

# KIC 011651105

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011651105-01	OBS	7468.01	13.860377	139.388508	160.9	36.480	10.5	18.1	0.80	5667	1.02	53.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011651105-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

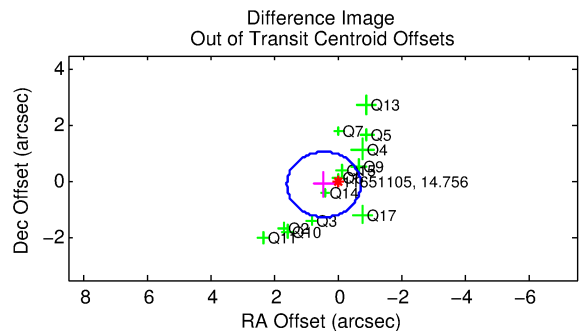
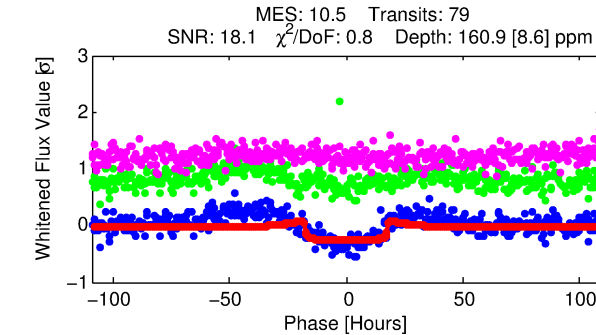
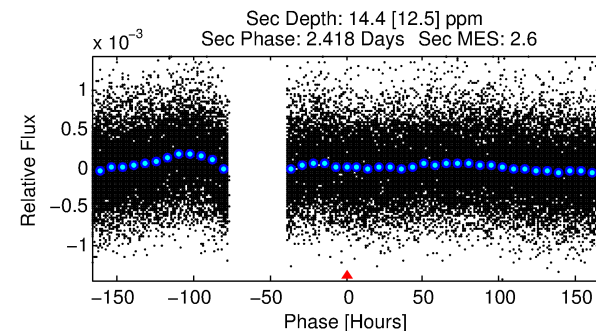
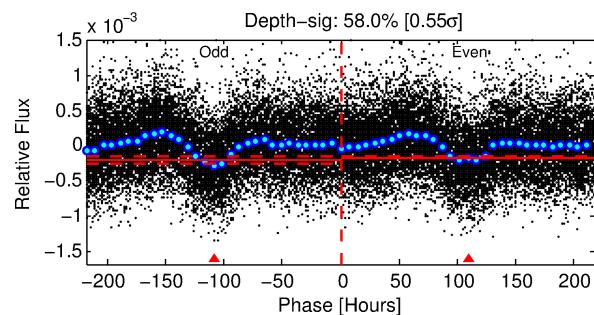
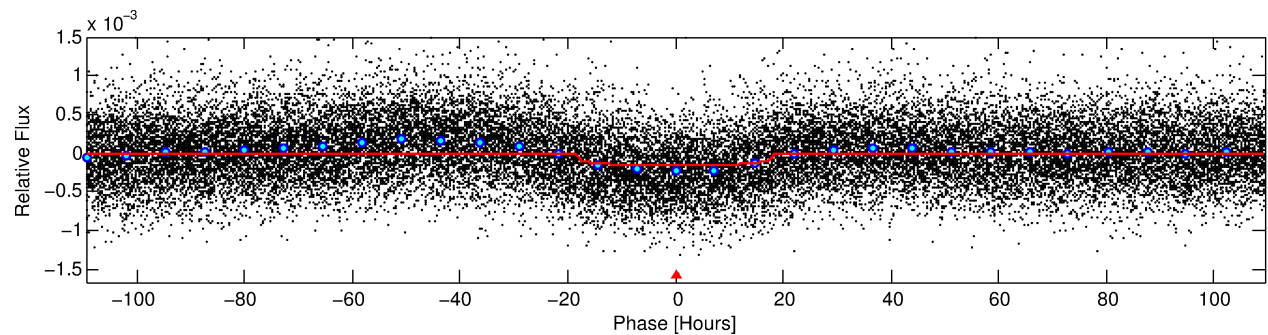
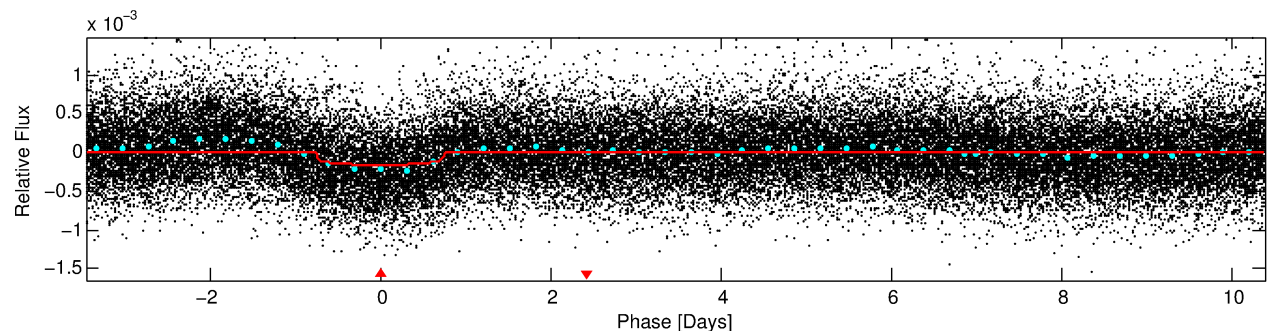
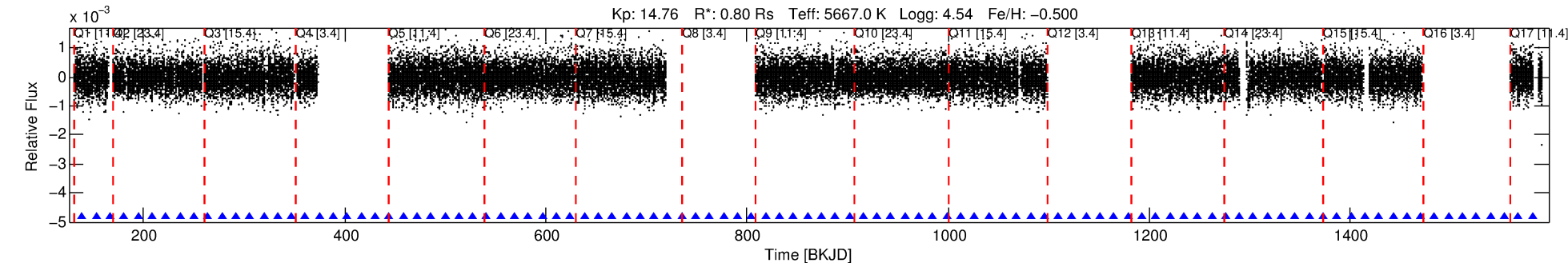
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011651105-01

No Significant Match Found

# DV One-Page Summary

KIC: 11651105 Candidate: 1 of 1 Period: 13.860 d  
KOI: K07468.01 Corr: 0.959



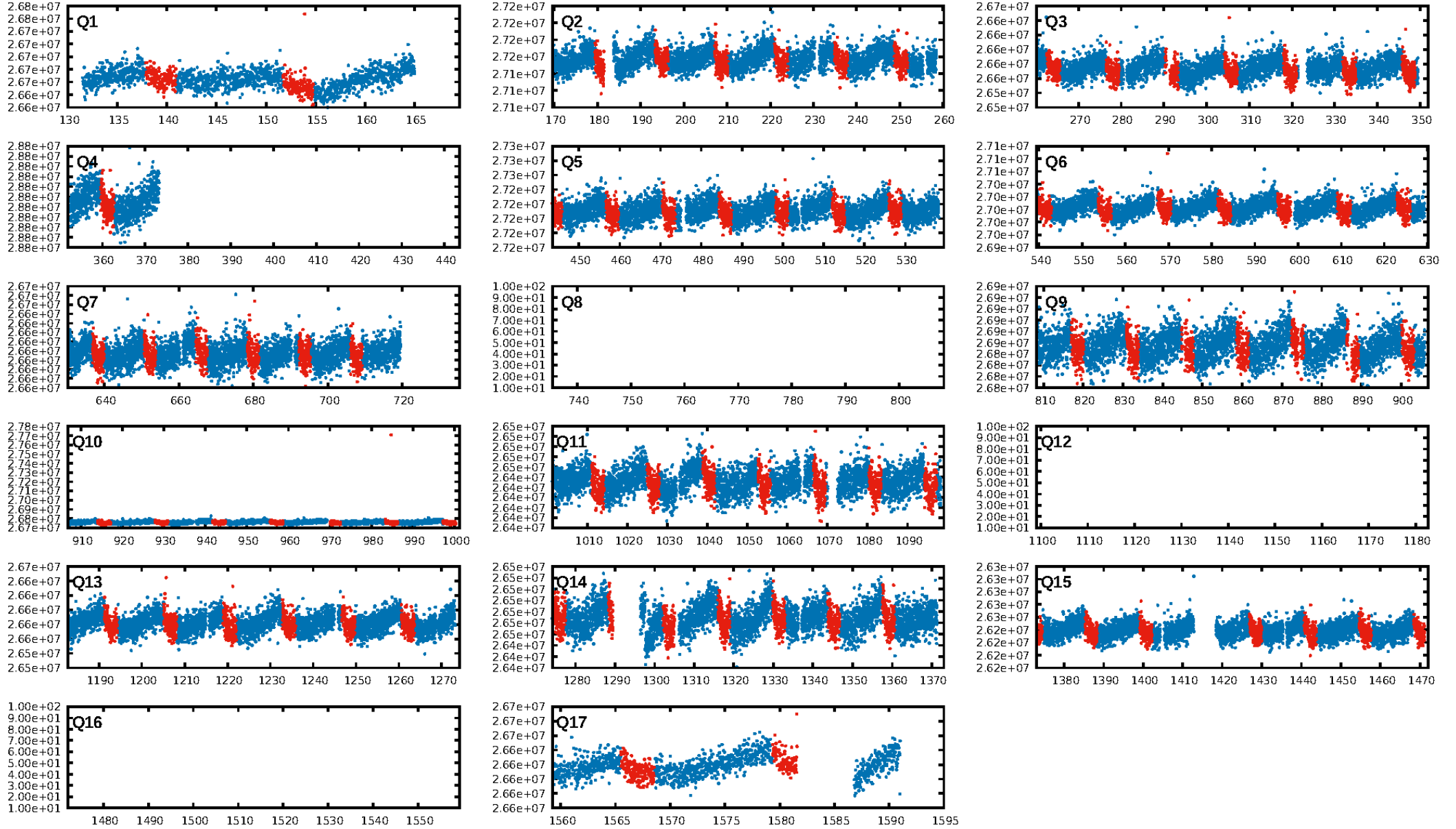
## DV Fit Results:

