SAO/Data Models - Jonathan McDowell

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

> HEADER

Band	Wave	Flux	Err	ObsDate	Telescope ....
U	3200	1.5	0.2	2008-04-03	MMT
B	4400	2.3	1.2	2008-04-08	Keck
-	5102.1	1.1	0.1	2008-04-09	Spectrograph
-	5102.4	1.1	0.1	ditto	ditto
-	5102.8	3.1	0.1	ditto	ditto
-	5103.4	1.3	0.5	ditto	ditto
R	7000	4.8	1.3	2008-03-01	MMT

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