

# KIC 011666141

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011666141-01	OBS	No	13.072438	137.159685	89.2	37.821	7.6	10.3	1.26	6332	2.40	196.66

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011666141-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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

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

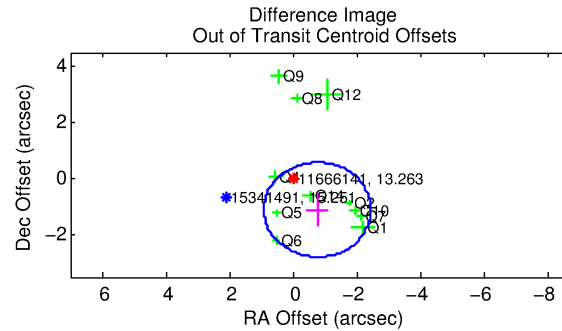
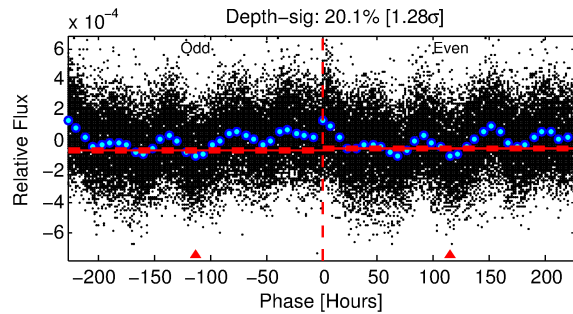
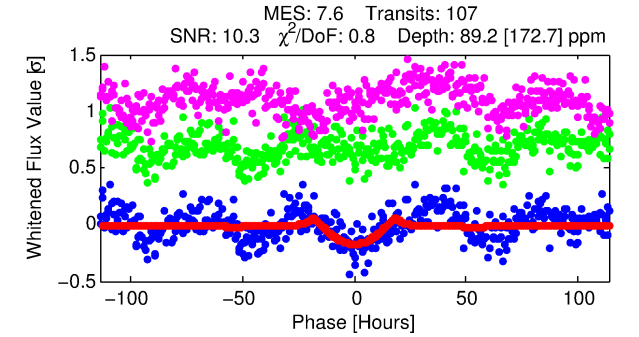
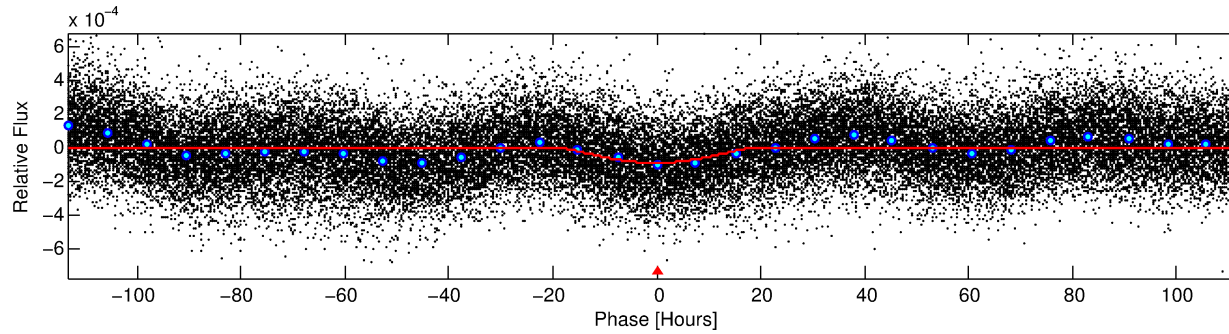
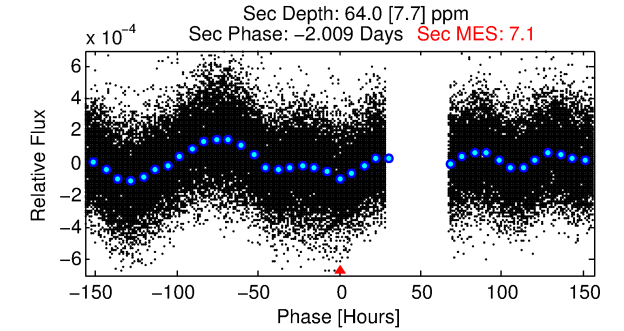
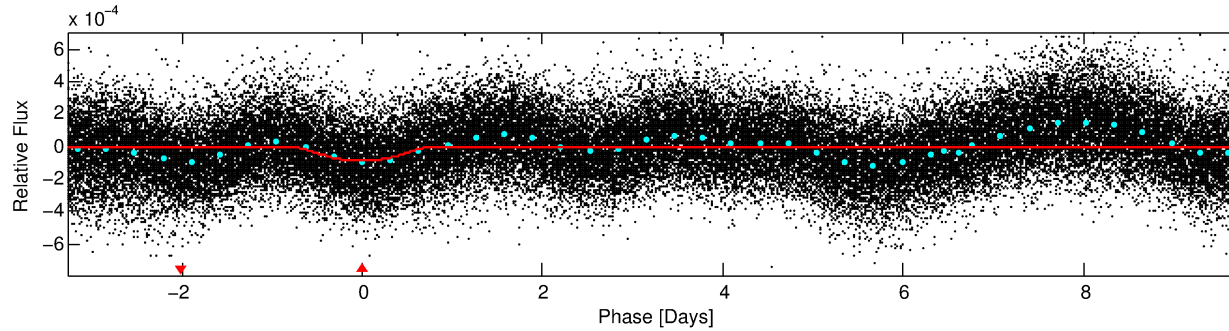
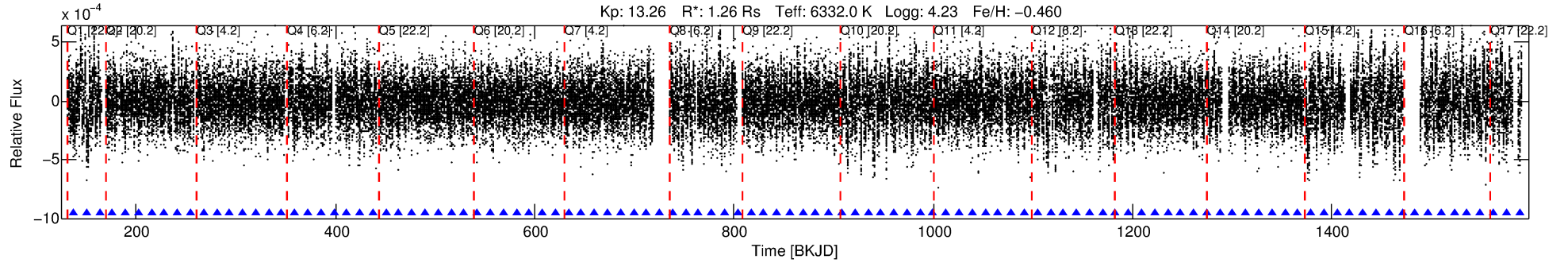
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011666141-01

No Significant Match Found

# DV One-Page Summary

KIC: 11666141 Candidate: 1 of 1 Period: 13.072 d



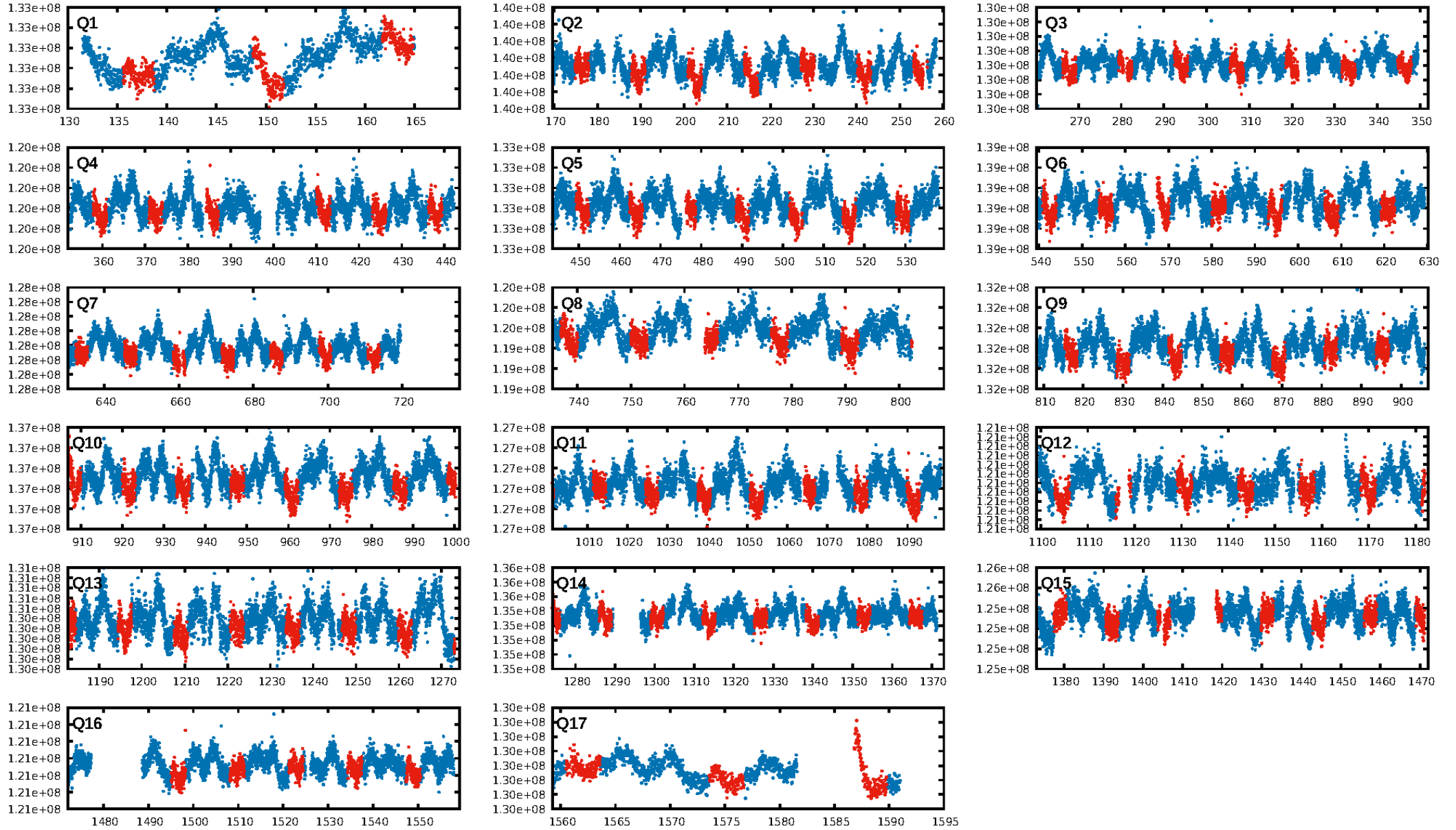
## DV Fit Results:

