

# KIC 010967168

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010967168-01	OBS	5845.01	22.265899	144.876035	83.7	4.734	9.8	11.6	1.49	6888	1.56	152.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010967168-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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 010967168-01

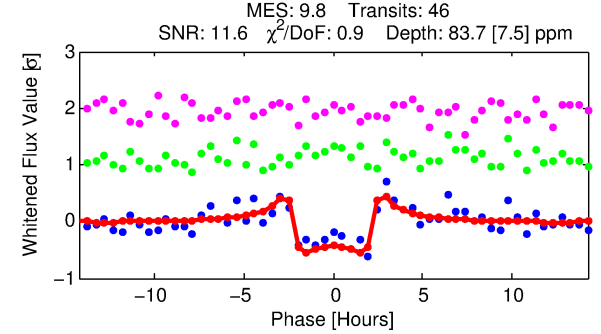
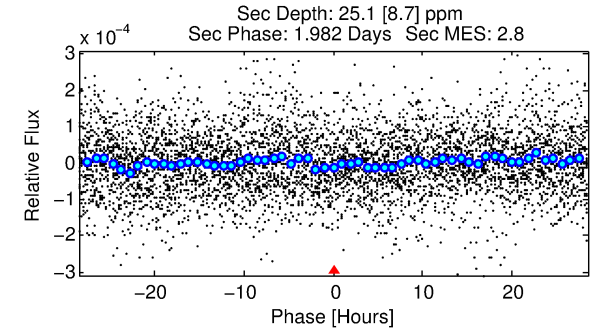
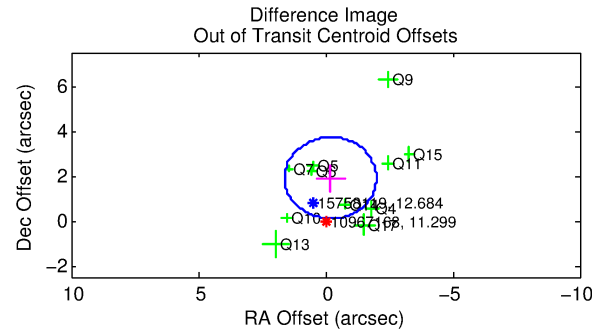
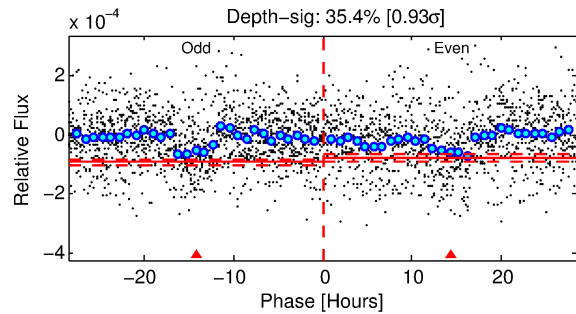
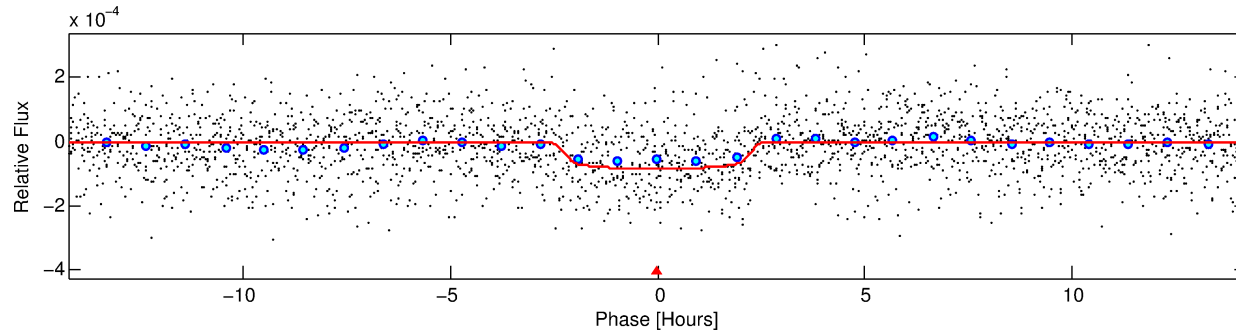
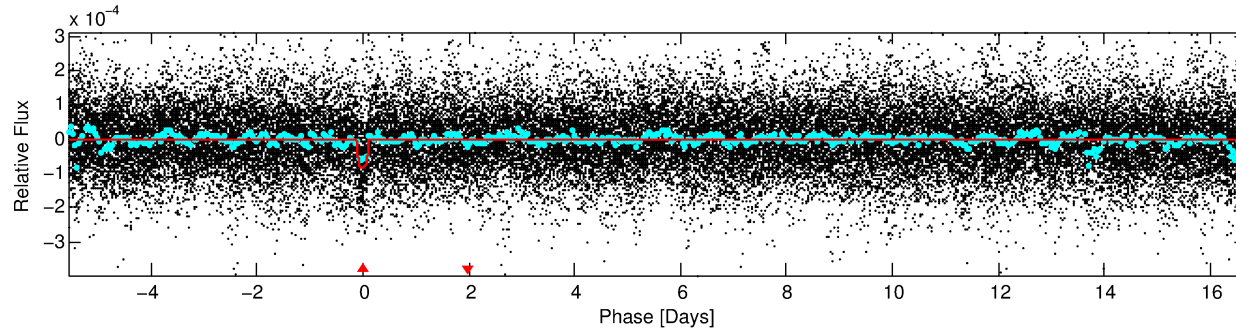
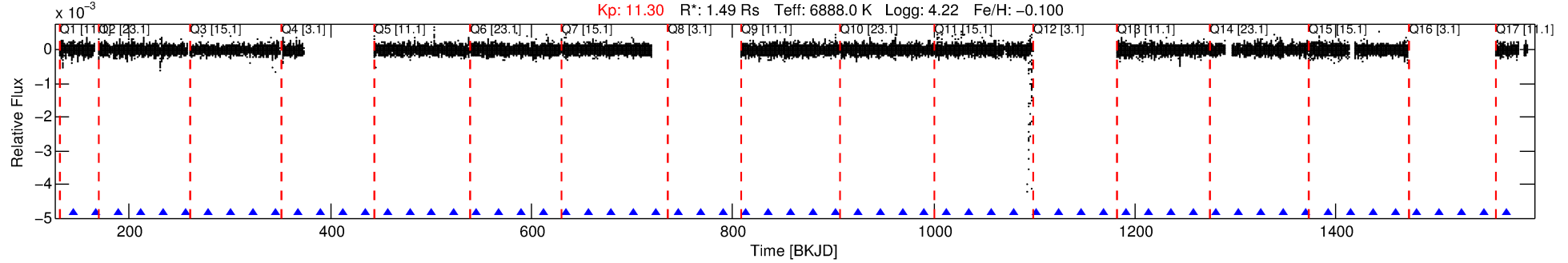
No Significant Match Found

# DV One-Page Summary

KIC: 10967168 Candidate: 1 of 1 Period: 22.266 d

KOI: K05845.01 Corr: 0.989

Kp: 11.30 R\*: 1.49 Rs Teff: 6888.0 K Logg: 4.22 Fe/H: -0.100



## DV Fit Results:

Period = 22.26590 [0.00012] d  
Epoch = 144.8760 [0.0042] BKJD  
Rp/R\* = 0.0096 [0.0017]  
a/R\* = 18.08 [18.13]  
b = 0.88 [0.27]  
Seff = 152.61 [47.78]  
Teq = 896 [70] K  
Rp = 1.56 [0.44] Re  
a = 0.1715 [0.0305] AU  
Ag = 166.65 [93.59] [1.77σ]  
Teffp = 4979 [662] K [6.13σ]

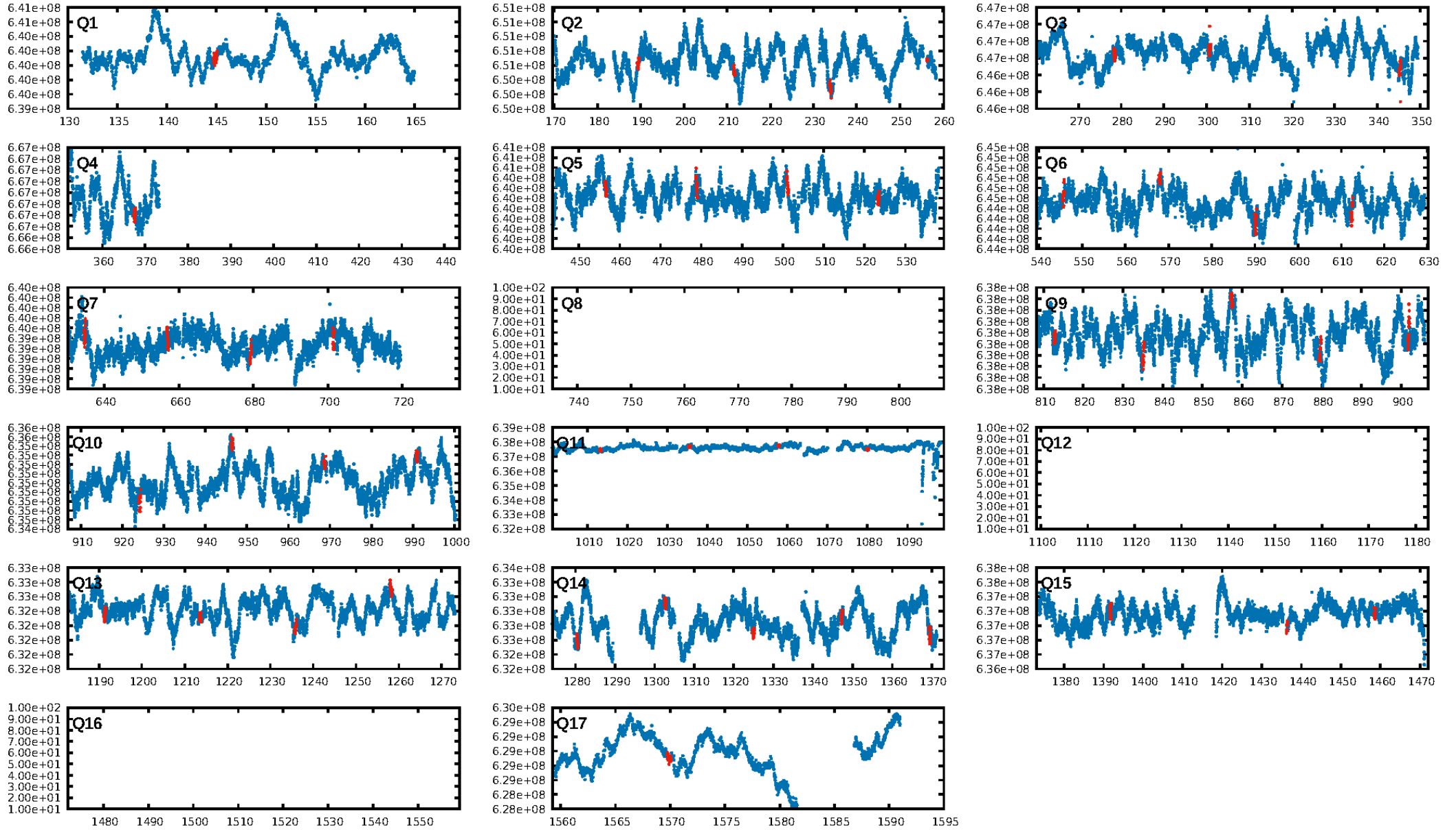
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 90.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.96e-20  
RollingBand-fgt: 1.00 [43/43]  
GhostDiagnostic-chr: 2.663  
Centroid-sig: 0.0%  
Centroid-so: 1.664 arcsec [2.85σ]  
OotOffset-rm: 1.918 arcsec [3.18σ]  
KicOffset-rm: 1.859 arcsec [3.04σ]  
OotOffset-st: 3/3/1/4 [11]  
KicOffset-st: 3/3/1/4 [11]  
DiffImageQuality-fgm: 0.73 [8/11]  
DiffImageOverlap-fno: 1.00 [14/14]

