

# KIC 004760746

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004760746-01	OBS	1455.01	15.068061	137.528868	19387.7	3.319	298.8	285.9	0.96	5982	16.99	71.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004760746-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_KIC_POS

**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.

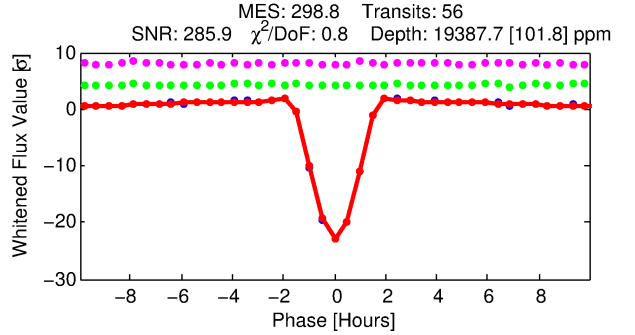
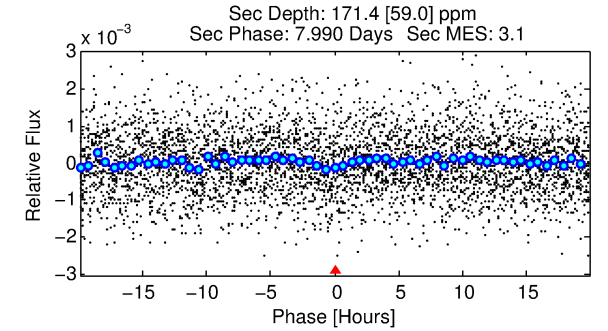
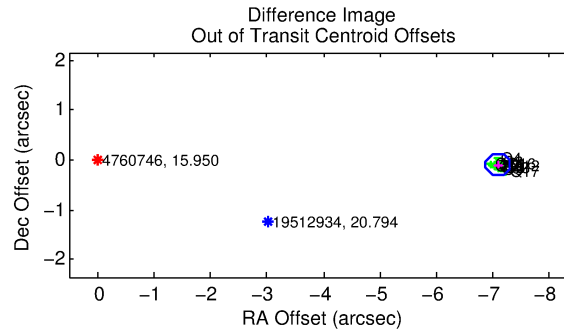
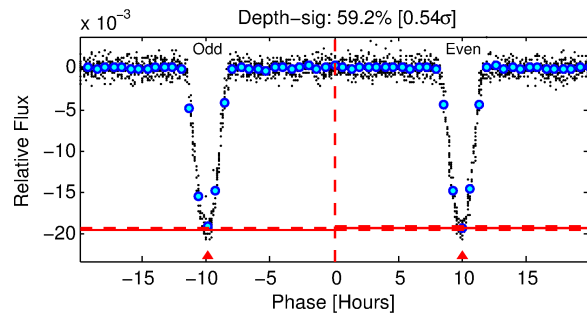
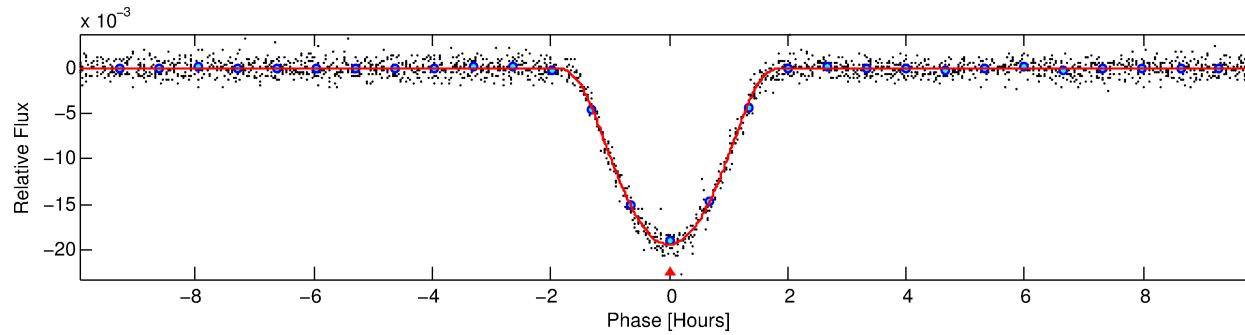
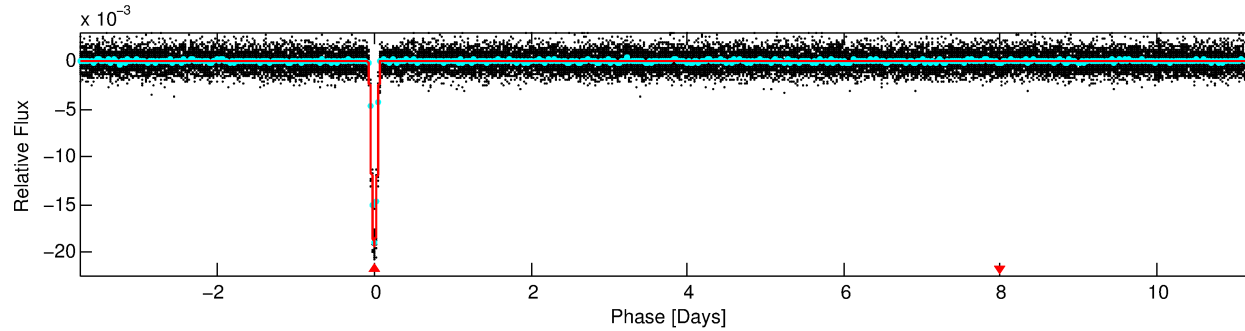
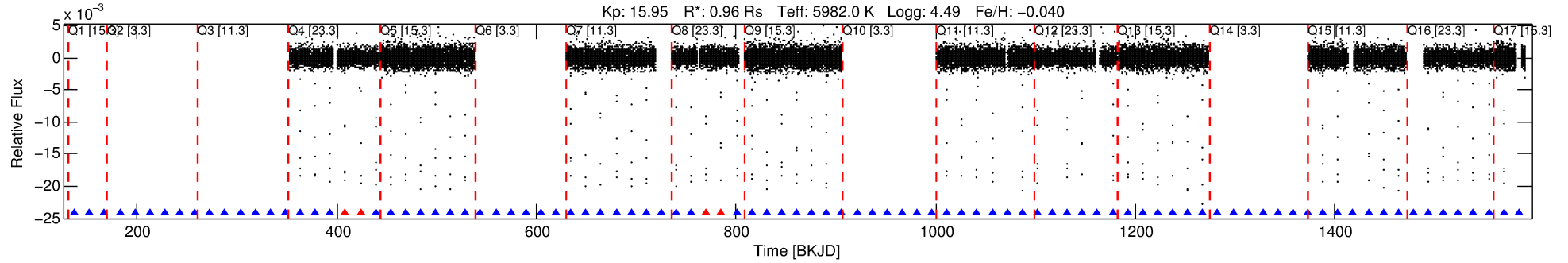
## Ephemeris Match Information For 004760746-01

No Significant Match Found

# DV One-Page Summary

KIC: 4760746 Candidate: 1 of 1 Period: 15.068 d  
KOI: K01455.01 Corr: 0.999

Kp: 15.95 R\*: 0.96 Rs Teff: 5982.0 K Logg: 4.49 Fe/H: -0.040



## DV Fit Results:

Period = 15.06806 [0.00001] d  
Epoch = 137.5289 [0.0003] BKJD  
Rp/R\* = 0.1622 [0.0062]  
a/R\* = 25.75 [0.37]  
b = 0.89 [0.01]  
Seff = 71.95 [26.49]  
Teq = 743 [68] K  
Rp = 16.99 [4.82] Re  
a = 0.1212 [0.0282] AU  
Ag = 4.80 [2.33] [1.63σ]  
Teffp = 1700 [164] K [5.39σ]

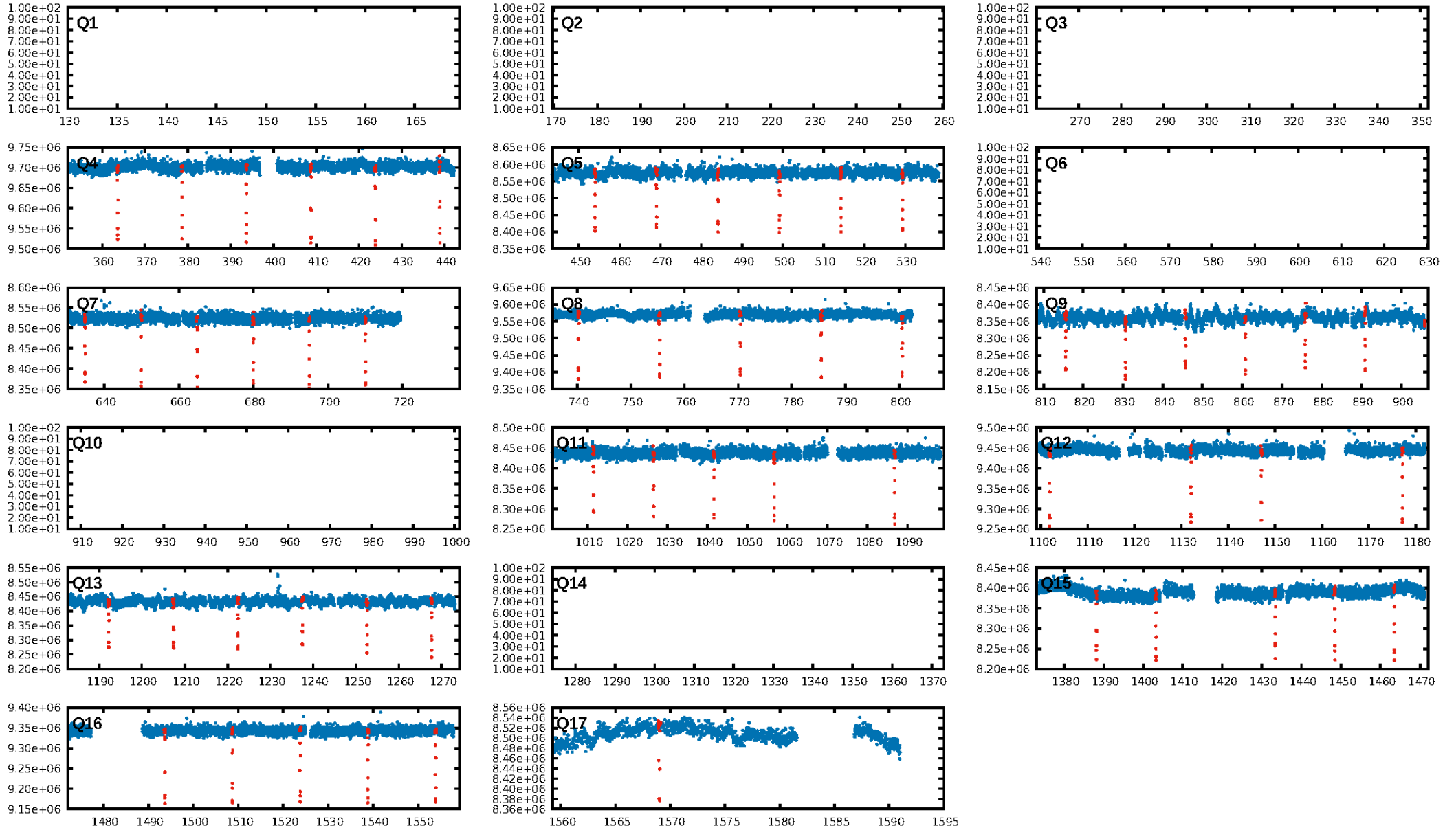
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 10.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.93 [51/55]  
GhostDiagnostic-chr: 4.155  
Centroid-sig: 0.0%  
Centroid-so: 1.496 arcsec [74.15σ]  
OotOffset-rm: 7.084 arcsec [98.50σ]  
KicOffset-rm: 0.159 arcsec [2.23σ]  
OotOffset-st: 0/3/4/4 [11]  
KicOffset-st: 0/3/4/4 [11]  
DiffImageQuality-fgm: 1.00 [11/11]  
DiffImageOverlap-fno: 1.00 [11/11]

