

# KIC 006615511

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006615511-01	OBS	3306.01	25.159396	153.037759	369.0	5.296	11.7	12.7	0.94	5973	2.00	34.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006615511-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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 006615511-01

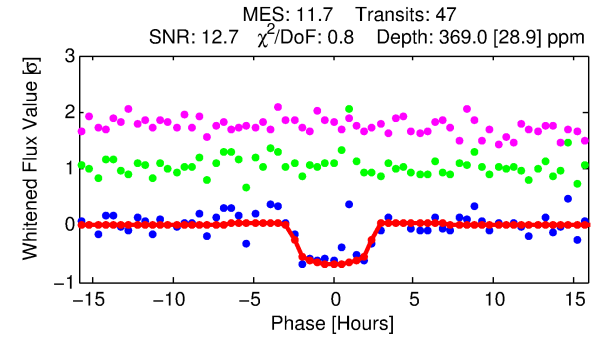
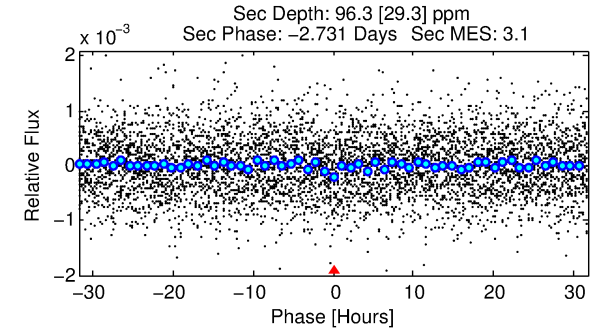
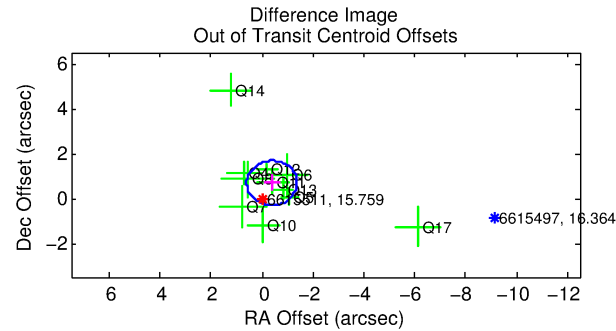
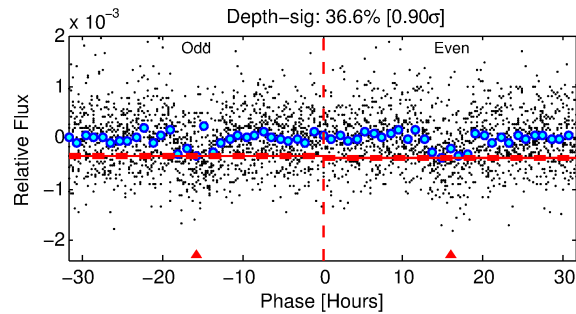
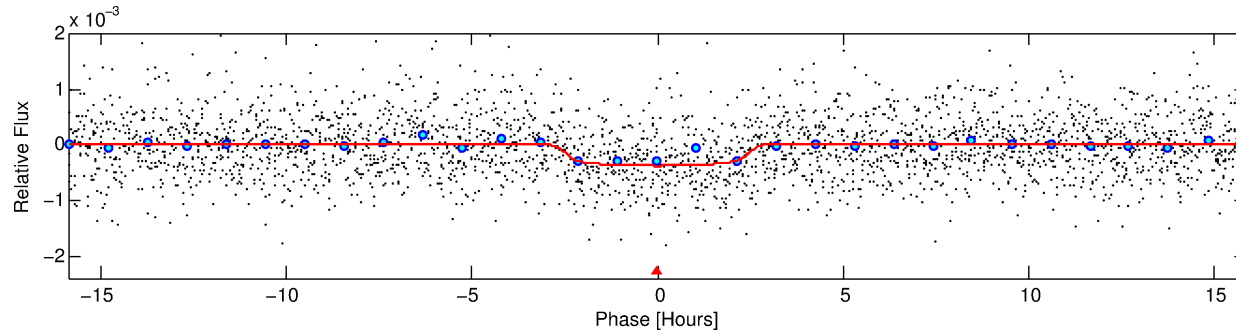
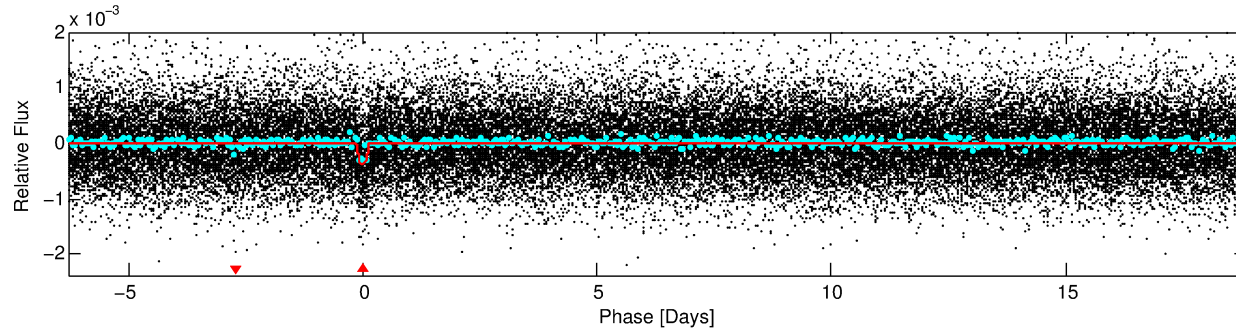
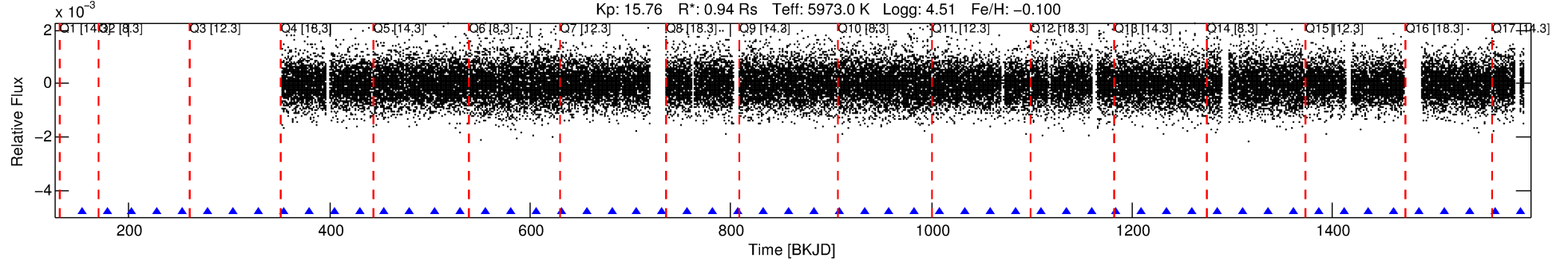
No Significant Match Found

# DV One-Page Summary

KIC: 6615511 Candidate: 1 of 1 Period: 25.159 d

KOI: K03306.01 Corr: 0.942

Kp: 15.76 R\*: 0.94 Rs Teff: 5973.0 K Logg: 4.51 Fe/H: -0.100



## DV Fit Results:

Period = 25.15940 [0.00029] d  
Epoch = 153.0378 [0.0103] BKJD  
Rp/R\* = 0.0196 [0.0082]  
a/R\* = 22.25 [44.84]  
b = 0.81 [0.84]  
Seff = 34.78 [13.81]  
Teq = 619 [61] K  
Rp = 2.00 [1.03] Re  
a = 0.1693 [0.0426] AU  
Ag = 378.40 [363.76] [1.04σ]  
Teffp = 4223 [952] K [3.78σ]

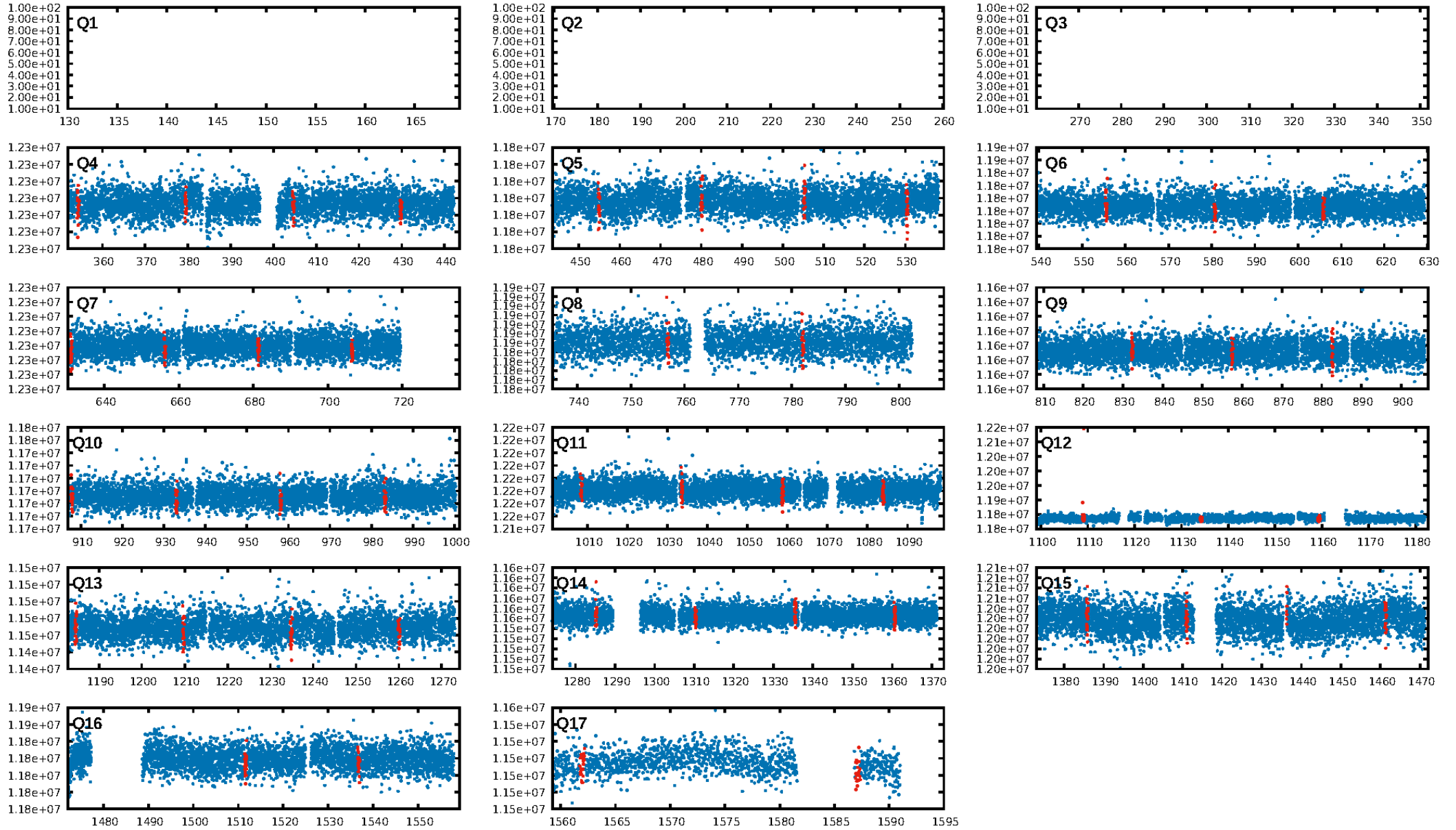
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 9.03e-31  
RollingBand-fgt: 1.00 [45/45]  
GhostDiagnostic-chr: 1.416  
Centroid-sig: 1.3%  
Centroid-so: 0.520 arcsec [0.55σ]  
OotOffset-rm: 0.786 arcsec [2.38σ]  
KicOffset-rm: 0.794 arcsec [2.28σ]  
OotOffset-st: 3/2/3/3 [11]  
KicOffset-st: 3/2/3/3 [11]  
DiffImageQuality-fgm: 0.73 [8/11]  
DiffImageOverlap-fno: 1.00 [14/14]

