

# KIC 010155026

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010155026-01	OBS	No	2.100428	131.919317	25.8	16.119	10.4	7.6	1.90	7910	1.05	8338.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010155026-01	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

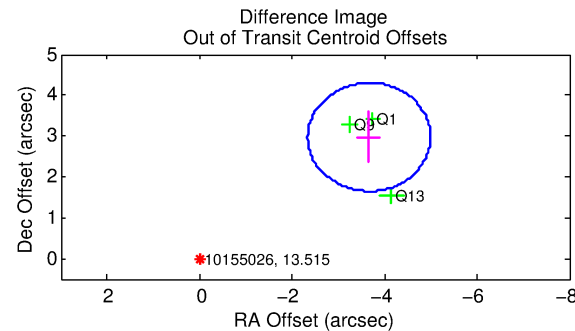
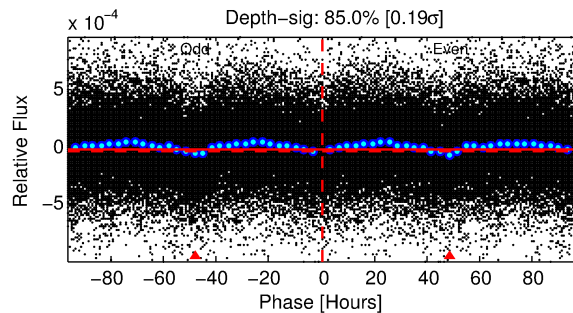
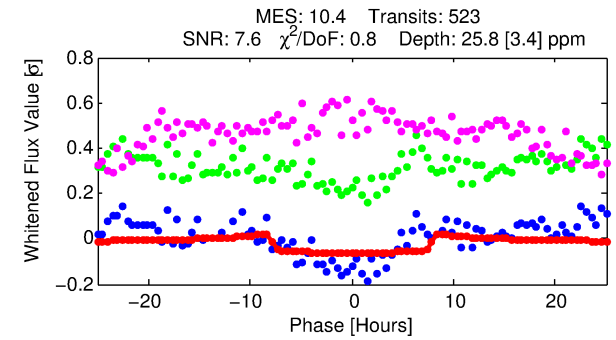
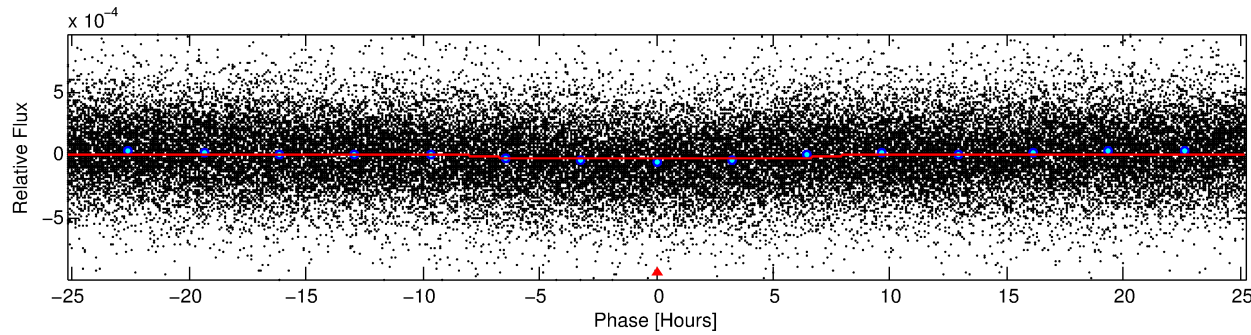
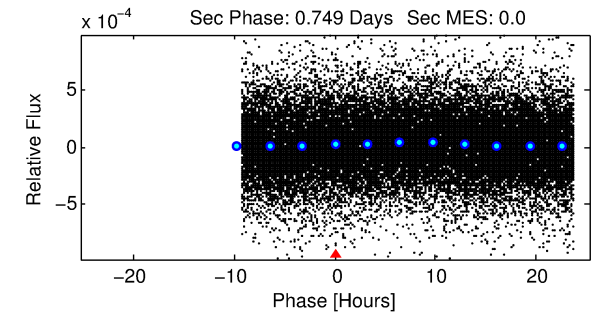
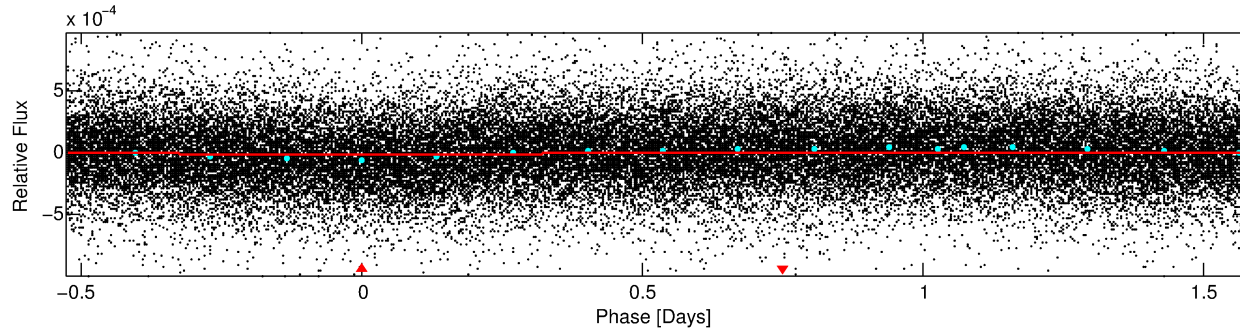
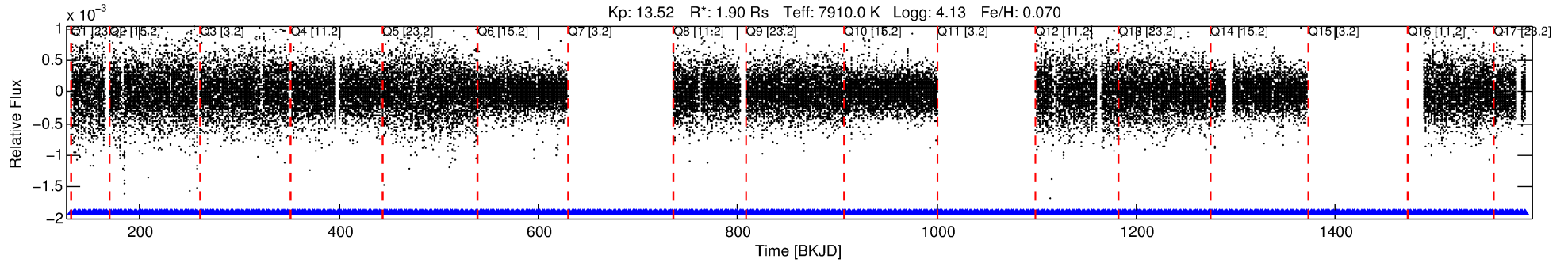
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010155026-01

No Significant Match Found

# DV One-Page Summary

KIC: 10155026 Candidate: 1 of 1 Period: 2.100 d



## DV Fit Results:

Period = 2.10043 [0.00004] d  
Epoch = 131.9193 [0.0118] BKJD  
Rp/R\* = 0.0051 [0.0027]  
a/R\* = 1.09 [0.57]  
b = 0.76 [1.88]  
Seff = 8338.39 [3070.24]  
Teq = 2437 [224] K  
Rp = 1.05 [0.63] Re  
a = 0.0389 [0.0087] AU  
Ag = N/A  
Teffp = N/A

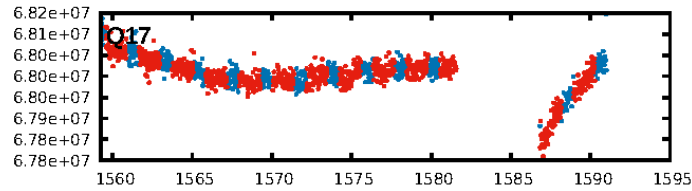
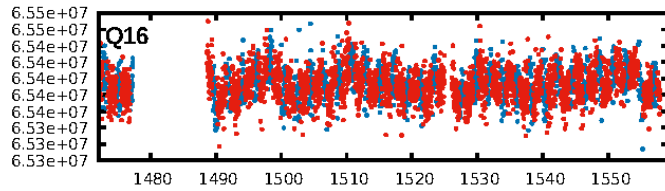
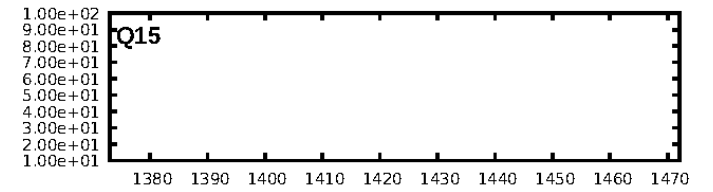
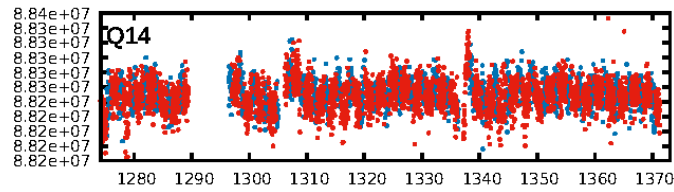
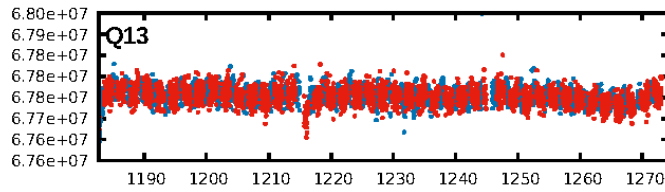
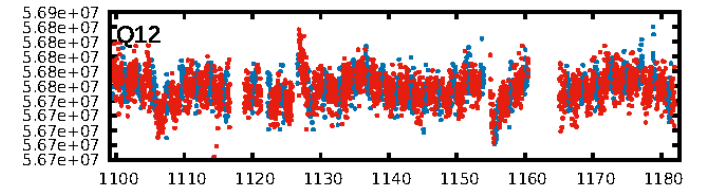
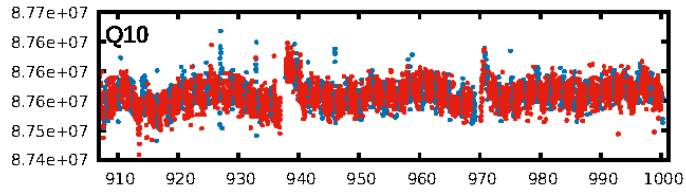
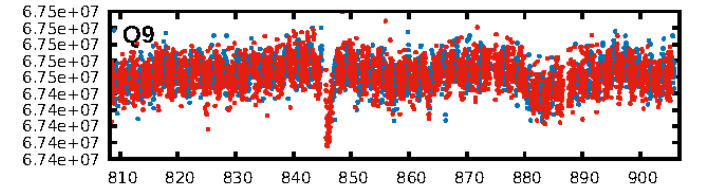
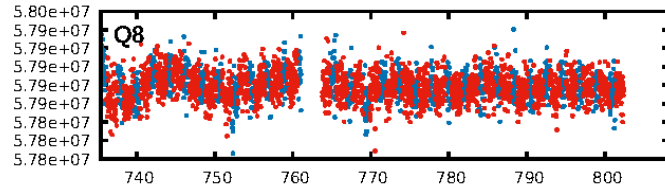
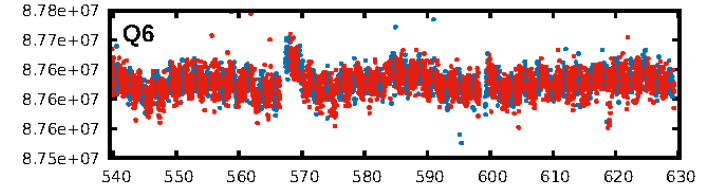
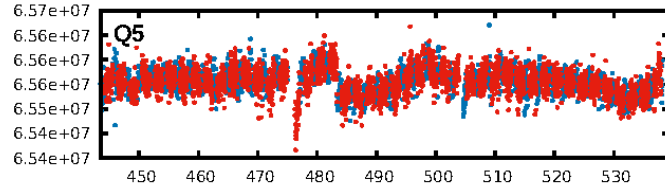
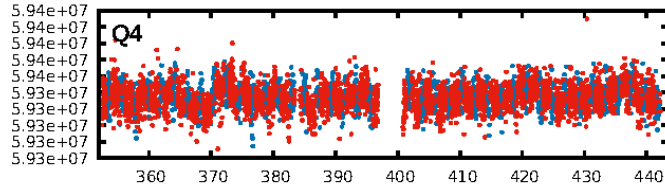
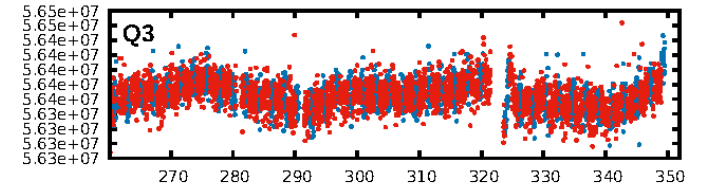
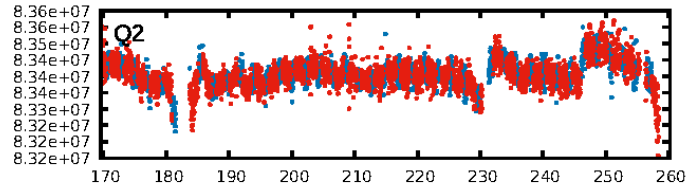
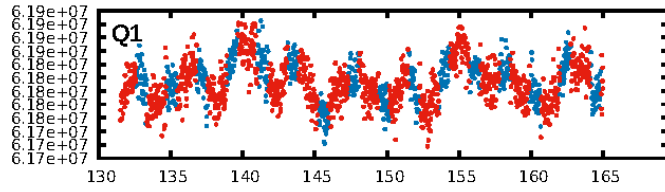
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.97e-140  
RollingBand-fgt: 1.00 [494/494]  
GhostDiagnostic-chr: -8.381  
Centroid-sig: 0.0%  
Centroid-so: 1.140 arcsec [2.88σ]  
OotOffset-rm: 4.720 arcsec [10.67σ]  
KicOffset-rm: 0.883 arcsec [1.30σ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-st: 3/0/0/3 [6]  
DiffImageQuality-fgm: 0.33 [2/6]  
DiffImageOverlap-fno: 1.00 [14/14]

