

# KIC 007286911

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007286911-01	OBS	2180.01	11.555629	138.196462	438.3	1.627	18.9	22.0	0.85	5420	1.78	57.91

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007286911-01	OBS	PC	0.99	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.

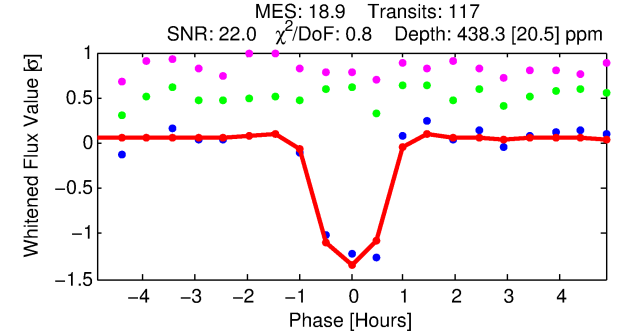
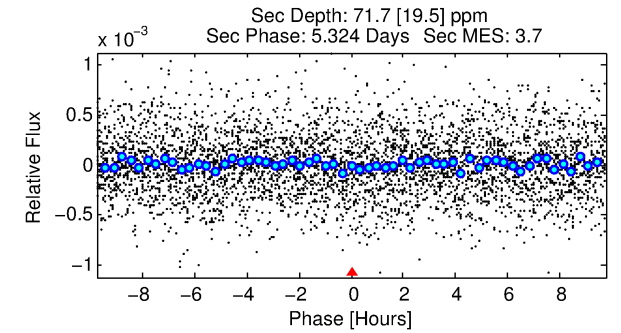
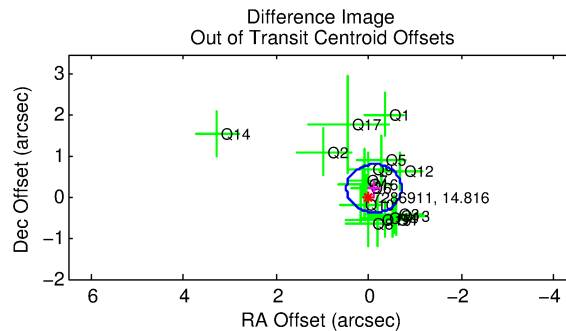
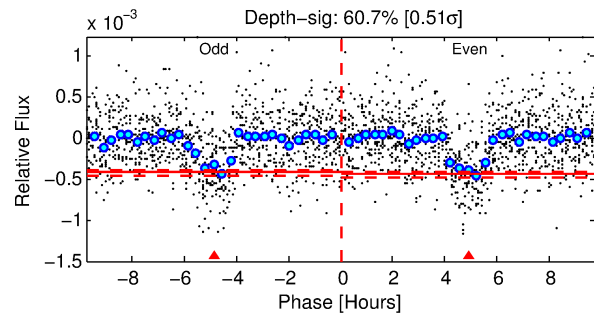
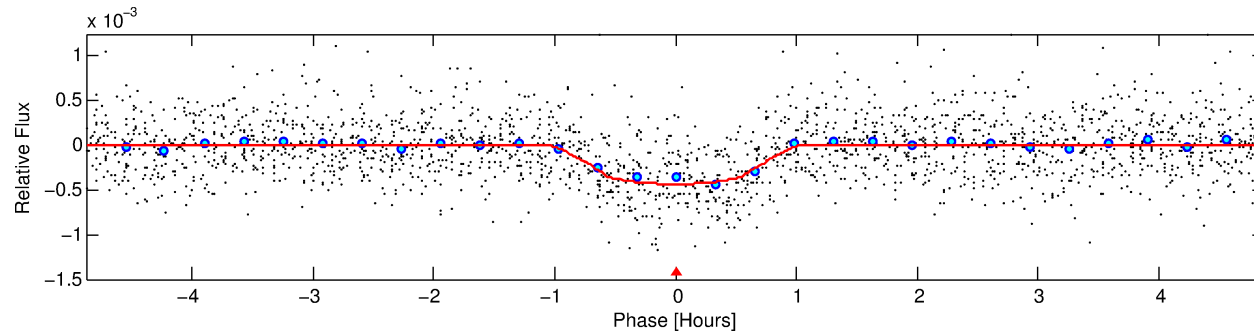
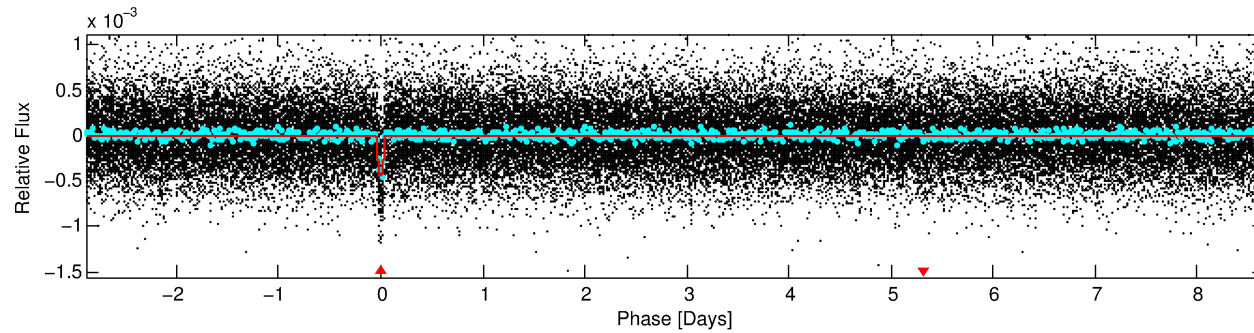
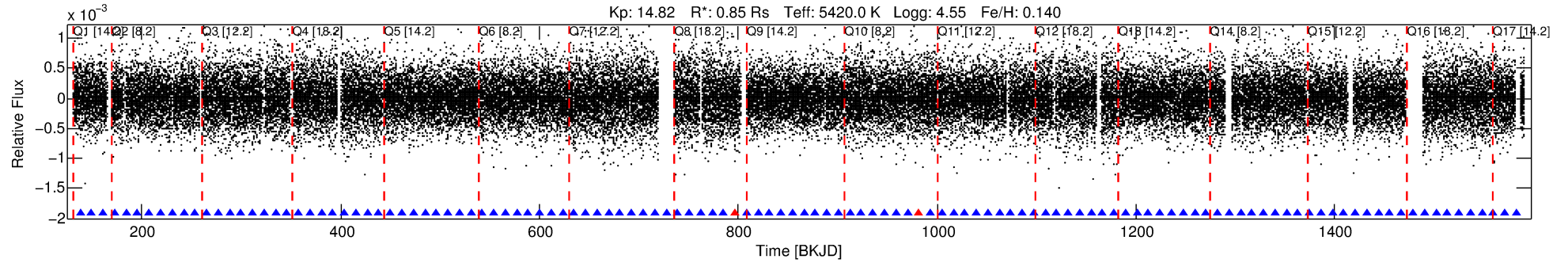
## Ephemeris Match Information For 007286911-01

No Significant Match Found

# DV One-Page Summary

KIC: 7286911 Candidate: 1 of 1 Period: 11.556 d

KOI: K02180.01 Corr: 0.987



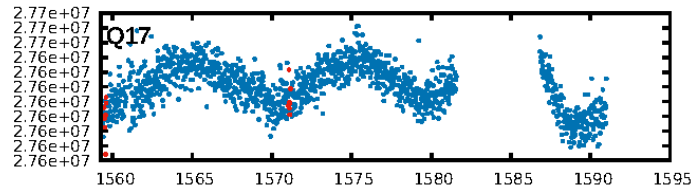
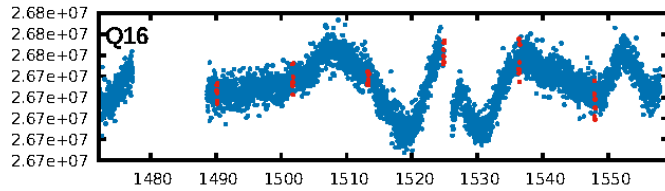
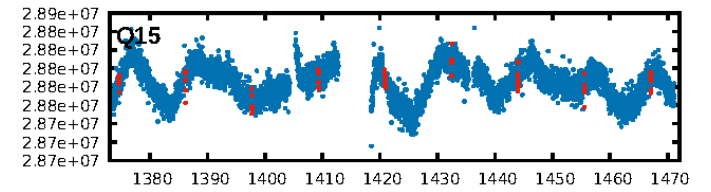
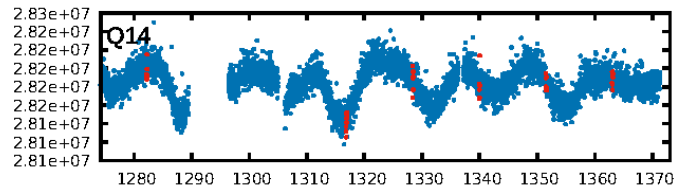
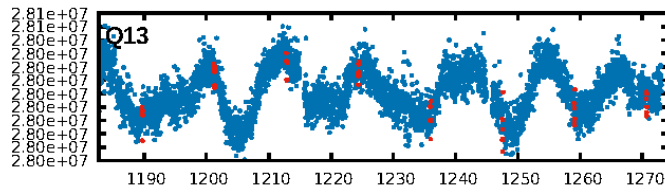
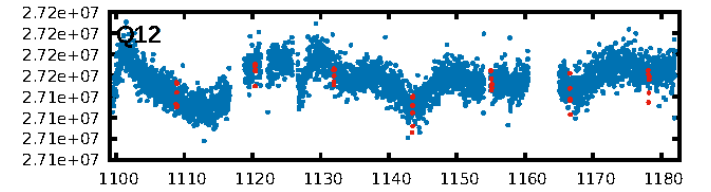
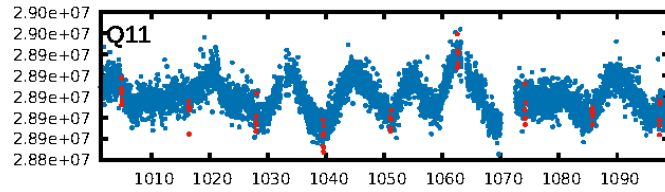
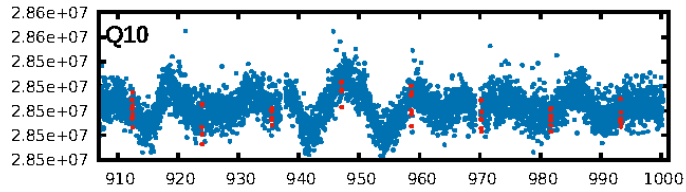
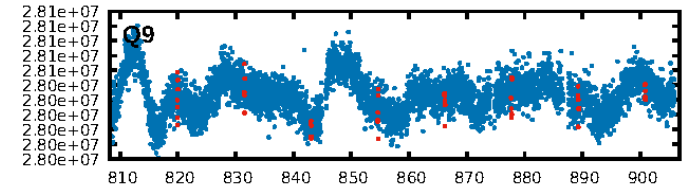
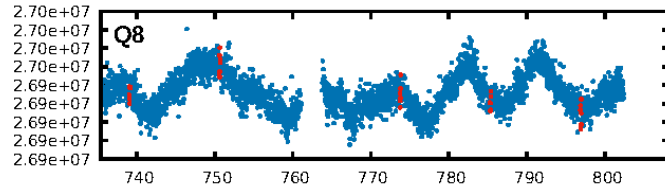
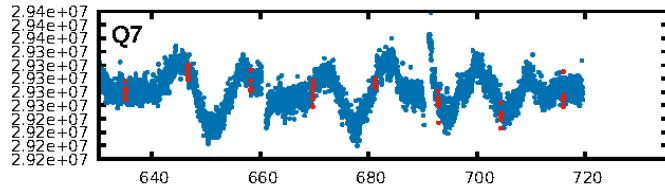
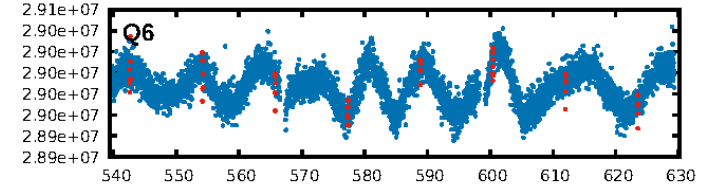
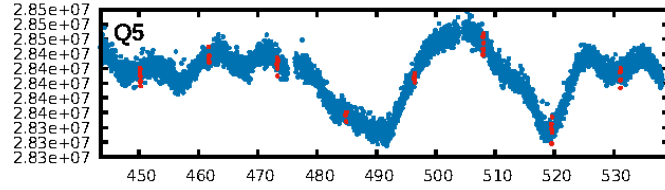
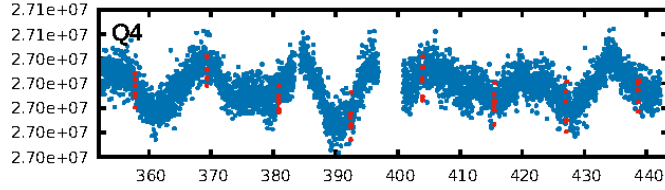
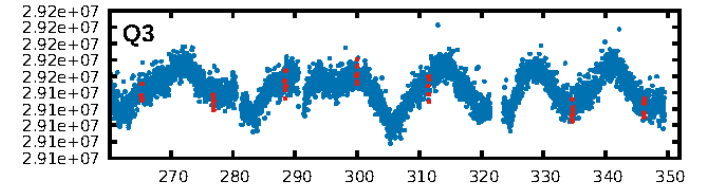
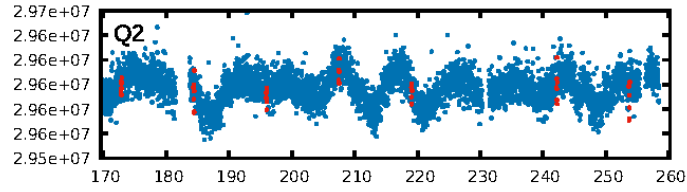
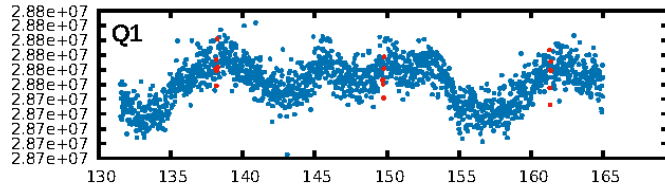
## DV Fit Results:

