

# KIC 011757422

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011757422-01	OBS	7476.01	1.819919	132.538408	86.7	2.866	8.5	8.7	0.58	4205	0.62	160.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011757422-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—CENT_RESOLVED_OFFSET

**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 011757422-01

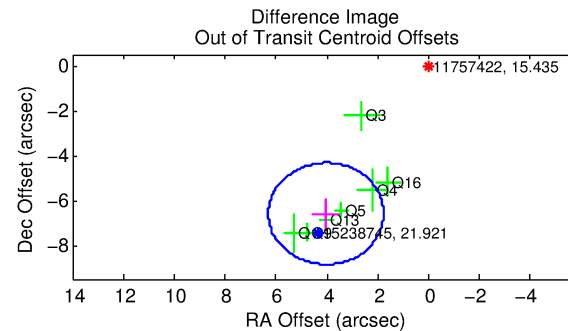
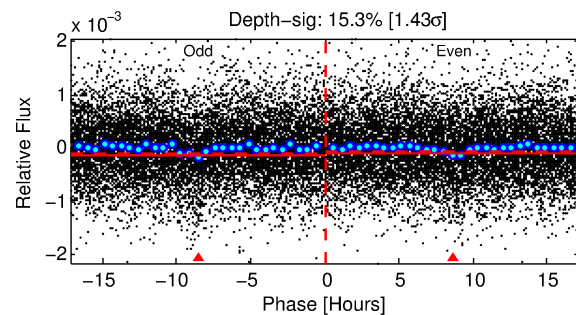
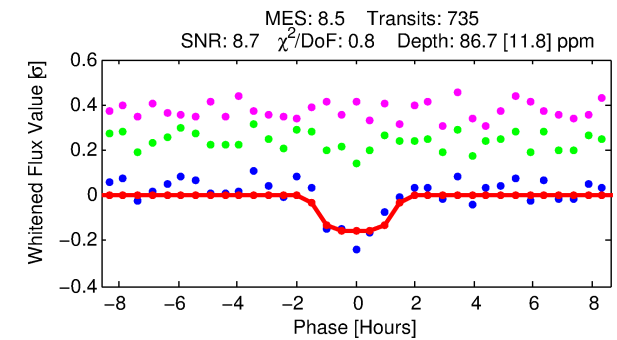
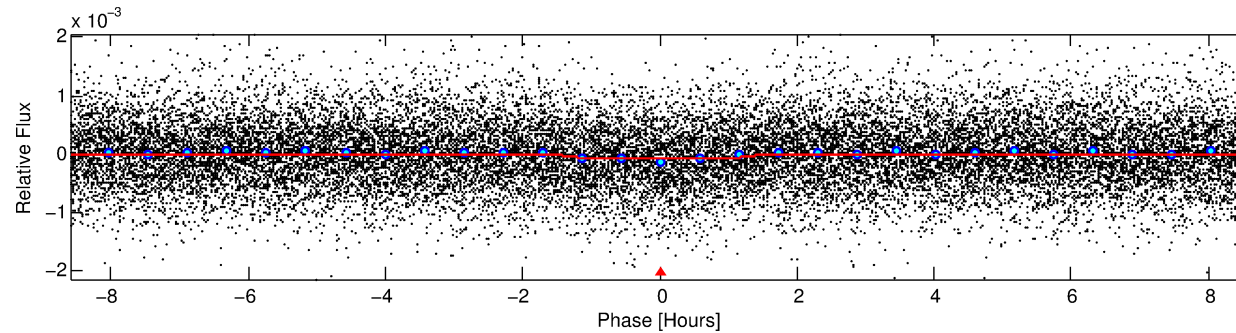
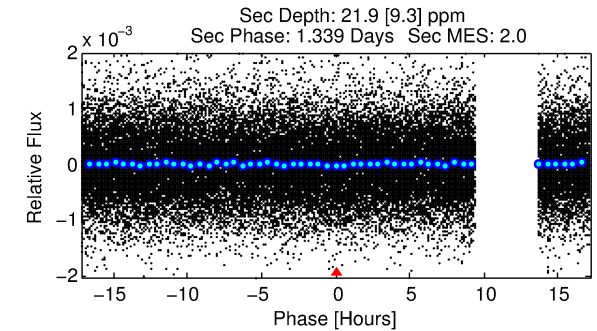
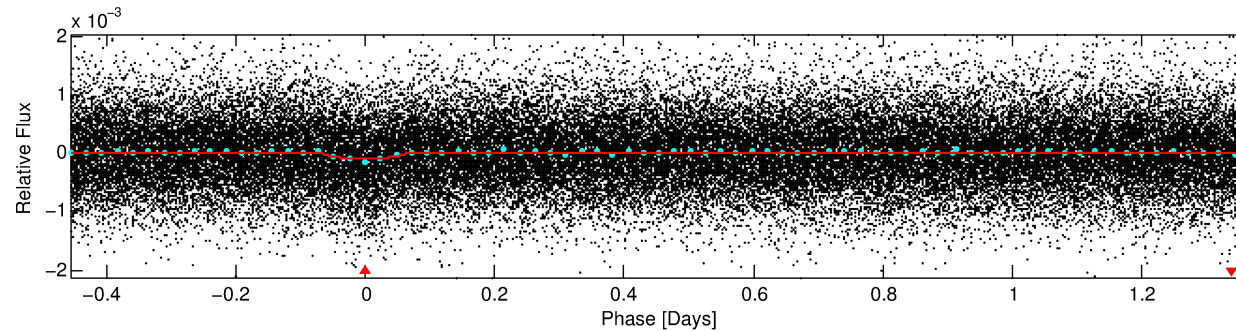
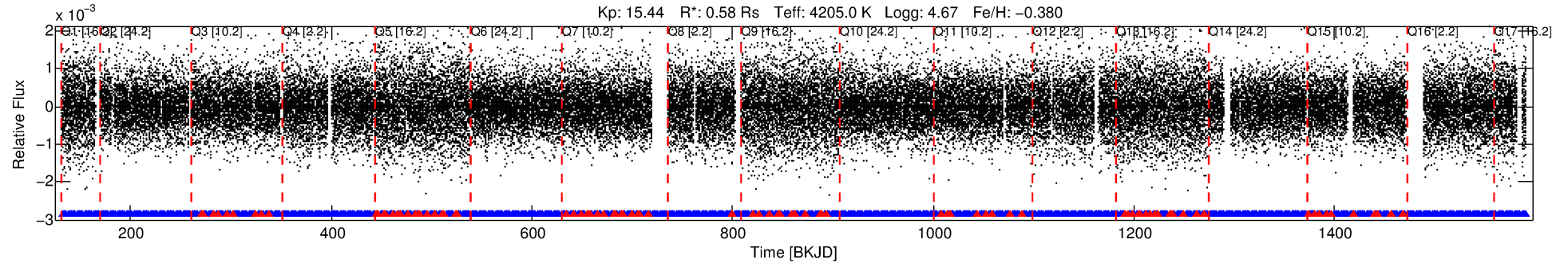
No Significant Match Found

# DV One-Page Summary

KIC: 11757422 Candidate: 1 of 1 Period: 1.820 d

KOI: K07476.01 Corr: 0.825

Kp: 15.44 R\*: 0.58 Rs Teff: 4205.0 K Logg: 4.67 Fe/H: -0.380



## DV Fit Results:

Period = 1.81992 [0.00002] d  
Epoch = 132.5384 [0.0049] BKJD  
Rp/R\* = 0.0098 [0.0091]  
a/R\* = 2.85 [9.58]  
b = 0.84 [1.35]  
Seff = 160.39 [27.96]  
Teq = 907 [40] K  
Rp = 0.62 [0.58] Re  
a = 0.0242 [0.0020] AU  
Ag = 18.44 [35.24] [0.49σ]  
Teff = 2907 [1390] K [1.44σ]

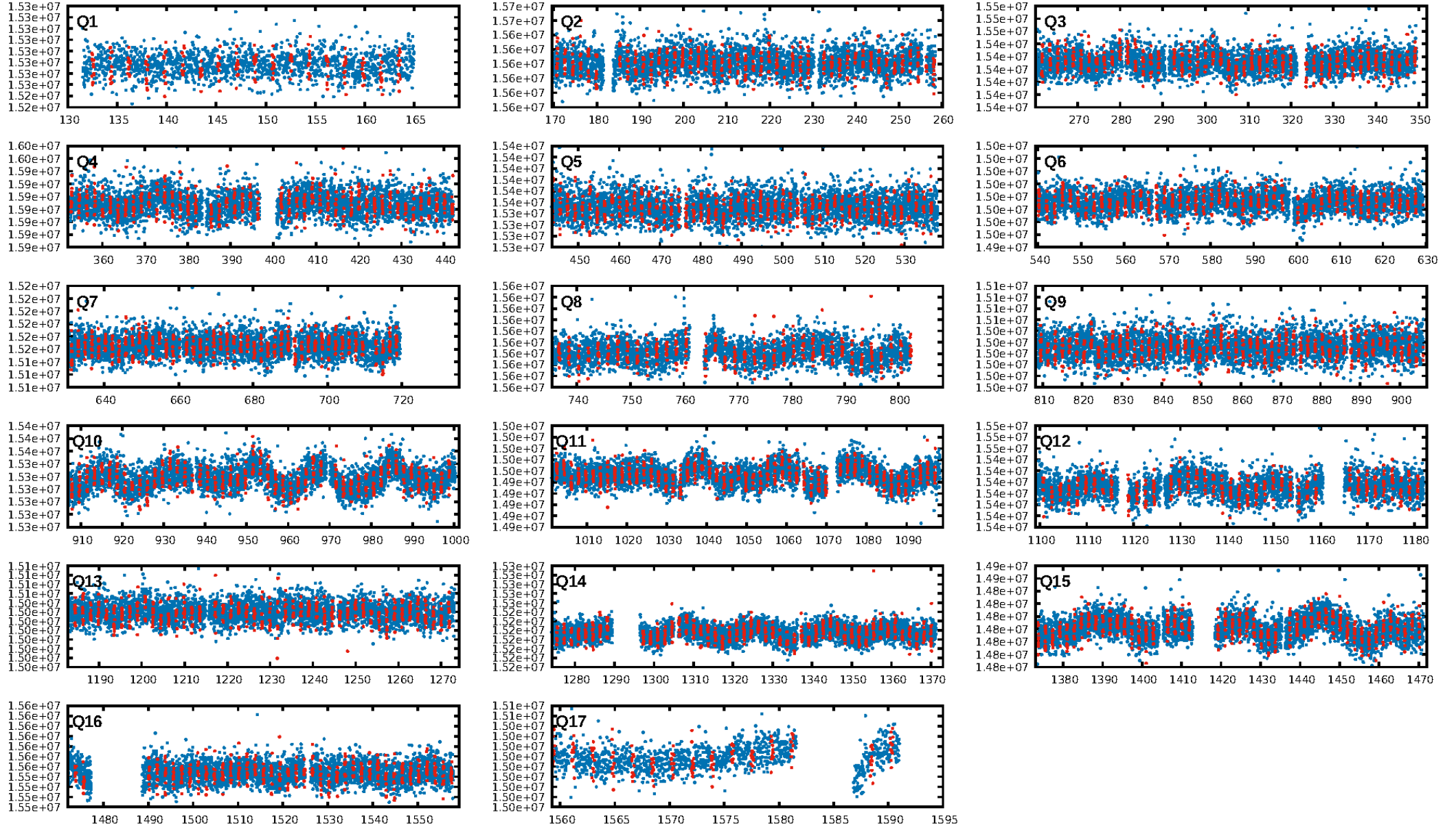
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.79e-18  
RollingBand-fgt: 0.88 [615/702]  
GhostDiagnostic-chr: -0.2975  
Centroid-sig: 0.0%  
Centroid-so: 20.376 arcsec [11.49σ]  
OotOffset-rm: 7.727 arcsec [10.25σ]  
KicOffset-rm: 7.656 arcsec [11.13σ]  
OotOffset-st: 0/1/2/4 [7]  
KicOffset-st: 0/1/2/4 [7]  
DiffImageQuality-fgm: 1.00 [7/7]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:24:57 Z

