

# KIC 008681125

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008681125-01	OBS	No	153.783030	171.216213	3645.9	12.146	44.3	52.8	1.06	5942	6.72	3.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008681125-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—INCONSISTENT_TRANS

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

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

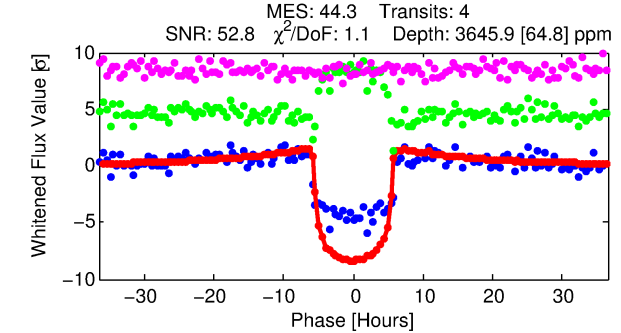
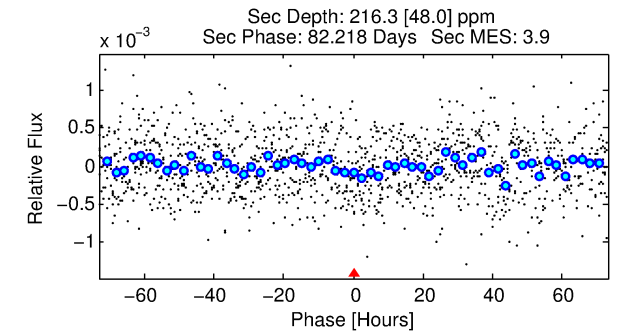
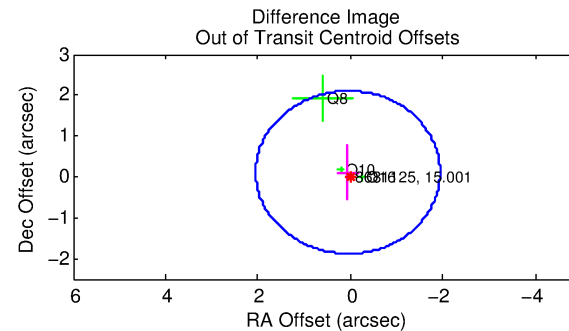
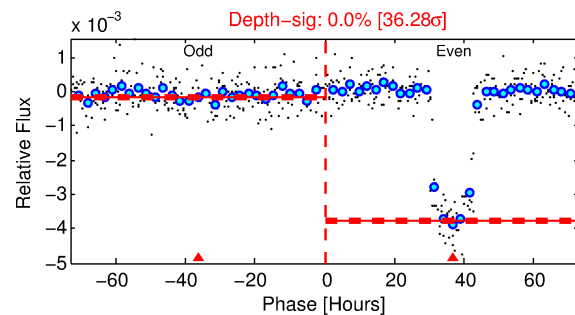
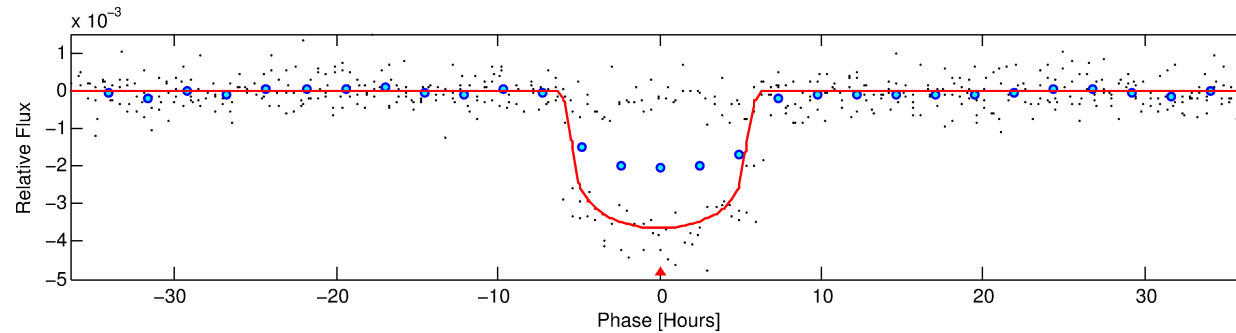
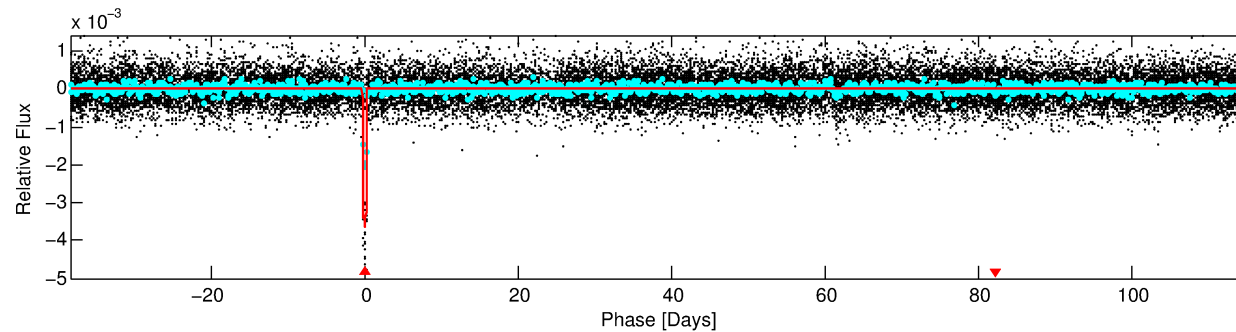
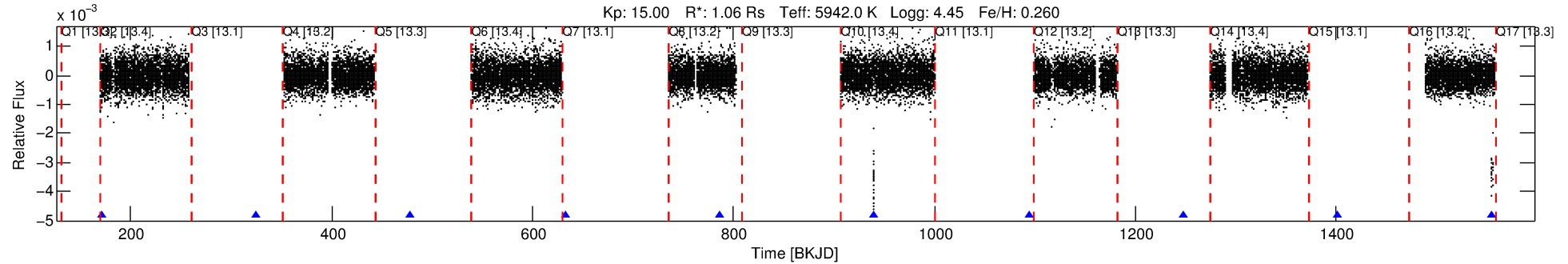
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008681125-01

No Significant Match Found

# DV One-Page Summary

KIC: 8681125 Candidate: 1 of 1 Period: 153.783 d



## DV Fit Results:

Period = 153.78303 [0.00060] d  
Epoch = 171.2162 [0.0036] BKJD  
Rp/R\* = 0.0583 [0.0018]  
a/R\* = 80.62 [10.22]  
b = 0.65 [0.11]  
Seff = 3.63 [1.57]  
Teq = 352 [38] K  
Rp = 6.73 [2.16] Re  
a = 0.5862 [0.1605] AU  
Ag = 903.78 [420.88] [2.14 $\sigma$ ]  
Teffp = 2984 [205] K [12.61 $\sigma$ ]

