

# KIC 010448122

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010448122-01	OBS	No	514.404349	508.953876	132.4	4.794	8.6	7.3	124.65	3463	188.69	916.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010448122-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED

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

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

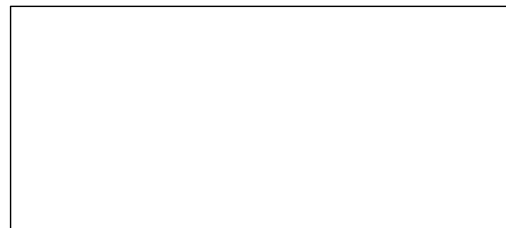
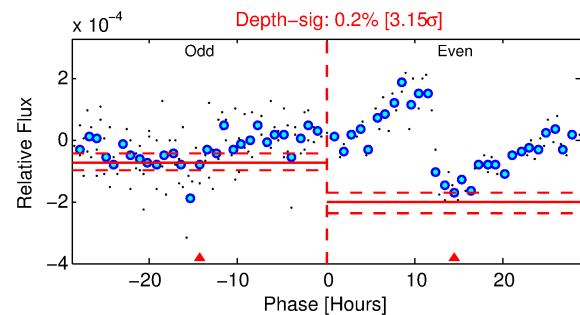
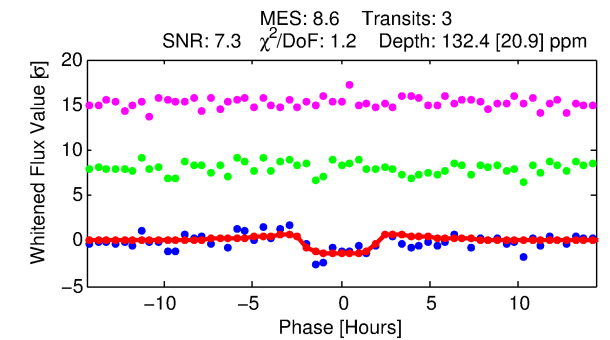
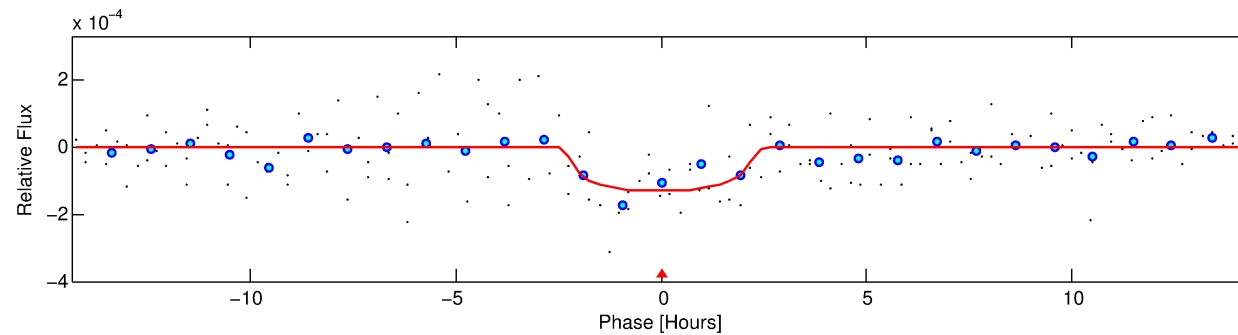
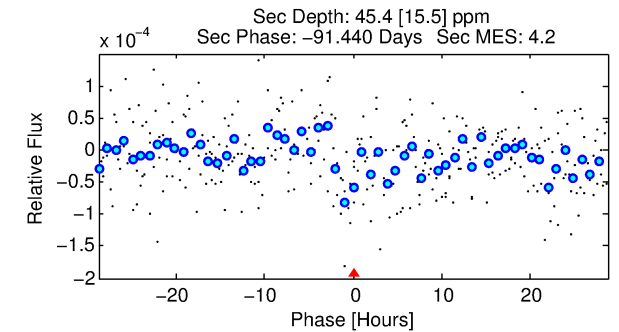
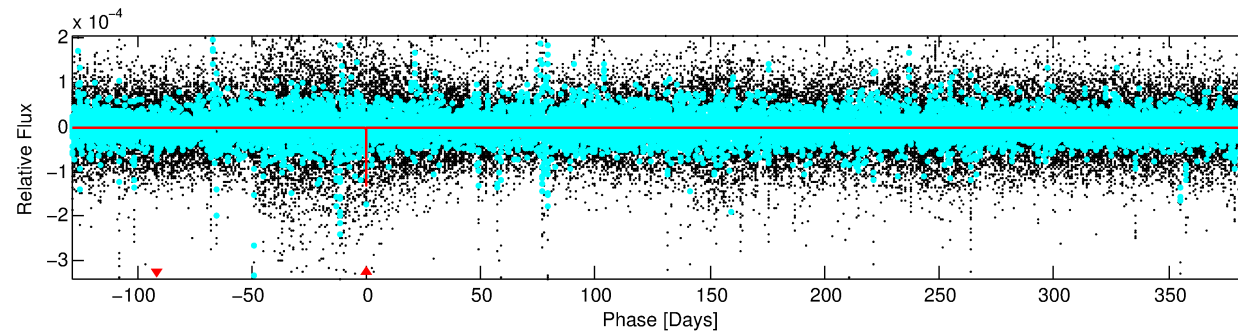
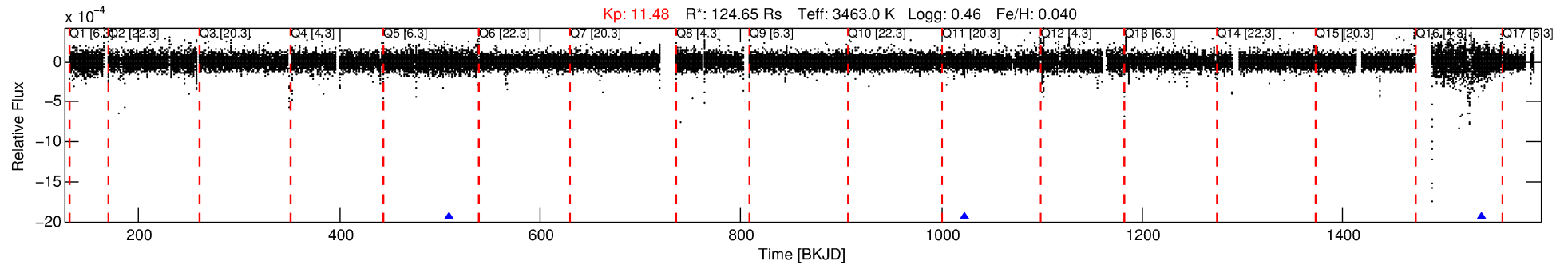
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010448122-01

