

# KIC 003867676

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003867676-01	OBS	No	79.417908	204.858802	604.2	9.053	8.4	3.8	17.41	4790	46.37	487.02

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003867676-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT

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

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

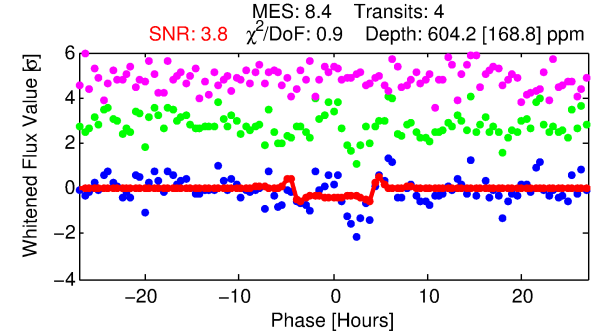
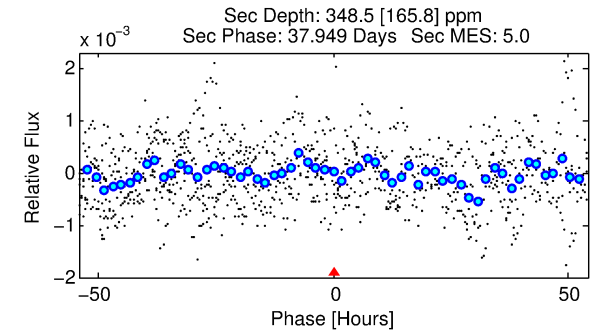
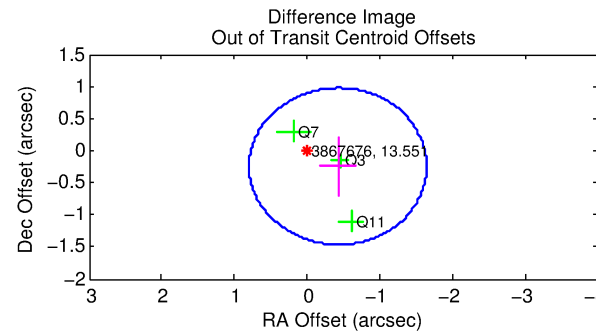
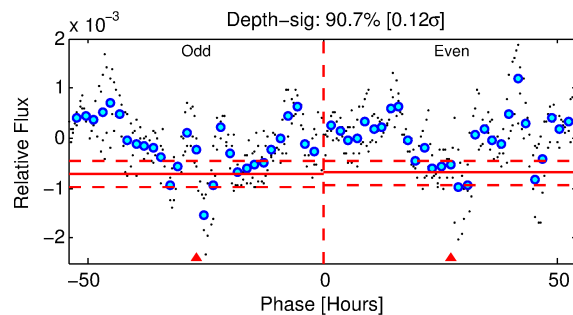
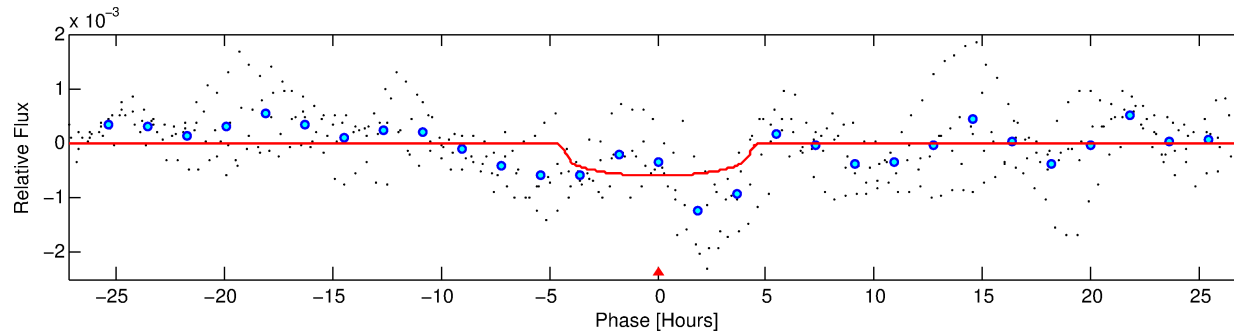
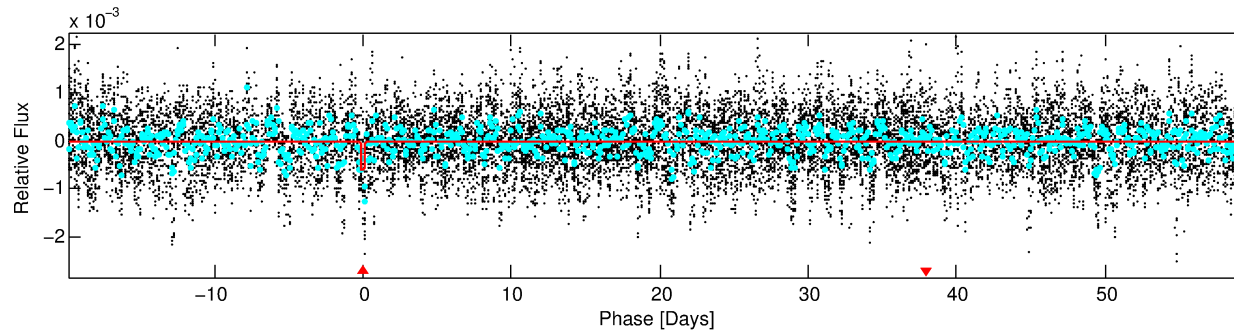
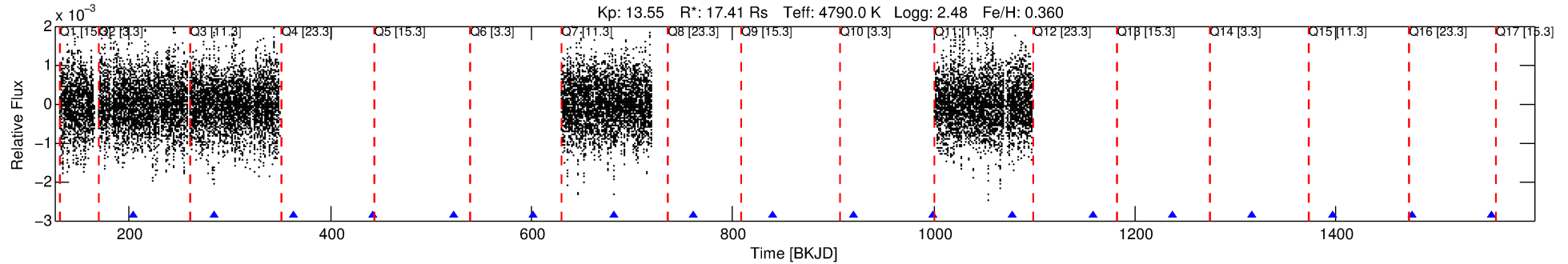
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003867676-01

No Significant Match Found

# DV One-Page Summary

KIC: 3867676 Candidate: 1 of 1 Period: 79.418 d



## DV Fit Results:

Period = 79.41791 [0.00145] d  
Epoch = 204.8588 [0.0099] BKJD  
Rp/R\* = 0.0244 [0.0107]  
a/R\* = 47.75 [64.18]  
b = 0.74 [0.84]  
Seff = 487.02 [144.76]  
Teq = 1198 [89] K  
Rp = 46.37 [26.34] Re  
a = 0.5418 [0.1308] AU  
Ag = 26.17 [26.93] [0.93 $\sigma$ ]  
Teff = 4189 [1061] K [2.81 $\sigma$ ]

