

# KIC 005950854

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005950854-01	OBS	No	528.919505	484.662014	90.7	17.185	8.4	9.1	1.20	5862	1.29	0.99

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005950854-01	OBS	FP	0.00	1	0	0	0	<del>LPP_DV</del> <del>MOD_POS_DV</del> <del>INCONSISTENT_TRANS</del> <del>CENT_SATURATED</del>

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

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

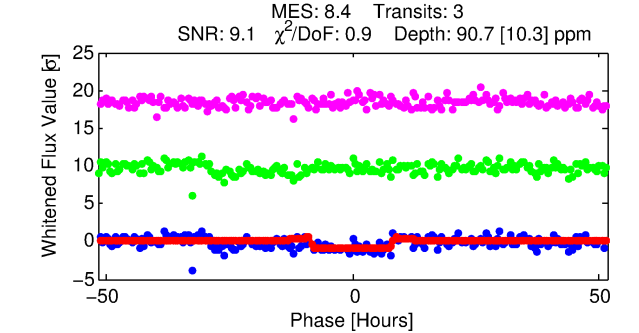
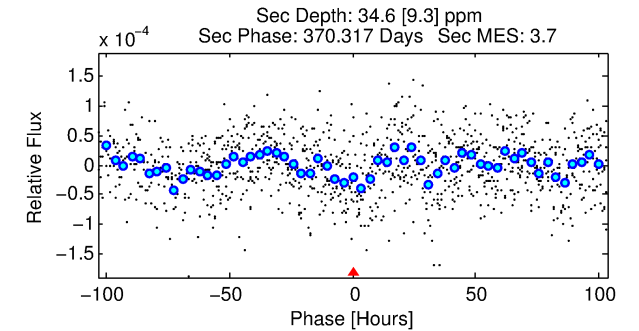
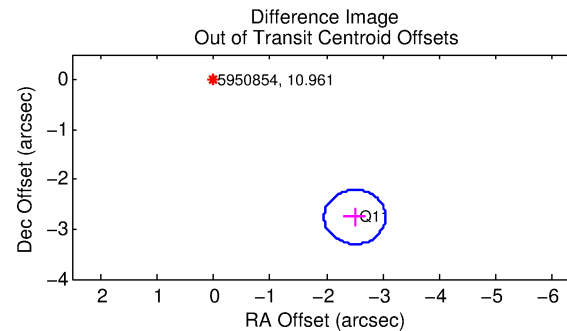
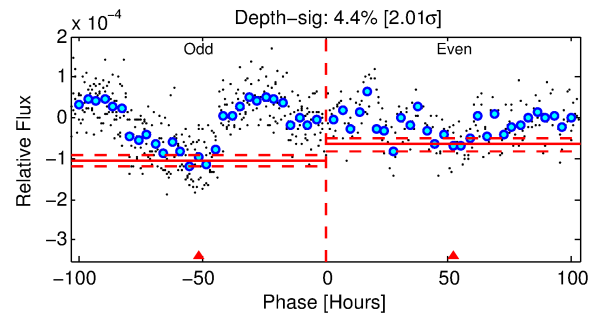
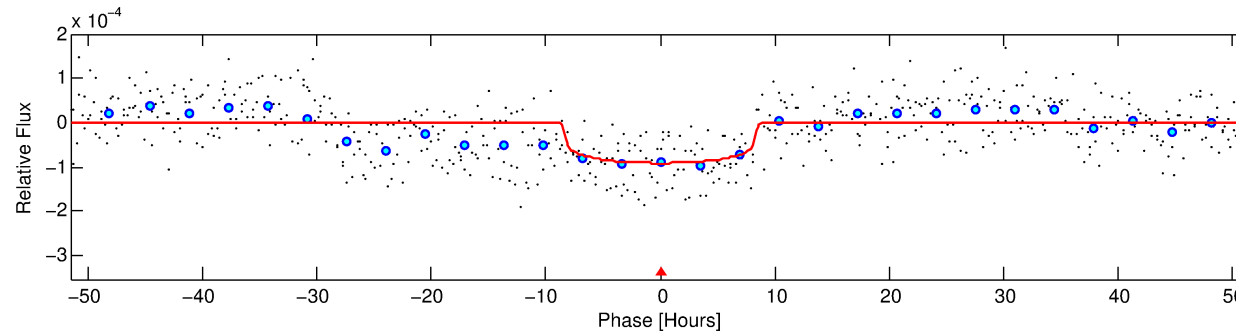
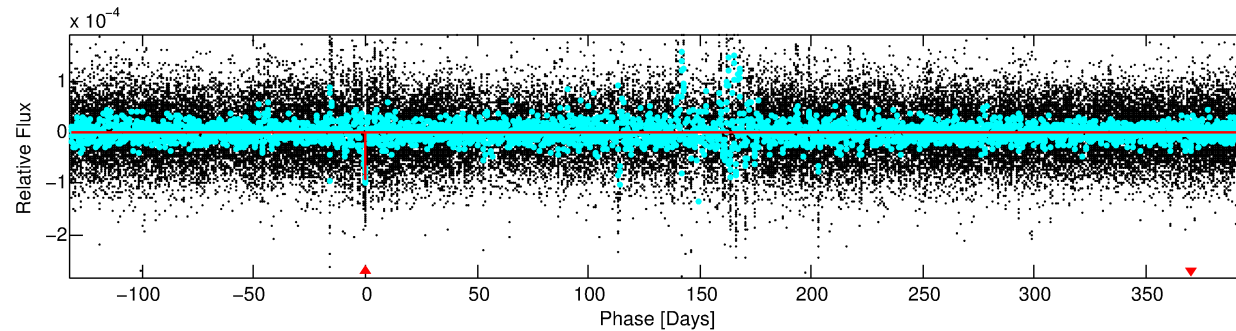
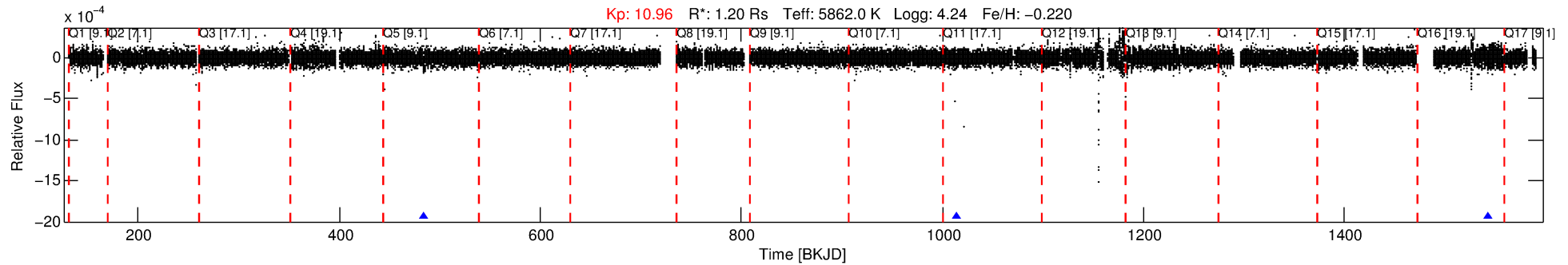
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005950854-01

No Significant Match Found

# DV One-Page Summary

KIC: 5950854 Candidate: 1 of 1 Period: 528.920 d



## DV Fit Results:

Period = 528.91951 [0.01174] d  
Epoch = 484.6620 [0.0133] BKJD  
Rp/R\* = 0.0098 [0.0019]  
a/R\* = 136.54 [121.44]  
b = 0.83 [0.34]  
Seff = 0.99 [0.06]  
Teq = 254 [4] K  
Rp = 1.29 [0.25] Re  
a = 1.2437 [0.0321] AU  
Ag = 17789.15 [8366.00] [2.13 $\sigma$ ]  
Teffp = 4543 [537] K [7.99 $\sigma$ ]

