

# KIC 002695110

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002695110-01	OBS	0400.01	44.189398	165.800228	4076.1	6.697	142.0	99.6	0.97	6061	10.11	19.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002695110-01	OBS	FP	0.00	0	1	1	0	DEEP_V_SHAPED—CENT_RESOLVED_OFFSET—HALO_GHOST

**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 002695110-01

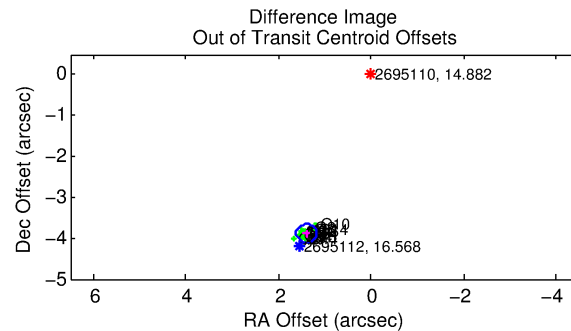
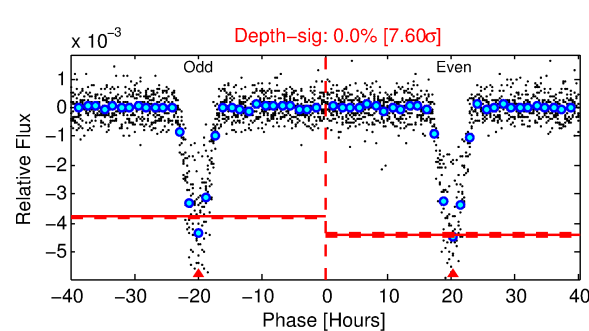
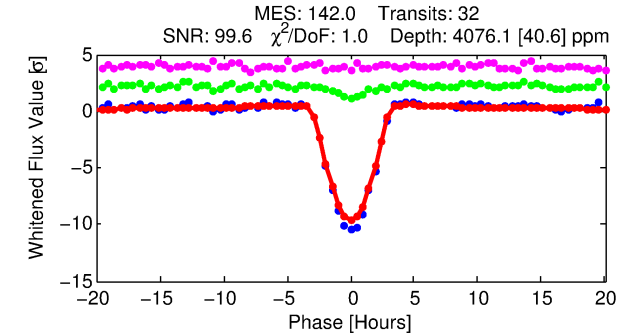
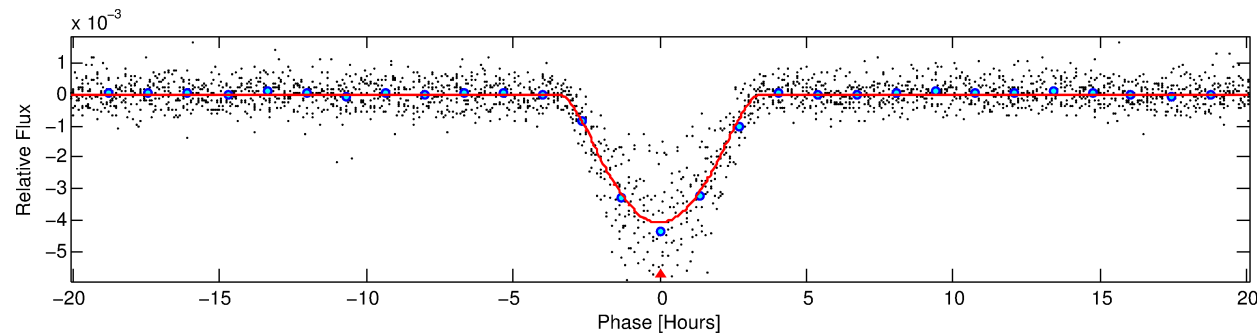
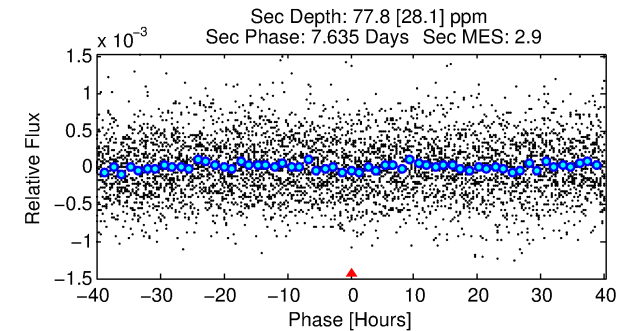
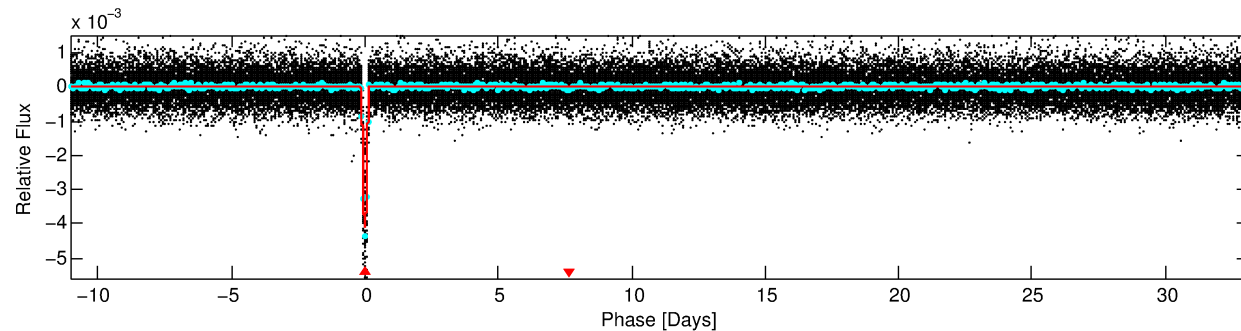
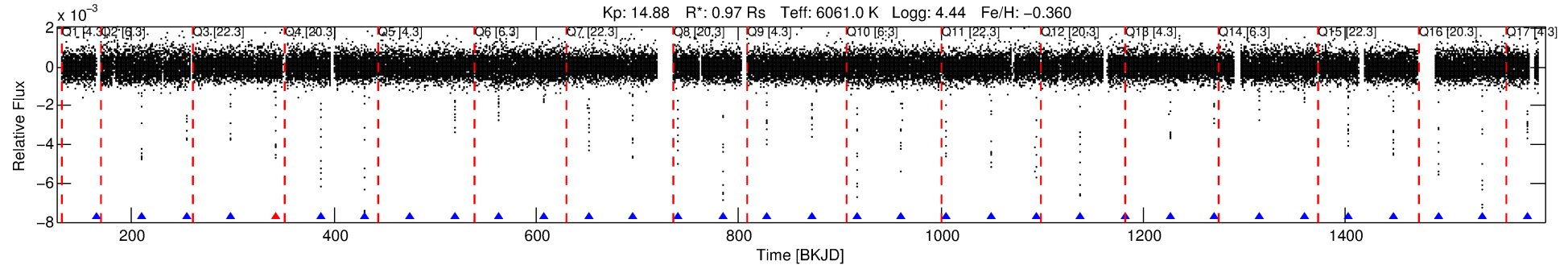
No Significant Match Found

# DV One-Page Summary

KIC: 2695110 Candidate: 1 of 1 Period: 44.189 d

KOI: K00400.01 Corr: 0.993

Kp: 14.88 R\*: 0.97 Rs Teff: 6061.0 K Logg: 4.44 Fe/H: -0.360



## DV Fit Results:

Period = 44.18940 [0.00008] d  
Epoch = 165.8002 [0.0015] BKJD  
Rp/R\* = 0.0957 [0.0257]  
a/R\* = 24.44 [1.58]  
b = 0.98 [0.04]  
Seff = 19.77 [7.71]  
Teq = 538 [52] K  
Rp = 10.11 [3.99] Re  
a = 0.2394 [0.0595] AU  
Ag = 24.01 [17.83] [1.29σ]  
Teff = 1840 [303] K [4.23σ]

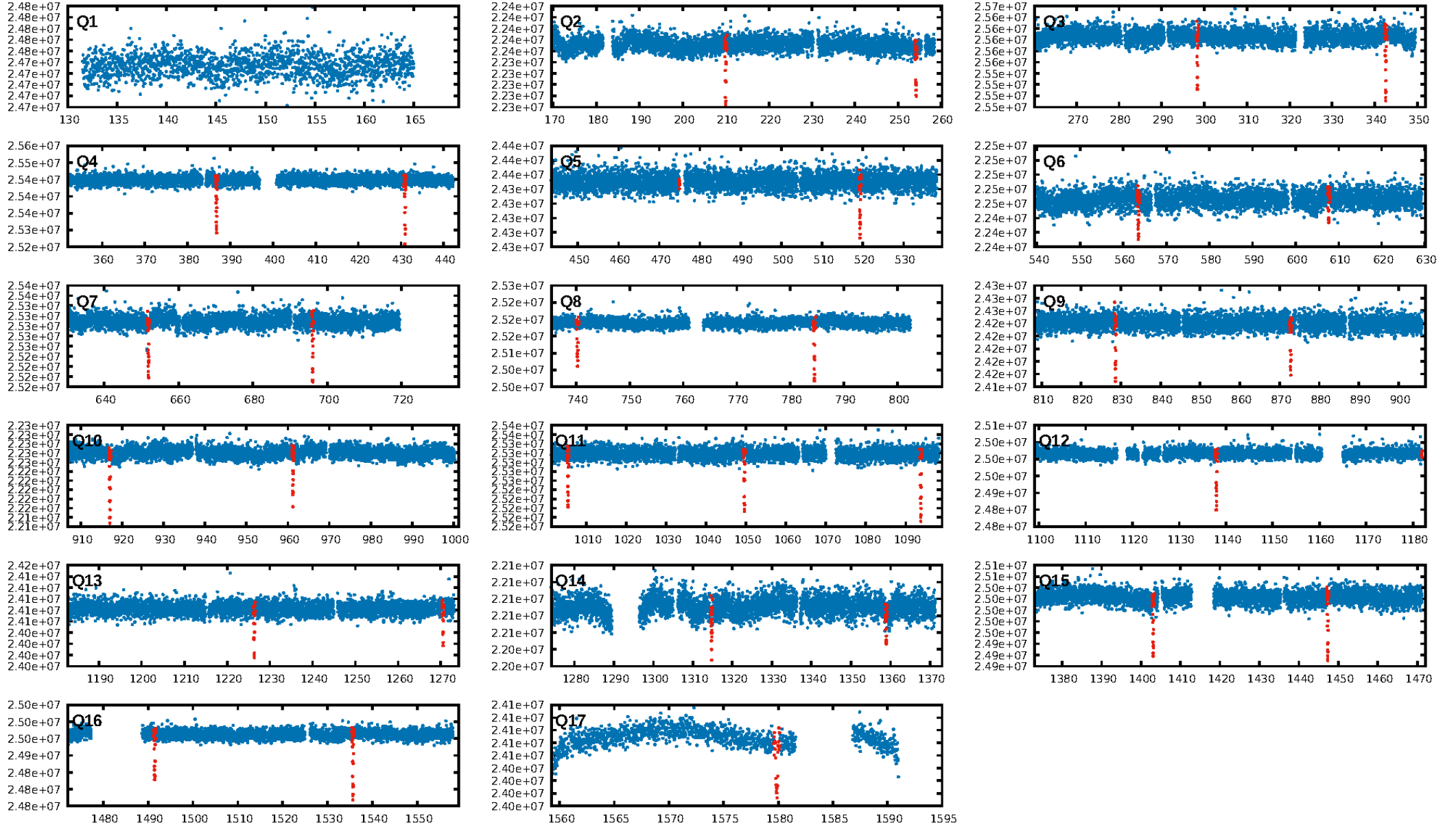
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.97 [30/31]  
GhostDiagnostic-chr: 0.1129  
Centroid-sig: 0.0%  
Centroid-so: 8.382 arcsec [94.26σ]  
OotOffset-rm: 4.129 arcsec [56.73σ]  
KicOffset-rm: 4.535 arcsec [65.09σ]  
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]

