

# KIC 011455642

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011455642-01	OBS	No	9.953355	139.171634	19.6	21.937	7.2	8.5	1.31	6447	0.65	296.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011455642-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

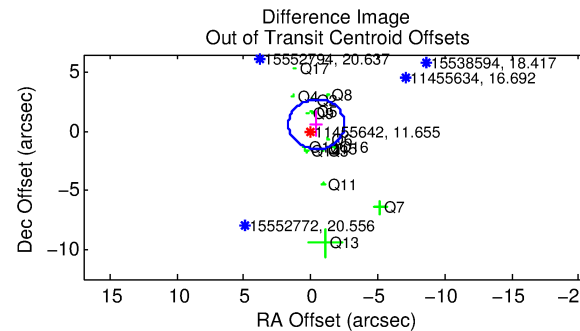
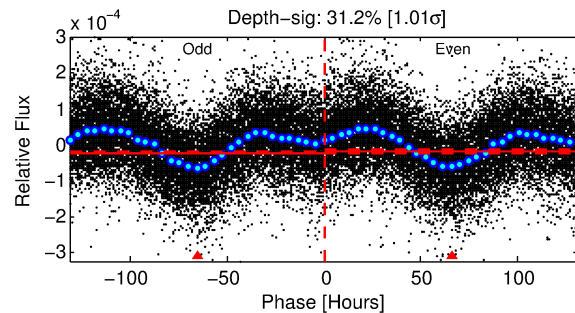
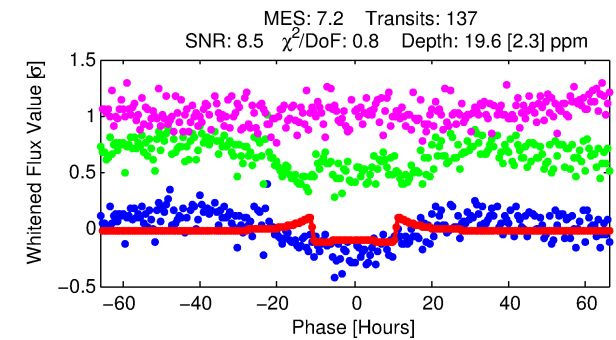
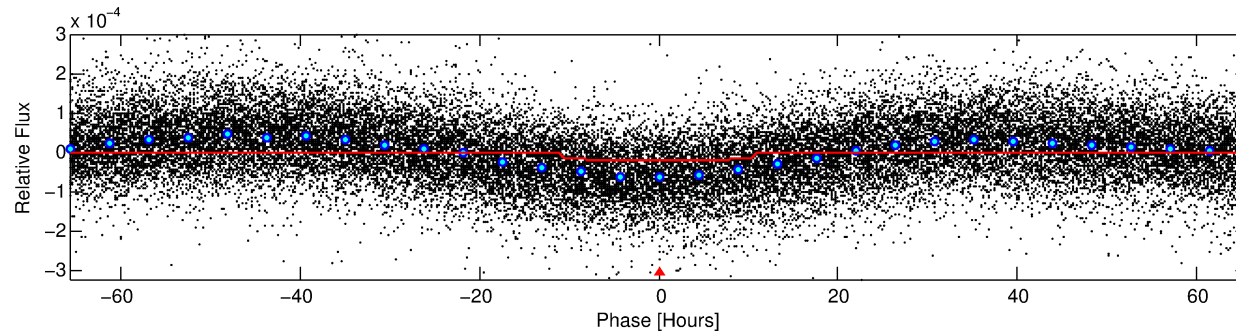
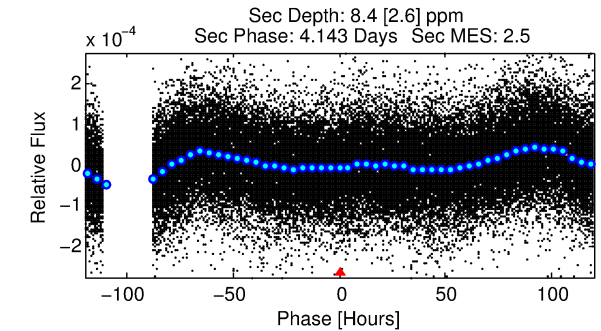
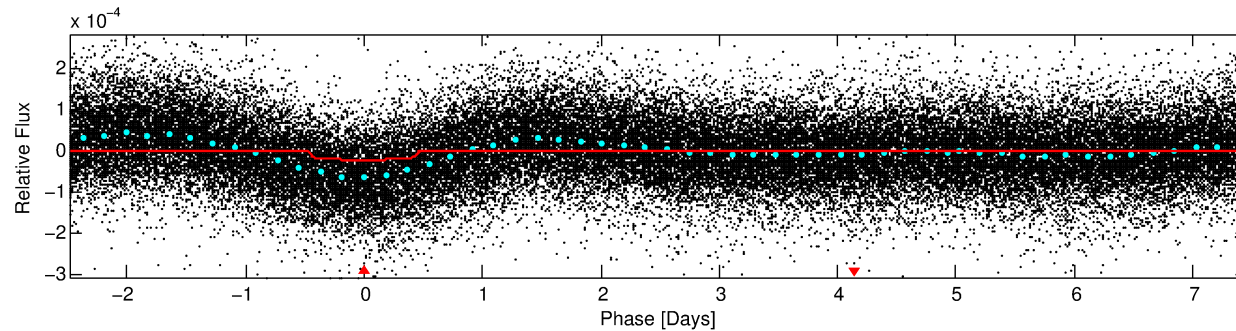
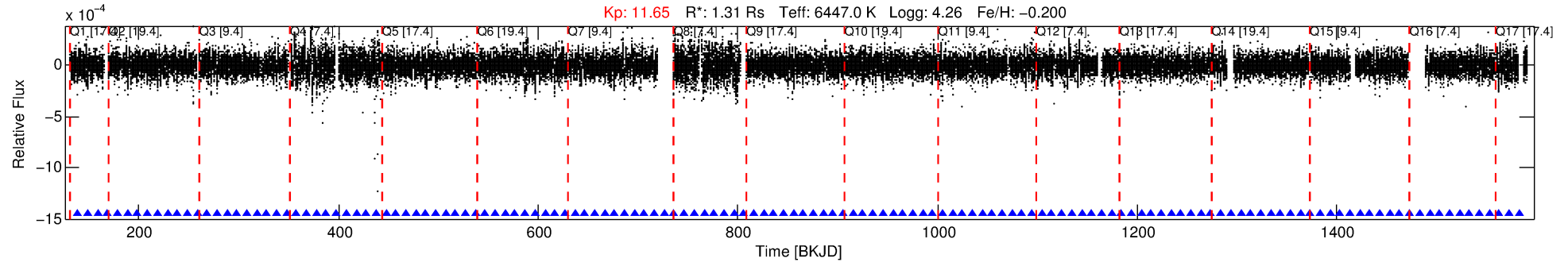
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011455642-01

No Significant Match Found

# DV One-Page Summary

KIC: 11455642 Candidate: 1 of 1 Period: 9.953 d



## DV Fit Results:

Period = 9.95335 [0.00016] d  
Epoch = 139.1716 [0.0127] BKJD  
 $R_p/R^*$  = 0.0046 [0.0005]  
 $a/R^*$  = 2.12 [0.79]  
 $b$  = 0.84 [0.17]  
 $S_{\text{eff}}$  = 296.10 [63.21]  
 $T_{\text{eq}}$  = 1058 [56] K  
 $R_p$  = 0.65 [0.13]  $R_e$   
 $a$  = 0.0946 [0.0133] AU  
 $A_g$  = 98.25 [42.29] [2.30σ]  
 $T_{\text{eff}}$  = 5149 [489] K [8.31σ]

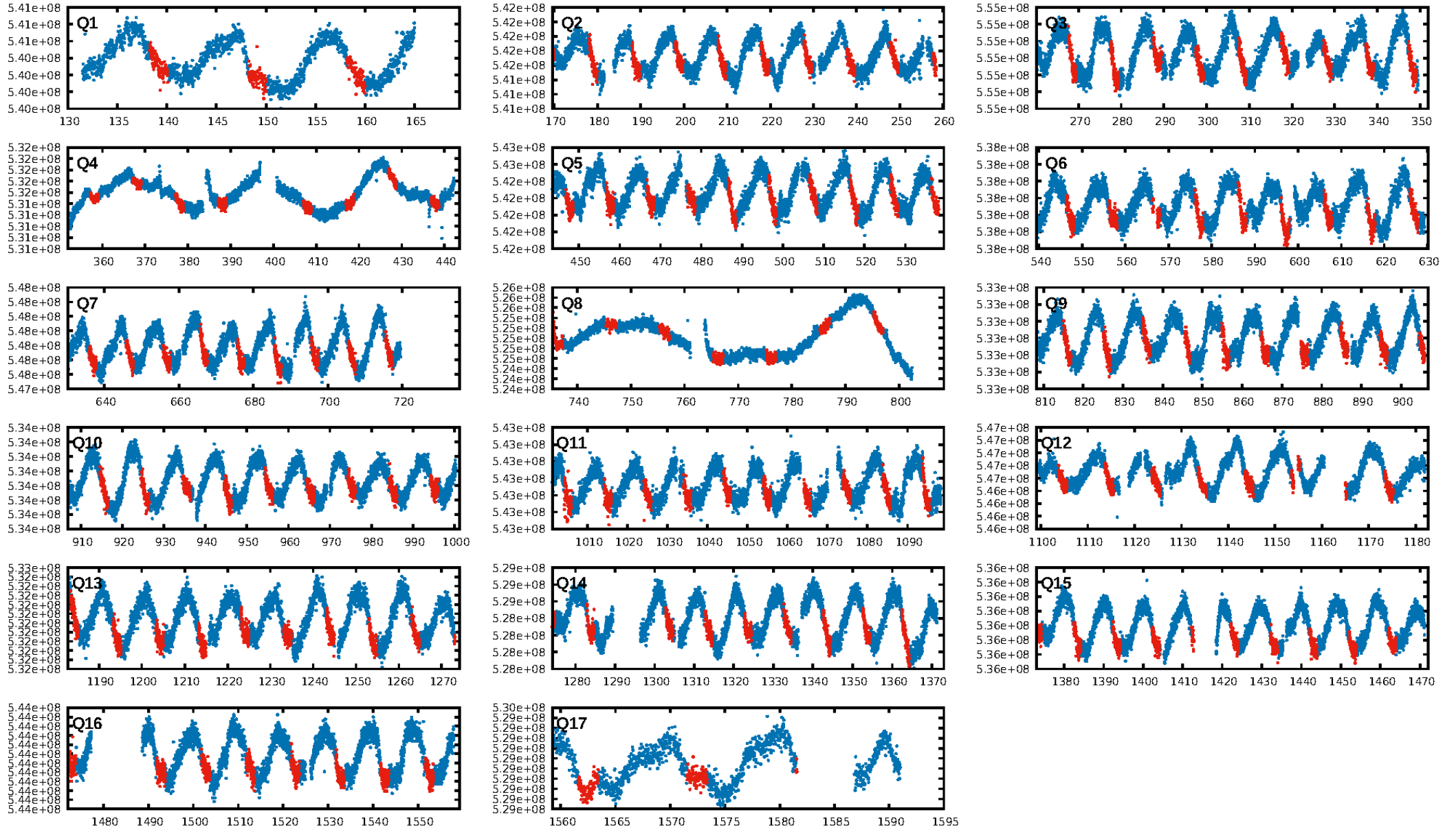
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.60e-13  
RollingBand-fgt: 1.00 [132/132]  
GhostDiagnostic-chr: 1.082  
Centroid-sig: 8.0%  
Centroid-so: 1.258 arcsec [1.25σ]  
OotOffset-rm: 0.728 arcsec [1.04σ]  
KicOffset-rm: 0.689 arcsec [0.94σ]  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 0.60 [9/15]  
DiffImageOverlap-fno: 1.00 [17/17]

