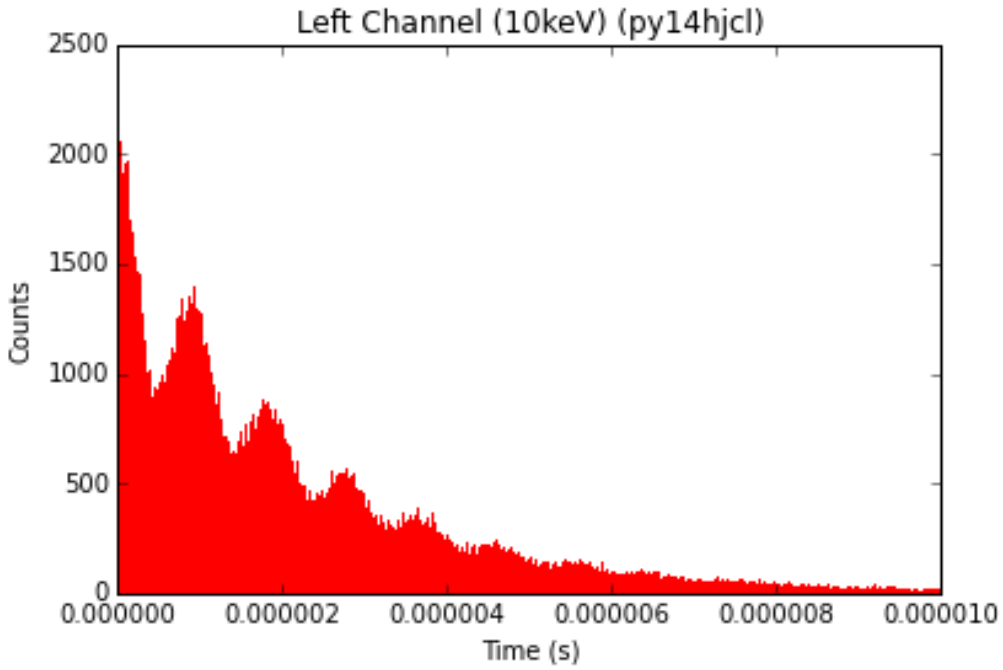
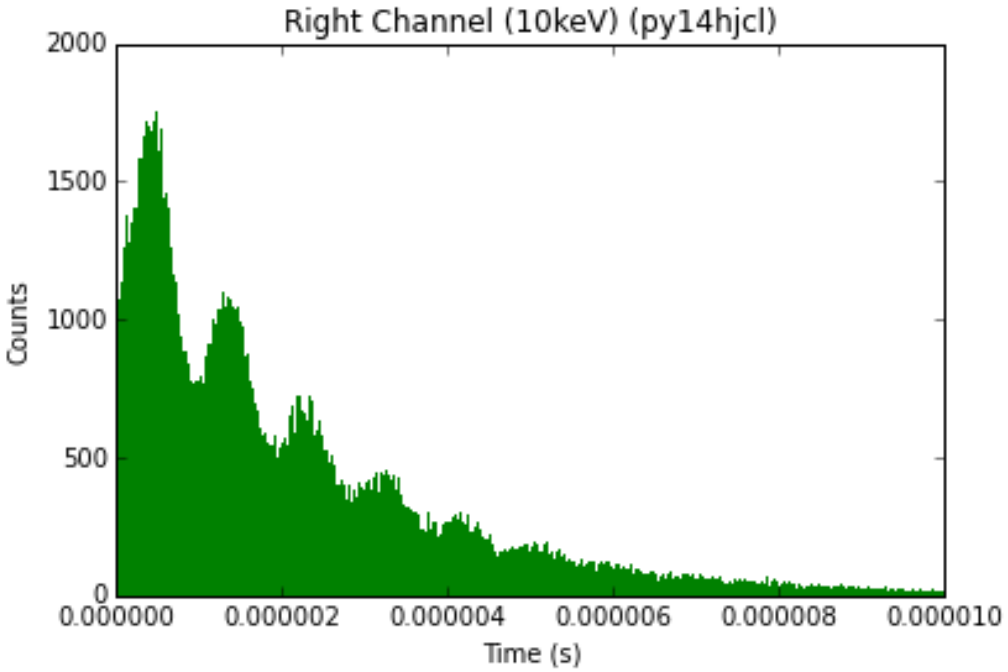
PHYS2320 Computing 2 Report (Henry Long - py14hjcl)

