

# KIC 003437557

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003437557-01	OBS	No	9.358090	133.960473	16.4	39.219	9.1	8.9	1.75	6576	0.82	638.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003437557-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS

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

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

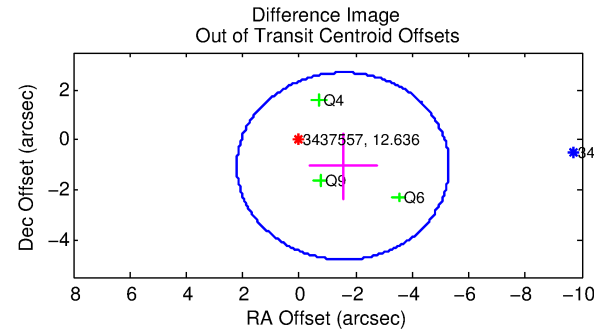
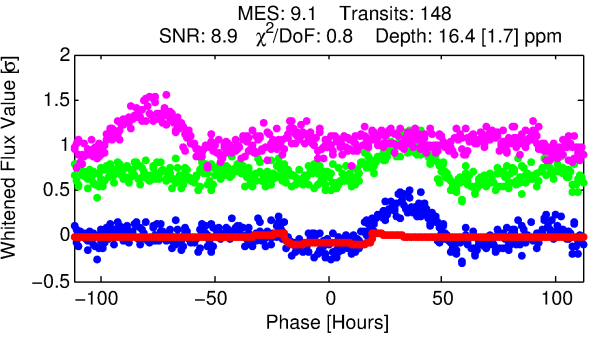
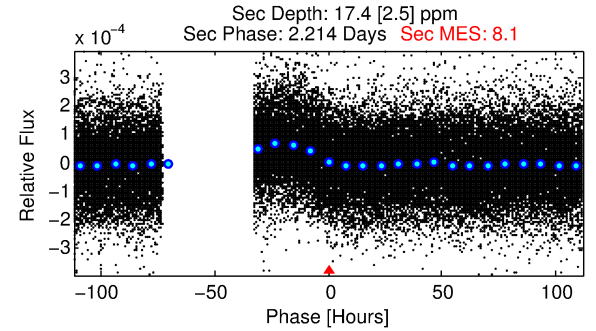
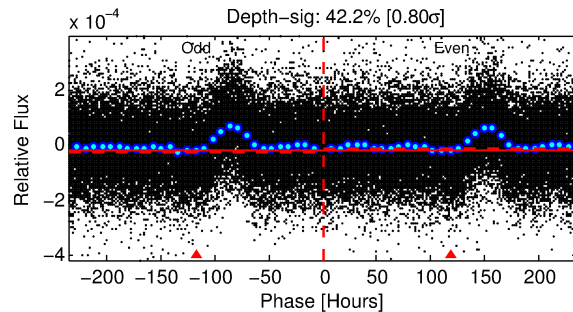
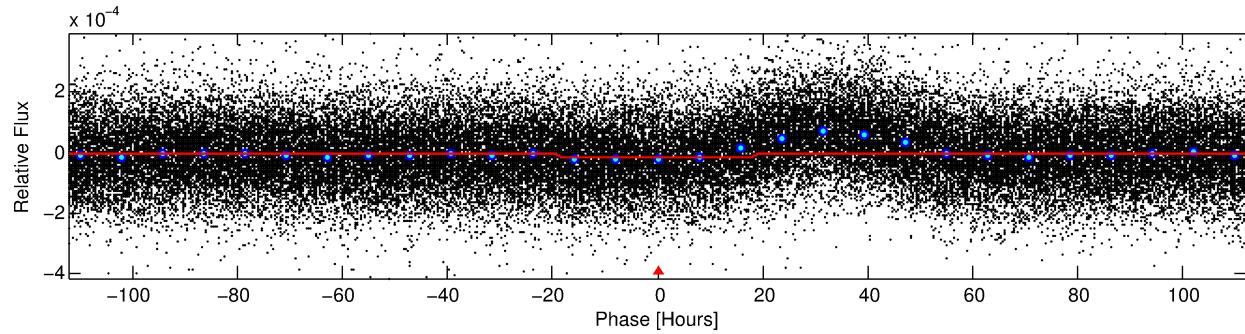
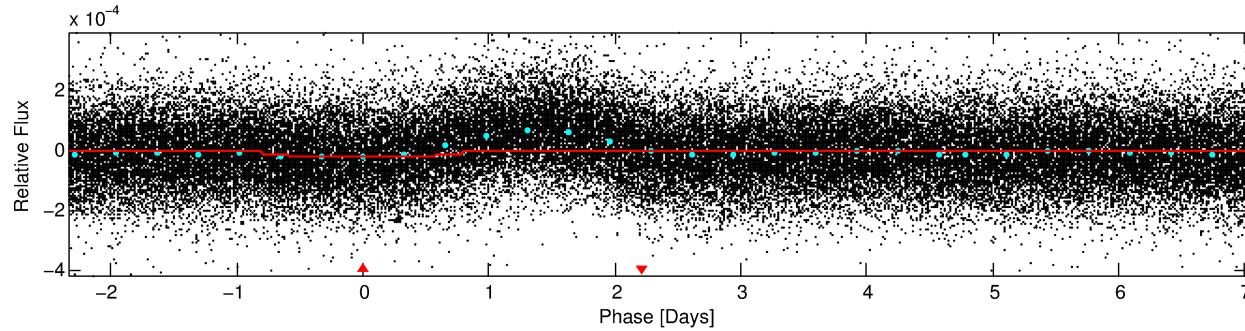
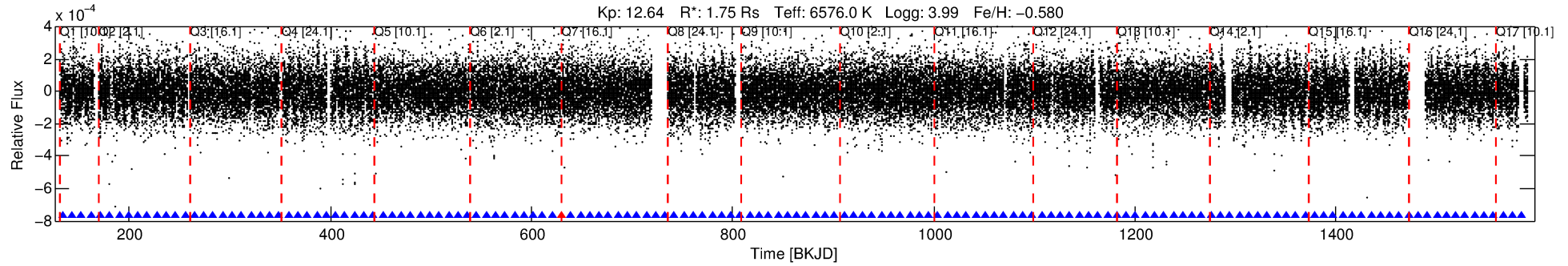
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003437557-01

No Significant Match Found

# DV One-Page Summary

KIC: 3437557 Candidate: 1 of 1 Period: 9.358 d



## DV Fit Results:

Period = 9.35809 [0.00037] d  
Epoch = 133.9605 [0.0314] BKJD  
Rp/R\* = 0.0043 [0.0004]  
a/R\* = 1.25 [0.19]  
b = 0.90 [0.09]  
Seff = 638.30 [313.66]  
Teq = 1282 [157] K  
Rp = 0.82 [0.26] Re  
a = 0.0894 [0.0265] AU  
Ag = 114.08 [60.32] [1.87 $\sigma$ ]  
Teffp = 6476 [421] K [11.55 $\sigma$ ]

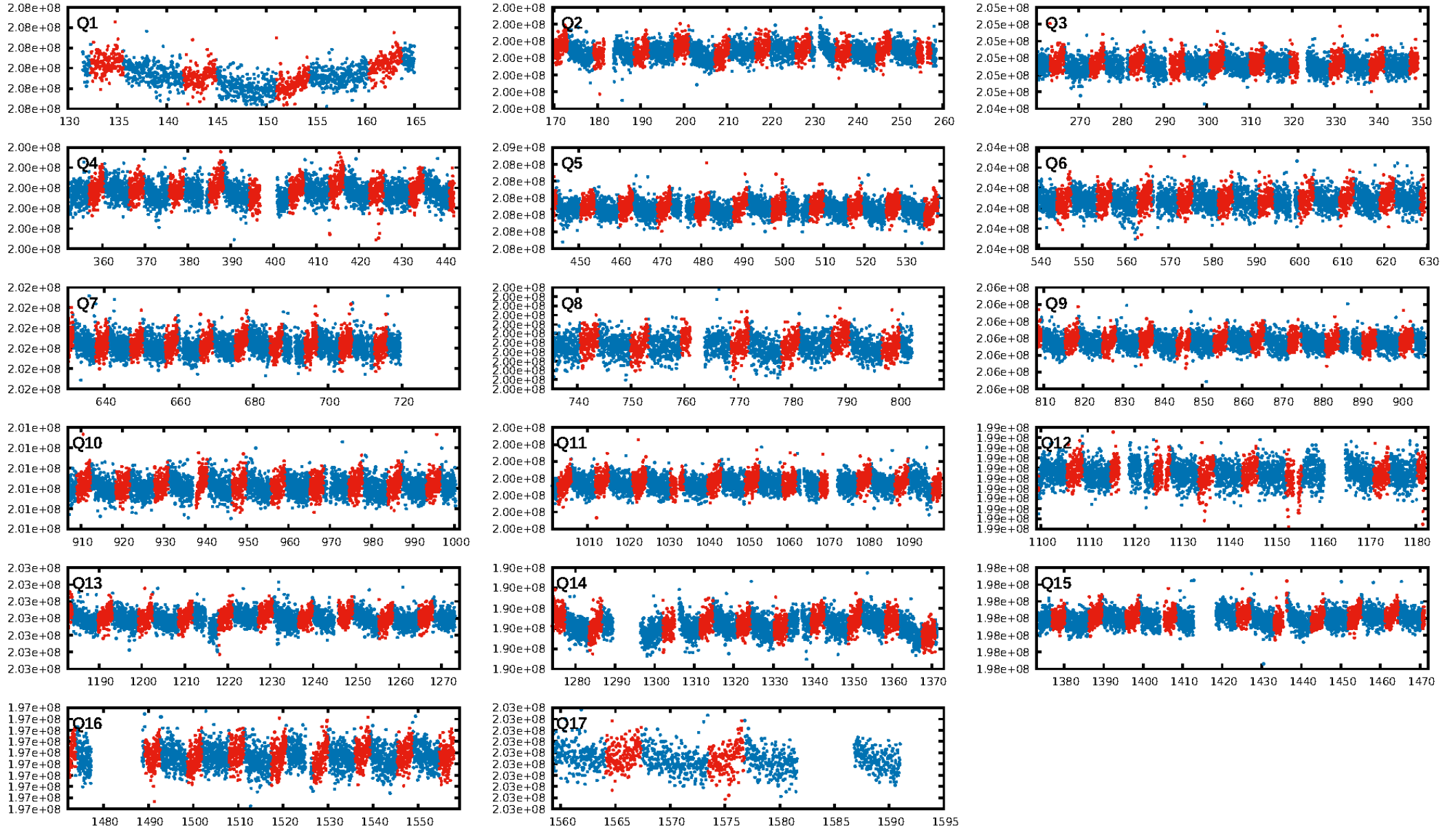
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.10e-20  
RollingBand-fgt: 0.99 [141/142]  
GhostDiagnostic-chr: -0.6021  
Centroid-sig: 0.2%  
Centroid-so: 2.869 arcsec [1.92 $\sigma$ ]  
OotOffset-rm: 1.878 arcsec [1.50 $\sigma$ ]  
KicOffset-rm: 1.919 arcsec [1.53 $\sigma$ ]  
OotOffset-st: 1/0/1/1 [3]  
KicOffset-st: 1/0/1/1 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [17/17]

