

# KIC 003648721

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003648721-01	OBS	No	2.513923	133.049393	0.0	2.933	7.2	0.0	1.16	6450	0.00	1411.62

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003648721-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_KIC_POS

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

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

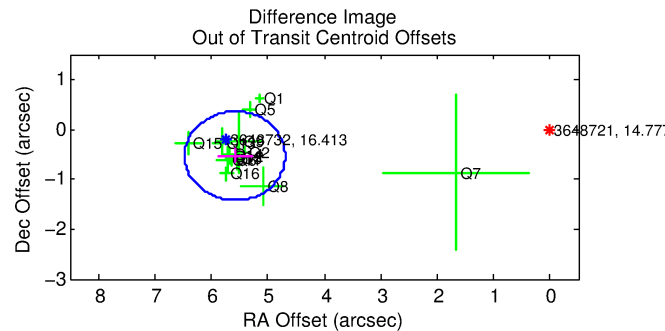
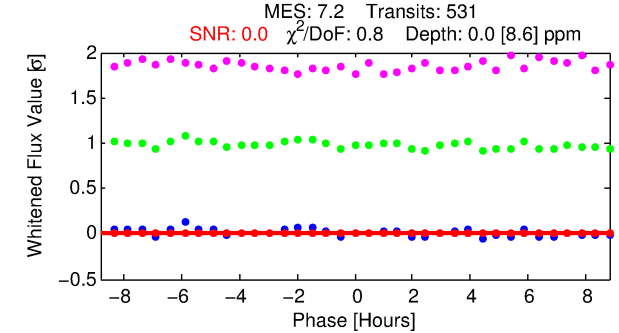
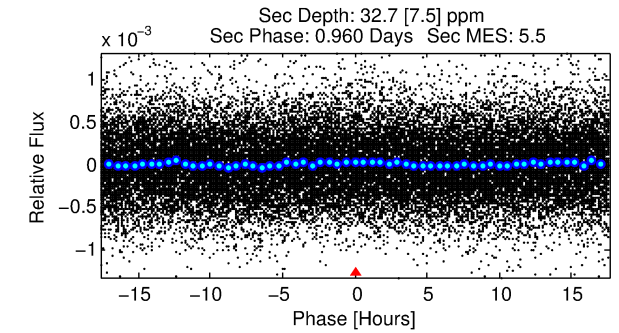
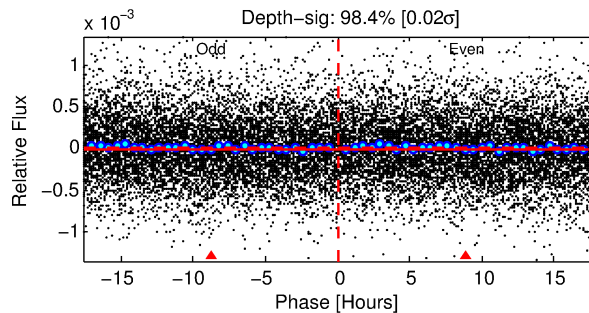
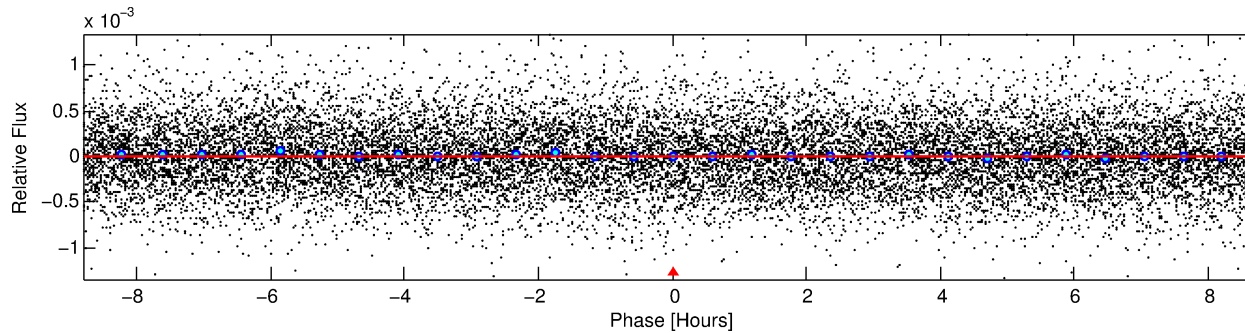
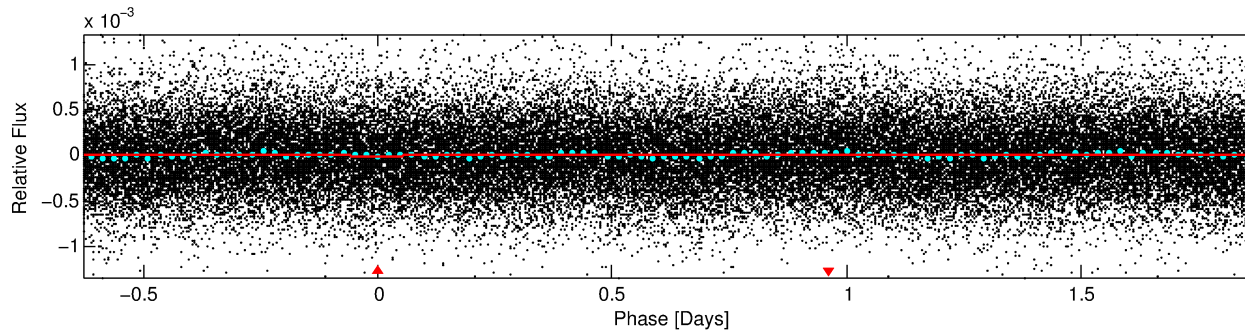
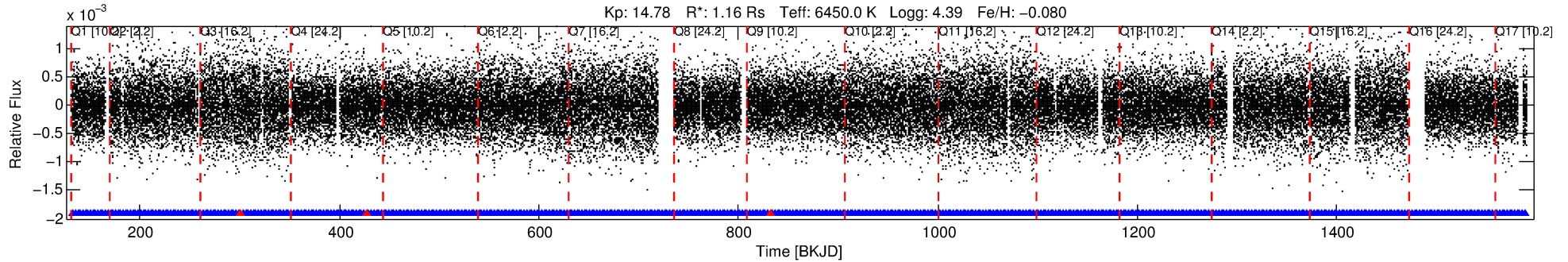
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003648721-01

No Significant Match Found

# DV One-Page Summary

KIC: 3648721 Candidate: 1 of 1 Period: 2.514 d



## DV Fit Results:

Period = 2.51392 [1.60686] d  
Epoch = 133.0494 [362.5670] BKJD  
Rp/R\* = 0.0000 [0.1340]  
a/R\* = 5.64 [3731.34]  
b = 0.52 [2951.18]  
Seff = 1411.62 [1343.62]  
Teq = 1563 [372] K  
Rp = 0.00 [16.89] Re  
a = 0.0383 [0.0195] AU  
Ag = 1950727.03 [17927804164.28] [0.000]  
Teffp = 90312 [207506195] K [0.00σ]