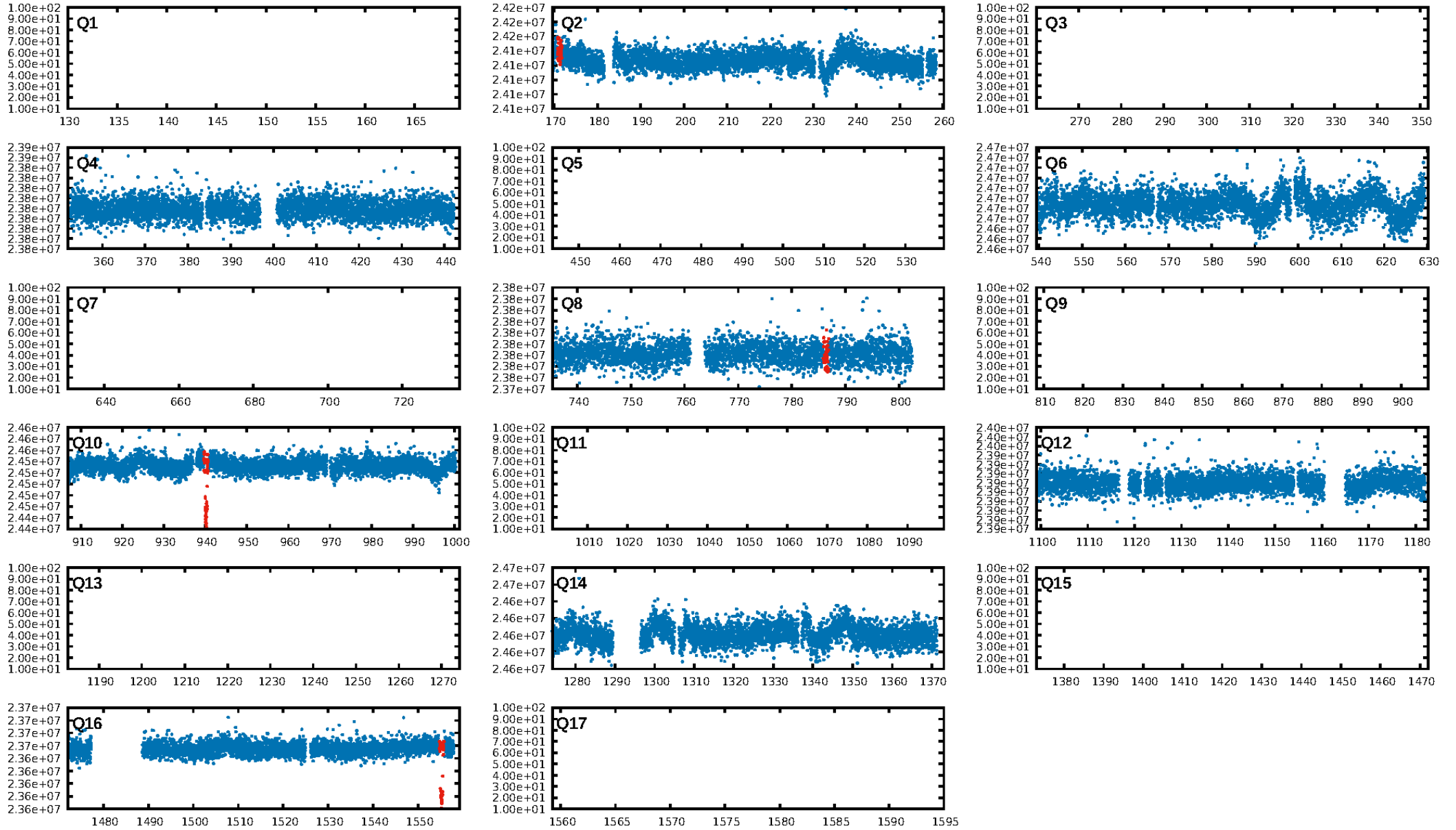
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.60e-250  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 3.974  
Centroid-sig: 1.5%  
Centroid-so: 0.438 arcsec [2.07 $\sigma$ ]  
OotOffset-rm: 0.125 arcsec [0.19 $\sigma$ ]  
KicOffset-rm: 0.159 arcsec [0.72 $\sigma$ ]  
OotOffset-st: 1/0/2/0 [3]  
KicOffset-st: 1/0/2/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

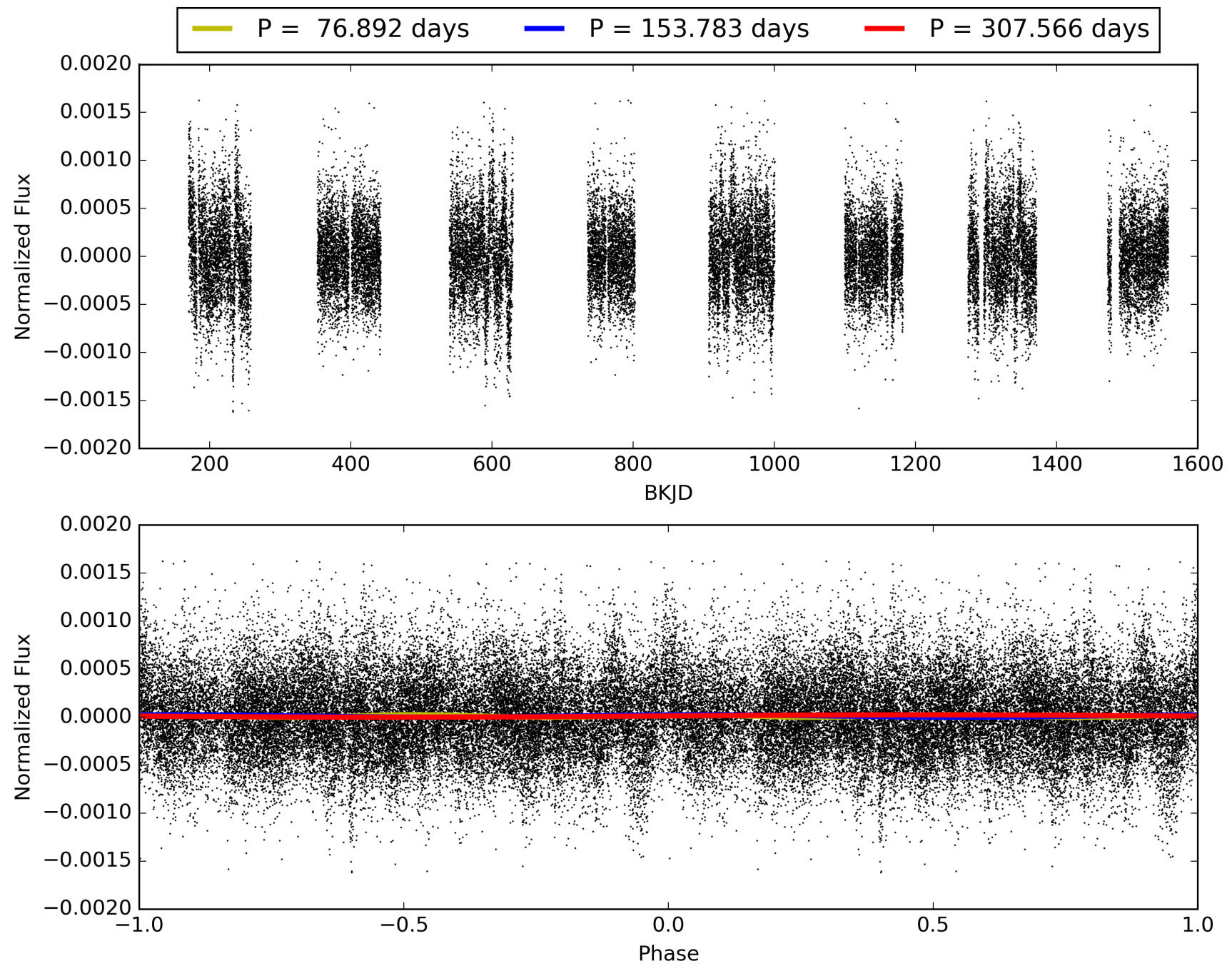
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:13:20 Z

