

# KIC 009541144

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009541144-01	OBS	No	0.593792	131.857915	37.8	1.273	8.9	9.8	2.83	5490	2.10	27186.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009541144-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_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.

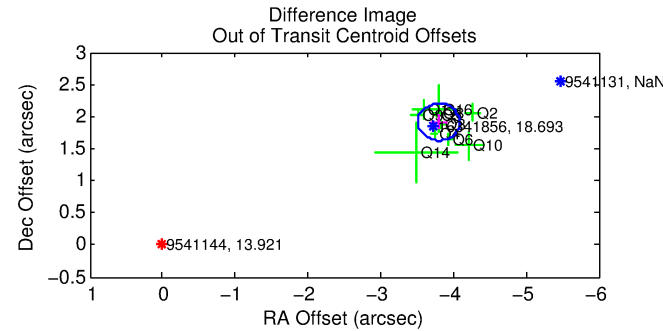
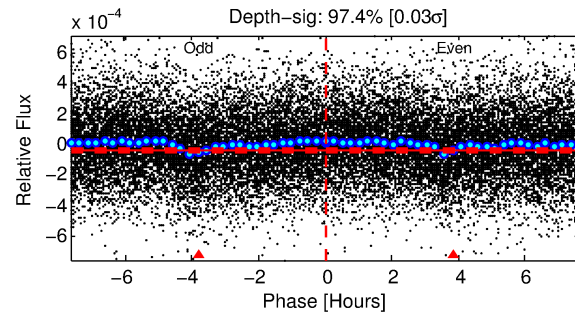
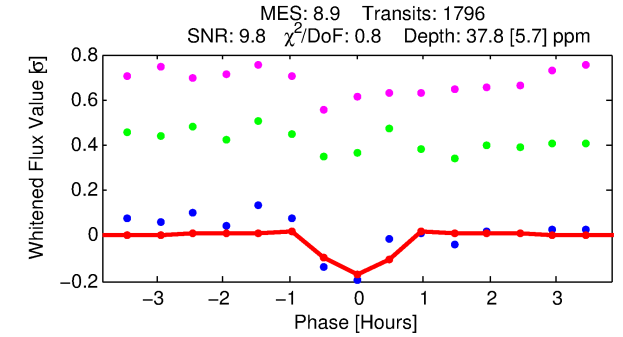
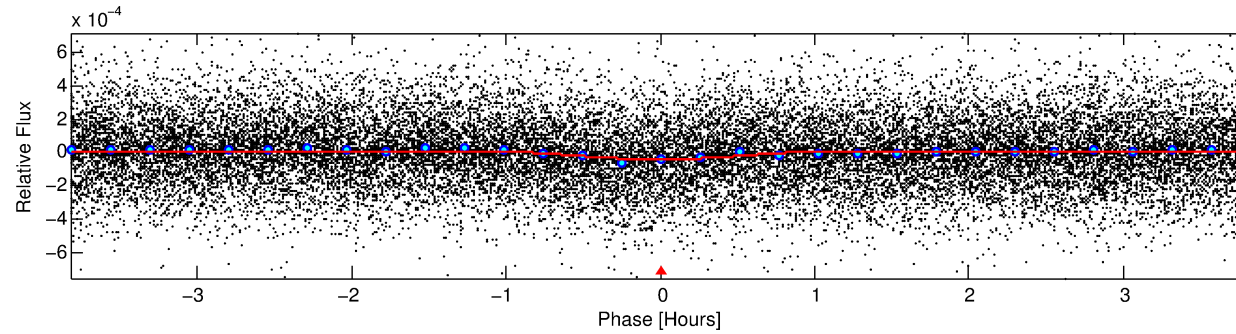
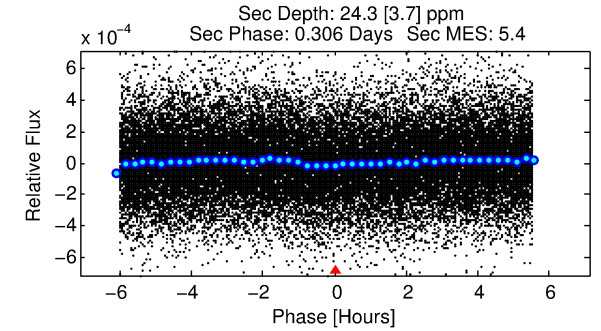
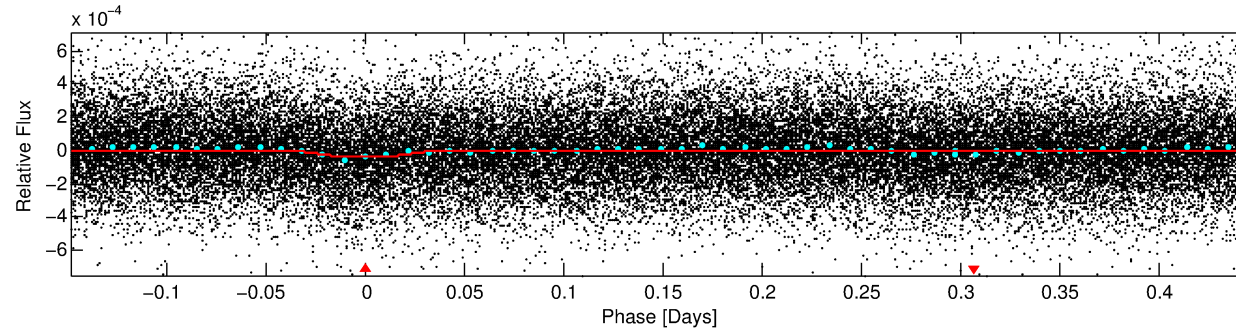
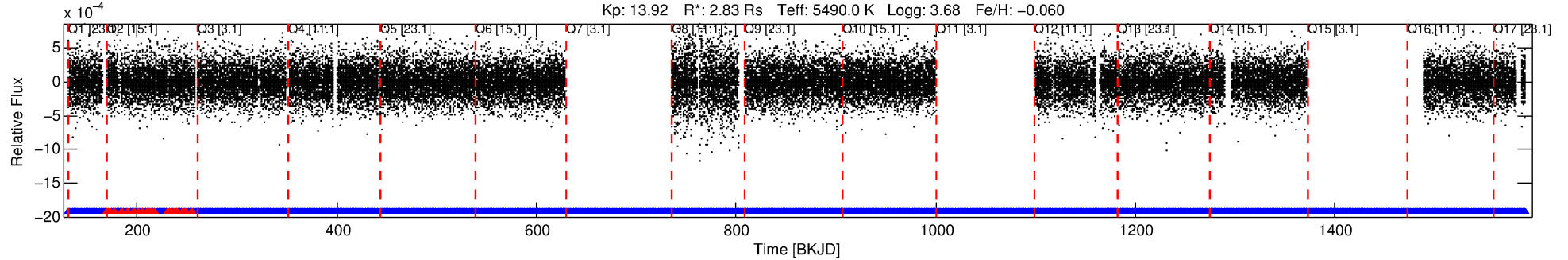
## Ephemeris Match Information For 009541144-01

No Significant Match Found

# DV One-Page Summary

KIC: 9541144 Candidate: 1 of 1 Period: 0.594 d  
KOI: K07603 Corr: No Ephemeris Match

Kp: 13.92 R\*: 2.83 Rs Teff: 5490.0 K Logg: 3.68 Fe/H: -0.060



## DV Fit Results:

Period = 0.59379 [0.00001] d  
Epoch = 131.8579 [0.0019] BKJD  
Rp/R\* = 0.0068 [0.0028]  
a/R\* = 1.84 [2.45]  
b = 0.90 [0.40]  
Seff = 27186.28 [33822.53]  
Teq = 3274 [1018] K  
Rp = 2.10 [1.65] Re  
a = 0.0155 [0.0113] AU  
Ag = 0.73 [1.09] [-0.25σ]  
Teffp = 4675 [1001] K [0.98σ]

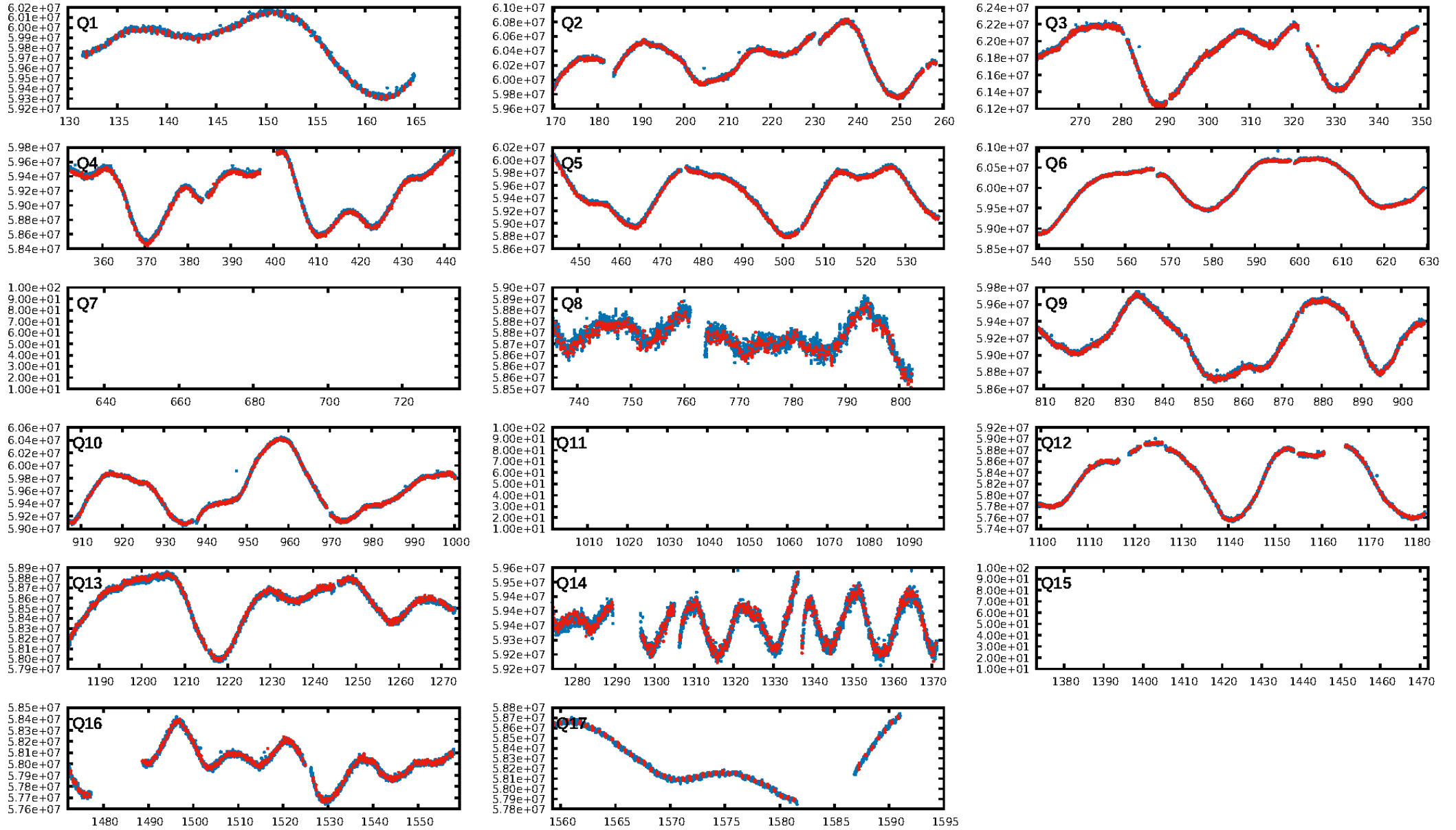
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.06e-16  
RollingBand-fgt: 0.99 [1671/1695]  
GhostDiagnostic-chr: 0.7258  
Centroid-sig: 0.0%  
Centroid-so: 8.218 arcsec [7.90σ]  
OotOffset-rm: 4.253 arcsec [44.48σ]  
KicOffset-rm: 4.230 arcsec [43.96σ]  
OotOffset-st: 4/1/3/3 [11]  
KicOffset-st: 4/1/3/3 [11]  
DiffImageQuality-fgm: 1.00 [11/11]  
DiffImageOverlap-fno: 1.00 [14/14]

