

# KIC 007969481

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007969481-01	OBS	No	313.113773	394.851590	123.9	3.966	11.8	6.6	107.15	3892	121.01	1213.35

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007969481-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

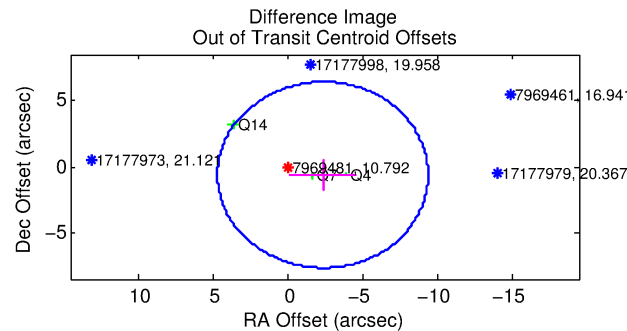
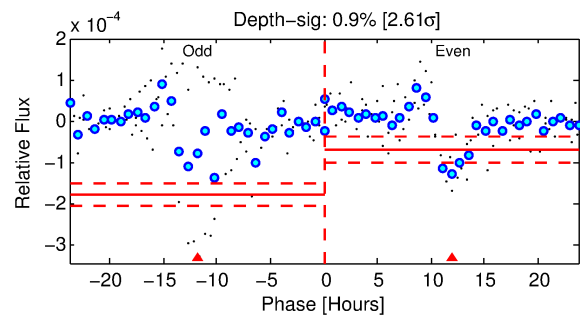
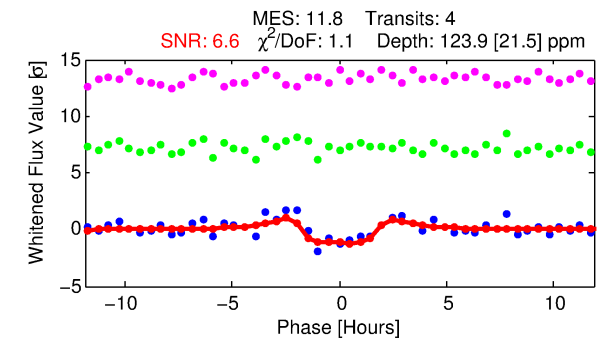
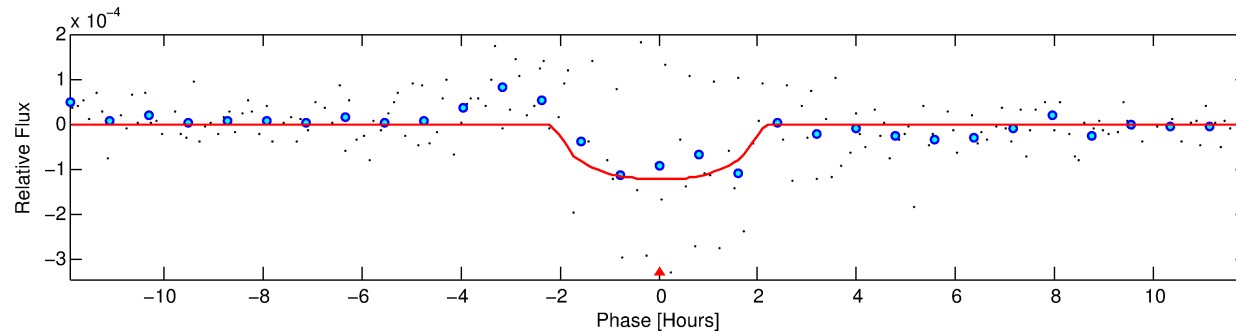
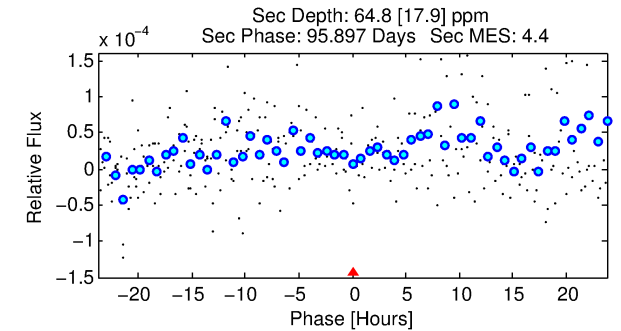
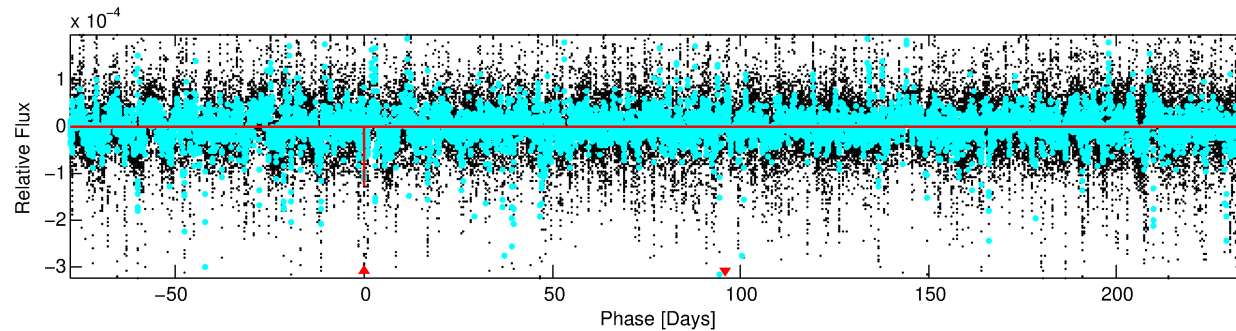
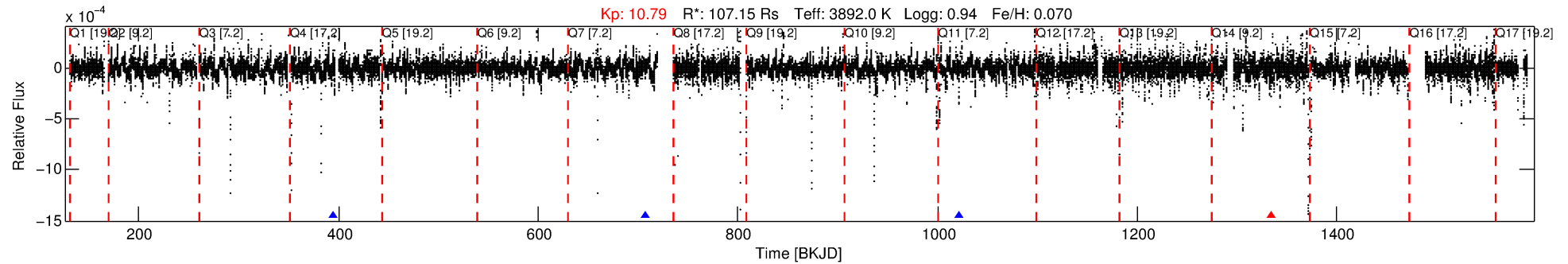
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007969481-01

No Significant Match Found

# DV One-Page Summary

KIC: 7969481 Candidate: 1 of 1 Period: 313.114 d



## DV Fit Results:

Period = 313.11377 [0.00425] d  
Epoch = 394.8516 [0.0076] BKJD  
Rp/R\* = 0.0103 [0.0078]  
a/R\* = 497.82 [931.84]  
b = 0.58 [2.20]  
Seff = 1213.35 [413.25]  
Teq = 1505 [128] K  
Rp = 121.01 [106.13] Re  
a = 1.3948 [0.4123] AU  
Ag = 4.74 [7.44] [0.50σ]  
Teffp = 3433 [1329] K [1.44σ]