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

# TCE 008681125-01, PDC Light Curves

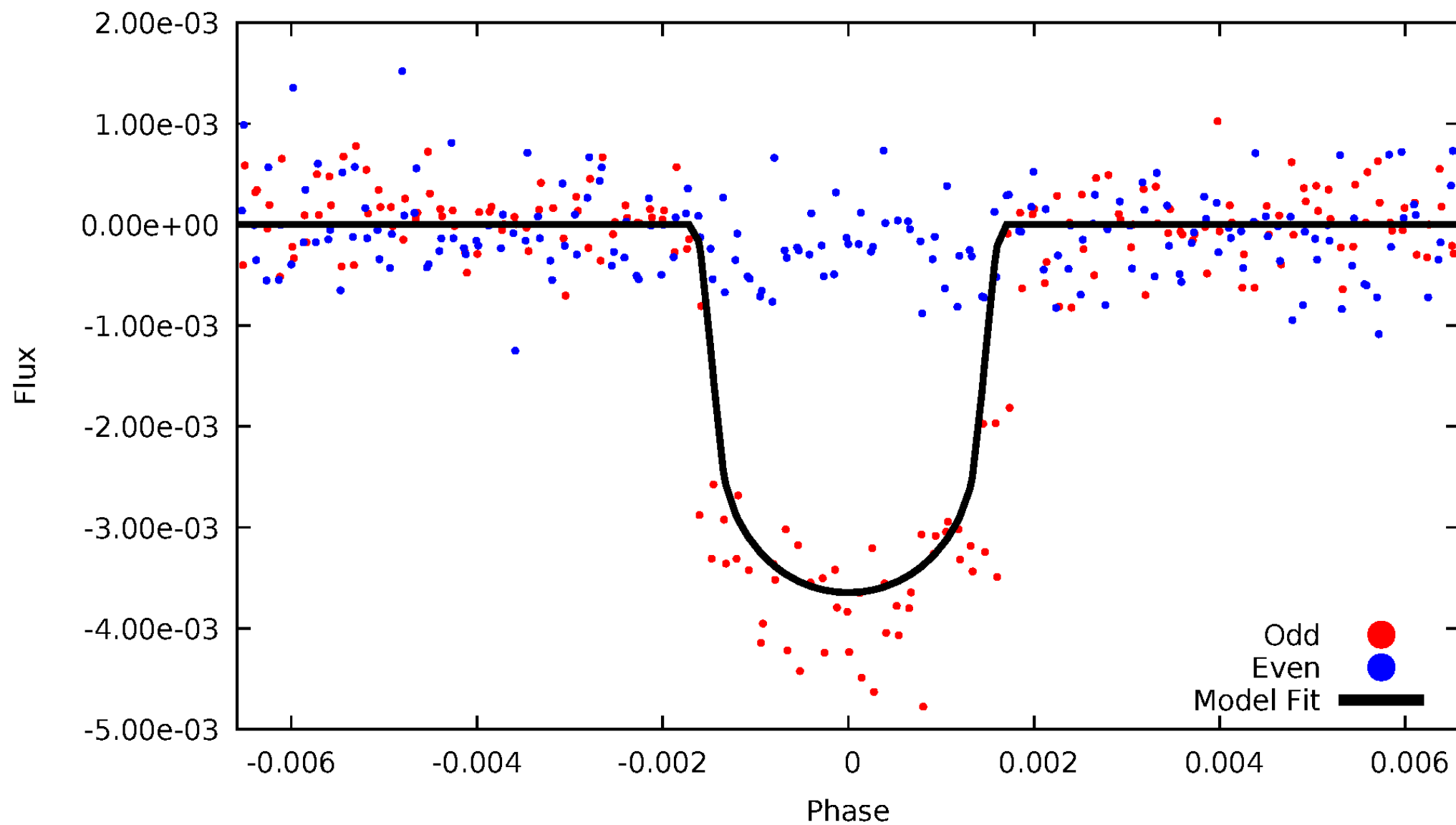


TCE 008681125-01



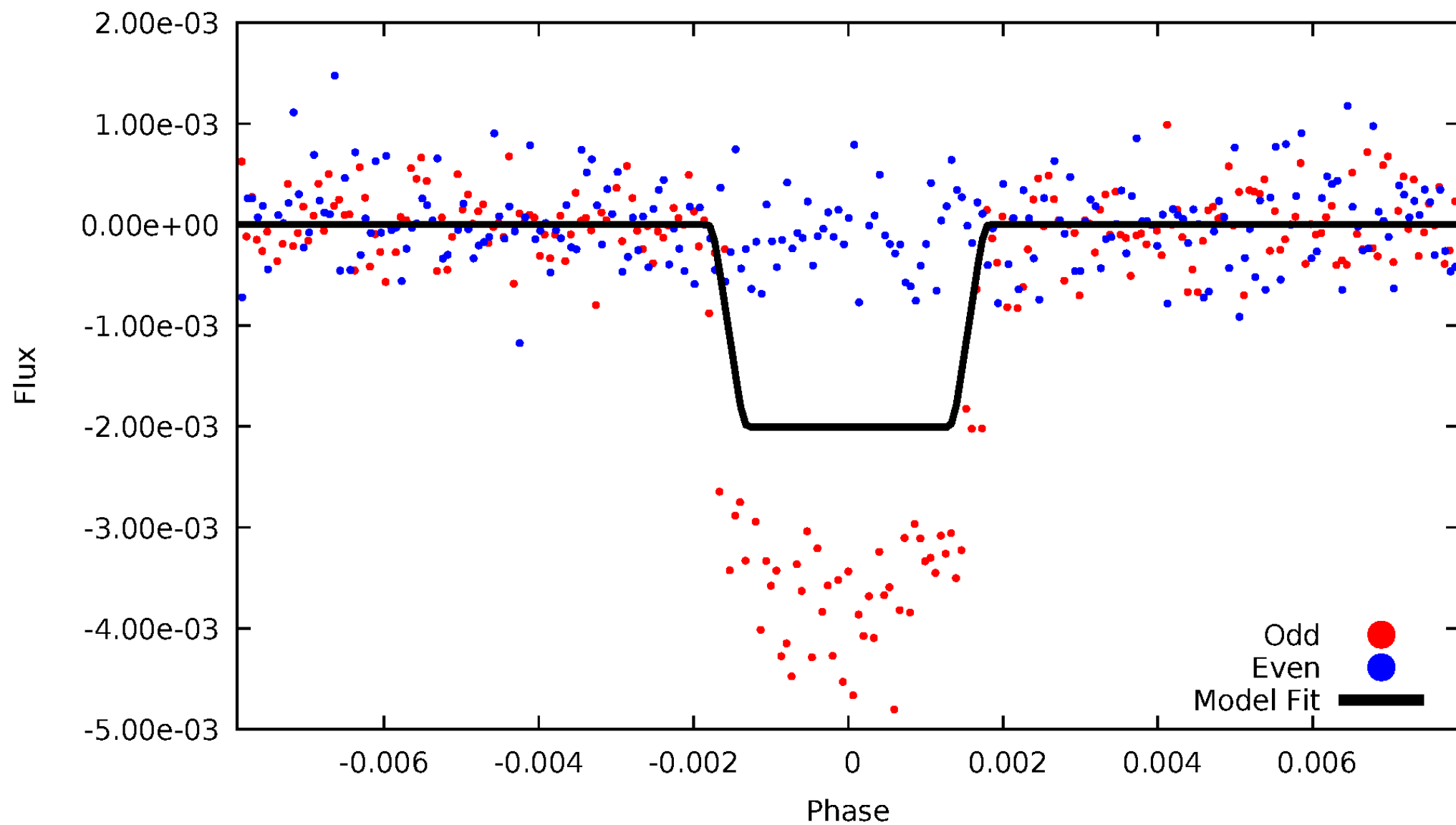
# DV Odd/Even

TCE 008681125-01



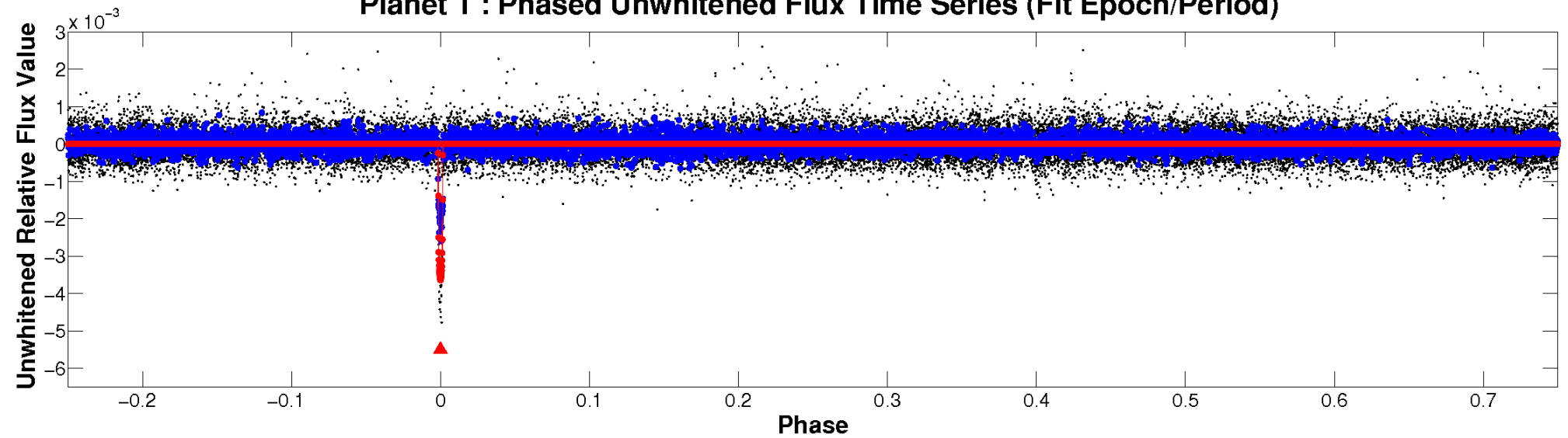