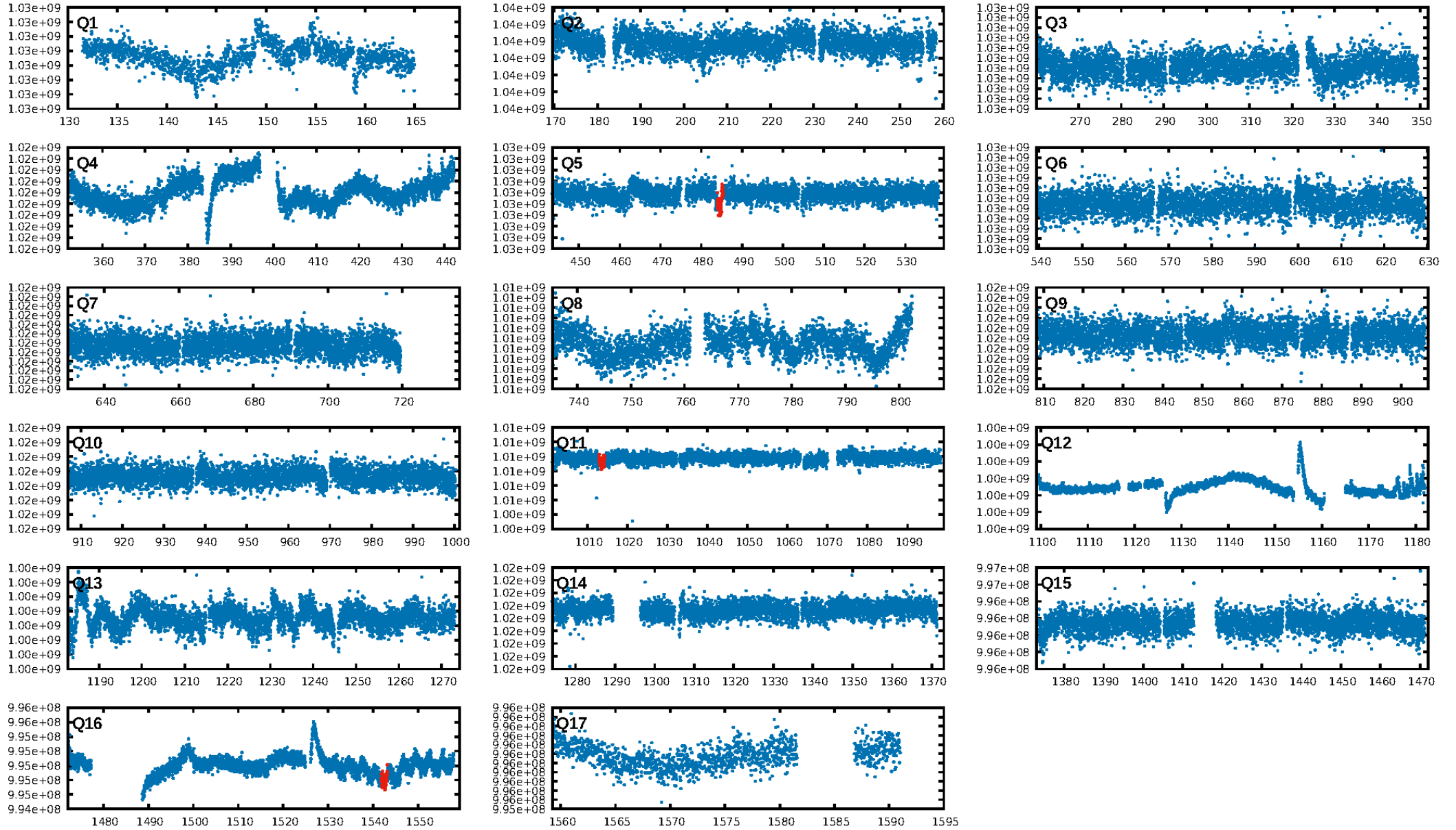
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 12.4%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 5.65e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 4.623  
Centroid-sig: 51.3%  
Centroid-so: 1.805 arcsec [0.94 $\sigma$ ]  
**OotOffset-rm: 3.723 arcsec [20.56 $\sigma$ ]**  
**KicOffset-rm: 3.640 arcsec [20.25 $\sigma$ ]**  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [3/3]

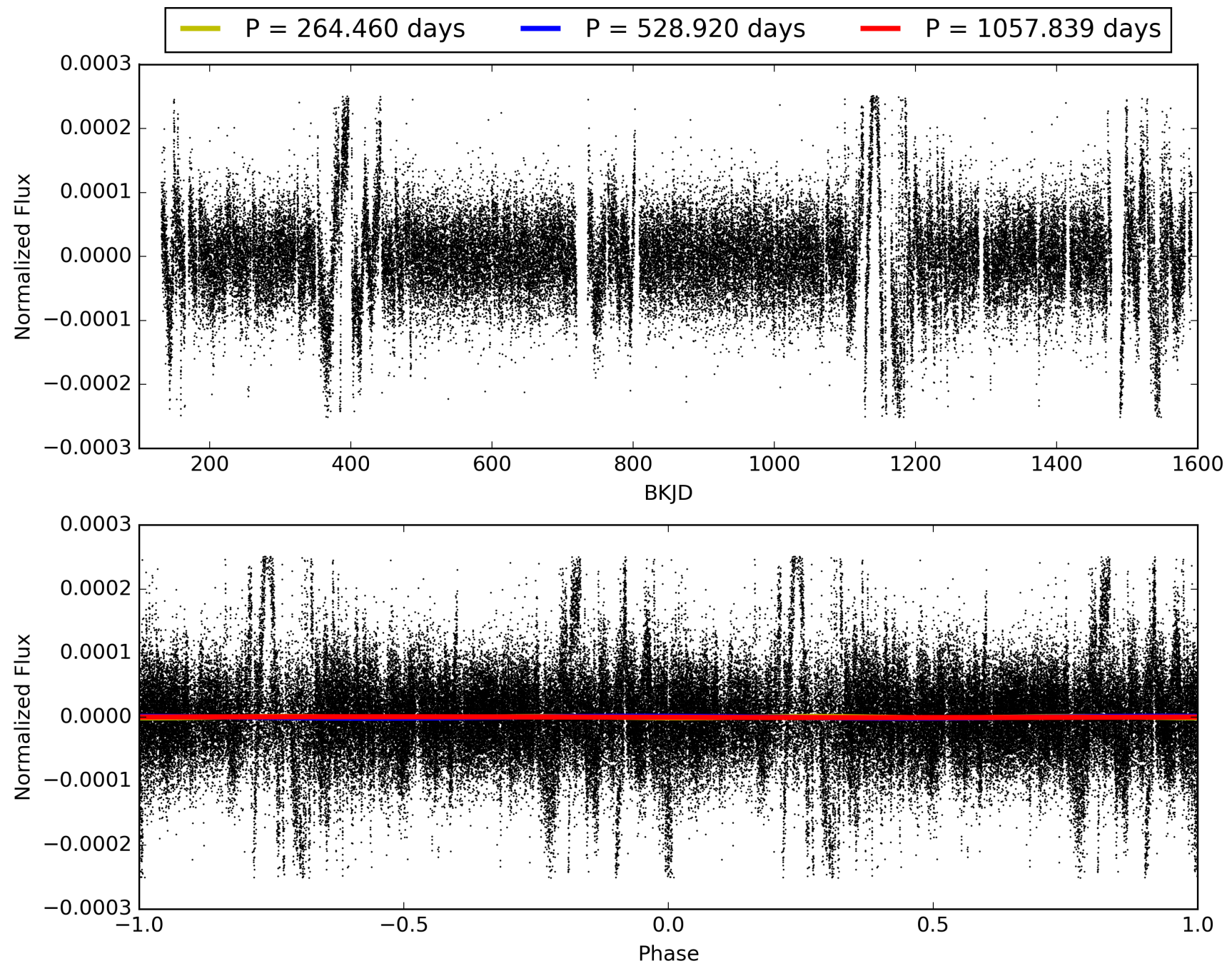
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:15:51 Z