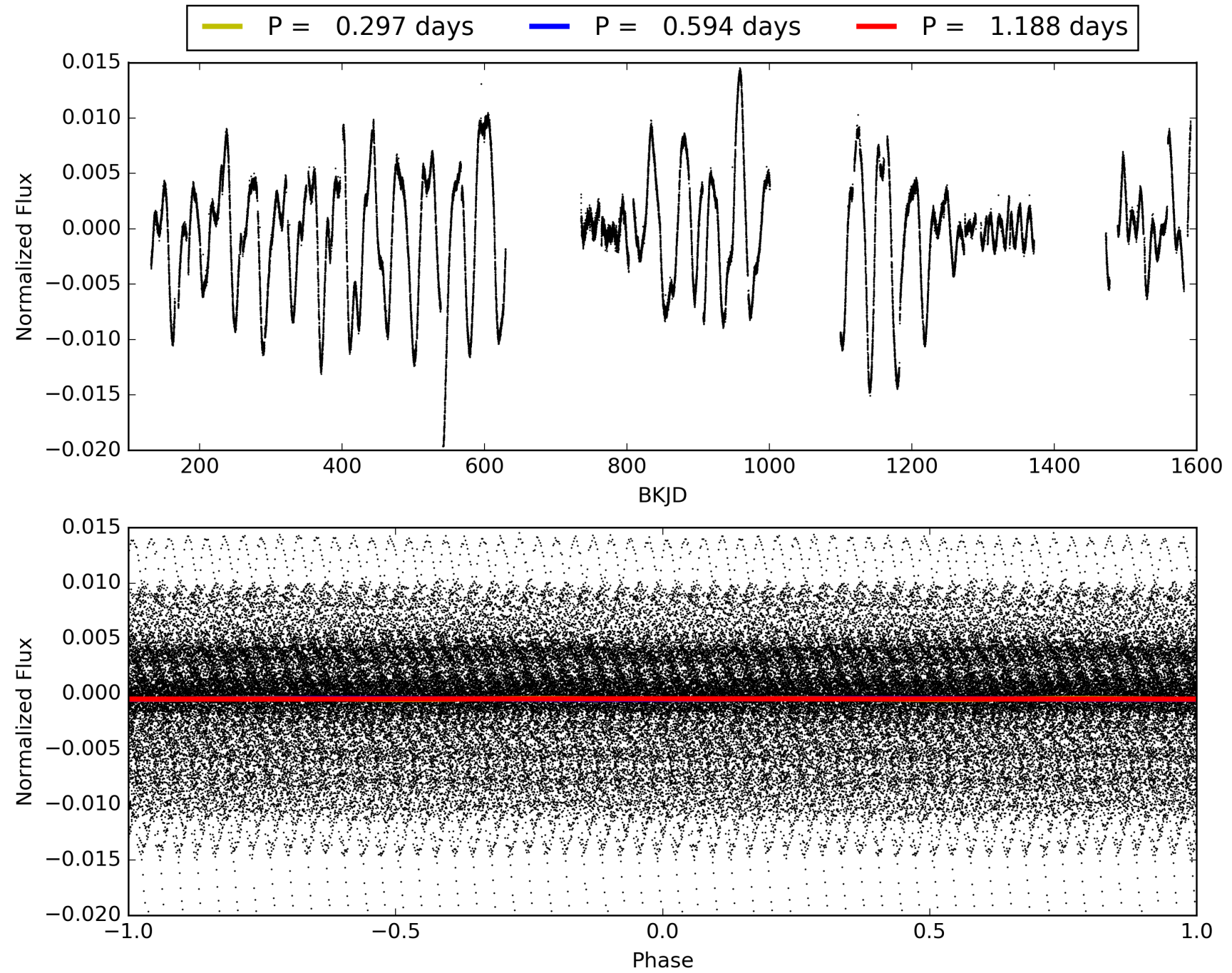
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:24:24 Z

