

# KIC 006440528

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006440528-01	OBS	No	0.566769	131.850599	31.3	3.274	8.2	7.5	0.66	5009	0.40	1844.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006440528-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—HALO_GHOST

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

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

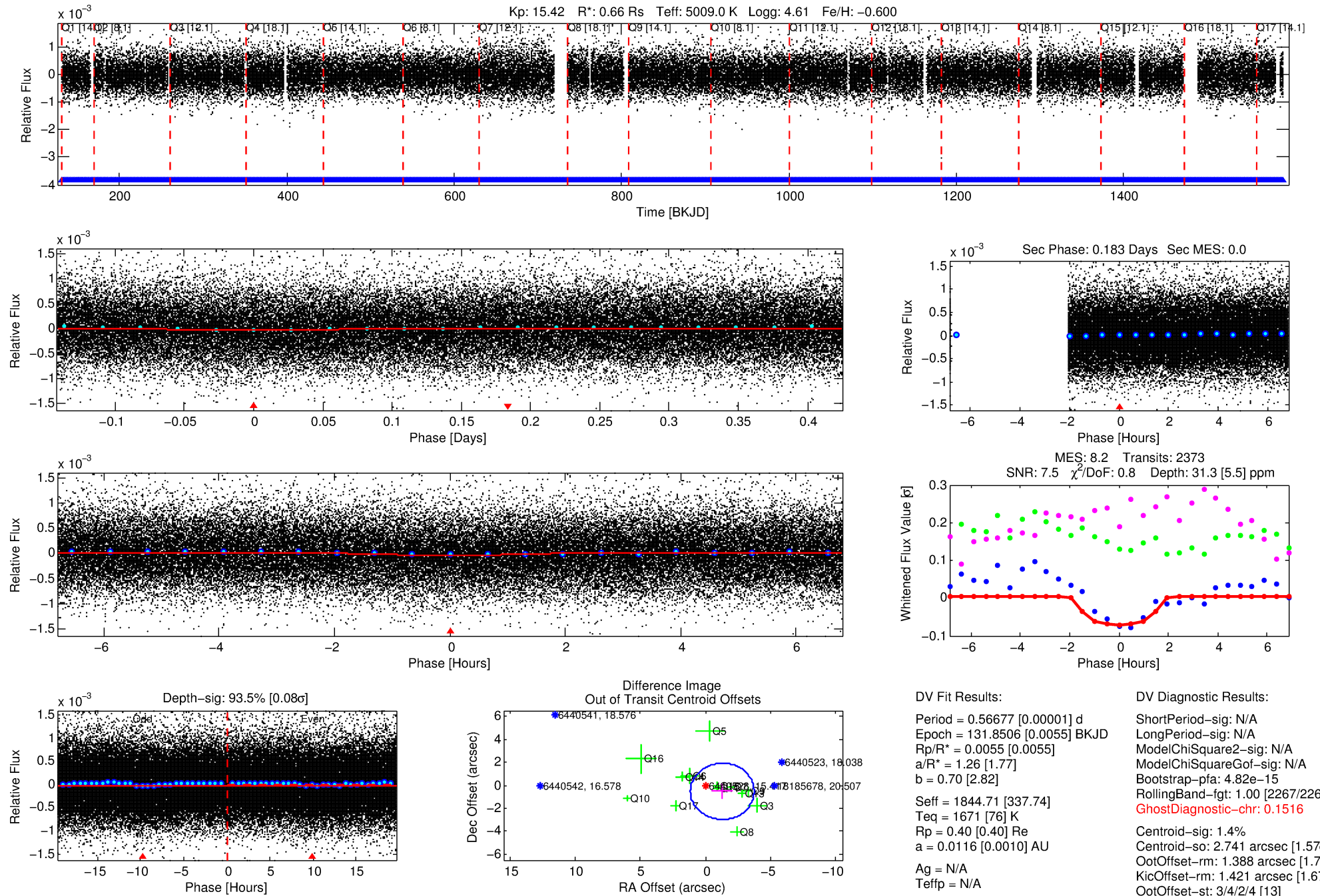
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006440528-01

No Significant Match Found

# DV One-Page Summary

KIC: 6440528 Candidate: 1 of 1 Period: 0.567 d



## DV Fit Results:

Period = 0.56677 [0.00001] d  
Epoch = 131.8506 [0.0055] BKJD  
Rp/R\* = 0.0055 [0.0055]  
a/R\* = 1.26 [1.77]  
b = 0.70 [2.82]  
Seff = 1844.71 [337.74]  
Teff = 1671 [76] K  
Rp = 0.40 [0.40] Re  
a = 0.0116 [0.0010] AU  
Ag = N/A  
Teffp = N/A

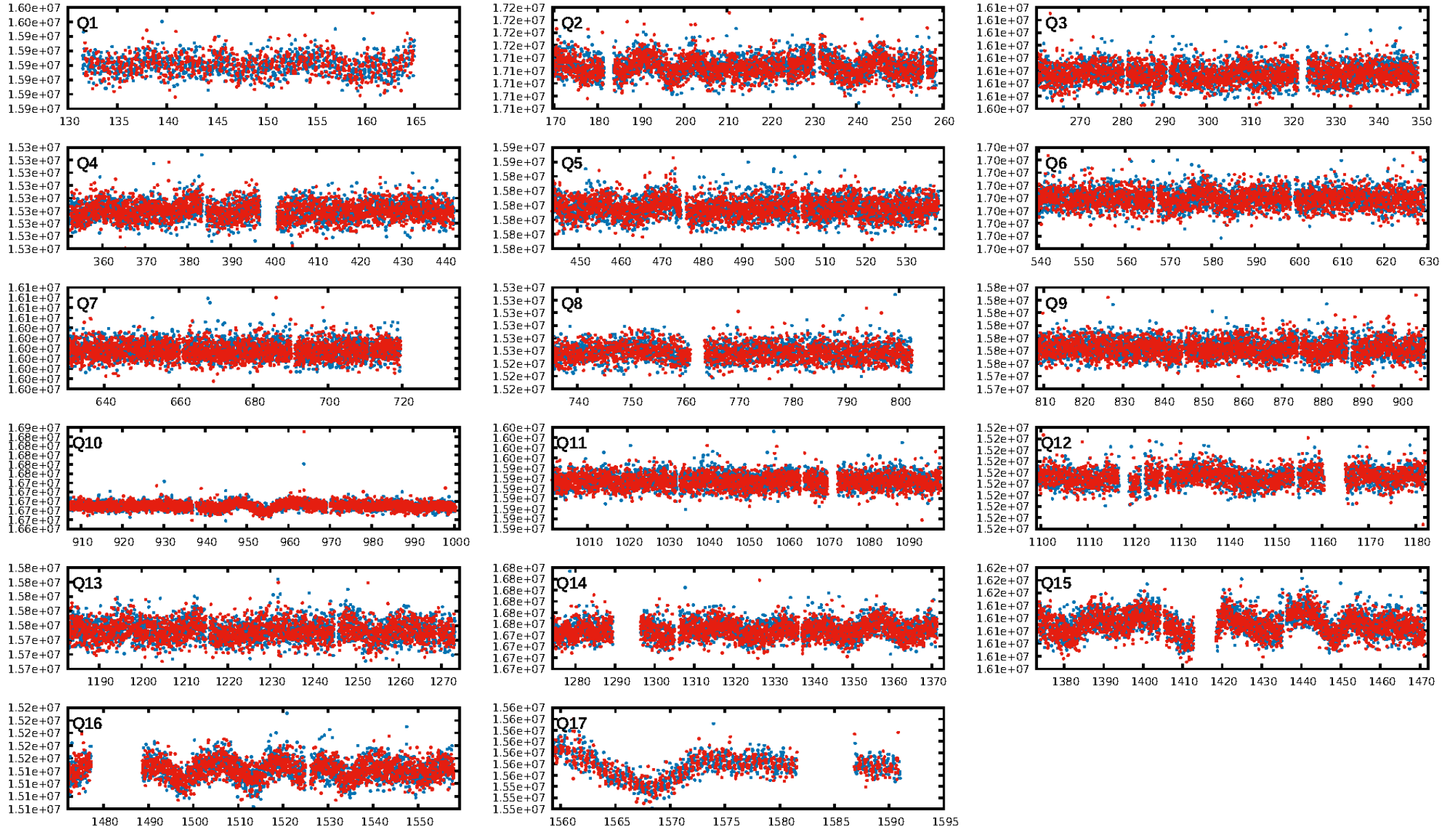
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.82e-15  
RollingBand-fgt: 1.00 [2267/2267]  
**GhostDiagnostic-chr: 0.1516**  
Centroid-sig: 1.4%  
Centroid-so: 2.741 arcsec [1.57 $\sigma$ ]  
OotOffset-rm: 1.388 arcsec [1.70 $\sigma$ ]  
KicOffset-rm: 1.421 arcsec [1.67 $\sigma$ ]  
OotOffset-st: 3/4/2/4 [13]  
KicOffset-st: 3/4/2/4 [13]  
DiffImageQuality-fgm: 0.00 [0/13]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:12:49 Z

