

# KIC 006387542

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006387542-01	OBS	1626.01	2.534727	132.690446	413.8	4.525	38.5	42.4	0.81	5662	1.95	521.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006387542-01	OBS	PC	1.00	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.

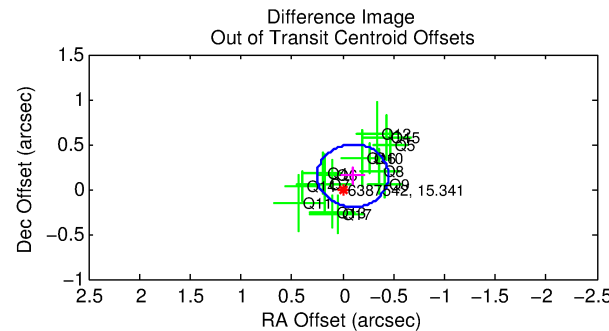
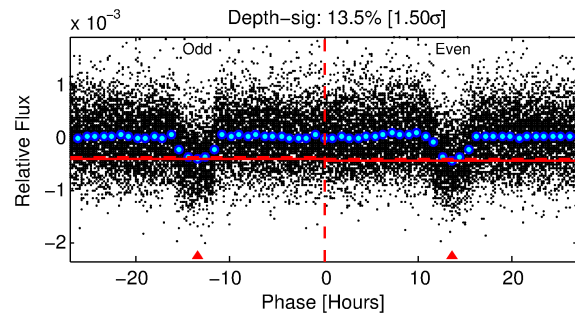
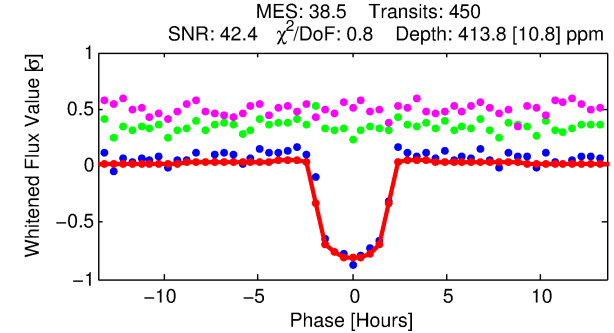
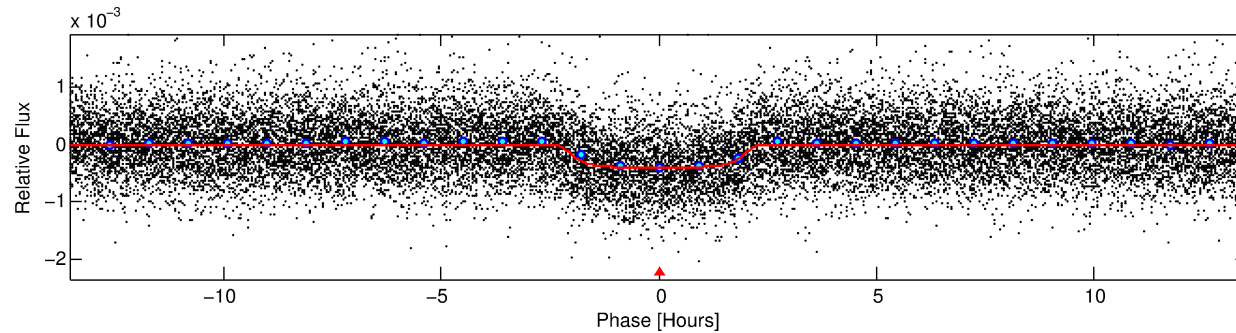
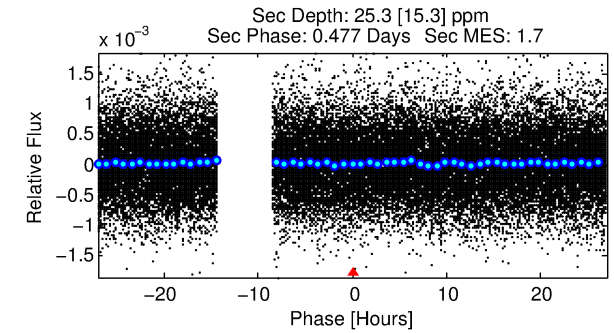
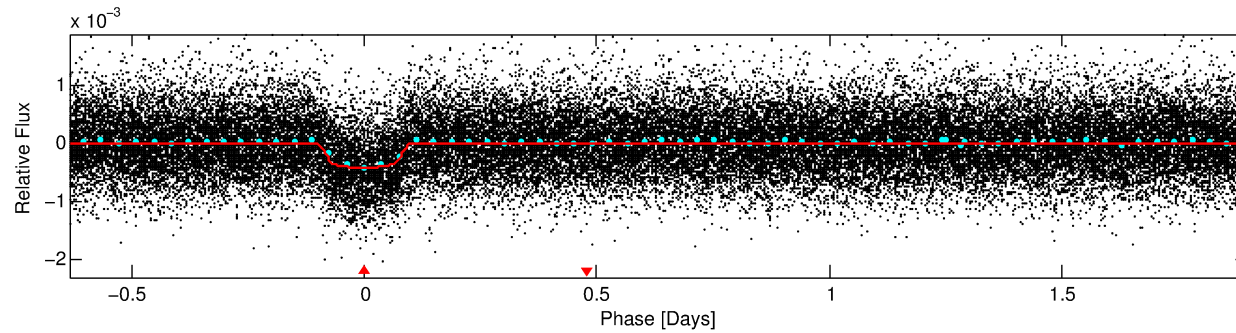
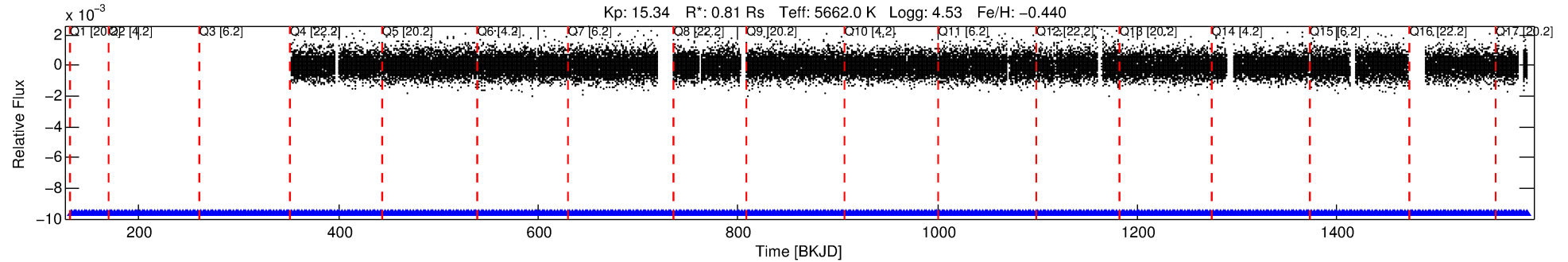
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006387542-01

No Significant Match Found

# DV One-Page Summary

KIC: 6387542 Candidate: 1 of 1 Period: 2.535 d  
KOI: K01626.01 Corr: 0.975



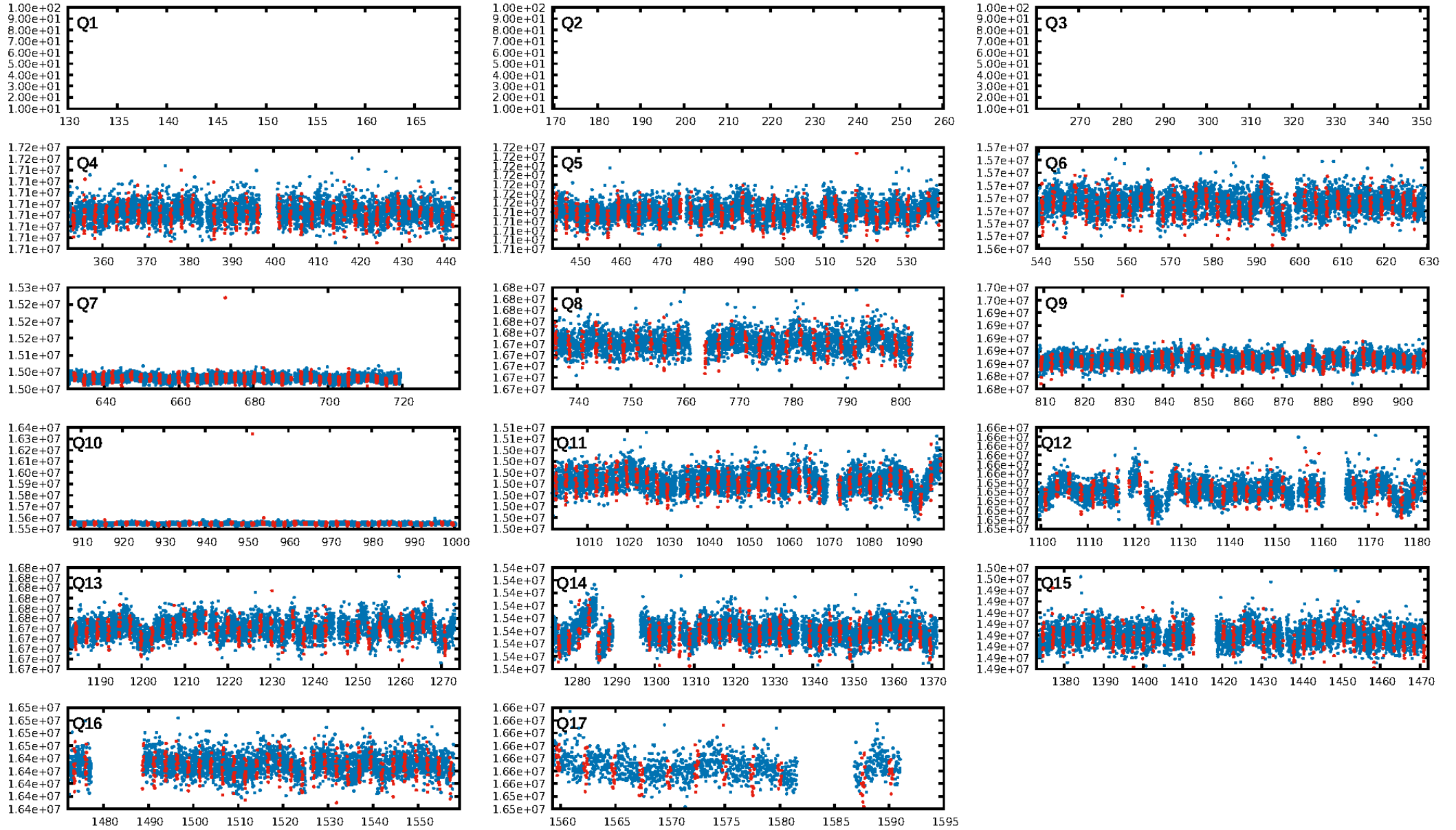
## DV Fit Results:

