

# KIC 006222668

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006222668-01	OBS	No	0.766368	132.003091	0.8	4.650	8.4	2.8	2.35	8810	0.24	63968.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006222668-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED

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

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

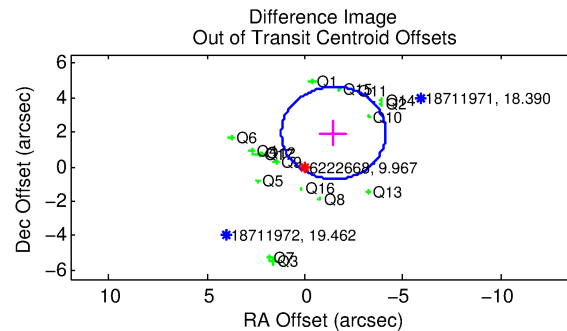
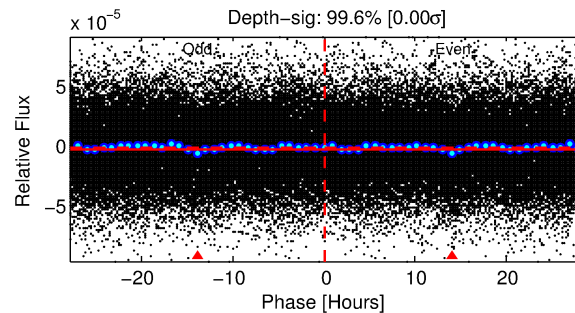
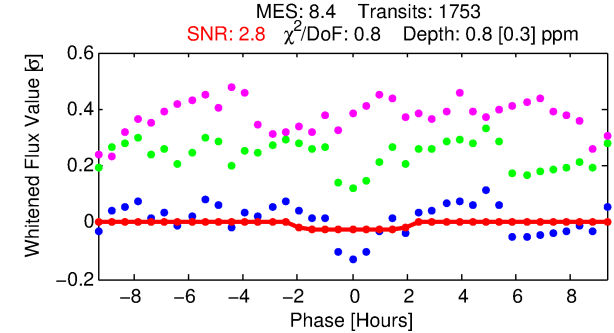
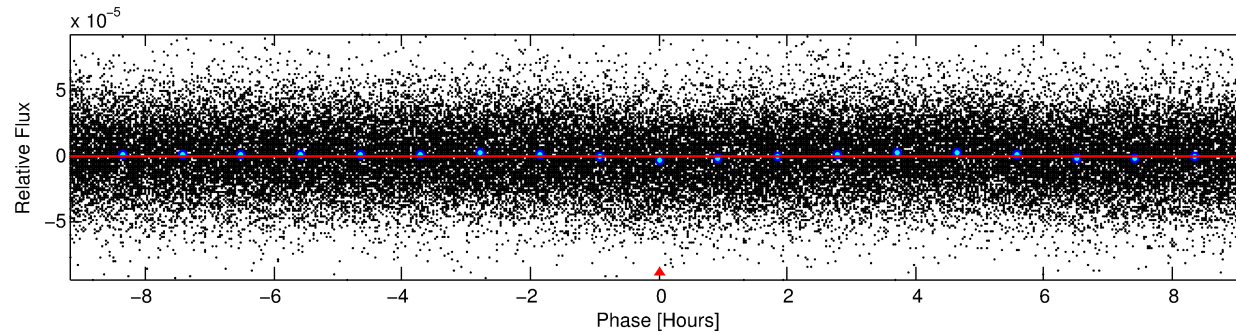
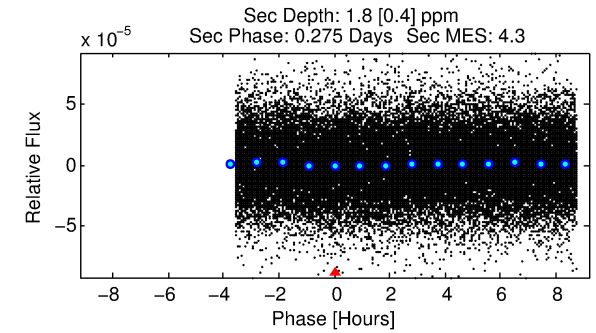
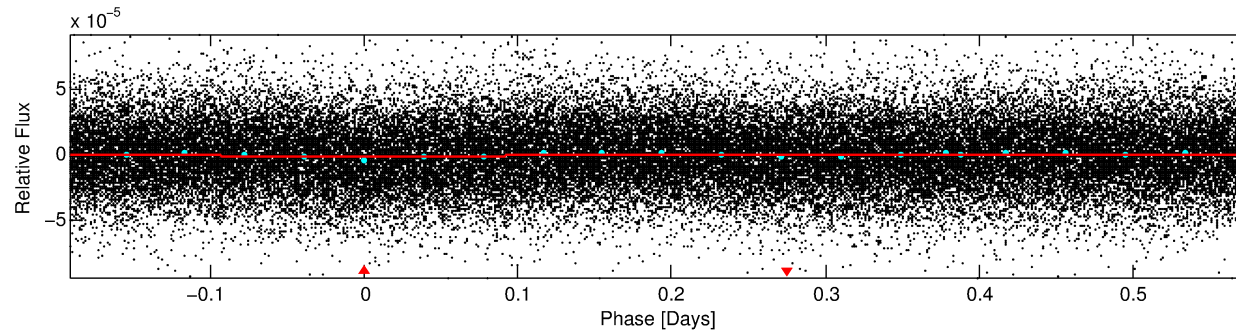
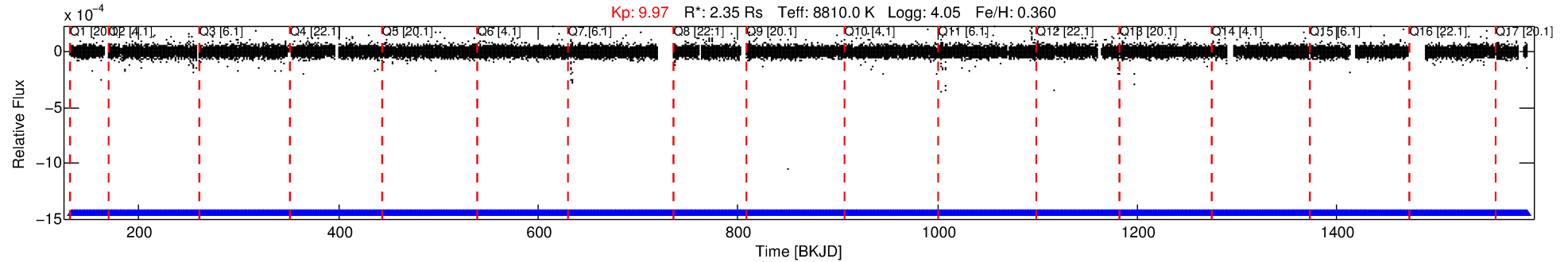
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006222668-01

No Significant Match Found

# DV One-Page Summary

KIC: 6222668 Candidate: 1 of 1 Period: 0.766 d



## DV Fit Results:

Period = 0.76637 [0.00004] d  
Epoch = 132.0031 [0.0141] BKJD  
Rp/R\* = 0.0009 [0.0003]  
a/R\* = 1.08 [0.21]  
b = 0.92 [0.25]  
Seff = 63968.04 [27394.89]  
Teq = 4055 [434] K  
Rp = 0.24 [0.11] Re  
a = 0.0216 [0.0061] AU  
Ag = 7.99 [5.81] [1.20σ]  
Teffp = 10542 [1668] K [3.76σ]