Period = 11.55563 [0.00003] d  
Epoch = 138.1965 [0.0020] BKJD  
Rp/R\* = 0.0192 [0.0104]  
a/R\* = 51.42 [105.58]  
b = 0.38 [4.76]  
Seff = 57.91 [10.36]  
Teff = 703 [31] K  
Rp = 1.78 [0.99] Re  
a = 0.0982 [0.0107] AU  
Ag = 120.00 [135.27] [0.88σ]  
Teffp = 3600 [1004] K [2.88σ]

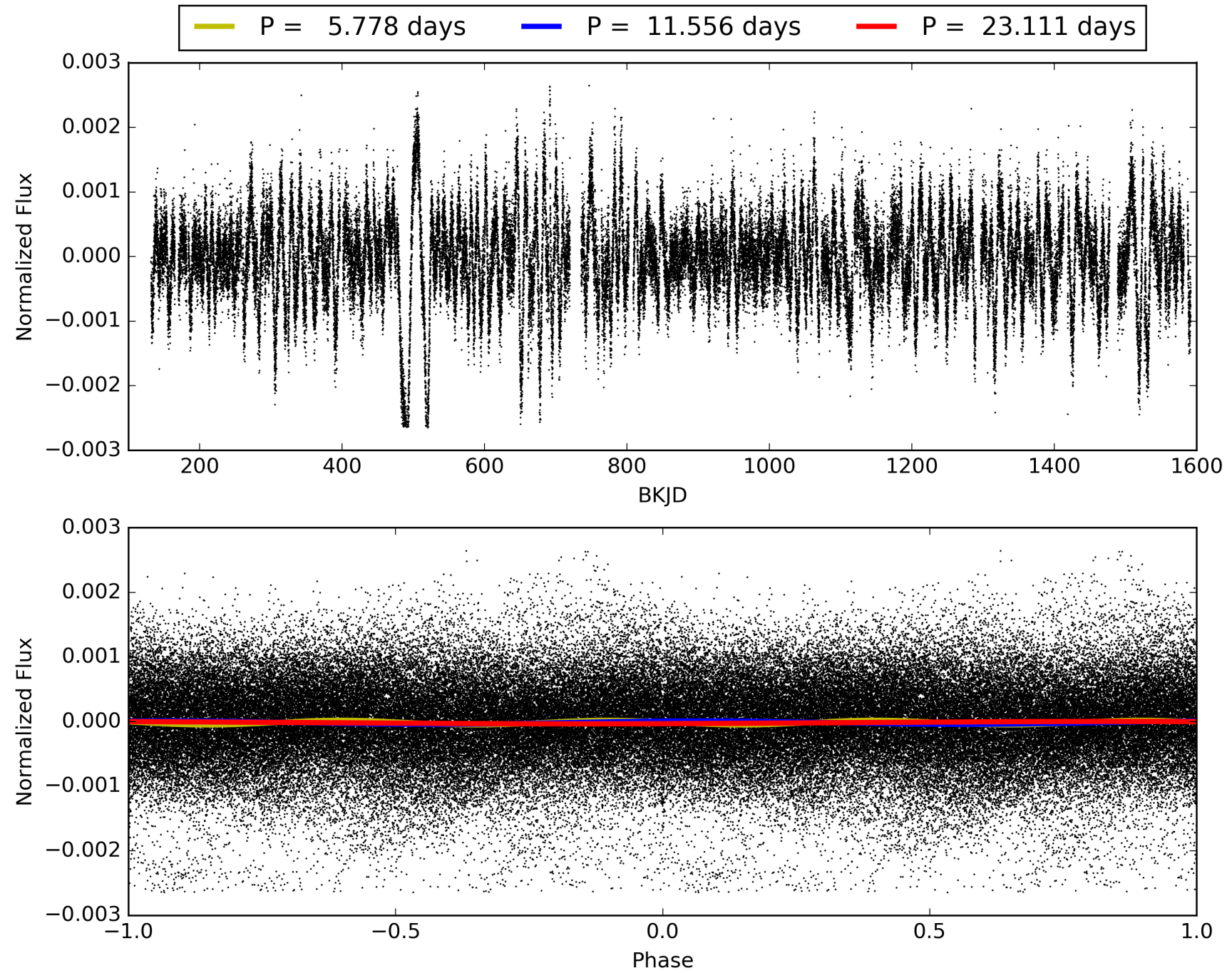
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.51e-77  
RollingBand-fgt: 0.98 [110/112]  
GhostDiagnostic-chr: -6.617  
Centroid-sig: 0.0%  
Centroid-so: 1.453 arcsec [2.62σ]  
OotOffset-rm: 0.243 arcsec [1.24σ]  
KicOffset-rm: 0.336 arcsec [1.63σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007286911-01, PDC Light Curves

