

# KIC 003861611

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003861611-01	OBS	2932.01	3.849339	134.432911	537.2	2.394	12.1	13.8	0.91	5984	2.47	409.67

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003861611-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH

**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 003861611-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
003861611-01	3861611	003861595-pri	3861595	1:1	11.7	-1	3	11.43	15.85	2.61	Direct-PRF	0	0.40	0.27

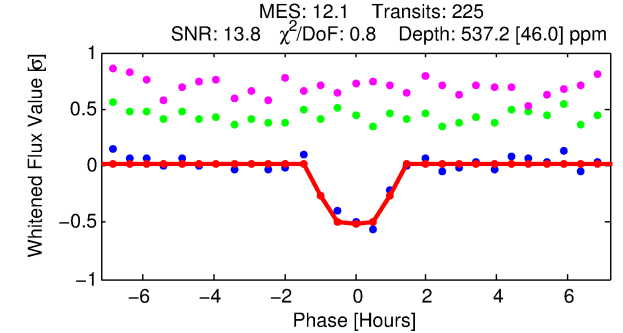
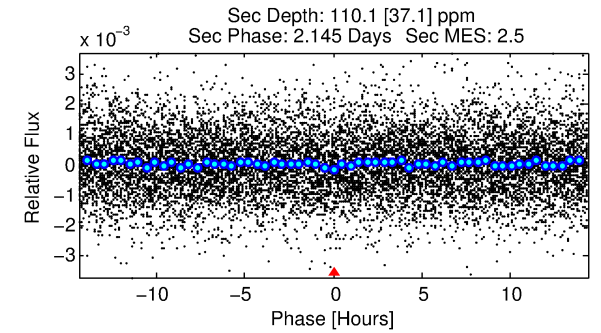
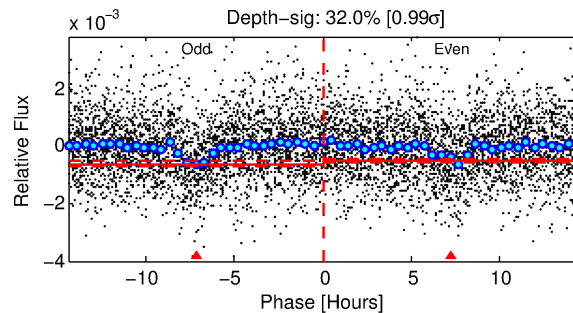
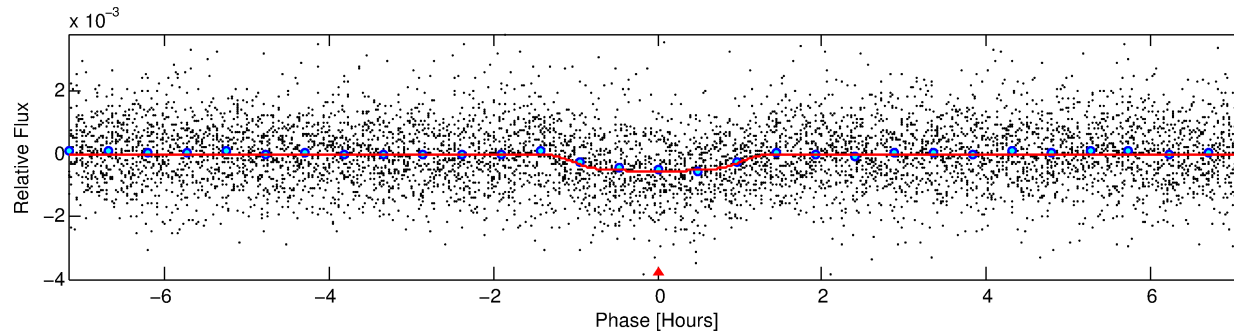
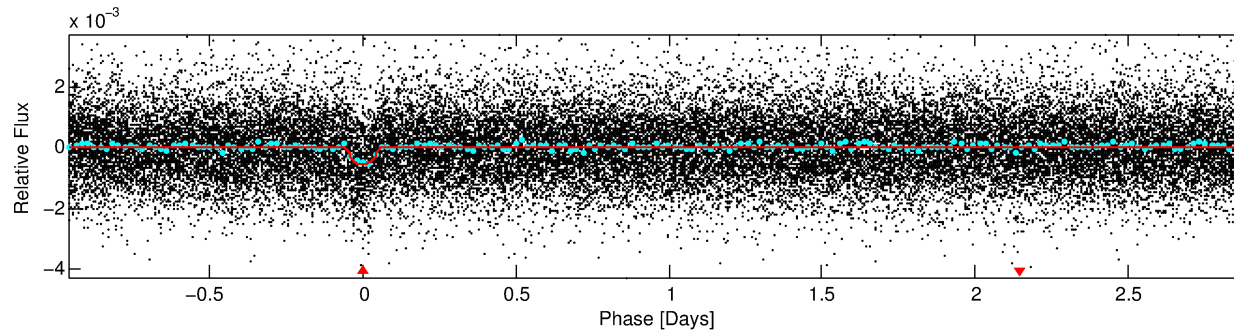
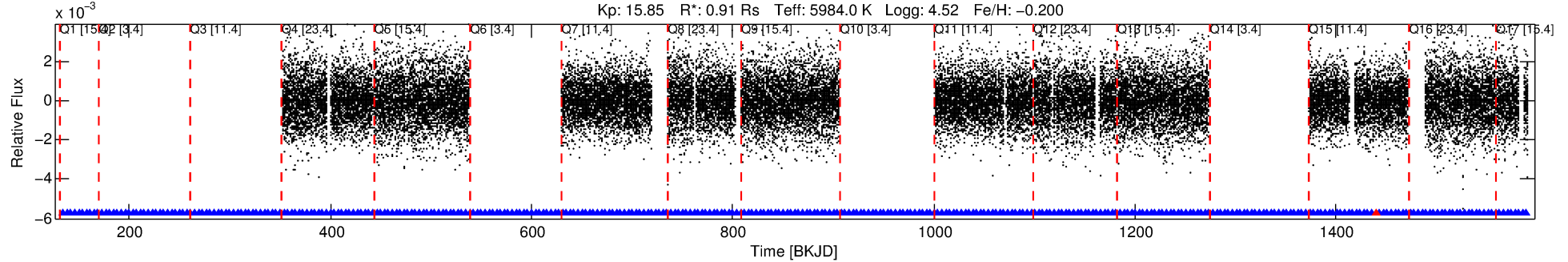
**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 3861611 Candidate: 1 of 1 Period: 3.849 d

KOI: K02932.01 Corr: 0.982

Kp: 15.85 R\*: 0.91 Rs Teff: 5984.0 K Logg: 4.52 Fe/H: -0.200



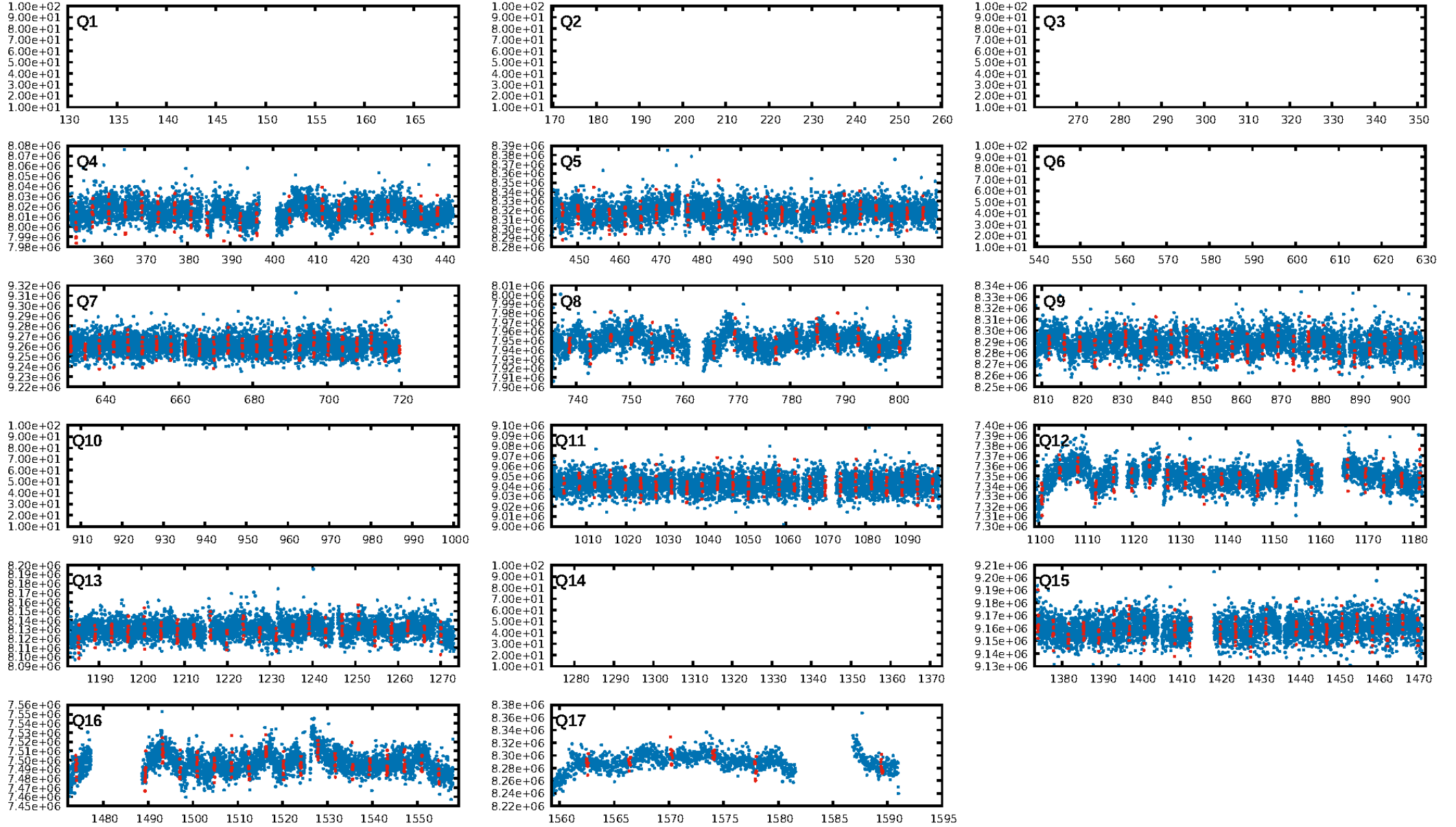
## DV Fit Results:

