

# KIC 008694381

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008694381-01	OBS	No	170.160677	221.796516	18.3	1.104	11.6	2.1	1.00	5780	0.51	2.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008694381-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—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.

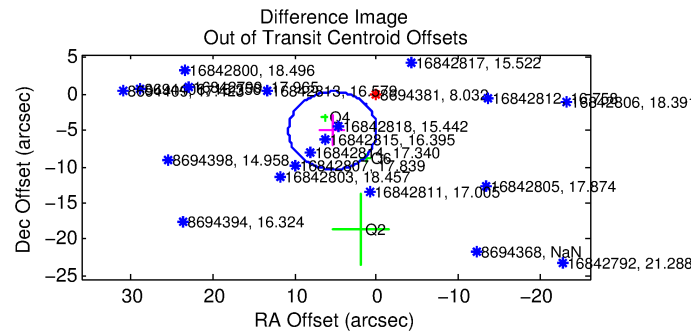
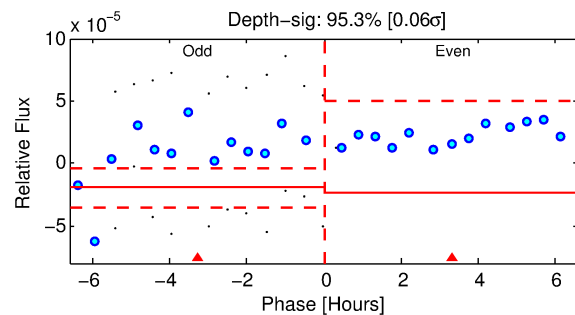
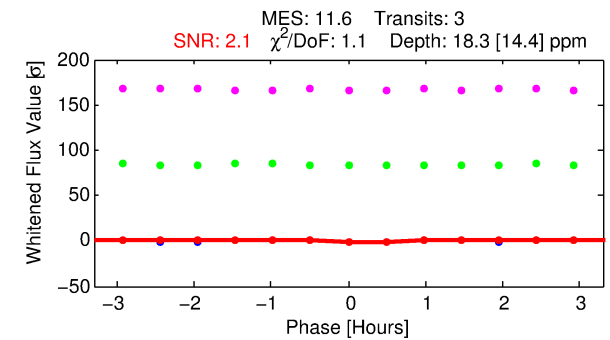
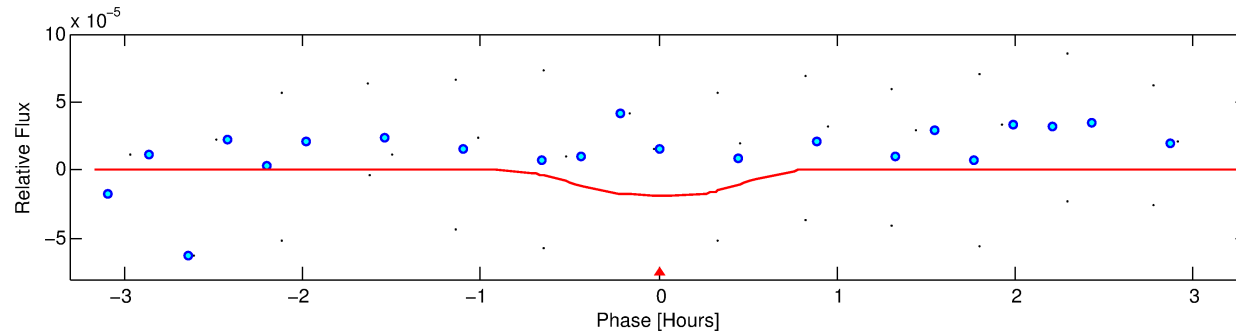
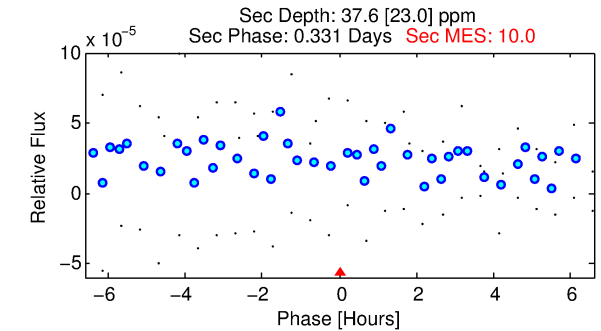
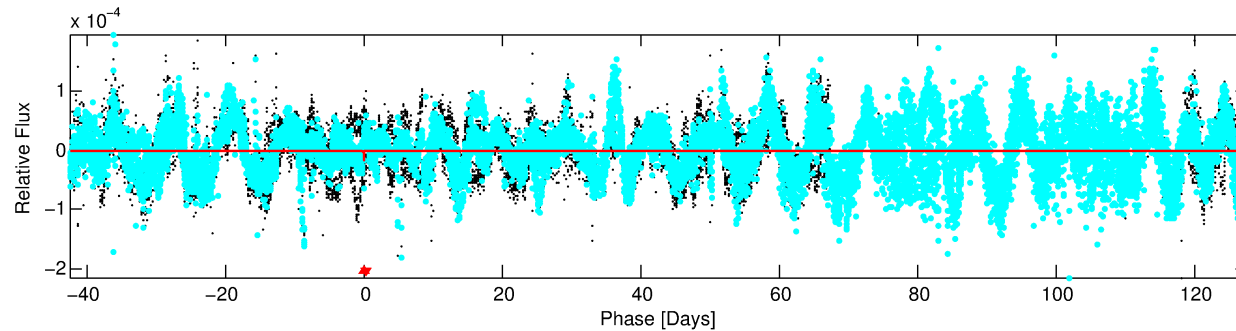
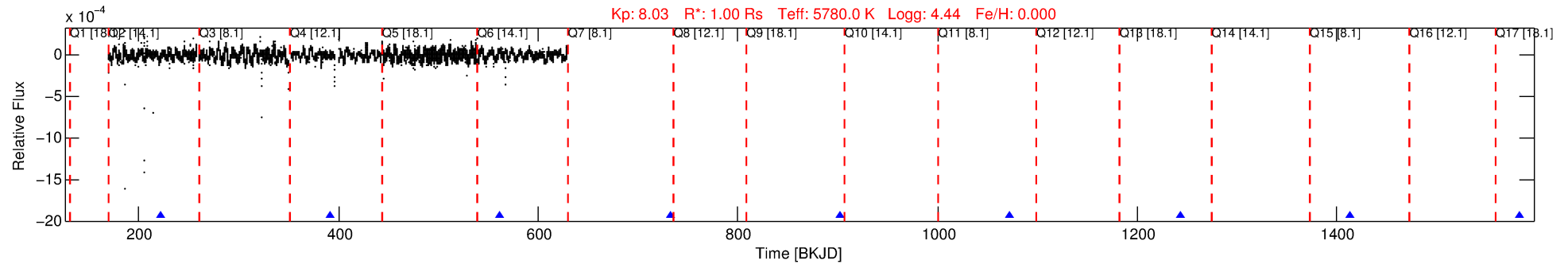
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008694381-01

No Significant Match Found

# DV One-Page Summary

KIC: 8694381 Candidate: 1 of 1 Period: 170.161 d



## DV Fit Results:

Period = 170.16068 [0.02082] d  
Epoch = 221.7965 [0.0183] BKJD  
Rp/R\* = 0.0047 [0.0214]  
a/R\* = 519.68 [10002.04]  
b = 0.90 [4.43]  
Seff = 2.77 [0.00]  
Teq = 329 [0] K  
Rp = 0.51 [2.33] Re  
a = 0.6011 [0.0000] AU  
Ag = 28388.21 [258667.57] [0.11 $\sigma$ ]  
Teffp = 6601 [15036] K [0.42 $\sigma$ ]