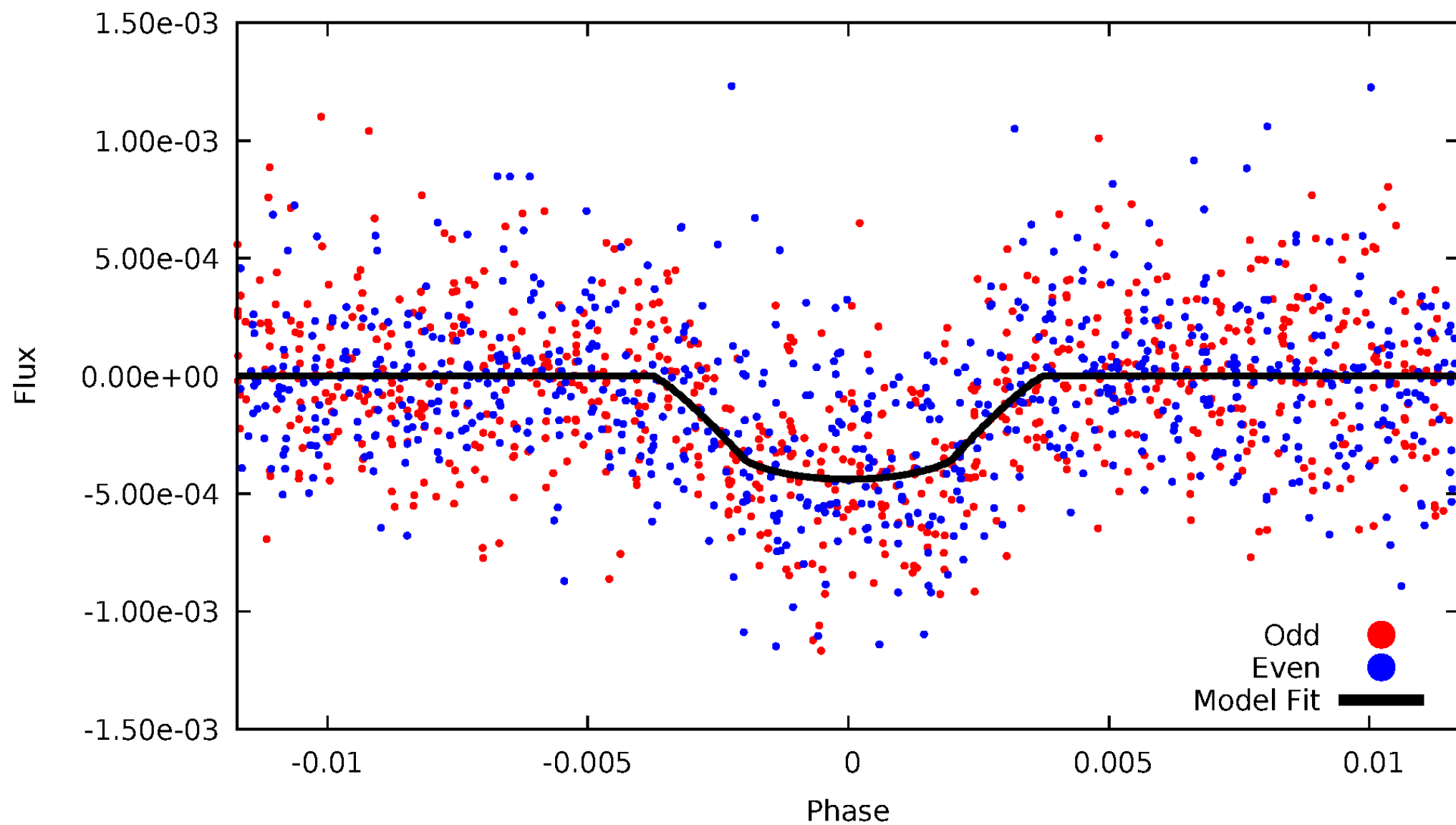


TCE 007286911-01



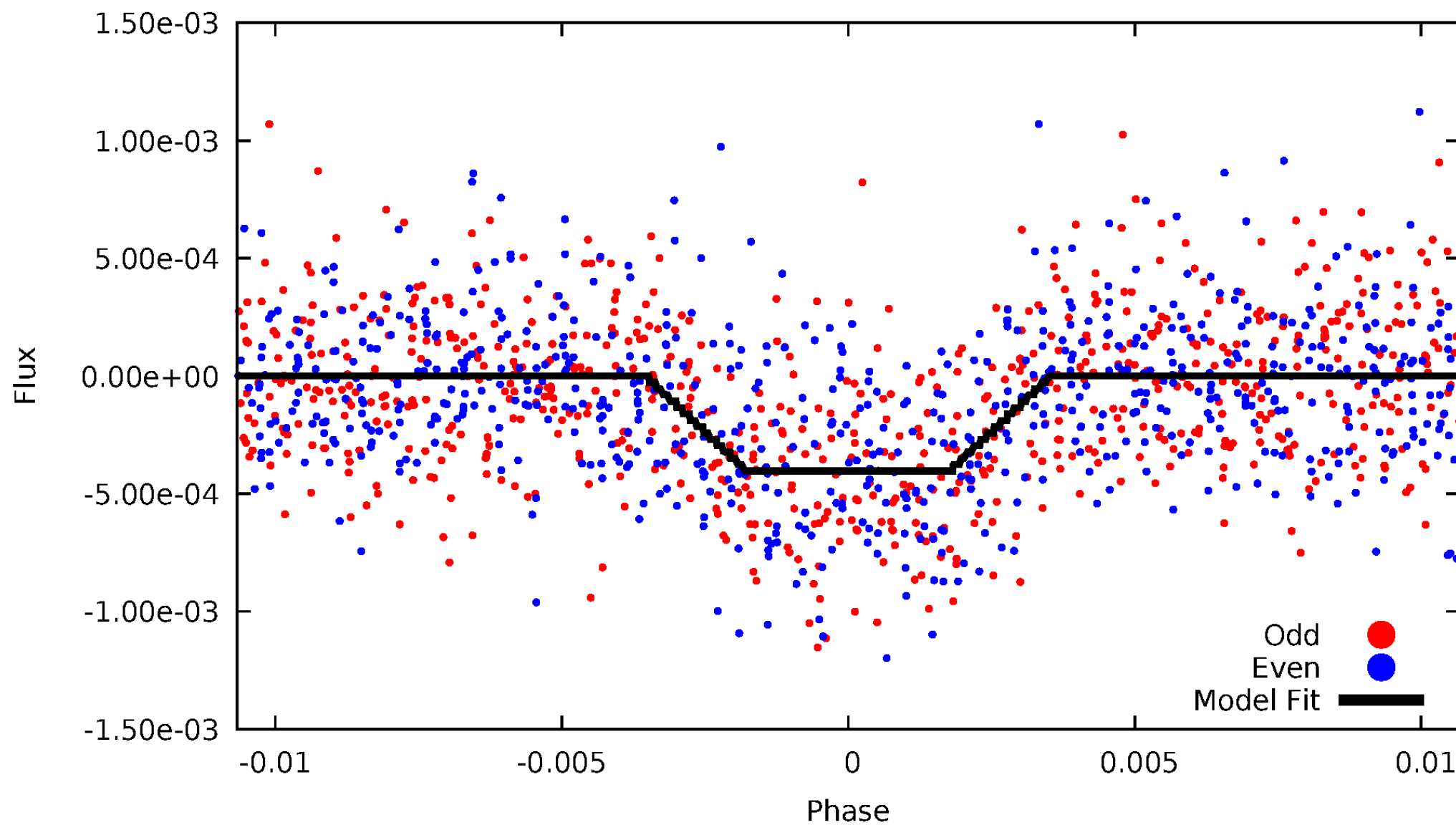
# DV Odd/Even

TCE 007286911-01



# ALT Odd/Even

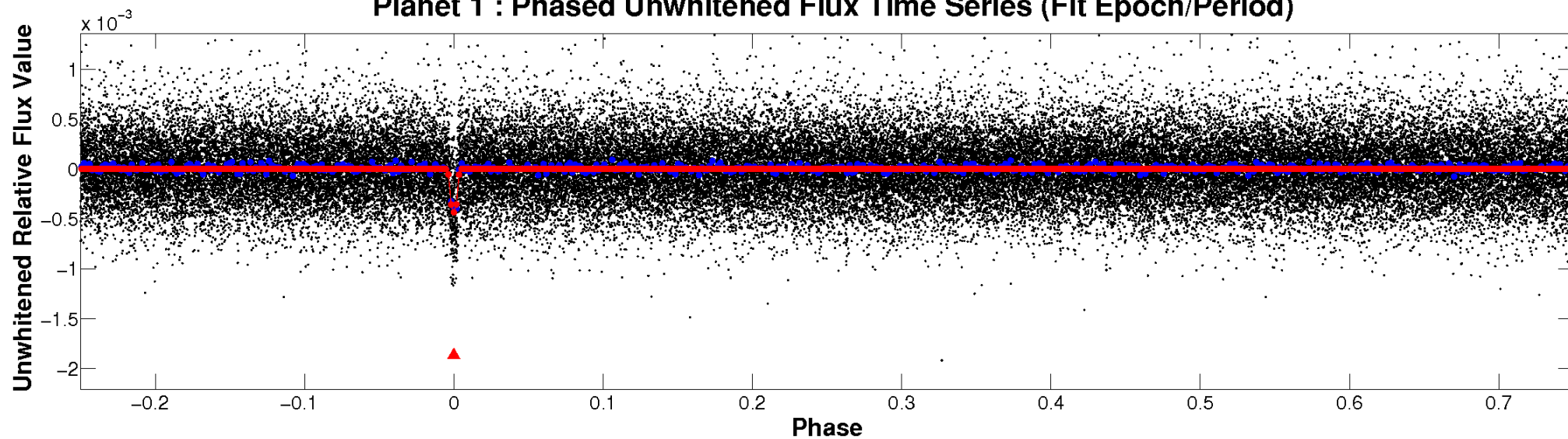
TCE 007286911-01



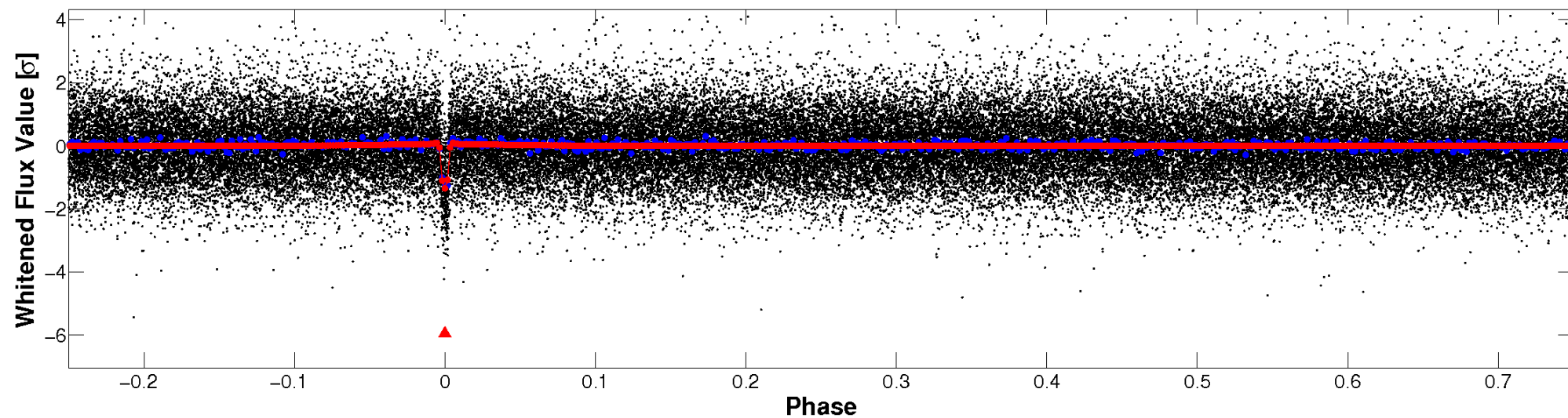


# Non-Whitened Vs. Whitened Light Curve

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

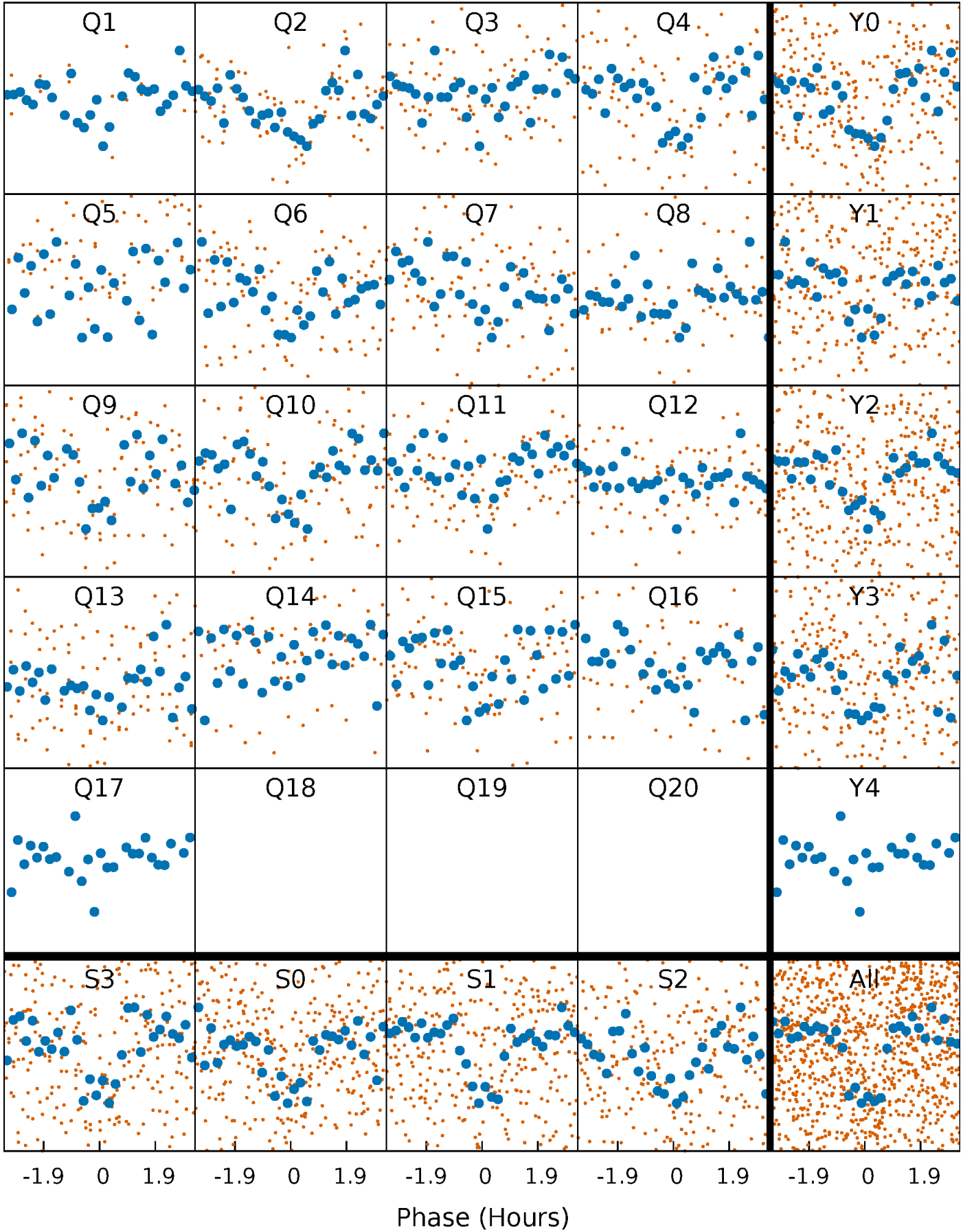


