

# KIC 006599975

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006599975-01	OBS	3438.01	14.556536	141.038277	102.8	4.728	13.0	14.3	1.06	6065	1.26	90.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006599975-01	OBS	PC	0.97	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.

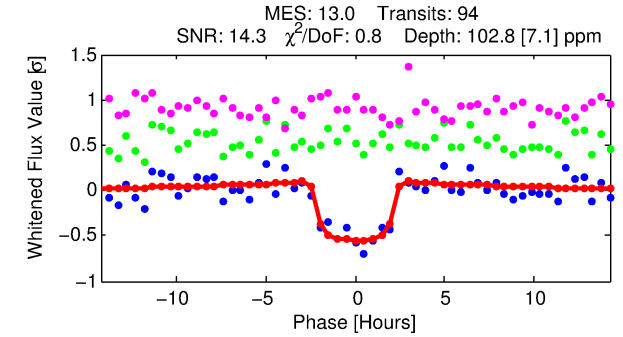
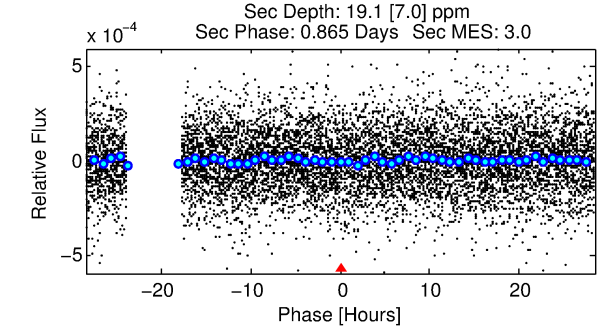
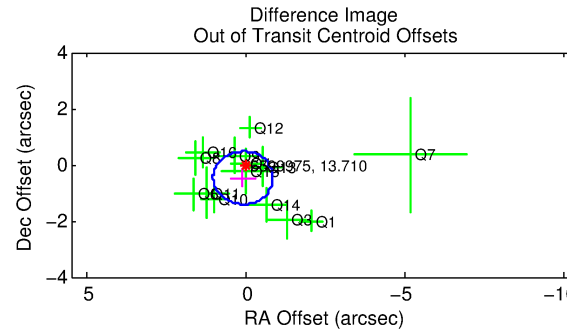
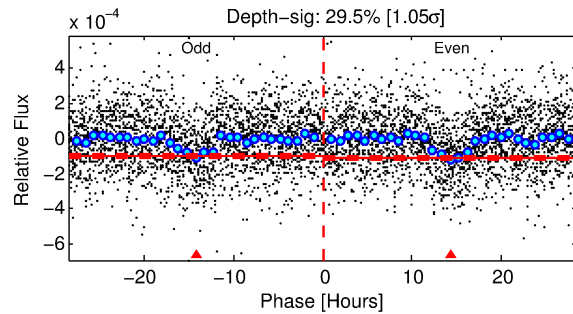
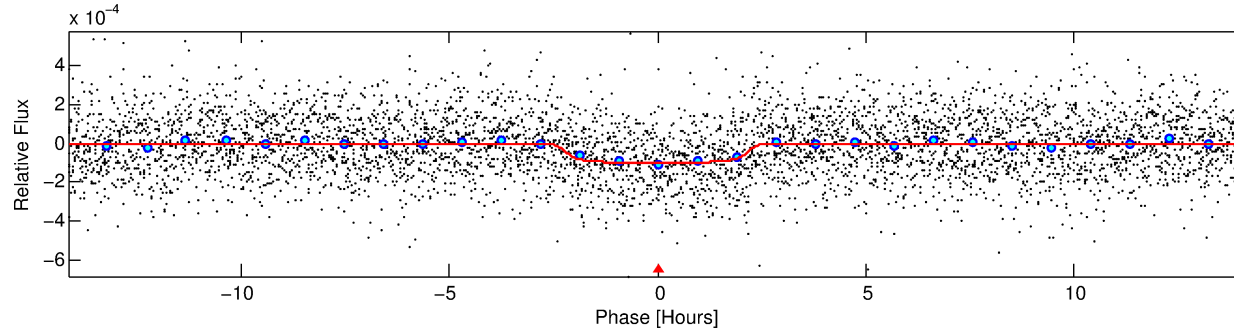
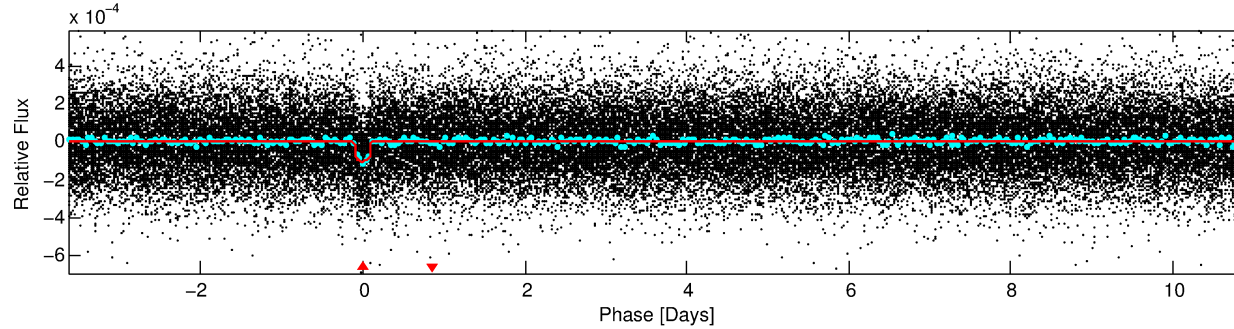
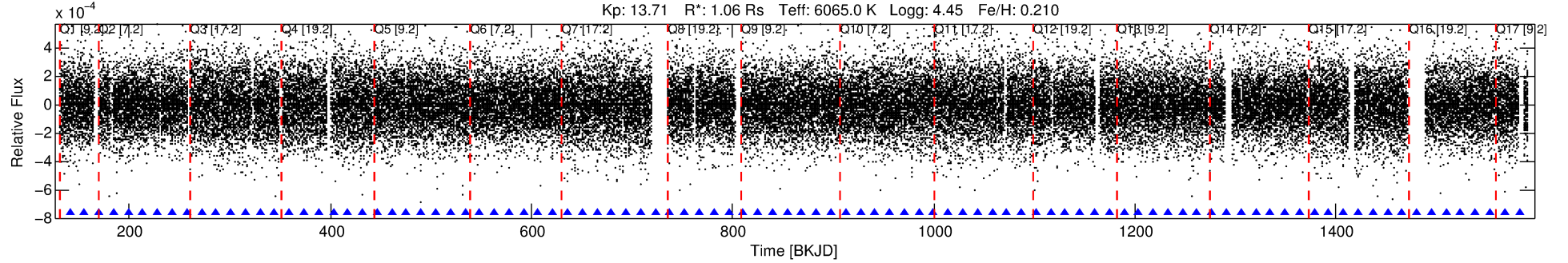
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006599975-01

No Significant Match Found

# DV One-Page Summary

KIC: 6599975 Candidate: 1 of 1 Period: 14.557 d  
KOI: K03438.01 Corr: 0.982



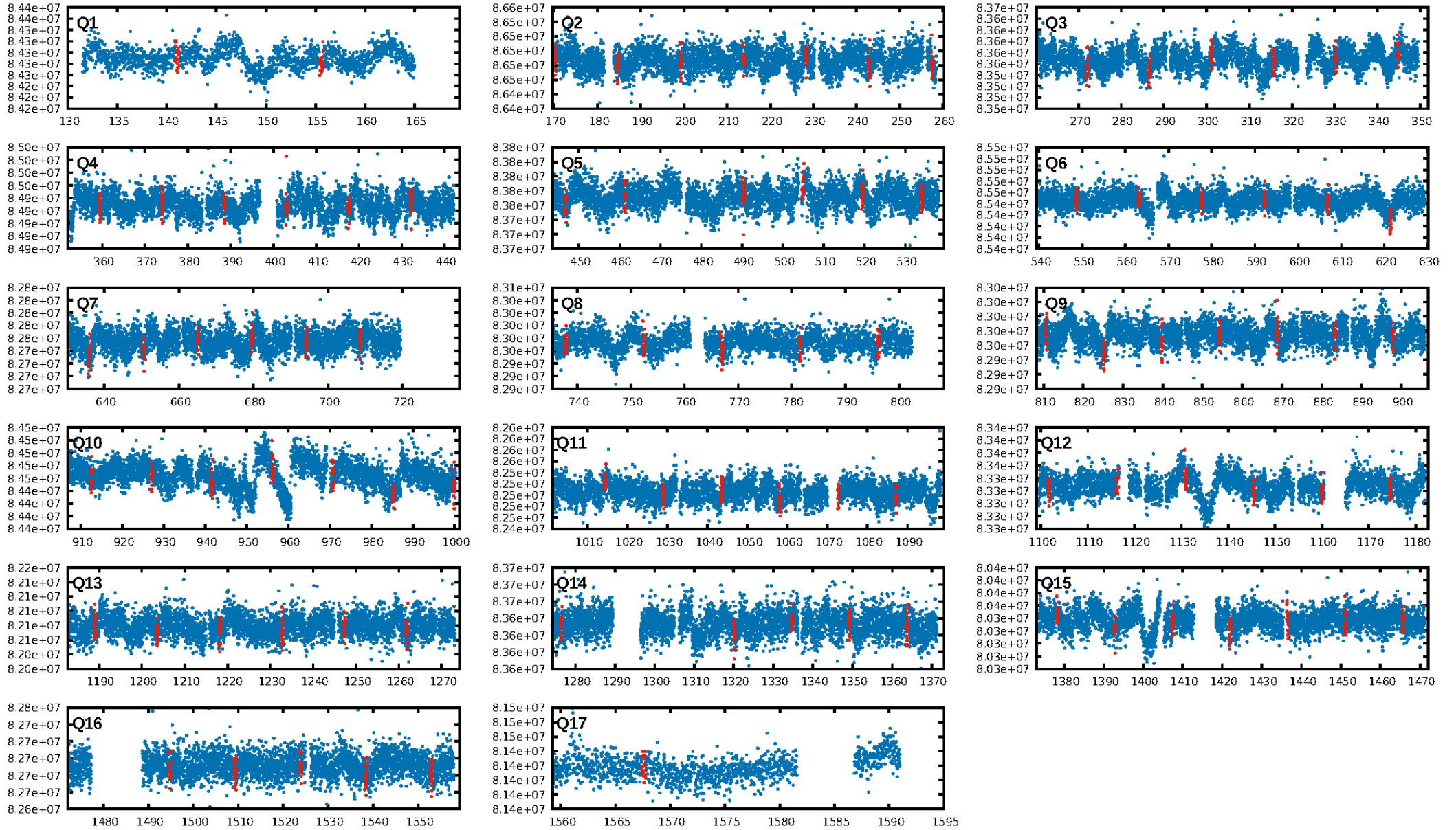
## DV Fit Results:

