Refer to the binary regression O-ring example from class.

1. Write down the expression for the working response $Z$ and the weights $W$ for complementary log-log link.

2. Carry out $k$ steps of the Fisher scoring algorithm using a weighted least squares algorithm until the estimates converge. Be sure to show your results at each step! Compare your standard errors and estimates to the Splus function.

3. Construct studentized Pearson and deviance residuals and Cook's distance for each case. Are there any cases that warrant further investigation or that appear to be surprising?

4. Compare the one-step approximations to Cook's distance (based on the CooksD function) to the exact expression obtained by refitting the model without the $i$th case for all data points.