

# KIC 008507475

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008507475-01	OBS	4300.01	3.582729	134.953284	359.9	1.507	12.5	14.1	0.87	5448	1.63	303.79

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008507475-01	OBS	PC	1.00	0	0	0	0	CENT_FEW_MEAS

**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.

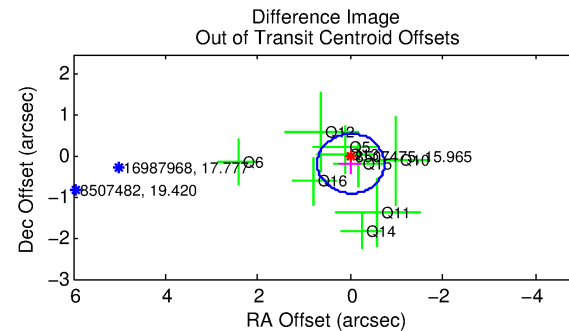
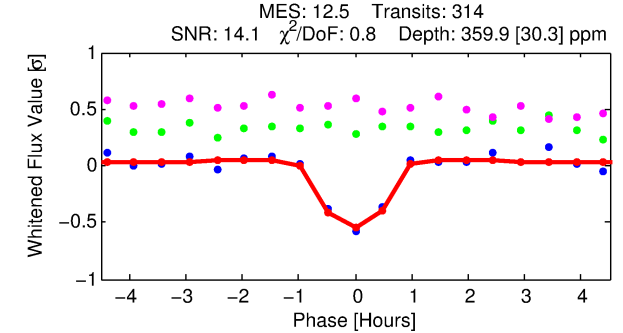
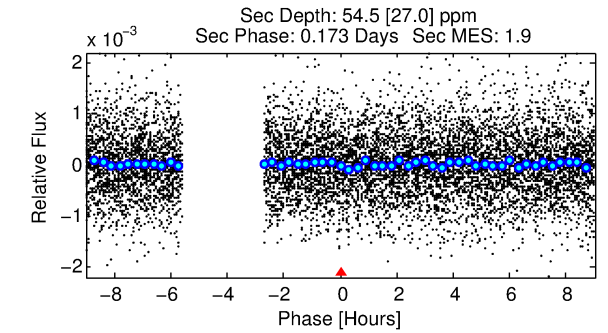
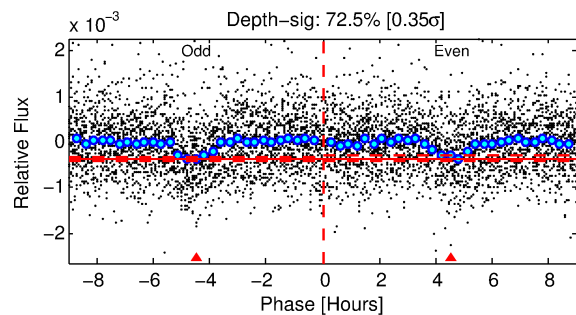
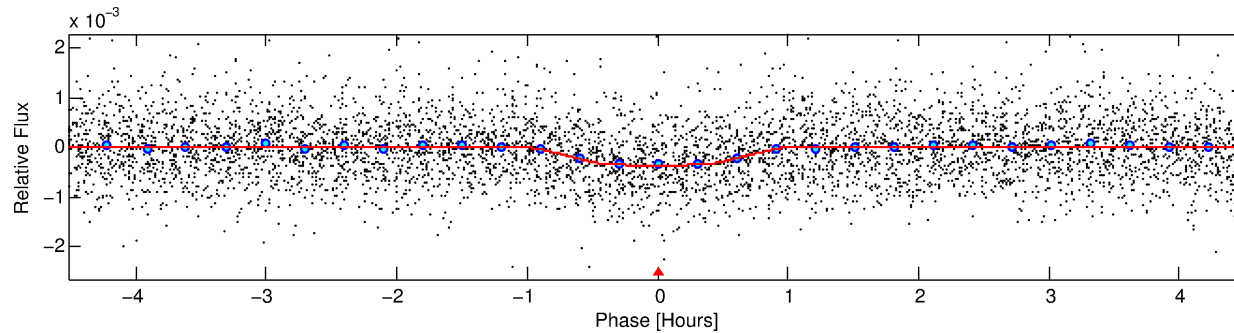
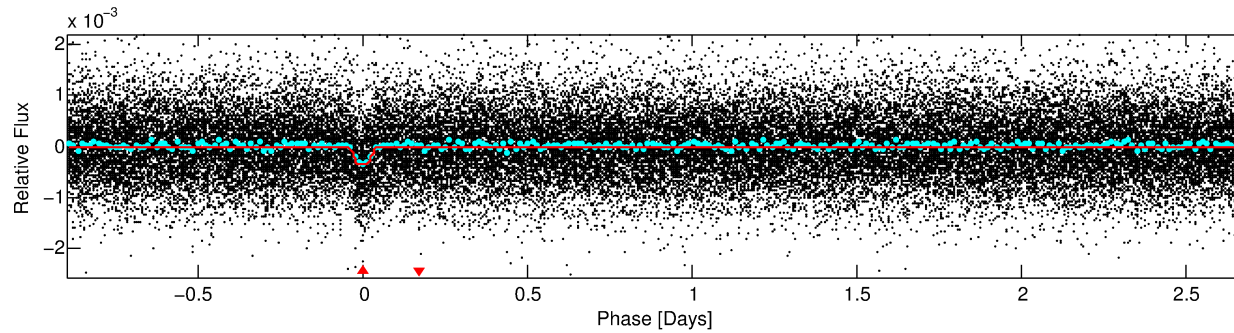
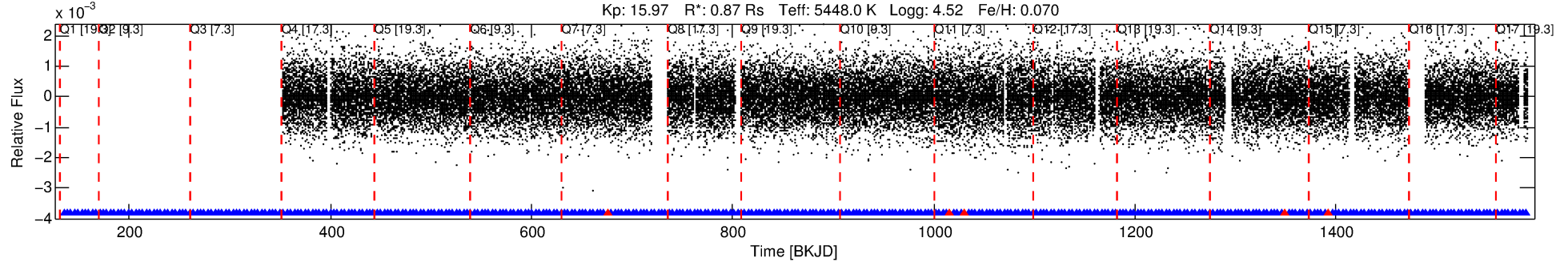
## Ephemeris Match Information For 008507475-01

No Significant Match Found

# DV One-Page Summary

KIC: 8507475 Candidate: 1 of 1 Period: 3.583 d  
KOI: K04300.01 Corr: 0.970

Kp: 15.97 R\*: 0.87 Rs Teff: 5448.0 K Logg: 4.52 Fe/H: 0.070



## DV Fit Results:

Period = 3.58273 [0.00001] d  
Epoch = 134.9533 [0.0021] BKJD  
Rp/R\* = 0.0171 [0.0204]  
a/R\* = 18.47 [86.15]  
b = 0.04 [124.00]  
Seff = 303.79 [92.63]  
Teq = 1065 [81] K  
Rp = 1.63 [1.97] Re  
a = 0.0444 [0.0084] AU  
Ag = 22.36 [54.81] [0.39σ]  
Teffp = 3579 [2182] K [1.15σ]

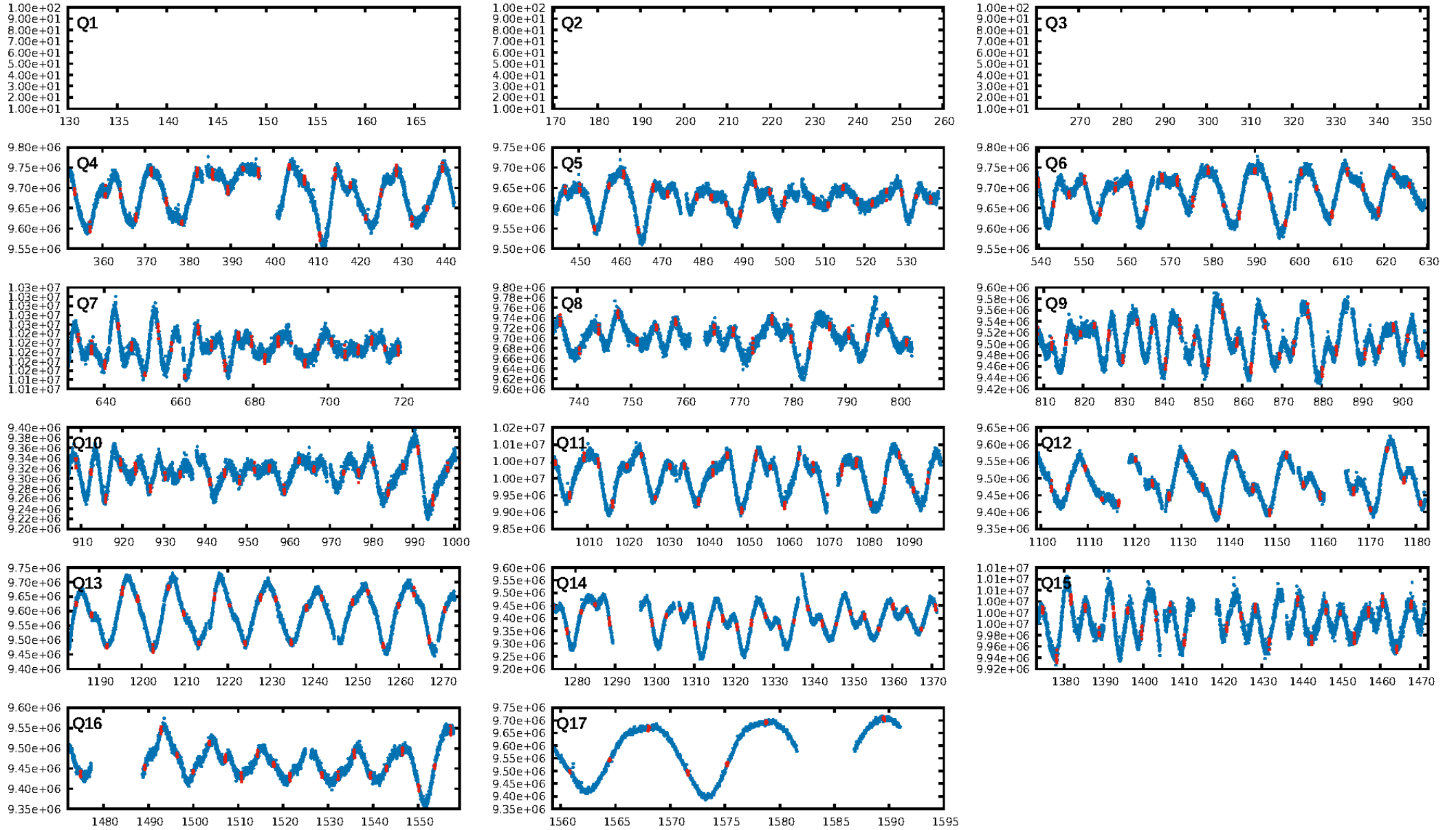
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.75e-35  
RollingBand-fgt: 0.98 [302/307]  
GhostDiagnostic-chr: -14.49  
Centroid-sig: 3.8%  
Centroid-so: 1.214 arcsec [1.43σ]  
OotOffset-rm: 0.174 arcsec [0.72σ]  
KicOffset-rm: 0.330 arcsec [1.36σ]  
OotOffset-st: 3/2/2/2 [9]  
KicOffset-st: 3/2/2/2 [9]  
DiffImageQuality-fgm: 0.78 [7/9]  
DiffImageOverlap-fno: 1.00 [14/14]

