

# KIC 007191646

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007191646-01	OBS	4358.01	106.954551	224.996647	617.8	7.894	9.9	10.1	0.97	6075	3.40	5.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007191646-01	OBS	PC	0.95	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 007191646-01

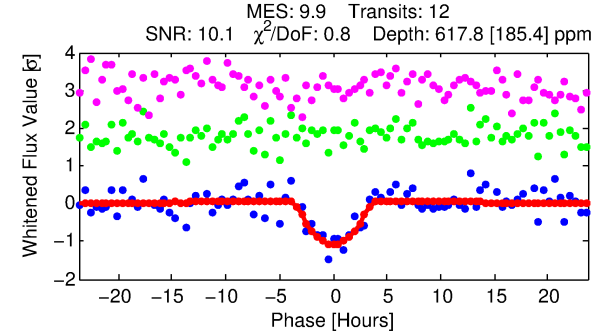
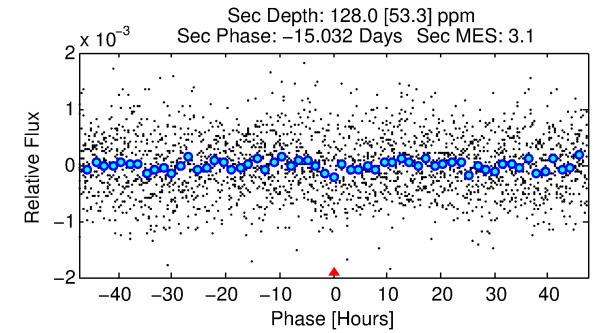
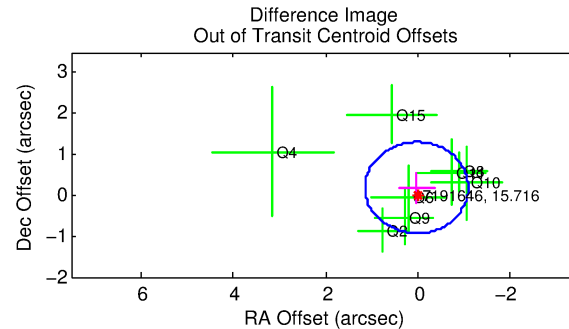
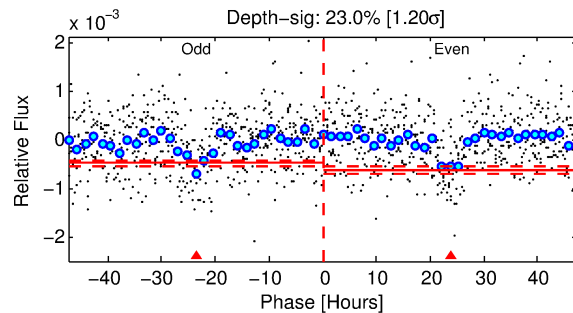
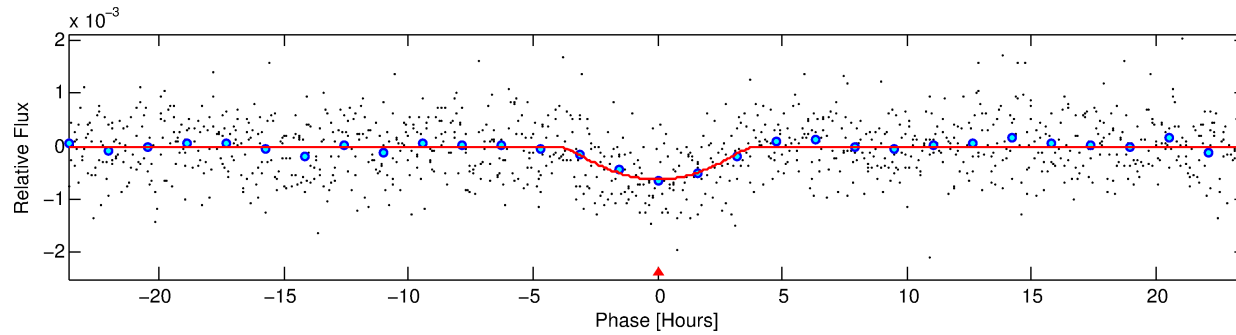
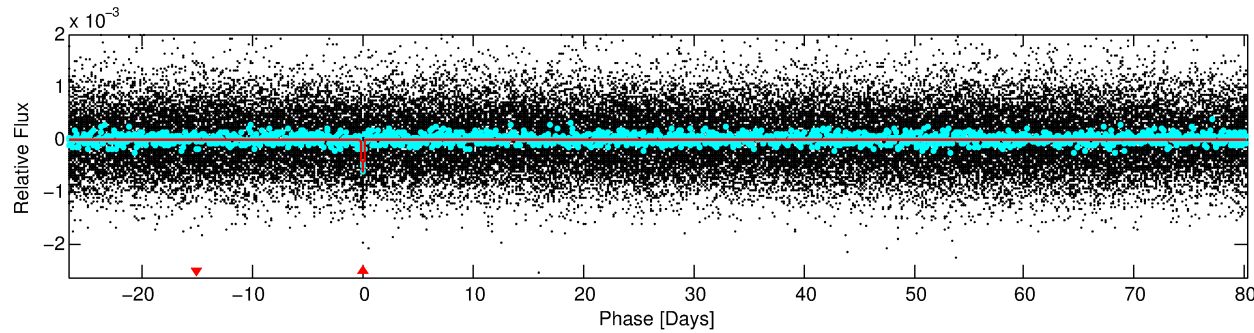
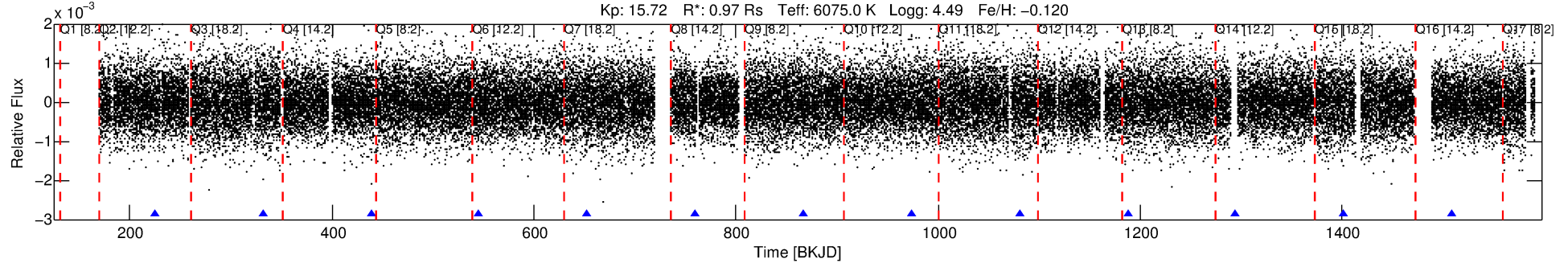
No Significant Match Found

# DV One-Page Summary

KIC: 7191646 Candidate: 1 of 1 Period: 106.955 d

KOI: K04358.01 Corr: 0.935

Kp: 15.72 R\*: 0.97 Rs Teff: 6075.0 K Logg: 4.49 Fe/H: -0.120



## DV Fit Results:

Period = 106.95455 [0.00254] d  
Epoch = 224.9966 [0.0170] BKJD  
Rp/R\* = 0.0322 [0.0220]  
a/R\* = 34.24 [13.52]  
b = 0.98 [0.05]  
Seff = 5.71 [2.36]  
Teq = 394 [41] K  
Rp = 3.40 [2.55] Re  
a = 0.4481 [0.1186] AU  
Ag = 1223.11 [1812.69] [0.67σ]  
Teffp = 3603 [1294] K [2.48σ]