Period = 2.53473 [0.00001] d  
Epoch = 132.6904 [0.0016] BKJD  
Rp/R\* = 0.0221 [0.0012]  
a/R\* = 2.27 [0.48]  
b = 0.90 [0.06]  
Seff = 521.30 [156.97]  
Teq = 1218 [92] K  
Rp = 1.95 [0.48] Re  
a = 0.0339 [0.0065] AU  
Ag = 4.22 [2.83] [1.14σ]  
Teffp = 2700 [424] K [3.42σ]

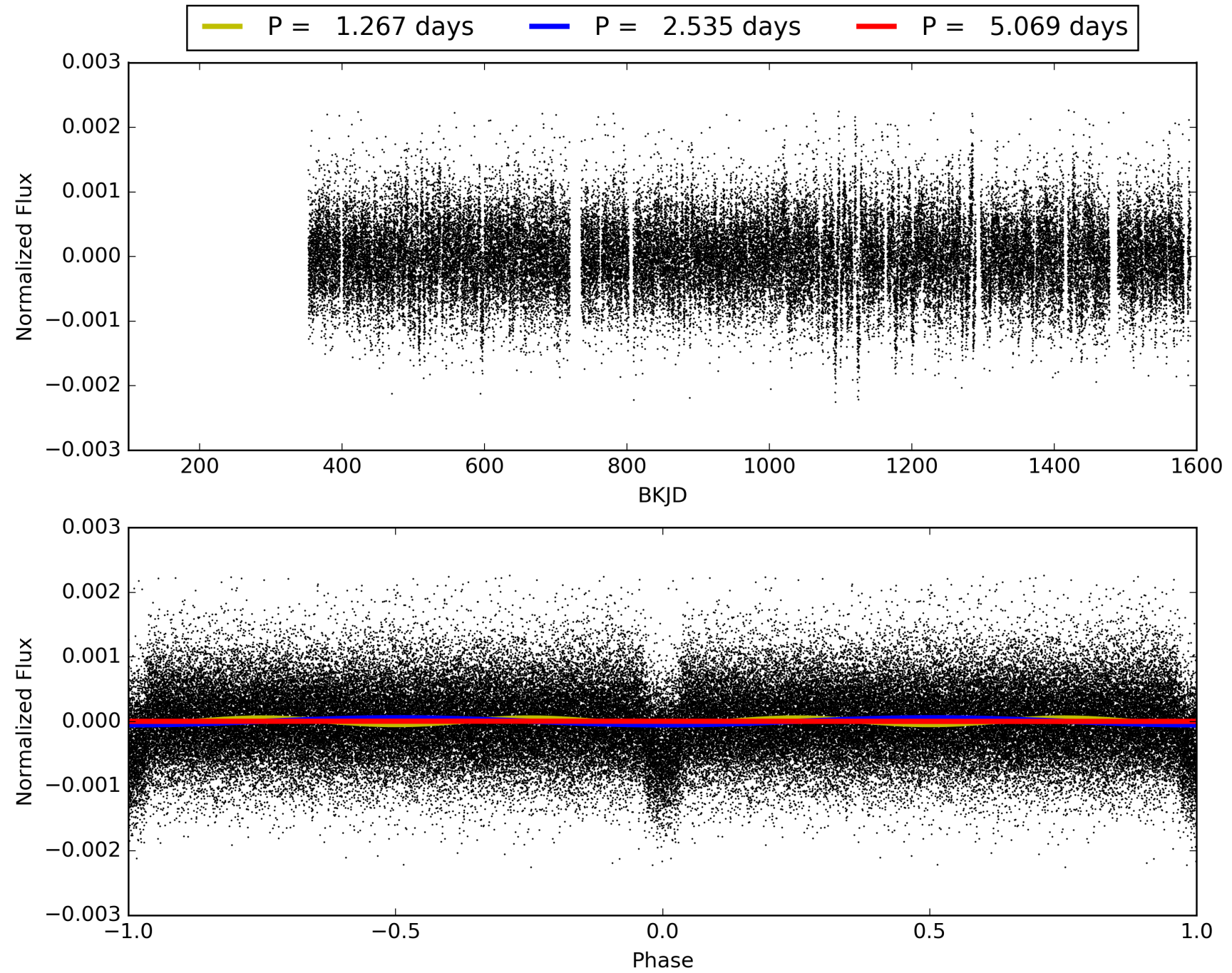
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.12e-304  
RollingBand-fgt: 1.00 [439/439]  
GhostDiagnostic-chr: 3.639  
Centroid-sig: 0.0%  
Centroid-so: 0.202 arcsec [0.70σ]  
OotOffset-rm: 0.179 arcsec [1.54σ]  
KicOffset-rm: 0.117 arcsec [0.99σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 006387542-01, PDC Light Curves

