

# KIC 011455428

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011455428-01	OBS	3365.01	22.126818	144.932640	415.2	3.870	17.1	18.8	1.45	5312	3.47	64.06

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011455428-01	OBS	PC	0.90	0	0	0	0	NO_COMMENT

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

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

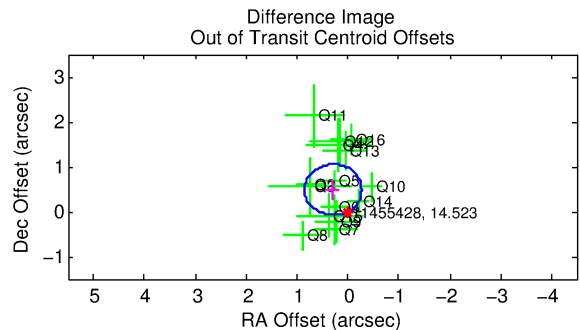
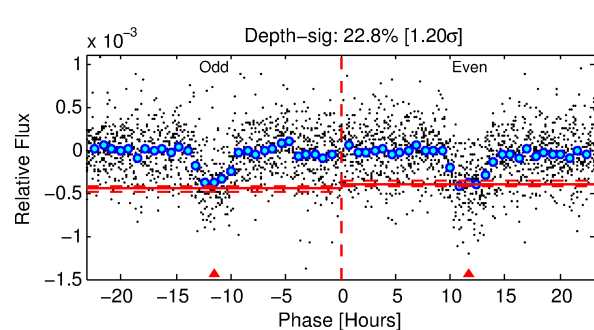
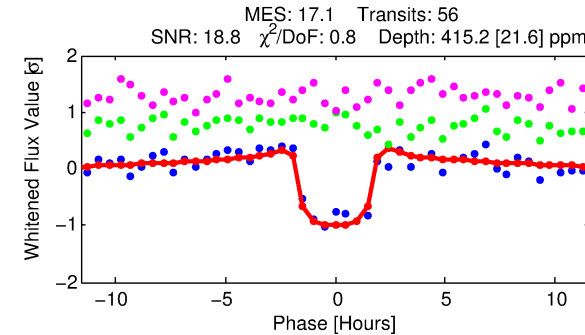
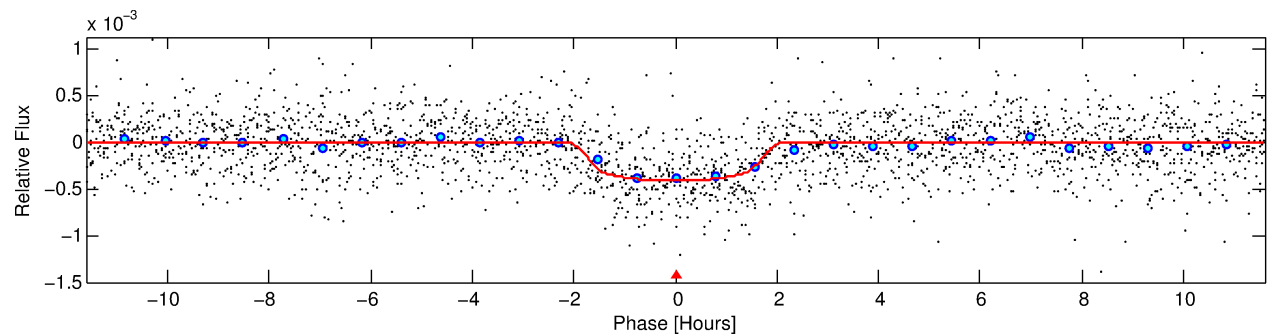
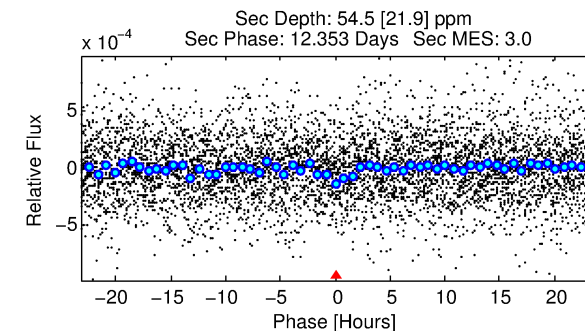
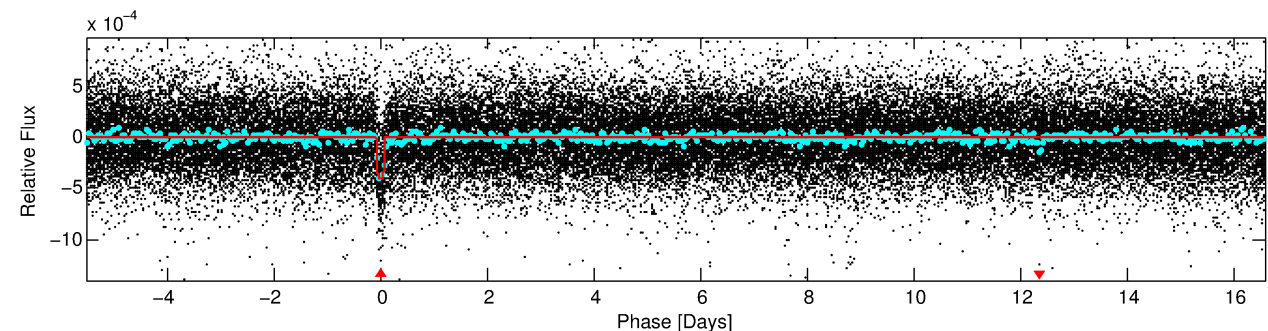
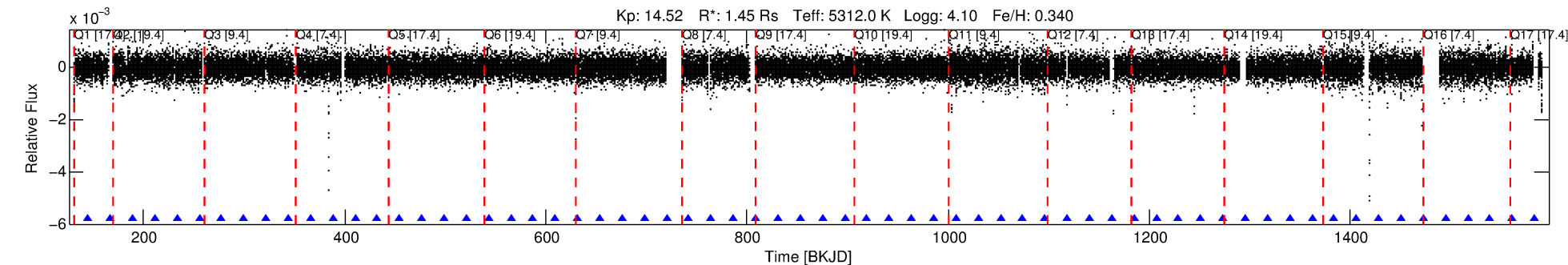
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011455428-01

No Significant Match Found

# DV One-Page Summary

KIC: 11455428 Candidate: 1 of 1 Period: 22.127 d  
KOI: K03365.01 Corr: 0.976



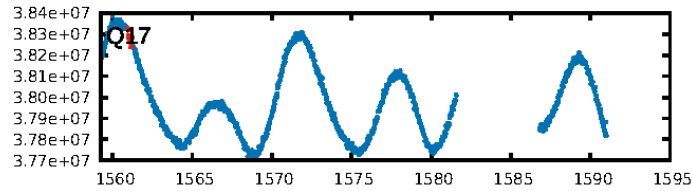
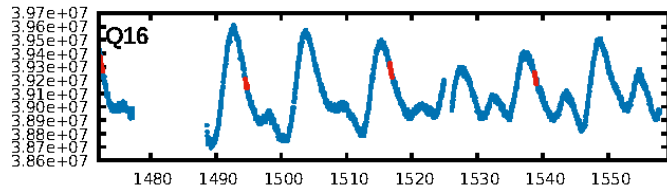
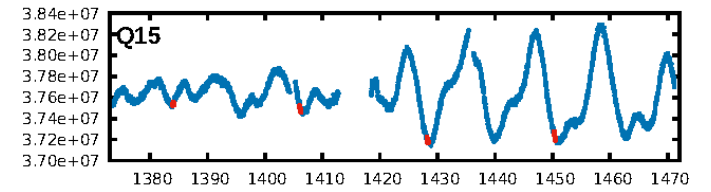
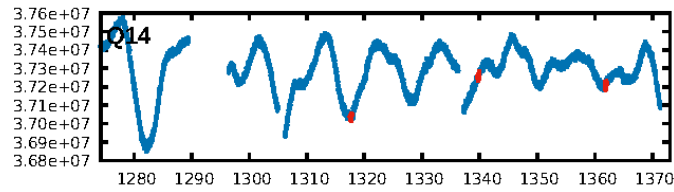
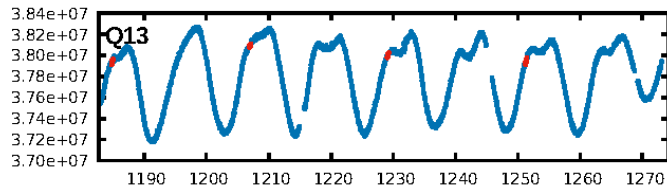
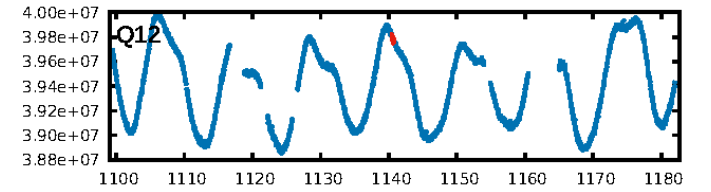
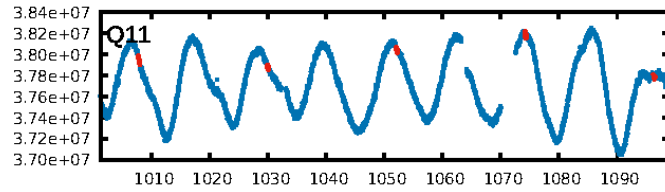
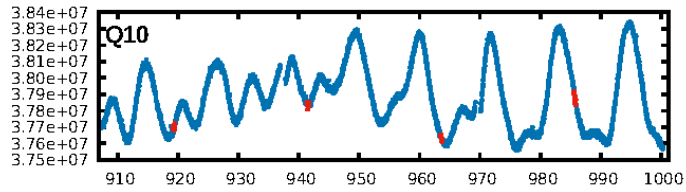
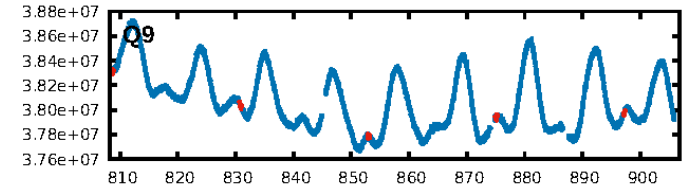
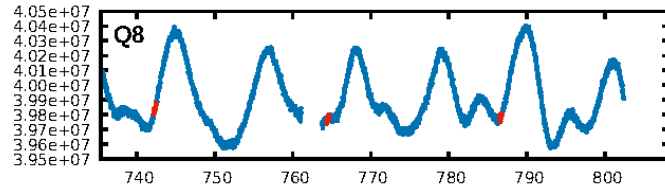
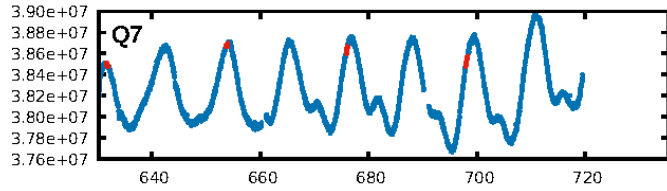
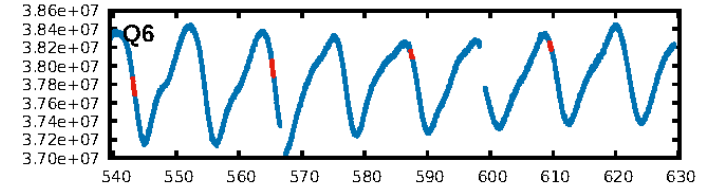
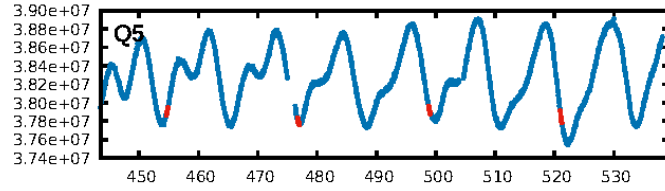
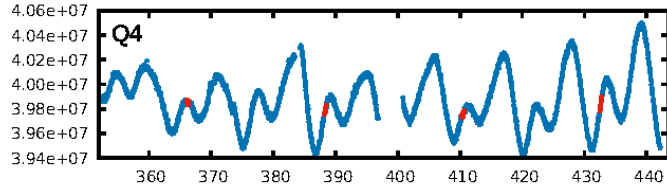
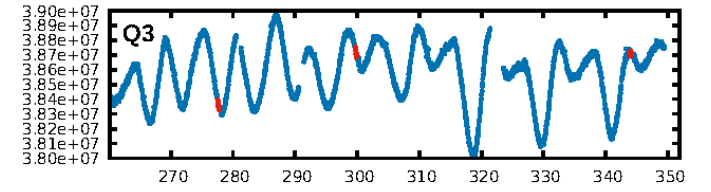
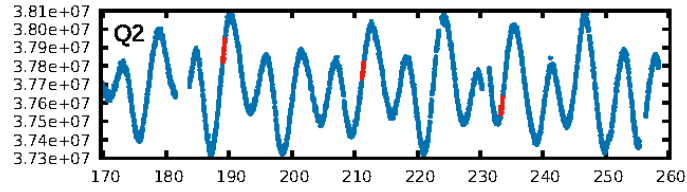
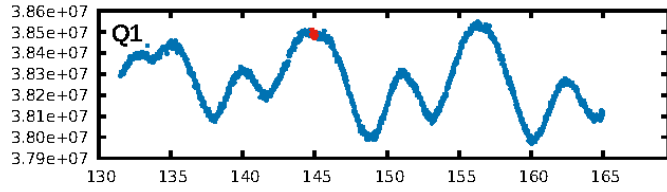
## DV Fit Results:

