

# KIC 009537008

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009537008-01	OBS	No	0.607962	131.959994	42.7	0.924	7.7	10.7	1.00	5985	0.78	5662.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009537008-01	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

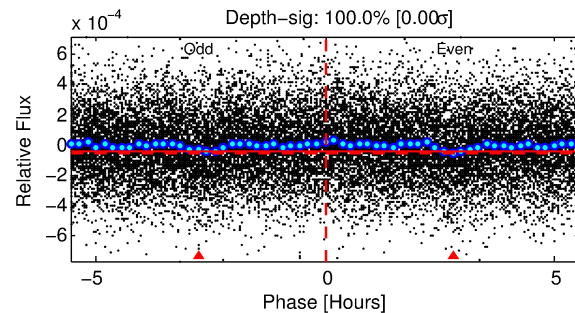
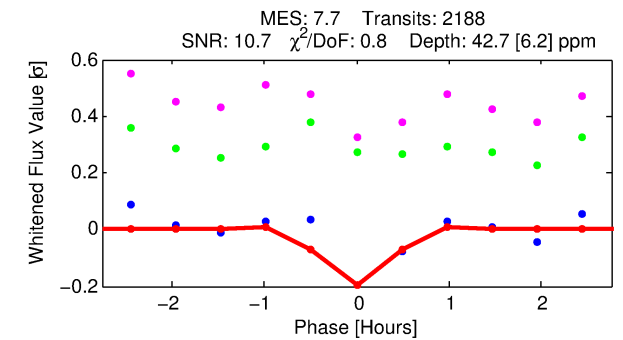
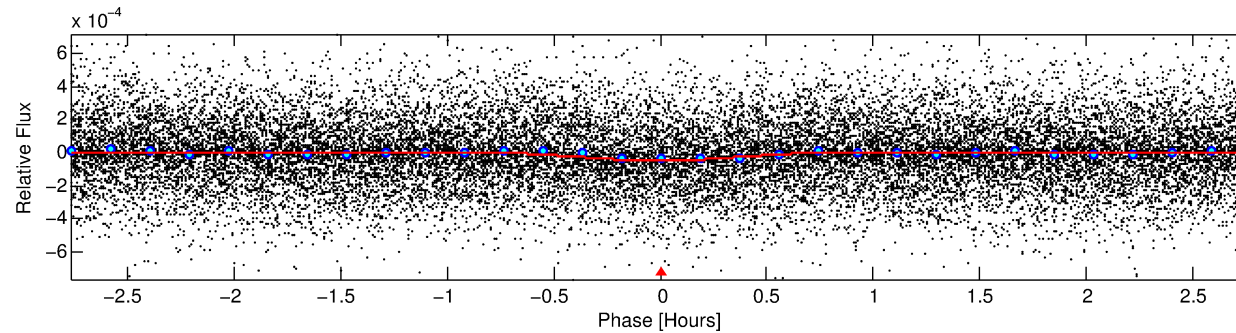
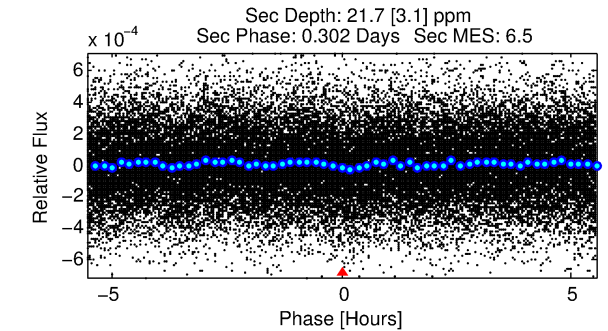
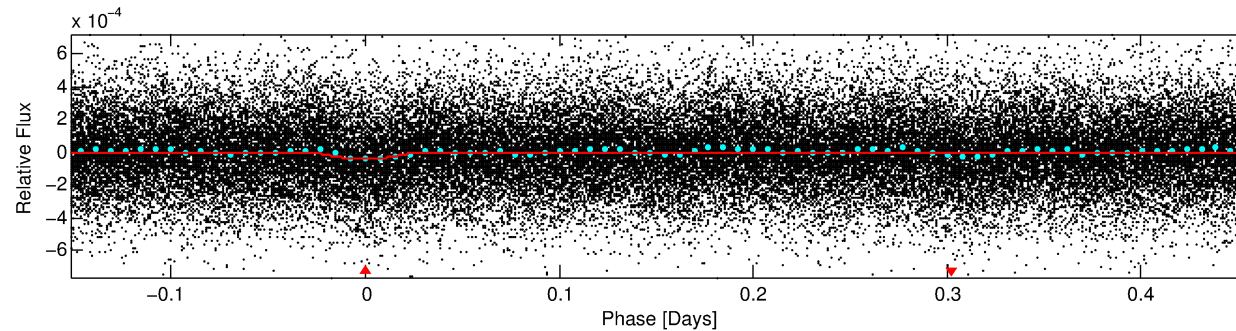
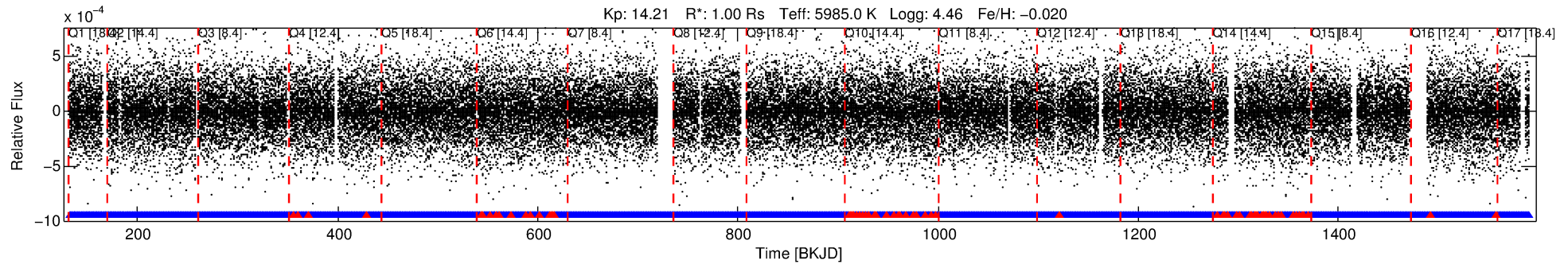
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009537008-01

No Significant Match Found

# DV One-Page Summary

KIC: 9537008 Candidate: 1 of 1 Period: 0.608 d



## DV Fit Results:

Period = 0.60796 [0.00001] d  
Epoch = 131.9600 [0.0015] BKJD  
Rp/R\* = 0.0072 [0.0020]  
a/R\* = 2.46 [2.91]  
b = 0.90 [0.30]  
Seff = 5662.74 [2311.62]  
Teff = 2212 [226] K  
Rp = 0.78 [0.33] Re  
a = 0.0142 [0.0038] AU  
Ag = 3.98 [2.80] [1.06σ]  
Teffp = 4830 [730] K [3.43σ]

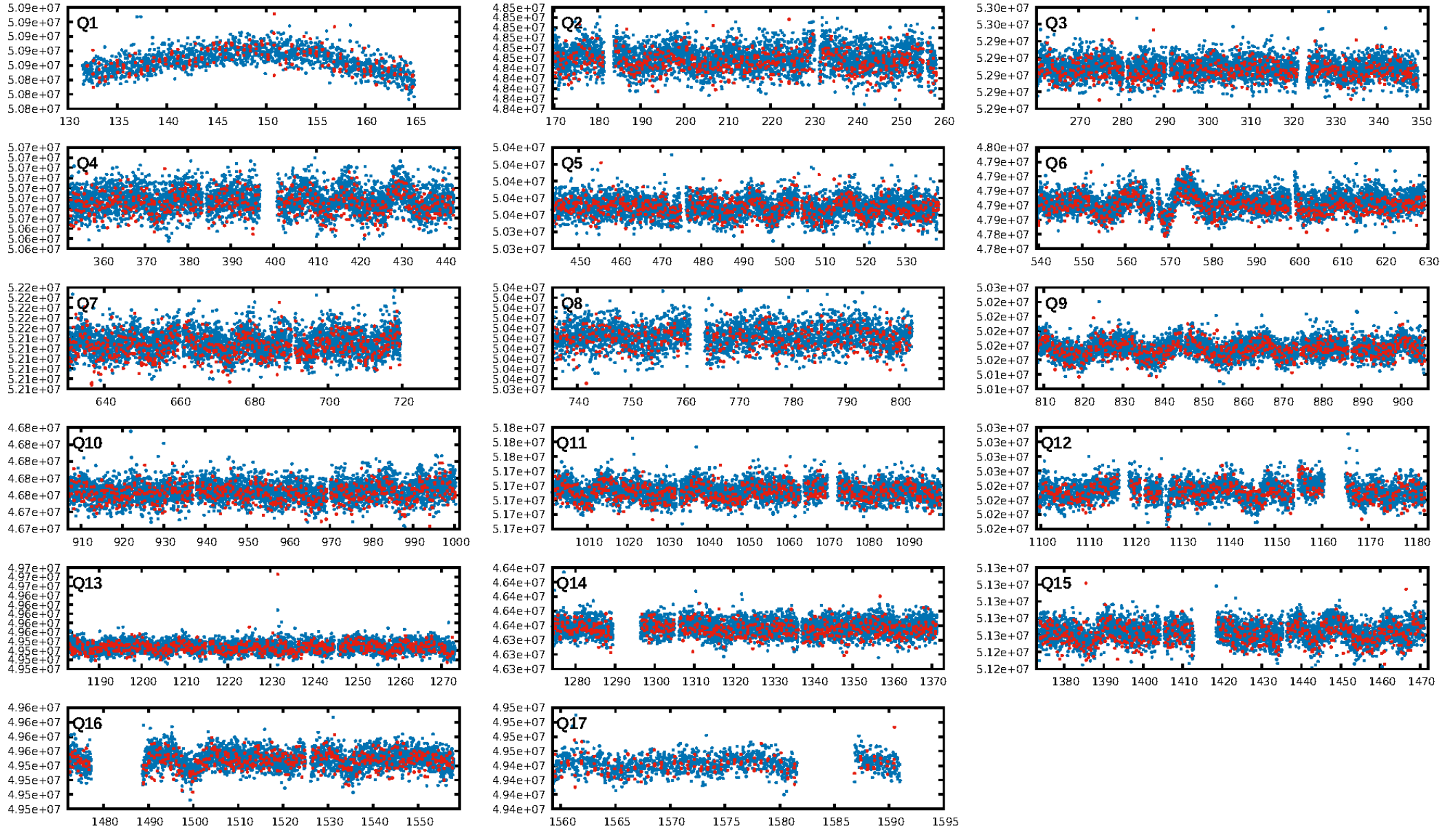
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 9.10e-15  
RollingBand-fgt: 0.97 [2017/2089]  
GhostDiagnostic-chr: -0.1535  
Centroid-sig: 0.0%  
Centroid-so: 40.183 arcsec [29.07σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [17/17]