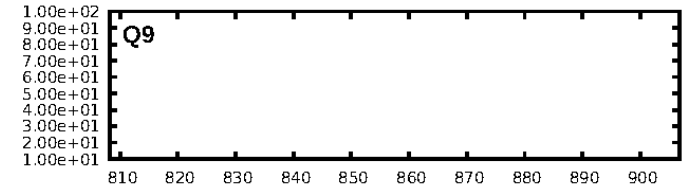
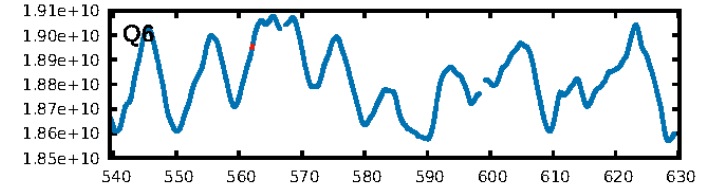
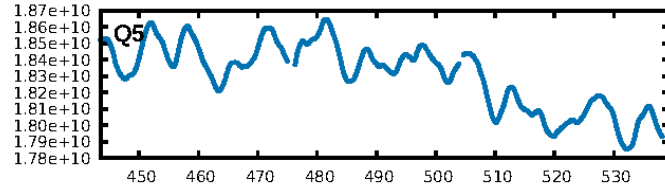
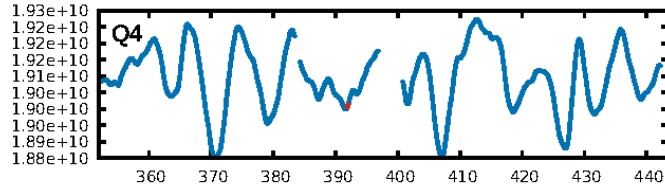
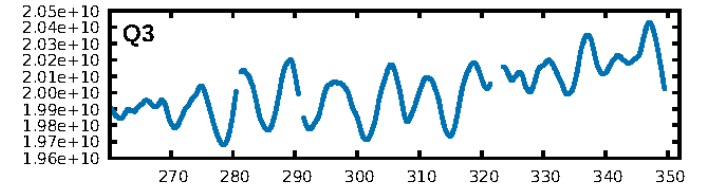
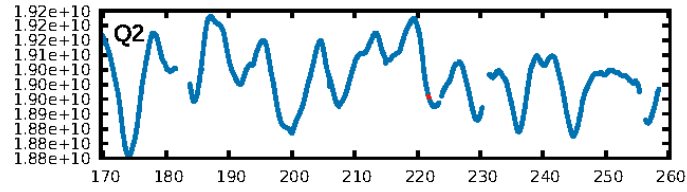
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 92.5%  
ModelChiSquareGof-sig: 98.9%  
Bootstrap-pfa: 1.45e-06  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 22.4%  
Centroid-so: 54.404 arcsec [1.05 $\sigma$ ]  
OotOffset-rm: 7.345 arcsec [4.11 $\sigma$ ]  
KicOffset-rm: 7.216 arcsec [3.25 $\sigma$ ]  
OotOffset-st: 2/0/1/0 [3]  
KicOffset-st: 2/0/1/0 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [3/3]

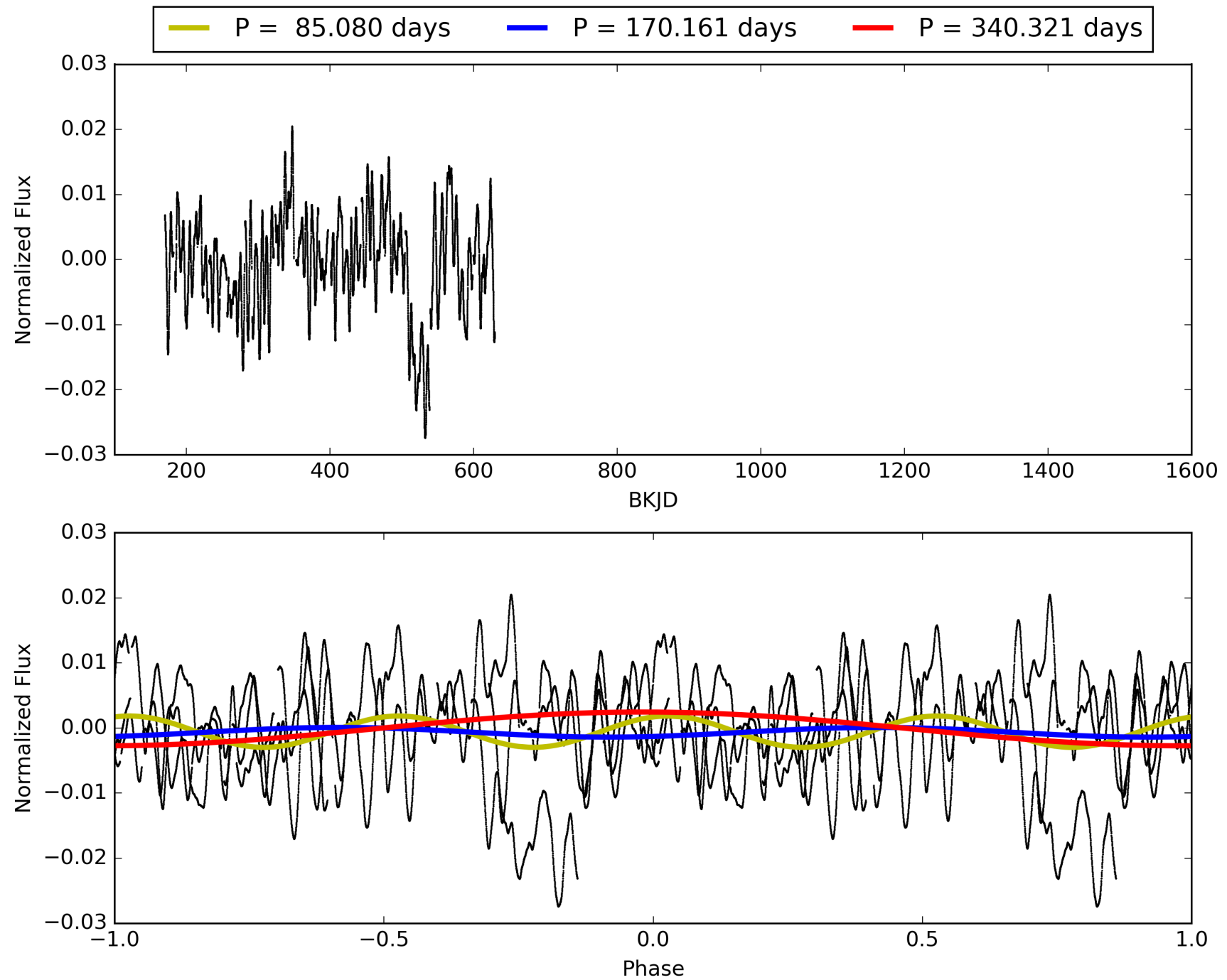
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:12:29 Z

