

# KIC 005446082

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005446082-01	OBS	No	500.536146	330.400804	236.1	13.502	7.5	7.1	2.73	4806	4.91	2.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005446082-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

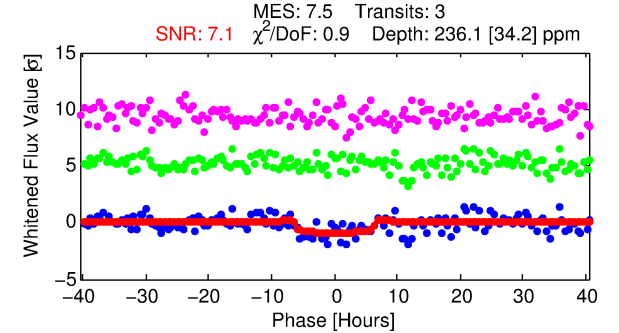
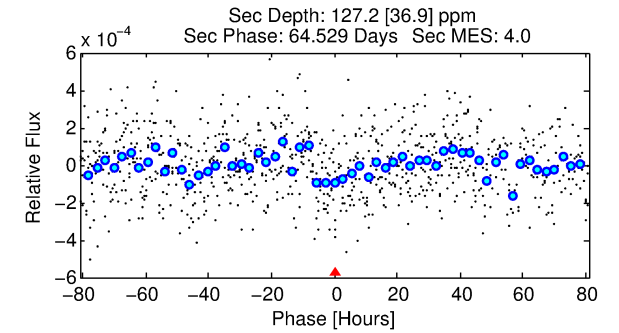
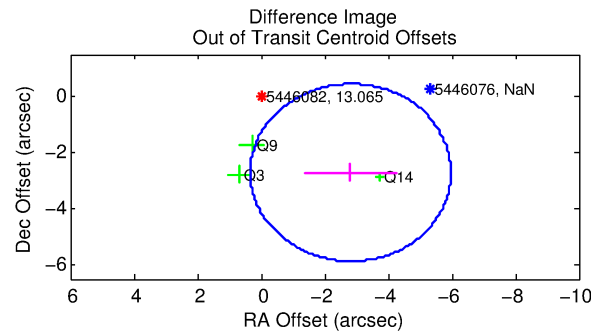
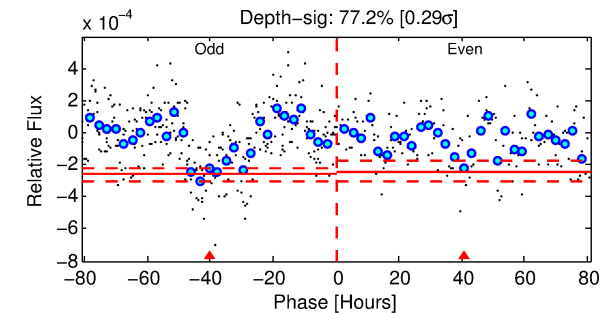
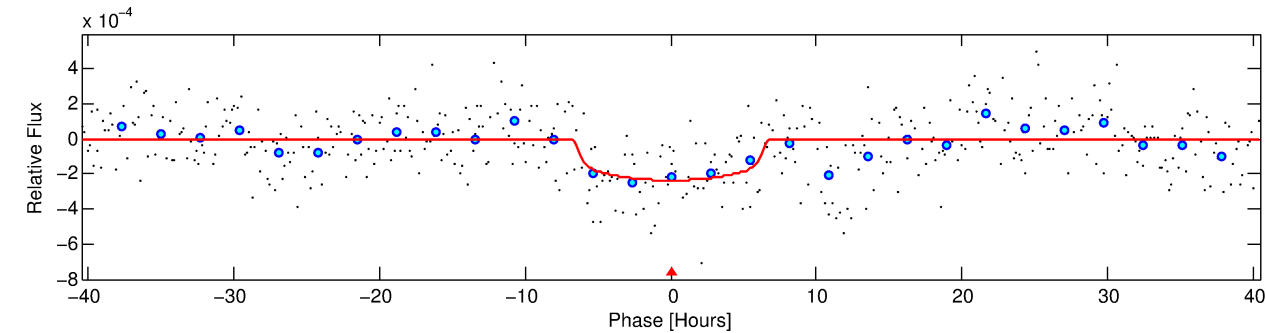
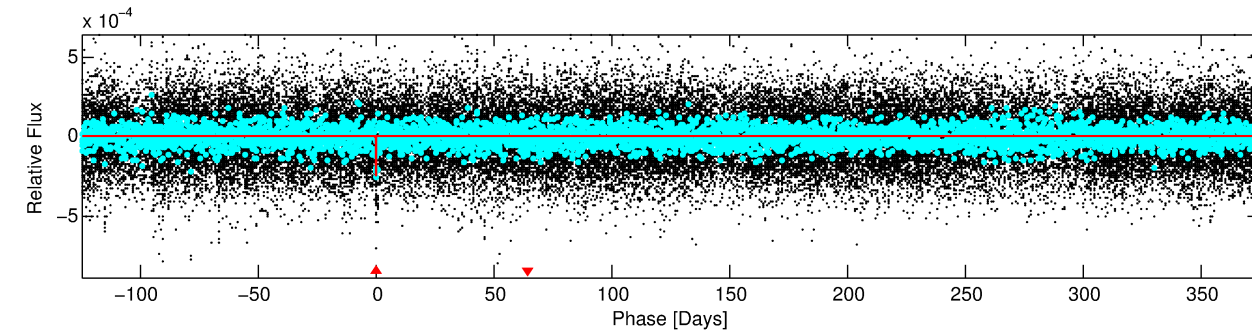
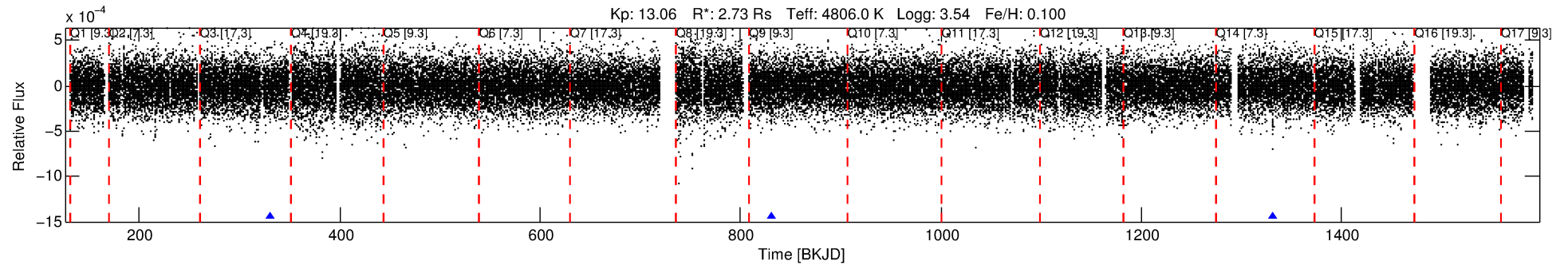
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005446082-01