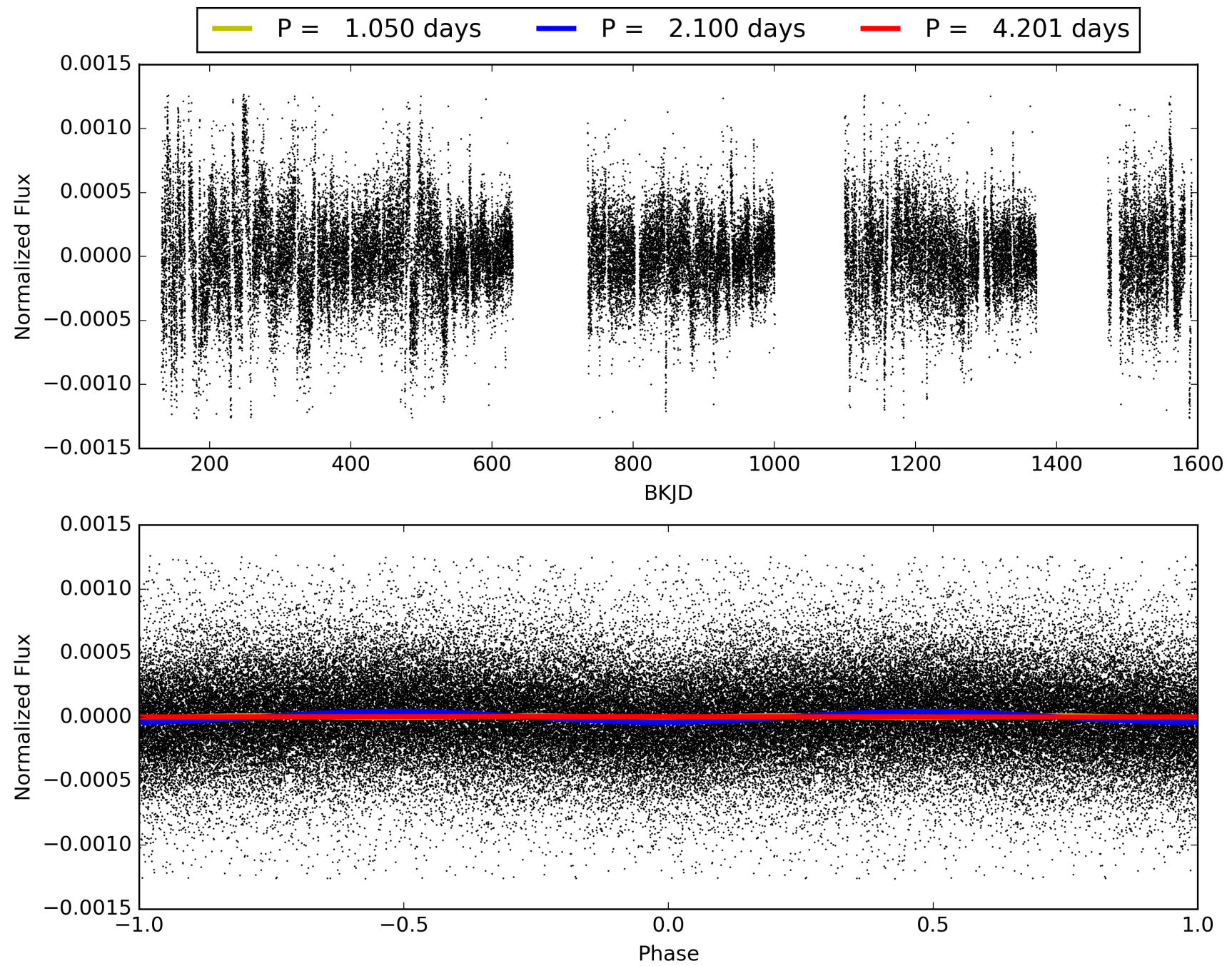
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:17:14 Z