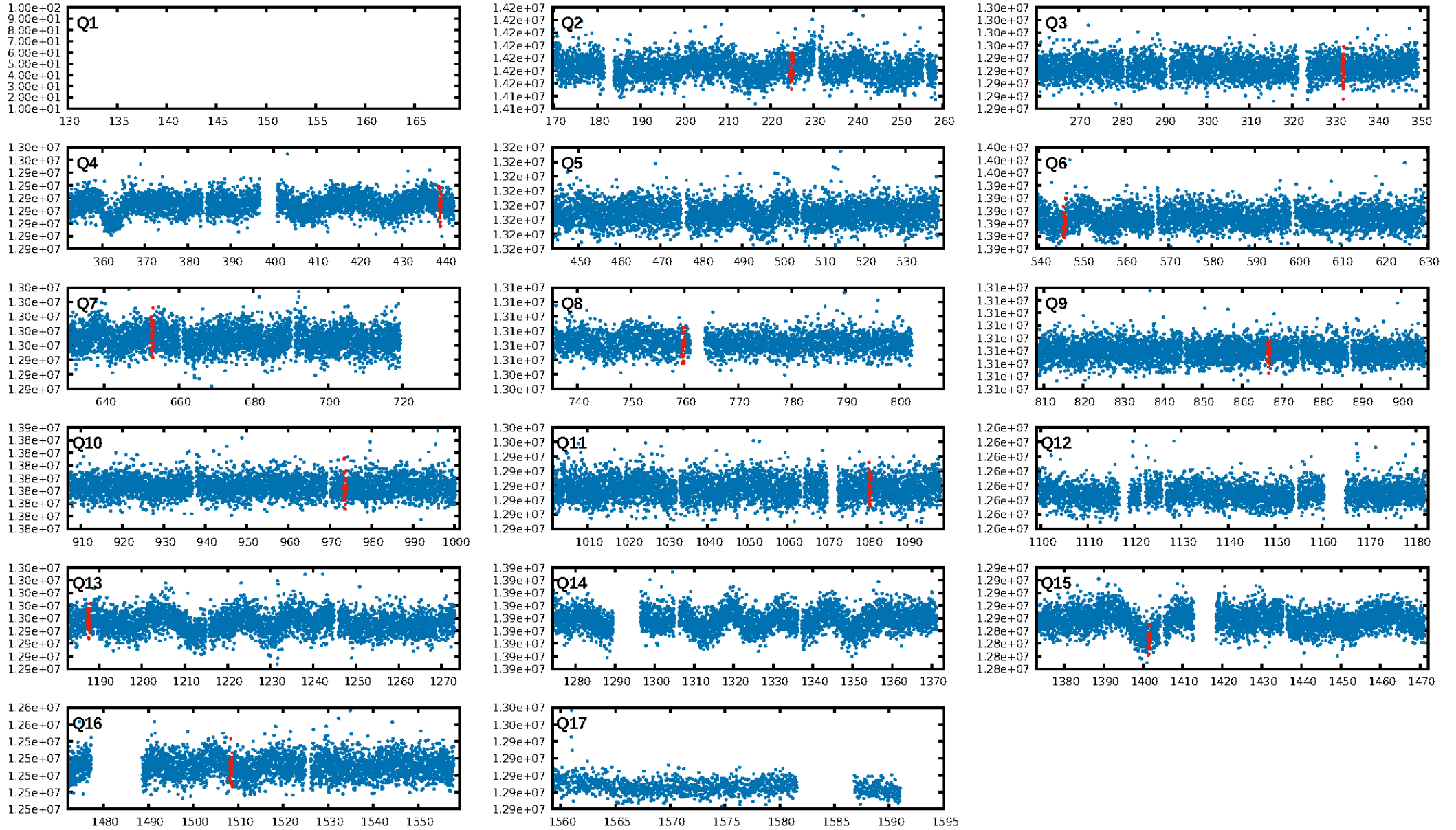
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 61.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 7.98e-23  
RollingBand-fgt: 1.00 [12/12]  
GhostDiagnostic-chr: 3.274  
Centroid-sig: 58.5%  
Centroid-so: 1.163 arcsec [0.83σ]  
OotOffset-rm: 0.189 arcsec [0.51σ]  
KicOffset-rm: 0.055 arcsec [0.15σ]  
OotOffset-st: 3/2/2/1 [8]  
KicOffset-st: 3/2/2/1 [8]  
DiffImageQuality-fgm: 0.50 [4/8]  
DiffImageOverlap-fno: 1.00 [11/11]

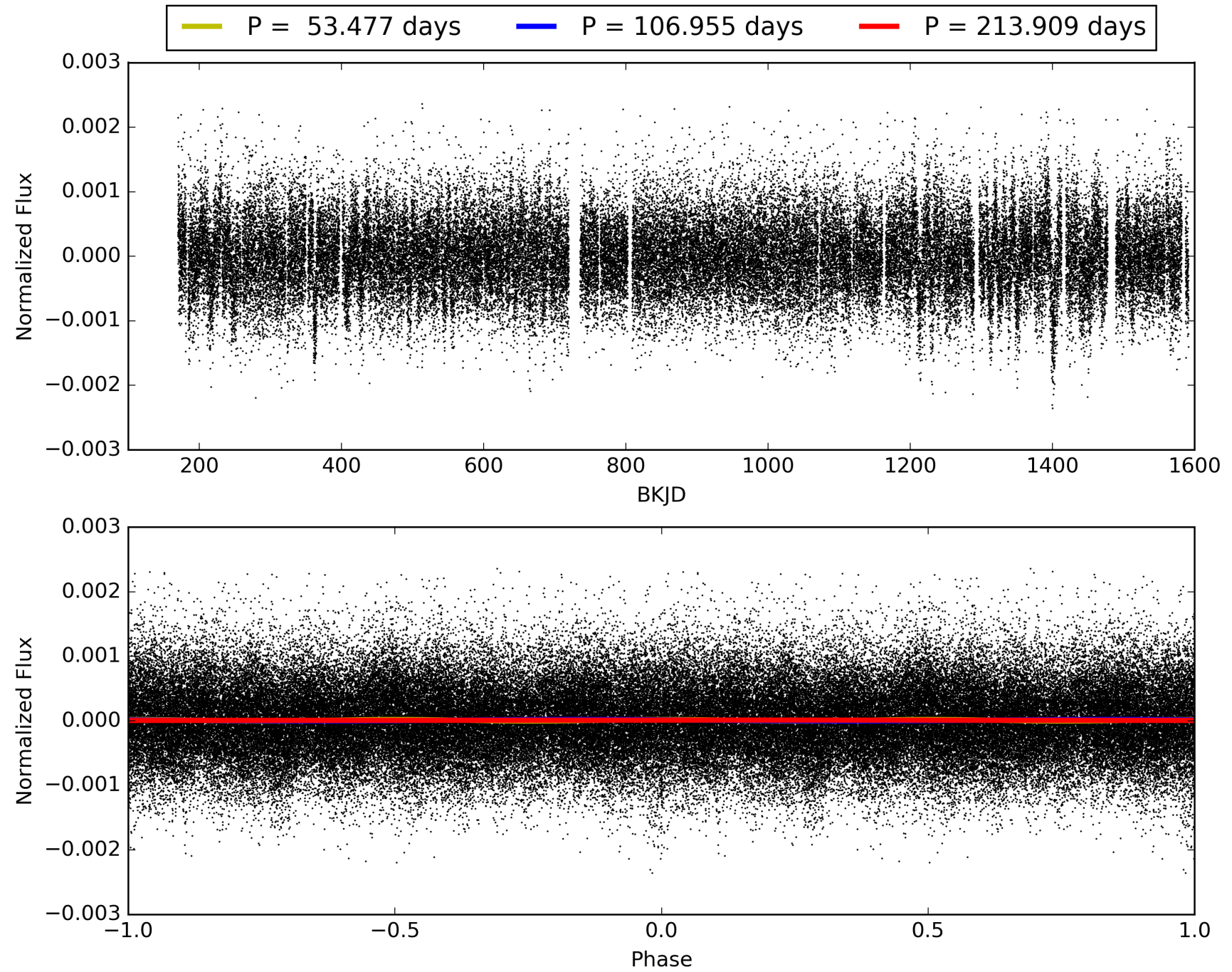
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:28:27 Z