Period = 22.12682 [0.00010] d  
Epoch = 144.9326 [0.0036] BKJD  
Rp/R\* = 0.0220 [0.0044]  
a/R\* = 23.11 [17.99]  
b = 0.87 [0.21]  
Seff = 64.06 [43.78]  
Teq = 721 [123] K  
Rp = 3.47 [1.46] Re  
a = 0.1525 [0.0607] AU  
Ag = 57.74 [50.63] [1.12σ]  
Teffp = 3075 [446] K [5.09σ]

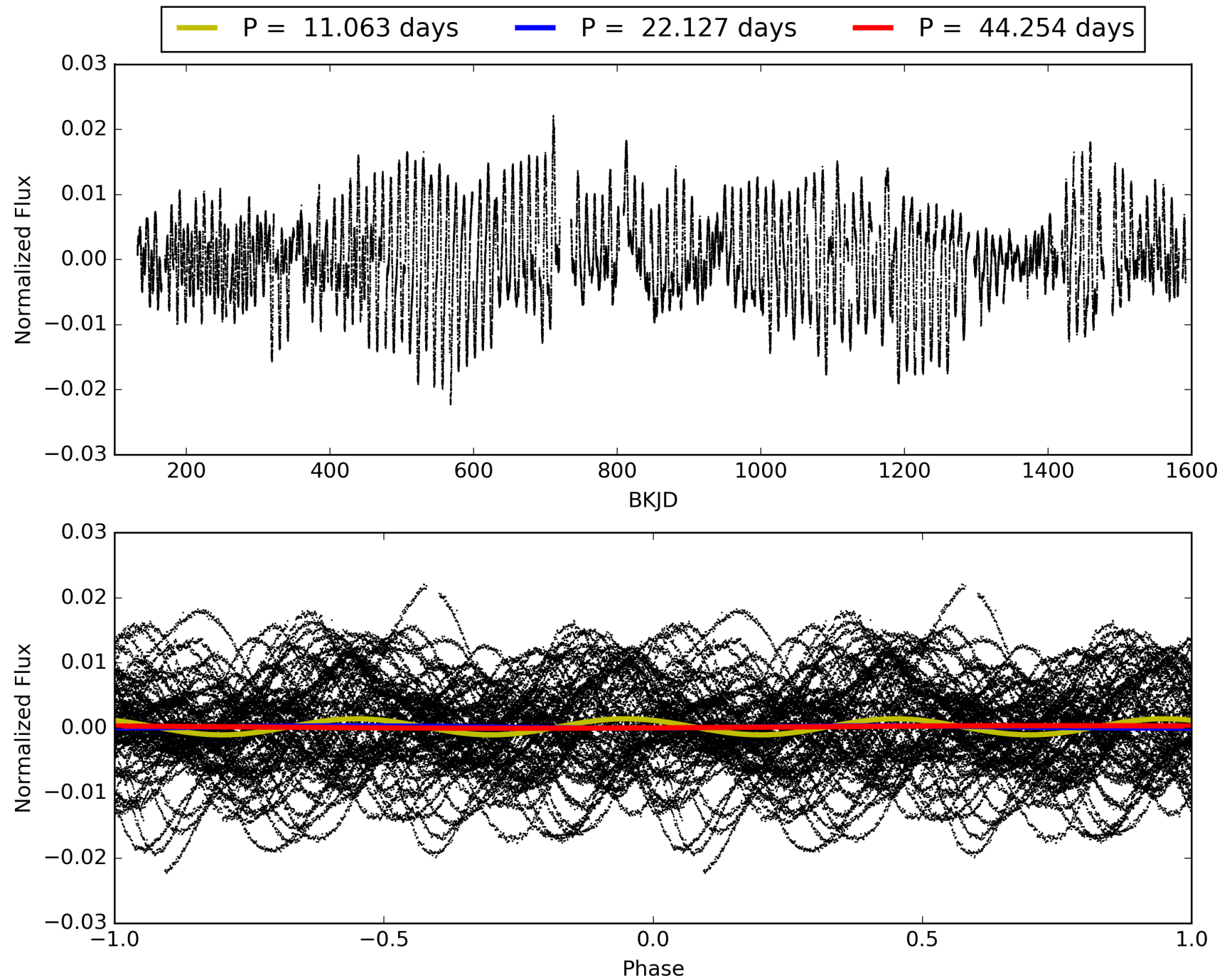
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.85e-58  
RollingBand-fgt: 1.00 [54/54]  
GhostDiagnostic-chr: 4.628  
Centroid-sig: 1.9%  
Centroid-so: 0.790 arcsec [1.62σ]  
**OotOffset-rm: 0.567 arcsec [3.01σ]**  
KicOffset-rm: 0.292 arcsec [1.50σ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 1.00 [15/15]  
DiffImageOverlap-fno: 1.00 [16/16]