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

# TCE 008694381-01, PDC Light Curves

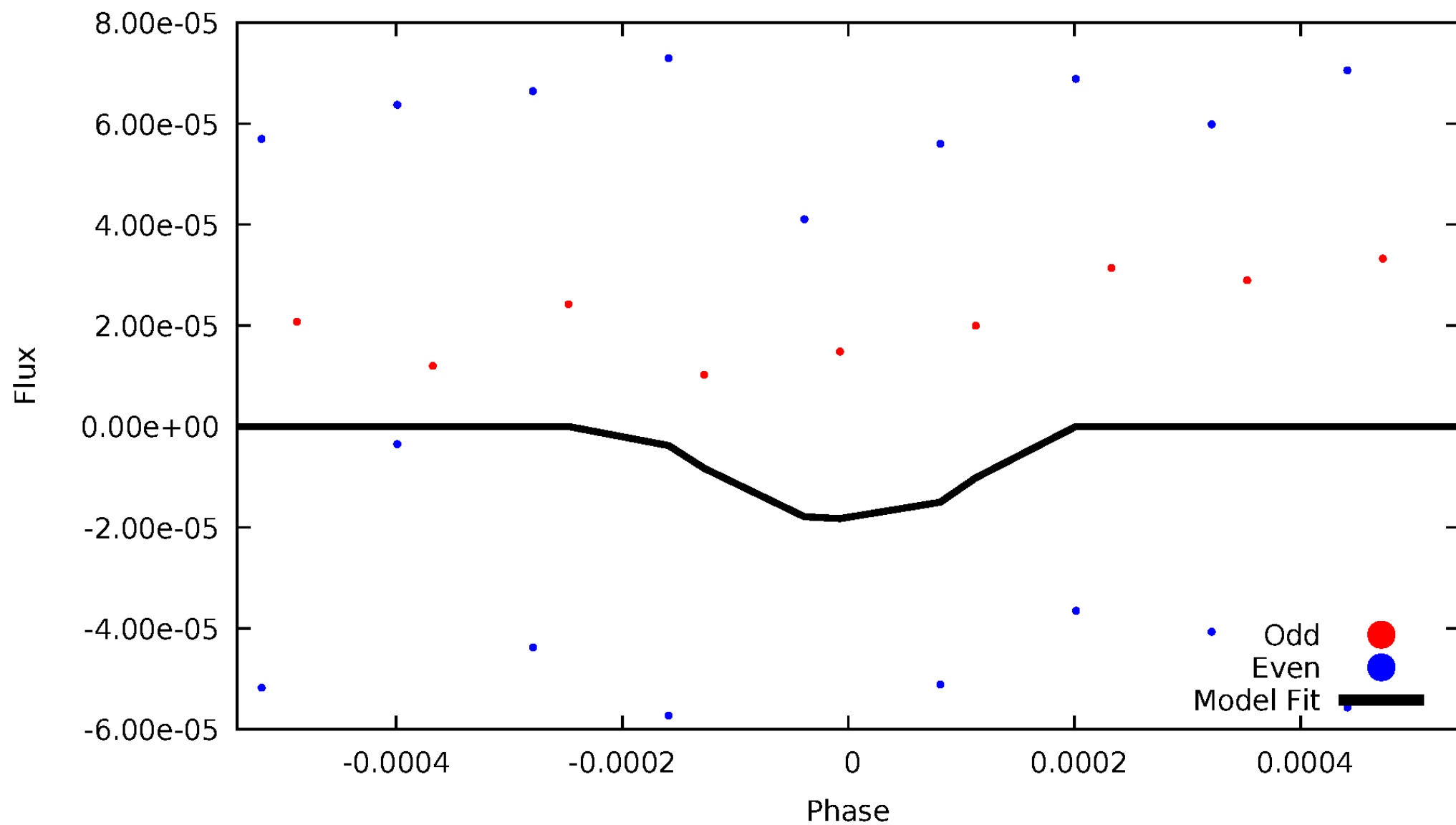


TCE 008694381-01



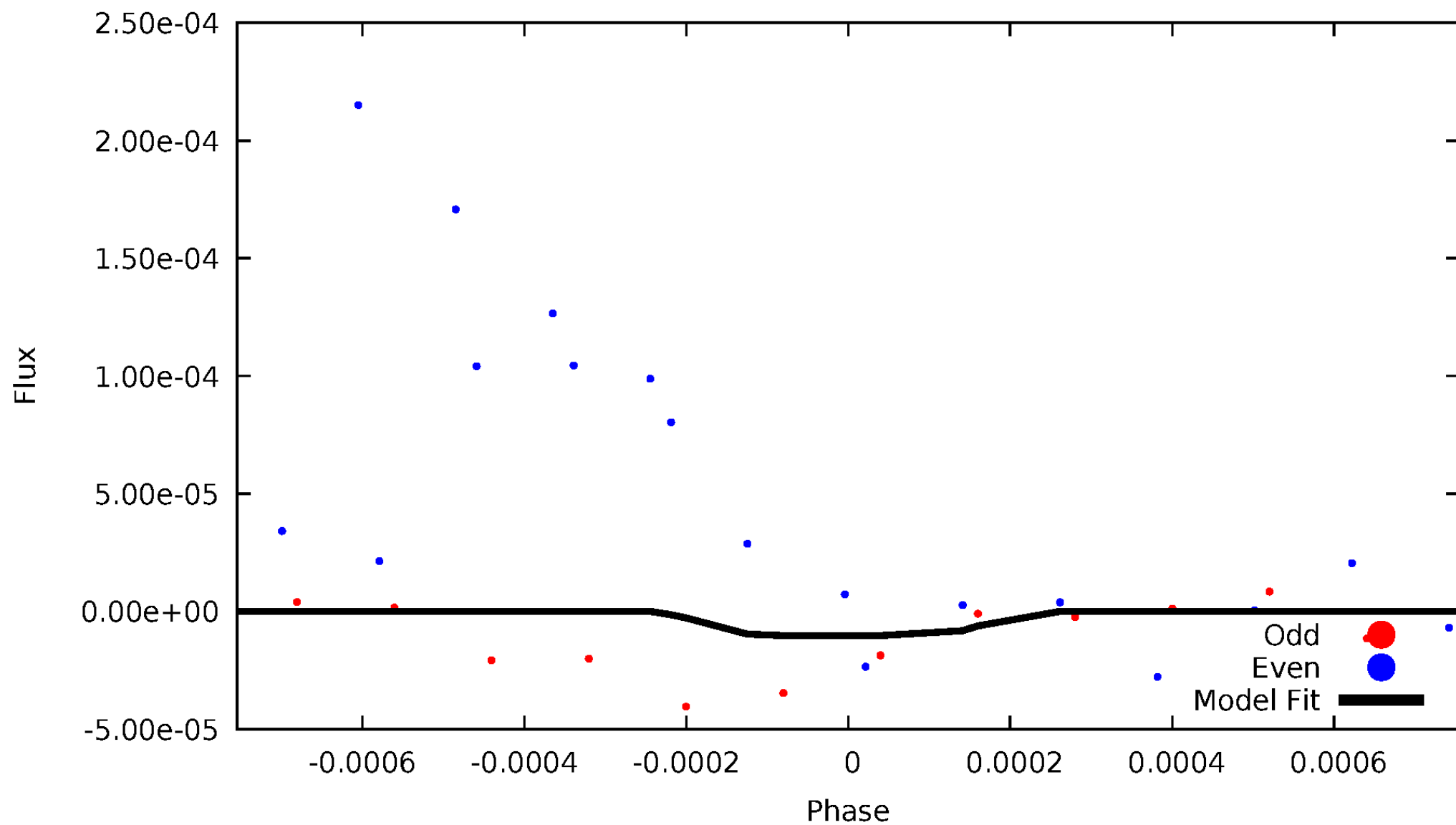
# DV Odd/Even

TCE 008694381-01



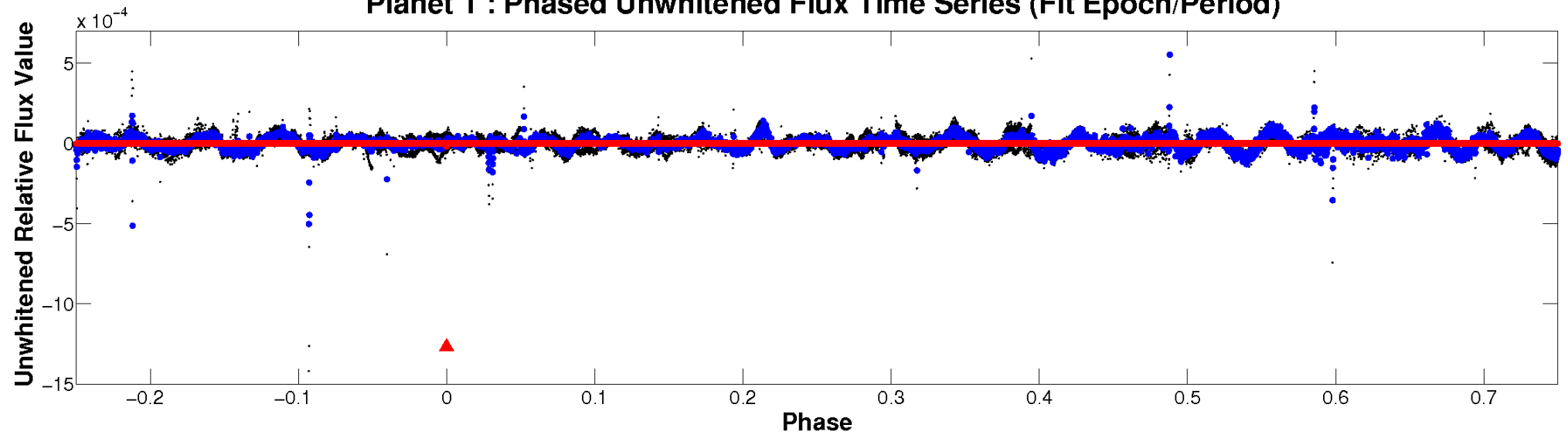
# ALT Odd/Even

TCE 008694381-01

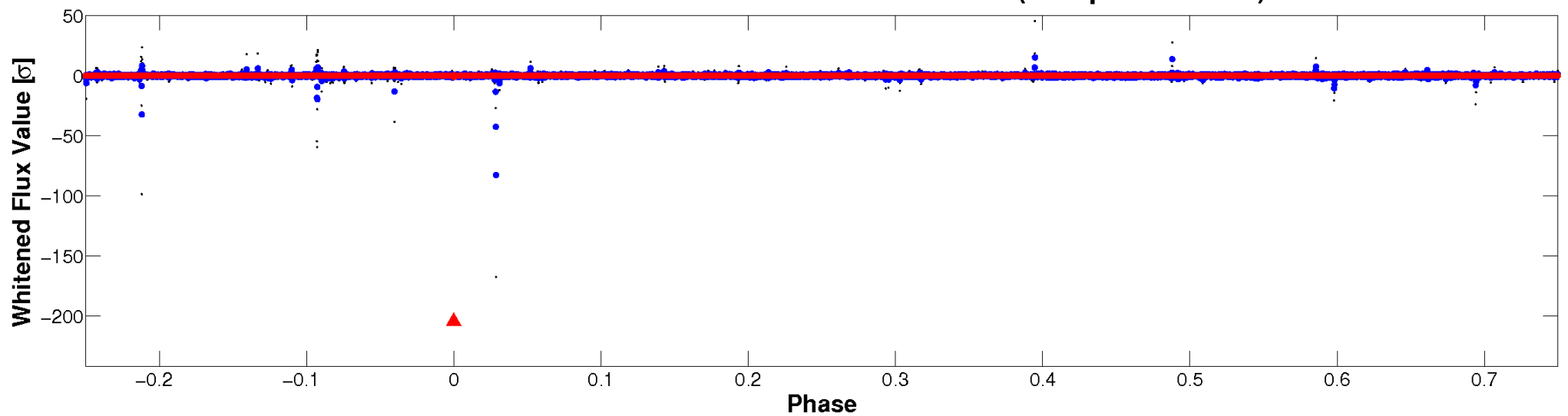


