

# KIC 004556345

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004556345-01	OBS	No	0.960242	132.068295	24.4	10.308	10.5	10.6	2.90	7540	1.50	42491.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004556345-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED

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

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

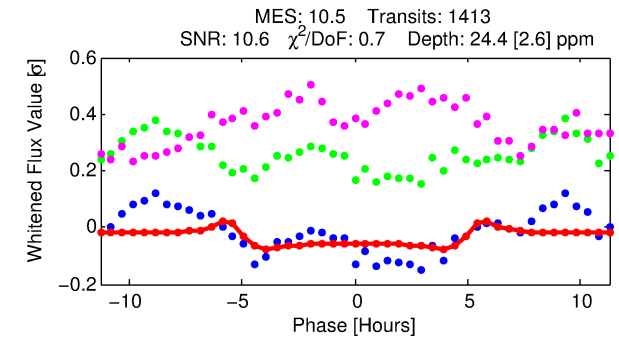
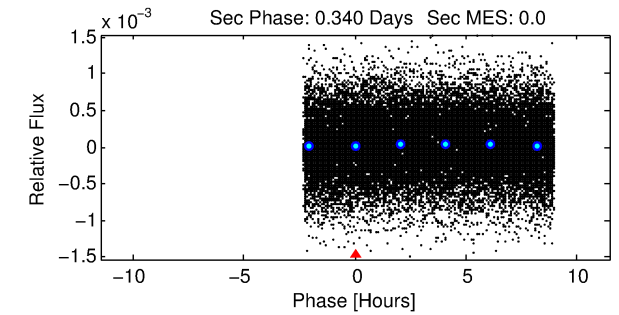
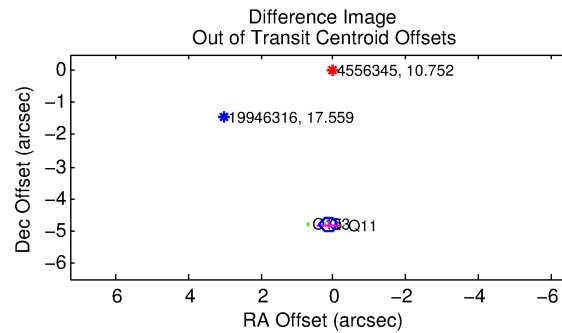
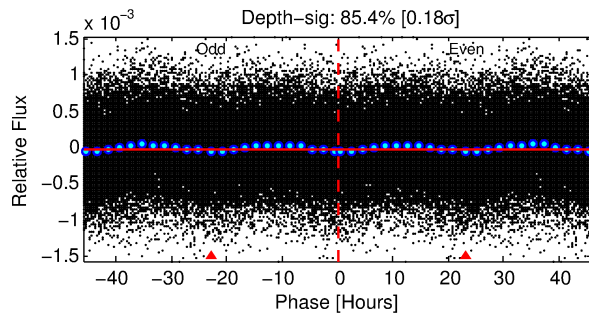
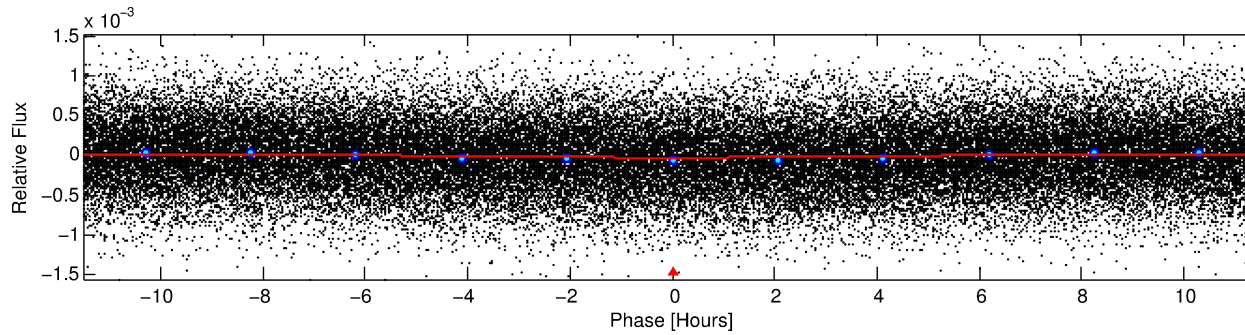
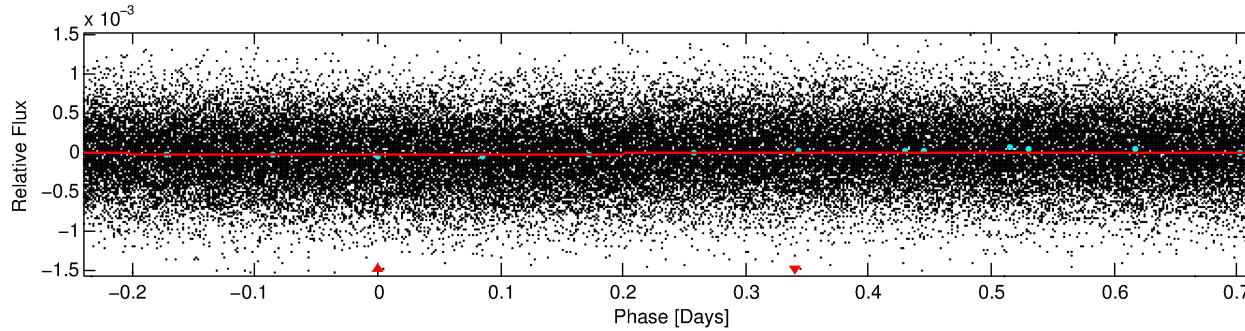
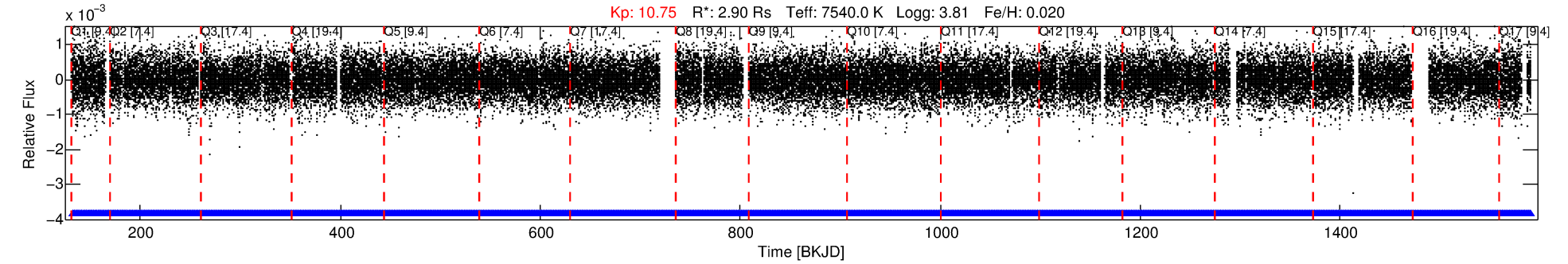
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004556345-01

No Significant Match Found

# DV One-Page Summary

KIC: 4556345 Candidate: 1 of 1 Period: 0.960 d



## DV Fit Results:

Period = 0.96024 [0.00001] d  
Epoch = 132.0683 [0.0056] BKJD  
Rp/R\* = 0.0048 [0.0028]  
a/R\* = 1.01 [0.10]  
b = 0.59 [4.08]  
Seff = 42491.72 [25802.09]  
Teff = 3661 [556] K  
Rp = 1.50 [1.10] Re  
a = 0.0239 [0.0091] AU  
Ag = N/A  
Teffp = N/A

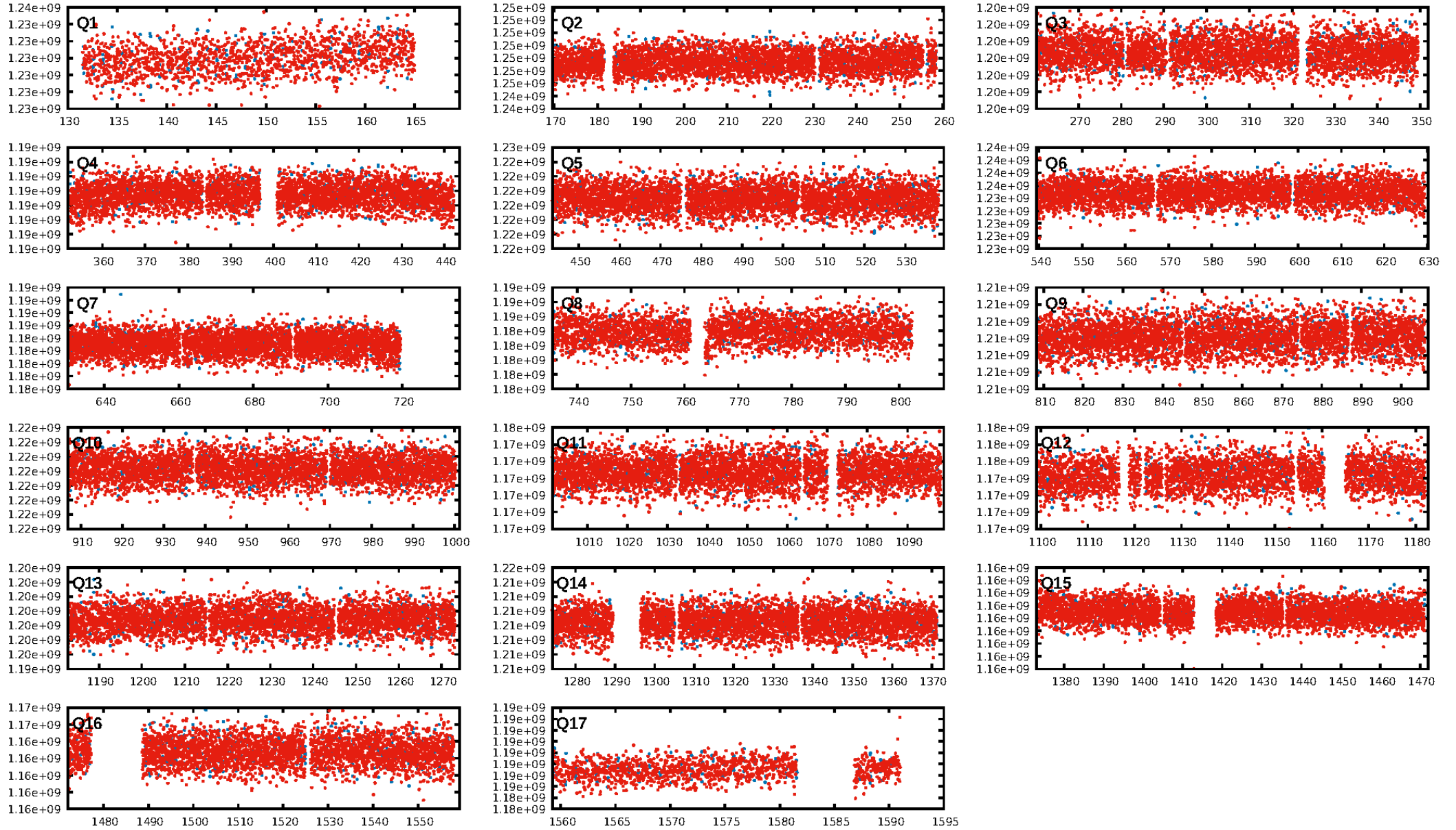
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1350/1350]  
GhostDiagnostic-chr: 1.778  
Centroid-sig: 0.0%  
Centroid-so: 2.701 arcsec [6.40 $\sigma$ ]  
OotOffset-rm: 4.814 arcsec [67.22 $\sigma$ ]  
KicOffset-rm: 6.574 arcsec [77.84 $\sigma$ ]  
OotOffset-st: 0/3/0/0 [3]  
KicOffset-st: 0/3/0/0 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:51:46 Z

