

# KIC 006469946

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006469946-01	OBS	7781.01	0.715800	131.691905	695.0	0.769	23.8	45.9	0.76	5239	2.48	1781.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006469946-01	OBS	FP	0.00	0	0	1	0	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.

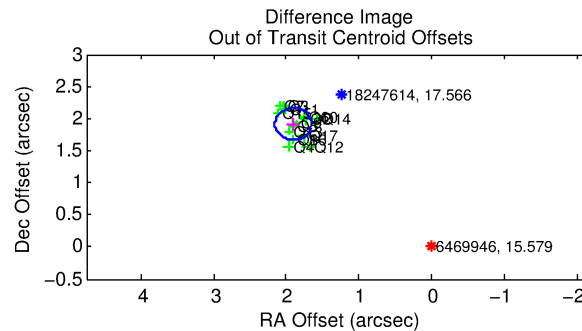
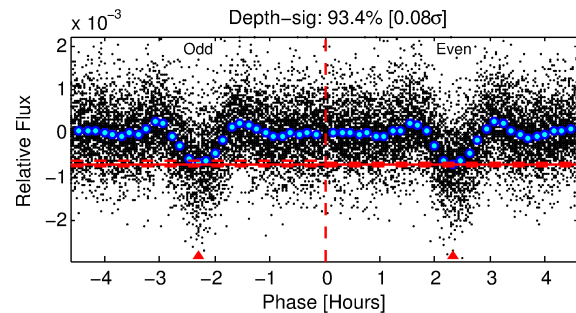
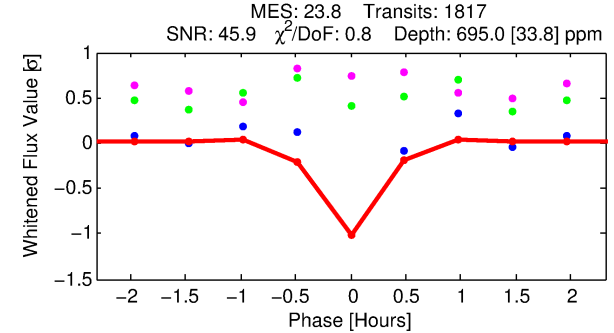
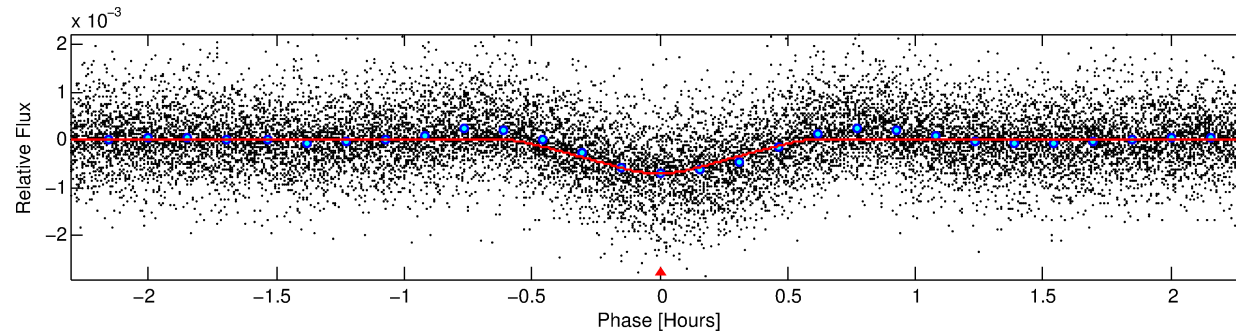
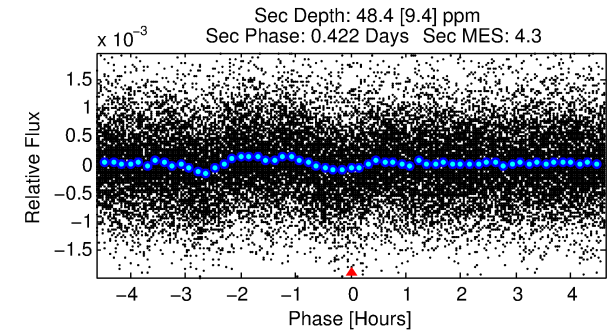
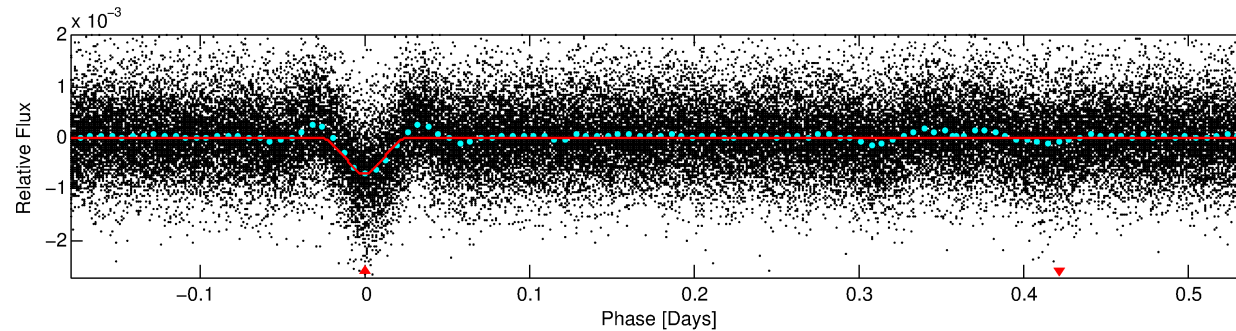
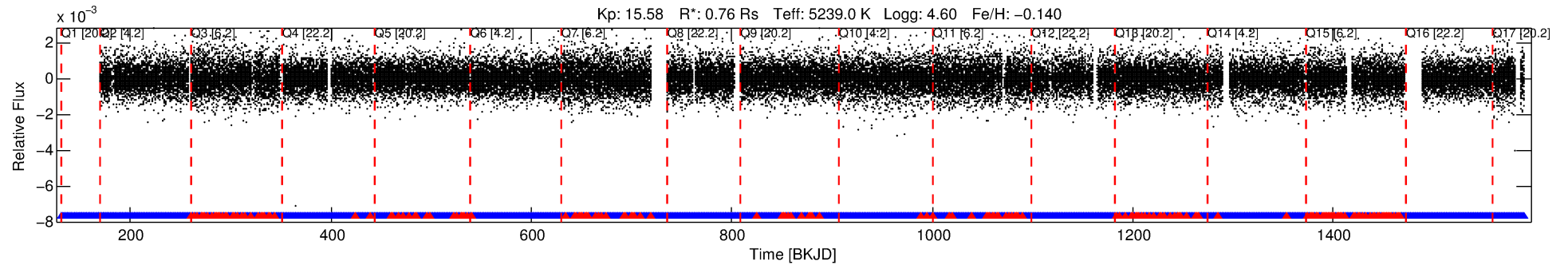
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006469946-01

No Significant Match Found

# DV One-Page Summary

KIC: 6469946 Candidate: 1 of 1 Period: 0.716 d



## DV Fit Results:

Period = 0.71580 [0.00000] d  
Epoch = 131.6919 [0.0003] BKJD  
Rp/R\* = 0.0300 [0.0057]  
a/R\* = 3.63 [2.49]  
b = 0.90 [0.16]  
Seff = 1781.95 [385.87]  
Teq = 1657 [90] K  
Rp = 2.48 [0.60] Re  
a = 0.0147 [0.0018] AU  
Ag = 0.94 [0.43] [-0.14 $\sigma$ ]  
Teffp = 2523 [281] K [2.93 $\sigma$ ]

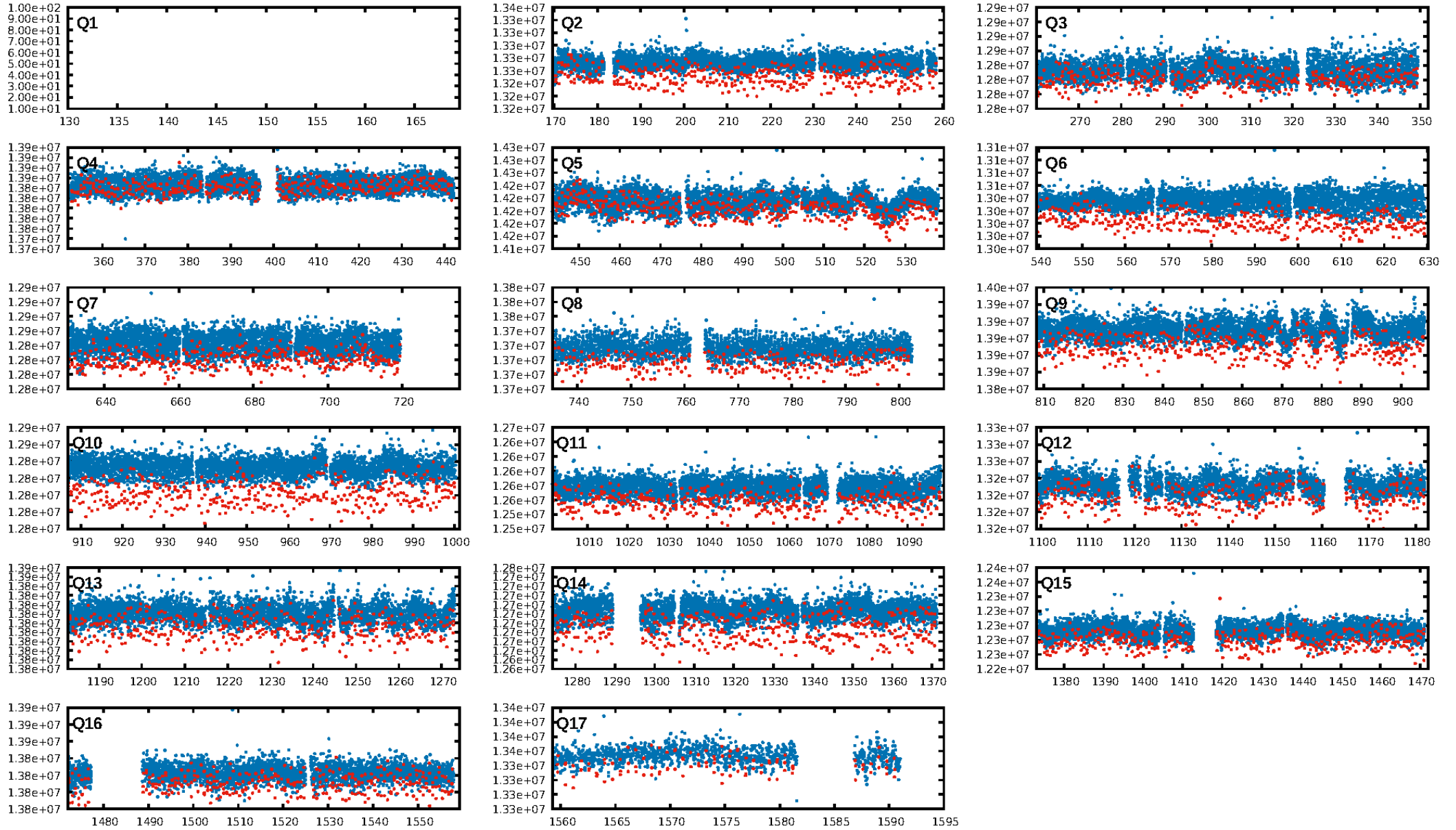
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.12e-117  
RollingBand-fgt: 0.89 [1578/1780]  
GhostDiagnostic-chr: 1.037  
Centroid-sig: 0.0%  
Centroid-so: 4.287 arcsec [18.80 $\sigma$ ]  
OotOffset-rm: 2.703 arcsec [32.60 $\sigma$ ]  
KicOffset-rm: 2.861 arcsec [39.32 $\sigma$ ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [16/16]