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

# TCE 007191646-01, PDC Light Curves

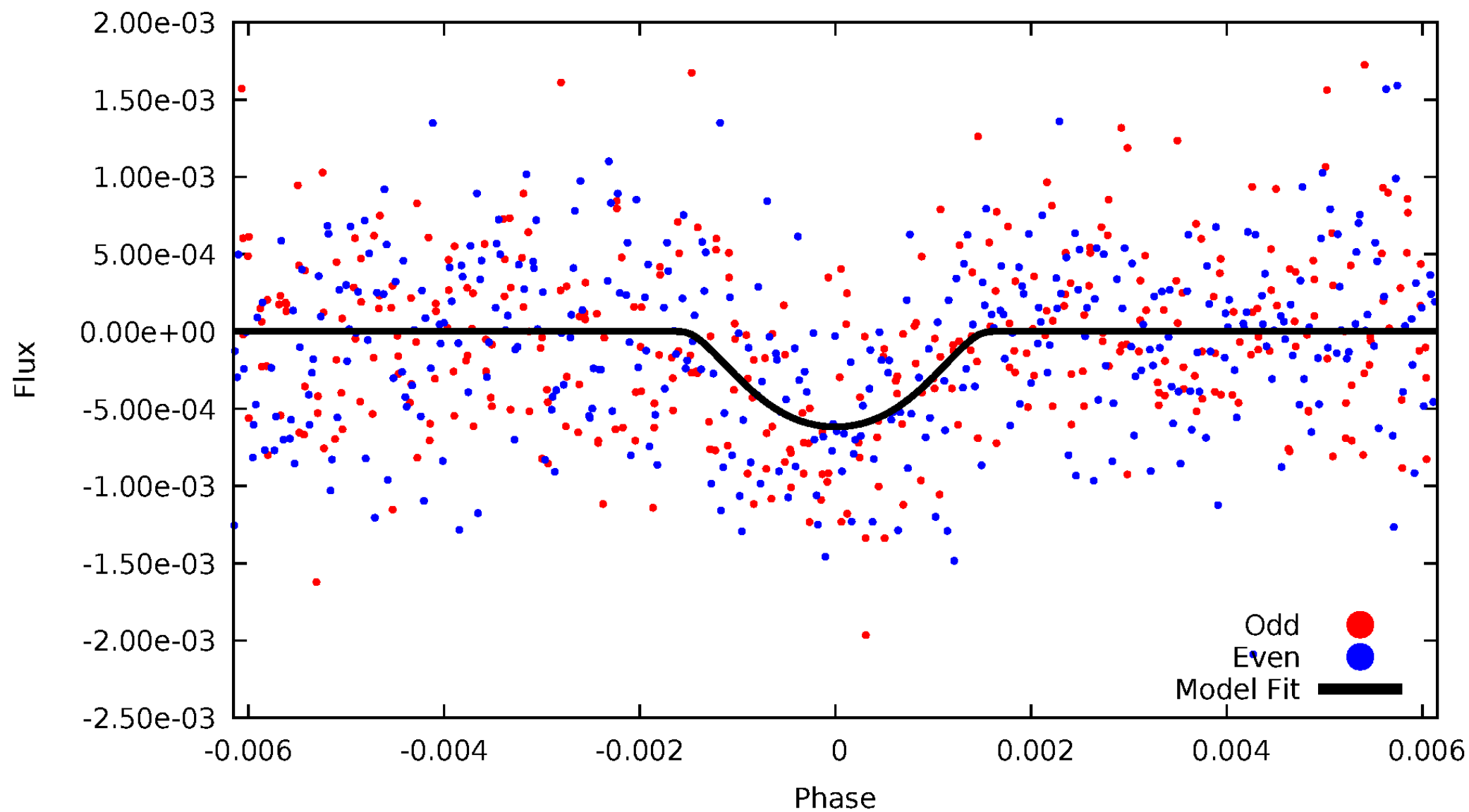


# TCE 007191646-01



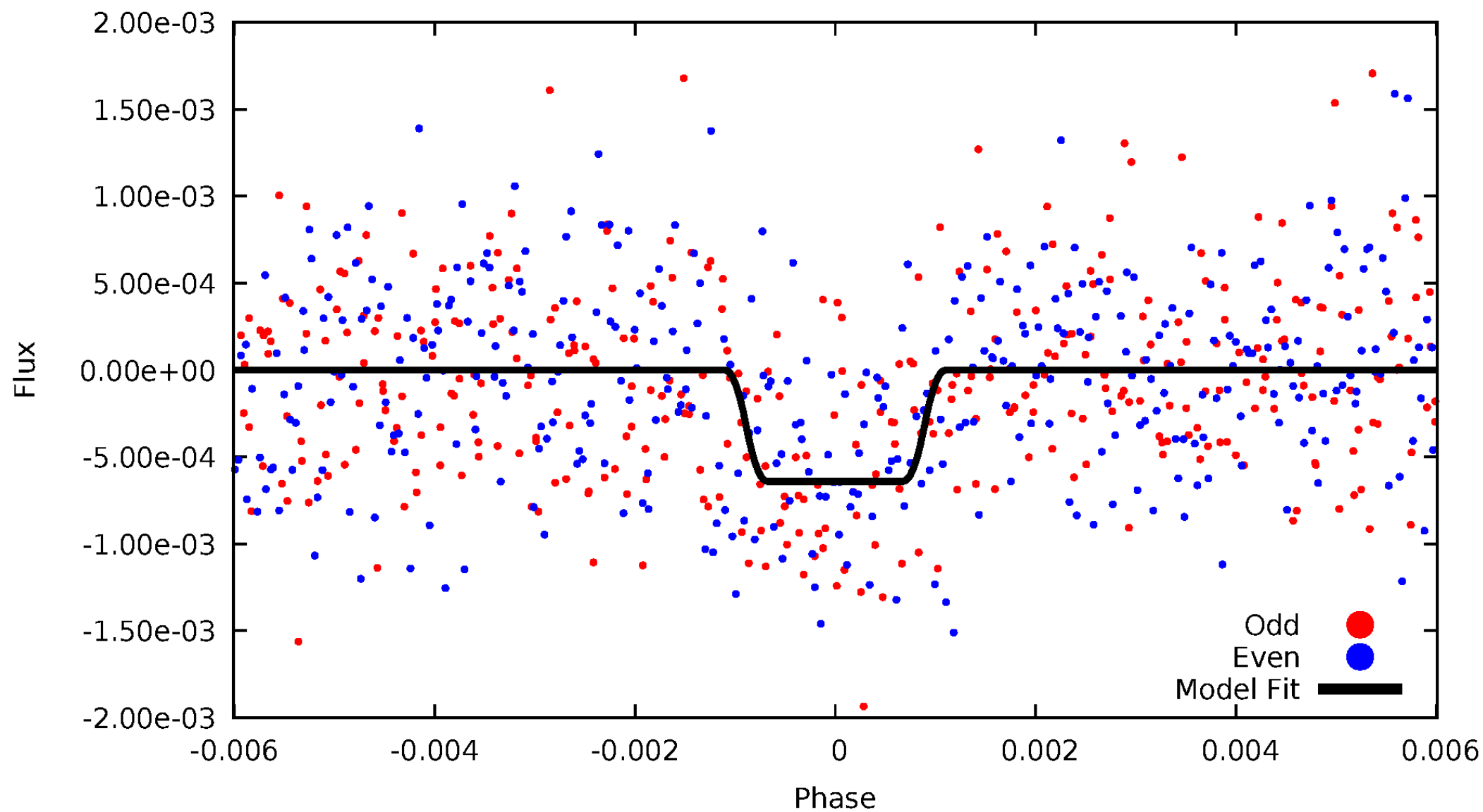
# DV Odd/Even

TCE 007191646-01



# ALT Odd/Even

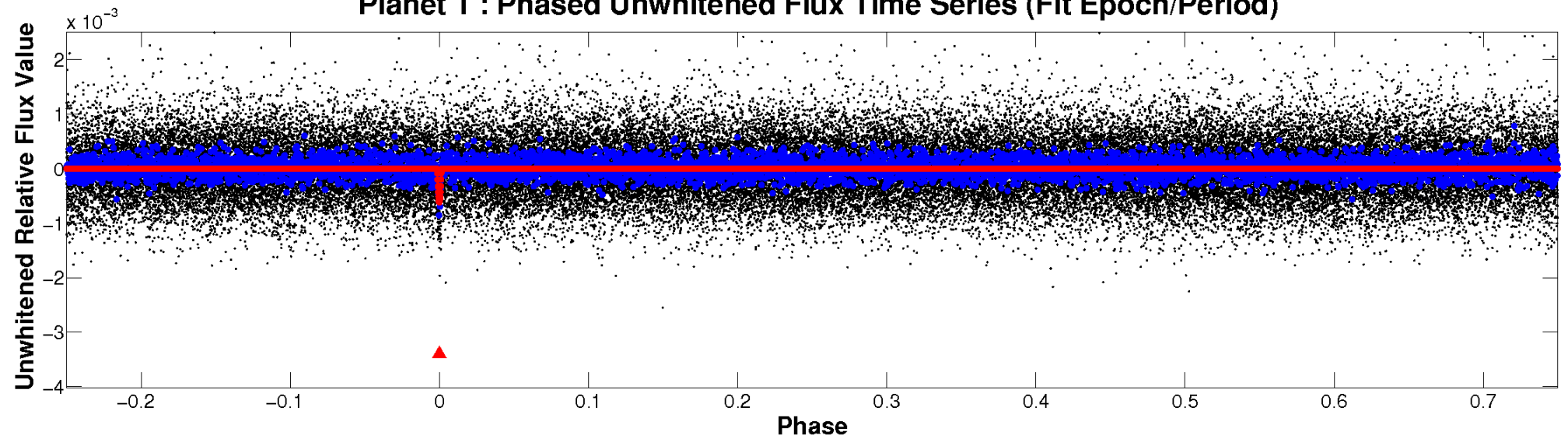
TCE 007191646-01



