

# KIC 005694127

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005694127-01	OBS	No	5.550091	134.254560	188.2	1.952	7.7	6.0	0.70	4303	1.11	50.14
005694127-02	OBS	No	271.484242	335.661286	827.1	1.466	13.7	2.8	0.70	4303	1.92	0.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005694127-01	OBS	FP	0.01	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
005694127-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_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_FEW_DIFFS

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

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

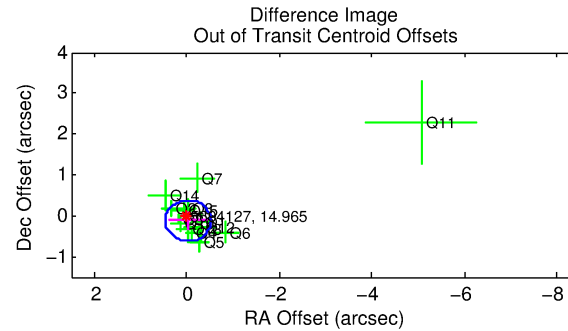
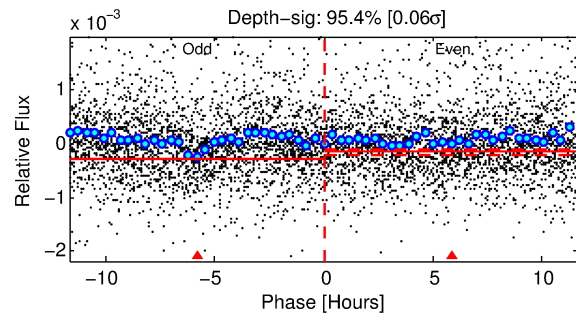
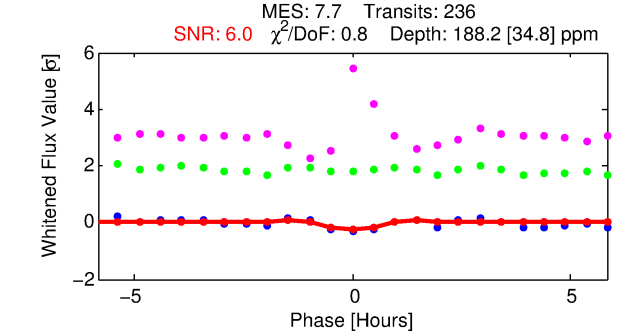
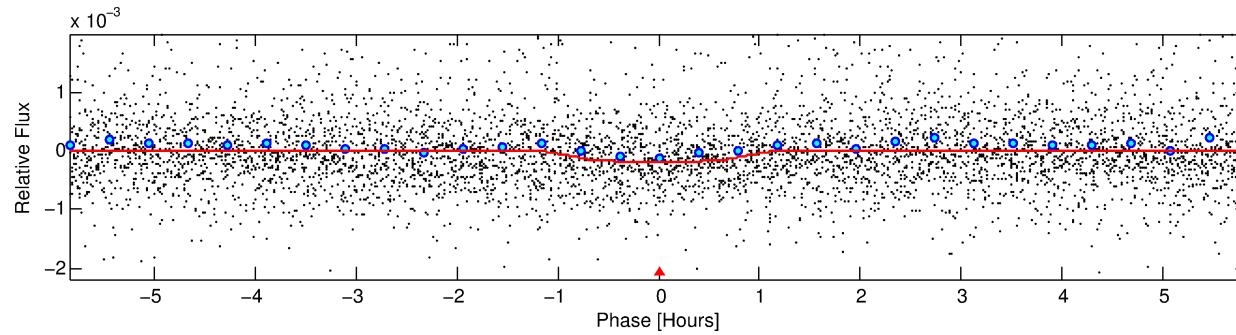
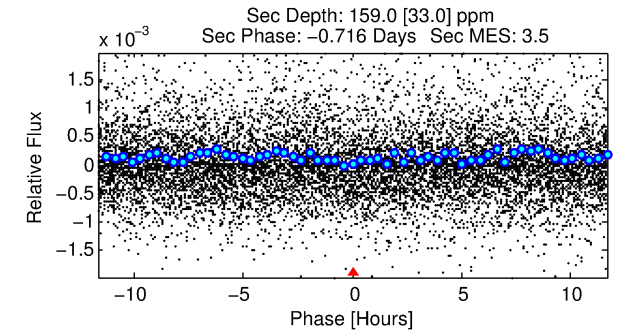
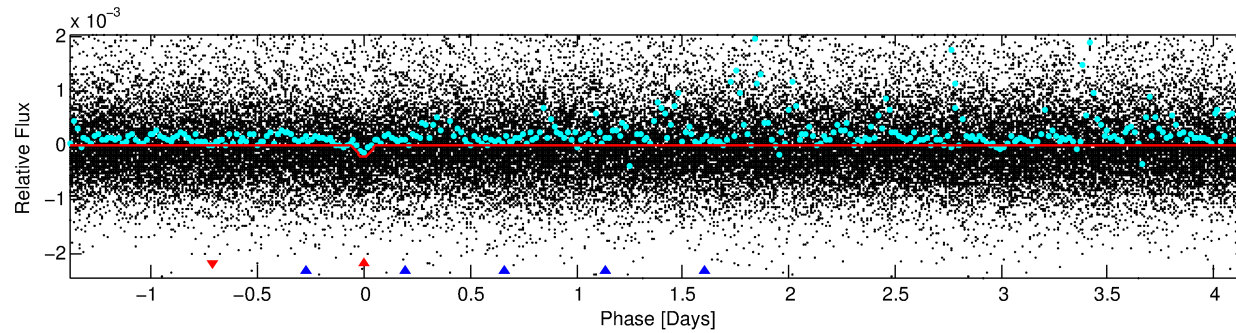
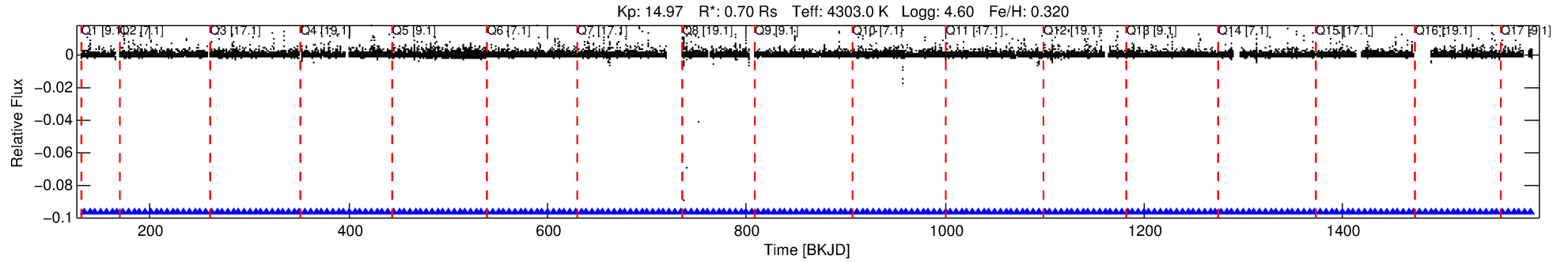
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005694127-01

No Significant Match Found

# DV One-Page Summary

KIC: 5694127 Candidate: 1 of 2 Period: 5.550 d



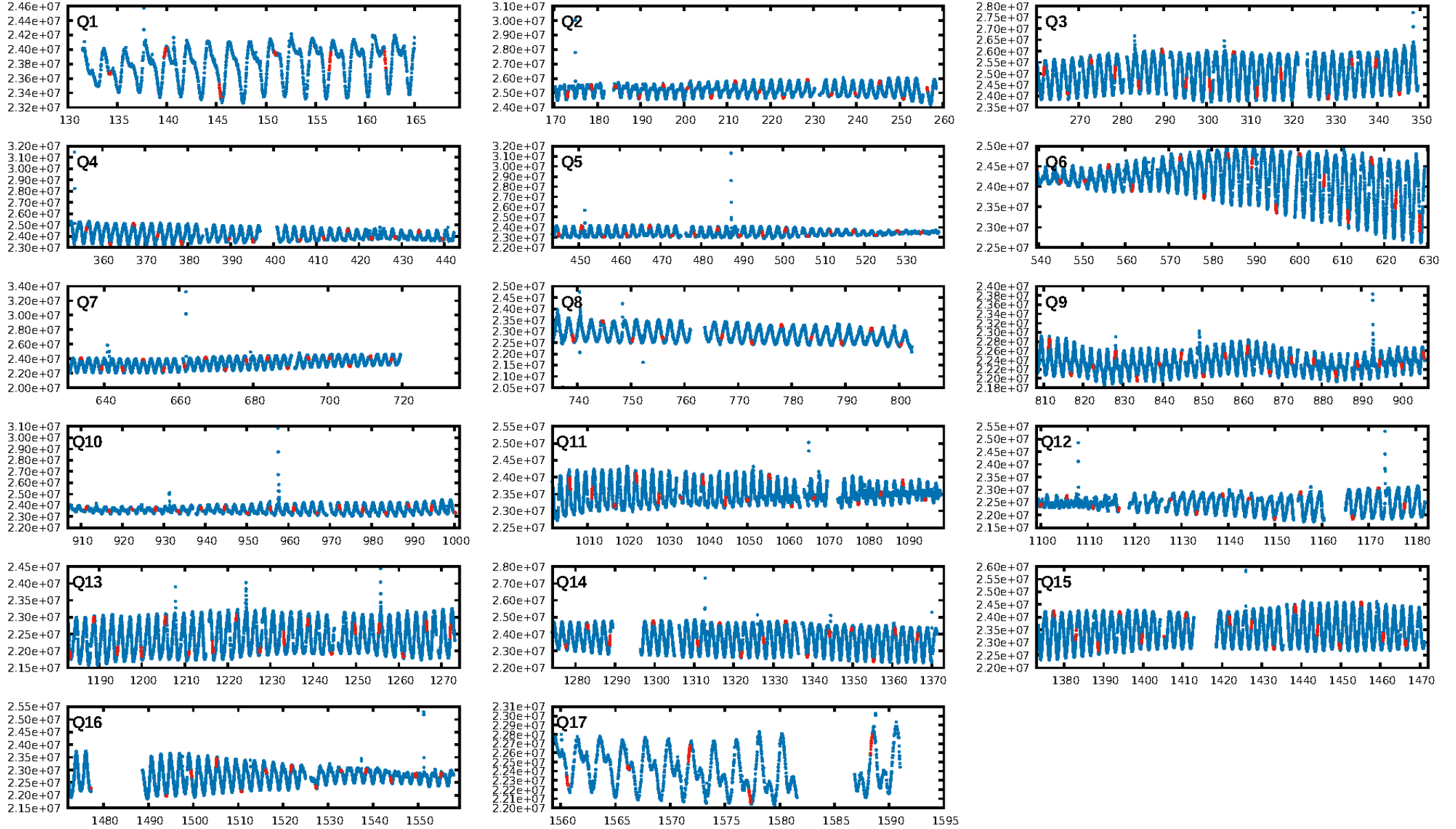
## DV Fit Results:

Period = 5.55009 [0.00004] d  
Epoch = 134.2546 [0.0047] BKJD  
Rp/R\* = 0.0145 [0.0153]  
a/R\* = 12.87 [43.00]  
b = 0.82 [1.36]  
Seff = 50.14 [7.99]  
Teq = 679 [27] K  
Rp = 1.11 [1.17] Re  
a = 0.0546 [0.0035] AU  
Ag = 213.49 [453.51] [0.47σ]  
Teffp = 4010 [2132] K [1.56σ]

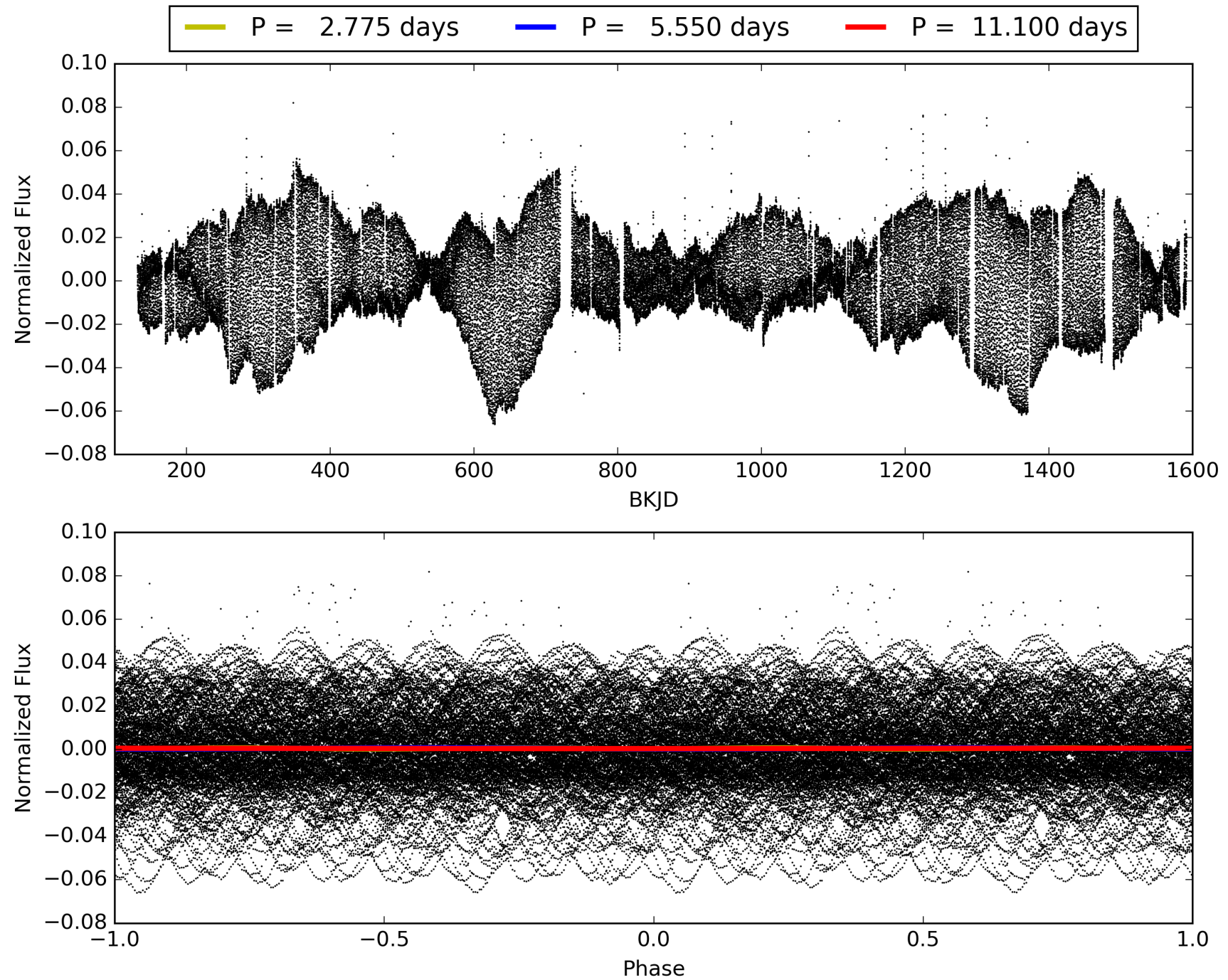
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [2614.76σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.25e-08  
RollingBand-fgt: 1.00 [225/225]  
GhostDiagnostic-chr: -0.5235  
Centroid-sig: 19.2%  
Centroid-so: 1.065 arcsec [1.08σ]  
OotOffset-rm: 0.124 arcsec [0.75σ]  
KicOffset-rm: 0.168 arcsec [0.93σ]  
OotOffset-st: 4/3/4 [14]  
KicOffset-st: 4/3/4 [14]  
DiffImageQuality-fgm: 0.50 [7/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 005694127-01, PDC Light Curves