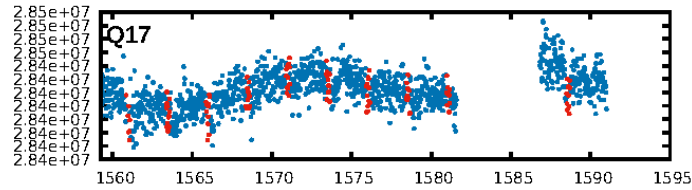
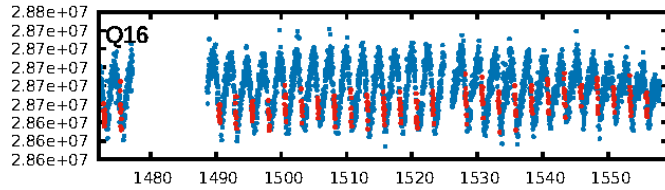
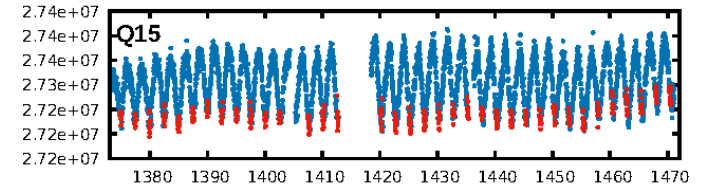
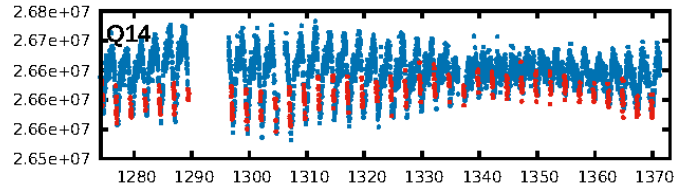
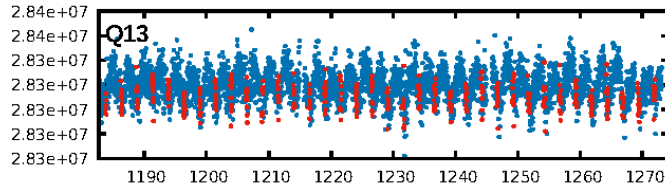
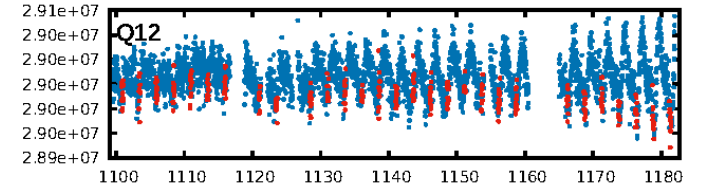
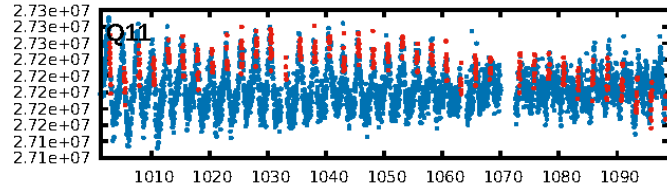
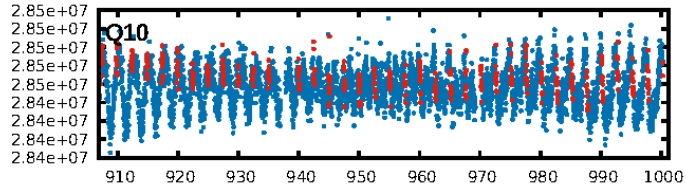
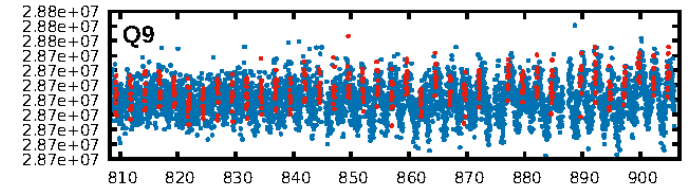
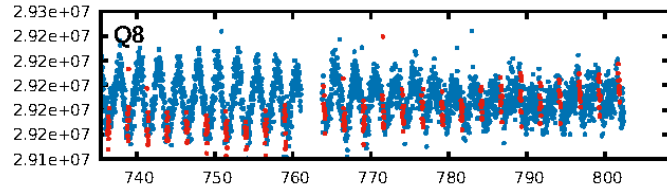
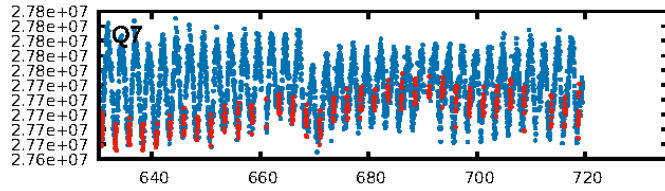
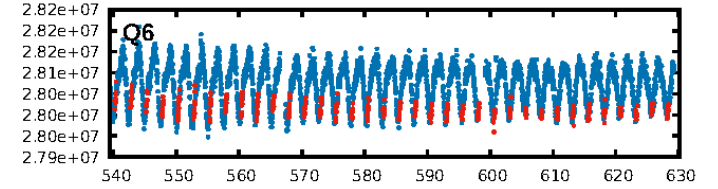
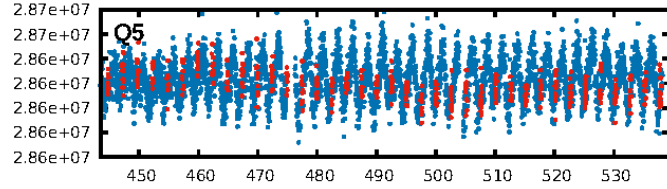
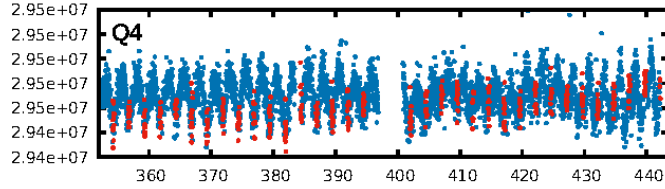
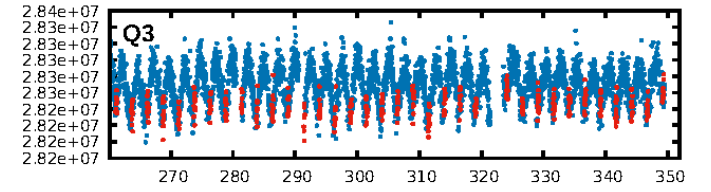
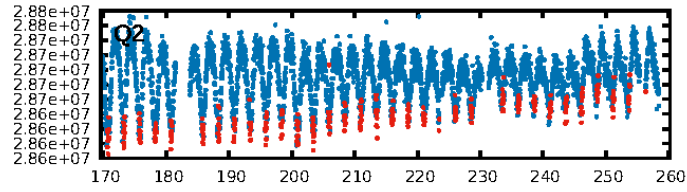
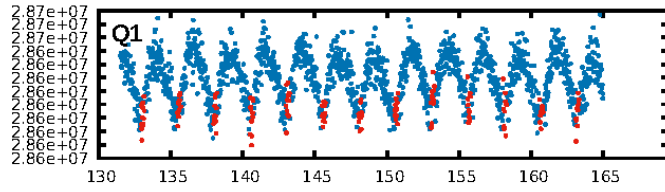
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.65e-13  
RollingBand-fgt: 0.99 [505/508]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 5.605 arcsec [18.90σ]  
KicOffset-rm: 5.929 arcsec [21.01σ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.71 [10/14]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:03:24 Z

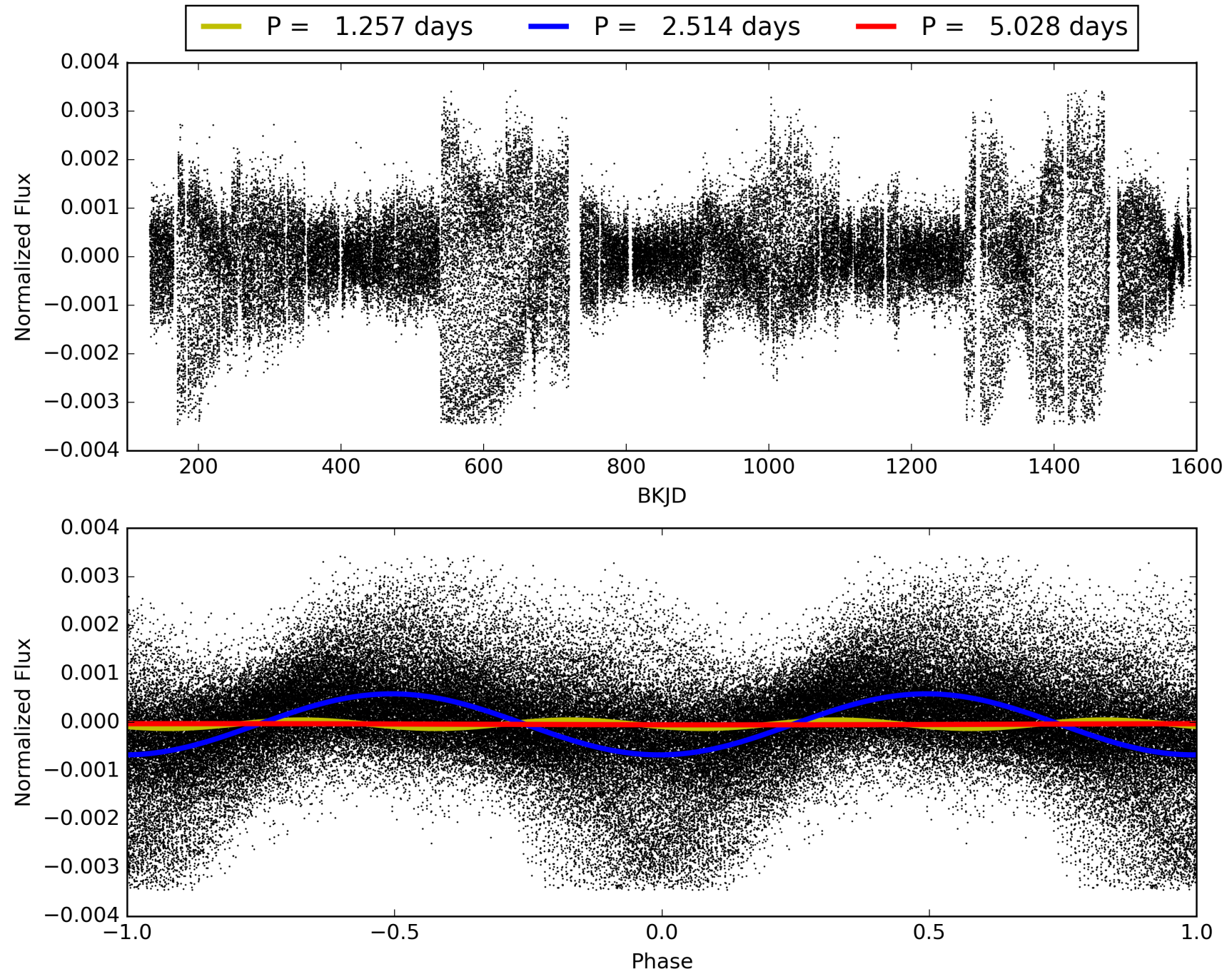
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003648721-01, PDC Light Curves



