File structure

SimCADO

SimCADO

Holds the scripts that build up the SimCADO module

Scripts that contains all the modules for the SimCADO.

- Detector.py - LightObject.py
- OpticalTrain.py
- SpectralCurve.py
- SimulationRun.py
- PlaneEffect.py
- PSFCube.py

utils.py

See the package model

data

Holds data for the simulations

Transmission Curves ASCII files containing 2 columns: wavelength [um], value [0...1]

- TC_filter_I.dat
- TC_filter_z.dat - TC_filter_Y.dat
- TC_filter_J.dat
- TC_filter_H.dat
- TC_filter_Ks.dat - TC_filter_K.dat
- TC_mirror_mgf2agal.dat
- TC_detector_H4RG.dat

SkyCalc Curves

A FITS binary table generated by the ESO skycalc online tool. The 3 interesting columns are *lam*, *flux*, *trans*

- skytable.fits

PSF files

A FITS cube containing PSFs for a specific mode over a specific wavelength range

- PSF_MAORY_Ks_0.6arcsec.fits

Detector files

Files needed by the NG_HxRG script to simulate the detector noise and examples thereof

- FPA_nirspec_pca0.fits
- FPA_detector_noise.fits

user commands

Holds the config files with all the editable parameters.

Master

Contains only the paths to the other config files

- master.config

Frequently used parameters

Contains any parameters that the user wants to play with. Overrides the default values.

user.config

Atmosphere

Contains information relevant to functions that deal with the atmosphere

- atmosphere.config

Telescope + Instrument

Contains the parameters that control how SimCADO builds the optical train from M1 to just infront of the detector

- telescope.config

Detector characteristics

Contains parameters to do with the detector. Primarily those for the NG_HxRG module

- detector.config

Simulated Observations

Contains parameters relevant to a single simulated observation

- observation.config

output

Any files generated during a simulations are saved here by defaults. This path can be defined by the user

Temporary instrument files

Files which are generated during a simulation which can be used again to save time

- slices.fits
- PSF slices per a filter range
- H4RG noise.fits
- If the detector pattern is re generated - light.fits

Detector output

Simulated detector readout arrays are saved here. Various stages of the journey through the optical path can be saved

- output.clean.fits
- output.noise.fits
- output.raw.fits
- output.red.fits .clean is only the source passing through

.noise is only the background noise .raw is the combined source+noise .red is the raw output minus a constant BG

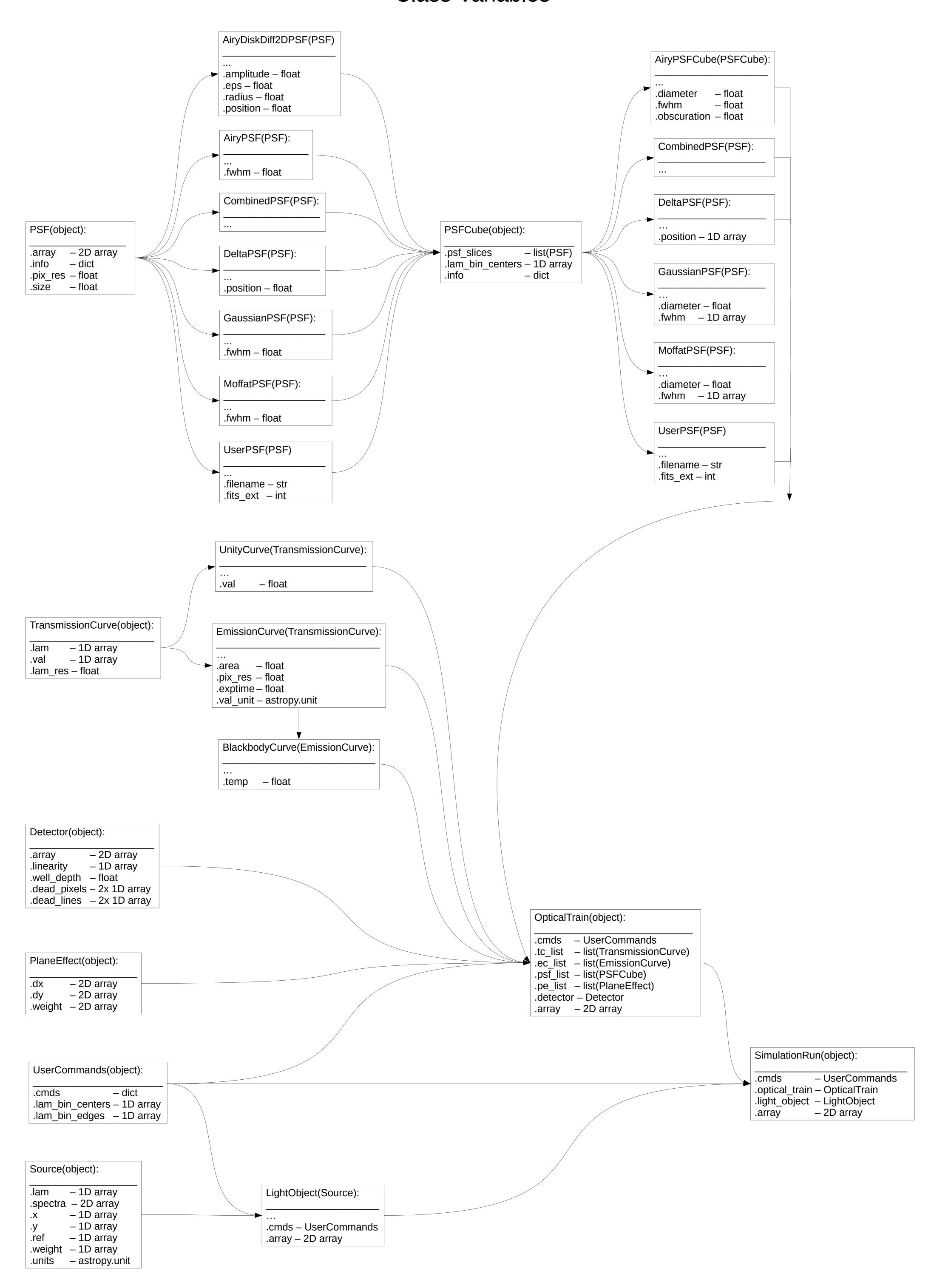
Input

The default folder for an input science data files – ASCII or FITS

scripts

Usage examples for SimCADO for MICADO/EELT and possibly other telescopes

Class Variables



Class Methods

