

# KIC 005906694

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005906694-01	OBS	4069.01	13.062556	144.179170	490.0	3.606	17.2	19.1	0.66	4522	1.72	18.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005906694-01	OBS	PC	0.91	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.

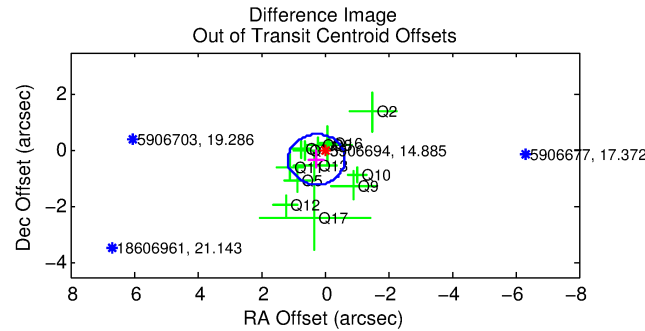
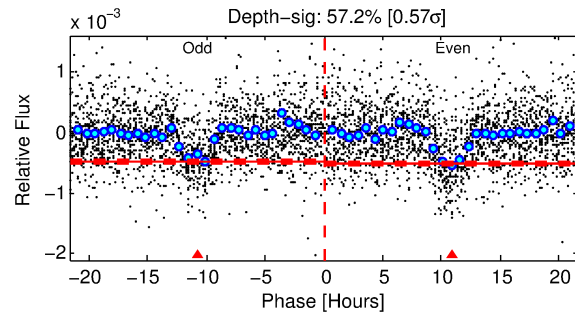
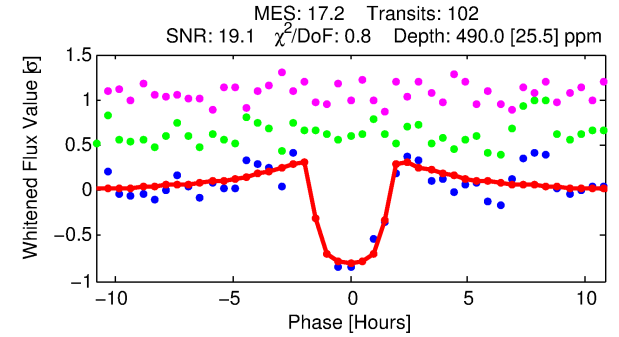
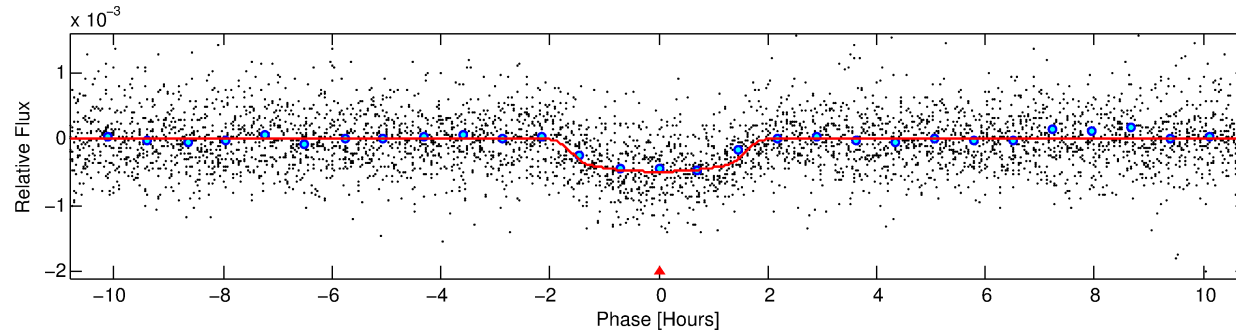
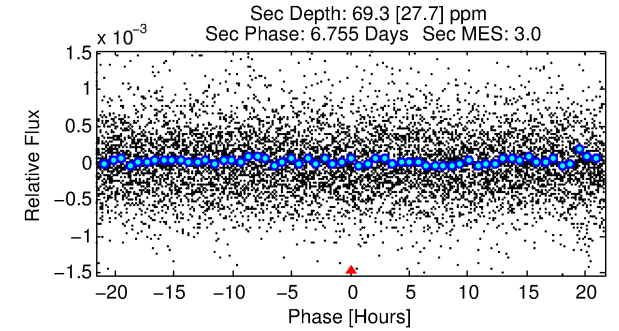
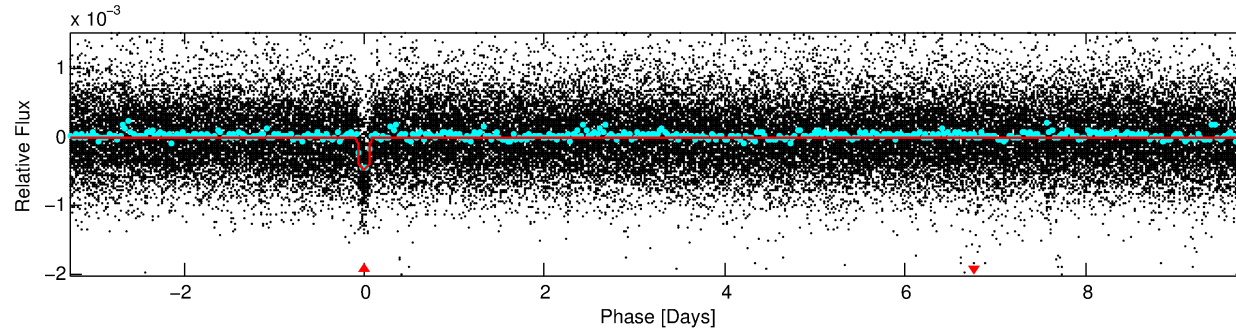
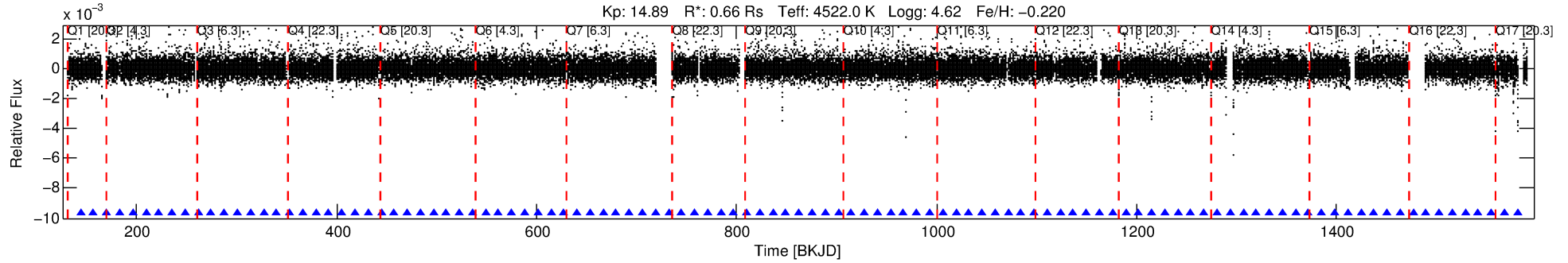
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005906694-01

No Significant Match Found

# DV One-Page Summary

KIC: 5906694 Candidate: 1 of 1 Period: 13.063 d  
KOI: K04069.01 Corr: 0.935



## DV Fit Results:

Period = 13.06256 [0.00005] d  
Epoch = 144.1792 [0.0031] BKJD  
Rp/R\* = 0.0240 [0.0060]  
a/R\* = 15.25 [13.28]  
b = 0.86 [0.27]  
Seff = 18.27 [2.81]  
Teff = 527 [20] K  
Rp = 1.72 [0.46] Re  
a = 0.0938 [0.0066] AU  
Ag = 113.76 [73.94] [1.53σ]  
Teffp = 2662 [435] K [4.90σ]

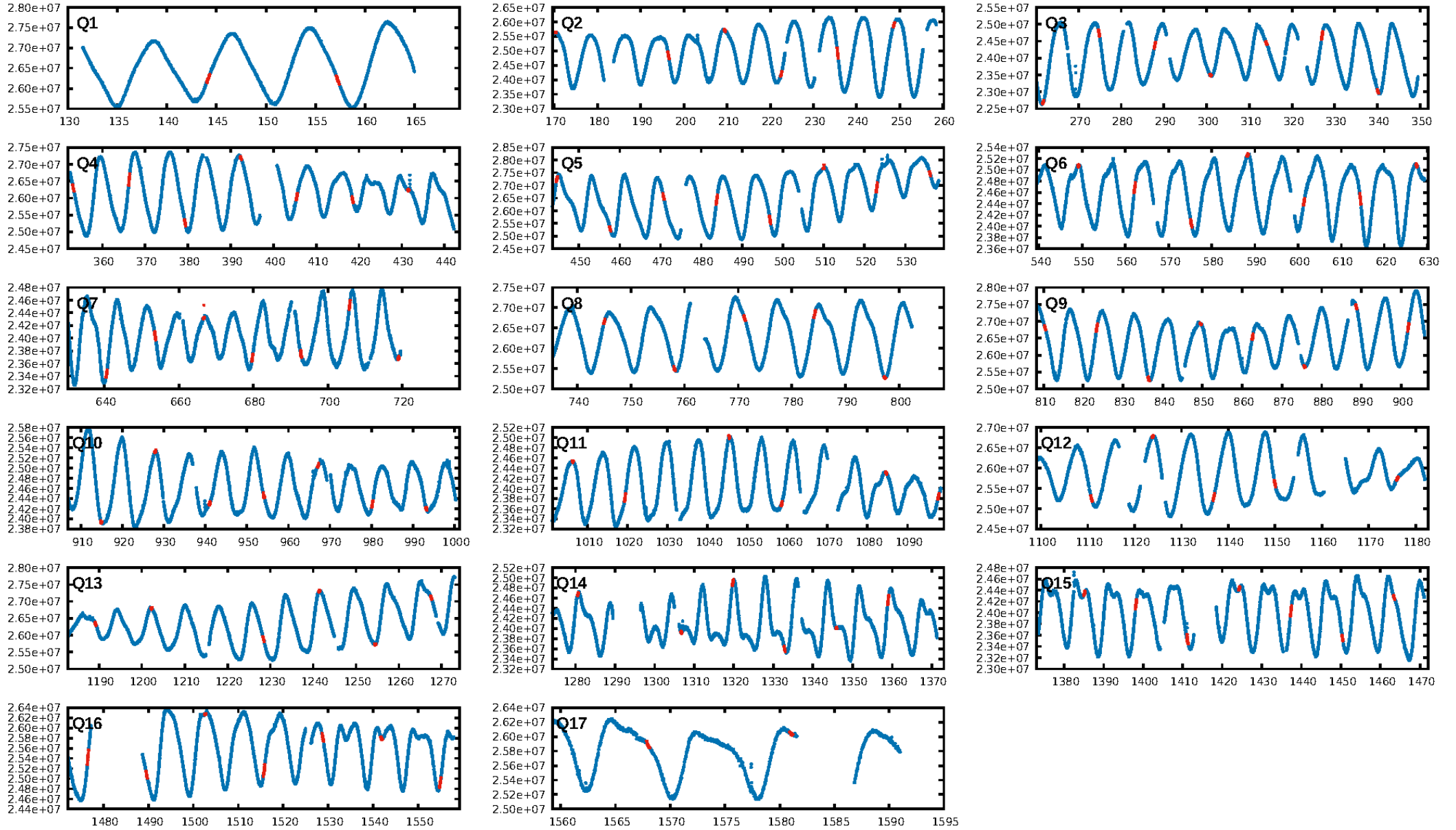
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 8.09e-50  
RollingBand-fgt: 1.00 [98/98]  
GhostDiagnostic-chr: 1.69  
Centroid-sig: 11.4%  
Centroid-so: 0.918 arcsec [1.38σ]  
OotOffset-rm: 0.407 arcsec [1.36σ]  
KicOffset-rm: 0.390 arcsec [1.36σ]  
OotOffset-st: 2/3/4/4 [13]  
KicOffset-st: 2/3/4/4 [13]  
DiffImageQuality-fgm: 0.77 [10/13]  
DiffImageOverlap-fno: 1.00 [17/17]