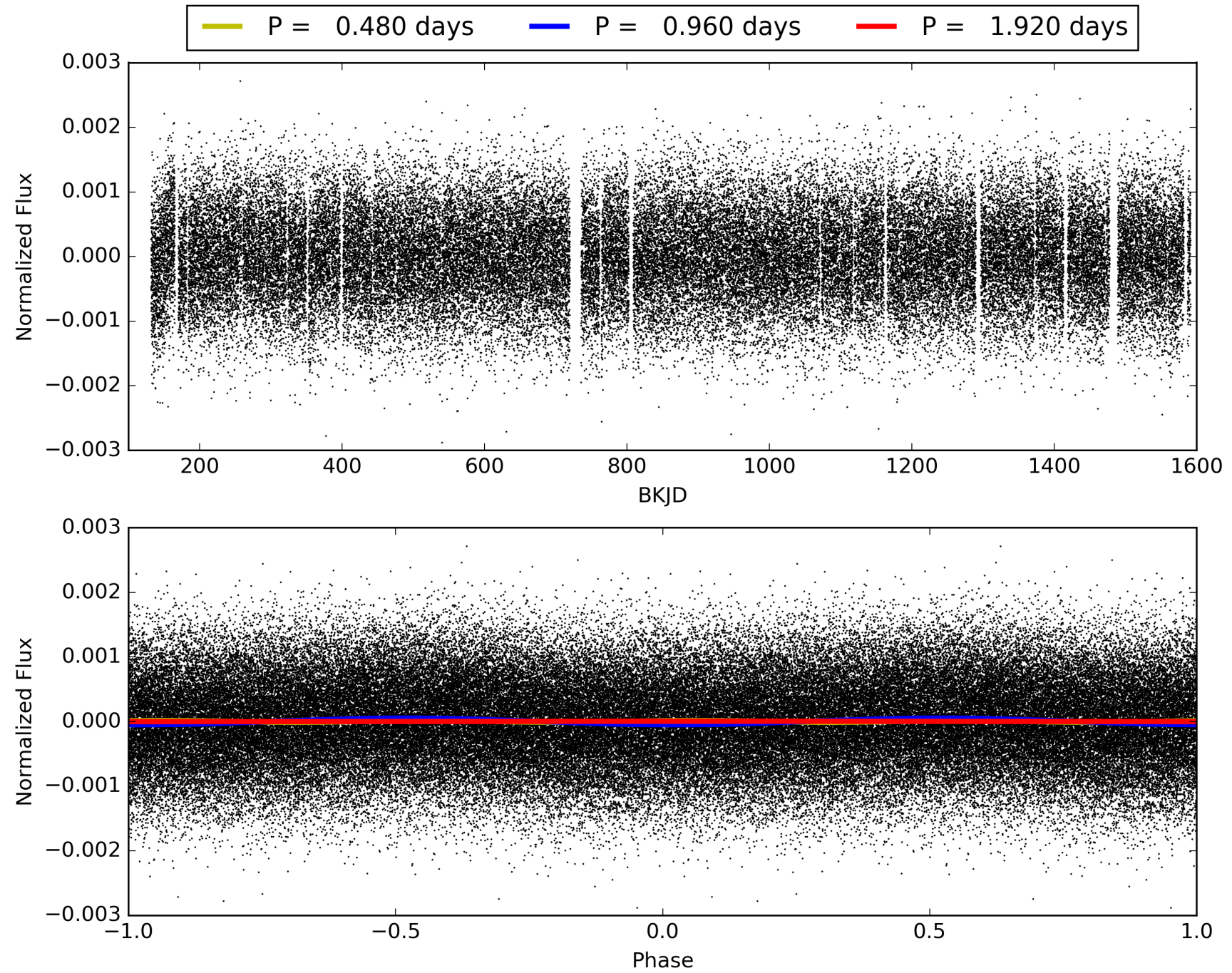
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 004556345-01, PDC Light Curves