Period = 14.55654 [0.00010] d  
Epoch = 141.0383 [0.0058] BKJD  
Rp/R\* = 0.0109 [0.0031]  
a/R\* = 11.17 [15.84]  
b = 0.89 [0.33]  
Seff = 90.63 [17.21]  
Teq = 787 [37] K  
Rp = 1.26 [0.40] Re  
a = 0.1227 [0.0143] AU  
Ag = 98.67 [69.42] [1.41 $\sigma$ ]  
Teffp = 3834 [655] K [4.64 $\sigma$ ]

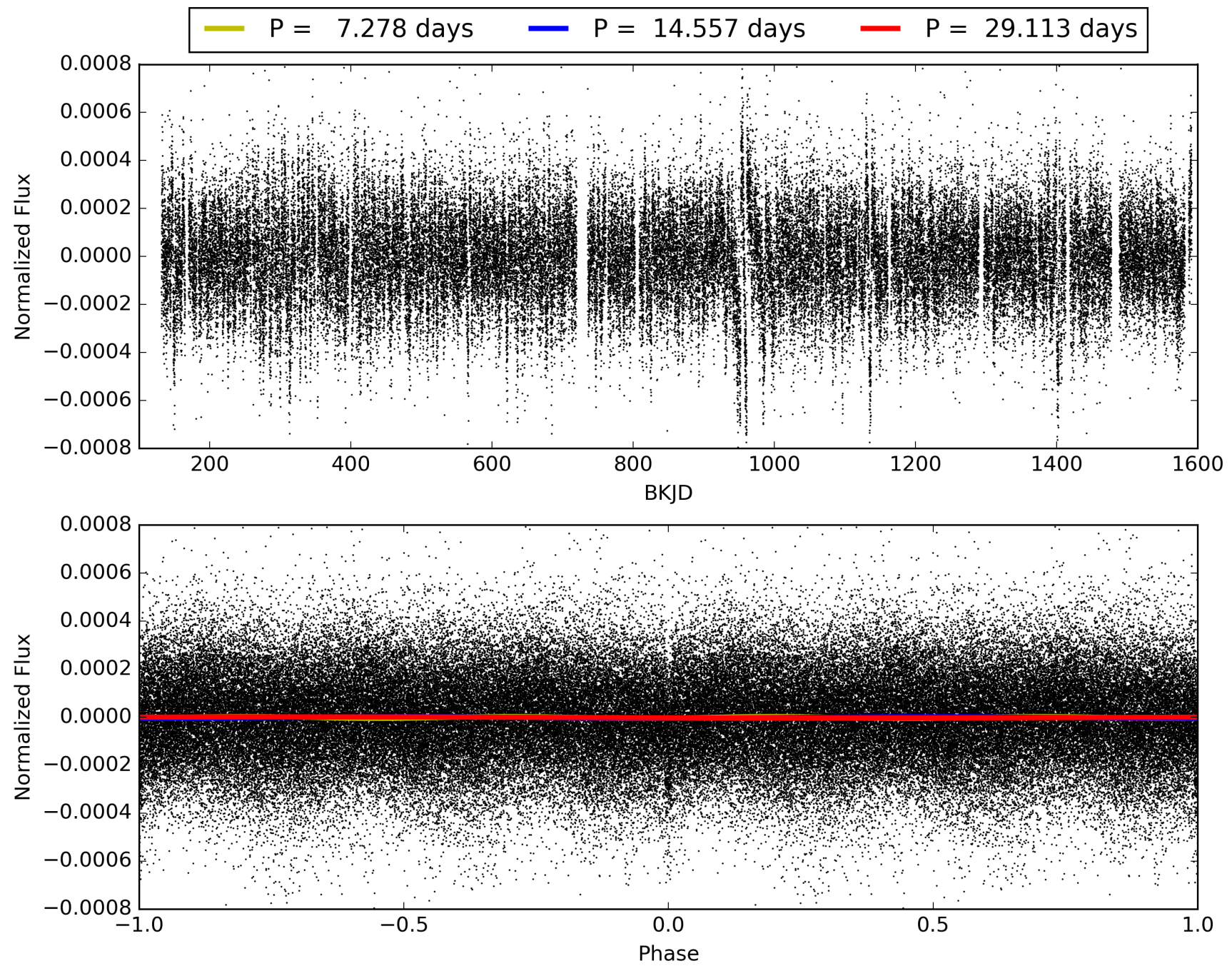
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.66e-37  
RollingBand-fgt: 1.00 [91/91]  
GhostDiagnostic-chr: 3.505  
Centroid-sig: 5.3%  
Centroid-so: 1.416 arcsec [1.59 $\sigma$ ]  
OotOffset-rm: 0.477 arcsec [1.52 $\sigma$ ]  
KicOffset-rm: 0.415 arcsec [1.26 $\sigma$ ]  
OotOffset-st: 3/4/4/3 [14]  
KicOffset-st: 3/4/4/3 [14]  
DiffImageQuality-fgm: 0.86 [12/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006599975-01, PDC Light Curves



