

# KIC 010855545

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010855545-01	OBS	5834.01	37.538508	159.763806	343.7	4.356	8.2	7.3	1.08	6095	2.27	27.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010855545-01	OBS	FP	0.09	1	0	0	0	LPP_DV

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

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

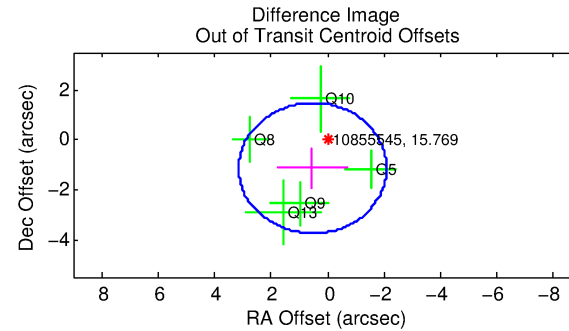
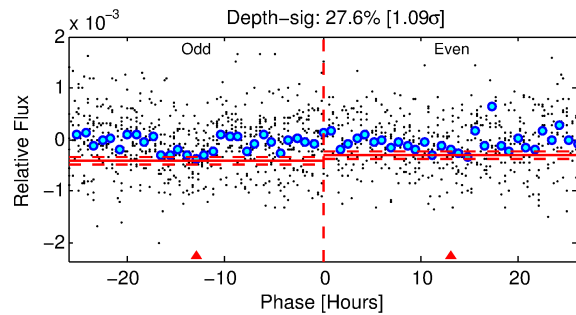
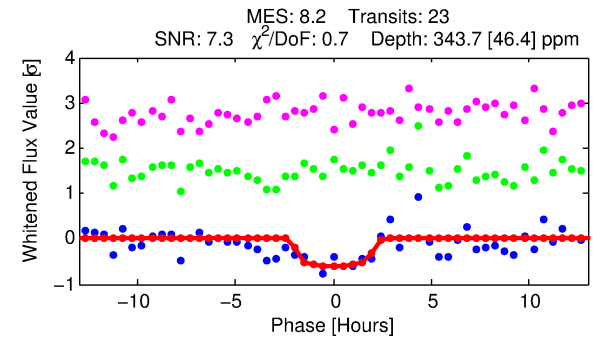
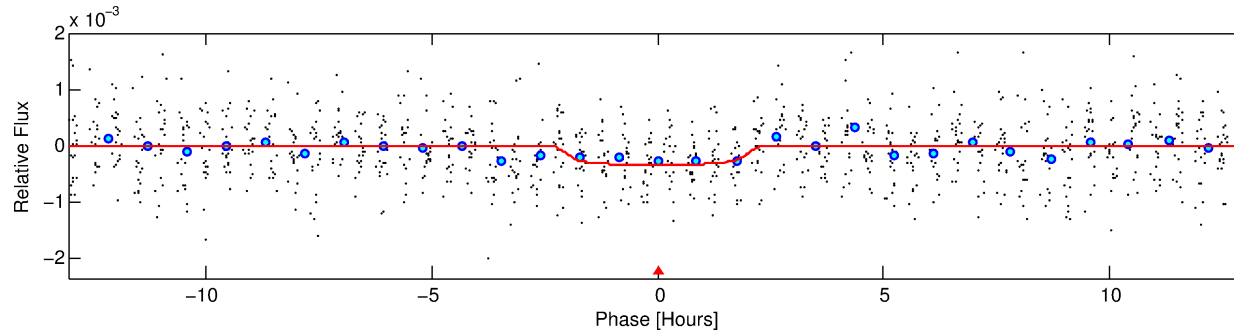
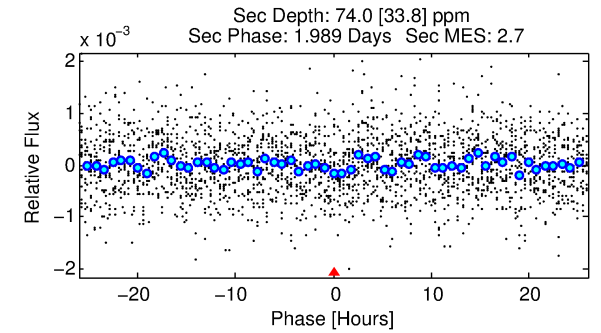
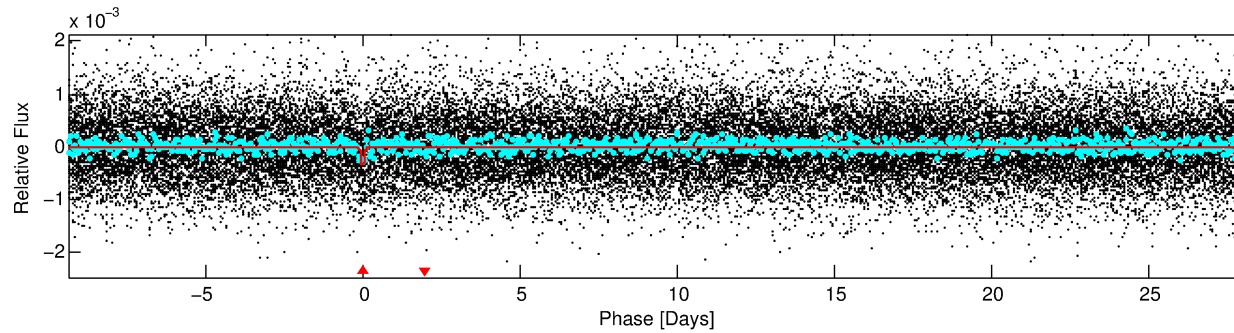
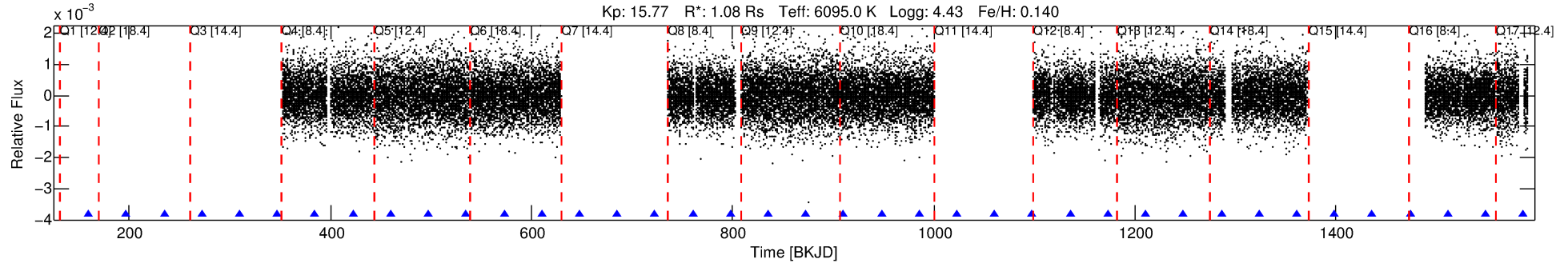
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010855545-01

No Significant Match Found

# DV One-Page Summary

KIC: 10855545 Candidate: 1 of 1 Period: 37.539 d  
KOI: K05834.01 Corr: 0.810



## DV Fit Results:

Period = 37.53851 [0.00072] d  
Epoch = 159.7638 [0.0168] BKJD  
Rp/R\* = 0.0192 [0.0113]  
a/R\* = 37.75 [106.71]  
b = 0.84 [0.99]  
Seff = 27.43 [10.93]  
Teq = 584 [58] K  
Rp = 2.27 [1.51] Re  
a = 0.2297 [0.0581] AU  
Ag = 416.20 [547.10] [0.76σ]  
Teffp = 4075 [1299] K [2.69σ]

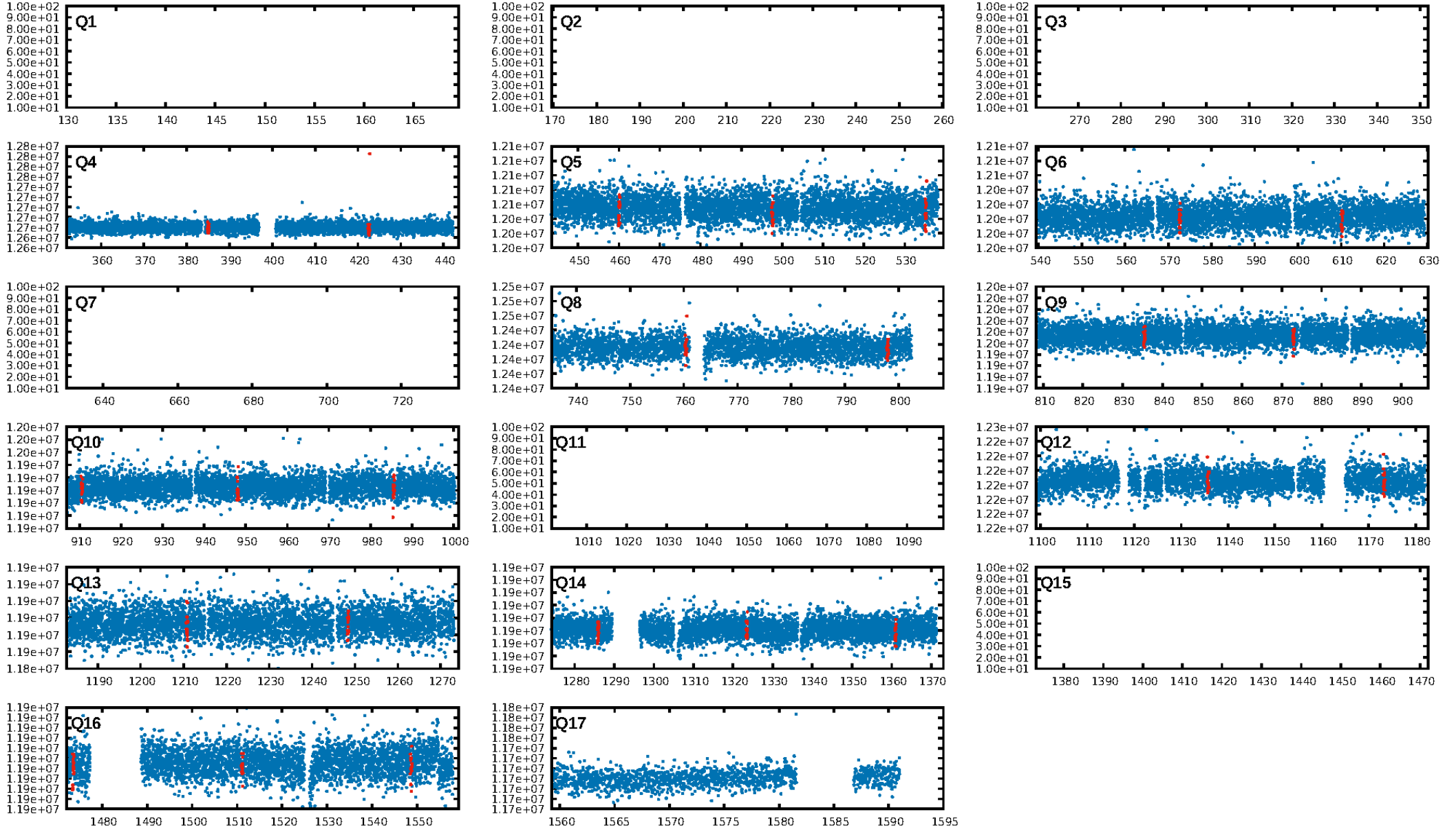
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.75e-17  
RollingBand-fgt: 1.00 [23/23]  
GhostDiagnostic-chr: -2.203  
Centroid-sig: 11.2%  
Centroid-so: 2.430 arcsec [1.21σ]  
OotOffset-rm: 1.258 arcsec [1.44σ]  
KicOffset-rm: 1.306 arcsec [1.34σ]  
OotOffset-st: 1/0/1/3 [5]  
KicOffset-st: 1/0/1/3 [5]  
DiffImageQuality-fgm: 0.40 [2/5]  
DiffImageOverlap-fno: 1.00 [10/10]

