New programmer staff hired:
  Jim Cant, Dinesh Gunasegaran

Spectrum Java Library:
  Jim Cant has upgraded to new JAXB release
  Working on packaging and build procedure for user release;
  solving some problems with lack of JAXB support for some schema features
  Functionality unchanged in this release

Photometry and SEDs
  Continued discussions with IPAC, CDS
  Will format NED SEDs in Spectrum Model compatible way

STC
  Dinesh Gunasegaran working on STC Java Library

Interfaces
  Doug Burke project - faceted browsing
    http://vo.cfa.harvard.edu/reports

Other projects
  Units (with CDS folks)
  ConeSearch for small CfA data holdings (summer 2008)
  SSA service implementation for CfA spectra (fall 2008)
SED serialization plan - as developed by SAO+IPAC

SED is set of photometry points and Spectrum instances
Photometry point has the same metadata as a Spectrum-with-one-data-point
plus some metadata associated with the bandpass and zero point

Approach A: Extend Spectrum to handle photometry metadata. Treat each point as a
Spectrum instance. Serialize SED as a concatenation of Spectrum instances.
pro: Provides a good object interface for library
con: too verbose

> HEADER
Data Point 1: U
Wave Flux Err
3200   5.2  1.2
> HEADER
Data Point 2: B
Wave Flux Err
4400   3.2  1.8
> HEADER
Data Point 3: V
Wave Flux Err
5500   1.3  2.1
Approach B: Single table, each row is a photometry point or spectrum data point.
Pro: much more compact
Con: too many table columns - metadata is different for each data point so things that were header items are now columns themselves

<table>
<thead>
<tr>
<th>Band</th>
<th>Wave</th>
<th>Flux</th>
<th>Err</th>
<th>ObsDate</th>
<th>Telescope</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>3200</td>
<td>1.5</td>
<td>0.2</td>
<td>2008-04-03</td>
<td>MMT</td>
</tr>
<tr>
<td>B</td>
<td>4400</td>
<td>2.3</td>
<td>1.2</td>
<td>2008-04-08</td>
<td>Keck</td>
</tr>
<tr>
<td>-</td>
<td>5102.1</td>
<td>1.1</td>
<td>0.1</td>
<td>2008-04-09</td>
<td>Spectrograph</td>
</tr>
<tr>
<td>-</td>
<td>5102.4</td>
<td>1.1</td>
<td>0.1</td>
<td>ditto</td>
<td>ditto</td>
</tr>
<tr>
<td>-</td>
<td>5102.8</td>
<td>3.1</td>
<td>0.1</td>
<td>ditto</td>
<td>ditto</td>
</tr>
<tr>
<td>-</td>
<td>5103.4</td>
<td>1.3</td>
<td>0.5</td>
<td>ditto</td>
<td>ditto</td>
</tr>
<tr>
<td>R</td>
<td>7000</td>
<td>4.8</td>
<td>1.3</td>
<td>2008-03-01</td>
<td>MMT</td>
</tr>
</tbody>
</table>
Approach C: Compromise in style of 'Greenback convention'
Combine photometry points into tables when they share common metadata values
Up to data provider (file creator) to decide the sensible mix

> HEADER
ObsDate 2008-04-03
Telescope Keck
Band Wave Flux Err
U 3200 1.5 0.2
B 4400 2.3 1.2

> Header
ObsDate 2008-04-09
Telescope Gemini Spectrograph
- 5102.1 1.1 0.1
- 5102.4 1.1 0.1
- 5102.8 3.1 0.1
- 5103.4 1.3 0.5

> Header
Telescope MMT
Band R
Wave 7000
Flux Err ObsDate
4.8 1.3 2008-03-01
5.2 0.3 2008-04-02
2.1 0.9 2008-04-03