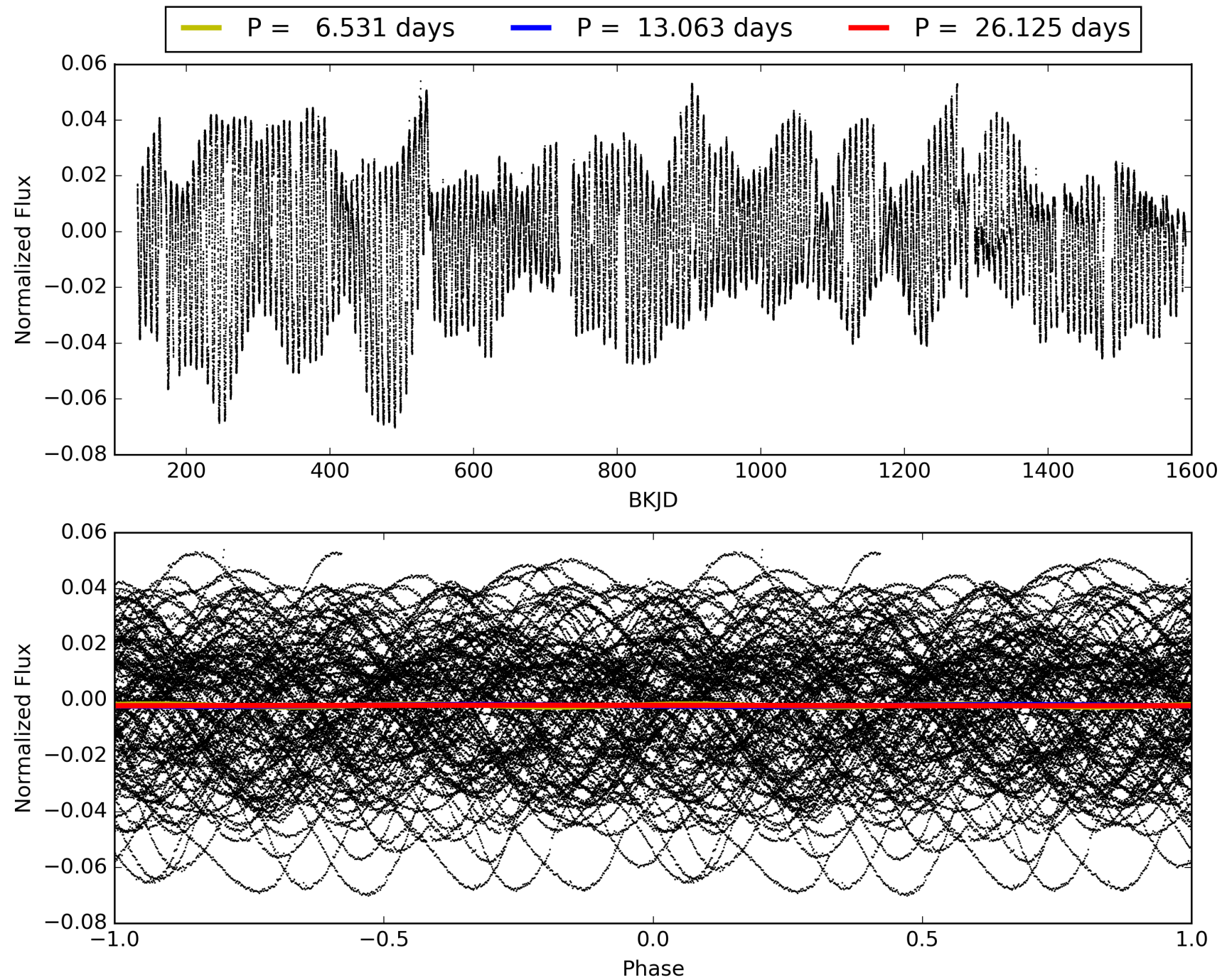
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:14:45 Z