No Significant Match Found

# DV One-Page Summary

KIC: 5446082 Candidate: 1 of 1 Period: 500.536 d



## DV Fit Results:

Period = 500.53615 [0.01538] d  
Epoch = 330.4008 [0.0209] BKJD  
Rp/R\* = 0.0165 [0.0039]  
a/R\* = 156.16 [130.33]  
b = 0.85 [0.27]  
Seff = 2.42 [0.68]  
Teq = 318 [22] K  
Rp = 4.91 [1.69] Re  
a = 1.2161 [0.2413] AU  
Ag = 4290.75 [2671.47] [1.61 $\sigma$ ]  
Teffp = 3979 [559] K [6.54 $\sigma$ ]

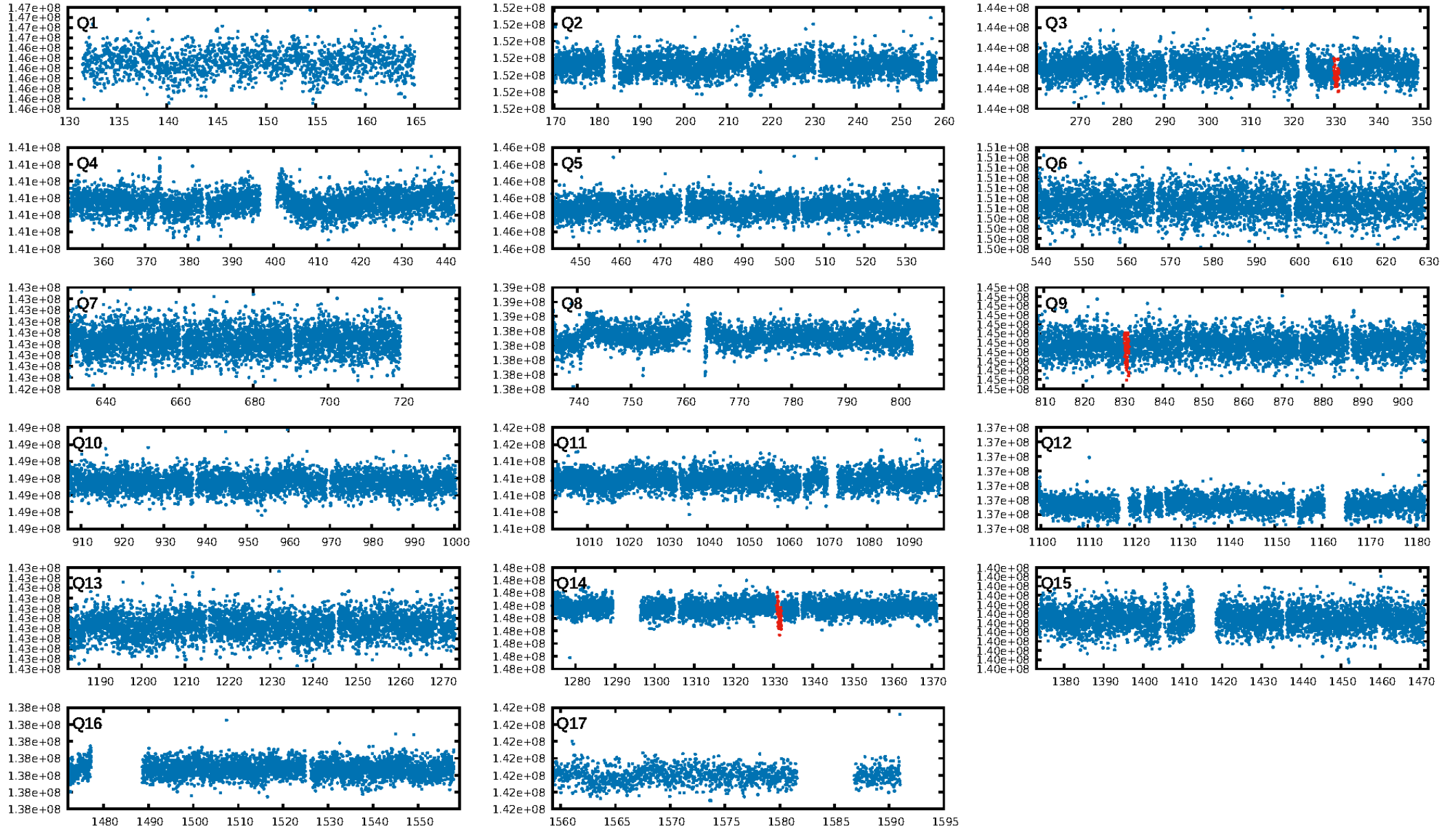
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 26.5%  
ModelChiSquareGof-sig: 99.8%  
**Bootstrap-pfa: 1.41e-11**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 9.352  
Centroid-sig: 98.6%  
Centroid-so: 0.130 arcsec [0.15 $\sigma$ ]  
**OotOffset-rm: 3.911 arcsec [3.72 $\sigma$ ]**  
**KicOffset-rm: 3.982 arcsec [3.78 $\sigma$ ]**  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

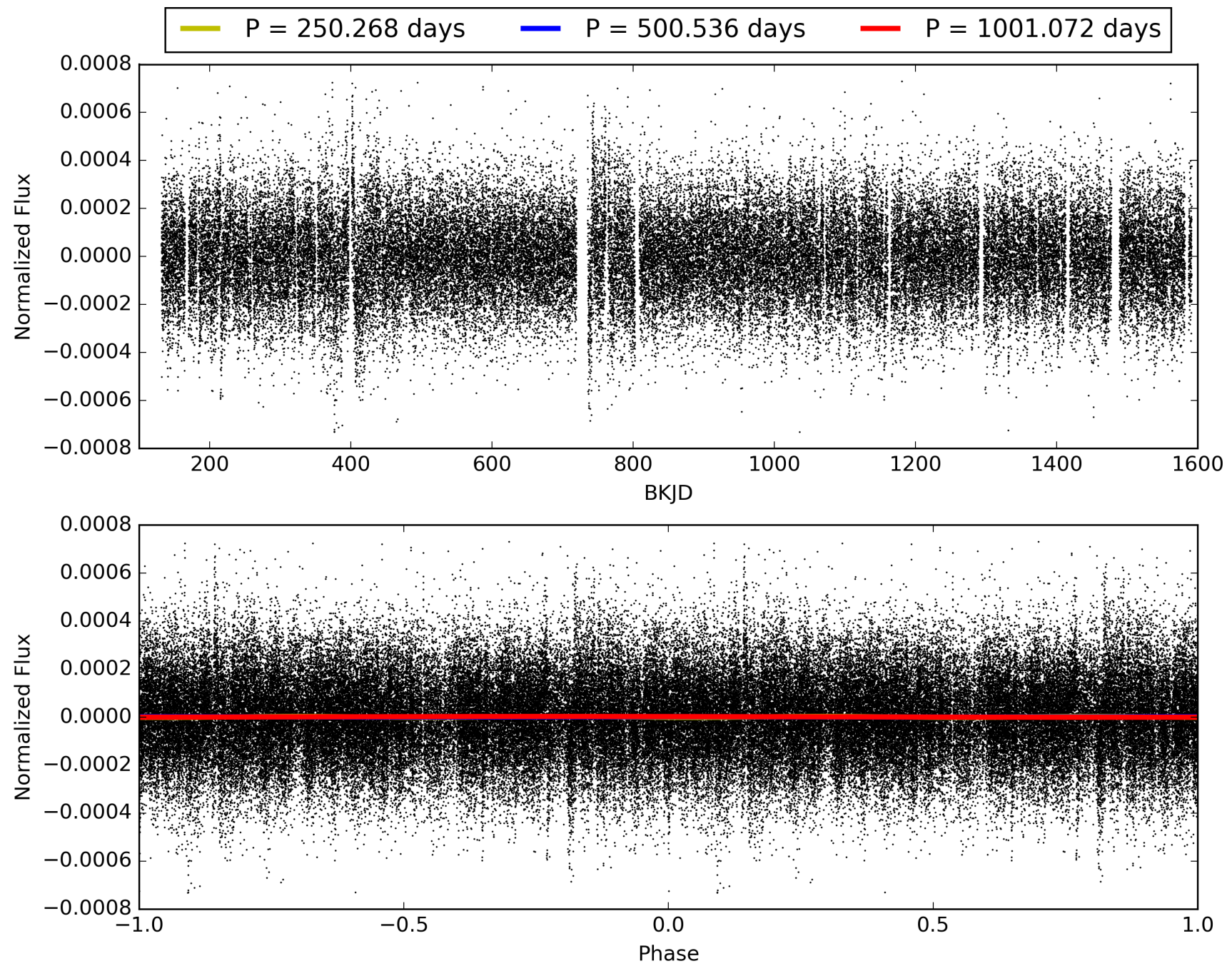
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:51:49 Z