Period = 13.07244 [0.00103] d  
Epoch = 137.1597 [0.0645] BKJD  
Rp/R\* = 0.0175 [0.0241]  
a/R\* = 1.12 [0.06]  
b = 1.00 [0.06]  
Seff = 196.66 [56.60]  
Teq = 955 [69] K  
Rp = 2.40 [3.35] Re  
a = 0.1079 [0.0188] AU  
Ag = 70.89 [196.95] [0.35 $\sigma$ ]  
Teffp = 4284 [2960] K [1.12 $\sigma$ ]

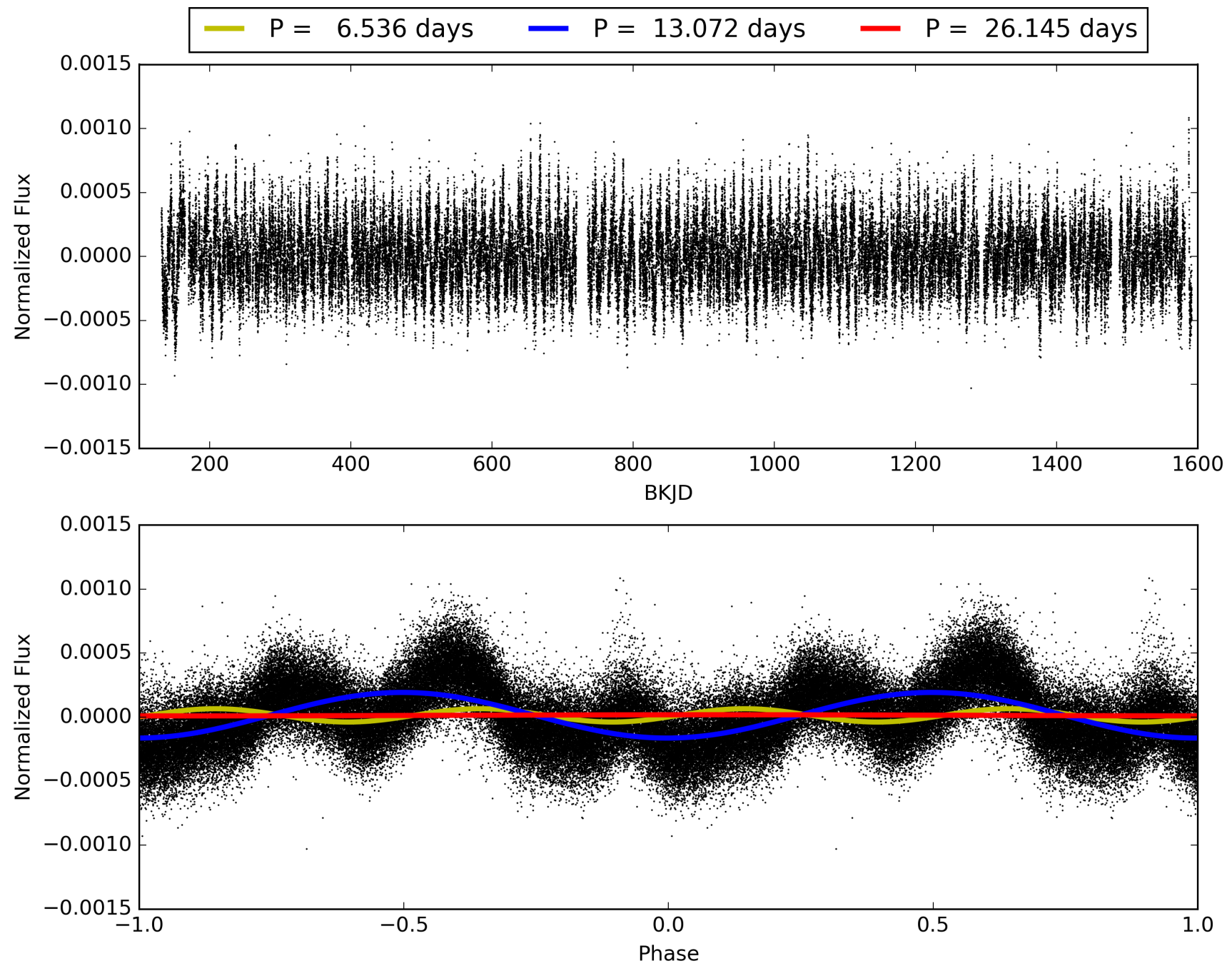
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 8.36e-14  
RollingBand-fgt: 1.00 [101/101]  
GhostDiagnostic-chr: 2.44  
Centroid-sig: 16.4%  
Centroid-so: 0.560 arcsec [1.13 $\sigma$ ]  
OotOffset-rm: 1.345 arcsec [2.39 $\sigma$ ]  
OotOffset-st: 4/1/3/3 [11]  
KicOffset-rm: 1.246 arcsec [2.10 $\sigma$ ]  
KicOffset-st: 4/1/3/3 [11]  
DiffImageQuality-fgm: 0.55 [6/11]  
DiffImageOverlap-fno: 1.00 [16/16]

