

# KIC 007697568

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007697568-01	OBS	1829.01	22.841543	138.633242	2884.5	2.670	47.5	49.3	0.83	5381	7.46	22.84

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007697568-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

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

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

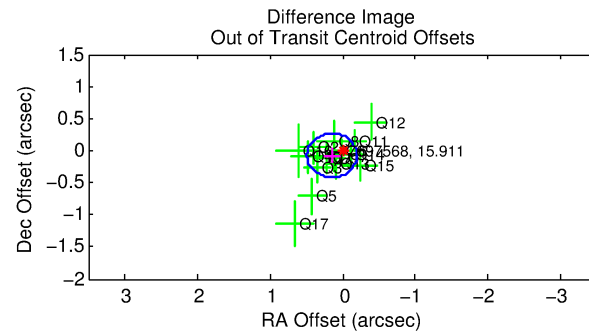
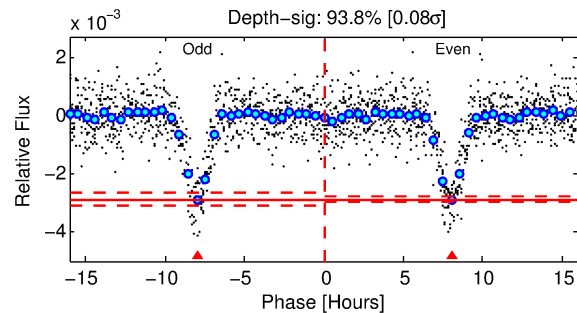
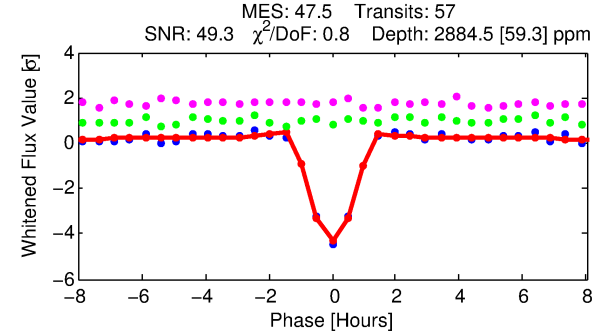
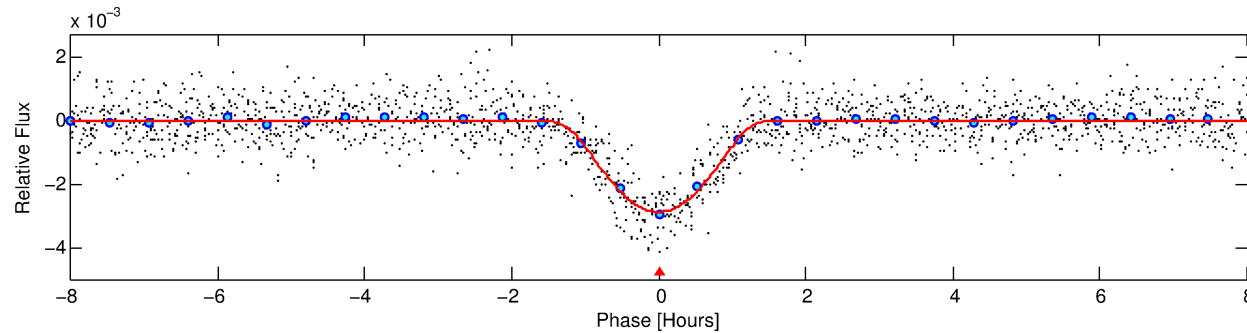
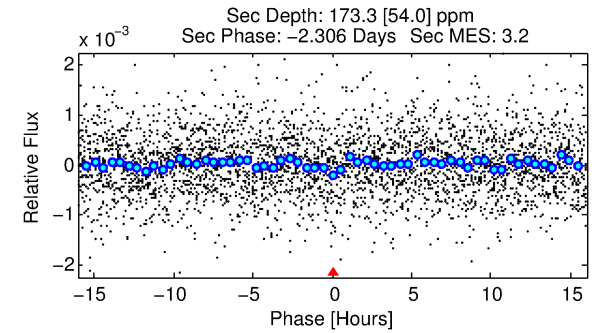
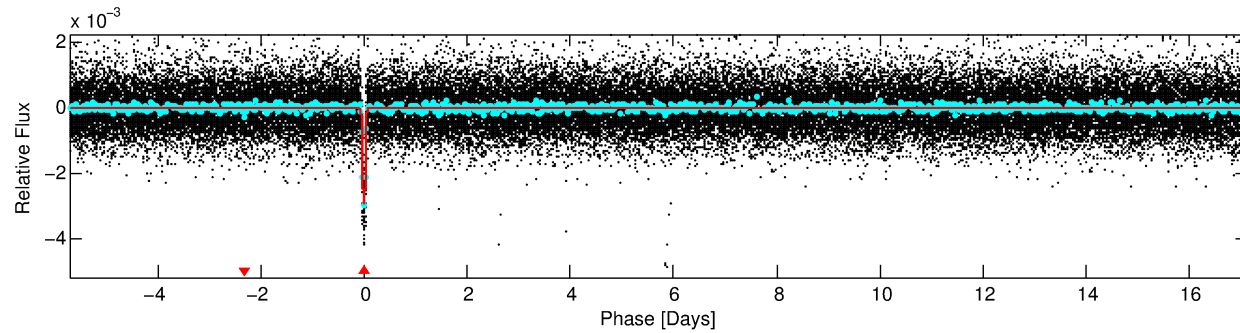
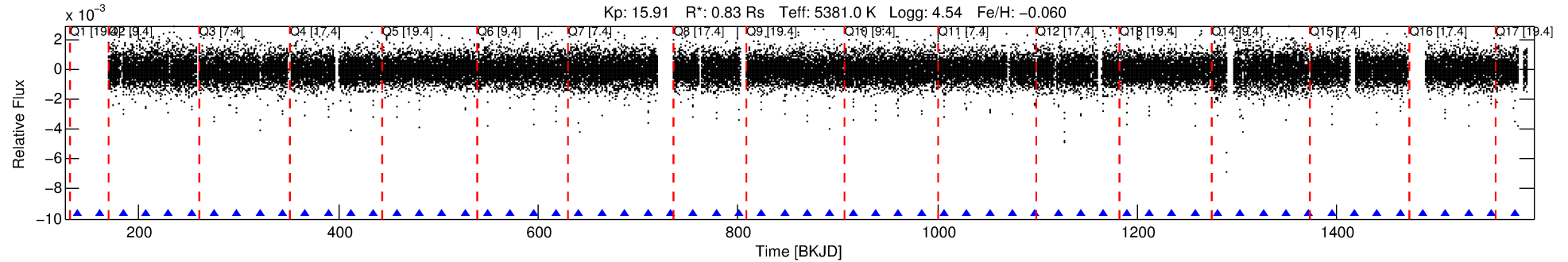
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007697568-01

No Significant Match Found

# DV One-Page Summary

KIC: 7697568 Candidate: 1 of 1 Period: 22.842 d  
KOI: K01829.01 Corr: 0.995



## DV Fit Results:

Period = 22.84154 [0.00003] d  
Epoch = 138.6332 [0.0012] BKJD  
Rp/R\* = 0.0828 [0.0456]  
a/R\* = 29.92 [4.33]  
b = 0.98 [0.07]  
Seff = 22.84 [5.85]  
Teq = 557 [36] K  
Rp = 7.46 [4.33] Re  
a = 0.1498 [0.0230] AU  
Ag = 38.43 [44.79] [0.84σ]  
Teffp = 2146 [618] K [2.57σ]

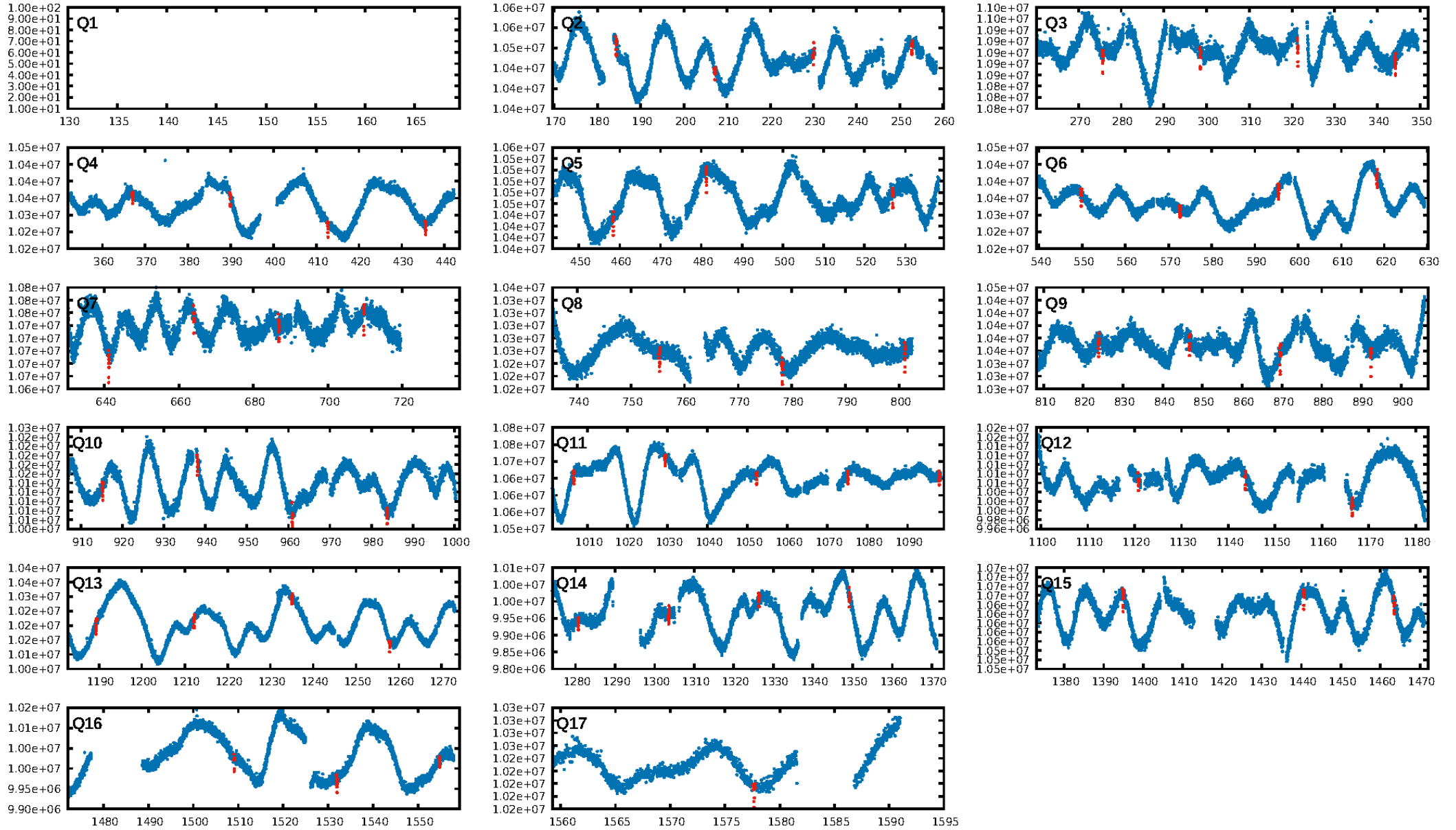
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [56/56]  
GhostDiagnostic-chr: 2.942  
Centroid-sig: 0.2%  
Centroid-so: 0.355 arcsec [1.54σ]  
OotOffset-rm: 0.168 arcsec [1.47σ]  
KicOffset-rm: 0.233 arcsec [1.89σ]  
OotOffset-st: 4/4/4 [16]  
KicOffset-st: 4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [16/16]