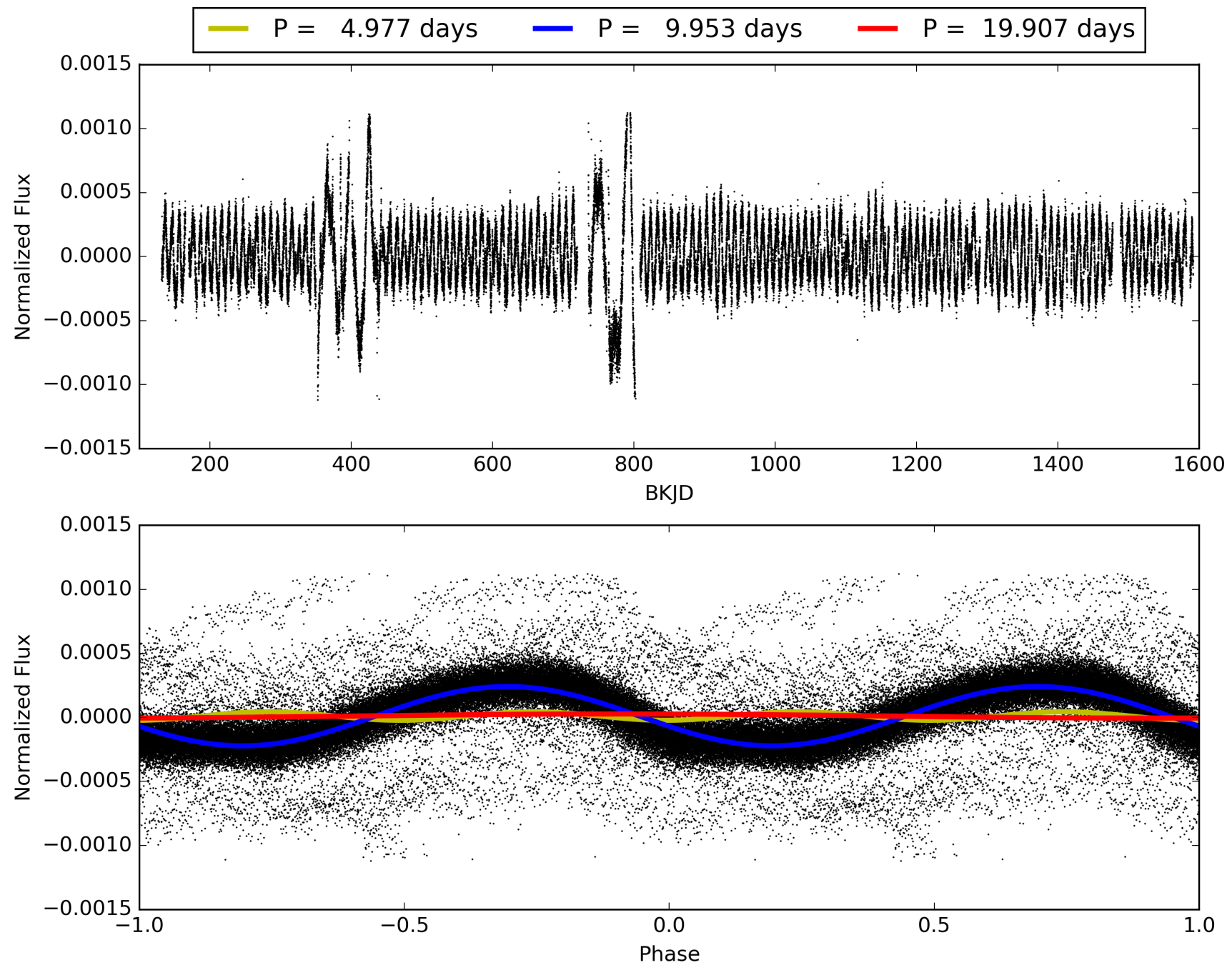
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:44:33 Z