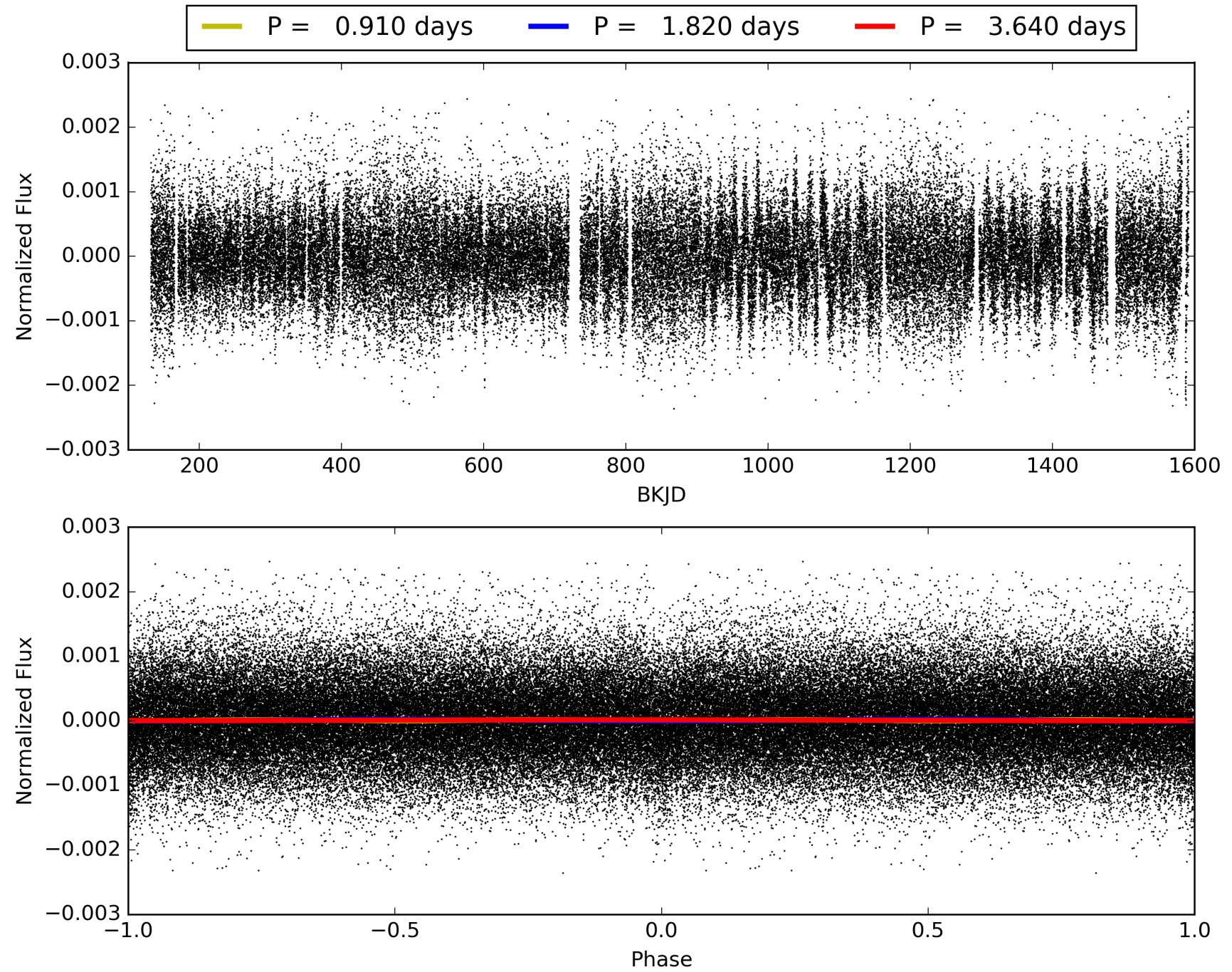
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011757422-01, PDC Light Curves



