

# KIC 007506027

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007506027-01	OBS	No	443.645895	562.908339	809.9	15.260	9.6	5.5	0.68	5033	2.00	0.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007506027-01	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

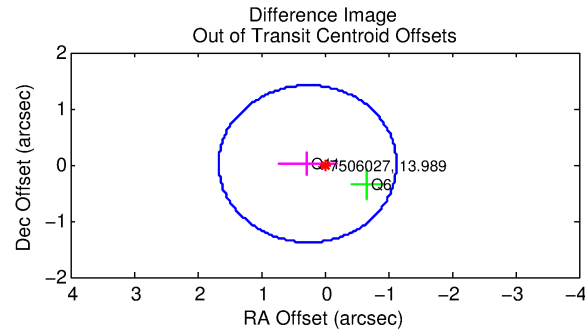
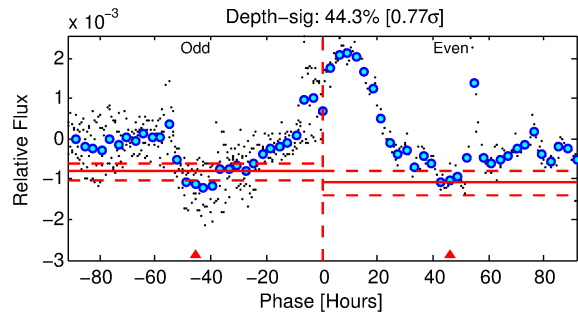
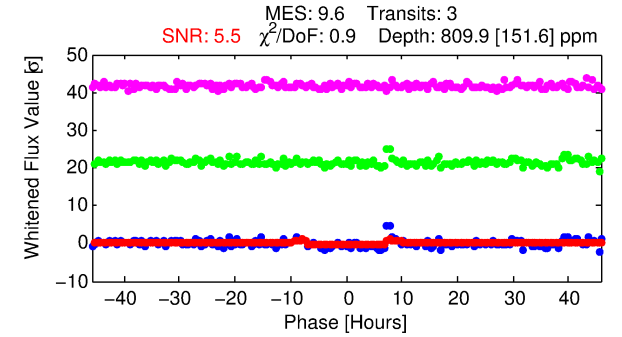
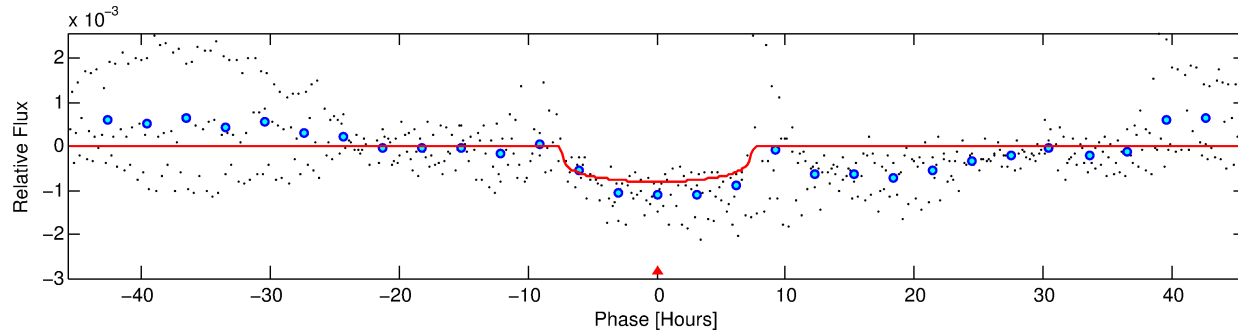
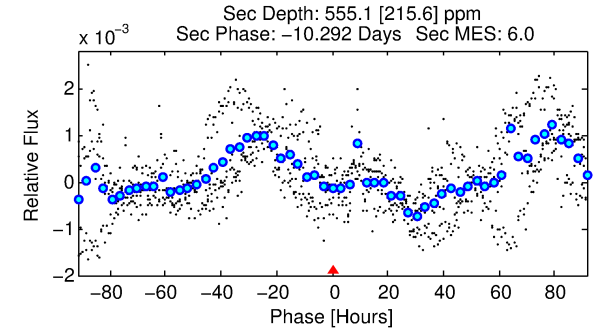
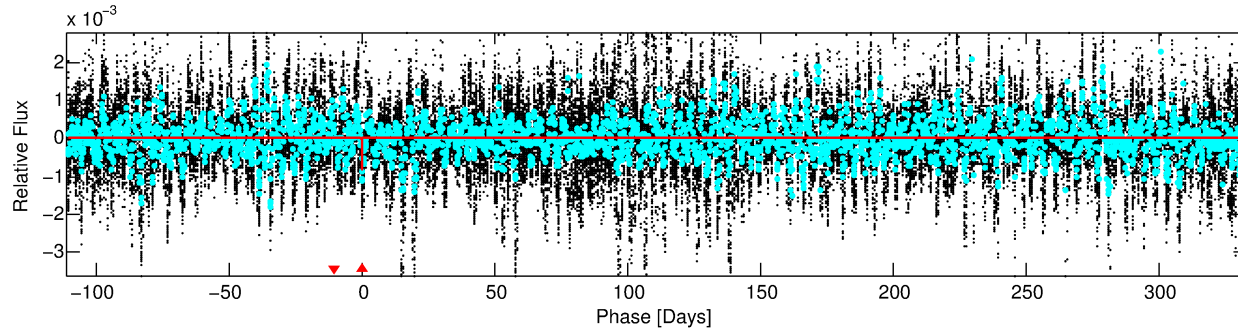
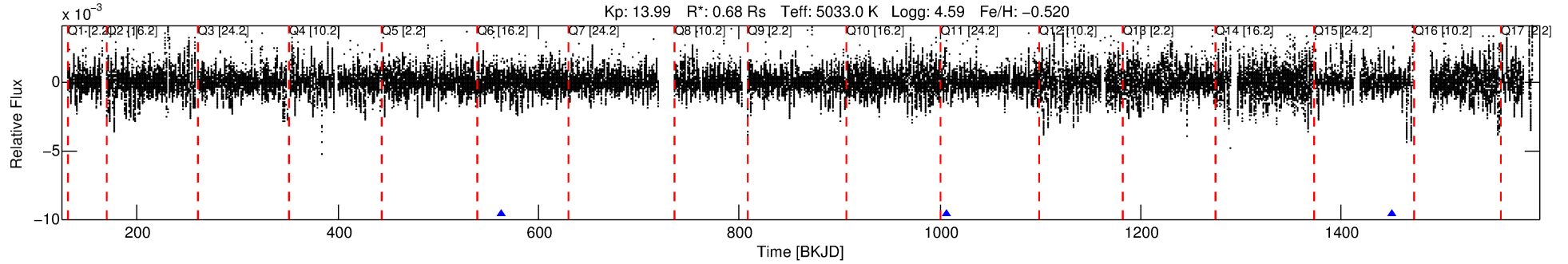
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007506027-01