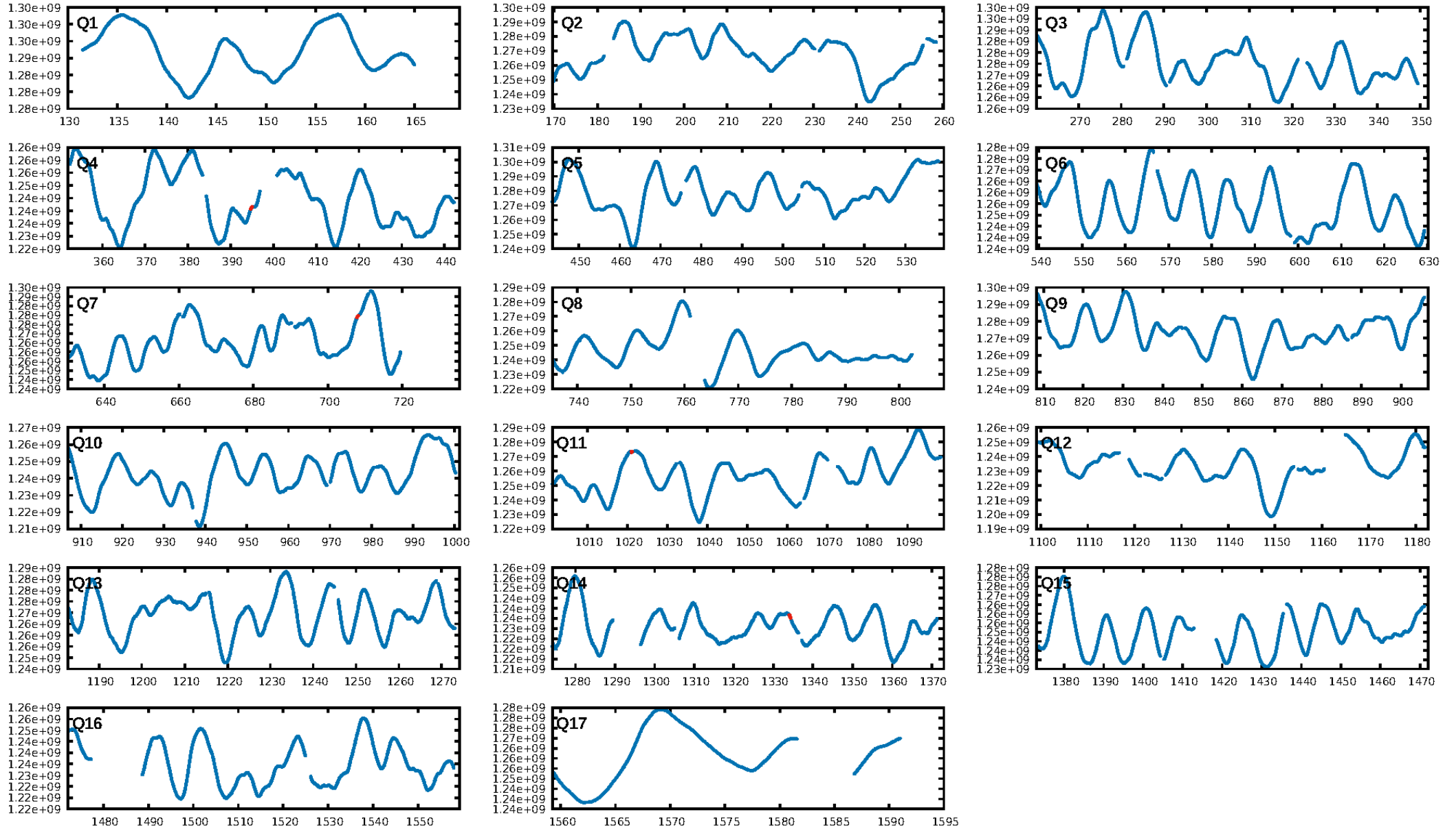
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 67.6%  
Bootstrap-pfa: 1.78e-05  
RollingBand-fgt: 0.75 [3/4]  
GhostDiagnostic-chr: -3.299  
Centroid-sig: 68.7%  
Centroid-so: 1.287 arcsec [0.49σ]  
OotOffset-rm: 2.464 arcsec [1.05σ]  
KicOffset-rm: 2.566 arcsec [1.04σ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [3/3]

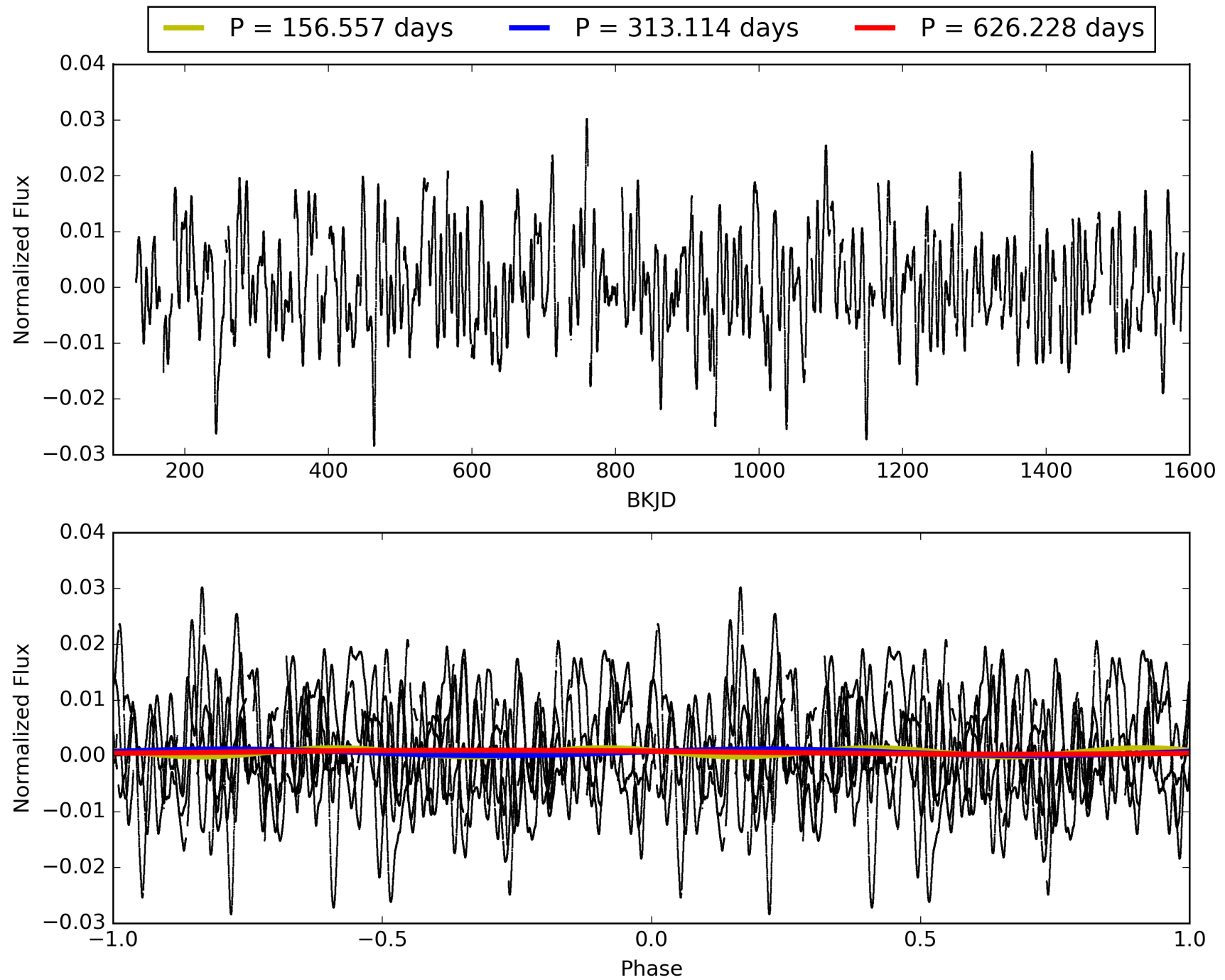
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:14:14 Z