# ALT Odd/Even

TCE 008681125-01

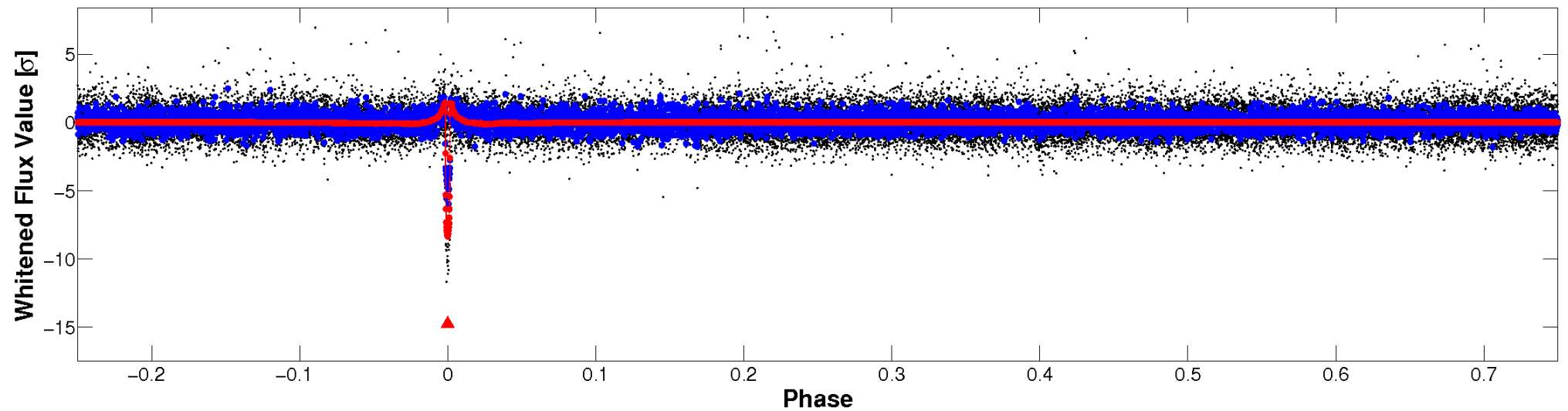


# Non-Whitened Vs. Whitened Light Curve

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

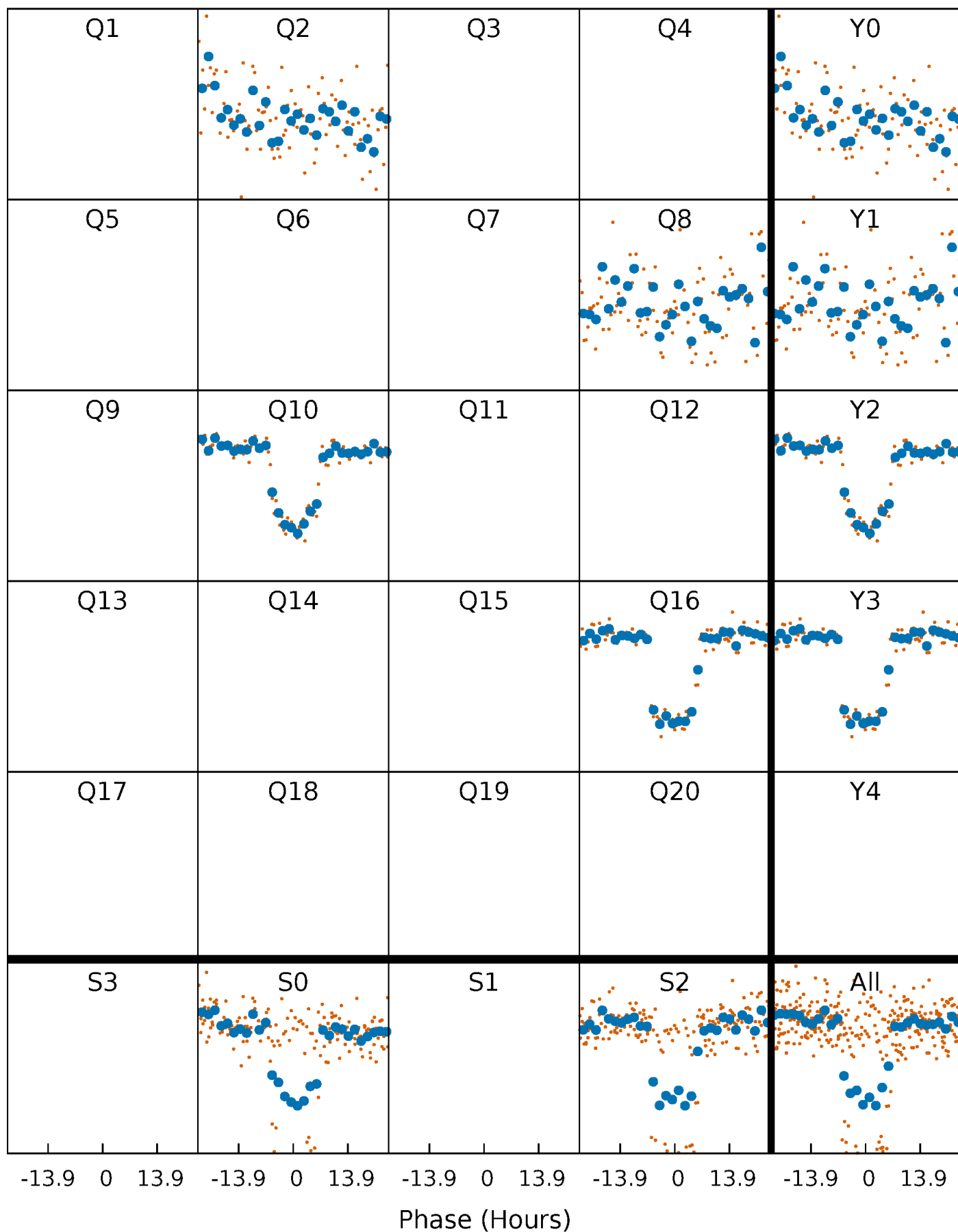


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