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

# TCE 010155026-01, PDC Light Curves

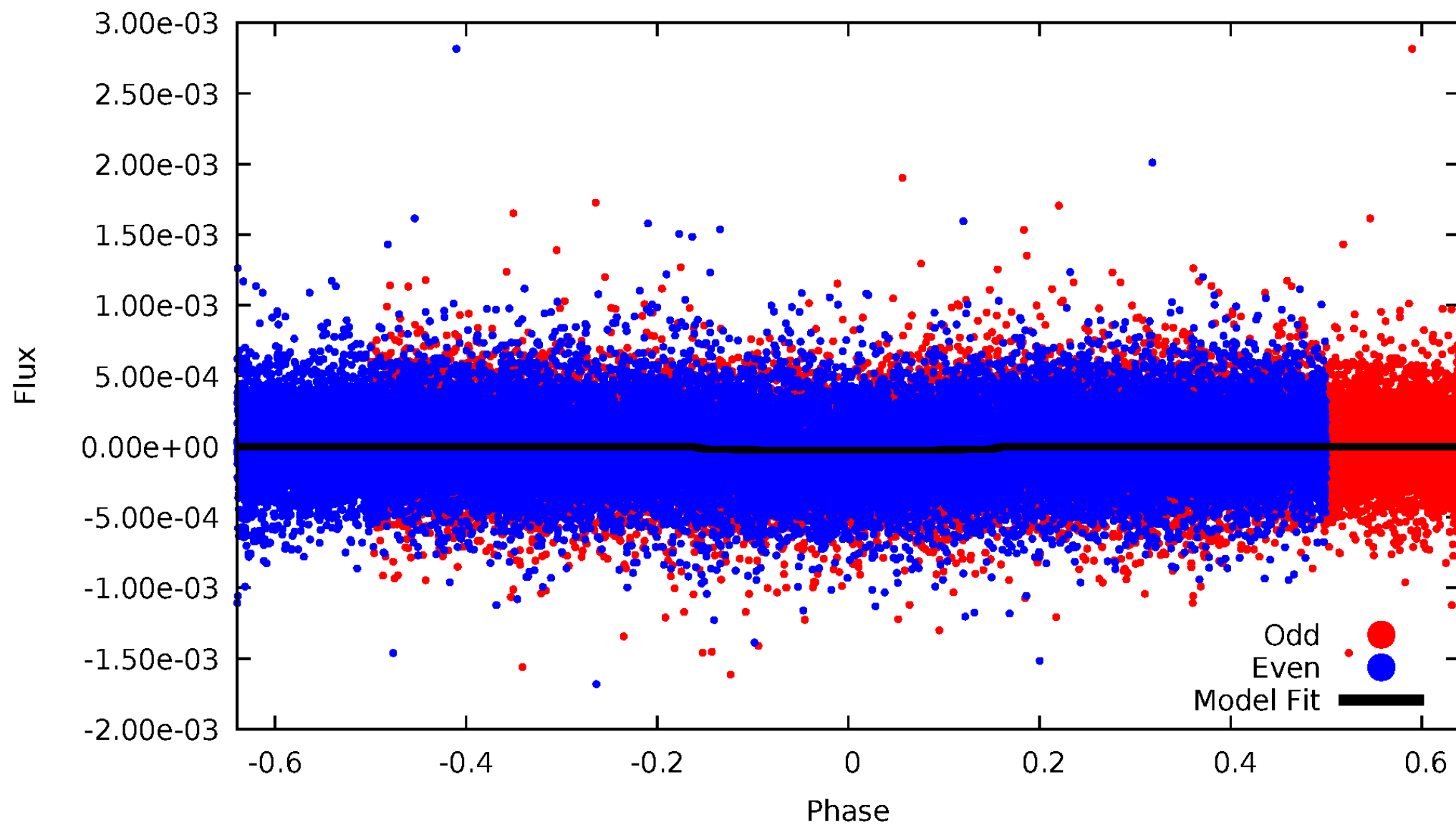


TCE 010155026-01



# DV Odd/Even

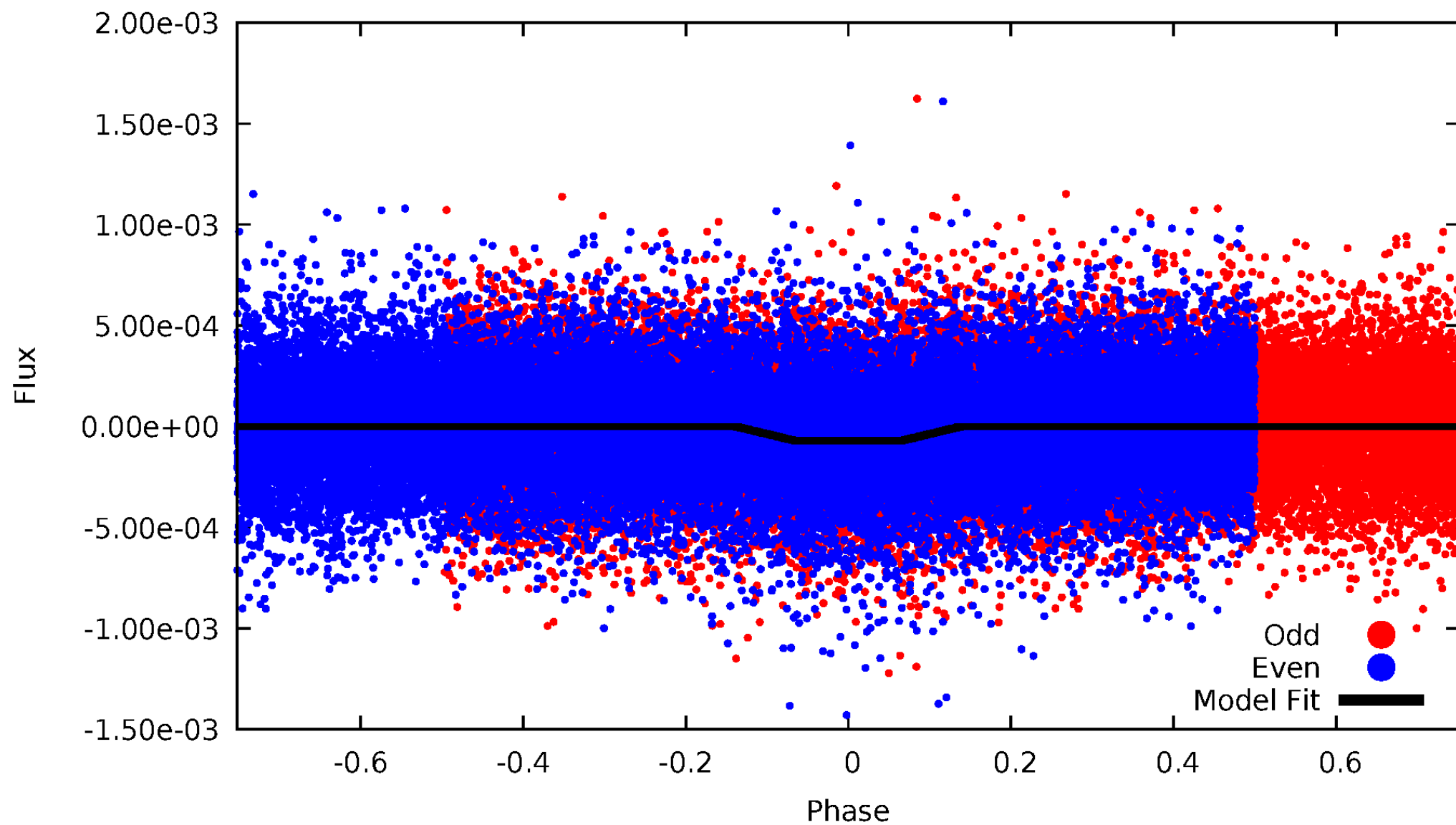
TCE 010155026-01





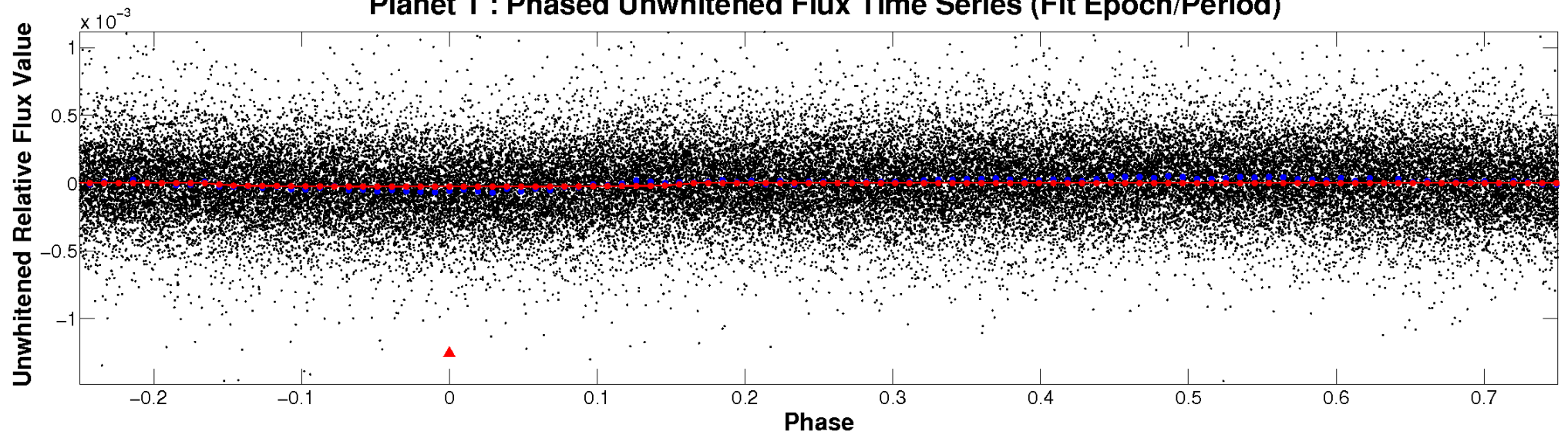
# ALT Odd/Even

TCE 010155026-01

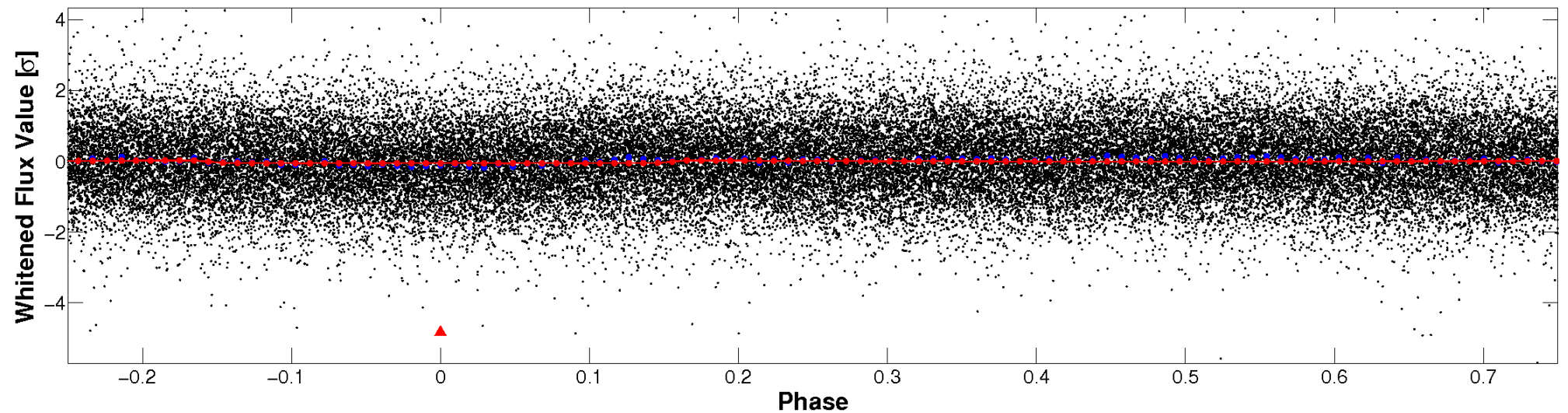


# Non-Whitened Vs. Whitened Light Curve

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