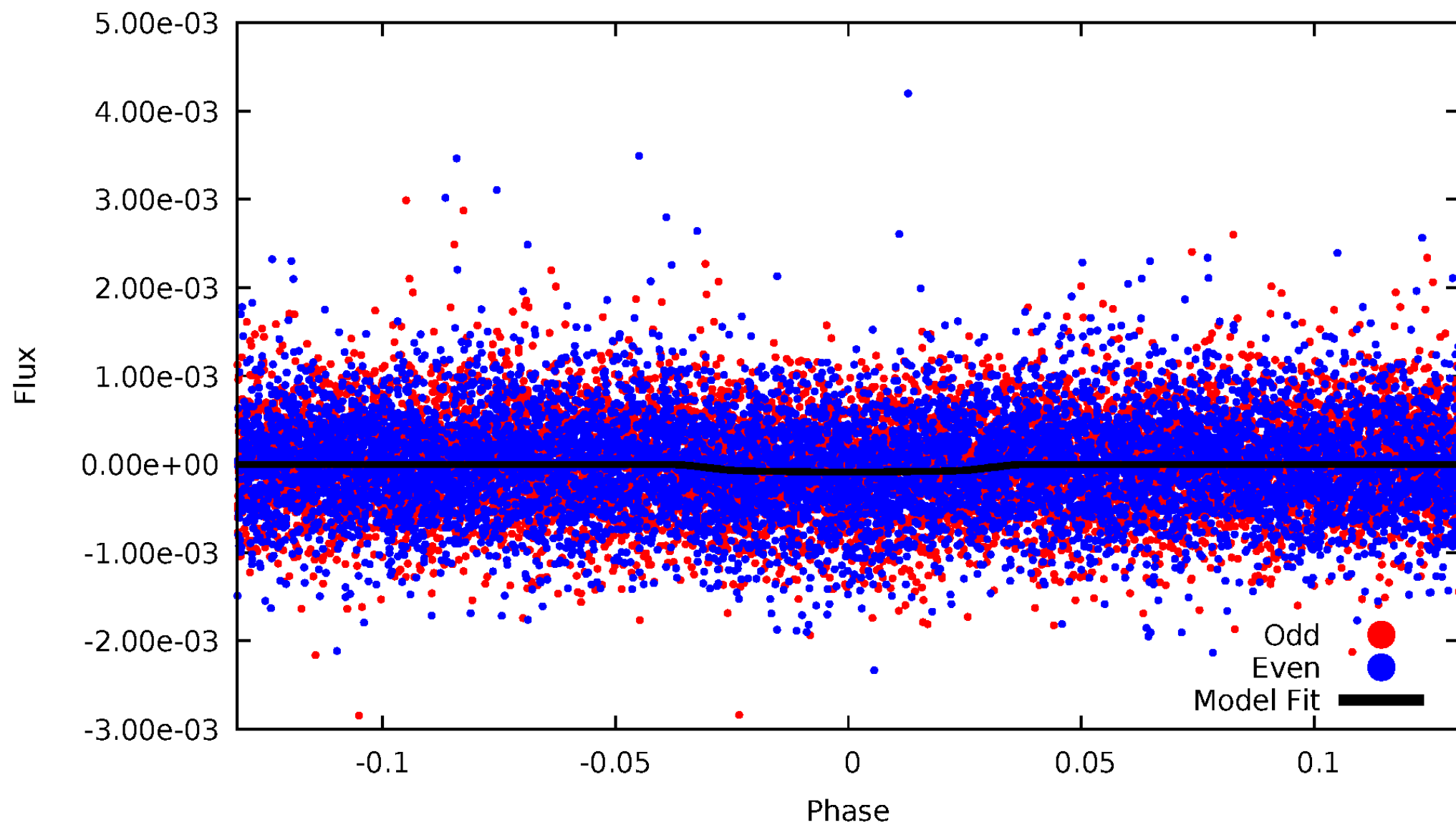


# TCE 011757422-01



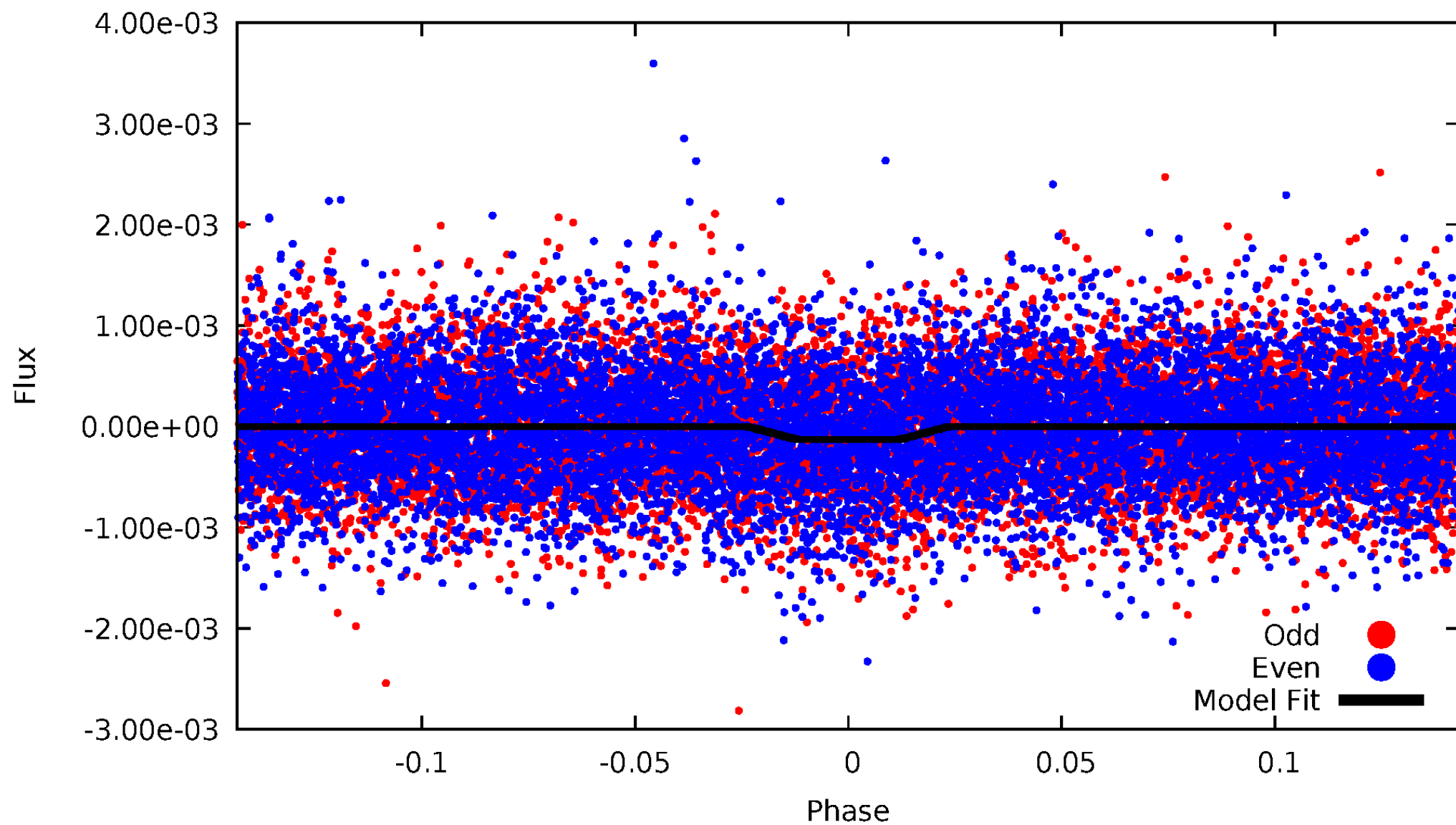
# DV Odd/Even

TCE 011757422-01

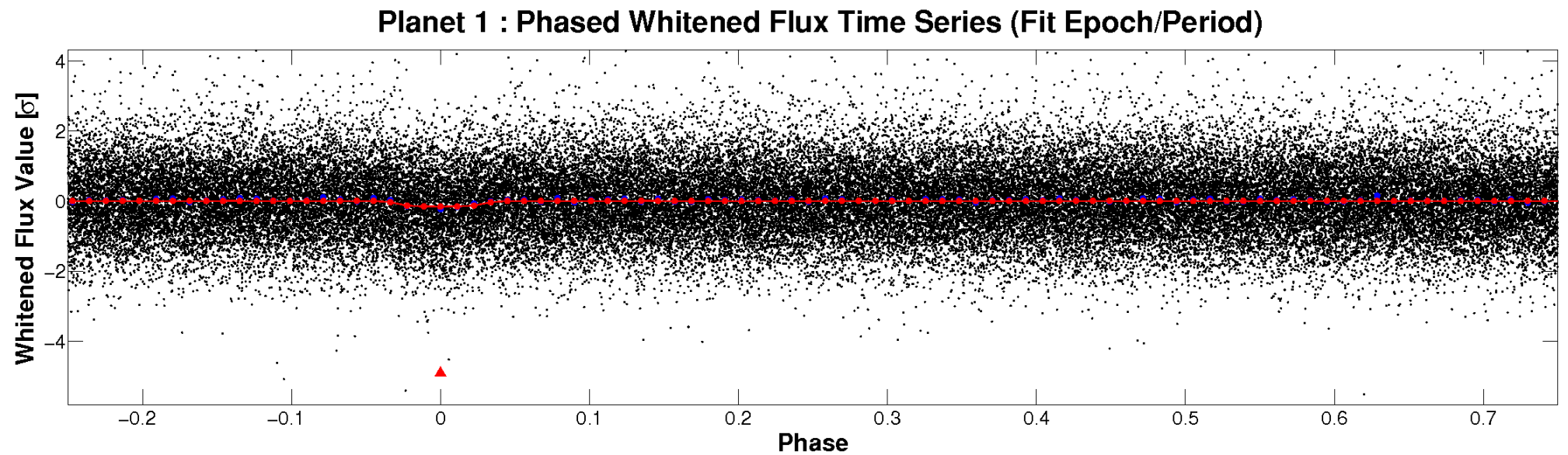
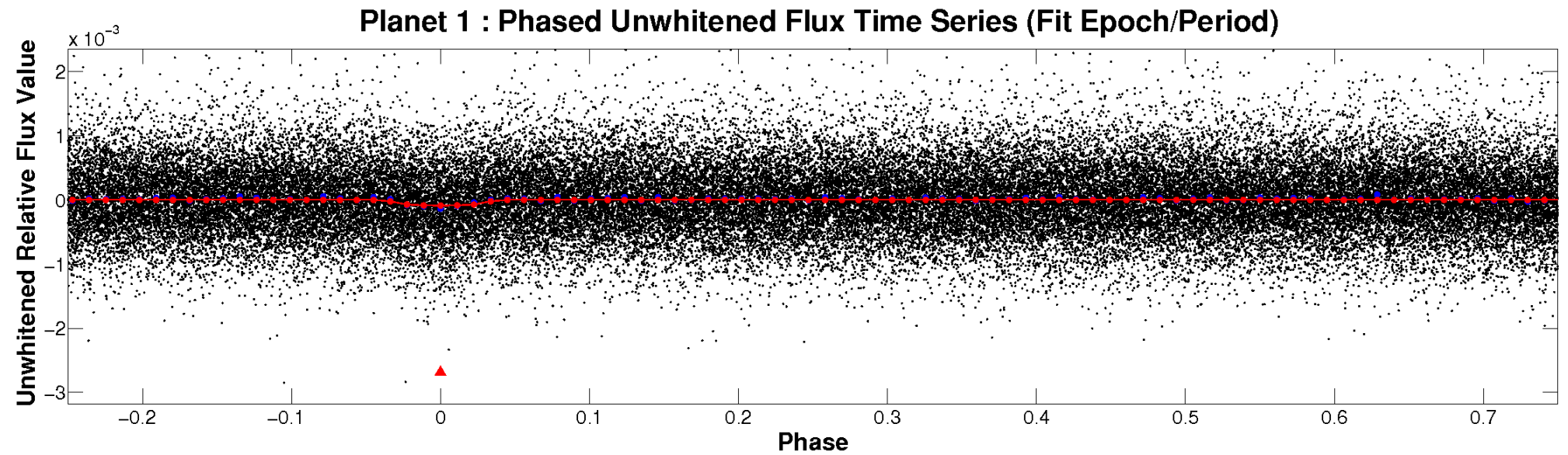


# ALT Odd/Even

TCE 011757422-01



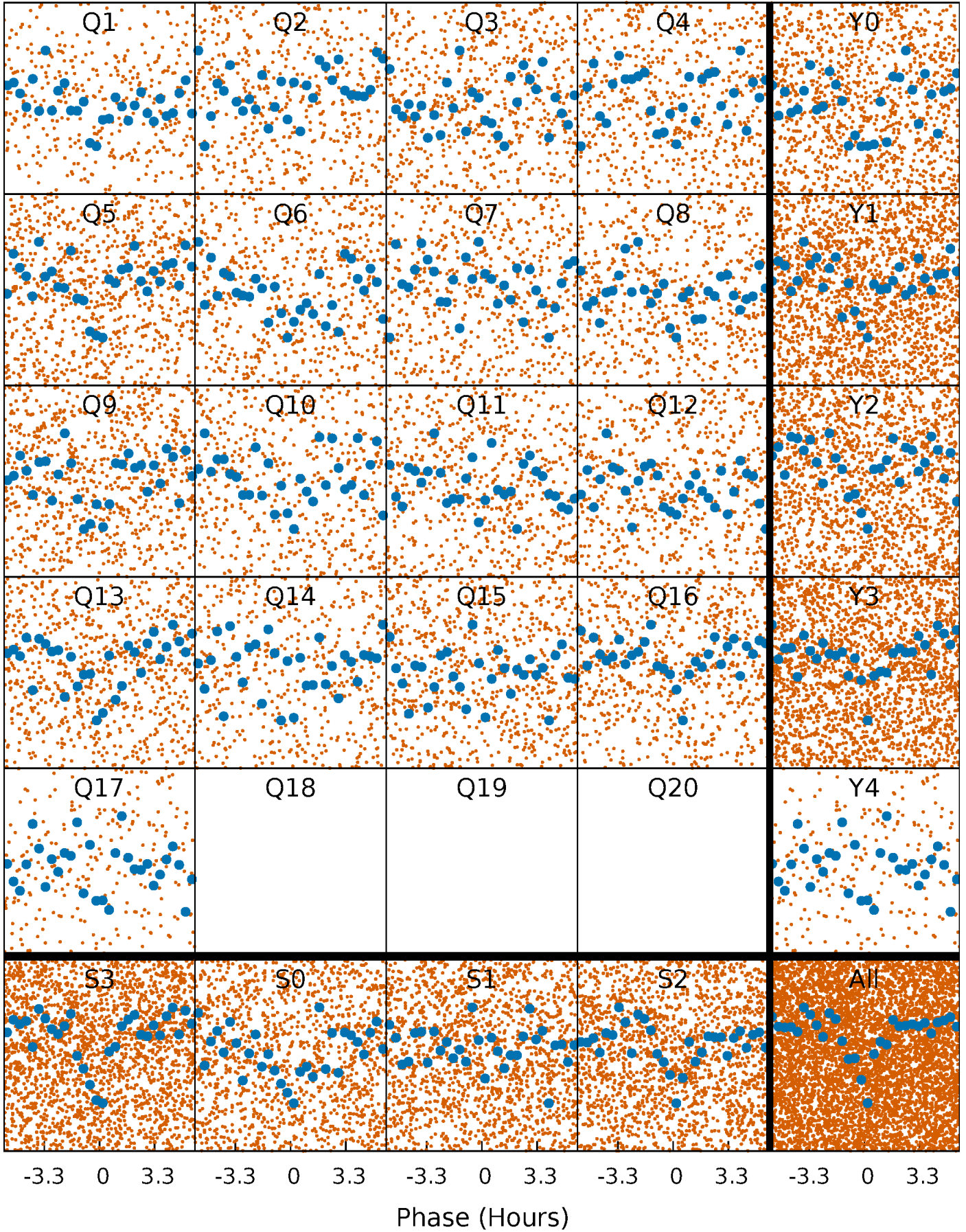
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

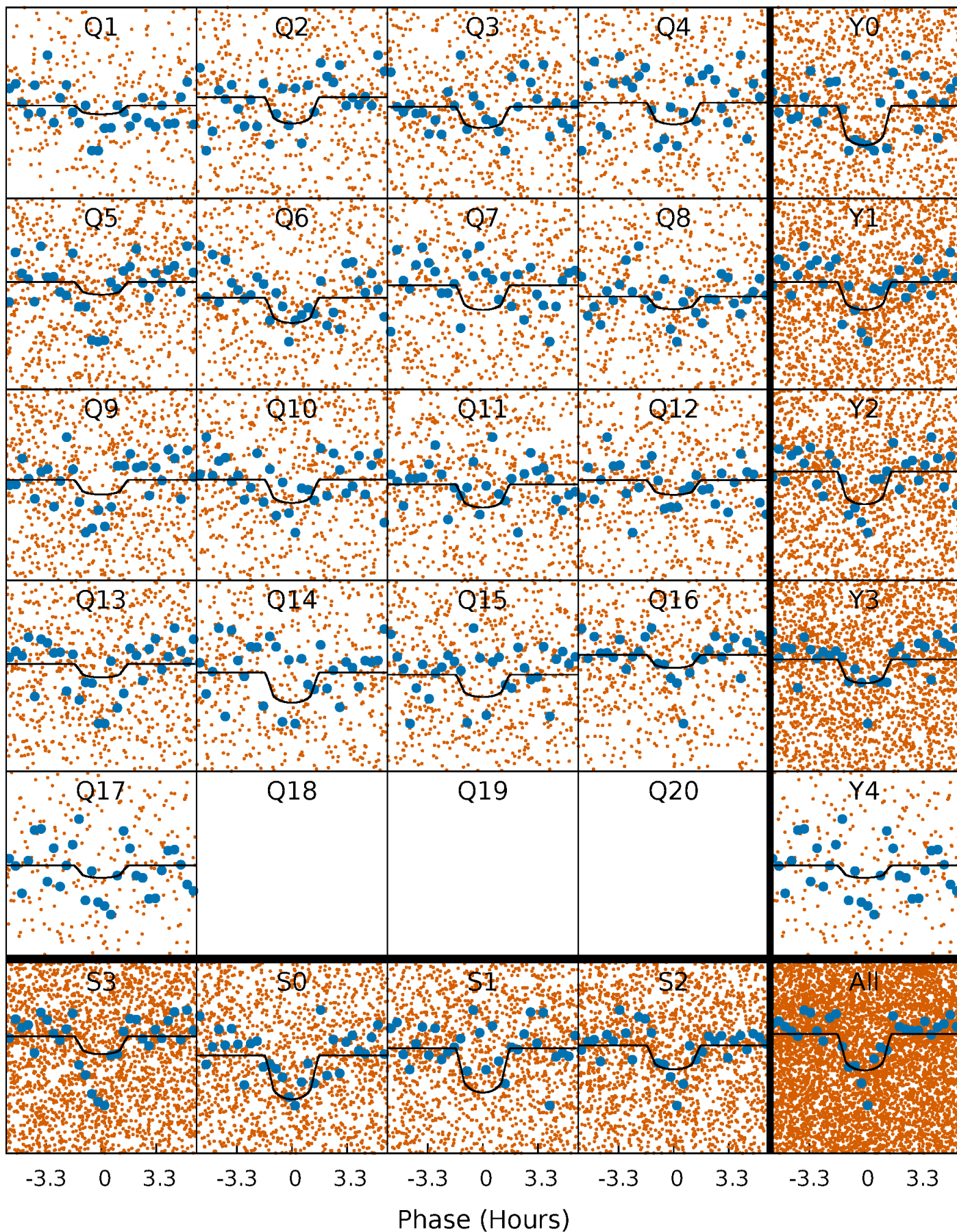
TCE 011757422-01 P= 1.819919 Days  $T_0=132.538408$  (BKJD)