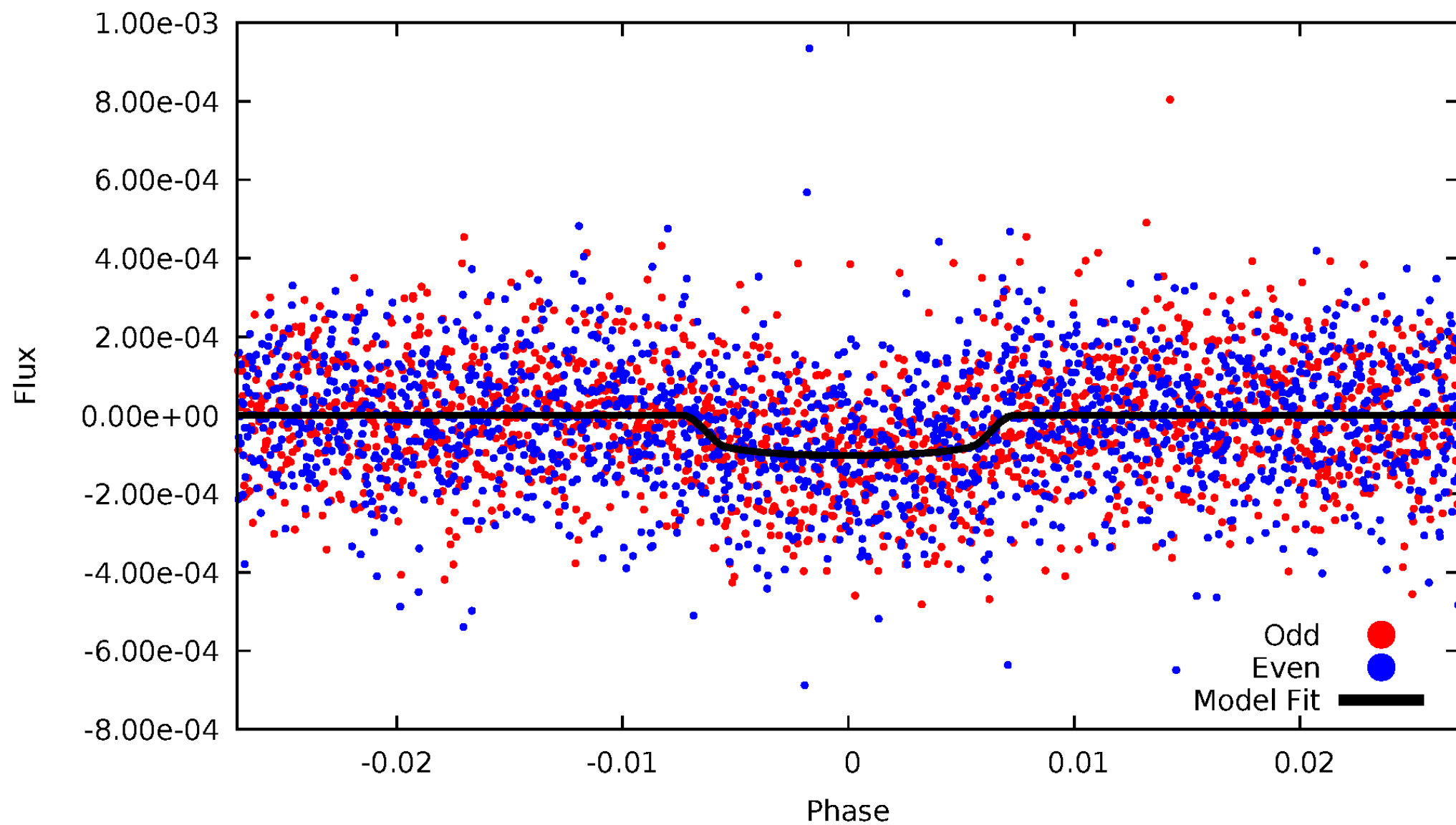
TCE 006599975-01





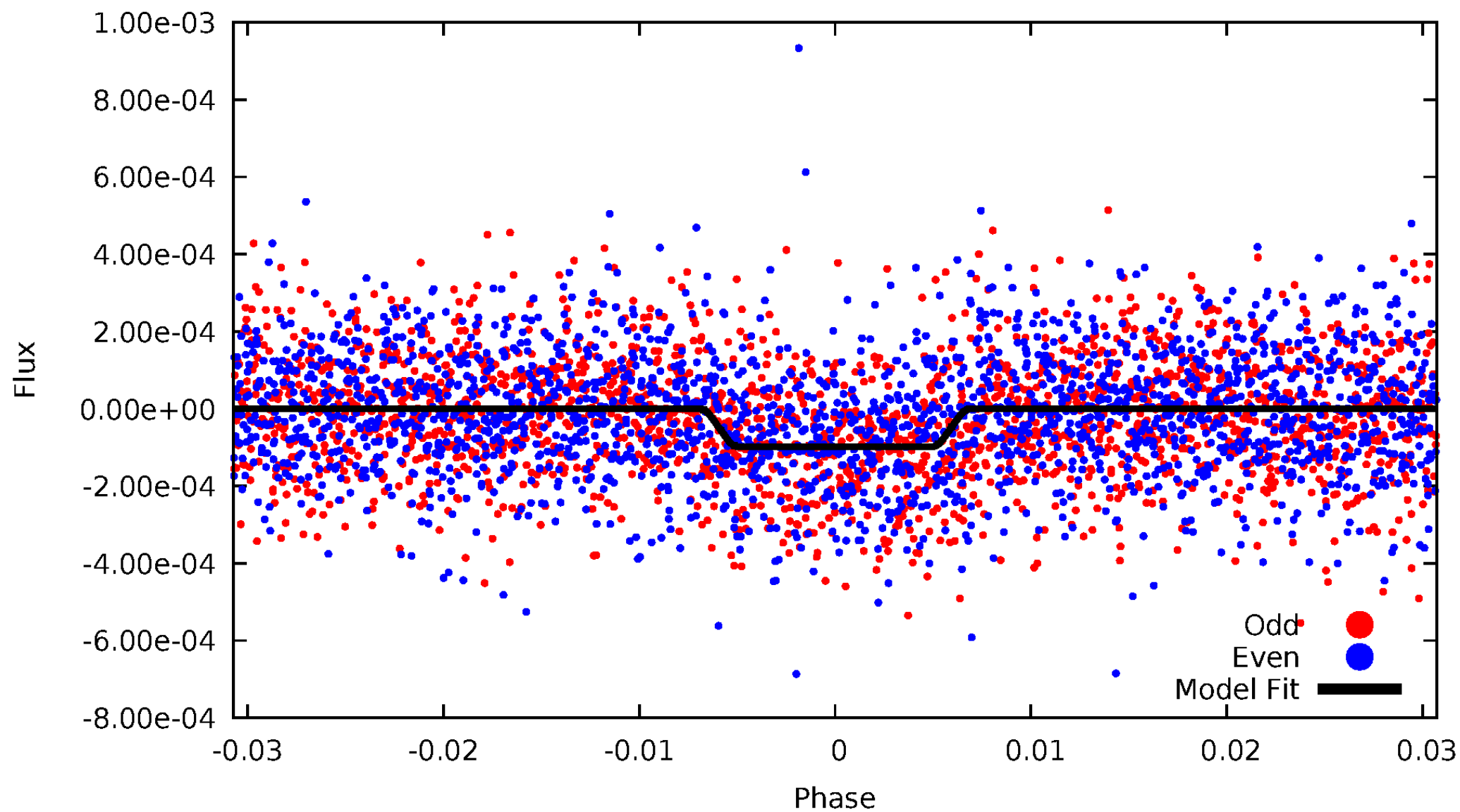
# DV Odd/Even

TCE 006599975-01



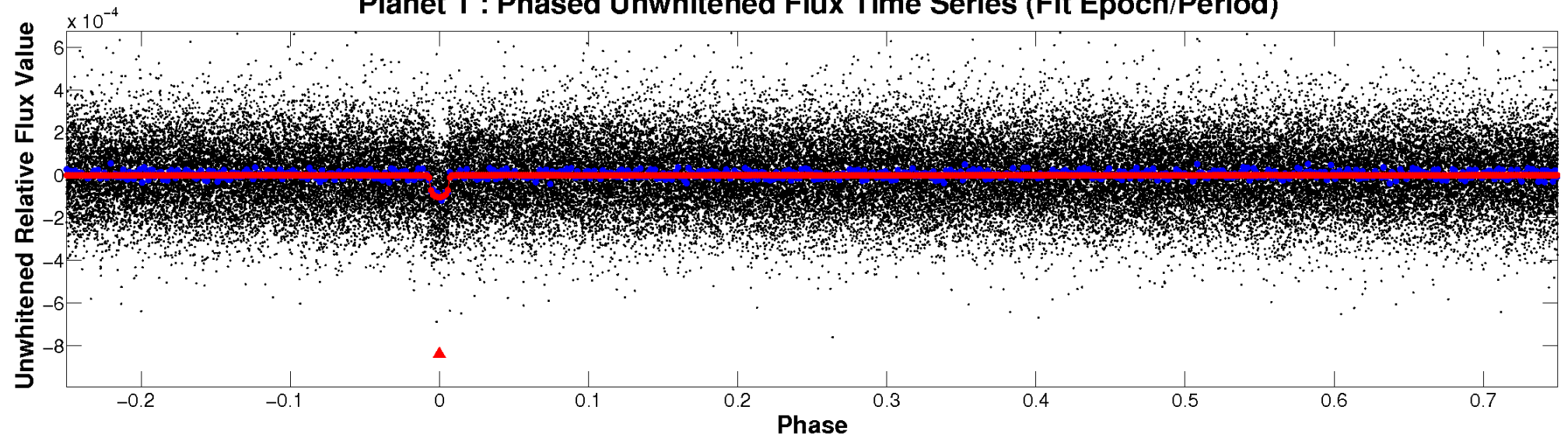
# ALT Odd/Even

TCE 006599975-01

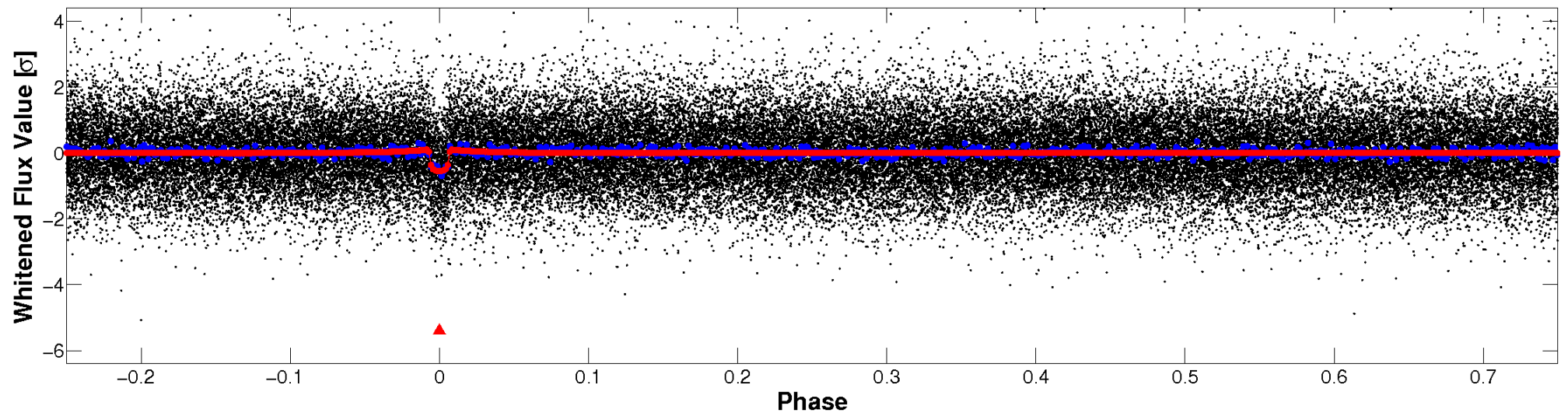


# Non-Whitened Vs. Whitened Light Curve

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

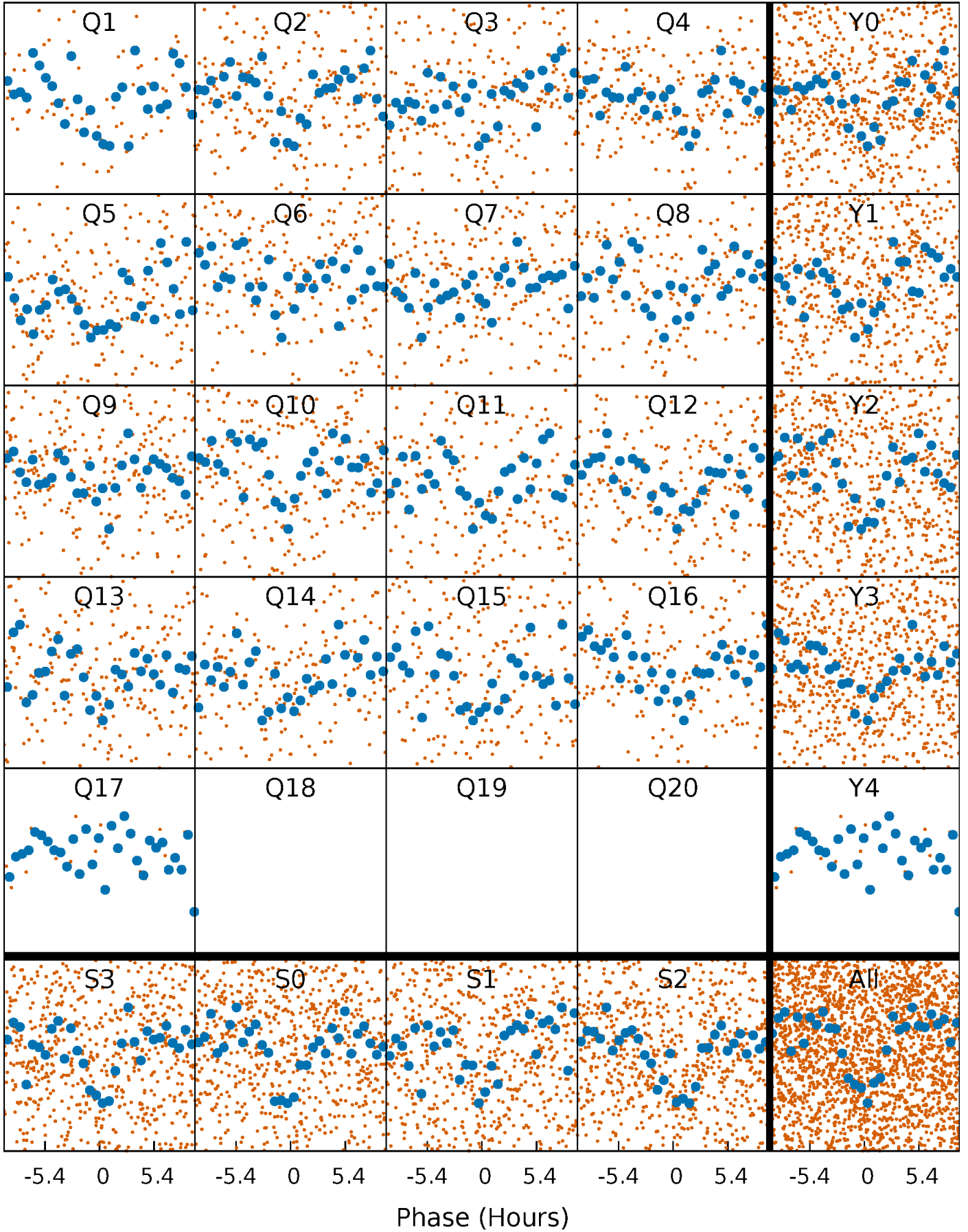