No Significant Match Found

# DV One-Page Summary

KIC: 10448122 Candidate: 1 of 1 Period: 514.404 d



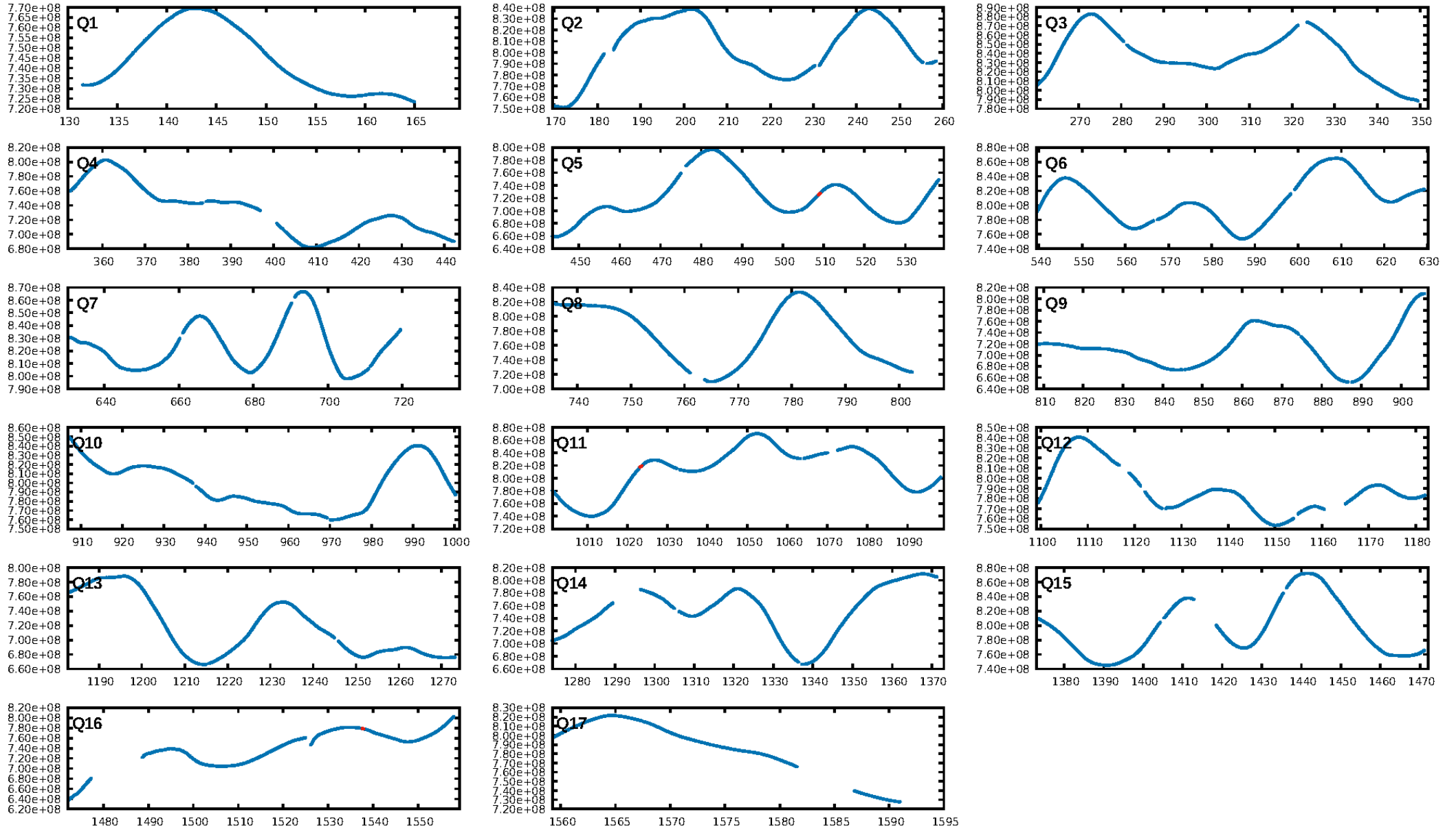
## DV Fit Results:

Period = 514.40435 [0.00822] d  
Epoch = 508.9539 [0.0098] BKJD  
Rp/R\* = 0.0139 [0.0085]  
a/R\* = 356.70 [717.22]  
b = 0.92 [0.37]  
Seff = 916.44 [146.82]  
Teq = 1403 [56] K  
Rp = 188.69 [120.14] Re  
a = 1.4781 [0.1655] AU  
Ag = 1.53 [1.97] [0.27σ]  
Teffp = 2414 [773] K [1.30σ]

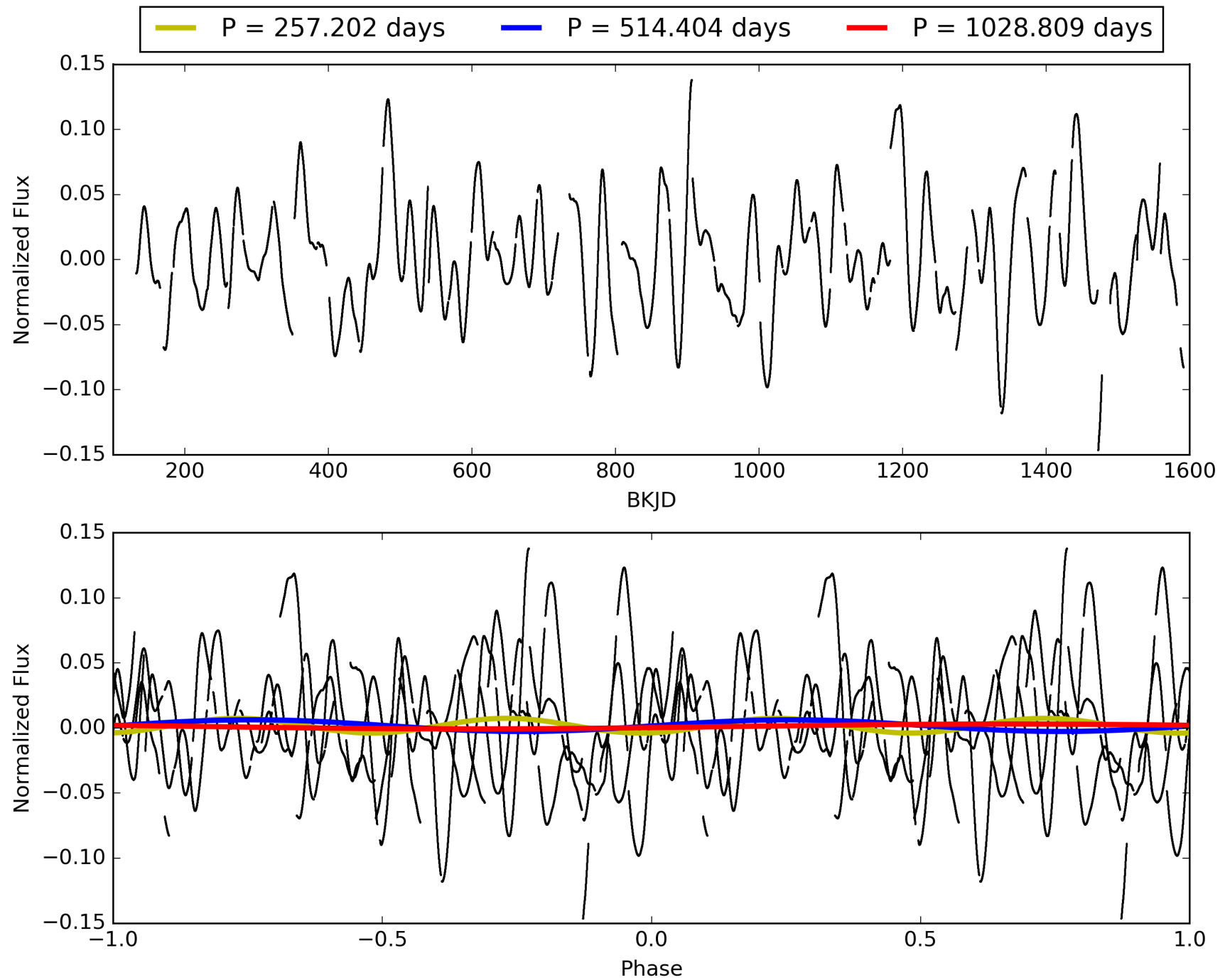
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 4.0%  
ModelChiSquareGof-sig: 64.8%  
Bootstrap-pfa: 2.36e-05  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.705  
Centroid-sig: 40.4%  
Centroid-so: 1.123 arcsec [0.59σ]  
OotOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-rm: N/A  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 010448122-01, PDC Light Curves