# Non-Whitened Vs. Whitened Light Curve

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

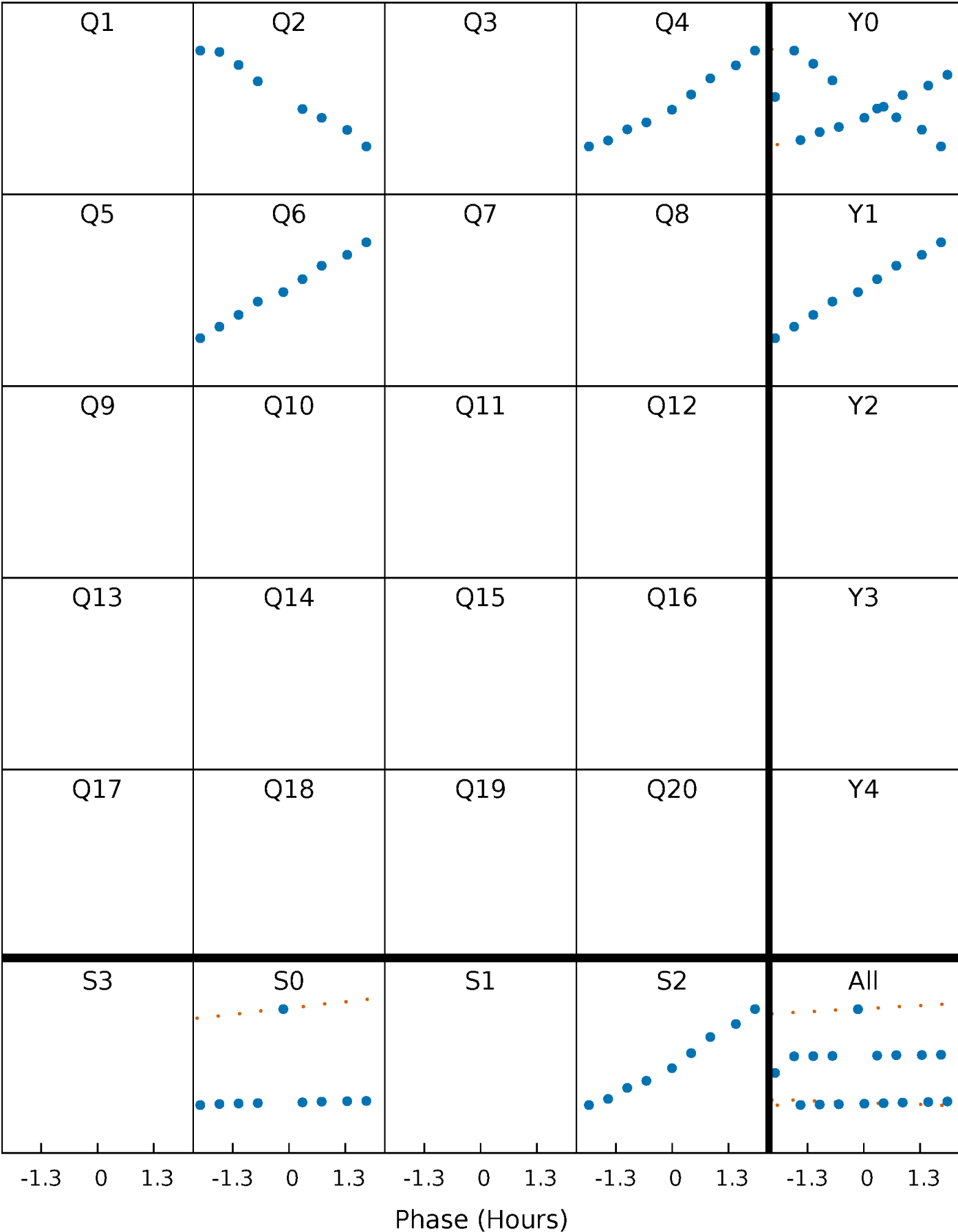


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



PDC Quarter-Phased Transit Curves

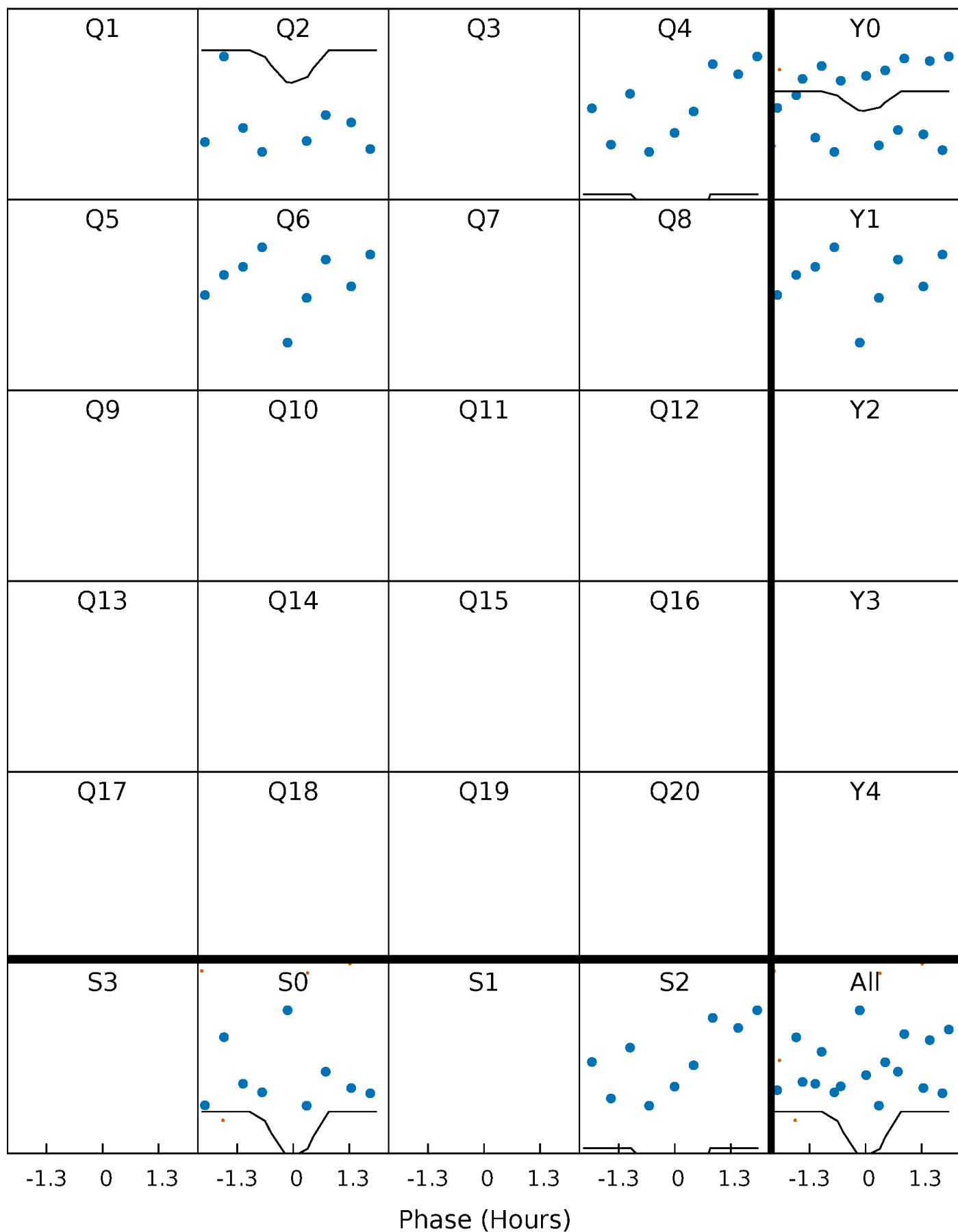
TCE 008694381-01    P=170.160677 Days    T<sub>0</sub>=221.796516 (BKJD)





