

# KIC 010685353

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010685353-01	OBS	No	190.285570	152.395234	72.8	9.250	24.8	5.0	1.00	5780	0.97	2.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010685353-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

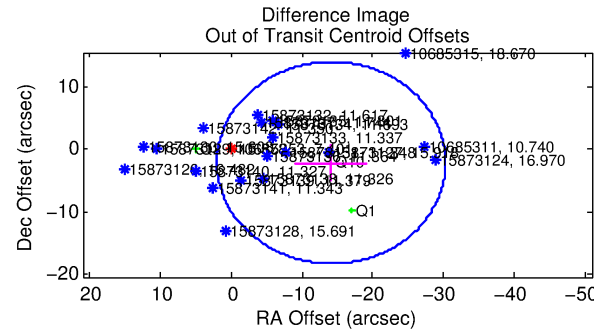
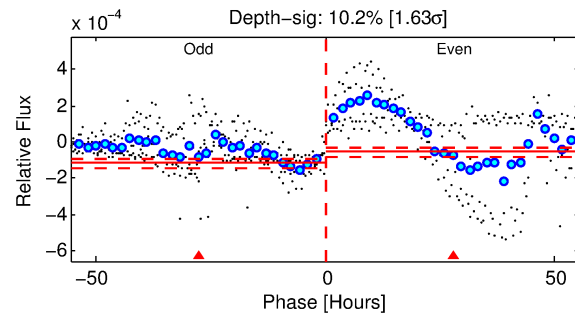
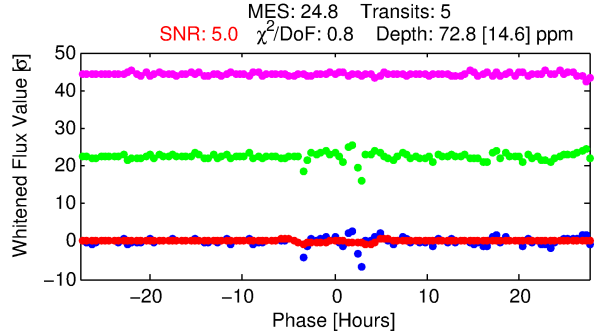
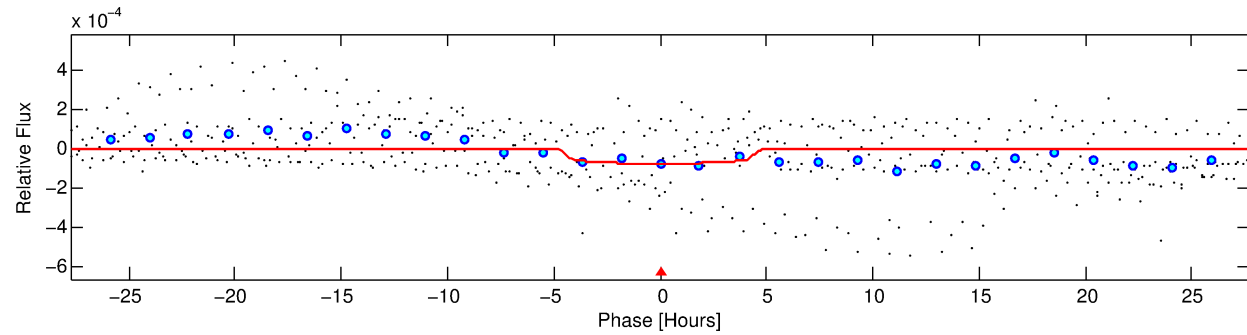
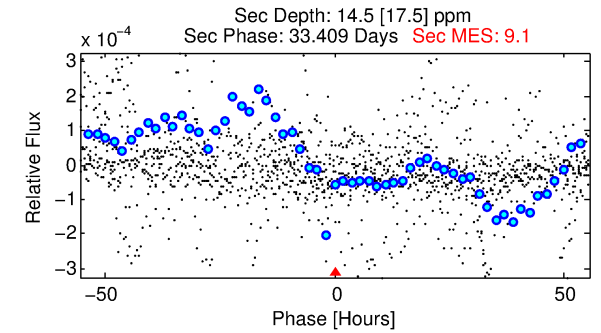
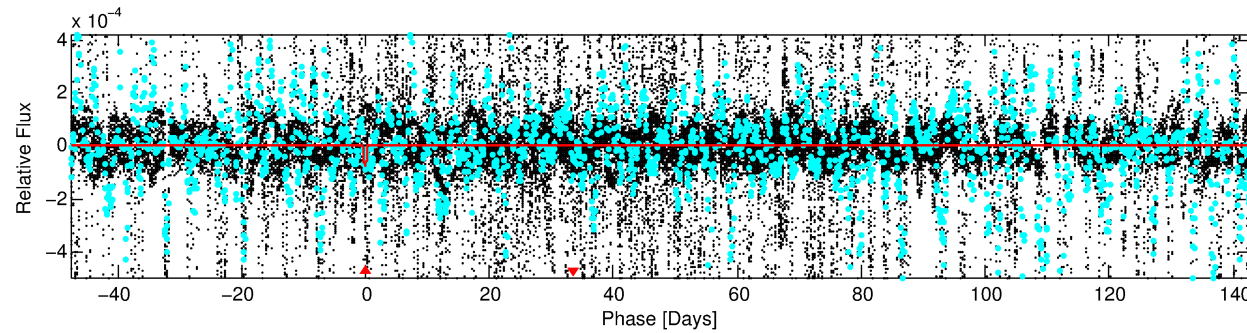
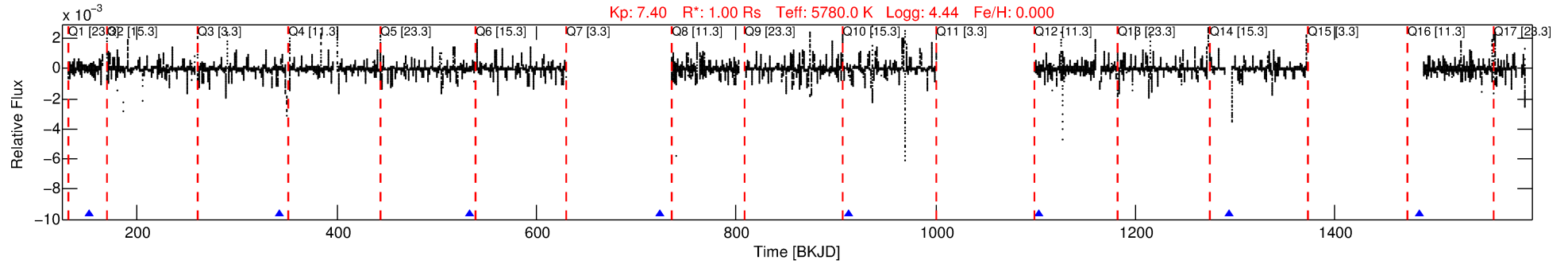
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010685353-01

No Significant Match Found

# DV One-Page Summary

KIC: 10685353 Candidate: 1 of 1 Period: 190.286 d



## DV Fit Results:

Period = 190.28557 [0.00321] d  
Epoch = 152.3952 [0.0108] BKJD  
Rp/R\* = 0.0089 [0.0032]  
a/R\* = 87.96 [140.48]  
b = 0.84 [0.57]  
Seff = 2.38 [0.00]  
Teq = 317 [0] K  
Rp = 0.97 [0.35] Re  
a = 0.6476 [0.0000] AU  
Ag = 3569.74 [5027.31] [0.71σ]  
Teffp = 3787 [1333] K [2.60σ]