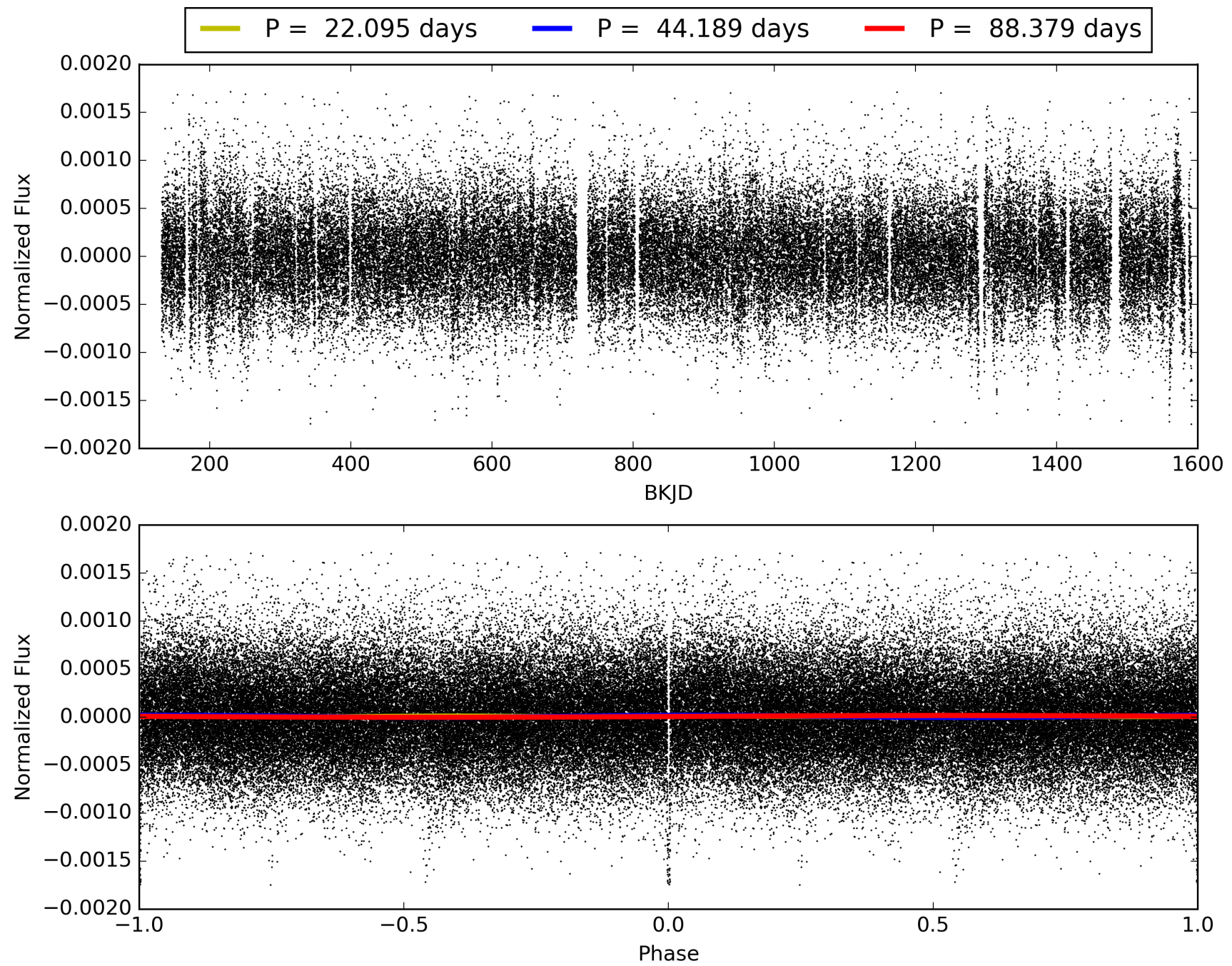
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:47:47 Z