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

# TCE 007969481-01, PDC Light Curves

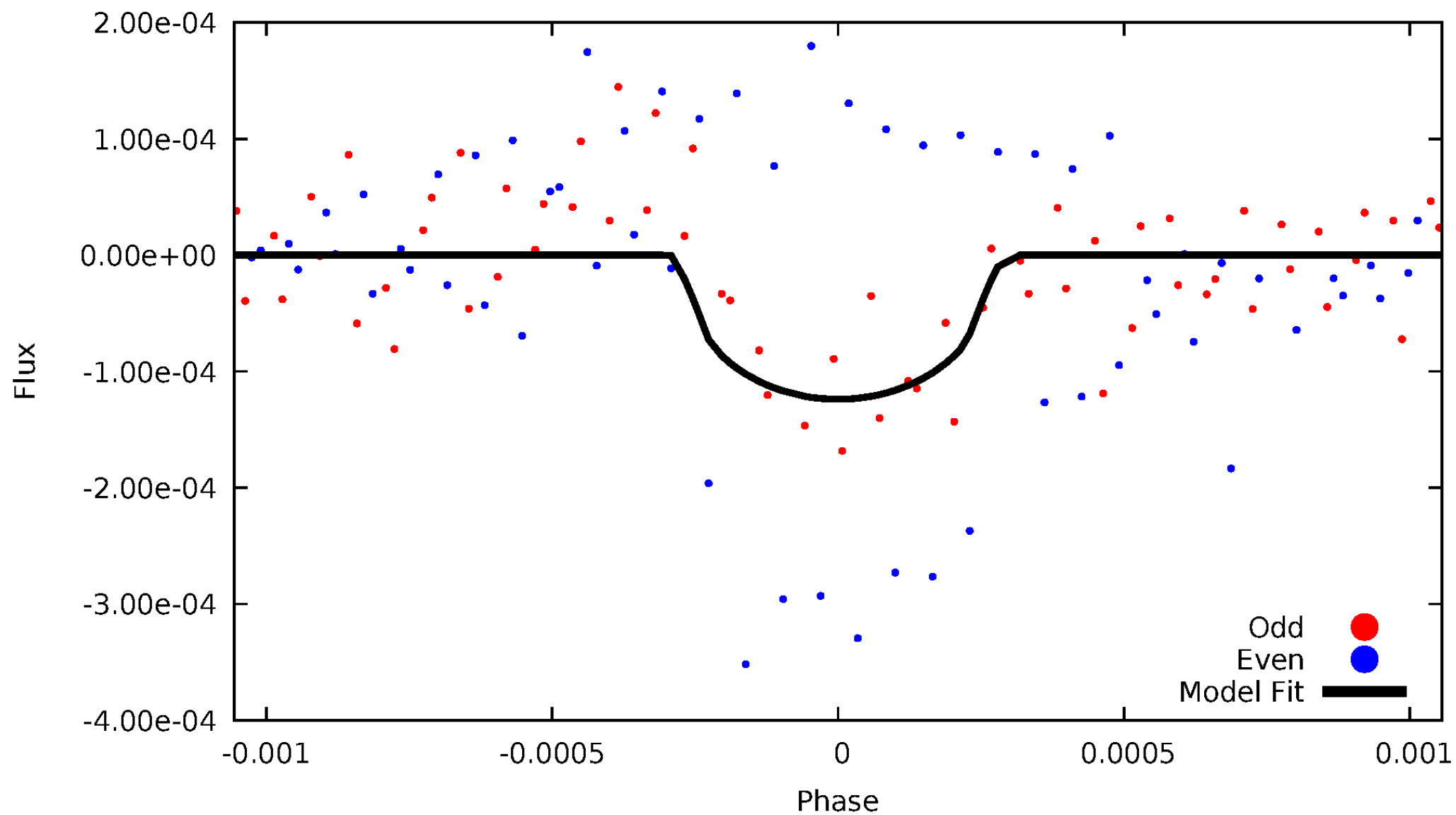


TCE 007969481-01