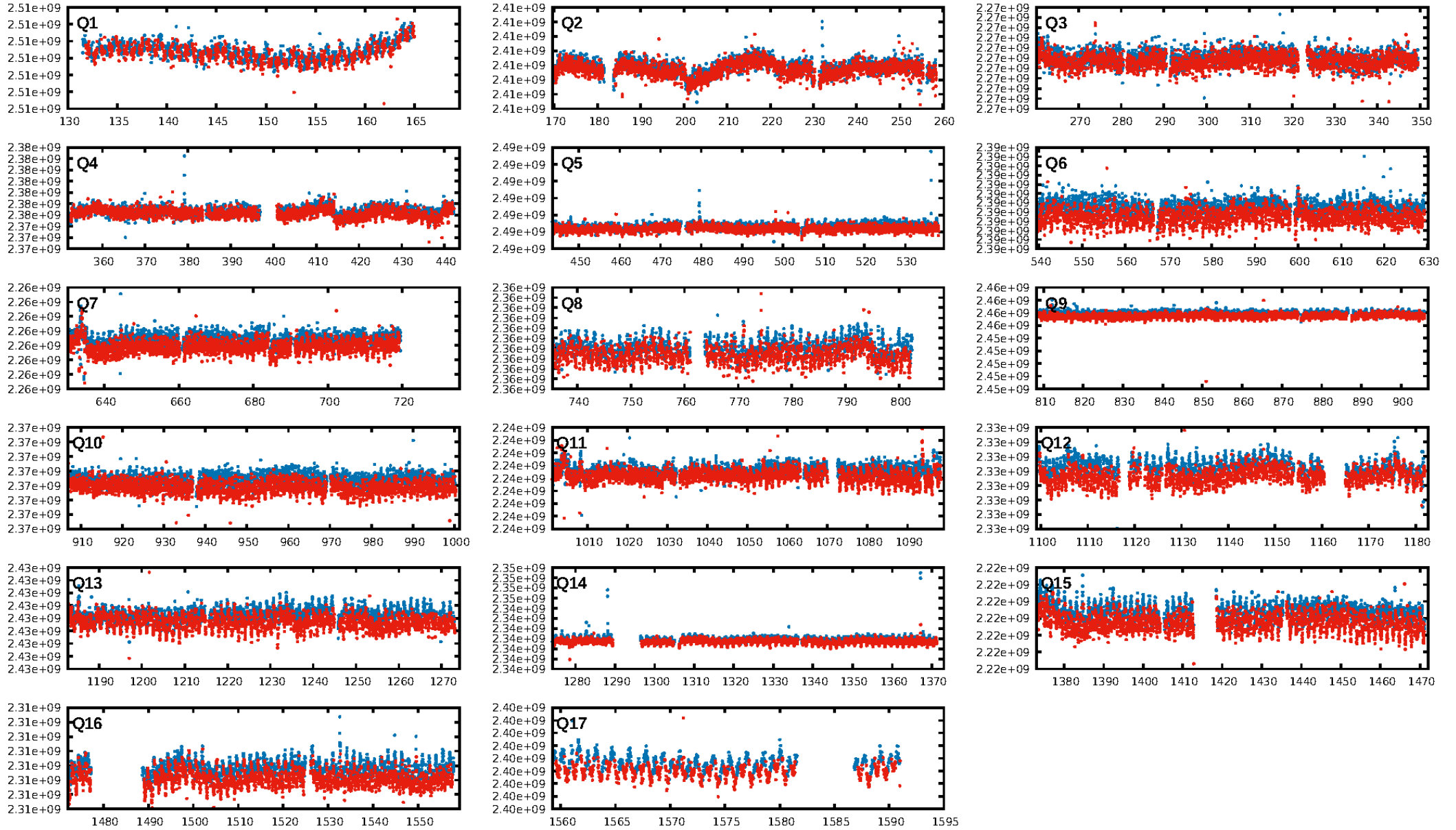
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 4.41e-11**  
RollingBand-fgt: 1.00 [1675/1675]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 2.435 arcsec [2.73σ]  
KicOffset-rm: 2.645 arcsec [2.89σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.06 [1/17]  
DiffImageOverlap-fno: 1.00 [17/17]

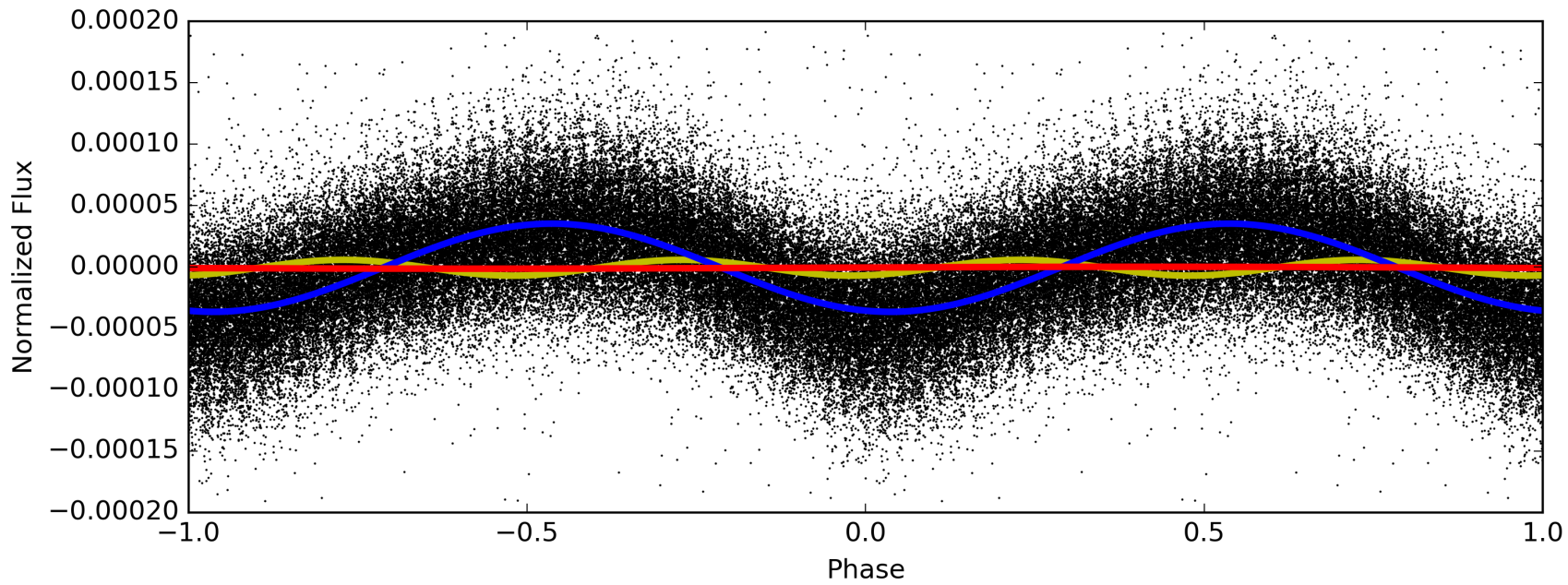
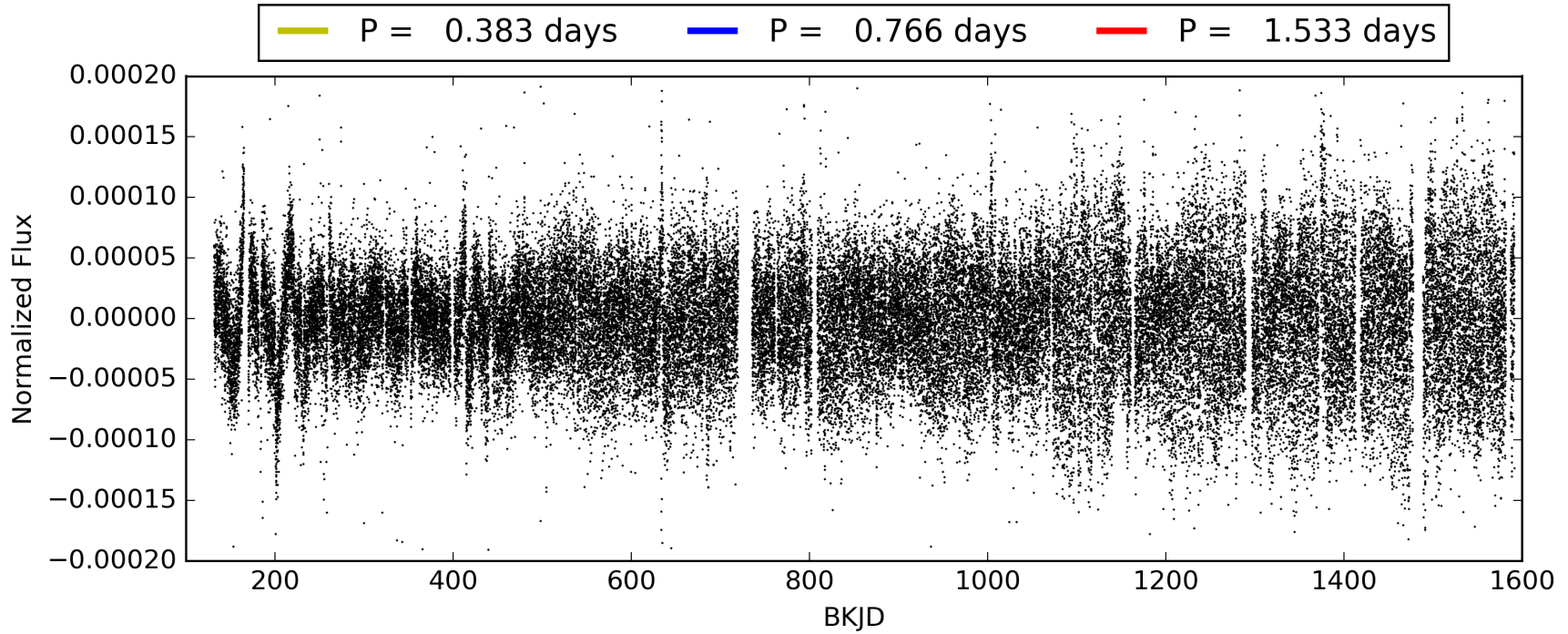
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:03:00 Z