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

# TCE 002695110-01, PDC Light Curves

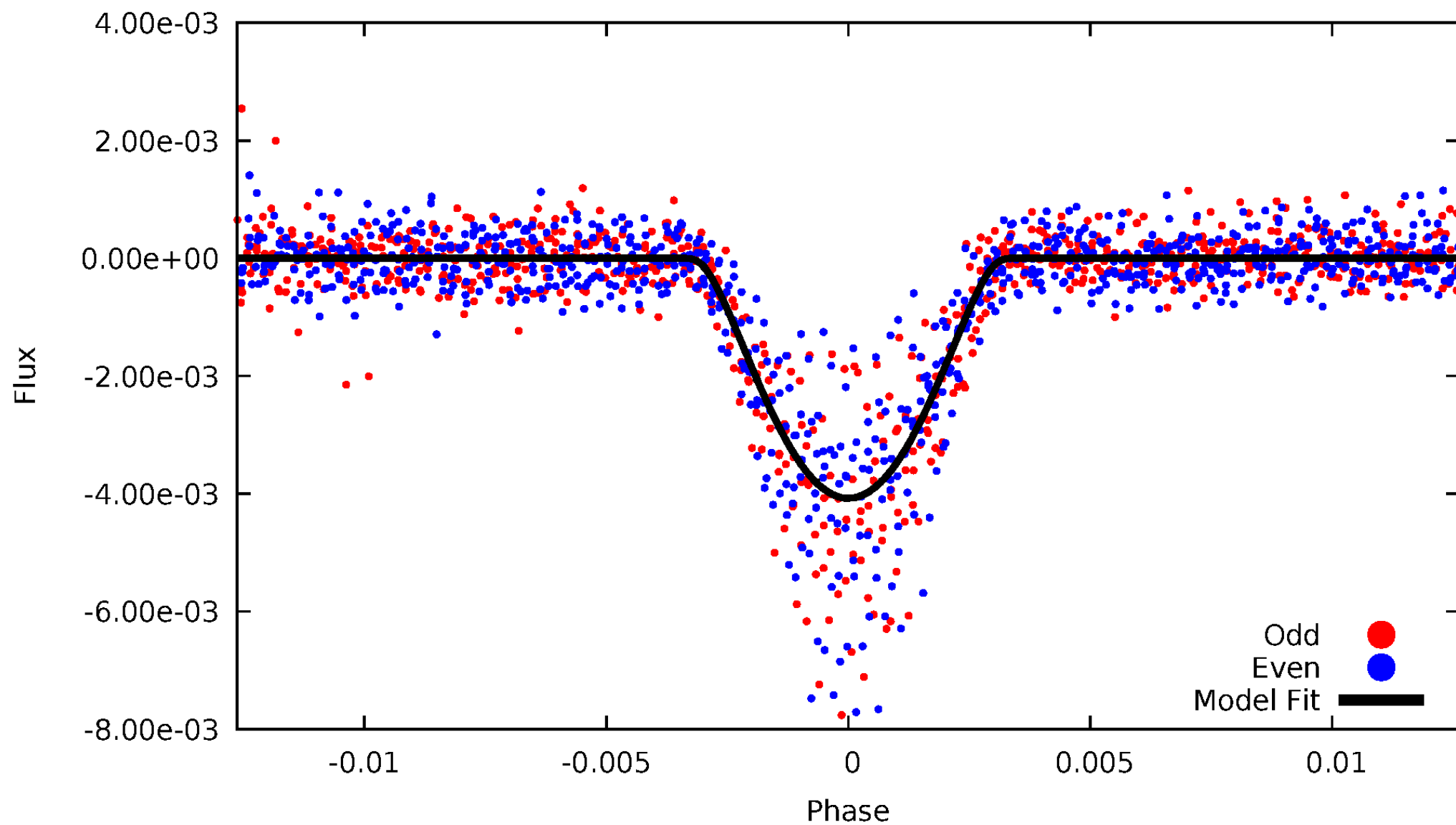


# TCE 002695110-01



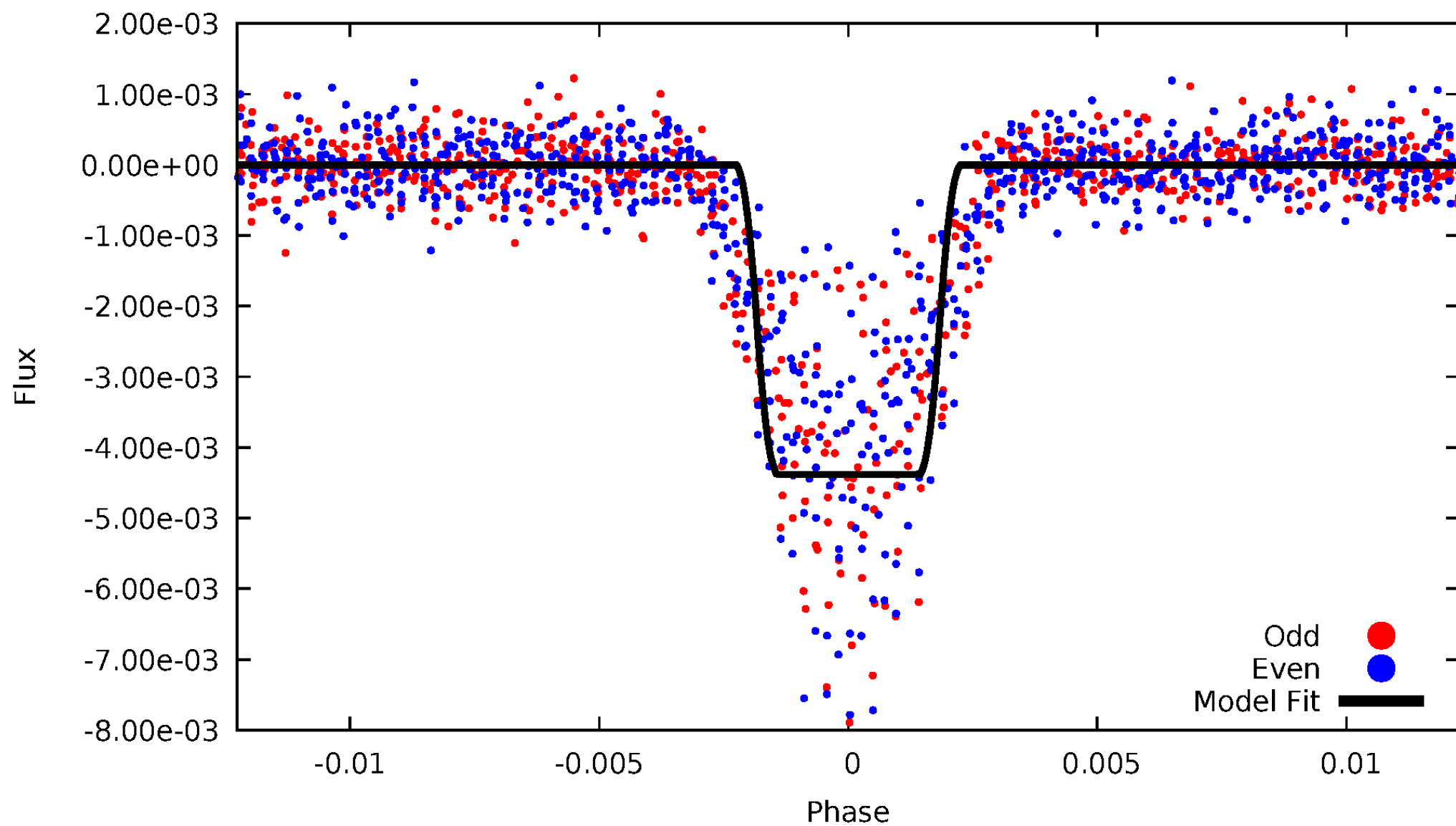
# DV Odd/Even

TCE 002695110-01



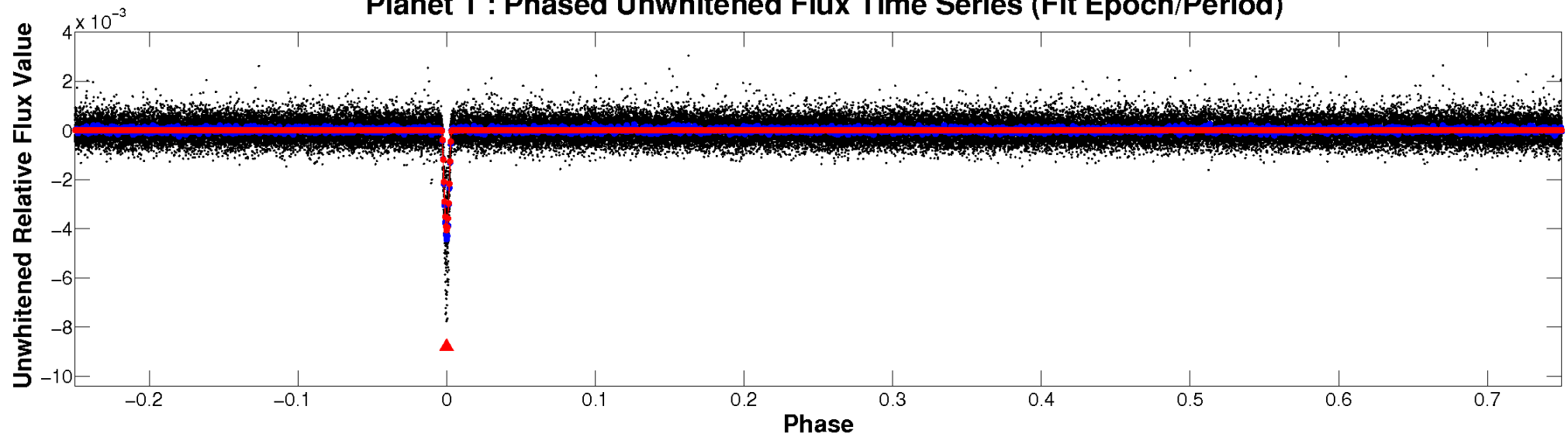
# ALT Odd/Even

TCE 002695110-01

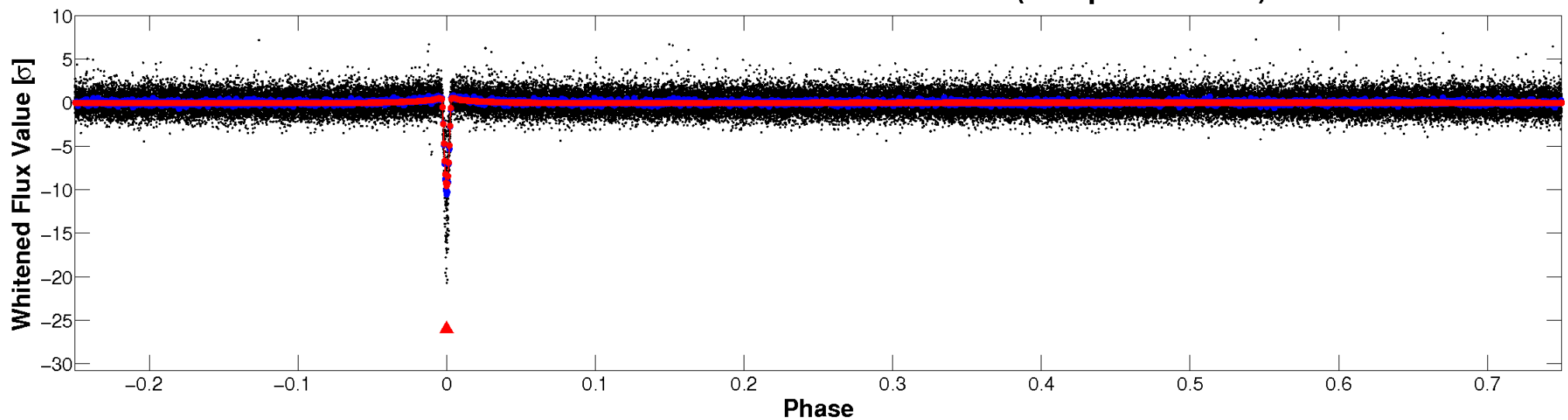


# Non-Whitened Vs. Whitened Light Curve

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



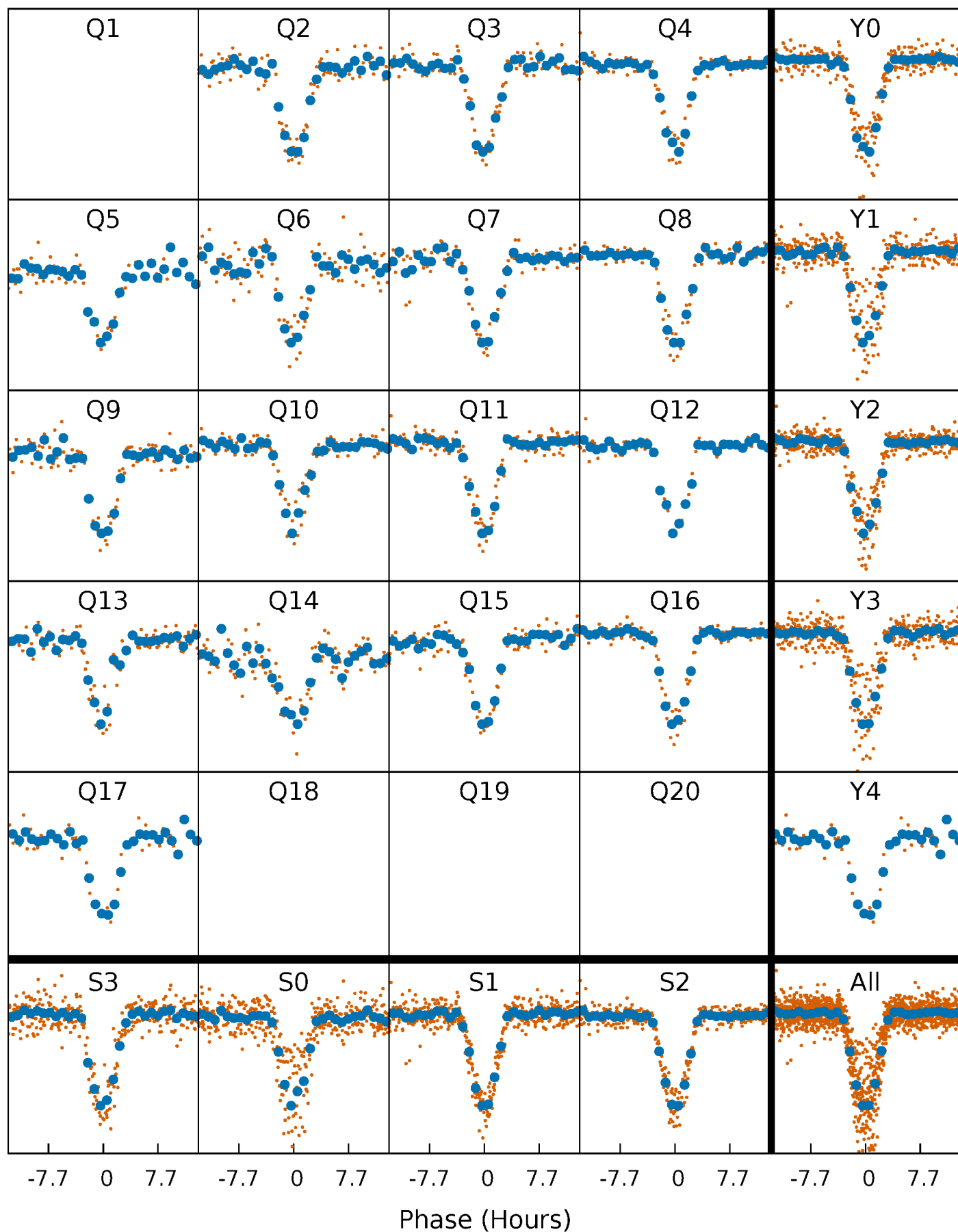
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