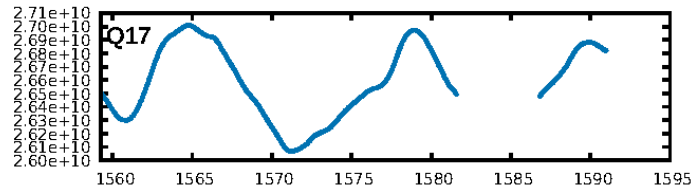
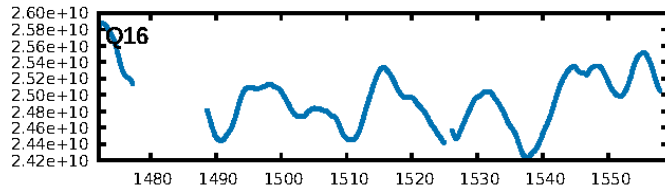
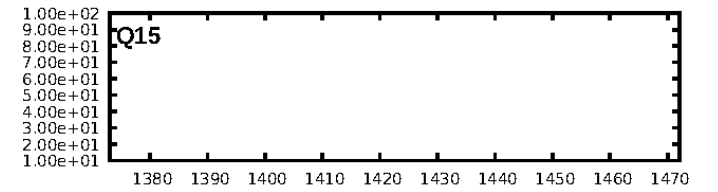
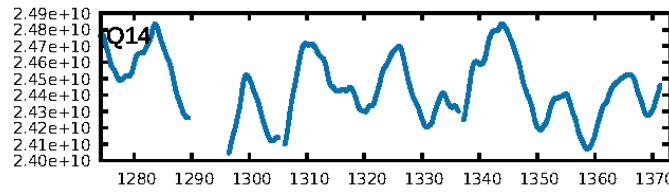
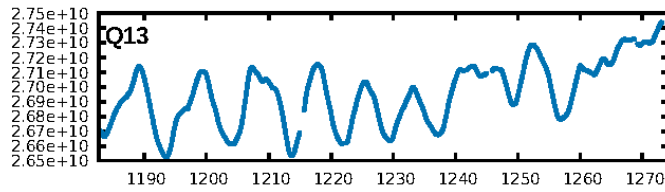
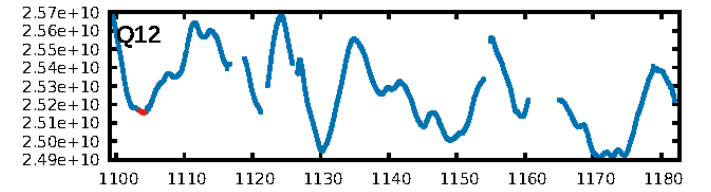
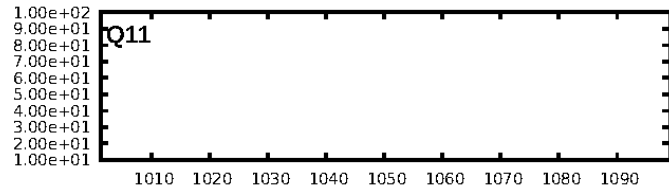
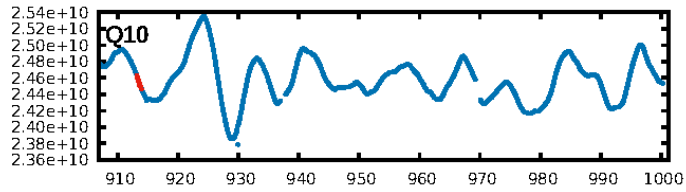
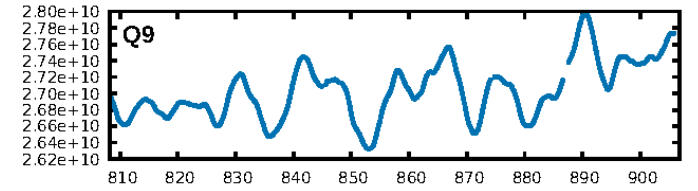
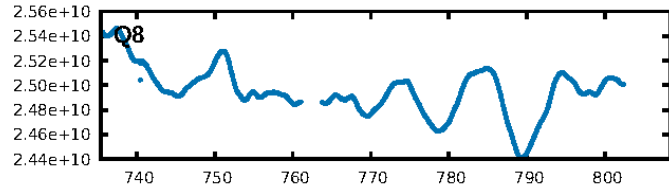
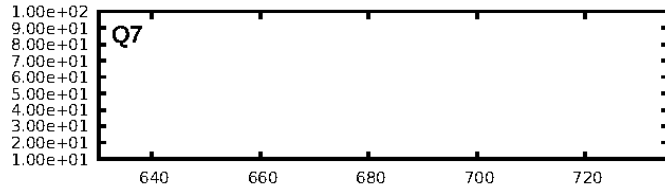
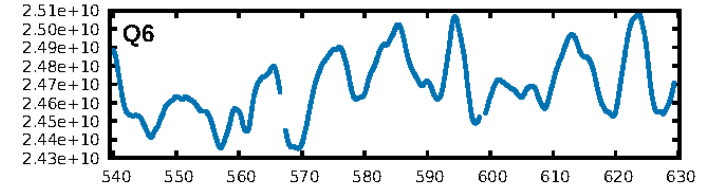
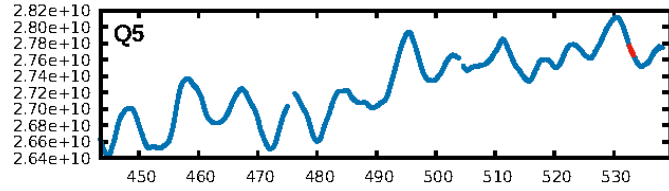
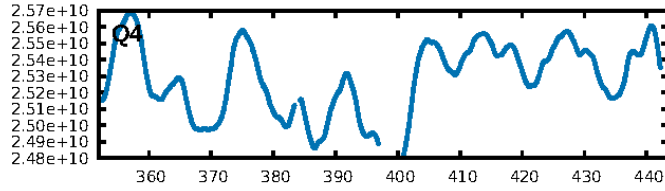
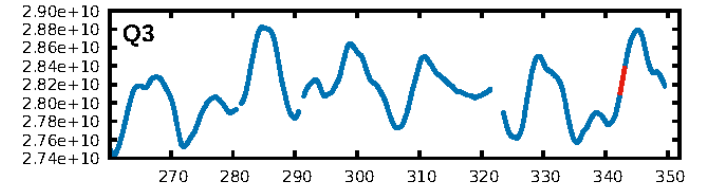
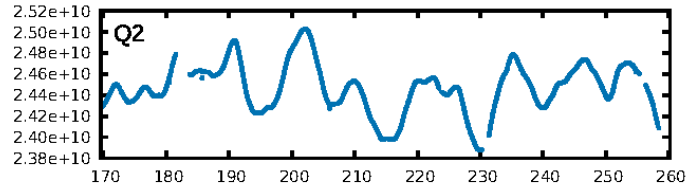
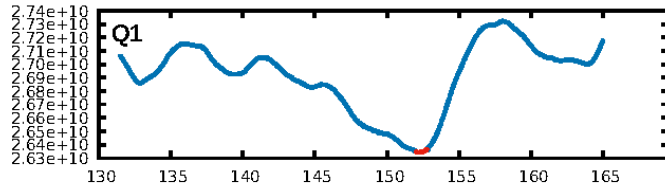
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 45.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.14e-07  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 14.9%  
Centroid-so: 87.393 arcsec [1.18σ]  
OotOffset-rm: 14.299 arcsec [2.65σ]  
KicOffset-rm: 12.828 arcsec [0.91σ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [4/4]

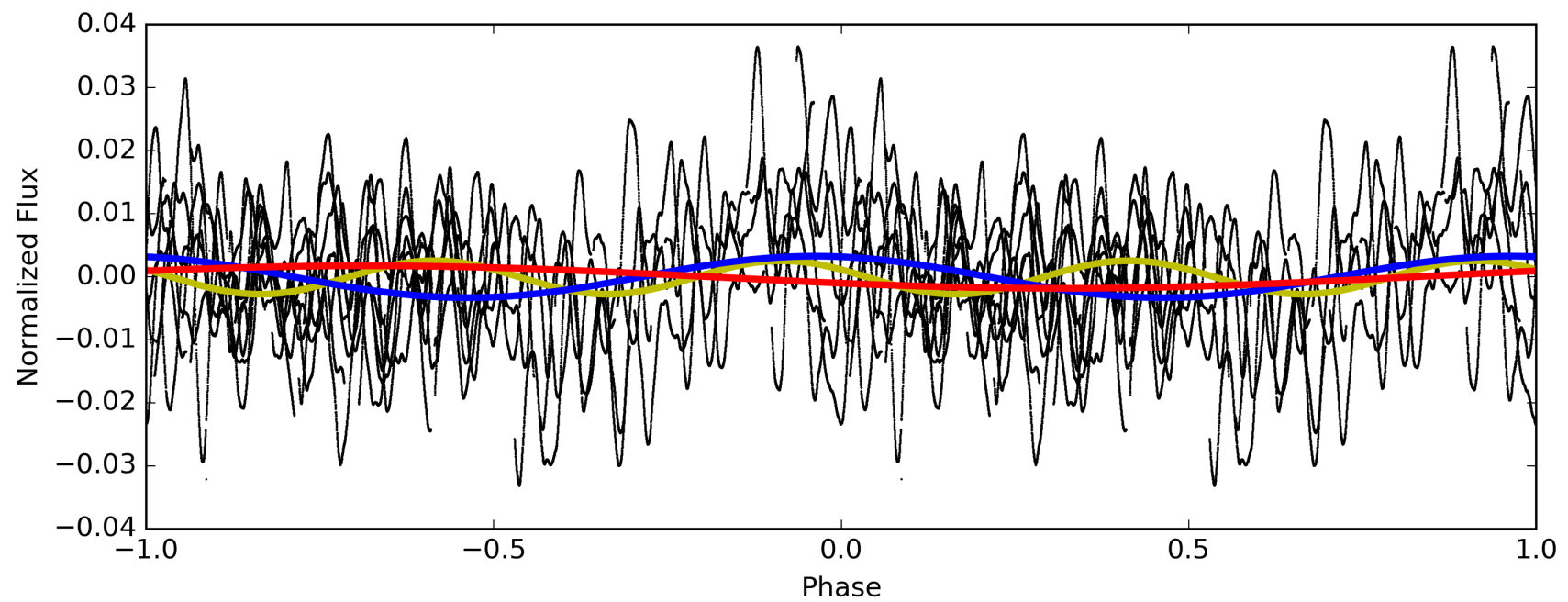
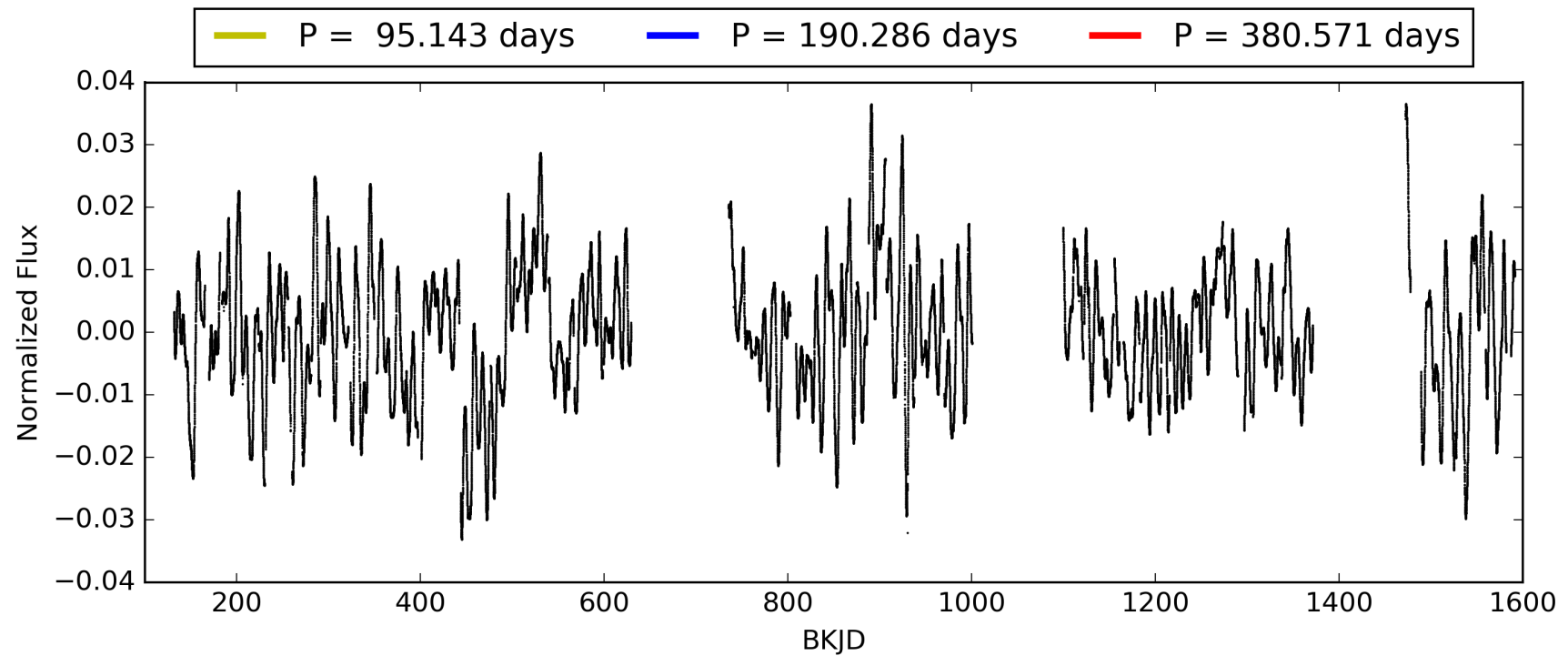
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:25:56 Z