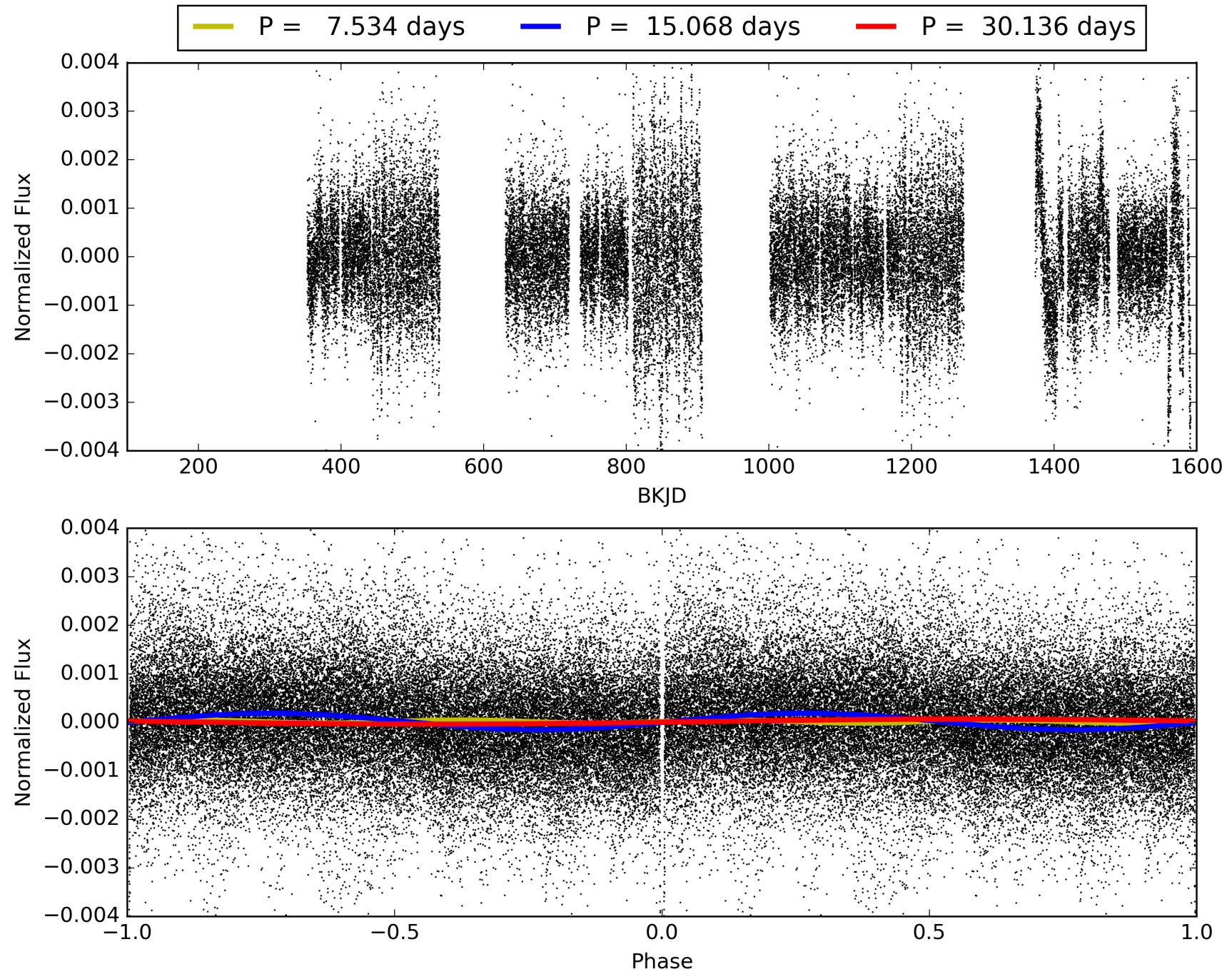
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:12:01 Z

