

# KIC 005296831

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005296831-01	OBS	No	0.754499	132.151029	14.7	2.659	7.4	6.2	3.54	6809	1.58	62844.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005296831-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

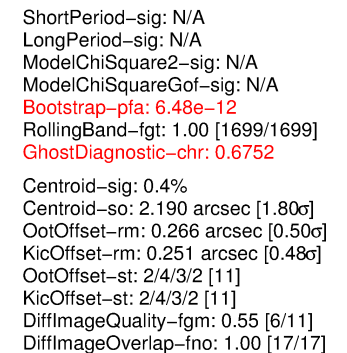
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

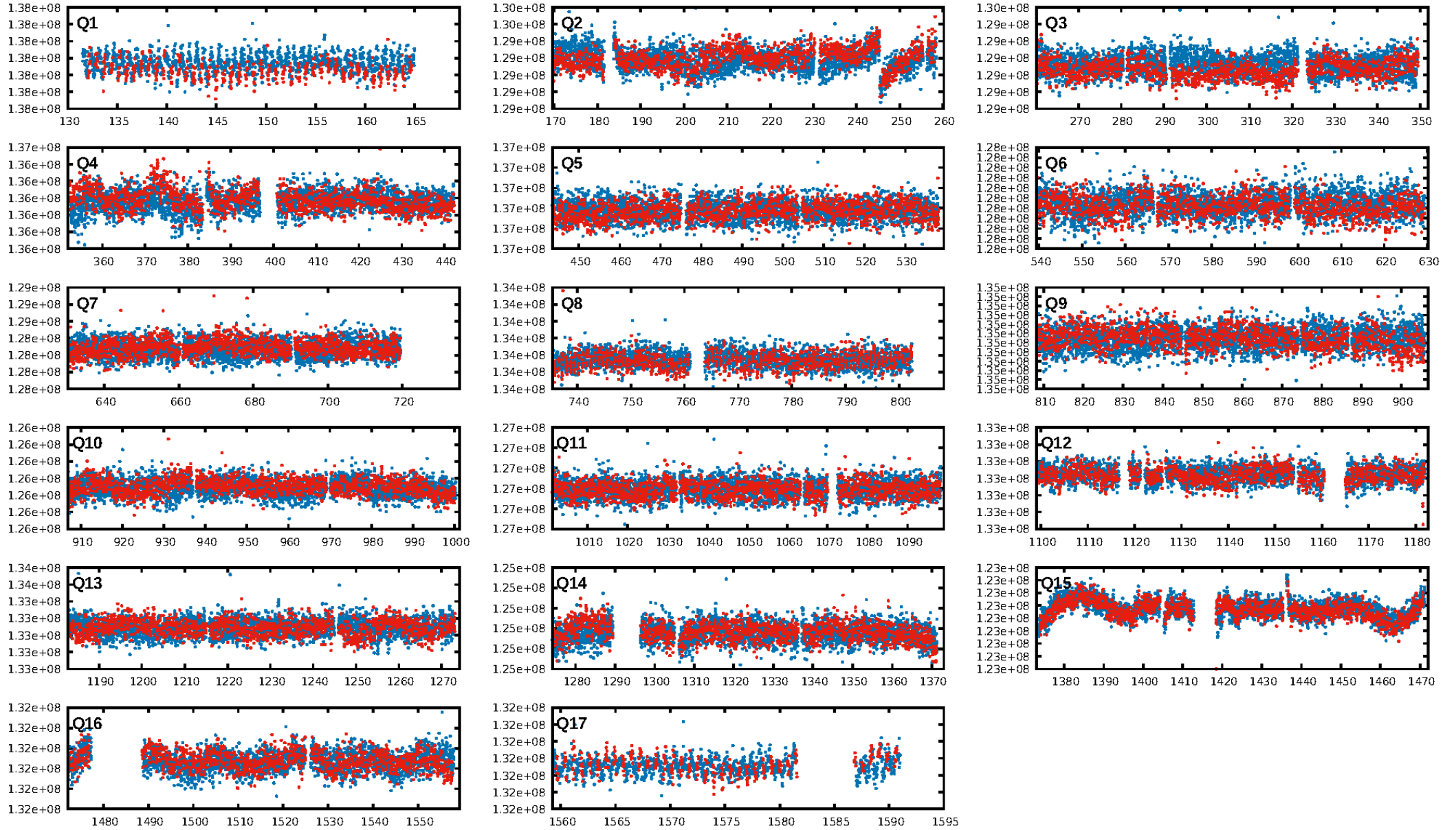
## Ephemeris Match Information For 005296831-01

No Significant Match Found

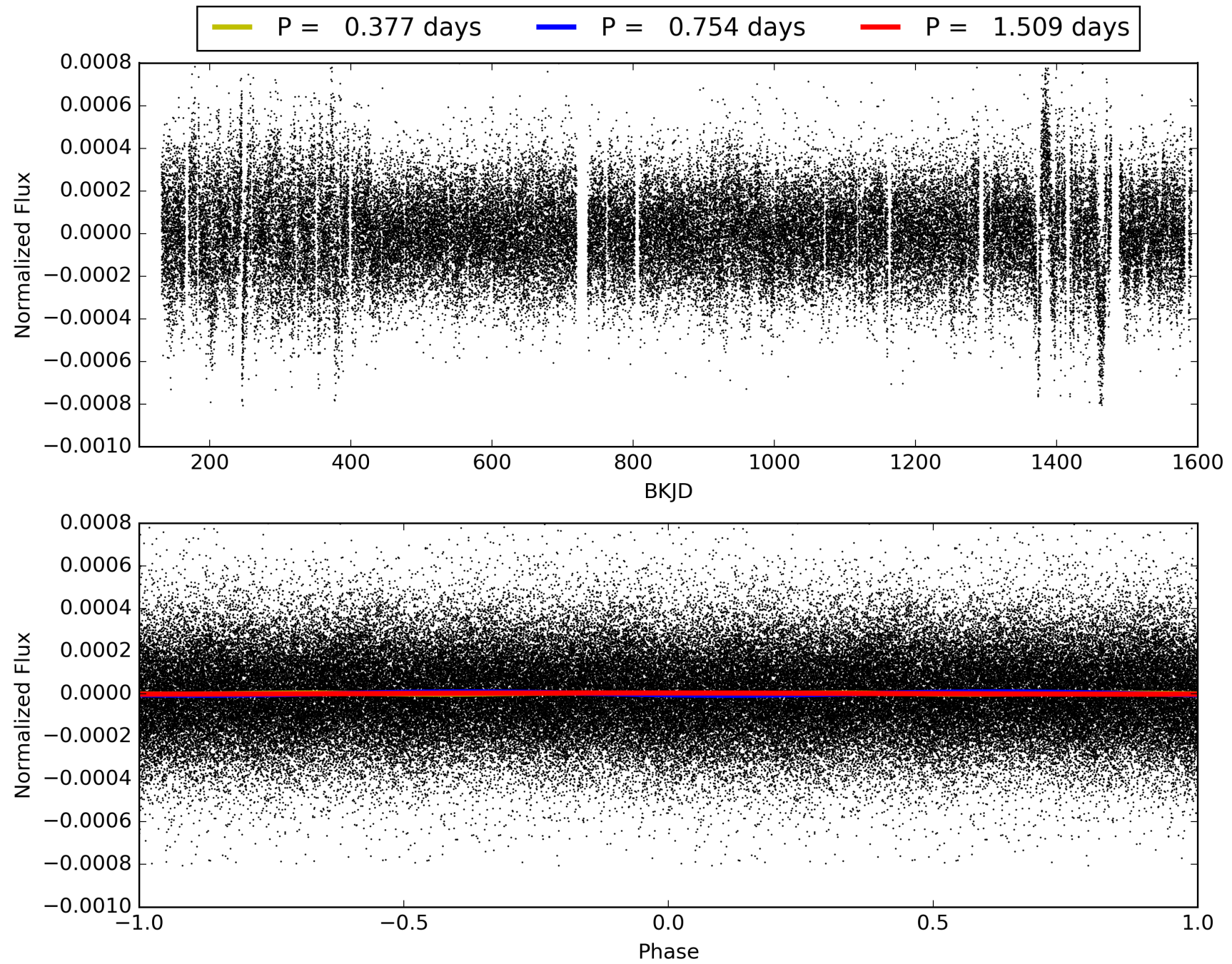
## KIC: 5296831    Candidate: 1 of 1    Period: 0.754 d