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

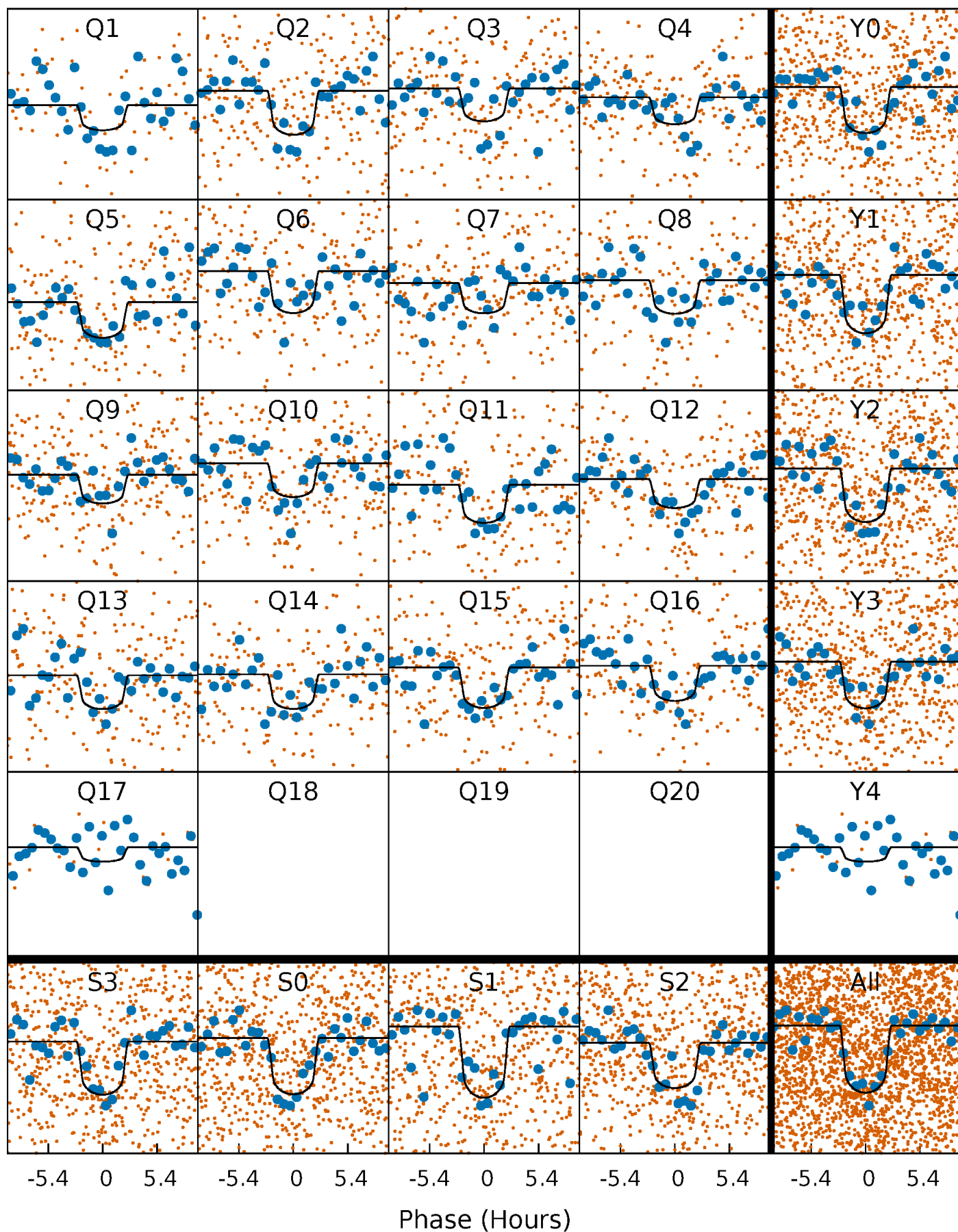
TCE 006599975-01 P= 14.556536 Days  $T_0=141.038277$  (BKJD)





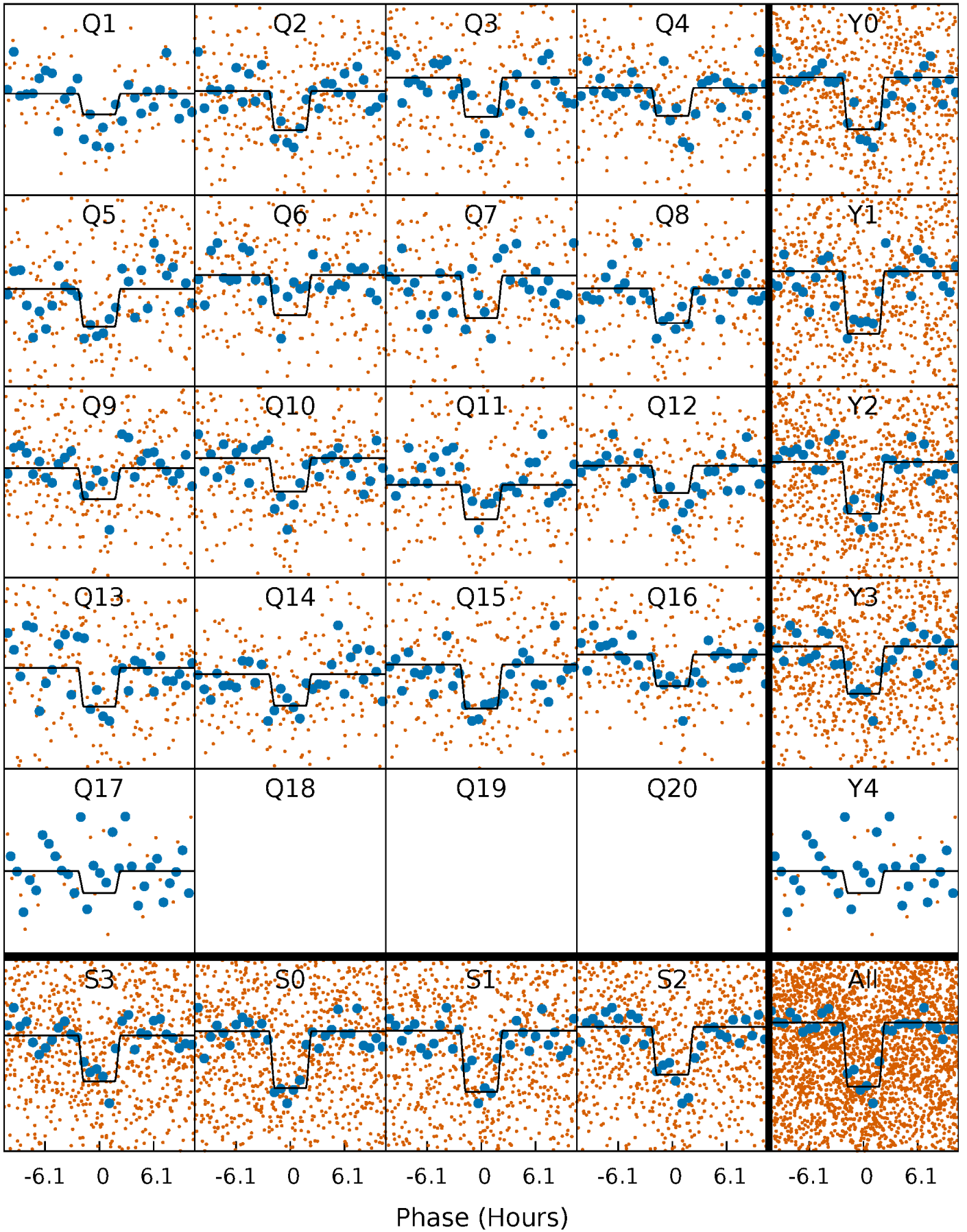
# DV Quarter-Phased Transit Curves

TCE 006599975-01 P= 14.556536 Days  $T_0=141.038277$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

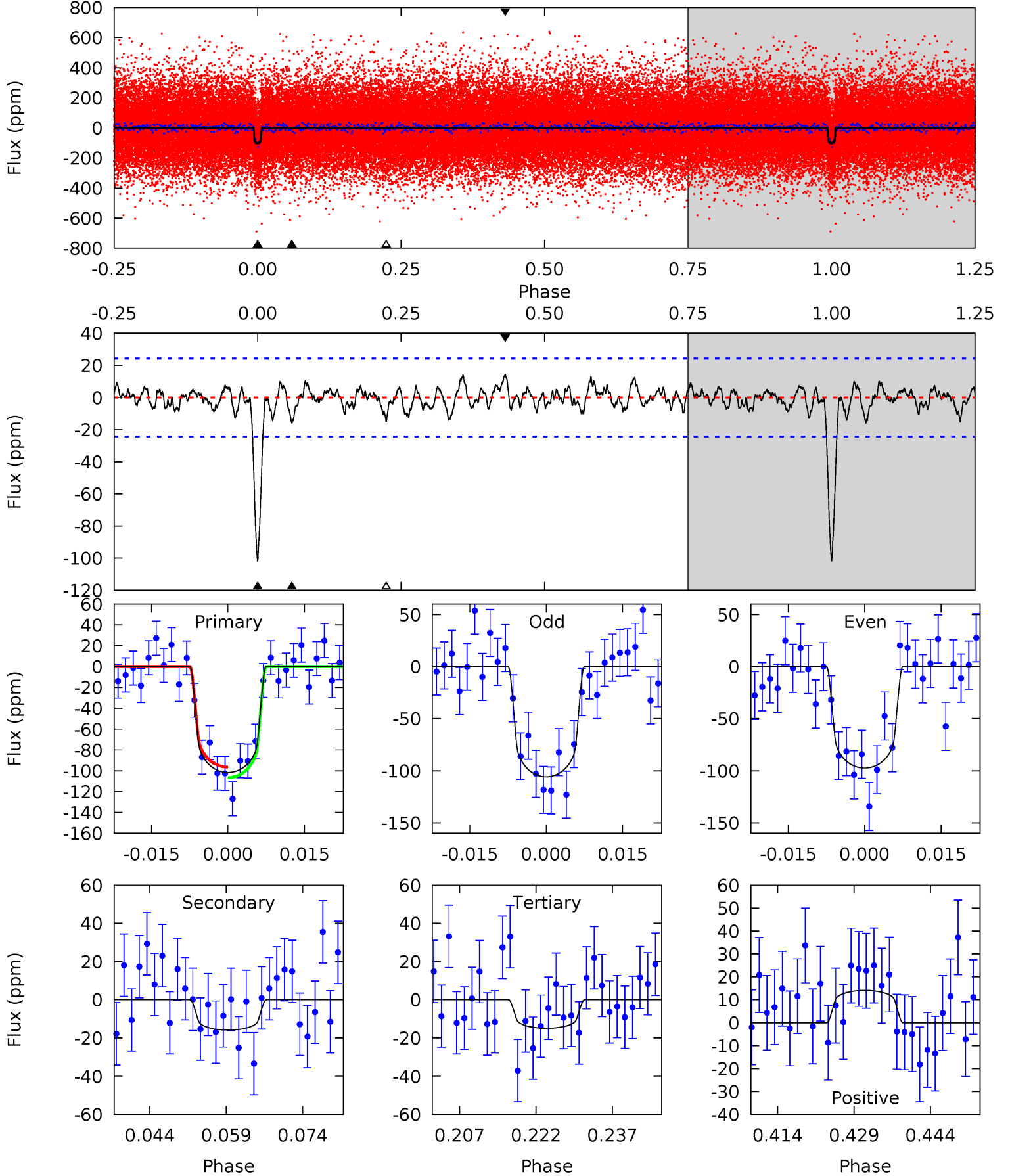
TCE 006599975-01 P= 14.556325 Days  $T_0=141.043821$  (BKJD)



