

# KIC 005480710

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005480710-01	OBS	No	316.191060	426.742403	107.2	20.231	9.5	8.5	1.56	6017	1.78	4.14

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005480710-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS

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

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

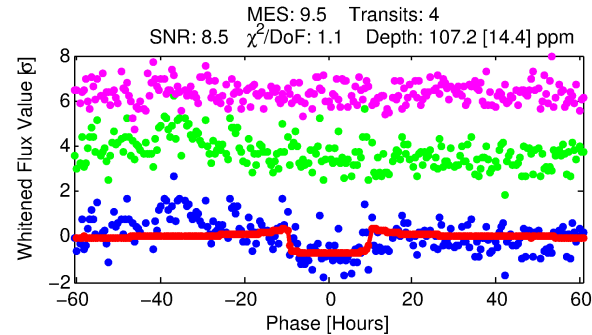
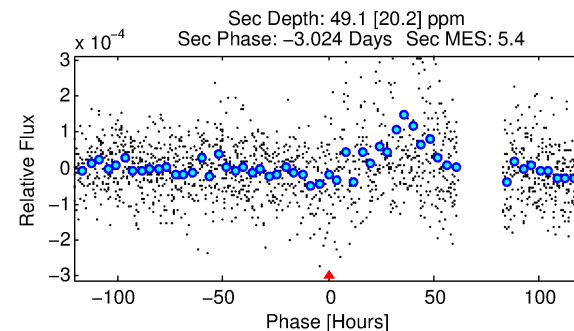
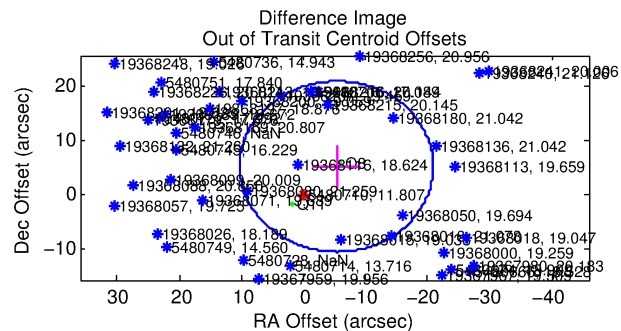
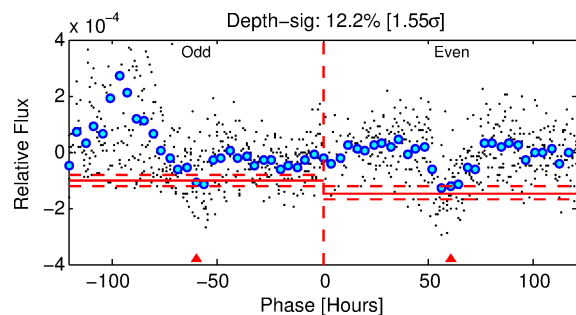
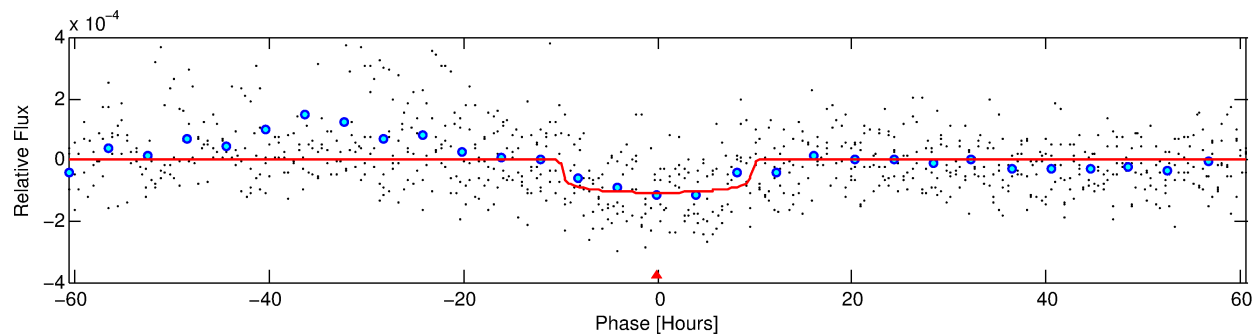
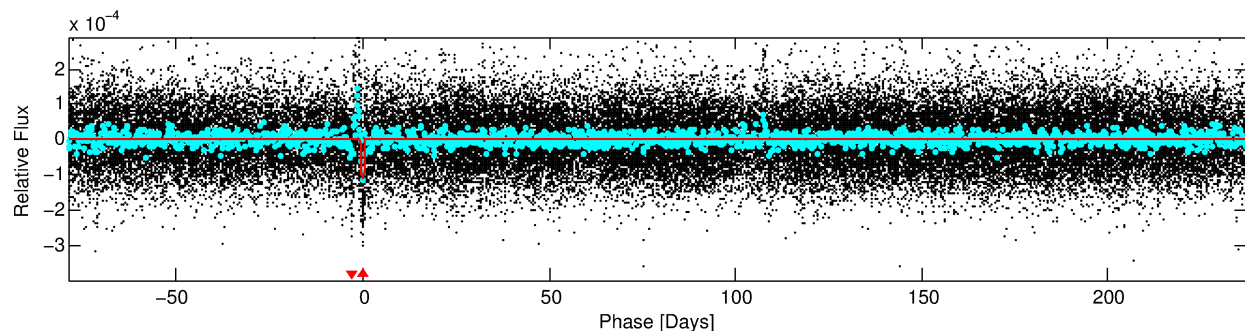
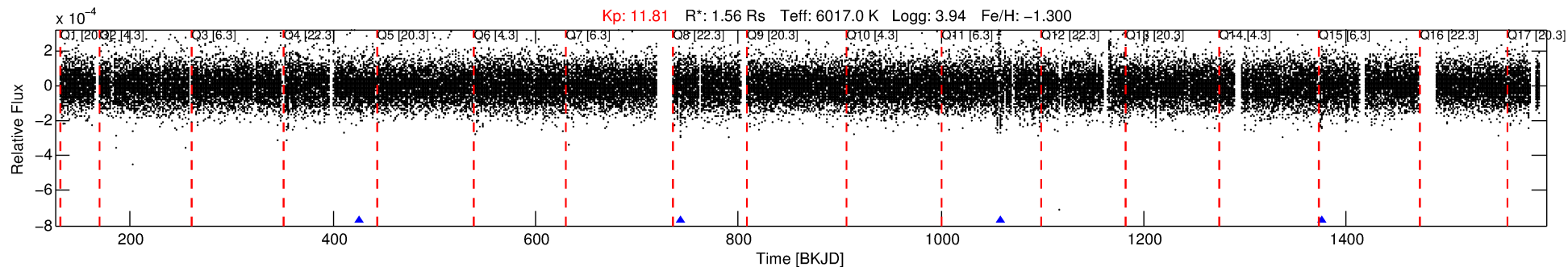
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005480710-01

No Significant Match Found

# DV One-Page Summary

KIC: 5480710 Candidate: 1 of 1 Period: 316.191 d



## DV Fit Results:

Period = 316.19106 [0.01126] d  
Epoch = 426.7424 [0.0205] BKJD  
Rp/R\* = 0.0105 [0.0016]  
a/R\* = 73.09 [52.30]  
b = 0.80 [0.32]  
Seff = 4.14 [3.03]  
Teq = 364 [67] K  
Rp = 1.78 [0.73] Re  
a = 0.8299 [0.3485] AU  
Ag = 5842.05 [5130.98] [1.14 $\sigma$ ]  
Teffp = 4916 [656] K [6.90 $\sigma$ ]