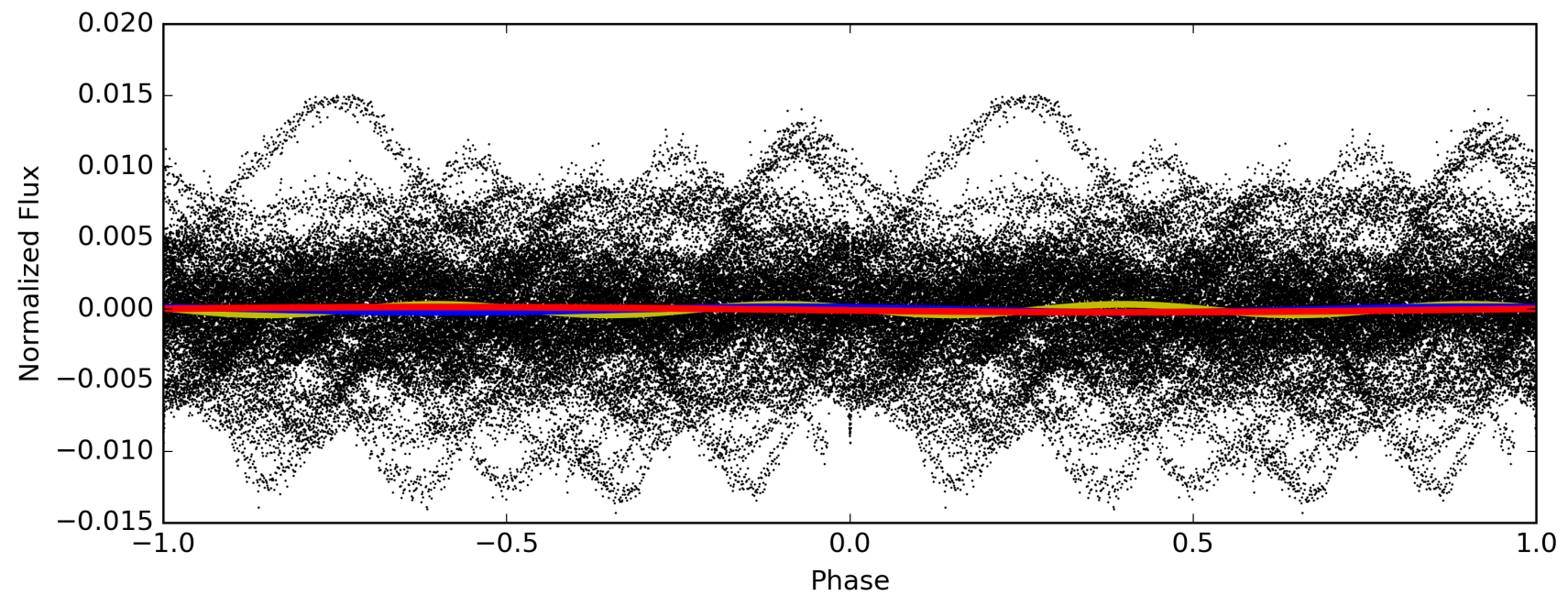
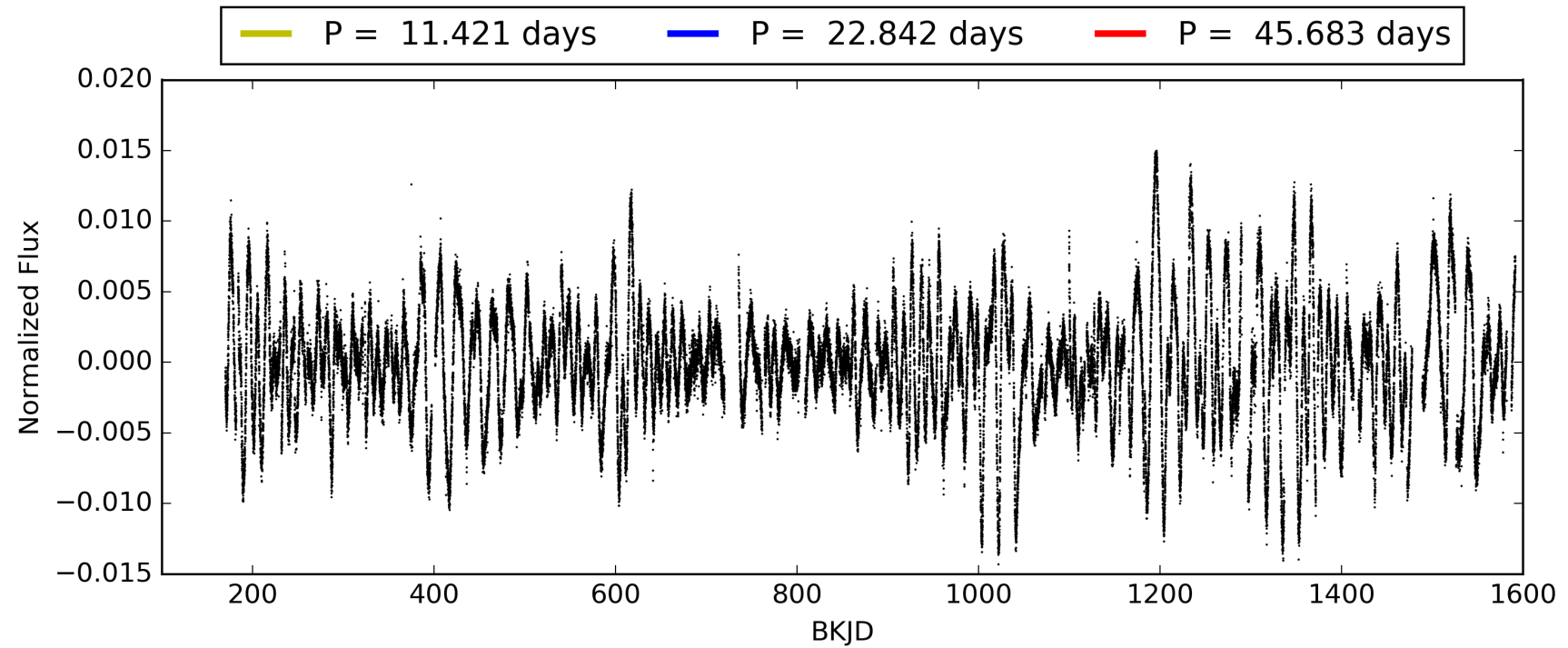
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:22:48 Z