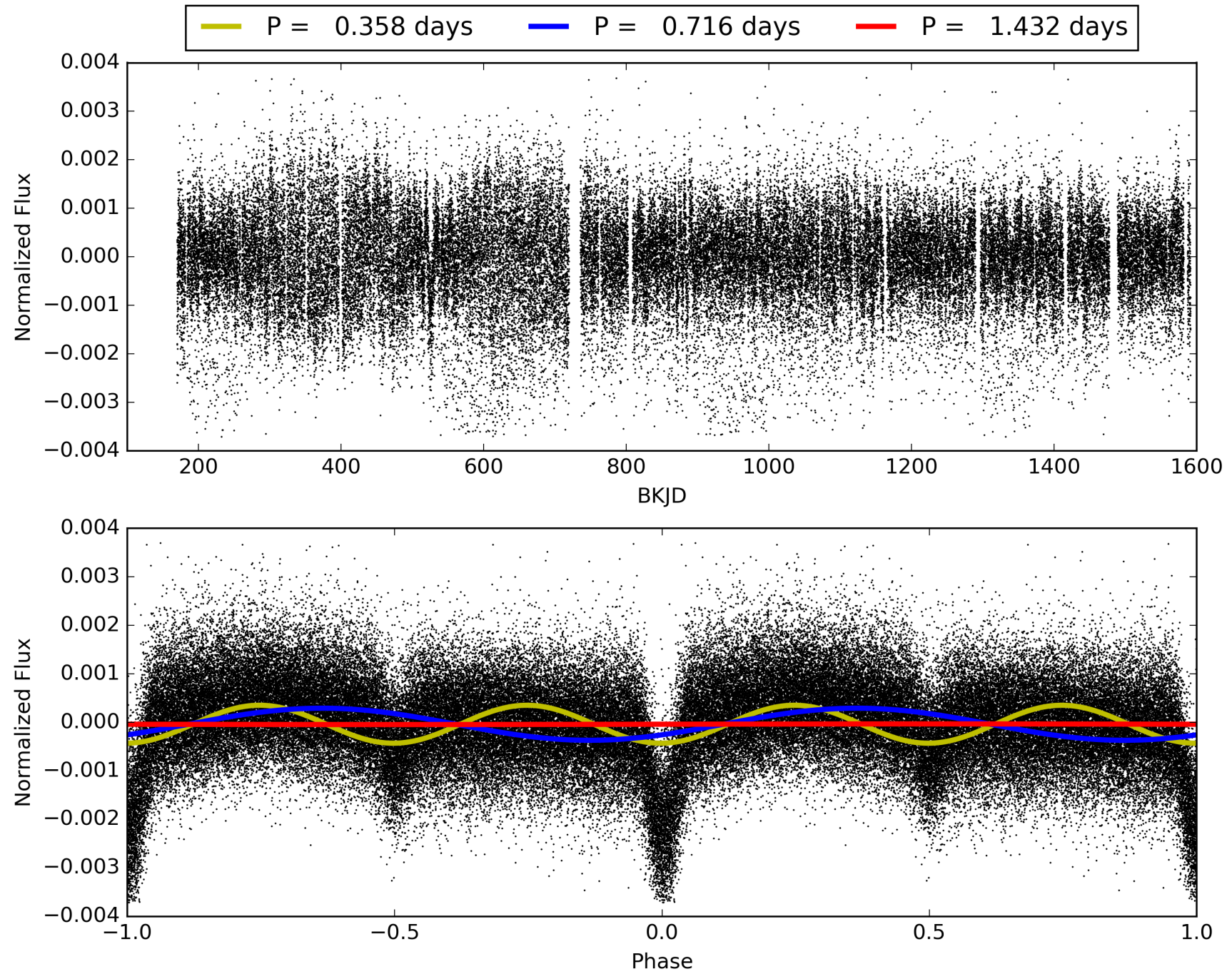
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:18:24 Z