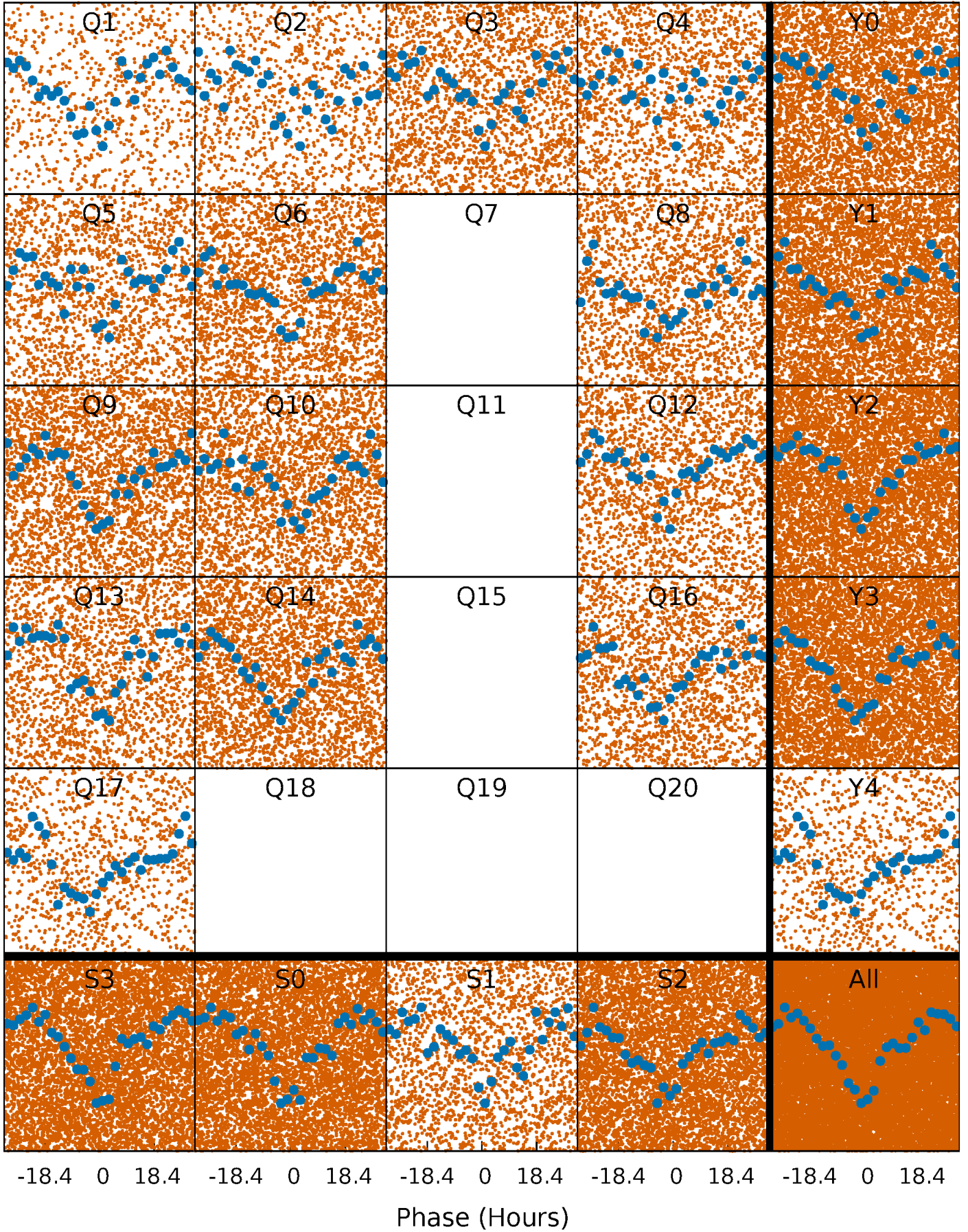


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

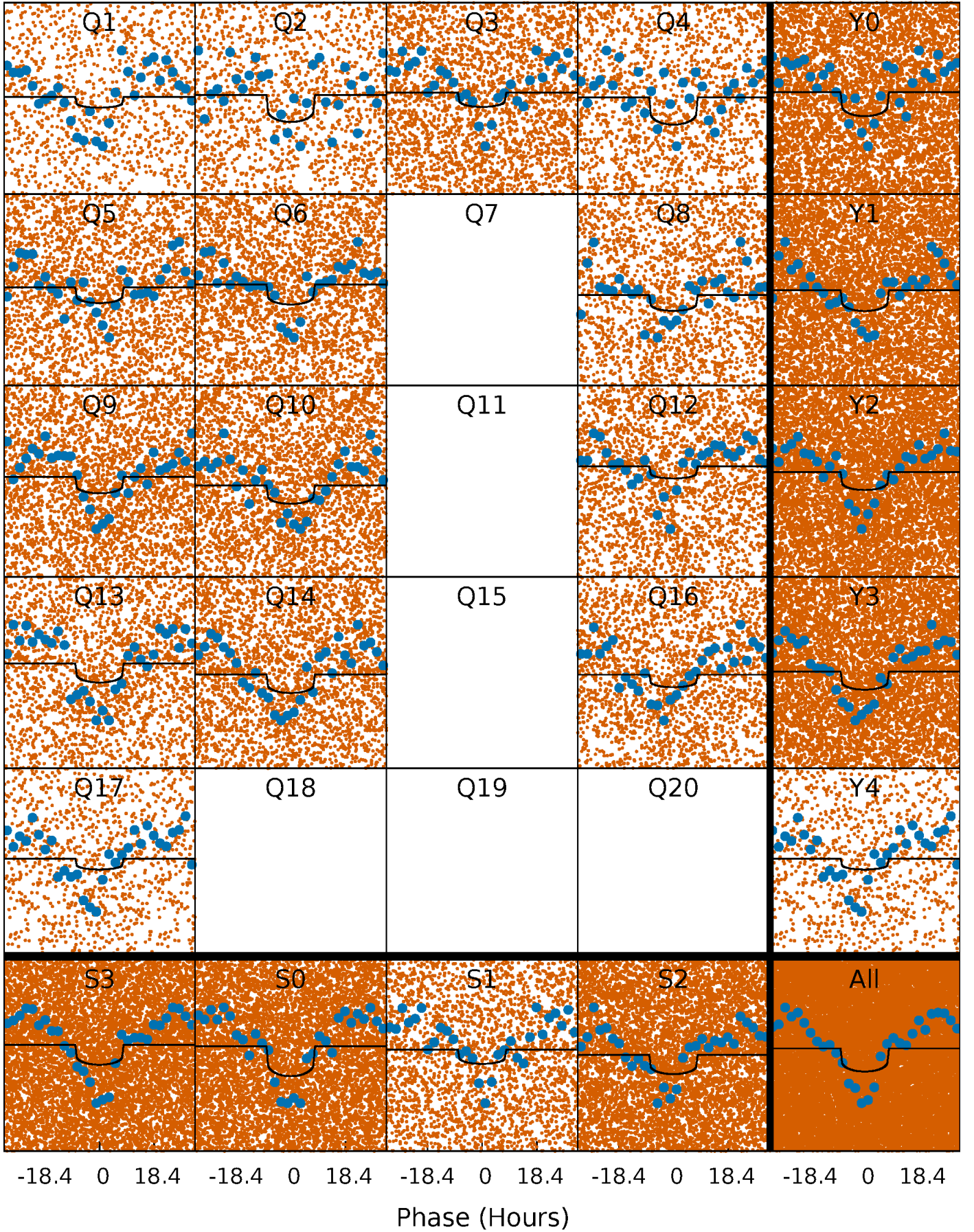
TCE 010155026-01 P= 2.100428 Days  $T_0=131.919317$  (BKJD)





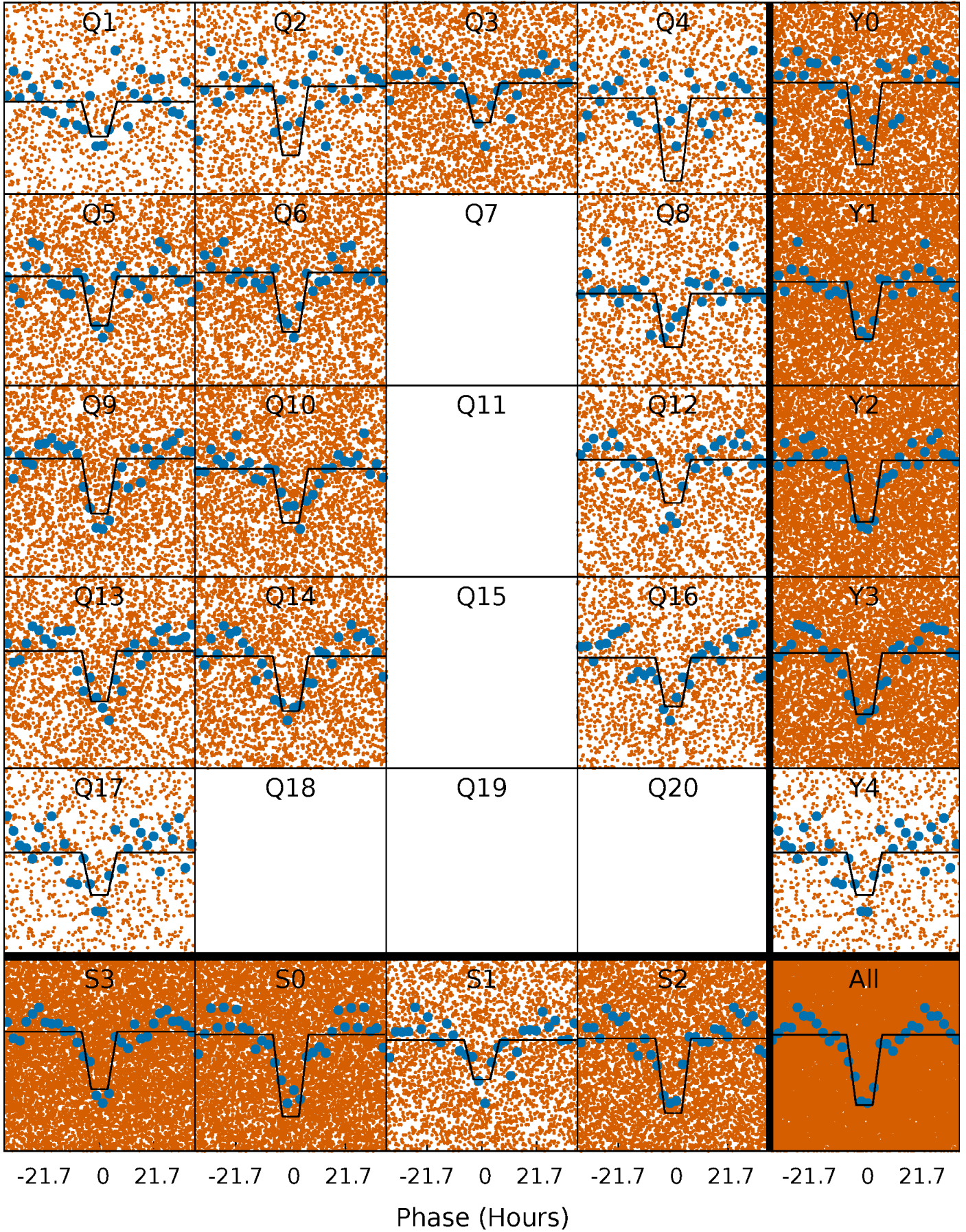
# DV Quarter-Phased Transit Curves

TCE 010155026-01 P= 2.100428 Days  $T_0=131.919317$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010155026-01 P= 2.100234 Days  $T_0=131.955117$  (BKJD)