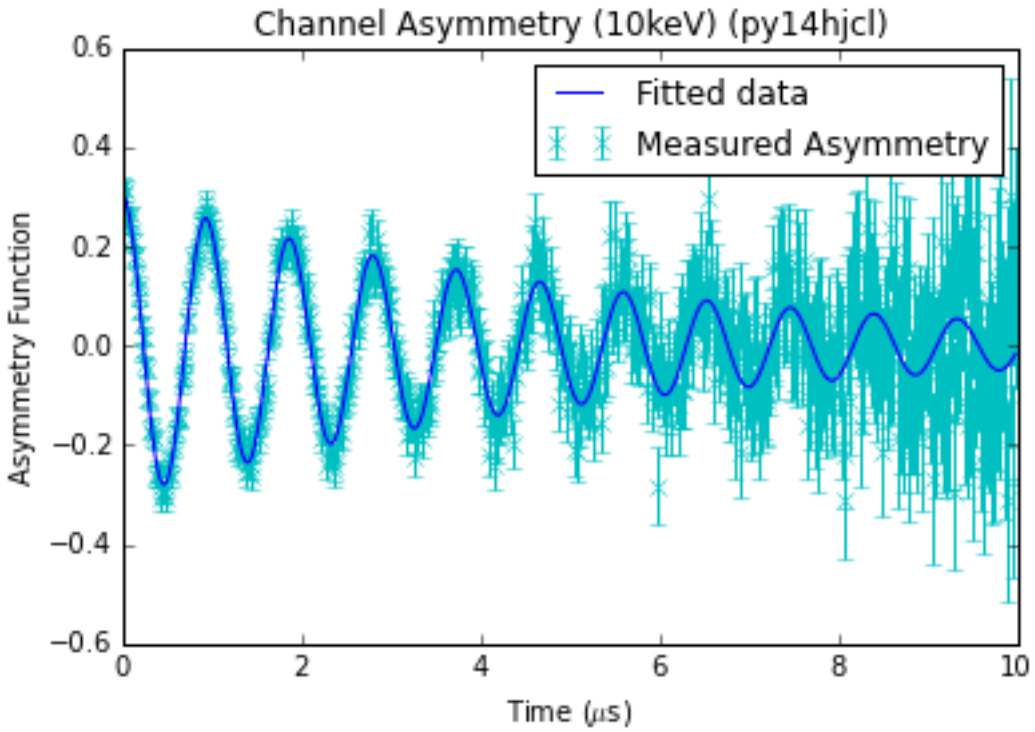
1 Part 1

1.1 10 keV Data



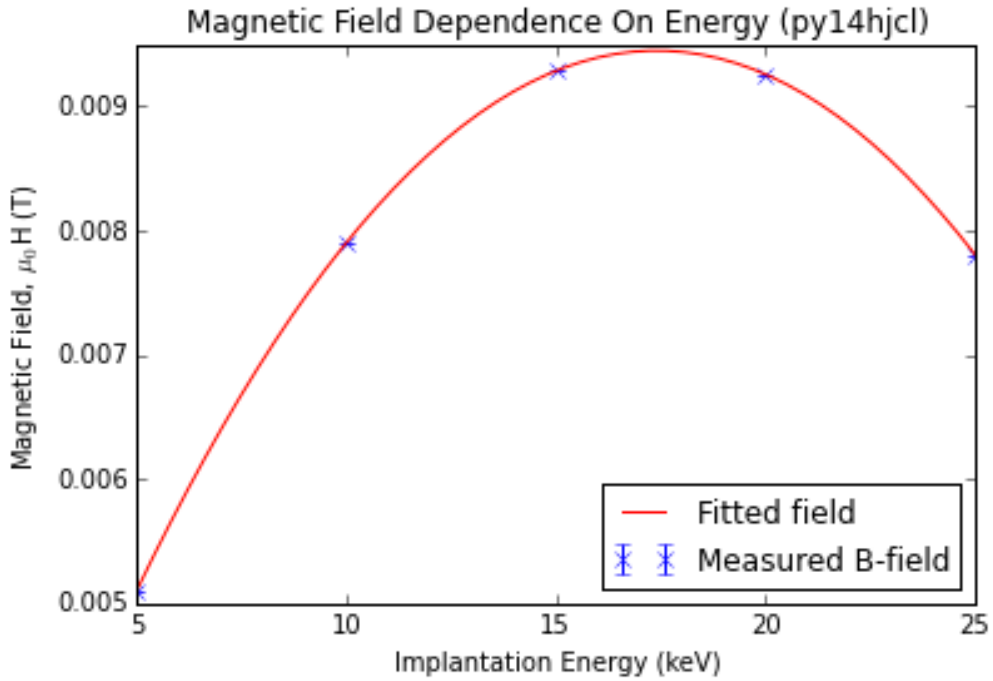