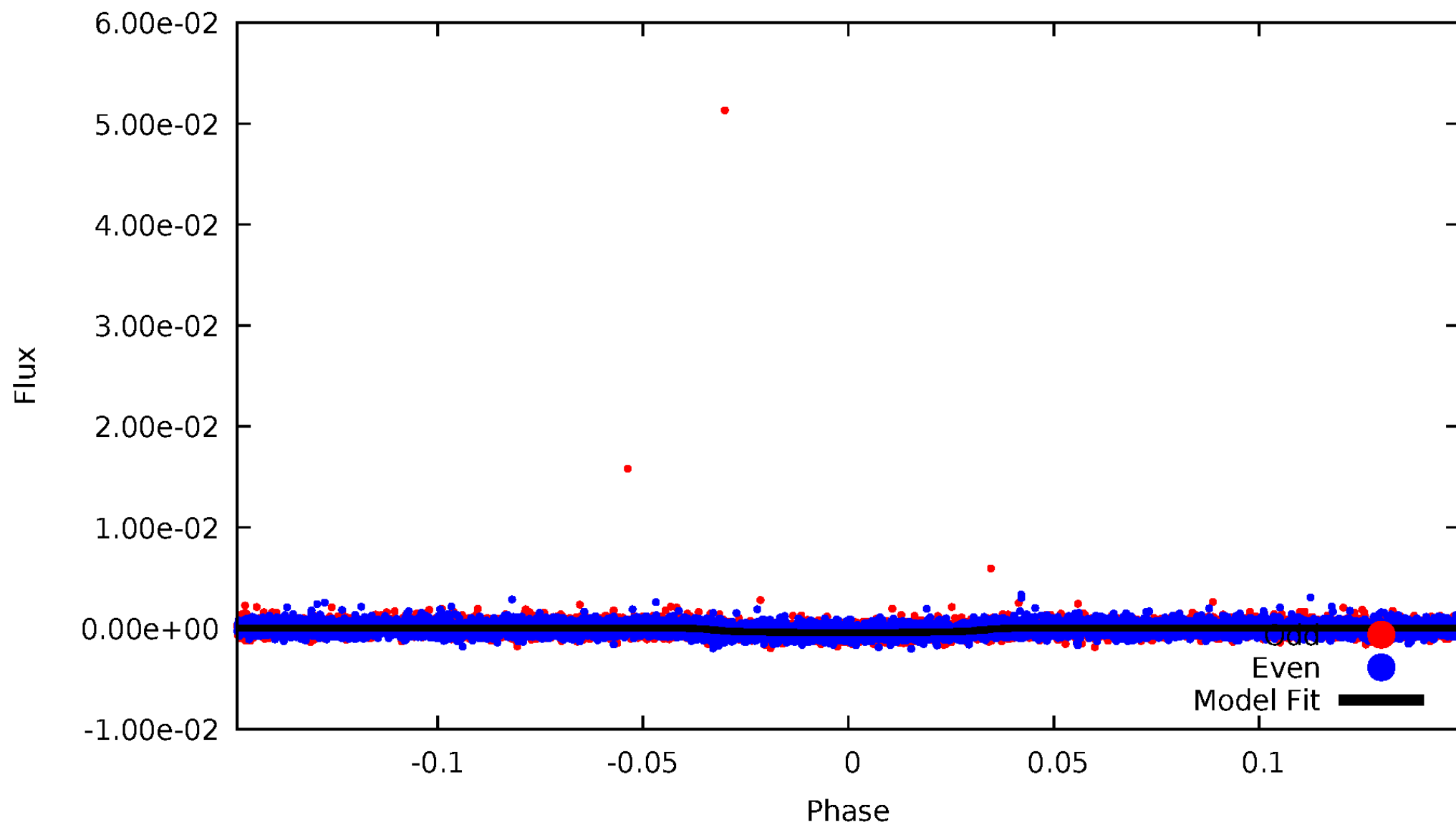


TCE 006387542-01



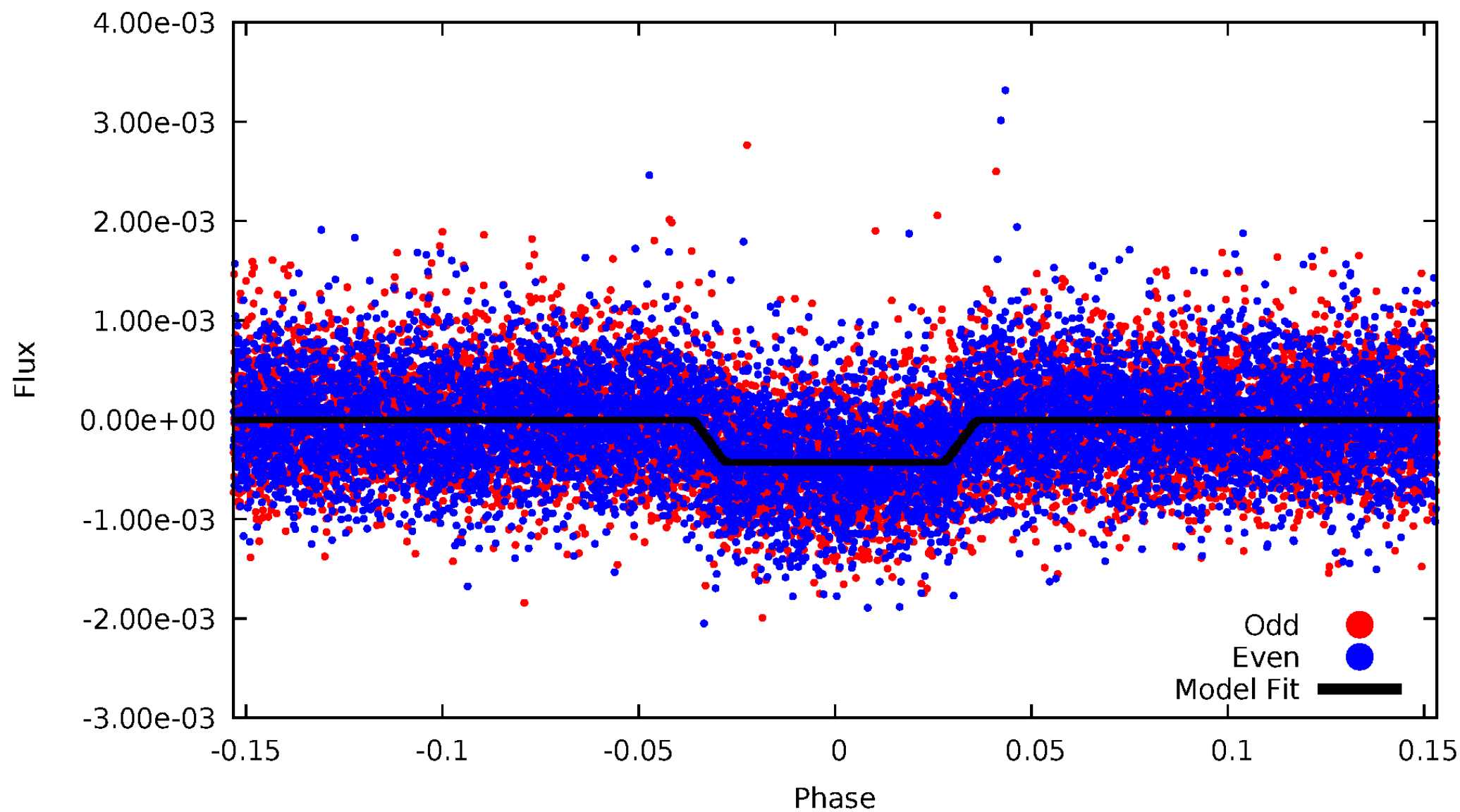
# DV Odd/Even

TCE 006387542-01



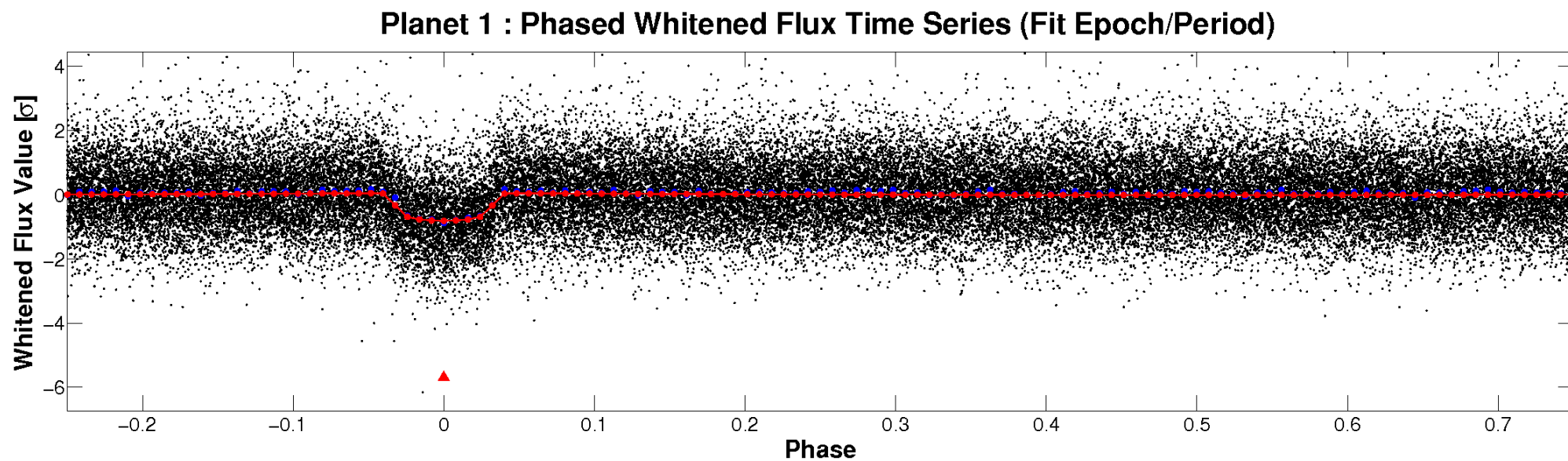
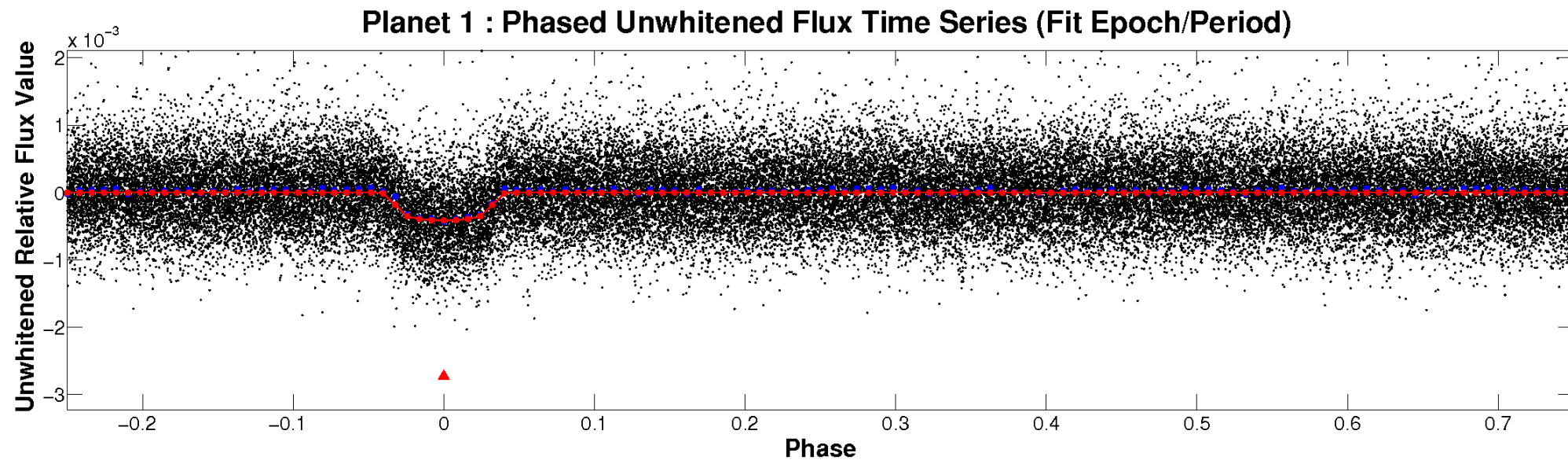
# ALT Odd/Even