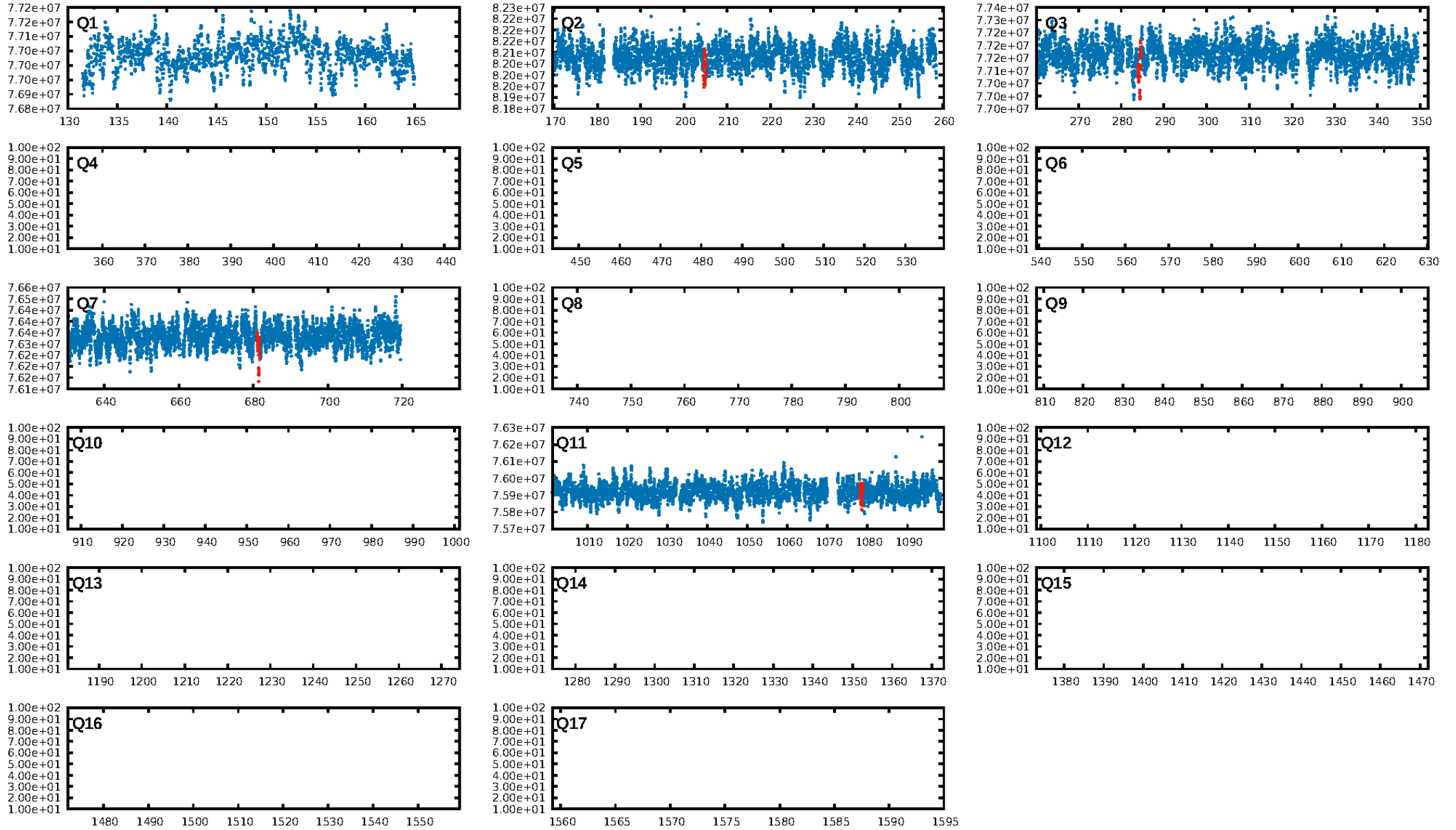
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 55.8%  
ModelChiSquareGof-sig: 98.6%  
Bootstrap-pfa: 9.69e-14  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 31.06  
Centroid-sig: 0.0%  
Centroid-so: 3.169 arcsec [3.38 $\sigma$ ]  
OotOffset-rm: 0.489 arcsec [1.20 $\sigma$ ]  
KicOffset-rm: 0.455 arcsec [1.44 $\sigma$ ]  
OotOffset-st: 0/3/0/0 [3]  
KicOffset-st: 0/3/0/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [4/4]

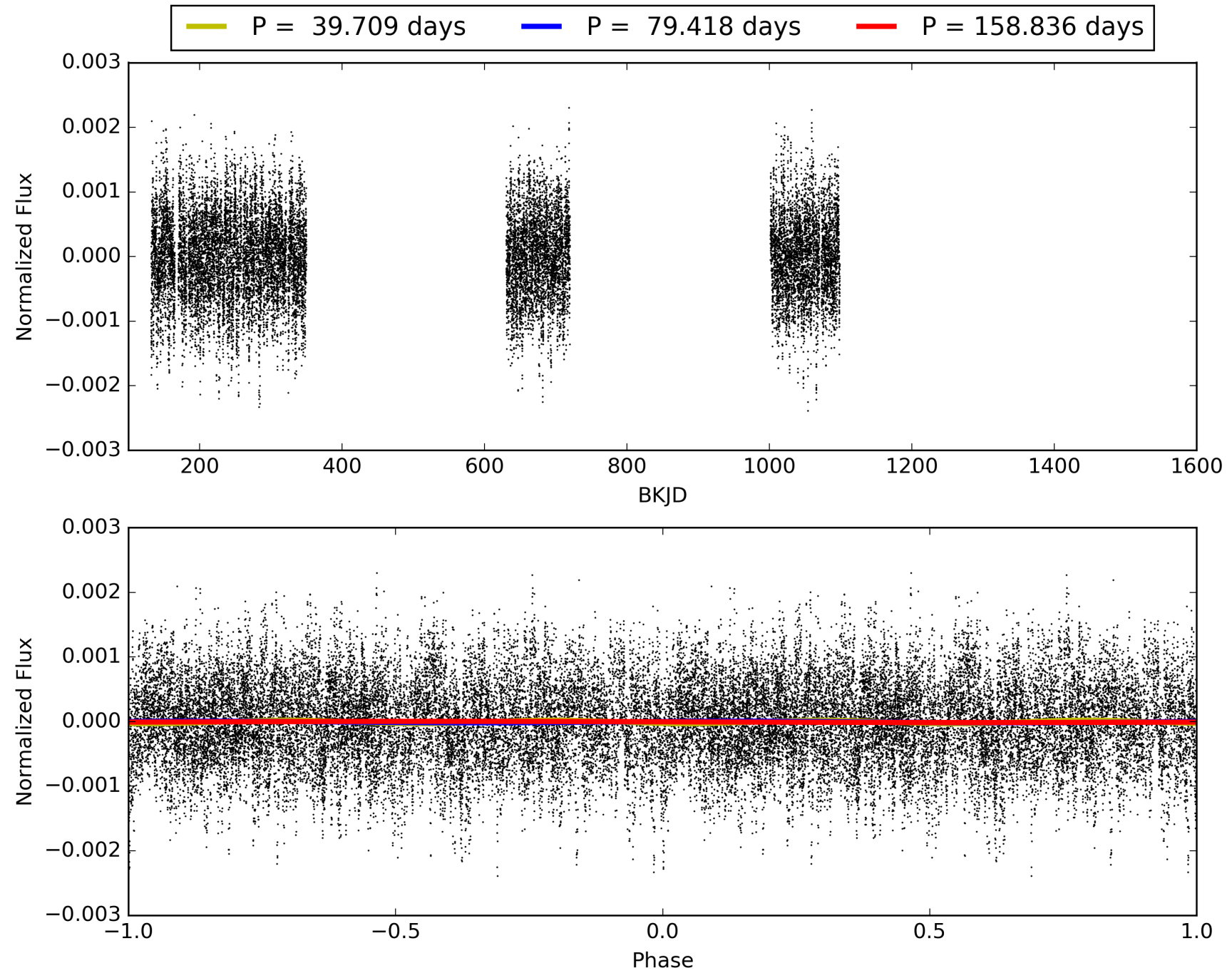
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:53:30 Z