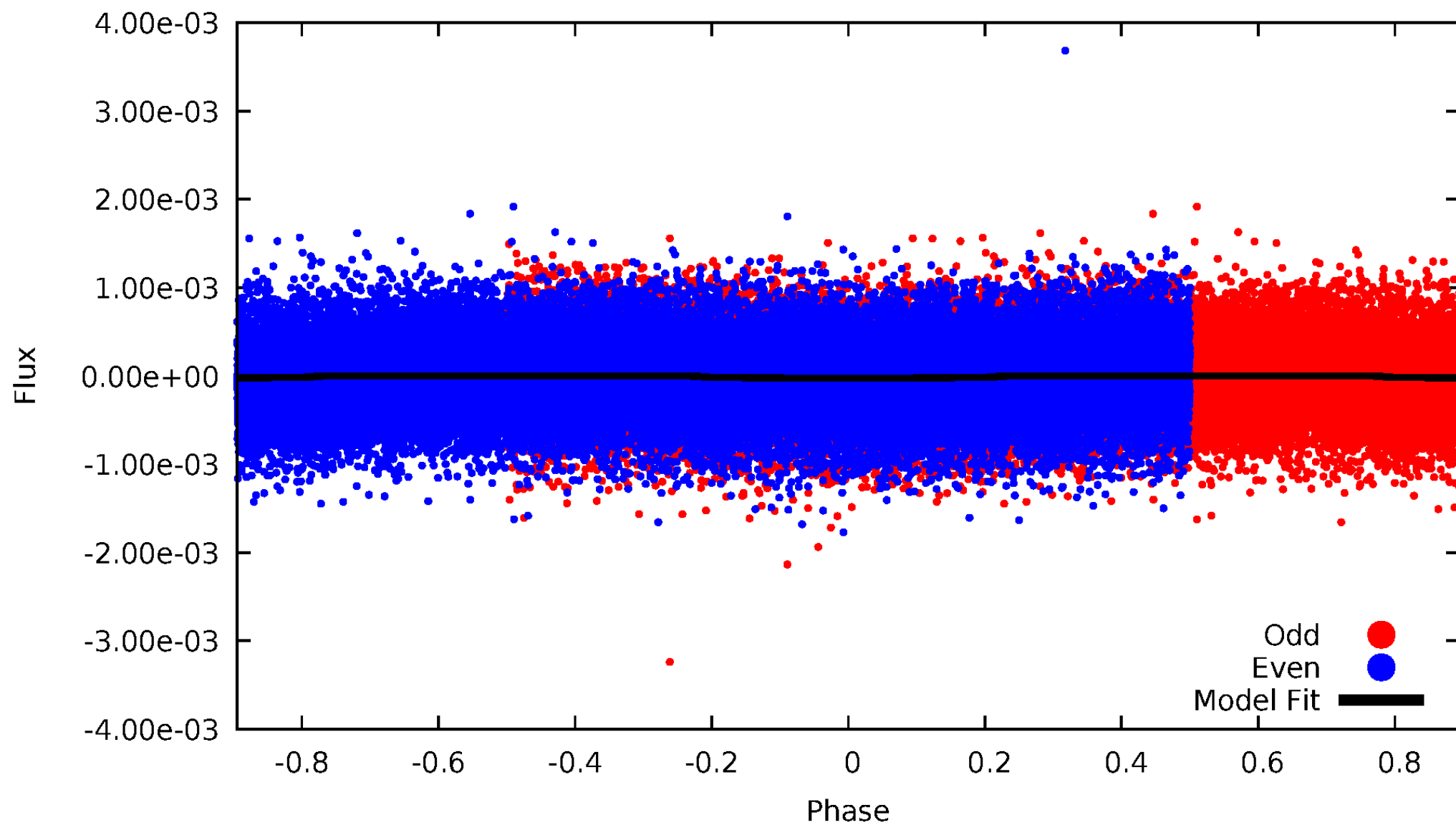


TCE 004556345-01



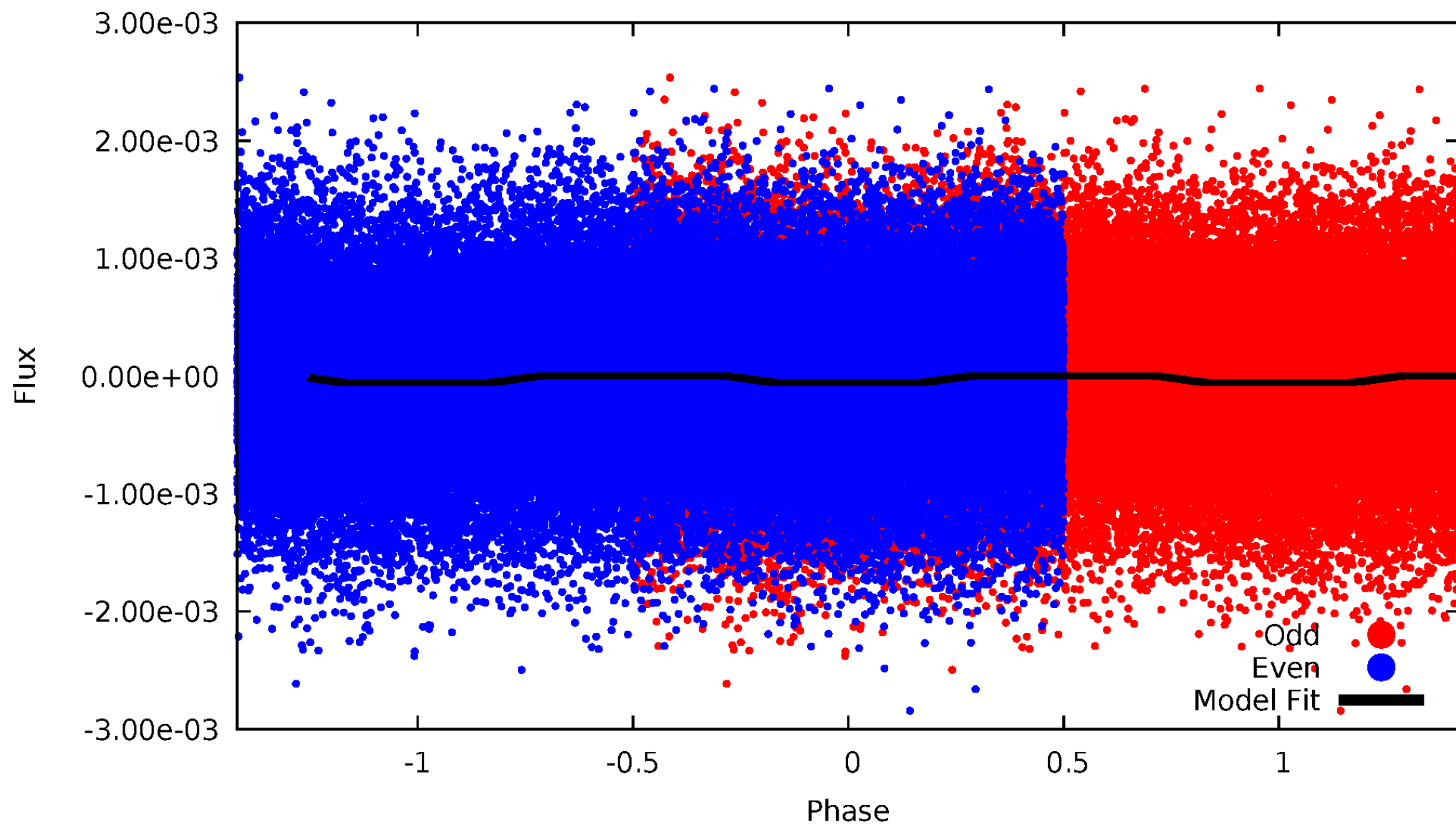
# DV Odd/Even

TCE 004556345-01



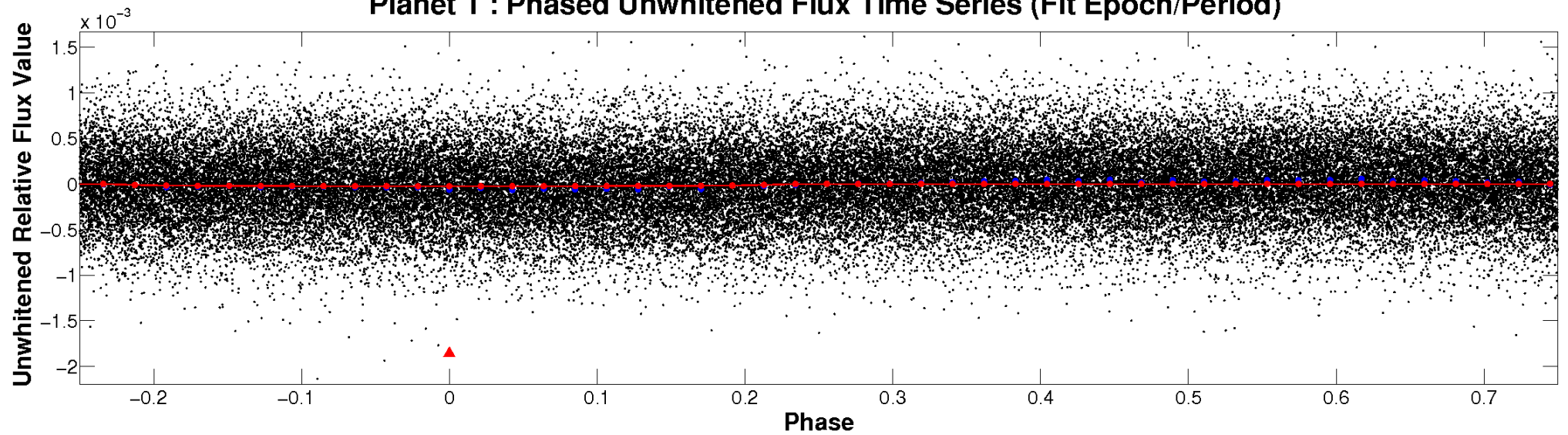
# ALT Odd/Even

TCE 004556345-01

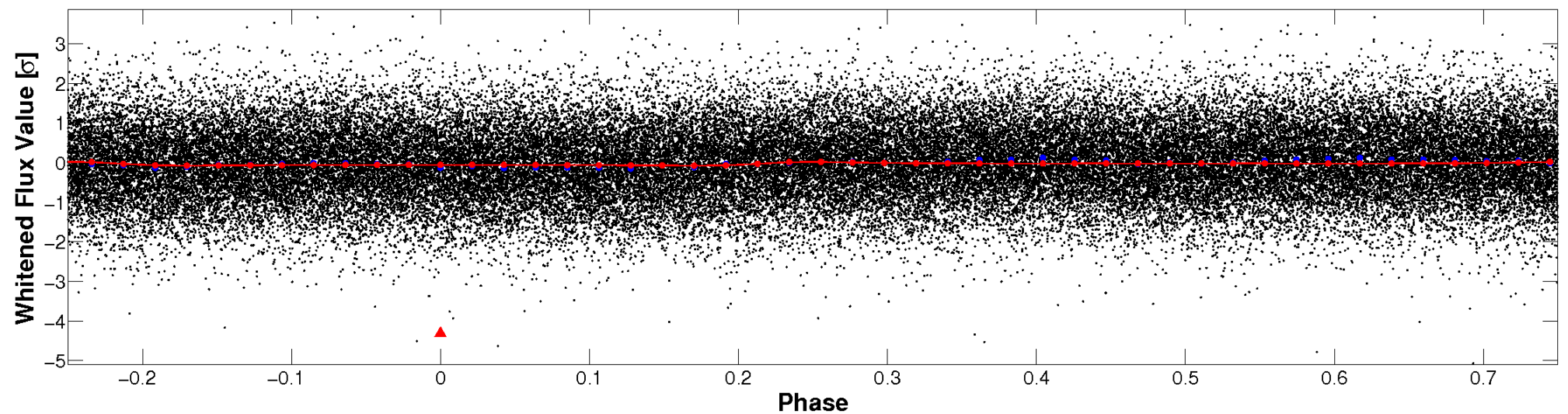


# Non-Whitened Vs. Whitened Light Curve

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



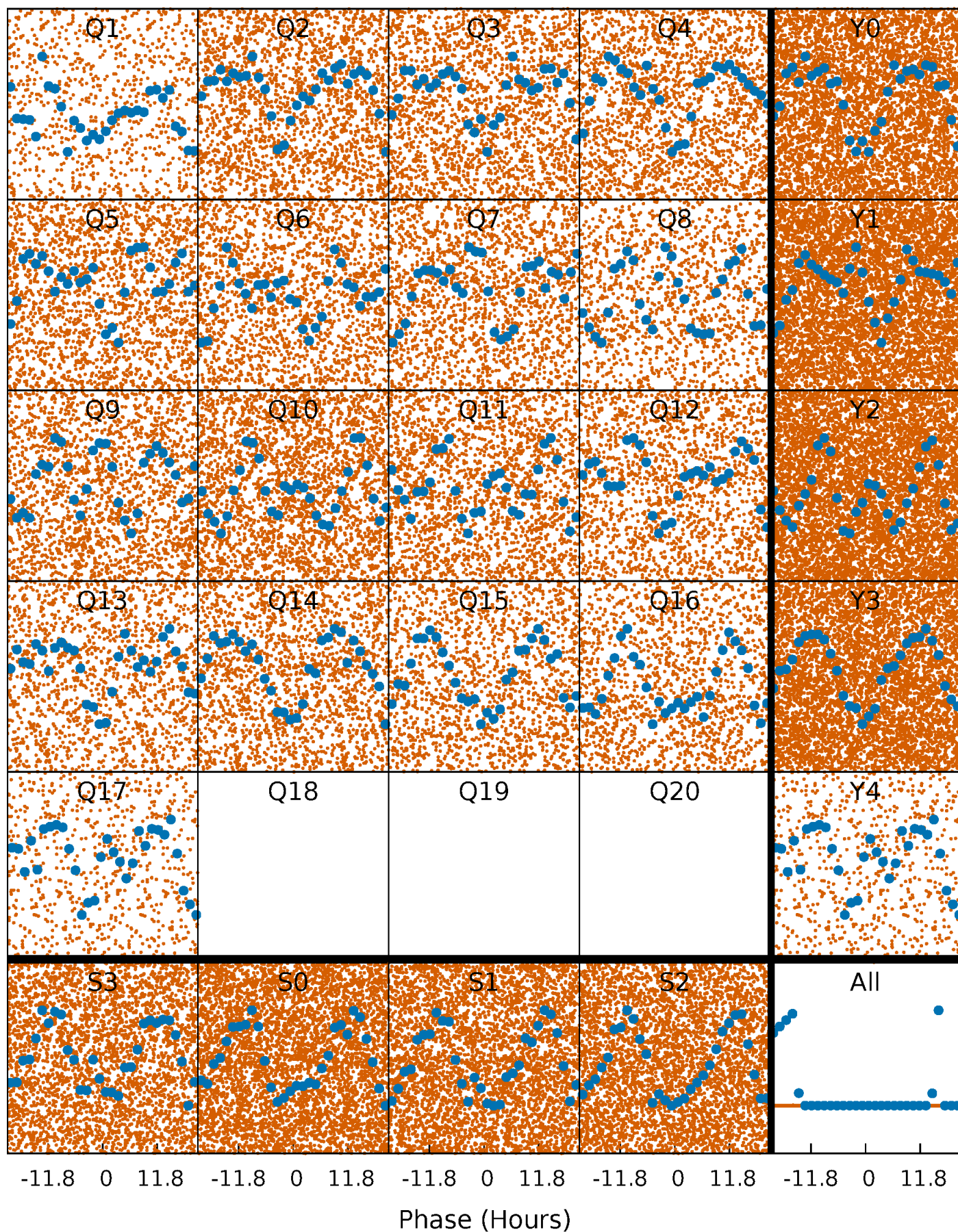
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