# TCE 011455428-01, PDC Light Curves

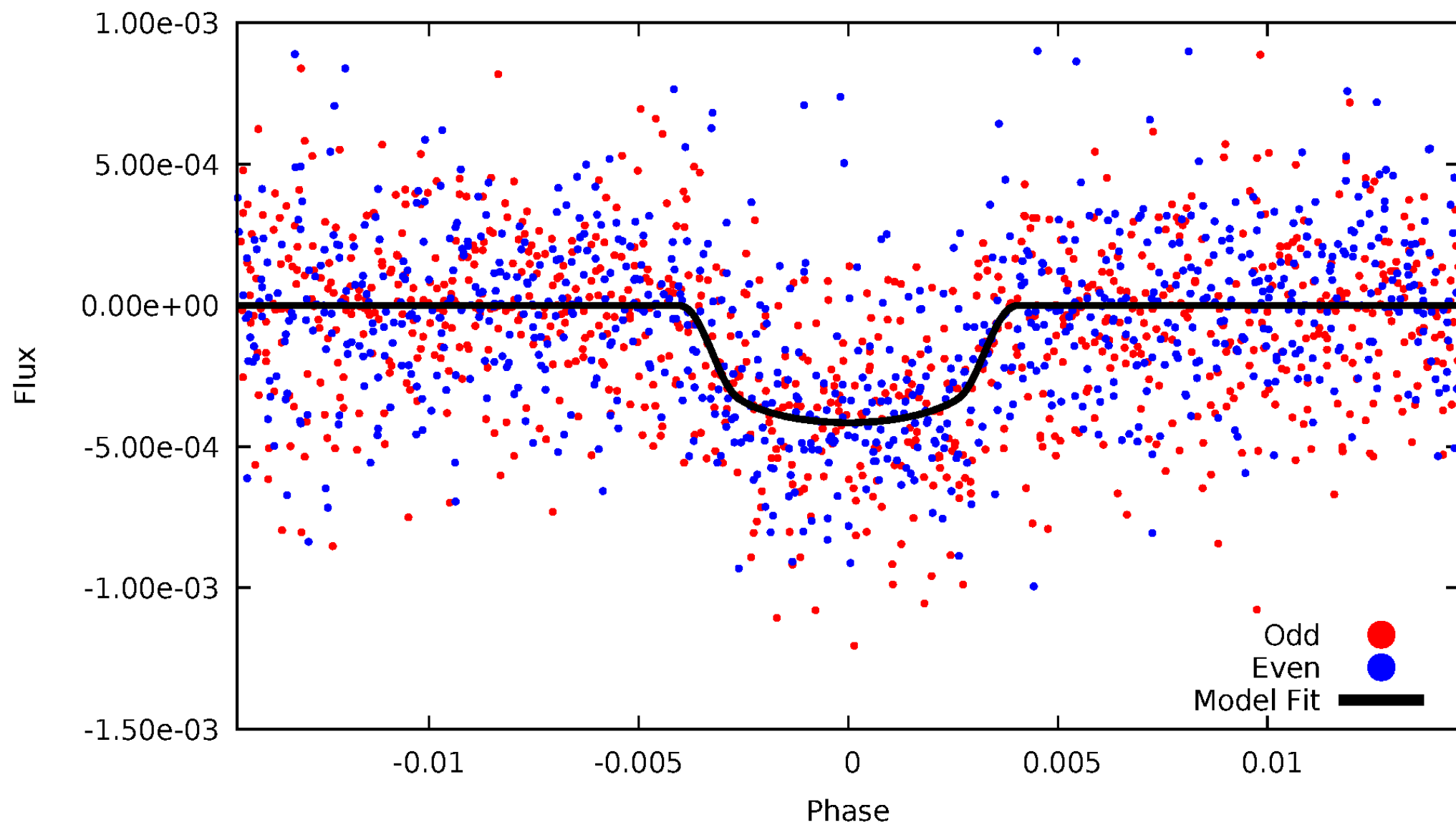


# TCE 011455428-01



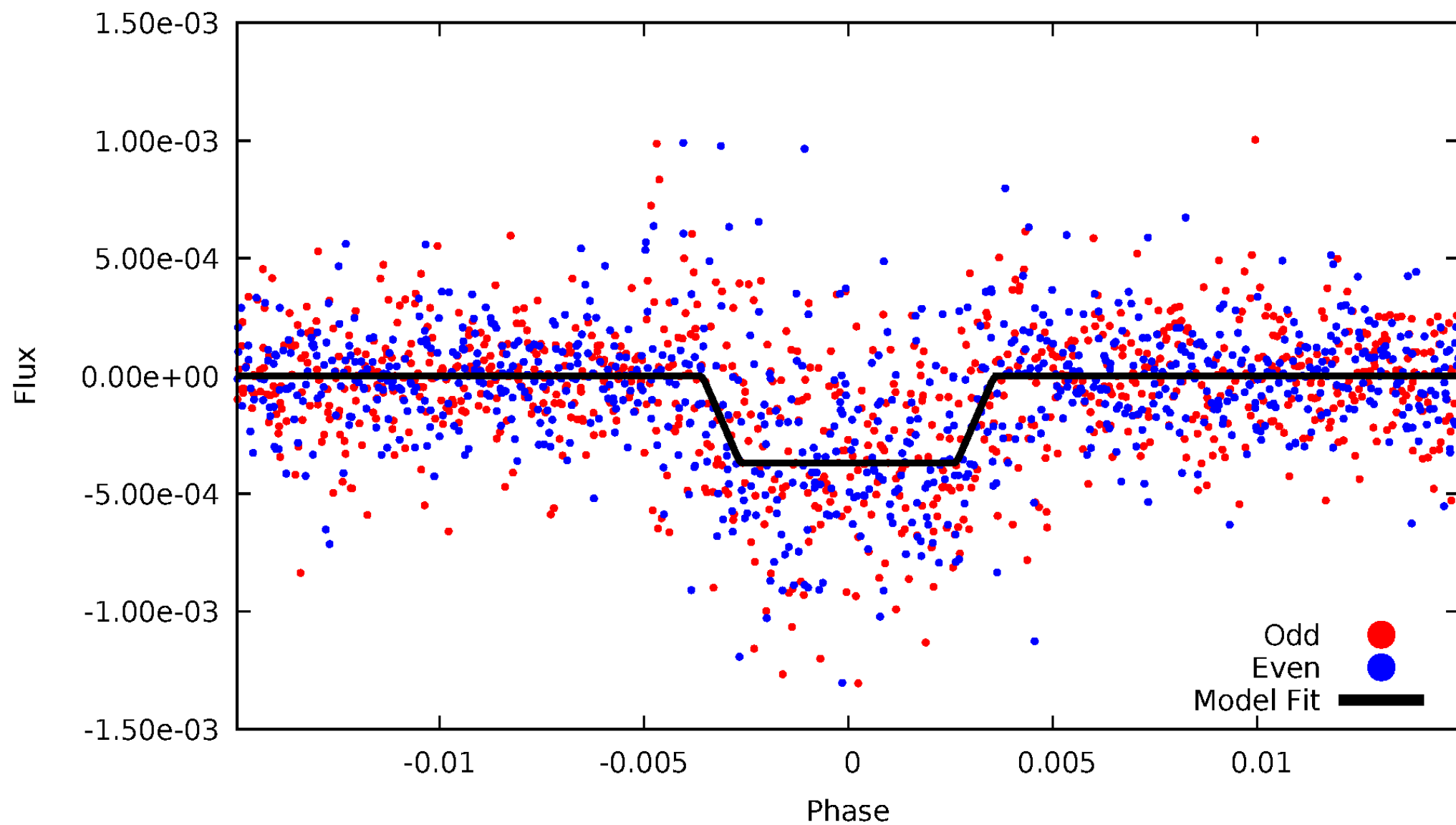
# DV Odd/Even

TCE 011455428-01



# ALT Odd/Even

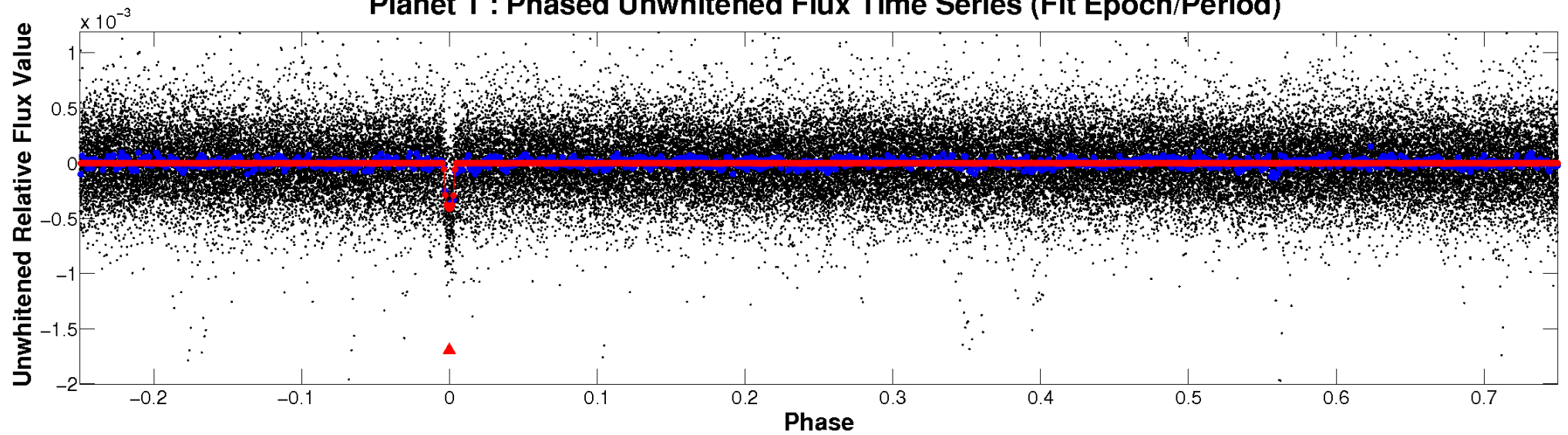
TCE 011455428-01



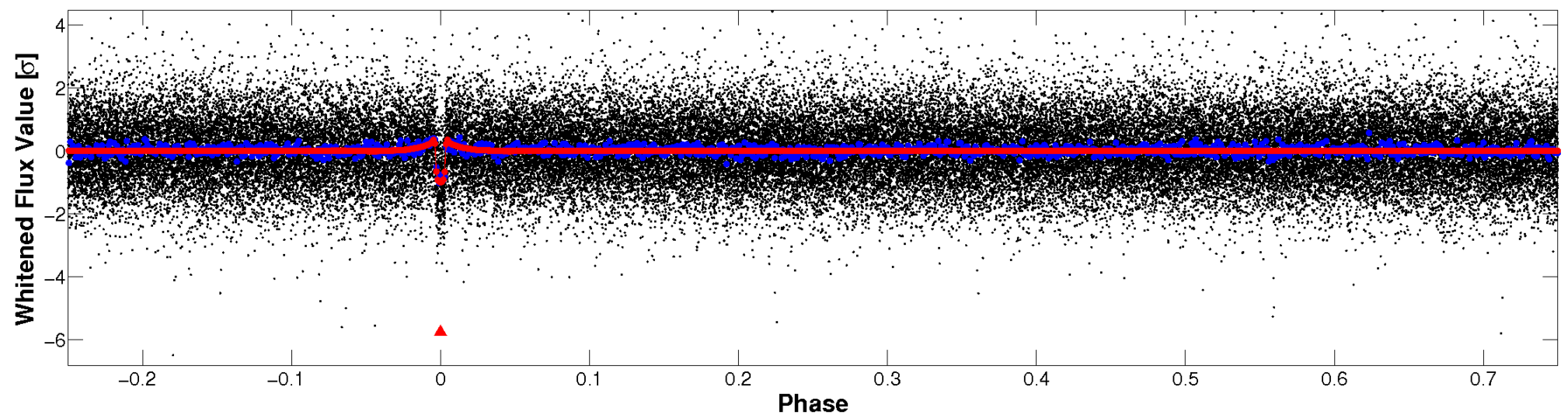


# Non-Whitened Vs. Whitened Light Curve

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

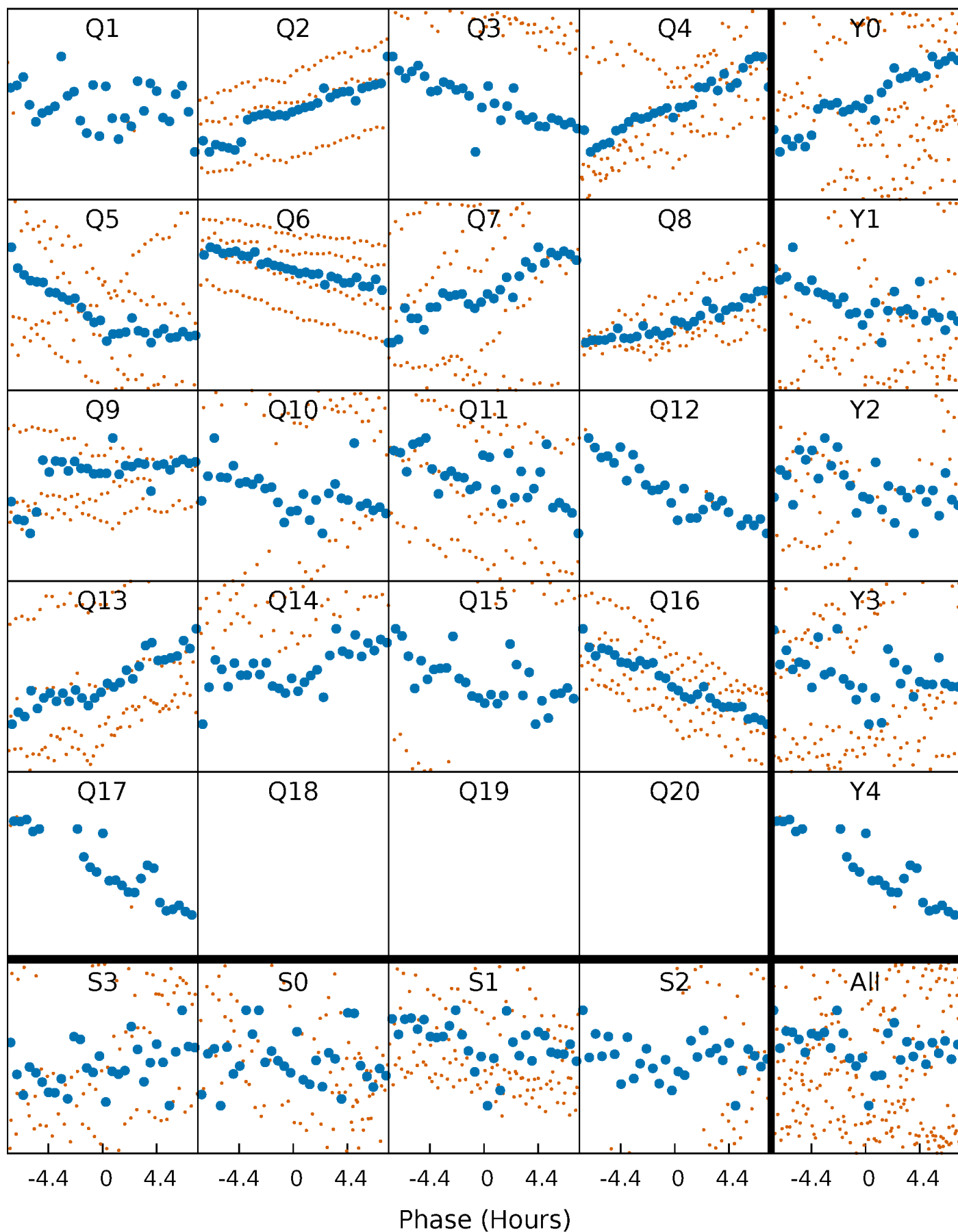


