

# KIC 001572201

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
001572201-01	OBS	No	254.280410	167.773654	33.4	8.730	9.0	8.0	3.06	8552	1.96	45.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001572201-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

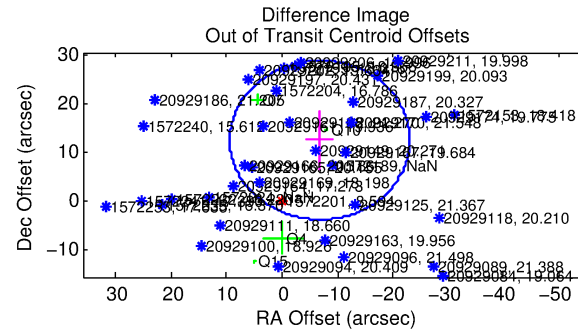
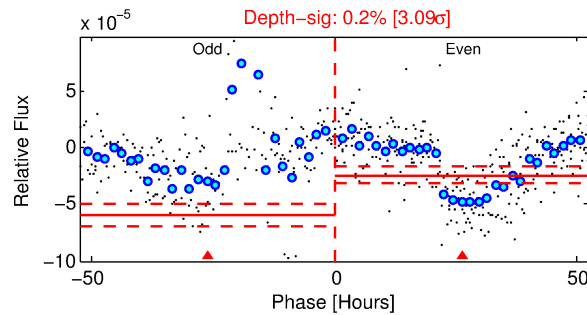
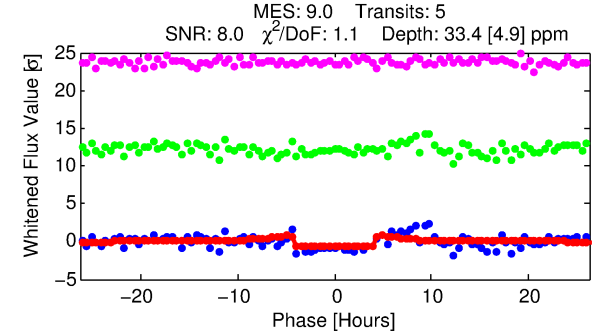
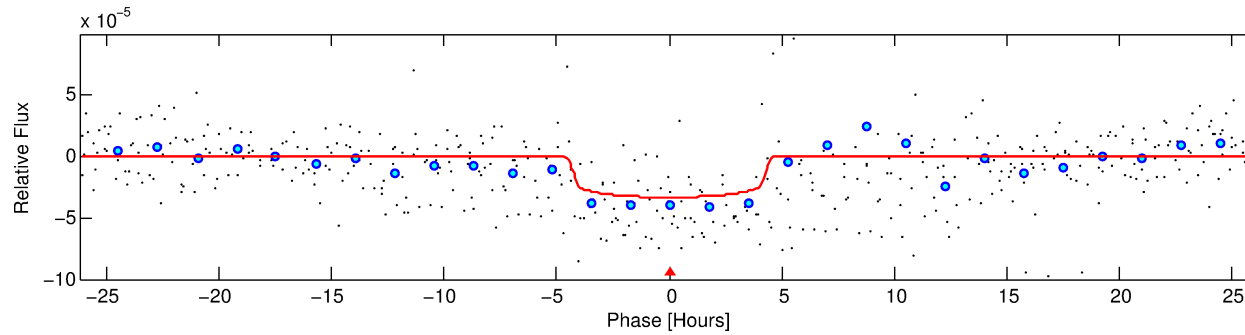
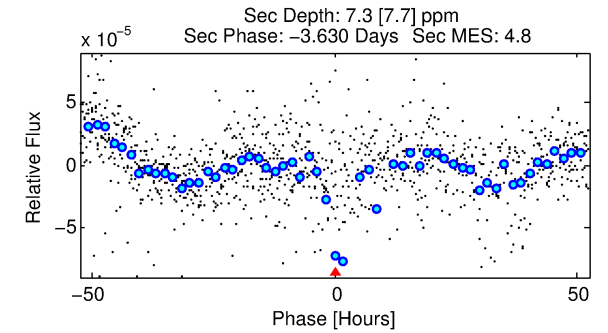
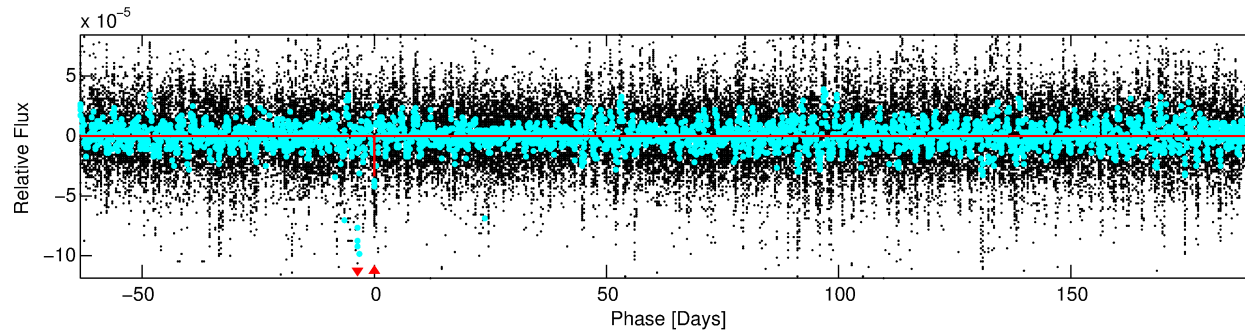
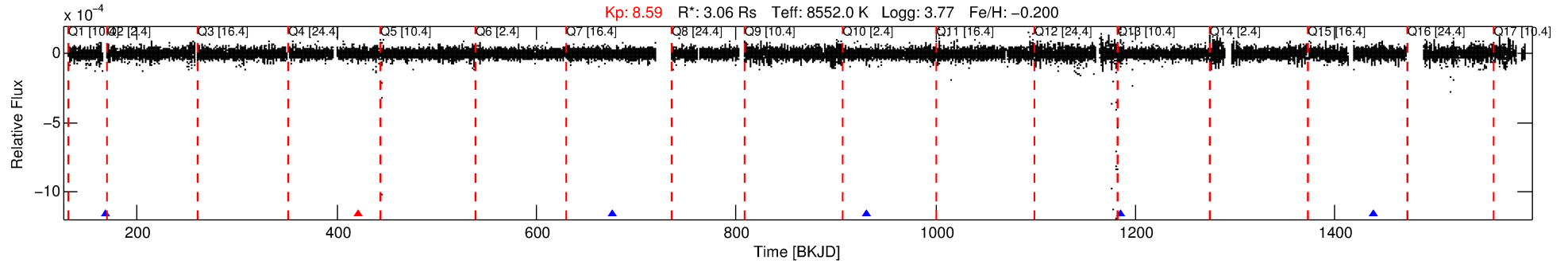
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 001572201-01

No Significant Match Found

# DV One-Page Summary

KIC: 1572201 Candidate: 1 of 1 Period: 254.280 d



## DV Fit Results:

Period = 254.28041 [0.00324] d  
Epoch = 167.7737 [0.0107] BKJD  
Rp/R\* = 0.0059 [0.0012]  
a/R\* = 131.56 [157.20]  
b = 0.81 [0.50]  
Seff = 45.71 [32.12]  
Teq = 663 [116] K  
Rp = 1.96 [0.91] Re  
a = 0.9912 [0.4127] AU  
Ag = 1027.33 [1355.25] [0.76σ]  
Teffp = 5804 [1659] K [3.09σ]

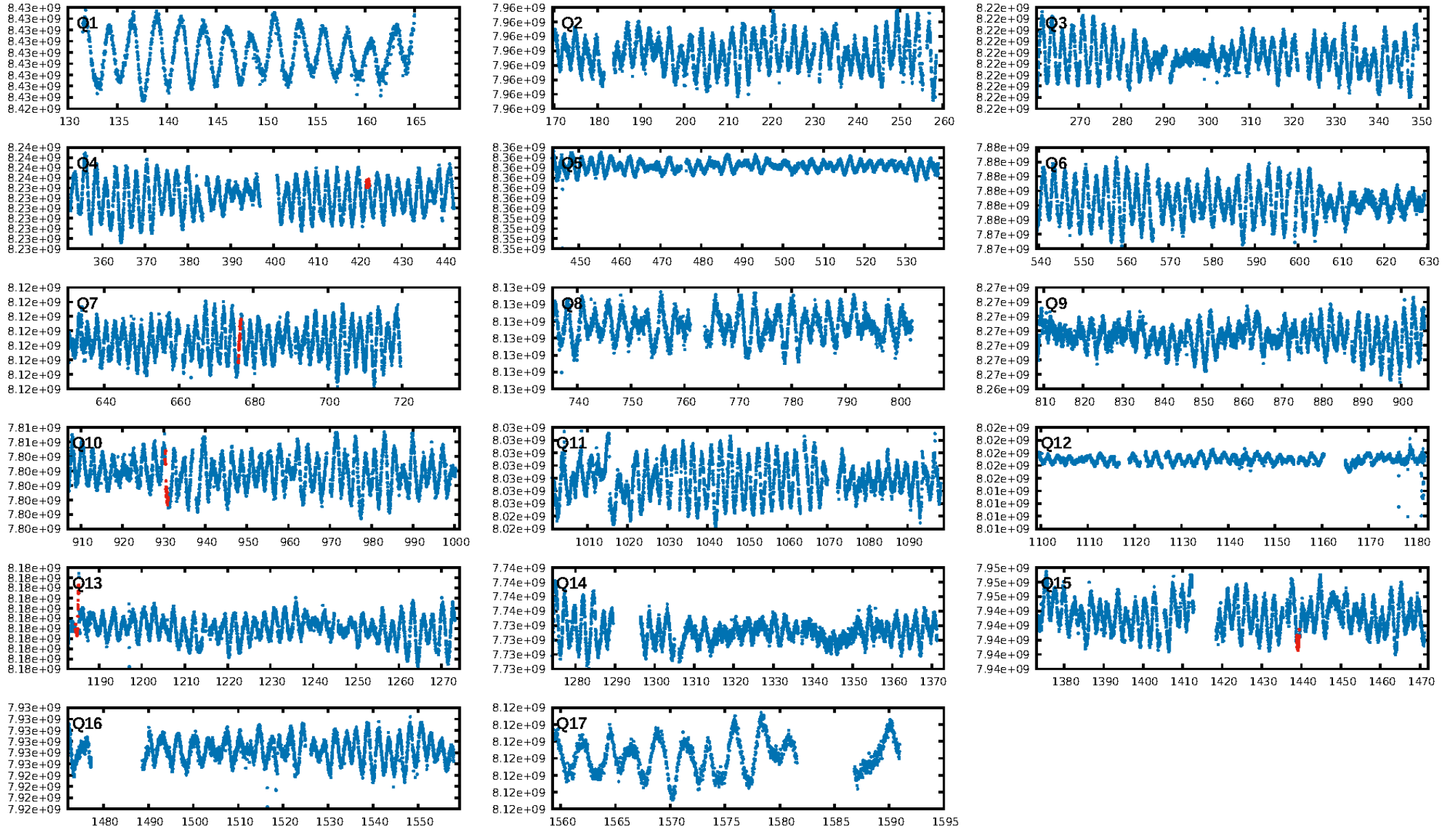
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 92.1%  
Bootstrap-pfa: 3.56e-08  
RollingBand-fgt: 0.80 [4/5]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 4.8%  
Centroid-so: 9.845 arcsec [1.37σ]  
OotOffset-rm: 14.257 arcsec [2.63σ]  
KicOffset-rm: 13.134 arcsec [2.03σ]  
OotOffset-st: 1/2/1/0 [4]  
KicOffset-st: 1/2/1/0 [4]  
DiffImageQuality-fgm: 0.00 [0/4]  
DiffImageOverlap-fno: 1.00 [4/4]