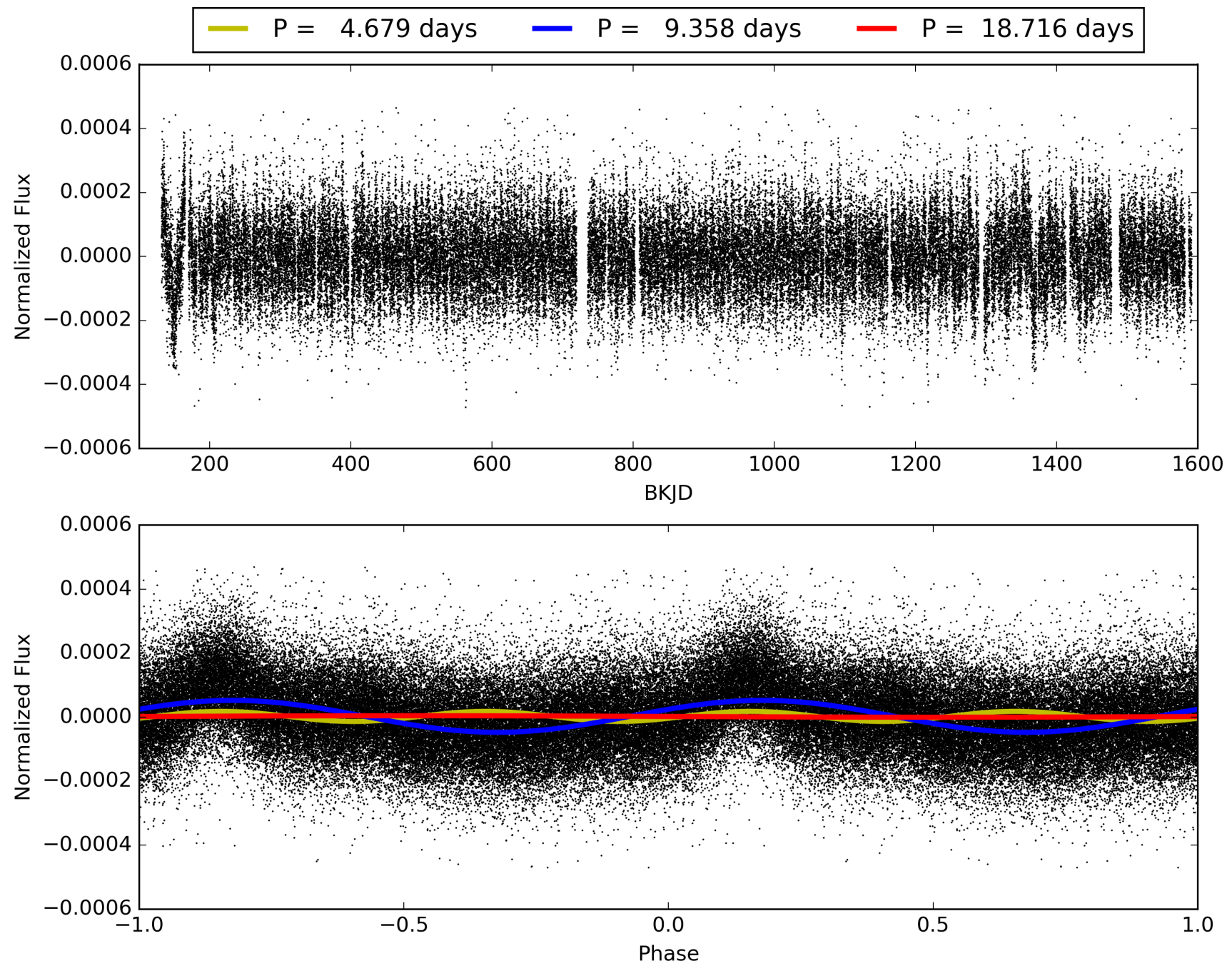
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:24:11 Z