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

# TCE 006469946-01, PDC Light Curves



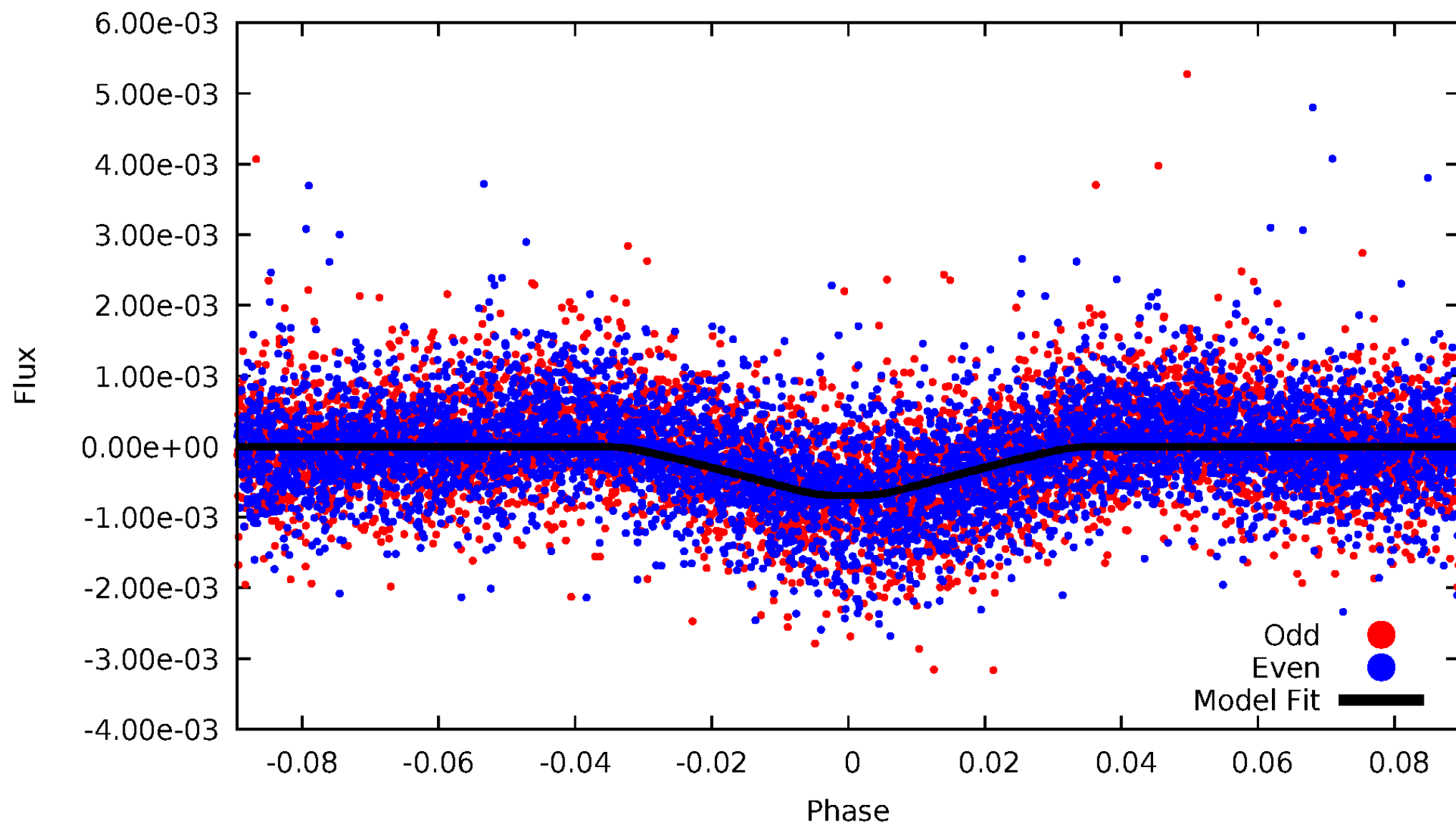
TCE 006469946-01





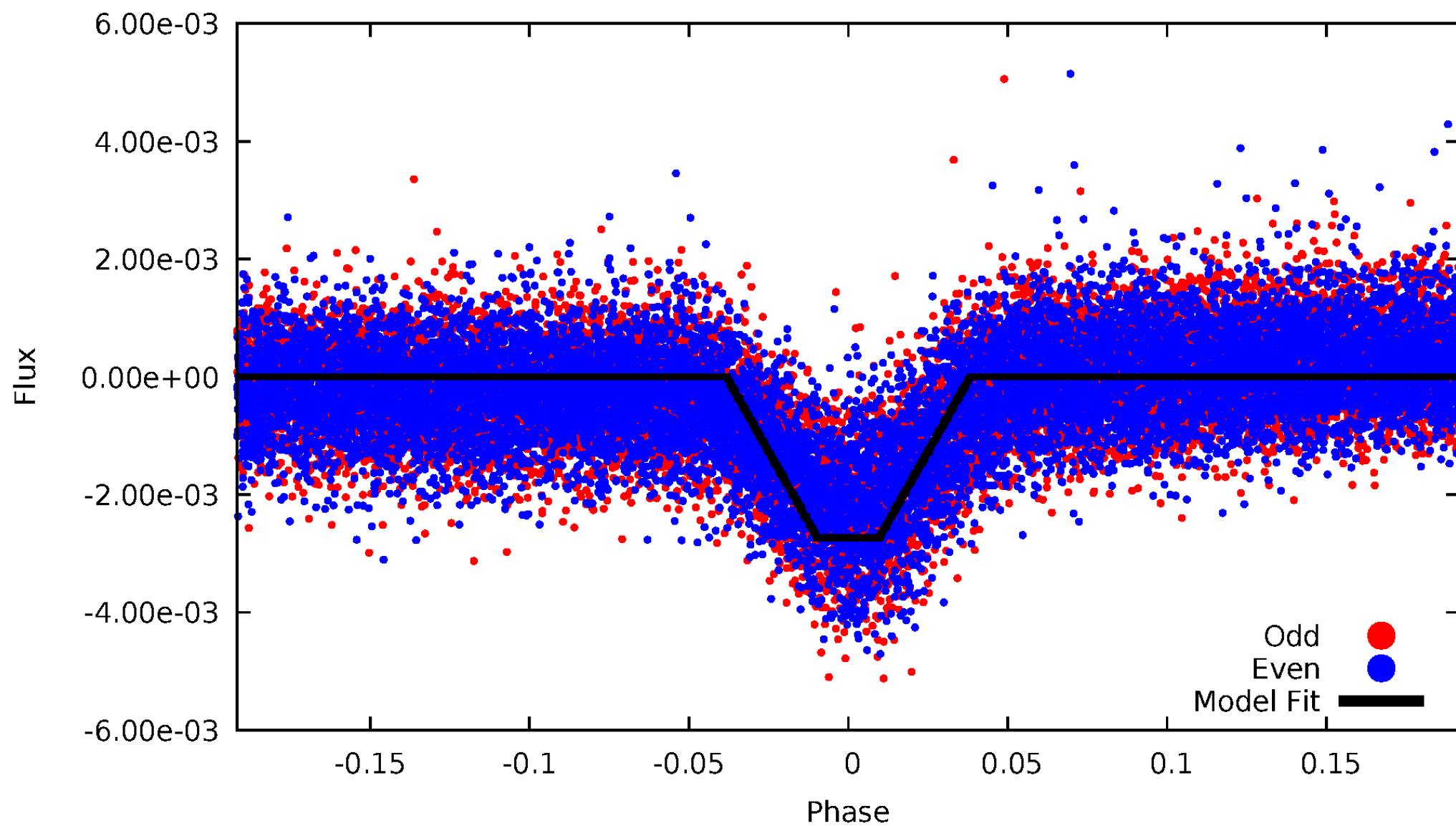
# DV Odd/Even

TCE 006469946-01



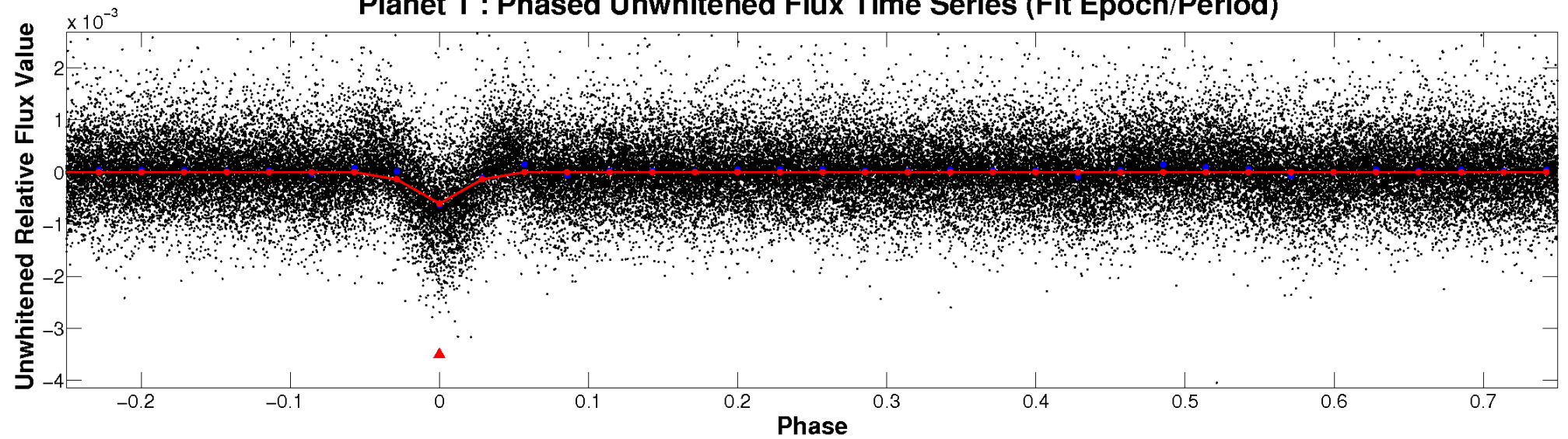
# ALT Odd/Even

TCE 006469946-01

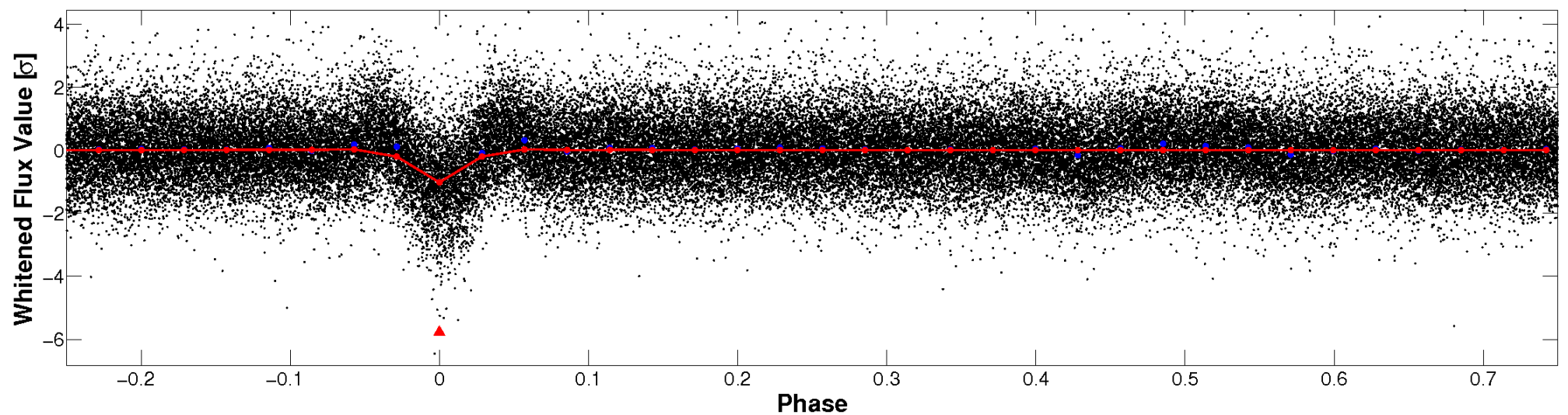


# Non-Whitened Vs. Whitened Light Curve

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

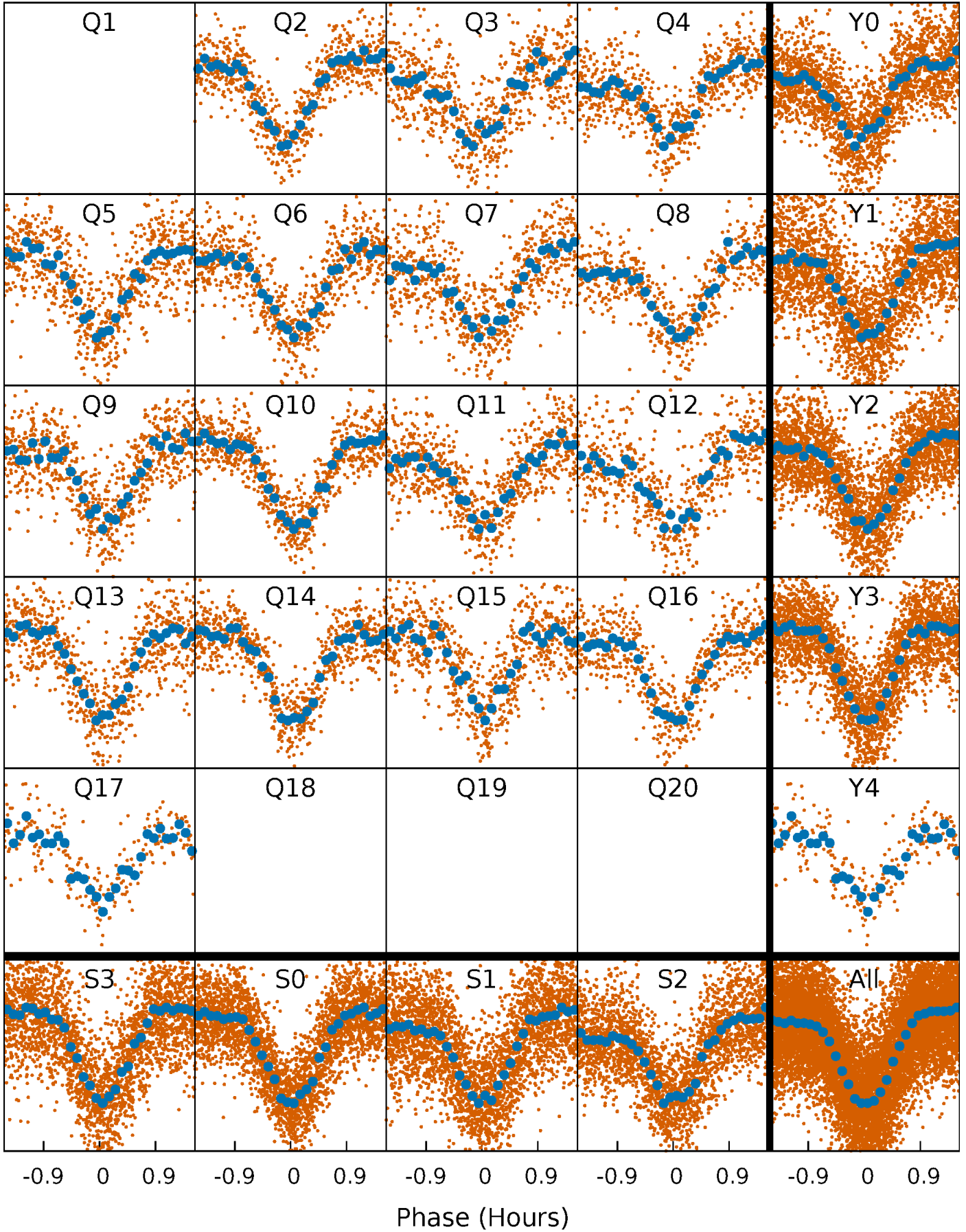