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

# TCE 006222668-01, PDC Light Curves

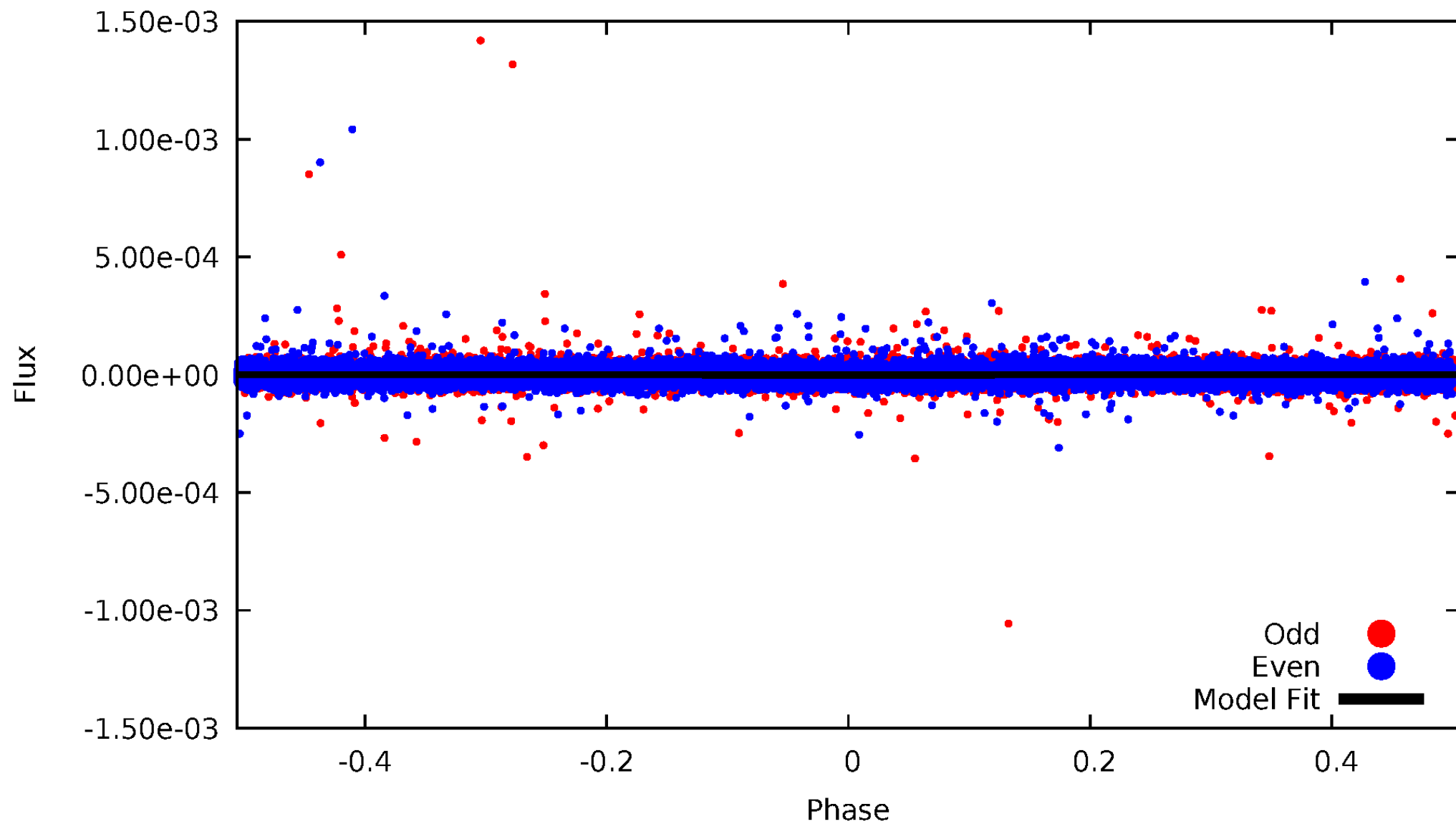


TCE 006222668-01



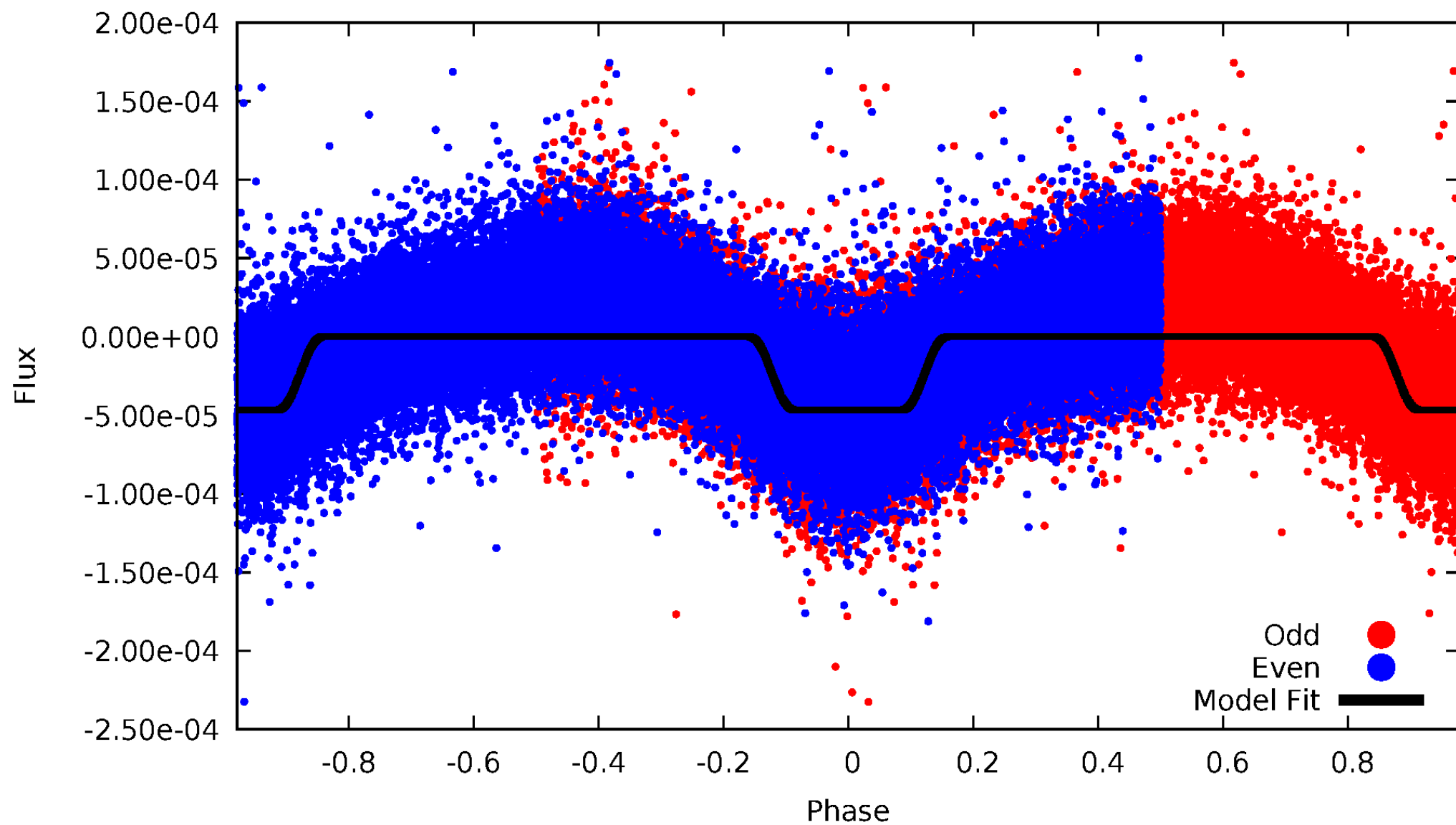
# DV Odd/Even

TCE 006222668-01