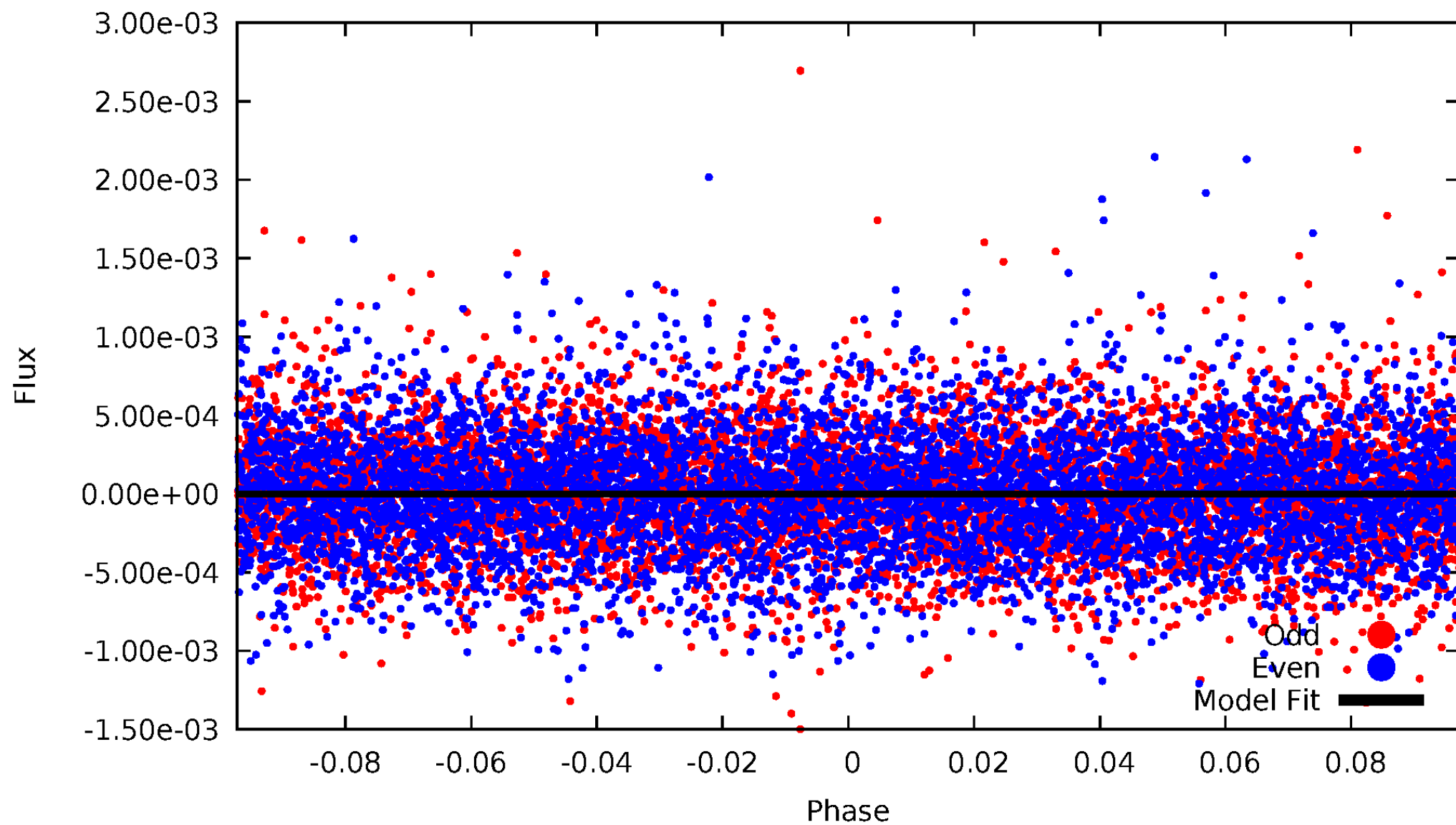


TCE 003648721-01



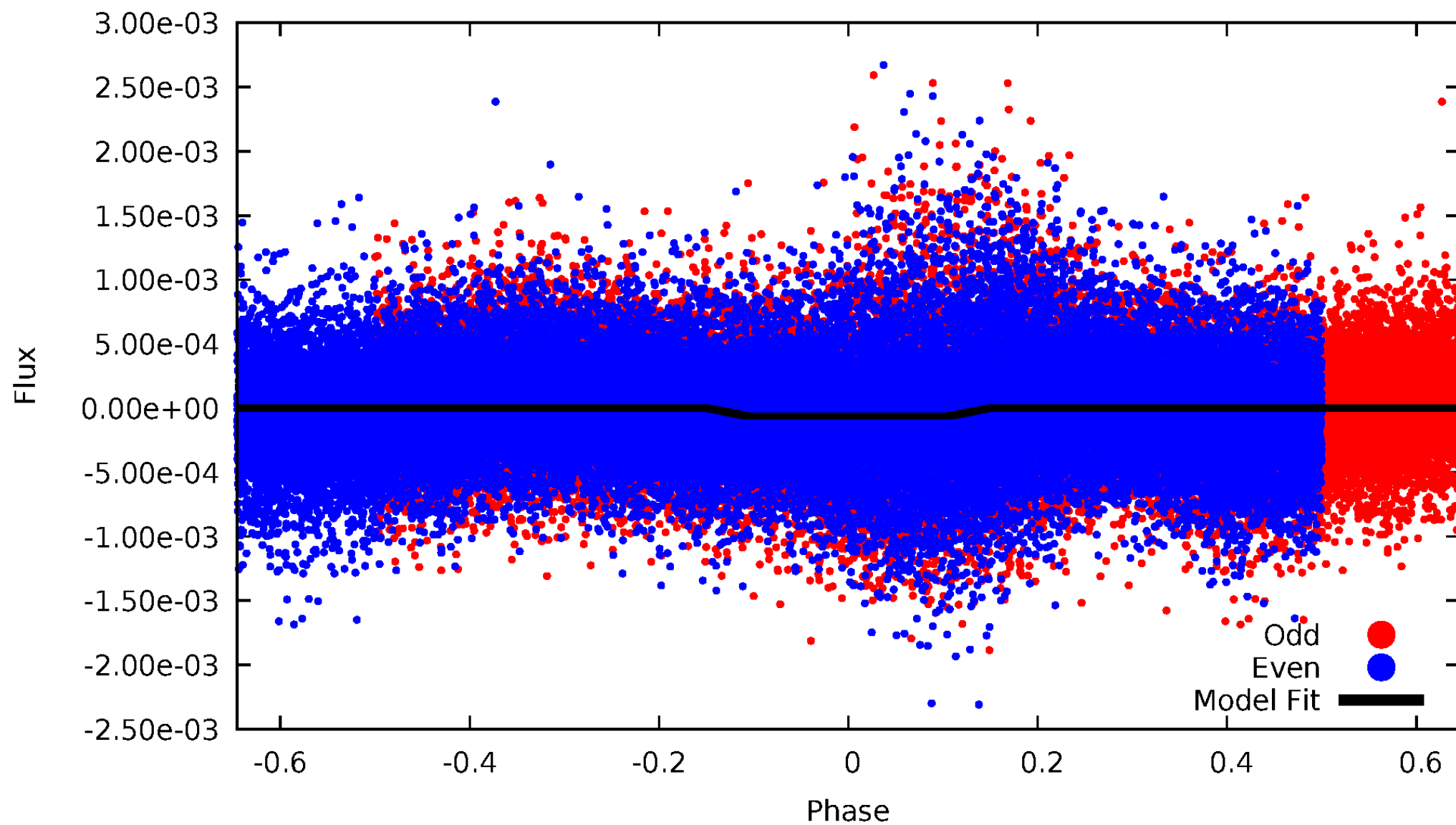
# DV Odd/Even

TCE 003648721-01

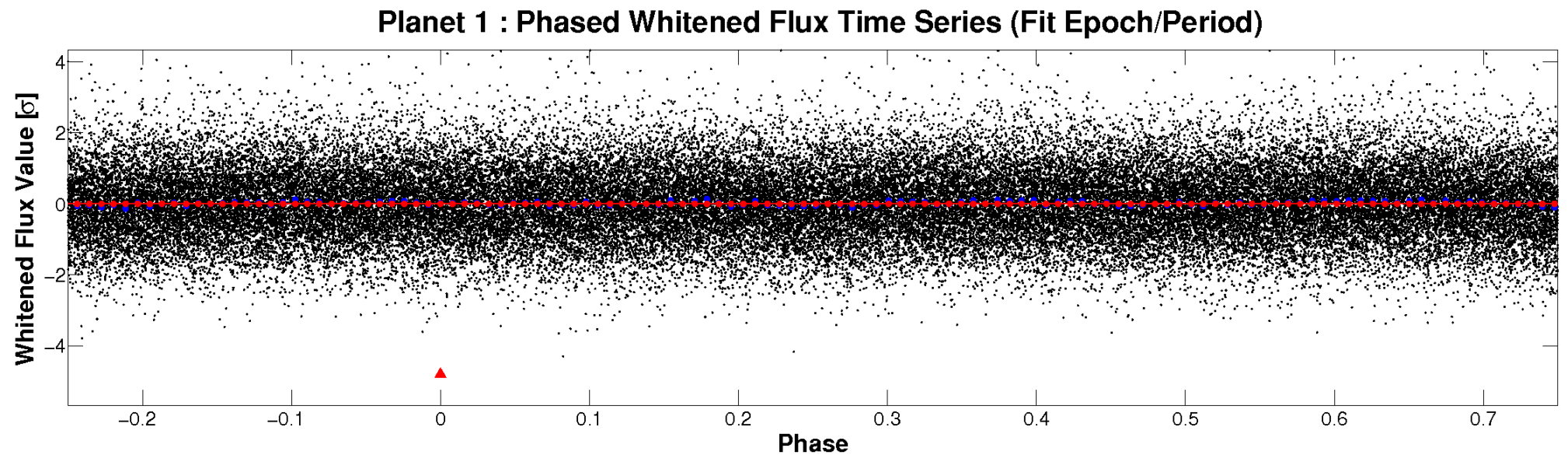
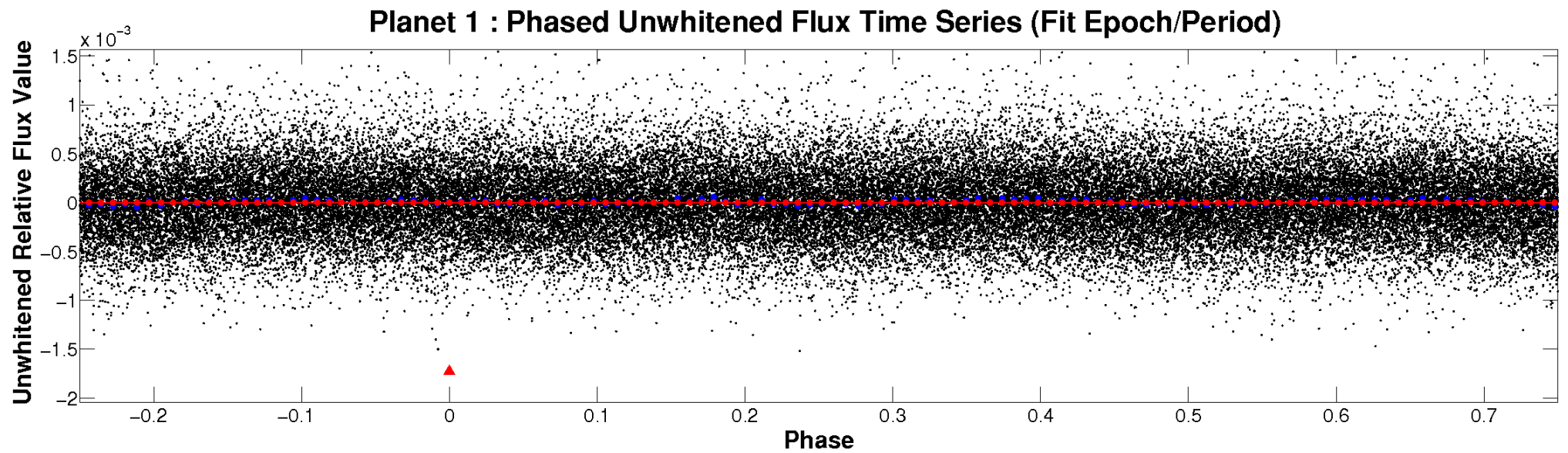


# ALT Odd/Even

TCE 003648721-01



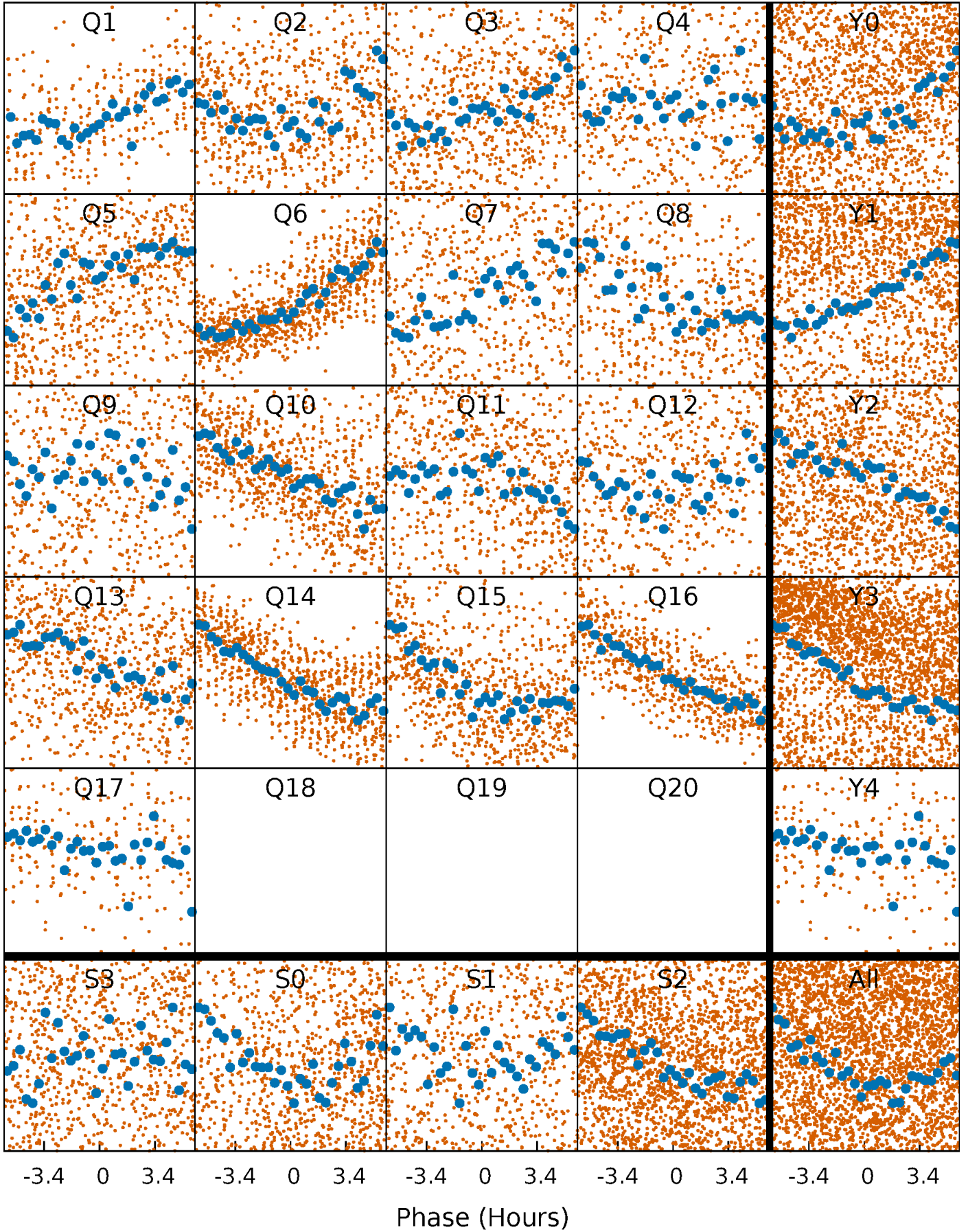
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