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

# TCE 007697568-01, PDC Light Curves

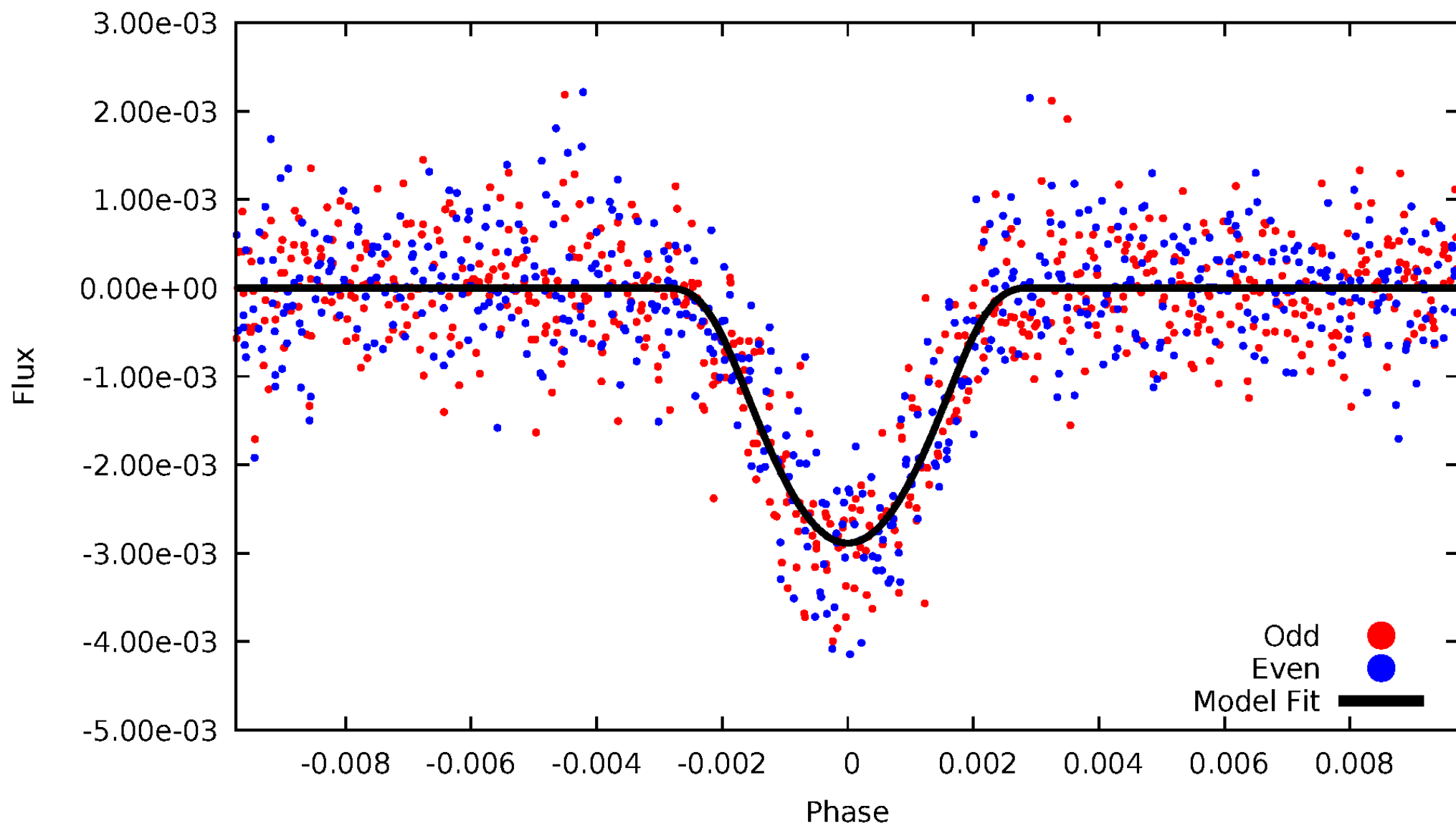


TCE 007697568-01



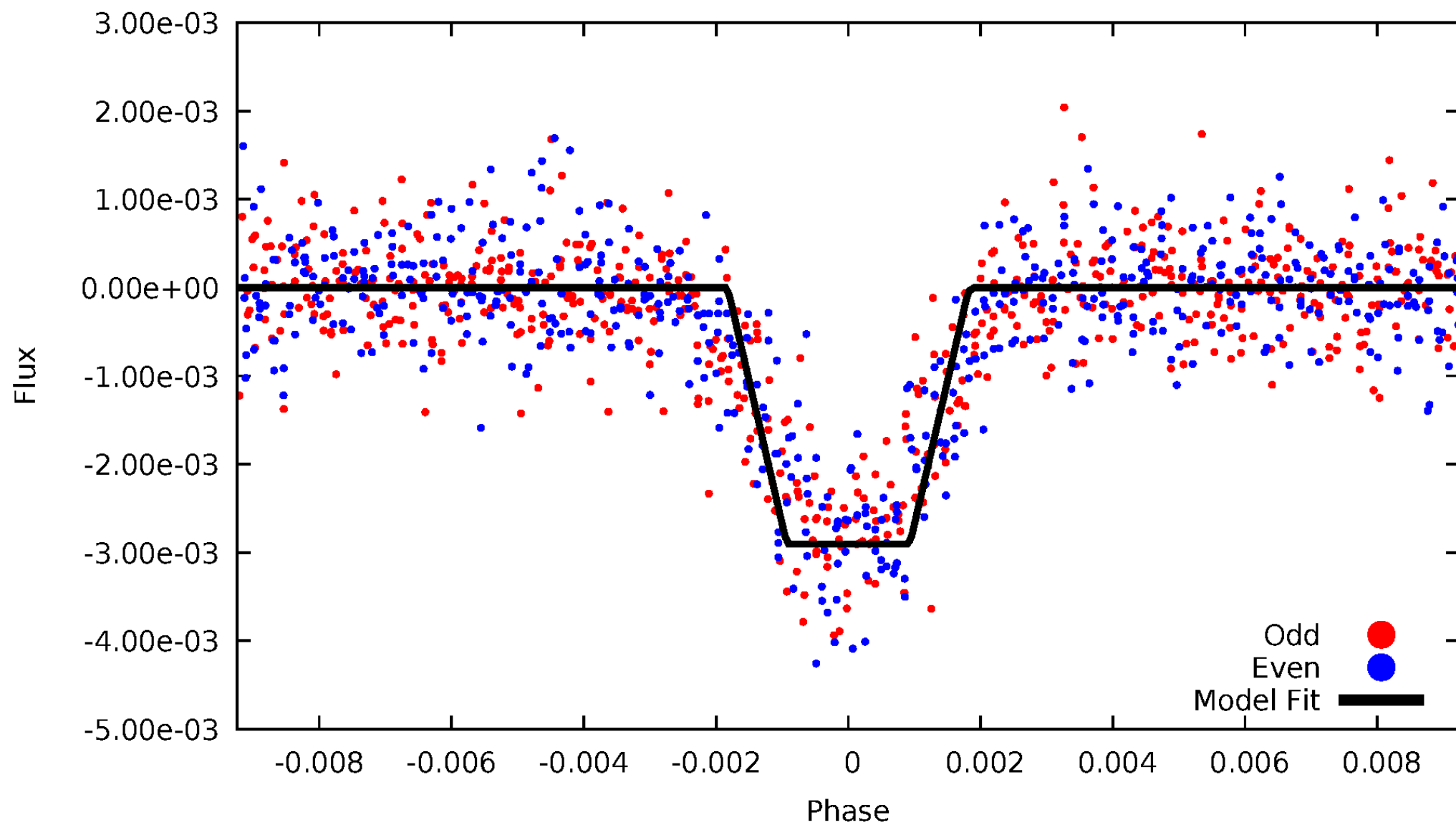
# DV Odd/Even

TCE 007697568-01



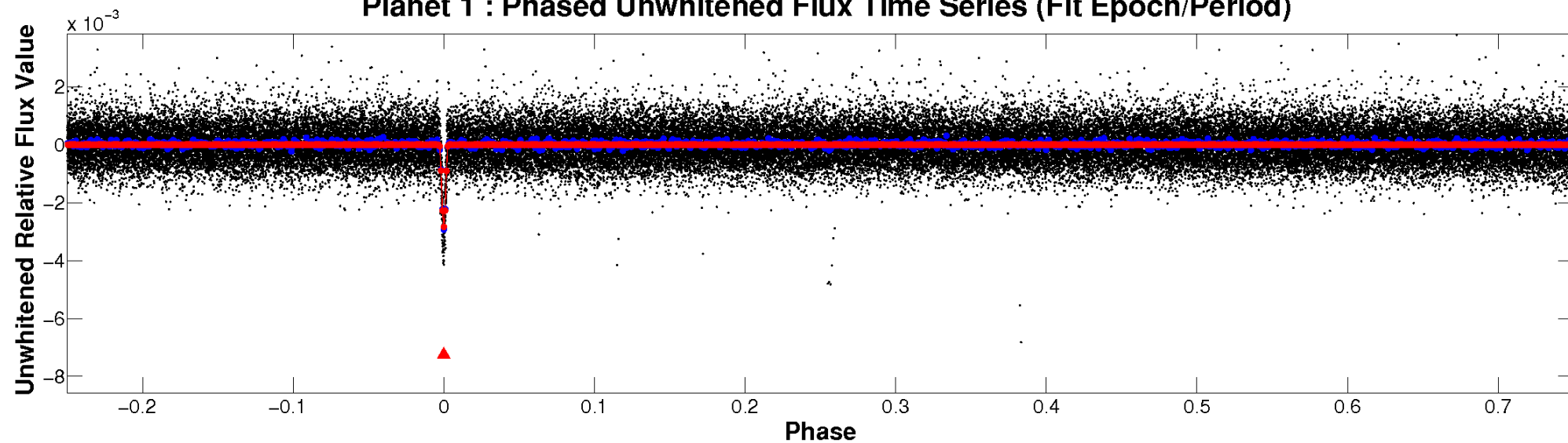
# ALT Odd/Even

TCE 007697568-01

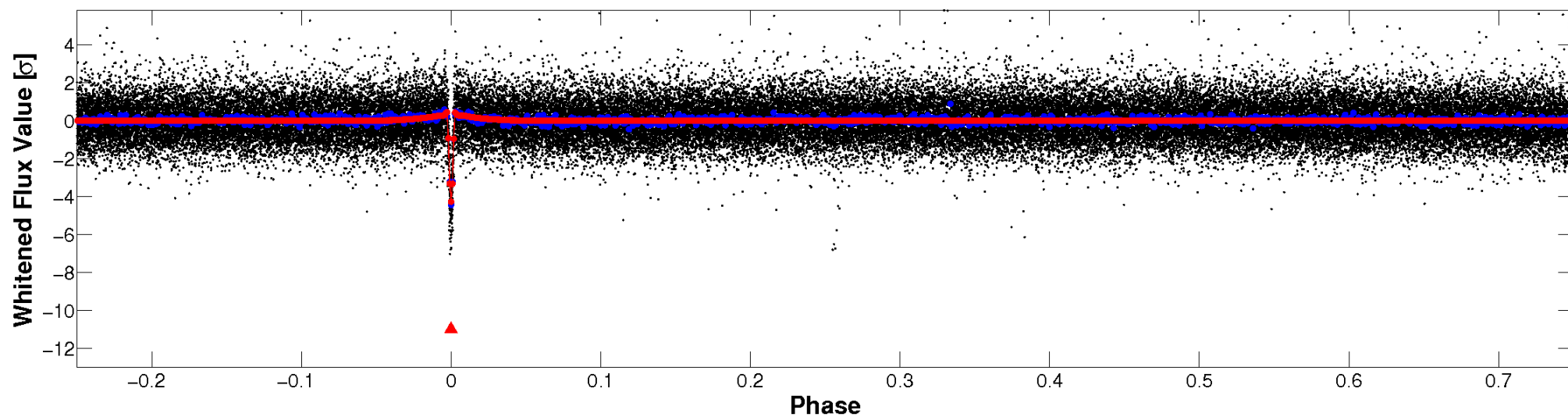