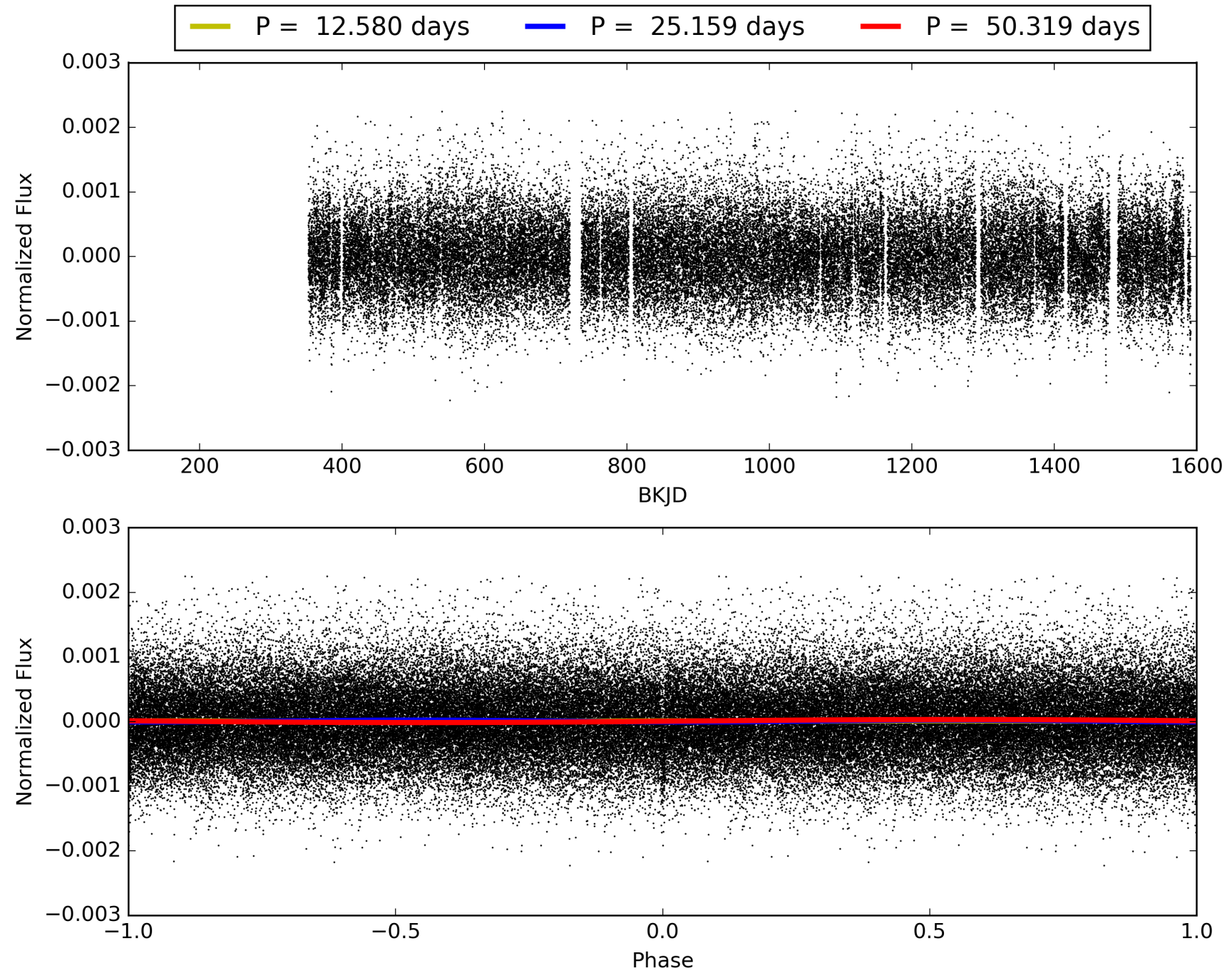
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:38:51 Z