Period = 13.86038 [0.00029] d  
Epoch = 139.3885 [0.0163] BKJD  
Rp/R\* = 0.0118 [0.0030]  
a/R\* = 2.79 [2.82]  
b = 0.40 [2.49]  
Seff = 53.61 [14.85]  
Teff = 690 [48] K  
Rp = 1.02 [0.34] Re  
a = 0.1045 [0.0187] AU  
Ag = 82.97 [86.08] [0.95 $\sigma$ ]  
Teffp = 3220 [814] K [3.10 $\sigma$ ]

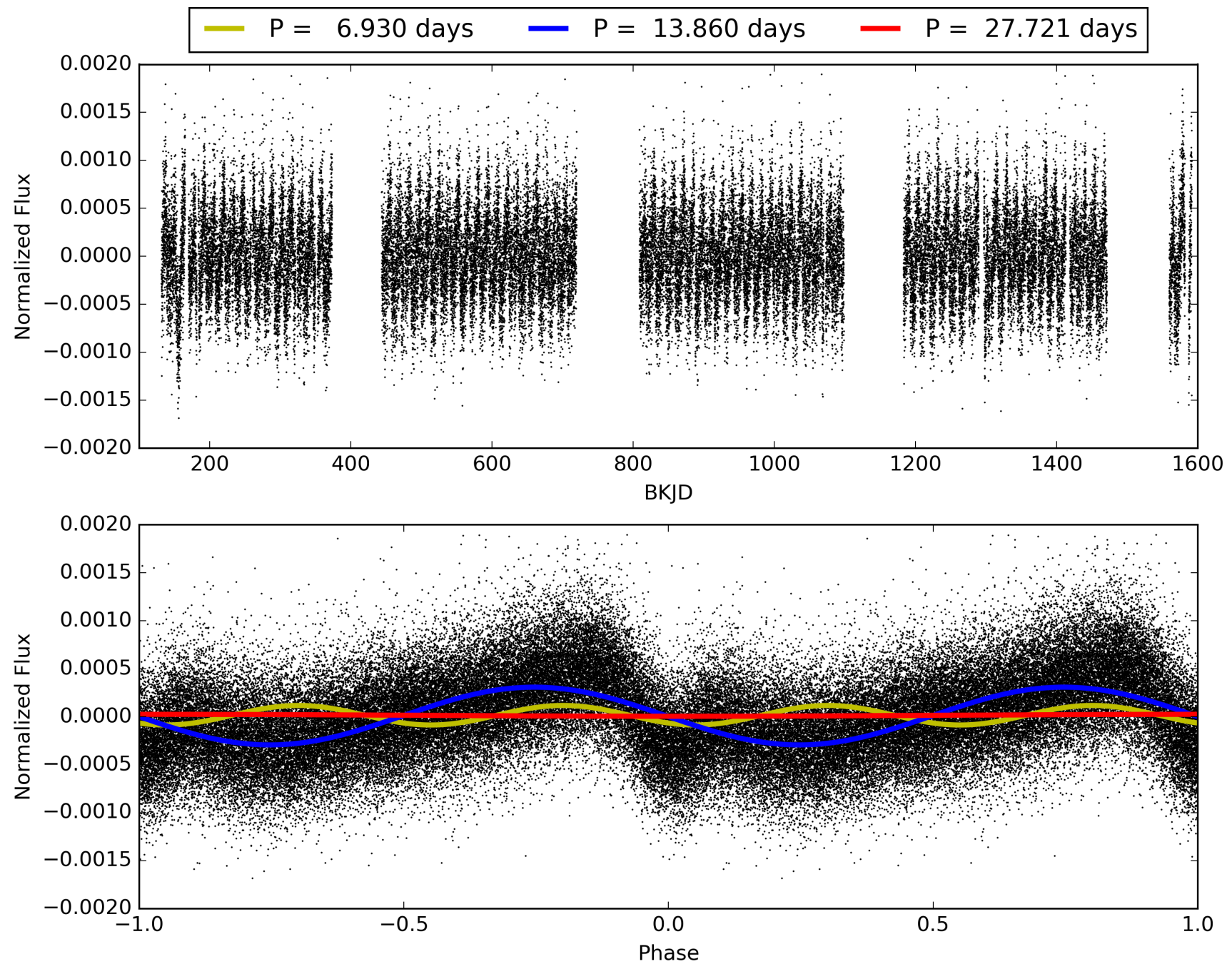
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 92.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 8.09e-26  
RollingBand-fgt: 1.00 [74/74]  
GhostDiagnostic-chr: 2.467  
Centroid-sig: 79.4%  
Centroid-so: 0.131 arcsec [0.25 $\sigma$ ]  
OotOffset-rm: 0.471 arcsec [1.22 $\sigma$ ]  
KicOffset-rm: 0.481 arcsec [1.47 $\sigma$ ]  
OotOffset-st: 4/4/1/4 [13]  
KicOffset-st: 4/4/1/4 [13]  
DiffImageQuality-fgm: 0.92 [12/13]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 011651105-01, PDC Light Curves

