

# KIC 005956654

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005956654-01	OBS	No	345.703158	205.027658	1180.1	22.527	8.8	9.9	0.87	5845	3.48	0.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005956654-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—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.

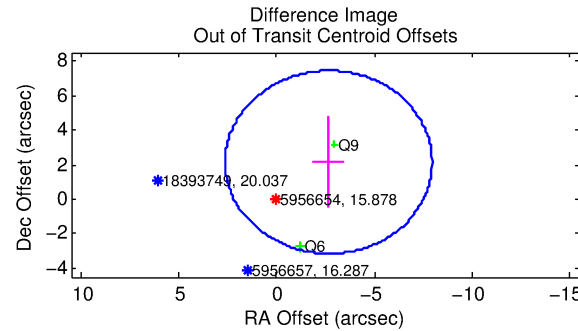
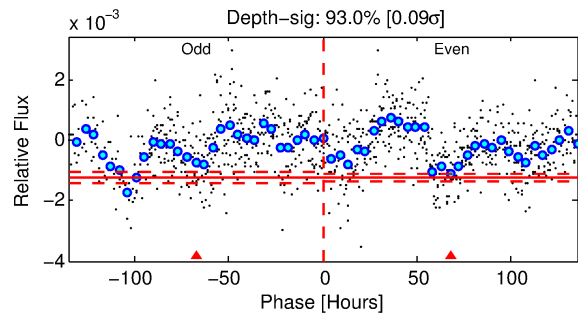
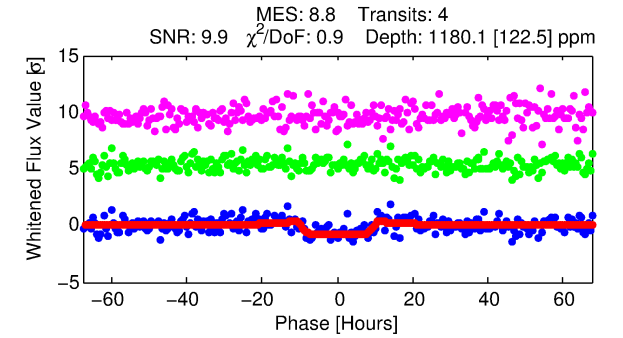
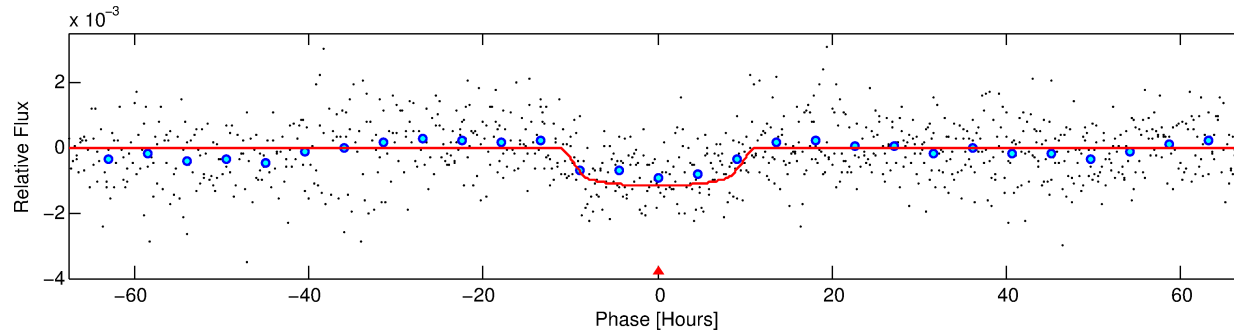
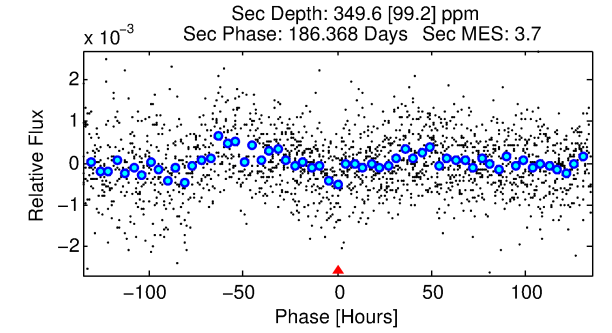
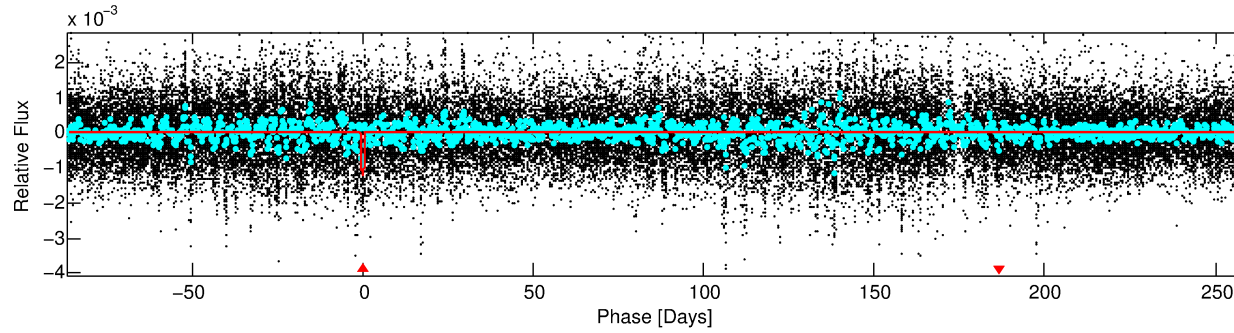
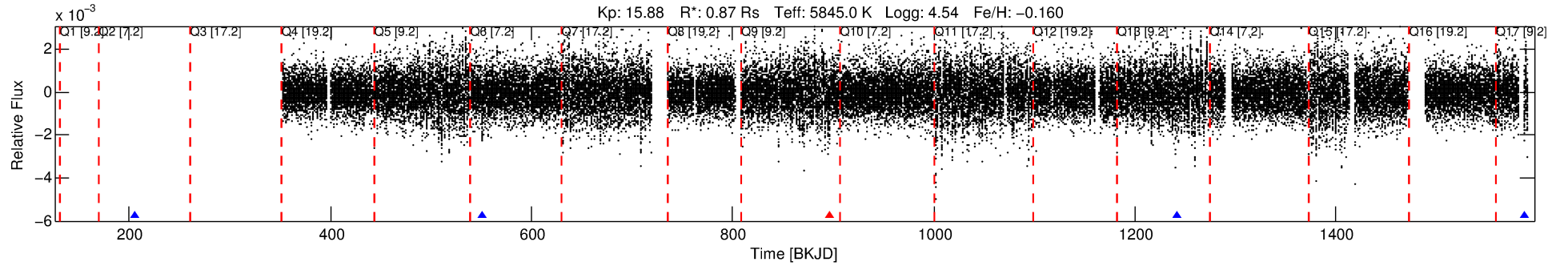
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005956654-01