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

# TCE 011455642-01, PDC Light Curves

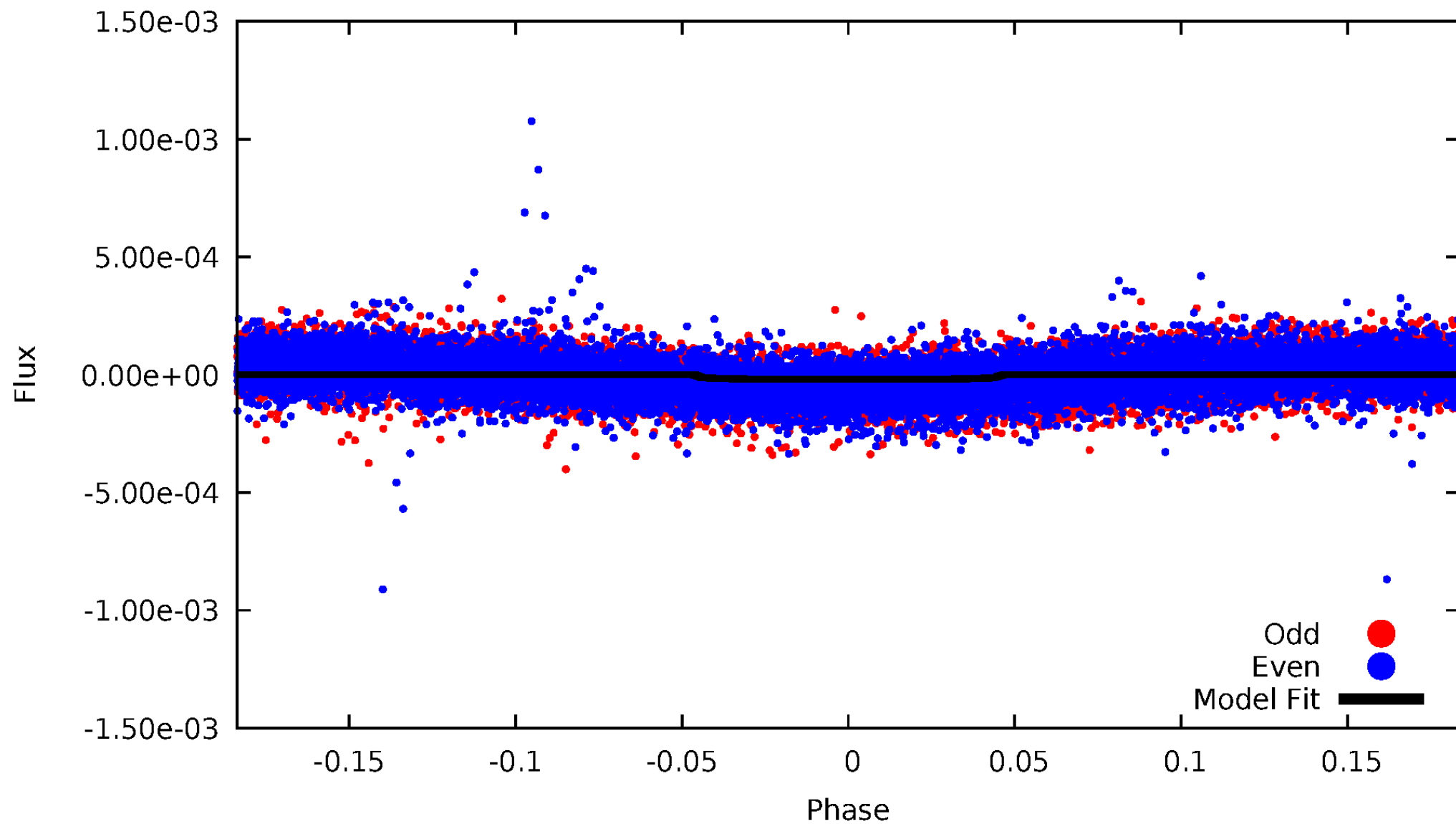


# TCE 011455642-01



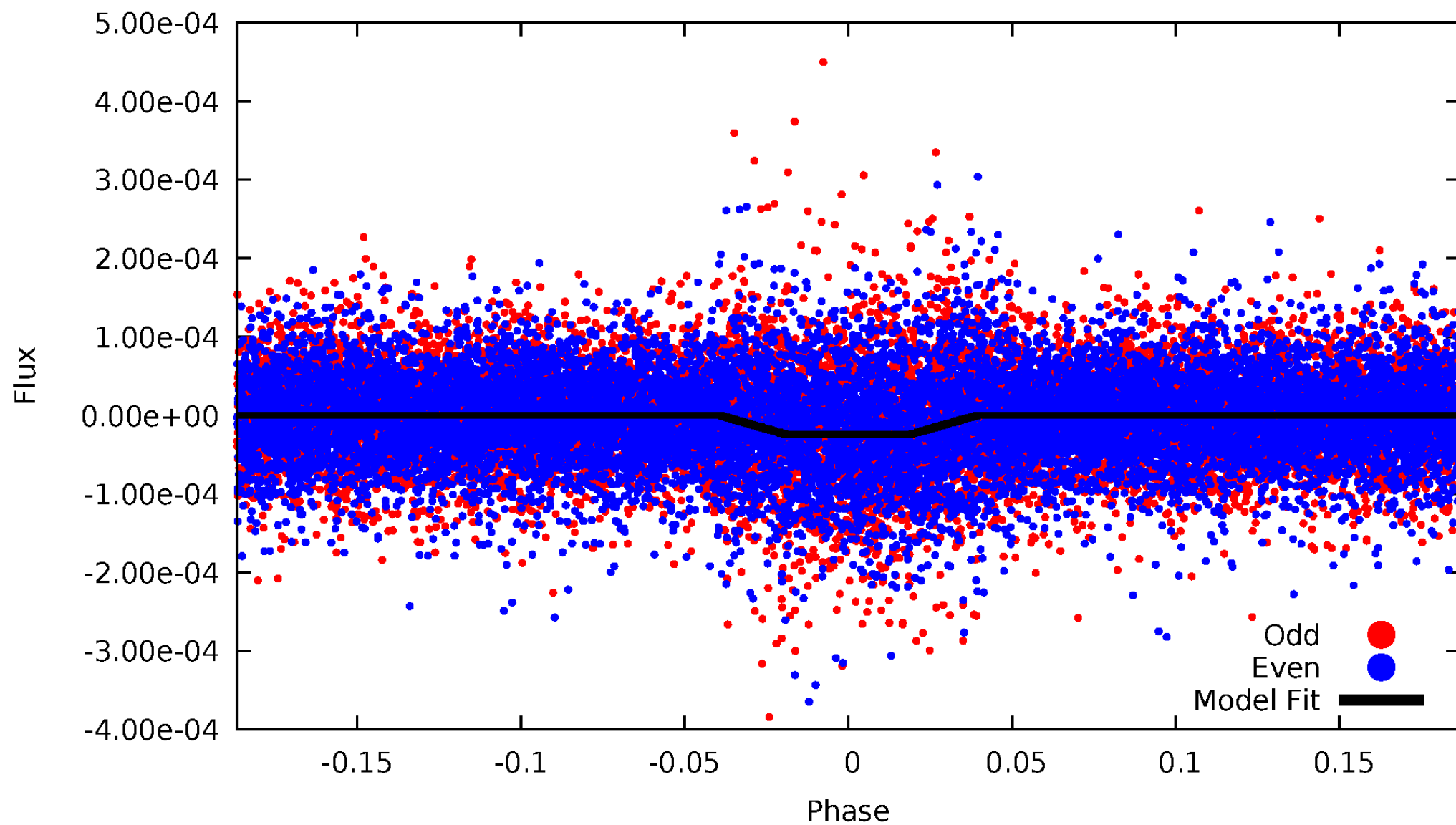
# DV Odd/Even

TCE 011455642-01



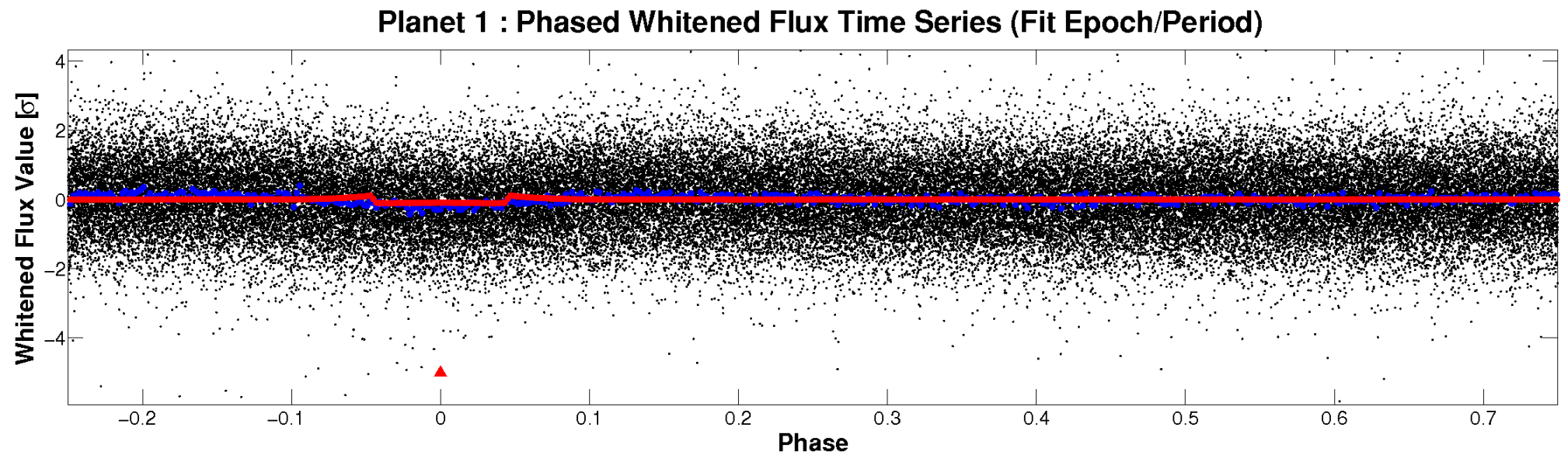
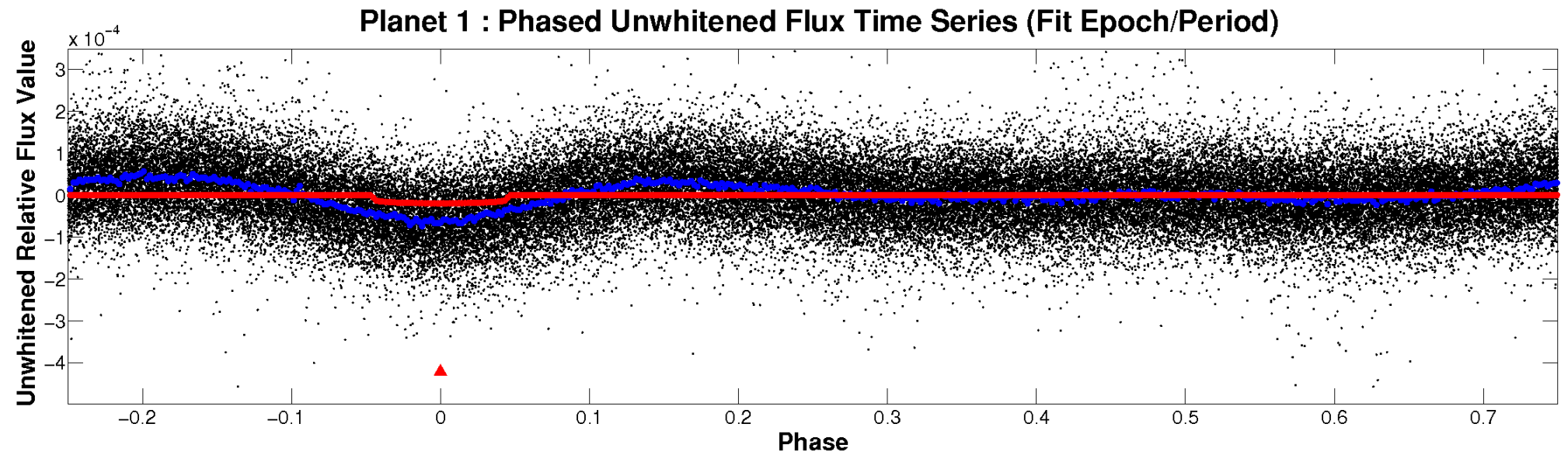
# ALT Odd/Even

