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**Measuring the Parity-Violating Asymmetry of Aluminum in the $Q_{weak}$ Experiment**[1] KATHERINE MYERS, George Washington University, QWEAK COLLABORATION — The $Q_{weak}$ Collaboration at Jefferson Lab will perform the first direct measurement of the proton's weak charge, $Q_W^p$, to a precision of 4% by measuring the parity-violating asymmetry in elastic electron-proton scattering. At tree level, the weak mixing angle is related to the weak charge of the proton by $Q_W^p$=1-4sin$^2\,\theta_W$, leading to a 0.3% measurement of sin$^2\,\theta_W$ at low energy. To achieve these goals, systematic effects must be well understood and measured precisely. One of the largest corrections to the experimental asymmetry comes from elastic electron-Aluminum scattering in the target windows. This asymmetry must be measured directly in dedicated thick Aluminum target runs and measured to a relative precision of a few percent. The measurement of this asymmetry will provide the first extraction of the parity-violating elastic electron-Aluminum asymmetry. To extract this asymmetry, corrections for target contaminants (other nuclei present in the Aluminum alloy used), quasielastic scattering, and inelastic transitions must be considered. A discussion of the data quality from the first production run of the experiment as well as the mentioned corrections will be presented.

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