Period = 3.84934 [0.00002] d  
Epoch = 134.4329 [0.0031] BKJD  
Rp/R\* = 0.0250 [0.0068]  
a/R\* = 6.16 [8.08]  
b = 0.90 [0.30]  
Seff = 409.67 [159.56]  
Teq = 1147 [112] K  
Rp = 2.47 [0.99] Re  
a = 0.0480 [0.0119] AU  
Ag = 22.77 [16.77] [1.30σ]  
Teffp = 3875 [635] K [4.23σ]

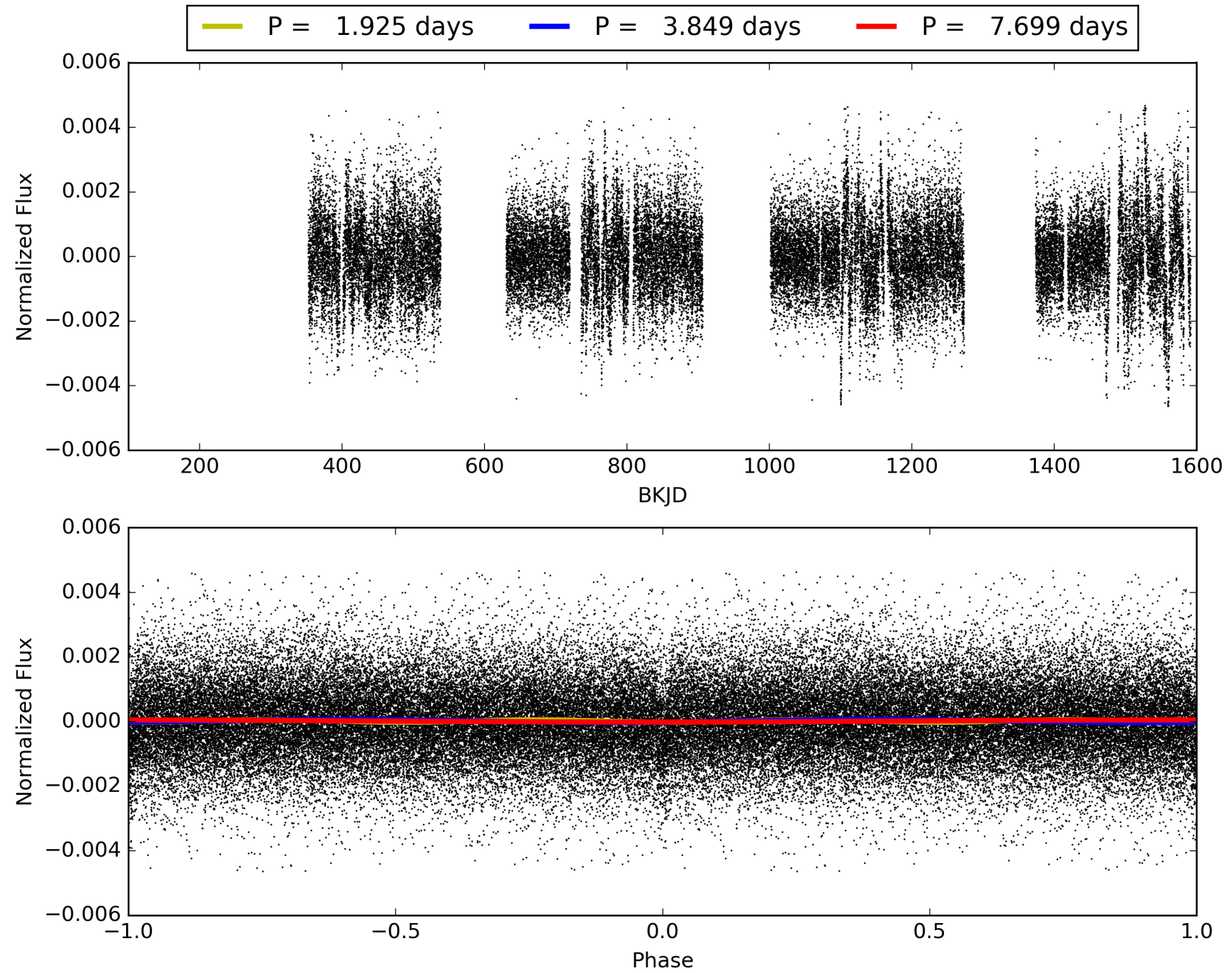
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.21e-33  
RollingBand-fgt: 1.00 [218/219]  
GhostDiagnostic-chr: -0.5283  
Centroid-sig: 0.0%  
Centroid-so: 5.722 arcsec [21.40σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [11/11]