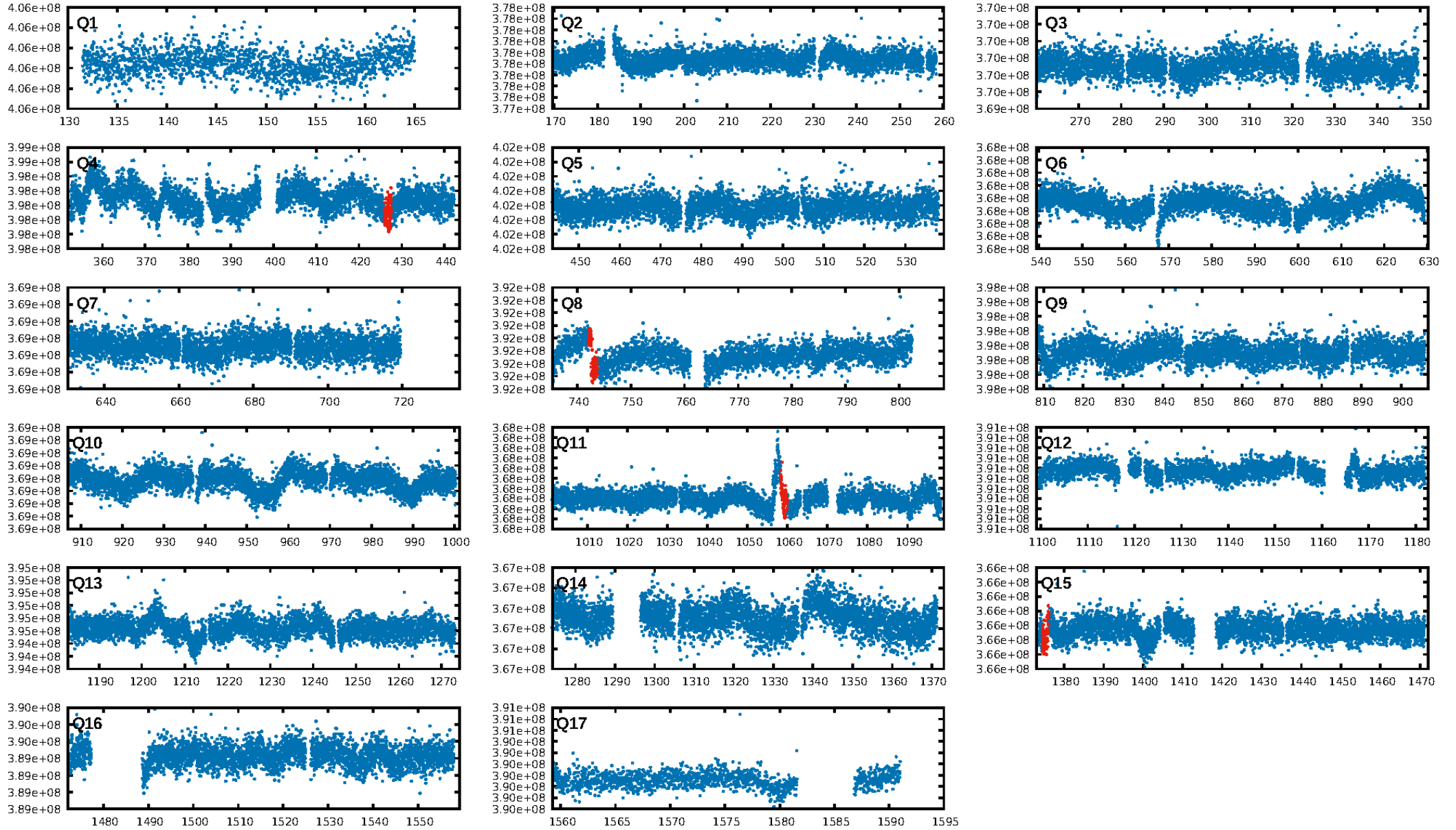
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 9.4%  
ModelChiSquareGof-sig: 72.4%  
Bootstrap-pfa: 1.40e-15  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 2.972  
Centroid-sig: 81.4%  
Centroid-so: 0.797 arcsec [0.51 $\sigma$ ]  
OotOffset-rm: 7.441 arcsec [1.43 $\sigma$ ]  
OotOffset-st: 0/1/1/0 [2]  
KicOffset-rm: 7.432 arcsec [1.43 $\sigma$ ]  
KicOffset-st: 0/1/1/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

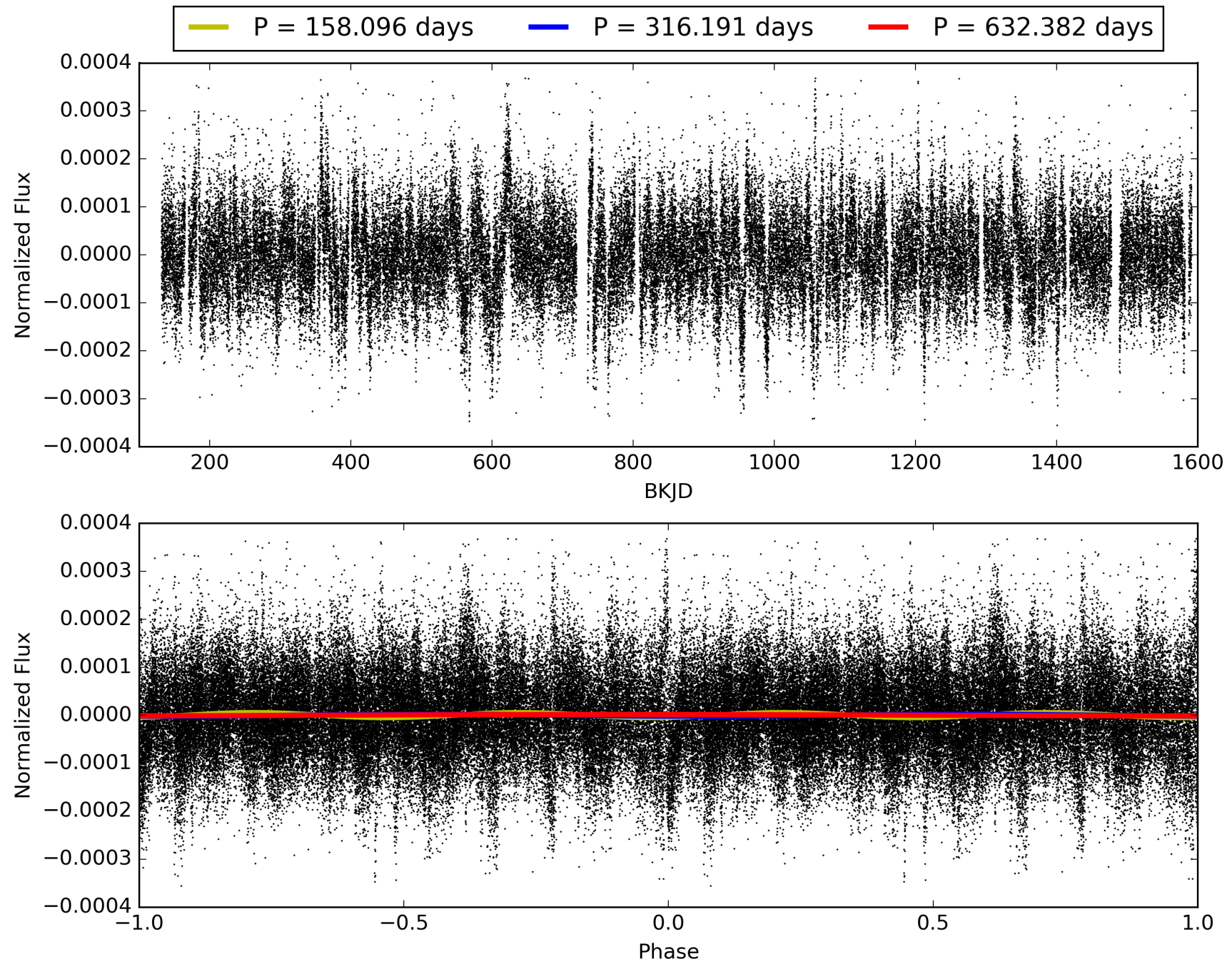
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:50:48 Z