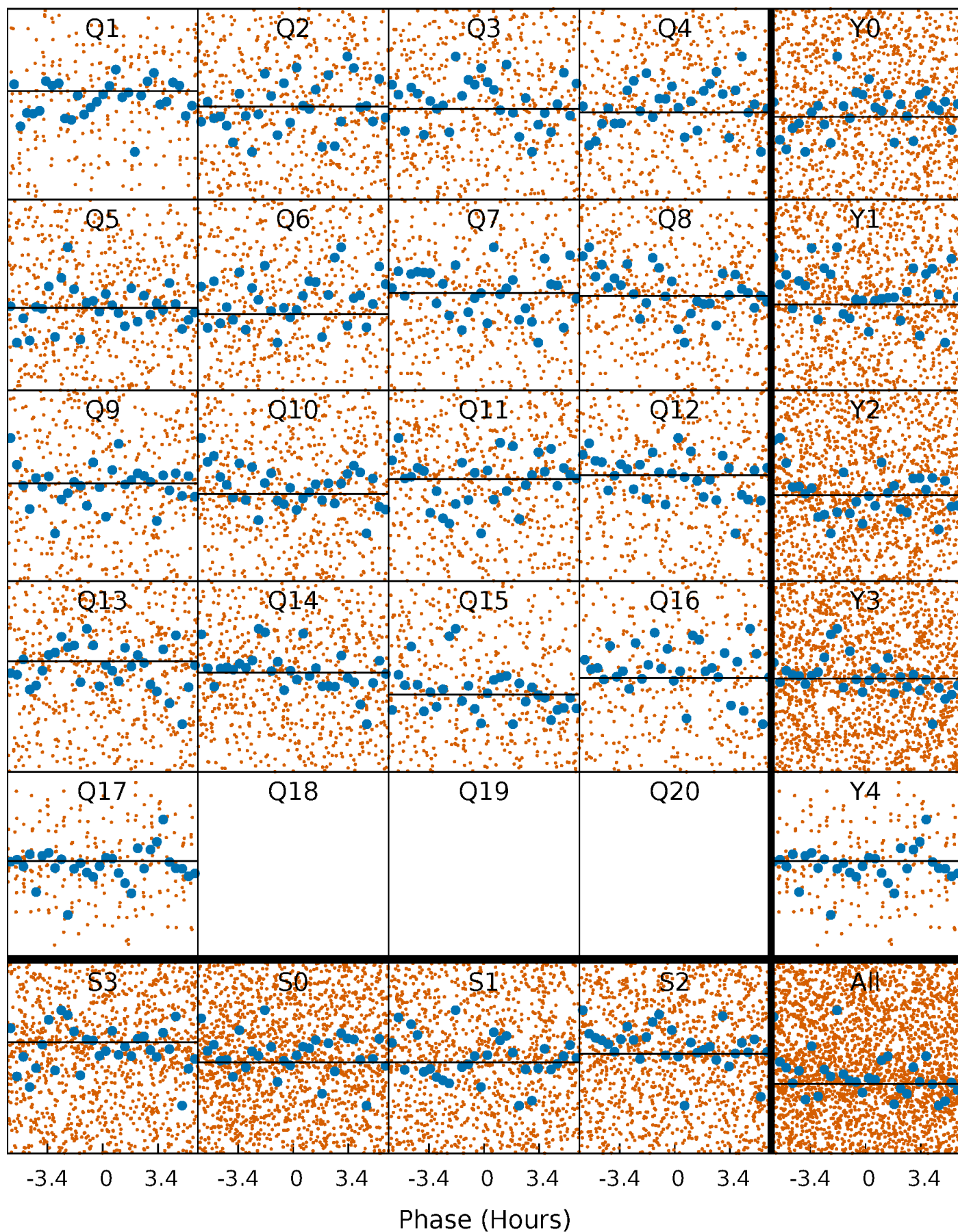
TCE 003648721-01 P= 2.513923 Days  $T_0=133.049393$  (BKJD)





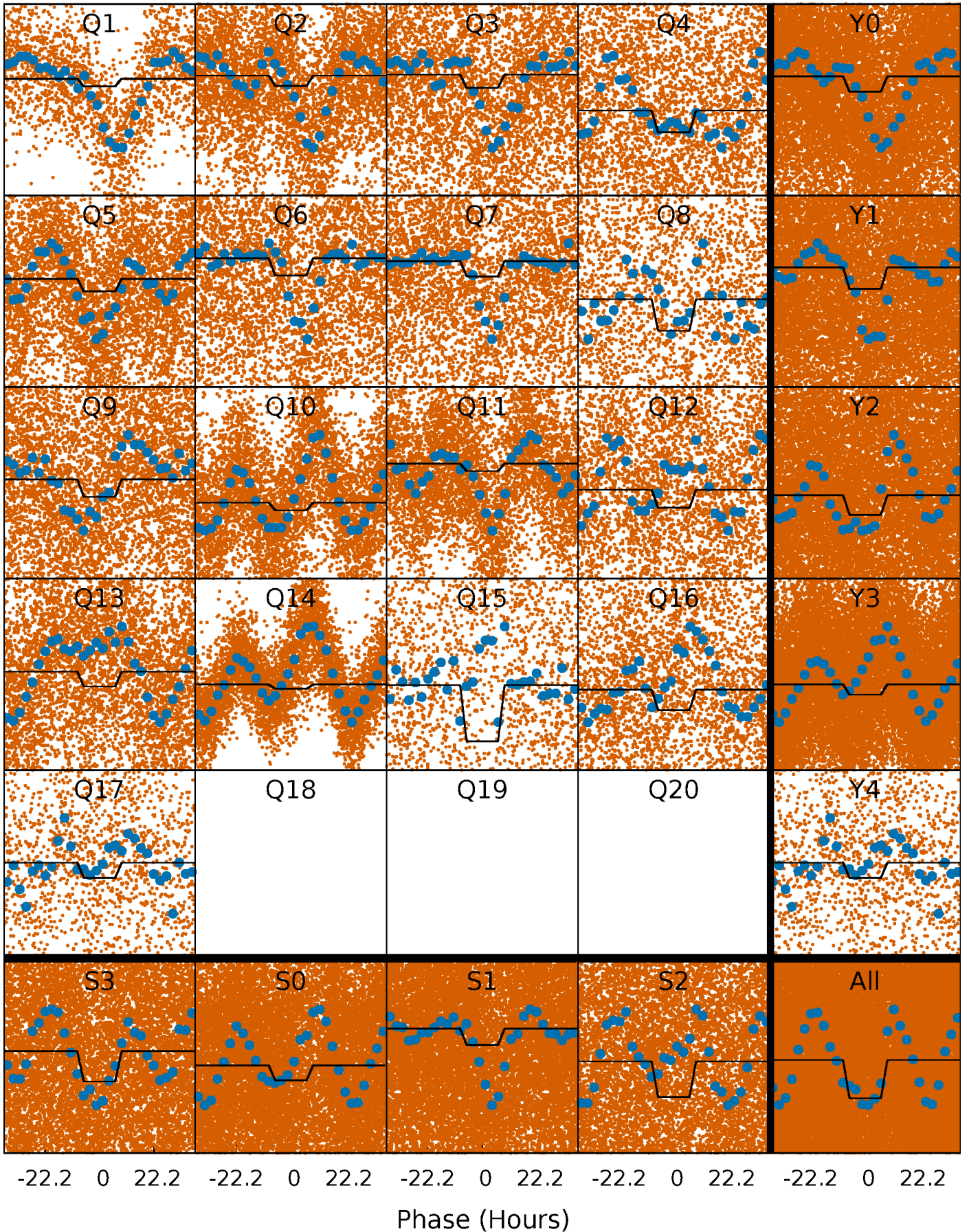
# DV Quarter-Phased Transit Curves

TCE 003648721-01 P= 2.513923 Days  $T_0=133.049393$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

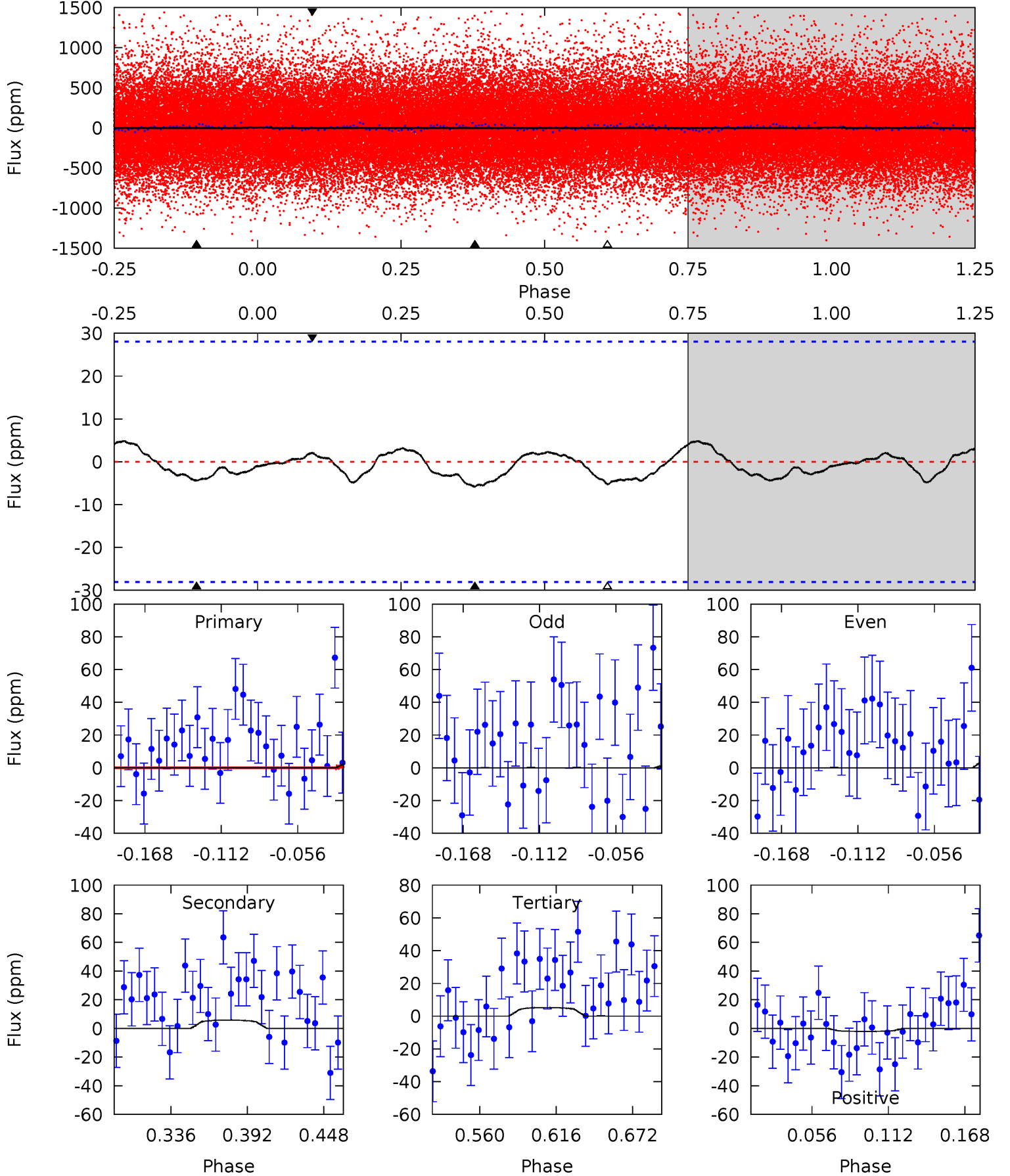
TCE 003648721-01 P= 2.512997 Days  $T_0=132.631065$  (BKJD)