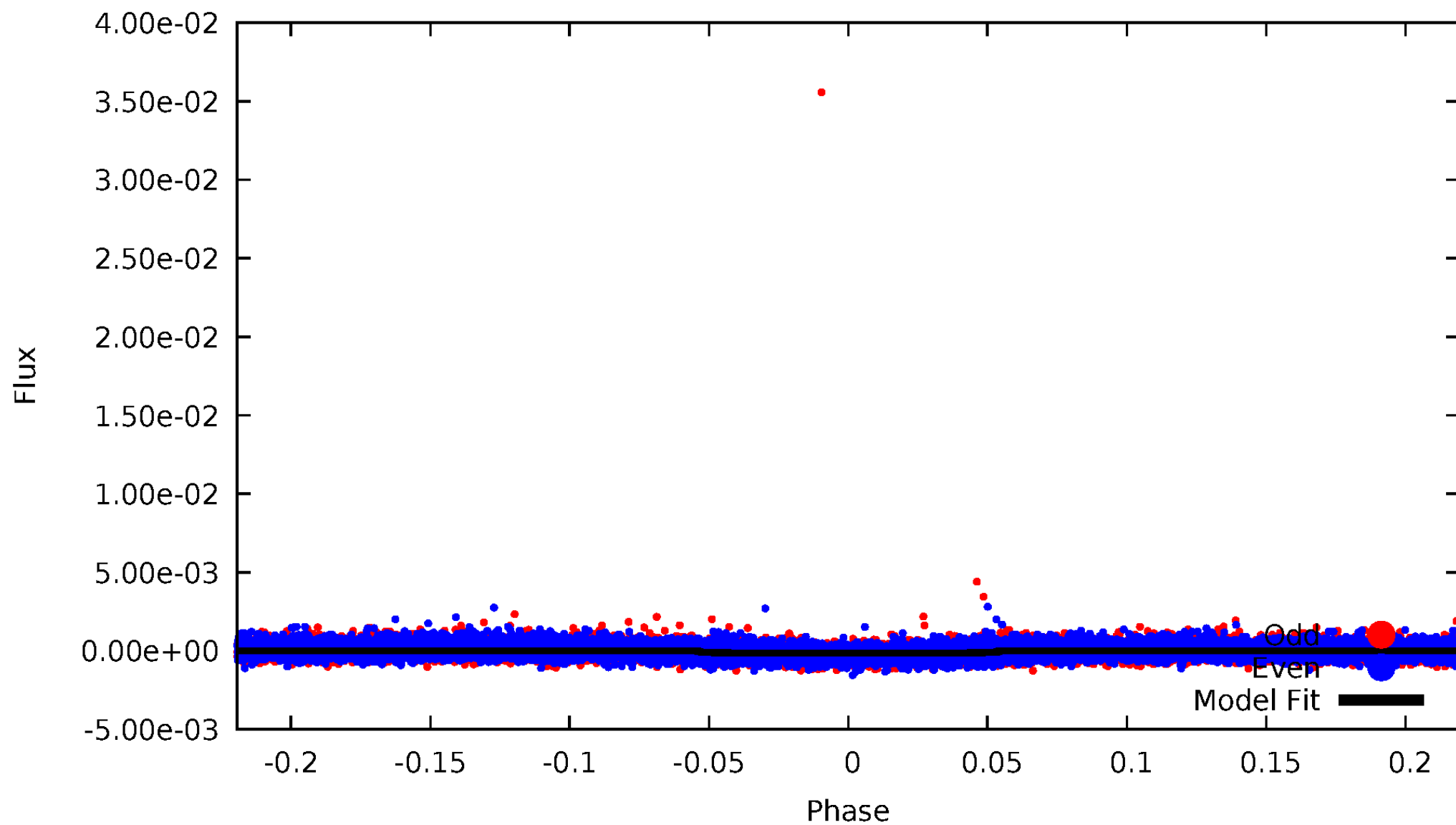


TCE 011651105-01



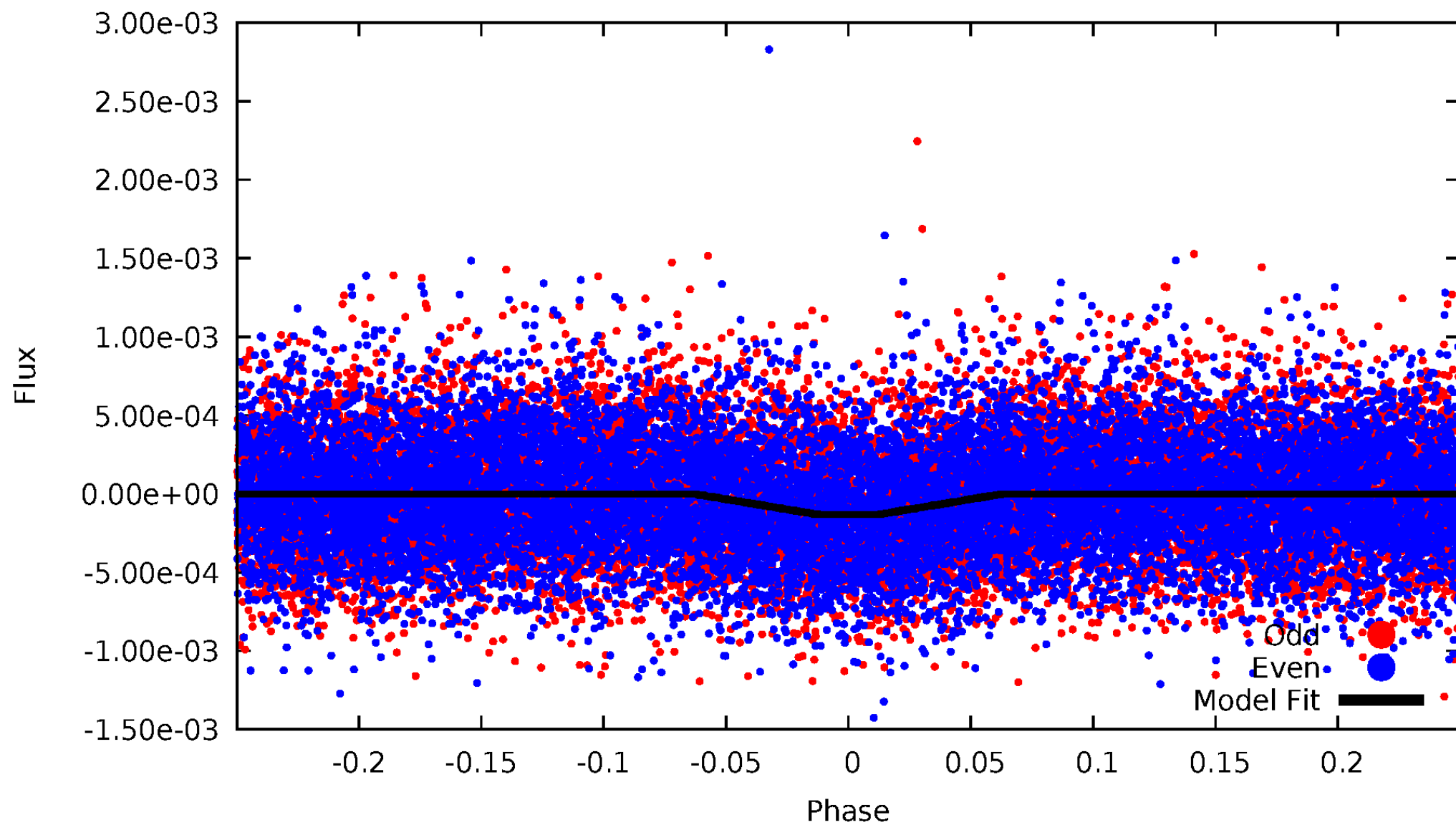
# DV Odd/Even

TCE 011651105-01



# ALT Odd/Even

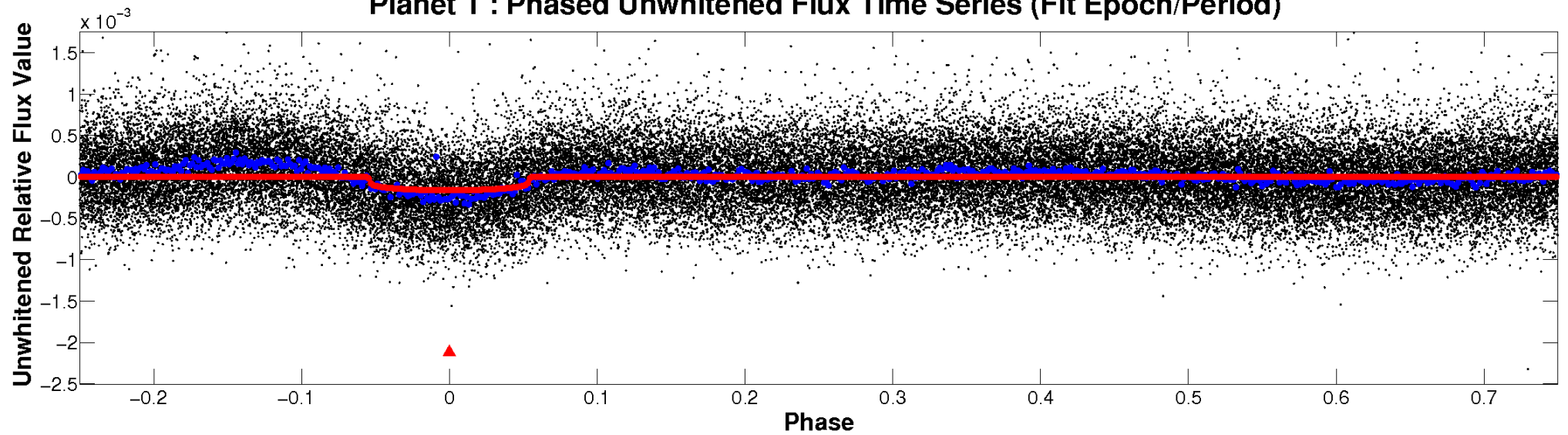
TCE 011651105-01



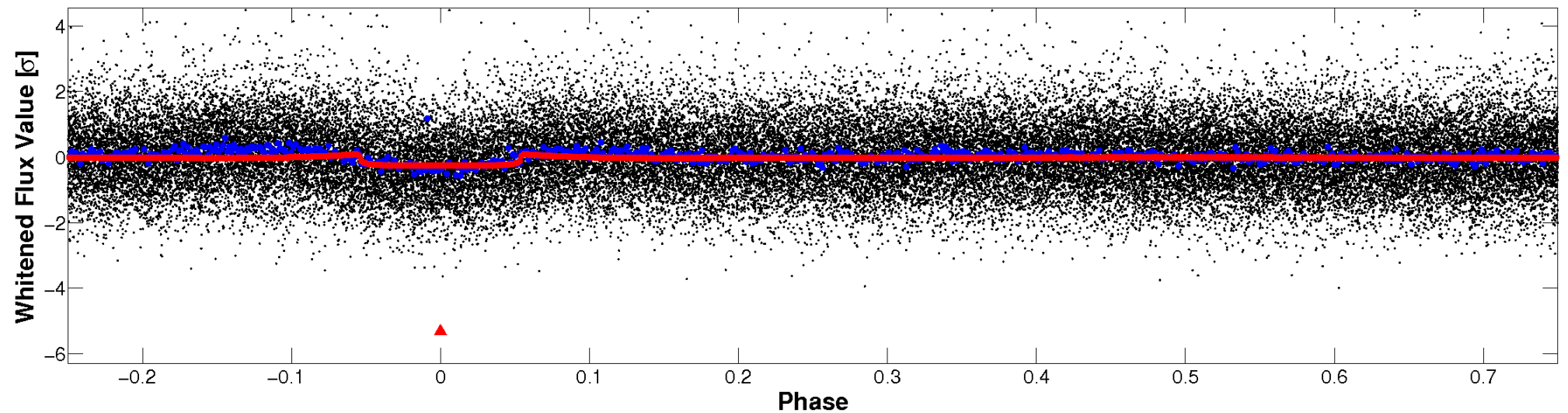


# Non-Whitened Vs. Whitened Light Curve

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

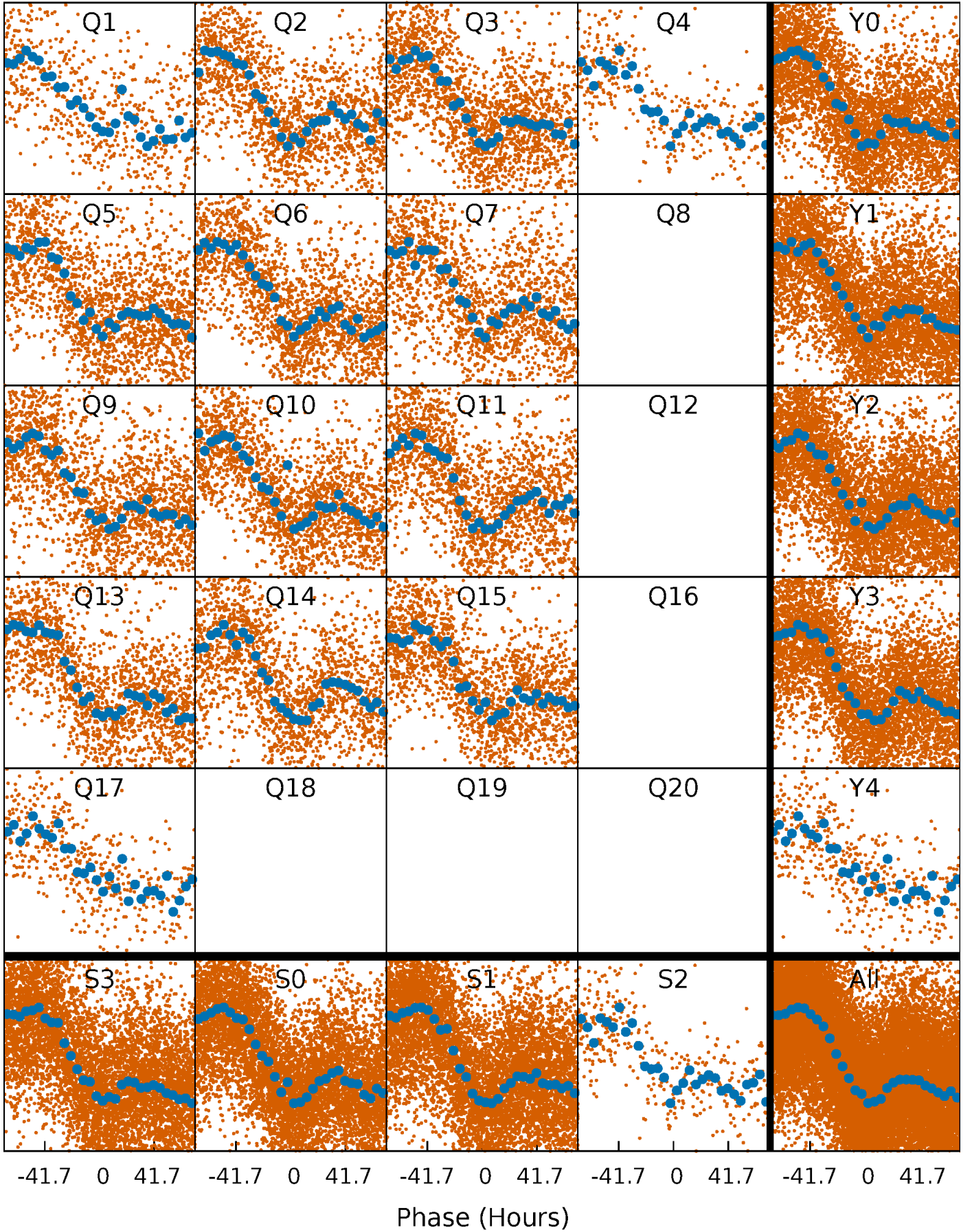


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

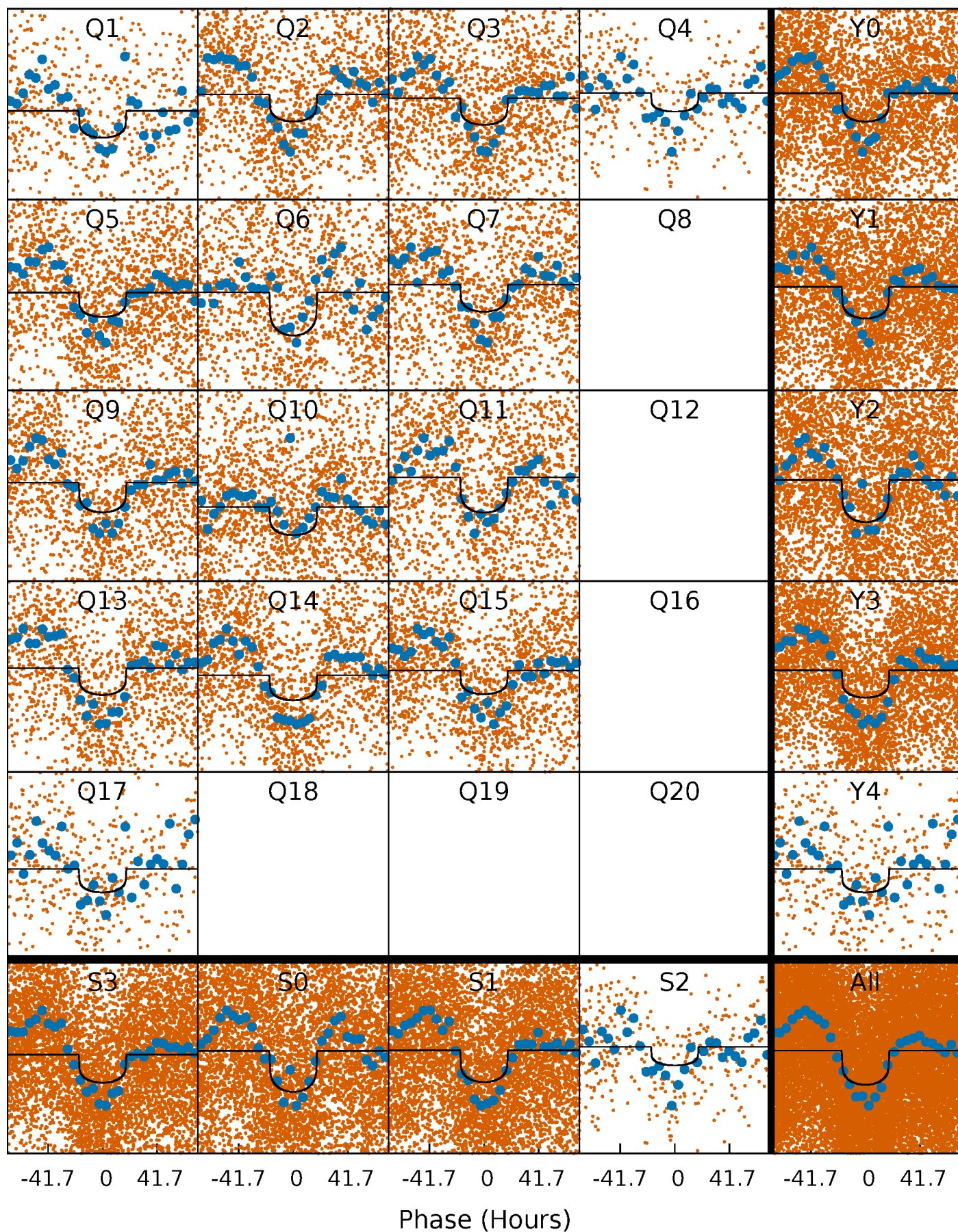
TCE 011651105-01 P= 13.860377 Days  $T_0=139.388509$  (BKJD)