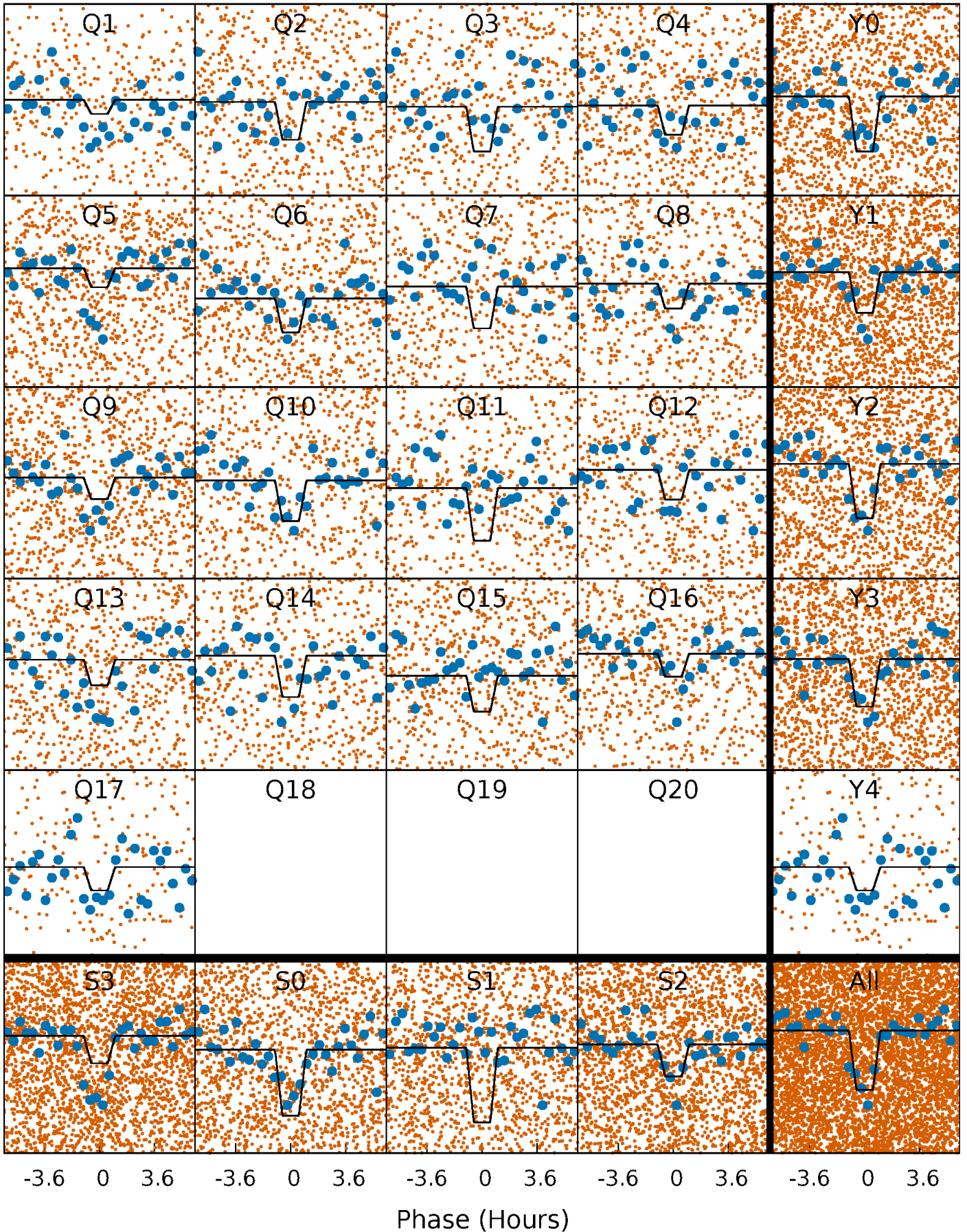
# DV Quarter-Phased Transit Curves

TCE 011757422-01 P= 1.819919 Days  $T_0=132.538408$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

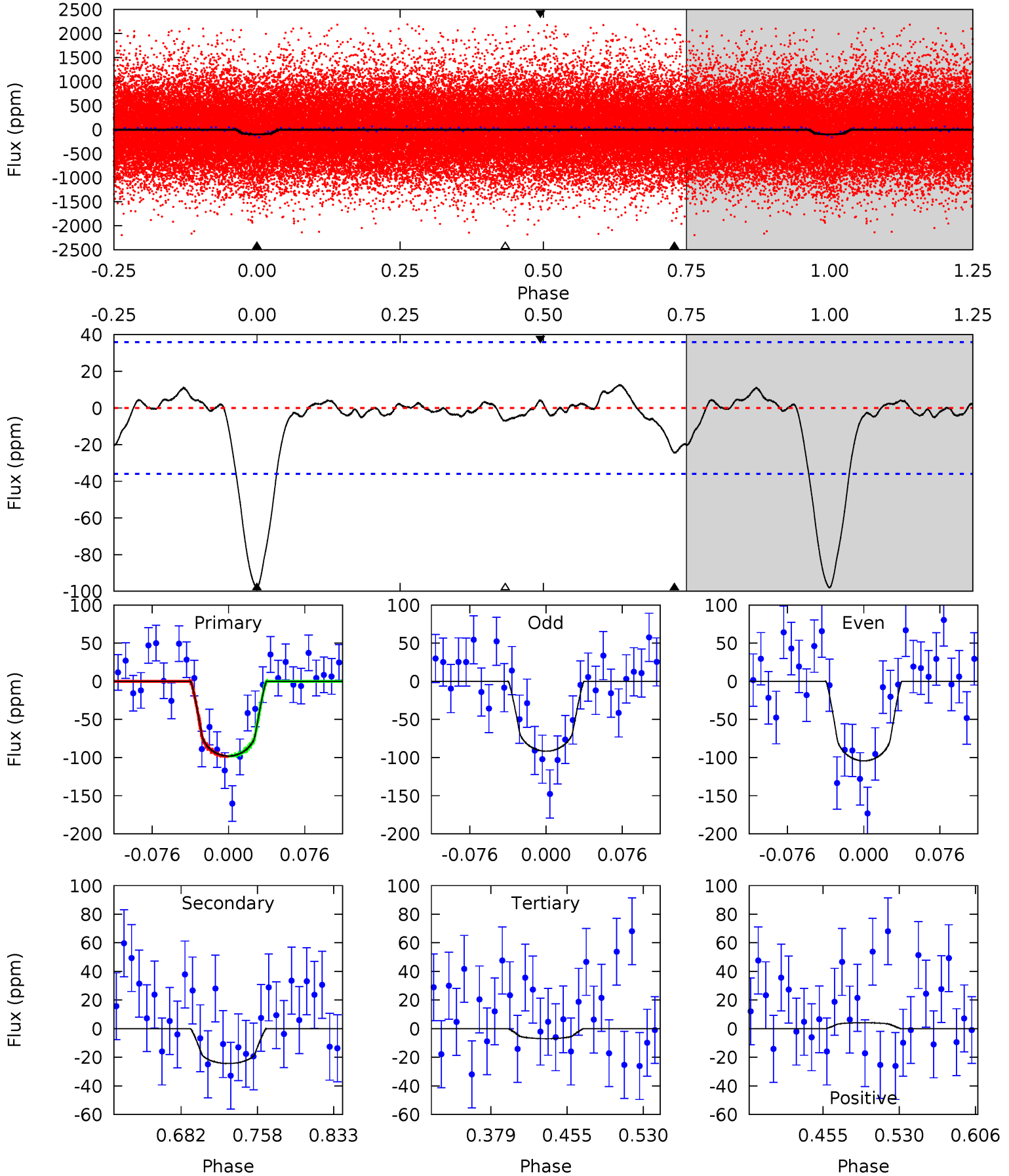
TCE 011757422-01 P= 1.819930 Days  $T_0=132.535650$  (BKJD)



# DV Model-Shift Uniqueness Test

011757422-01, P = 1.819919 Days, E = 130.718489 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
12.6	3.13	0.90	0.53	4.62	1.78	0.53	11.7	12.1	2.23	2.60	0.83	1.12	0.11	0.04

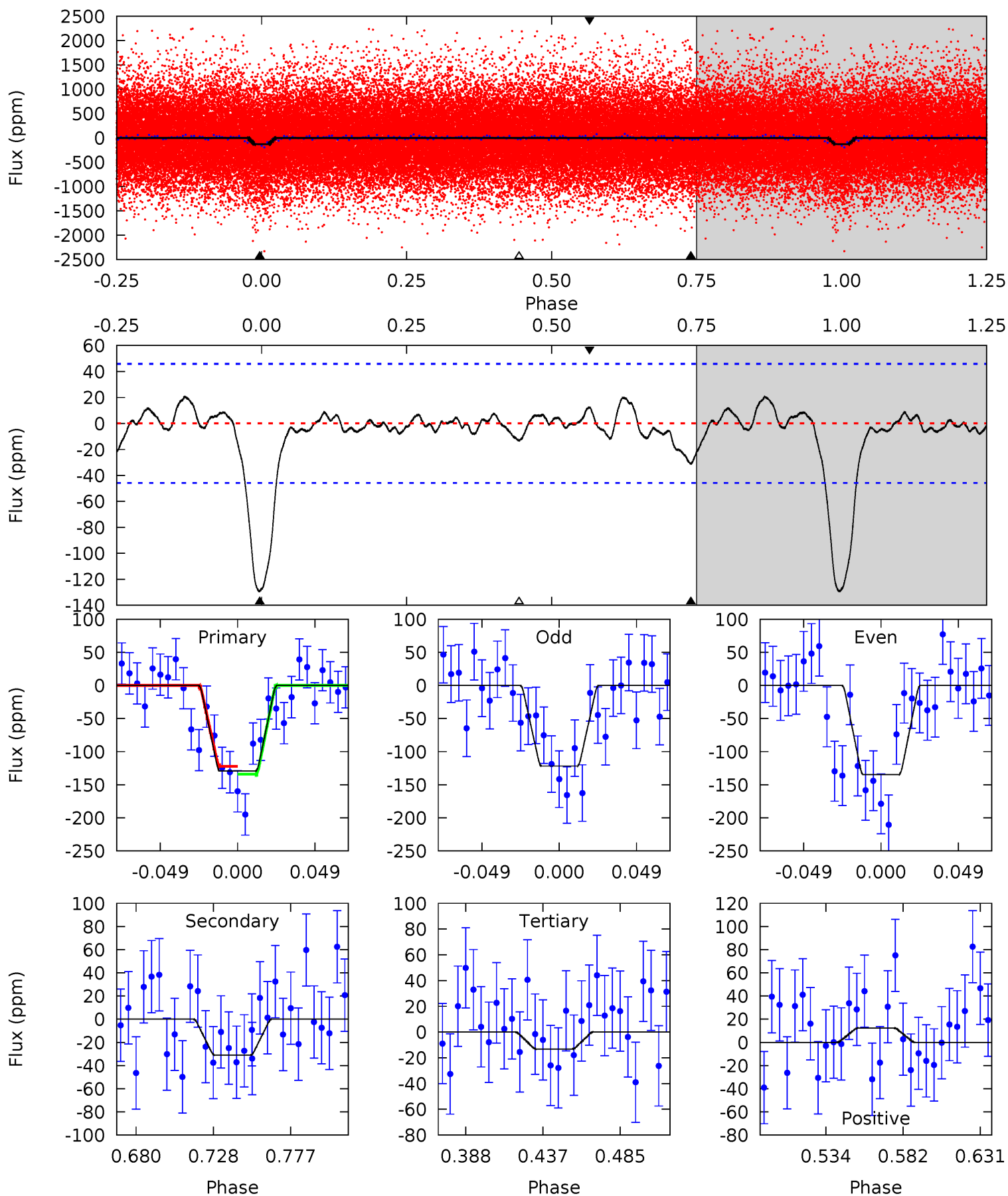




# Alt Model-Shift Uniqueness Test

011757422-01, P = 1.819930 Days, E = 130.715720 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
13.3	3.19	1.35	1.27	4.71	1.97	0.71	11.9	12.0	1.84	1.92	0.65	1.13	0.14	0.60