# ALT Odd/Even

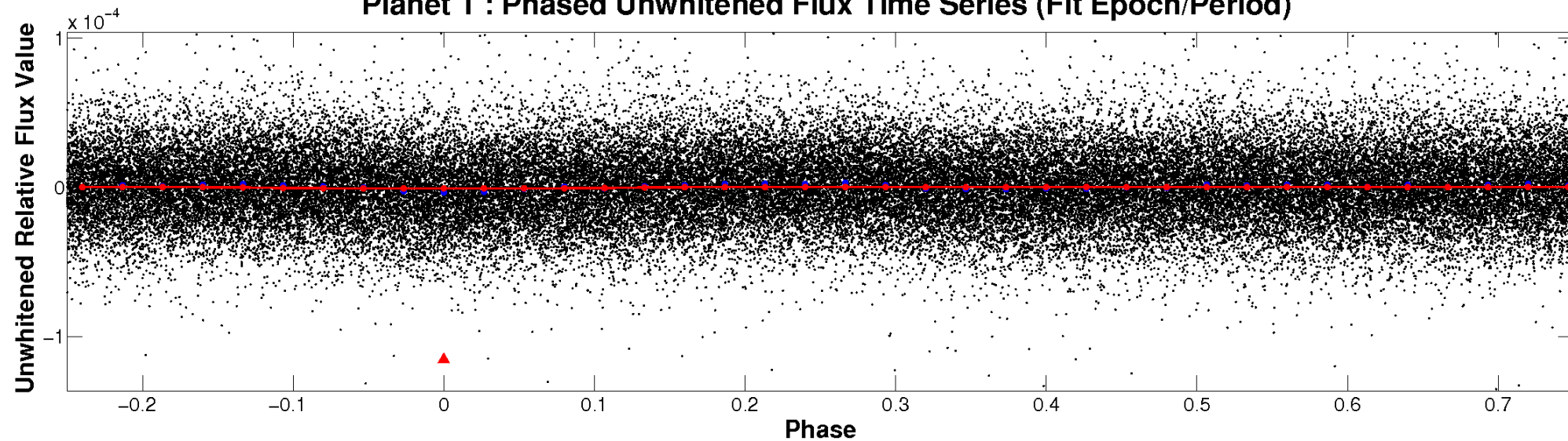
TCE 006222668-01



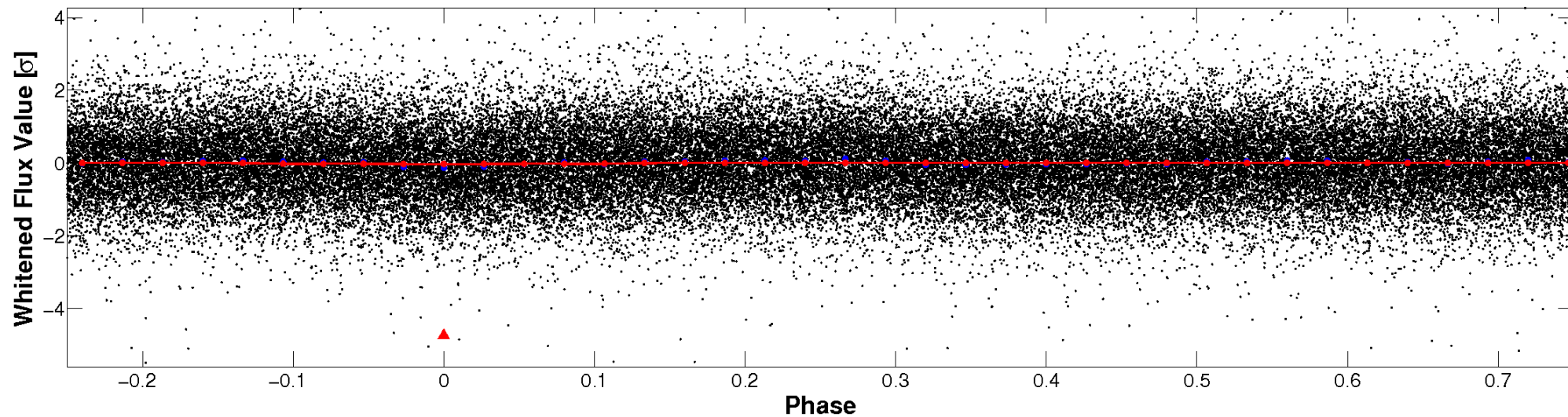


# Non-Whitened Vs. Whitened Light Curve

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