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

# TCE 005480710-01, PDC Light Curves

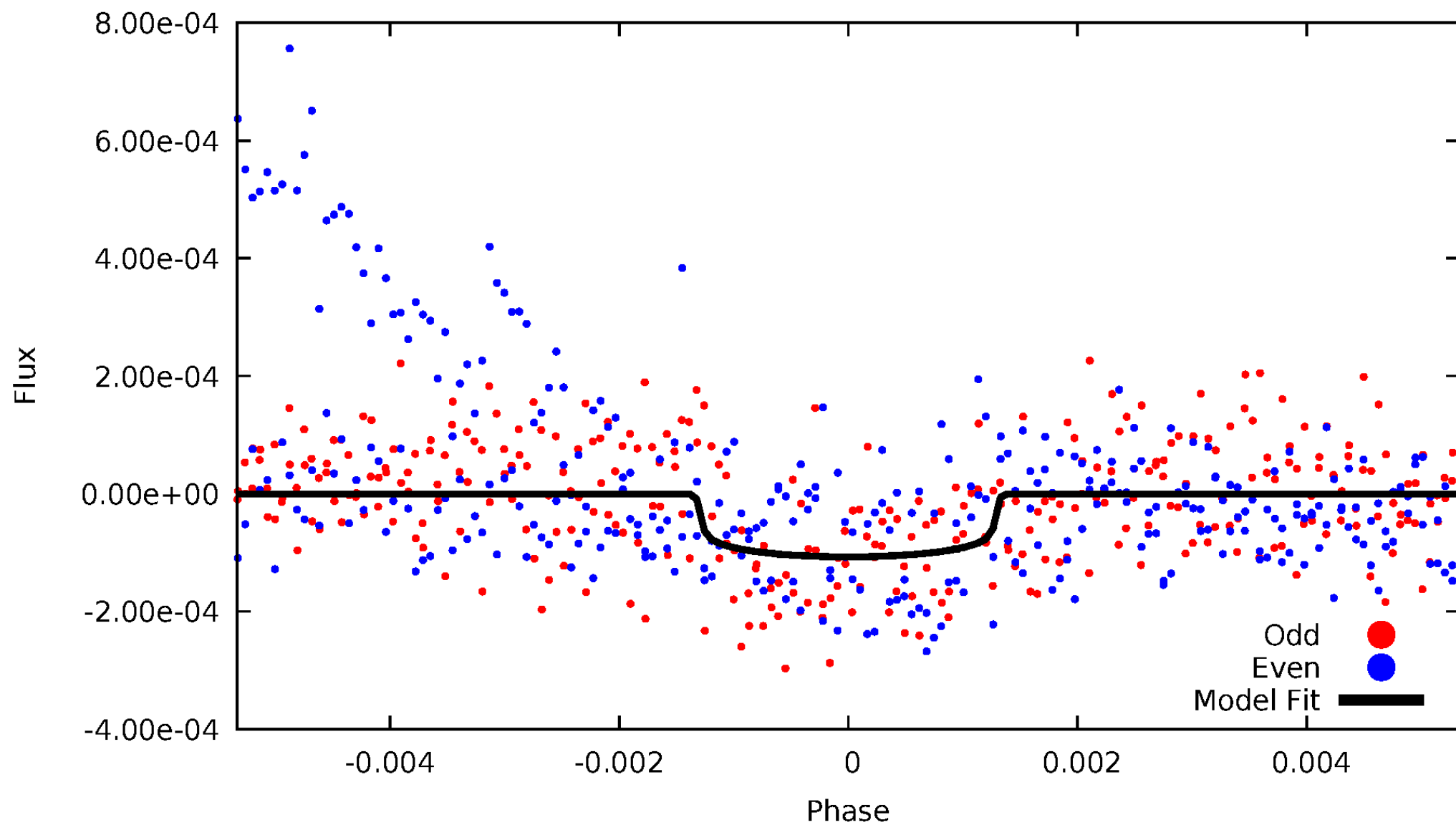


TCE 005480710-01



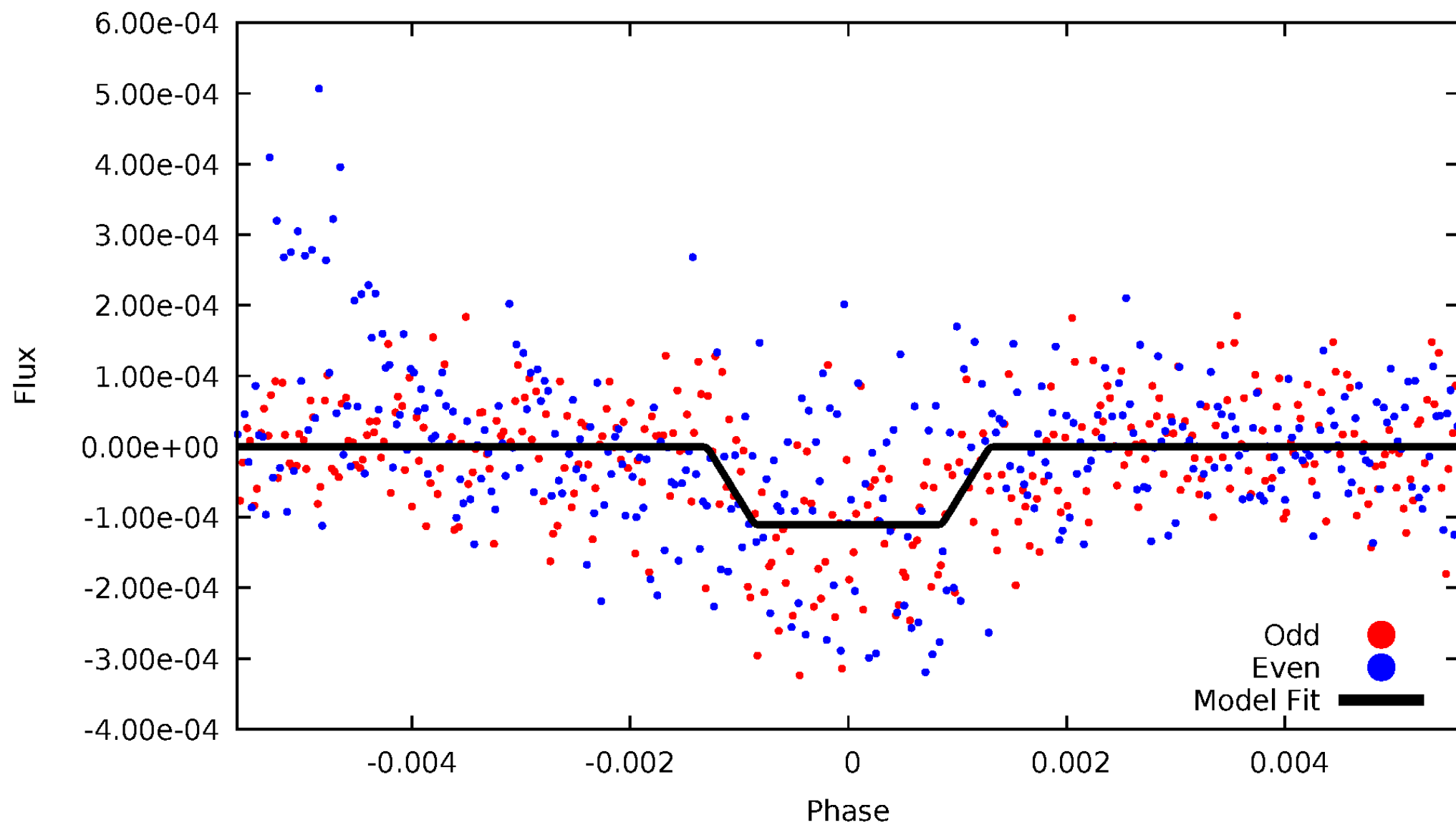
# DV Odd/Even

TCE 005480710-01



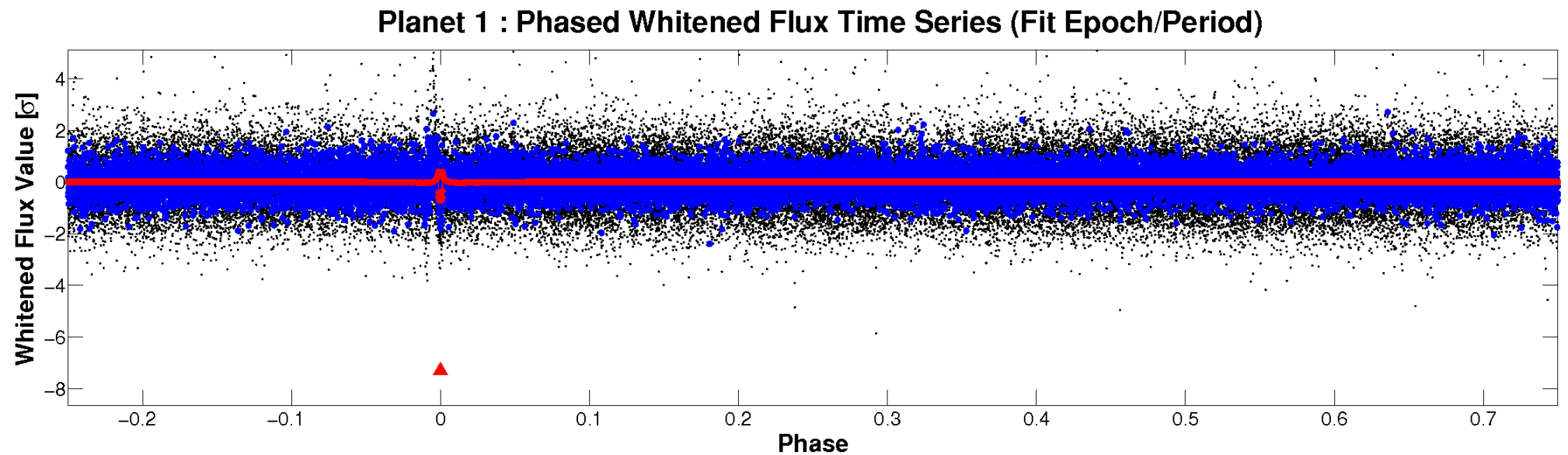
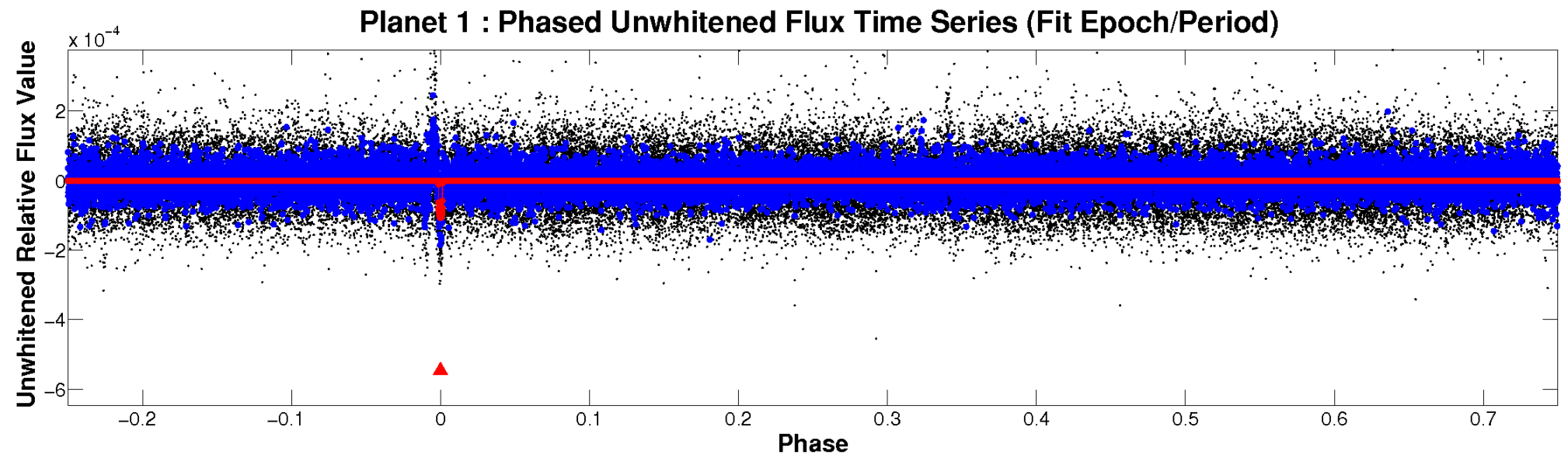
# ALT Odd/Even