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

# TCE 005906694-01, PDC Light Curves

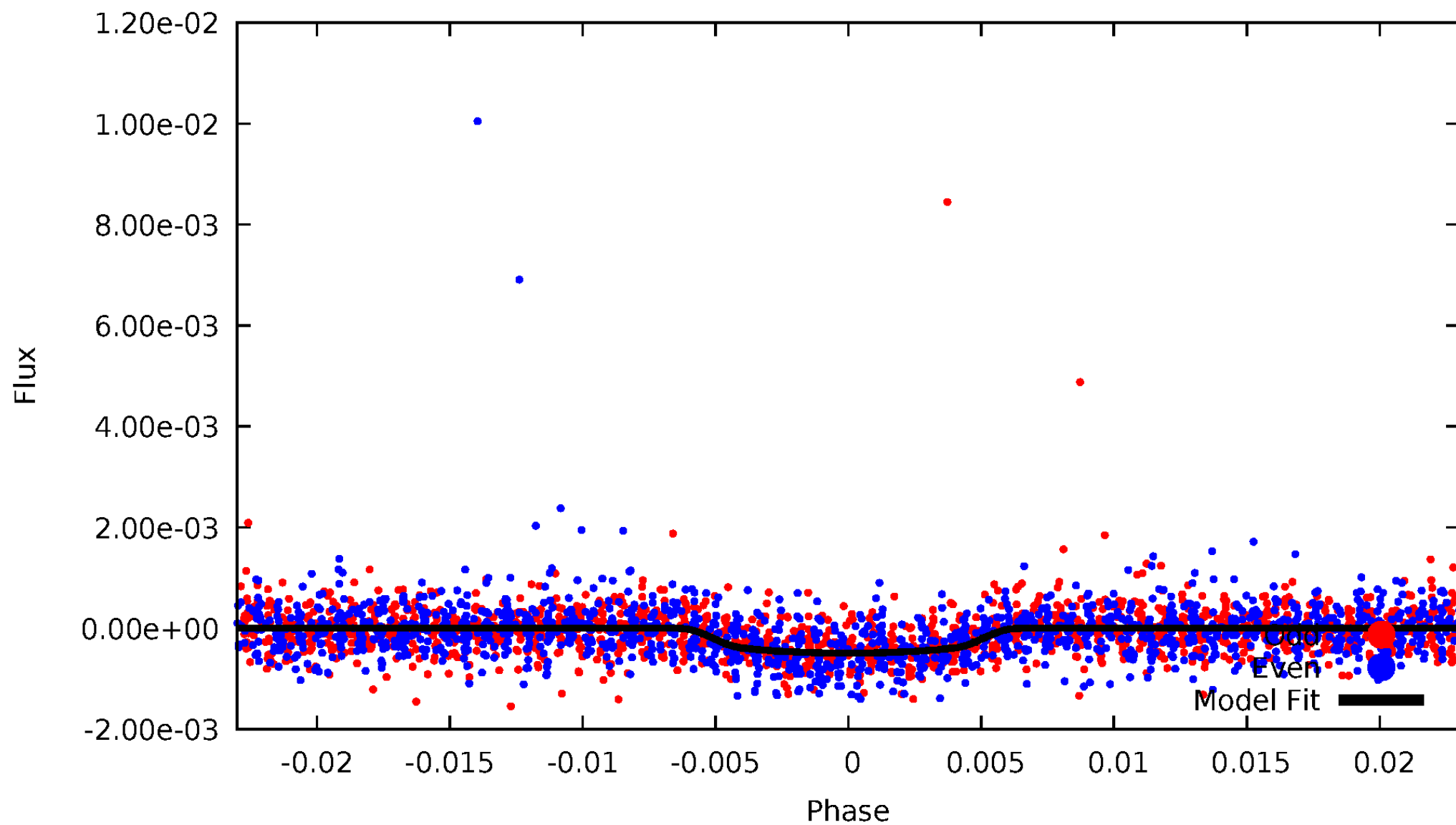


TCE 005906694-01



# DV Odd/Even

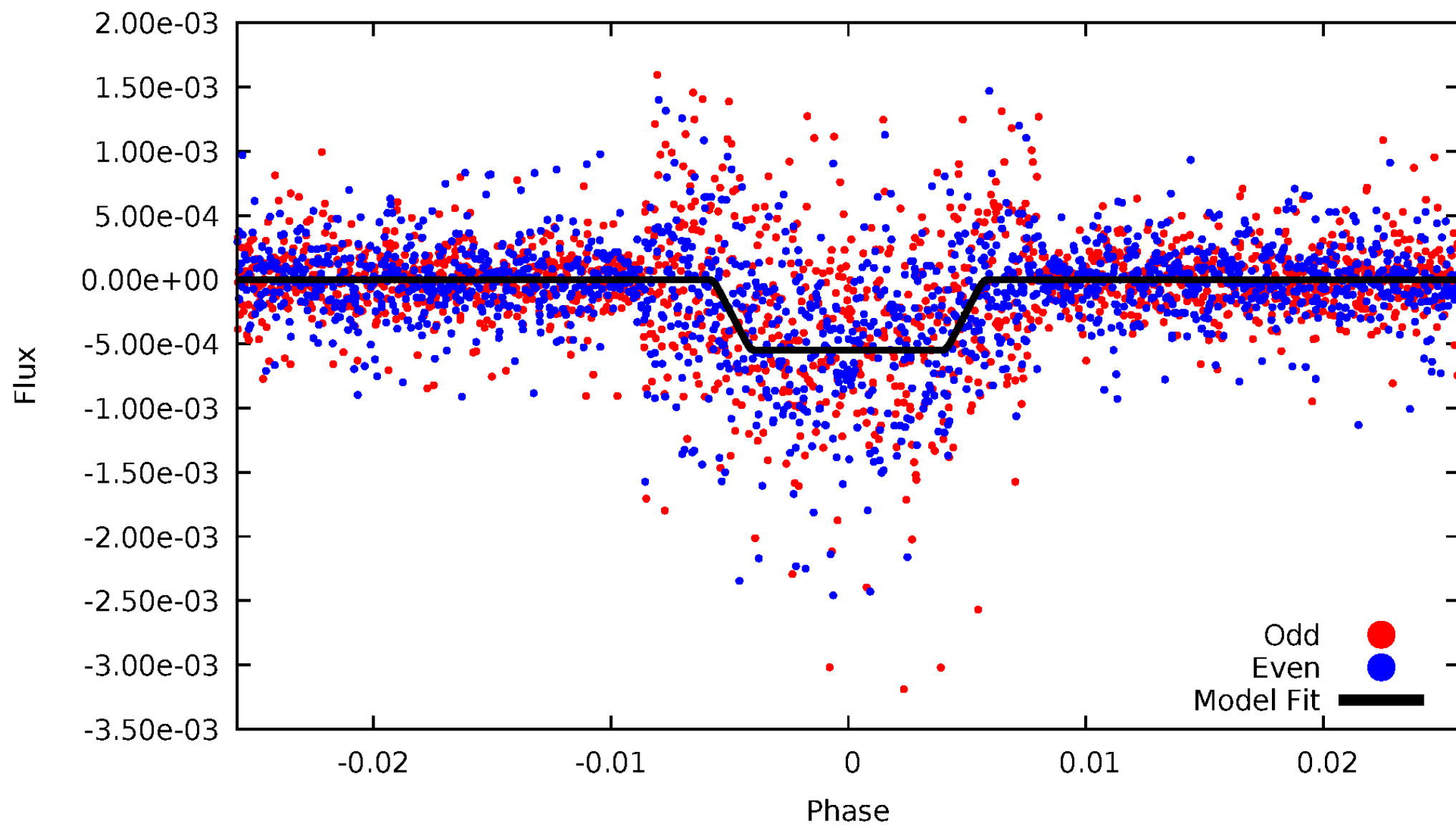
TCE 005906694-01





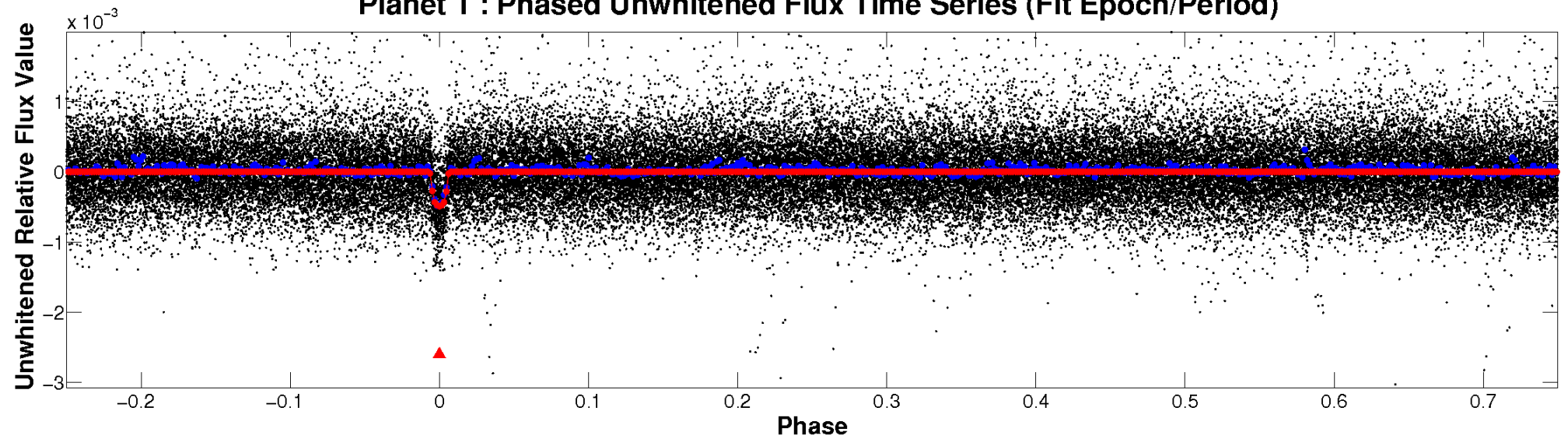
# ALT Odd/Even

TCE 005906694-01

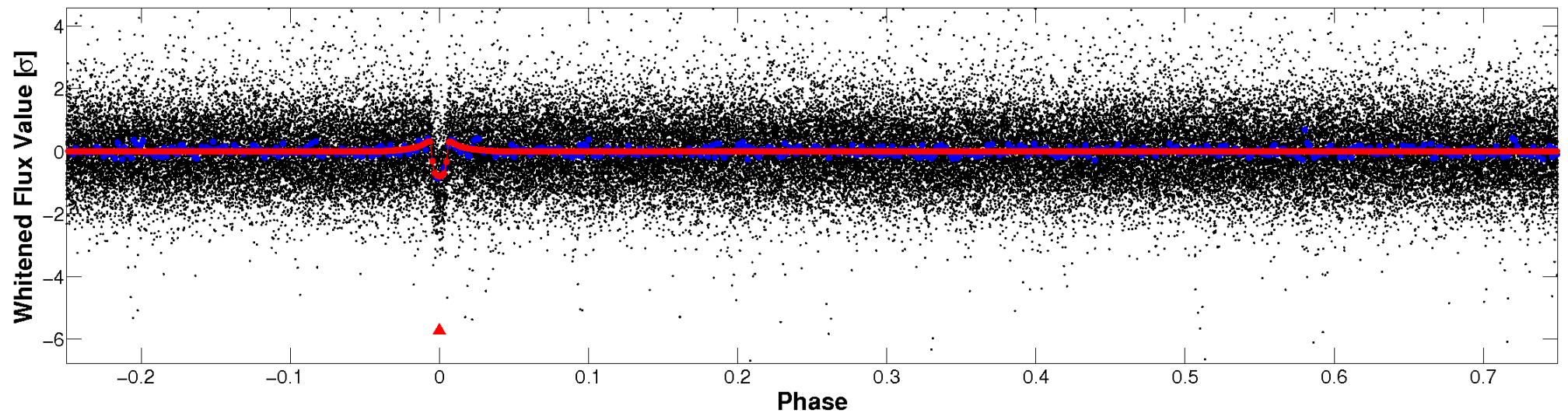


# Non-Whitened Vs. Whitened Light Curve

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

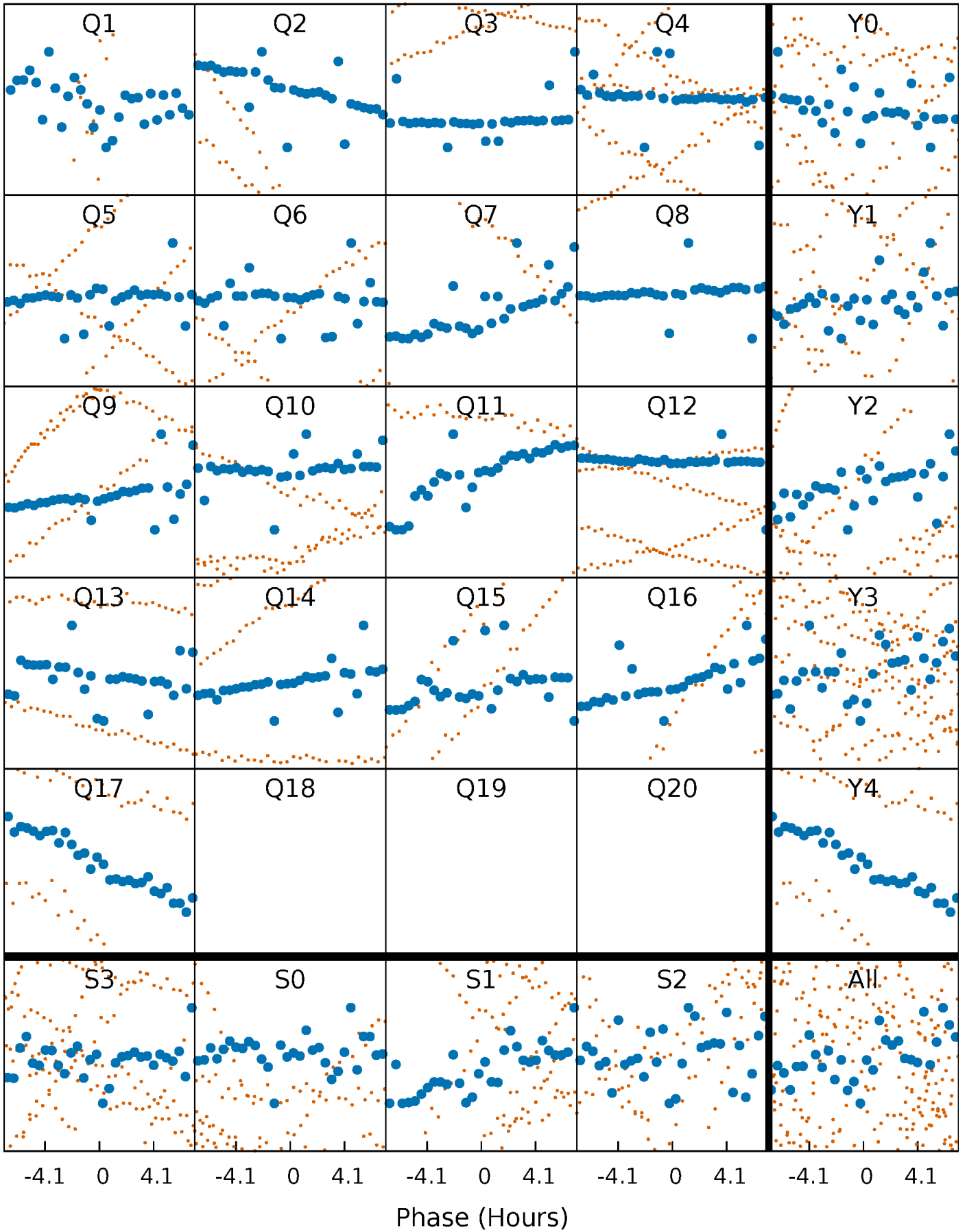