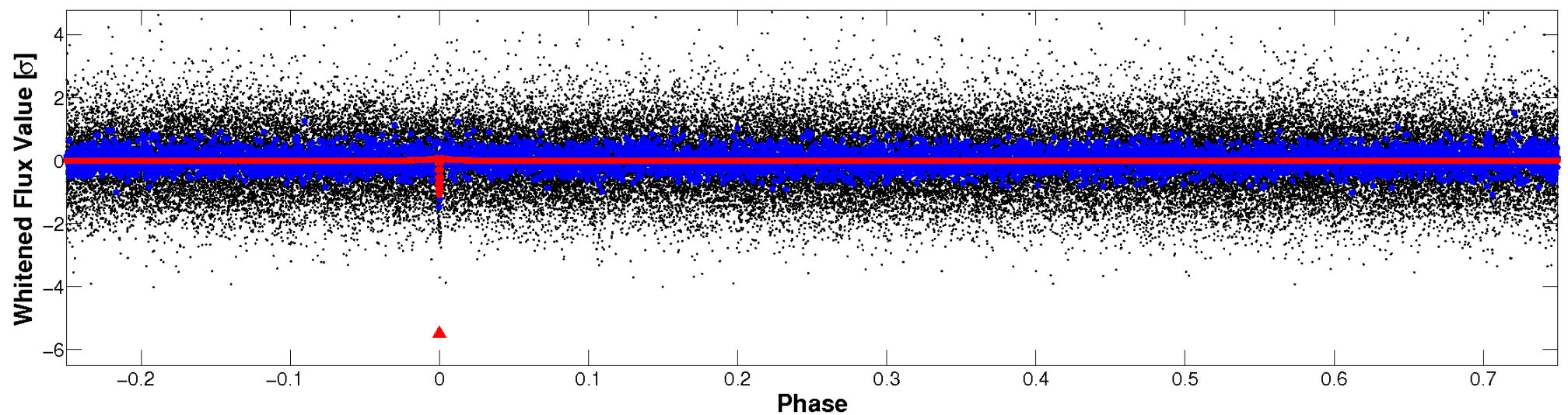


# Non-Whitened Vs. Whitened Light Curve

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

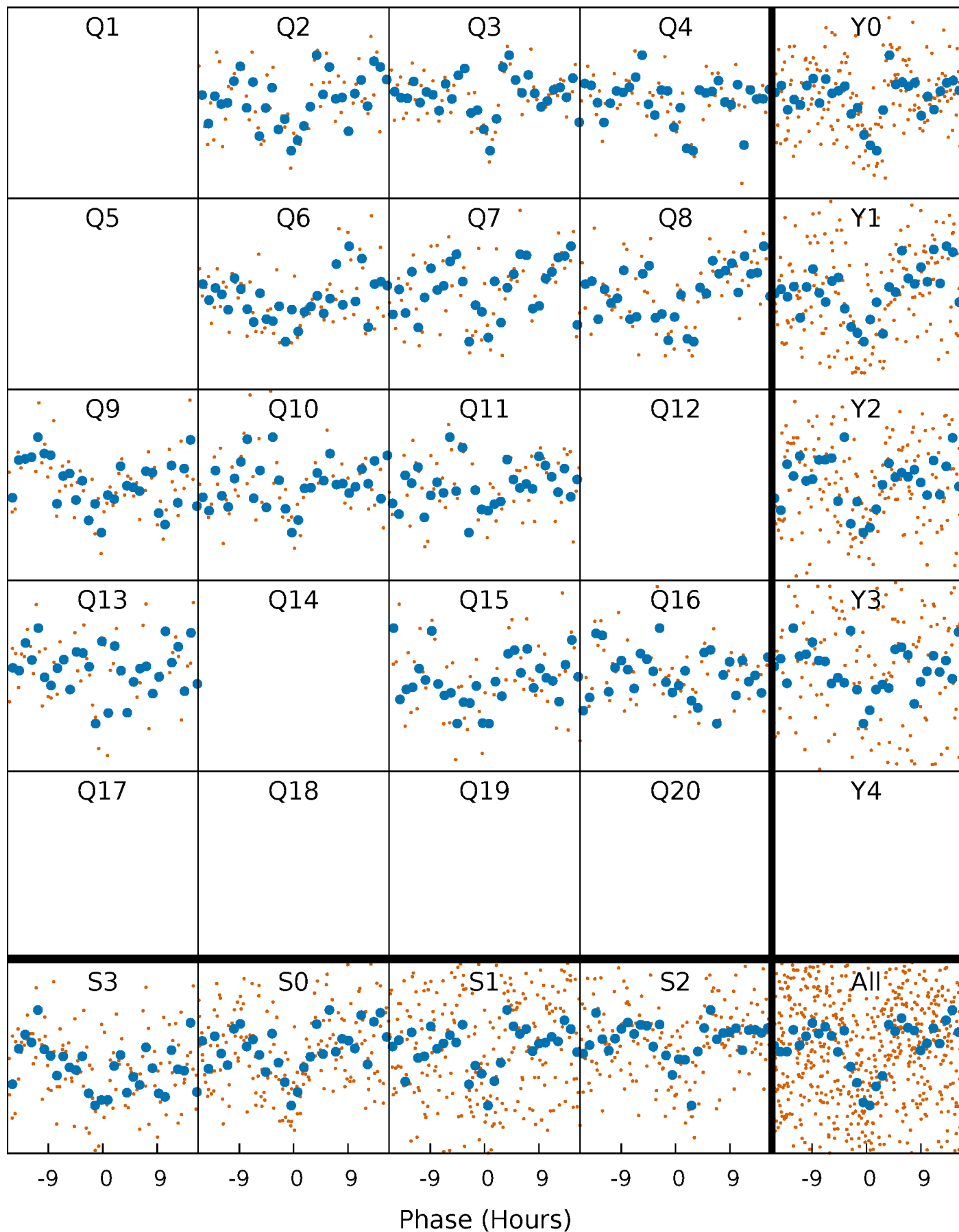


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

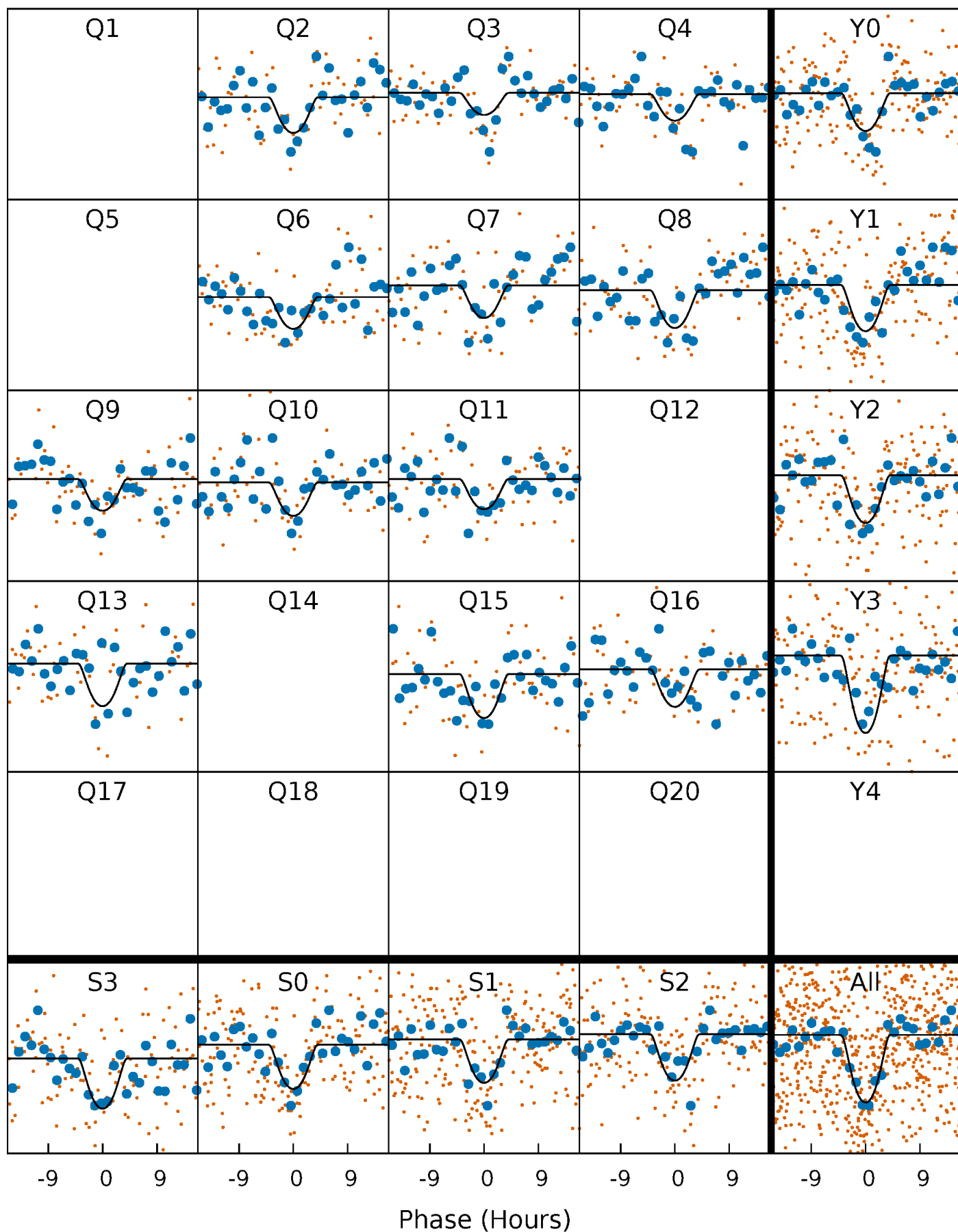
TCE 007191646-01 P=106.954551 Days  $T_0=224.996647$  (BKJD)