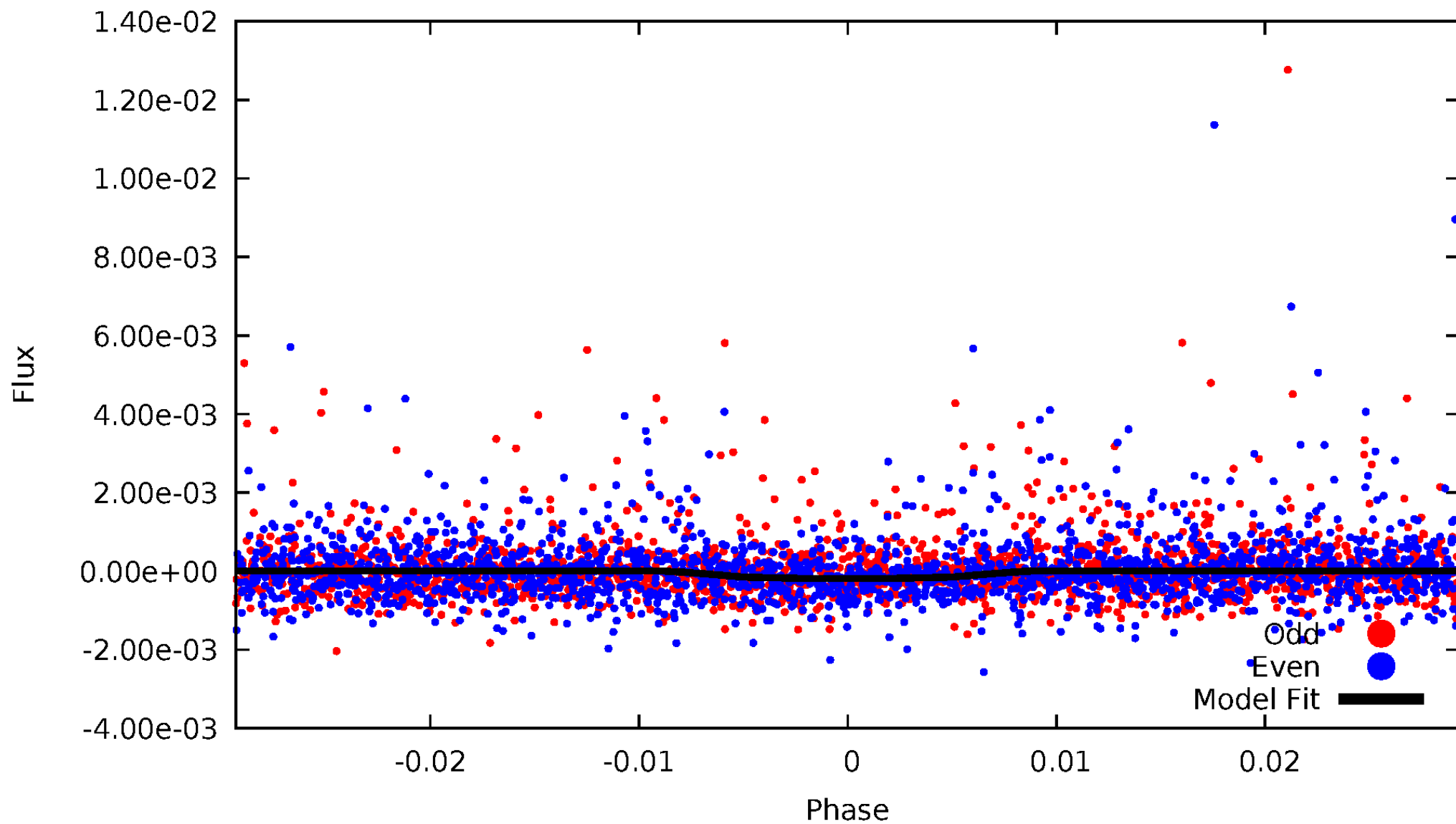


TCE 005694127-01



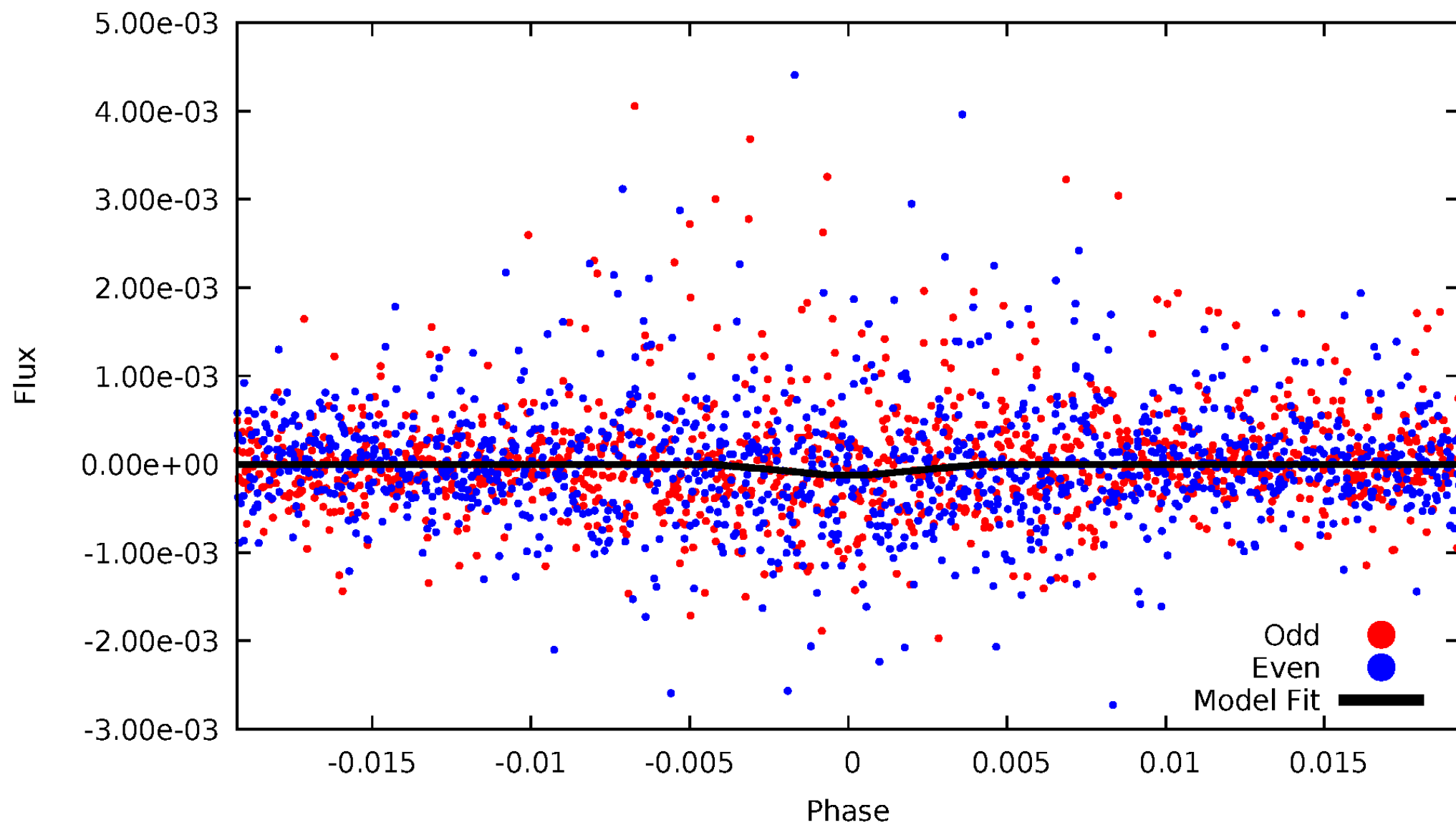
# DV Odd/Even

TCE 005694127-01

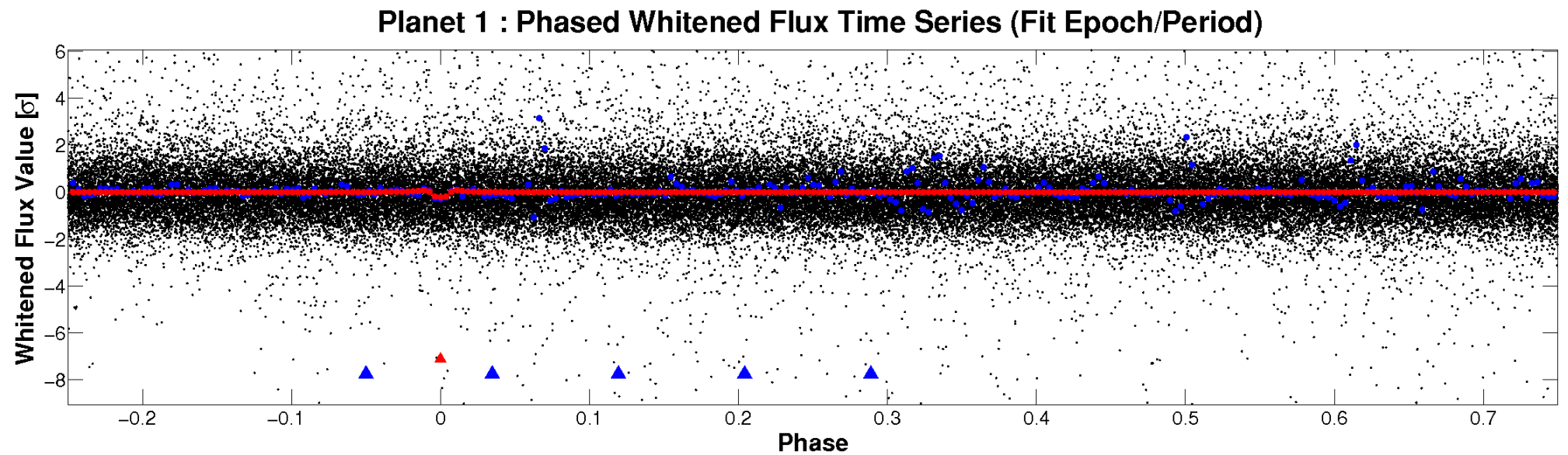
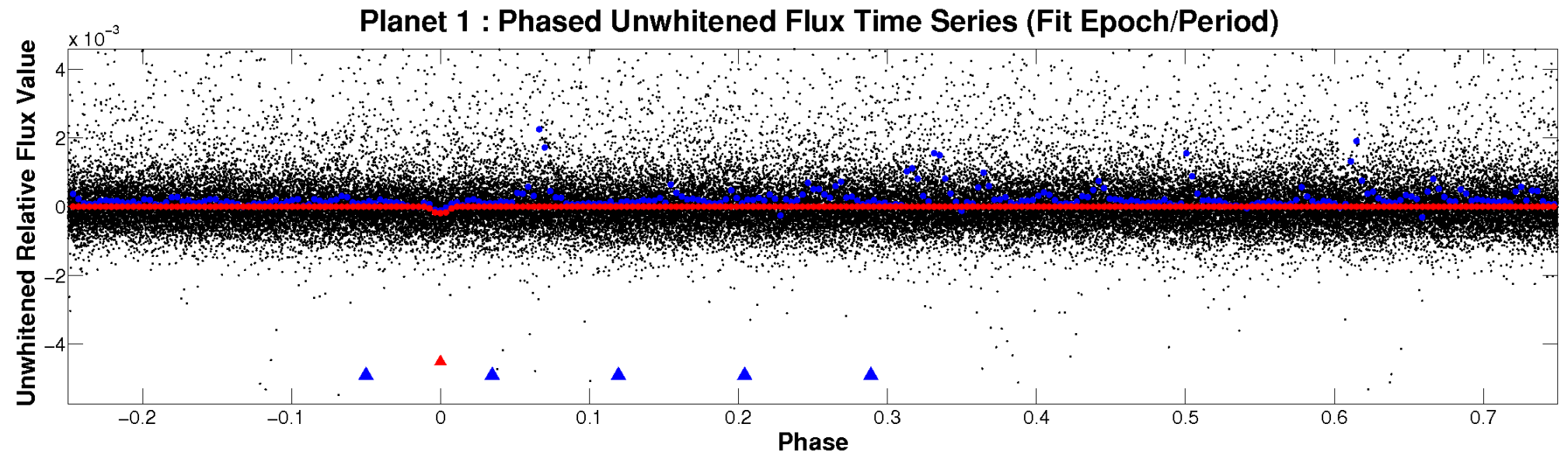


# ALT Odd/Even

TCE 005694127-01

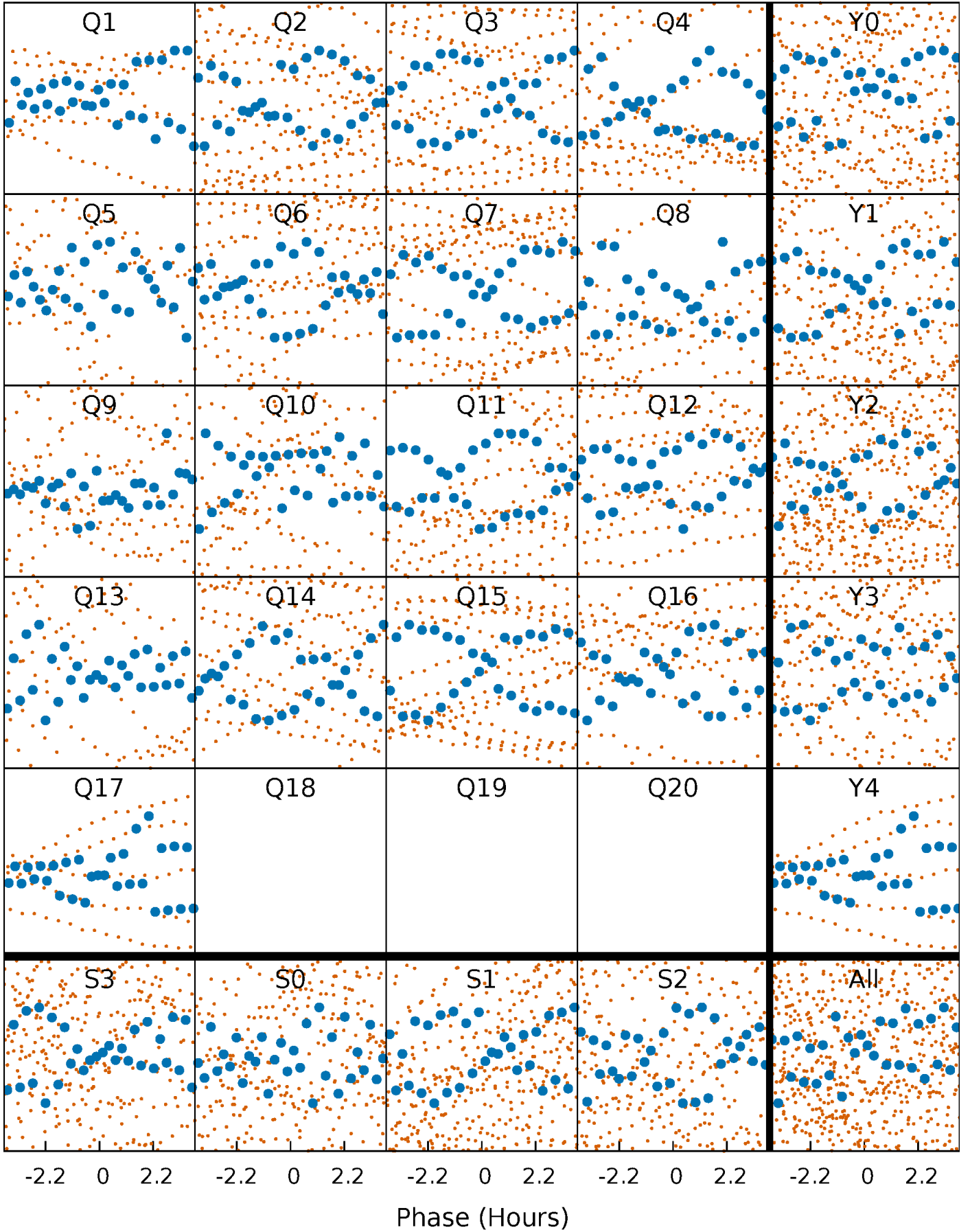


# Non-Whitened Vs. Whitened Light Curve



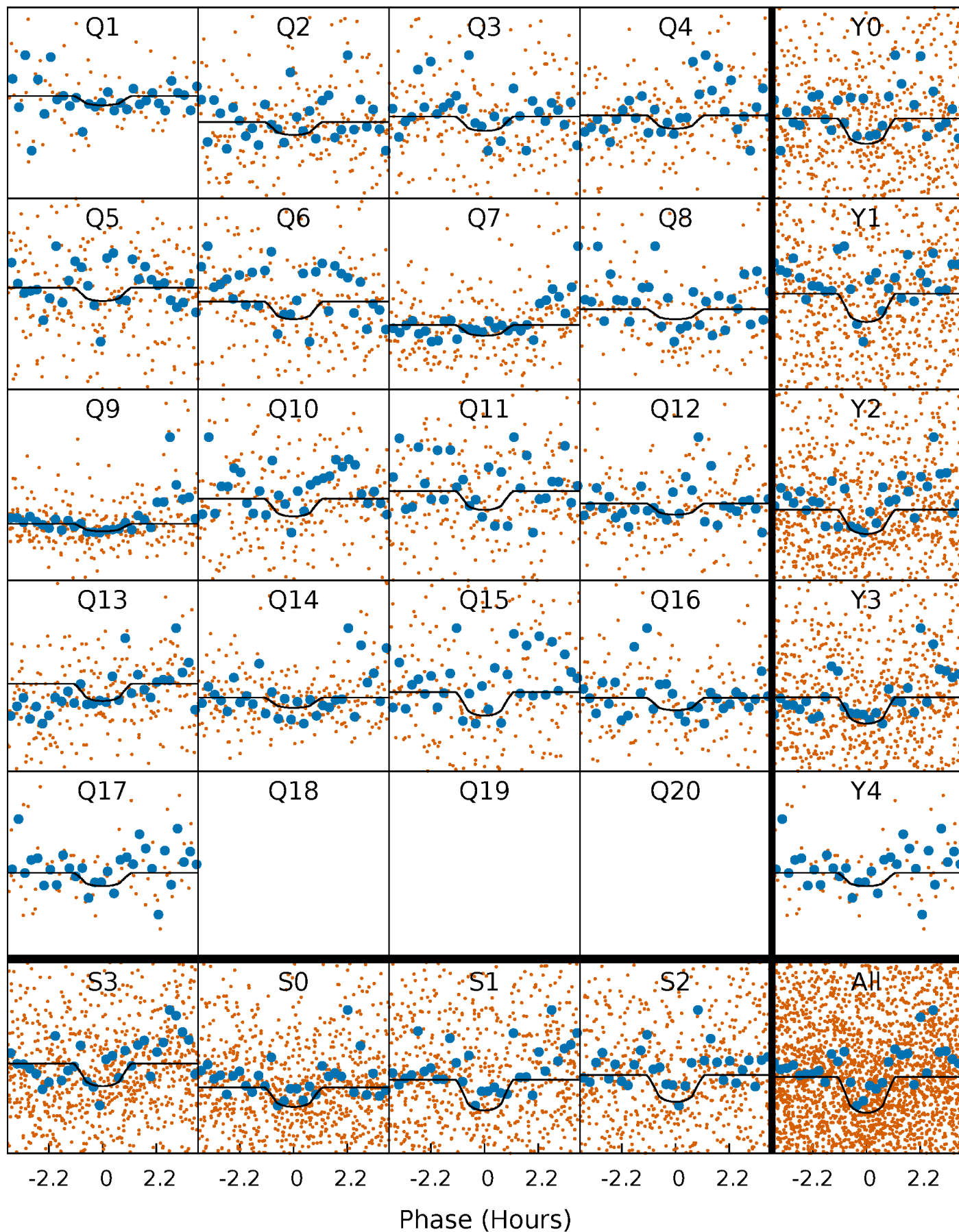
# PDC Quarter-Phased Transit Curves

TCE 005694127-01 P= 5.550091 Days  $T_0=134.254560$  (BKJD)



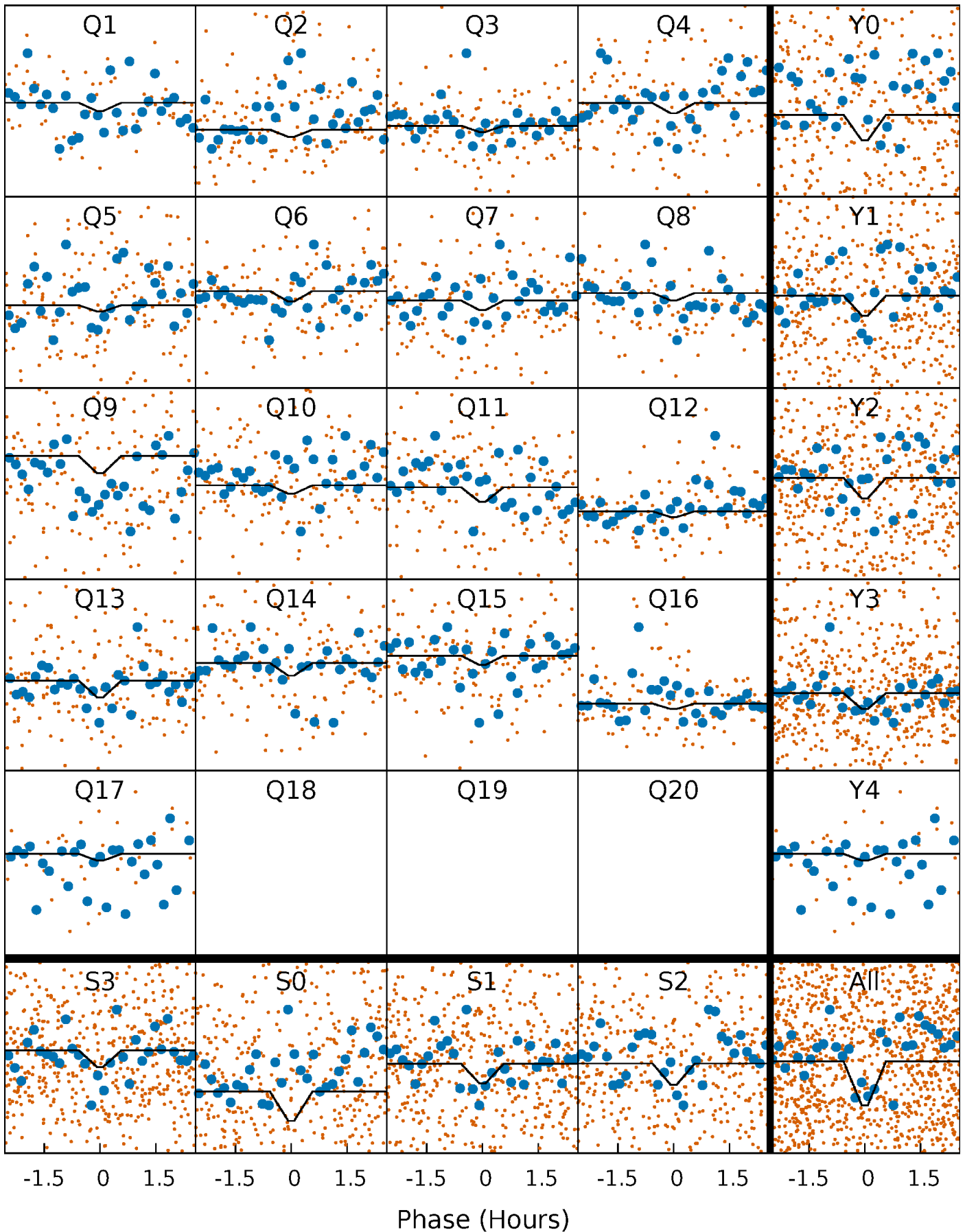
# DV Quarter-Phased Transit Curves

TCE 005694127-01 P= 5.550091 Days  $T_0=134.254560$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