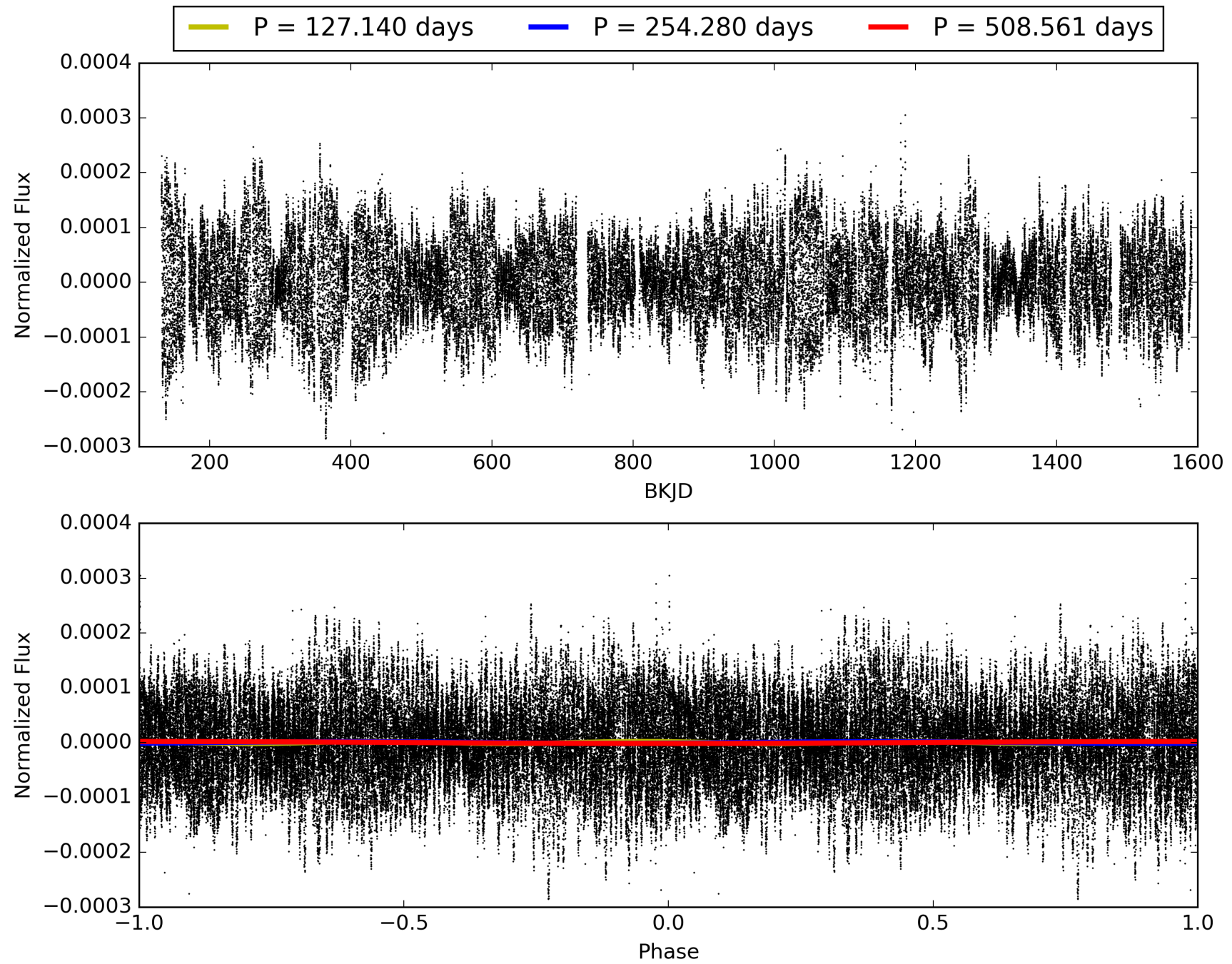
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:35:51 Z