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

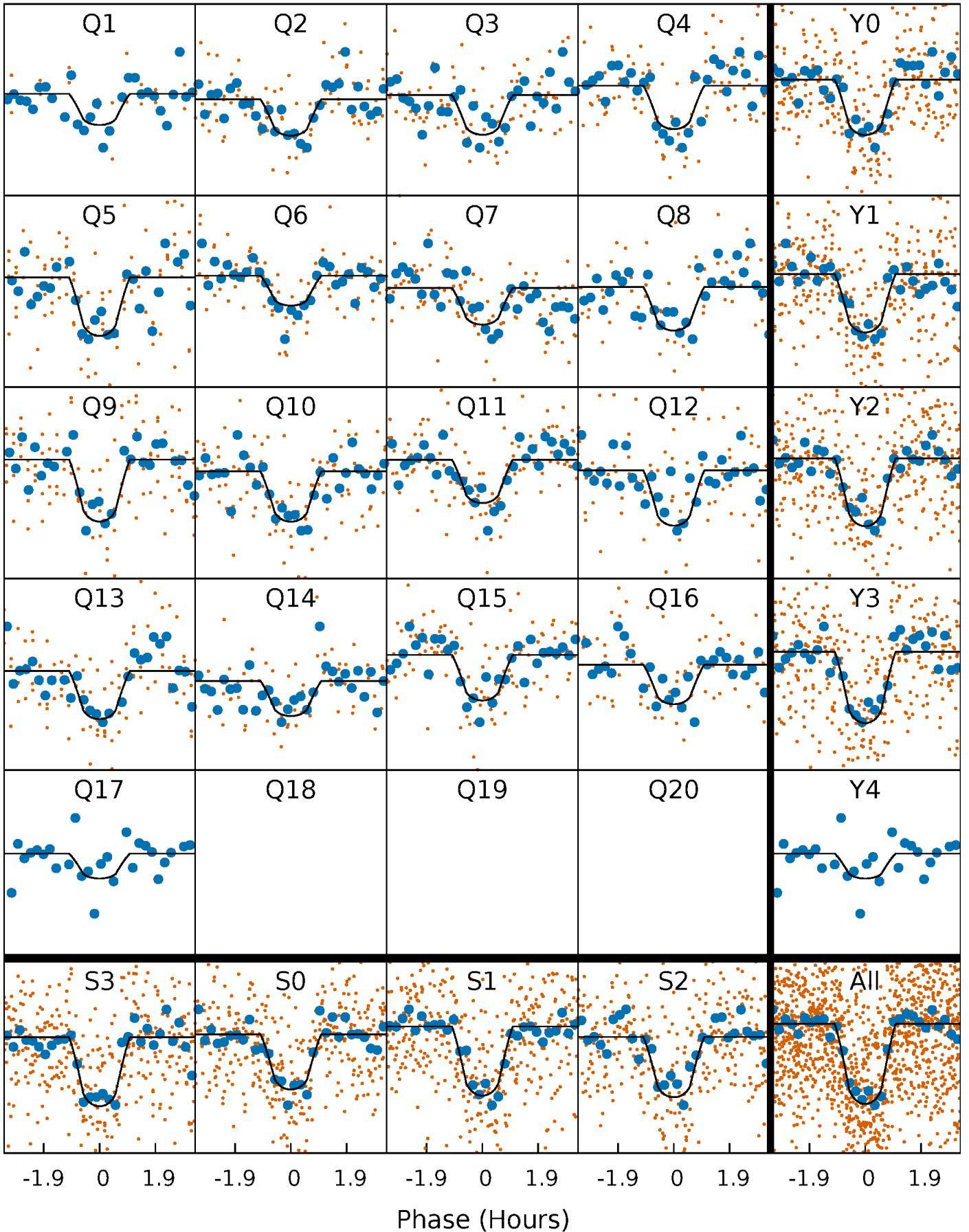
TCE 007286911-01 P= 11.555629 Days  $T_0=138.196462$  (BKJD)





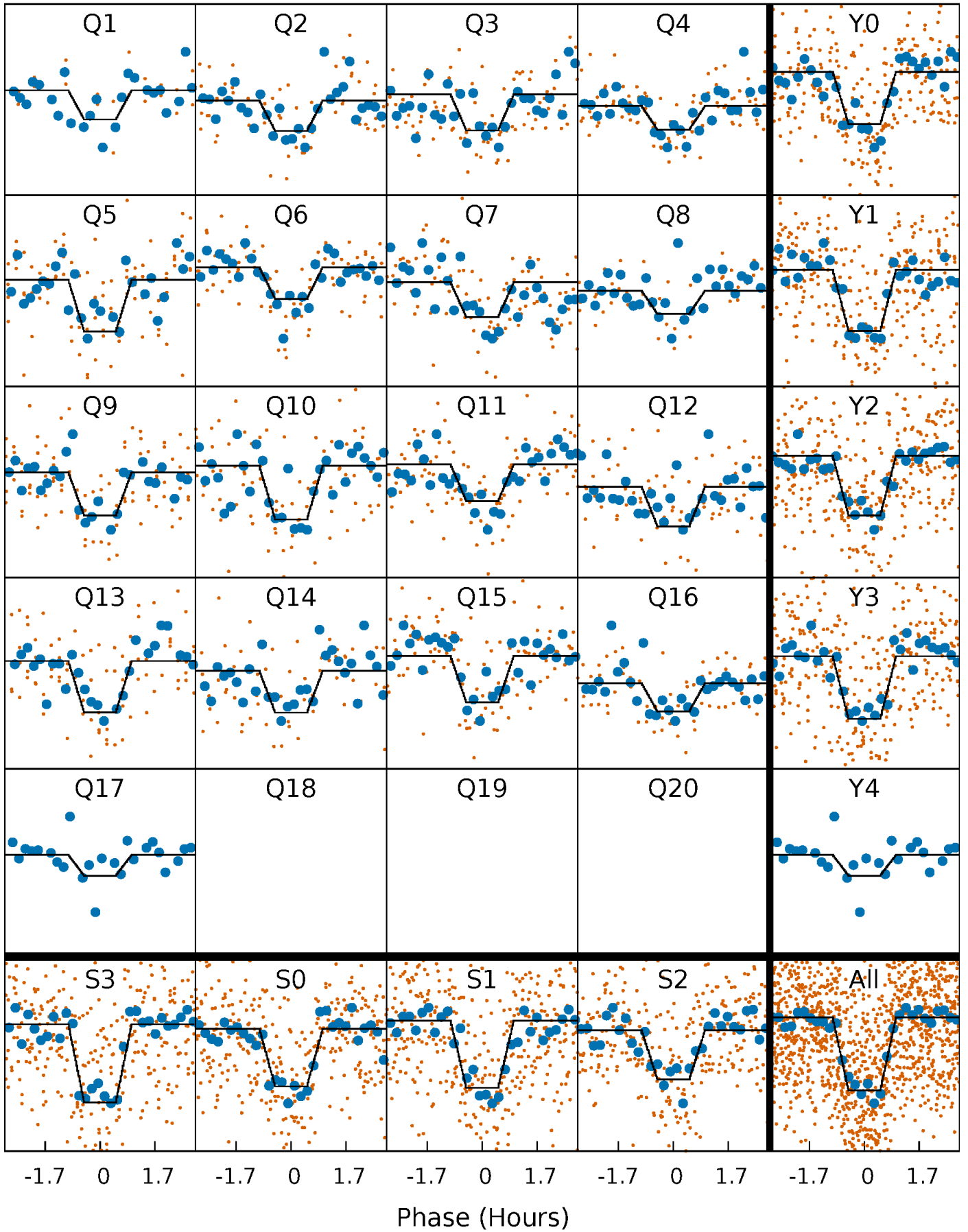
# DV Quarter-Phased Transit Curves

TCE 007286911-01 P= 11.555629 Days  $T_0=138.196462$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

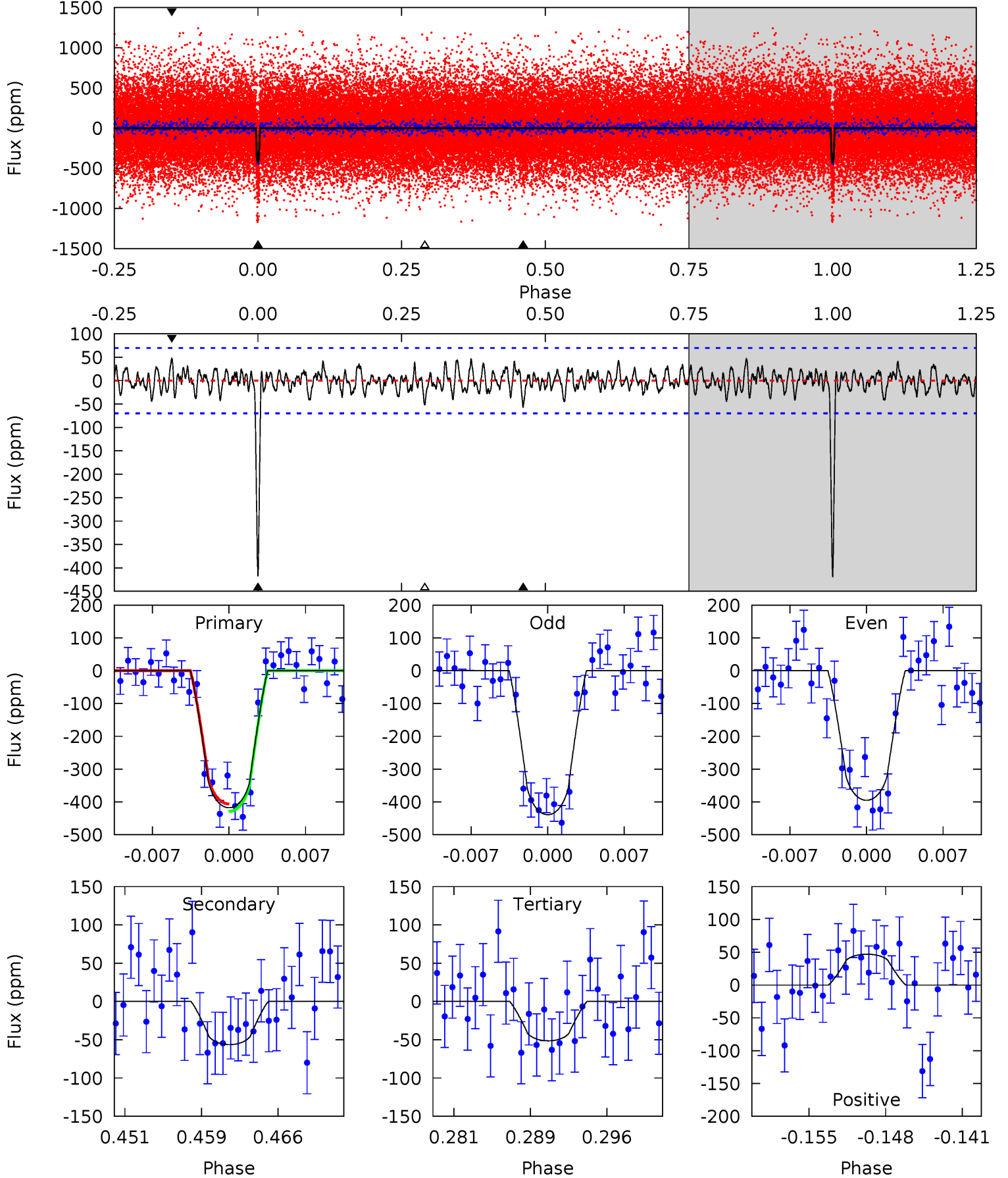
TCE 007286911-01 P= 11.555604 Days  $T_0=138.197545$  (BKJD)