TCE 006387542-01



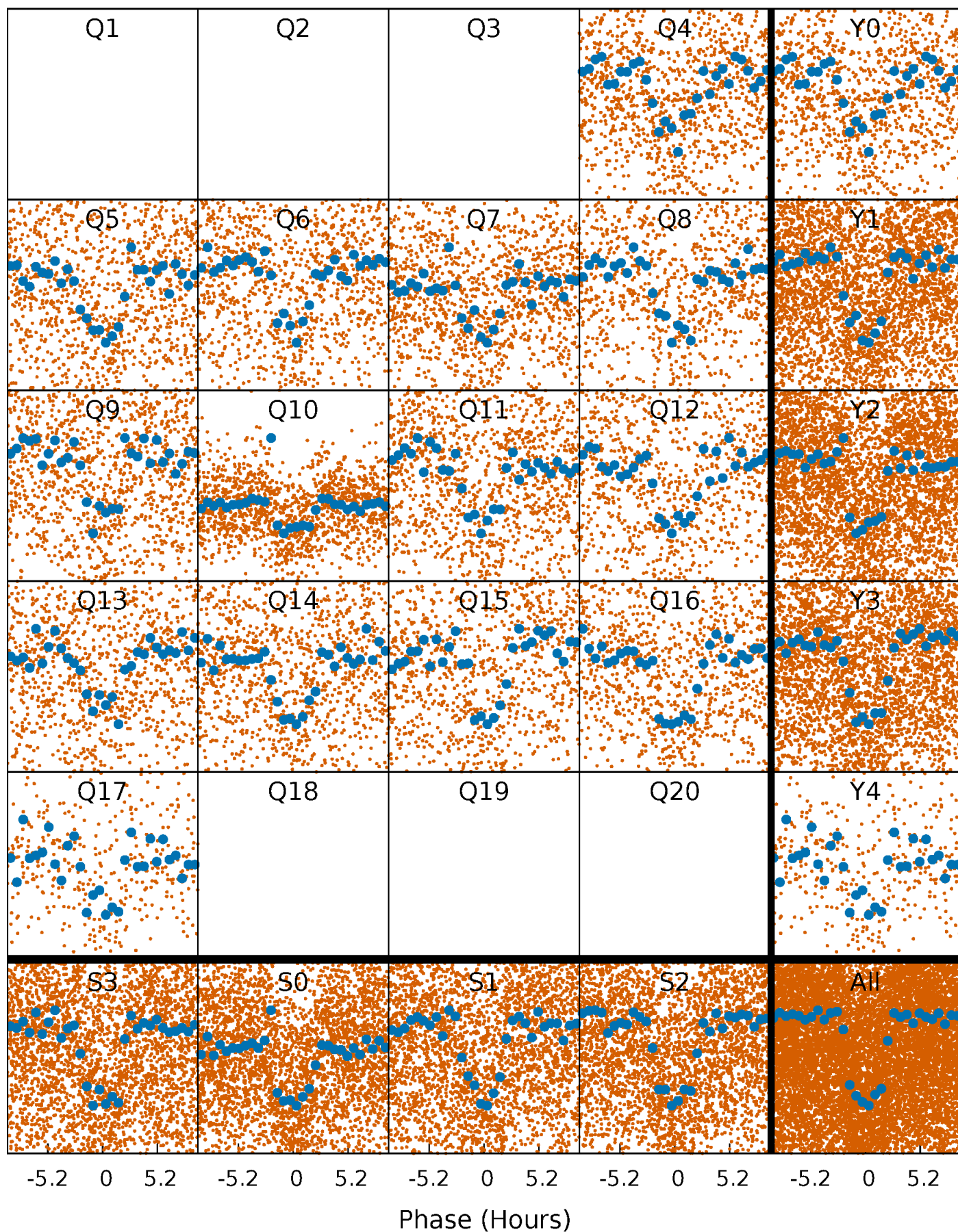


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

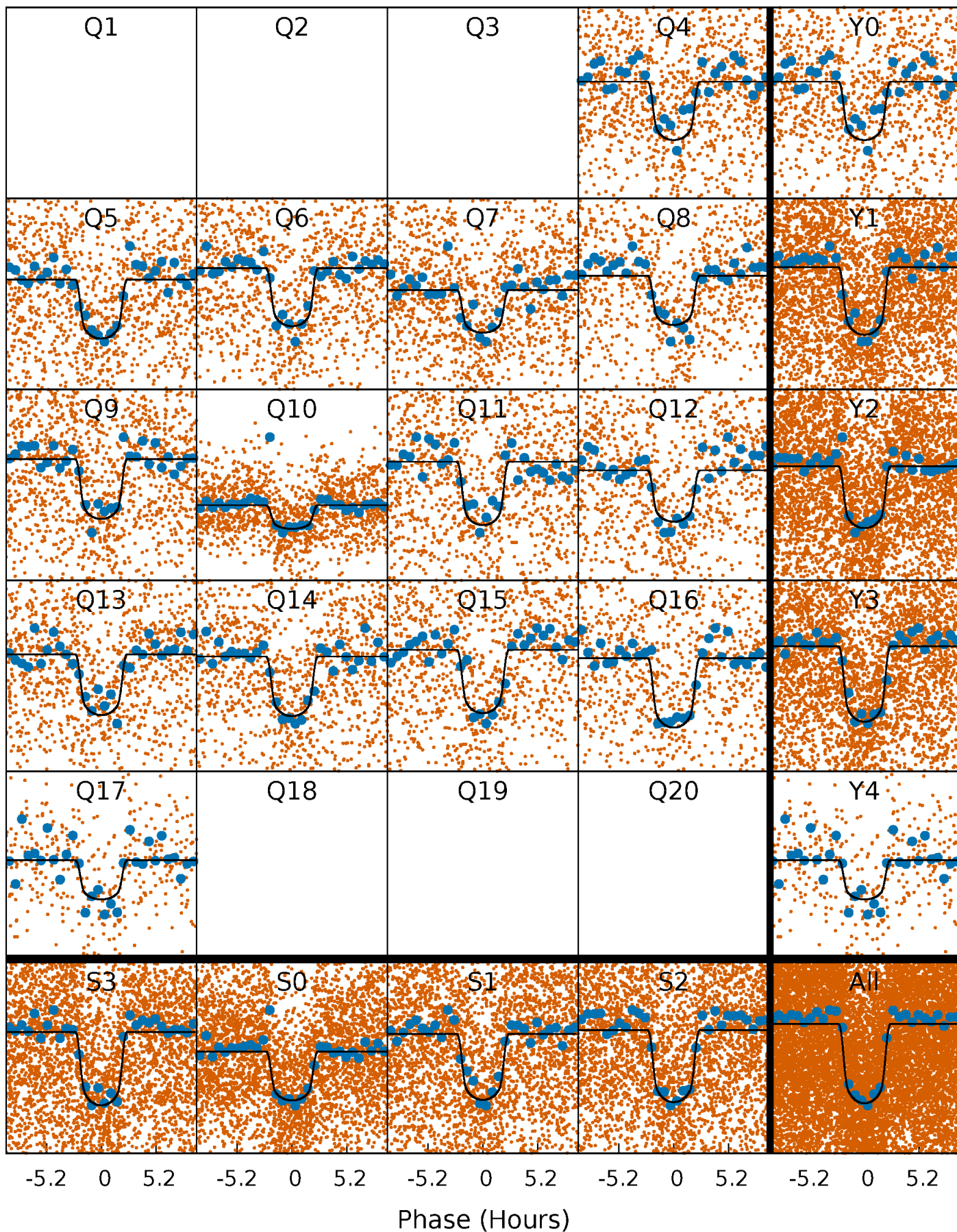
TCE 006387542-01 P= 2.534727 Days  $T_0=132.690446$  (BKJD)





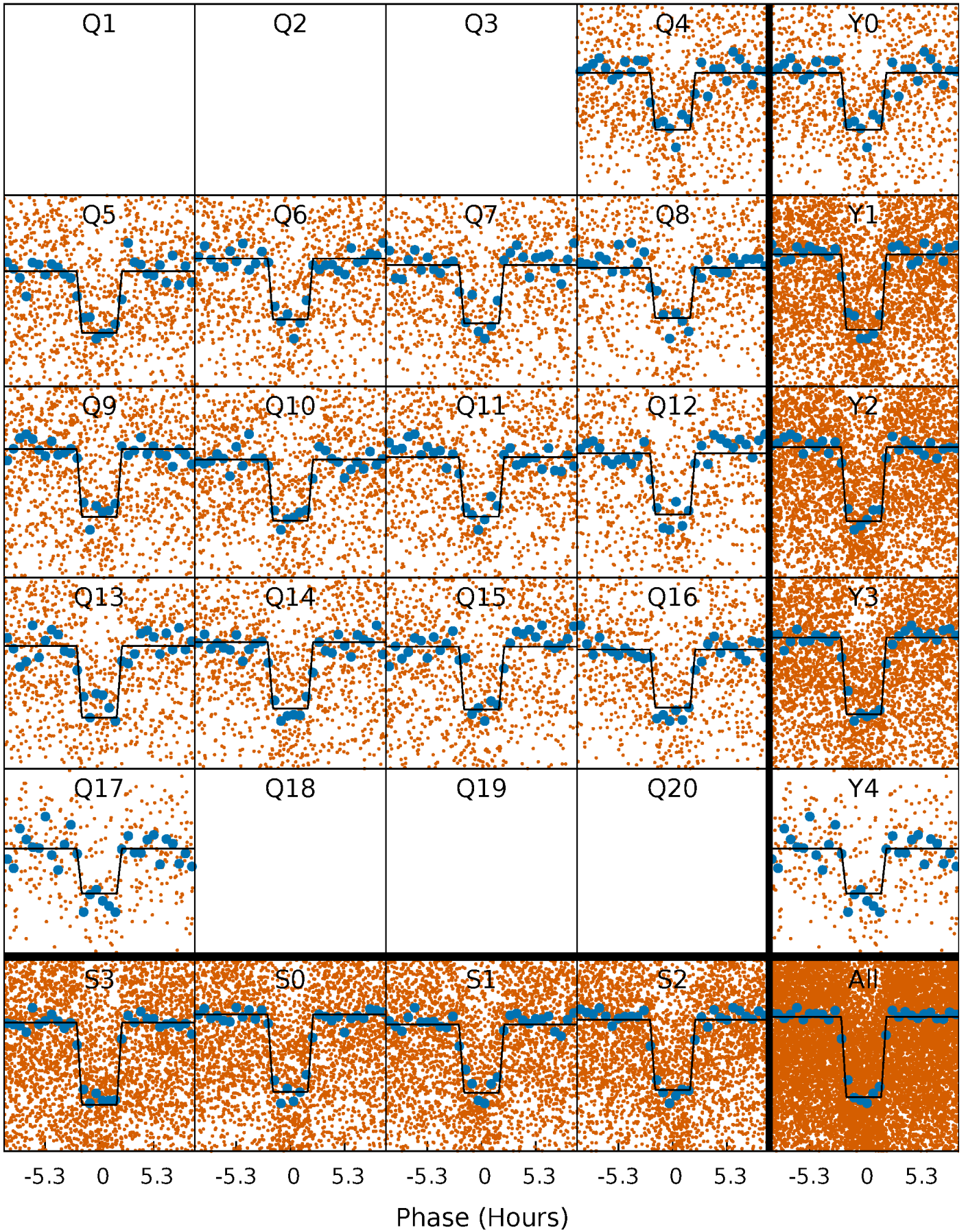
# DV Quarter-Phased Transit Curves

TCE 006387542-01 P= 2.534727 Days  $T_0=132.690446$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

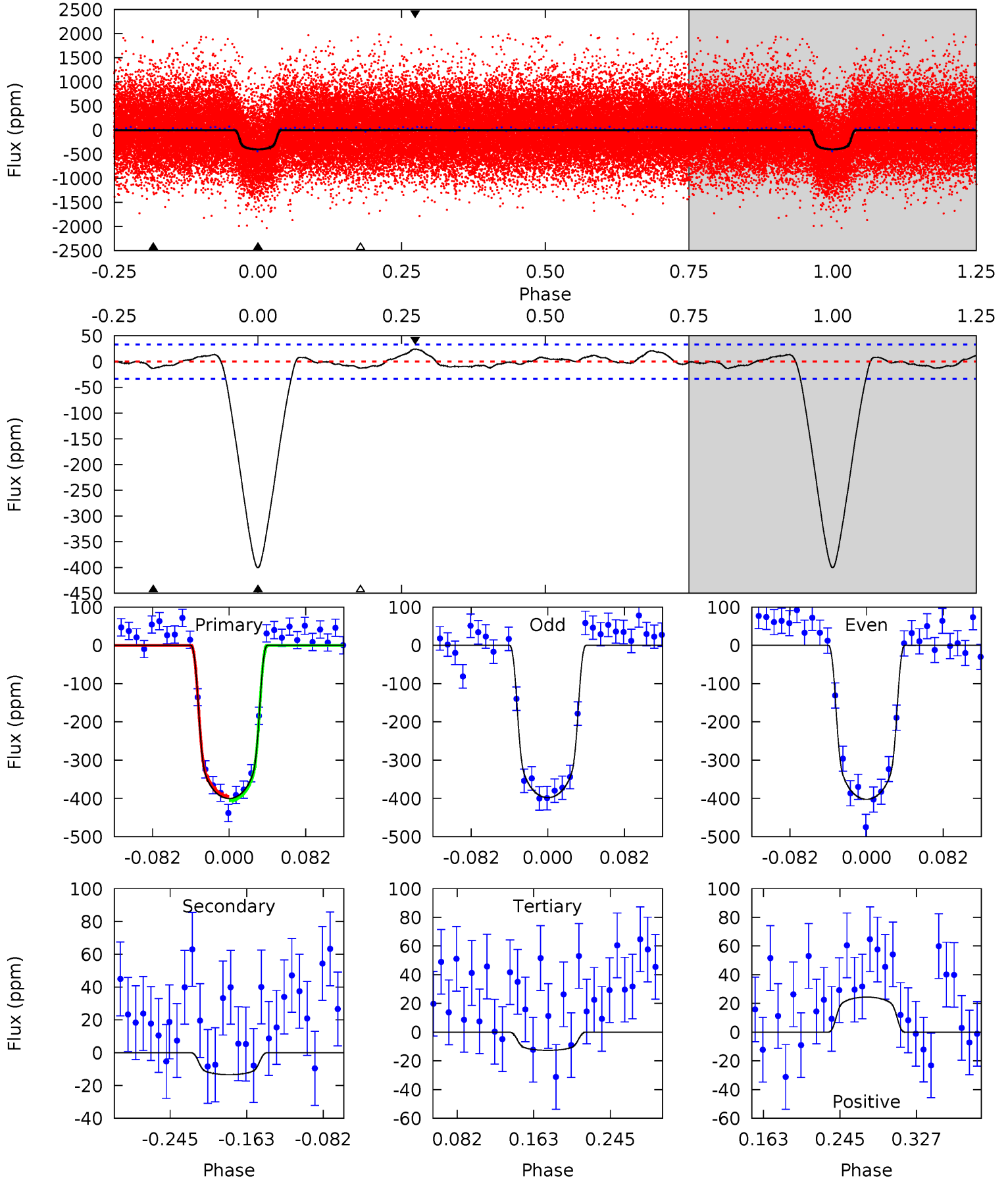
TCE 006387542-01 P= 2.534744 Days  $T_0=132.684490$  (BKJD)