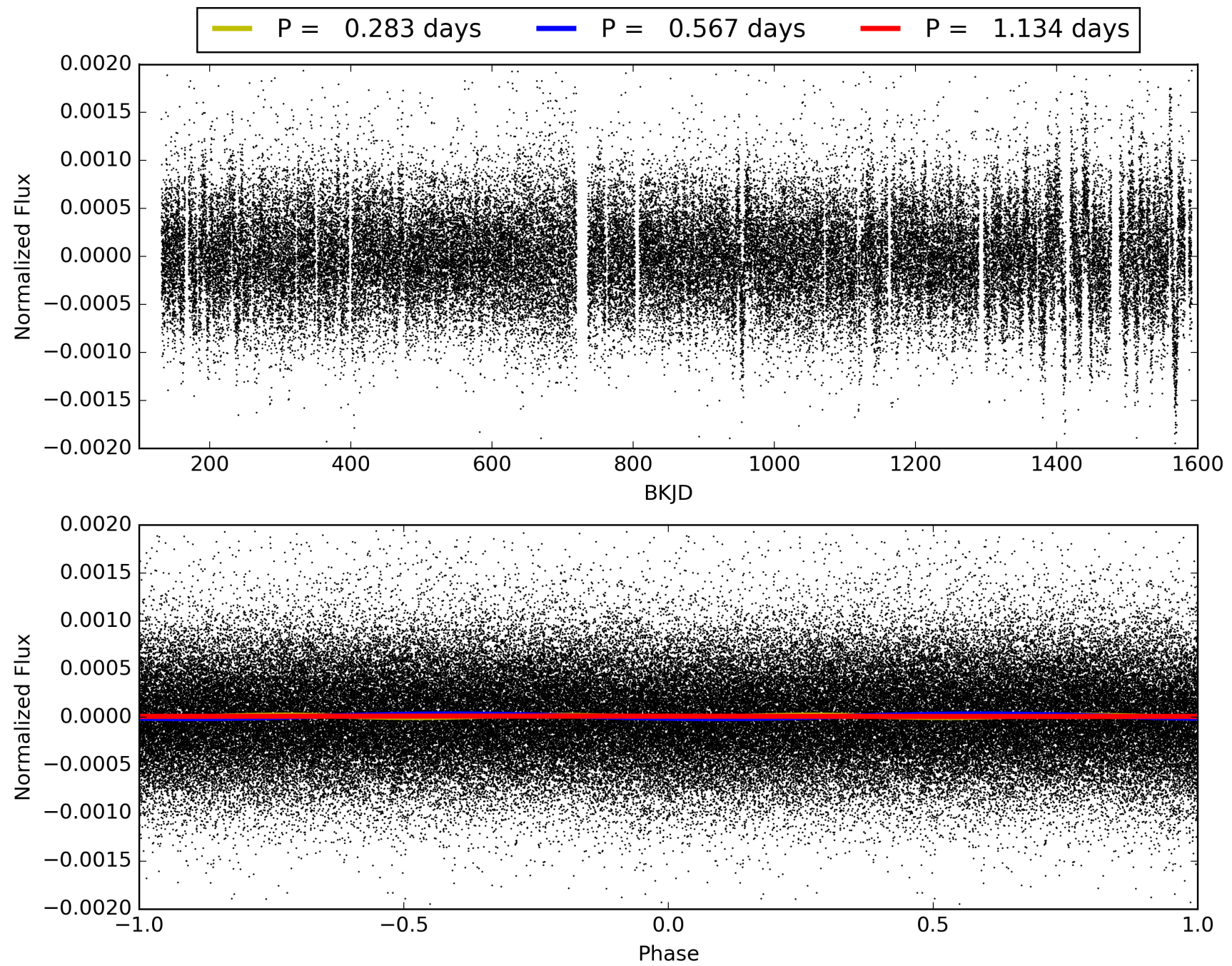
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006440528-01, PDC Light Curves