No Significant Match Found

# DV One-Page Summary

KIC: 5956654 Candidate: 1 of 1 Period: 345.703 d



## DV Fit Results:

Period = 345.70316 [0.01395] d  
Epoch = 205.0277 [0.0365] BKJD  
Rp/R\* = 0.0364 [0.0031]  
a/R\* = 65.54 [18.89]  
b = 0.87 [0.08]  
Seff = 0.88 [0.31]  
Teq = 247 [22] K  
Rp = 3.48 [0.92] Re  
a = 0.9539 [0.2053] AU  
Ag = 14483.90 [6668.40] [2.17σ]  
Teffp = 4186 [376] K [10.45σ]

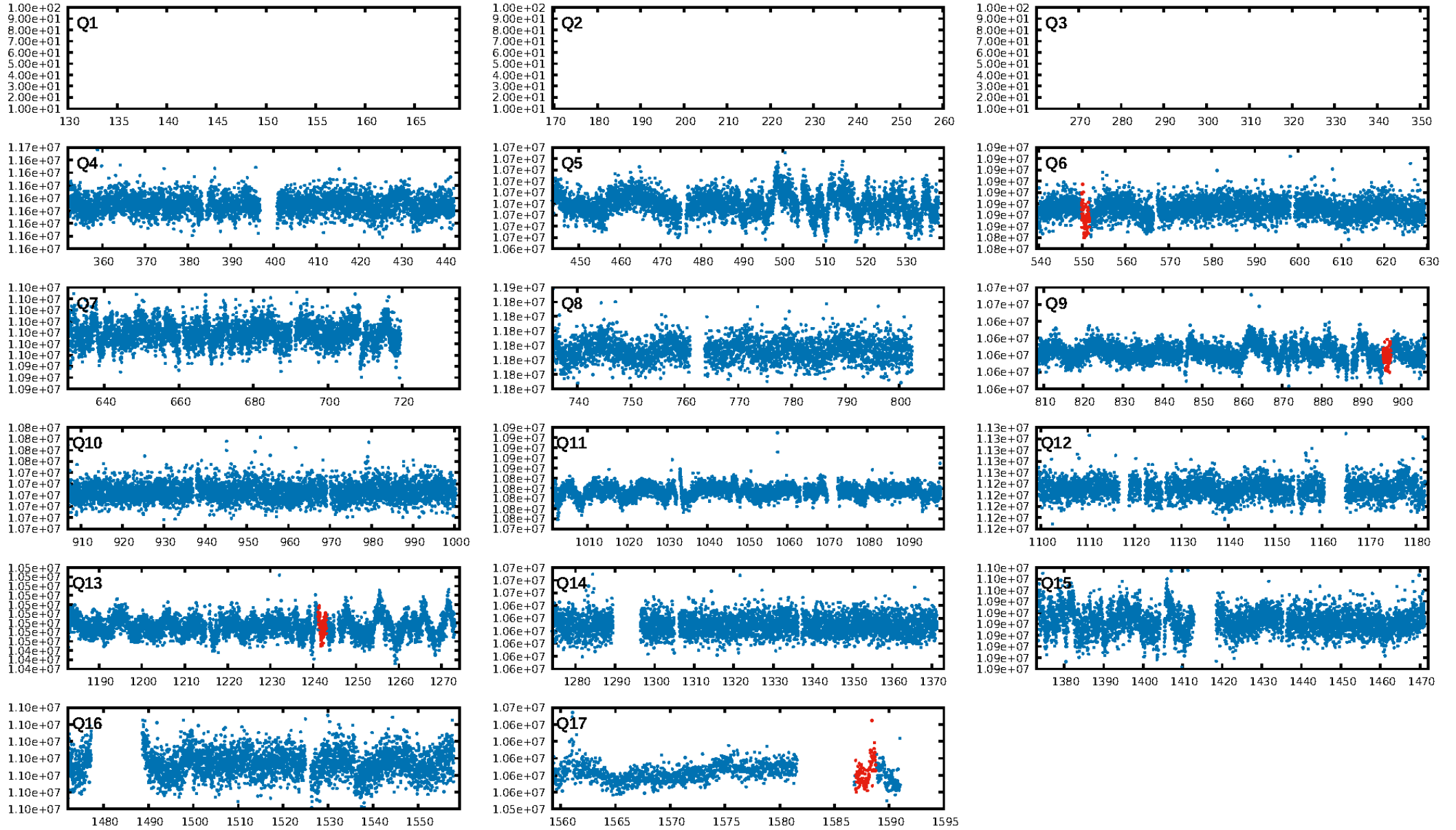
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 32.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.00e-11  
RollingBand-fgt: 0.67 [2/3]  
GhostDiagnostic-chr: -0.4174  
Centroid-sig: 0.0%  
Centroid-so: 4.326 arcsec [4.41σ]  
OotOffset-rm: 3.418 arcsec [1.94σ]  
KicOffset-rm: 3.018 arcsec [1.90σ]  
OotOffset-st: 1/0/0/1 [2]  
KicOffset-st: 1/0/0/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