# DV Model-Shift Uniqueness Test

006387542-01, P = 2.534727 Days, E = 132.690446 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
55.6	1.87	1.76	3.40	4.61	1.74	1.27	53.9	52.2	0.10	-1.53	0.31	0.93	0.06	0.77

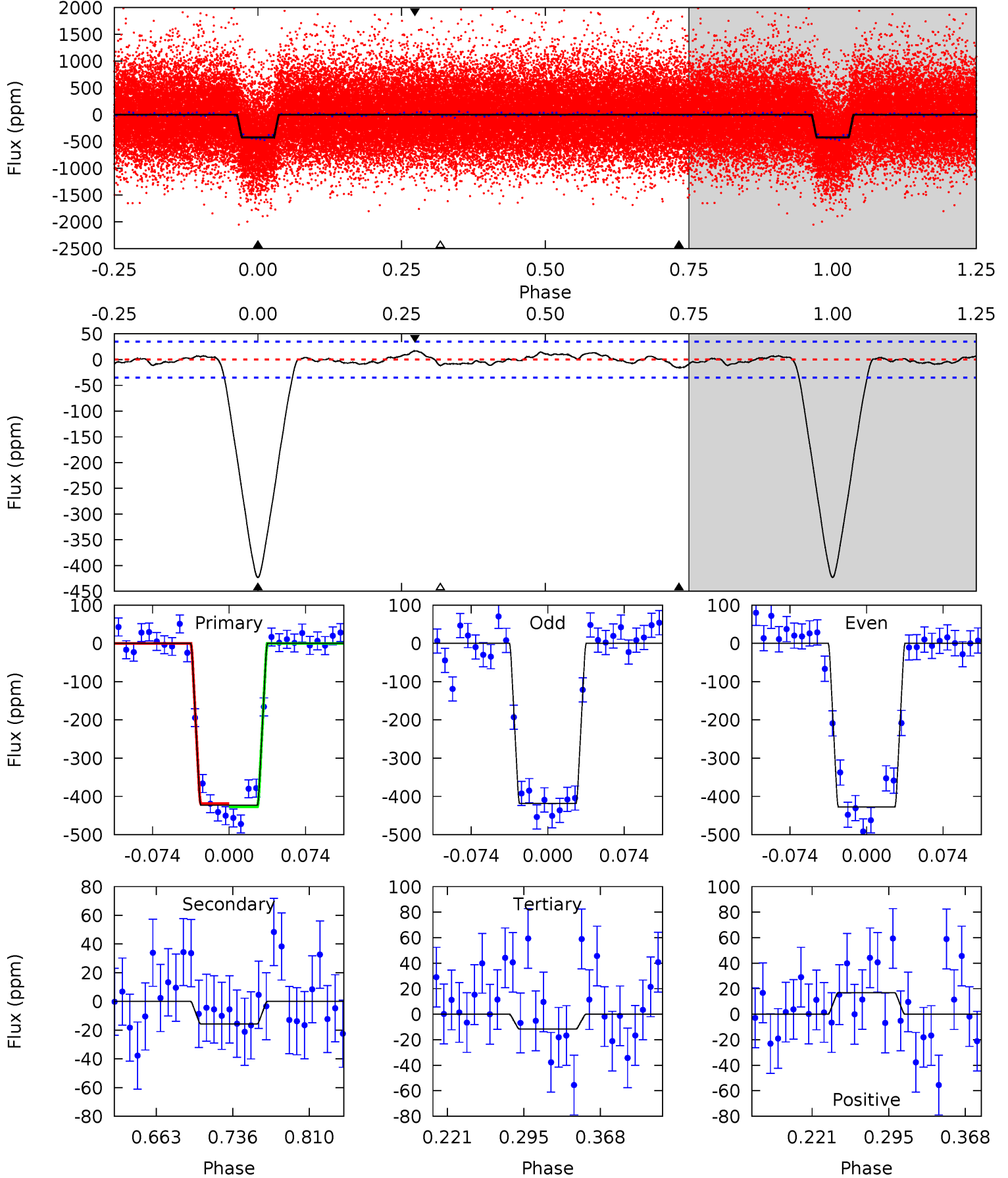




# Alt Model-Shift Uniqueness Test

006387542-01, P = 2.534744 Days, E = 132.684490 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
56.2	2.07	1.54	2.23	4.63	1.79	0.94	54.6	53.9	0.53	-0.15	0.63	1.00	0.04	0.53





### Stellar Parameters For KIC 006387542

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5662^{+186}_{-186}$	$4.532^{+0.077}_{-0.143}$	$-0.440^{+0.300}_{-0.300}$	$0.806^{+0.192}_{-0.082}$	$0.808^{+0.106}_{-0.071}$	$2.171^{+0.675}_{-0.903}$
	+3%/-3%	+2%/-3%	+68%/-68%	+24%/-10%	+13%/-9%	+31%/-42%
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 006387542-01 / KOI 1626.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-13 \pm 7$	$1.97^{+0.25}_{-0.17}$	$1716^{+112}_{-81}$	$2920^{+216}_{-375}$	$2.138^{+1.227}_{-1.199}$
Alt.	$-16 \pm 8$	$1.85^{+0.23}_{-0.18}$	$1717^{+99}_{-85}$	$3042^{+225}_{-299}$	$2.818^{+1.570}_{-1.342}$

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

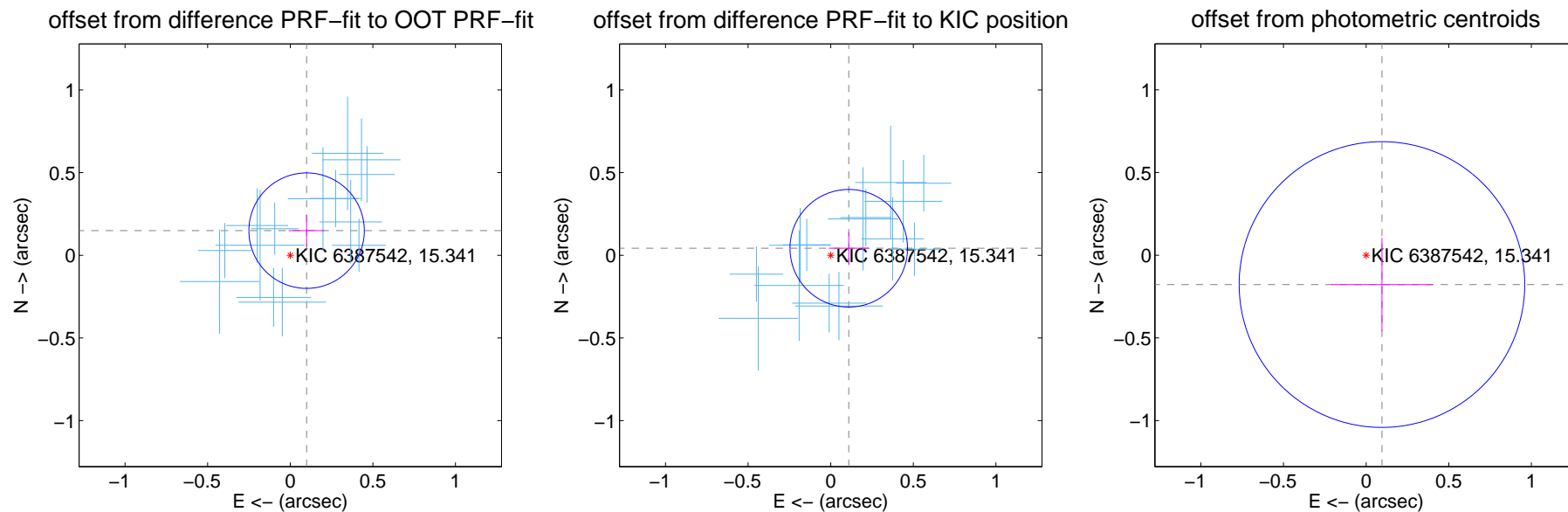
## DV Centroid Data

Supplemental centroid analysis for 006387542-01. Kepler magnitude: 15.34. Transit SNR 42.38

There are 14 quarters with good PRF difference image offsets

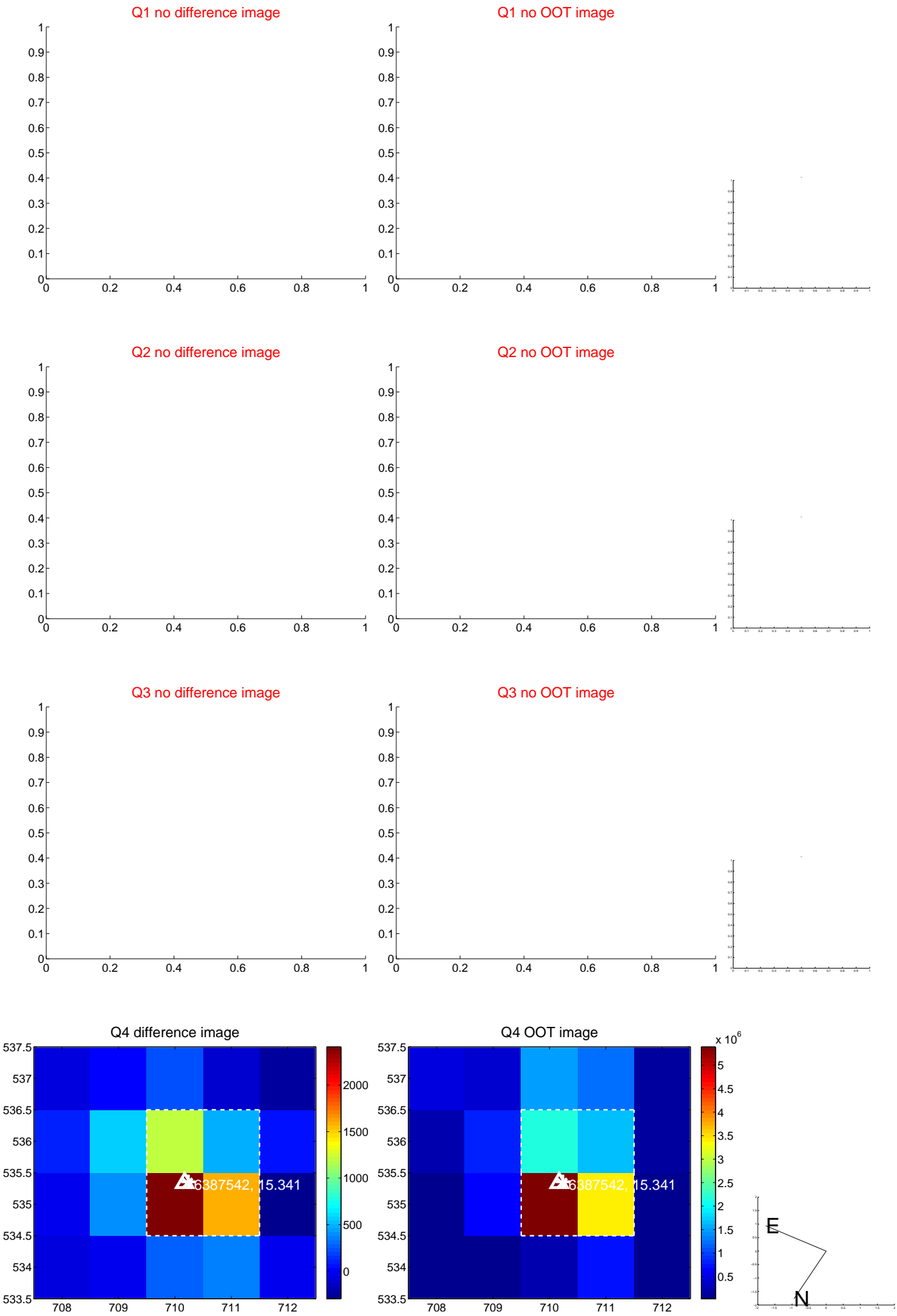
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.179 \pm 0.116$	1.54	$-0.099 \pm 0.107$	$0.149 \pm 0.096$
PRF-fit source offset from KIC position	$0.117 \pm 0.119$	0.99	$-0.109 \pm 0.121$	$0.042 \pm 0.097$
photometric centroid source offset	$0.20 \pm 0.29$	0.70	$-0.10 \pm 0.31$	$-0.18 \pm 0.28$