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

# TCE 005950854-01, PDC Light Curves

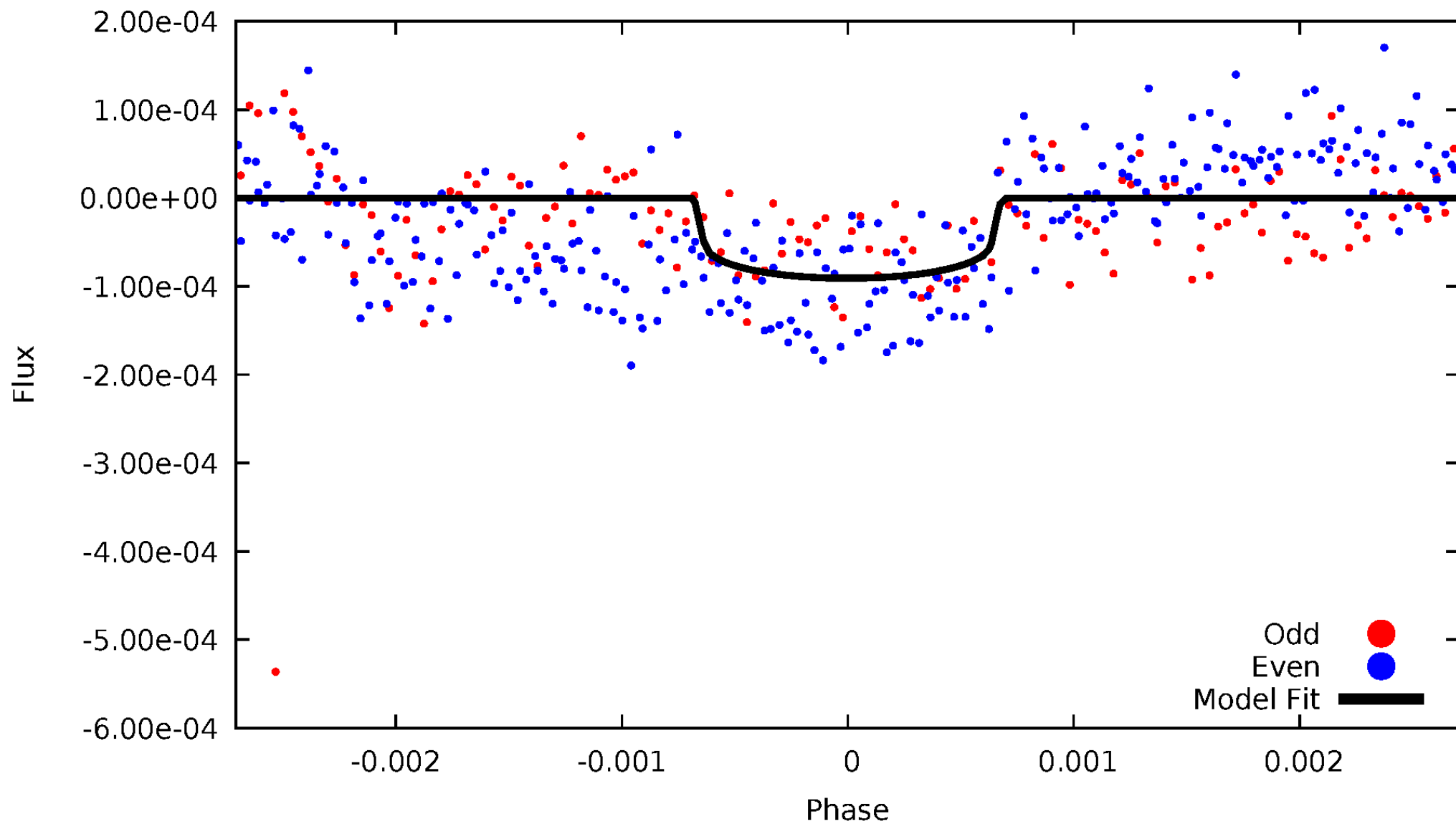


TCE 005950854-01



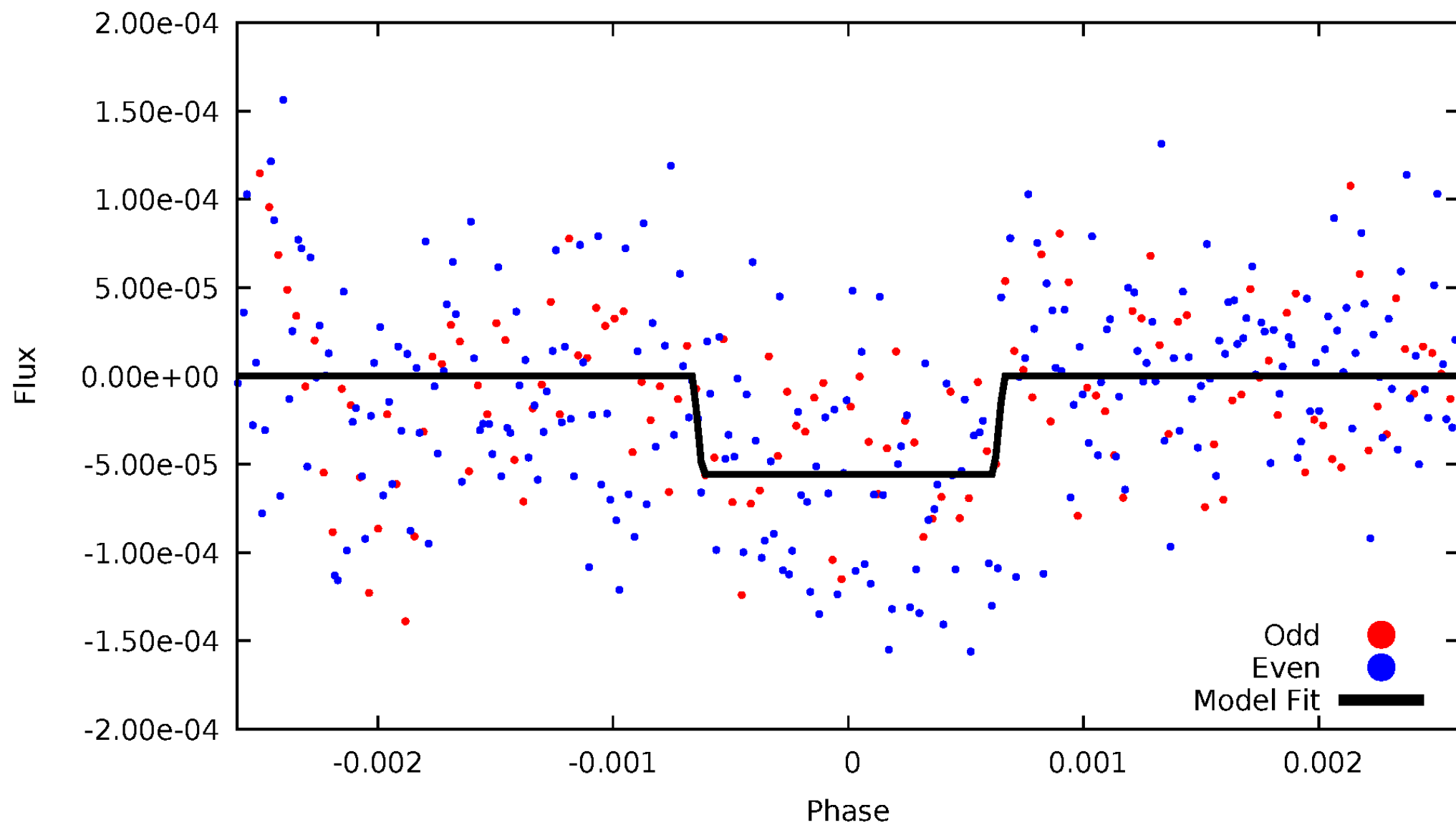
# DV Odd/Even

TCE 005950854-01

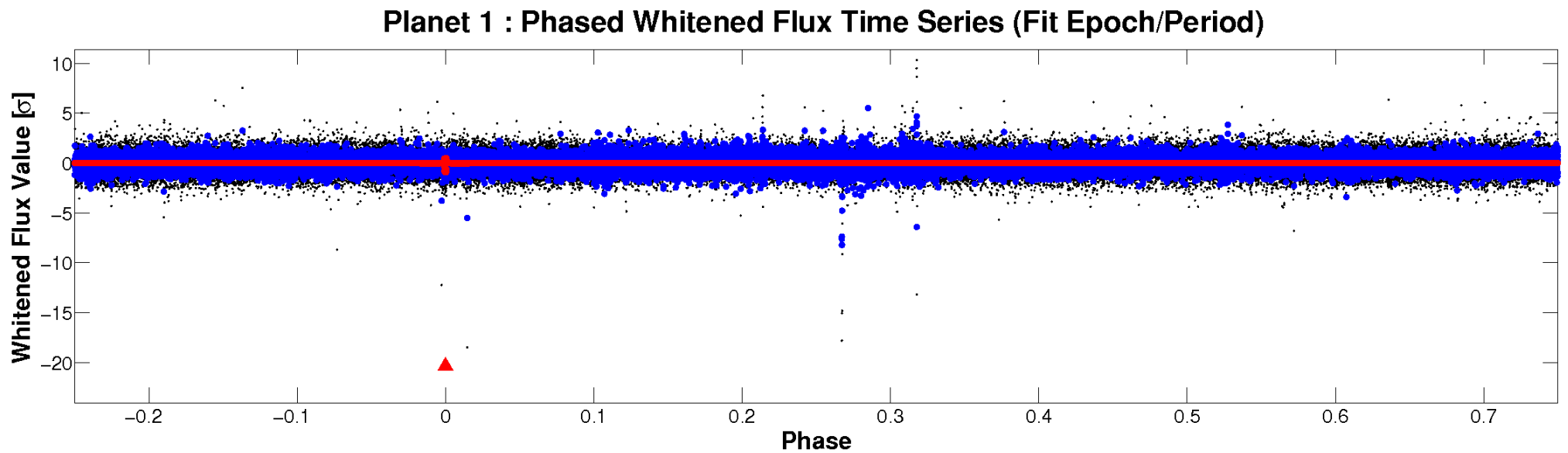
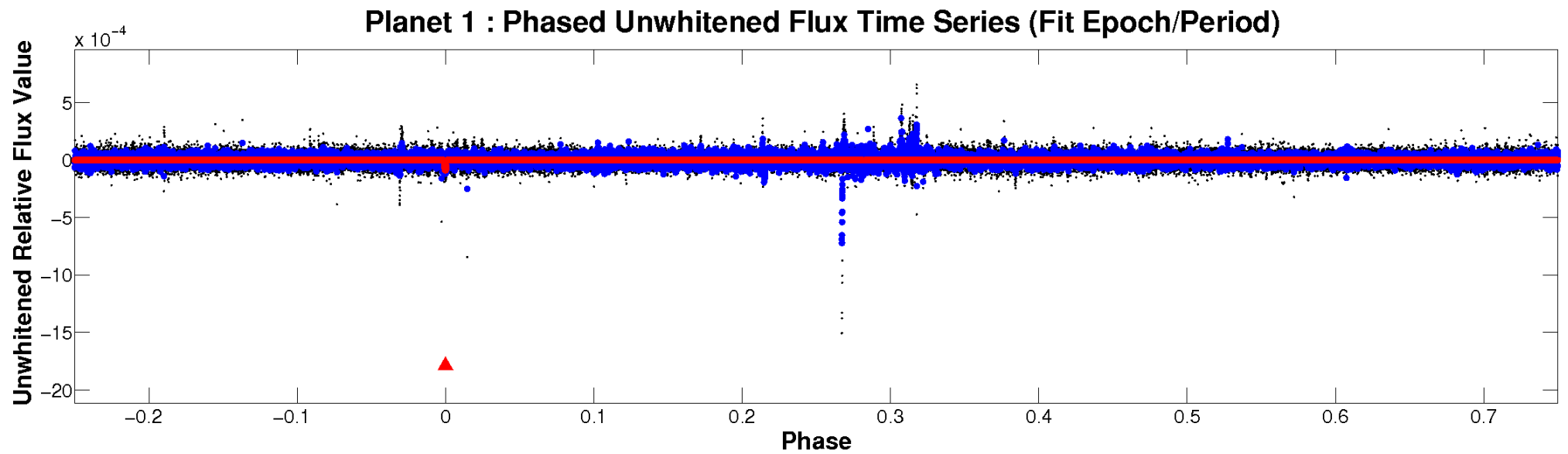