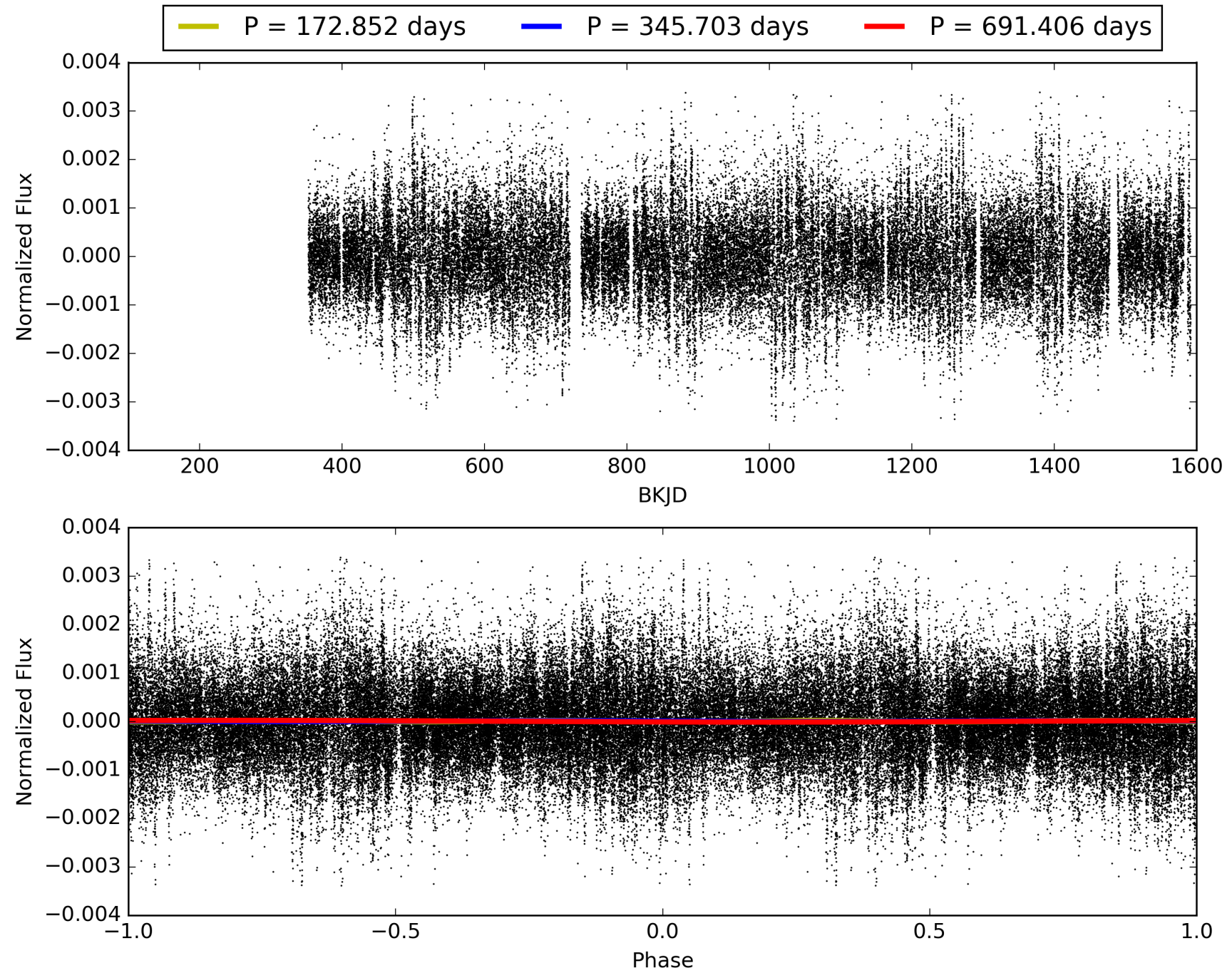
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:01:57 Z