# TCE 005296831-01, PDC Light Curves

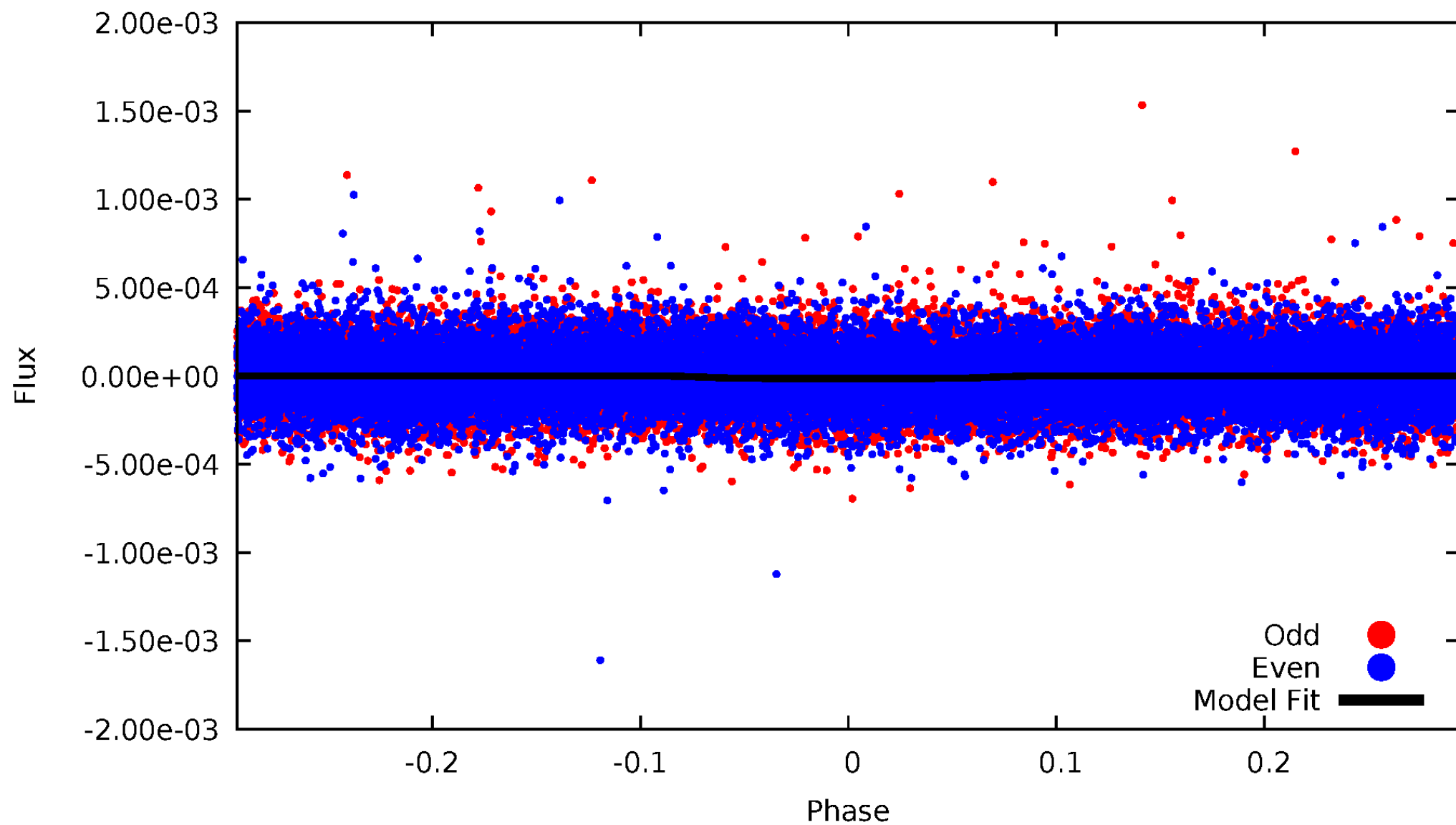


TCE 005296831-01



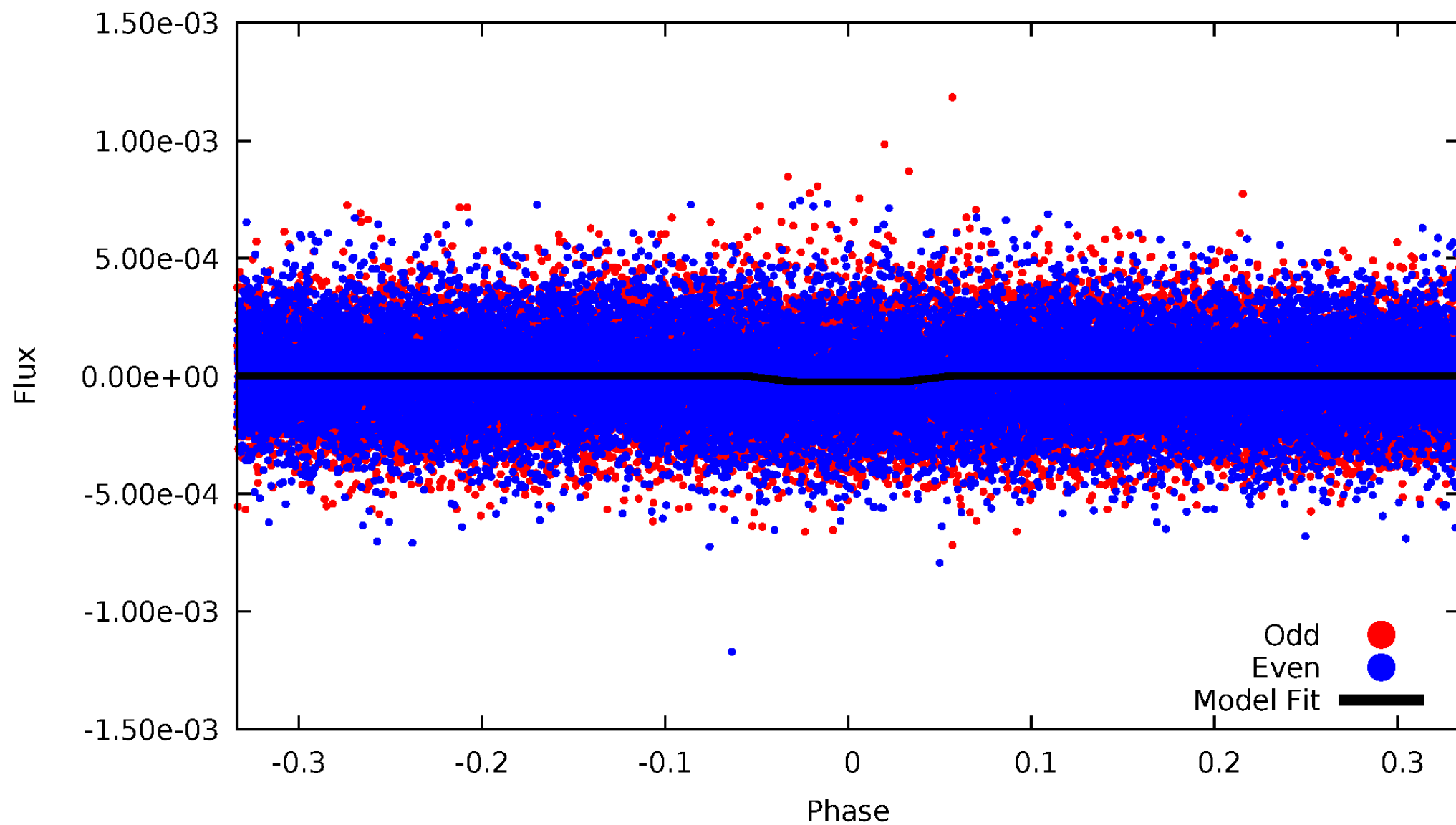
# DV Odd/Even

TCE 005296831-01



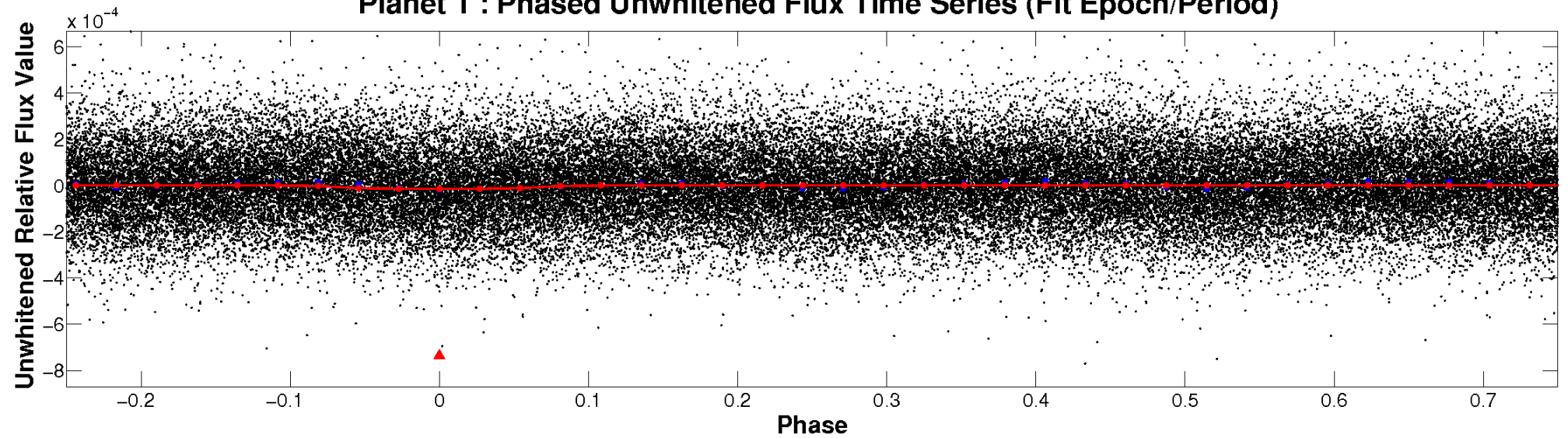
# ALT Odd/Even

TCE 005296831-01

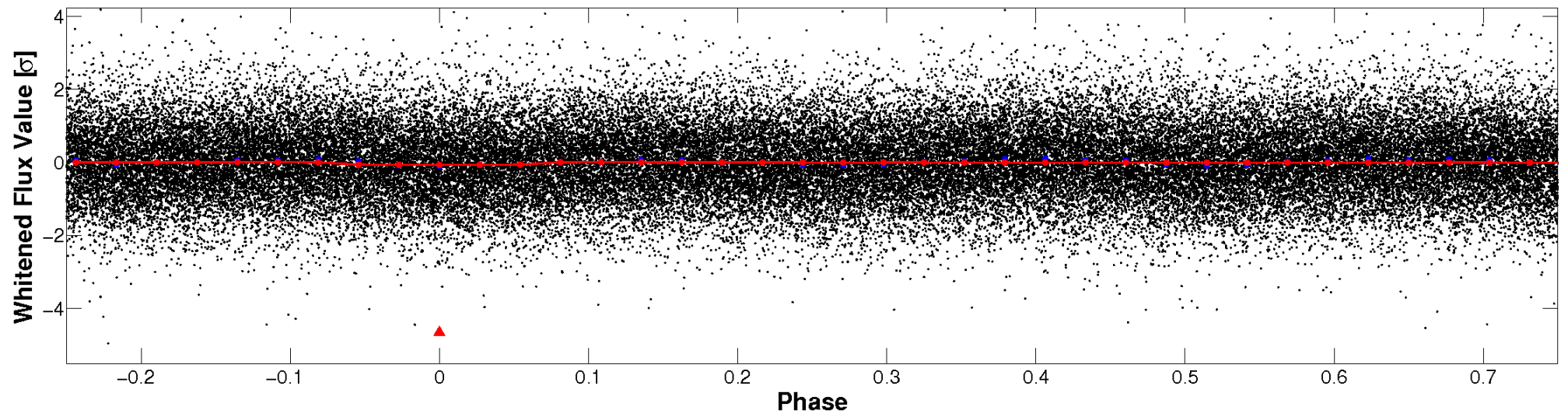