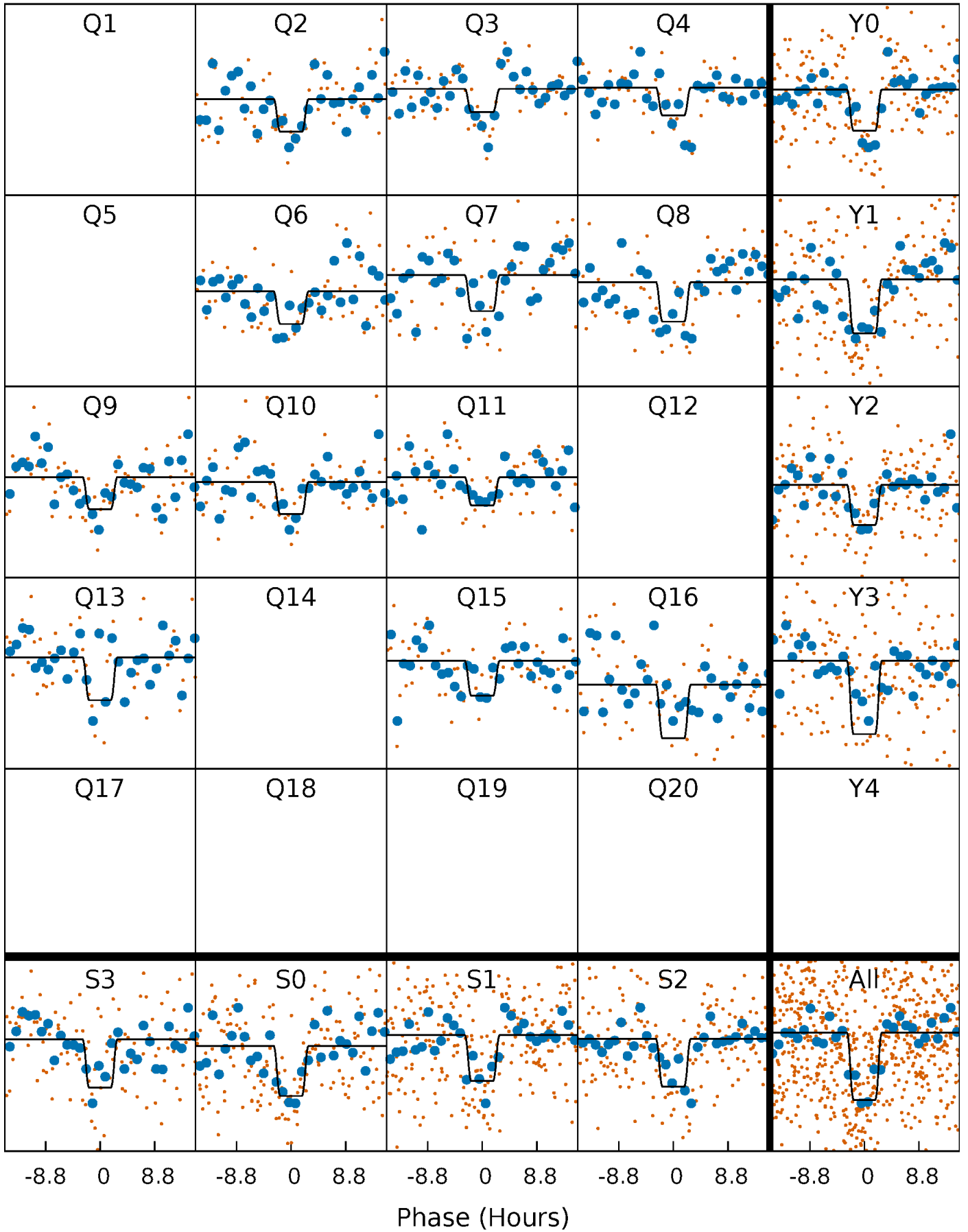
# DV Quarter-Phased Transit Curves

TCE 007191646-01 P=106.954551 Days  $T_0=224.996647$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

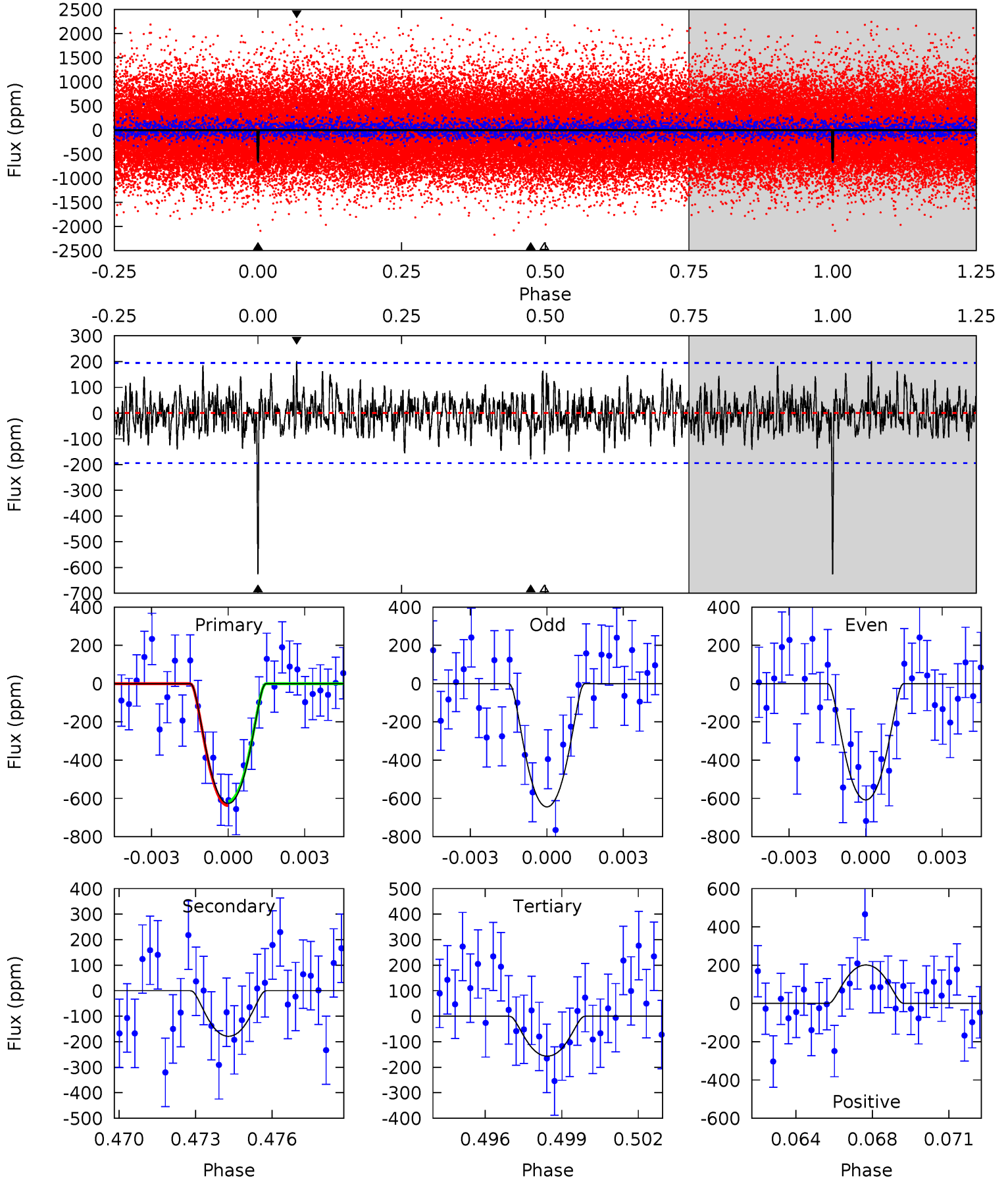
TCE 007191646-01 P=106.954858 Days  $T_0=224.999450$  (BKJD)



# DV Model-Shift Uniqueness Test

007191646-01, P = 106.954551 Days, E = 118.042096 Days

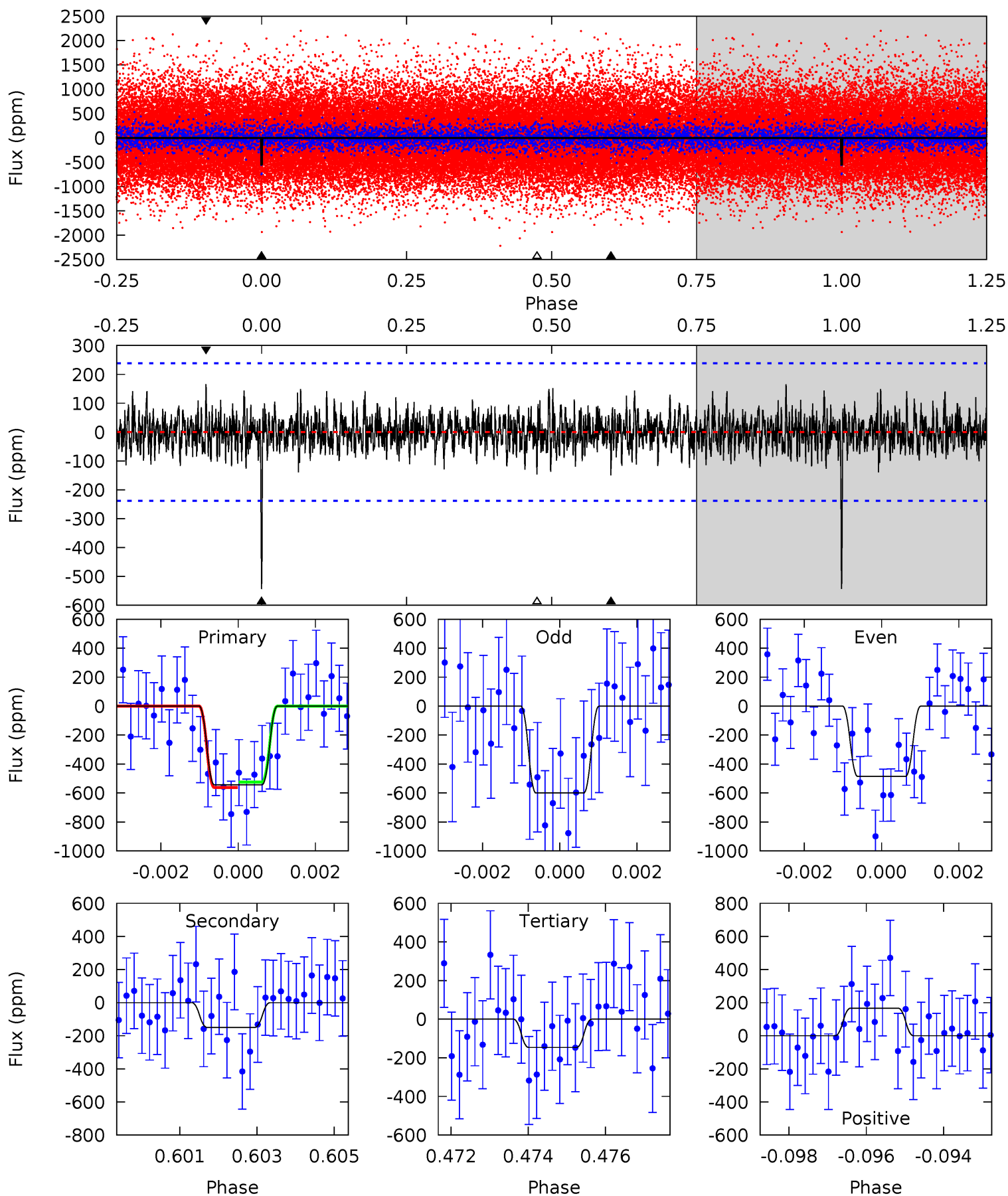
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	4.81	4.22	5.42	5.24	2.95	1.46	12.7	11.5	0.59	-0.60	0.49	0.93	0.24	0.31