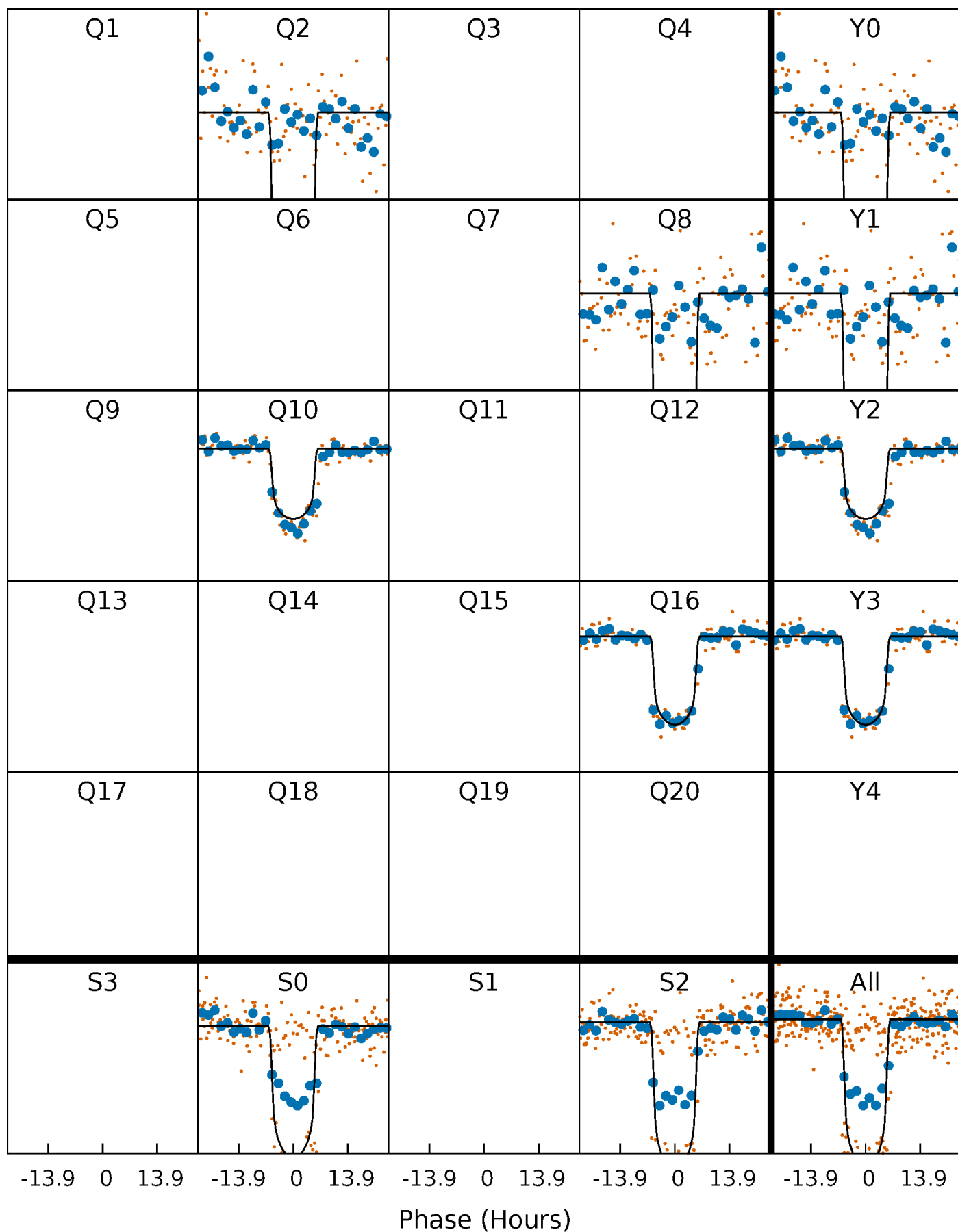
TCE 008681125-01 P=153.783030 Days  $T_0=171.216213$  (BKJD)





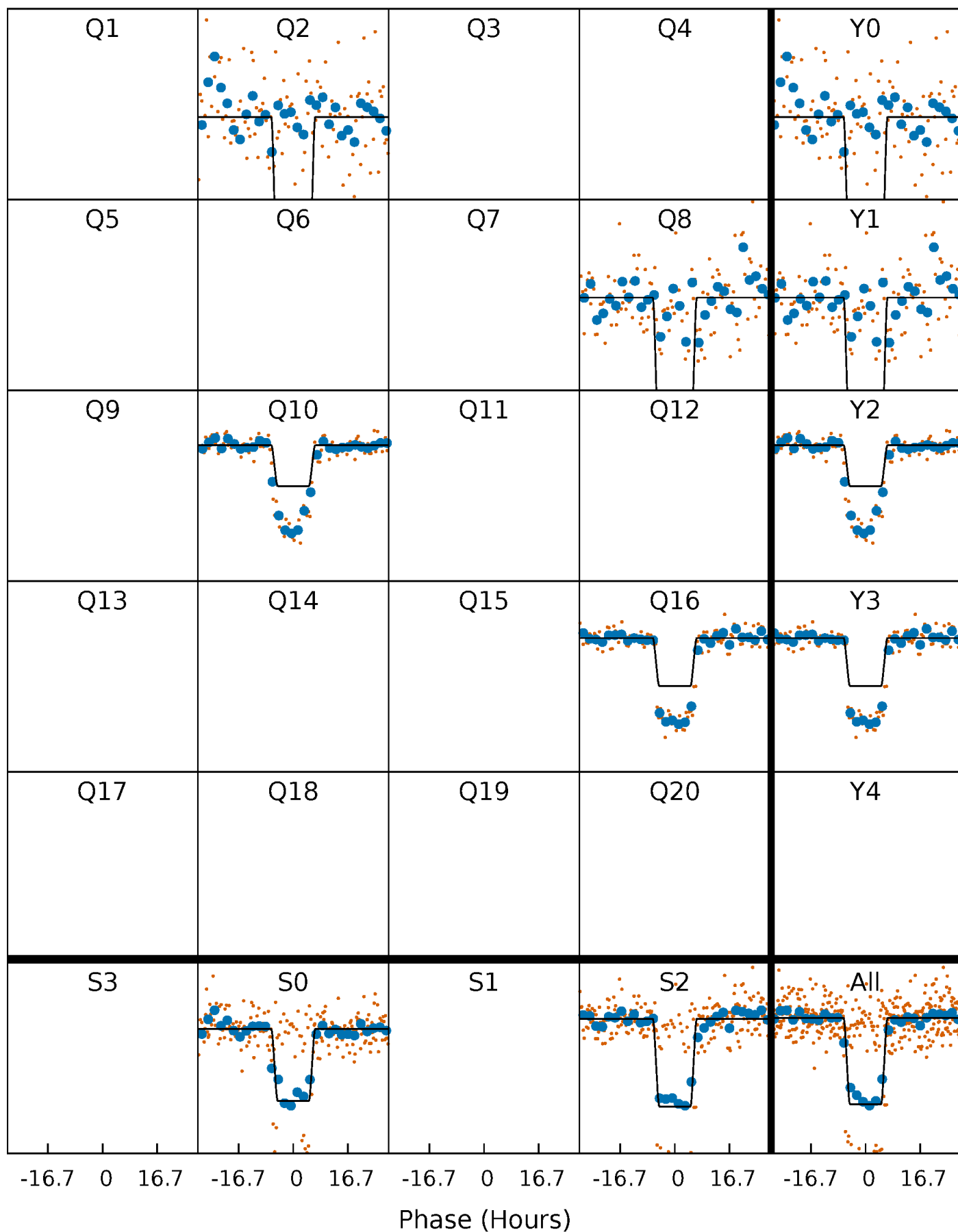
# DV Quarter-Phased Transit Curves

TCE 008681125-01 P=153.783030 Days  $T_0=171.216213$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