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

# TCE 009541144-01, PDC Light Curves

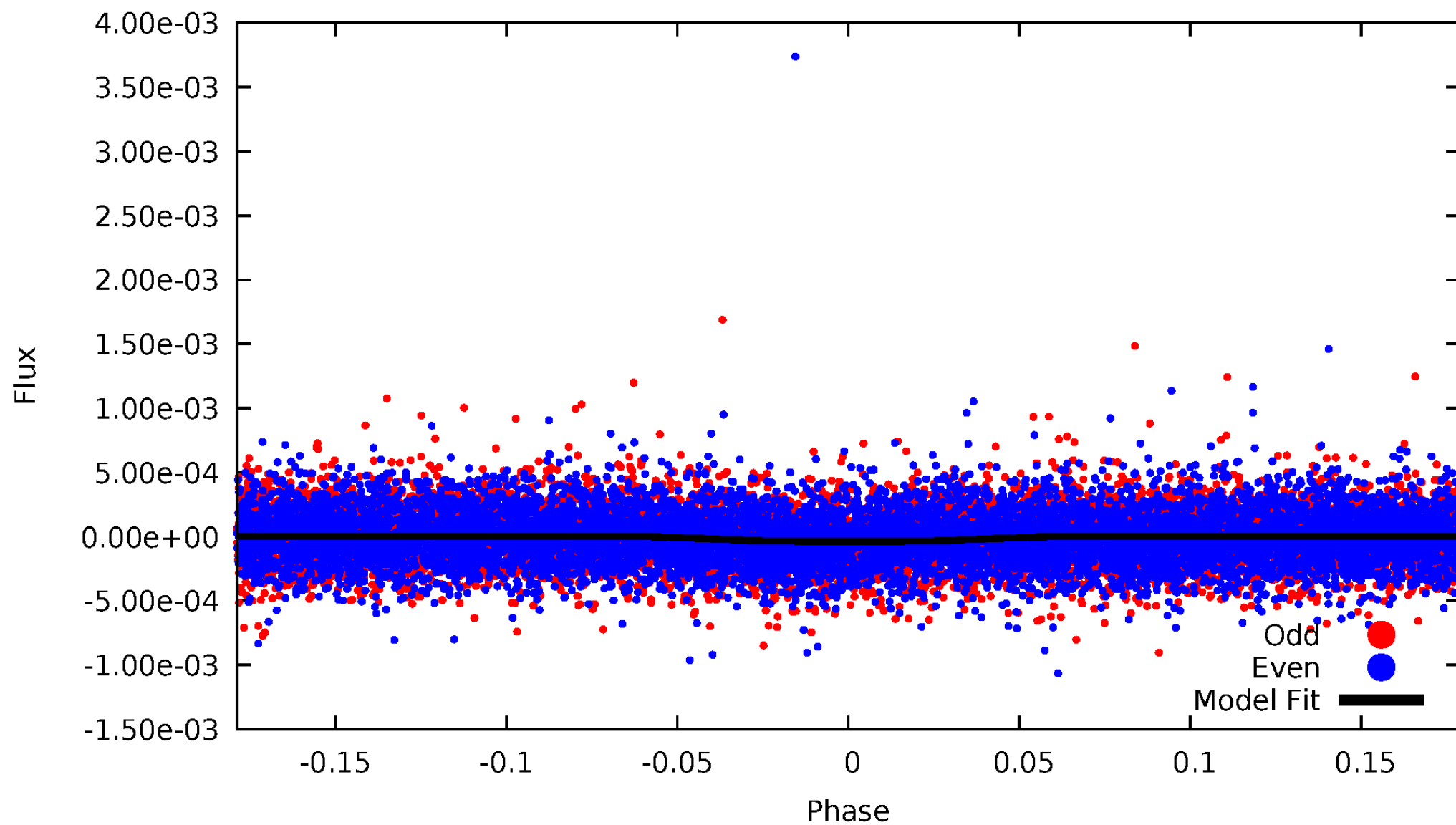


TCE 009541144-01



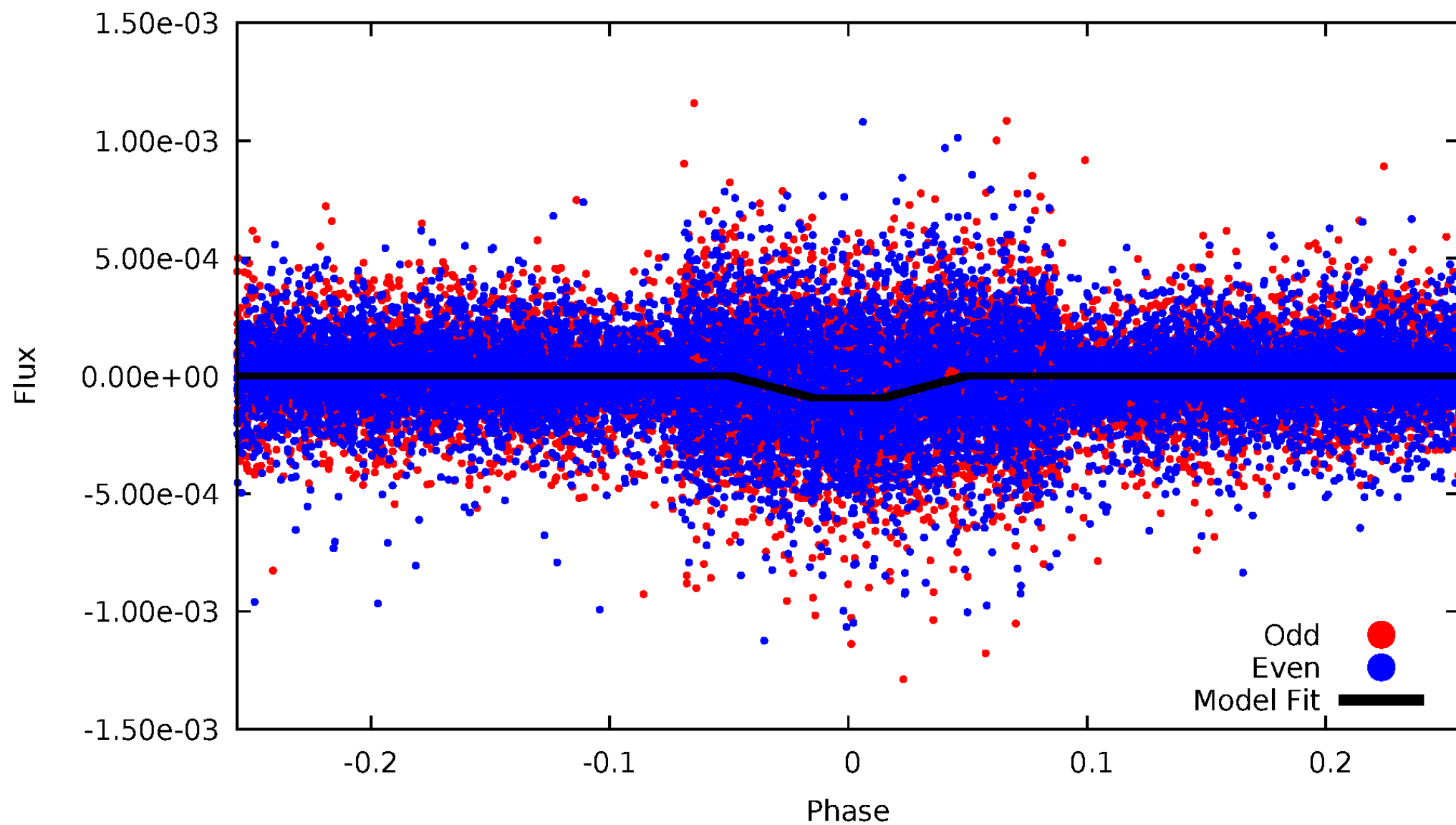
# DV Odd/Even

TCE 009541144-01



# ALT Odd/Even

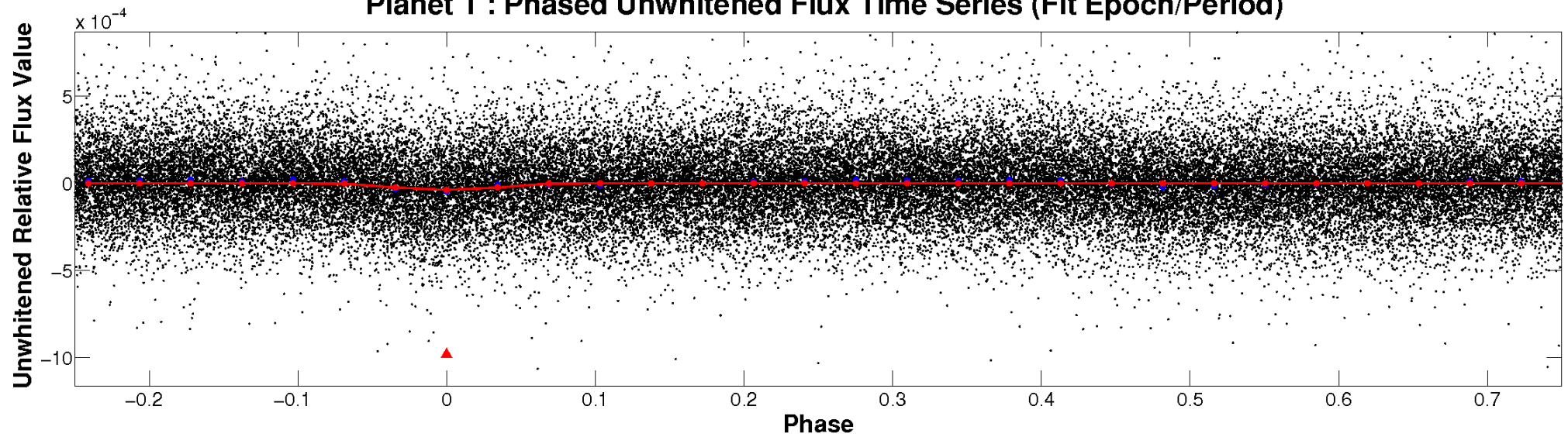
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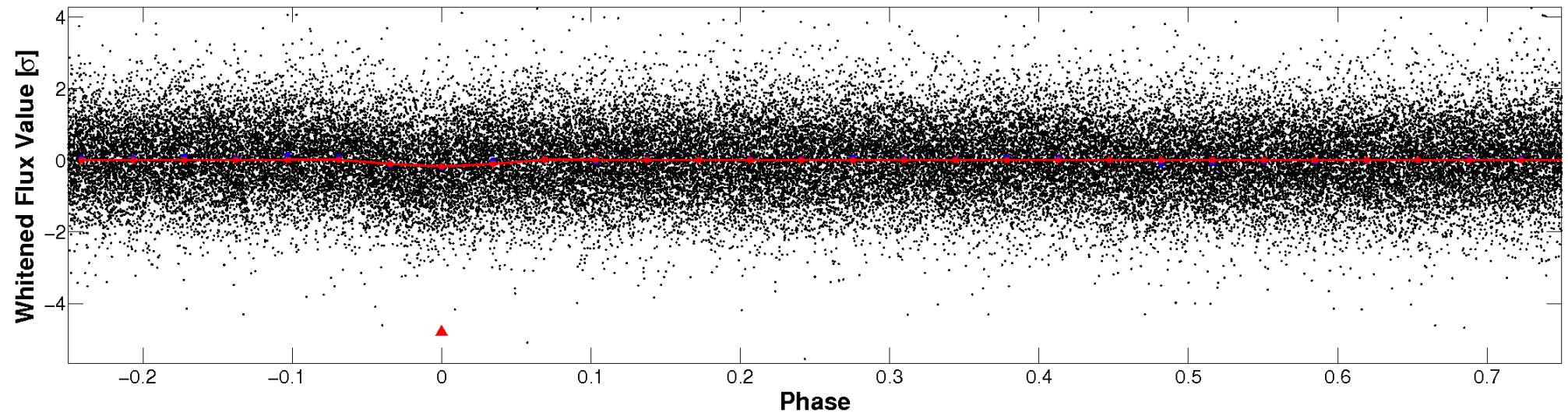