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

# TCE 001572201-01, PDC Light Curves

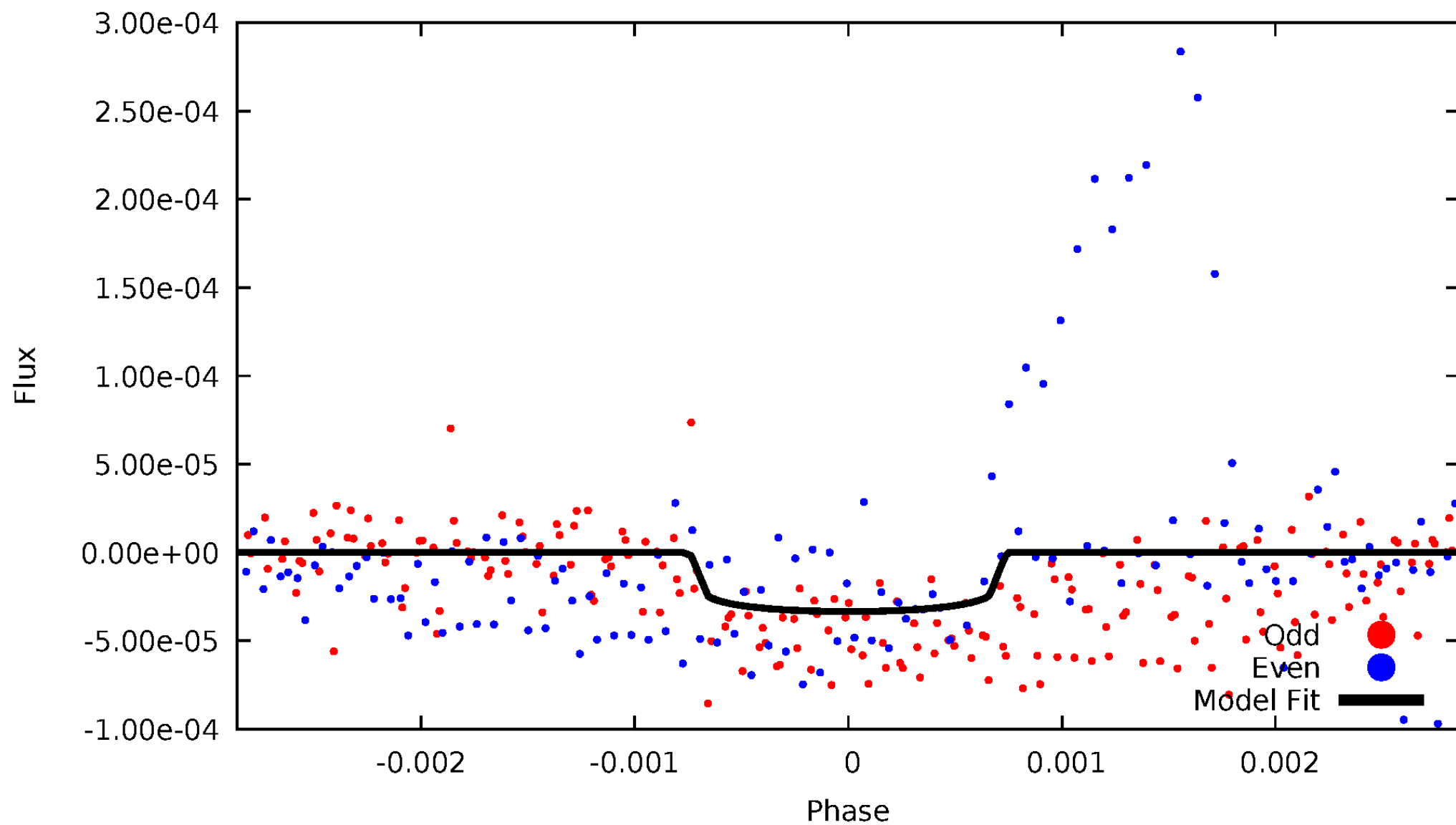


TCE 001572201-01



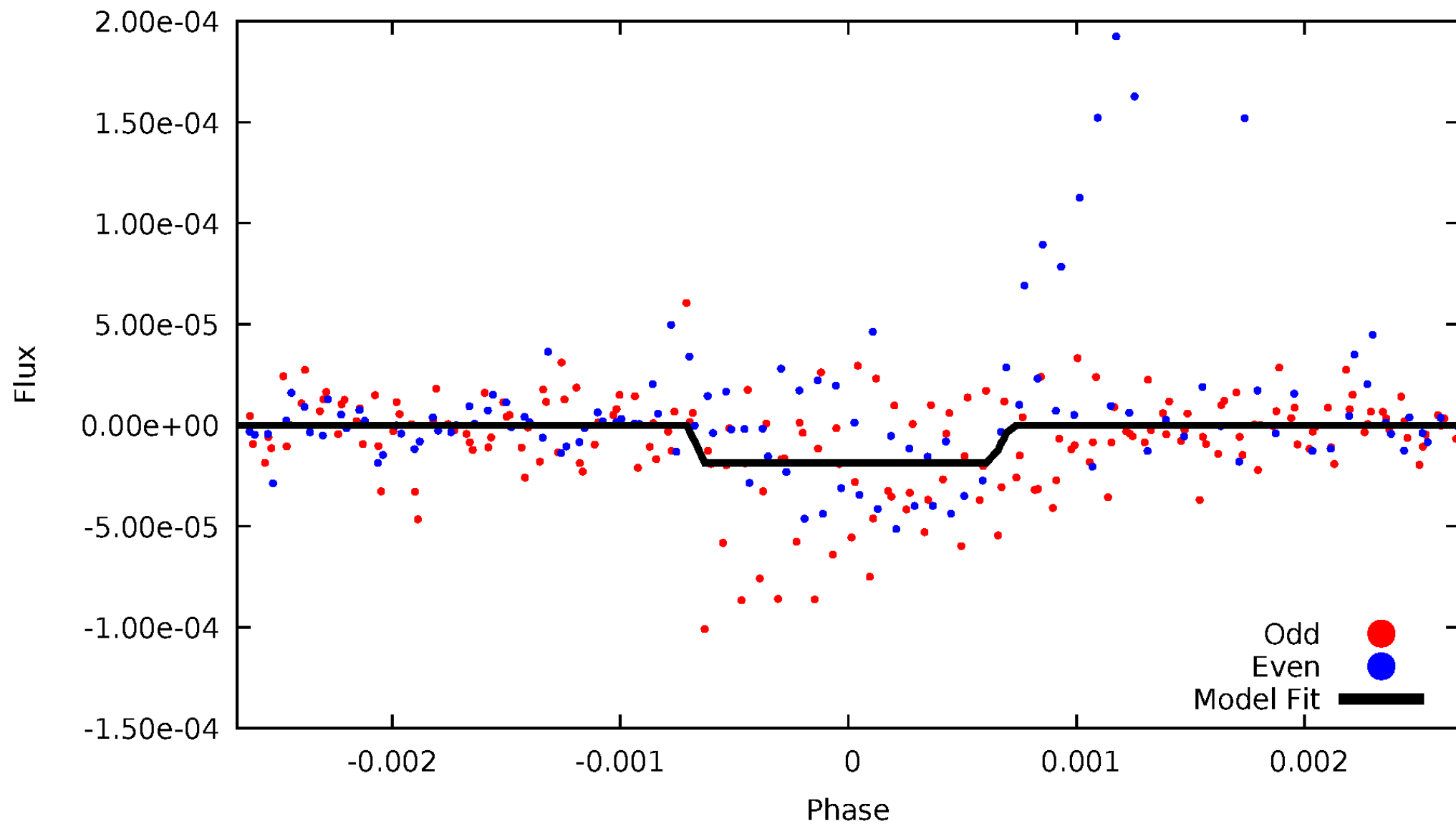
# DV Odd/Even

TCE 001572201-01



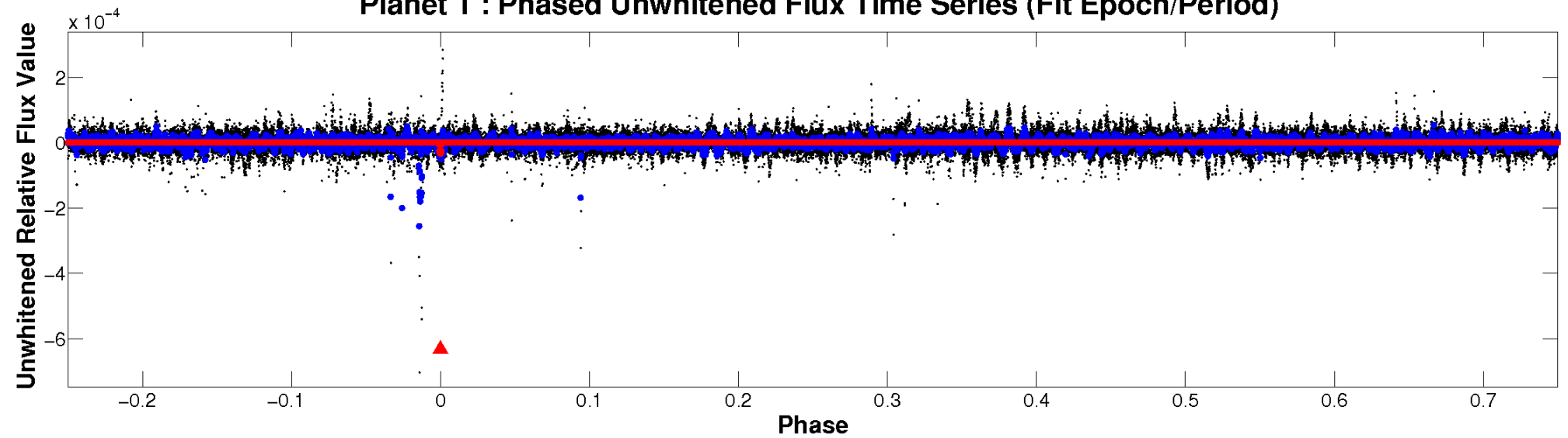
# ALT Odd/Even

TCE 001572201-01

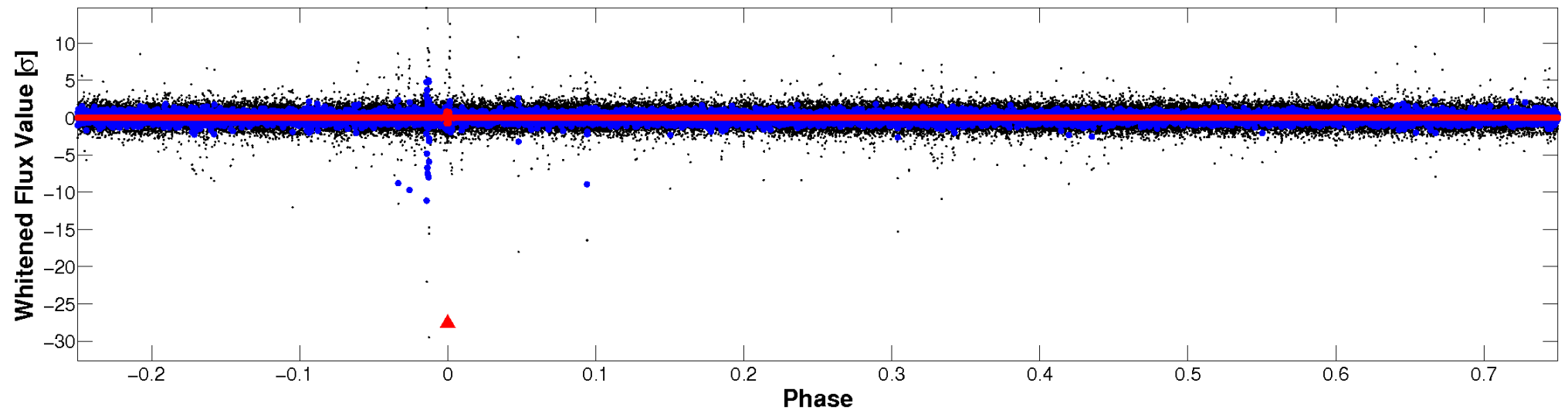


# Non-Whitened Vs. Whitened Light Curve

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