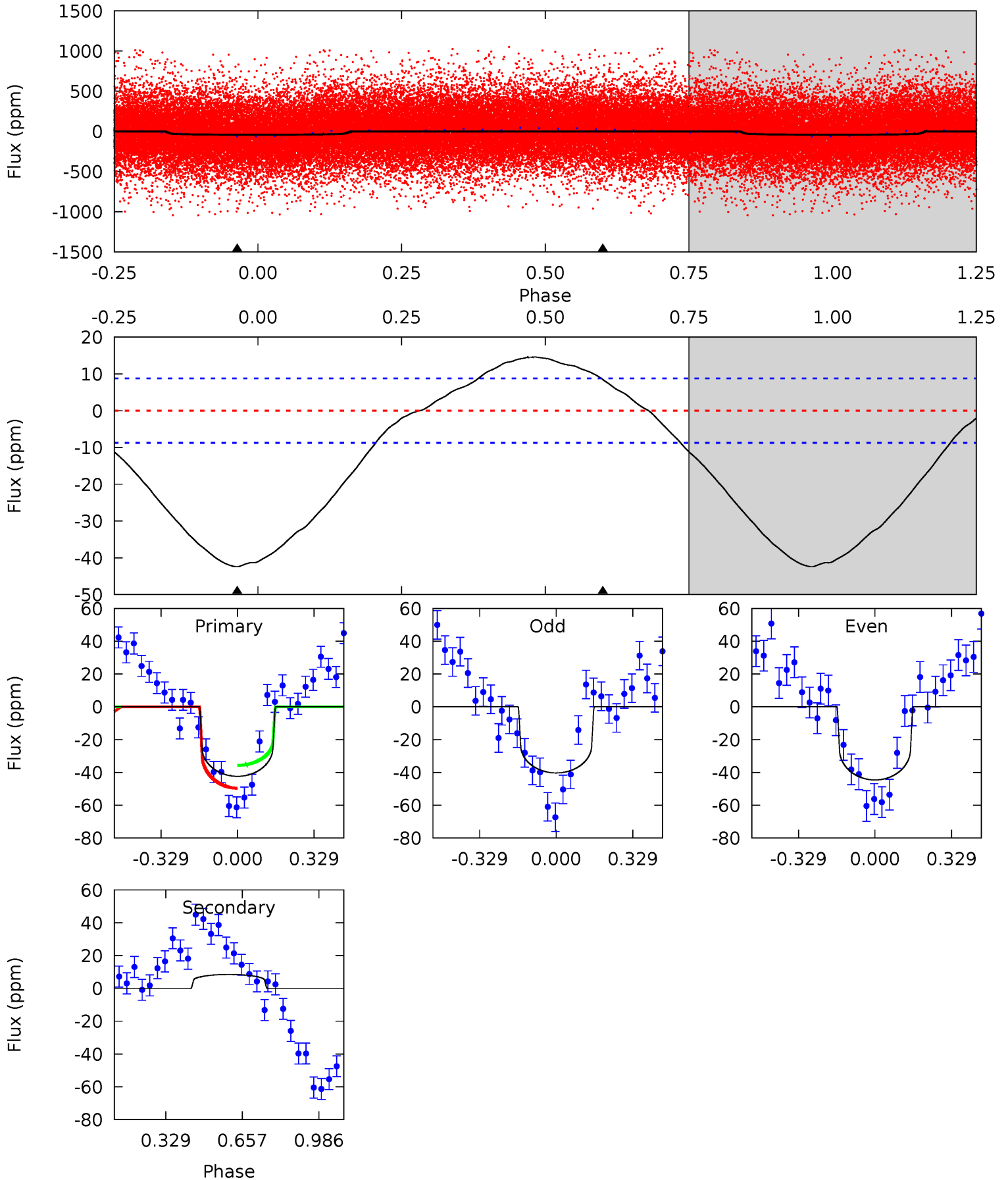




# DV Model-Shift Uniqueness Test

010155026-01, P = 2.100428 Days, E = 129.818889 Days

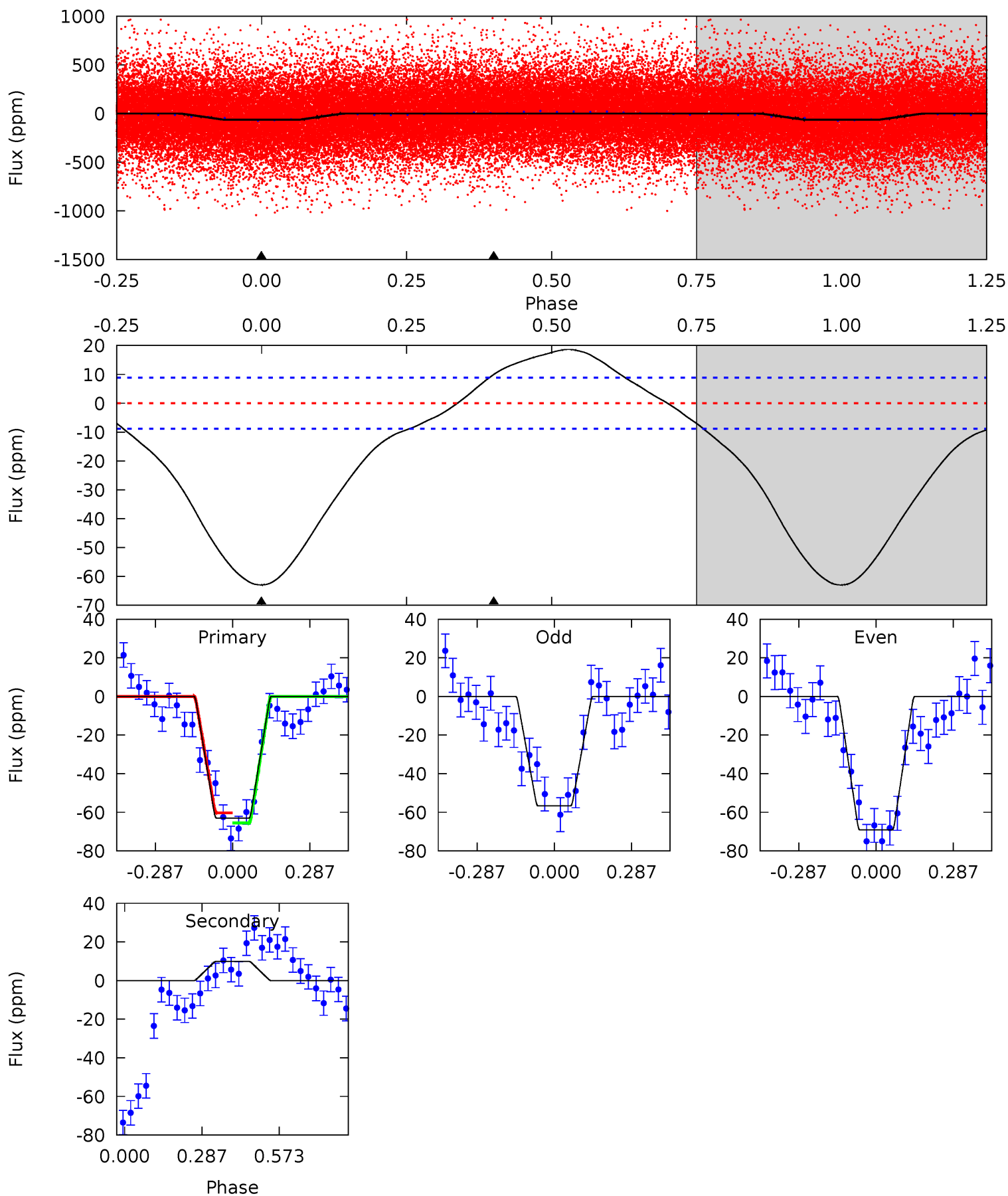
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	-4.18	0	0	4.31	0.98	1.17	20.9	20.9	-4.18	-4.18	1.08	0.99	0.26	3.53



# Alt Model-Shift Uniqueness Test

010155026-01, P = 2.100234 Days, E = 129.854883 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
30.9	-4.88	0	0	4.34	1.07	1.84	30.9	30.9	-4.88	-4.88	3.07	1.12	0.23	1.27





### Stellar Parameters For KIC 010155026

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7910^{+216}_{-351}$	$4.132^{+0.094}_{-0.175}$	$0.070^{+0.250}_{-0.400}$	$1.896^{+0.508}_{-0.339}$	$1.777^{+0.183}_{-0.275}$	$0.367^{+0.197}_{-0.176}$
	+3%/-4%	+2%/-4%	+357%/-571%	+27%/-18%	+10%/-15%	+54%/-48%
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 010155026-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$8 \pm 2$	$1.08^{+0.57}_{-0.53}$	$3422^{+237}_{-210}$	$-5854^{+972}_{-2423}$	$-5.955^{+3.500}_{-15.199}$
Alt.	$10 \pm 2$	$1.78^{+0.65}_{-0.59}$	$3440^{+237}_{-197}$	$-4914^{+483}_{-911}$	$-2.496^{+1.185}_{-3.180}$

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

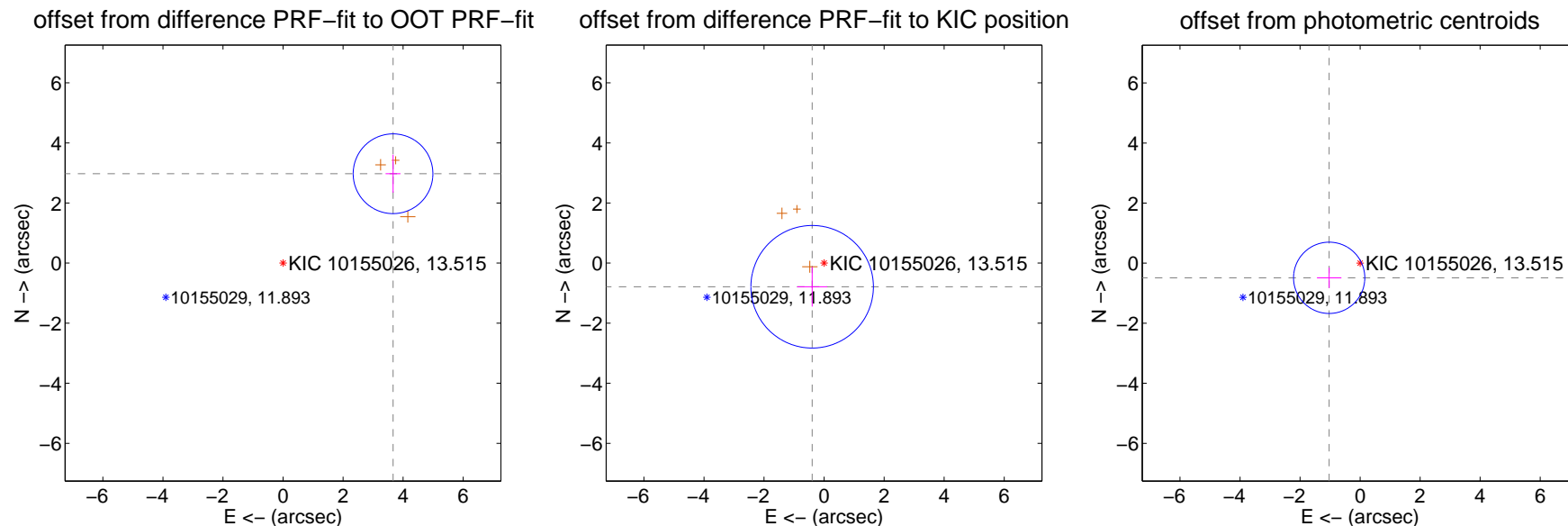
## DV Centroid Data

Supplemental centroid analysis for 010155026-01. Kepler magnitude: 13.52. Transit SNR 7.62

There are 2 quarters with good PRF difference image offsets

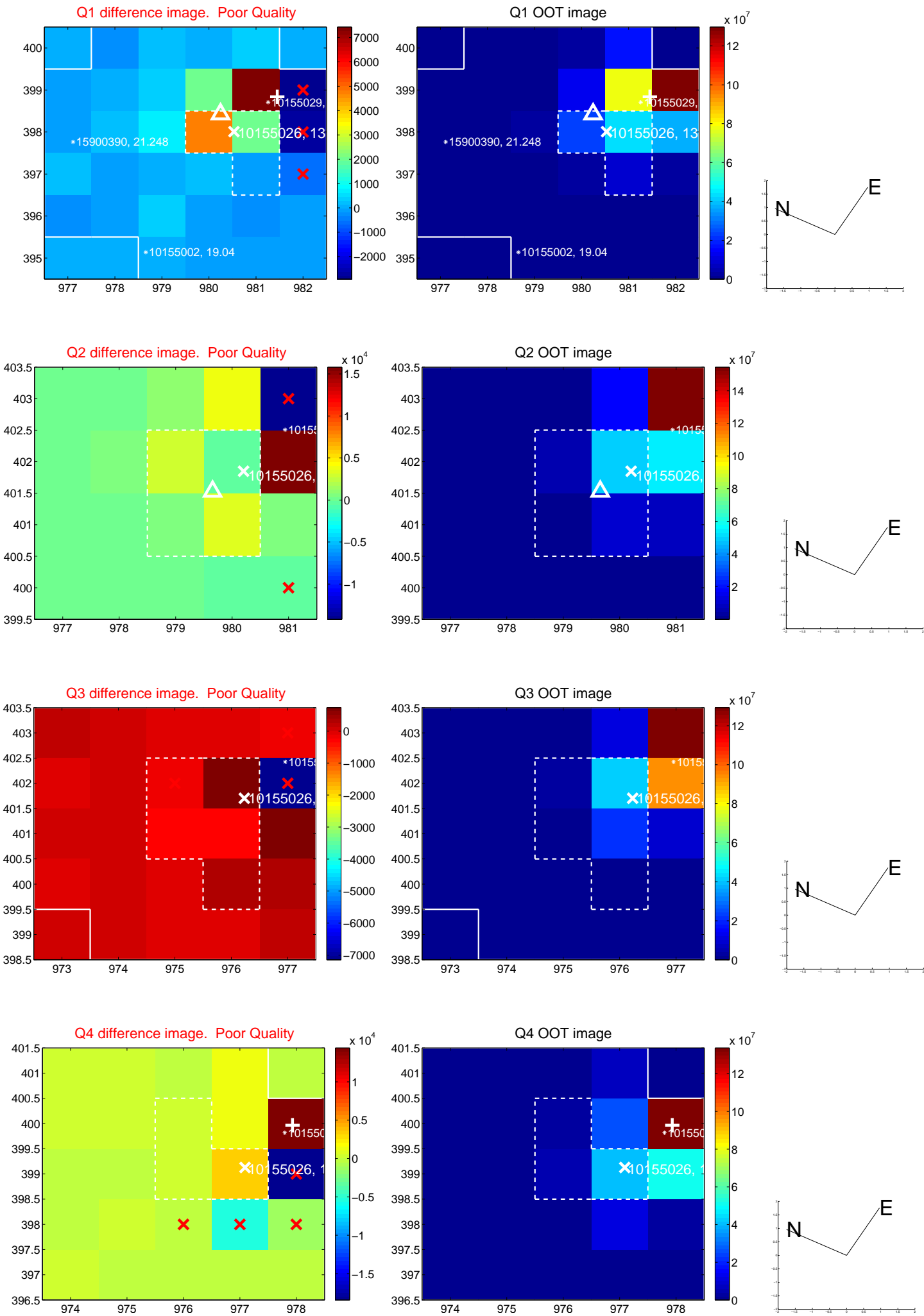
The OOT PRF centroid is offset from the target star catalog position by about 4.92 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.720 \pm 0.442$	$10.67$	$-3.664 \pm 0.248$	$2.975 \pm 0.632$
PRF-fit source offset from KIC position	$0.883 \pm 0.680$	$1.30$	$0.397 \pm 0.502$	$-0.788 \pm 0.659$
photometric centroid source offset	$1.14 \pm 0.40$	$2.88$	$1.03 \pm 0.41$	$-0.49 \pm 0.34$