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

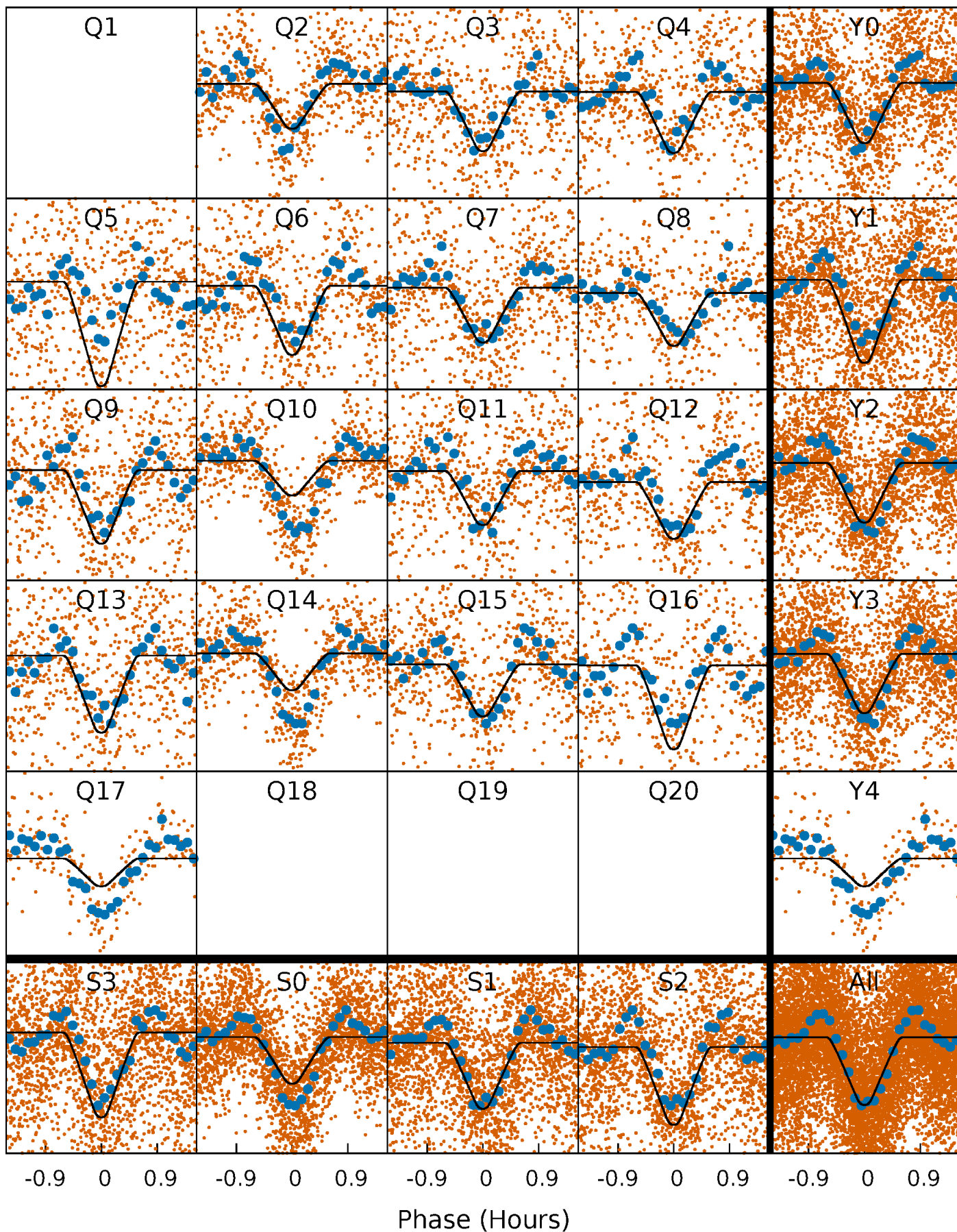
TCE 006469946-01   P= 0.715800 Days    $T_0=131.691905$  (BKJD)





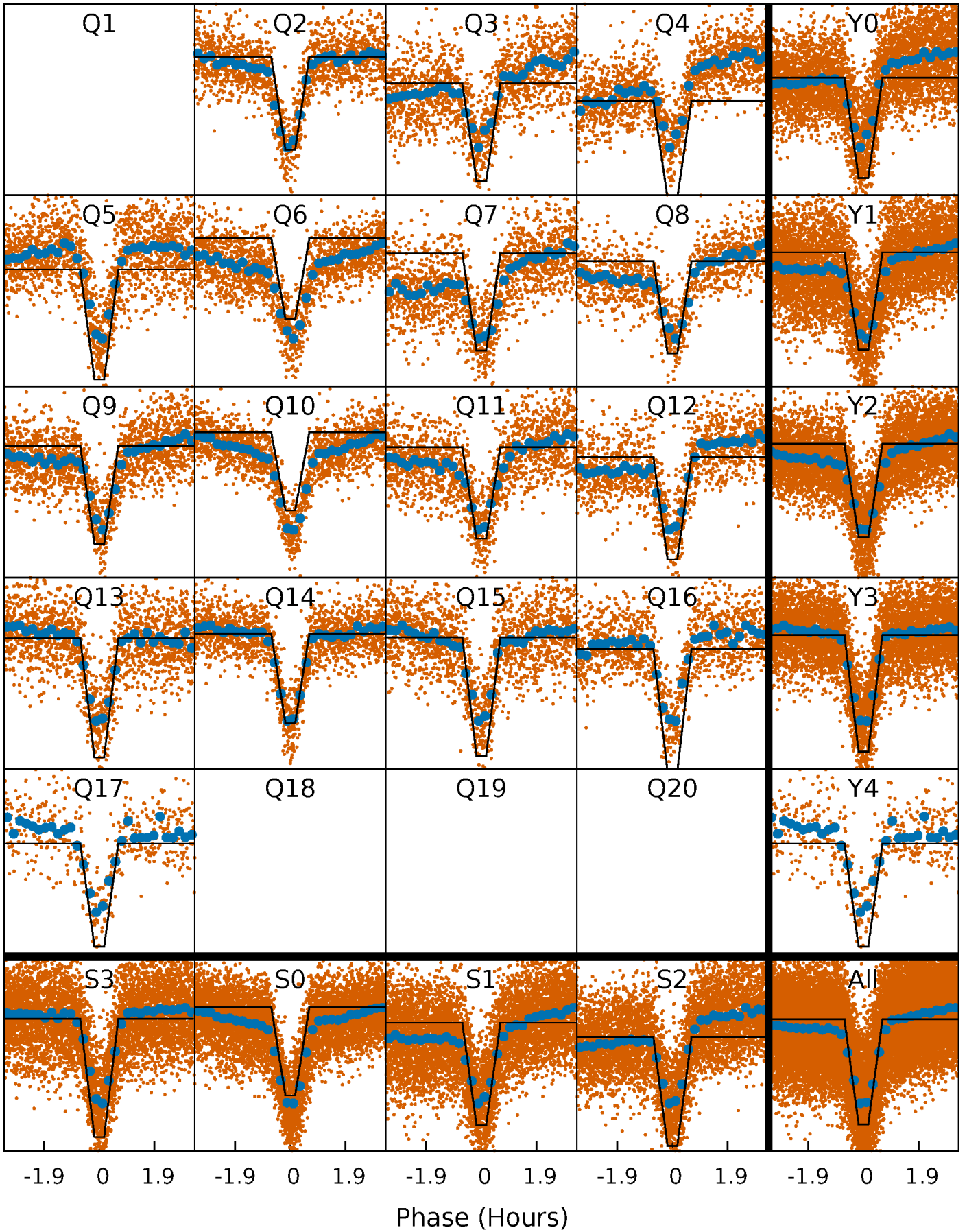
# DV Quarter-Phased Transit Curves

TCE 006469946-01 P= 0.715800 Days  $T_0=131.691905$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

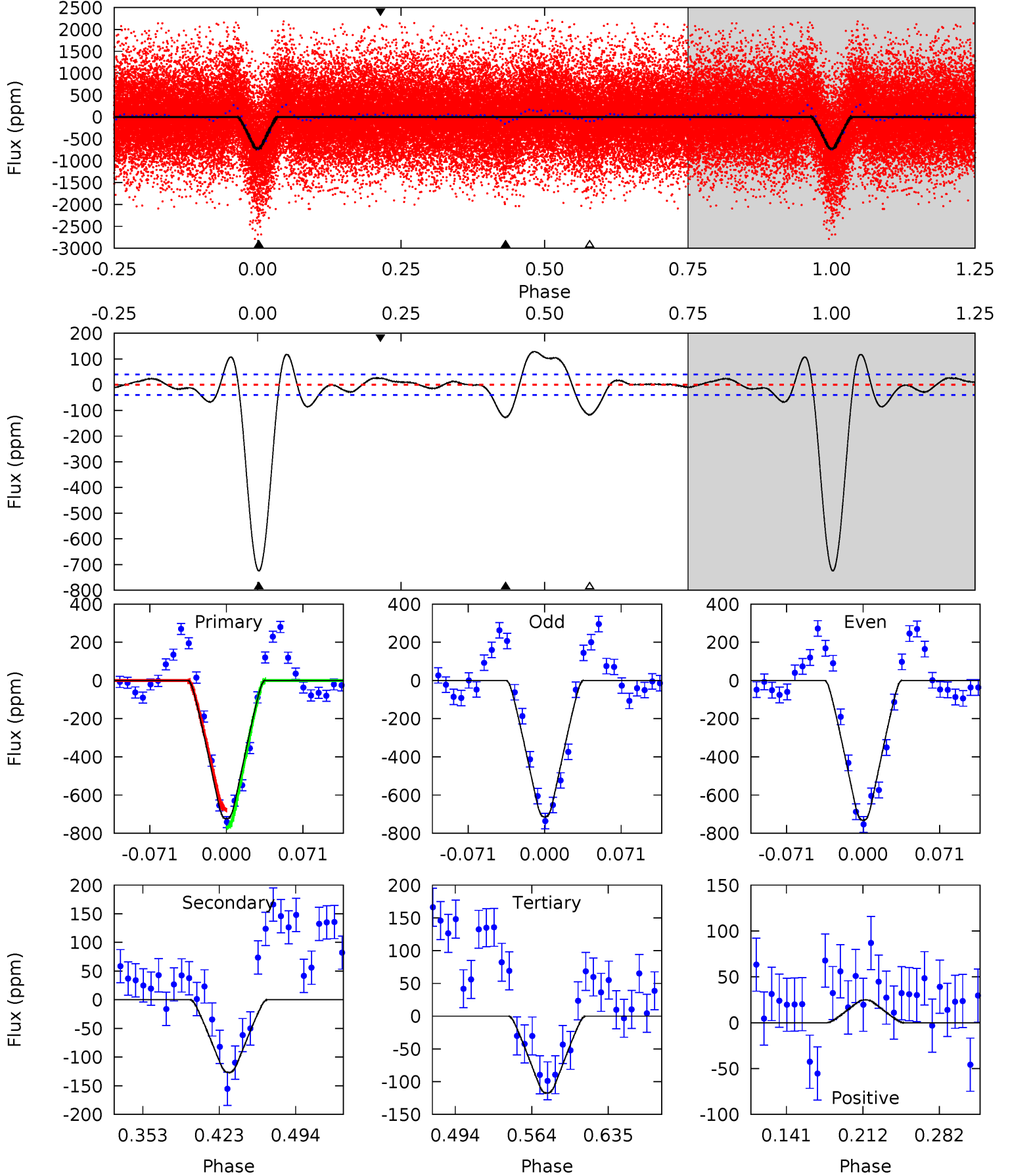
TCE 006469946-01 P= 0.715802 Days  $T_0=131.690545$  (BKJD)