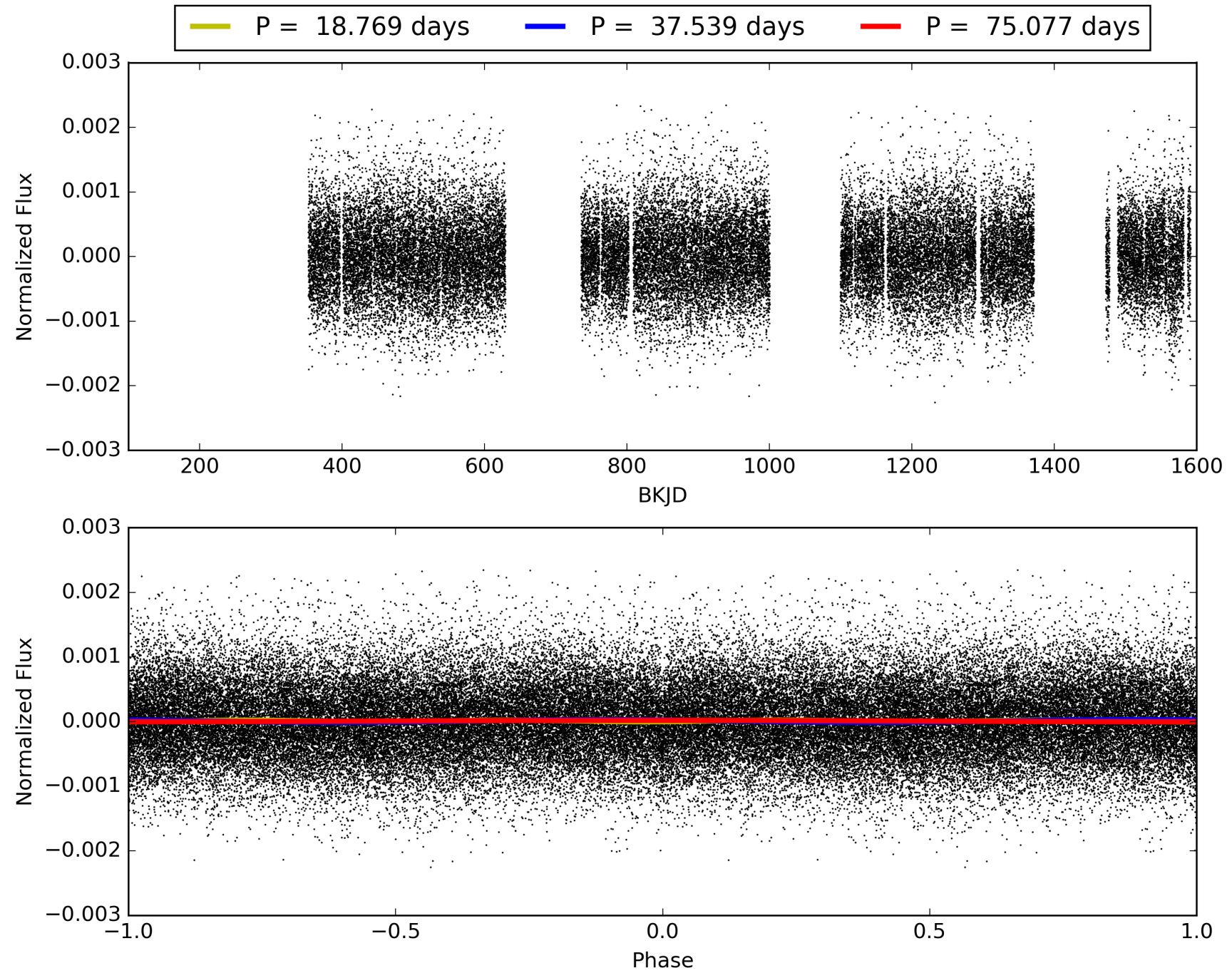
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:24:40 Z