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

# TCE 004760746-01, PDC Light Curves

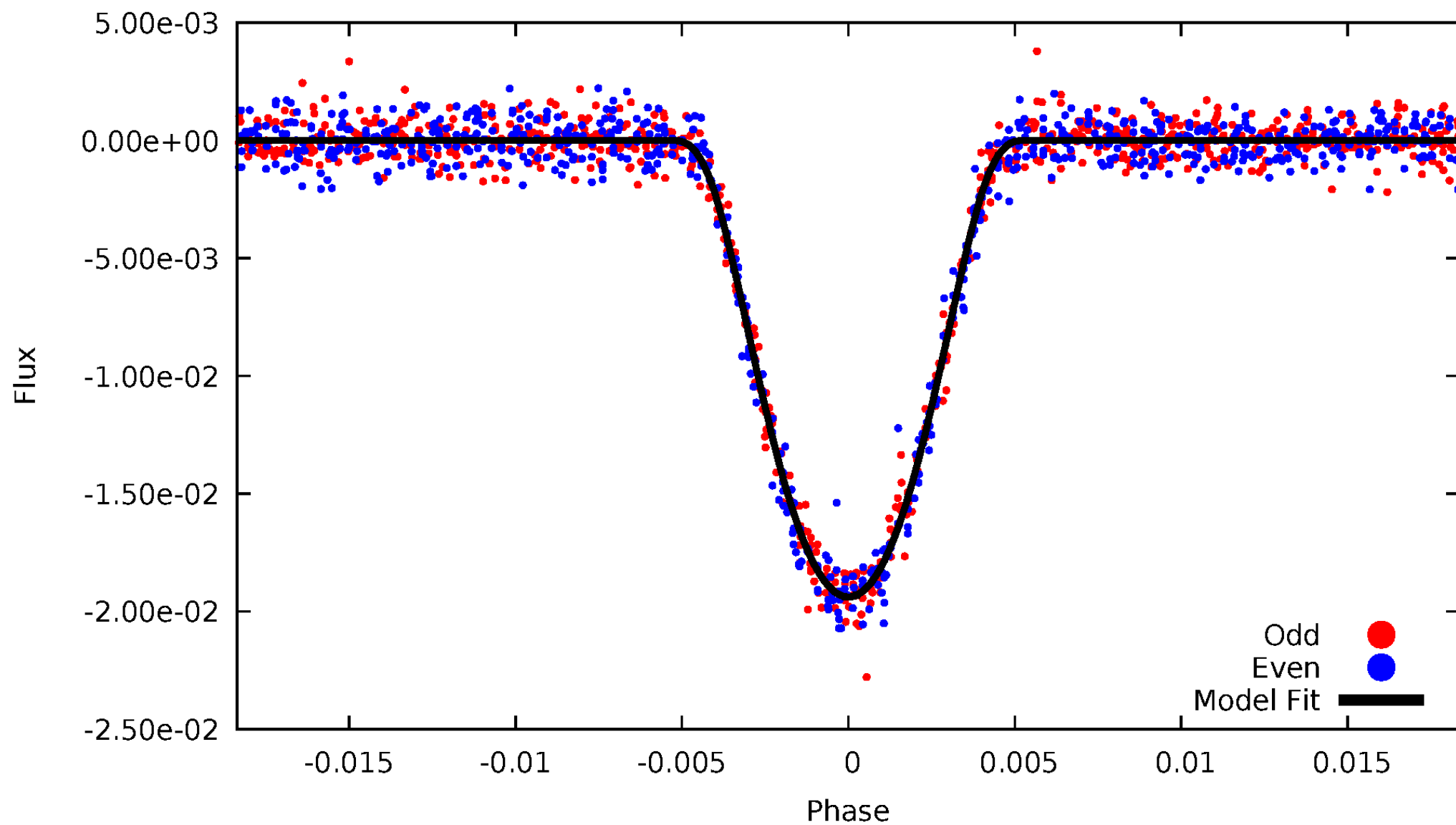


TCE 004760746-01



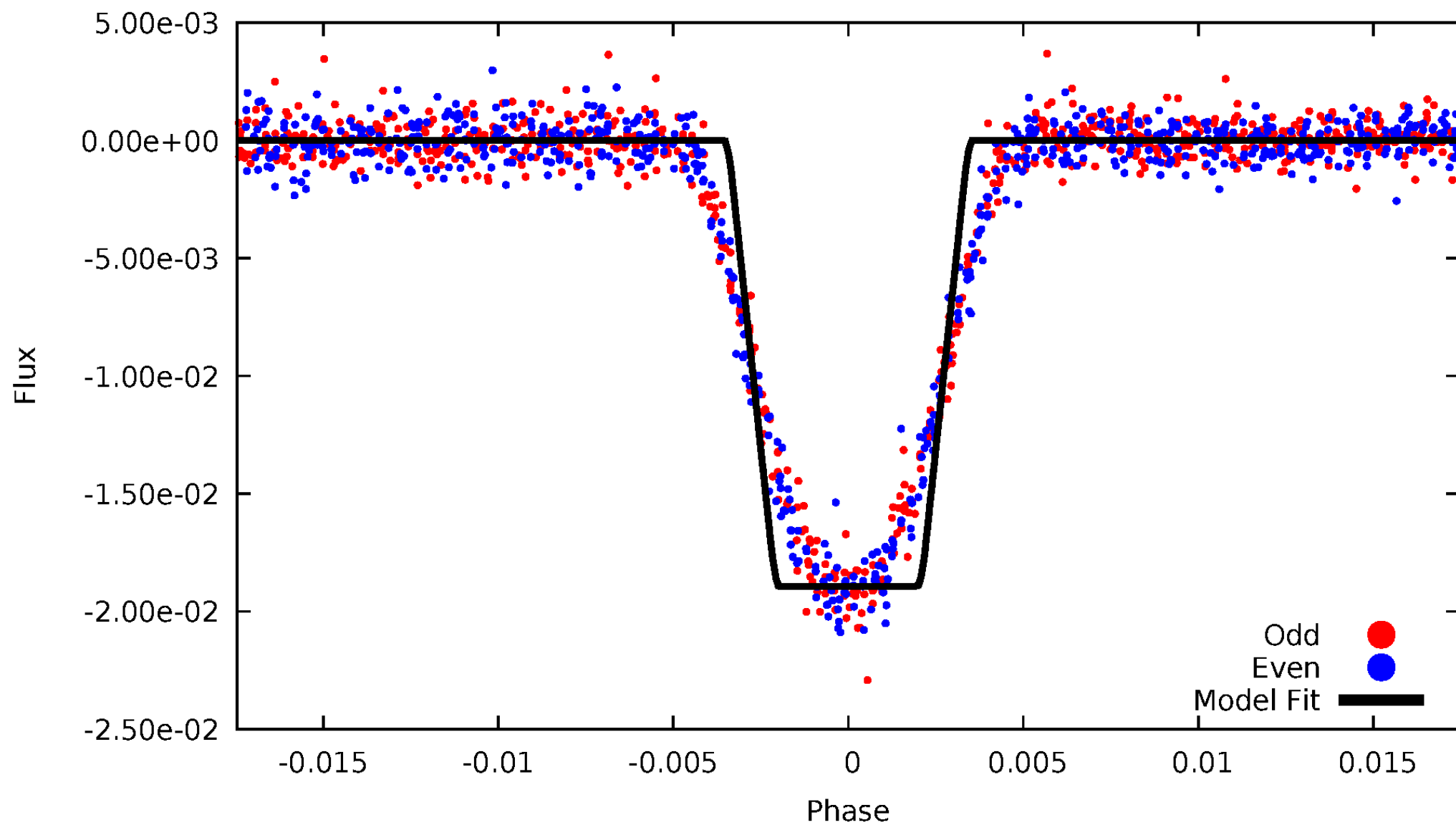
# DV Odd/Even

TCE 004760746-01



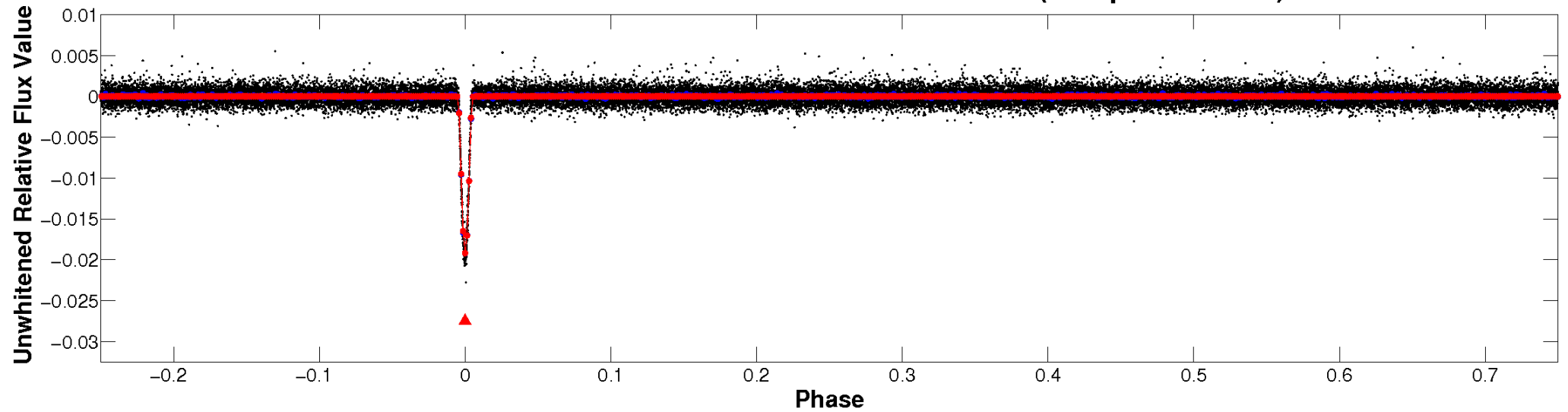
# ALT Odd/Even

TCE 004760746-01

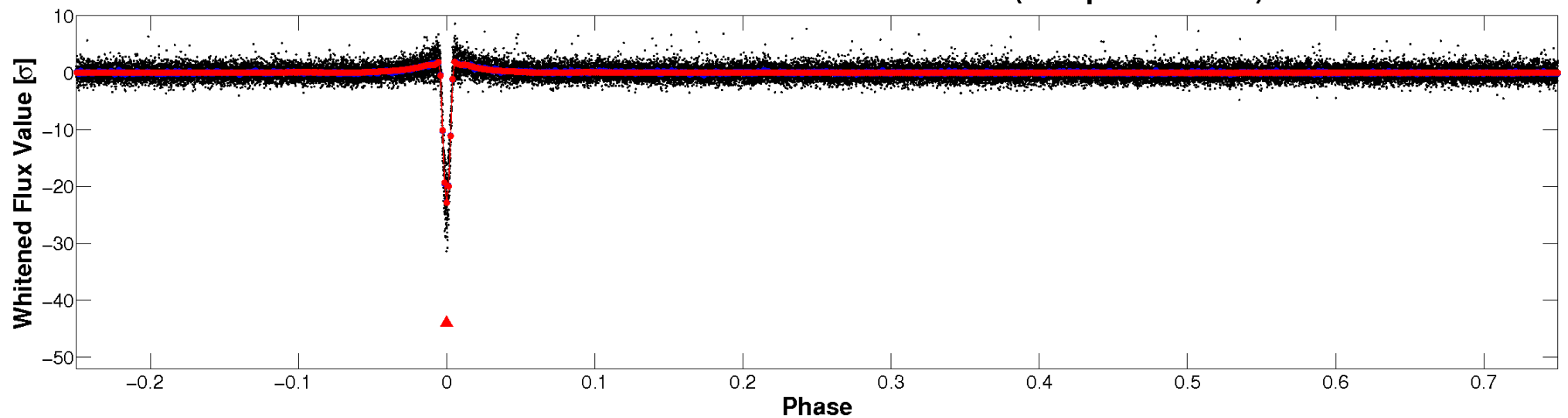


# Non-Whitened Vs. Whitened Light Curve

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