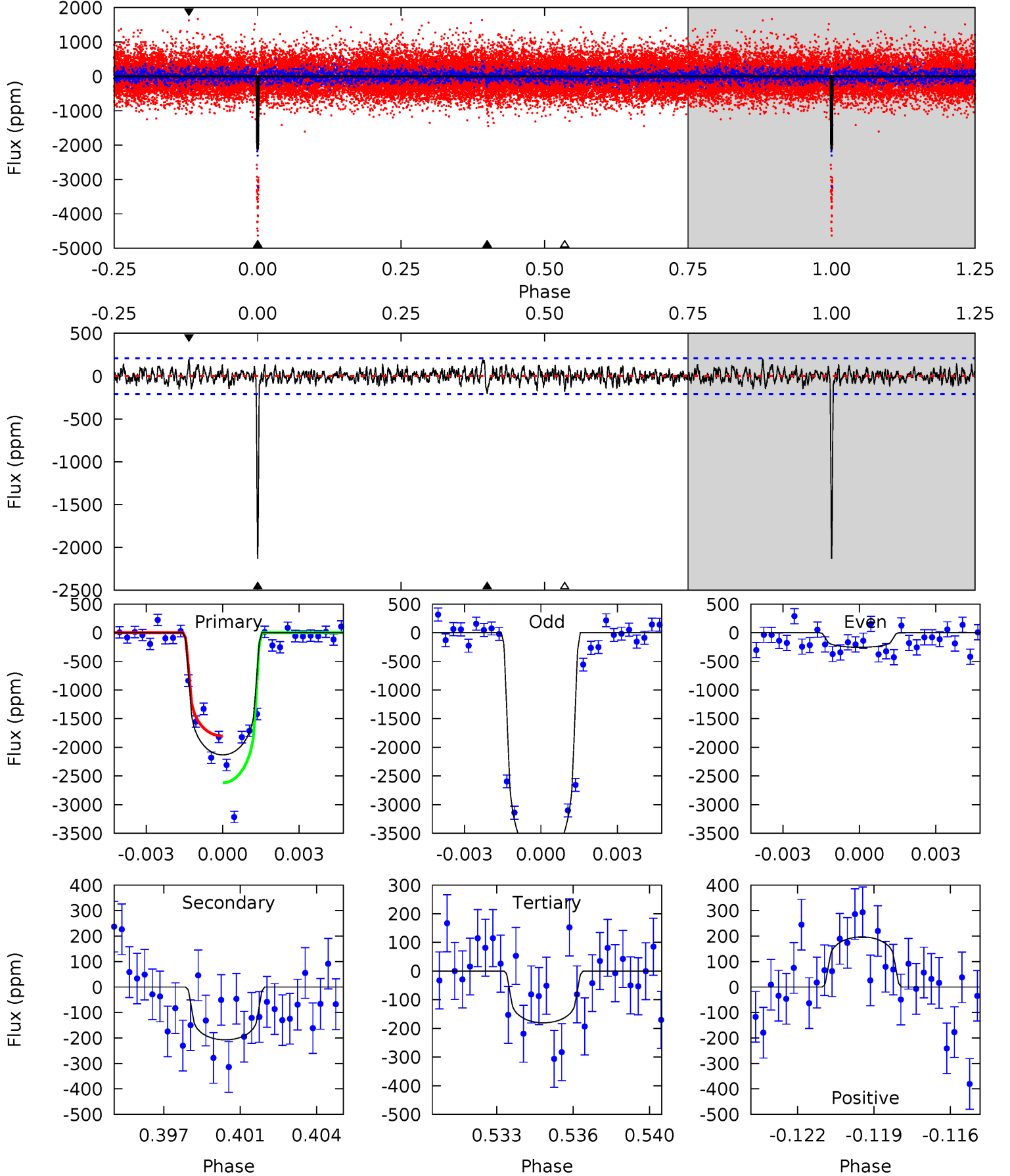
TCE 008681125-01 P=153.769350 Days  $T_0=171.317444$  (BKJD)



# DV Model-Shift Uniqueness Test

008681125-01,  $P = 153.783030$  Days,  $E = 17.433183$  Days

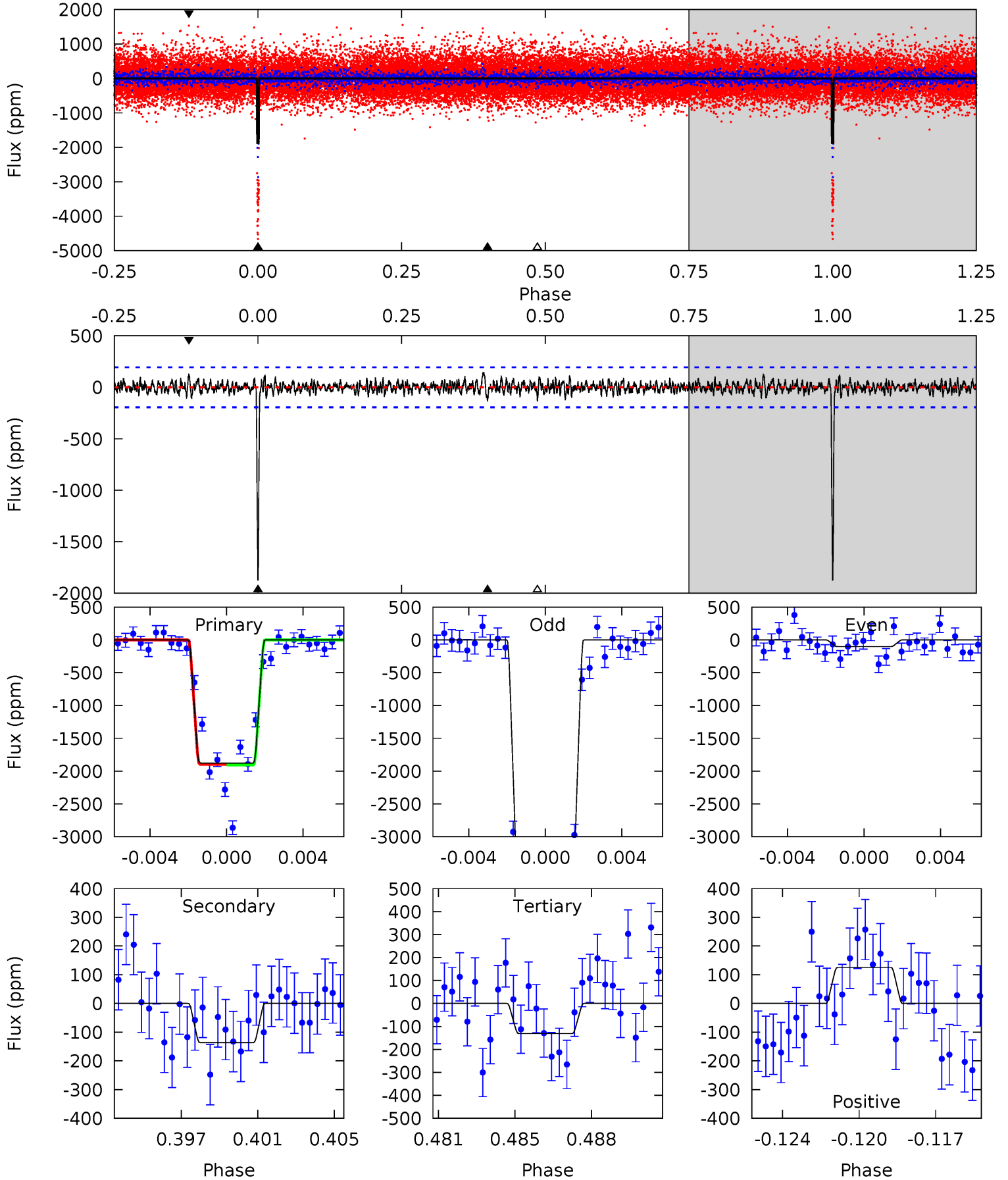
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
53.6	5.22	4.54	4.95	5.23	2.94	1.36	49.1	48.7	0.68	0.27	49.8	1.04	0.08	9.97



# Alt Model-Shift Uniqueness Test

008681125-01,  $P = 153.769350$  Days,  $E = 17.548094$  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
50.5	3.67	3.52	3.37	5.22	2.91	1.03	47.0	47.1	0.14	0.30	50.8	1.03	0.07	0.11



### Stellar Parameters For KIC 008681125

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5942^{+182}_{-223}$	$4.445^{+0.056}_{-0.224}$	$0.260^{+0.150}_{-0.300}$	$1.057^{+0.338}_{-0.113}$	$1.135^{+0.133}_{-0.147}$	$1.355^{+0.386}_{-0.713}$
	+3%/-4%	+1%/-5%	+58%/-115%	+32%/-11%	+12%/-13%	+28%/-53%
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 008681125-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-207 \pm 40$	$6.91^{+1.18}_{-0.66}$	$501^{+38}_{-27}$	$3445^{+130}_{-148}$	$776^{+255}_{-226}$
Alt.	$-136 \pm 37$	$5.31^{+1.02}_{-0.48}$	$503^{+40}_{-28}$	$3514^{+162}_{-198}$	$851^{+344}_{-310}$

$T_{\text{max}}$  = 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

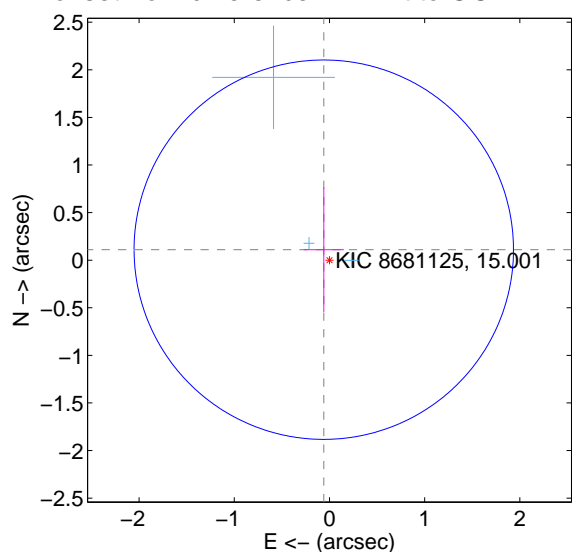
Supplemental centroid analysis for 008681125-01. Kepler magnitude: 15.00. Transit SNR 52.78