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

# TCE 006615511-01, PDC Light Curves

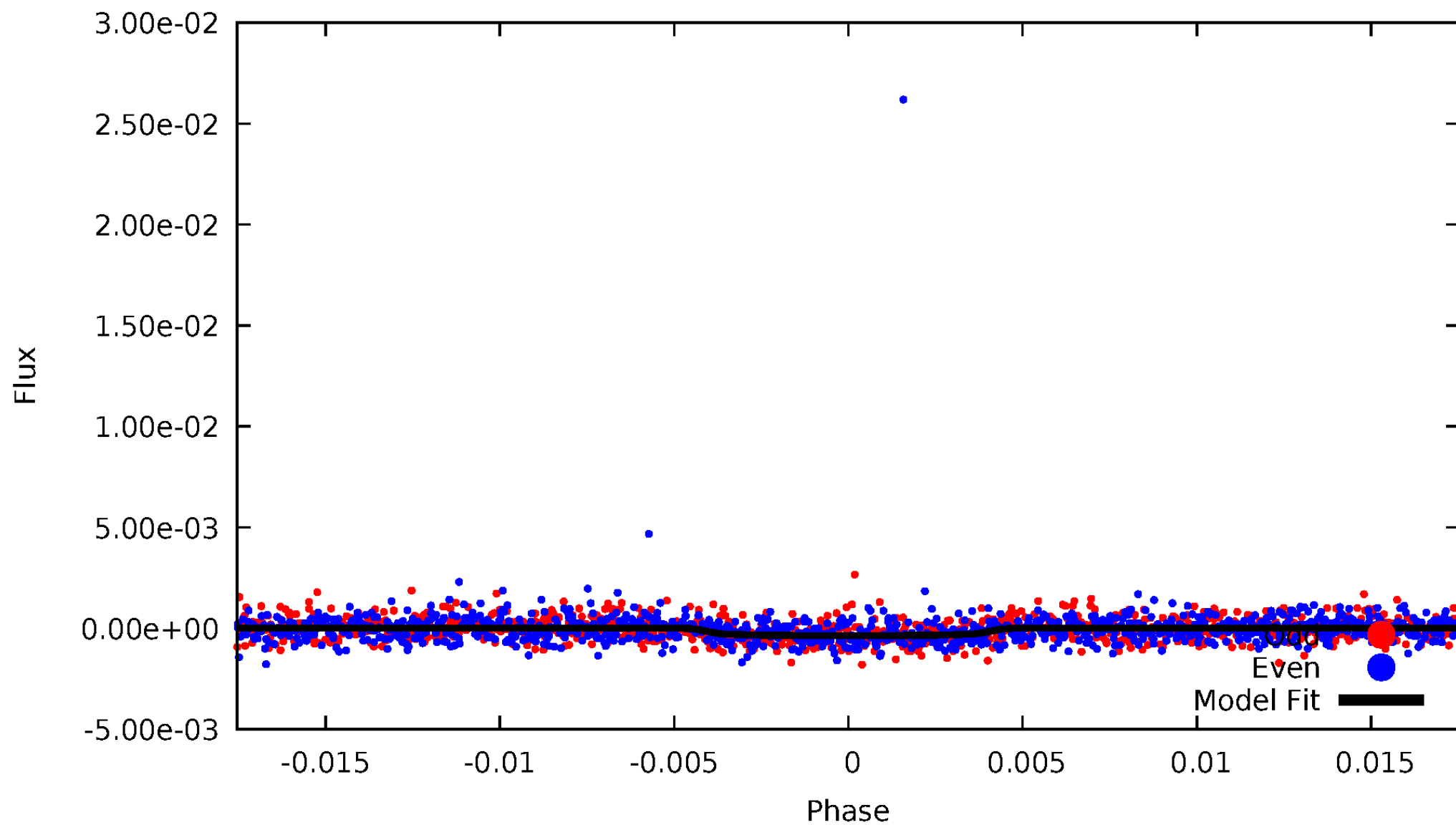


TCE 006615511-01



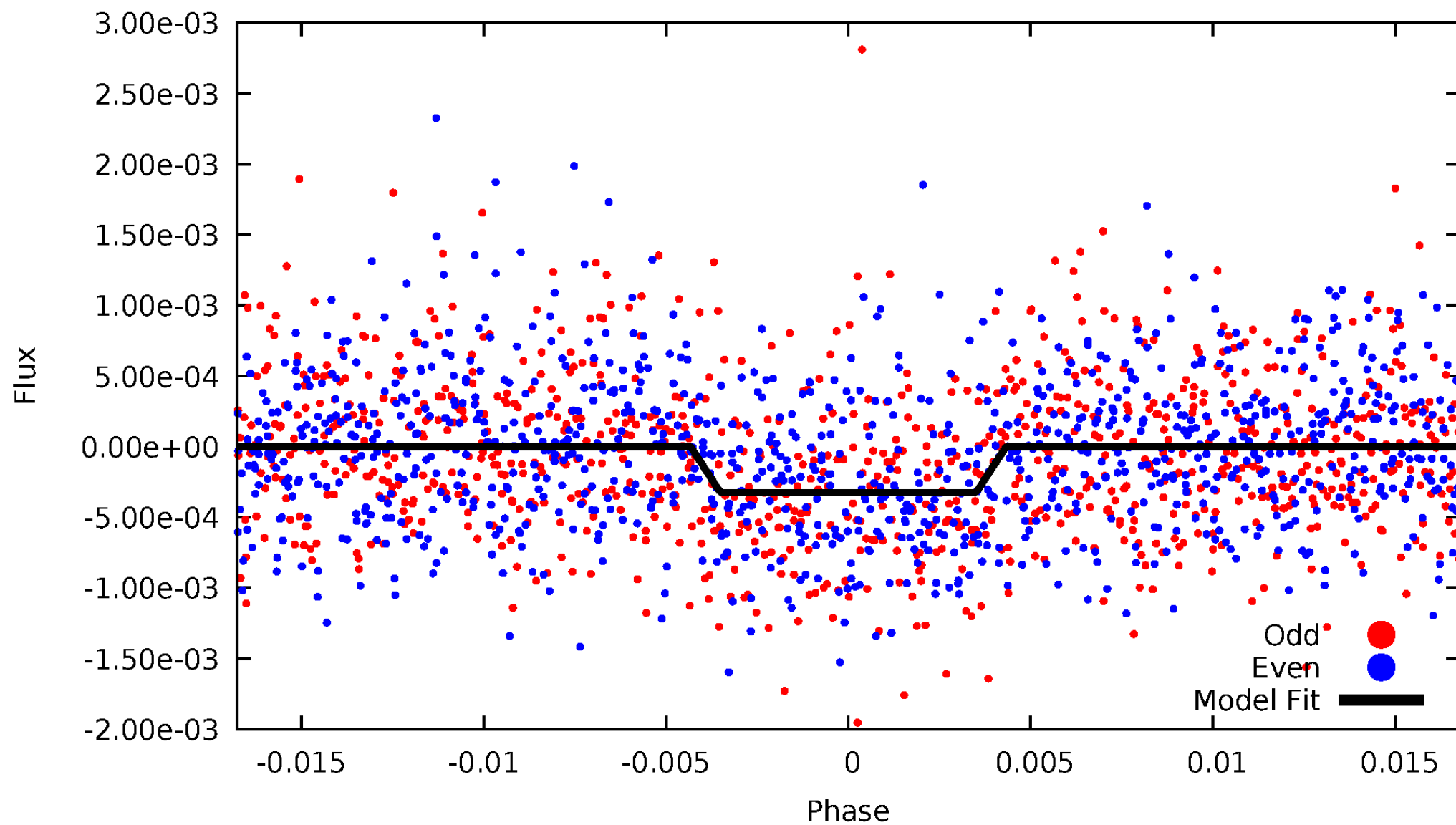
# DV Odd/Even

TCE 006615511-01



# ALT Odd/Even

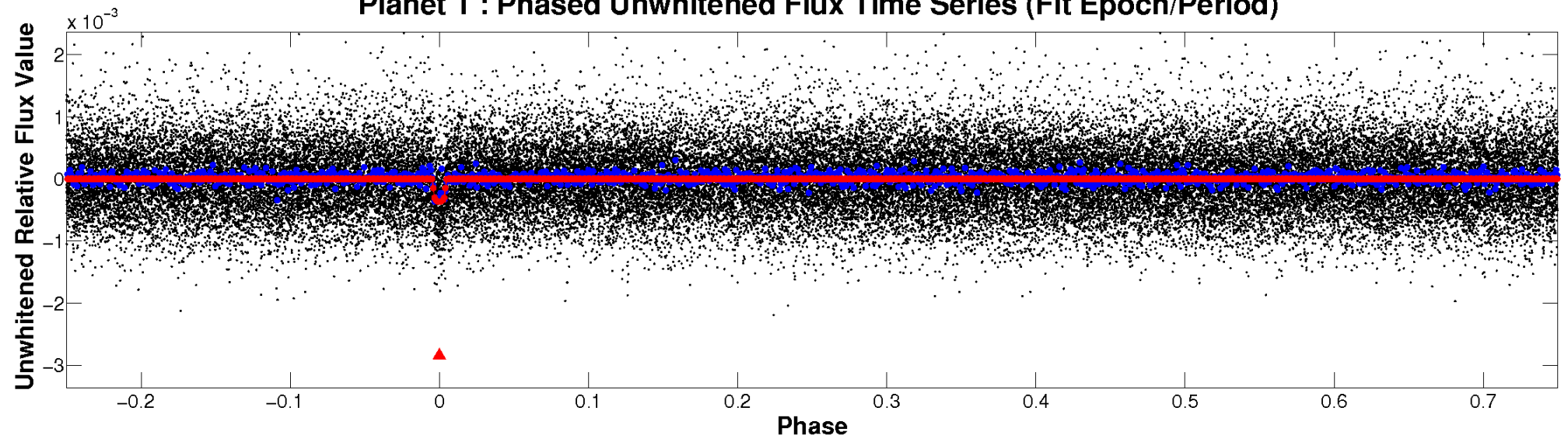
TCE 006615511-01



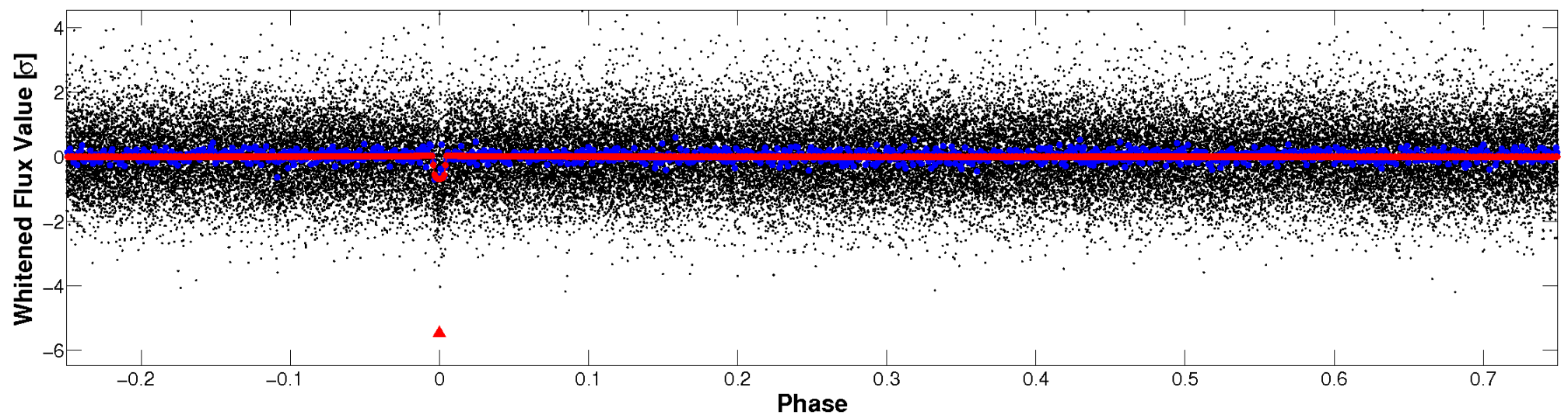


# Non-Whitened Vs. Whitened Light Curve

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