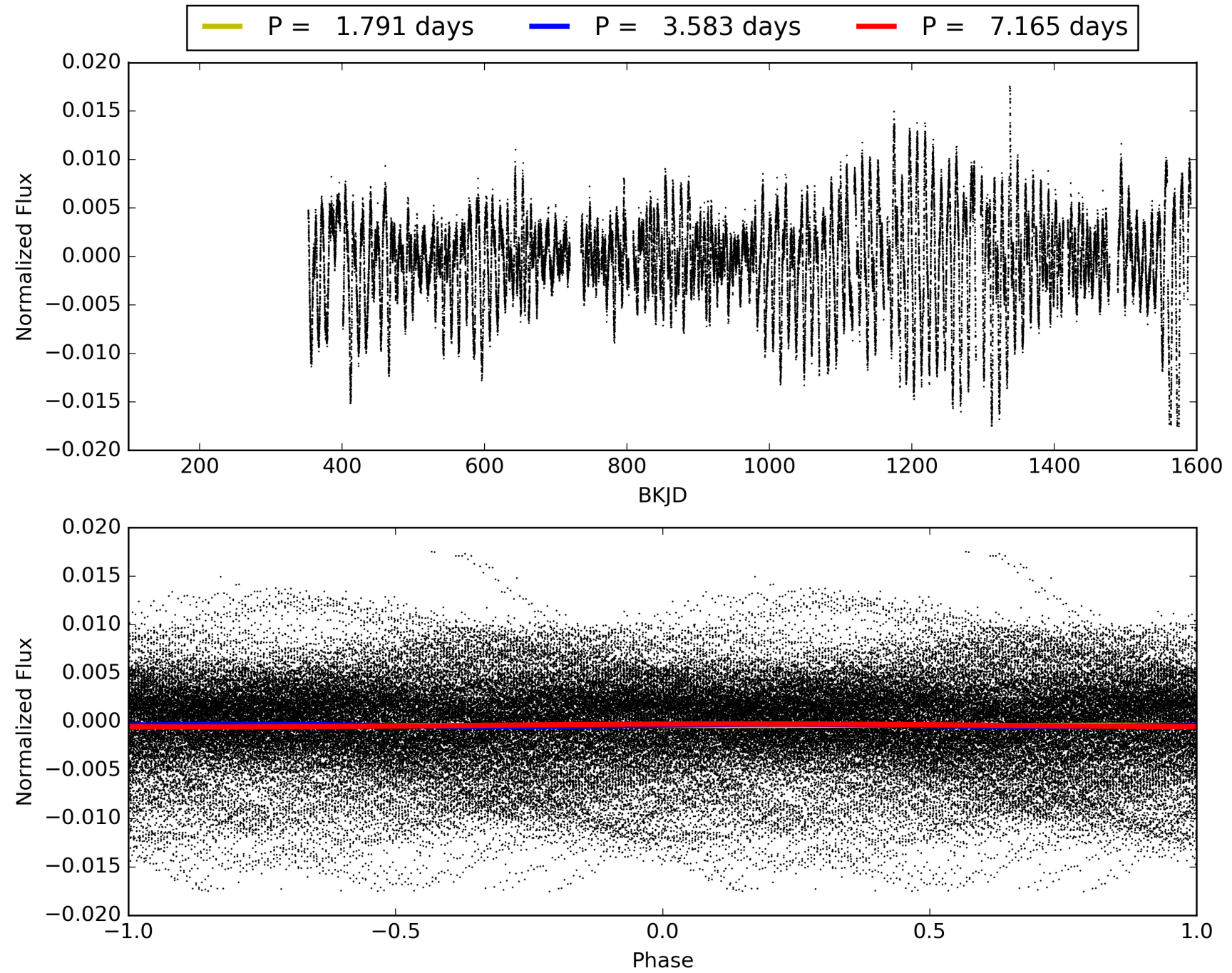
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:34:04 Z