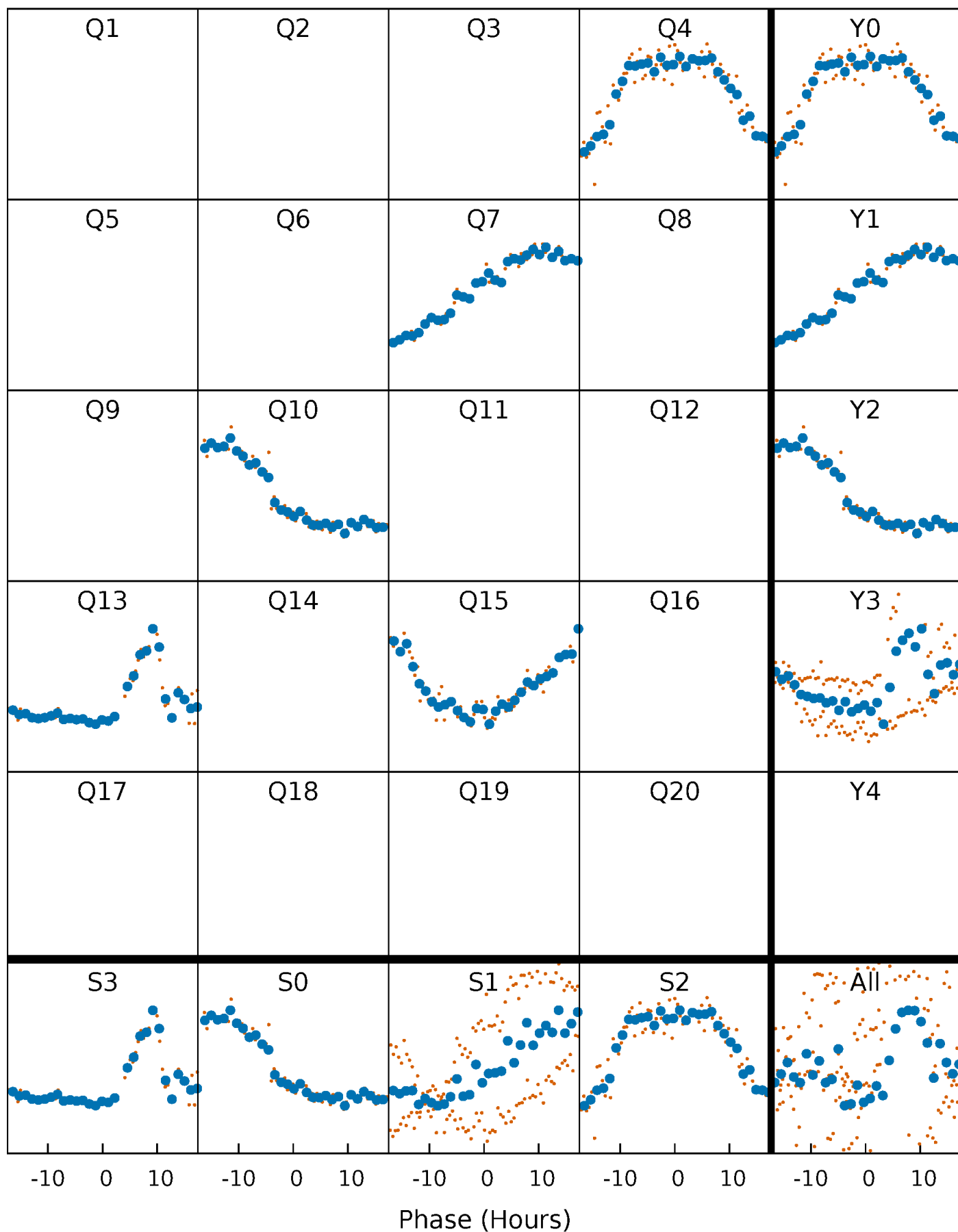


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



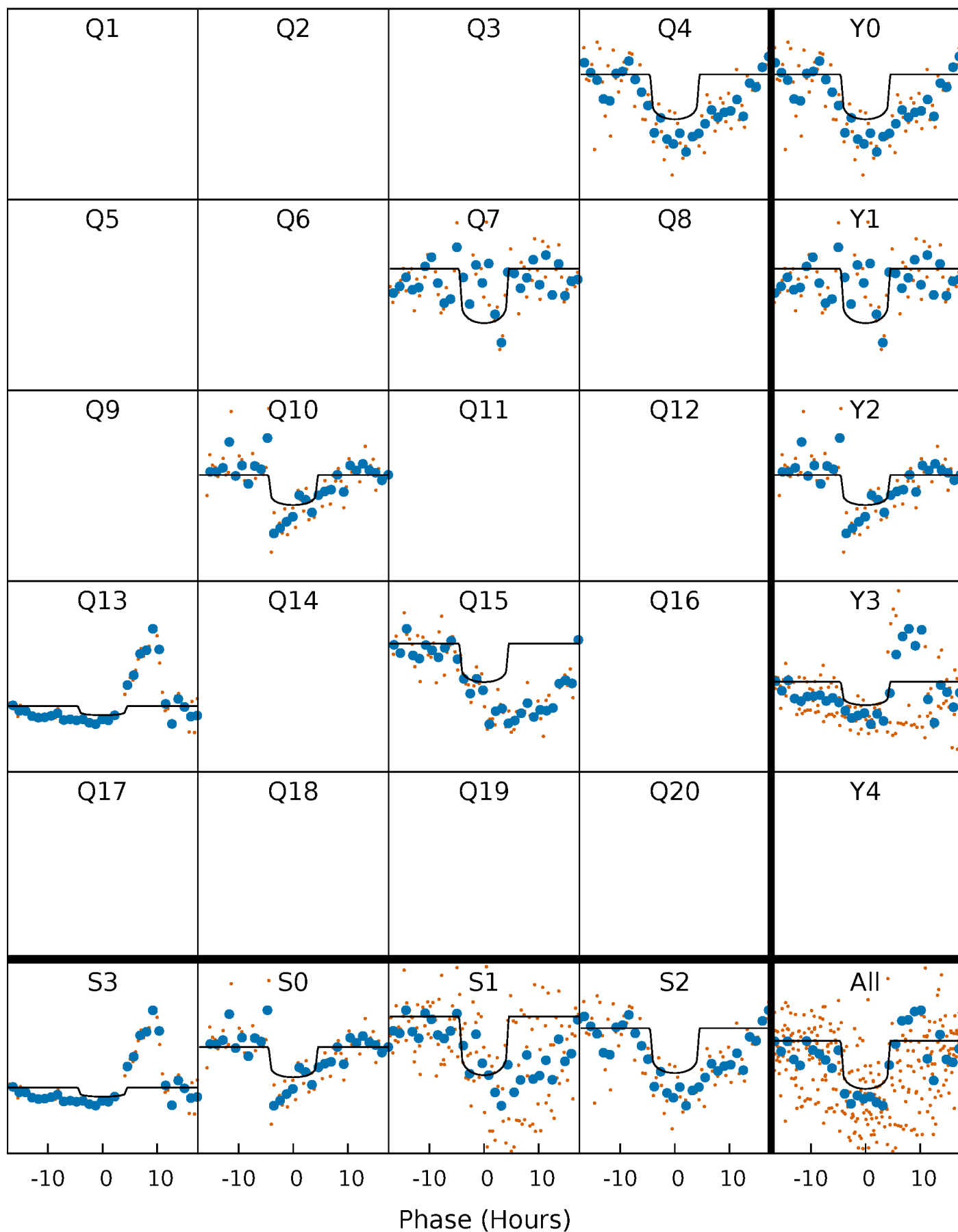
# PDC Quarter-Phased Transit Curves

TCE 001572201-01 P=254.280410 Days  $T_0=167.773654$  (BKJD)



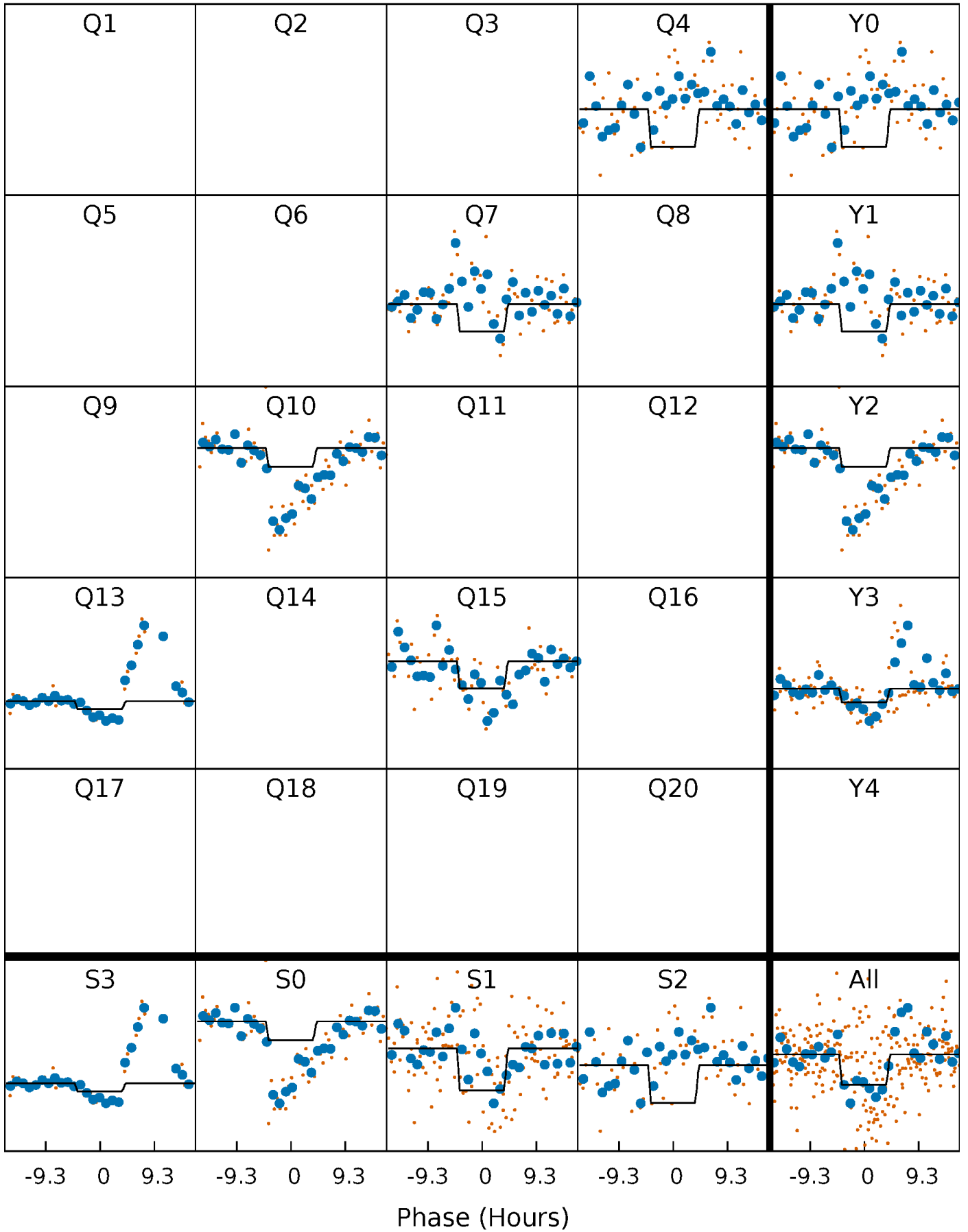
# DV Quarter-Phased Transit Curves

TCE 001572201-01     $P=254.280410$  Days     $T_0=167.773654$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