# TCE 003861611-01, PDC Light Curves

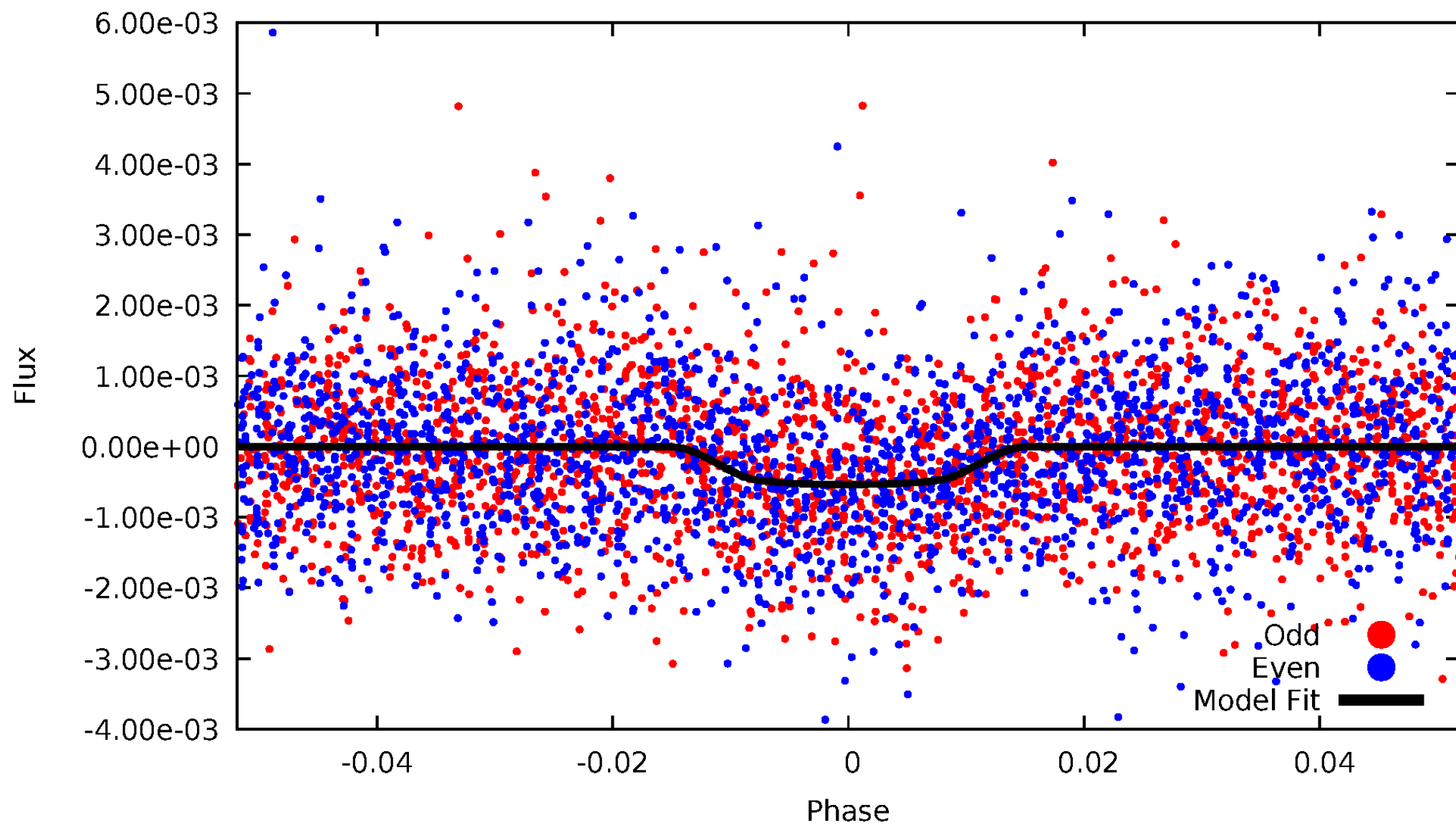


# TCE 003861611-01



# DV Odd/Even

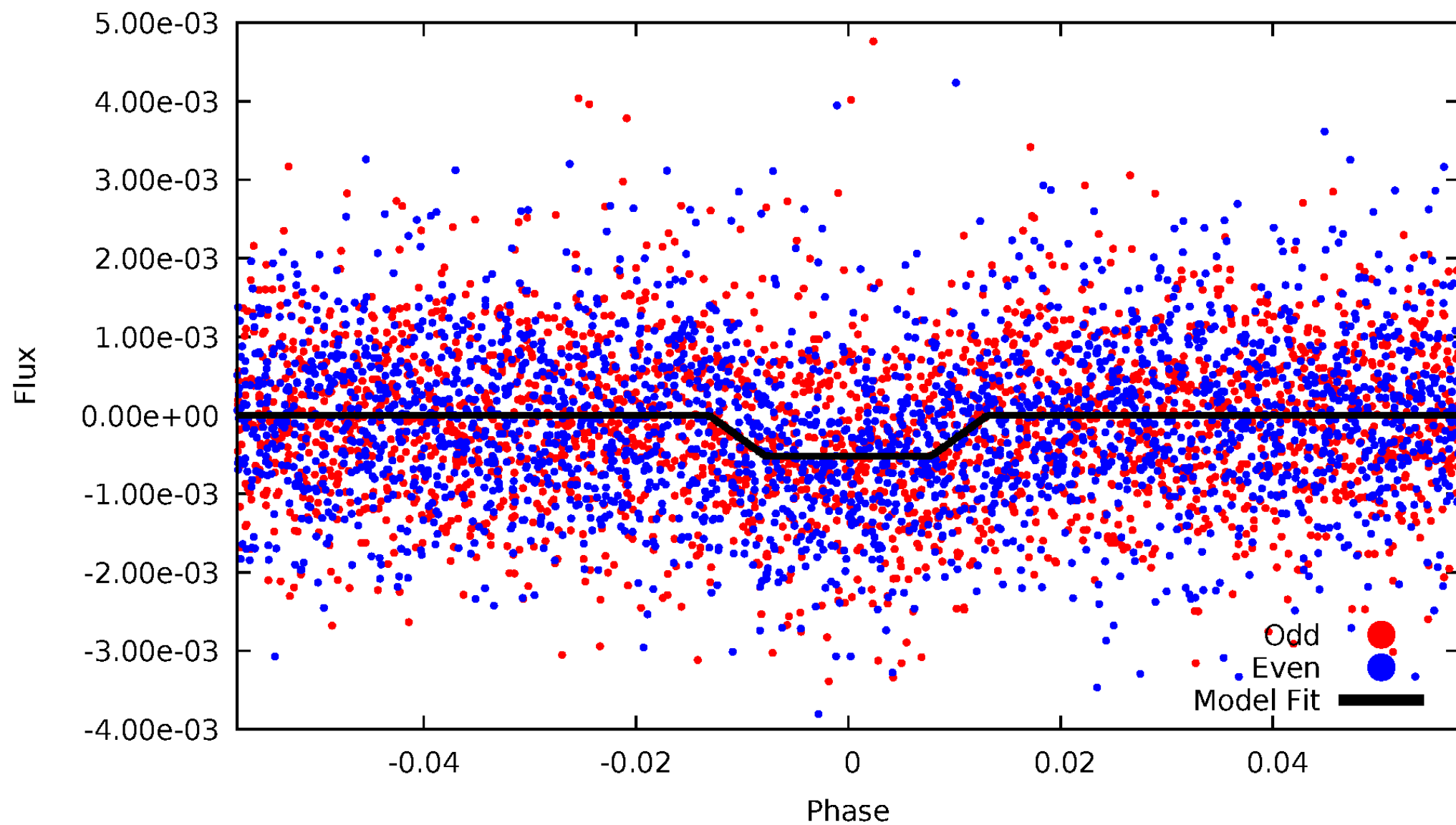
TCE 003861611-01





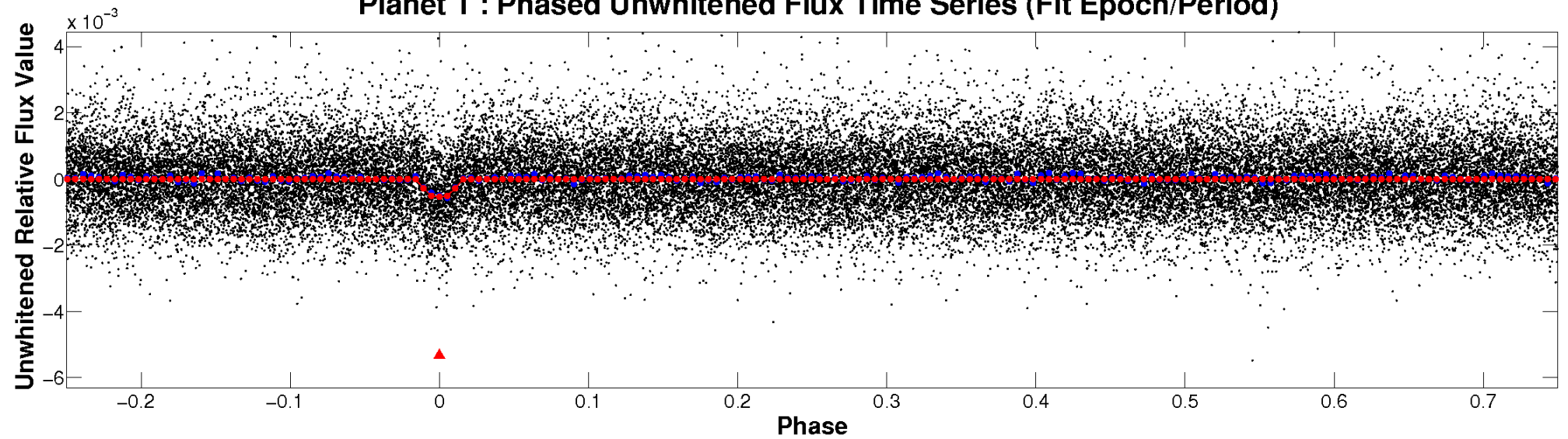
# ALT Odd/Even

TCE 003861611-01

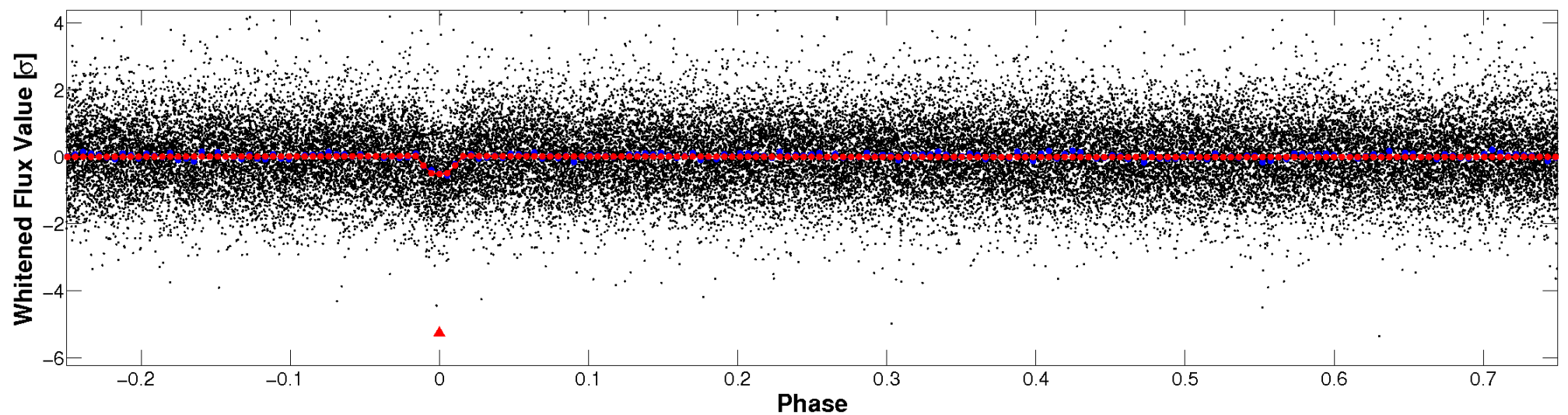


# Non-Whitened Vs. Whitened Light Curve

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

