

# KIC 004919550

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004919550-01	OBS	4766.01	5.566766	132.501062	160.3	2.062	10.3	11.6	0.86	5032	1.29	128.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004919550-01	OBS	PC	1.00	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.

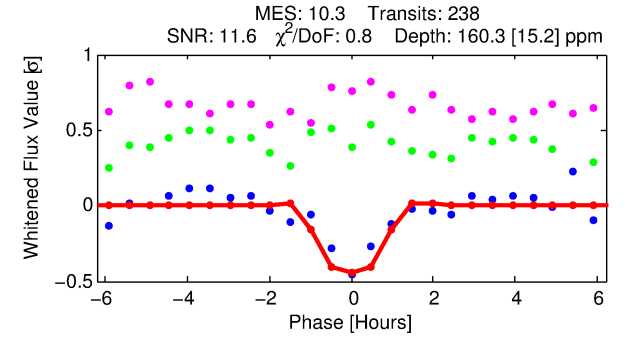
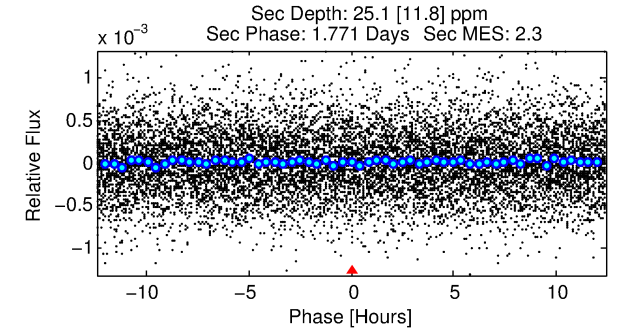
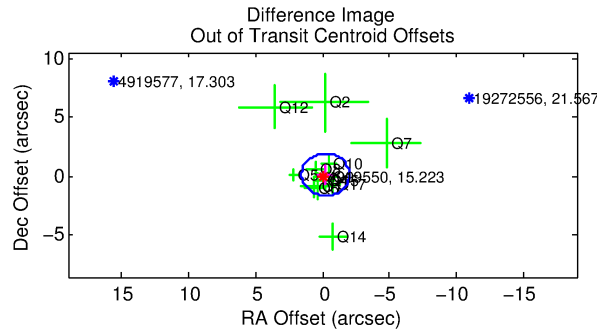
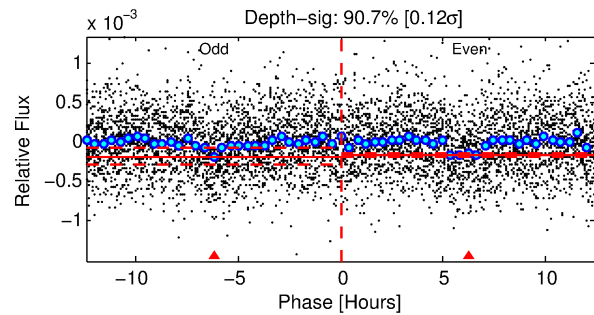
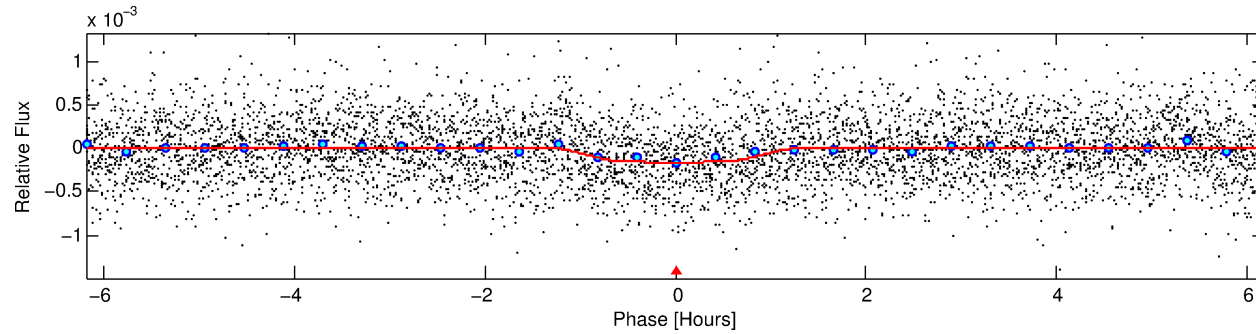
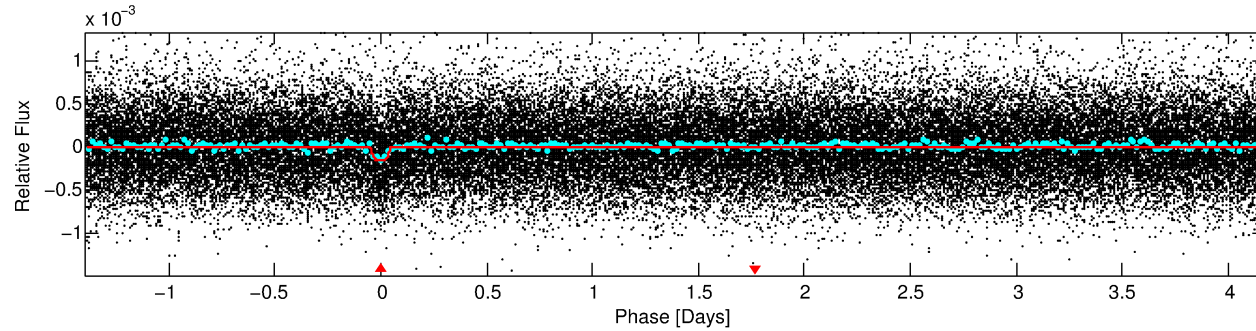
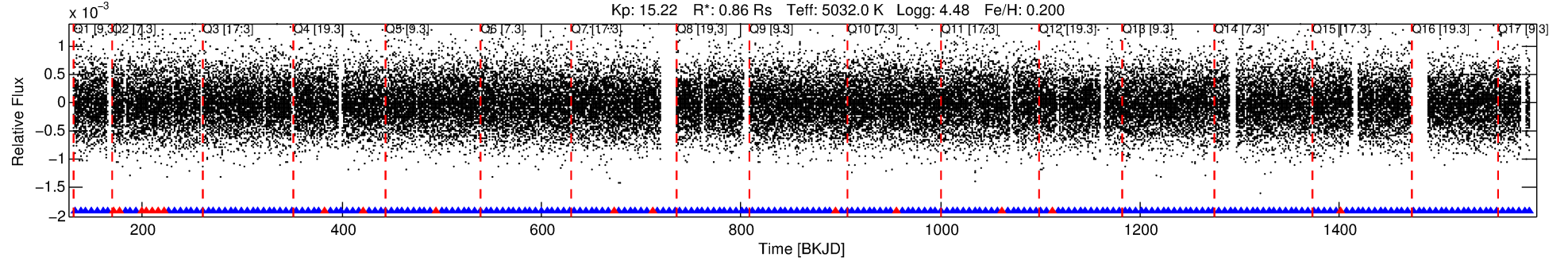
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004919550-01

No Significant Match Found

# DV One-Page Summary

KIC: 4919550 Candidate: 1 of 1 Period: 5.567 d  
KOI: K04766.01 Corr: 0.926



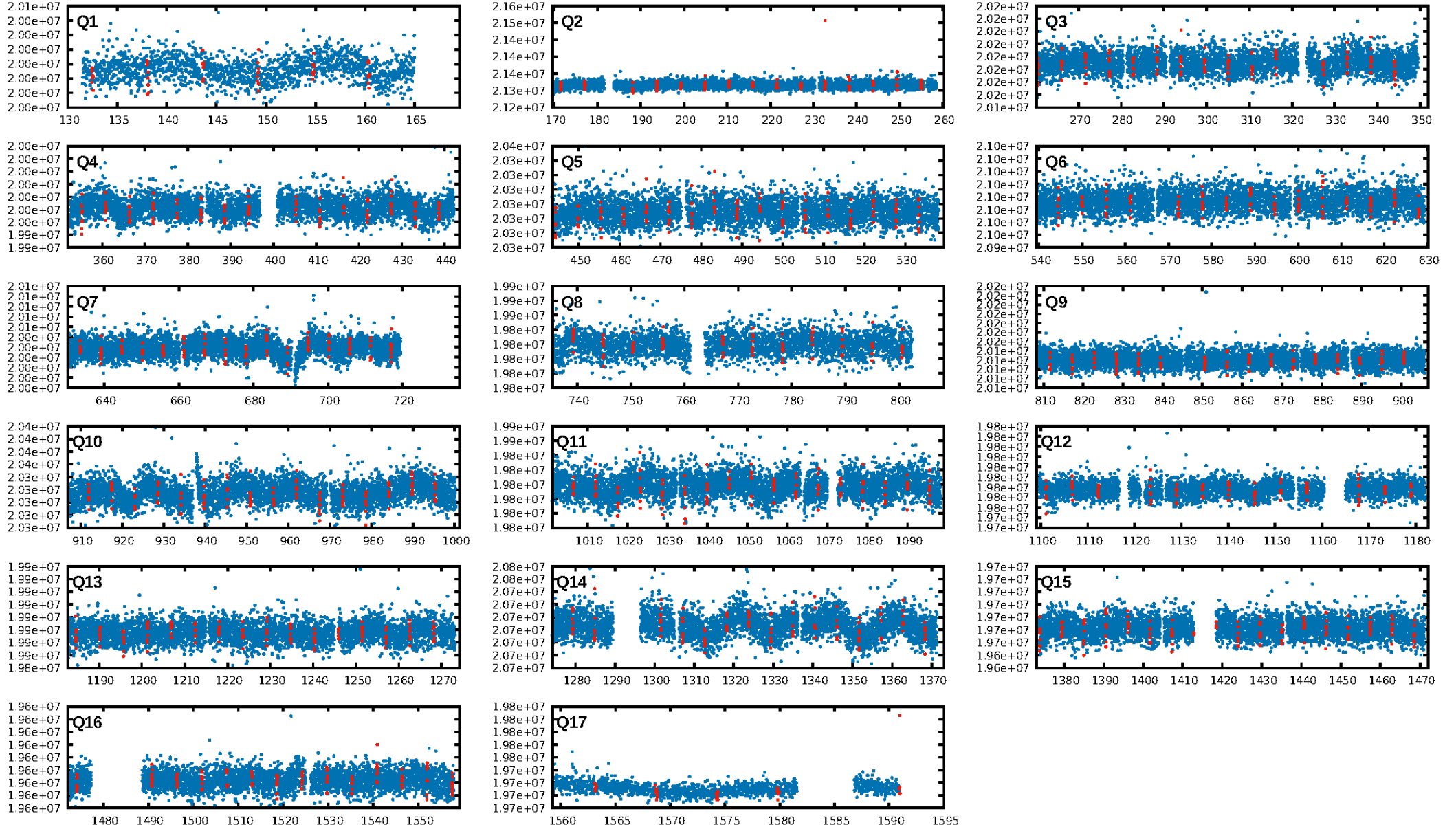
## DV Fit Results:

Period = 5.56677 [0.00003] d  
Epoch = 132.5011 [0.0039] BKJD  
Rp/R\* = 0.0137 [0.0137]  
a/R\* = 10.73 [40.35]  
b = 0.87 [1.08]  
Seff = 128.94 [18.71]  
Teff = 859 [31] K  
Rp = 1.29 [1.29] Re  
a = 0.0573 [0.0046] AU  
Ag = 27.31 [55.91] [0.47σ]  
Teffp = 3037 [1552] K [1.40σ]