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

# TCE 005446082-01, PDC Light Curves

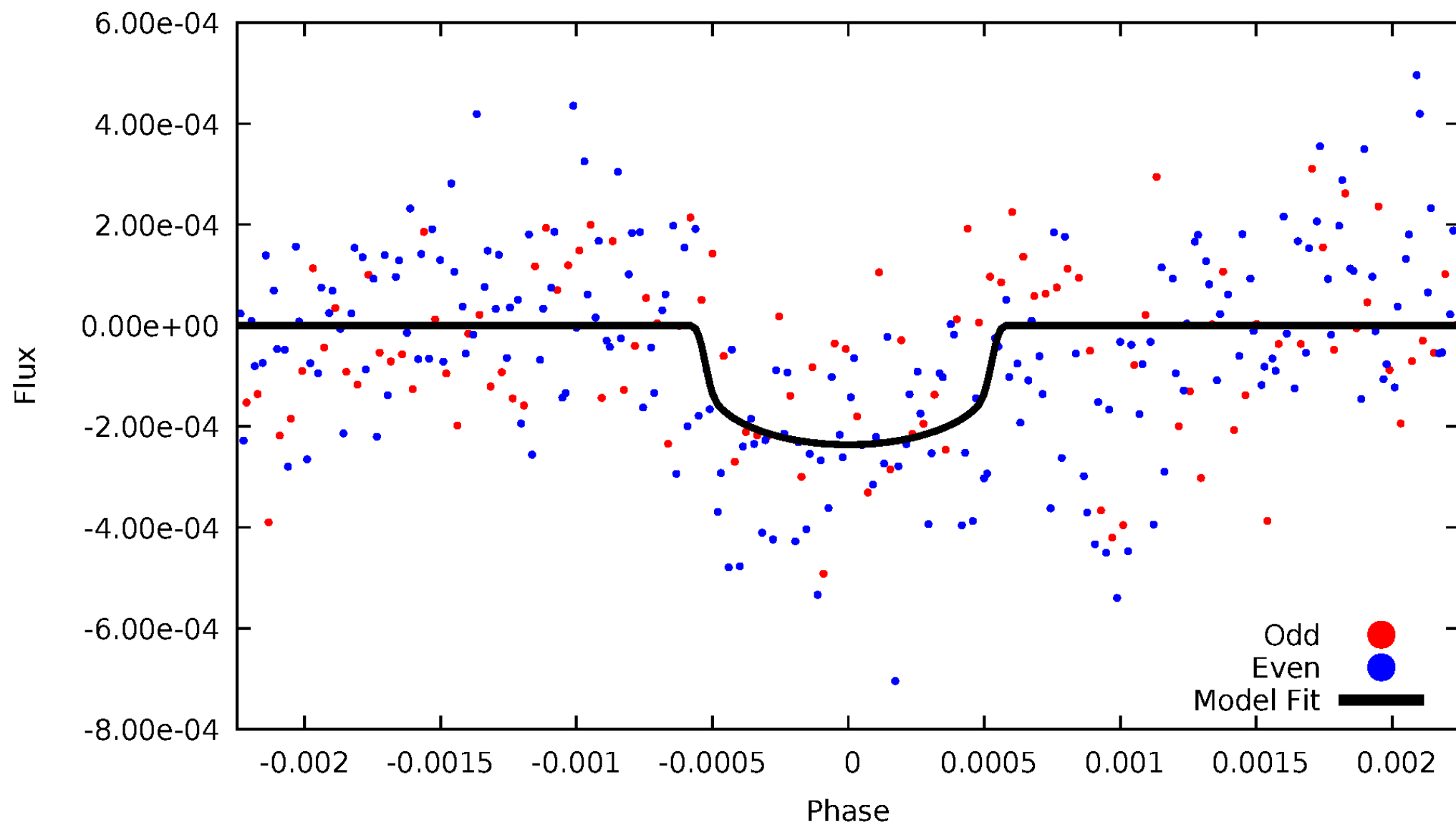


TCE 005446082-01