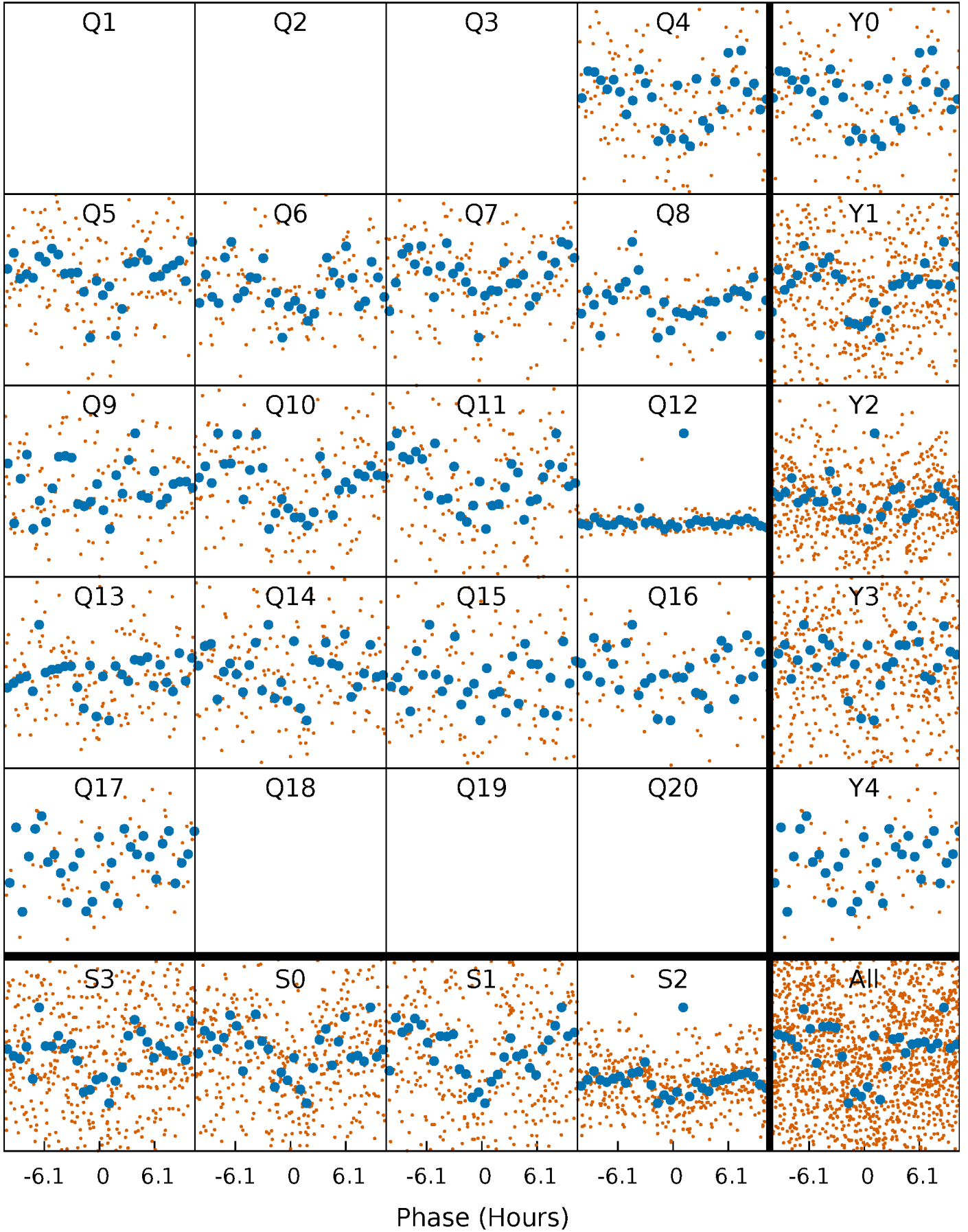


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

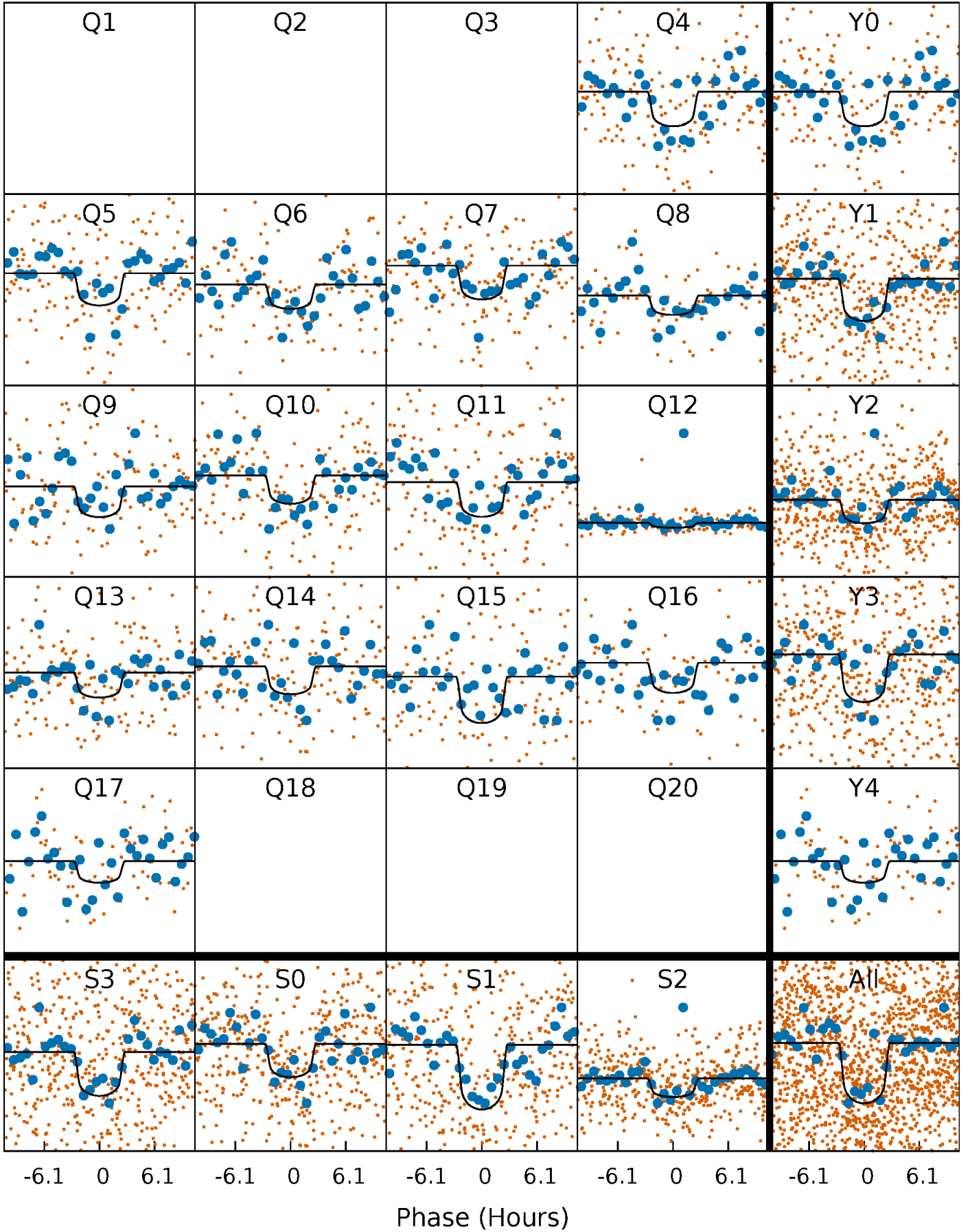
TCE 006615511-01 P= 25.159396 Days  $T_0=153.037759$  (BKJD)





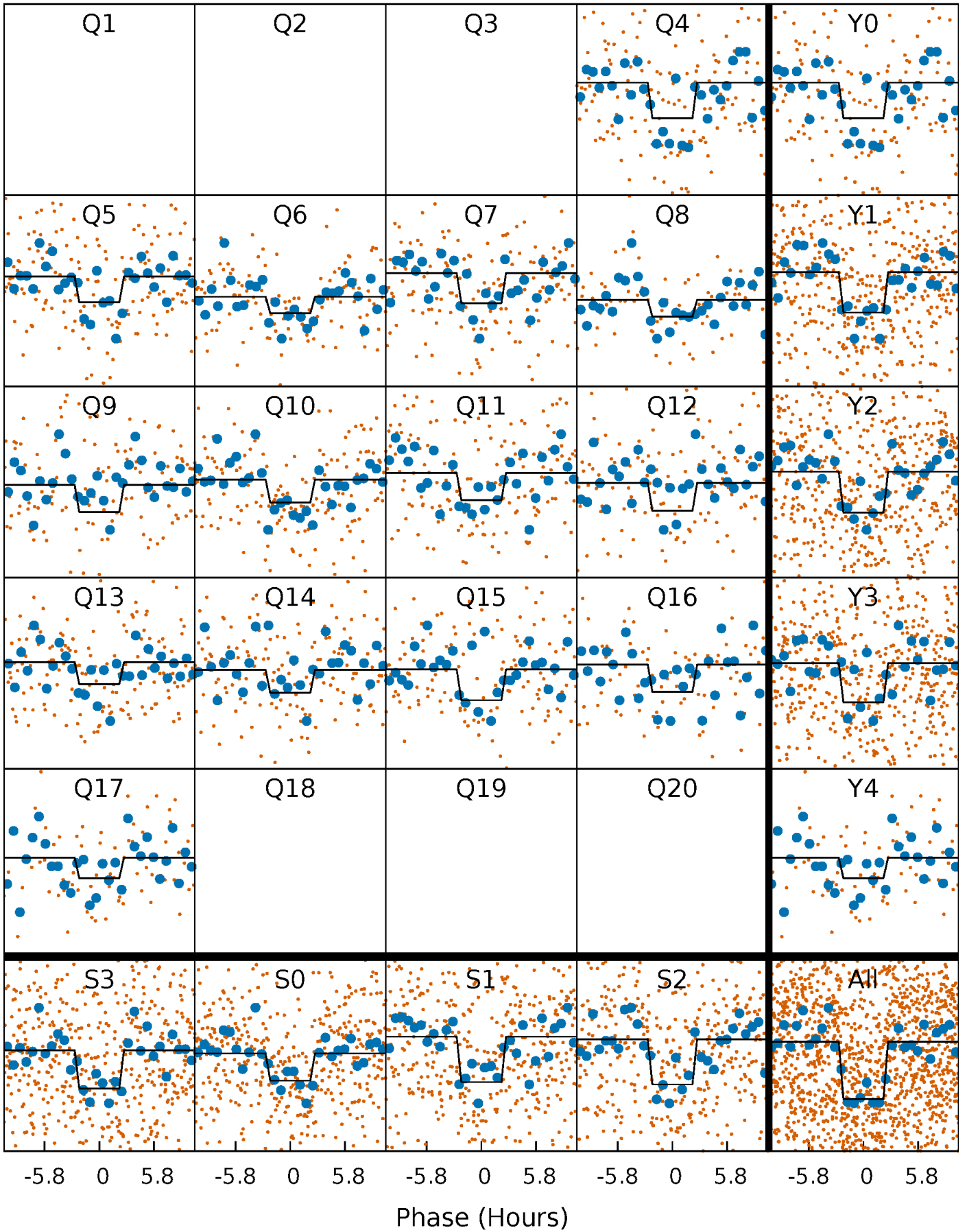
# DV Quarter-Phased Transit Curves

TCE 006615511-01 P= 25.159396 Days  $T_0=153.037759$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