No Significant Match Found

# DV One-Page Summary

KIC: 7506027 Candidate: 1 of 1 Period: 443.646 d



## DV Fit Results:

Period = 443.64590 [0.01070] d  
Epoch = 562.9083 [0.0130] BKJD  
Rp/R\* = 0.0268 [0.0066]  
a/R\* = 189.85 [149.38]  
b = 0.57 [0.95]  
Seff = 0.27 [0.05]  
Teq = 184 [8] K  
Rp = 1.99 [0.53] Re  
a = 0.9916 [0.0842] AU  
Ag = 75447.83 [48389.10] [1.56 $\sigma$ ]  
Teffp = 4722 [753] K [6.03 $\sigma$ ]

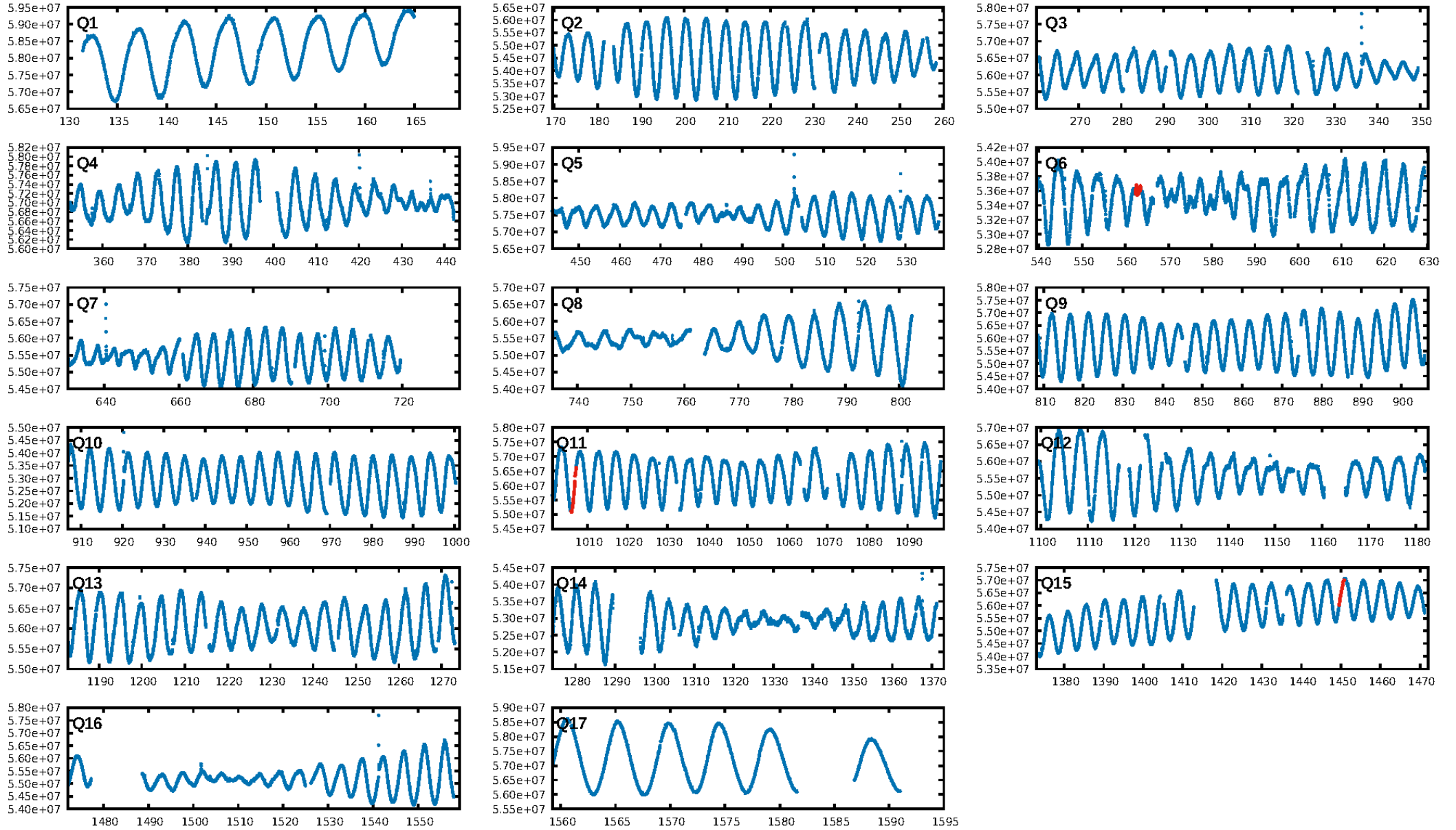
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 69.1%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 1.97e-08**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.086  
Centroid-sig: 2.1%  
Centroid-so: 0.587 arcsec [0.87 $\sigma$ ]  
OotOffset-rm: 0.267 arcsec [0.57 $\sigma$ ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-rm: 0.418 arcsec [1.53 $\sigma$ ]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