### Stellar Parameters For KIC 011757422

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4205^{+125}_{-138}$	$4.668^{+0.059}_{-0.027}$	$-0.380^{+0.300}_{-0.300}$	$0.578^{+0.050}_{-0.061}$	$0.567^{+0.063}_{-0.051}$	$4.134^{+1.188}_{-0.525}$
	+3%/-3%	+1%/-1%	+79%/-79%	+9%/-11%	+11%/-9%	+29%/-13%
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 011757422-01 / KOI 7476.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-24 \pm 8$	$0.72^{+0.52}_{-0.46}$	$1258^{+42}_{-44}$	$3153^{+1309}_{-483}$	$15^{+97}_{-11}$
Alt.	$-31 \pm 10$	$0.80^{+0.54}_{-0.47}$	$1258^{+45}_{-44}$	$3172^{+1041}_{-484}$	$15^{+68}_{-10}$

$T_{\text{max}}$  = 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

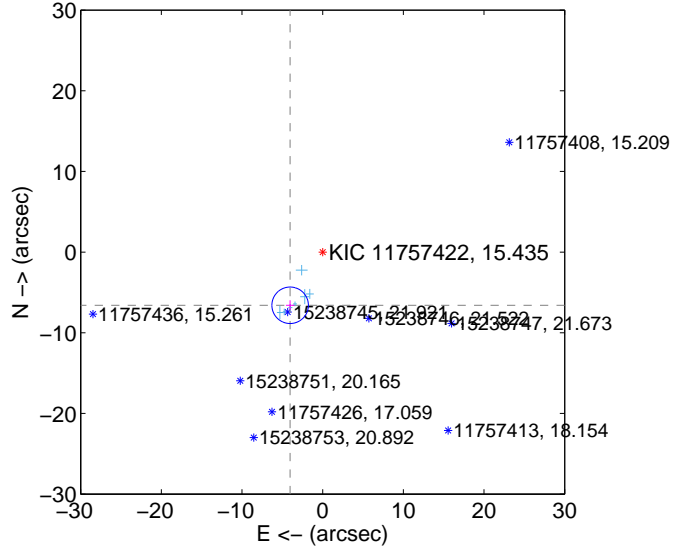
Supplemental centroid analysis for 011757422-01. Kepler magnitude: 15.44. Transit SNR 8.71

There are 7 quarters with good PRF difference image offsets

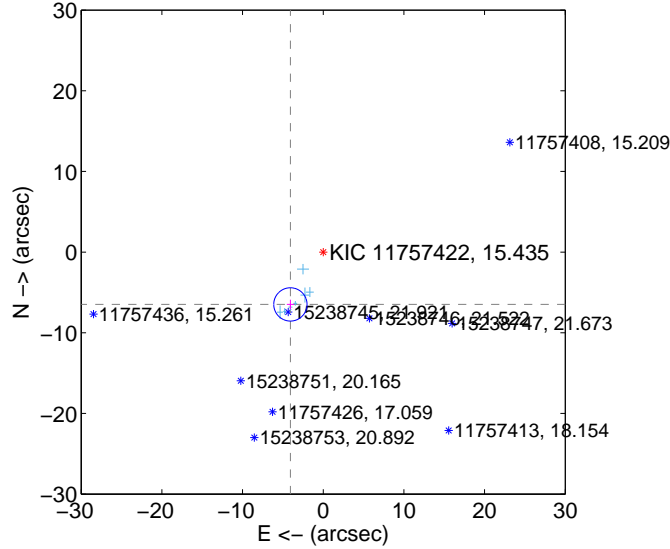
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>7.727 <math>\pm</math> 0.754</b>	<b>10.25</b>	4.032 $\pm$ 0.512	-6.592 $\pm$ 0.615
PRF-fit source offset from KIC position	<b>7.656 <math>\pm</math> 0.688</b>	<b>11.13</b>	4.068 $\pm$ 0.443	-6.486 $\pm$ 0.586
photometric centroid source offset	<b>20.38 <math>\pm</math> 1.77</b>	<b>11.49</b>	10.30 $\pm$ 1.74	-17.58 $\pm$ 1.79

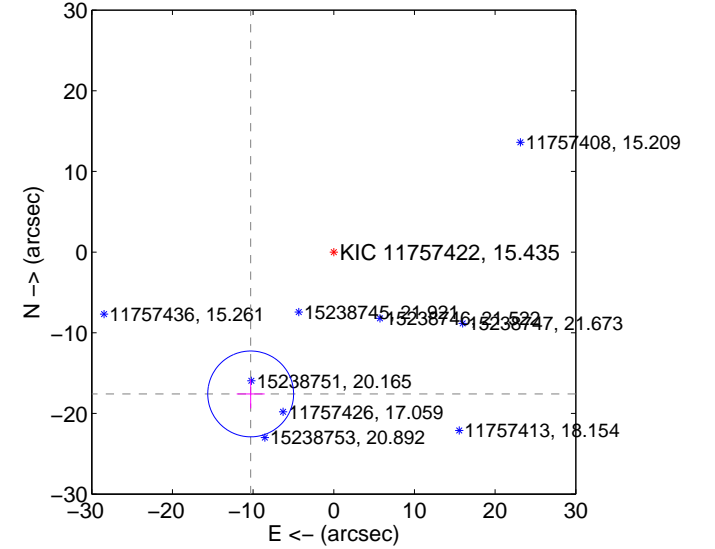
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

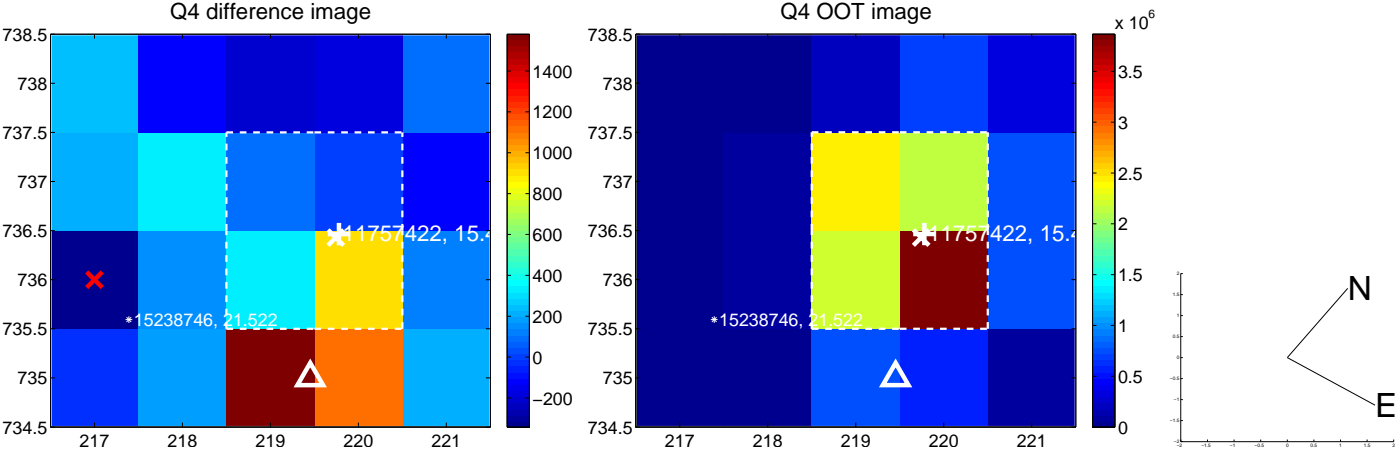
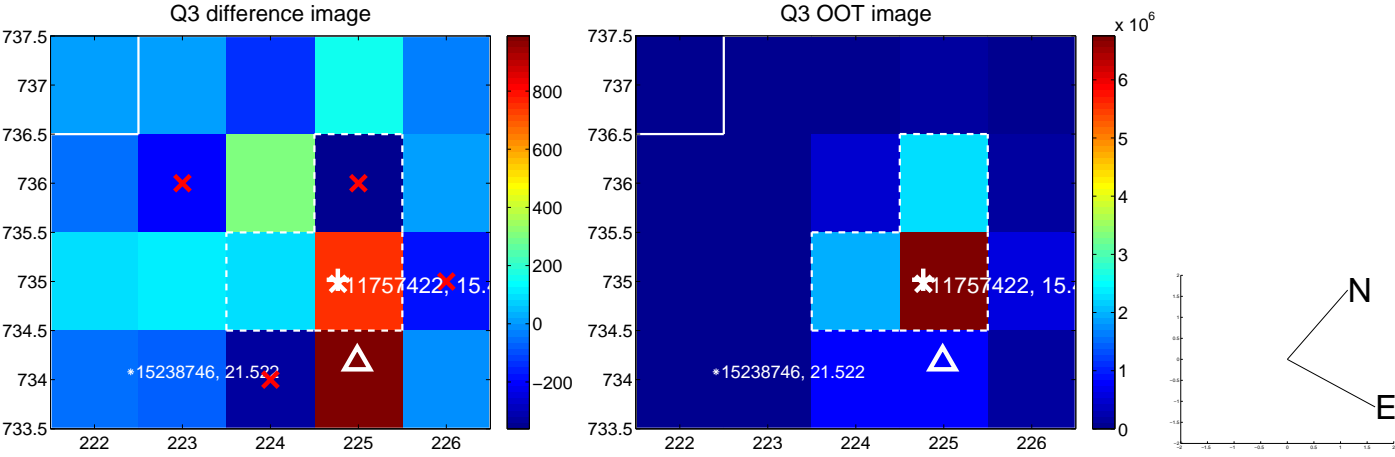
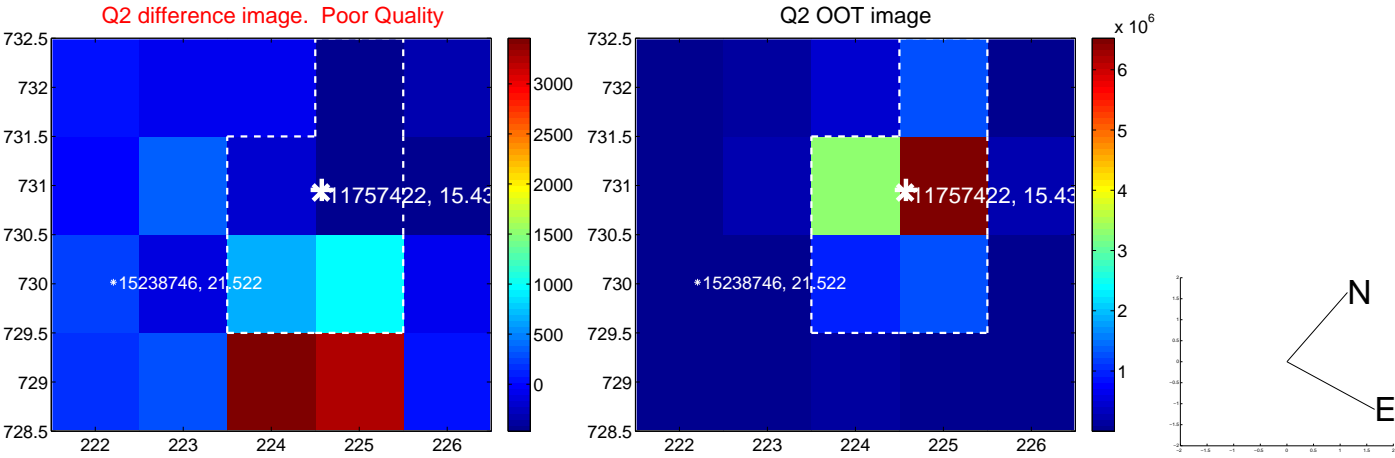
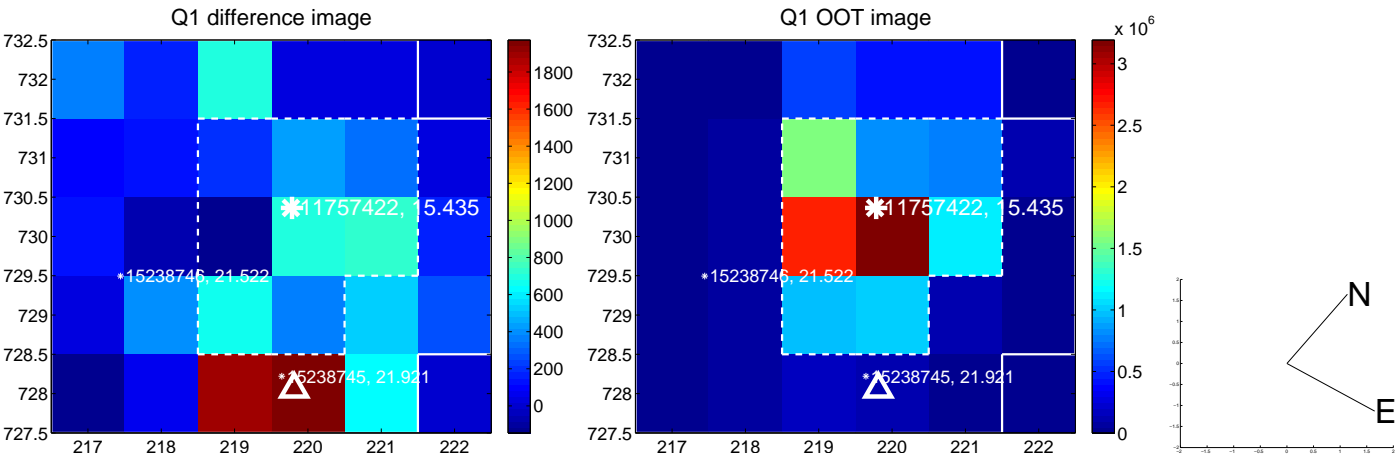