TCE 011455642-01



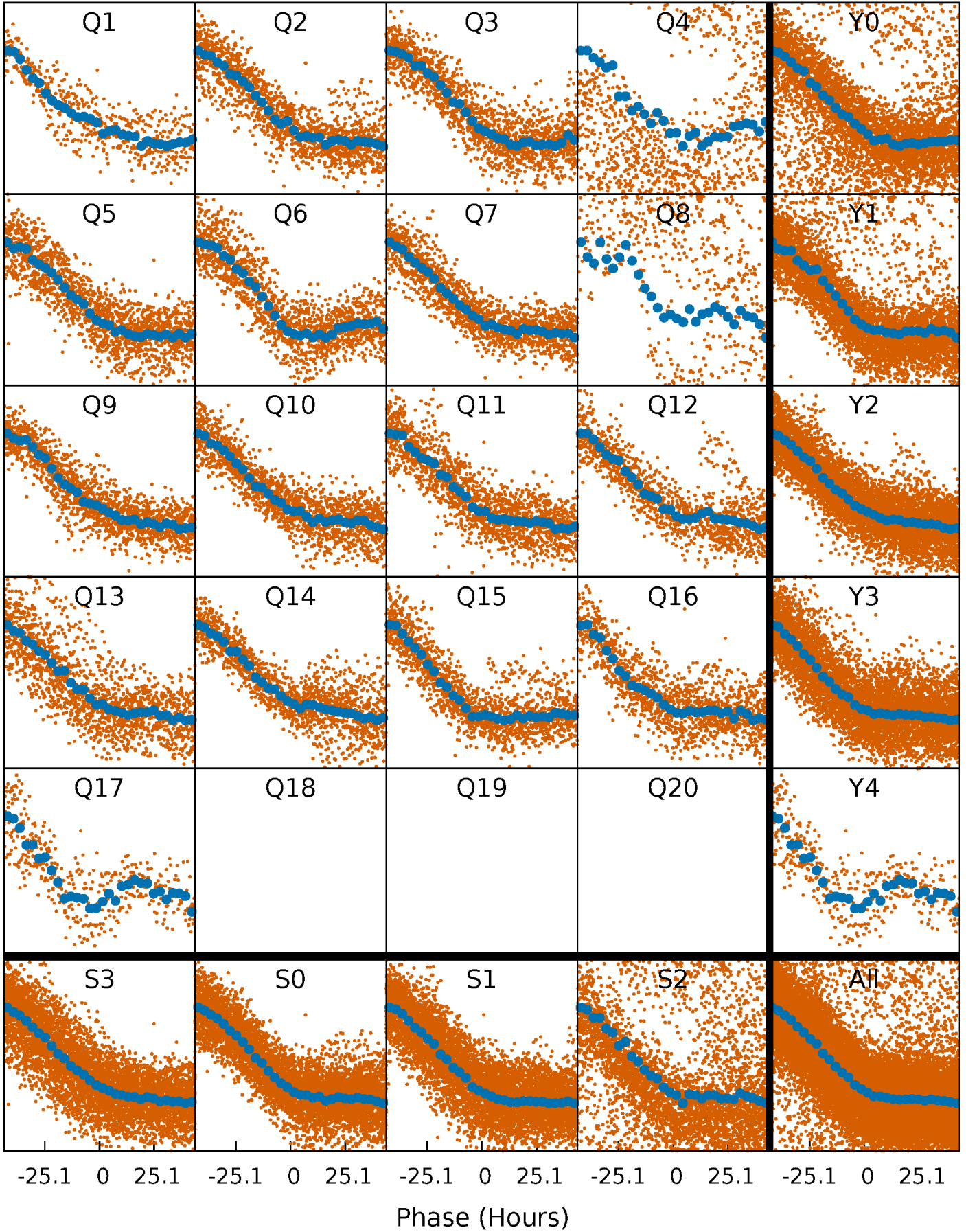


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

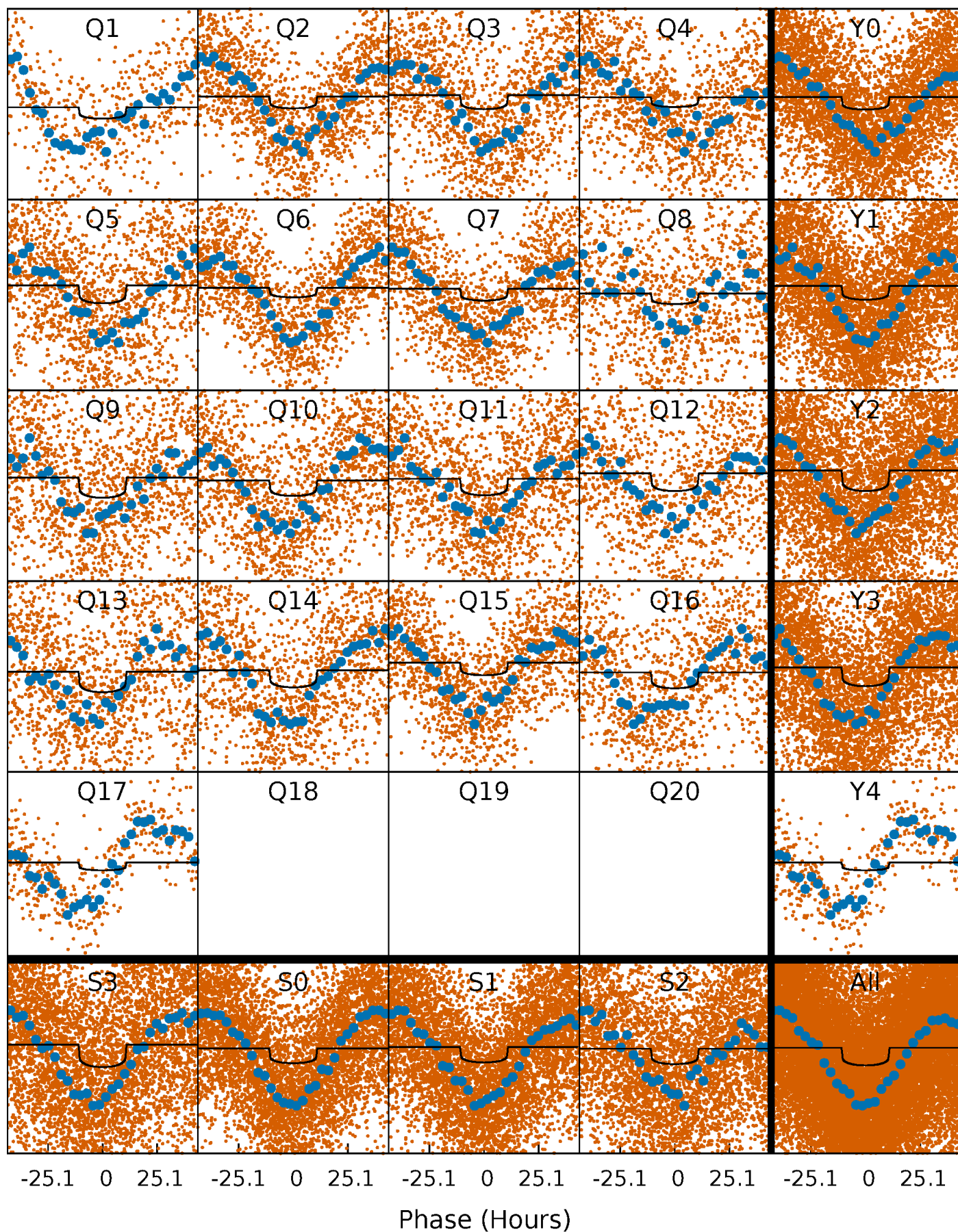
TCE 011455642-01   P= 9.953355 Days    $T_0=139.171634$  (BKJD)





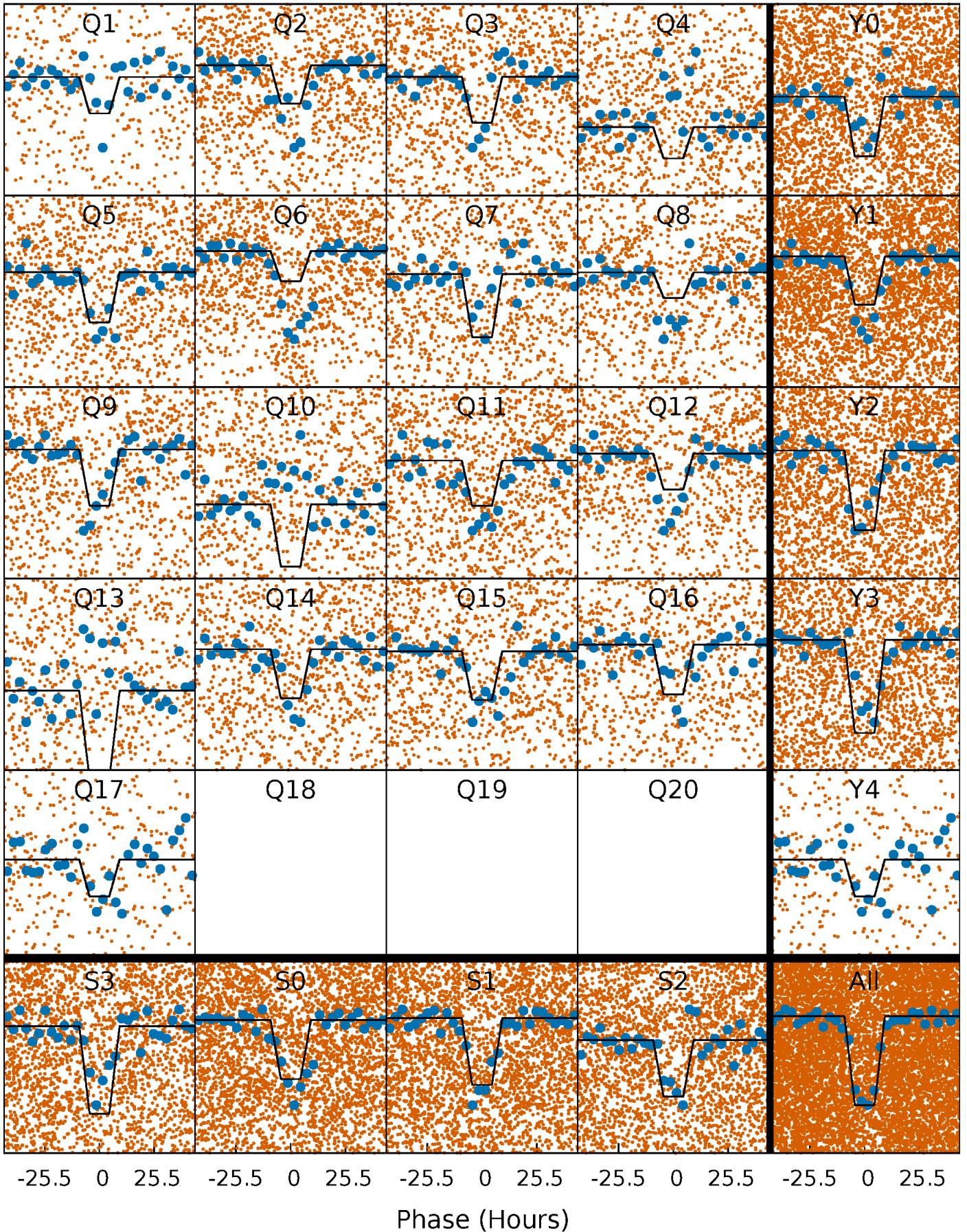
# DV Quarter-Phased Transit Curves

TCE 011455642-01 P= 9.953355 Days  $T_0=139.171634$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 011455642-01 P= 9.952829 Days  $T_0=139.208881$  (BKJD)