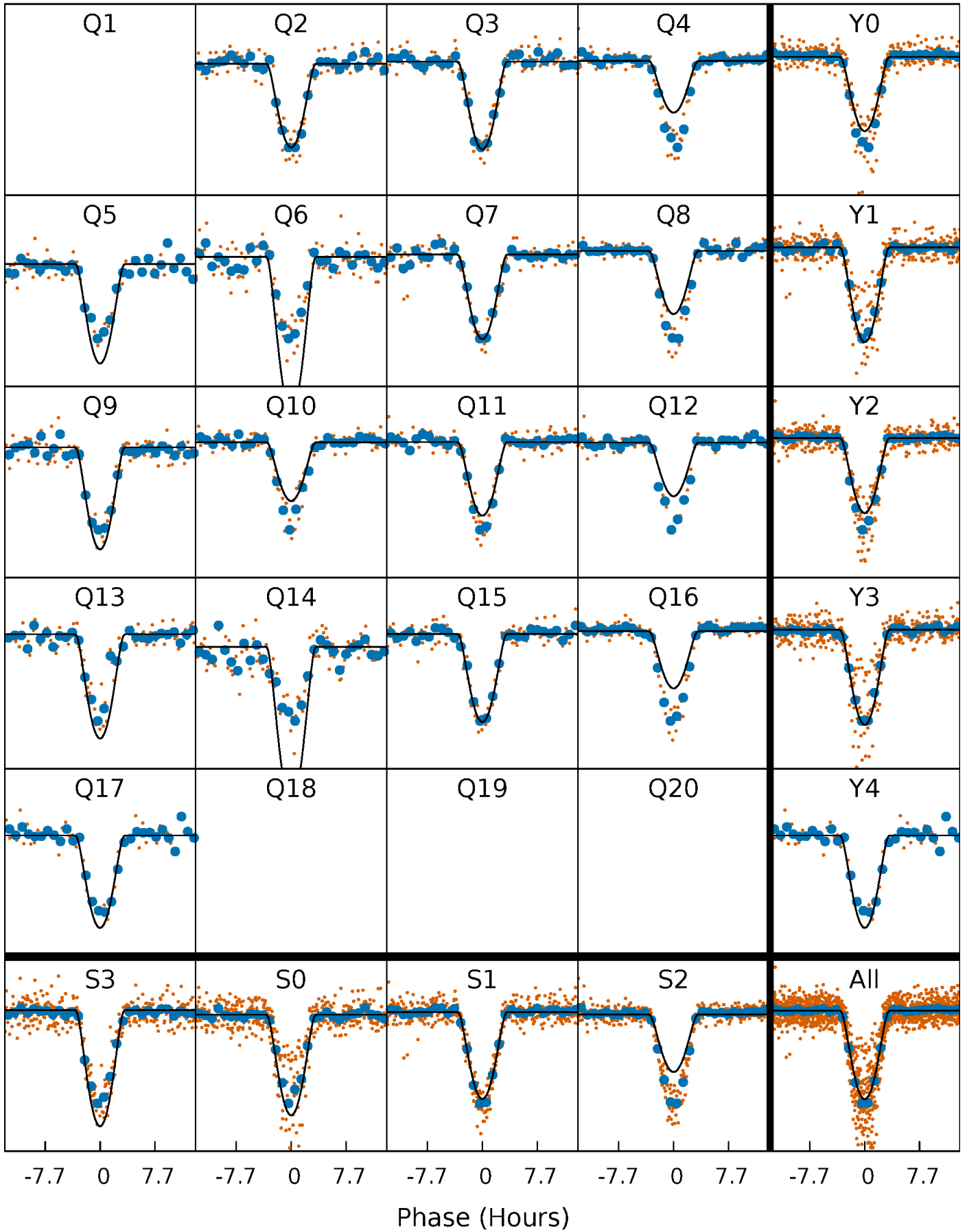
TCE 002695110-01 P= 44.189398 Days  $T_0=165.800229$  (BKJD)





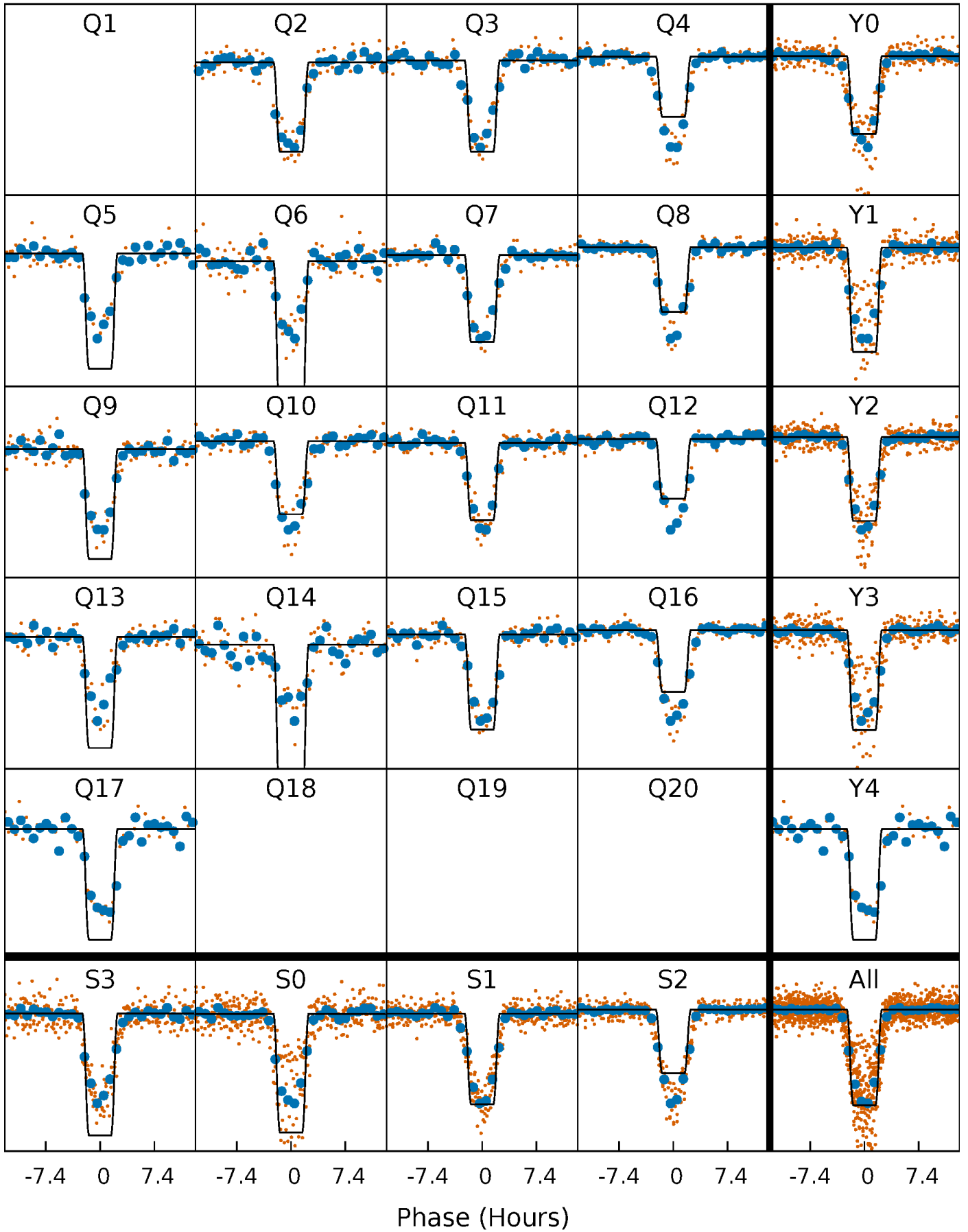
# DV Quarter-Phased Transit Curves

TCE 002695110-01 P= 44.189398 Days  $T_0=165.800229$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