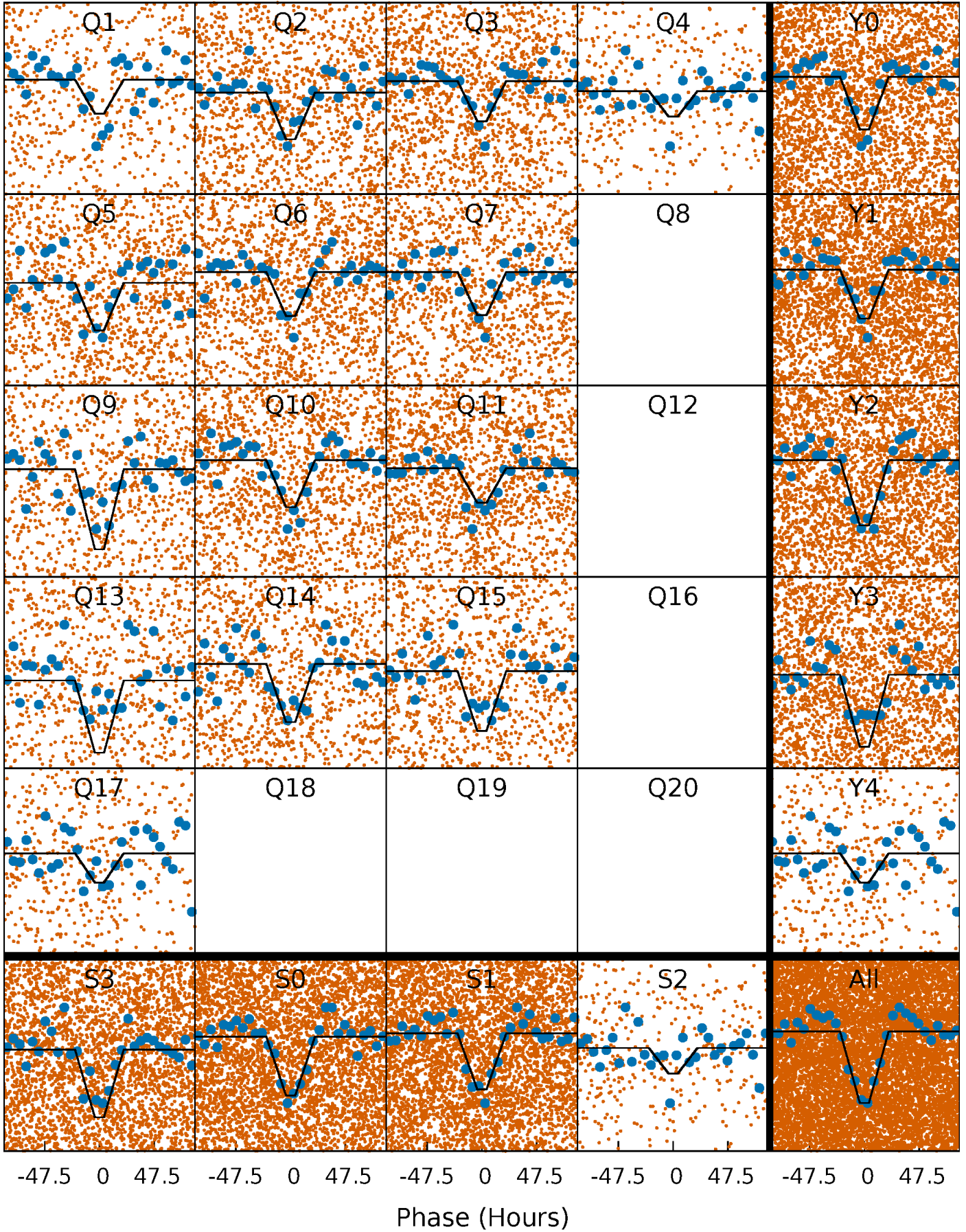
# DV Quarter-Phased Transit Curves

TCE 011651105-01 P= 13.860377 Days  $T_0=139.388509$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

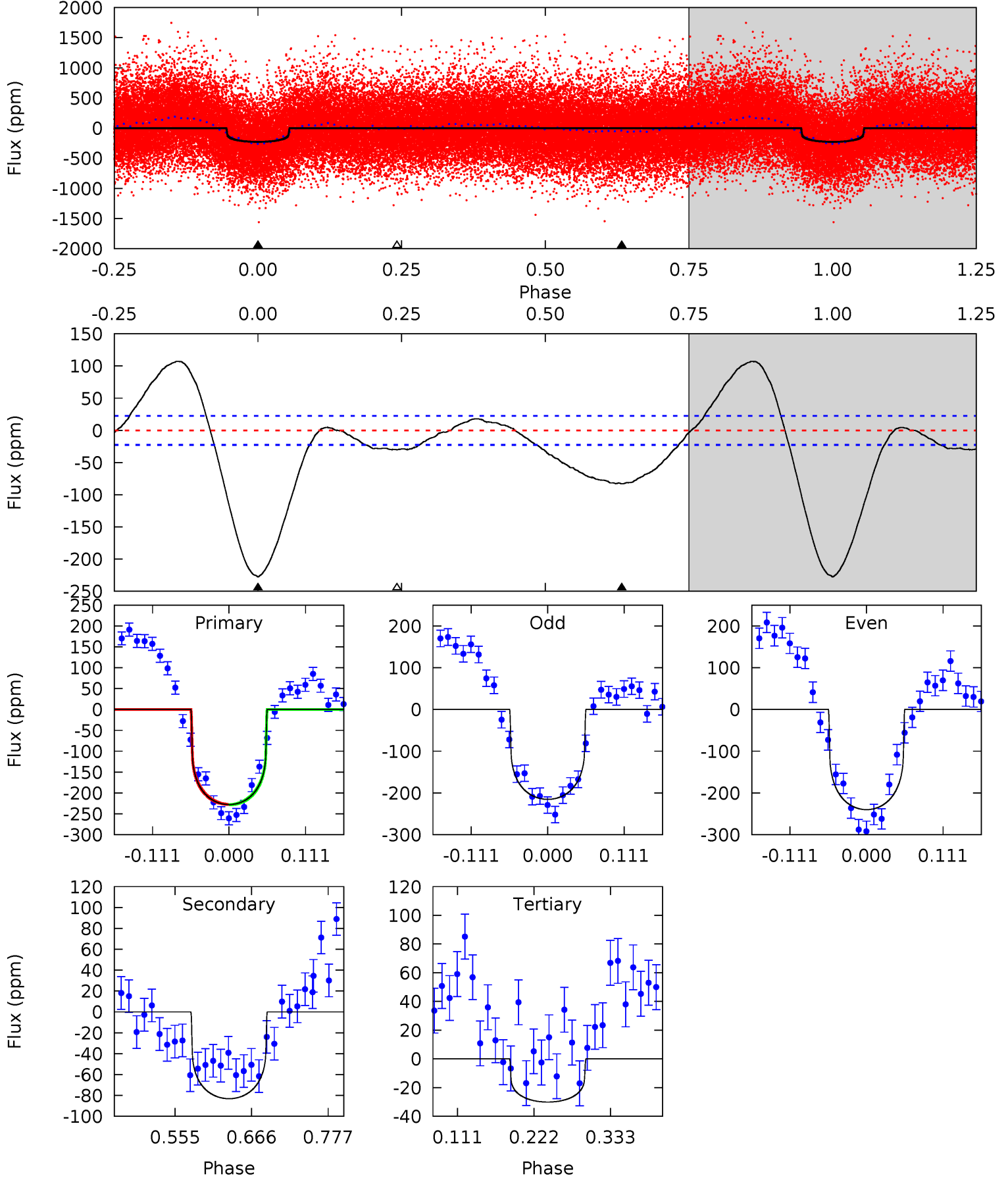
TCE 011651105-01 P= 13.858445 Days  $T_0=139.447291$  (BKJD)



# DV Model-Shift Uniqueness Test

011651105-01, P = 13.860377 Days, E = 125.528132 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
45.7	16.7	6.04	0	4.54	1.59	8.12	39.7	45.7	10.7	16.7	2.48	0.89	0.32	0.08