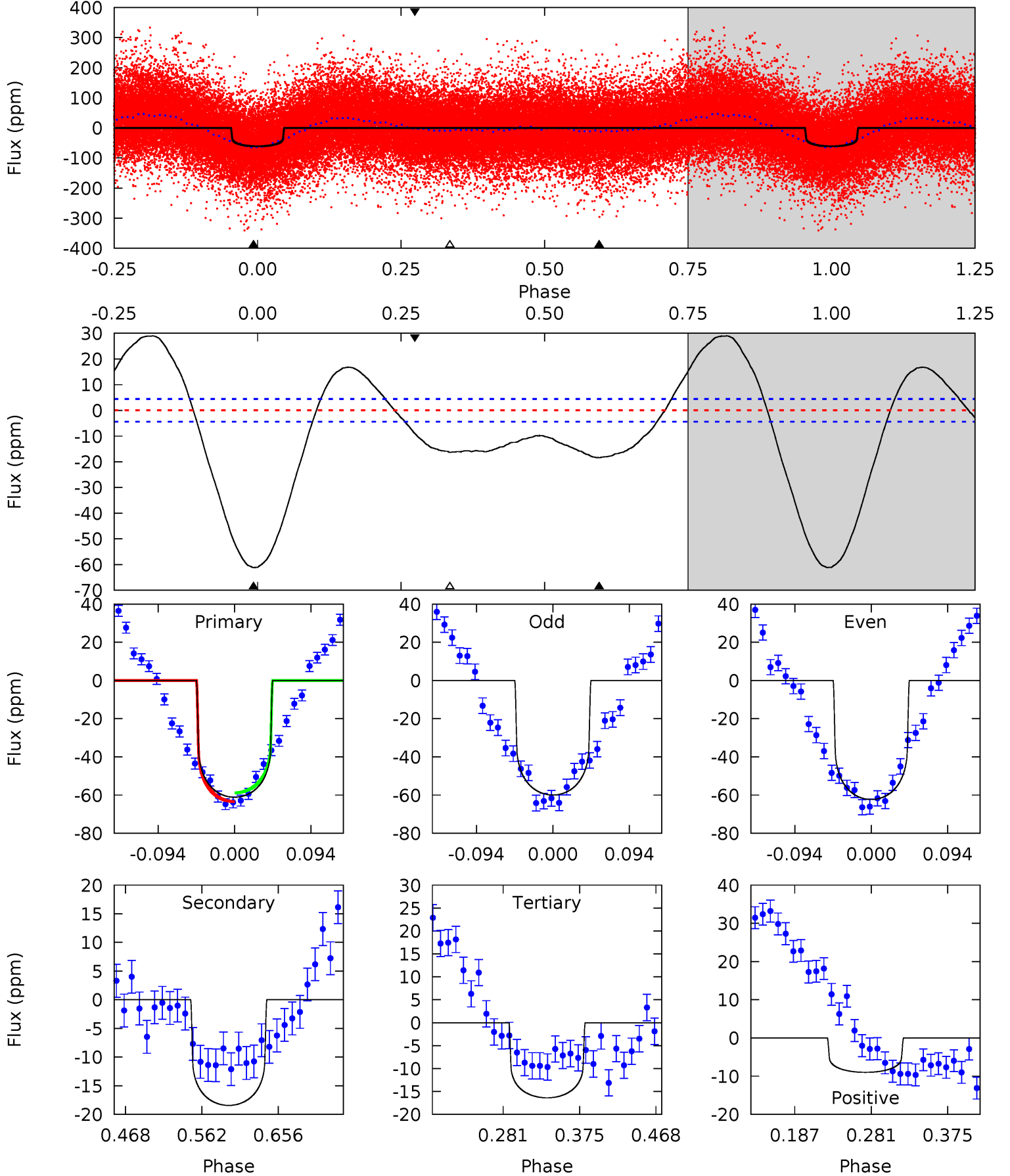




# DV Model-Shift Uniqueness Test

011455642-01, P = 9.953355 Days, E = 129.218279 Days

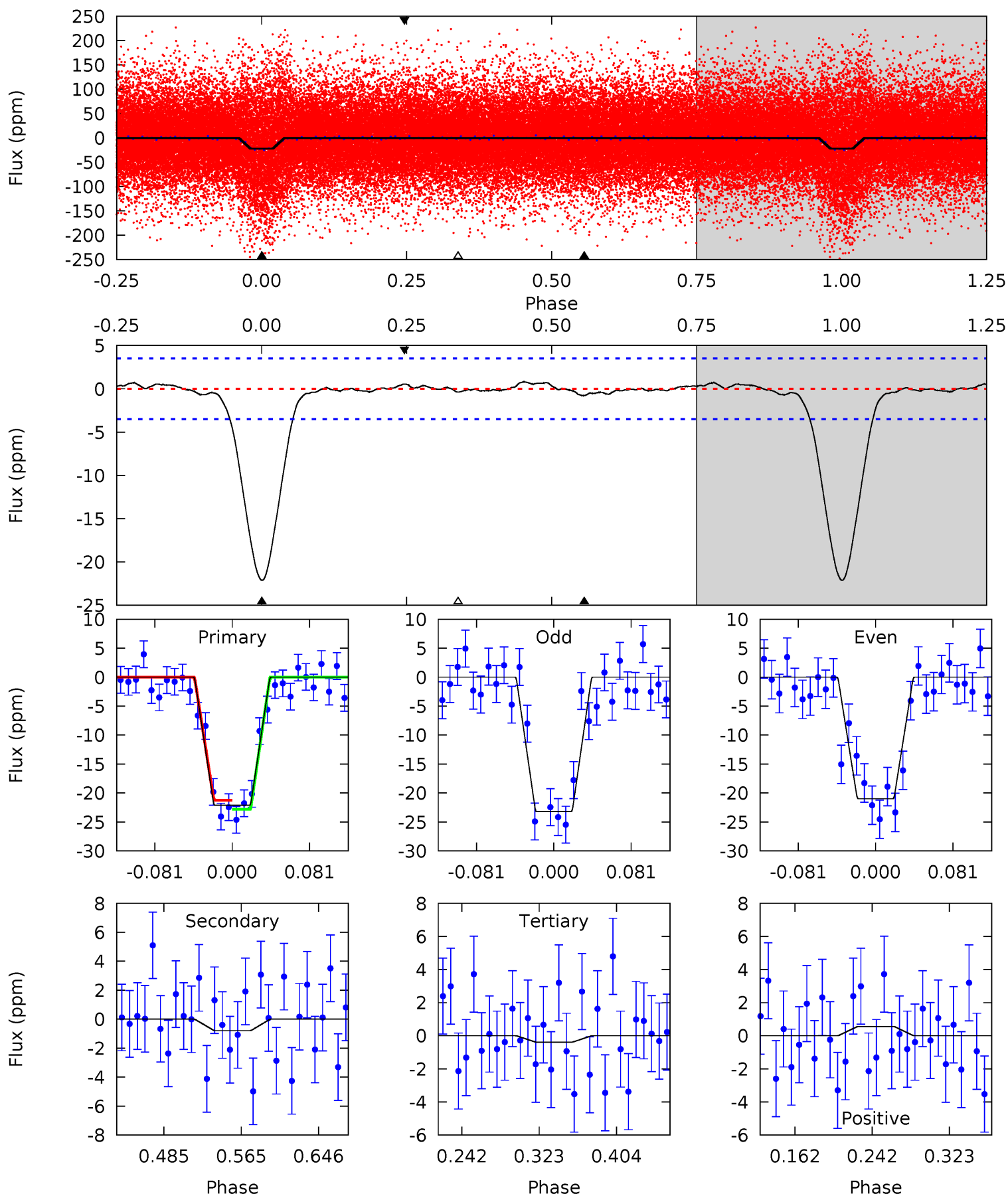
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.5	19.1	17.0	-9.34	4.58	1.68	15.4	46.5	72.8	2.12	28.5	1.23	0.96	0.32	2.40



# Alt Model-Shift Uniqueness Test

011455642-01, P = 9.952829 Days, E = 129.256052 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
29.1	1.04	0.51	0.74	4.61	1.75	0.41	28.6	28.4	0.53	0.31	1.46	1.26	0.04	1.02



### Stellar Parameters For KIC 011455642

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6447^{+71}_{-77}$	$4.261^{+0.103}_{-0.115}$	$-0.200^{+0.150}_{-0.150}$	$1.308^{+0.216}_{-0.177}$	$1.138^{+0.092}_{-0.083}$	$0.717^{+0.314}_{-0.238}$
	+1%/-1%	+2%/-3%	+75%/-75%	+17%/-14%	+8%/-7%	+44%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 011455642-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-18 \pm 1$	$0.65^{+0.10}_{-0.08}$	$1482^{+66}_{-56}$	$6263^{+396}_{-361}$	$214^{+64}_{-54}$
Alt.	$-1 \pm 1$	$0.71^{+0.09}_{-0.09}$	$1481^{+64}_{-59}$	$3257^{+407}_{-5553}$	$7.485^{+7.931}_{-7.679}$

$T_{max}$  = 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

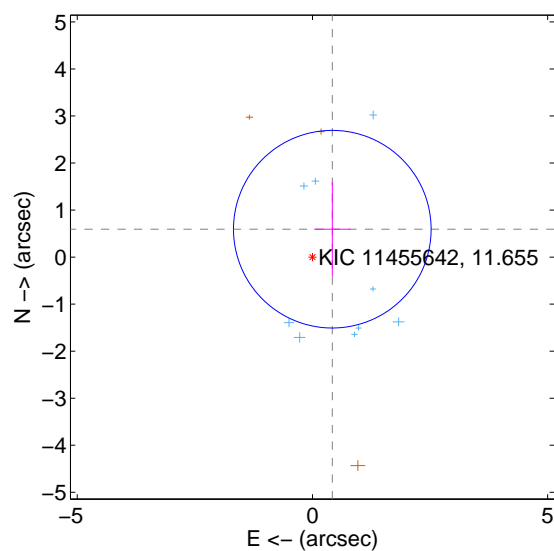
Supplemental centroid analysis for 011455642-01. **Kepler magnitude: 11.65.** Transit SNR 8.52

There are 9 quarters with good PRF difference image offsets

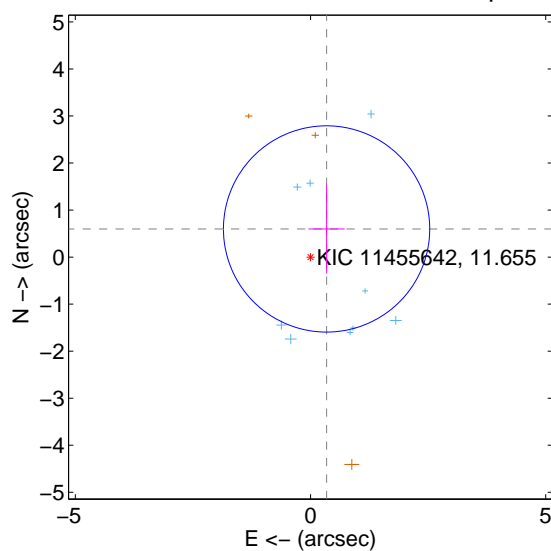
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.728 \pm 0.700$	1.04	$-0.422 \pm 0.386$	$0.593 \pm 1.003$
PRF-fit source offset from KIC position	$0.689 \pm 0.731$	0.94	$-0.341 \pm 0.386$	$0.598 \pm 0.944$
photometric centroid source offset	$1.26 \pm 1.01$	1.25	$0.29 \pm 0.73$	$-1.22 \pm 1.02$

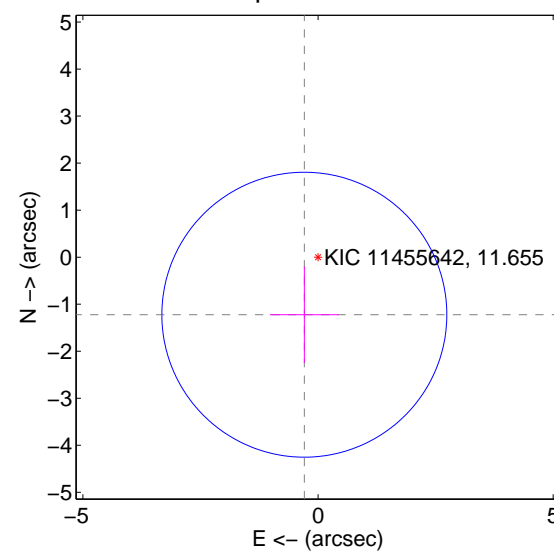
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