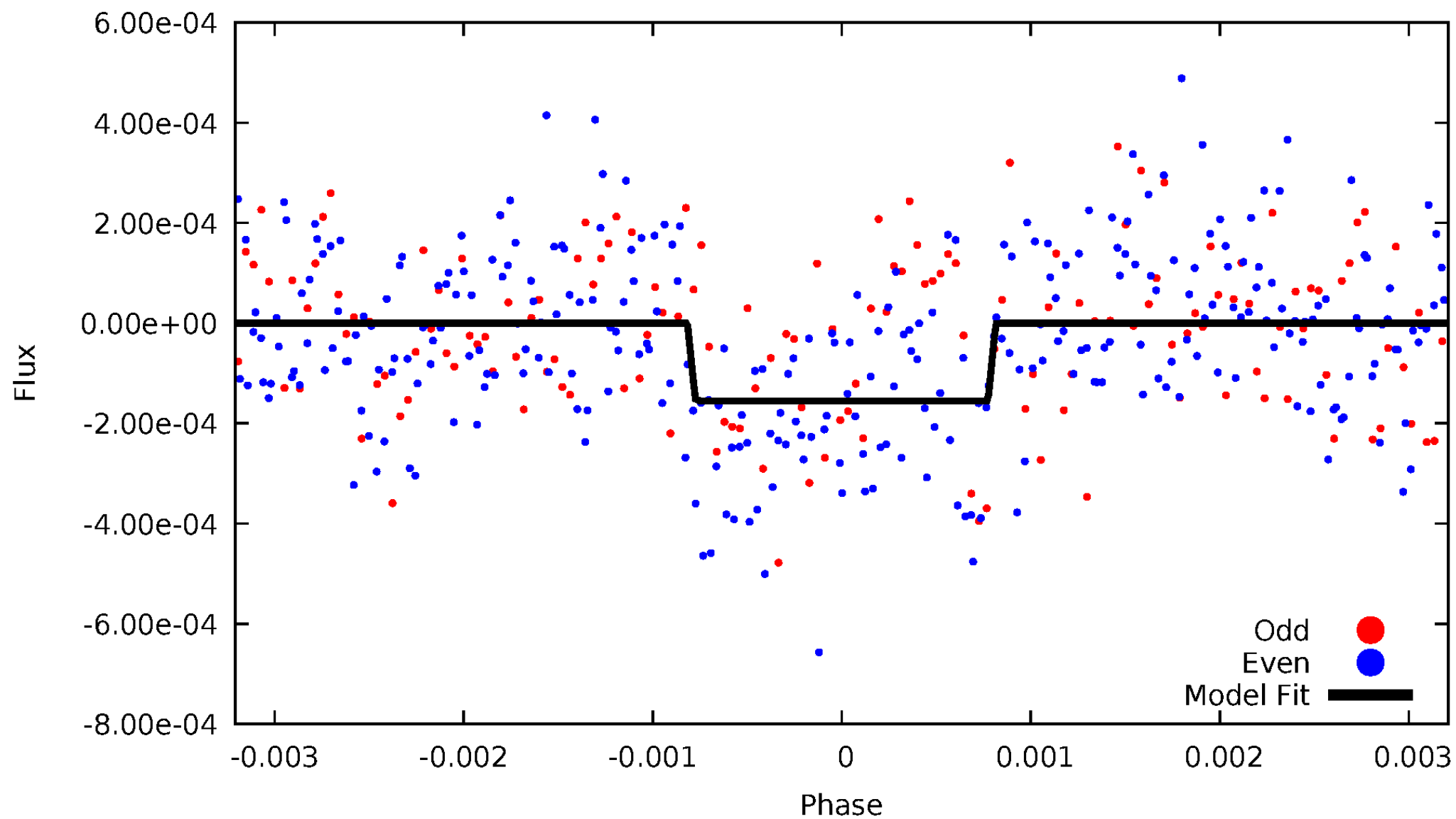
# DV Odd/Even

TCE 005446082-01



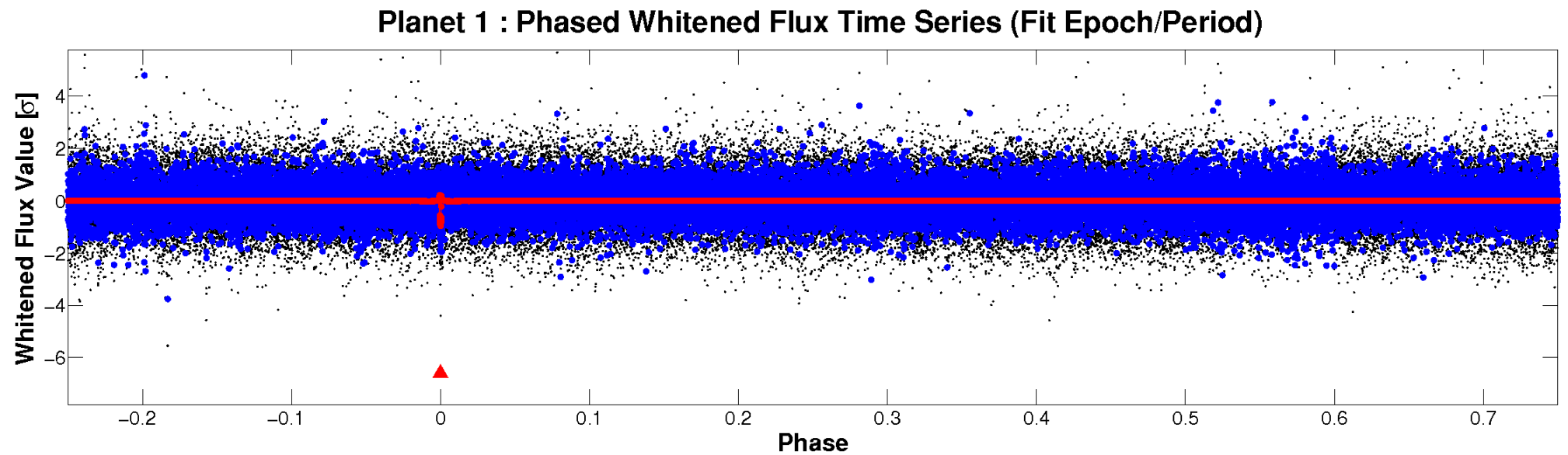
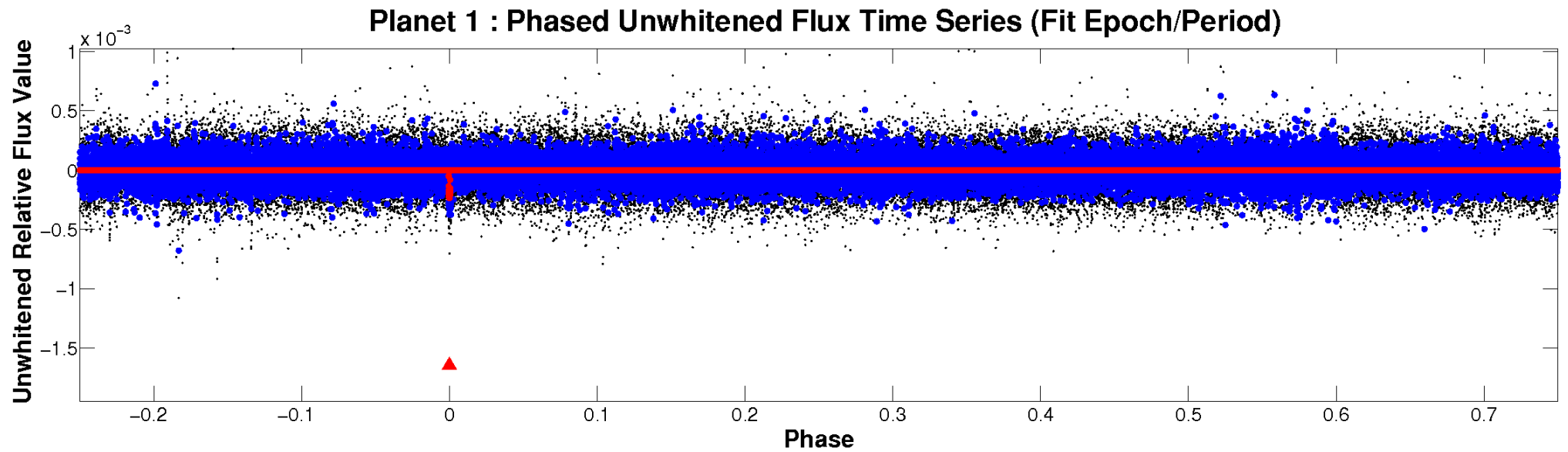
# ALT Odd/Even