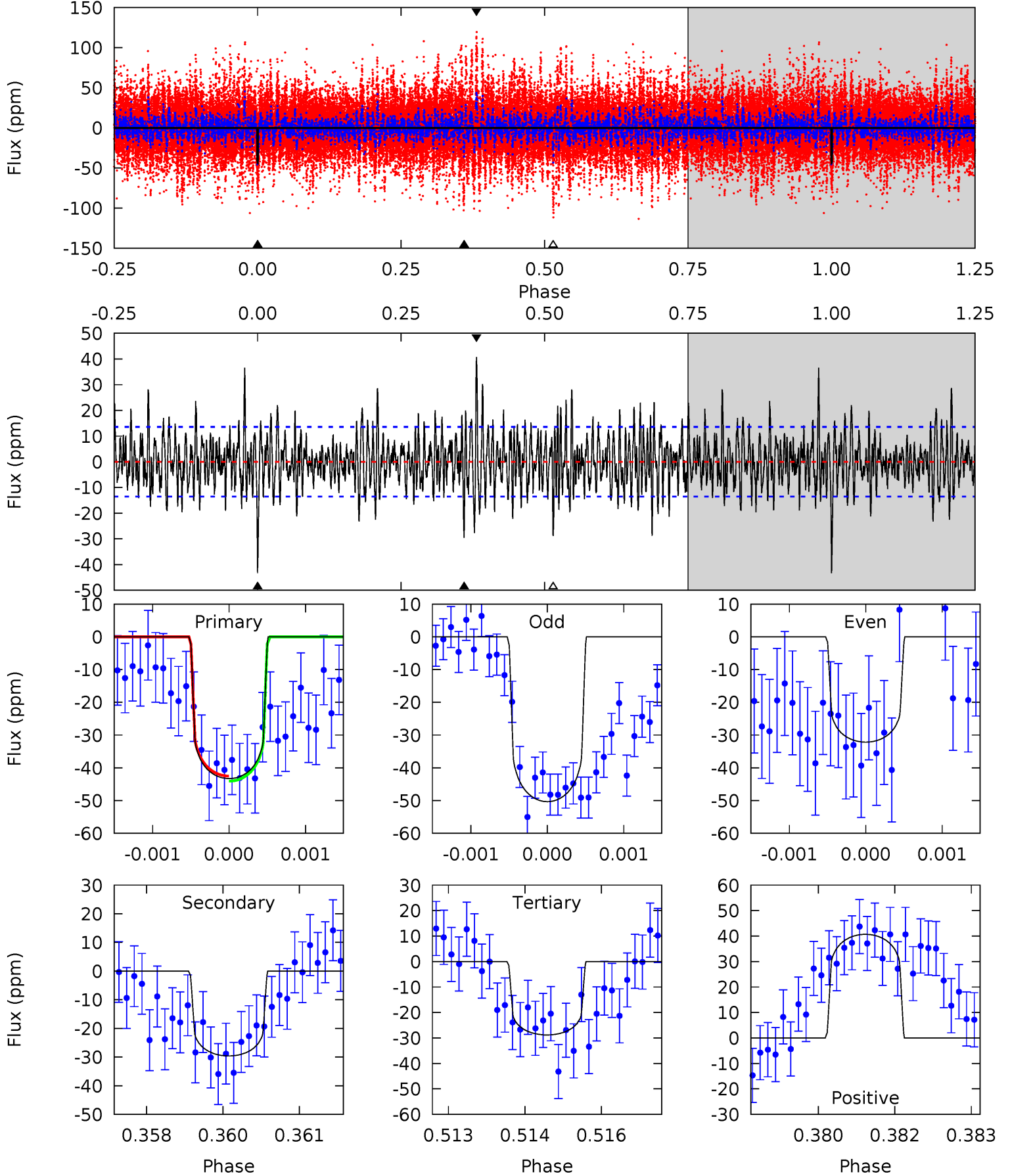
TCE 001572201-01     $P=254.282032$  Days     $T_0=167.761966$  (BKJD)



# DV Model-Shift Uniqueness Test

001572201-01, P = 254.280410 Days, E = 167.773654 Days

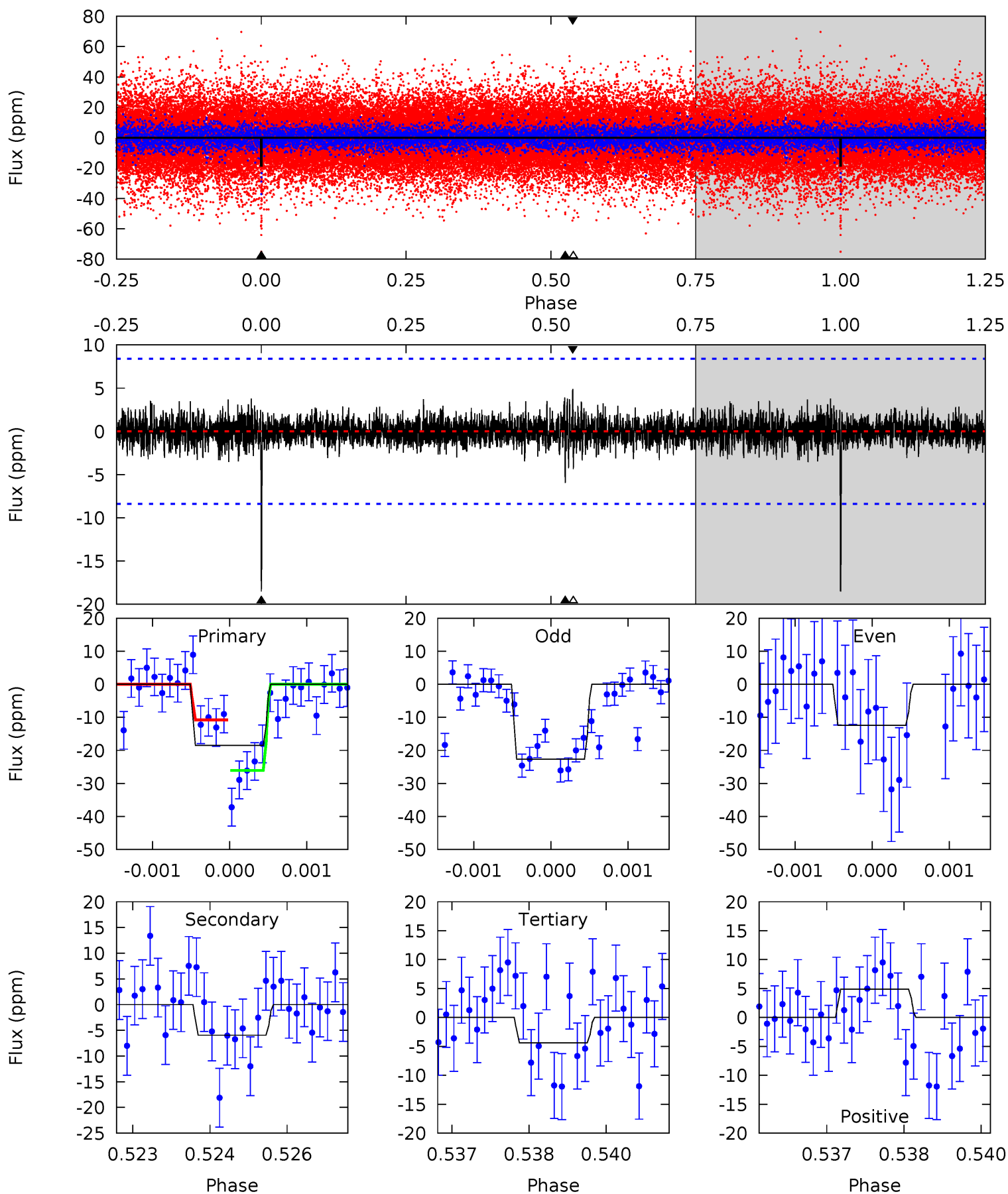
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	11.8	11.4	16.2	5.38	3.18	3.57	5.75	1.04	0.32	-4.40	3.52	0.85	0.48	0.31



# Alt Model-Shift Uniqueness Test

001572201-01, P = 254.282032 Days, E = 167.761966 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
11.9	3.83	2.81	3.15	5.39	3.20	0.66	9.09	8.75	1.01	0.68	3.32	0.99	0.21	4.91



### Stellar Parameters For KIC 001572201

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8552^{+237}_{-373}$	$3.769^{+0.405}_{-0.135}$	$-0.200^{+0.400}_{-0.350}$	$3.061^{+0.925}_{-1.272}$	$2.009^{+0.440}_{-0.440}$	$0.099^{+0.359}_{-0.044}$
	+3%/-4%	+11%/-4%	+200%/-175%	+30%/-42%	+22%/-22%	+364%/-45%
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 001572201-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-30 \pm 3$	$1.82^{+0.56}_{-0.53}$	$893^{+77}_{-99}$	$8093^{+1340}_{-927}$	$4985^{+4438}_{-2084}$
Alt.	$-6 \pm 2$	$1.34^{+0.51}_{-0.46}$	$893^{+79}_{-105}$	$6066^{+1401}_{-750}$	$1810^{+2319}_{-920}$

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

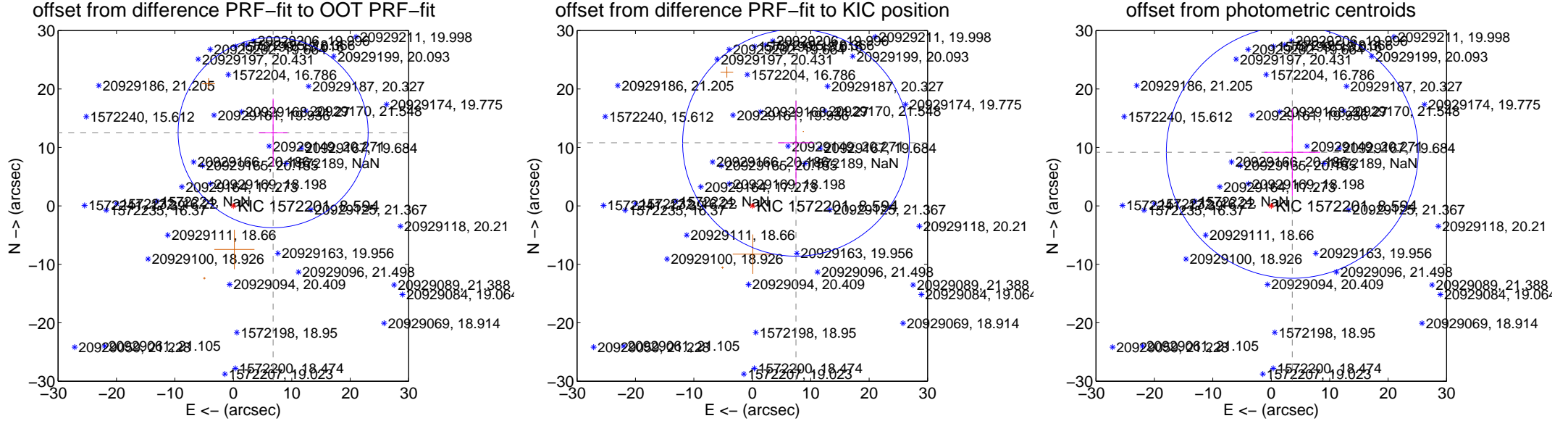
## DV Centroid Data

Supplemental centroid analysis for 001572201-01. **Kepler magnitude: 8.59.** Transit SNR 7.95