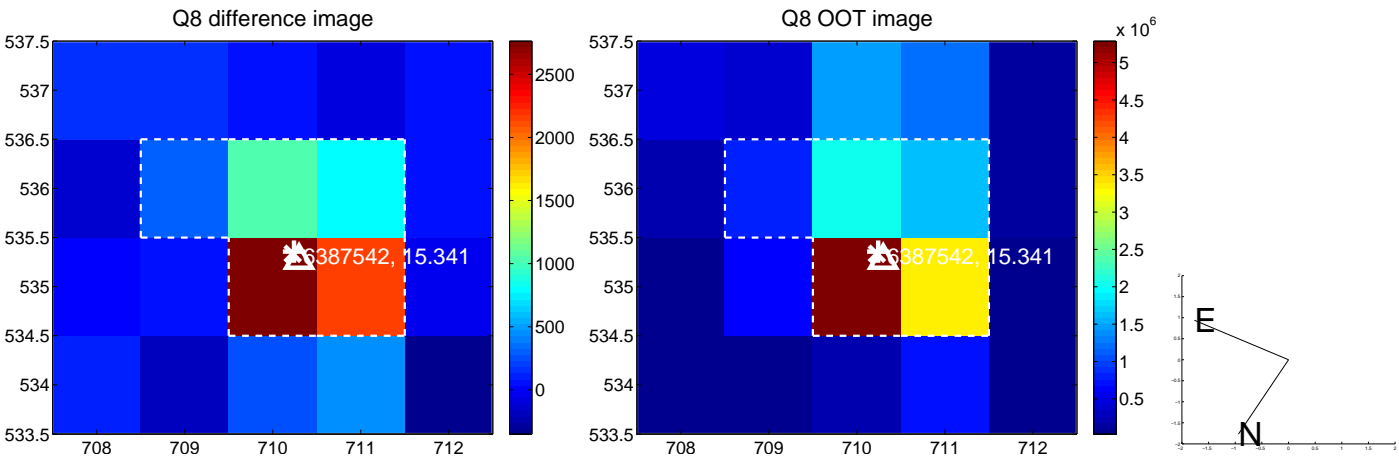
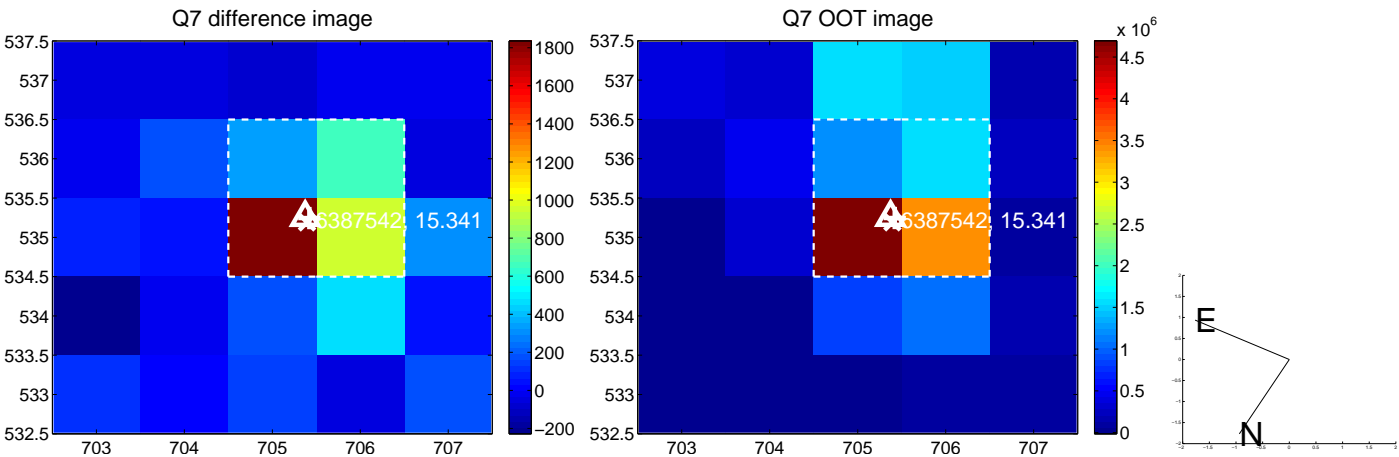
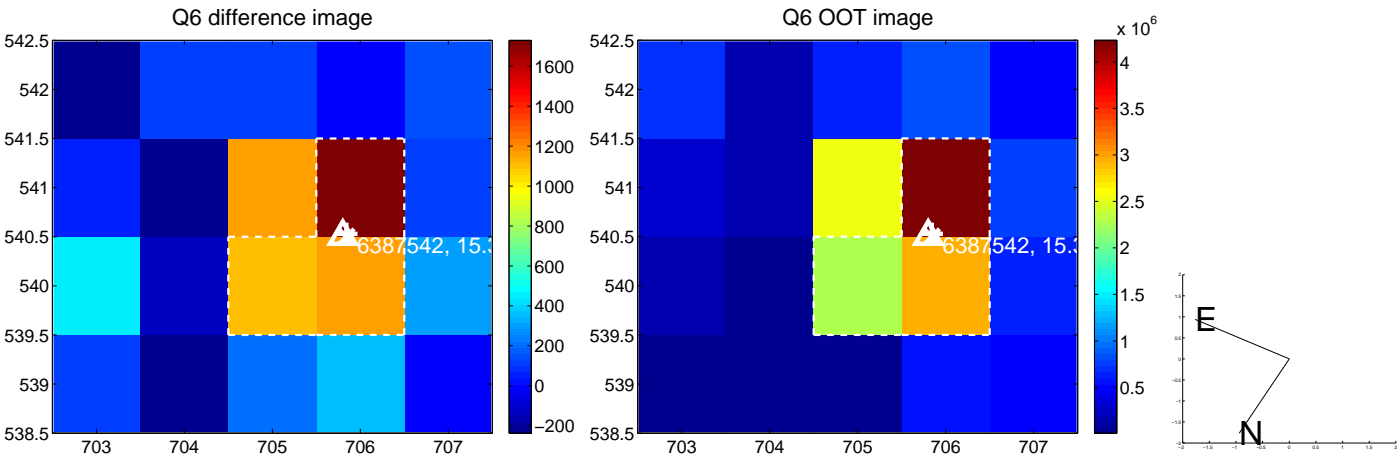
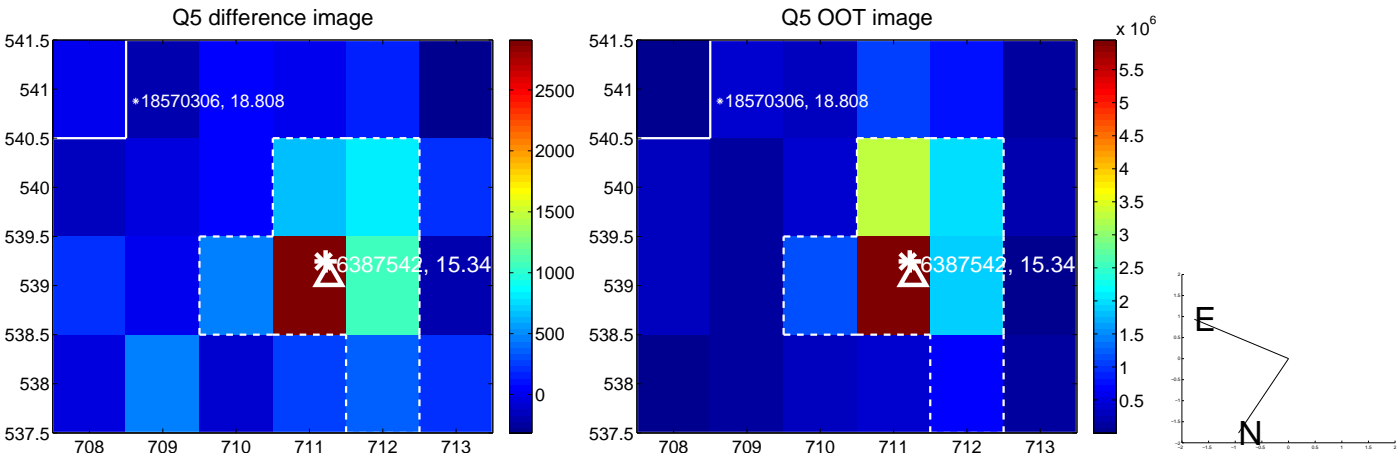