# DV Model-Shift Uniqueness Test

006469946-01, P = 0.715800 Days, E = 131.691905 Days

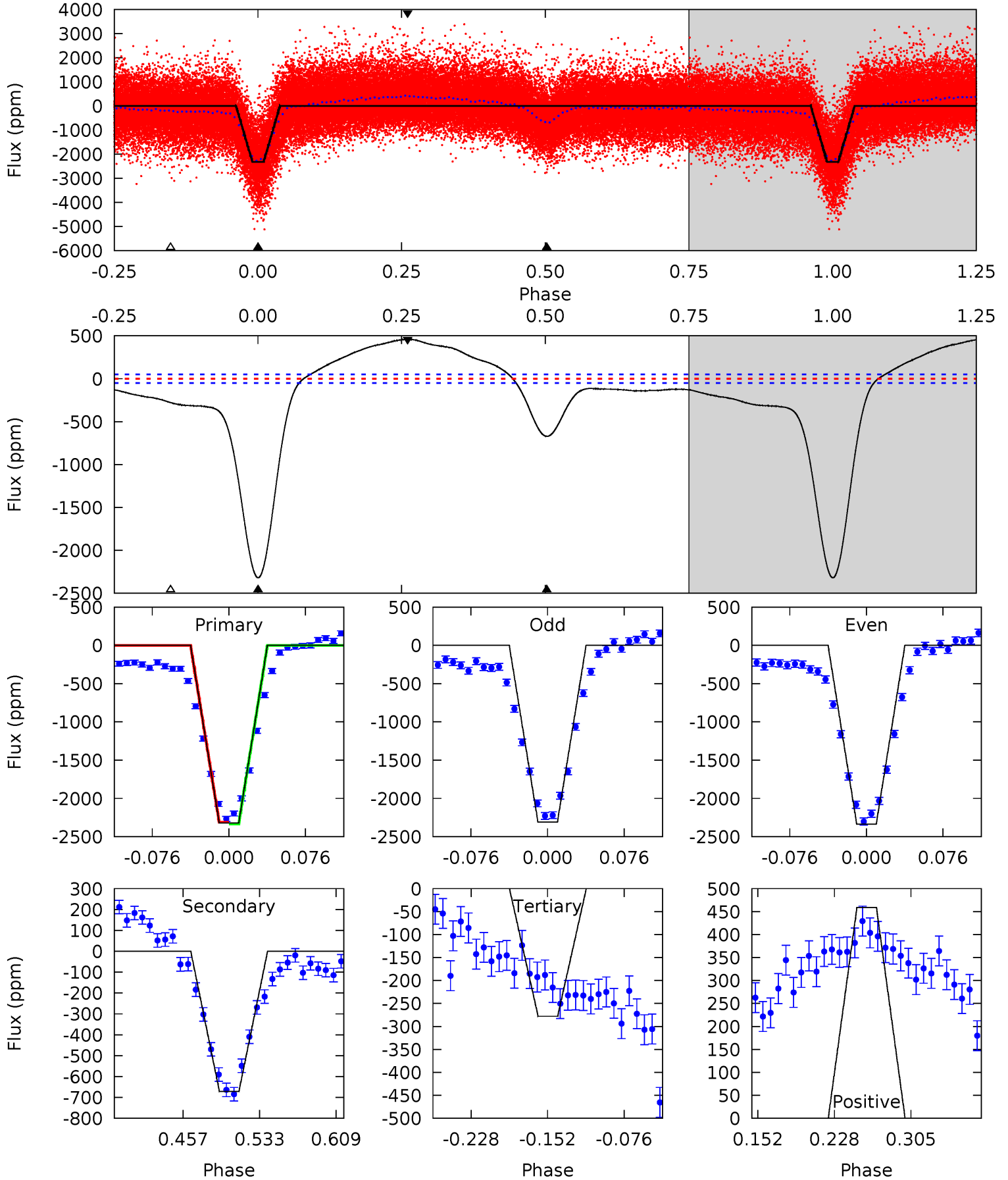
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
84.4	14.8	13.7	2.89	4.64	1.81	4.54	70.8	81.5	1.10	11.9	1.01	1.04	0.15	5.55



# Alt Model-Shift Uniqueness Test

006469946-01, P = 0.715802 Days, E = 131.690545 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
214.7	62.1	25.7	42.5	4.62	1.77	24.4	189.0	172.2	36.4	19.6	1.32	1.02	0.17	1.12





### Stellar Parameters For KIC 006469946

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5239^{+174}_{-158}$	$4.600^{+0.032}_{-0.091}$	$-0.140^{+0.300}_{-0.300}$	$0.757^{+0.112}_{-0.060}$	$0.841^{+0.070}_{-0.101}$	$2.735^{+0.453}_{-0.823}$
	+3%/-3%	+1%/-2%	+214%/-214%	+15%/-8%	+8%/-12%	+17%/-30%
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 006469946-01 / KOI 7781.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-127 \pm 9$	$2.54^{+0.55}_{-0.47}$	$2347^{+108}_{-88}$	$3533^{+319}_{-225}$	$2.326^{+1.280}_{-0.741}$
Alt.	$-671 \pm 11$	$4.44^{+0.58}_{-0.54}$	$2343^{+107}_{-94}$	$3913^{+211}_{-181}$	$4.038^{+1.135}_{-0.834}$

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

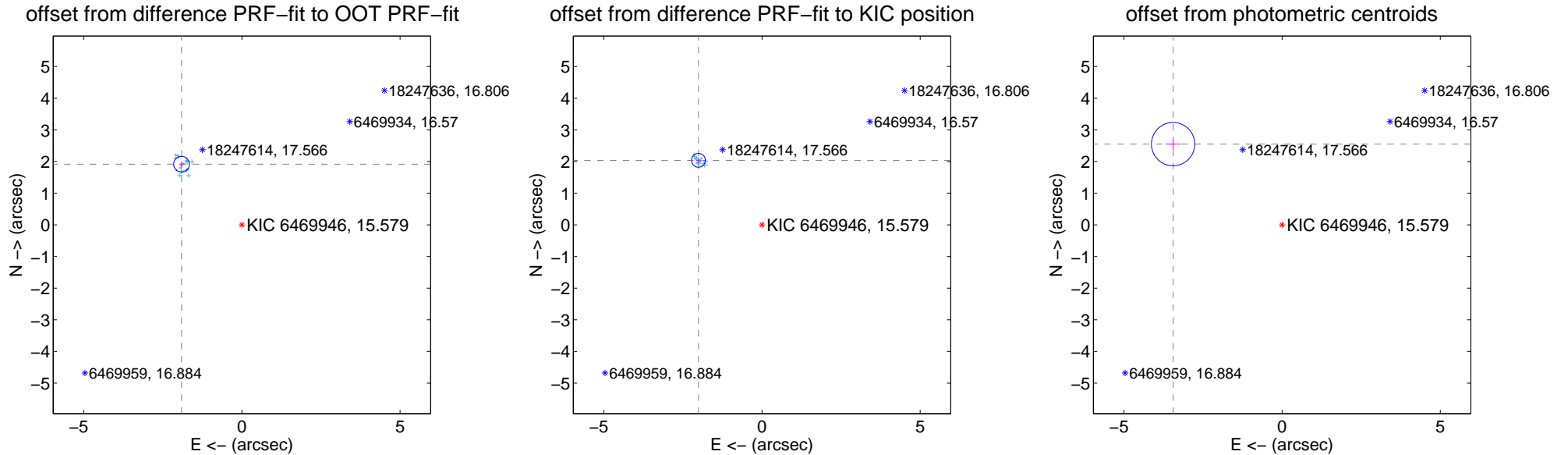
## DV Centroid Data

Supplemental centroid analysis for 006469946-01. Kepler magnitude: 15.58. Transit SNR 45.91

There are 16 quarters with good PRF difference image offsets

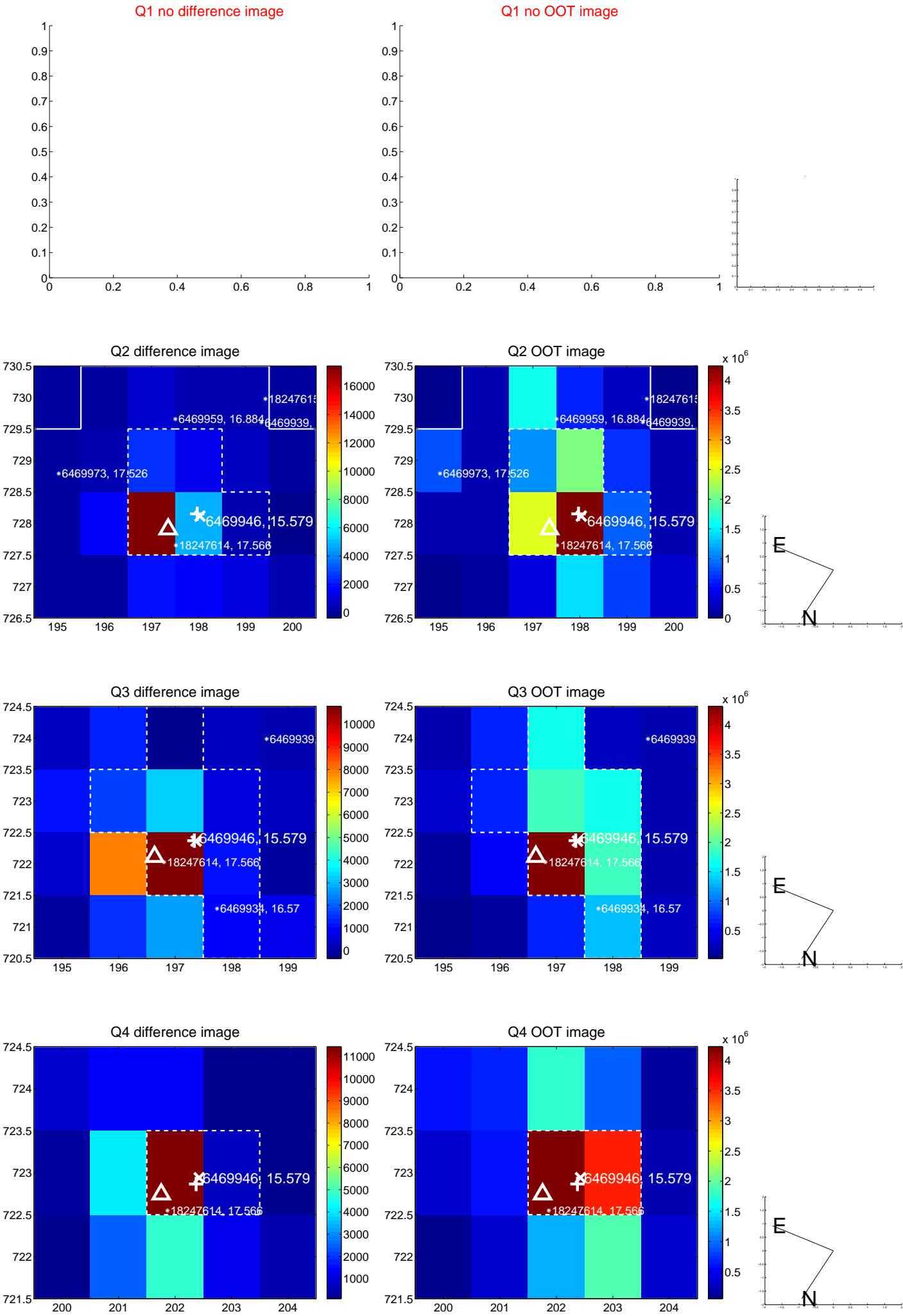
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>2.703 <math>\pm</math> 0.083</b>	<b>32.60</b>	1.908 $\pm$ 0.076	1.915 $\pm$ 0.085
PRF-fit source offset from KIC position	<b>2.861 <math>\pm</math> 0.073</b>	<b>39.32</b>	2.008 $\pm$ 0.071	2.038 $\pm$ 0.070
photometric centroid source offset	<b>4.29 <math>\pm</math> 0.23</b>	<b>18.80</b>	3.45 $\pm$ 0.24	2.55 $\pm$ 0.21