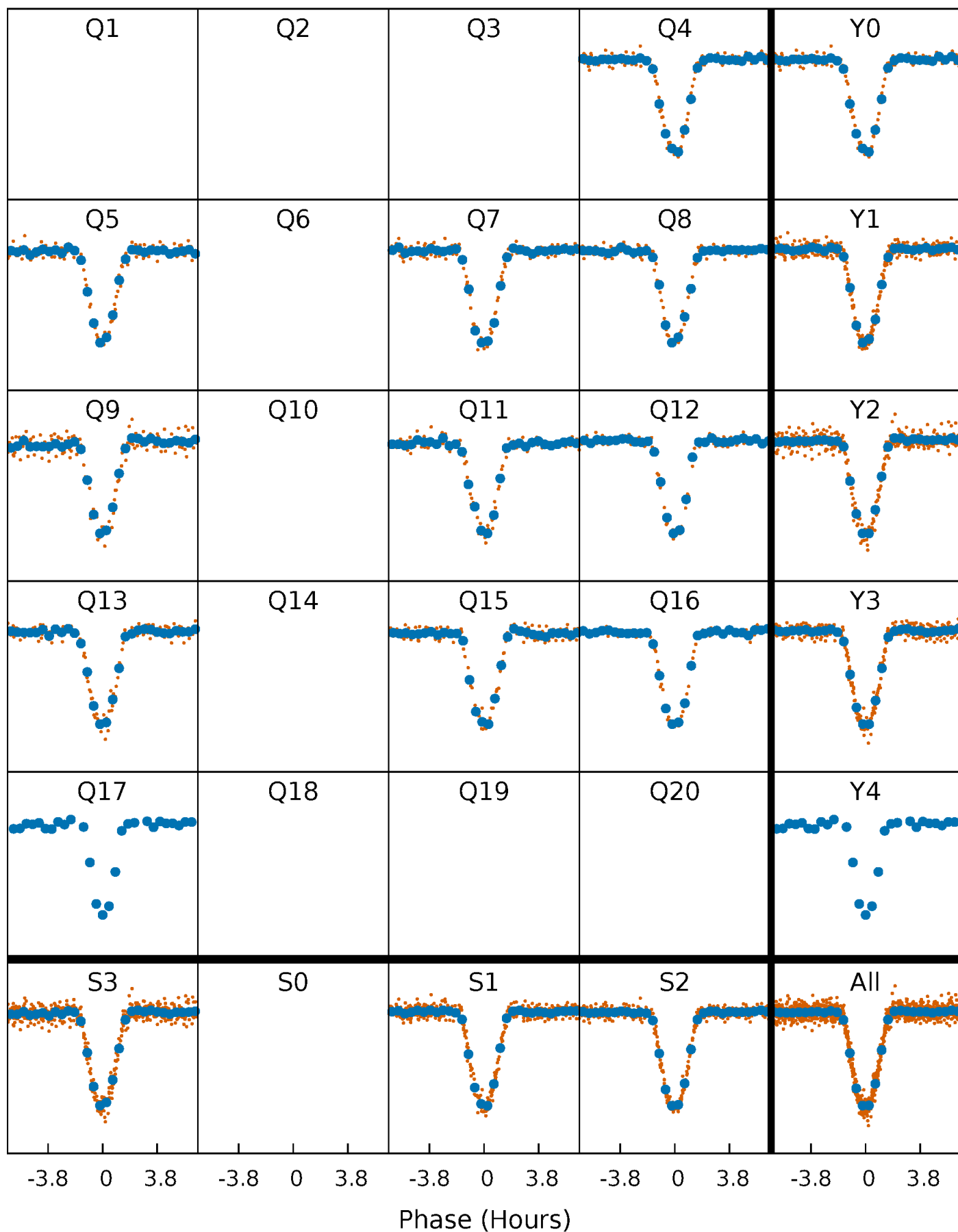


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

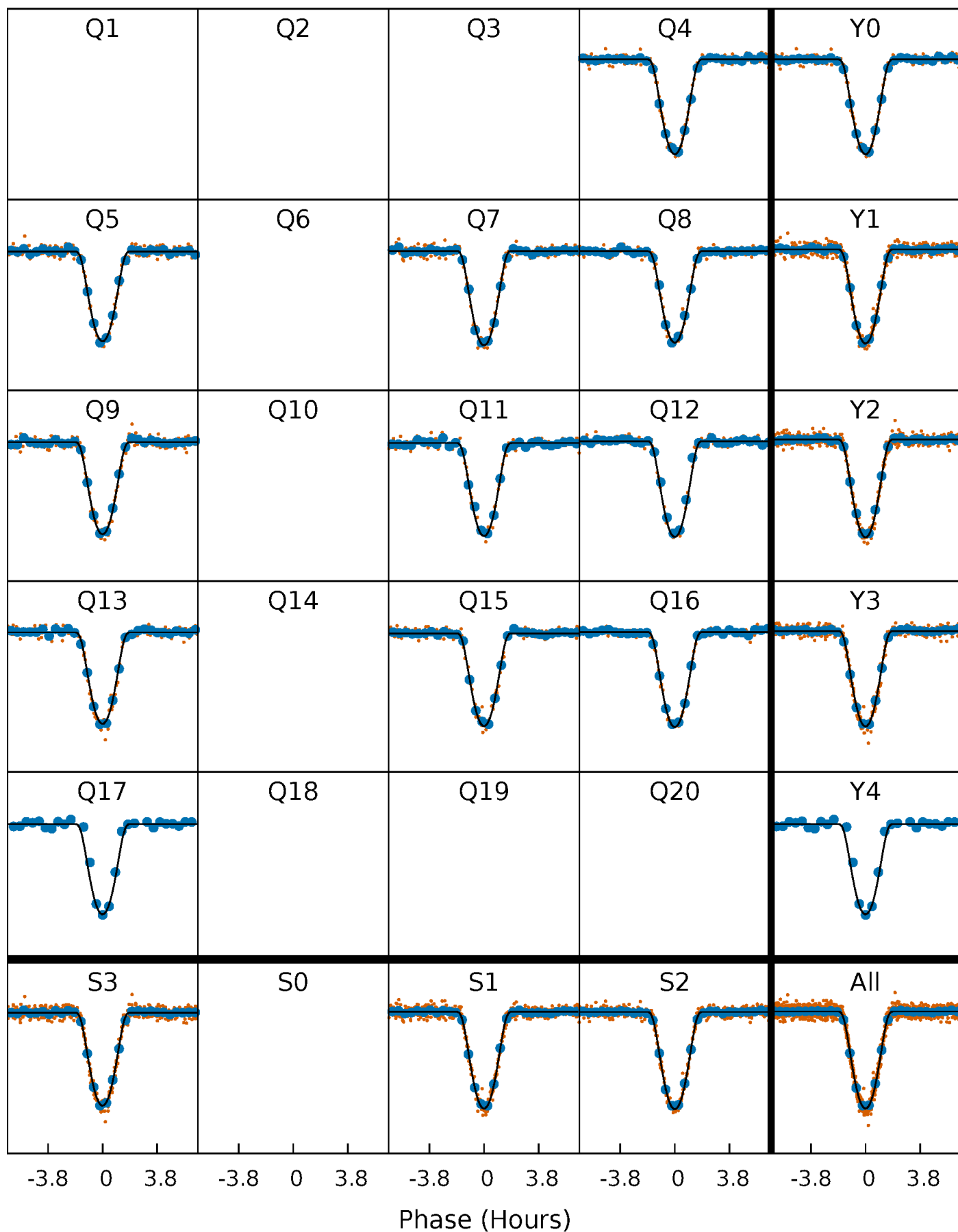
TCE 004760746-01 P= 15.068061 Days  $T_0=137.528868$  (BKJD)





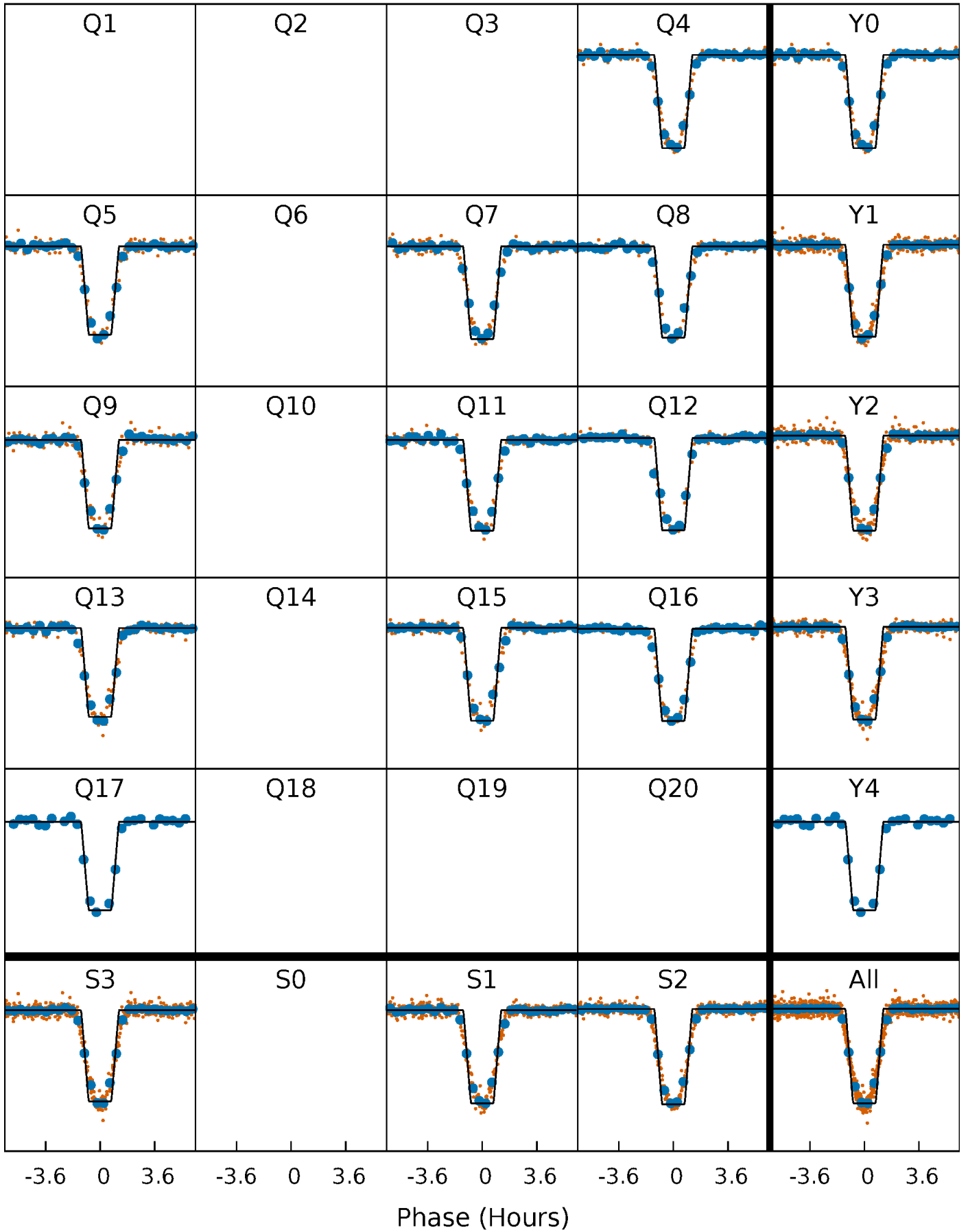
# DV Quarter-Phased Transit Curves

TCE 004760746-01 P= 15.068061 Days  $T_0=137.528868$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