# TCE 011666141-01, PDC Light Curves

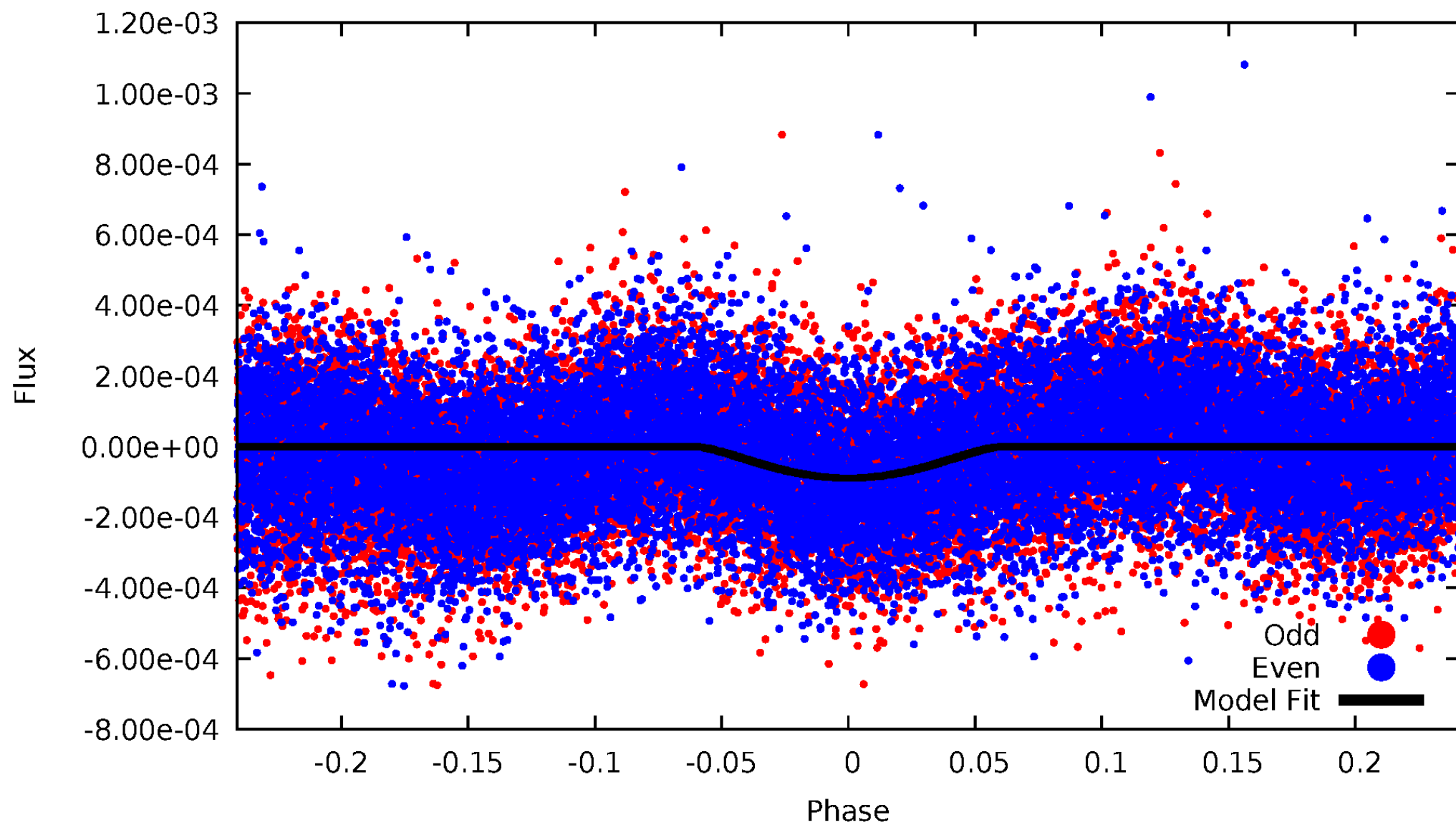


# TCE 011666141-01



# DV Odd/Even

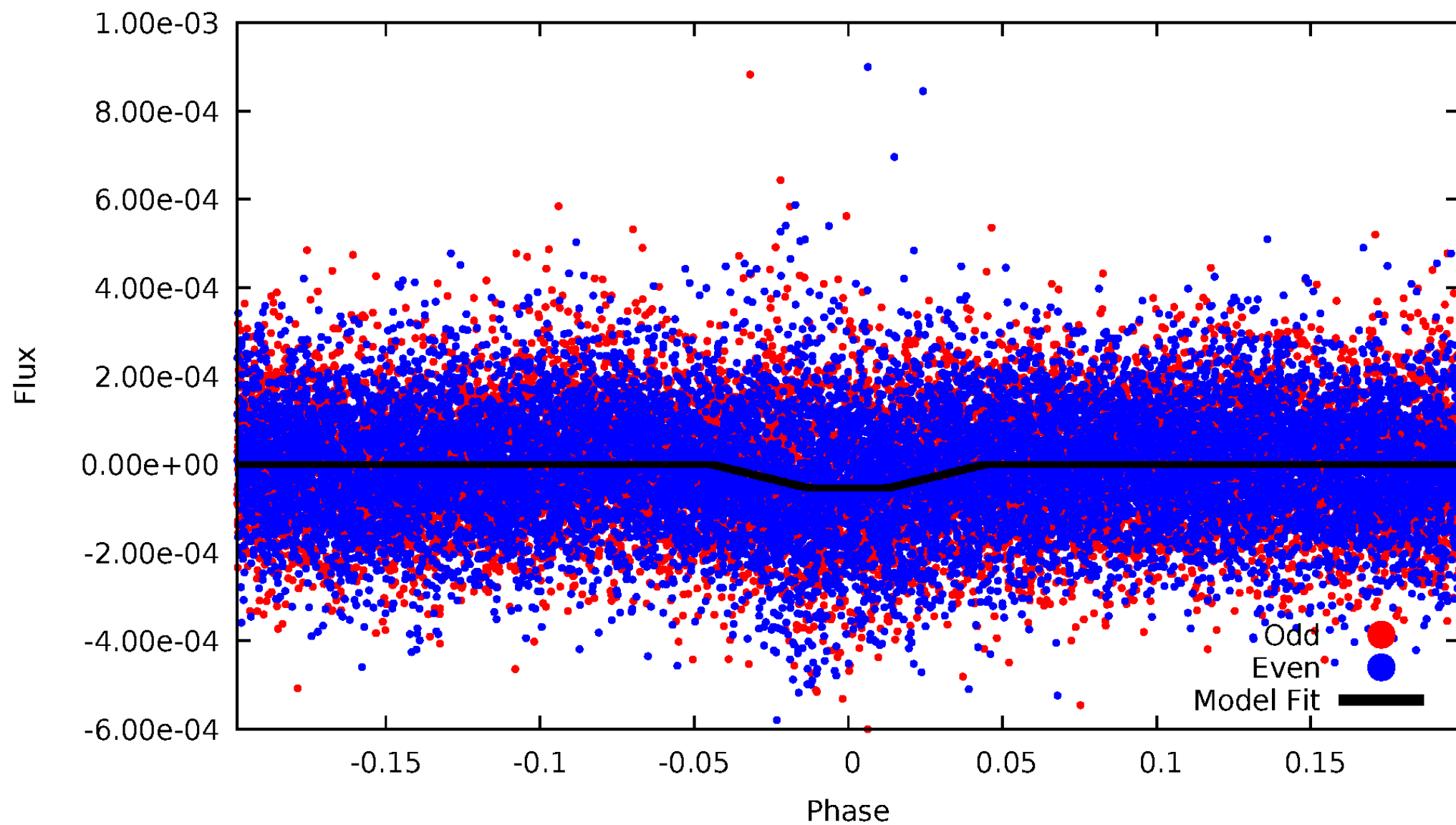
TCE 011666141-01



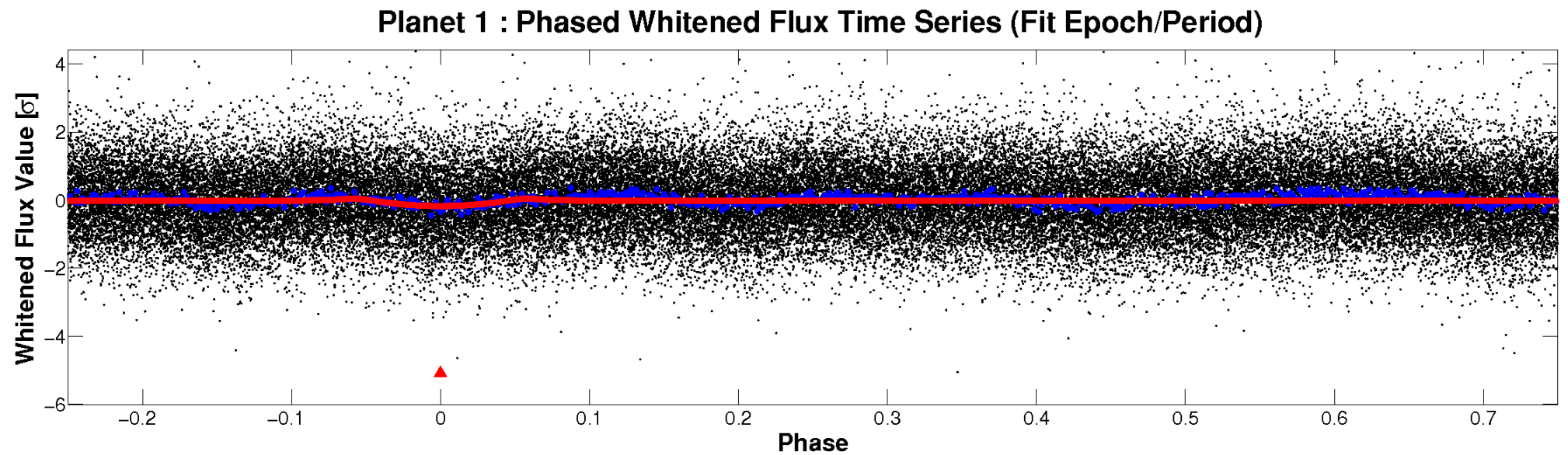
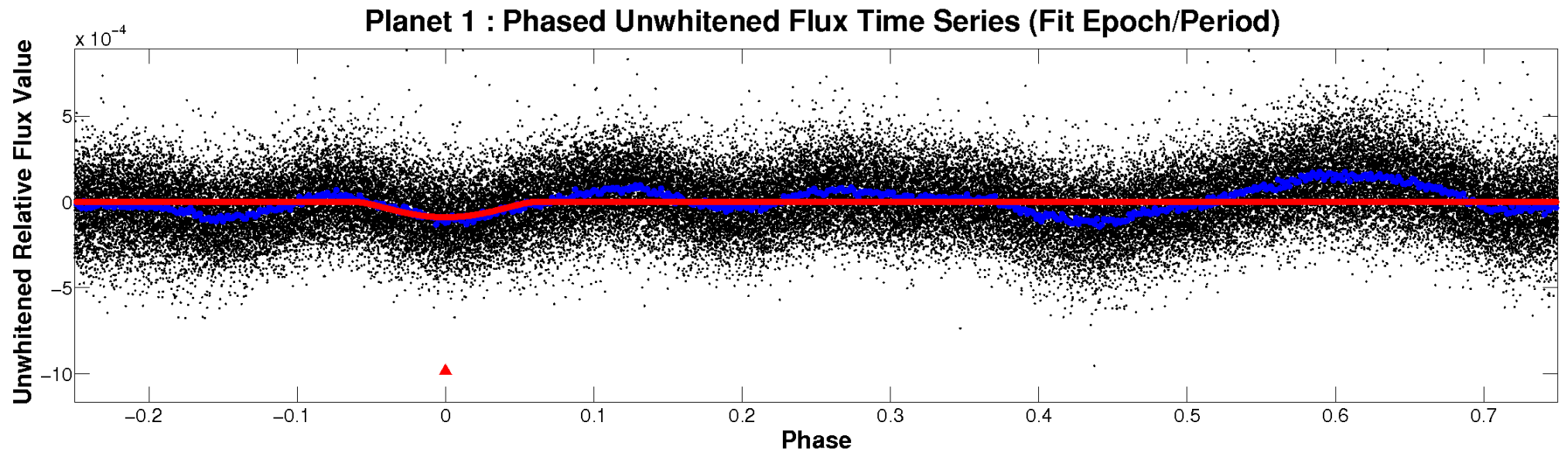