TCE 005446082-01





# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 005446082-01 P=500.536146 Days  $T_0=330.400804$  (BKJD)





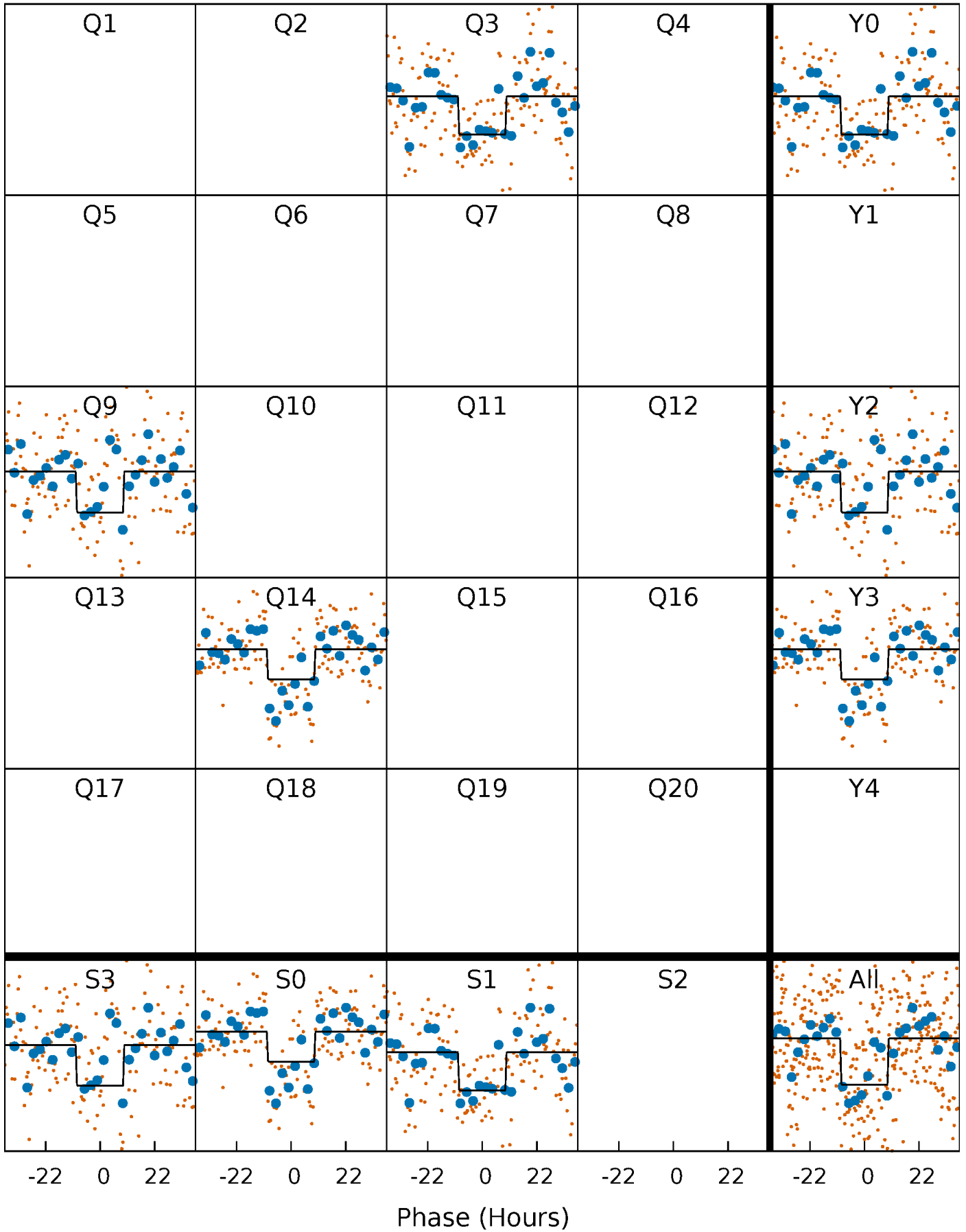
# DV Quarter-Phased Transit Curves

TCE 005446082-01     $P=500.536146$  Days     $T_0=330.400804$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

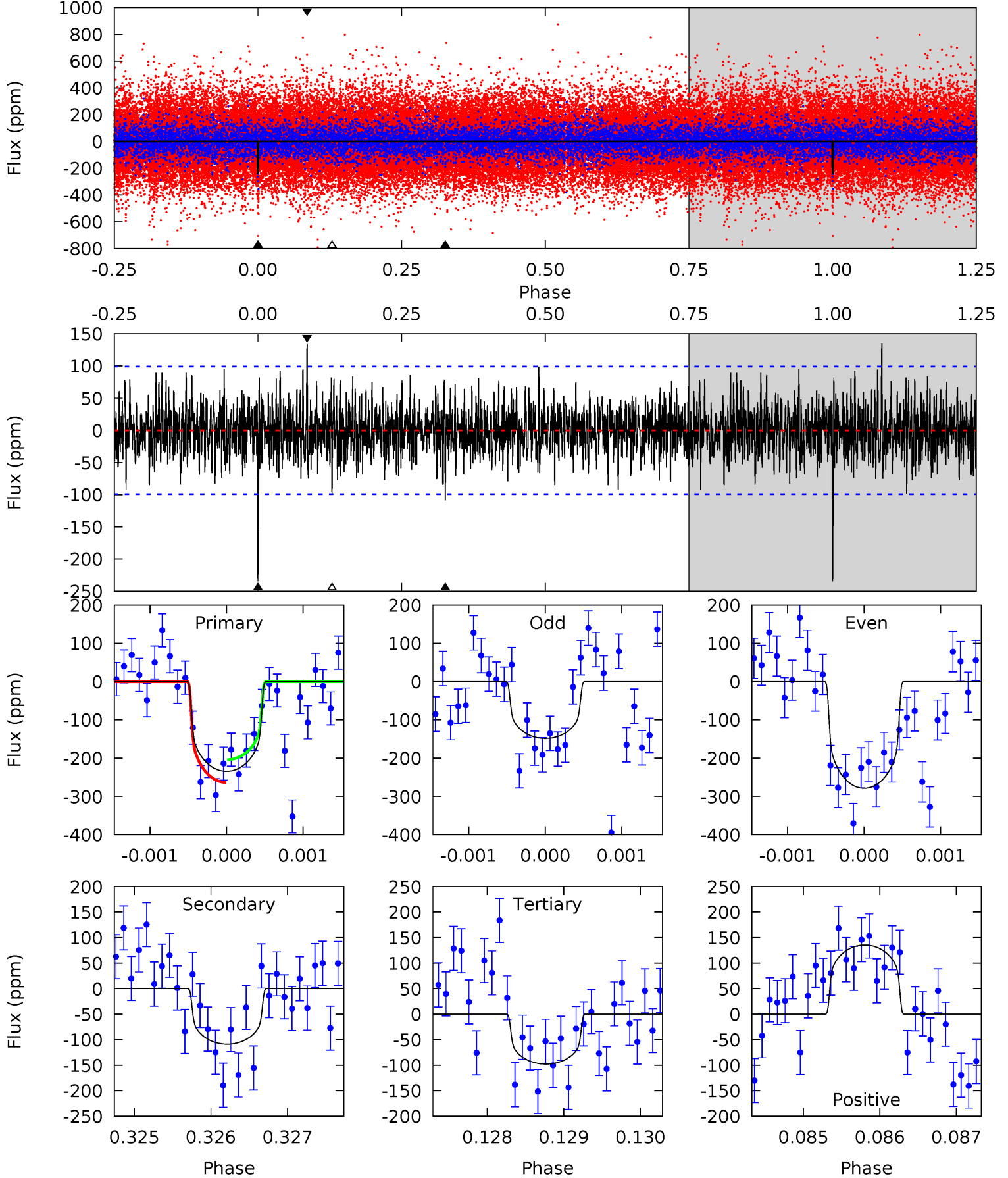
TCE 005446082-01   P=500.560919 Days    $T_0=330.498048$  (BKJD)