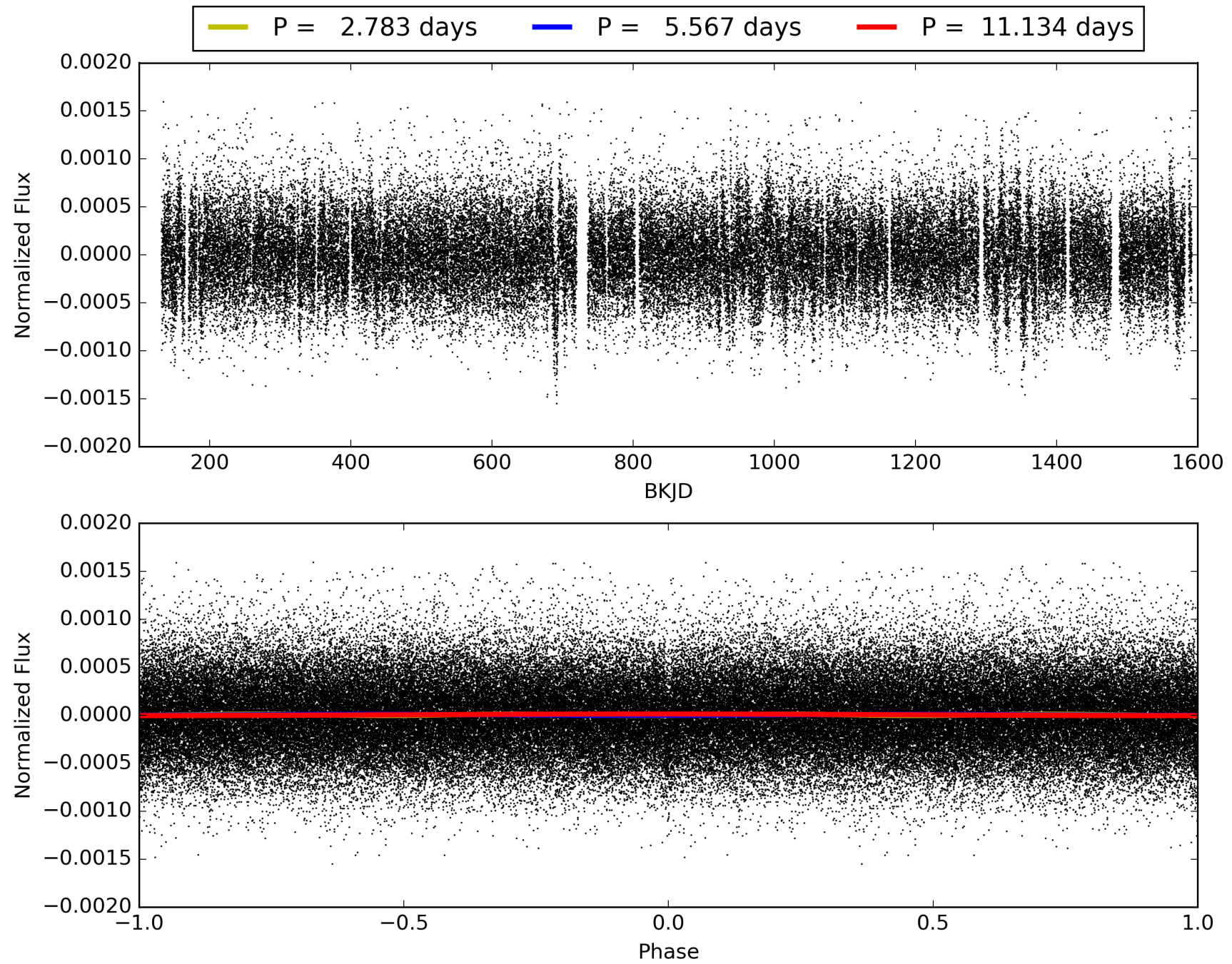
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.53e-24  
RollingBand-fgt: 0.93 [210/227]  
GhostDiagnostic-chr: -5.219  
Centroid-sig: 0.0%  
Centroid-so: 3.046 arcsec [2.36σ]  
OotOffset-rm: 0.271 arcsec [0.45σ]  
KicOffset-rm: 0.048 arcsec [0.10σ]  
OotOffset-st: 4/2/3/4 [13]  
KicOffset-st: 4/2/3/4 [13]  
DiffImageQuality-fgm: 0.54 [7/13]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 004919550-01, PDC Light Curves