# DV Model-Shift Uniqueness Test

006599975-01, P = 14.556536 Days, E = 126.481741 Days

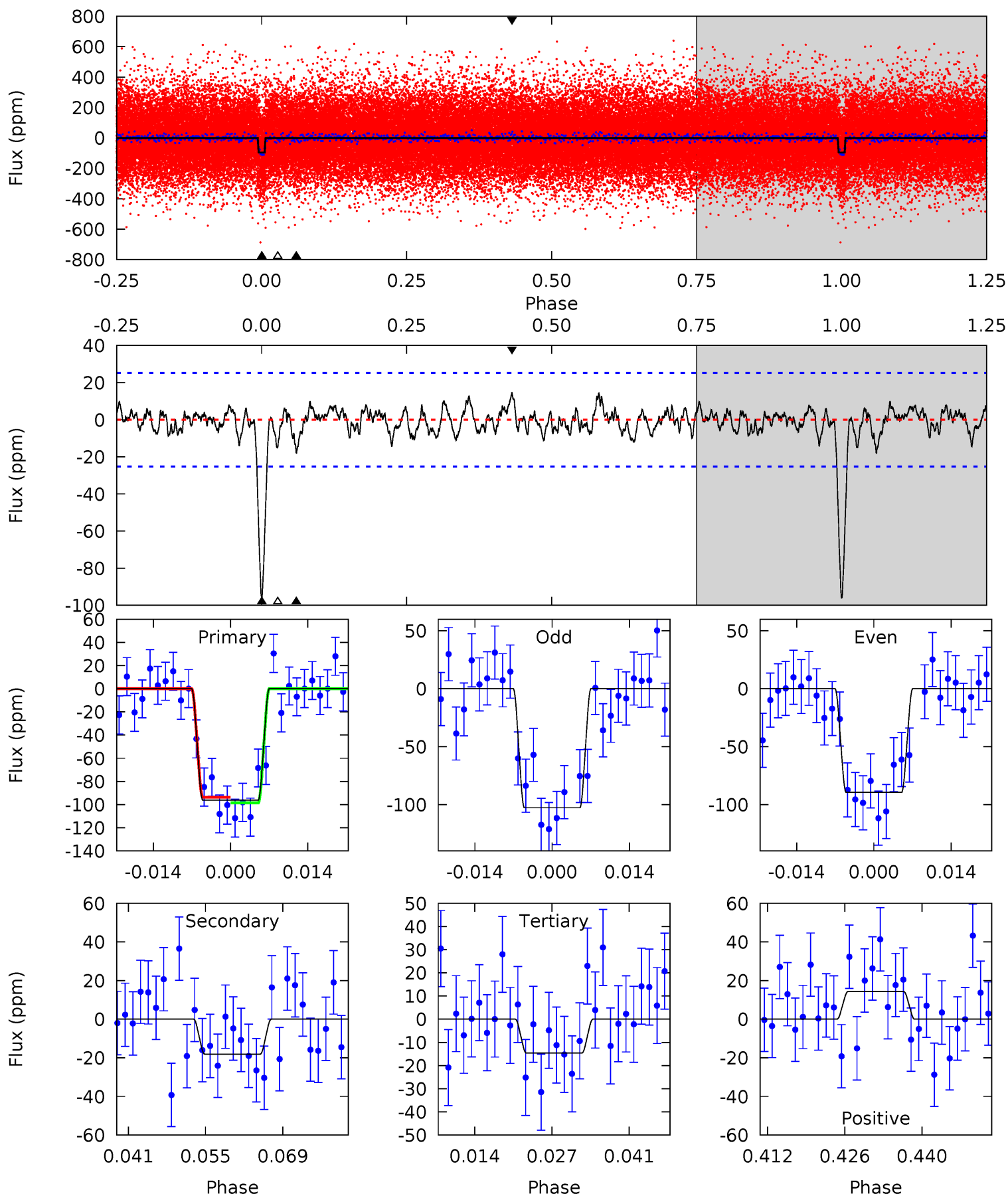
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	3.24	3.05	2.87	4.95	2.44	1.07	17.7	17.9	0.19	0.36	0.86	0.96	0.12	1.03



# Alt Model-Shift Uniqueness Test

006599975-01,  $P = 14.556325$  Days,  $E = 126.487496$  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
18.9	3.57	2.88	2.83	4.96	2.46	1.02	16.1	16.1	0.69	0.74	1.32	1.00	0.13	0.48





### Stellar Parameters For KIC 006599975

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6065^{+66}_{-96}$	$4.452^{+0.024}_{-0.102}$	$0.210^{+0.150}_{-0.150}$	$1.061^{+0.138}_{-0.053}$	$1.163^{+0.053}_{-0.087}$	$1.370^{+0.159}_{-0.406}$
	+1%/-2%	+1%/-2%	+71%/-71%	+13%/-5%	+5%/-7%	+12%/-30%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006599975-01 / KOI 3438.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-16 \pm 5$	$1.29^{+0.36}_{-0.38}$	$1109^{+41}_{-24}$	$4012^{+534}_{-426}$	$81^{+80}_{-39}$
Alt.	$-18 \pm 5$	$1.17^{+0.37}_{-0.38}$	$1109^{+35}_{-24}$	$4217^{+742}_{-453}$	$106^{+137}_{-50}$

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

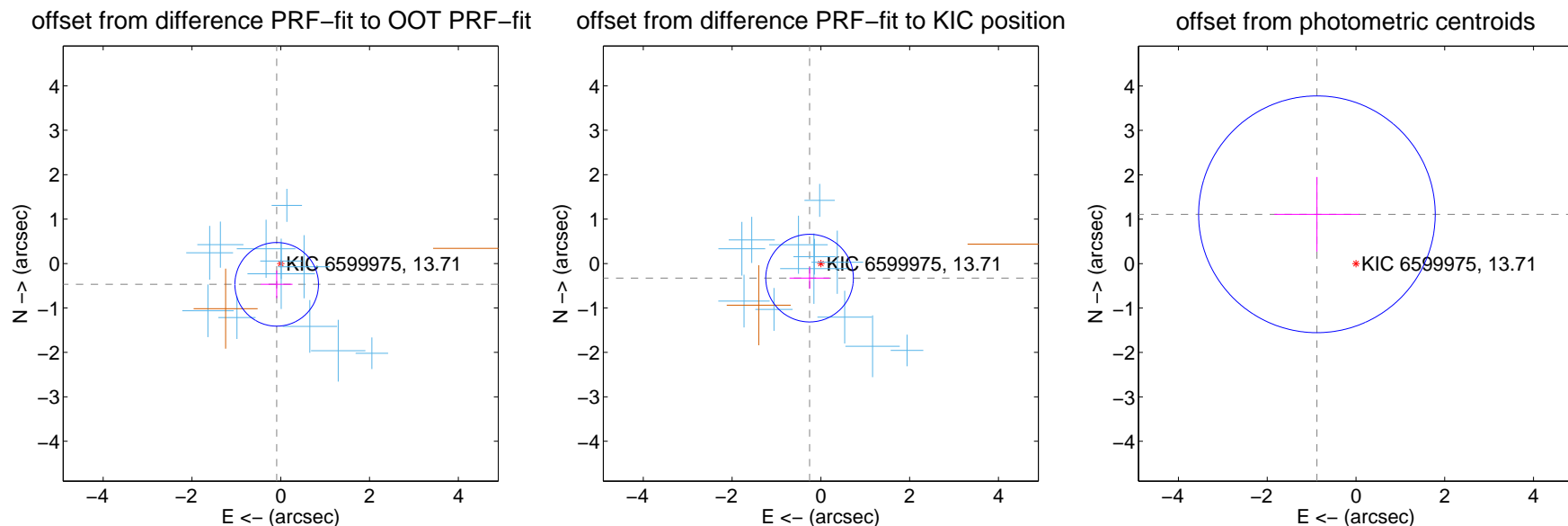
## DV Centroid Data

Supplemental centroid analysis for 006599975-01. Kepler magnitude: 13.71. Transit SNR 14.32