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

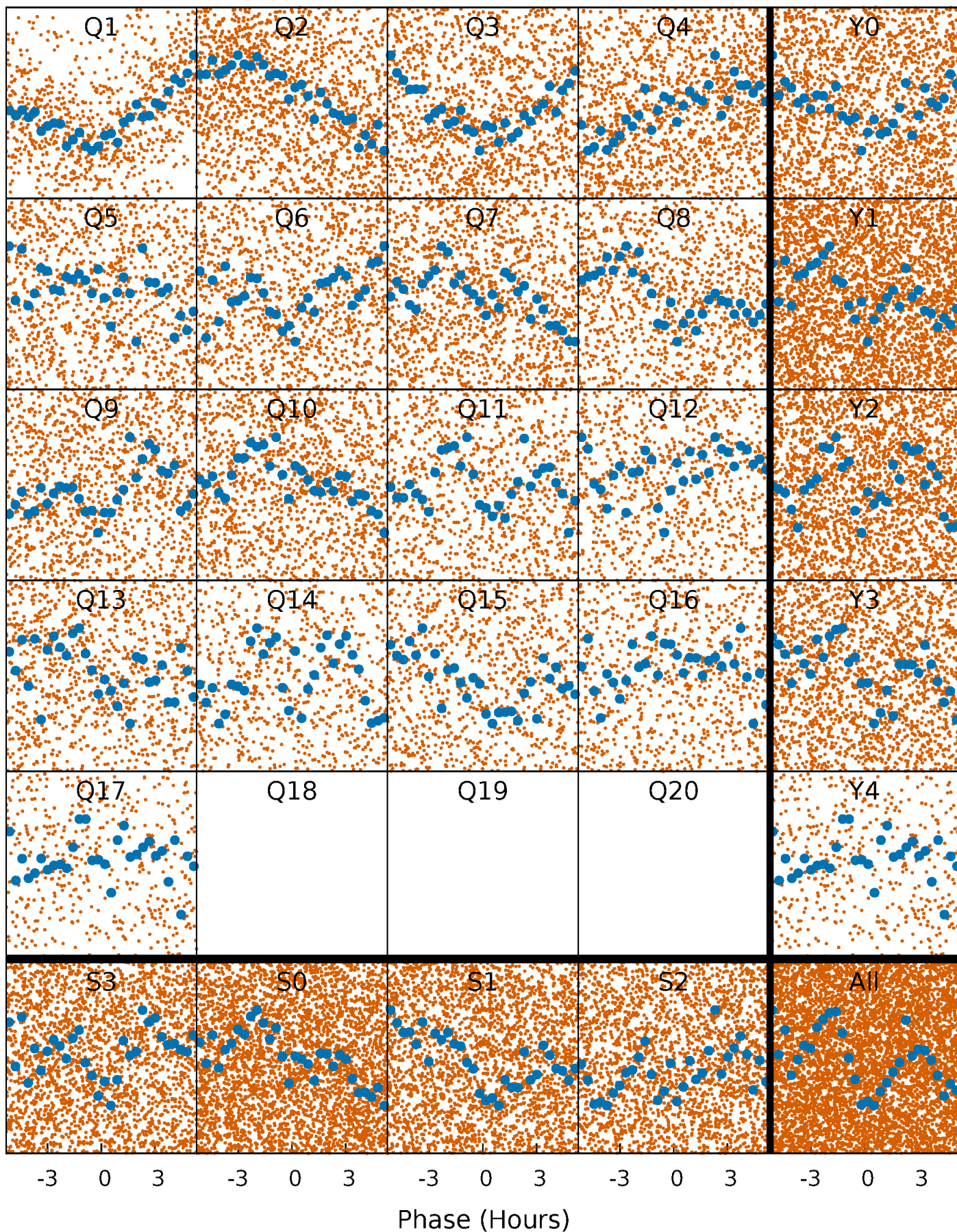


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



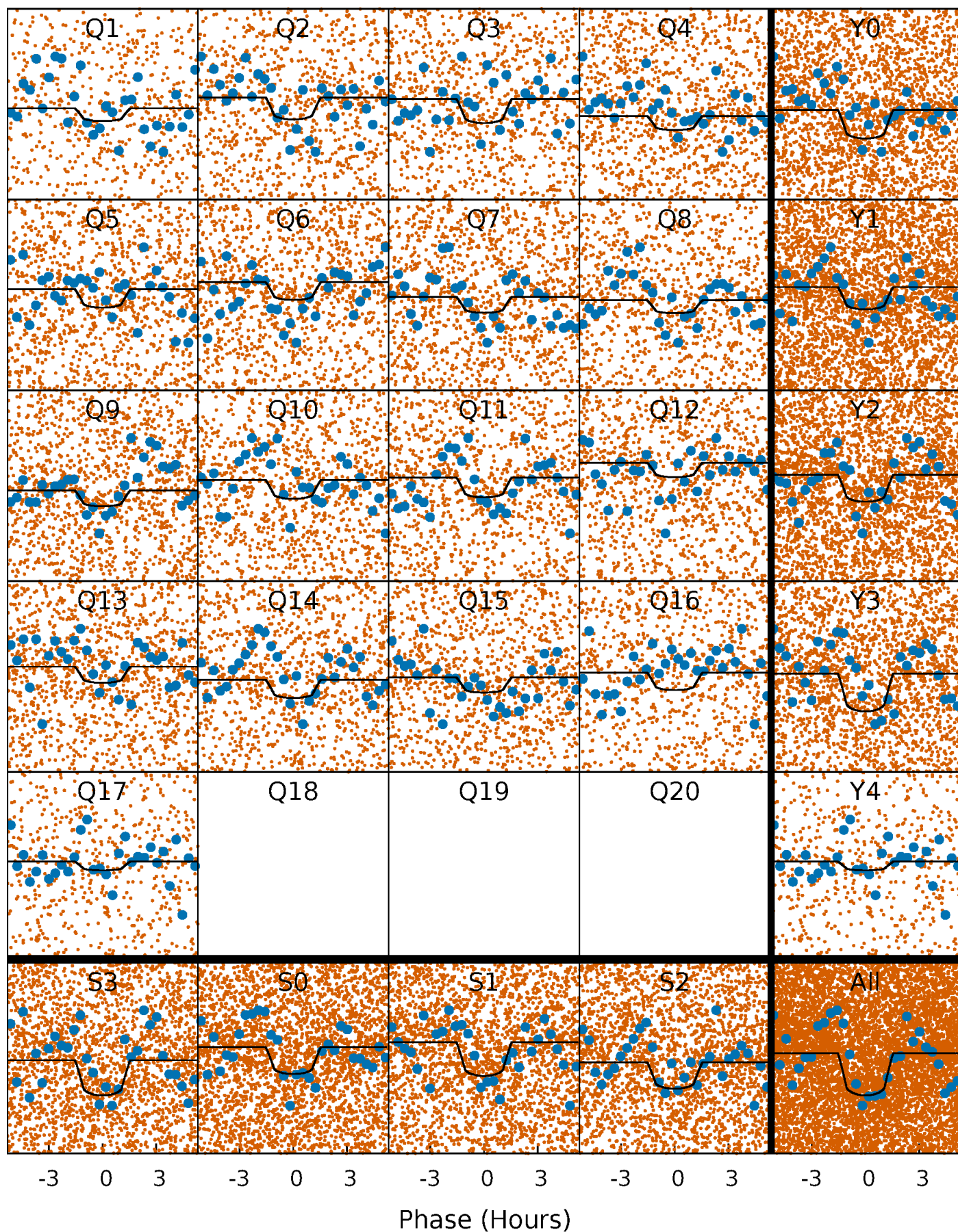
# PDC Quarter-Phased Transit Curves

TCE 005296831-01 P= 0.754499 Days  $T_0=132.151029$  (BKJD)