# Non-Whitened Vs. Whitened Light Curve

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

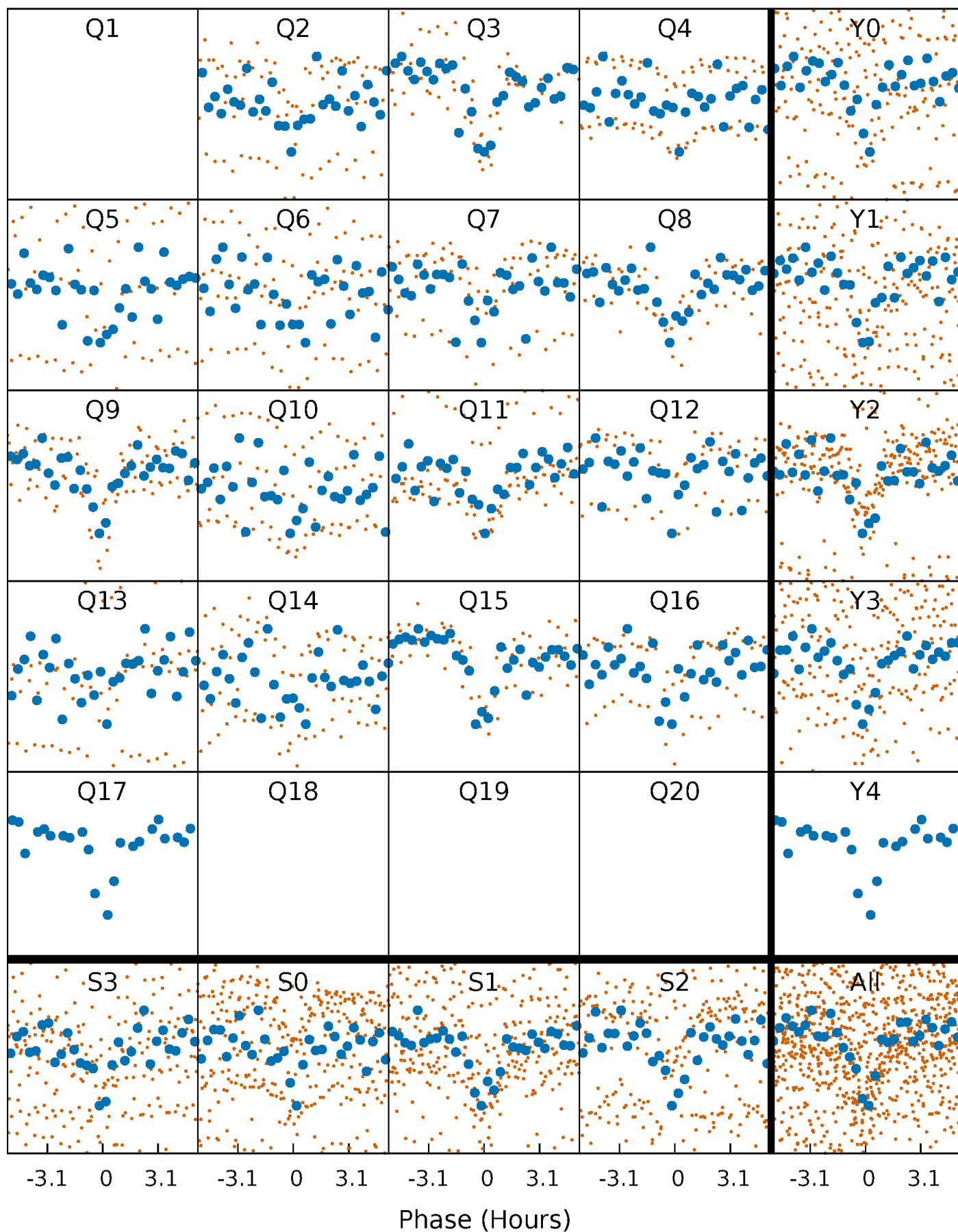


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



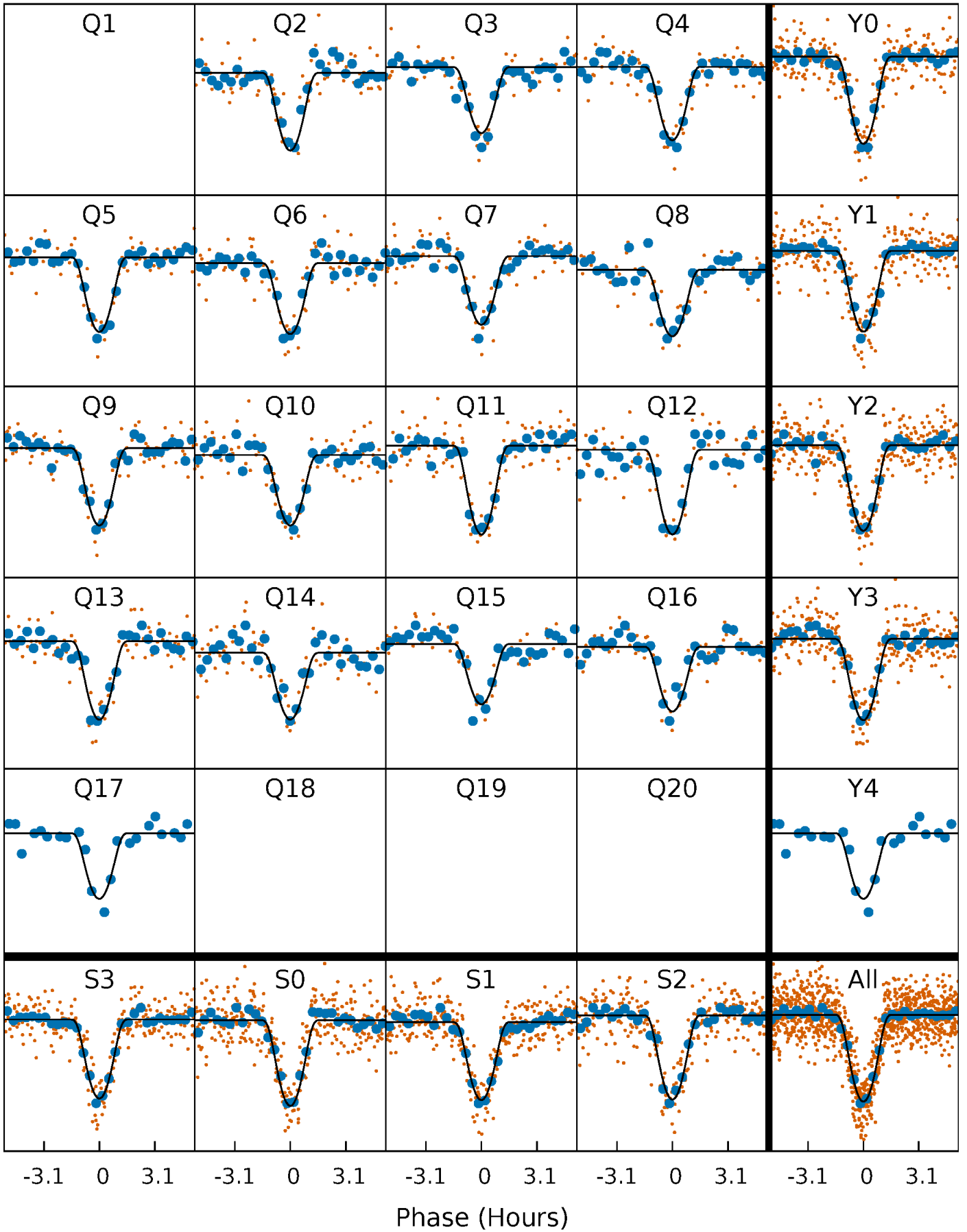
# PDC Quarter-Phased Transit Curves

TCE 007697568-01 P= 22.841543 Days  $T_0=138.633242$  (BKJD)



