

# KIC 003547178

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003547178-01	OBS	6342.01	8.177067	136.839810	34.6	5.482	8.3	8.3	1.21	6501	0.83	366.13

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003547178-01	OBS	PC	0.98	0	0	0	0	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.

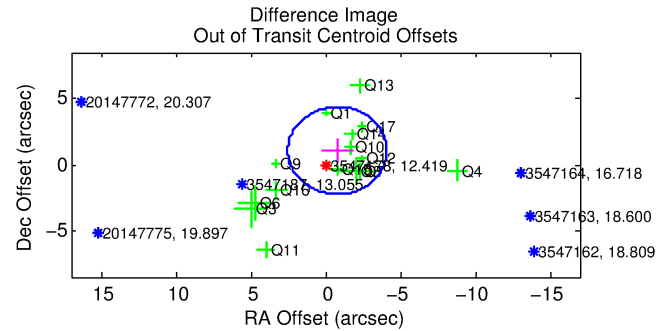
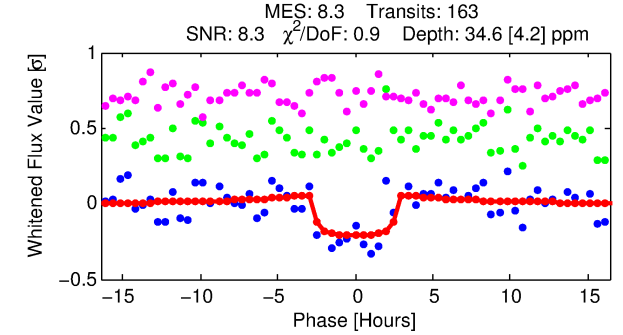
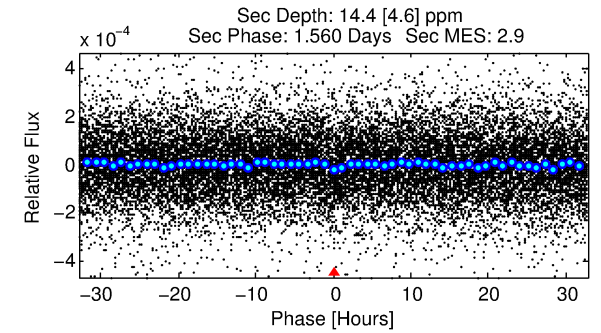
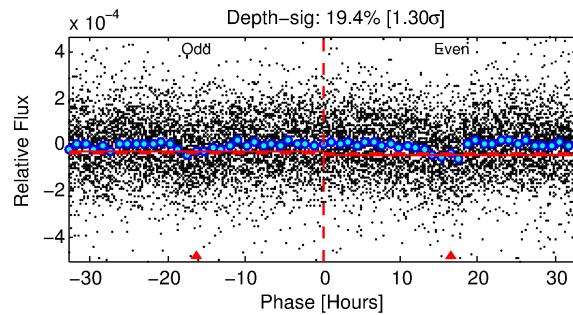
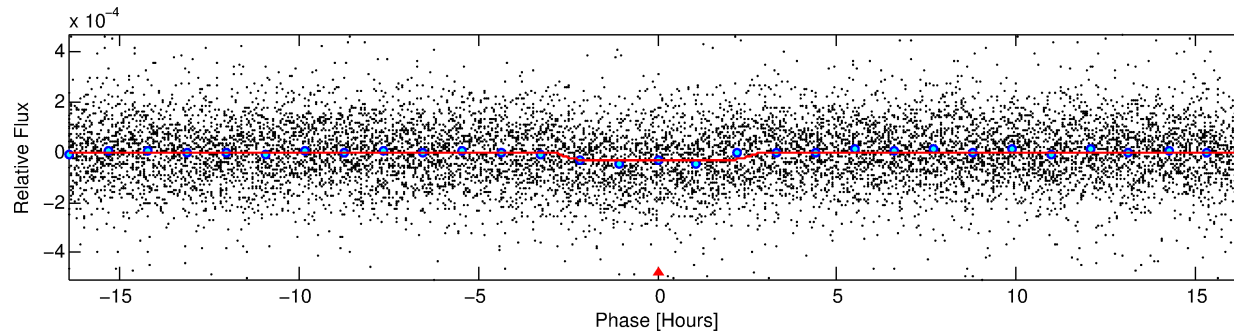
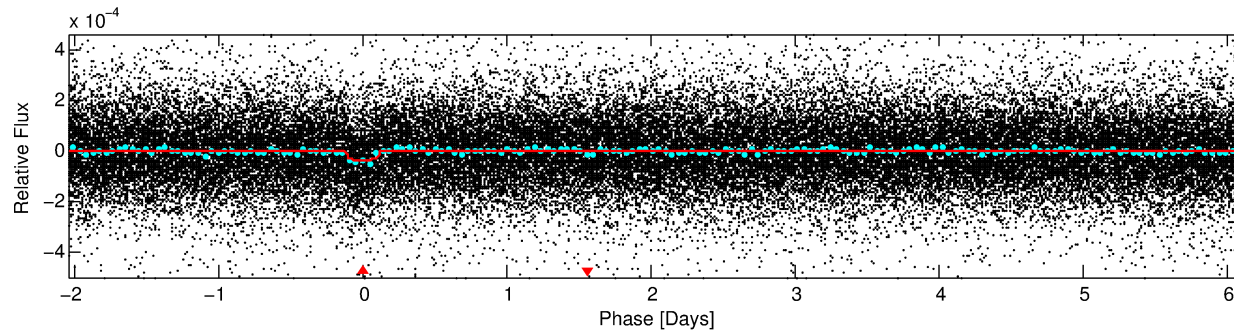
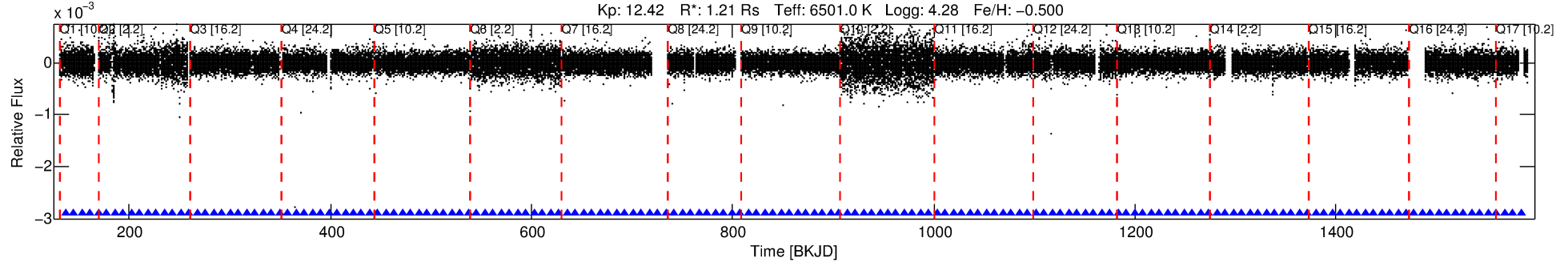
## Ephemeris Match Information For 003547178-01

No Significant Match Found

# DV One-Page Summary

KIC: 3547178 Candidate: 1 of 1 Period: 8.177 d  
KOI: K06342.01 Corr: 0.898

Kp: 12.42 R\*: 1.21 Rs Teff: 6501.0 K Logg: 4.28 Fe/H: -0.500



## DV Fit Results:

Period = 8.17707 [0.00010] d  
Epoch = 136.8398 [0.0090] BKJD  
Rp/R\* = 0.0063 [0.0020]  
a/R\* = 5.23 [9.50]  
b = 0.90 [0.41]  
Seff = 366.13 [128.22]  
Teq = 1115 [98] K  
Rp = 0.83 [0.35] Re  
a = 0.0799 [0.0182] AU  
Ag = 73.58 [58.63] [1.24σ]  
Teffp = 5051 [925] K [4.23σ]

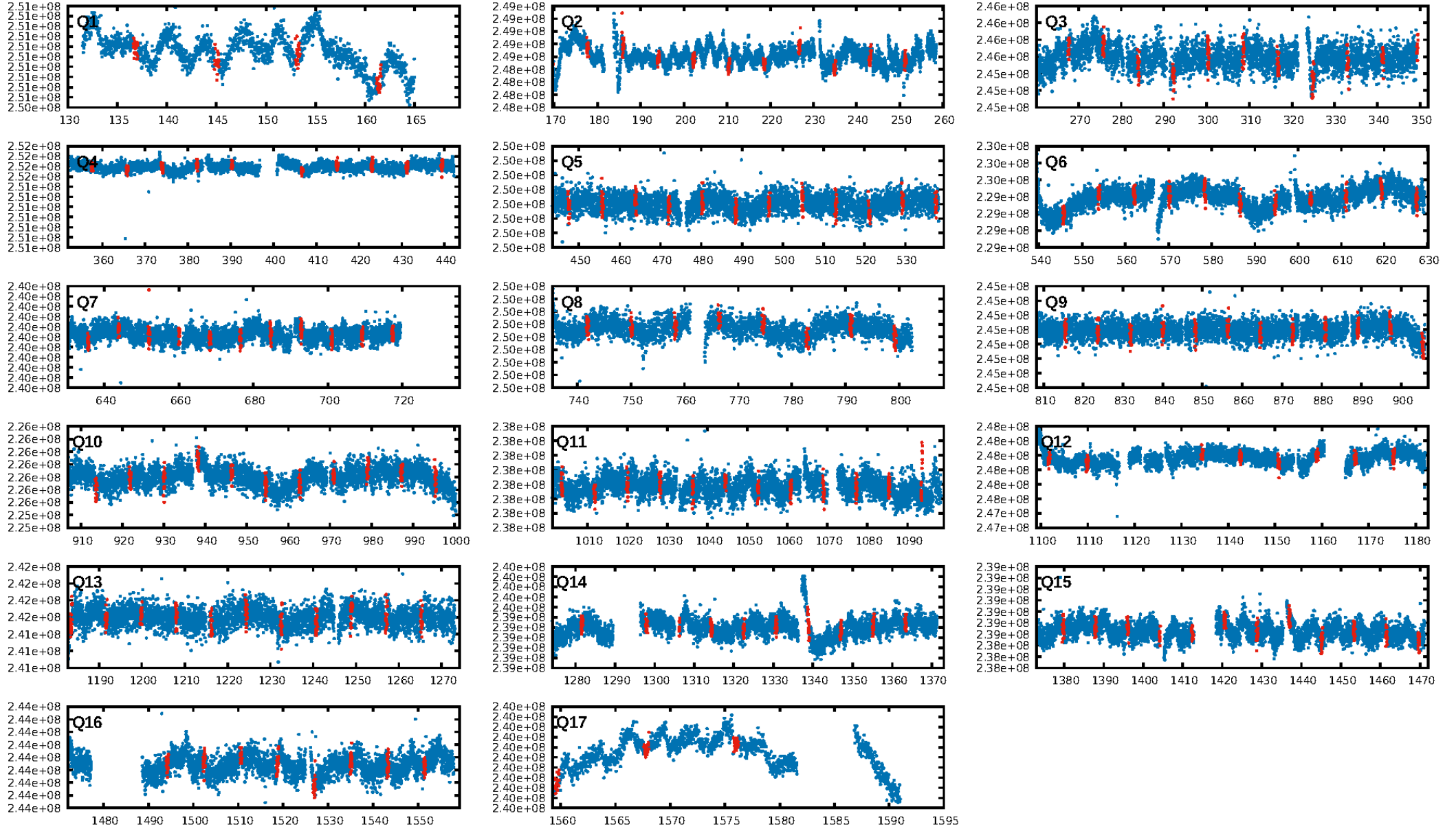
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.87e-16  
RollingBand-fgt: 1.00 [156/156]  
GhostDiagnostic-chr: -2.685  
Centroid-sig: 70.1%  
Centroid-so: 1.588 arcsec [1.61σ]  
OotOffset-rm: 1.313 arcsec [1.19σ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-rm: 0.768 arcsec [1.11σ]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.60 [9/15]  
DiffImageOverlap-fno: 1.00 [17/17]