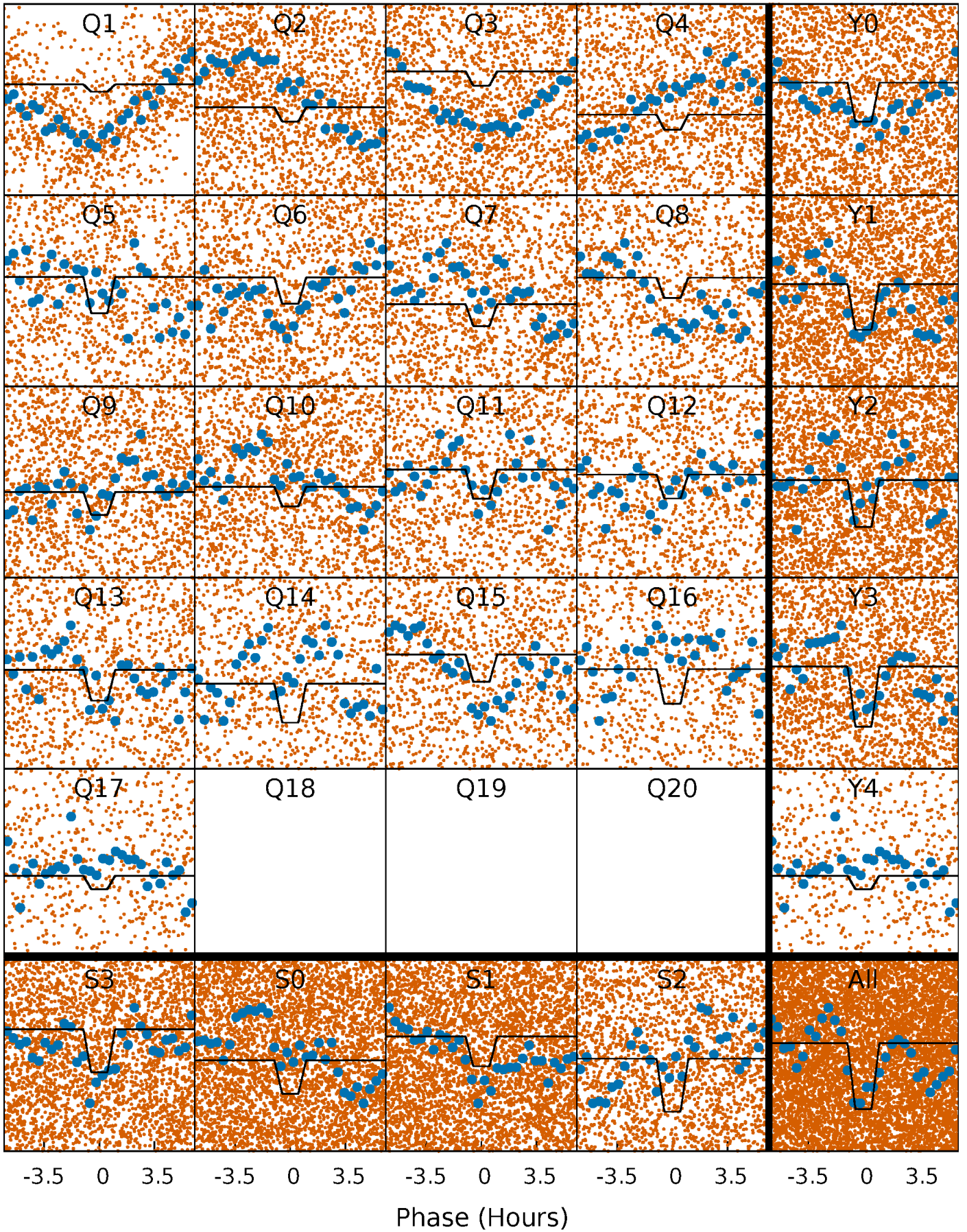
# DV Quarter-Phased Transit Curves

TCE 005296831-01 P= 0.754499 Days  $T_0=132.151029$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

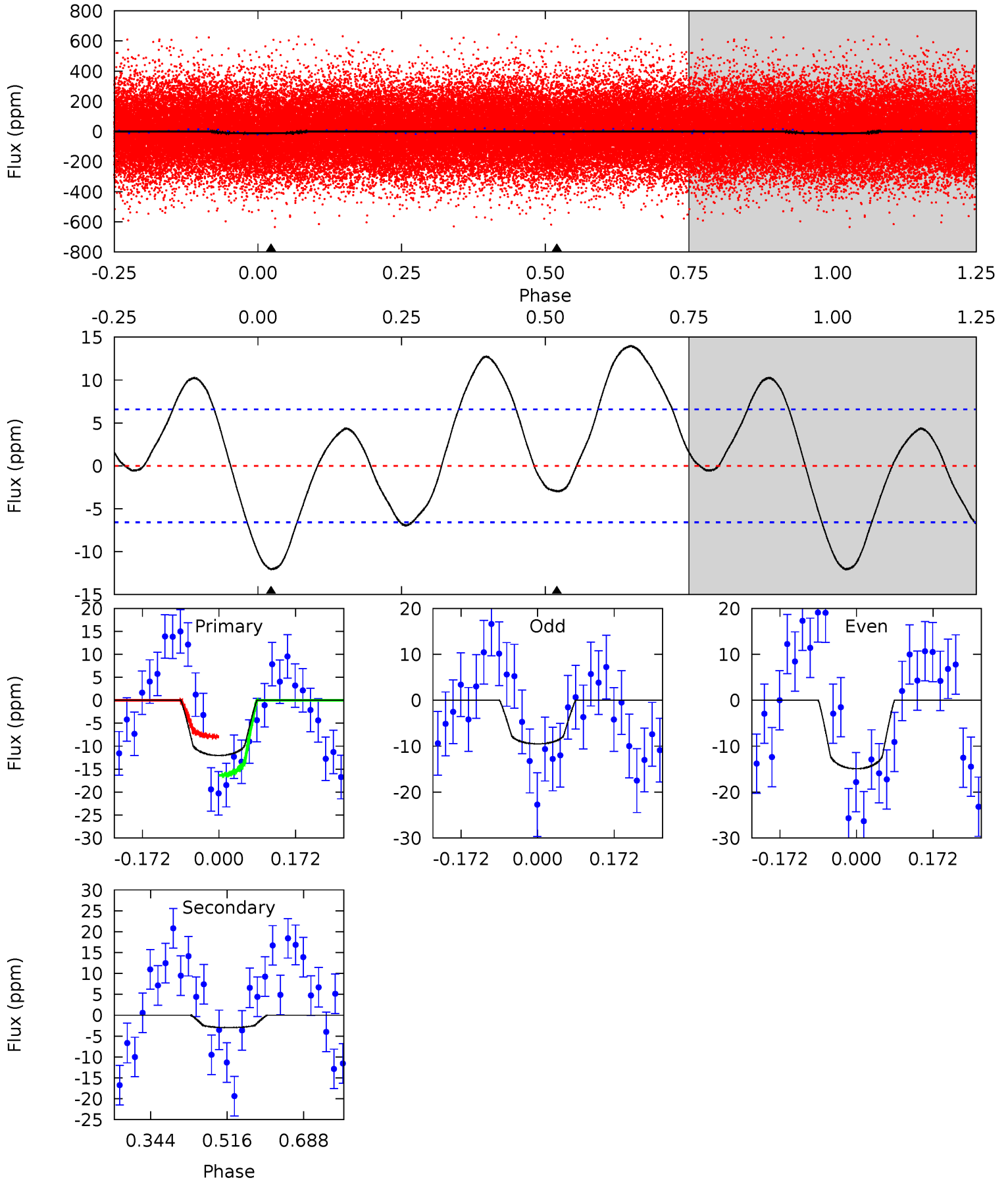
TCE 005296831-01 P= 0.754517 Days  $T_0=132.147505$  (BKJD)



# DV Model-Shift Uniqueness Test

005296831-01, P = 0.754499 Days, E = 131.396530 Days

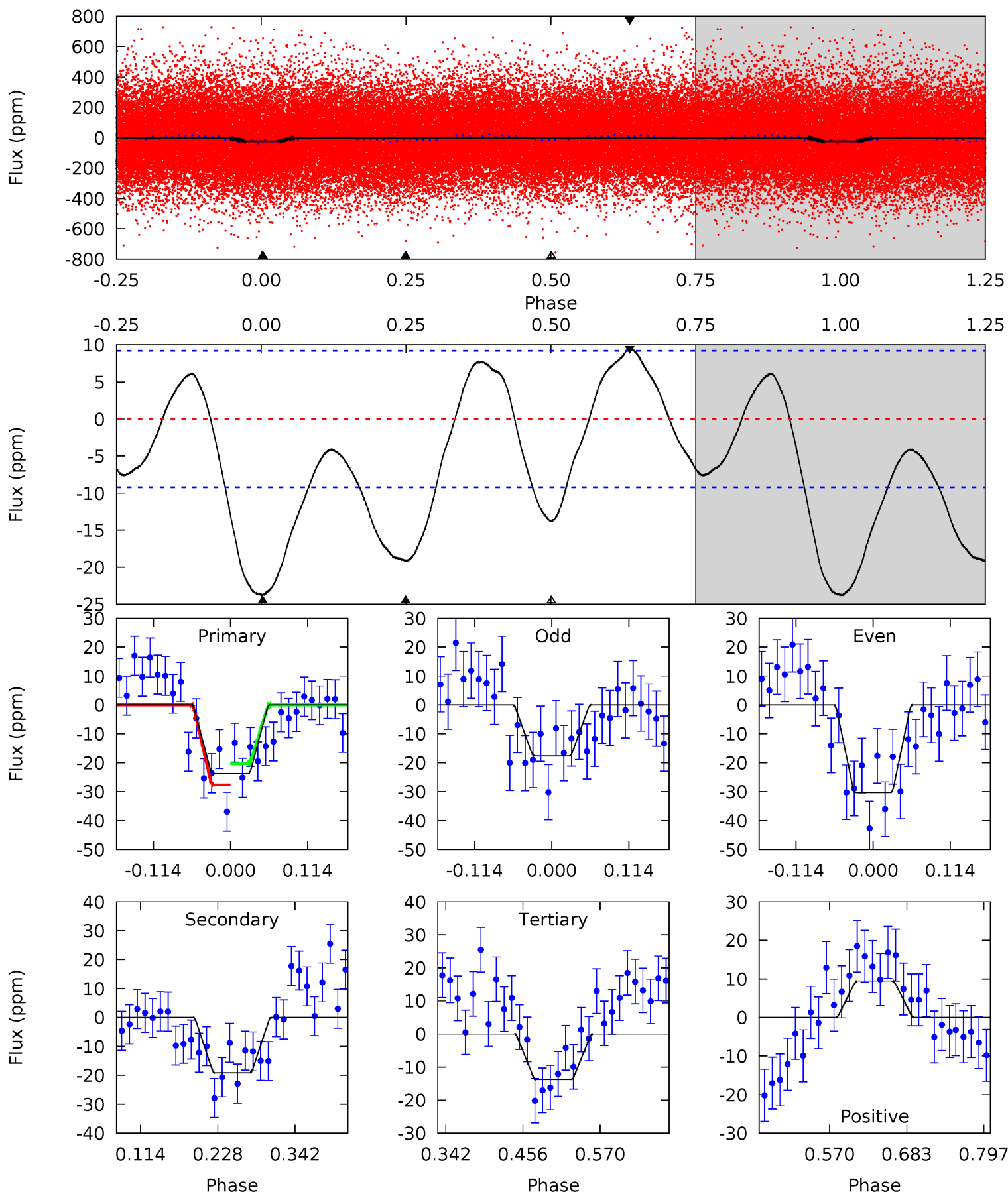
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.14	2.01	0	0	4.45	1.37	3.10	8.14	8.14	2.01	2.01	1.84	0.88	0.54	2.85