TCE 005480710-01



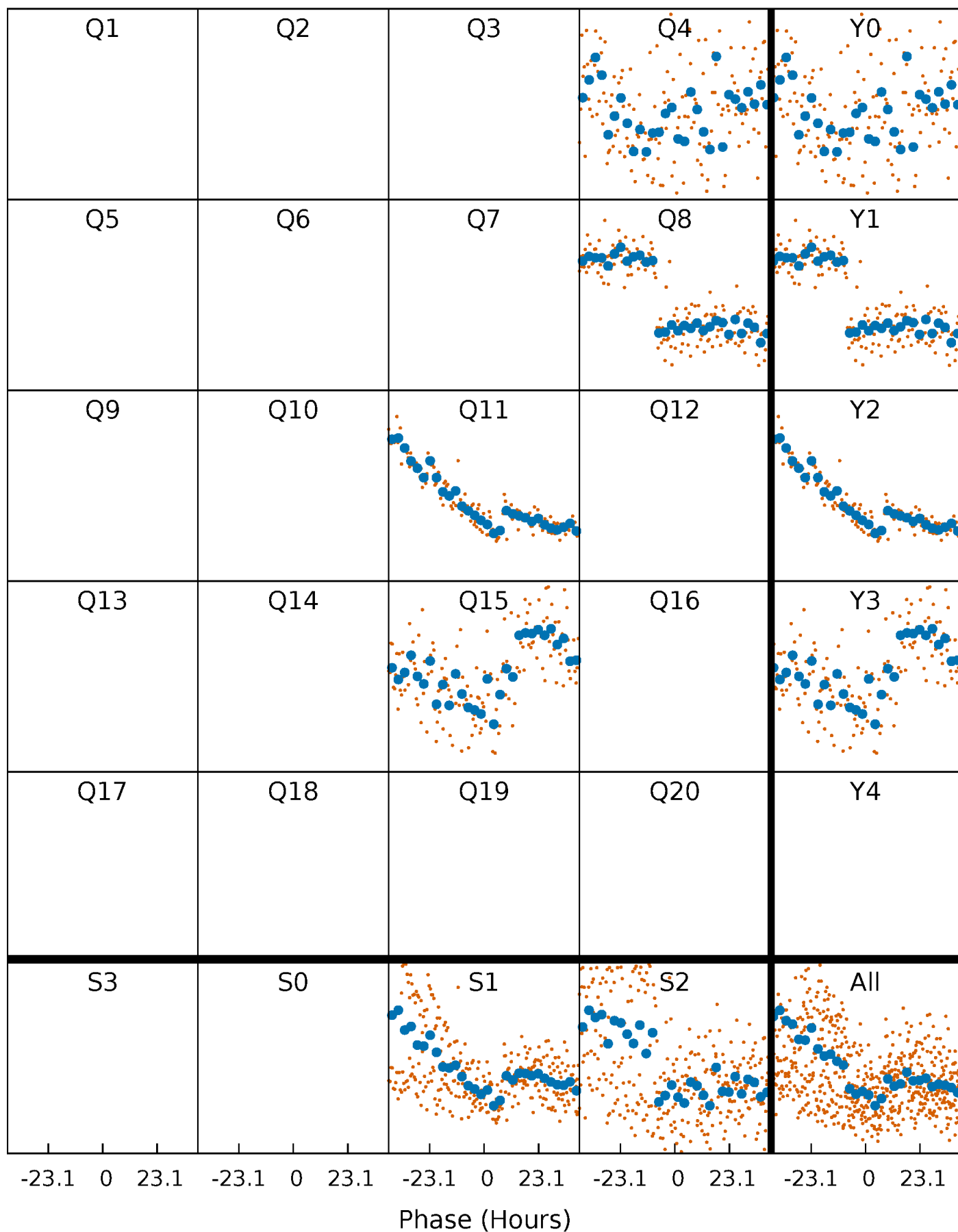


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

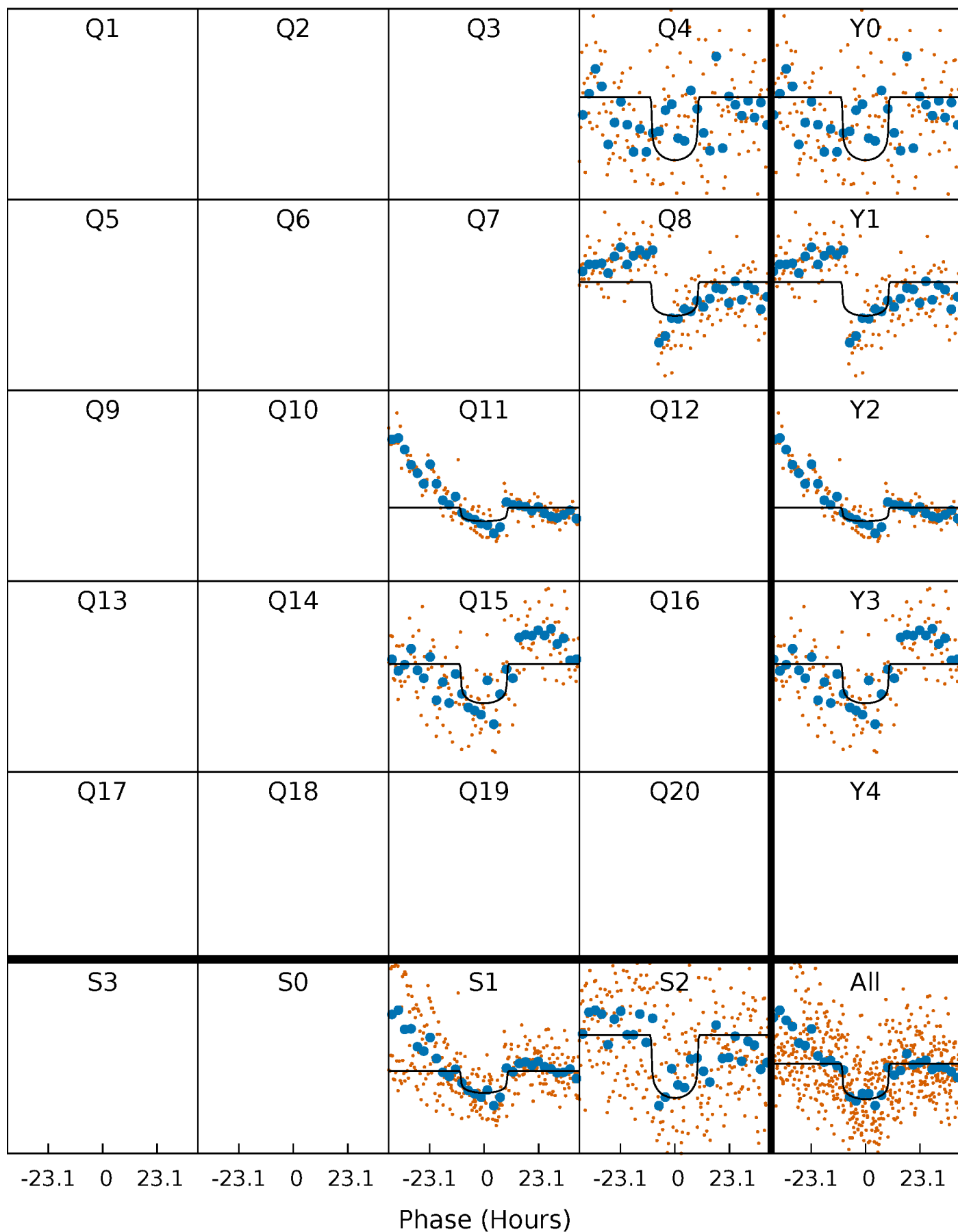
TCE 005480710-01 P=316.191060 Days  $T_0=426.742403$  (BKJD)