# DV Model-Shift Uniqueness Test

007286911-01,  $P = 11.555629$  Days,  $E = 126.640833$  Days

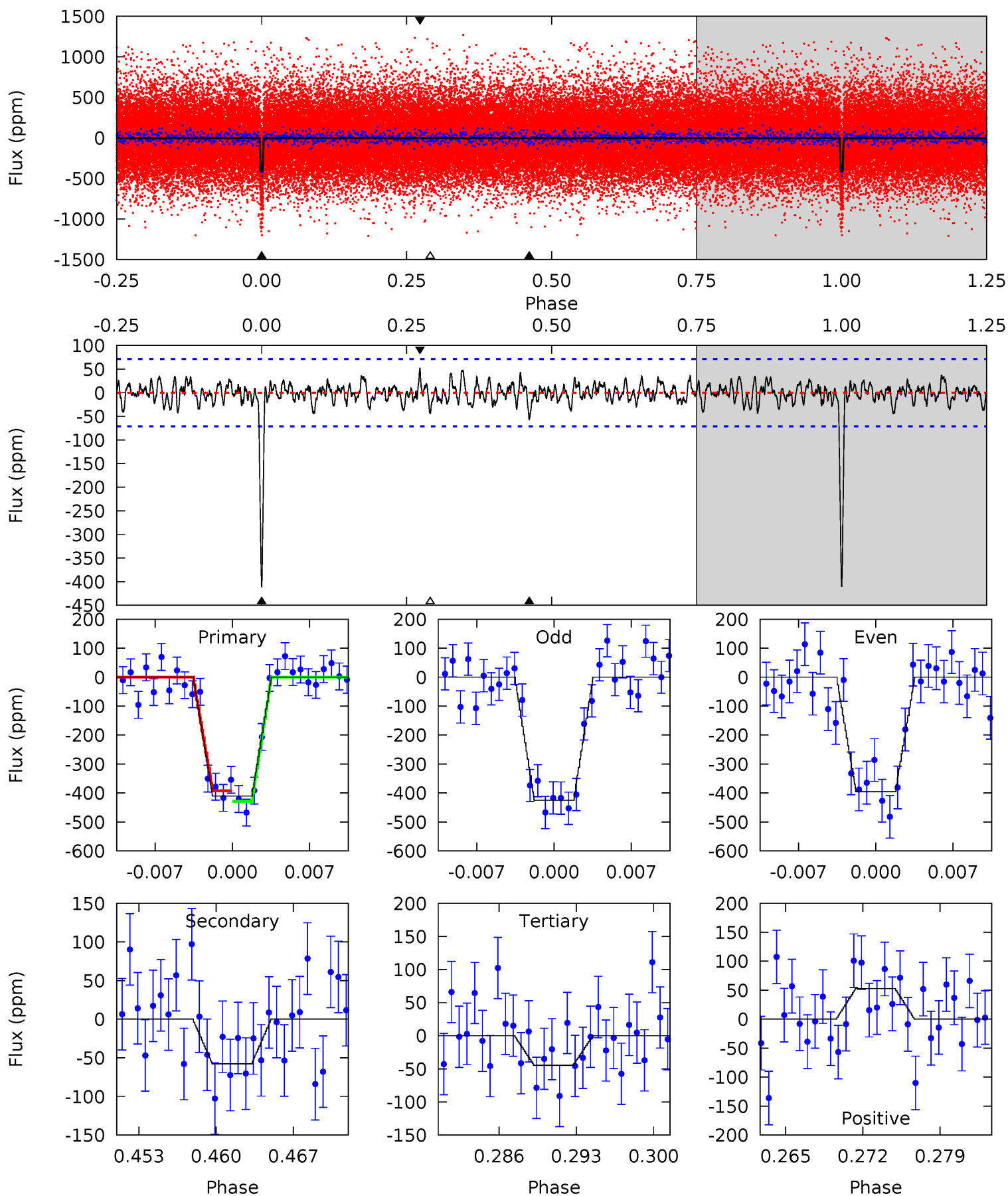
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.5	4.11	3.75	3.43	5.08	2.68	1.25	26.7	27.0	0.36	0.69	1.60	0.96	0.10	0.82



# Alt Model-Shift Uniqueness Test

007286911-01, P = 11.555604 Days, E = 126.641941 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
29.4	4.14	3.19	3.77	5.10	2.70	1.16	26.2	25.6	0.95	0.36	1.05	1.01	0.11	1.29



### Stellar Parameters For KIC 007286911

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5420^{+73}_{-81}$	$4.555^{+0.019}_{-0.097}$	$0.140^{+0.150}_{-0.150}$	$0.850^{+0.101}_{-0.034}$	$0.945^{+0.034}_{-0.062}$	$2.169^{+0.189}_{-0.650}$
	+1%/-1%	+0%/-2%	+107%/-107%	+12%/-4%	+4%/-7%	+9%/-30%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 007286911-01 / KOI 2180.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-56 \pm 14$	$1.83^{+0.92}_{-0.92}$	$993^{+30}_{-21}$	$3769^{+1068}_{-535}$	$88^{+255}_{-53}$
Alt.	$-58 \pm 14$	$1.94^{+0.95}_{-1.00}$	$994^{+30}_{-23}$	$3679^{+1144}_{-444}$	$79^{+258}_{-46}$

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



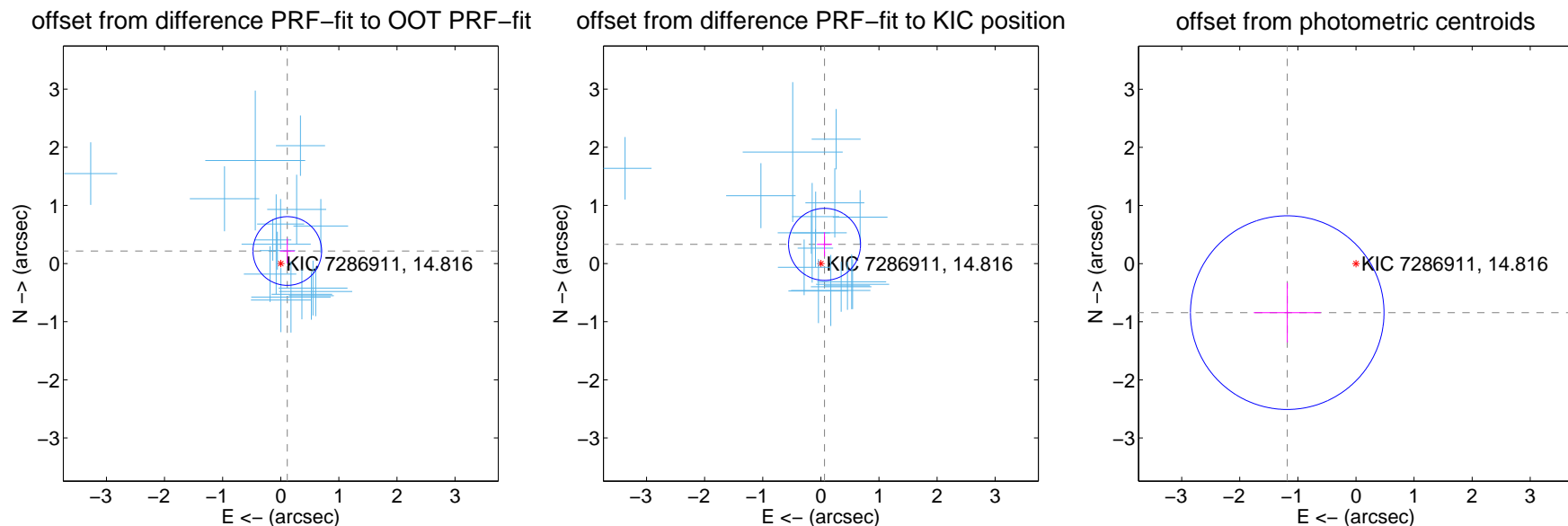
## DV Centroid Data

Supplemental centroid analysis for 007286911-01. Kepler magnitude: 14.82. Transit SNR 22.03

There are 17 quarters with good PRF difference image offsets

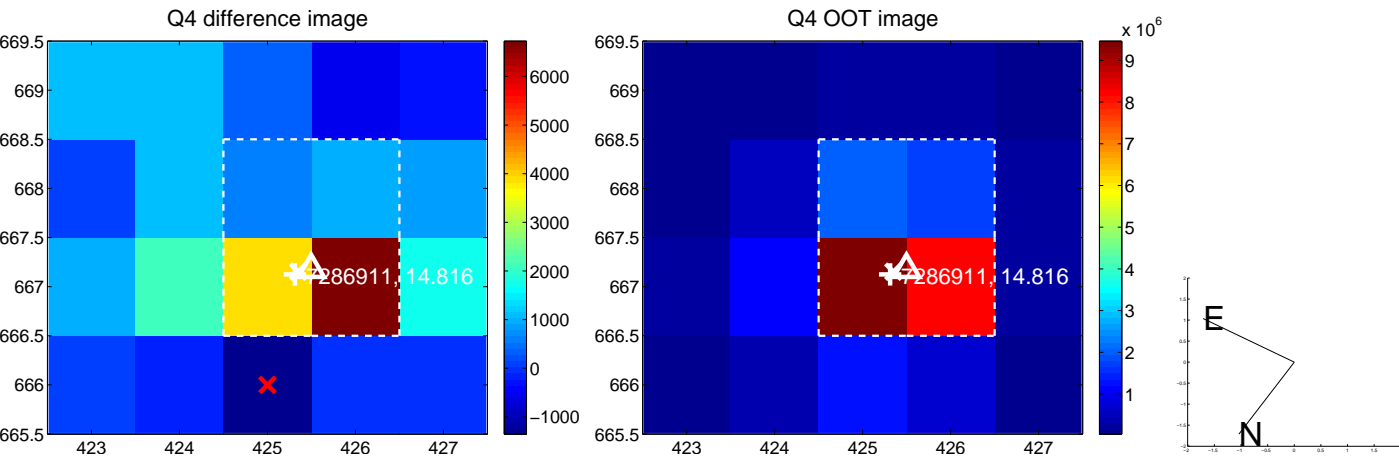
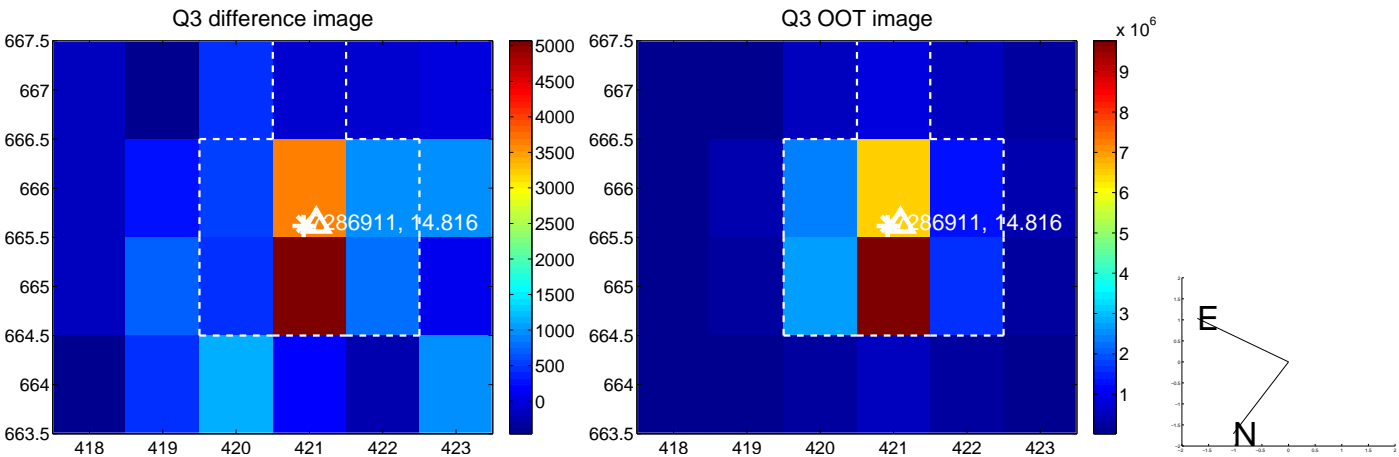
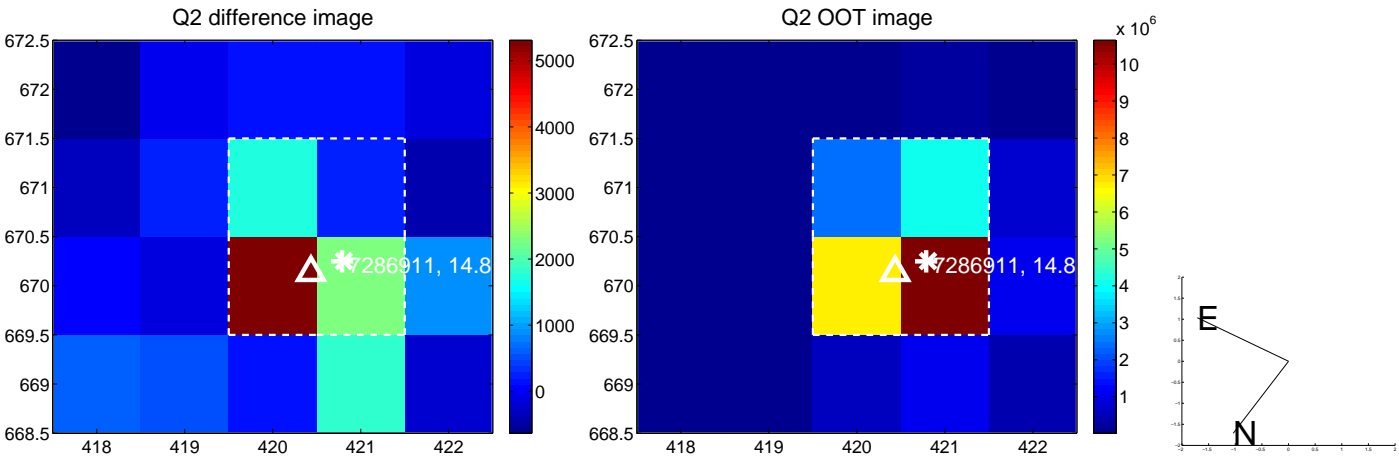
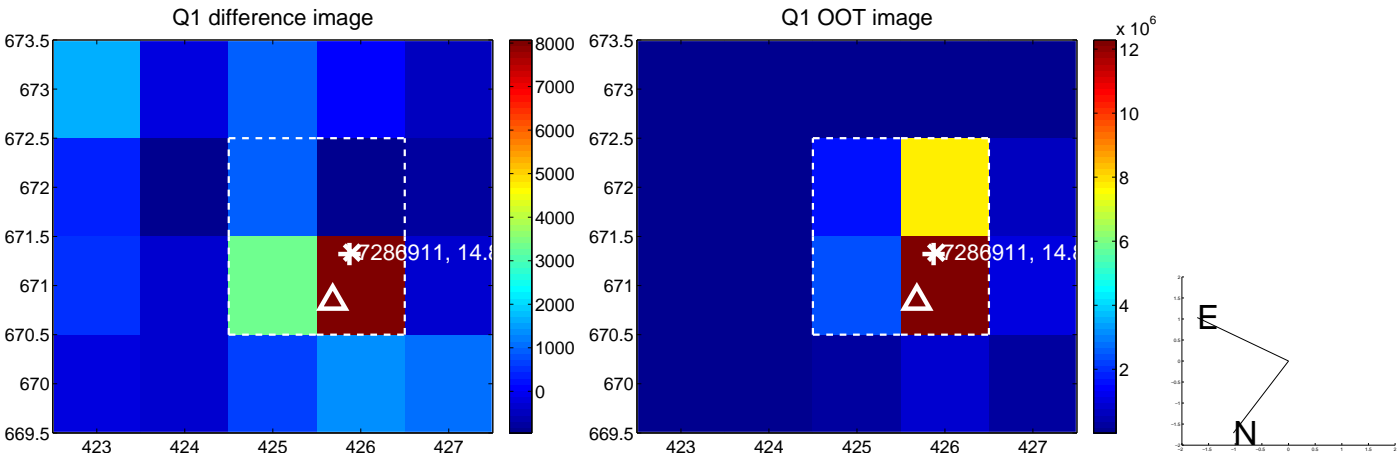
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.243 \pm 0.197$	1.24	$-0.113 \pm 0.127$	$0.216 \pm 0.212$
PRF-fit source offset from KIC position	$0.336 \pm 0.207$	1.63	$-0.064 \pm 0.129$	$0.330 \pm 0.209$
photometric centroid source offset	$1.45 \pm 0.56$	2.62	$1.18 \pm 0.58$	$-0.84 \pm 0.51$