# Alt Model-Shift Uniqueness Test

005296831-01, P = 0.754517 Days, E = 131.392988 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	9.42	6.79	4.67	4.54	1.58	3.30	4.93	7.05	2.63	4.75	3.14	0.98	0.29	1.74



### Stellar Parameters For KIC 005296831

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6809^{+184}_{-225}$	$3.586^{+0.304}_{-0.057}$	$-0.140^{+0.300}_{-0.250}$	$3.539^{+0.405}_{-1.297}$	$1.762^{+0.158}_{-0.342}$	$0.056^{+0.121}_{-0.010}$
	+3%/-3%	+8%/-2%	+214%/-179%	+11%/-37%	+9%/-19%	+217%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 005296831-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-3\pm 1$	$1.45^{+0.74}_{-0.68}$	$5504^{+298}_{-539}$	$-2810^{+8175}_{-1532}$	$0.283^{+0.678}_{-0.186}$
Alt.	$-19\pm 2$	$1.81^{+0.67}_{-0.67}$	$5483^{+323}_{-462}$	$5828^{+1809}_{-1084}$	$1.228^{+1.785}_{-0.576}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

## DV Centroid Data

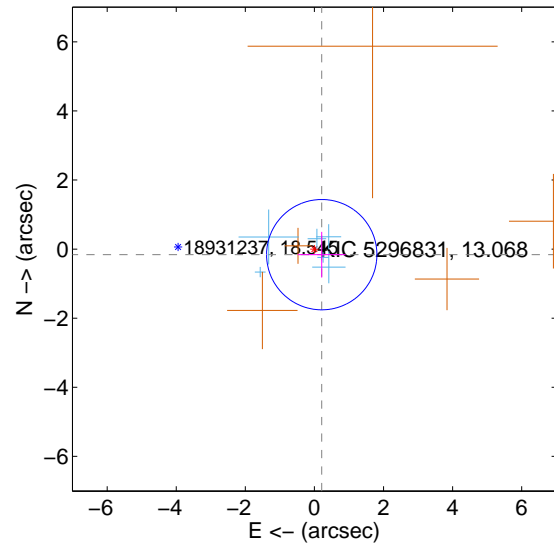
Supplemental centroid analysis for 005296831-01. Kepler magnitude: 13.07. Transit SNR 6.25

There are 6 quarters with good PRF difference image offsets

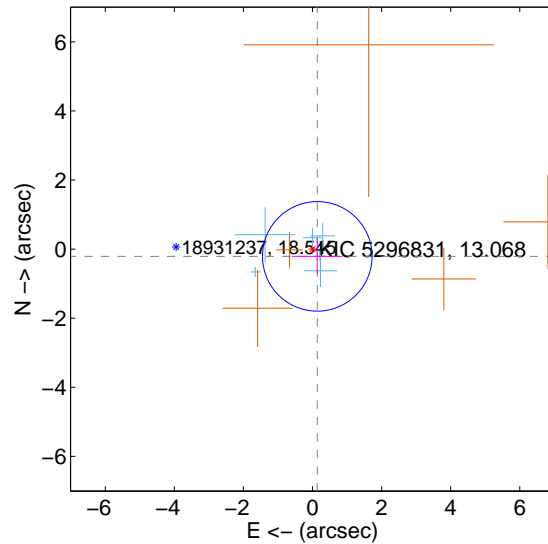
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.266 \pm 0.532$	0.50	$-0.211 \pm 0.694$	$-0.161 \pm 0.662$
PRF-fit source offset from KIC position	$0.251 \pm 0.529$	0.48	$-0.137 \pm 0.730$	$-0.211 \pm 0.508$
photometric centroid source offset	$2.19 \pm 1.22$	1.80	$-0.80 \pm 1.46$	$2.04 \pm 1.17$

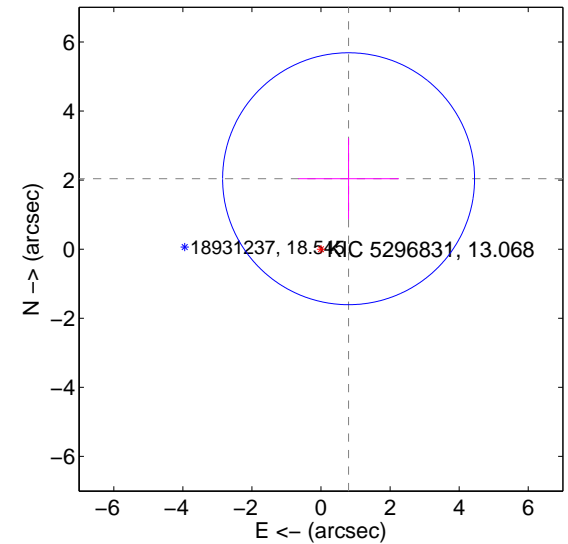
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

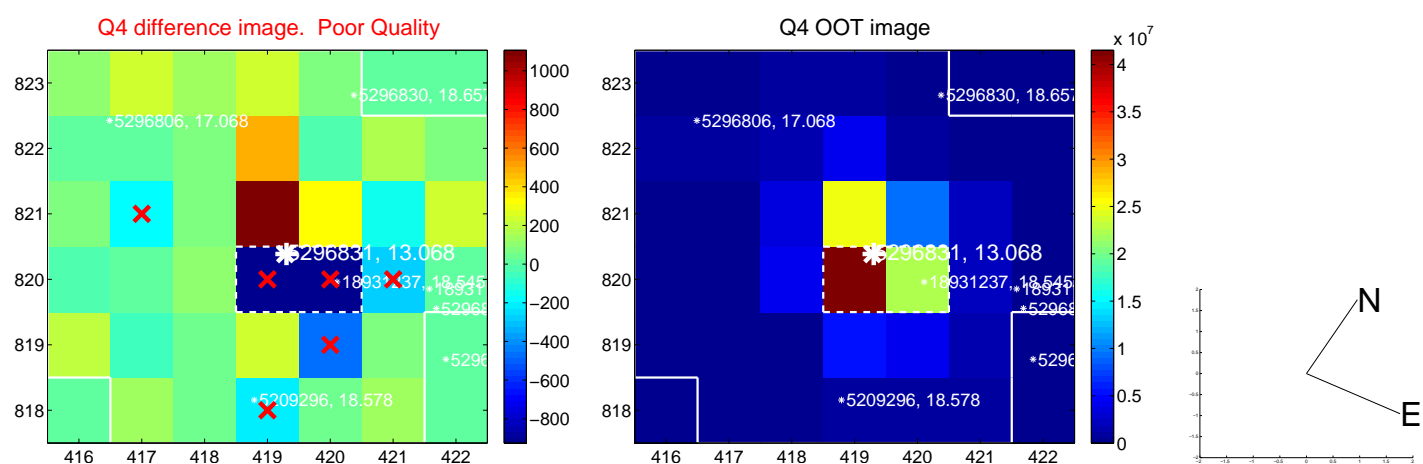
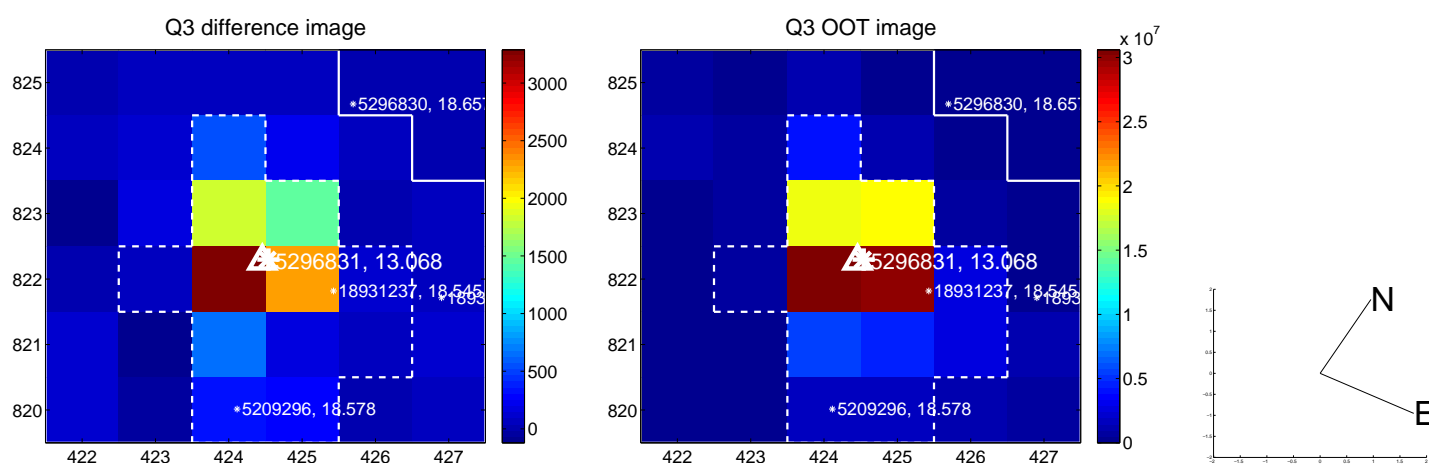
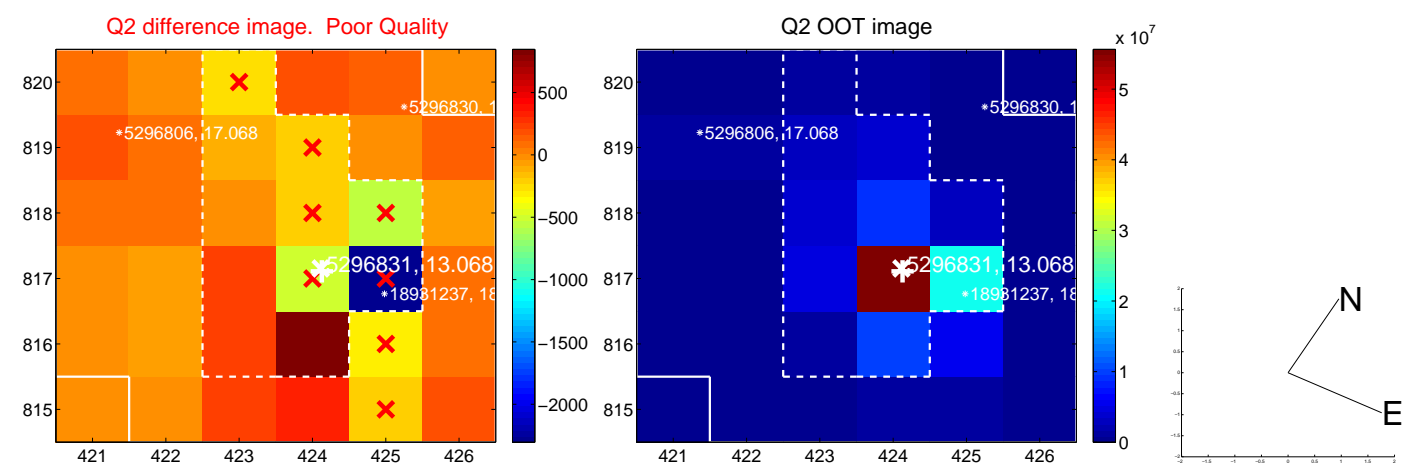
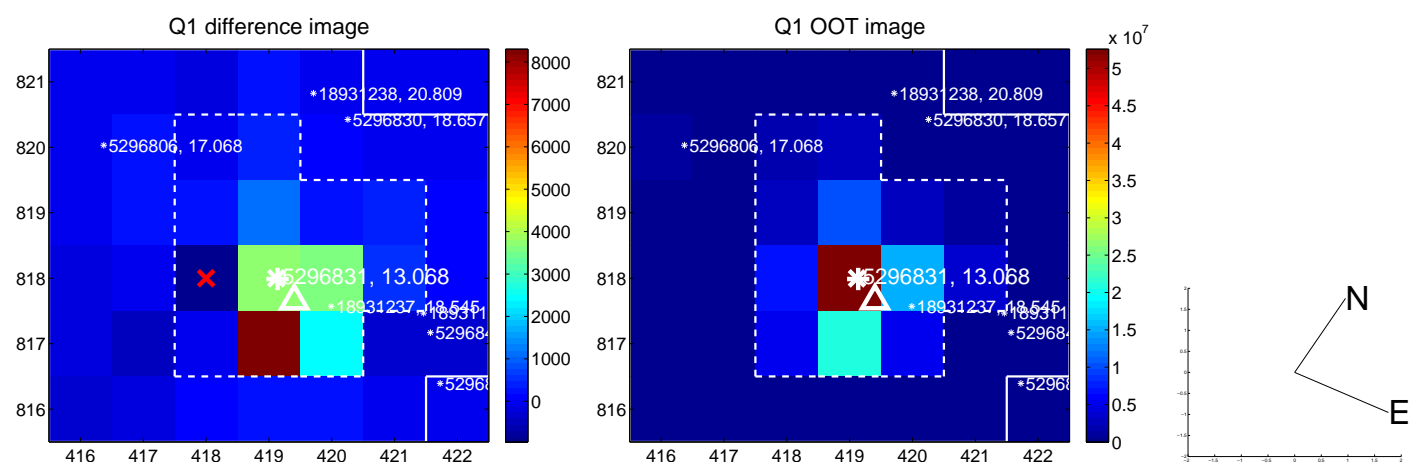