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

# TCE 008507475-01, PDC Light Curves

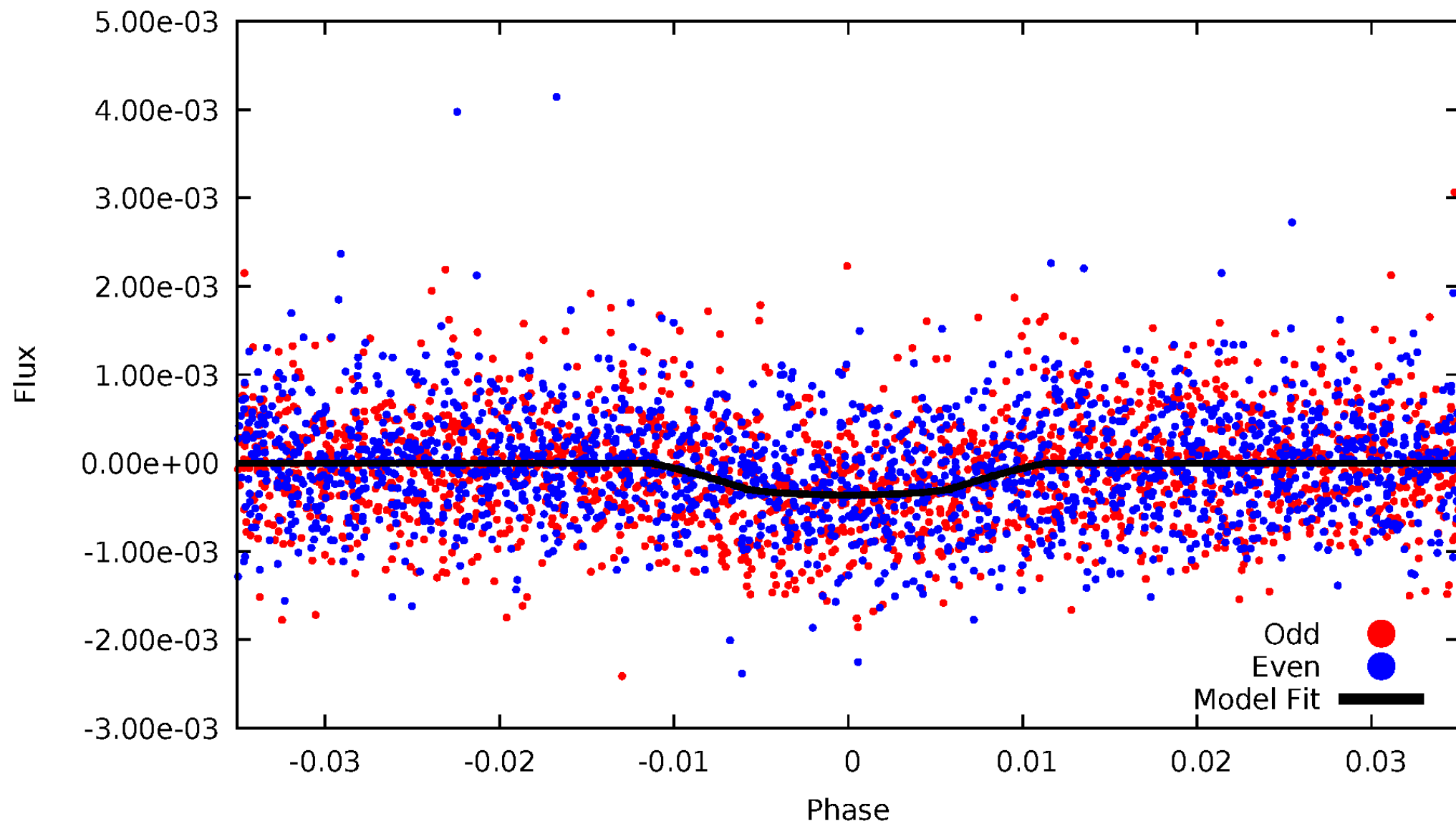


TCE 008507475-01



# DV Odd/Even

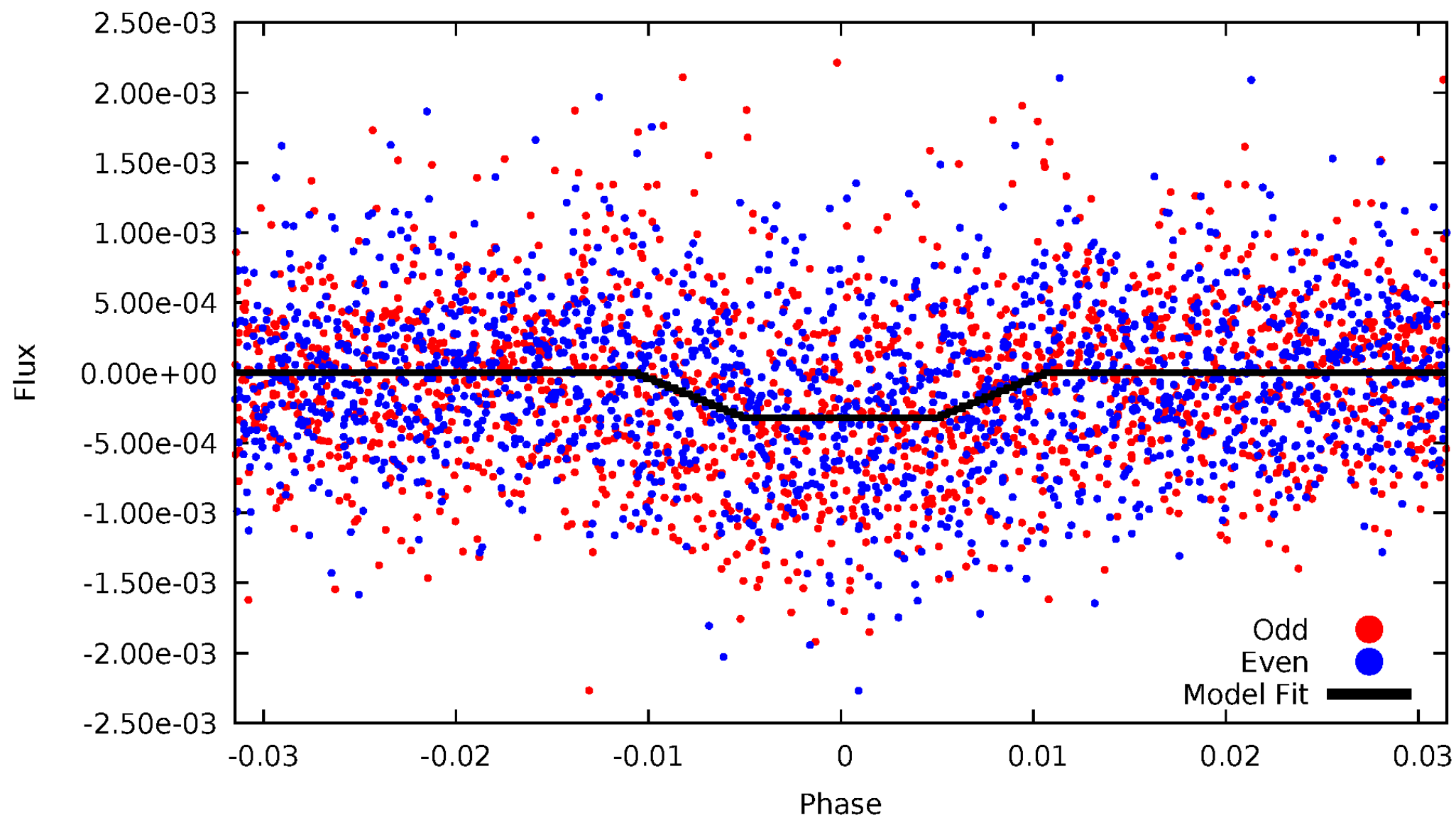
TCE 008507475-01





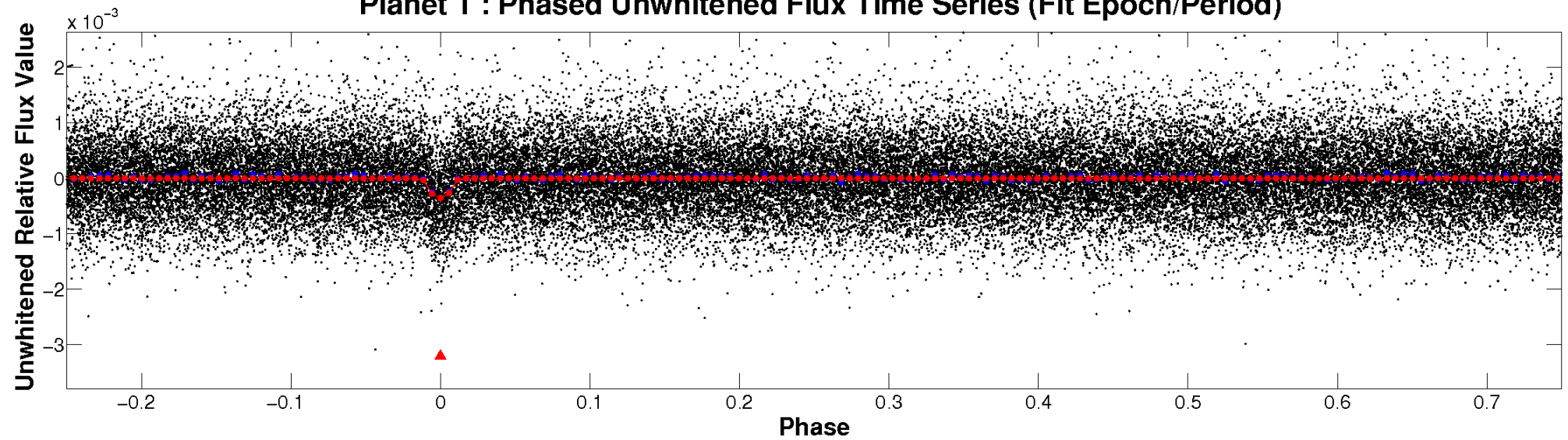
# ALT Odd/Even

TCE 008507475-01

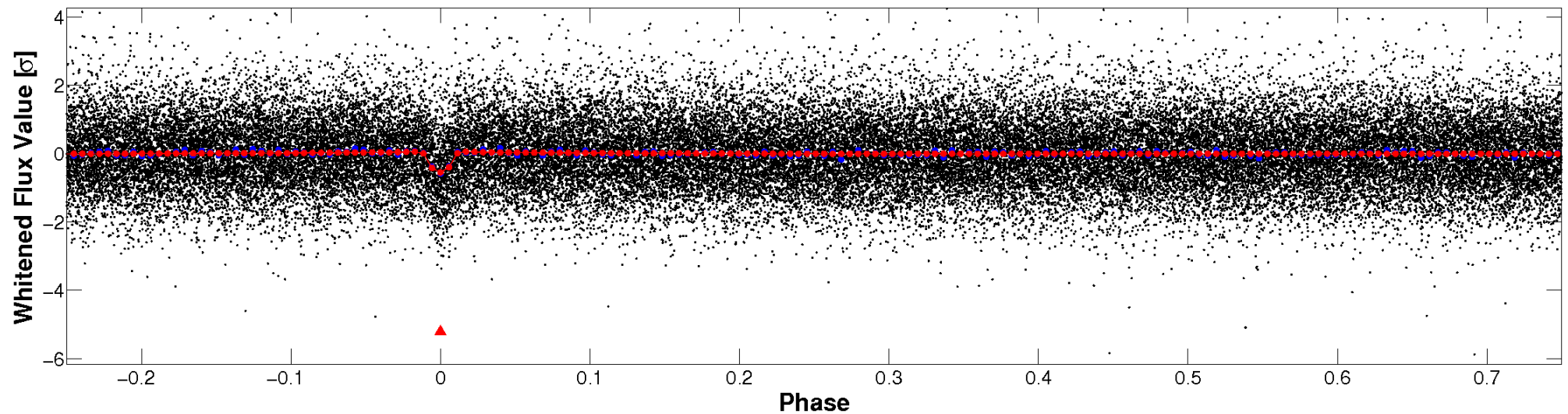


# Non-Whitened Vs. Whitened Light Curve

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

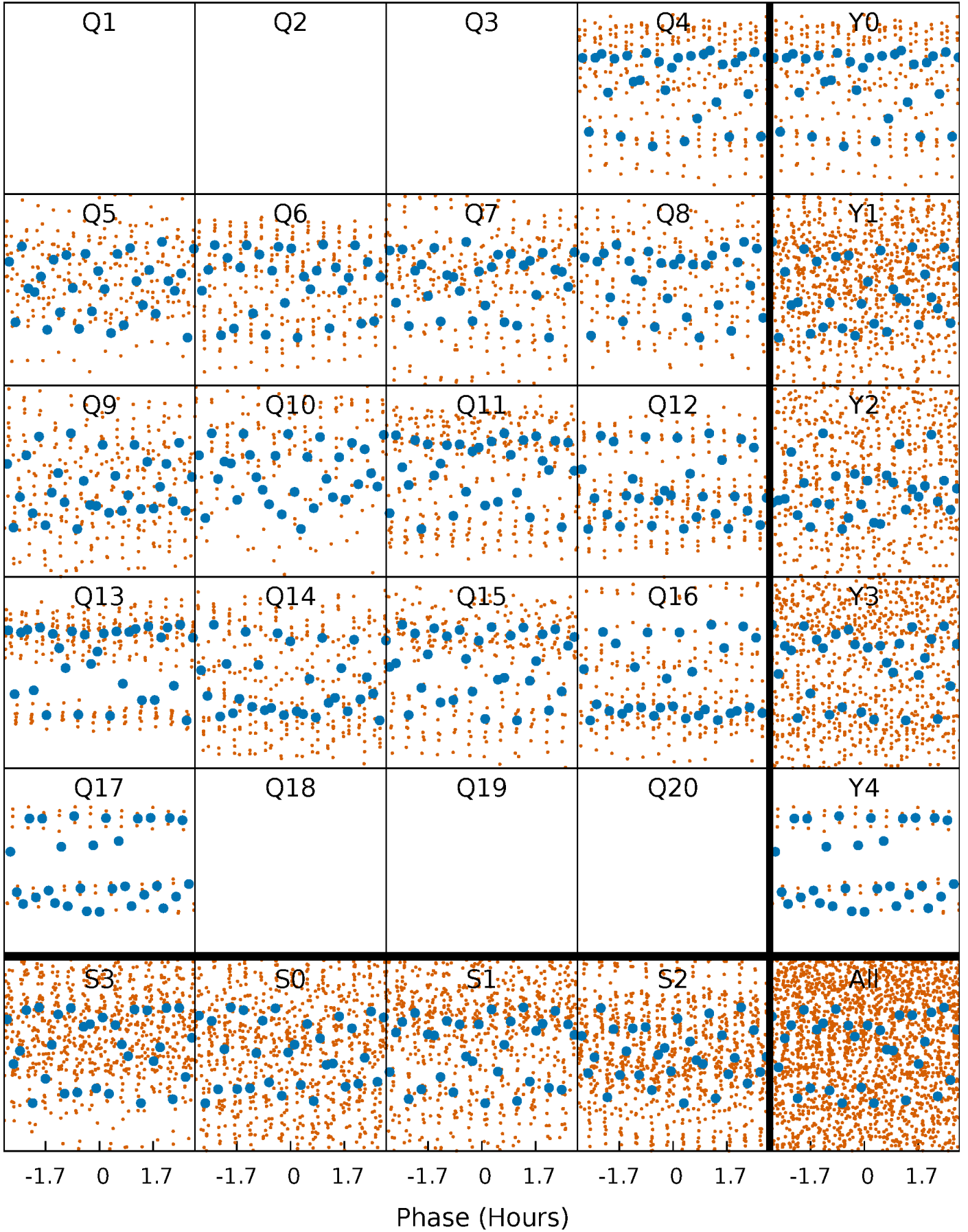


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

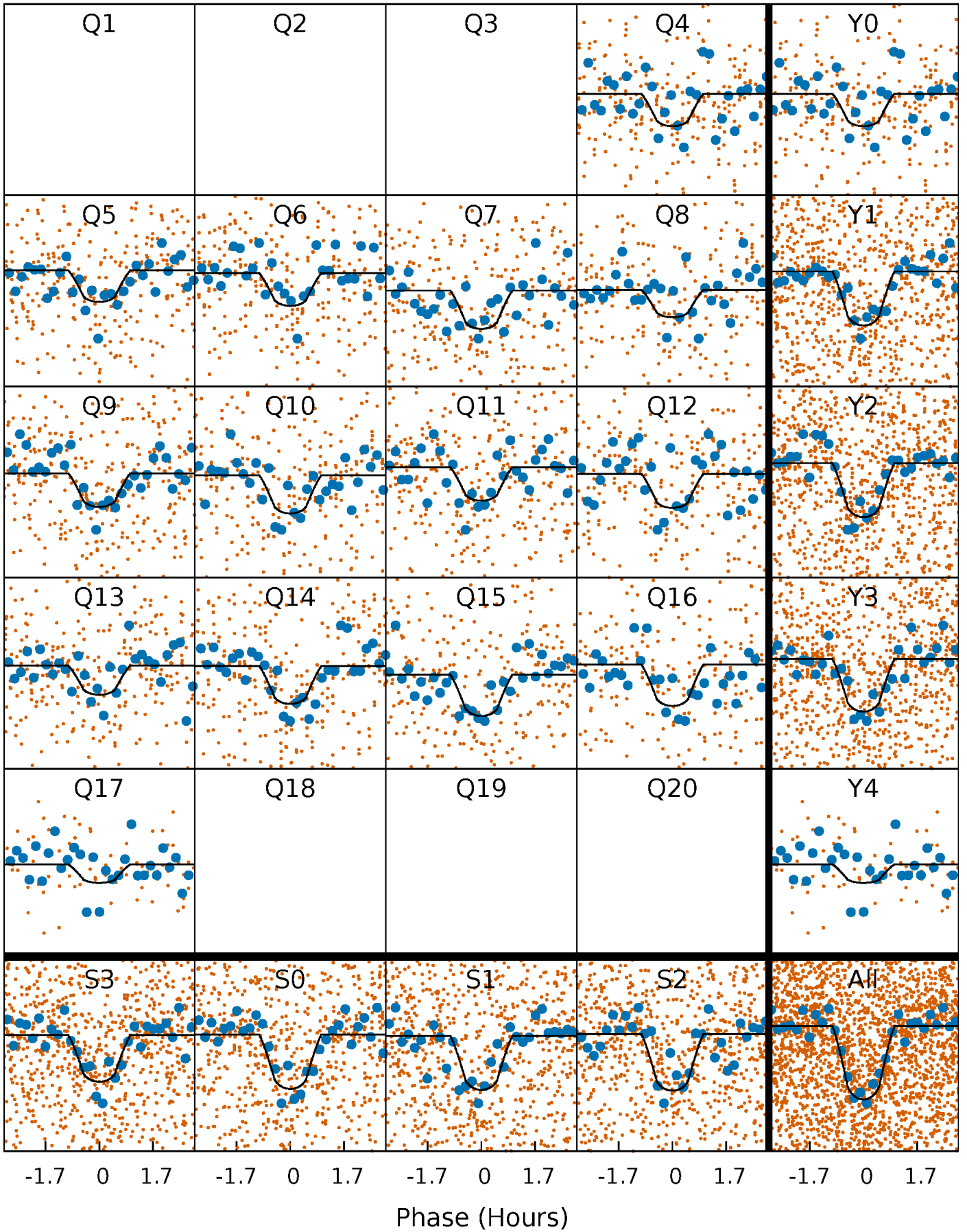
TCE 008507475-01   P= 3.582729 Days    $T_0=134.953284$  (BKJD)