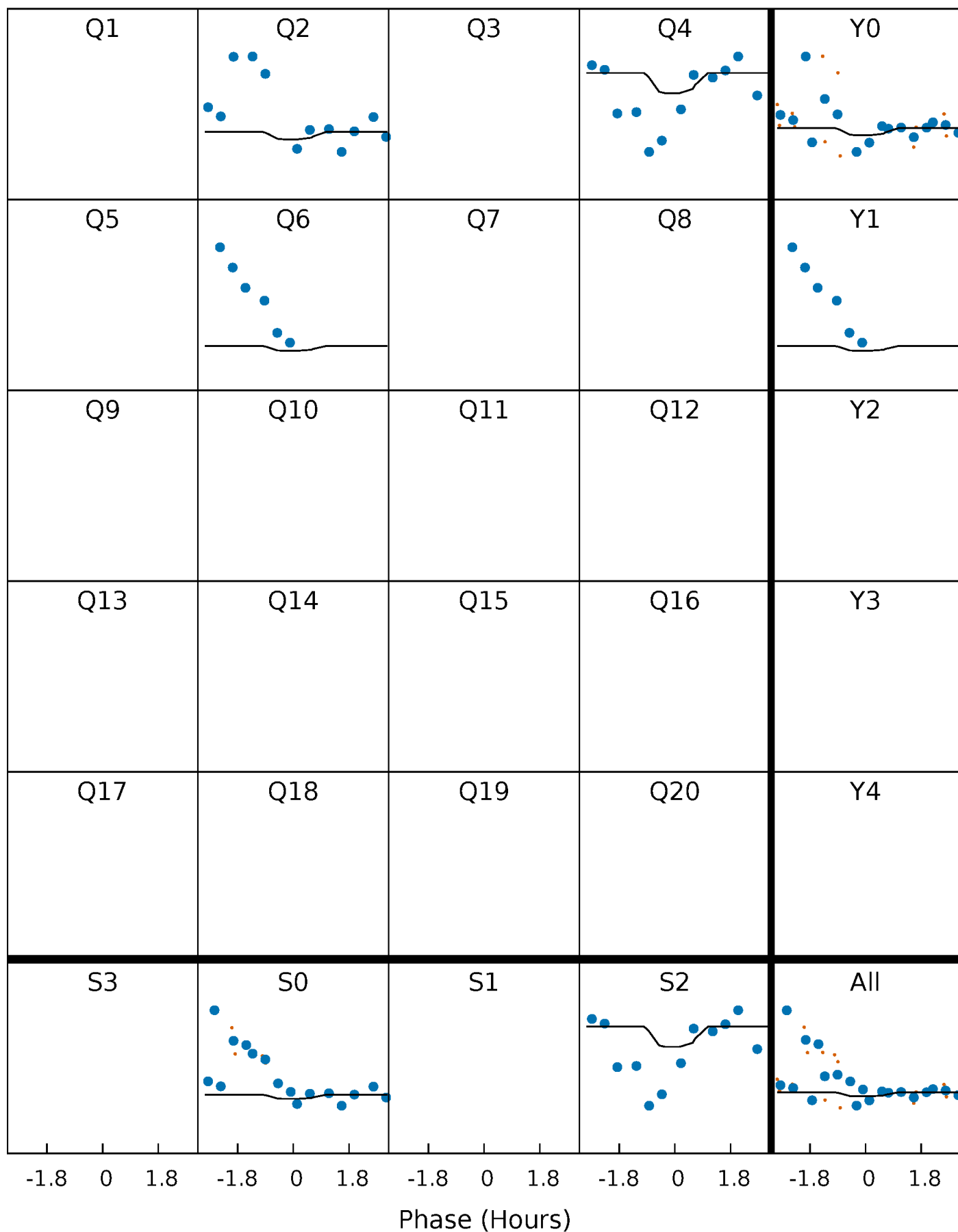
# DV Quarter-Phased Transit Curves

TCE 008694381-01 P=170.160677 Days  $T_0=221.796516$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

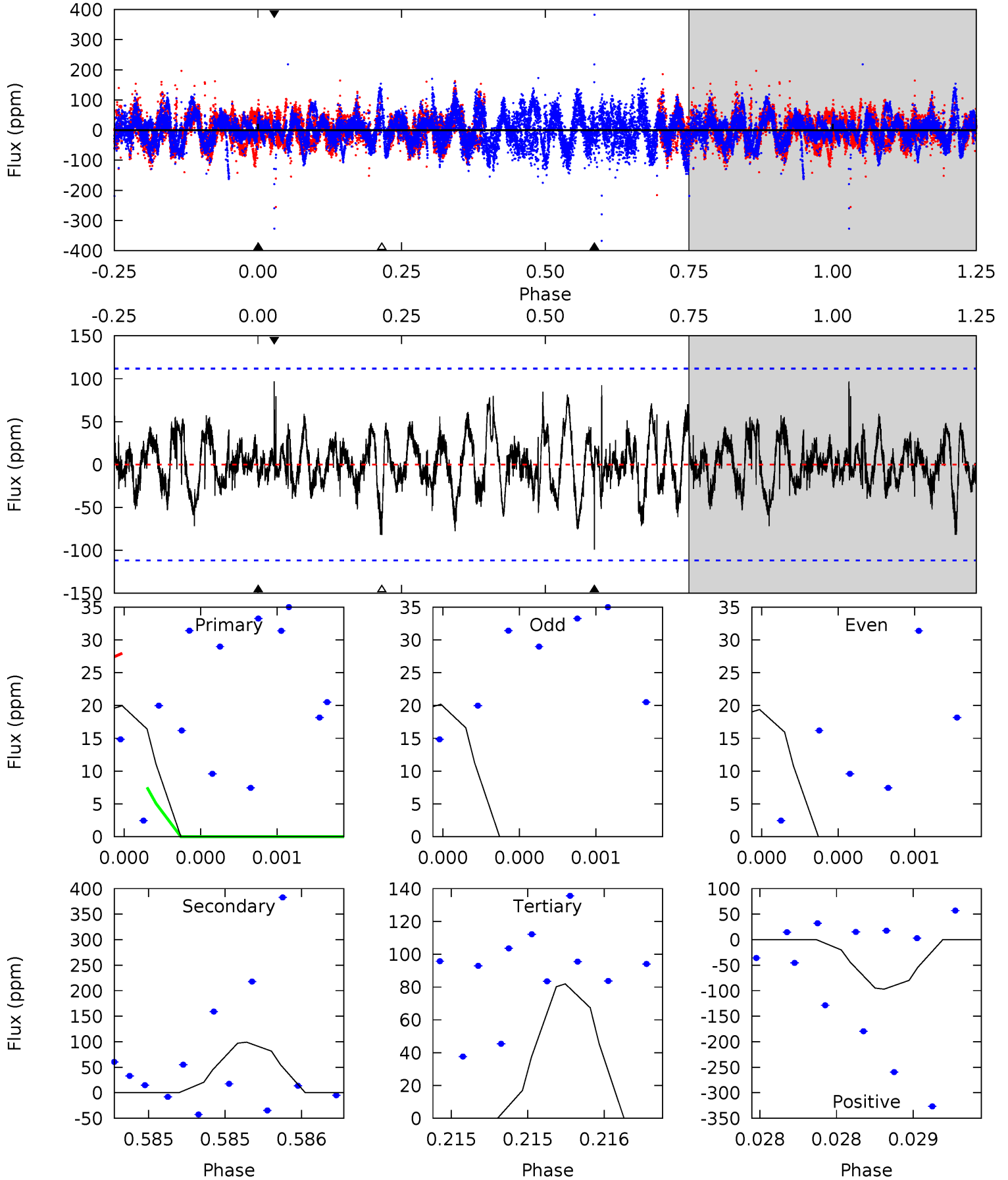
TCE 008694381-01 P=170.162863 Days  $T_0=221.806735$  (BKJD)