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

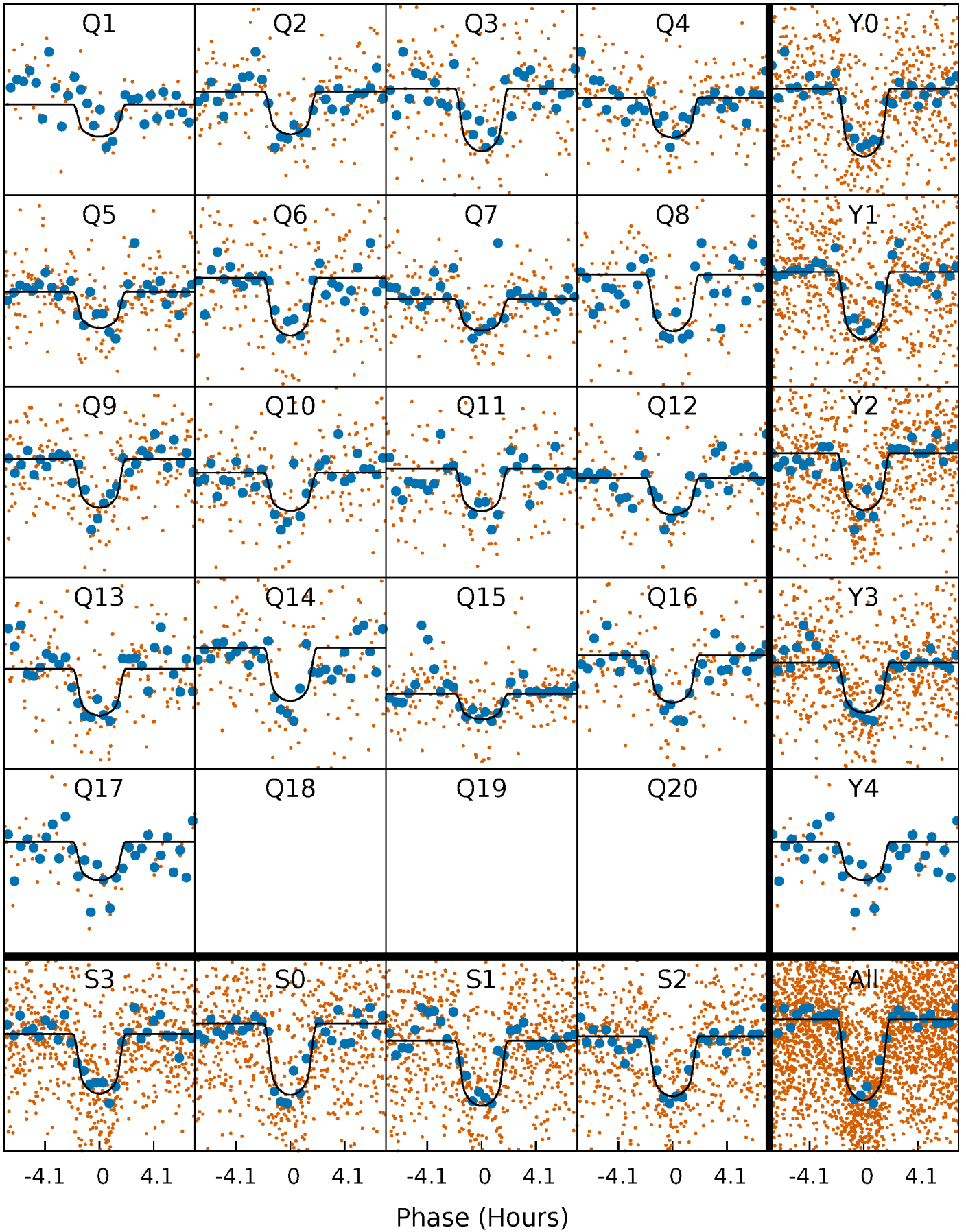
TCE 005906694-01 P= 13.062556 Days  $T_0=144.179170$  (BKJD)





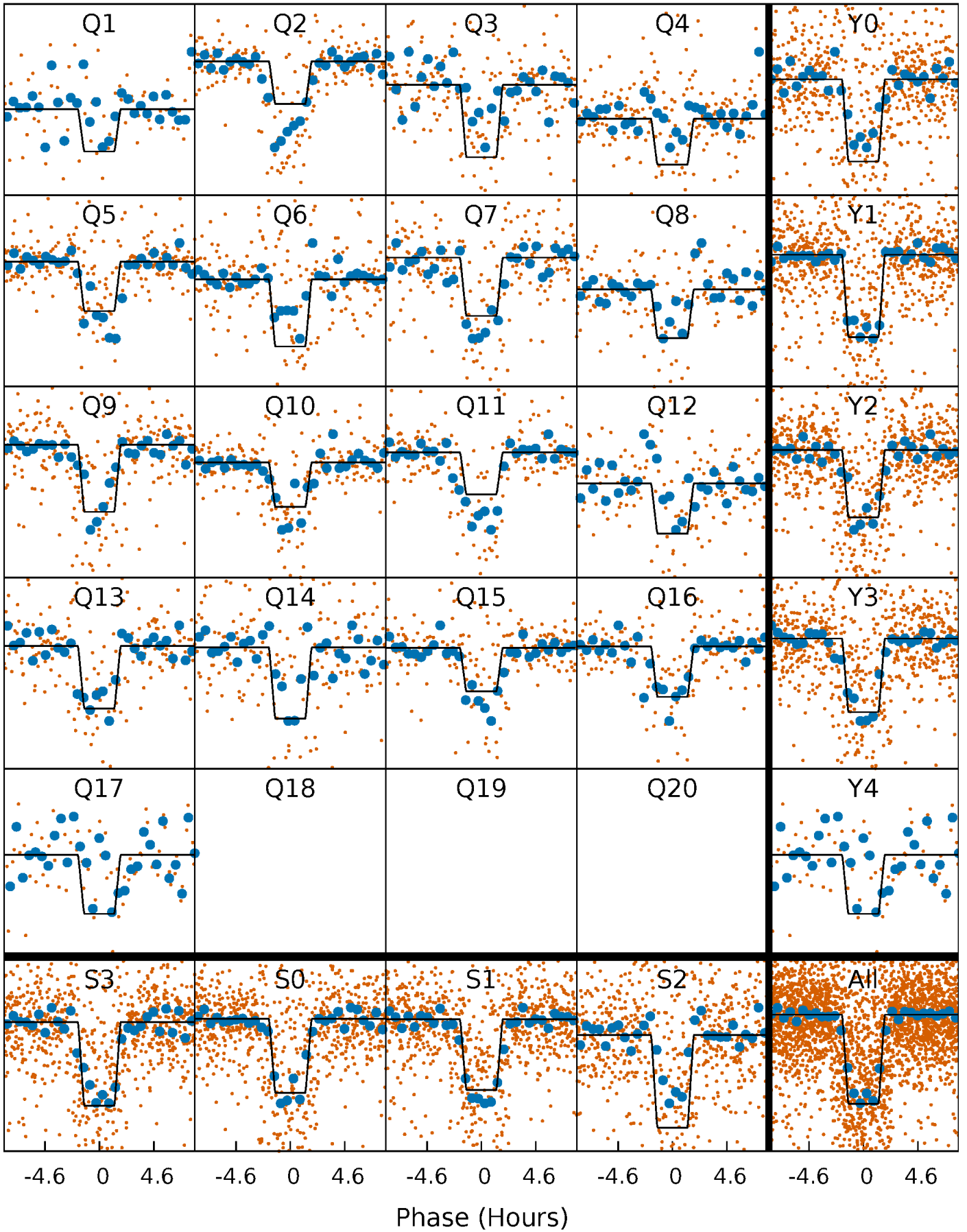
# DV Quarter-Phased Transit Curves

TCE 005906694-01 P= 13.062556 Days  $T_0=144.179170$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

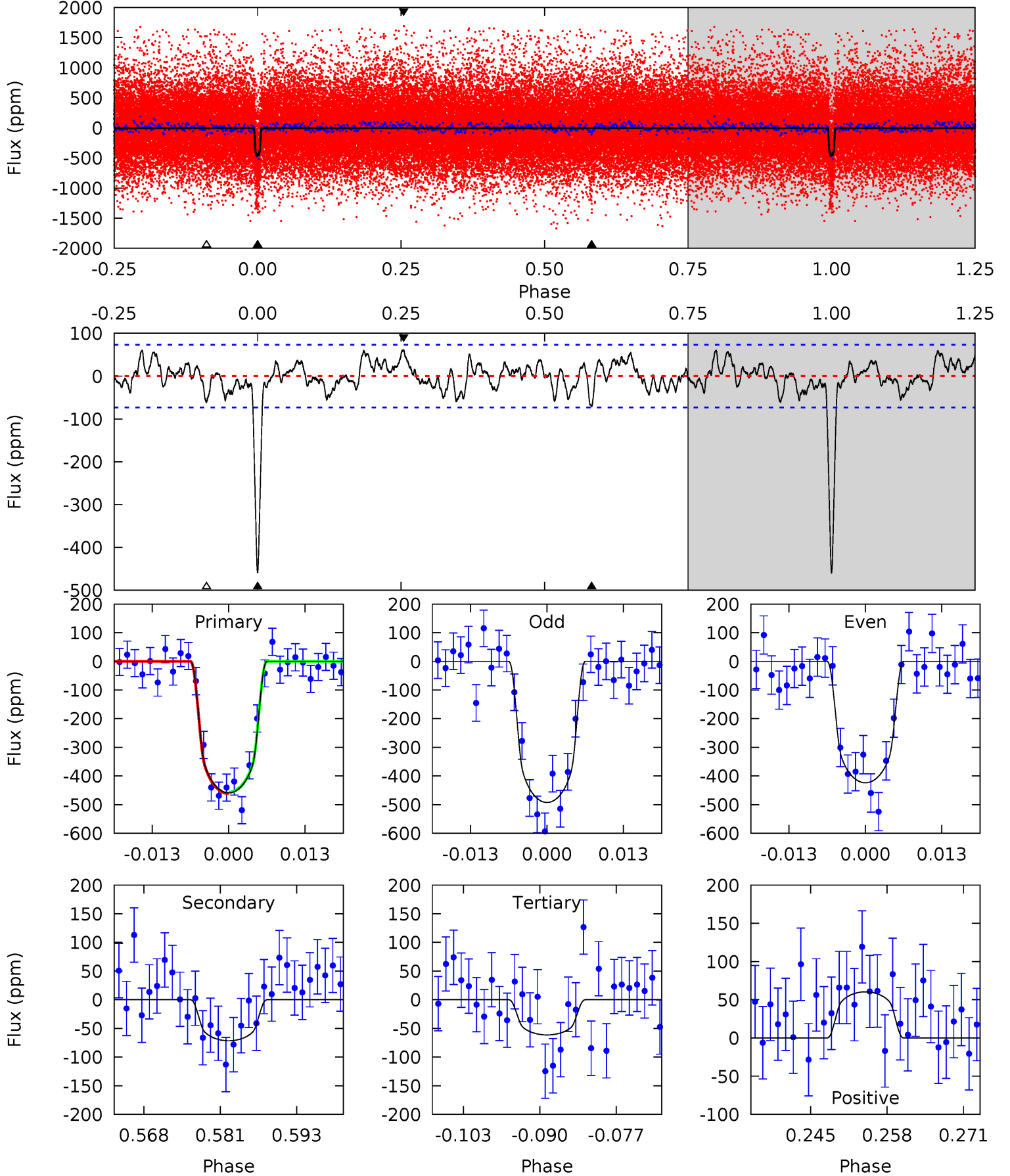
TCE 005906694-01 P= 13.062379 Days  $T_0=144.185832$  (BKJD)



