

# KIC 008611781

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008611781-01	OBS	2185.01	76.957231	192.334837	353.0	9.623	20.6	21.5	1.04	5878	2.13	9.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008611781-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT

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

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

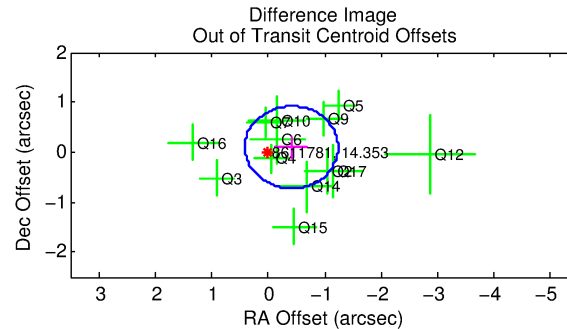
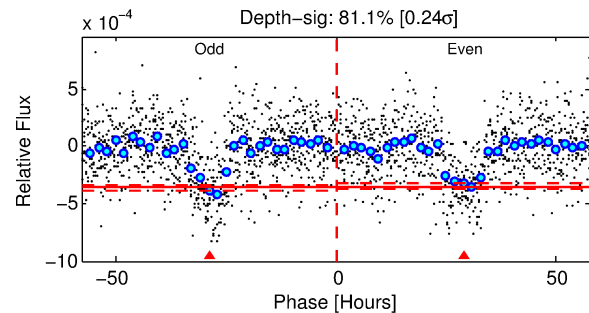
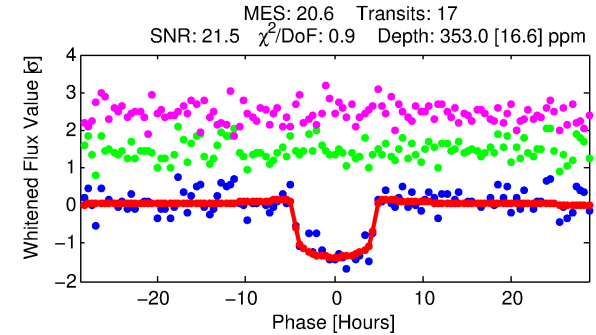
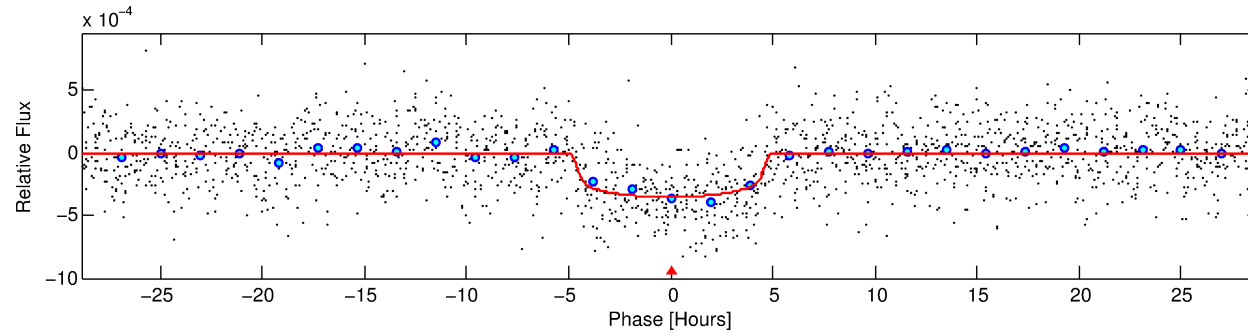
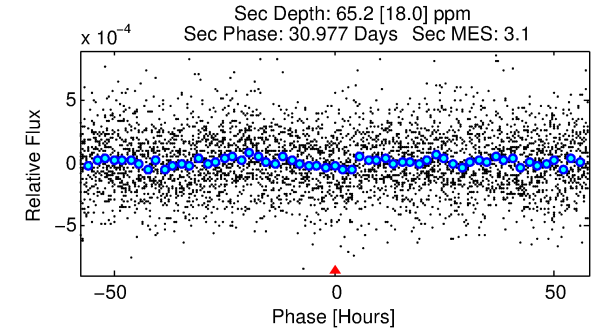
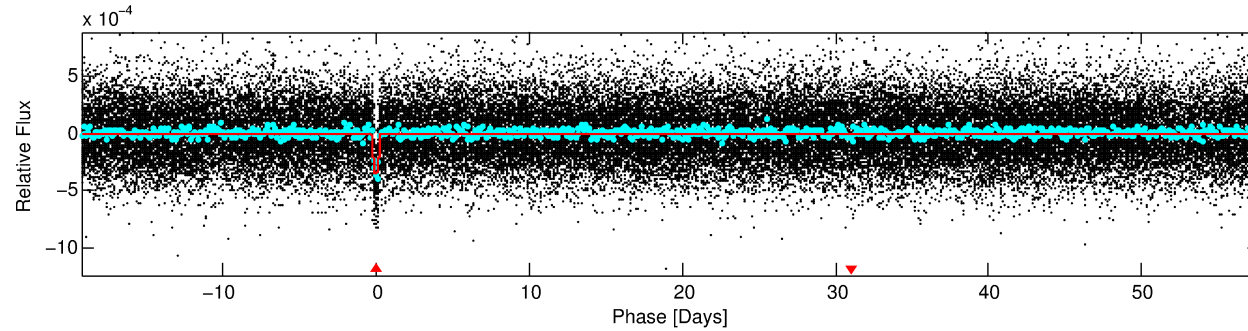
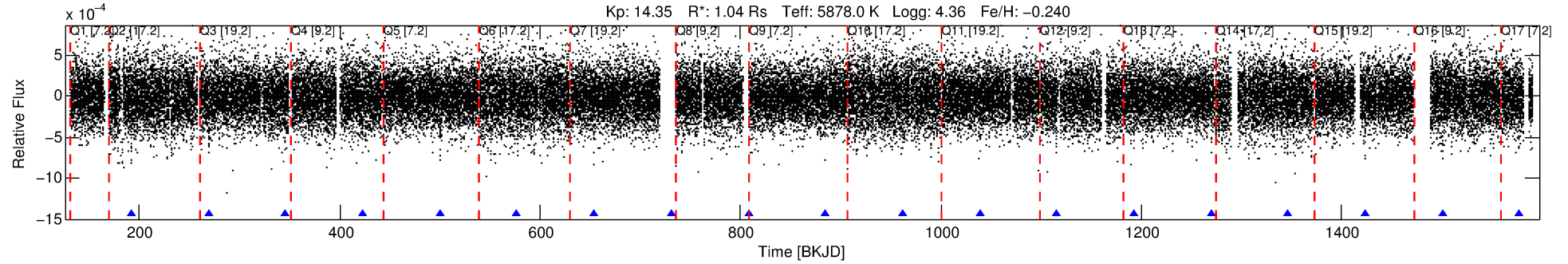
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008611781-01

No Significant Match Found

# DV One-Page Summary

KIC: 8611781 Candidate: 1 of 1 Period: 76.957 d  
KOI: K02185.01 Corr: 0.986



## DV Fit Results:

Period = 76.95723 [0.00062] d  
Epoch = 192.3348 [0.0069] BKJD  
Rp/R\* = 0.0187 [0.0043]  
a/R\* = 41.71 [45.61]  
b = 0.76 [0.63]  
Seff = 9.83 [3.49]  
Teq = 451 [40] K  
Rp = 2.13 [0.76] Re  
a = 0.3434 [0.0791] AU  
Ag = 934.60 [593.95] [1.57σ]  
Teffp = 3860 [529] K [6.42σ]

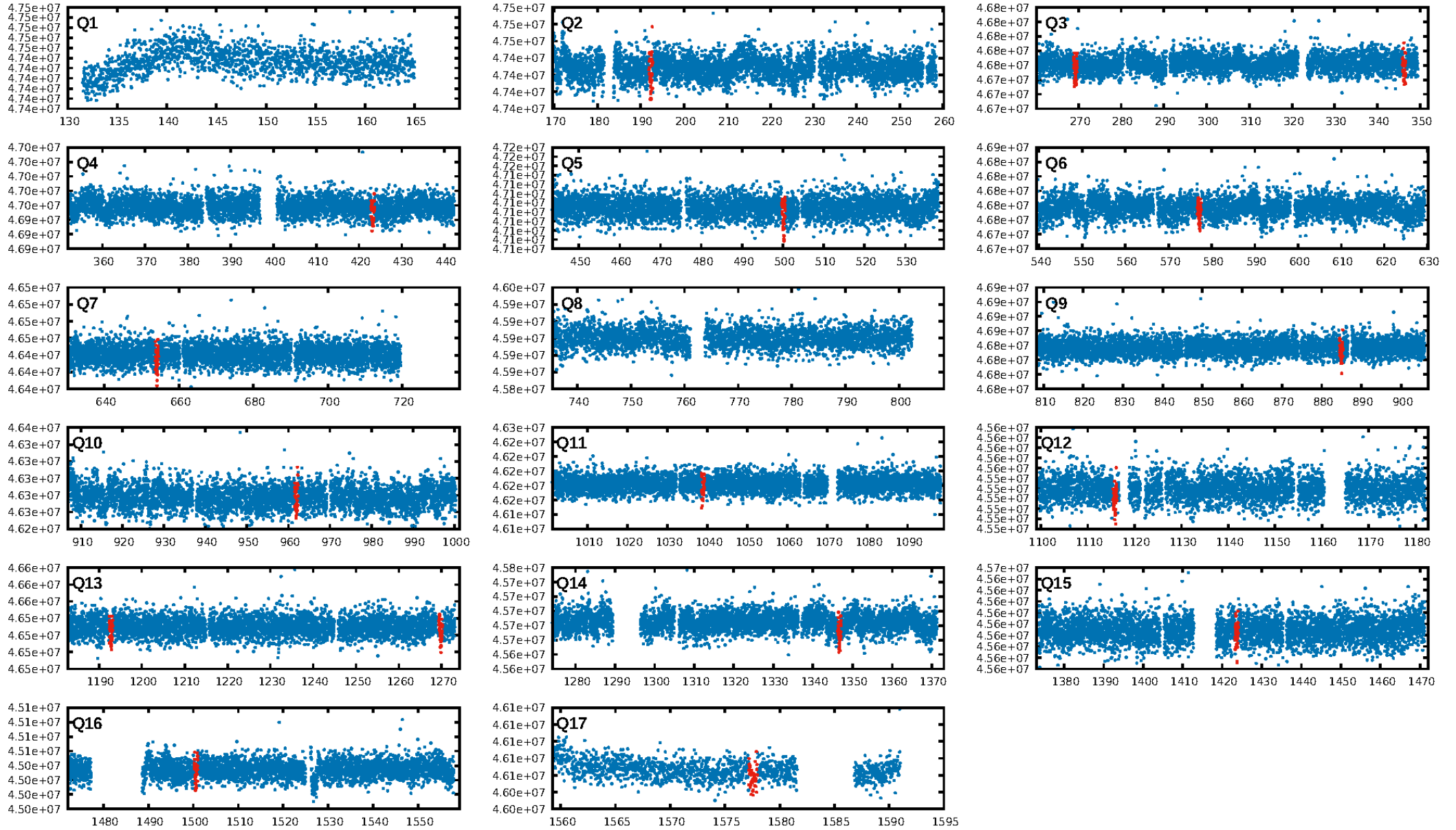
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 90.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 9.36e-83  
RollingBand-fgt: 1.00 [16/16]  
GhostDiagnostic-chr: 5.315  
Centroid-sig: 67.4%  
Centroid-so: 0.174 arcsec [0.29σ]  
OotOffset-rm: 0.424 arcsec [1.54σ]  
KicOffset-rm: 0.411 arcsec [1.34σ]  
OotOffset-st: 4/3/3/3 [13]  
KicOffset-st: 4/3/3/3 [13]  
DiffImageQuality-fgm: 0.92 [12/13]  
DiffImageOverlap-fno: 1.00 [13/13]