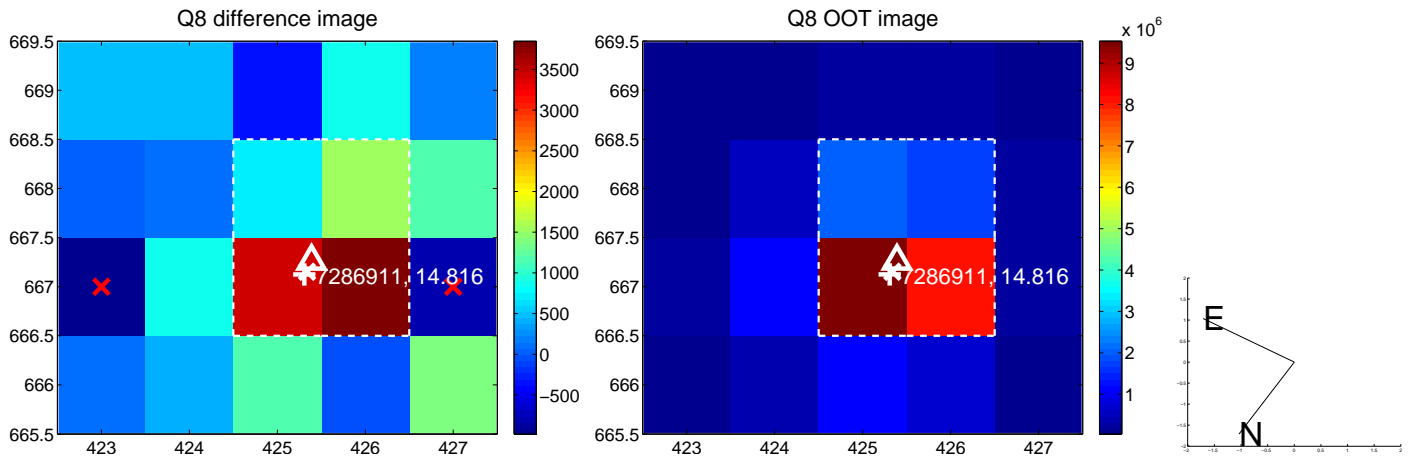
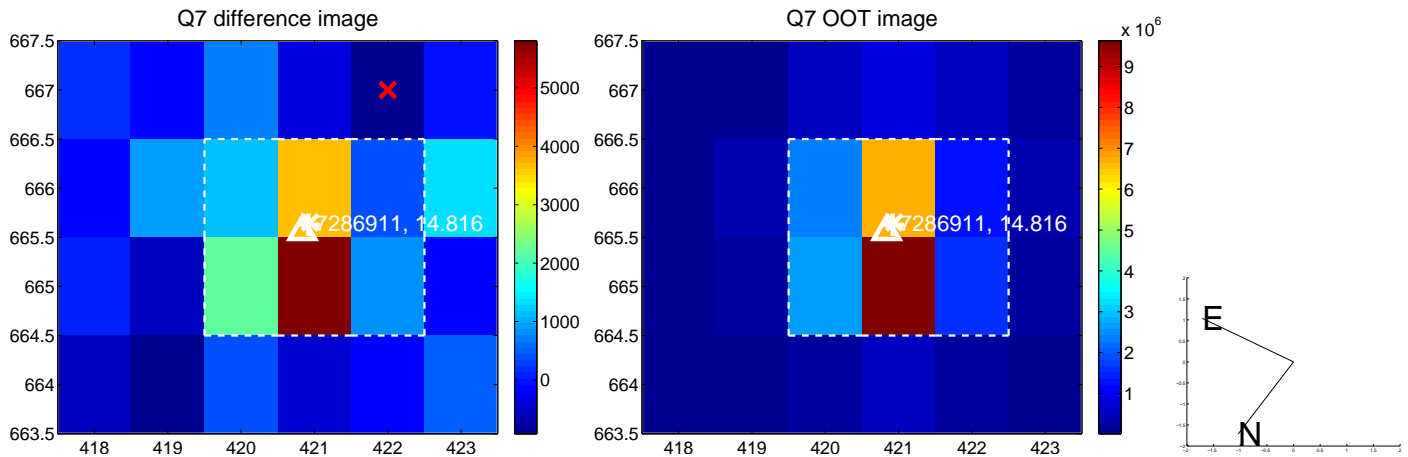
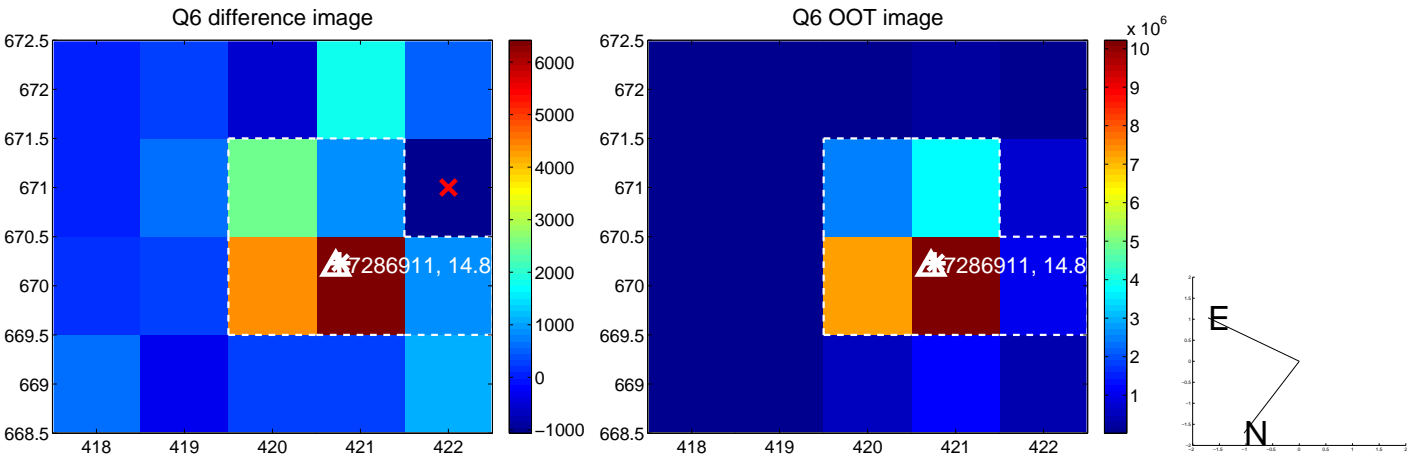
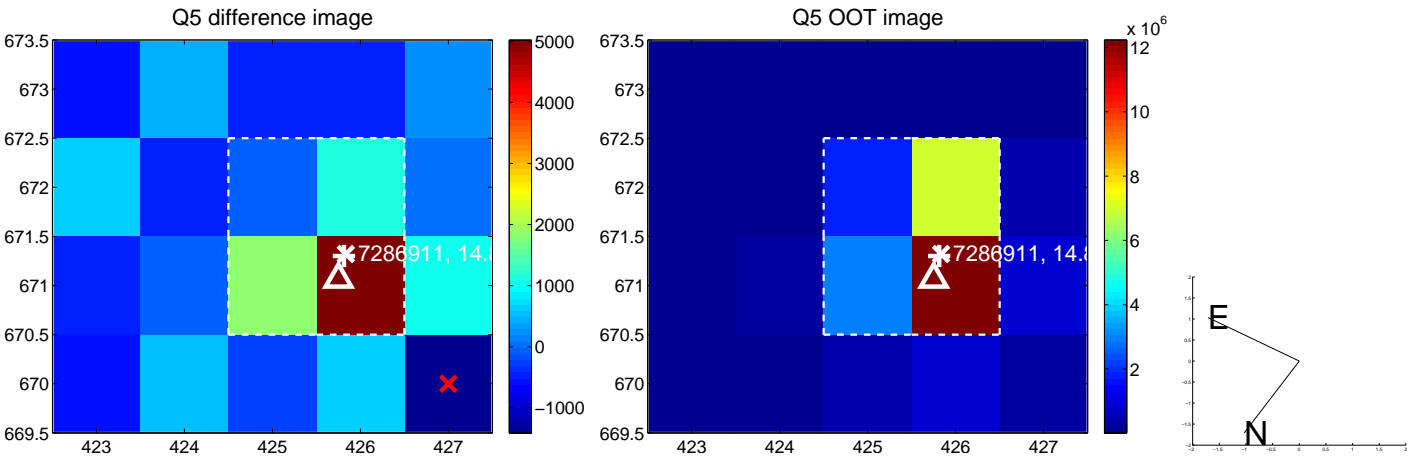