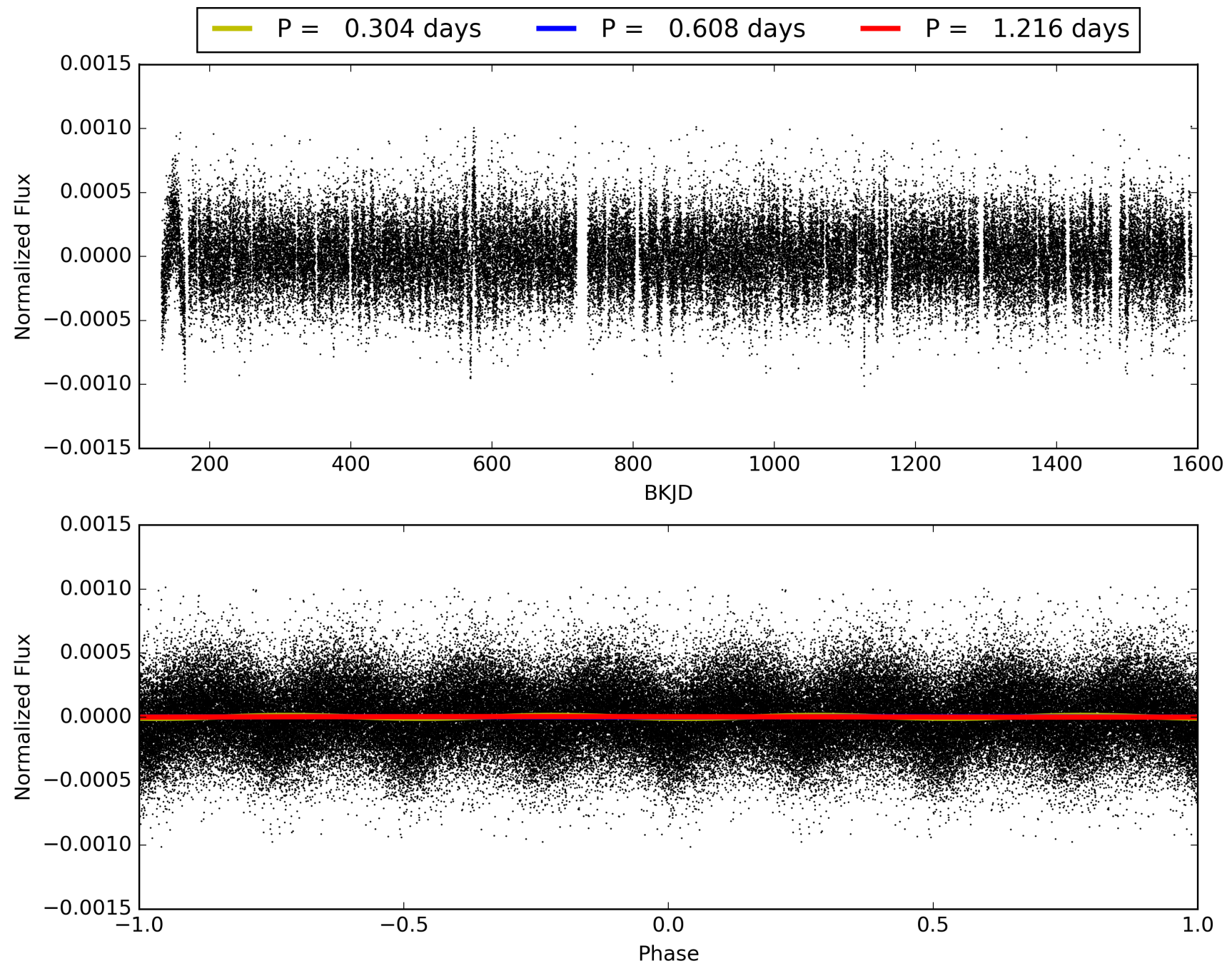
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:01:27 Z