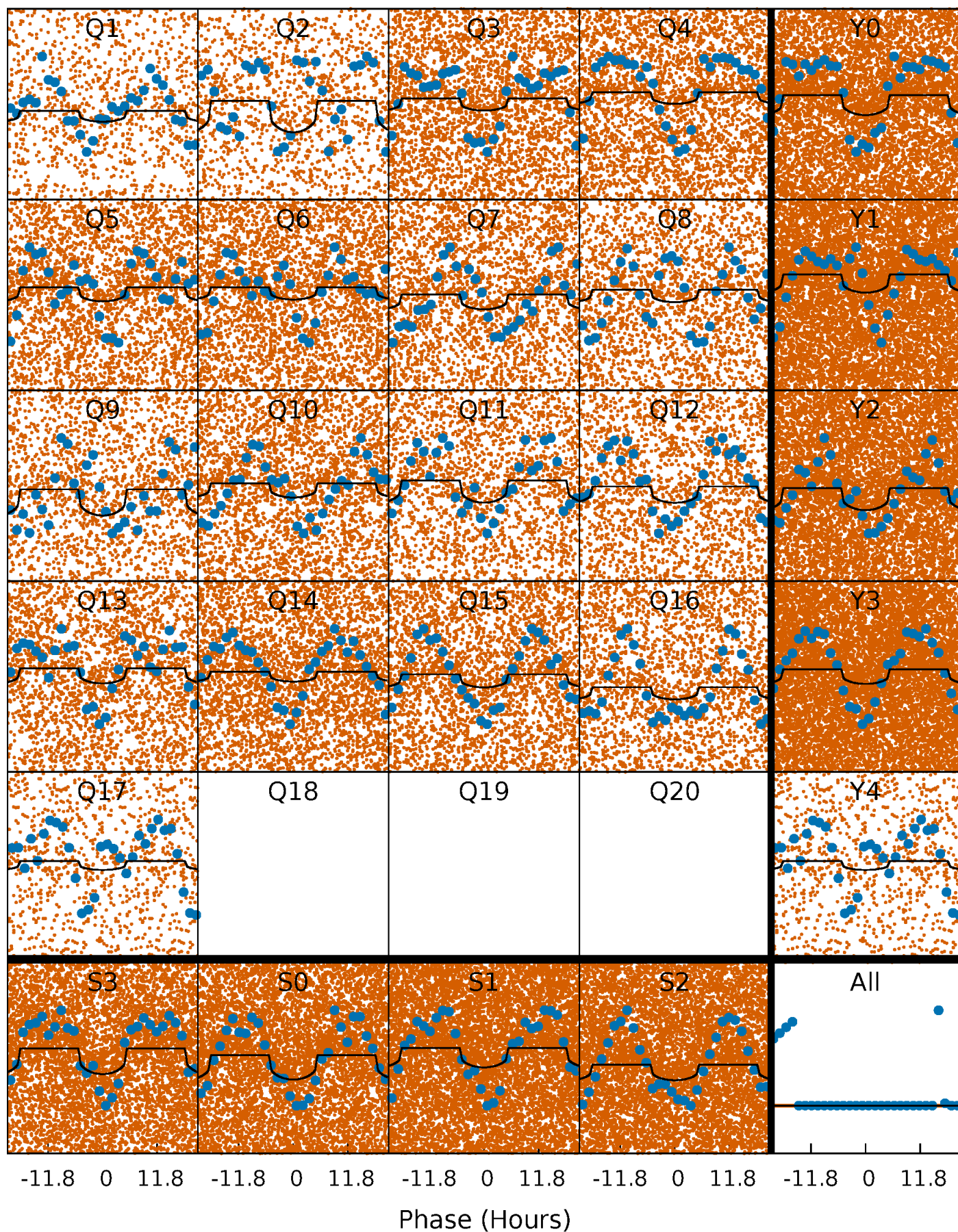
TCE 004556345-01 P= 0.960242 Days  $T_0=132.068295$  (BKJD)





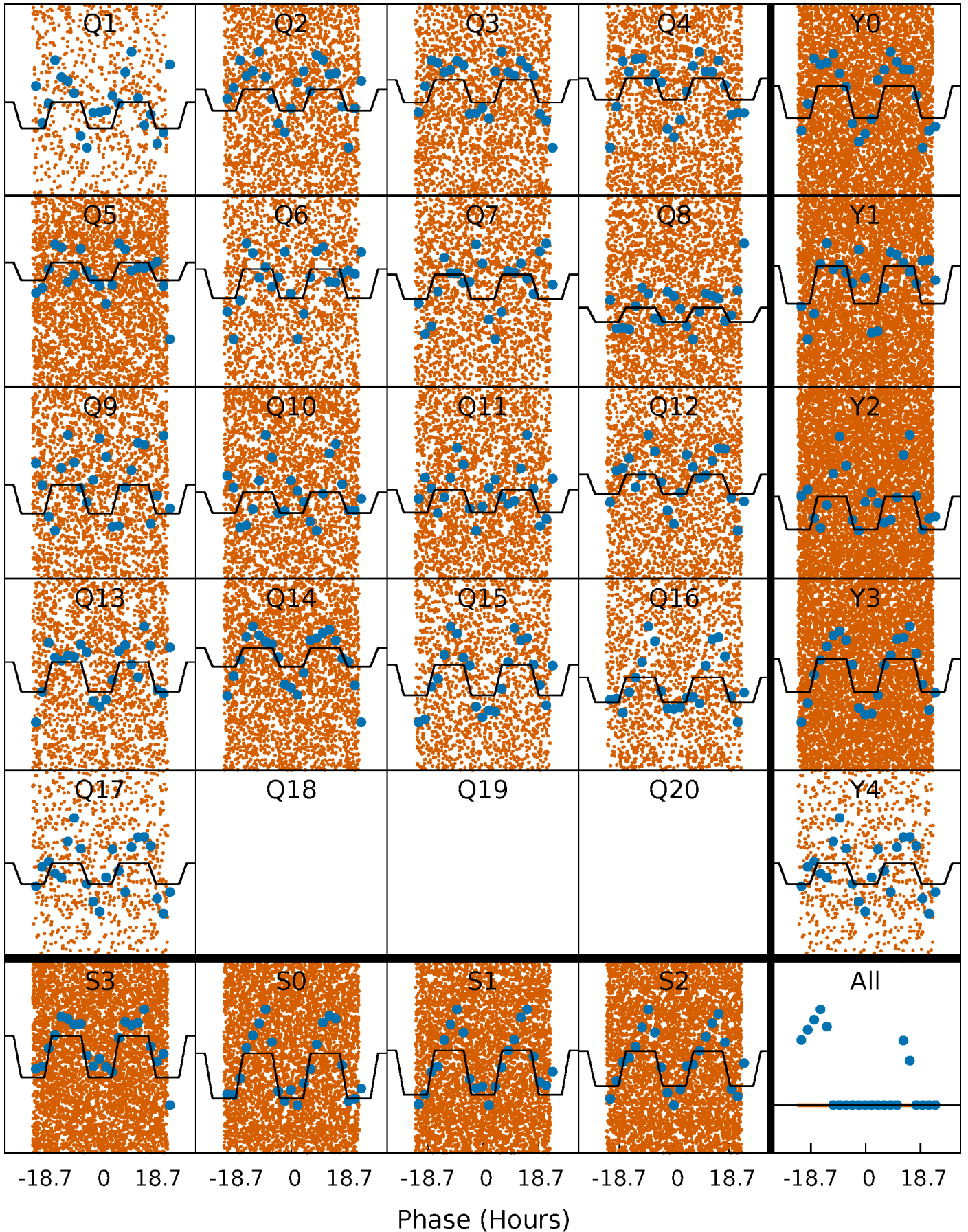
# DV Quarter-Phased Transit Curves

TCE 004556345-01 P= 0.960242 Days  $T_0=132.068295$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 004556345-01 P= 0.960147 Days  $T_0=132.125460$  (BKJD)