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

# TCE 005956654-01, PDC Light Curves

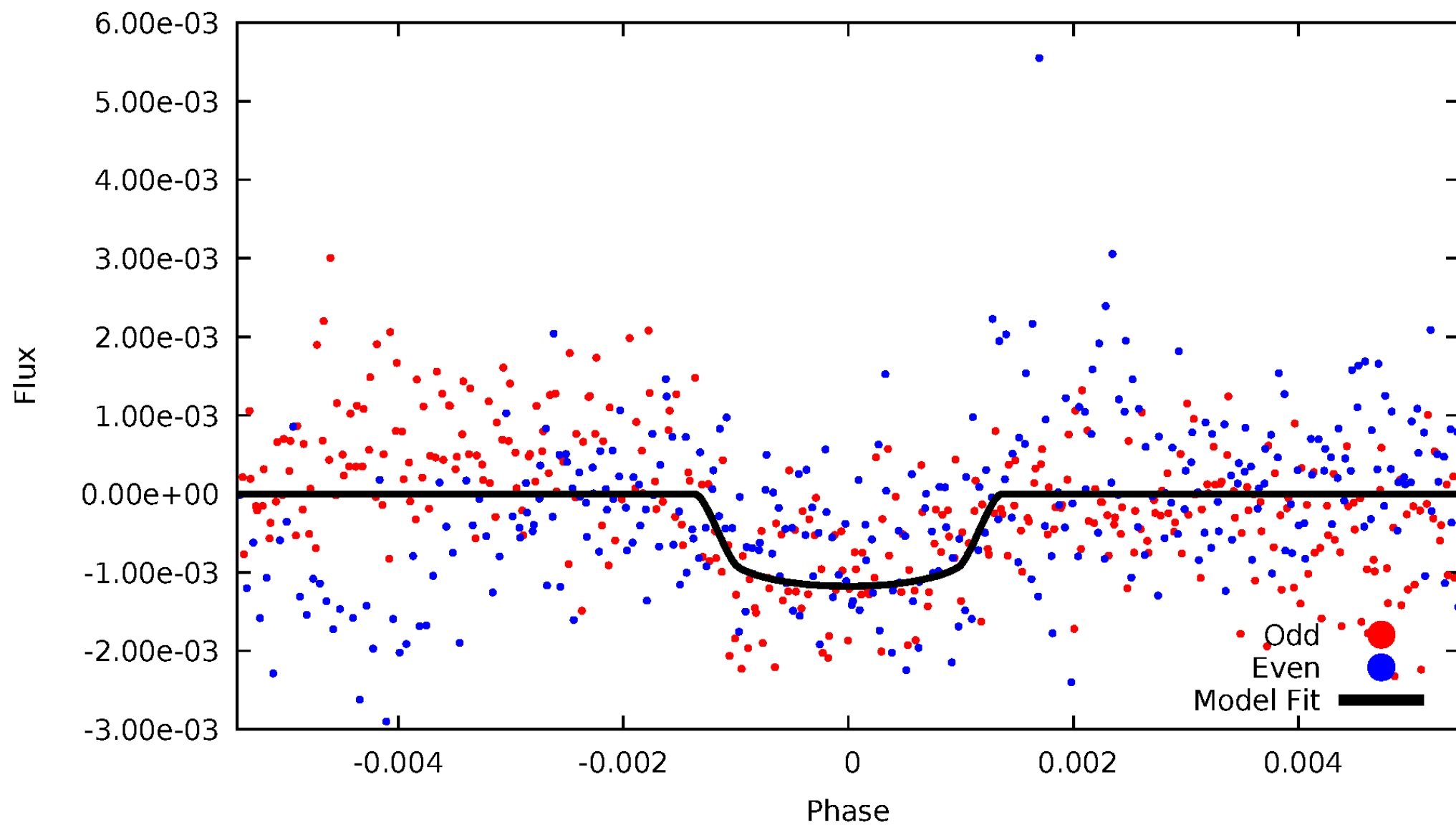


TCE 005956654-01



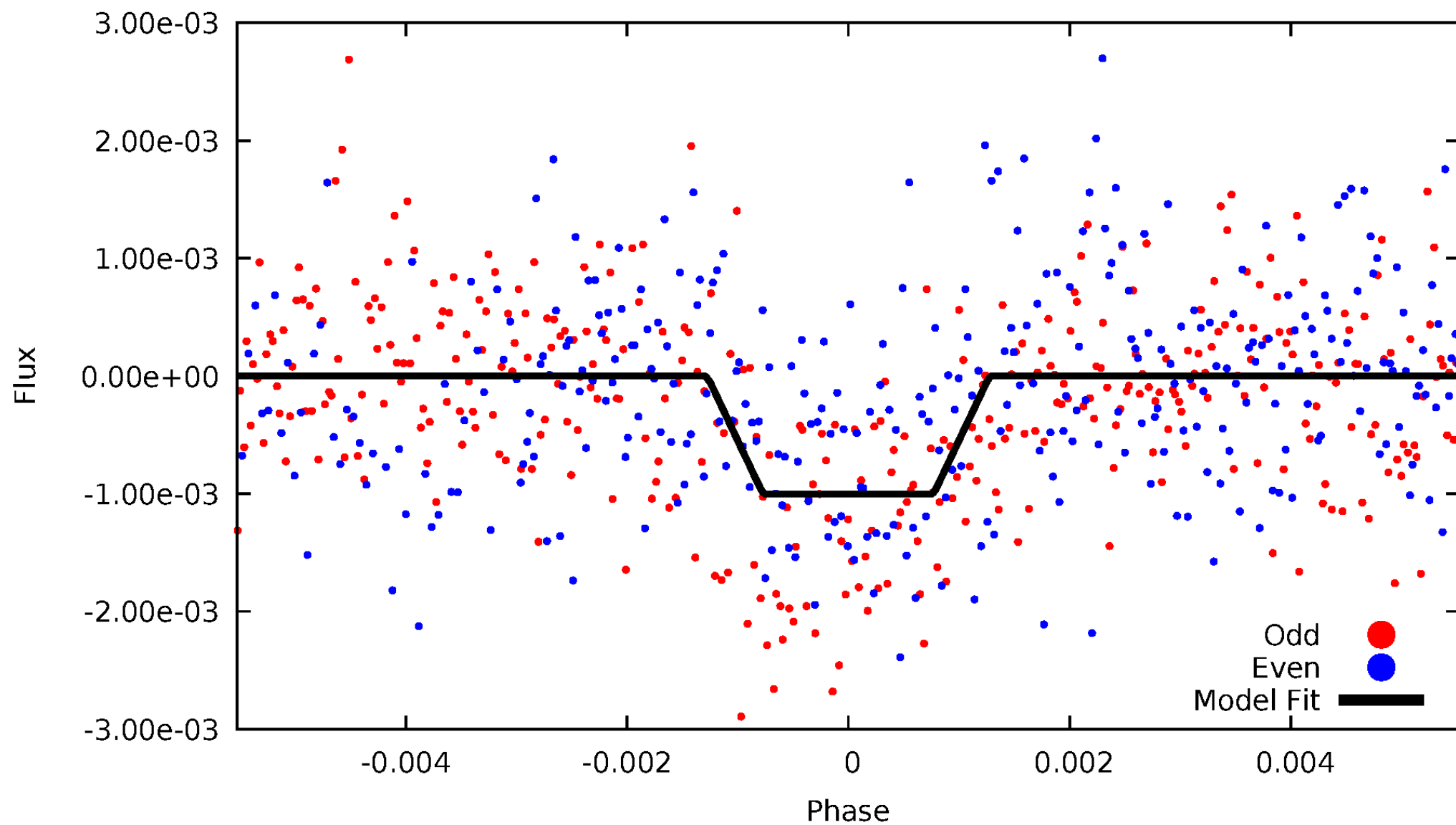
# DV Odd/Even

TCE 005956654-01



# ALT Odd/Even

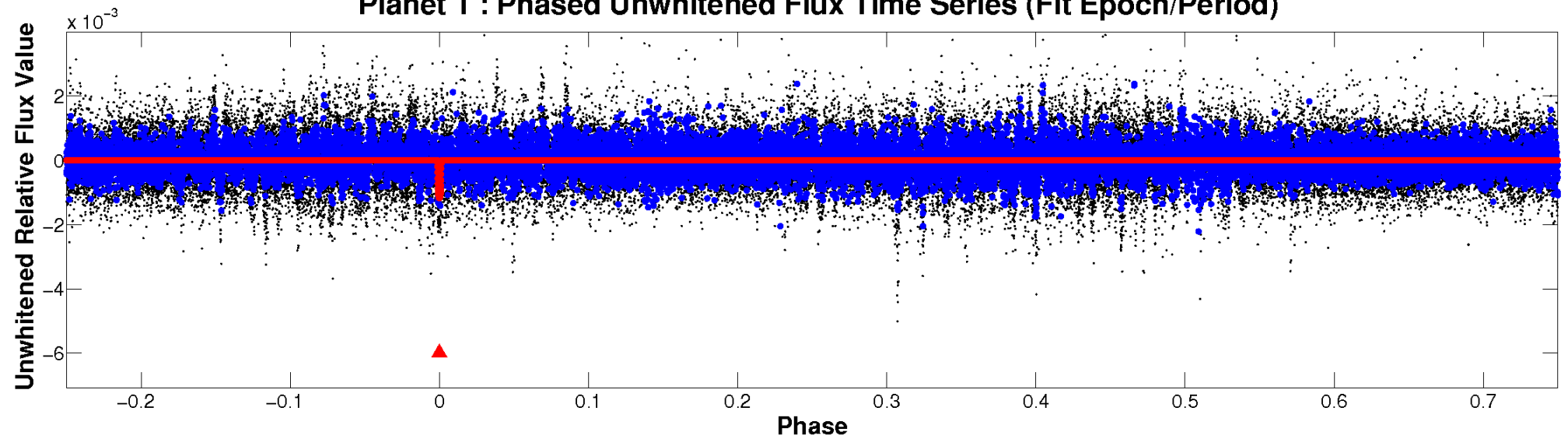
TCE 005956654-01



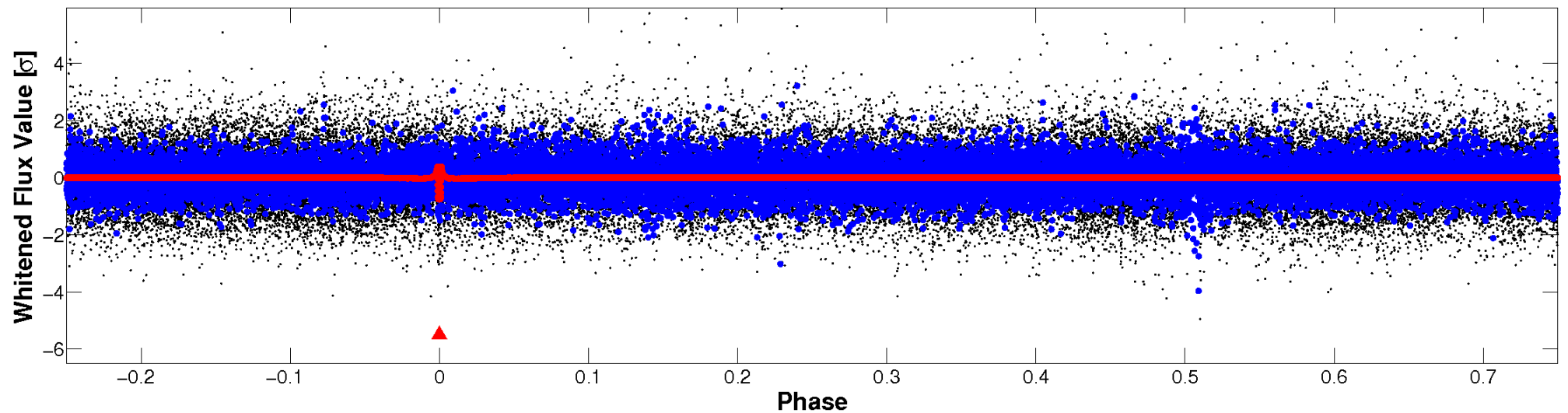


# Non-Whitened Vs. Whitened Light Curve

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