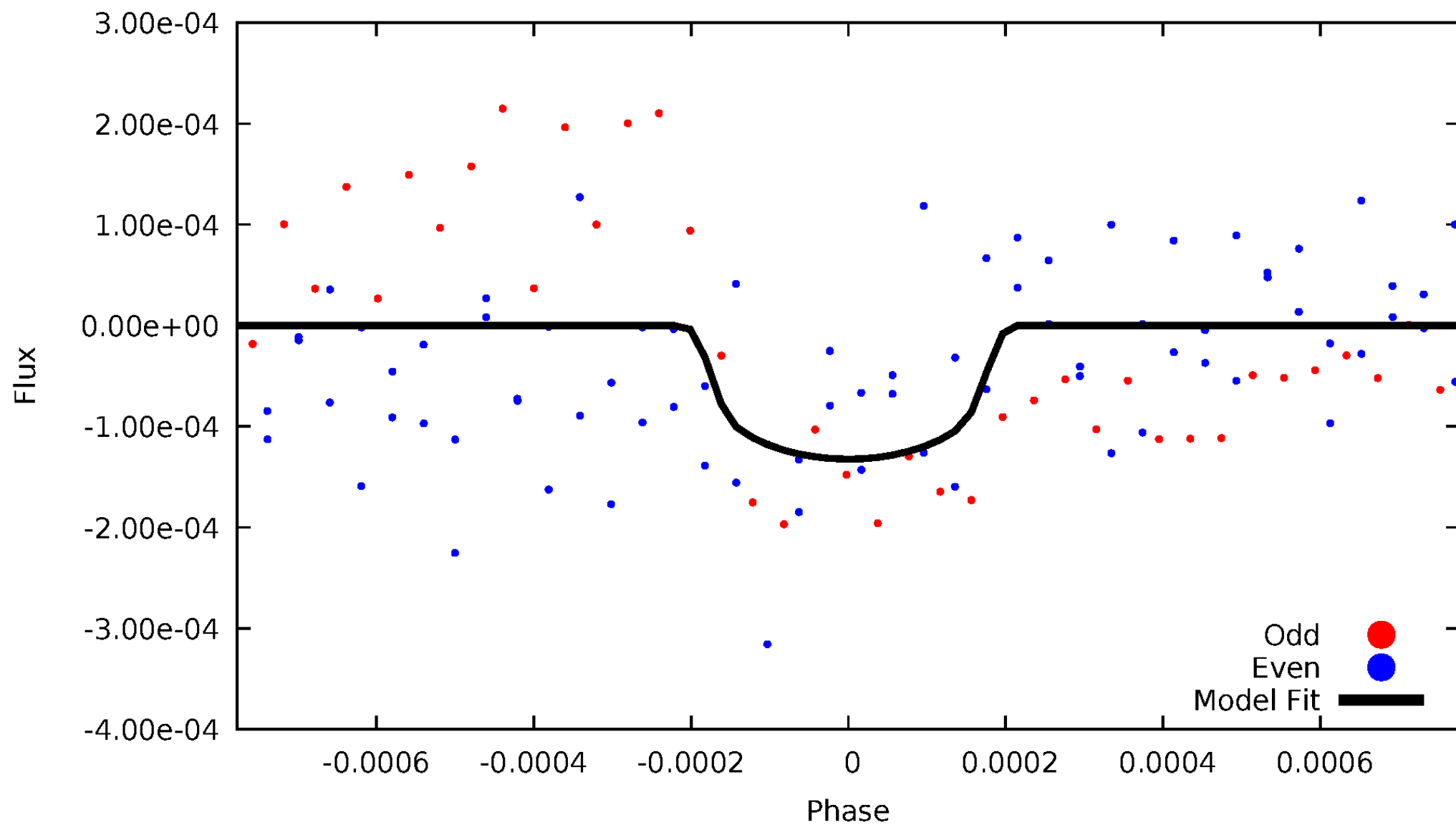


# TCE 010448122-01



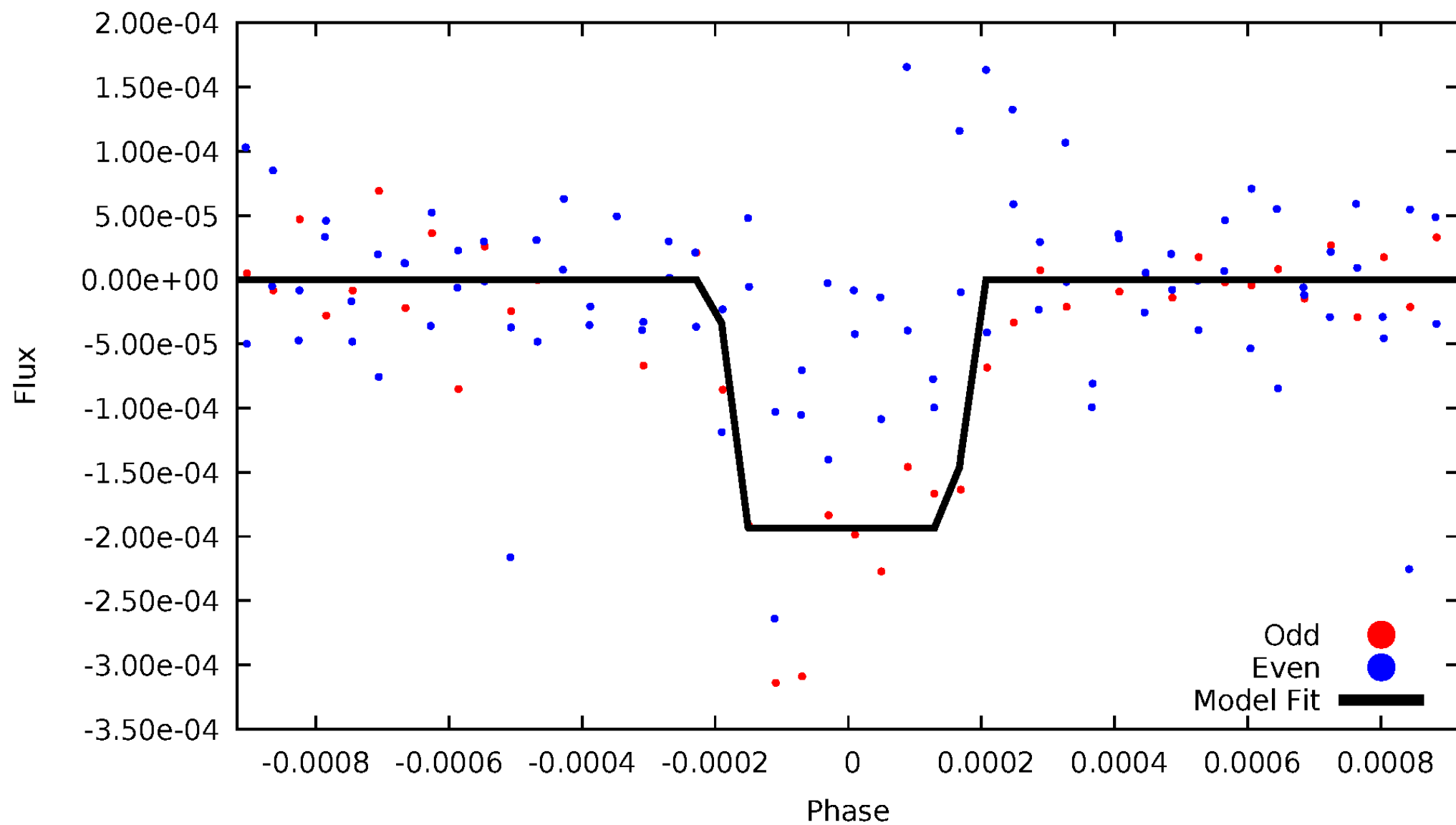
# DV Odd/Even

TCE 010448122-01



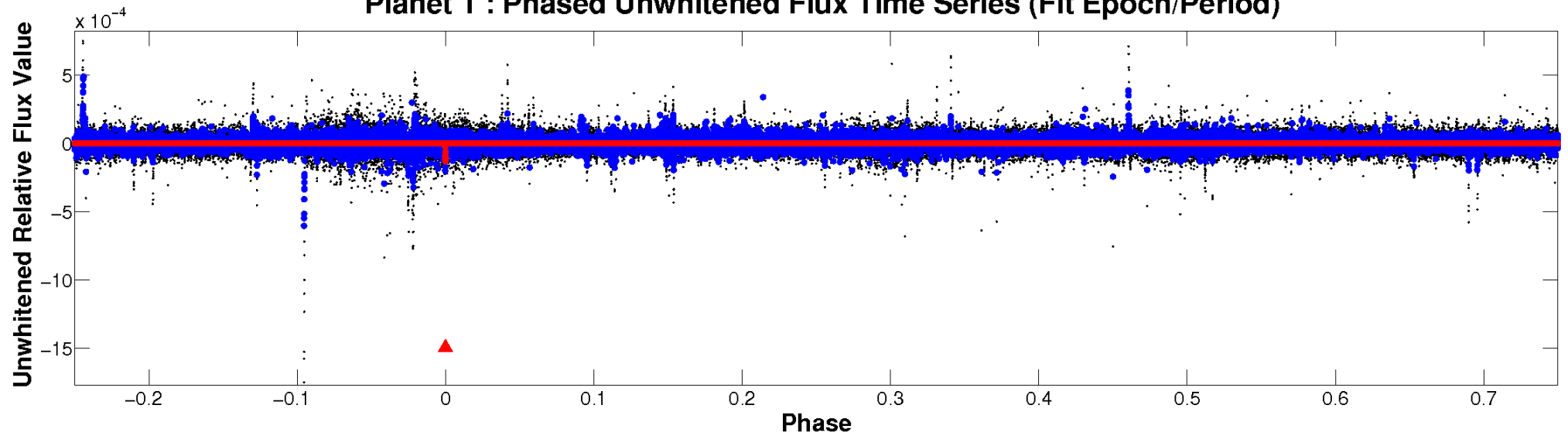
# ALT Odd/Even

TCE 010448122-01

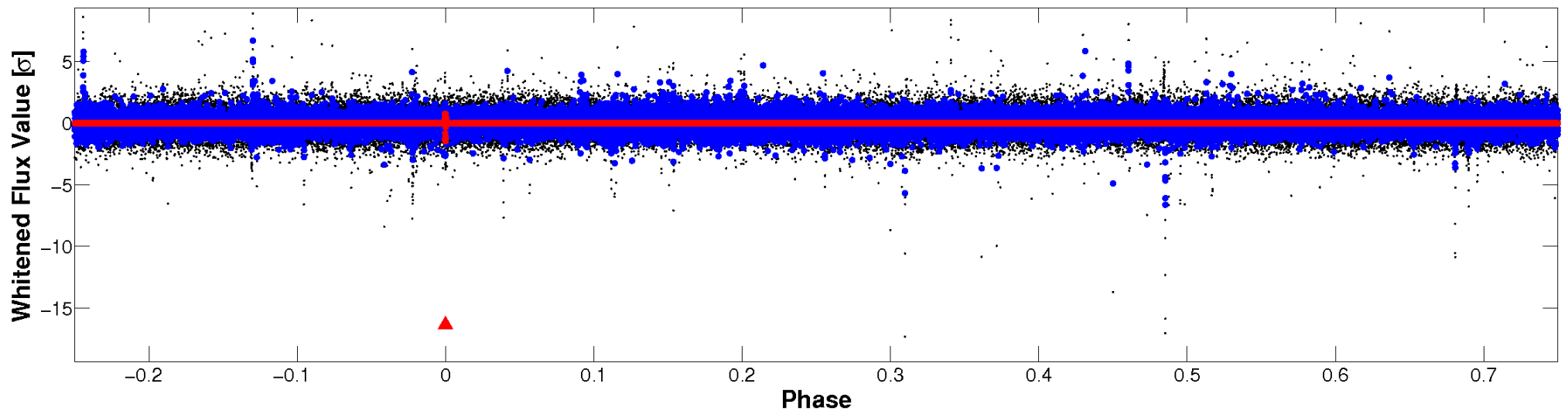