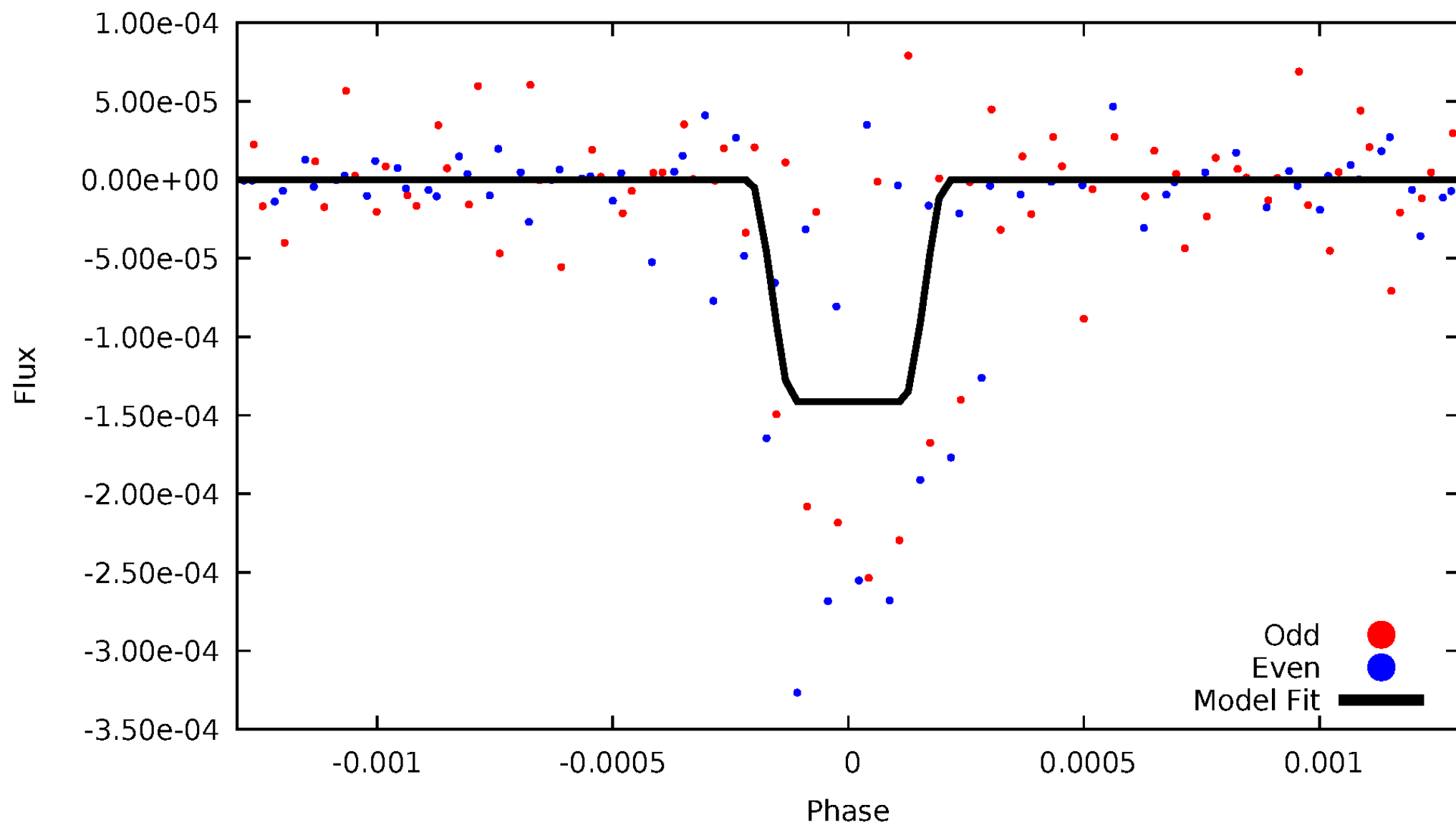
# DV Odd/Even

TCE 007969481-01

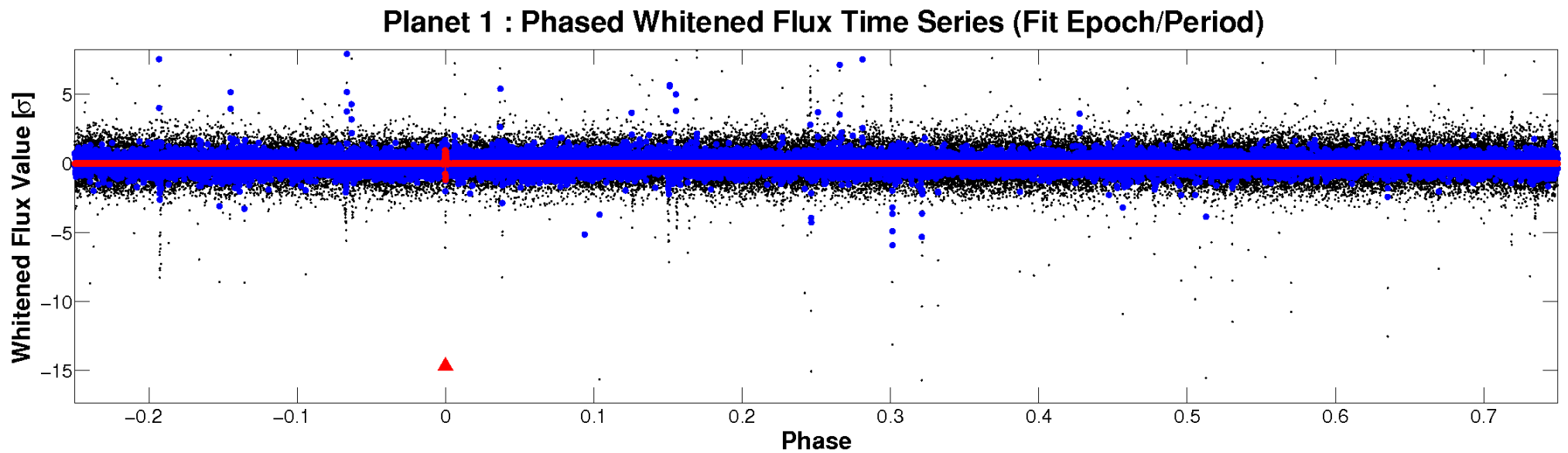
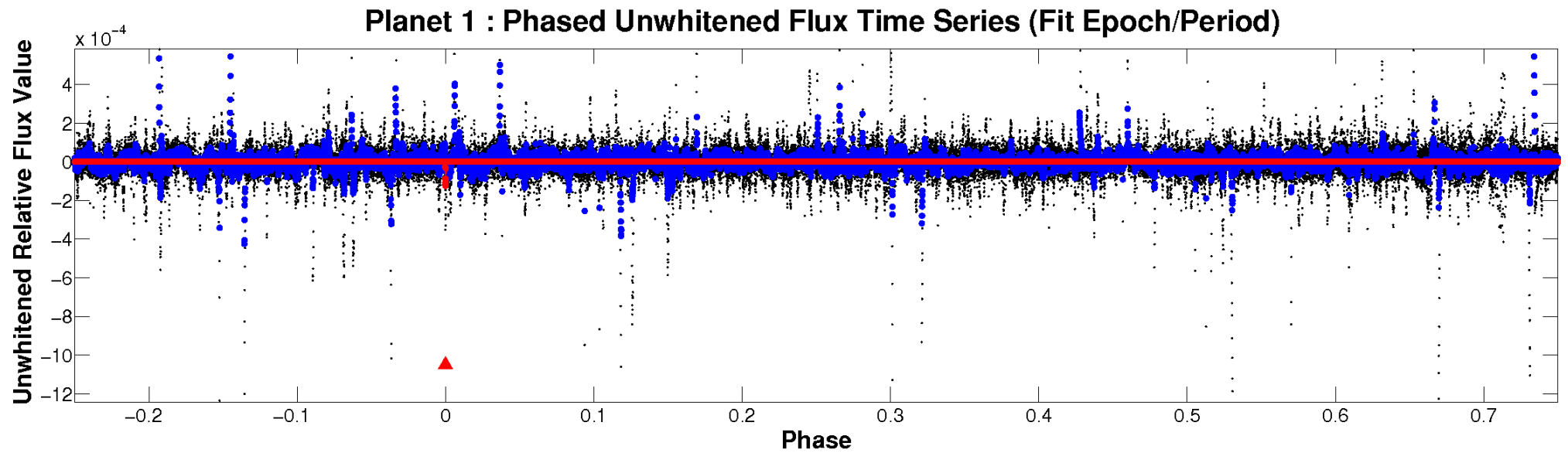