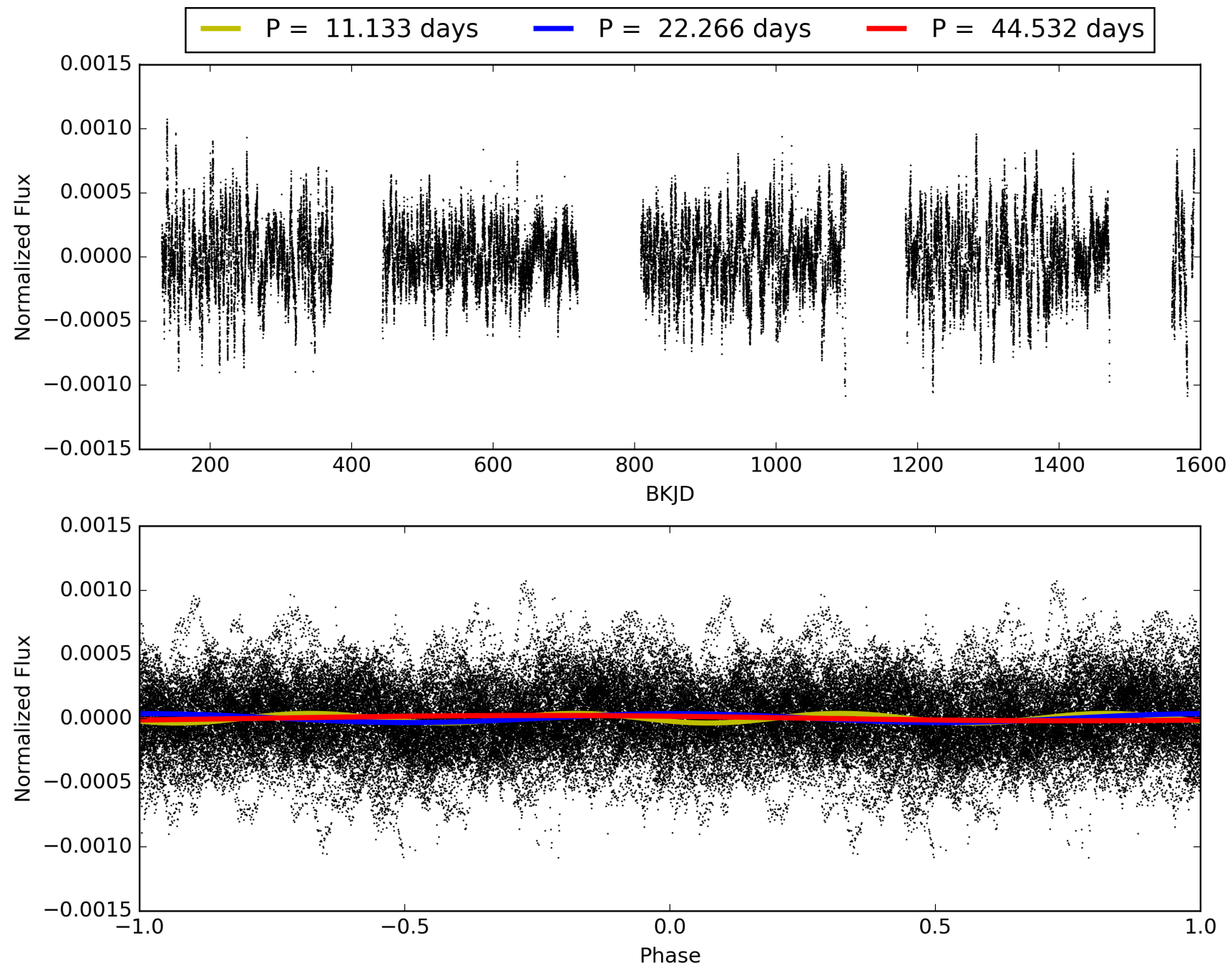
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:40:06 Z