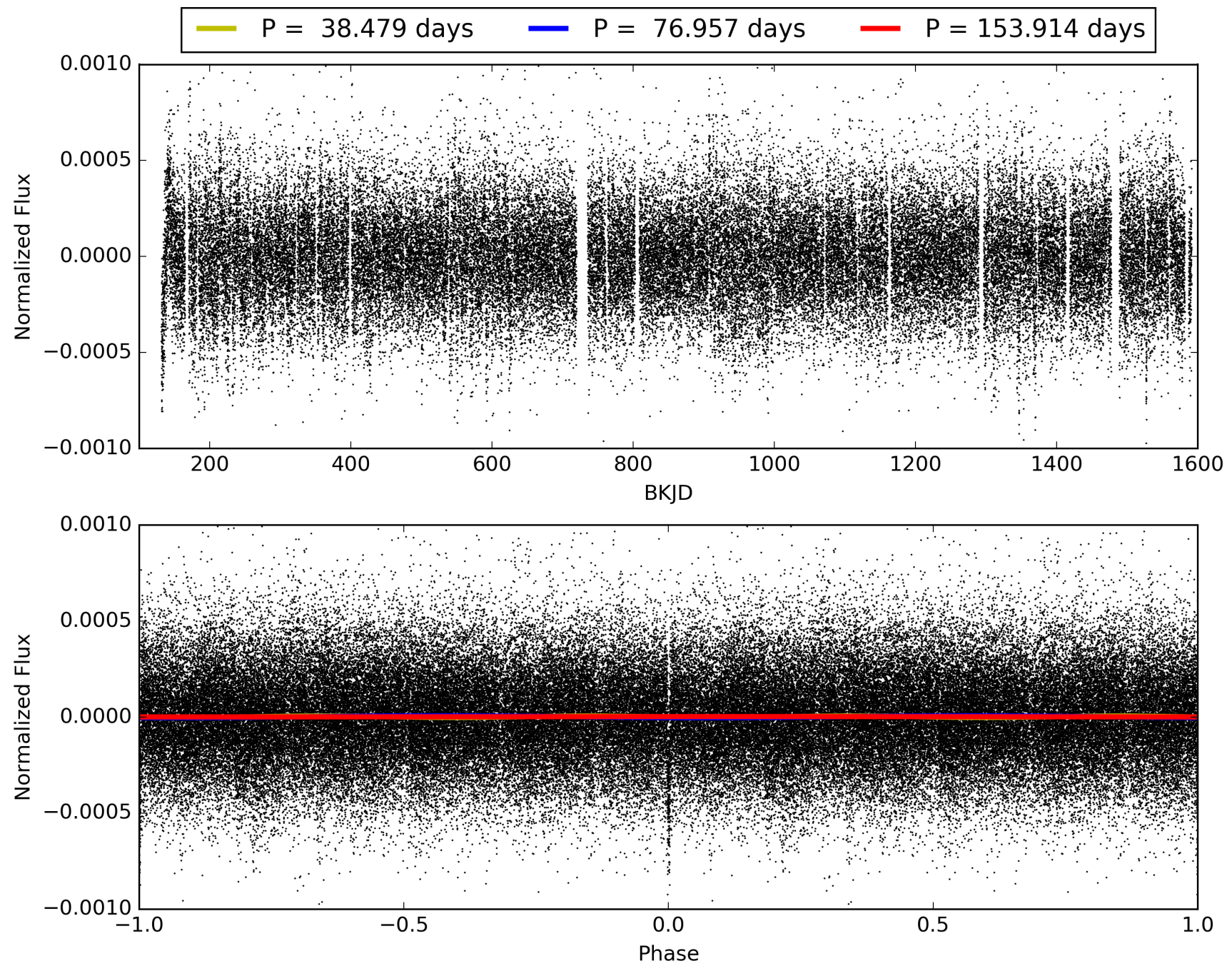
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:08:10 Z

