

PS1 Detection table fields

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

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

Name	Unit	Data Type	Size	Default Value	Description
objID	dimensionless	BIGINT	8	NA	Unique object identifier.
uniquePsp2id	dimensionless	BIGINT	8	NA	Unique internal PSPS detection identifier.
detectID	dimensionless	BIGINT	8	NA	Unique detection identifier.
ippObjID	dimensionless	BIGINT	8	NA	IPP internal object identifier.
ippDetectID	dimensionless	BIGINT	8	NA	IPP internal detection identifier.
filterID	dimensionless	TINYINT	1	NA	Filter identifier. Details in the Filter table.
surveyID	dimensionless	TINYINT	1	NA	Survey identifier. Details in the Survey table.
imageID	dimensionless	BIGINT	8	NA	Unique image identifier. Constructed as (100 * frameID + ccdID).
randomDetID	dimensionless	FLOAT	8	NA	Random value drawn from the interval between zero and one.
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	raw pixels	REAL	4	-999	PSF x center location.
yPos	raw pixels	REAL	4	-999	PSF y center location.
xPosErr	raw pixels	REAL	4	-999	Error in PSF x center location.
yPosErr	raw 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.
extNSigma	dimensionless	REAL	4	0	An extendedness measure based on the deviation between PSF and Kron (1980) magnitudes, normalized by the PSF magnitude uncertainty.
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 frame/exposure. 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.

psfFlux	Janskys	REAL	4	-999	Flux from PSF fit.
psfFluxErr	Janskys	REAL	4	-999	Error on flux from PSF fit.
psfMajorFWHM	arcsec	REAL	4	-999	PSF major axis FWHM.
psfMinorFWHM	arcsec	REAL	4	-999	PSF minor axis FWHM.
psfTheta	degrees	REAL	4	-999	PSF major axis orientation.
psfCore	dimensionless	REAL	4	-999	PSF core parameter k, where $F = F_0 / (1 + k r^2 + r^3.33)$.
psfQf	dimensionless	REAL	4	-999	PSF coverage factor.
psfQfPercent	dimensionless	REAL	4	-999	PSF weighted fraction of pixels totally unmasked.
psfChiSq	dimensionless	REAL	4	-999	Reduced chi squared value of the PSF model fit.
psfLikelihood	dimensionless	REAL	4	-999	Likelihood that this detection is best fit by a PSF.
momentXX	arcsec ²	REAL	4	-999	Second moment M_{xx} .
momentXY	arcsec ²	REAL	4	-999	Second moment M_{xy} .
momentYY	arcsec ²	REAL	4	-999	Second moment M_{yy} .
momentR1	arcsec	REAL	4	-999	First radial moment.
momentRH	arcsec ^{0.5}	REAL	4	-999	Half radial moment ($r^{0.5}$ weighting).
momentM3C	arcsec ²	REAL	4	-999	Cosine of trefoil second moment term: $r^2 \cos(3 \theta) = M_{xxx} - 3 * M_{xyy}$.
momentM3S	arcsec ²	REAL	4	-999	Sine of trefoil second moment: $r^2 \sin(3 \theta) = 3 * M_{xxy} - M_{yyy}$.
momentM4C	arcsec ²	REAL	4	-999	Cosine of quadrupole second moment: $r^2 \cos(4 \theta) = M_{xxxx} - 6 * M_{xxyy} + M_{yyyy}$.
momentM4S	arcsec ²	REAL	4	-999	Sine of quadrupole second moment: $r^2 \sin(4 \theta) = 4 * M_{xxyy} - 4 * M_{xyyy}$.
apFlux	Janskys	REAL	4	-999	Flux in seeing-dependent aperture.
apFluxErr	Janskys	REAL	4	-999	Error on flux in seeing-dependent aperture.
apFillF	dimensionless	REAL	4	-999	Aperture fill factor.
apRadius	arcsec	REAL	4	-999	Aperture radius.
kronFlux	Janskys	REAL	4	-999	Kron (1980) flux.
kronFluxErr	Janskys	REAL	4	-999	Error on Kron (1980) flux.
kronRad	arcsec	REAL	4	-999	Kron (1980) radius.
sky	Janskys / arcsec ²	REAL	4	-999	Background sky level.
skyErr	Janskys / arcsec ²	REAL	4	-999	Error in background sky level.
infoFlag	dimensionless	BIGINT	8	0	Information flag bitmask indicating details of the photometry. Values listed in DetectionFlags.
infoFlag2	dimensionless	INT	4	0	Information flag bitmask indicating details of the photometry. Values listed in DetectionFlags2.
infoFlag3	dimensionless	INT	4	0	Information flag bitmask indicating details of the photometry. Values listed in DetectionFlags3.
processingVersion	dimensionless	TINYINT	1	NA	Data release version.