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

# TCE 009537008-01, PDC Light Curves



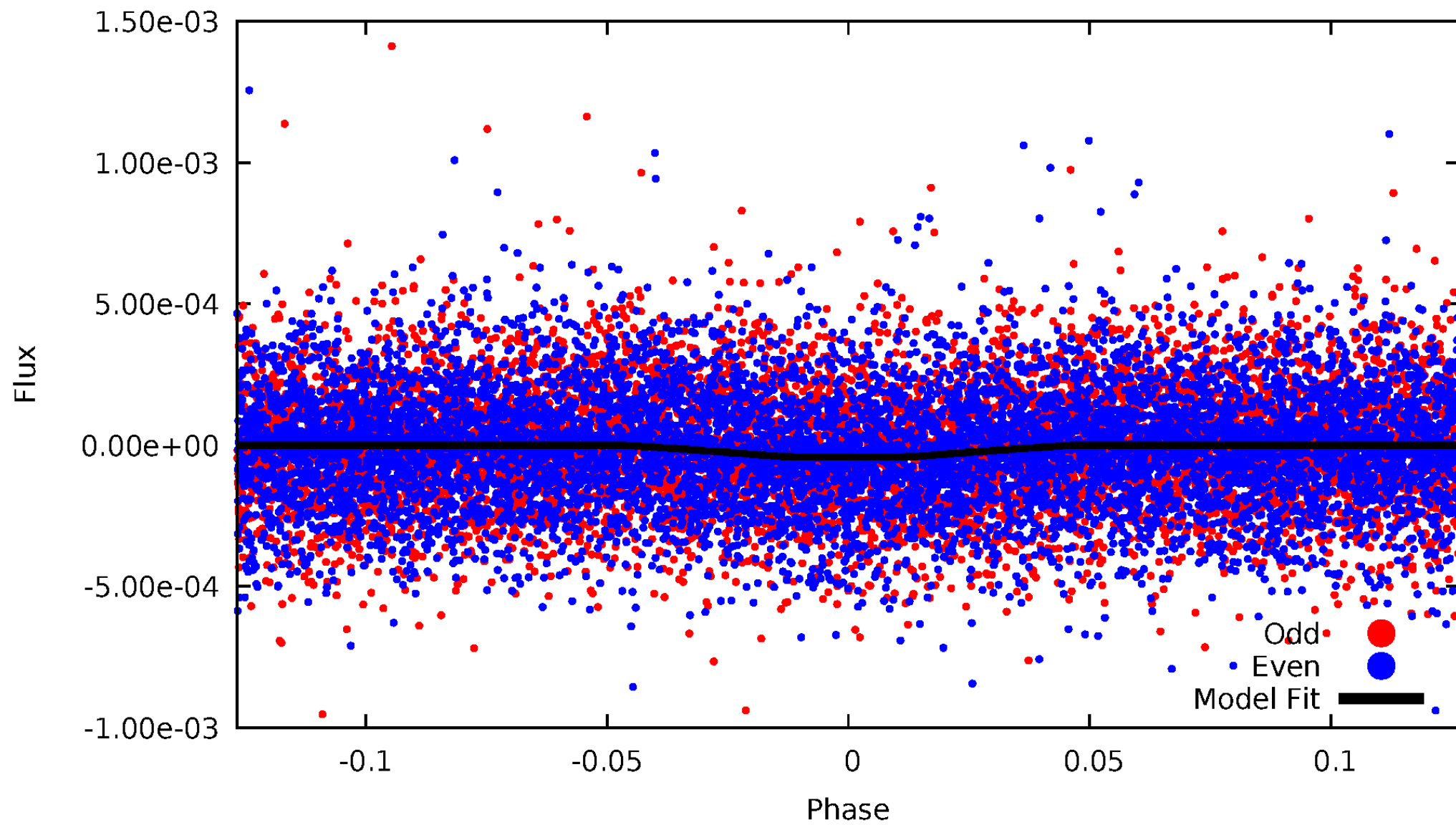
TCE 009537008-01





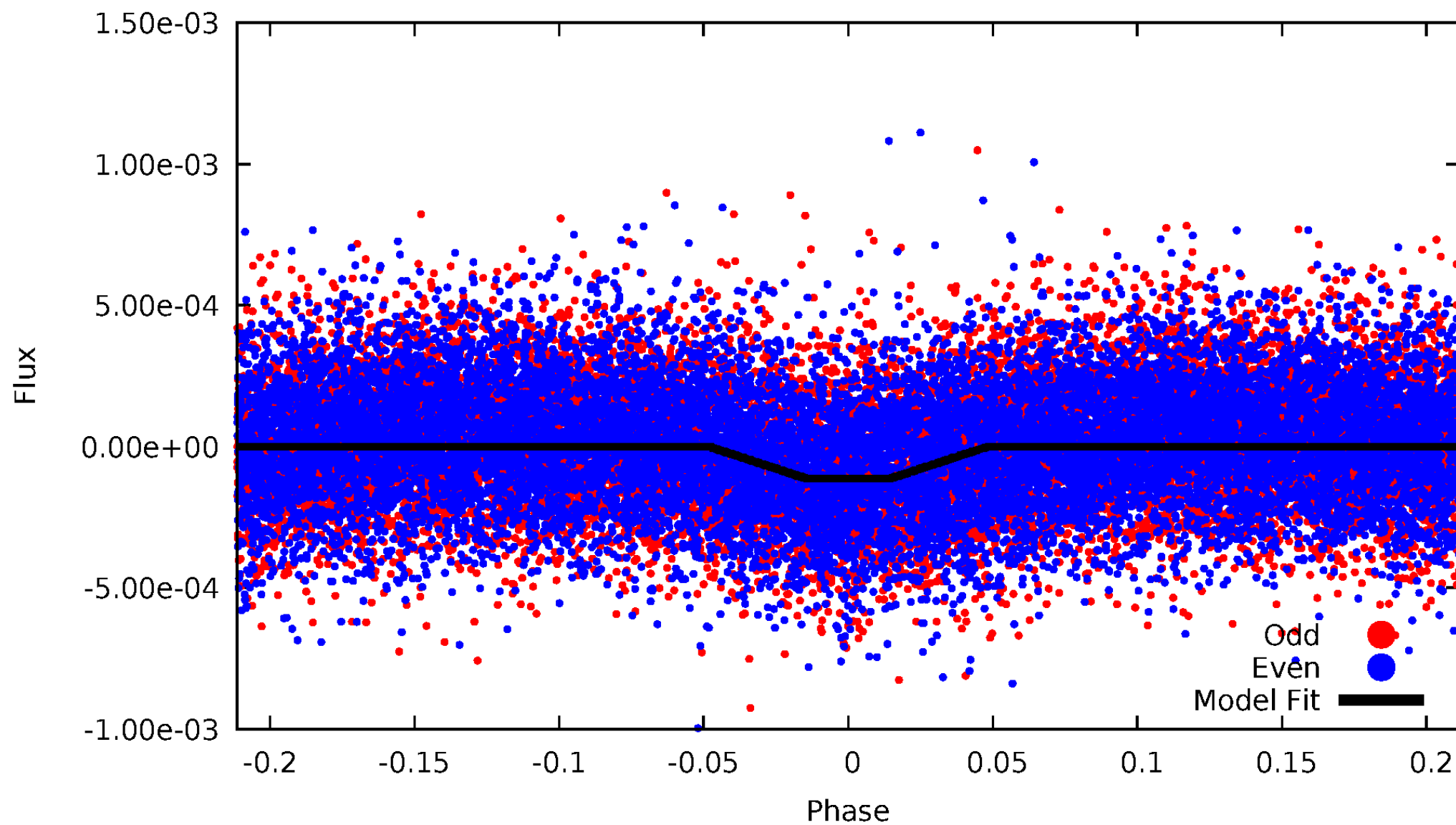
# DV Odd/Even

TCE 009537008-01



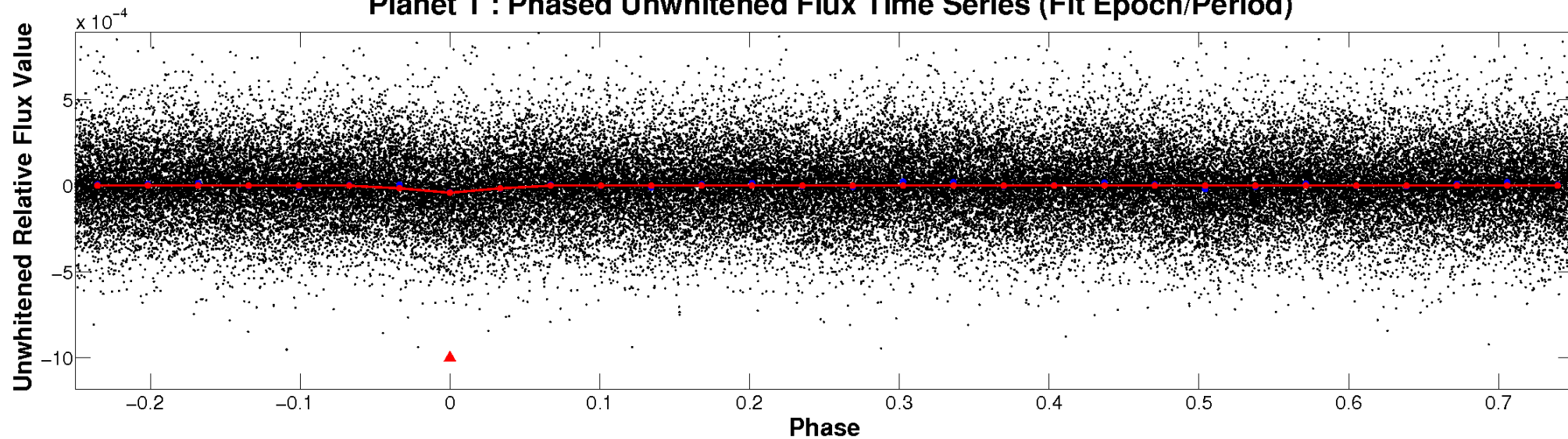
# ALT Odd/Even

TCE 009537008-01

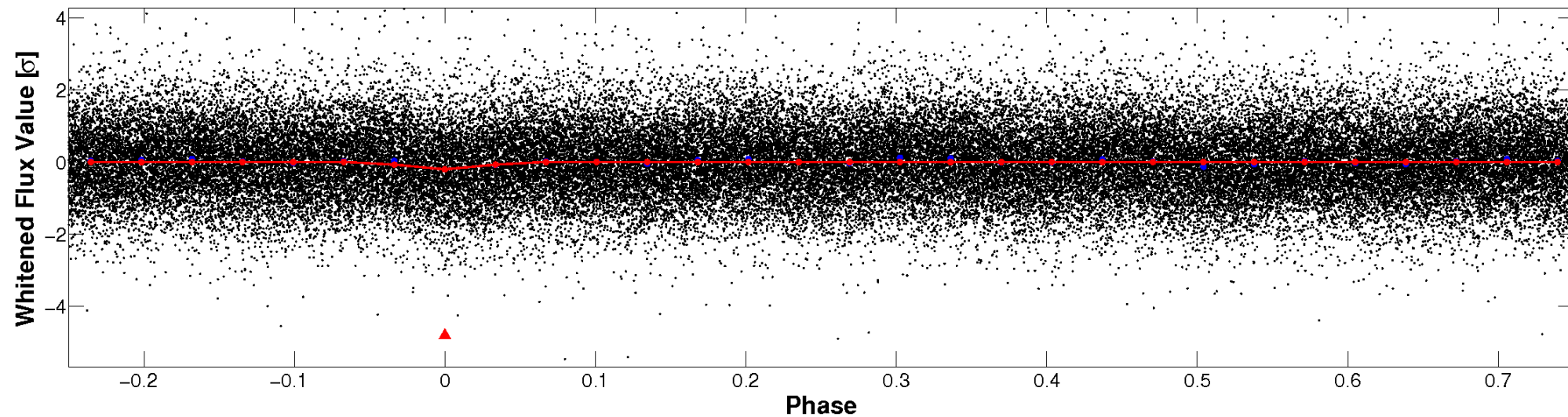


# Non-Whitened Vs. Whitened Light Curve

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

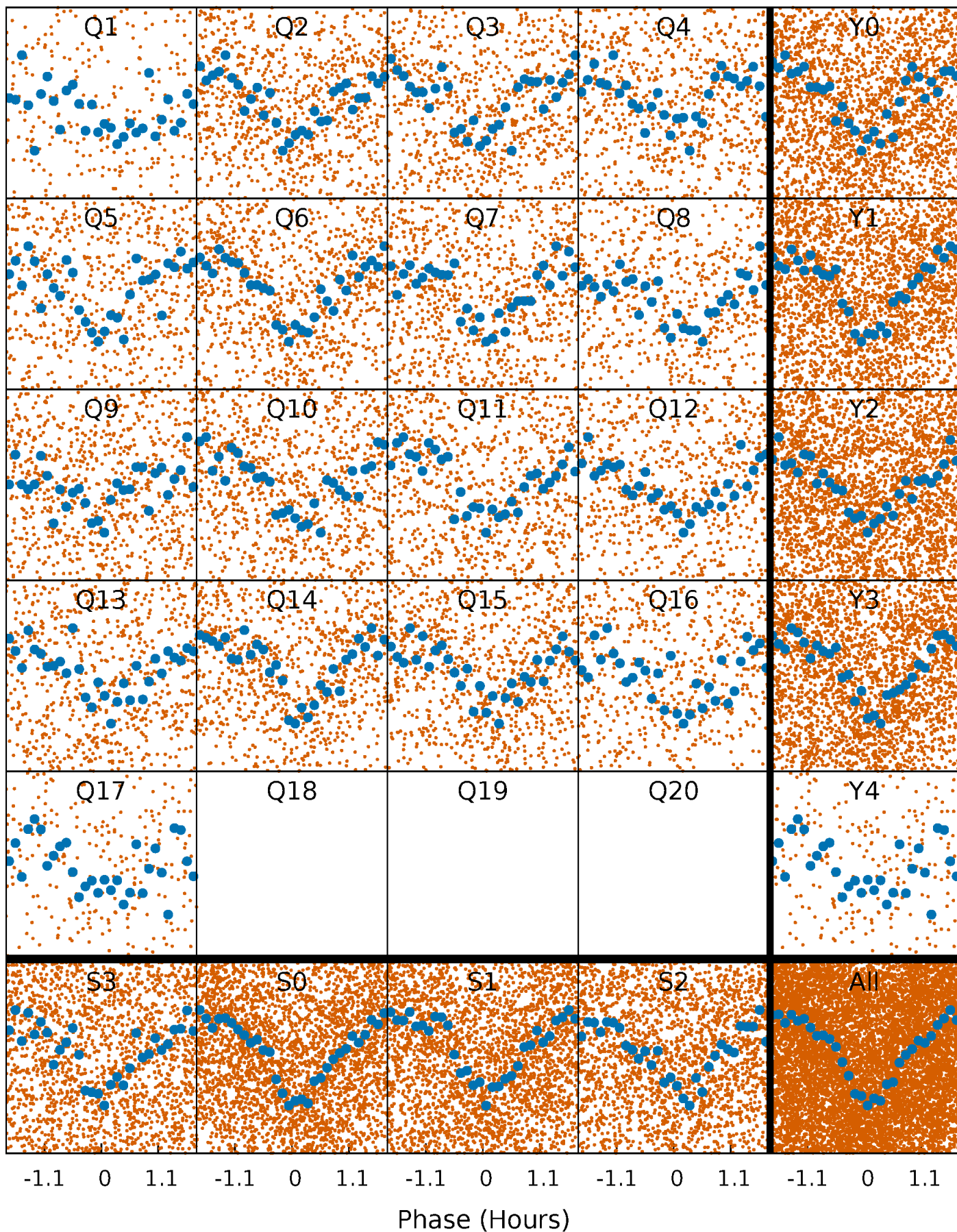


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

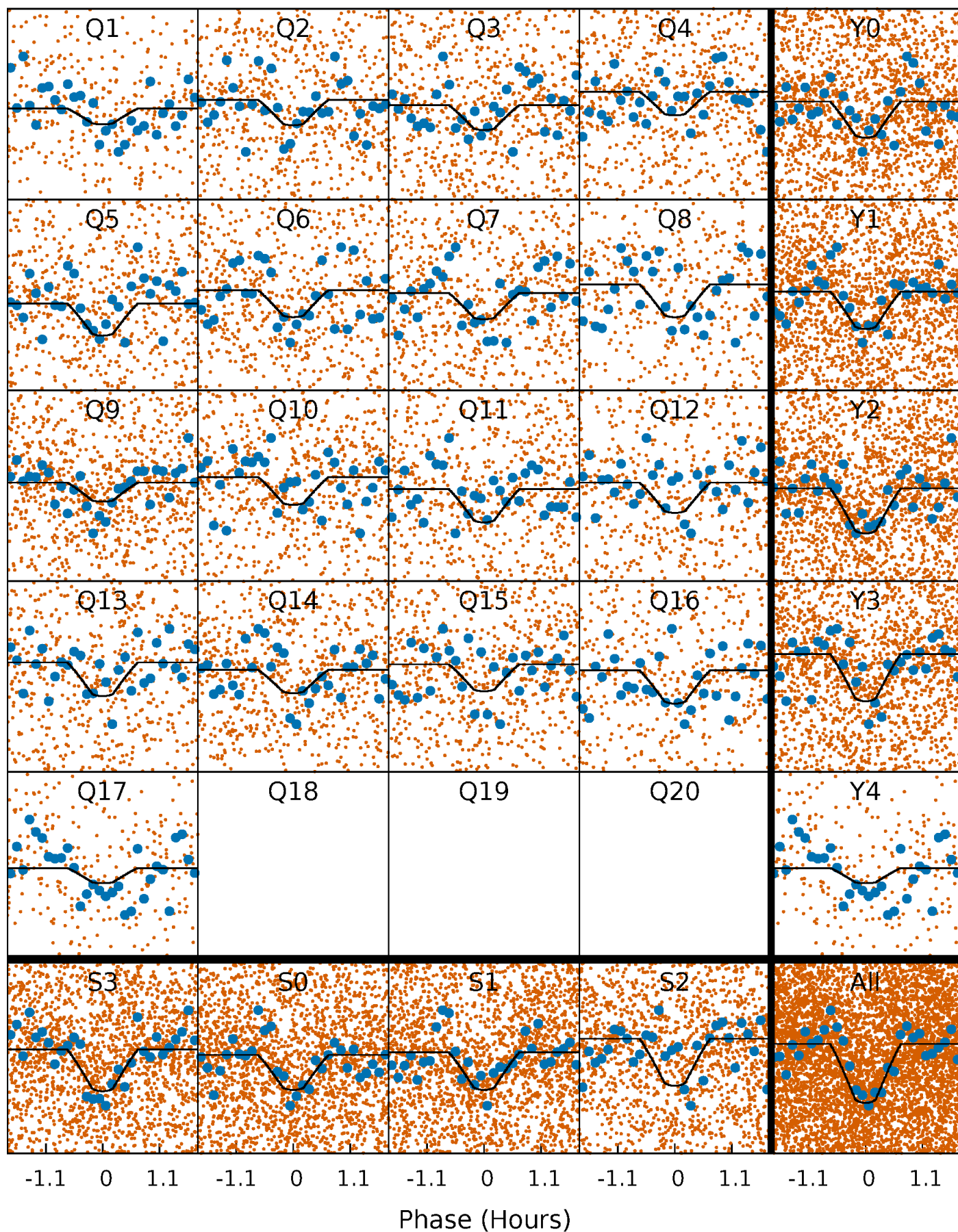
TCE 009537008-01   P= 0.607962 Days    $T_0=131.959994$  (BKJD)