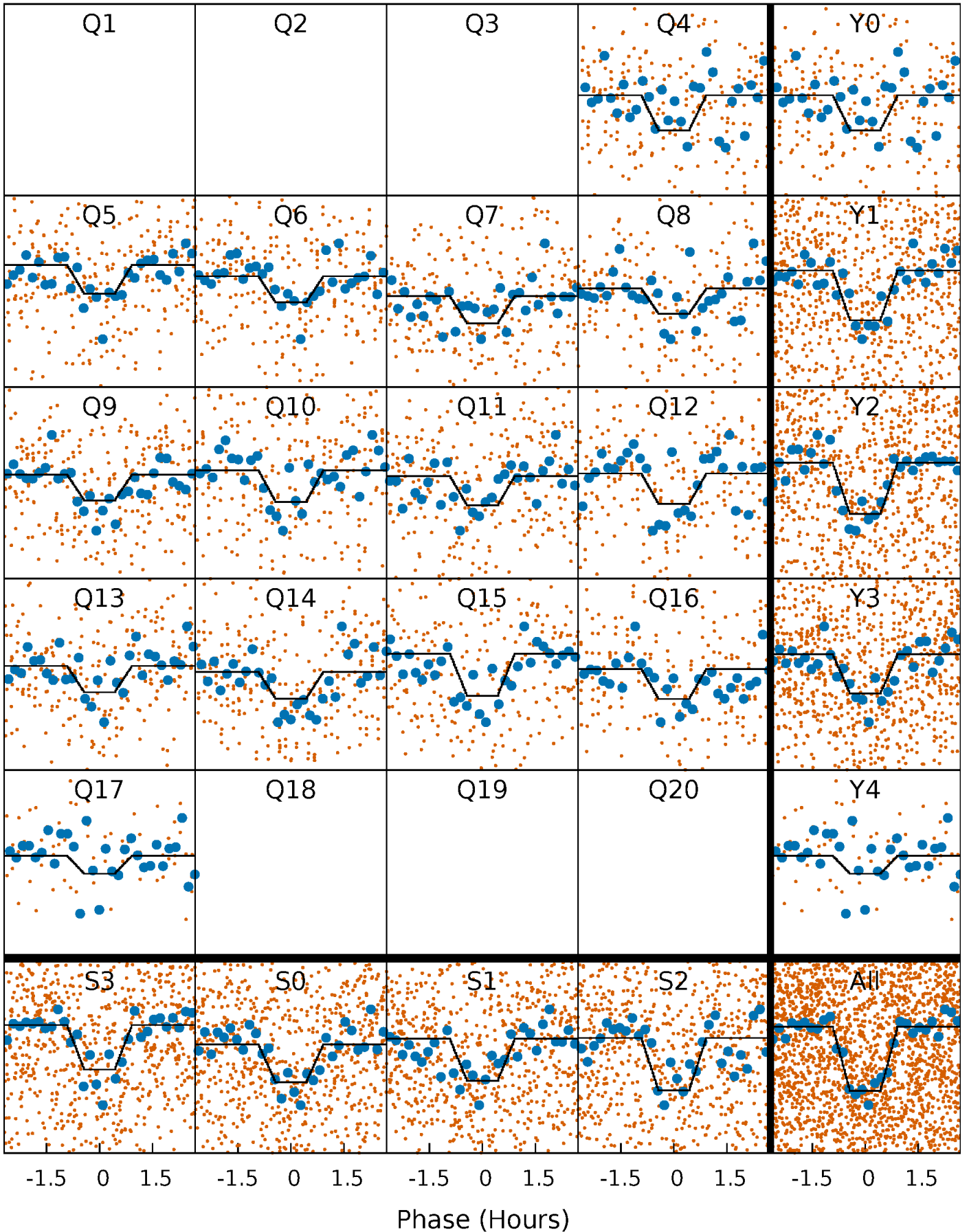
# DV Quarter-Phased Transit Curves

TCE 008507475-01   P= 3.582729 Days    $T_0=134.953284$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

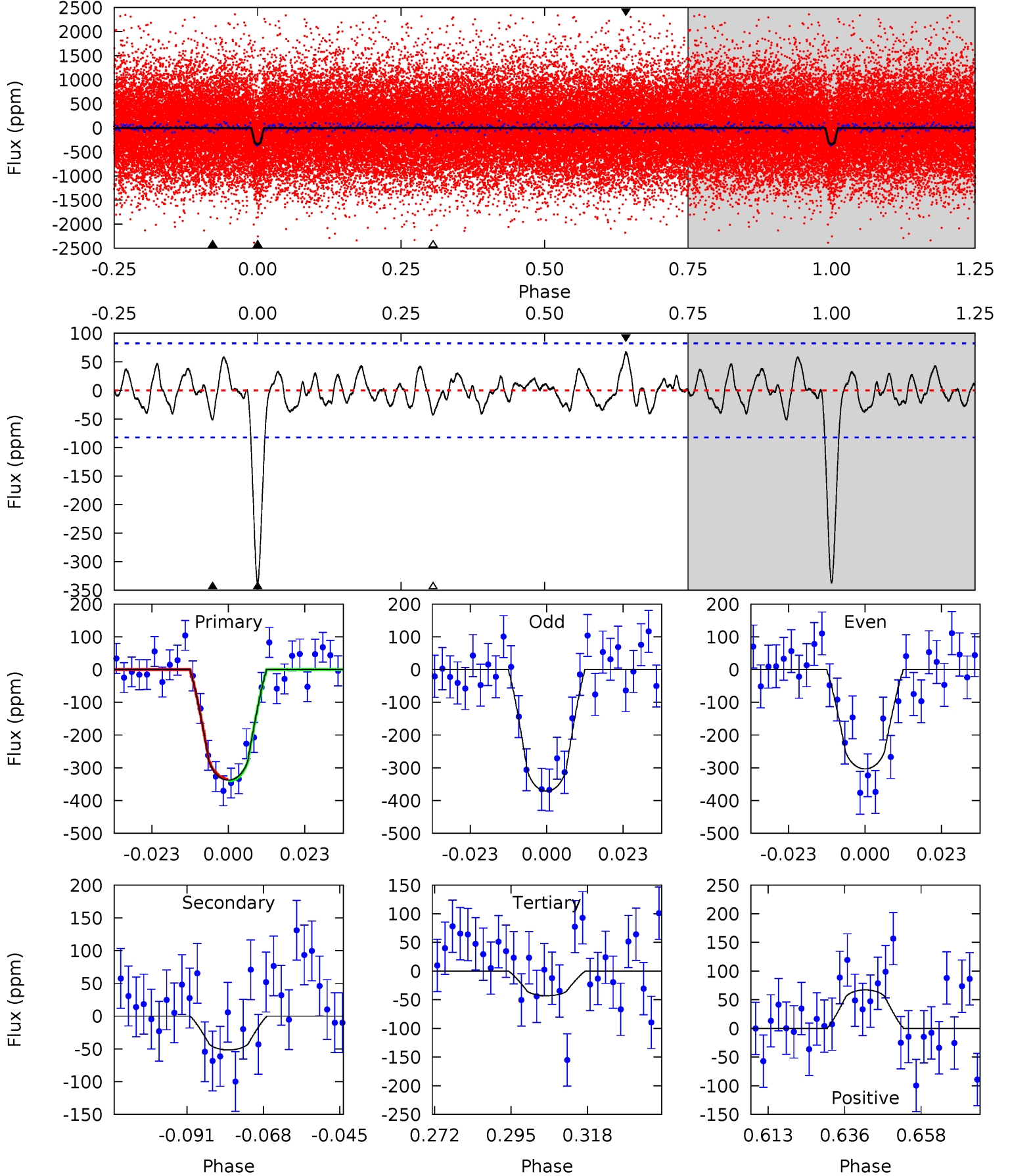
TCE 008507475-01   P= 3.582739 Days    $T_0=134.950855$  (BKJD)