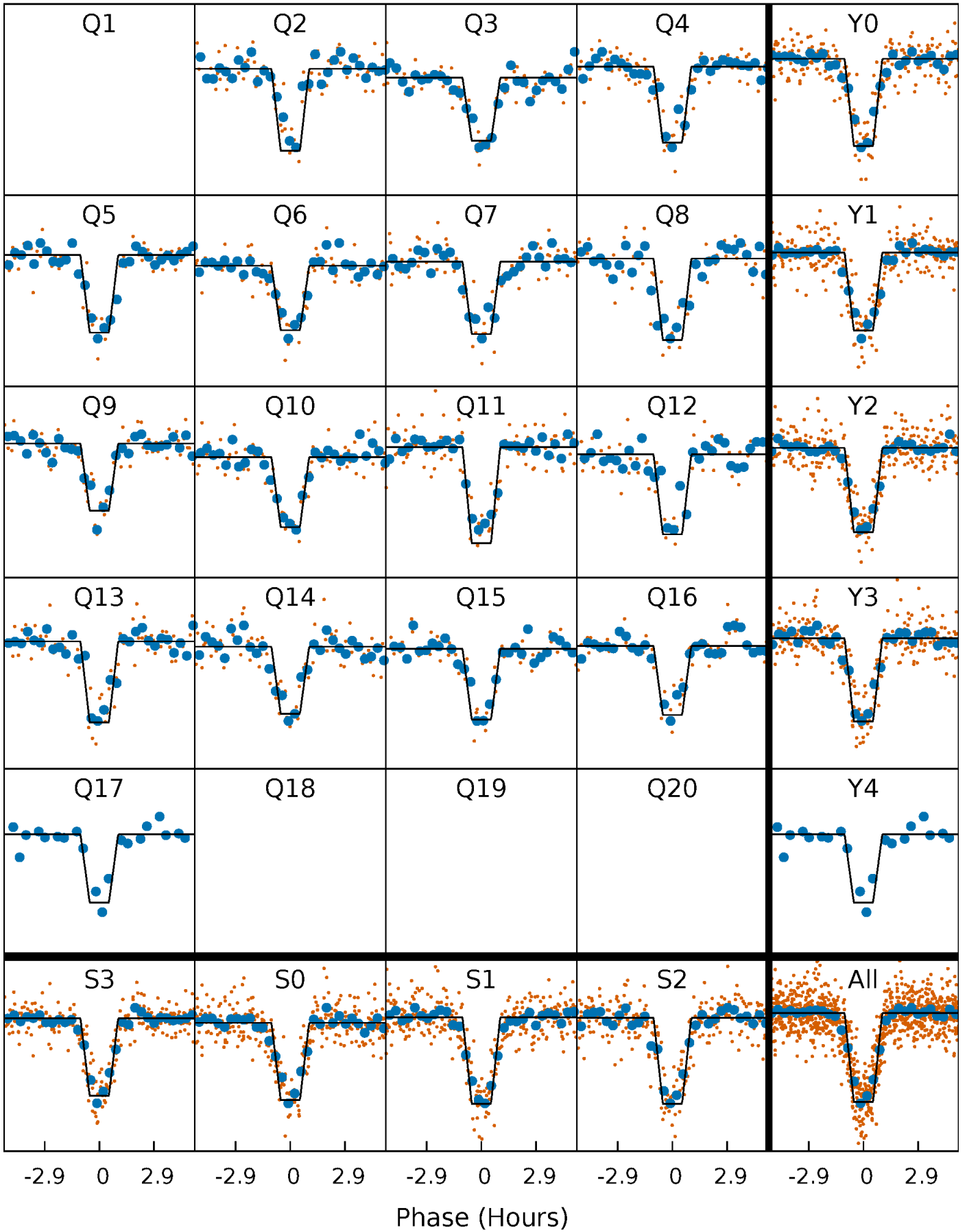
# DV Quarter-Phased Transit Curves

TCE 007697568-01 P= 22.841543 Days  $T_0=138.633242$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

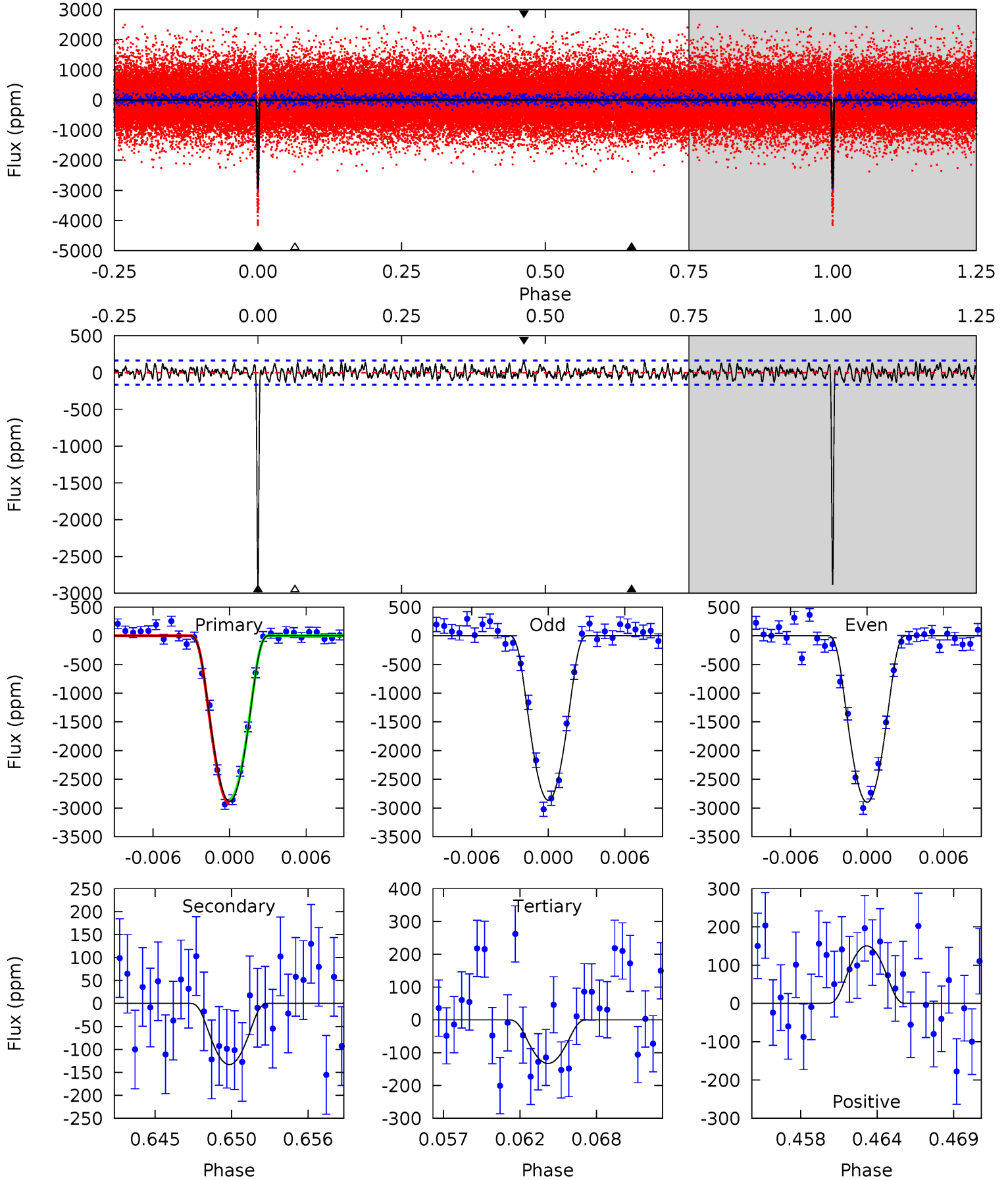
TCE 007697568-01 P= 22.841556 Days  $T_0=138.632276$  (BKJD)



# DV Model-Shift Uniqueness Test

007697568-01, P = 22.841543 Days, E = 138.633242 Days

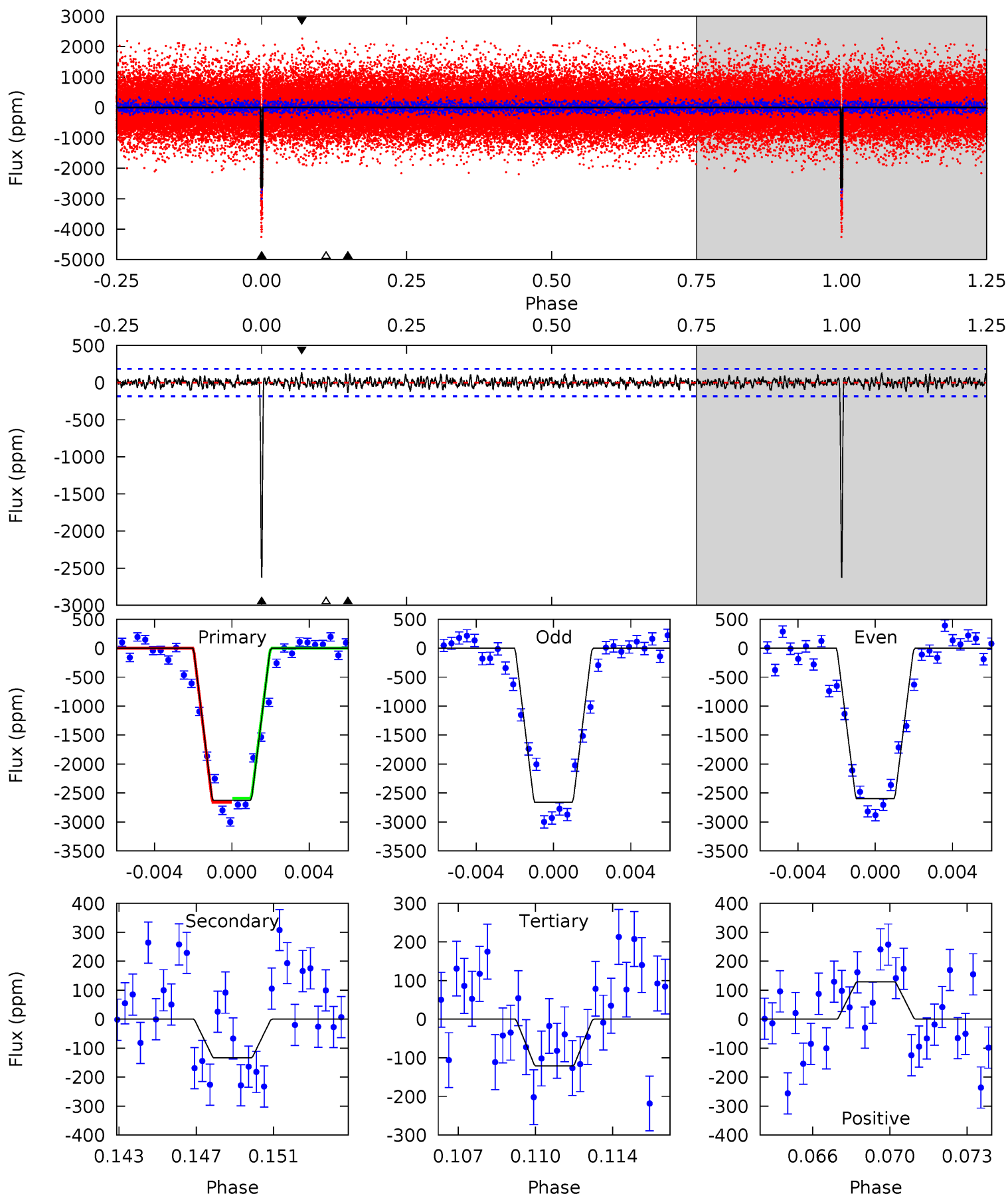
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
90.4	4.17	4.17	4.72	5.13	2.77	1.70	86.3	85.7	0.01	-0.54	0.55	0.98	0.05	1.20



# Alt Model-Shift Uniqueness Test

007697568-01,  $P = 22.841556$  Days,  $E = 138.632276$  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
74.1	3.76	3.41	3.64	5.22	2.90	1.09	70.7	70.5	0.35	0.13	0.87	0.99	0.05	1.02