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

# TCE 010967168-01, PDC Light Curves

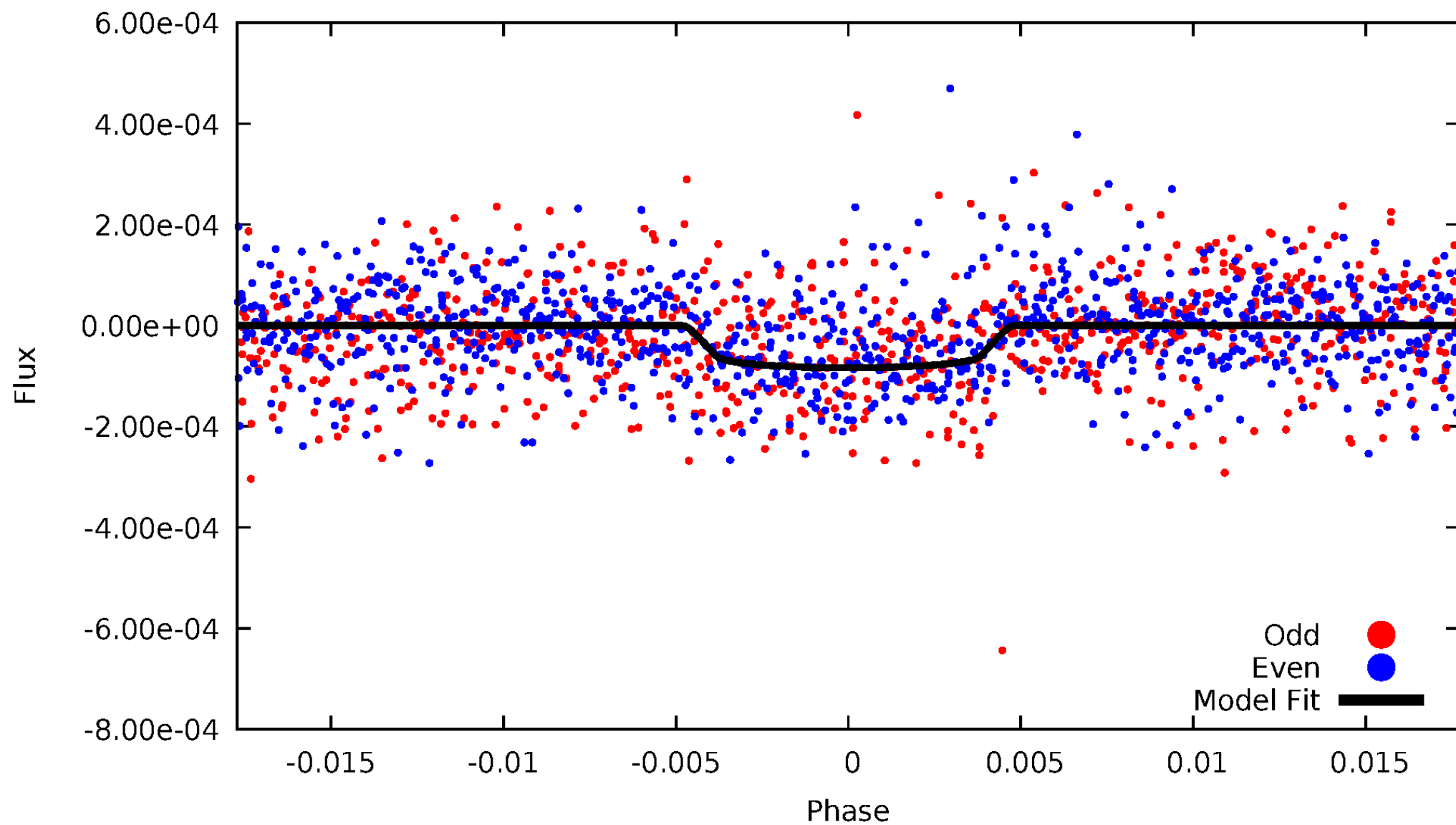


# TCE 010967168-01



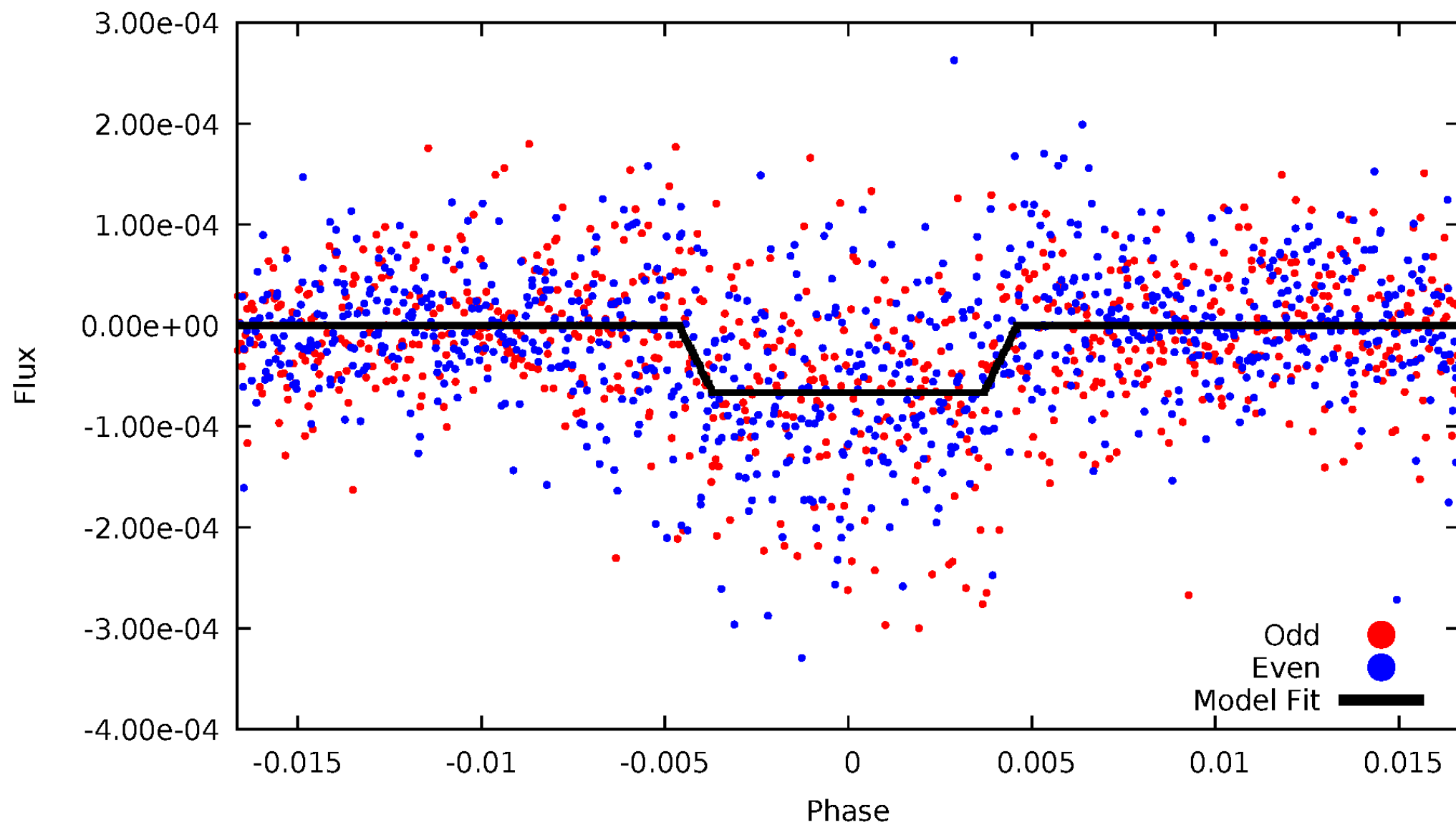
# DV Odd/Even

TCE 010967168-01



# ALT Odd/Even

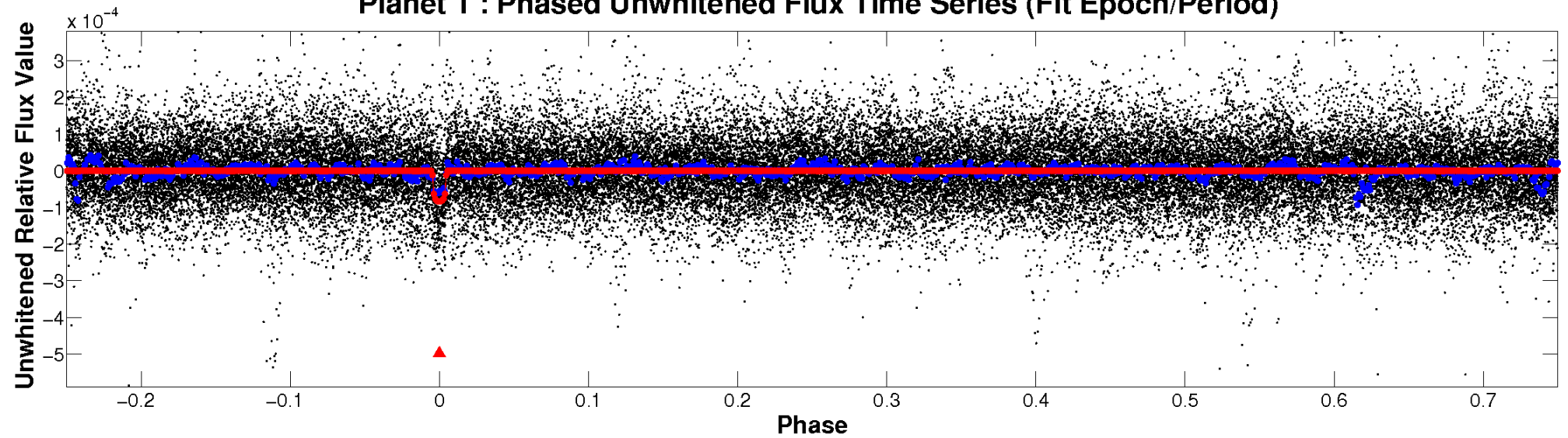
TCE 010967168-01



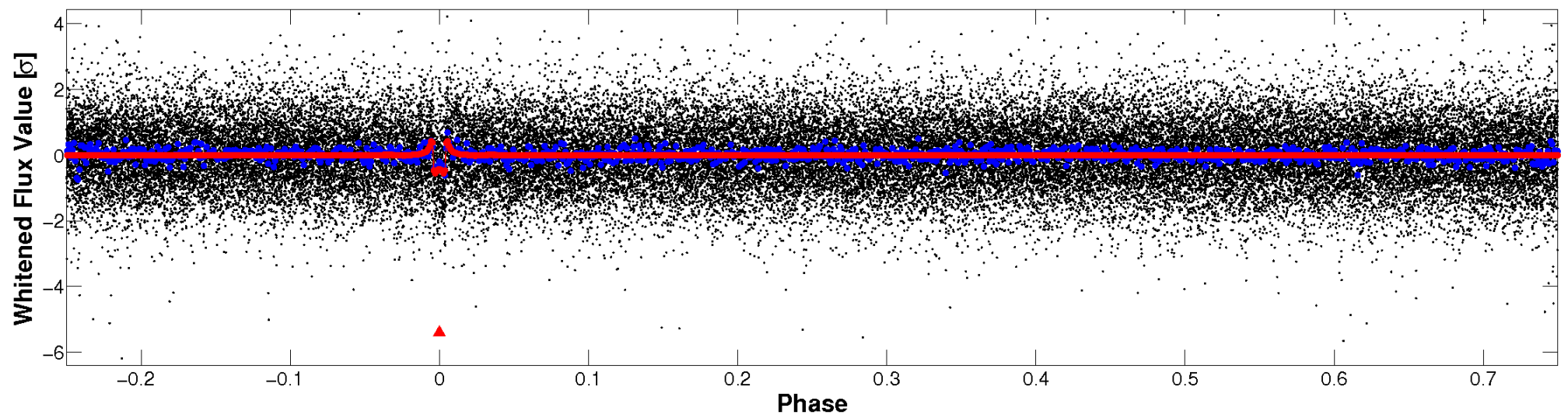


# Non-Whitened Vs. Whitened Light Curve

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

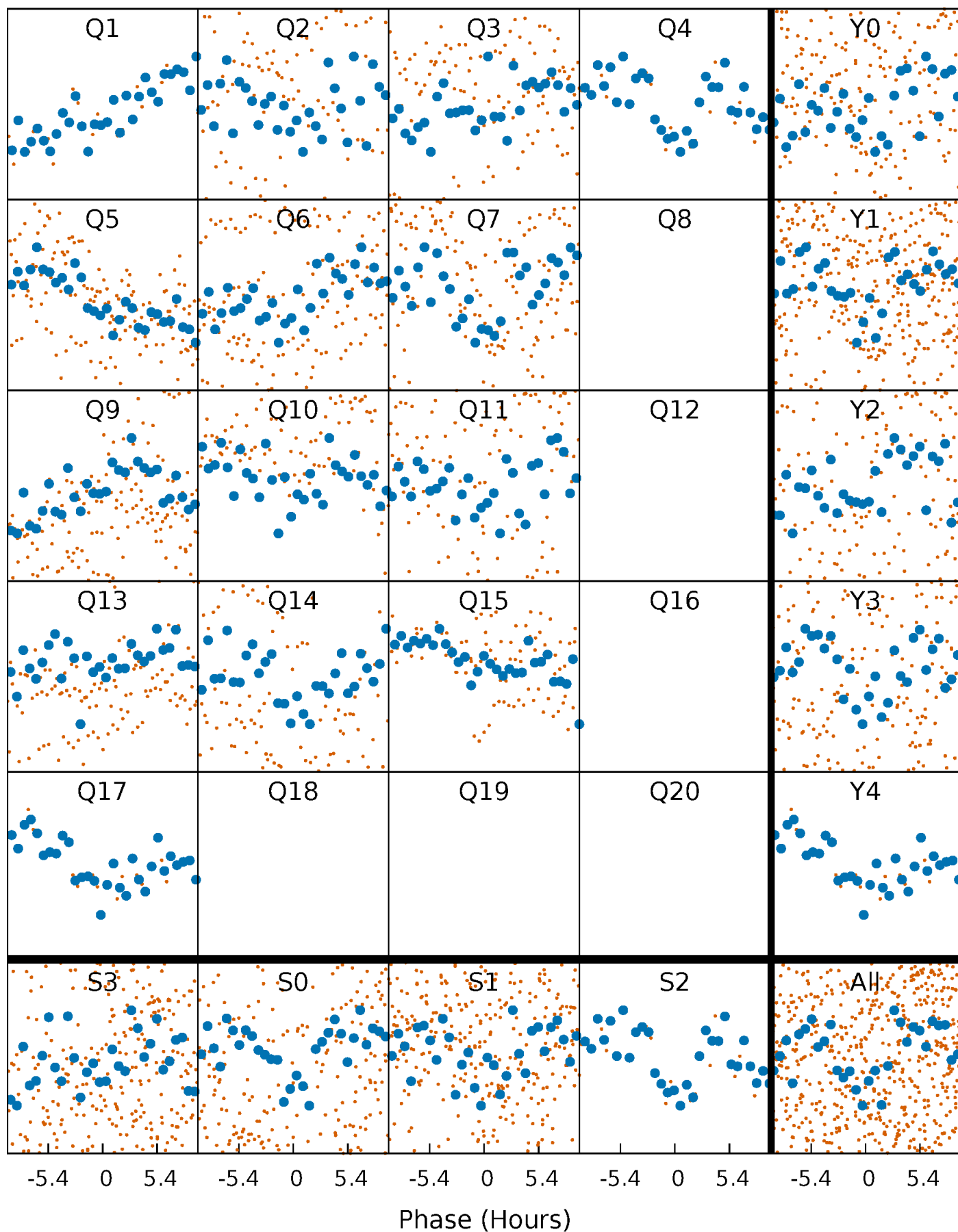