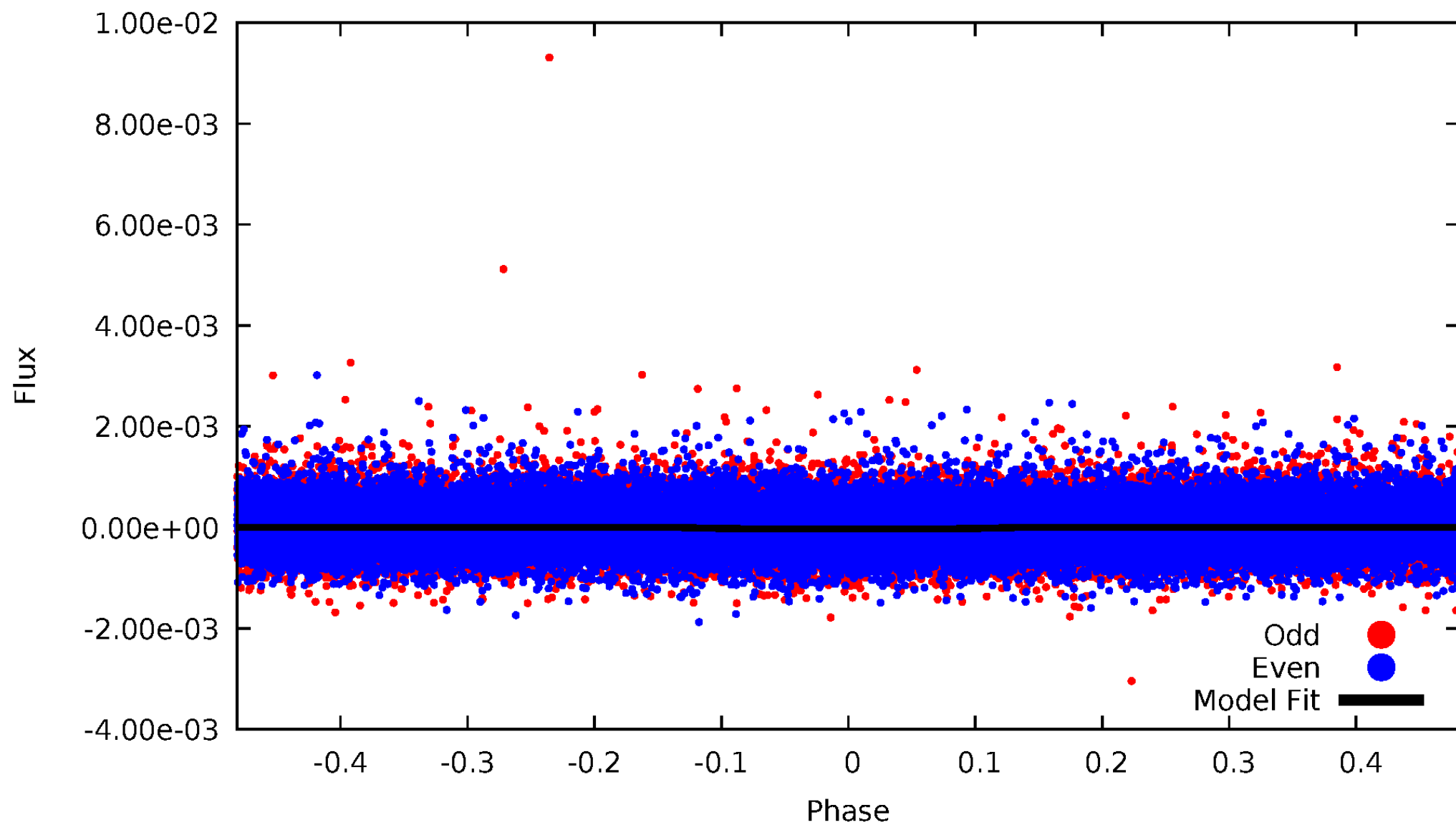


TCE 006440528-01



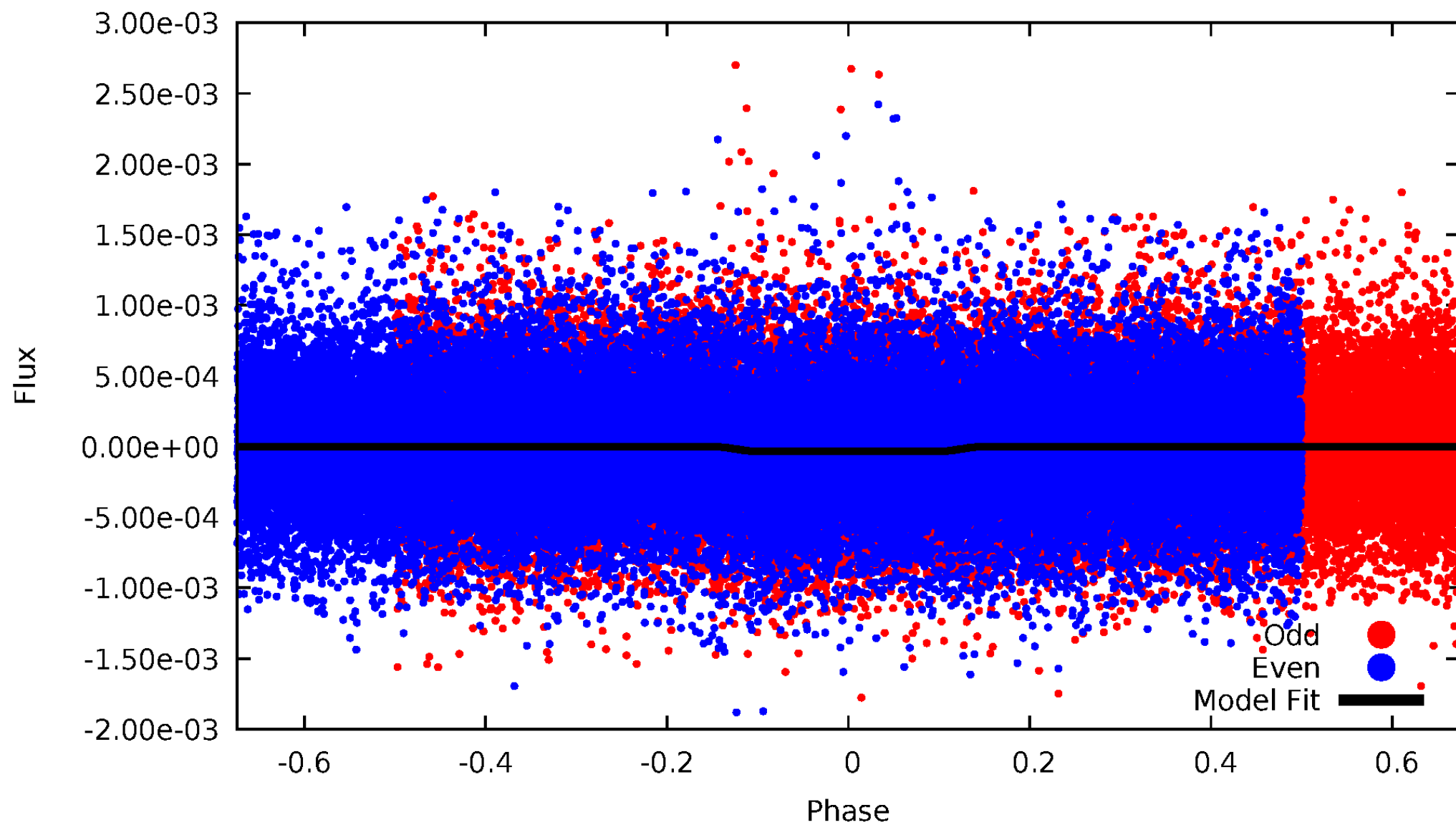
# DV Odd/Even

TCE 006440528-01



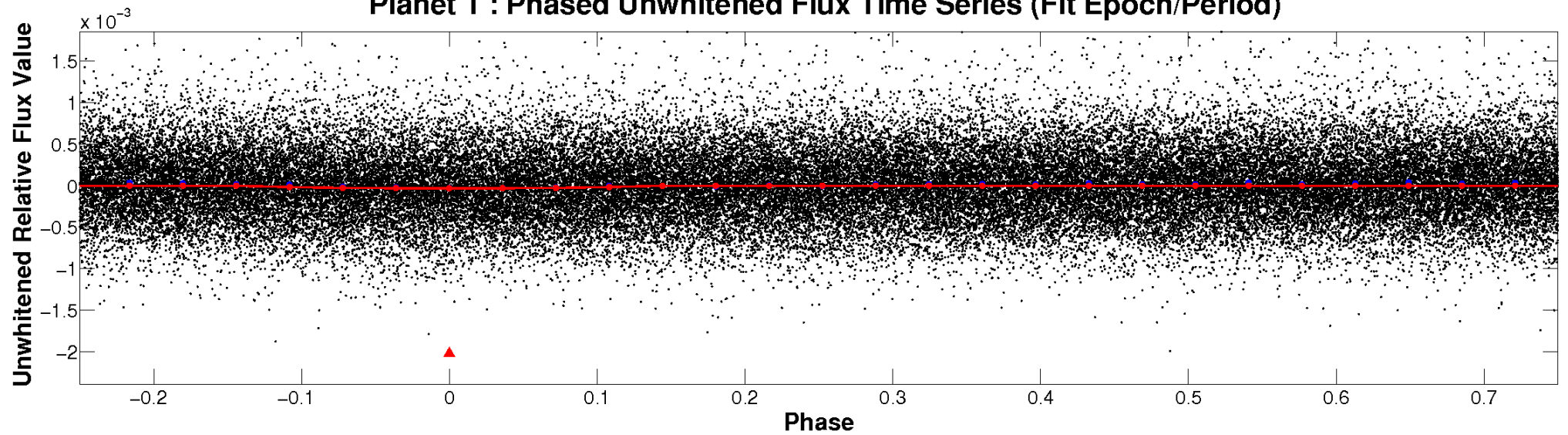
# ALT Odd/Even

TCE 006440528-01

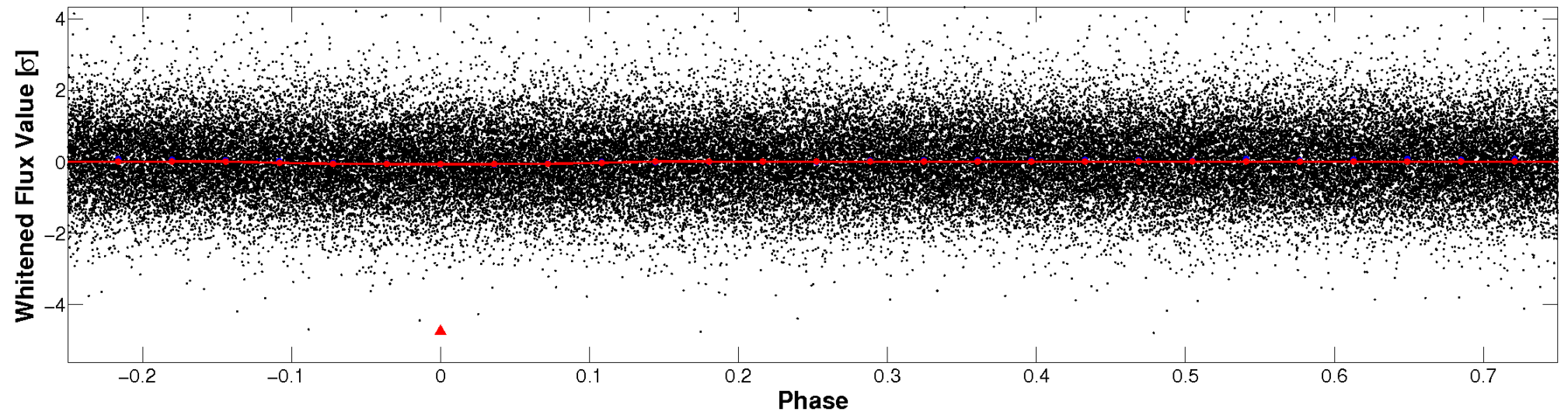


# Non-Whitened Vs. Whitened Light Curve

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



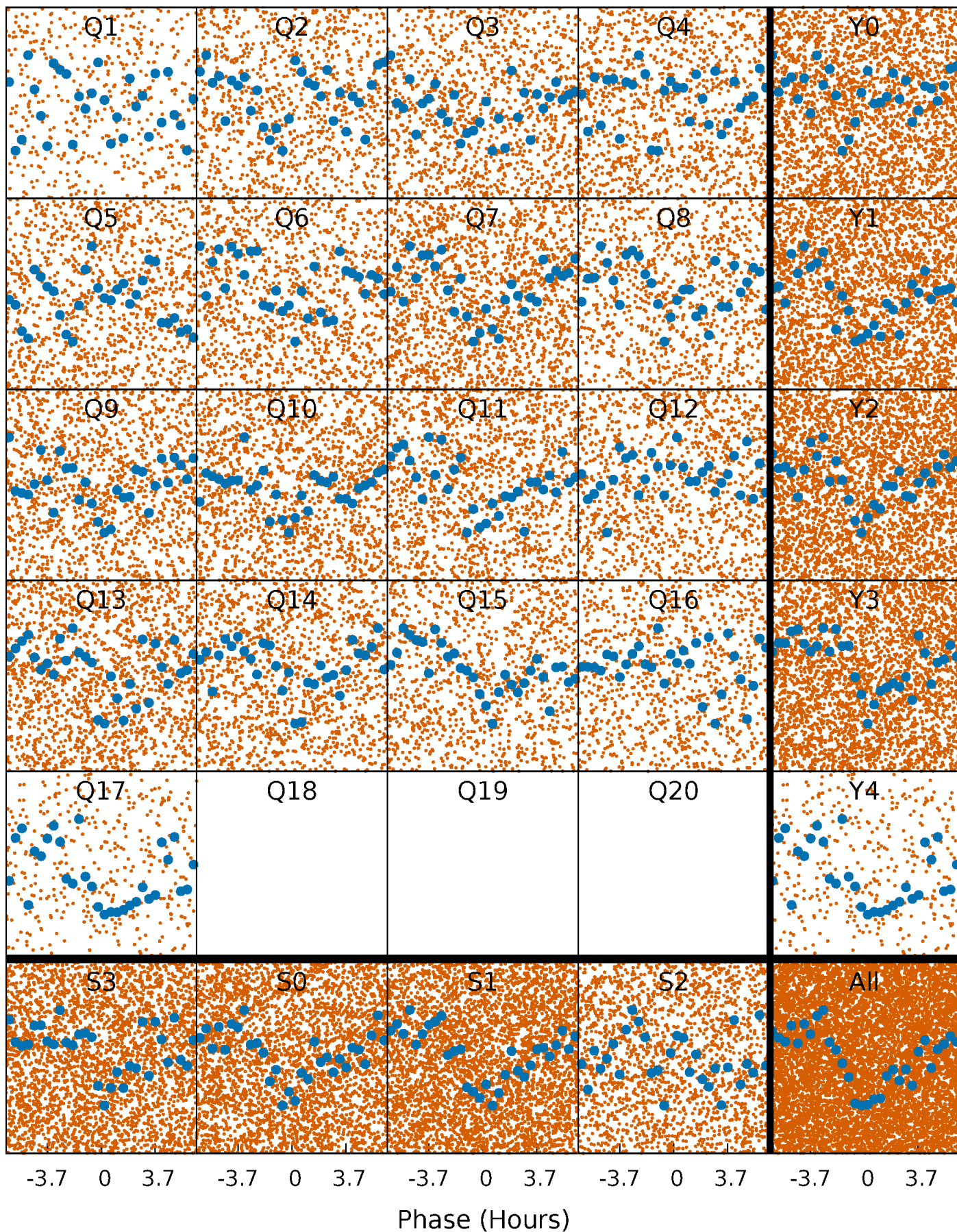
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

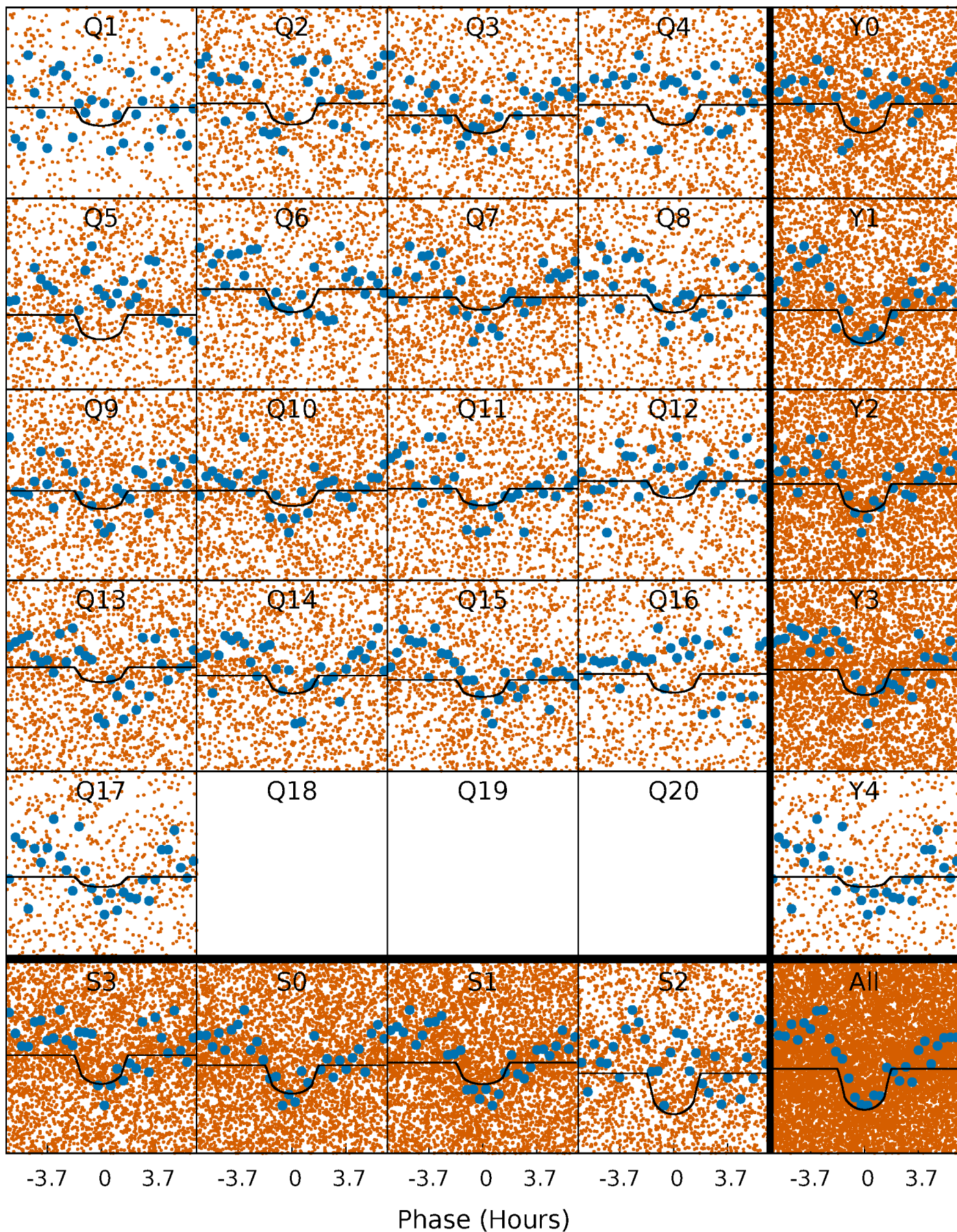
TCE 006440528-01 P= 0.566769 Days  $T_0=131.850599$  (BKJD)