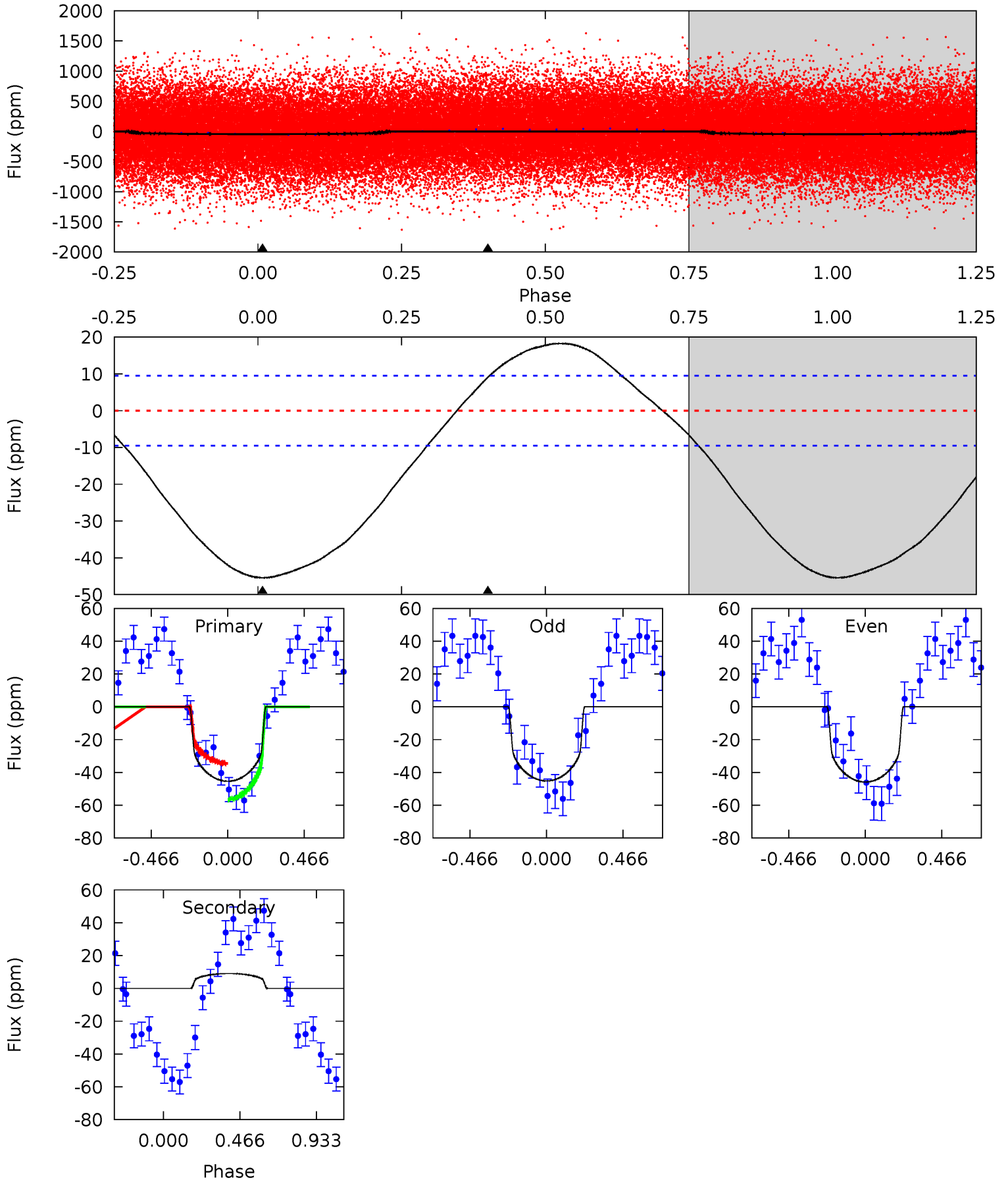




# DV Model-Shift Uniqueness Test

004556345-01, P = 0.960242 Days, E = 131.108053 Days

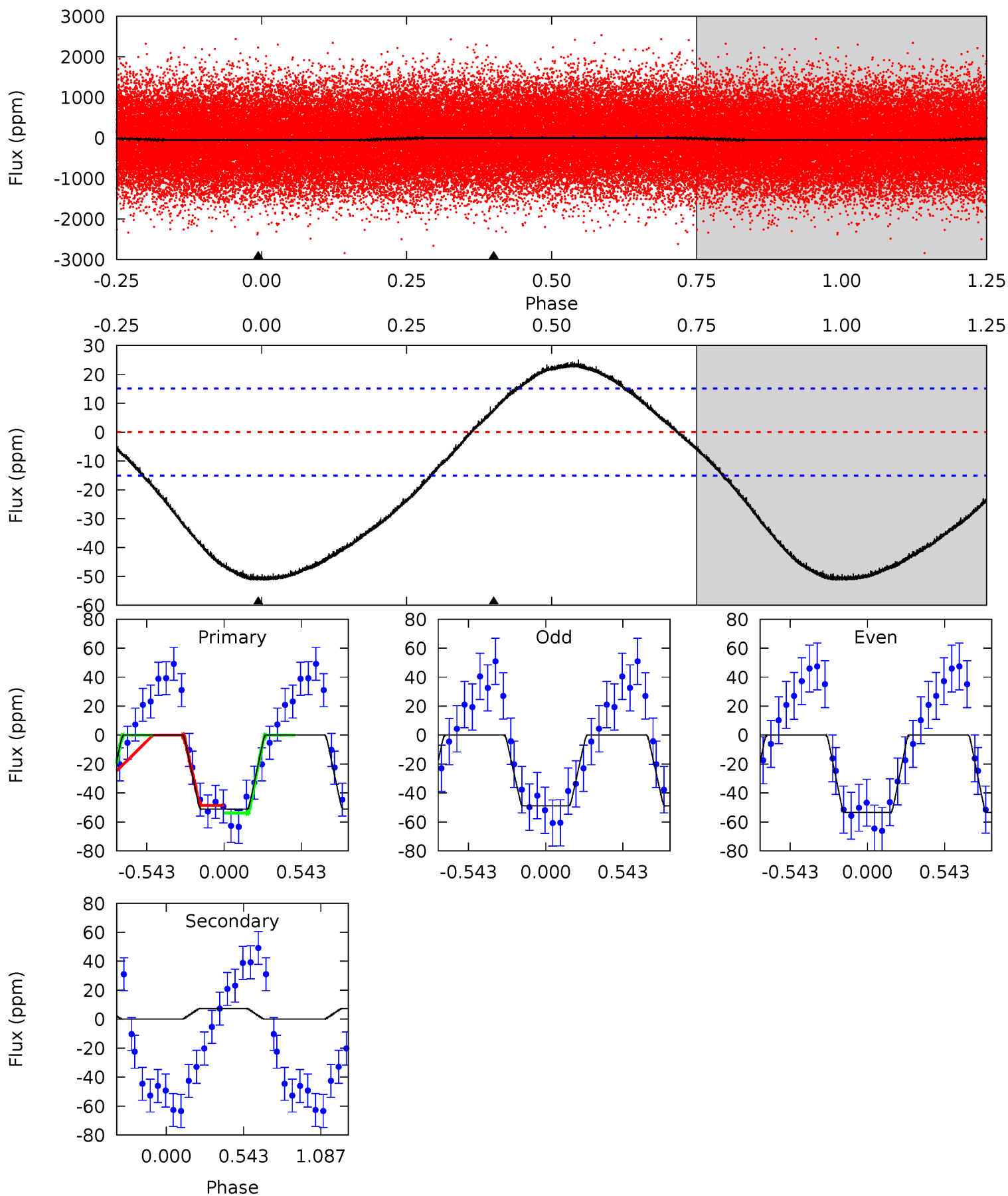
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	-4.03	0	0	4.23	0.73	1.84	20.2	20.2	-4.03	-4.03	0.16	1.10	0.29	4.83



# Alt Model-Shift Uniqueness Test

004556345-01, P = 0.960147 Days, E = 131.165313 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
14.2	-2.02	0	0	4.20	0.61	1.48	14.2	14.2	-2.02	-2.02	0.65	1.13	0.33	0.75





### Stellar Parameters For KIC 004556345

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7540^{+209}_{-340}$	$3.810^{+0.330}_{-0.110}$	$0.020^{+0.200}_{-0.350}$	$2.895^{+0.408}_{-1.225}$	$1.973^{+0.088}_{-0.500}$	$0.115^{+0.302}_{-0.034}$
	+3%/-5%	+9%/-3%	+1000%/-1750%	+14%/-42%	+4%/-25%	+264%/-29%
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 004556345-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$9\pm 2$	$1.46^{+0.87}_{-0.78}$	$5001^{+351}_{-514}$	$-6035^{+888}_{-2835}$	$-1.267^{+0.781}_{-4.761}$
Alt.	$7\pm 4$	$2.19^{+0.94}_{-0.93}$	$5017^{+325}_{-523}$	$-5104^{+500}_{-978}$	$-0.434^{+0.267}_{-0.972}$

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

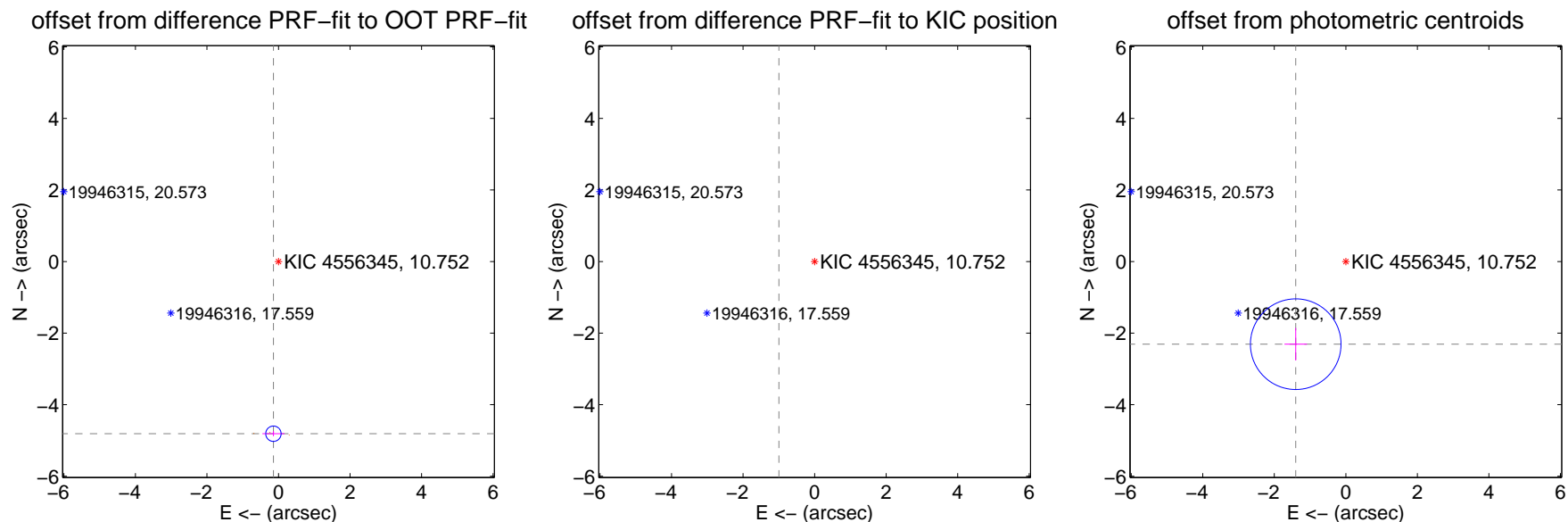
## DV Centroid Data

Supplemental centroid analysis for 004556345-01. **Kepler magnitude: 10.75.** Transit SNR 10.57

**There are 0 quarters with good PRF difference image offsets**

The direct PRF centroid is offset from the target star catalog position by about 1.89 arcsec