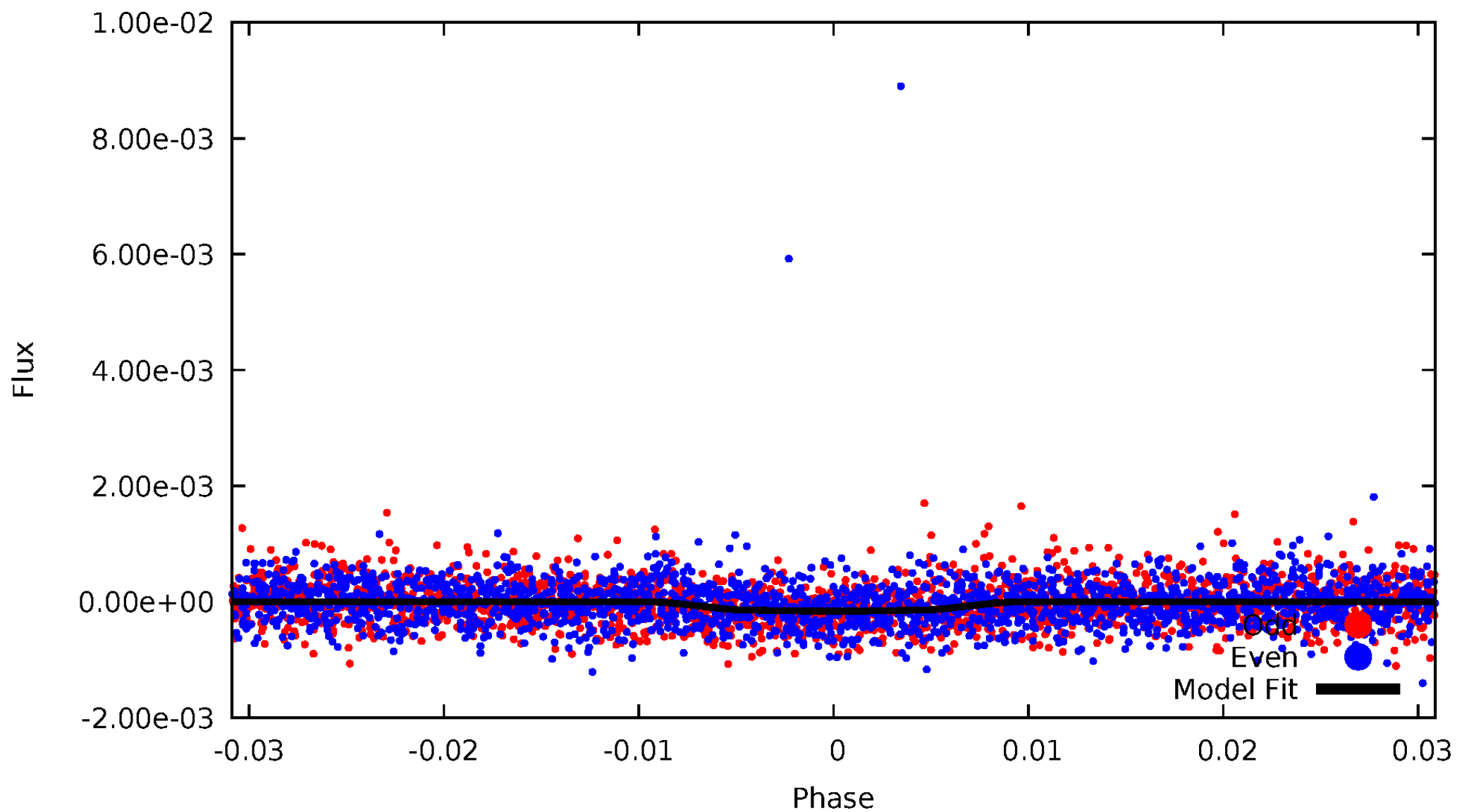


TCE 004919550-01



# DV Odd/Even

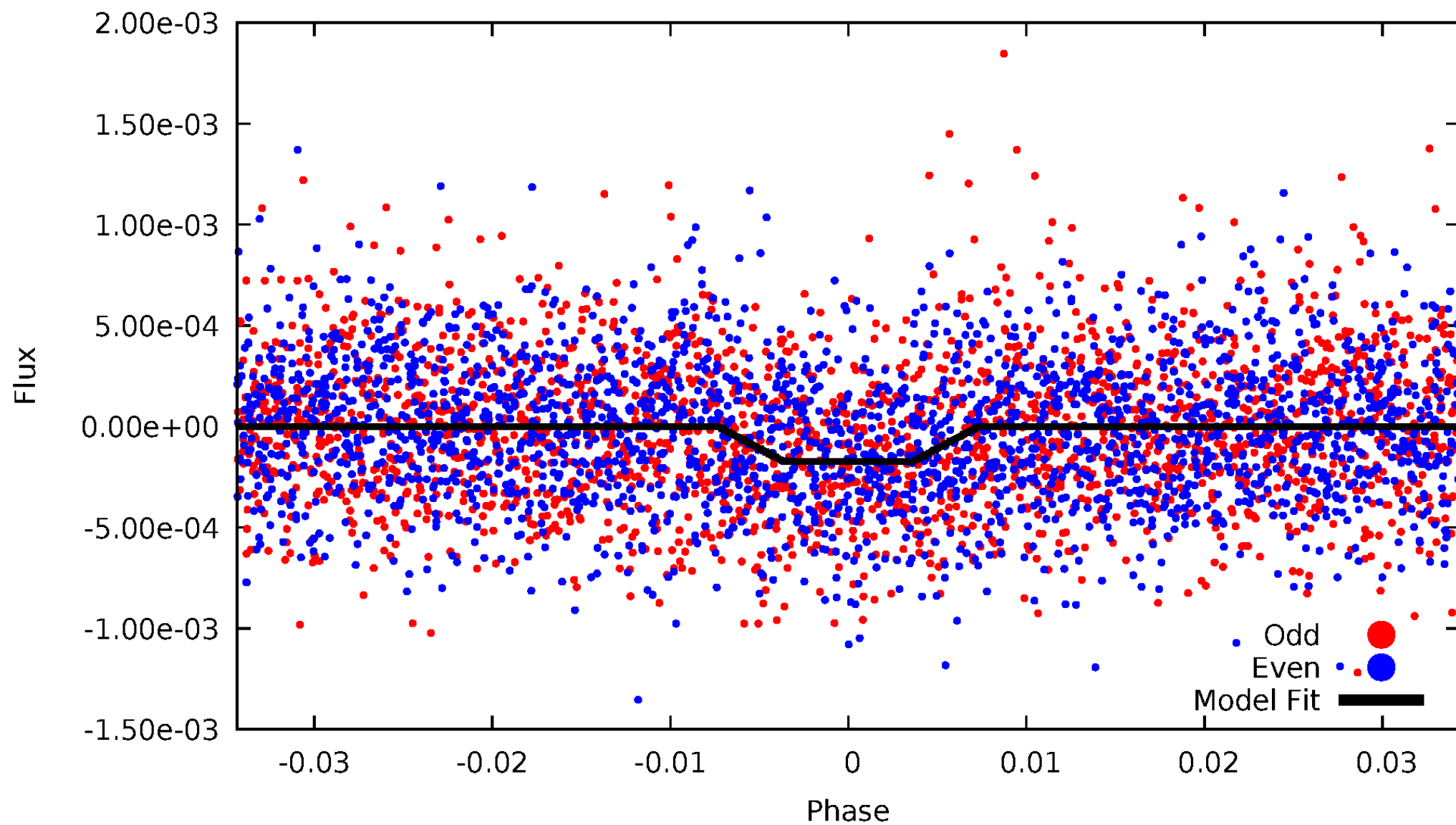
TCE 004919550-01





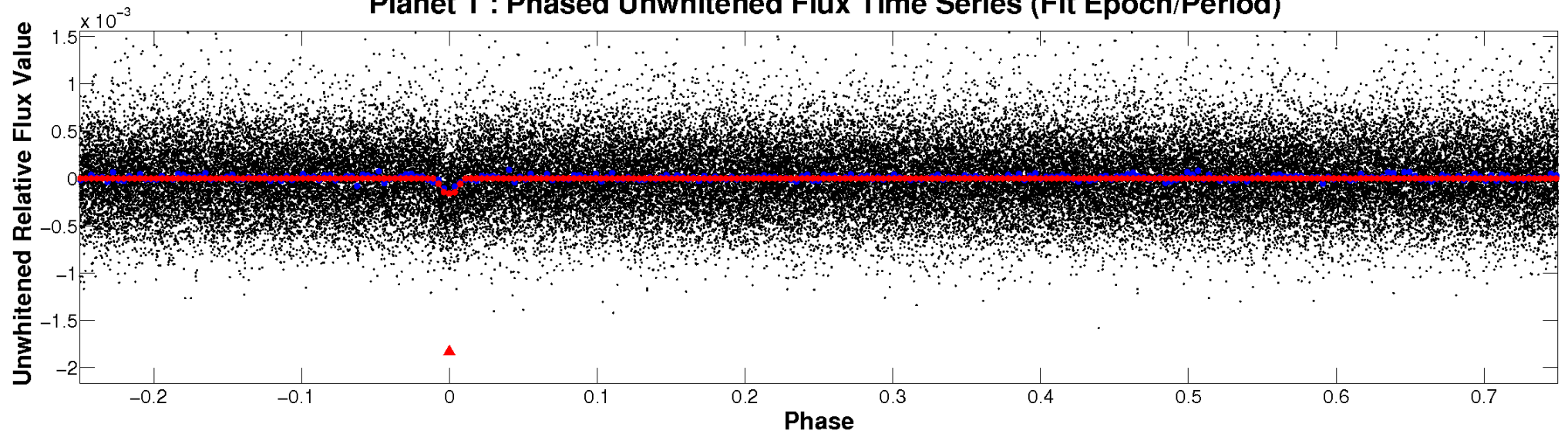
# ALT Odd/Even

TCE 004919550-01

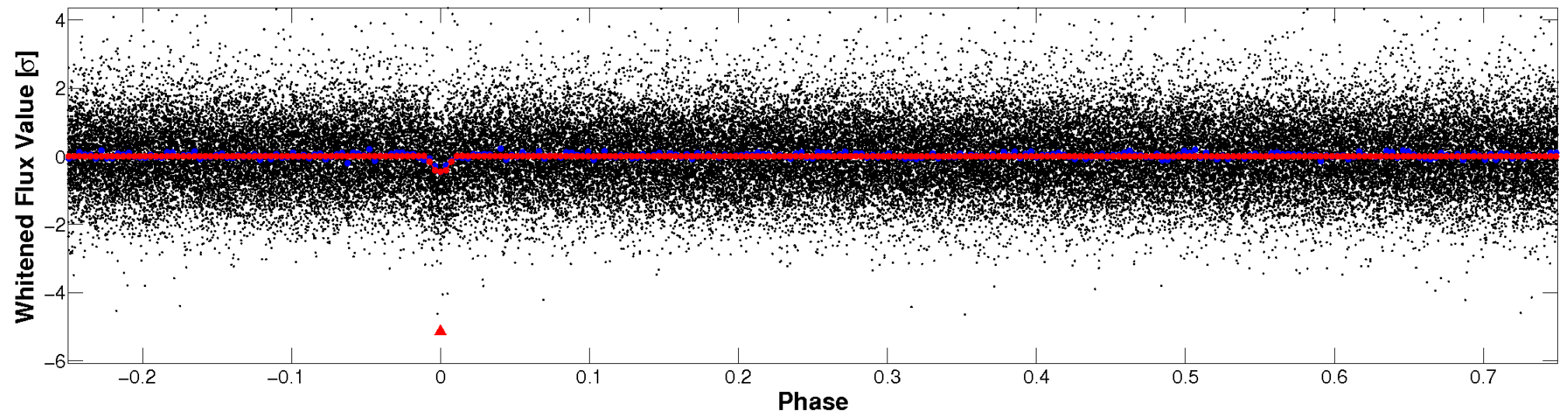


# Non-Whitened Vs. Whitened Light Curve

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

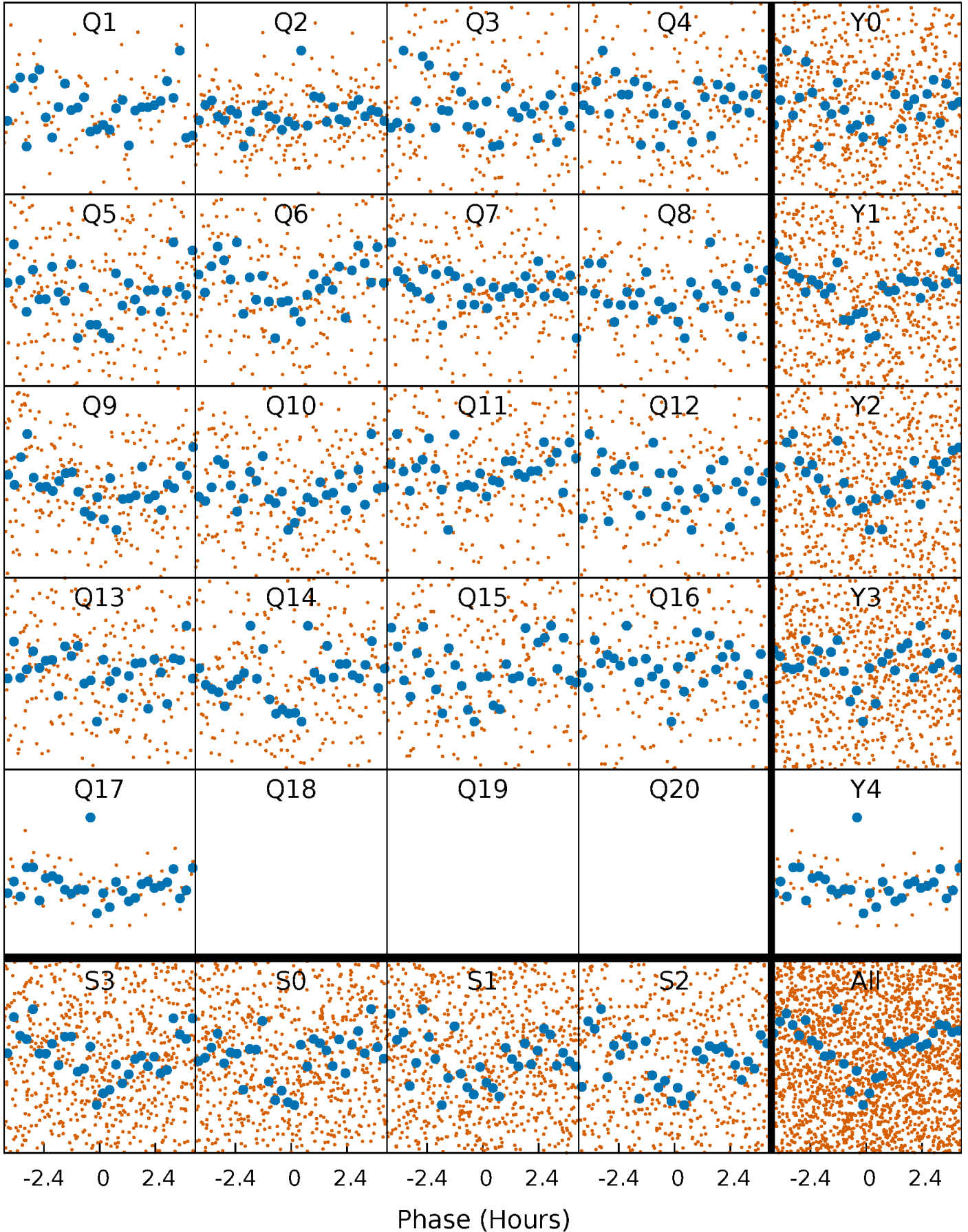


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

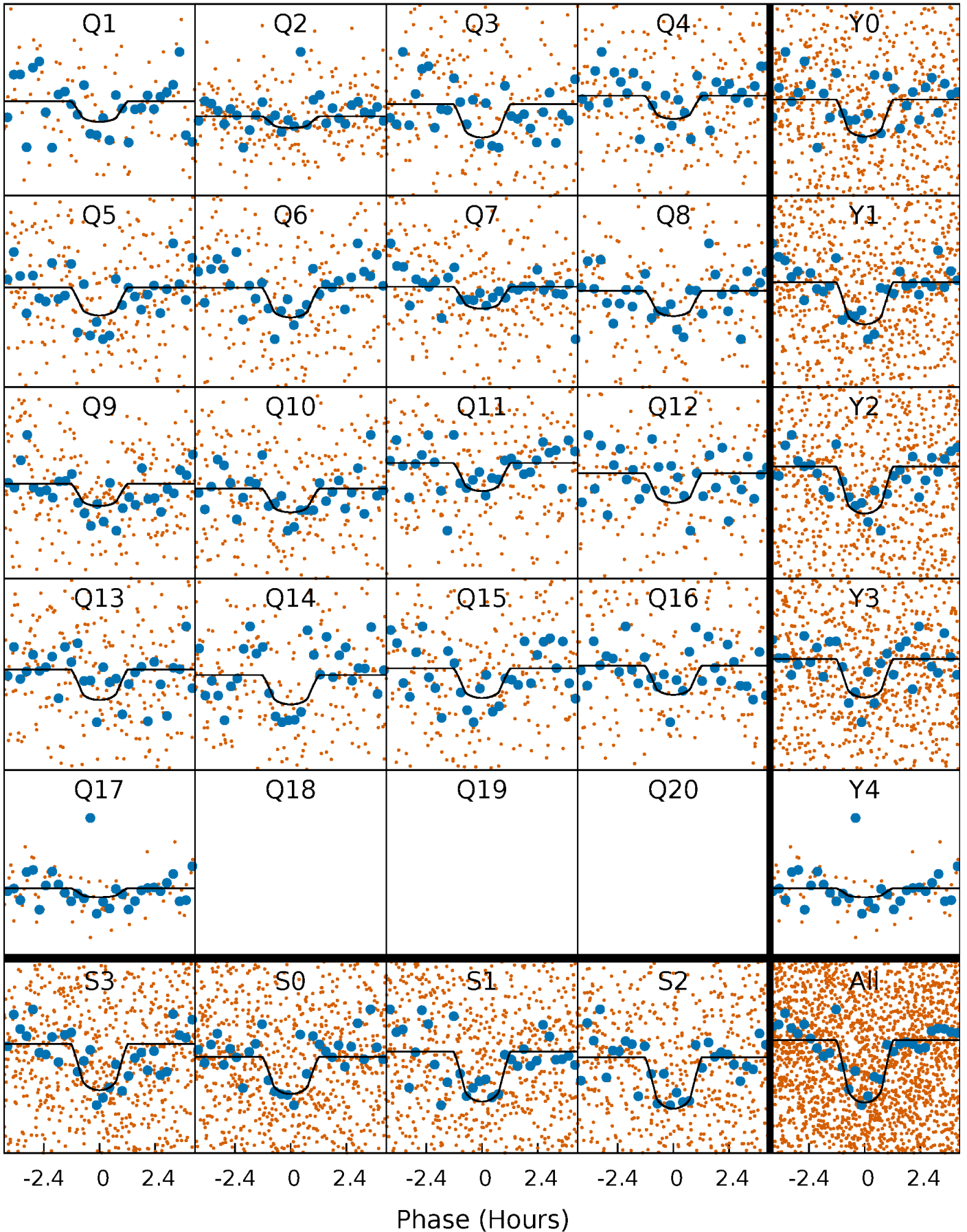
TCE 004919550-01 P= 5.566766 Days  $T_0=132.501062$  (BKJD)