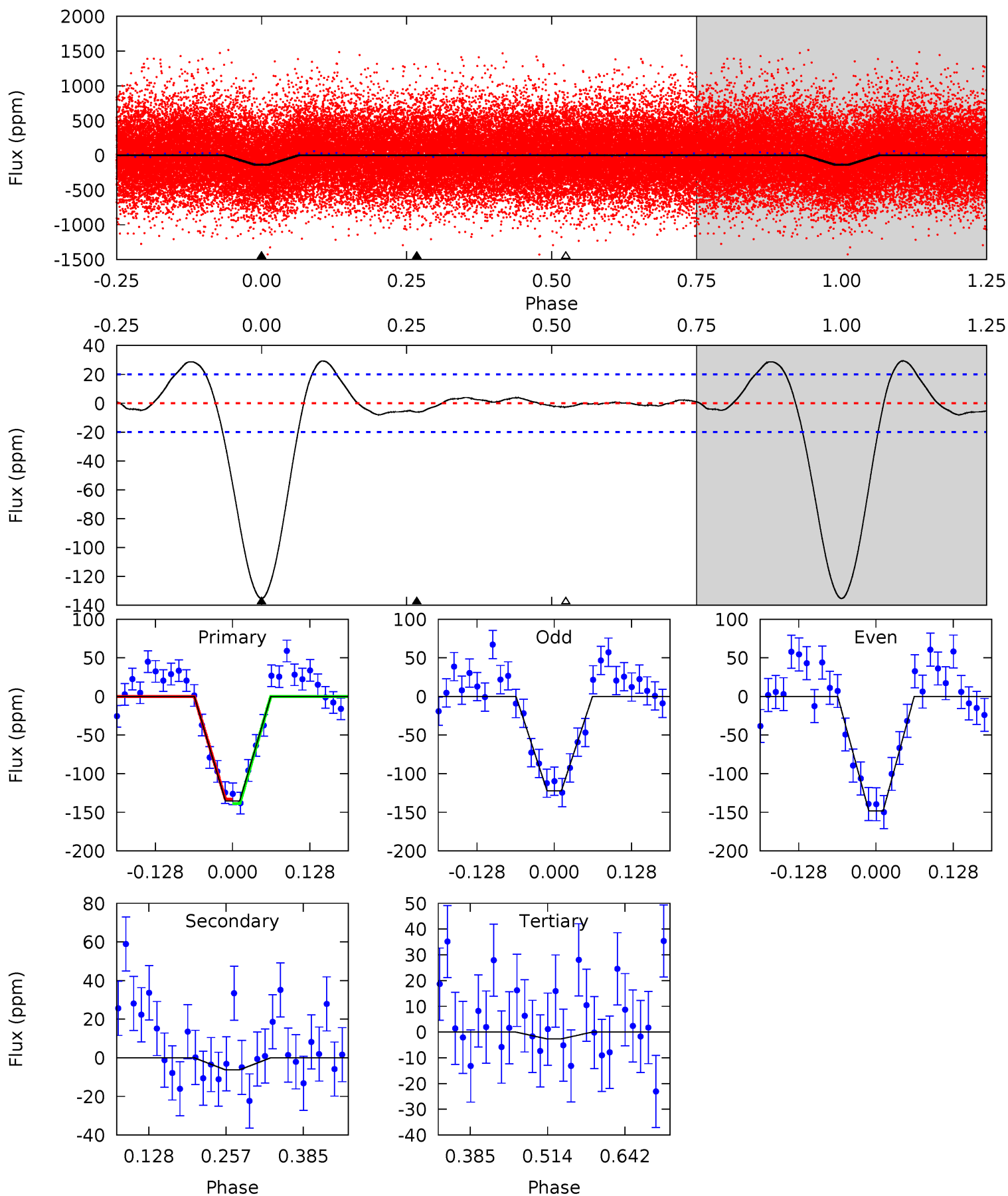




# Alt Model-Shift Uniqueness Test

011651105-01, P = 13.858445 Days, E = 125.588846 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
30.6	1.40	0.60	0	4.51	1.52	1.44	30.0	30.6	0.80	1.40	2.95	1.11	0.18	0.64



### Stellar Parameters For KIC 011651105

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5667^{+152}_{-152}$	$4.535^{+0.074}_{-0.137}$	$-0.500^{+0.300}_{-0.300}$	$0.796^{+0.173}_{-0.074}$	$0.791^{+0.096}_{-0.064}$	$2.212^{+0.702}_{-0.888}$
	+3%/-3%	+2%/-3%	+60%/-60%	+22%/-9%	+12%/-8%	+32%/-40%
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 011651105-01 / KOI 7468.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-83 \pm 5$	$1.02^{+0.29}_{-0.28}$	$973^{+54}_{-44}$	$5102^{+790}_{-498}$	$477^{+426}_{-184}$
Alt.	$-6 \pm 4$	$1.01^{+0.31}_{-0.27}$	$969^{+53}_{-40}$	$3196^{+485}_{-546}$	$34^{+50}_{-25}$

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



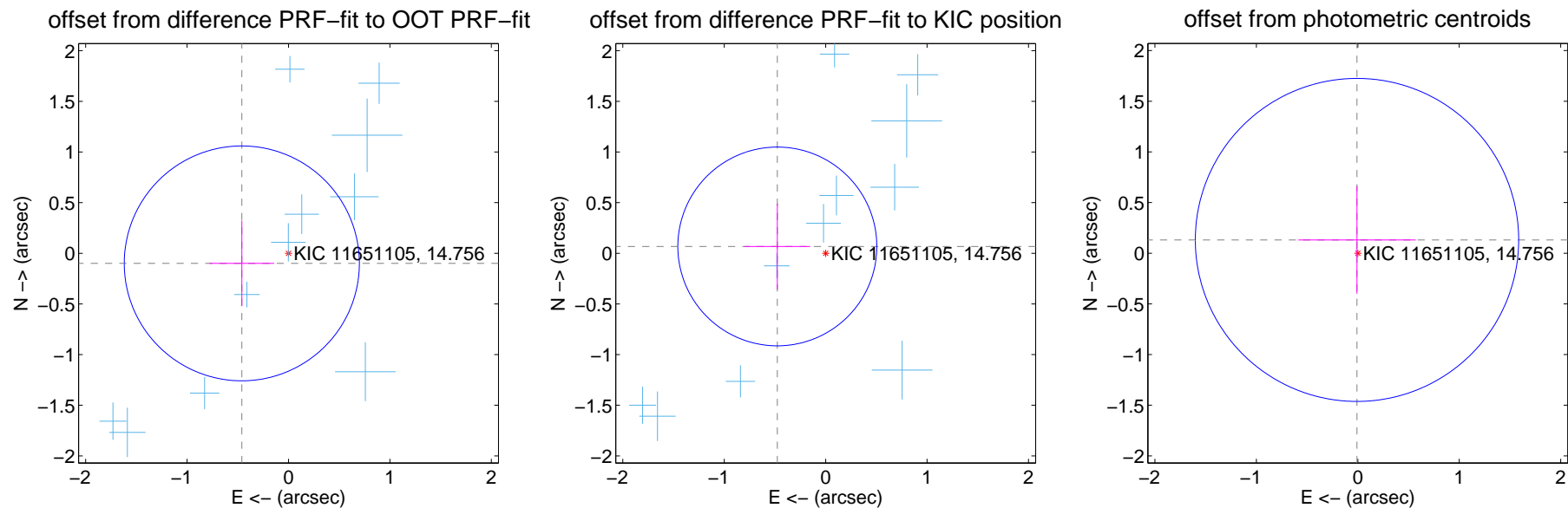
## DV Centroid Data

Supplemental centroid analysis for 011651105-01. Kepler magnitude: 14.76. Transit SNR 18.08