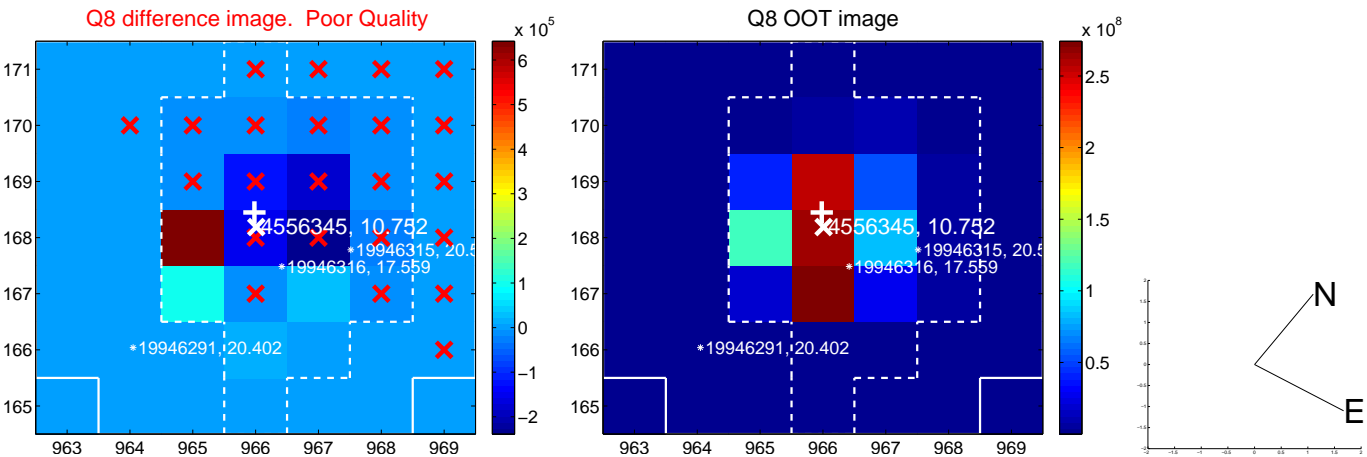
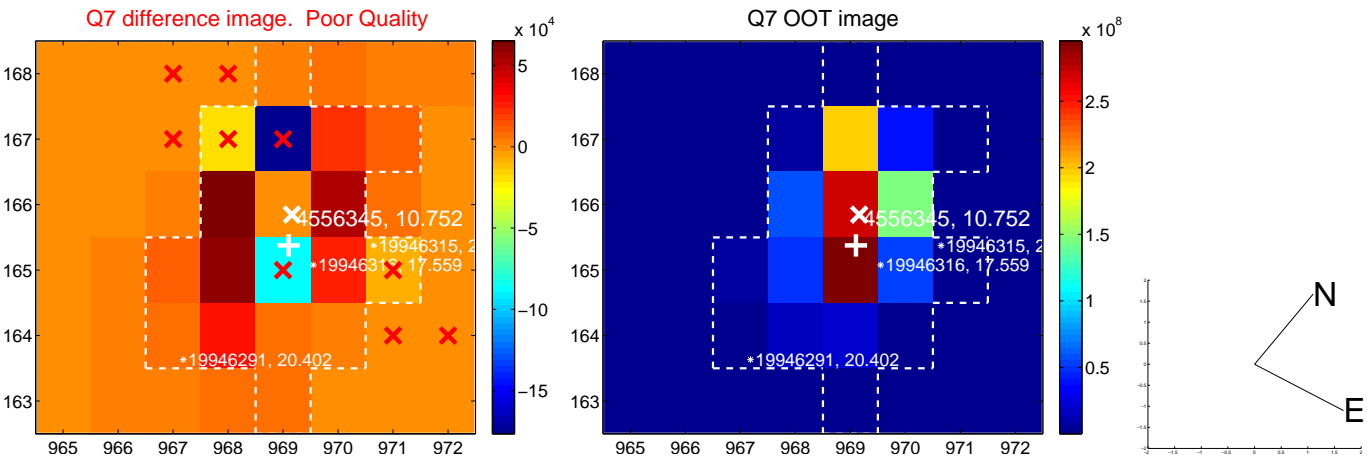
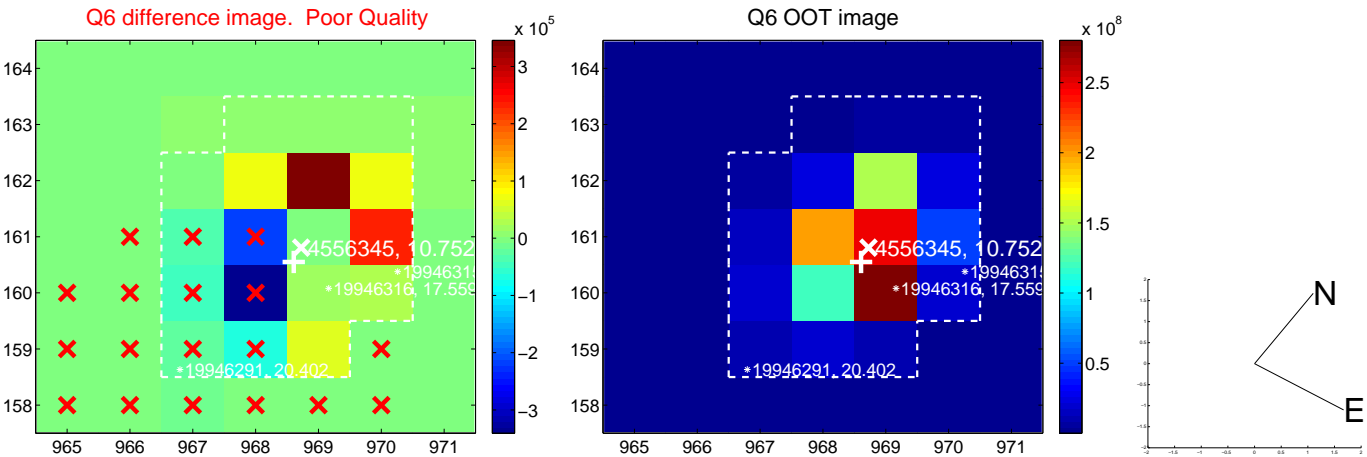
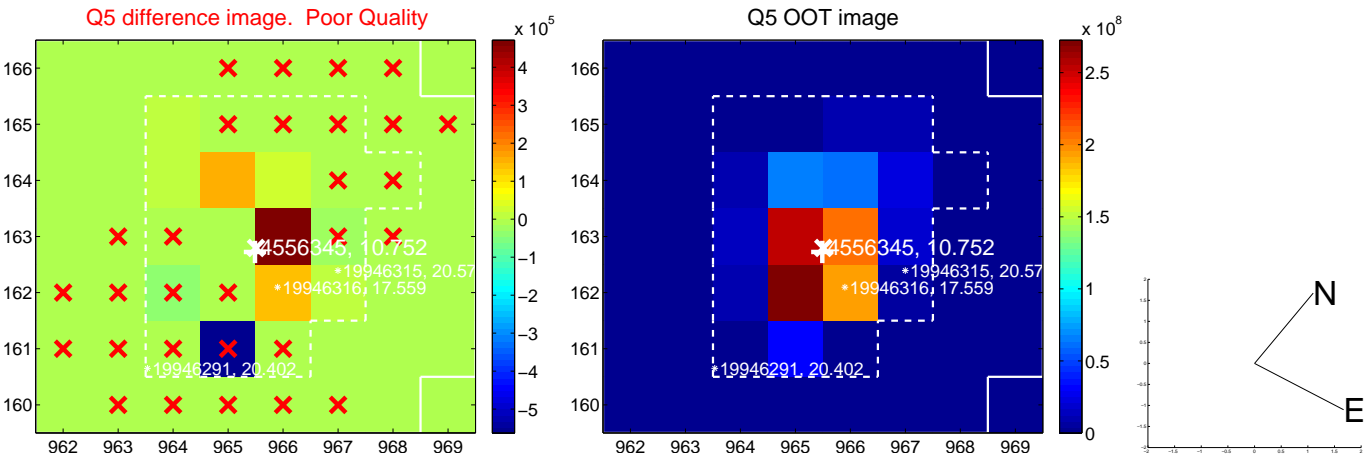
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>4.814 \pm 0.072</math></b>	<b>67.22</b>	$0.142 \pm 0.308$	$-4.812 \pm 0.071$
PRF-fit source offset from KIC position	<b><math>6.574 \pm 0.084</math></b>	<b>77.84</b>	$0.998 \pm 0.328$	$-6.498 \pm 0.069$
photometric centroid source offset	<b><math>2.70 \pm 0.42</math></b>	<b>6.40</b>	$1.40 \pm 0.31$	$-2.31 \pm 0.46$



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.