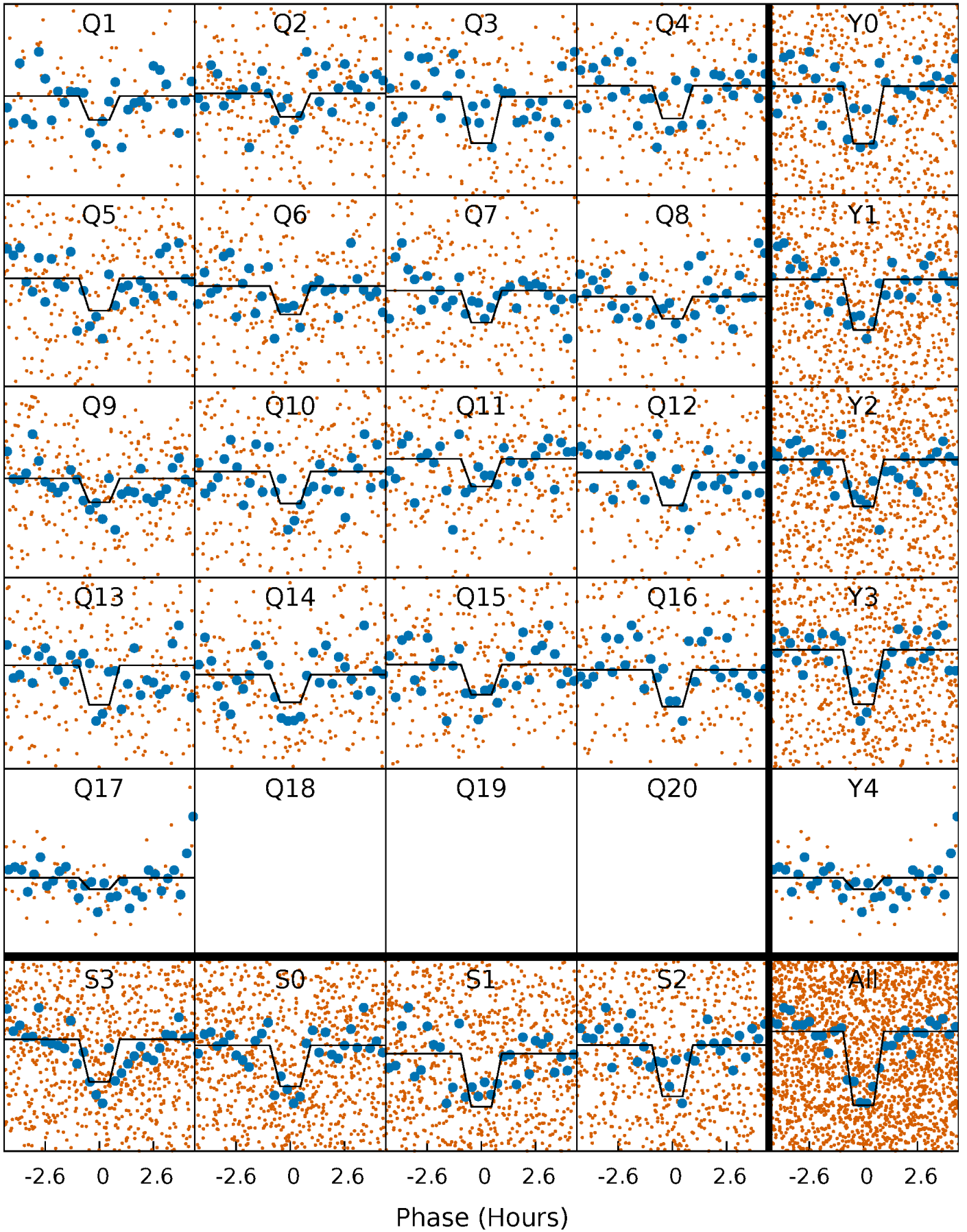
# DV Quarter-Phased Transit Curves

TCE 004919550-01 P= 5.566766 Days  $T_0=132.501062$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

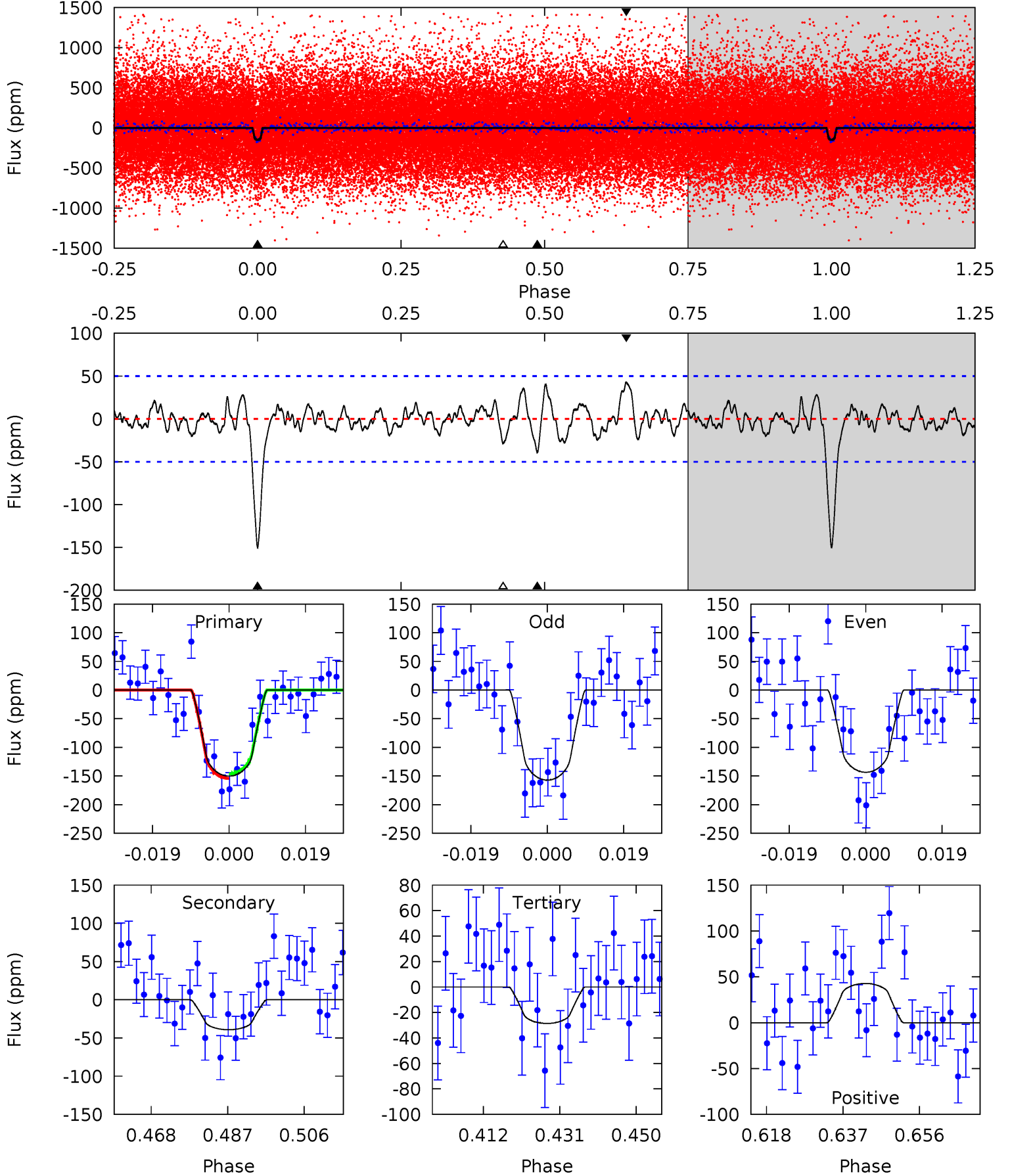
TCE 004919550-01 P= 5.566709 Days  $T_0=132.507263$  (BKJD)



# DV Model-Shift Uniqueness Test

004919550-01, P = 5.566766 Days, E = 126.934296 Days

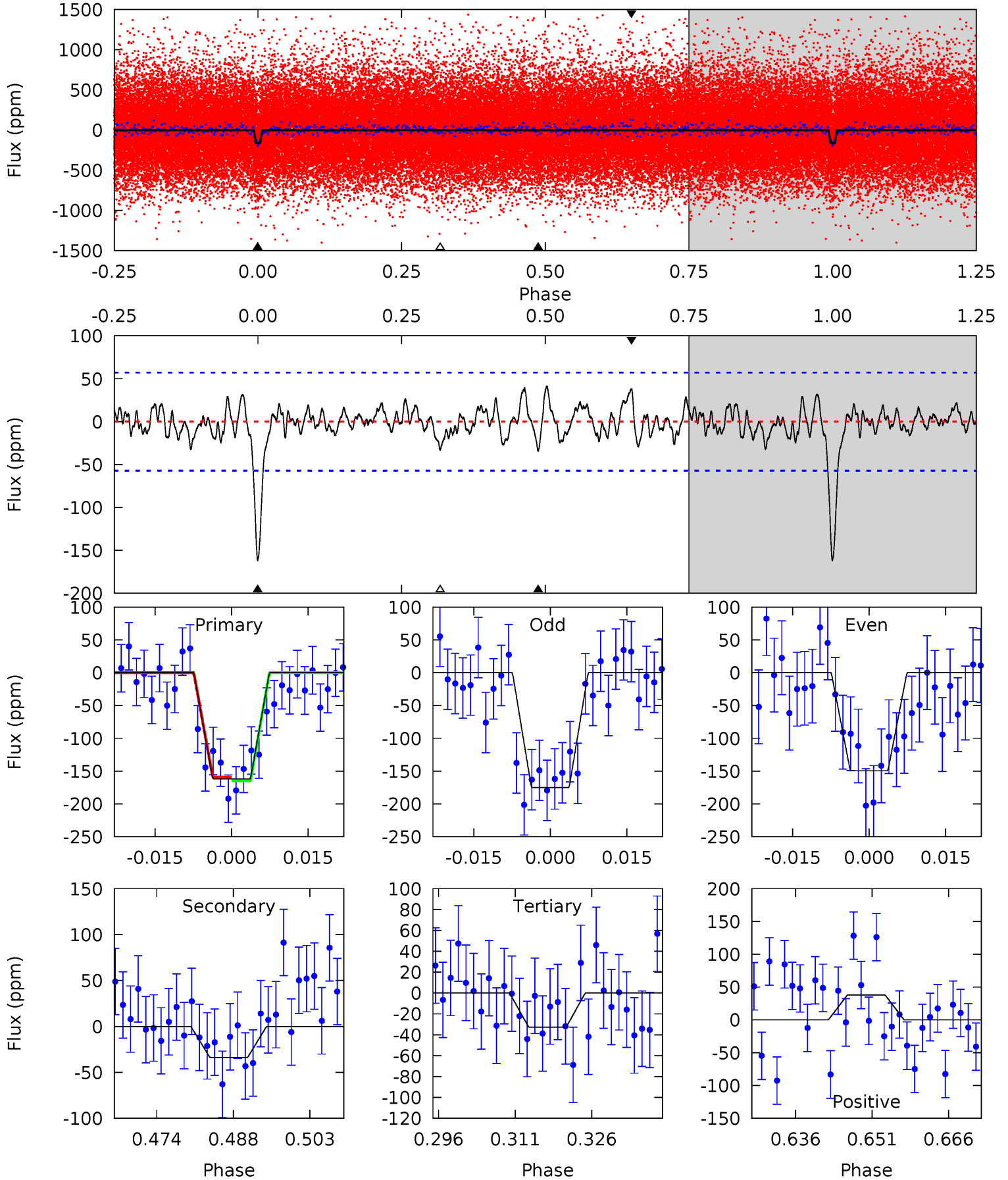
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	3.84	2.80	4.18	4.90	2.35	1.21	11.9	10.5	1.04	-0.35	0.67	0.83	0.22	0.39