# DV Quarter-Phased Transit Curves

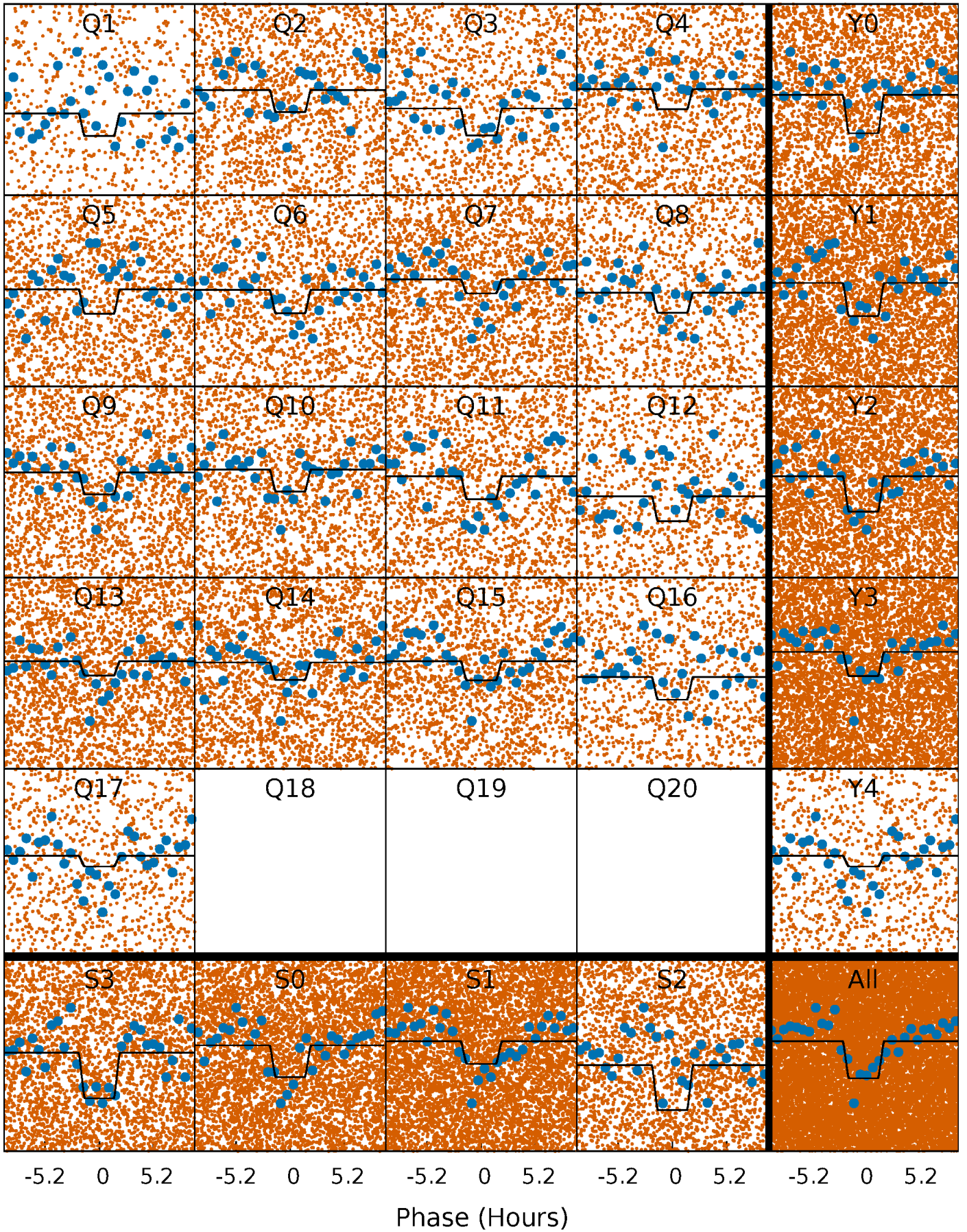
TCE 006440528-01 P= 0.566769 Days  $T_0=131.850599$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

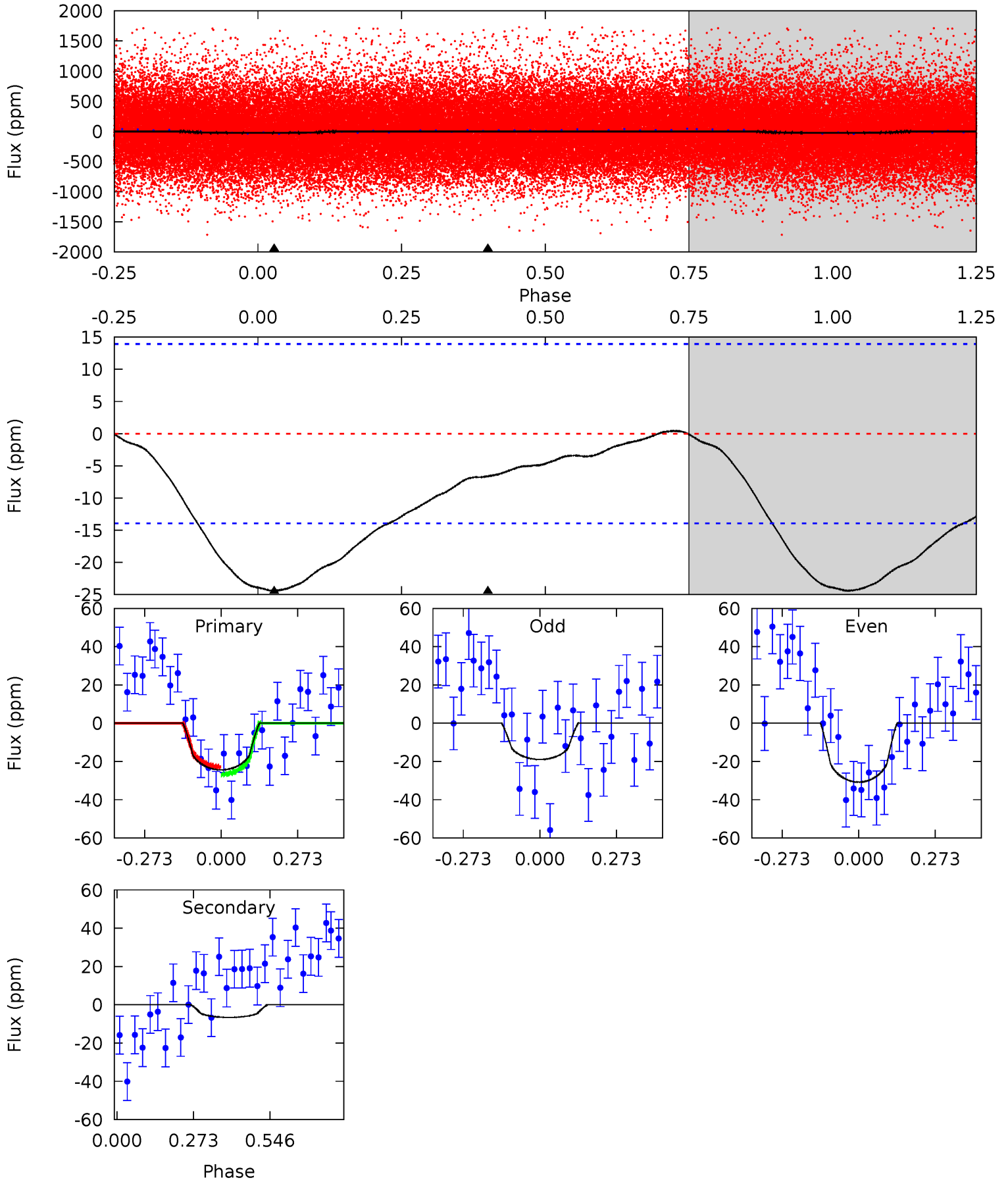
TCE 006440528-01 P= 0.566808 Days  $T_0=131.818606$  (BKJD)