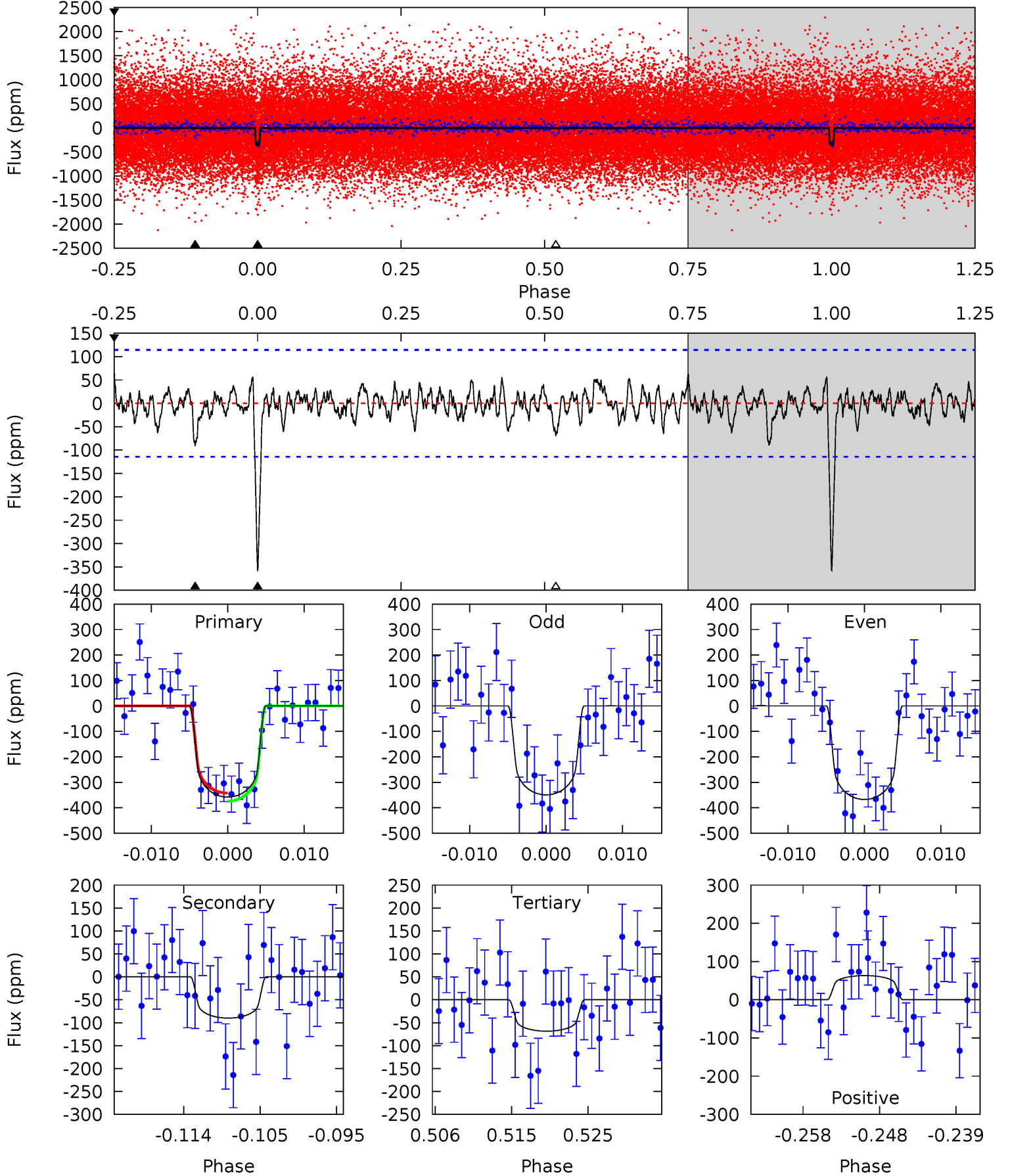
TCE 006615511-01 P= 25.159115 Days  $T_0=153.045506$  (BKJD)



# DV Model-Shift Uniqueness Test

006615511-01, P = 25.159396 Days, E = 153.037759 Days

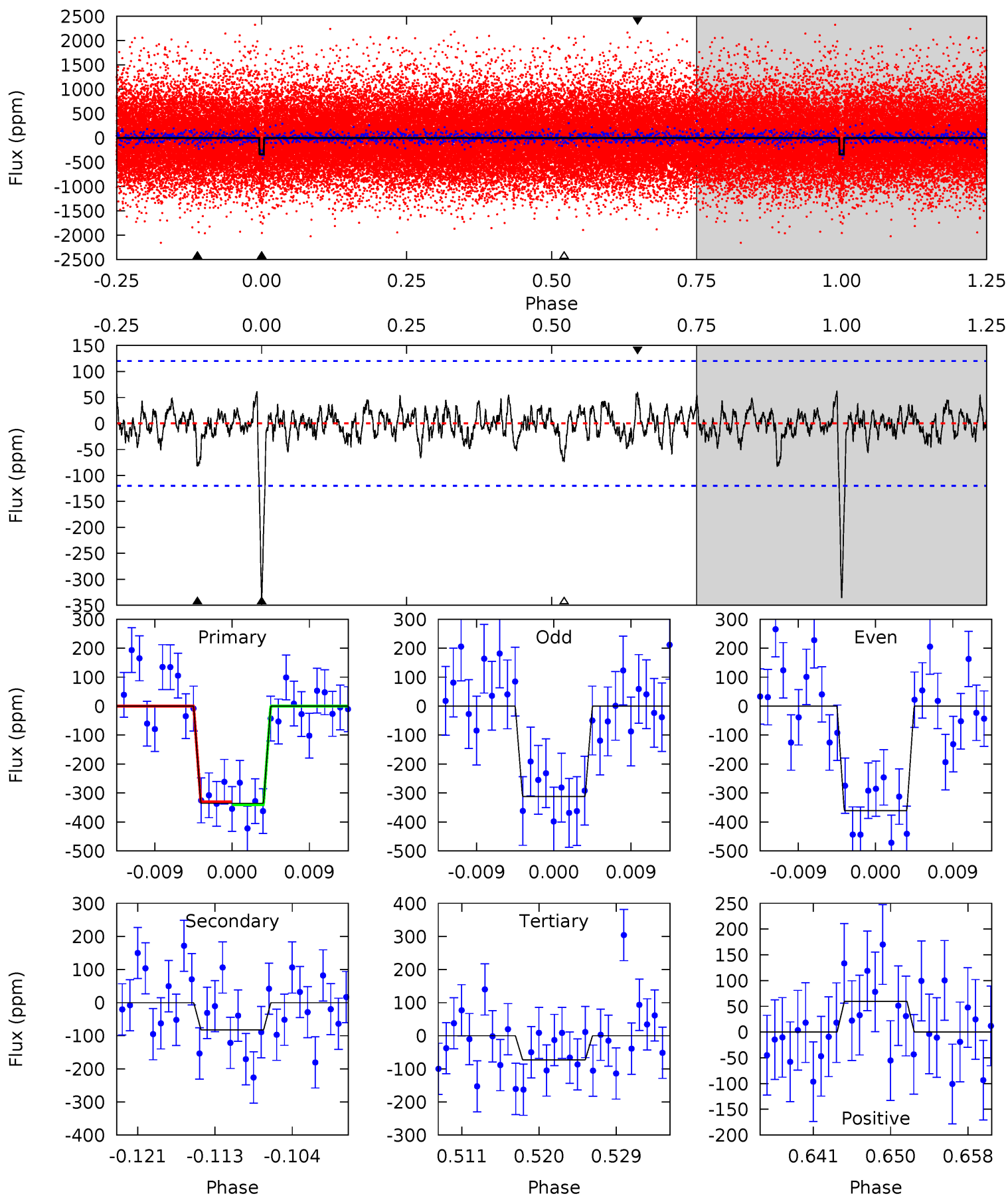
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	3.96	3.02	2.78	5.04	2.59	0.99	12.7	13.0	0.94	1.18	0.40	0.80	0.15	0.70



# Alt Model-Shift Uniqueness Test

006615511-01, P = 25.159115 Days, E = 153.045506 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
14.1	3.47	3.07	2.51	5.05	2.63	0.93	11.1	11.6	0.40	0.95	1.03	0.95	0.16	0.21



### Stellar Parameters For KIC 006615511

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5973^{+187}_{-229}$	$4.506^{+0.050}_{-0.200}$	$-0.100^{+0.250}_{-0.350}$	$0.935^{+0.280}_{-0.093}$	$1.024^{+0.119}_{-0.145}$	$1.762^{+0.458}_{-0.882}$
	+3%/-4%	+1%/-4%	+250%/-350%	+30%/-10%	+12%/-14%	+26%/-50%
Source	KIC0	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 006615511-01 / KOI 3306.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-90 \pm 23$	$2.14^{+0.93}_{-0.87}$	$881^{+66}_{-45}$	$4298^{+1015}_{-548}$	$294^{+563}_{-155}$
Alt.	$-82 \pm 24$	$1.97^{+0.87}_{-0.84}$	$885^{+59}_{-47}$	$4382^{+1242}_{-586}$	$314^{+683}_{-172}$

$T_{\text{max}}$  = 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

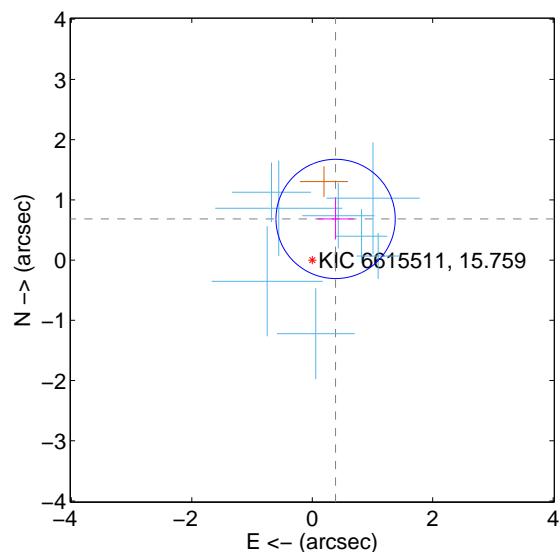
Supplemental centroid analysis for 006615511-01. Kepler magnitude: 15.76. Transit SNR 12.74

There are 8 quarters with good PRF difference image offsets

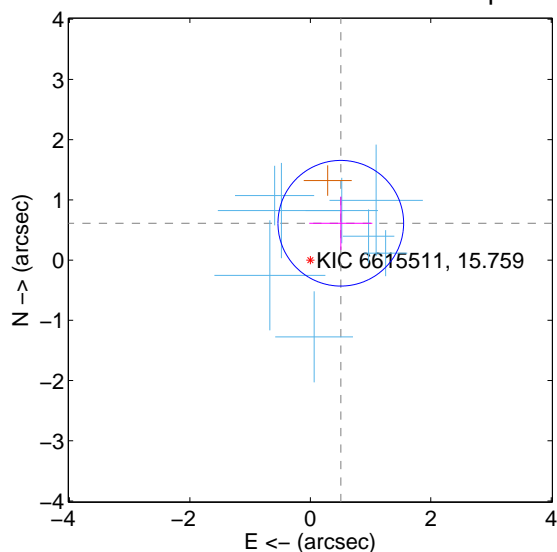
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.786 \pm 0.330$	2.38	$-0.388 \pm 0.299$	$0.684 \pm 0.339$
PRF-fit source offset from KIC position	$0.794 \pm 0.348$	2.28	$-0.506 \pm 0.524$	$0.612 \pm 0.443$
photometric centroid source offset	$0.52 \pm 0.94$	0.55	$0.51 \pm 0.95$	$0.10 \pm 0.83$