# Alt Model-Shift Uniqueness Test

007191646-01, P = 106.954858 Days, E = 118.044592 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
12.1	3.34	3.27	3.70	5.31	3.06	1.03	8.84	8.41	0.07	-0.36	1.28	1.00	0.23	0.42



### Stellar Parameters For KIC 007191646

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6075^{+189}_{-210}$	$4.486^{+0.054}_{-0.216}$	$-0.120^{+0.250}_{-0.350}$	$0.969^{+0.300}_{-0.100}$	$1.048^{+0.139}_{-0.139}$	$1.622^{+0.455}_{-0.850}$
	+3%/-3%	+1%/-5%	+208%/-292%	+31%/-10%	+13%/-13%	+28%/-52%
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 007191646-01 / KOI 4358.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-179 \pm 37$	$3.79^{+2.23}_{-2.18}$	$563^{+41}_{-29}$	$4058^{+1849}_{-587}$	$1295^{+6367}_{-787}$
Alt.	$-150 \pm 45$	$2.98^{+2.39}_{-1.86}$	$563^{+39}_{-28}$	$4226^{+2398}_{-741}$	$1658^{+10788}_{-1156}$

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

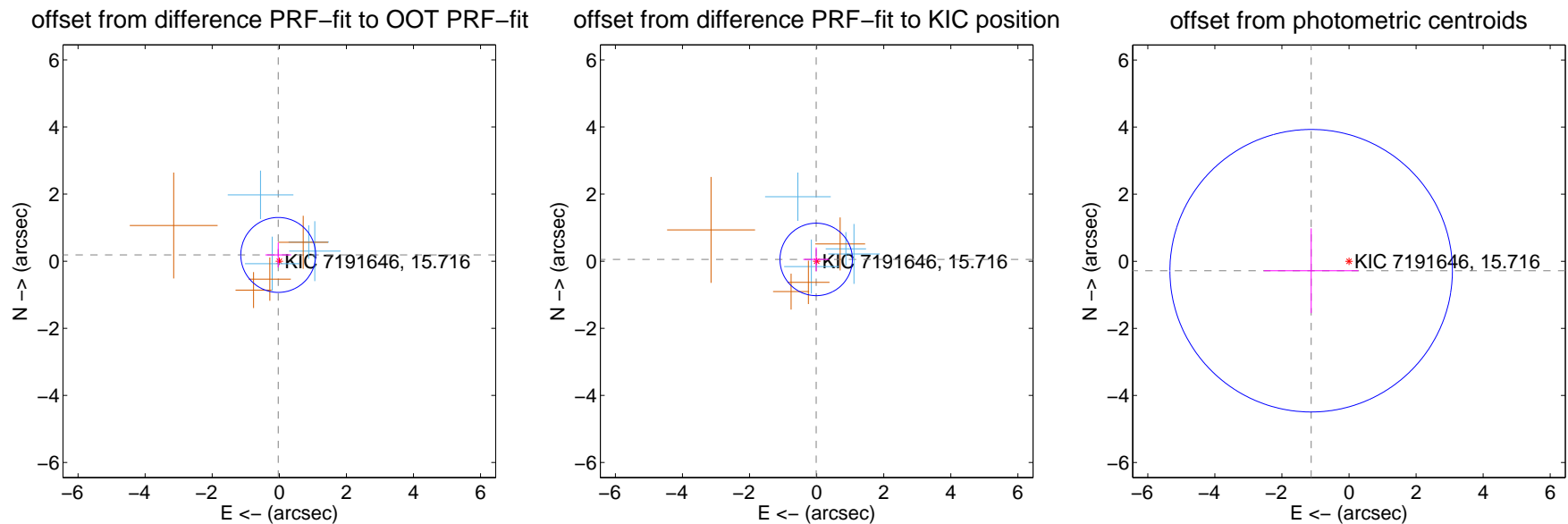
## DV Centroid Data

Supplemental centroid analysis for 007191646-01. Kepler magnitude: 15.72. Transit SNR 10.07

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

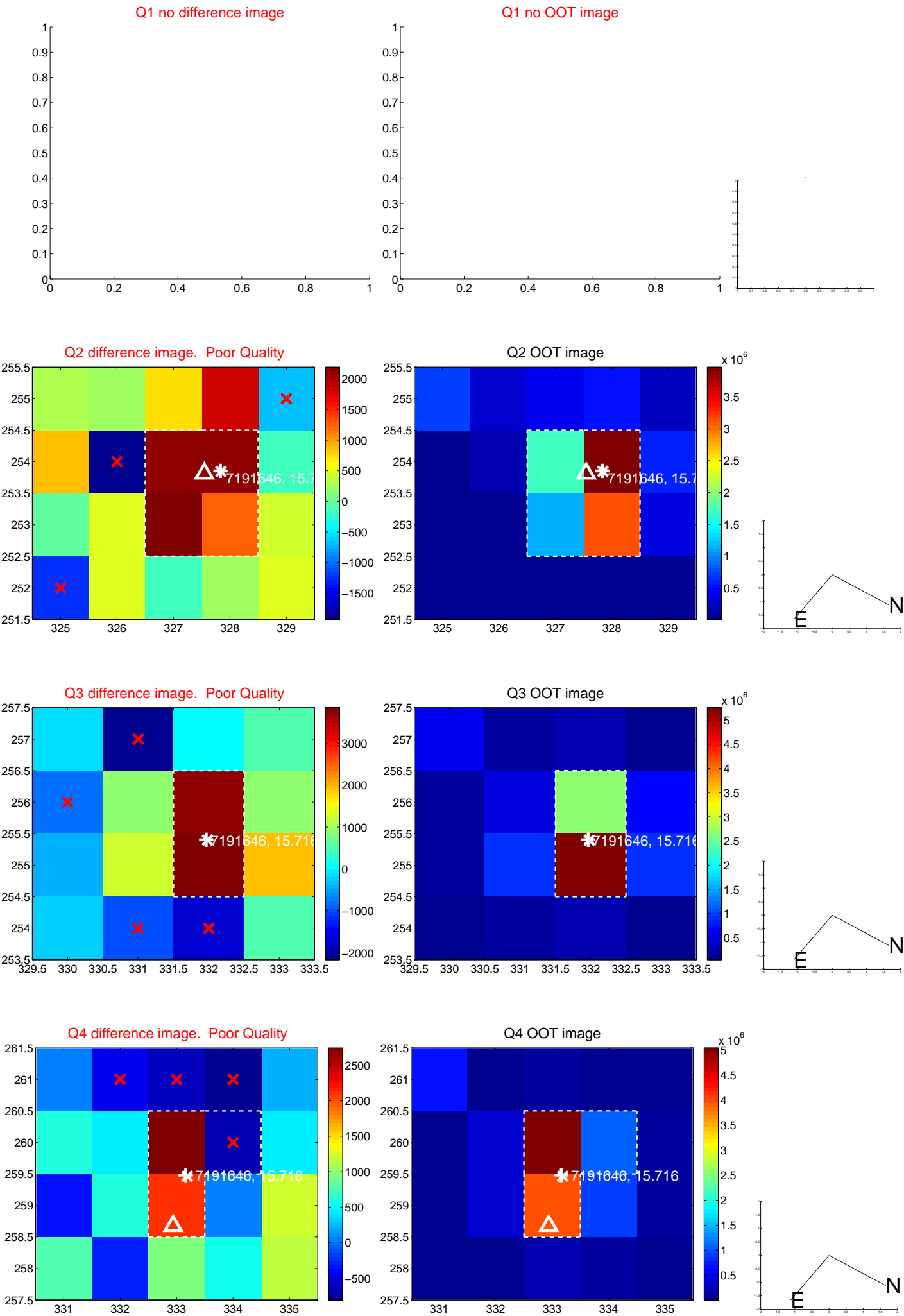
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.189 \pm 0.372$	0.51	$0.032 \pm 0.383$	$0.187 \pm 0.372$
PRF-fit source offset from KIC position	$0.055 \pm 0.360$	0.15	$0.014 \pm 0.383$	$0.053 \pm 0.358$
photometric centroid source offset	$1.16 \pm 1.40$	0.83	$1.13 \pm 1.41$	$-0.28 \pm 1.26$