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

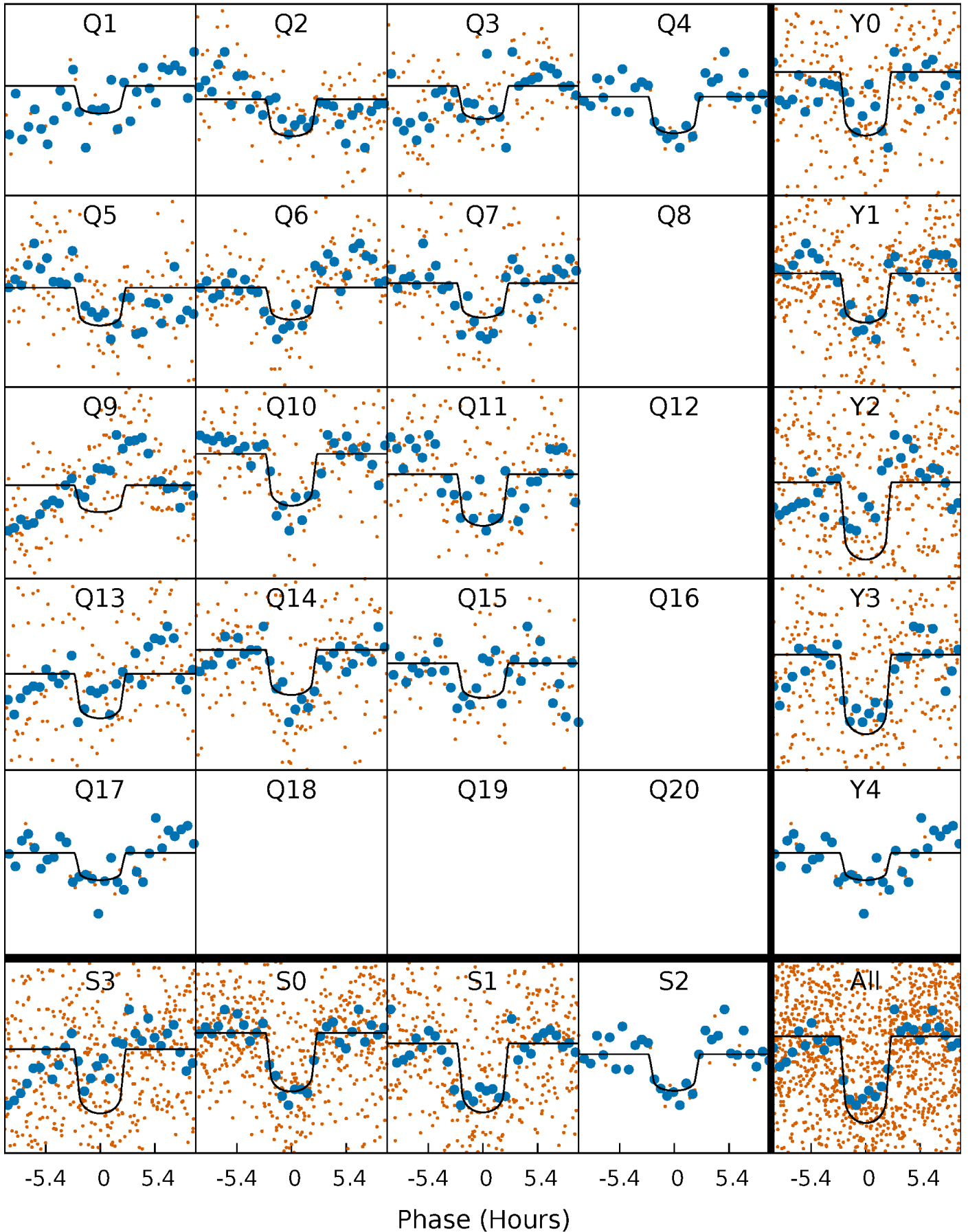
TCE 010967168-01 P= 22.265899 Days  $T_0=144.876036$  (BKJD)





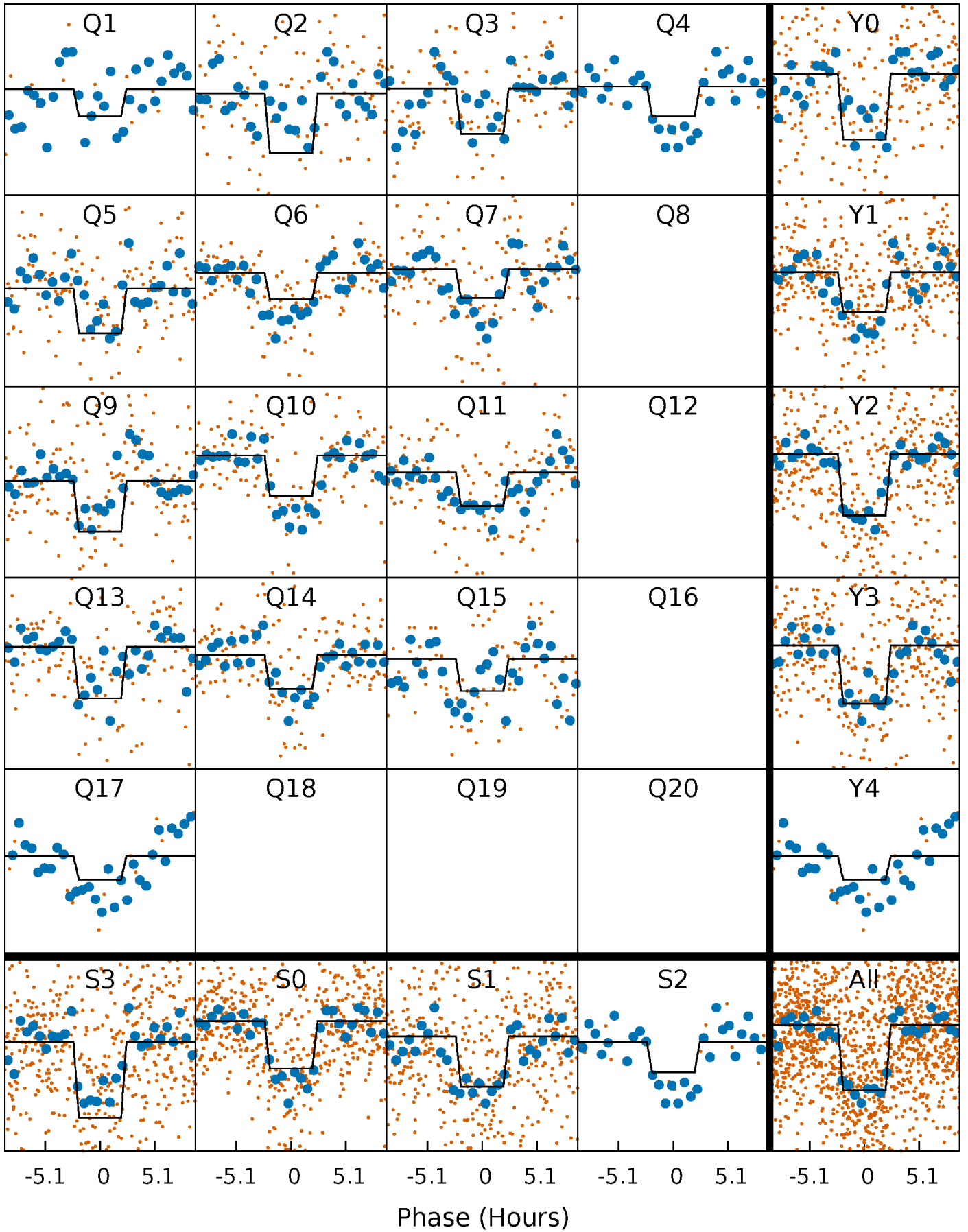
# DV Quarter-Phased Transit Curves

TCE 010967168-01 P= 22.265899 Days  $T_0=144.876036$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

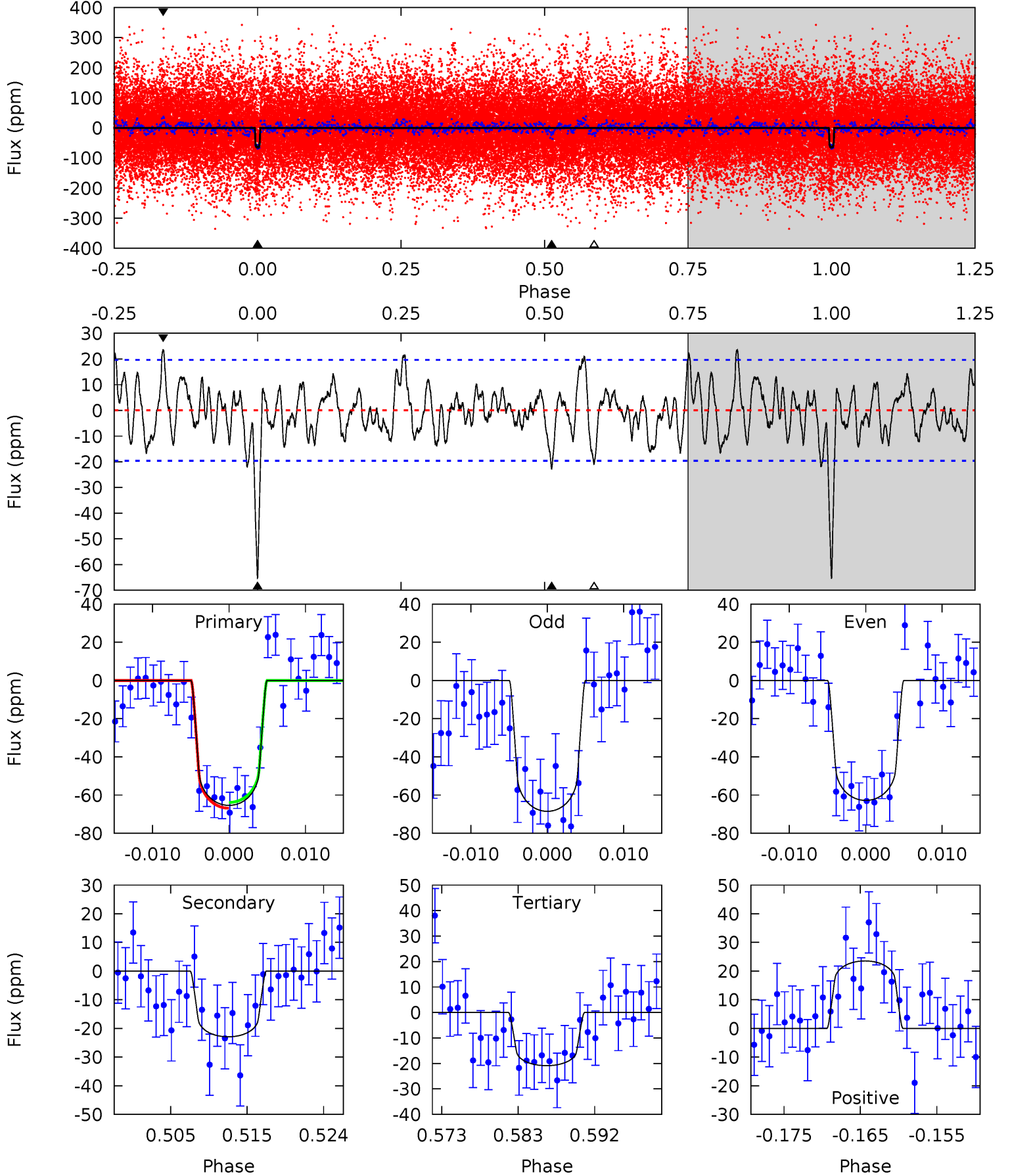
TCE 010967168-01 P= 22.265969 Days  $T_0=144.875280$  (BKJD)