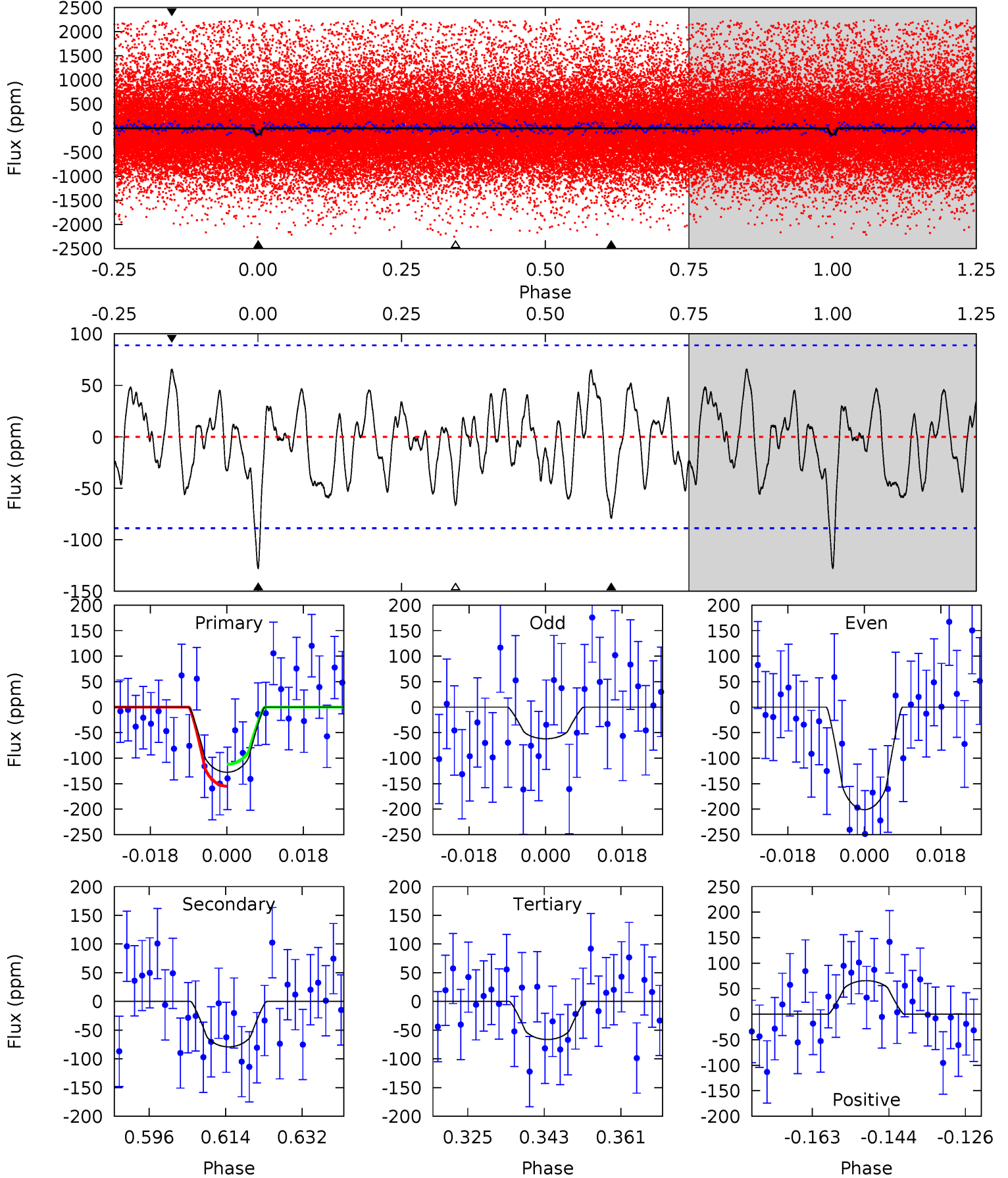
TCE 005694127-01 P= 5.550062 Days  $T_0=134.250488$  (BKJD)



# DV Model-Shift Uniqueness Test

005694127-01, P = 5.550091 Days, E = 128.704469 Days

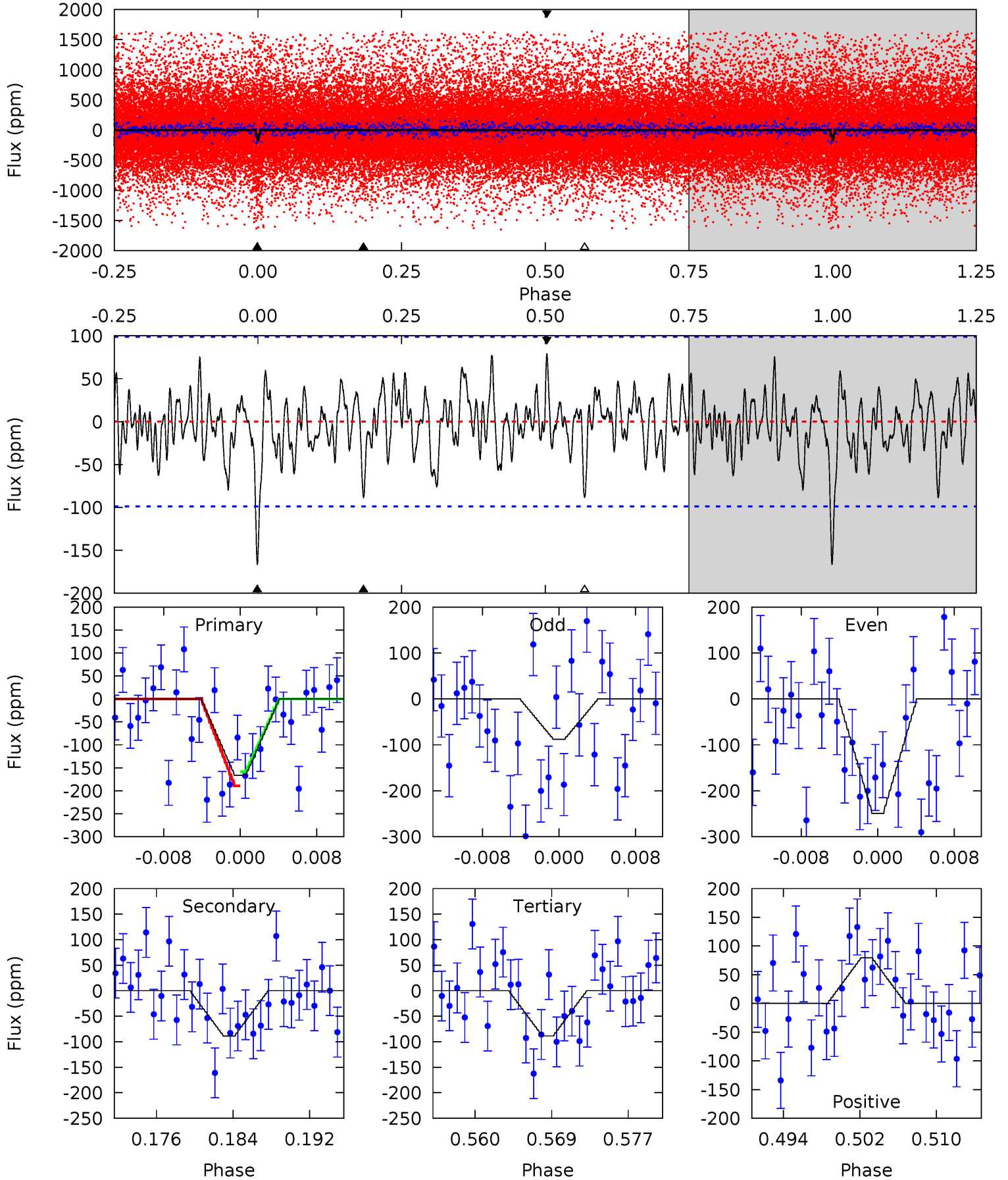
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.06	4.37	3.67	3.64	4.91	2.36	1.61	3.39	3.42	0.71	0.73	3.88	0.64	0.34	1.20



# Alt Model-Shift Uniqueness Test

005694127-01, P = 5.550062 Days, E = 128.700426 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
8.54	4.56	4.54	4.07	5.06	2.64	1.44	4.00	4.47	0.01	0.48	4.15	0.56	0.32	0.80



### Stellar Parameters For KIC 005694127

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4303^{+142}_{-142}$	$4.599^{+0.046}_{-0.018}$	$0.320^{+0.100}_{-0.300}$	$0.698^{+0.024}_{-0.057}$	$0.705^{+0.036}_{-0.052}$	$2.926^{+0.615}_{-0.215}$
	+3%/-3%	+1%/-0%	+31%/-94%	+3%/-8%	+5%/-7%	+21%/-7%
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 005694127-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-79 \pm 18$	$1.30^{+0.98}_{-0.80}$	$944^{+31}_{-37}$	$3390^{+1465}_{-496}$	$73^{+472}_{-48}$
Alt.	$-89 \pm 20$	$1.11^{+1.01}_{-0.72}$	$943^{+31}_{-36}$	$3631^{+1848}_{-639}$	$115^{+824}_{-83}$

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

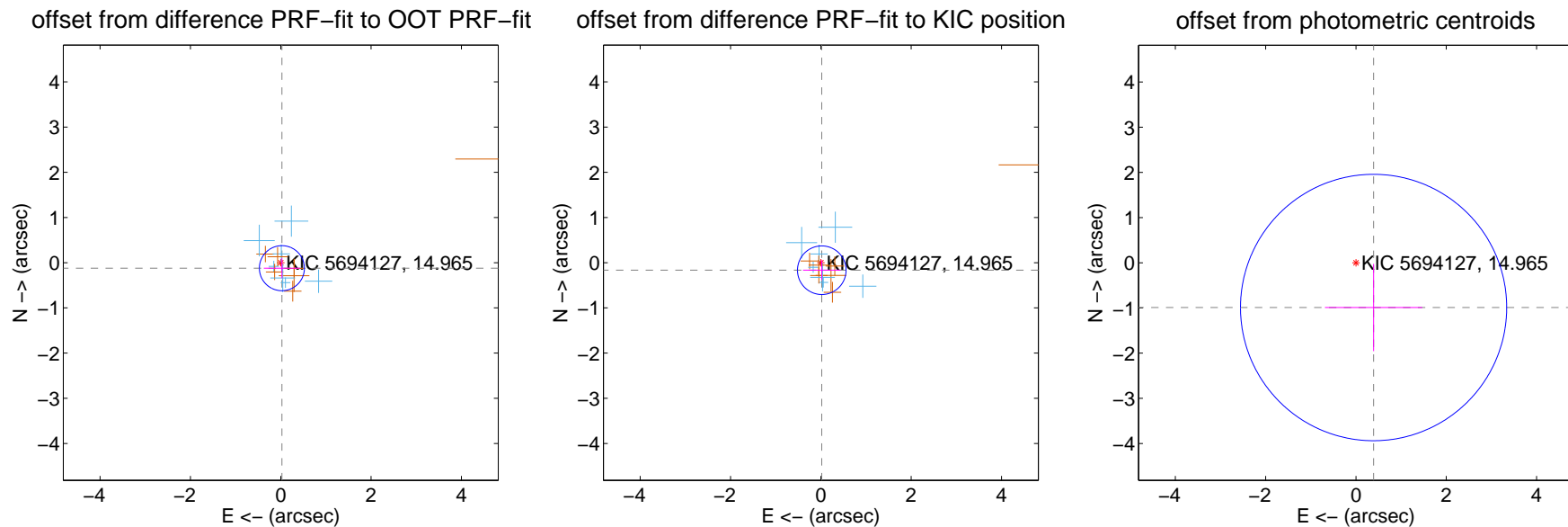
## DV Centroid Data

Supplemental centroid analysis for 005694127-01. Kepler magnitude: 14.96. Transit SNR 6.00

There are 7 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

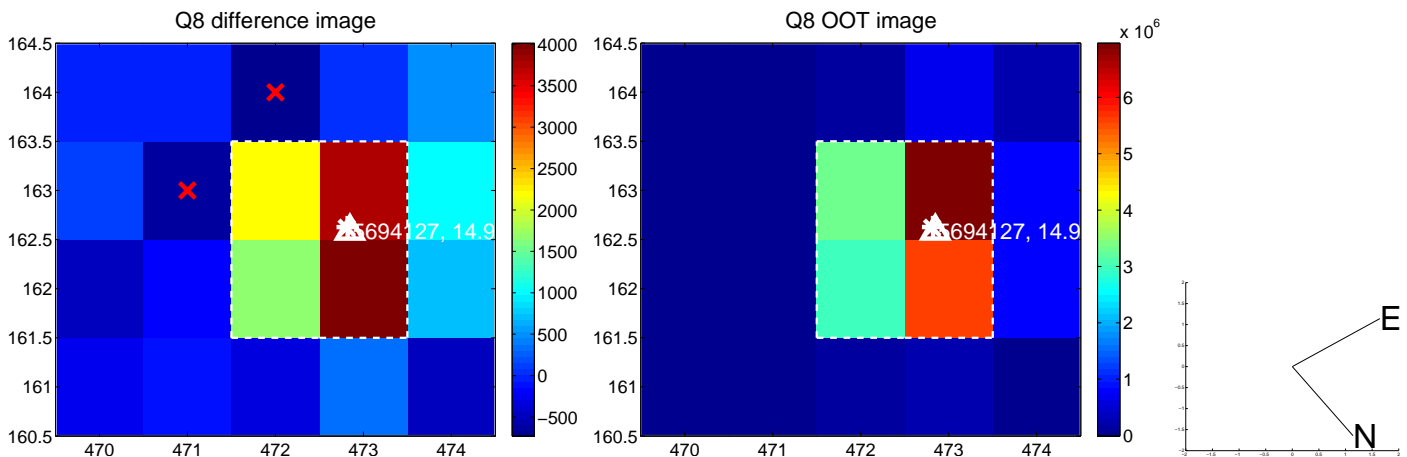
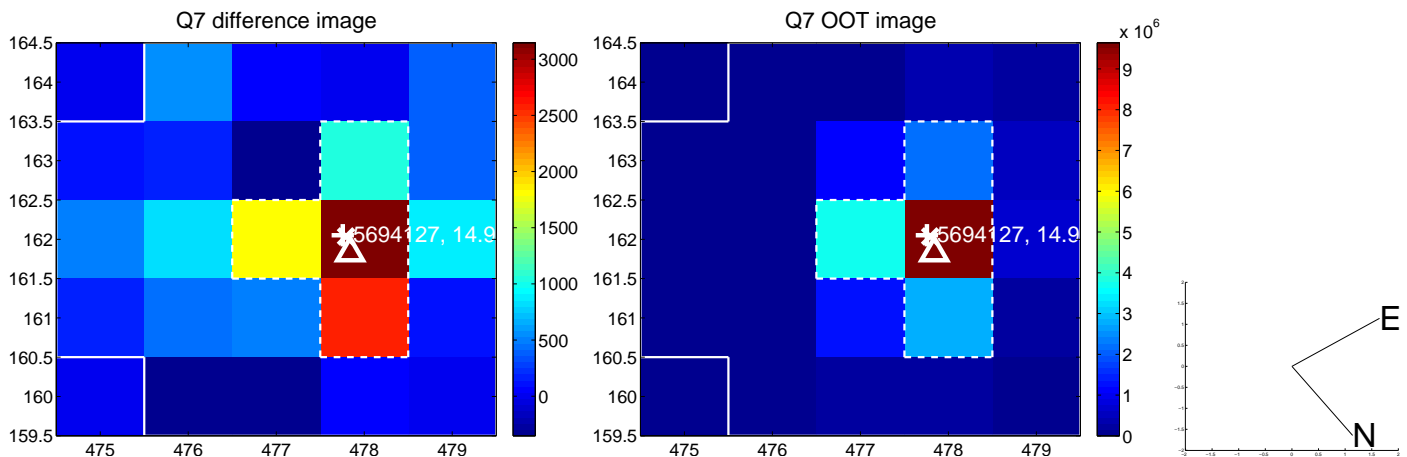
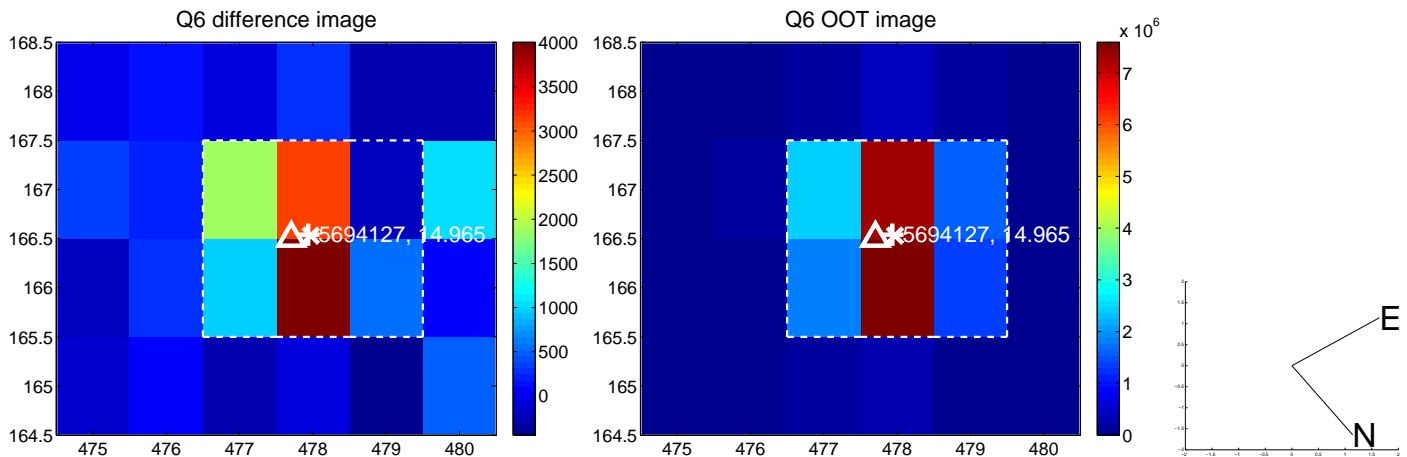
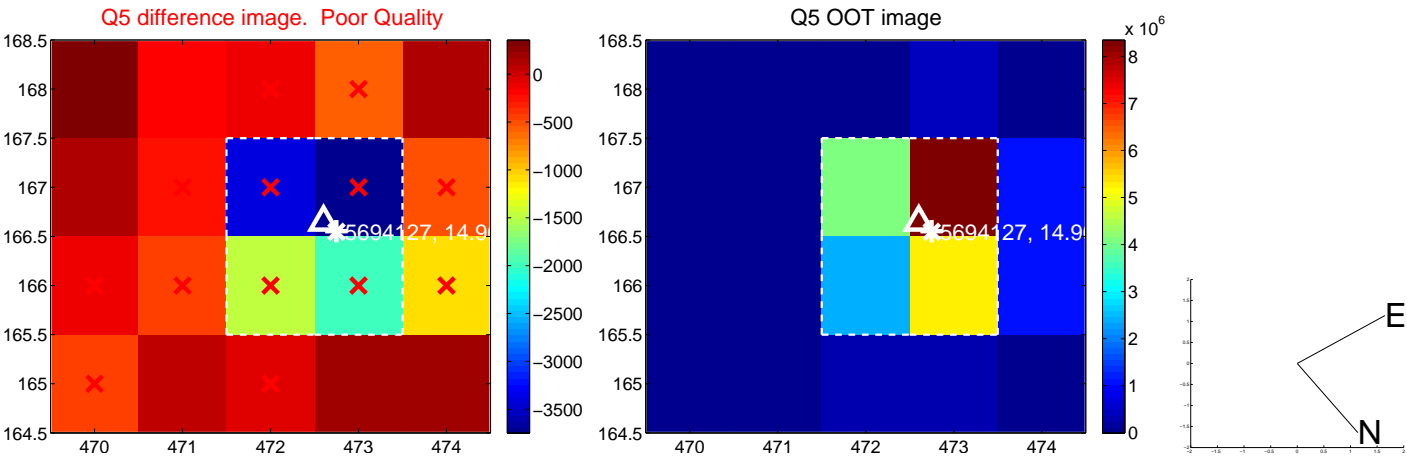
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.124 \pm 0.166$	0.75	$-0.025 \pm 0.400$	$-0.122 \pm 0.223$
PRF-fit source offset from KIC position	$0.168 \pm 0.179$	0.93	$-0.020 \pm 0.416$	$-0.166 \pm 0.217$
photometric centroid source offset	$1.06 \pm 0.98$	1.08	$-0.39 \pm 1.08$	$-0.99 \pm 0.97$