# DV Model-Shift Uniqueness Test

008694381-01, P = 170.160677 Days, E = 51.635839 Days

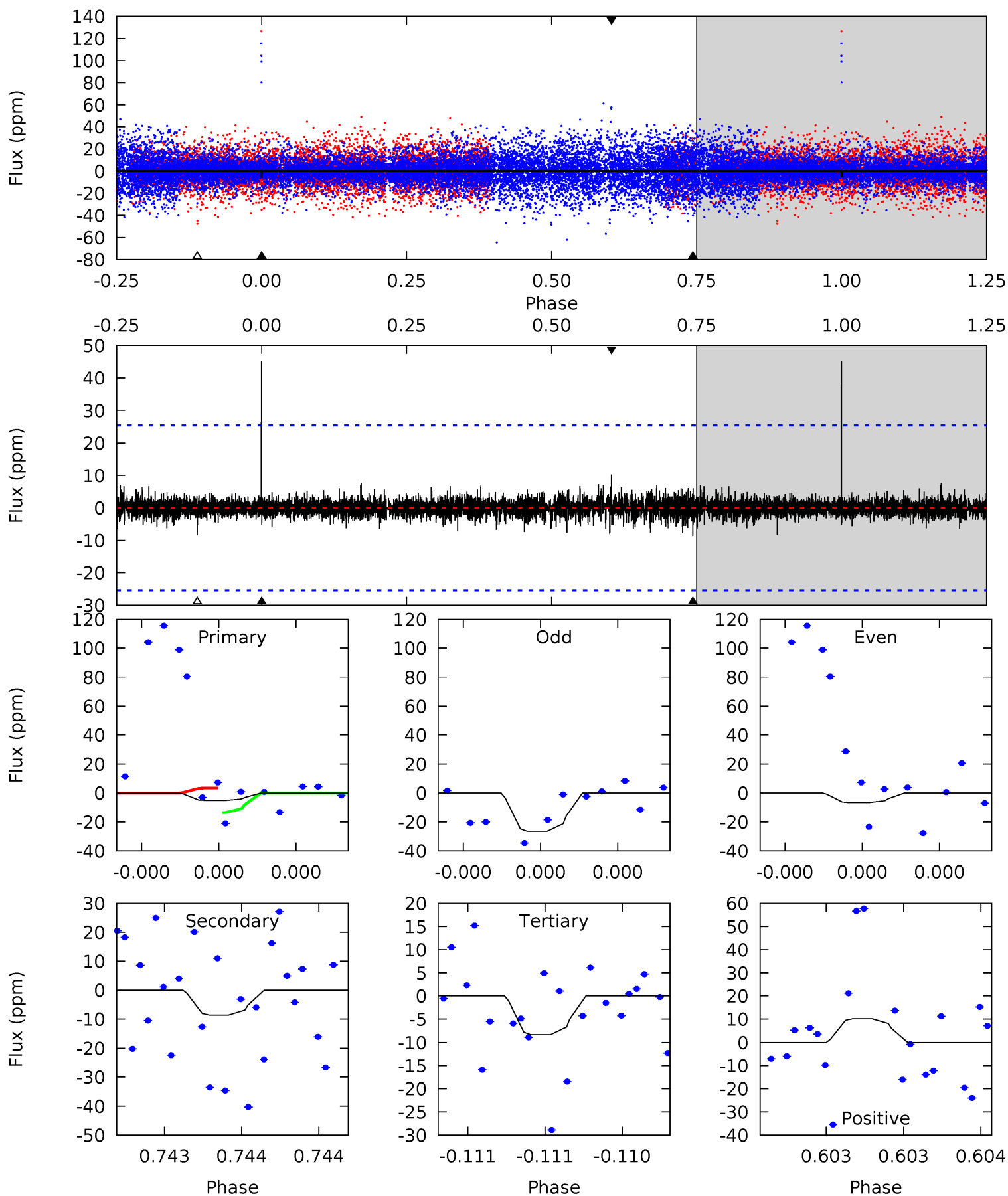
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.01	5.04	4.16	4.93	5.68	3.64	1.36	-3.15	-3.91	0.88	0.12	0.02	0.09	0.49	0.50



# Alt Model-Shift Uniqueness Test

008694381-01, P = 170.162863 Days, E = 51.643872 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
1.14	1.89	1.84	2.24	5.58	3.49	0.39	-0.70	-1.10	0.05	-0.35	2.46	0.77	0.84	1.08



### Stellar Parameters For KIC 008694381

	$T_{\text{eff}}(K)$	$\log(g)$	[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 008694381-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-99 \pm 20$	$1.81^{+1.74}_{-1.27}$	$460^{+20}_{-22}$	$4615^{+3703}_{-1026}$	$6016^{+56909}_{-4535}$
Alt.	$-9 \pm 5$	$1.74^{+1.83}_{-1.22}$	$459^{+21}_{-22}$	$3044^{+1570}_{-600}$	$502^{+5086}_{-408}$

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

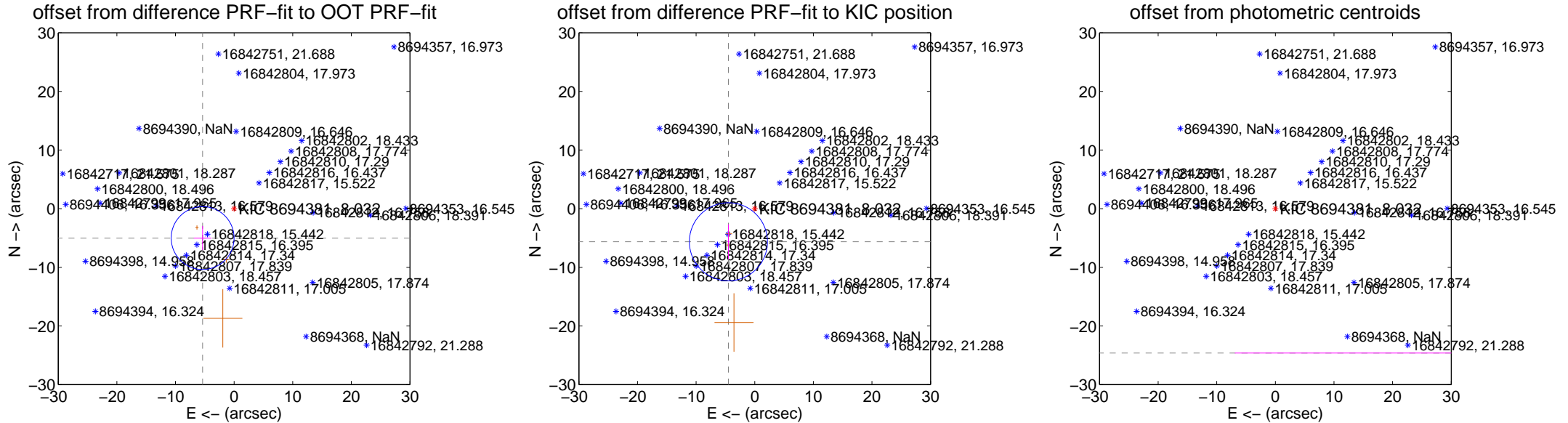
## DV Centroid Data

Supplemental centroid analysis for 008694381-01. **Kepler magnitude: 8.03.** Transit SNR 2.10