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

# TCE 010855545-01, PDC Light Curves

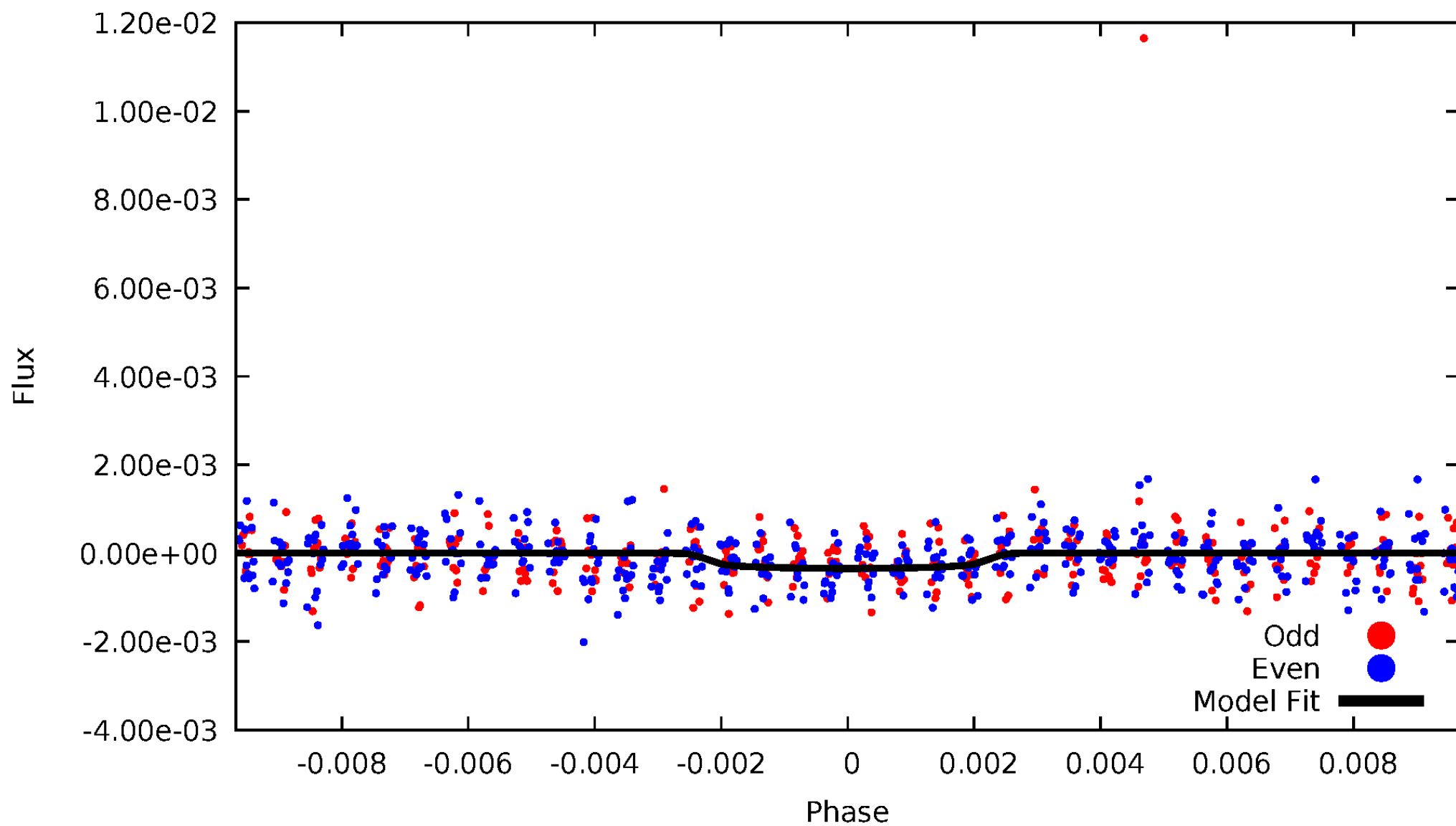


TCE 010855545-01



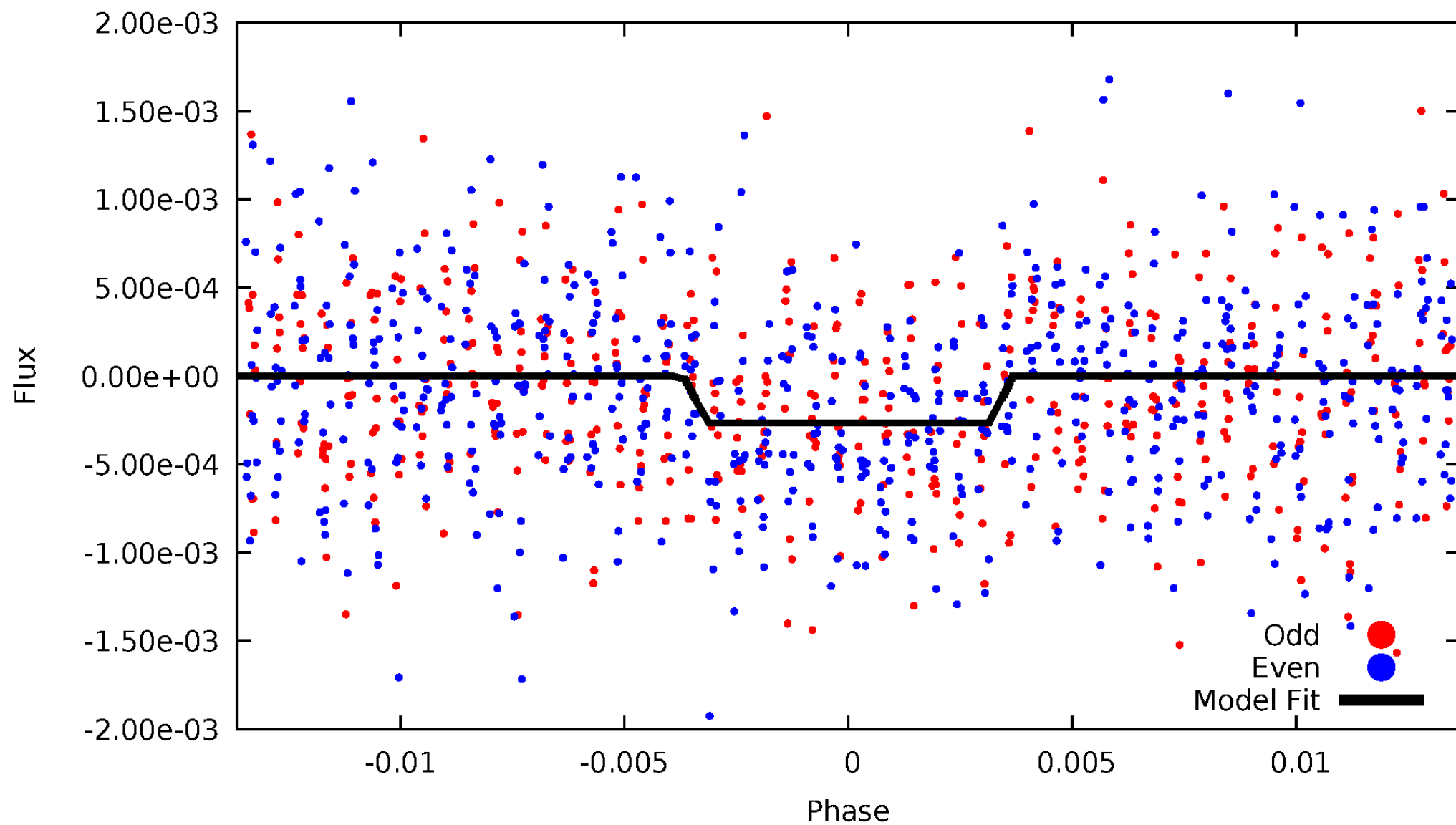
# DV Odd/Even

TCE 01085545-01



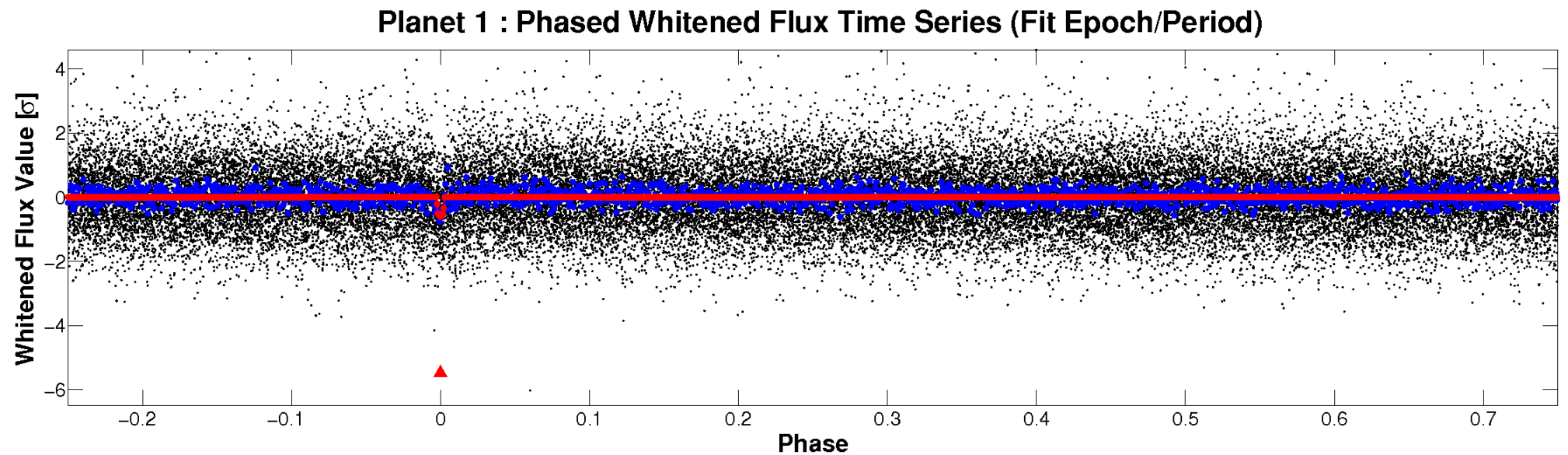
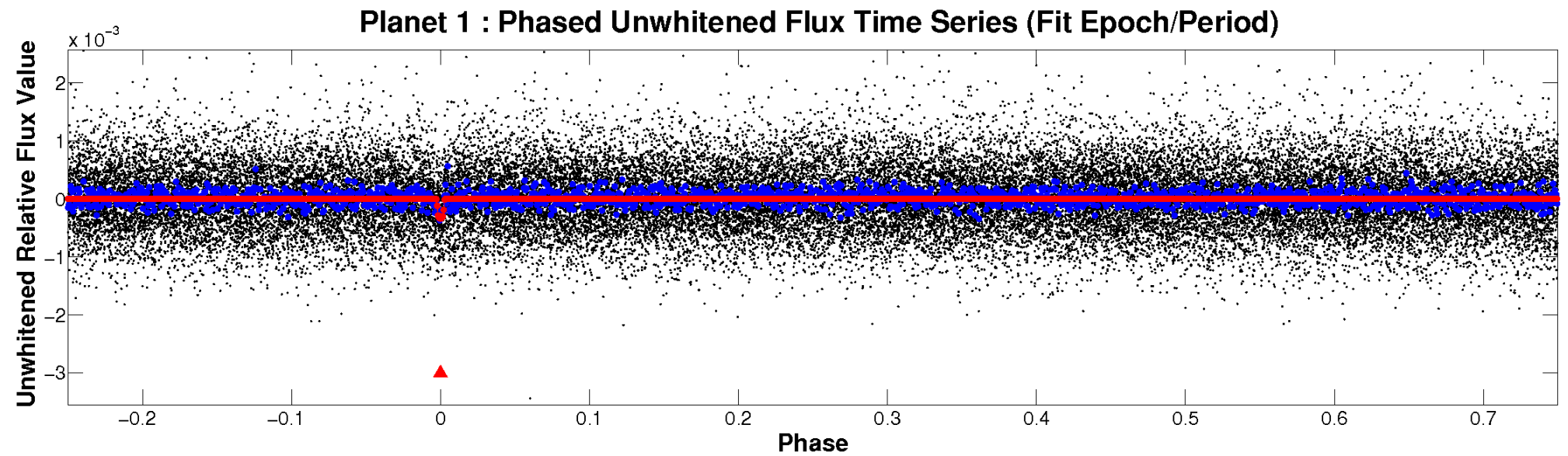
# ALT Odd/Even