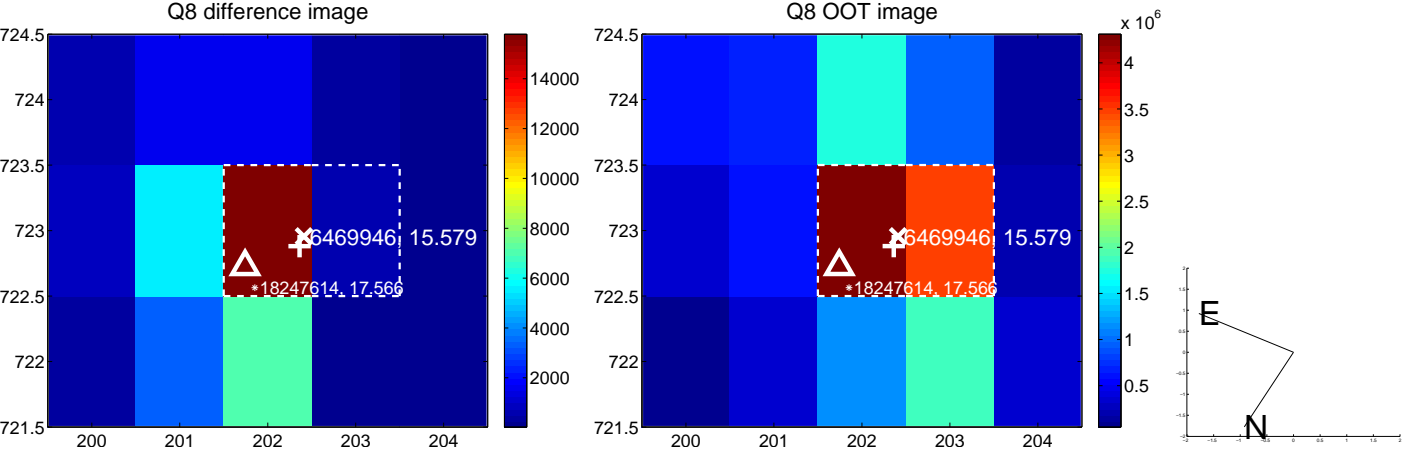
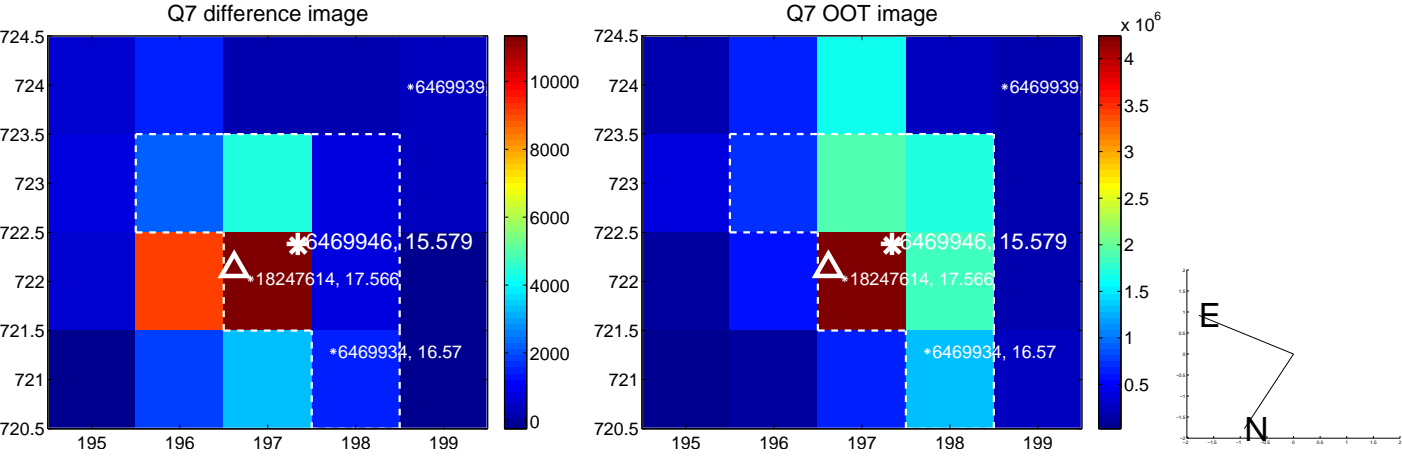
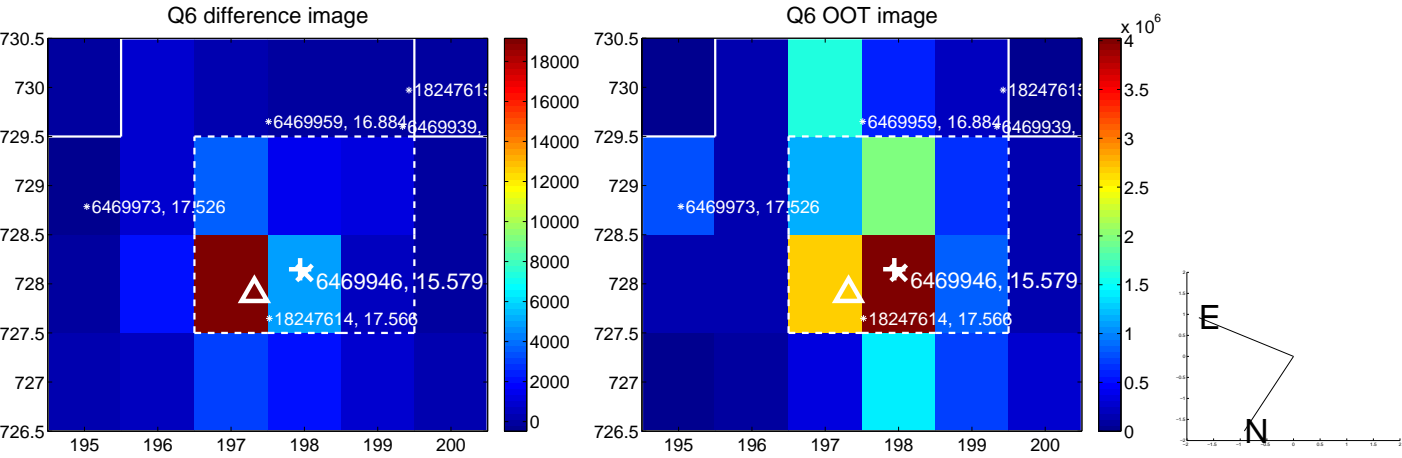
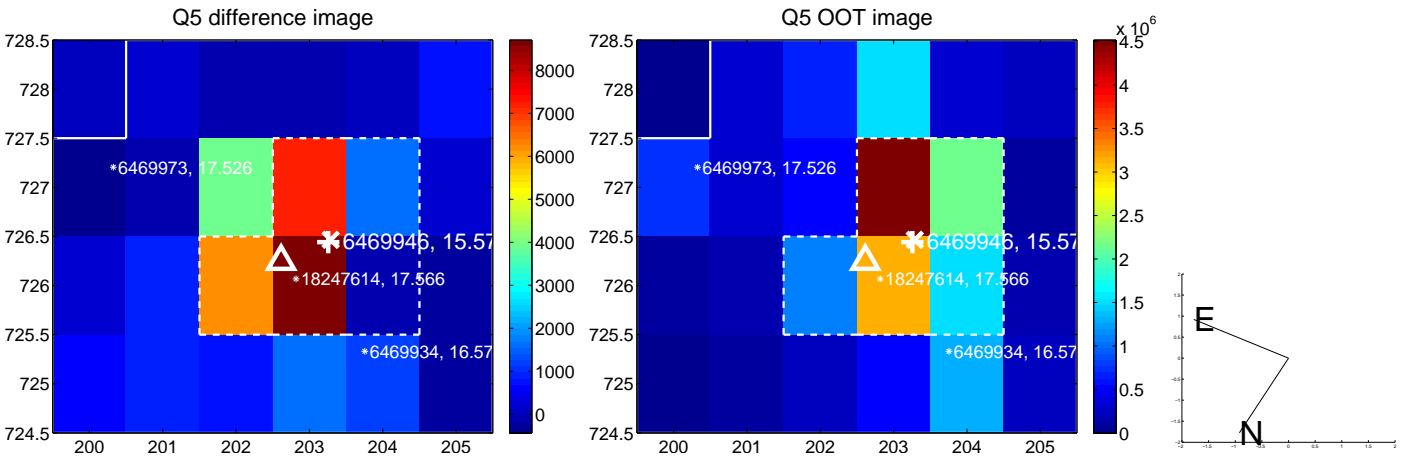