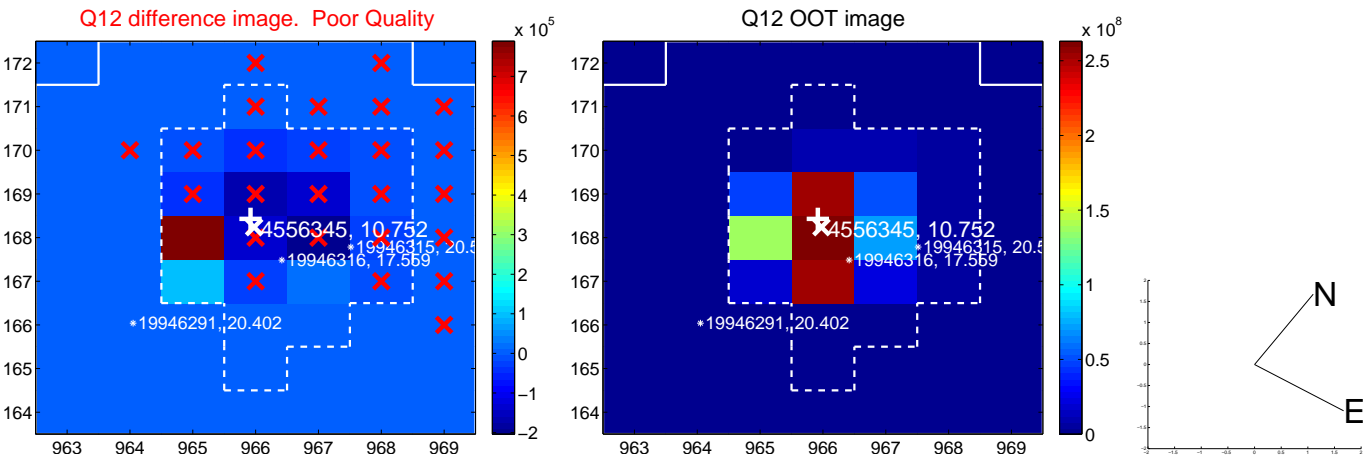
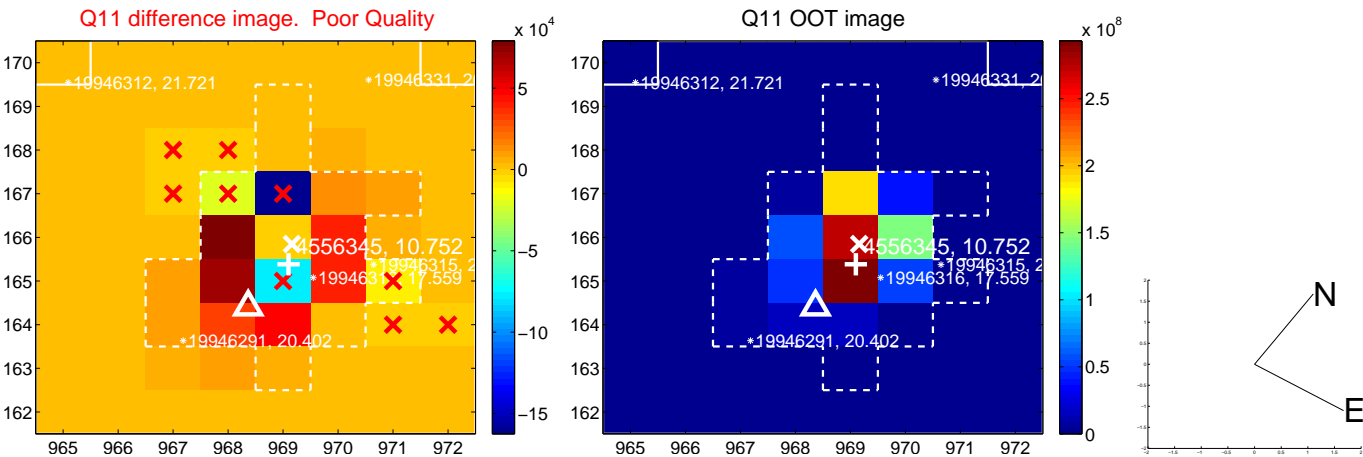
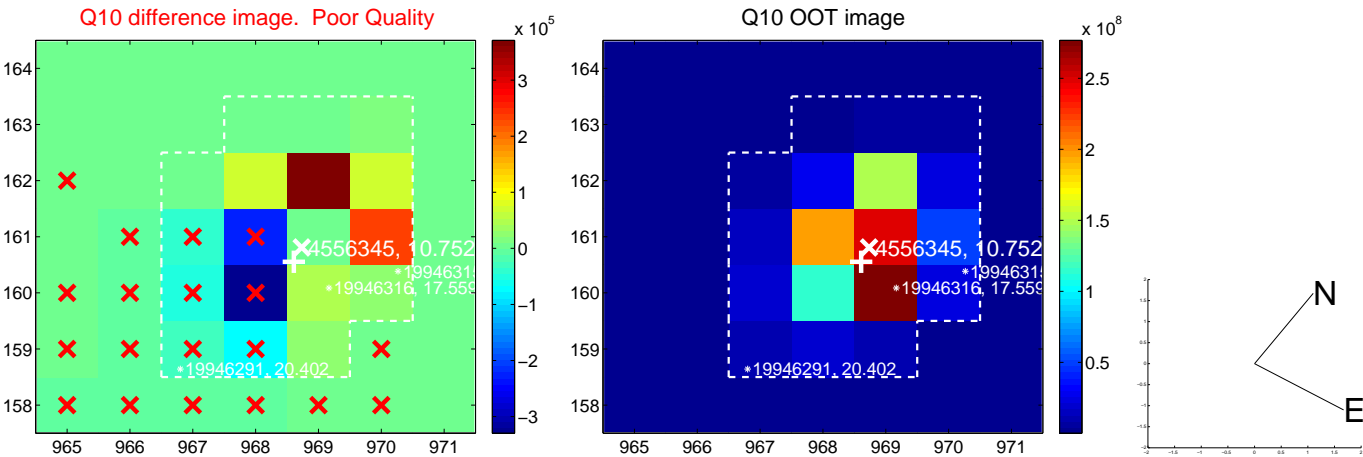
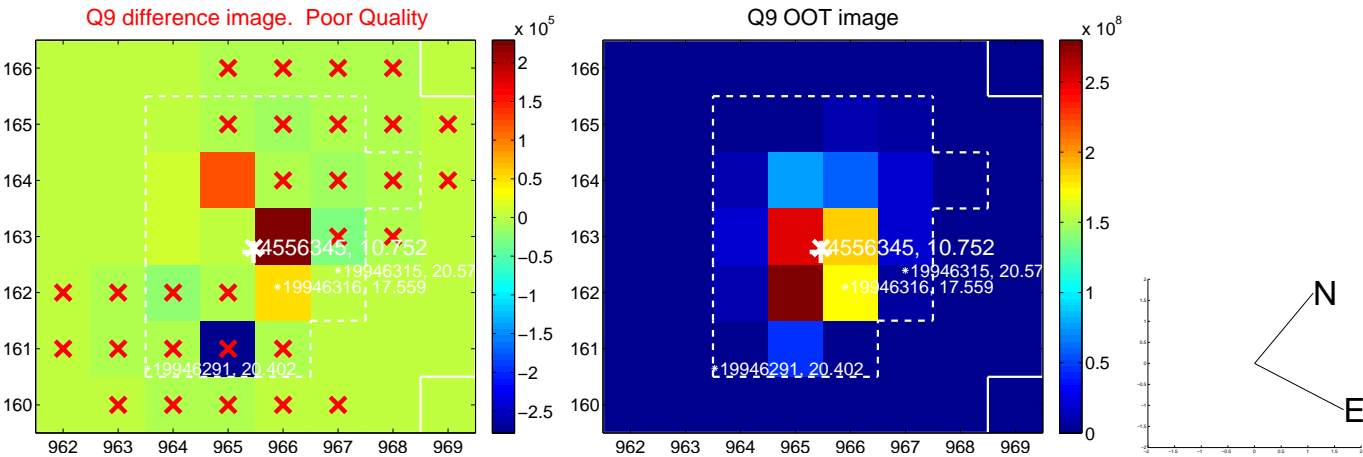