# ALT Odd/Even

TCE 007969481-01

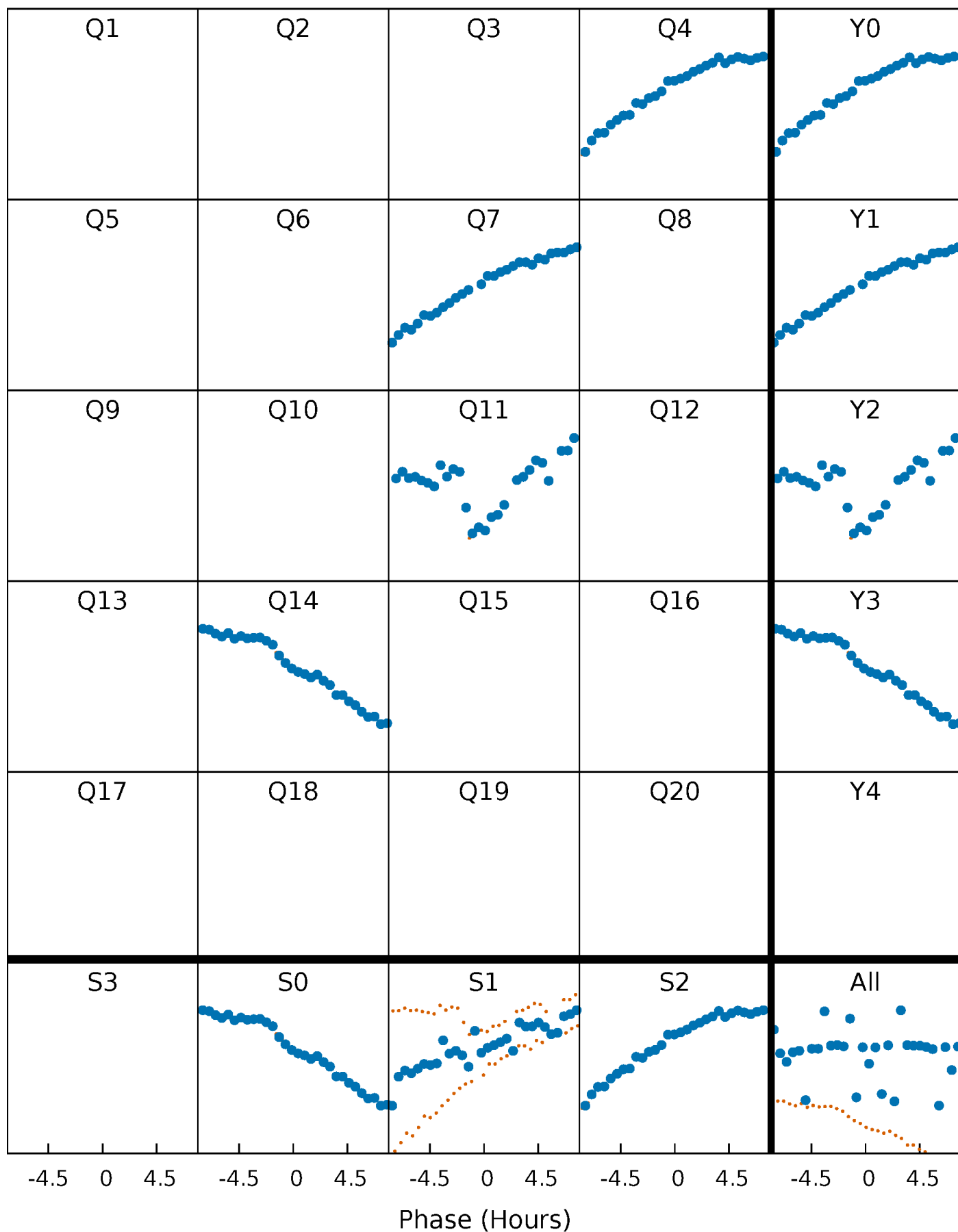


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

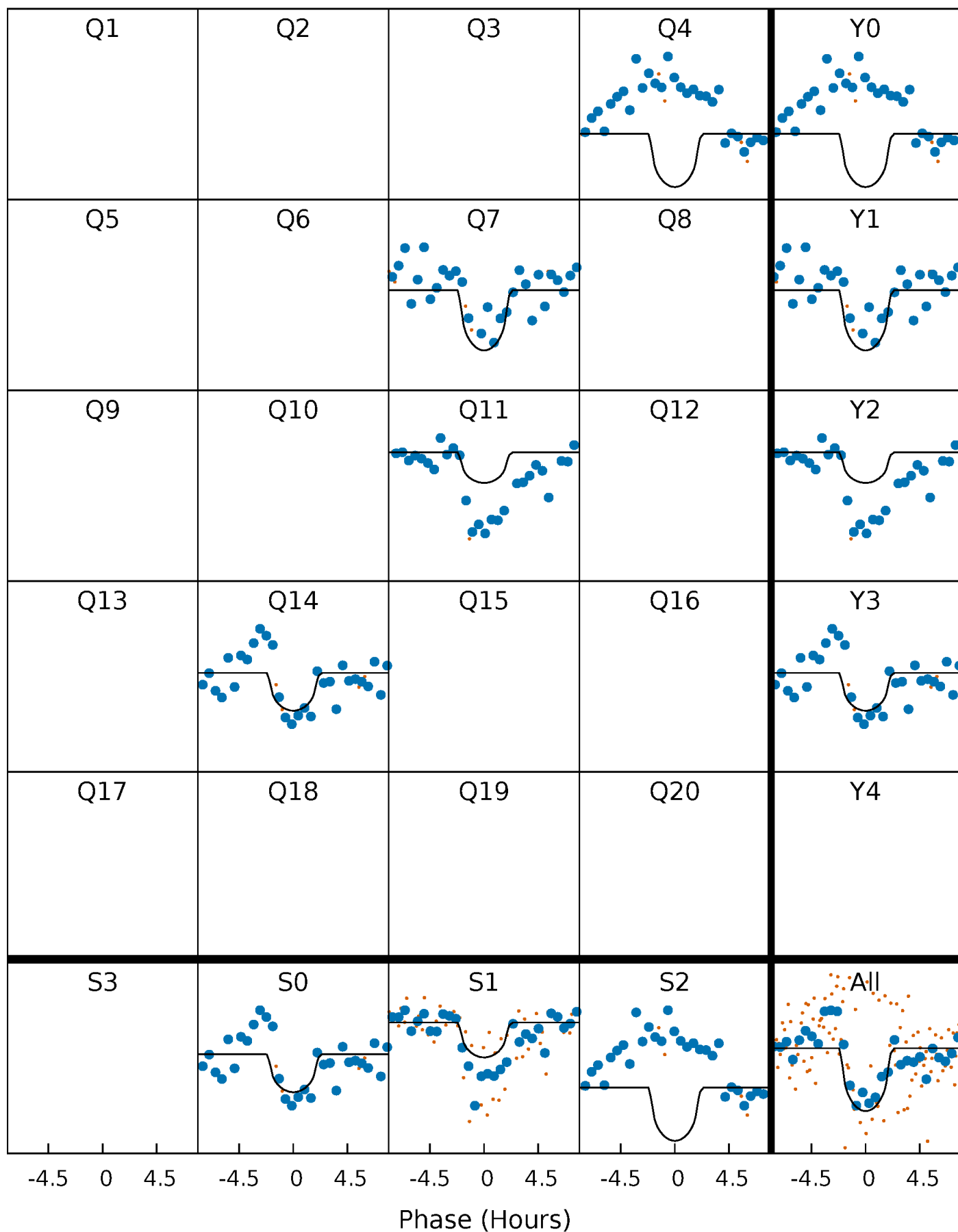
TCE 007969481-01 P=313.113773 Days  $T_0=394.851589$  (BKJD)





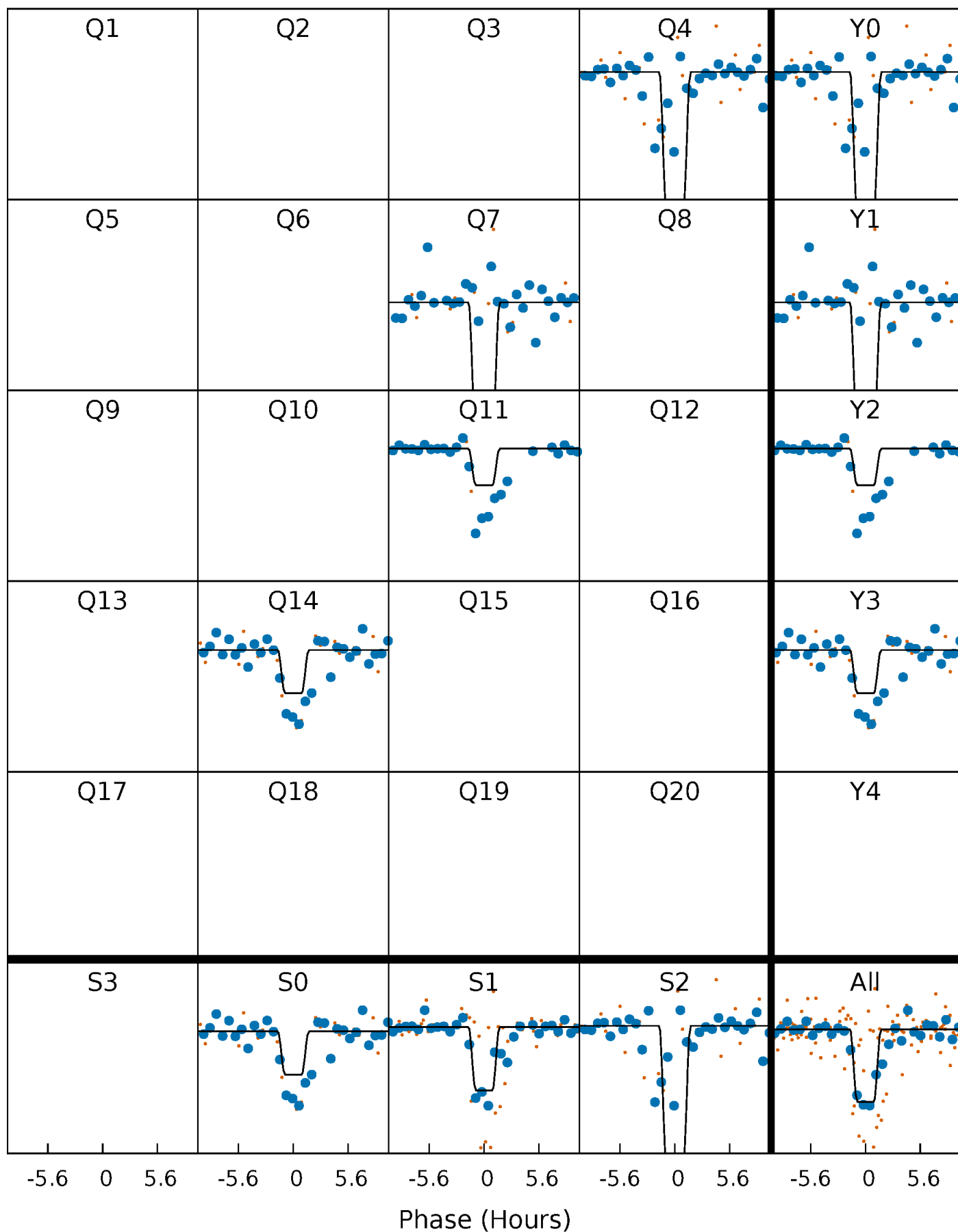
# DV Quarter-Phased Transit Curves

TCE 007969481-01 P=313.113773 Days  $T_0=394.851589$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