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

# TCE 010685353-01, PDC Light Curves

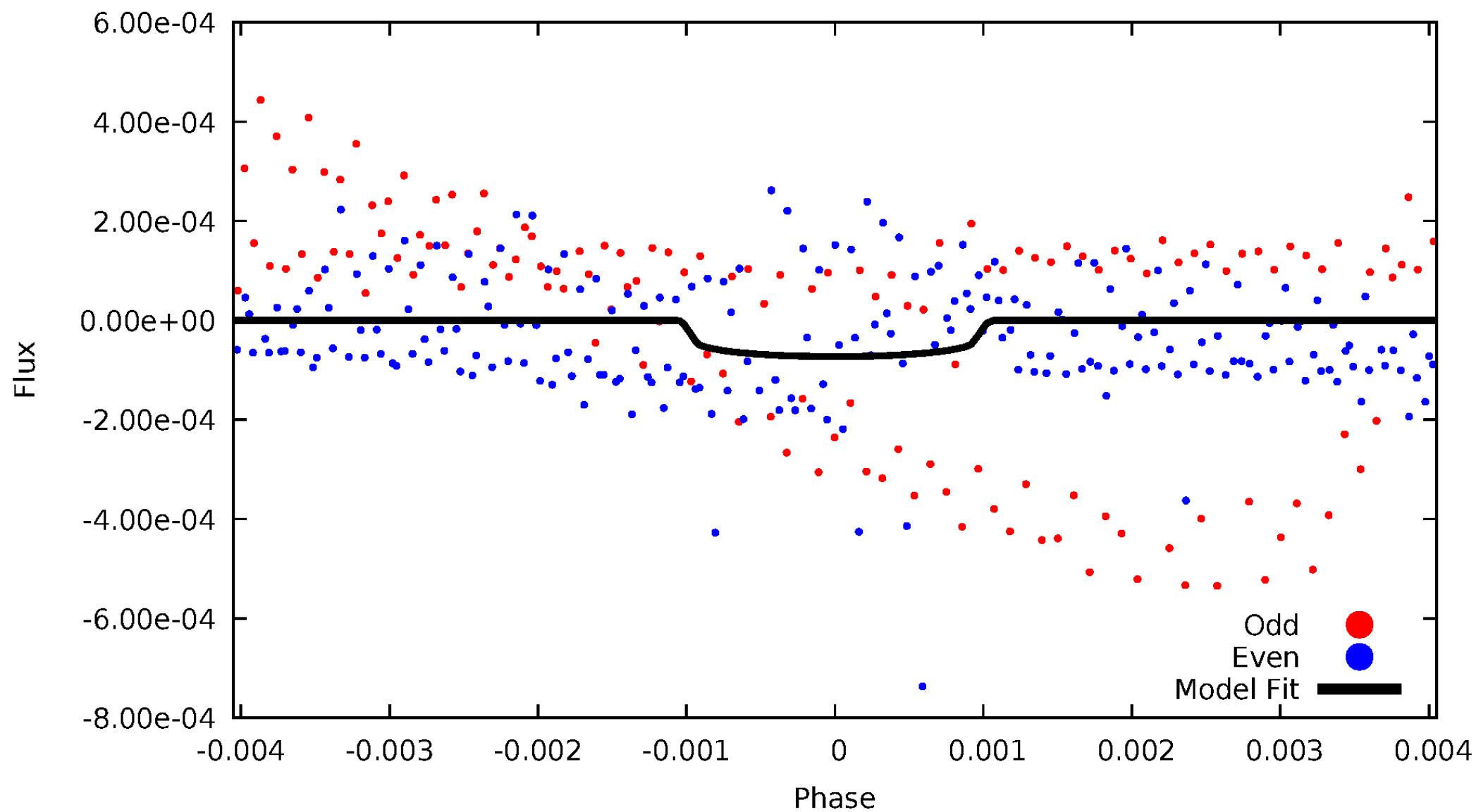


TCE 010685353-01



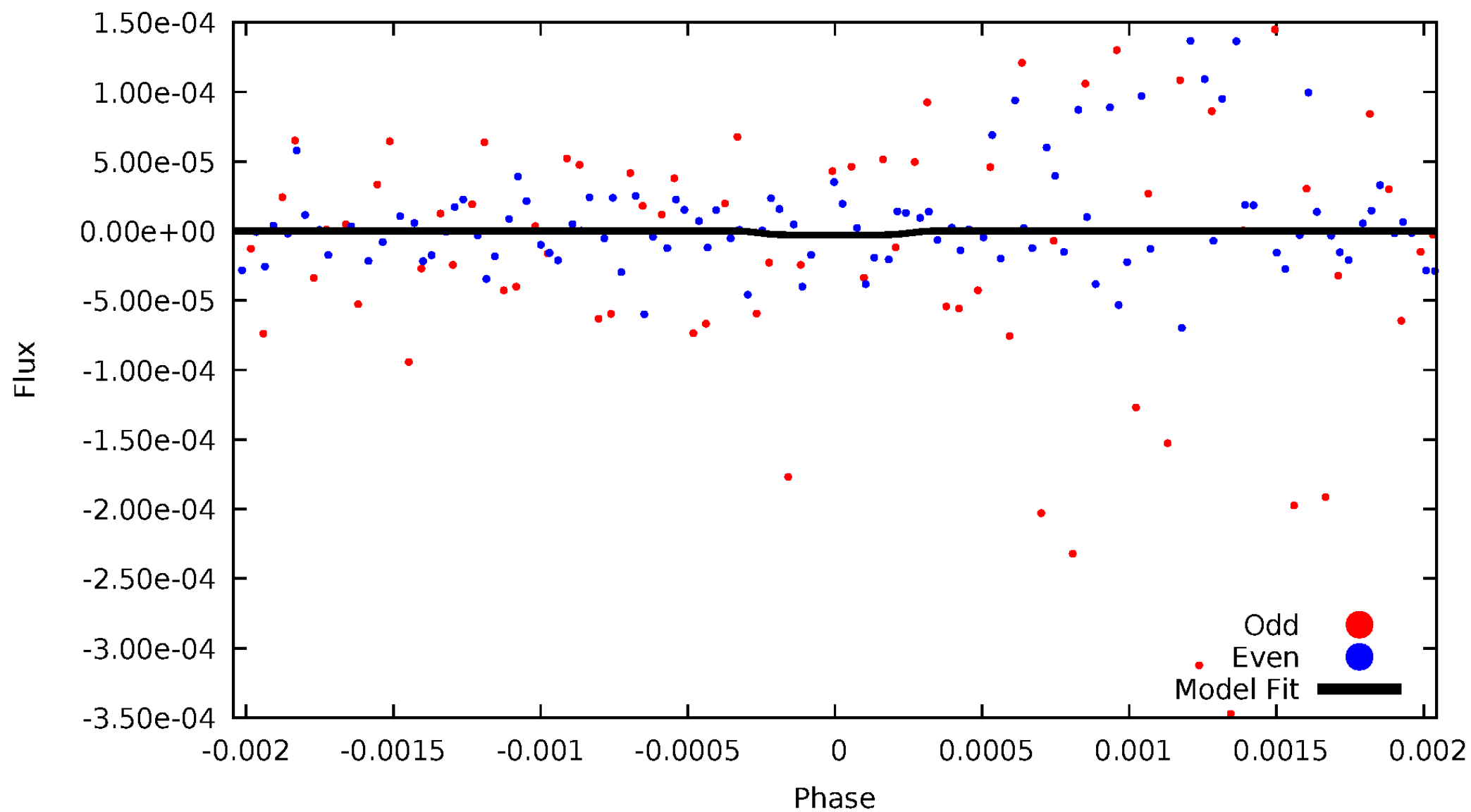
# DV Odd/Even

TCE 010685353-01



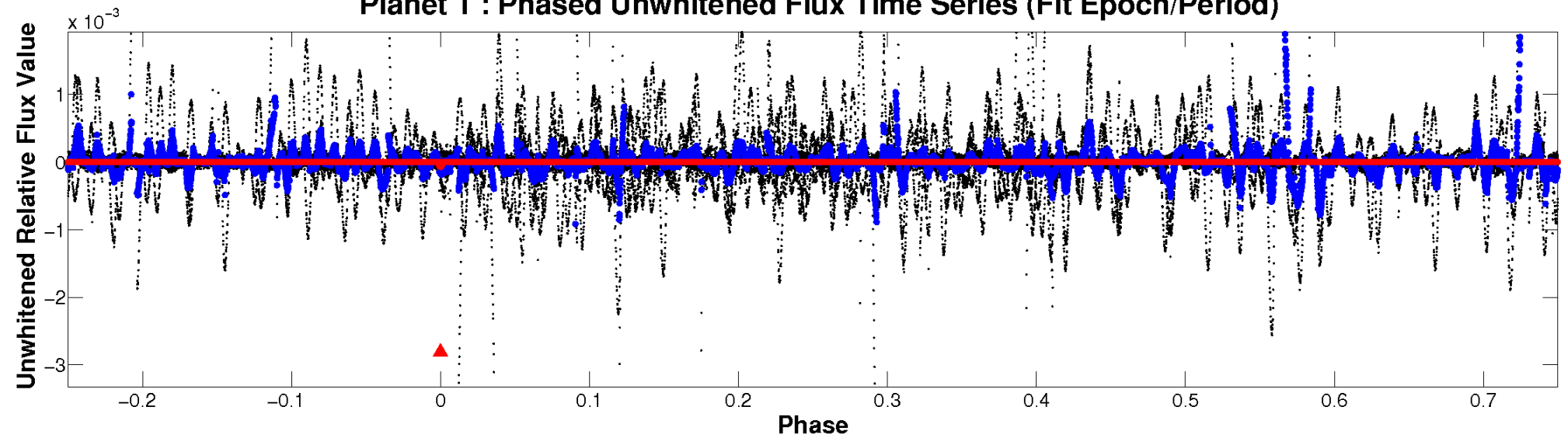
# ALT Odd/Even

TCE 010685353-01