# DV Model-Shift Uniqueness Test

005906694-01, P = 13.062556 Days, E = 131.116614 Days

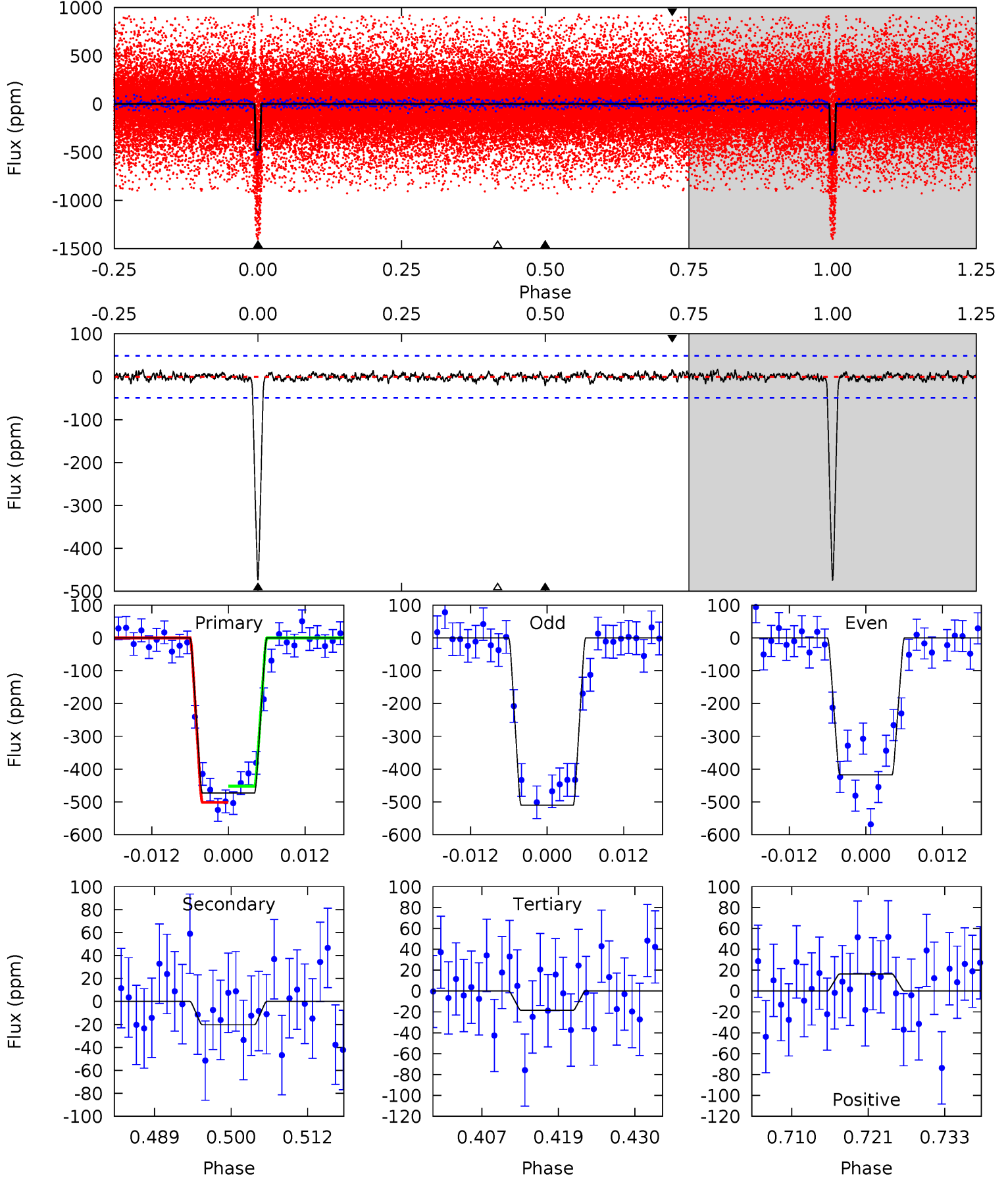
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.3	4.88	4.18	4.12	4.98	2.49	1.75	27.1	27.2	0.69	0.76	2.36	1.00	0.12	0.17



# Alt Model-Shift Uniqueness Test

005906694-01, P = 13.062379 Days, E = 131.123453 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
48.5	2.07	1.89	1.67	5.00	2.52	0.58	46.6	46.8	0.18	0.40	4.72	1.10	0.03	2.53



### Stellar Parameters For KIC 005906694

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4522^{+136}_{-136}$	$4.615^{+0.049}_{-0.025}$	$-0.220^{+0.300}_{-0.300}$	$0.655^{+0.052}_{-0.058}$	$0.646^{+0.071}_{-0.051}$	$3.231^{+0.750}_{-0.390}$
	+3%/-3%	+1%/-1%	+136%/-136%	+8%/-9%	+11%/-8%	+23%/-12%
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 005906694-01 / KOI 4069.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-72 \pm 15$	$1.69^{+0.45}_{-0.44}$	$733^{+25}_{-26}$	$3187^{+354}_{-228}$	$124^{+112}_{-51}$
Alt.	$-20 \pm 10$	$1.66^{+0.45}_{-0.43}$	$734^{+26}_{-24}$	$2678^{+258}_{-273}$	$35^{+35}_{-20}$

$T_{max}$  = 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

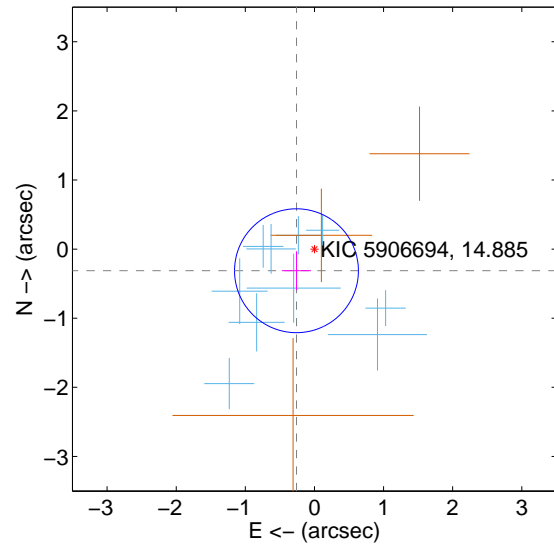
Supplemental centroid analysis for 005906694-01. Kepler magnitude: 14.88. Transit SNR 19.10

There are 10 quarters with good PRF difference image offsets

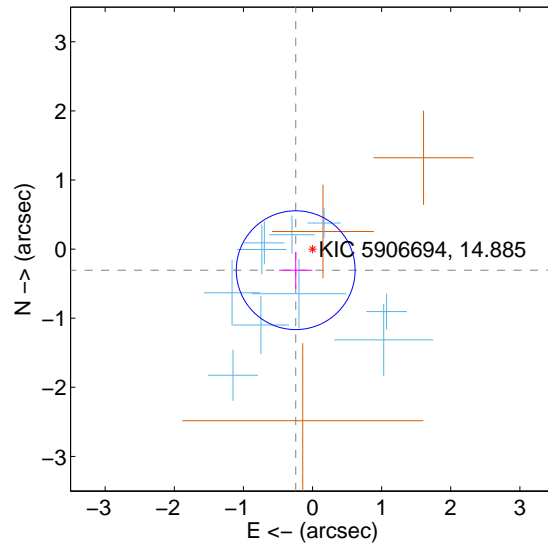
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.407 \pm 0.299$	1.36	$0.260 \pm 0.211$	$-0.313 \pm 0.281$
PRF-fit source offset from KIC position	$0.390 \pm 0.286$	1.36	$0.243 \pm 0.241$	$-0.305 \pm 0.266$
photometric centroid source offset	$0.92 \pm 0.67$	1.38	$-0.86 \pm 0.68$	$-0.33 \pm 0.53$

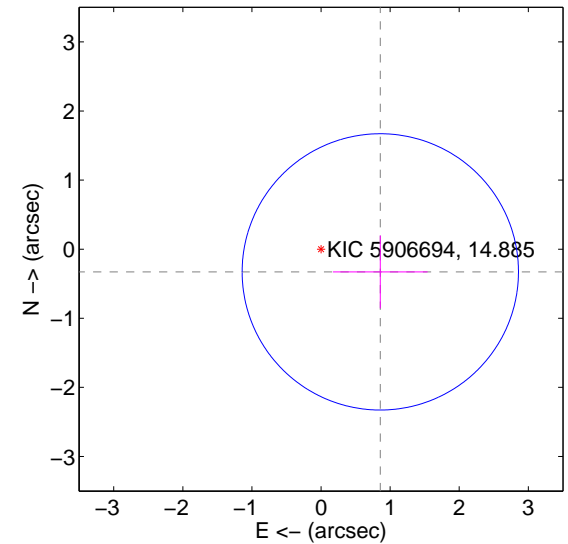
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