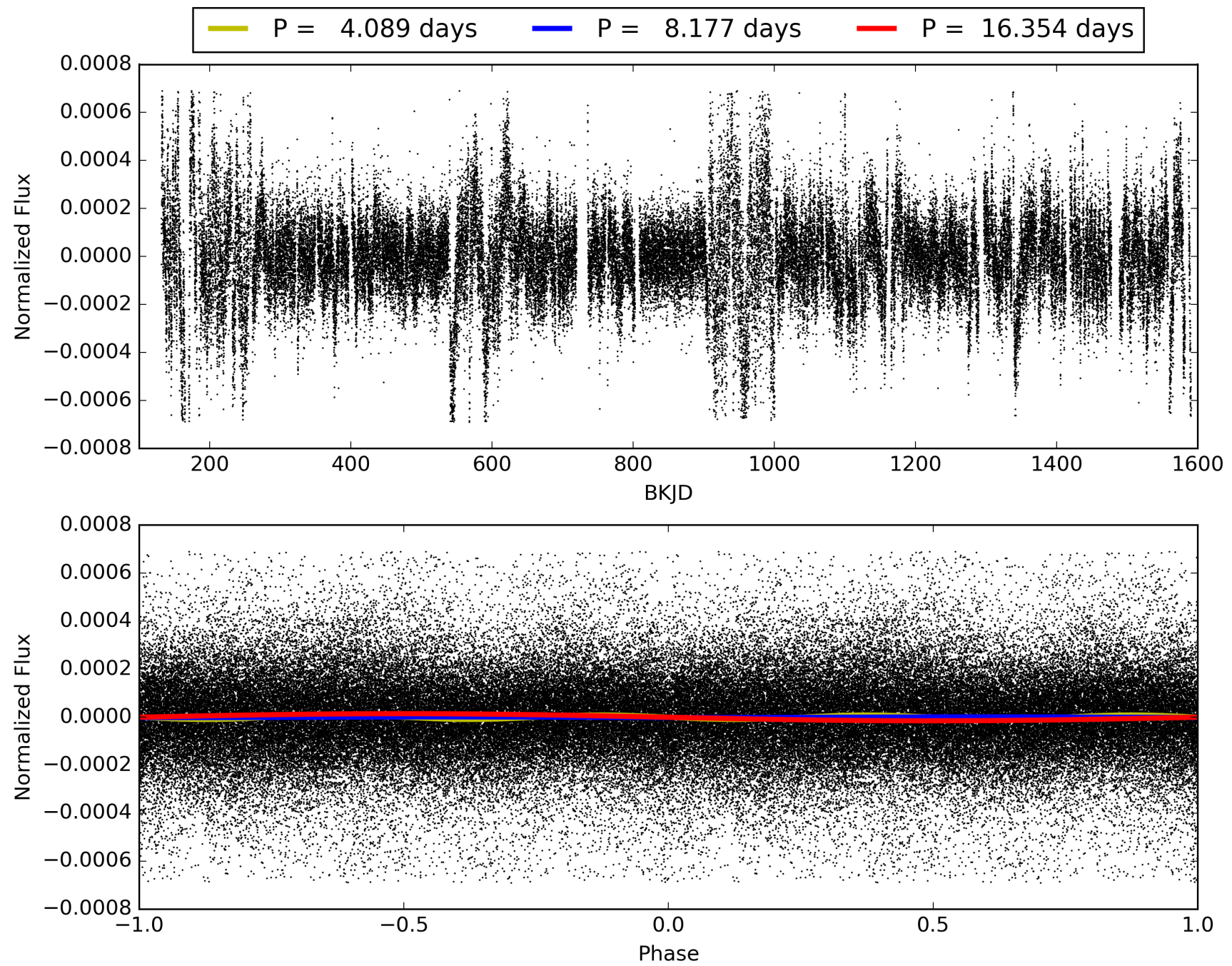
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:21:50 Z