# ALT Odd/Even

TCE 011666141-01

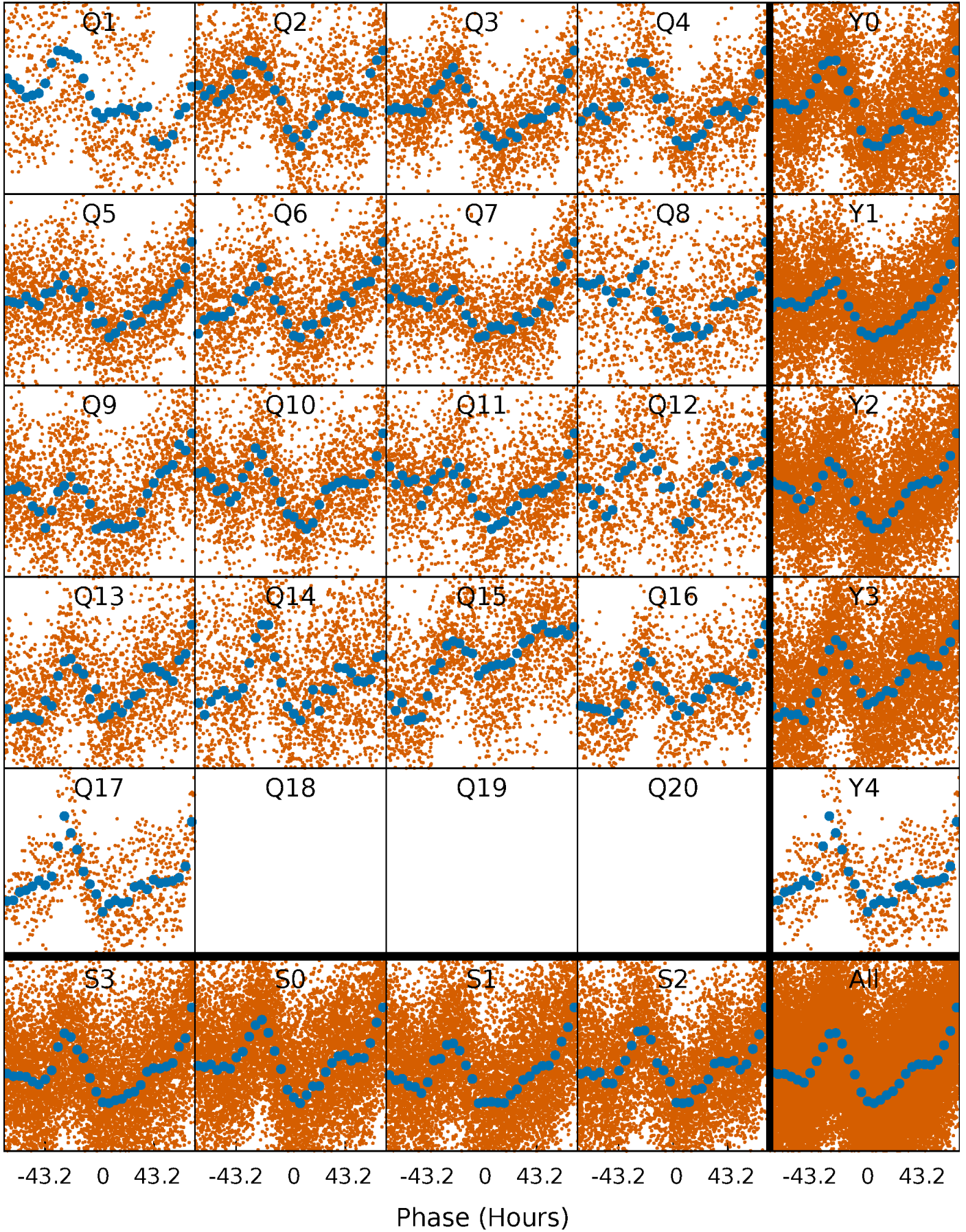


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

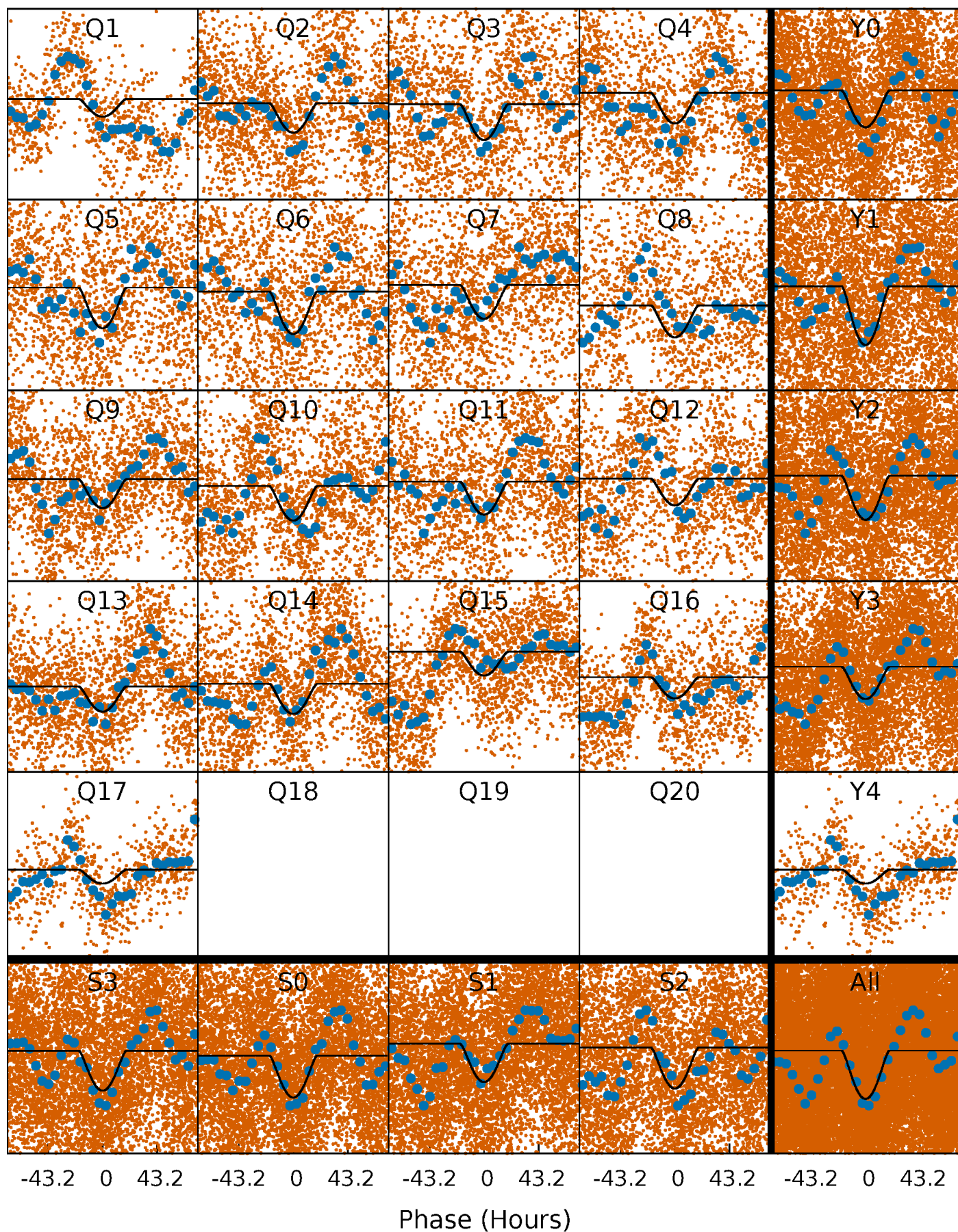
TCE 011666141-01 P= 13.072438 Days  $T_0=137.159685$  (BKJD)





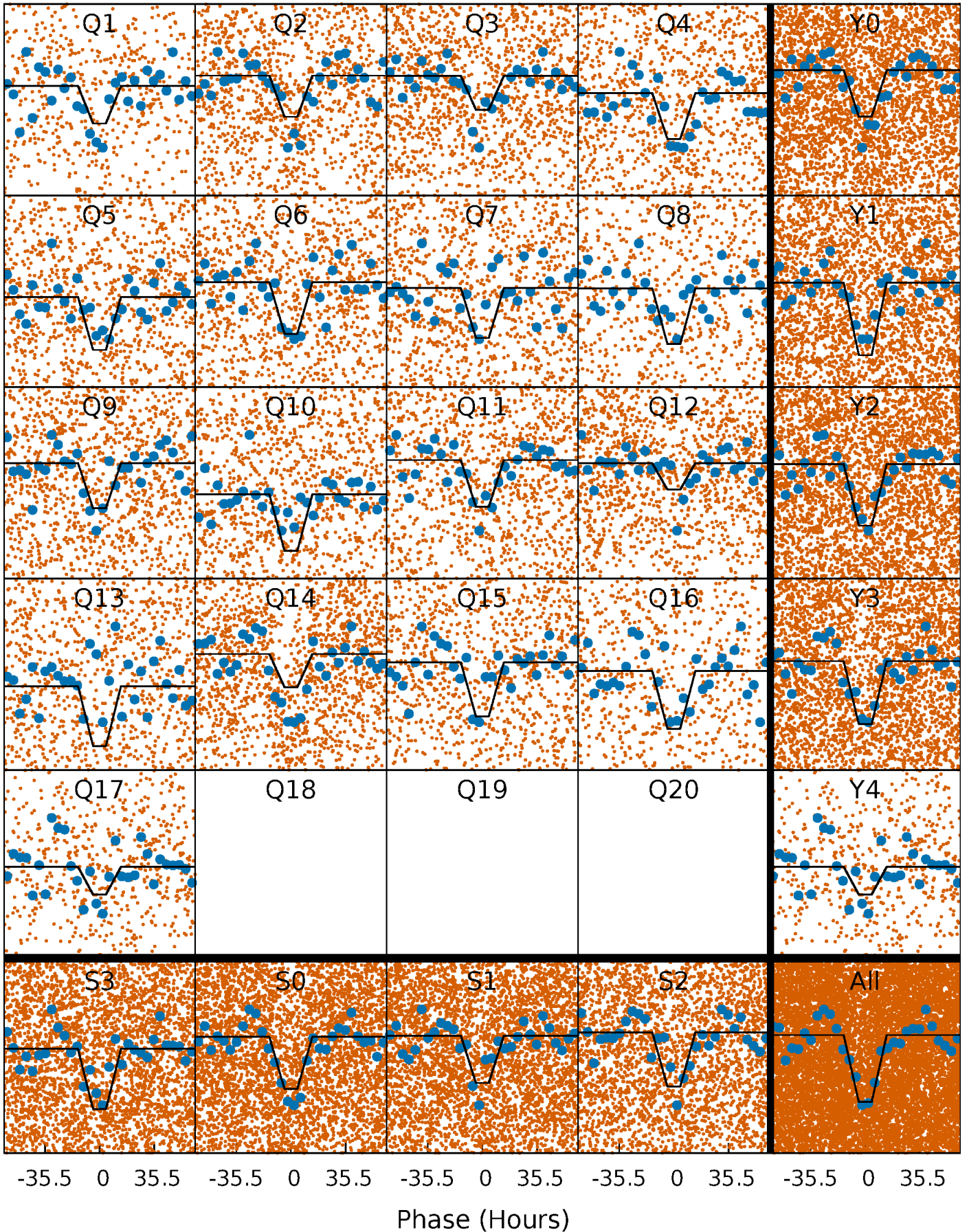
# DV Quarter-Phased Transit Curves

TCE 011666141-01 P= 13.072438 Days  $T_0=137.159685$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 011666141-01 P= 13.072349 Days  $T_0=137.235130$  (BKJD)