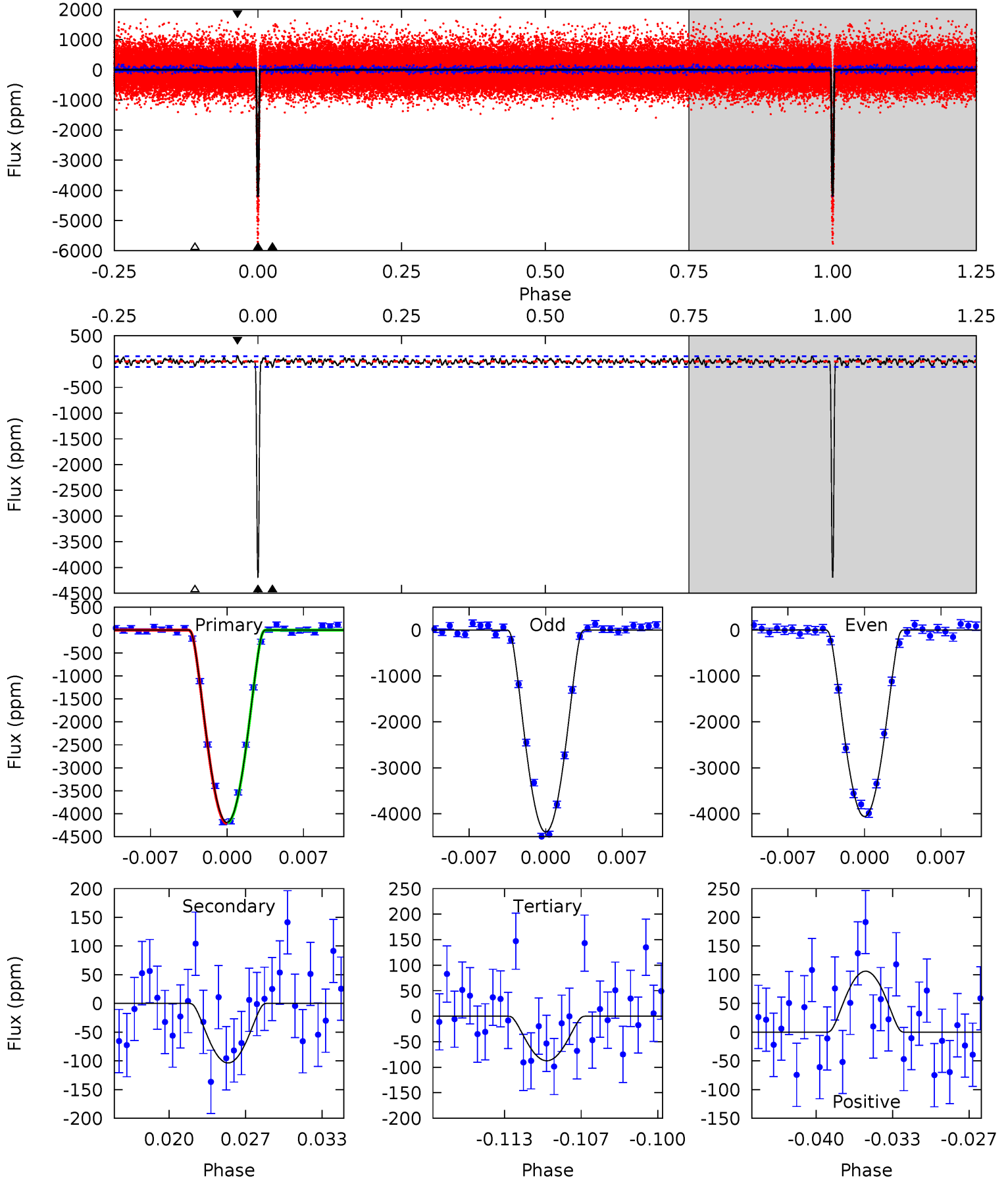
TCE 002695110-01 P= 44.188880 Days  $T_0=165.808927$  (BKJD)



# DV Model-Shift Uniqueness Test

002695110-01, P = 44.189398 Days, E = 121.610831 Days

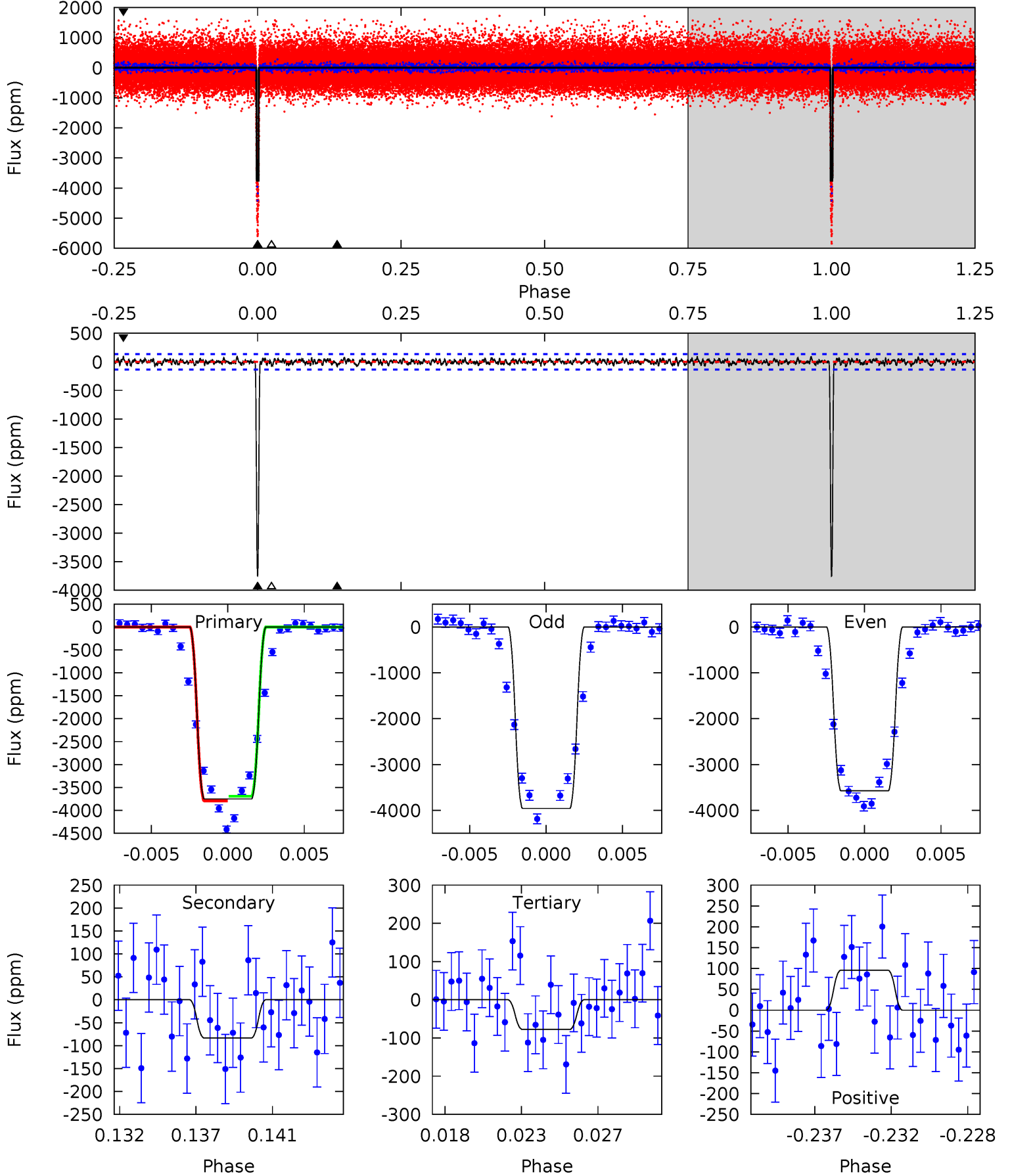
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
207.2	5.13	4.32	5.25	5.10	2.71	1.56	202.9	202.0	0.81	-0.12	8.29	1.00	0.02	0



# Alt Model-Shift Uniqueness Test

002695110-01, P = 44.188880 Days, E = 121.620047 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
143.1	3.18	2.97	3.65	5.18	2.84	1.09	140.1	139.5	0.21	-0.47	7.18	1.00	0.02	1.92



### Stellar Parameters For KIC 002695110

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6061^{+164}_{-200}$	$4.438^{+0.087}_{-0.203}$	$-0.360^{+0.300}_{-0.300}$	$0.968^{+0.281}_{-0.121}$	$0.939^{+0.130}_{-0.109}$	$1.457^{+0.551}_{-0.733}$
	+3%/-3%	+2%/-5%	+83%/-83%	+29%/-12%	+14%/-12%	+38%/-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 002695110-01 / KOI 0400.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-104 \pm 20$	$10.50^{+3.33}_{-2.94}$	$761^{+47}_{-41}$	$2729^{+254}_{-182}$	$29^{+26}_{-13}$
Alt.	$-83 \pm 26$	$7.37^{+3.06}_{-2.96}$	$760^{+62}_{-41}$	$2916^{+476}_{-299}$	$47^{+85}_{-27}$

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

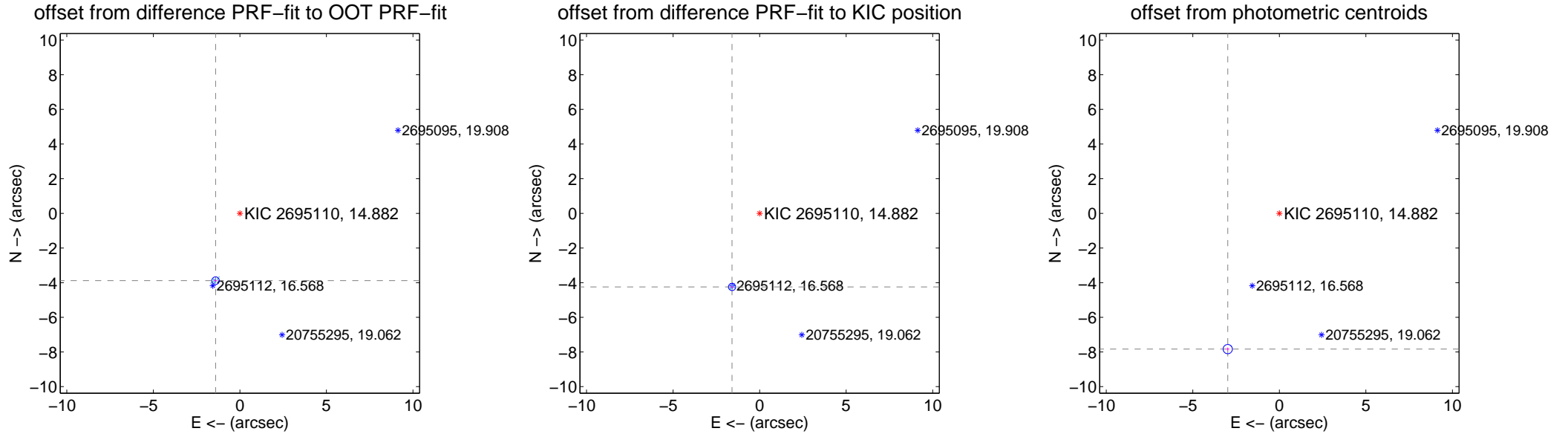
## DV Centroid Data

Supplemental centroid analysis for 002695110-01. Kepler magnitude: 14.88. Transit SNR 99.57