1.2 Asymmetry Plot



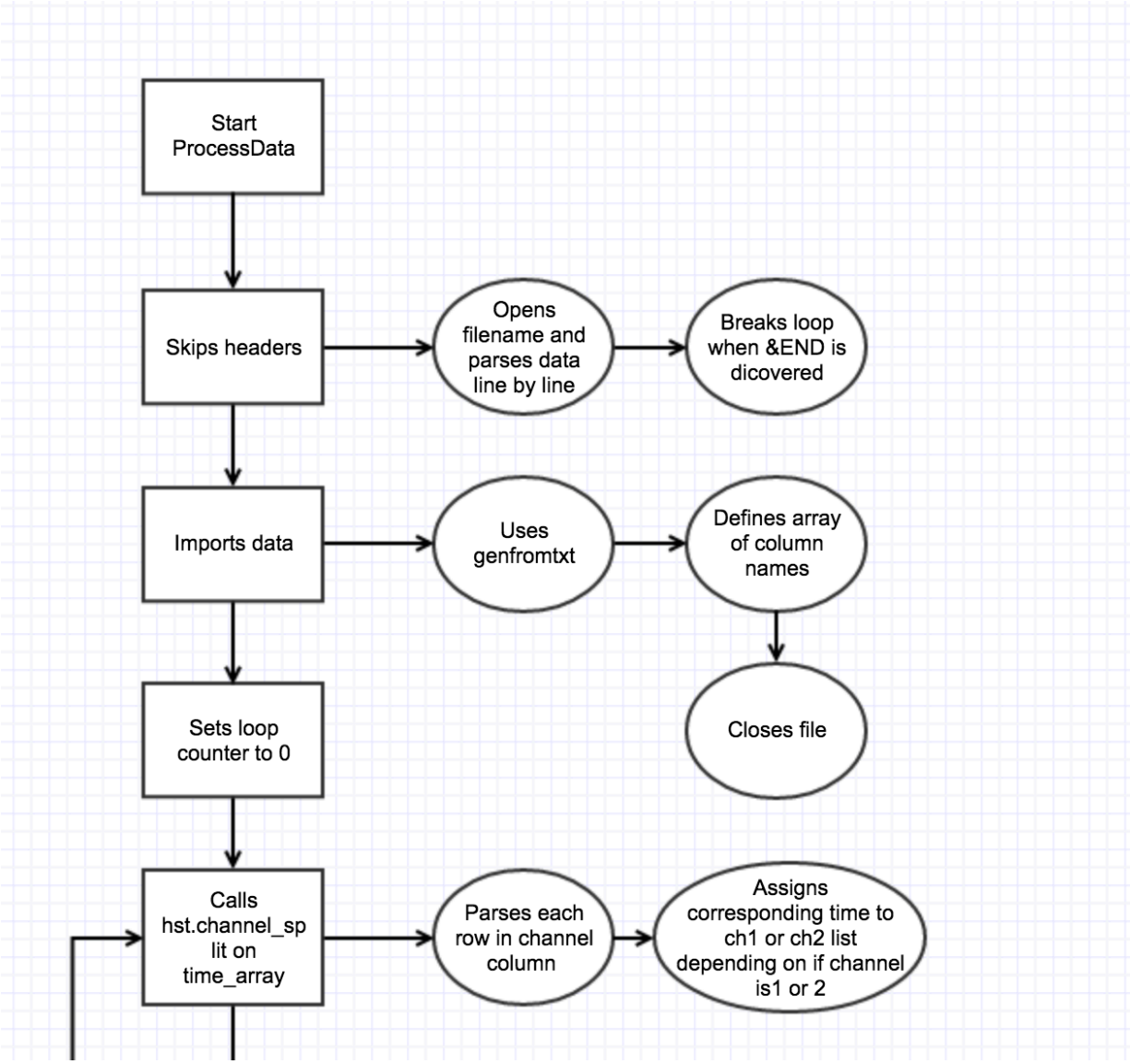
B = 7.902±0.006mT
β = 0.72±0.05rad
τ_{damp} = 5.4±0.2μs