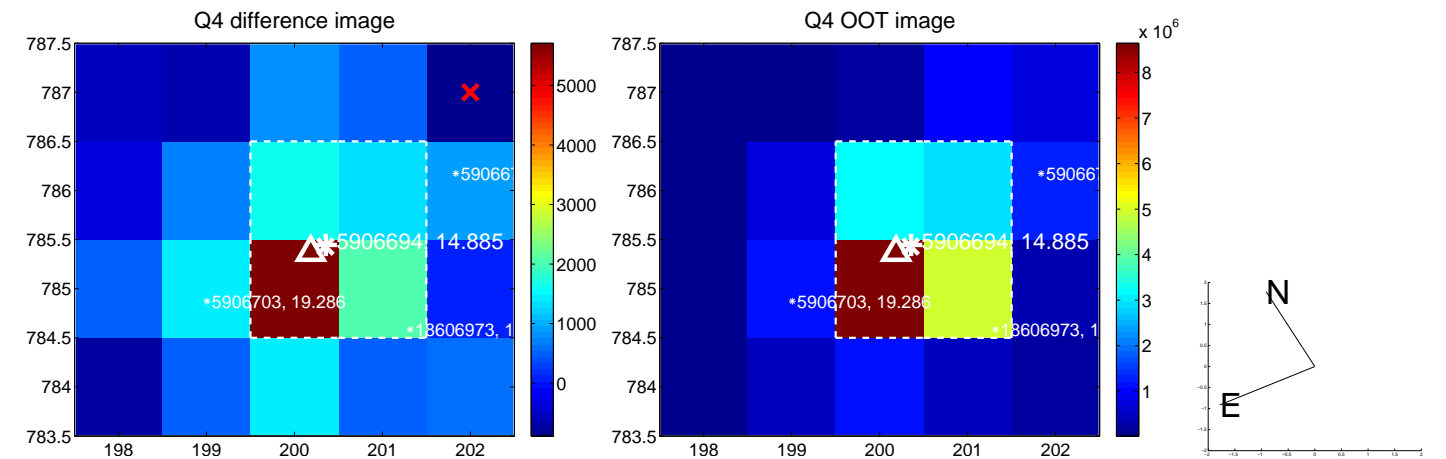
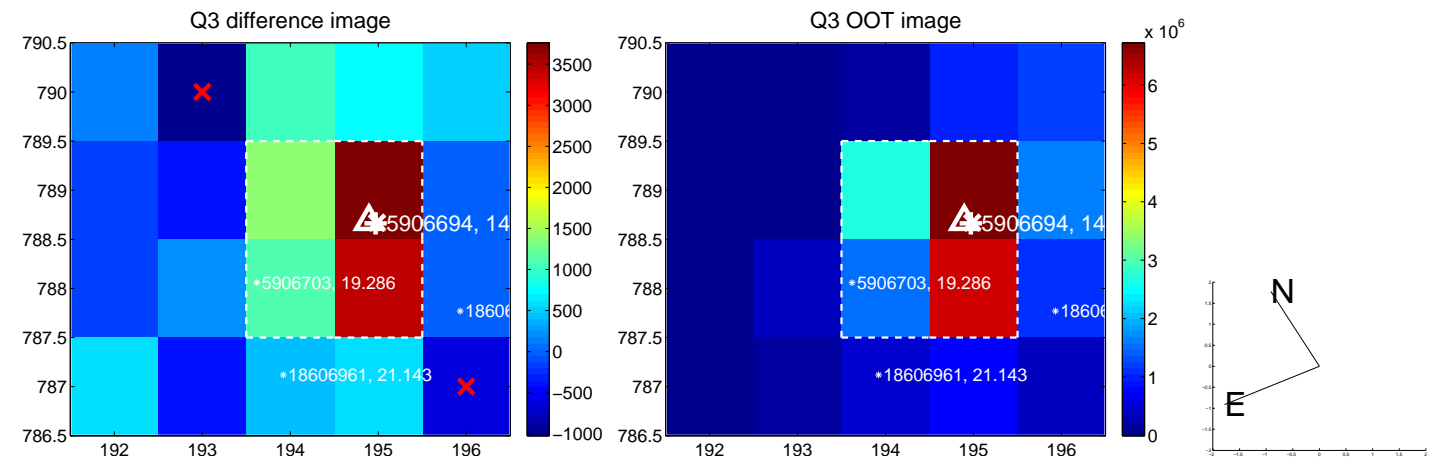
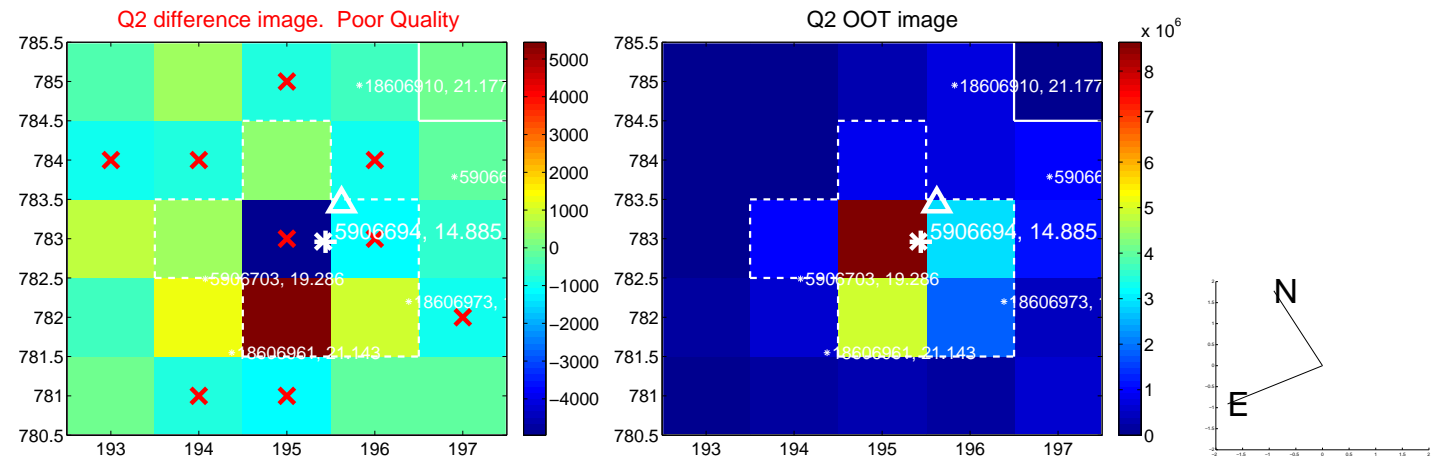
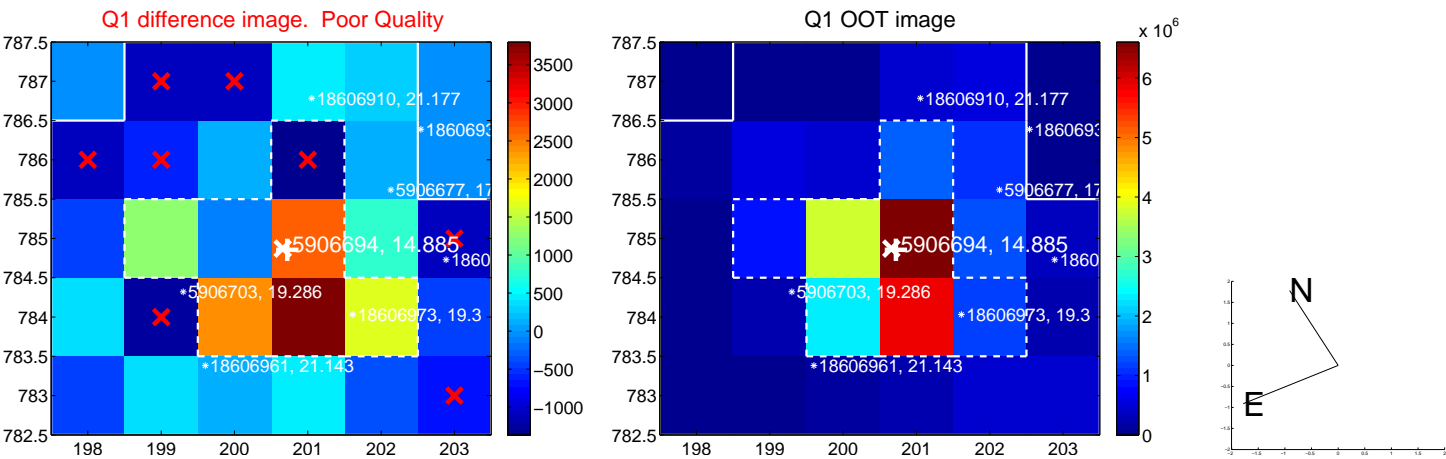


offset from photometric centroids

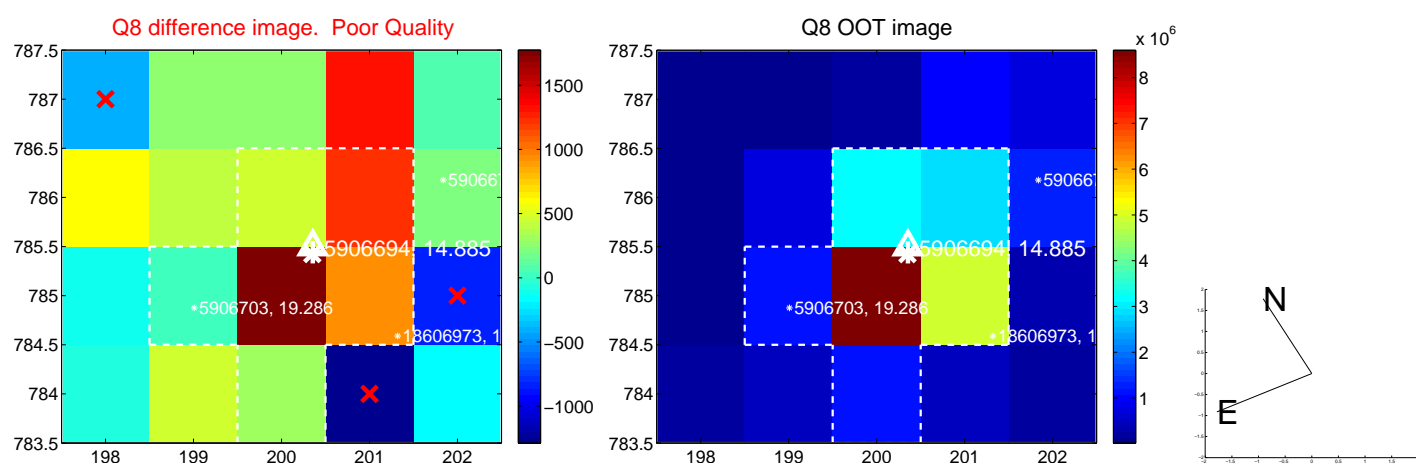
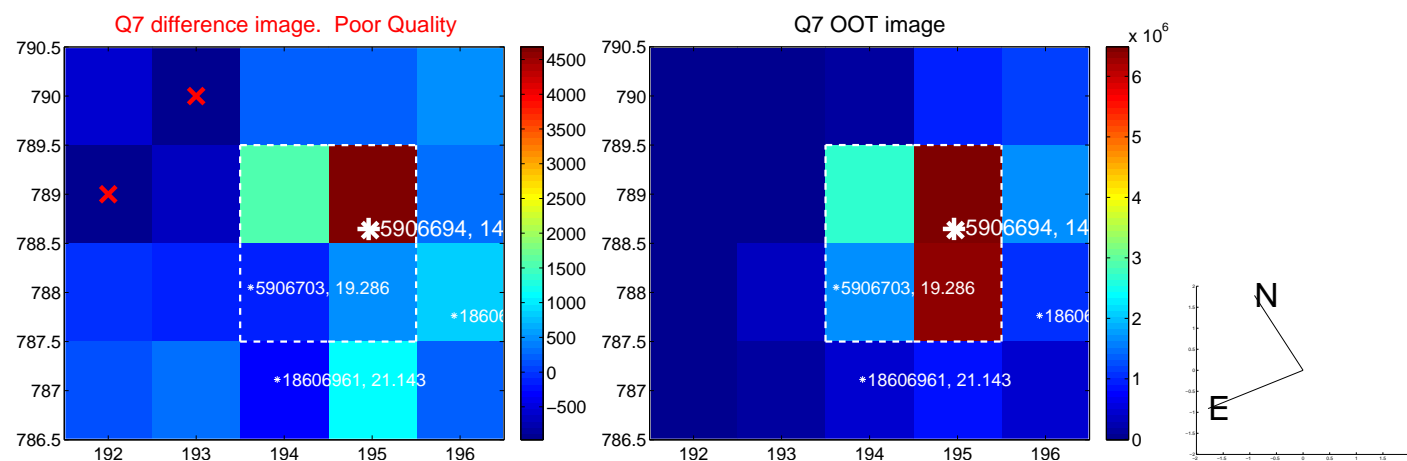
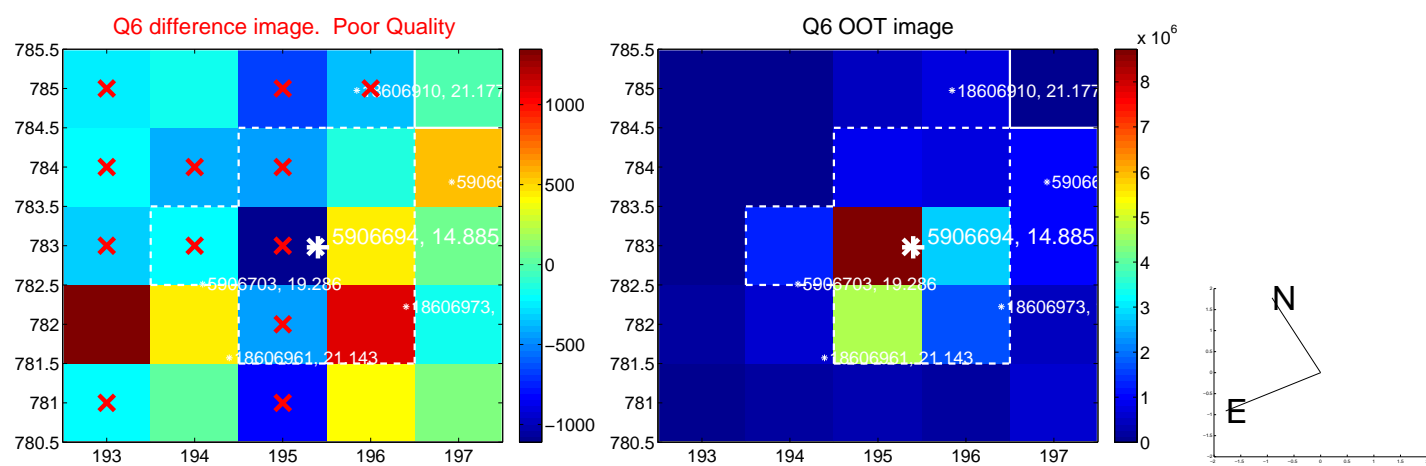
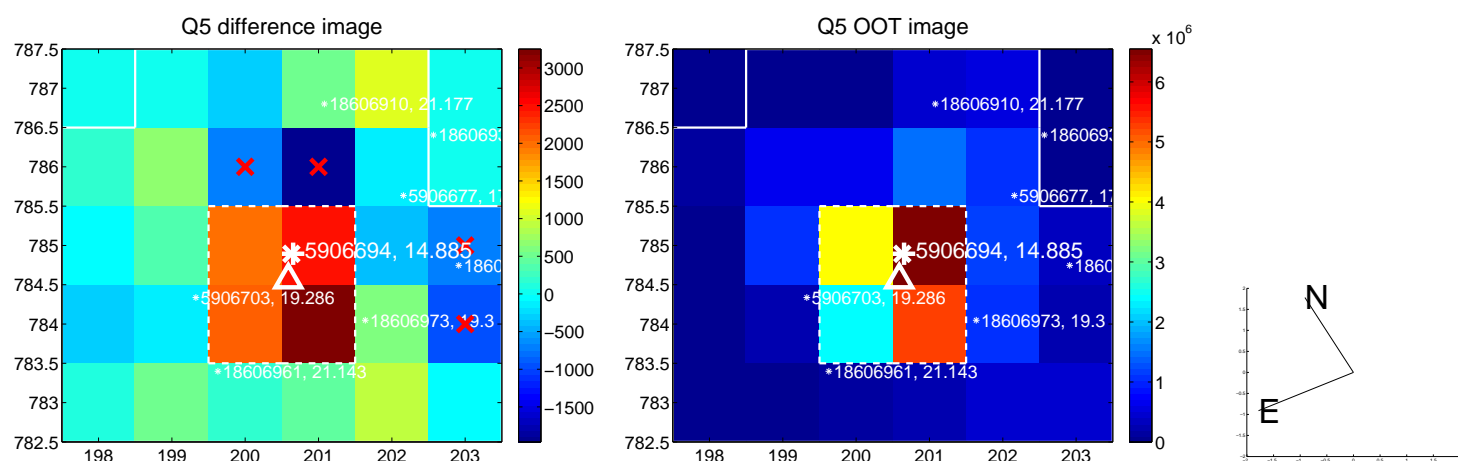