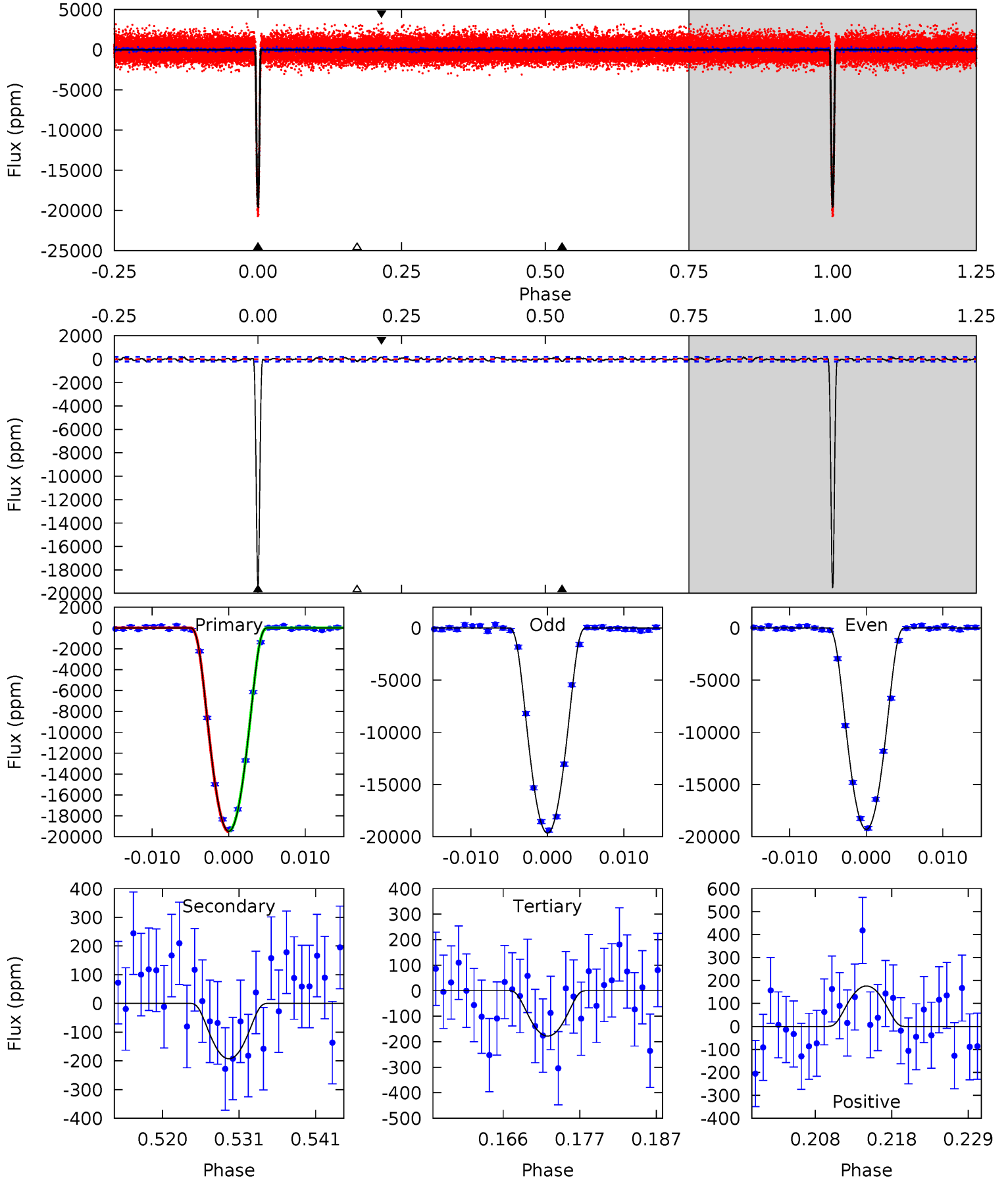
TCE 004760746-01 P= 15.068070 Days  $T_0=137.528301$  (BKJD)



# DV Model-Shift Uniqueness Test

004760746-01, P = 15.068061 Days, E = 137.528868 Days

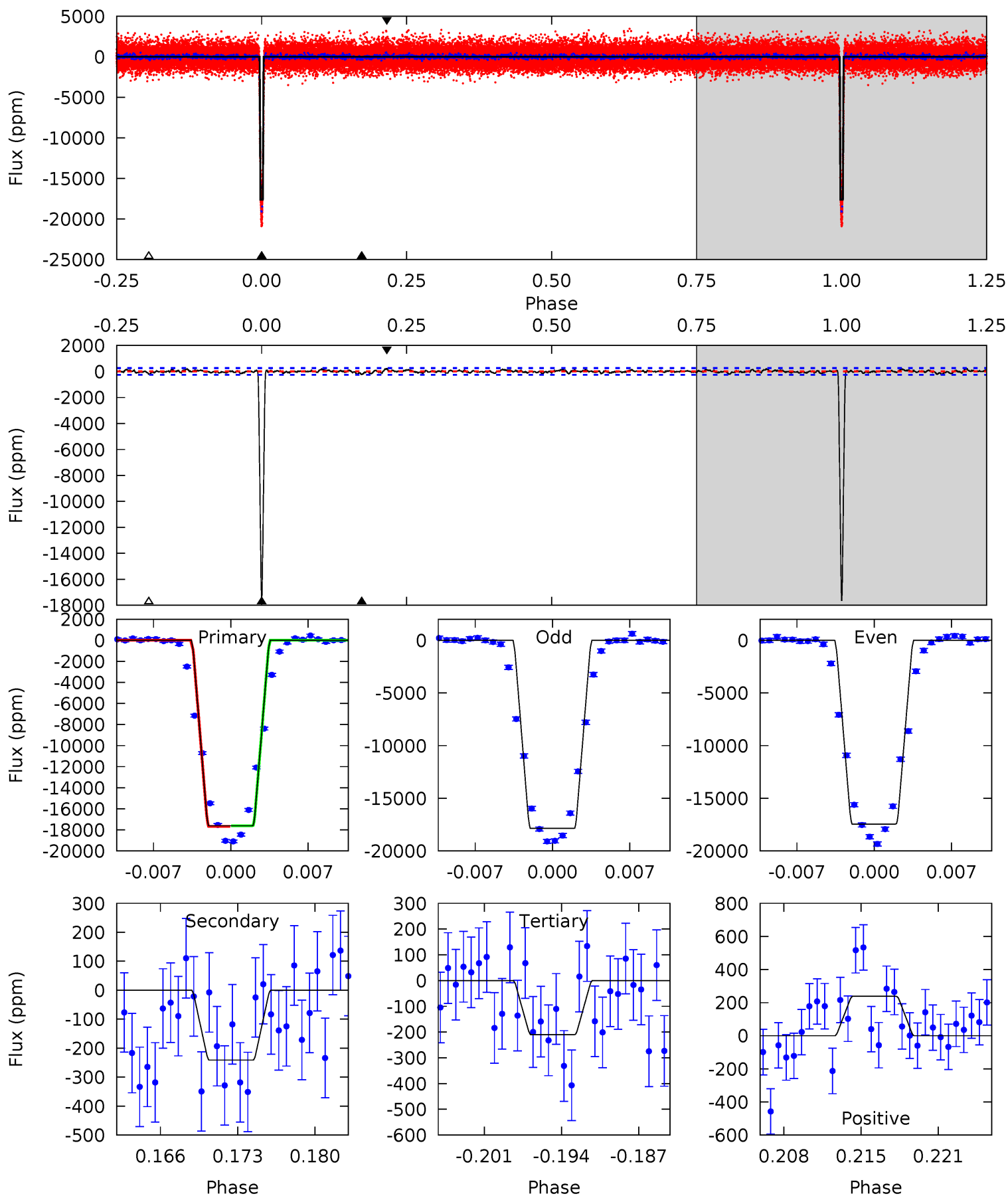
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
496.9	4.92	4.54	4.49	5.02	2.56	1.59	492.3	492.4	0.38	0.43	4.48	1.00	0.01	0.83



# Alt Model-Shift Uniqueness Test

004760746-01,  $P = 15.068070$  Days,  $E = 137.528301$  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
341.2	4.67	4.07	4.61	5.10	2.70	1.30	337.2	336.6	0.61	0.07	4.07	1.00	0.01	0.61



### Stellar Parameters For KIC 004760746

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5982^{+189}_{-232}$	$4.493^{+0.048}_{-0.180}$	$-0.040^{+0.250}_{-0.300}$	$0.960^{+0.270}_{-0.108}$	$1.047^{+0.126}_{-0.139}$	$1.667^{+0.428}_{-0.834}$
	+3%/-4%	+1%/-4%	+625%/-750%	+28%/-11%	+12%/-13%	+26%/-50%
Source	KIC0	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 004760746-01 / KOI 1455.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-193 \pm 39$	$17.50^{+2.71}_{-1.55}$	$1059^{+73}_{-53}$	$2555^{+85}_{-106}$	$4.791^{+1.528}_{-1.338}$
Alt.	$-241 \pm 52$	$14.72^{+2.32}_{-1.31}$	$1058^{+69}_{-54}$	$2749^{+95}_{-106}$	$8.549^{+2.646}_{-2.626}$

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

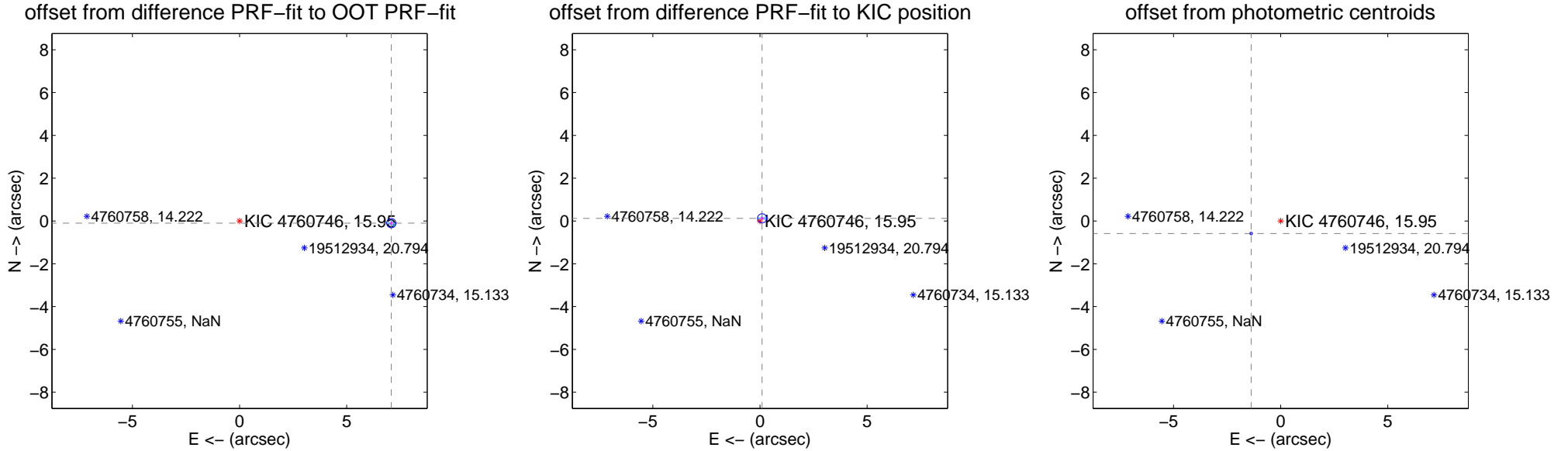
## DV Centroid Data

Supplemental centroid analysis for 004760746-01. Kepler magnitude: 15.95. Transit SNR 285.89