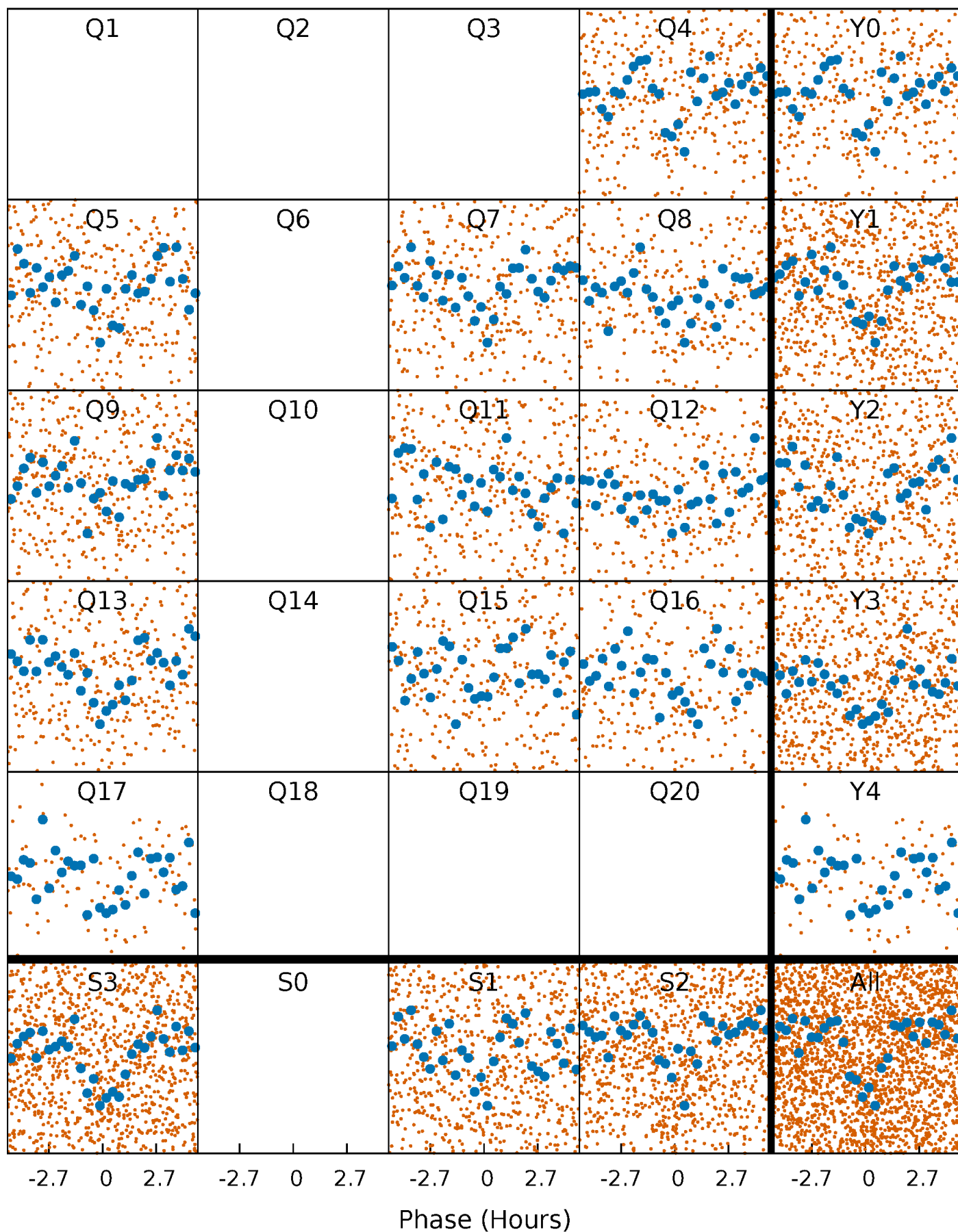


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

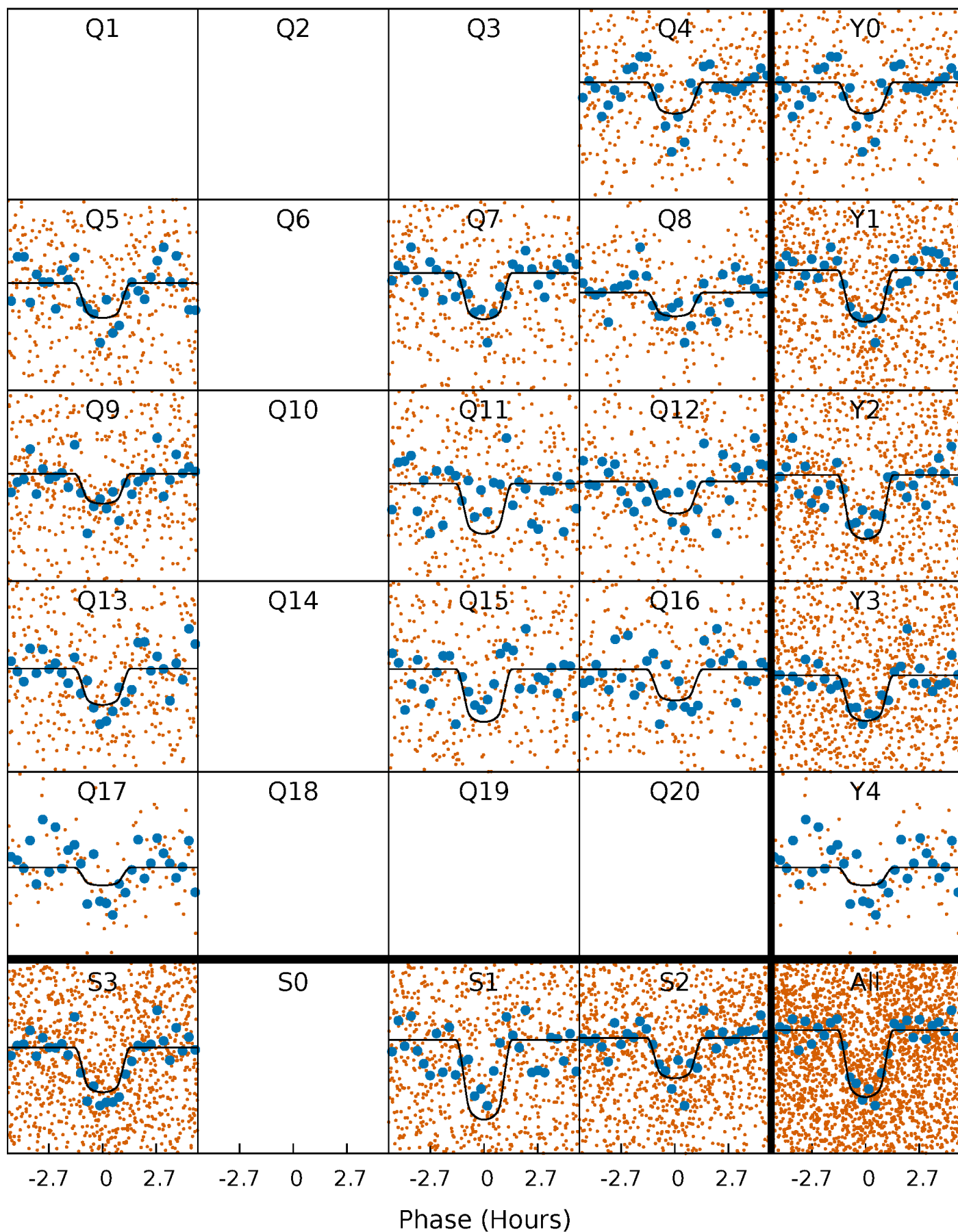
TCE 003861611-01 P= 3.849339 Days  $T_0=134.432911$  (BKJD)





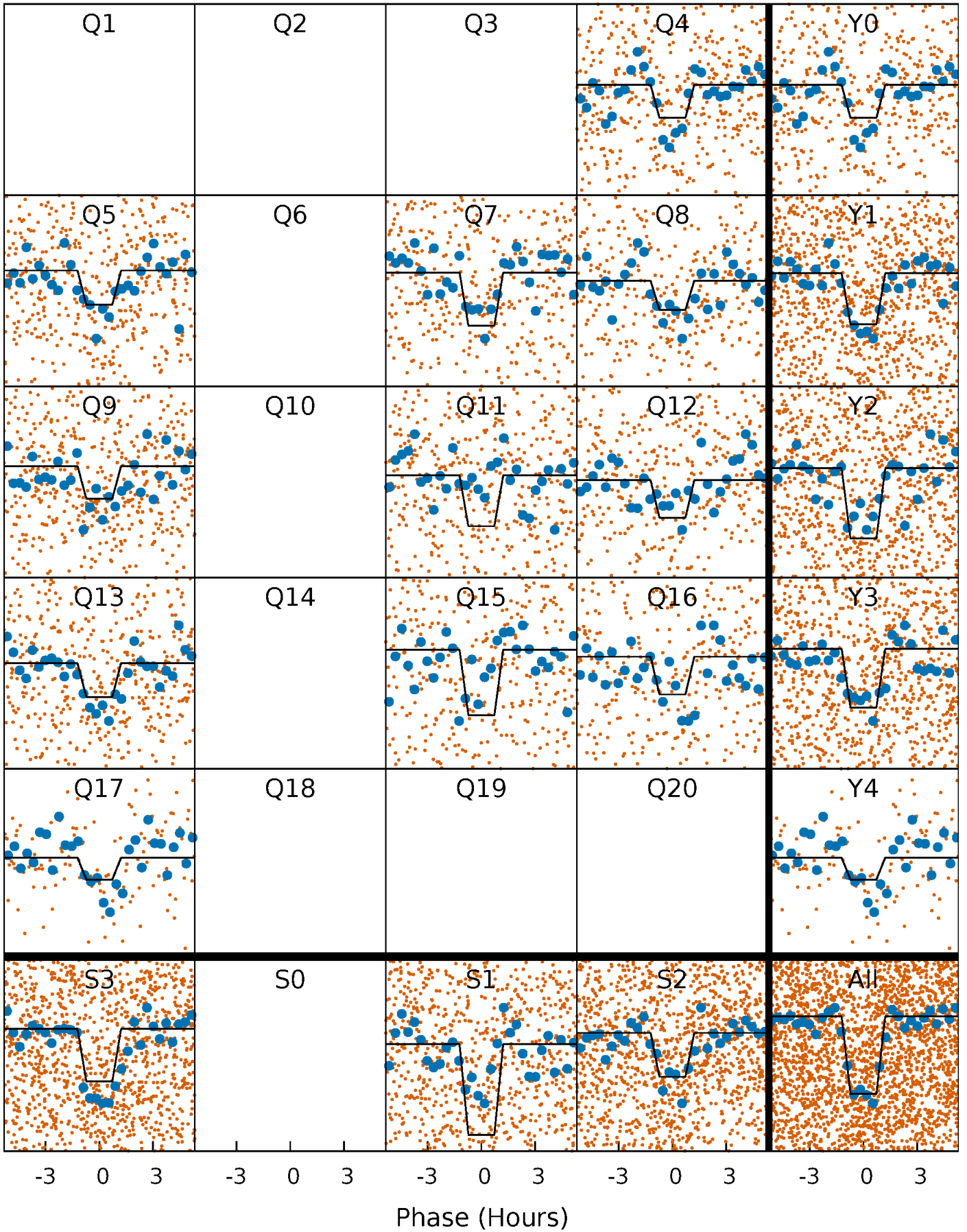
# DV Quarter-Phased Transit Curves

TCE 003861611-01 P= 3.849339 Days  $T_0=134.432911$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