# DV Model-Shift Uniqueness Test

006440528-01, P = 0.566769 Days, E = 131.283830 Days

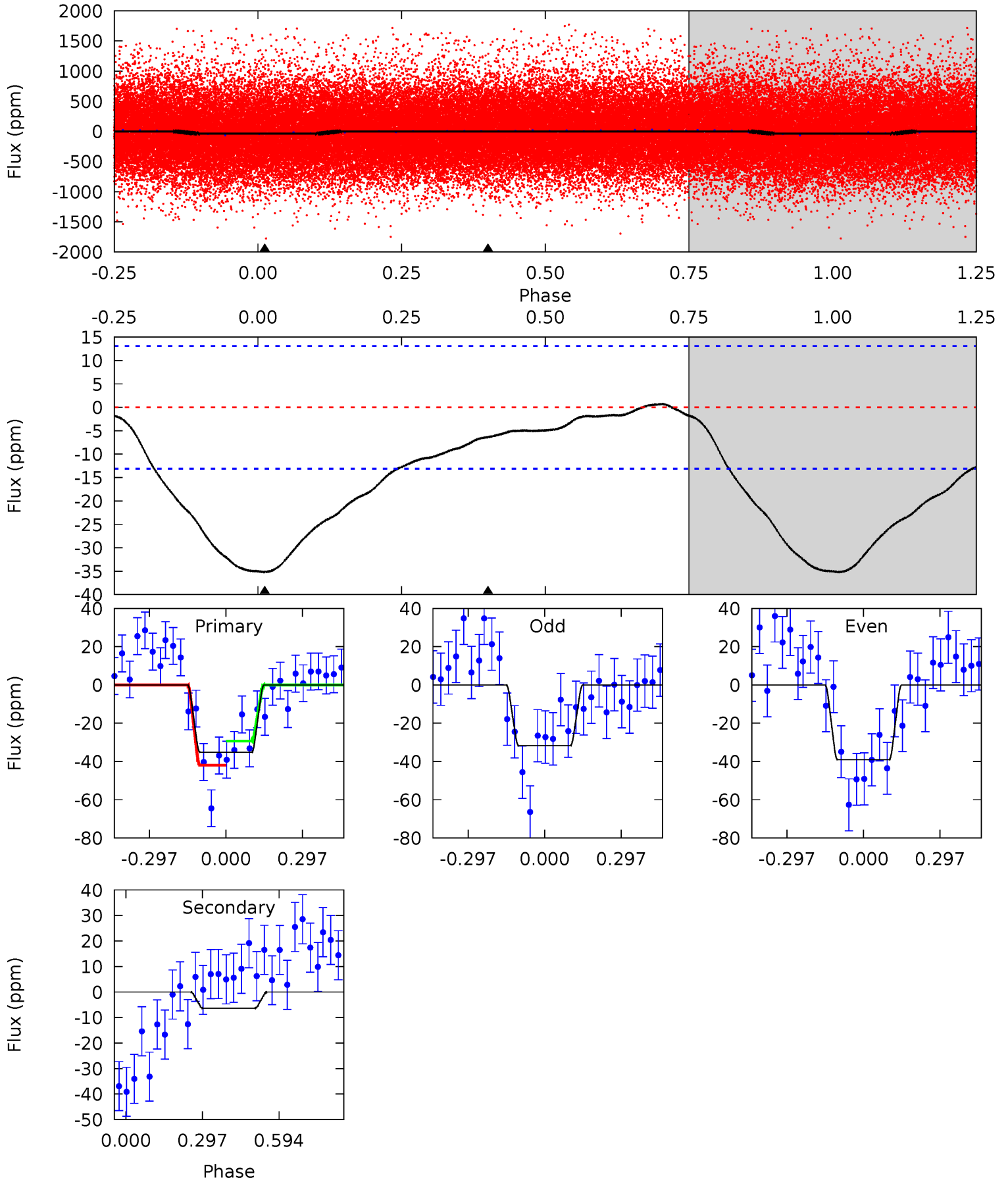
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.61	2.06	0	0	4.35	1.10	0.14	7.61	7.61	2.06	2.06	1.84	0.76	0.02	0.62



# Alt Model-Shift Uniqueness Test

006440528-01, P = 0.566808 Days, E = 131.251798 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
11.6	2.11	0	0	4.33	1.04	0.27	11.6	11.6	2.11	2.11	1.21	0.92	0.02	2.04





### Stellar Parameters For KIC 006440528

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5009^{+164}_{-149}$	$4.605^{+0.072}_{-0.039}$	$-0.600^{+0.350}_{-0.300}$	$0.662^{+0.064}_{-0.064}$	$0.643^{+0.079}_{-0.032}$	$3.124^{+0.852}_{-0.503}$
	+3%/-3%	+2%/-1%	+58%/-50%	+10%/-10%	+12%/-5%	+27%/-16%
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 006440528-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-7 \pm 3$	$0.47^{+0.36}_{-0.31}$	$2325^{+85}_{-91}$	$3403^{+1595}_{-787}$	$1.995^{+13.237}_{-1.432}$
Alt.	$-6 \pm 3$	$0.48^{+0.35}_{-0.29}$	$2323^{+97}_{-86}$	$3356^{+1441}_{-744}$	$1.859^{+10.318}_{-1.321}$

$T_{\text{max}}$  = 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

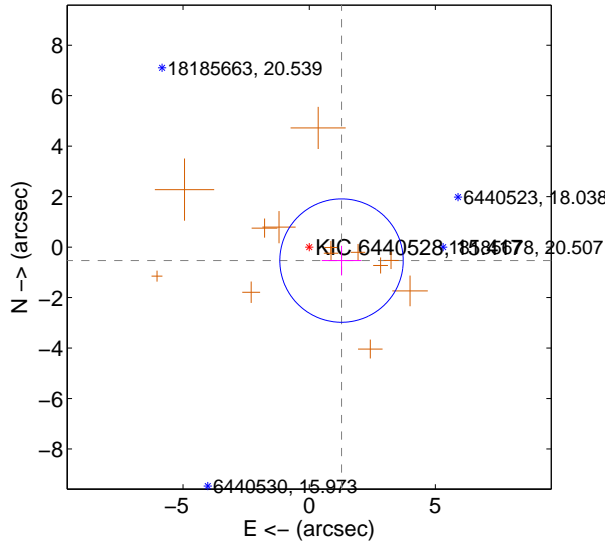
Supplemental centroid analysis for 006440528-01. Kepler magnitude: 15.42. Transit SNR 7.45

There are 0 quarters with good PRF difference image offsets

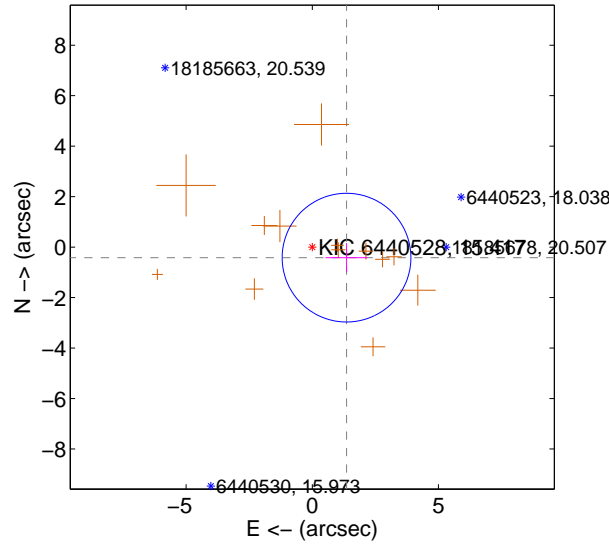
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.388 \pm 0.815$	1.70	$-1.281 \pm 0.783$	$-0.534 \pm 0.588$
PRF-fit source offset from KIC position	$1.421 \pm 0.850$	1.67	$-1.358 \pm 0.833$	$-0.418 \pm 0.576$
photometric centroid source offset	$2.74 \pm 1.75$	1.57	$-2.19 \pm 1.81$	$1.65 \pm 1.63$

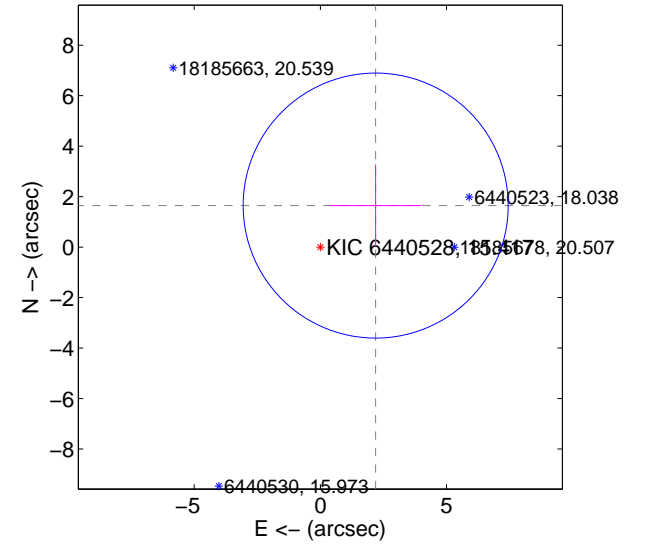
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