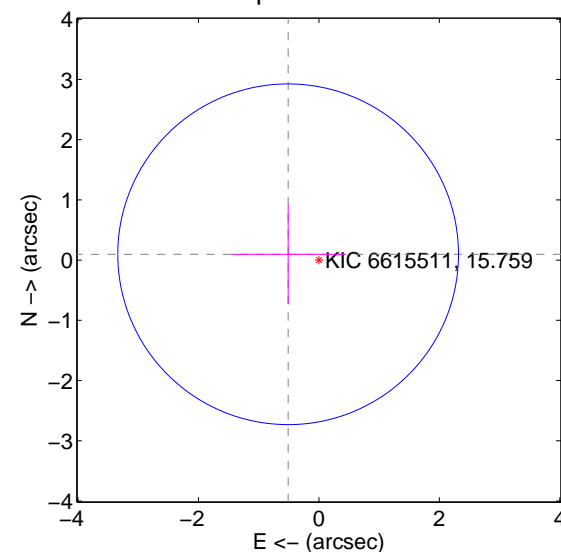
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



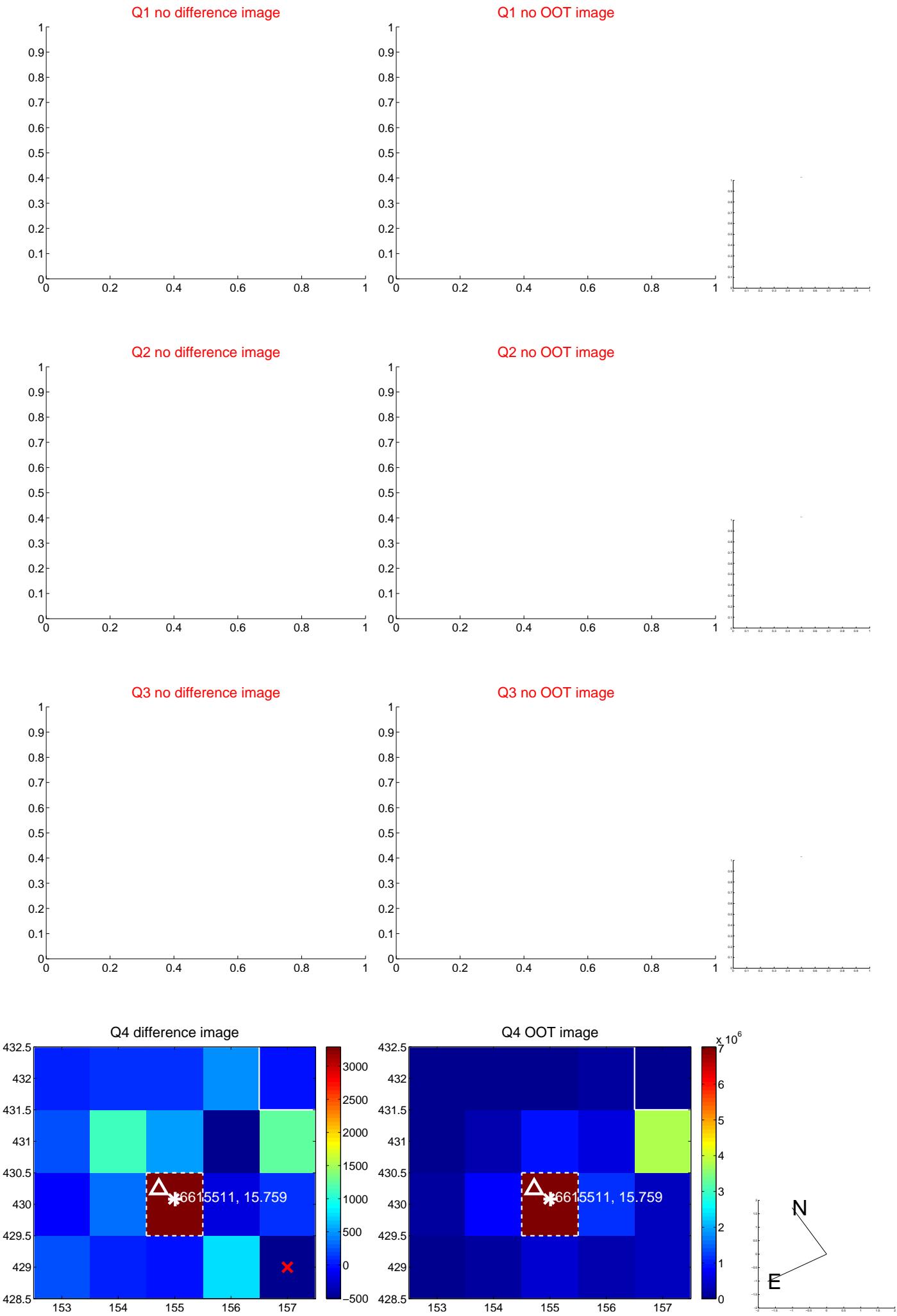
offset from photometric centroids



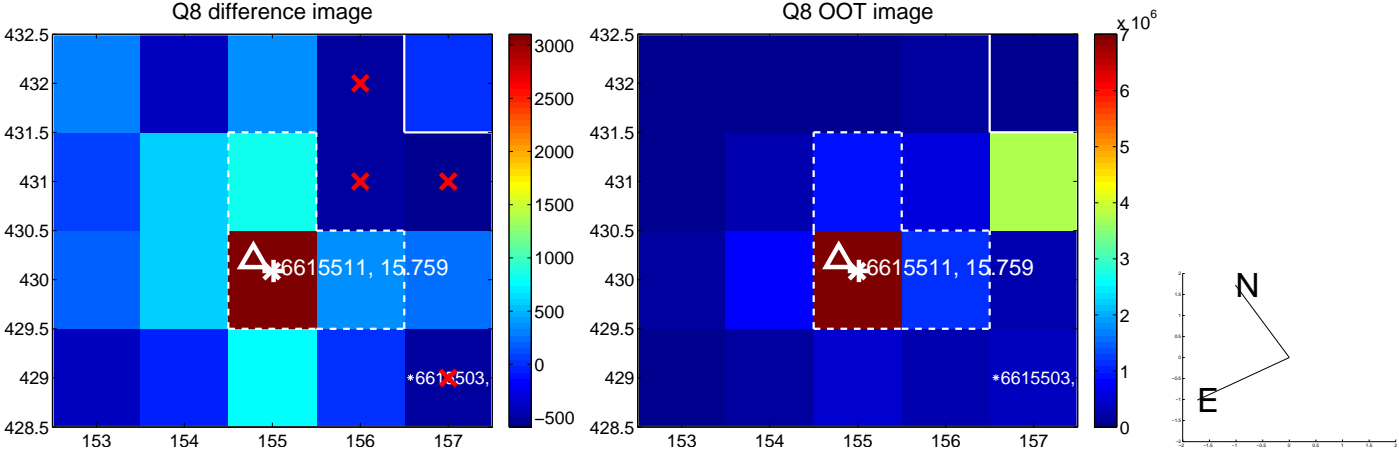
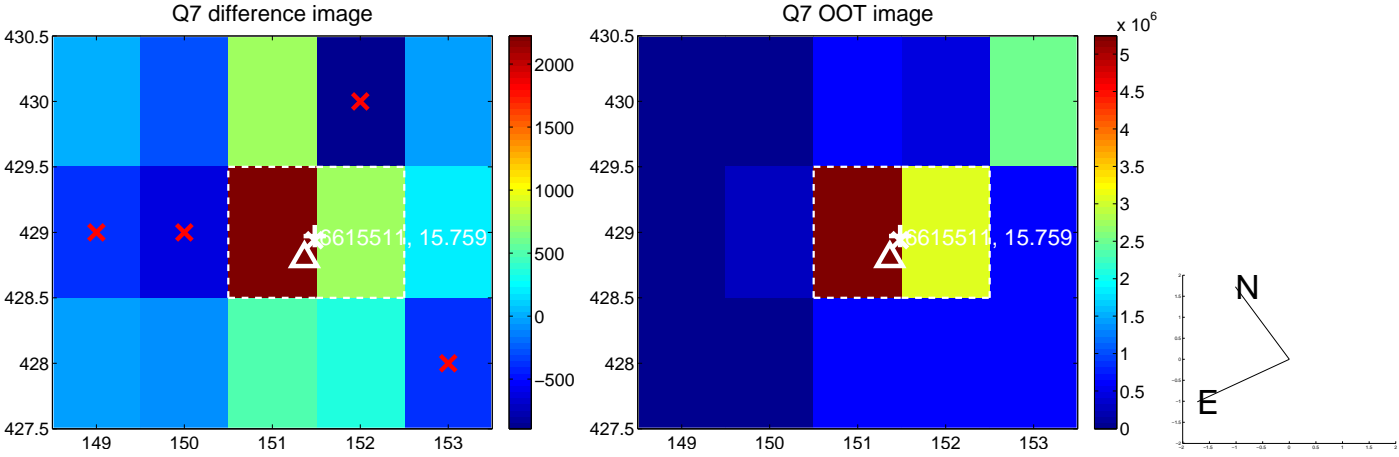
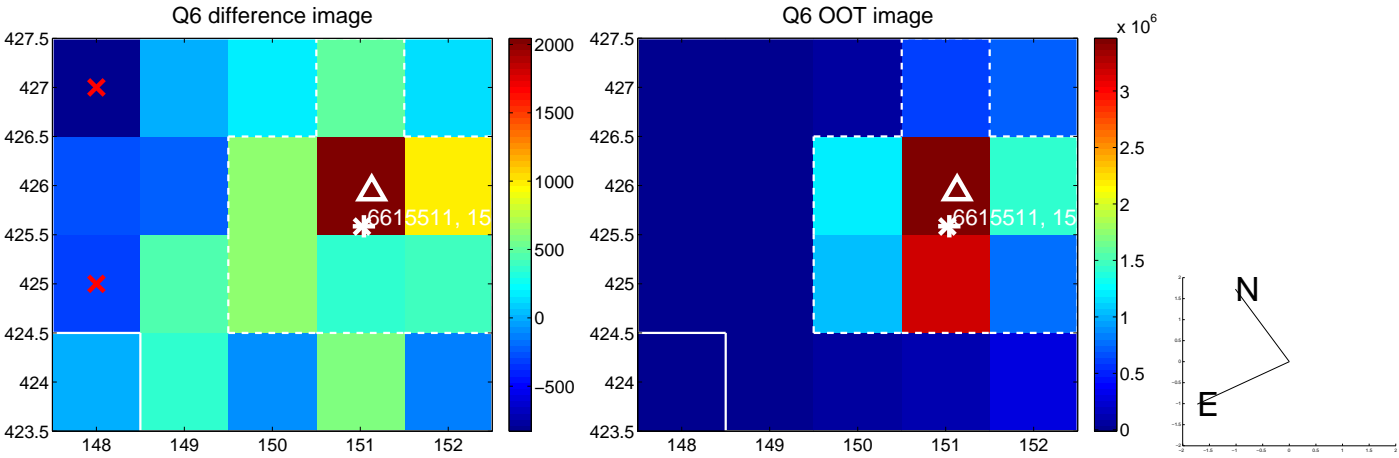
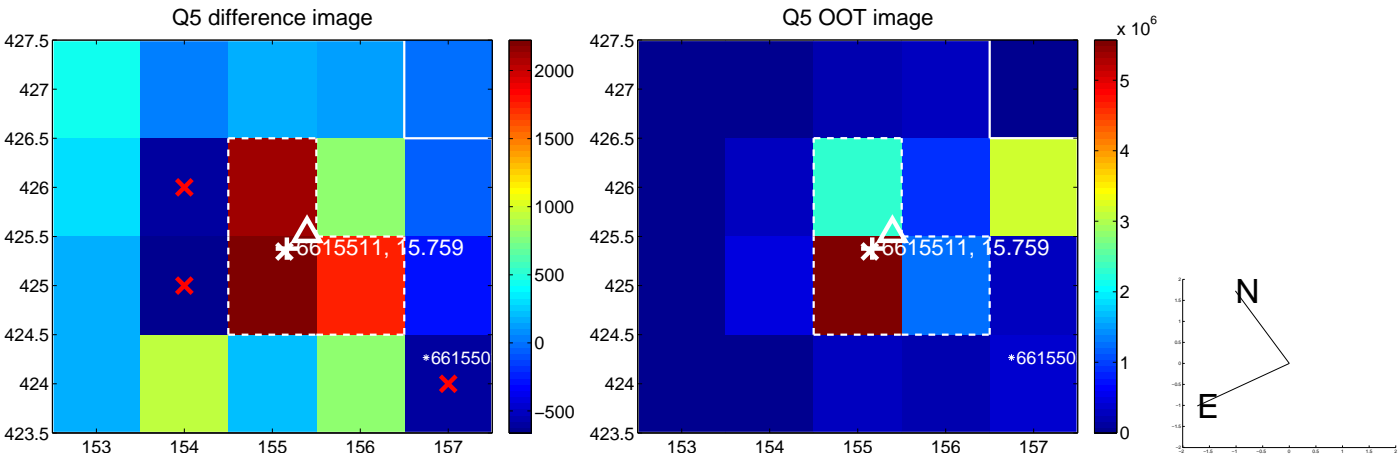
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