### Stellar Parameters For KIC 007697568

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5381^{+175}_{-159}$	$4.538^{+0.051}_{-0.119}$	$-0.060^{+0.300}_{-0.300}$	$0.826^{+0.153}_{-0.082}$	$0.858^{+0.087}_{-0.078}$	$2.146^{+0.539}_{-0.773}$
	+3%/-3%	+1%/-3%	+500%/-500%	+19%/-10%	+10%/-9%	+25%/-36%
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 007697568-01 / KOI 1829.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-133 \pm 32$	$7.61^{+4.71}_{-3.93}$	$788^{+38}_{-33}$	$2741^{+657}_{-314}$	$27^{+91}_{-17}$
Alt.	$-133 \pm 35$	$5.67^{+4.08}_{-3.32}$	$787^{+38}_{-31}$	$2952^{+1046}_{-394}$	$47^{+286}_{-32}$

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

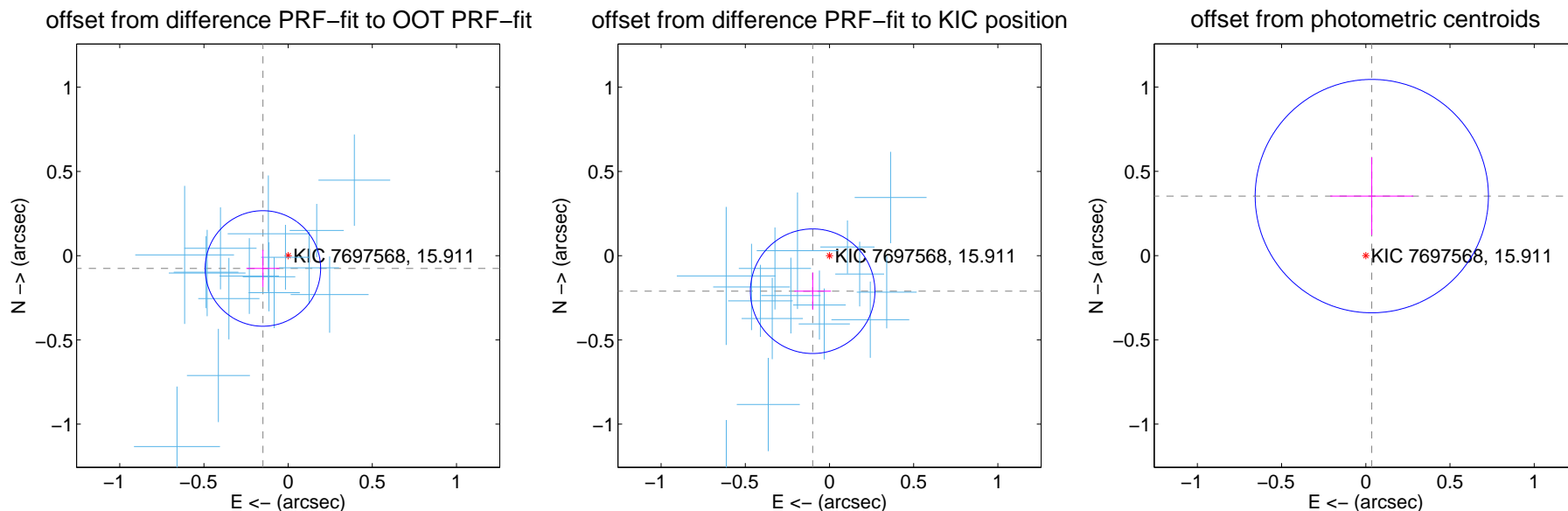
## DV Centroid Data

Supplemental centroid analysis for 007697568-01. Kepler magnitude: 15.91. Transit SNR 49.32

There are 16 quarters with good PRF difference image offsets

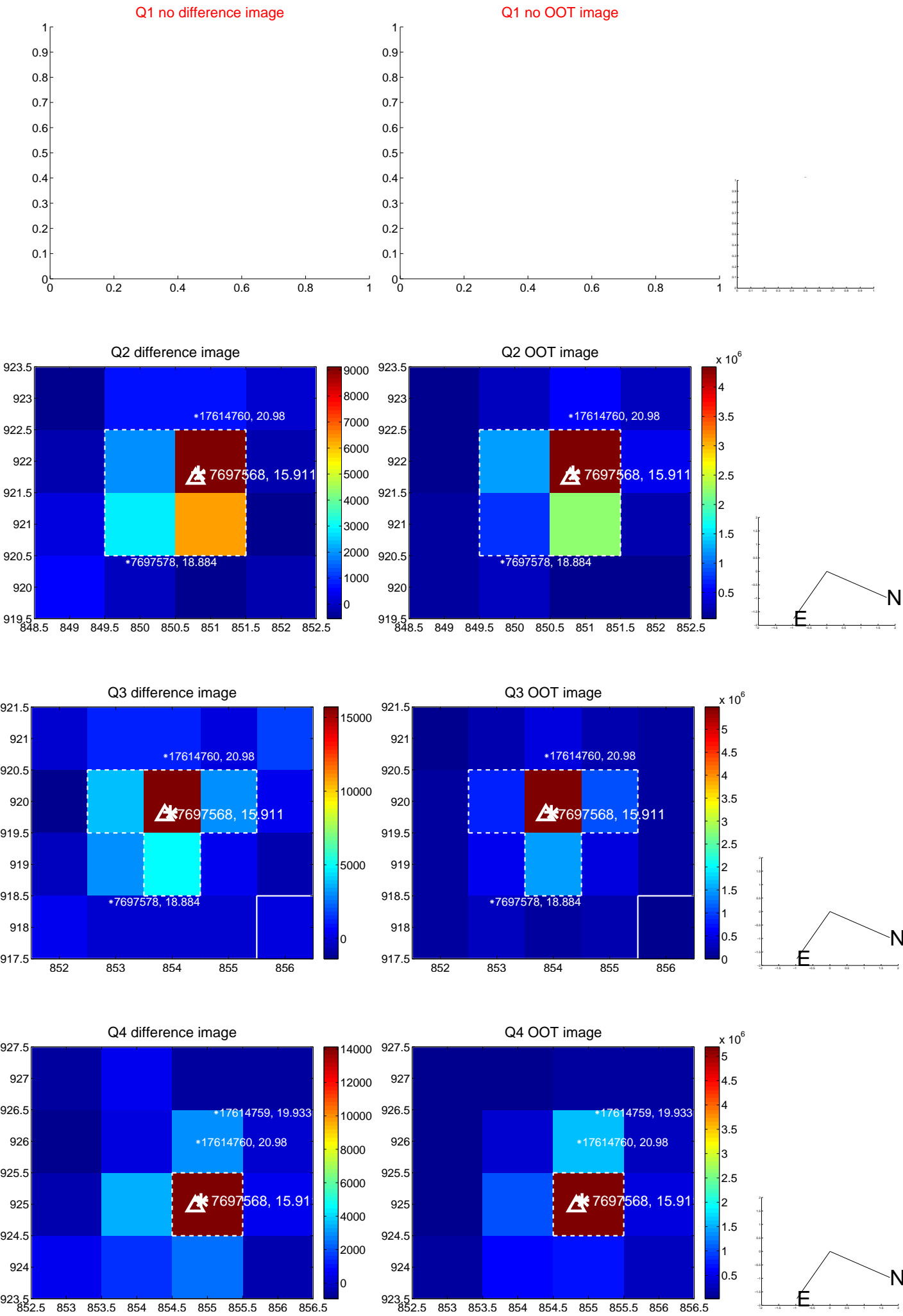
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.168 \pm 0.114$	1.47	$0.150 \pm 0.099$	$-0.076 \pm 0.110$
PRF-fit source offset from KIC position	$0.233 \pm 0.123$	1.89	$0.100 \pm 0.109$	$-0.211 \pm 0.110$
photometric centroid source offset	$0.35 \pm 0.23$	1.54	$-0.04 \pm 0.25$	$0.35 \pm 0.23$