# Non-Whitened Vs. Whitened Light Curve

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

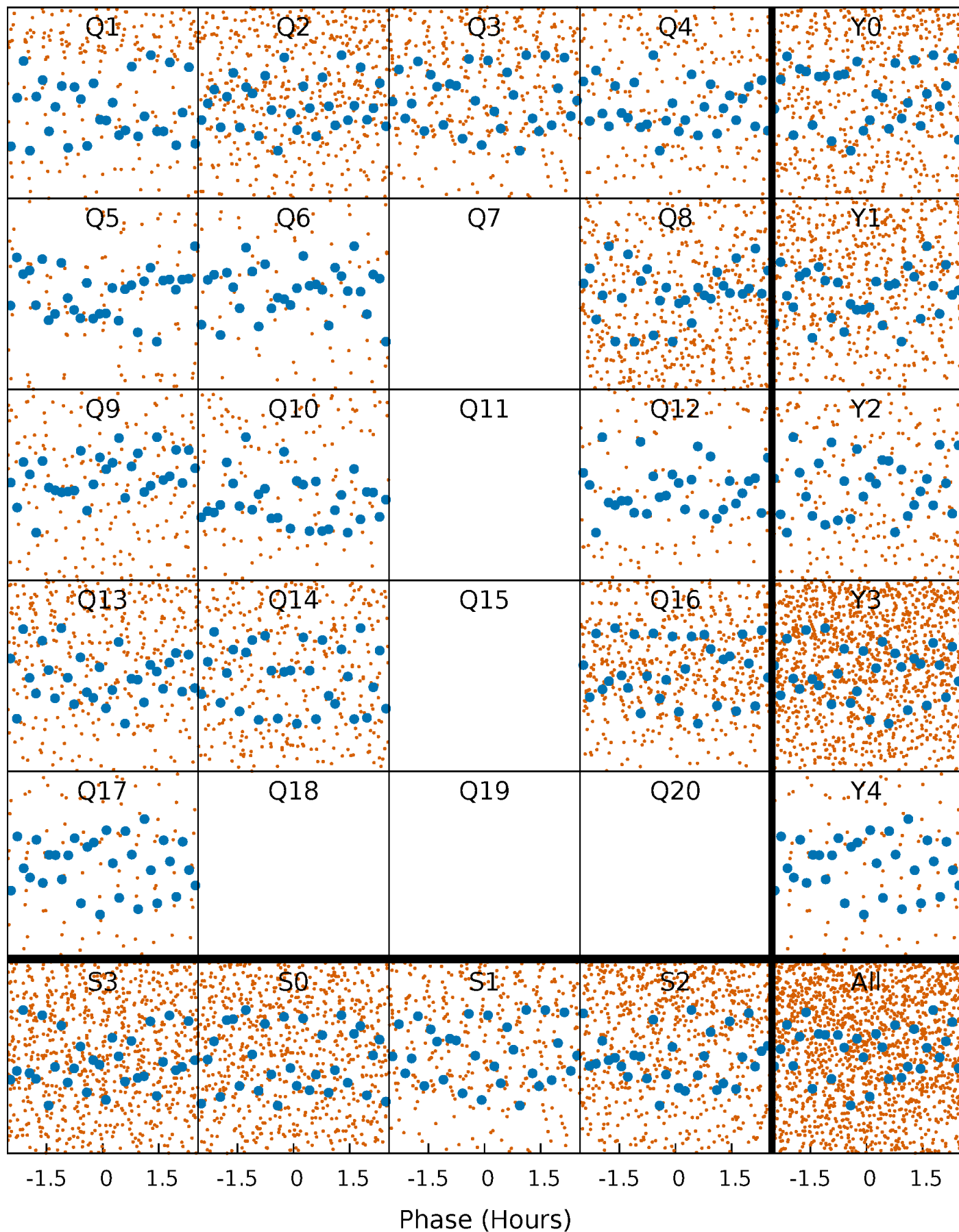


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

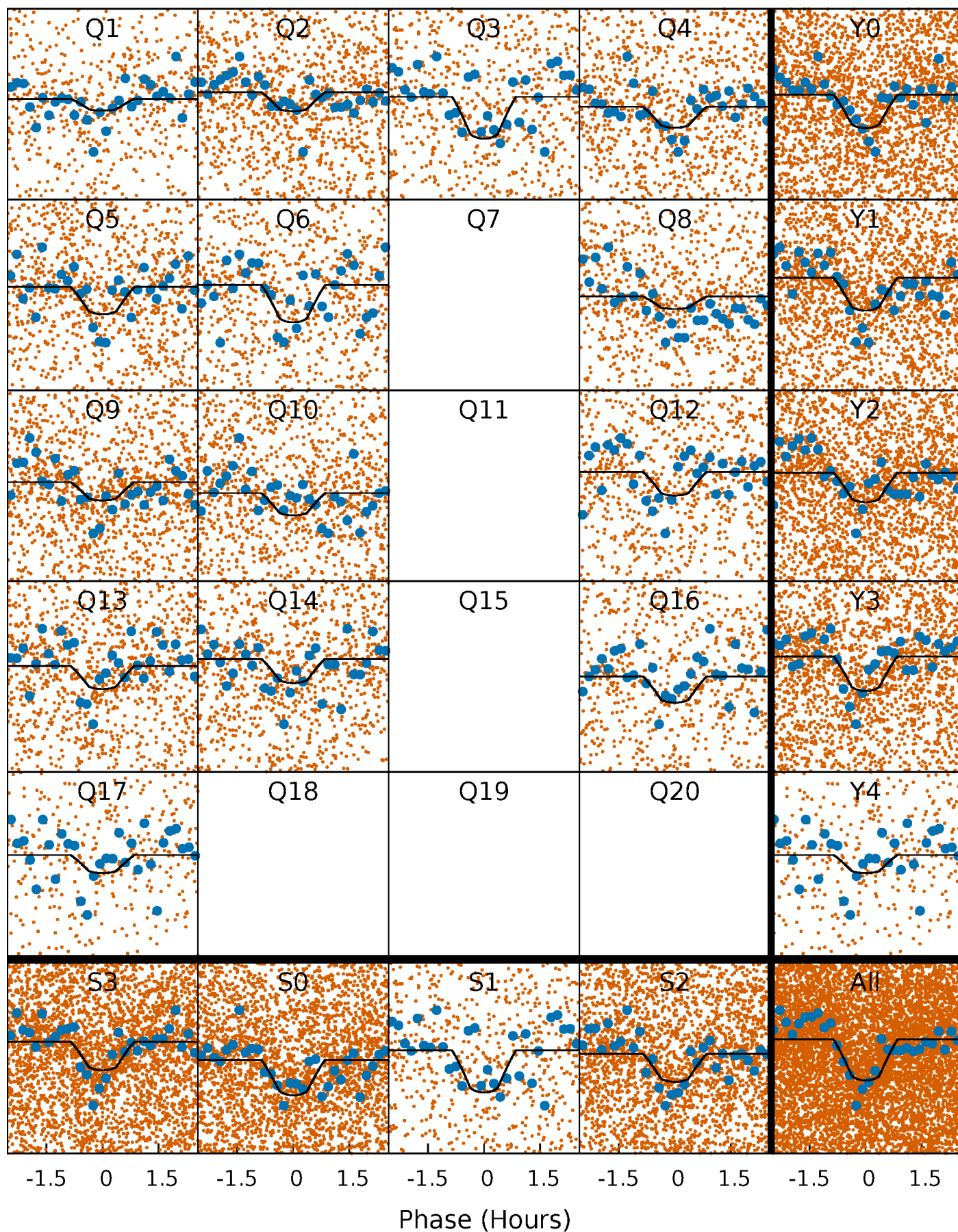
TCE 009541144-01 P= 0.593792 Days  $T_0=131.857915$  (BKJD)





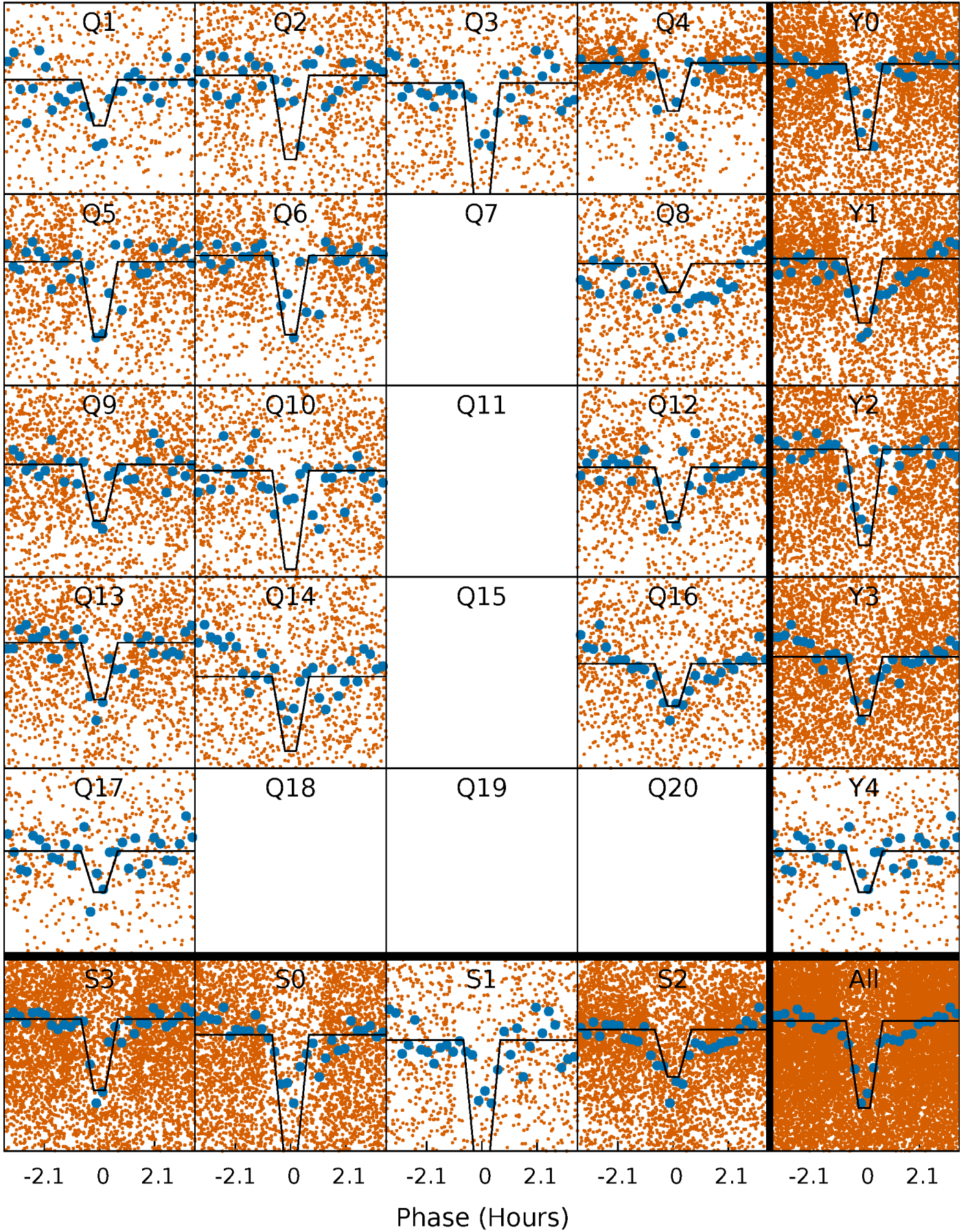
# DV Quarter-Phased Transit Curves

TCE 009541144-01 P= 0.593792 Days  $T_0=131.857915$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

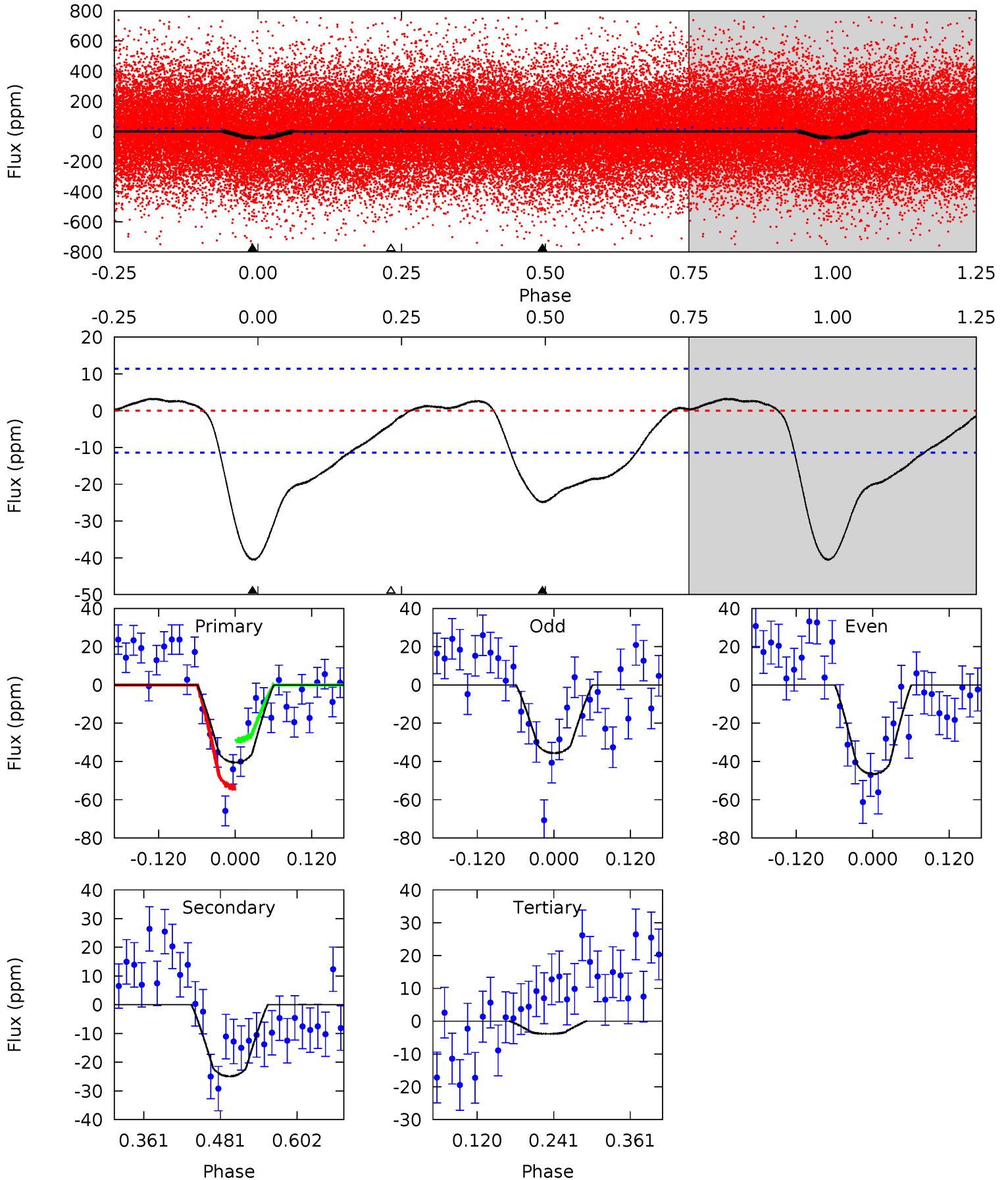
TCE 009541144-01 P= 0.593790 Days  $T_0=131.854196$  (BKJD)