TCE 01085545-01



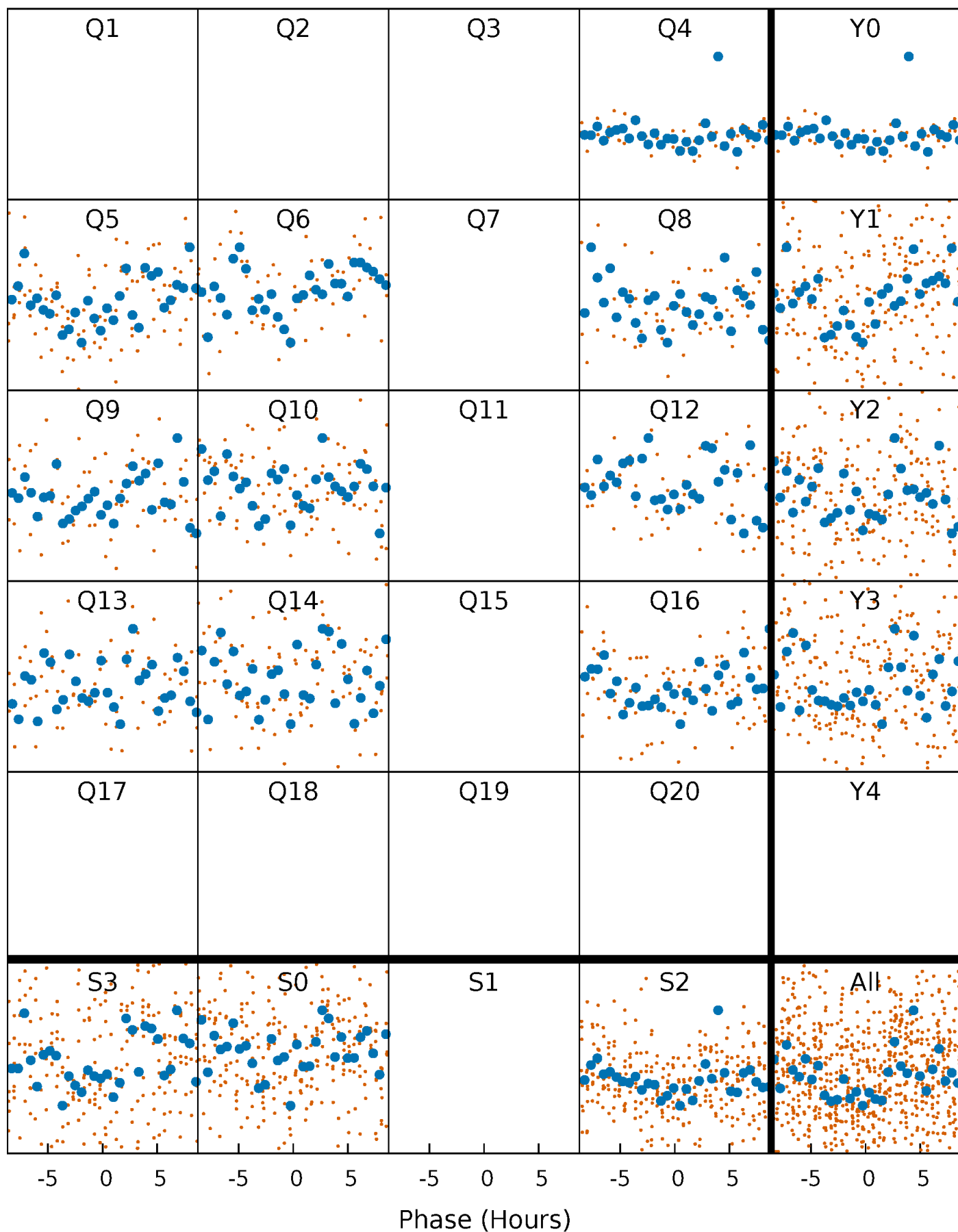


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

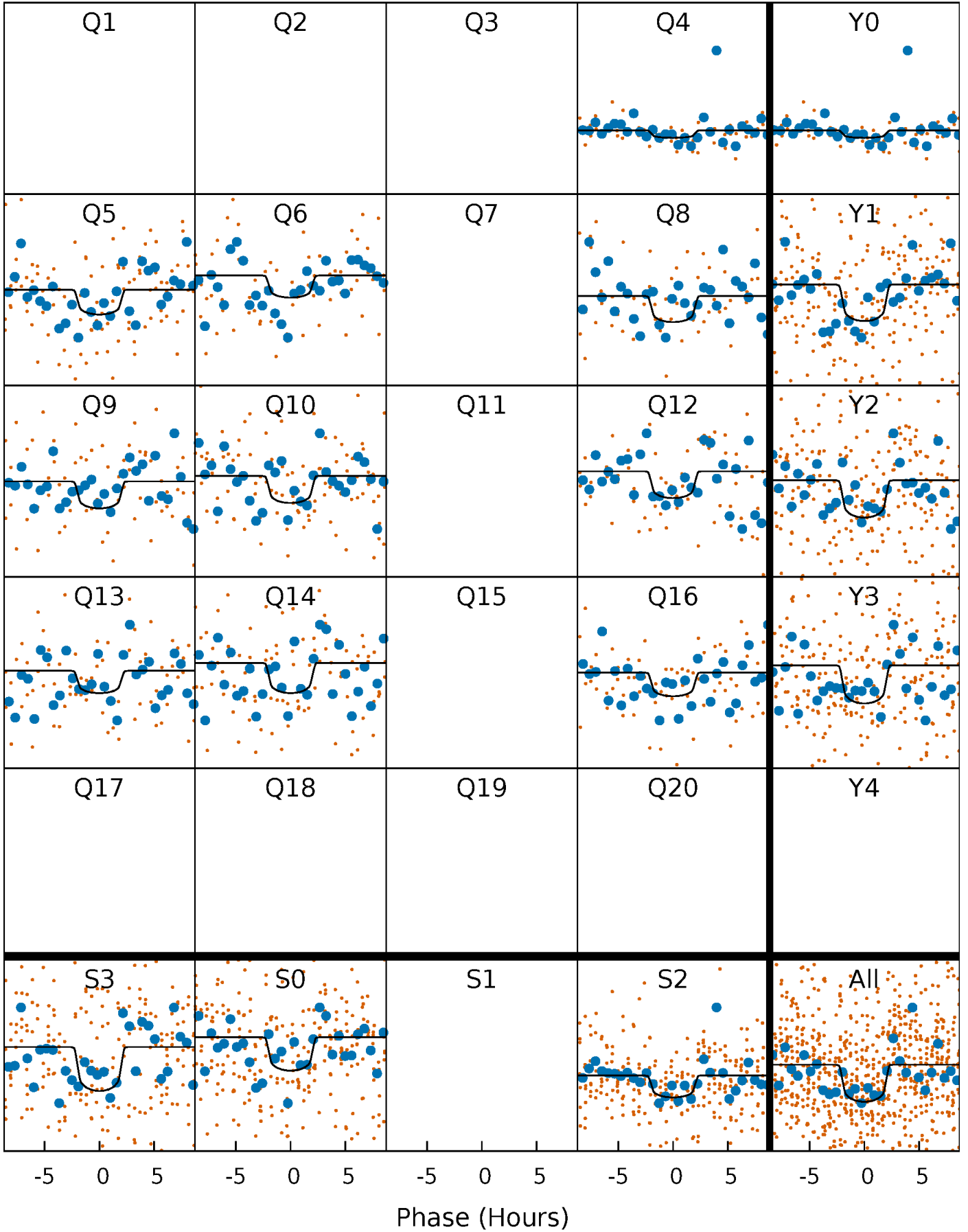
TCE 010855545-01 P= 37.538508 Days  $T_0=159.763806$  (BKJD)





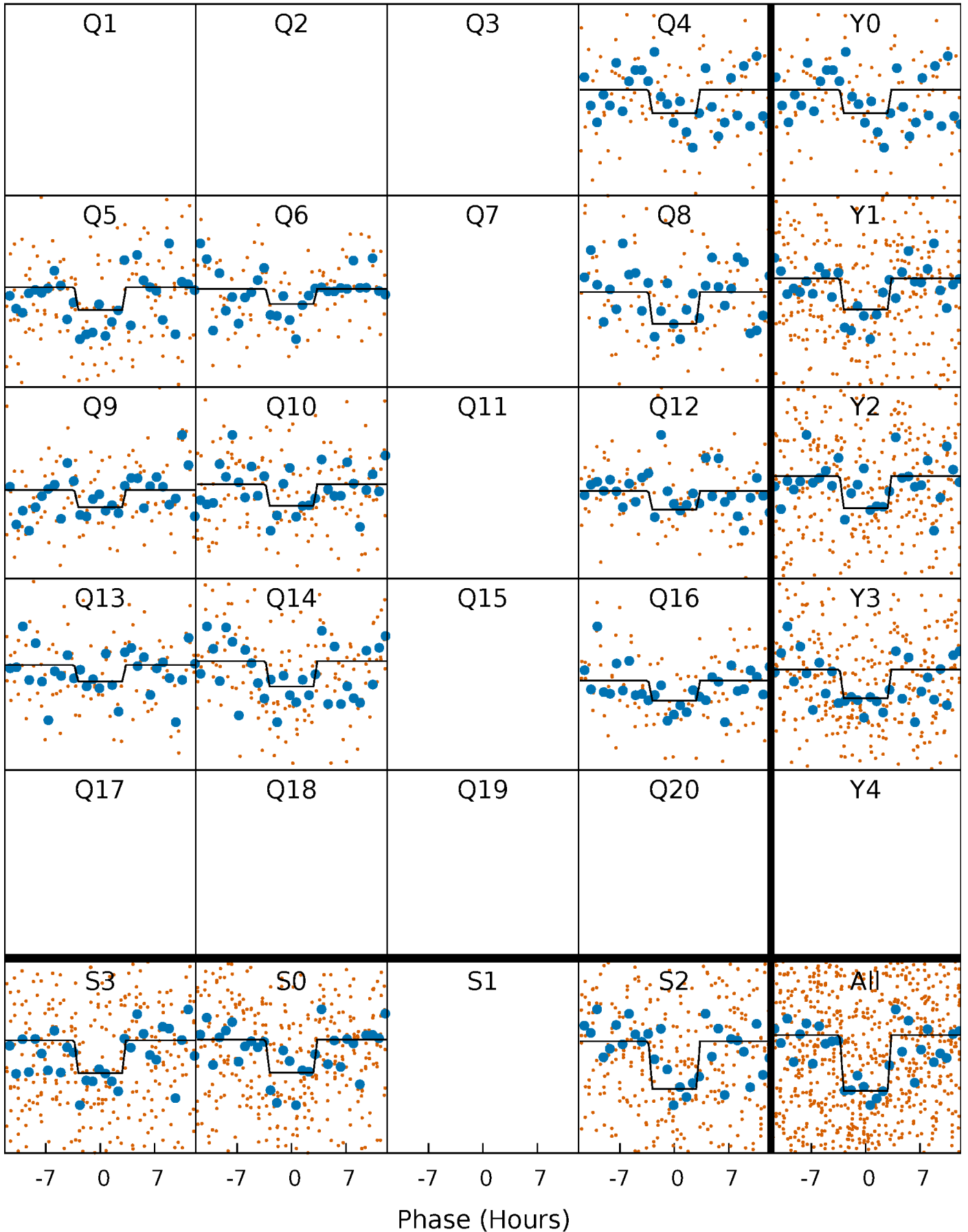
# DV Quarter-Phased Transit Curves

TCE 010855545-01 P= 37.538508 Days  $T_0=159.763806$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