# DV Model-Shift Uniqueness Test

003648721-01, P = 2.513923 Days, E = 130.535470 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
0.73	0.97	0.88	0.35	4.68	1.91	0.42	-0.15	0.38	0.09	0.62	0.31	0.82	0.45	0.52

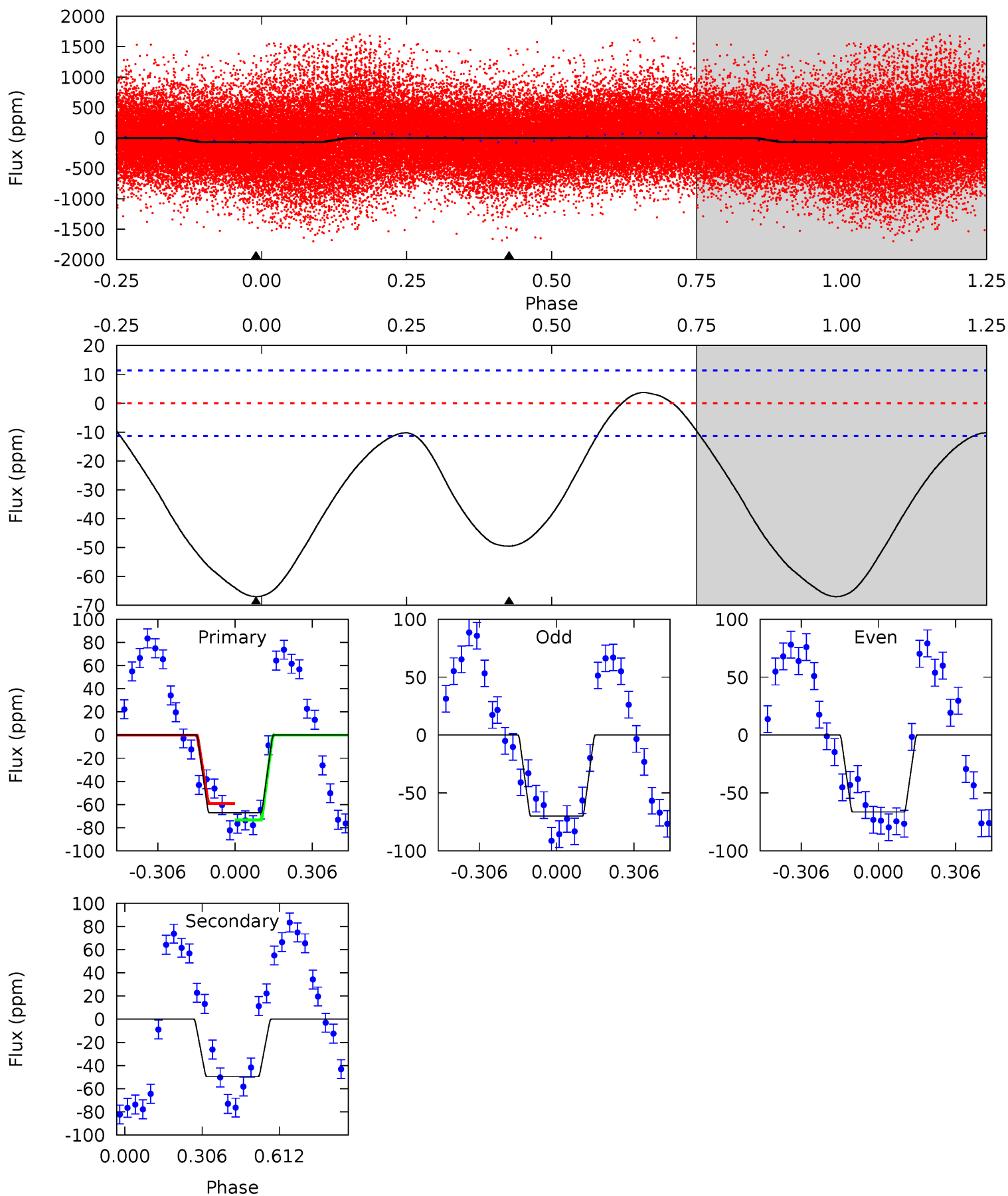




# Alt Model-Shift Uniqueness Test

003648721-01, P = 2.512997 Days, E = 130.118068 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
25.5	18.9	0	0	4.32	1.02	1.82	25.5	25.5	18.9	18.9	0.68	1.00	0.05	2.28





### Stellar Parameters For KIC 003648721

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6450^{+157}_{-224}$	$4.386^{+0.067}_{-0.216}$	$-0.080^{+0.250}_{-0.300}$	$1.155^{+0.389}_{-0.130}$	$1.183^{+0.169}_{-0.152}$	$1.081^{+0.323}_{-0.589}$
	+2%/-3%	+2%/-5%	+312%/-375%	+34%/-11%	+14%/-13%	+30%/-55%
Source	PHO1	KIC0	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 003648721-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-6 \pm 6$	$12.04^{+13.45}_{-8.61}$	$2253^{+658}_{-360}$	$-2571^{+877}_{-428}$	$0.016^{+0.277}_{-0.017}$
Alt.	$-50 \pm 3$	$13.26^{+14.09}_{-9.59}$	$2230^{+751}_{-348}$	$-2204^{+5746}_{-677}$	$0.210^{+2.567}_{-0.172}$

$T_{\text{max}}$  = 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  $A_{\text{obs}} \gg 1.0$

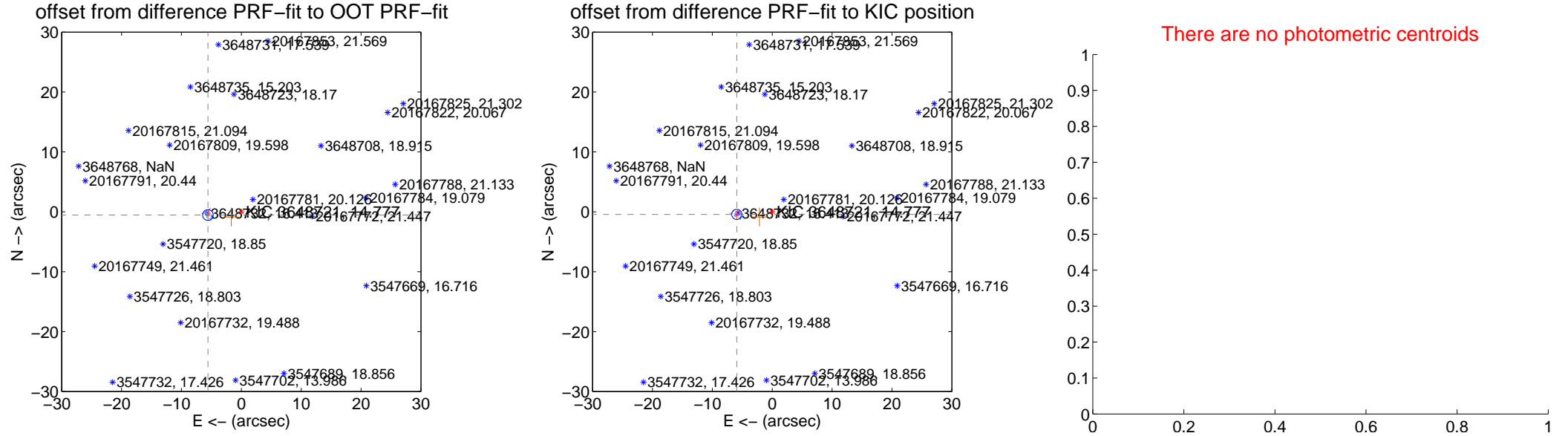
## DV Centroid Data

Supplemental centroid analysis for 003648721-01. Kepler magnitude: 14.78. Transit SNR 0.00