# DV Model-Shift Uniqueness Test

009541144-01, P = 0.593792 Days, E = 131.264123 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
16.1	9.89	1.53	0	4.53	1.55	2.52	14.6	16.1	8.35	9.89	2.17	0.94	0.08	4.91

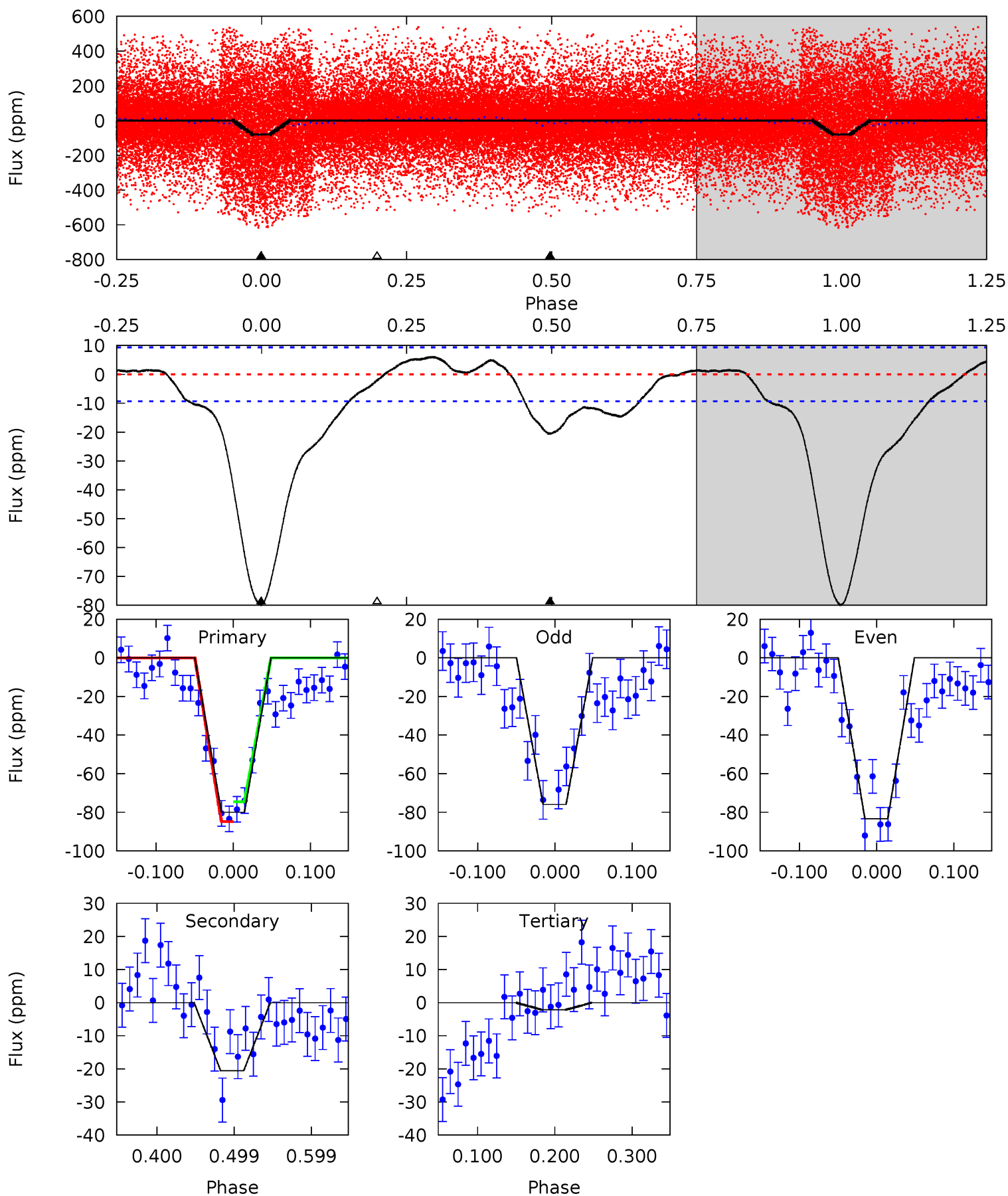




# Alt Model-Shift Uniqueness Test

009541144-01, P = 0.593790 Days, E = 131.260406 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
39.1	10.1	1.07	0	4.57	1.65	3.36	38.0	39.1	8.99	10.1	1.80	1.02	0.07	2.49



### Stellar Parameters For KIC 009541144

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5490^{+183}_{-167}$	$3.681^{+0.752}_{-0.188}$	$-0.060^{+0.300}_{-0.250}$	$2.825^{+0.807}_{-1.883}$	$1.396^{+0.213}_{-0.498}$	$0.087^{+1.335}_{-0.044}$
	+3%/-3%	+20%/-5%	+500%/-417%	+29%/-67%	+15%/-36%	+1530%/-50%
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 009541144-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-25 \pm 3$	$1.77^{+1.22}_{-0.87}$	$4492^{+462}_{-860}$	$4446^{+1545}_{-1249}$	$1.012^{+2.726}_{-0.645}$
Alt.	$-21 \pm 2$	$2.70^{+1.21}_{-1.09}$	$4490^{+433}_{-776}$	$3126^{+1035}_{-6701}$	$0.378^{+0.595}_{-0.197}$

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



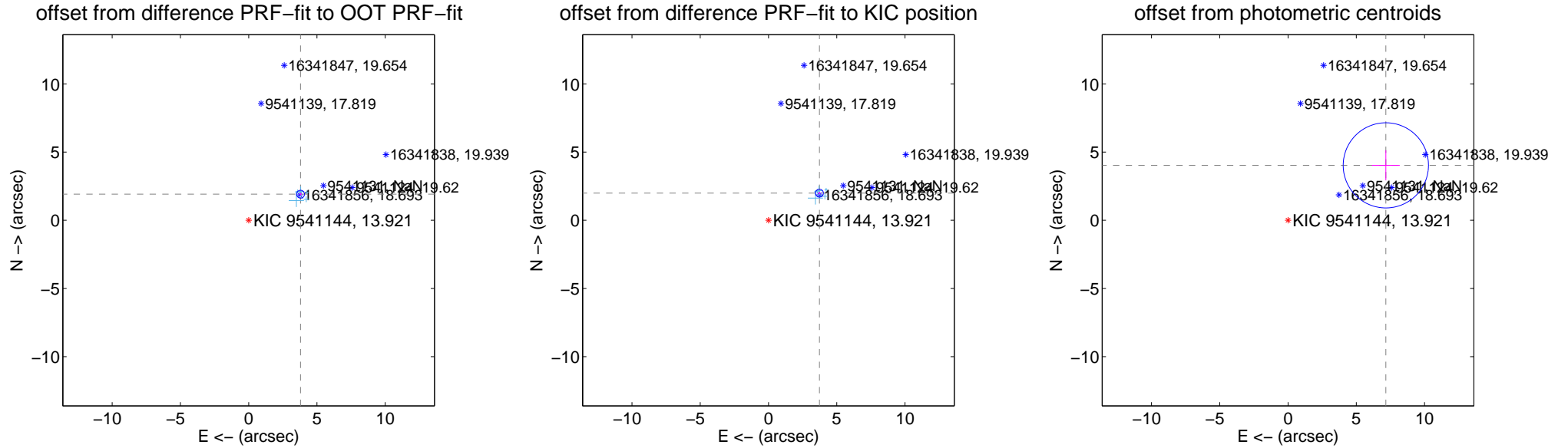
## DV Centroid Data

Supplemental centroid analysis for 009541144-01. Kepler magnitude: 13.92. Transit SNR 9.81