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

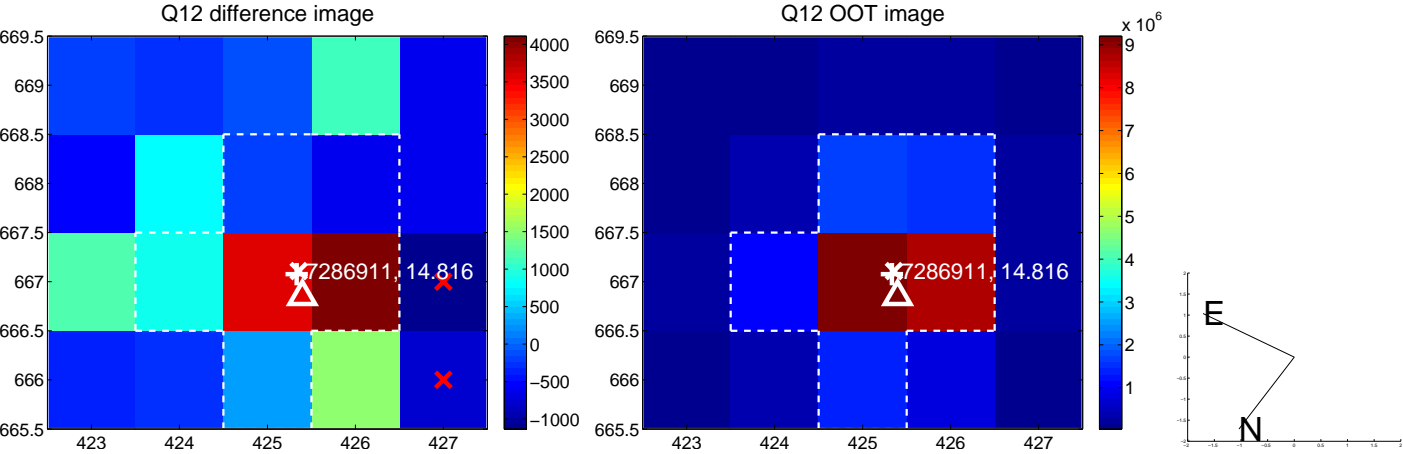
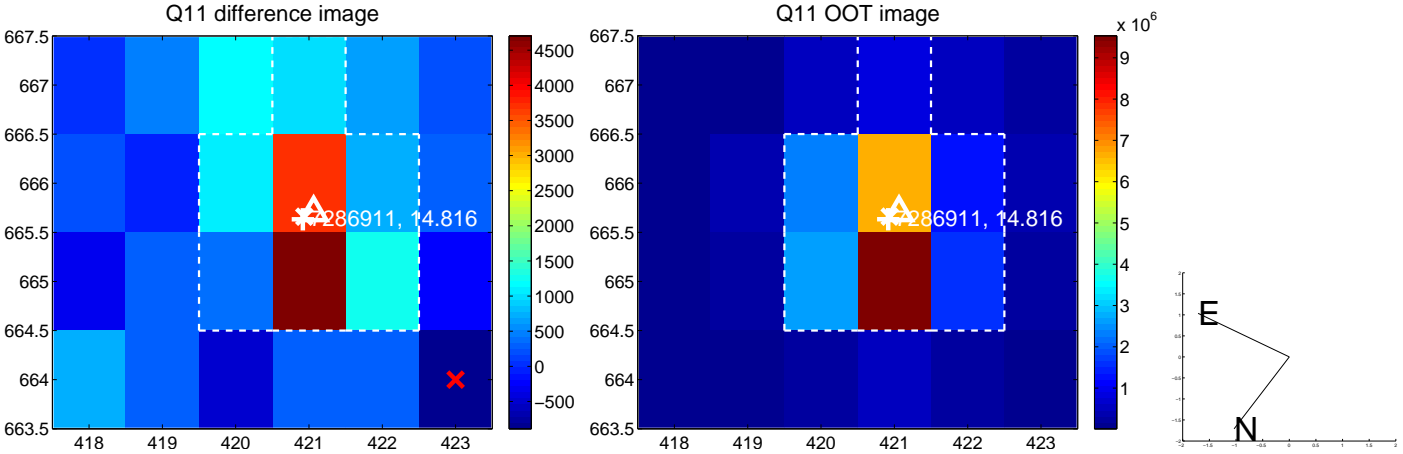
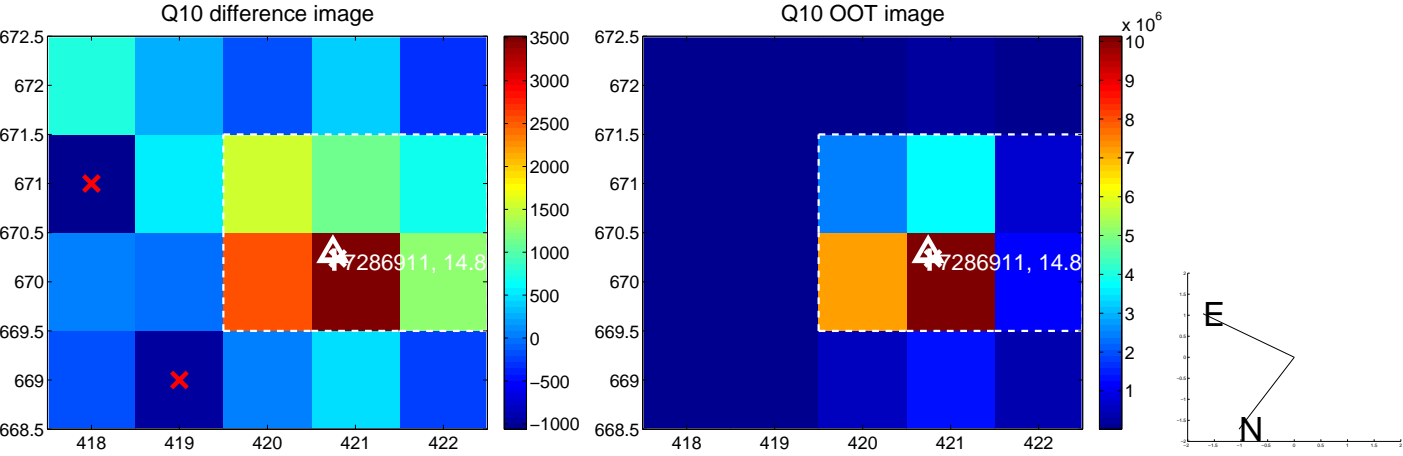
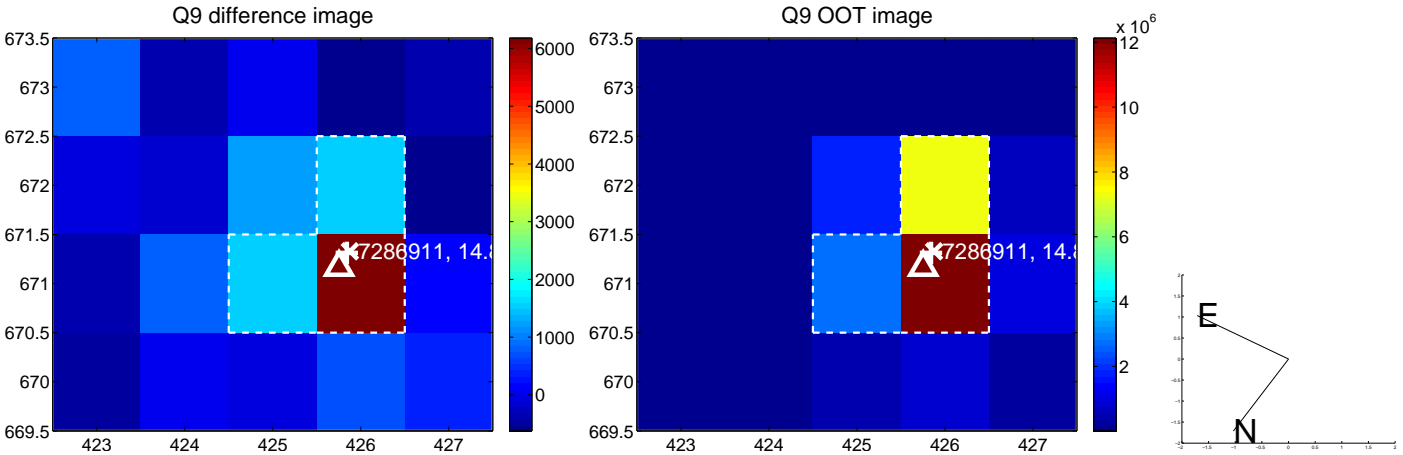
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