There are 0 quarters with good PRF difference image offsets

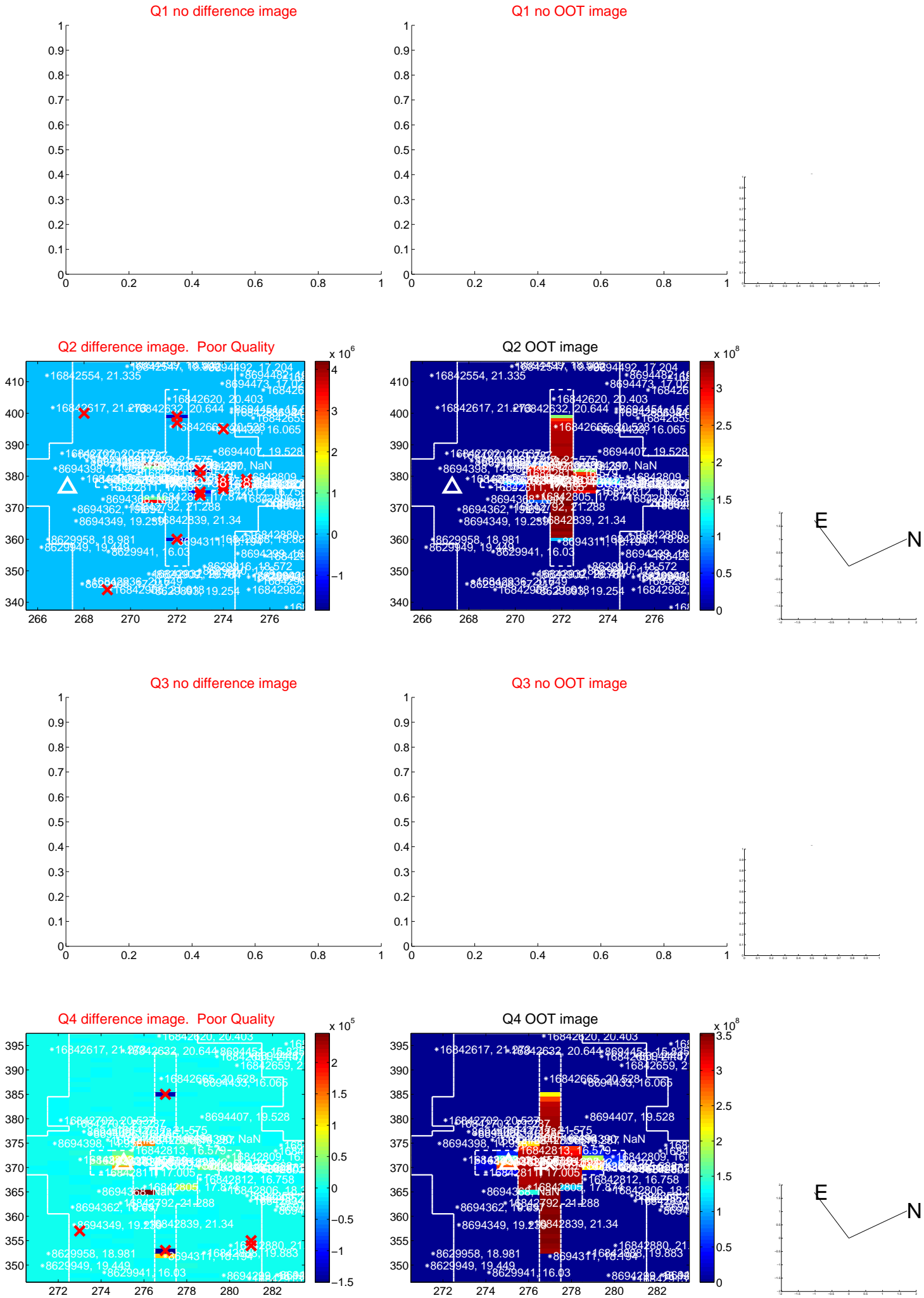
The OOT PRF centroid is offset from the target star catalog position by about 5.39 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>7.345 \pm 1.788</math></b>	<b>4.11</b>	$5.369 \pm 1.508$	$-5.013 \pm 2.064$
PRF-fit source offset from KIC position	<b><math>7.216 \pm 2.220</math></b>	<b>3.25</b>	$4.491 \pm 0.193$	$-5.648 \pm 2.974$
photometric centroid source offset	$54.41 \pm 52.03$	1.05	$-48.52 \pm 55.44$	$-24.63 \pm 35.83$