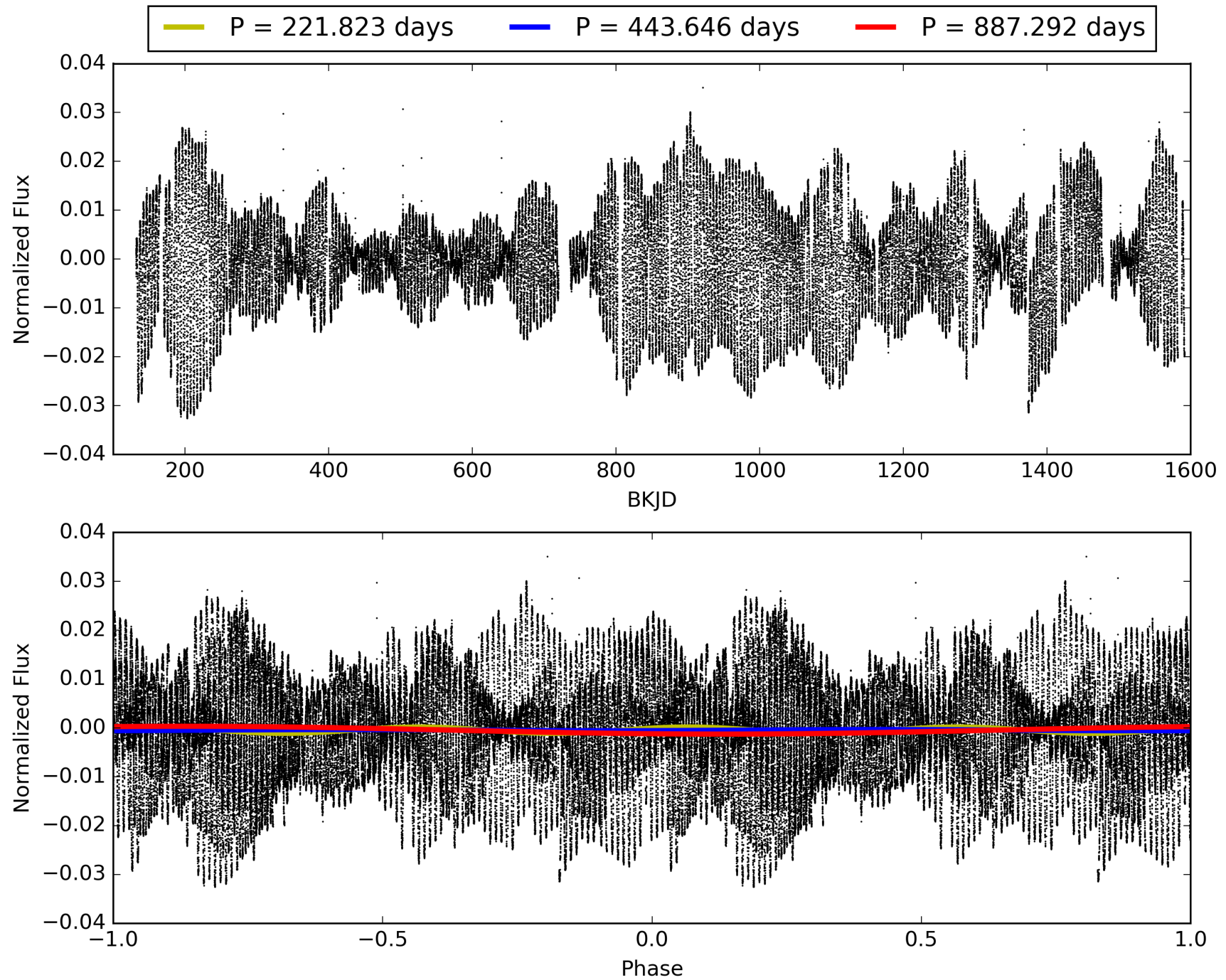
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:52:12 Z