There are 12 quarters with good PRF difference image offsets

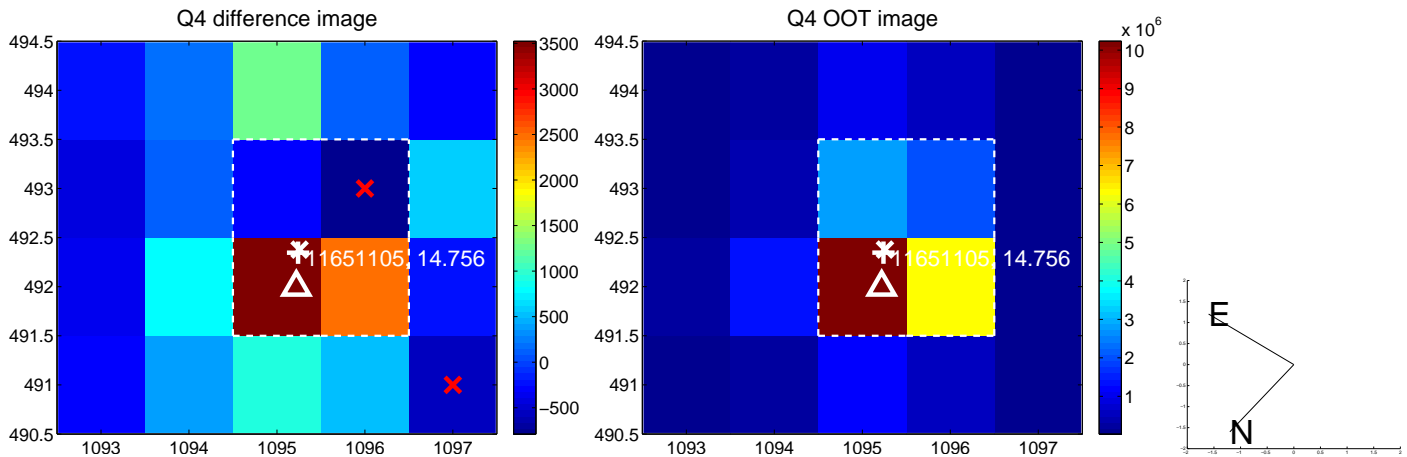
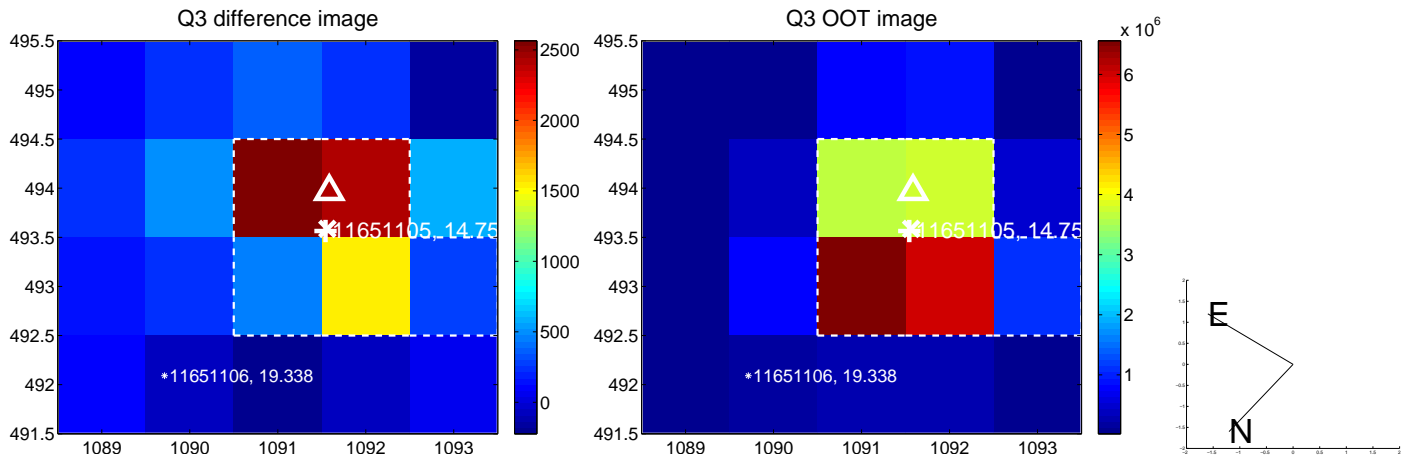
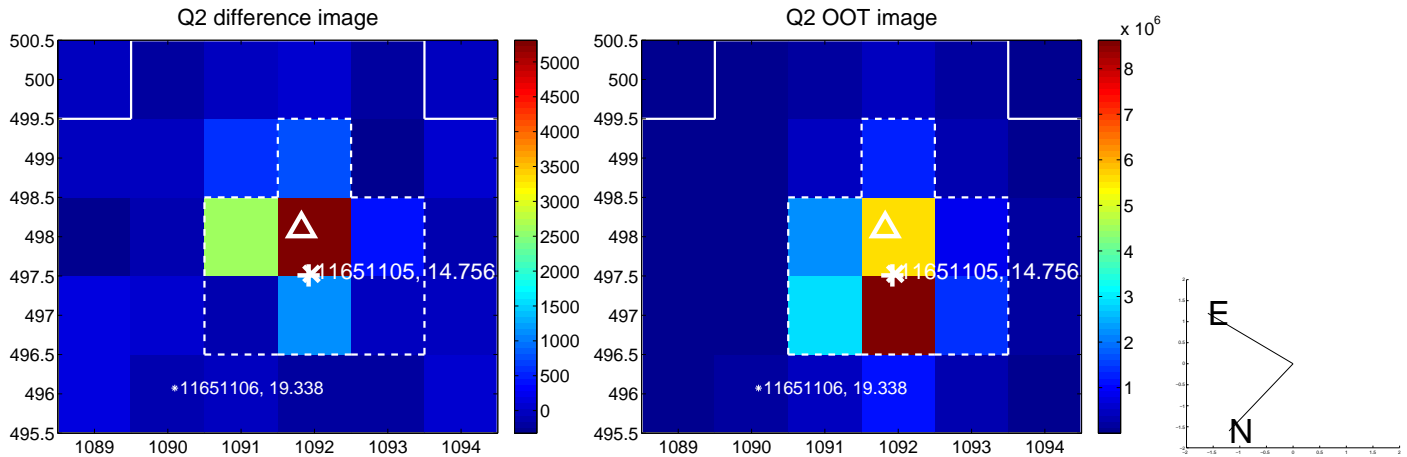
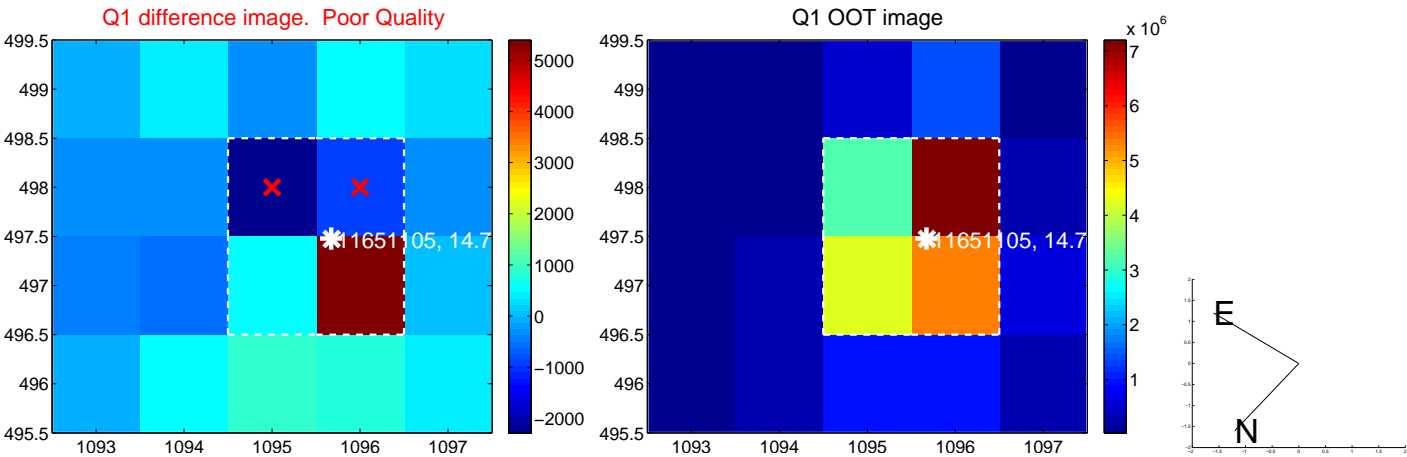
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.471 \pm 0.386$	1.22	$0.460 \pm 0.319$	$-0.100 \pm 0.422$
PRF-fit source offset from KIC position	$0.481 \pm 0.327$	1.47	$0.477 \pm 0.325$	$0.068 \pm 0.424$
photometric centroid source offset	$0.13 \pm 0.53$	0.25	$0.01 \pm 0.58$	$0.13 \pm 0.53$

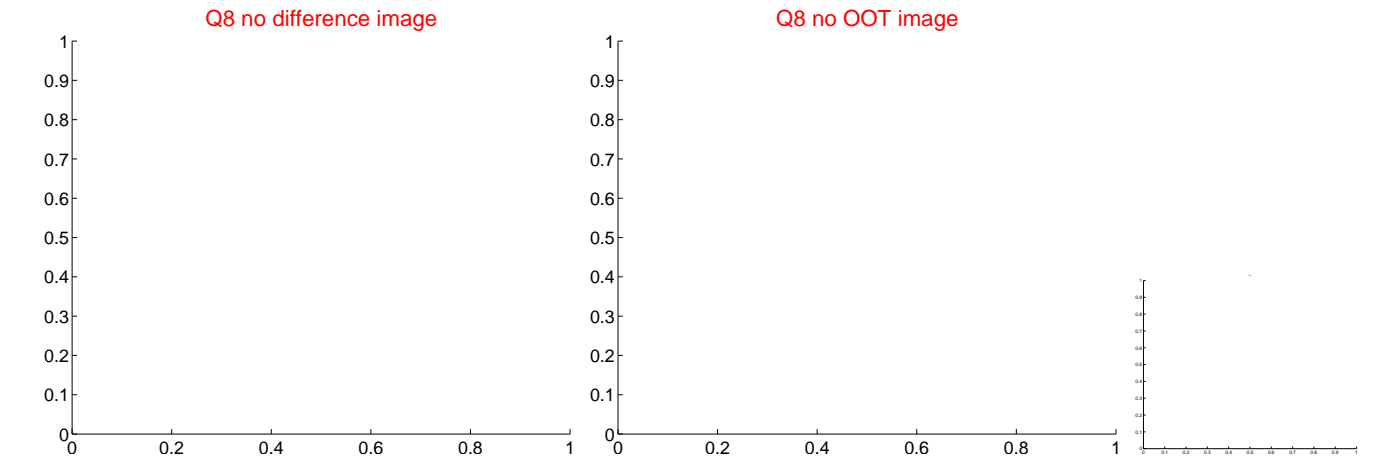
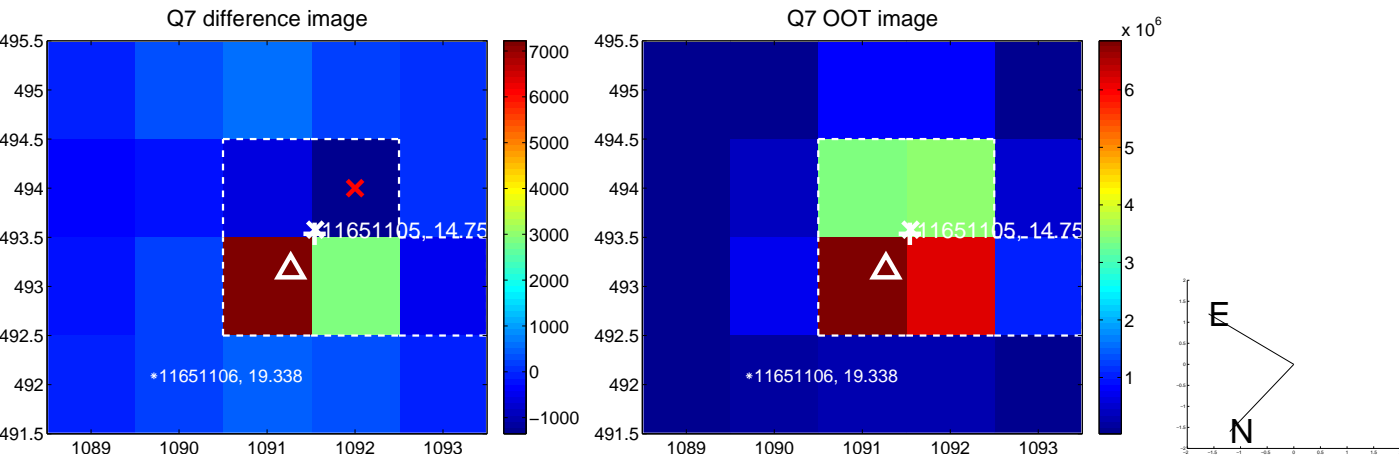
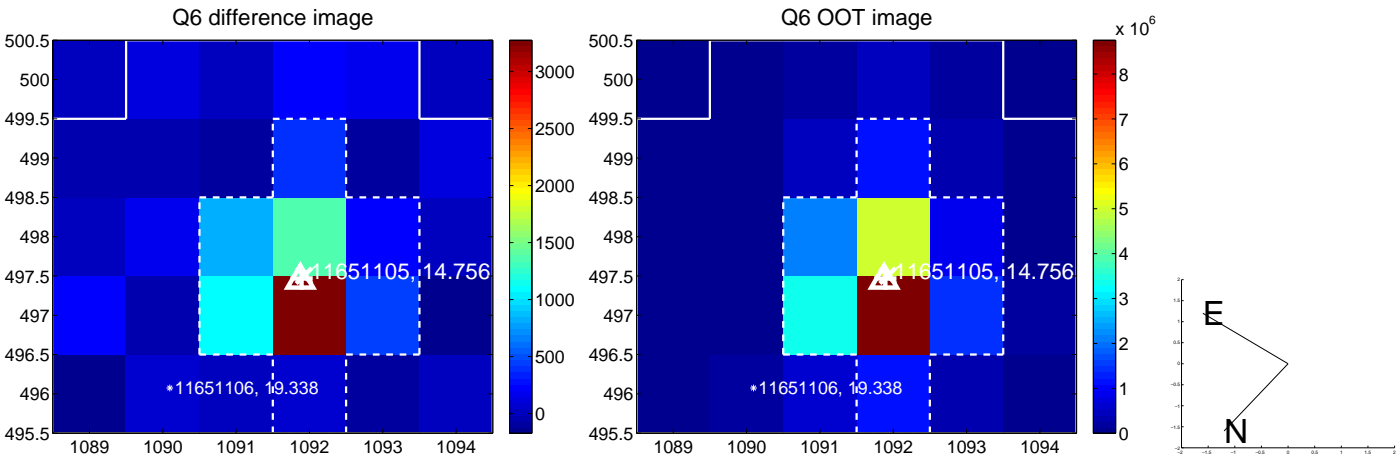
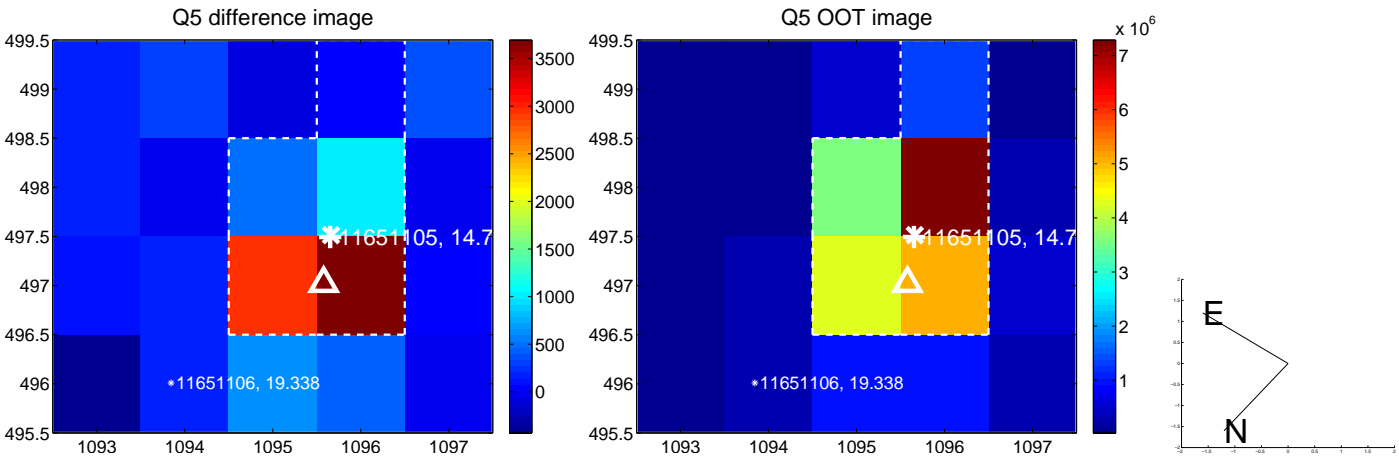


