Calibration Output

Fit to B:

```
[[15.38259852 16.32376991 22.79136017  0.69473671]]
Reduced χ^2:
9.773087679348862
Hessian:
[[ 1.46254840e+07 -2.61266489e+06 -4.77996000e+05 -8.02105155e+07]
 [-2.61266489e+06  4.73145331e+05  8.36924668e+04  1.41052105e+07]
 [-4.77996000e+05  8.36924668e+04  1.91219697e+04  2.58462153e+06]
 [-8.02105155e+07  1.41052105e+07  2.58462153e+06  4.51684397e+08]]
Covariance Matrix:
[[2.02545829e-03 6.26923449e-03 4.57864379e-03 1.37707037e-04]
 [6.26923449e-03 1.97238413e-02 1.39523498e-02 4.17521734e-04]
 [4.57864379e-03 1.39523498e-02 1.27571234e-02 3.04376715e-04]
 [1.37707037e-04 4.17521734e-04 3.04376715e-04 9.69569673e-06]]
Matrix of Correlation:
[[1.         0.99187538 0.90073871 0.98266383]
 [0.99187538 1.         0.87957976 0.95475914]
 [0.90073871 0.87957976 1.         0.86545708]
 [0.98266383 0.95475914 0.86545708 1.         ]]
Conditioned Hessian:
[[ 1.         -0.99318764 -0.90386345 -0.98686703]
 [-0.99318764  1.         0.87987864  0.96486099]
 [-0.90386345  0.87987864  1.         0.87945394]
 [-0.98686703  0.96486099  0.87945394  1.         ]]
Conditioned Hessian Eigenvalues:
[3.80597516e+00 1.58273488e-01 2.26022377e-04 3.55253288e-02]
```

Since the largest eigenvalue for the conditioned Hessian is ~ 1, and the next largest is four orders of magnitude less, the effective number of parameters is one, while the other three are negligible, comparatively.

Fit to B/A:

```
Best fit parameters (manual):
[[14.99186197 15.40430709 21.08623433  0.66223486]]
Reduced χ^2:
0.0017192739342586434
Hessian:
[[ 6.29000000e+02 -1.30445310e+02 -1.79661613e+01 -2.90292230e+03]
 [-1.30445310e+02  2.84197186e+01  3.65562462e+00  5.67114157e+02]
 [-1.79661613e+01  3.65562462e+00  7.60102675e-01  7.97080129e+01]
 [-2.90292230e+03  5.67114157e+02  7.97080129e+01  1.45727189e+04]]
Covariance Matrix:
[[1.15748945e-03 2.97892312e-03 2.36811060e-03 1.01693794e-04]
 [2.97892312e-03 7.98472891e-03 5.55109757e-03 2.52311365e-04]
 [2.36811060e-03 5.55109757e-03 1.10776908e-02 1.95114882e-04]
```

```
   [1.01693794e-04 2.52311365e-04 1.95114882e-04 9.48943640e-06]]
Matrix of Correlation:
[[1.         0.97987502 0.66133094 0.97032164]
 [0.97987502 1.         0.59023391 0.91661406]
 [0.66133094 0.59023391 1.         0.60179083]
 [0.97032164 0.91661406 0.60179083 1.        ]]
Conditioned Hessian:
[[ 1.        -0.97564823 -0.82166321 -0.95882599]
 [-0.97564823  1.         0.78653051  0.8812321 ]
 [-0.82166321  0.78653051  1.         0.75734813]
 [-0.95882599  0.8812321   0.75734813  1.        ]]
Conditioned Hessian Eigenvalues:
[3.59663476e+00 2.83928814e-01 1.59108187e-03 1.17845342e-01]
```

The result from fitting to B/A, compared to B is similar, but not quite the same. The difference is most obvious in the reduced χ^2 value.