There are 10 quarters with good PRF difference image offsets

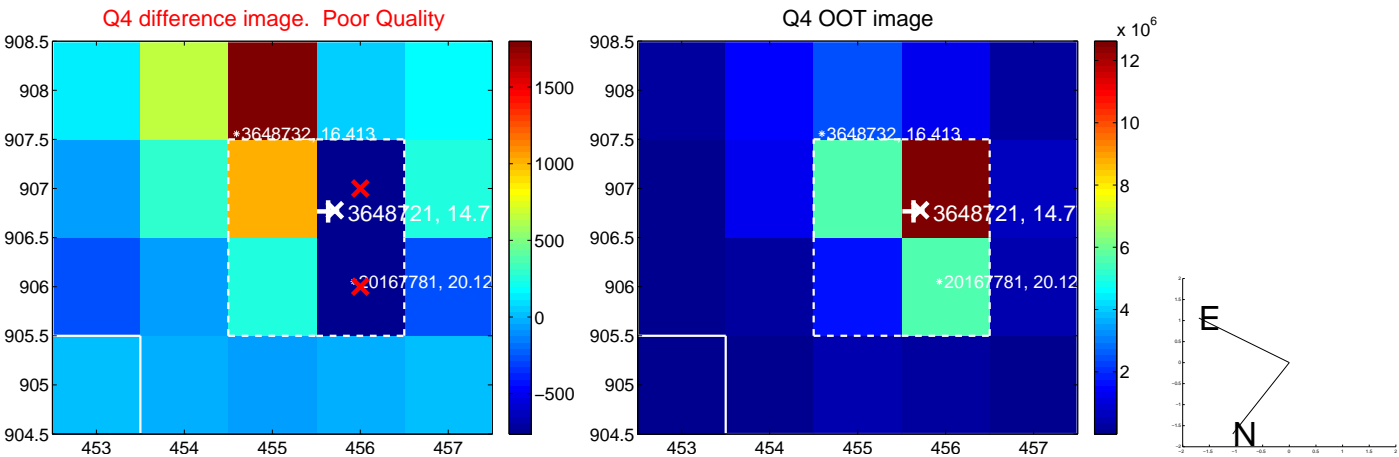
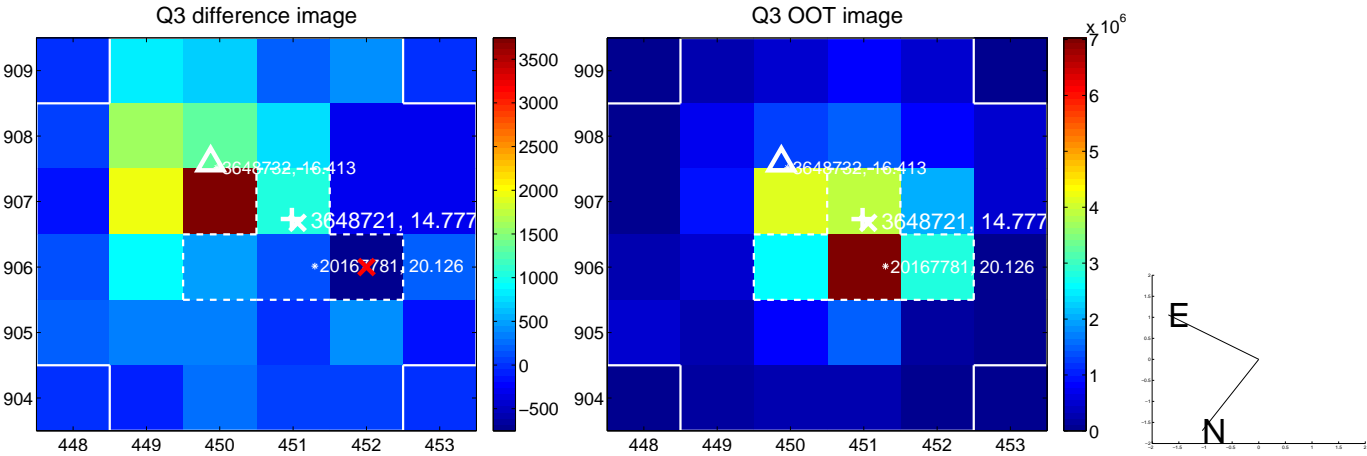
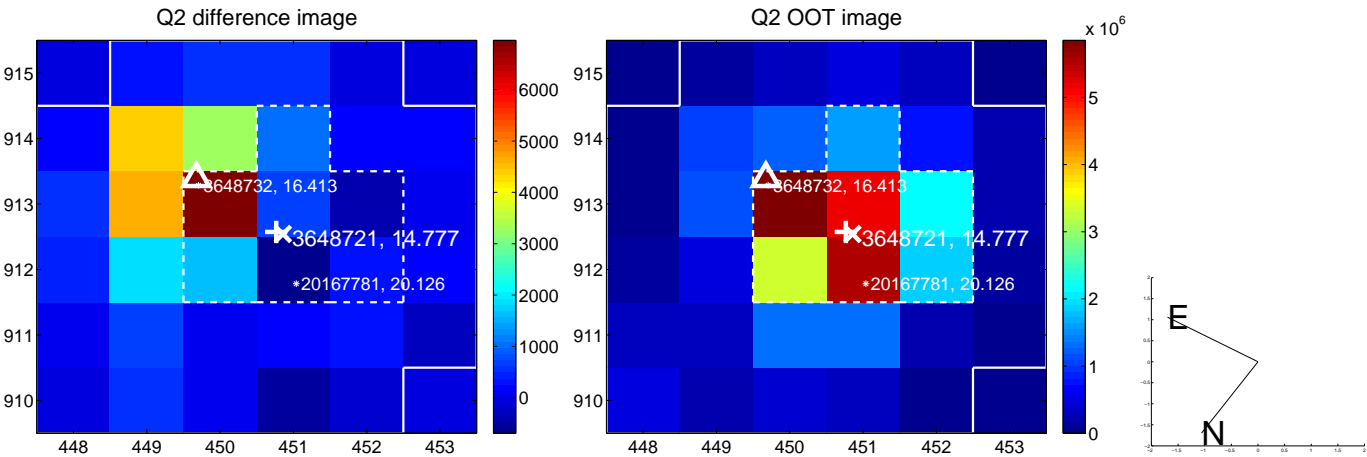
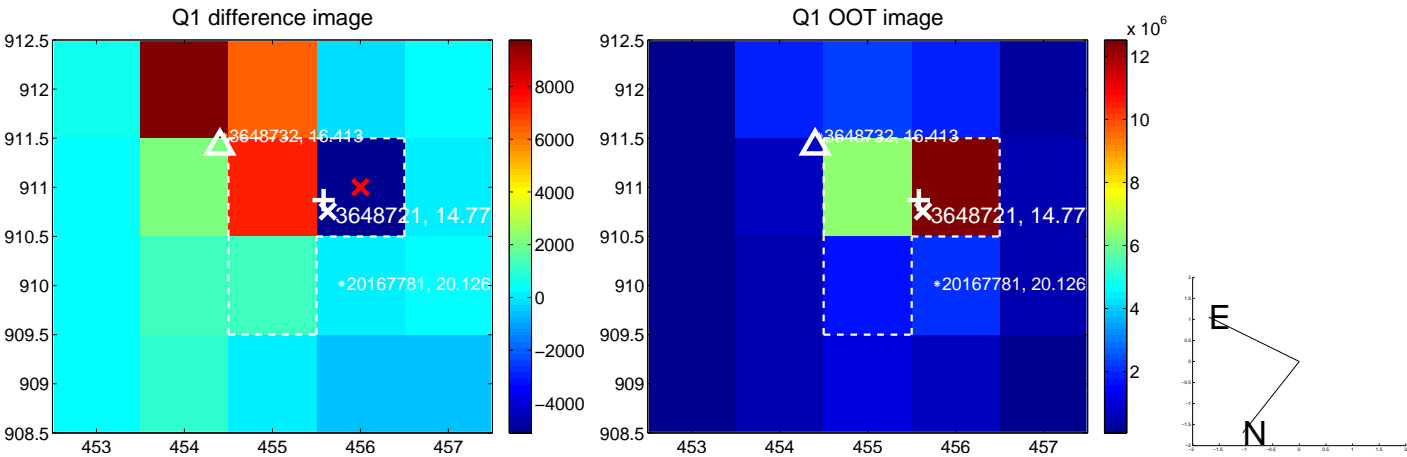
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>5.605 <math>\pm</math> 0.297</b>	<b>18.90</b>	5.580 $\pm$ 0.299	-0.535 $\pm$ 0.139
PRF-fit source offset from KIC position	<b>5.929 <math>\pm</math> 0.282</b>	<b>21.01</b>	5.913 $\pm$ 0.285	-0.434 $\pm$ 0.114
photometric centroid source offset	—	—	—	—

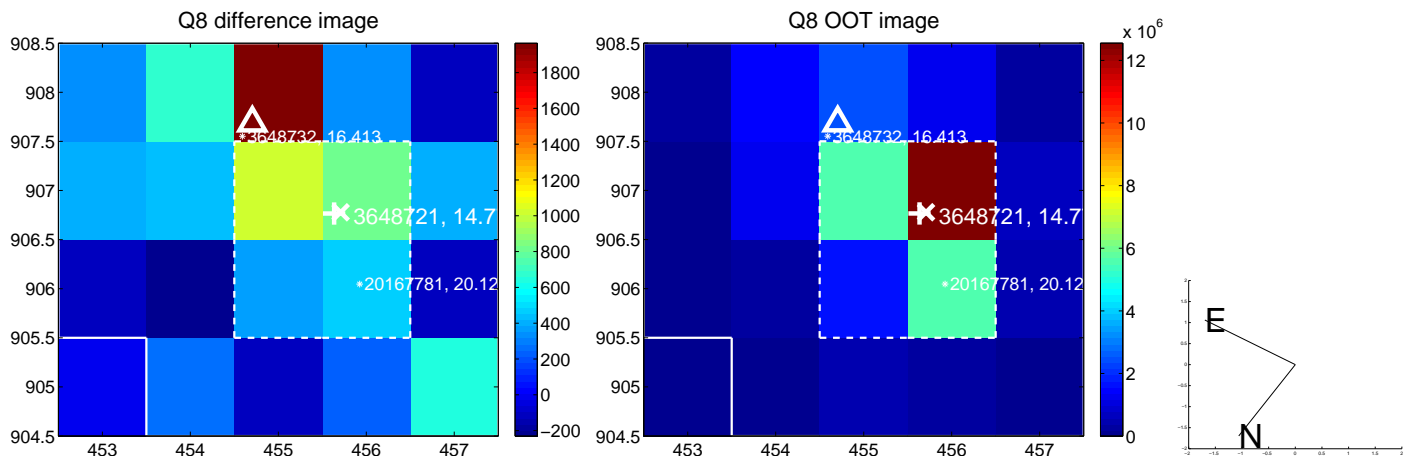
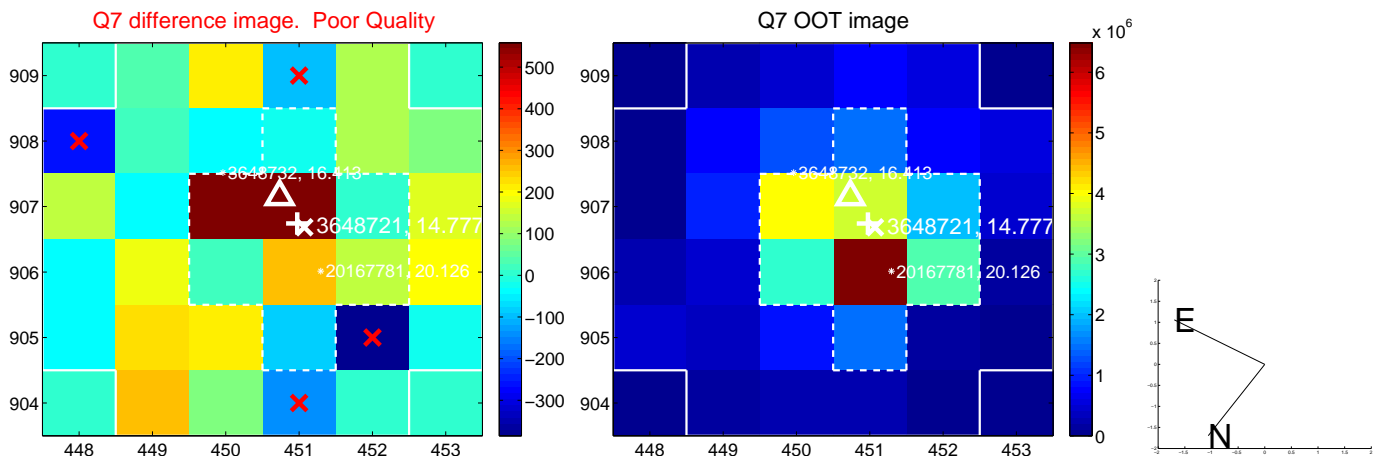
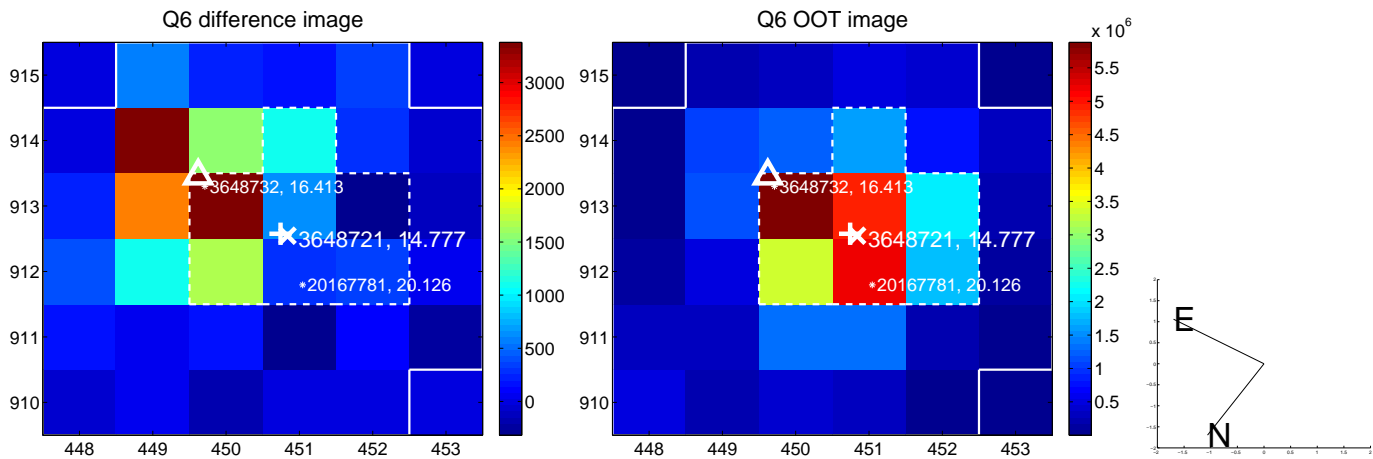
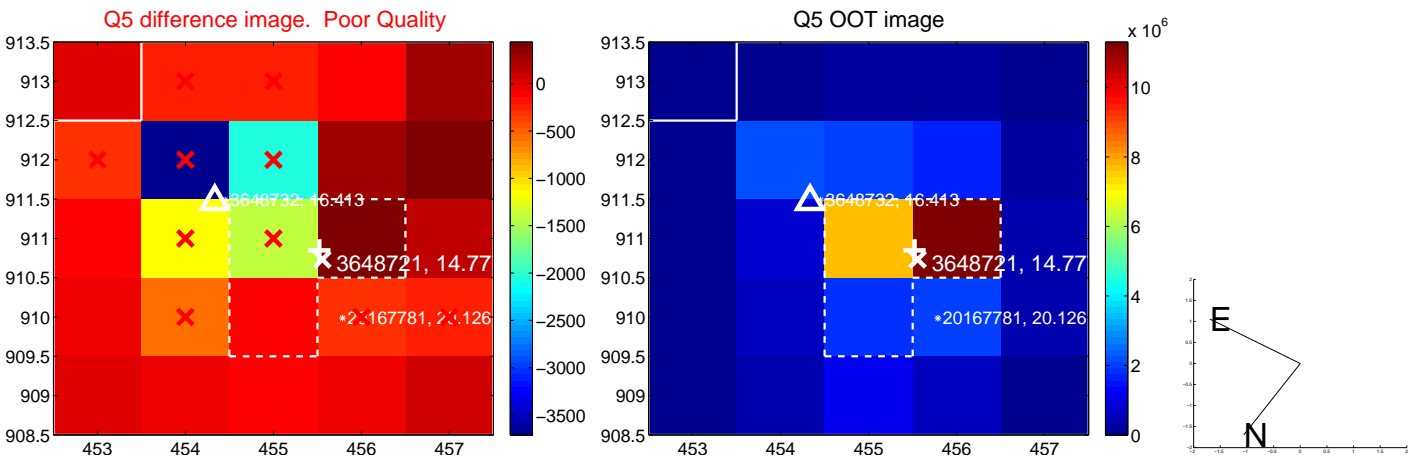