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

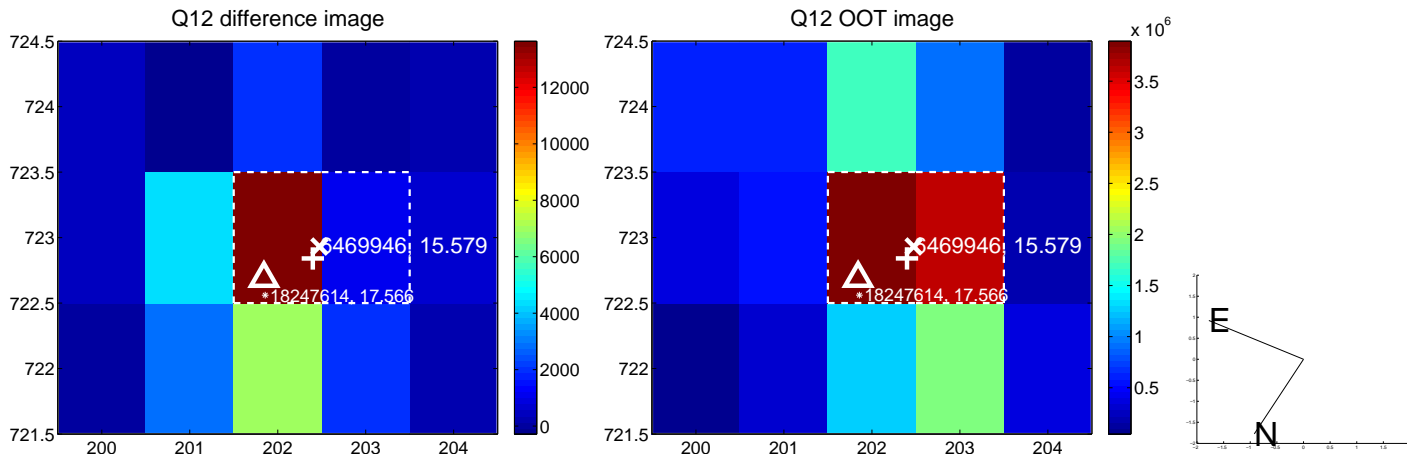
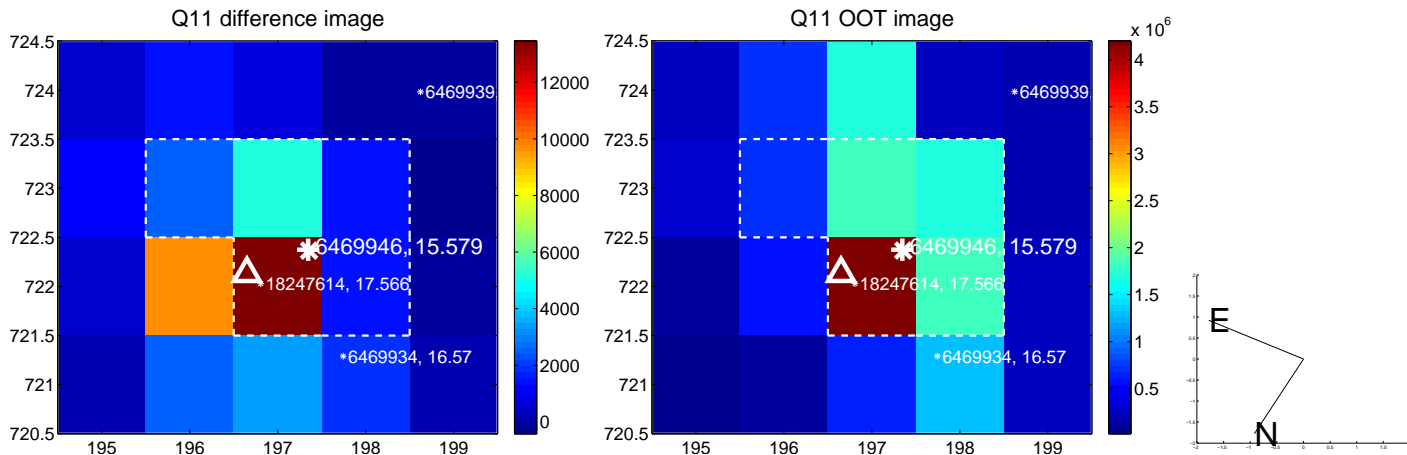
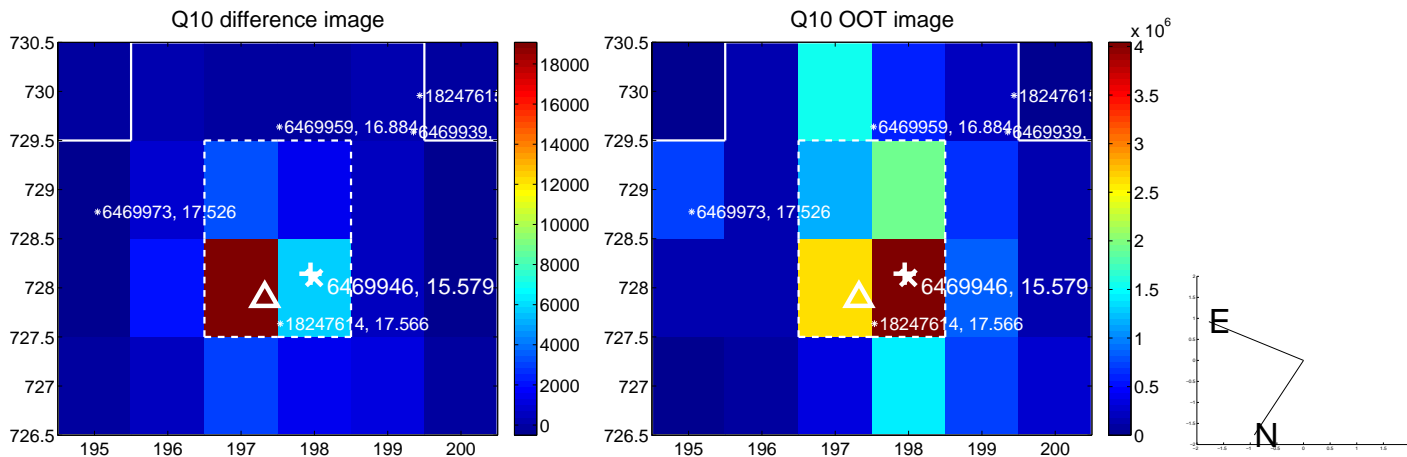
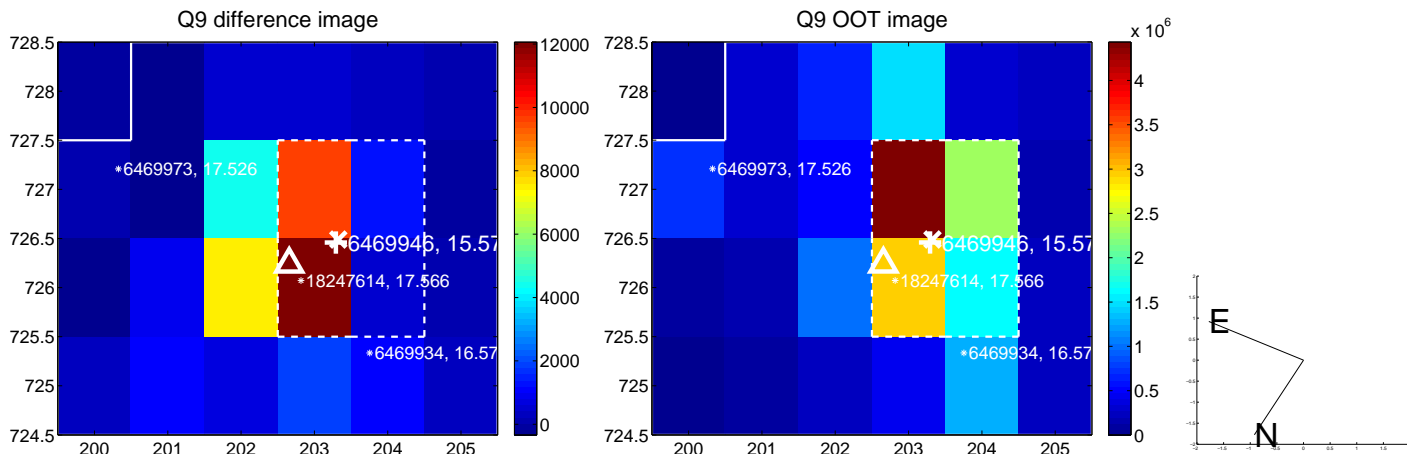