# Alt Model-Shift Uniqueness Test

004919550-01, P = 5.566709 Days, E = 126.940554 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
14.0	2.94	2.83	3.29	4.95	2.44	1.19	11.2	10.8	0.11	-0.35	1.13	0.99	0.20	0.25



### Stellar Parameters For KIC 004919550

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5032^{+80}_{-80}$	$4.479^{+0.077}_{-0.033}$	$0.200^{+0.150}_{-0.150}$	$0.859^{+0.041}_{-0.071}$	$0.810^{+0.048}_{-0.032}$	$1.800^{+0.523}_{-0.200}$
	+2%/-2%	+2%/-1%	+75%/-75%	+5%/-8%	+6%/-4%	+29%/-11%
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 004919550-01 / KOI 4766.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-39 \pm 10$	$1.59^{+1.02}_{-0.93}$	$1195^{+25}_{-31}$	$3481^{+1330}_{-516}$	$28^{+146}_{-18}$
Alt.	$-34 \pm 12$	$1.40^{+1.22}_{-0.94}$	$1193^{+29}_{-32}$	$3497^{+1822}_{-623}$	$30^{+248}_{-23}$

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



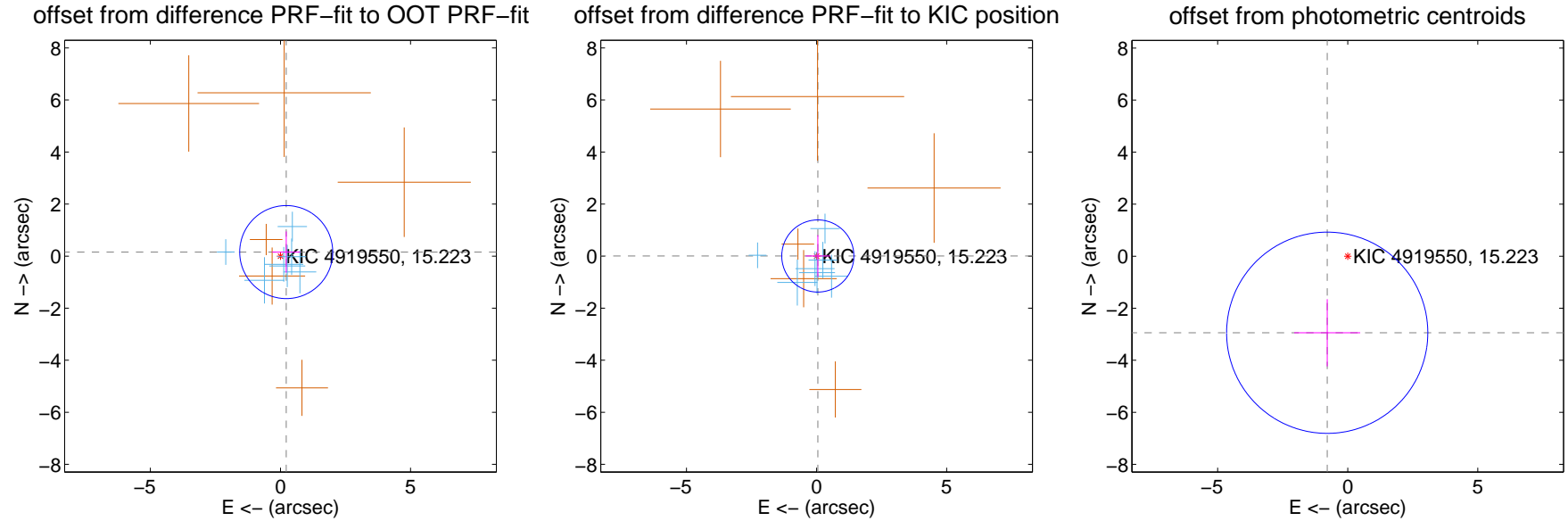
## DV Centroid Data

Supplemental centroid analysis for 004919550-01. Kepler magnitude: 15.22. Transit SNR 11.58

There are 7 quarters with good PRF difference image offsets

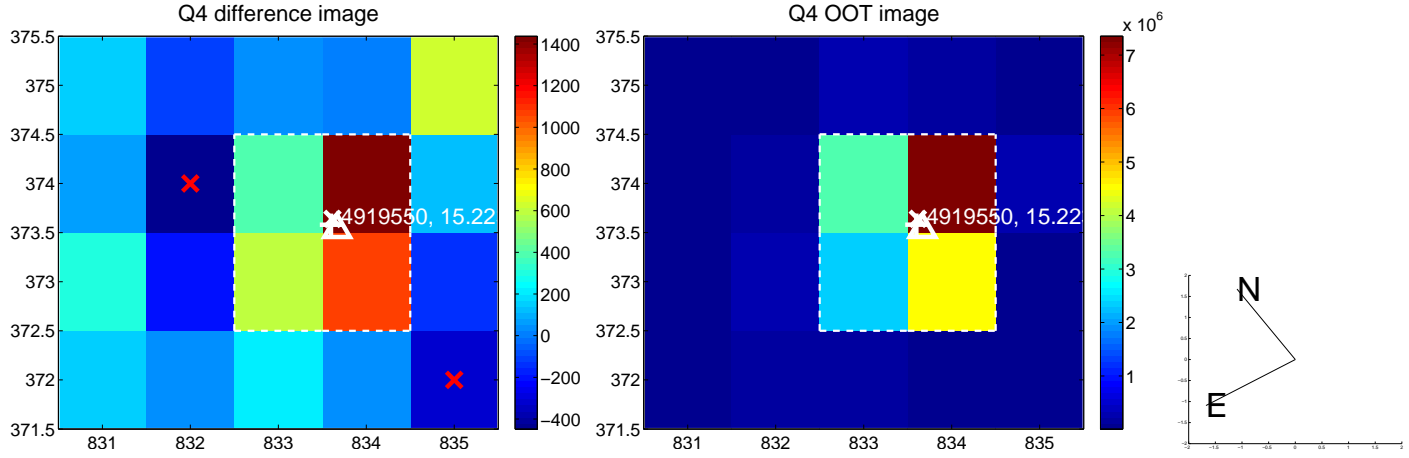
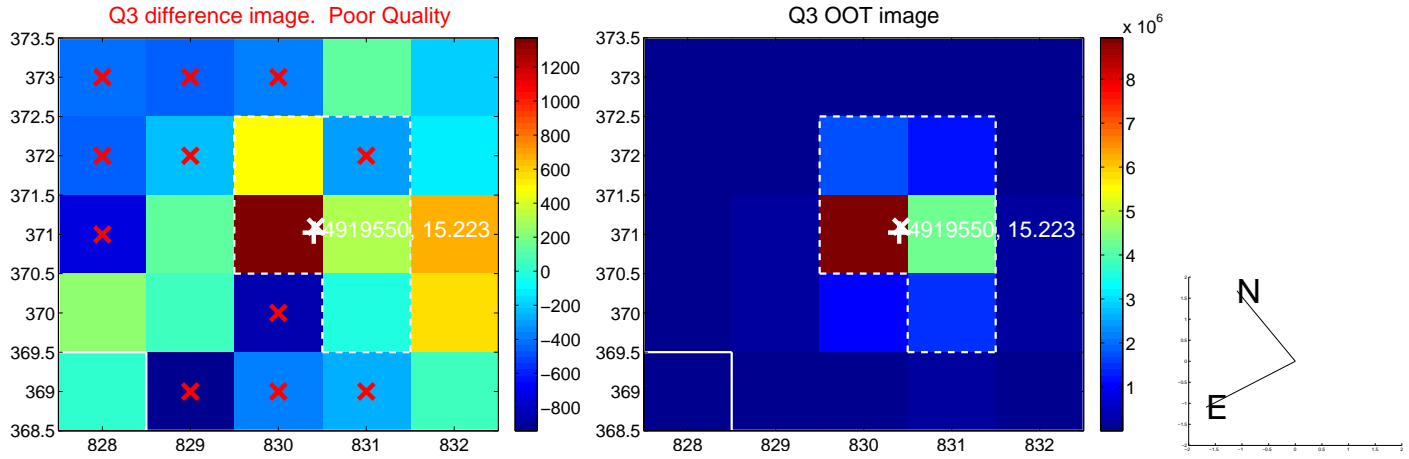
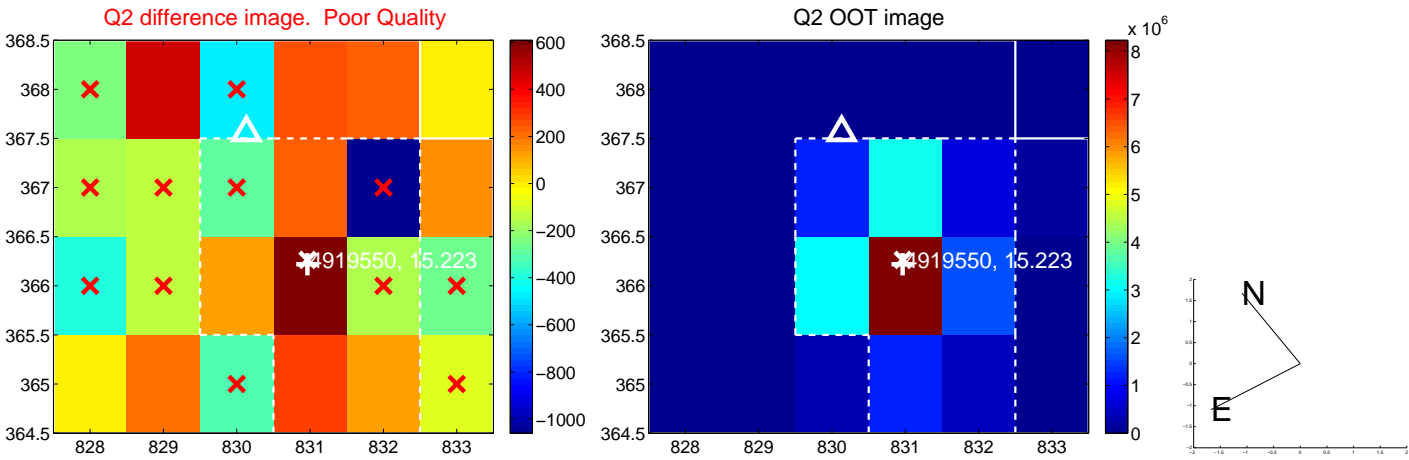
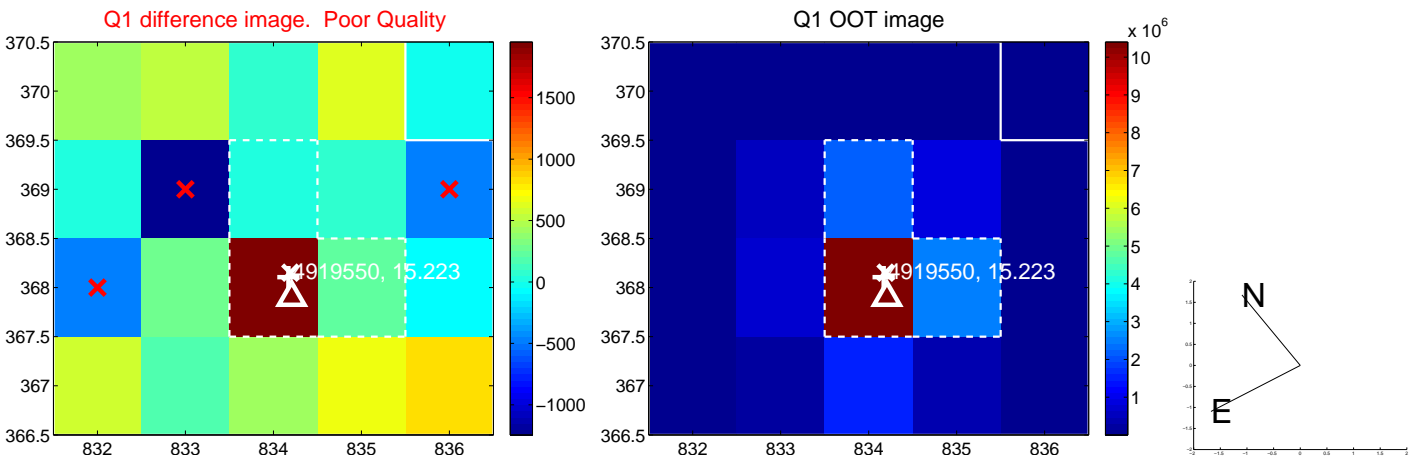
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.271 \pm 0.596$	0.45	$-0.222 \pm 0.540$	$0.155 \pm 0.793$
PRF-fit source offset from KIC position	$0.048 \pm 0.462$	0.10	$-0.048 \pm 0.471$	$0.006 \pm 0.802$
photometric centroid source offset	$3.05 \pm 1.29$	2.36	$0.79 \pm 1.27$	$-2.94 \pm 1.29$