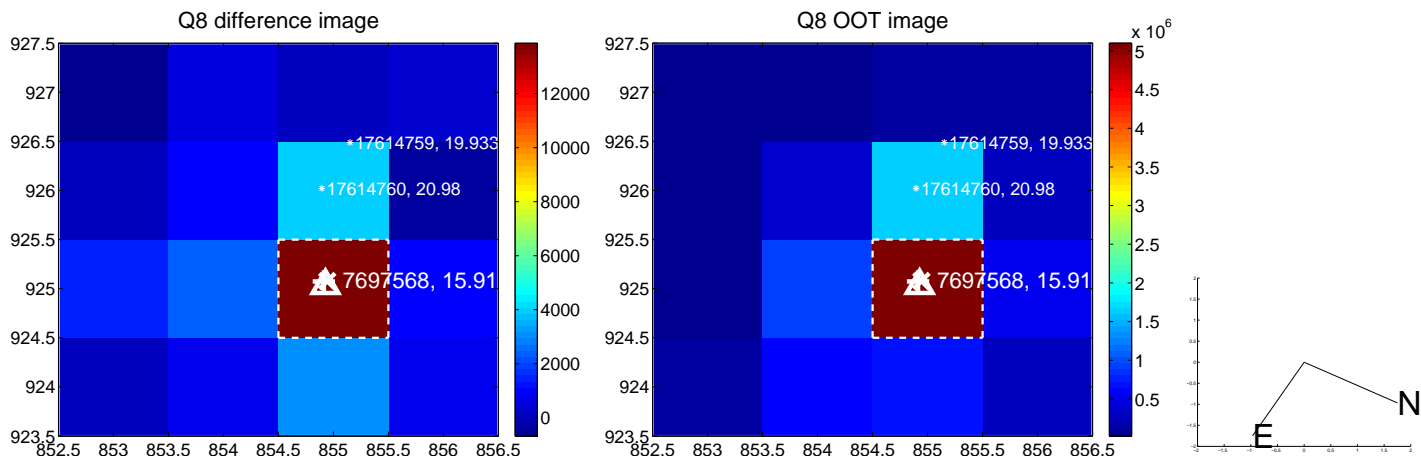
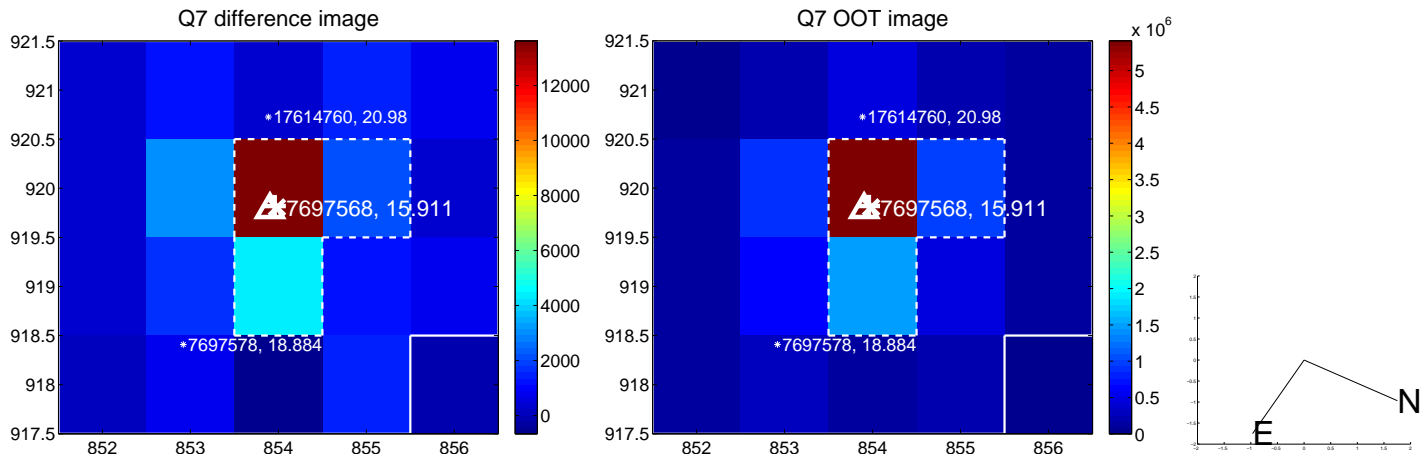
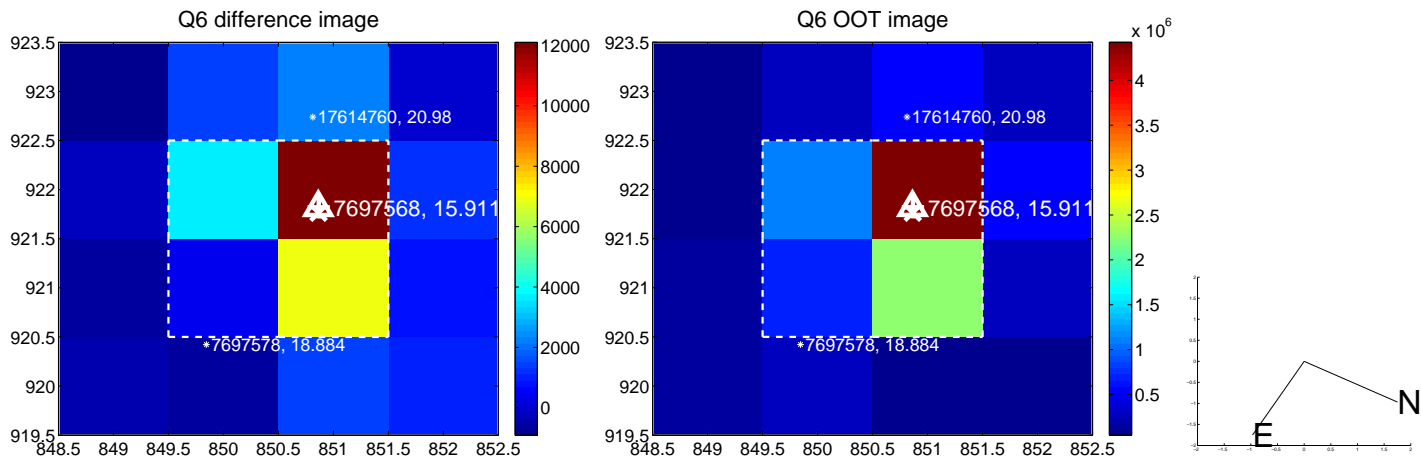
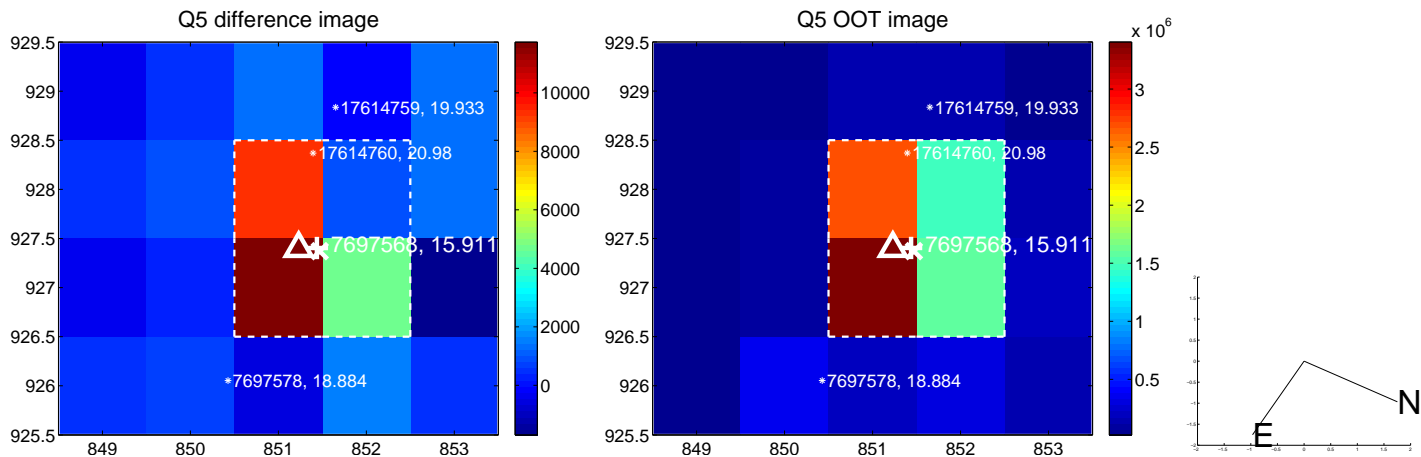


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

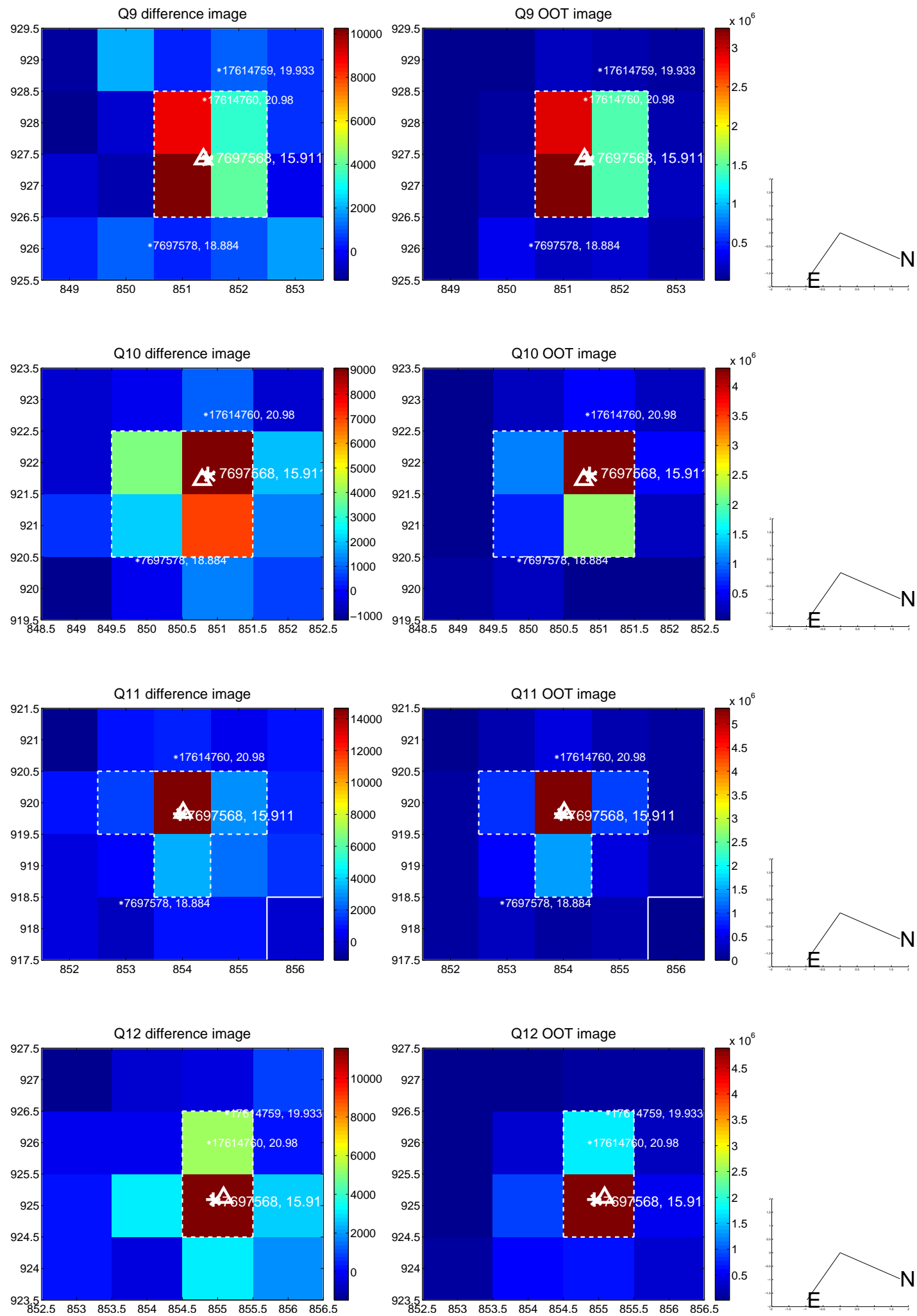
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