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

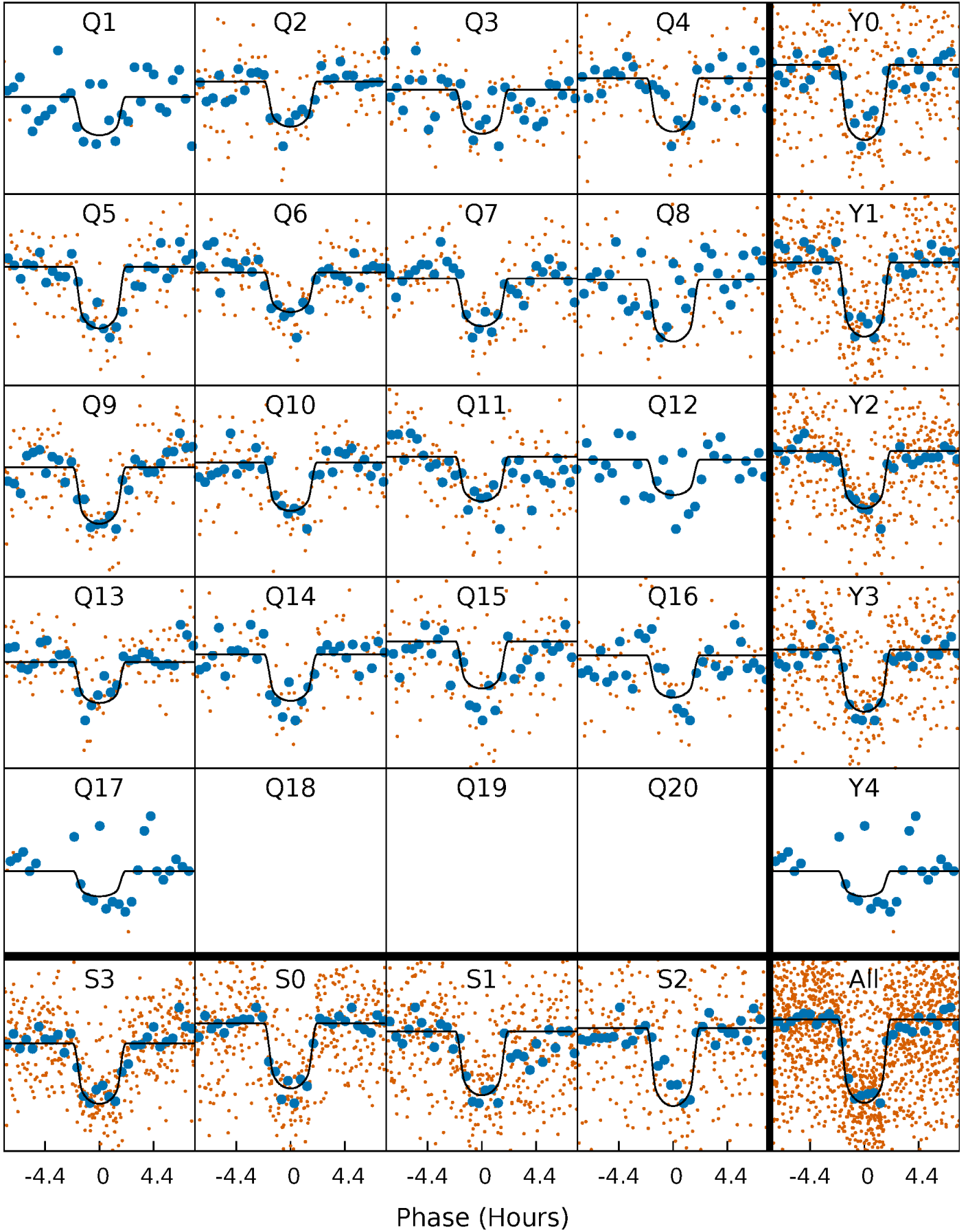
TCE 011455428-01 P= 22.126818 Days  $T_0=144.932640$  (BKJD)





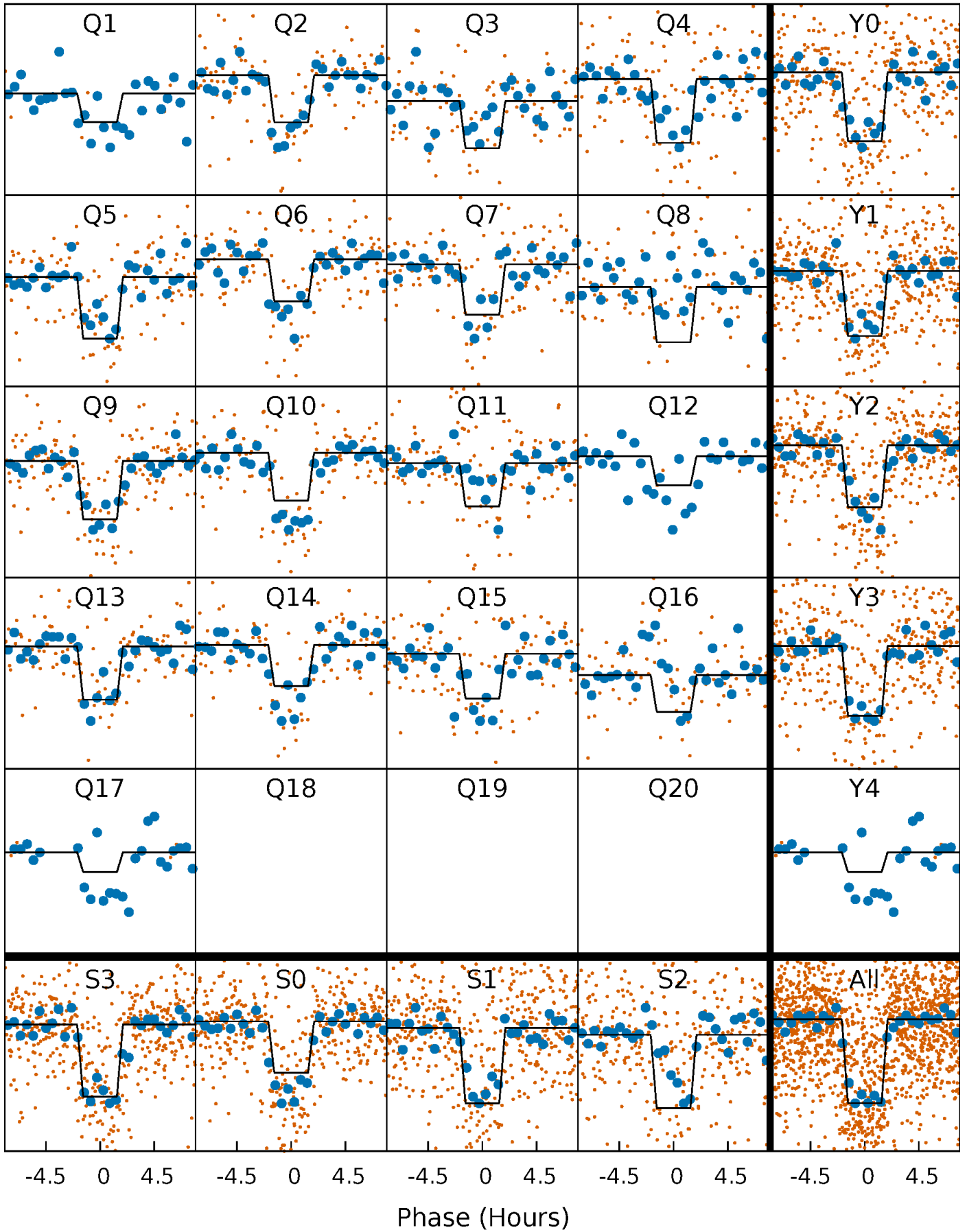
# DV Quarter-Phased Transit Curves

TCE 011455428-01   P= 22.126818 Days    $T_0=144.932640$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

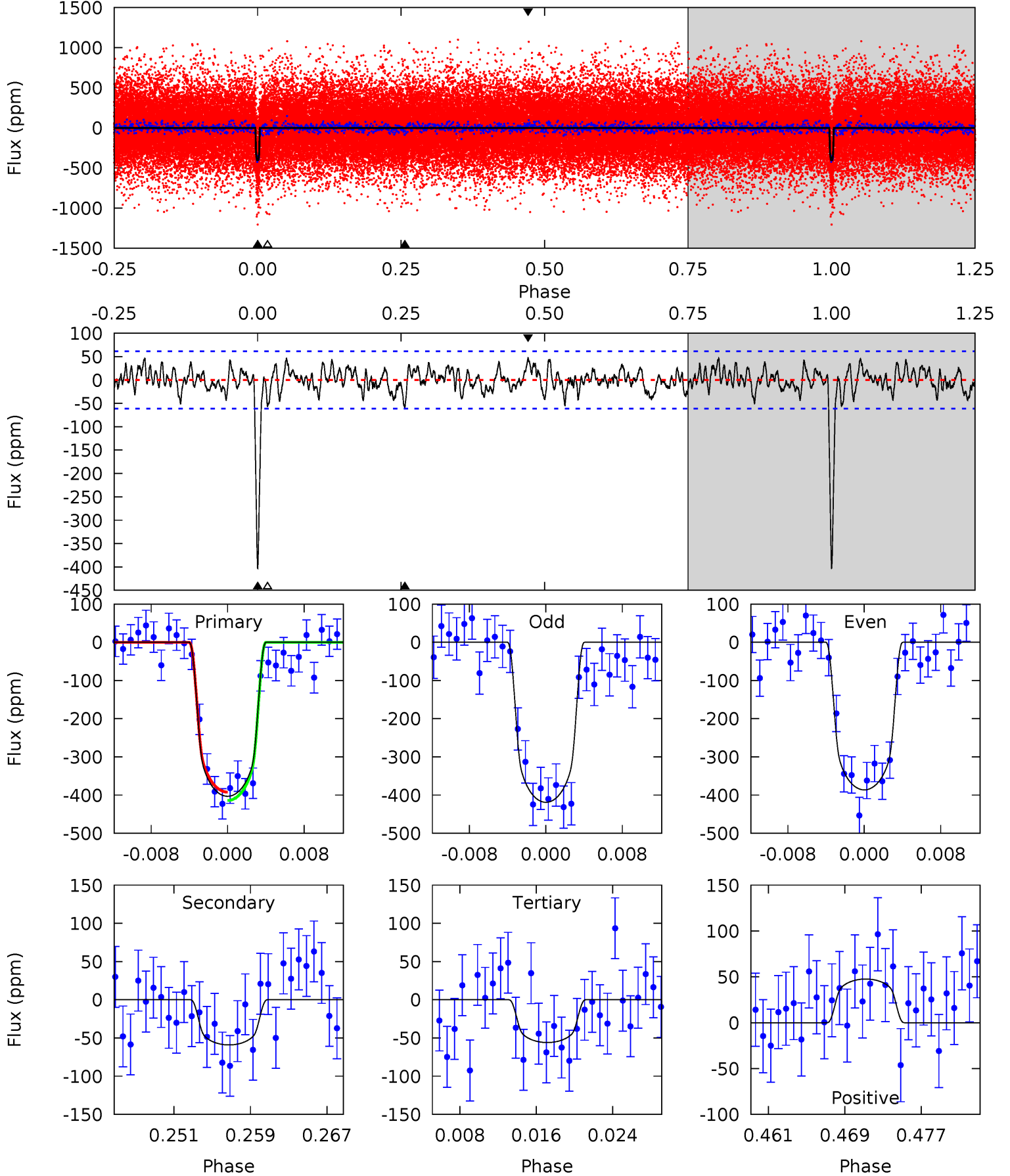
TCE 011455428-01 P= 22.126674 Days  $T_0=144.938956$  (BKJD)