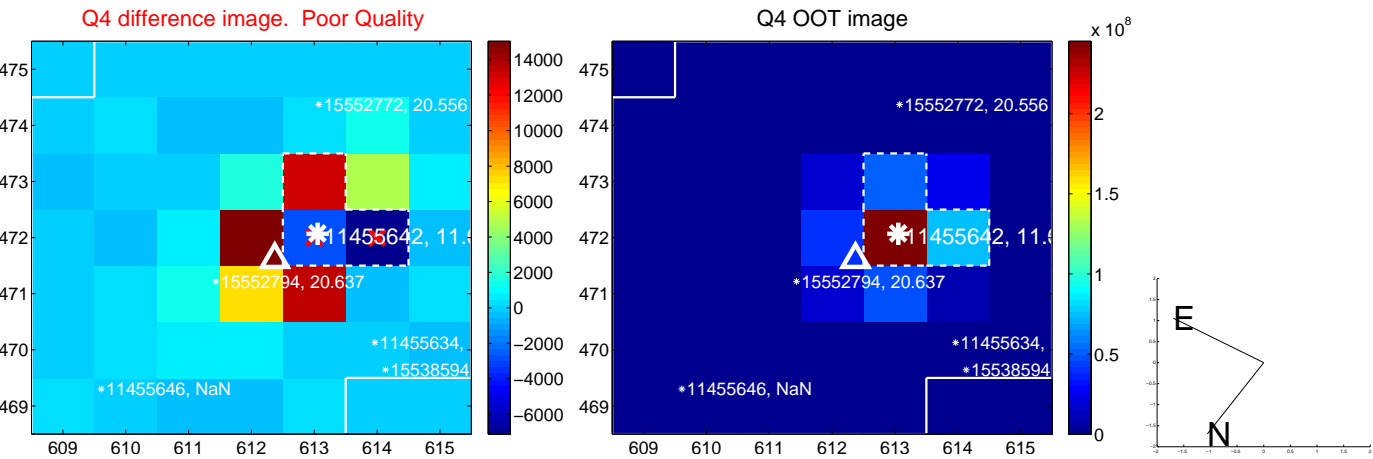
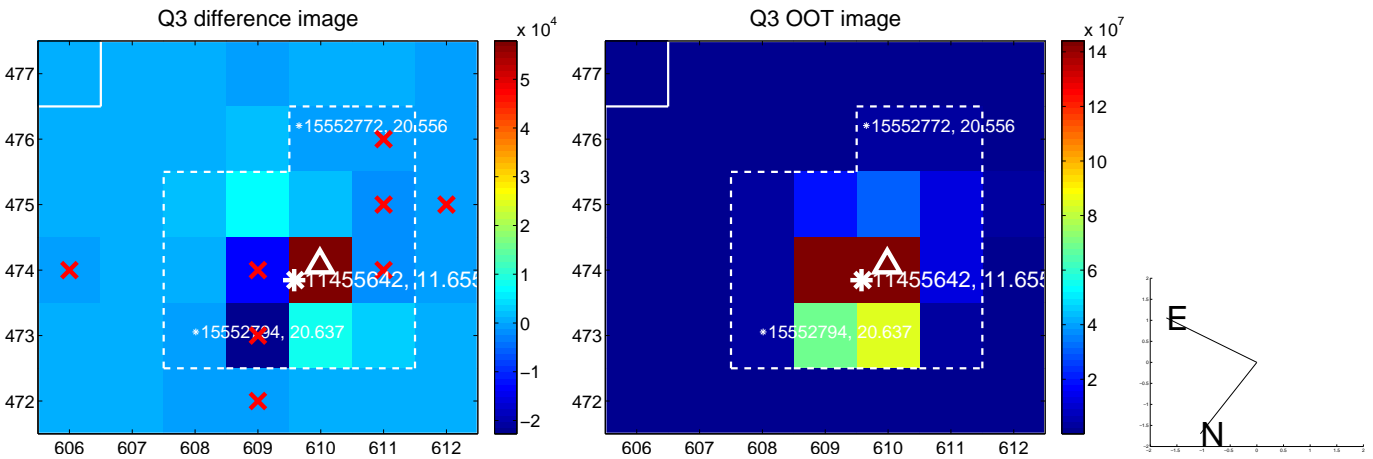
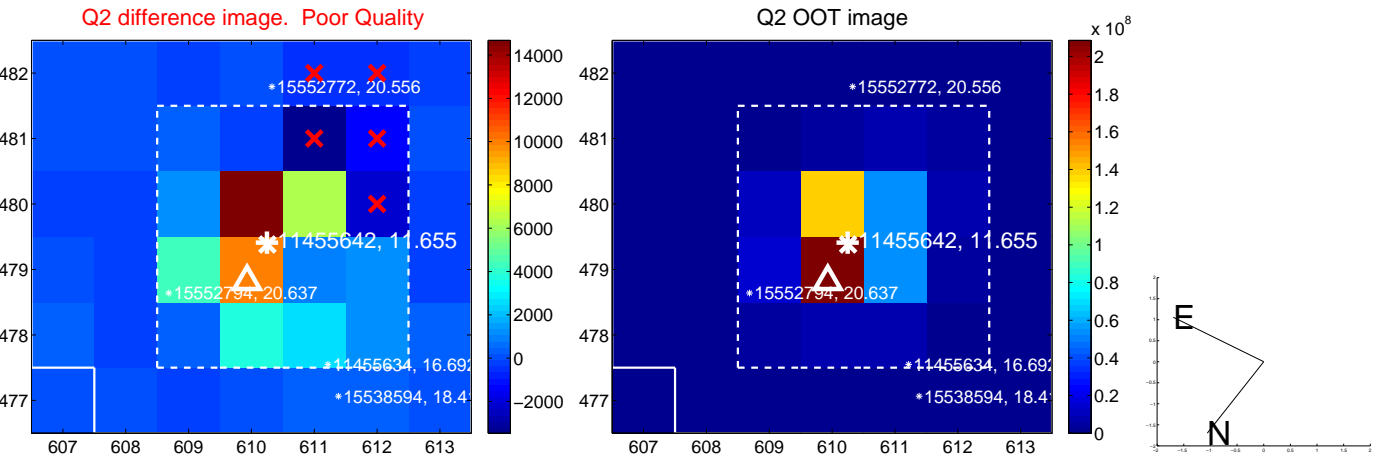
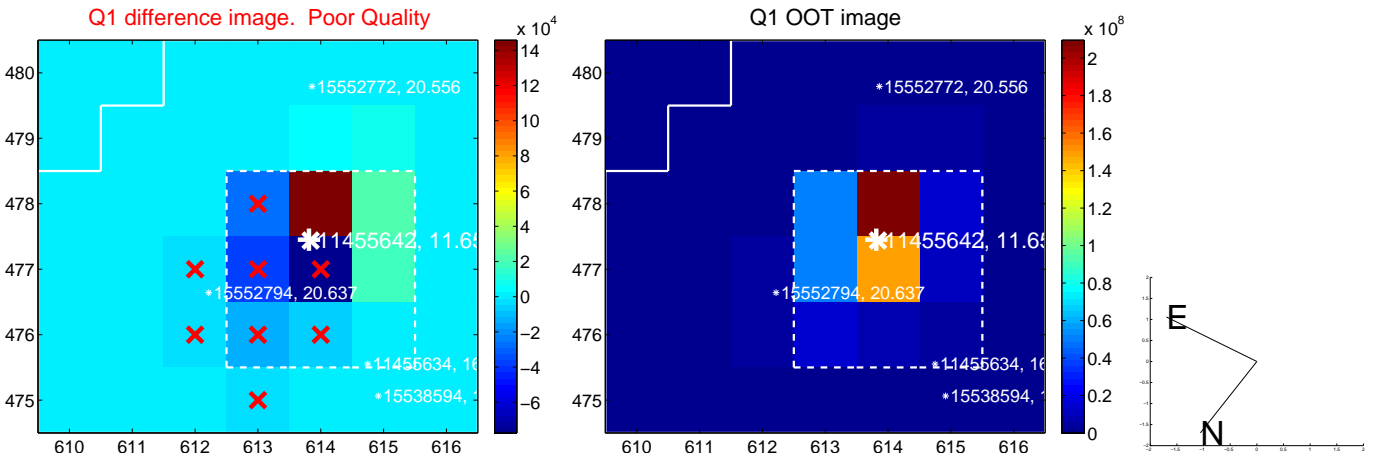


offset from photometric centroids

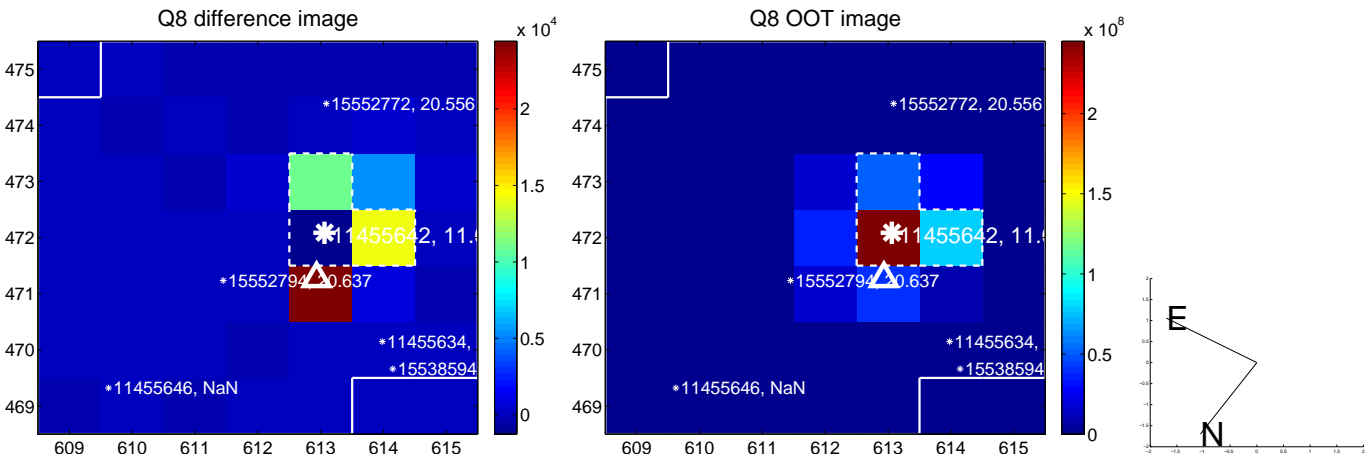
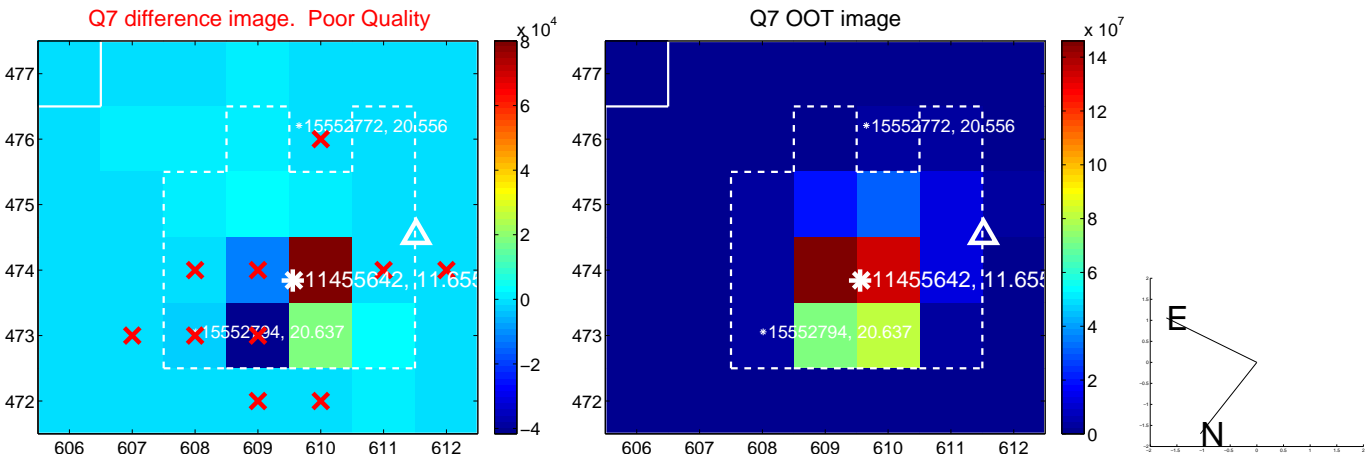
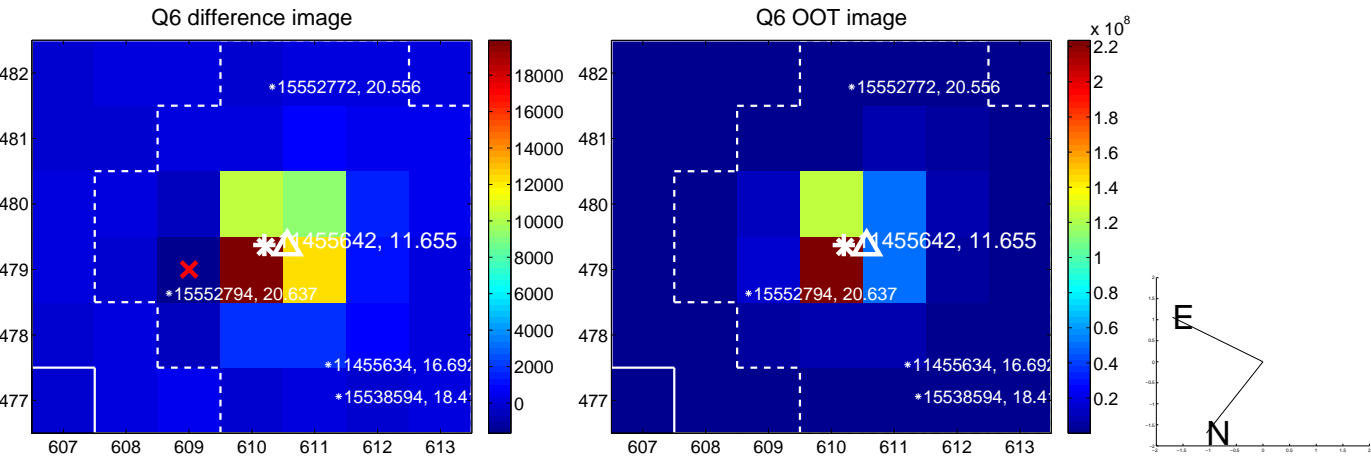
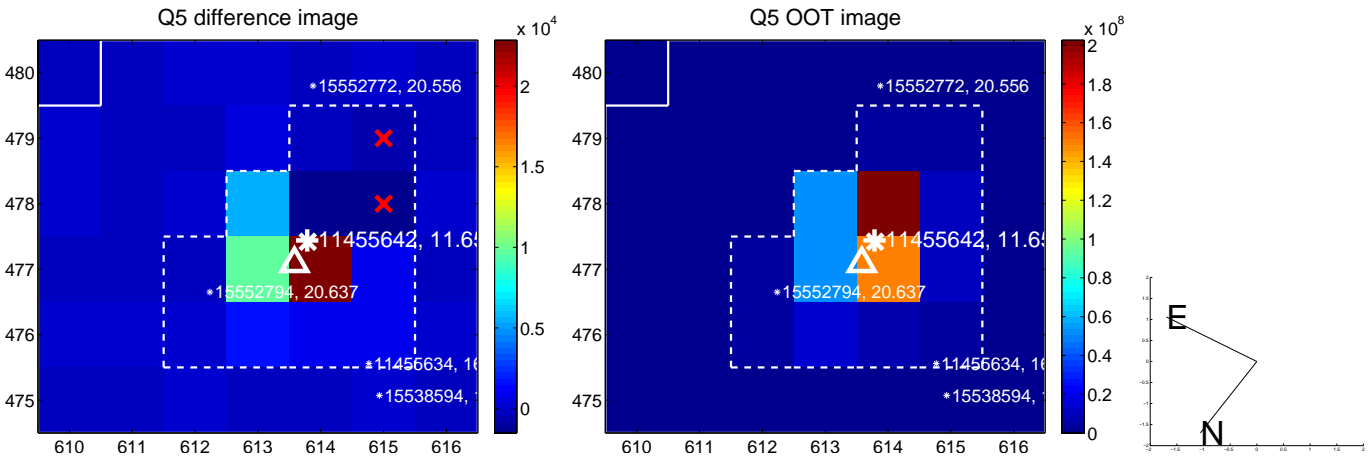