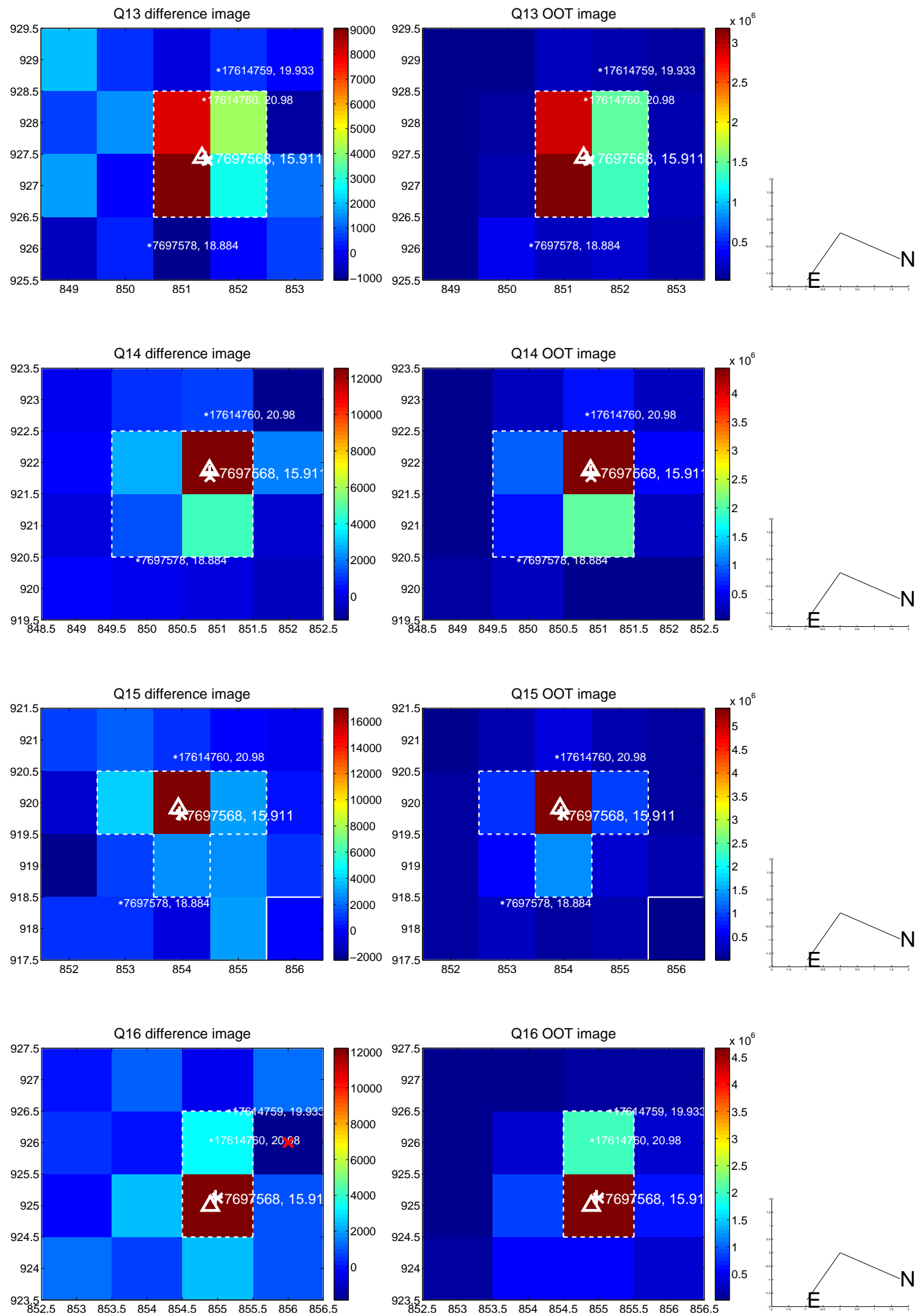
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



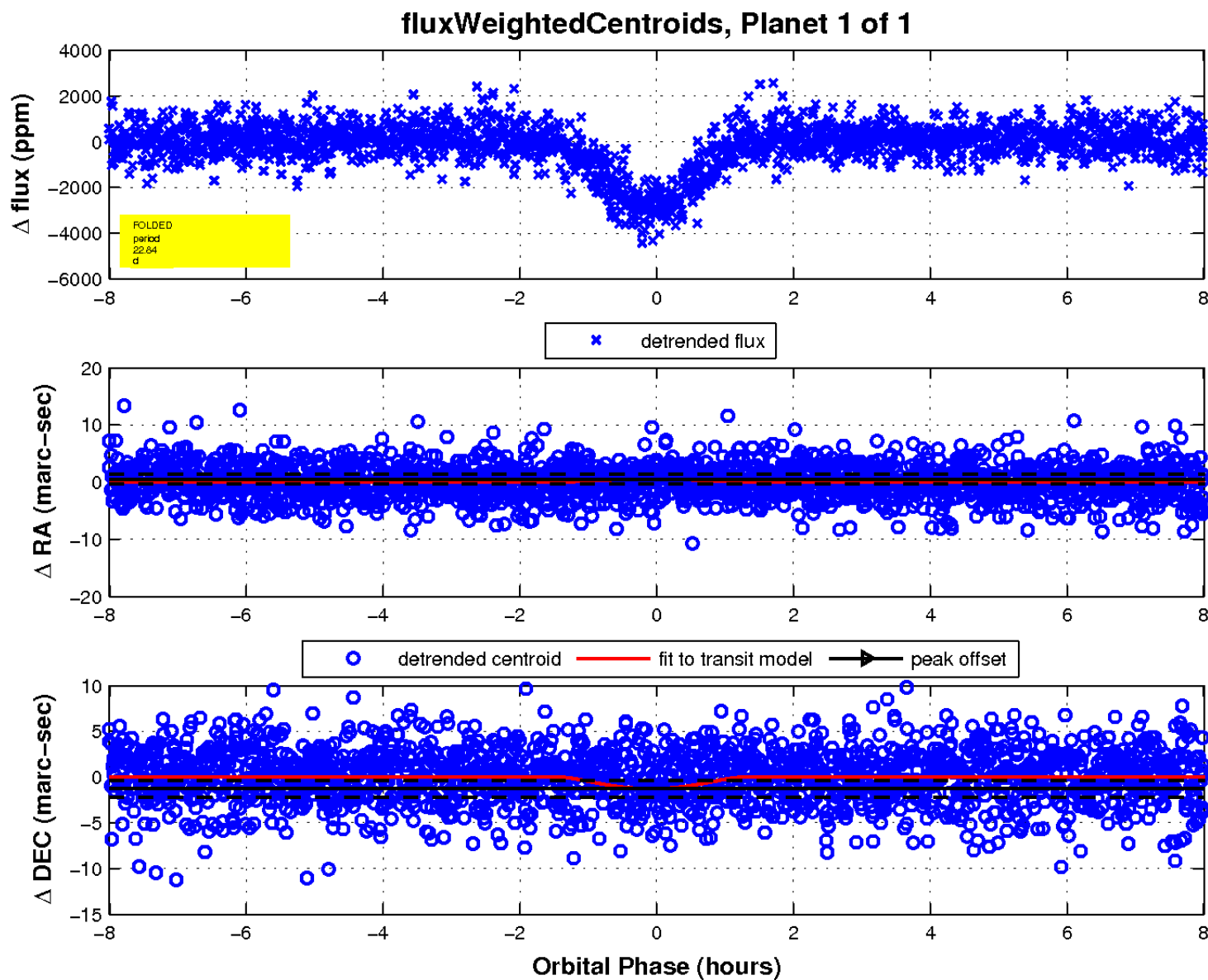
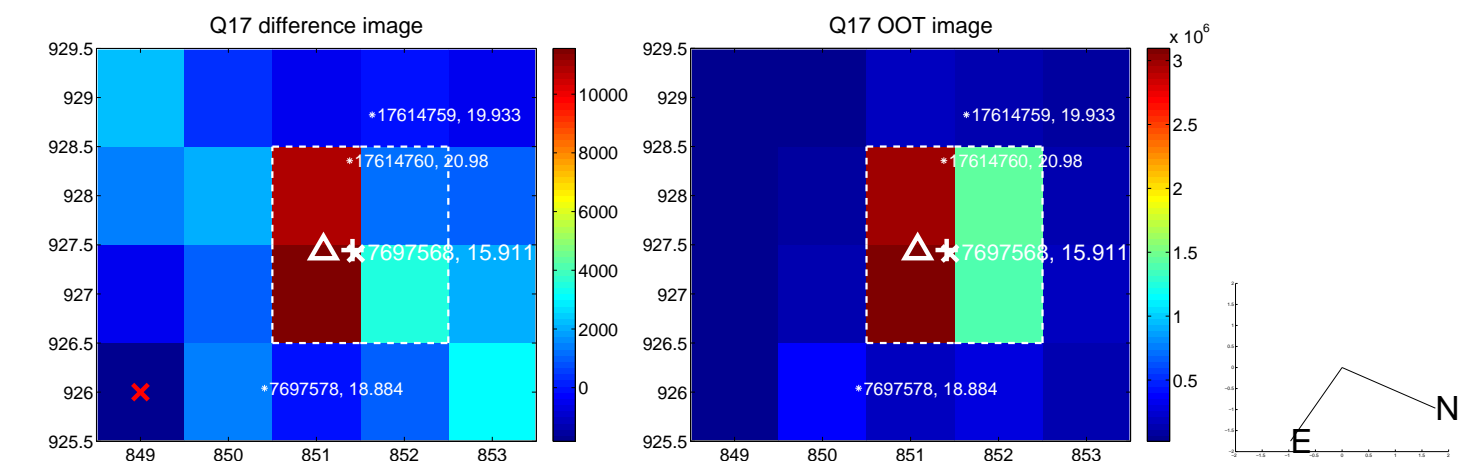
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

