

Abstract Submitted
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Two-Body Photodisintegration of ^3He , ^4He , and ^2He up to 1.5 GeV BARRY L. BERMAN, Department of Physics, The George Washington University for the CLAS Collaboration — We have obtained data on all of the photoreaction channels of ^3He and ^4He , from 0.35 to 1.5 GeV, using liquid targets, the Photon Tagger, and the CLAS in Hall B at Jefferson Lab. Our data for the three-body photodisintegration of ^3He and its evidence for three-body mechanisms have been published.¹ Here we report preliminary results for three other reaction channels as well as a more detailed analysis of the data of Ref. 1. Cross sections for the $^3\text{He}(\gamma, \text{dp})$ and $^4\text{He}(\gamma, \text{tp})$ reactions are compared with the model predictions of Laget² to throw further light on three-body mechanisms and reaffirm their importance. The angular distribution for $^4\text{He}(\gamma, \text{dd})$ shows no evidence for dipole reactions and the breaking of isospin symmetry, in contrast with earlier results at lower energies. And selecting only those $^3\text{He}(\gamma, \text{pp})\text{n}$ events where the neutron is a spectator enables us to study the two-body photodisintegration of ^2He , with surprising results, in preparation for an upcoming experiment³ on hard-pp quark-exchange processes.

¹ S. Niccolai *et al.*, Phys. Rev. C **70**, 064003 (2004)

² J-M. Laget, Pr. Comm. (2004)

³ R. Gilman *et al.*, JLab Expt. E03-101 (2003)

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