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

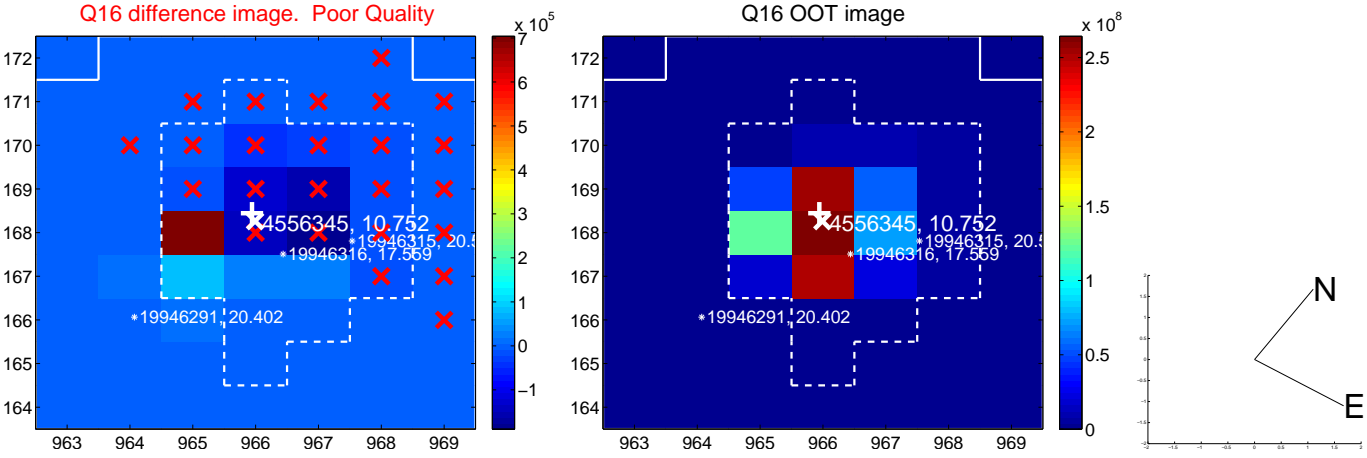
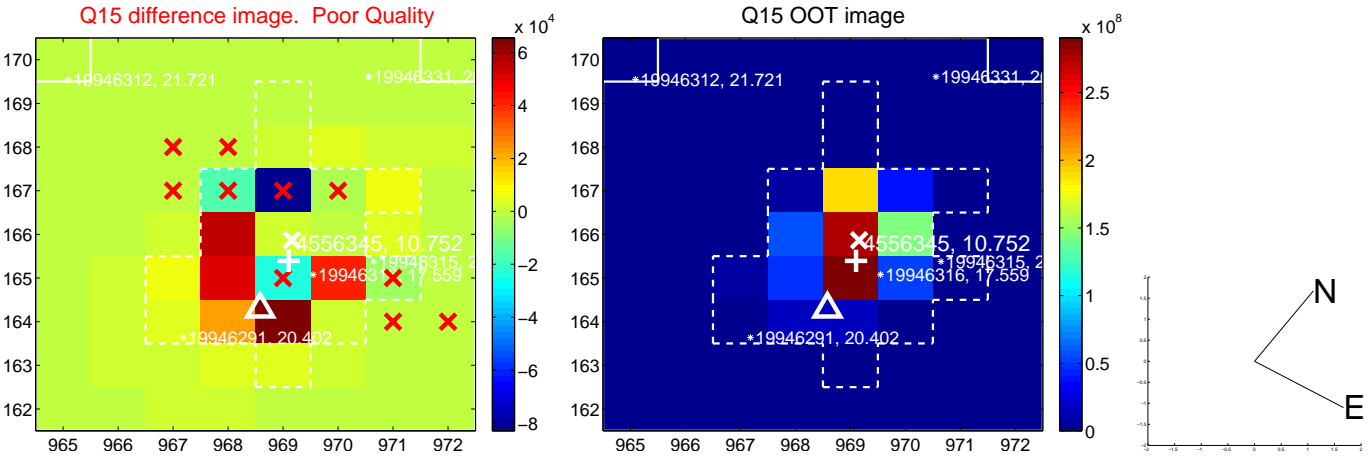
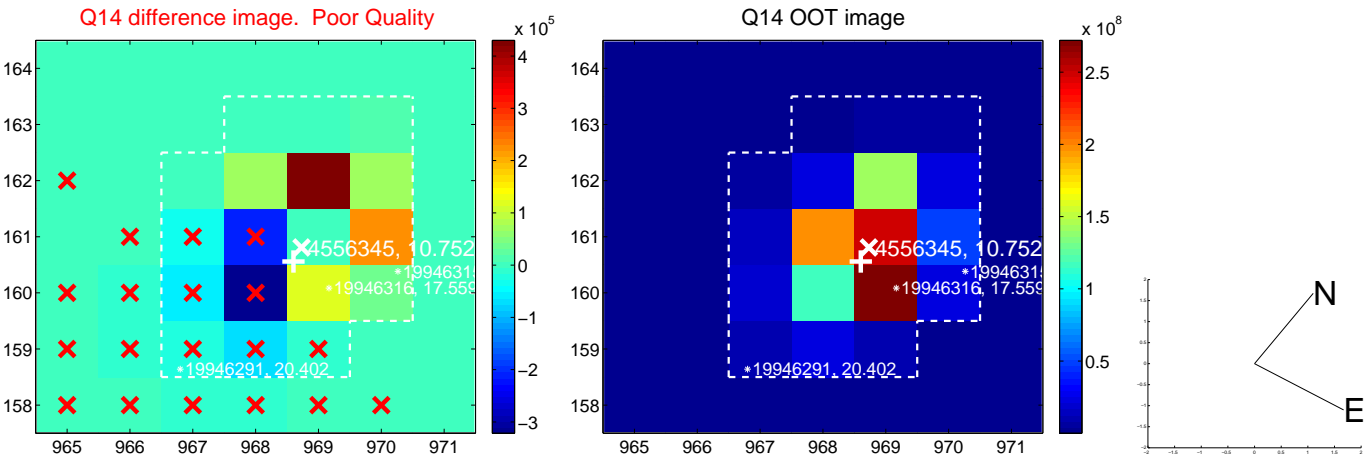
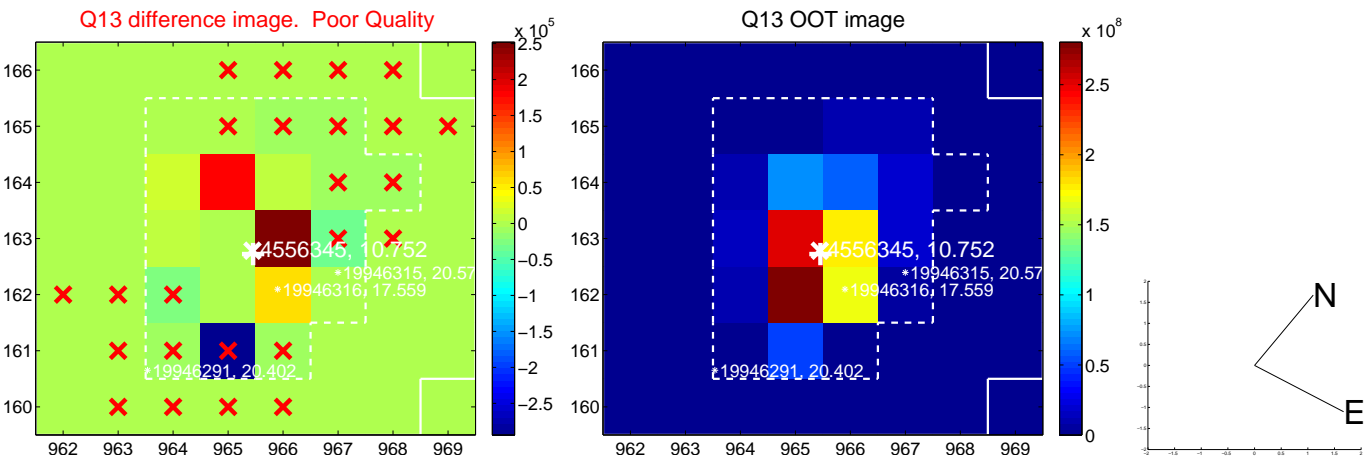




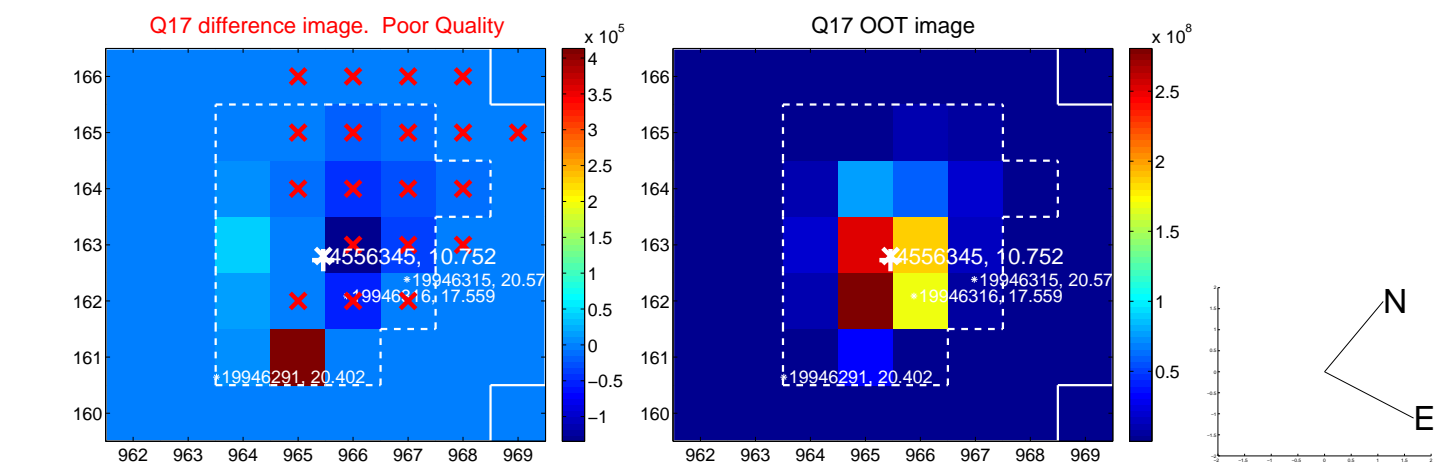
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



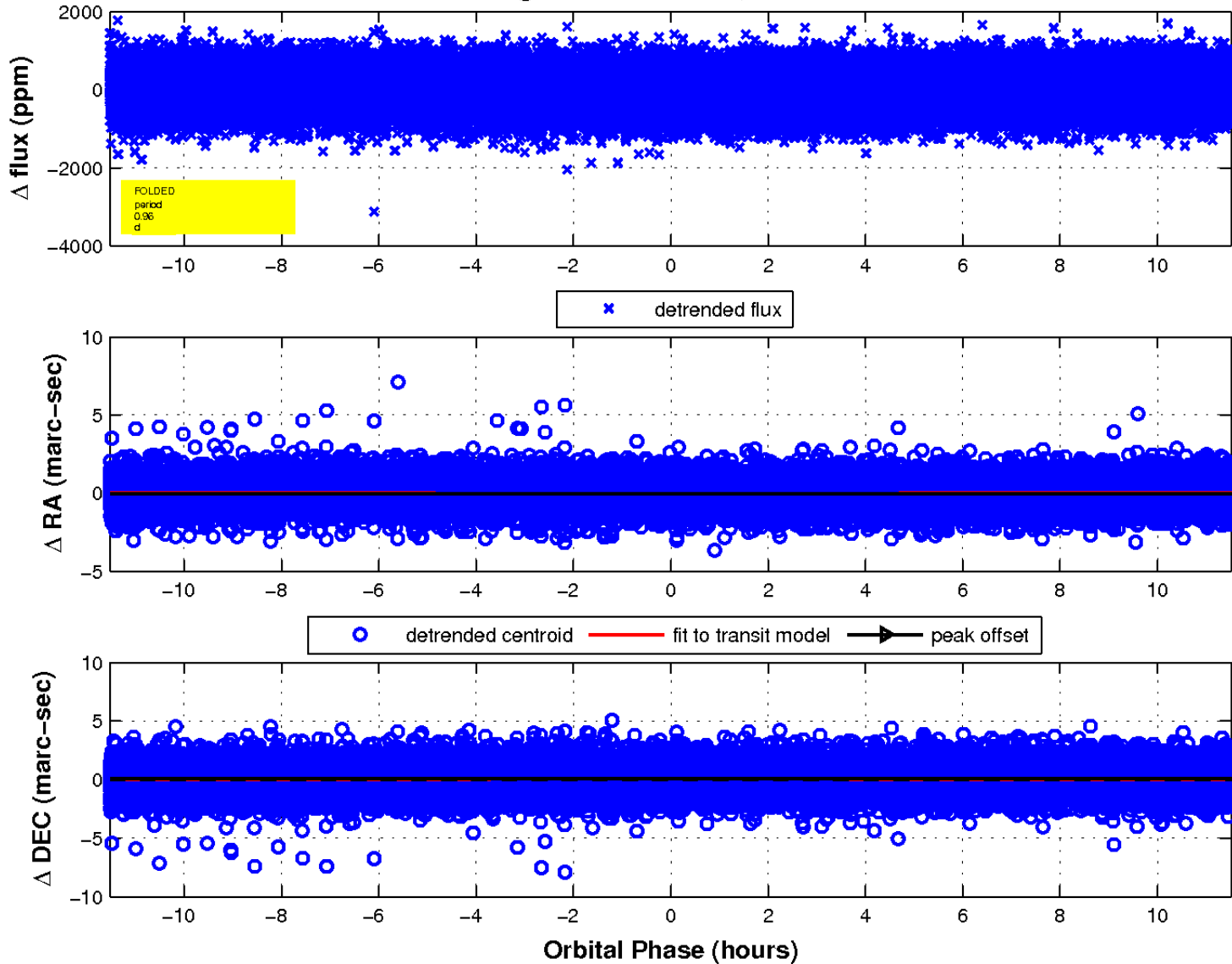
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