# DV Model-Shift Uniqueness Test

005446082-01, P = 500.536146 Days, E = 330.400804 Days

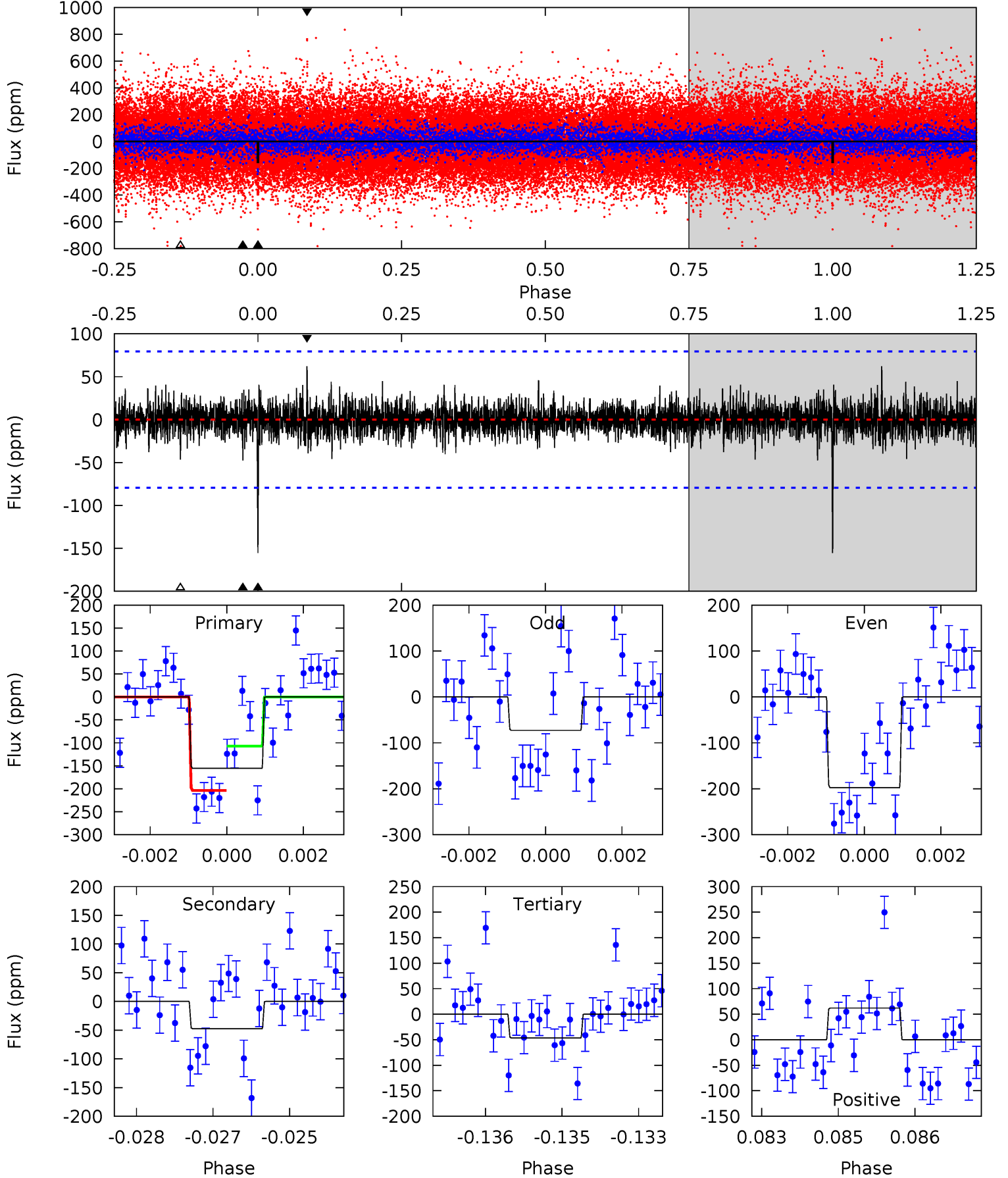
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	5.95	5.35	7.42	5.43	3.25	1.64	7.48	5.41	0.60	-1.48	3.39	1.18	0.37	1.63



# Alt Model-Shift Uniqueness Test

005446082-01, P = 500.560919 Days, E = 330.498048 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
10.5	3.21	3.14	4.19	5.36	3.14	0.80	7.36	6.31	0.07	-0.98	4.00	1.09	0.29	3.27



### Stellar Parameters For KIC 005446082

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4806^{+77}_{-43}$	$3.545^{+0.117}_{-0.143}$	$0.100^{+0.150}_{-0.100}$	$2.735^{+0.678}_{-0.339}$	$0.956^{+0.180}_{-0.020}$	$0.066^{+0.030}_{-0.029}$
	+2%/-1%	+3%/-4%	+150%/-100%	+25%/-12%	+19%/-2%	+46%/-43%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005446082-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-109 \pm 18$	$5.04^{+1.44}_{-1.19}$	$445^{+25}_{-18}$	$4020^{+414}_{-300}$	$3526^{+2672}_{-1415}$
Alt.	$-48 \pm 15$	$3.80^{+1.34}_{-1.15}$	$446^{+24}_{-19}$	$3846^{+514}_{-409}$	$2737^{+2897}_{-1439}$