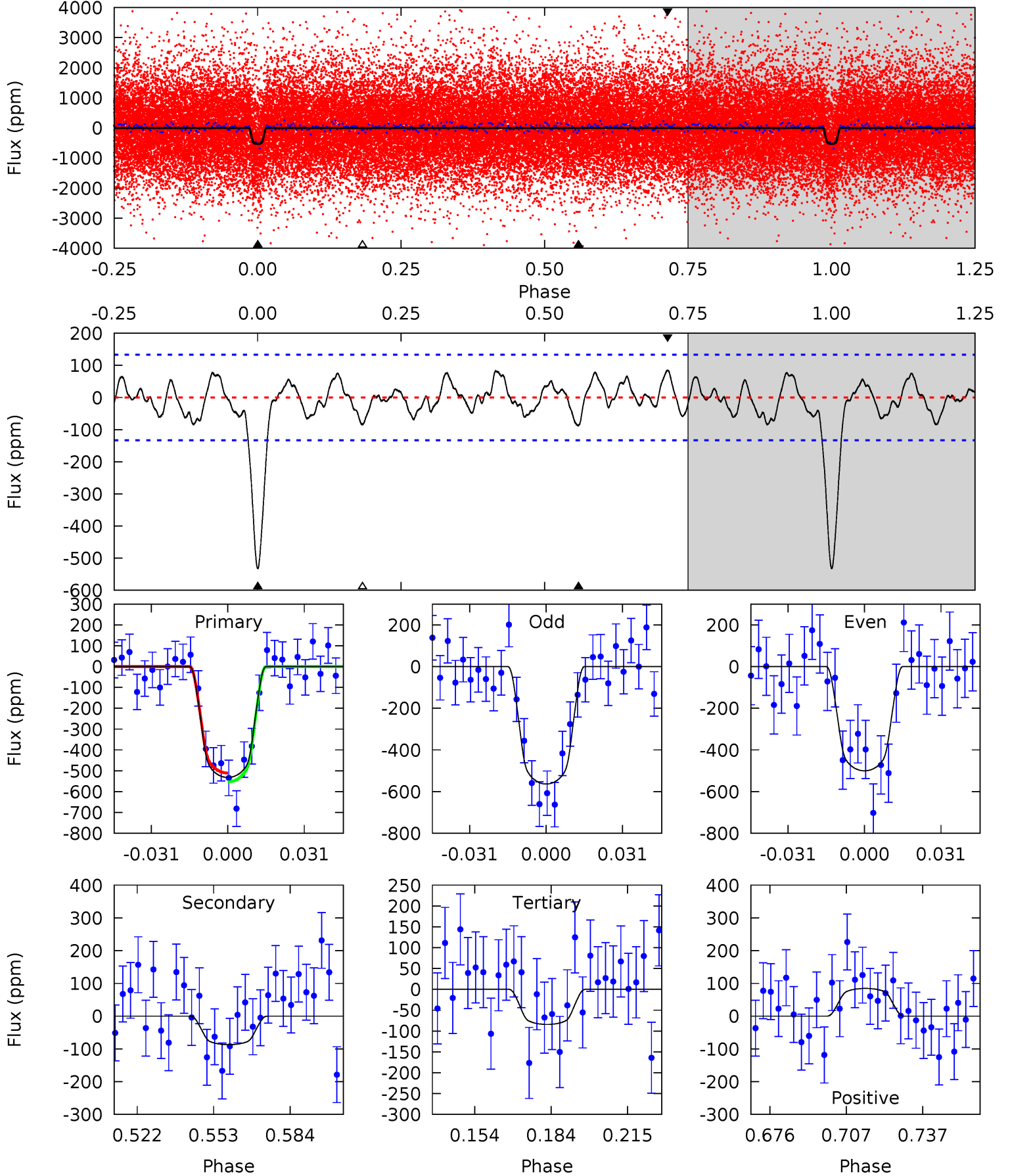
TCE 003861611-01 P= 3.849313 Days  $T_0=134.437910$  (BKJD)



# DV Model-Shift Uniqueness Test

003861611-01, P = 3.849339 Days, E = 134.432911 Days

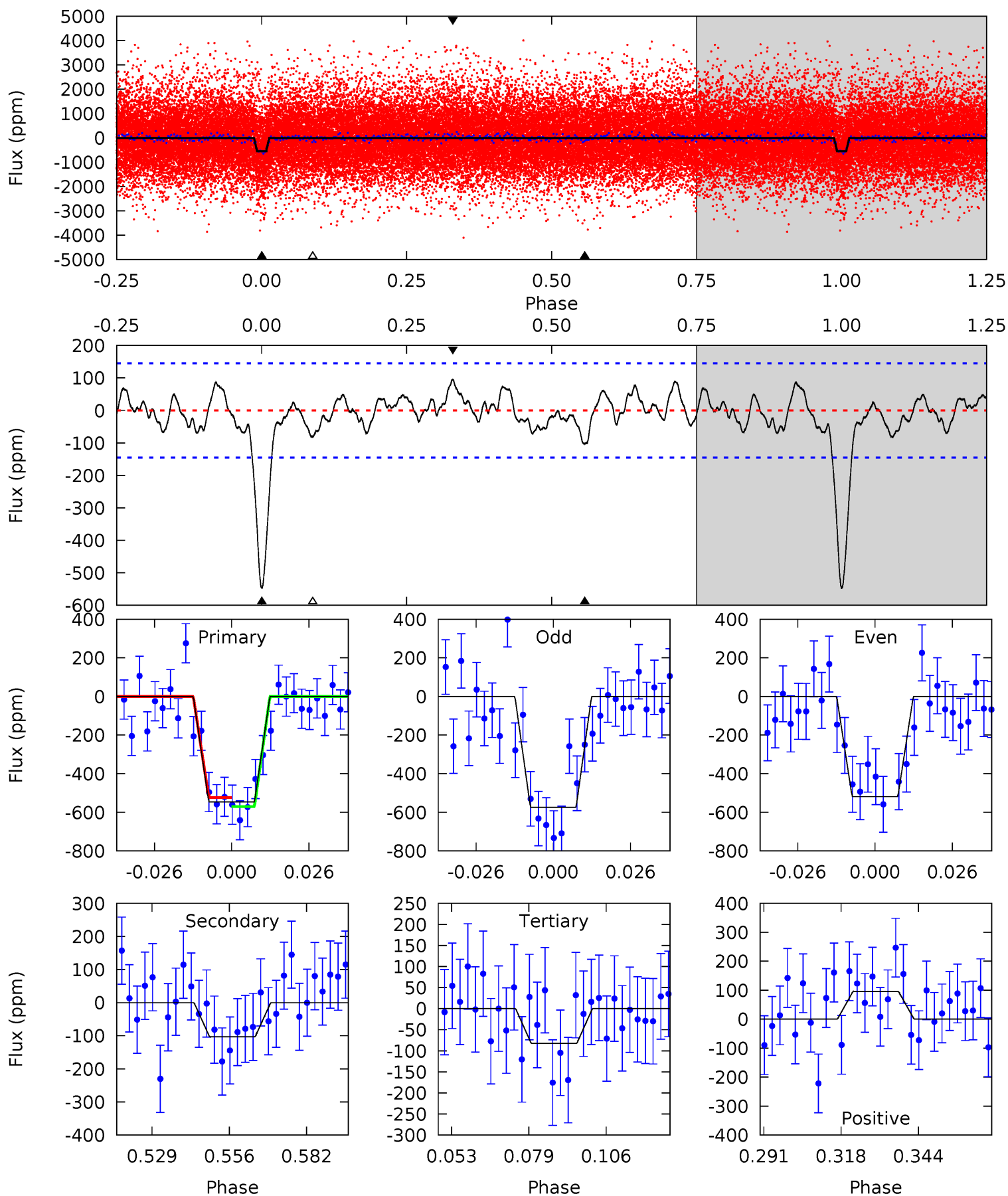
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	3.14	3.04	3.05	4.81	2.16	1.44	16.2	16.2	0.10	0.09	1.15	0.95	0.14	0.76



# Alt Model-Shift Uniqueness Test

003861611-01, P = 3.849313 Days, E = 134.437910 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
18.2	3.43	2.75	3.18	4.84	2.22	1.32	15.5	15.0	0.68	0.25	0.92	1.06	0.15	0.78



### Stellar Parameters For KIC 003861611

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5984^{+210}_{-210}$	$4.521^{+0.050}_{-0.200}$	$-0.200^{+0.300}_{-0.300}$	$0.906^{+0.264}_{-0.088}$	$0.993^{+0.121}_{-0.121}$	$1.883^{+0.480}_{-0.926}$
	+4%/-4%	+1%/-4%	+150%/-150%	+29%/-10%	+12%/-12%	+26%/-49%
Source	KIC0	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 003861611-01 / KOI 2932.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-87 \pm 28$	$2.56^{+0.79}_{-0.69}$	$1637^{+116}_{-86}$	$3947^{+563}_{-431}$	$16^{+16}_{-8}$
Alt.	$-103 \pm 30$	$2.35^{+0.75}_{-0.72}$	$1639^{+124}_{-91}$	$4225^{+676}_{-444}$	$23^{+25}_{-11}$

$T_{max}$  = 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

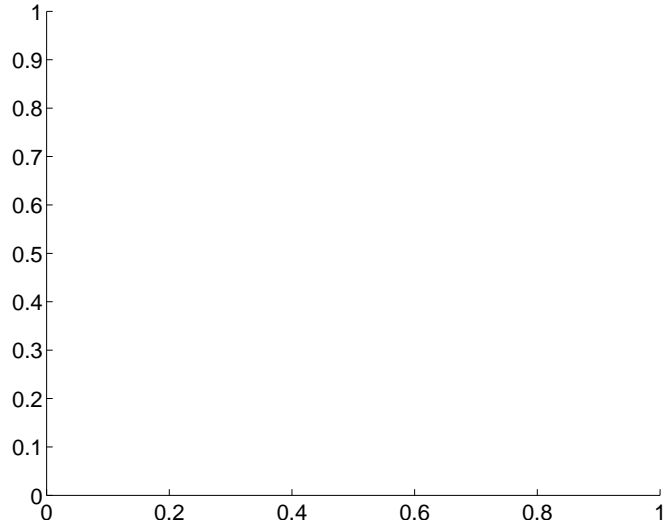
Supplemental centroid analysis for 003861611-01. Kepler magnitude: 15.85. Transit SNR 13.84

There are 0 quarters with good PRF difference image offsets

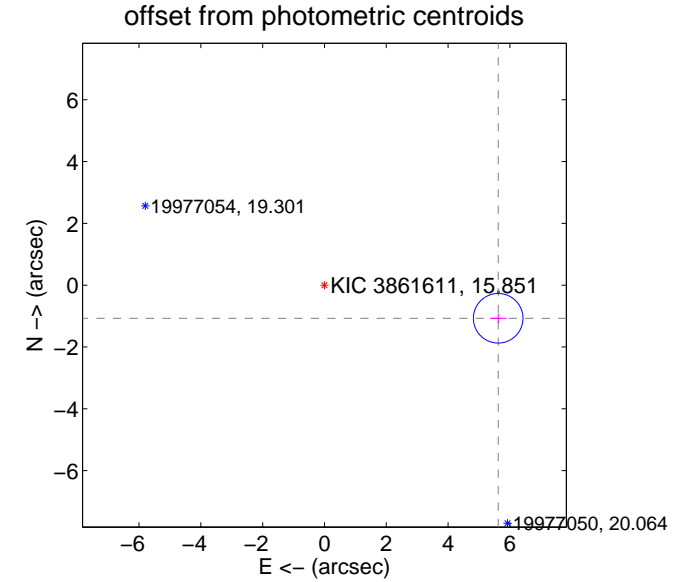
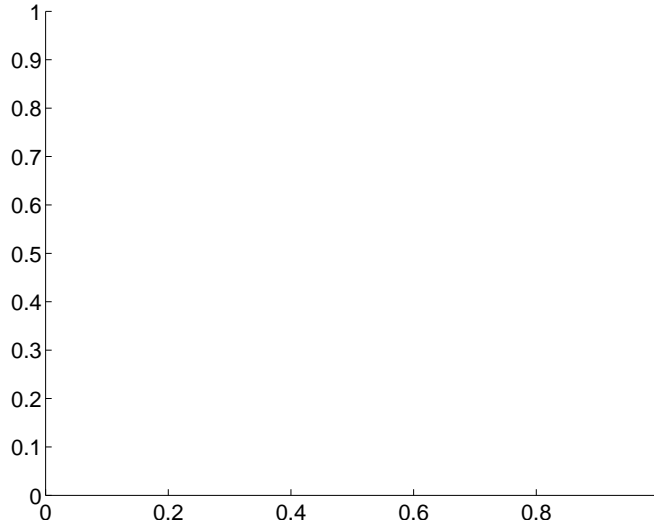
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$5.72 \pm 0.27$	21.40	$-5.62 \pm 0.27$	$-1.07 \pm 0.15$