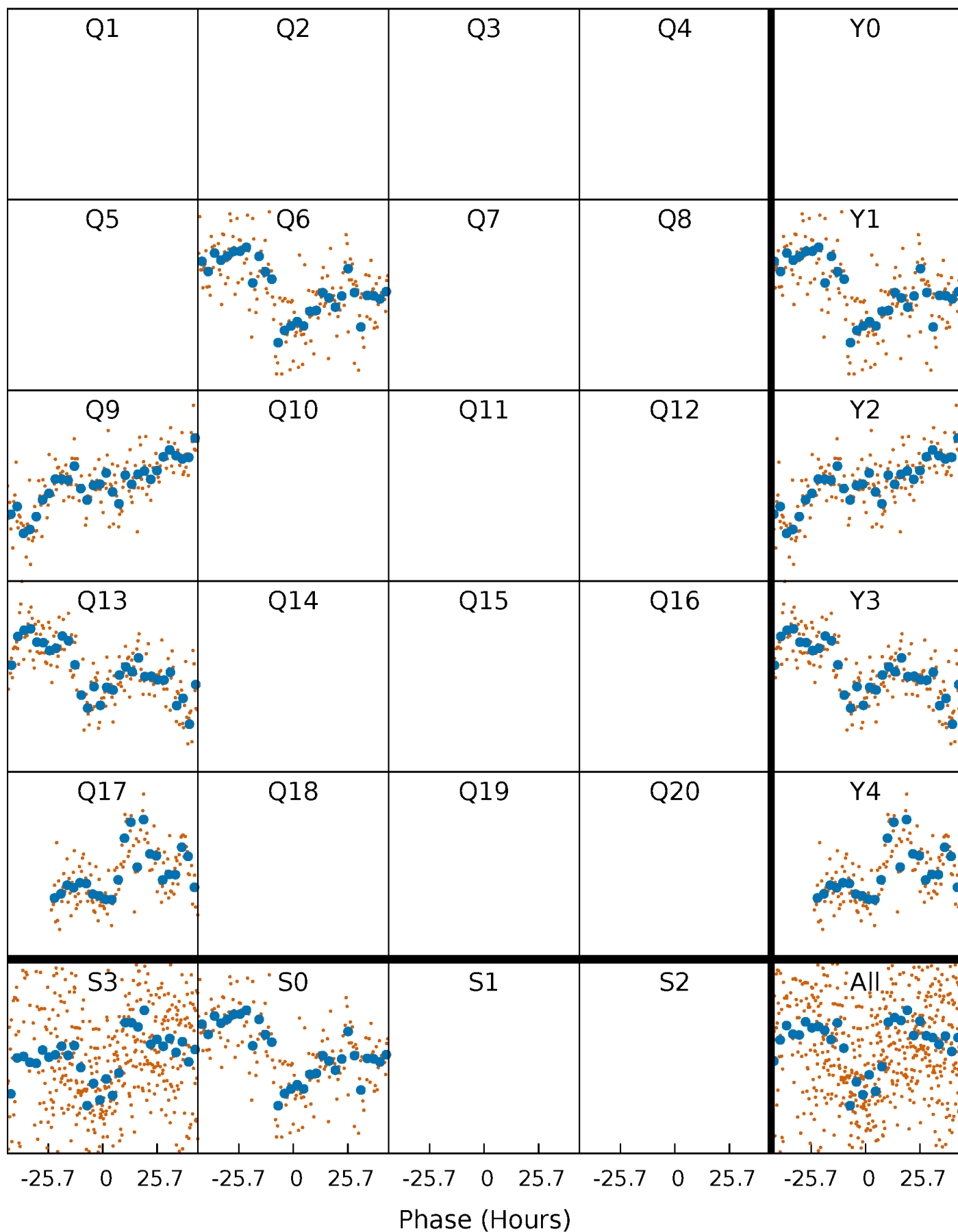


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

TCE 005956654-01     $P=345.703158$  Days     $T_0=205.027658$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 005956654-01 P=345.703158 Days  $T_0=205.027658$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

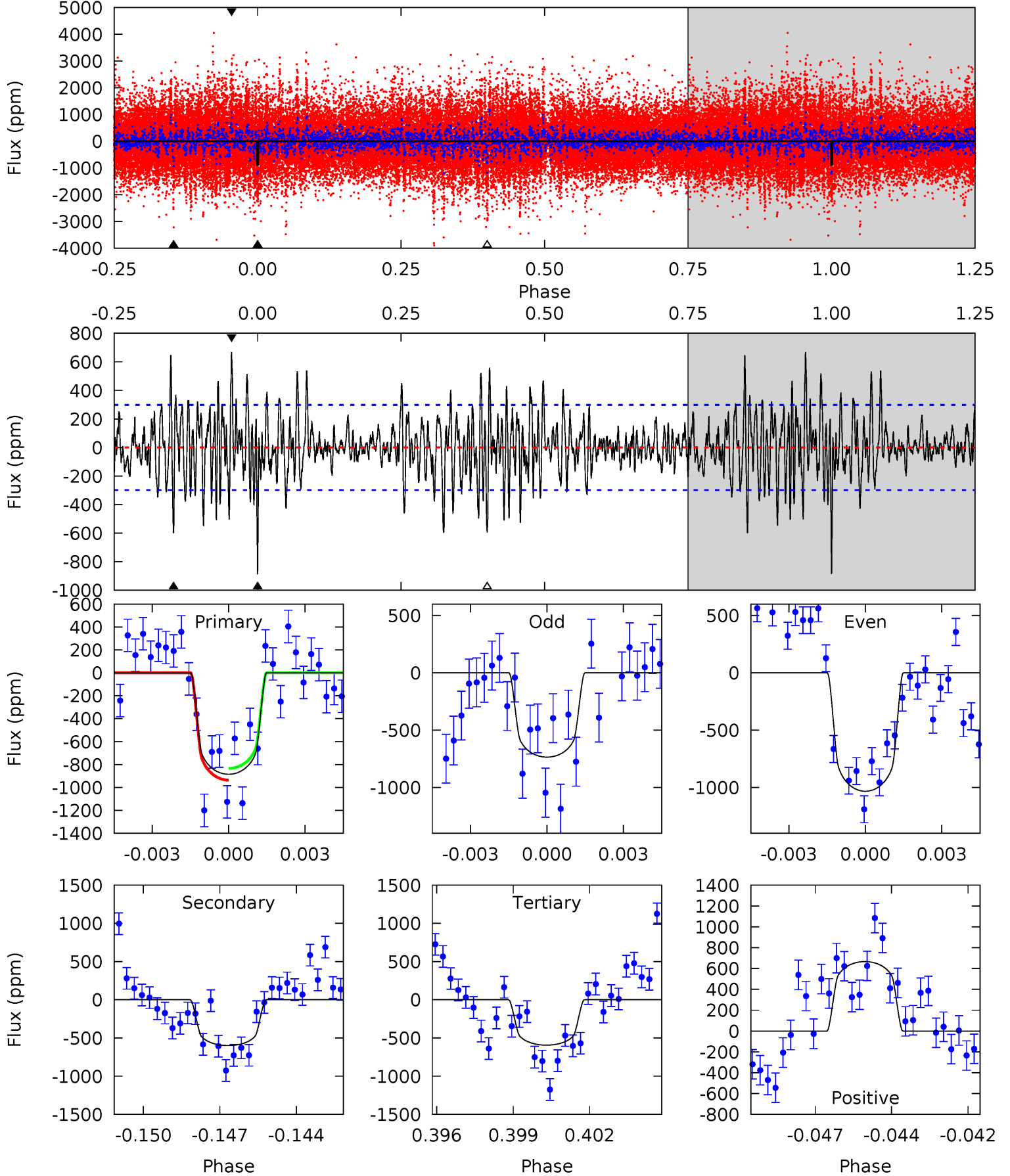
TCE 005956654-01 P=345.749458 Days  $T_0=204.858783$  (BKJD)