There are 11 quarters with good PRF difference image offsets

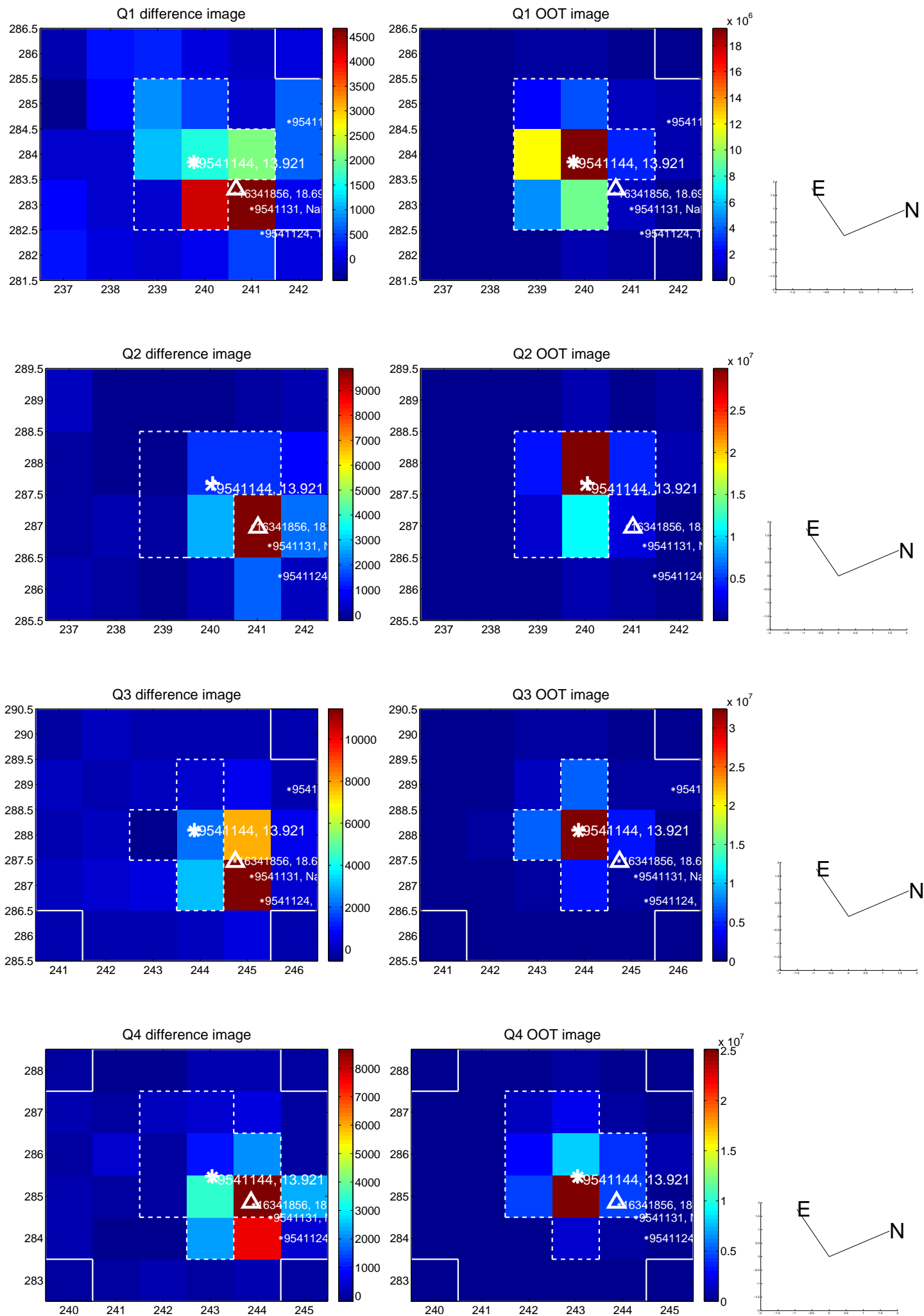
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	4.253 $\pm$ 0.096	44.48	-3.798 $\pm$ 0.096	1.913 $\pm$ 0.096
PRF-fit source offset from KIC position	4.230 $\pm$ 0.096	43.96	-3.732 $\pm$ 0.098	1.991 $\pm$ 0.088
photometric centroid source offset	8.22 $\pm$ 1.04	7.90	-7.16 $\pm$ 1.02	4.03 $\pm$ 1.10

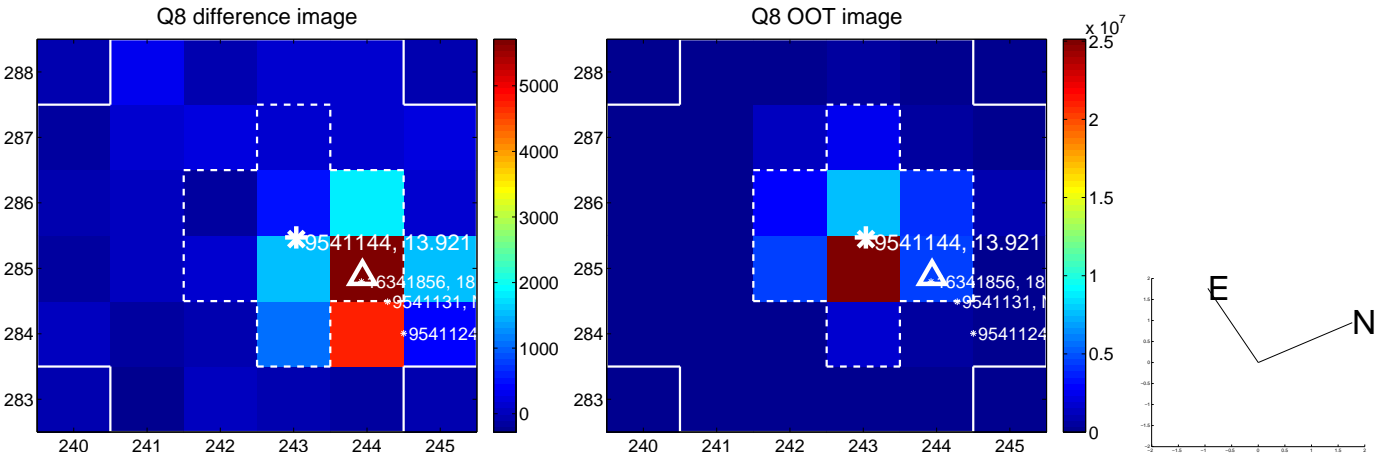
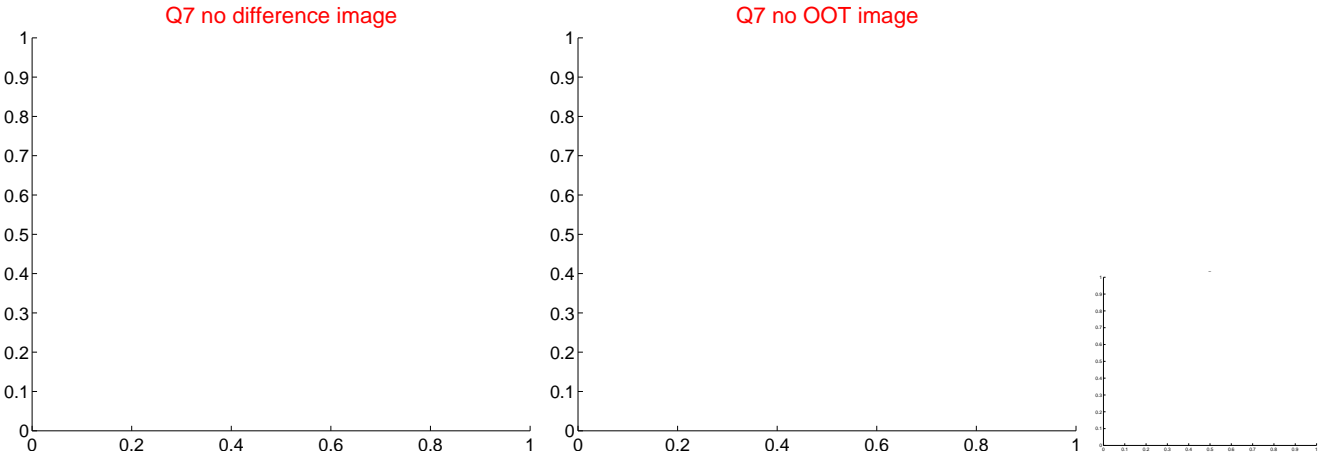
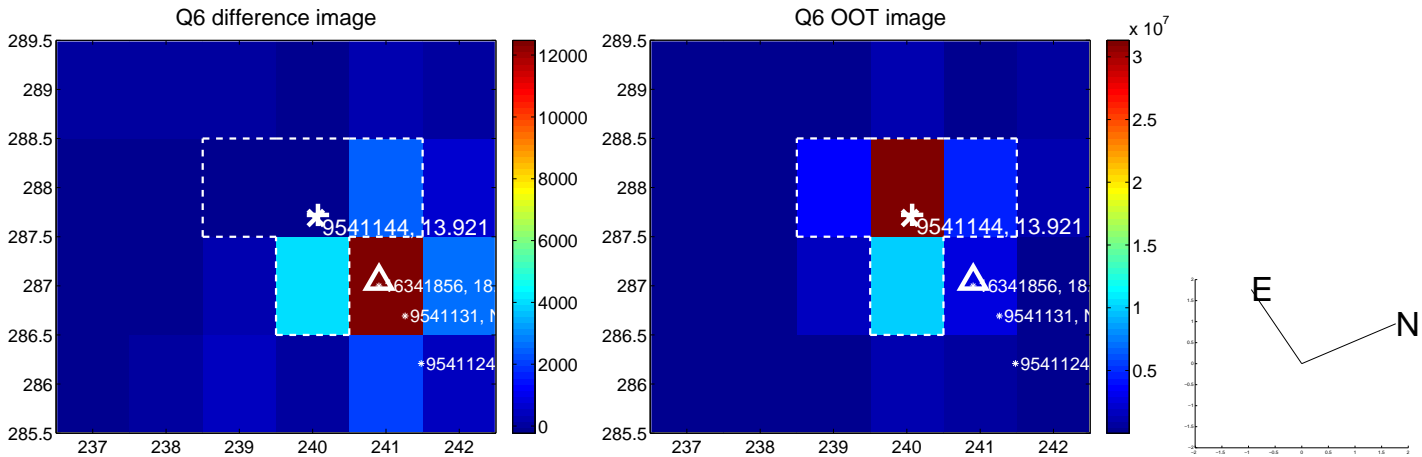
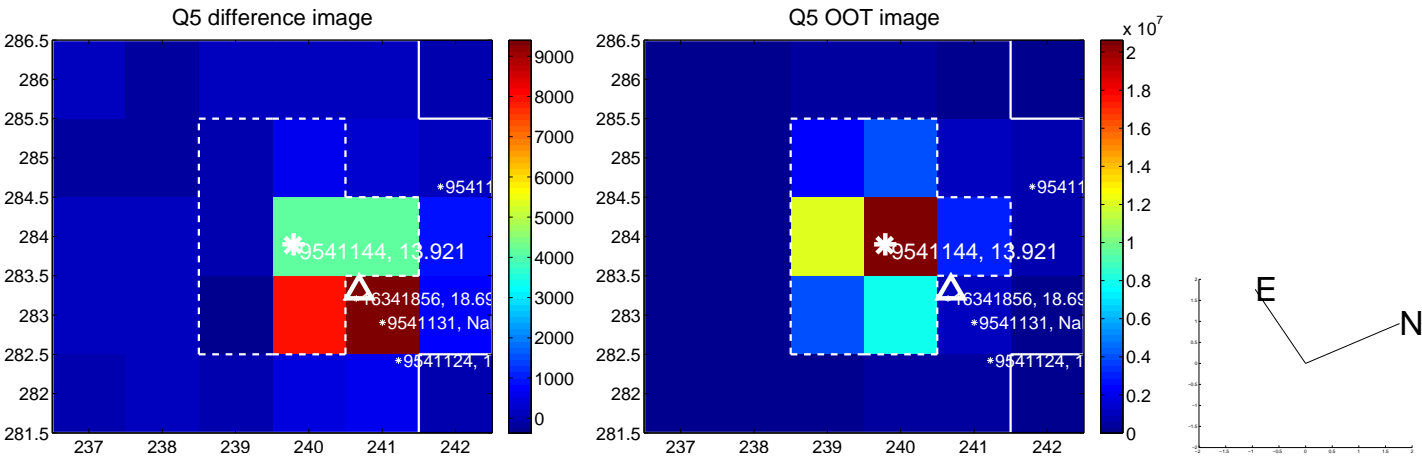