There is no PRF-fit offset from OOT-fit

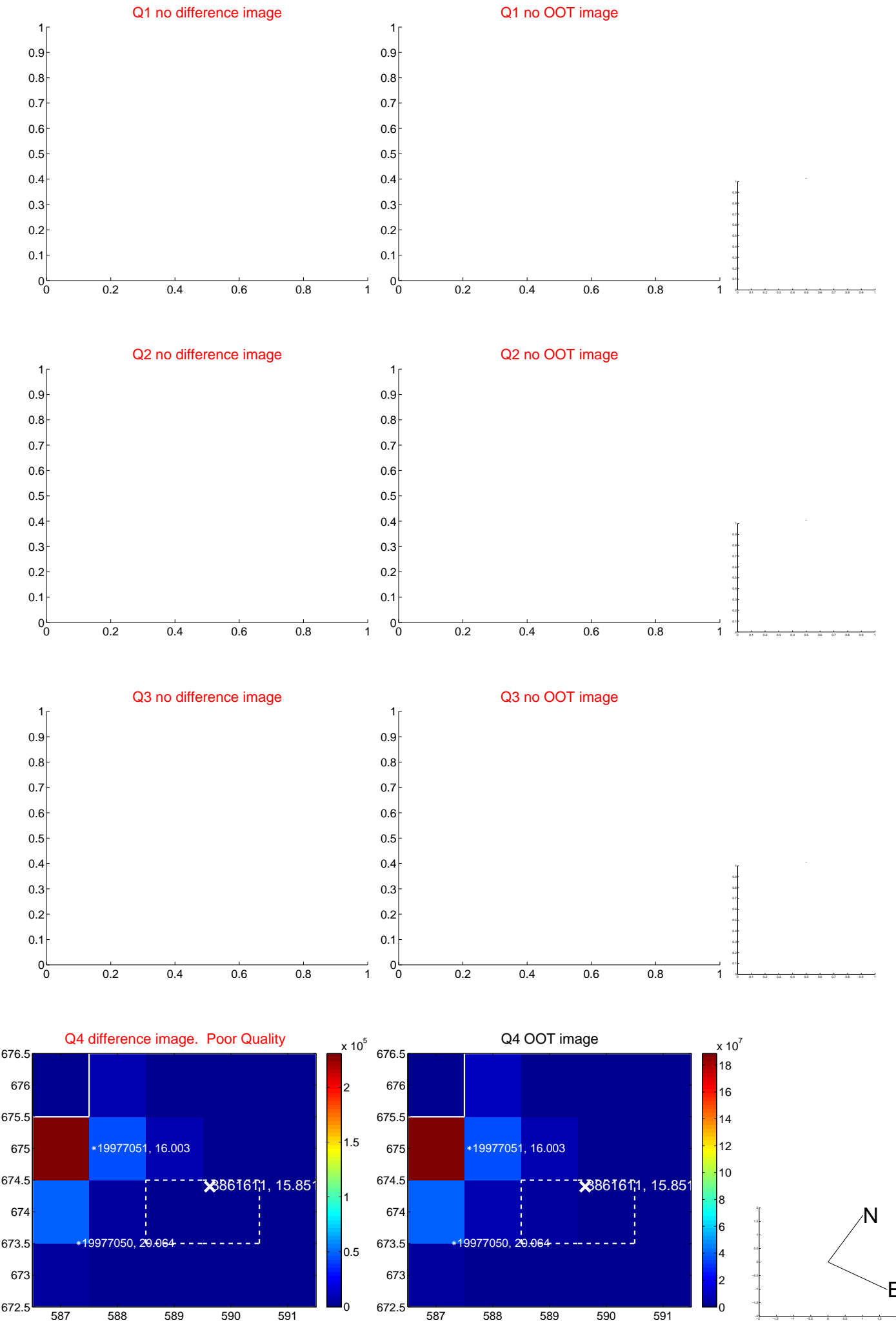


There is no PRF-fit offset from KIC

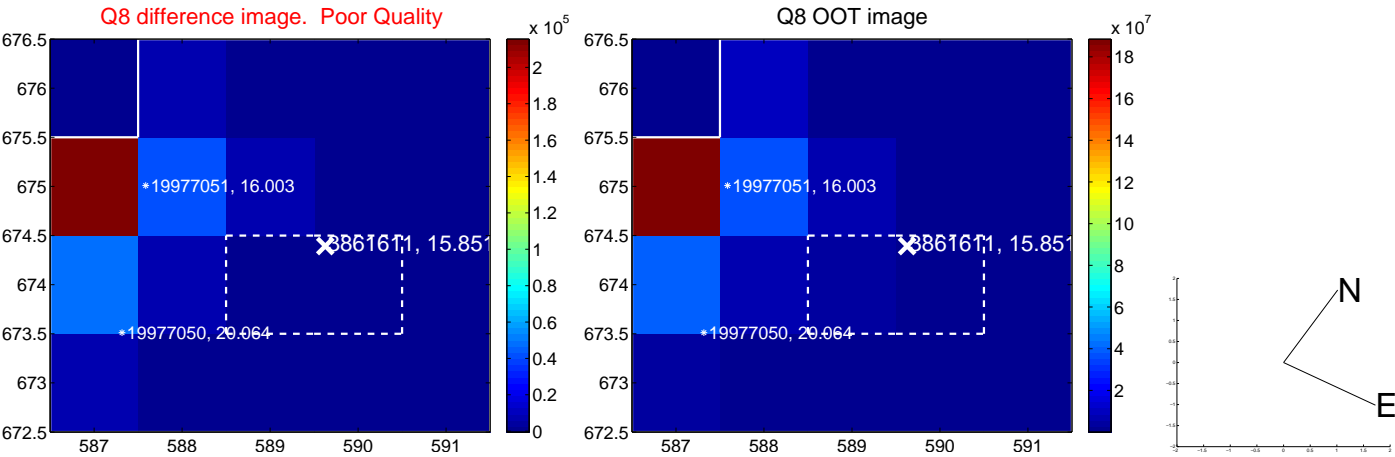
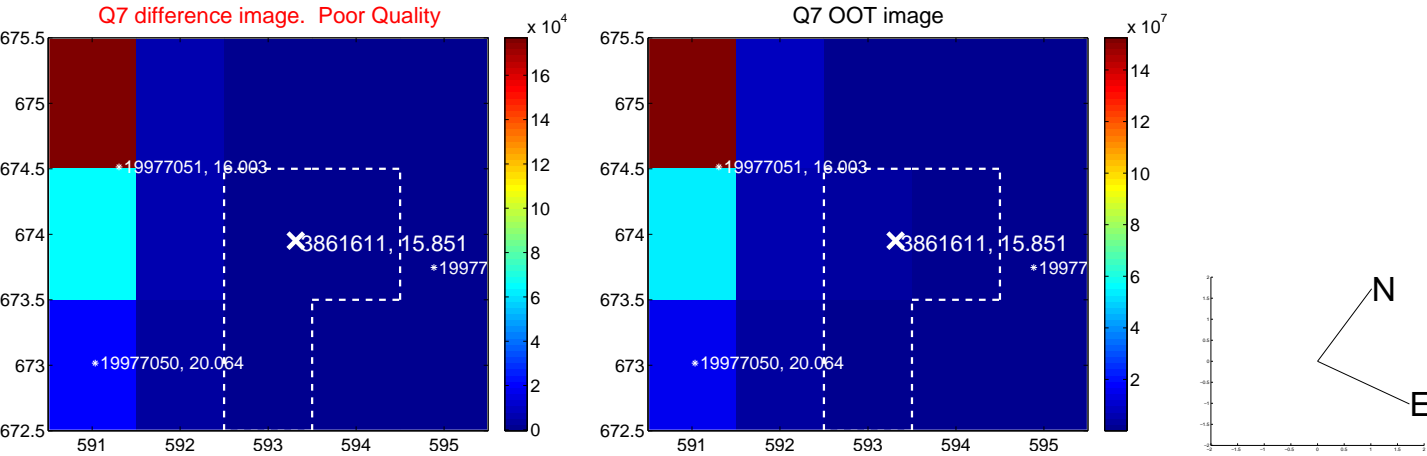
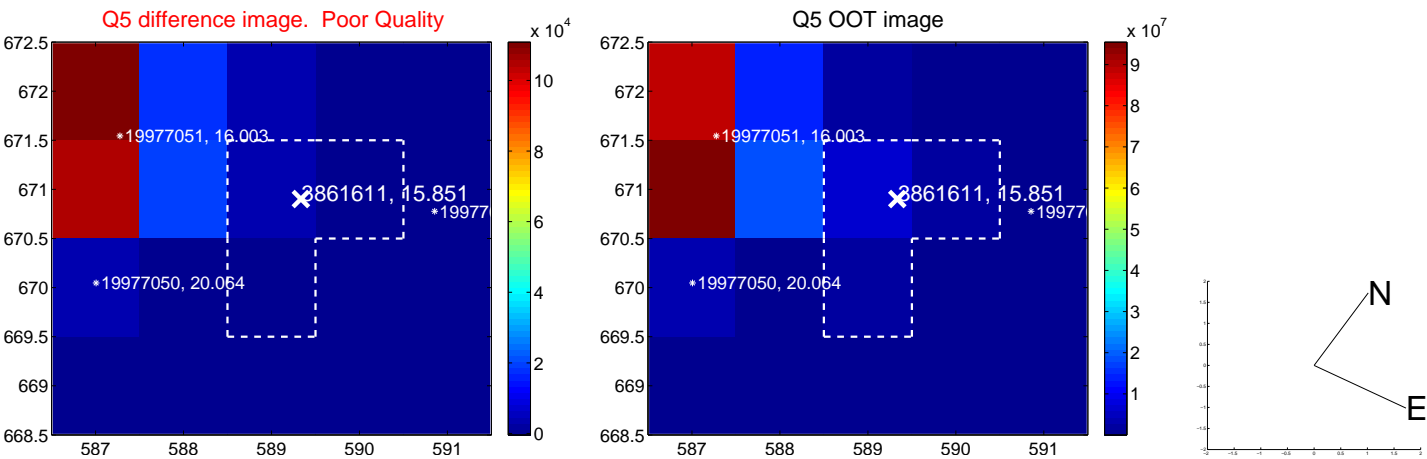