# ALT Odd/Even

TCE 005950854-01

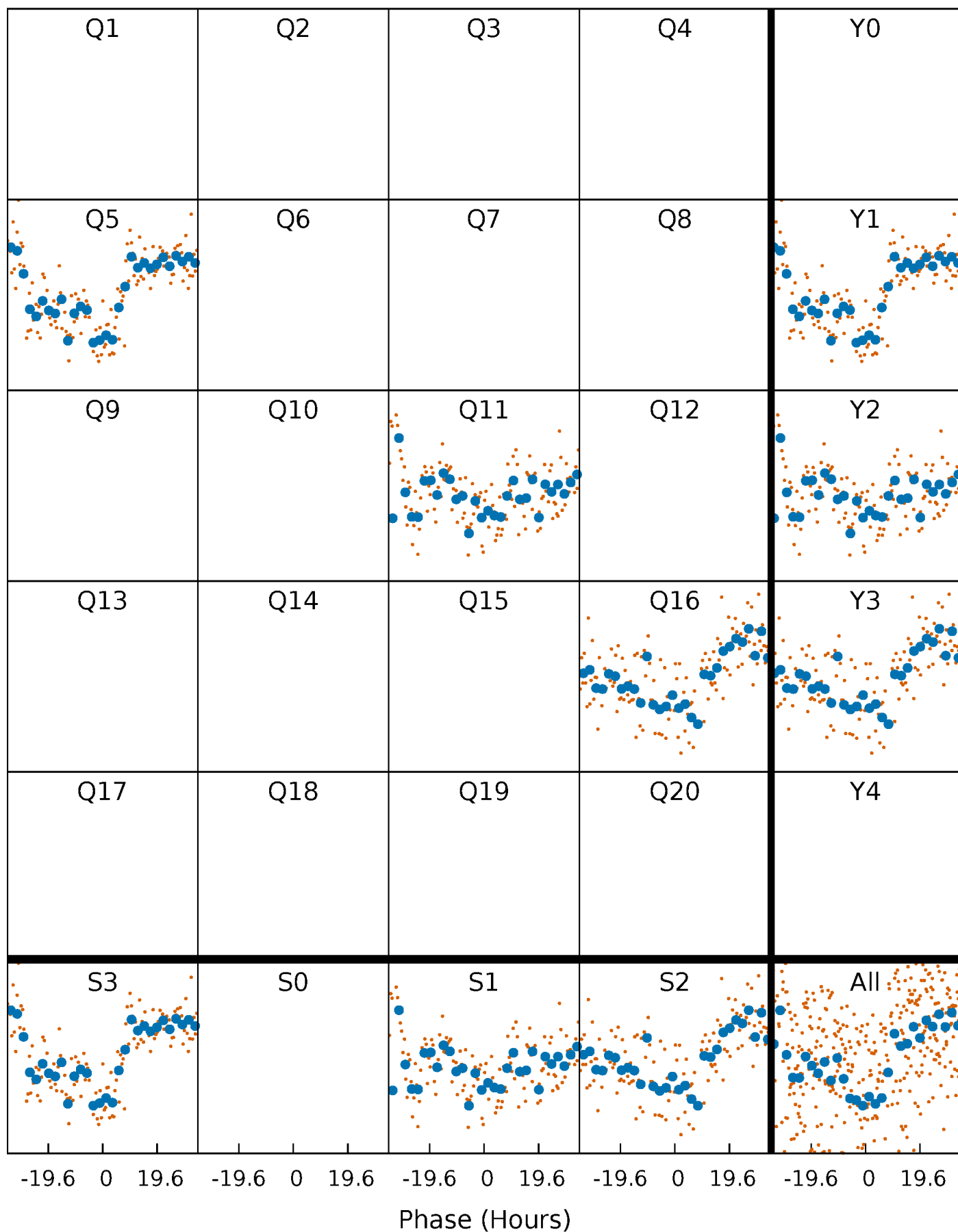


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

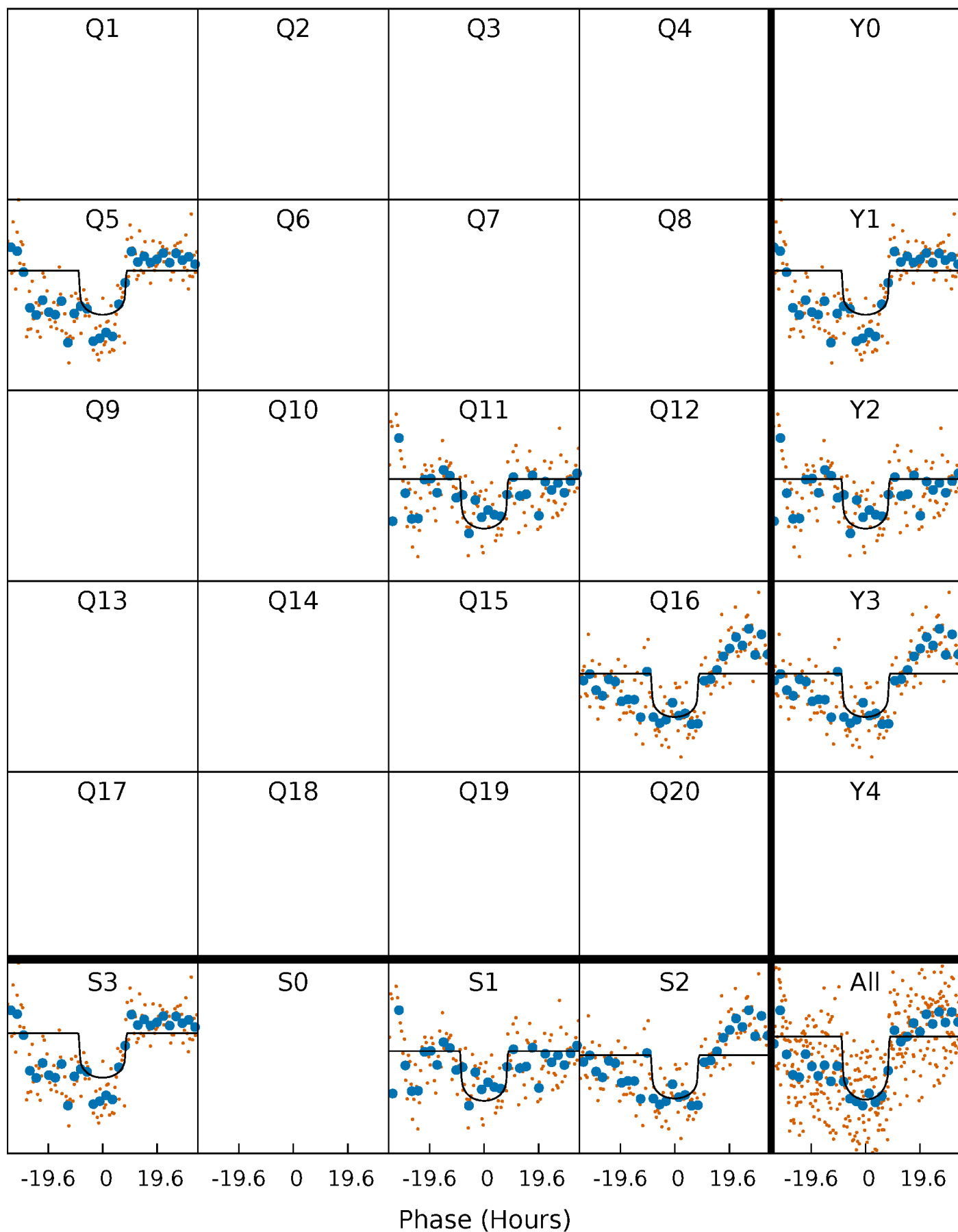
TCE 005950854-01 P=528.919505 Days  $T_0=484.662014$  (BKJD)