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

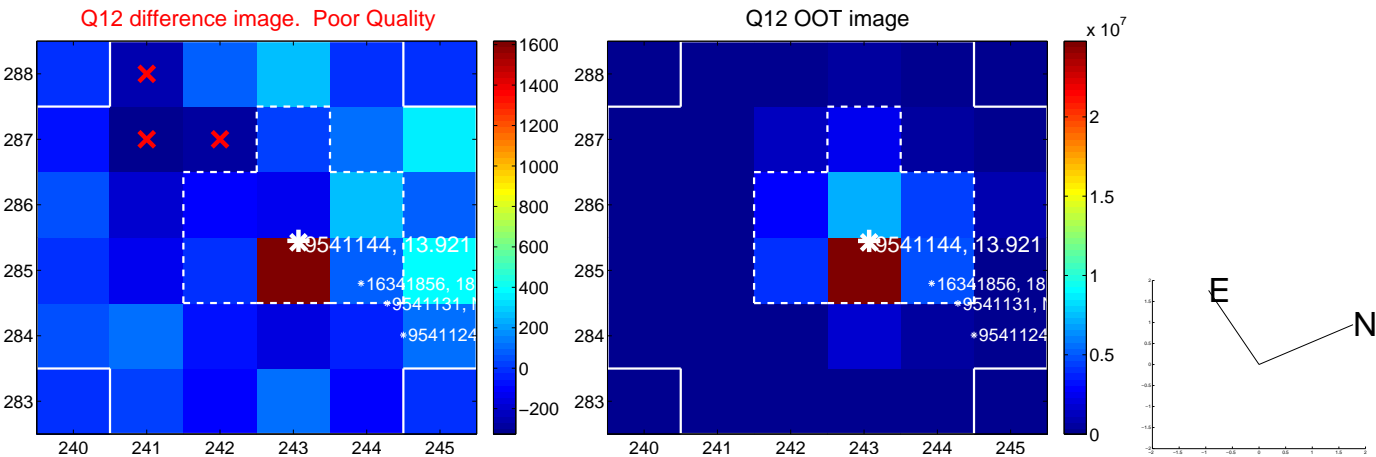
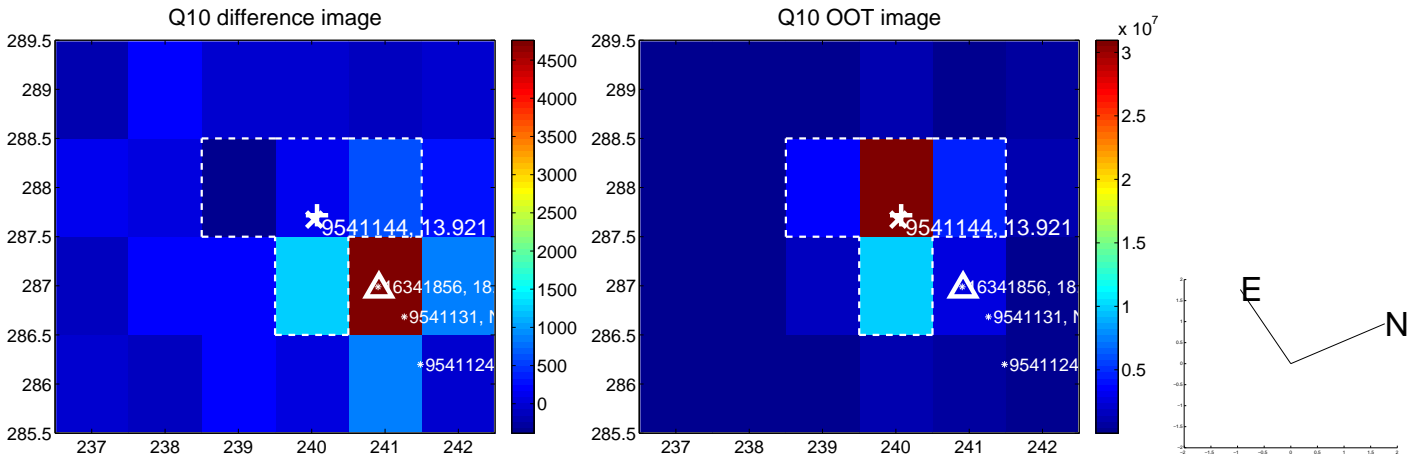
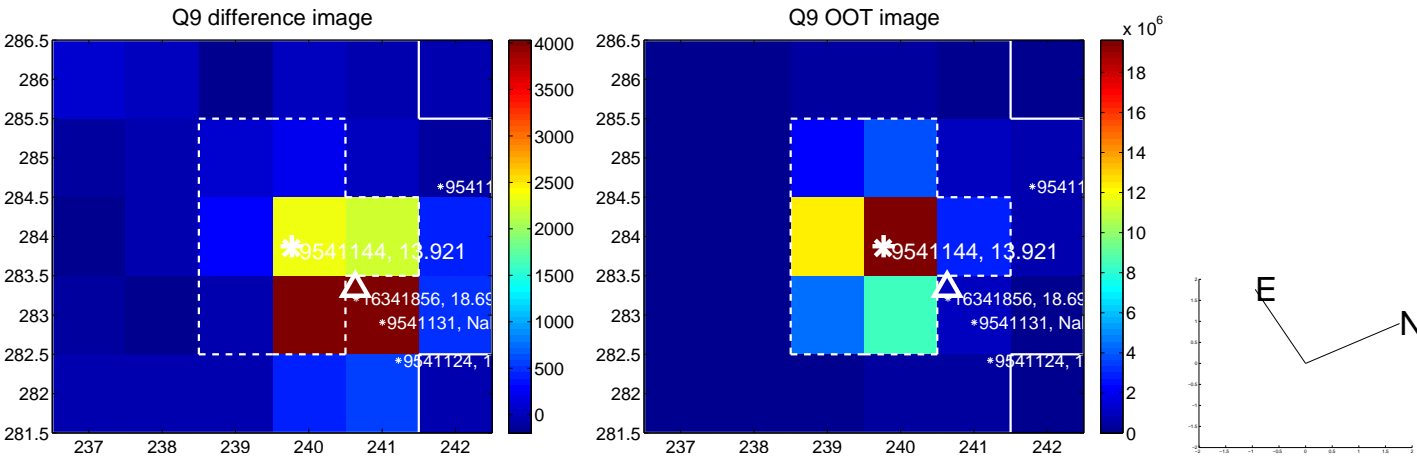
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