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

# TCE 003547178-01, PDC Light Curves

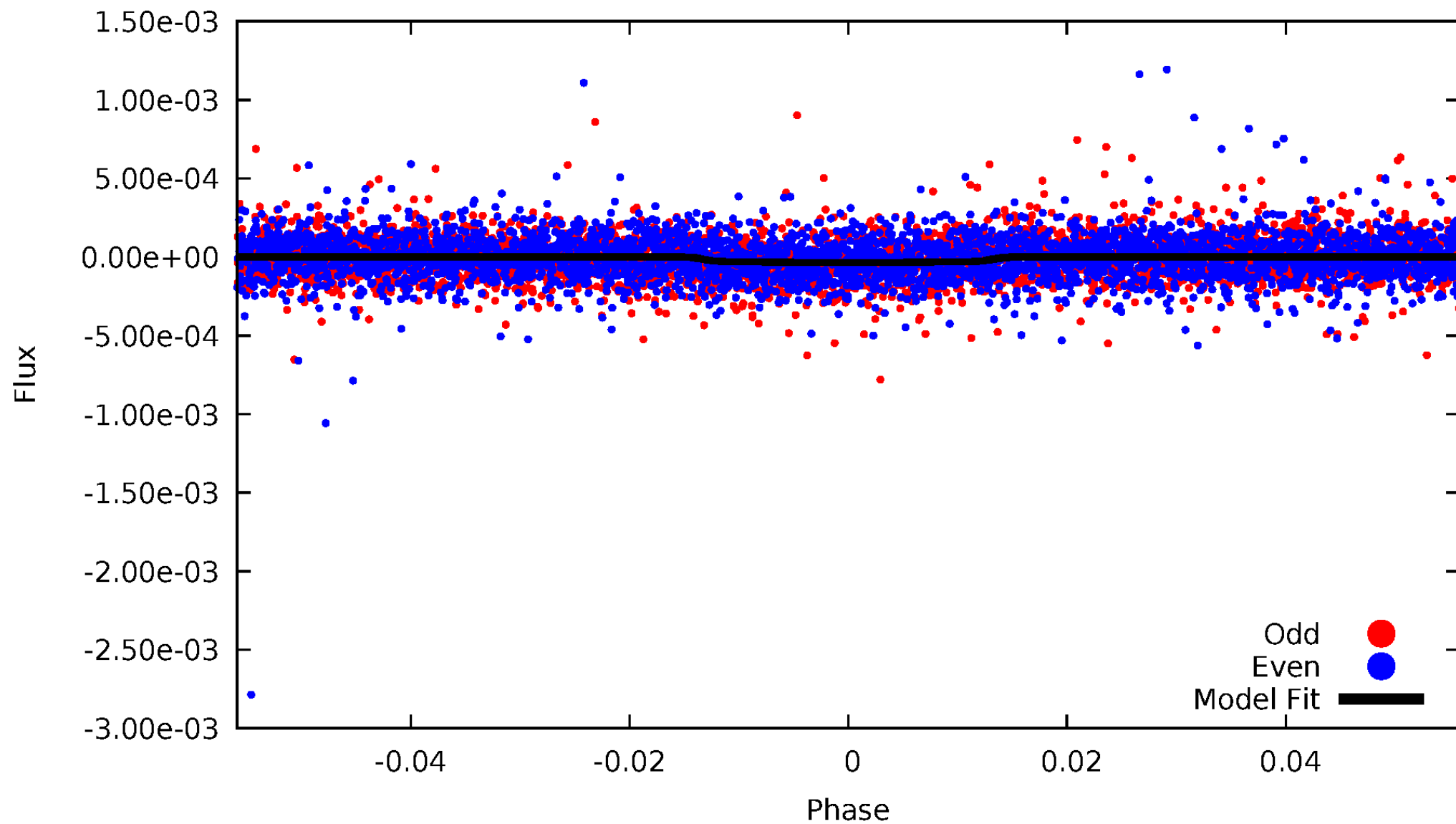


TCE 003547178-01



DV Odd/Even

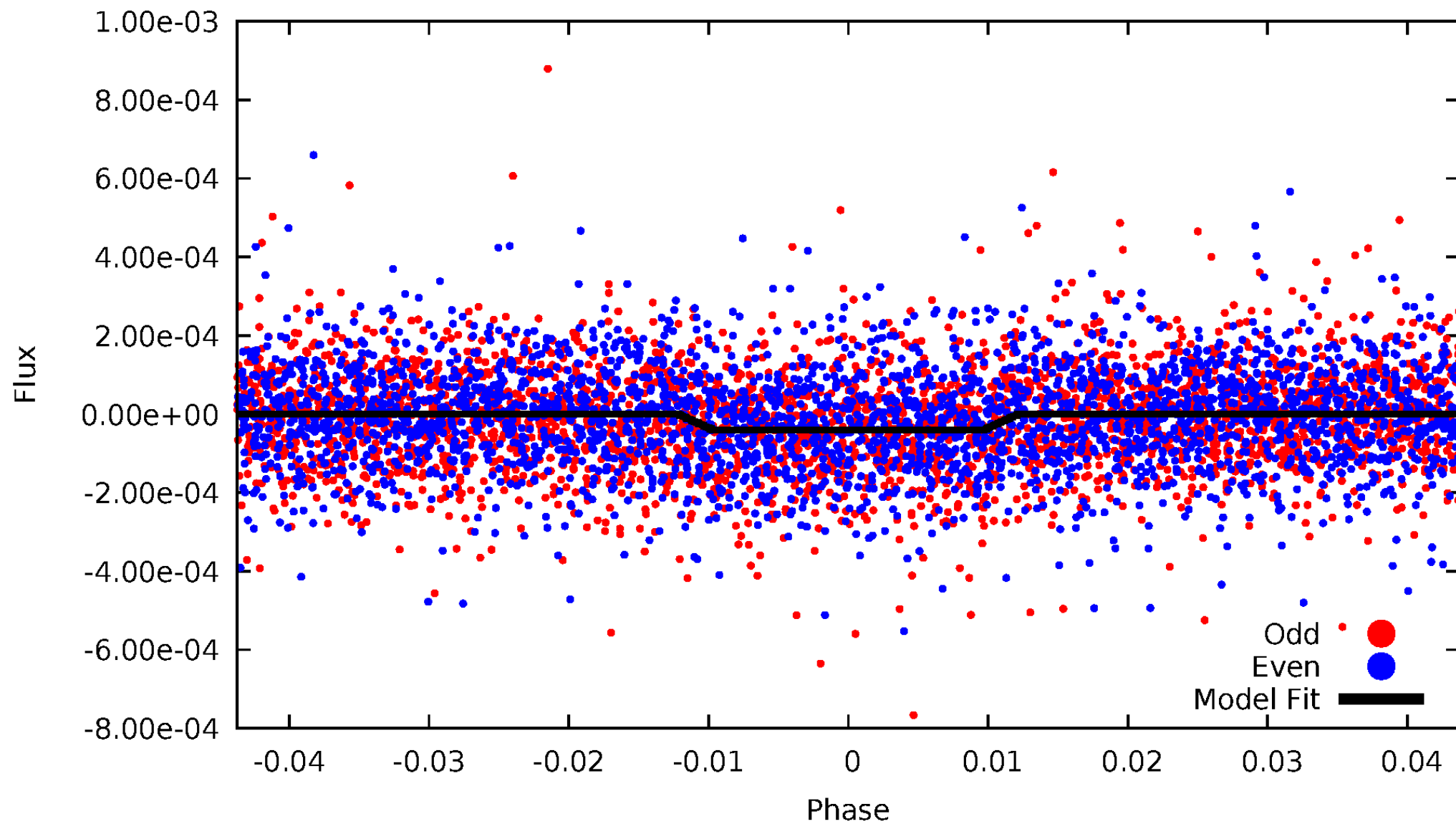
TCE 003547178-01





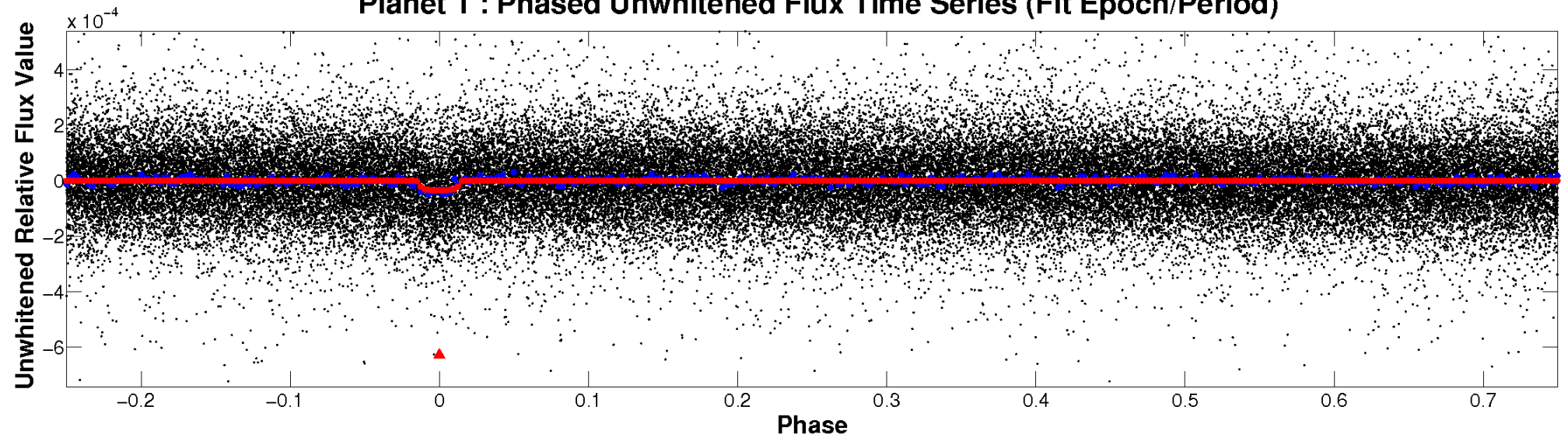
# ALT Odd/Even

TCE 003547178-01

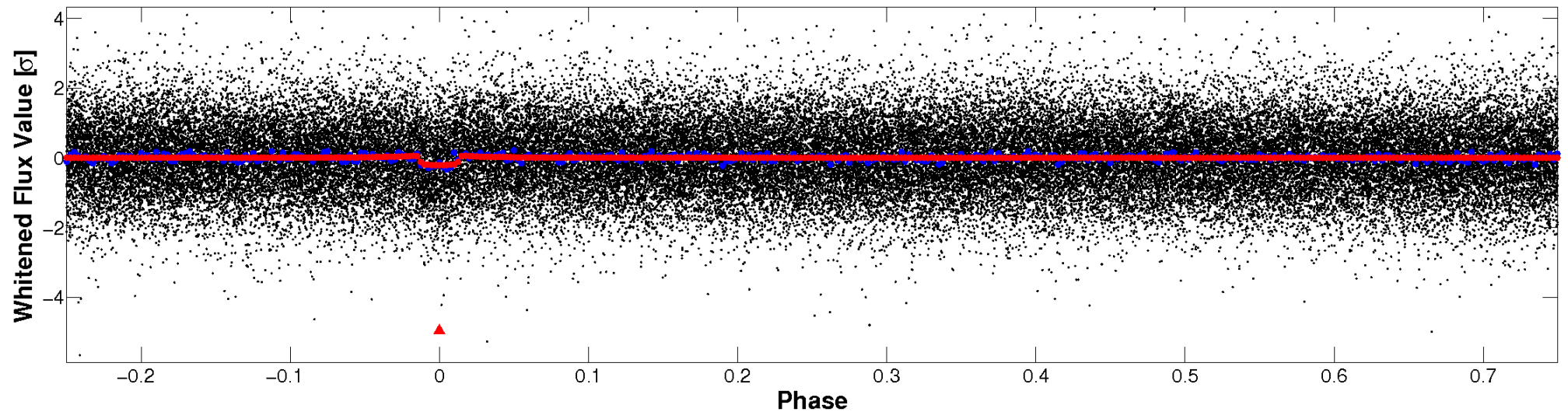


# Non-Whitened Vs. Whitened Light Curve

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

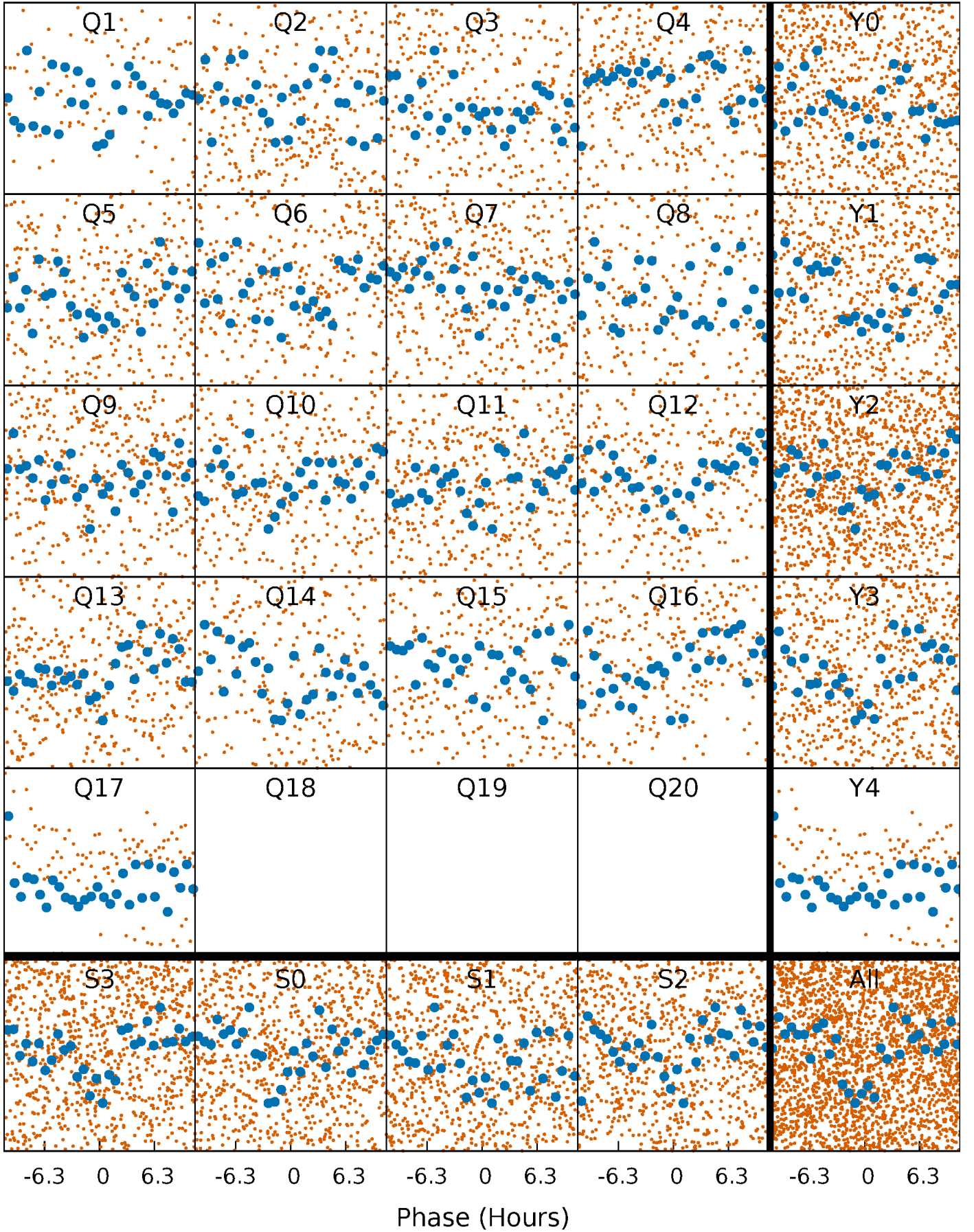


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

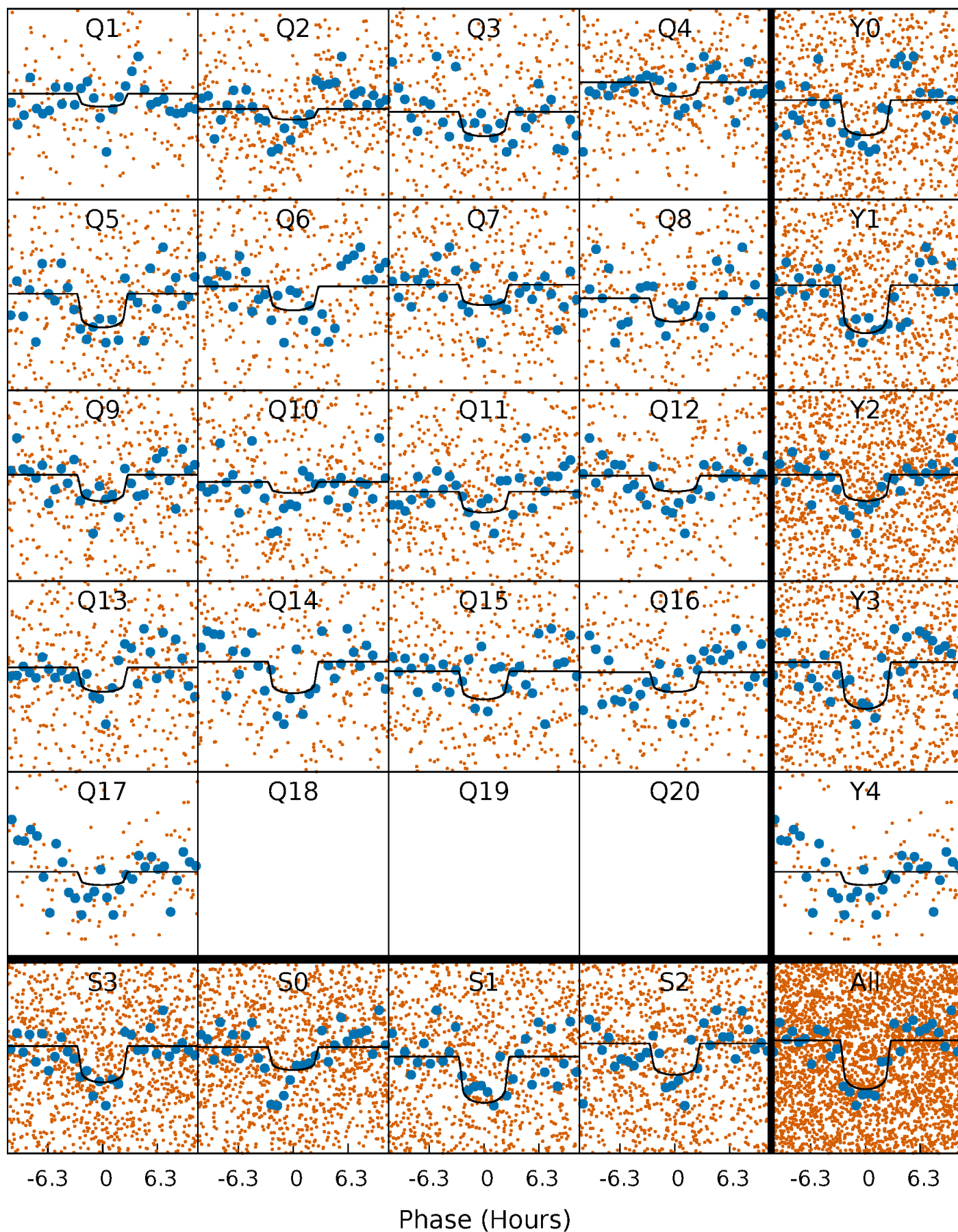
TCE 003547178-01   P= 8.177067 Days    $T_0=136.839810$  (BKJD)