There are 16 quarters with good PRF difference image offsets

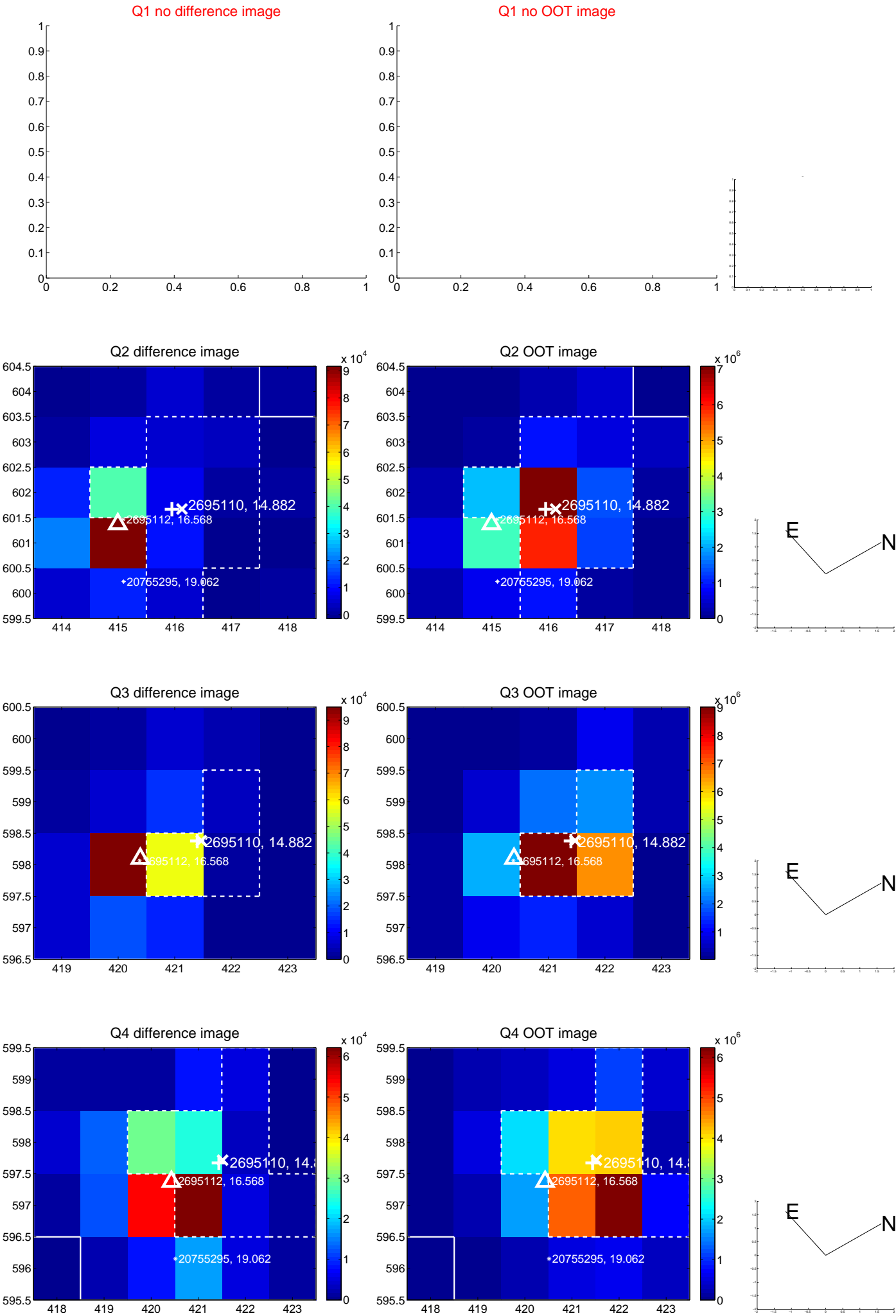
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>4.129 <math>\pm</math> 0.073</b>	<b>56.73</b>	1.403 $\pm$ 0.073	-3.883 $\pm$ 0.070
PRF-fit source offset from KIC position	<b>4.535 <math>\pm</math> 0.070</b>	<b>65.09</b>	1.592 $\pm$ 0.072	-4.246 $\pm$ 0.069
photometric centroid source offset	<b>8.38 <math>\pm</math> 0.09</b>	<b>94.26</b>	2.98 $\pm$ 0.09	-7.83 $\pm$ 0.09



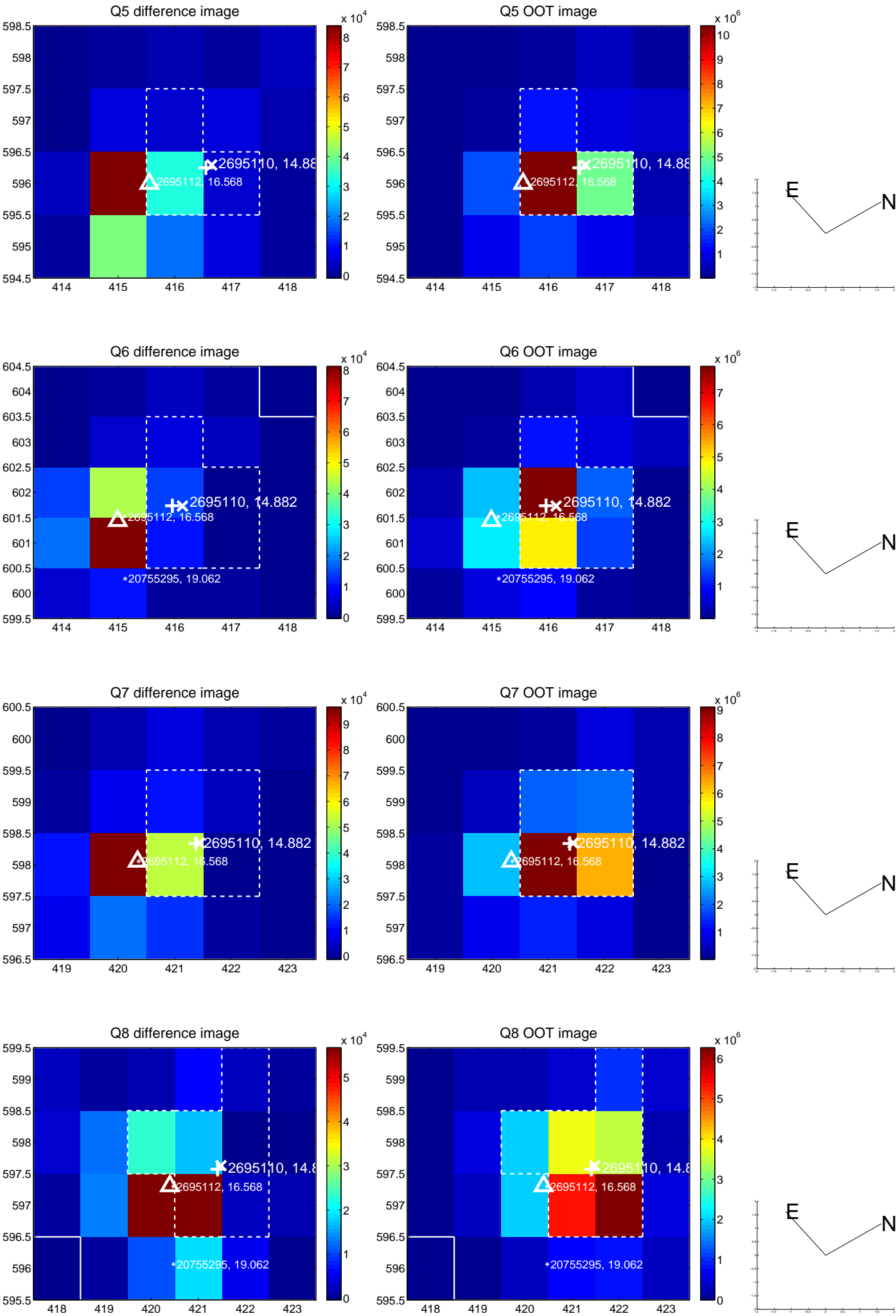
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

