.01 ± 0.32	0.012 ± 0.105
117.8	14.7 ± 0.30	0.123 ± 0.009	118.0	3.30 ± 0.071	- 0.225 ± 0.016	120.5	5.01 ± 0.11	0.0064 ± 0.016
127.2	12.5 ± 0.26	0.148 ± 0.010	127.4	2.99 ± 0.065	- 0.186 ± 0.015	129.6	4.72 ± 0.11	0.047 ± 0.018
136.4	10.0 ± 0.21	0.235 ± 0.015	136.5	2.67 ± 0.059	- 0.169 ± 0.016	138.5	4.29 ± 0.09	0.090 ± 0.018
145.4	7.89 ± 0.16	0.424 ± 0.024	145.5	2.51 ± 0.055	- 0.126 ± 0.016	147.2	4.16 ± 0.17	0.0029 ± 0.065
154.2	6.97 ± 0.15	0.572 ± 0.031	154.3	2.50 ± 0.056	- 0.097 ± 0.016	155.6	3.58 ± 0.16	0.059 ± 0.078
162.9	6.60 ± 0.14	0.558 ± 0.031	162.9	2.48 ± 0.055	- 0.036 ± 0.016	163.8	3.44 ± 0.17	0.060 ± 0.085
167.2	6.90 ± 0.14	0.416 ± 0.024	167.2	2.54 ± 0.057	- 0.0095 ± 0.016	167.9	3.27 ± 0.17	0.042 ± 0.090

Appendix 7-2 Differential cross sections and analyzing powers of the ${}^7\text{Li}(\text{p},\text{p}'){}^7\text{Li}^*$ reaction at 16 MeV.

${}^7\text{Li}$ ground ($3/2^-$)				${}^7\text{Li}$ 1st ($0.478 \text{ MeV } 1/2^-$)				${}^7\text{Li}$ 2nd ($4.63 \text{ MeV } 7/2^-$)			
$\theta_{\text{c.m.}}$ (deg)	$d\sigma/d\Omega$ (mb/sr)	Analyzing Power	$\theta_{\text{c.m.}}$ (deg)	$d\sigma/d\Omega$ (mb/sr)	Analyzing power	$\theta_{\text{c.m.}}$ (deg)	$d\sigma/d\Omega$ (mb/sr)	Analyzing Power			
22.6	434.3	± 12.7	-	0.068	± 0.051	22.7	6.25	± 0.32	-	0.067	± 0.063
33.9	256.0	± 5.1	-	0.080	± 0.025	34.0	6.19	± 0.31	-	0.116	± 0.064
45.1	115.2	± 2.3	-	0.224	± 0.025	45.2	5.82	± 0.29	-	0.242	± 0.065
56.2	41.8	± 0.84	-	0.273	± 0.026	56.3	5.29	± 0.27	-	0.103	± 0.078
67.0	13.7	± 0.28	-	0.281	± 0.026	67.1	4.52	± 0.092	-	0.218	± 0.026
77.6	7.25	± 0.15	0.275	± 0.042	77.7	3.20	± 0.065	-	0.206	± 0.029	
88.0	8.00	± 0.16	0.468	± 0.027	88.1	2.34	± 0.049	-	0.217	± 0.026	
98.1	9.51	± 0.19	0.343	± 0.044	98.3	1.93	± 0.040	-	0.163	± 0.031	
108.0	9.47	± 0.19	0.185	± 0.026	108.1	1.71	± 0.036	-	0.118	± 0.027	
117.6	8.37	± 0.18	0.038	± 0.034	117.8	1.63	± 0.040	-	0.085	± 0.042	
127.0	6.45	± 0.13	0.041	± 0.025	127.1	1.43	± 0.031	-	0.039	± 0.027	
136.2	4.60	± 0.094	0.106	± 0.032	136.3	1.23	± 0.027	-	0.028	± 0.038	
145.2	3.33	± 0.069	0.415	± 0.027	145.3	1.07	± 0.024	0.018	0.018	± 0.027	
154.0	2.78	± 0.058	0.653	± 0.017	154.1	1.06	± 0.023	0.046	0.046	± 0.037	
162.7	2.92	± 0.061	0.642	± 0.029	162.7	1.14	± 0.025	0.023	0.023	± 0.026	
167.0	3.06	± 0.064	0.502	± 0.021	167.0	1.20	± 0.026	0.020	0.020	± 0.037	