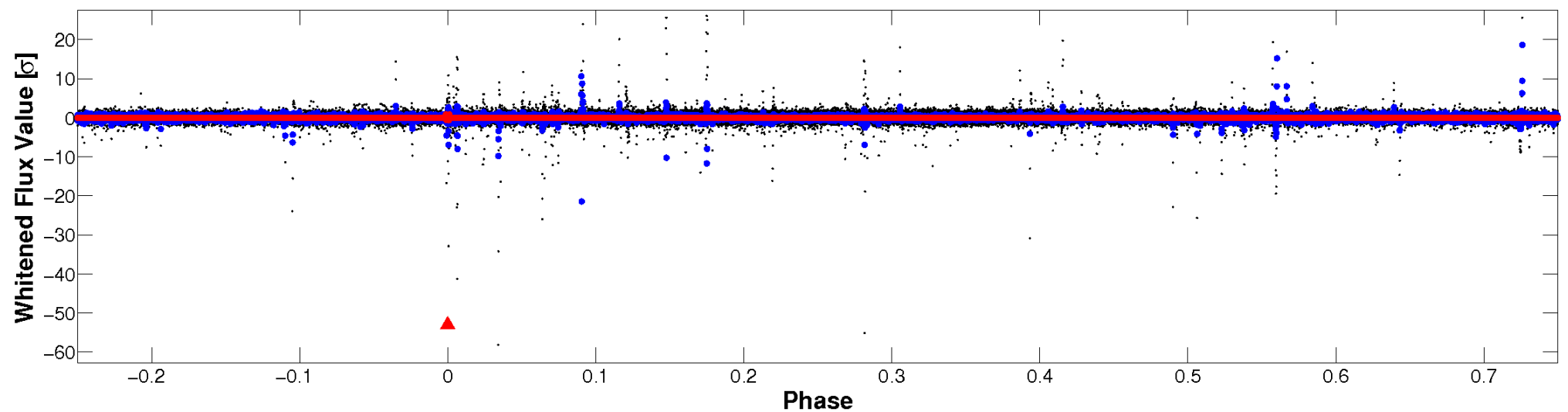


# Non-Whitened Vs. Whitened Light Curve

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

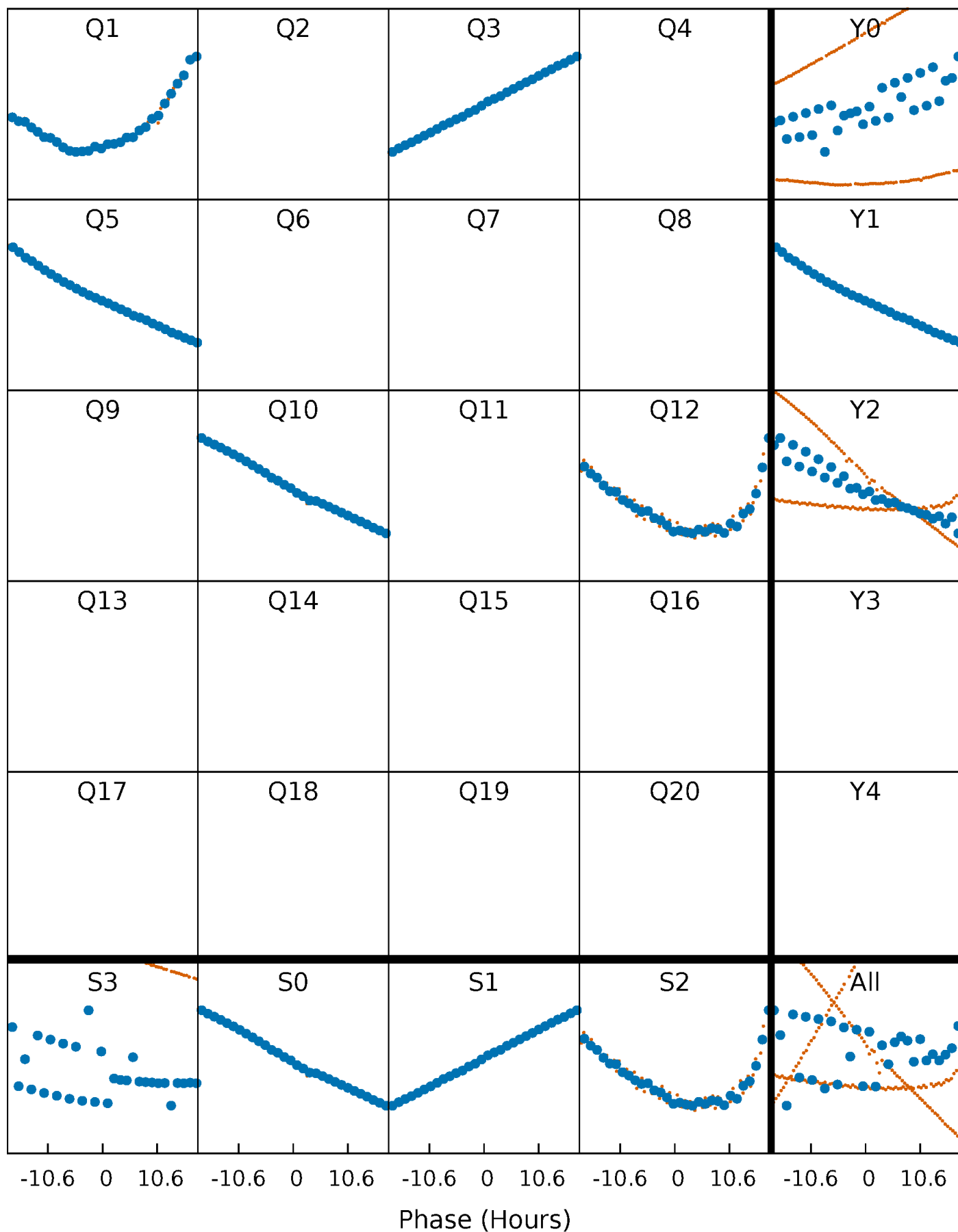


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

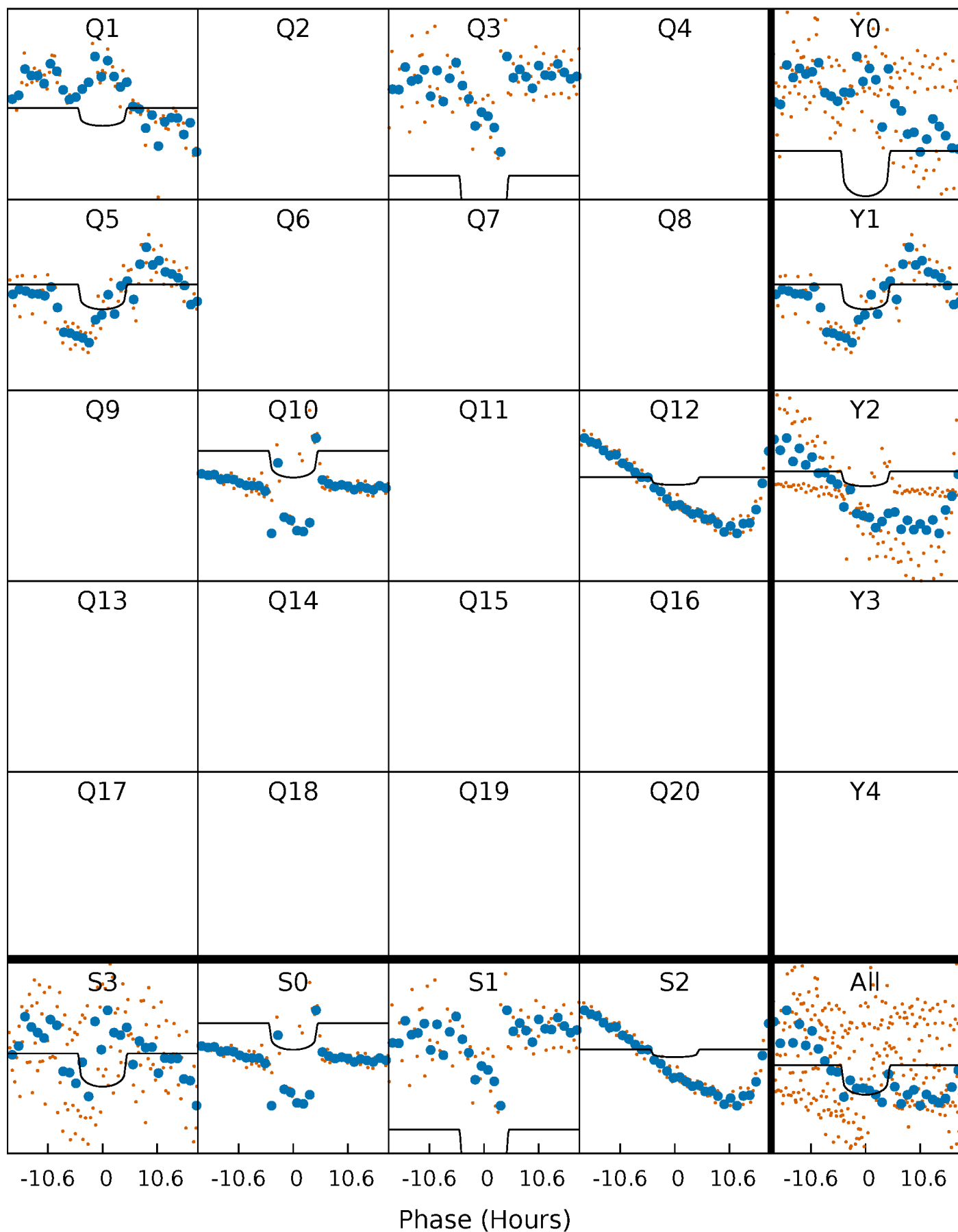
TCE 010685353-01 P=190.285570 Days  $T_0=152.395234$  (BKJD)