# DV Model-Shift Uniqueness Test

011455428-01, P = 22.126818 Days, E = 122.805822 Days

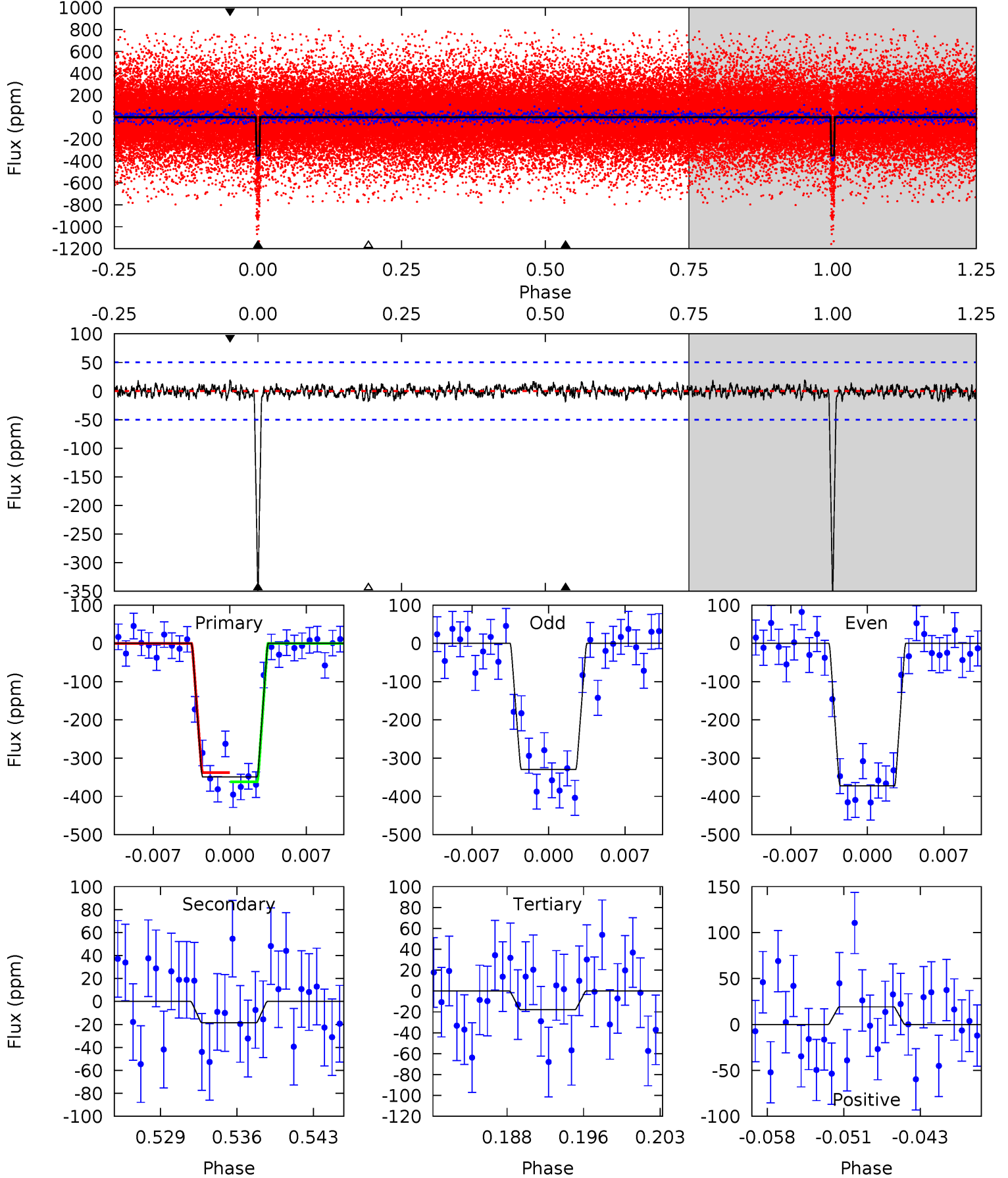
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.2	4.87	4.61	3.92	5.07	2.65	1.55	28.6	29.3	0.26	0.94	1.34	0.97	0.11	0.91



# Alt Model-Shift Uniqueness Test

011455428-01,  $P = 22.126674$  Days,  $E = 122.812282$  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
35.4	1.88	1.82	1.94	5.09	2.69	0.62	33.6	33.5	0.06	-0.06	2.17	0.96	0.05	1.22



### Stellar Parameters For KIC 011455428

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5312^{+175}_{-159}$	$4.103^{+0.406}_{-0.174}$	$0.340^{+0.100}_{-0.250}$	$1.445^{+0.438}_{-0.536}$	$0.963^{+0.079}_{-0.086}$	$0.450^{+1.282}_{-0.208}$
	+3%/-3%	+10%/-4%	+29%/-74%	+30%/-37%	+8%/-9%	+285%/-46%
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 011455428-01 / KOI 3365.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-59 \pm 12$	$3.26^{+1.03}_{-0.85}$	$988^{+98}_{-119}$	$3556^{+306}_{-261}$	$68^{+62}_{-31}$
Alt.	$-19 \pm 10$	$2.78^{+1.01}_{-0.78}$	$992^{+86}_{-106}$	$3122^{+347}_{-368}$	$29^{+36}_{-18}$

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

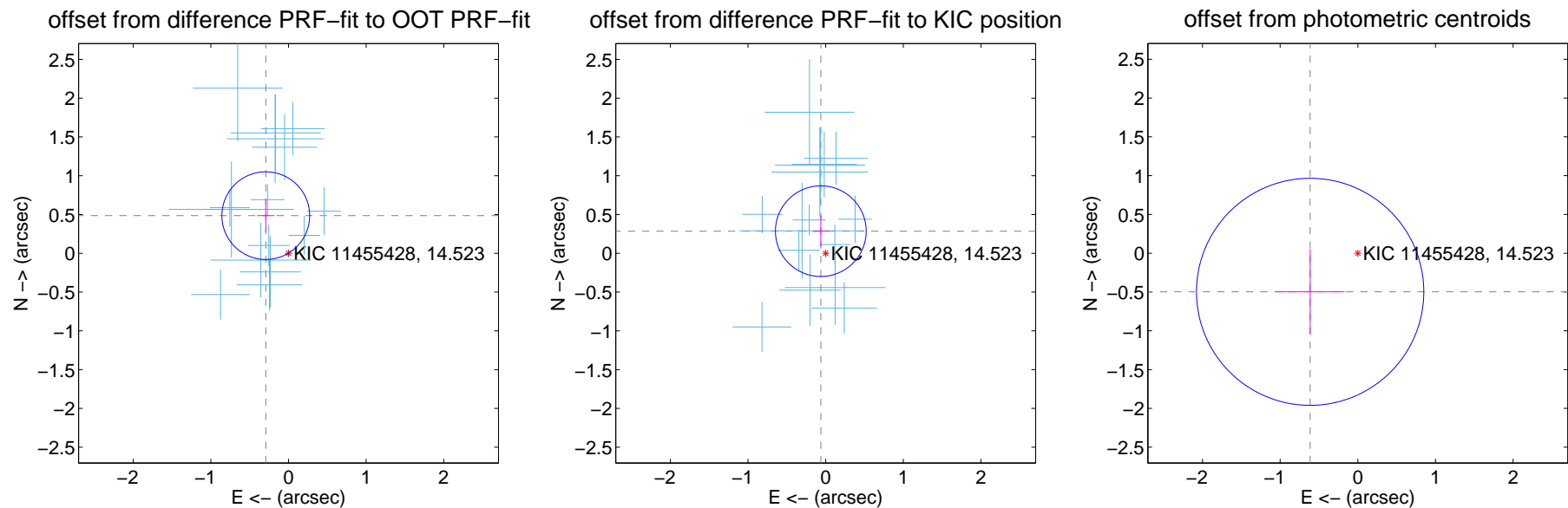
## DV Centroid Data

Supplemental centroid analysis for 011455428-01. Kepler magnitude: 14.52. Transit SNR 18.84