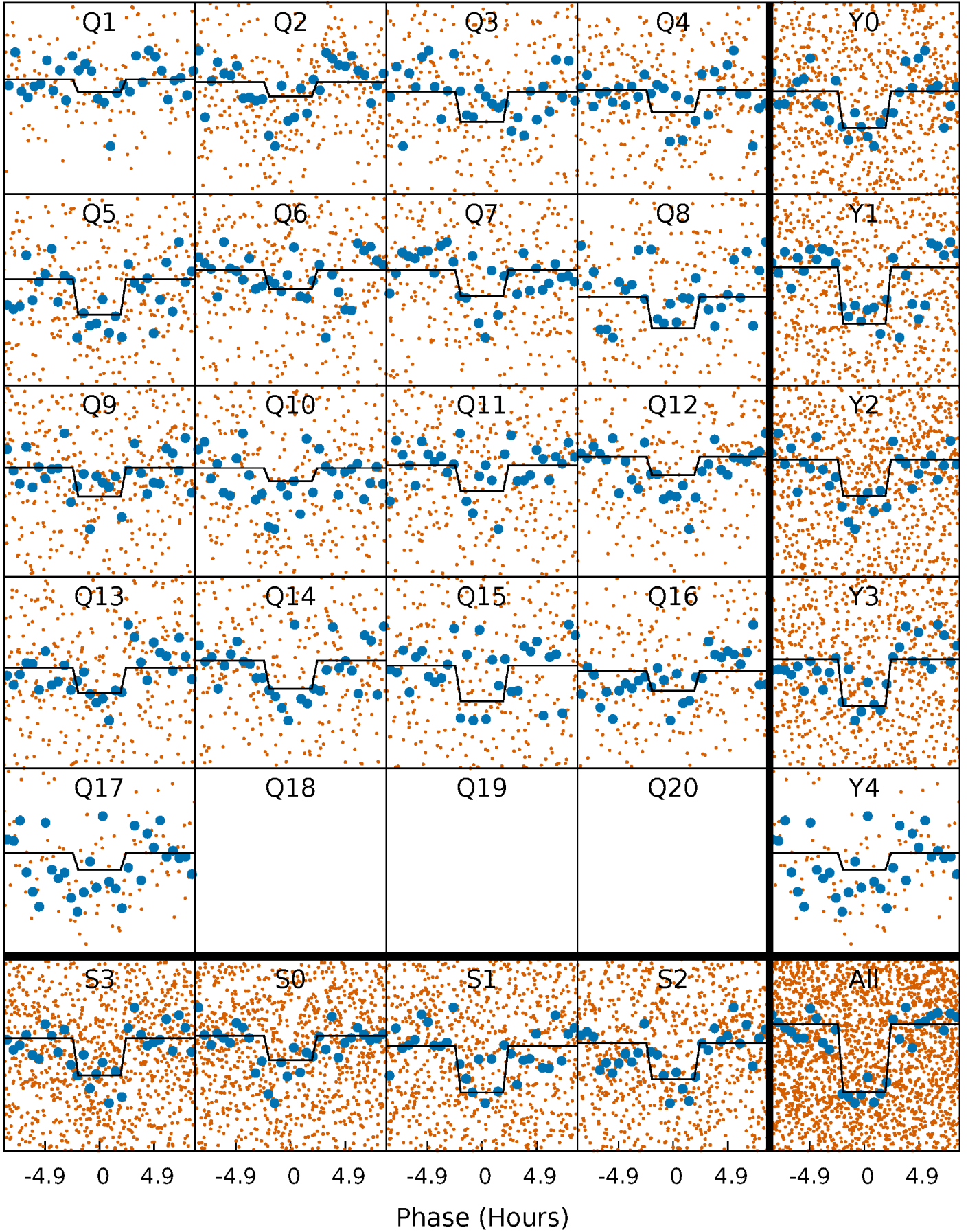
# DV Quarter-Phased Transit Curves

TCE 003547178-01 P= 8.177067 Days  $T_0=136.839810$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

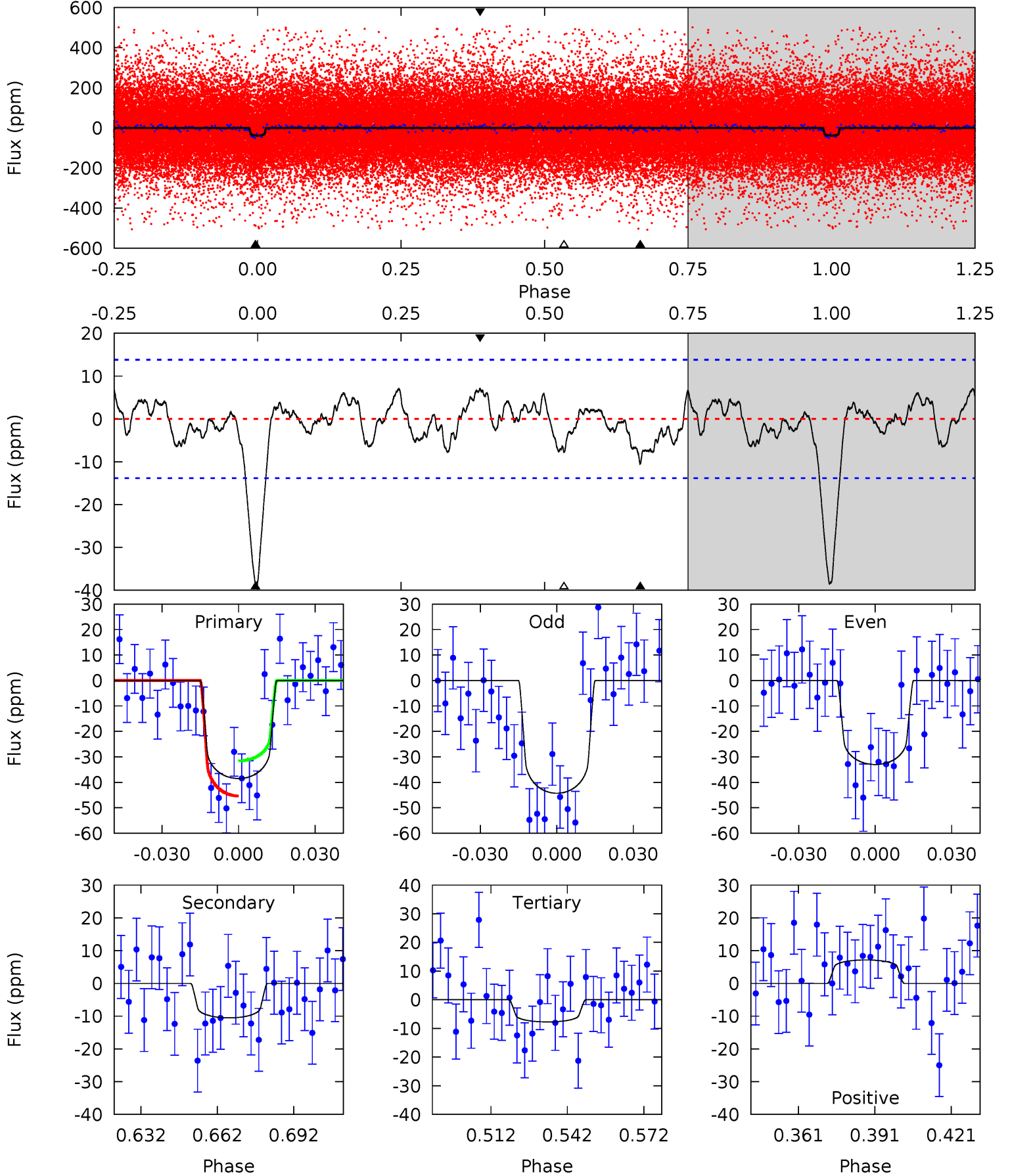
TCE 003547178-01 P= 8.177132 Days  $T_0=136.819261$  (BKJD)



# DV Model-Shift Uniqueness Test

003547178-01, P = 8.177067 Days, E = 128.662743 Days

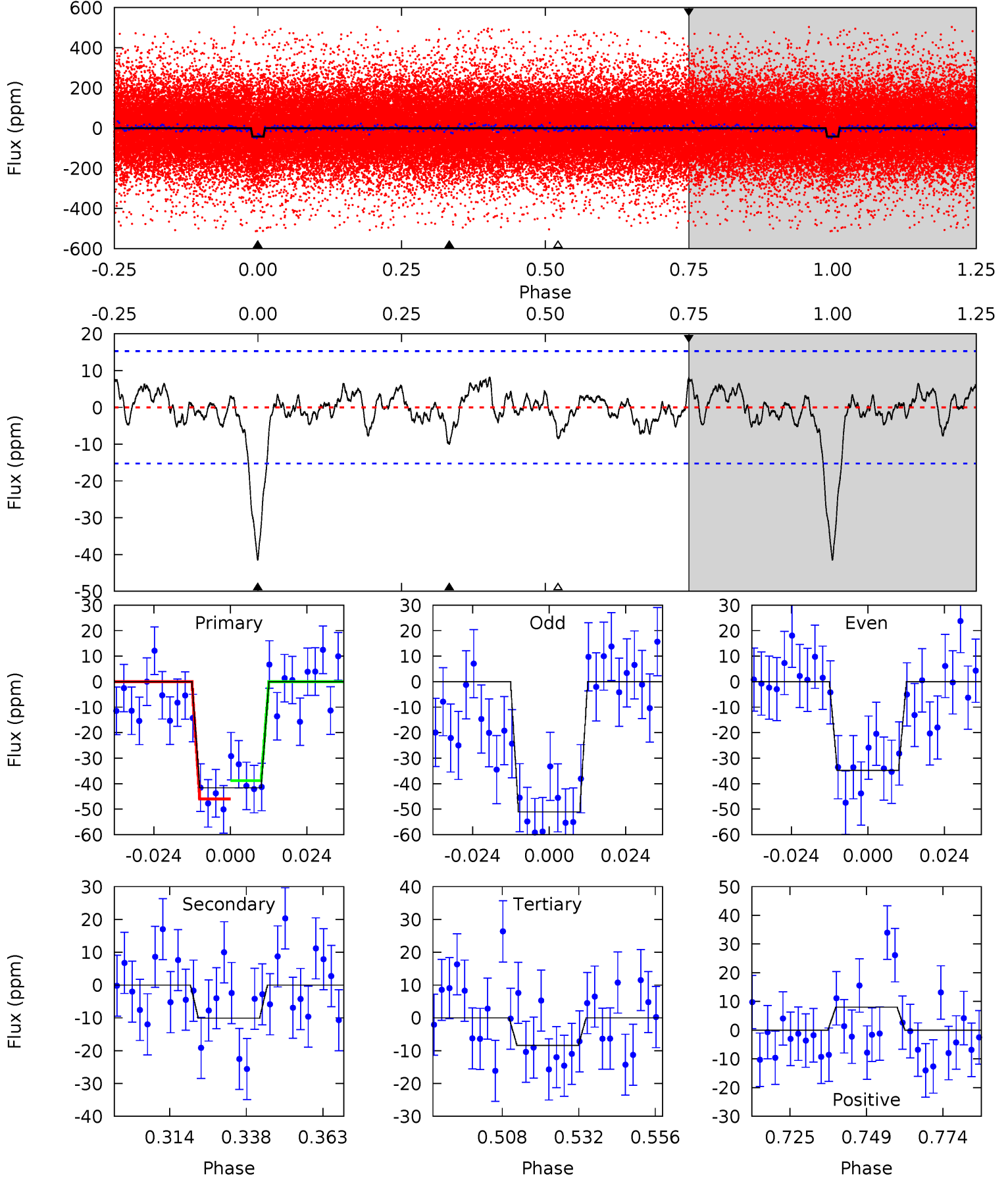
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	3.67	2.69	2.49	4.81	2.17	1.19	10.7	10.9	0.98	1.18	1.98	1.00	0.16	2.40