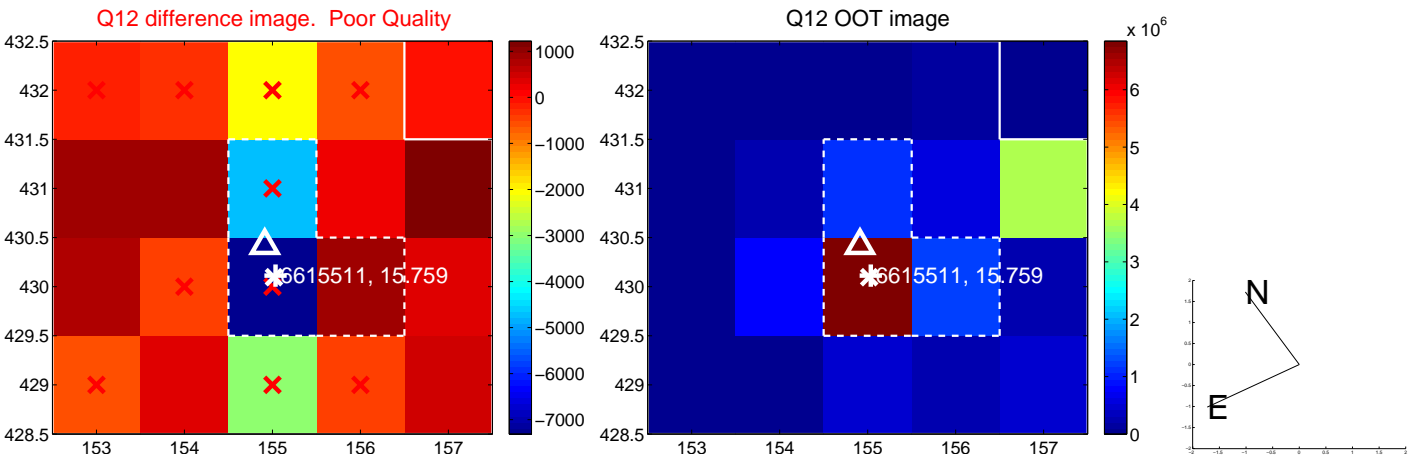
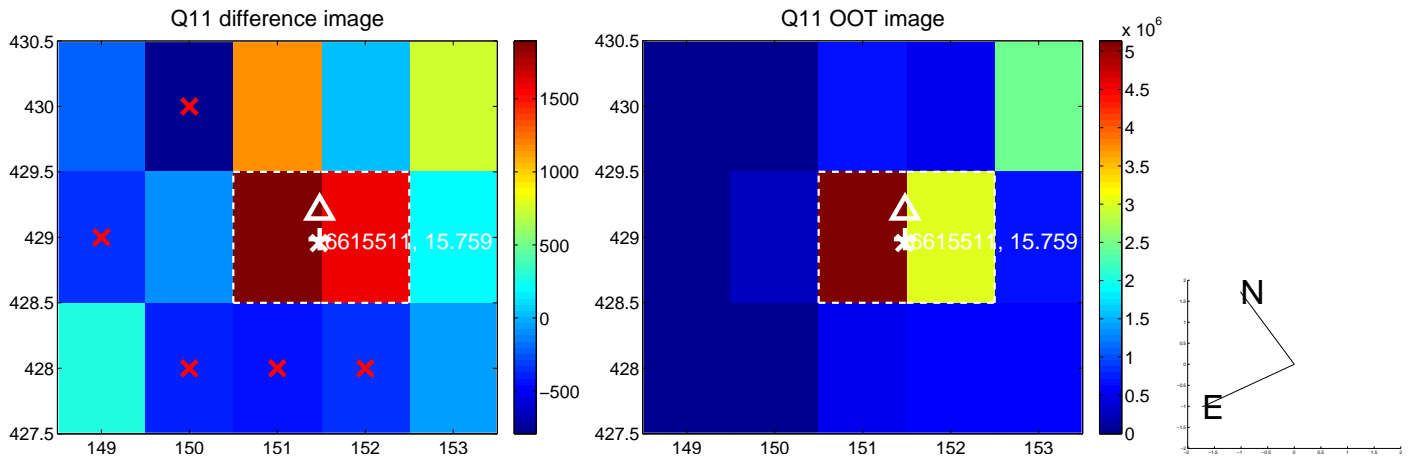
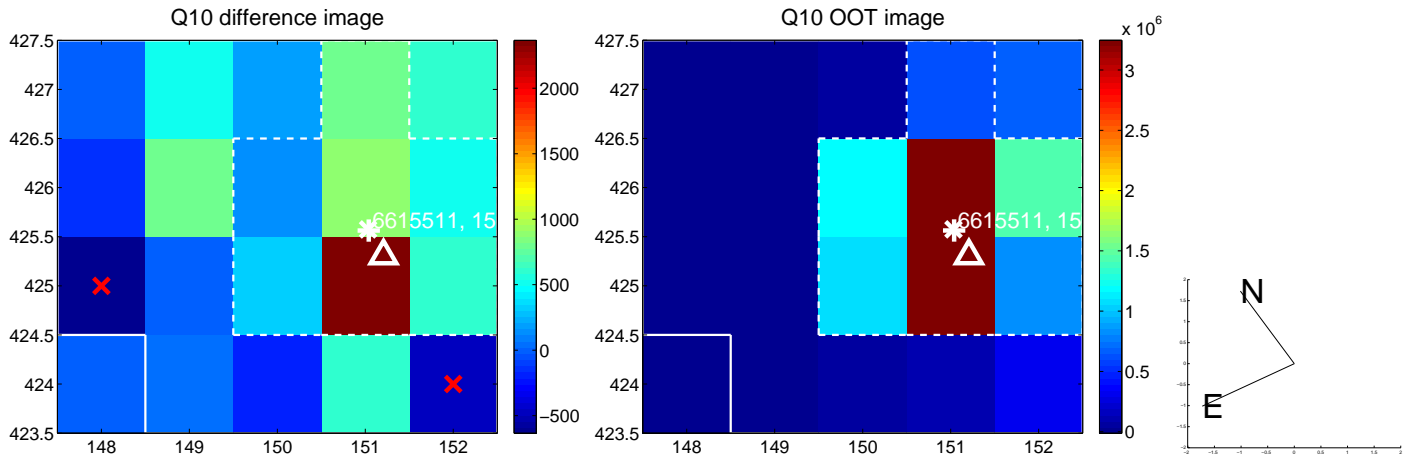
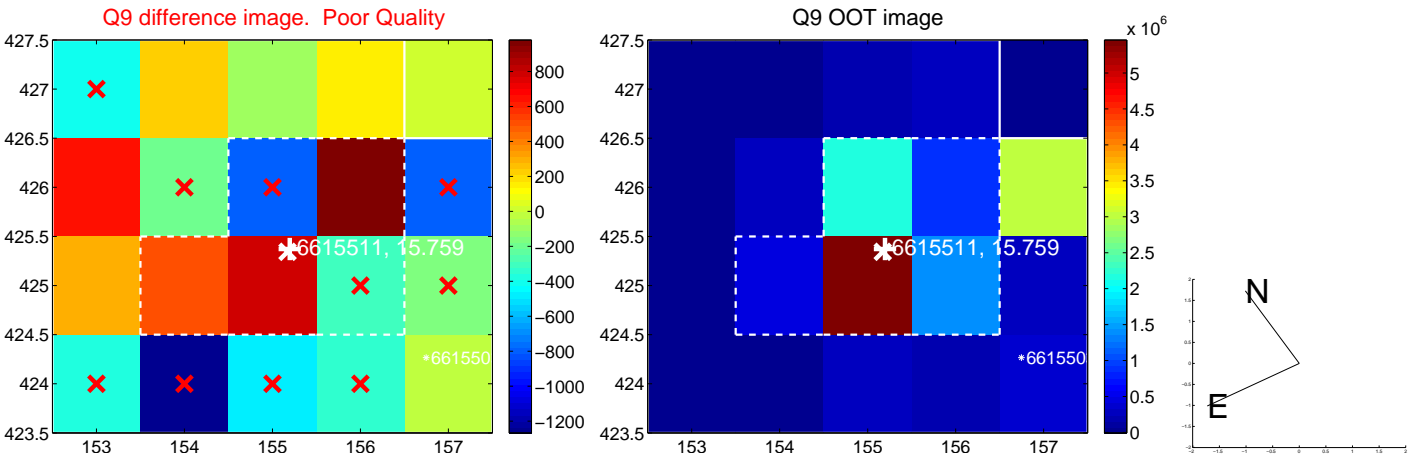
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