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

# TCE 008611781-01, PDC Light Curves

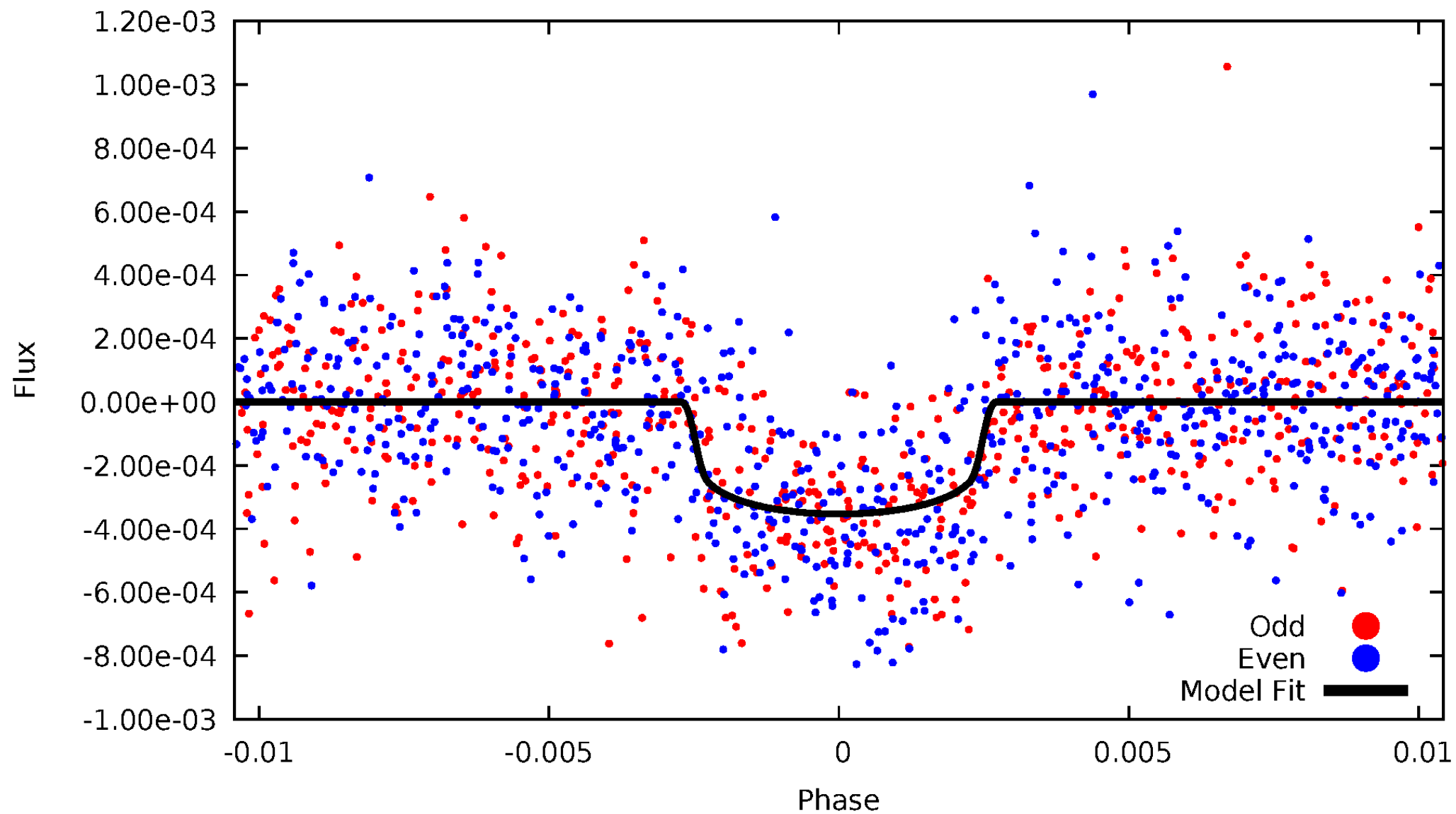


TCE 008611781-01



# DV Odd/Even

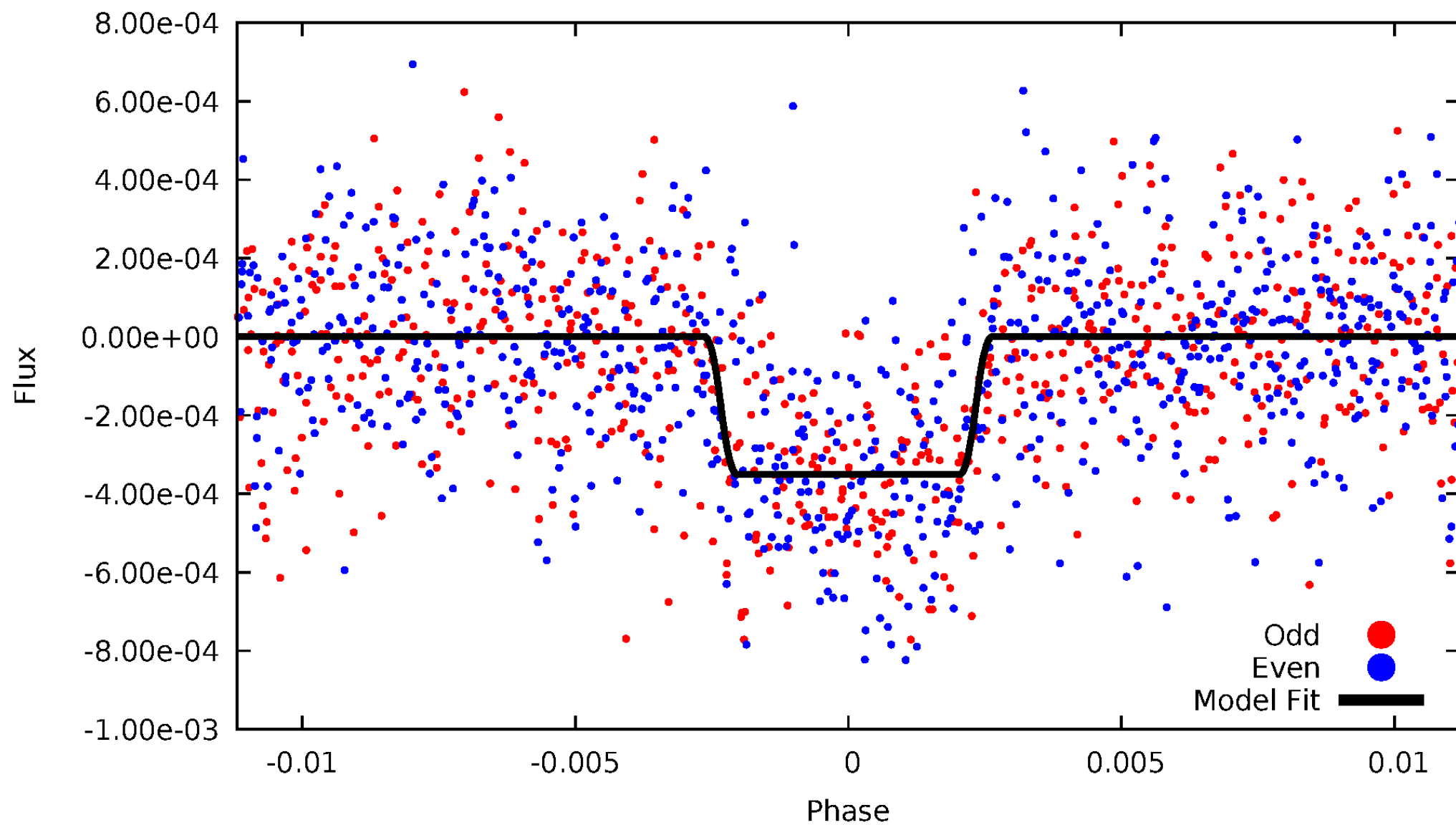
TCE 008611781-01



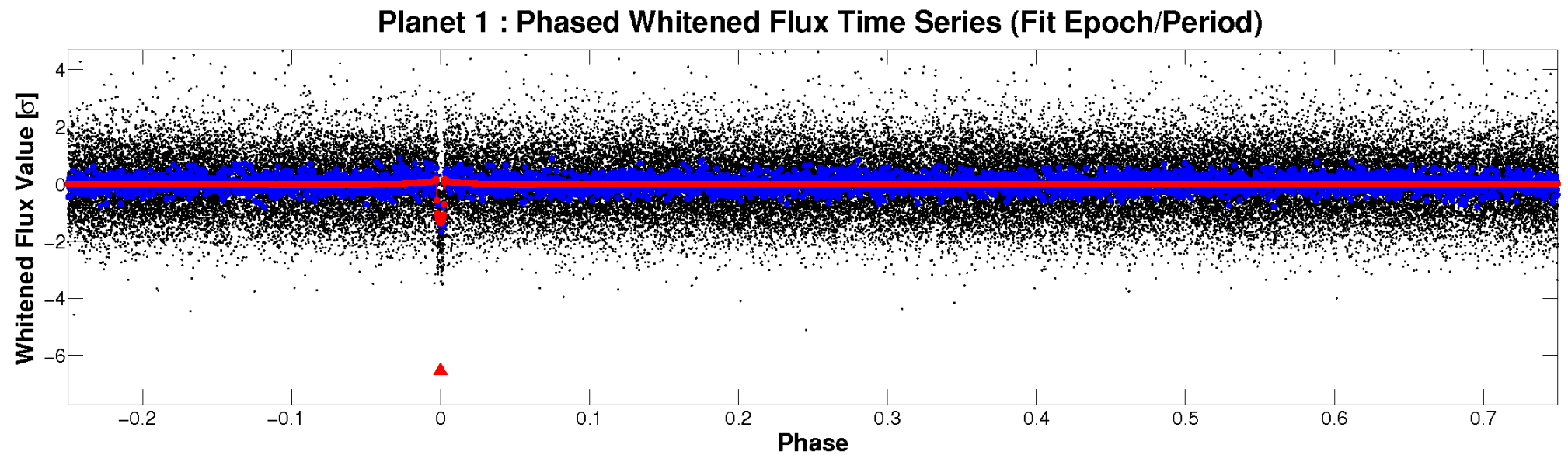
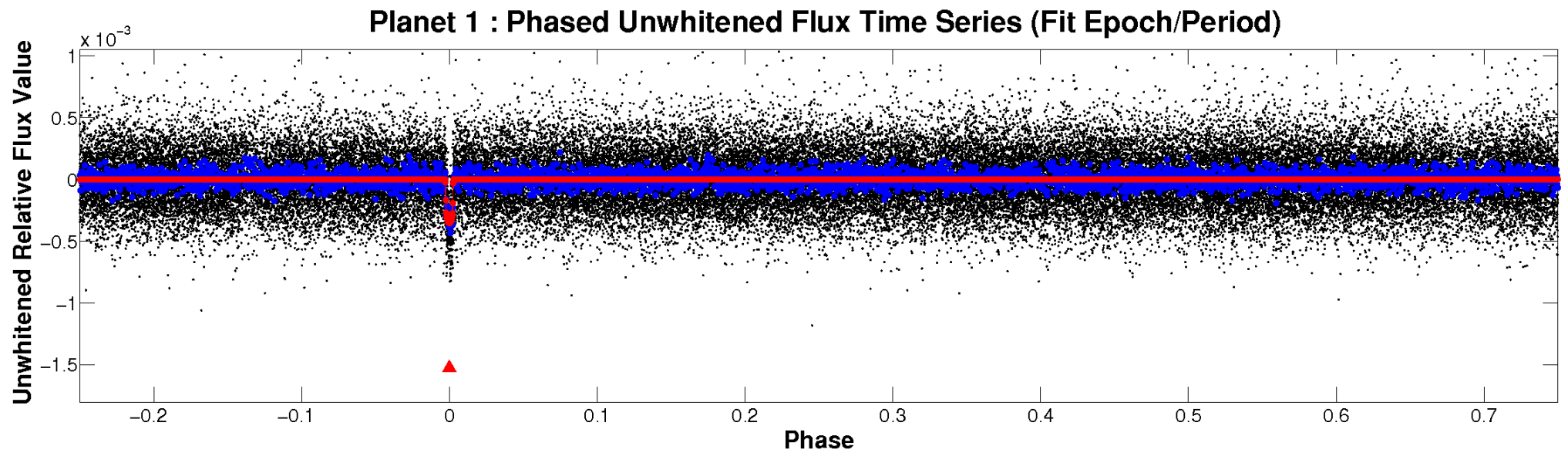