# Alt Model-Shift Uniqueness Test

003547178-01, P = 8.177132 Days, E = 128.642129 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
13.2	3.20	2.67	2.54	4.85	2.25	1.06	10.6	10.7	0.53	0.66	2.60	1.01	0.16	1.15



### Stellar Parameters For KIC 003547178

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6501^{+147}_{-180}$	$4.281^{+0.149}_{-0.182}$	$-0.500^{+0.300}_{-0.300}$	$1.209^{+0.326}_{-0.217}$	$1.017^{+0.150}_{-0.112}$	$0.810^{+0.571}_{-0.390}$
	+2%/-3%	+3%/-4%	+60%/-60%	+27%/-18%	+15%/-11%	+70%/-48%
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 003547178-01 / KOI 6342.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-11 \pm 3$	$0.86^{+0.28}_{-0.30}$	$1560^{+117}_{-85}$	$4742^{+893}_{-563}$	$51^{+63}_{-26}$
Alt.	$-10 \pm 3$	$0.86^{+0.31}_{-0.28}$	$1566^{+111}_{-95}$	$4672^{+925}_{-576}$	$47^{+61}_{-25}$

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



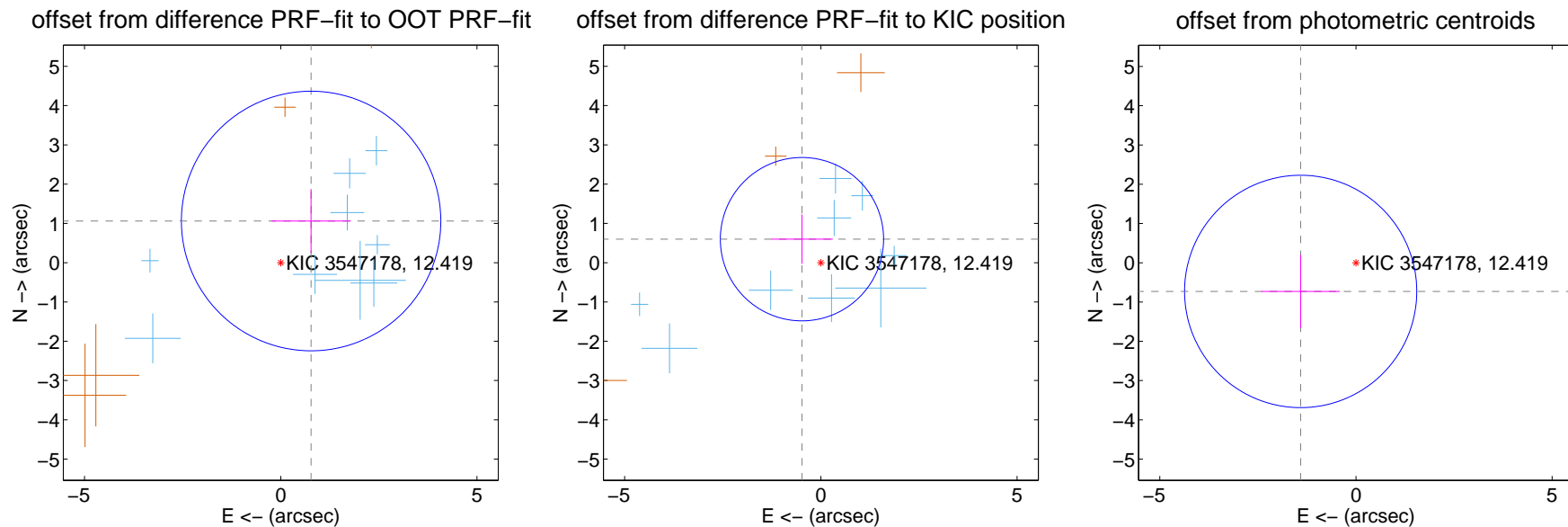
## DV Centroid Data

Supplemental centroid analysis for 003547178-01. Kepler magnitude: 12.42. Transit SNR 8.29

There are 9 quarters with good PRF difference image offsets

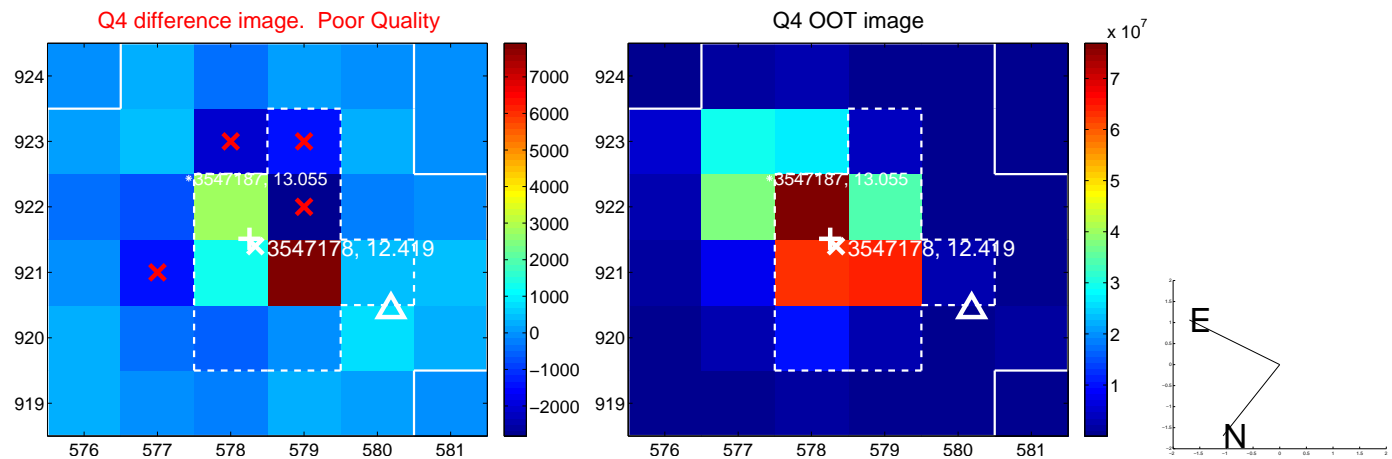
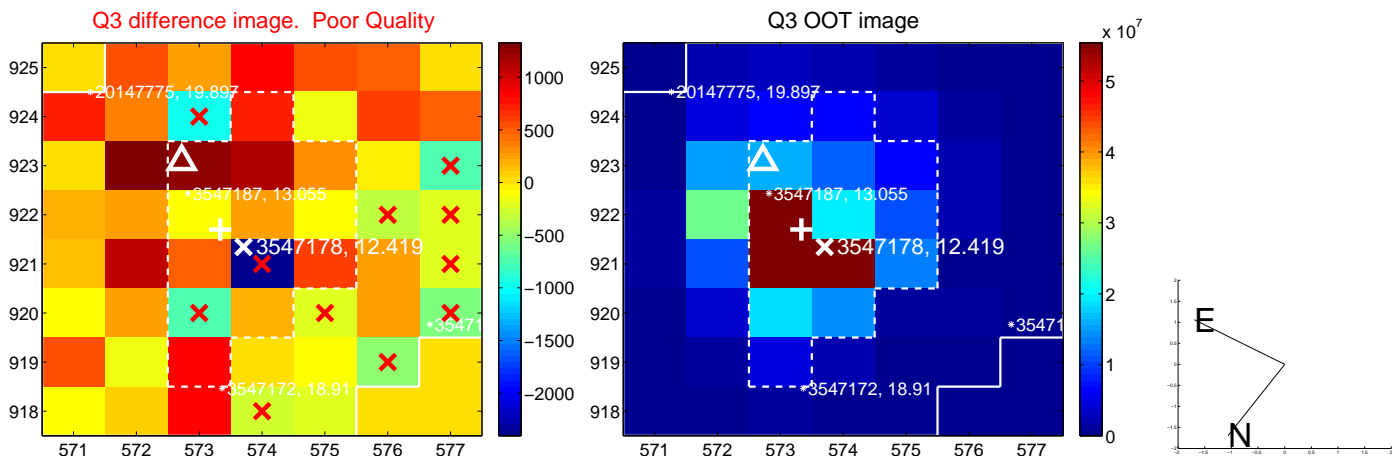
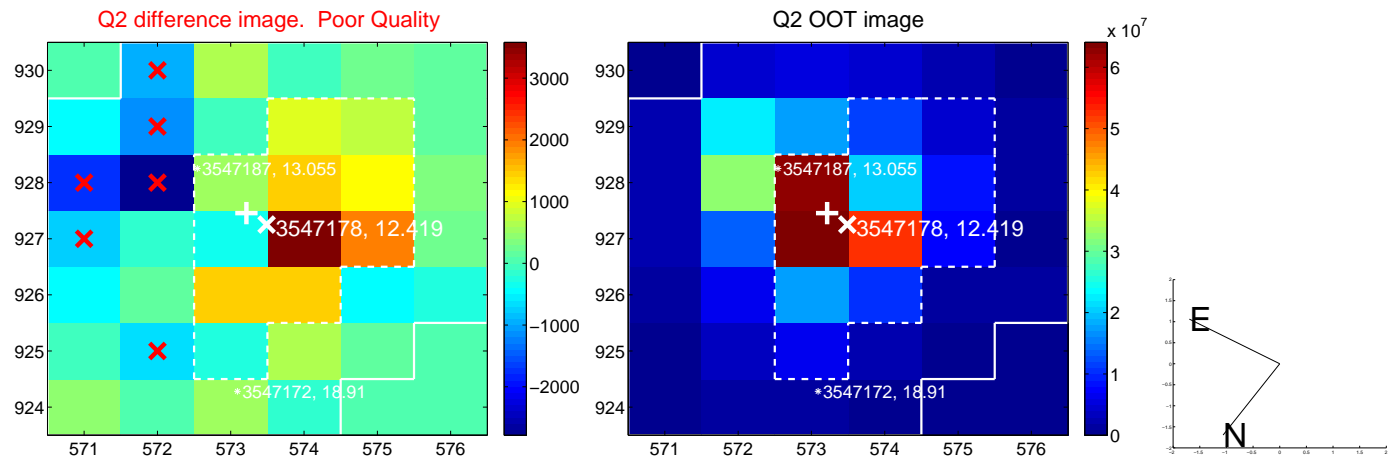
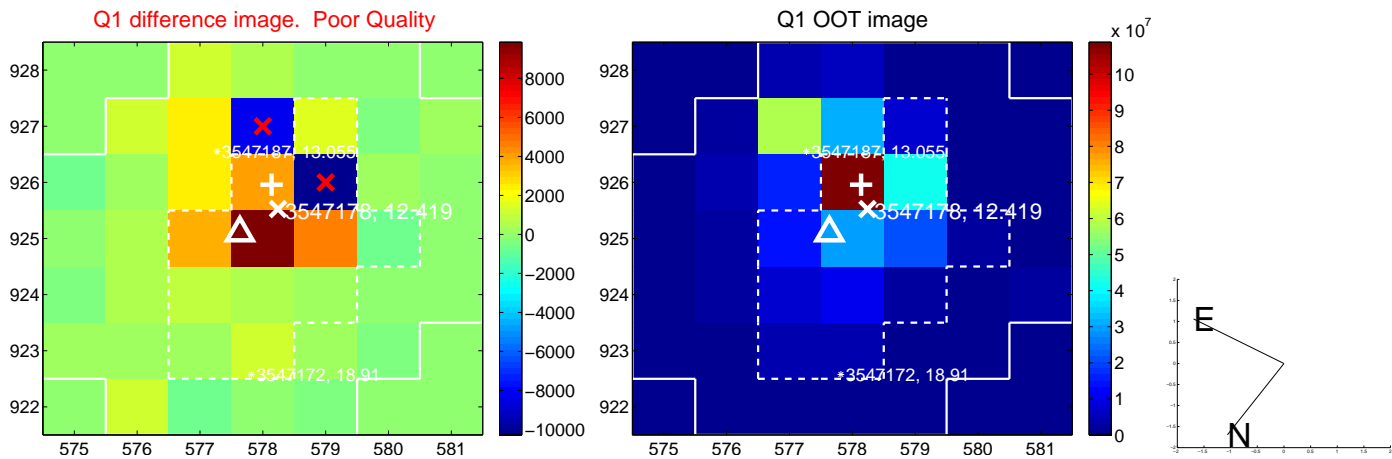
The direct PRF centroid is offset from the target star catalog position by about 1.79 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.313 \pm 1.102$	1.19	$-0.773 \pm 1.009$	$1.061 \pm 0.815$
PRF-fit source offset from KIC position	$0.768 \pm 0.693$	1.11	$0.482 \pm 0.784$	$0.599 \pm 0.627$
photometric centroid source offset	$1.59 \pm 0.99$	1.61	$1.41 \pm 1.00$	$-0.73 \pm 0.93$