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

# TCE 007506027-01, PDC Light Curves

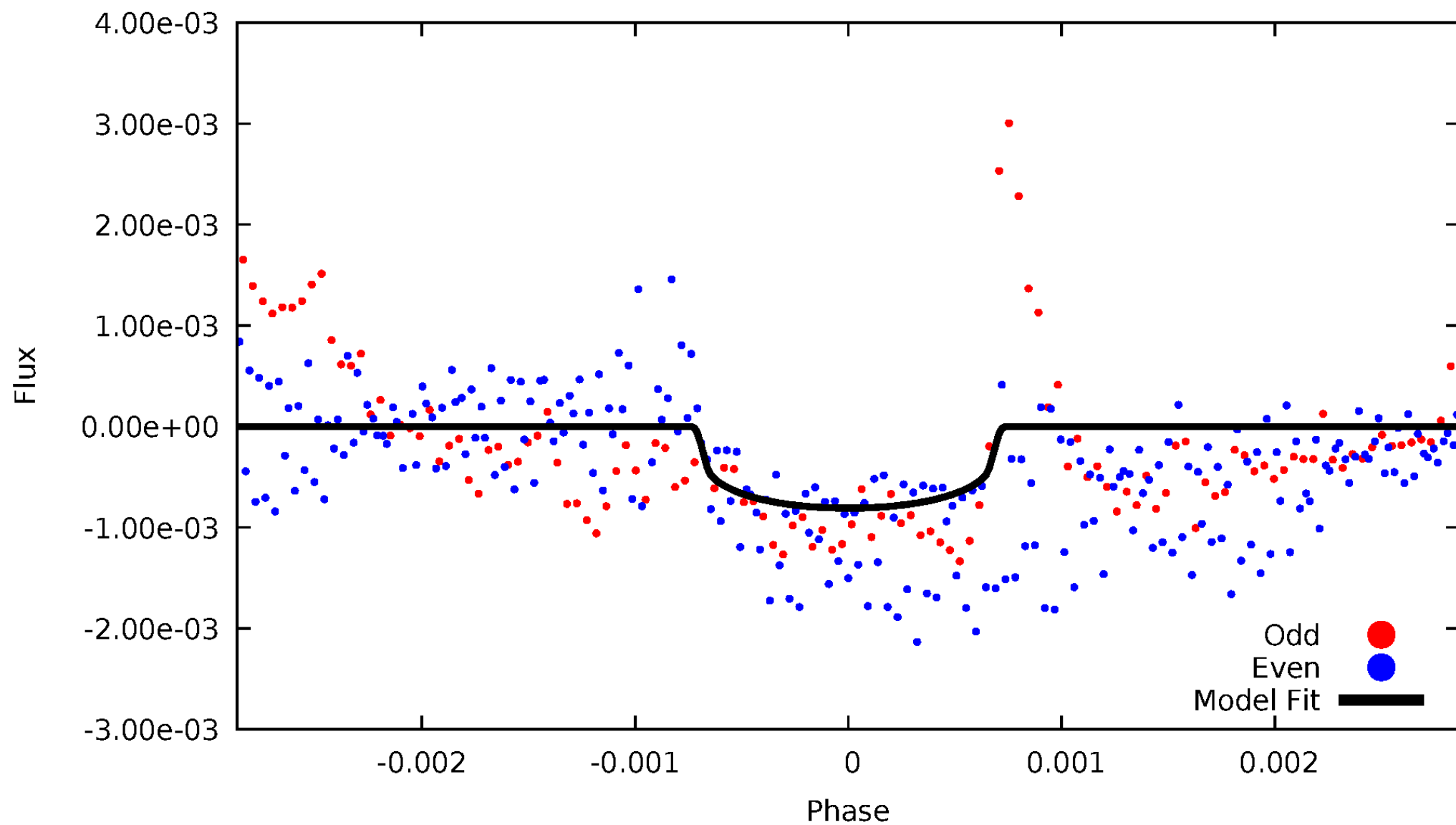


TCE 007506027-01



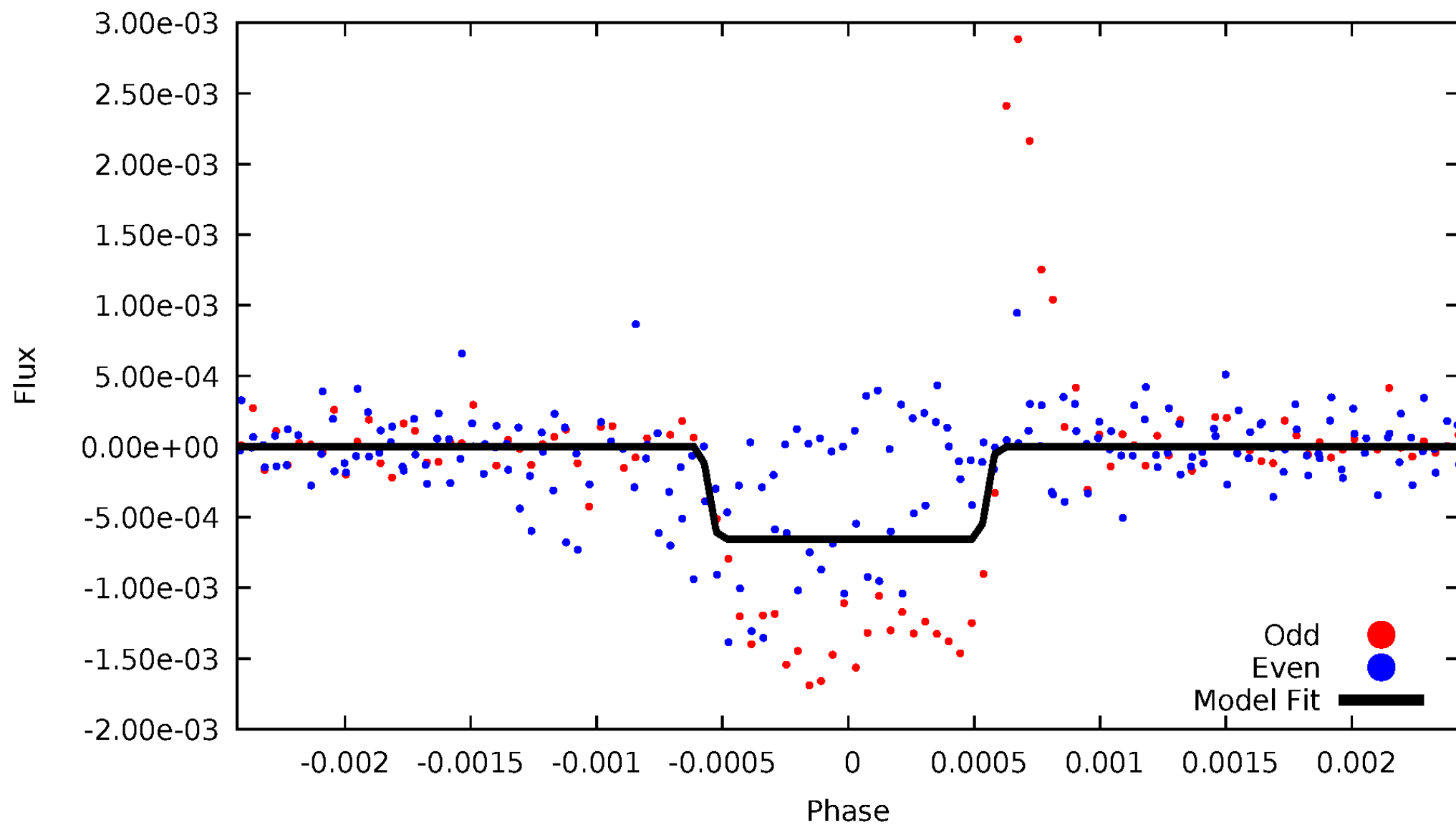
# DV Odd/Even

TCE 007506027-01



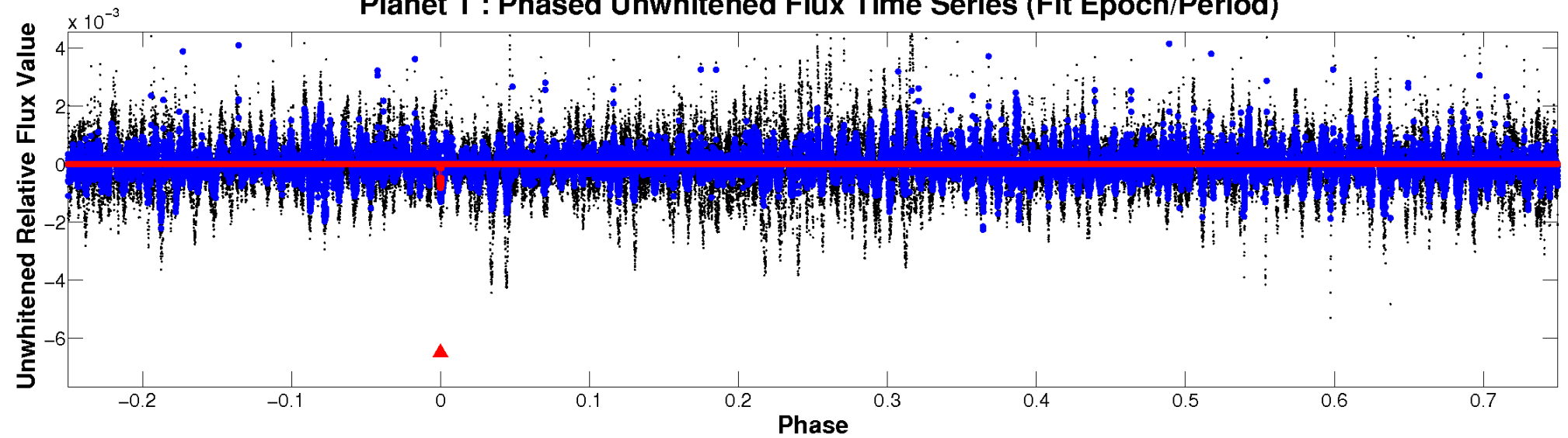
# ALT Odd/Even

TCE 007506027-01