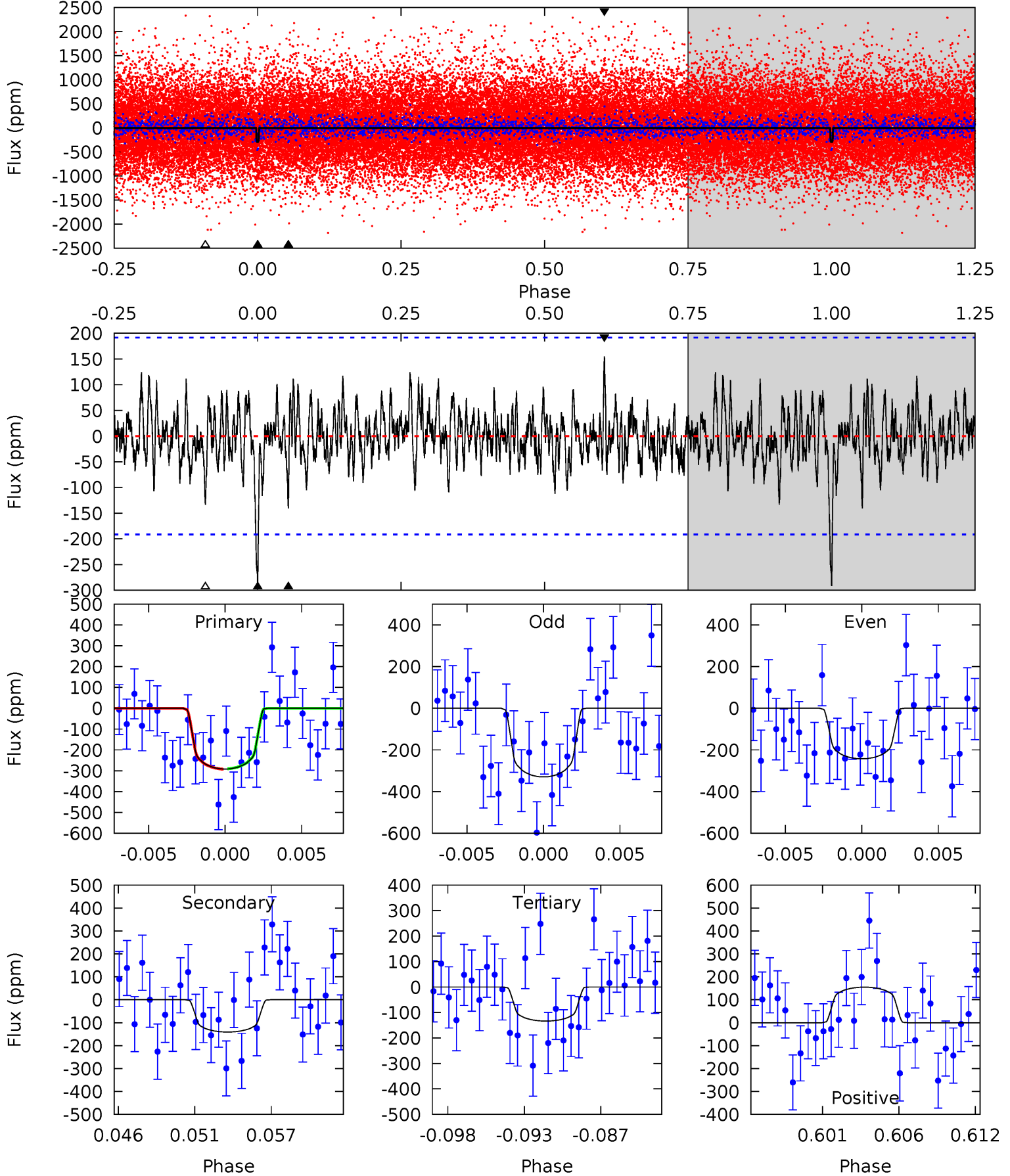
TCE 010855545-01   P= 37.538509 Days    $T_0=159.723100$  (BKJD)



# DV Model-Shift Uniqueness Test

010855545-01, P = 37.538508 Days, E = 159.763806 Days

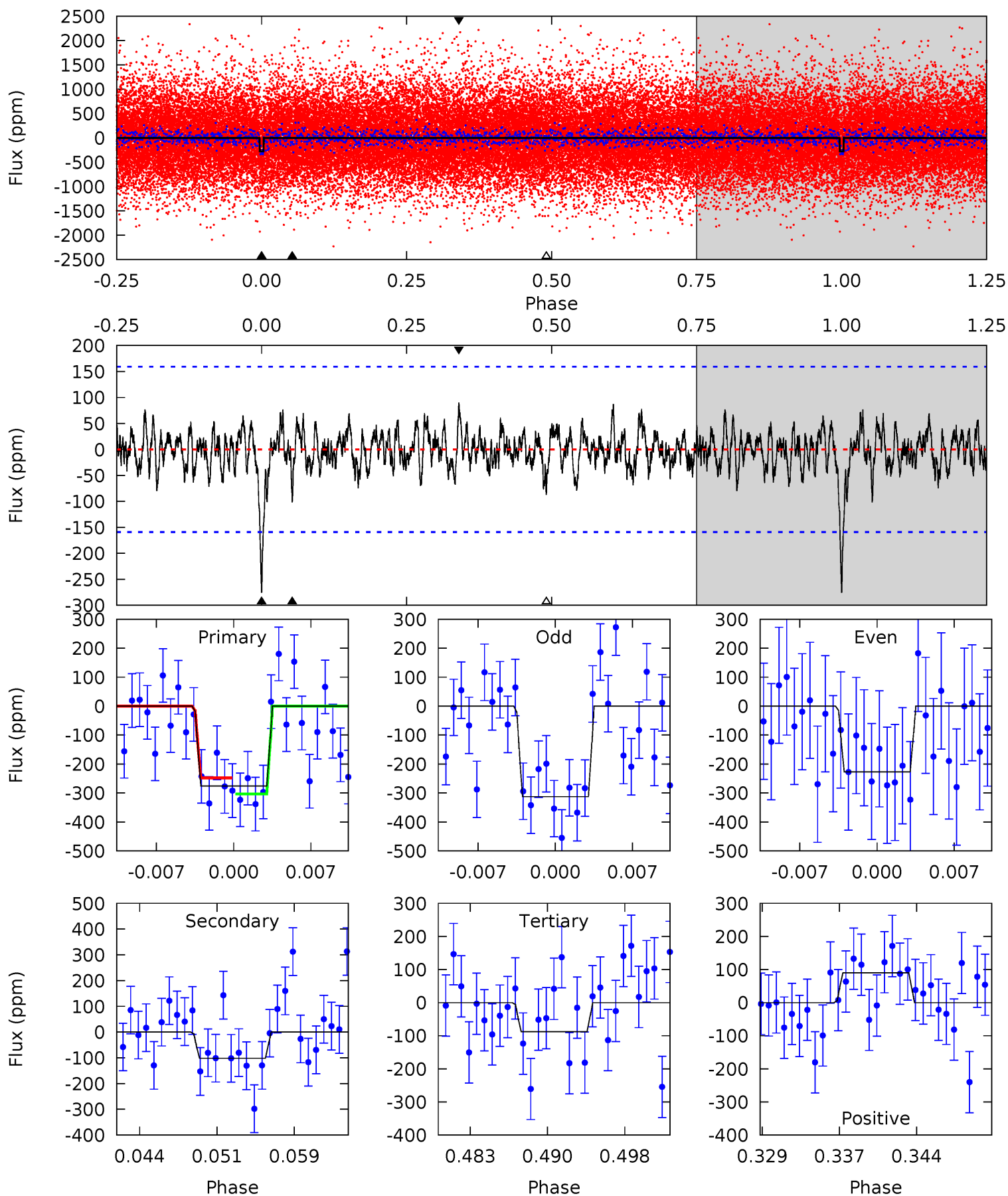
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.84	3.78	3.60	4.17	5.15	2.80	1.13	4.25	3.67	0.19	-0.39	1.17	0.95	0.35	0.03



# Alt Model-Shift Uniqueness Test

010855545-01, P = 37.538509 Days, E = 159.723100 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
8.81	3.25	2.80	2.87	5.09	2.68	0.95	6.01	5.94	0.45	0.38	1.36	1.00	0.25	0.89



### Stellar Parameters For KIC 010855545

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6095^{+190}_{-253}$	$4.429^{+0.065}_{-0.195}$	$0.140^{+0.200}_{-0.300}$	$1.082^{+0.331}_{-0.142}$	$1.150^{+0.136}_{-0.166}$	$1.278^{+0.375}_{-0.693}$
	+3%/-4%	+1%/-4%	+143%/-214%	+31%/-13%	+12%/-14%	+29%/-54%
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 010855545-01 / KOI 5834.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-141 \pm 37$	$2.42^{+1.27}_{-1.21}$	$829^{+56}_{-49}$	$4819^{+1848}_{-759}$	$673^{+2010}_{-408}$
Alt.	$-102 \pm 31$	$2.05^{+1.46}_{-1.18}$	$828^{+56}_{-45}$	$4804^{+2200}_{-950}$	$654^{+2775}_{-452}$

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

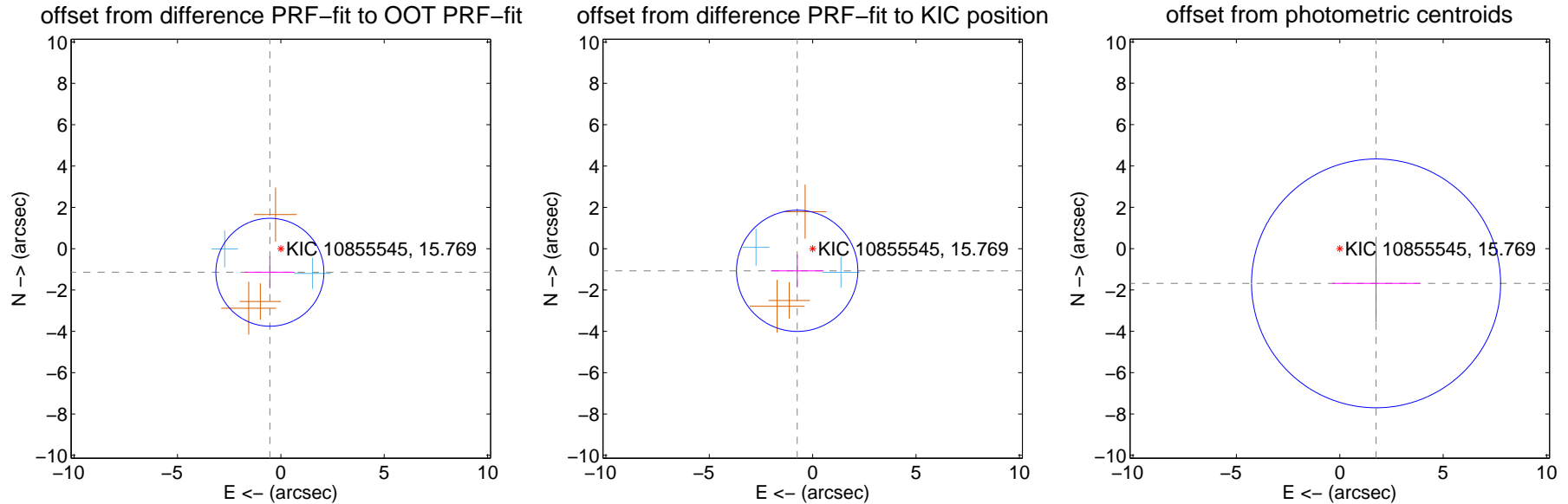
## DV Centroid Data

Supplemental centroid analysis for 010855545-01. Kepler magnitude: 15.77. Transit SNR 7.30