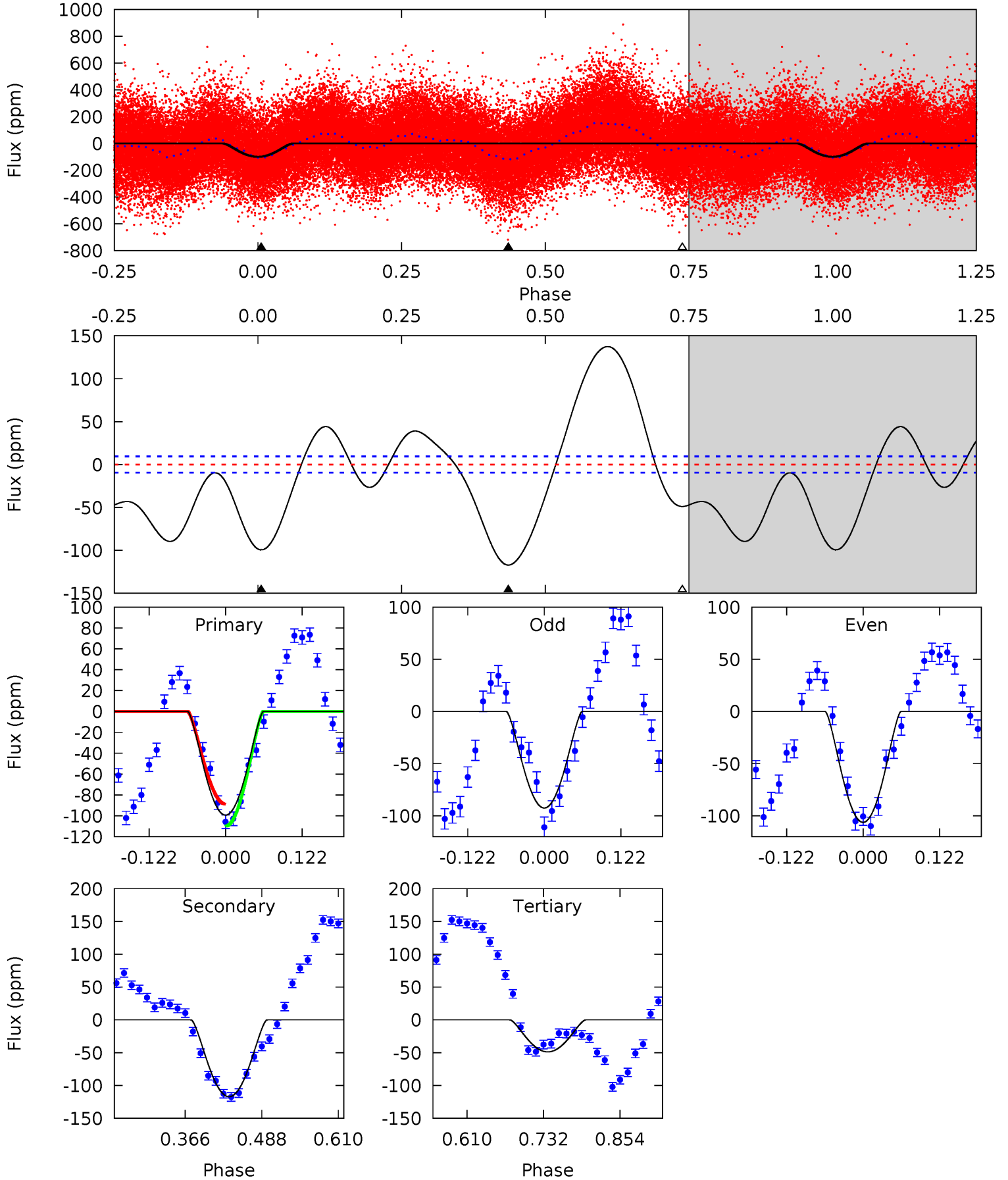




# DV Model-Shift Uniqueness Test

011666141-01,  $P = 13.072438$  Days,  $E = 124.087247$  Days

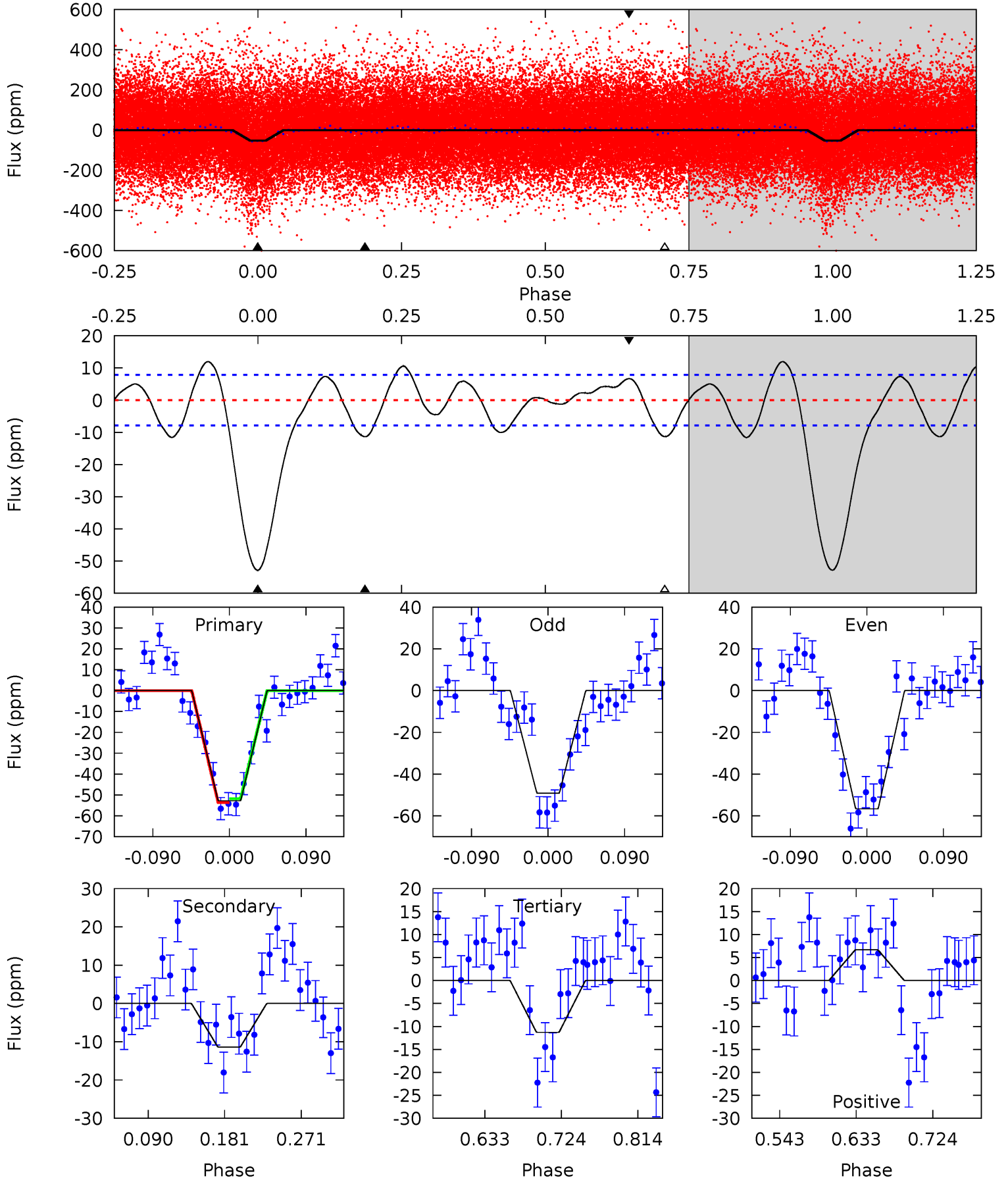
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.8	56.4	23.5	0	4.52	1.55	32.2	24.3	47.8	32.9	56.4	3.34	1.01	0.54	5.28



# Alt Model-Shift Uniqueness Test

011666141-01,  $P = 13.072349$  Days,  $E = 124.162781$  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
30.8	6.64	6.59	3.90	4.59	1.69	3.13	24.2	26.9	0.04	2.73	2.20	0.98	0.18	0.52





### Stellar Parameters For KIC 011666141

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6332^{+82}_{-82}$	$4.228^{+0.168}_{-0.112}$	$-0.460^{+0.150}_{-0.150}$	$1.261^{+0.201}_{-0.221}$	$0.981^{+0.064}_{-0.059}$	$0.689^{+0.550}_{-0.224}$
	+1%/-1%	+4%/-3%	+33%/-33%	+16%/-18%	+7%/-6%	+80%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 011666141-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-117 \pm 2$	$3.24^{+2.97}_{-2.15}$	$1329^{+59}_{-62}$	$4439^{+2988}_{-882}$	$72^{+552}_{-53}$
Alt.	$-11 \pm 2$	$2.52^{+2.62}_{-1.71}$	$1329^{+62}_{-69}$	$3270^{+1559}_{-628}$	$12^{+98}_{-9}$

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

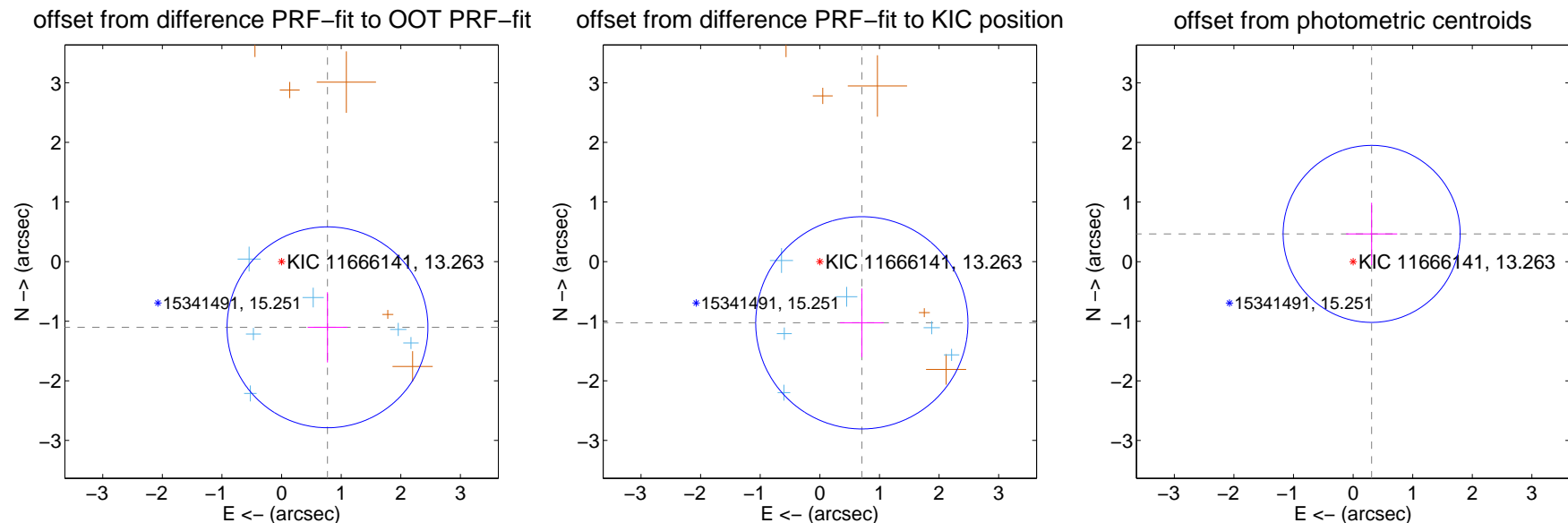
## DV Centroid Data

Supplemental centroid analysis for 011666141-01. Kepler magnitude: 13.26. Transit SNR 10.32