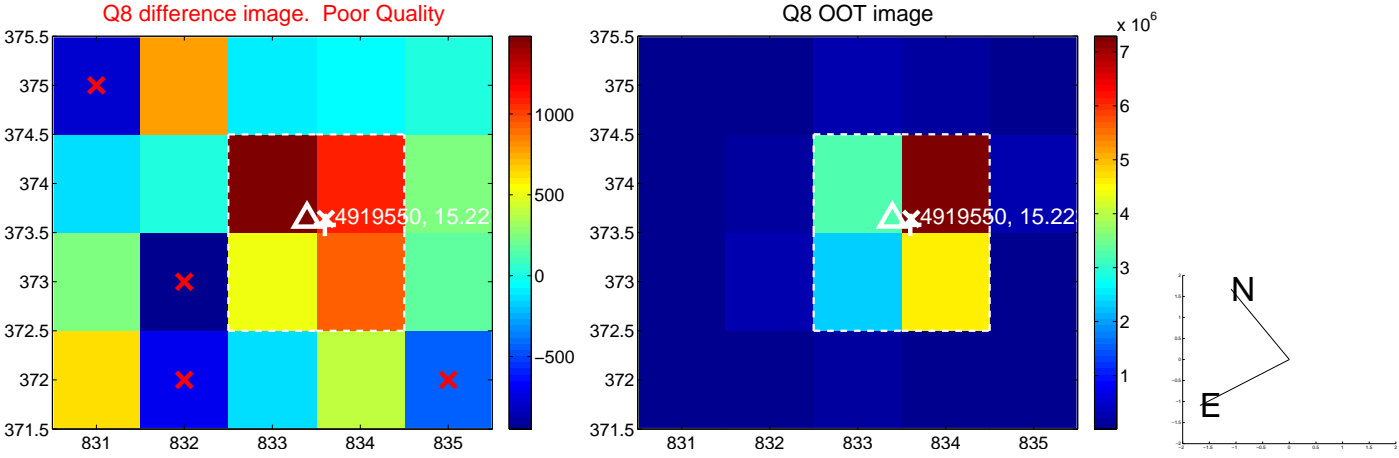
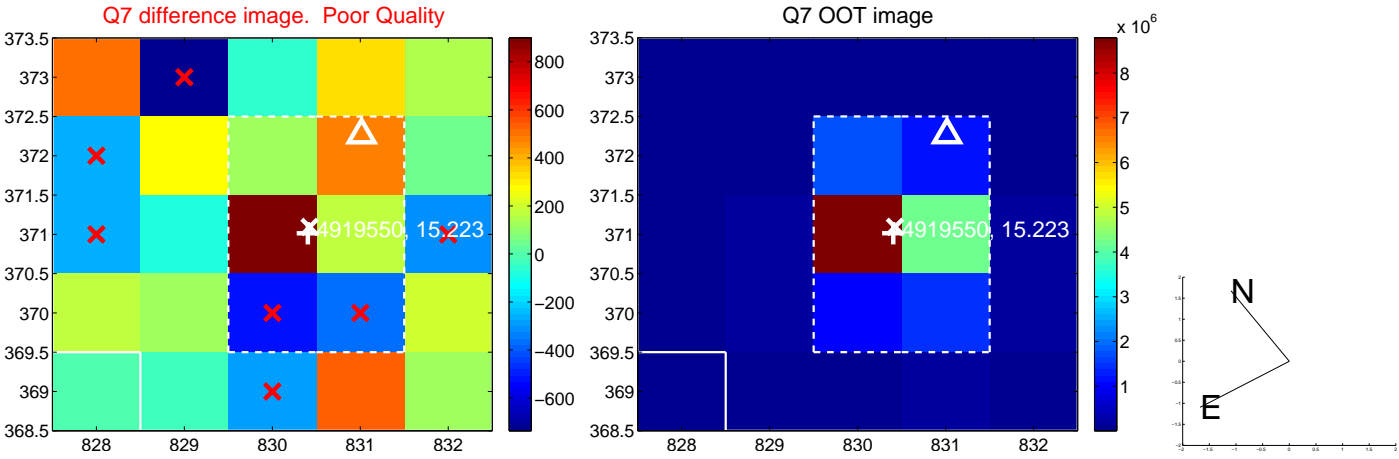
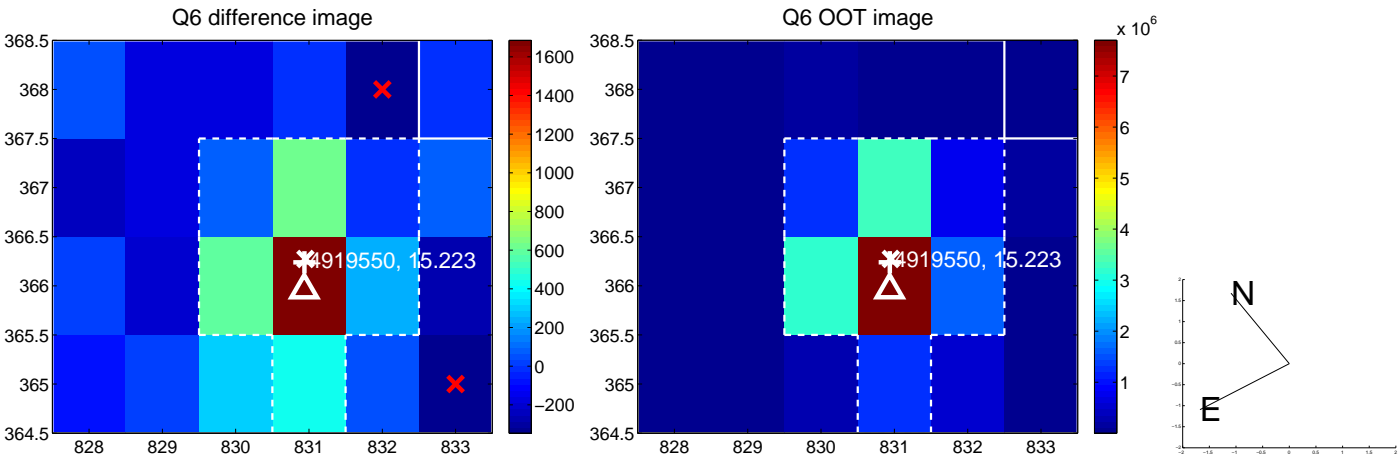
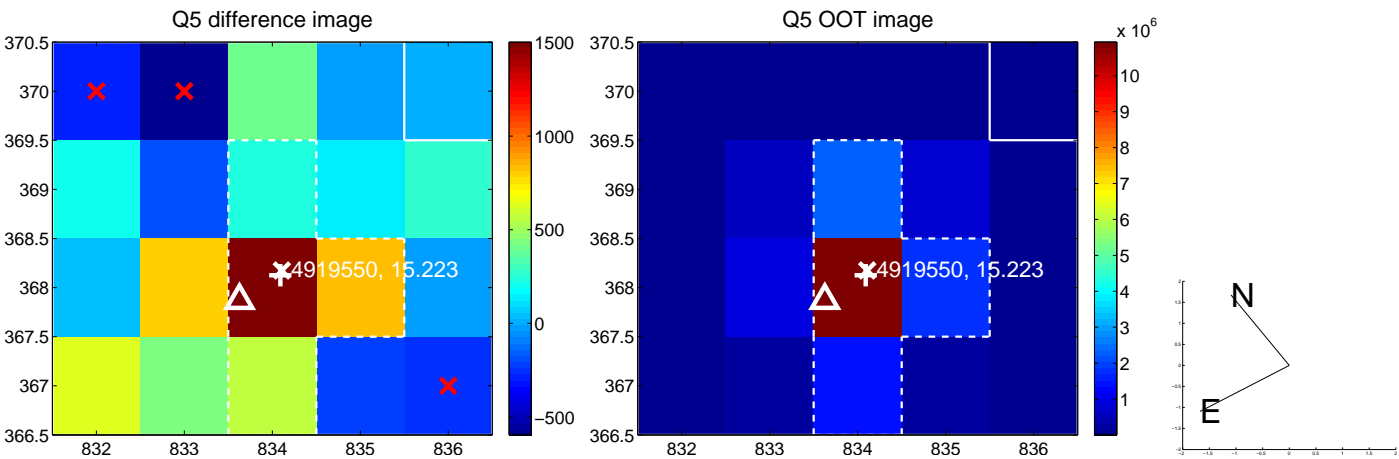