offset from photometric centroids

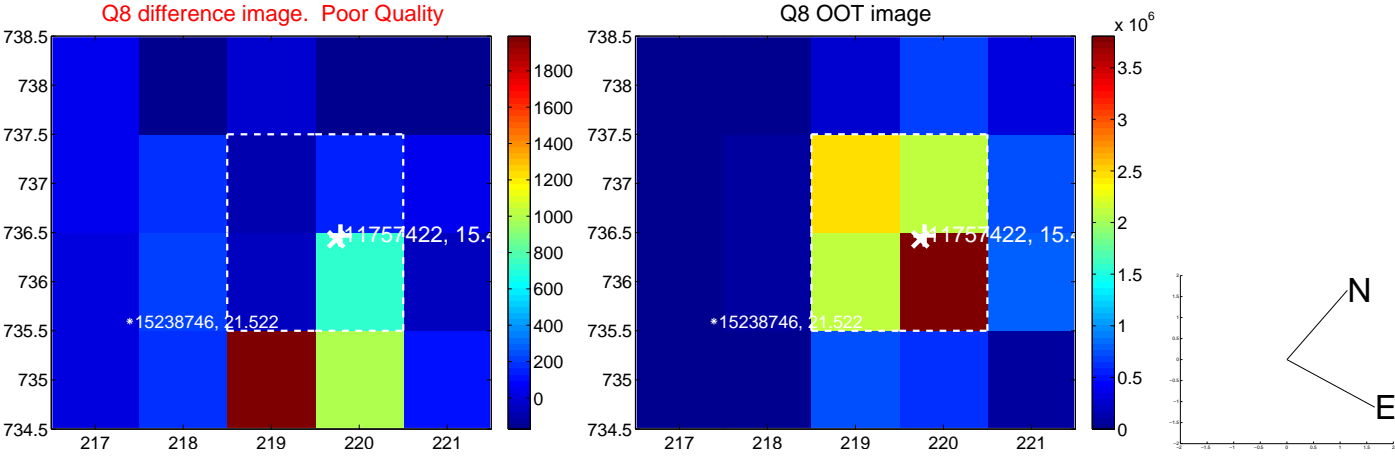
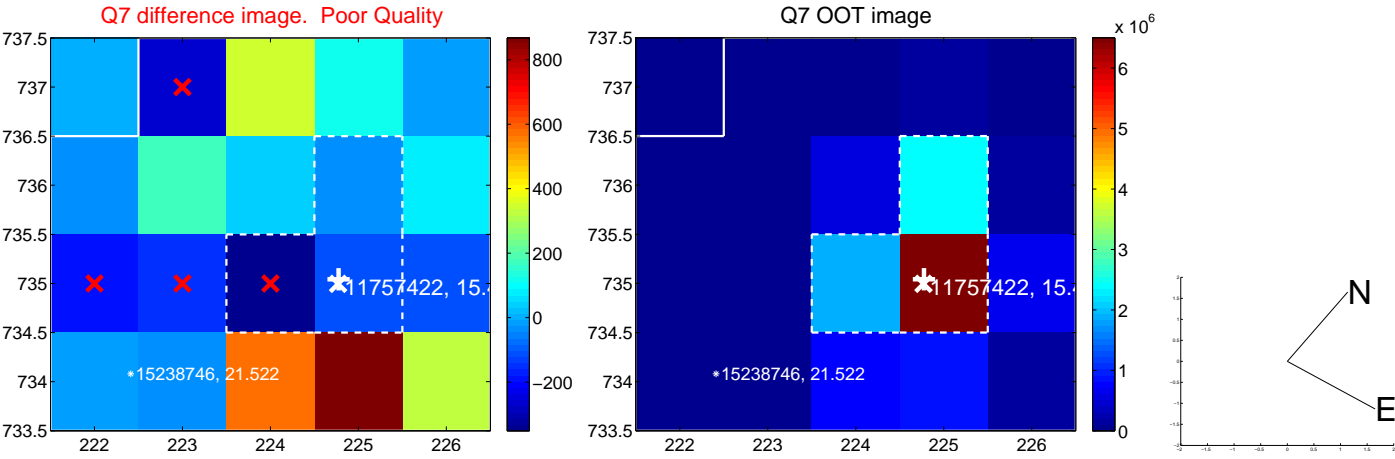
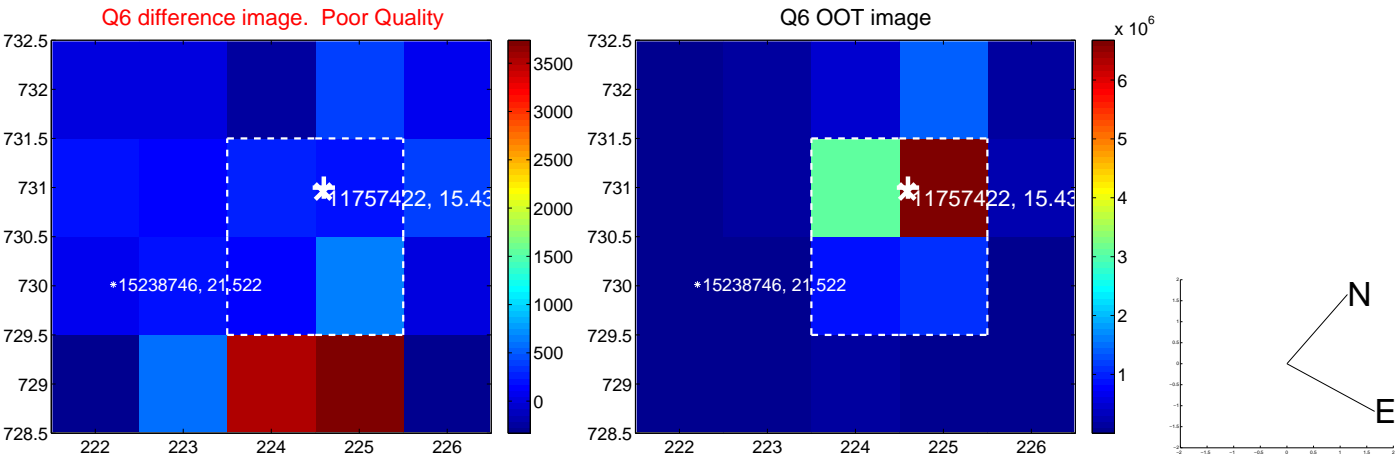
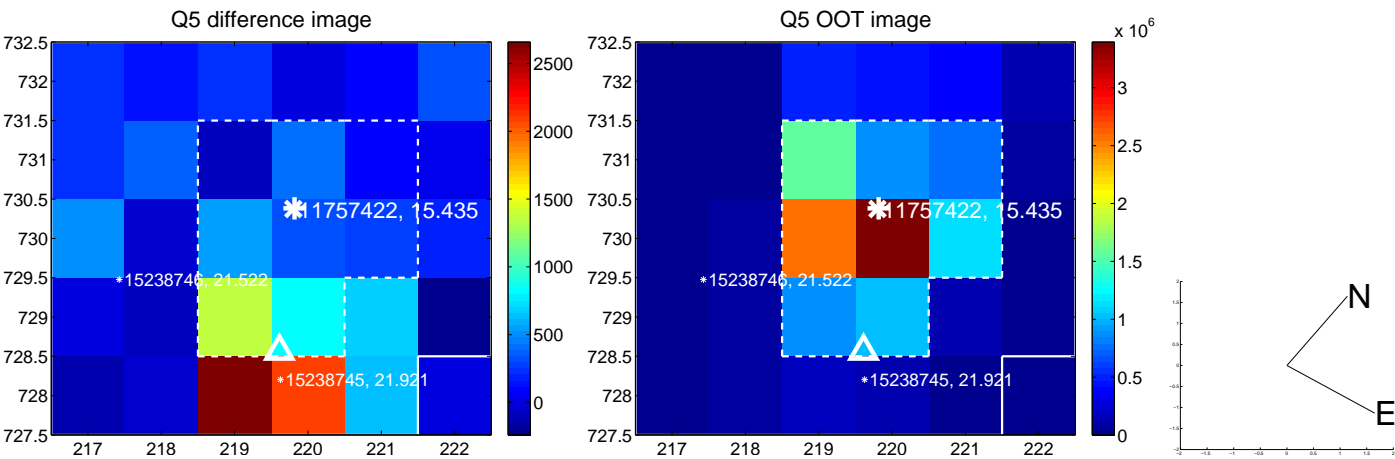