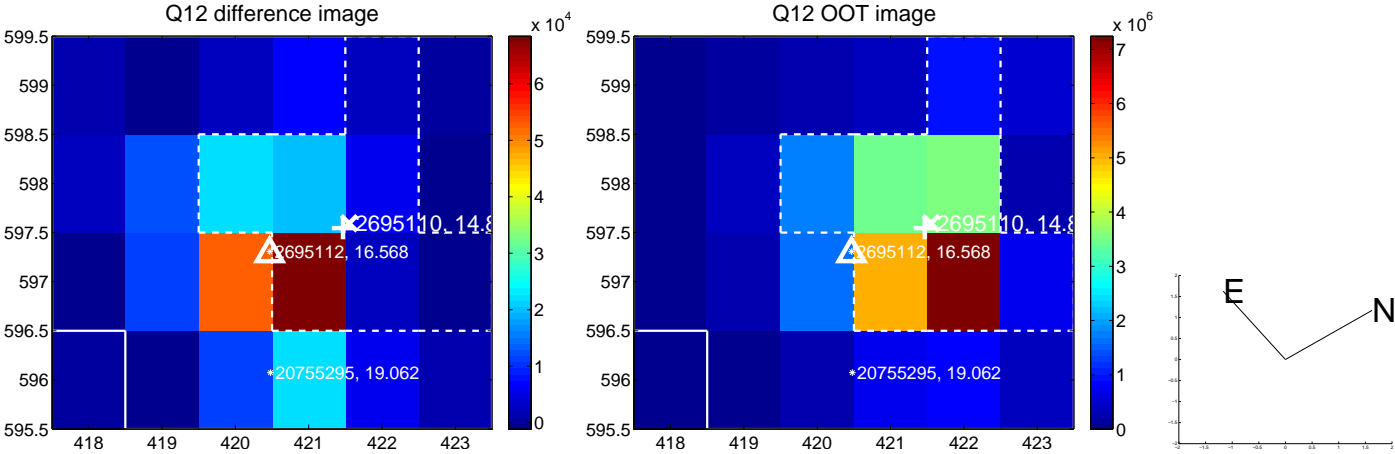
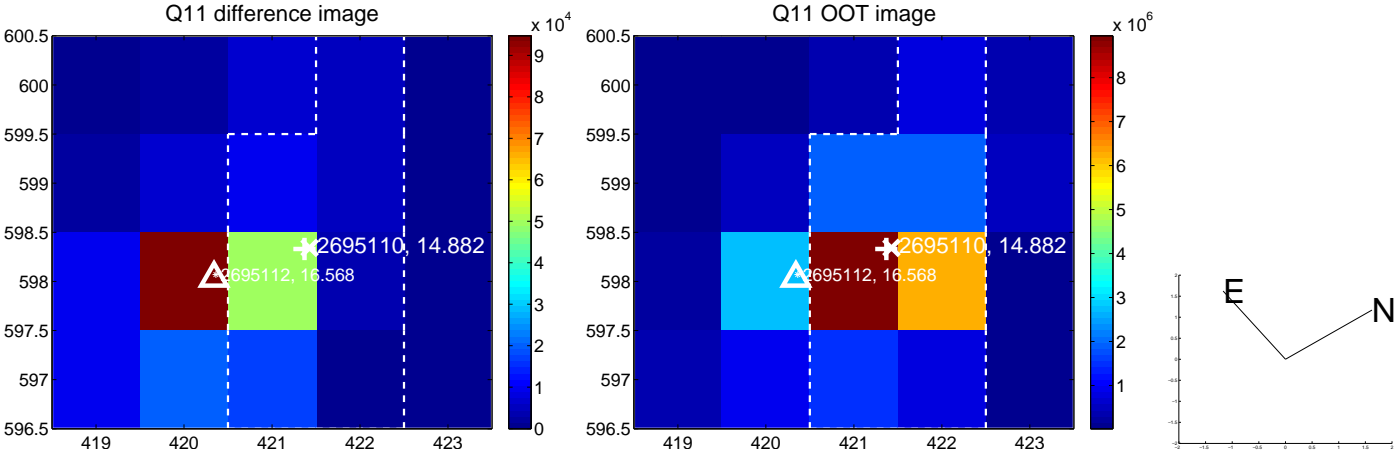
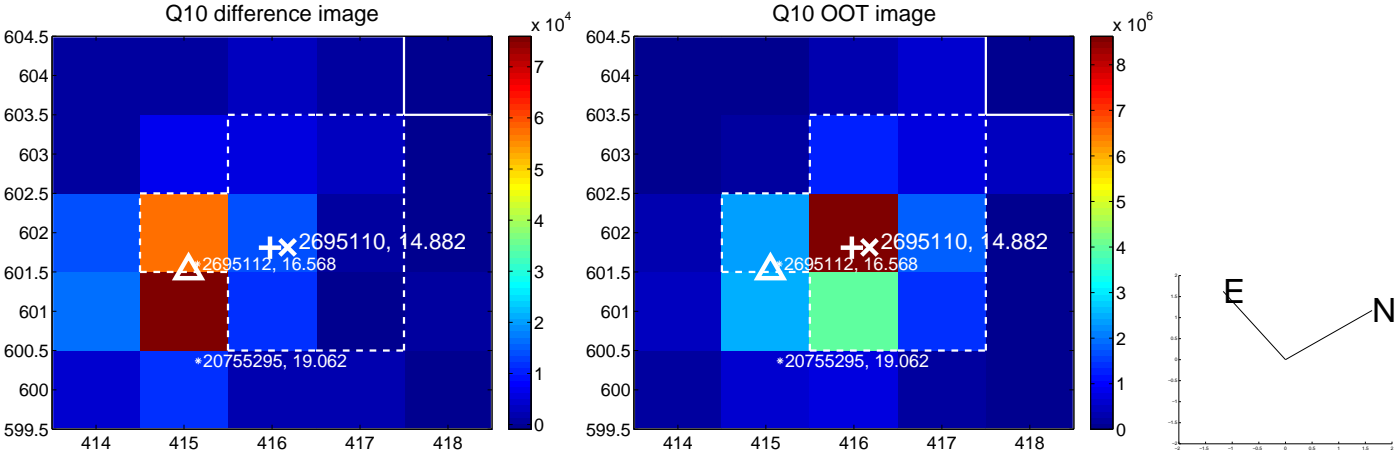
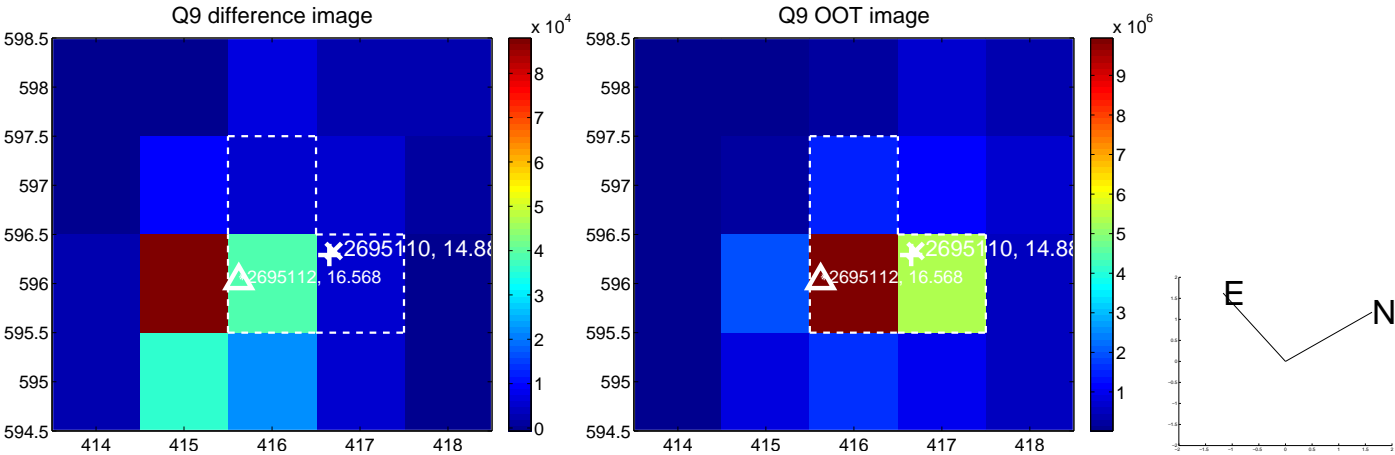