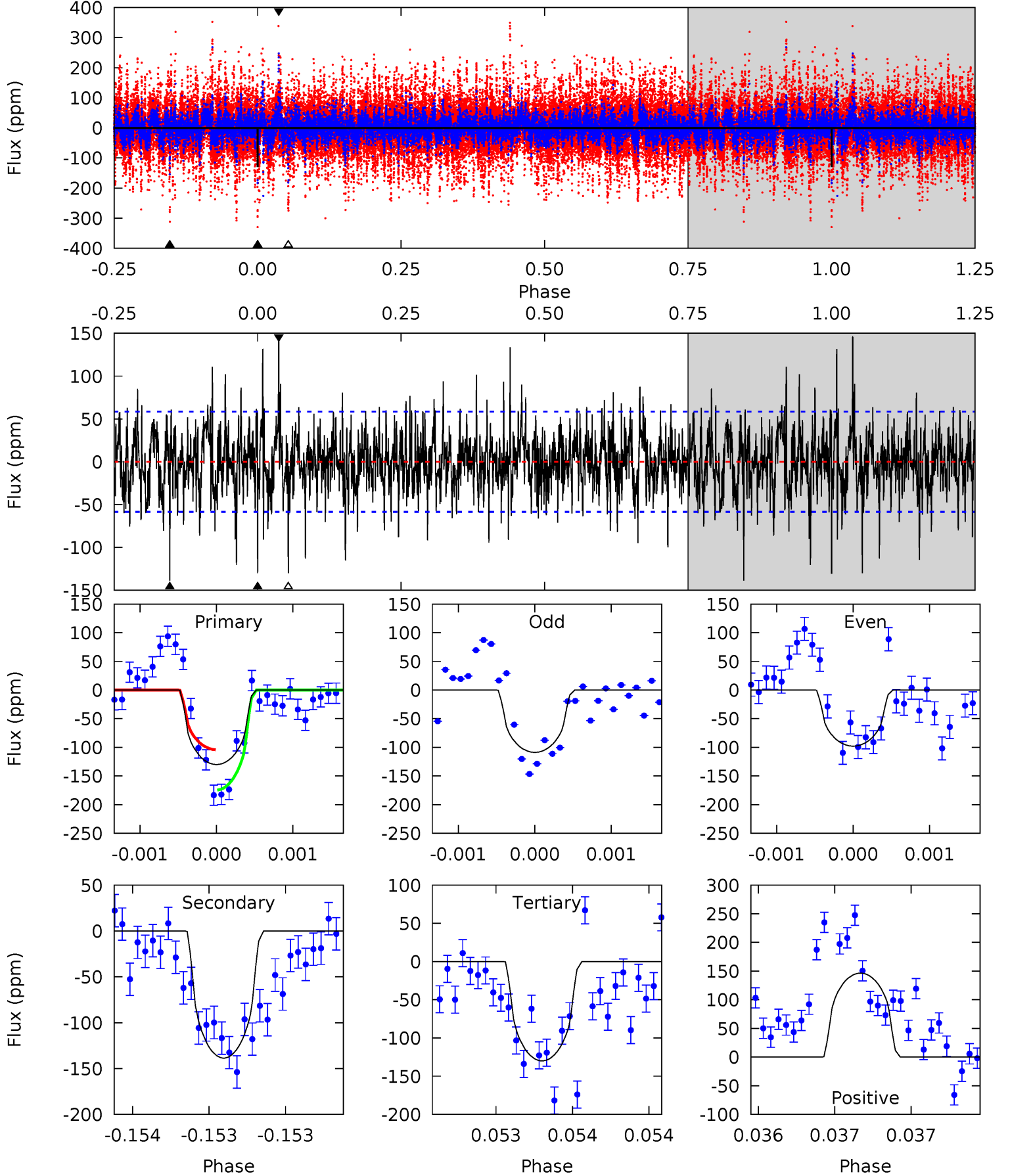
TCE 007969481-01 P=313.119068 Days  $T_0=394.824472$  (BKJD)



# DV Model-Shift Uniqueness Test

007969481-01, P = 313.113773 Days, E = 81.737816 Days

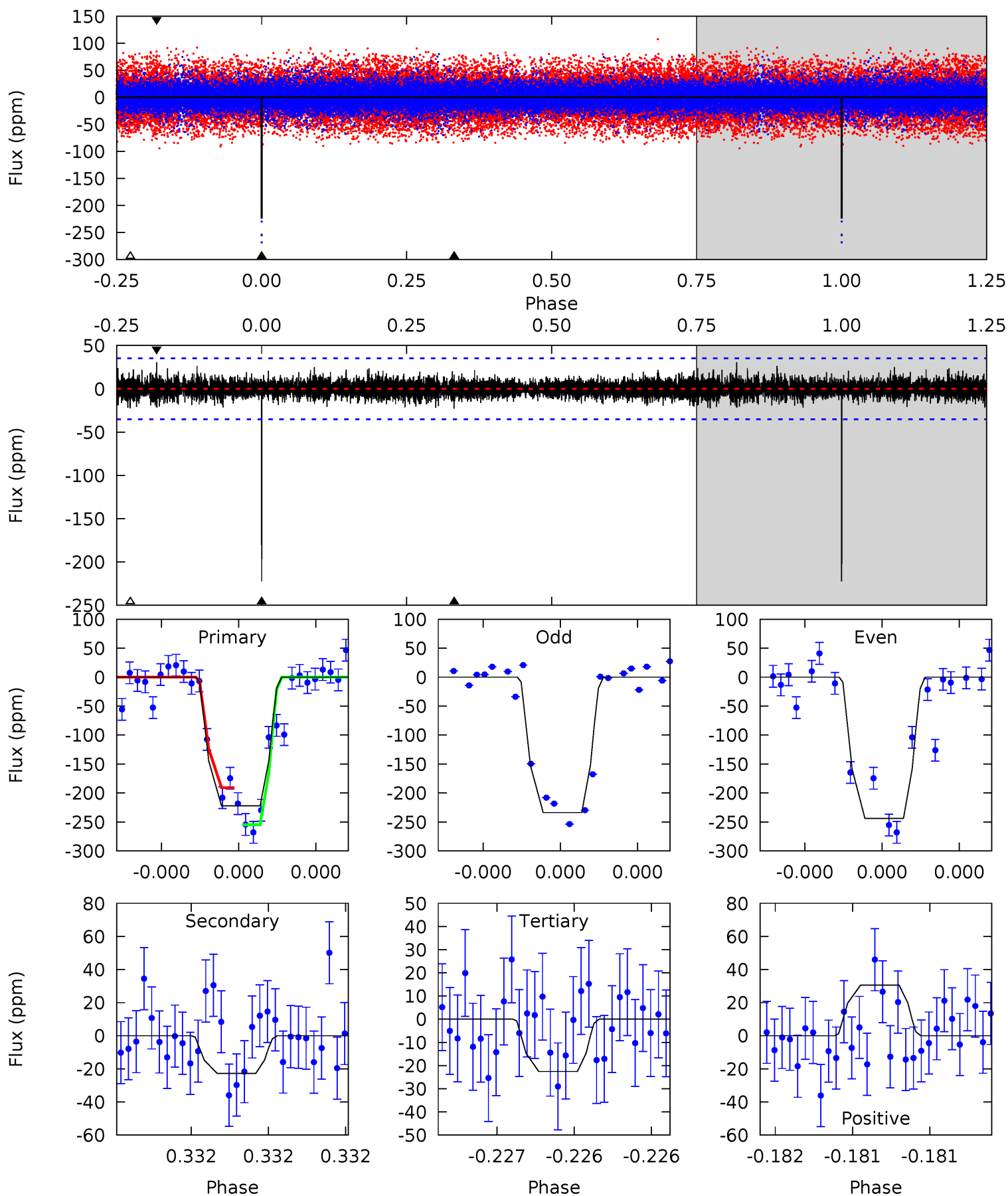
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	13.1	12.3	13.9	5.54	3.43	2.65	0.00	-1.56	0.82	-0.74	0.48	0.96	0.51	3.29



# Alt Model-Shift Uniqueness Test

007969481-01,  $P = 313.119068$  Days,  $E = 81.705404$  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
35.5	3.63	3.60	4.87	5.62	3.55	0.87	31.9	30.6	0.03	-1.24	0.83	1.01	0.12	5.16



### Stellar Parameters For KIC 007969481

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3892^{+56}_{-159}$	$0.945^{+0.033}_{-0.027}$	$0.070^{+0.150}_{-0.350}$	$107.153^{+2.491}_{-47.334}$	$3.685^{+0.074}_{-2.512}$	$0.000^{+0.000}_{-0.000}$
	+1%/-4%	+3%/-3%	+214%/-500%	+2%/-44%	+2%/-68%	+78%/-7%
Source	PHO54	AST54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 007969481-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-139 \pm 11$	$134.17^{+81.78}_{-73.76}$	$2101^{+42}_{-93}$	$3859^{+1425}_{-607}$	$8.108^{+30.085}_{-4.958}$
Alt.	$-23 \pm 6$	$148.60^{+95.07}_{-79.71}$	$2098^{+42}_{-92}$	$2700^{+835}_{-632}$	$1.050^{+3.904}_{-0.673}$