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

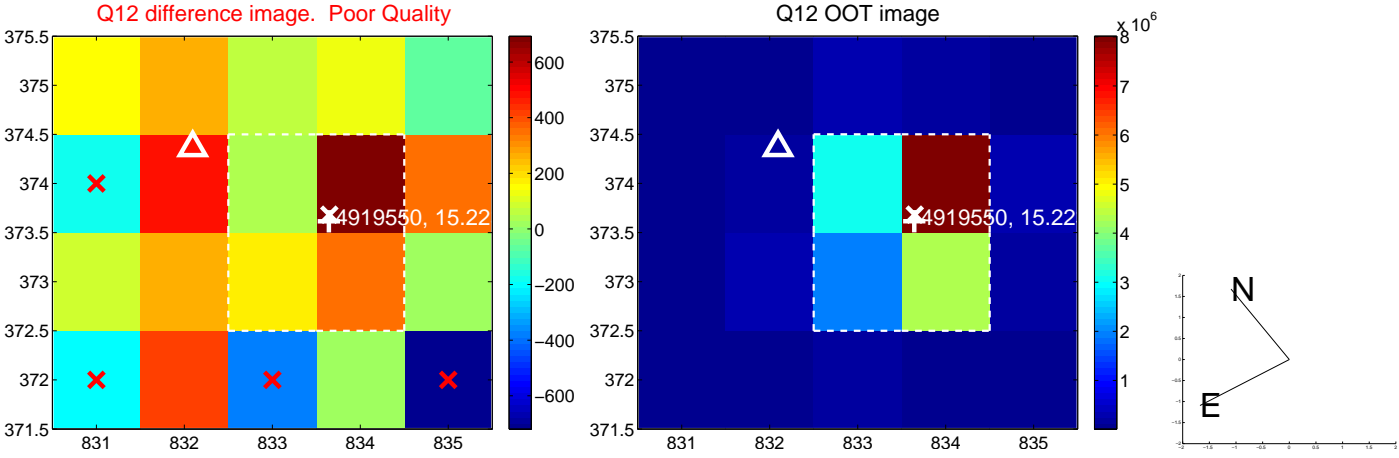
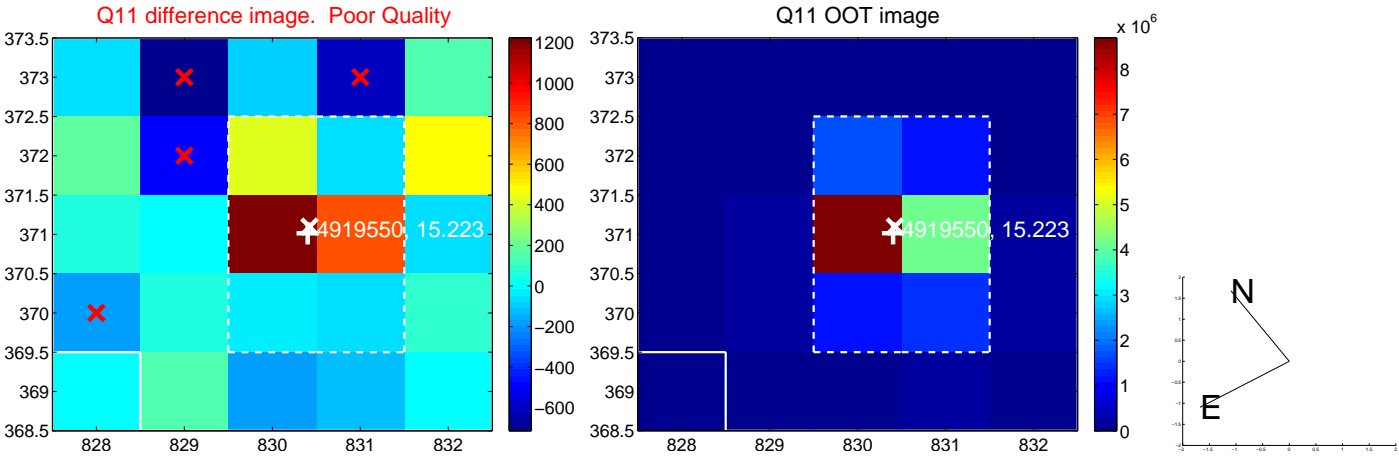
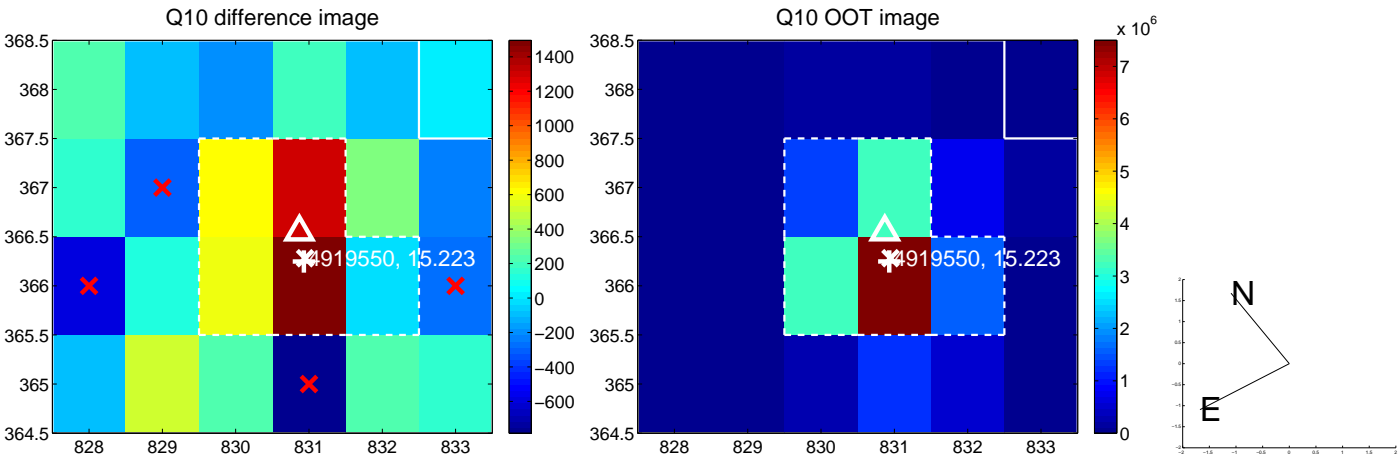
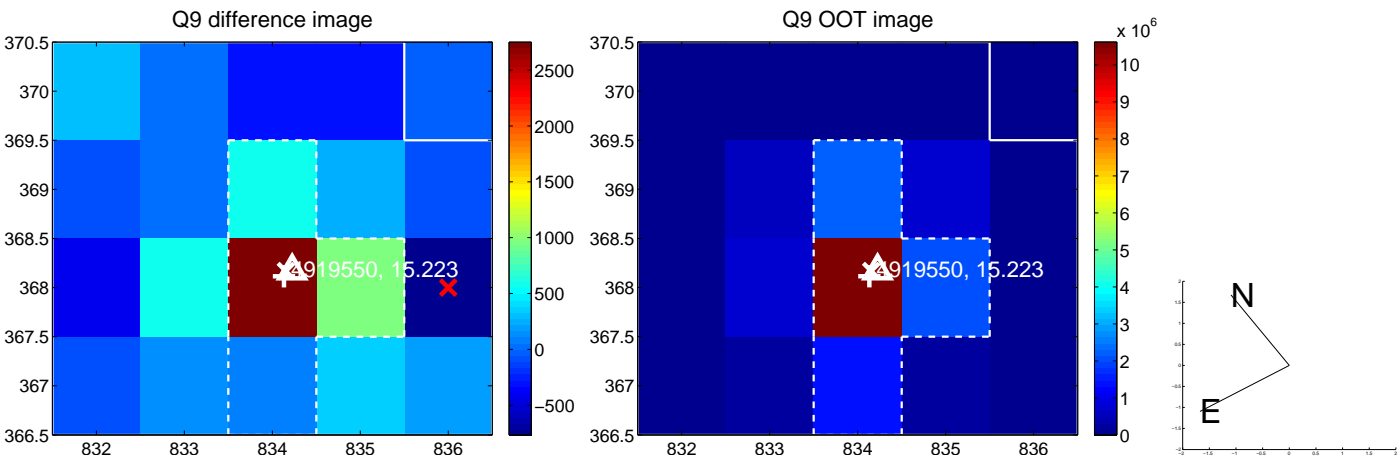
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