There are 12 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

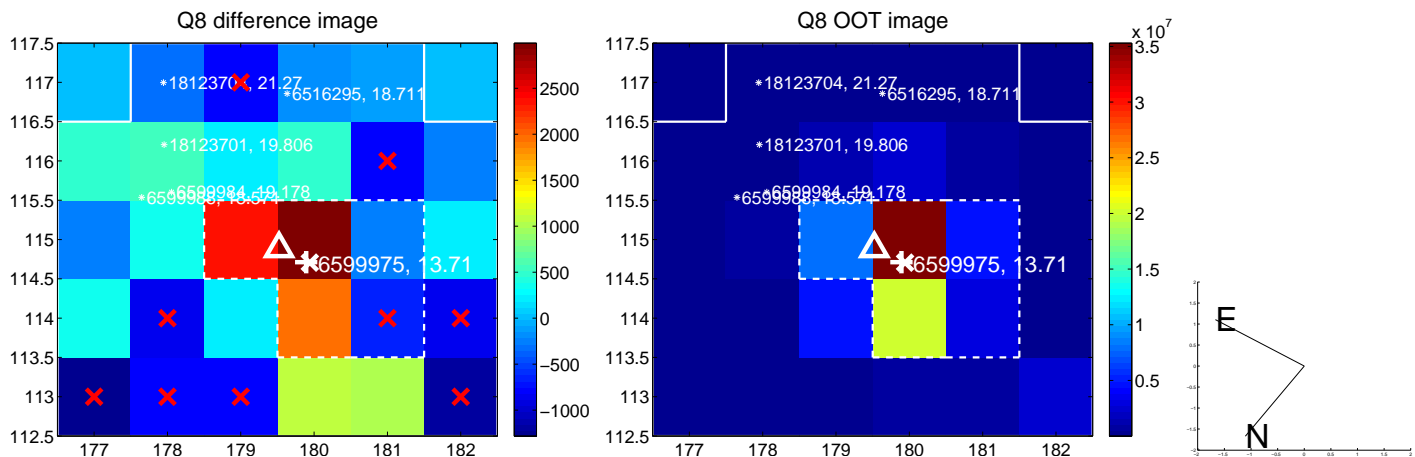
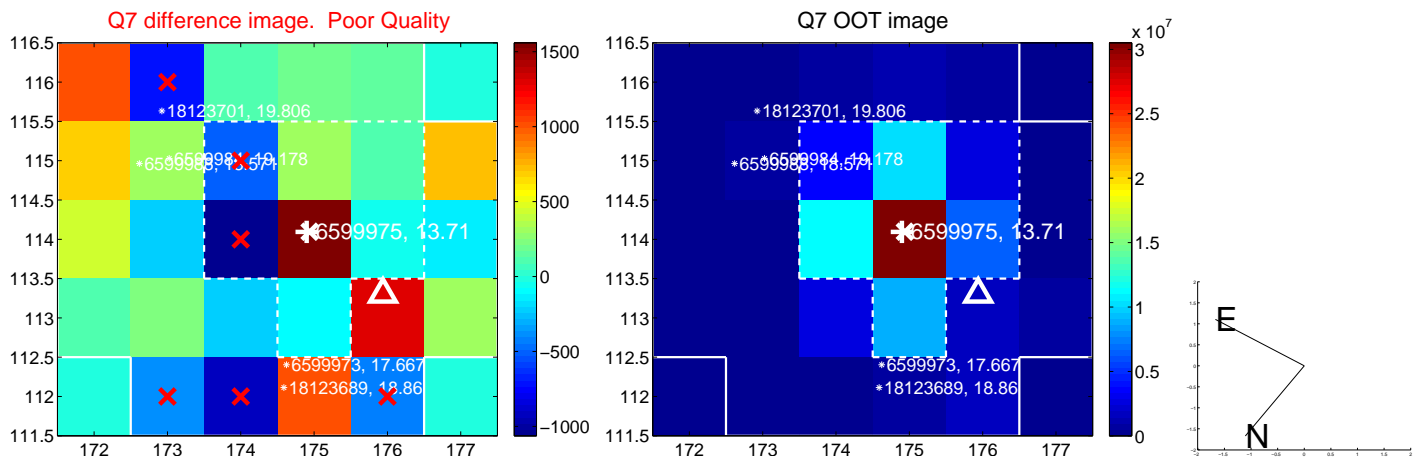
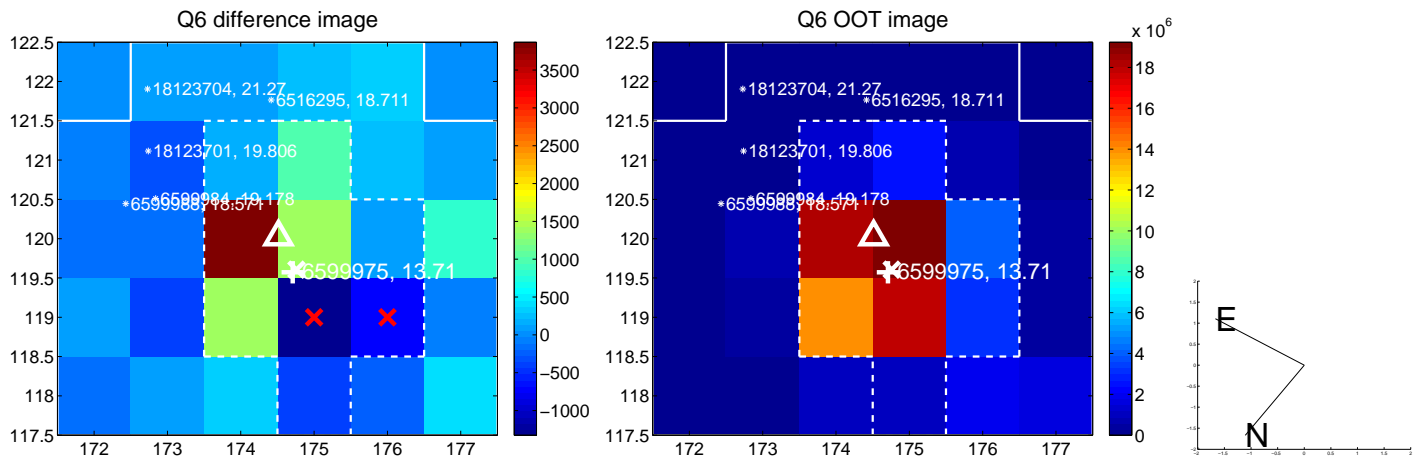
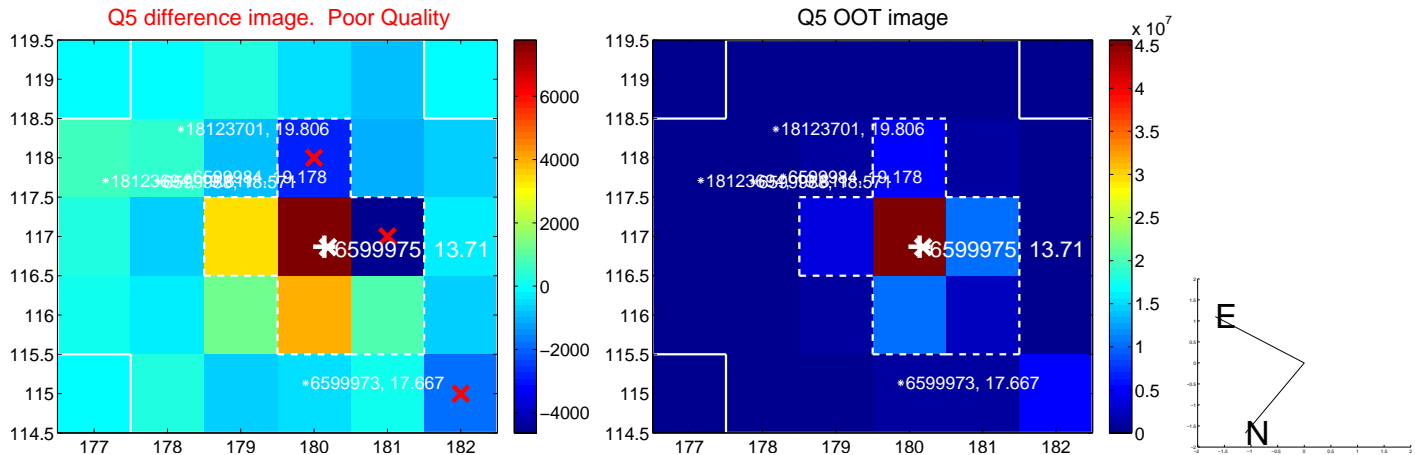
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.477 \pm 0.314$	1.52	$0.091 \pm 0.357$	$-0.468 \pm 0.312$
PRF-fit source offset from KIC position	$0.415 \pm 0.329$	1.26	$0.254 \pm 0.452$	$-0.328 \pm 0.242$
photometric centroid source offset	$1.42 \pm 0.89$	1.59	$0.88 \pm 0.96$	$1.11 \pm 0.84$



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.