# Non-Whitened Vs. Whitened Light Curve

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

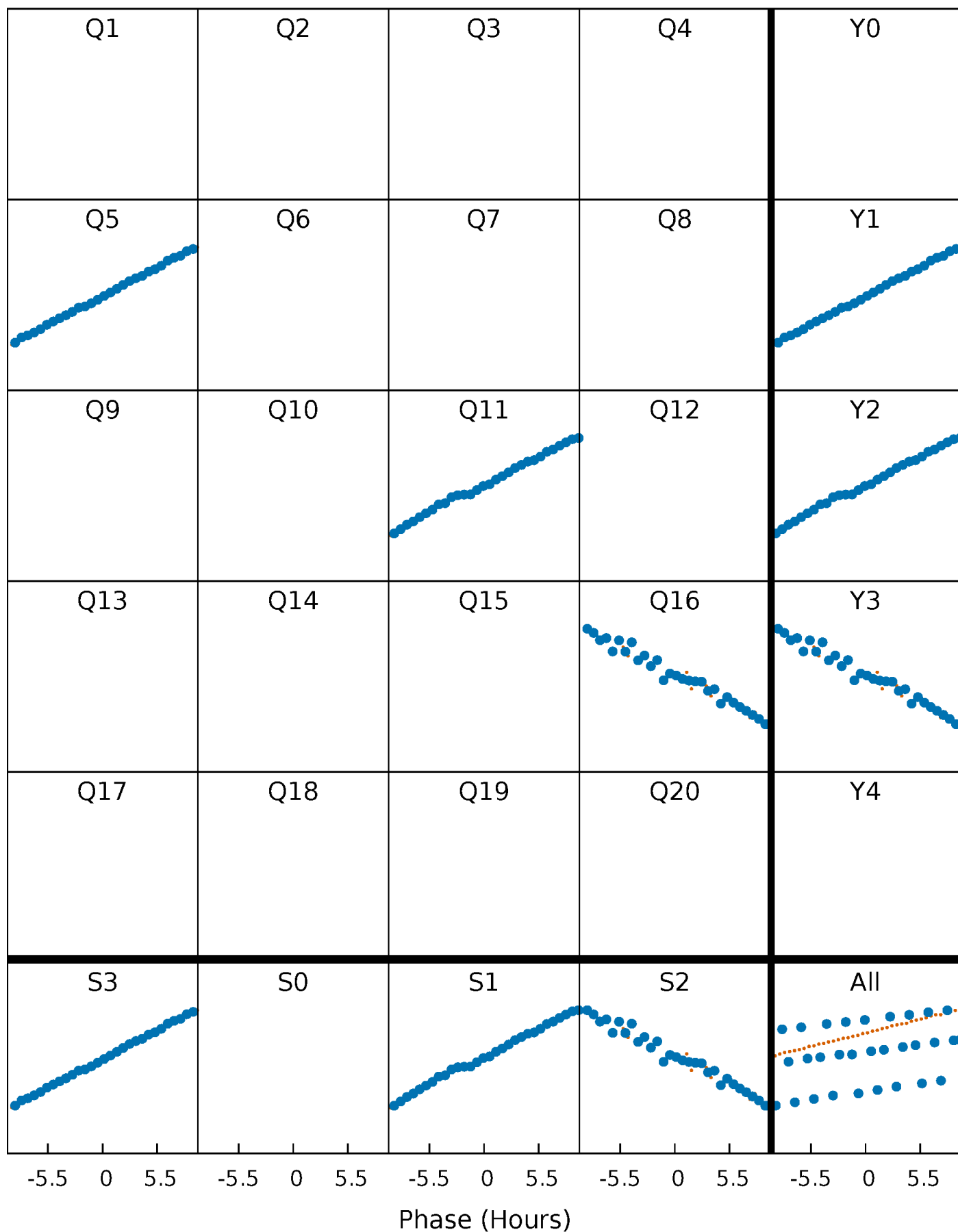


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

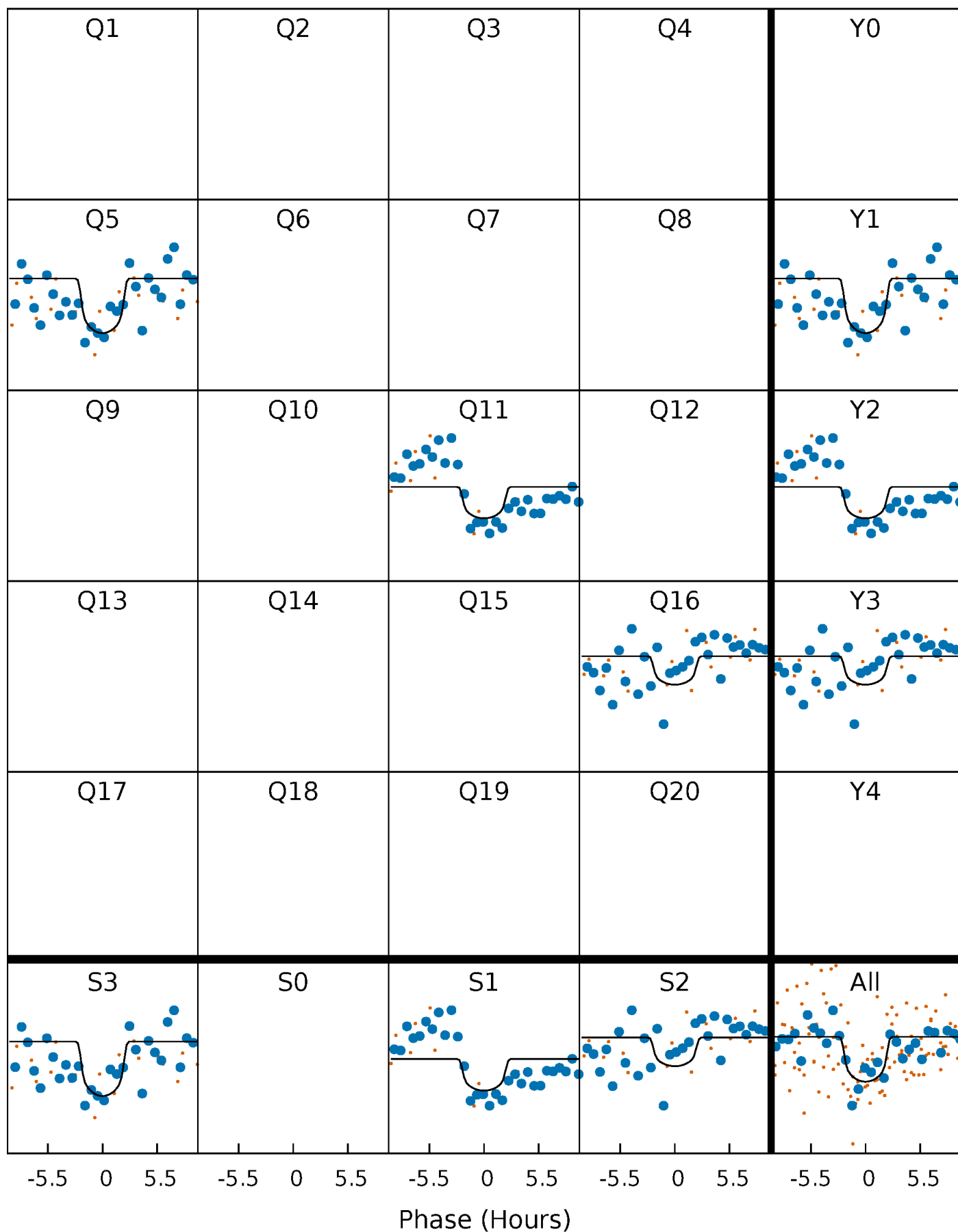
TCE 010448122-01 P=514.404349 Days  $T_0=508.953875$  (BKJD)