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

# TCE 003437557-01, PDC Light Curves

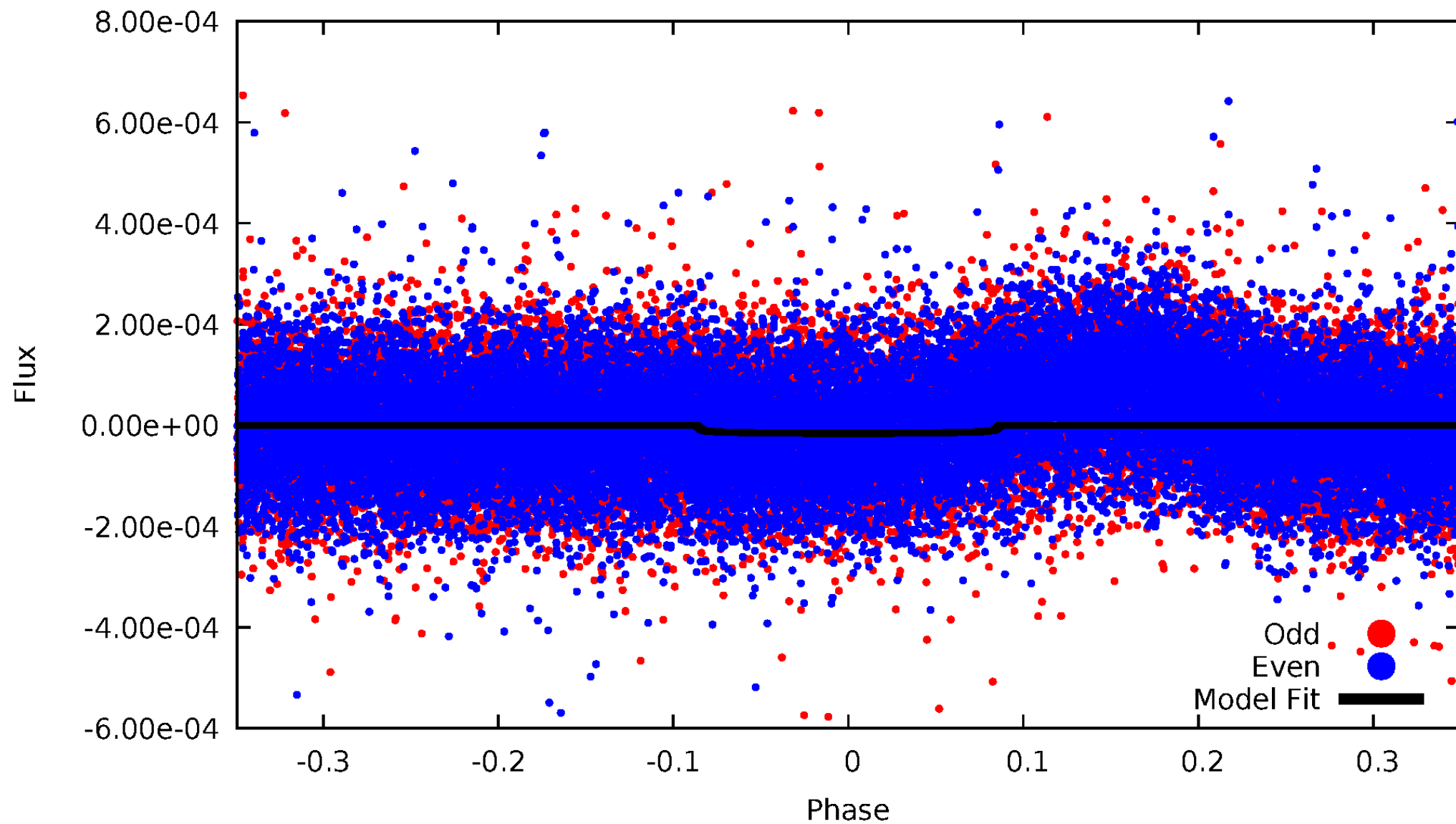


TCE 003437557-01



# DV Odd/Even

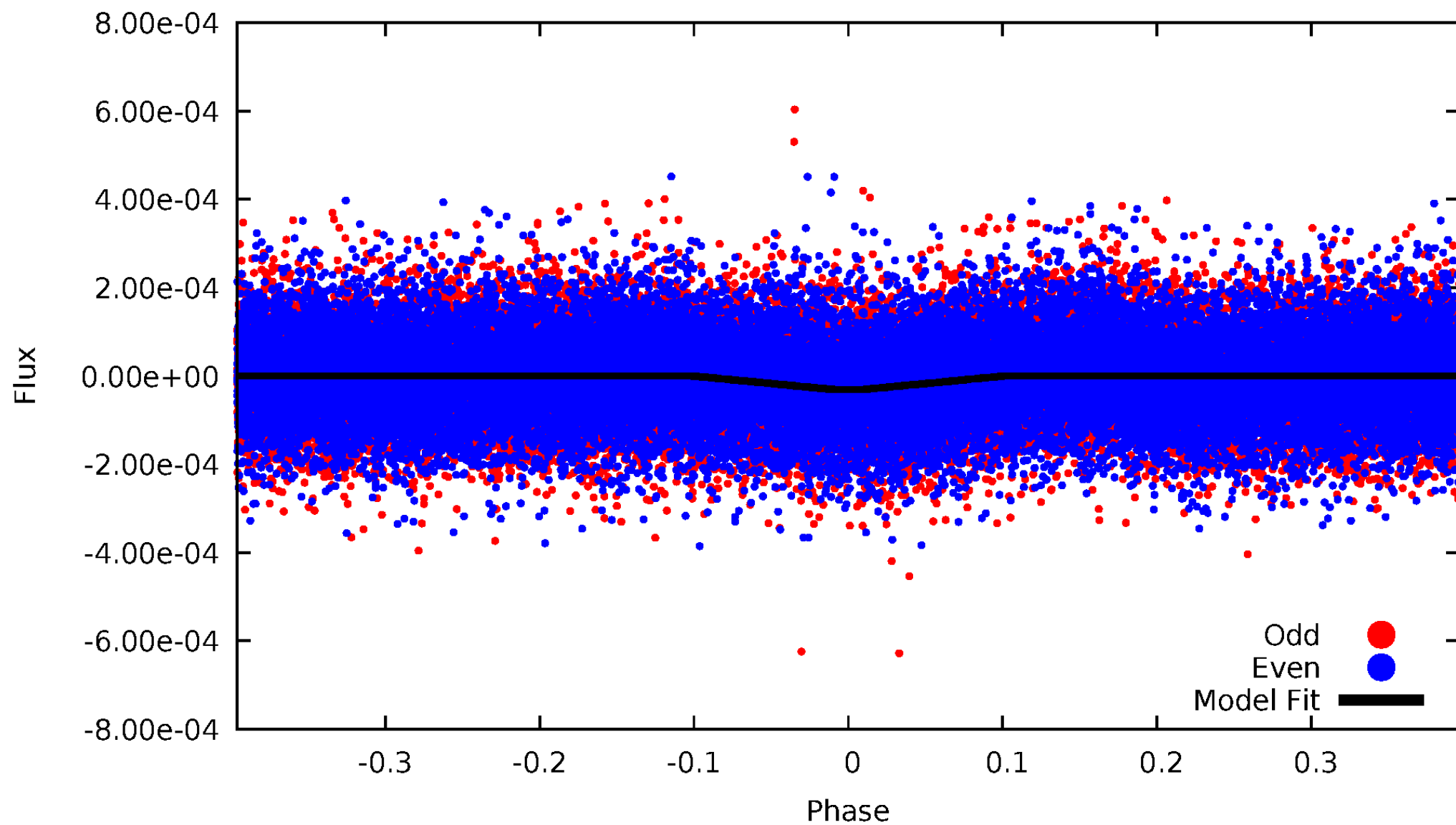
TCE 003437557-01





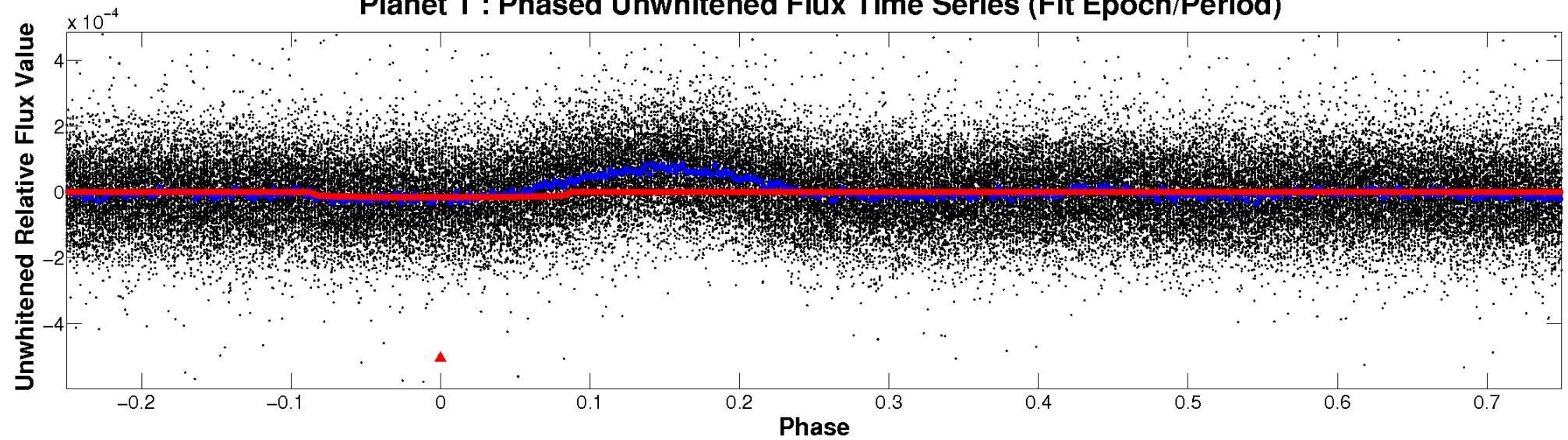
# ALT Odd/Even

TCE 003437557-01

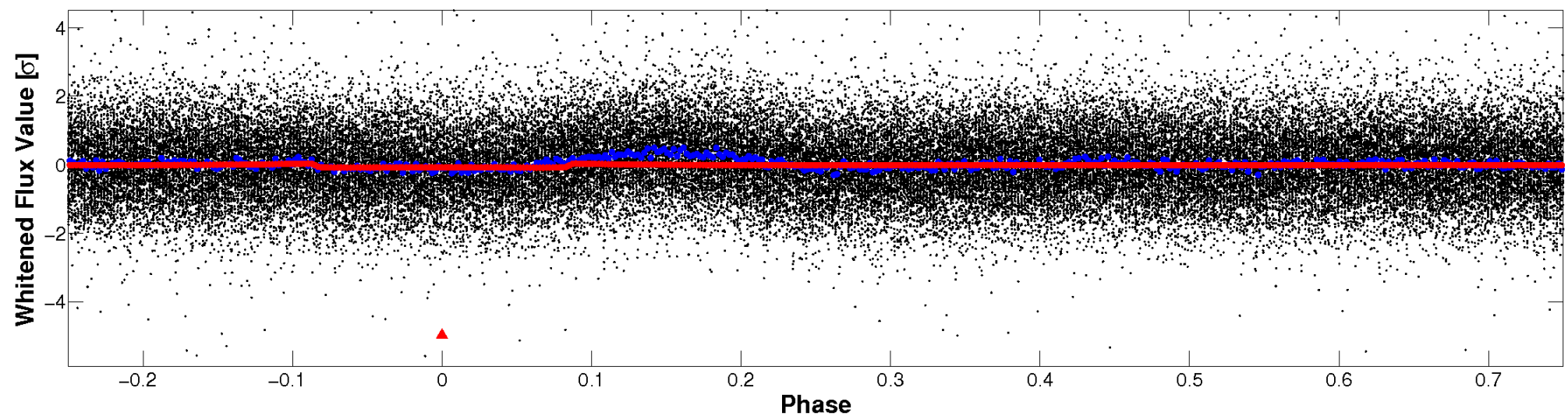


# Non-Whitened Vs. Whitened Light Curve

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