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

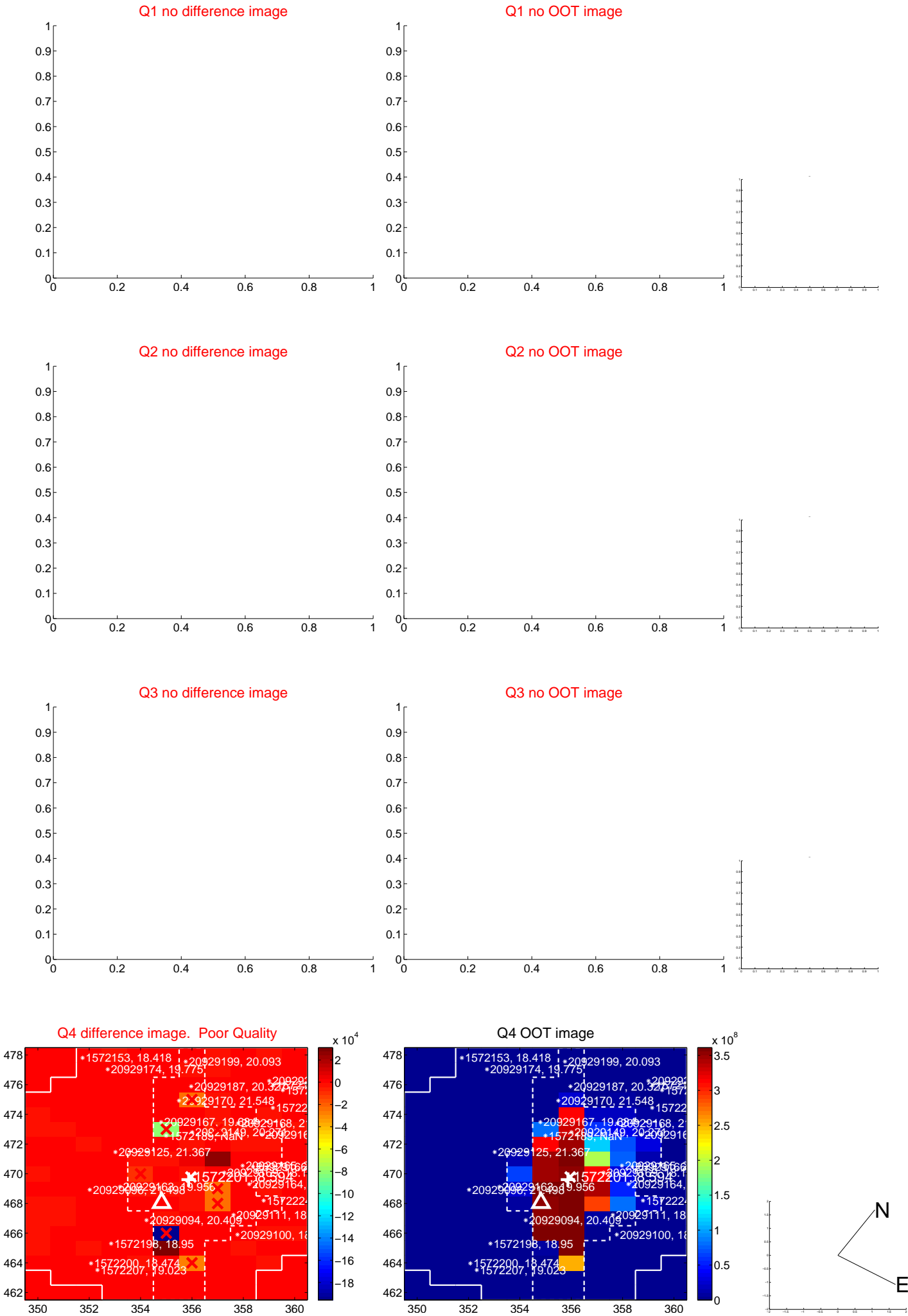
The direct PRF centroid is offset from the target star catalog position by about 1.83 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$14.257 \pm 5.421$	2.63	$-6.810 \pm 2.459$	$12.526 \pm 5.822$
PRF-fit source offset from KIC position	$13.134 \pm 6.469$	2.03	$-7.481 \pm 3.069$	$10.795 \pm 7.207$
photometric centroid source offset	$9.84 \pm 7.18$	1.37	$-3.59 \pm 4.77$	$9.17 \pm 7.49$



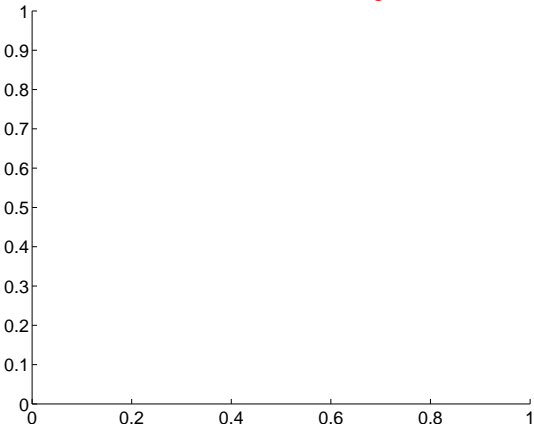
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

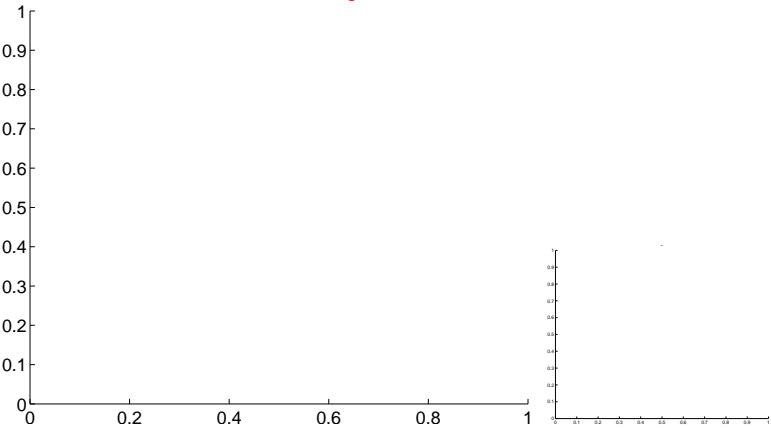


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

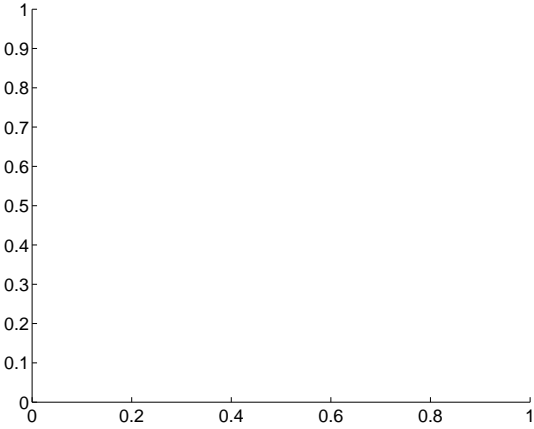
Q5 no difference image



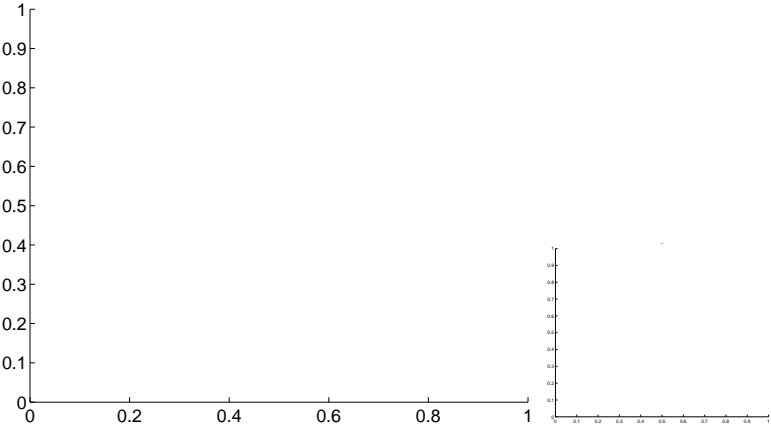
Q5 no OOT image



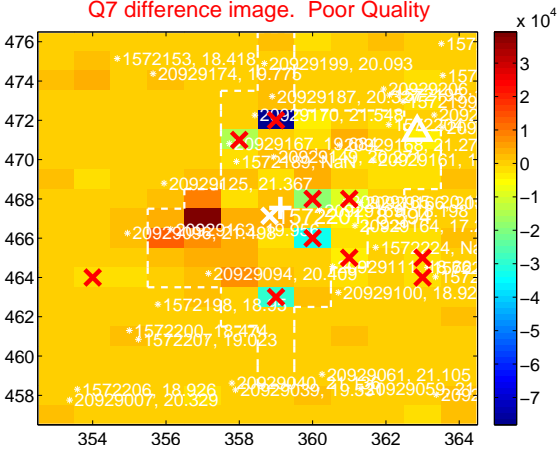
Q6 no difference image



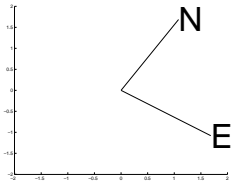
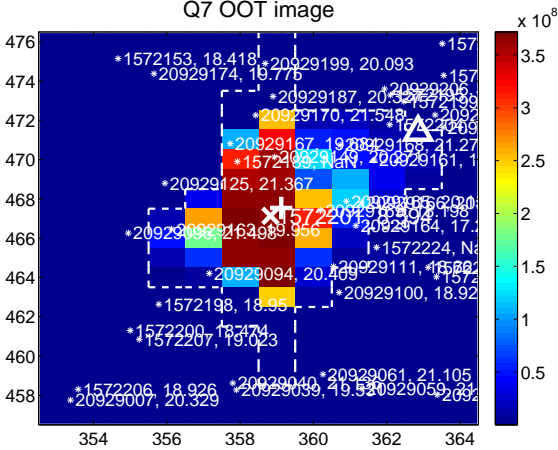
Q6 no OOT image