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

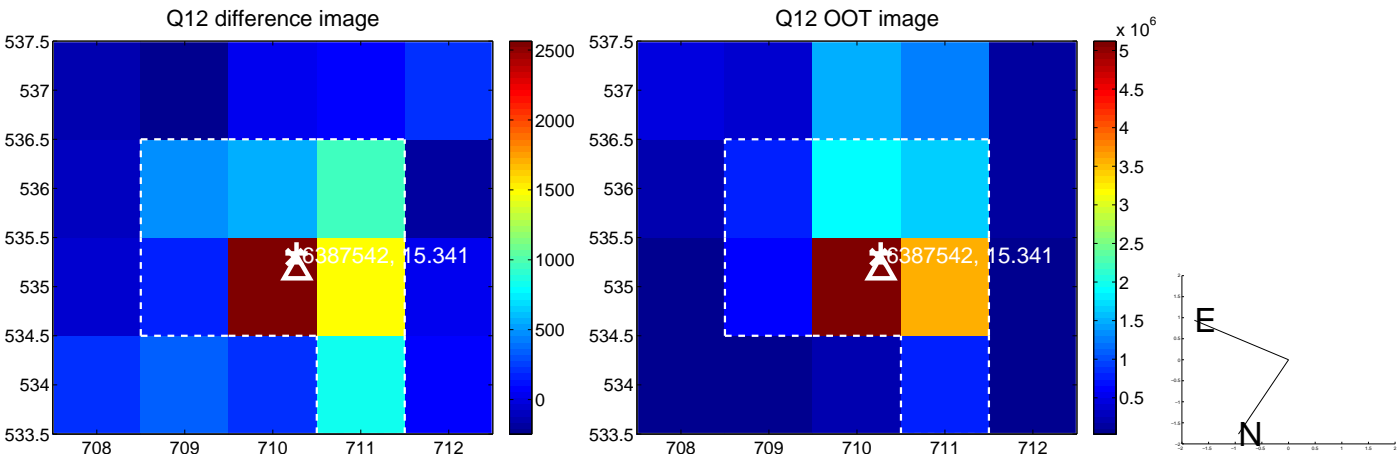
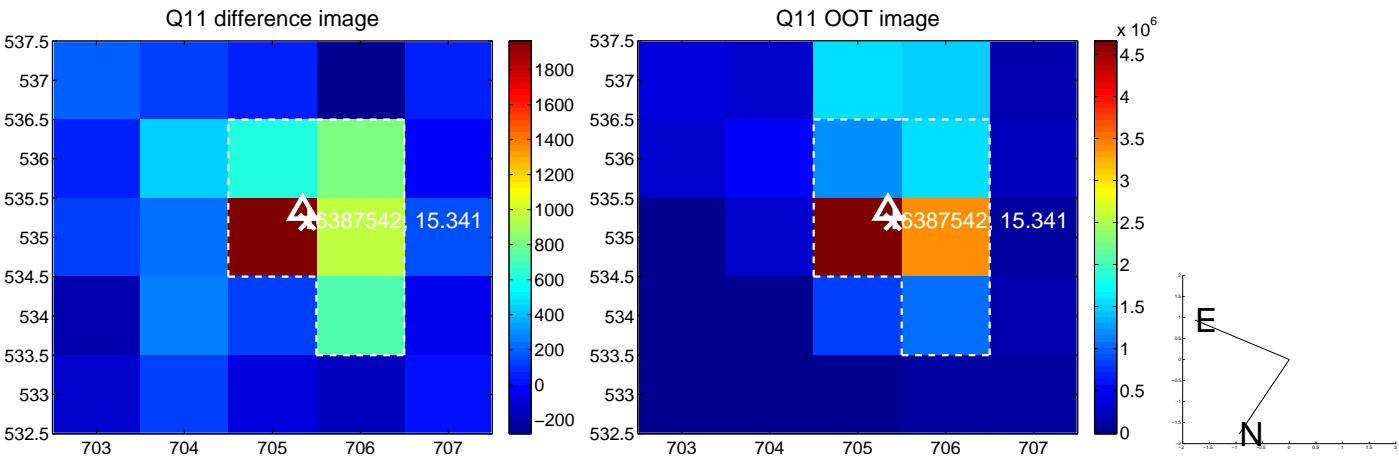
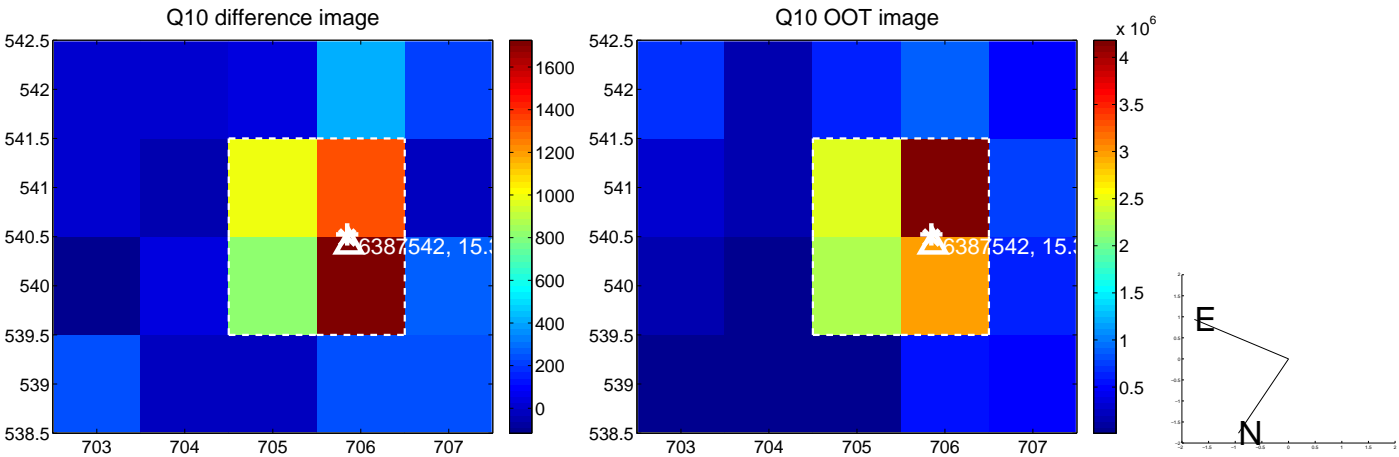
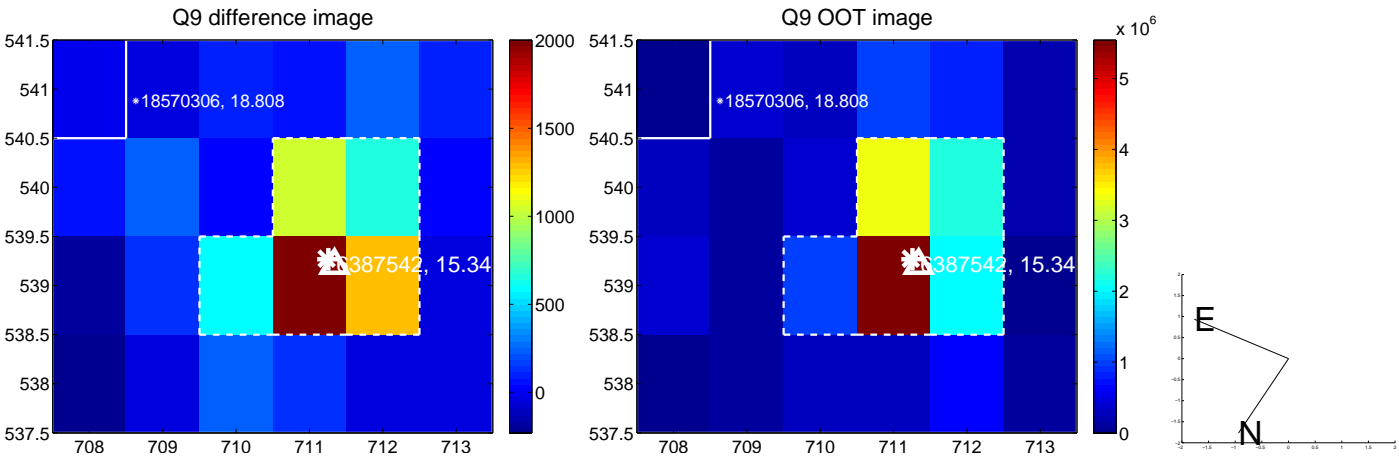