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

# TCE 003867676-01, PDC Light Curves

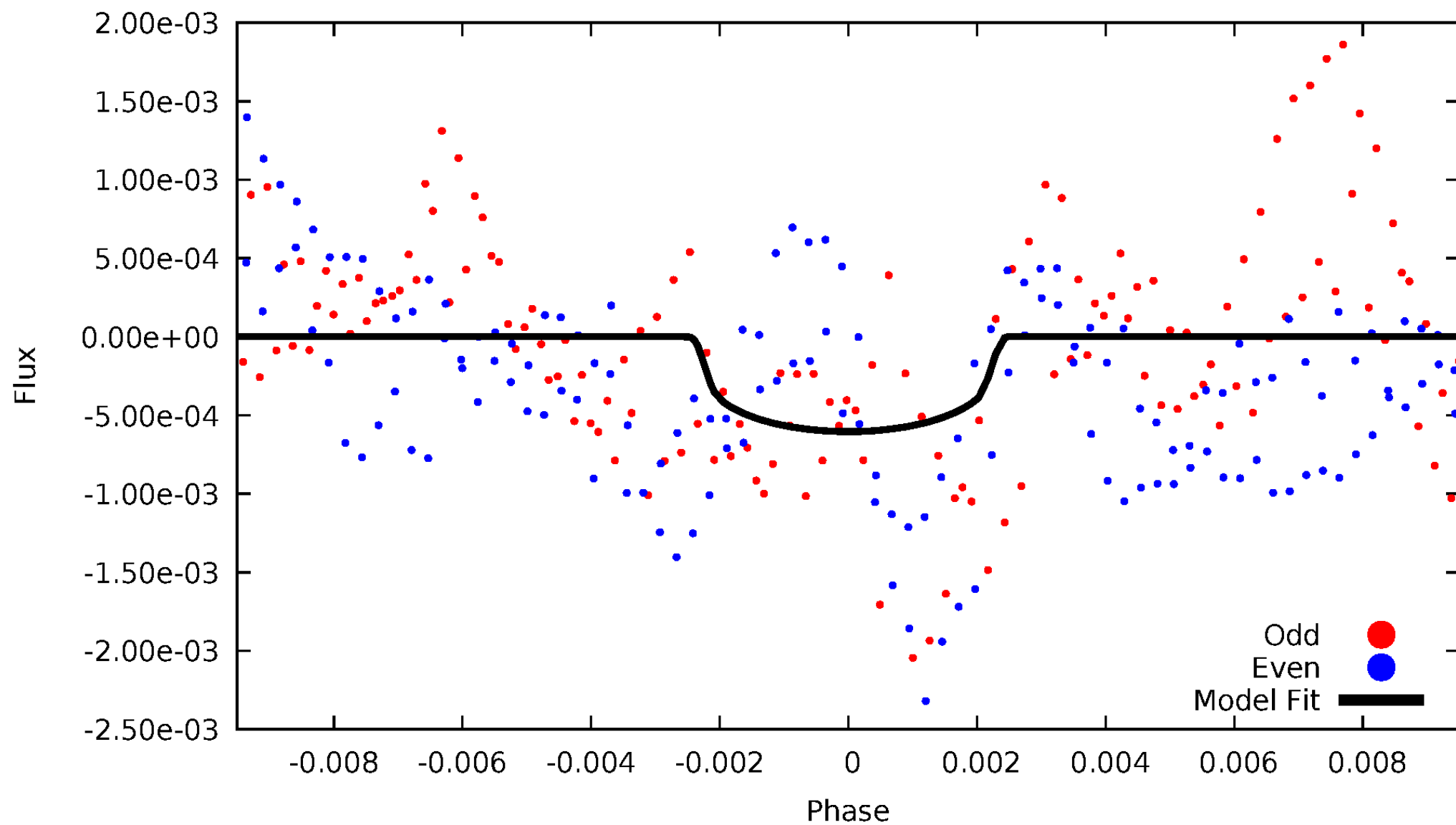


TCE 003867676-01



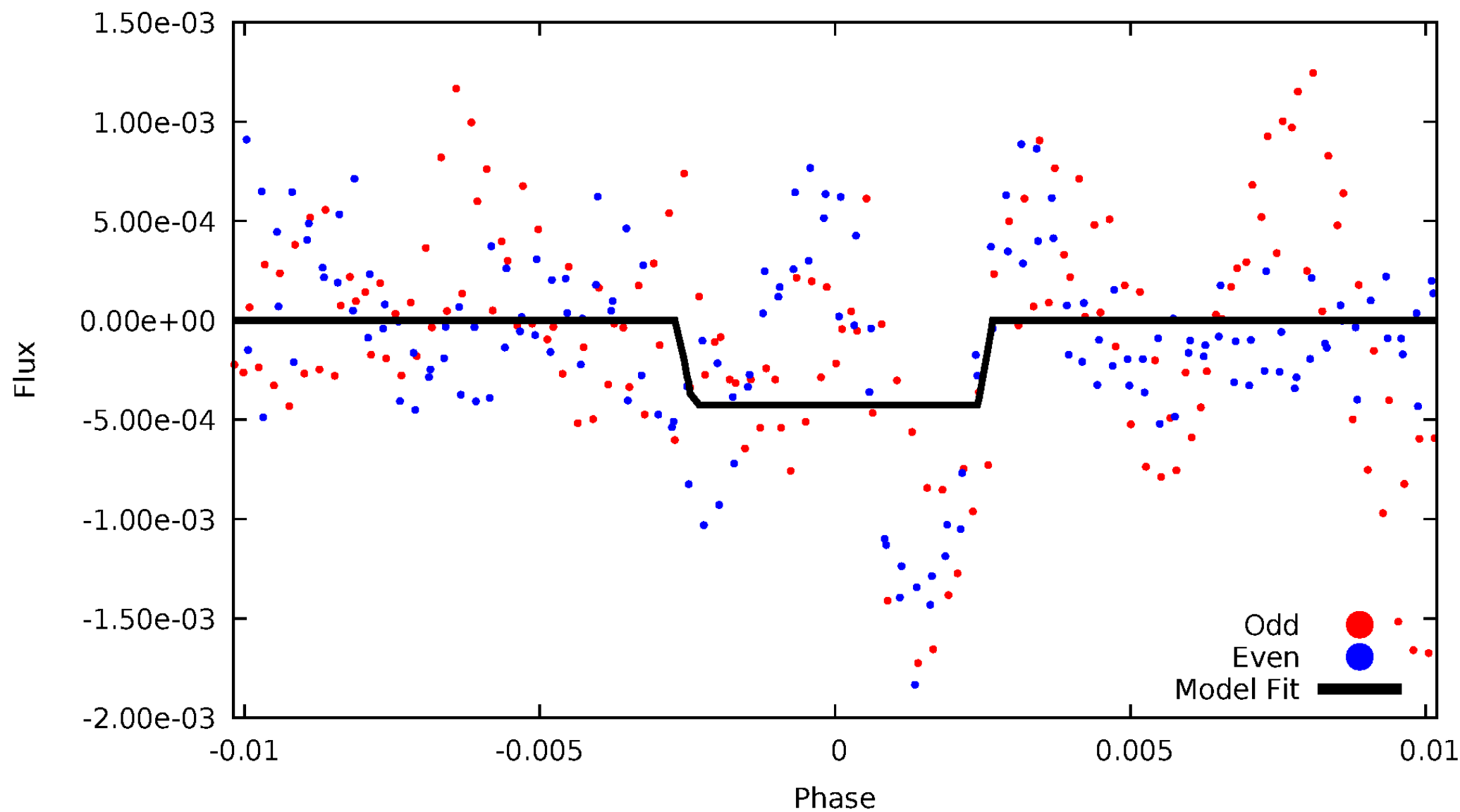
# DV Odd/Even

TCE 003867676-01

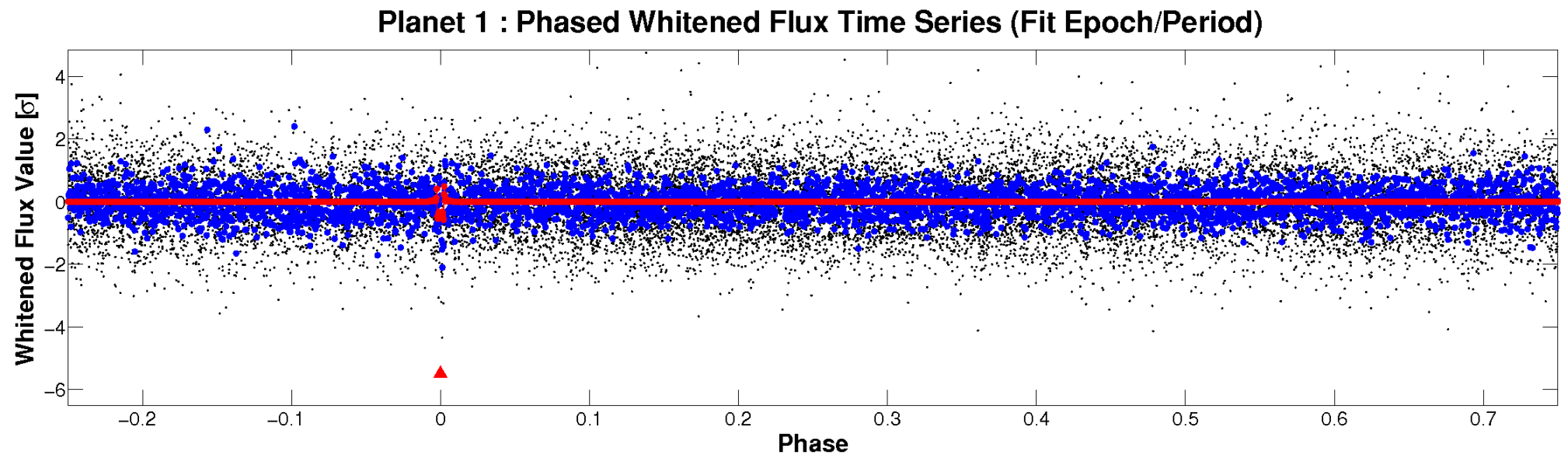
