

PS1 DiffDetection table fields

The starting point for the PS1 data archive is at [Pan-STARRS1 data archive home page](#).

Description: Contains the photometry of individual detections from a difference image. The identifiers connecting the detection back to the difference image and to the object association are provided. PSF, aperture, and Kron (1980) photometry are included, along with sky and detector coordinate positions. **Statistics References:** Kron, R. G. 1980, ApJS, 43, 305.

Name	Unit	Data Type	Size	Default Value	Description
diffObjID	dimensionless	BIGINT	8	NA	Unique difference object identifier.
uniquePspDFid	dimensionless	BIGINT	8	NA	Unique internal PSPS difference detection identifier.
diffDetID	dimensionless	BIGINT	8	NA	Unique difference detection identifier.
diffImageID	dimensionless	BIGINT	8	NA	Difference detection meta identifier.
ippObjID	dimensionless	BIGINT	8	NA	IPP internal object identifier.
ippDetectID	dimensionless	BIGINT	8	NA	IPP internal detection identifier.
fromPosImage	dimensionless	TINYINT	1	NA	Detection is from positive image (if 1) or negative image (if 0).
filterID	dimensionless	TINYINT	1	NA	Filter identifier. Details in the Filter table.
surveyID	dimensionless	TINYINT	1	NA	Survey identifier. Details in the Survey table.
randomDiffID	dimensionless	FLOAT	8	NA	Random value drawn from the interval between zero and one.
tessID	dimensionless	TINYINT	1	0	Tessellation identifier. Details in the TessellationType table.
projectionID	dimensionless	SMALLINT	2	-1	Projection cell identifier.
skyCellID	dimensionless	TINYINT	1	255	Skycell region identifier.
dvoRegionID	dimensionless	INT	4	-1	Internal DVO region identifier.
obsTime	days	FLOAT	8	-999	Modified Julian Date at the midpoint of the observation. Note these are international atomic time rather than UTC, so if you want UTC times you will need to add 34 or 35 seconds to correct for leap seconds.
xPos	sky pixels	REAL	4	-999	PSF x center location.
yPos	sky pixels	REAL	4	-999	PSF y center location.
xPosErr	sky pixels	REAL	4	-999	Error in PSF x center location.
yPosErr	sky pixels	REAL	4	-999	Error in PSF y center location.
pltScale	arcsec/pixel	REAL	4	-999	Local plate scale at this location.
posAngle	degrees	REAL	4	-999	Position angle (sky-to-chip) at this location.
ra	degrees	FLOAT	8	-999	Right ascension.
dec	degrees	FLOAT	8	-999	Declination.
raErr	arcsec	REAL	4	-999	Right ascension error.
decErr	arcsec	REAL	4	-999	Declination error.
zp	magnitudes	REAL	4	0	Photometric zeropoint. Necessary for converting listed fluxes and magnitudes back to measured ADU counts.

telluricExt	magnitudes	REAL	4	NA	Estimated Telluric extinction due to non-photometric observing conditions. Necessary for converting listed fluxes and magnitudes back to measured ADU counts.
expTime	seconds	REAL	4	-999	Exposure time of the positive single-epoch image. Necessary for converting listed fluxes and magnitudes back to measured ADU counts.
airMass	dimensionless	REAL	4	0	Airmass at midpoint of the exposure. Necessary for converting listed fluxes and magnitudes back to measured ADU counts.
DpsfFlux	Janskys	REAL	4	-999	Flux from PSF fit.
DpsfFluxErr	Janskys	REAL	4	-999	Error in PSF flux.
xPosChip	raw pixels	REAL	4	-999	PSF x position in original chip pixels.
yPosChip	raw pixels	REAL	4	-999	PSF y position in original chip pixels.
ccdID	dimensionless	SMALLINT	2	-999	OTA identifier of original chip (see ImageMeta).
DpsfMajorFWHM	arcsec	REAL	4	-999	PSF major axis FWHM.
DpsfMinorFWHM	arcsec	REAL	4	-999	PSF minor axis FWHM.
DpsfTheta	degrees	REAL	4	-999	PSF major axis orientation.
DpsfCore	dimensionless	REAL	4	-999	PSF core parameter k, where $F = F_0 / (1 + k r^2 + r^{3.33})$.
DpsfQf	dimensionless	REAL	4	-999	PSF coverage factor.
DpsfQfPerfect	dimensionless	REAL	4	-999	PSF-weighted fraction of pixels totally unmasked.
DpsfChiSq	dimensionless	REAL	4	-999	Reduced chi squared value of the PSF model fit.
DpsfLikelihood	dimensionless	REAL	4	-999	Likelihood that this detection is best fit by a PSF.
DmomentXX	arcsec ²	REAL	4	-999	Second moment M _{xx} .
DmomentXY	arcsec ²	REAL	4	-999	Second moment M _{xy} .
DmomentYY	arcsec ²	REAL	4	-999	Second moment M _{yy} .
DmomentR1	arcsec	REAL	4	-999	First radial moment.
DmomentRH	arcsec ^{0.5}	REAL	4	-999	Half radial moment (r ^{0.5} weighting).
DapFlux	Janskys	REAL	4	-999	Aperture flux.
DapFluxErr	Janskys	REAL	4	-999	Error in aperture flux.
DapFillF	dimensionless	REAL	4	-999	Aperture fill factor.
DkronFlux	Janskys	REAL	4	-999	Kron (1980) flux.
DkronFluxErr	Janskys	REAL	4	-999	Error in Kron (1980) flux.
DkronRad	arcsec	REAL	4	-999	Kron (1980) radius.
diffNPos	sky pixels	INT	4	-999	Number of difference pixels within the aperture that are positive.
diffFPosRatio	dimensionless	REAL	4	-999	Ratio of the sum of positive flux pixel values to the sum of the absolute value of all unmasked pixel within the aperture.
diffNPosRatio	dimensionless	REAL	4	-999	Ratio of the number of positive flux pixels to the number of unmasked pixels within the aperture.
diffNPosMask	dimensionless	REAL	4	-999	Ratio of the number of positive flux pixels to the number of positive or masked pixels within the aperture.
diffNPosAll	dimensionless	REAL	4	-999	Ratio of the number of positive flux pixels to the total number of all pixels within the aperture.

diffPosDist	sky pixels	REAL	4	-999	Distance to matching source in positive image.
diffNegDist	sky pixels	REAL	4	-999	Distance to matching source in negative image.
diffPosSN	dimensionless	REAL	4	-999	Signal to noise of matching source in positive image.
diffNegSN	dimensionless	REAL	4	-999	Signal to noise of matching source in negative image.
Dsky	Janskys /arcsec ²	REAL	4	-999	Background sky level.
DskyErr	Janskys /arcsec ²	REAL	4	-999	Error in background sky level.
DinfoFlag	dimensionless	BIGINT	8	0	Information flag bitmask indicating details of the photometry. Values listed in DetectionFlags.
DinfoFlag2	dimensionless	INT	4	0	Information flag bitmask indicating details of the photometry. Values listed in DetectionFlags2.
DinfoFlag3	dimensionless	INT	4	0	Information flag bitmask indicating details of the photometry. Values listed in DetectionFlags3.
processingVersion	dimensionless	TINYINT	1	NA	Data release version.