There are 11 quarters with good PRF difference image offsets

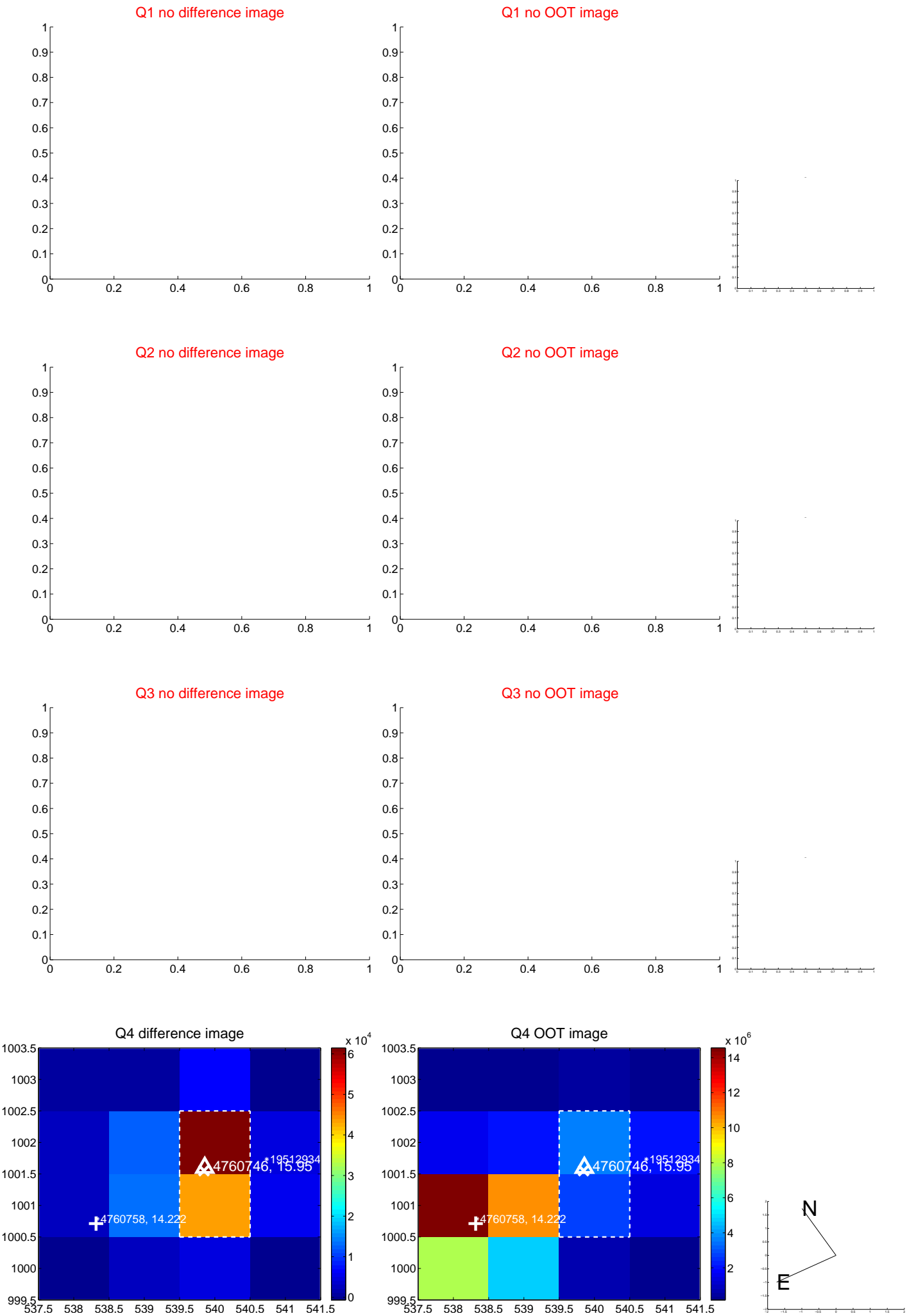
The OOT PRF centroid is offset from the target star catalog position by about 7.01 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.084 \pm 0.072$	98.50	$-7.083 \pm 0.072$	$-0.101 \pm 0.069$
PRF-fit source offset from KIC position	$0.159 \pm 0.071$	2.23	$-0.099 \pm 0.076$	$0.124 \pm 0.068$
photometric centroid source offset	$1.50 \pm 0.02$	74.15	$1.38 \pm 0.02$	$-0.58 \pm 0.01$

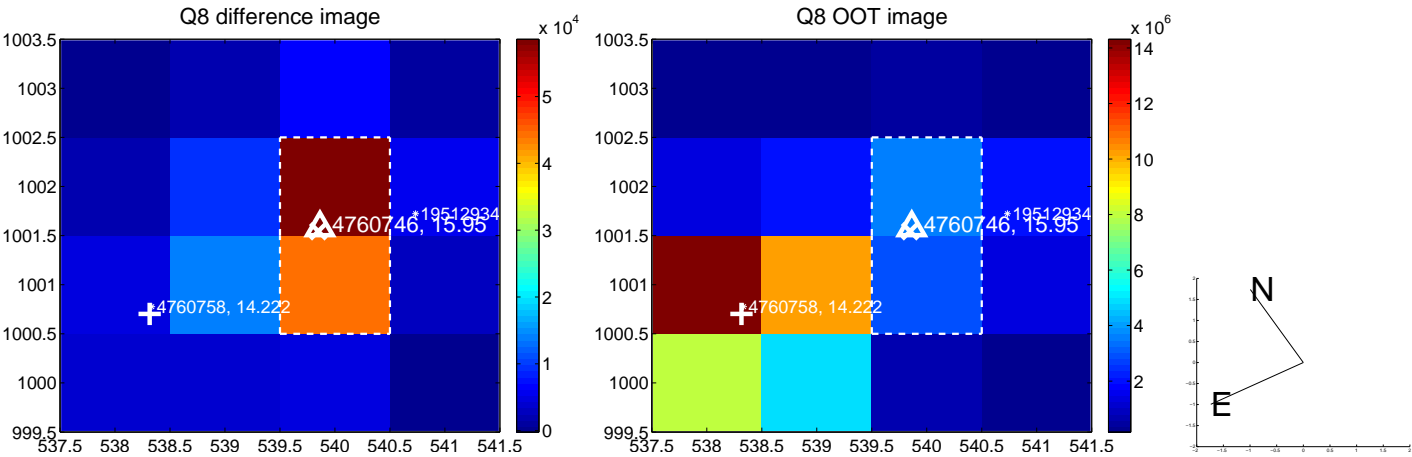
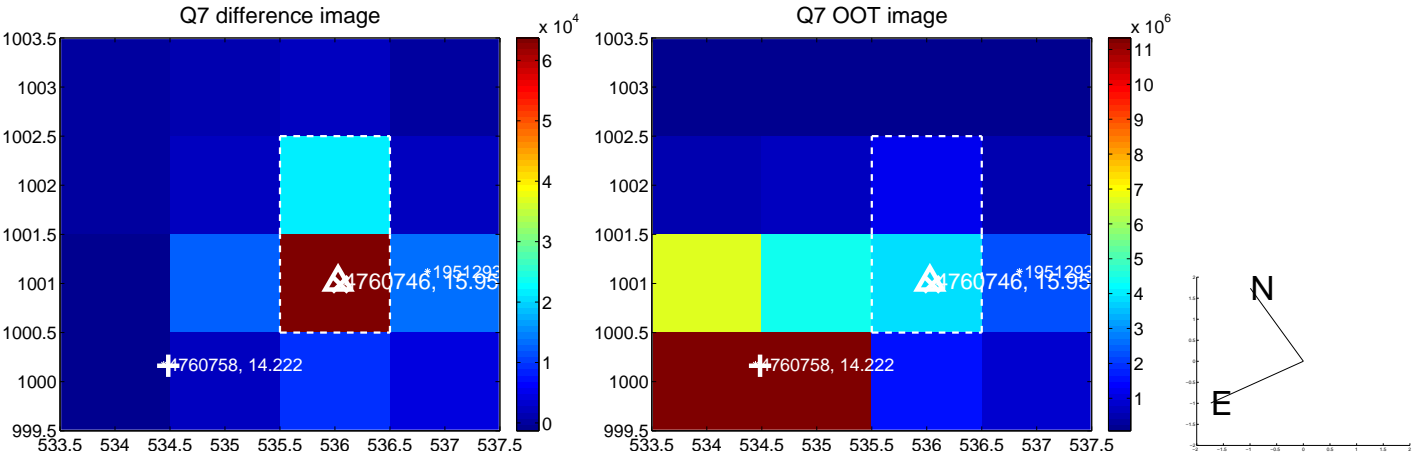
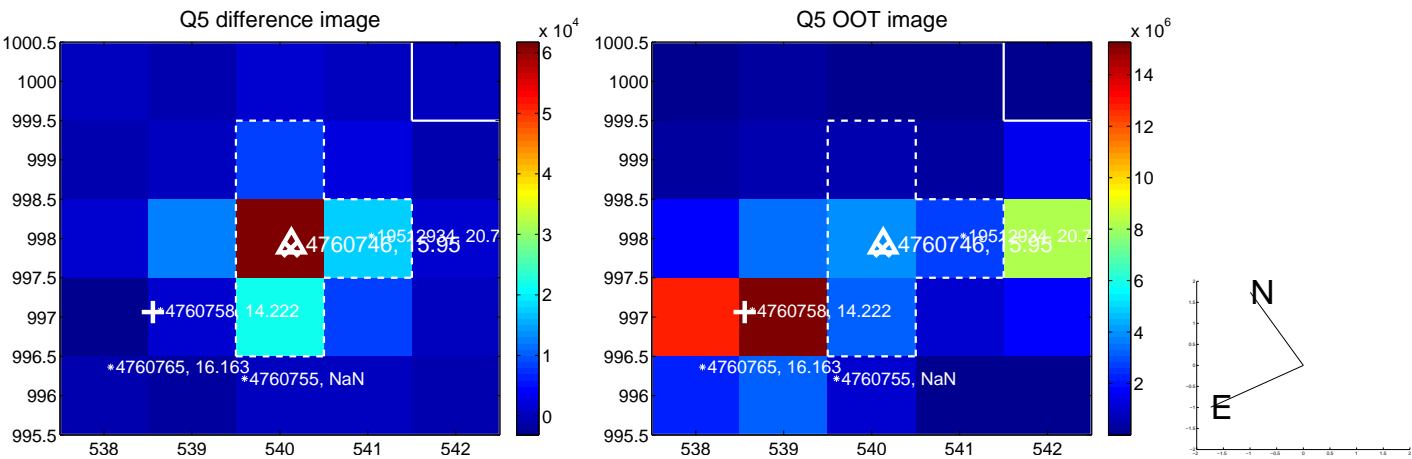