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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.

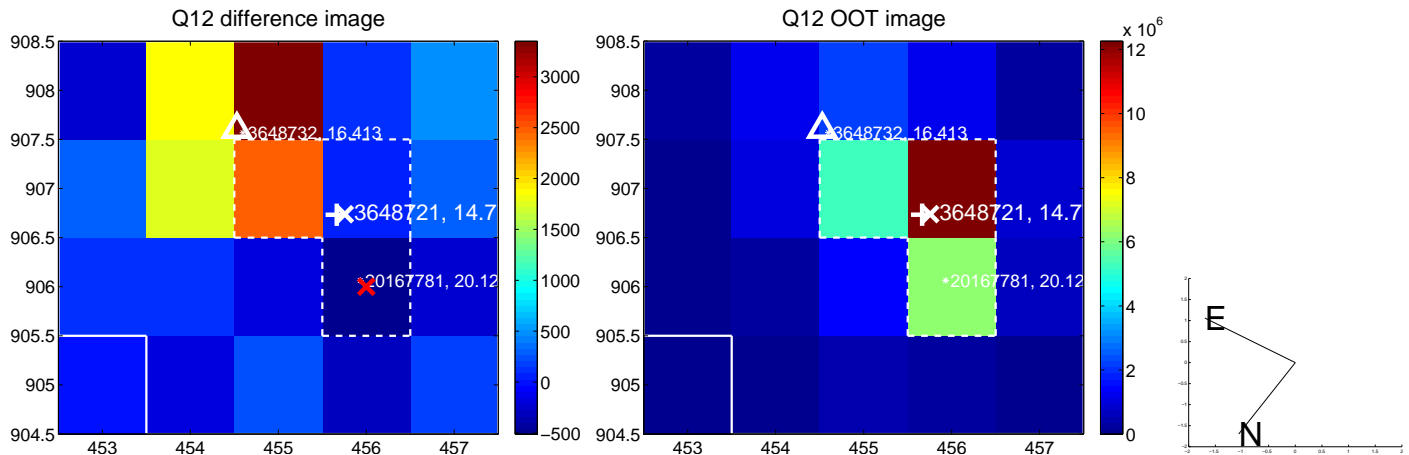
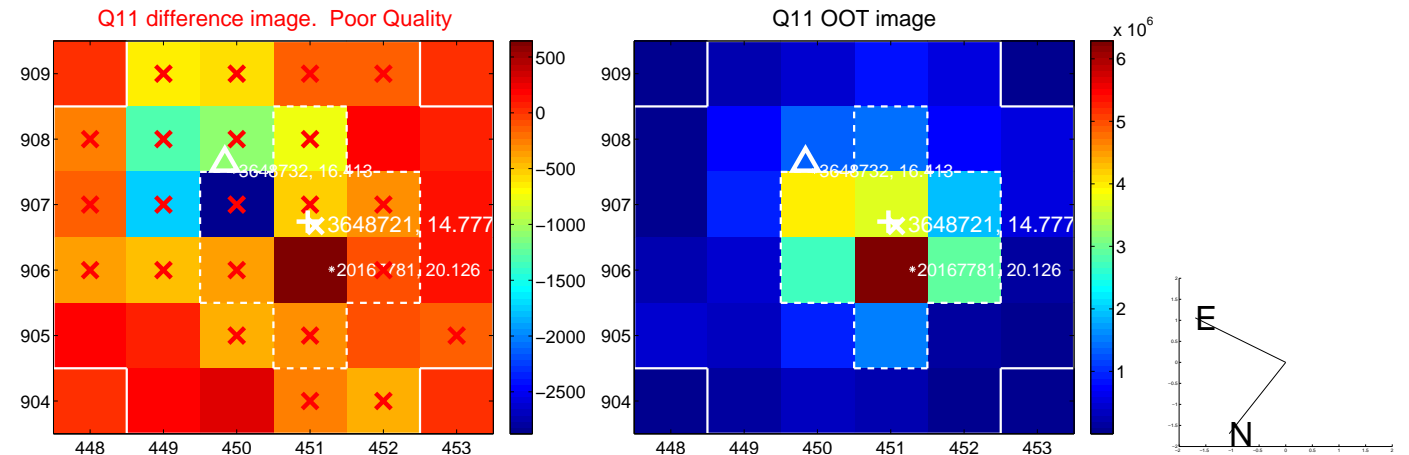
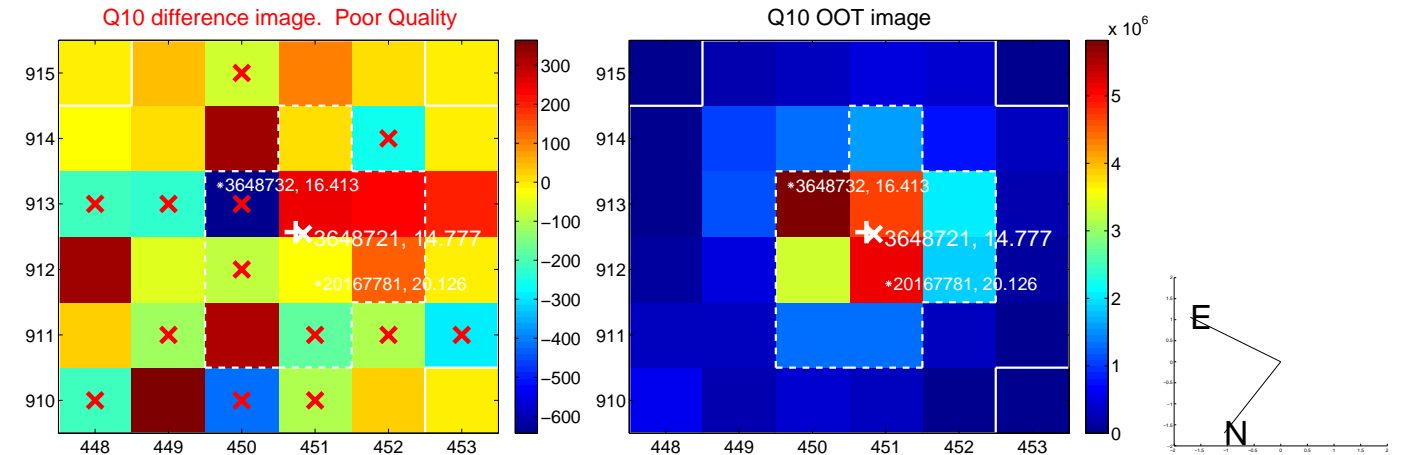
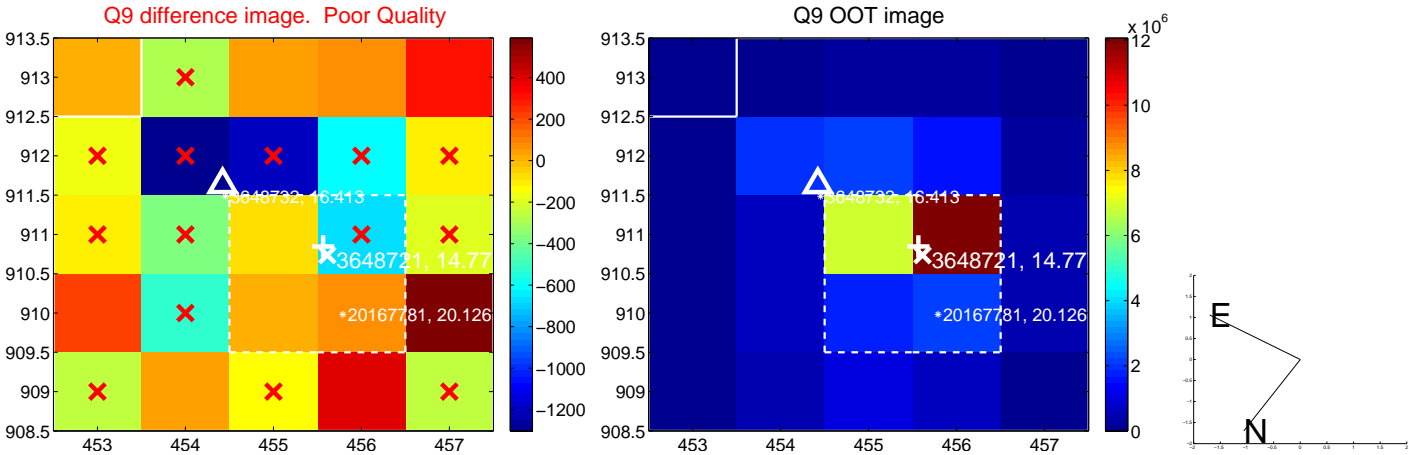