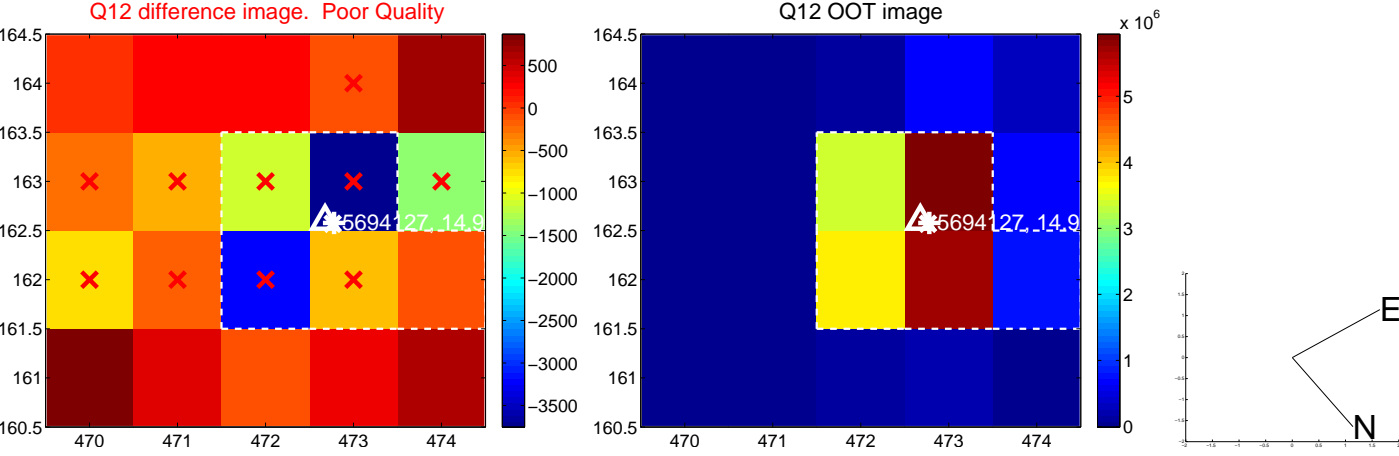
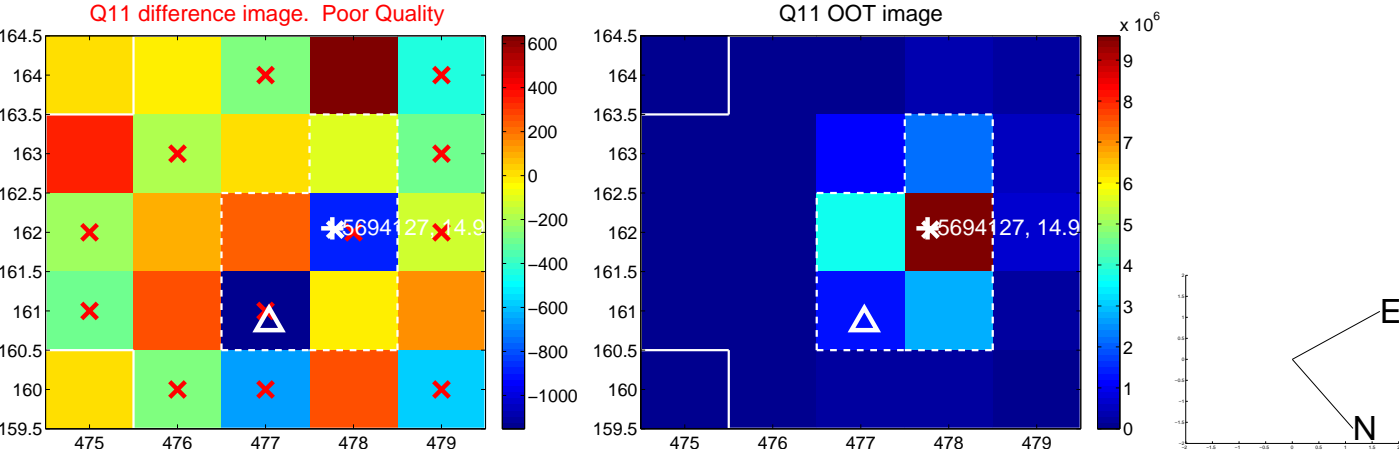
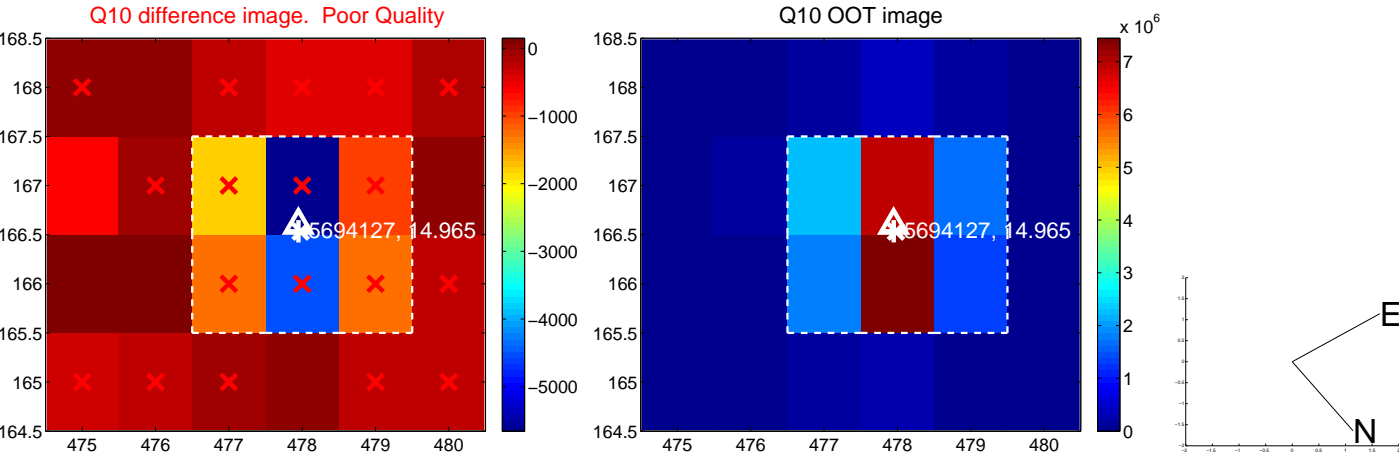
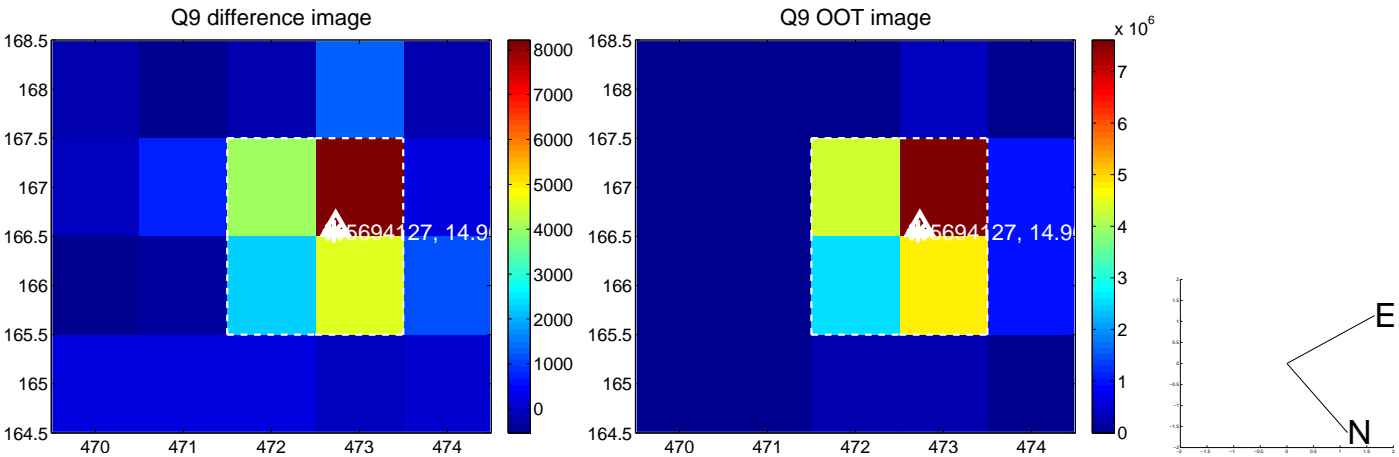
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



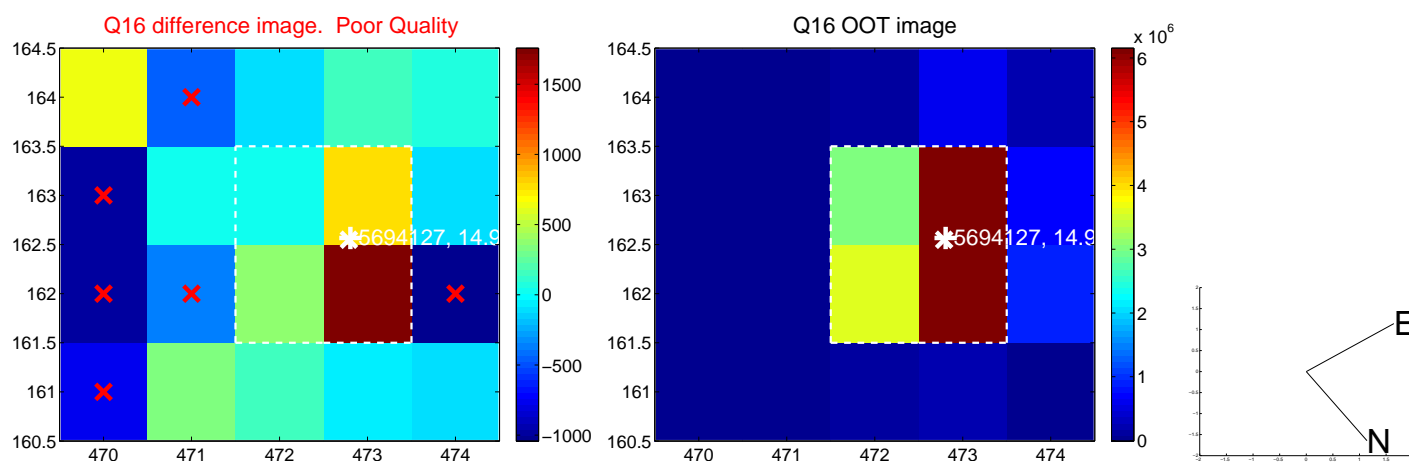
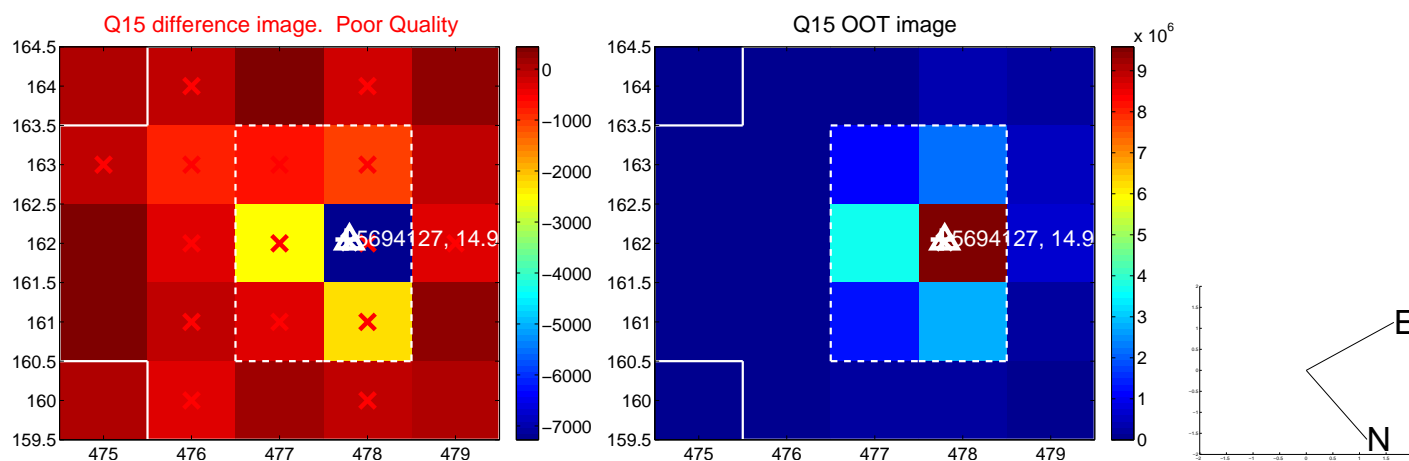
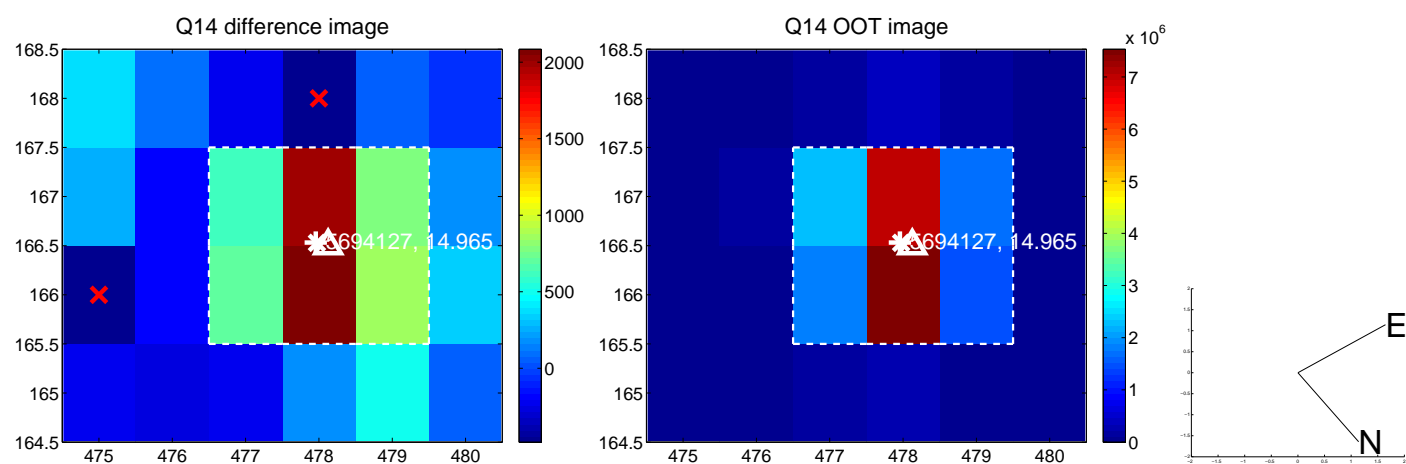
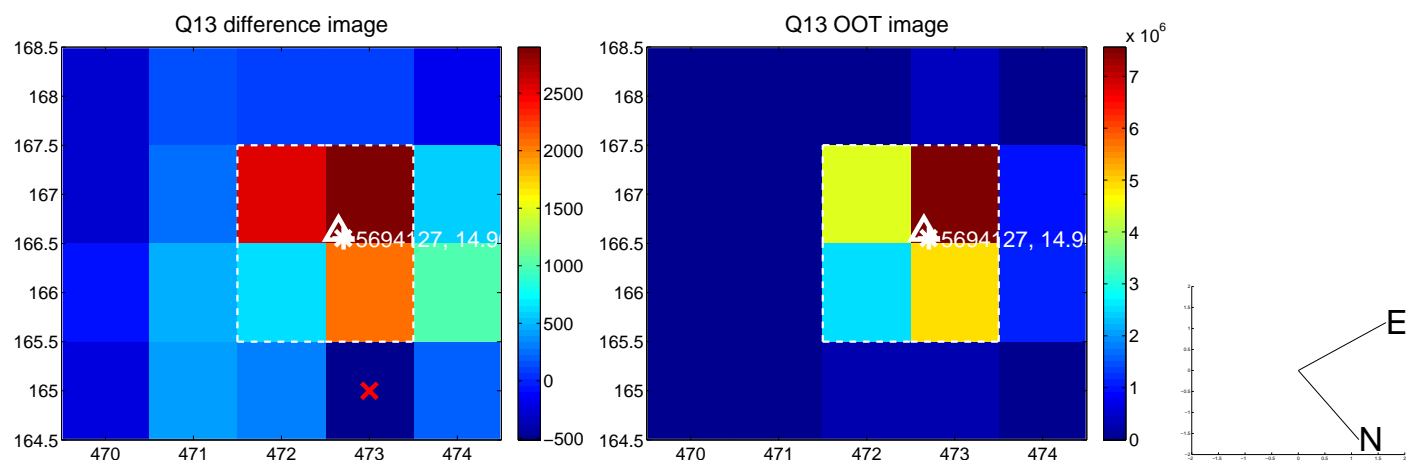
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



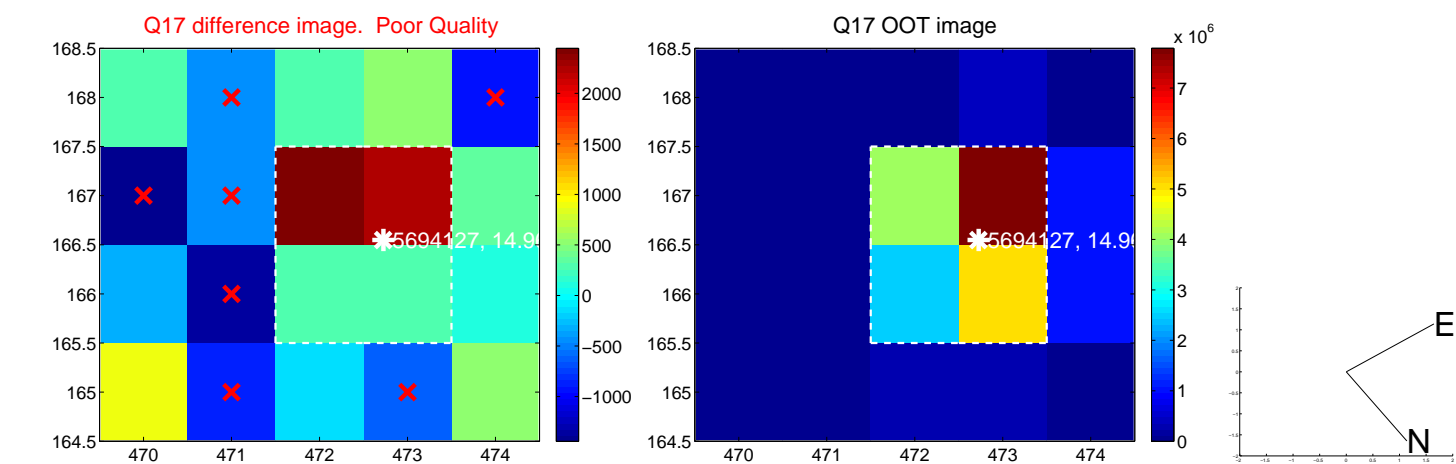
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



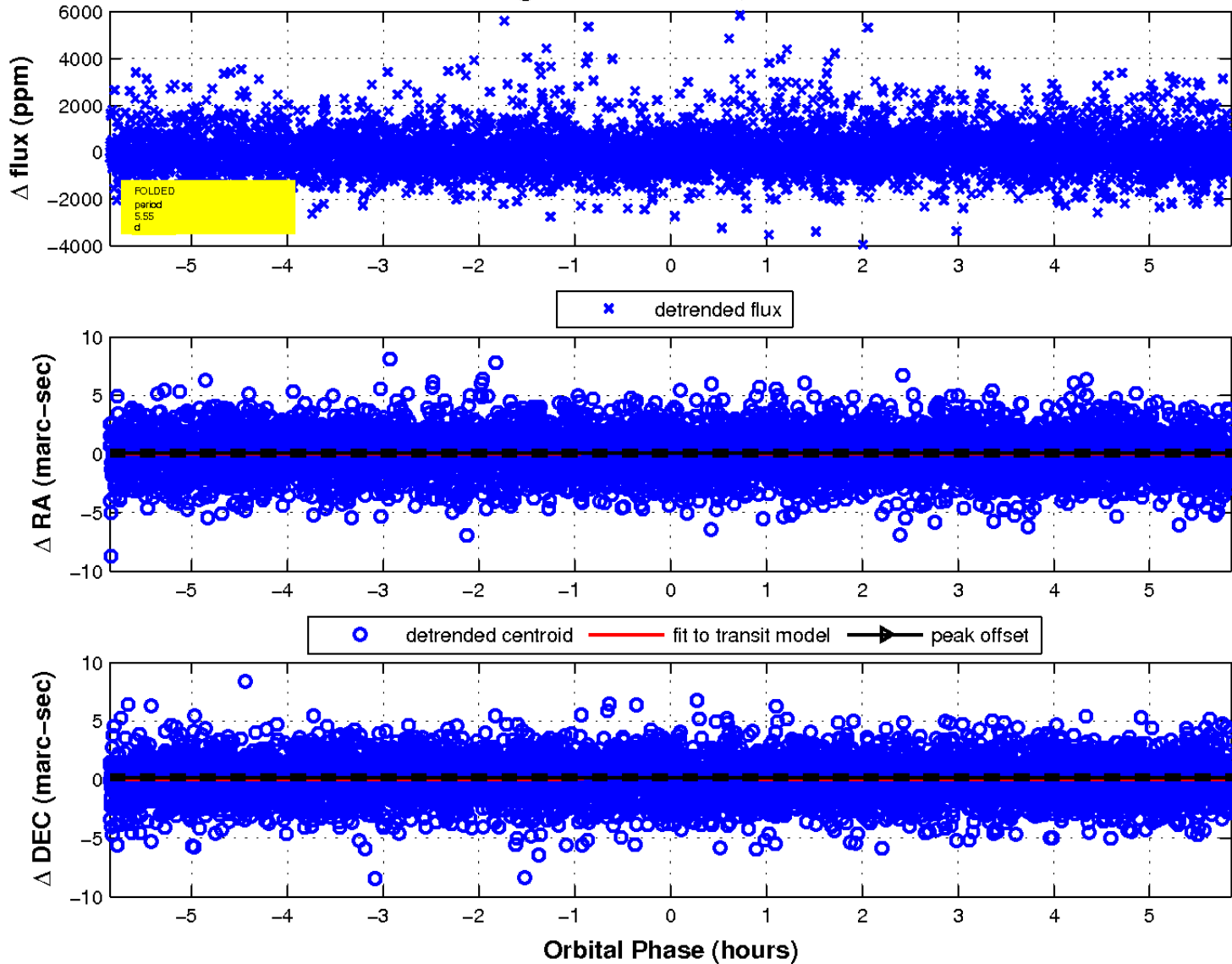
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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