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

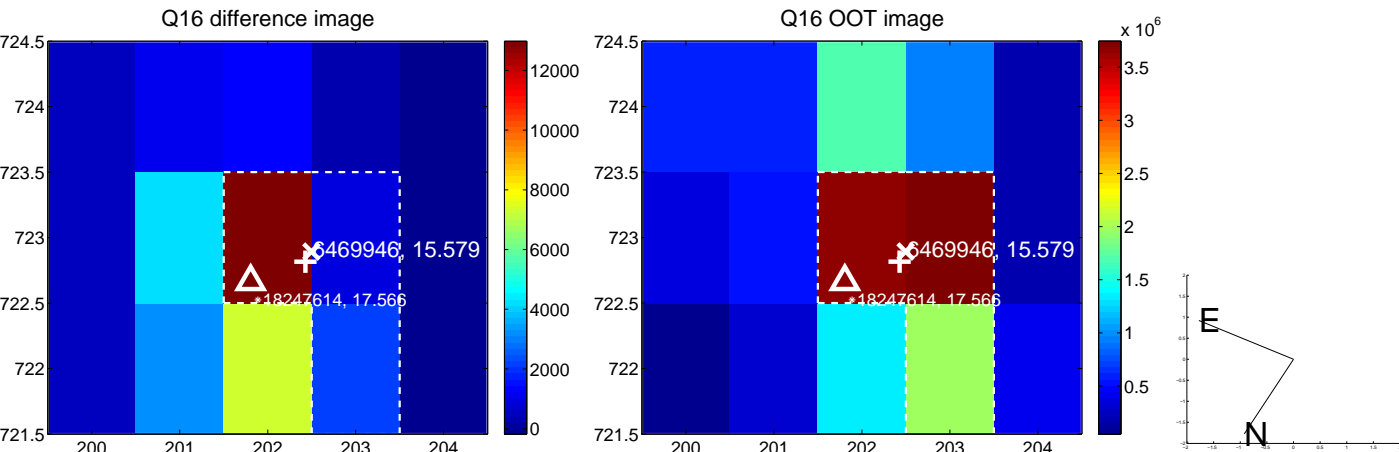
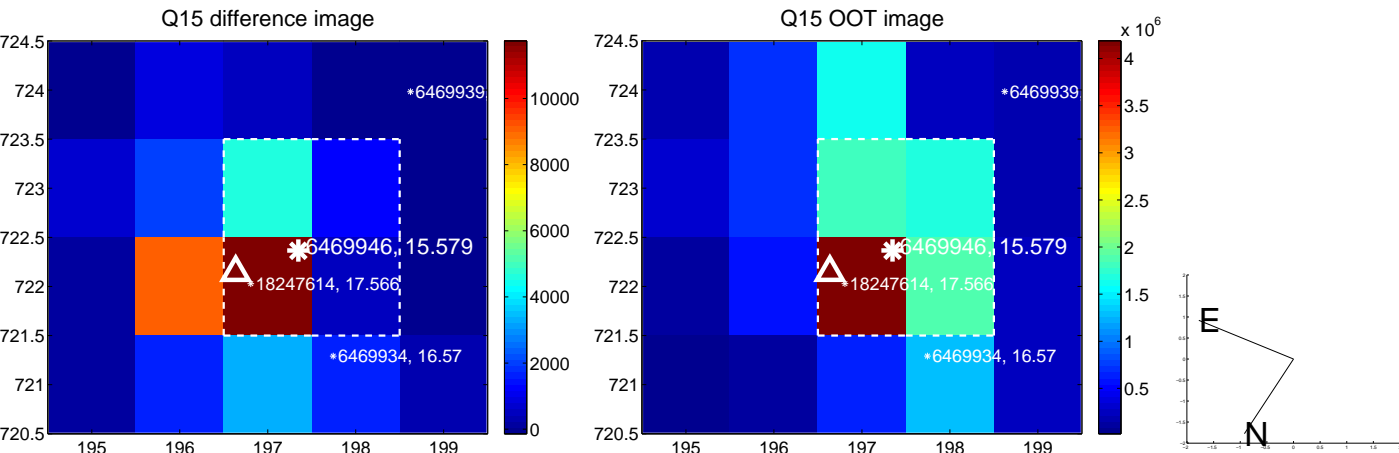
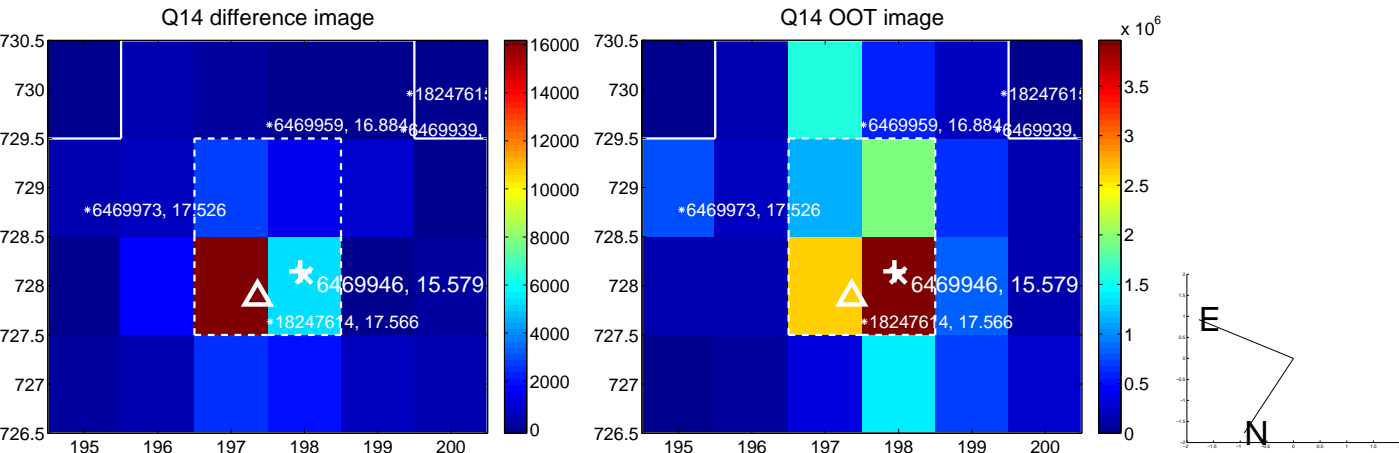
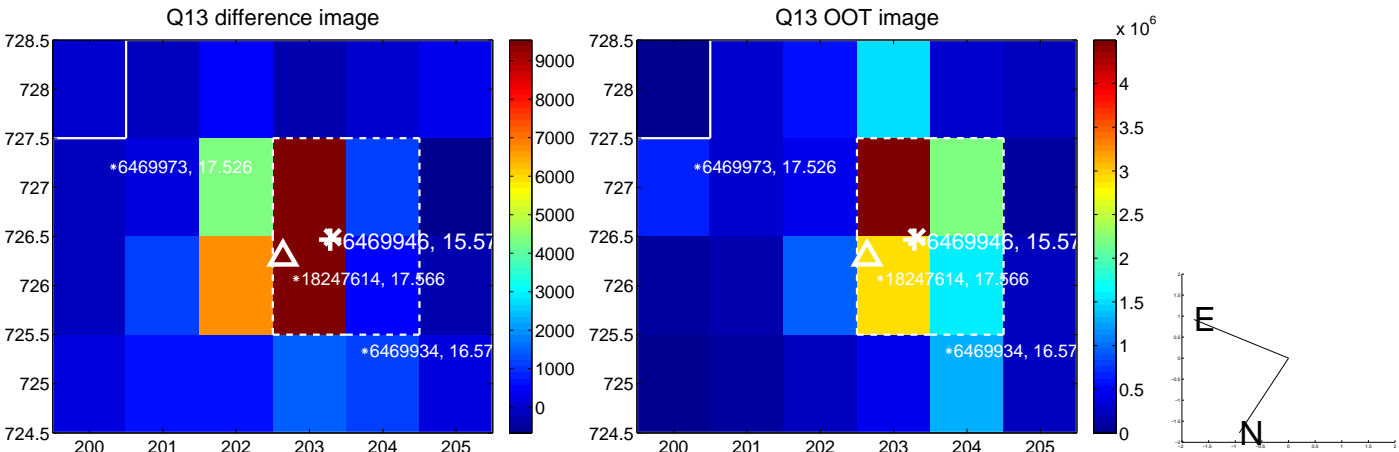




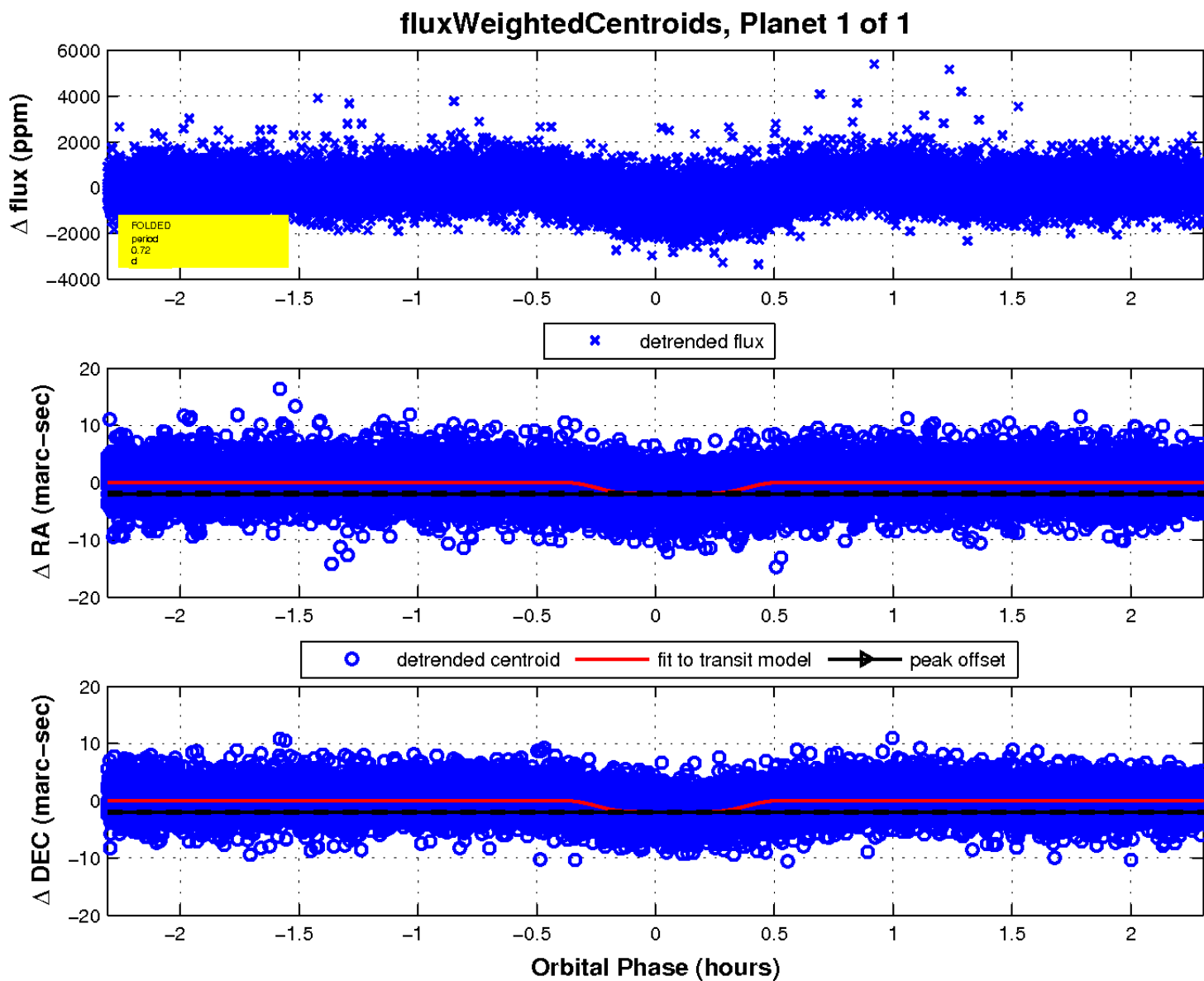
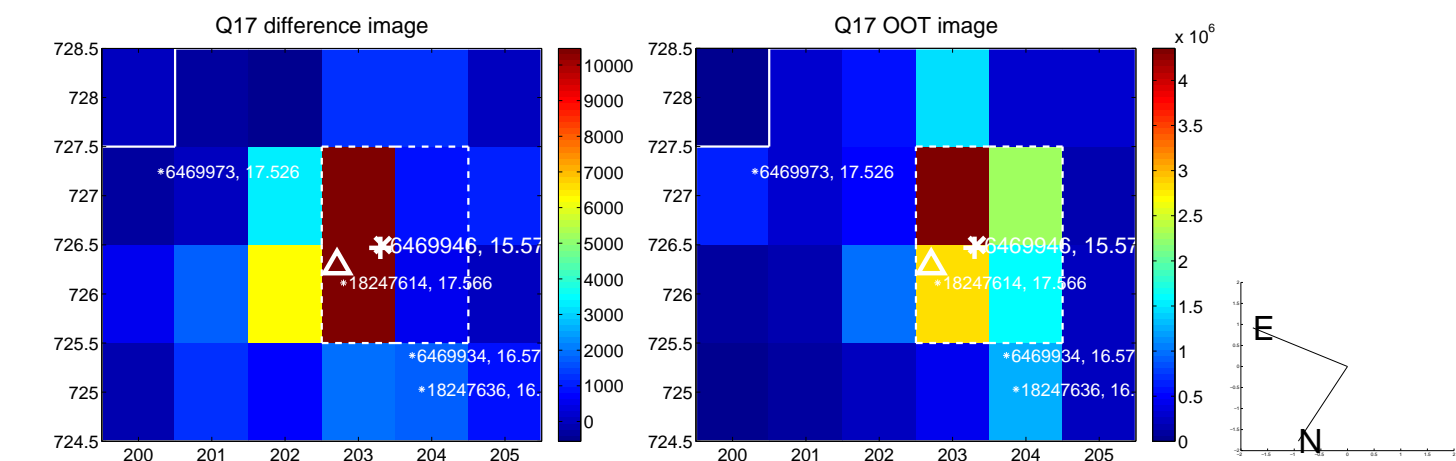
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