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

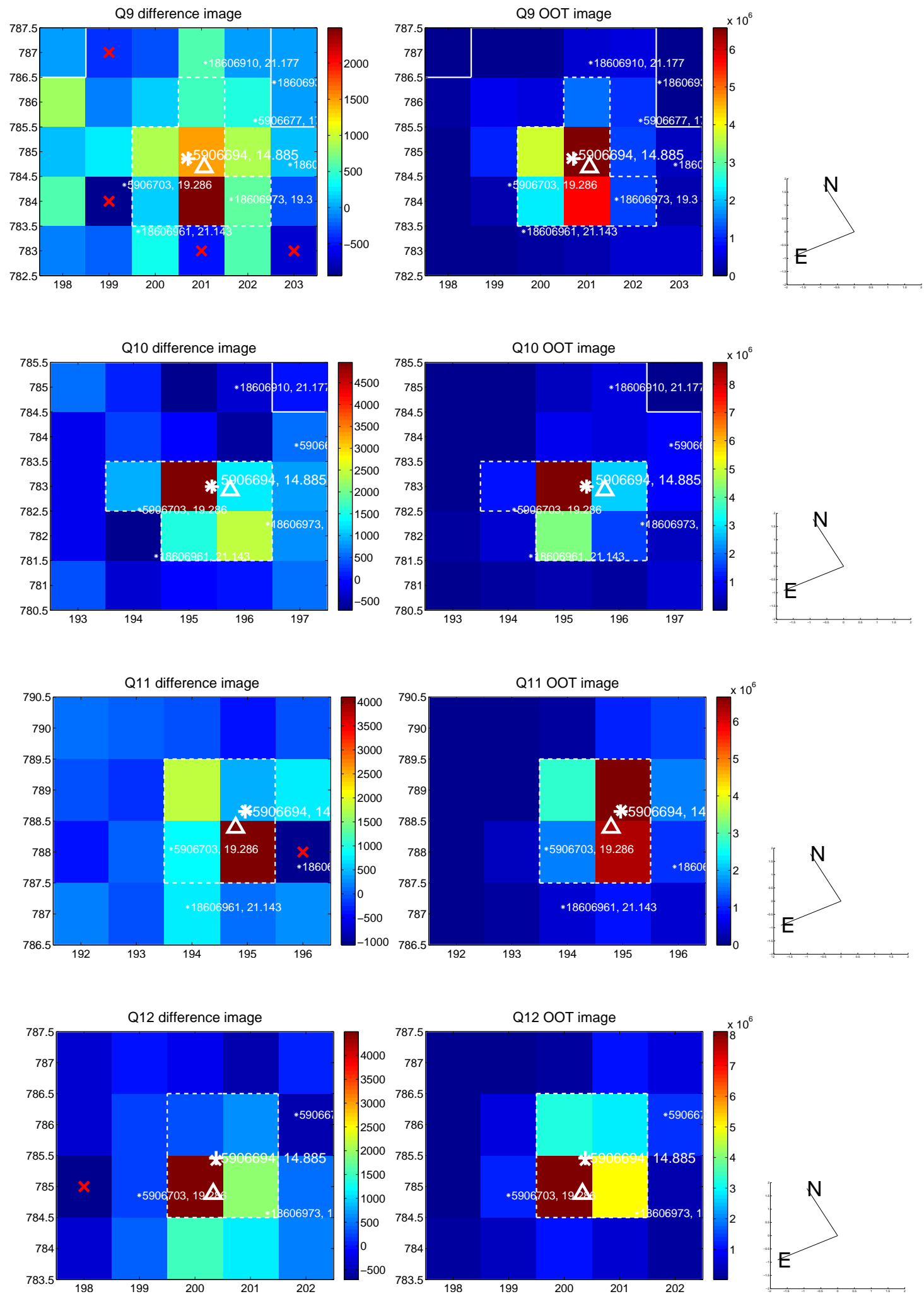
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