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

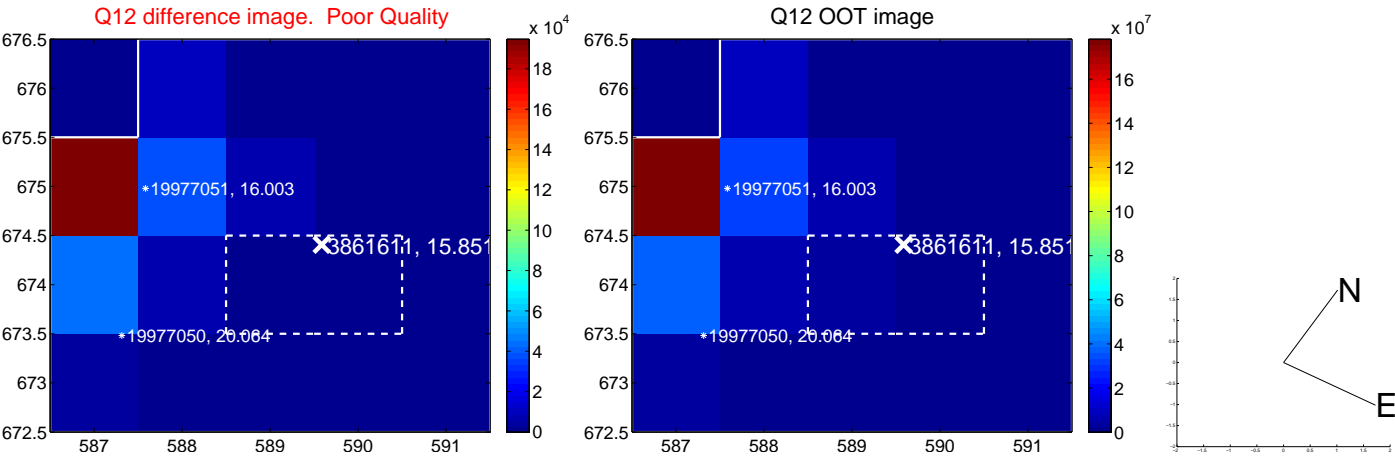
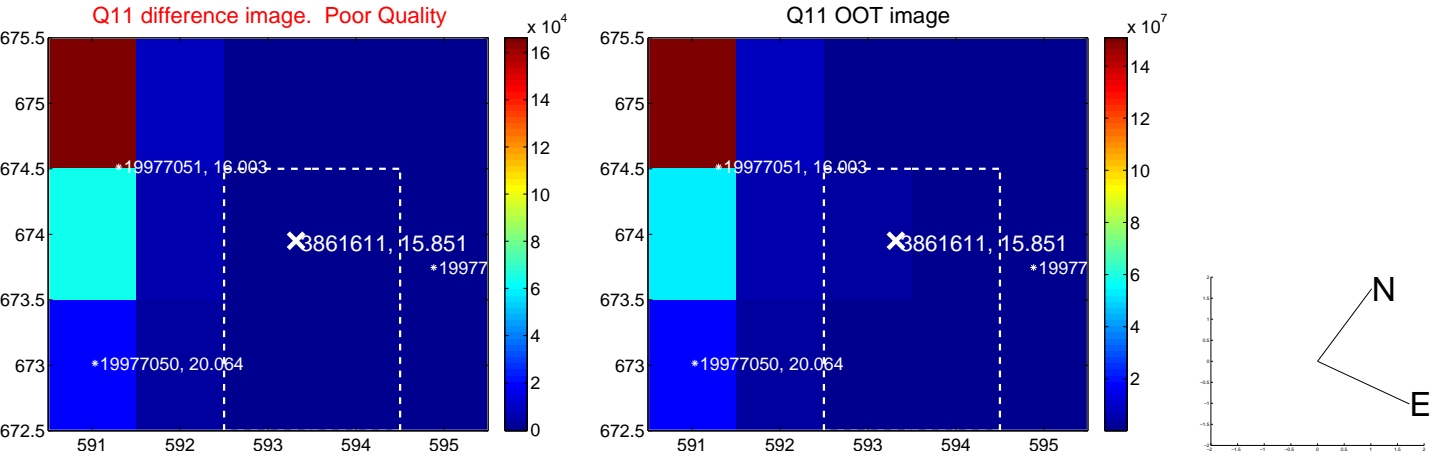
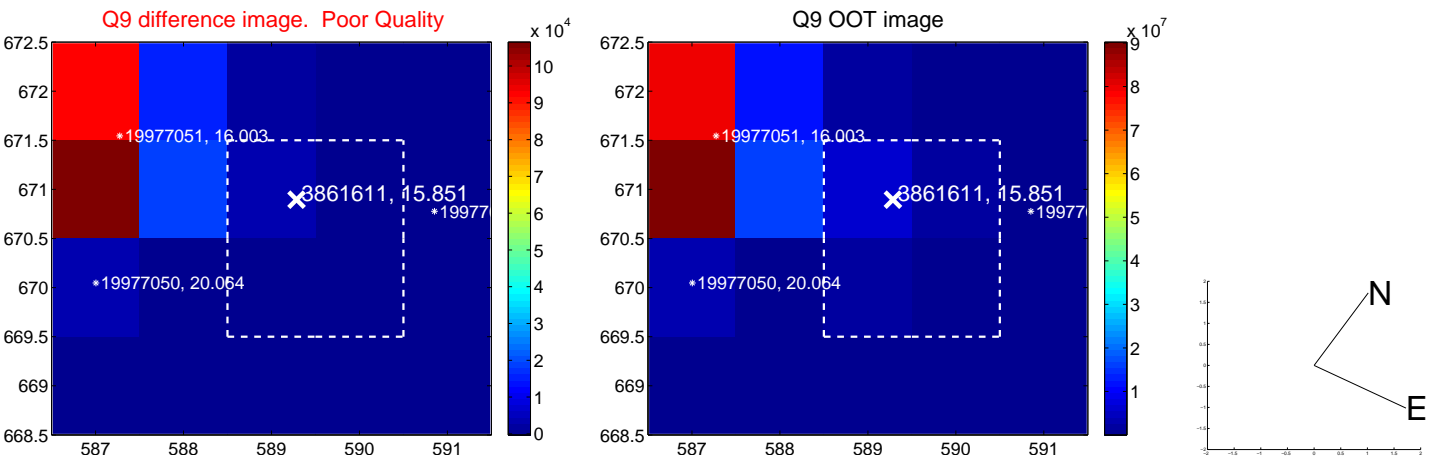
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