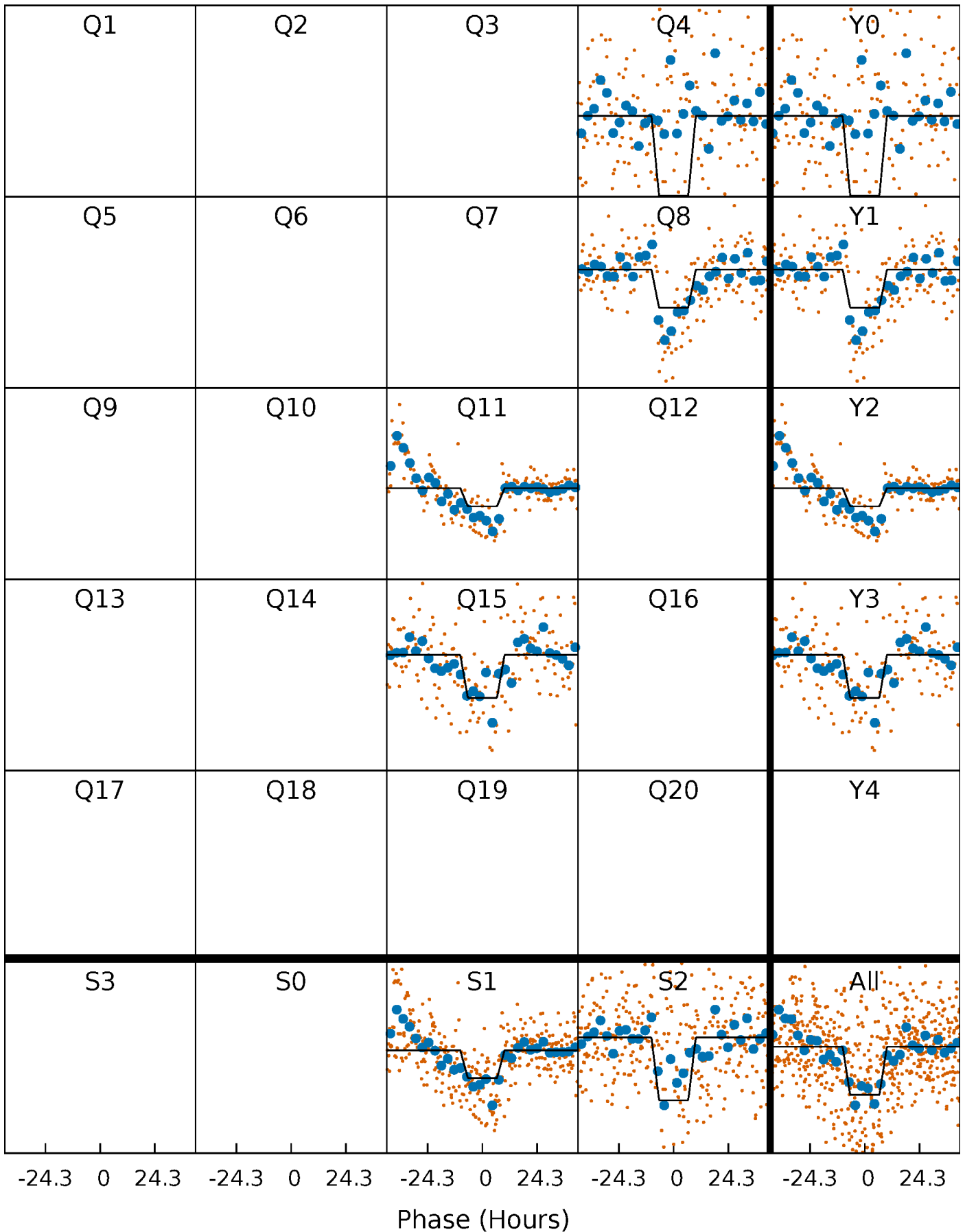
# DV Quarter-Phased Transit Curves

TCE 005480710-01 P=316.191060 Days  $T_0=426.742403$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

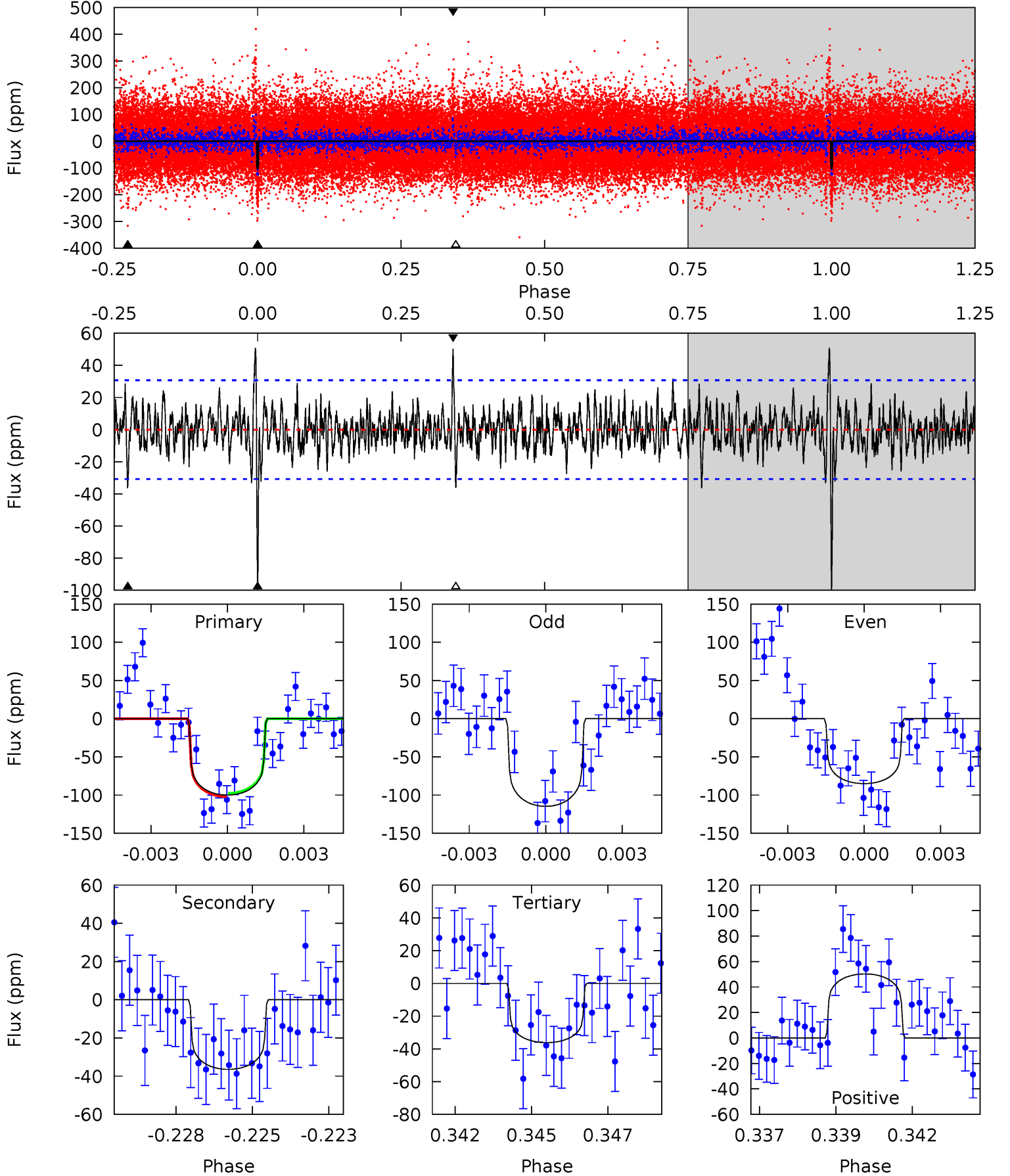
TCE 005480710-01 P=316.216152 Days  $T_0=426.684531$  (BKJD)