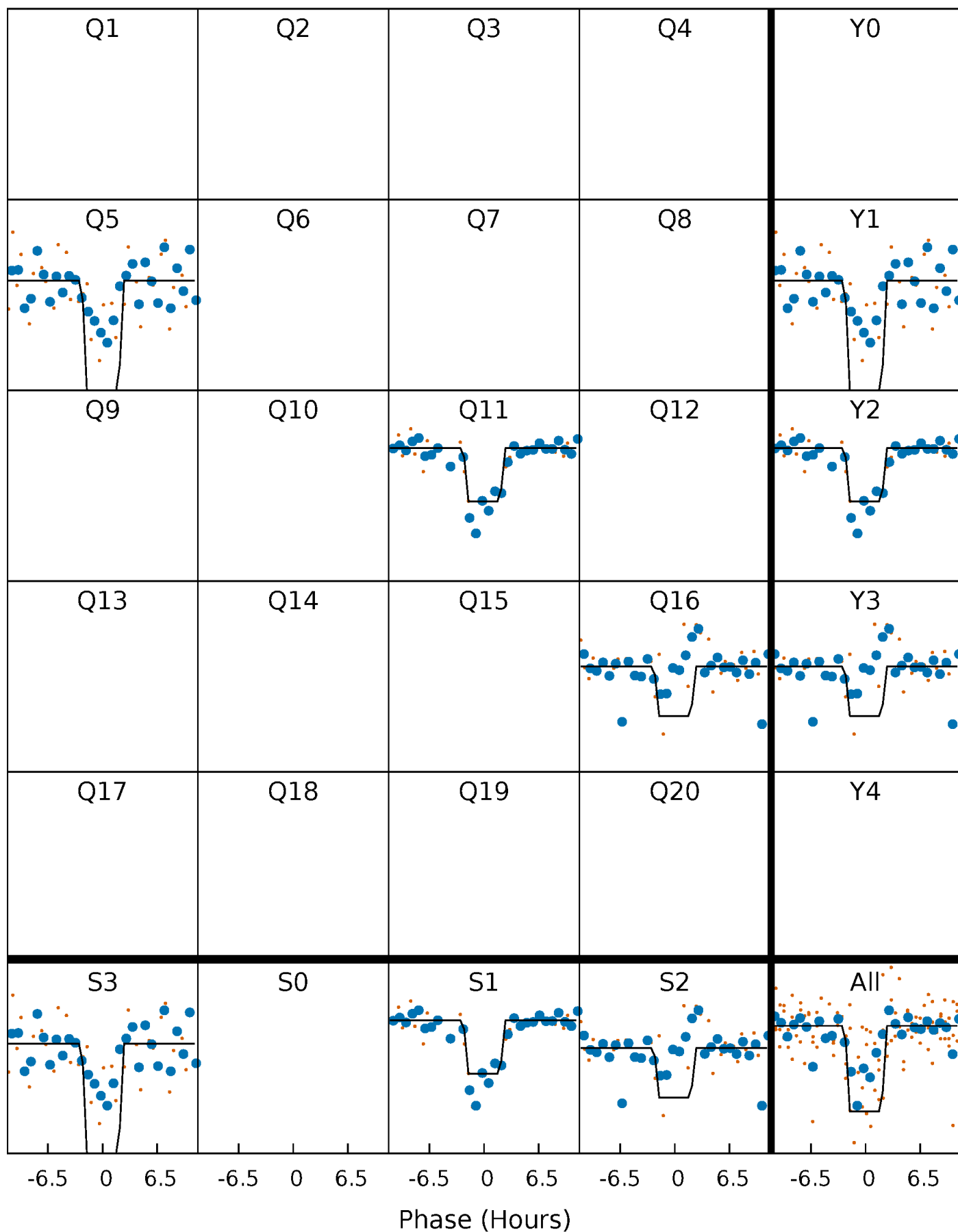
# DV Quarter-Phased Transit Curves

TCE 010448122-01 P=514.404349 Days  $T_0=508.953875$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

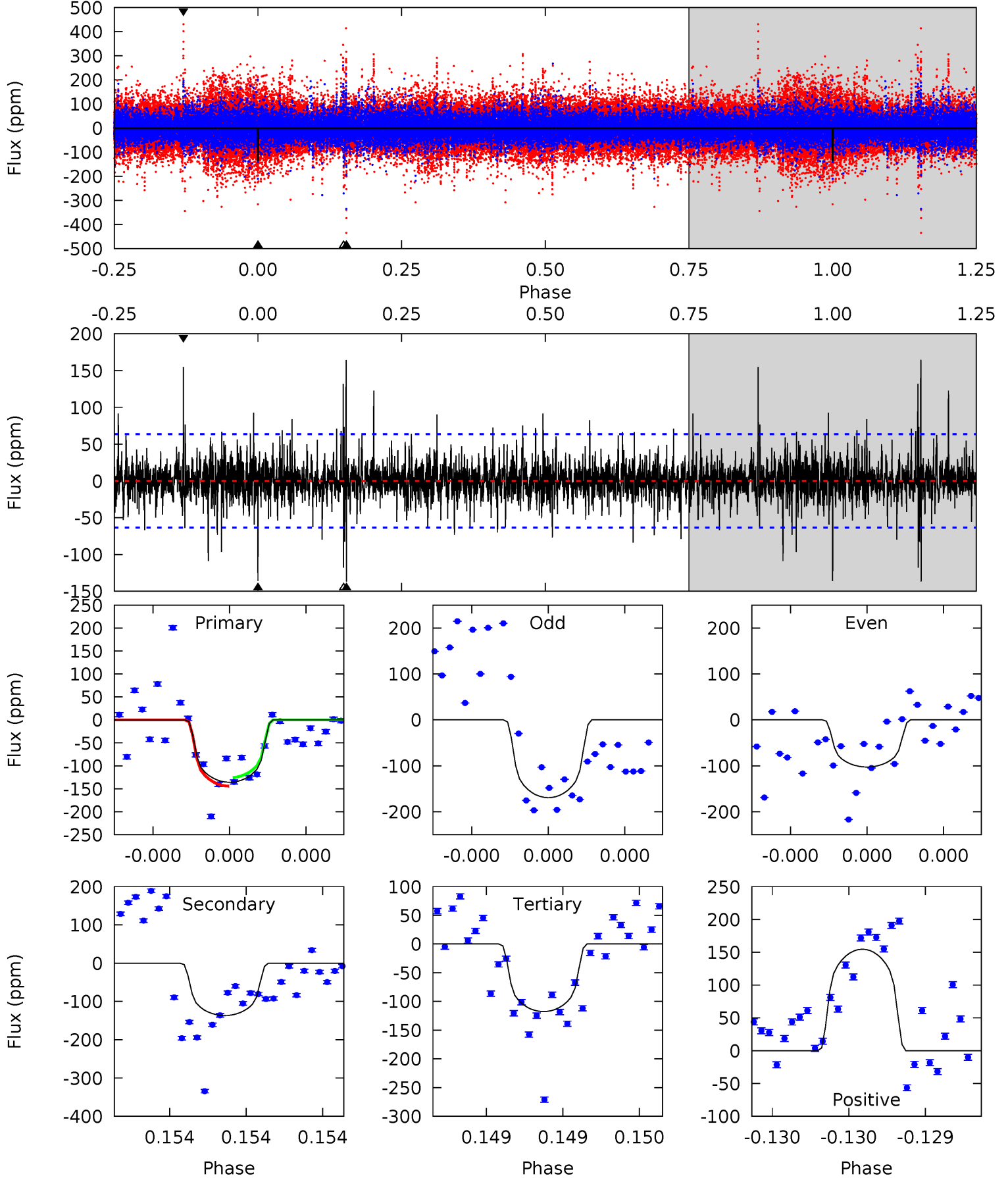
TCE 010448122-01 P=514.414873 Days  $T_0=508.936951$  (BKJD)