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

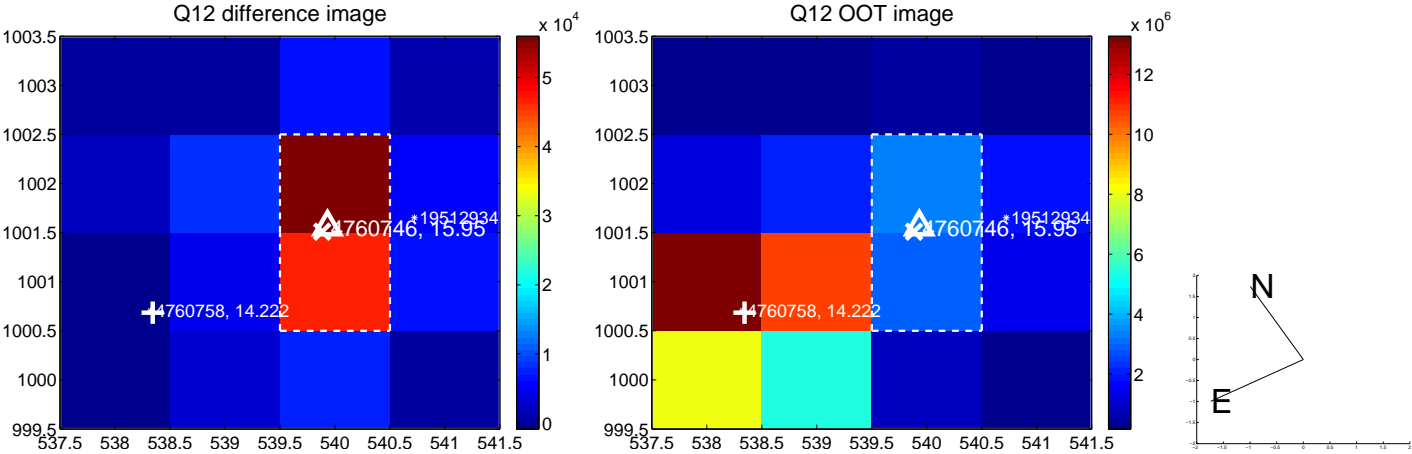
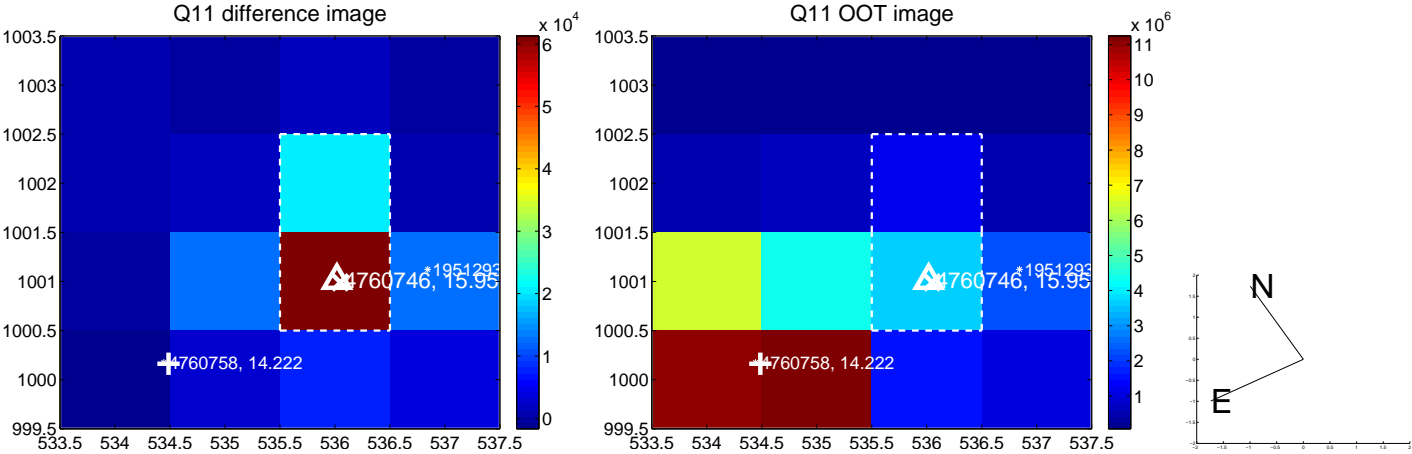
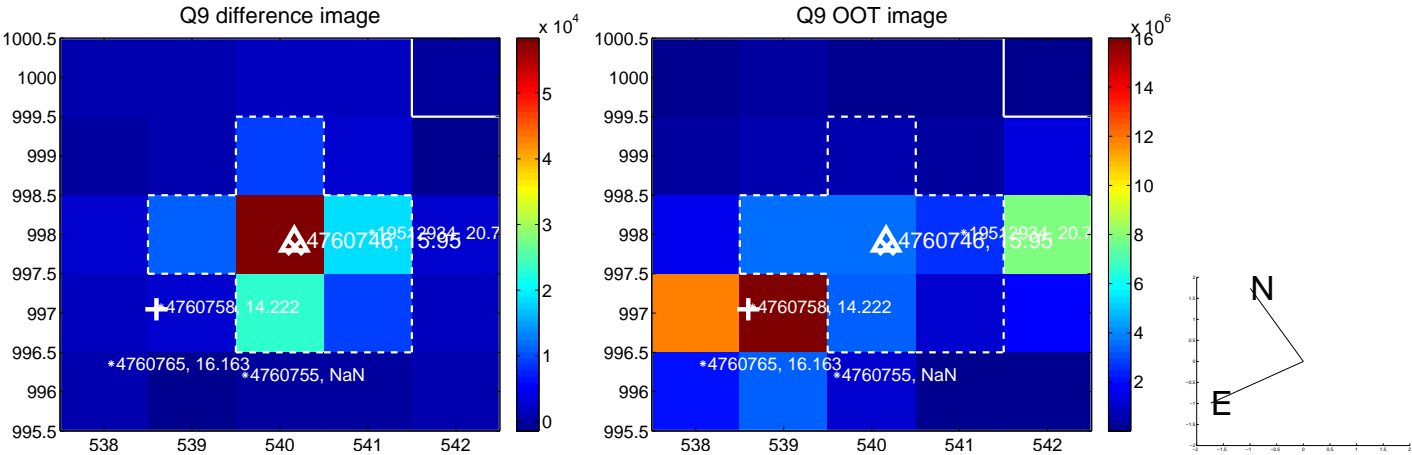