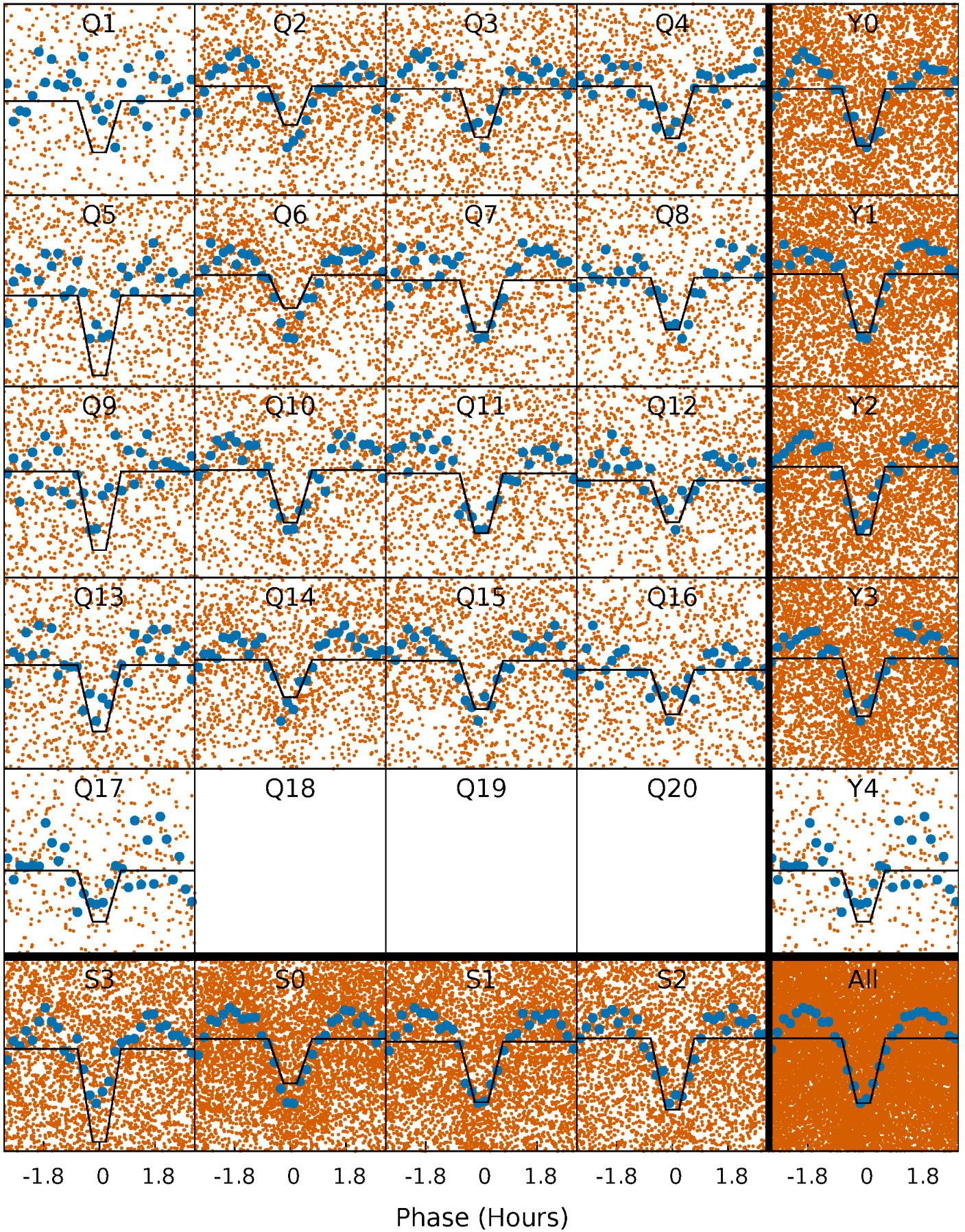
# DV Quarter-Phased Transit Curves

TCE 009537008-01   P= 0.607962 Days    $T_0=131.959994$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 009537008-01 P= 0.607969 Days  $T_0=131.956796$  (BKJD)

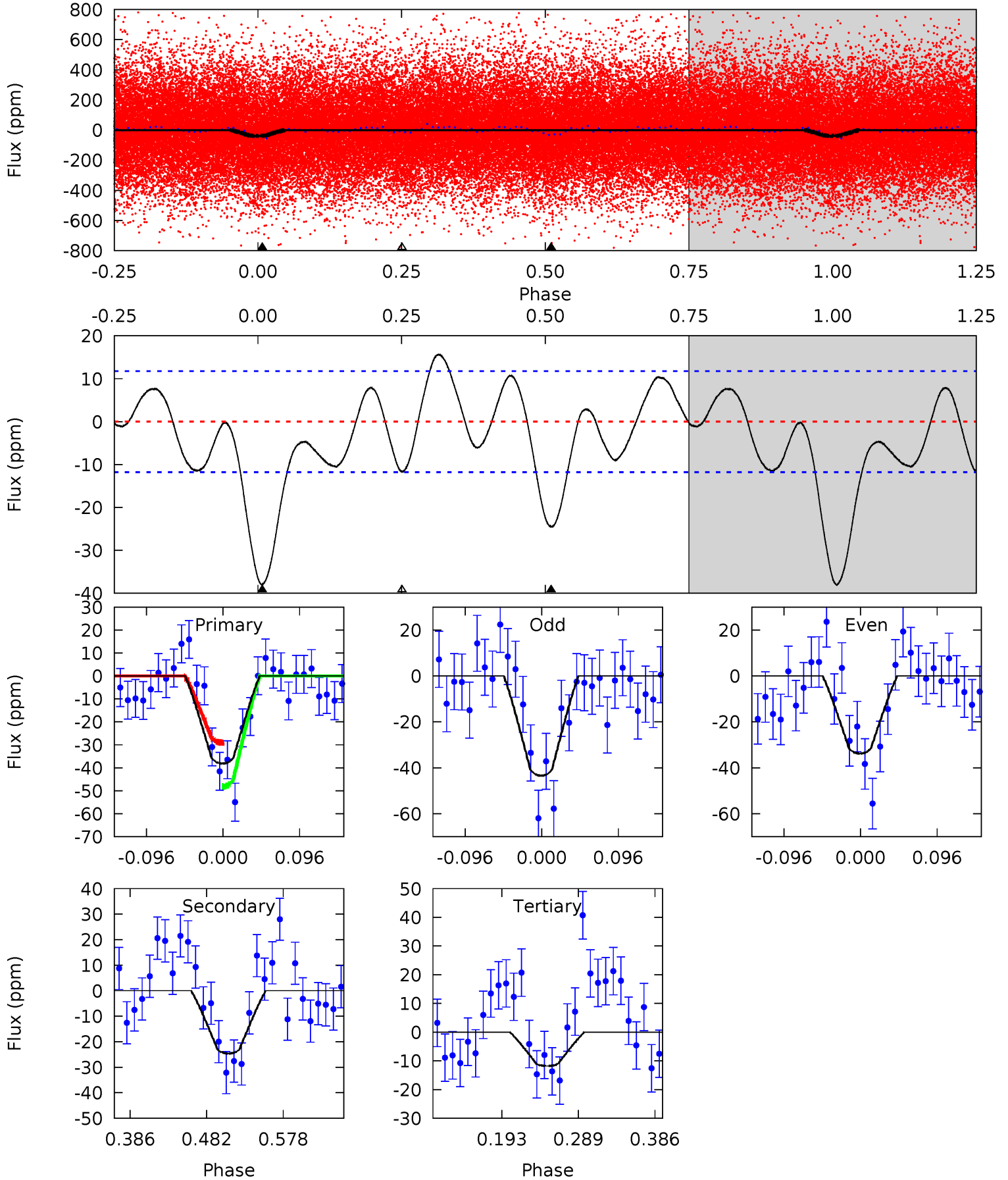




# DV Model-Shift Uniqueness Test

009537008-01, P = 0.607962 Days, E = 131.352032 Days

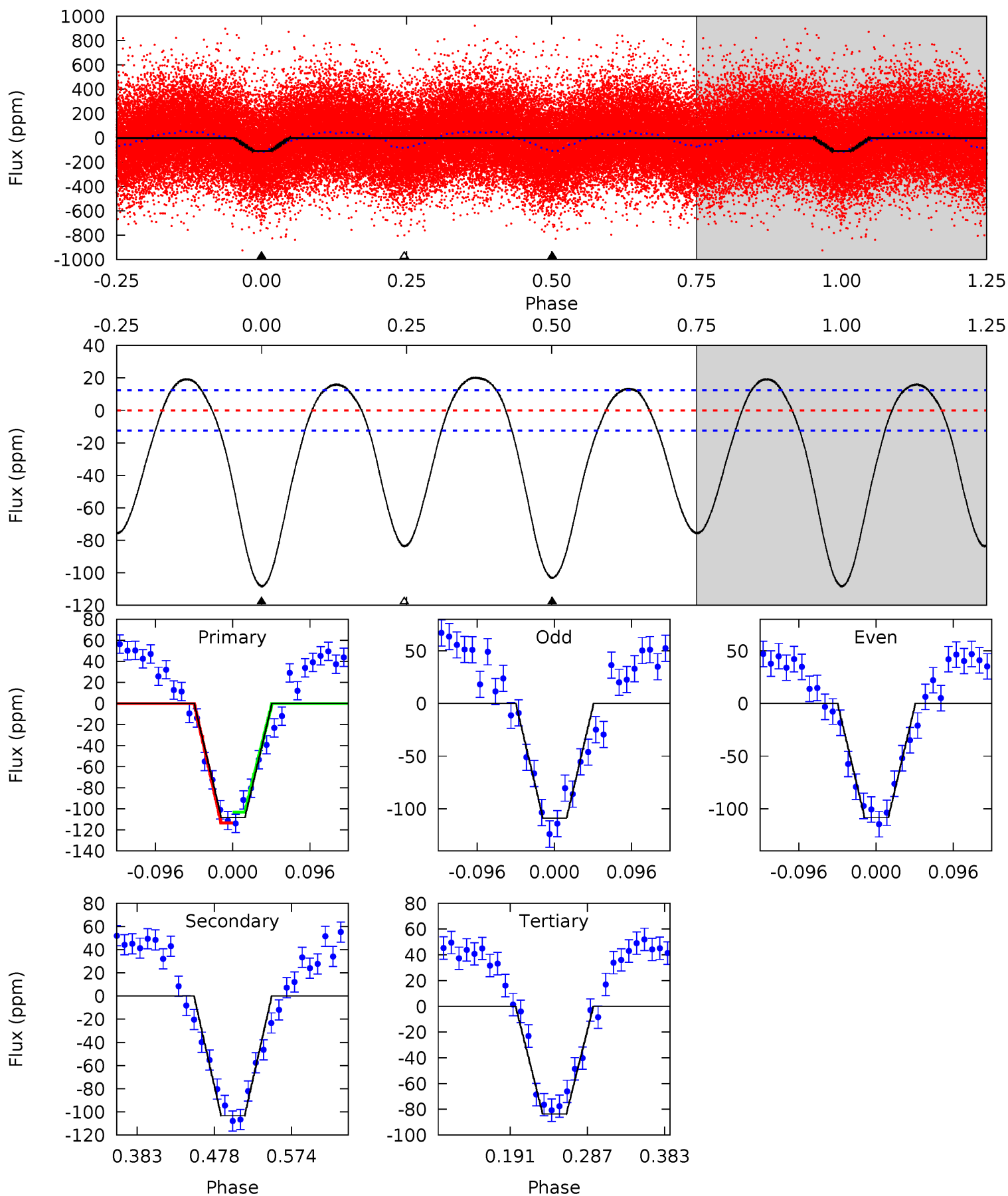
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	9.55	4.57	0	4.57	1.66	2.90	10.2	14.8	4.98	9.55	1.88	1.02	0.29	3.72