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

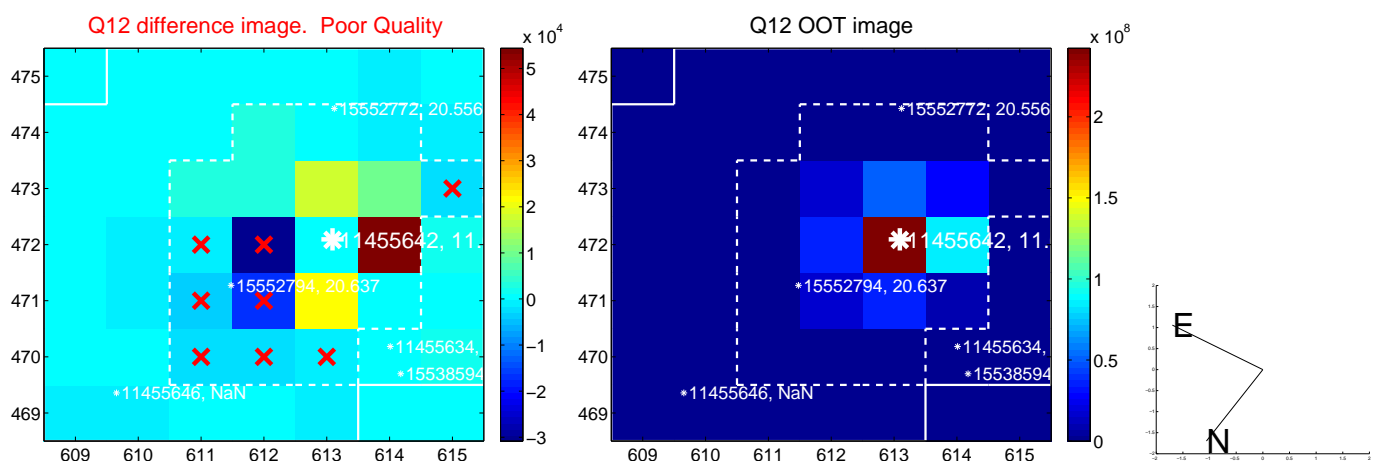
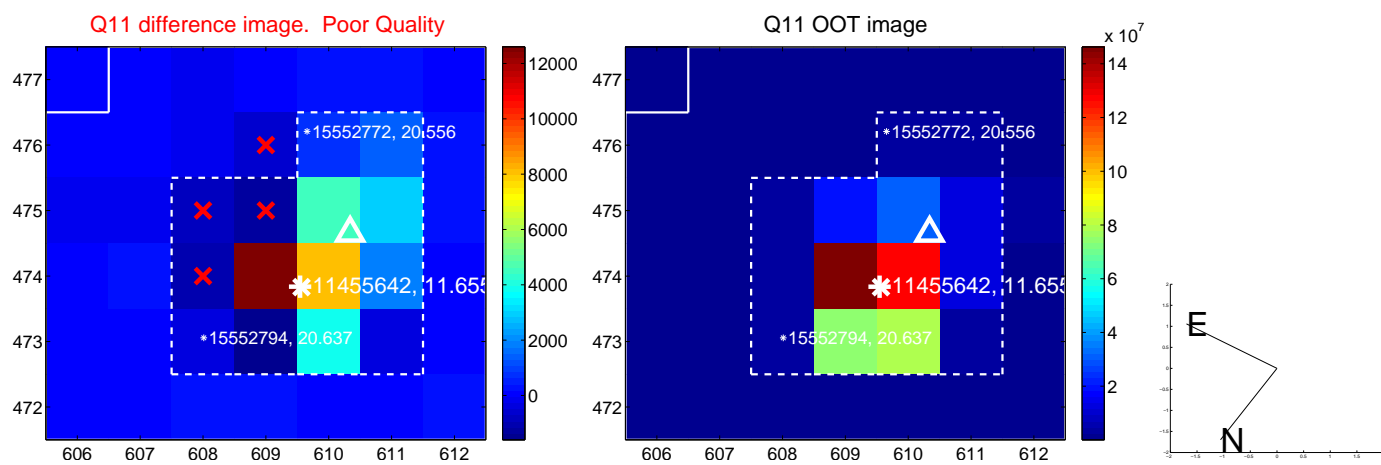
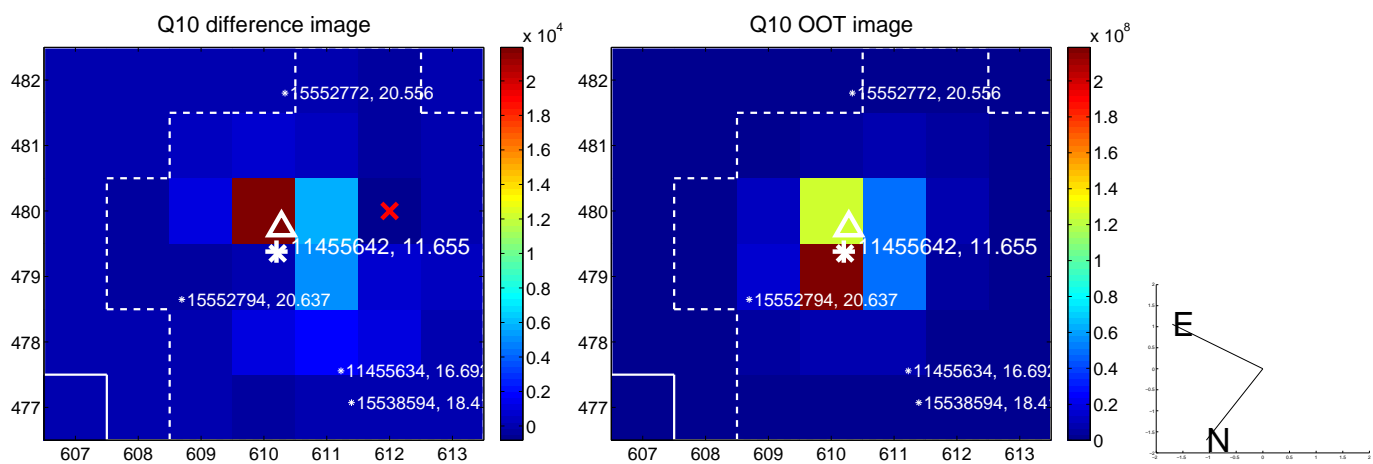
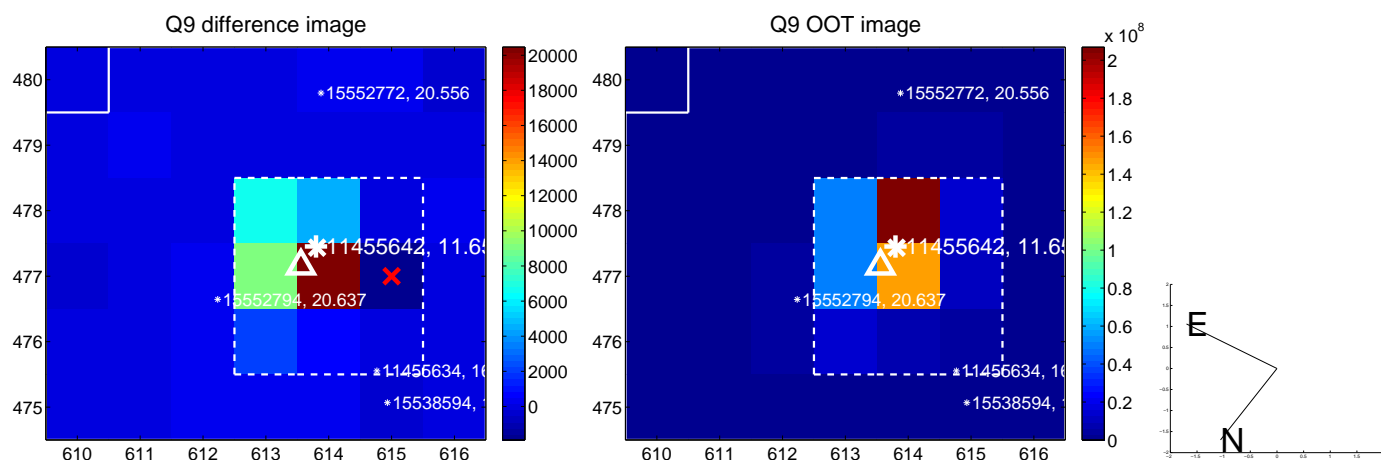
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