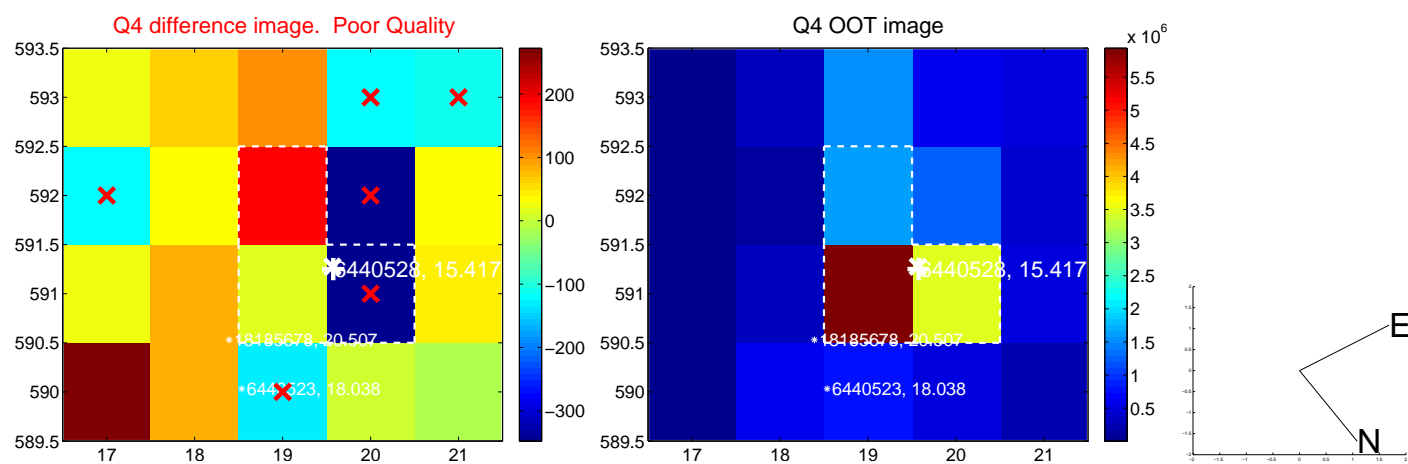
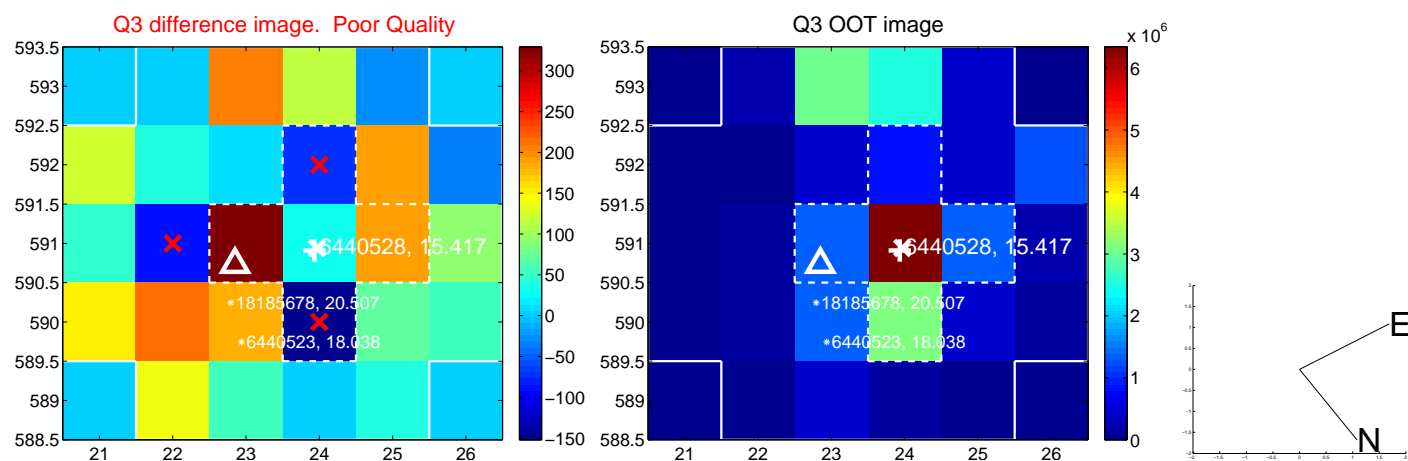
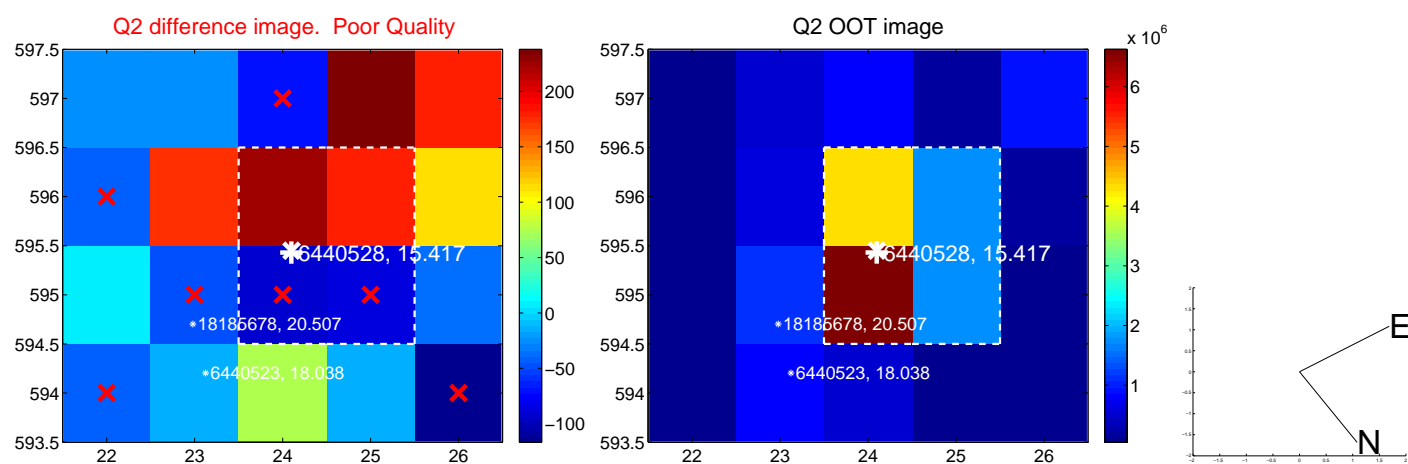
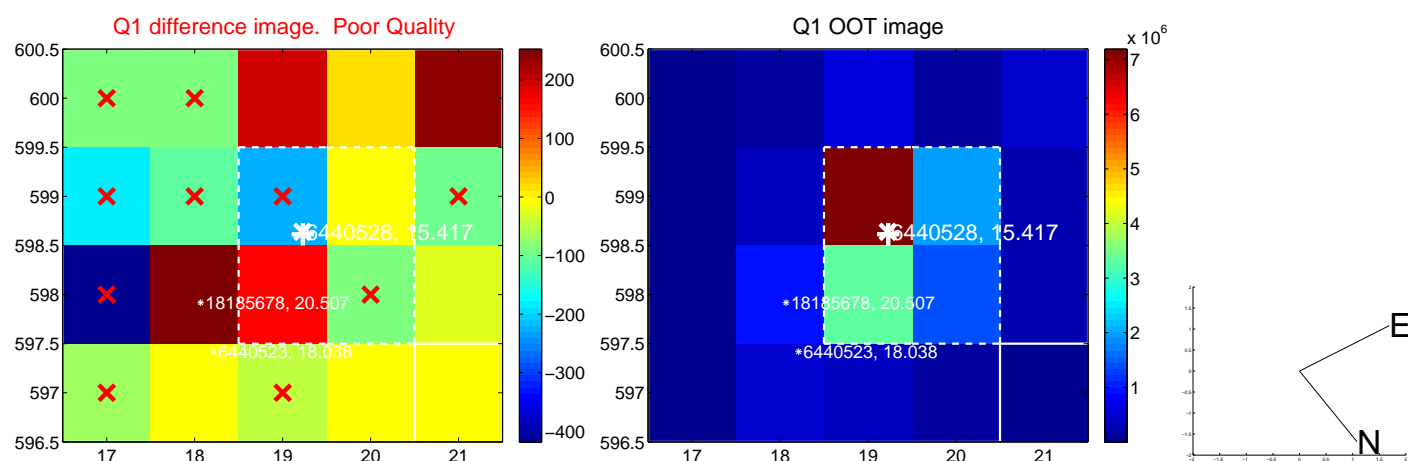


offset from photometric centroids

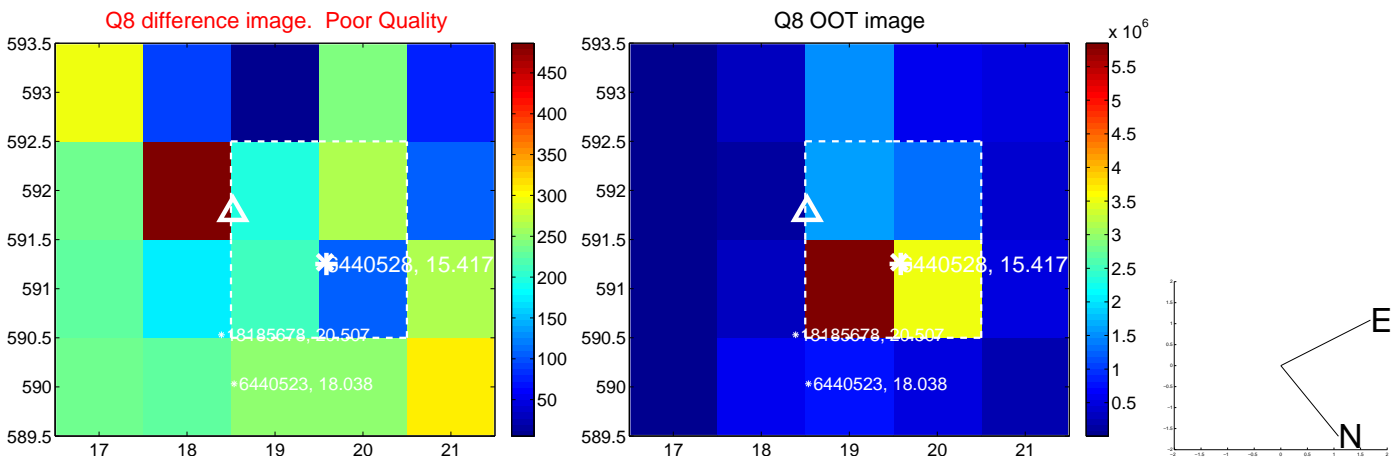
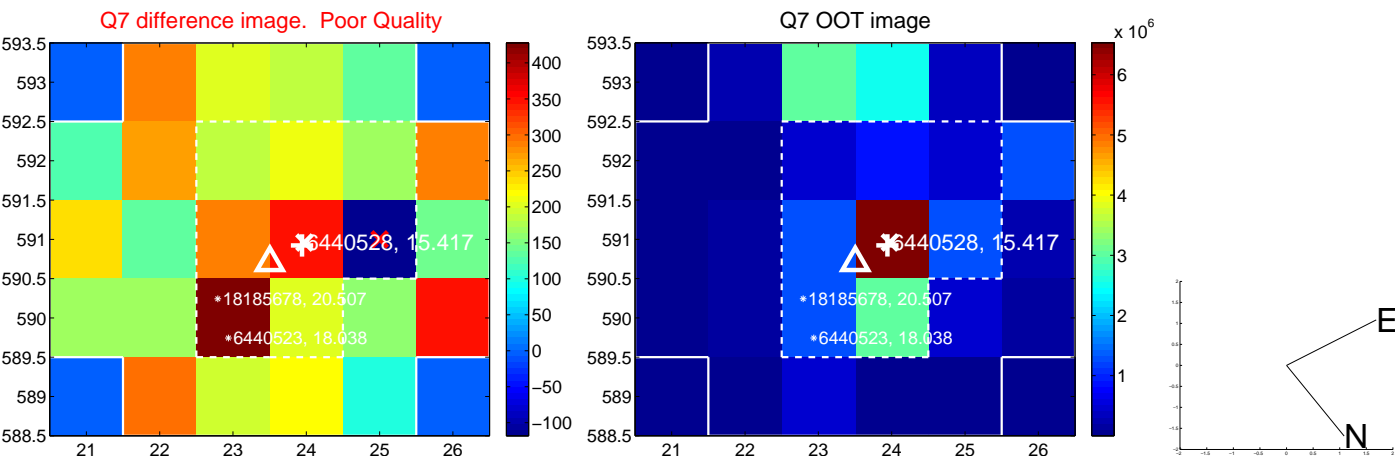
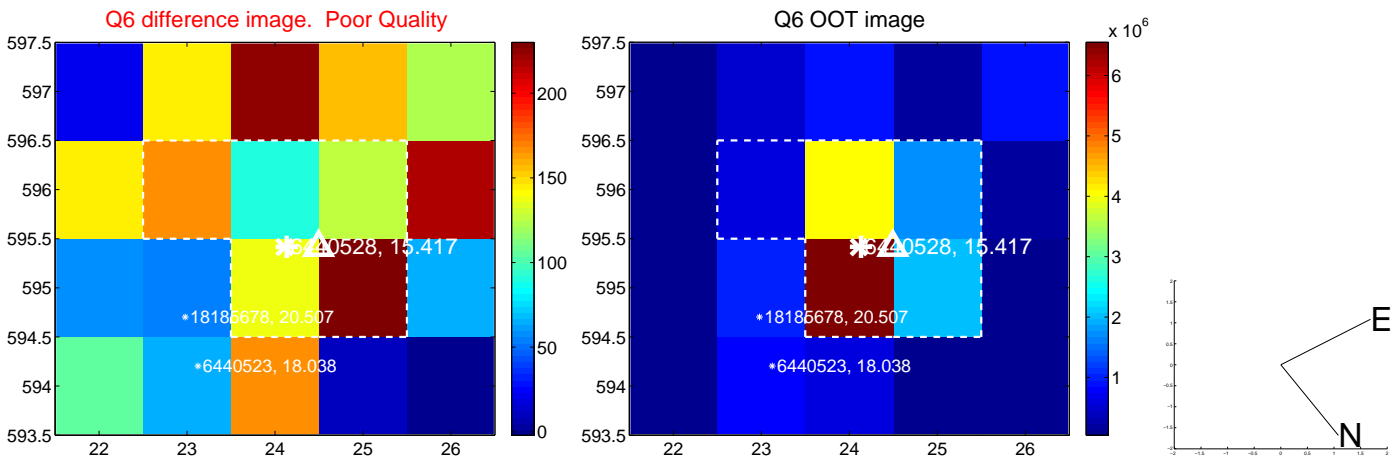
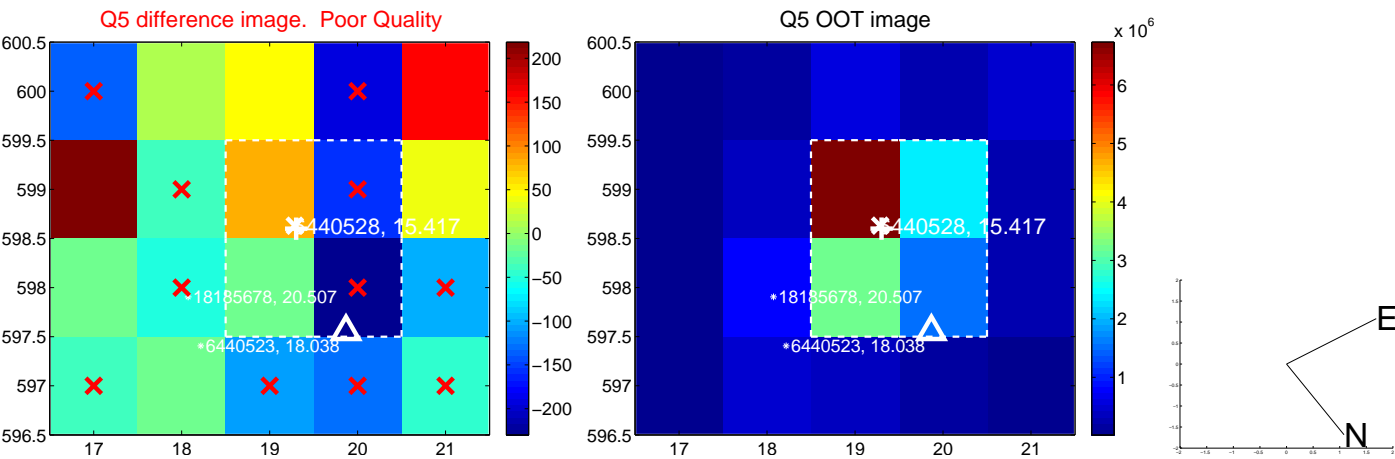