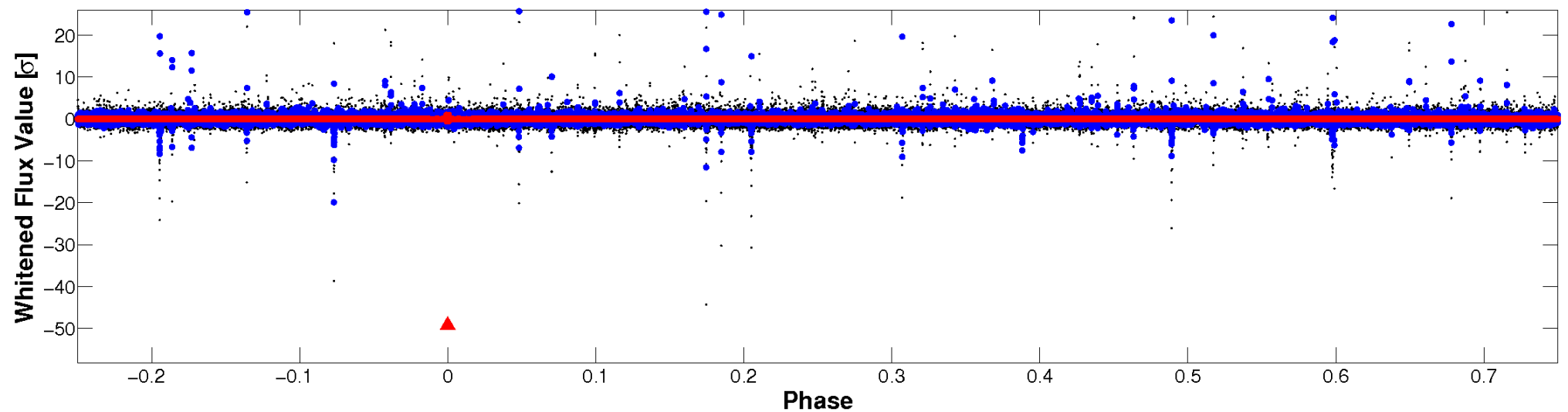


# Non-Whitened Vs. Whitened Light Curve

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



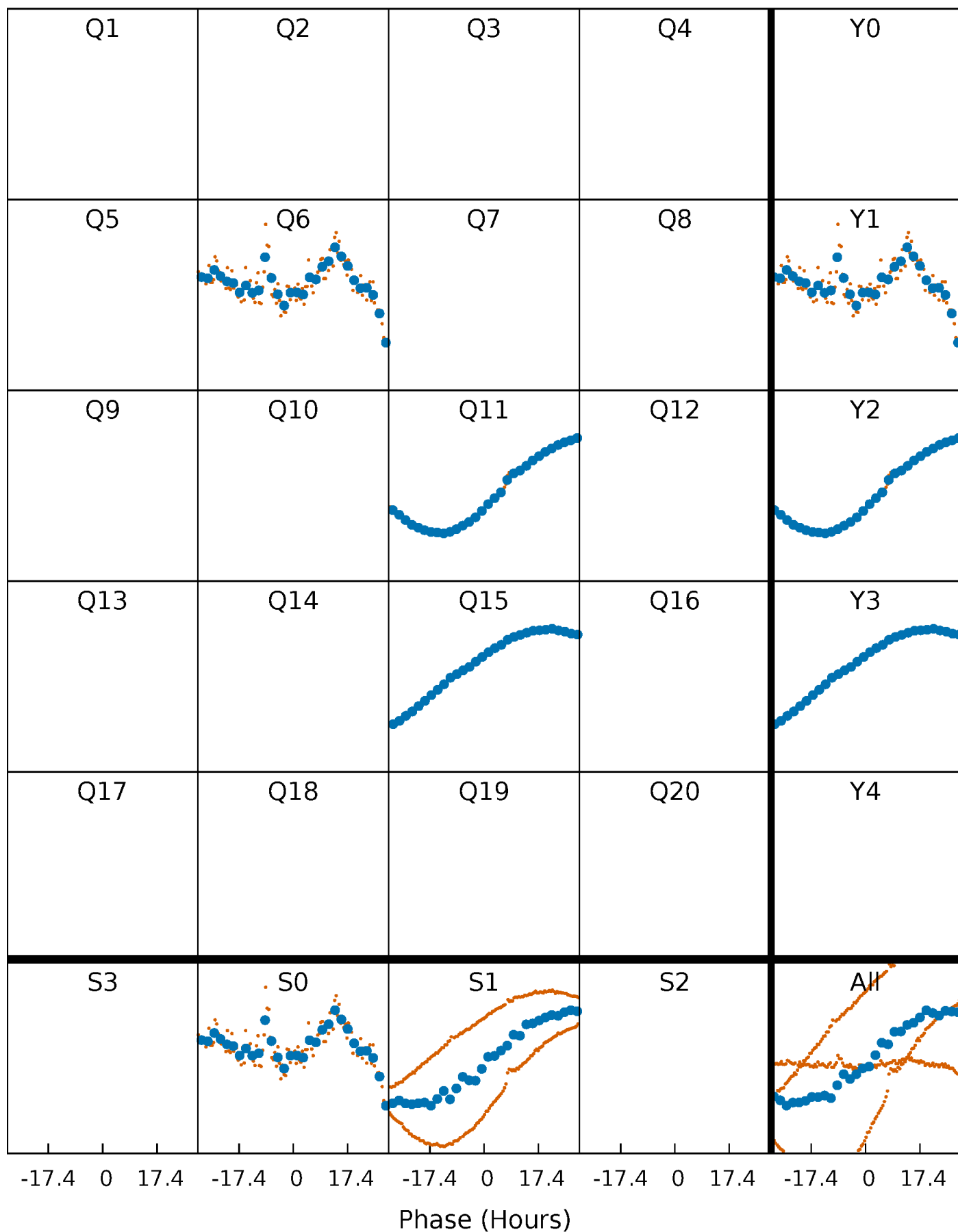
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

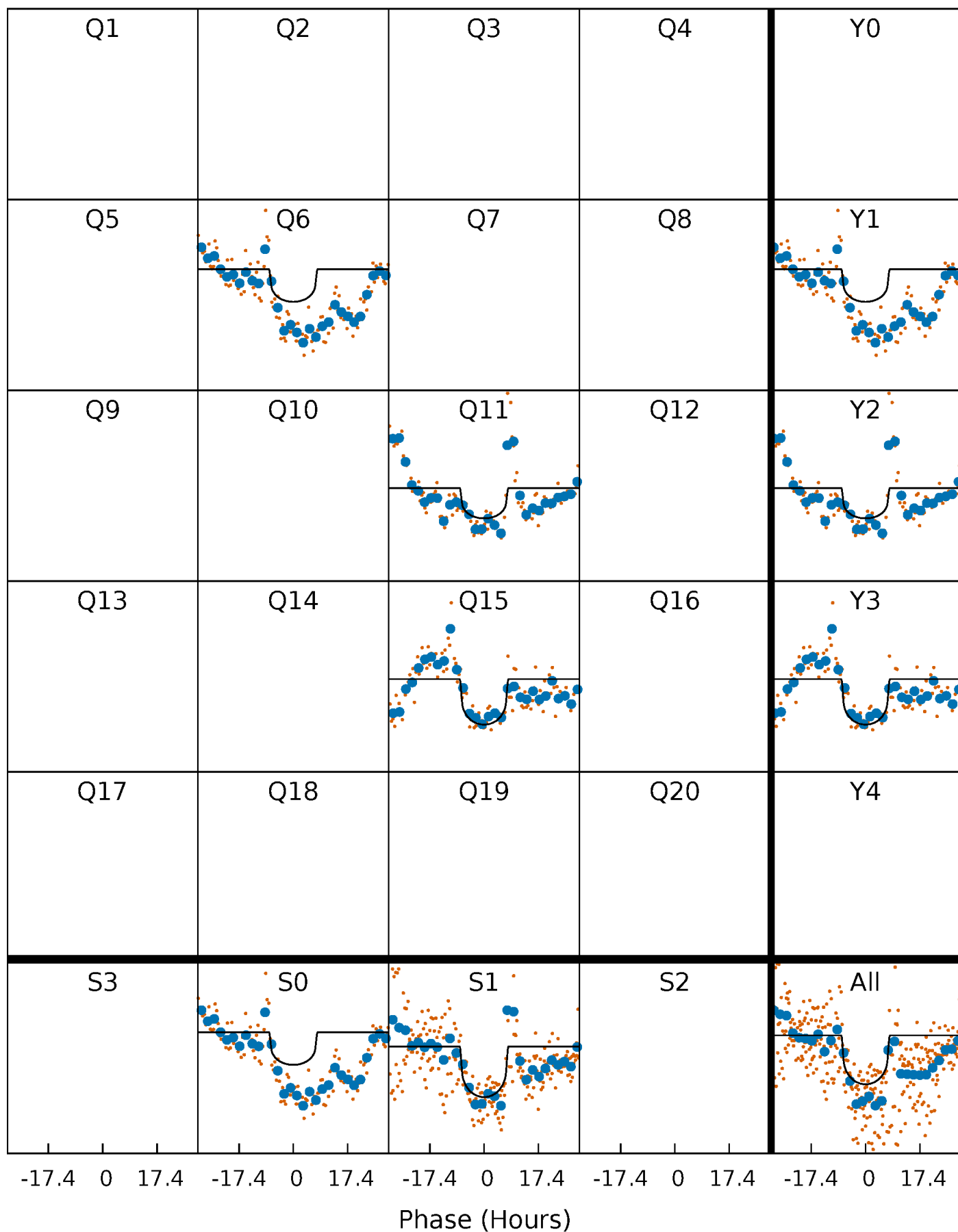
TCE 007506027-01 P=443.645895 Days  $T_0=562.908339$  (BKJD)