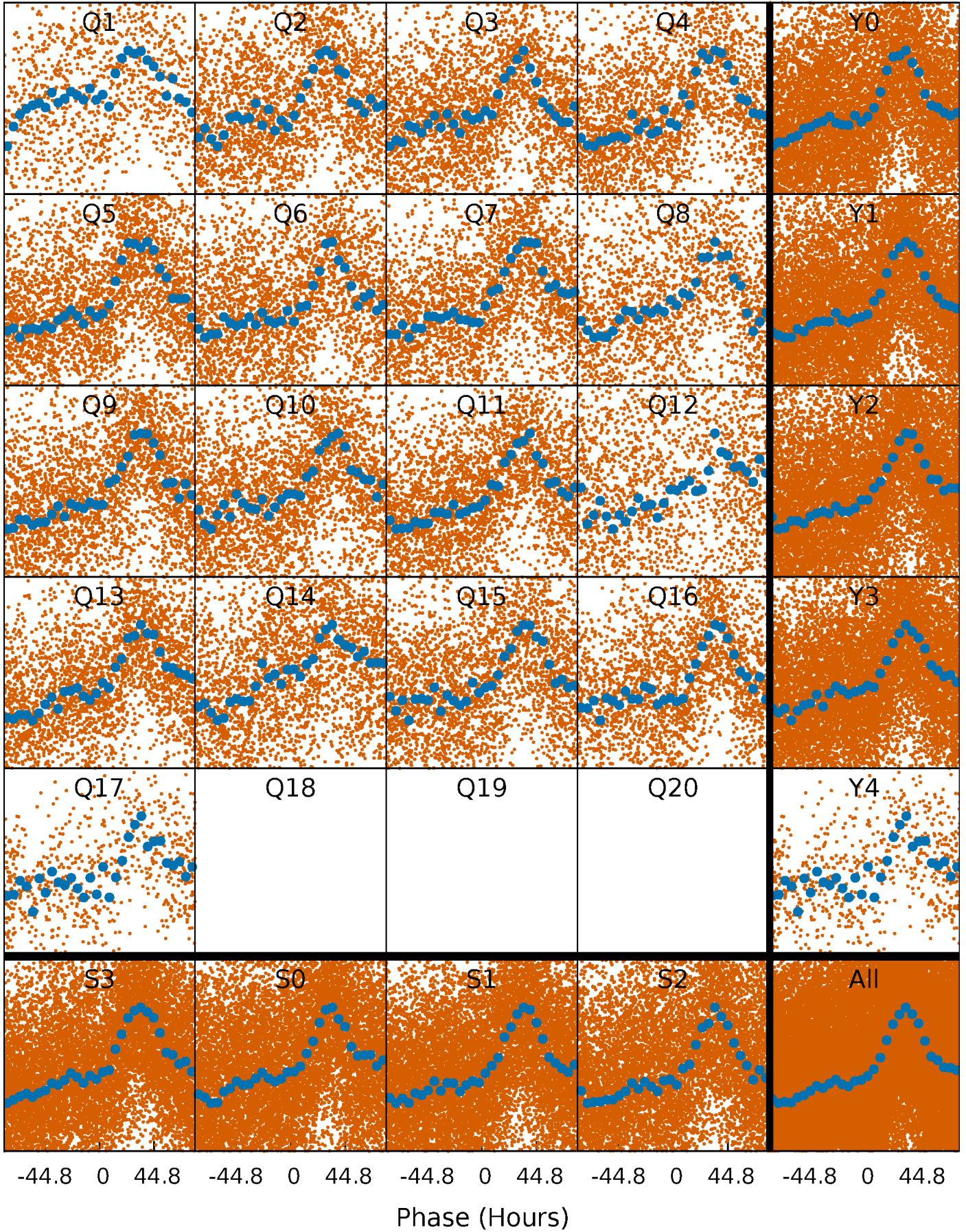


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

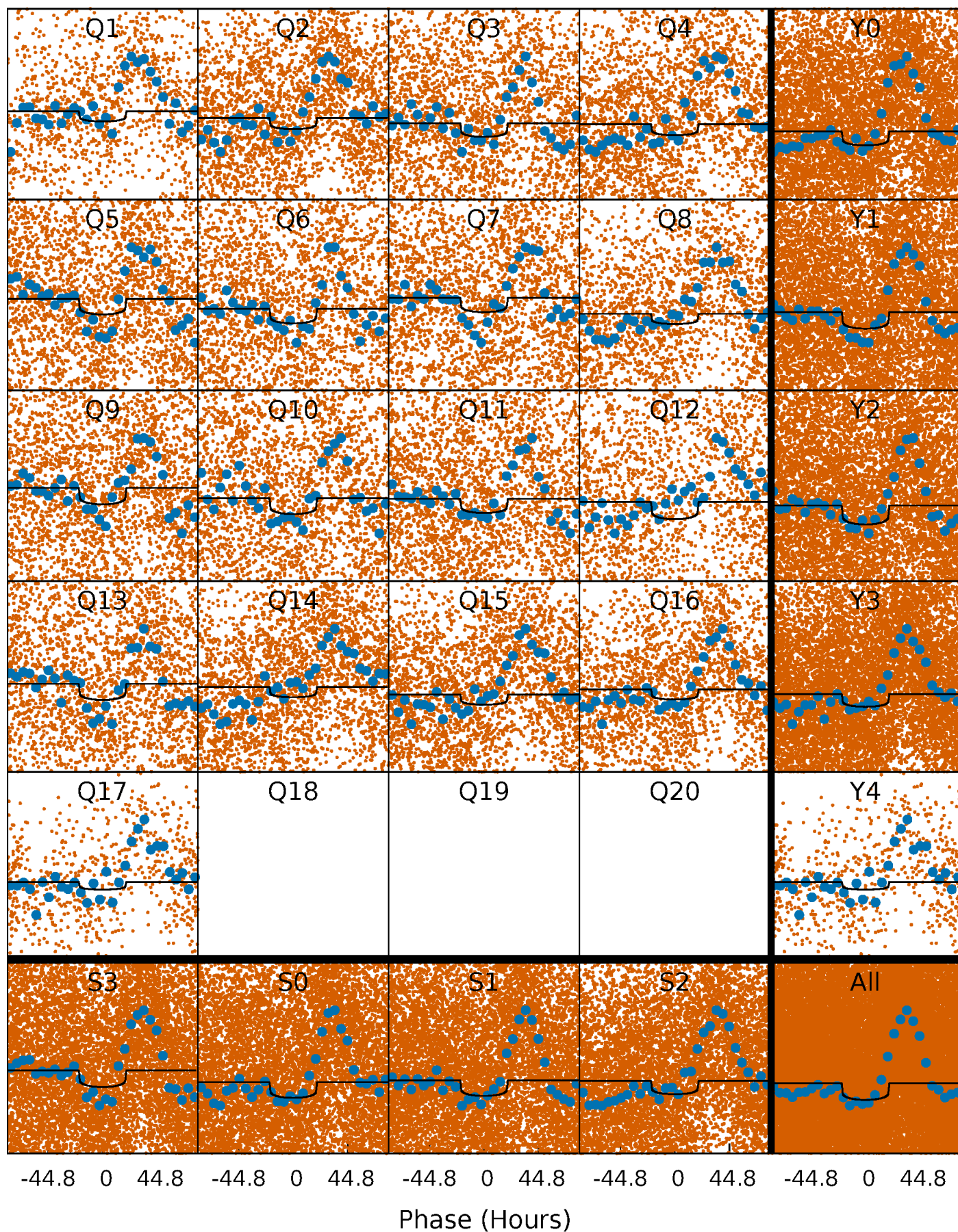
TCE 003437557-01 P= 9.358090 Days  $T_0=133.960473$  (BKJD)





# DV Quarter-Phased Transit Curves

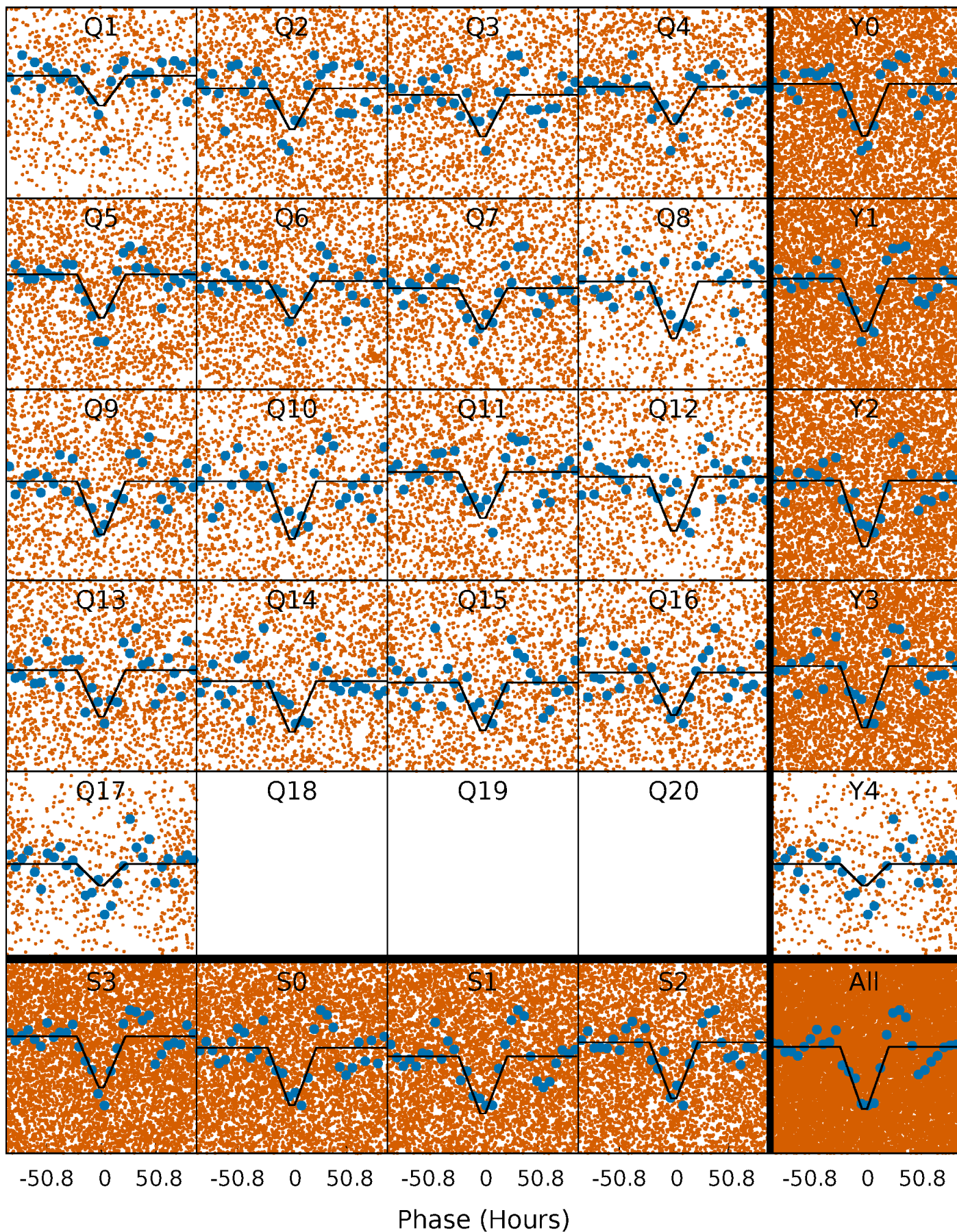
TCE 003437557-01 P= 9.358090 Days  $T_0=133.960473$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

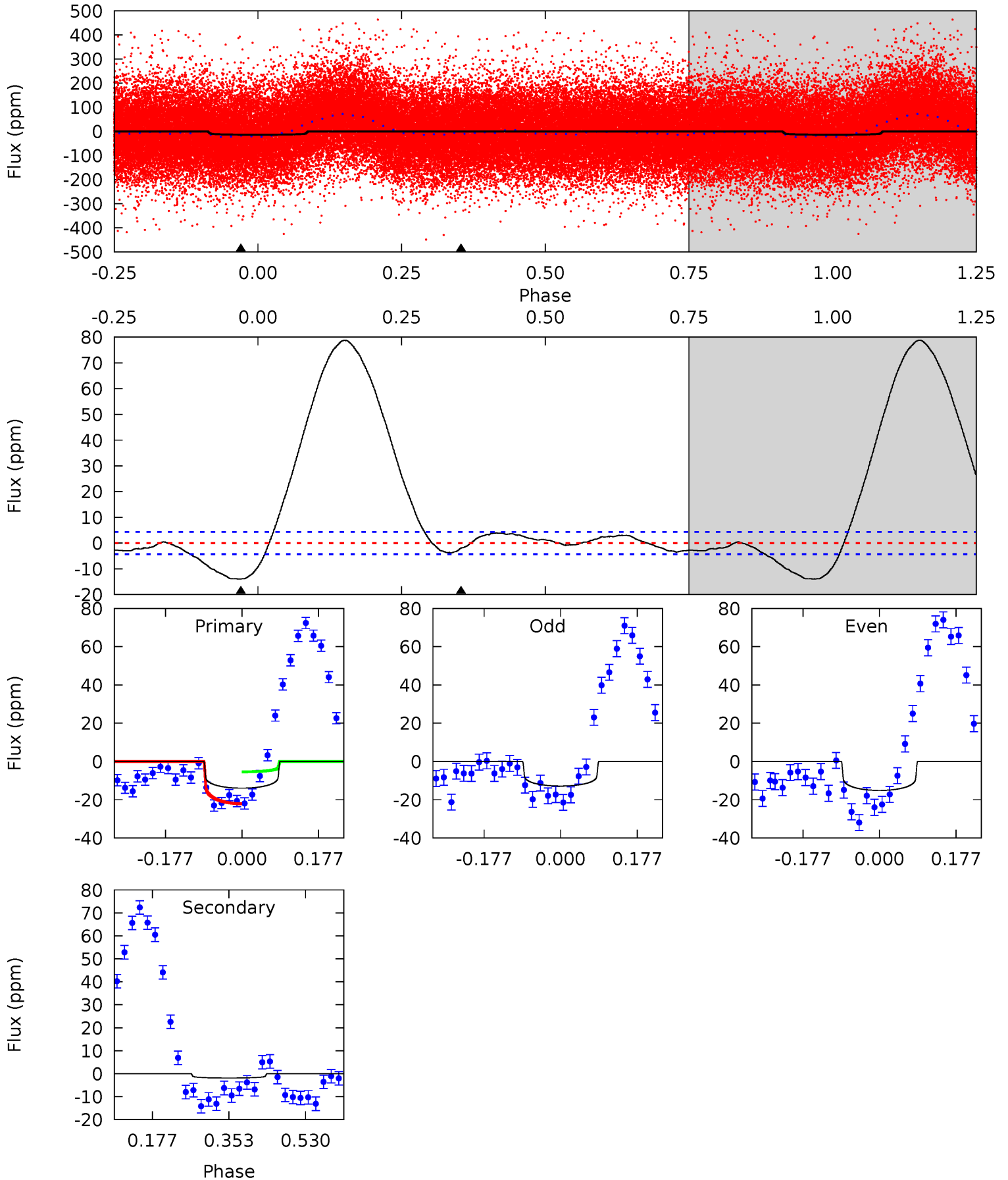
TCE 003437557-01 P= 9.357915 Days  $T_0=134.143353$  (BKJD)