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

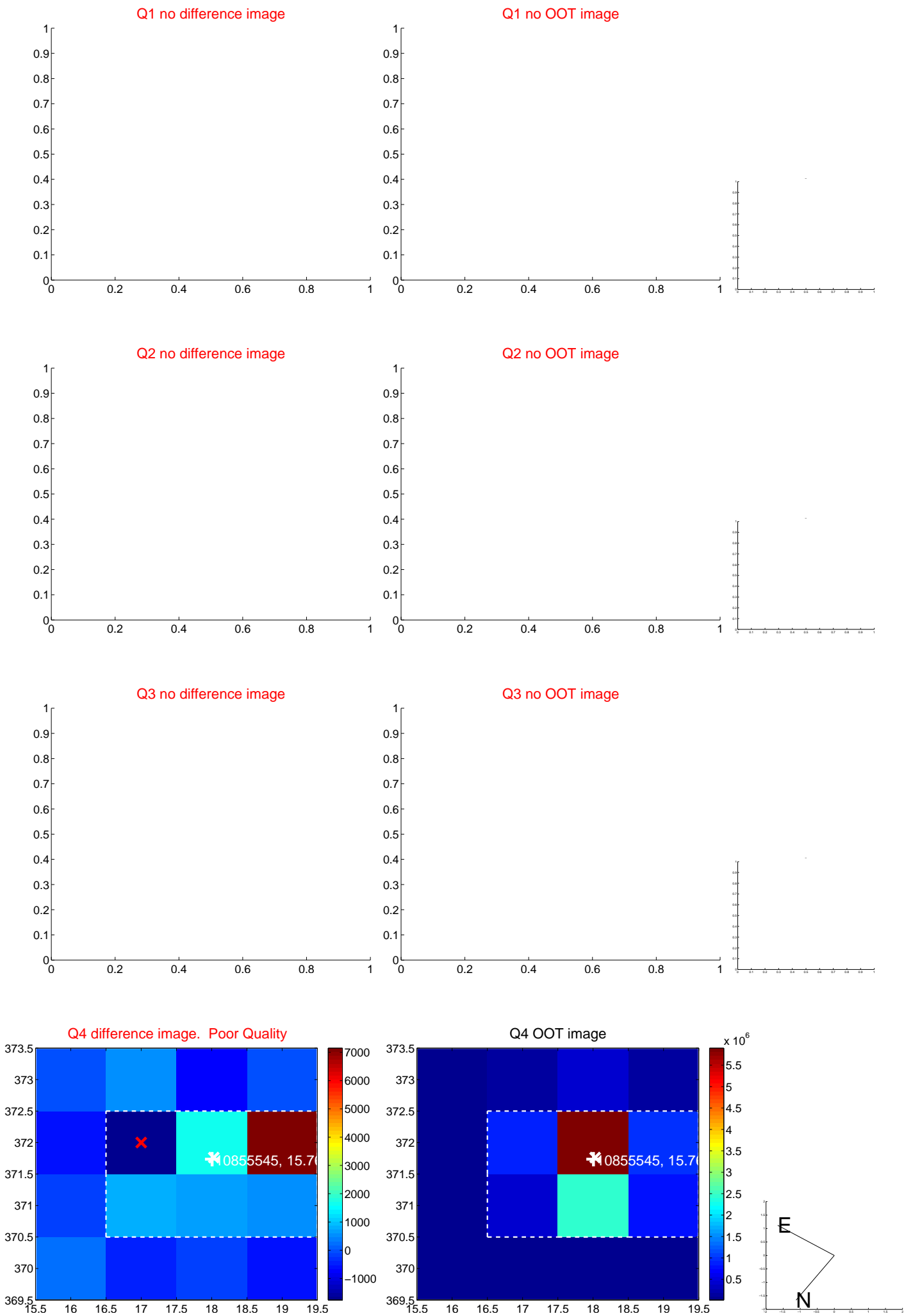
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.258 \pm 0.871$	1.44	$0.530 \pm 1.202$	$-1.141 \pm 0.781$
PRF-fit source offset from KIC position	$1.306 \pm 0.978$	1.34	$0.748 \pm 1.277$	$-1.071 \pm 0.792$
photometric centroid source offset	$2.43 \pm 2.01$	1.21	$-1.76 \pm 2.12$	$-1.68 \pm 1.87$



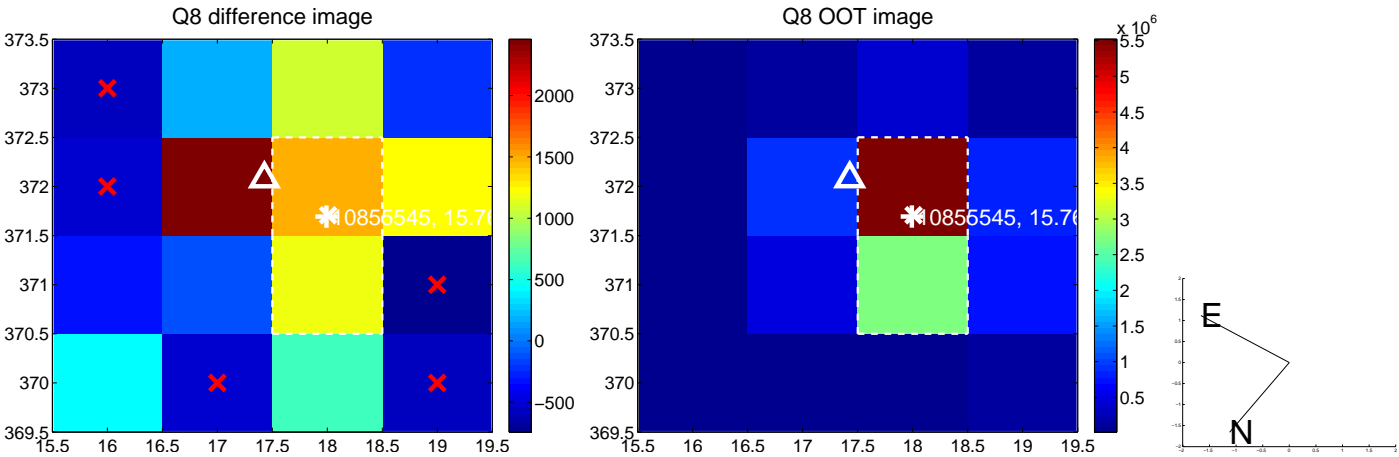
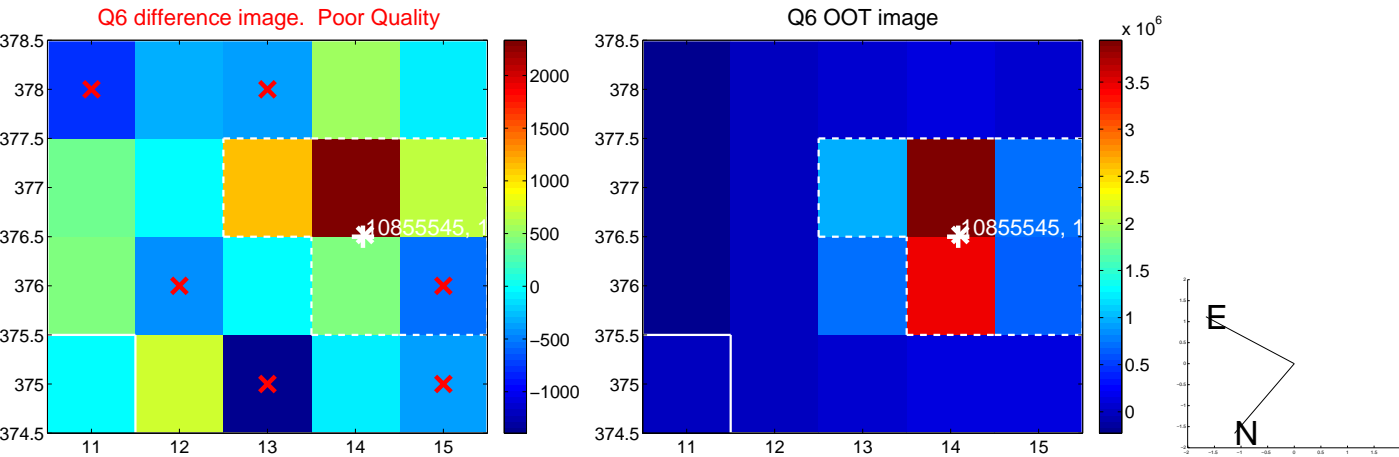
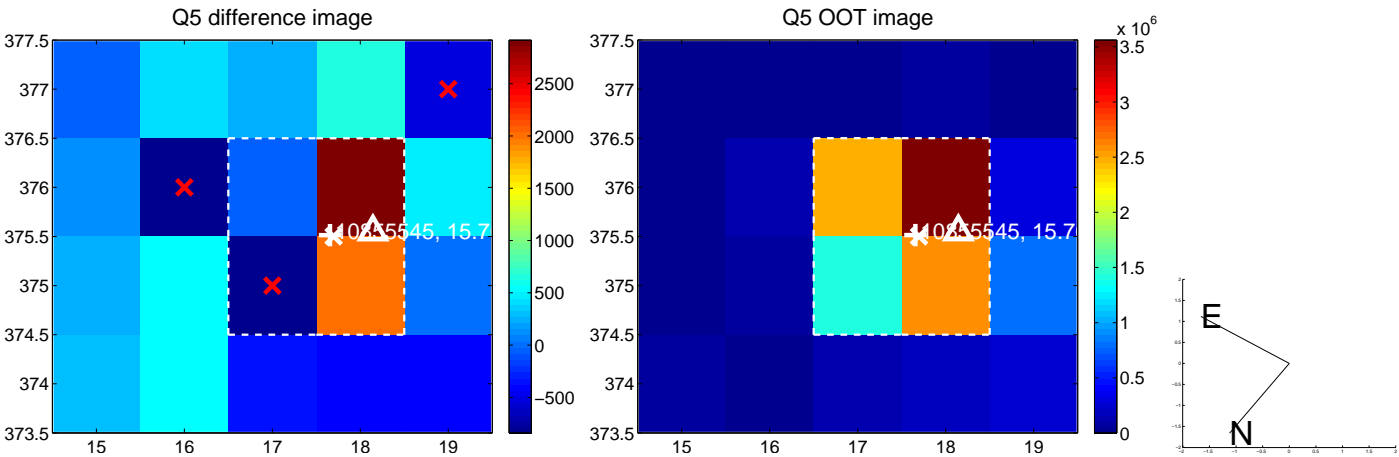
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