# ALT Odd/Even

TCE 008611781-01

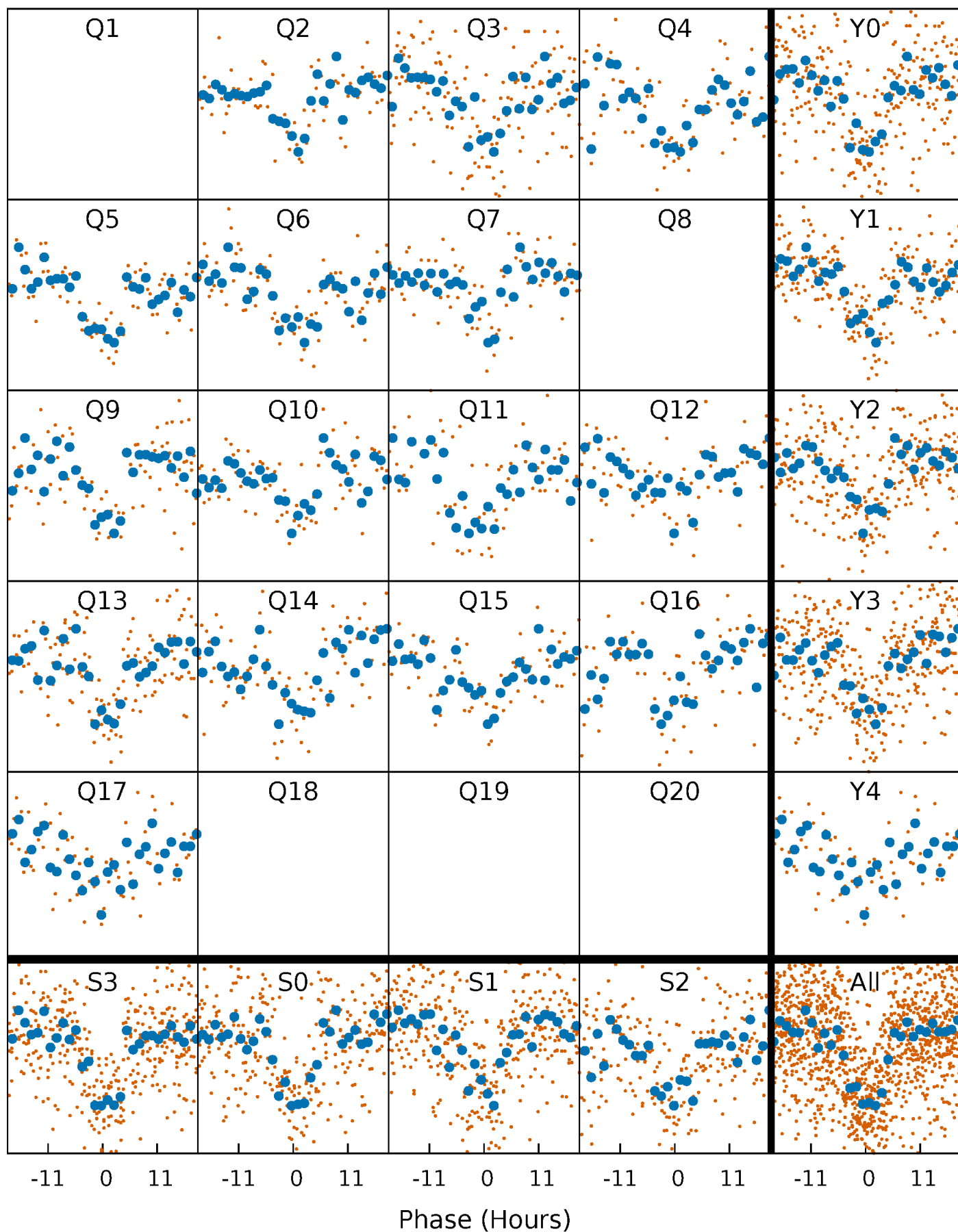


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

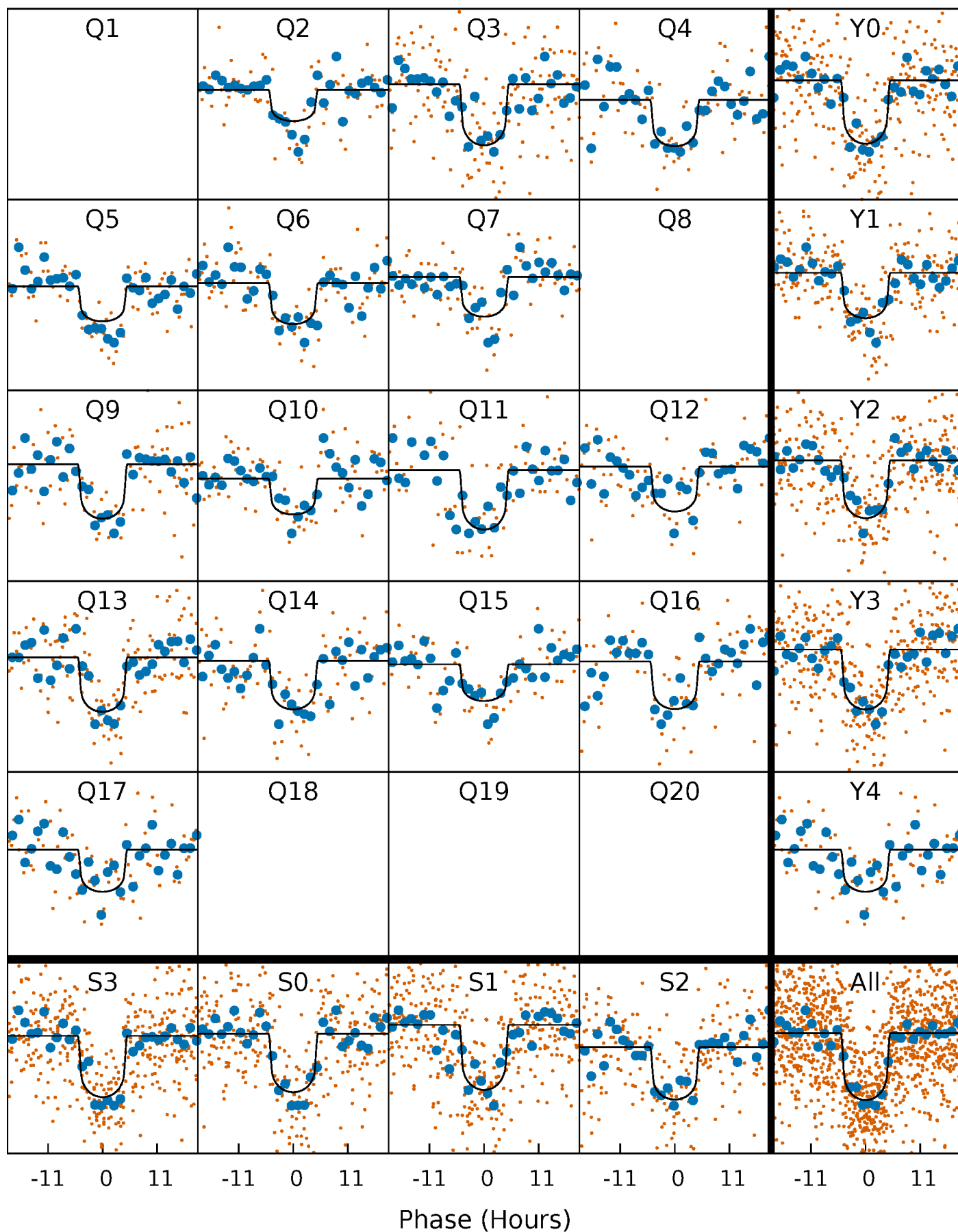
TCE 008611781-01 P= 76.957231 Days  $T_0=192.334836$  (BKJD)





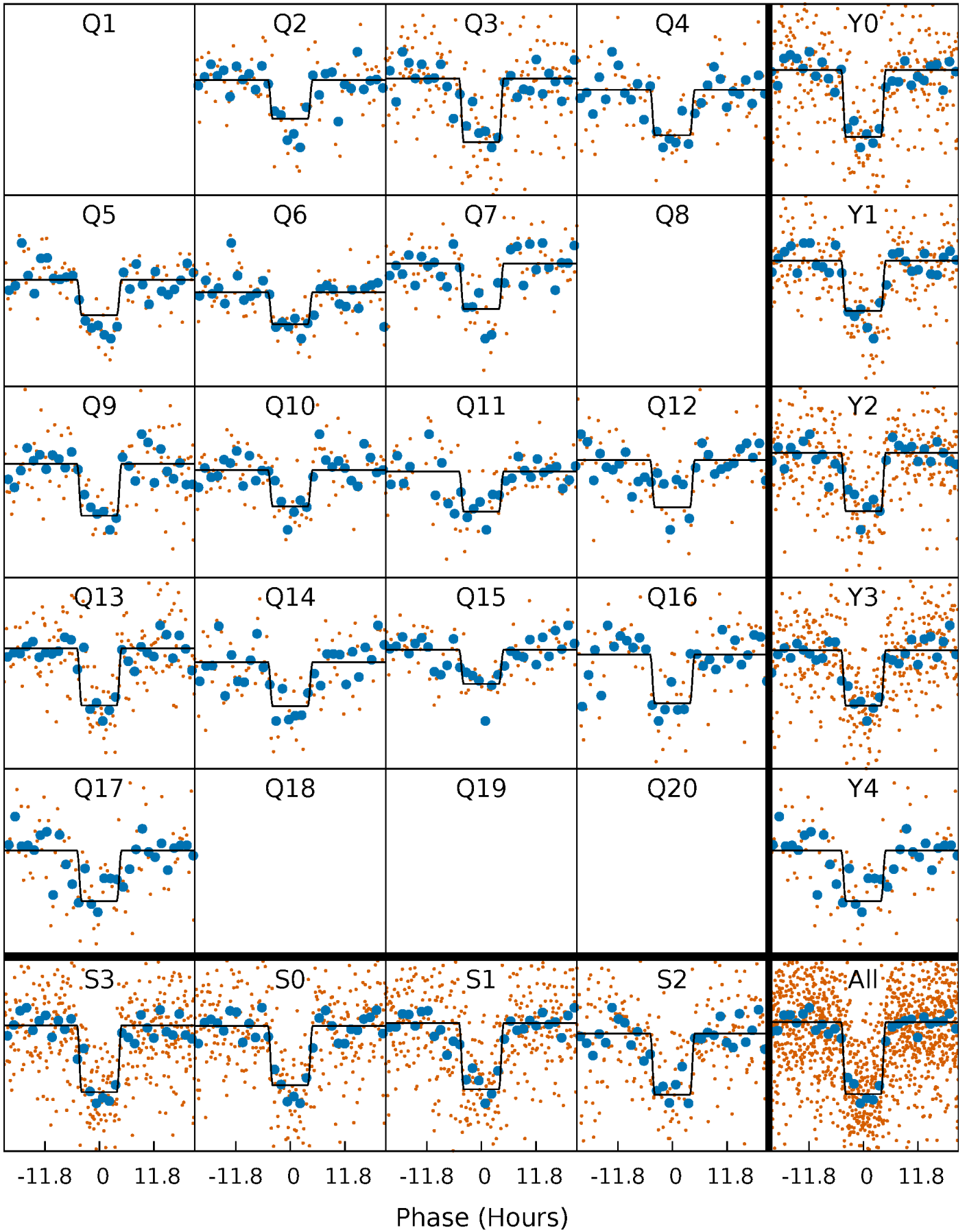
# DV Quarter-Phased Transit Curves

TCE 008611781-01 P= 76.957231 Days  $T_0=192.334836$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

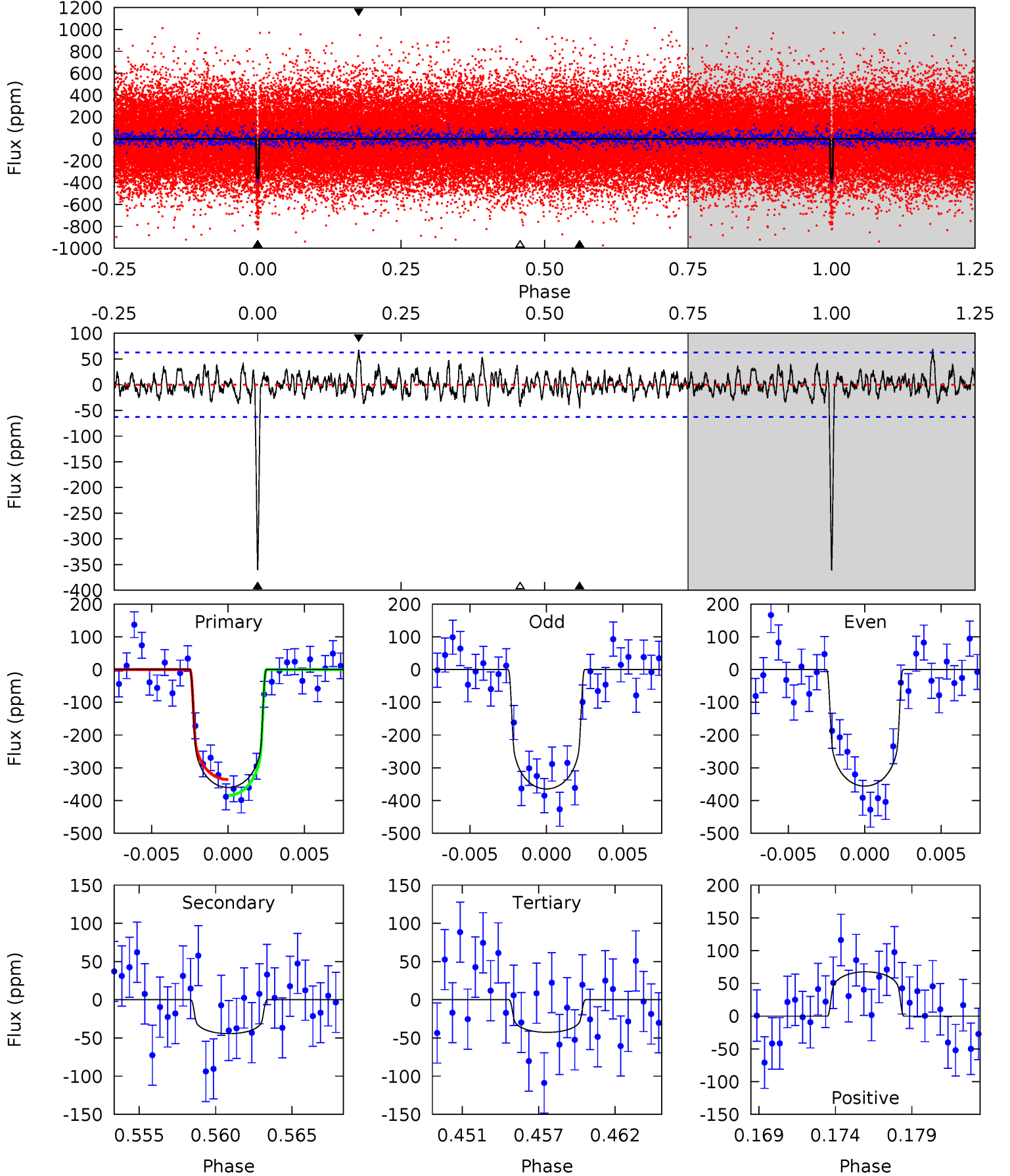
TCE 008611781-01 P= 76.958857 Days  $T_0=192.325251$  (BKJD)