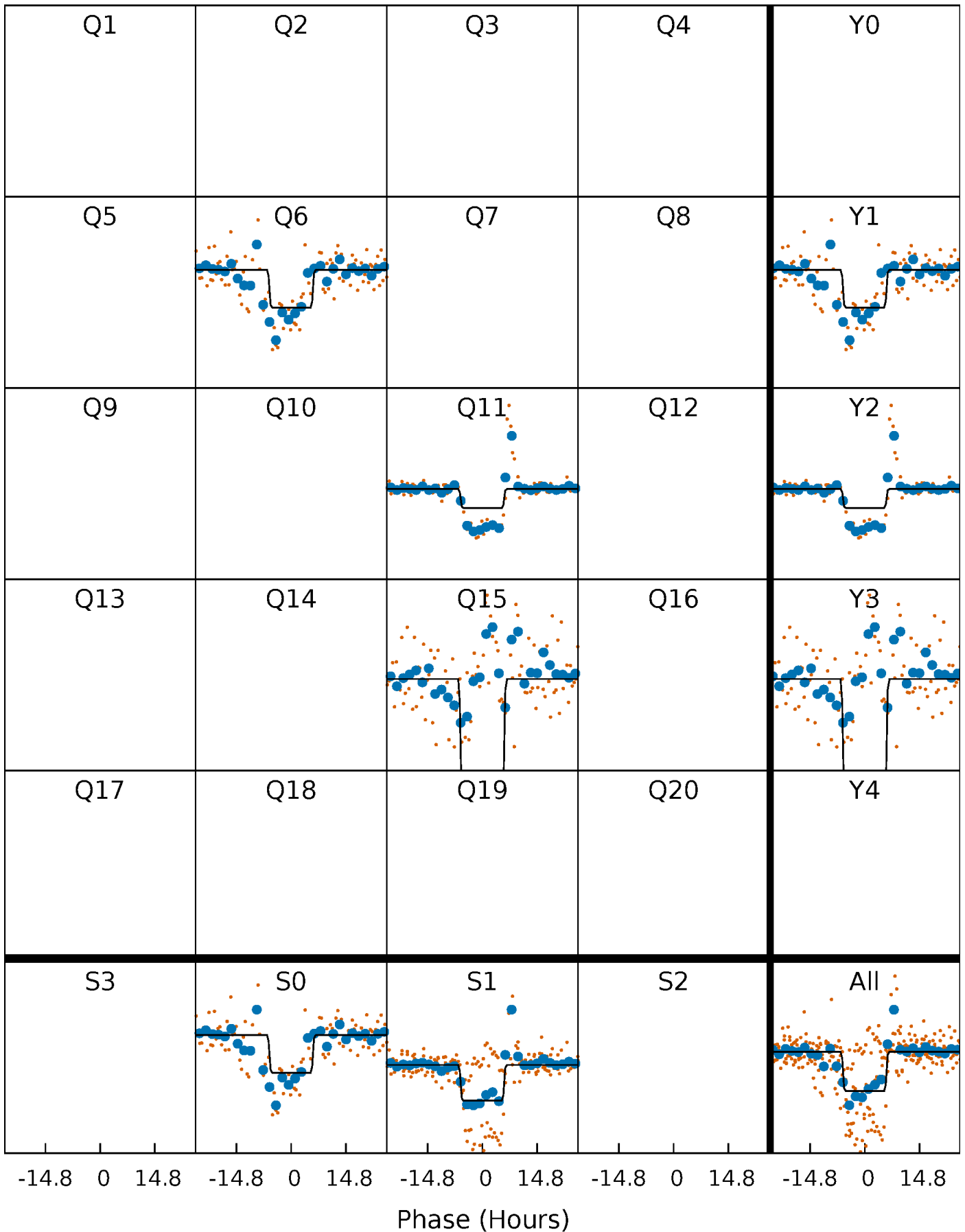
# DV Quarter-Phased Transit Curves

TCE 007506027-01 P=443.645895 Days  $T_0=562.908339$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