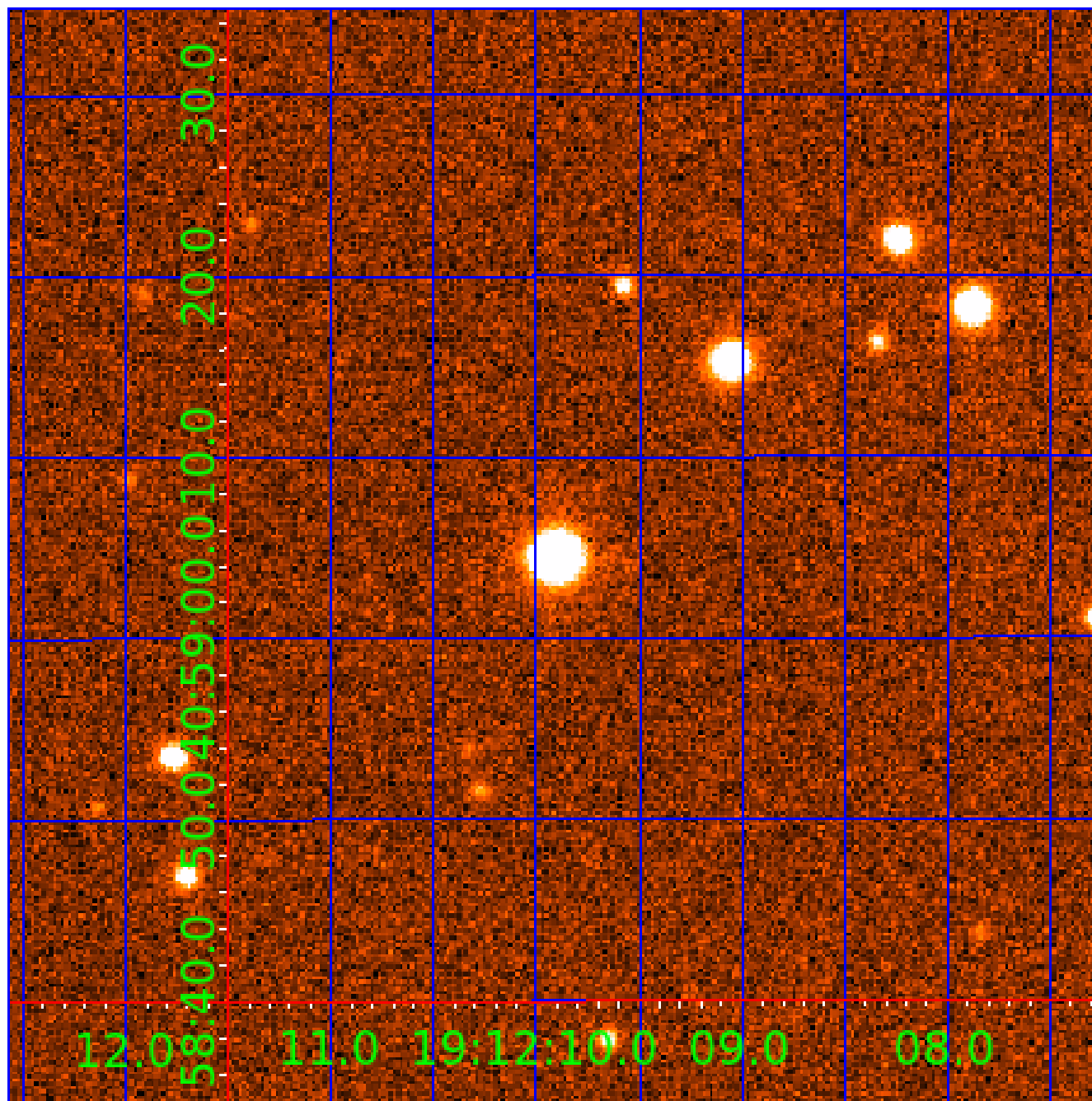


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



# KIC 005694127

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005694127-01	OBS	No	5.550091	134.254560	188.2	1.952	7.7	6.0	0.70	4303	1.11	50.14
005694127-02	OBS	No	271.484242	335.661286	827.1	1.466	13.7	2.8	0.70	4303	1.92	0.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005694127-01	OBS	FP	0.01	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
005694127-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_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_FEW_DIFFS

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

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

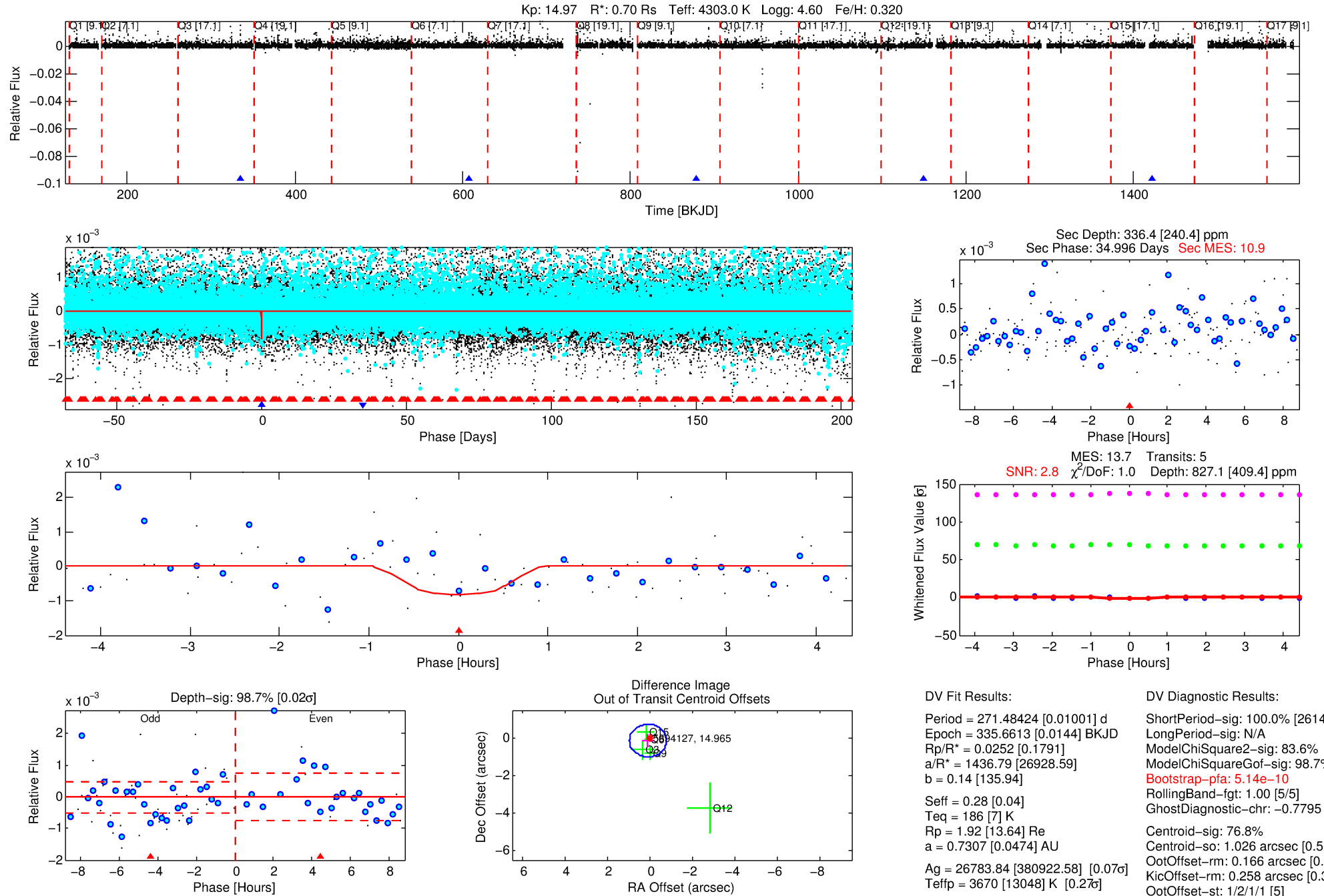
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005694127-02

No Significant Match Found

# DV One-Page Summary

KIC: 5694127 Candidate: 2 of 2 Period: 271.484 d



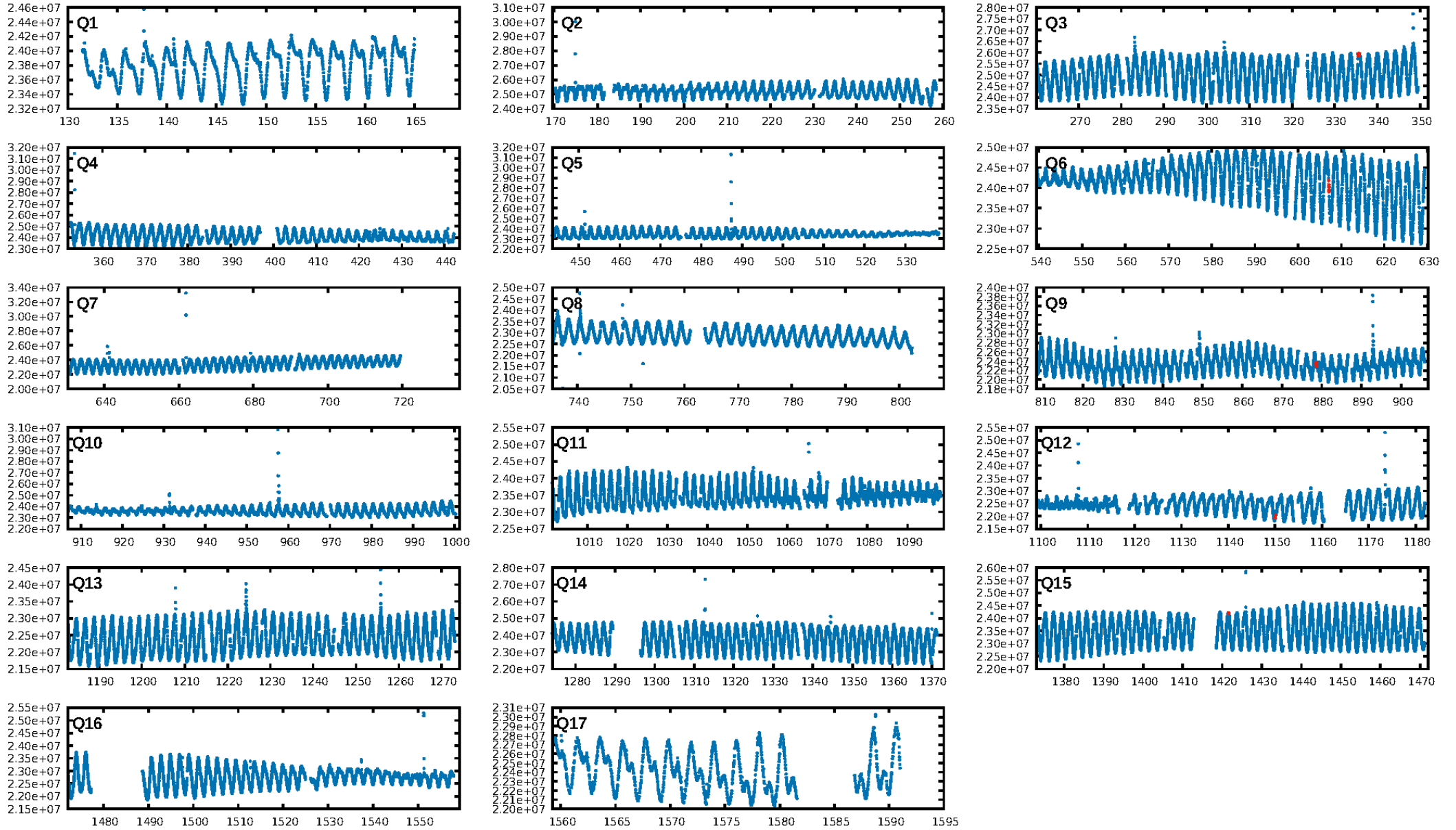
## DV Fit Results:

Period = 271.48424 [0.01001] d  
Epoch = 335.6613 [0.0144] BKJD  
Rp/R\* = 0.0252 [0.1791]  
a/R\* = 1436.79 [26928.59]  
b = 0.14 [135.94]  
Seff = 0.28 [0.04]  
Teq = 186 [7] K  
Rp = 1.92 [13.64] Re  
a = 0.7307 [0.0474] AU  
Ag = 26783.84 [380922.58] [0.07σ]  
Teffp = 3670 [13048] K [0.27σ]

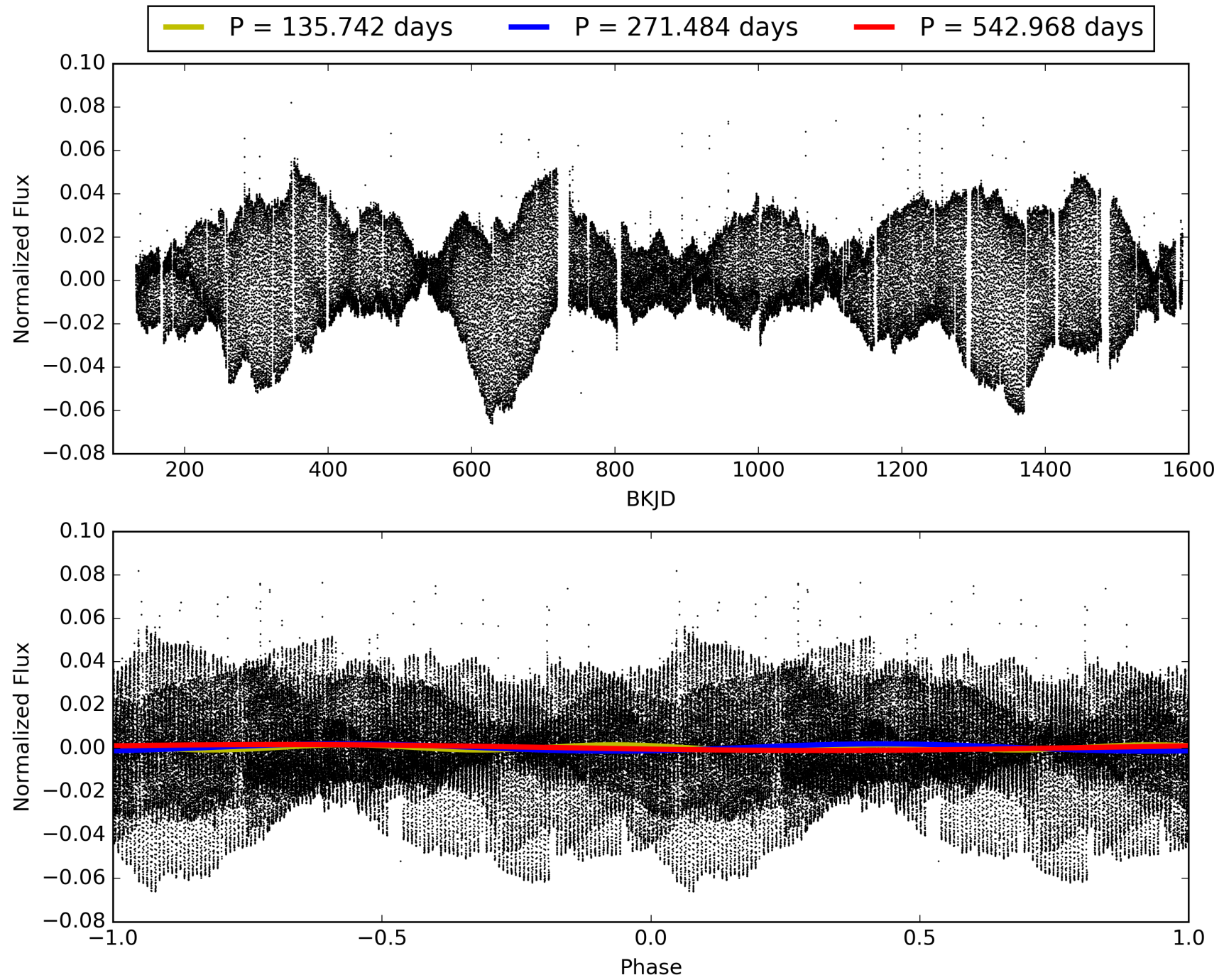
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [2614.76σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 83.6%  
ModelChiSquareGoF-sig: 98.7%  
**Bootstrap-pfa: 5.14e-10**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: -0.7795  
Centroid-sig: 76.8%  
Centroid-so: 1.026 arcsec [0.51σ]  
OotOffset-rm: 0.166 arcsec [0.57σ]  
KicOffset-rm: 0.258 arcsec [0.31σ]  
OotOffset-st: 1/2/1/1 [5]  
KicOffset-st: 1/2/1/1 [5]  
DiffImageQuality-fgm: 0.20 [1/5]  
DiffImageOverlap-fno: 0.80 [4/5]