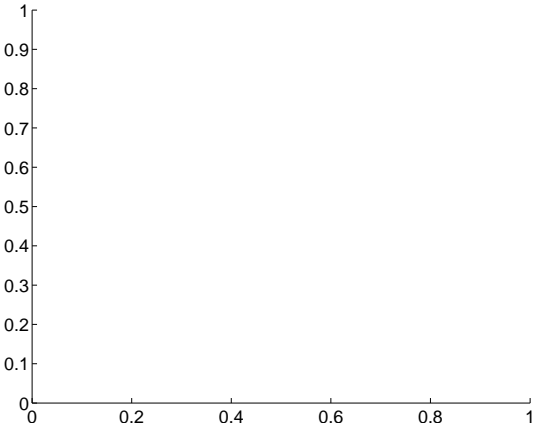
Q7 difference image. Poor Quality



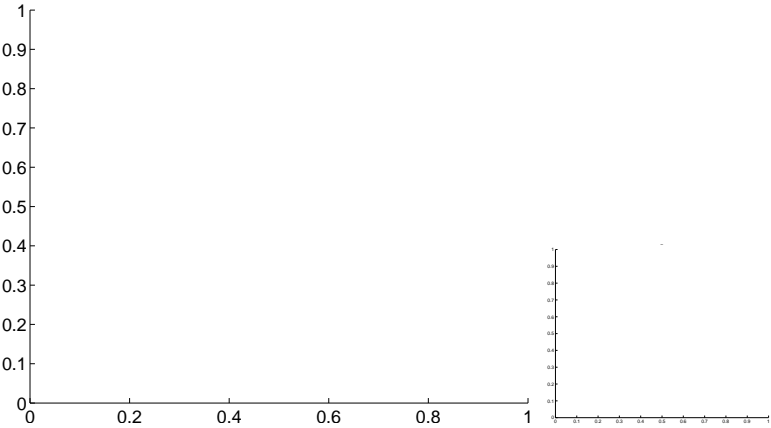
Q7 OOT image



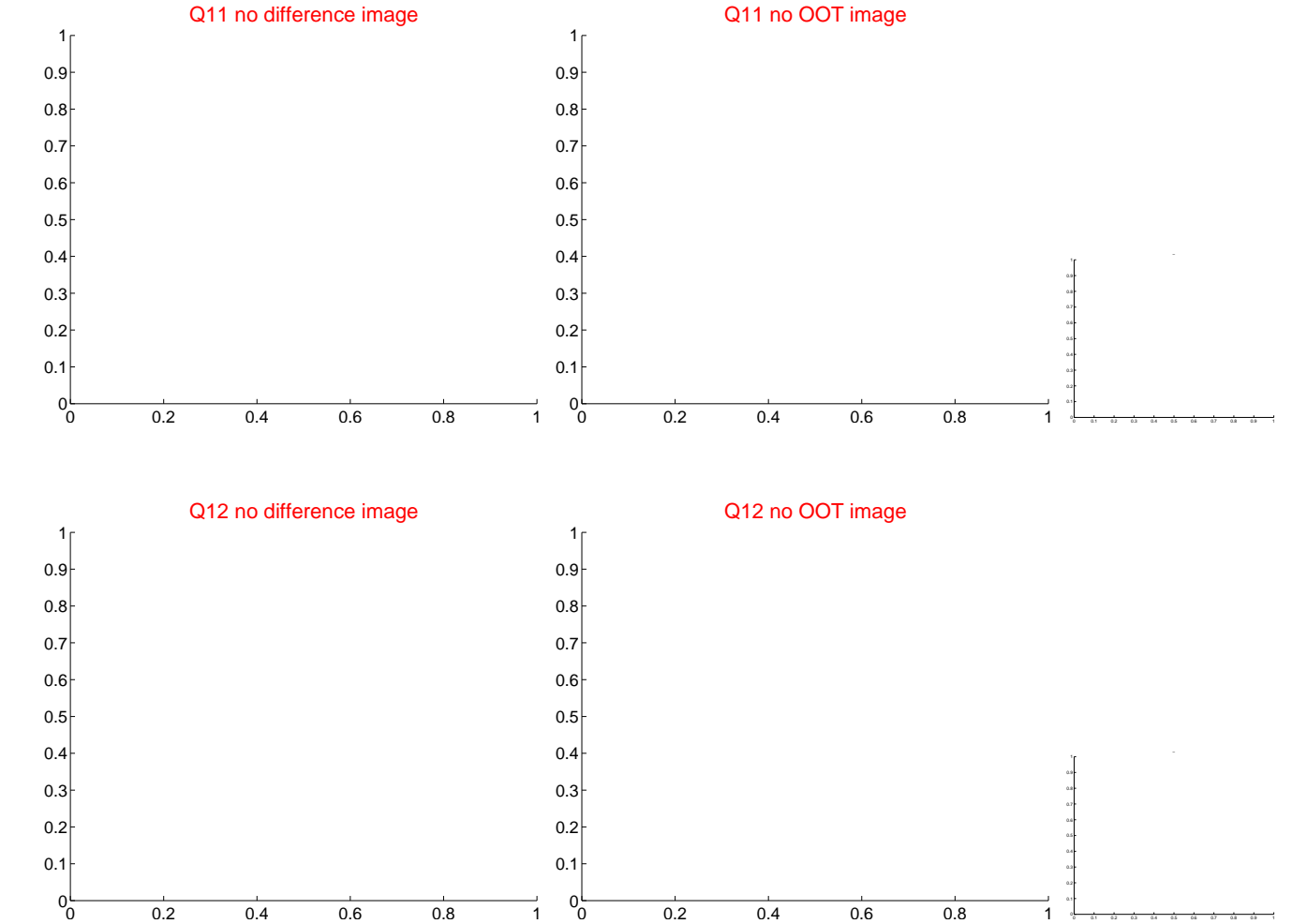
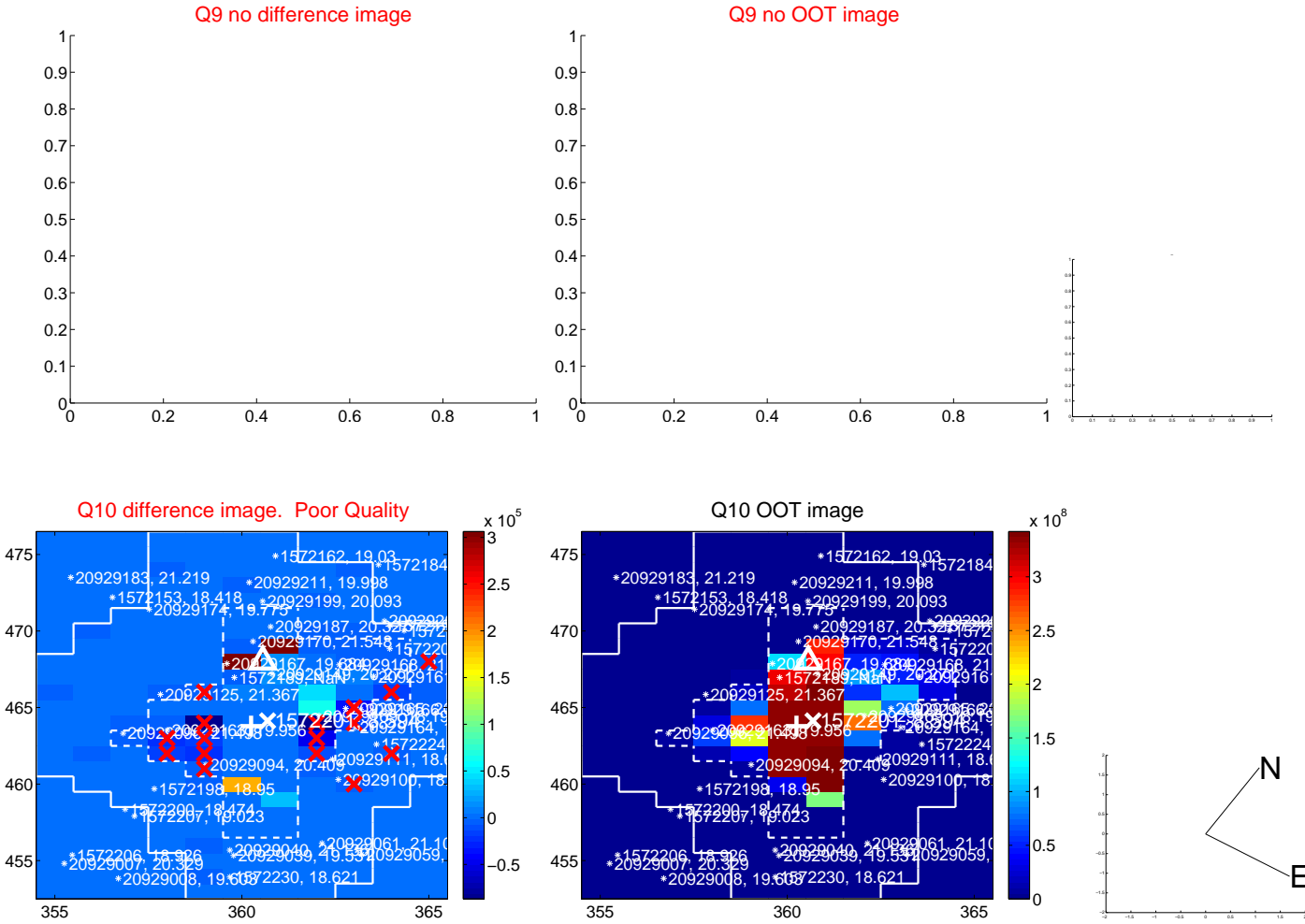
Q8 no difference image