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

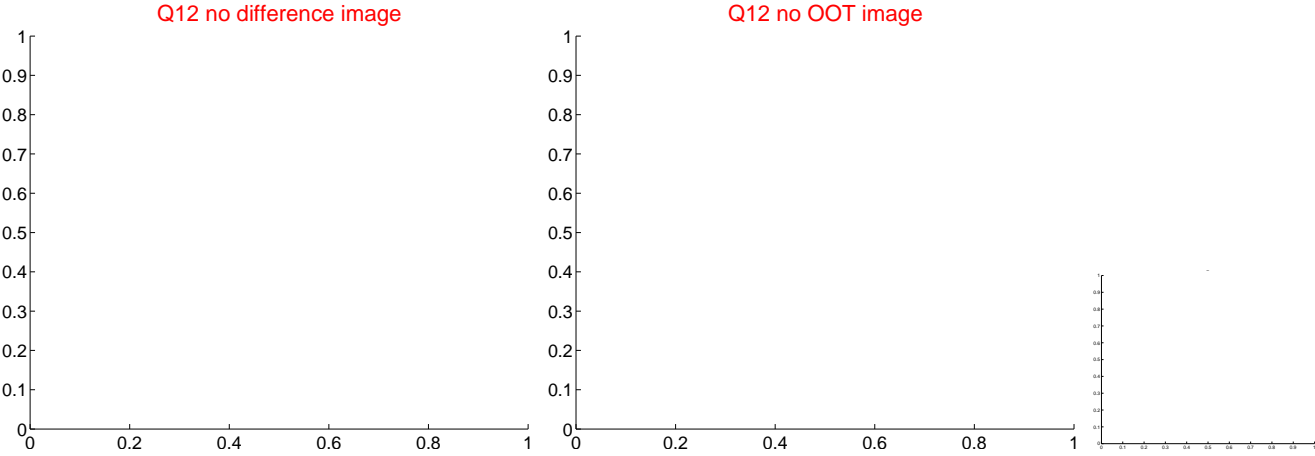
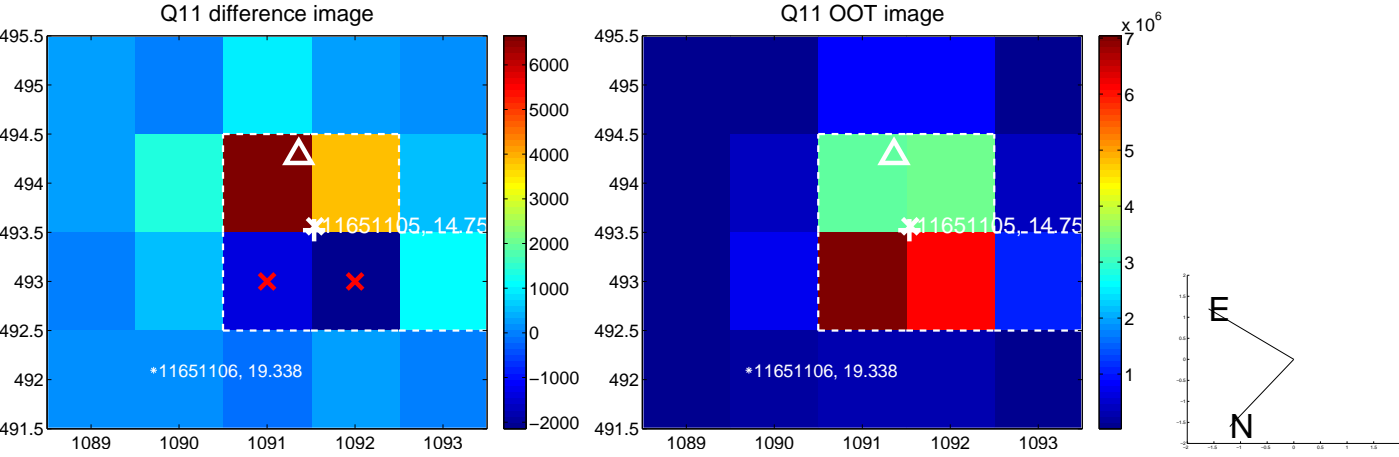
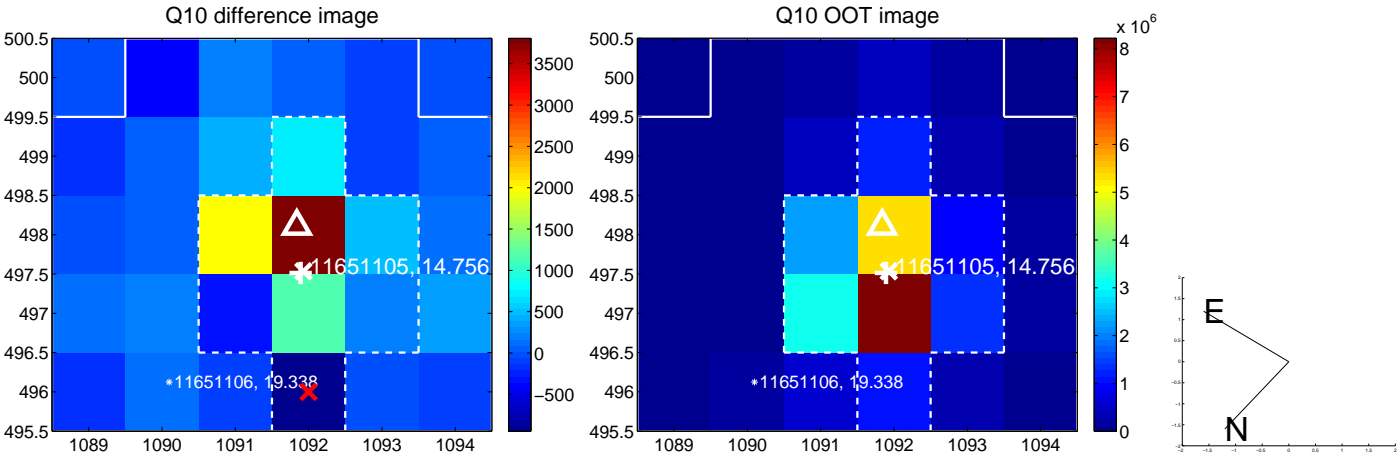
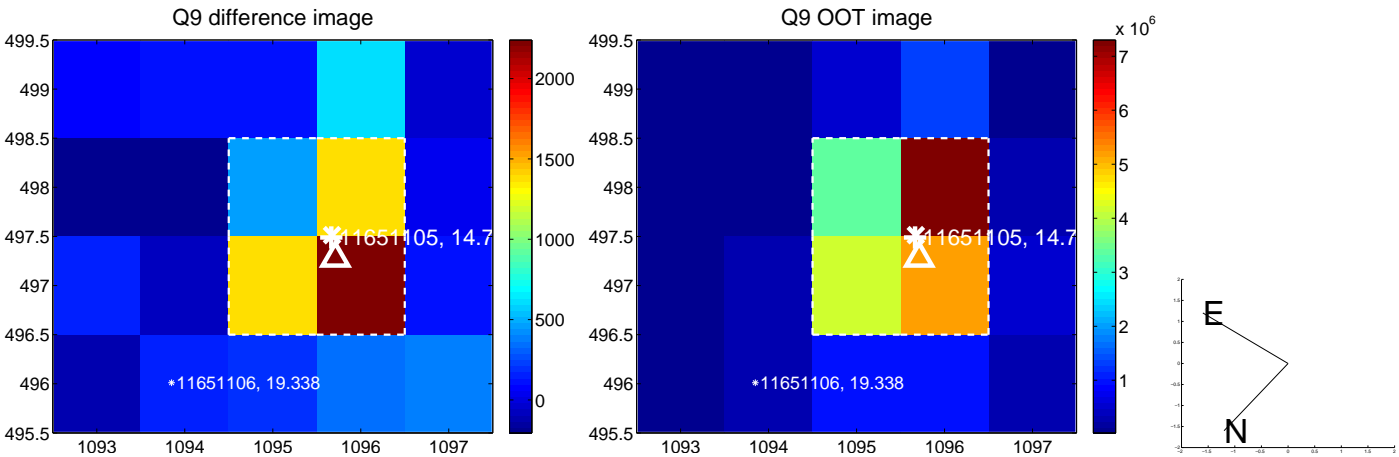
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