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

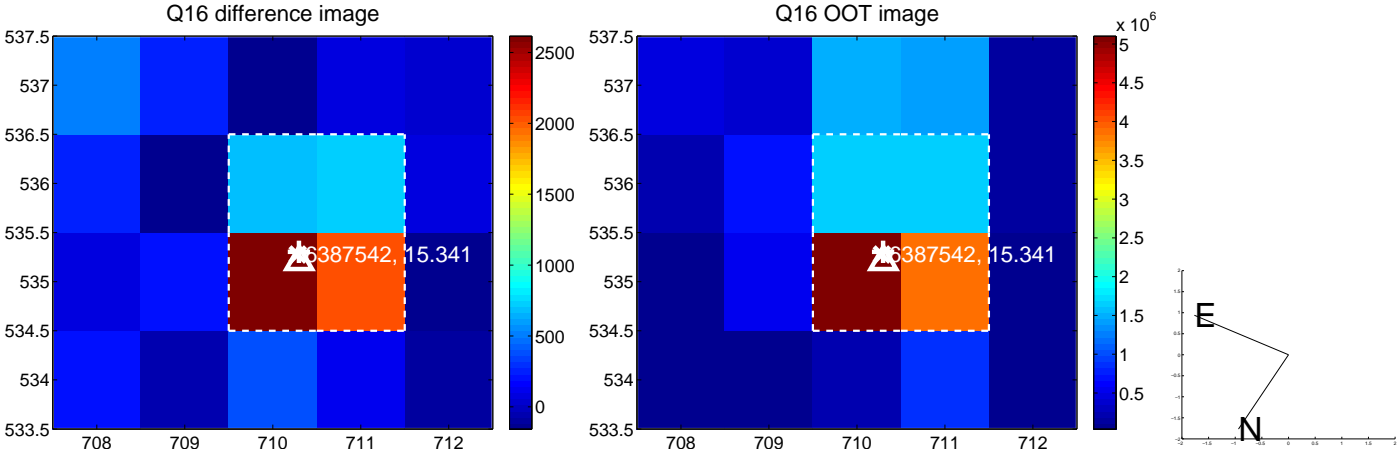
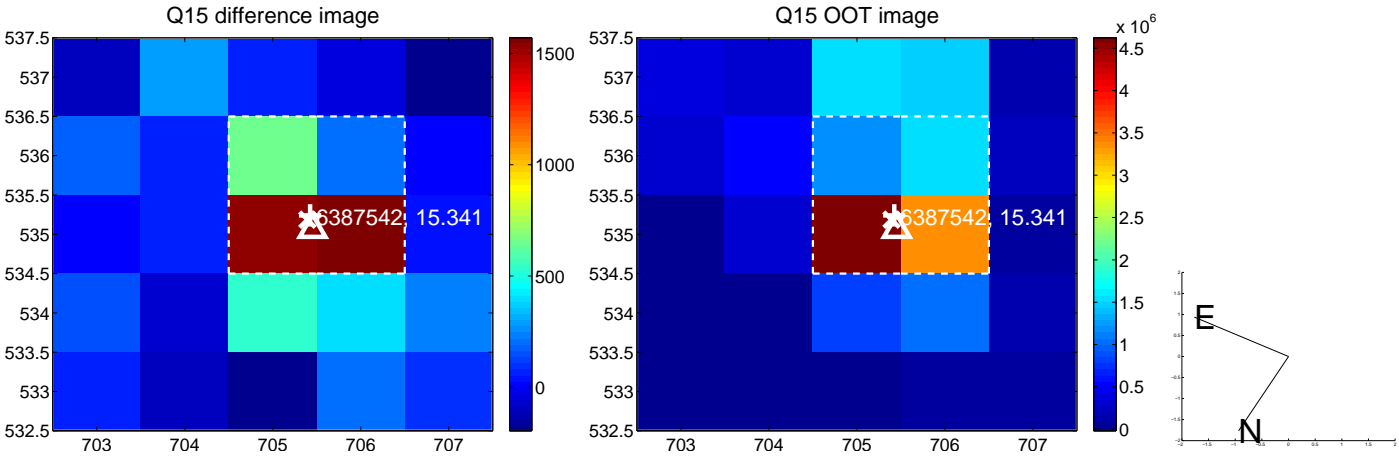
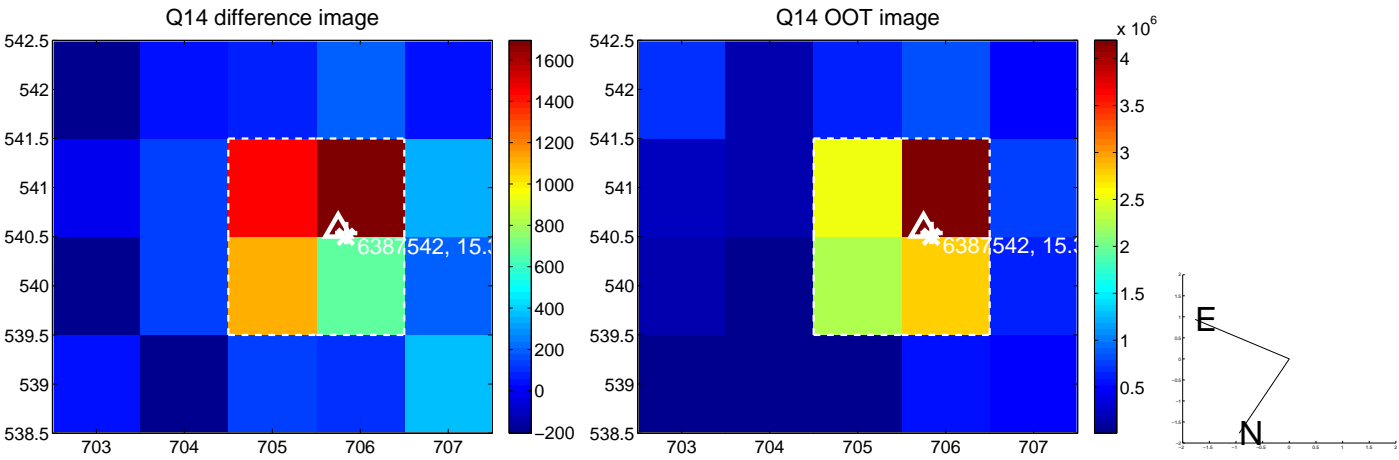
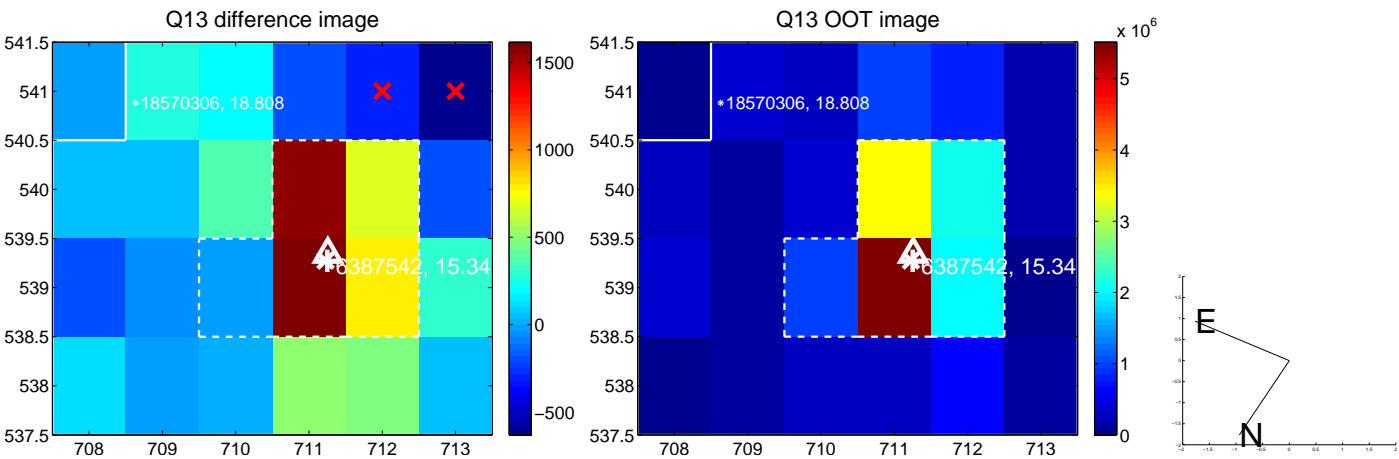




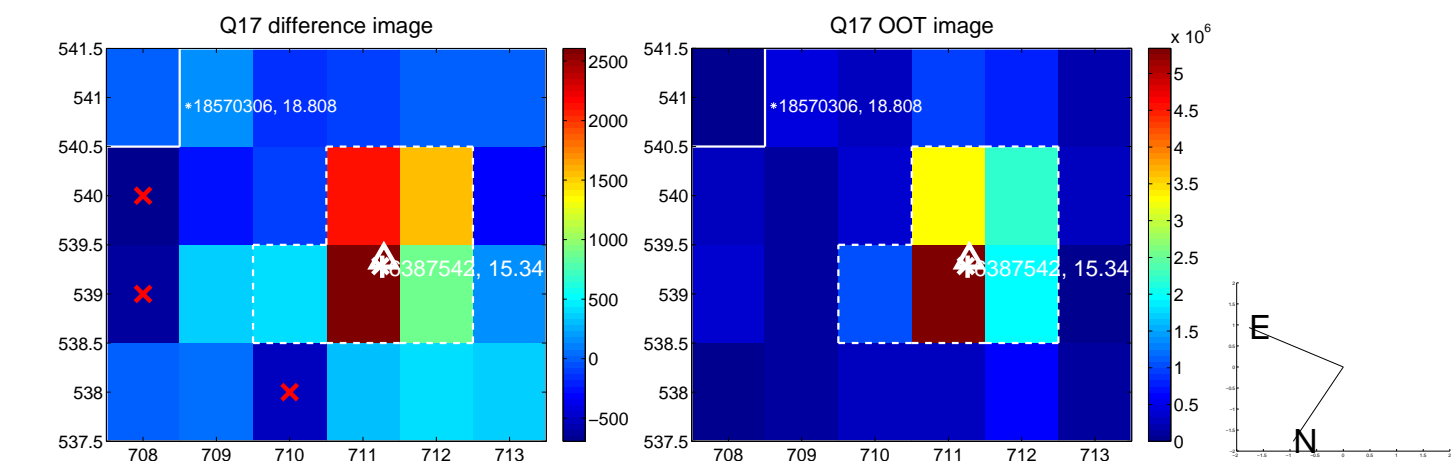
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



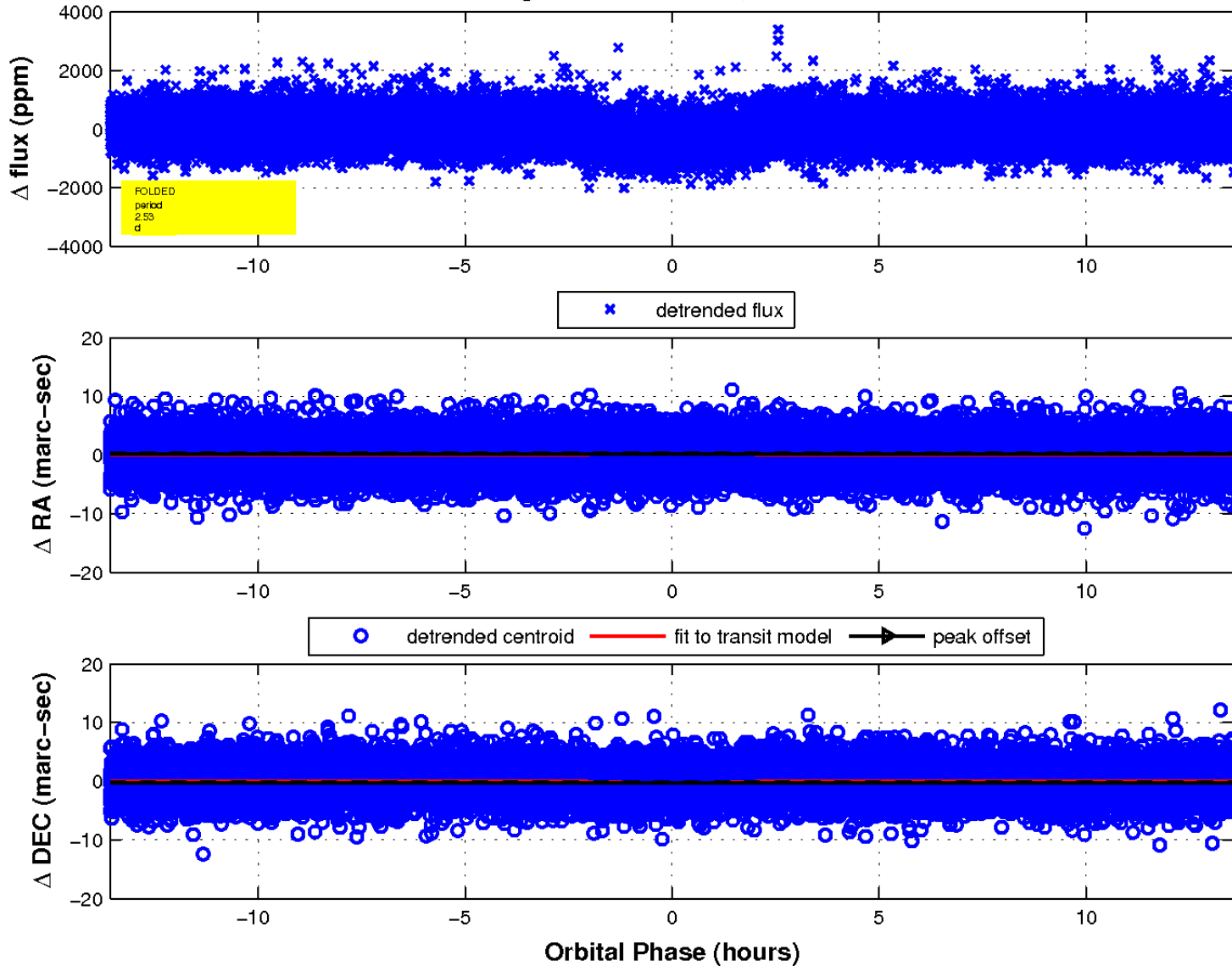
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