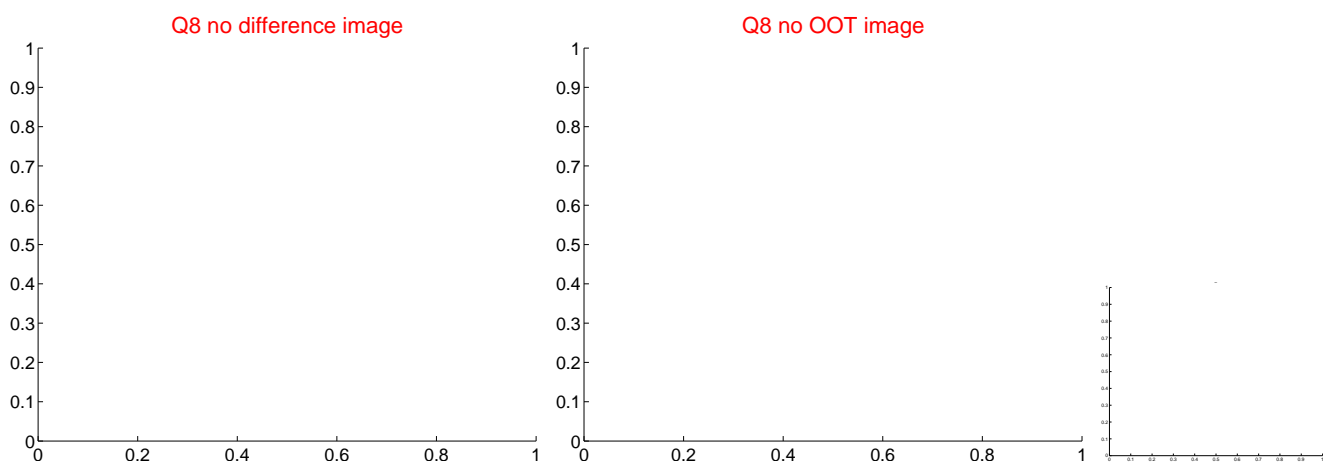
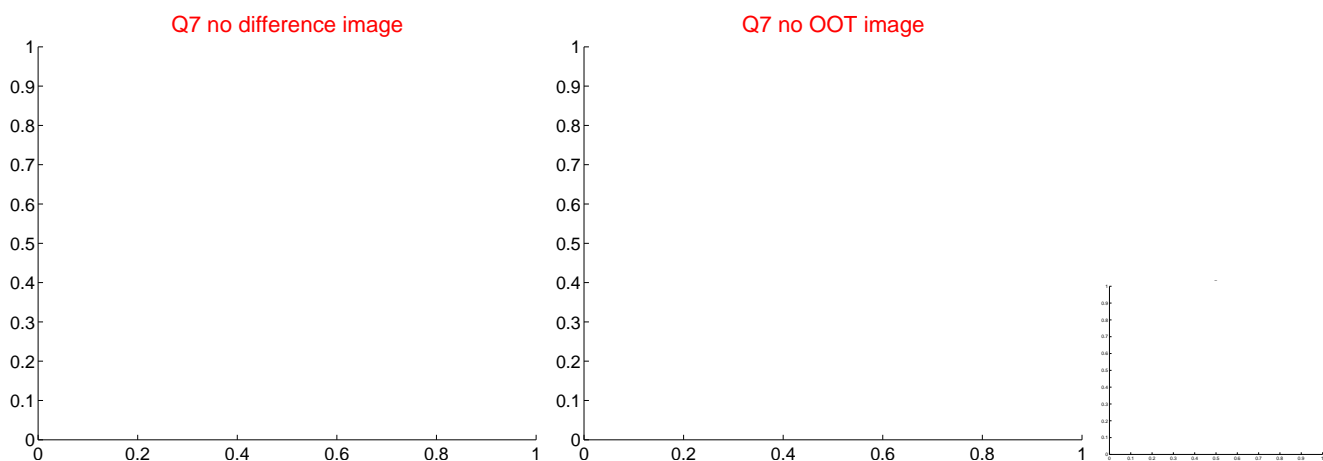
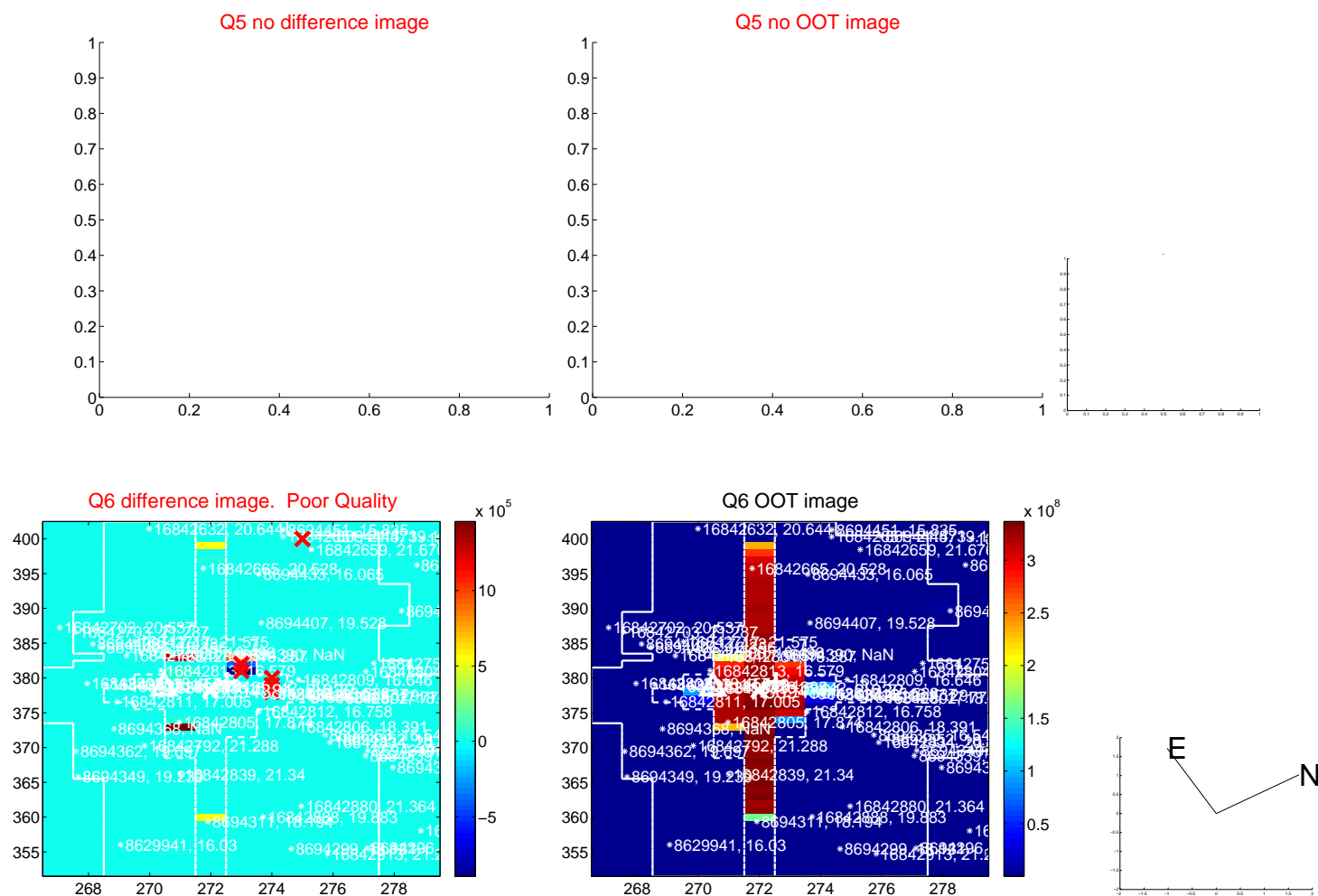


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





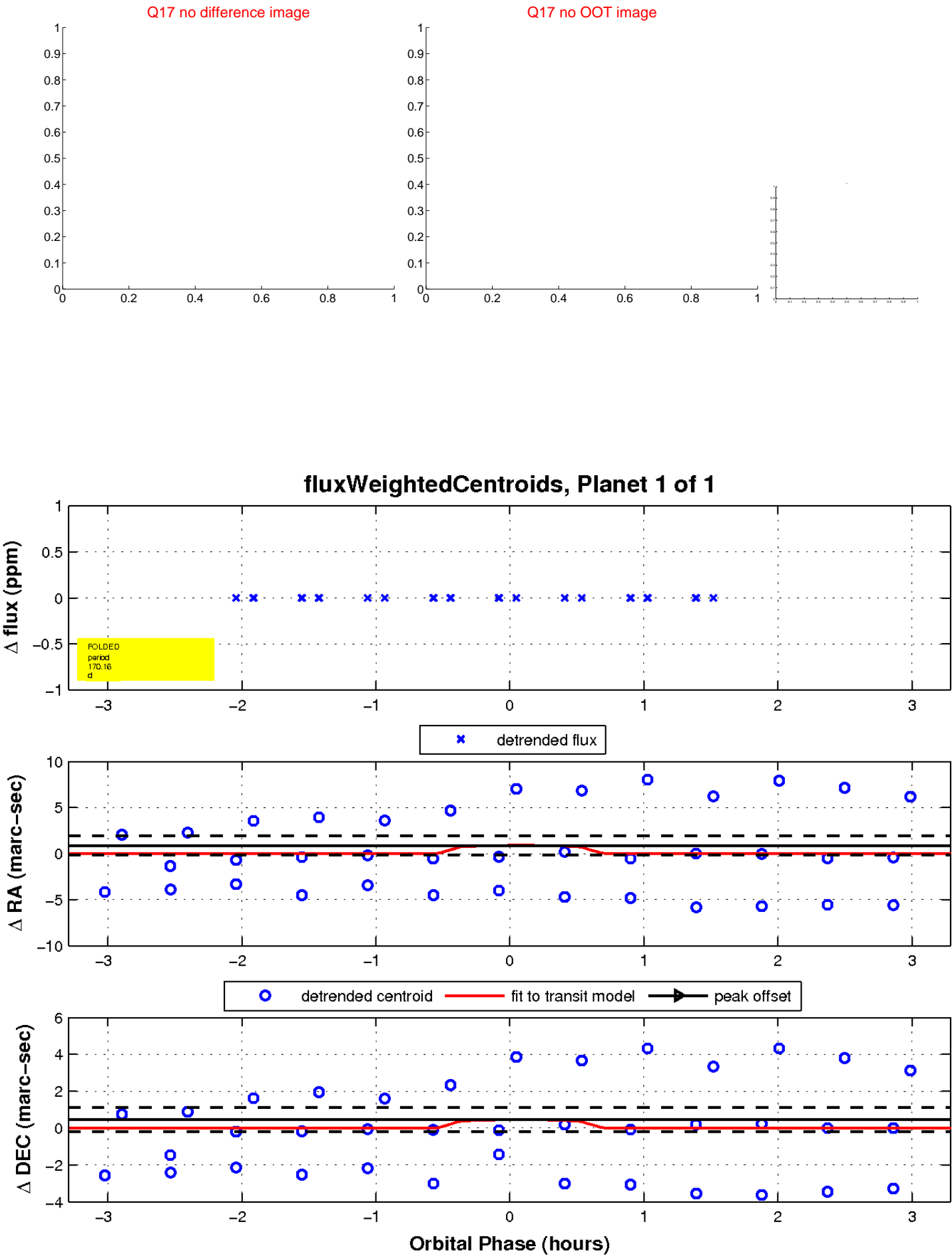
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