offset from photometric centroids

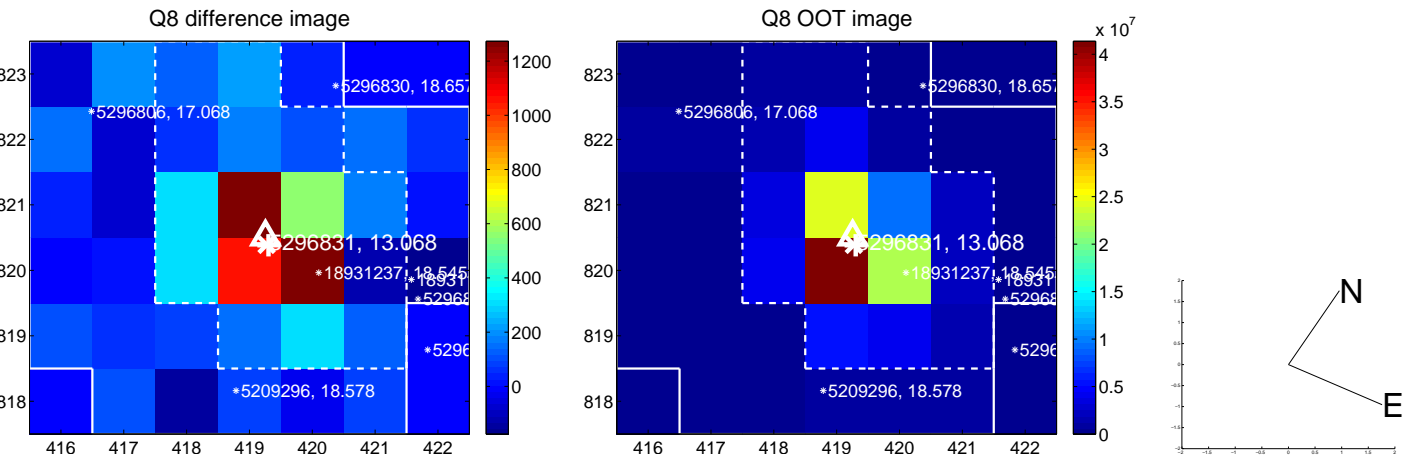
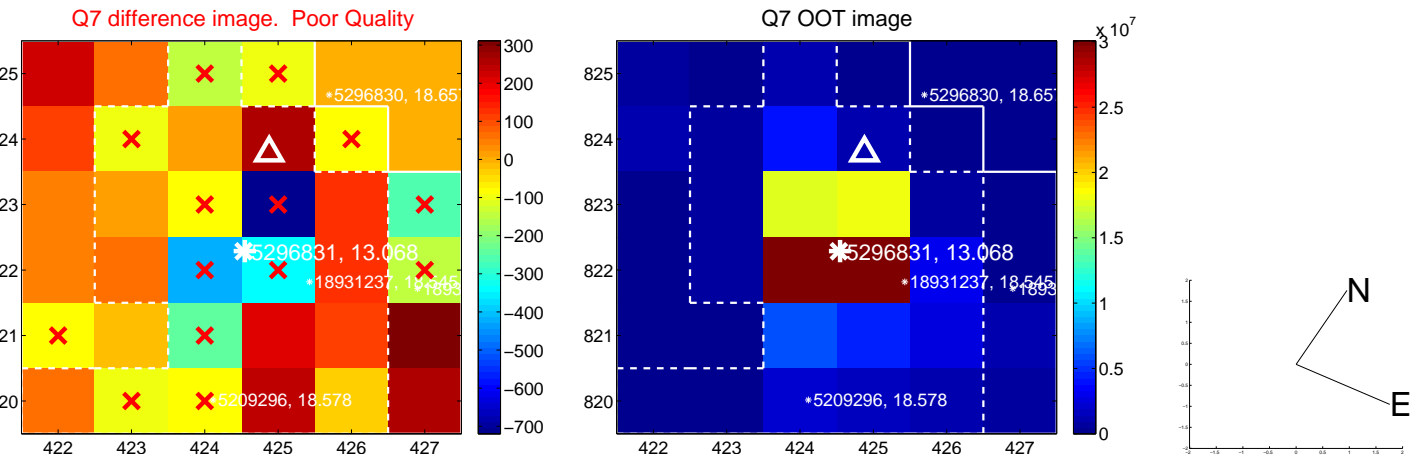
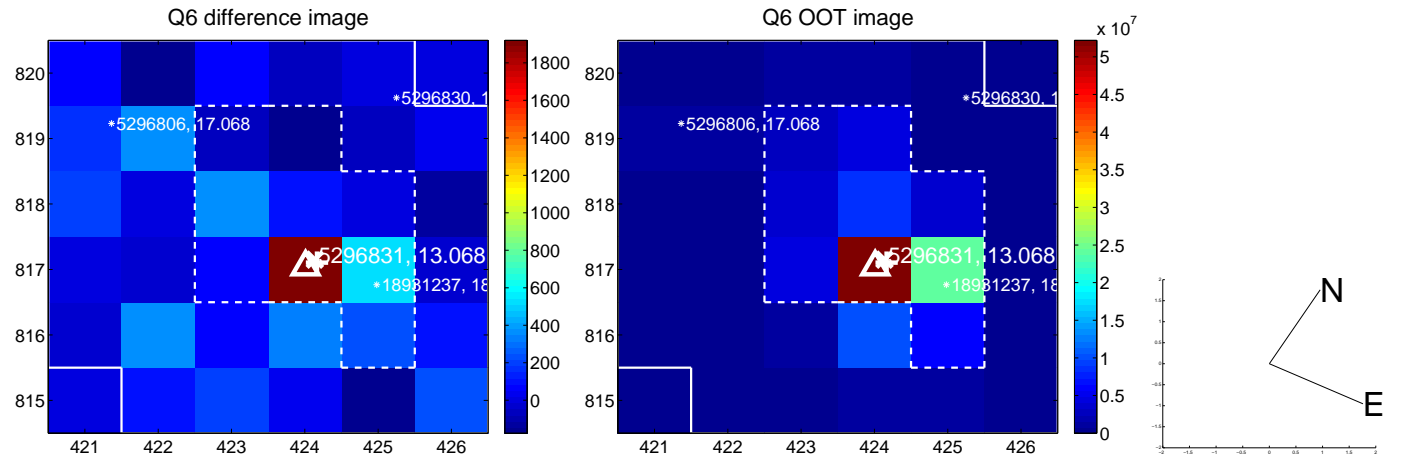
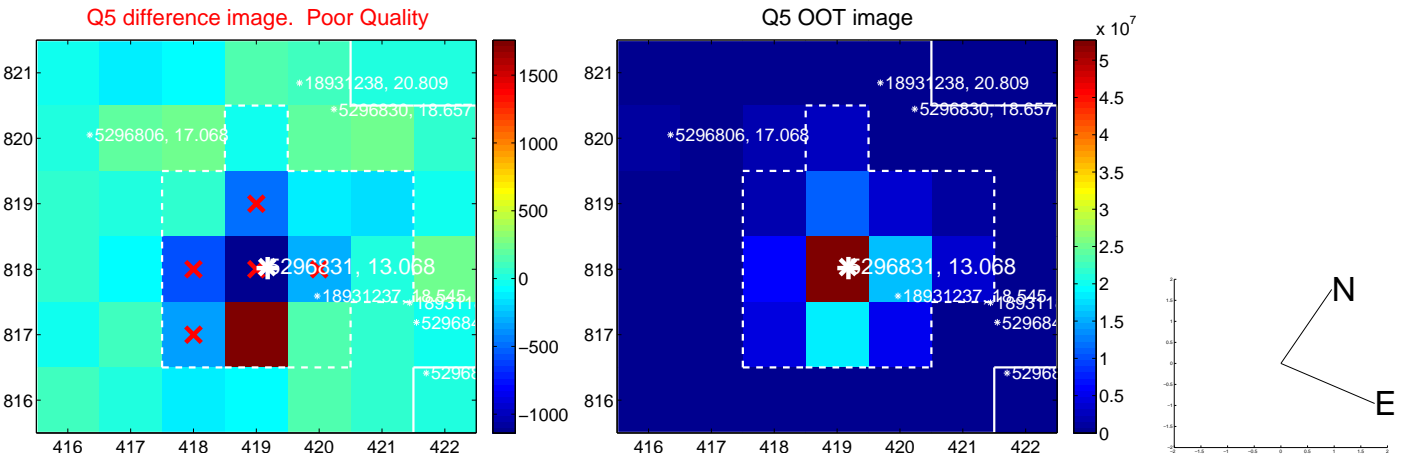