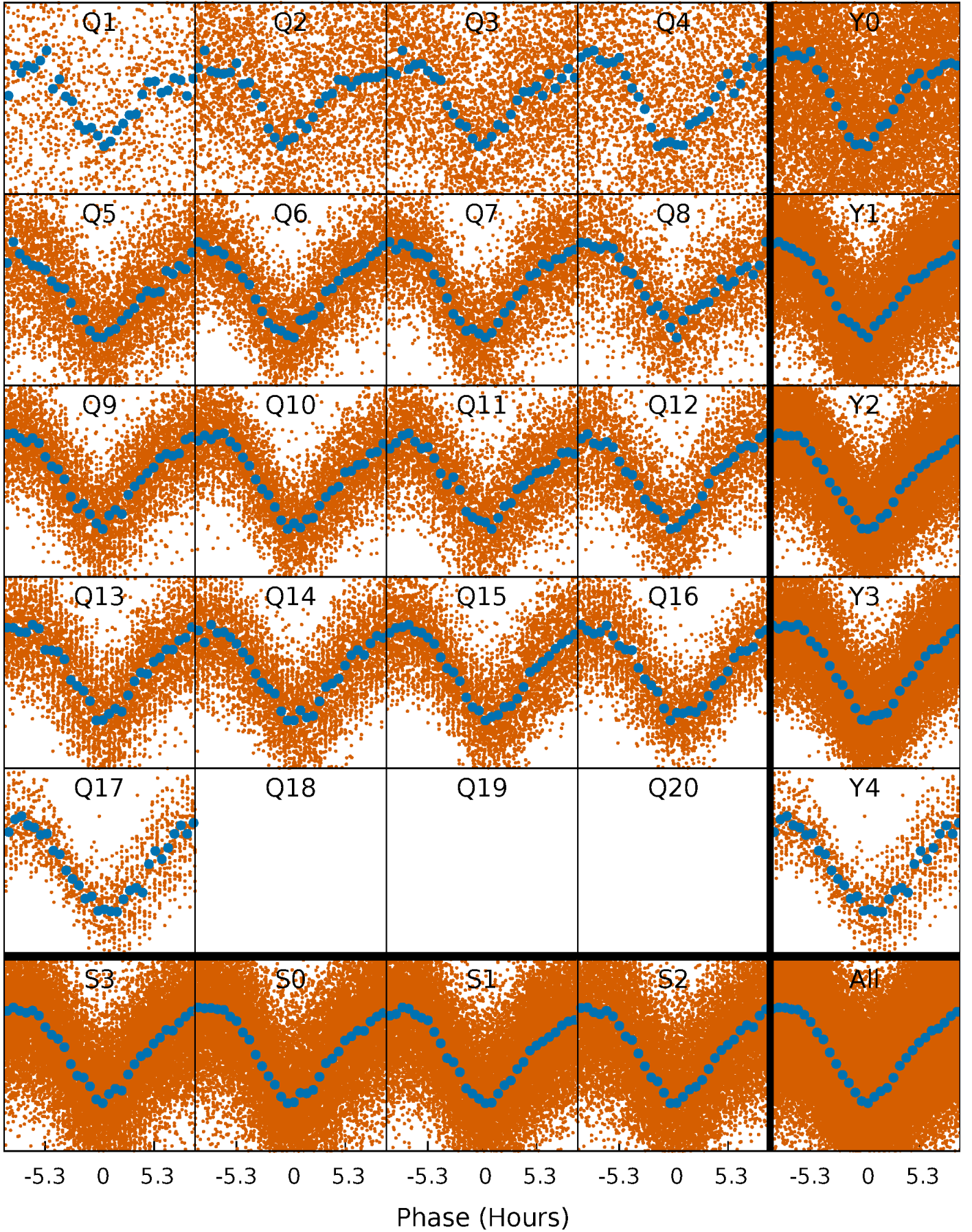


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

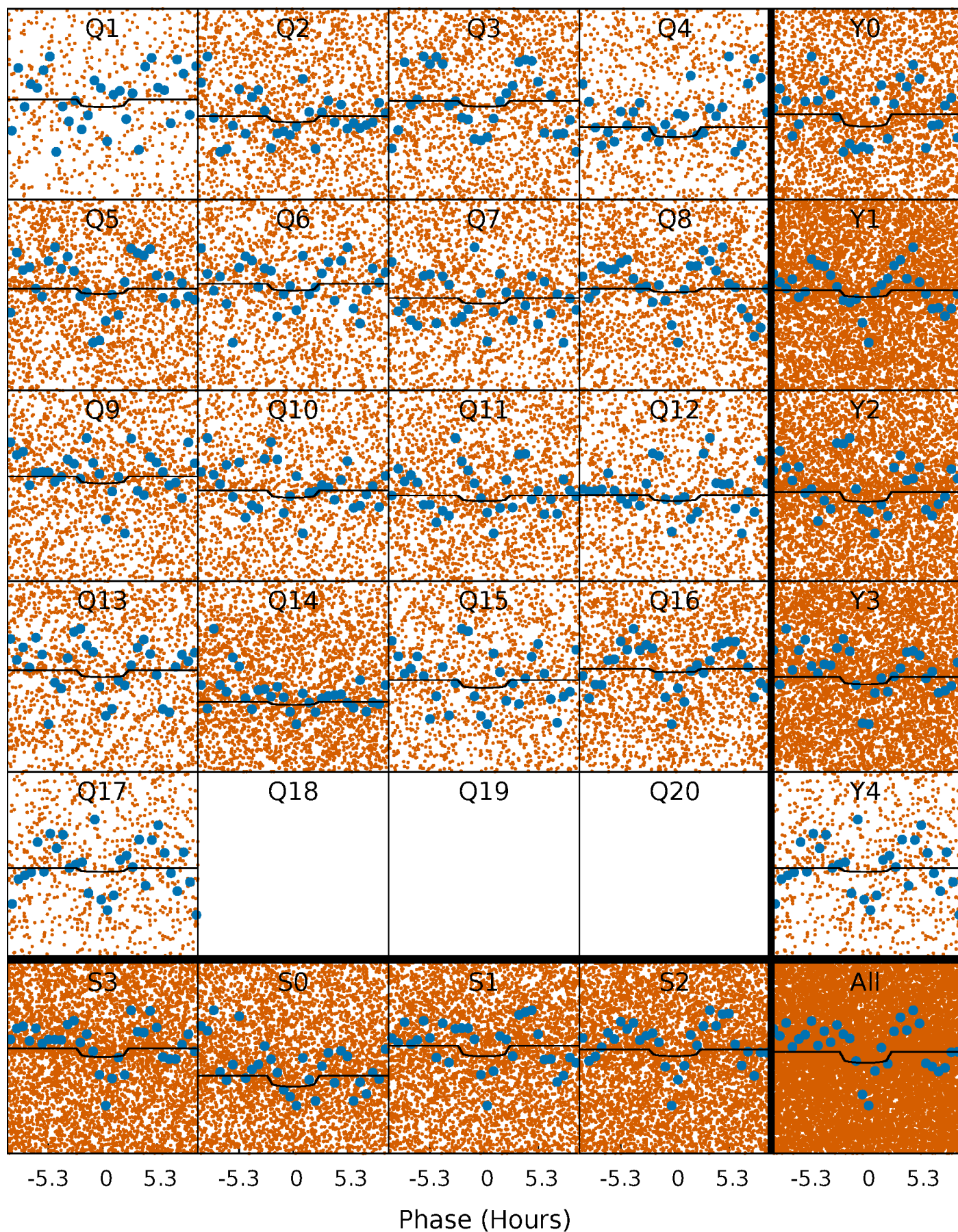
TCE 006222668-01   P= 0.766368 Days    $T_0=132.003091$  (BKJD)