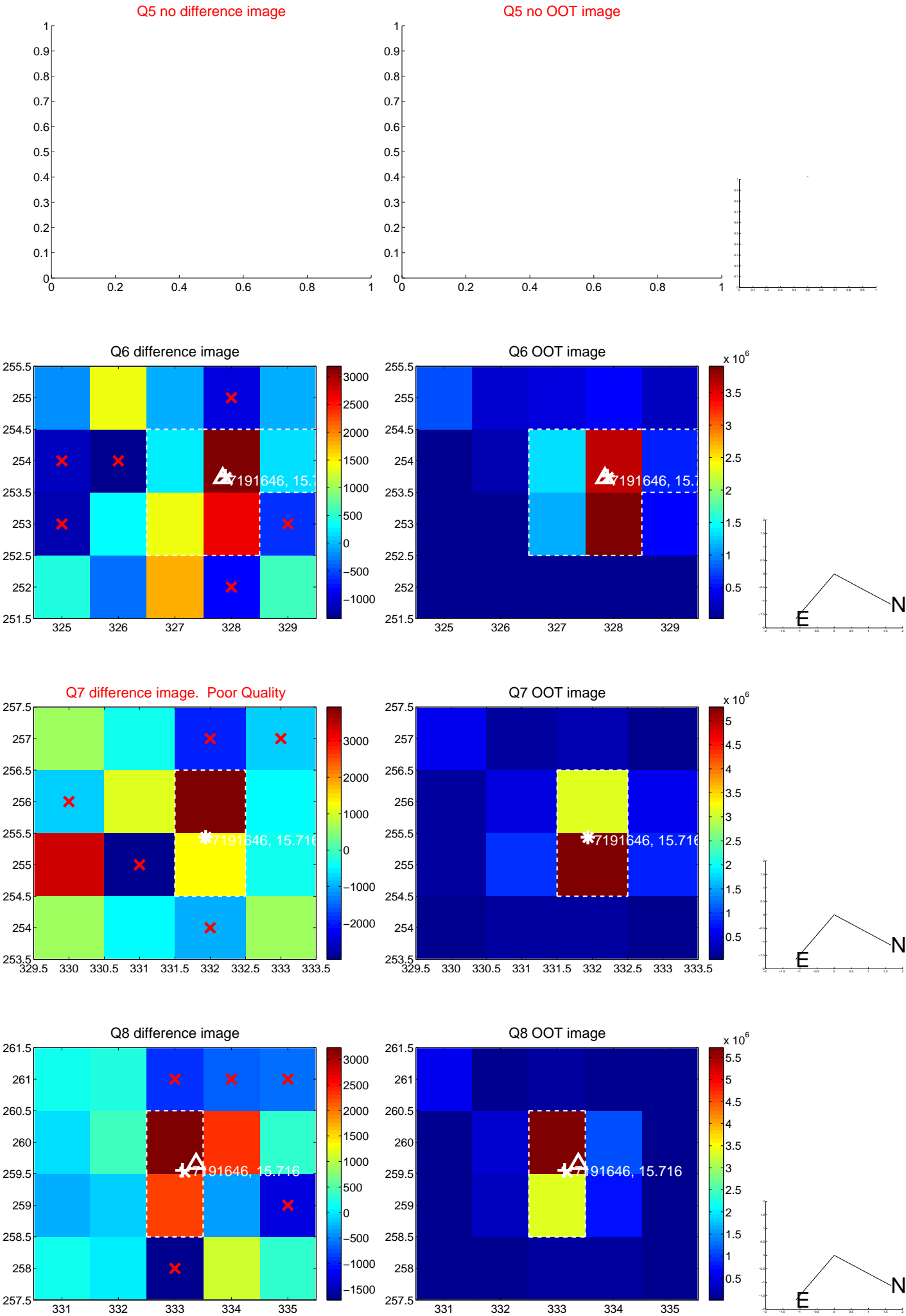
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



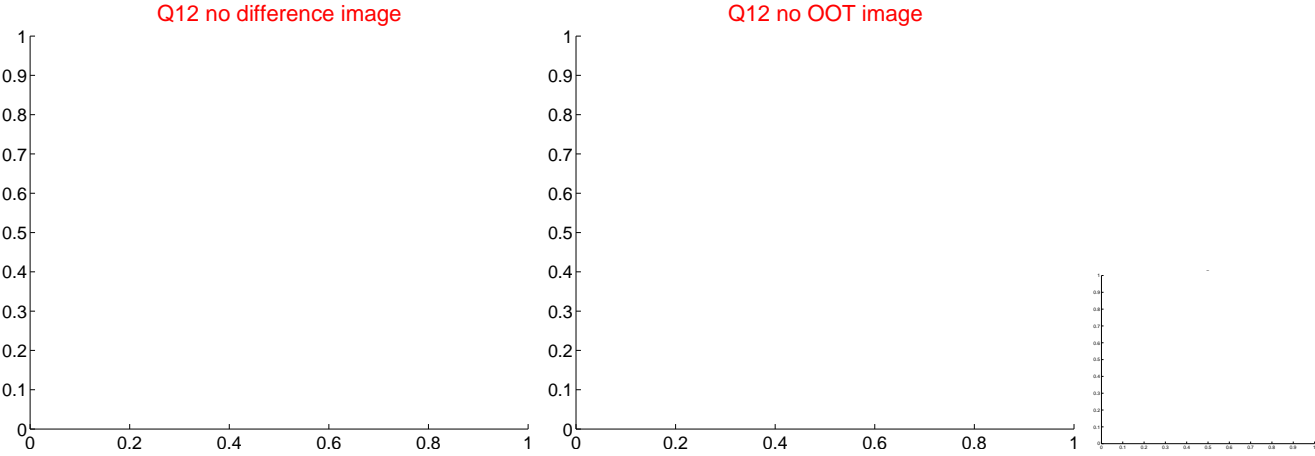
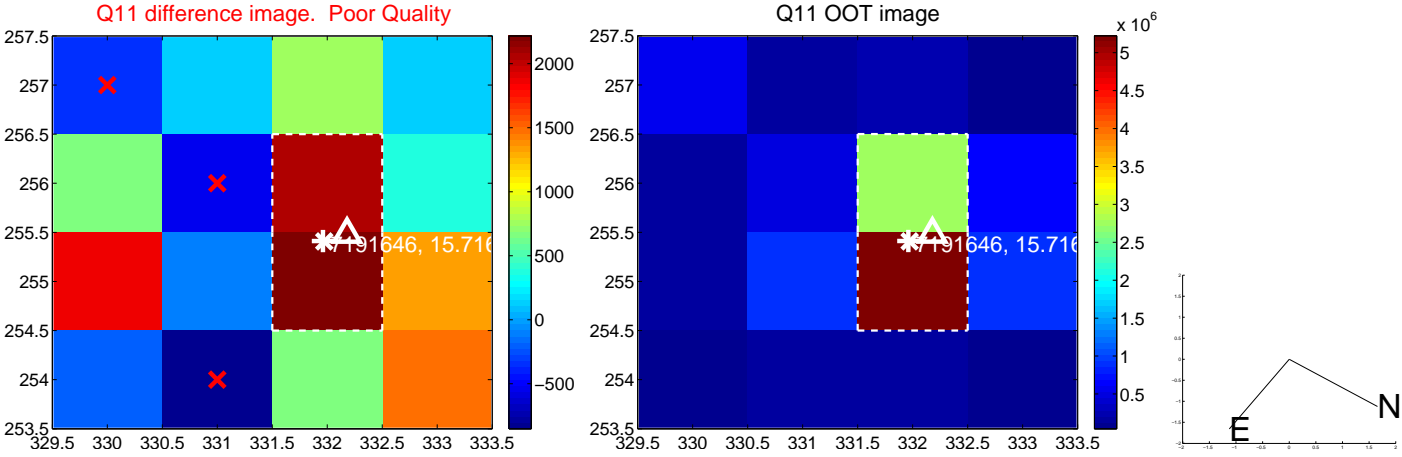
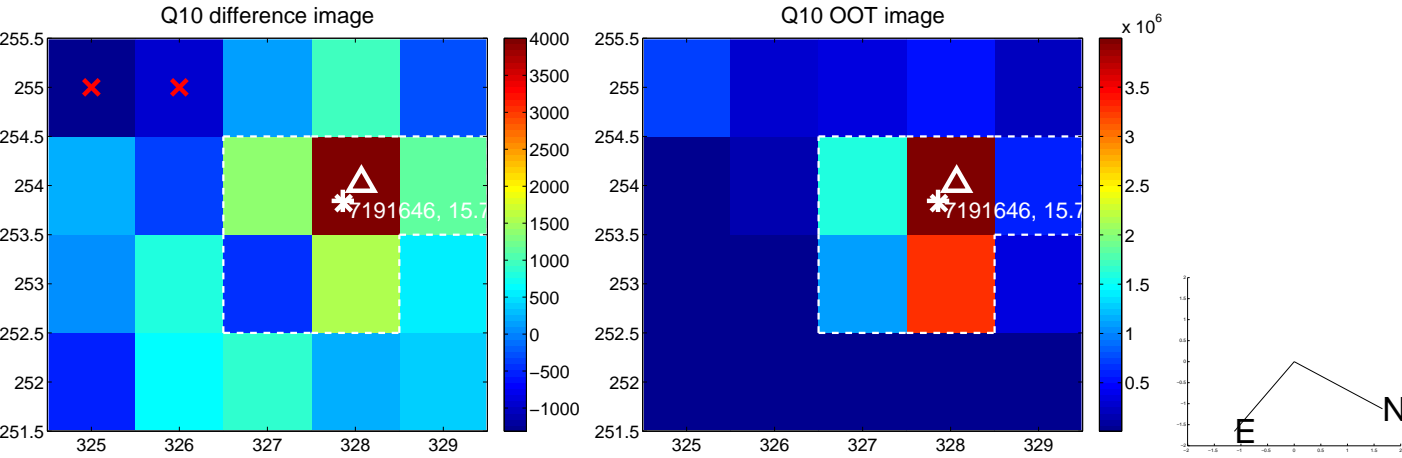
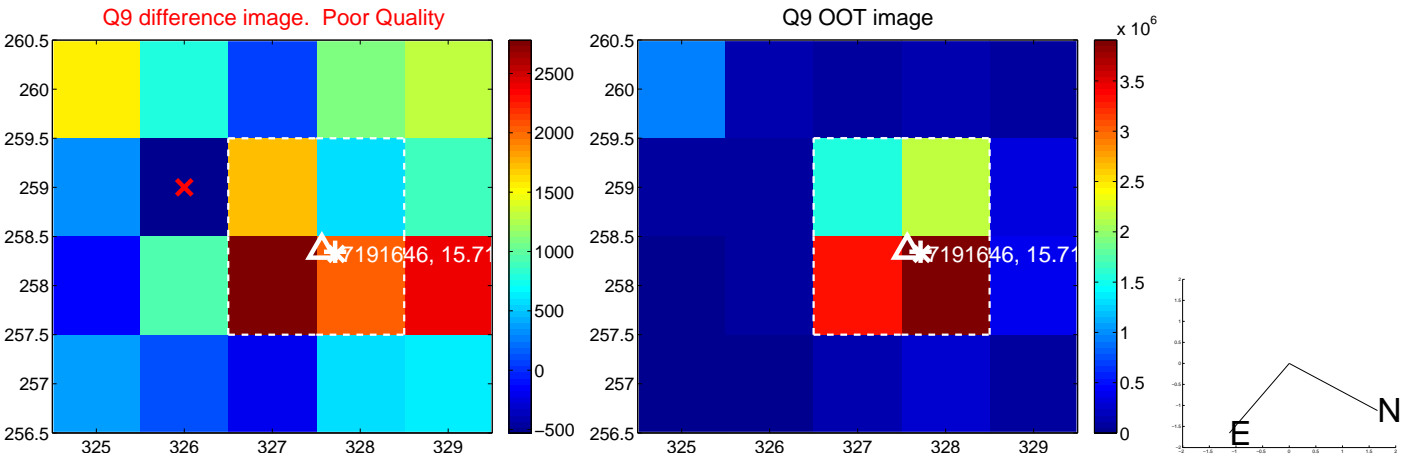
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