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

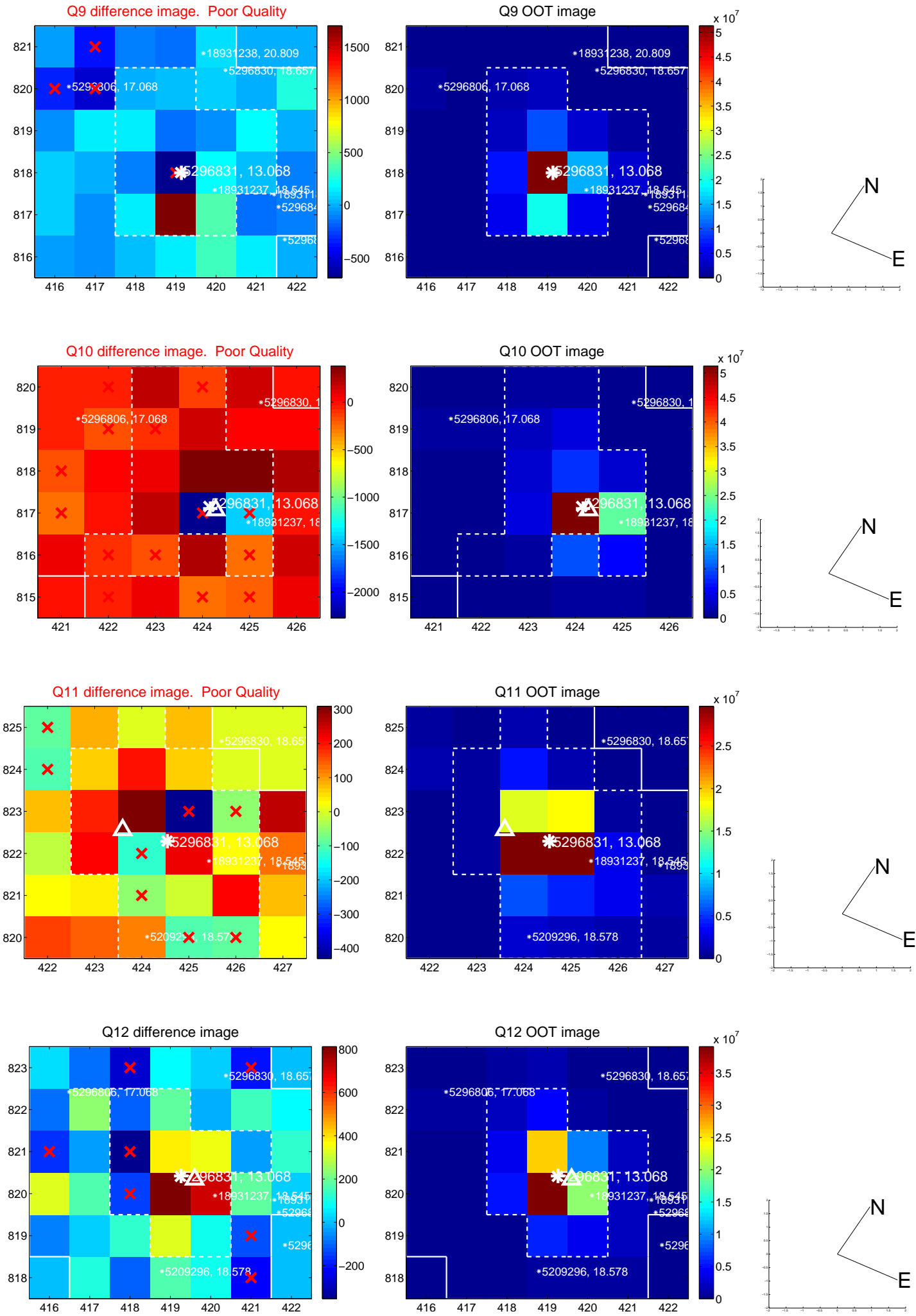
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