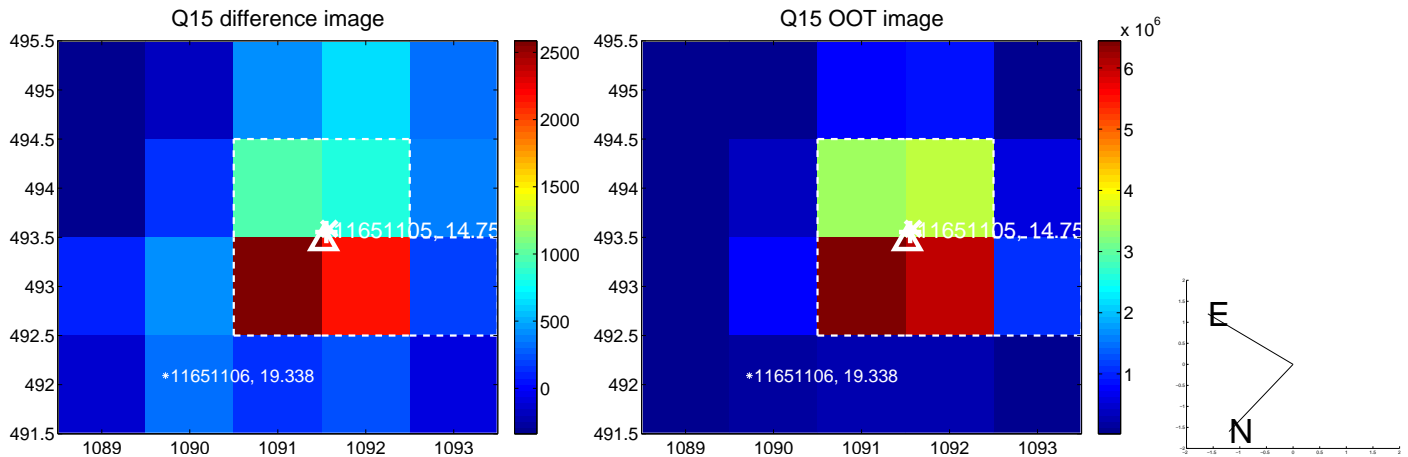
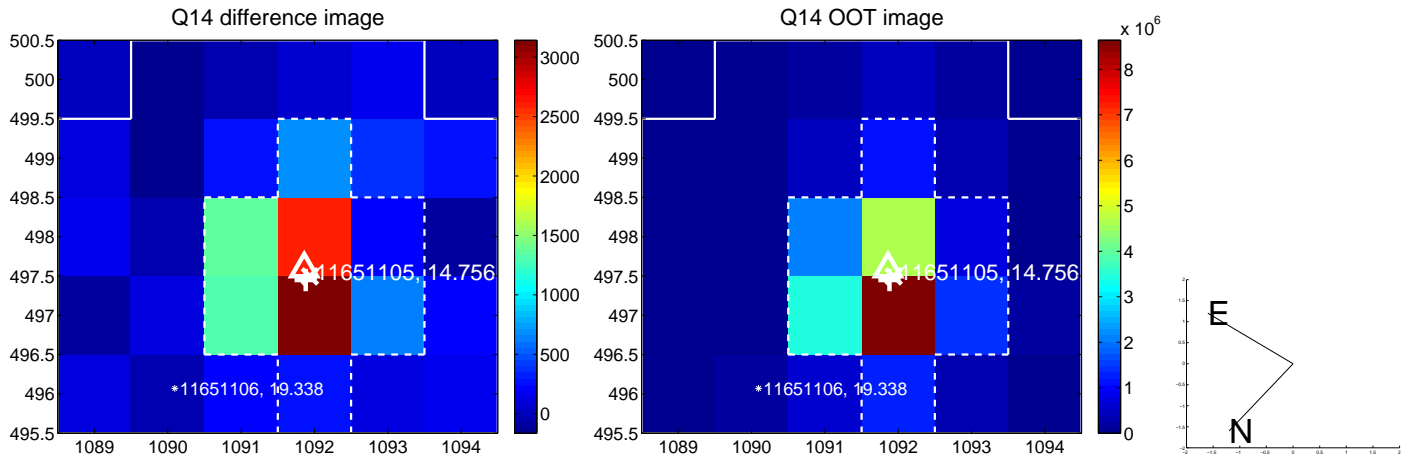
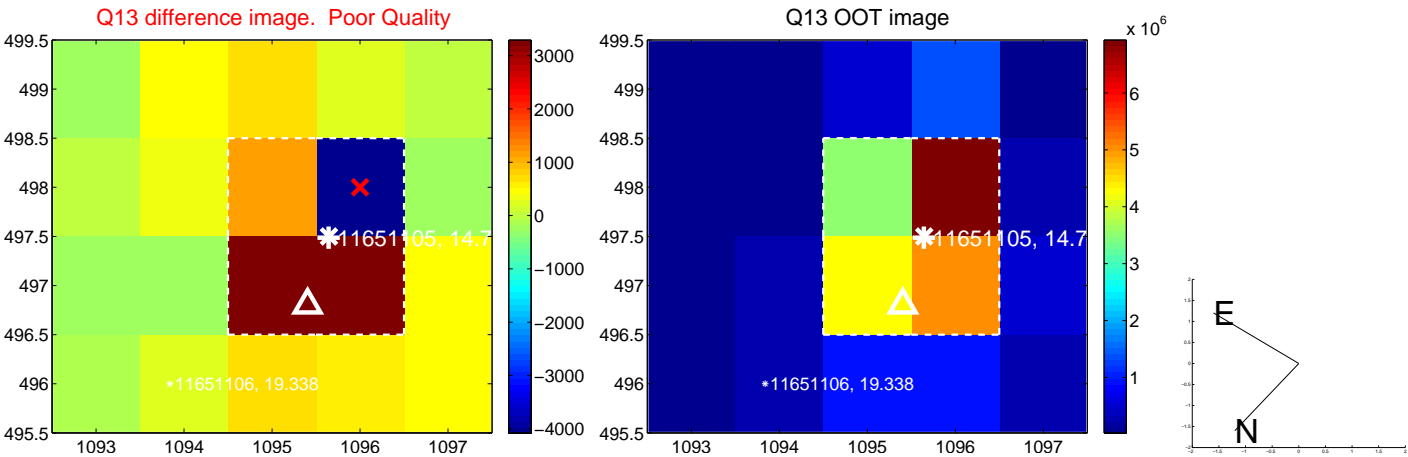
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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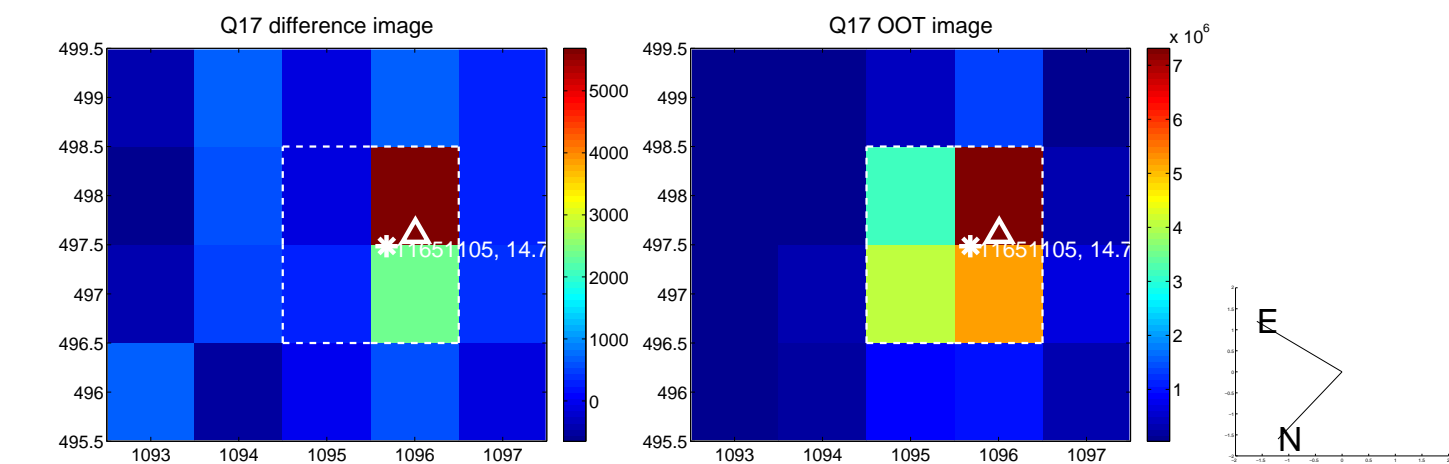


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

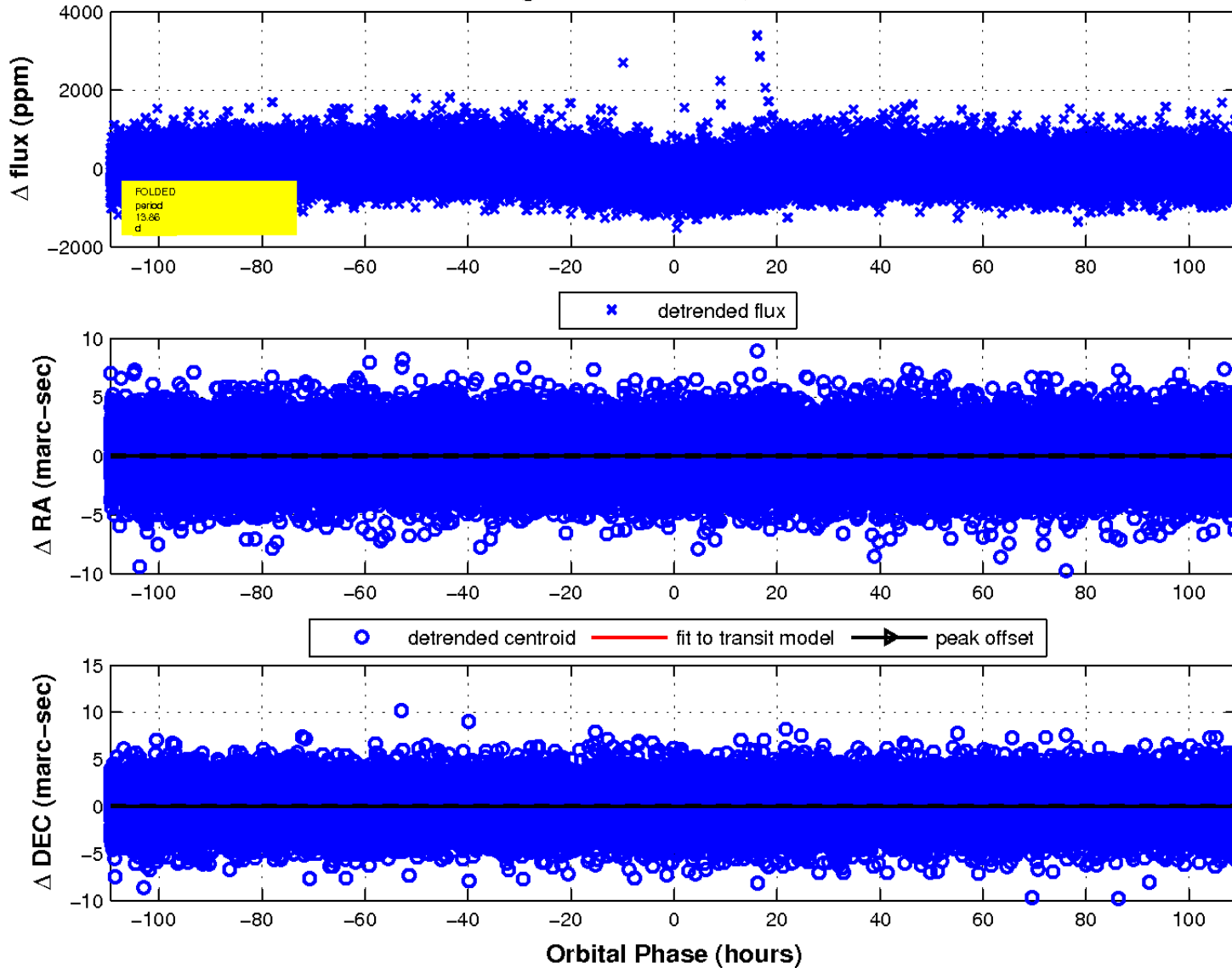




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