# DV Model-Shift Uniqueness Test

010967168-01, P = 22.265899 Days, E = 122.610137 Days

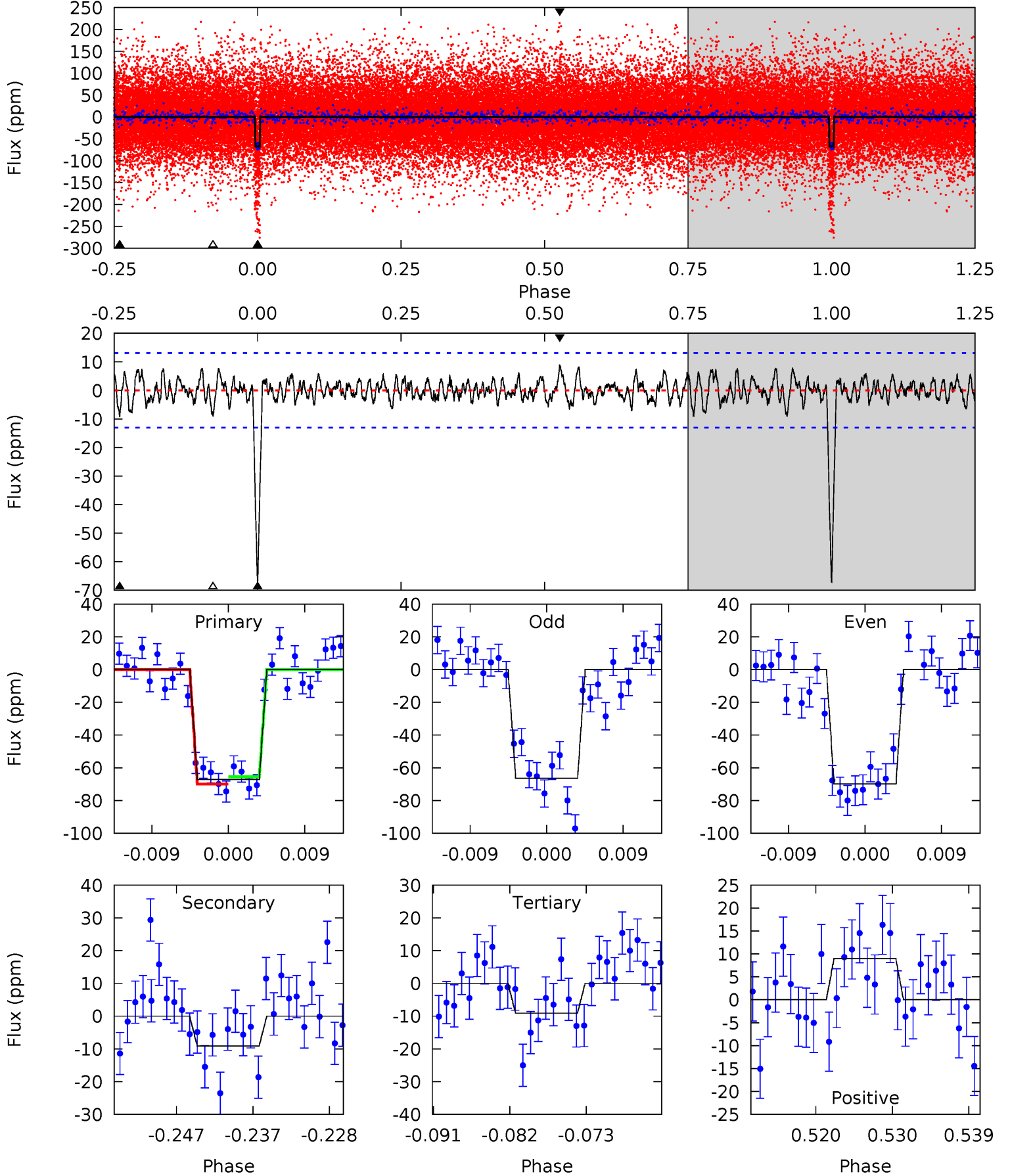
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	5.88	5.35	6.04	5.03	2.59	2.09	11.4	10.7	0.53	-0.16	0.73	0.94	0.26	0.39



# Alt Model-Shift Uniqueness Test

010967168-01, P = 22.265969 Days, E = 122.609311 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
25.9	3.52	3.51	3.45	5.04	2.61	1.18	22.4	22.5	0.01	0.07	0.67	1.11	0.12	0.86



### Stellar Parameters For KIC 010967168

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6888^{+192}_{-312}$	$4.223^{+0.112}_{-0.138}$	$-0.100^{+0.250}_{-0.350}$	$1.492^{+0.319}_{-0.261}$	$1.363^{+0.150}_{-0.225}$	$0.579^{+0.317}_{-0.240}$
	+3%/-5%	+3%/-3%	+250%/-350%	+21%/-17%	+11%/-17%	+55%/-41%
Source	KIC0	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 010967168-01 / KOI 5845.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-23 \pm 4$	$1.55^{+0.39}_{-0.29}$	$1256^{+75}_{-75}$	$4918^{+505}_{-382}$	$149^{+88}_{-53}$
Alt.	$-9 \pm 3$	$1.32^{+0.33}_{-0.29}$	$1253^{+75}_{-80}$	$4365^{+497}_{-414}$	$83^{+59}_{-33}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

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

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

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

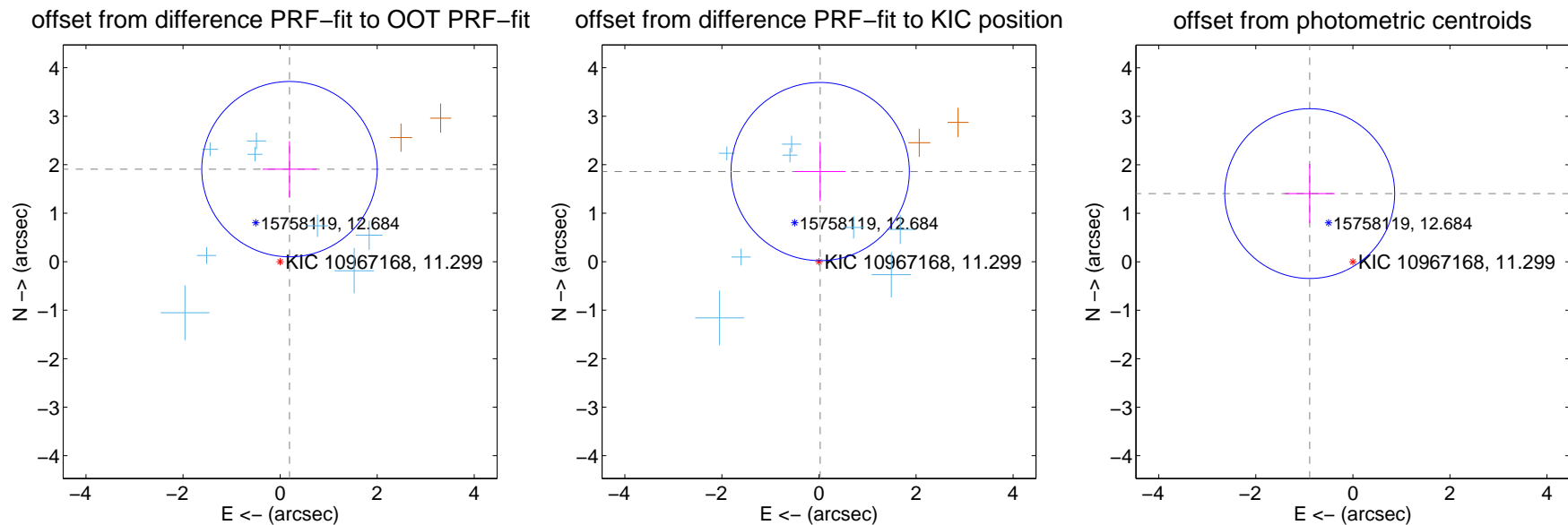
## DV Centroid Data

Supplemental centroid analysis for 010967168-01. **Kepler magnitude: 11.30.** Transit SNR 11.57