There are 6 quarters with good PRF difference image offsets

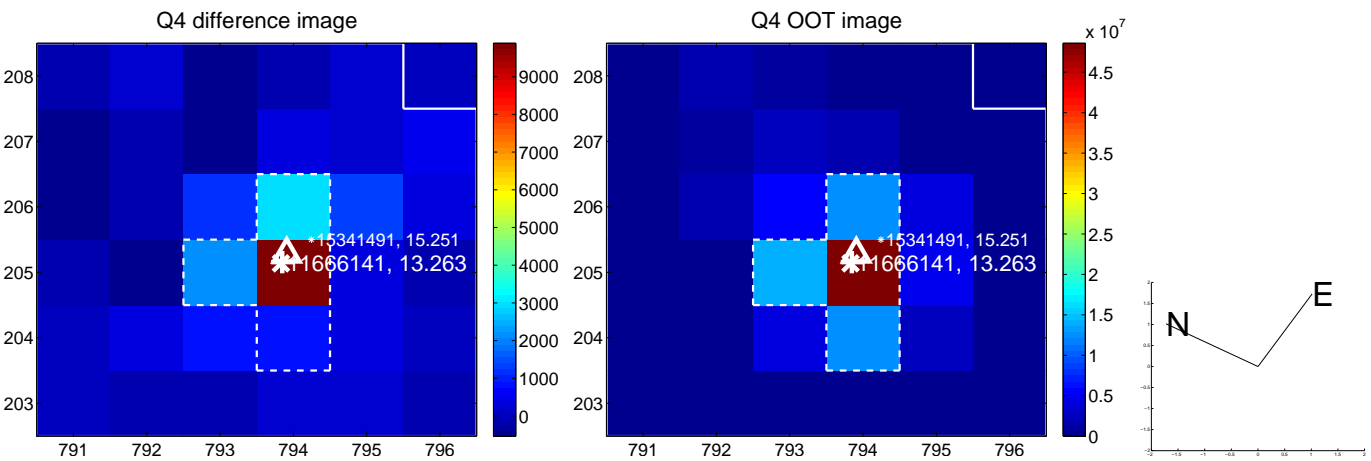
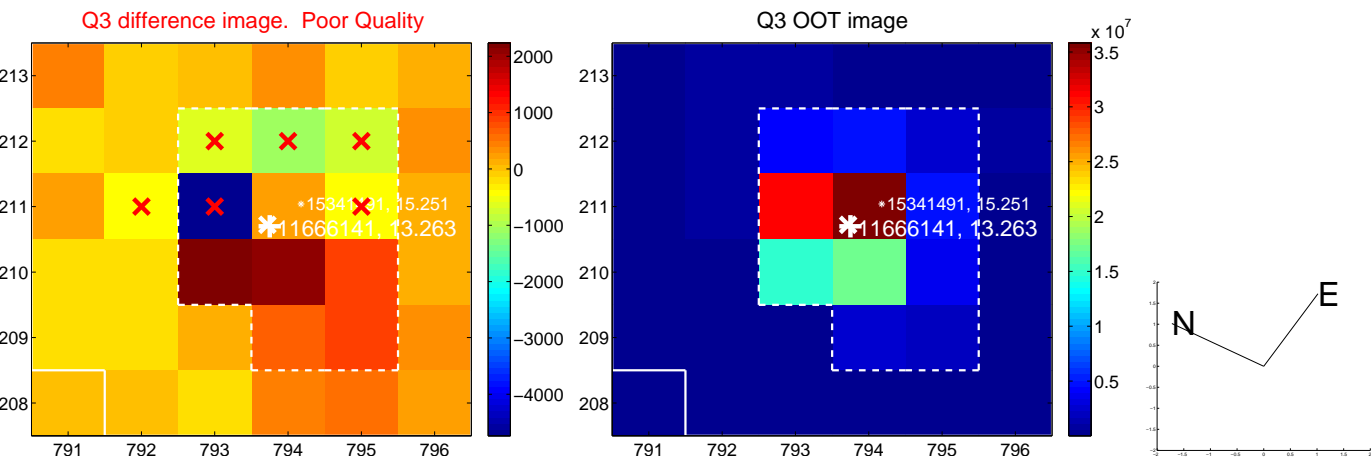
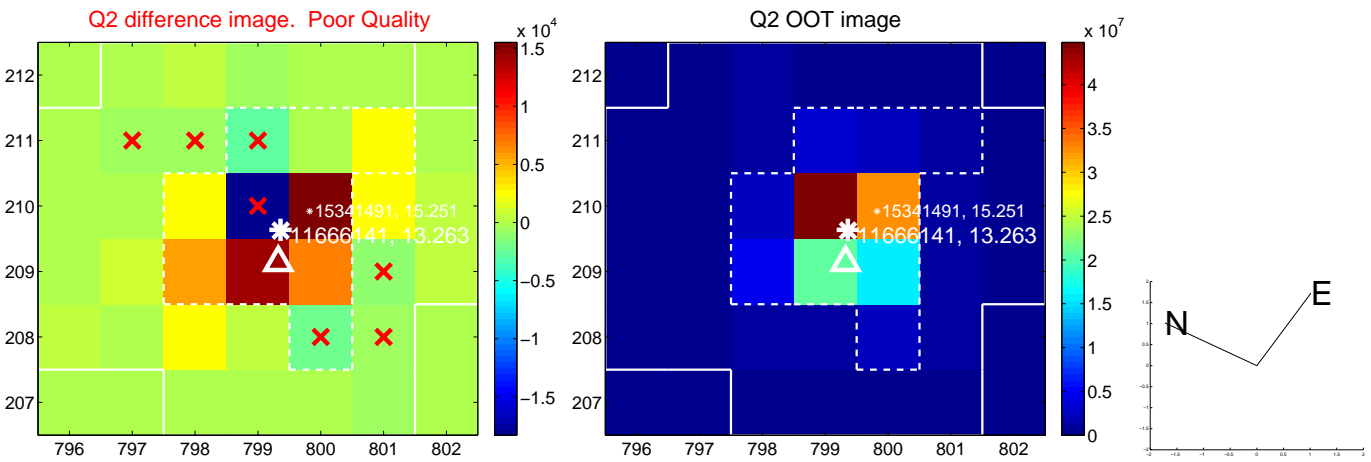
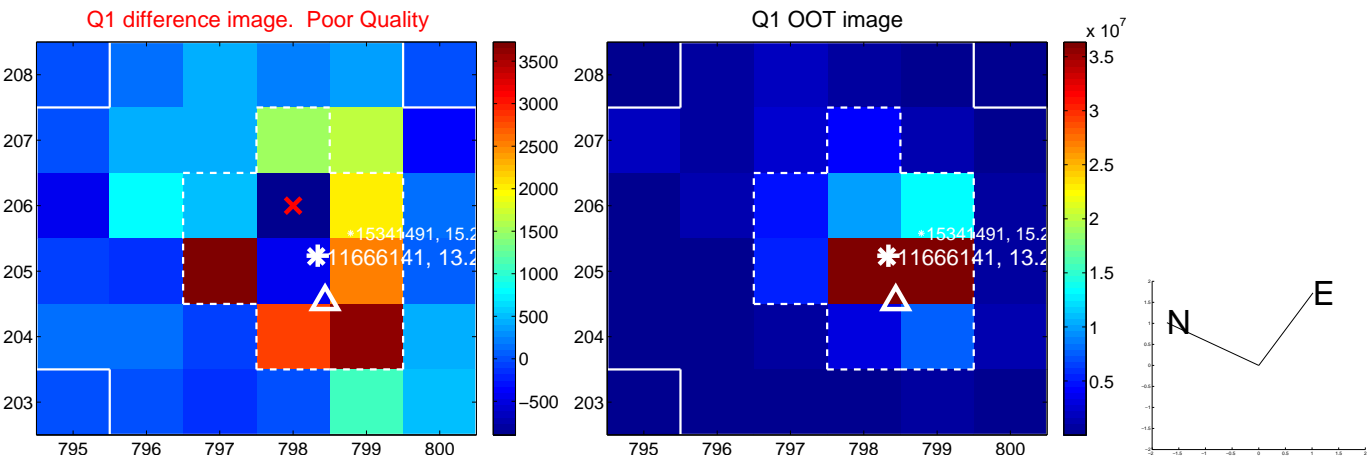
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.345 \pm 0.562$	2.39	$-0.770 \pm 0.335$	$-1.103 \pm 0.589$
PRF-fit source offset from KIC position	$1.246 \pm 0.593$	2.10	$-0.705 \pm 0.367$	$-1.027 \pm 0.575$
photometric centroid source offset	$0.56 \pm 0.50$	1.13	$-0.31 \pm 0.43$	$0.47 \pm 0.52$