Q13 no difference image



Q13 no OOT image



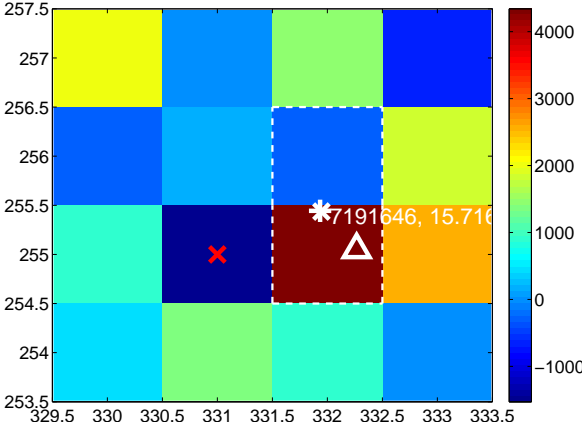
Q14 no difference image



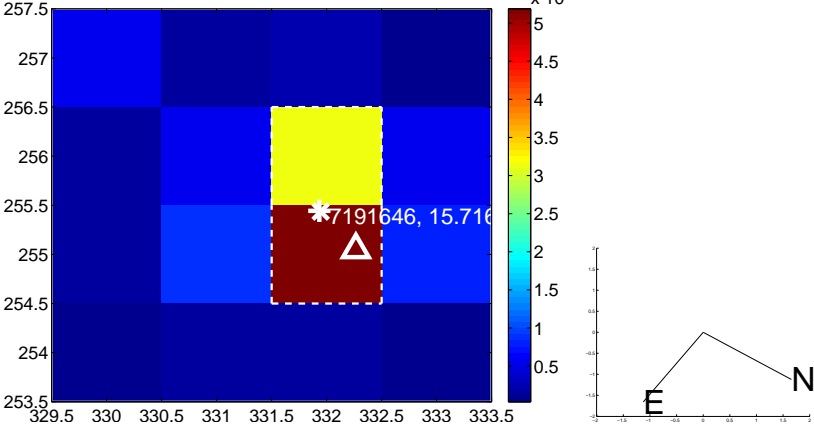
Q14 no OOT image



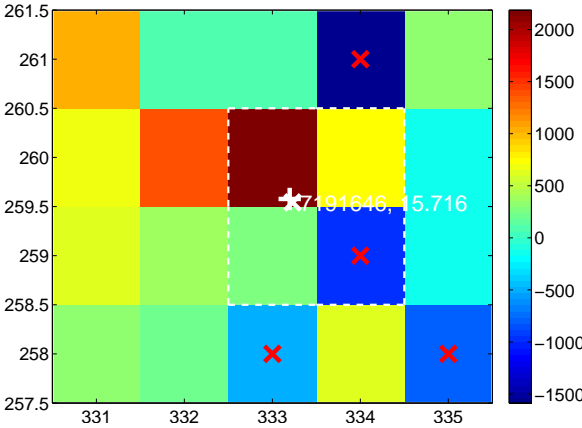
Q15 difference image



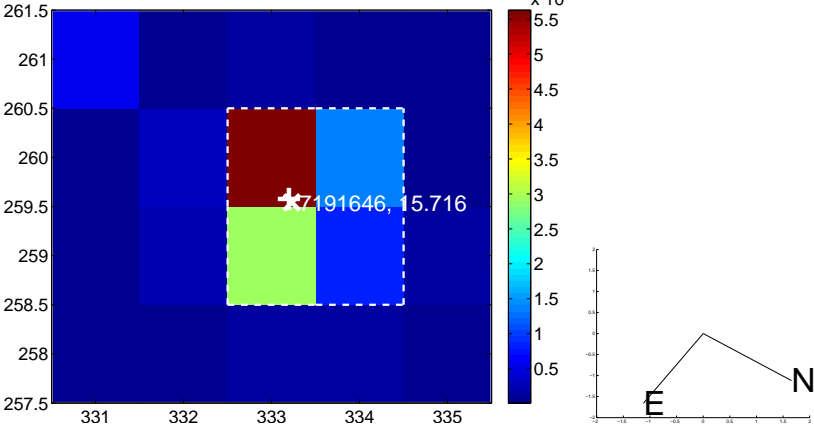
Q15 OOT image



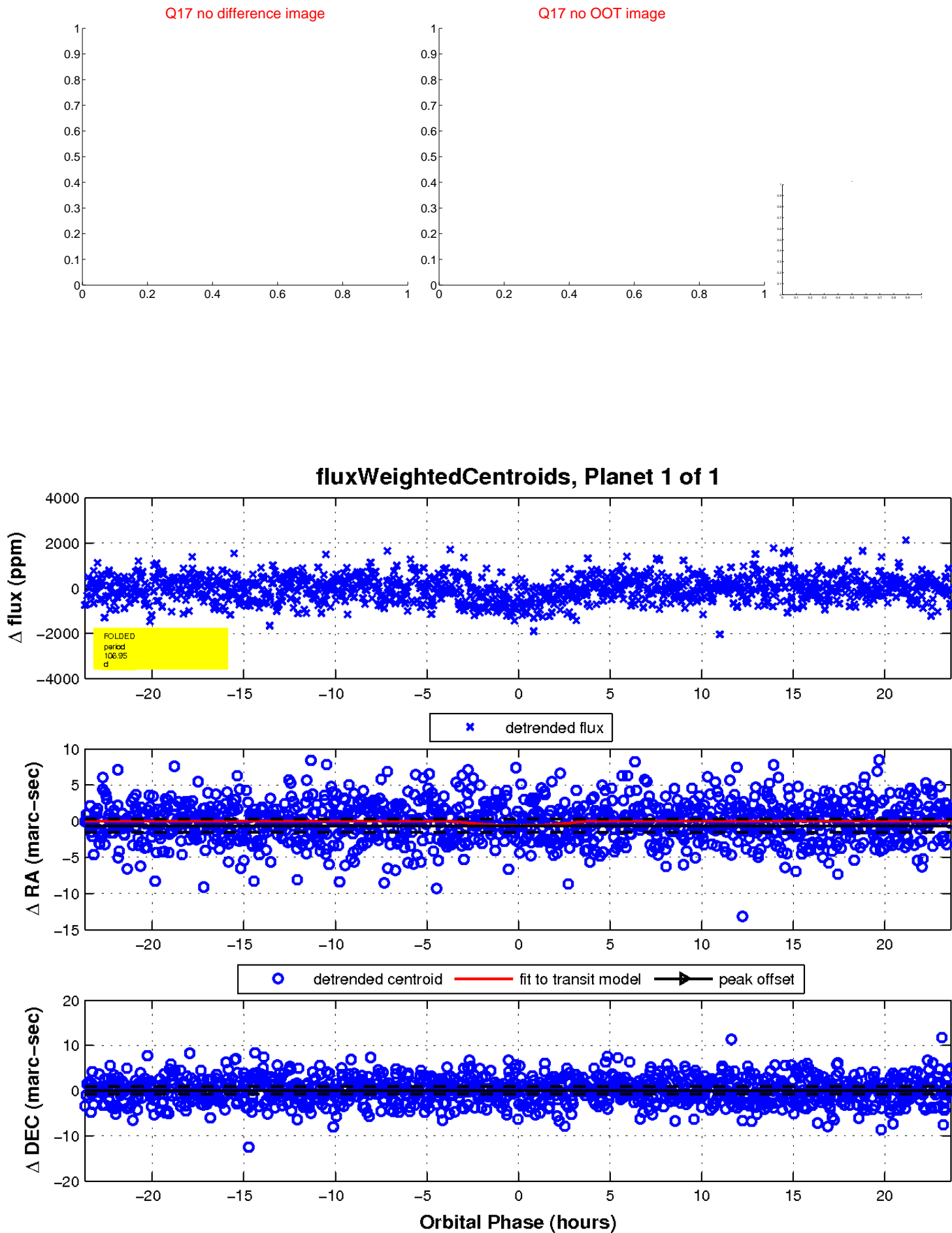
Q16 difference image. Poor Quality



Q16 OOT image



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



UKIRT Image

Declination