# DV Model-Shift Uniqueness Test

003437557-01, P = 9.358090 Days, E = 124.602383 Days

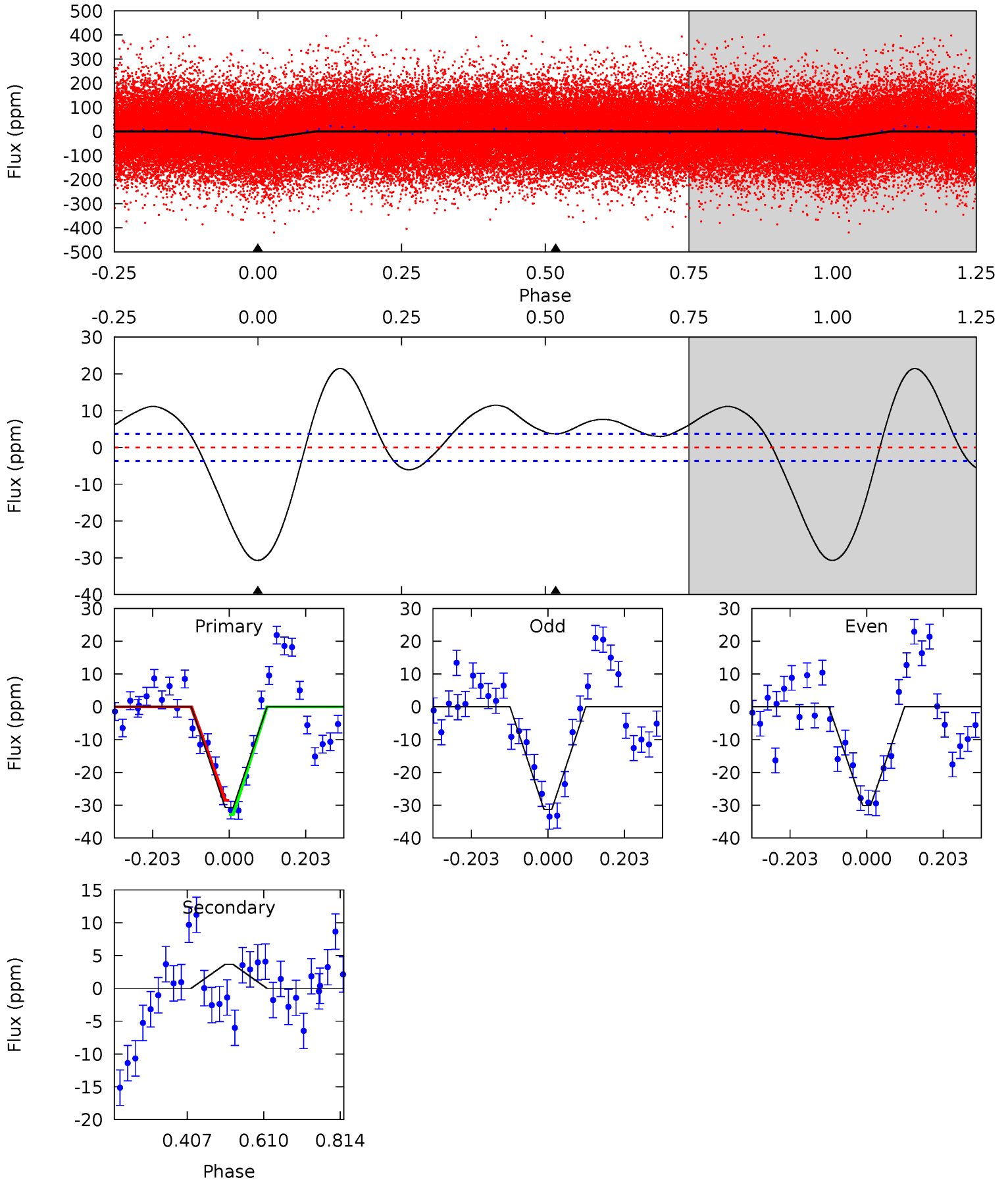
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	1.96	0	0	4.44	1.35	24.0	14.4	14.4	1.96	1.96	1.18	1.07	0.85	8.76



# Alt Model-Shift Uniqueness Test

003437557-01, P = 9.357915 Days, E = 124.785438 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
36.6	-4.37	0	0	4.41	1.27	6.63	36.6	36.6	-4.37	-4.37	0.71	0.97	0.41	2.57





### Stellar Parameters For KIC 003437557

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6576^{+160}_{-200}$	$3.991^{+0.280}_{-0.120}$	$-0.580^{+0.350}_{-0.300}$	$1.745^{+0.357}_{-0.536}$	$1.087^{+0.166}_{-0.149}$	$0.288^{+0.538}_{-0.106}$
	+2%/-3%	+7%/-3%	+60%/-52%	+20%/-31%	+15%/-14%	+187%/-37%
Source	PHO1	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 003437557-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-2\pm1$	$0.80^{+0.12}_{-0.16}$	$1761^{+108}_{-142}$	$3990^{+383}_{-511}$	$13^{+10}_{-7}$
Alt.	$4\pm1$	$1.02^{+0.15}_{-0.16}$	$1766^{+111}_{-153}$	$-4161^{+225}_{-207}$	$-15.530^{+4.500}_{-7.584}$

$T_{max}$  = 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

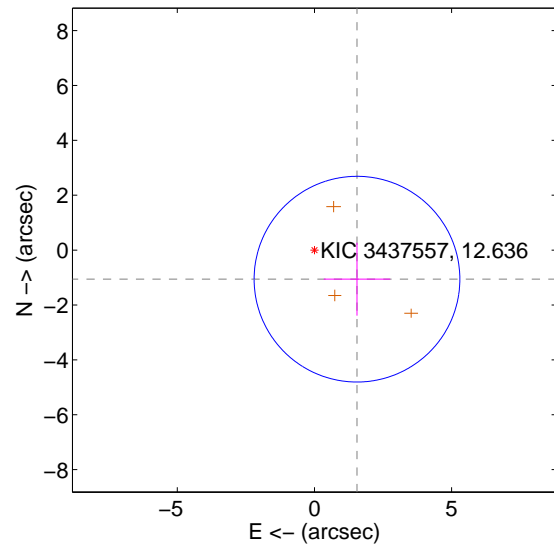
Supplemental centroid analysis for 003437557-01. Kepler magnitude: 12.64. Transit SNR 8.88

There are 0 quarters with good PRF difference image offsets

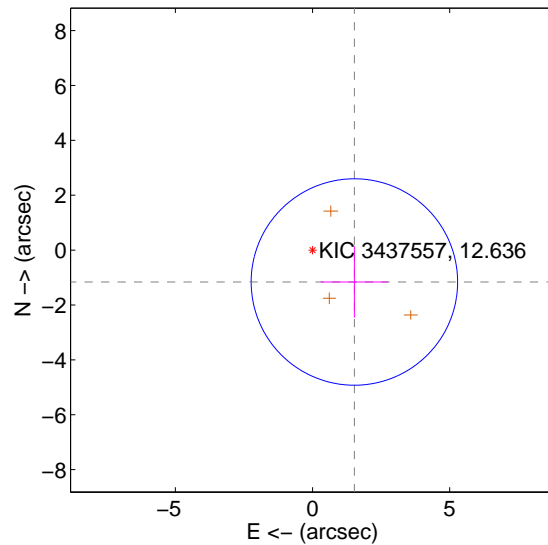
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.878 \pm 1.250$	1.50	$-1.551 \pm 1.211$	$-1.060 \pm 1.329$
PRF-fit source offset from KIC position	$1.919 \pm 1.254$	1.53	$-1.526 \pm 1.227$	$-1.163 \pm 1.299$
photometric centroid source offset	$2.87 \pm 1.49$	1.92	$-1.92 \pm 1.13$	$2.13 \pm 1.73$

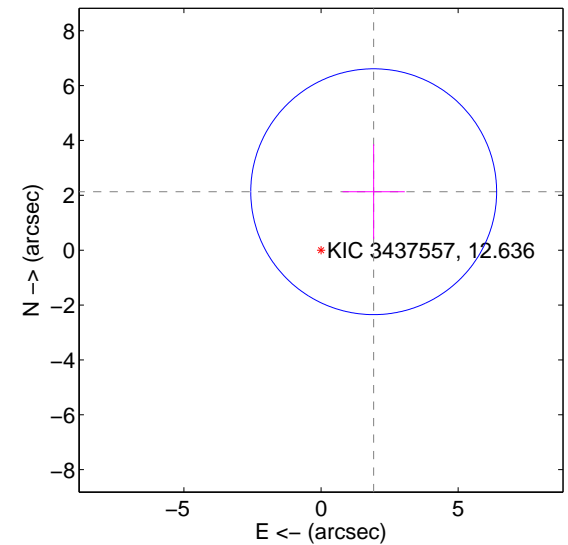
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