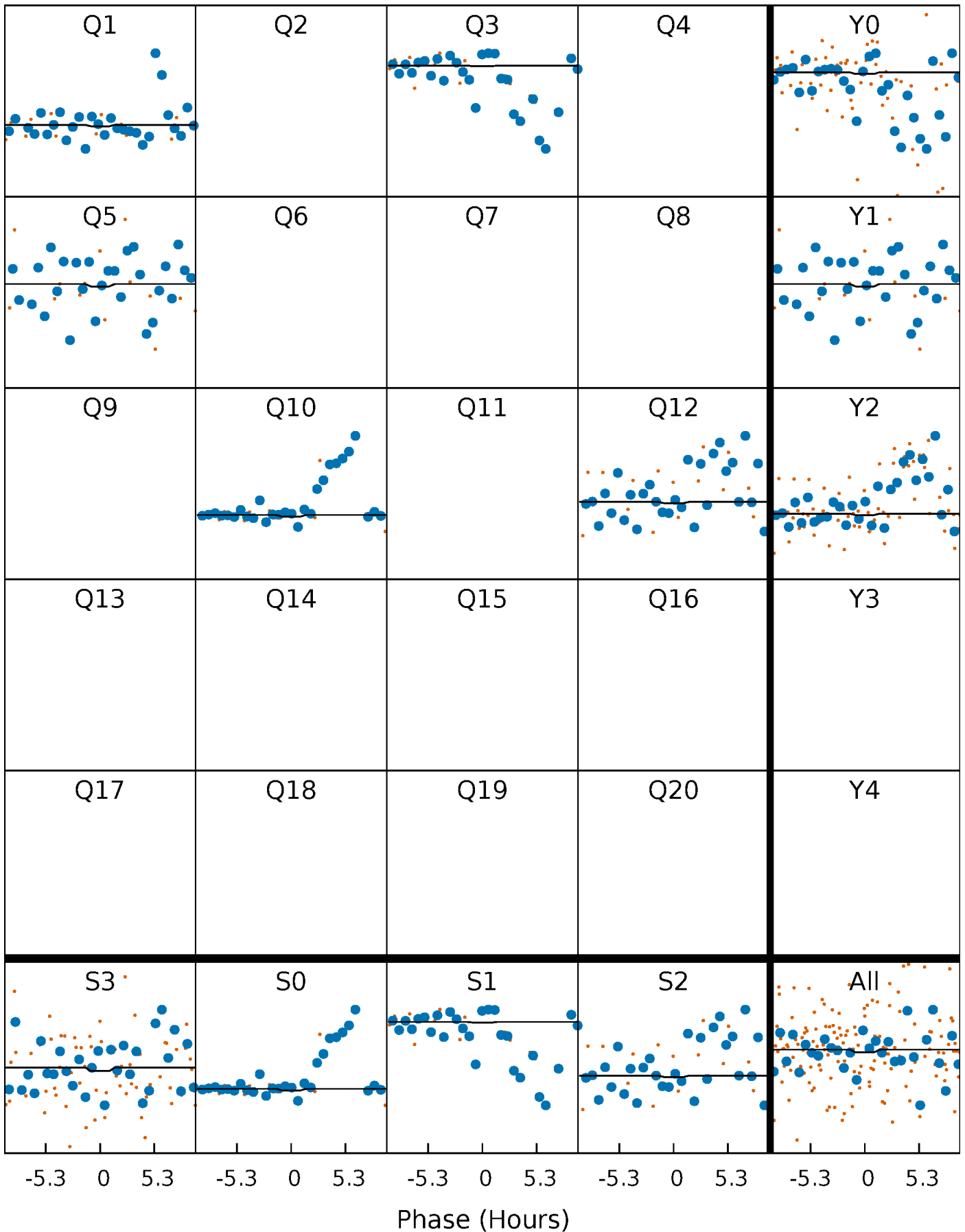
# DV Quarter-Phased Transit Curves

TCE 010685353-01 P=190.285570 Days  $T_0=152.395234$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

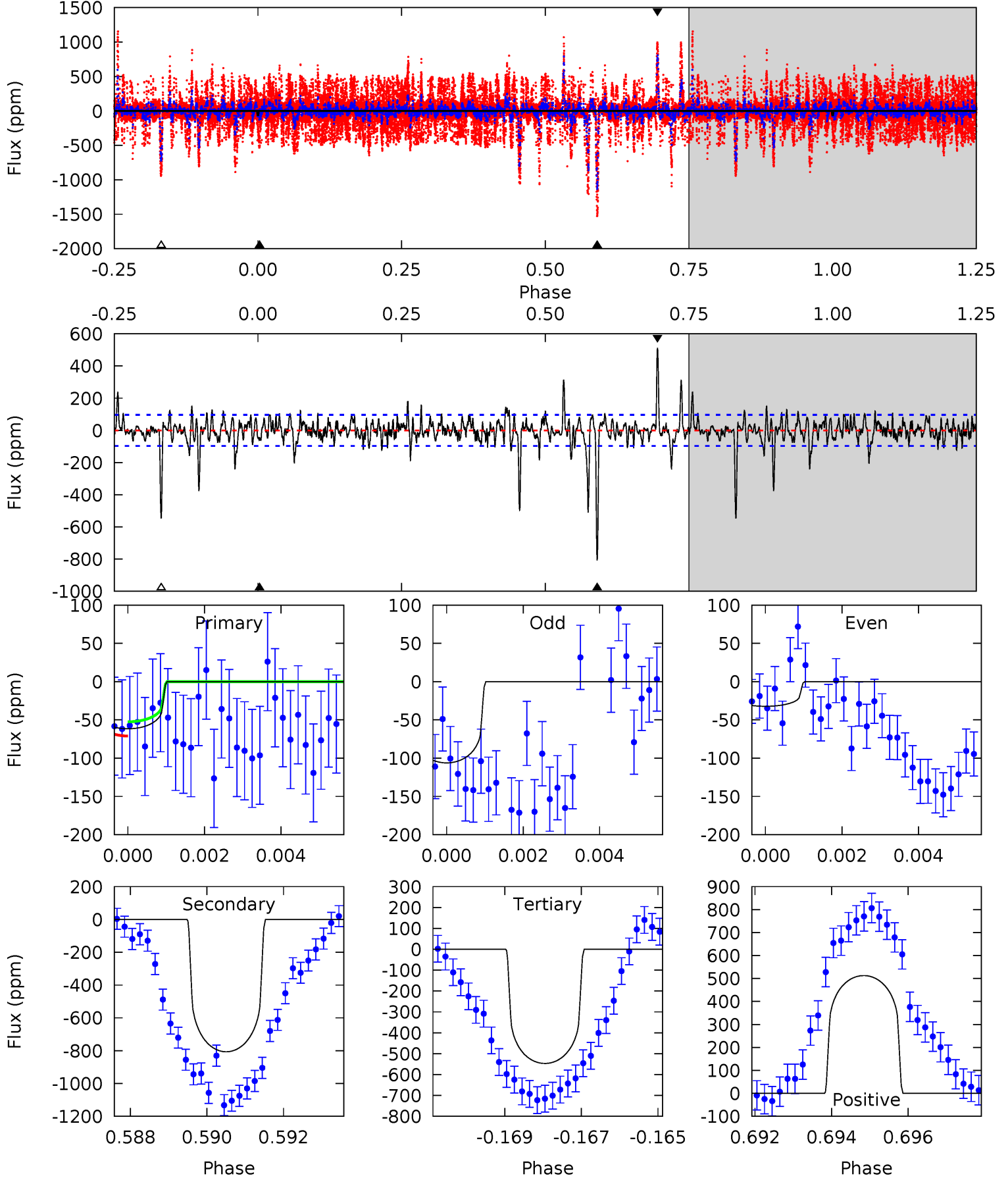
TCE 010685353-01 P=190.270393 Days  $T_0=152.084111$  (BKJD)