# TCE 005694127-02, PDC Light Curves

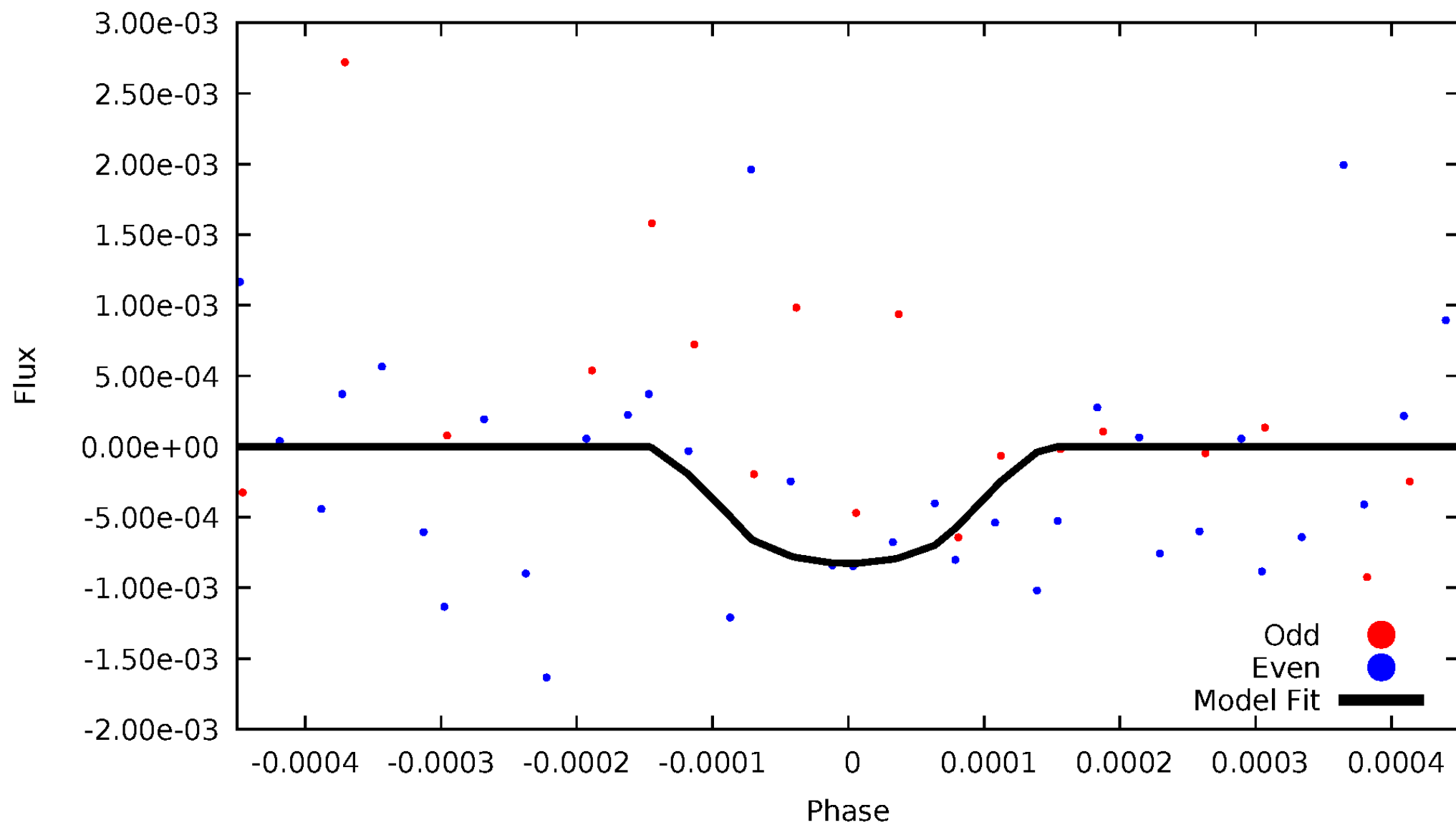


TCE 005694127-02



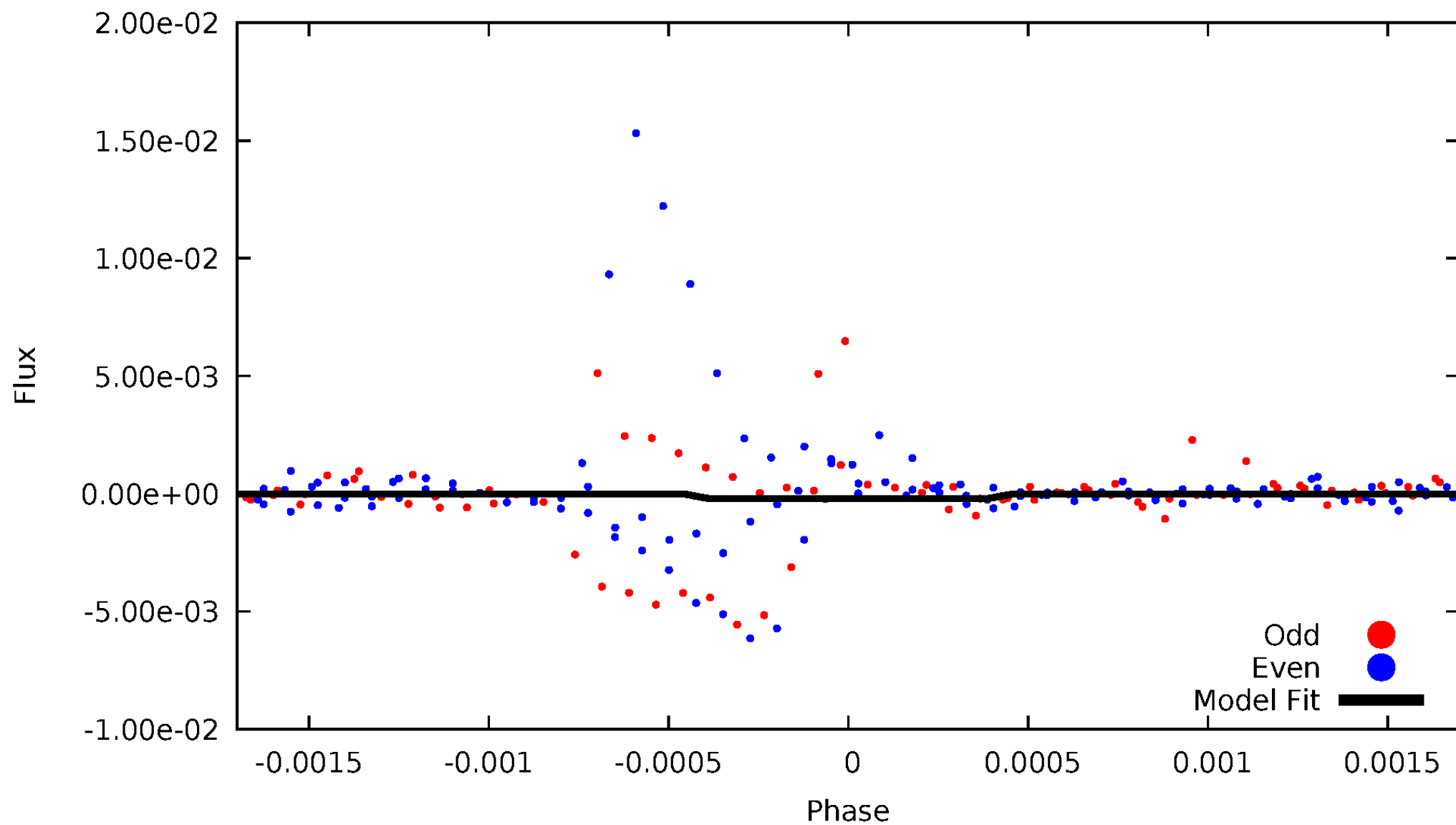
# DV Odd/Even

TCE 005694127-02



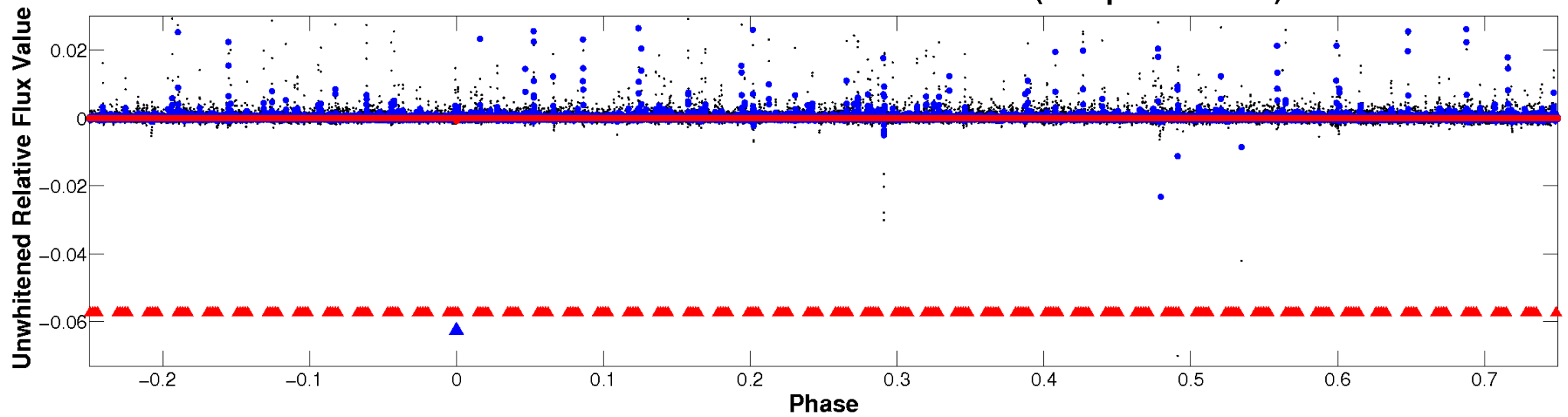
# ALT Odd/Even

TCE 005694127-02

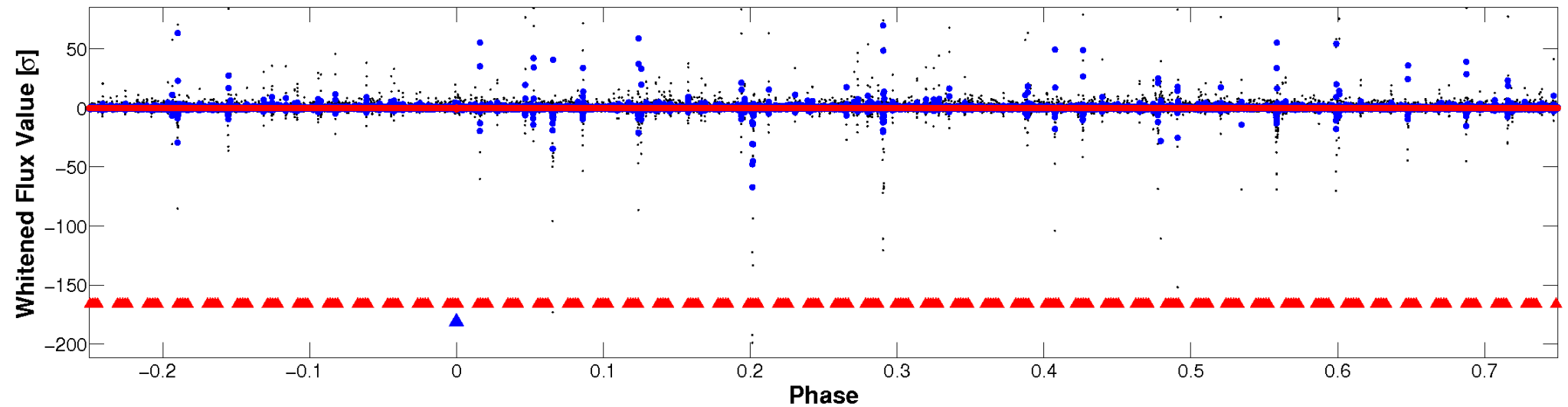


# Non-Whitened Vs. Whitened Light Curve

**Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

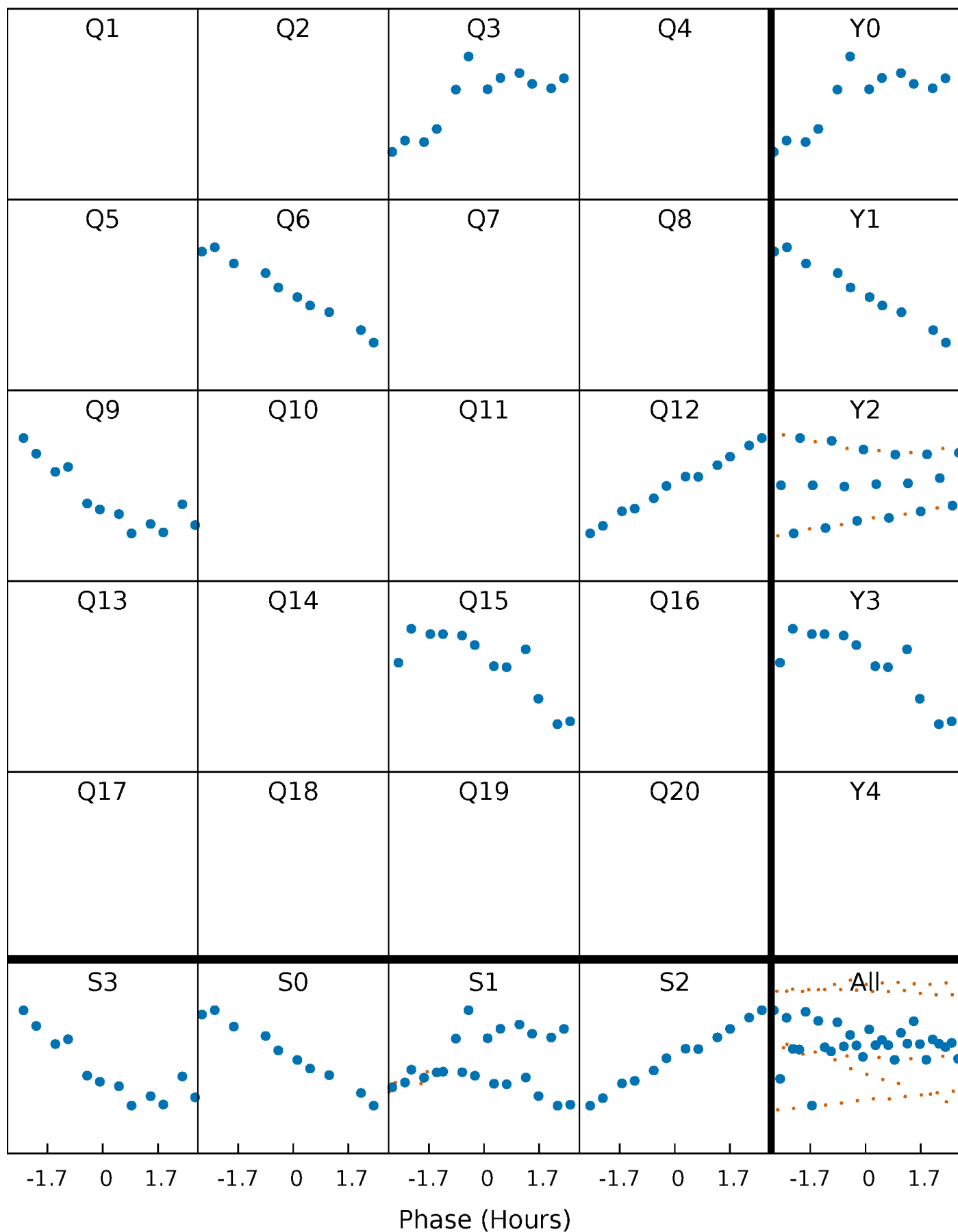


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



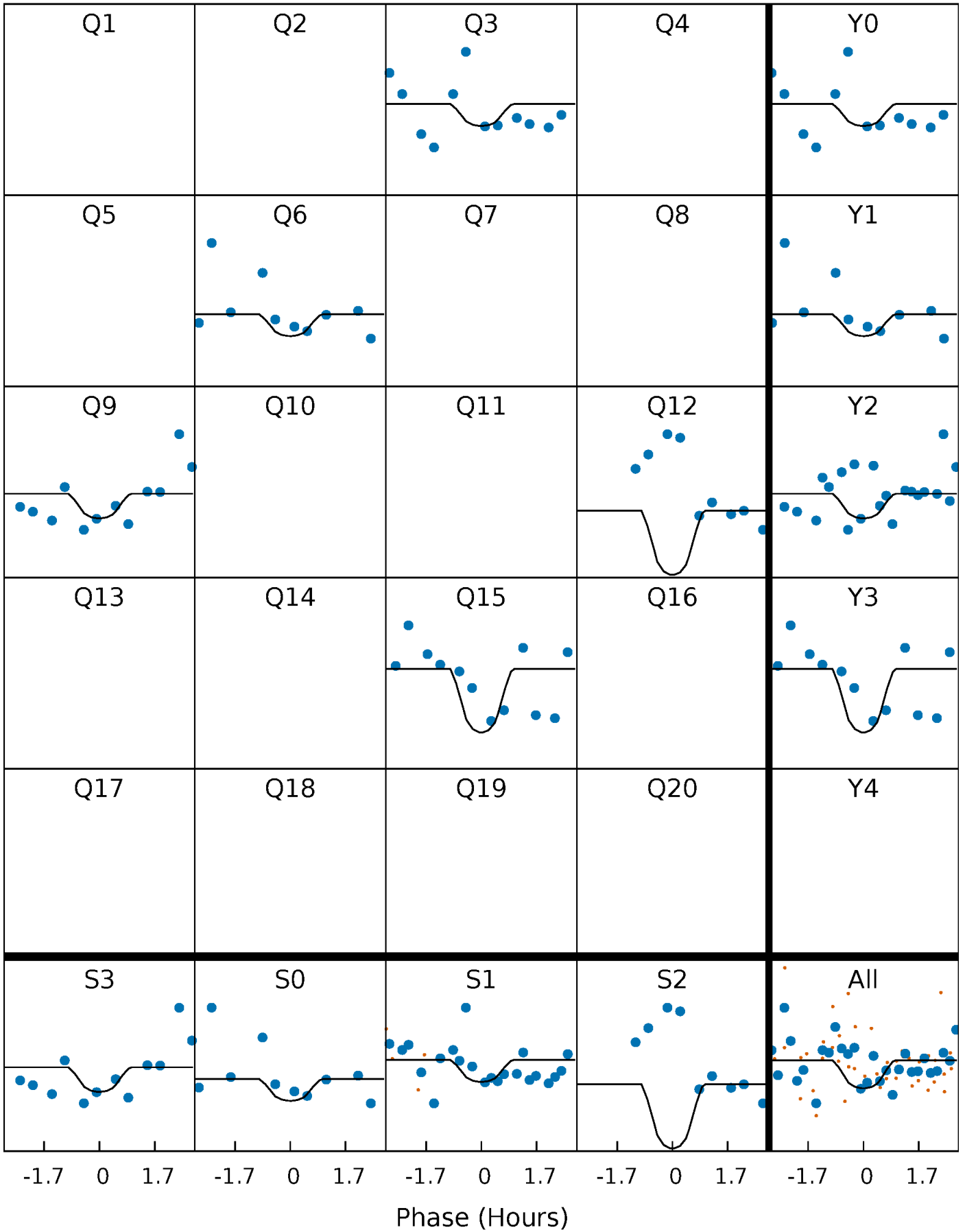
# PDC Quarter-Phased Transit Curves

TCE 005694127-02     $P=271.484242$  Days     $T_0=335.661287$  (BKJD)



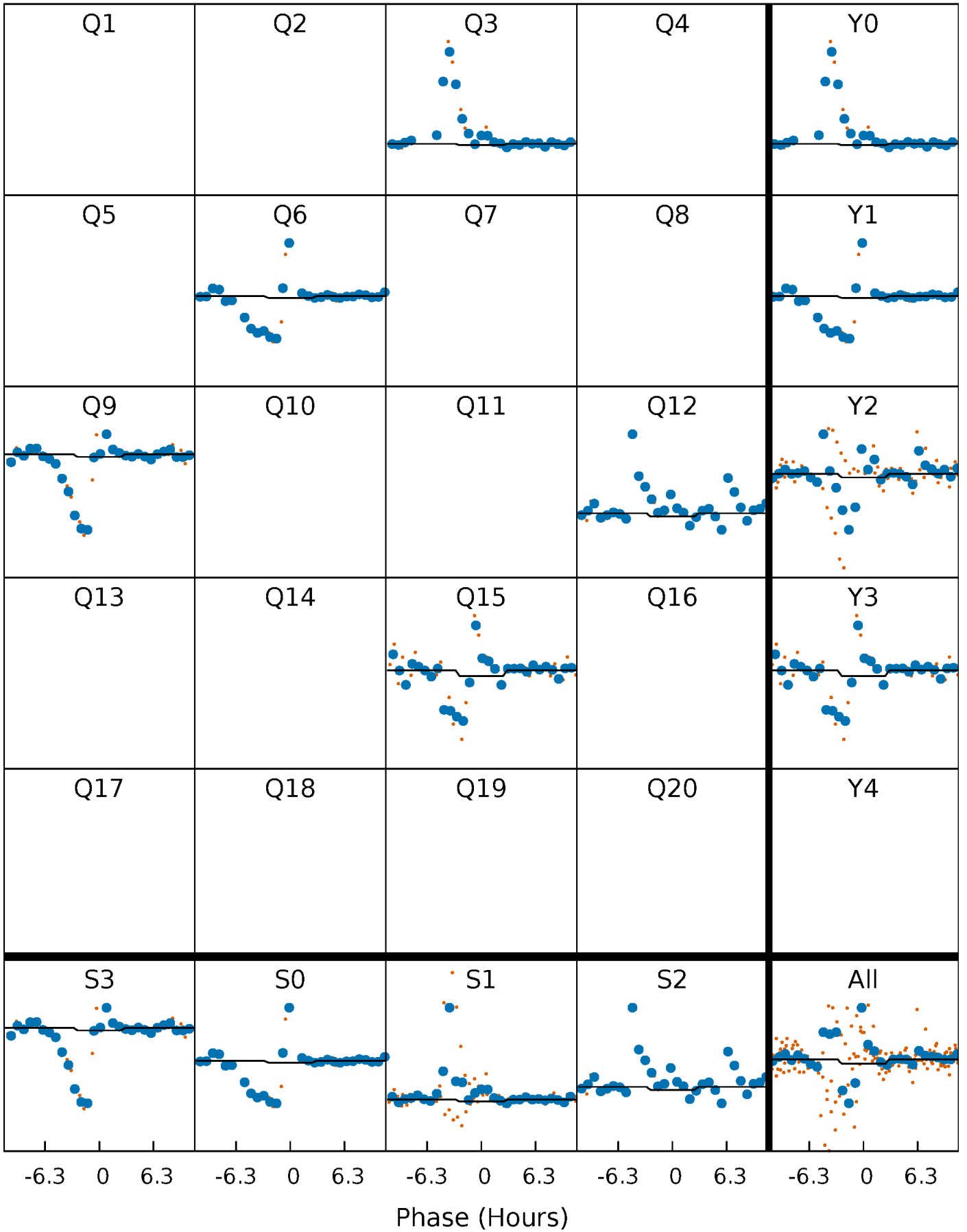
# DV Quarter-Phased Transit Curves

TCE 005694127-02     $P=271.484242$  Days     $T_0=335.661287$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