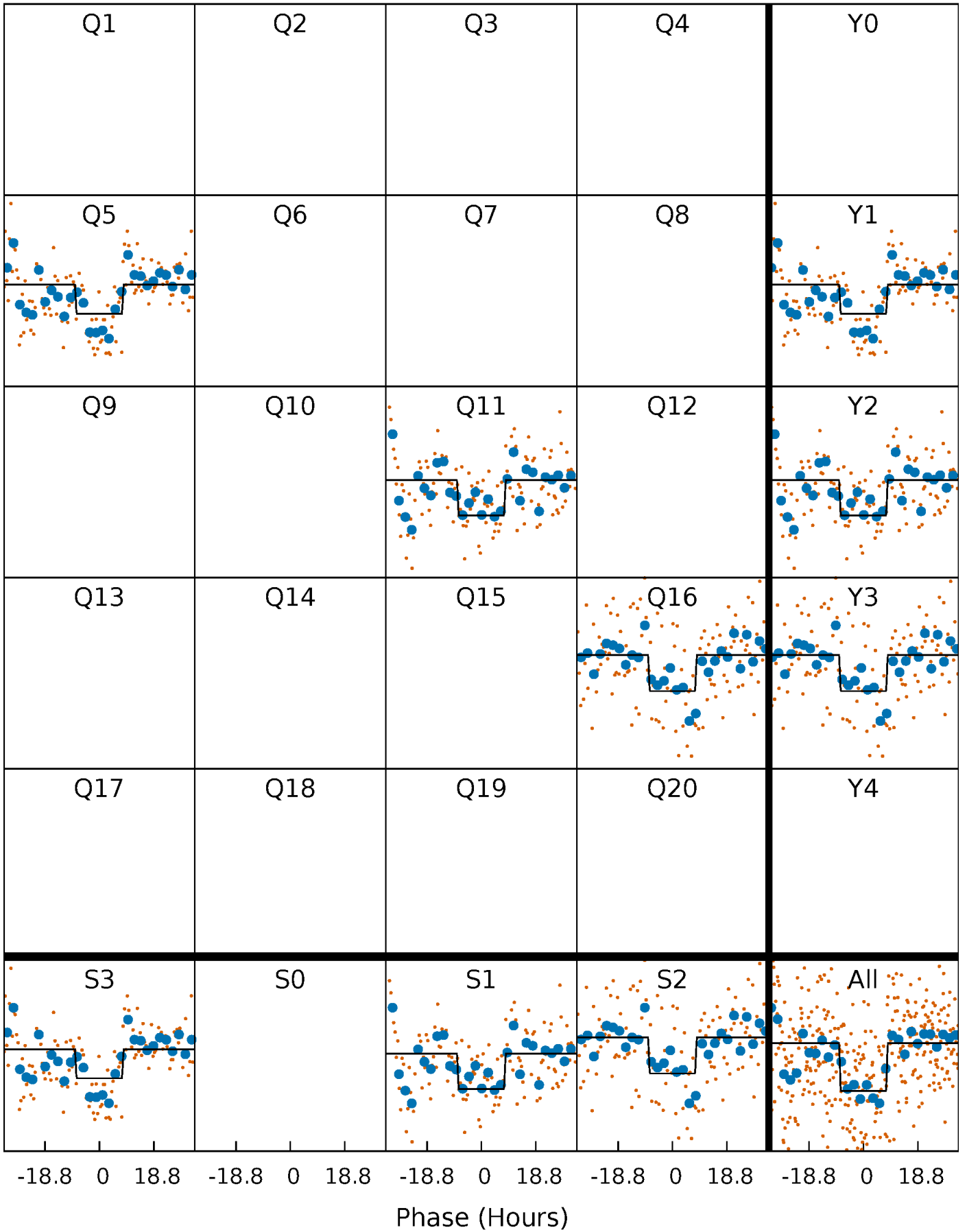
# DV Quarter-Phased Transit Curves

TCE 005950854-01 P=528.919505 Days  $T_0=484.662014$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

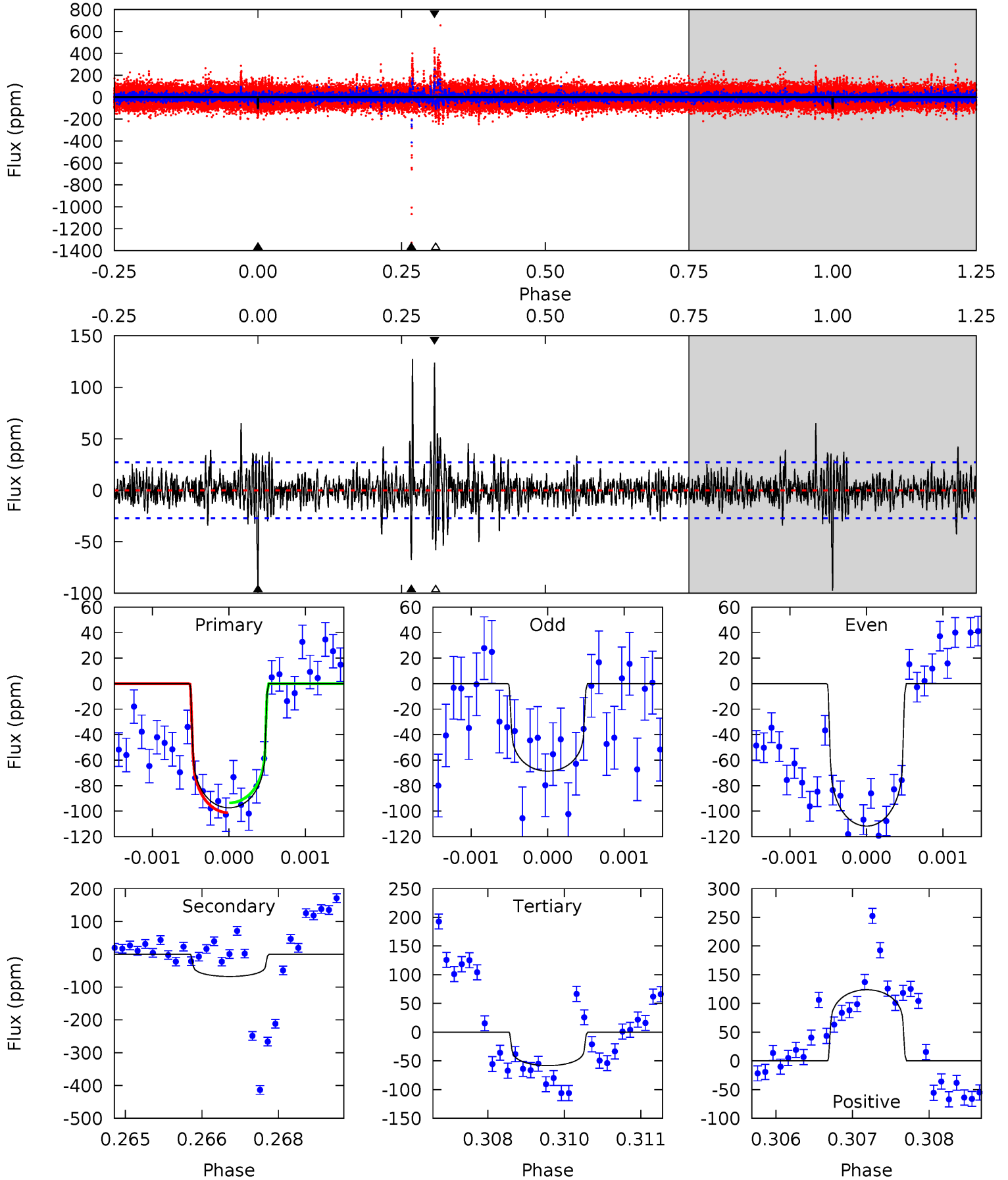
TCE 005950854-01 P=528.915889 Days  $T_0=484.669614$  (BKJD)