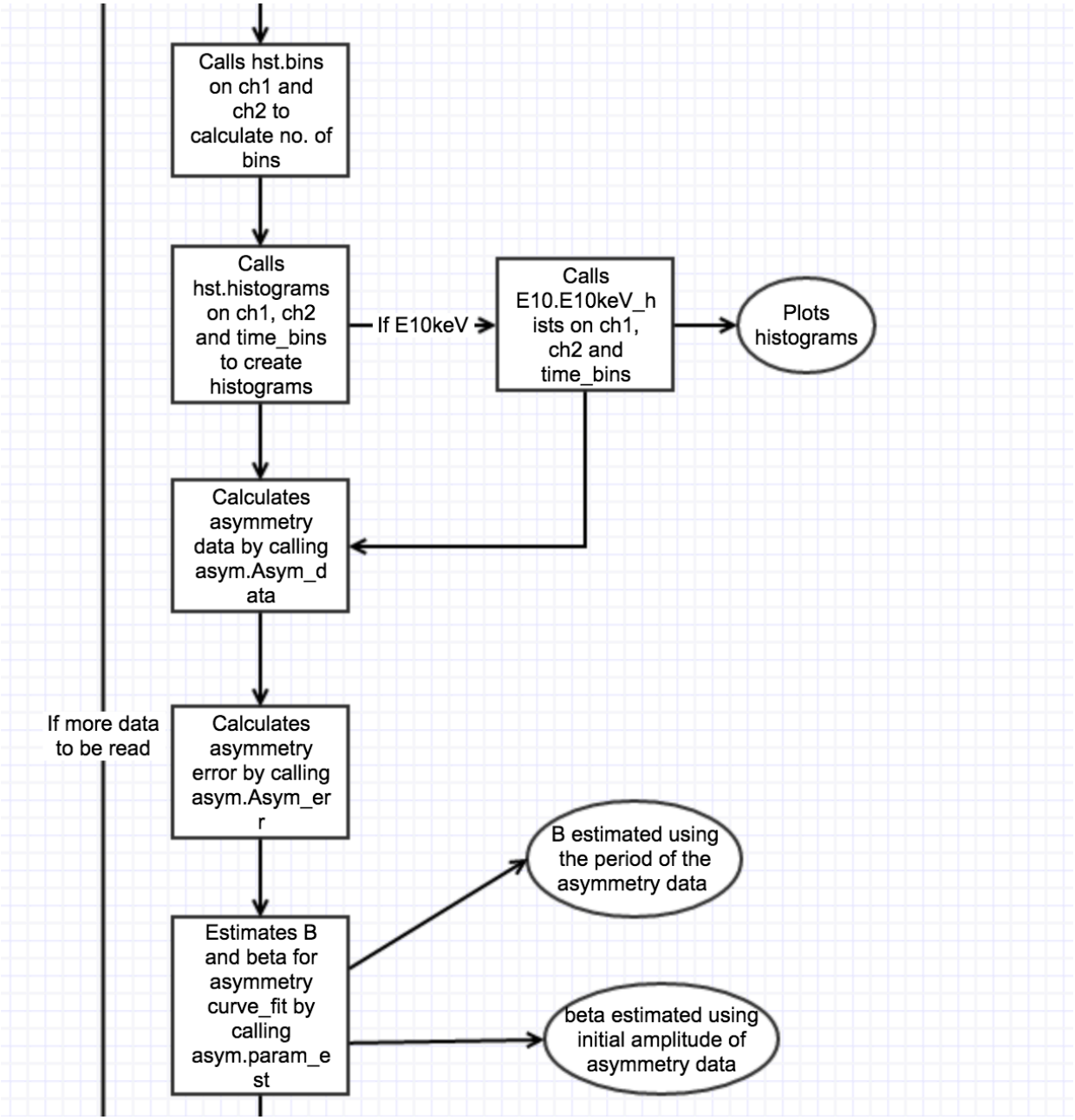
1.3 Multiple Energies

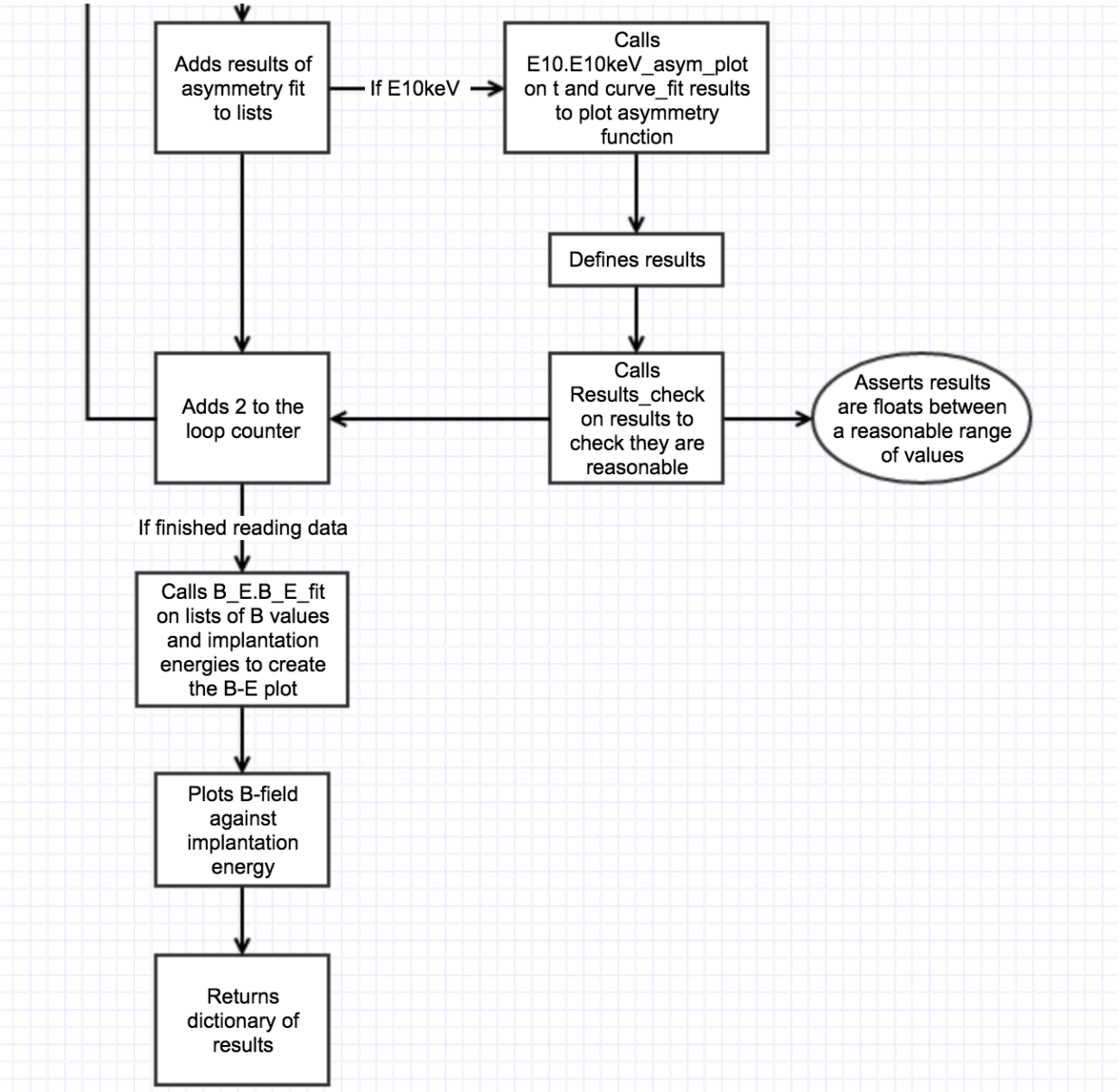


a = -28.31±0.02μTkeV^{-2}
b = 984.5±0.7μTkeV^{-1}
c = 889±5μT

2 Part 2
Flow Diagram




Calls hst.bins on ch1 and ch2 to calculate no. of bins
Calls hst.histograms on ch1, ch2 and time_bins to create histograms
If E10keV
Calls E10.E10keV_hists on ch1, ch2 and time_bins
Plots histograms
Calculates asymmetry data by calling asym.Asym_data
If more data to be read
Calculates asymmetry error by calling asym.Asym_err
B estimated using the period of the asymmetry data
Estimates B and beta for asymmetry curve_fit by calling asym.param_est
beta estimated using initial amplitude of asymmetry data


Adds results of asymmetry fit to lists
If E10keV
Calls E10.E10keV_asym_plot on t and curve_fit results to plot asymmetry function
Defines results
Calls Results_check on results to check they are reasonable
Asserts results are floats between a reasonable range of values
Adds 2 to the loop counter
If finished reading data
Calls B_E.B_E_fit on lists of B values and implantation energies to create the B-E plot
Plots B-field against implantation energy
Returns dictionary of results