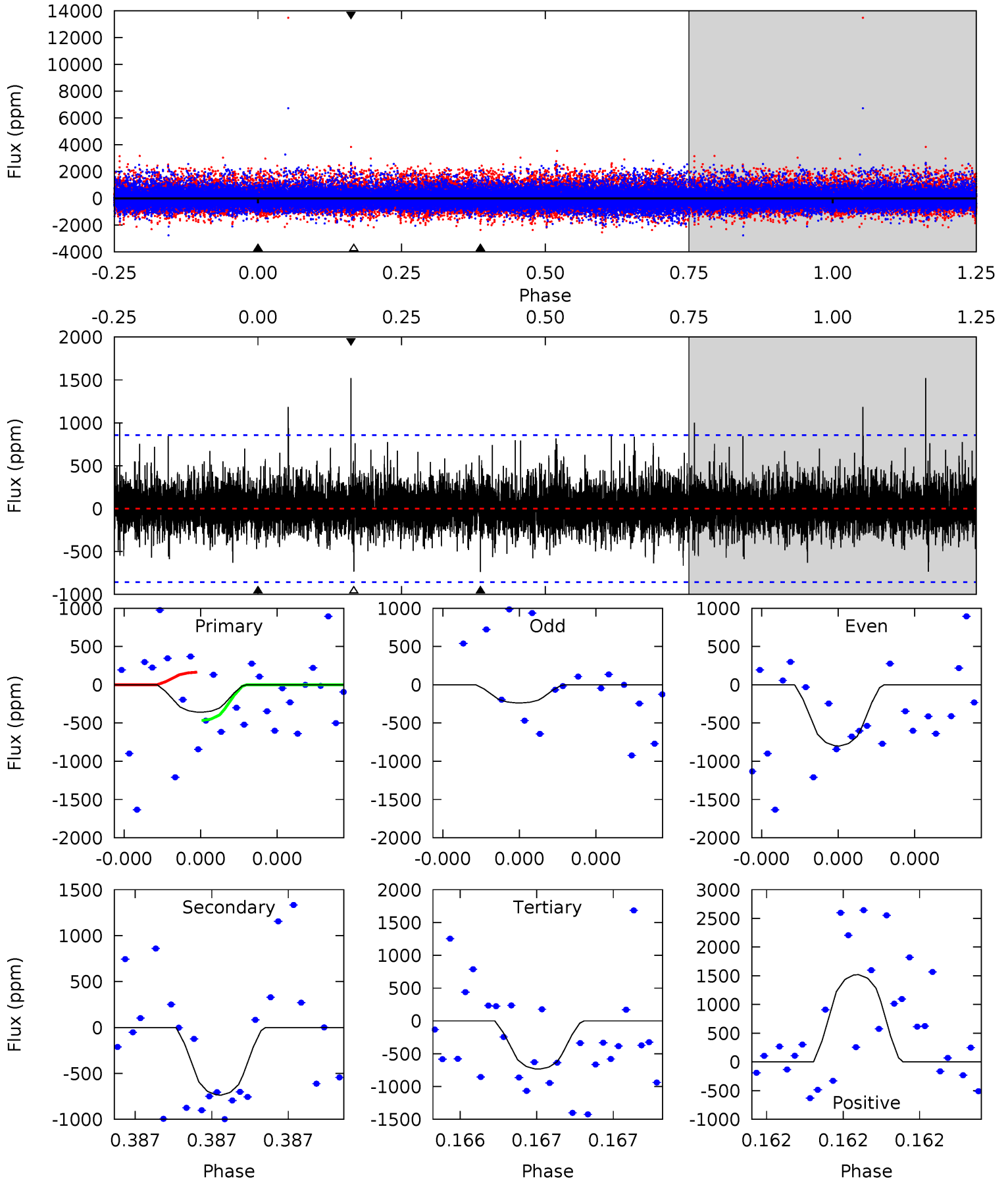
TCE 005694127-02 P=271.817114 Days  $T_0=335.618397$  (BKJD)



# DV Model-Shift Uniqueness Test

005694127-02, P = 271.484242 Days, E = 64.177045 Days

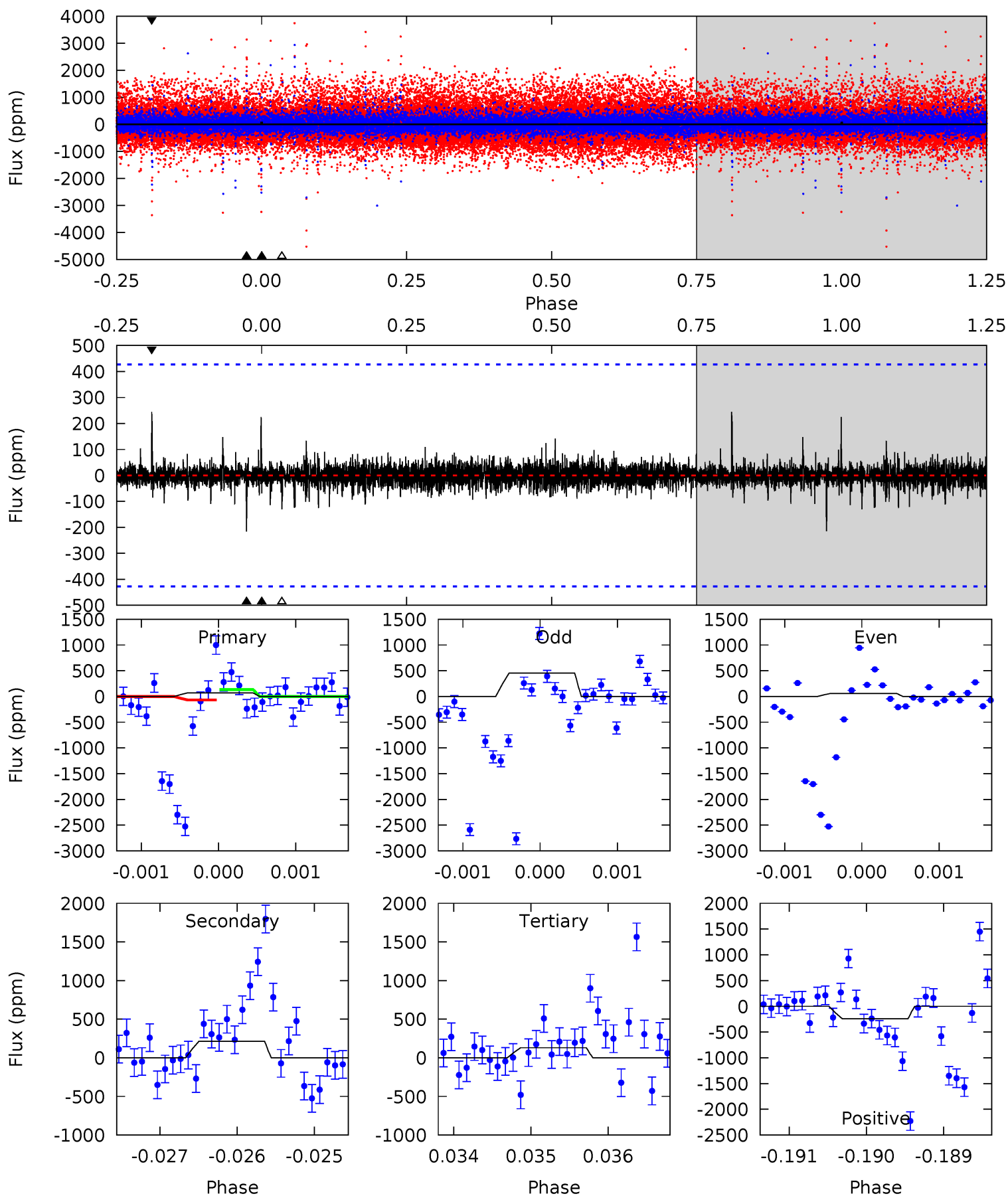
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.39	4.90	4.88	10.1	5.69	3.66	1.19	-2.49	-7.71	0.02	-5.20	1.62	0.36	0.67	1.04



# Alt Model-Shift Uniqueness Test

005694127-02,  $P = 271.817114$  Days,  $E = 63.801283$  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
0.88	2.75	1.67	3.13	5.48	3.33	0.35	-0.79	-2.25	1.08	-0.38	2.48	1.48	0.53	0



### Stellar Parameters For KIC 005694127

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4303^{+142}_{-142}$	$4.599^{+0.046}_{-0.018}$	$0.320^{+0.100}_{-0.300}$	$0.698^{+0.024}_{-0.057}$	$0.705^{+0.036}_{-0.052}$	$2.926^{+0.615}_{-0.215}$
	+3%/-3%	+1%/-0%	+31%/-94%	+3%/-8%	+5%/-7%	+21%/-7%
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 005694127-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-737 \pm 150$	$9.51^{+10.20}_{-6.63}$	$258^{+8}_{-9}$	$2697^{+1089}_{-464}$	$2412^{+22604}_{-1840}$
Alt.	$-214 \pm 78$	$9.27^{+10.09}_{-6.51}$	$258^{+9}_{-9}$	$2312^{+821}_{-349}$	$713^{+7338}_{-555}$

$T_{\text{max}}$  = 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

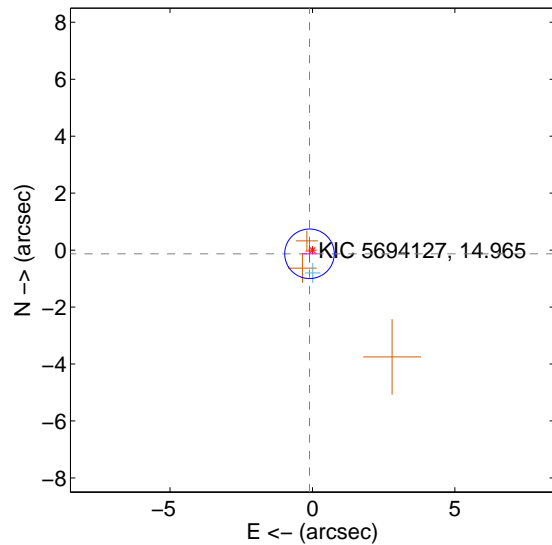
Supplemental centroid analysis for 005694127-02. Kepler magnitude: 14.96. Transit SNR 2.78

There are 1 quarters with good PRF difference image offsets

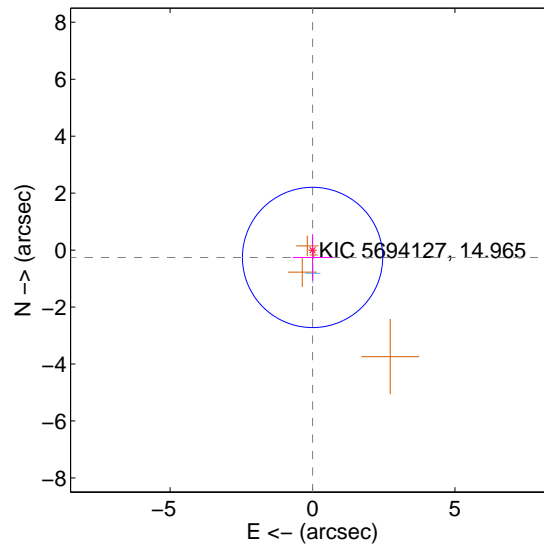
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.166 \pm 0.290$	0.57	$0.104 \pm 0.256$	$-0.129 \pm 0.310$
PRF-fit source offset from KIC position	$0.258 \pm 0.821$	0.31	$-0.001 \pm 0.699$	$-0.258 \pm 0.817$
photometric centroid source offset	$1.03 \pm 2.02$	0.51	$-1.02 \pm 2.02$	$-0.13 \pm 1.92$

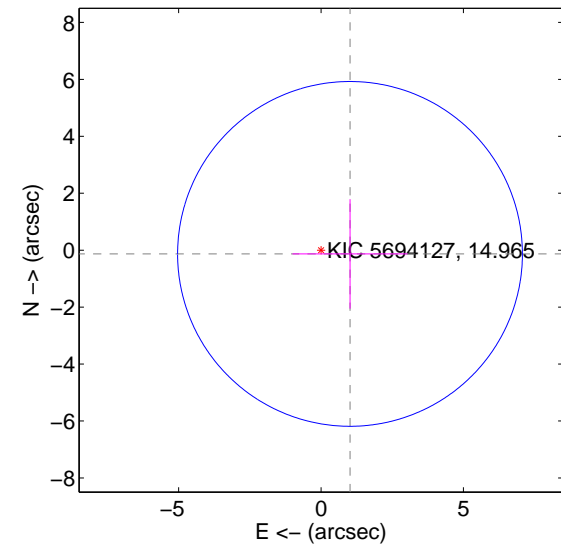
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



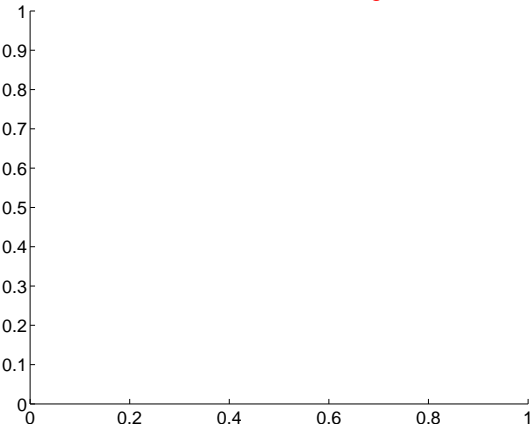
offset from photometric centroids



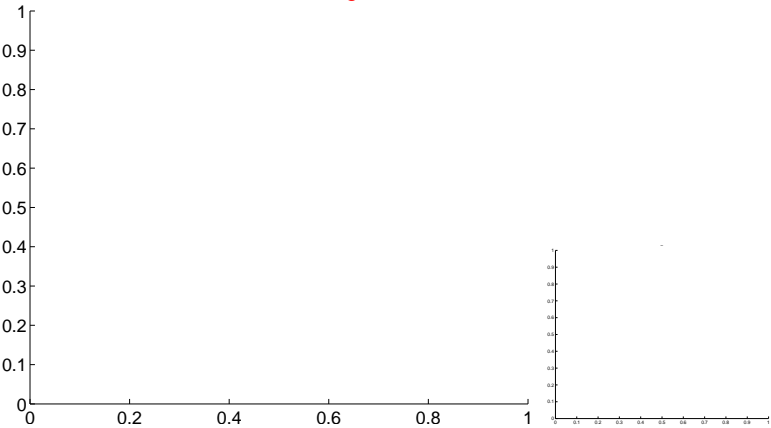
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