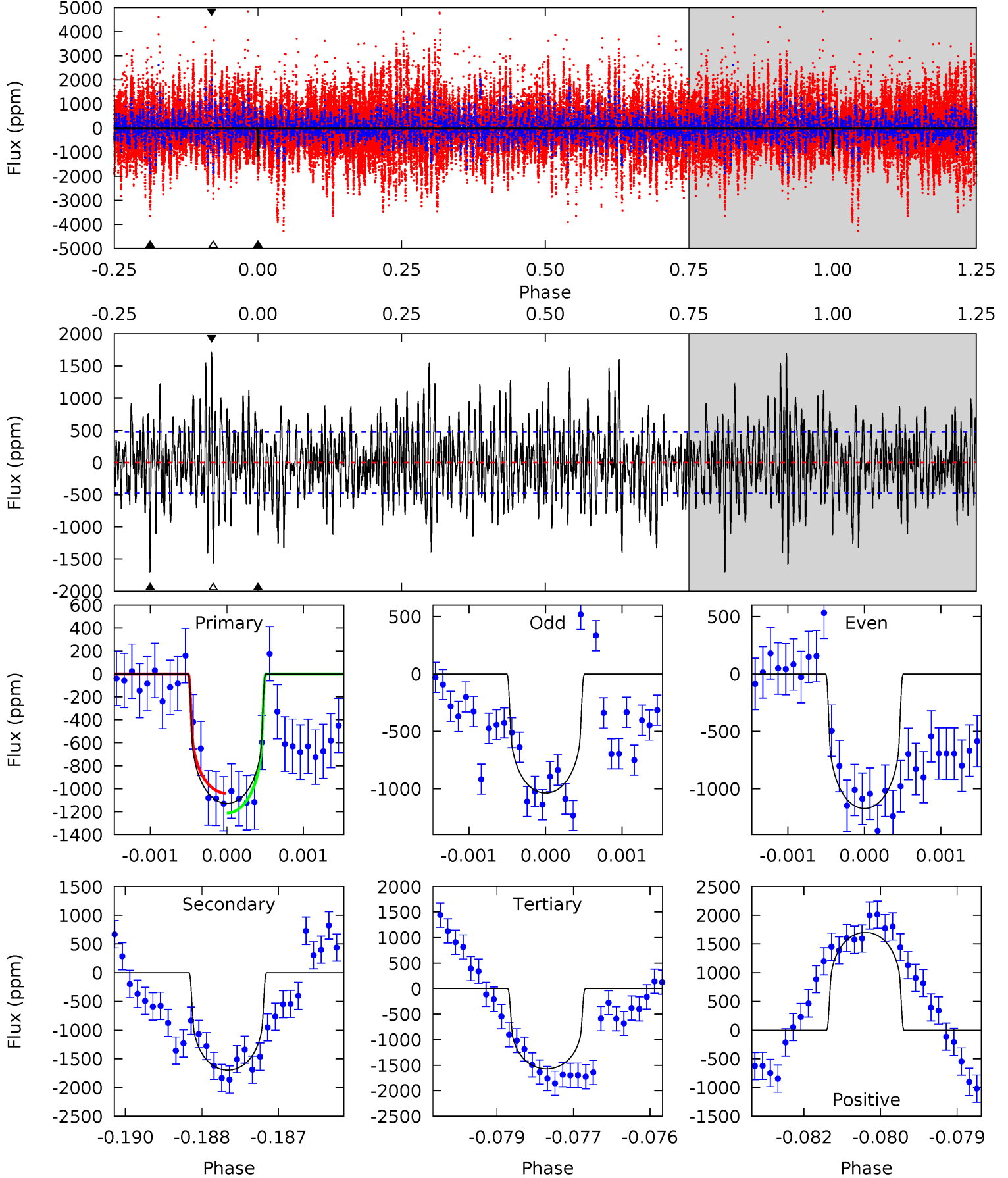
TCE 007506027-01 P=443.633021 Days  $T_0=562.956107$  (BKJD)



# DV Model-Shift Uniqueness Test

007506027-01, P = 443.645895 Days, E = 119.262444 Days

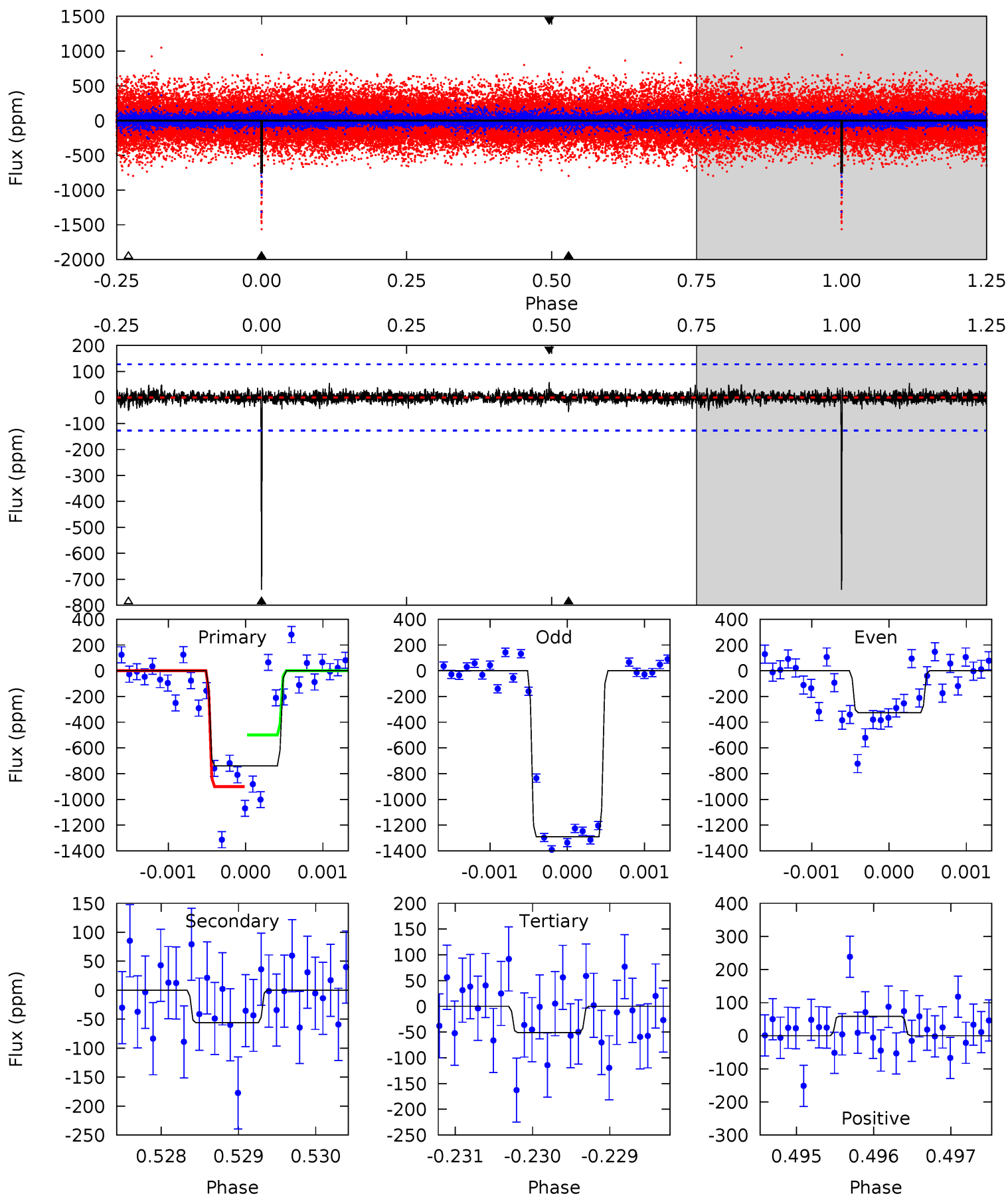
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	19.2	17.8	19.3	5.38	3.18	5.30	-5.01	-6.51	1.42	-0.07	0.68	1.09	0.50	0.98