# DV Model-Shift Uniqueness Test

008507475-01, P = 3.582729 Days, E = 134.953284 Days

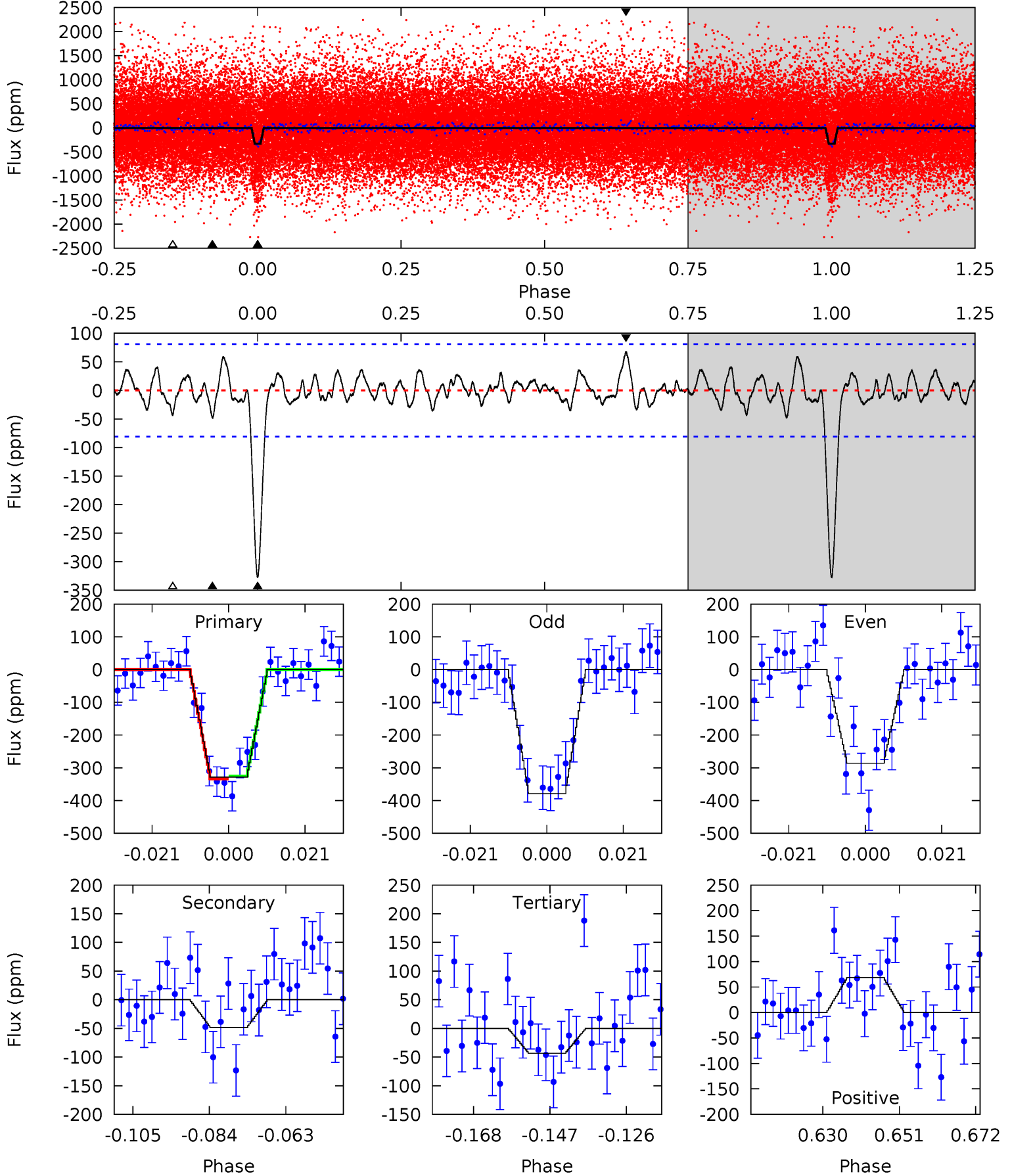
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	3.05	2.54	3.97	4.87	2.28	1.24	17.4	16.0	0.51	-0.92	2.01	1.02	0.17	0.15



# Alt Model-Shift Uniqueness Test

008507475-01, P = 3.582739 Days, E = 134.950855 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
19.8	2.93	2.61	4.12	4.88	2.31	1.11	17.2	15.7	0.32	-1.19	2.80	1.06	0.17	0.26



### Stellar Parameters For KIC 008507475

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5448^{+179}_{-179}$	$4.517^{+0.050}_{-0.150}$	$0.070^{+0.250}_{-0.300}$	$0.872^{+0.197}_{-0.085}$	$0.912^{+0.083}_{-0.092}$	$1.936^{+0.516}_{-0.823}$
	+3%/-3%	+1%/-3%	+357%/-429%	+23%/-10%	+9%/-10%	+27%/-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 008507475-01 / KOI 4300.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-52 \pm 17$	$2.19^{+1.82}_{-1.43}$	$1511^{+83}_{-71}$	$3564^{+1670}_{-711}$	$12^{+79}_{-9}$
Alt.	$-48 \pm 17$	$2.27^{+1.75}_{-1.40}$	$1510^{+100}_{-70}$	$3437^{+1479}_{-578}$	$9.735^{+54.605}_{-6.910}$

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



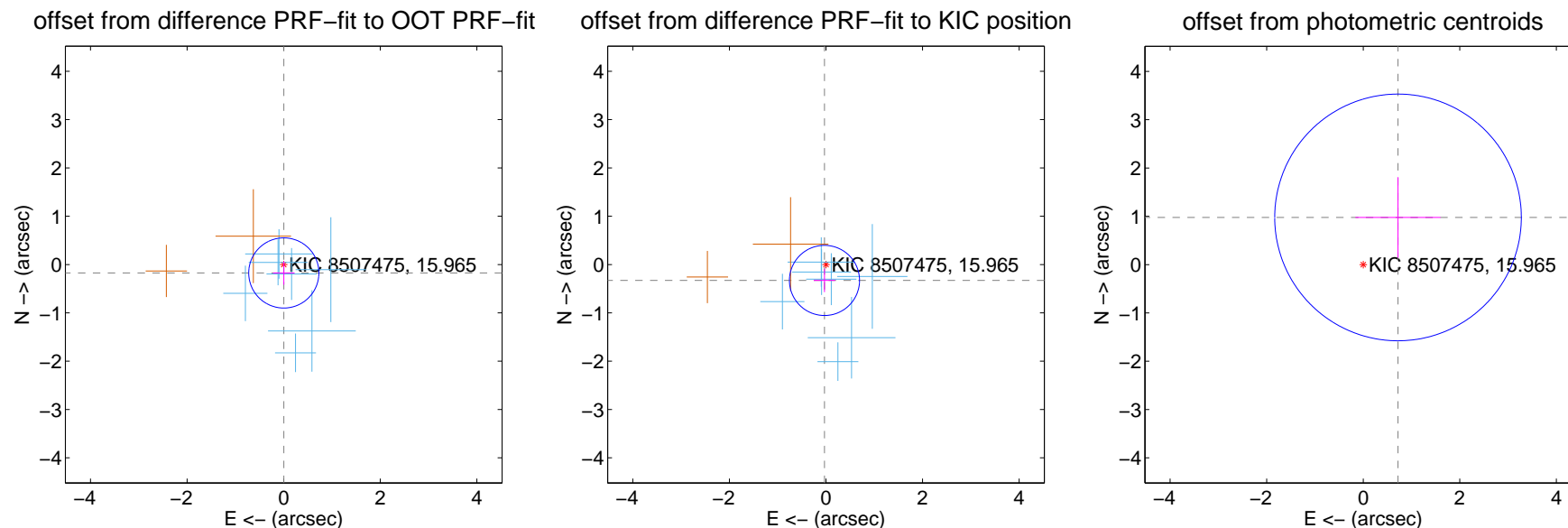
## DV Centroid Data

Supplemental centroid analysis for 008507475-01. Kepler magnitude: 15.96. Transit SNR 14.15

There are 7 quarters with good PRF difference image offsets

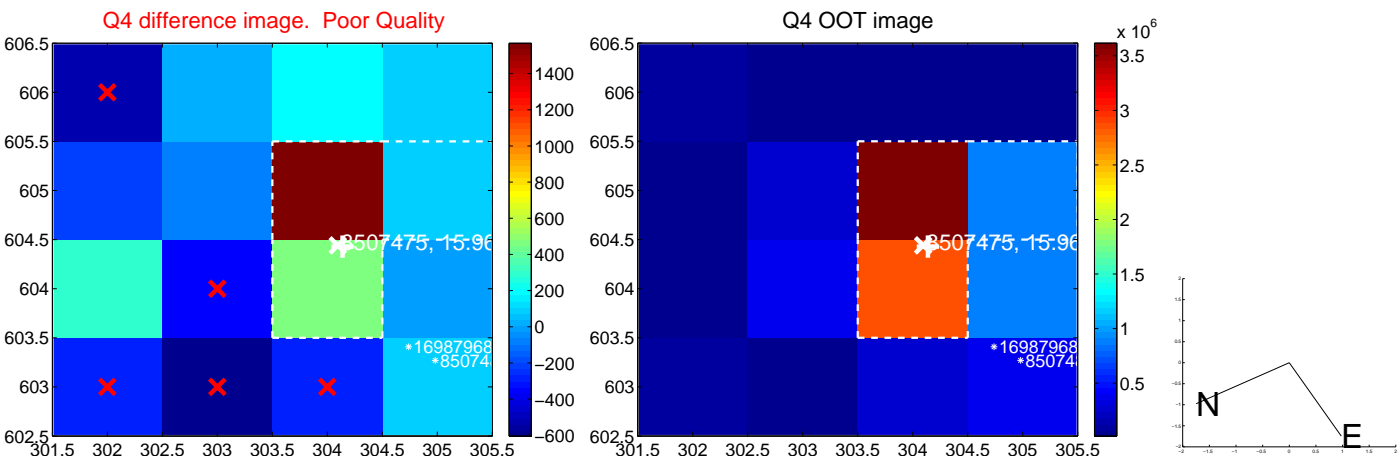
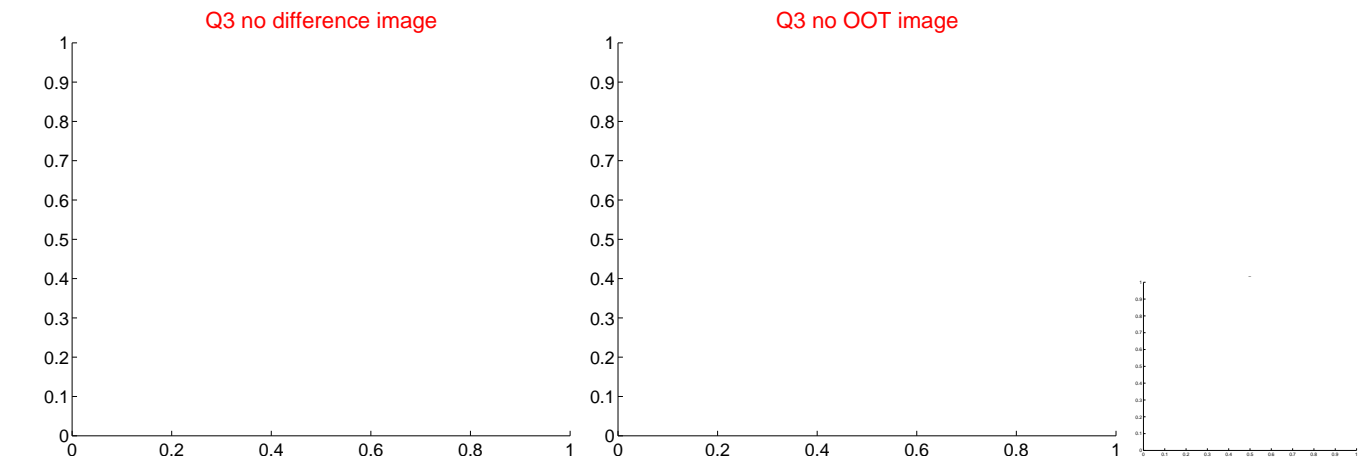
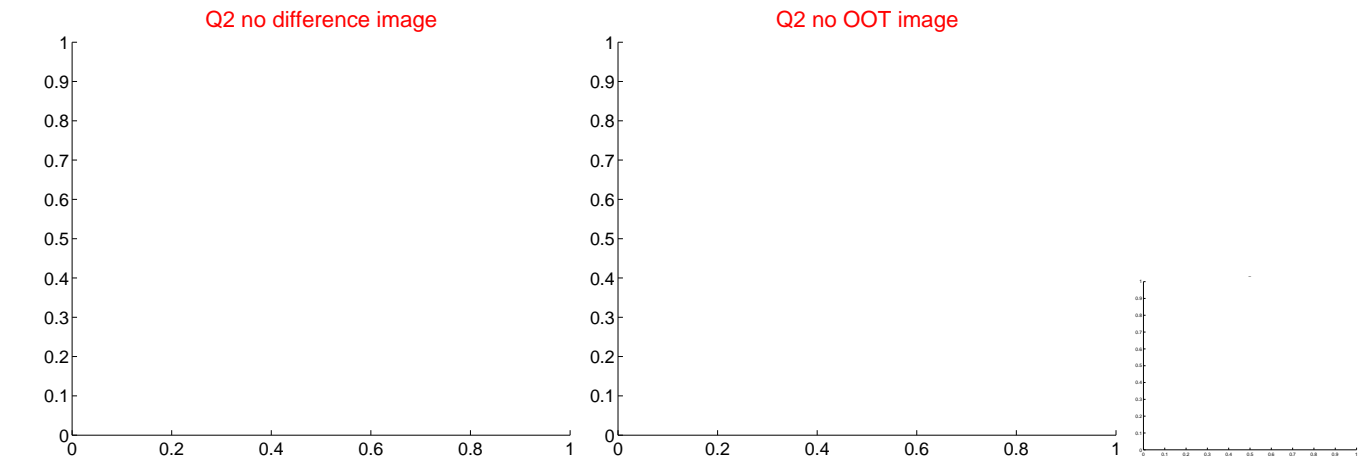
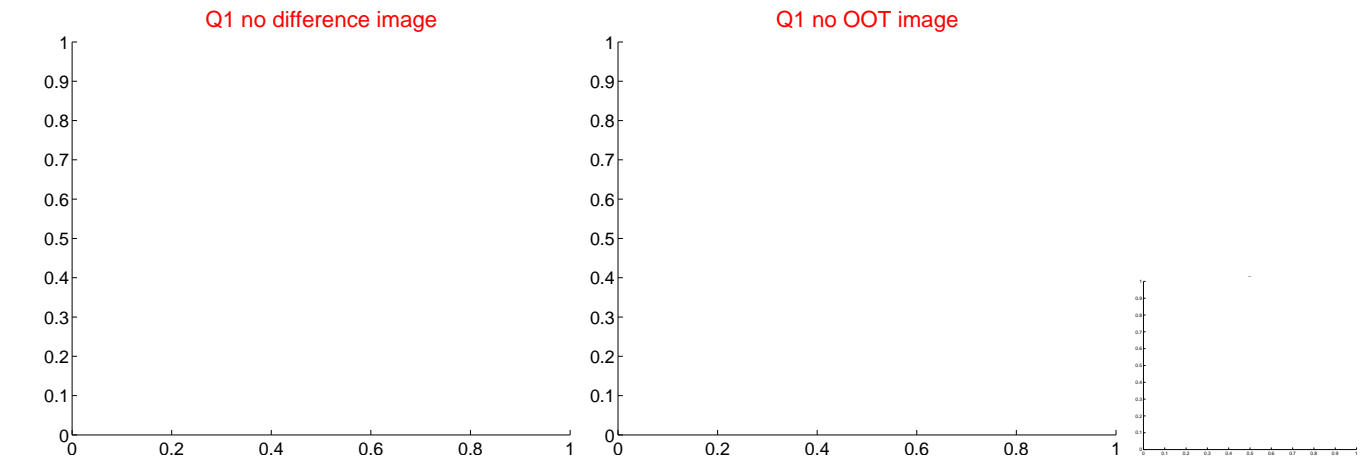
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.174 \pm 0.242$	0.72	$-0.002 \pm 0.223$	$-0.174 \pm 0.242$
PRF-fit source offset from KIC position	$0.330 \pm 0.242$	1.36	$0.031 \pm 0.223$	$-0.329 \pm 0.242$
photometric centroid source offset	$1.21 \pm 0.85$	1.43	$-0.72 \pm 0.88$	$0.98 \pm 0.83$