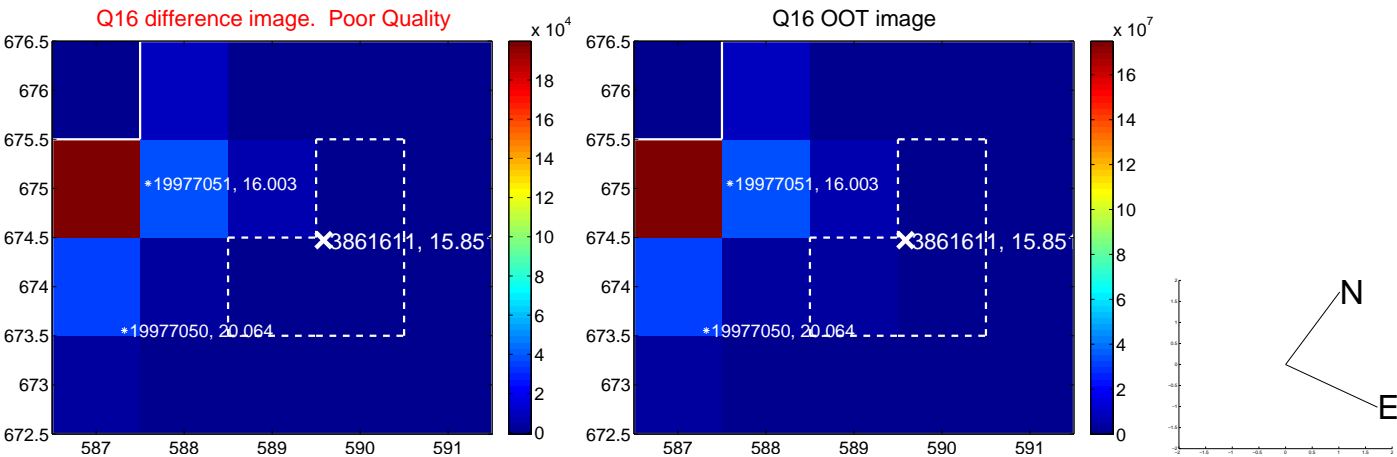
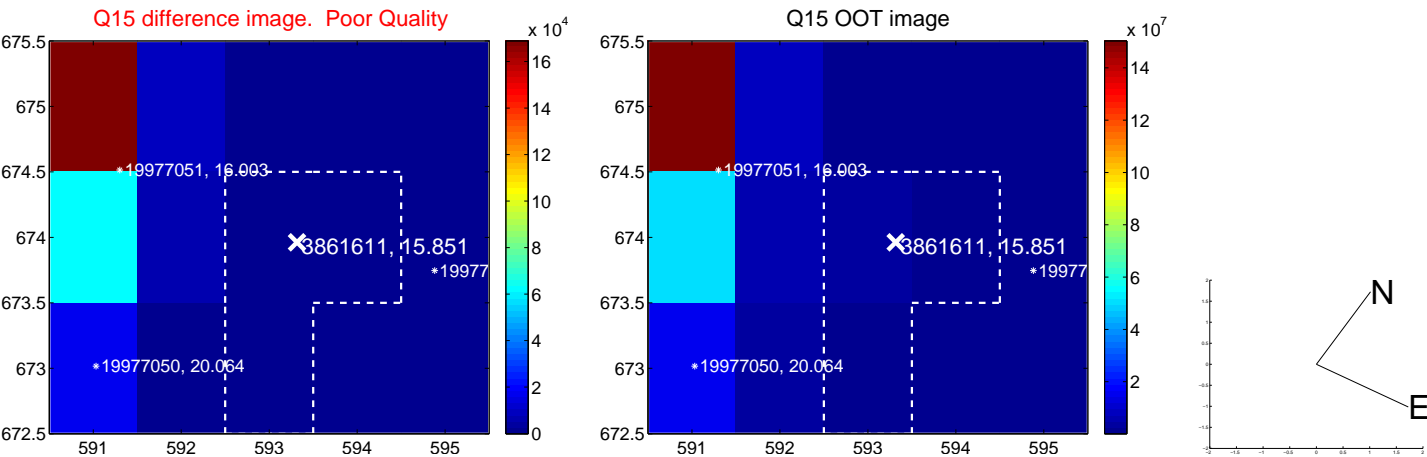
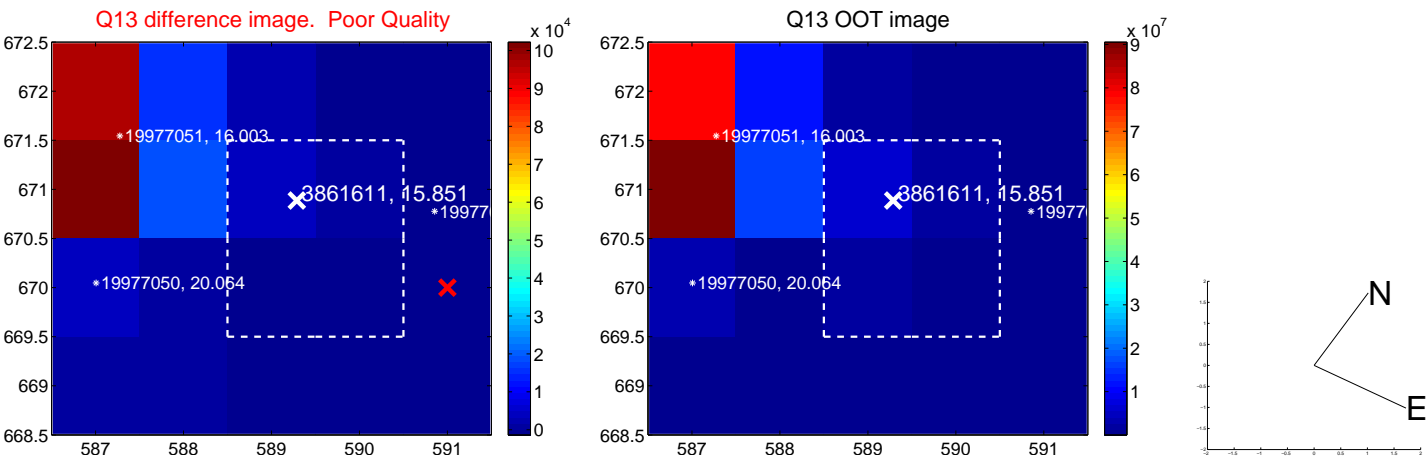
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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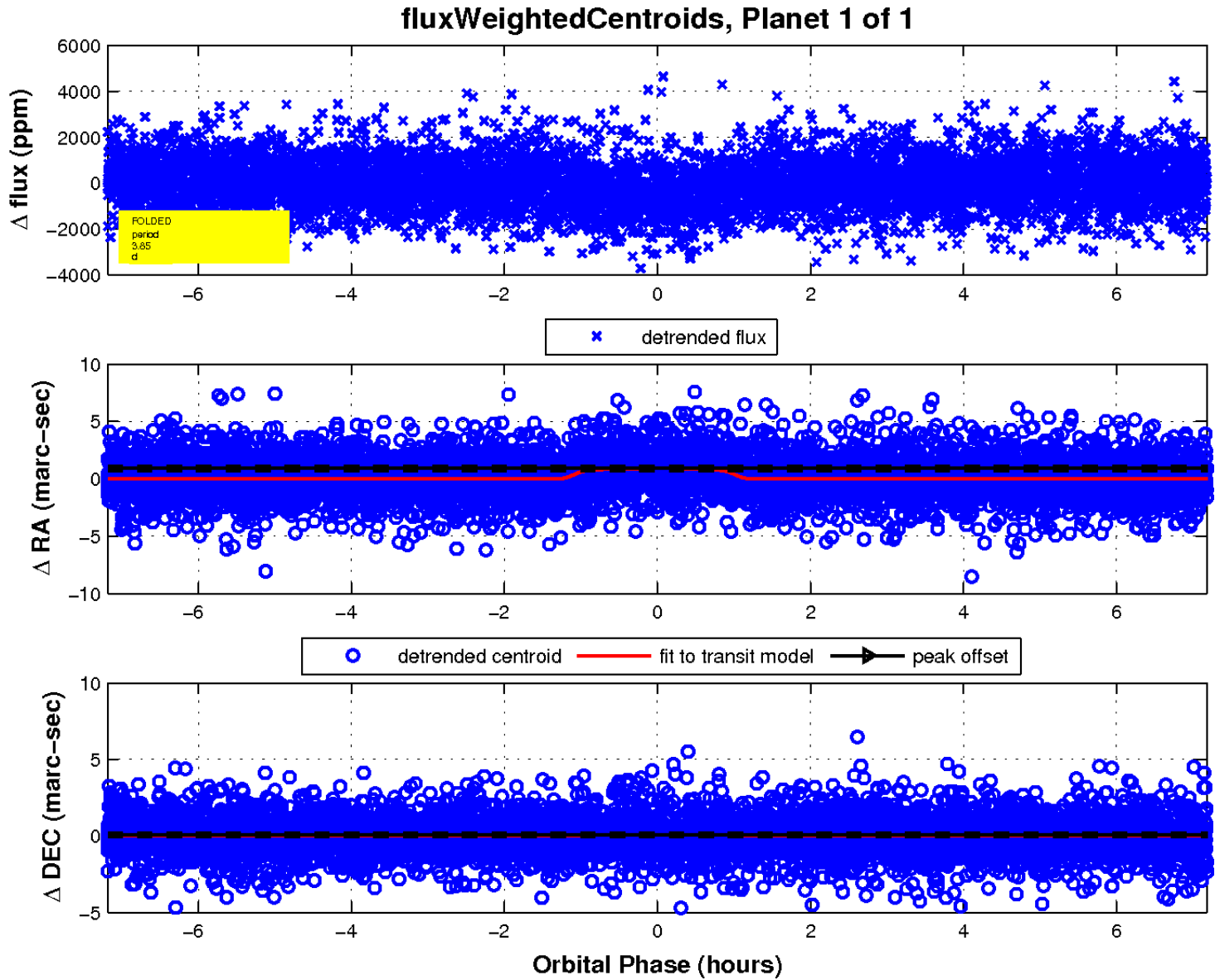
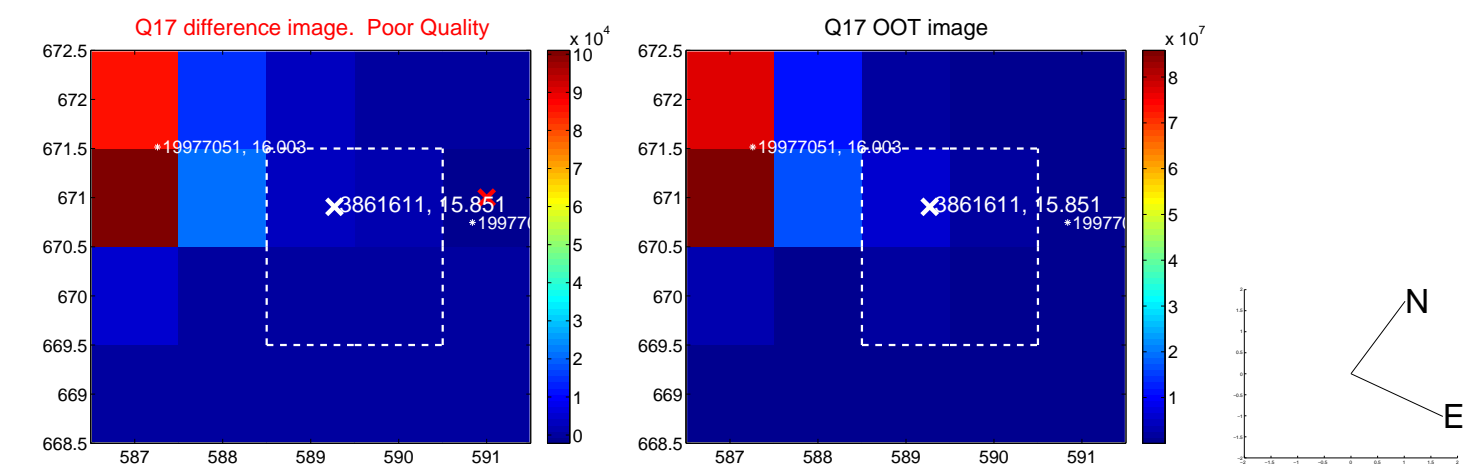


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UKIRT Image