# DV Model-Shift Uniqueness Test

005480710-01, P = 316.191060 Days, E = 110.551343 Days

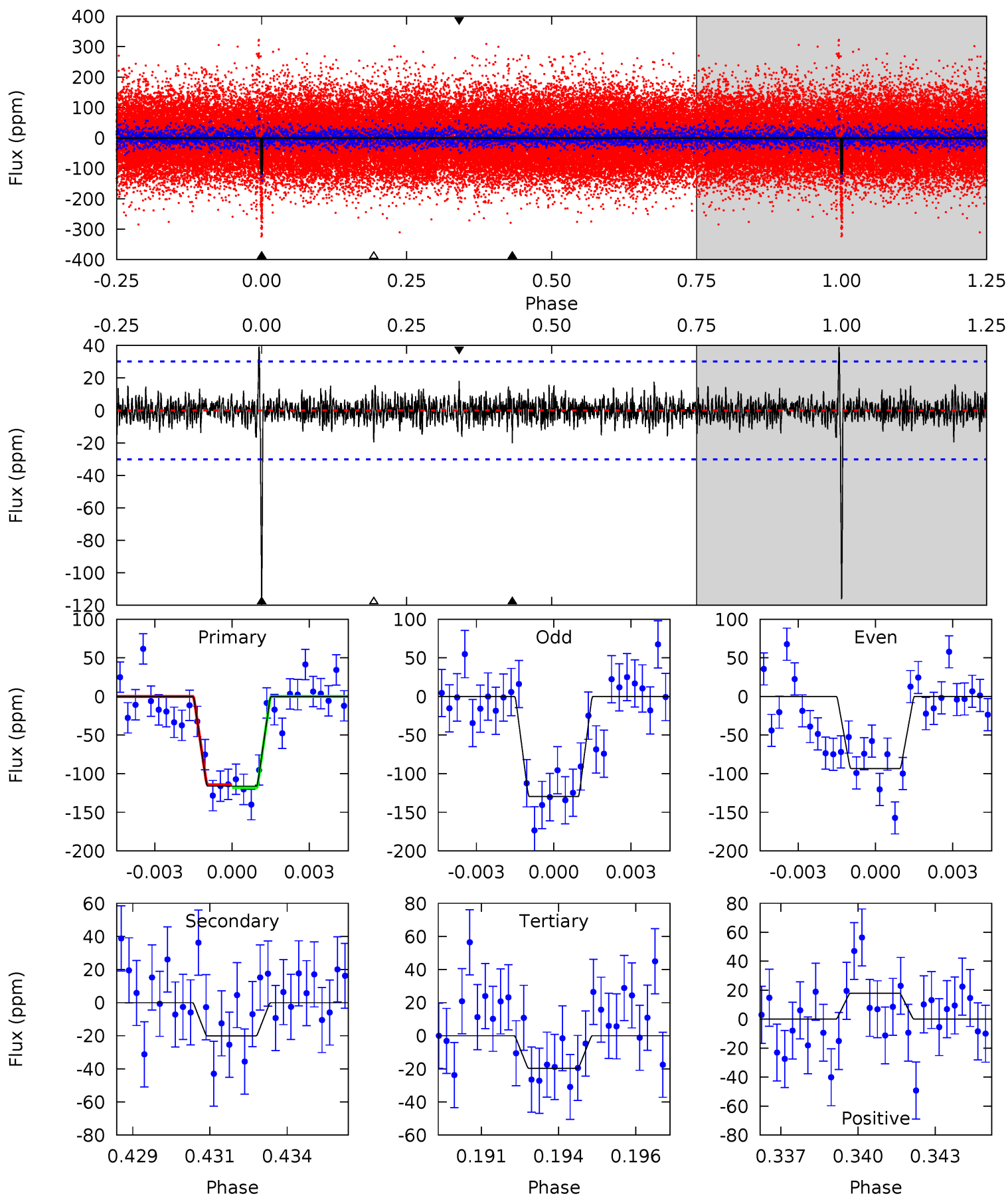
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	6.25	6.20	8.62	5.28	3.01	1.69	10.9	8.53	0.05	-2.38	2.54	0.87	0.34	0.36



# Alt Model-Shift Uniqueness Test

005480710-01, P = 316.216152 Days, E = 110.468379 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
20.3	3.52	3.44	3.15	5.28	3.01	0.93	16.9	17.2	0.07	0.37	3.22	0.87	0.25	0.34



### Stellar Parameters For KIC 005480710

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6017^{+236}_{-145}$	$3.935^{+0.435}_{-0.145}$	$-1.300^{+0.400}_{-0.250}$	$1.558^{+0.397}_{-0.595}$	$0.761^{+0.094}_{-0.031}$	$0.284^{+0.917}_{-0.132}$
	+4%/-2%	+11%/-4%	+31%/-19%	+25%/-38%	+12%/-4%	+323%/-46%
Source	PHO1	FLK73	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 005480710-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-36 \pm 6$	$1.72^{+0.44}_{-0.42}$	$502^{+41}_{-54}$	$4712^{+385}_{-331}$	$4683^{+3566}_{-1762}$
Alt.	$-20 \pm 6$	$1.74^{+0.41}_{-0.44}$	$503^{+37}_{-53}$	$4194^{+354}_{-321}$	$2536^{+2133}_{-1008}$

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

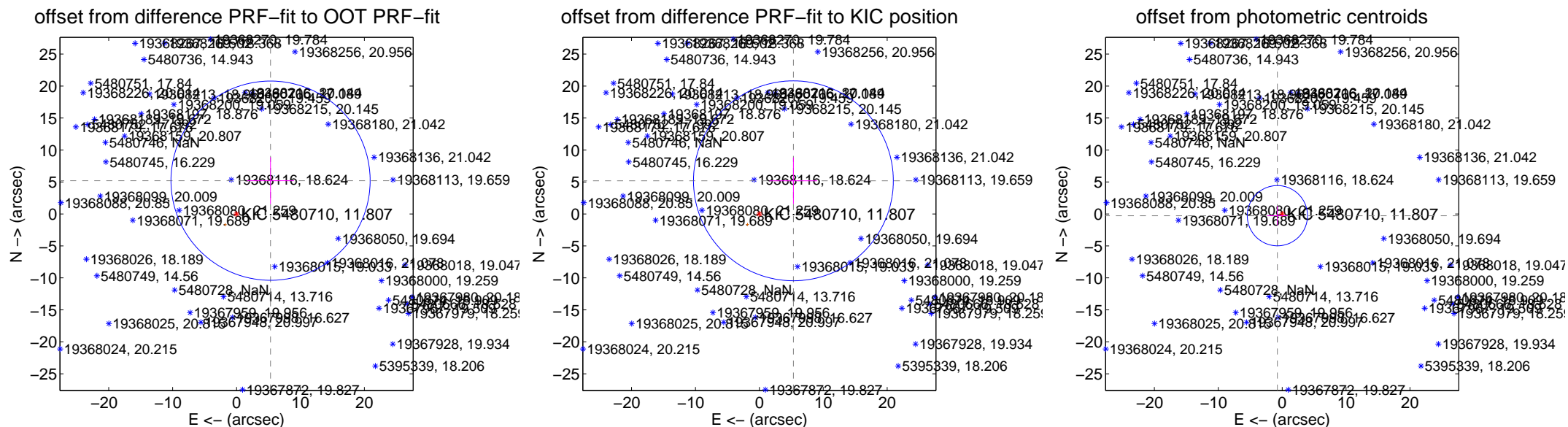
## DV Centroid Data

Supplemental centroid analysis for 005480710-01. **Kepler magnitude: 11.81.** Transit SNR 8.53

There are 1 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	$7.441 \pm 5.193$	1.43	$-5.321 \pm 3.683$	$5.202 \pm 3.662$
PRF-fit source offset from KIC position	$7.432 \pm 5.210$	1.43	$-5.327 \pm 3.733$	$5.183 \pm 3.635$
photometric centroid source offset	$0.80 \pm 1.57$	0.51	$0.75 \pm 1.58$	$-0.27 \pm 1.51$