# DV Model-Shift Uniqueness Test

010448122-01, P = 514.404349 Days, E = 508.953875 Days

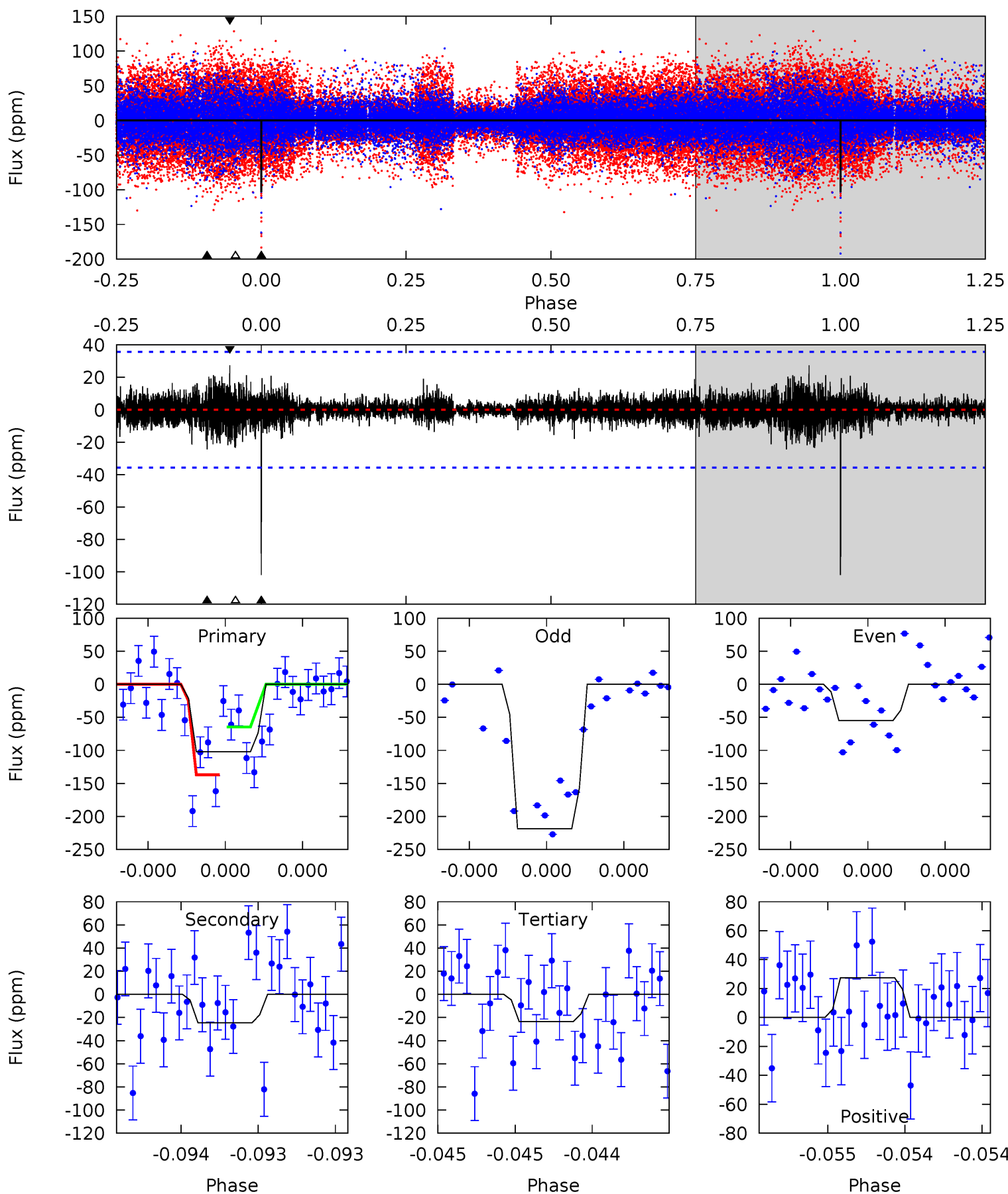
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	12.1	10.4	13.7	5.62	3.55	1.70	1.61	-1.66	1.70	-1.57	2.74	0.99	0.55	0.83



# Alt Model-Shift Uniqueness Test

010448122-01, P = 514.414873 Days, E = 508.936951 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
16.1	3.84	3.70	4.32	5.61	3.54	0.65	12.4	11.7	0.15	-0.47	14.9	1.44	0.21	4.93



### Stellar Parameters For KIC 010448122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3463^{+84}_{-93}$	$0.458^{+0.030}_{-0.030}$	$0.040^{+0.200}_{-0.250}$	$124.654^{+3.414}_{-20.487}$	$1.626^{+0.054}_{-0.483}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+7%/-7%	+500%/-625%	+3%/-16%	+3%/-30%	+23%/-7%
Source	PHO54	AST54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 010448122-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-137 \pm 11$	$199.19^{+106.07}_{-102.32}$	$1959^{+53}_{-57}$	$3186^{+904}_{-414}$	$4.126^{+12.553}_{-2.343}$
Alt.	$-24 \pm 6$	$190.50^{+110.67}_{-102.33}$	$1957^{+55}_{-61}$	$2434^{+702}_{-857}$	$0.796^{+2.855}_{-0.490}$

$T_{max}$  = 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

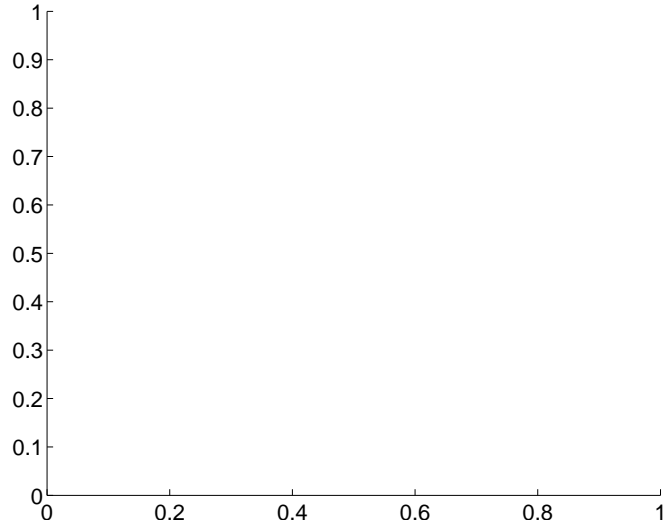
Supplemental centroid analysis for 010448122-01. **Kepler magnitude: 11.48.** Transit SNR 7.27

**There are 0 quarters with good PRF difference image offsets**

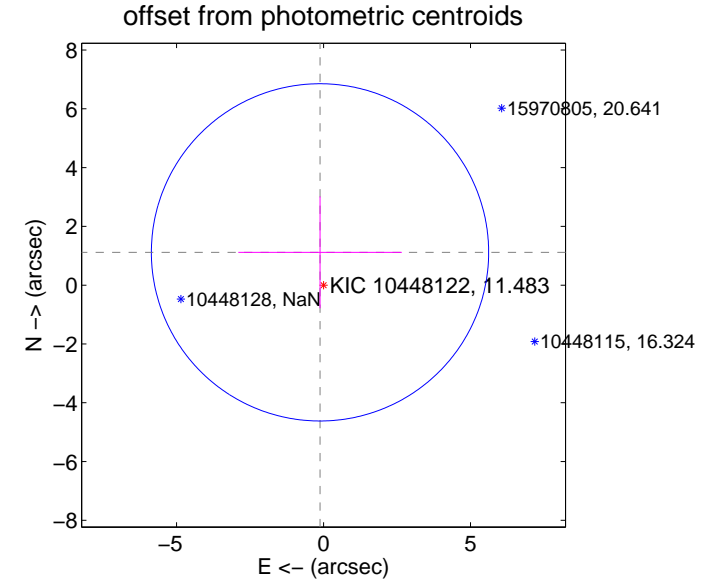
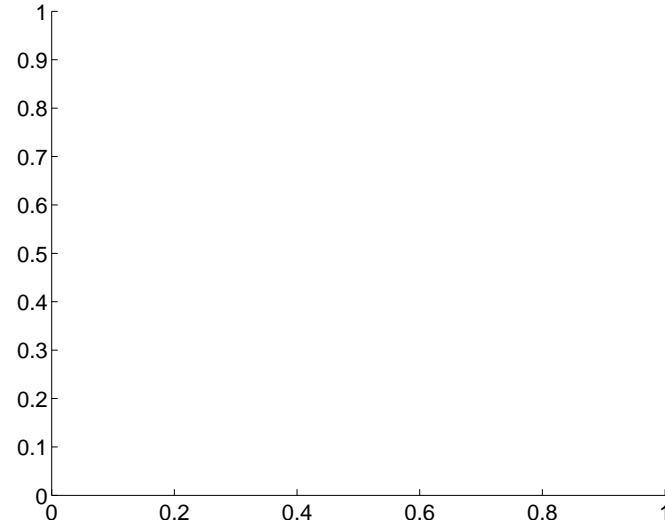
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$1.12 \pm 1.91$	0.59	$0.12 \pm 2.78$	$1.12 \pm 1.90$