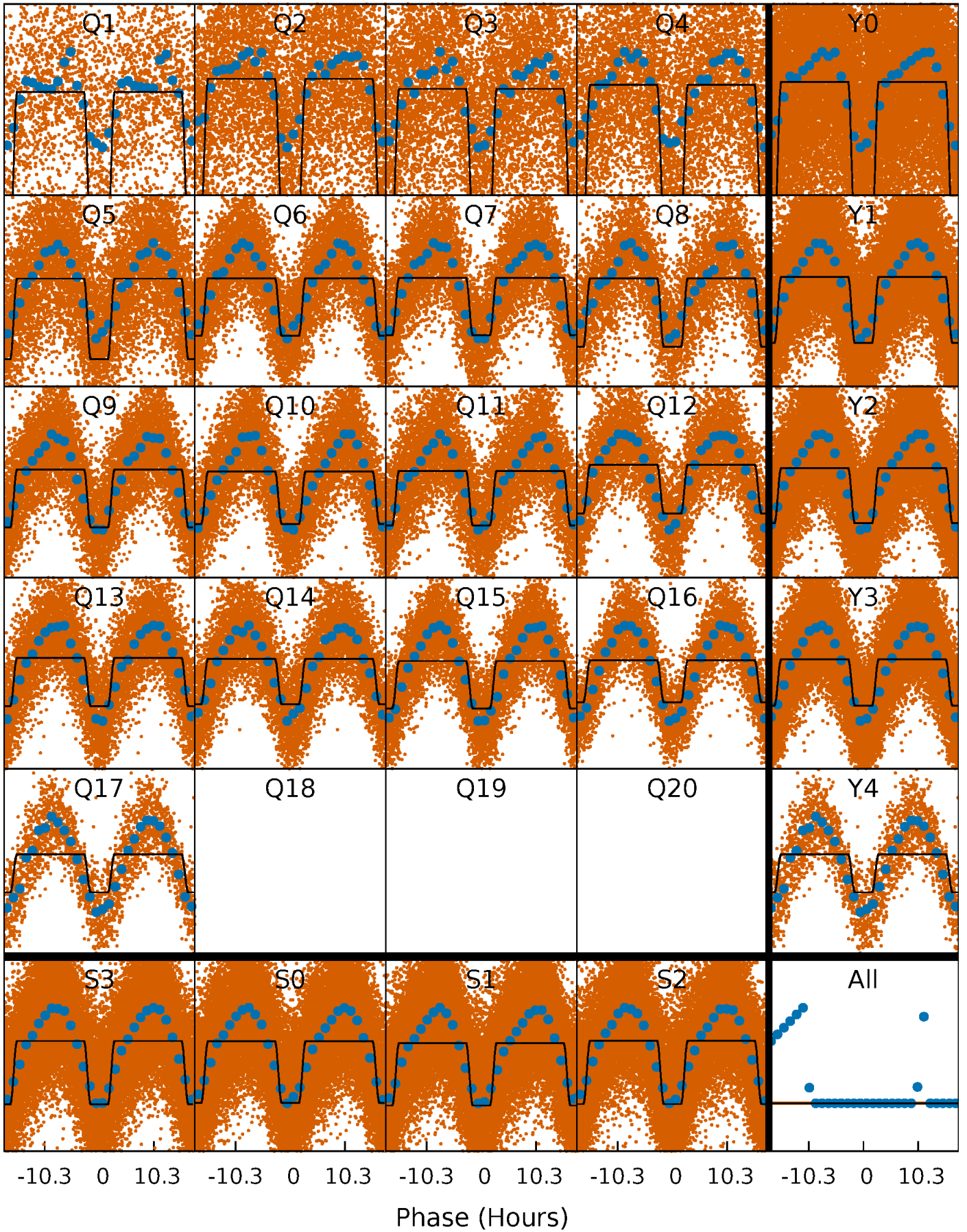
# DV Quarter-Phased Transit Curves

TCE 006222668-01 P= 0.766368 Days  $T_0=132.003091$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

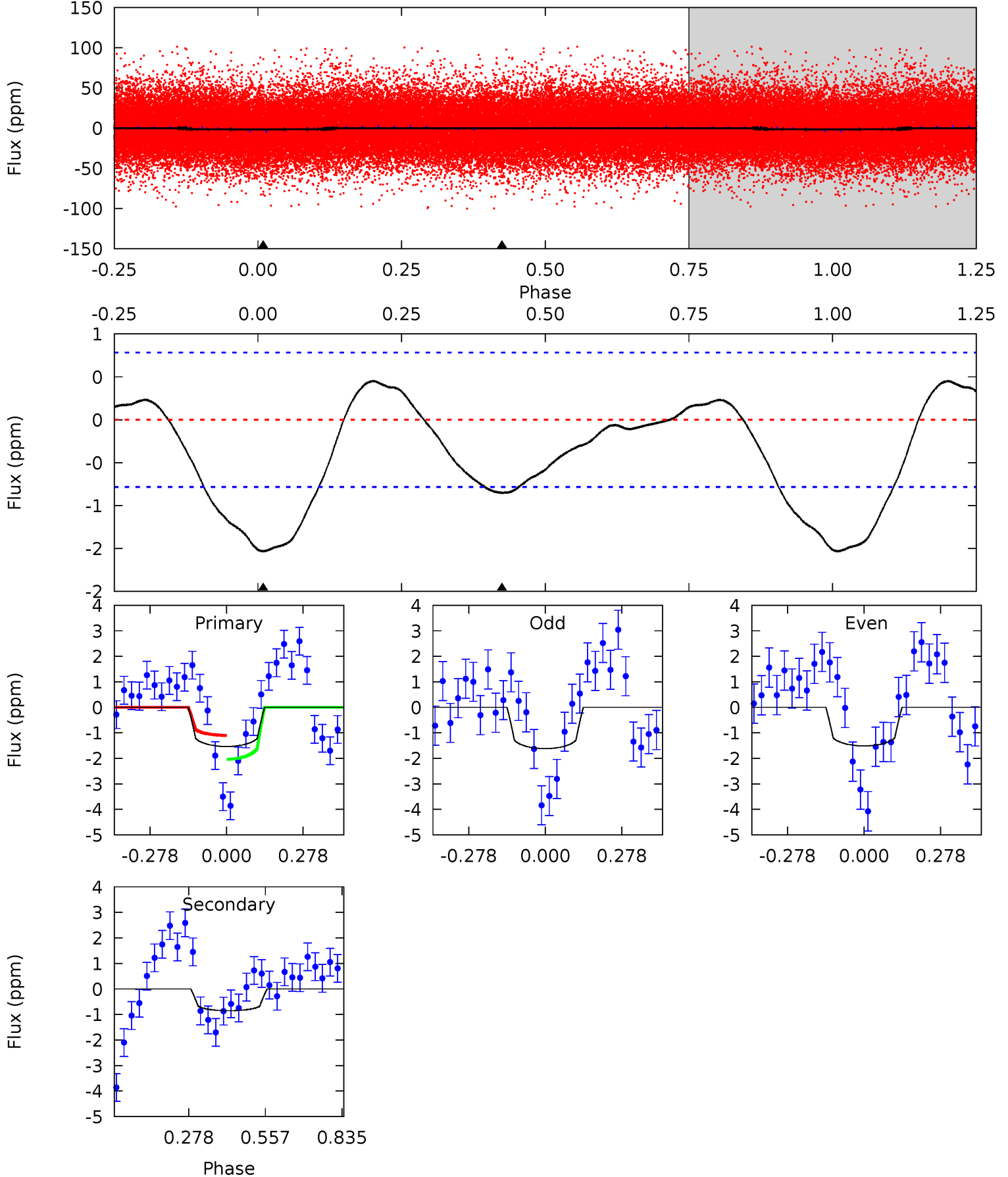
TCE 006222668-01 P= 0.766381 Days  $T_0=132.002062$  (BKJD)



# DV Model-Shift Uniqueness Test

006222668-01, P = 0.766368 Days, E = 131.236723 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
8.50	4.73	0	0	4.35	1.08	0.46	8.50	8.50	4.73	4.73	0.31	0.75	0.23	2.63