There are 15 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

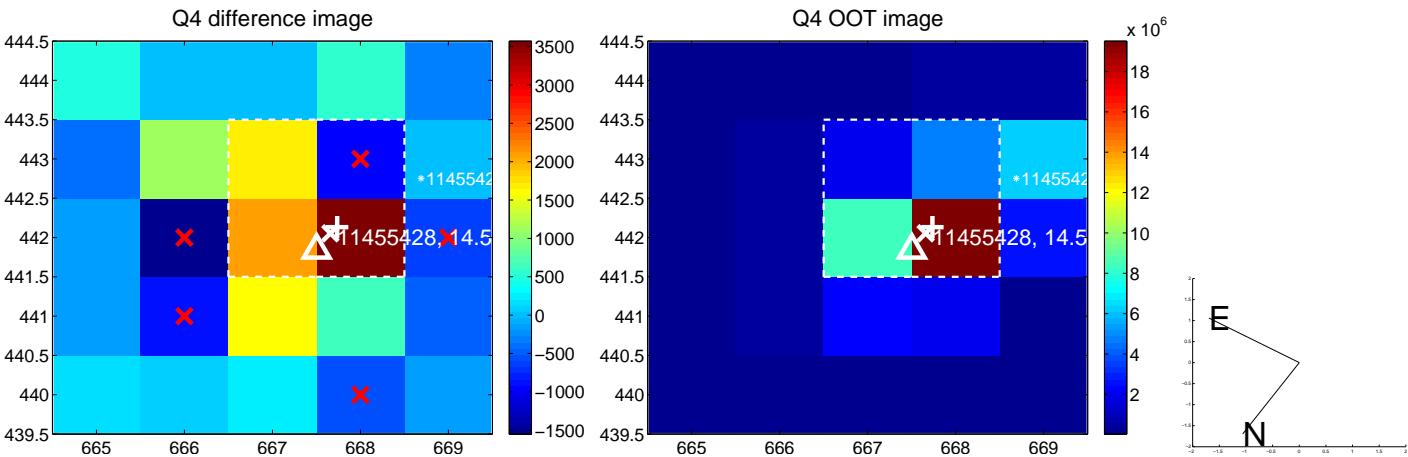
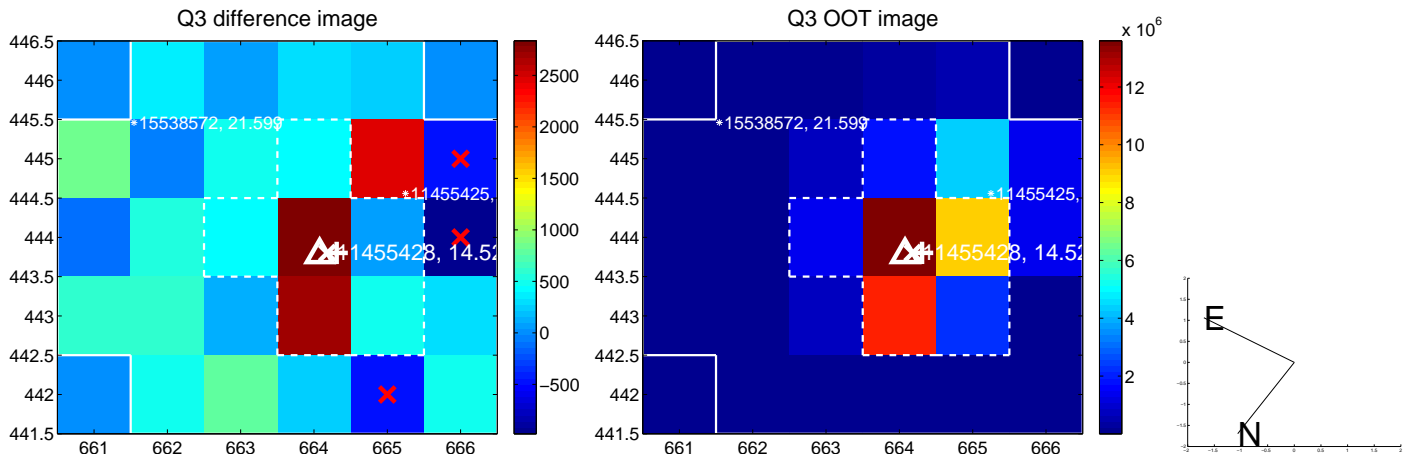
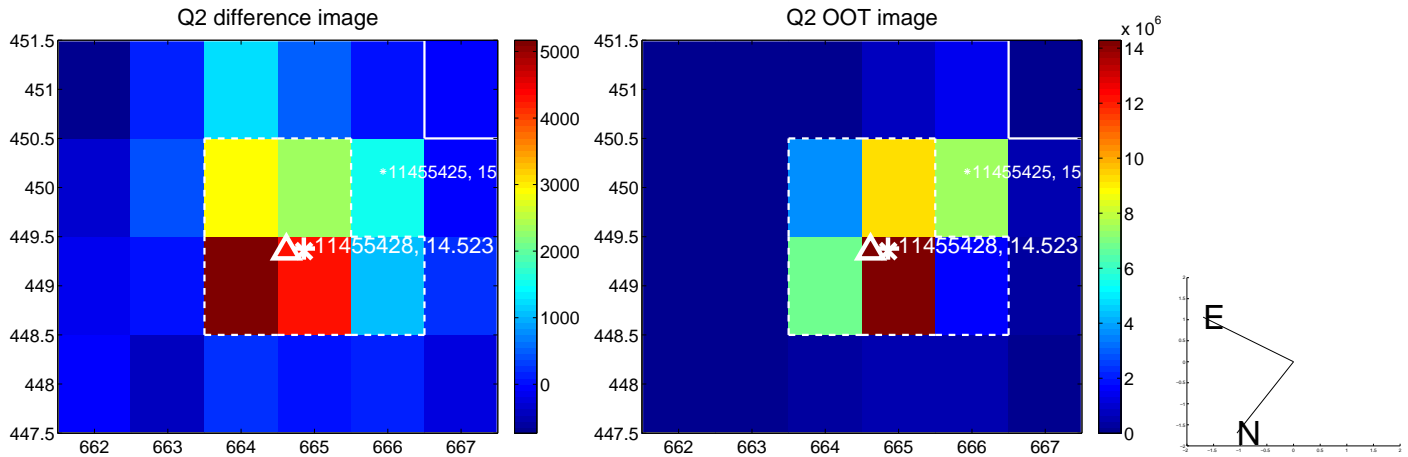
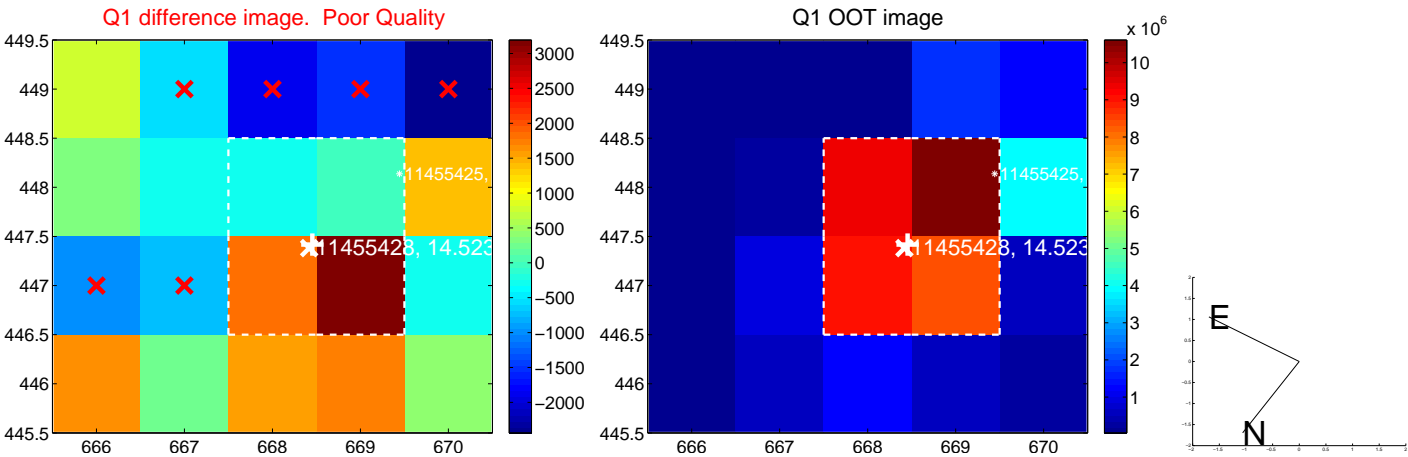
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>0.567 <math>\pm</math> 0.188</b>	<b>3.01</b>	0.293 $\pm$ 0.111	0.485 $\pm$ 0.211
PRF-fit source offset from KIC position	0.292 $\pm$ 0.195	1.50	0.062 $\pm$ 0.105	0.285 $\pm$ 0.198
photometric centroid source offset	0.79 $\pm$ 0.49	1.62	0.61 $\pm$ 0.44	-0.50 $\pm$ 0.55



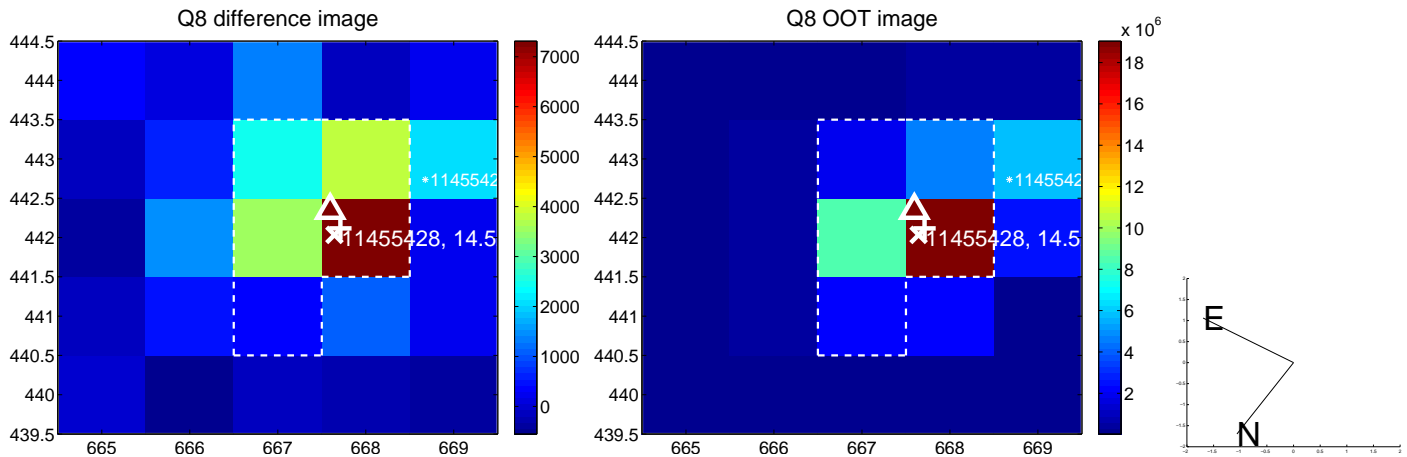
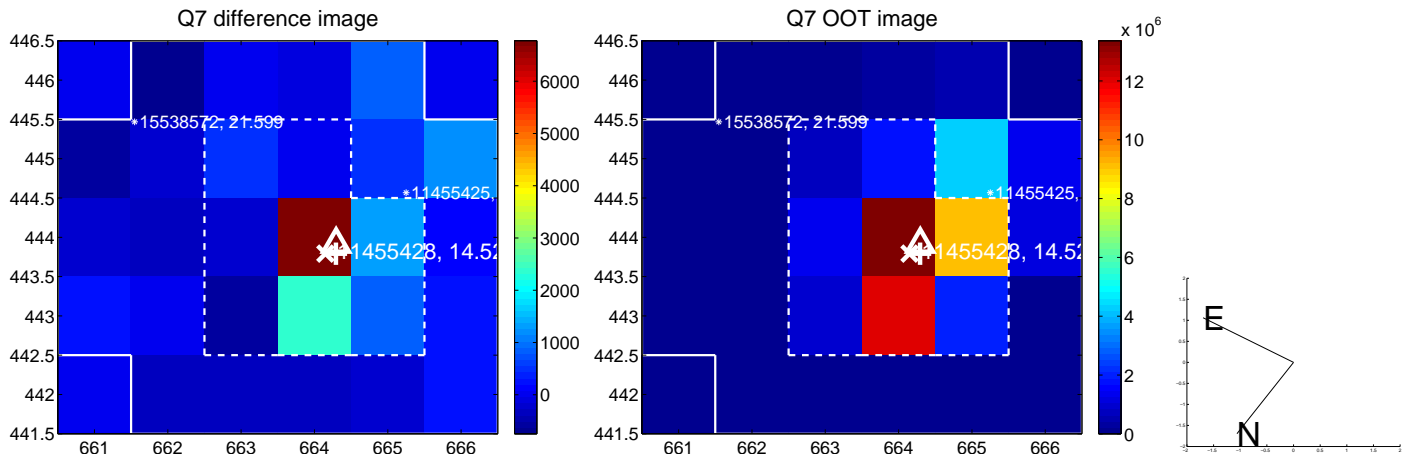
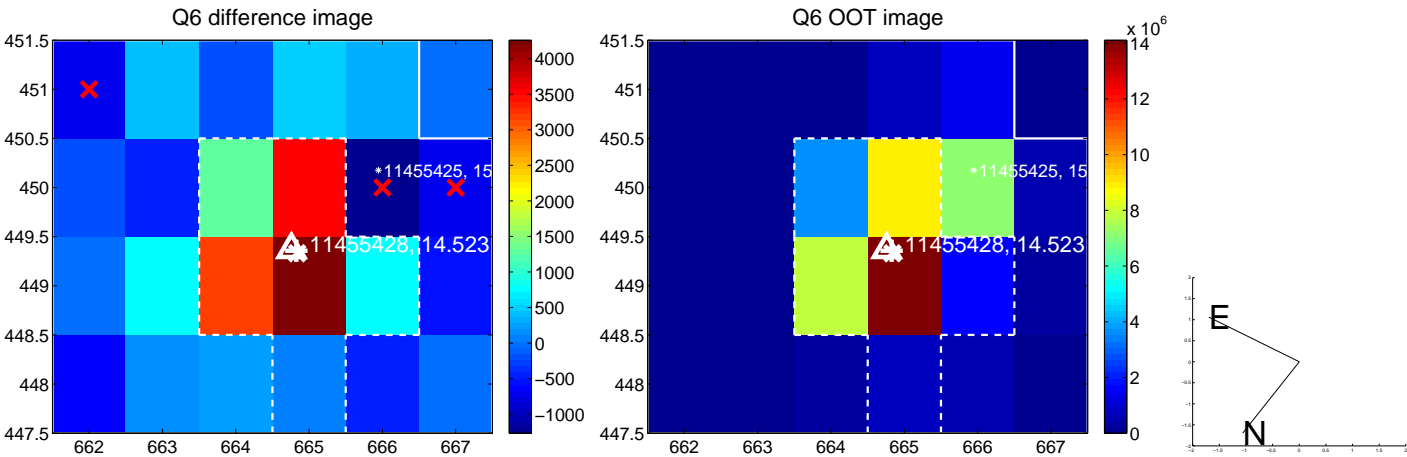
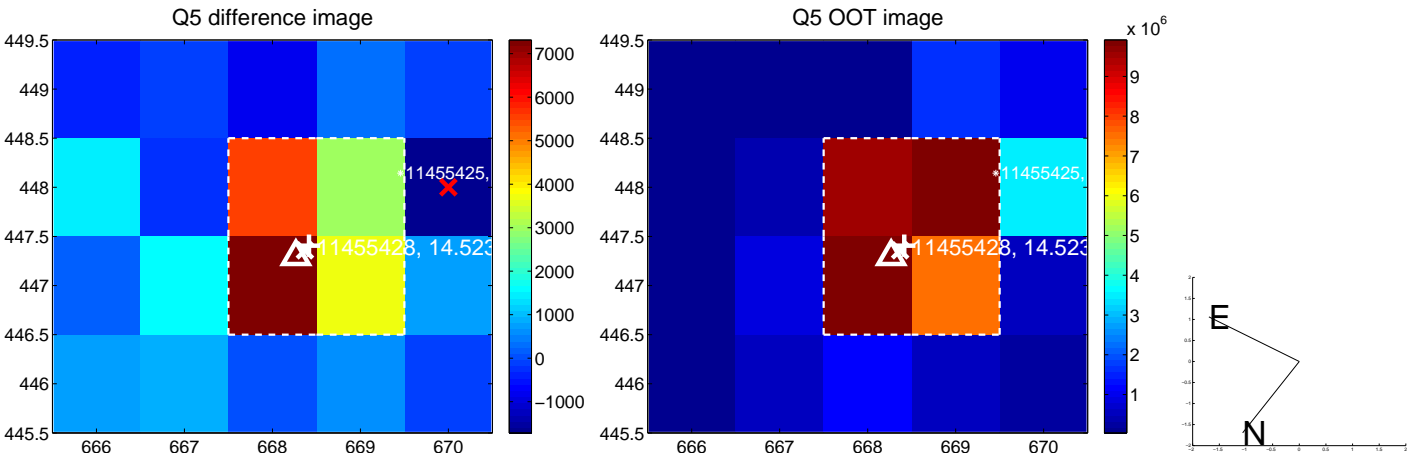
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