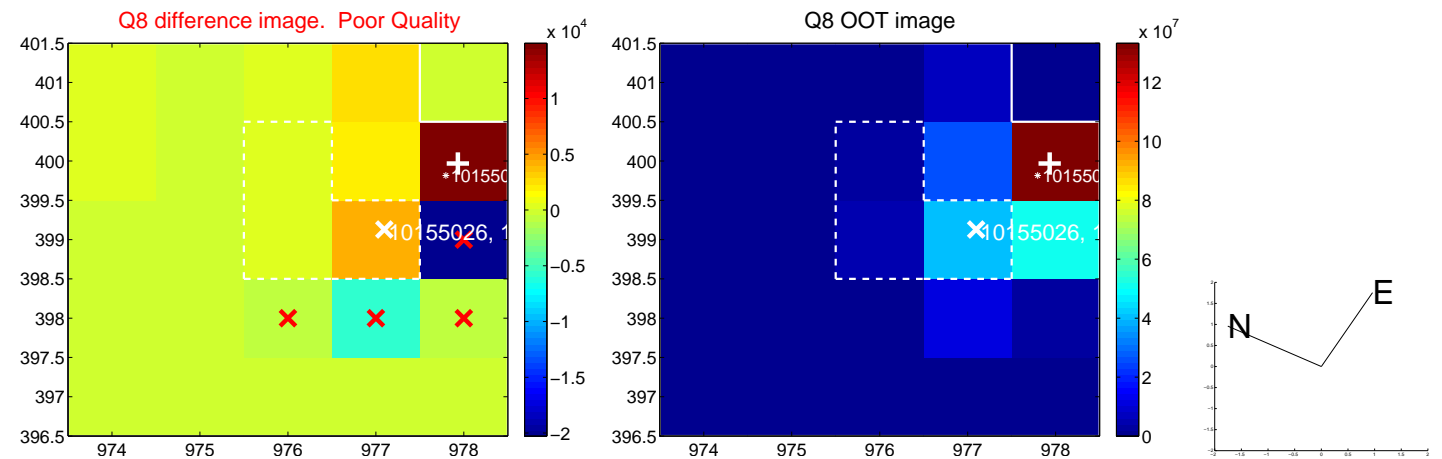
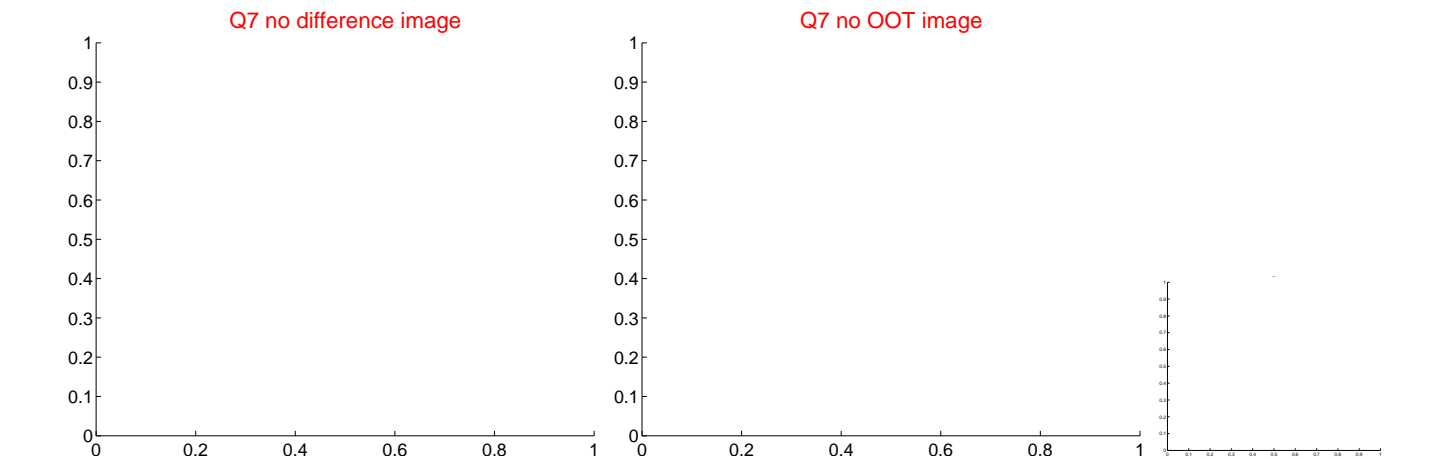
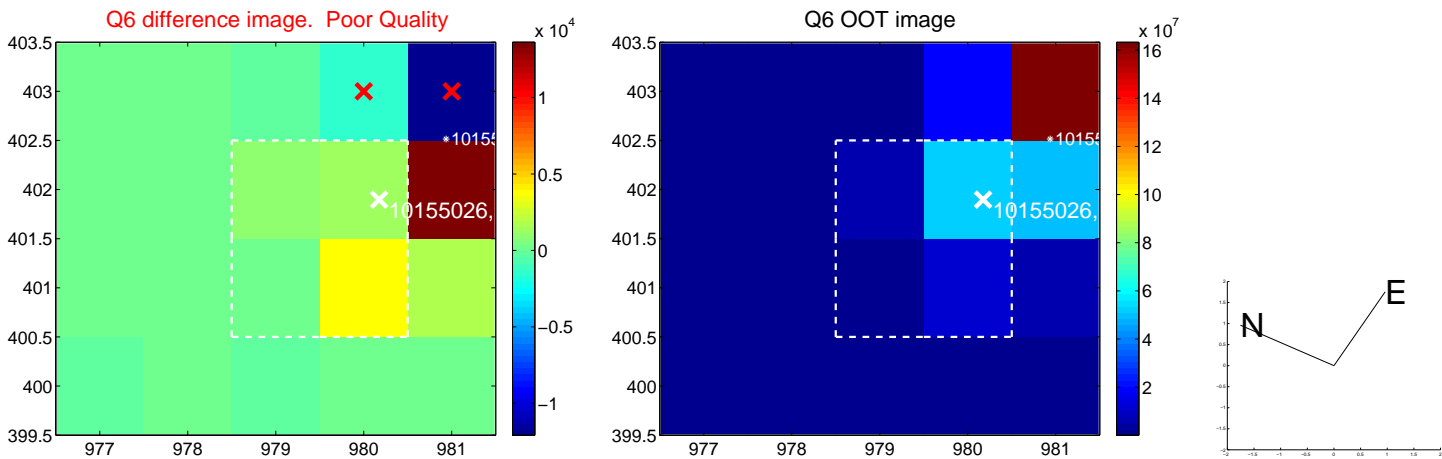
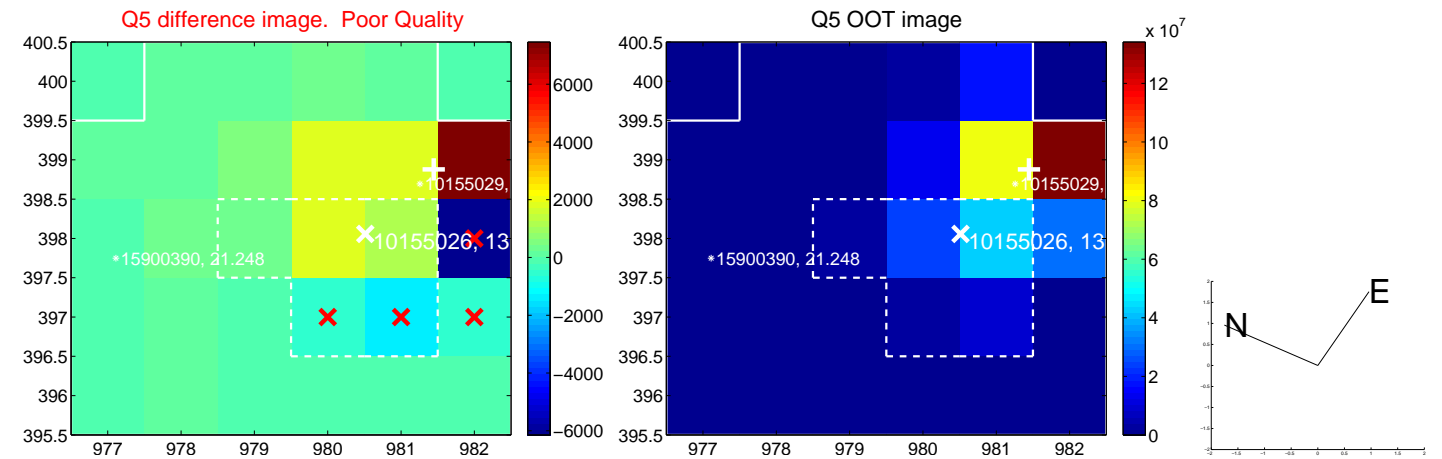