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

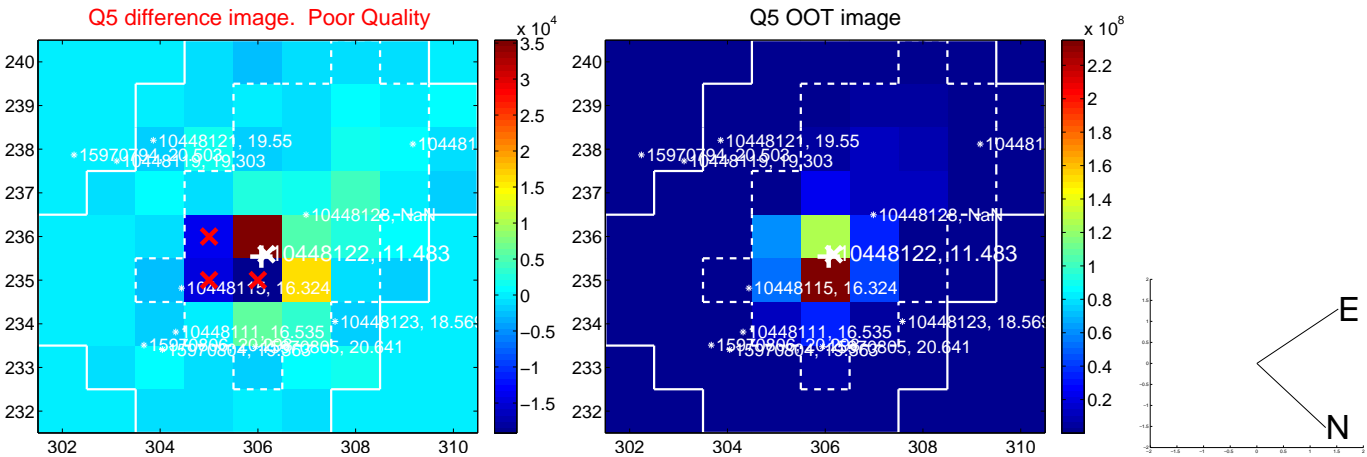


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

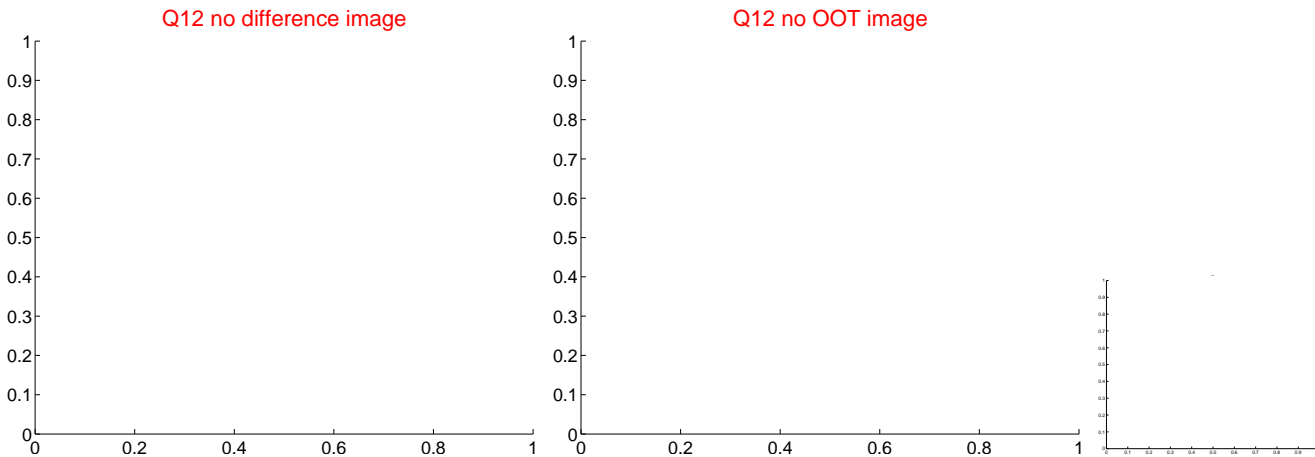
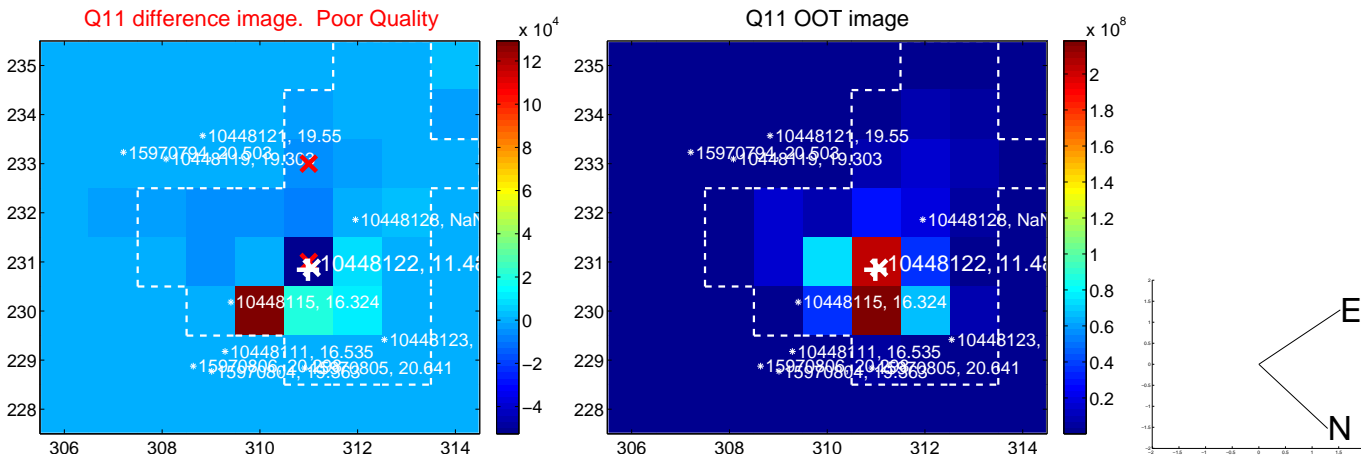
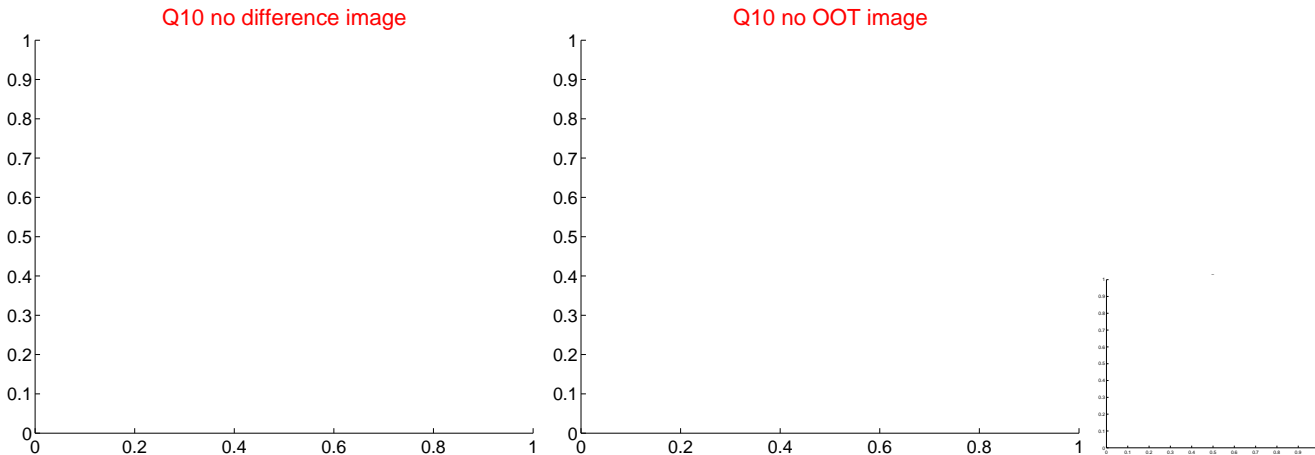
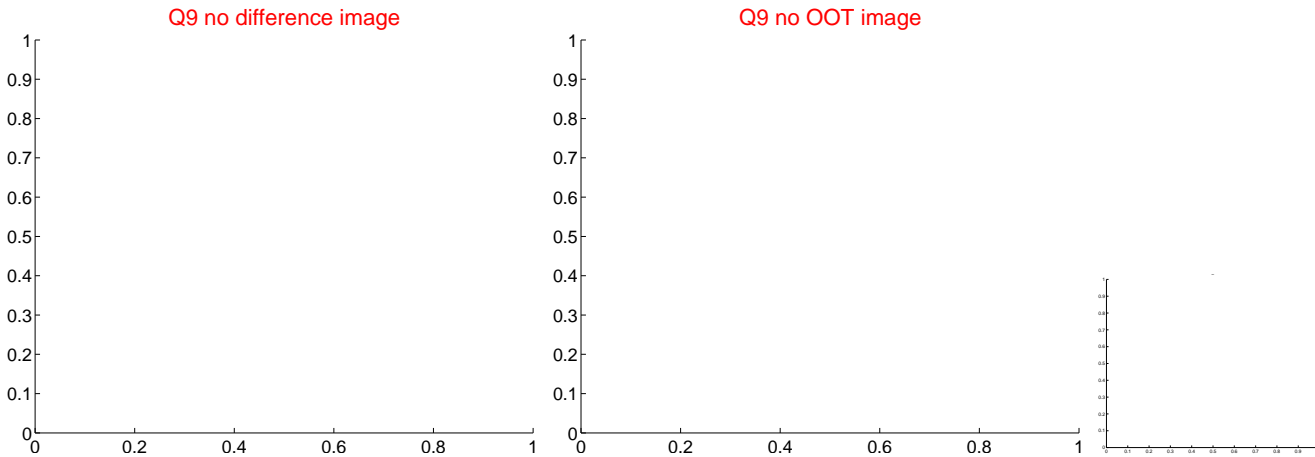