There are 8 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

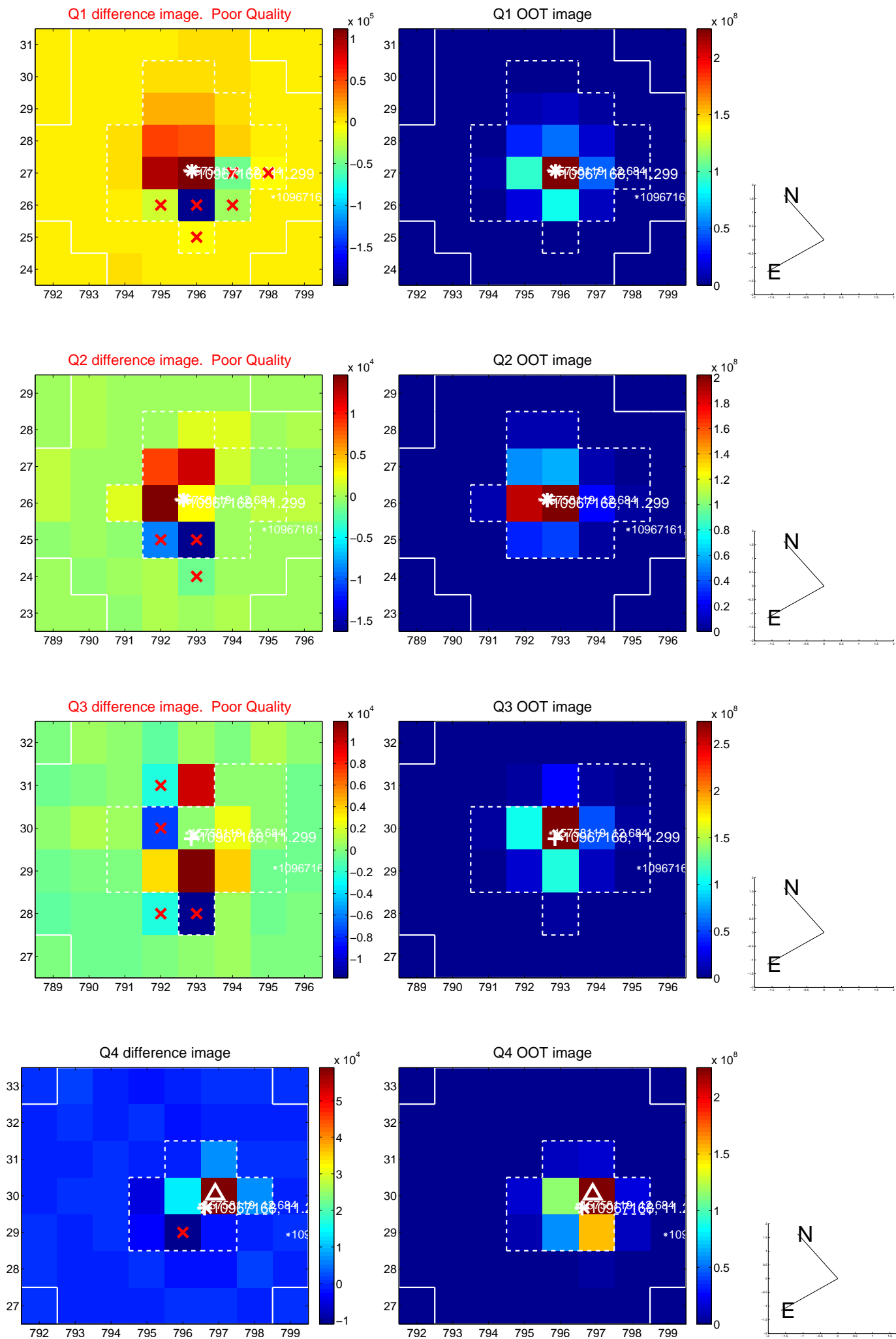
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>1.918 \pm 0.603</math></b>	<b>3.18</b>	$-0.194 \pm 0.554$	$1.908 \pm 0.575$
PRF-fit source offset from KIC position	<b><math>1.859 \pm 0.612</math></b>	<b>3.04</b>	$-0.024 \pm 0.522$	$1.859 \pm 0.609$
photometric centroid source offset	$1.66 \pm 0.58$	2.85	$0.89 \pm 0.52$	$1.41 \pm 0.61$



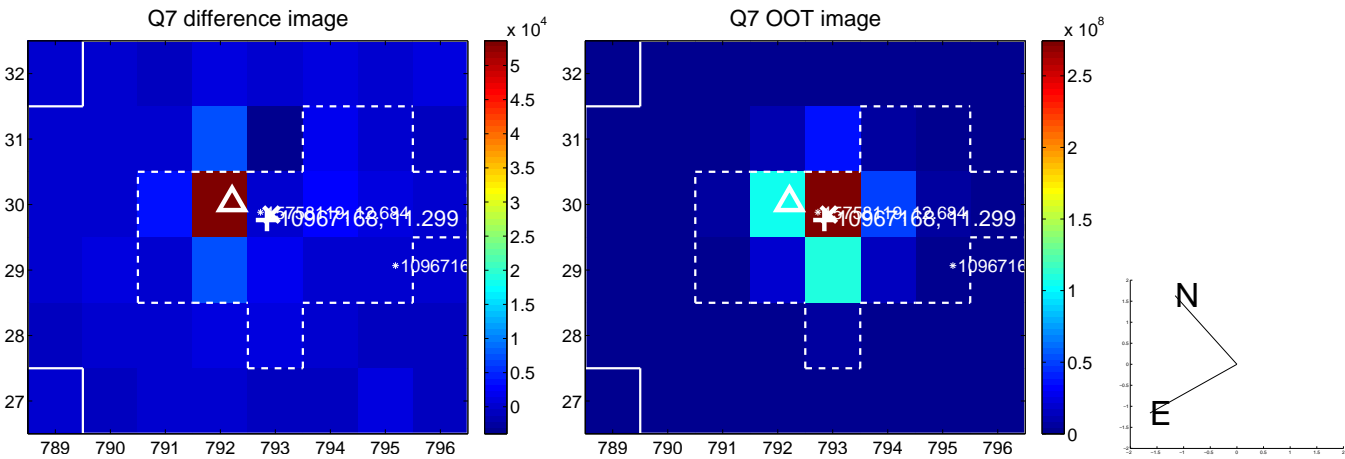
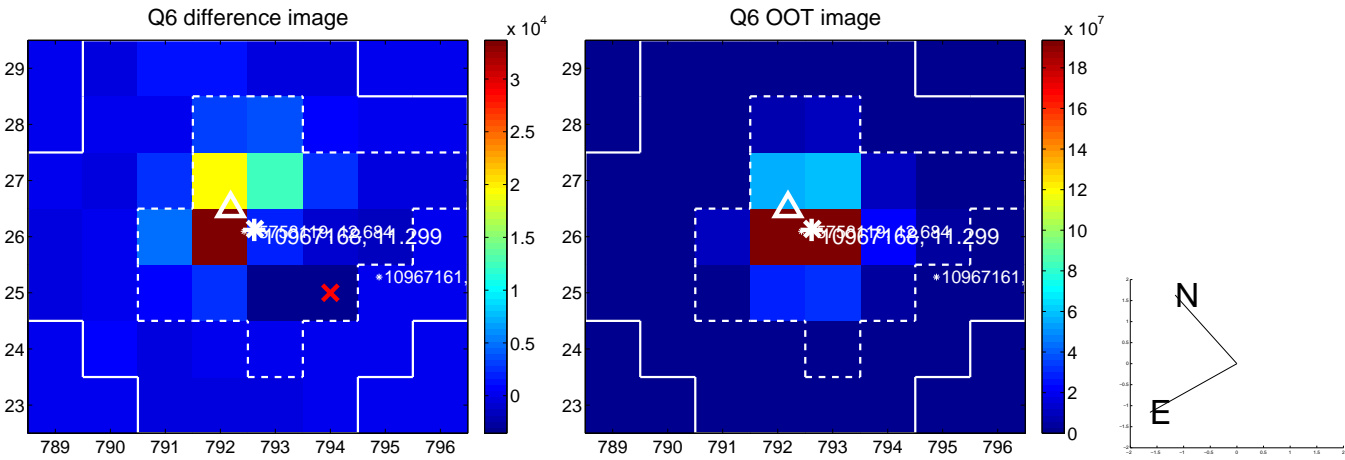
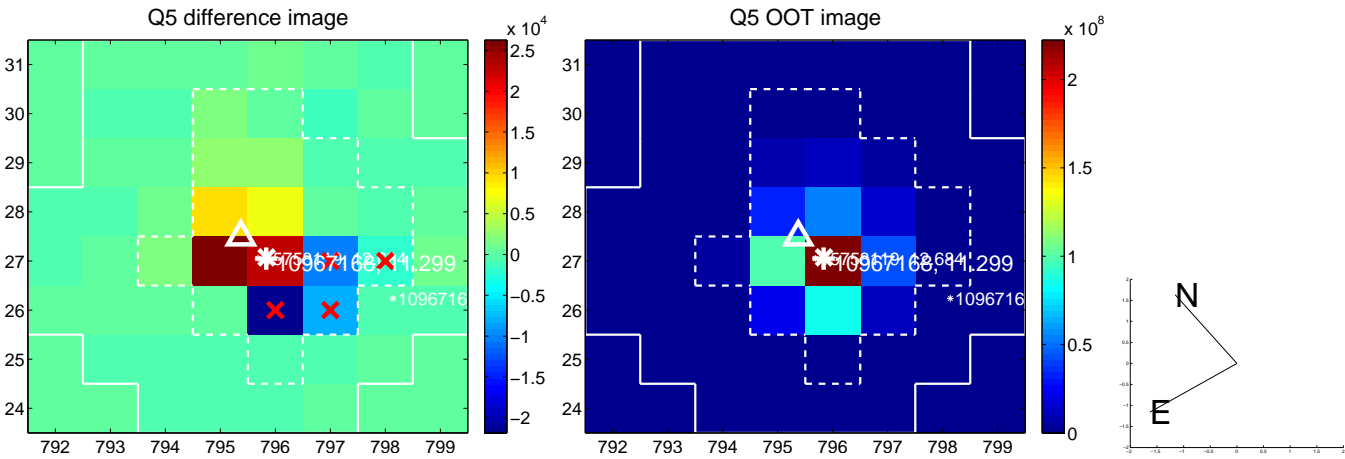
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