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

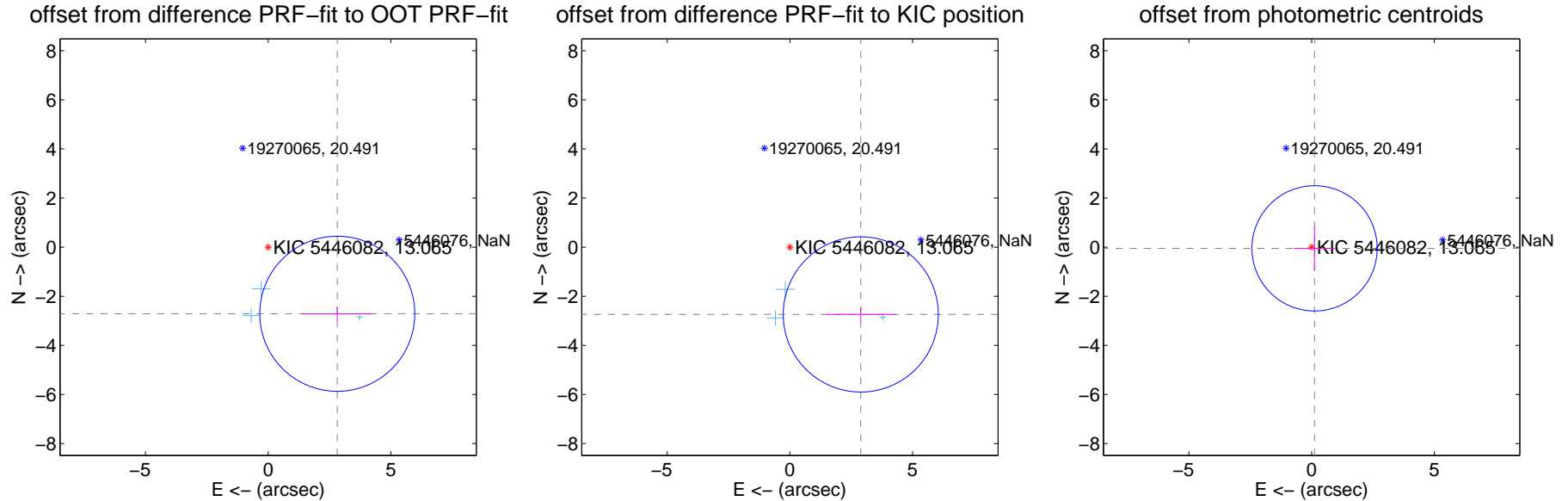
## DV Centroid Data

Supplemental centroid analysis for 005446082-01. Kepler magnitude: 13.06. Transit SNR 7.06

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.911 \pm 1.053$	3.72	$-2.818 \pm 1.434$	$-2.713 \pm 0.291$
PRF-fit source offset from KIC position	$3.982 \pm 1.053$	3.78	$-2.889 \pm 1.423$	$-2.740 \pm 0.301$
photometric centroid source offset	$0.13 \pm 0.85$	0.15	$-0.12 \pm 0.84$	$-0.05 \pm 0.91$



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.

Q1 no difference image



Q1 no OOT image



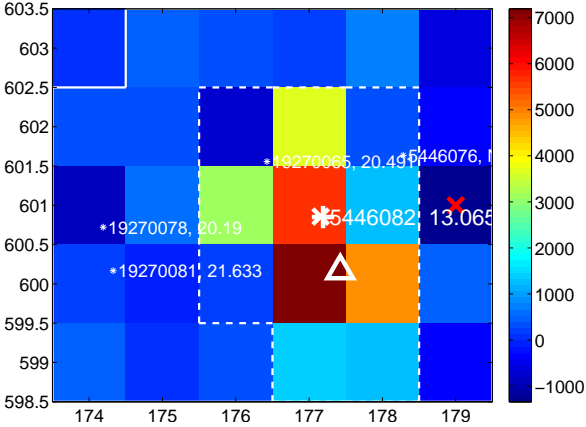
Q2 no difference image



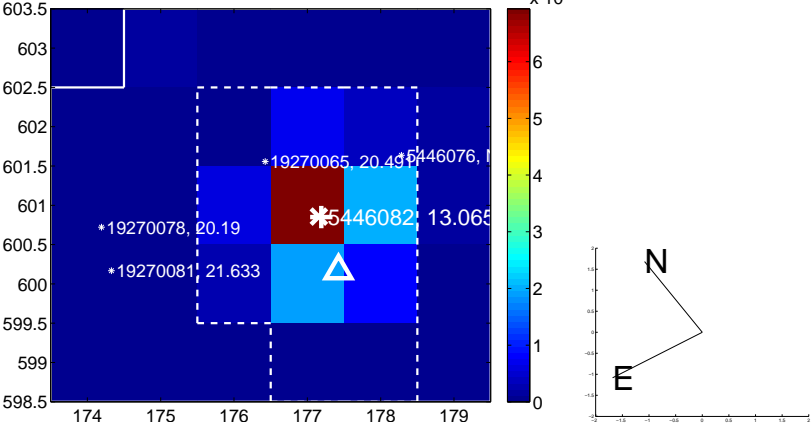
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