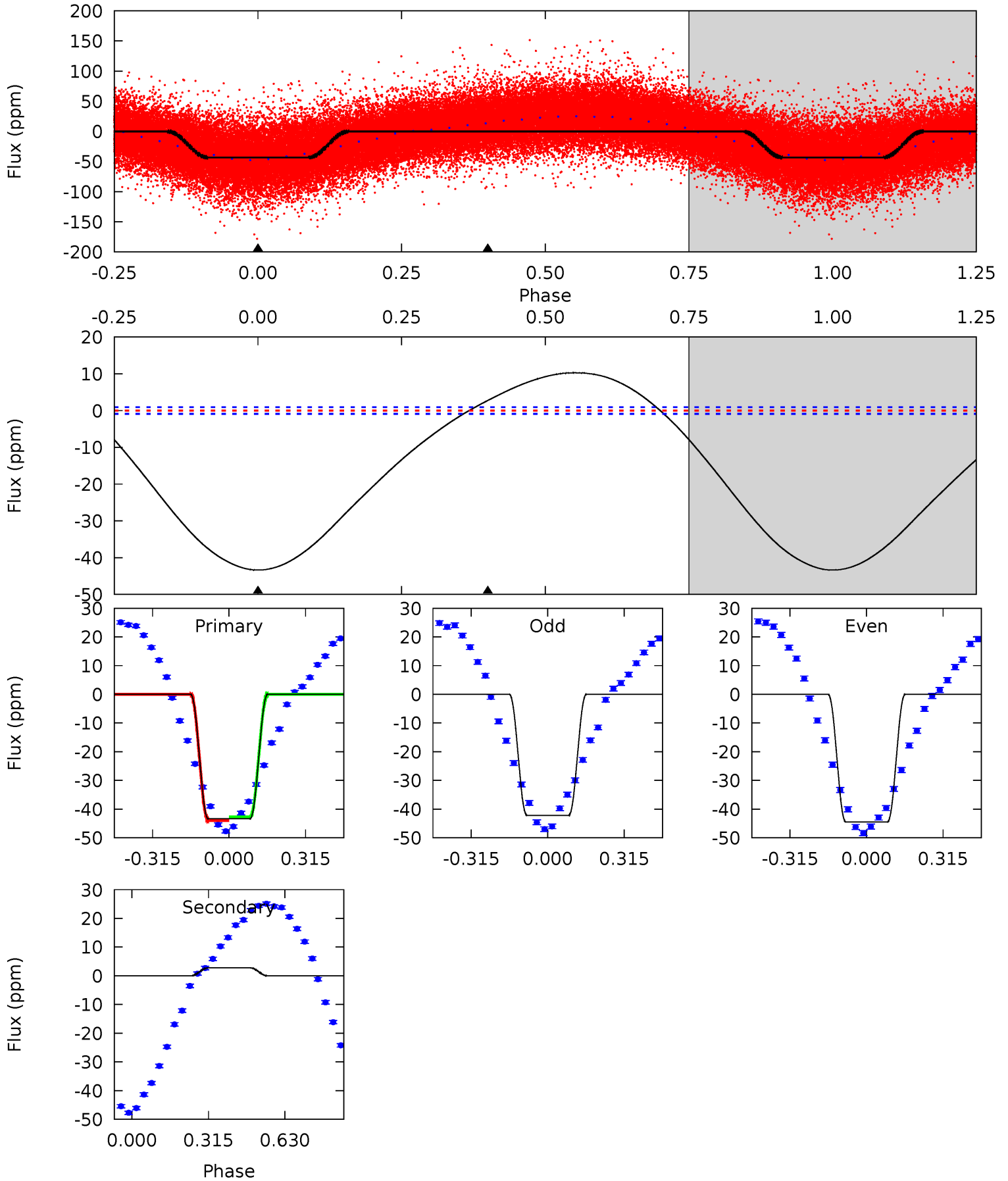




# Alt Model-Shift Uniqueness Test

006222668-01, P = 0.766381 Days, E = 131.235681 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
206.2	-13.1	0	0	4.32	1.00	19.4	206.2	206.2	-13.1	-13.1	5.30	1.02	0.19	3.43





### Stellar Parameters For KIC 006222668

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8810^{+274}_{-366}$	$4.055^{+0.112}_{-0.208}$	$0.360^{+0.050}_{-0.200}$	$2.353^{+0.819}_{-0.441}$	$2.294^{+0.340}_{-0.278}$	$0.248^{+0.133}_{-0.136}$
	+3%/-4%	+3%/-5%	+14%/-56%	+35%/-19%	+15%/-12%	+54%/-55%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006222668-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1 \pm 0$	$0.25^{+0.08}_{-0.08}$	$5710^{+483}_{-336}$	$8404^{+2633}_{-1476}$	$3.483^{+3.845}_{-1.597}$
Alt.	$3 \pm 0$	$1.79^{+0.31}_{-0.20}$	$5736^{+464}_{-354}$	$-5210^{+195}_{-232}$	$-0.218^{+0.055}_{-0.062}$

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

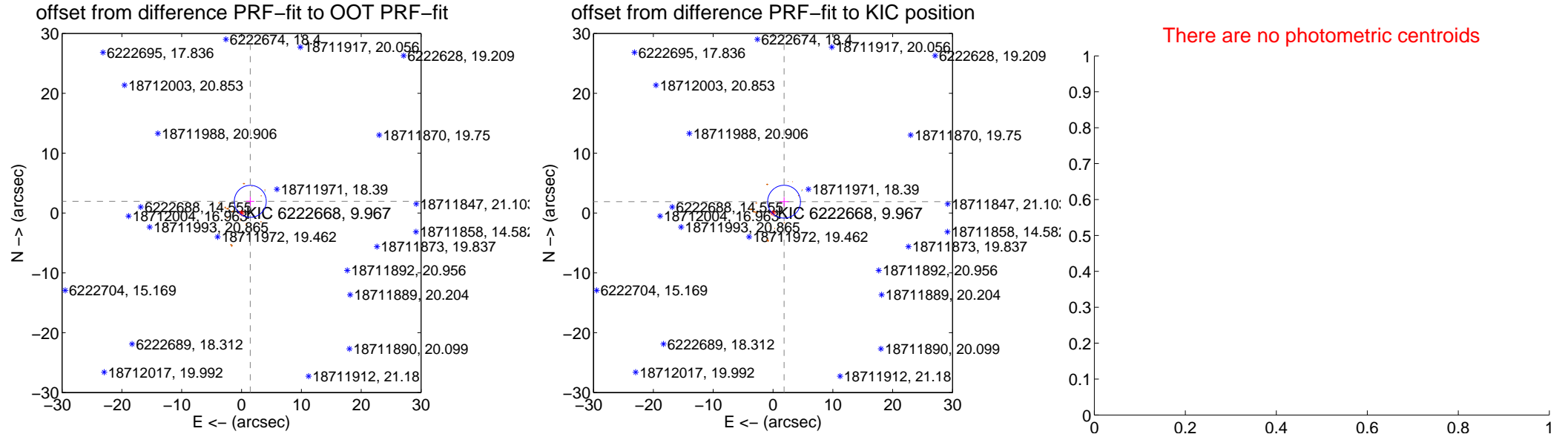
## DV Centroid Data

Supplemental centroid analysis for 006222668-01. **Kepler magnitude: 9.97.** Transit SNR 2.83

**There are 1 quarters with good PRF difference image offsets**

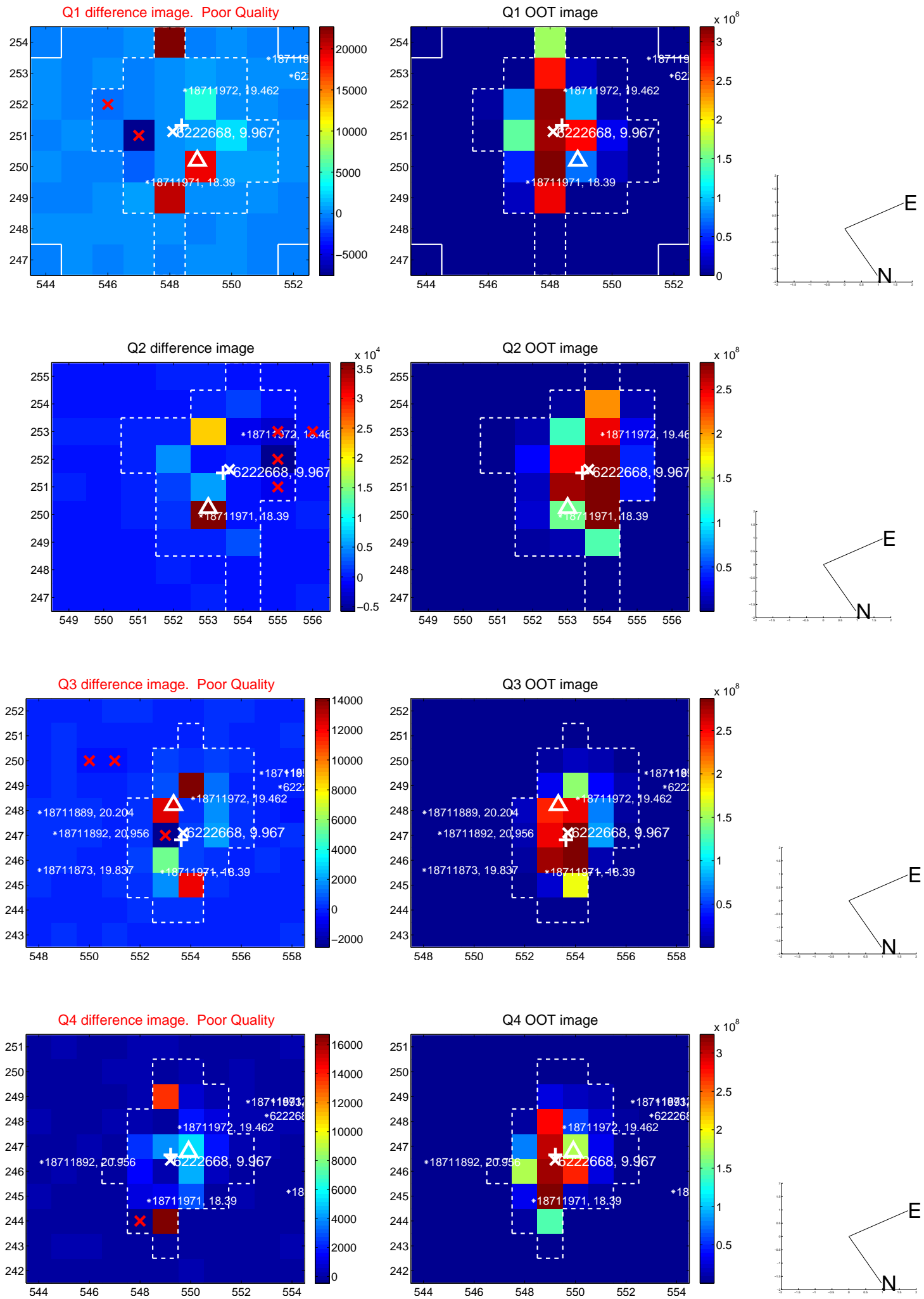
The direct PRF centroid is offset from the target star catalog position by about 1.36 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.435 \pm 0.890$	2.73	$-1.460 \pm 0.676$	$1.948 \pm 0.751$
PRF-fit source offset from KIC position	$2.645 \pm 0.915$	2.89	$-1.848 \pm 0.768$	$1.891 \pm 0.761$
photometric centroid source offset	—	—	—	—