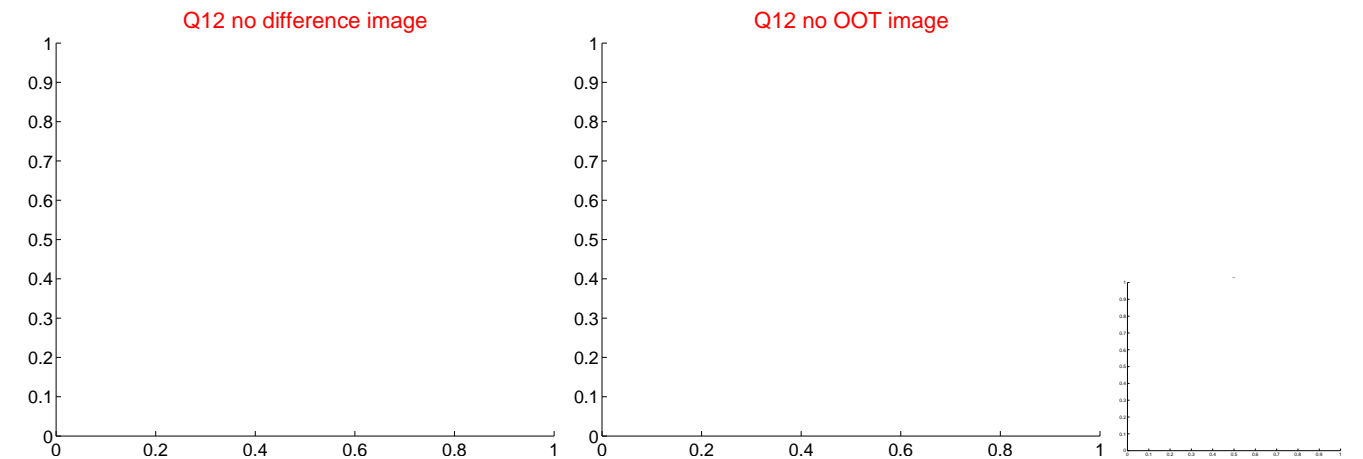
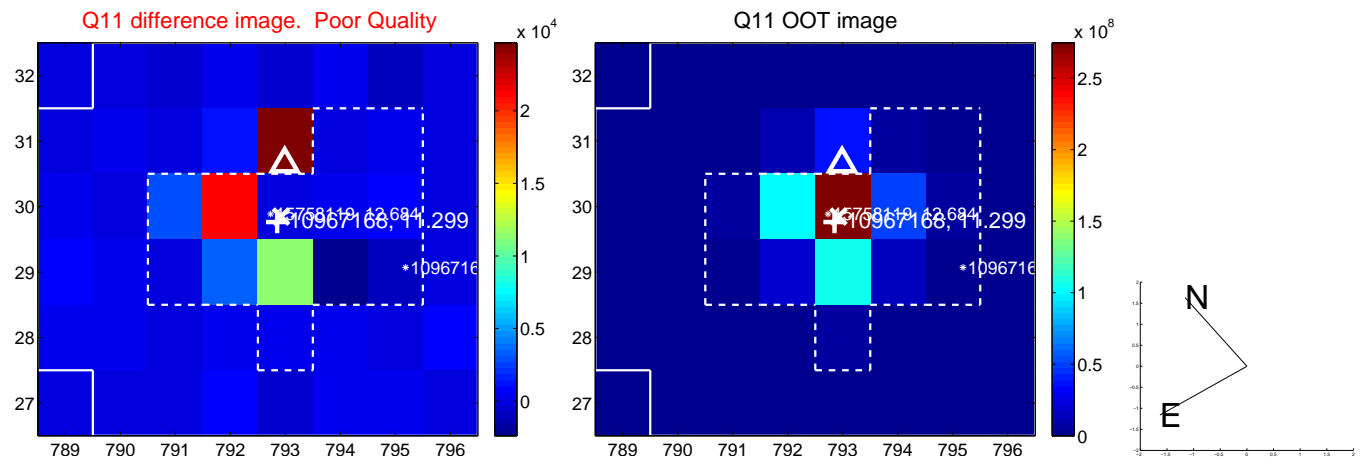
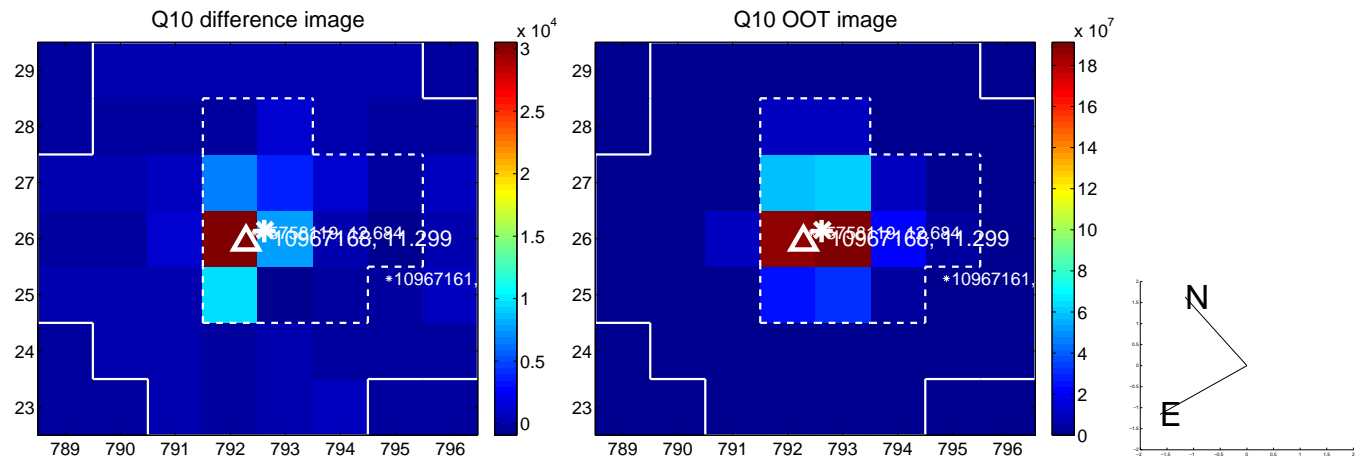
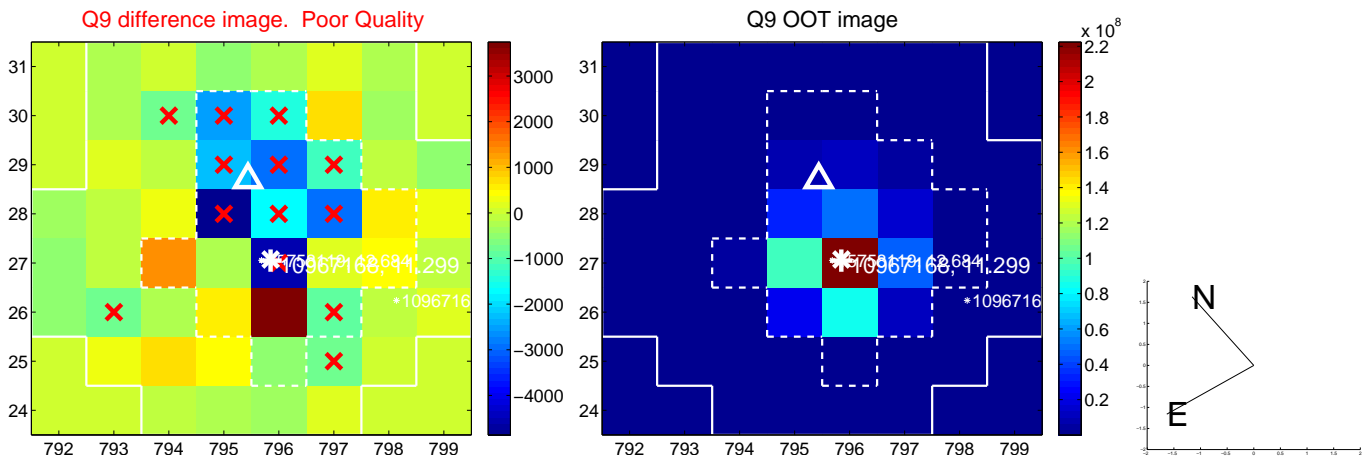
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