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

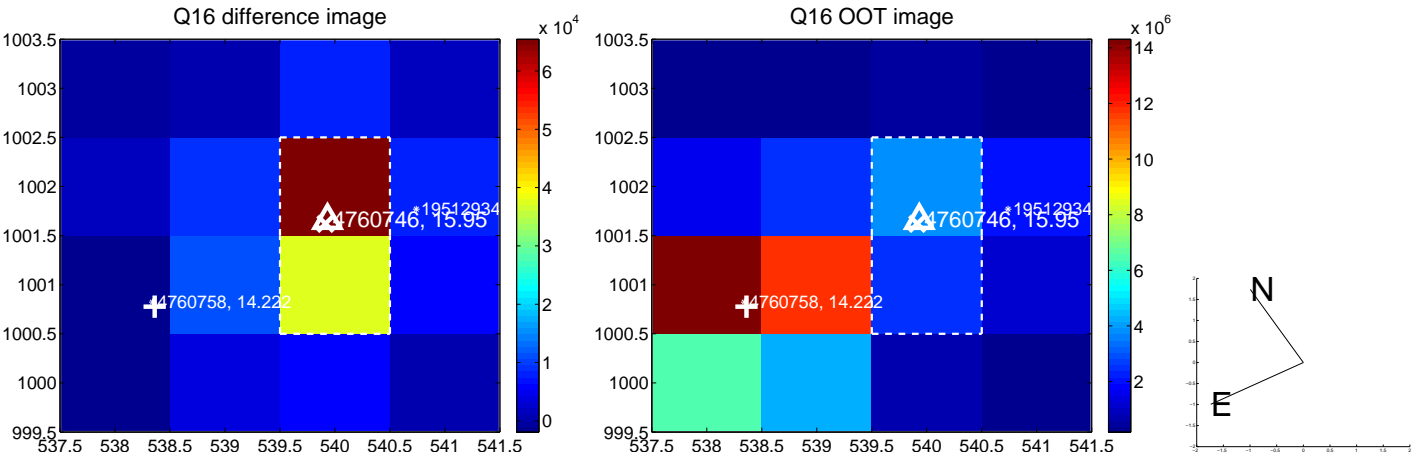
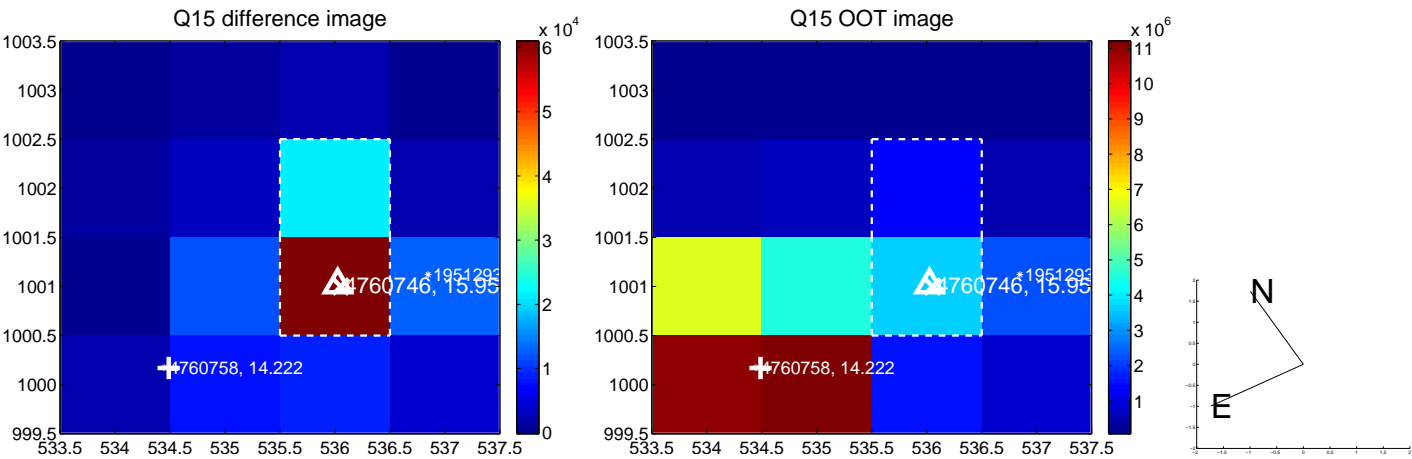
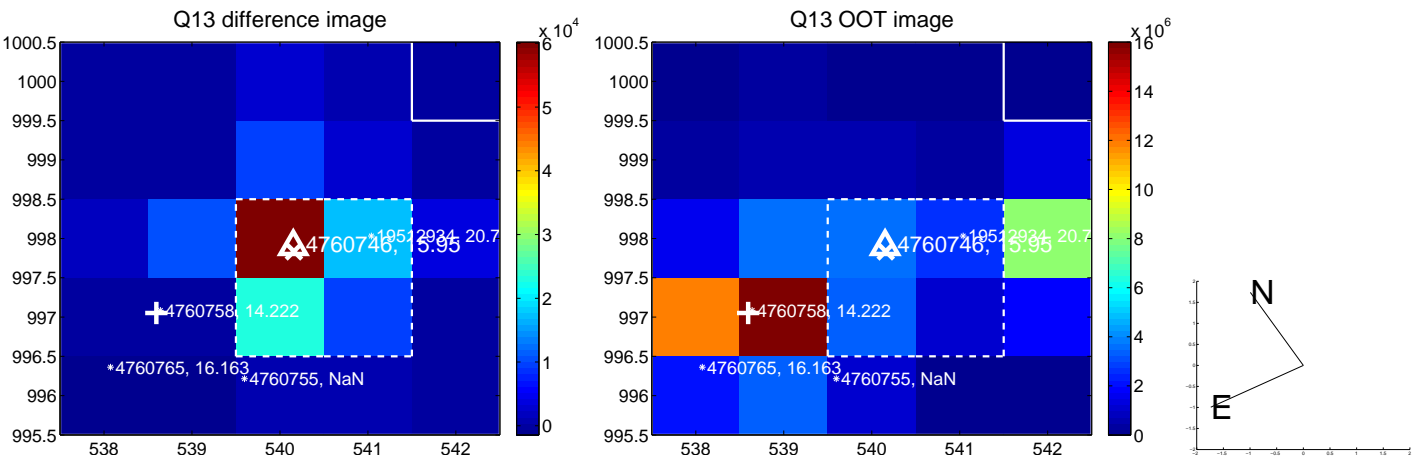




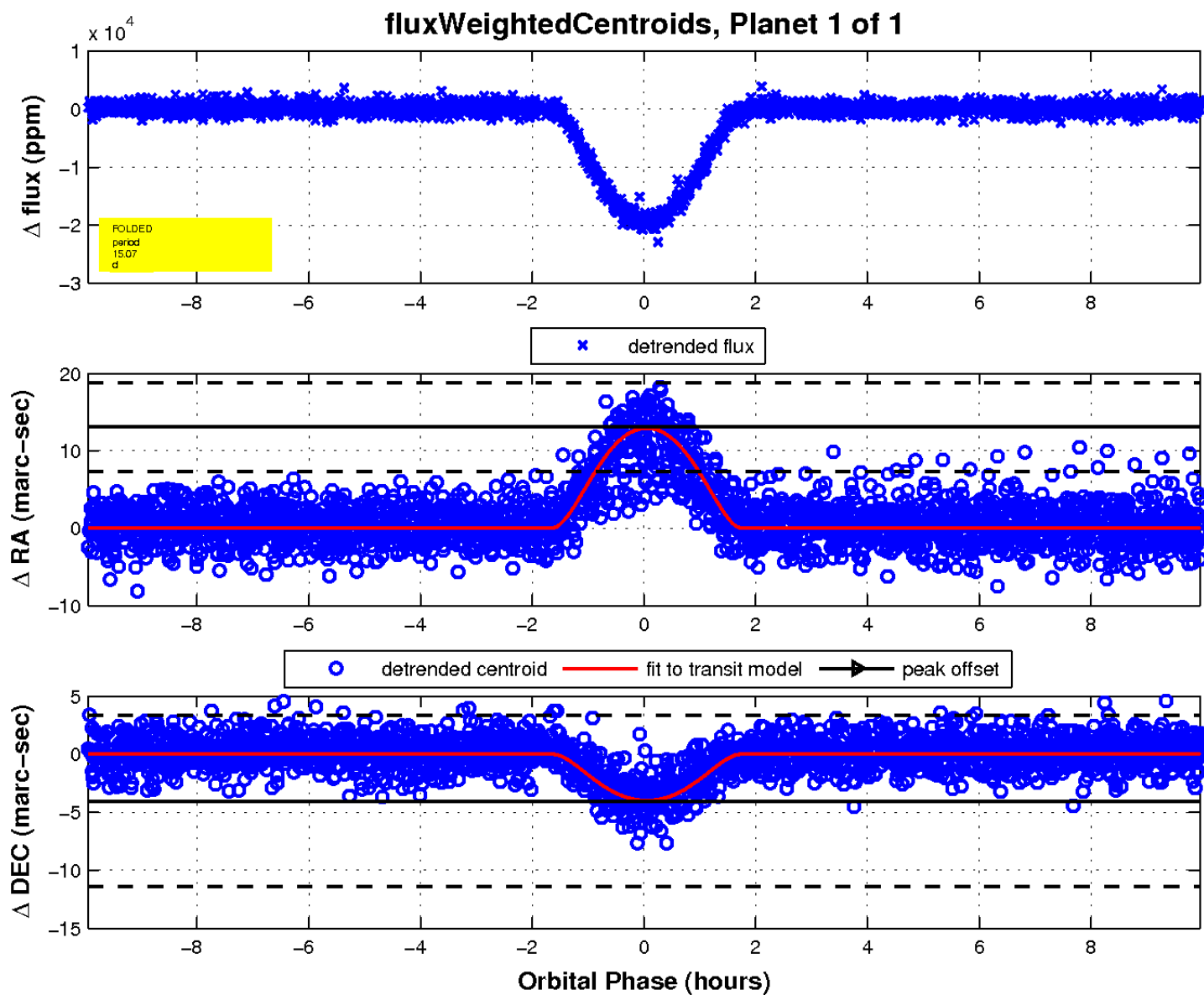
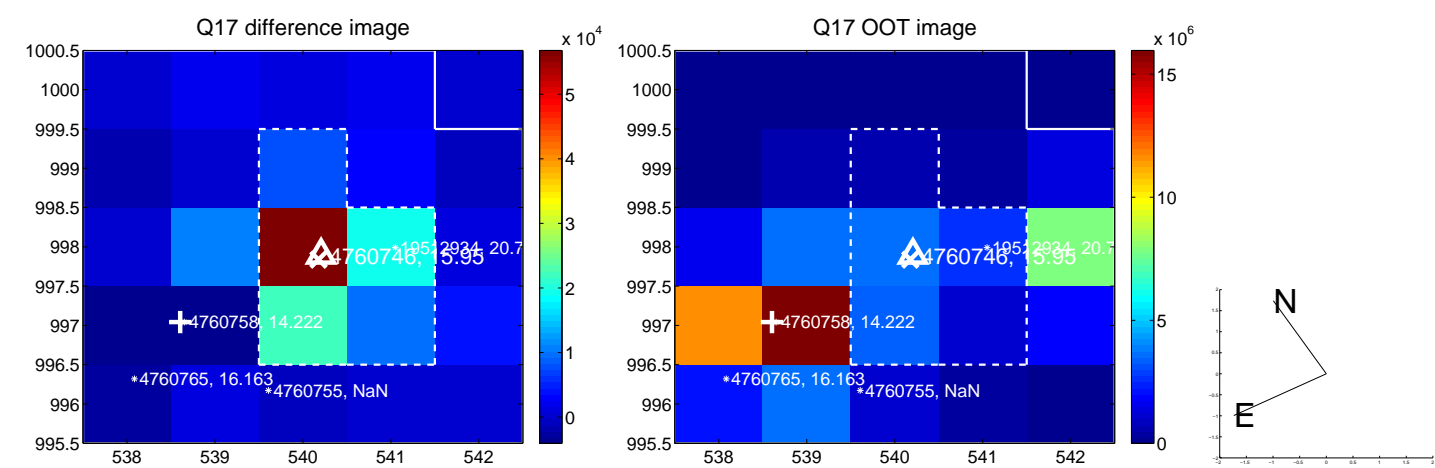
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