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

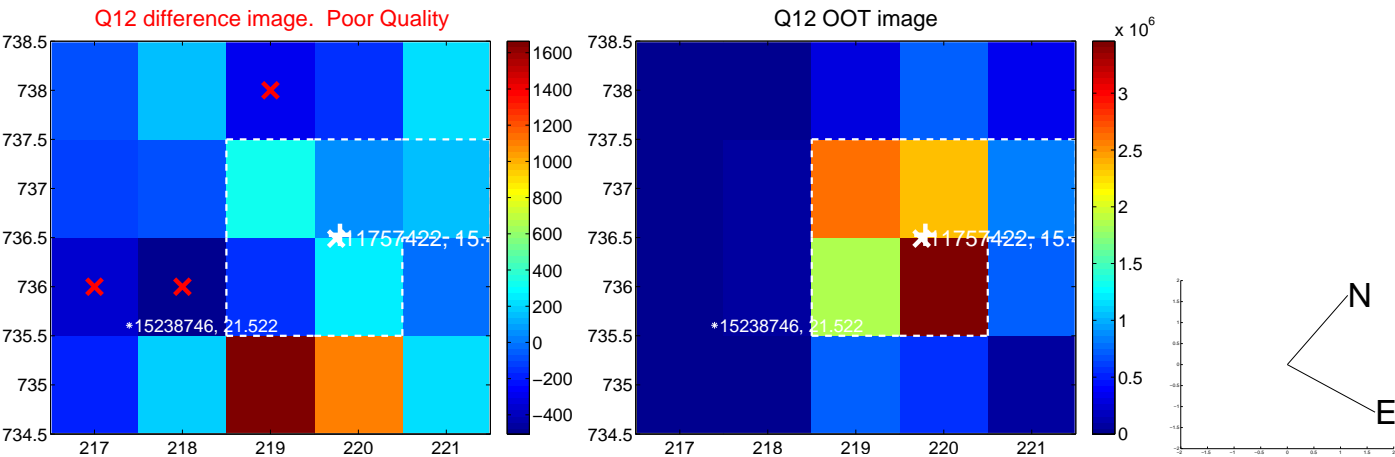
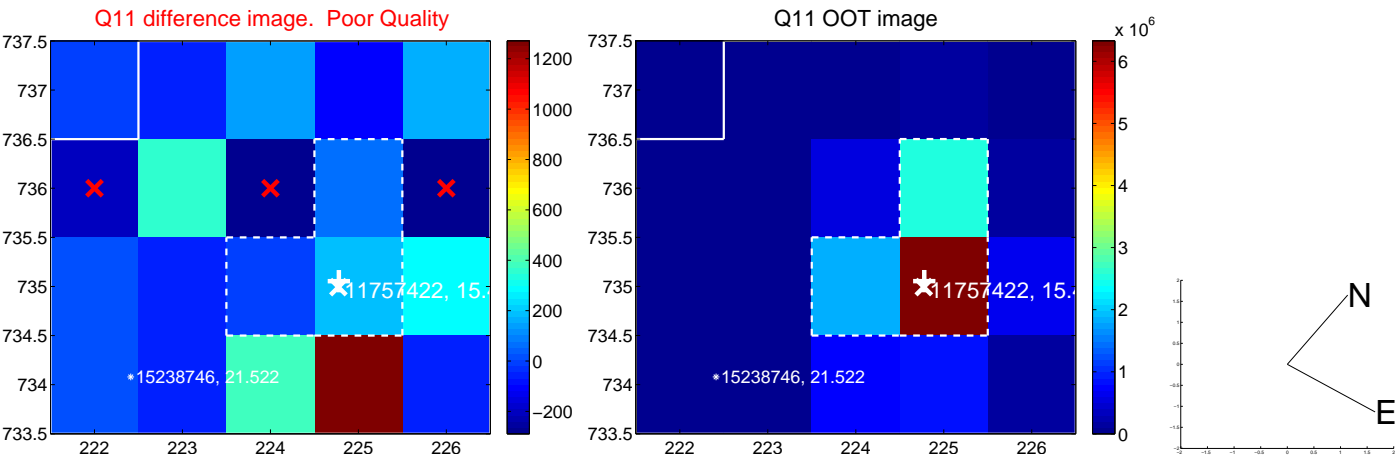
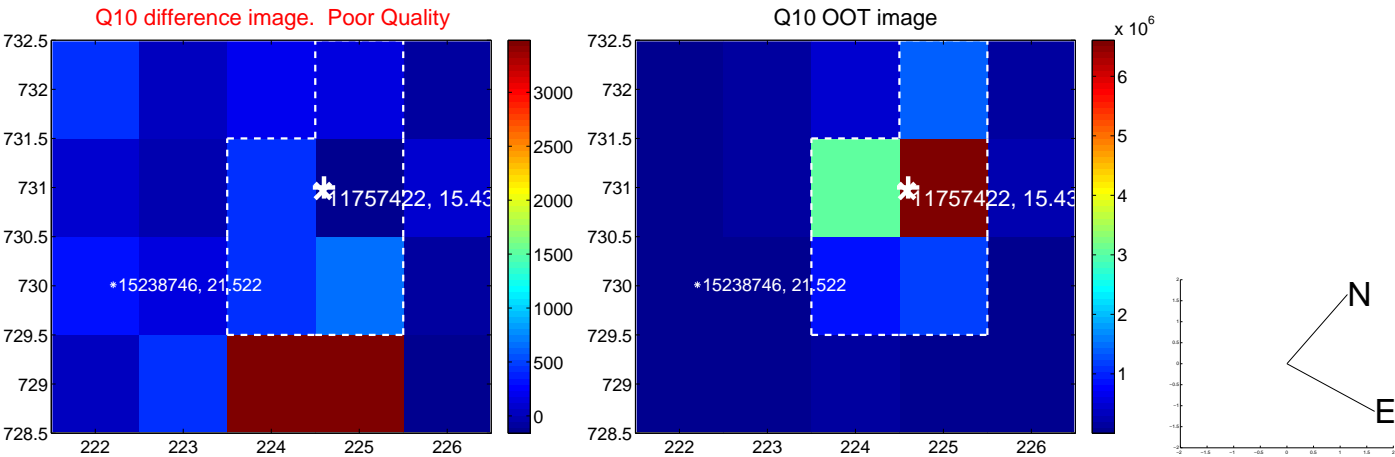
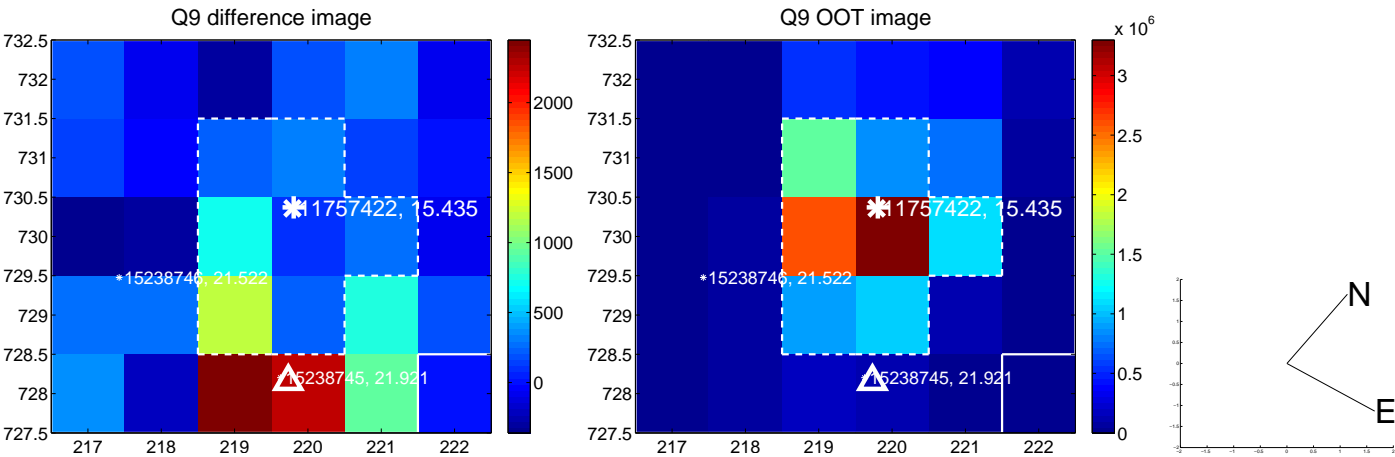