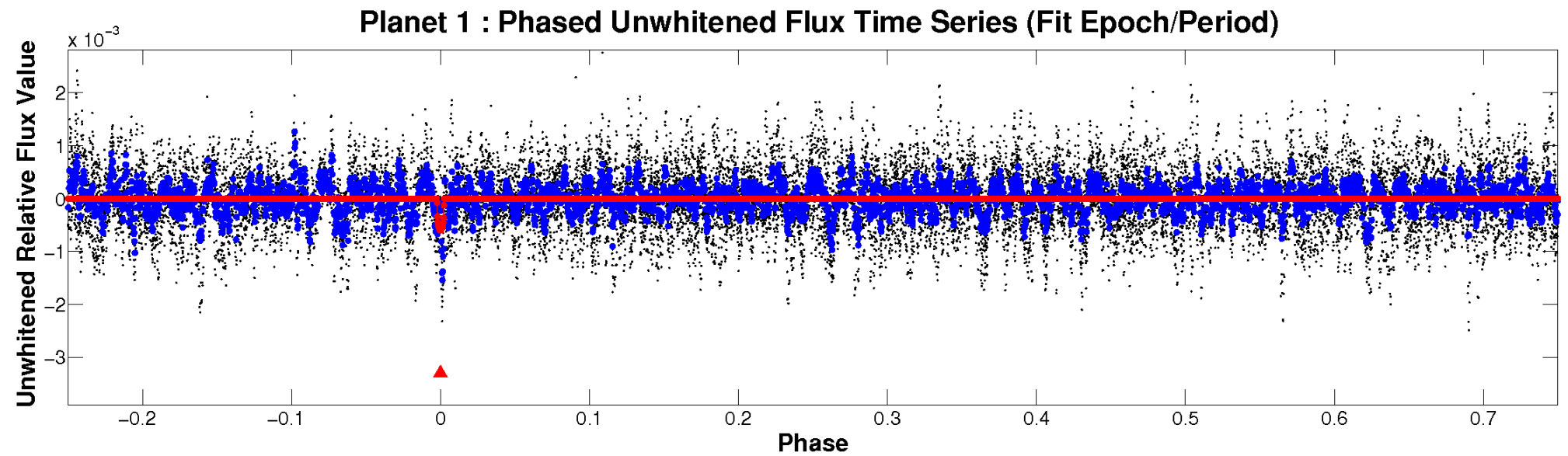


# ALT Odd/Even

TCE 003867676-01

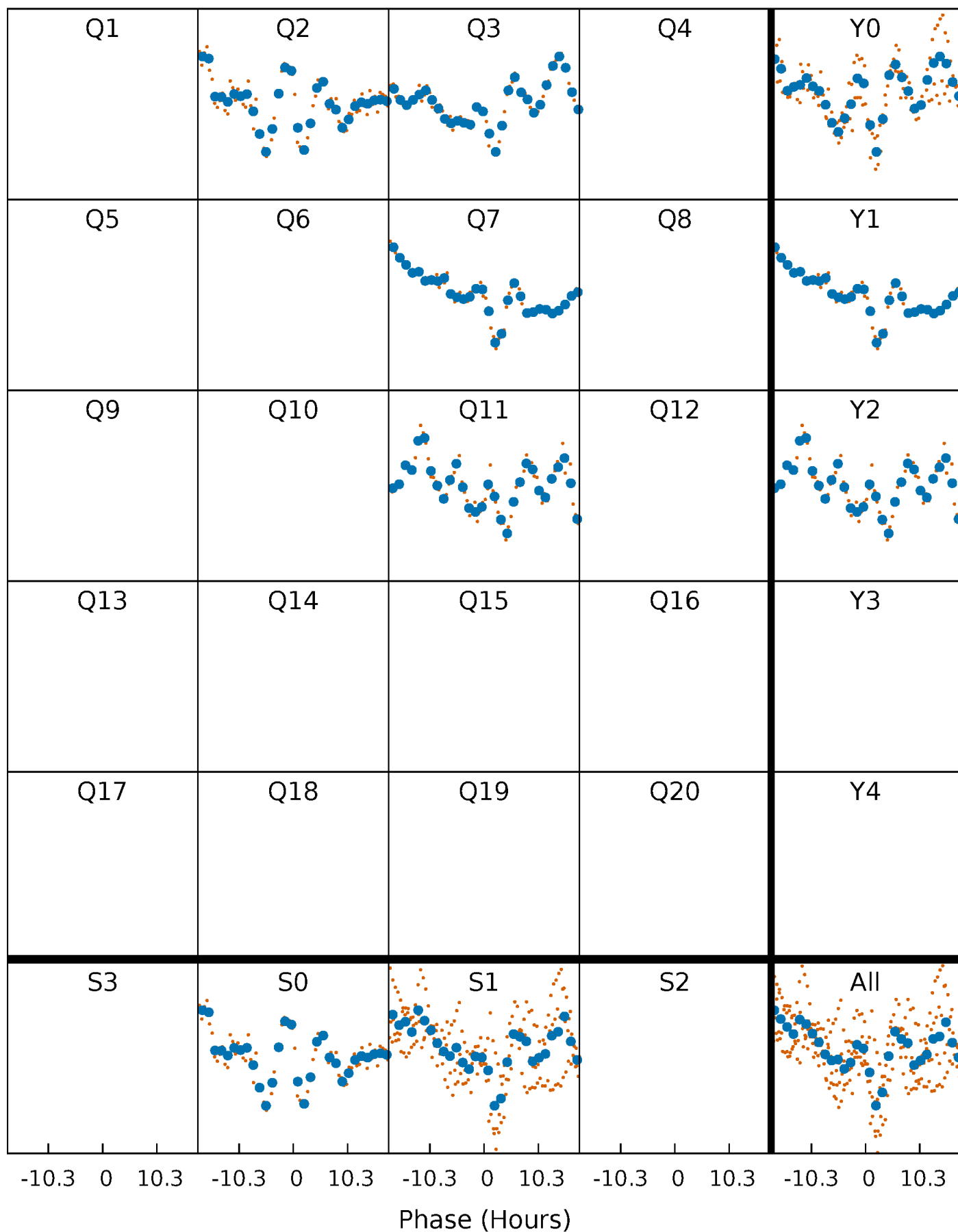


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 003867676-01     $P = 79.417908$  Days     $T_0 = 204.858802$  (BKJD)