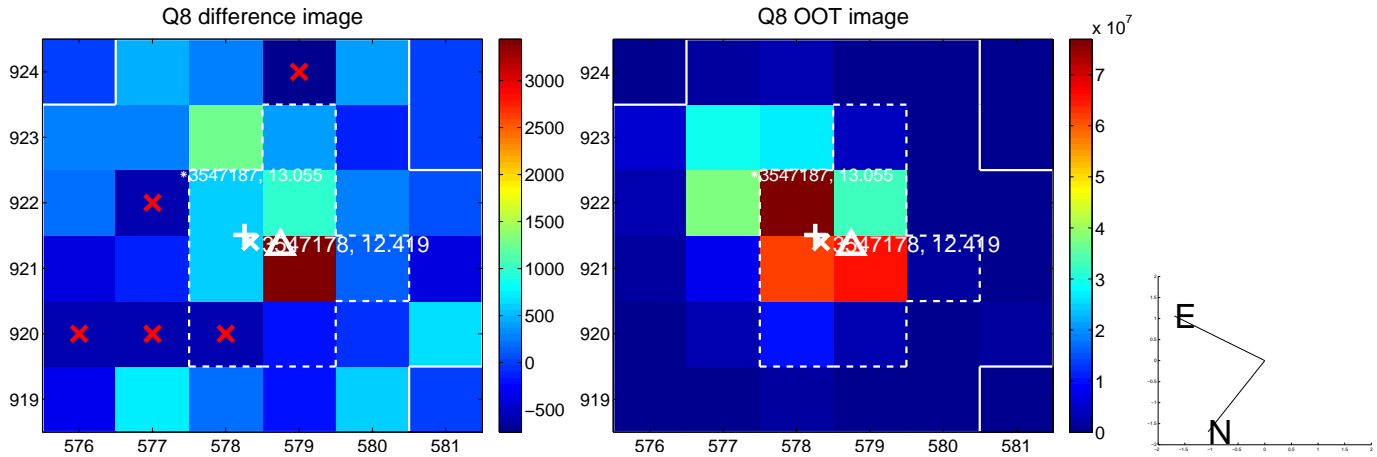
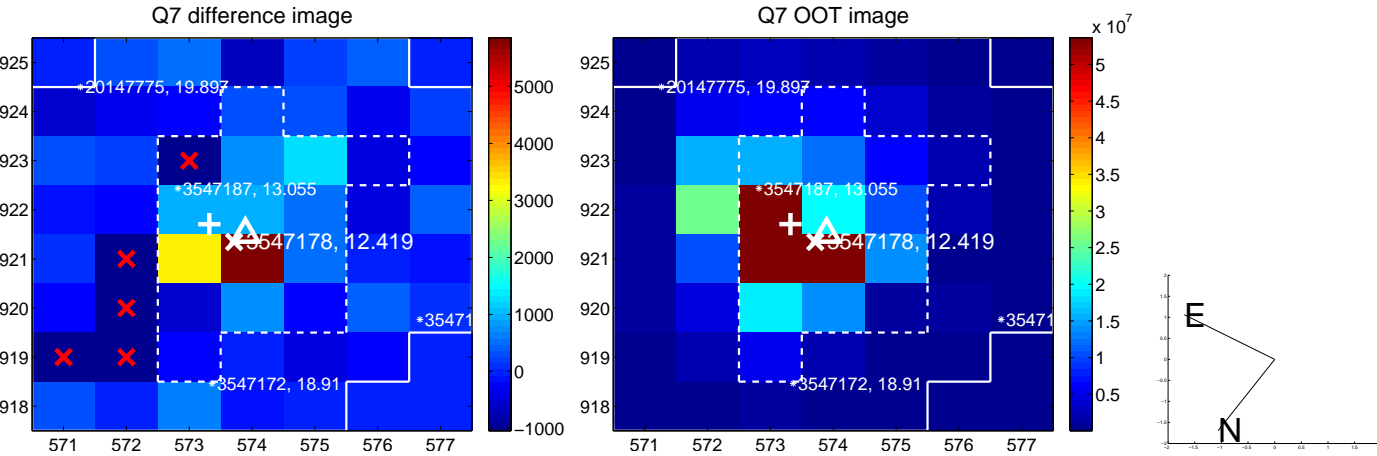
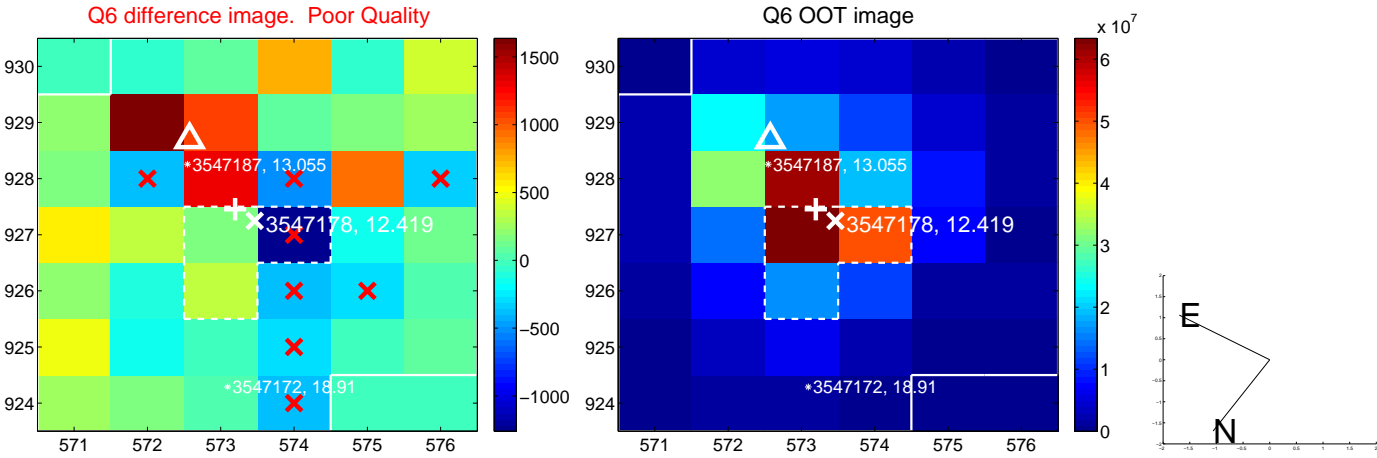
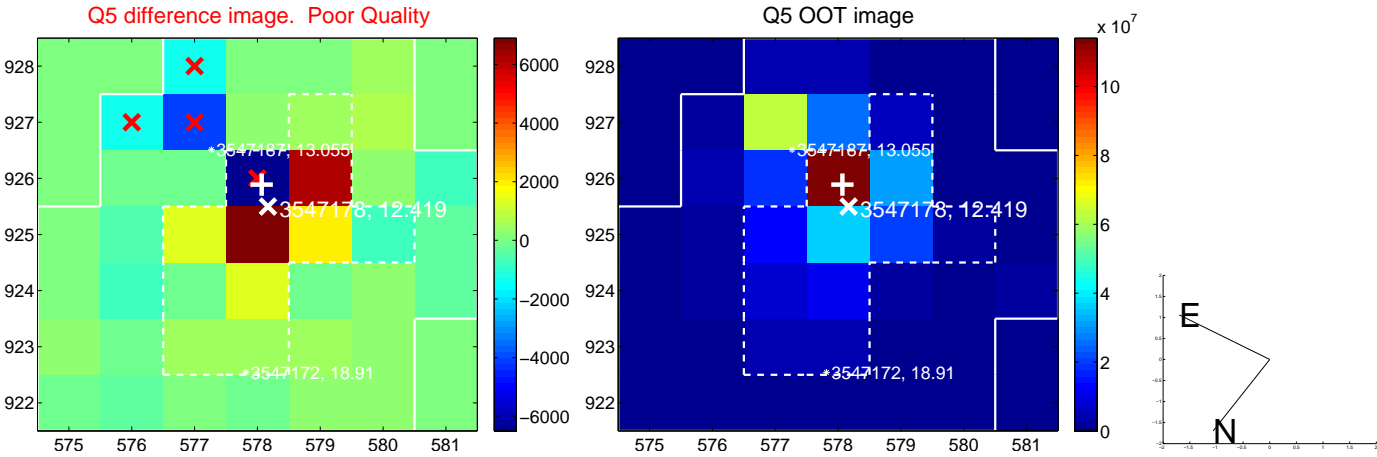