# Alt Model-Shift Uniqueness Test

009537008-01, P = 0.607969 Days, E = 131.348827 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
39.9	38.0	30.8	0	4.57	1.67	12.6	9.09	39.9	7.20	38.0	0.06	1.00	0.16	1.90





### Stellar Parameters For KIC 009537008

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5985^{+181}_{-199}$	$4.456^{+0.056}_{-0.210}$	$-0.020^{+0.250}_{-0.300}$	$0.999^{+0.318}_{-0.106}$	$1.037^{+0.147}_{-0.134}$	$1.466^{+0.435}_{-0.795}$
	+3%/-3%	+1%/-5%	+1250%/-1500%	+32%/-11%	+14%/-13%	+30%/-54%
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 009537008-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-25 \pm 3$	$0.81^{+0.26}_{-0.24}$	$3150^{+231}_{-157}$	$4985^{+795}_{-559}$	$3.980^{+4.057}_{-1.626}$
Alt.	$-103 \pm 3$	$1.21^{+0.28}_{-0.24}$	$3156^{+226}_{-154}$	$5804^{+647}_{-520}$	$7.617^{+4.200}_{-2.570}$

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

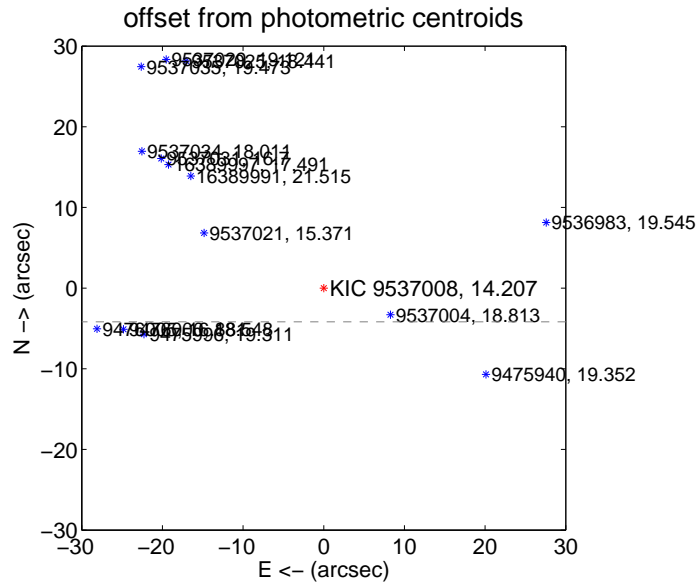
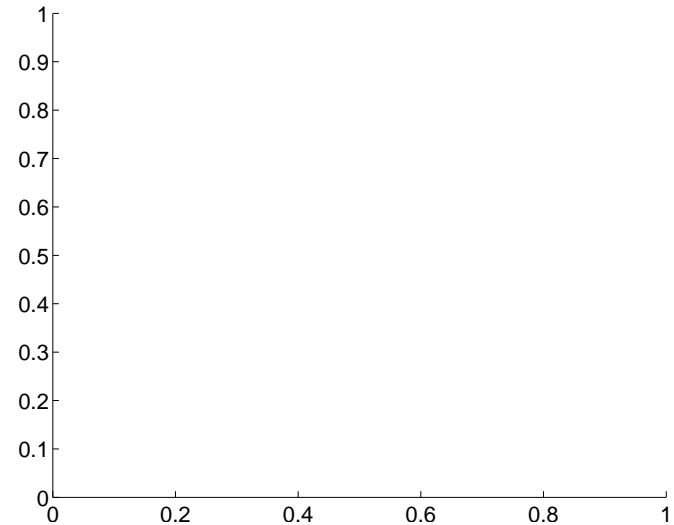
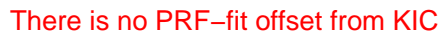
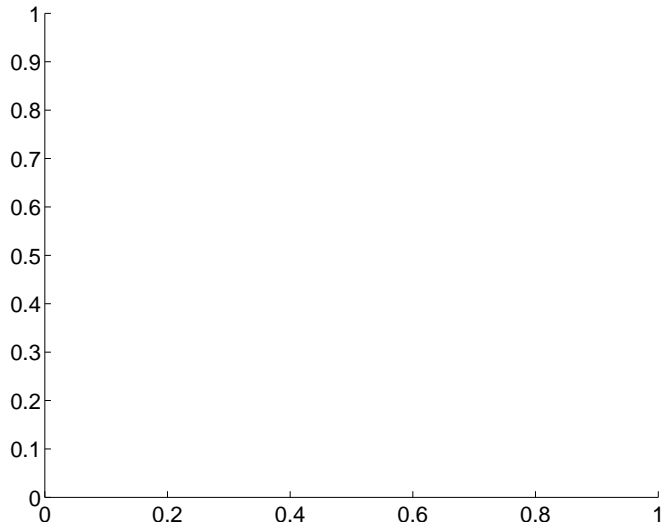
## DV Centroid Data

Supplemental centroid analysis for 009537008-01. Kepler magnitude: 14.21. Transit SNR 10.67

There are 0 quarters with good PRF difference image offsets

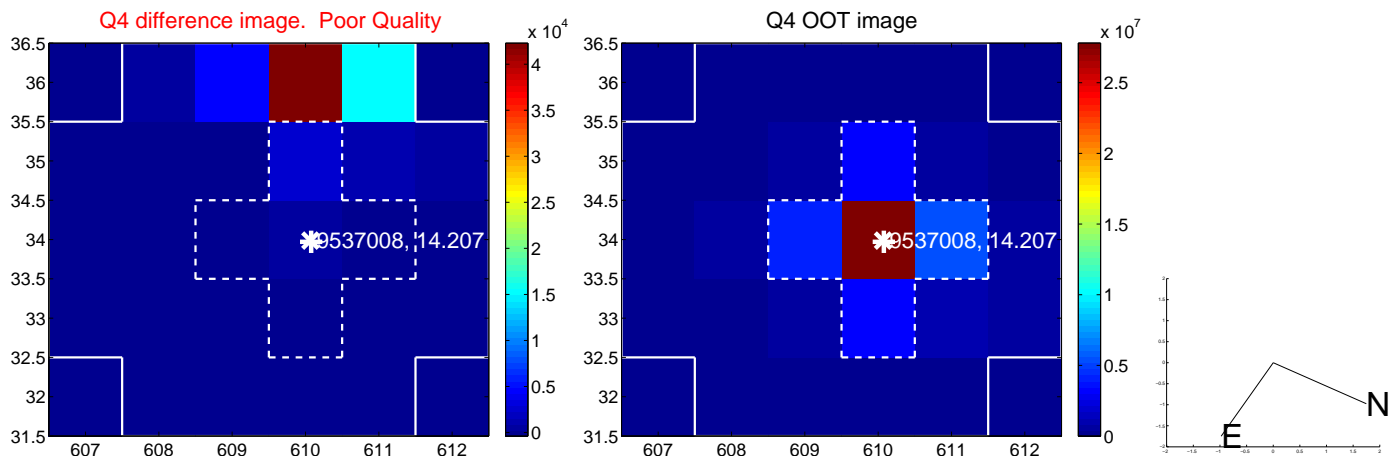
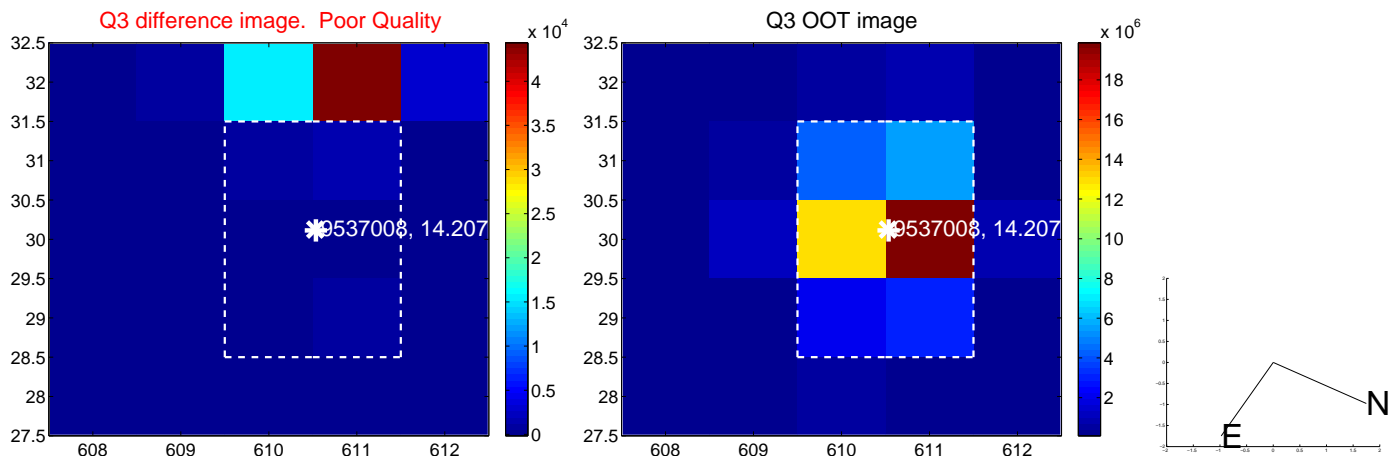
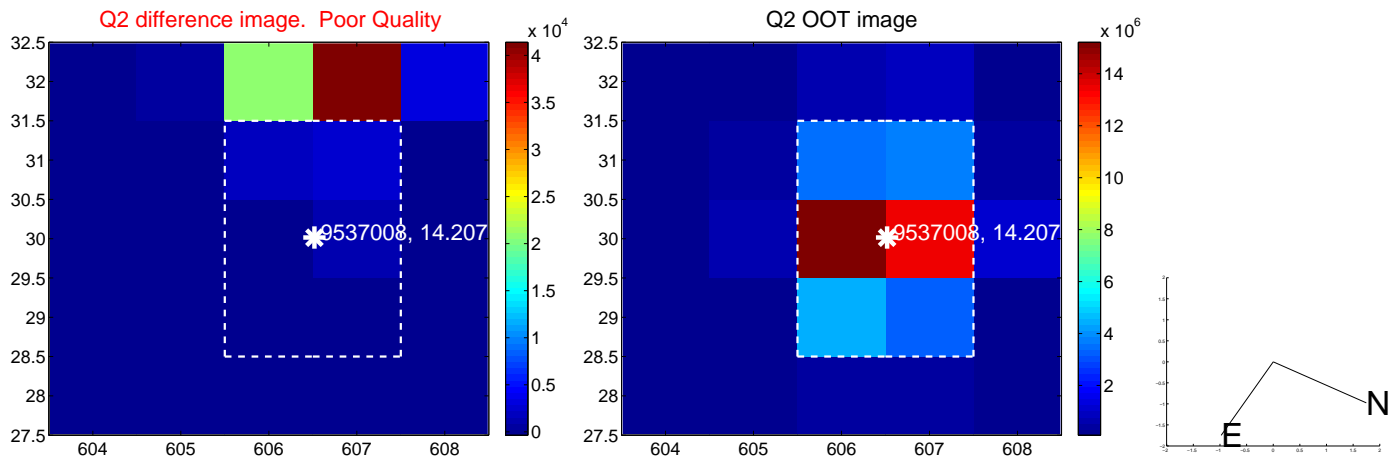
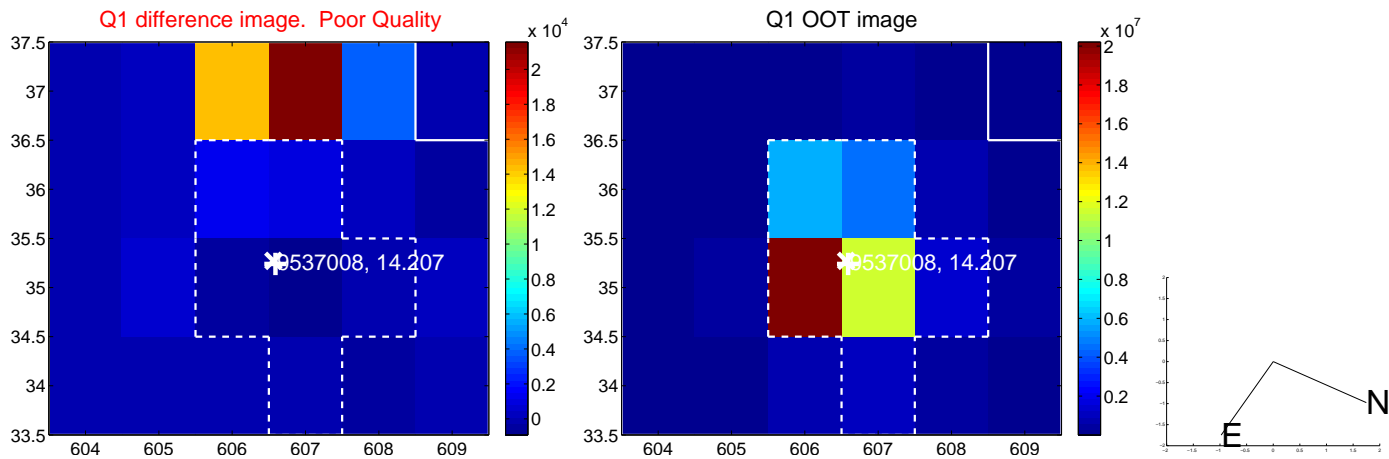
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	<b>40.18 <math>\pm</math> 1.38</b>	<b>29.07</b>	-39.97 $\pm$ 1.38	-4.18 $\pm$ 1.35