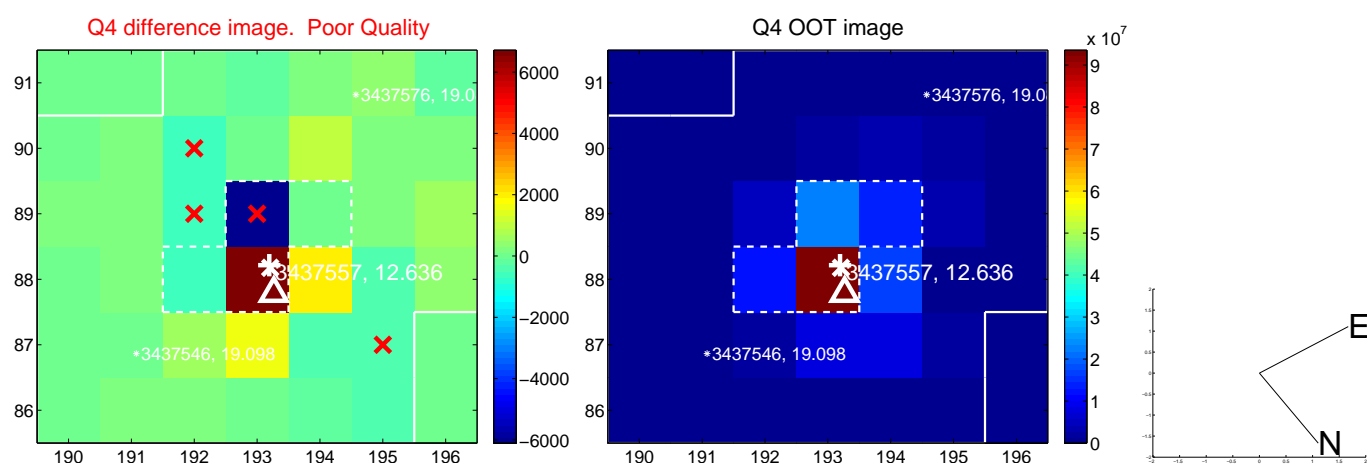
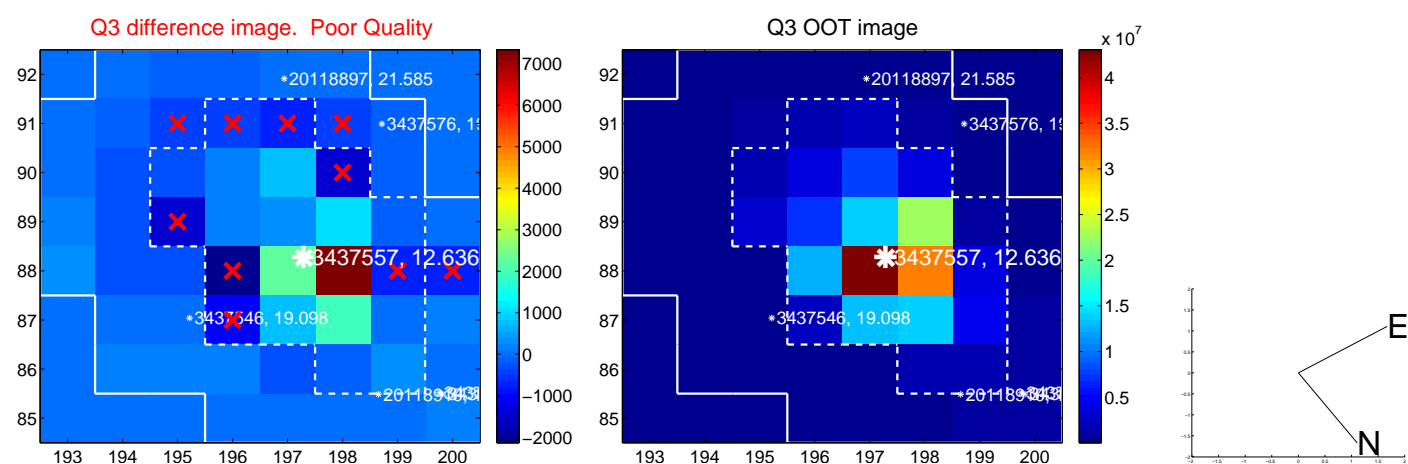
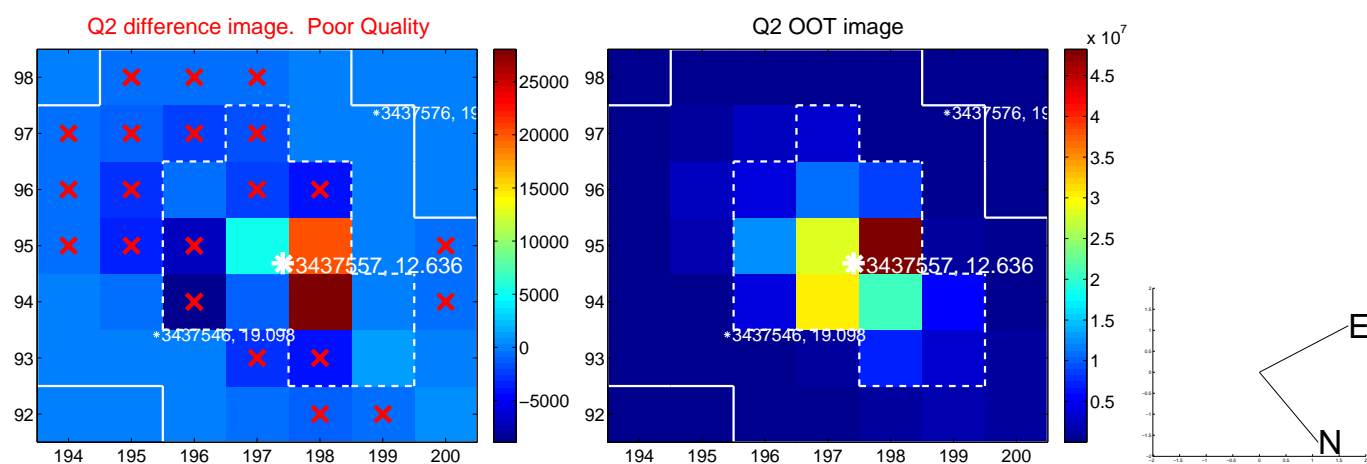
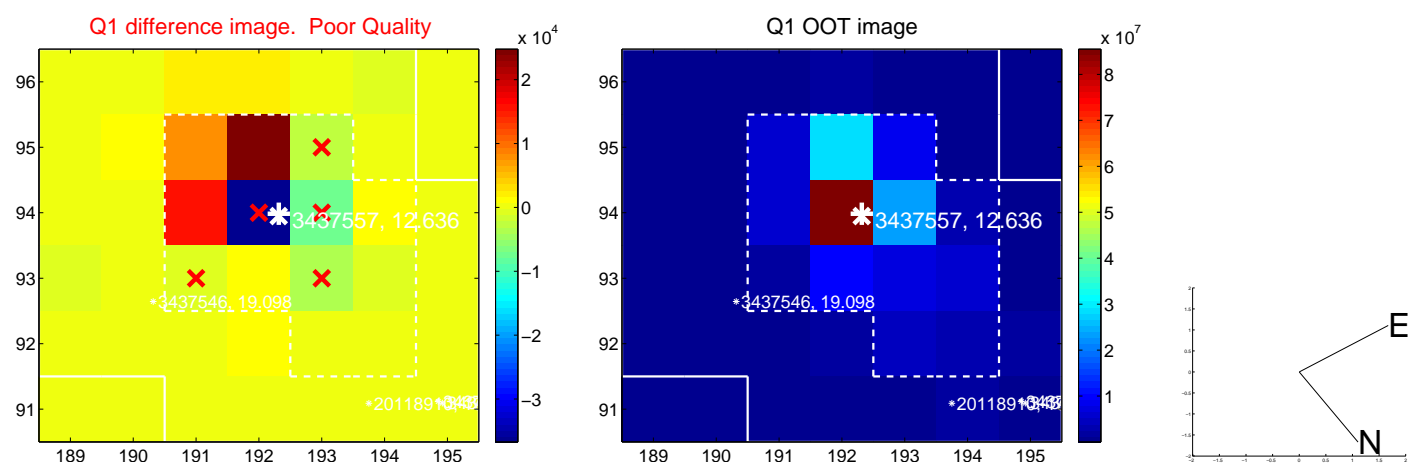