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

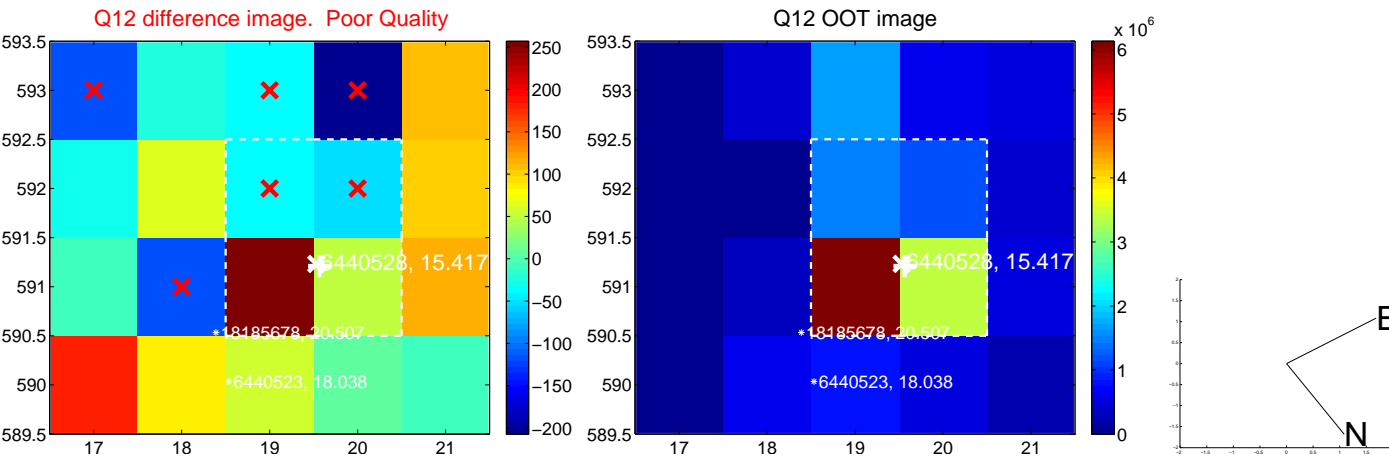
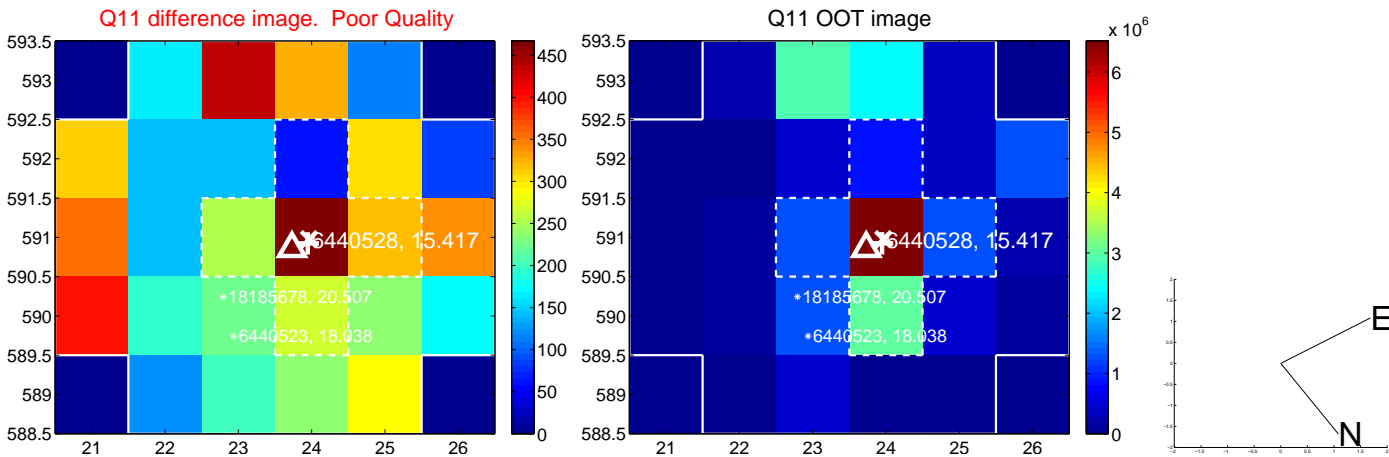
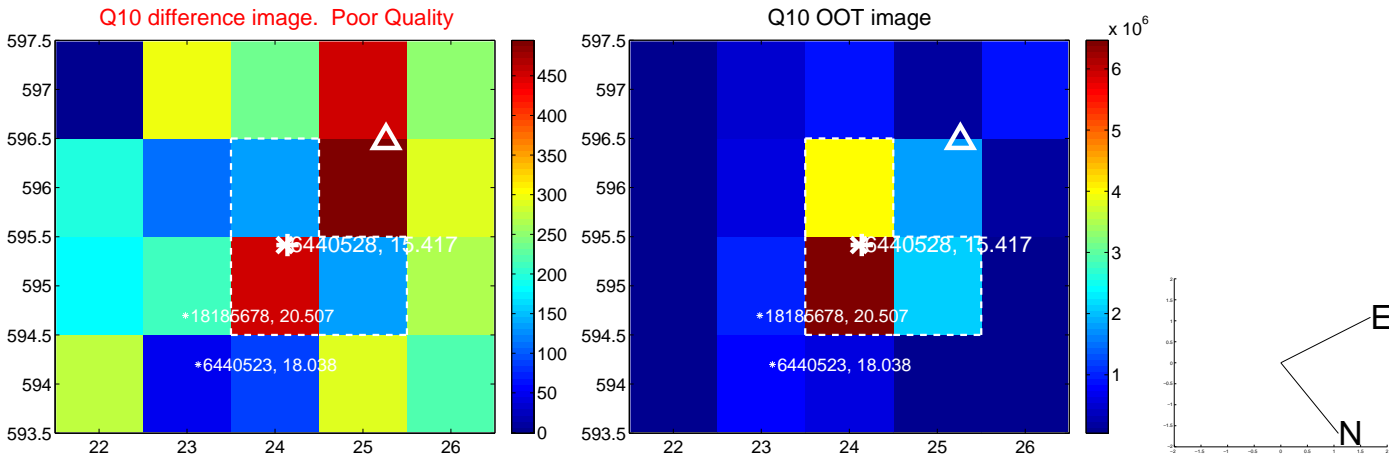
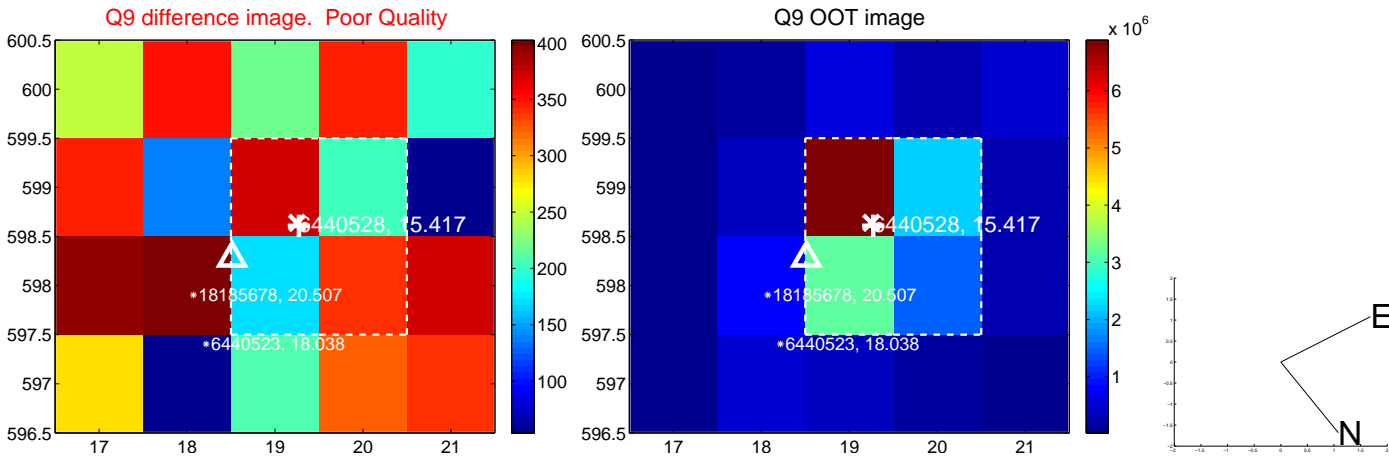