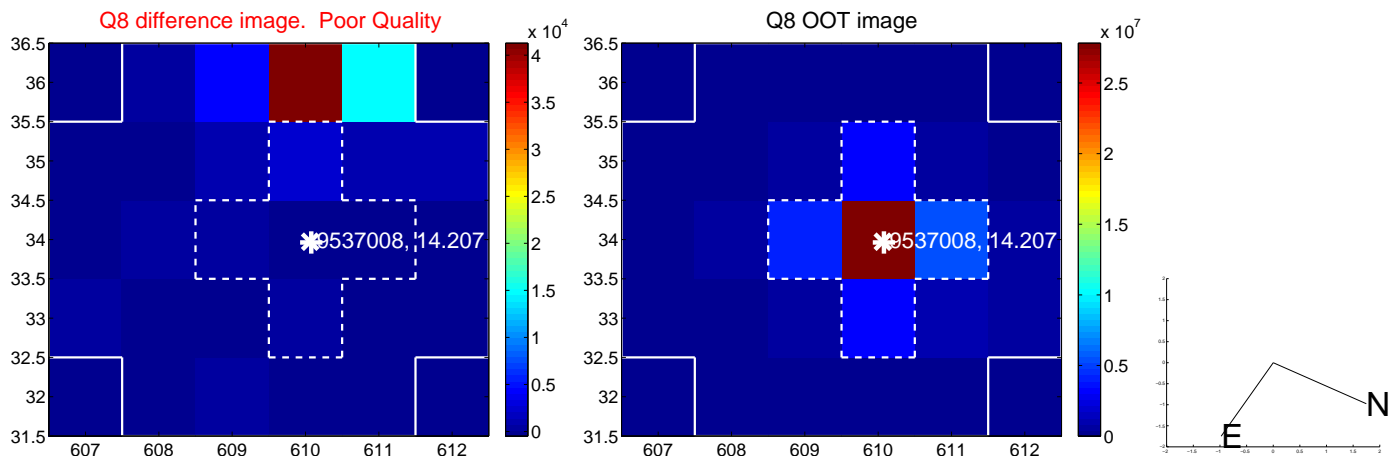
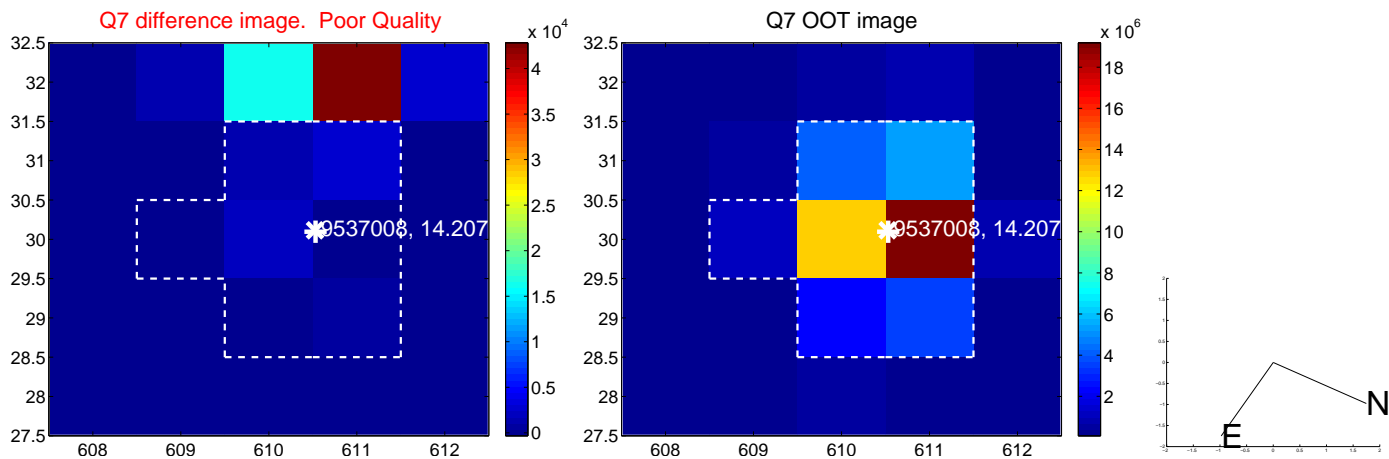
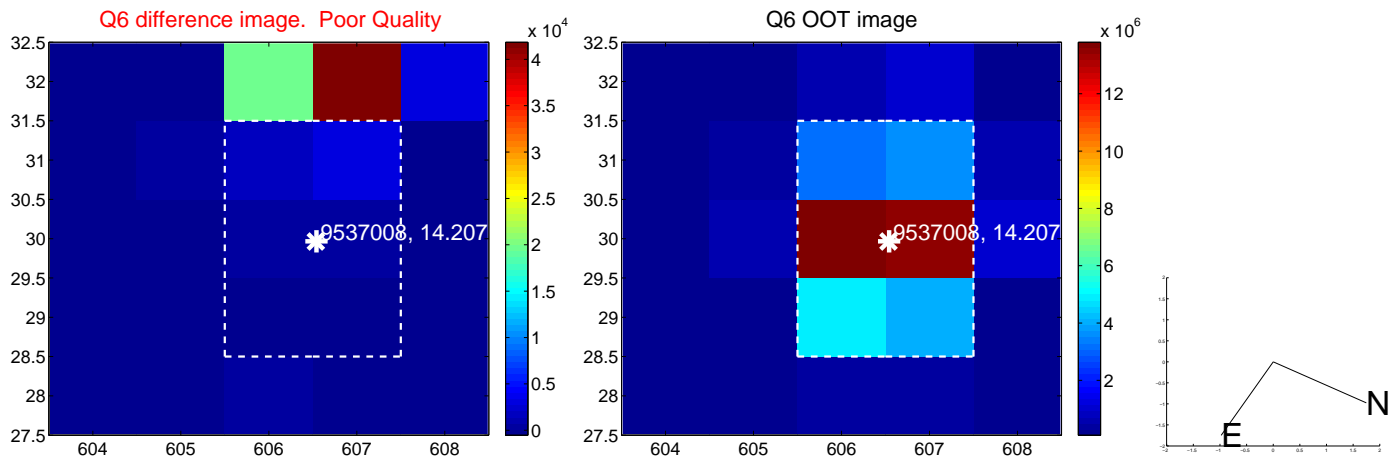
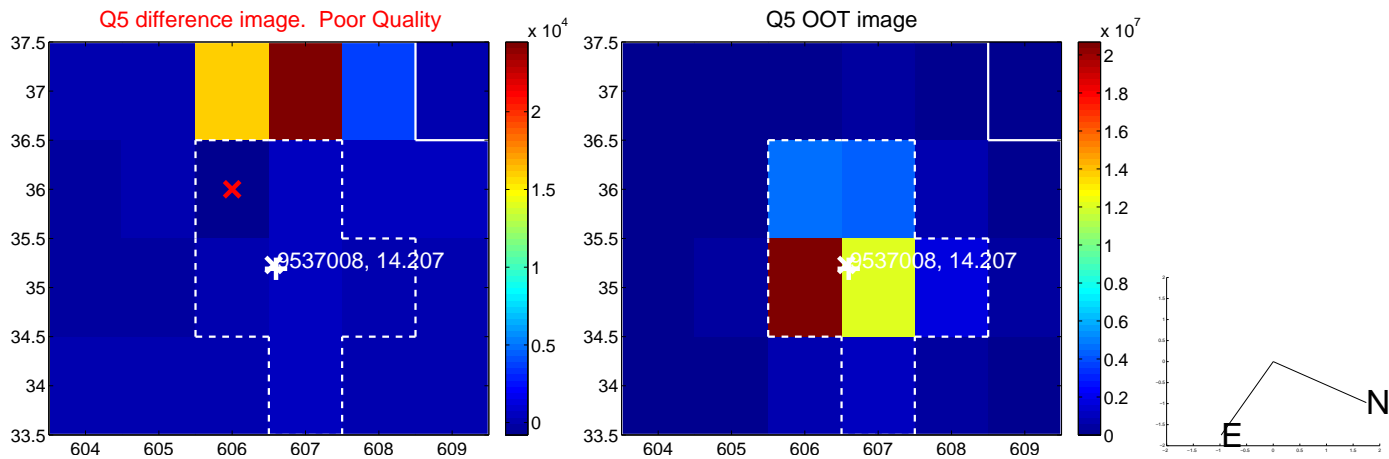