Q4 no OOT image

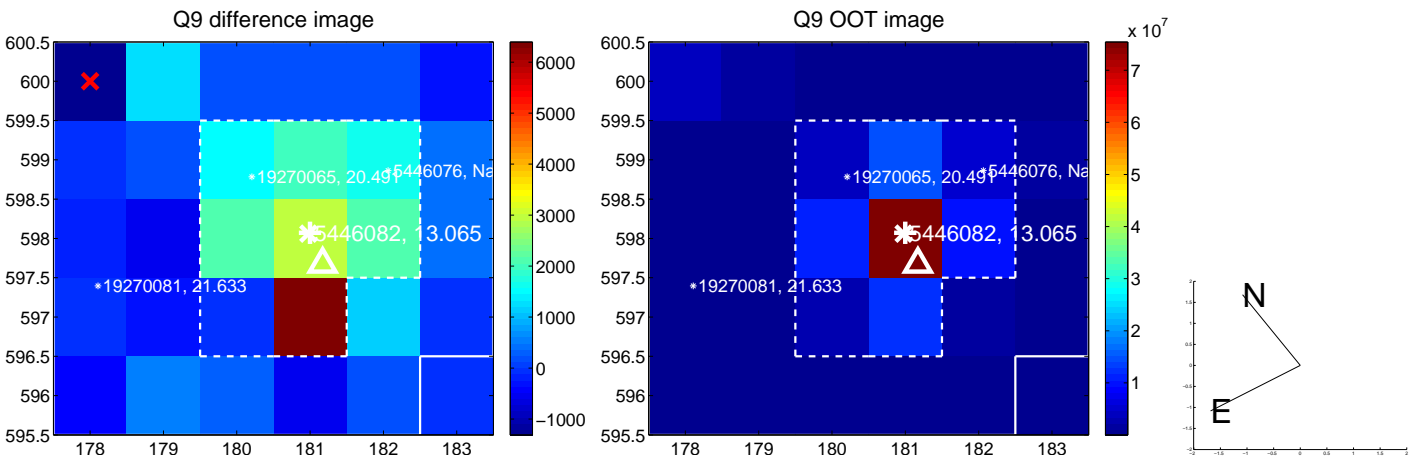




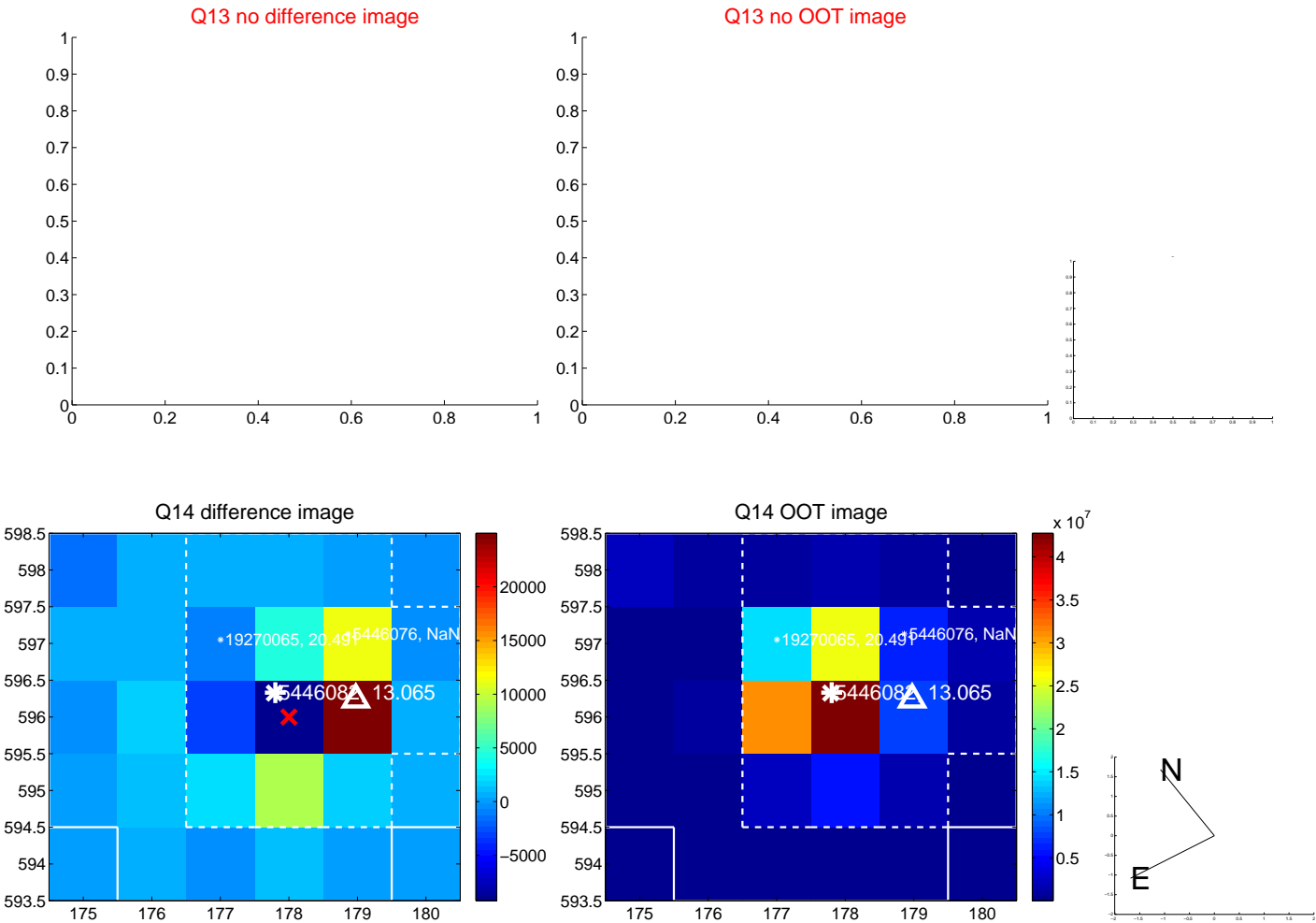
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



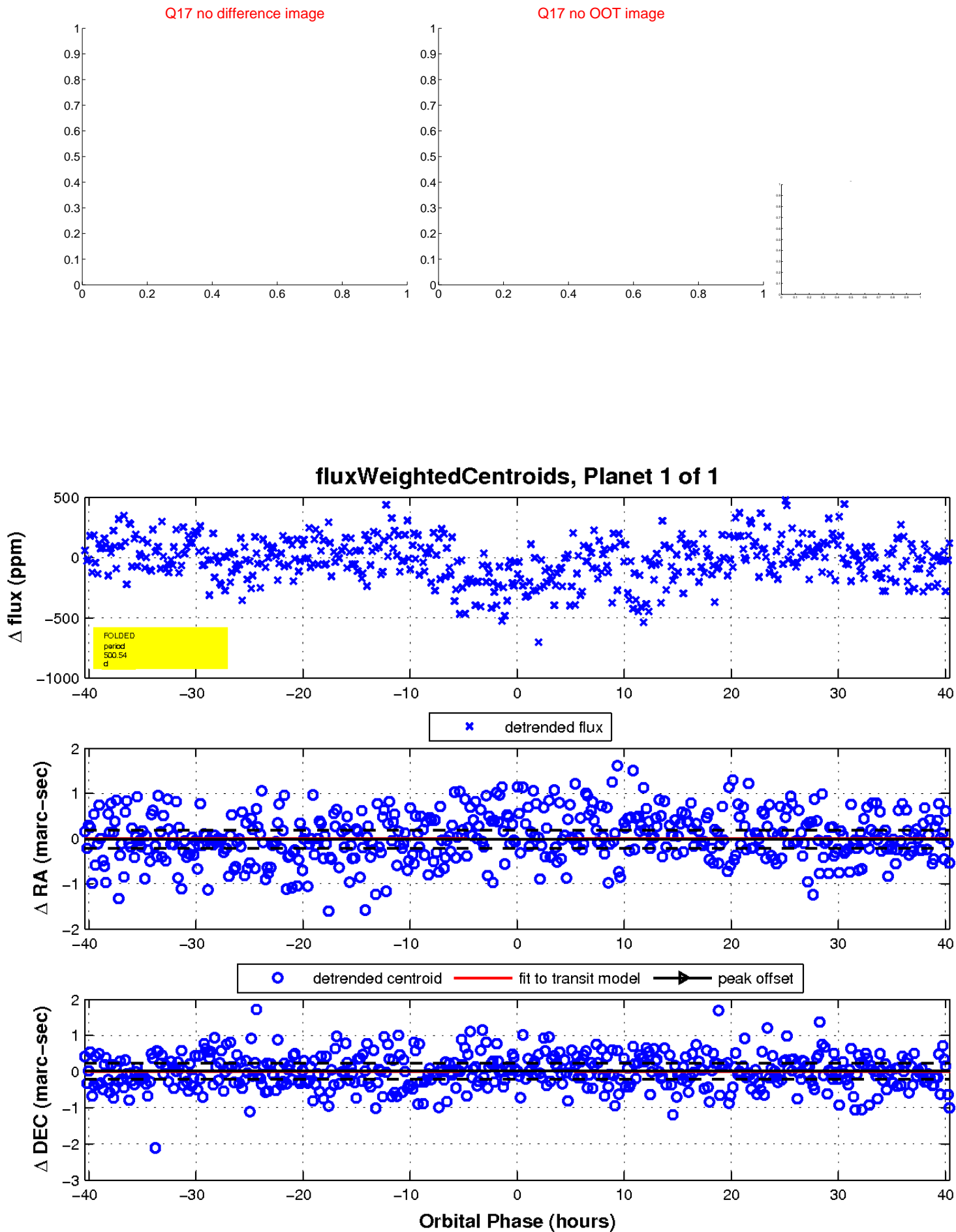
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



UKIRT Image