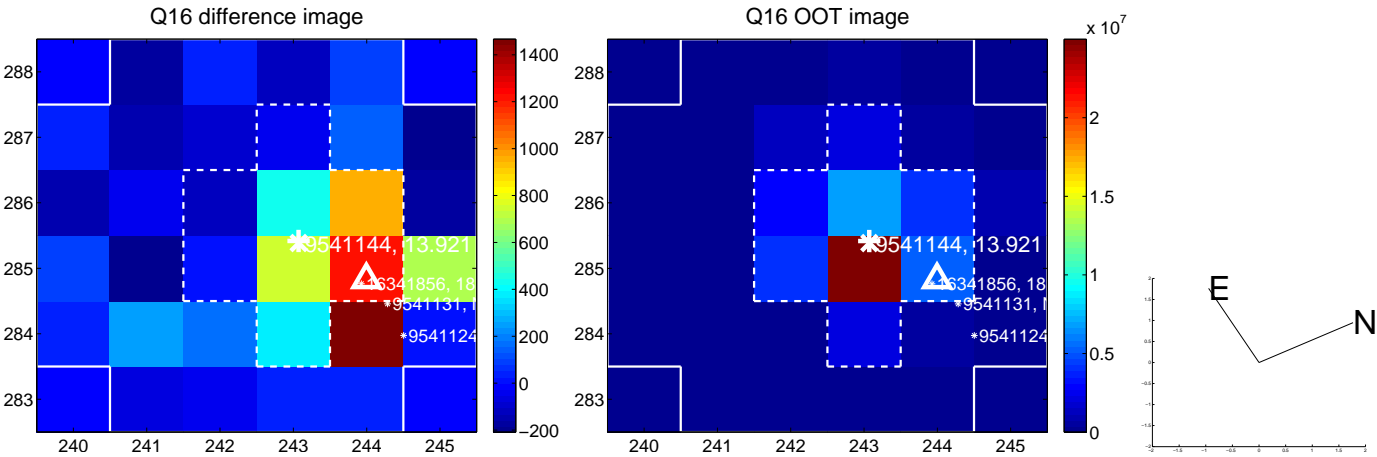
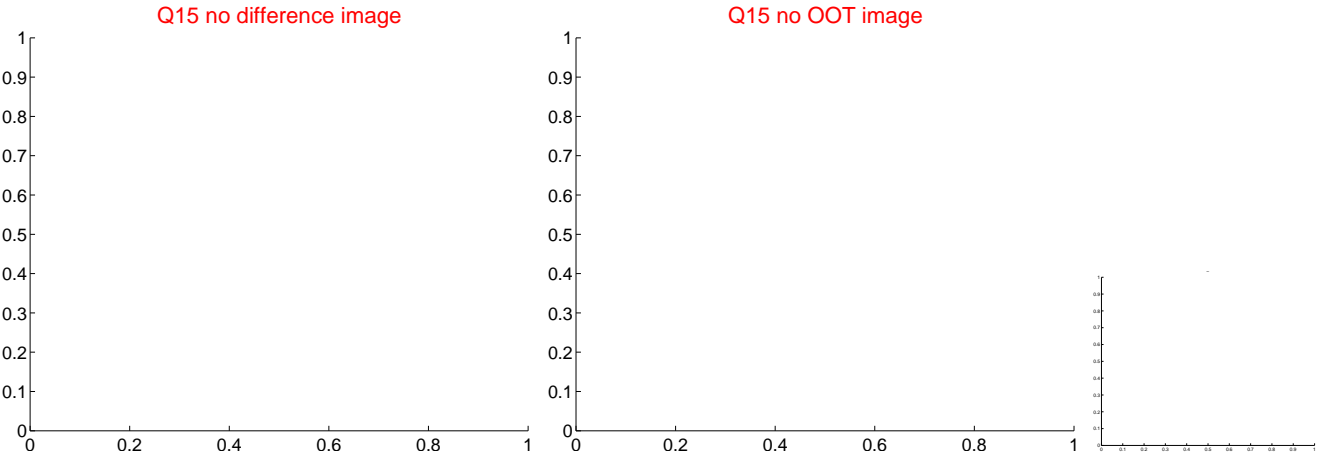
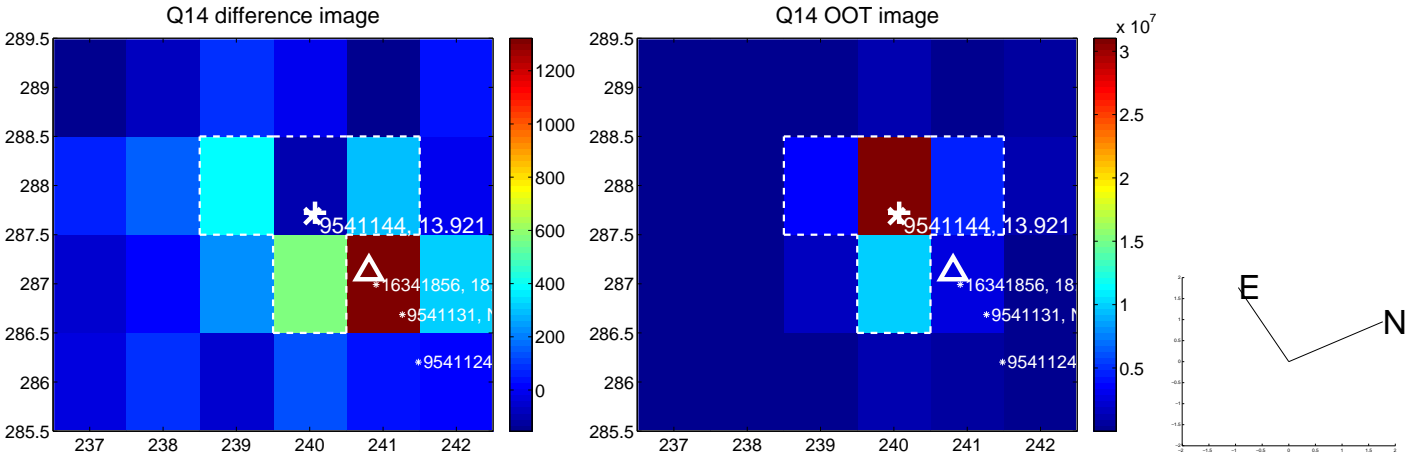
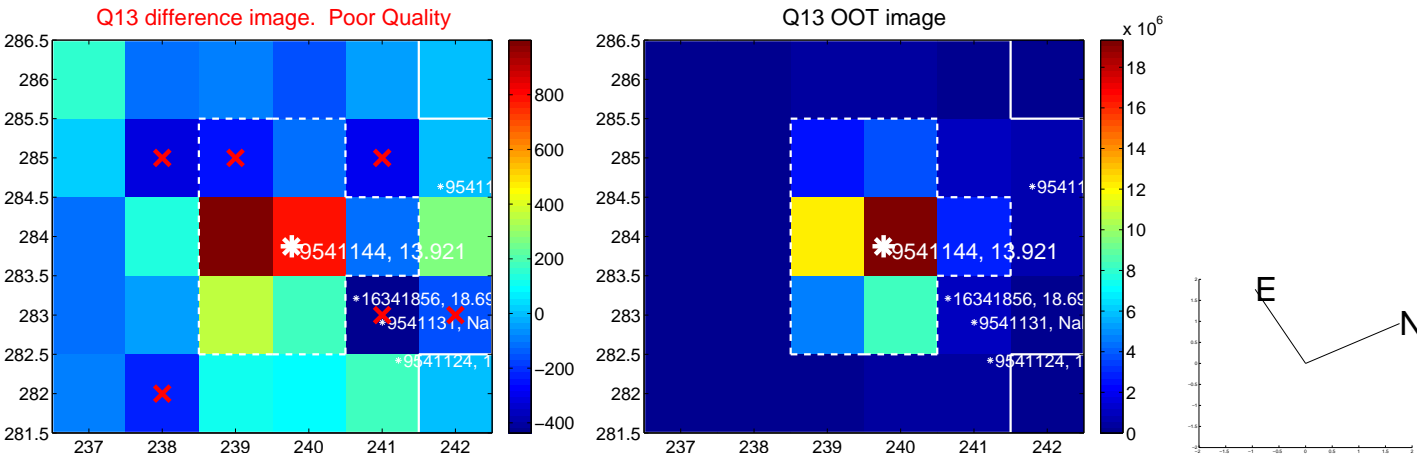
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

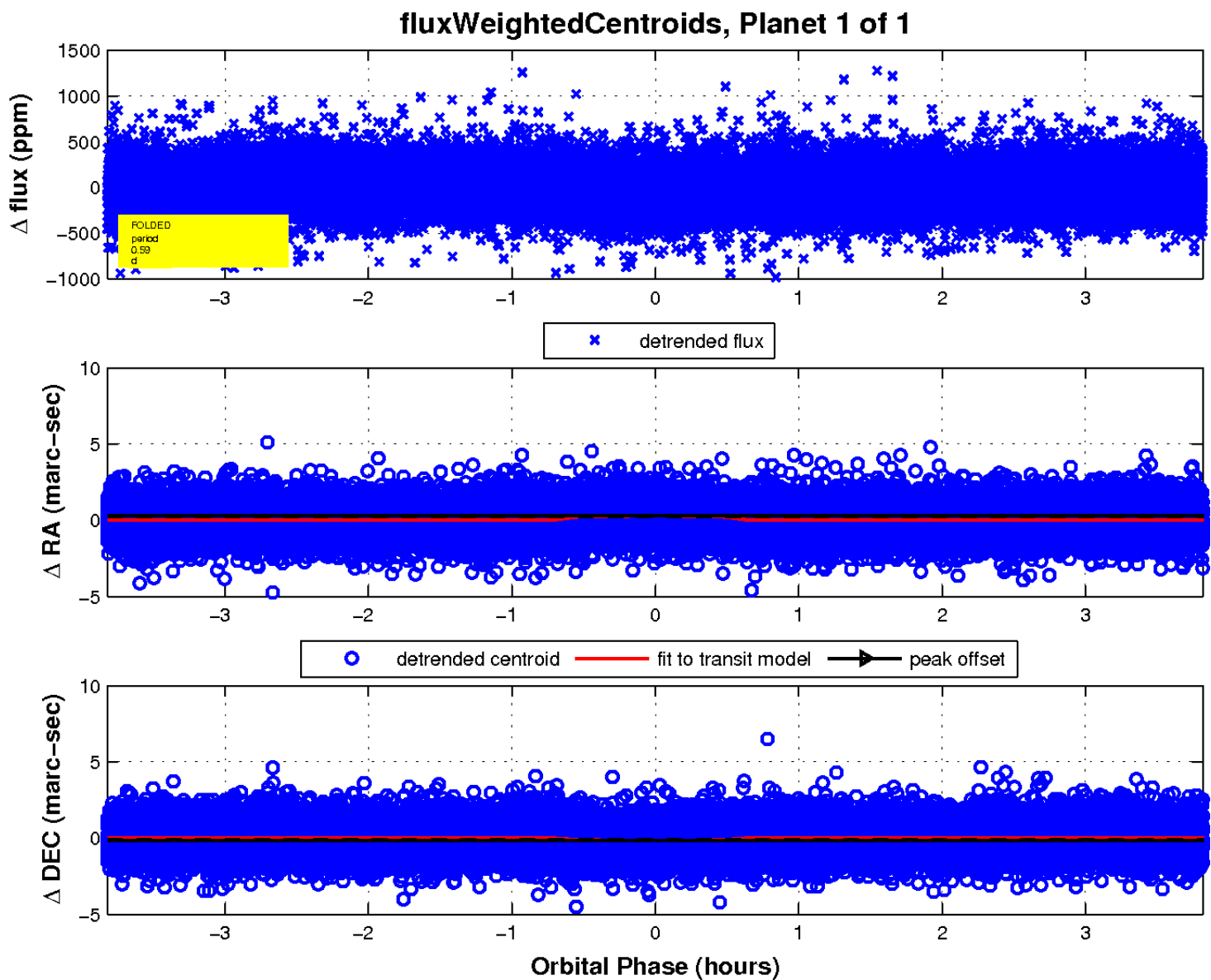
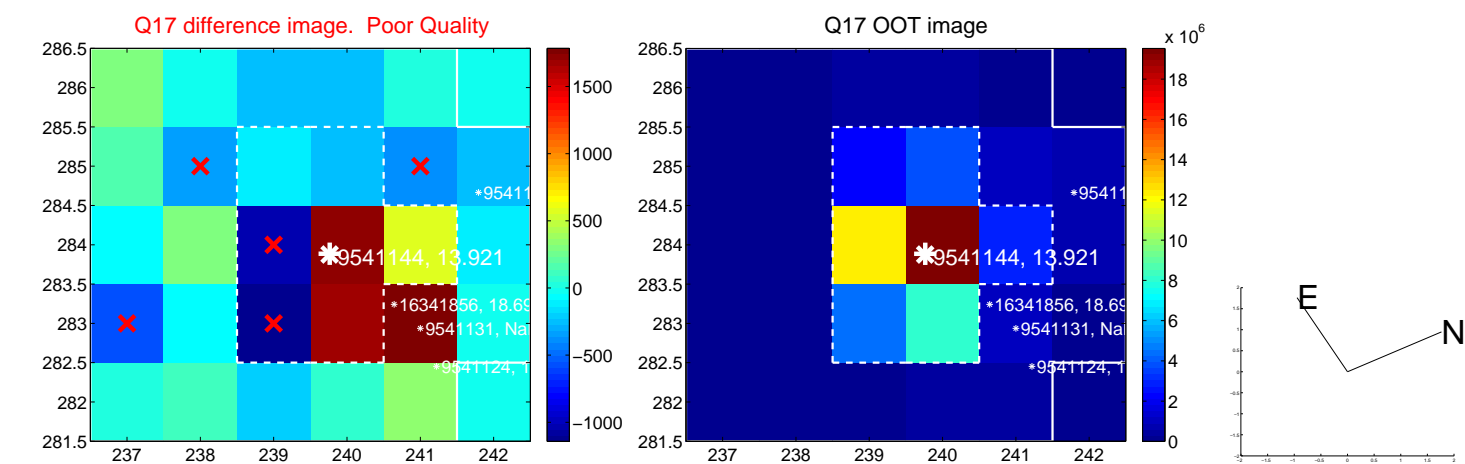


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