# DV Model-Shift Uniqueness Test

005956654-01, P = 345.703158 Days, E = 205.027658 Days

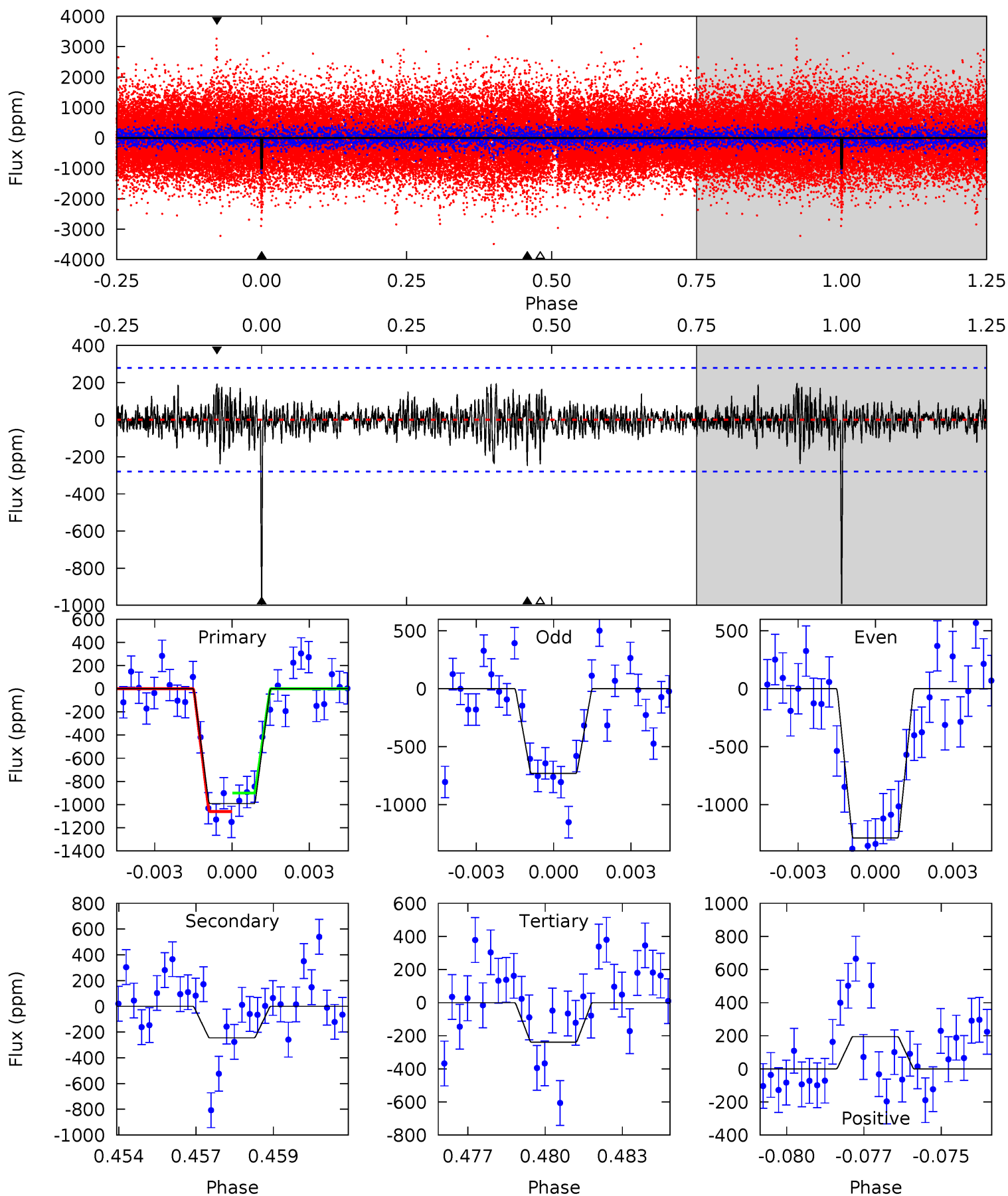
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	10.6	10.5	11.8	5.27	2.99	3.17	5.14	3.86	0.10	-1.18	2.64	1.03	0.43	0.90



# Alt Model-Shift Uniqueness Test

005956654-01, P = 345.749458 Days, E = 204.858783 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
18.8	4.63	4.52	3.68	5.28	3.01	1.07	14.2	15.1	0.12	0.95	5.28	1.00	0.16	1.50



### Stellar Parameters For KIC 005956654

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5845^{+164}_{-205}$	$4.541^{+0.042}_{-0.178}$	$-0.160^{+0.300}_{-0.300}$	$0.874^{+0.218}_{-0.078}$	$0.968^{+0.110}_{-0.121}$	$2.042^{+0.464}_{-0.932}$
	+3%/-4%	+1%/-4%	+188%/-188%	+25%/-9%	+11%/-12%	+23%/-46%
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 005956654-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-599 \pm 57$	$3.58^{+0.55}_{-0.40}$	$352^{+22}_{-17}$	$4885^{+264}_{-222}$	$22696^{+6848}_{-5552}$
Alt.	$-245 \pm 53$	$3.13^{+0.48}_{-0.42}$	$351^{+21}_{-17}$	$4329^{+270}_{-264}$	$12396^{+4753}_{-3826}$