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

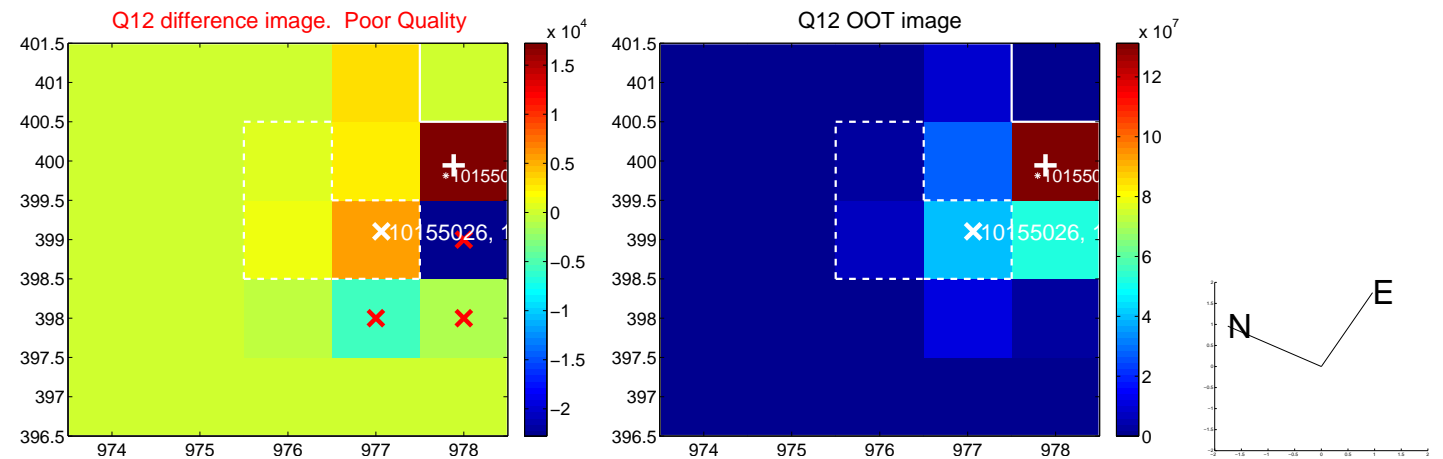
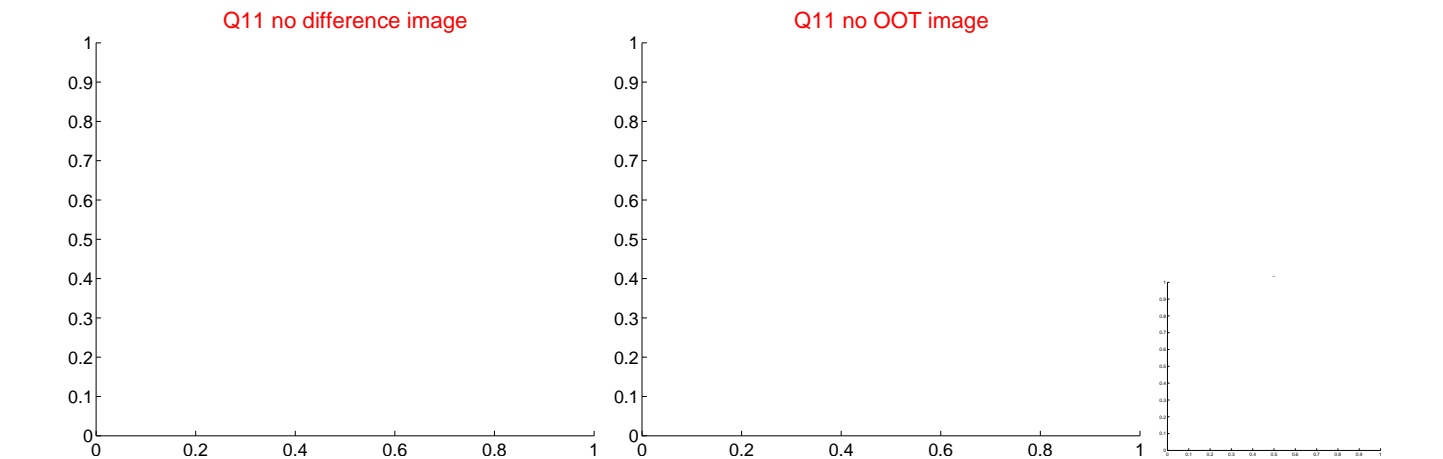
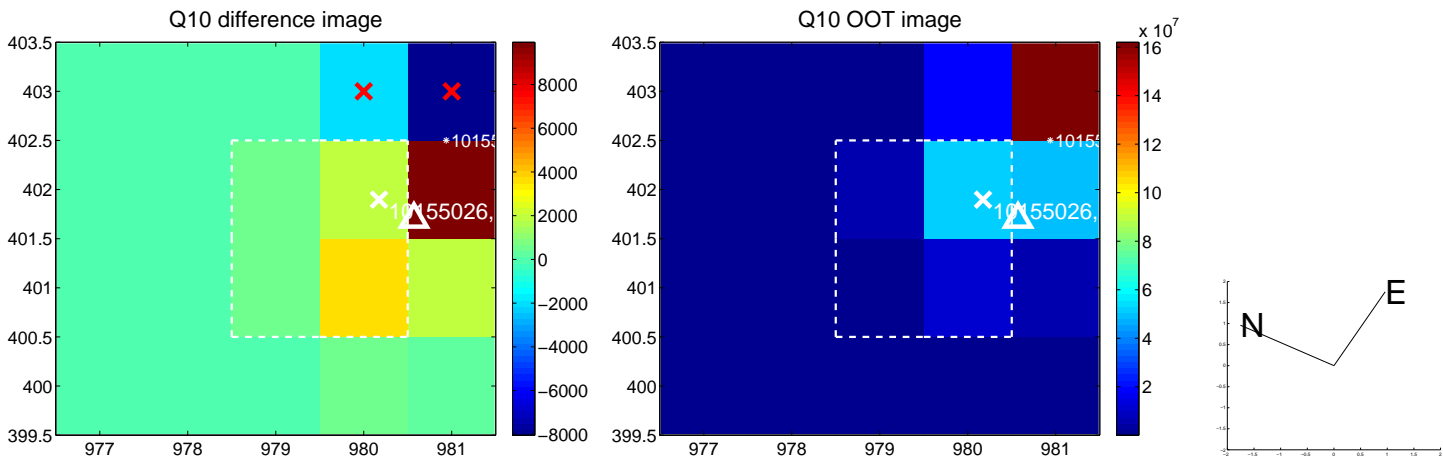
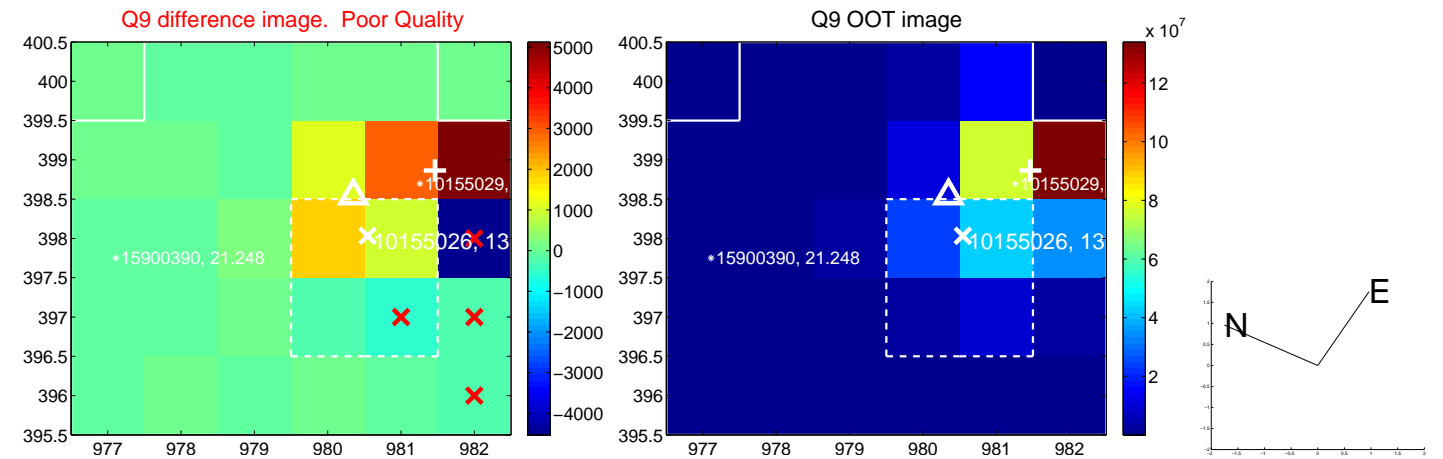