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



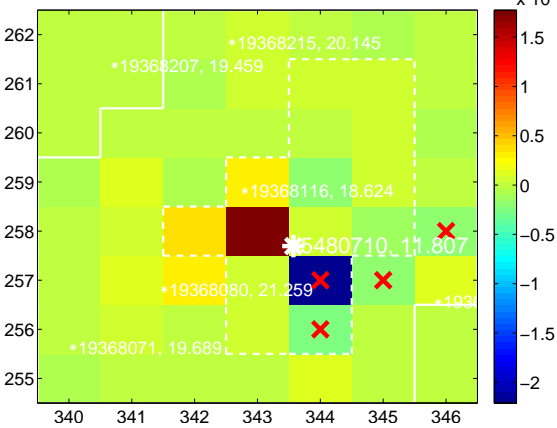
Q3 no difference image



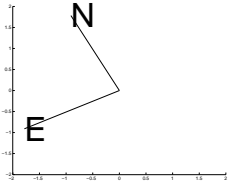
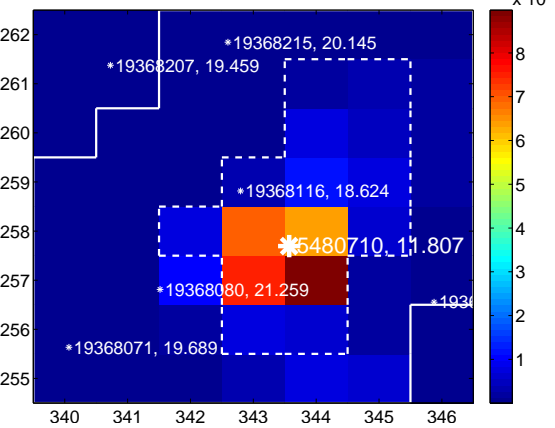
Q3 no OOT image