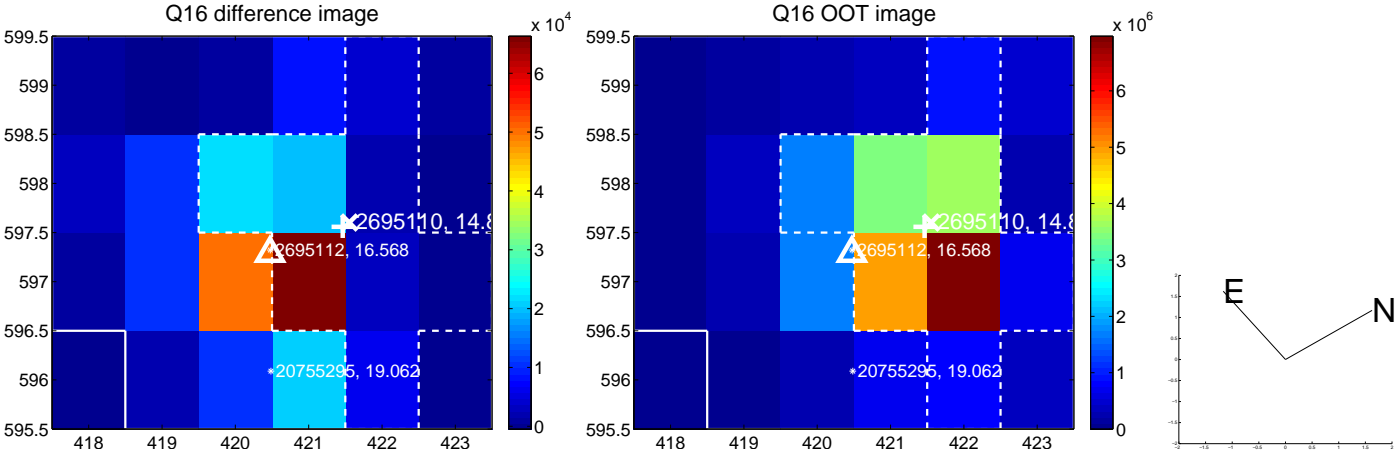
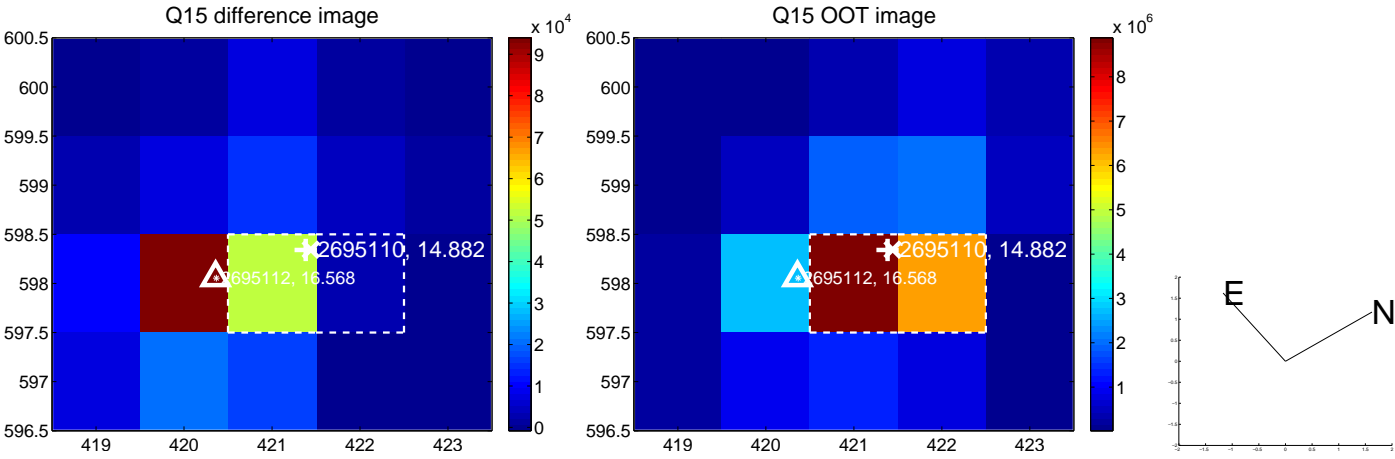
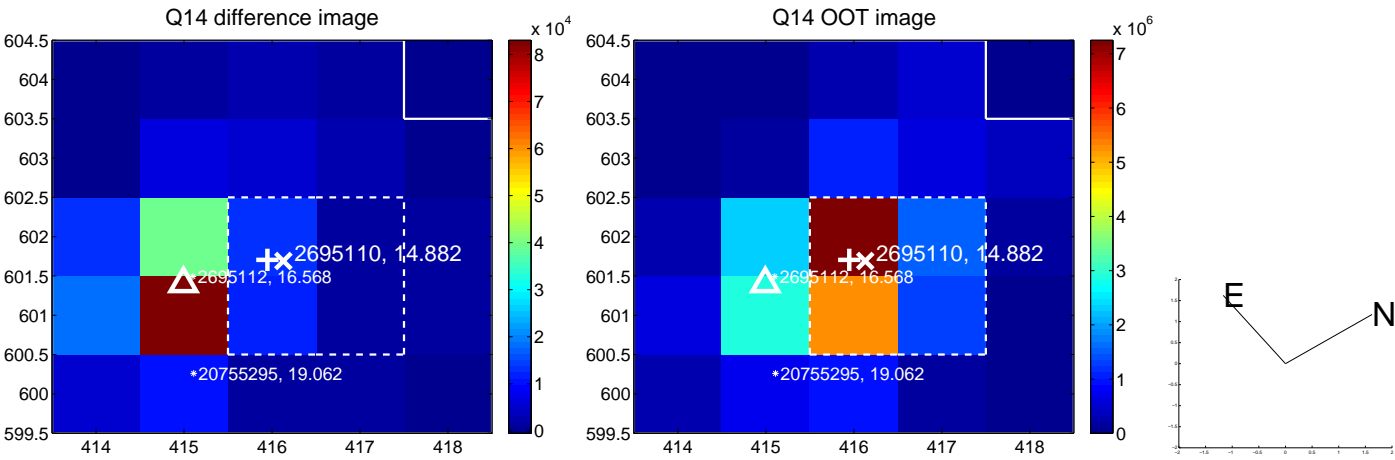
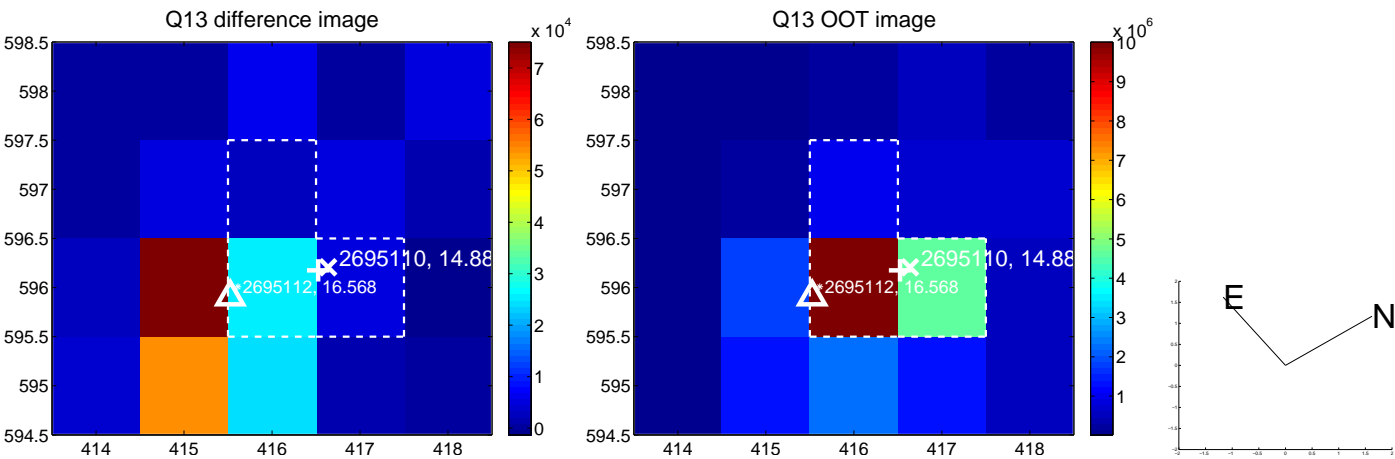
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



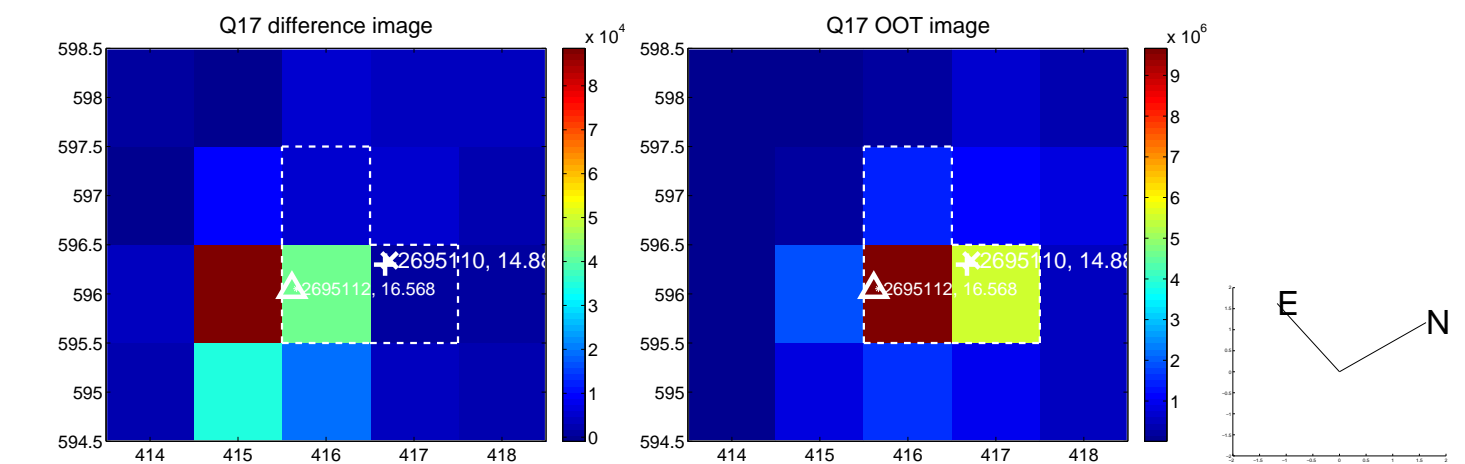
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



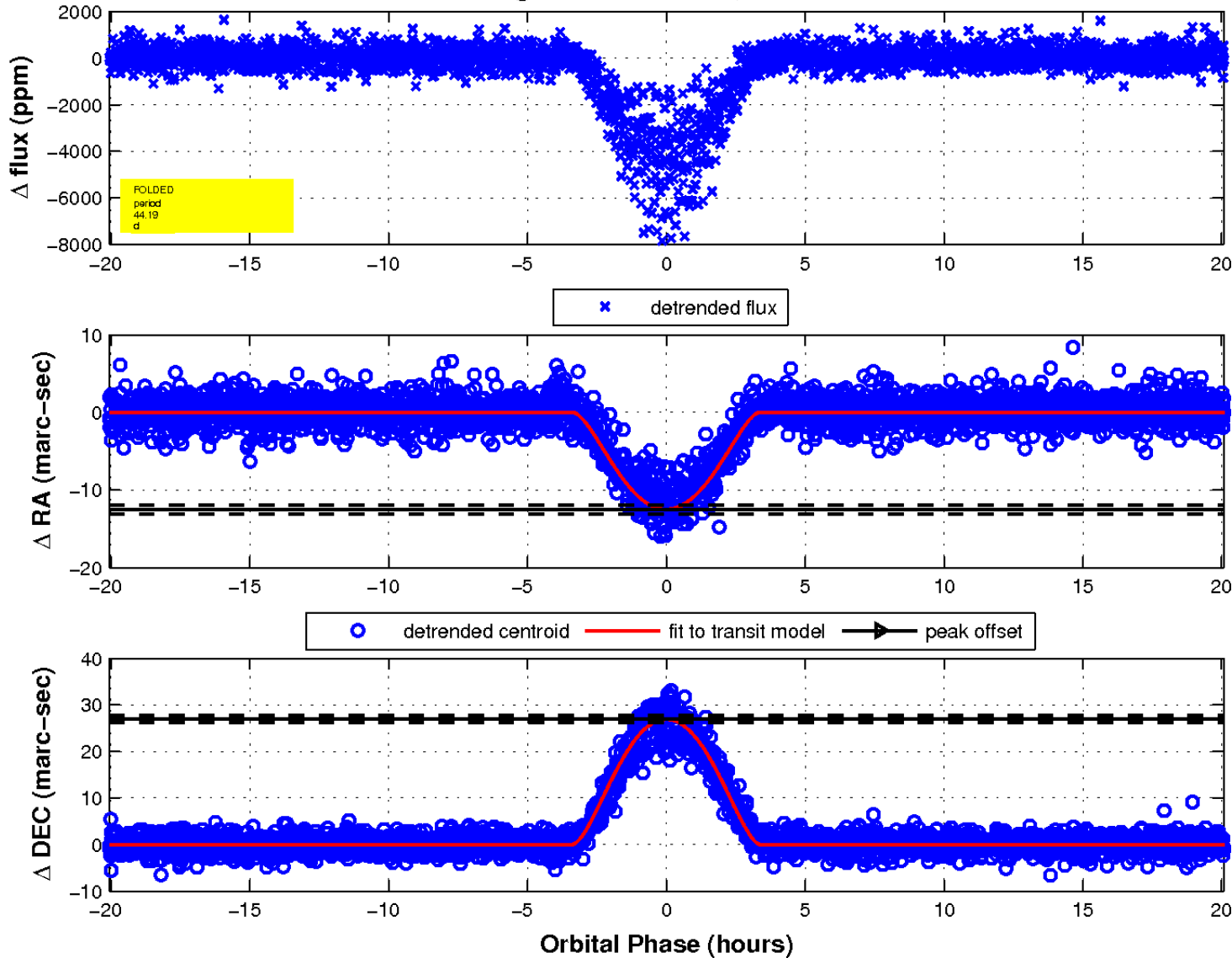
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