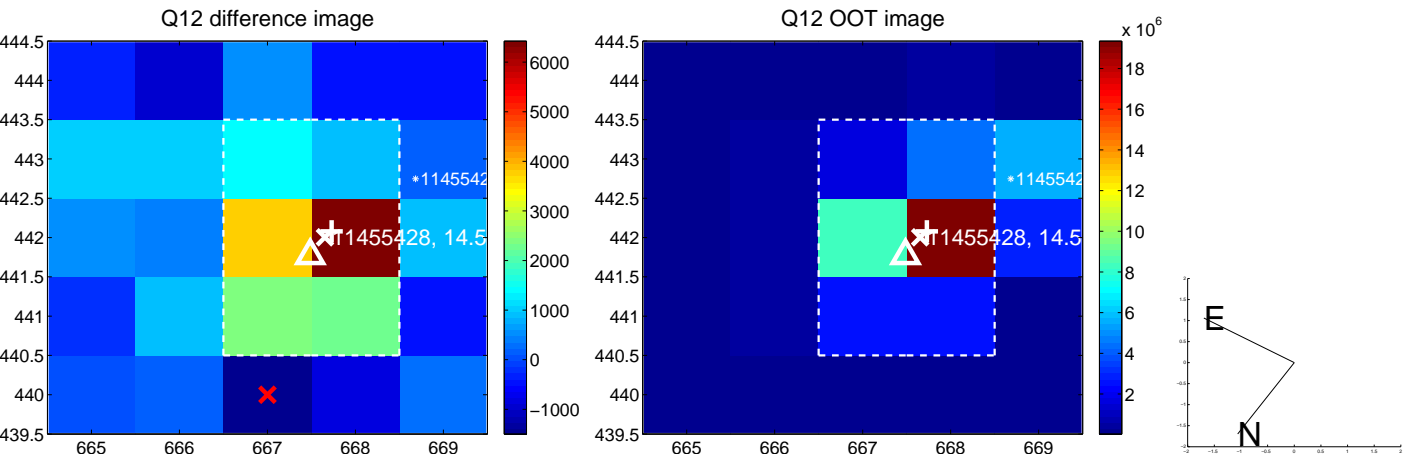
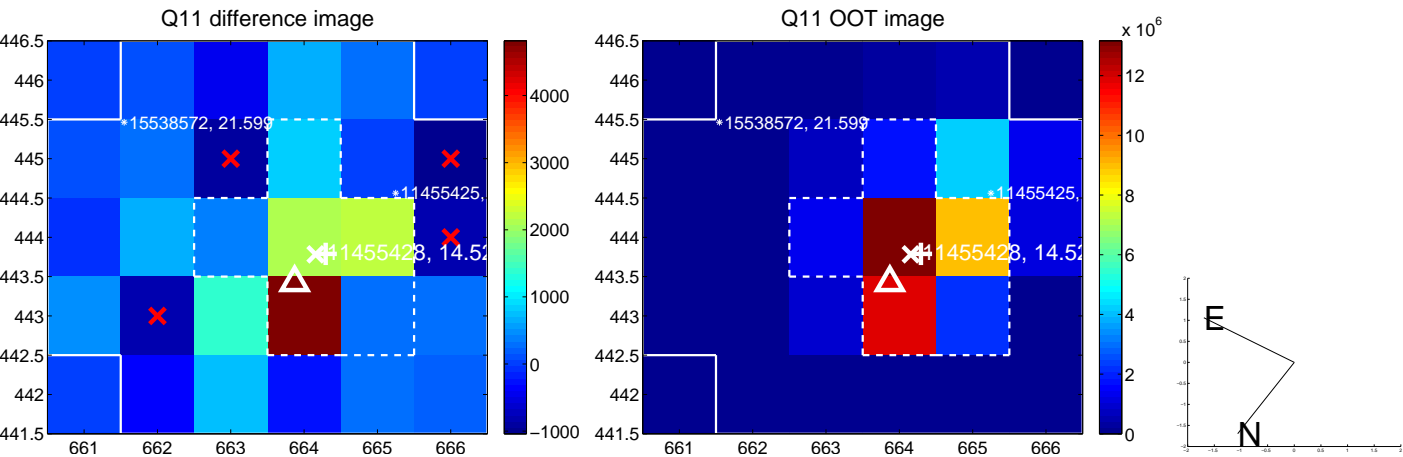
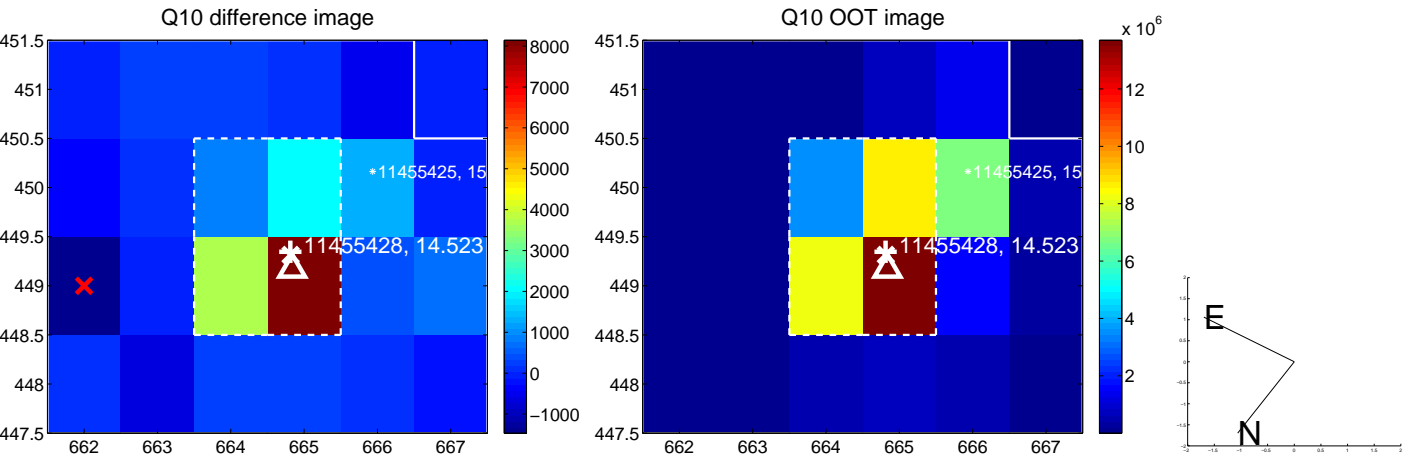
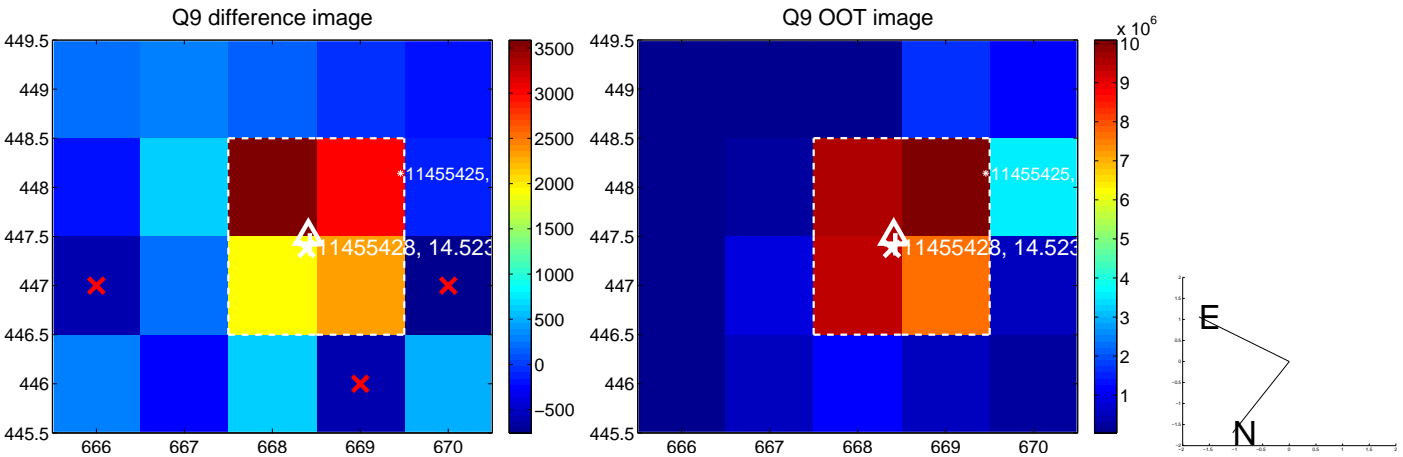
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