# DV Model-Shift Uniqueness Test

005950854-01, P = 528.919505 Days, E = 484.662014 Days

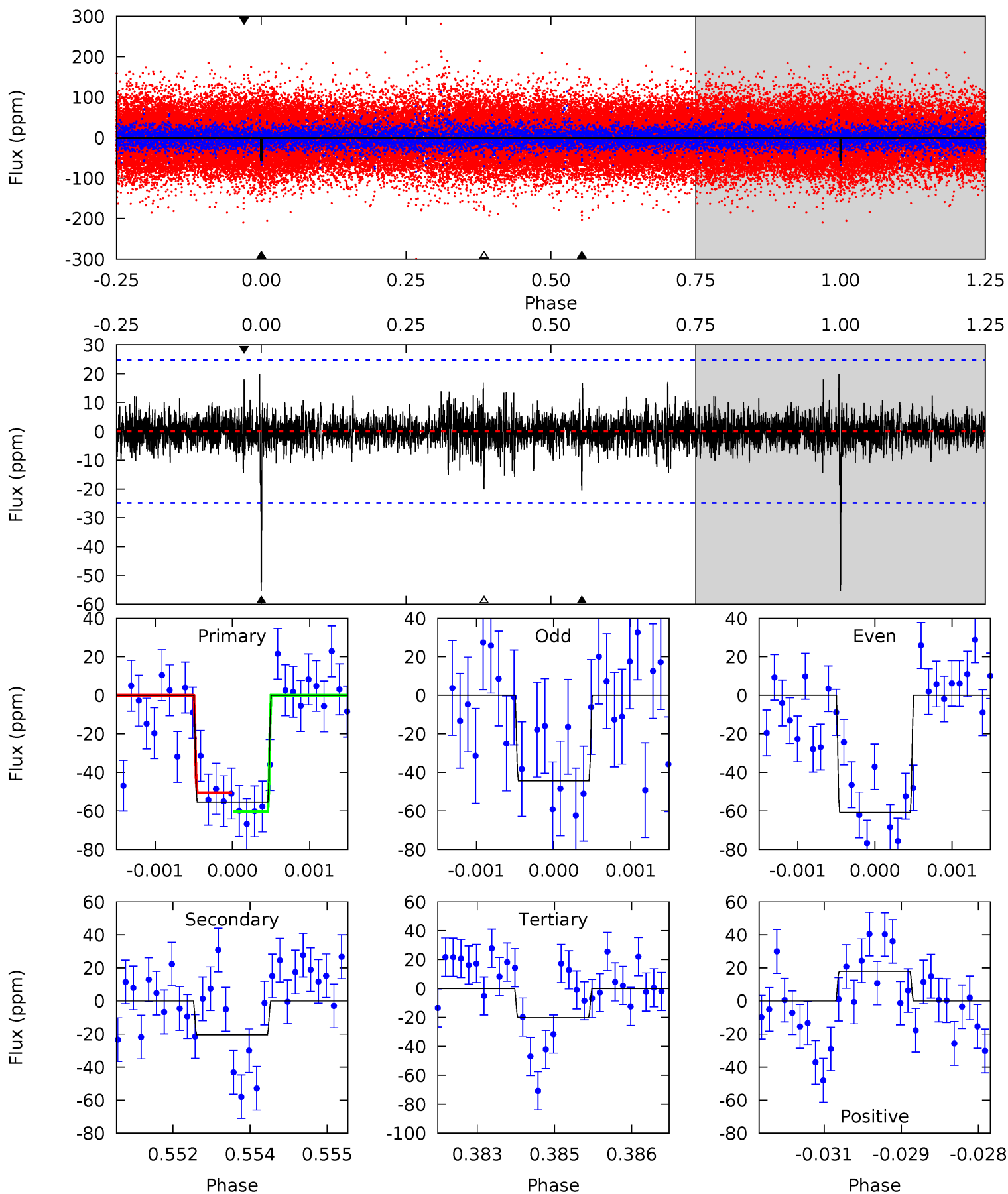
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	13.5	11.6	24.6	5.40	3.20	2.58	7.78	-5.27	1.90	-11.1	3.92	0.98	0.57	0.77



# Alt Model-Shift Uniqueness Test

005950854-01, P = 528.915889 Days, E = 484.669614 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
12.1	4.45	4.37	3.92	5.40	3.21	0.88	7.70	8.14	0.08	0.52	1.70	1.06	0.26	1.07



### Stellar Parameters For KIC 005950854

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5862^{+79}_{-79}$	$4.239^{+0.013}_{-0.012}$	$-0.220^{+0.150}_{-0.150}$	$1.204^{+0.043}_{-0.043}$	$0.918^{+0.064}_{-0.058}$	$0.741^{+0.044}_{-0.041}$
	+1%/-1%	+0%/-0%	+68%/-68%	+4%/-4%	+7%/-6%	+6%/-6%
Source	SPE72	AST10	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 005950854-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-68 \pm 5$	$1.29^{+0.27}_{-0.24}$	$355^{+5}_{-5}$	$5402^{+555}_{-405}$	$34453^{+17813}_{-10507}$
Alt.	$-20 \pm 5$	$0.99^{+0.25}_{-0.25}$	$355^{+5}_{-5}$	$4656^{+649}_{-424}$	$17091^{+15345}_{-6777}$

$T_{\text{max}}$  = 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

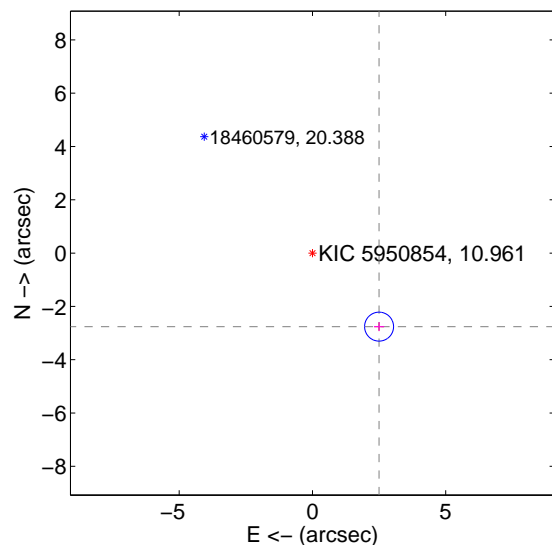
Supplemental centroid analysis for 005950854-01. **Kepler magnitude: 10.96.** Transit SNR 9.07

**There are 0 quarters with good PRF difference image offsets**

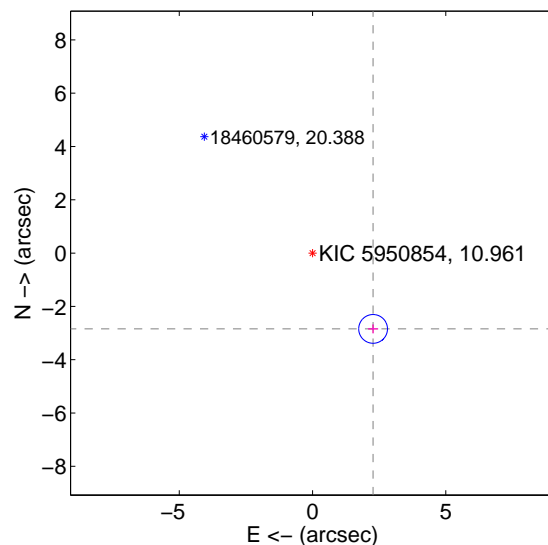
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>3.723 <math>\pm</math> 0.181</b>	<b>20.56</b>	-2.500 $\pm$ 0.192	-2.759 $\pm$ 0.171
PRF-fit source offset from KIC position	<b>3.640 <math>\pm</math> 0.180</b>	<b>20.25</b>	-2.272 $\pm$ 0.192	-2.844 $\pm$ 0.171
photometric centroid source offset	1.80 $\pm$ 1.92	0.94	-0.79 $\pm$ 1.76	1.62 $\pm$ 1.96

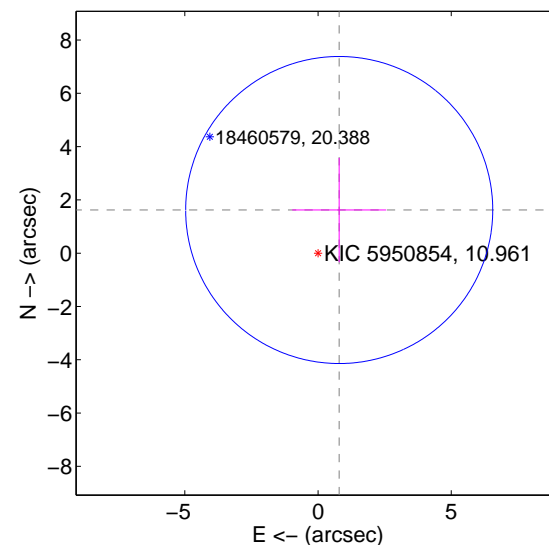
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