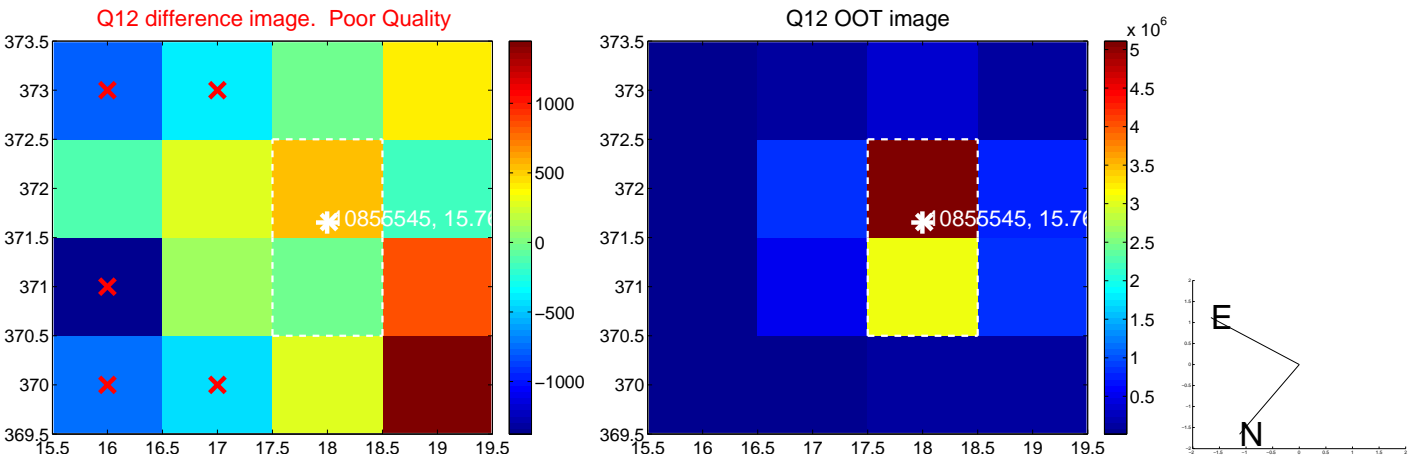
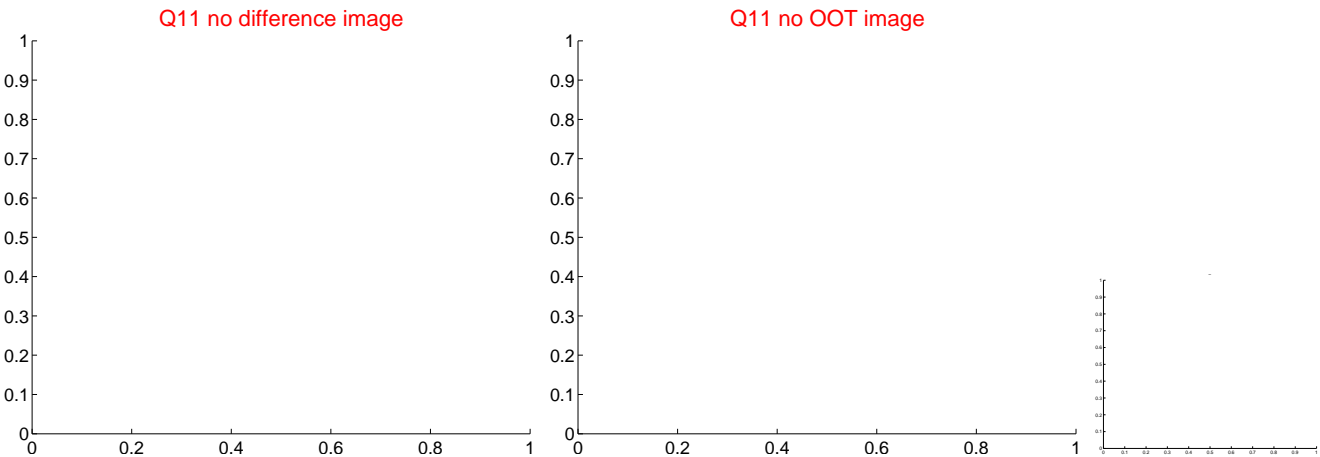
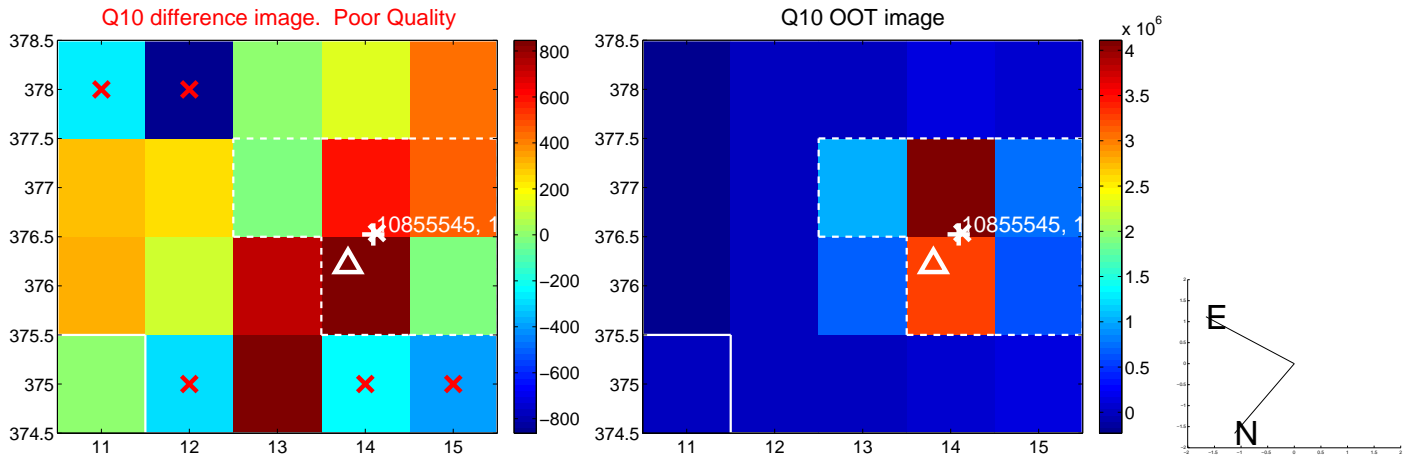
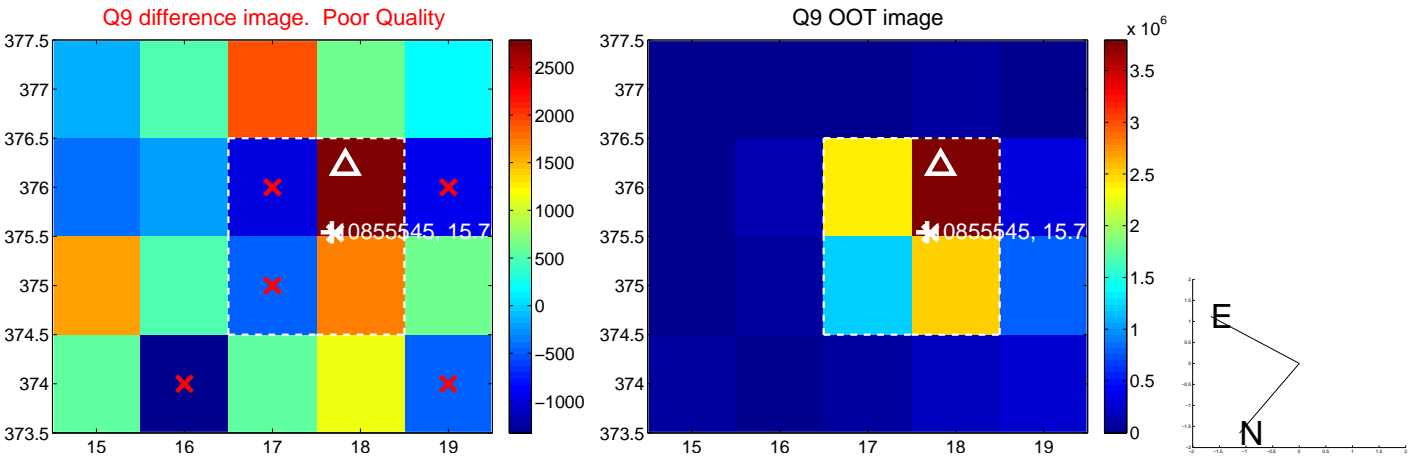
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