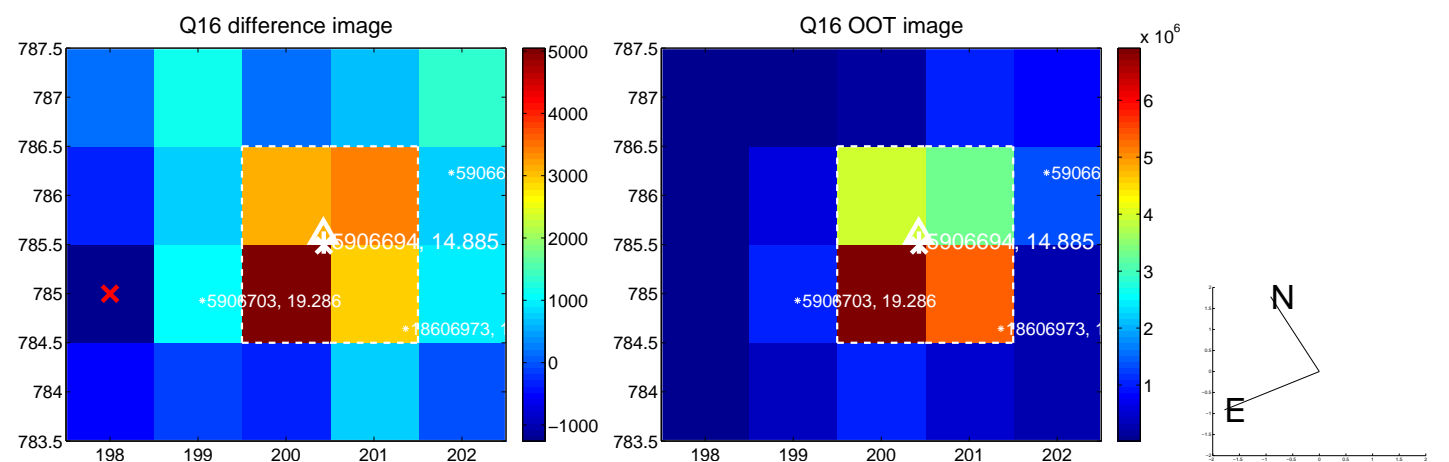
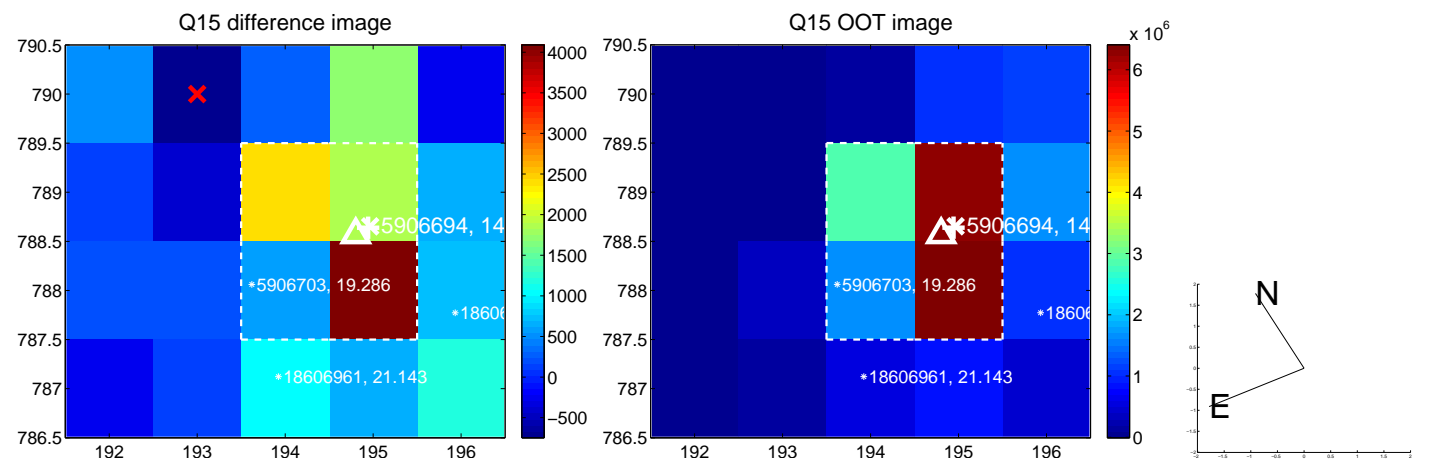
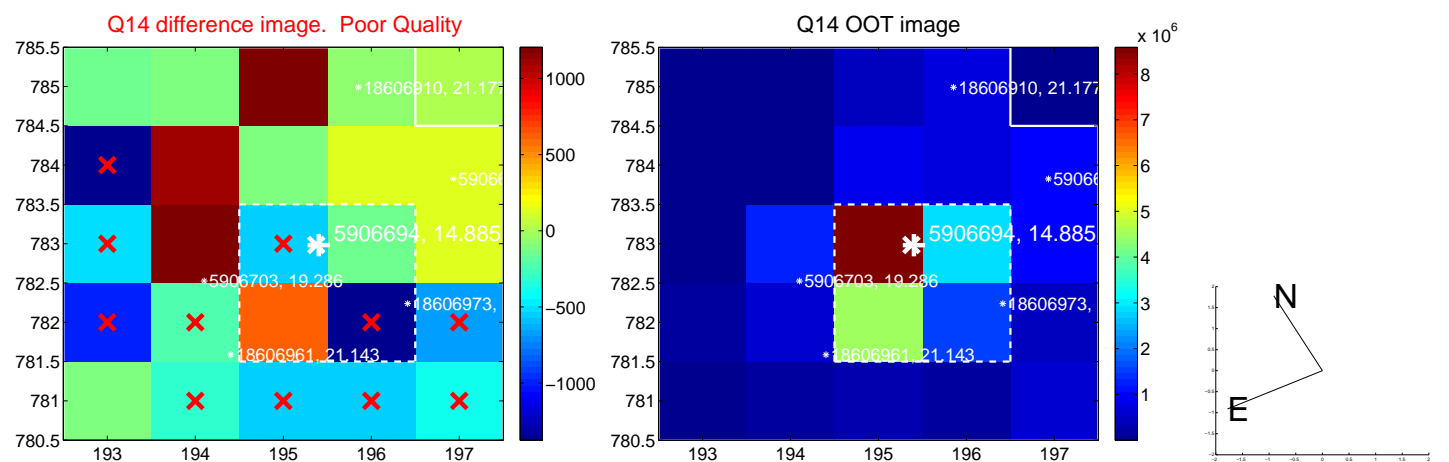
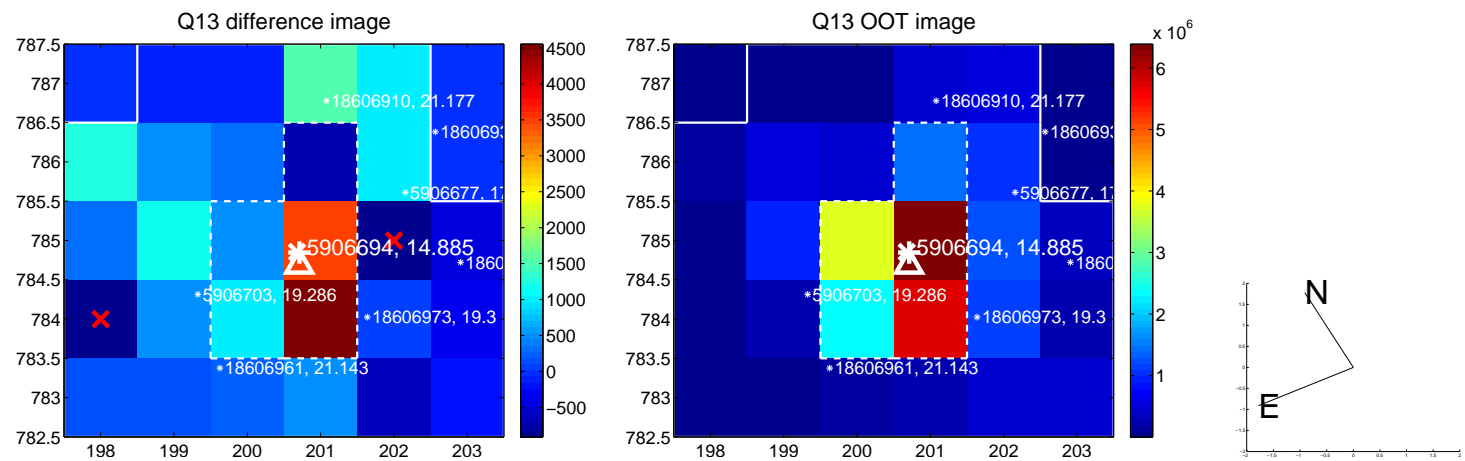
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

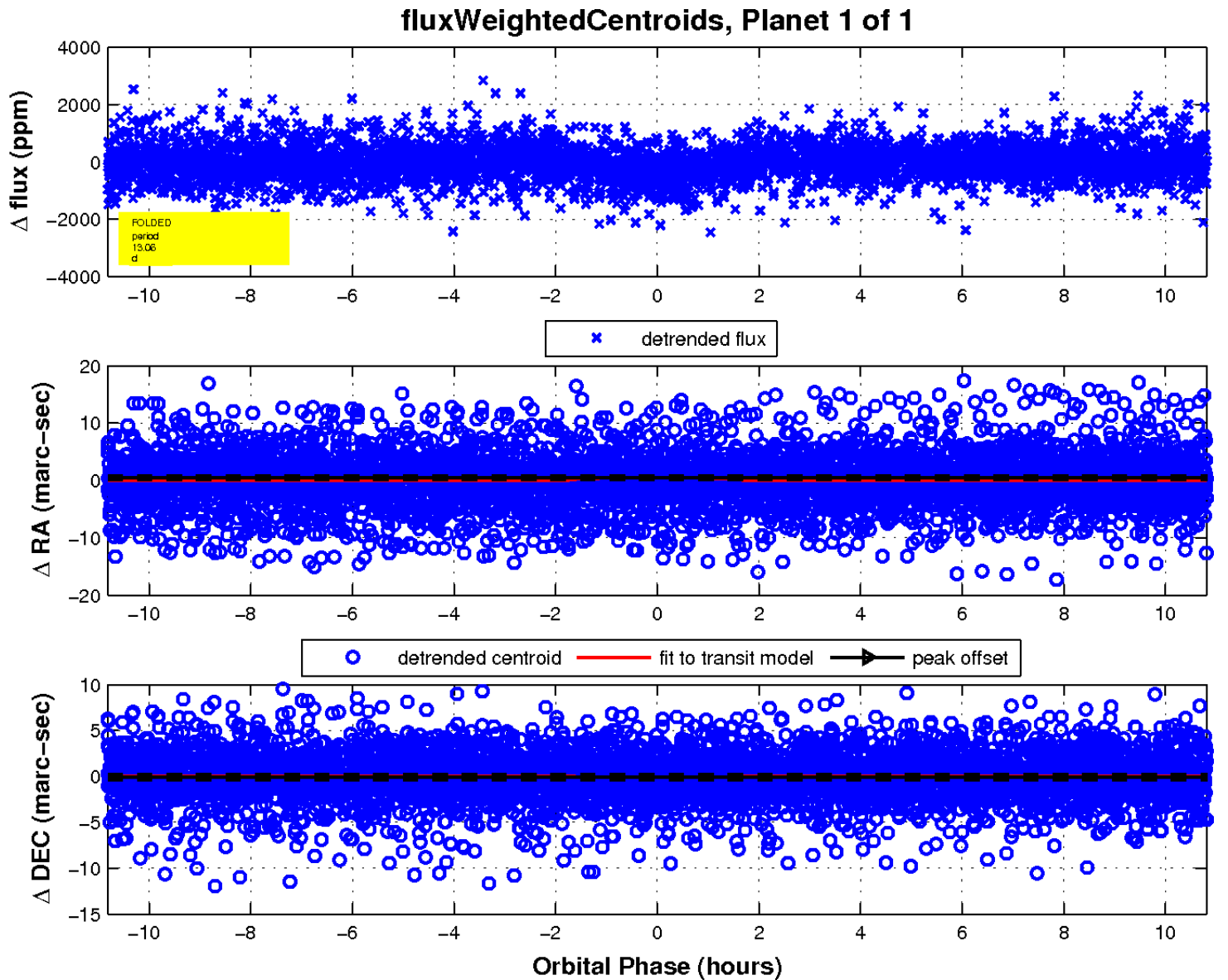
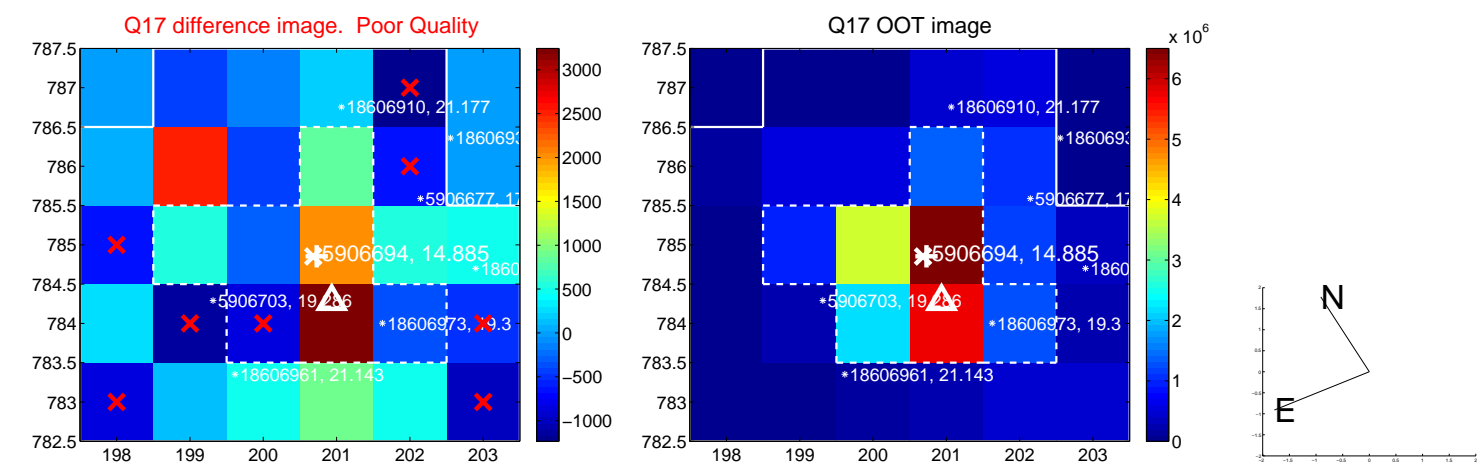


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