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

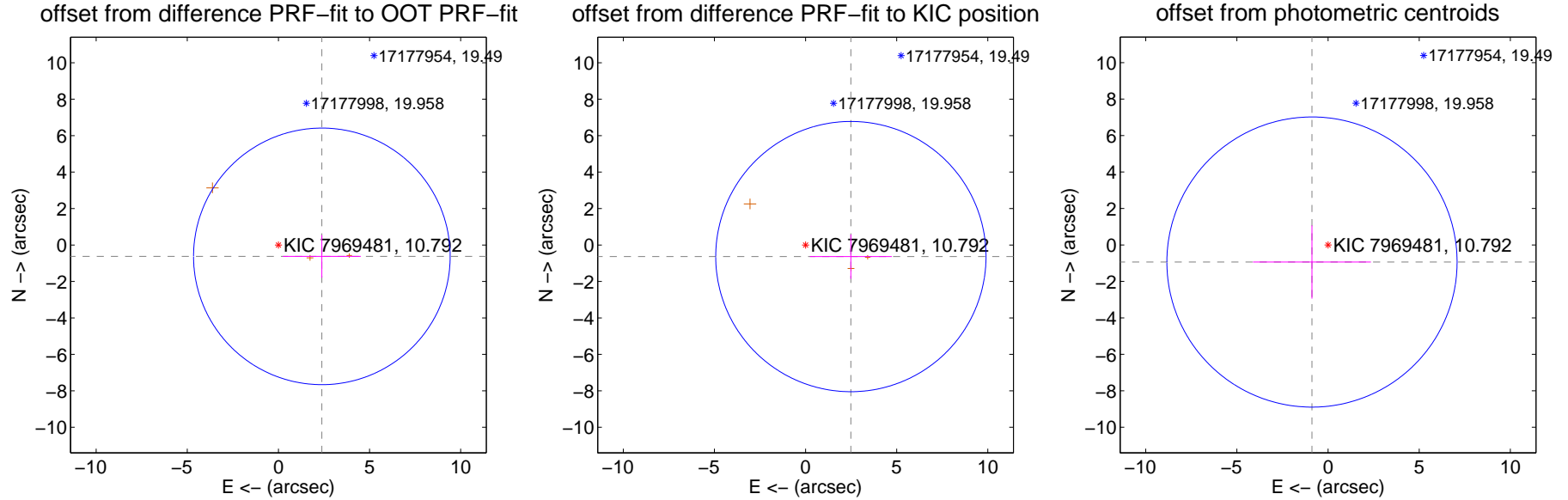
## DV Centroid Data

Supplemental centroid analysis for 007969481-01. **Kepler magnitude: 10.79.** Transit SNR 6.57

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

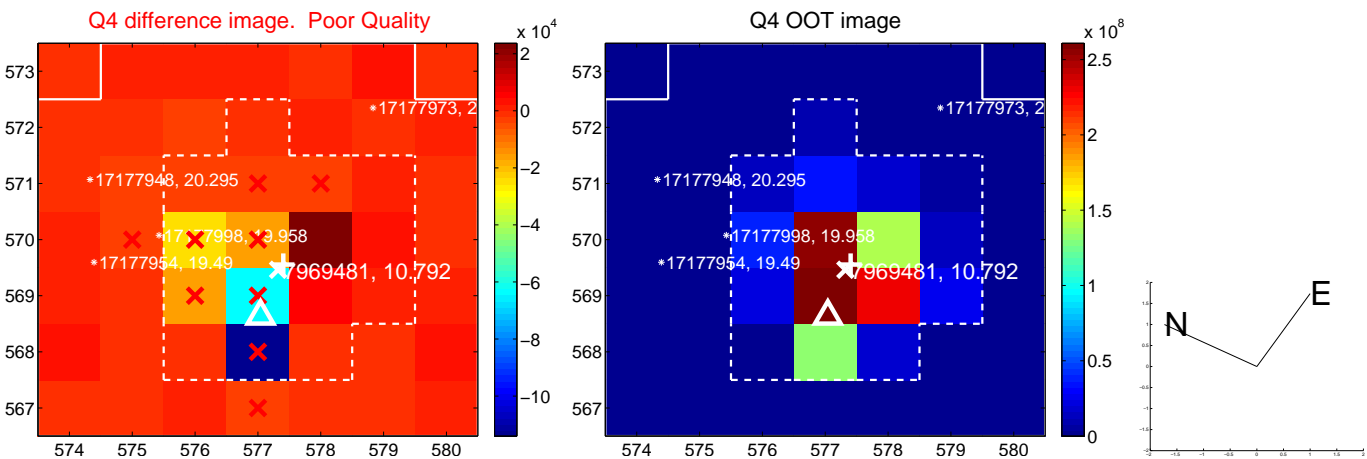
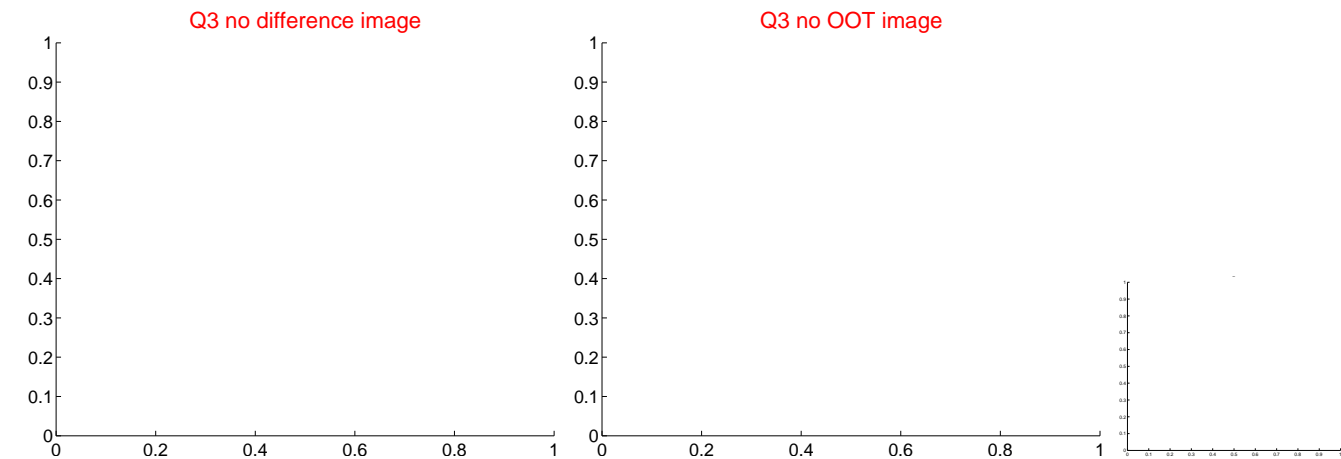
The direct PRF centroid is offset from the target star catalog position by about 1.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.464 \pm 2.346$	1.05	$-2.384 \pm 2.138$	$-0.624 \pm 1.168$
PRF-fit source offset from KIC position	$2.566 \pm 2.471$	1.04	$-2.486 \pm 2.246$	$-0.635 \pm 1.216$
photometric centroid source offset	$1.29 \pm 2.65$	0.49	$0.88 \pm 3.23$	$-0.94 \pm 2.01$