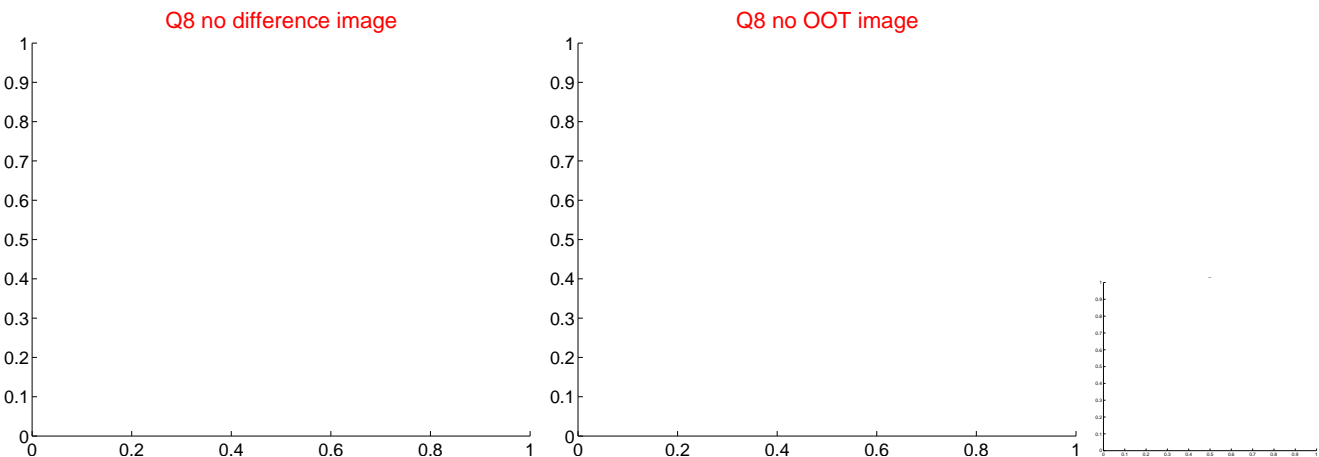
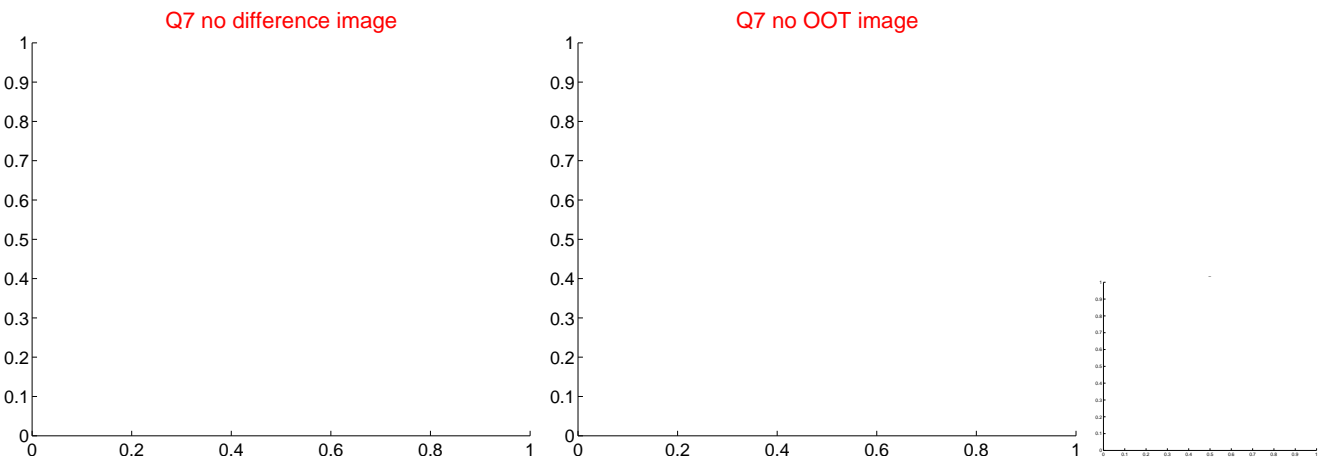
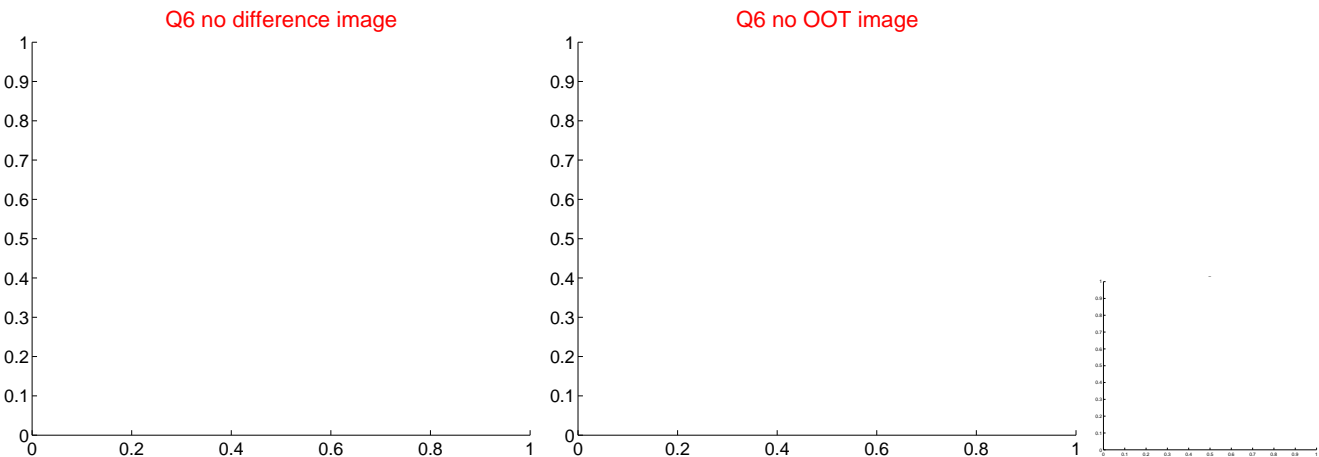
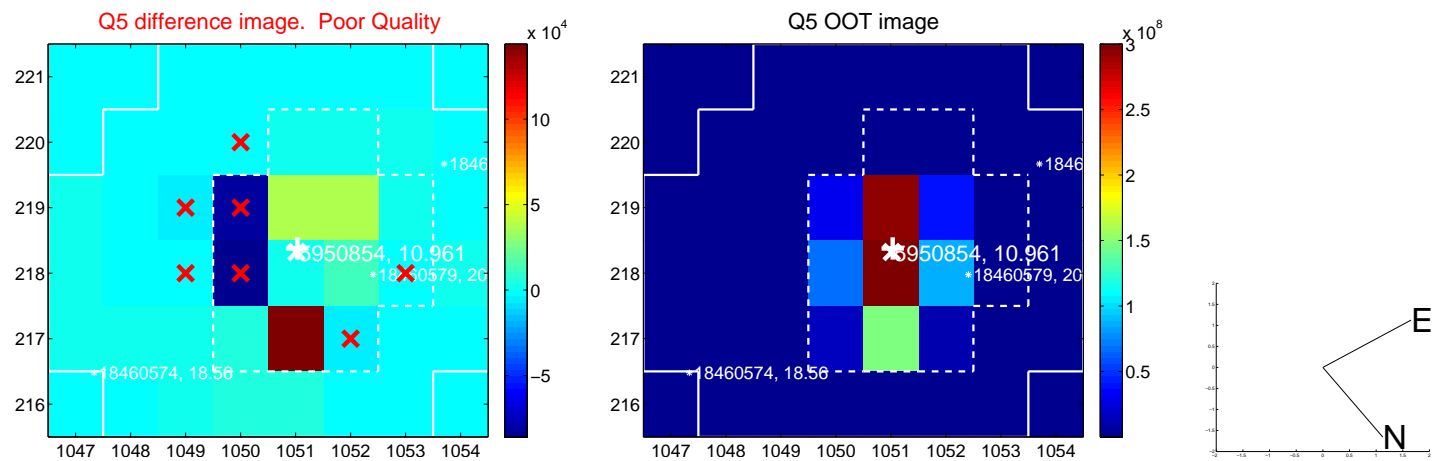