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

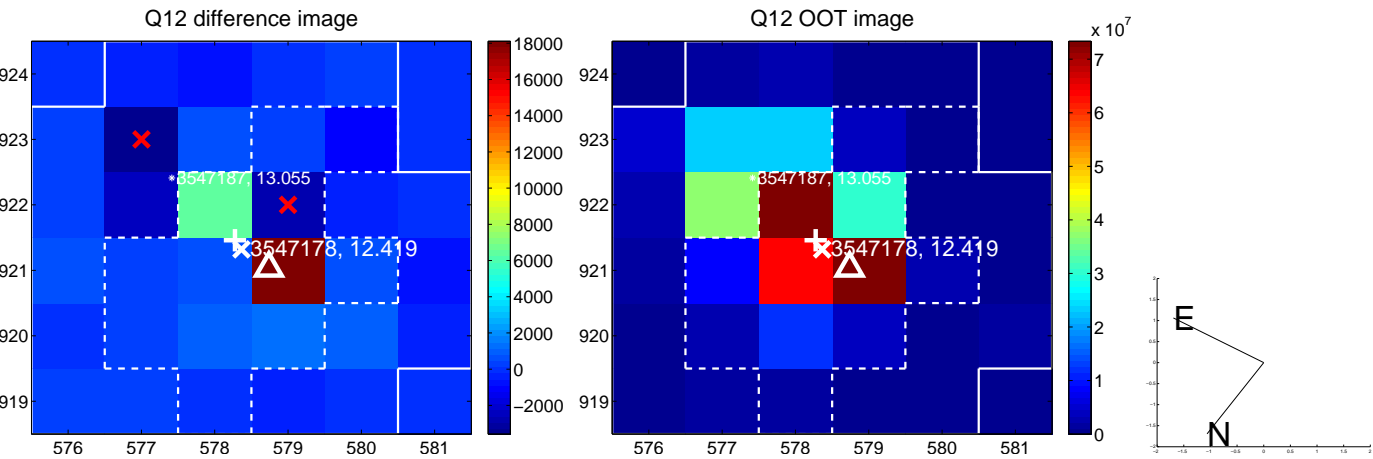
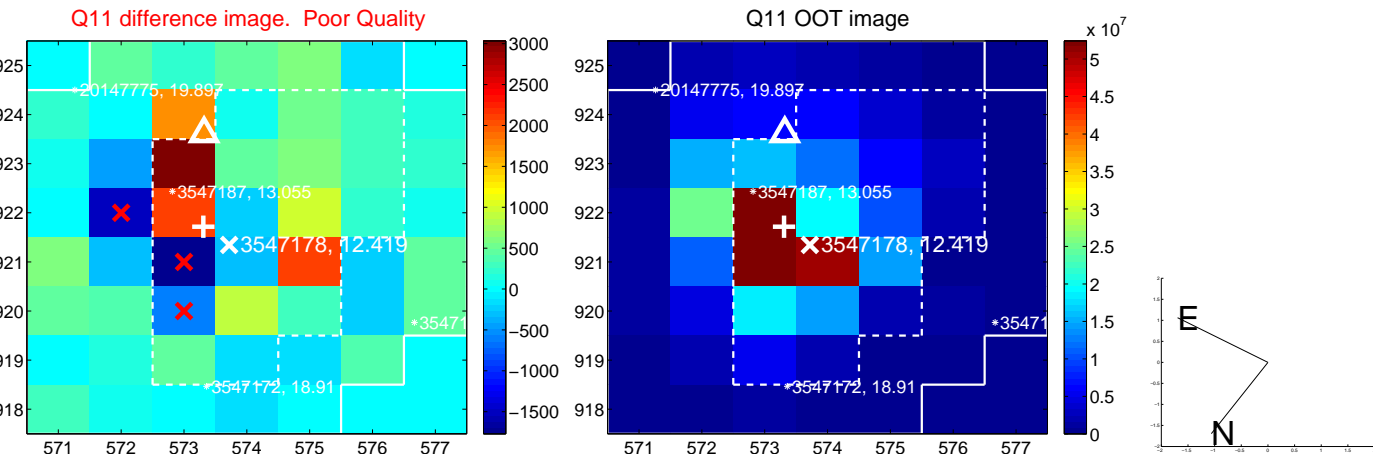
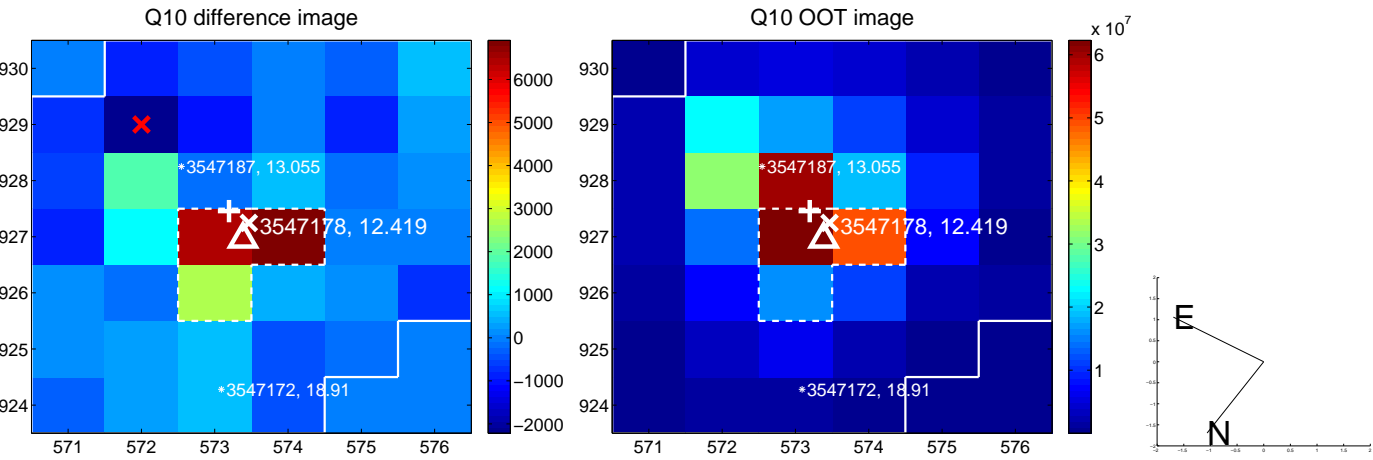
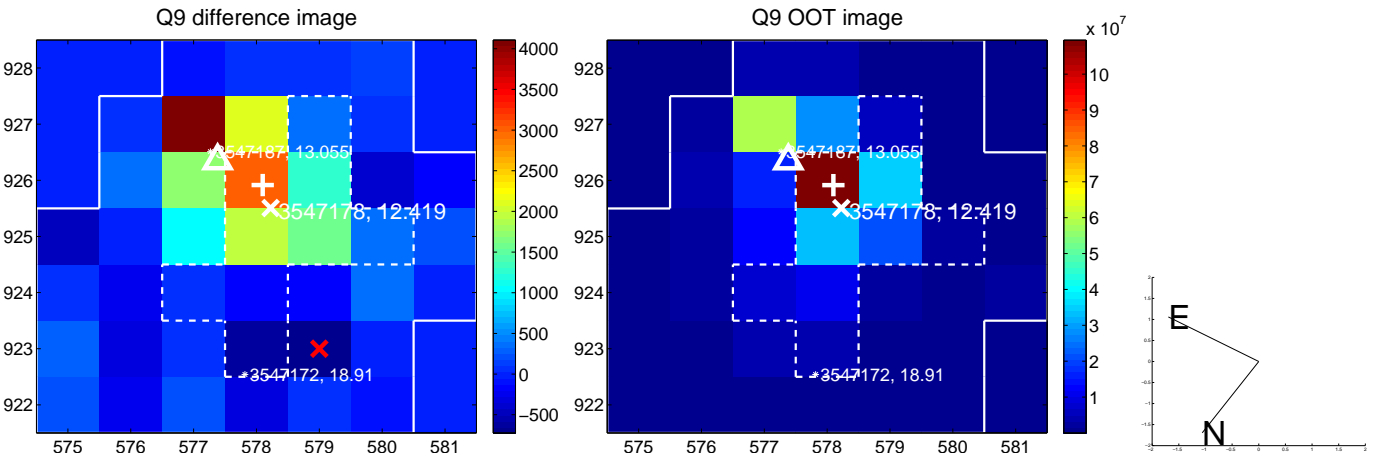
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