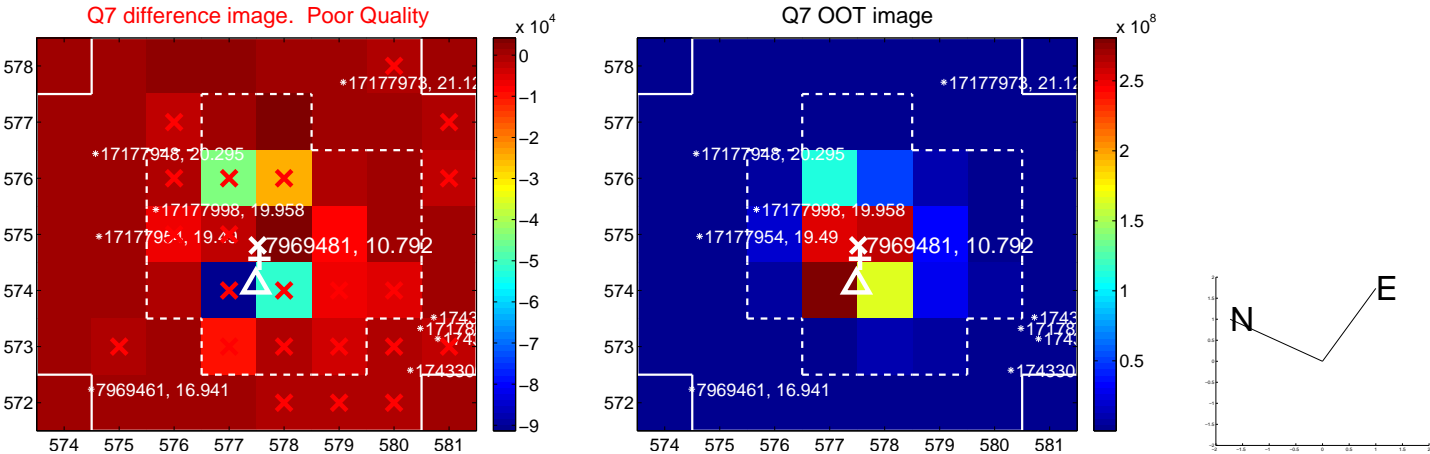


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

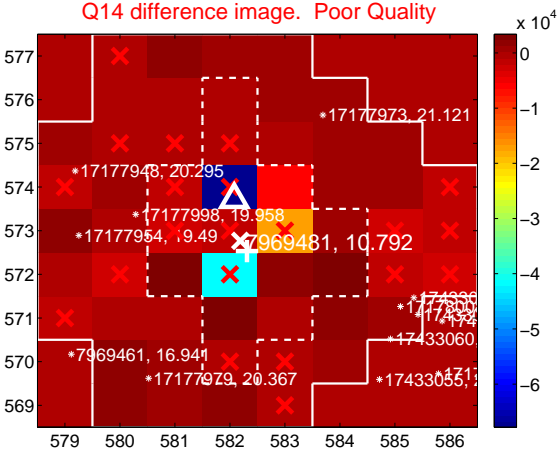
Q13 no difference image



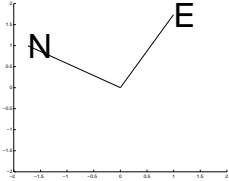
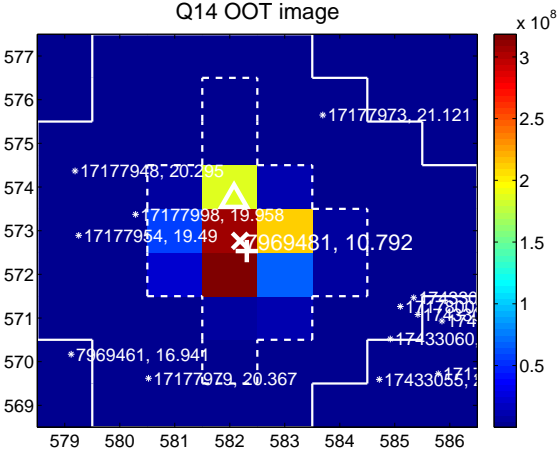
Q13 no OOT image



Q14 difference image. Poor Quality



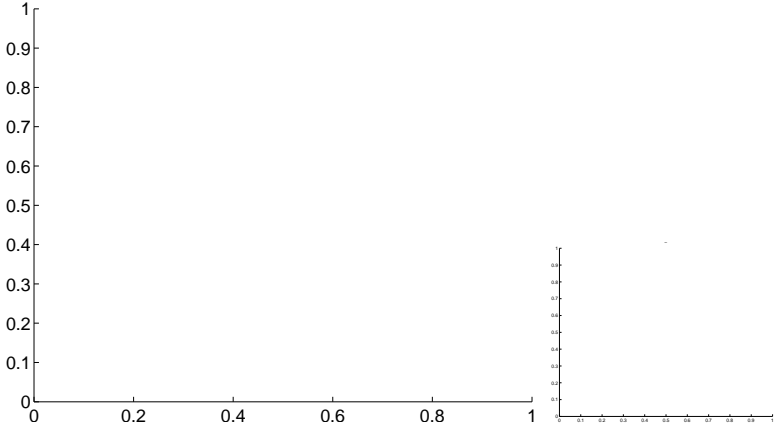
Q14 OOT image



Q15 no difference image



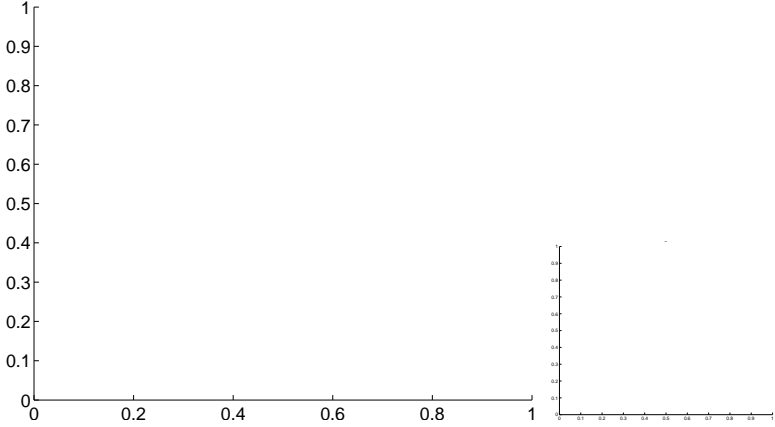
Q15 no OOT image



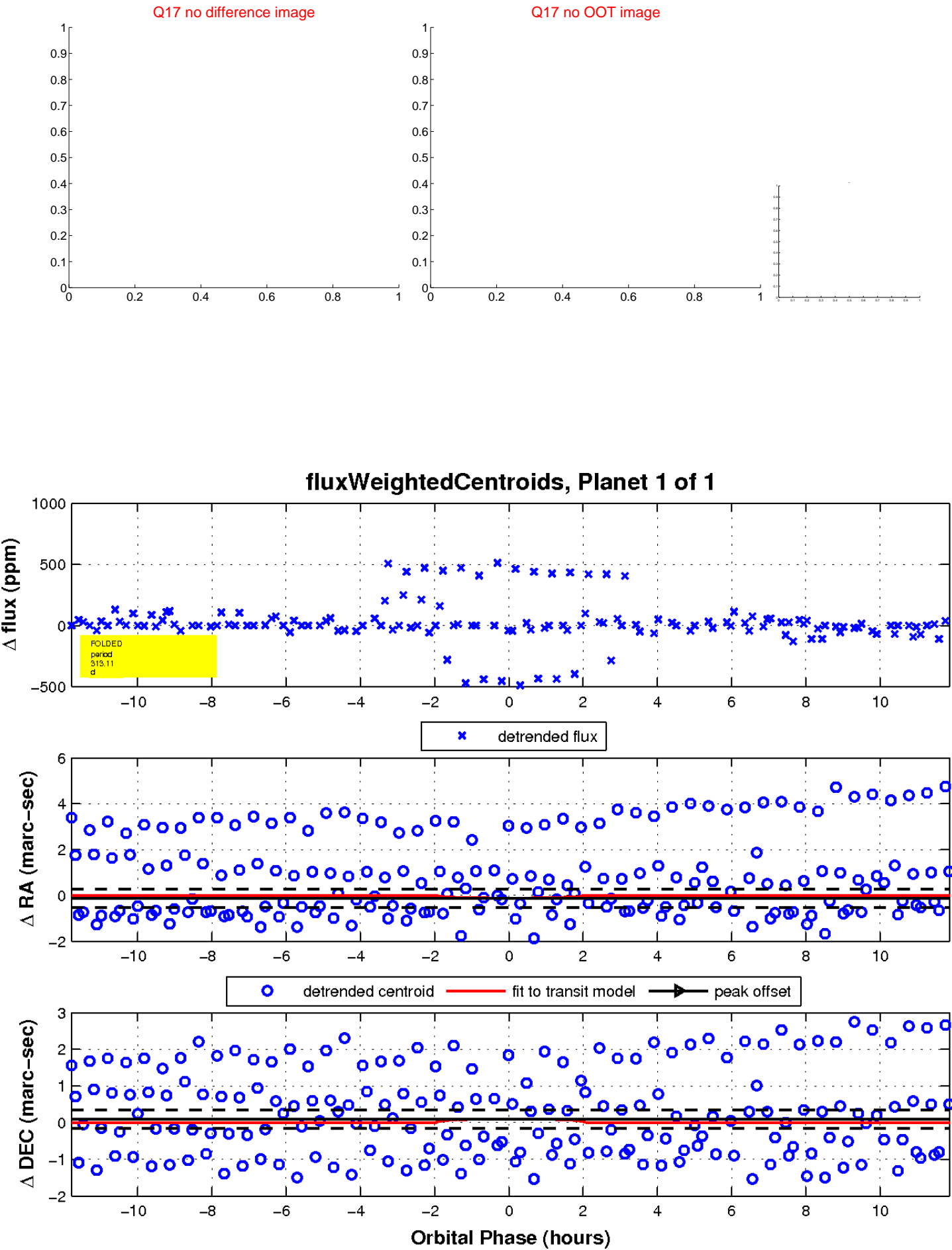
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