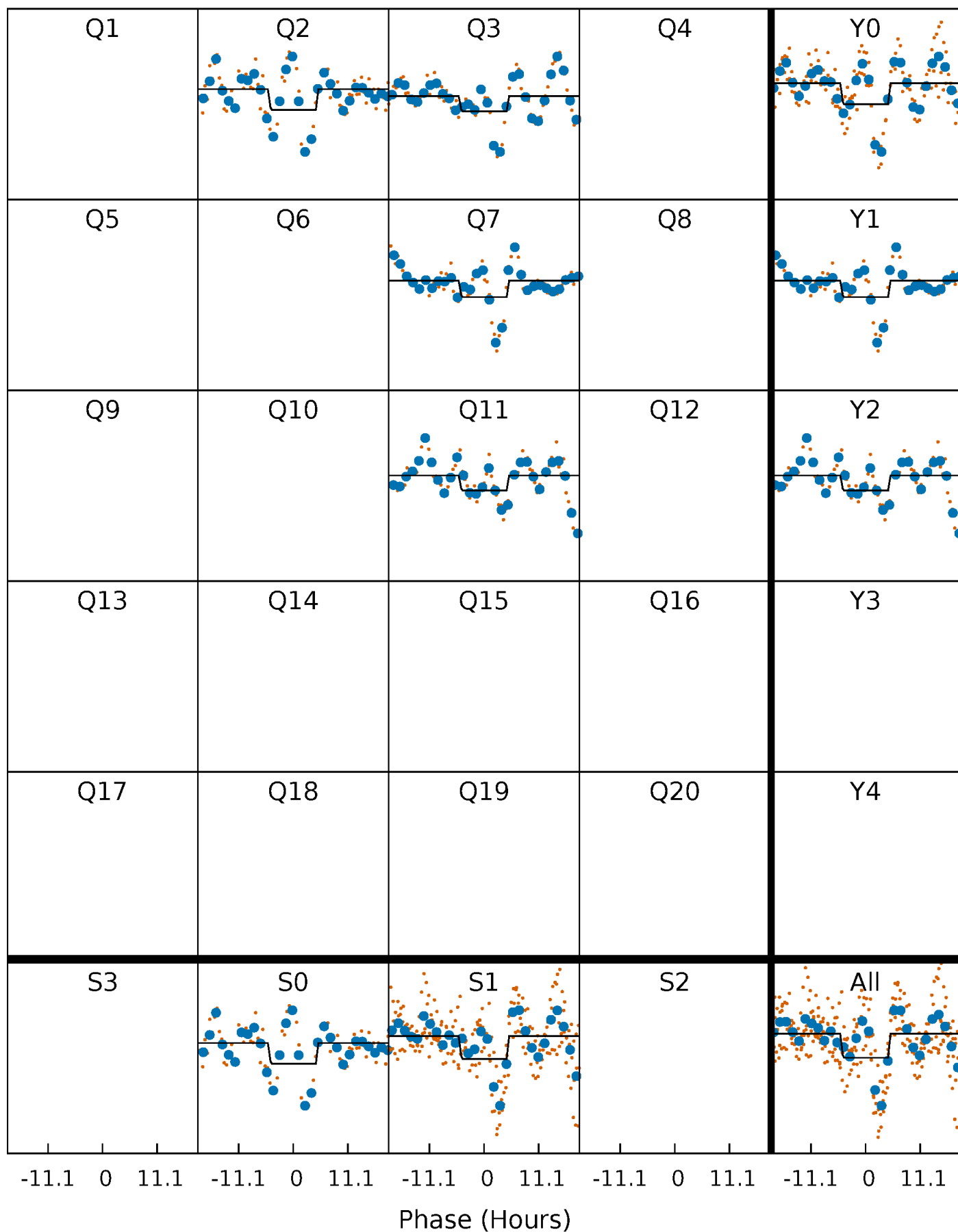
# DV Quarter-Phased Transit Curves

TCE 003867676-01     $P = 79.417908$  Days     $T_0 = 204.858802$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

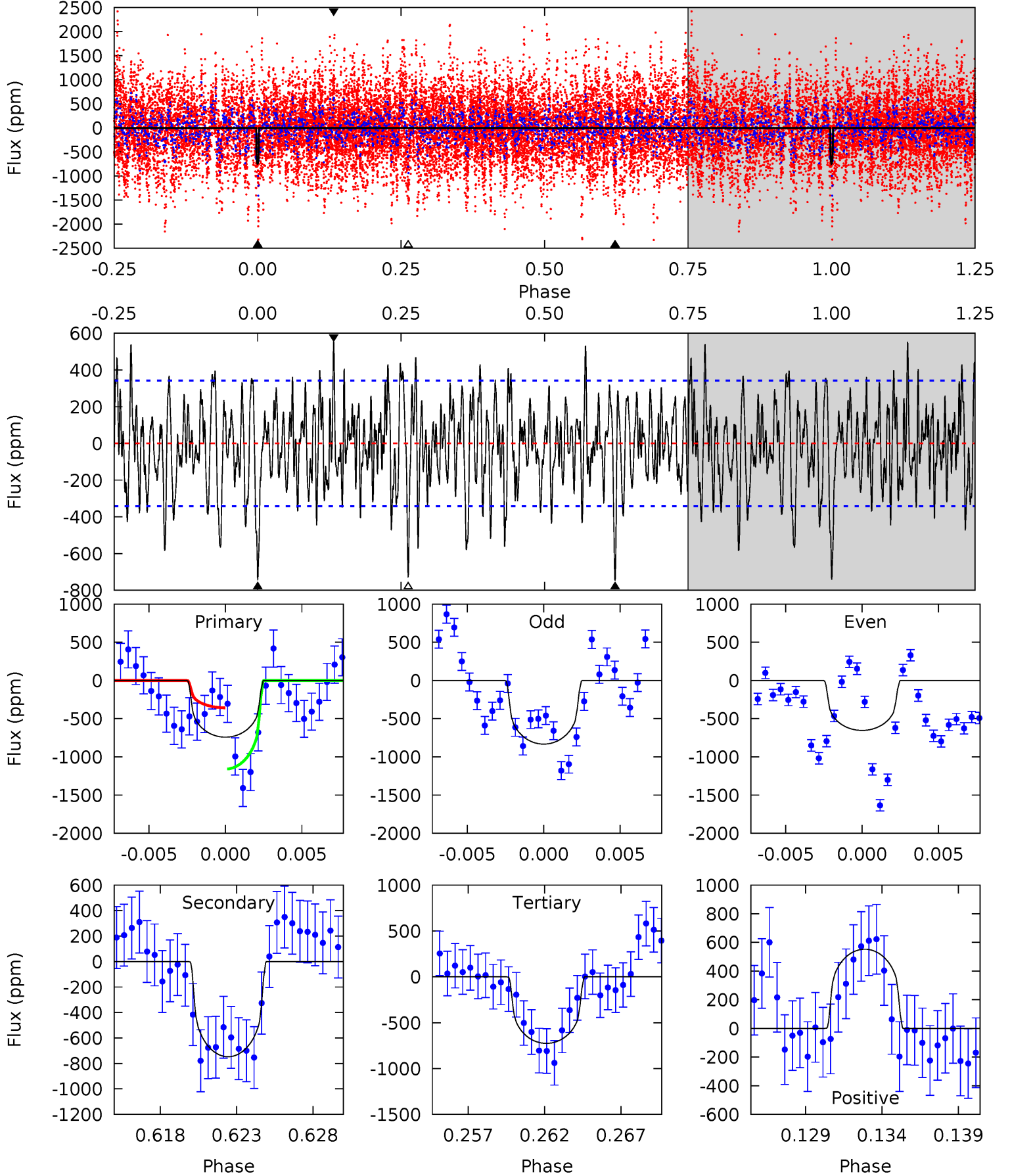
TCE 003867676-01     $P = 79.421858$  Days     $T_0 = 204.822946$  (BKJD)



# DV Model-Shift Uniqueness Test

003867676-01, P = 79.417908 Days, E = 125.440894 Days

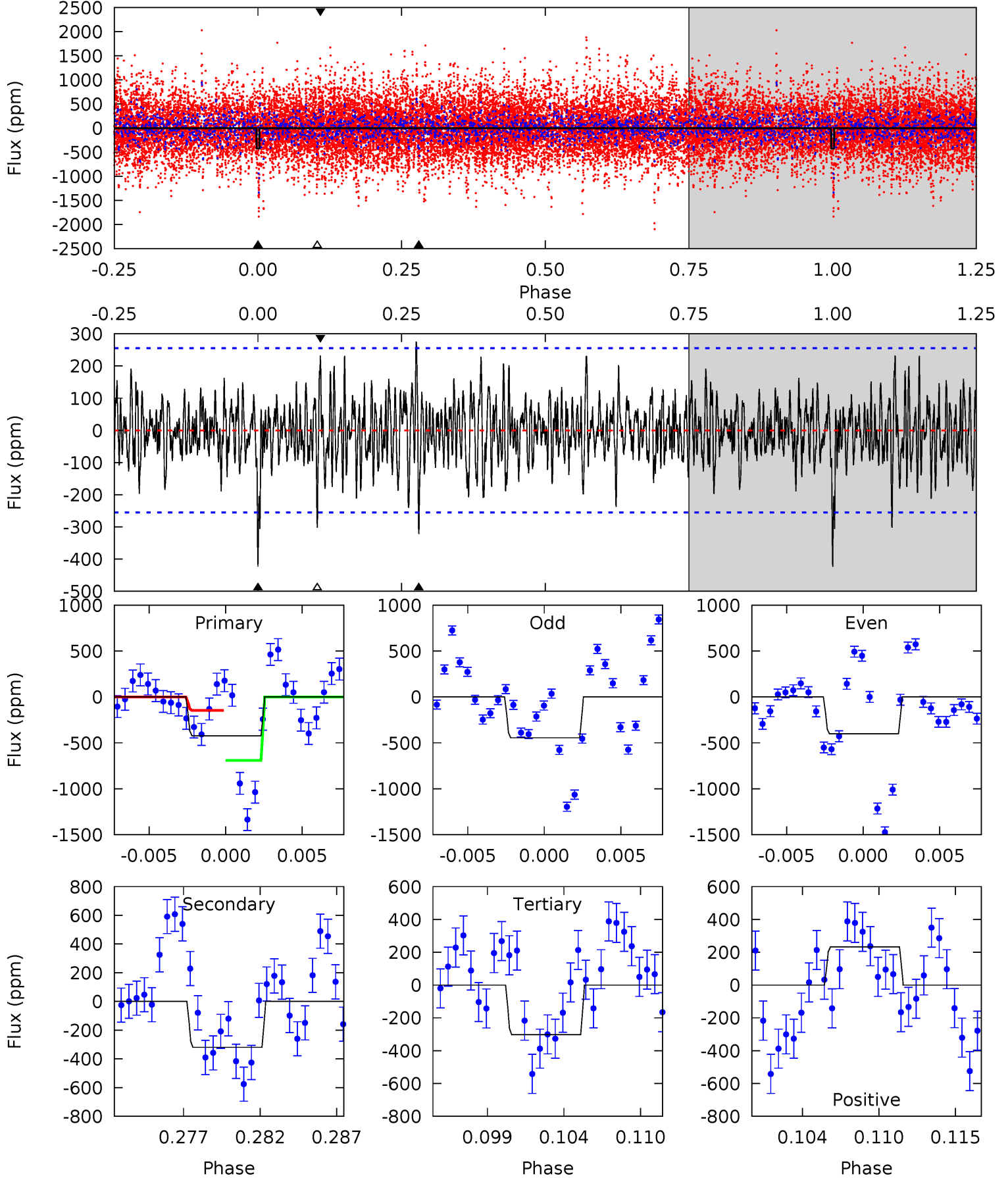
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	11.3	10.9	8.33	5.16	2.81	3.08	0.24	2.85	0.32	2.93	1.36	0.89	0.43	6.03