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

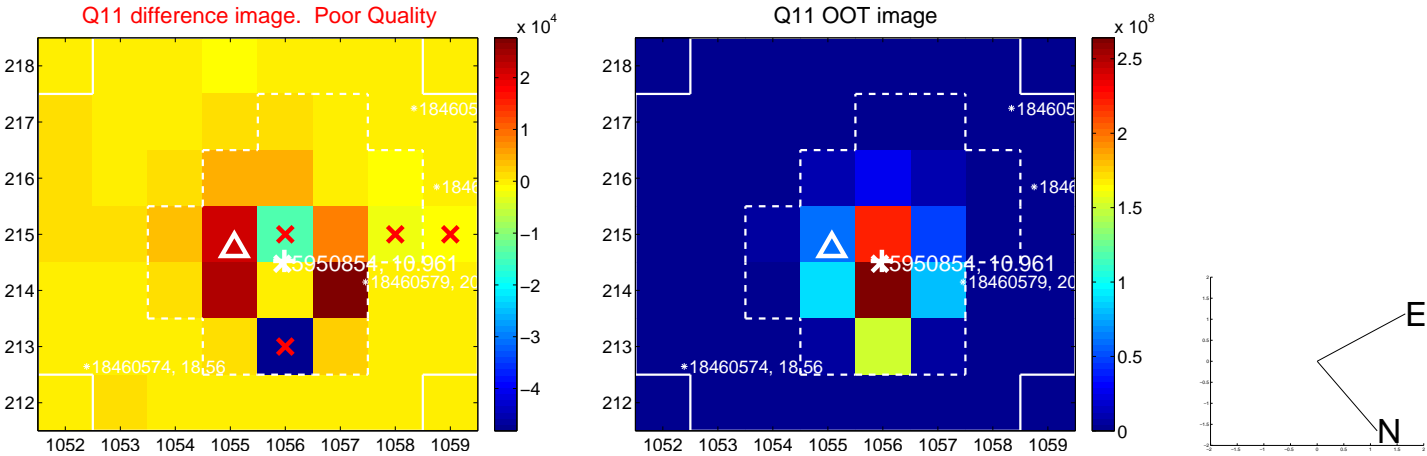


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

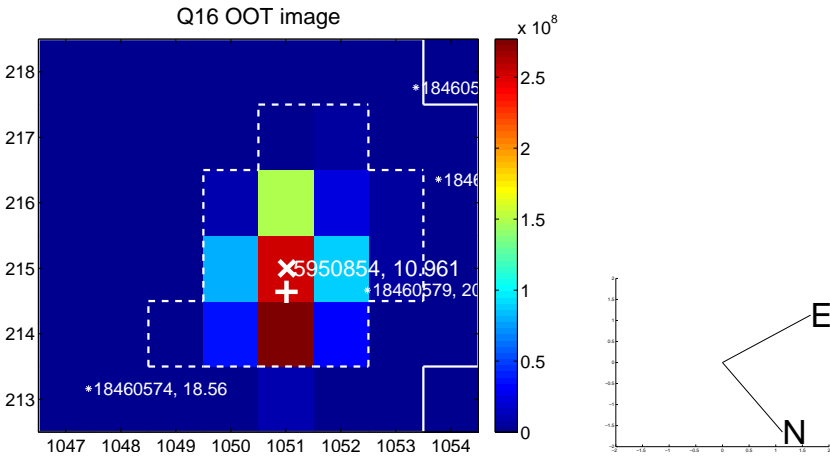
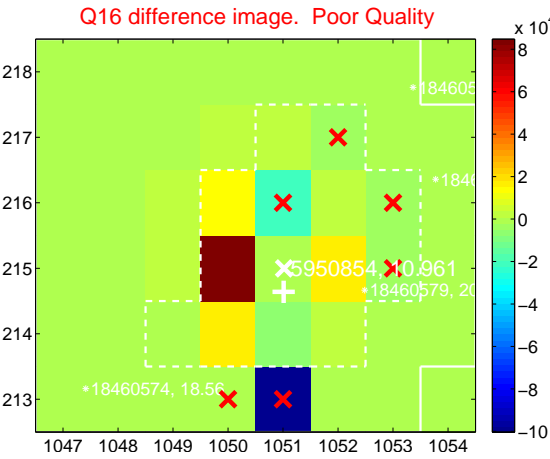
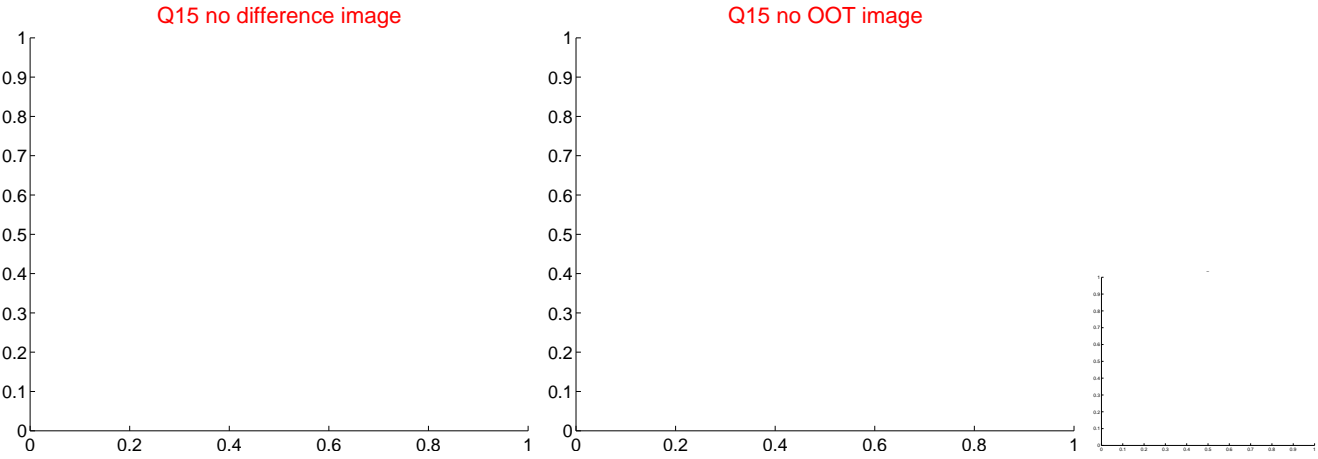
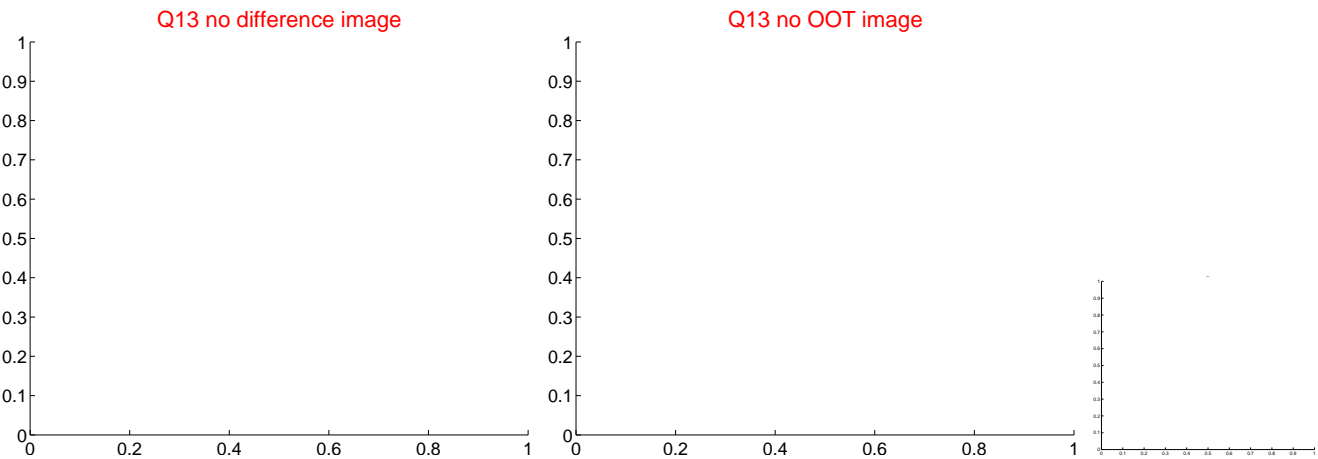




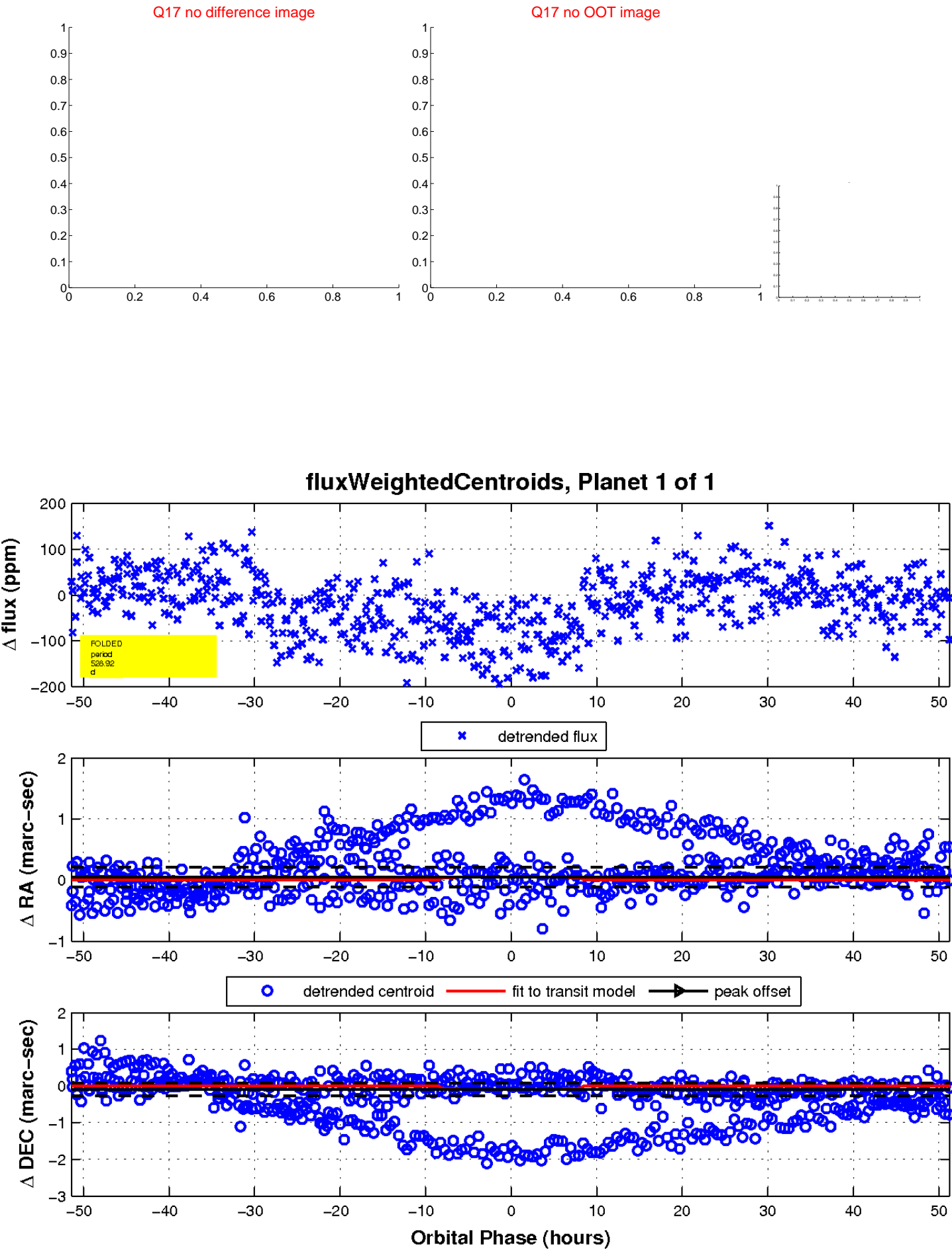
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