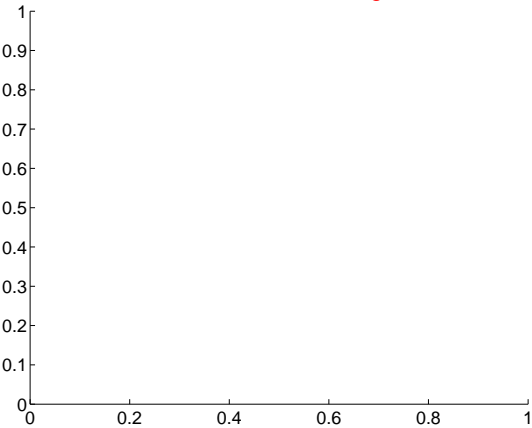
Q1 no difference image



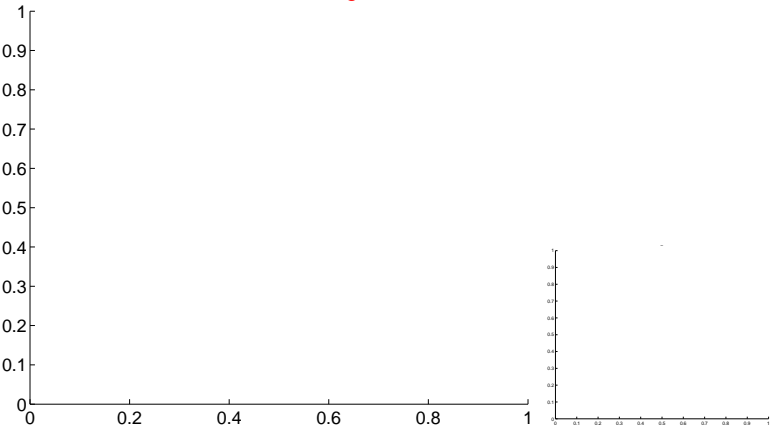
Q1 no OOT image



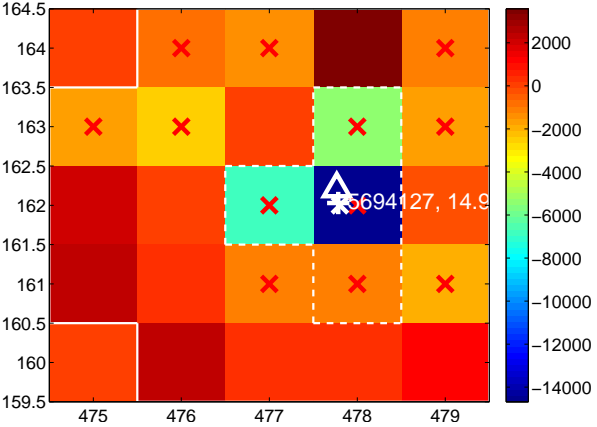
Q2 no difference image



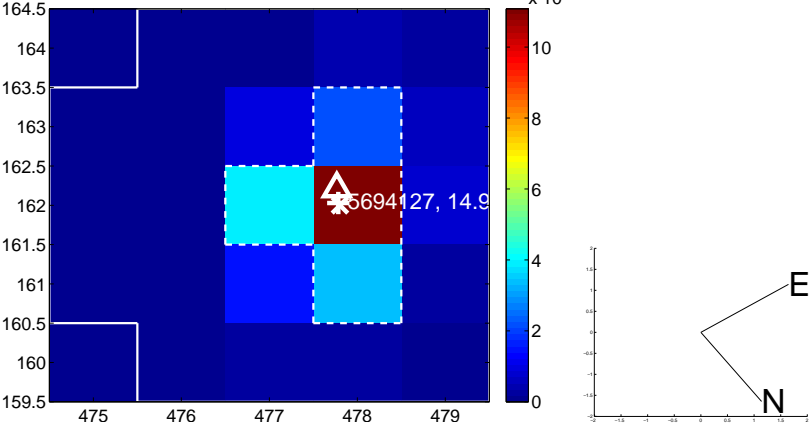
Q2 no OOT image



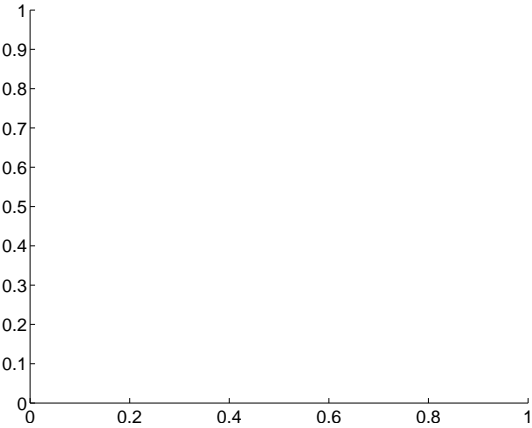
Q3 difference image. Poor Quality



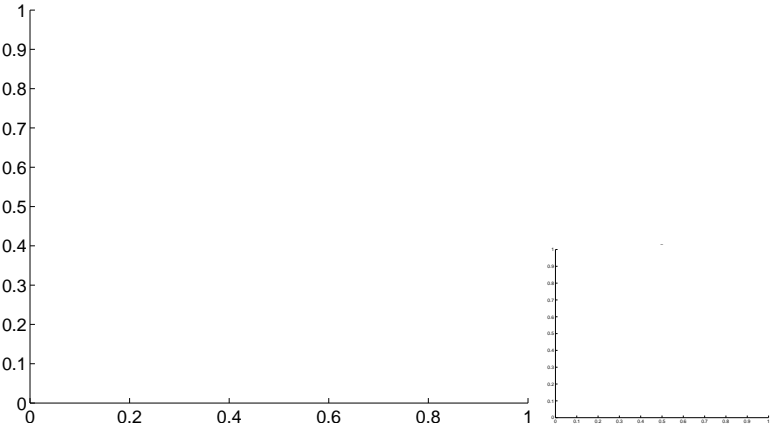
Q3 OOT image



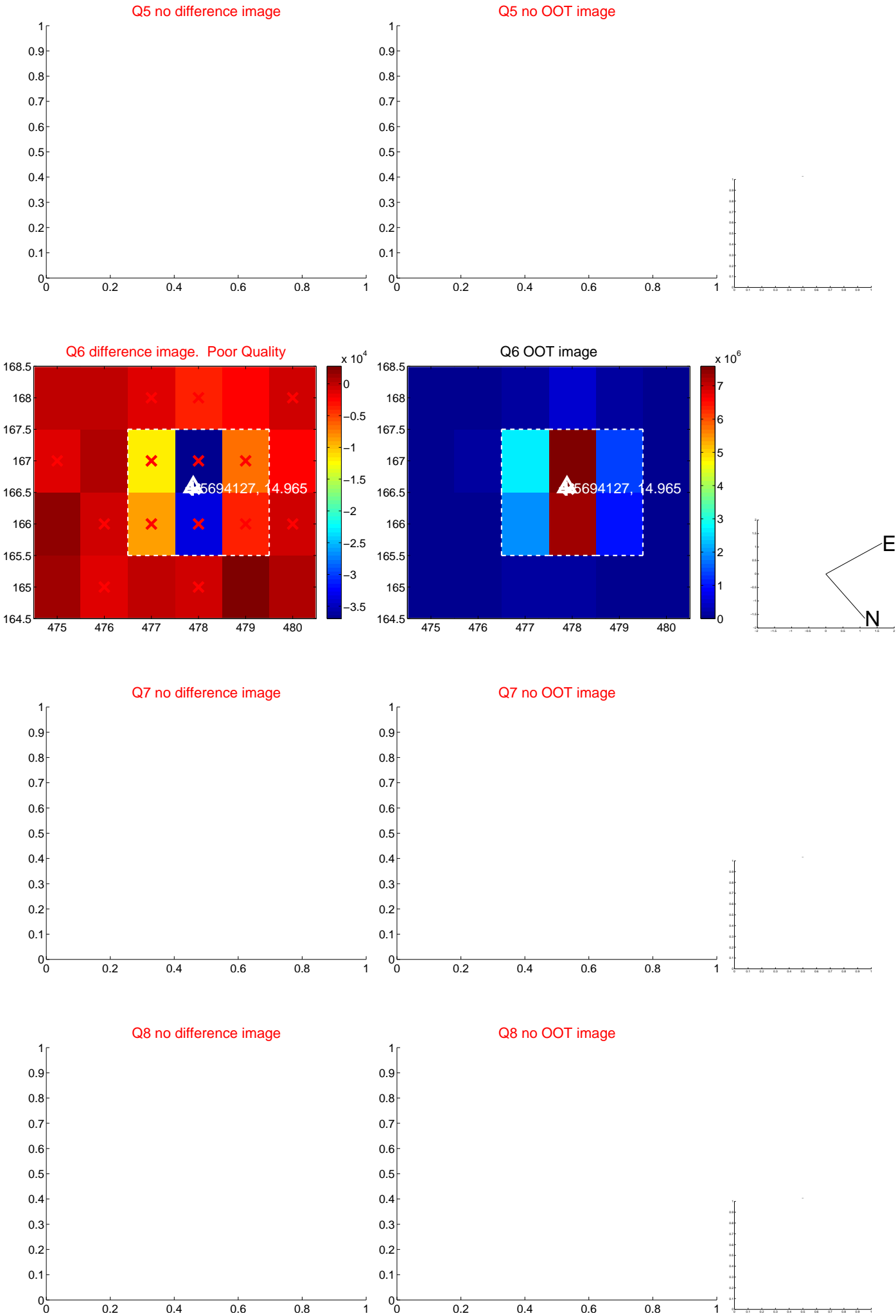
Q4 no difference image



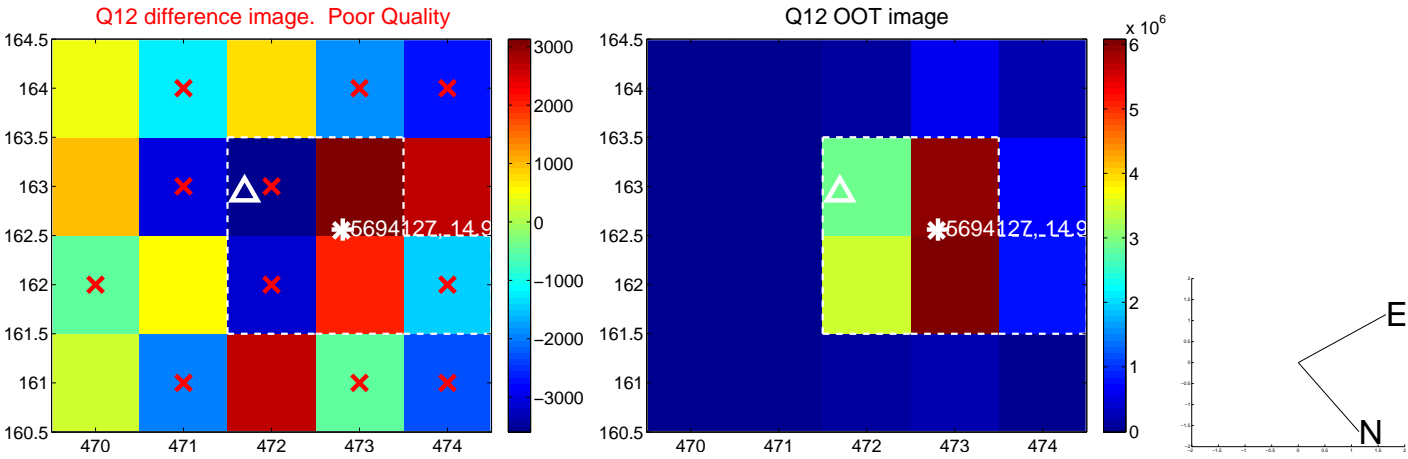
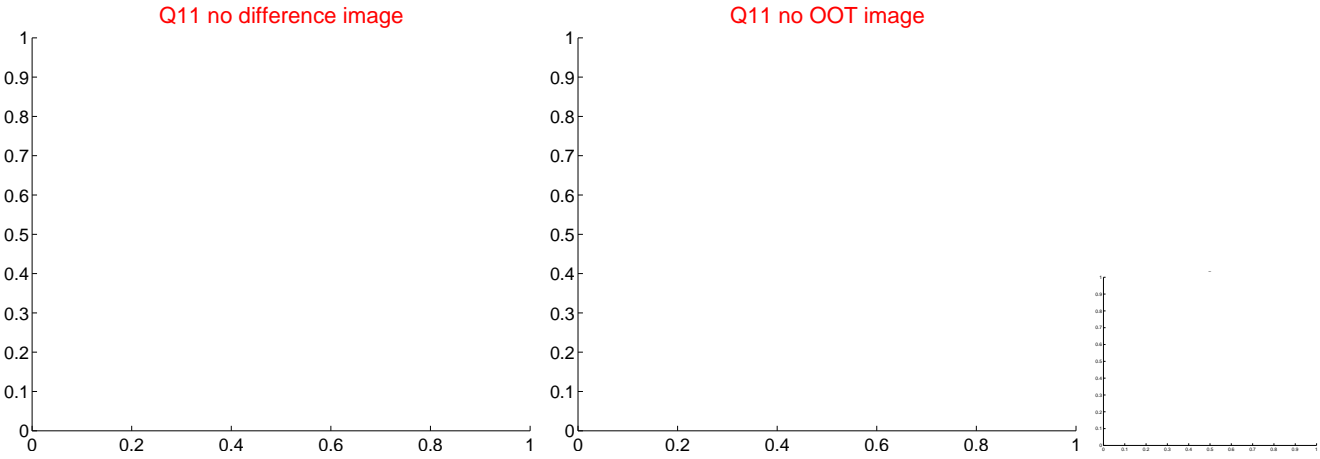
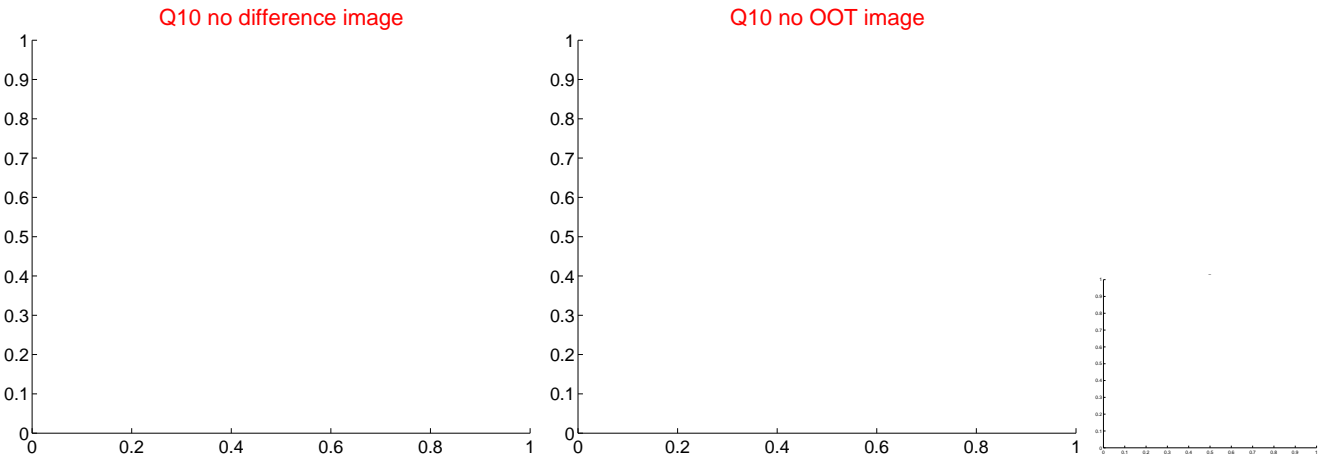
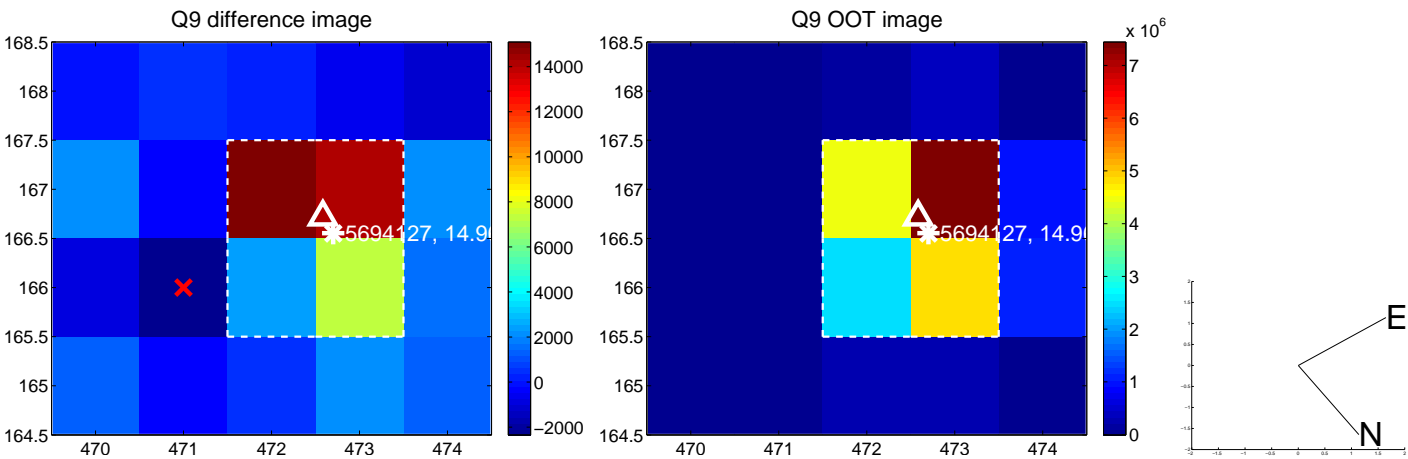
Q4 no OOT image



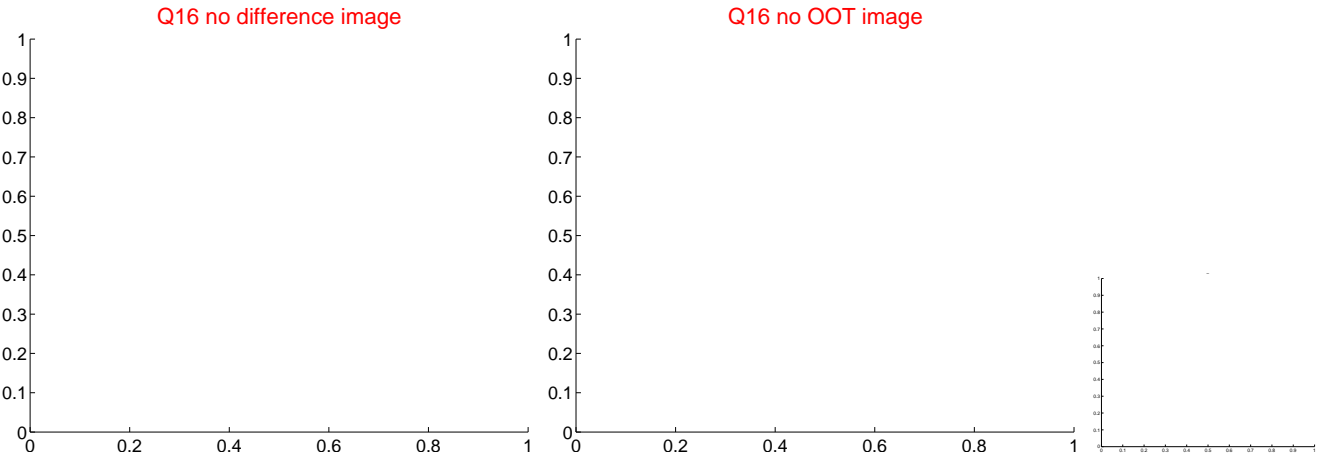
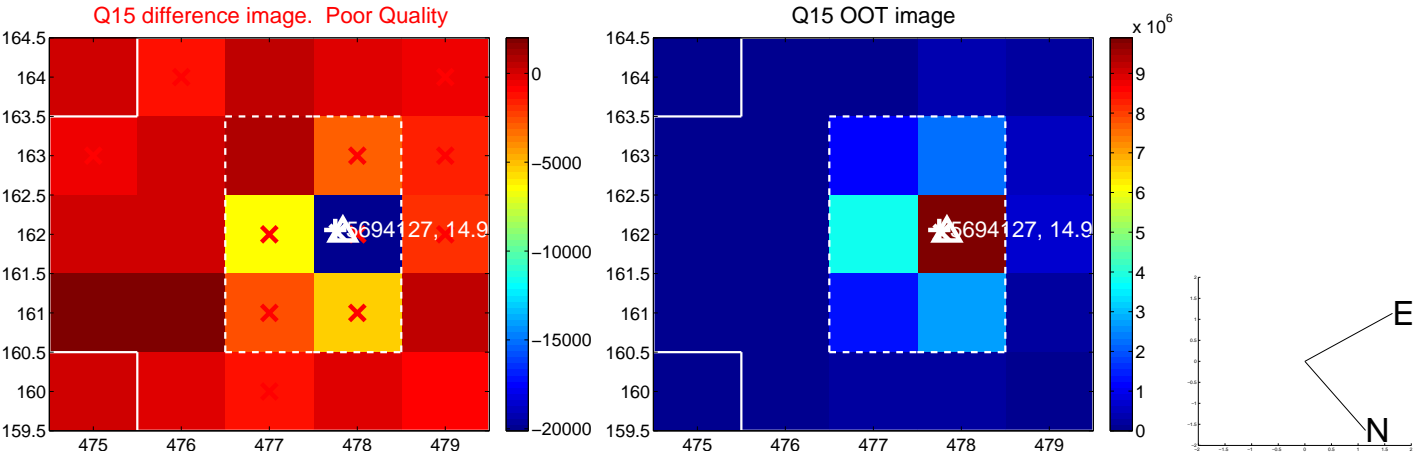
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



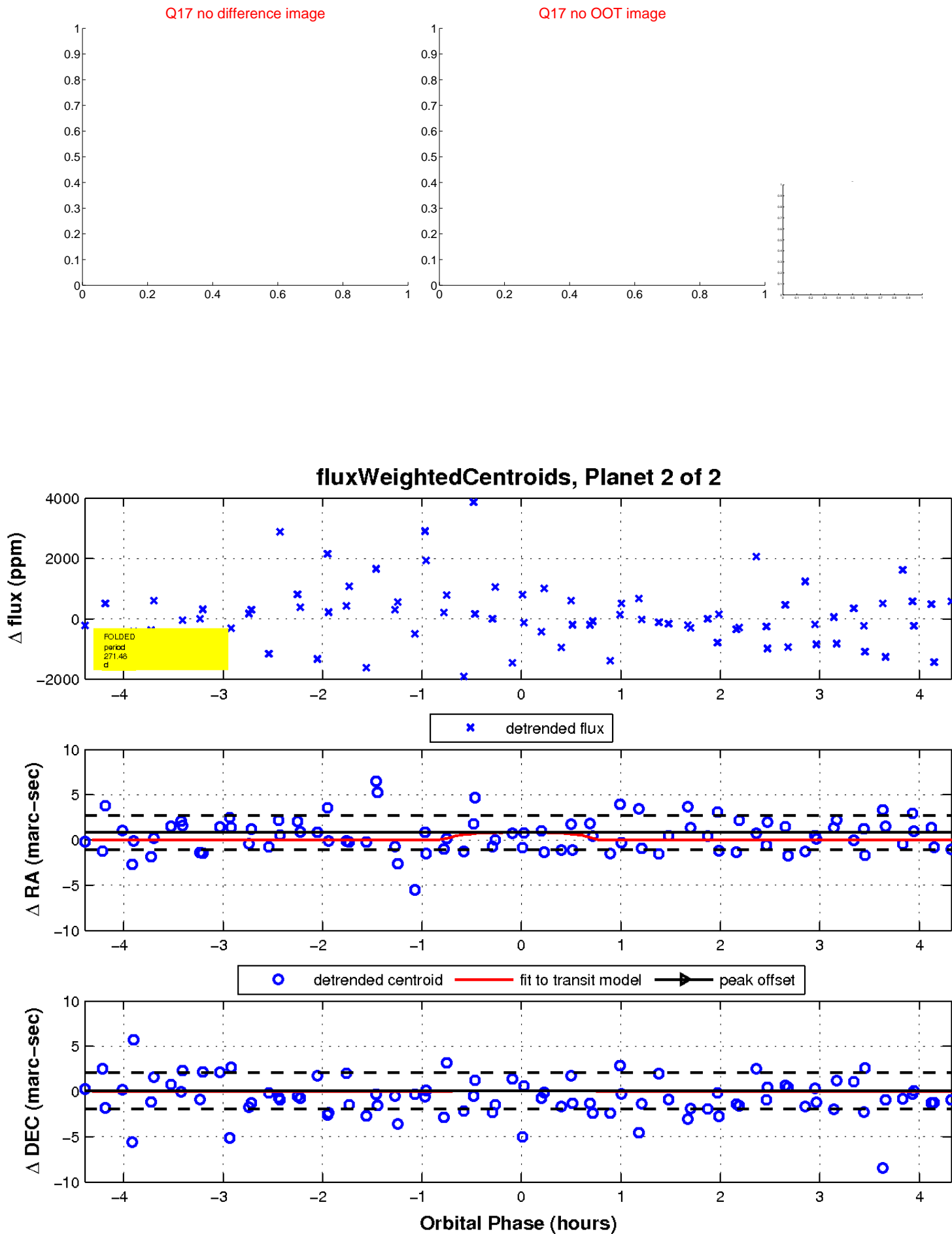
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