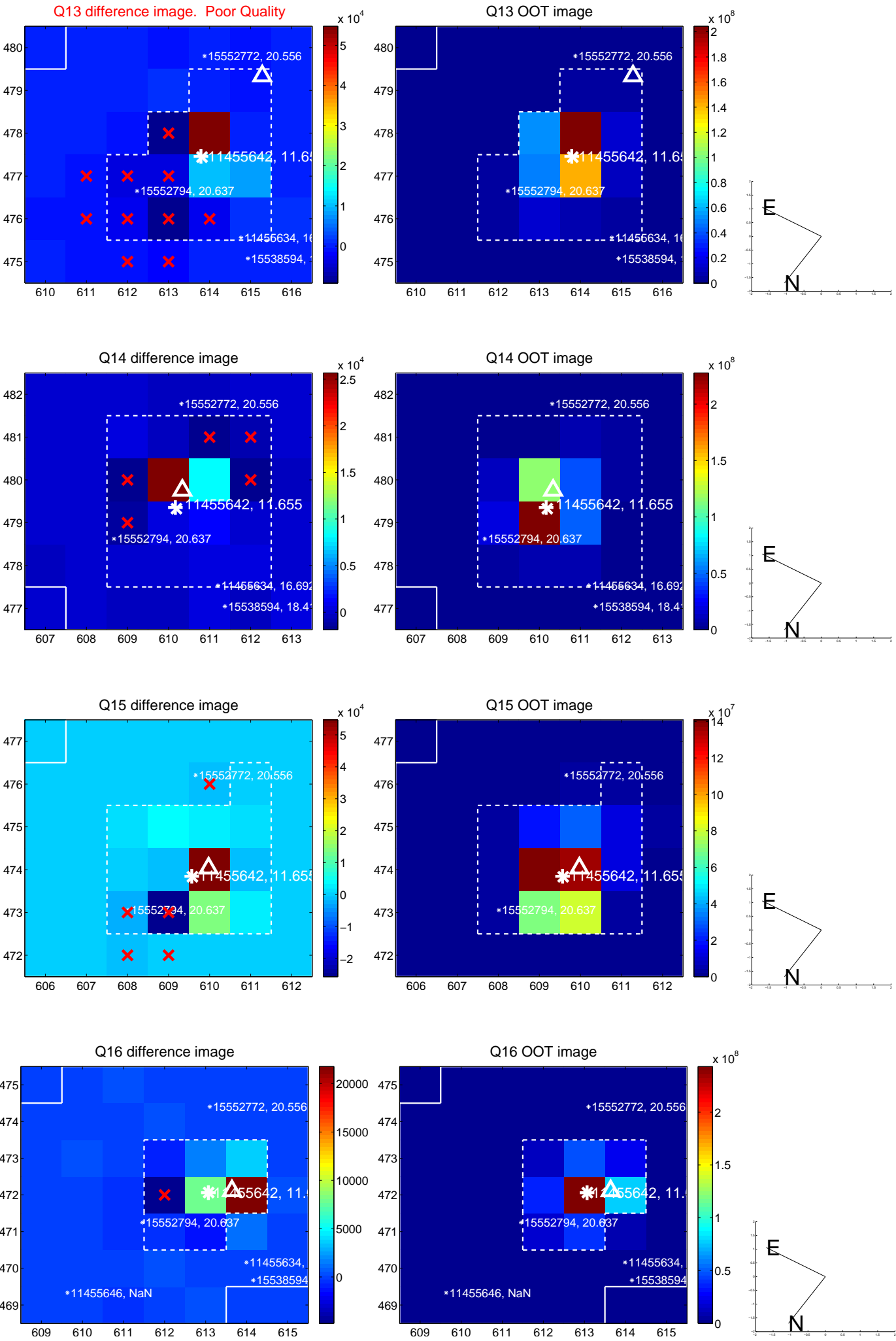
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

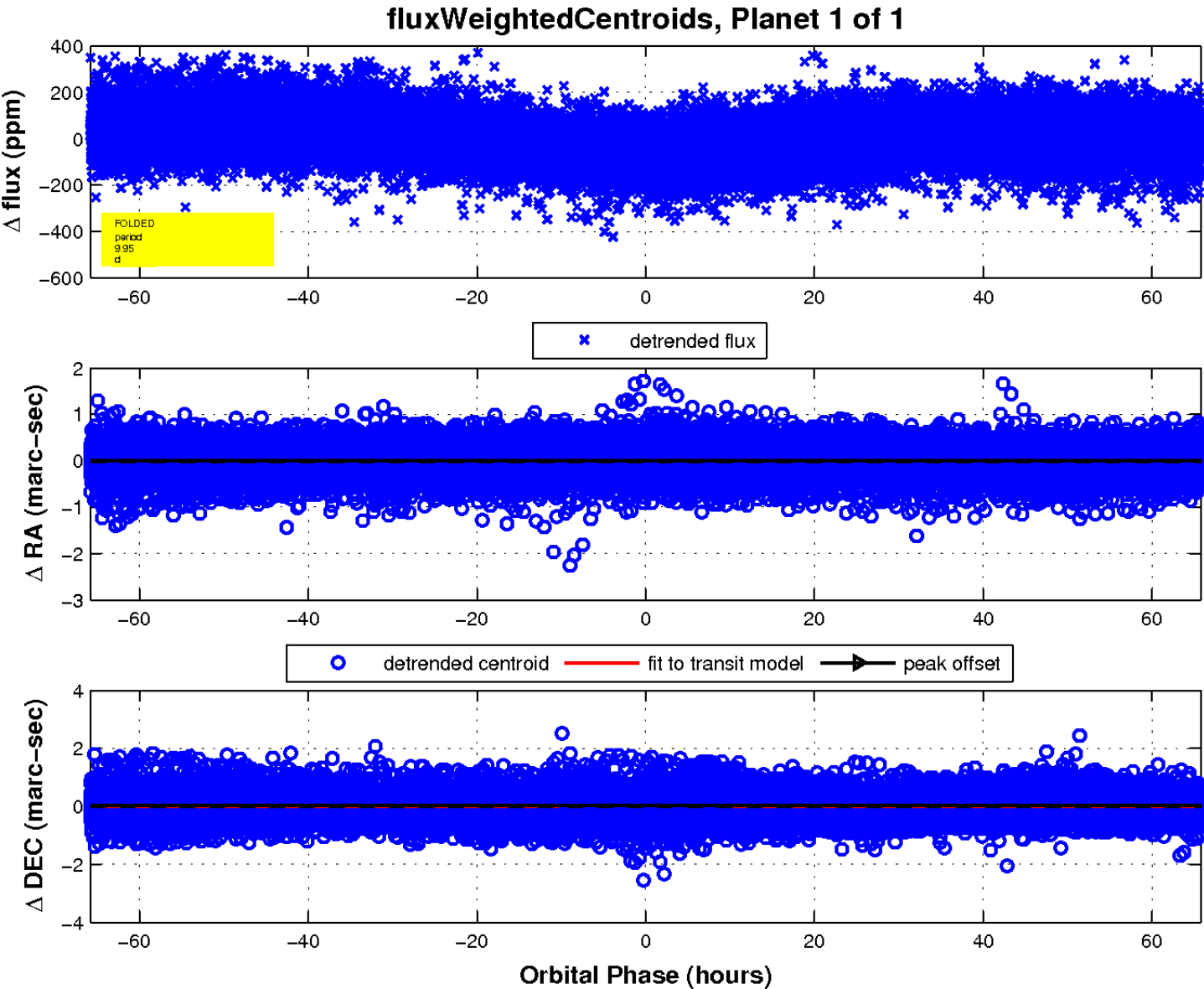
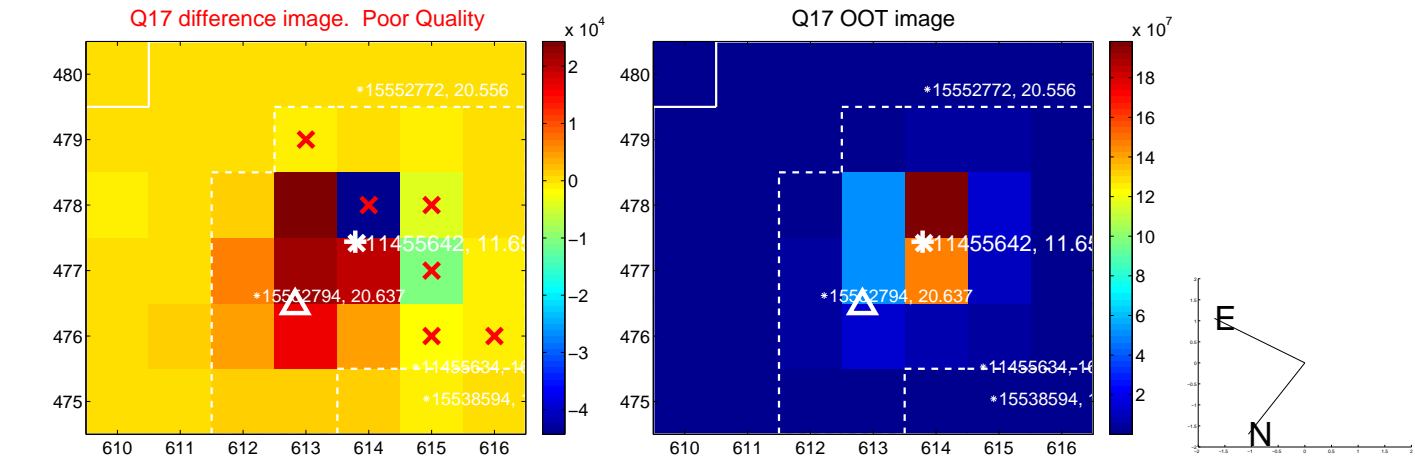


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

