<table>
<thead>
<tr>
<th>Likelihood Enhancements</th>
<th>duration</th>
<th>Who</th>
<th>Timescale</th>
</tr>
</thead>
<tbody>
<tr>
<td>- use C++ version of Minuit</td>
<td>3</td>
<td>Jim</td>
<td>DC2 closeout</td>
</tr>
<tr>
<td>- generate warning if required diffuse response component is not present</td>
<td>0.5</td>
<td>Jim</td>
<td>DC2 closeout</td>
</tr>
<tr>
<td>Add plotting to the ballistic version (James' stgraph)</td>
<td></td>
<td>Analia</td>
<td>build 19</td>
</tr>
</tbody>
</table>

**Have *all* models calculate the flux - currently only in the powerlaw and broken powerlaw models.**

- integrated fluxes for the fit range
- fluxes for a specified energy range (should this be a separate ballistic tool?)

- improve and canonicalize output from optimizers          | 14       | Jim   | build 19         |
- flip sign of log-likelihood in optimizer package         | 1        | Jim   | build 19         |
- find robust error estimator                              | 7        |       | build 19         |
- understand reference distribution for null case          | 14       | Jim   | Analia           |

**Have the python version use .par files**                  |          | Jim   | Build 20         |
**Allow multiplicative and additive models.**
- enable multiplicative composite functions, e.g., absorption*power-law | 7        | Jim   | Build 20         |
- enable tying together of fit parameters                  | 14       |       | Build 20         |

**Add the ability to generate confidence contours.**       |          | Analia| Build 20         |

**Can we estimate a chi^2 value from the binned spectrum?** |          | Analia| Build 20/21      |

Once the counts are binned and Likelihood generates a model folded though the responses it seems that this would be straightforward.

**Ability to estimate the significance off adding an additional spectral component (like the F-test in XSPEC)**

- add Healpix-based likelihood                             | 14       | ?      | build ??         |