# DV Model-Shift Uniqueness Test

008611781-01,  $P = 76.957231$  Days,  $E = 115.377605$  Days

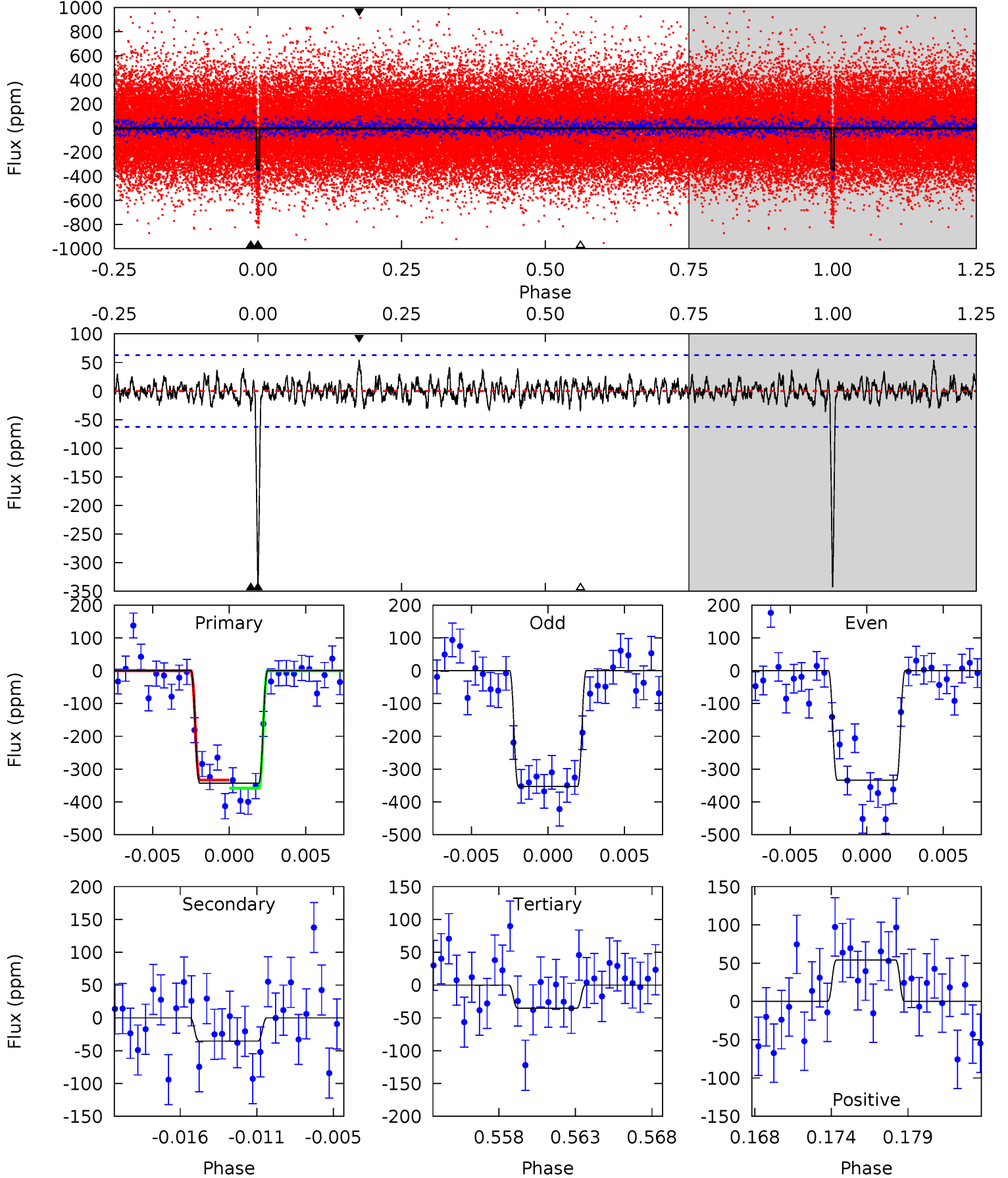
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.5	3.64	3.50	5.54	5.14	2.78	1.33	26.0	24.0	0.14	-1.91	0.36	1.02	0.16	1.98



# Alt Model-Shift Uniqueness Test

008611781-01, P = 76.958857 Days, E = 115.366394 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
28.2	2.91	2.90	4.45	5.15	2.79	1.06	25.3	23.7	0.01	-1.54	0.78	0.98	0.14	1.03



### Stellar Parameters For KIC 008611781

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5878^{+157}_{-157}$	$4.363^{+0.153}_{-0.187}$	$-0.240^{+0.300}_{-0.300}$	$1.041^{+0.281}_{-0.187}$	$0.912^{+0.132}_{-0.088}$	$1.139^{+0.824}_{-0.557}$
	+3%/-3%	+4%/-4%	+125%/-125%	+27%/-18%	+14%/-10%	+72%/-49%
Source	PHO1	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 008611781-01 / KOI 2185.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-44 \pm 12$	$2.18^{+0.57}_{-0.51}$	$635^{+48}_{-38}$	$3851^{+399}_{-323}$	$612^{+471}_{-269}$
Alt.	$-35 \pm 12$	$2.11^{+0.65}_{-0.50}$	$633^{+48}_{-38}$	$3740^{+424}_{-362}$	$497^{+444}_{-236}$

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



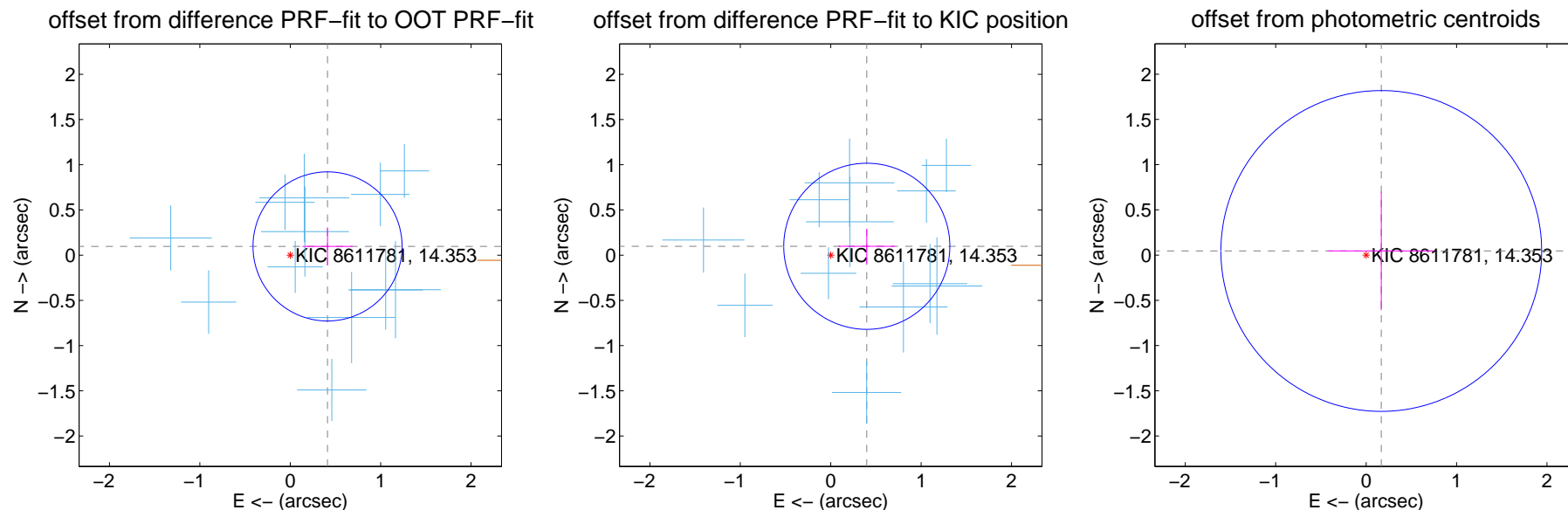
## DV Centroid Data

Supplemental centroid analysis for 008611781-01. Kepler magnitude: 14.35. Transit SNR 21.52