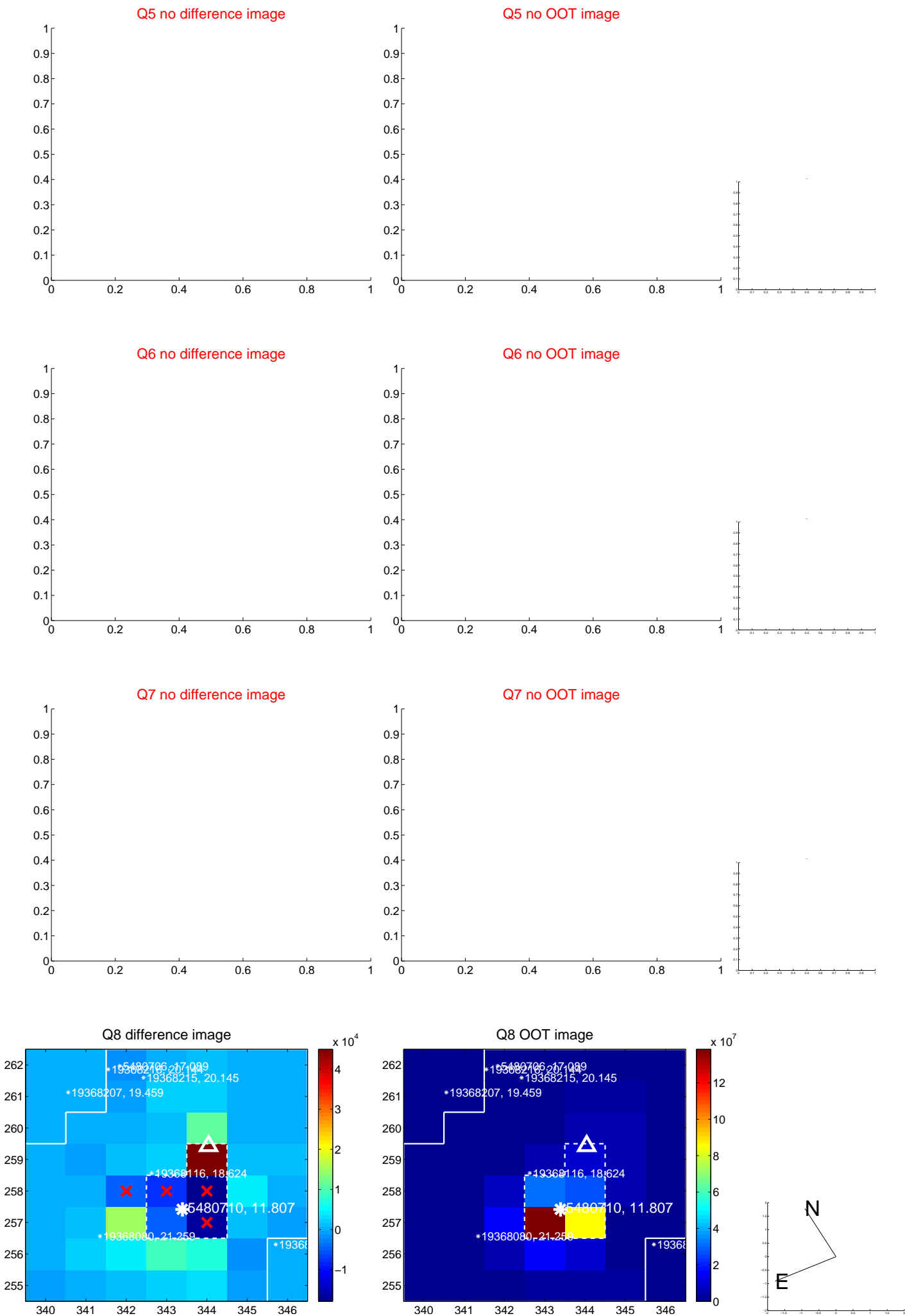
Q4 difference image. Poor Quality



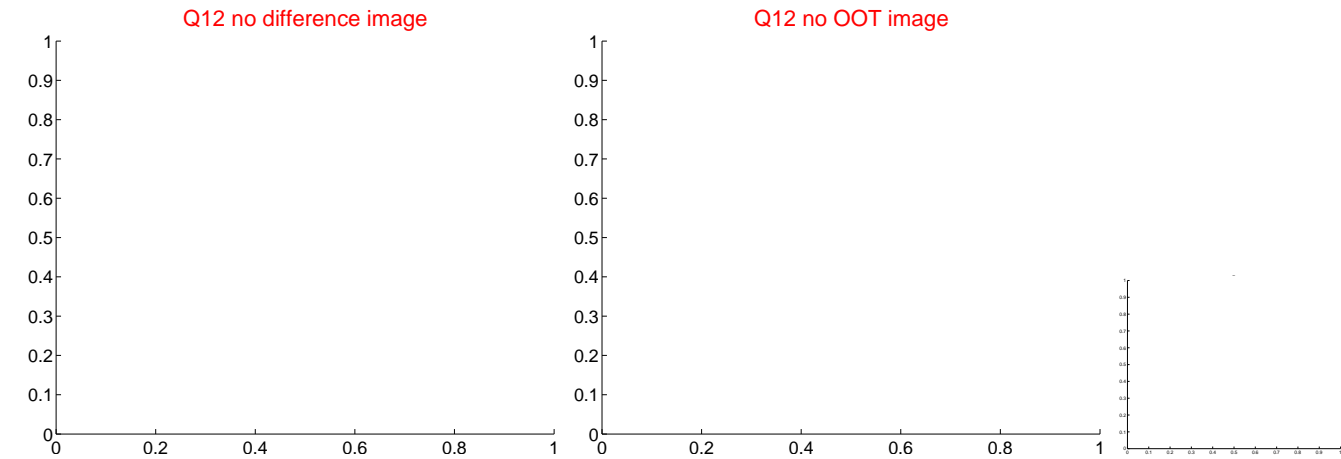
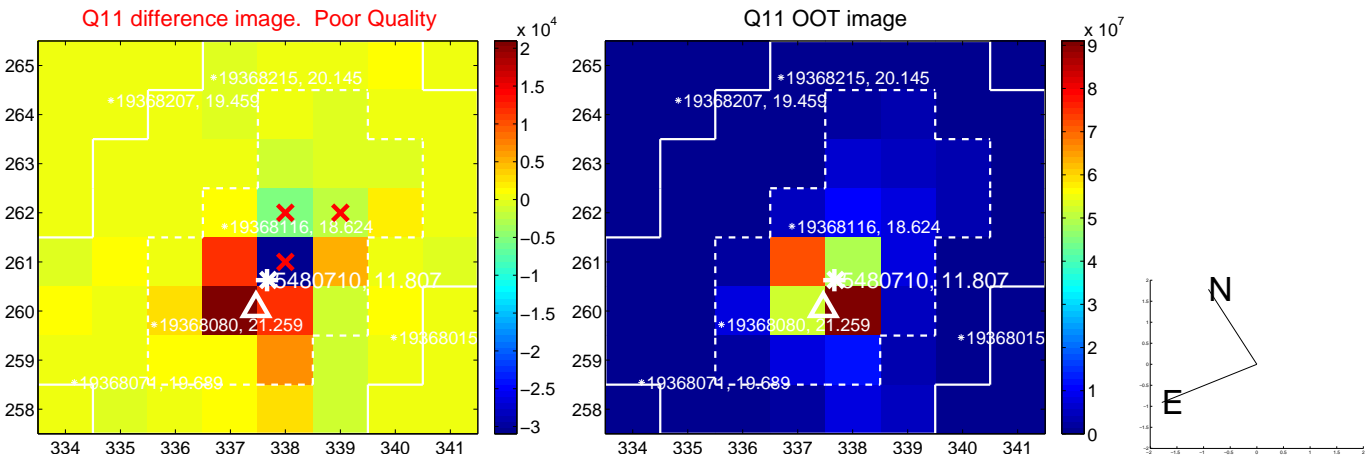
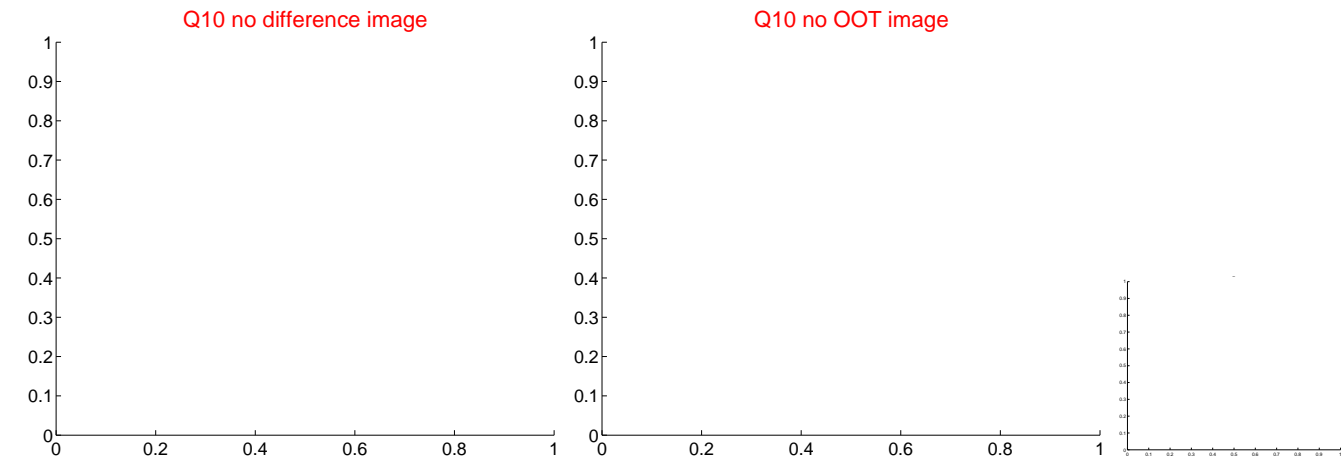
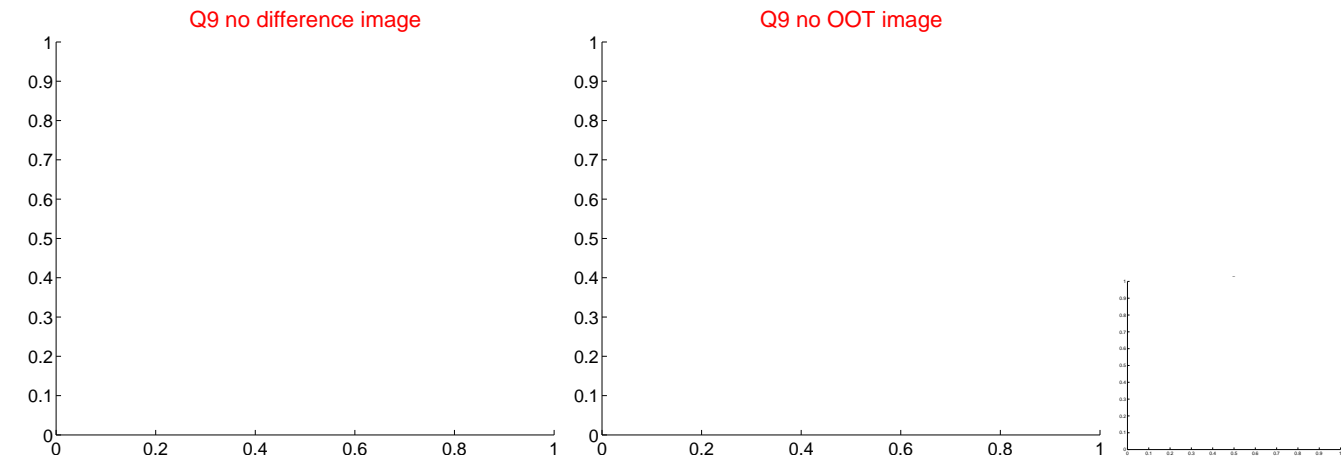
Q4 OOT image



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



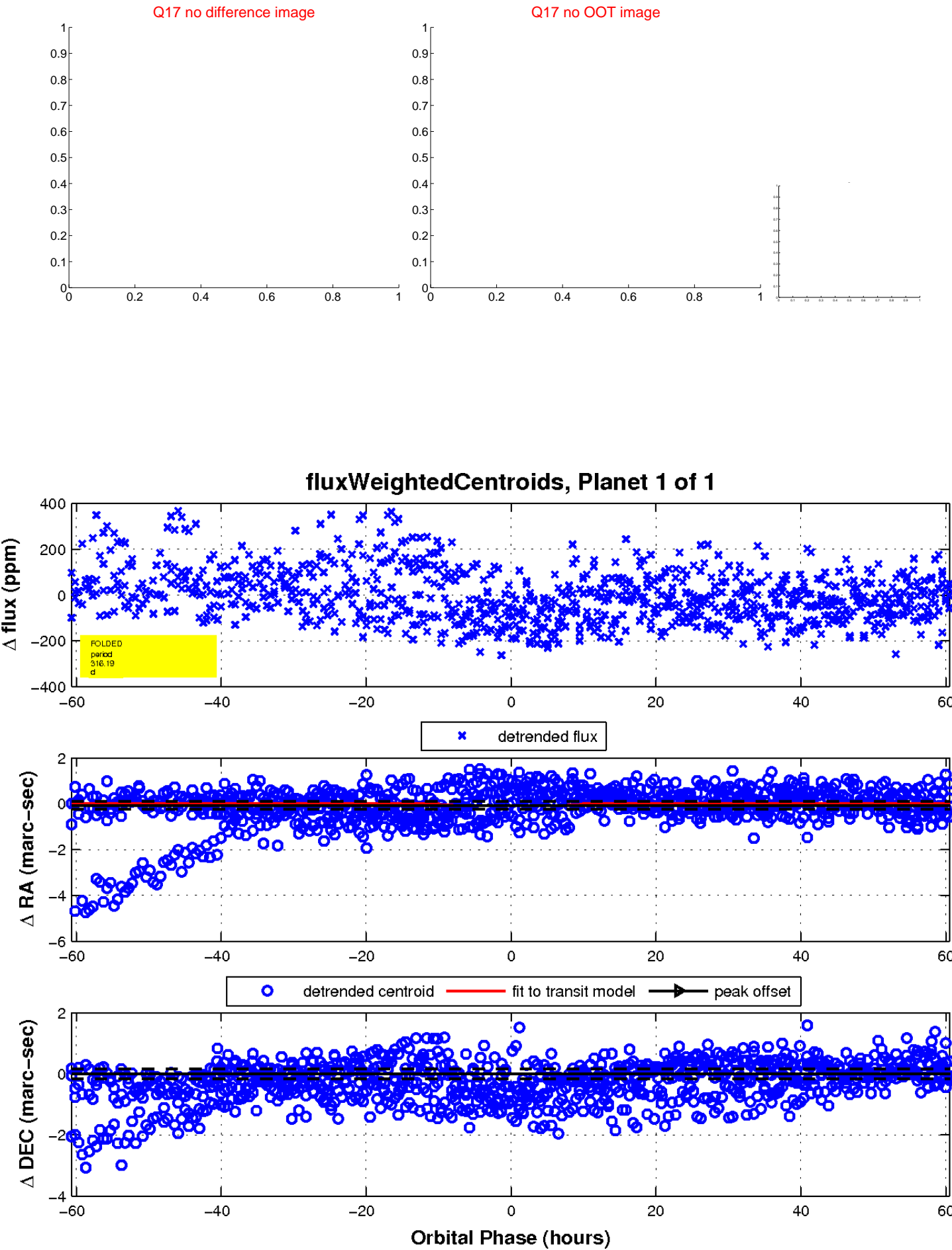
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