There are 3 quarters with good PRF difference image offsets

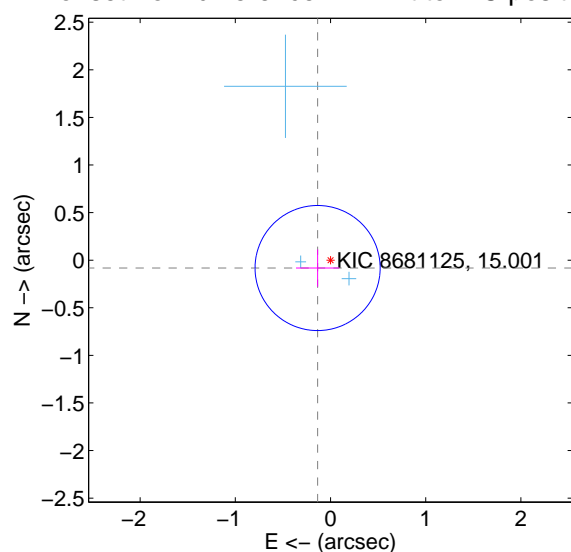
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.125 \pm 0.664$	0.19	$0.060 \pm 0.211$	$0.110 \pm 0.656$
PRF-fit source offset from KIC position	$0.159 \pm 0.219$	0.72	$0.136 \pm 0.227$	$-0.083 \pm 0.195$
photometric centroid source offset	$0.44 \pm 0.21$	2.07	$-0.18 \pm 0.23$	$-0.40 \pm 0.21$

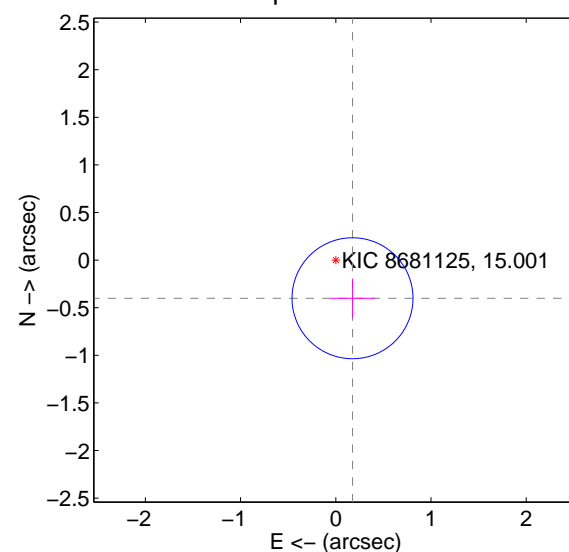
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