# DV Model-Shift Uniqueness Test

010685353-01, P = 190.285570 Days, E = 152.395234 Days

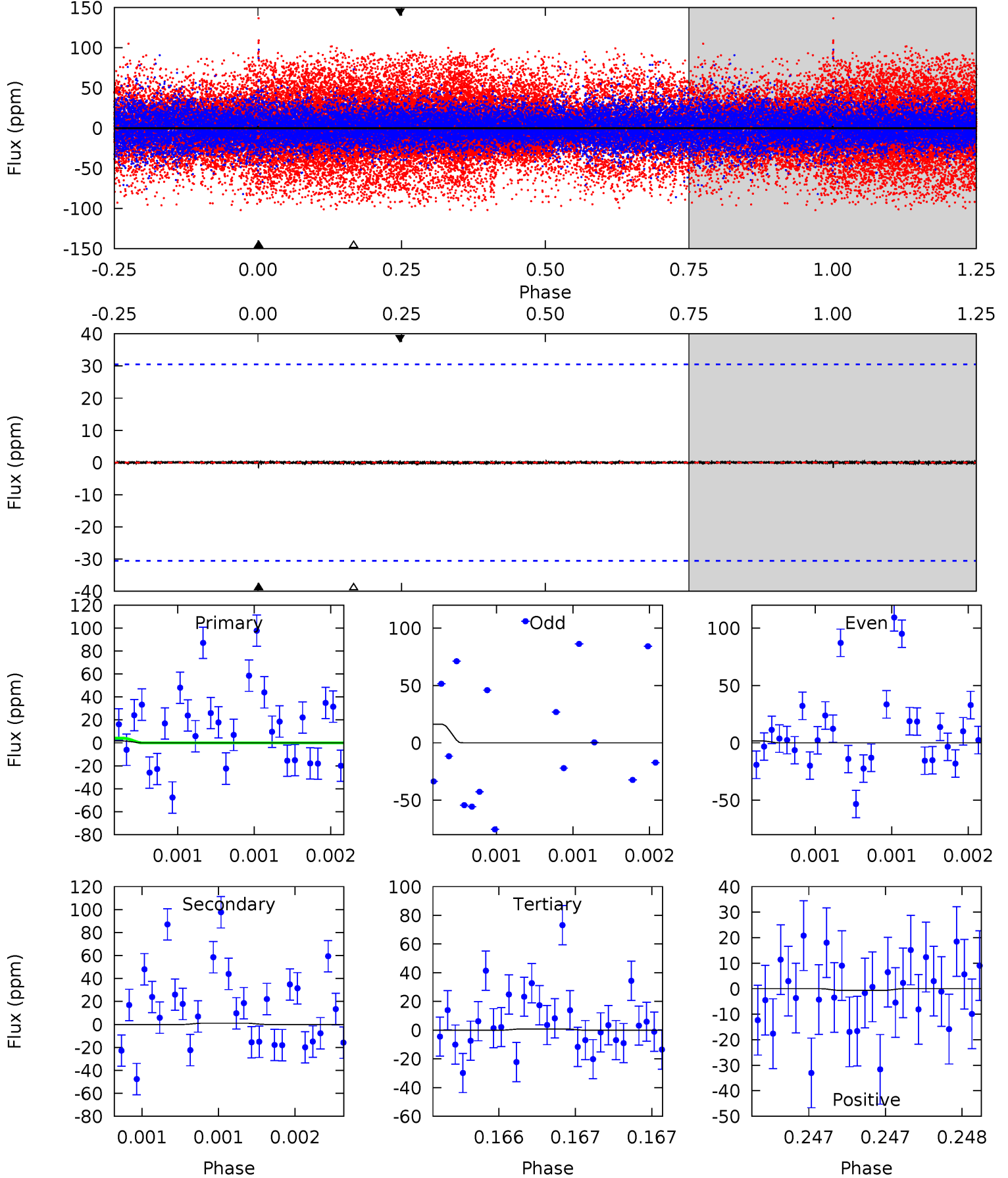
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.39	44.4	30.1	28.2	5.32	3.08	3.93	-26.7	-24.8	14.3	16.2	0.95	0.67	0.39	0.52



# Alt Model-Shift Uniqueness Test

010685353-01, P = 190.270393 Days, E = 152.084111 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
0.29	0.19	0.15	0.12	5.54	3.42	0.03	0.14	0.17	0.04	0.07	1.11	2.34	0.29	0.26



### Stellar Parameters For KIC 010685353

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5780^{+1}_{-1}$	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

### Secondary Eclipse Parameters for KIC 010685353-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-807 \pm 18$	$0.94^{+0.39}_{-0.34}$	$444^{+20}_{-23}$	$12222^{+6801}_{-2716}$	$211055^{+303907}_{-104016}$
Alt.	$-1 \pm 6$	$0.31^{+0.30}_{-0.19}$	$443^{+20}_{-20}$	$3658^{+2931}_{-8712}$	$1860^{+30335}_{-12471}$

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

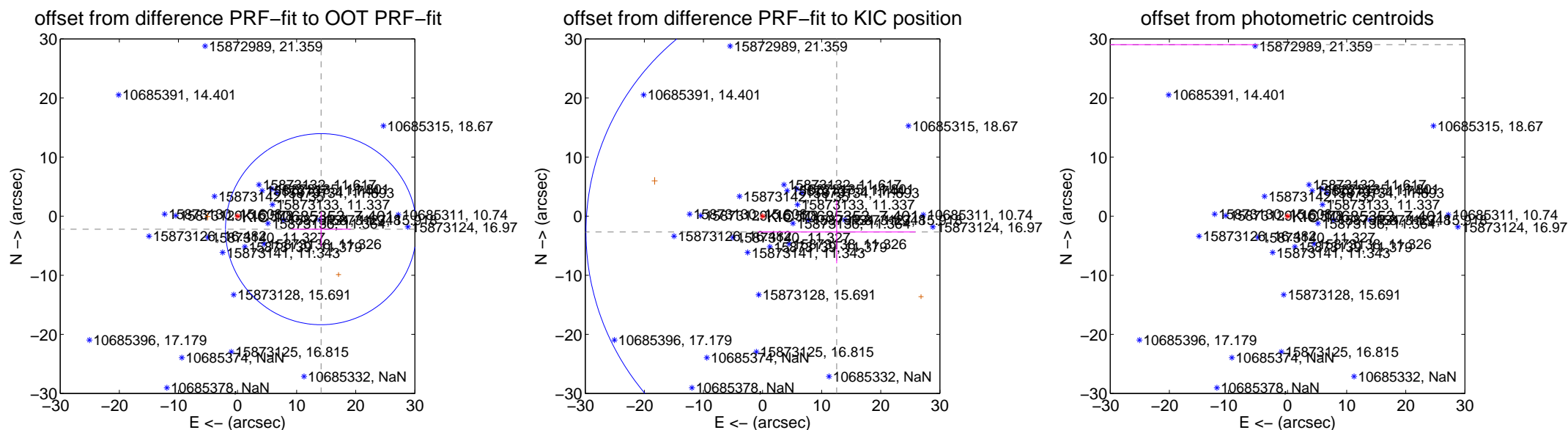
## DV Centroid Data

Supplemental centroid analysis for 010685353-01. **Kepler magnitude: 7.40.** Transit SNR 4.96

There are 0 quarters with good PRF difference image offsets

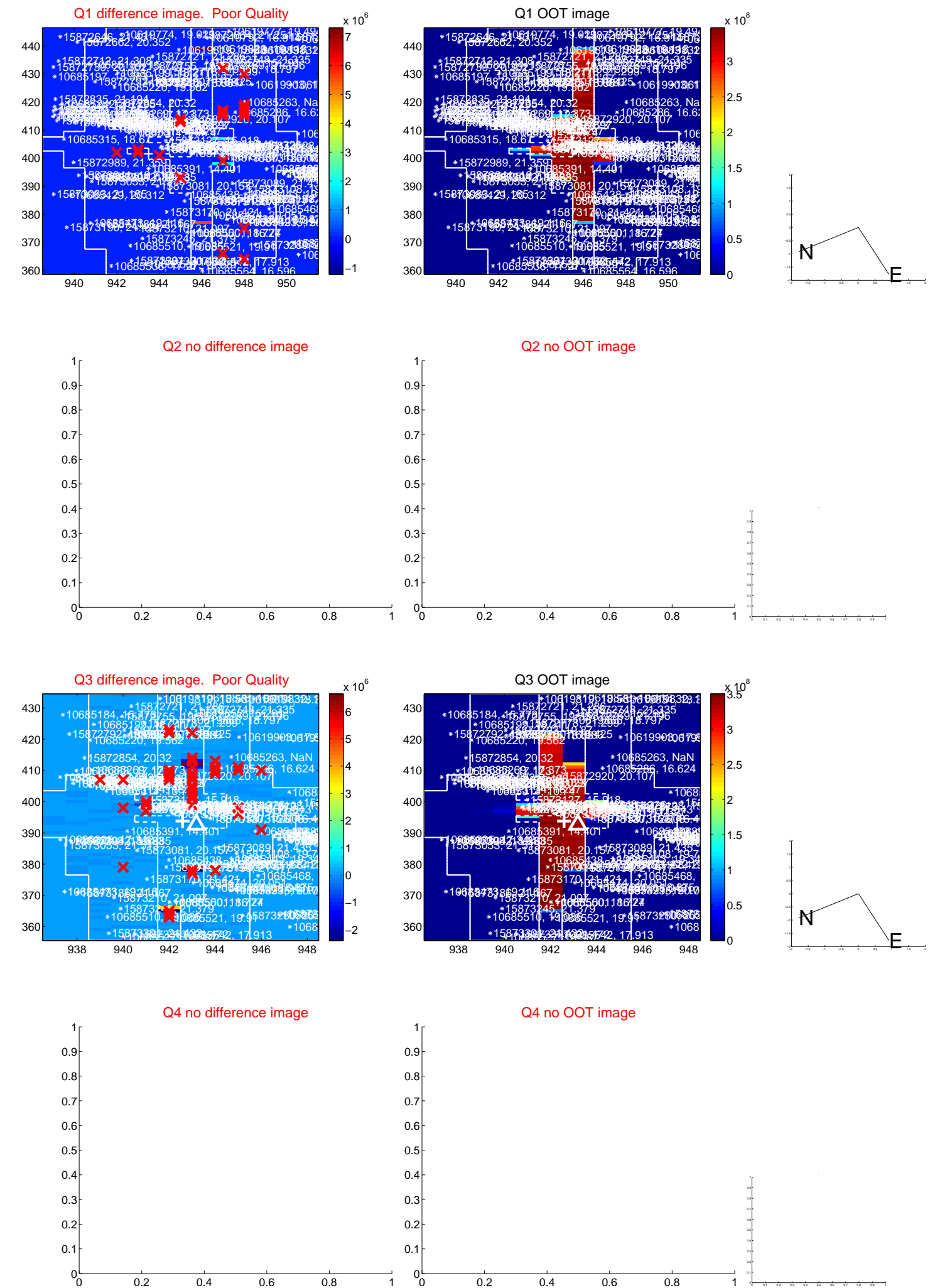
The direct PRF centroid is offset from the target star catalog position by about 1.65 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$14.299 \pm 5.389$	2.65	$-14.129 \pm 5.046$	$-2.202 \pm 2.935$
PRF-fit source offset from KIC position	$12.828 \pm 14.138$	0.91	$-12.546 \pm 13.333$	$-2.674 \pm 5.301$
photometric centroid source offset	$87.38 \pm 74.30$	1.18	$82.42 \pm 77.35$	$29.03 \pm 42.30$