# Alt Model-Shift Uniqueness Test

003867676-01, P = 79.421858 Days, E = 125.401088 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
8.54	6.45	6.10	4.68	5.15	2.79	1.62	2.44	3.85	0.35	1.76	0.43	1.02	0.39	5.52



### Stellar Parameters For KIC 003867676

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4790^{+86}_{-201}$	$2.483^{+0.033}_{-0.027}$	$0.360^{+0.100}_{-0.400}$	$17.410^{+0.696}_{-6.268}$	$3.364^{+0.101}_{-1.918}$	$0.001^{+0.001}_{-0.000}$
	+2%/-4%	+1%/-1%	+28%/-111%	+4%/-36%	+3%/-57%	+67%/-9%
Source	PHO1	AST9	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 003867676-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-747 \pm 66$	$47.39^{+20.15}_{-21.18}$	$1674^{+38}_{-72}$	$4920^{+1511}_{-634}$	$54^{+115}_{-28}$
Alt.	$-319 \pm 50$	$38.57^{+21.74}_{-18.91}$	$1672^{+43}_{-70}$	$4499^{+1602}_{-686}$	$34^{+100}_{-19}$

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

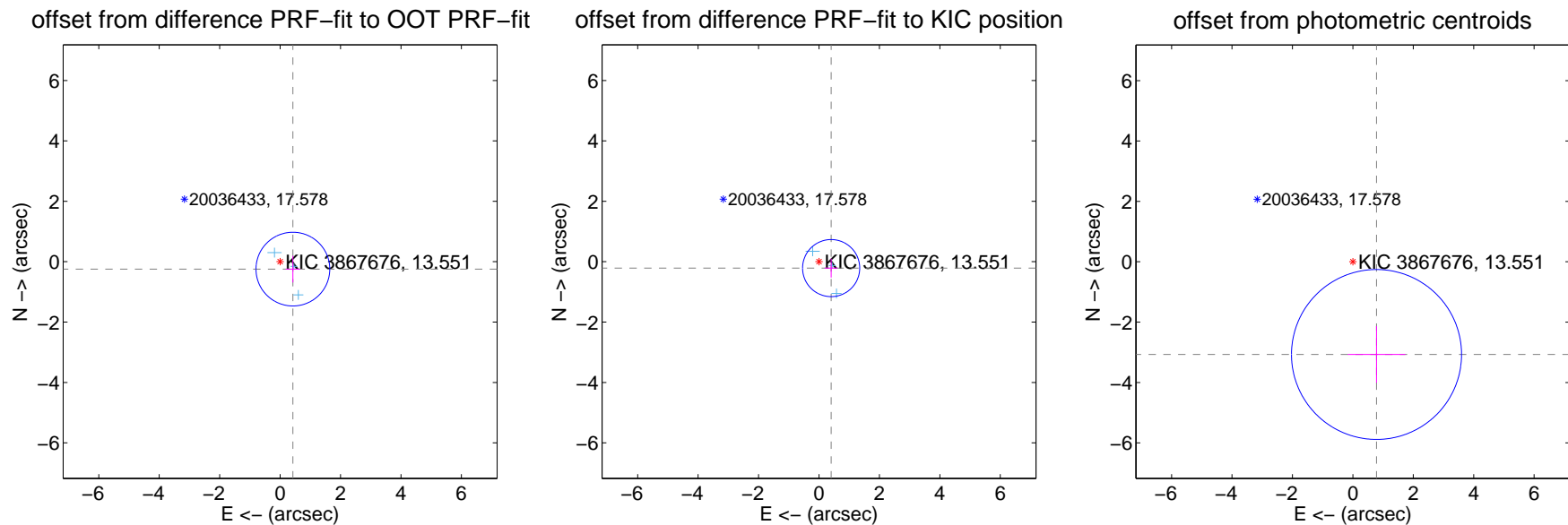
## DV Centroid Data

Supplemental centroid analysis for 003867676-01. Kepler magnitude: 13.55. Transit SNR 3.76

There are 3 quarters with good PRF difference image offsets

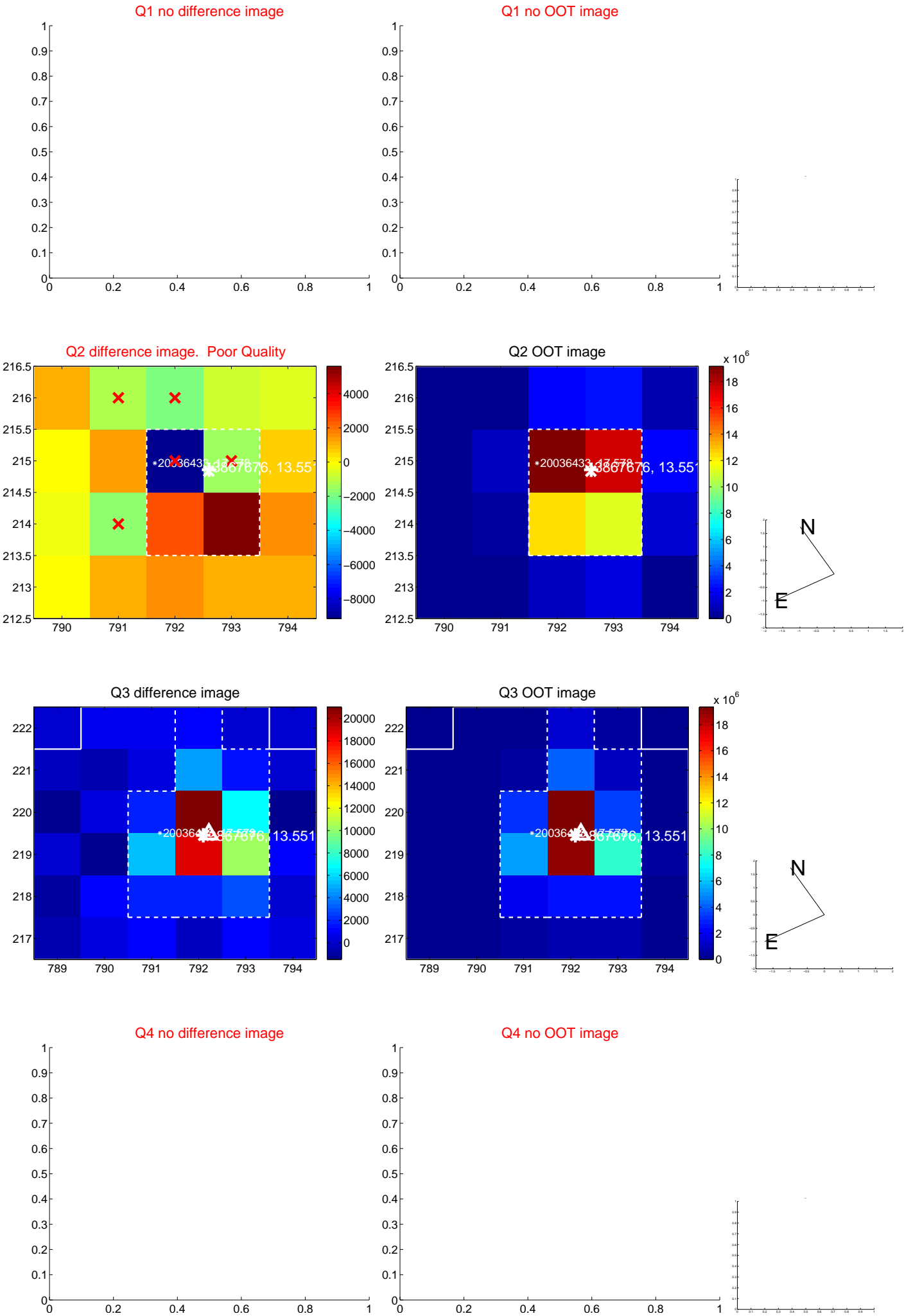
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.489 \pm 0.407$	1.20	$-0.423 \pm 0.239$	$-0.246 \pm 0.443$
PRF-fit source offset from KIC position	$0.455 \pm 0.315$	1.44	$-0.402 \pm 0.213$	$-0.212 \pm 0.312$
photometric centroid source offset	$3.17 \pm 0.94$	3.38	$-0.78 \pm 0.95$	$-3.07 \pm 0.94$