offset from photometric centroids

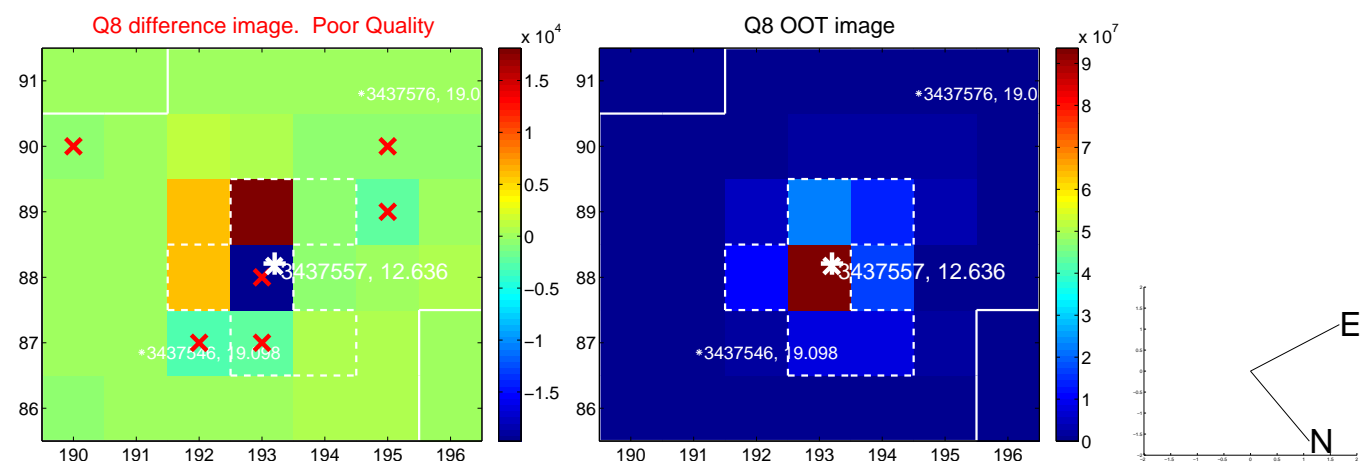
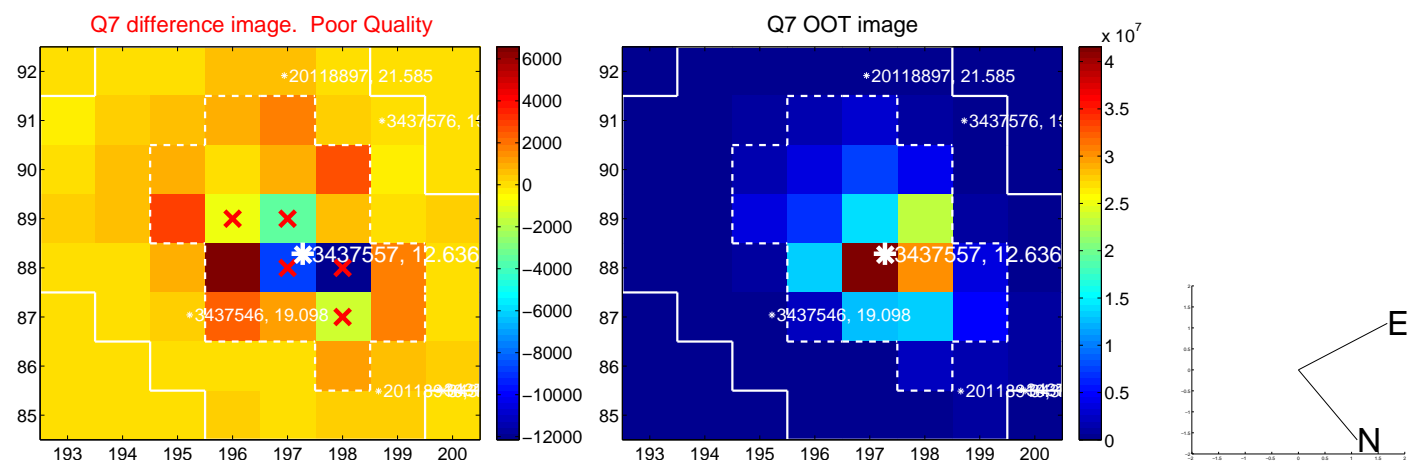
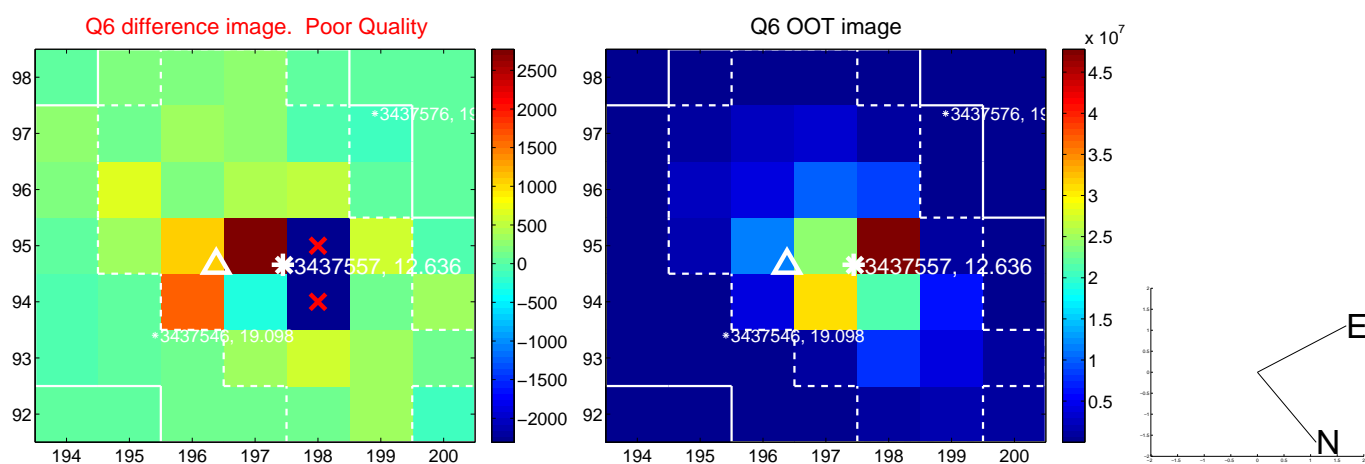
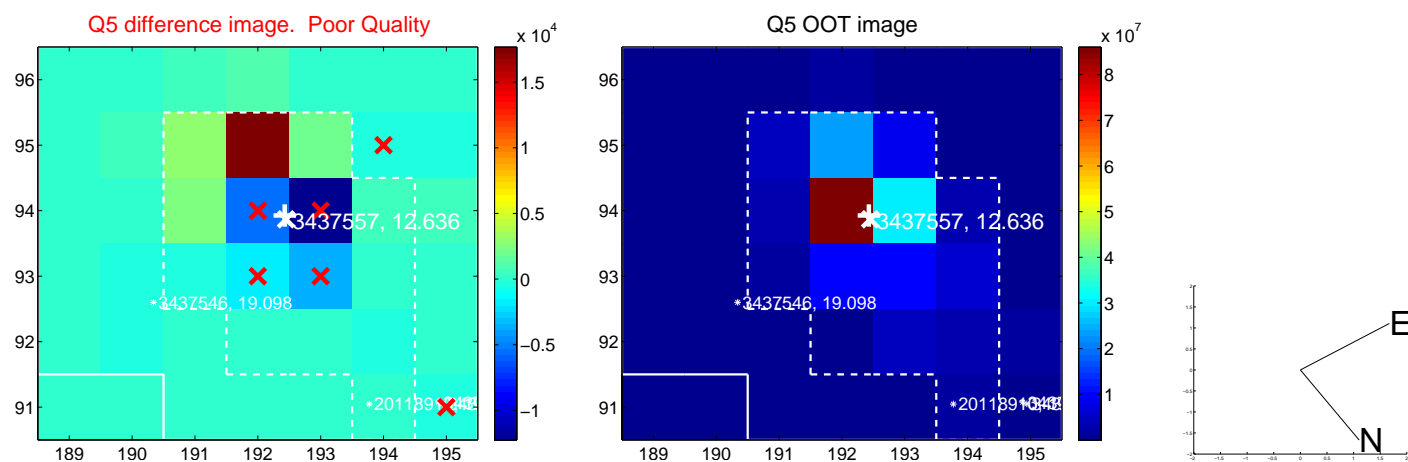