There are 12 quarters with good PRF difference image offsets

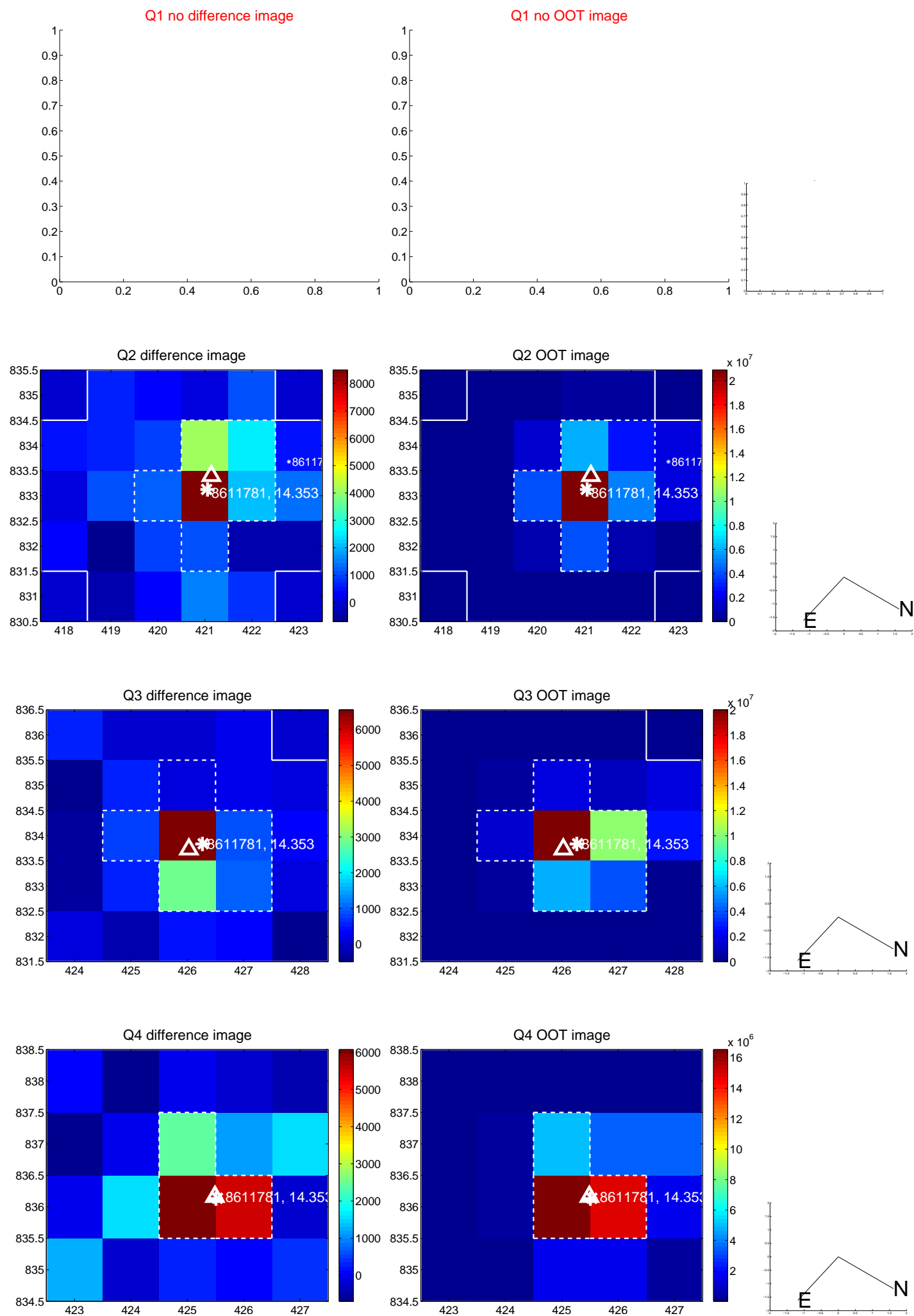
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.424 \pm 0.275$	1.54	$-0.412 \pm 0.278$	$0.097 \pm 0.211$
PRF-fit source offset from KIC position	$0.411 \pm 0.306$	1.34	$-0.399 \pm 0.311$	$0.098 \pm 0.194$
photometric centroid source offset	$0.17 \pm 0.59$	0.29	$-0.17 \pm 0.59$	$0.05 \pm 0.65$

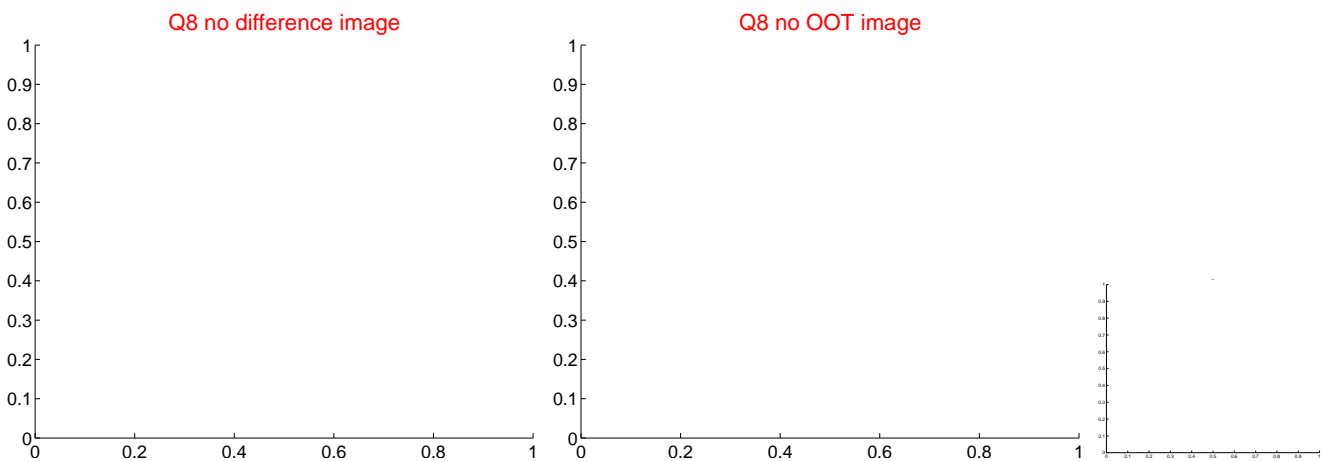
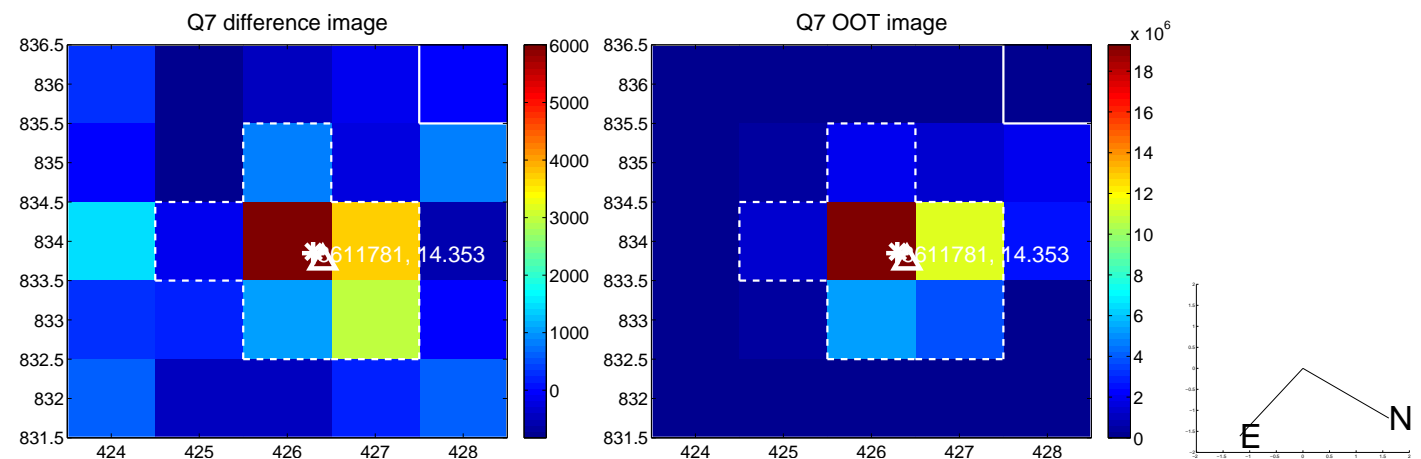
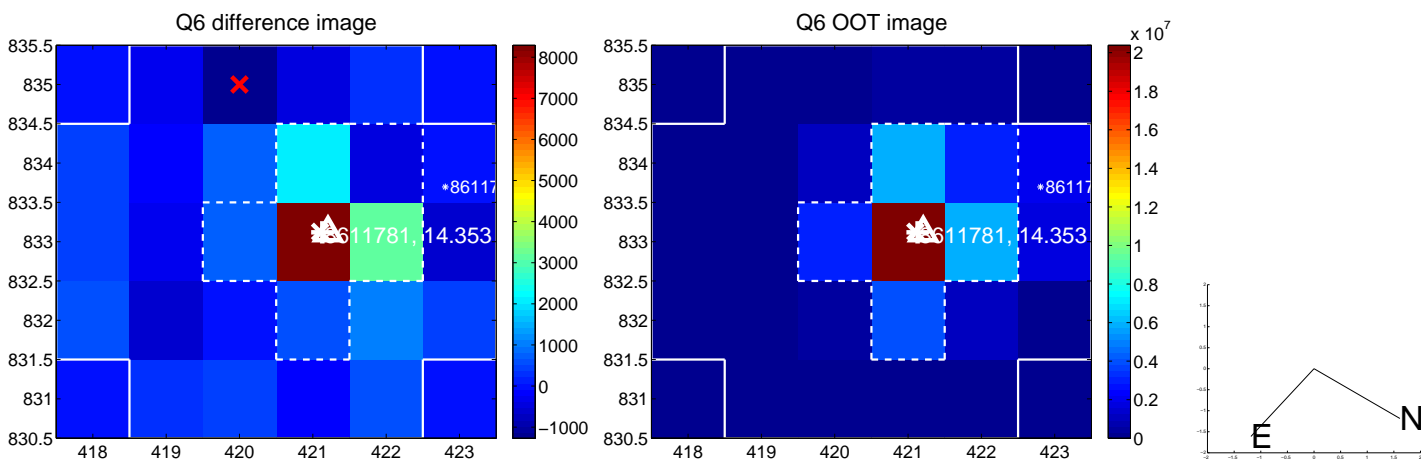
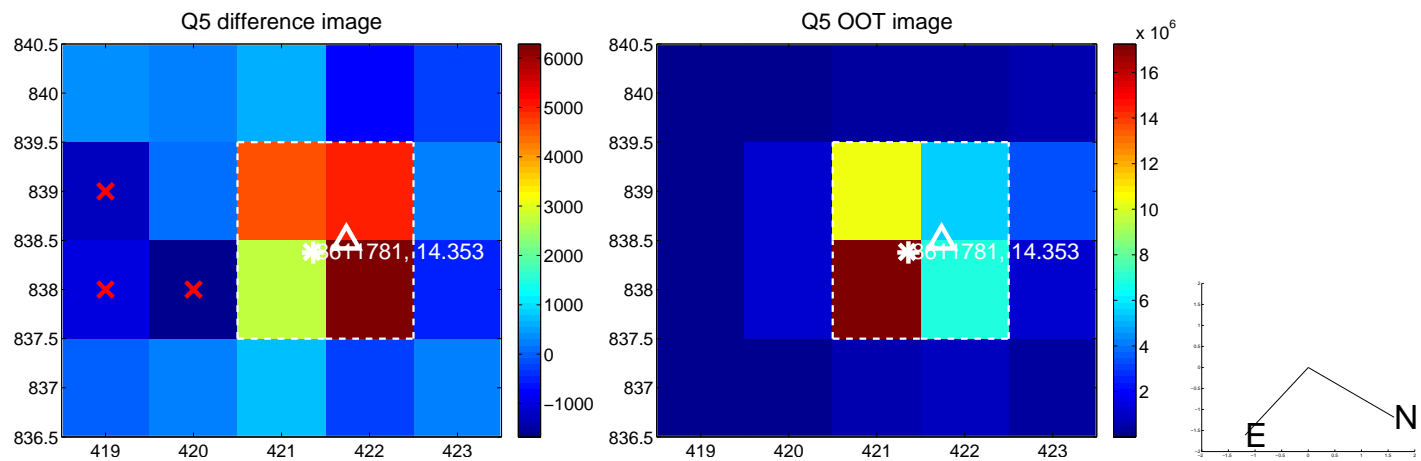