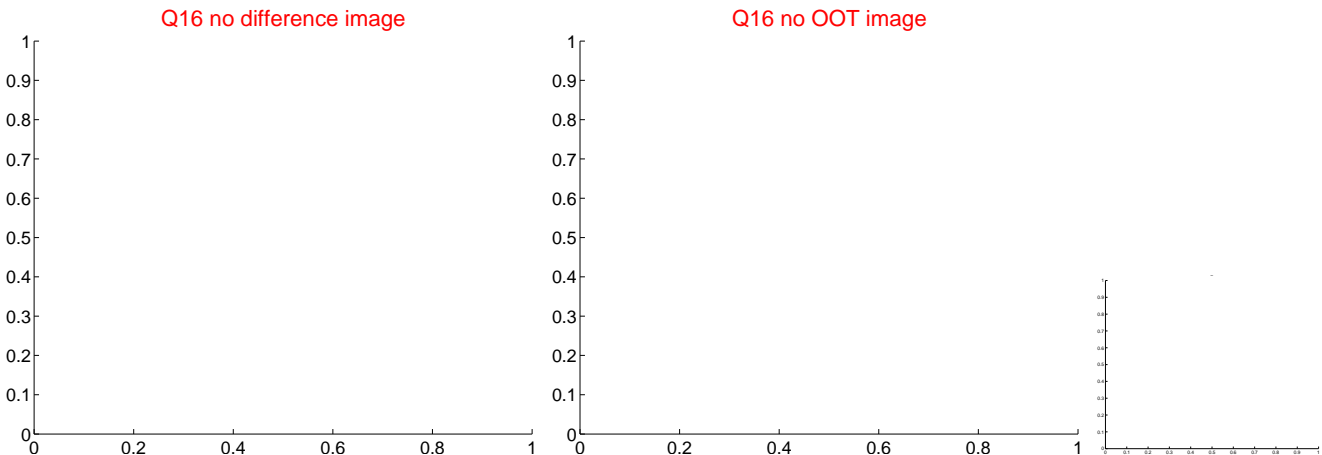
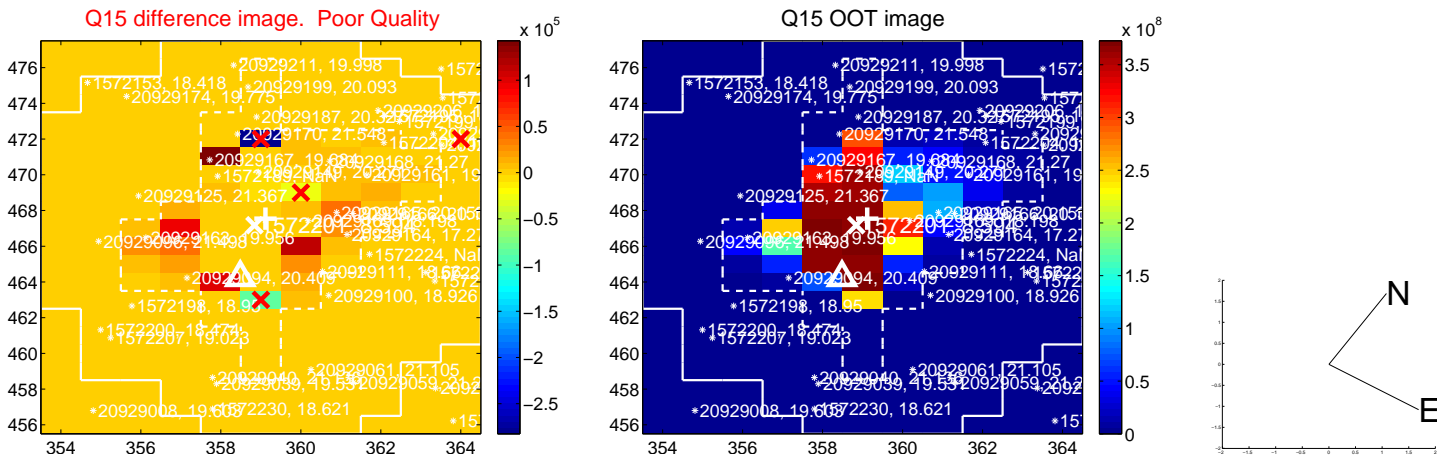
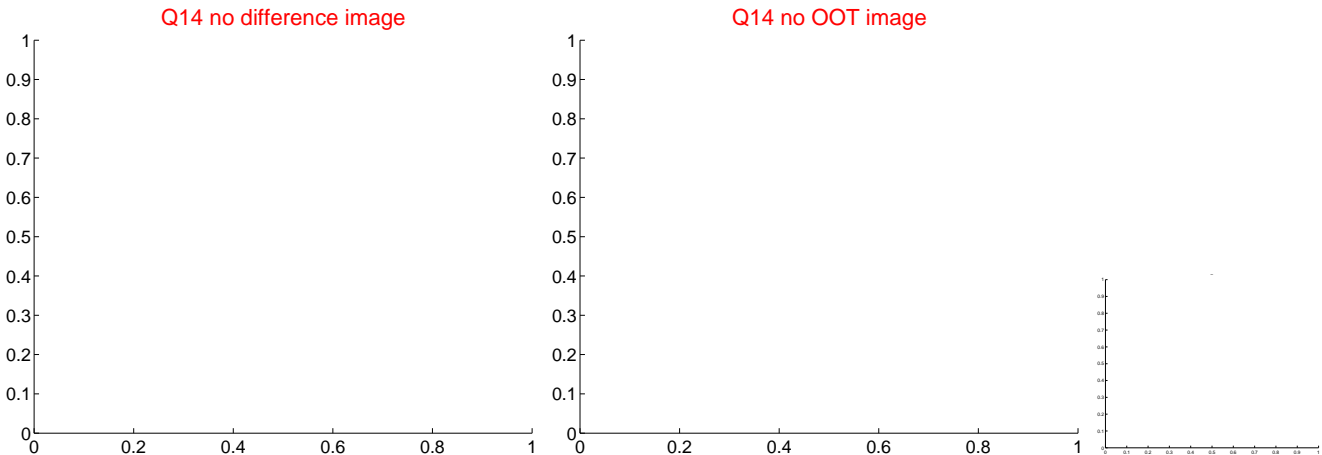
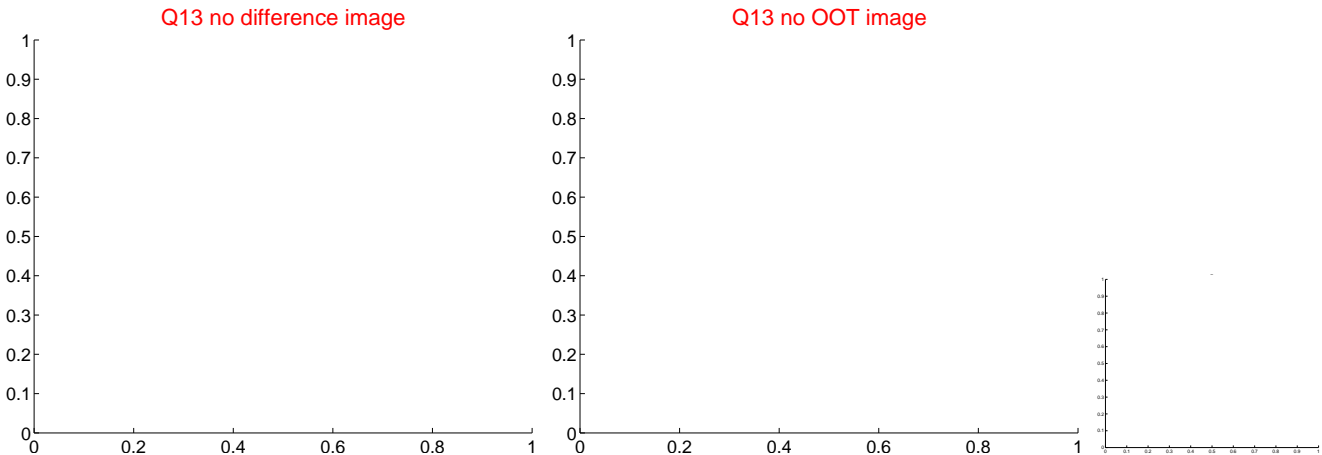
Q8 no OOT image



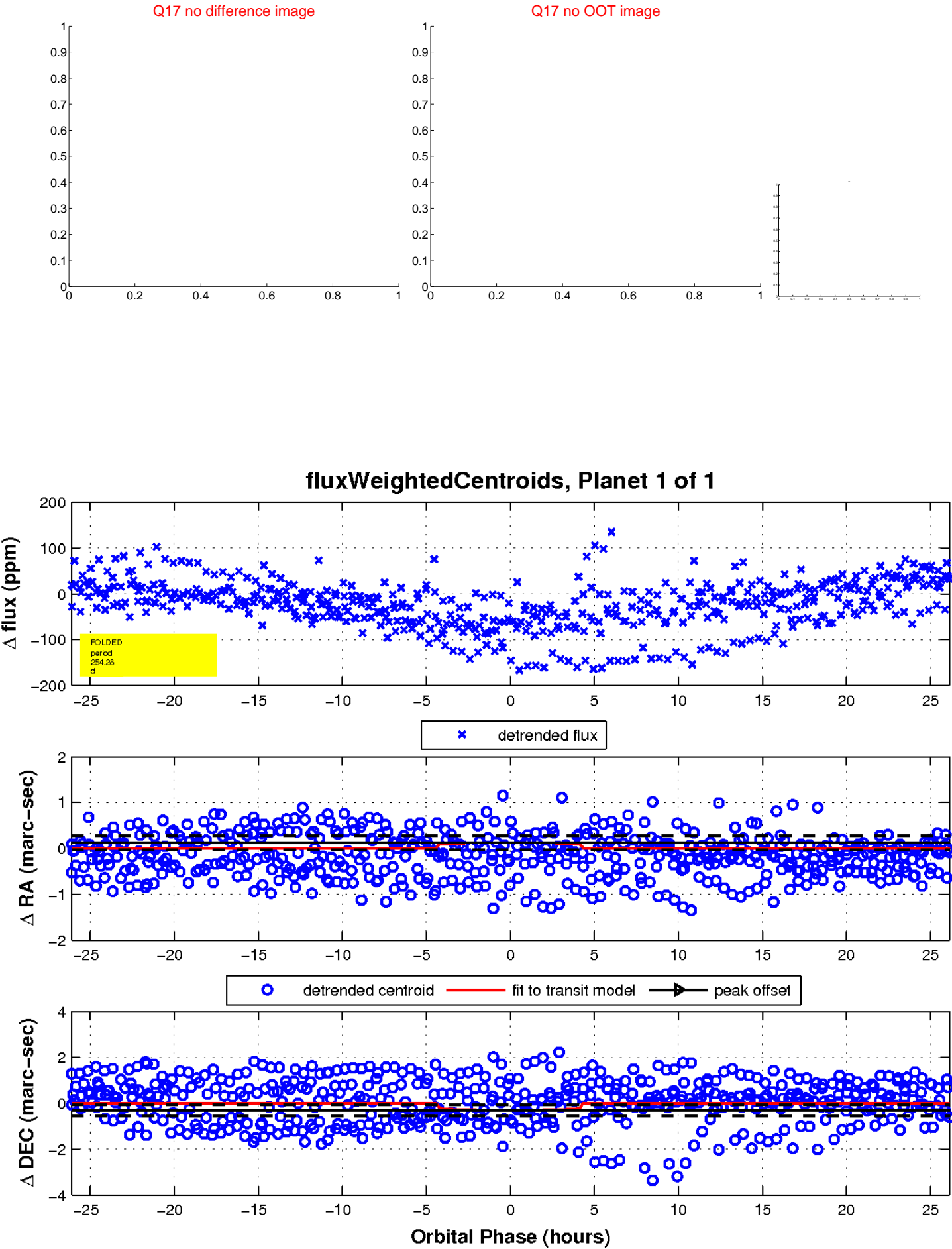
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