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

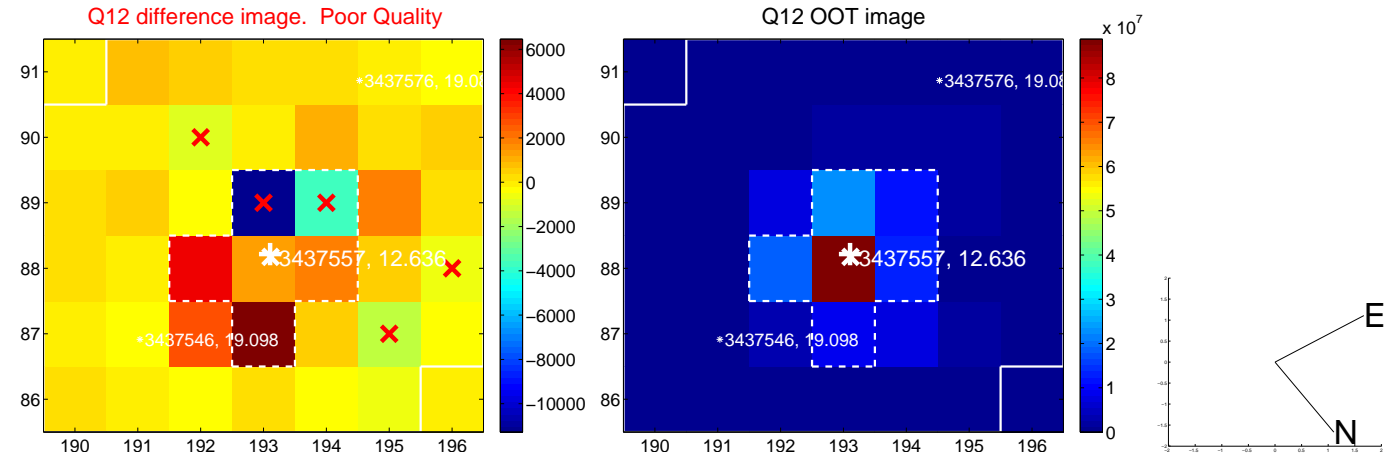
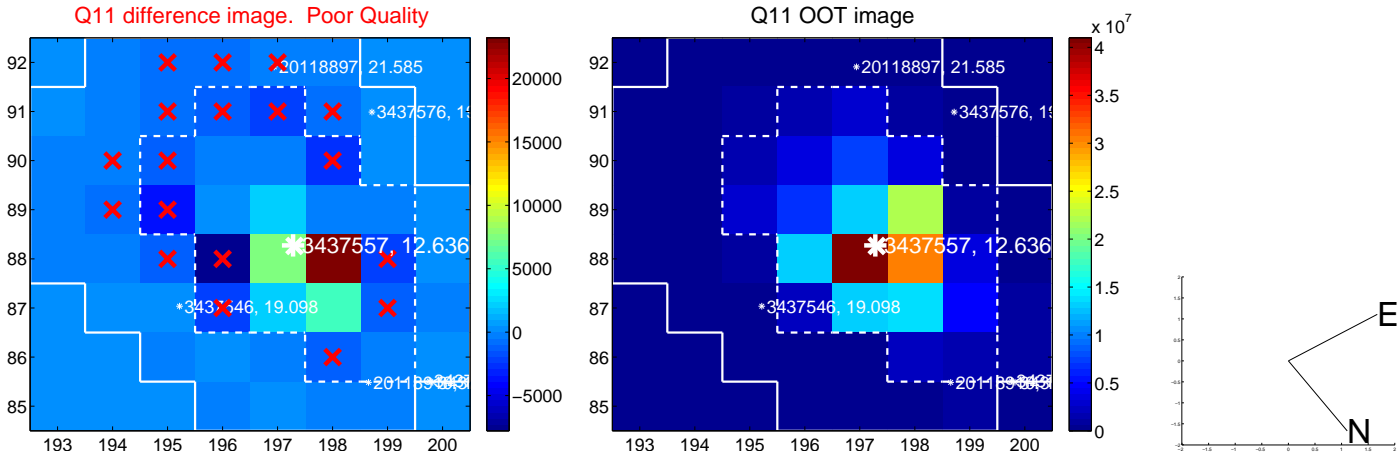
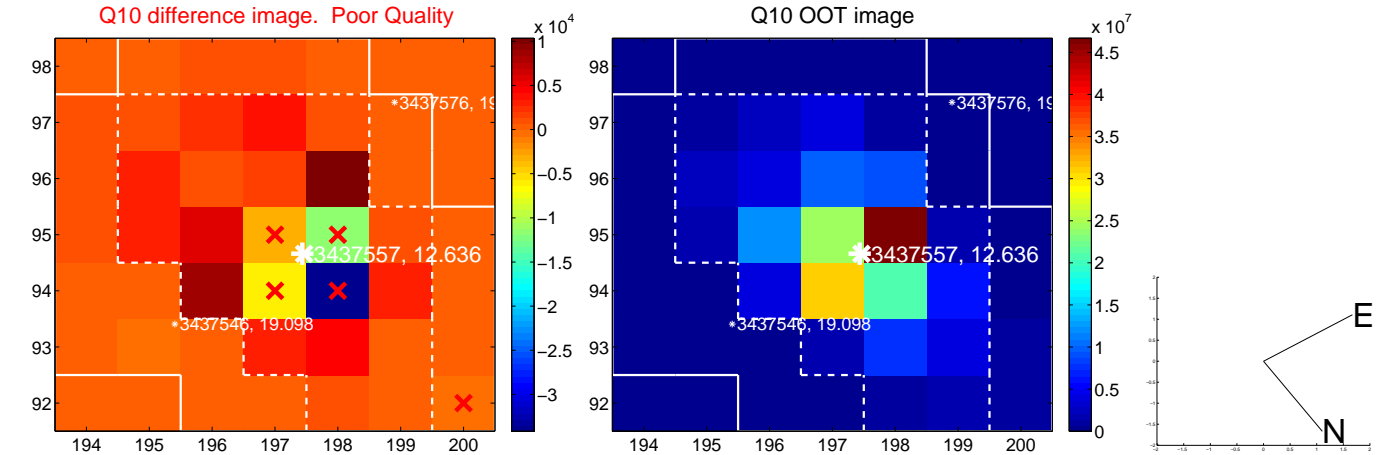
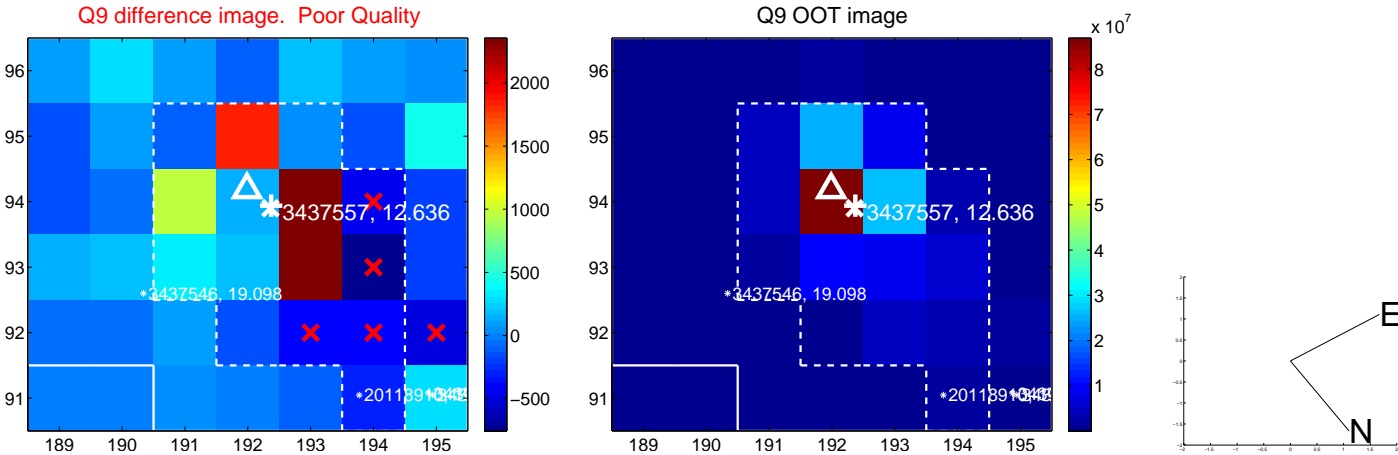


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



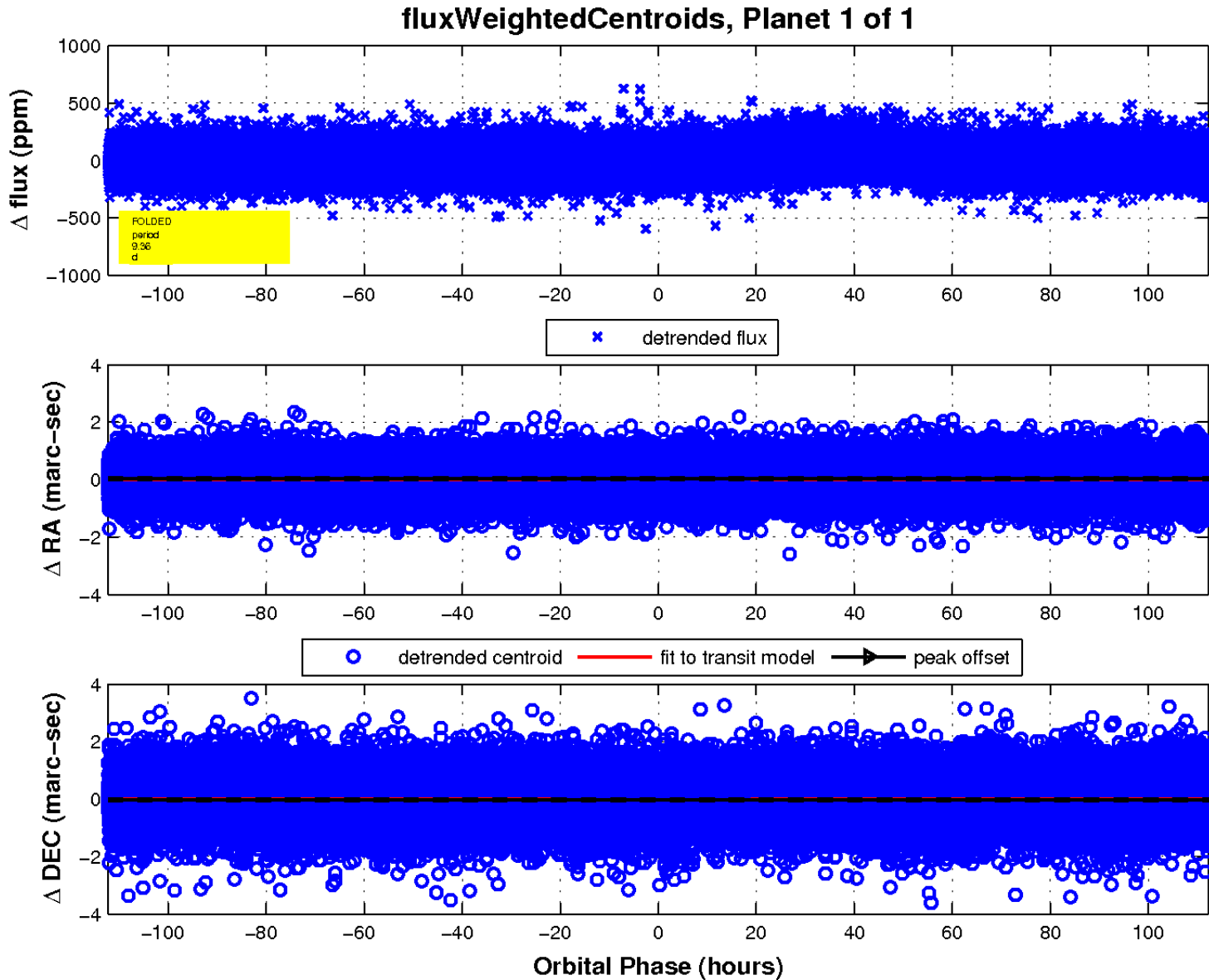
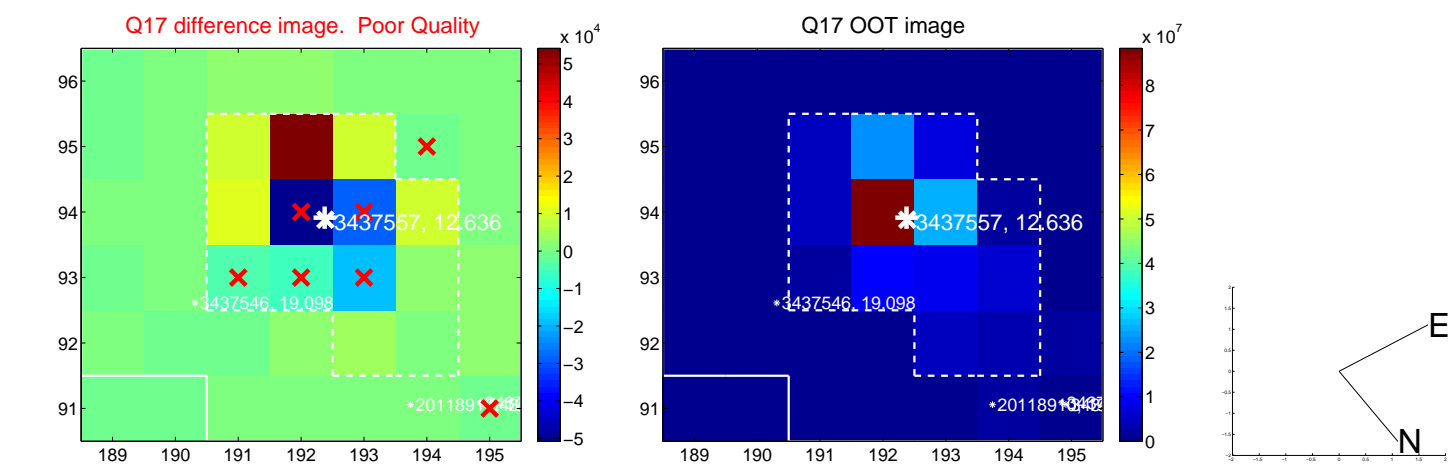


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