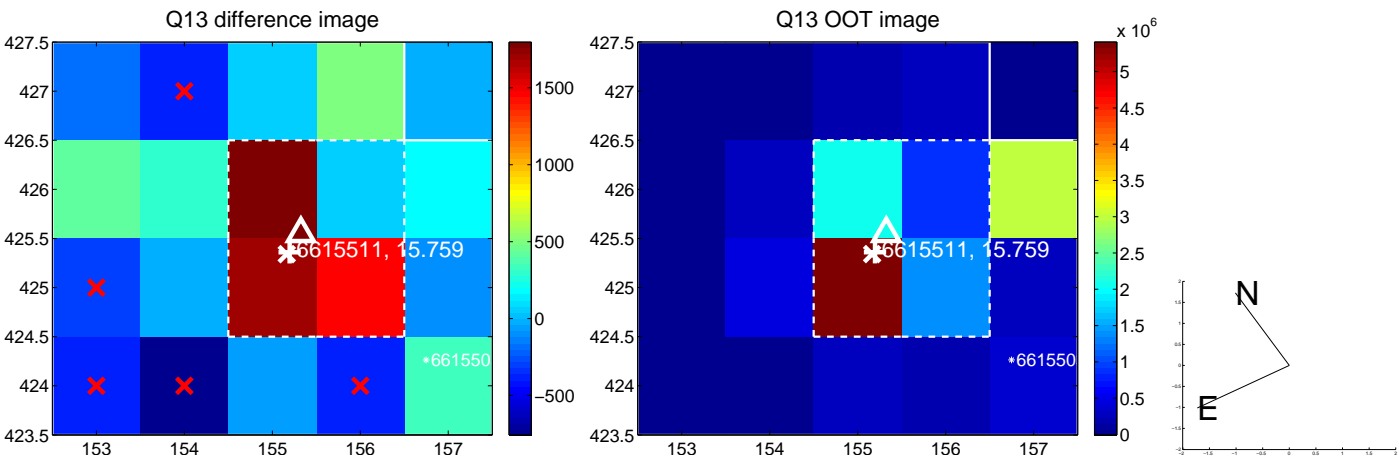
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



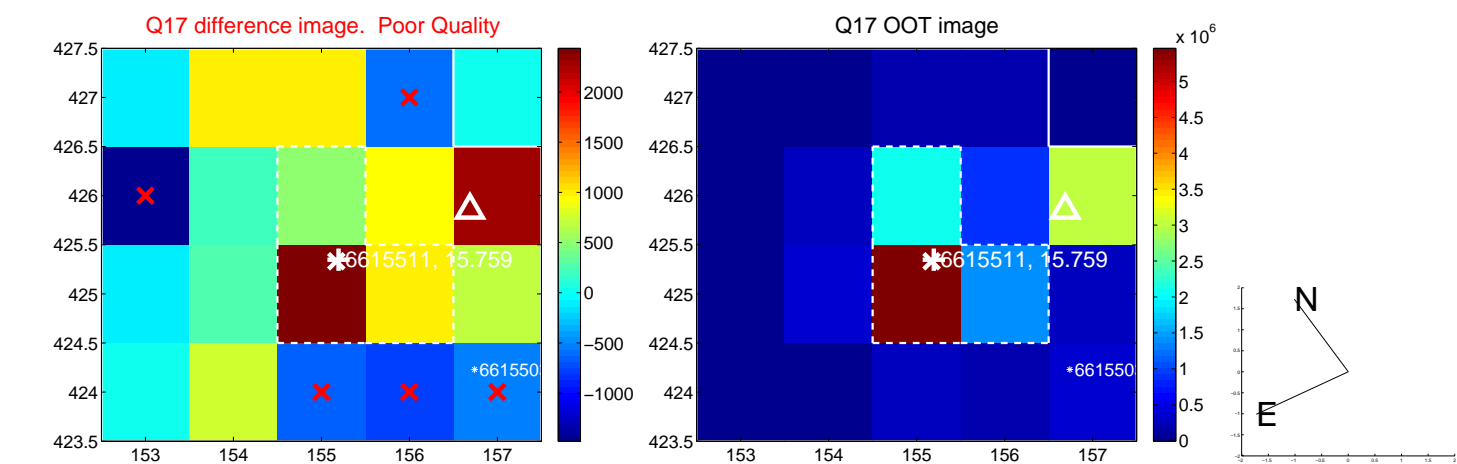
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



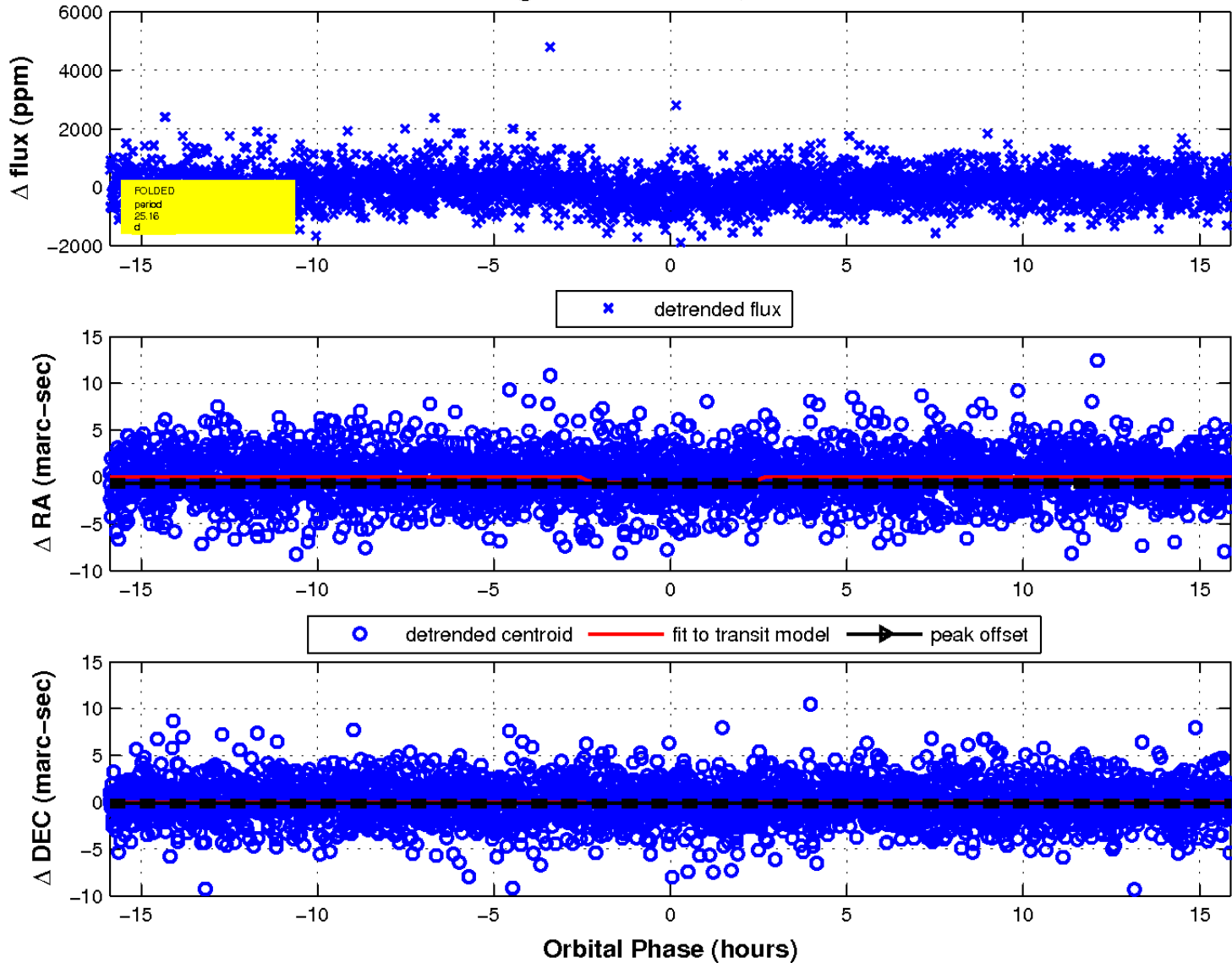
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