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

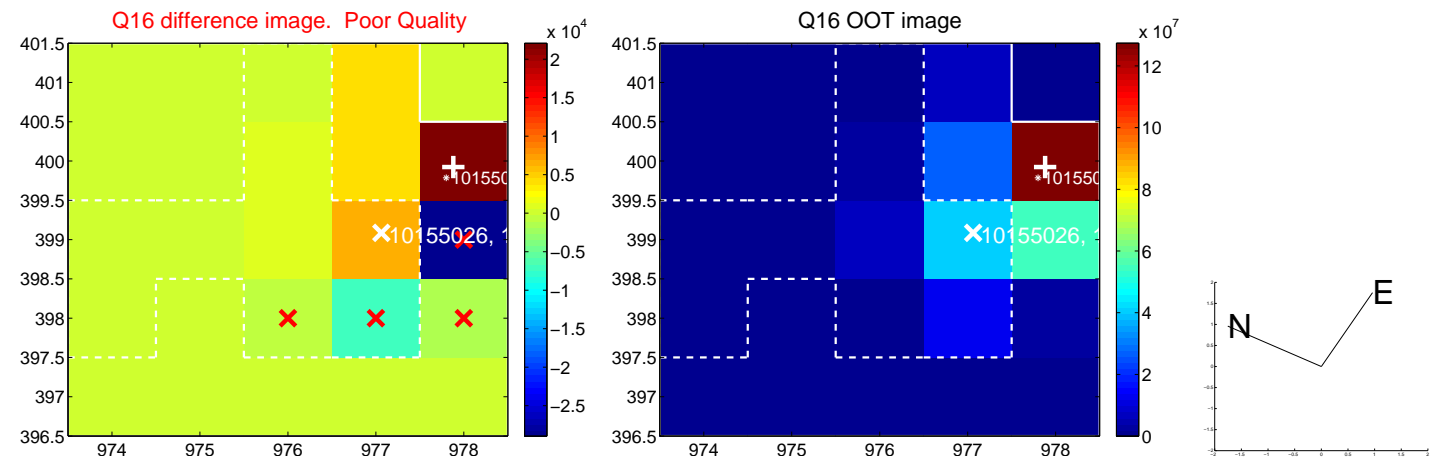
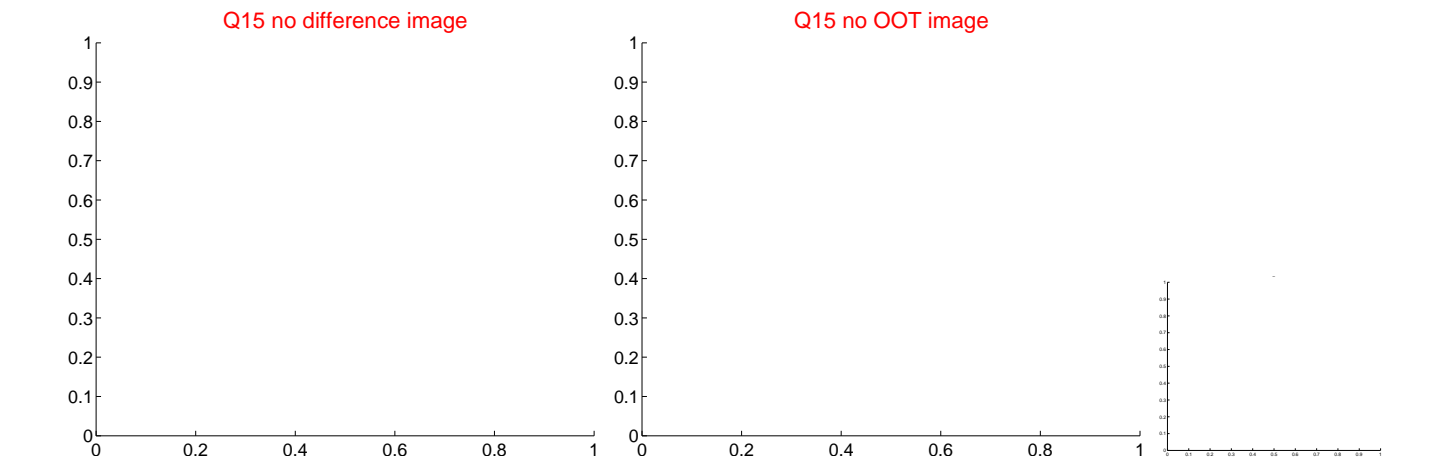
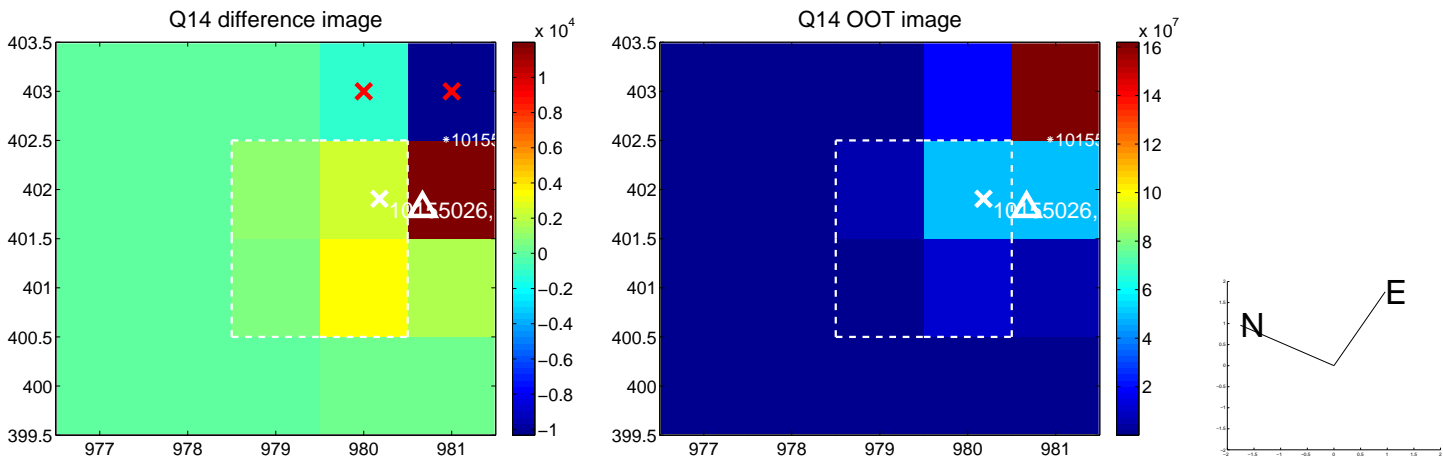
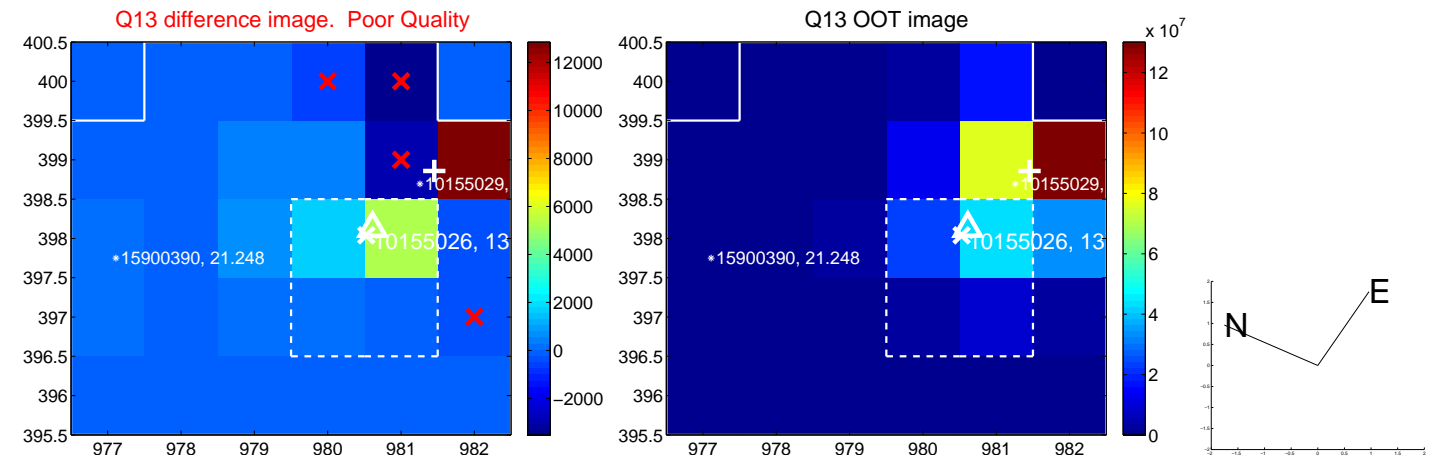




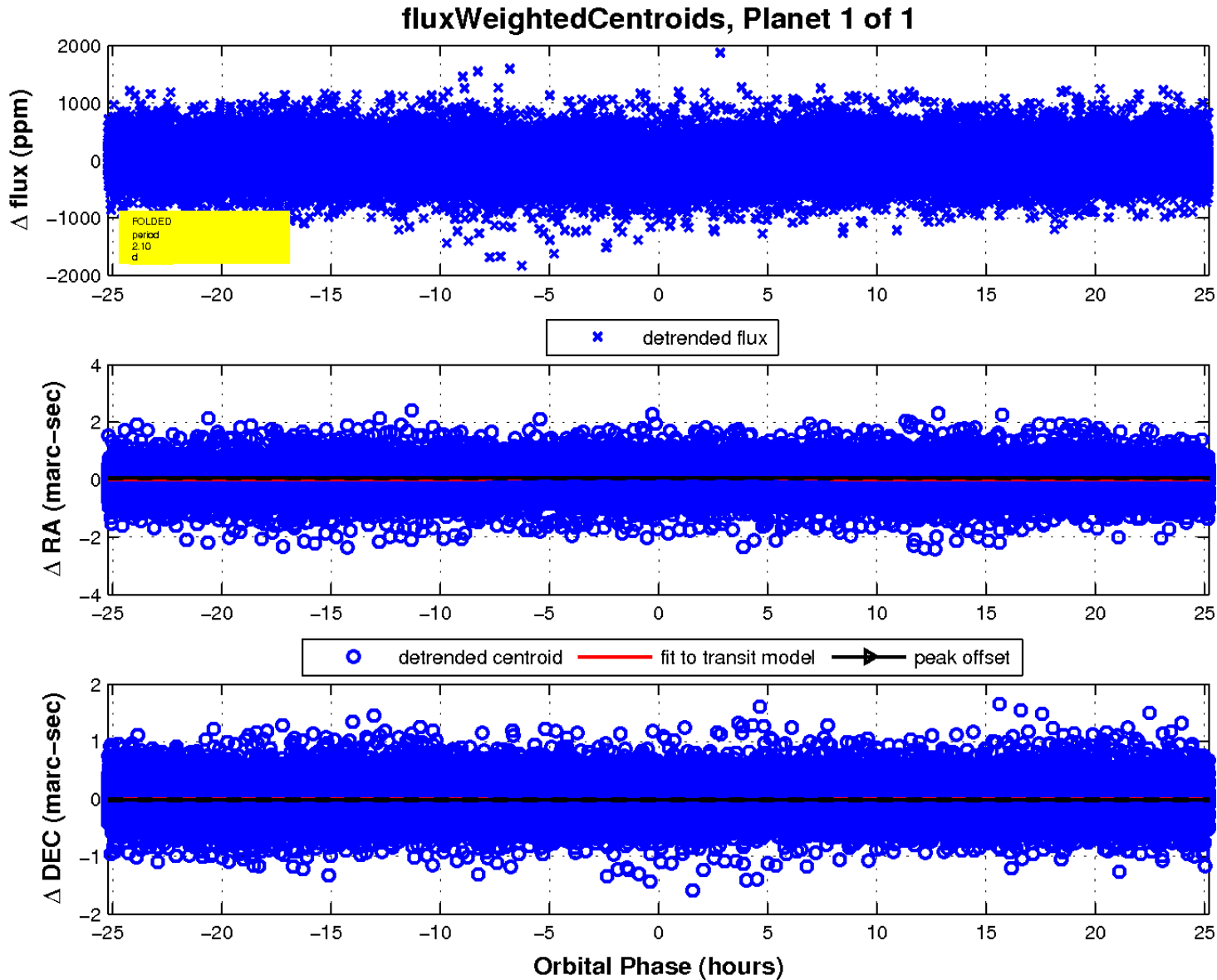
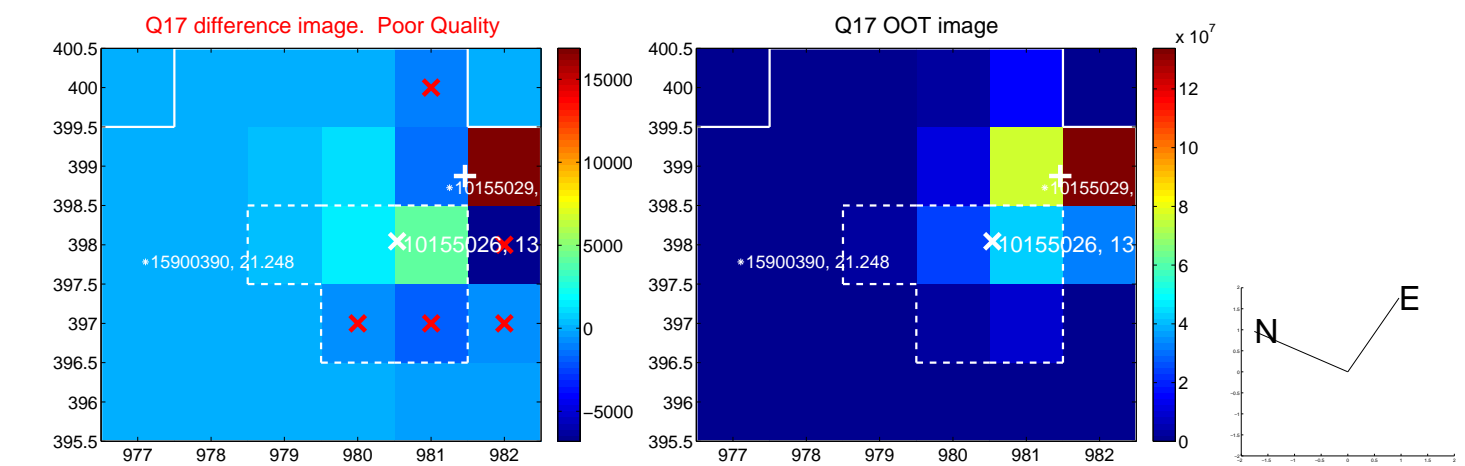
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