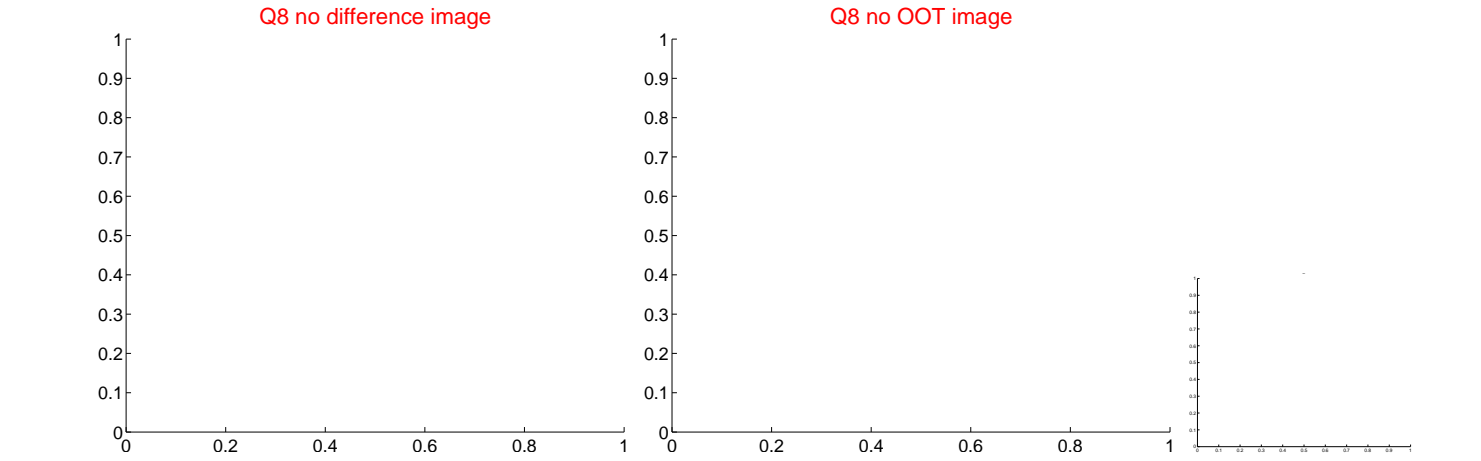
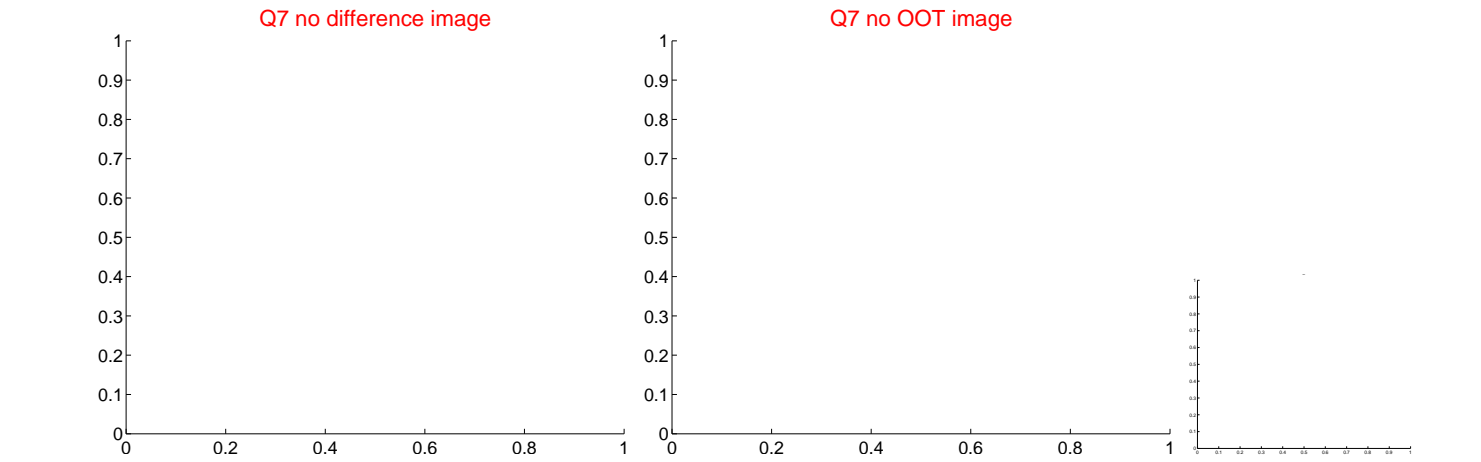
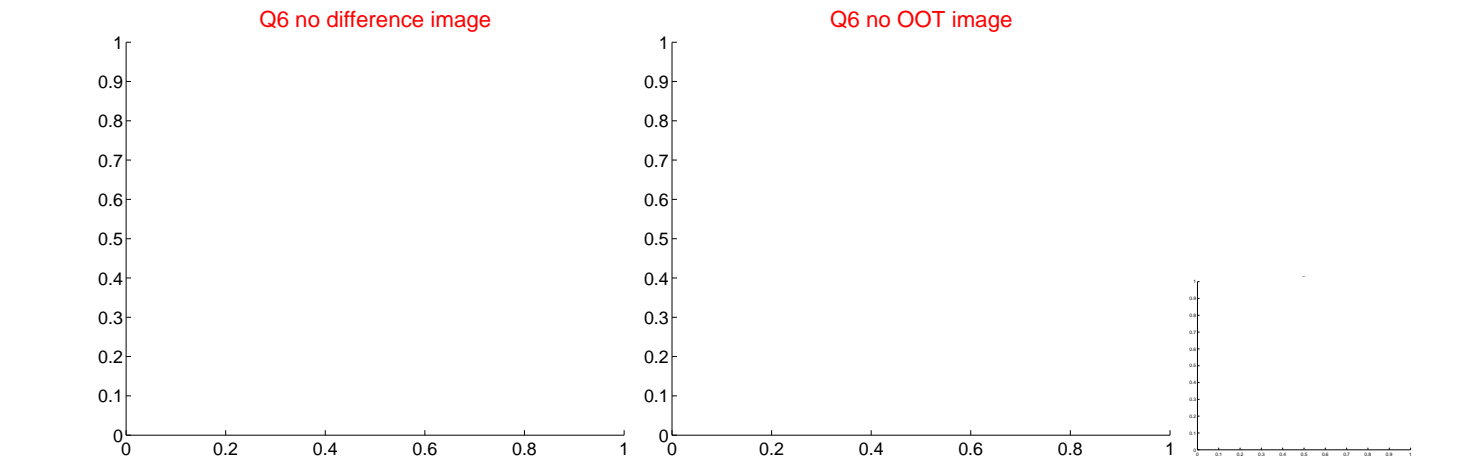
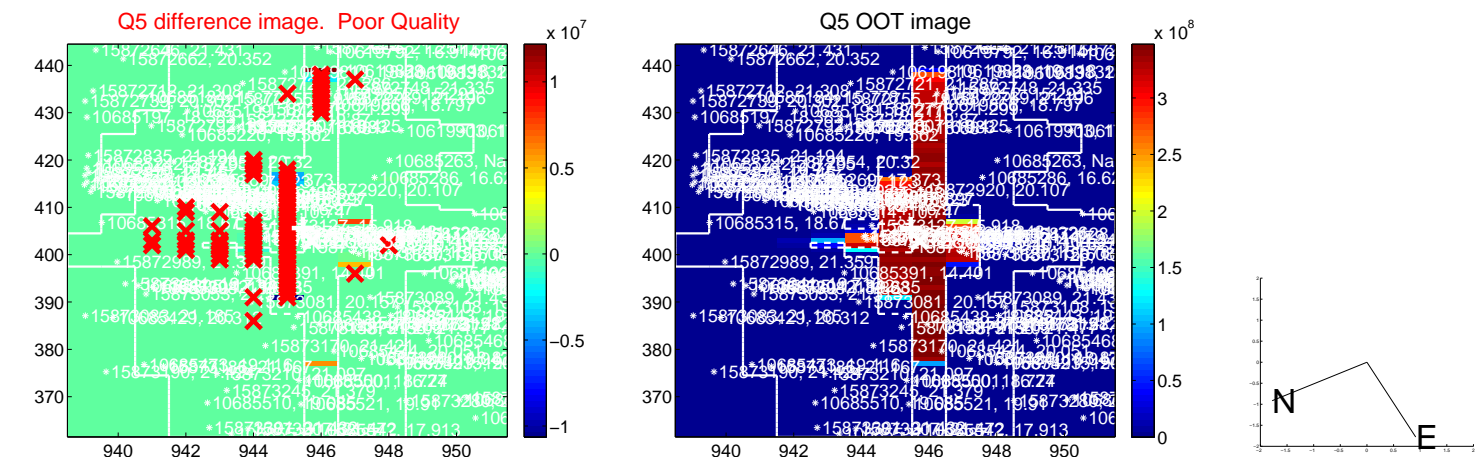


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



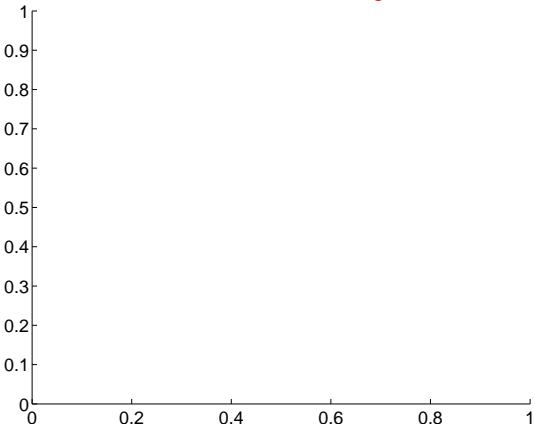
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