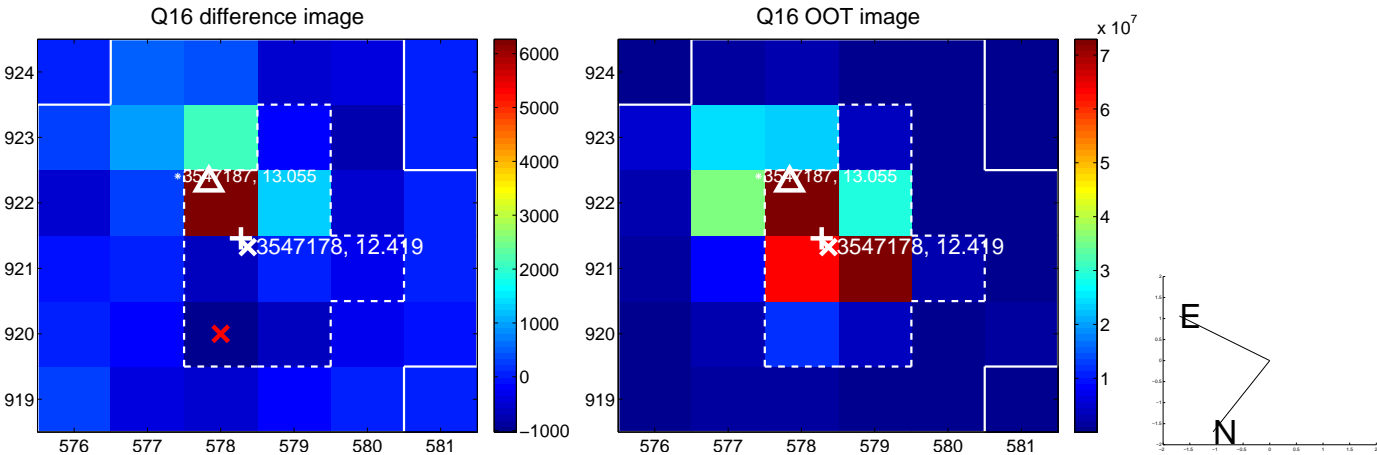
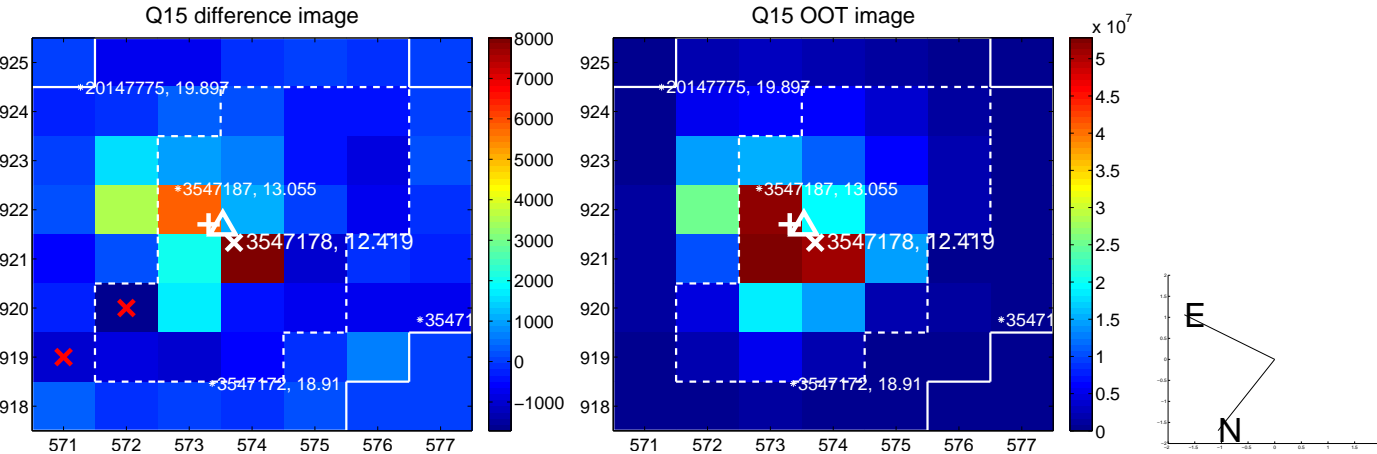
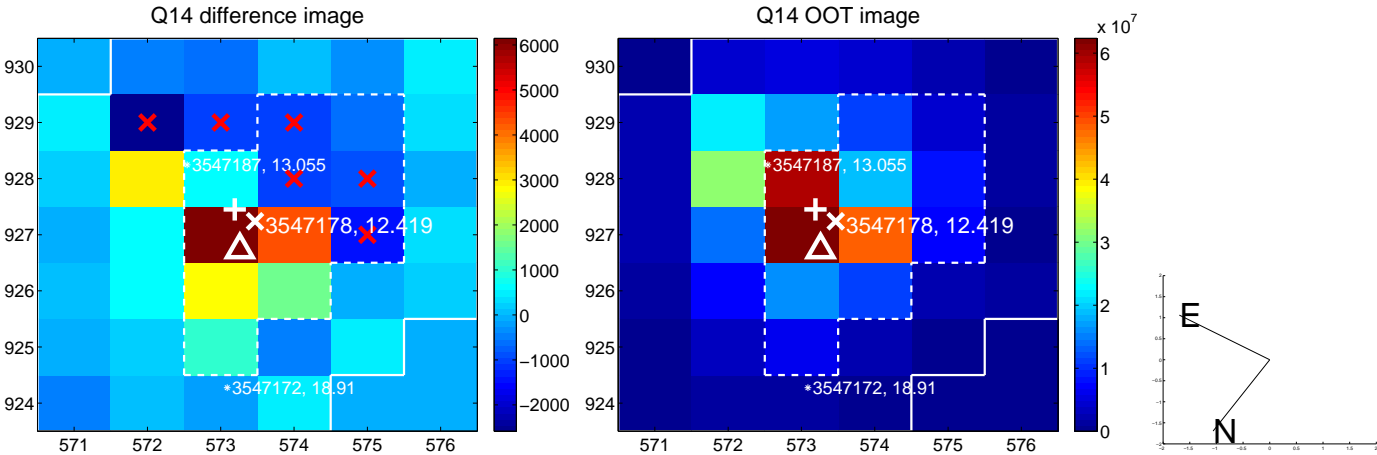
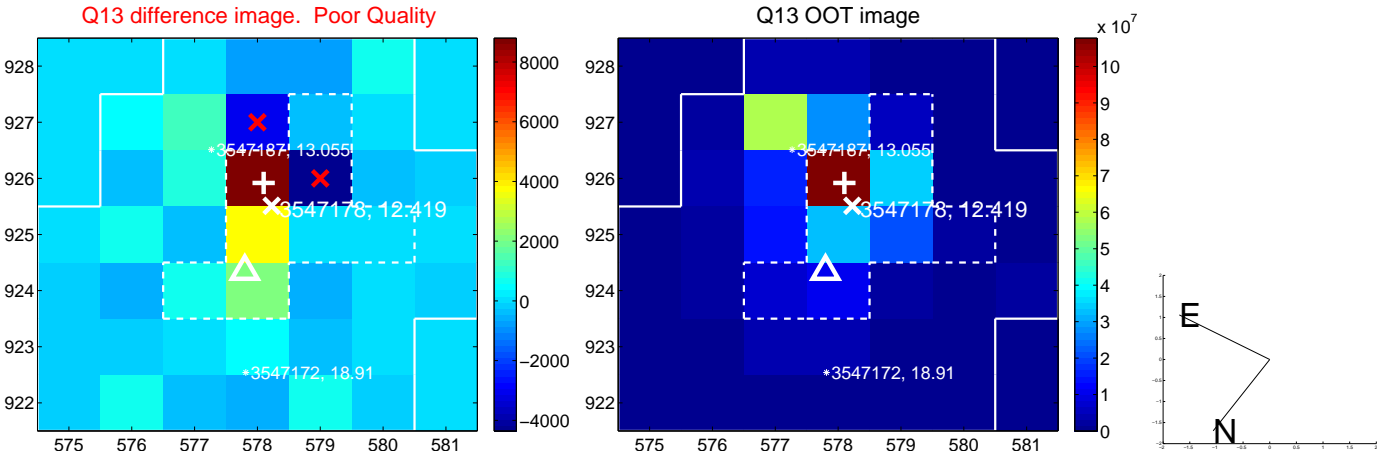
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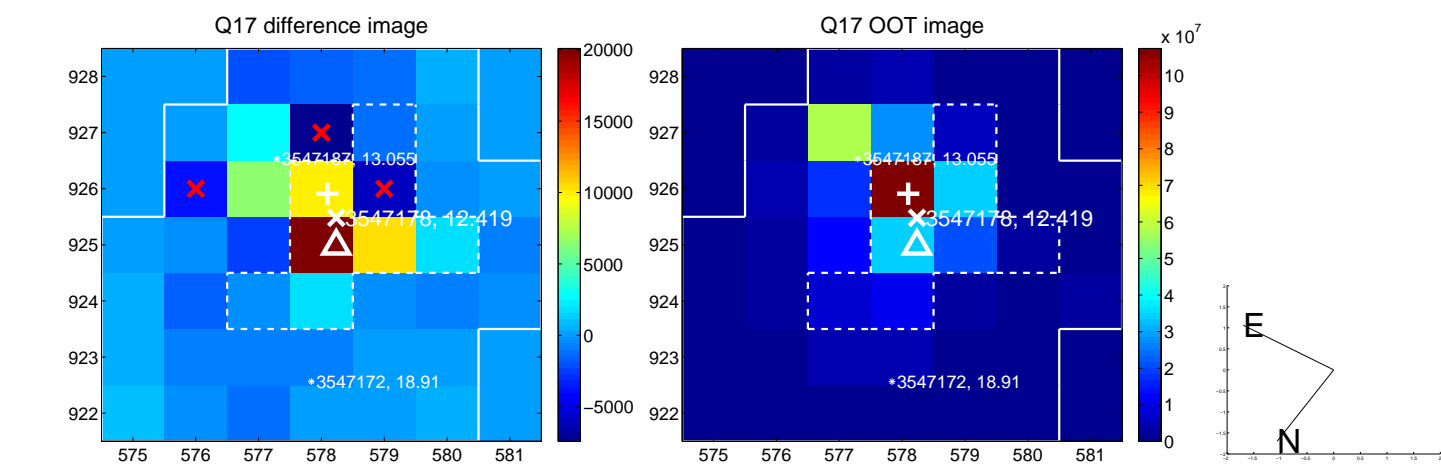


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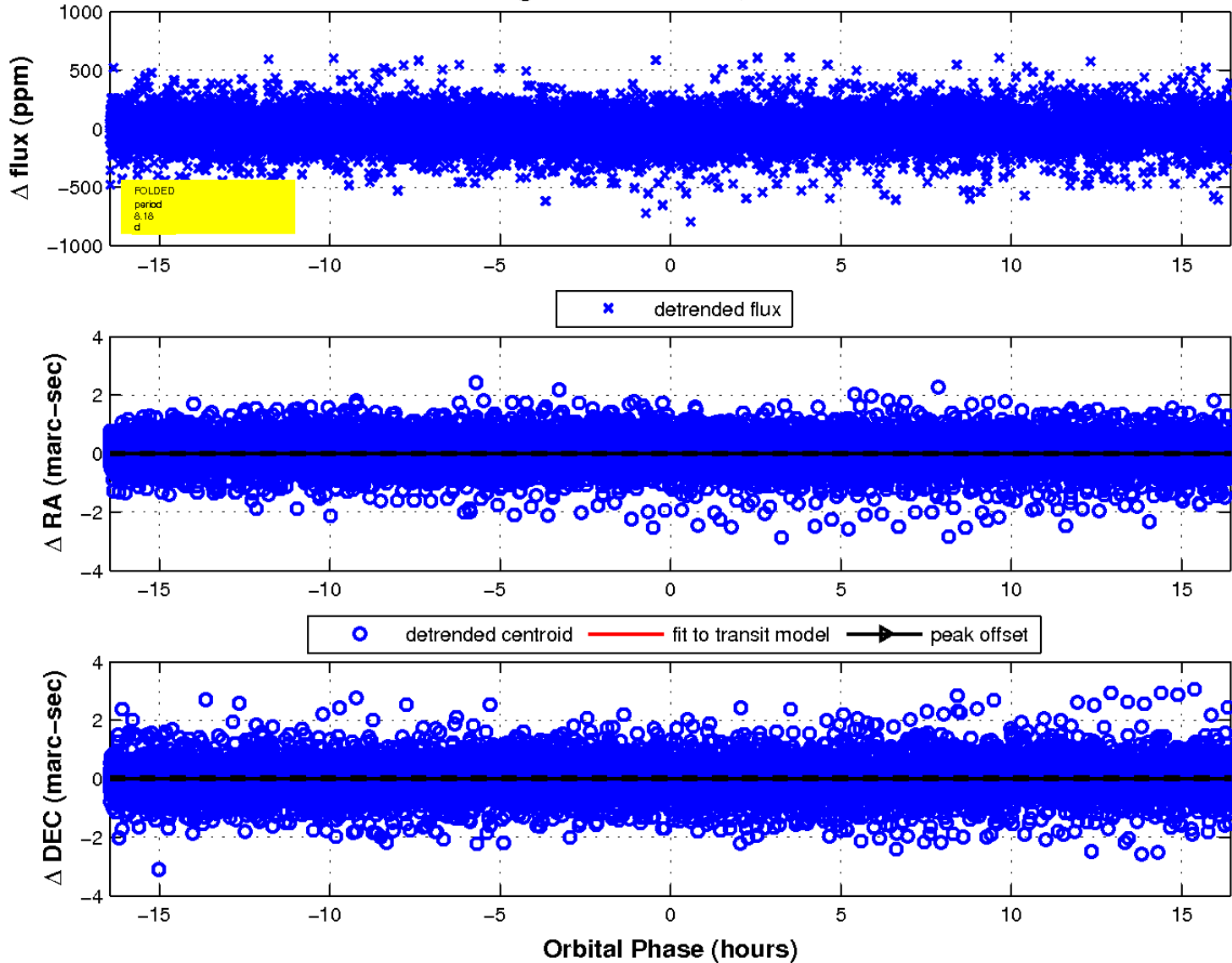




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