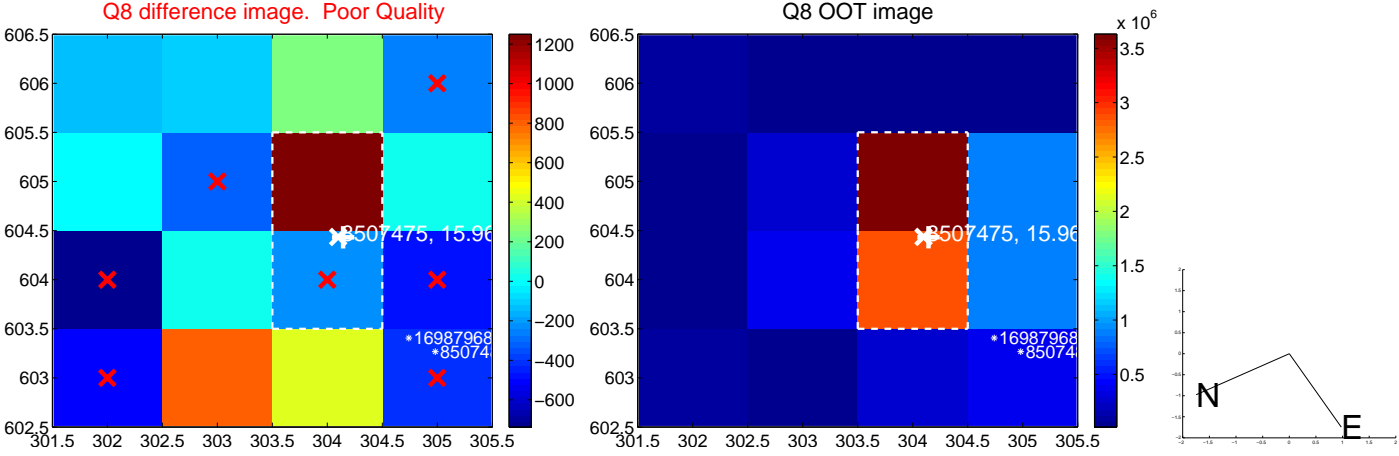
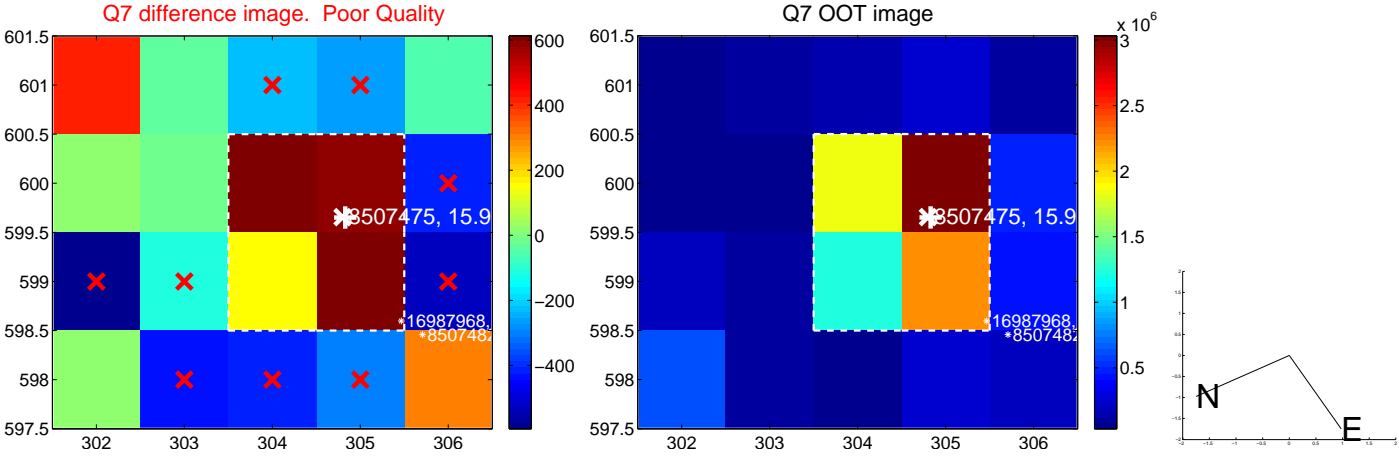
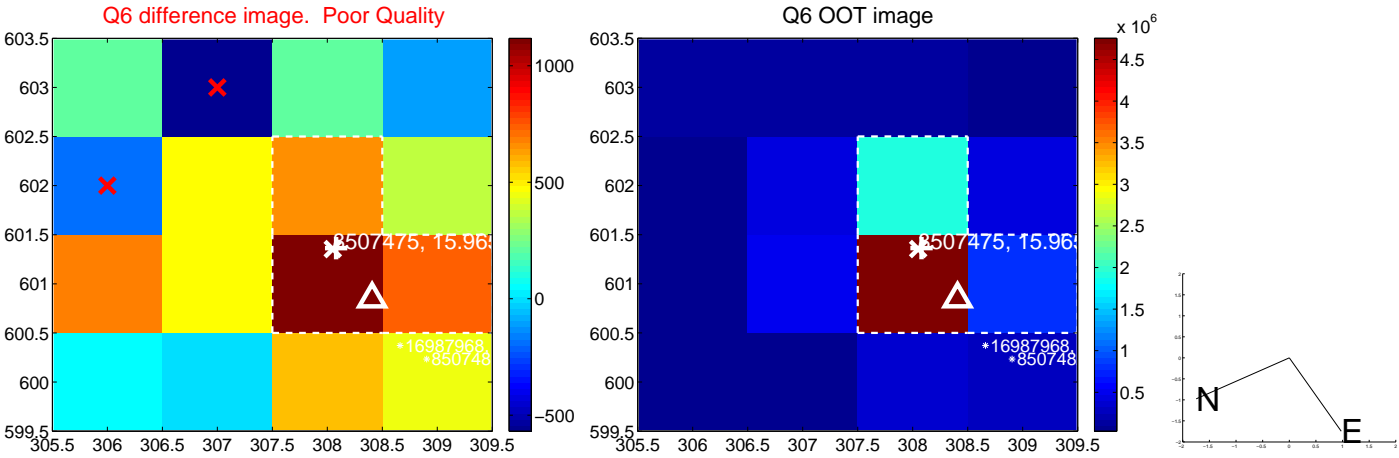
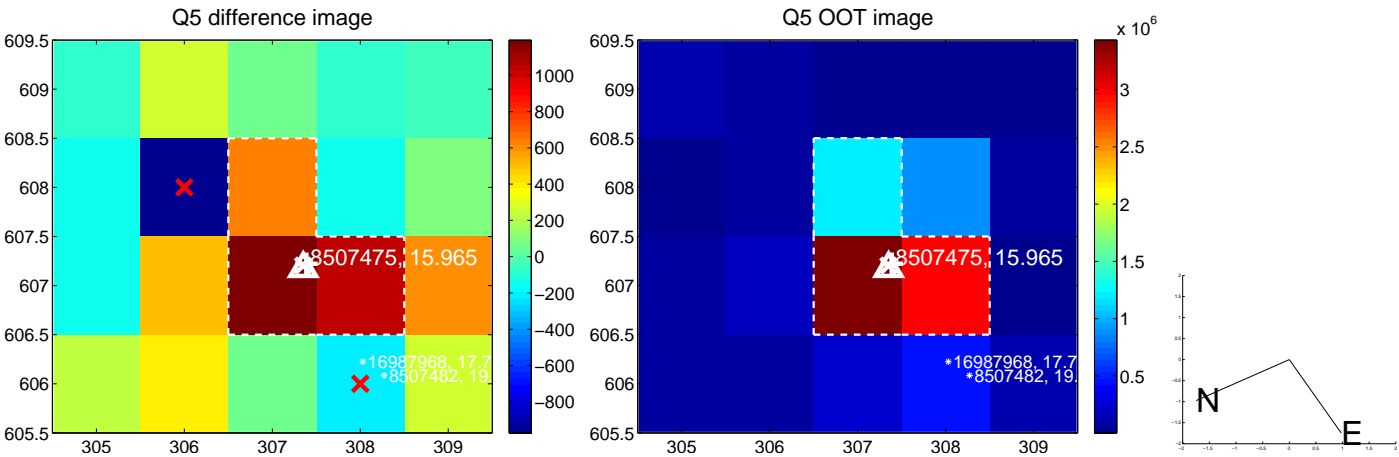