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

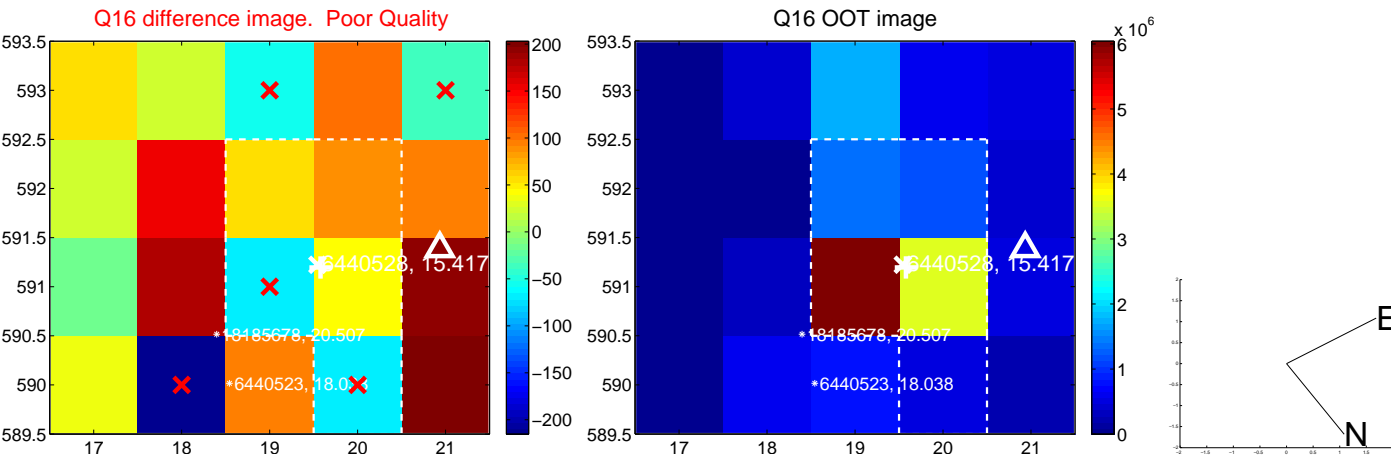
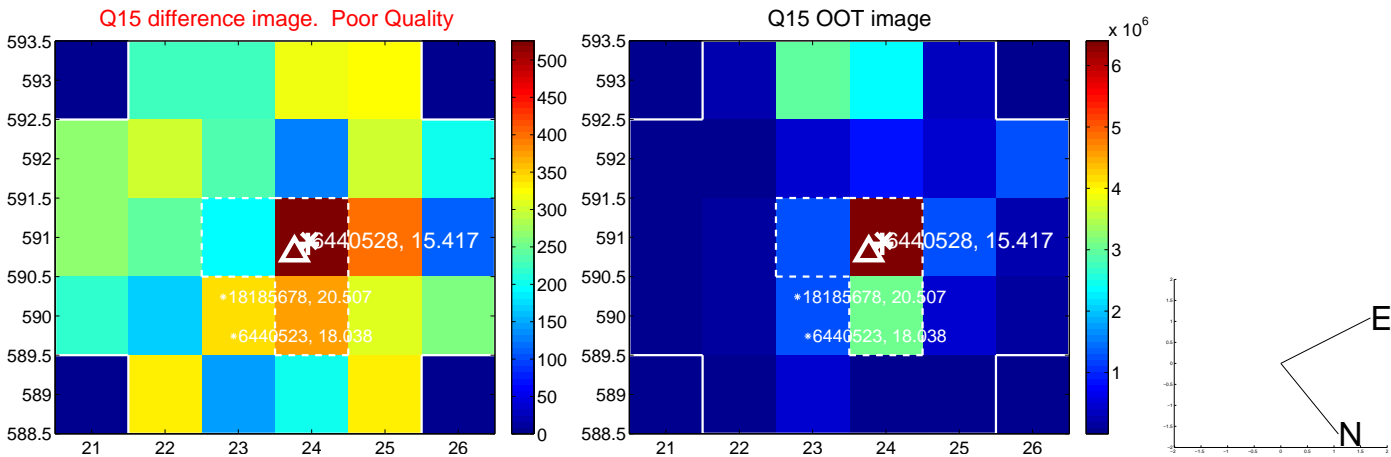
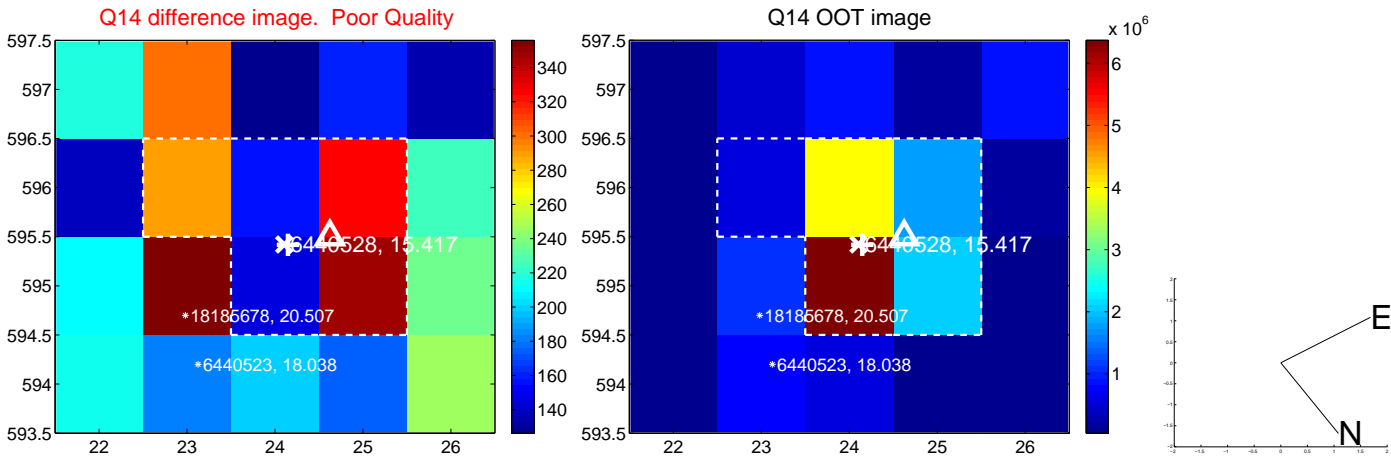
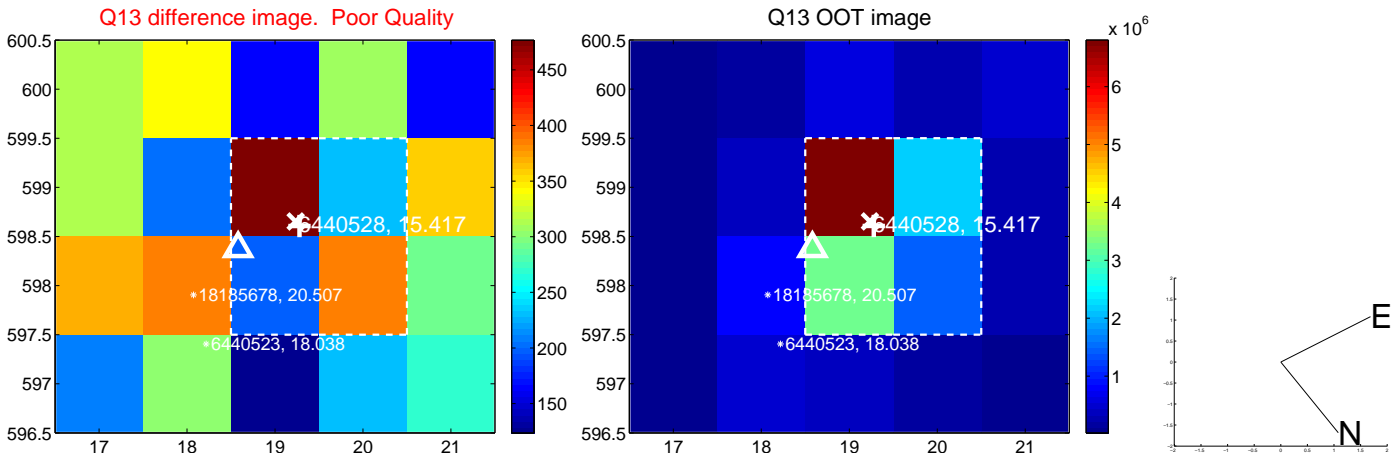




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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





# UKIRT Image

Declination