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

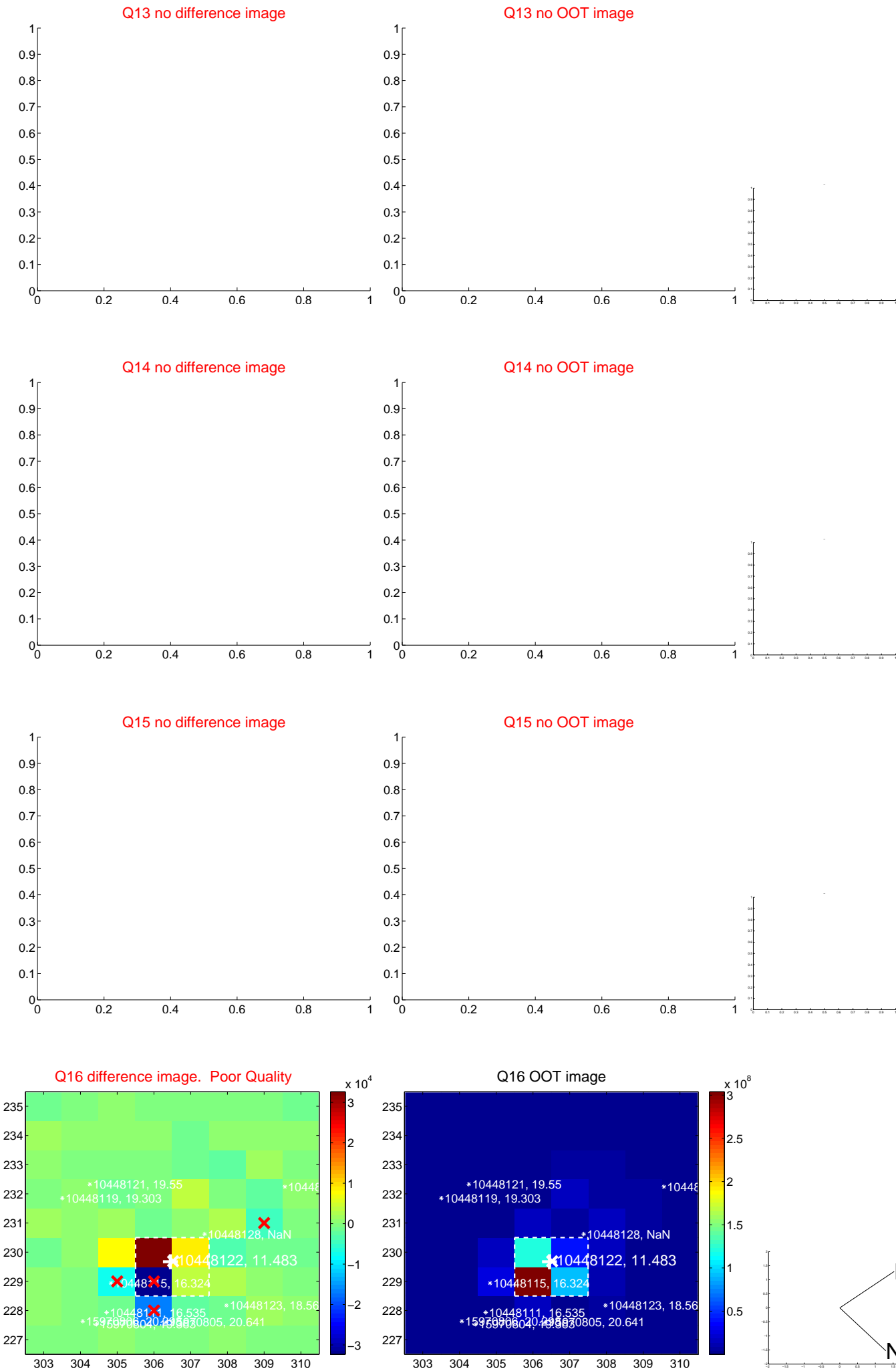




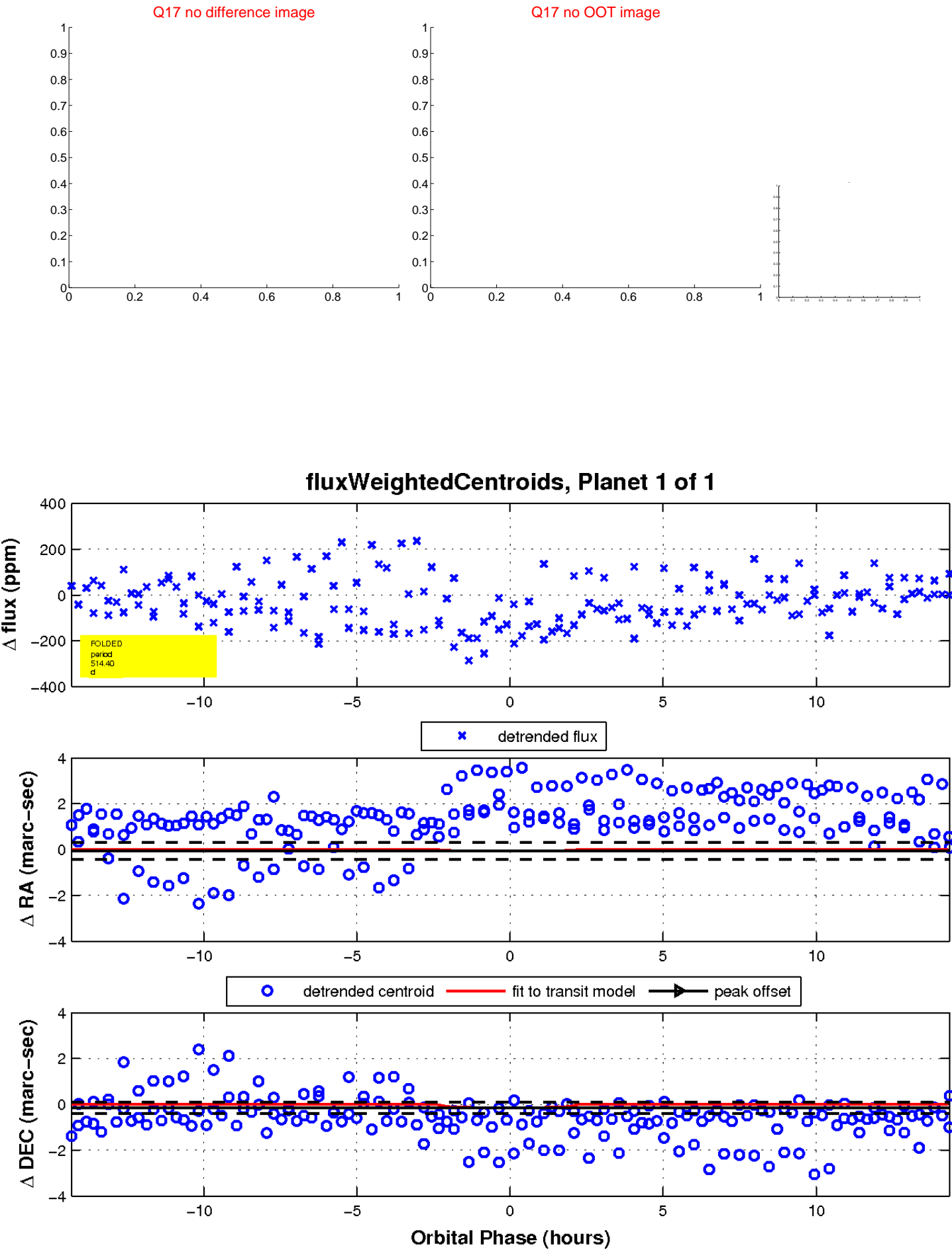
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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



UKIRT Image

Declination