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

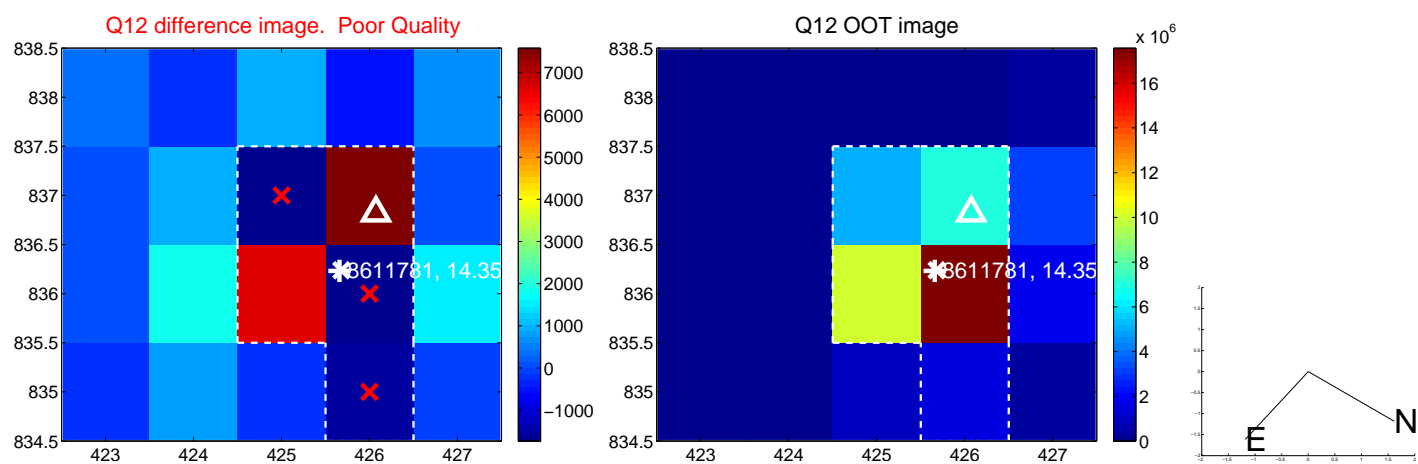
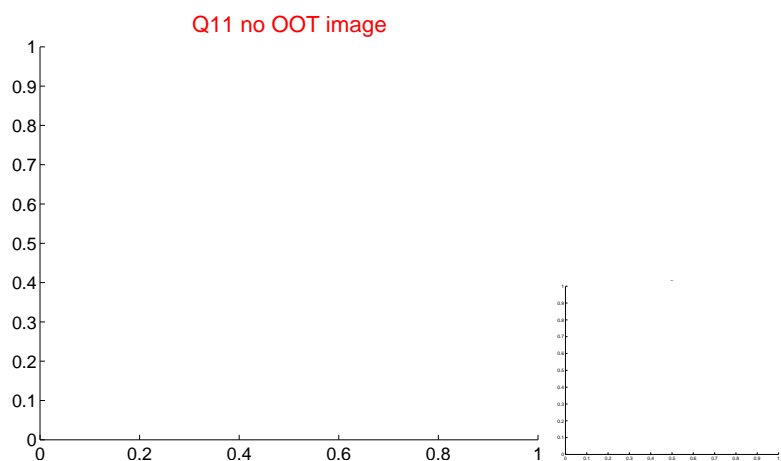
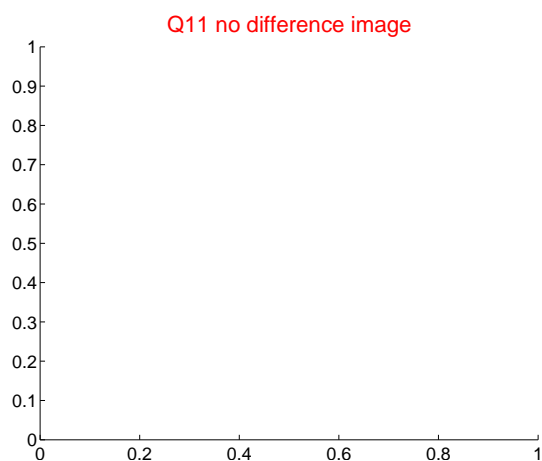
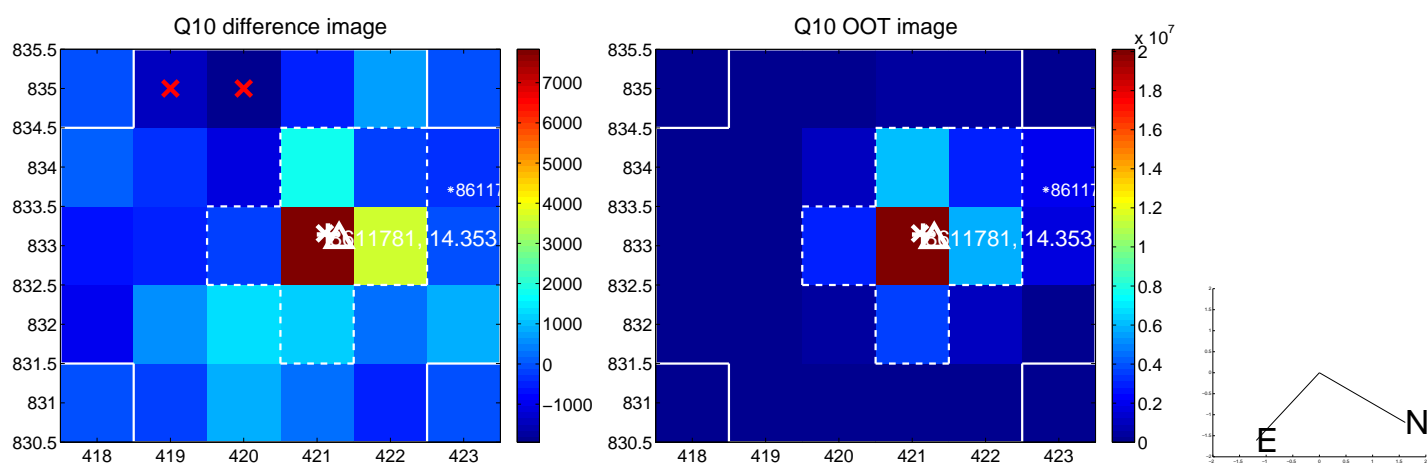
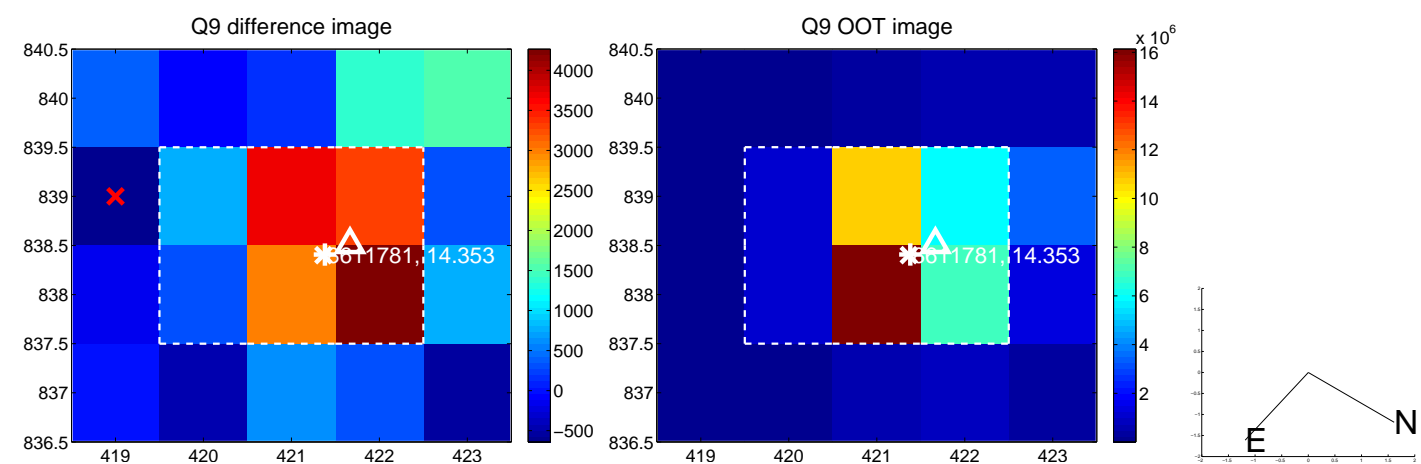
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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.