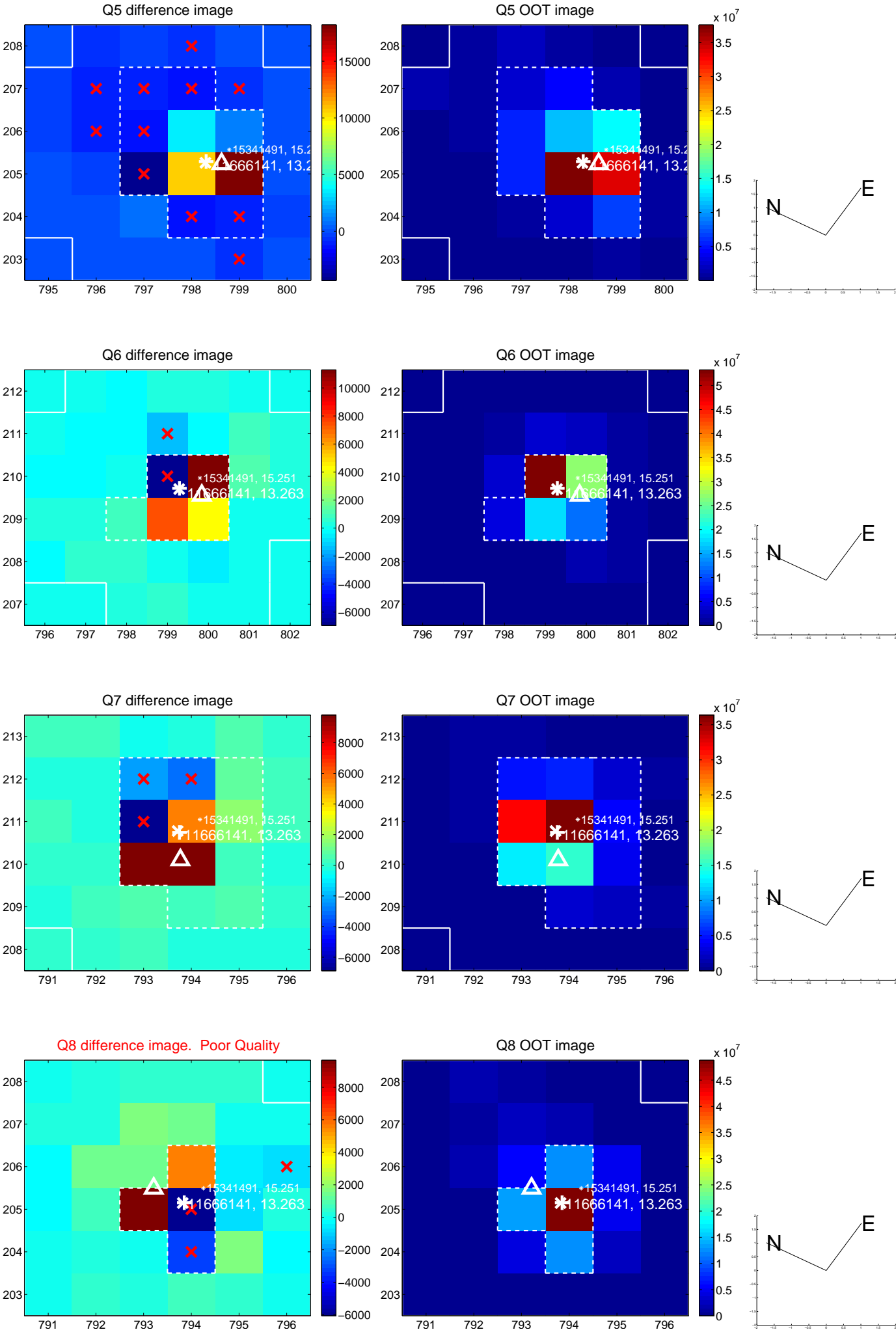


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

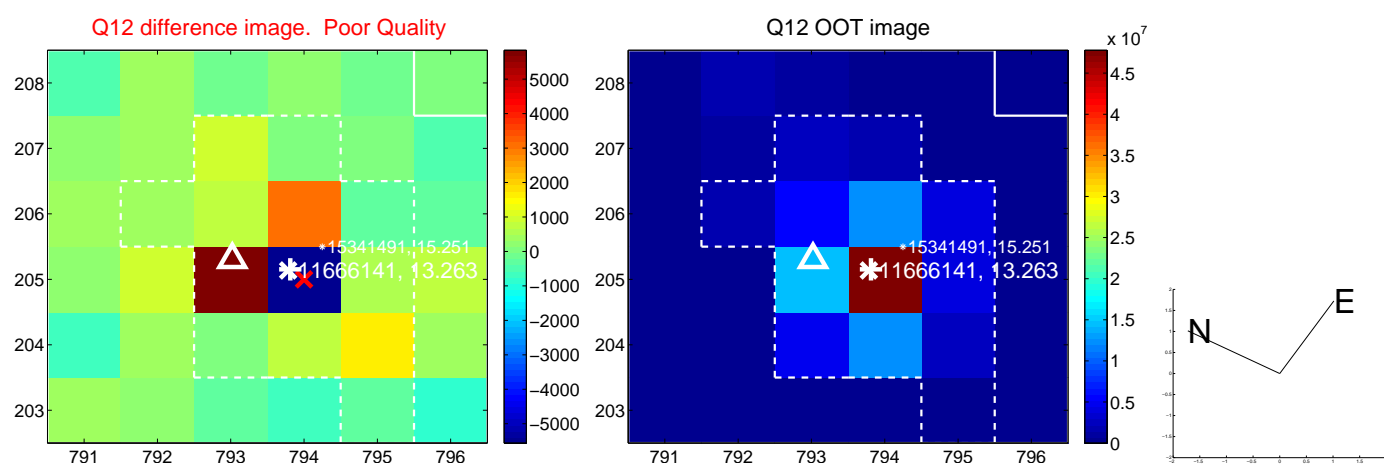
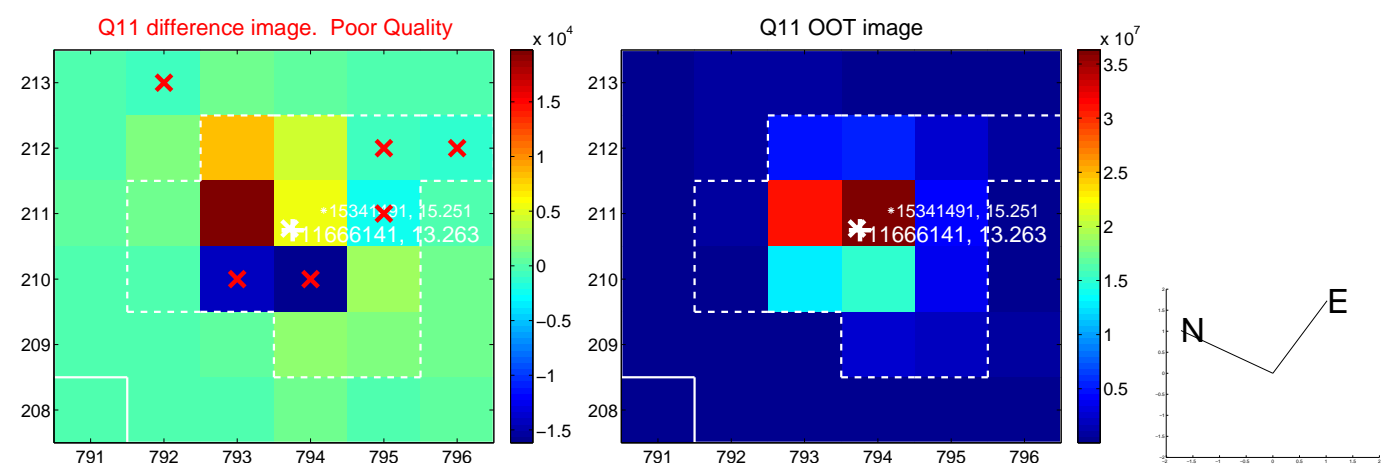
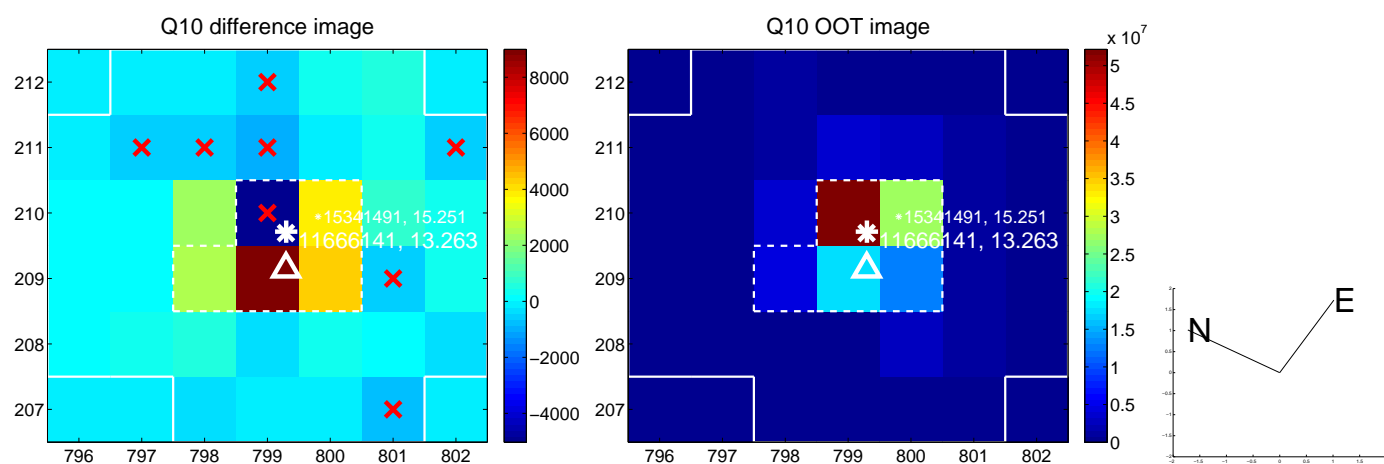
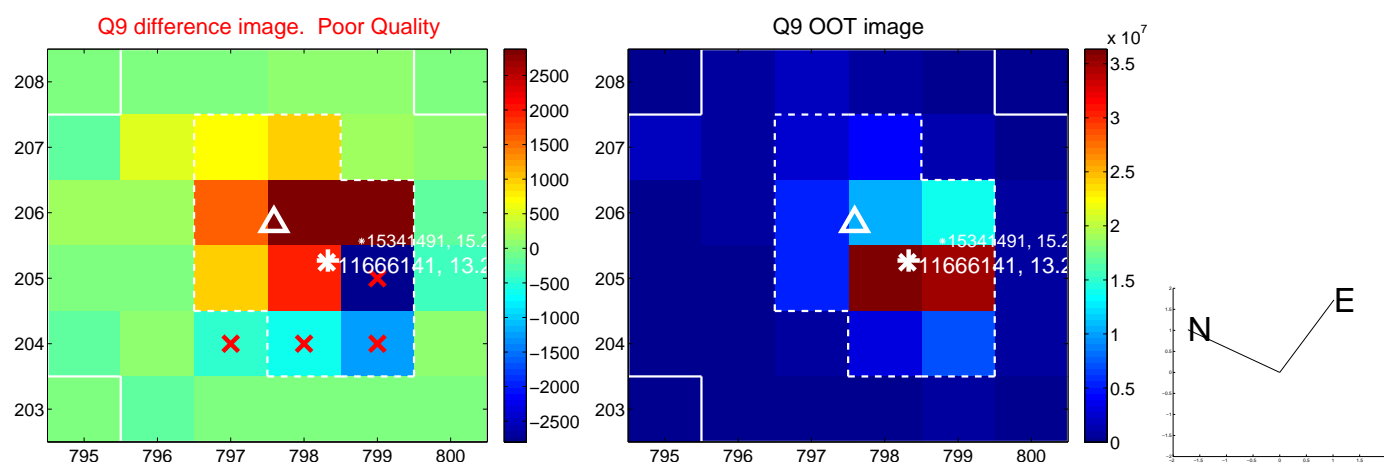