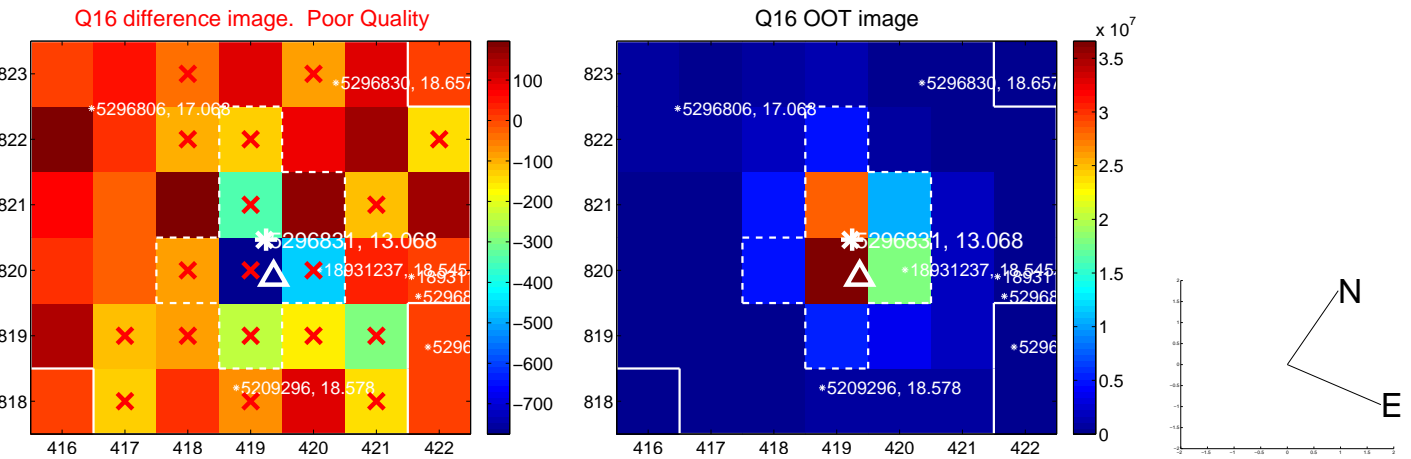
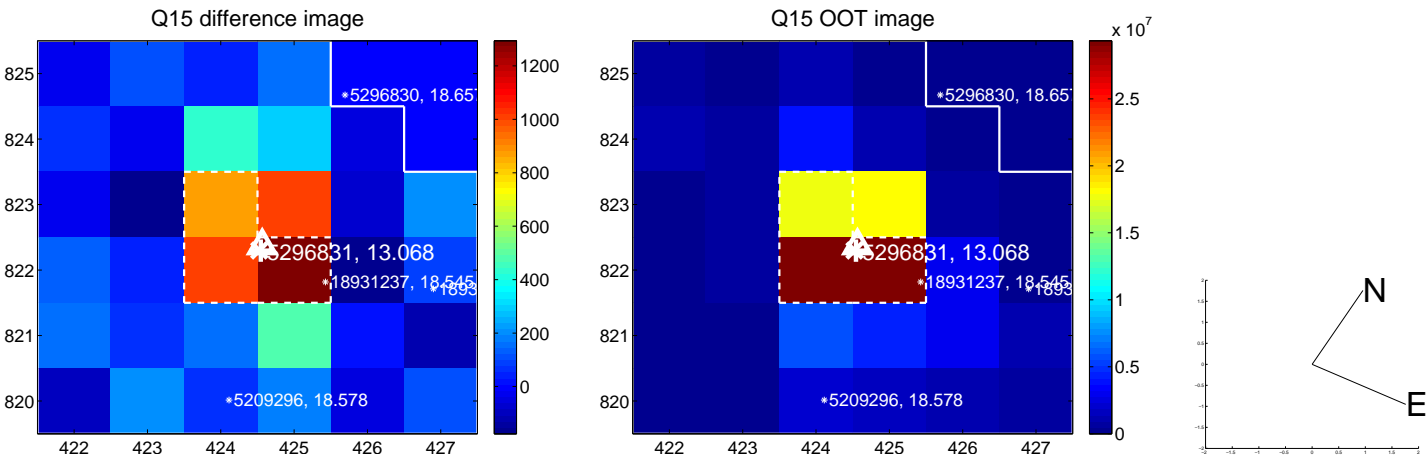
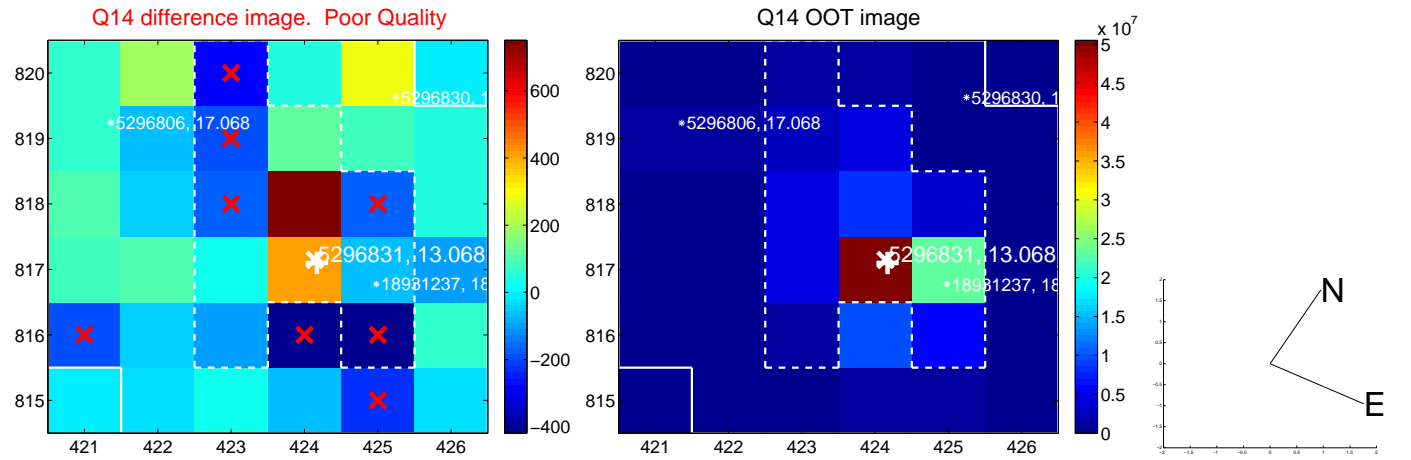
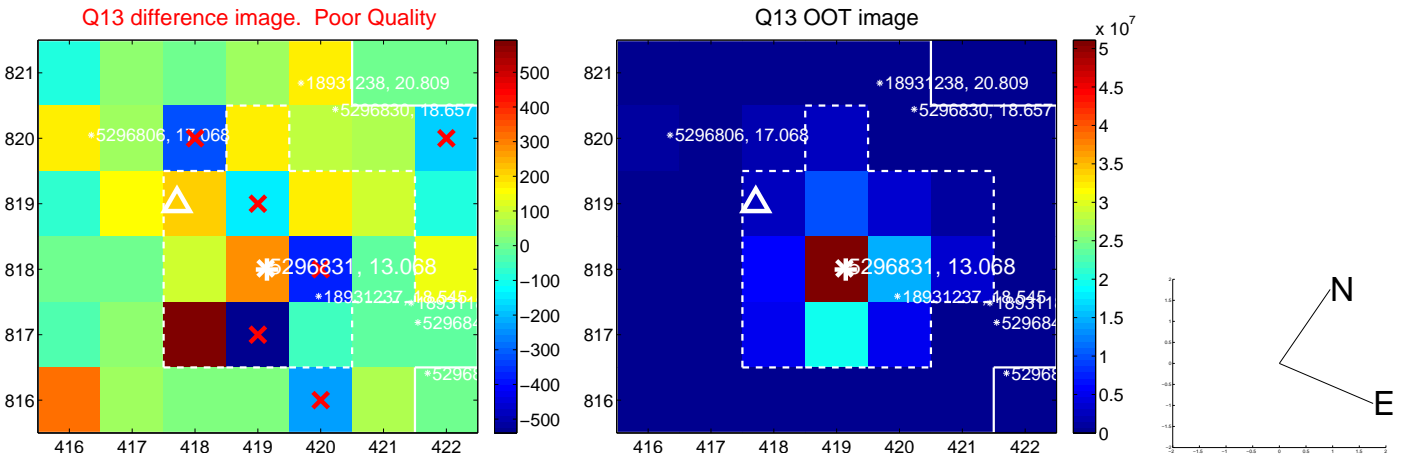
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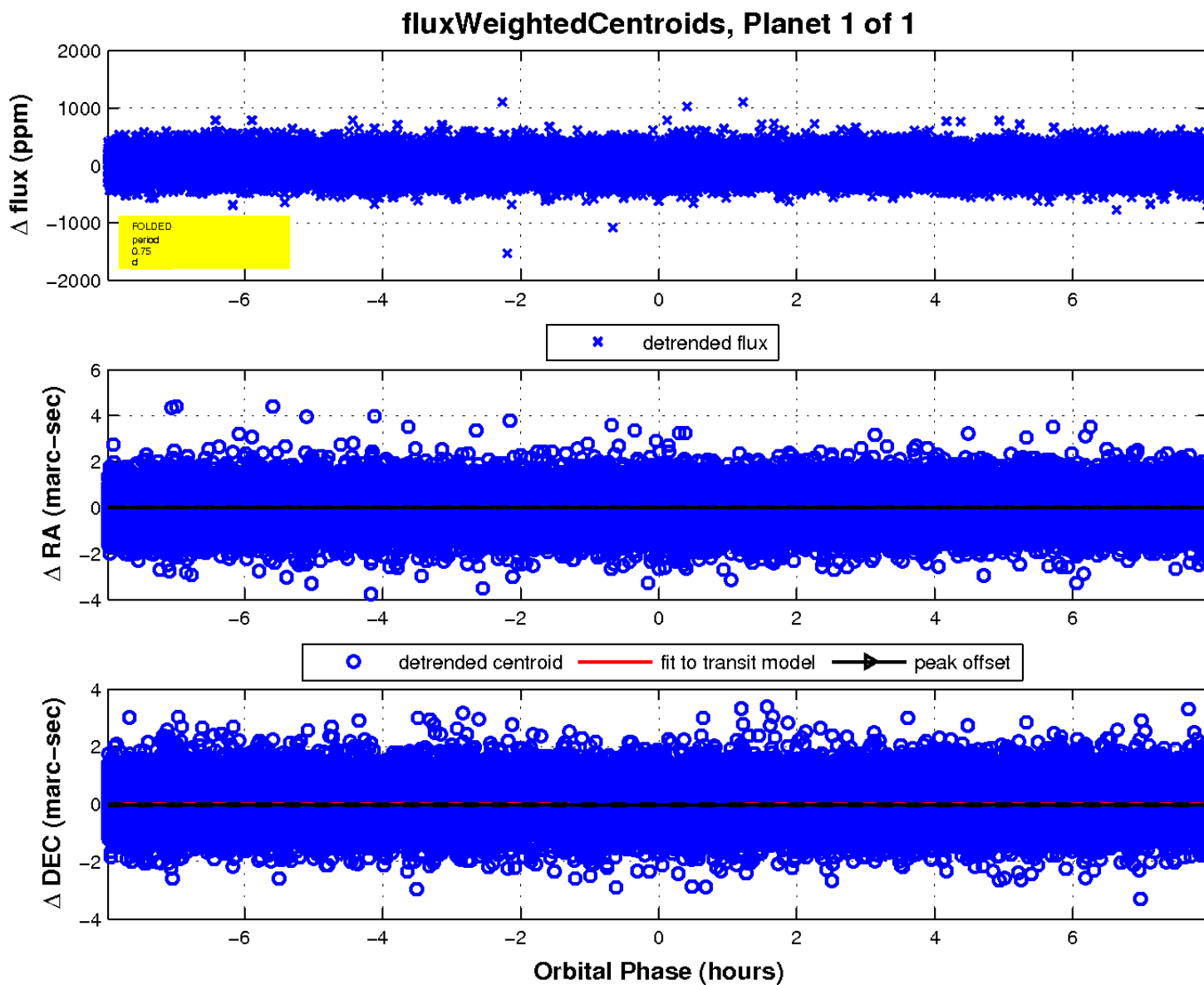
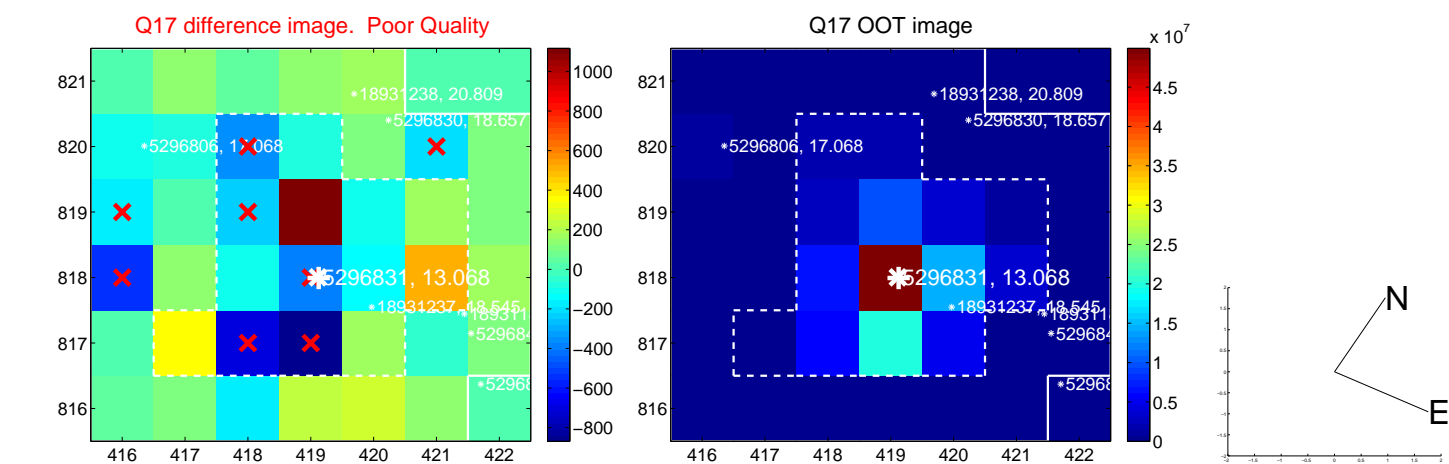
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UKIRT Image

Declination