$T_{\text{max}}$  = 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

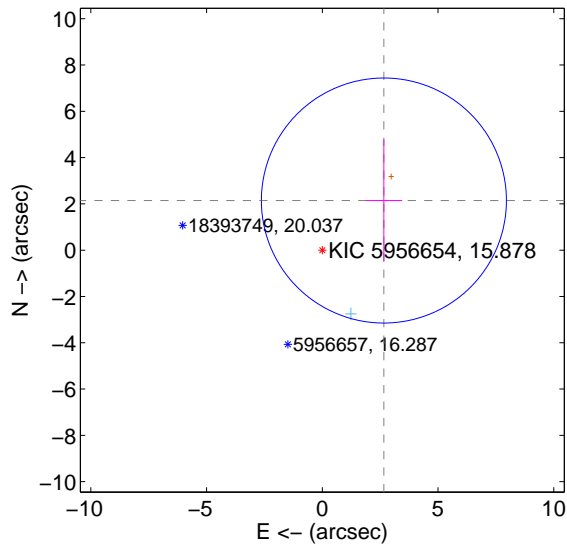
Supplemental centroid analysis for 005956654-01. Kepler magnitude: 15.88. Transit SNR 9.86

There are 1 quarters with good PRF difference image offsets

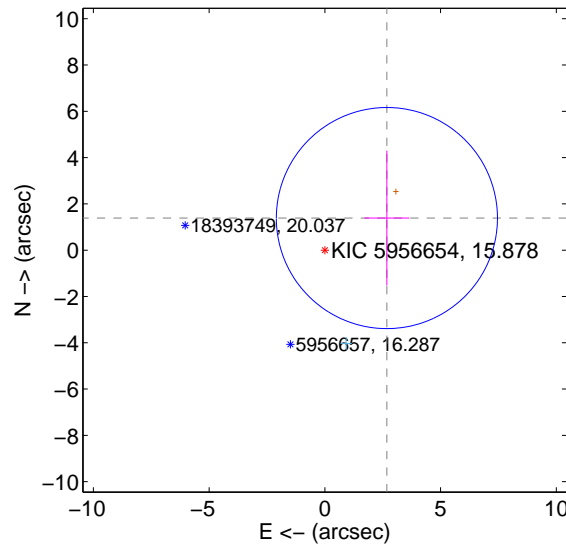
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.418 \pm 1.764$	1.94	$-2.661 \pm 0.788$	$2.145 \pm 2.636$
PRF-fit source offset from KIC position	$3.018 \pm 1.592$	1.90	$-2.680 \pm 0.969$	$1.387 \pm 2.914$
photometric centroid source offset	$4.33 \pm 0.98$	4.41	$-2.88 \pm 1.05$	$-3.23 \pm 0.92$

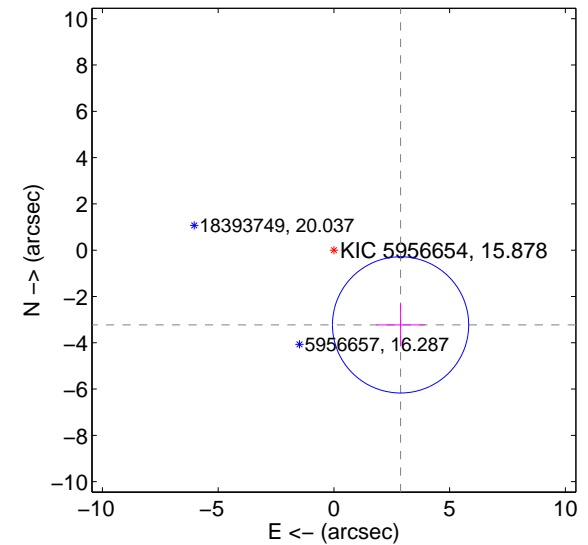
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



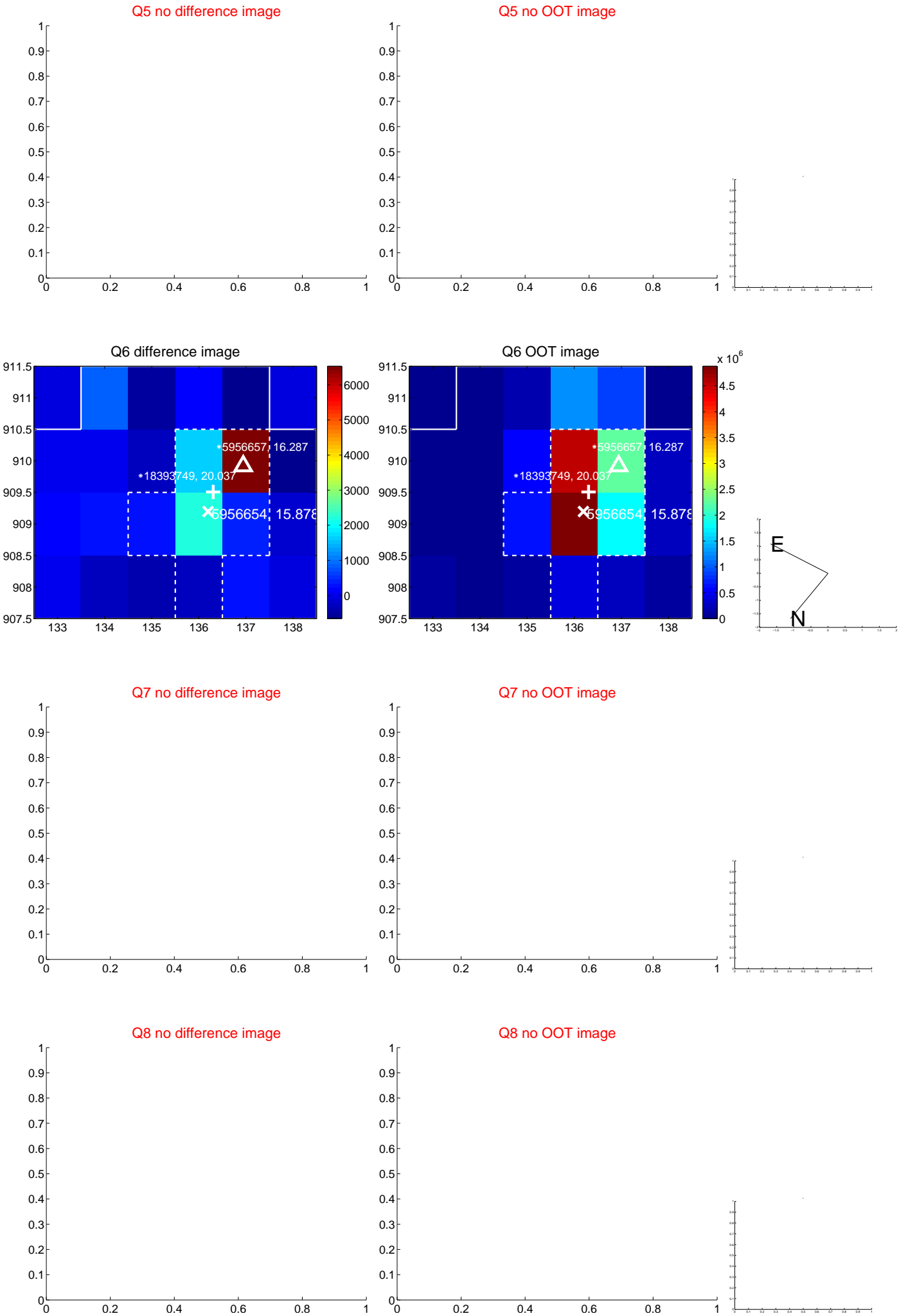
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