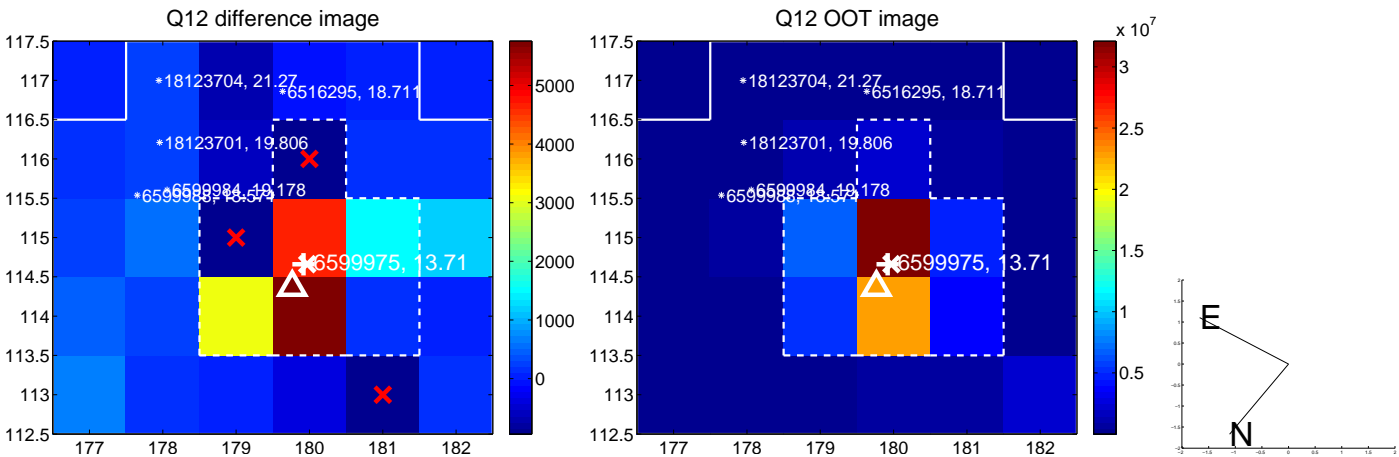
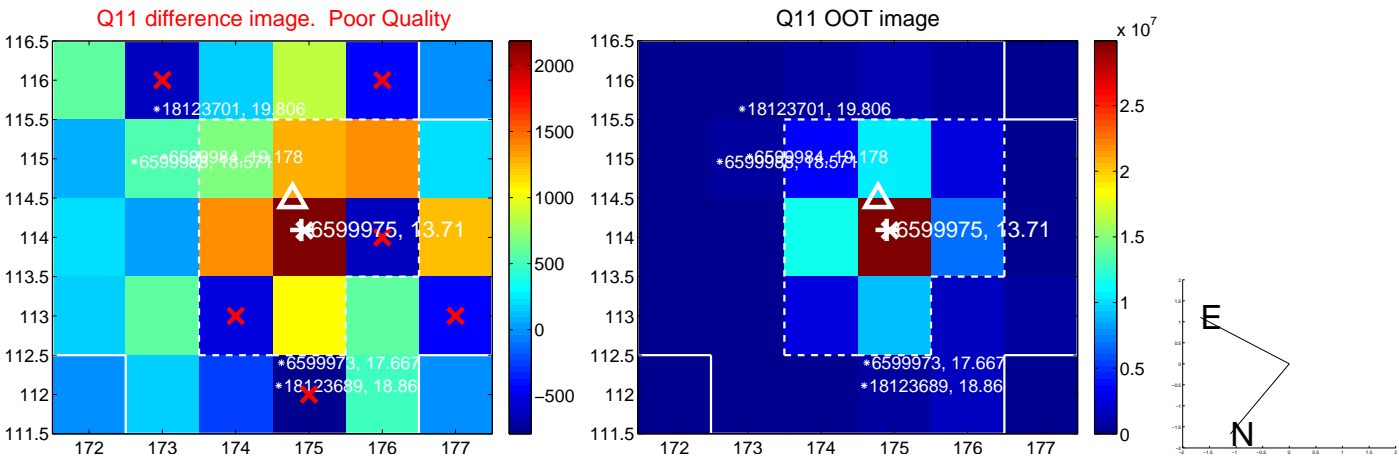
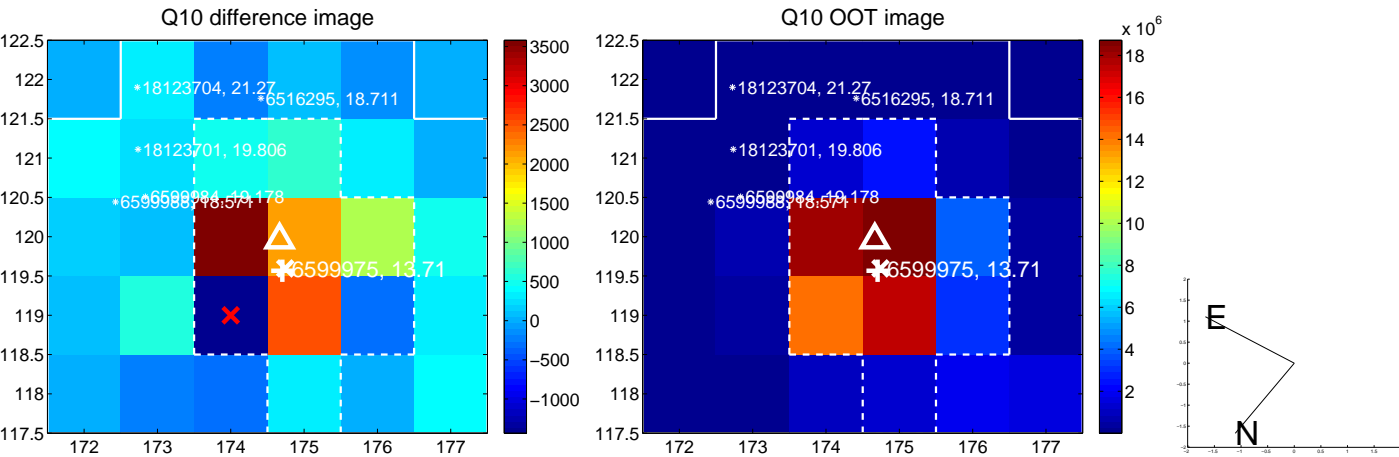
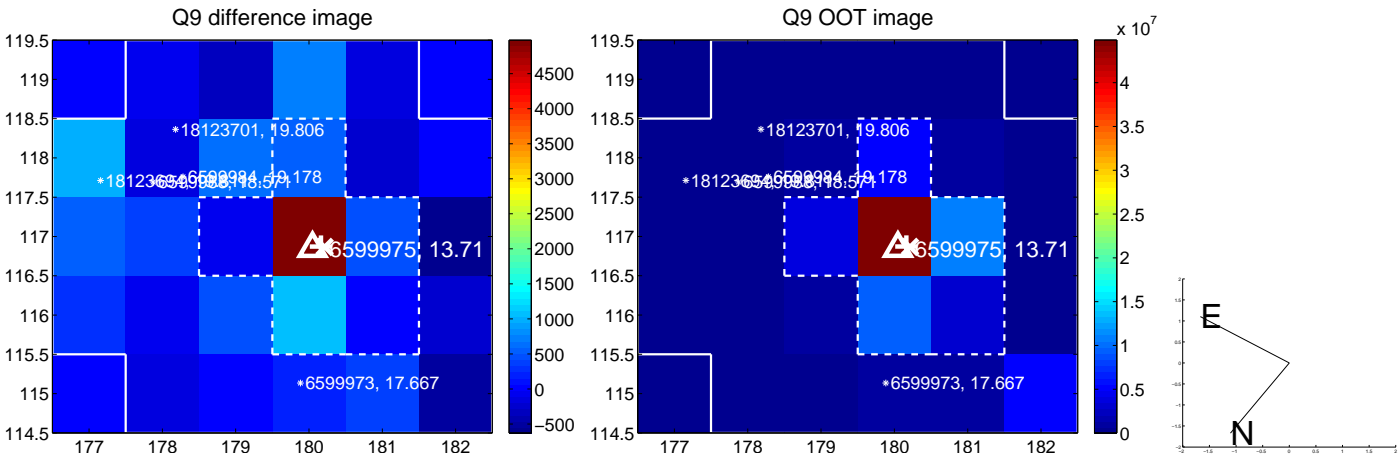