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

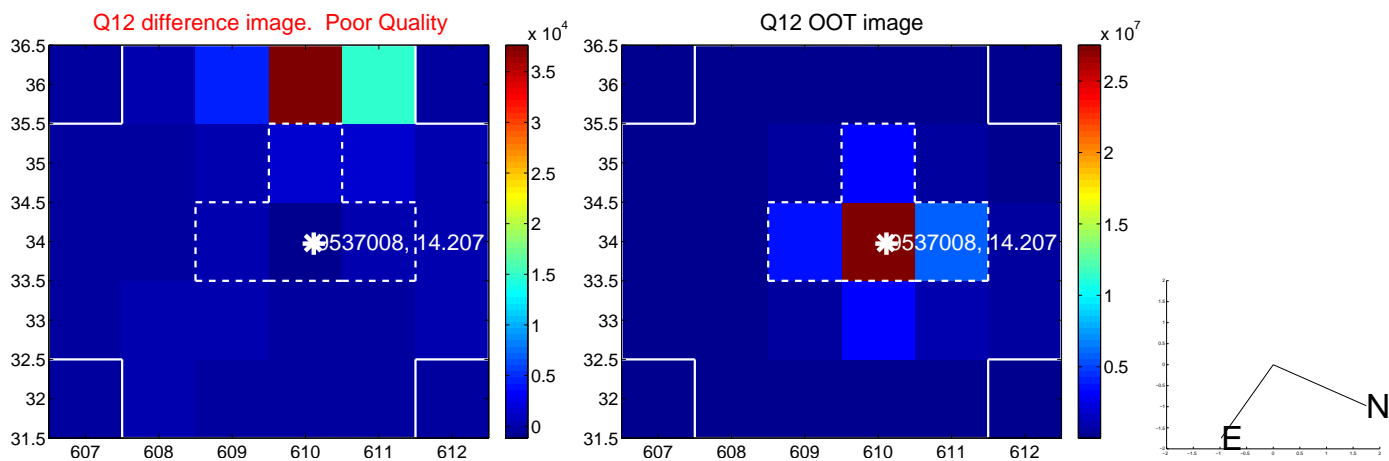
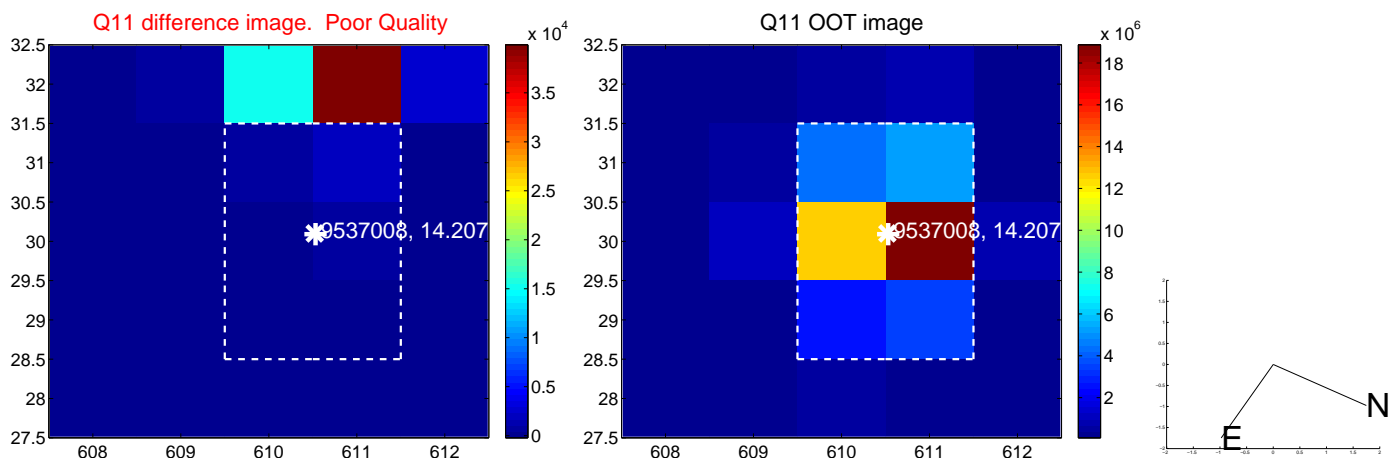
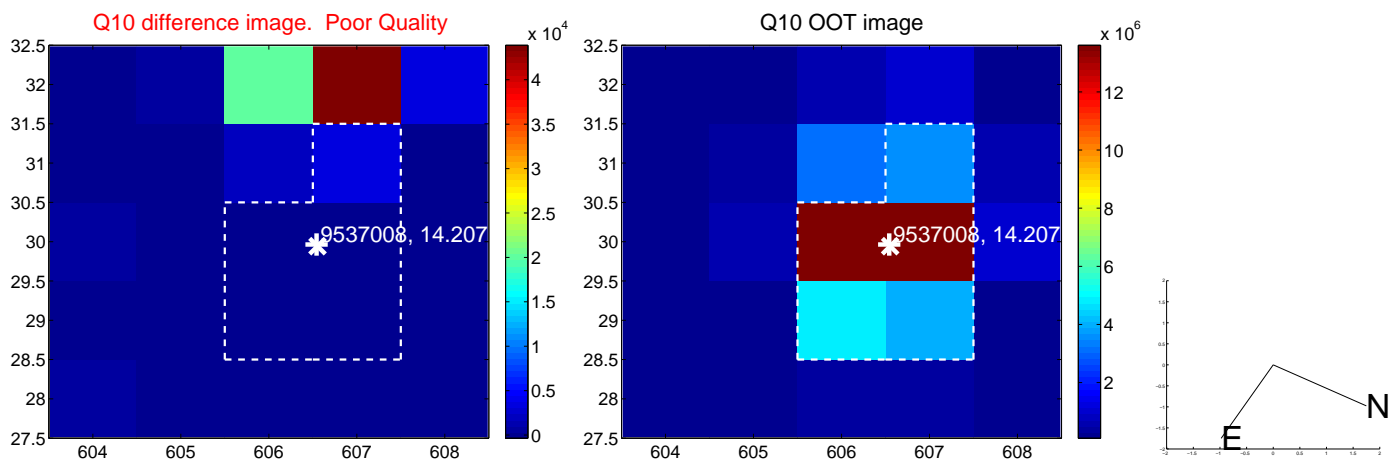
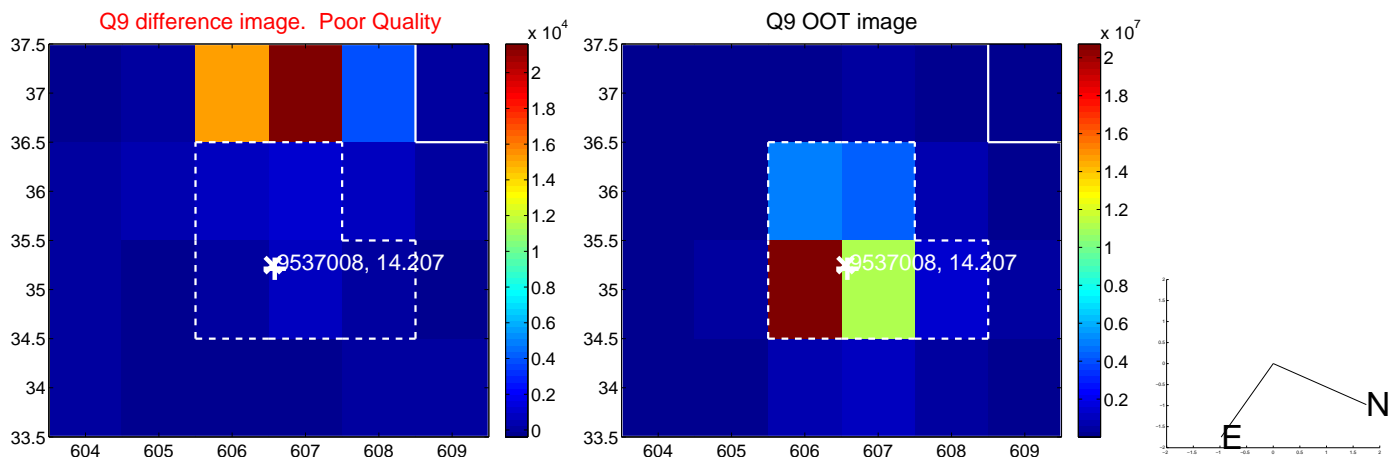