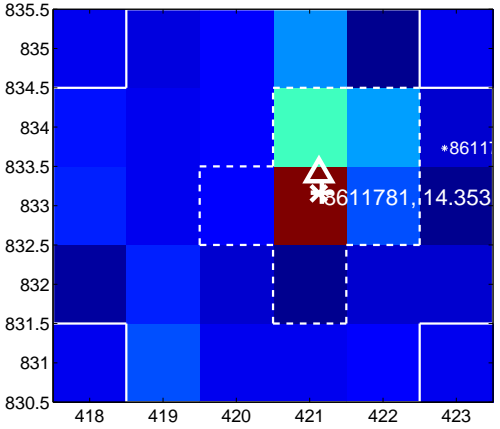
Q13 no difference image



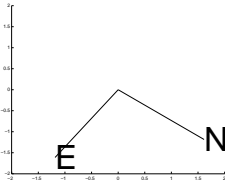
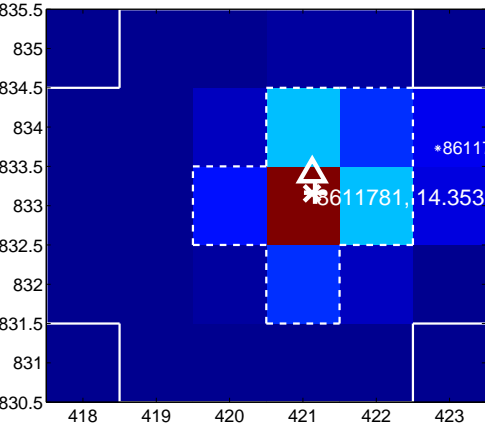
Q13 no OOT image



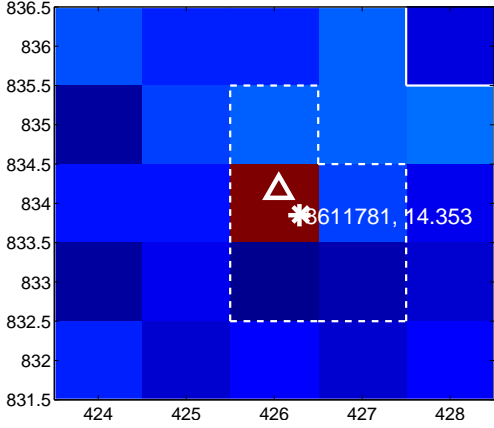
Q14 difference image



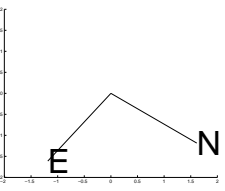
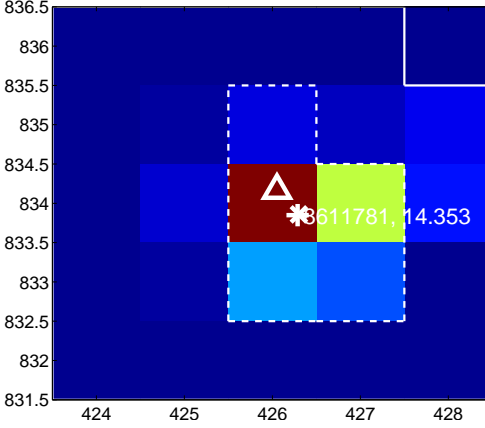
Q14 OOT image



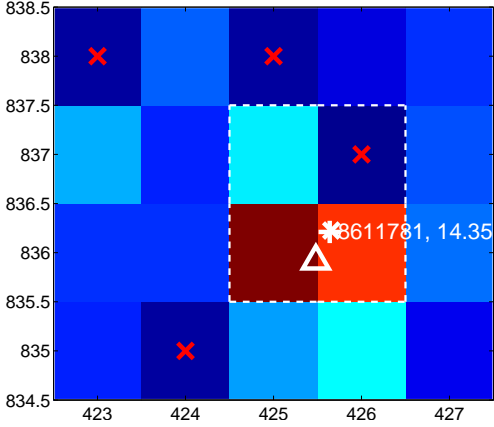
Q15 difference image



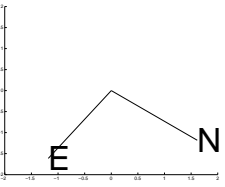
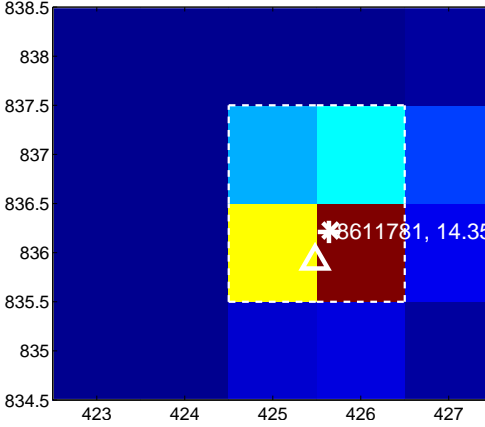
Q15 OOT image



Q16 difference image

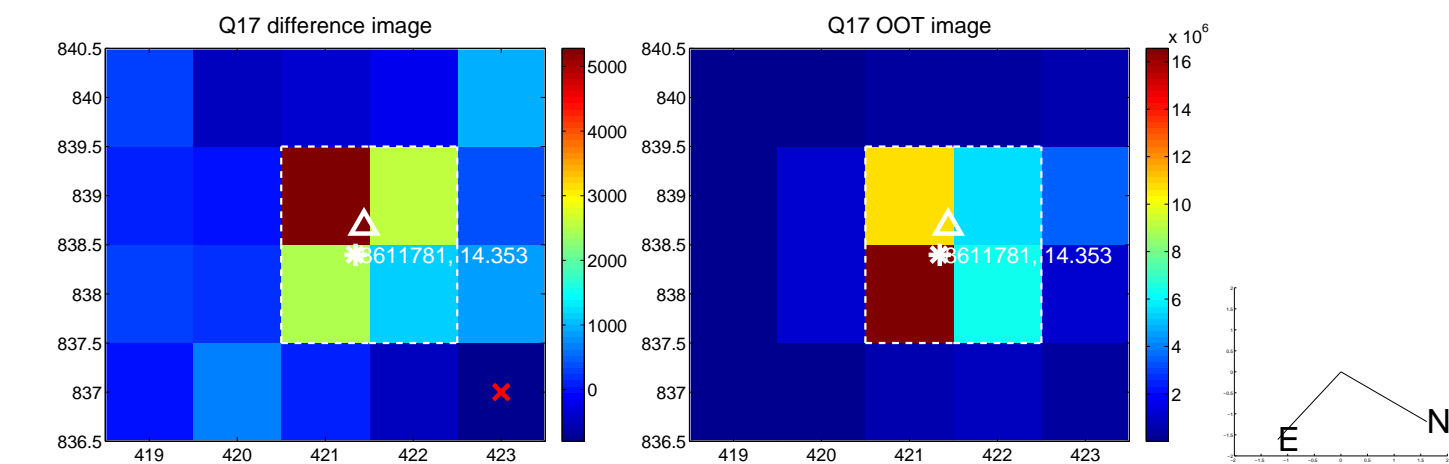


Q16 OOT image

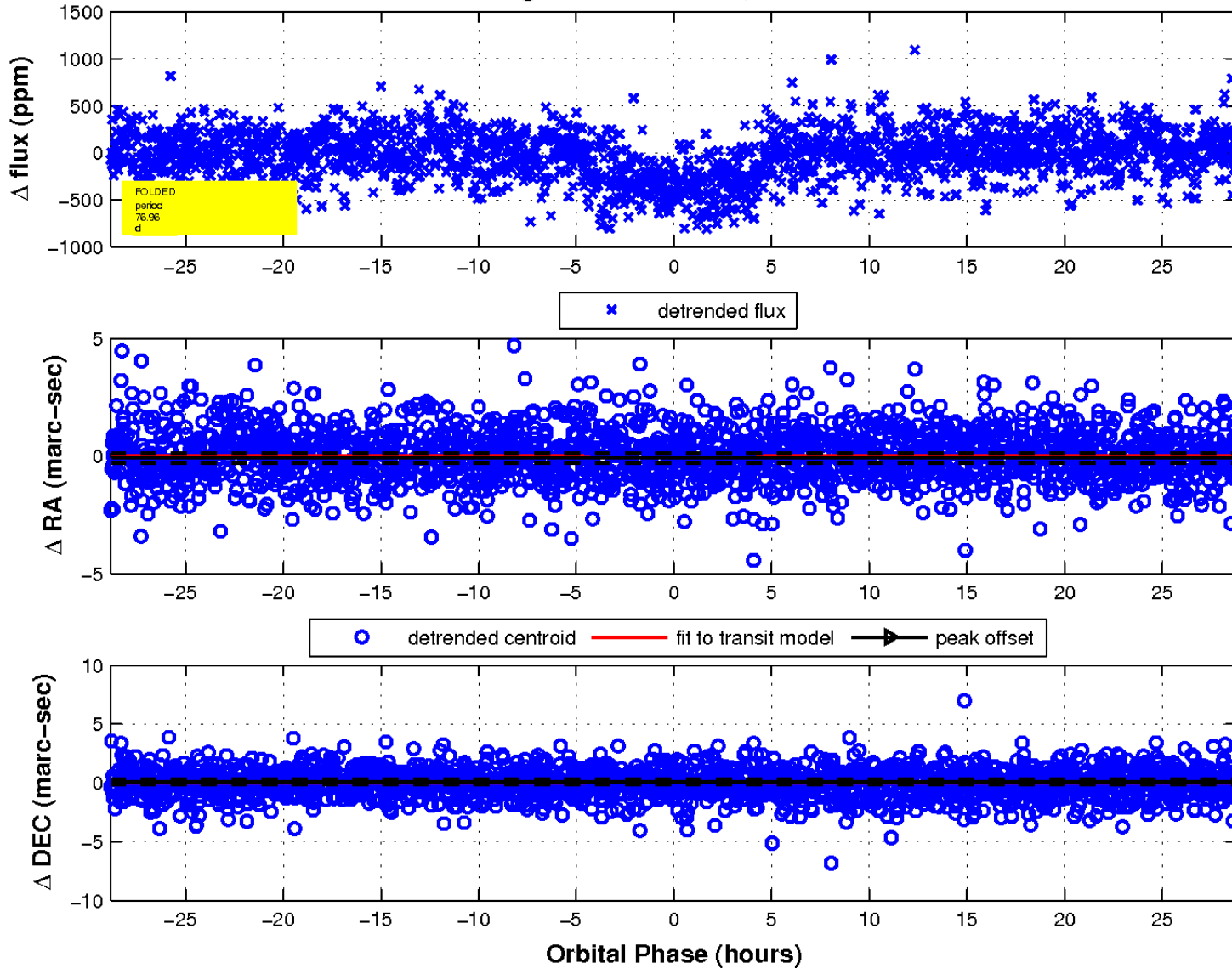




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