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

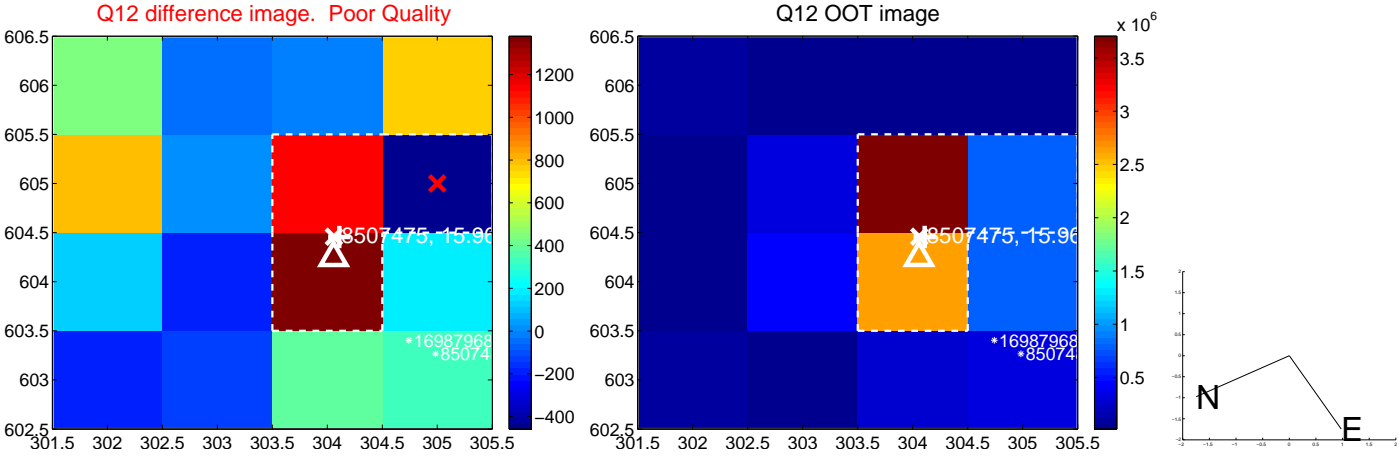
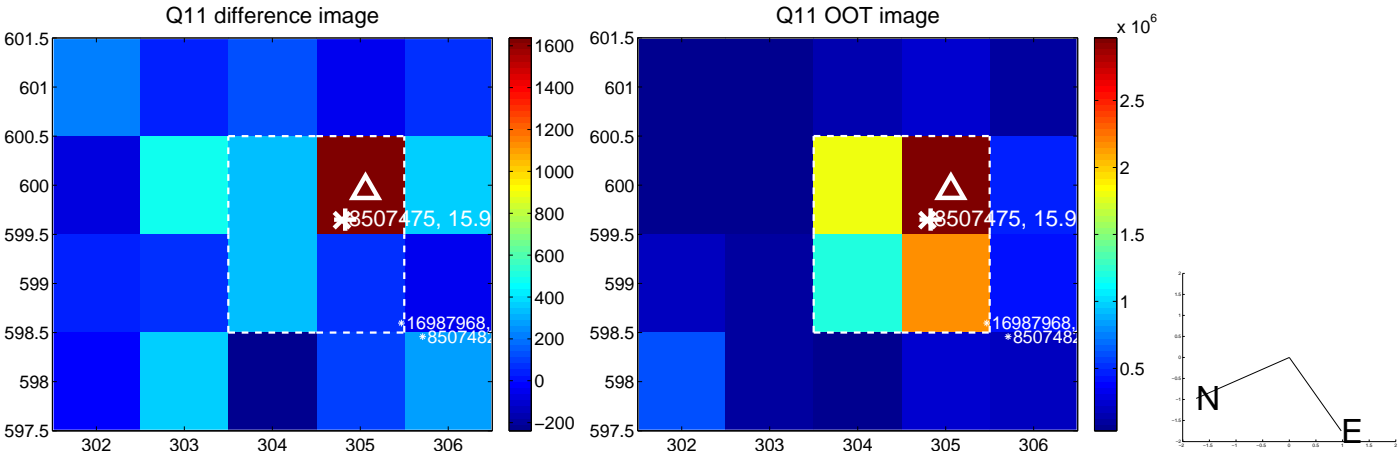
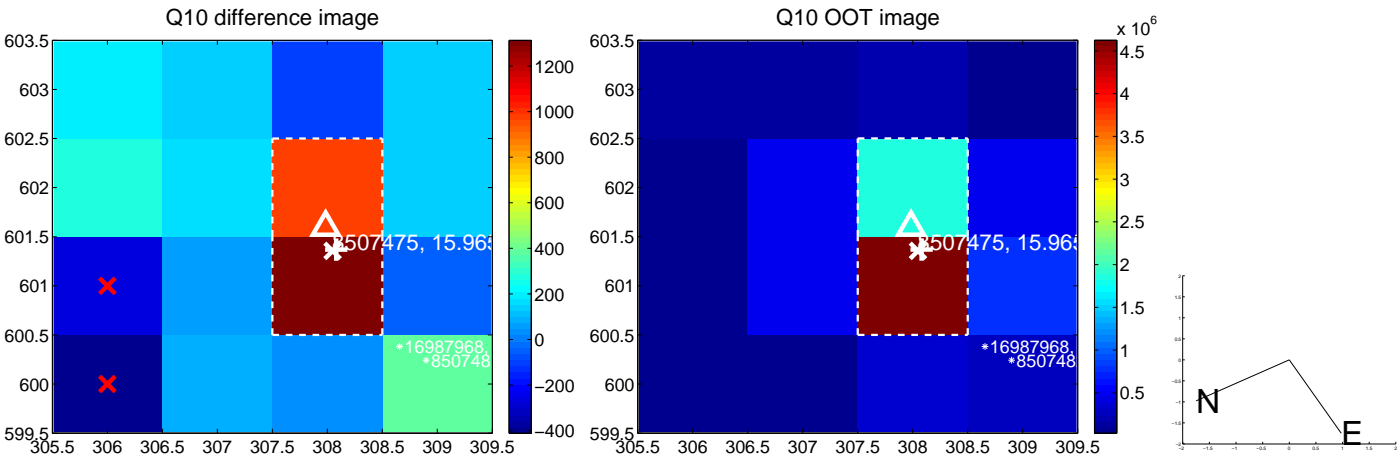
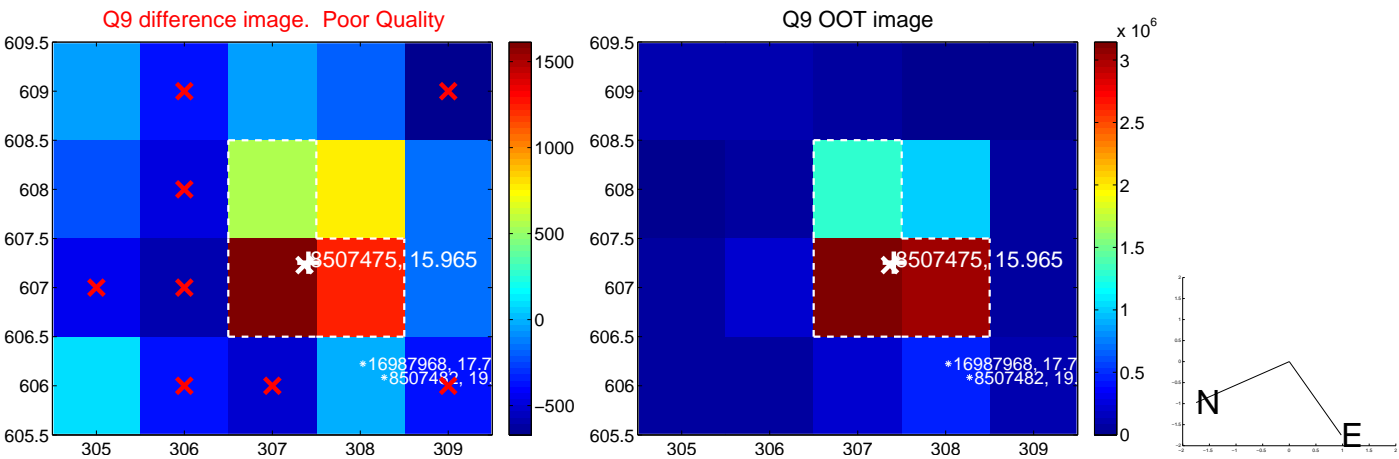
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