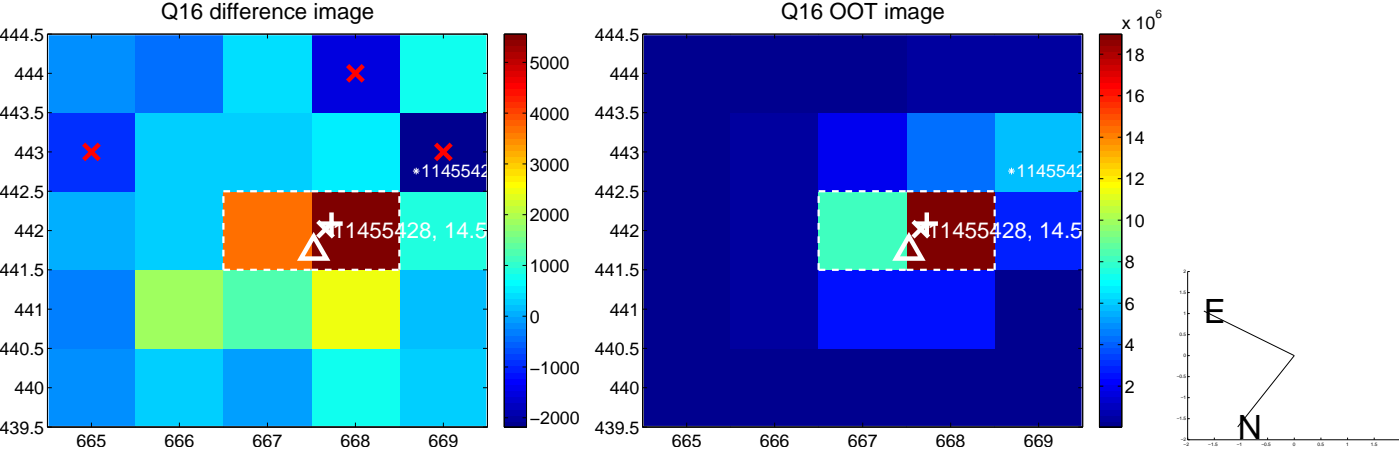
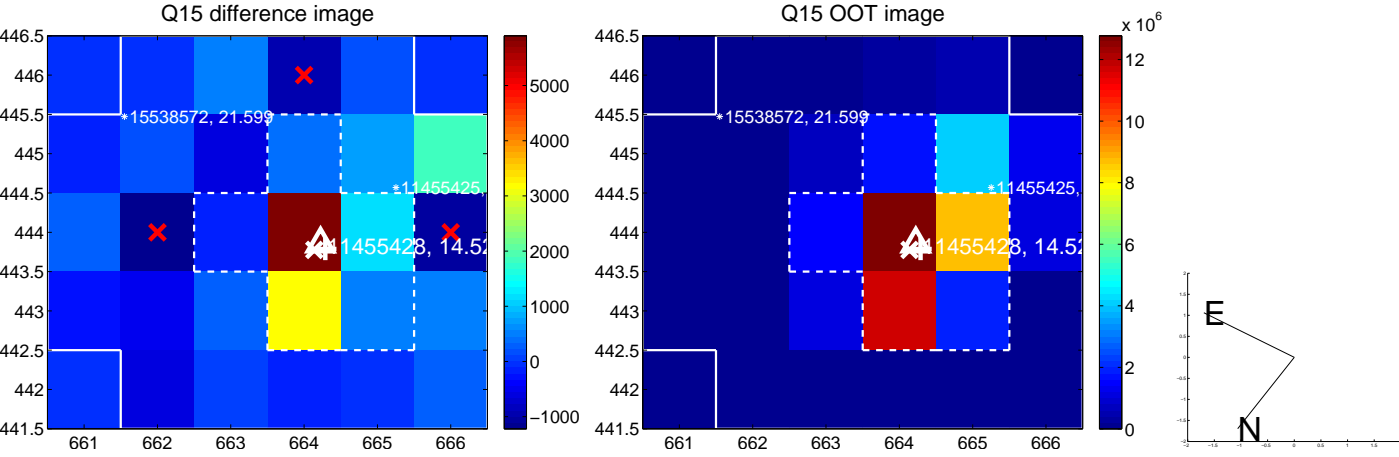
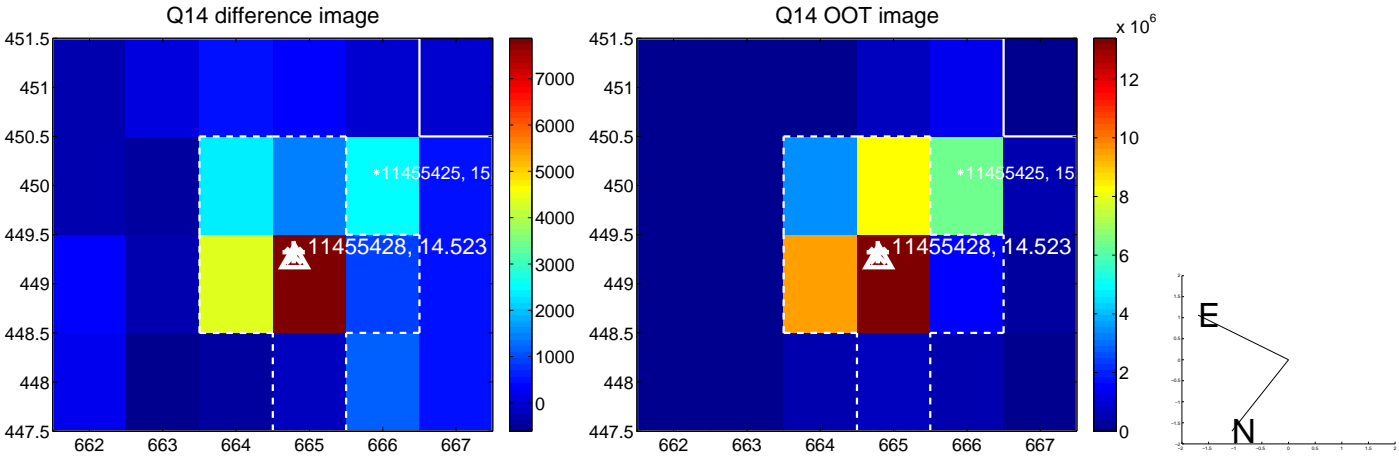
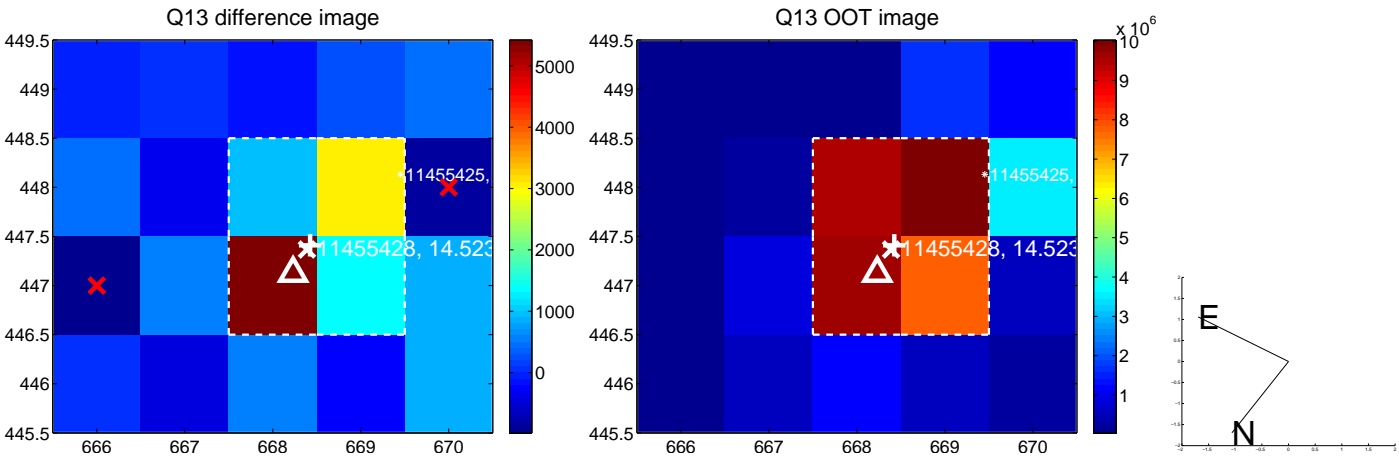
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



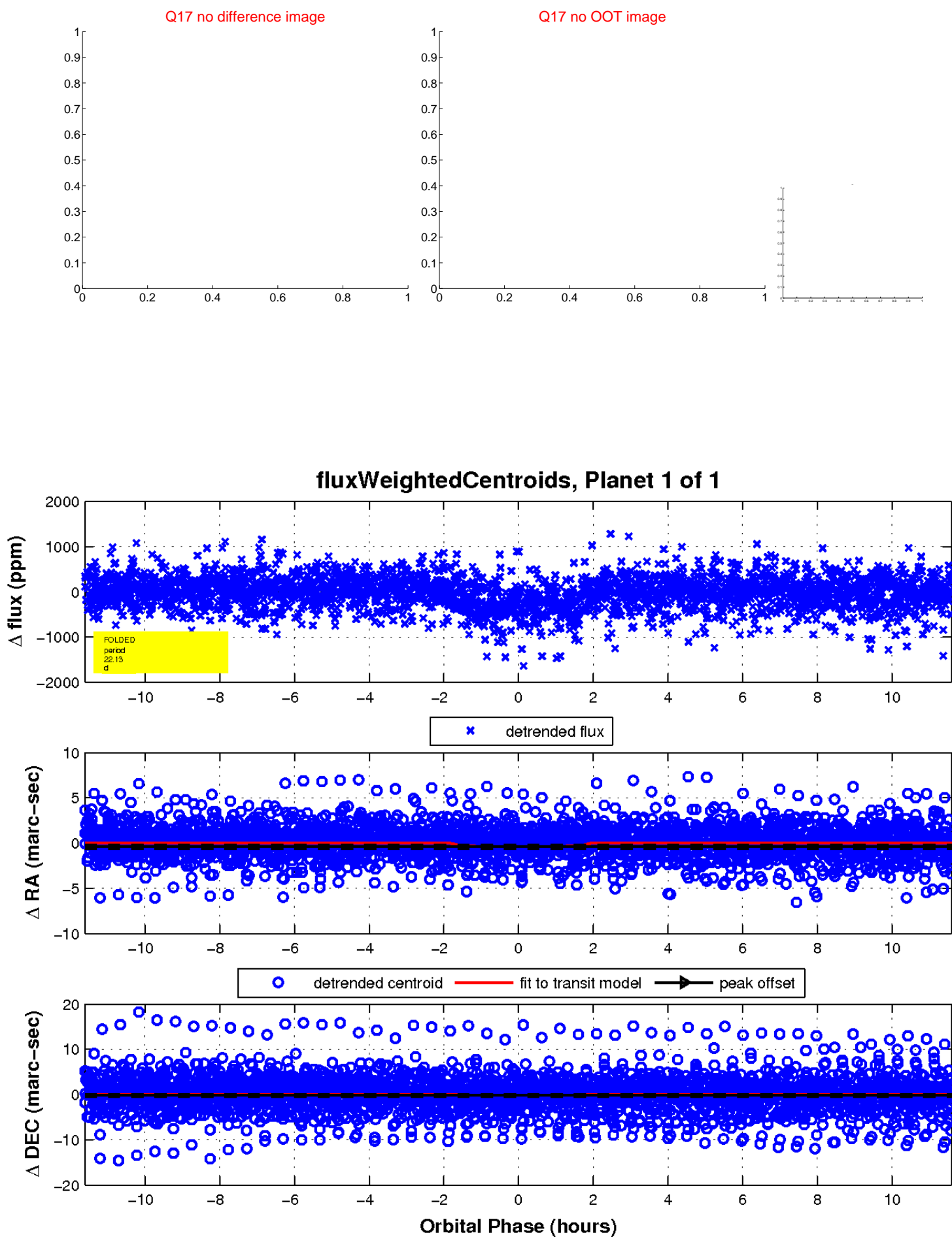
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