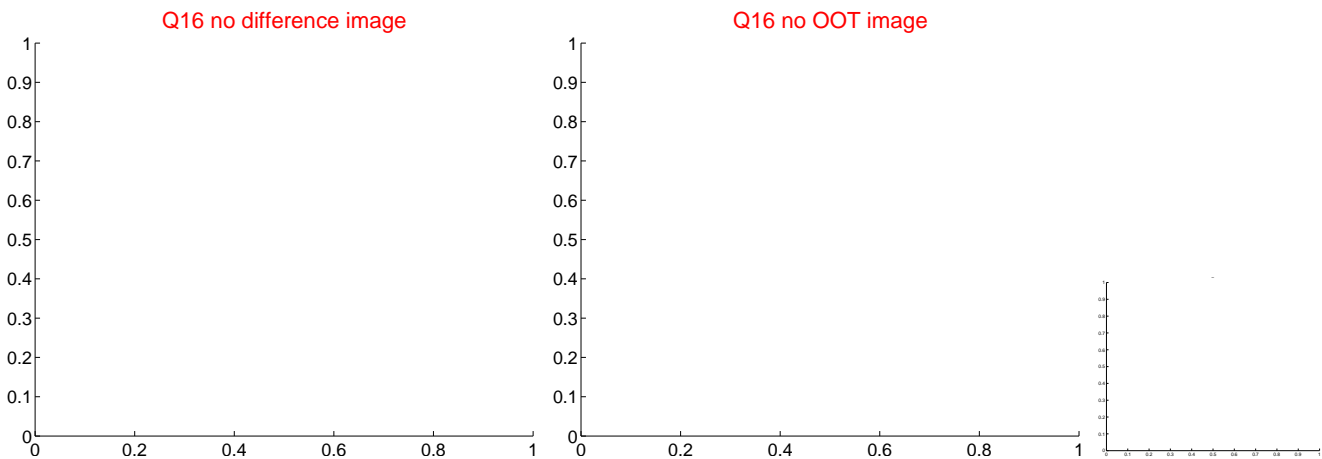
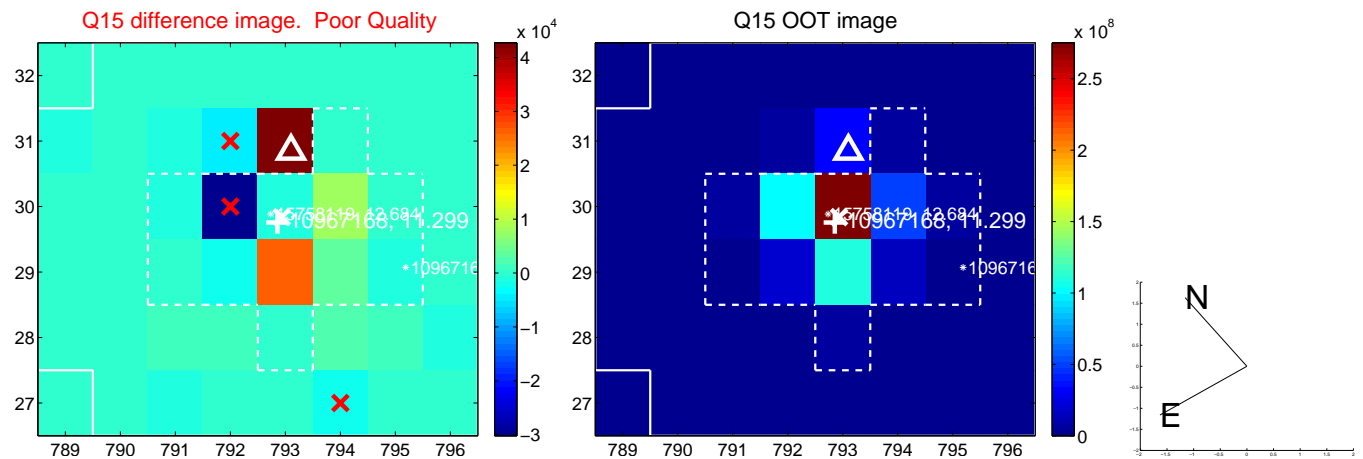
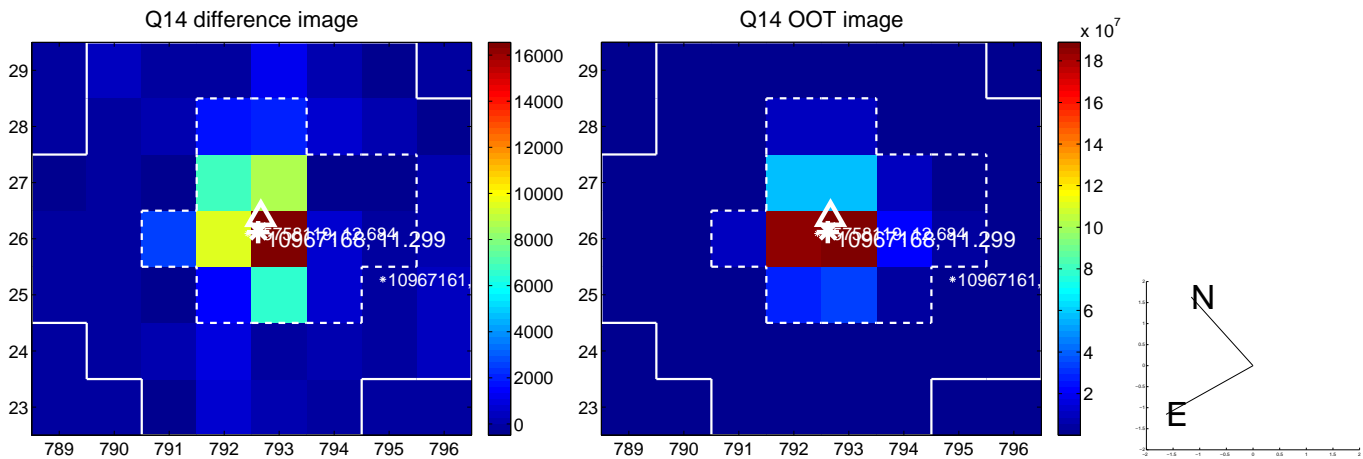
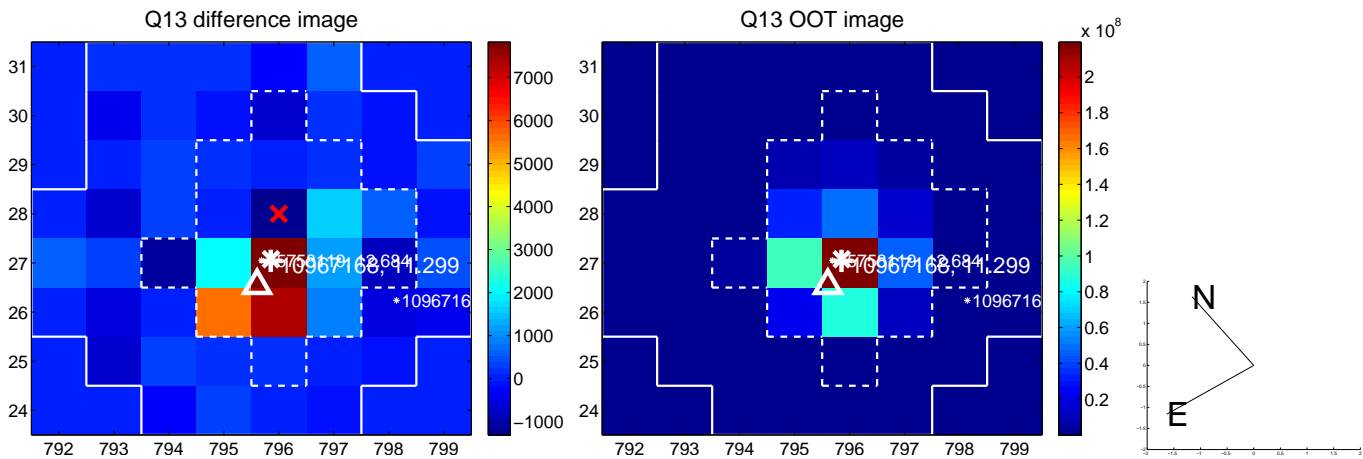
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



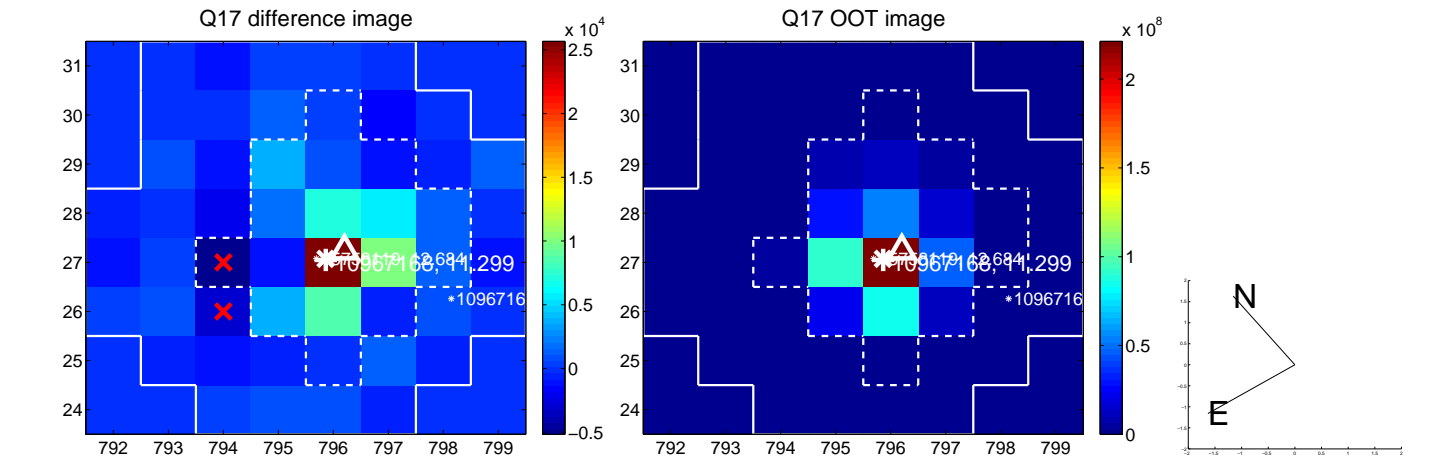
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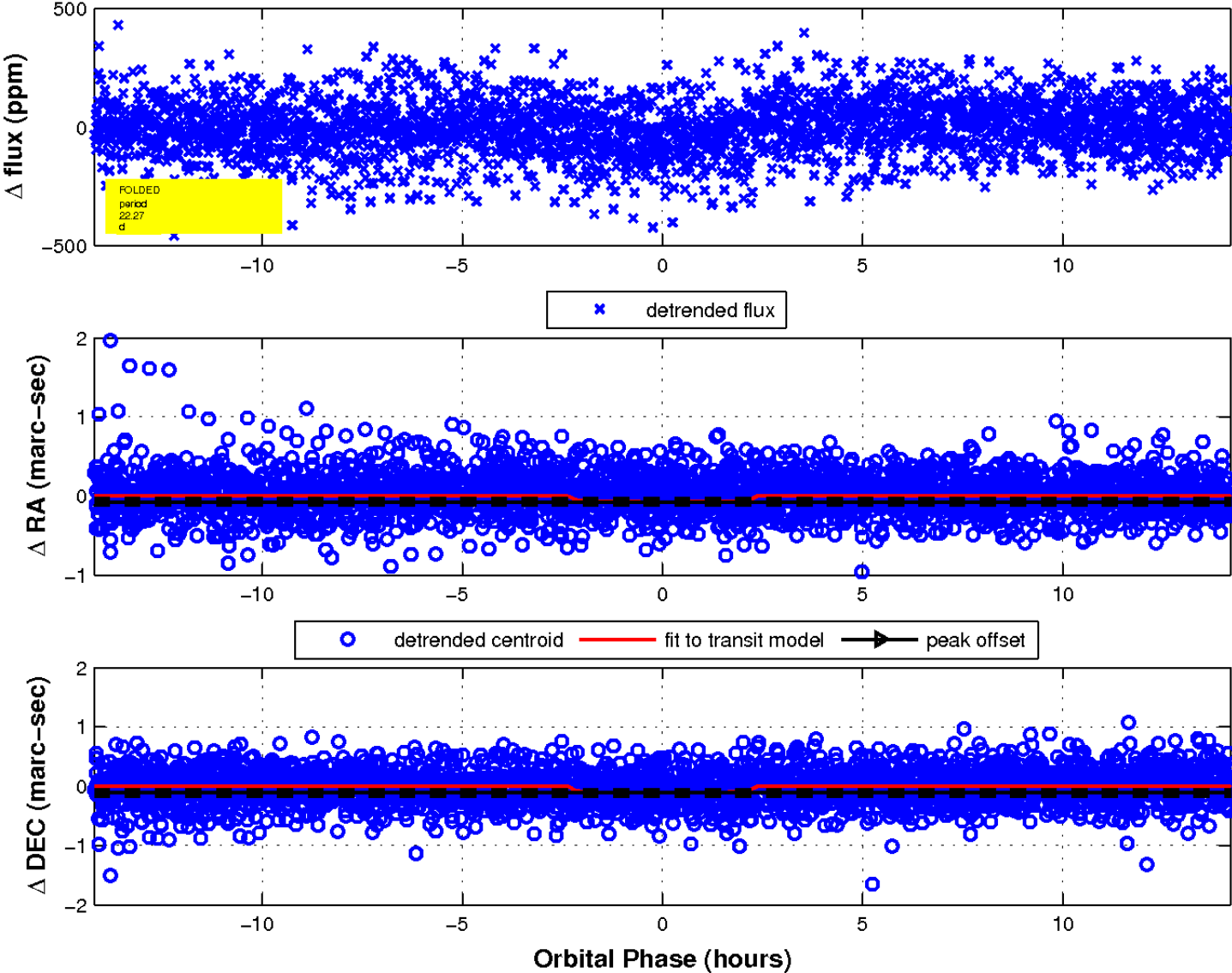
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