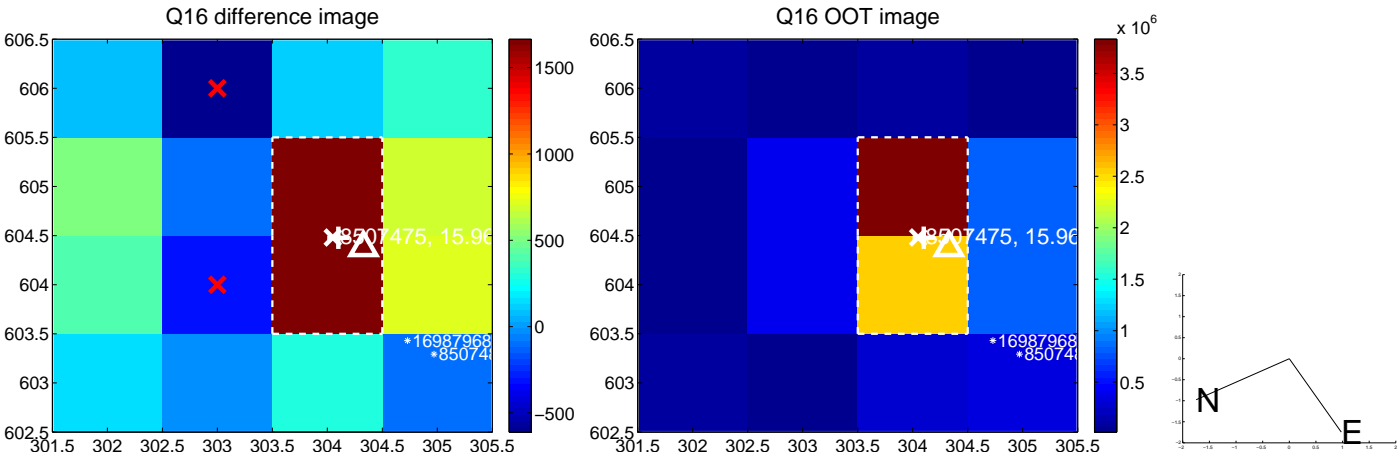
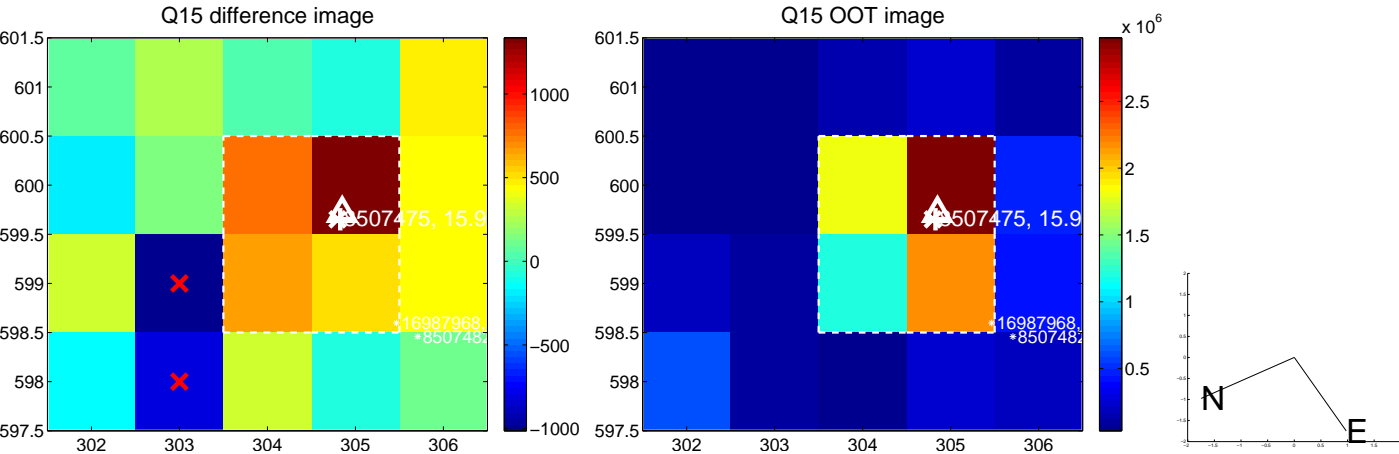
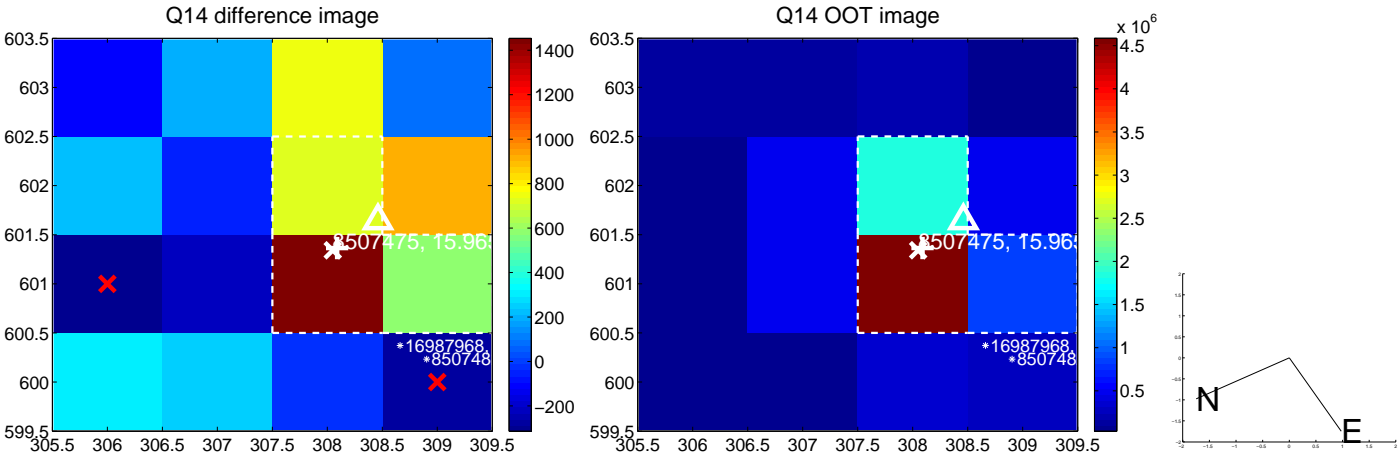
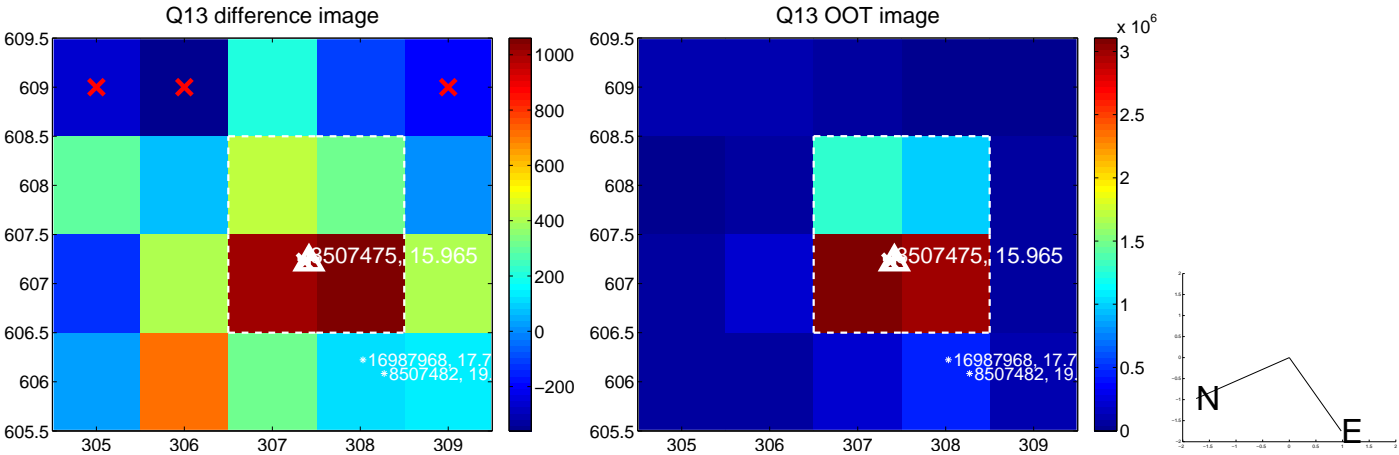
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

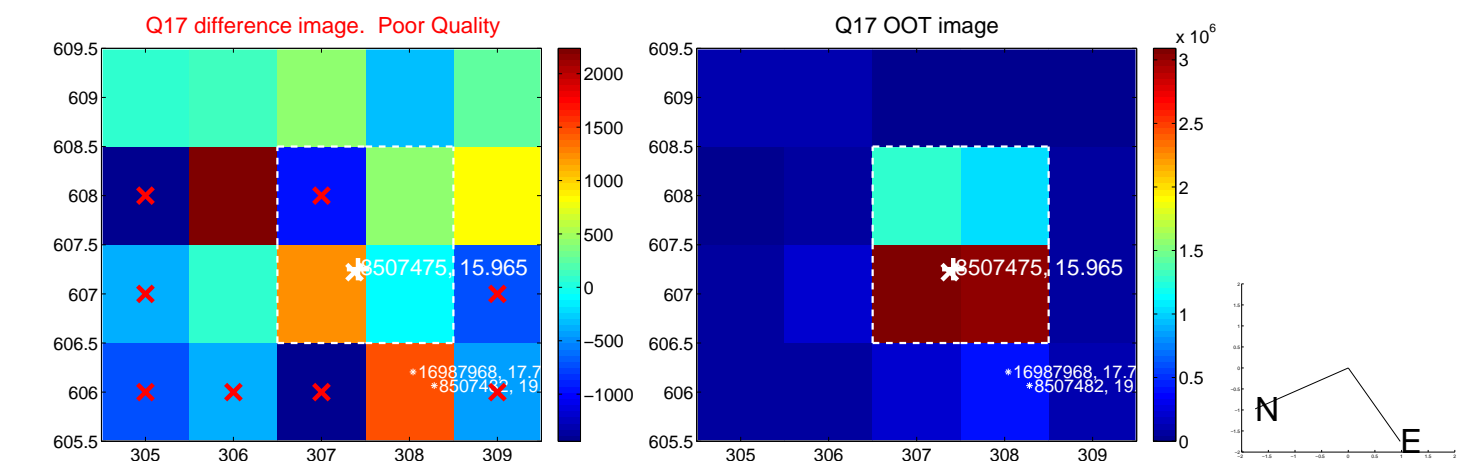


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

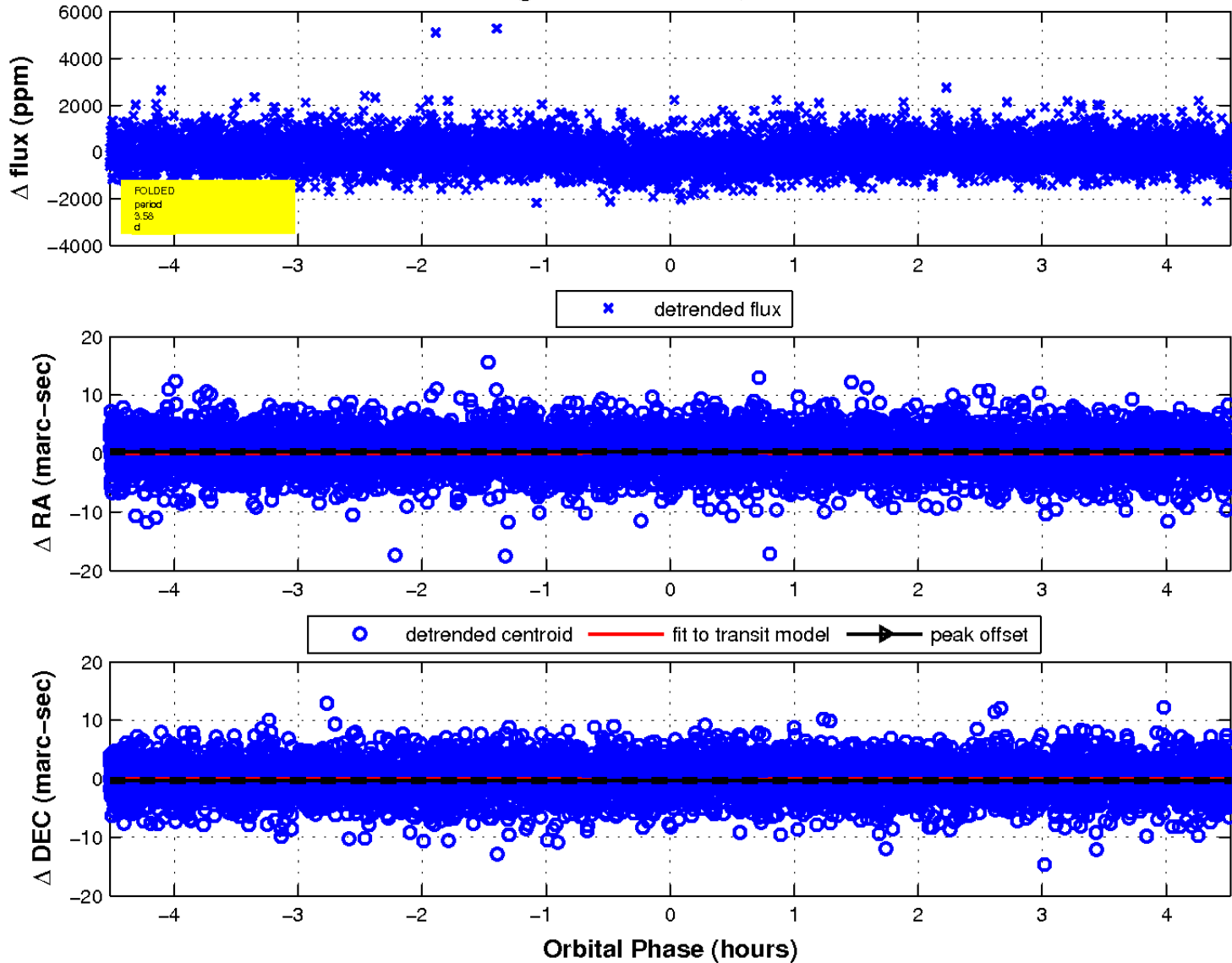




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

