

Exposure

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graph TD; Exposure --> Meta-data; Exposure --> WCS; Exposure --> MaskedImage; Exposure --> PSF; MaskedImage --> Image; MaskedImage --> Mask; MaskedImage --> VarianceImage; Meta-data --> SDQA;
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Meta-data

Information similar to that found in a FITS header

WCS (optional)

A function which maps sky coordinates to CCD coordinates and vice versa. May or may not comply with the WCS standard.

MaskedImage

A MaskedImage contains an Image, a Variance Image, and Mask, all with the same pixel dimensions.

PSF (optional)

A representation of the point spread function as a function of position in the associated MaskedImage. Mathematically, represented by a Kernel. Needs to include convenient summary info, like FWHM and ellipticity.

Science Data

Quality Analysis (sdqa)
Info such as the mean and where bad data is located

Image

Mask

A 3D array of bits, arranged as a stack of 2D Mask Planes. When a Mask is associated with a compatibly sized Image, each plane identifies the per-pixel presence or absence of a particular condition in the associated Image.

Variance Image

pixel value gives the estimated variance in the pixel value of the corresponding pixel of the Image, Constructed from info about the gain