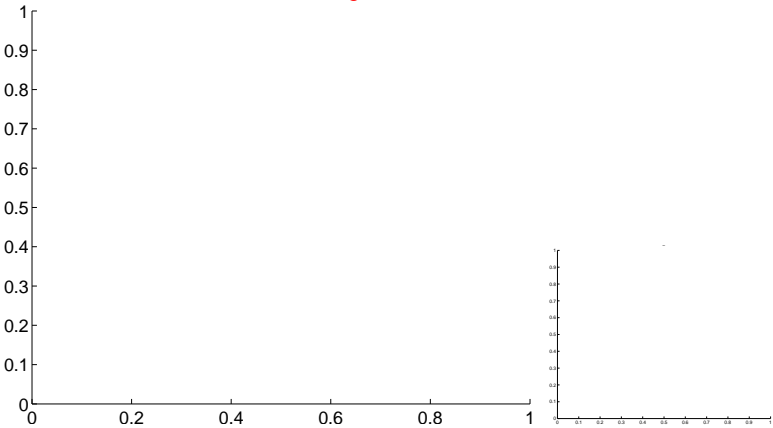


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

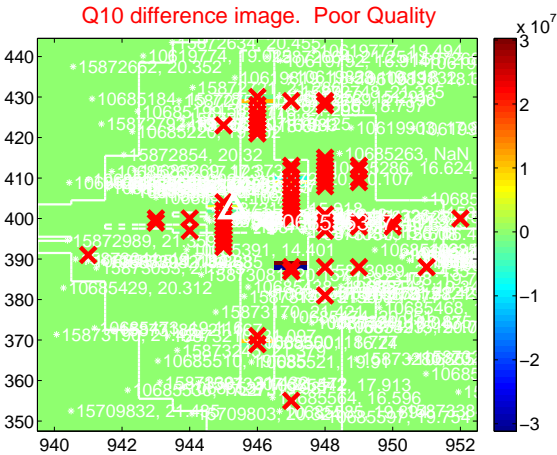
Q9 no difference image



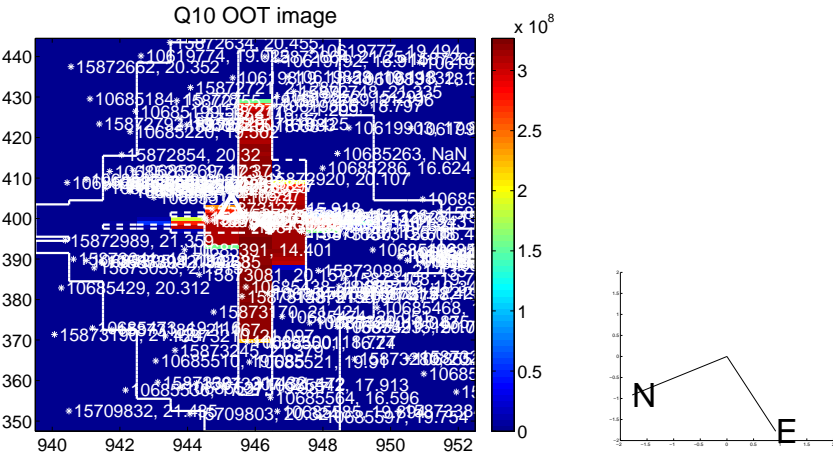
Q9 no OOT image



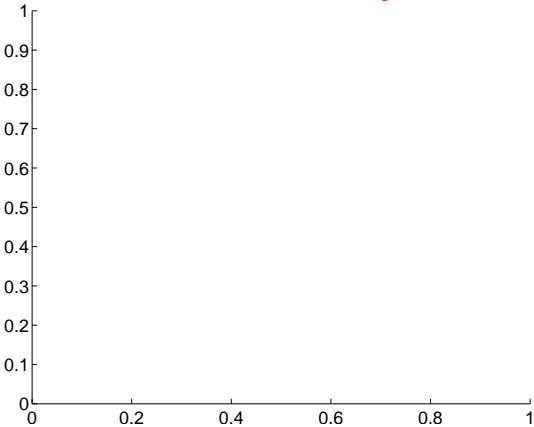
Q10 difference image. Poor Quality



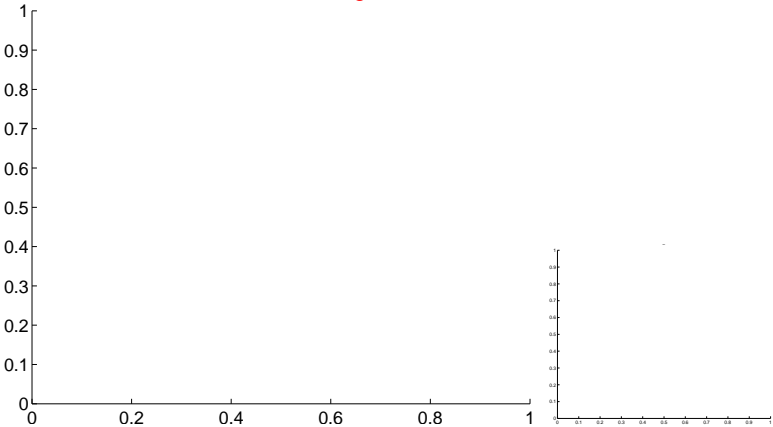
Q10 OOT image



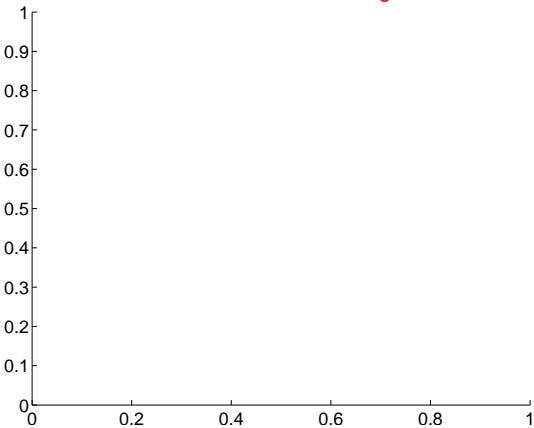
Q11 no difference image



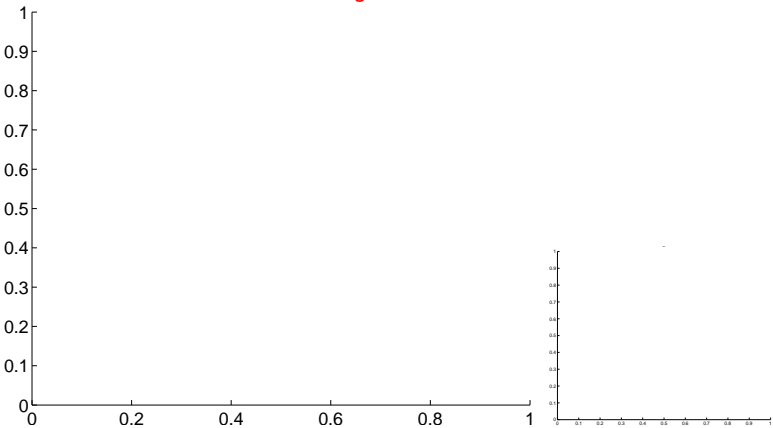
Q11 no OOT image



Q12 no difference image



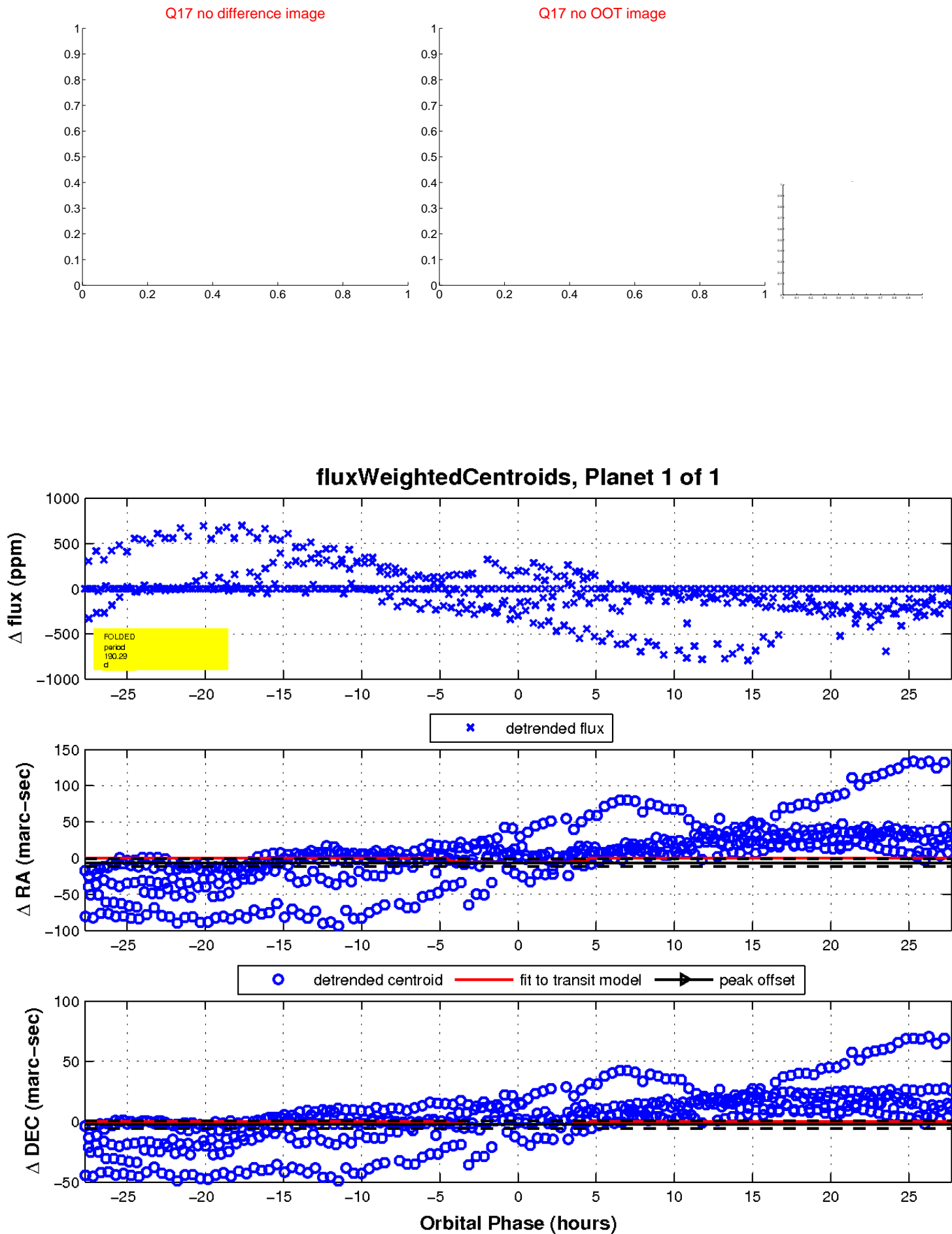
Q12 no OOT image



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