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

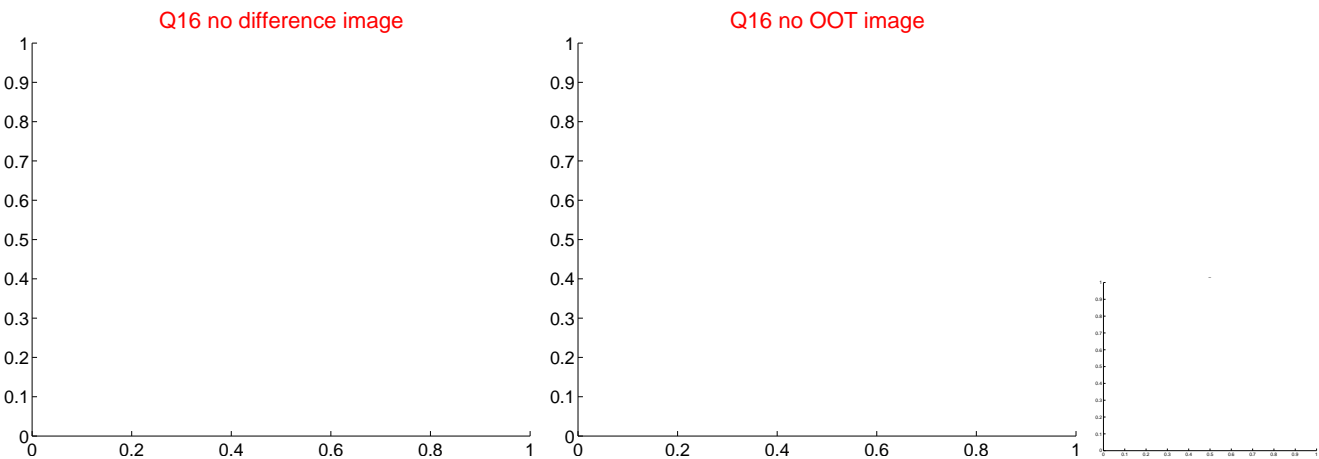
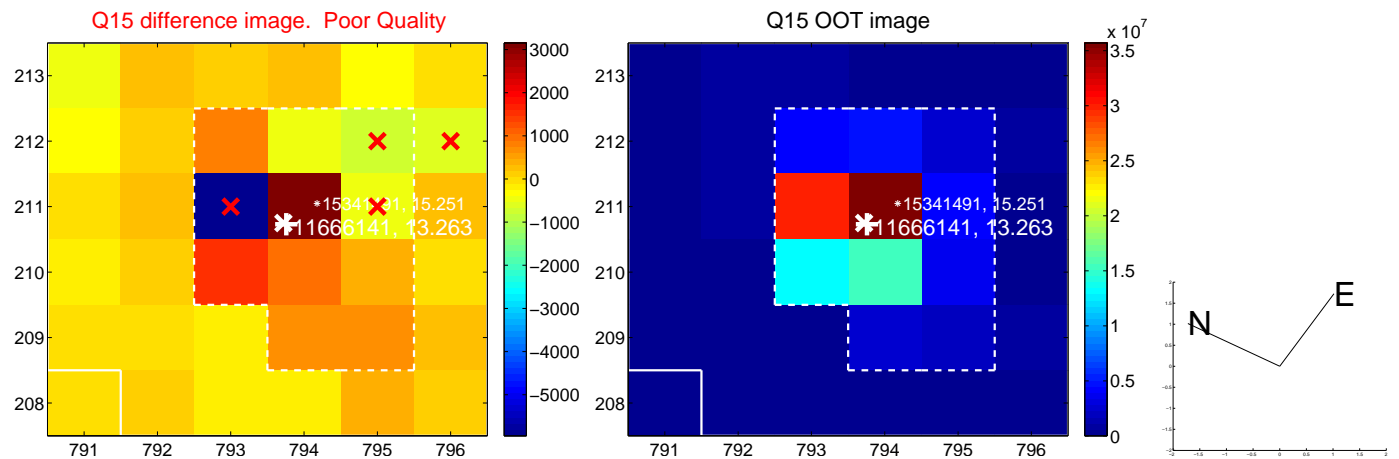
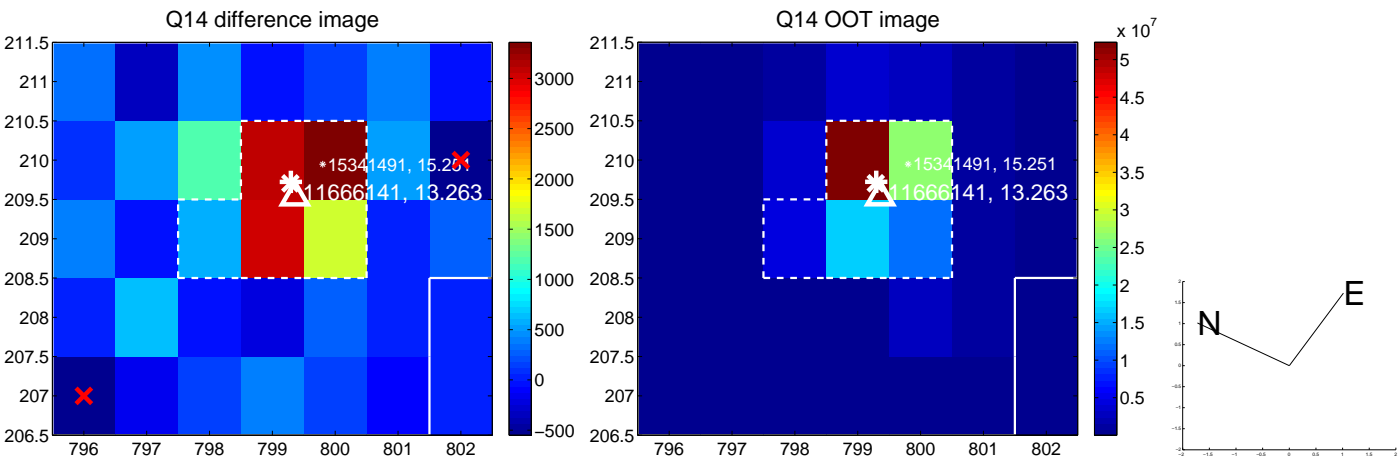
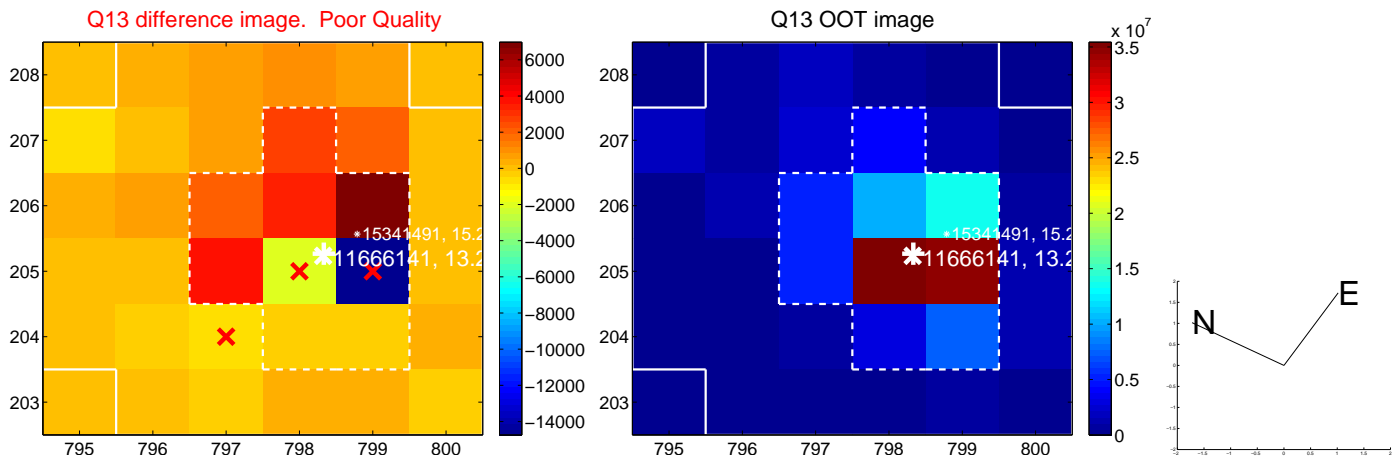




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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





UKIRT Image

Declination