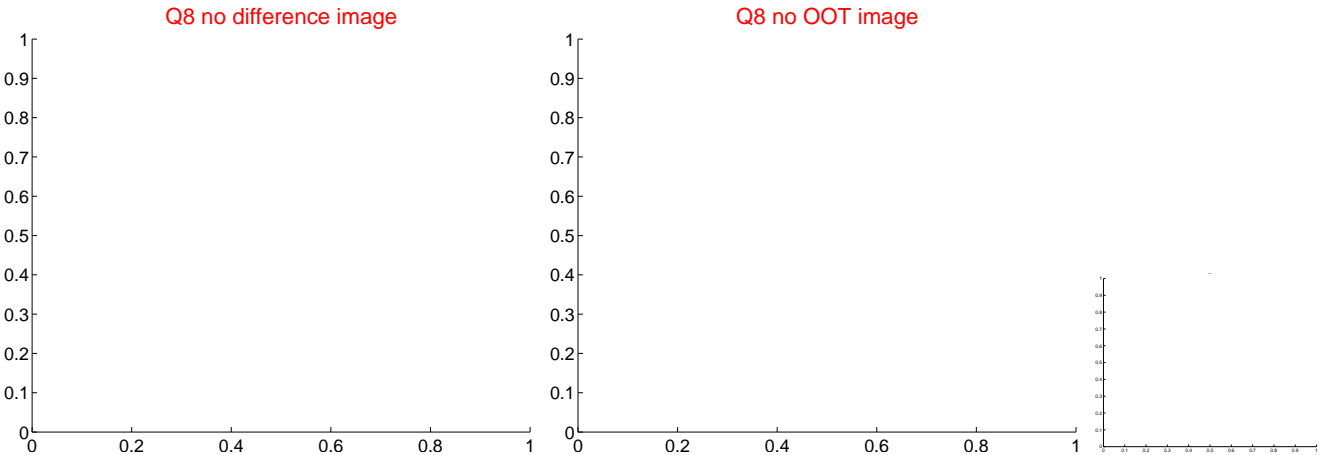
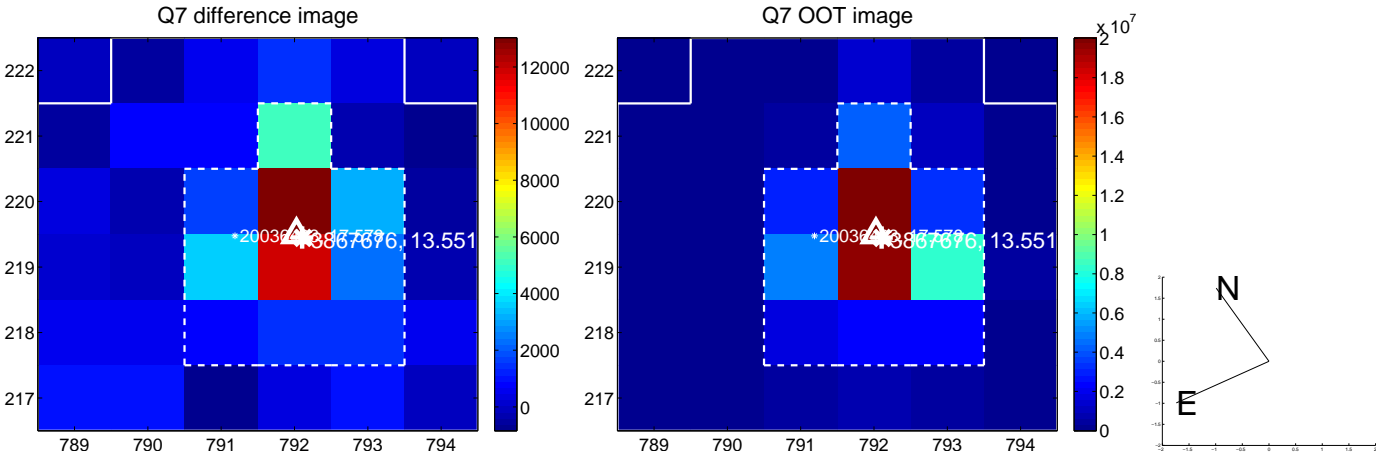
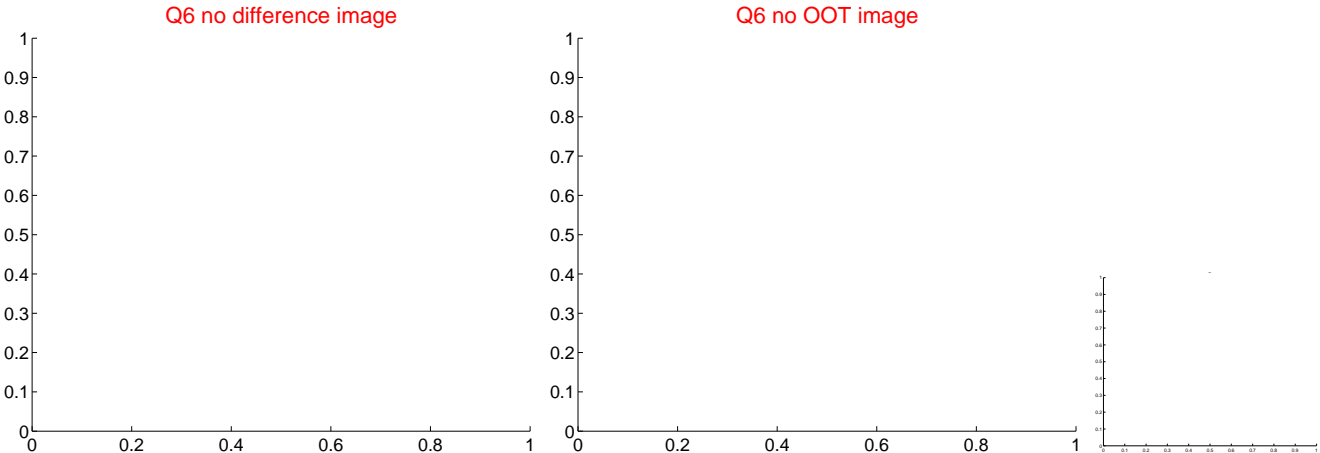
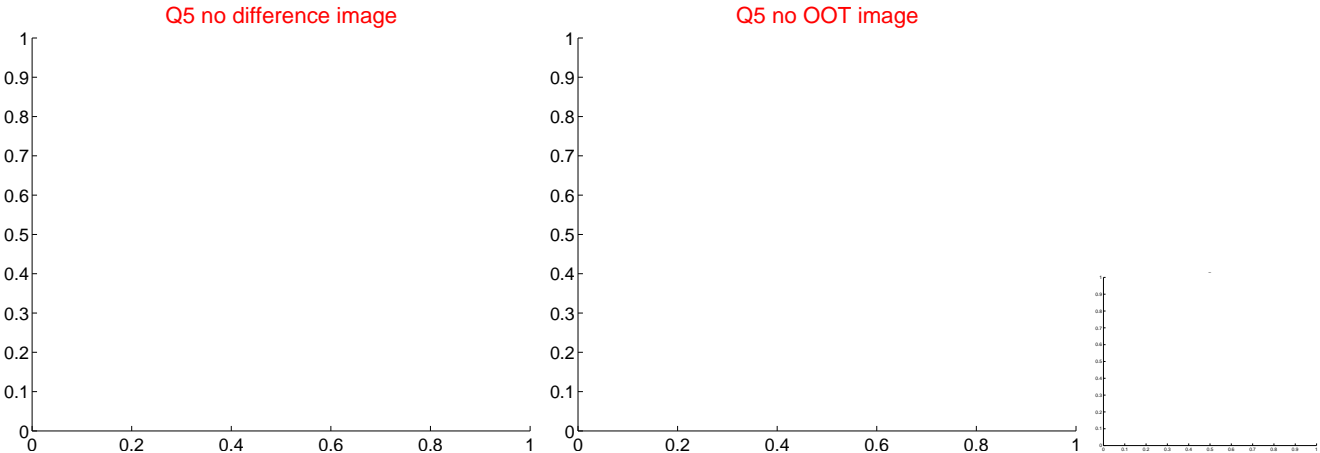