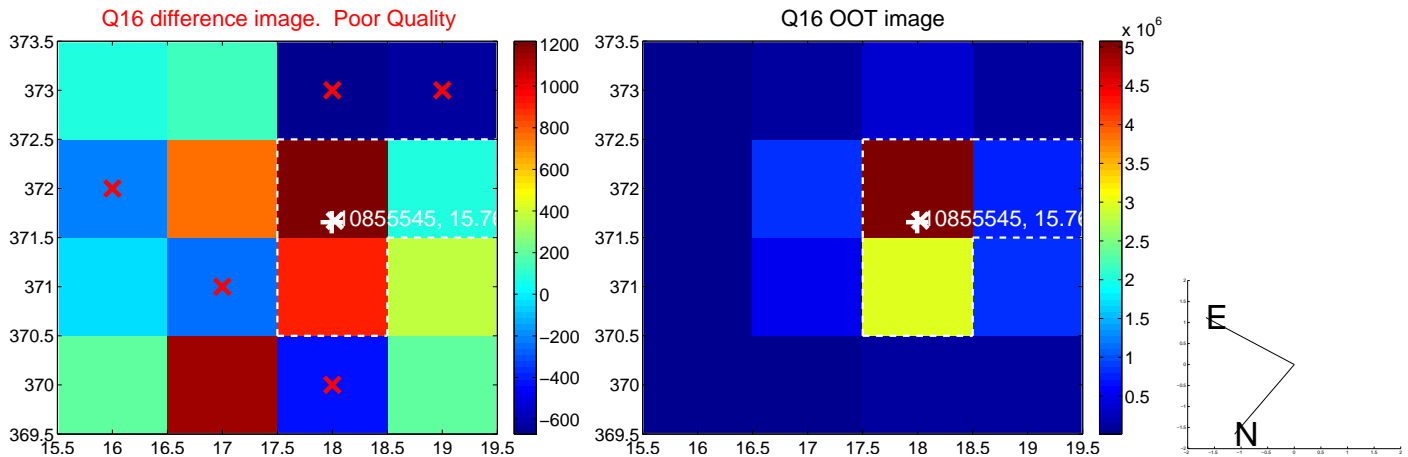
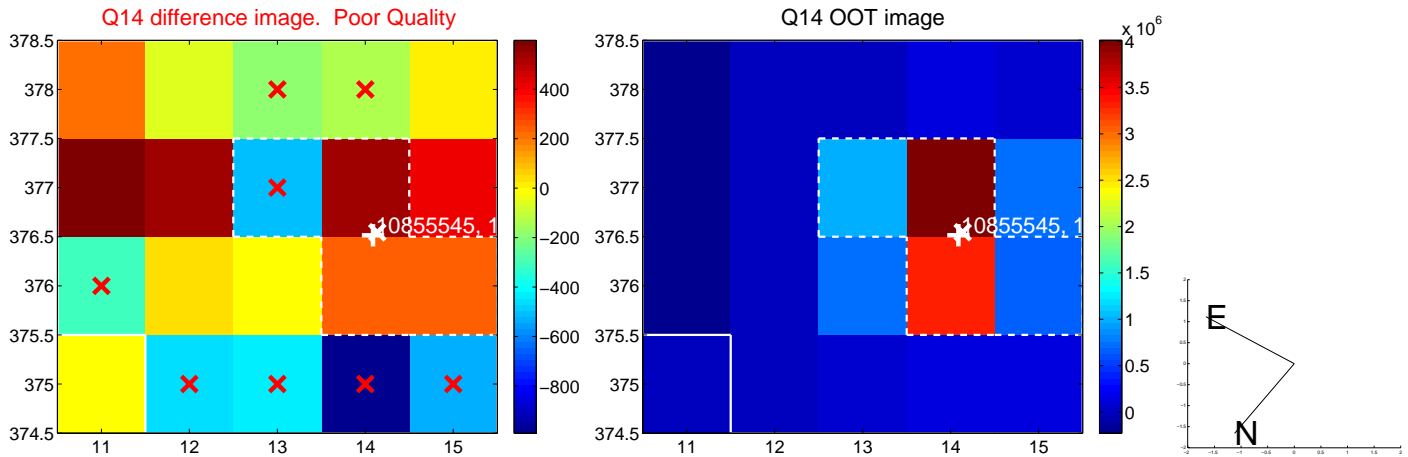
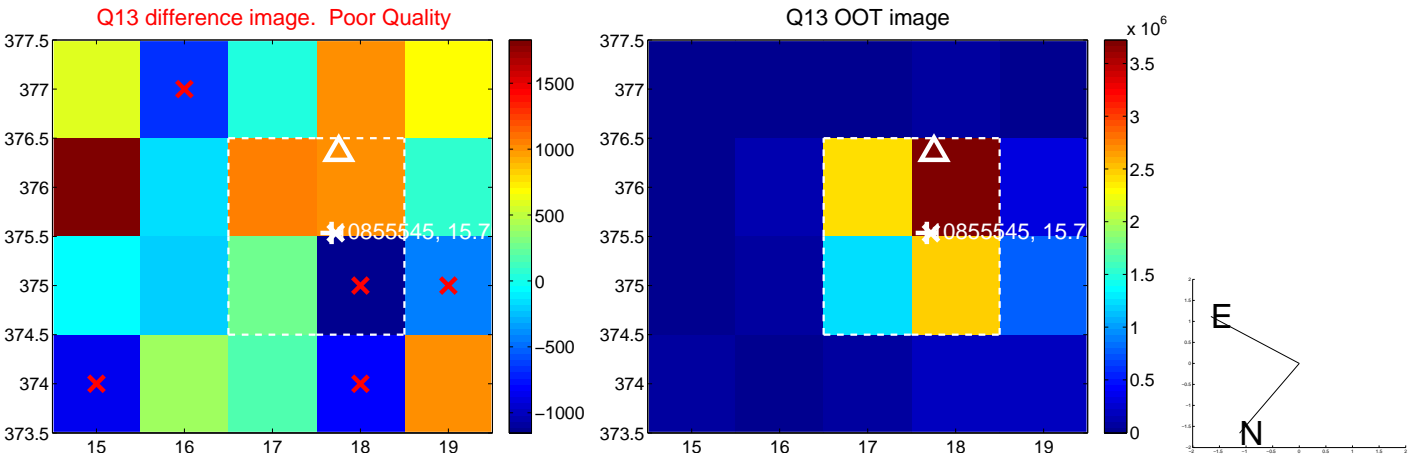
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



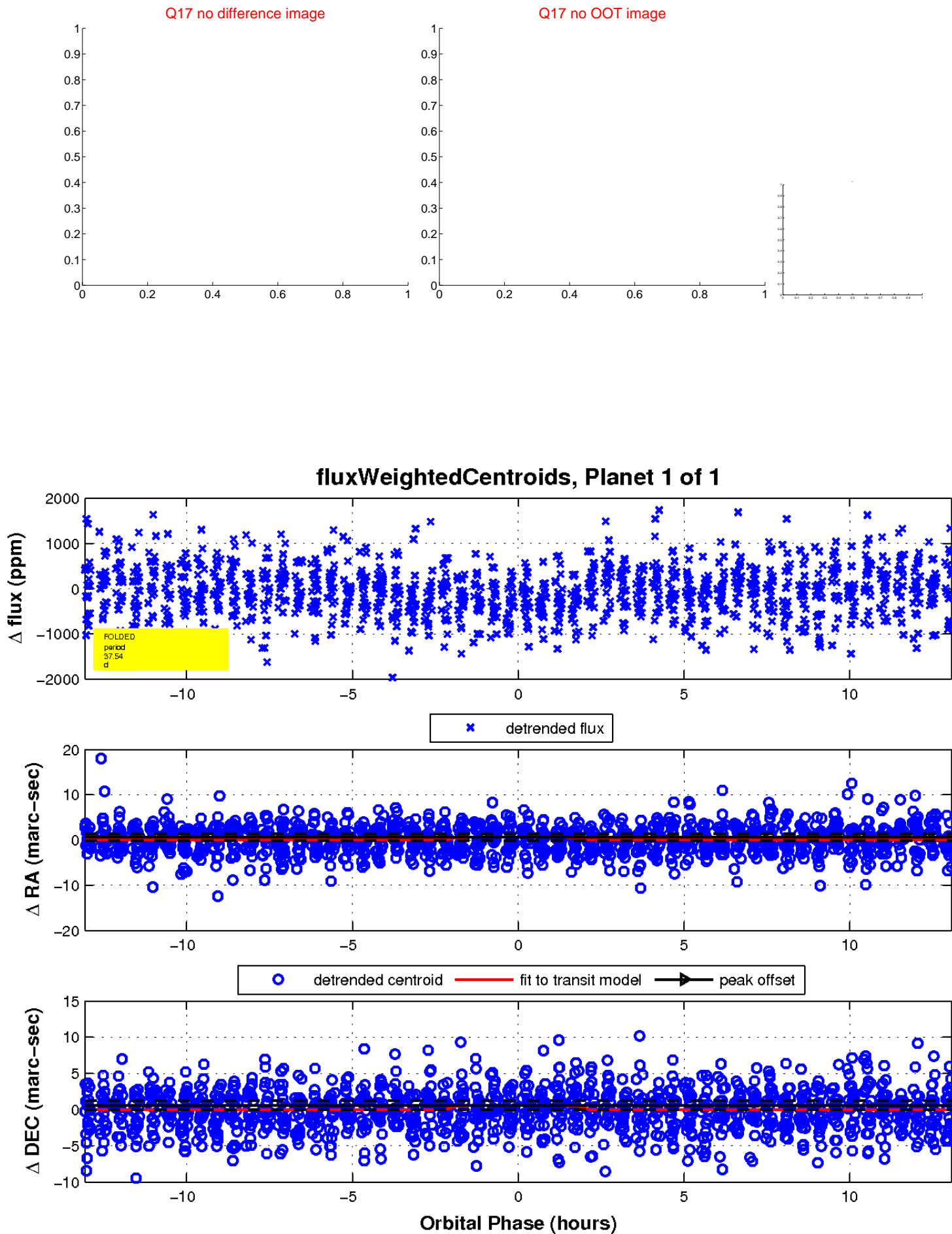
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