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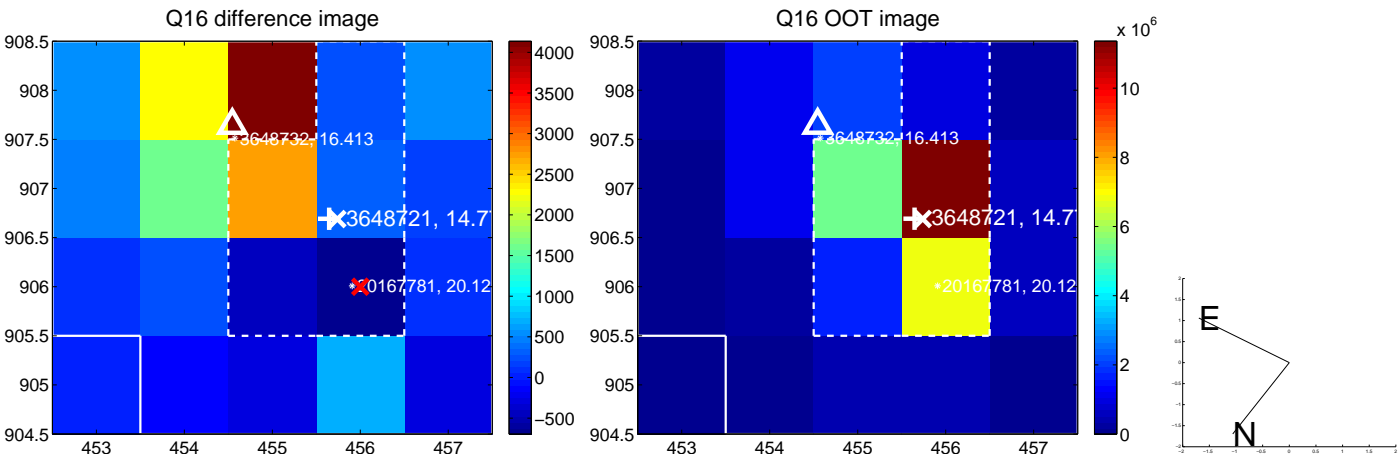
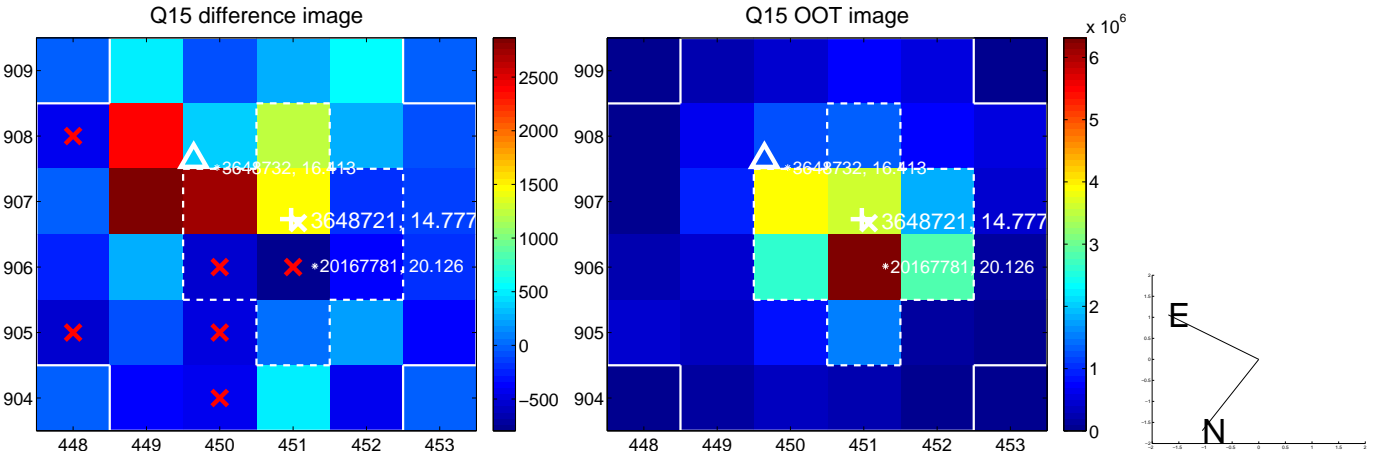
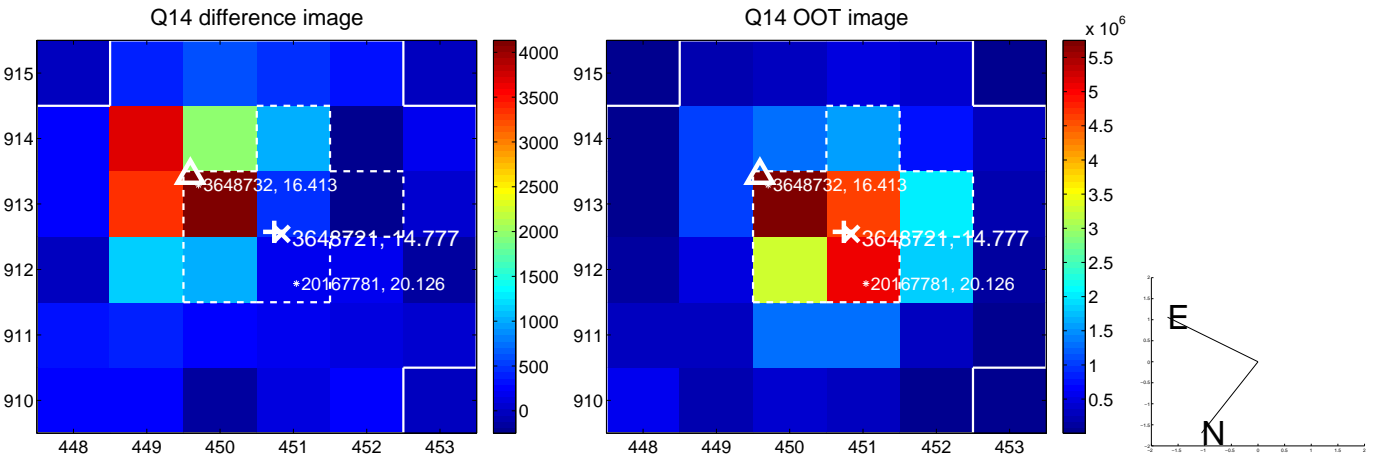
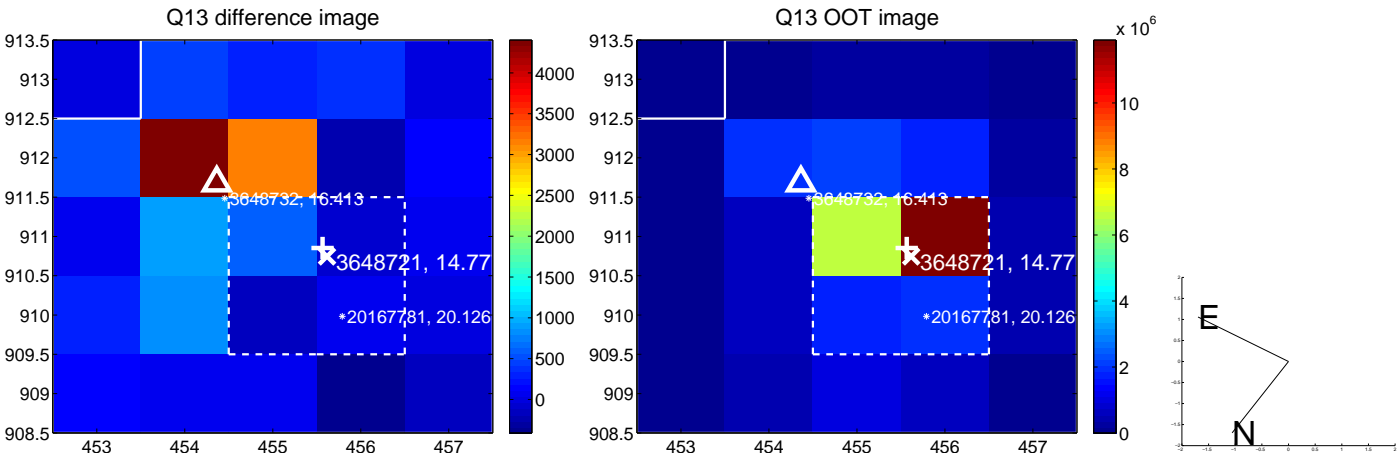




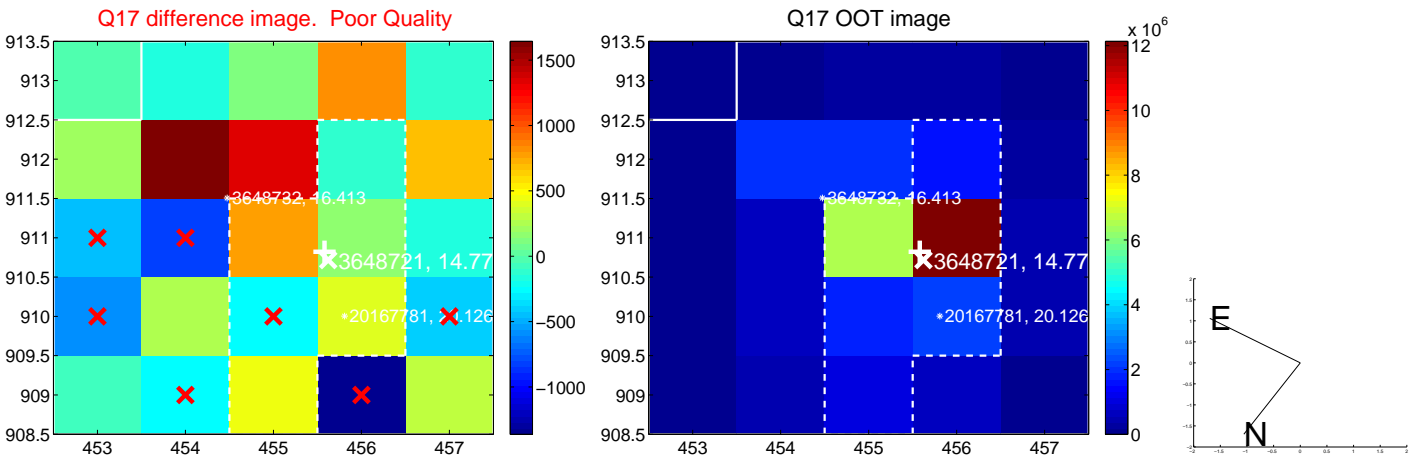
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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