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

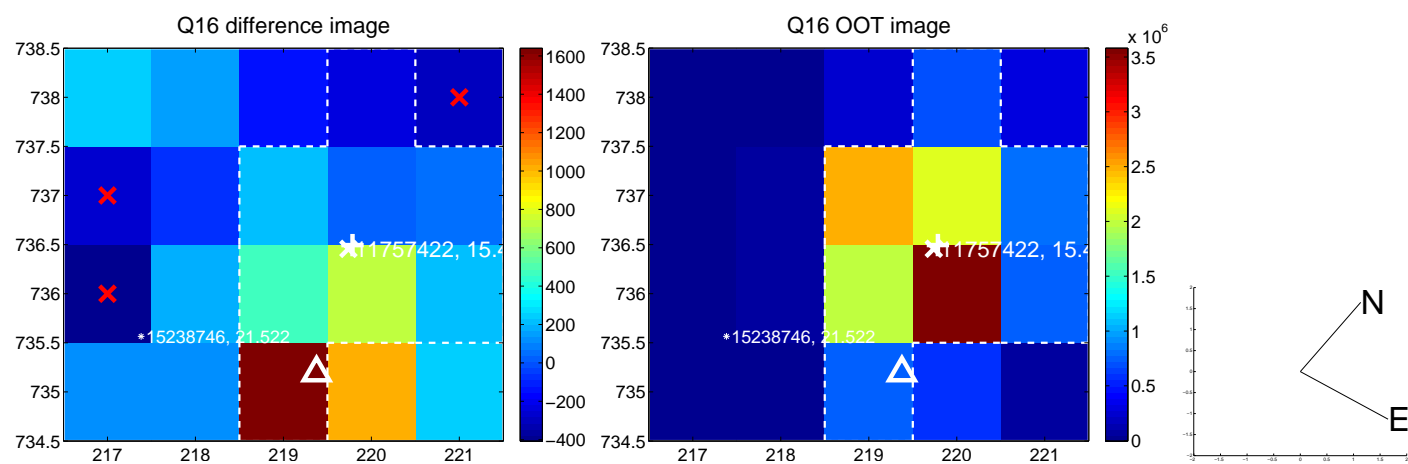
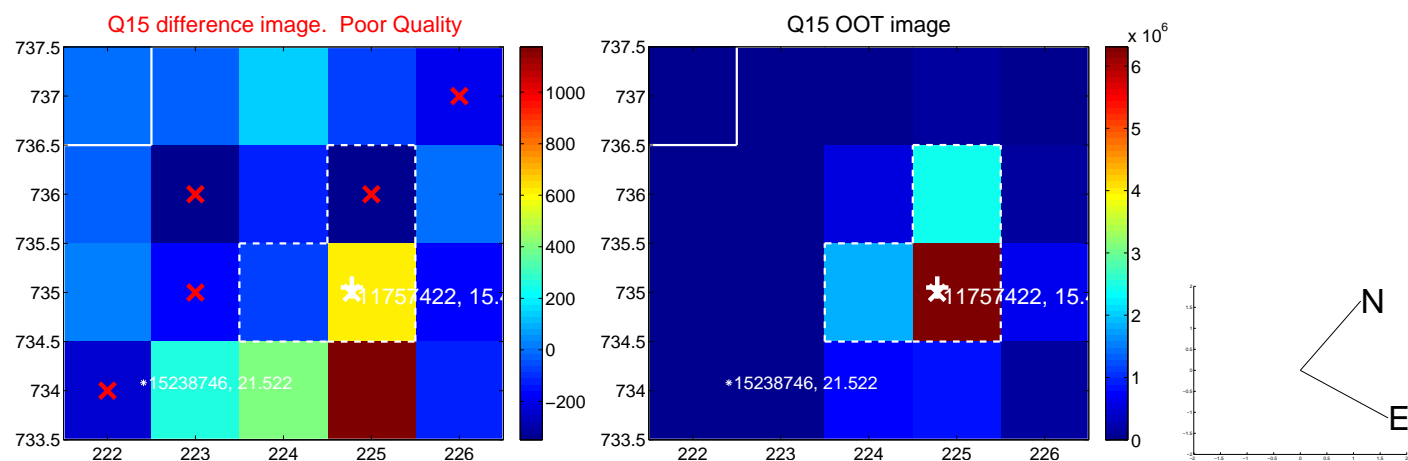
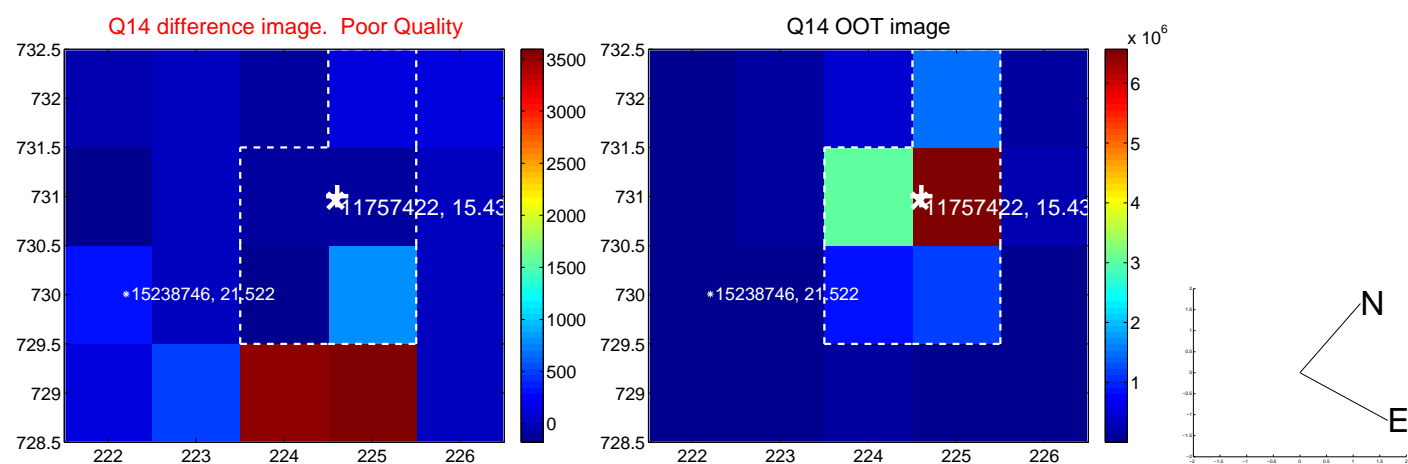
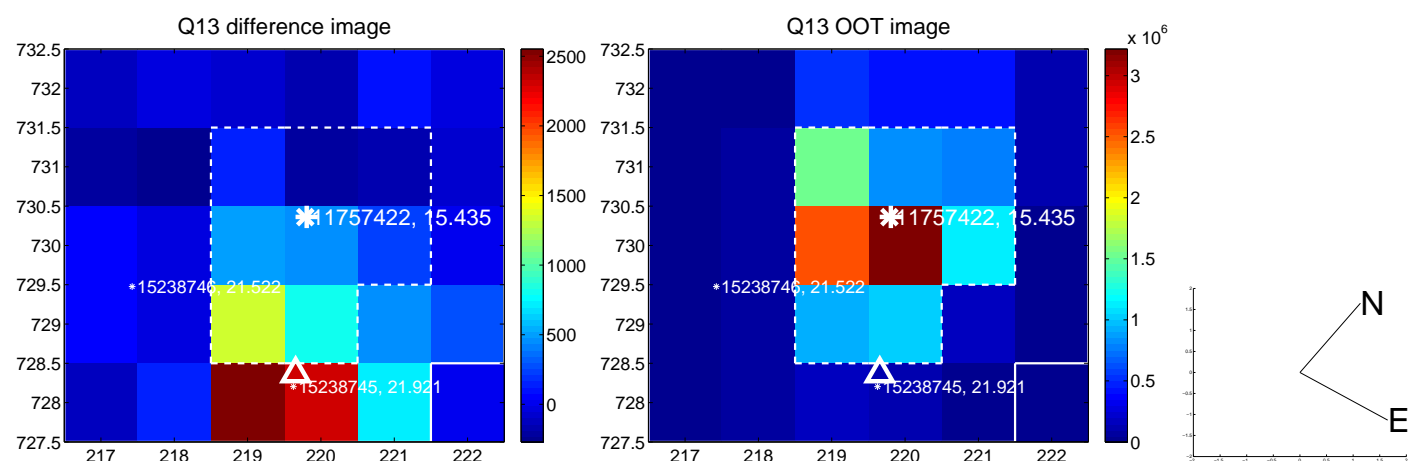




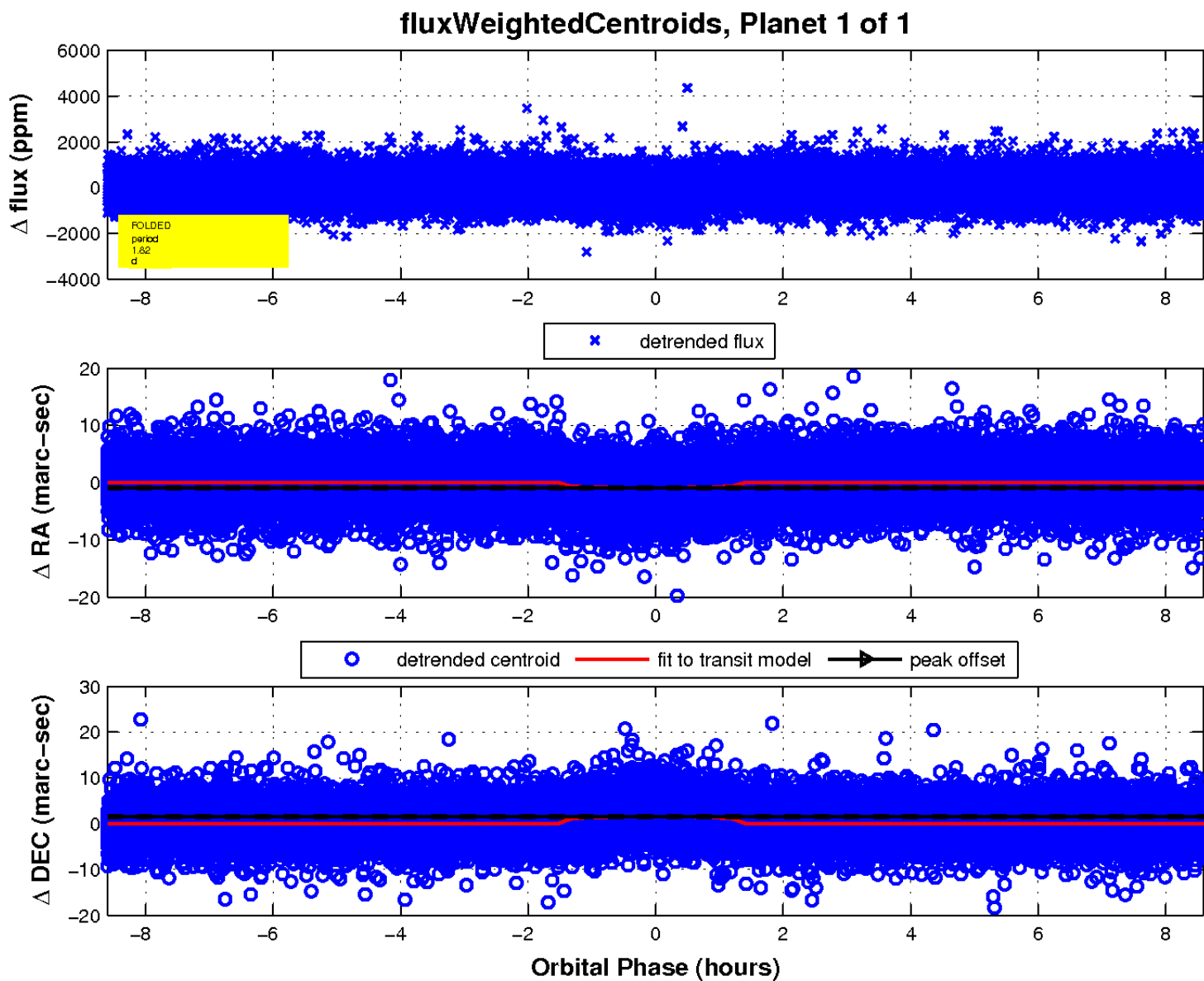
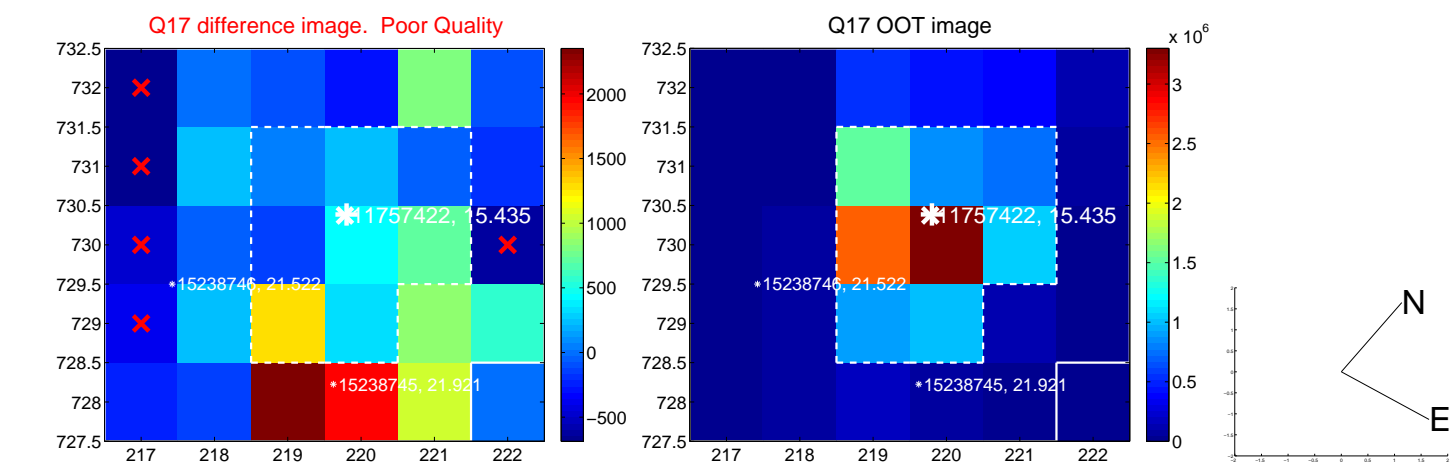
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