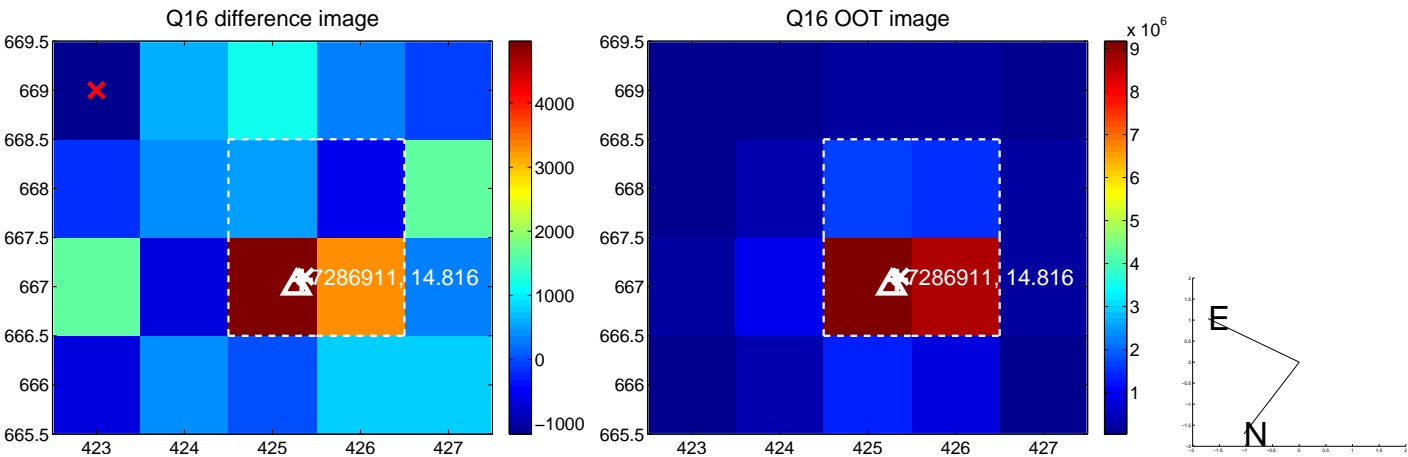
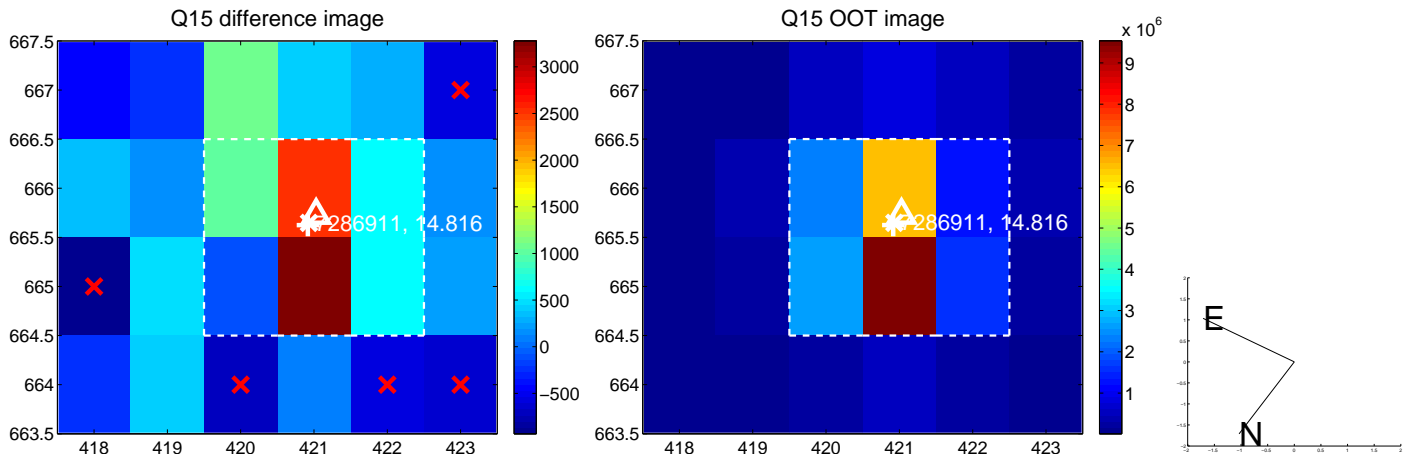
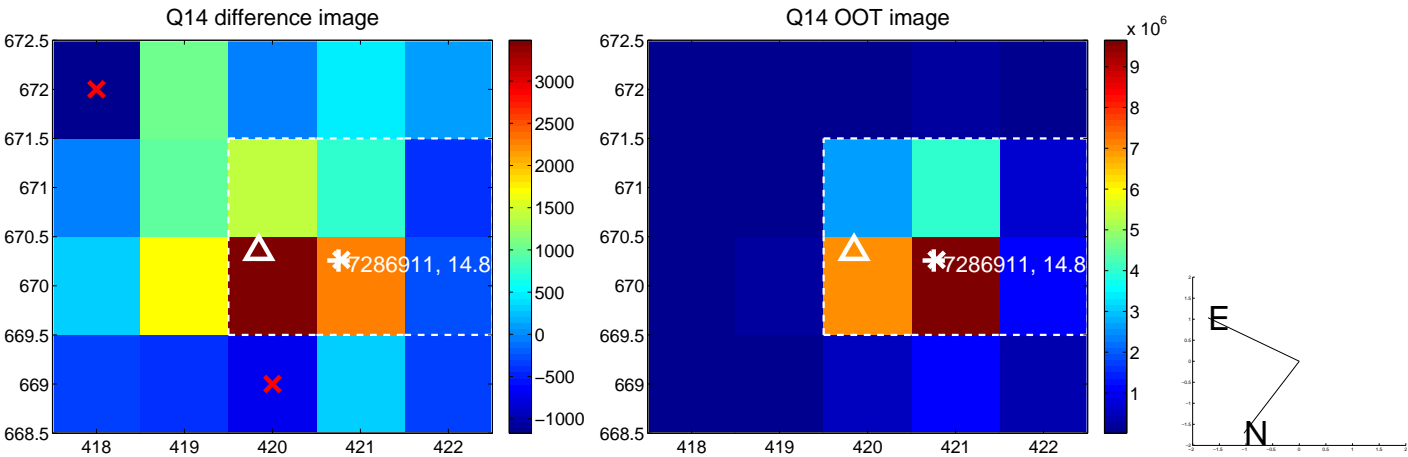
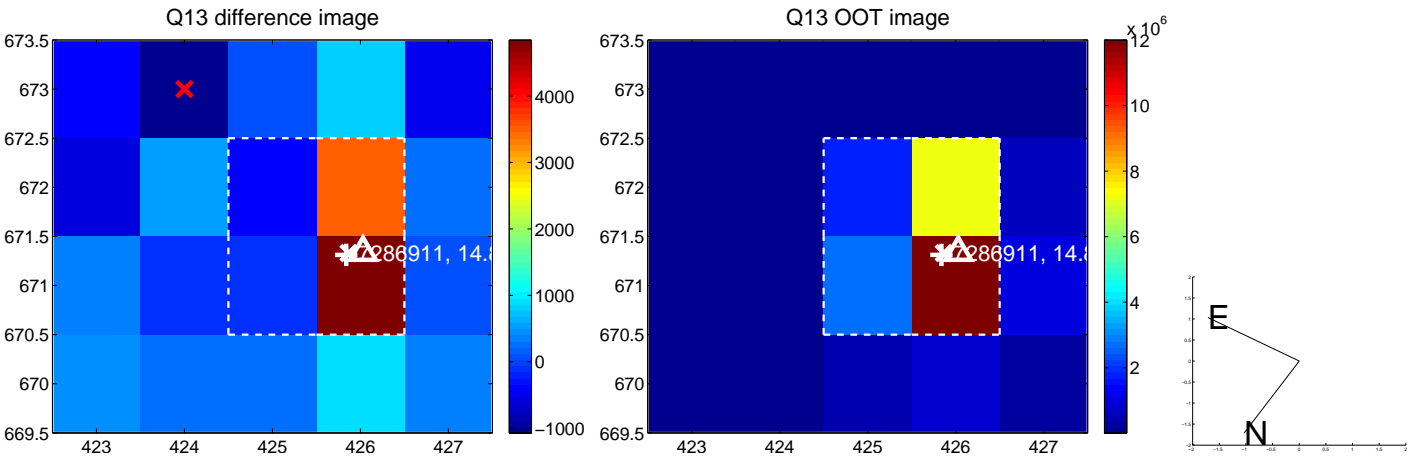
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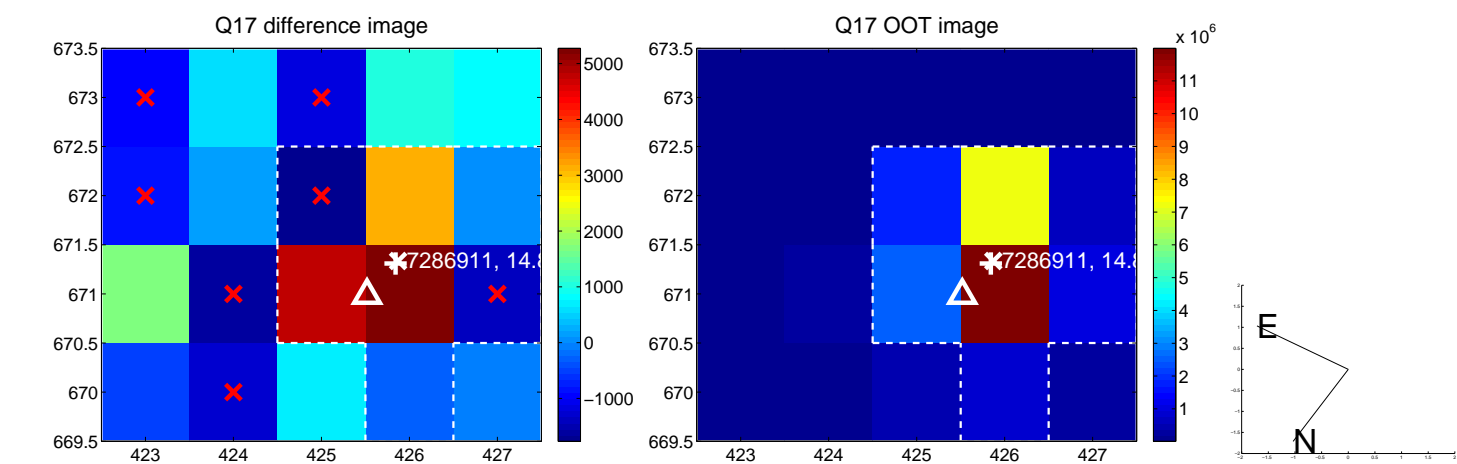


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

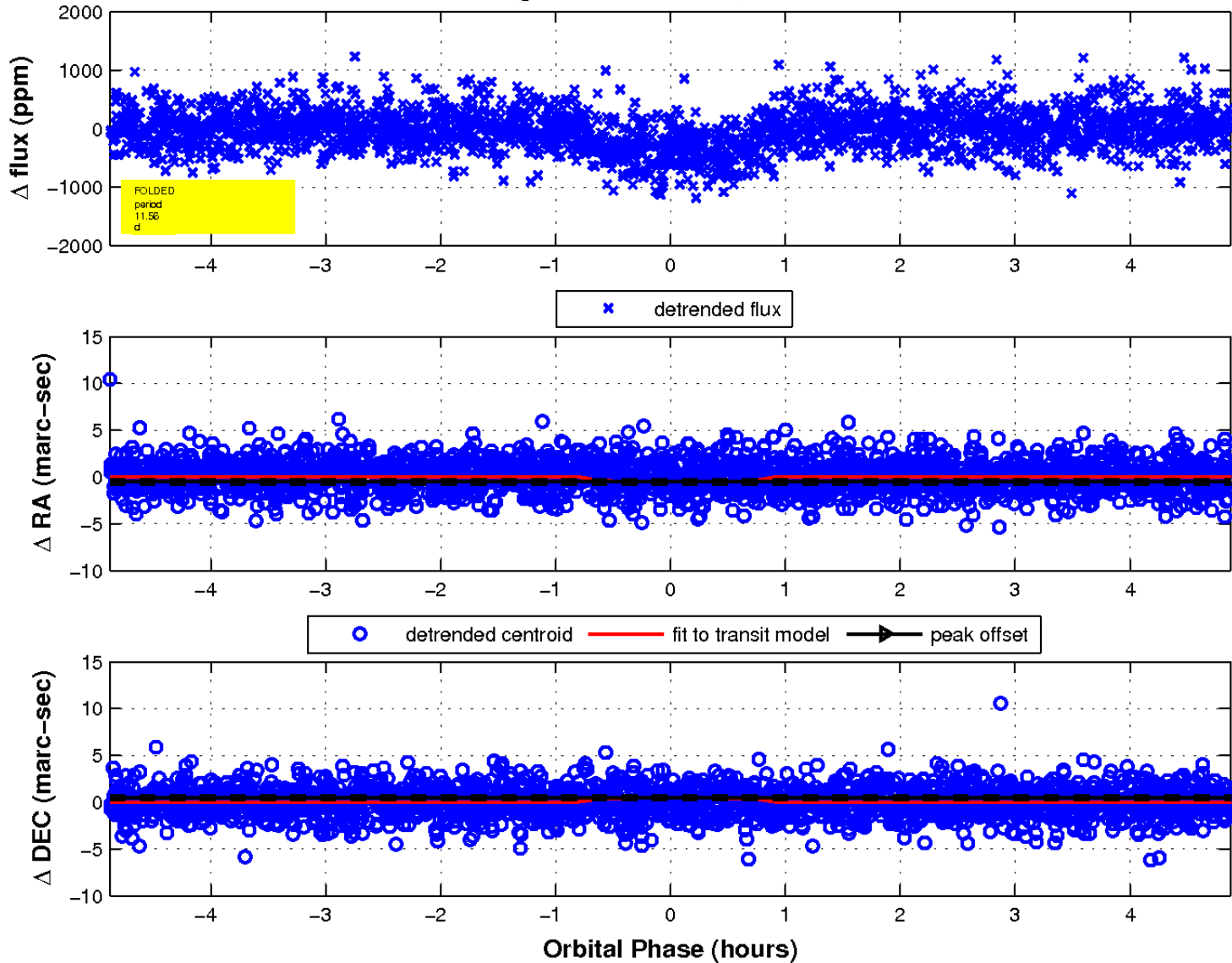




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