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

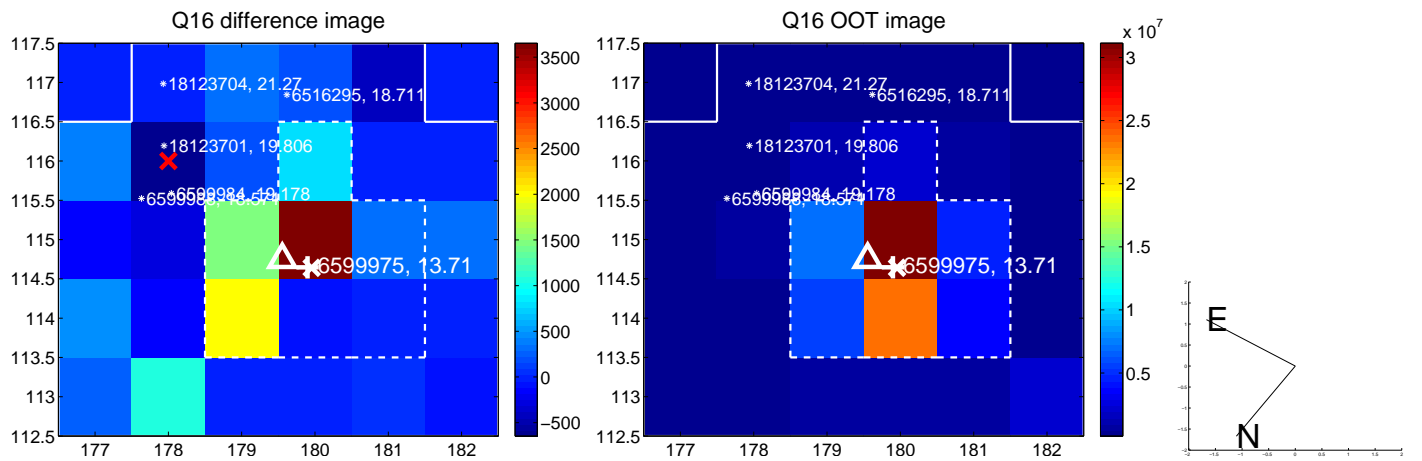
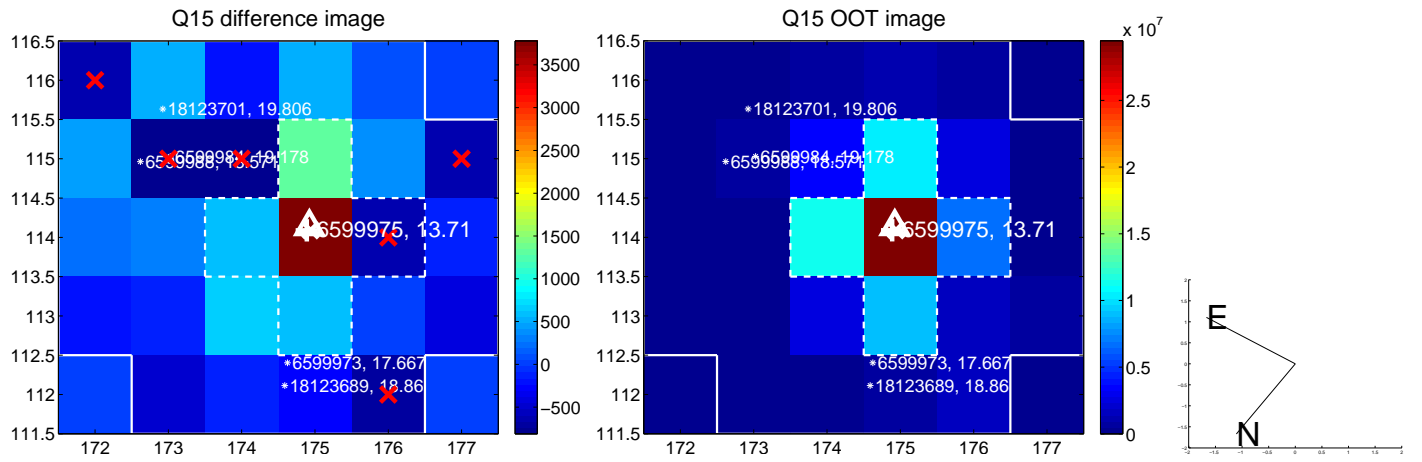
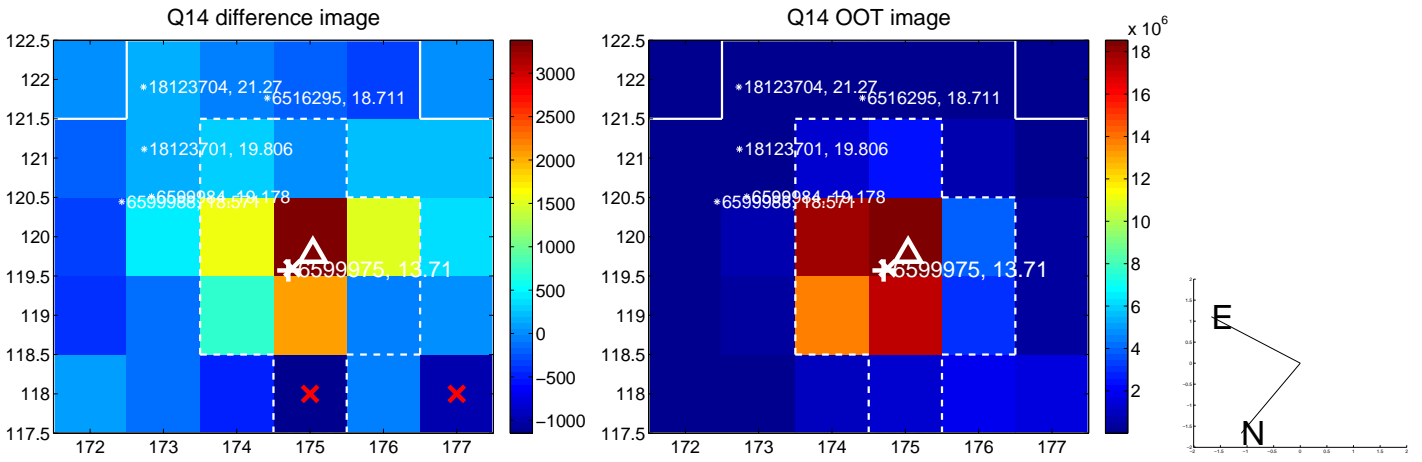
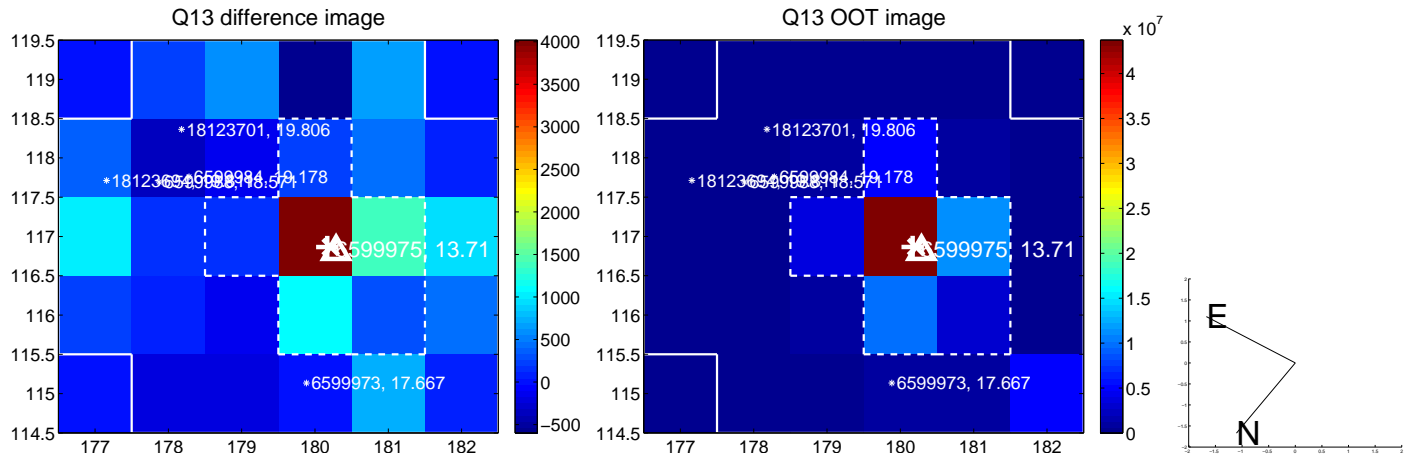




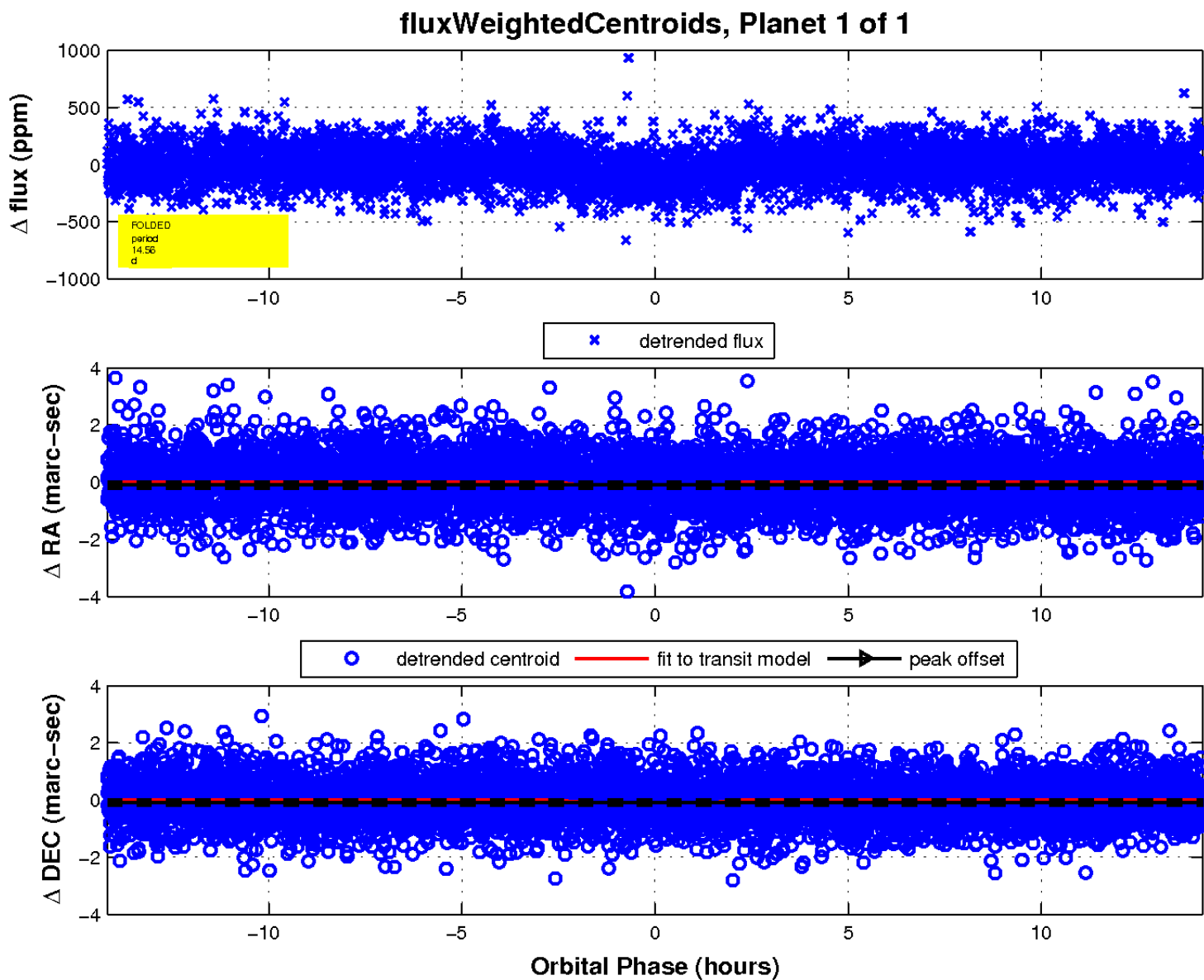
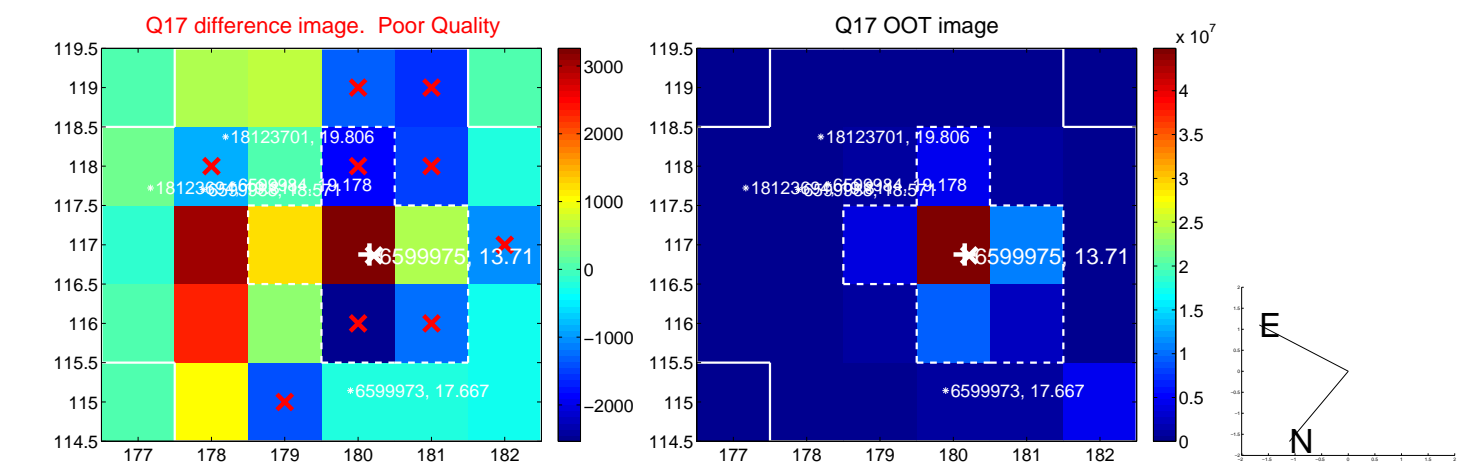
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