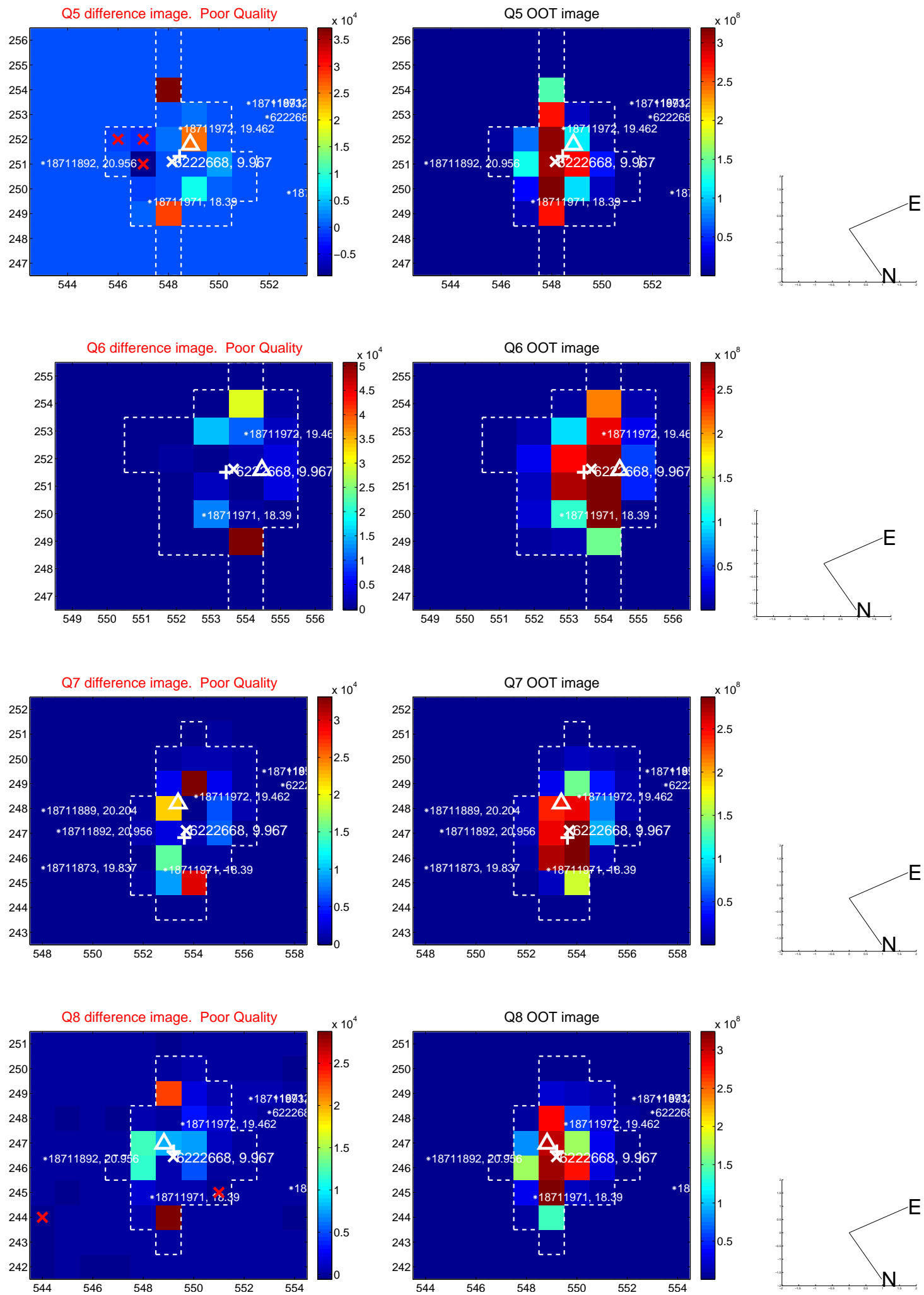


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



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

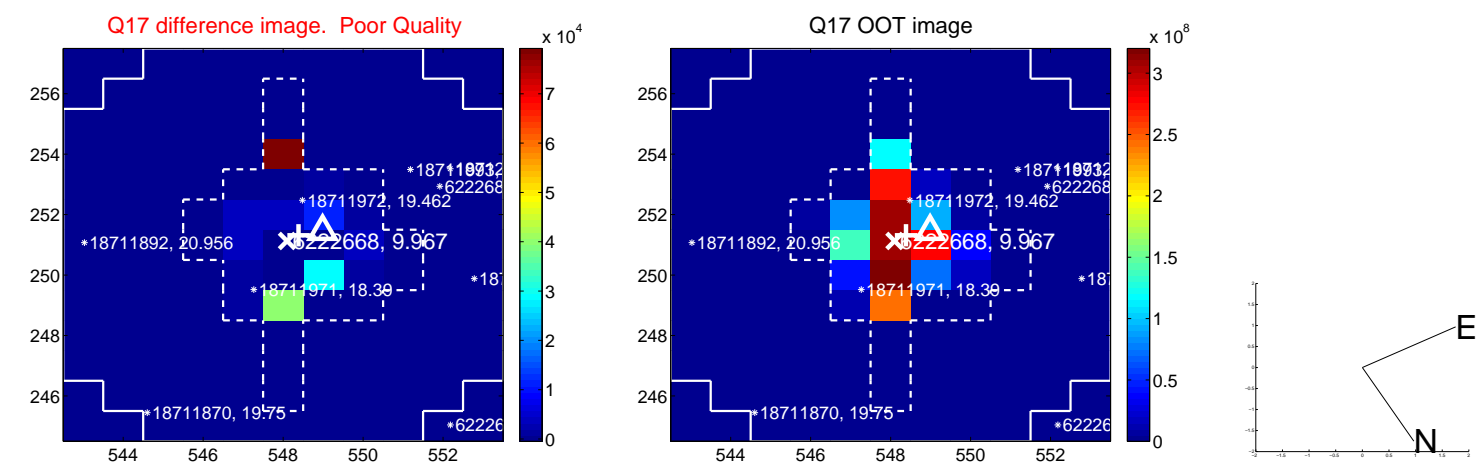








white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination

