

Abstract Submitted  
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**Fluorescence Polarization of Helium Negative Ion Resonances Excited by Polarized Electron Impact**<sup>1</sup> T.J. GAY, J.W. MASEBERG, University of Nebraska — The helium triply-excited negative ion  $2s^22p^2P$  and  $2s2p^2^2D$  resonance states can autoionize to populate the singly excited  $3^3D$  level. Optical observation of interference from these resonant channels in the  $3^3D \rightarrow 2^3P$  587.5 nm transition is possible and measurements of the intensity and linear polarization fraction of this line are available [1-4]. In contrast to previous work, we utilize spin-polarized electrons and report the integrated Stokes parameters  $P_1$ ,  $P_2$ , and  $P_3$  in the 55-60 eV region. Our null result for  $P_2$  indicates that even though these resonances are long lived ( $\sim 200$  ps), magnetic forces acting on the temporarily-captured electron are negligible. Values of  $P_3$  show no statistically-significant variation from their asymptotic non-resonant levels.

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