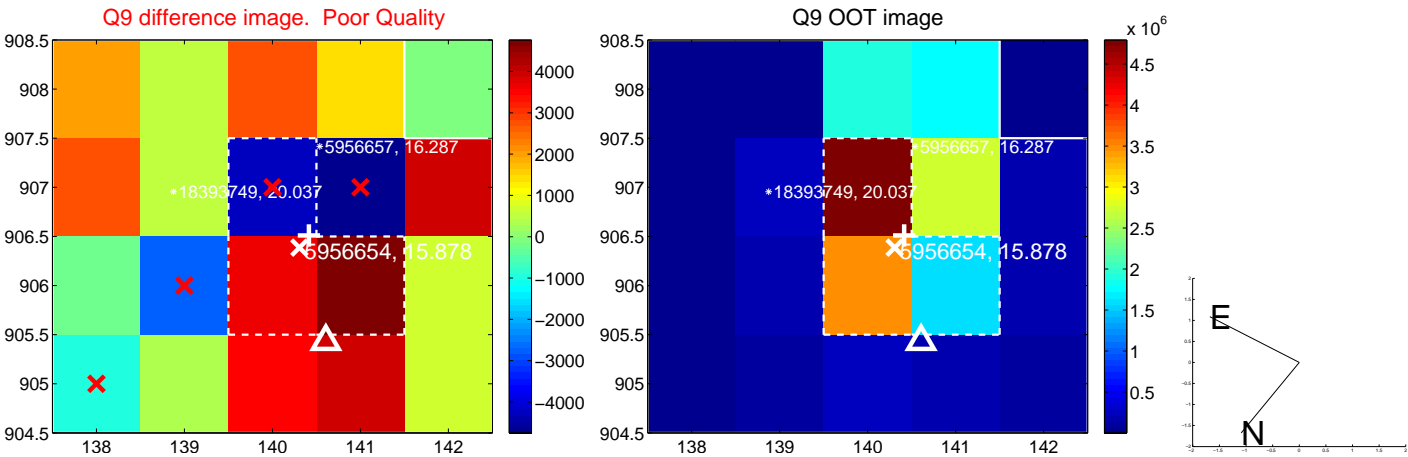




white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



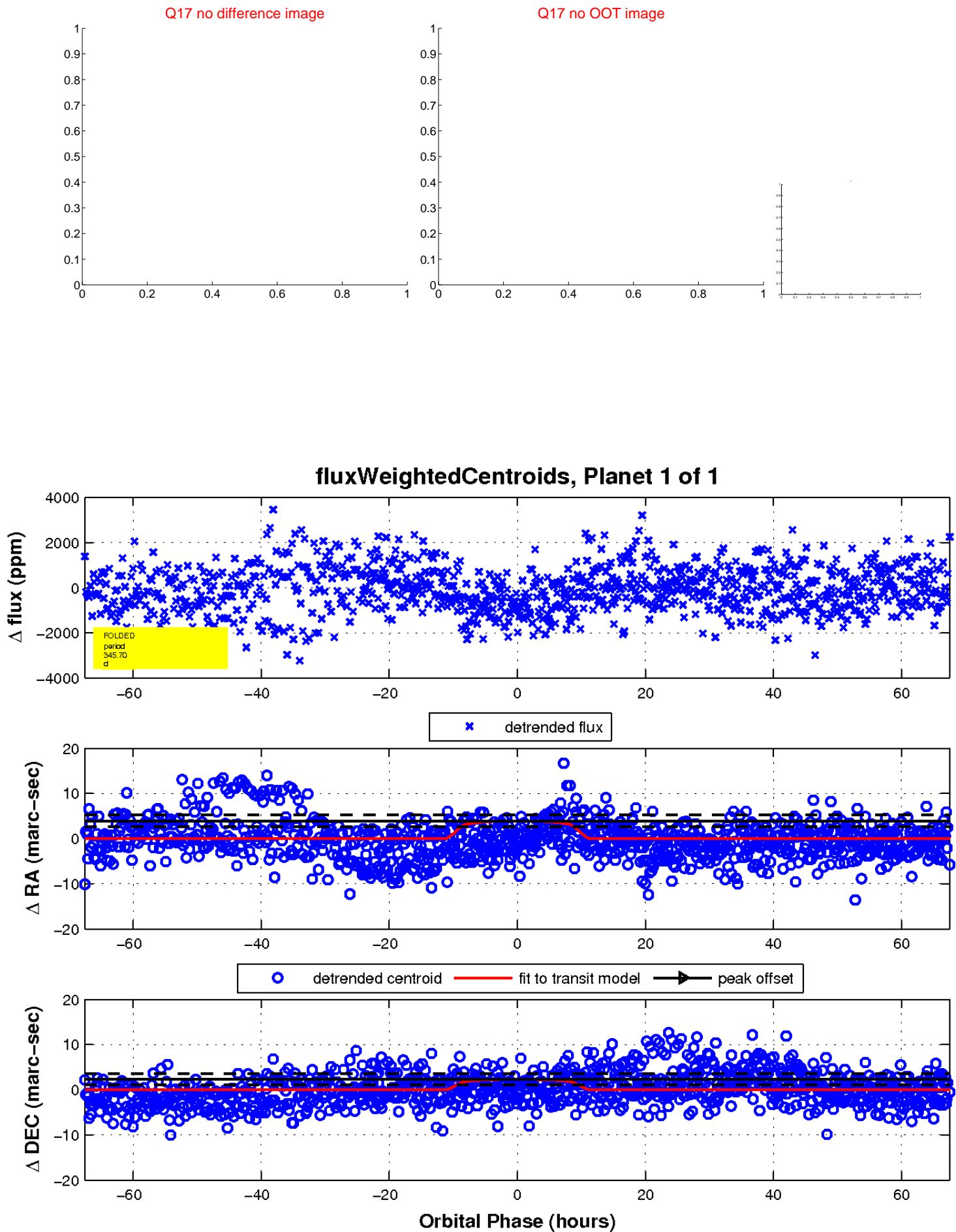
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