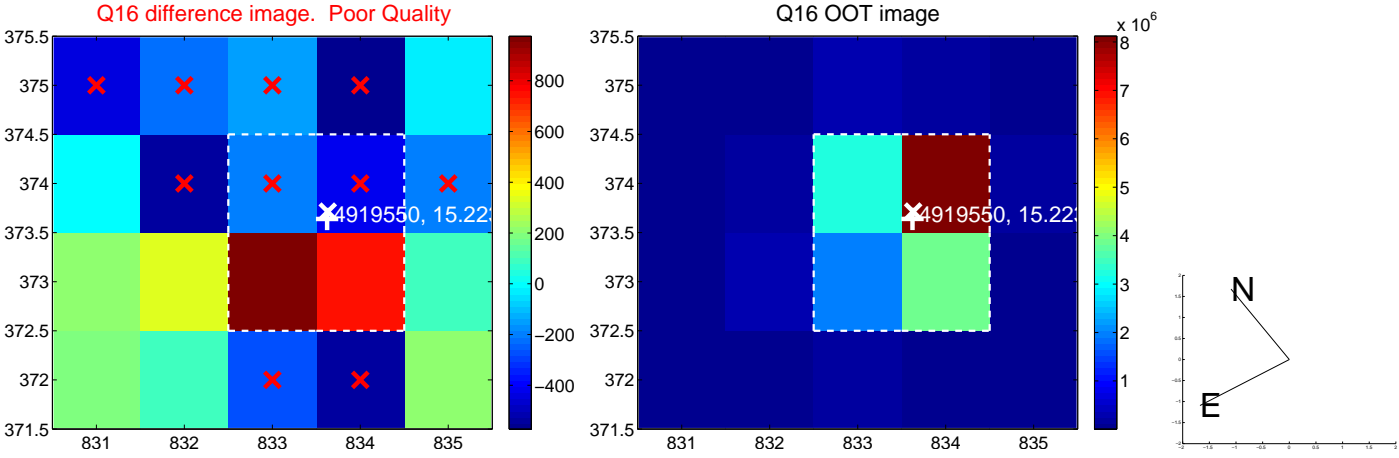
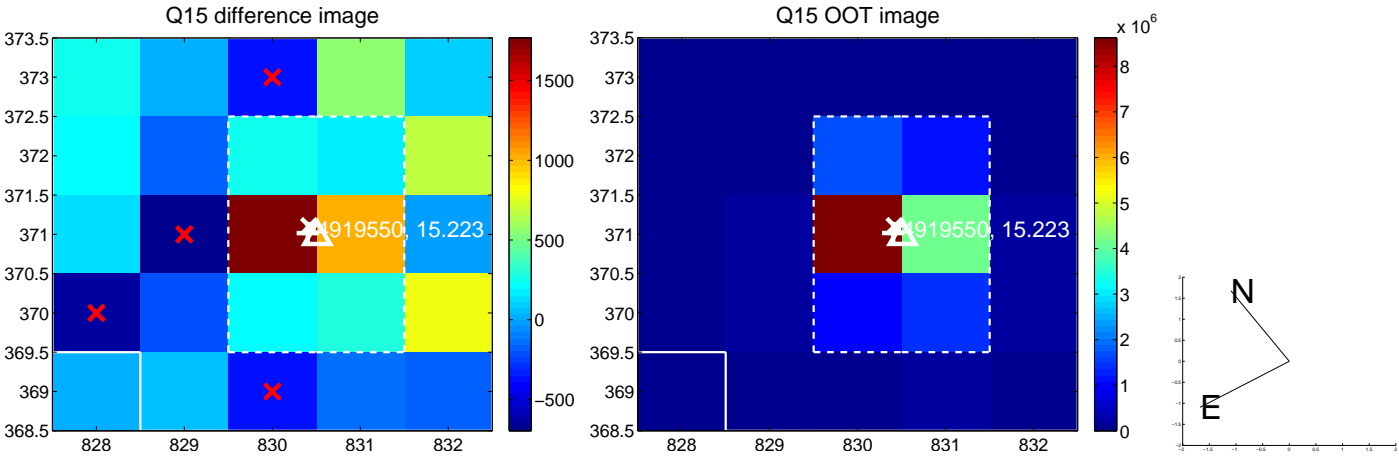
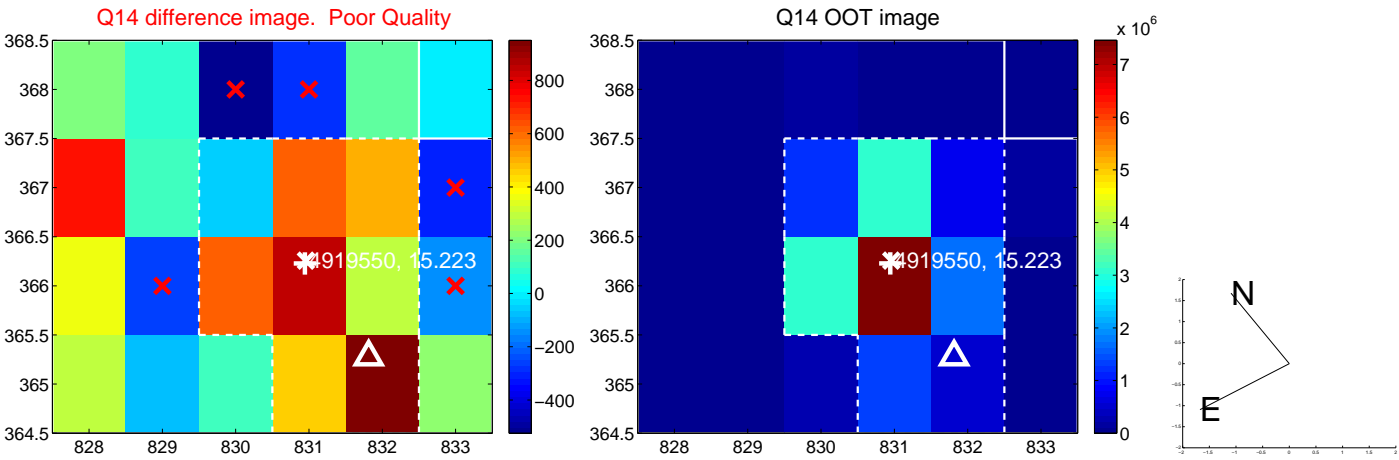
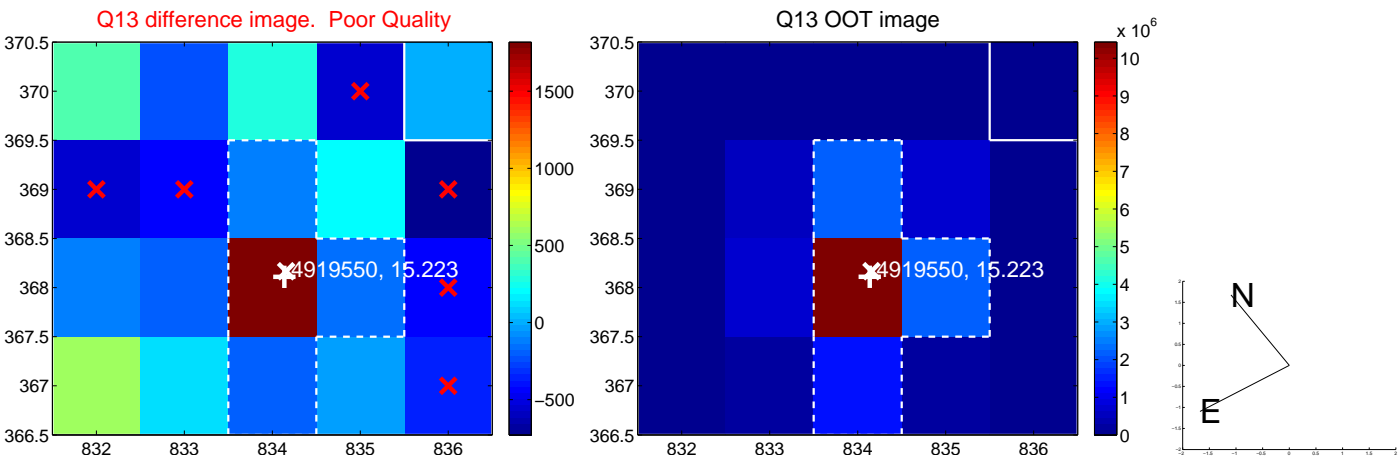
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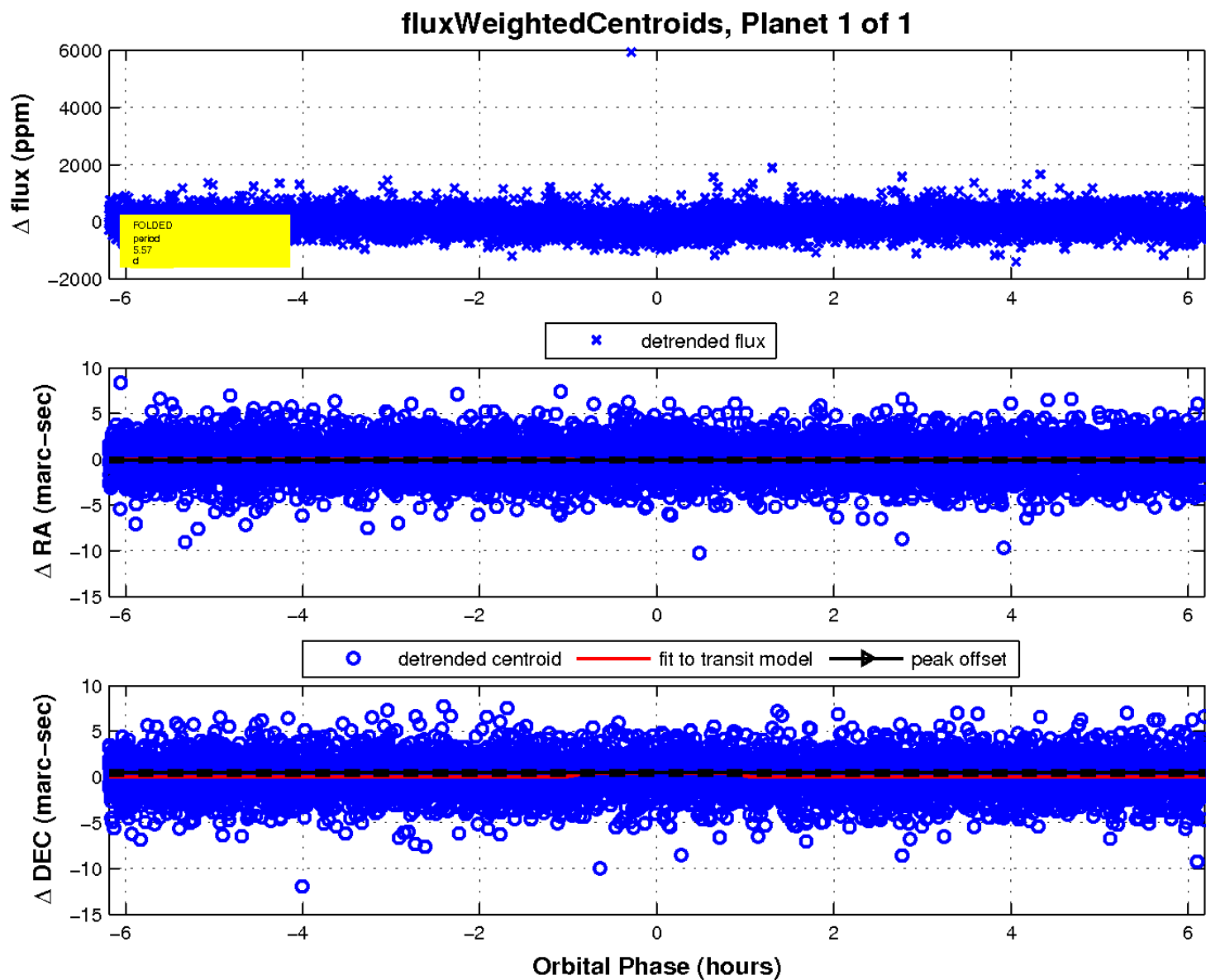
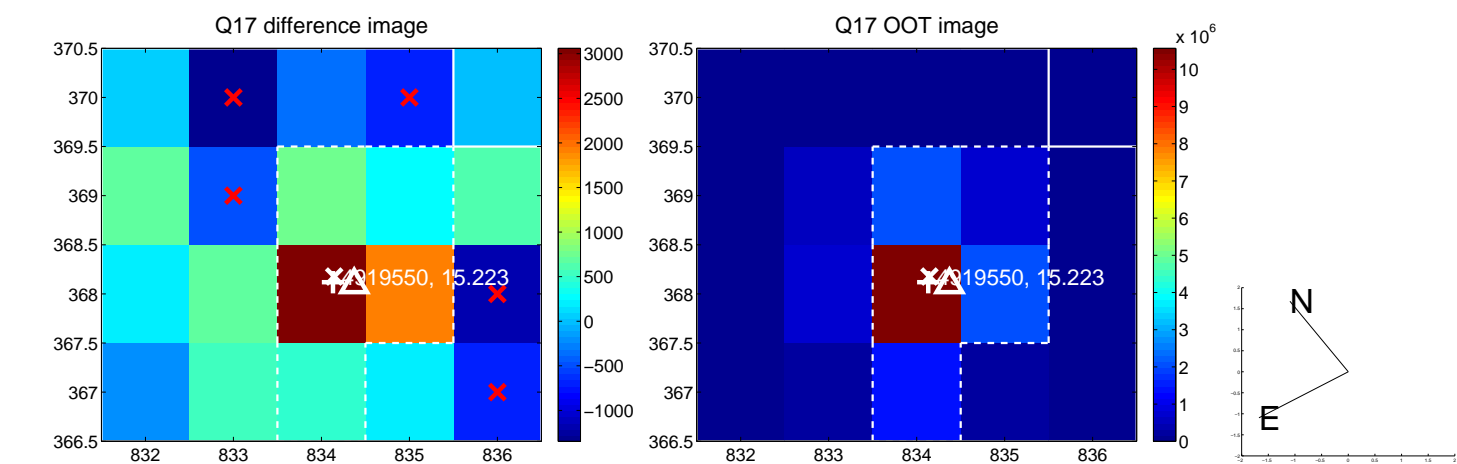


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