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

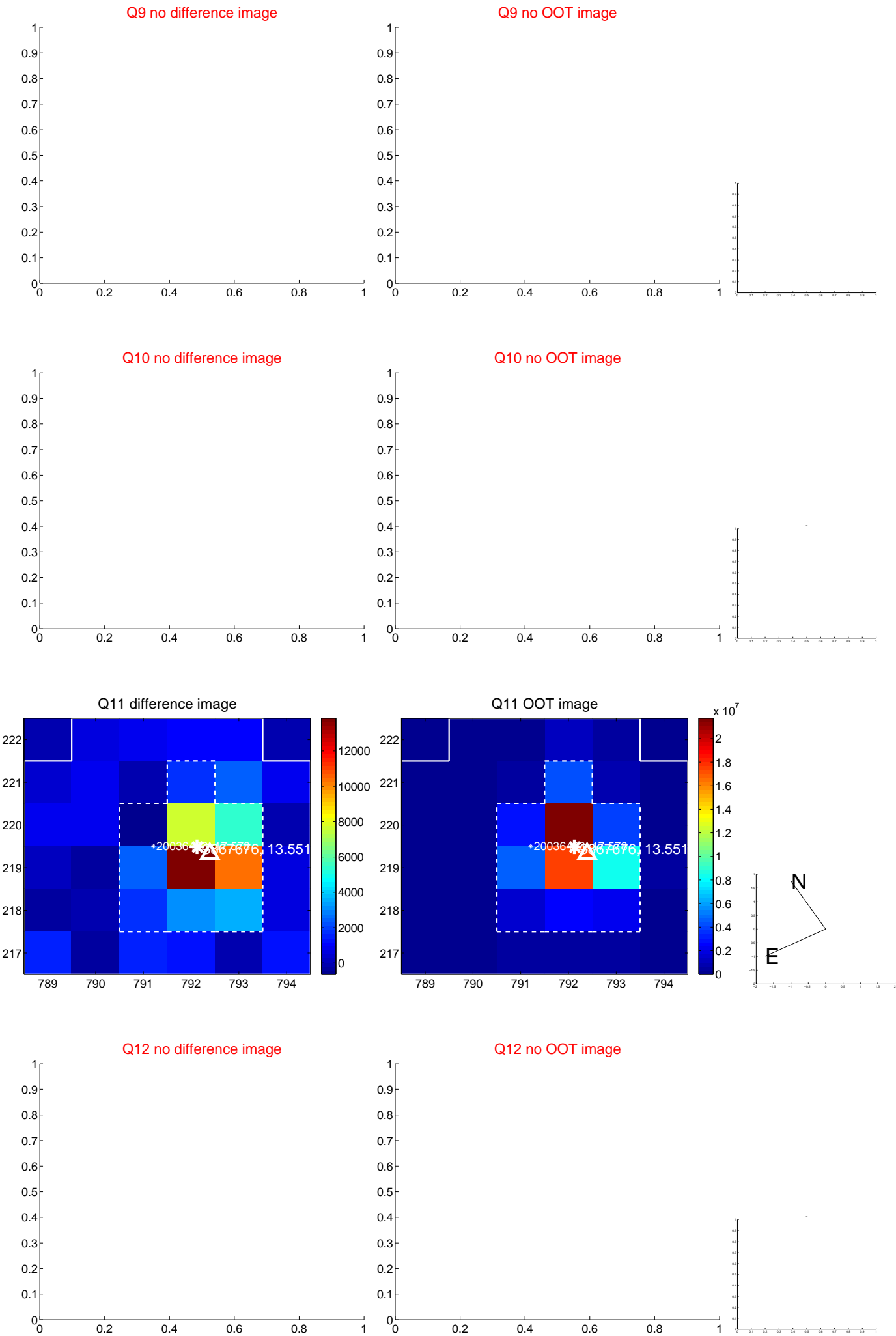


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value





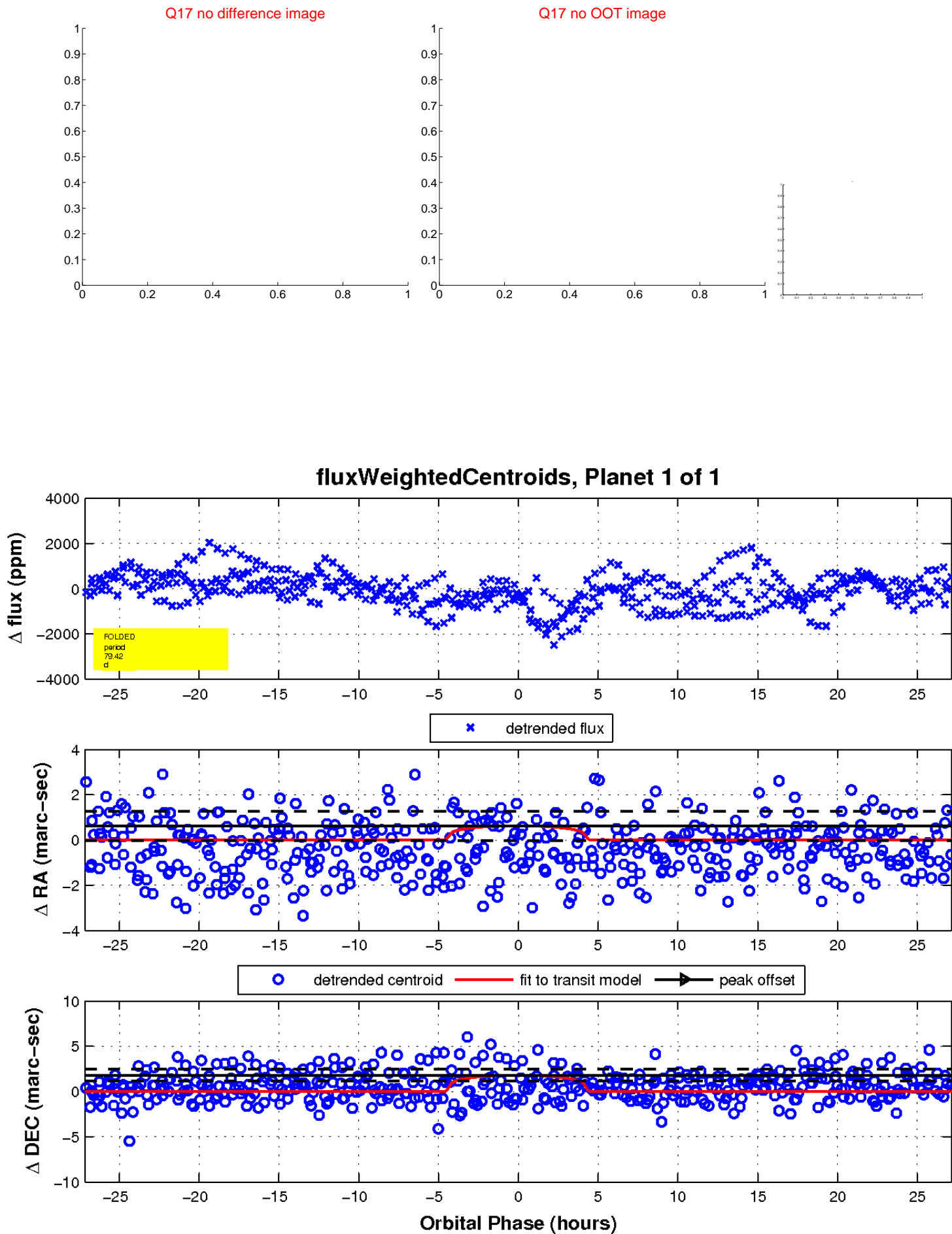
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