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

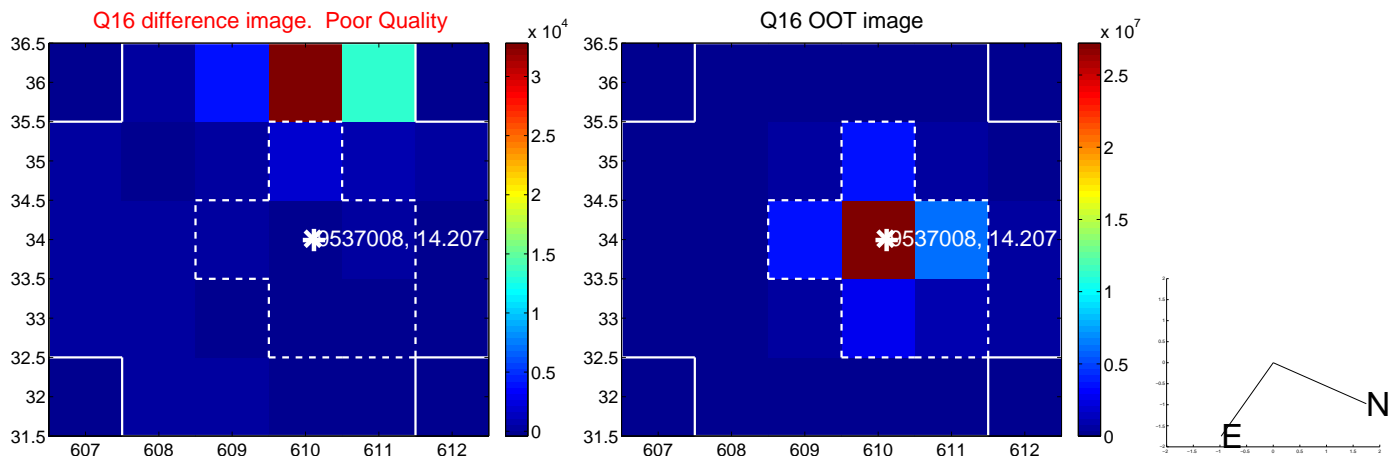
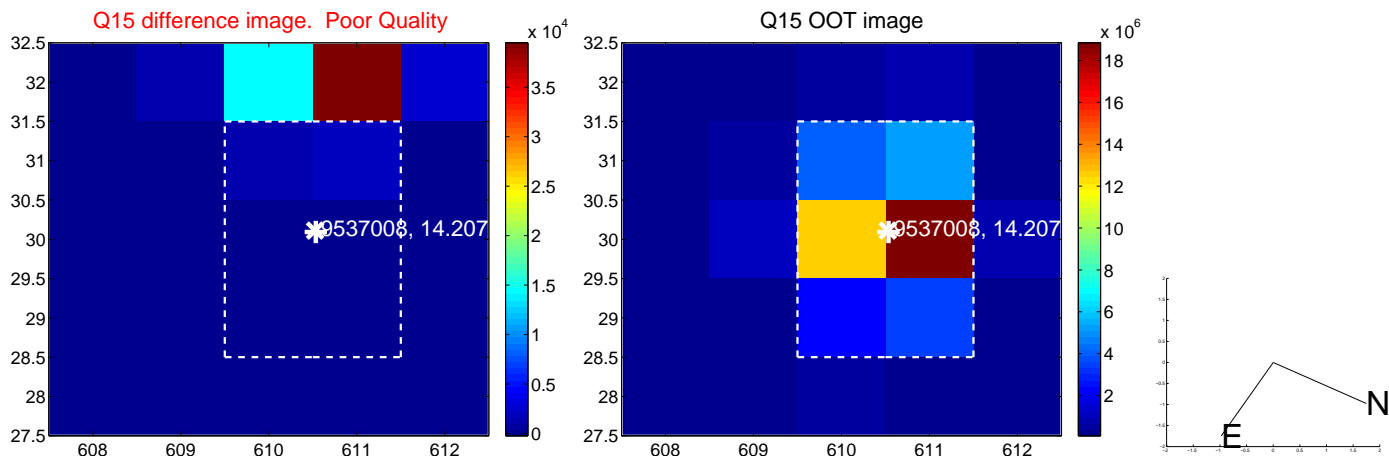
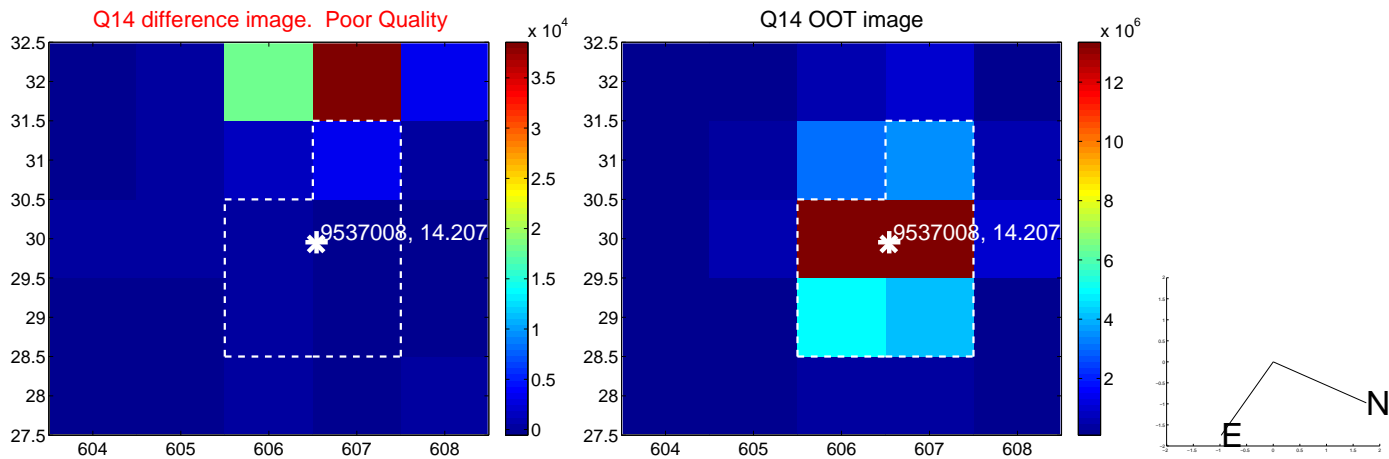
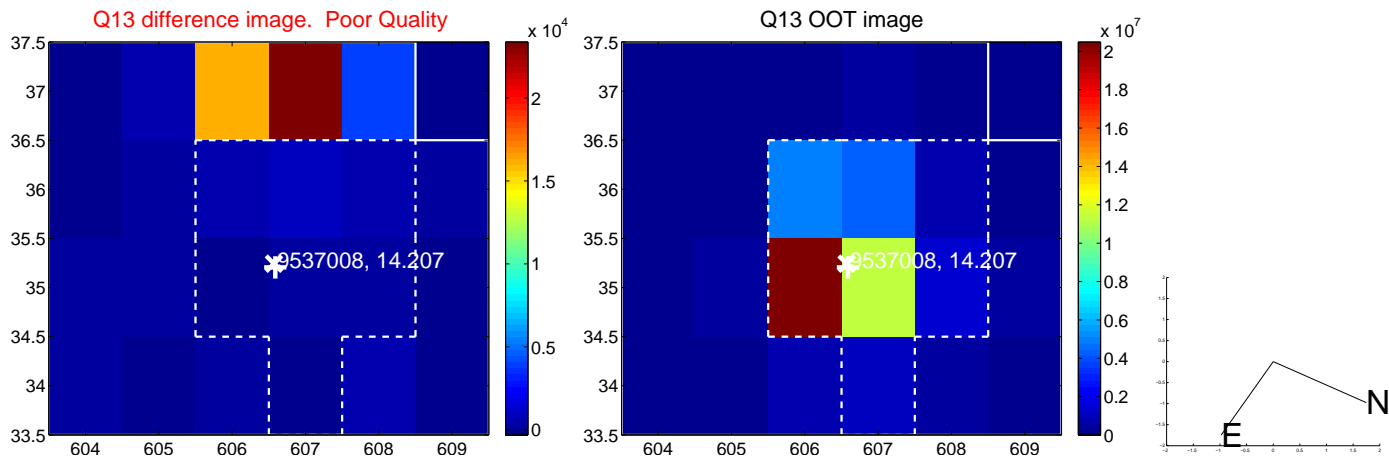




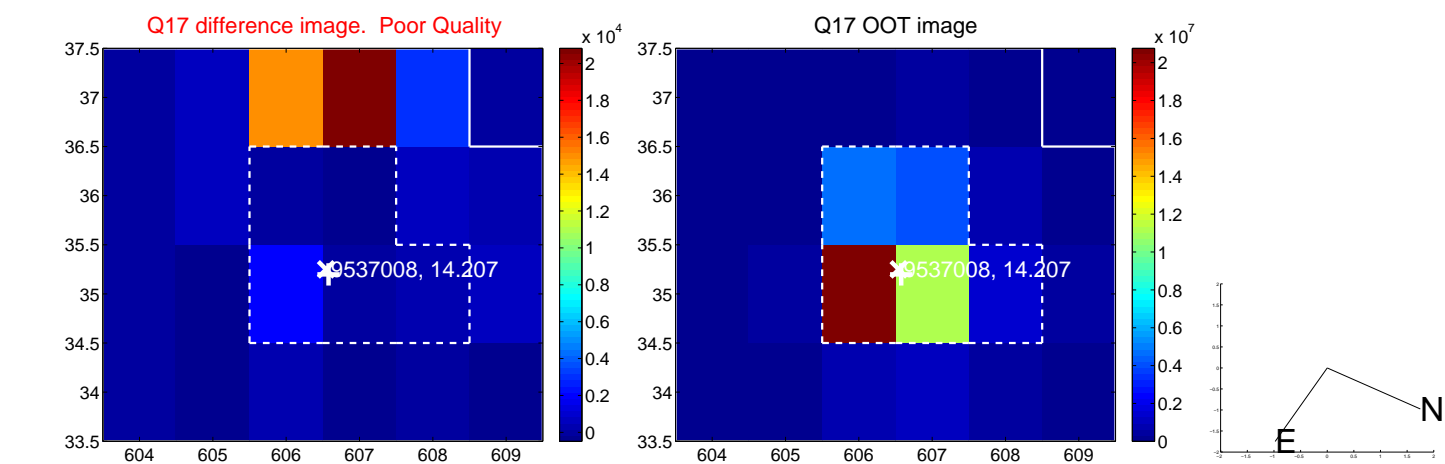
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



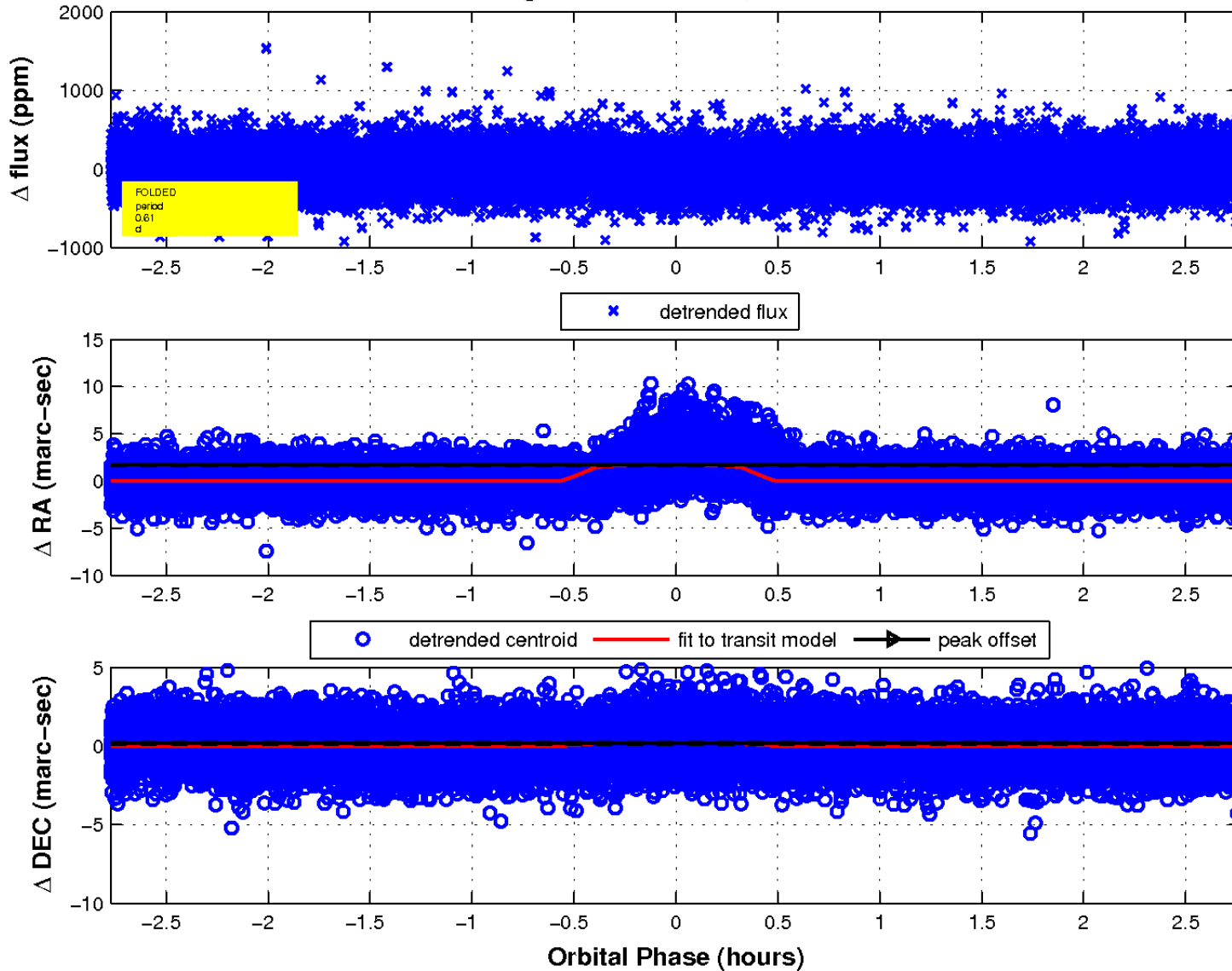
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