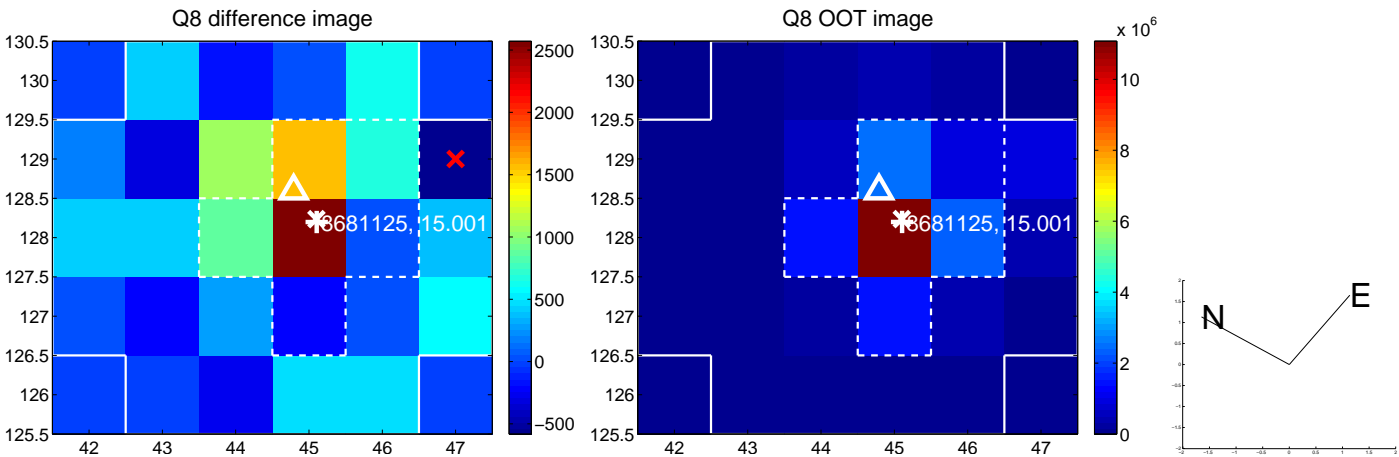


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

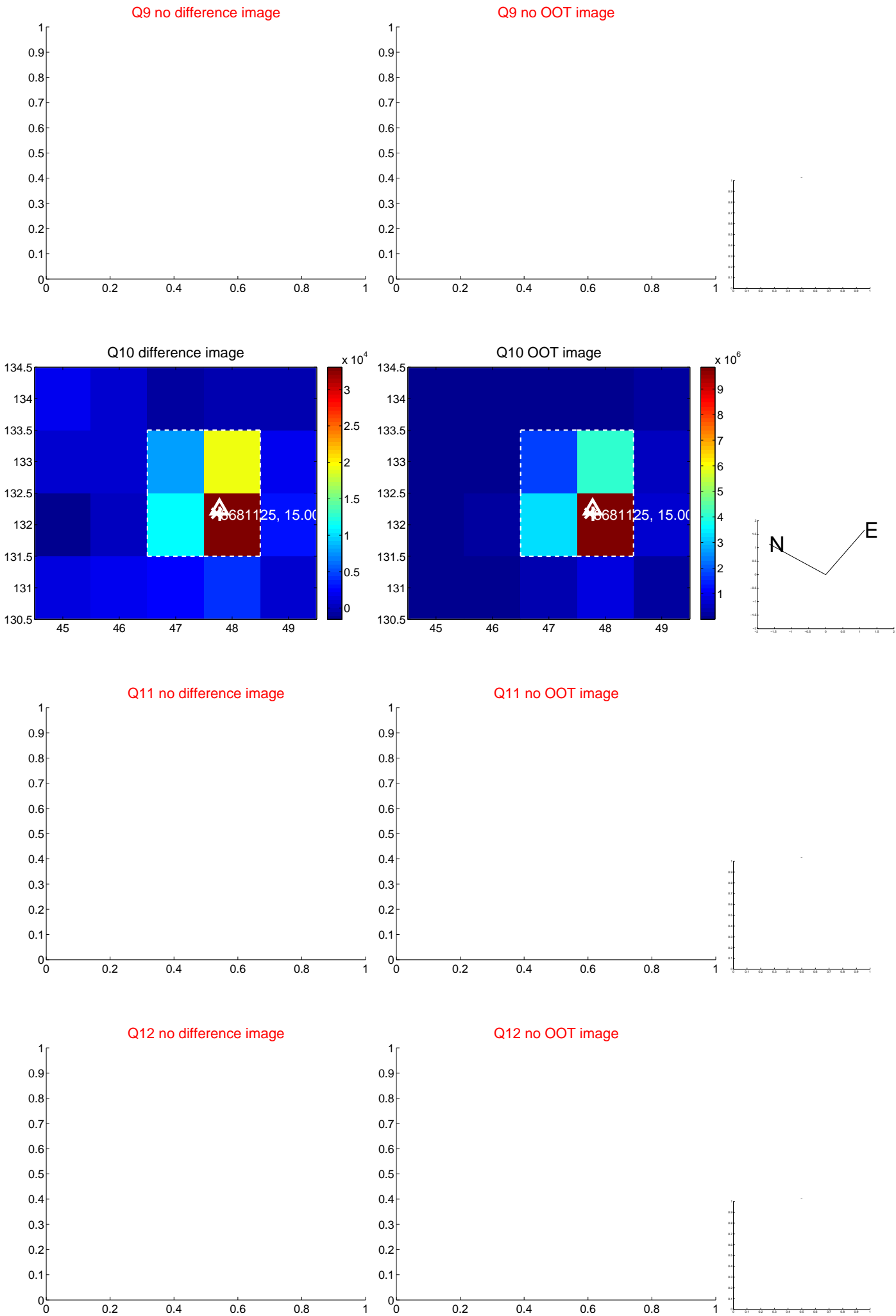


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

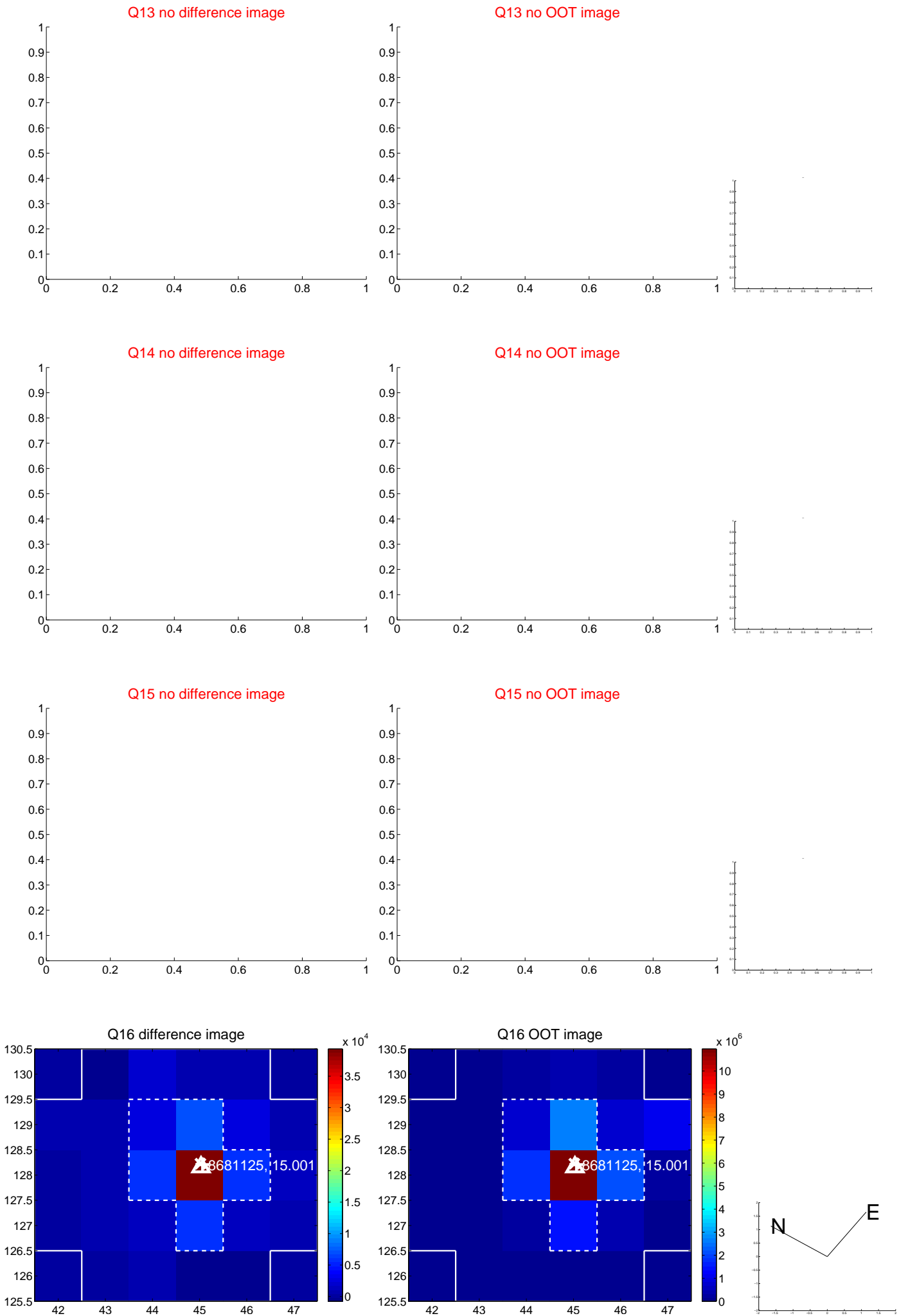




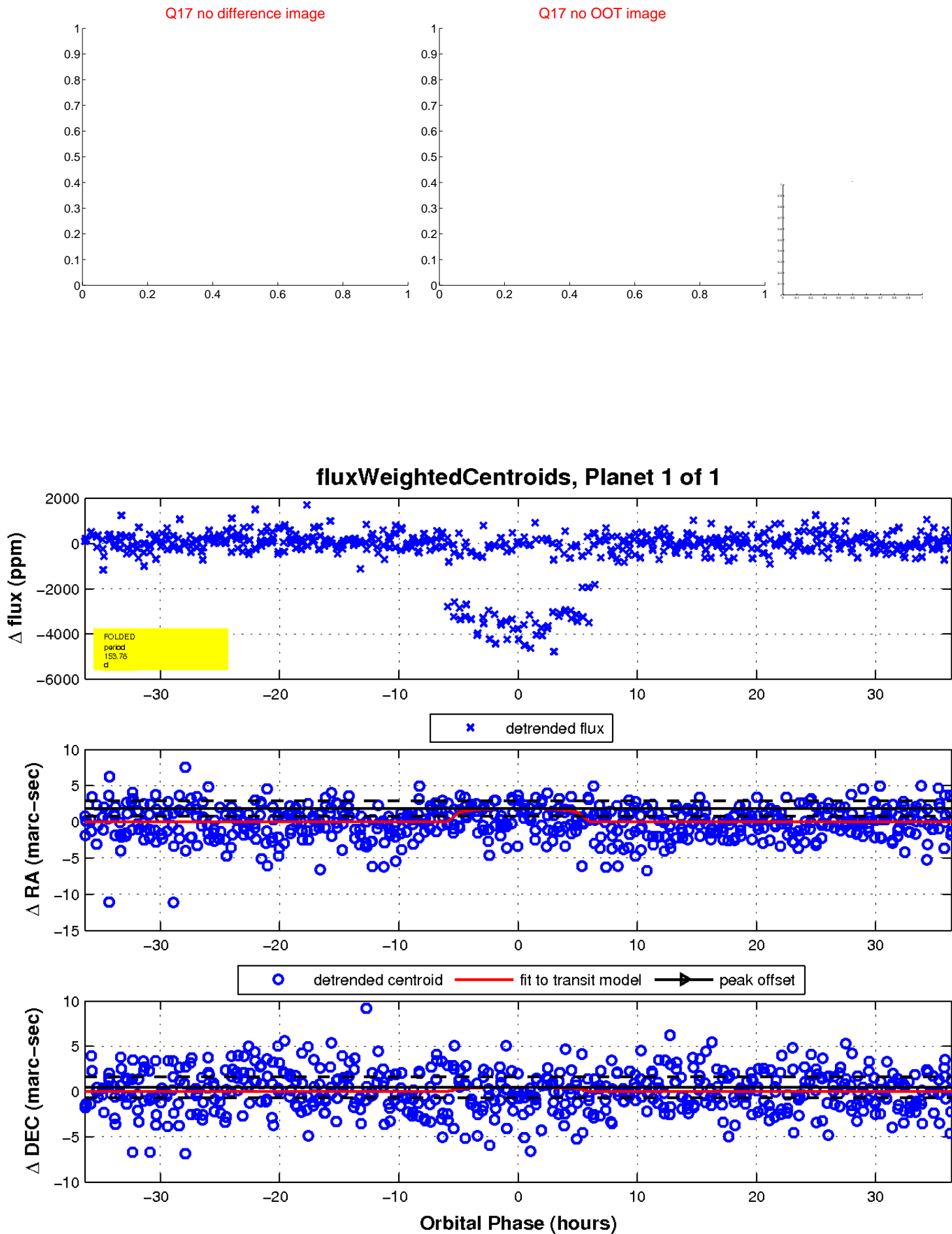
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