# Alt Model-Shift Uniqueness Test

007506027-01, P = 443.633021 Days, E = 119.323086 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
31.5	2.37	2.17	2.50	5.42	3.24	0.47	29.3	29.0	0.21	-0.12	23.4	0.93	0.07	8.56



### Stellar Parameters For KIC 007506027

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5033^{+135}_{-135}$	$4.589^{+0.072}_{-0.039}$	$-0.520^{+0.300}_{-0.300}$	$0.683^{+0.066}_{-0.066}$	$0.659^{+0.080}_{-0.037}$	$2.918^{+0.877}_{-0.469}$
	+3%/-3%	+2%/-1%	+58%/-58%	+10%/-10%	+12%/-6%	+30%/-16%
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 007506027-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1696 \pm 88$	$1.98^{+0.53}_{-0.47}$	$256^{+9}_{-9}$	$6088^{+1005}_{-589}$	$235814^{+172721}_{-88616}$
Alt.	$-56 \pm 24$	$1.90^{+0.51}_{-0.48}$	$256^{+9}_{-9}$	$3245^{+359}_{-327}$	$8505^{+8306}_{-4403}$

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

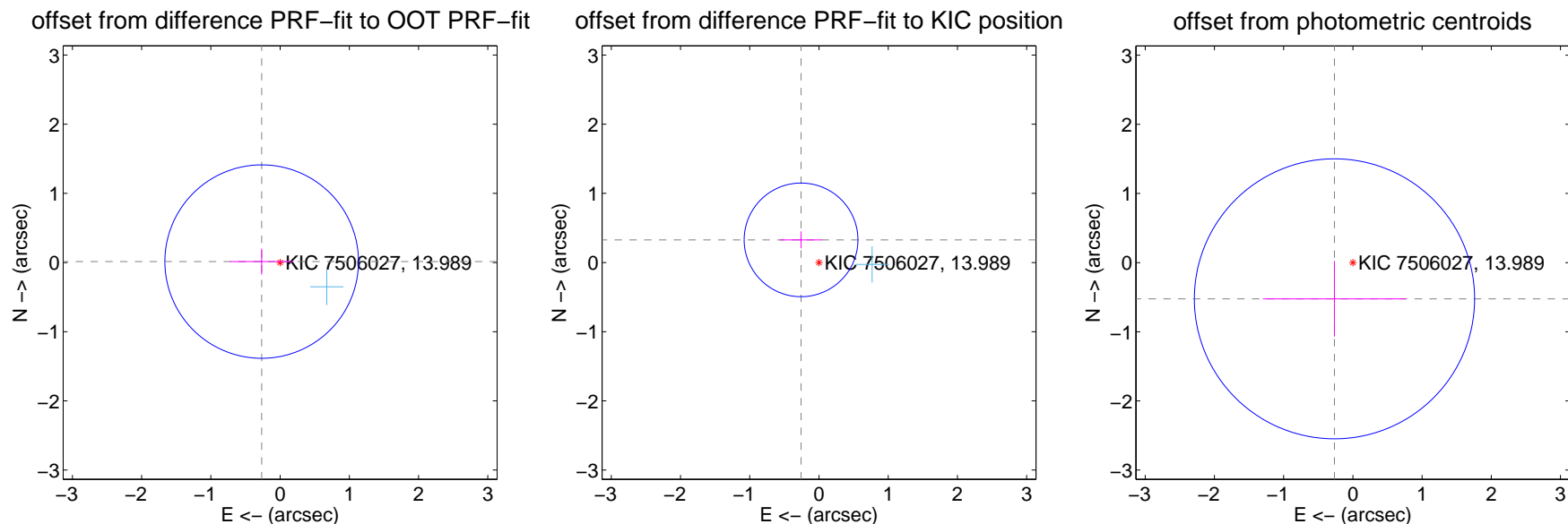
## DV Centroid Data

Supplemental centroid analysis for 007506027-01. Kepler magnitude: 13.99. Transit SNR 5.45

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.267 \pm 0.466$	0.57	$0.266 \pm 0.458$	$0.014 \pm 0.188$
PRF-fit source offset from KIC position	$0.418 \pm 0.274$	1.53	$0.259 \pm 0.305$	$0.328 \pm 0.123$
photometric centroid source offset	$0.59 \pm 0.67$	0.87	$0.27 \pm 1.03$	$-0.52 \pm 0.55$



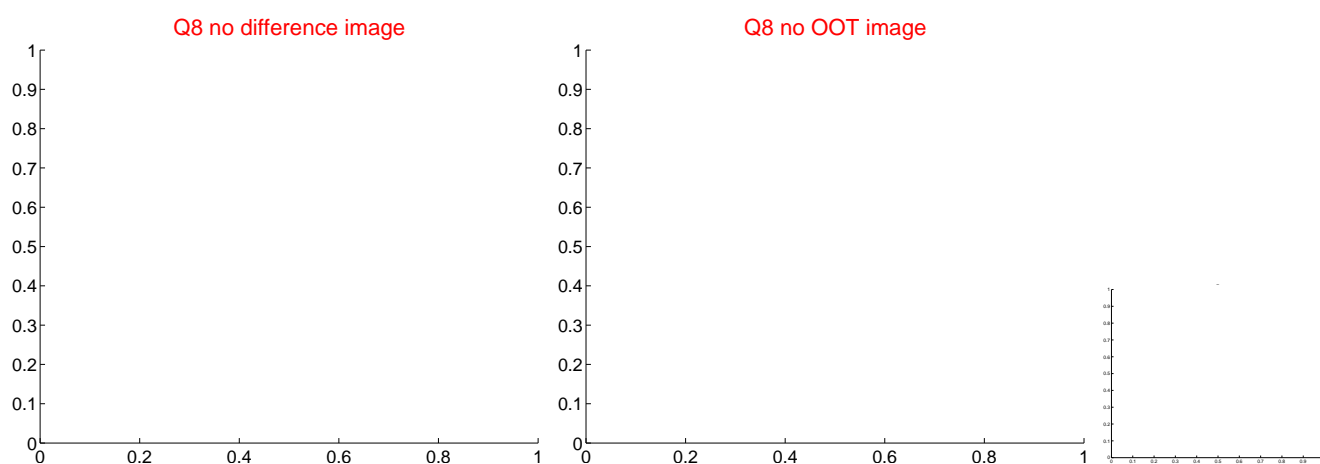
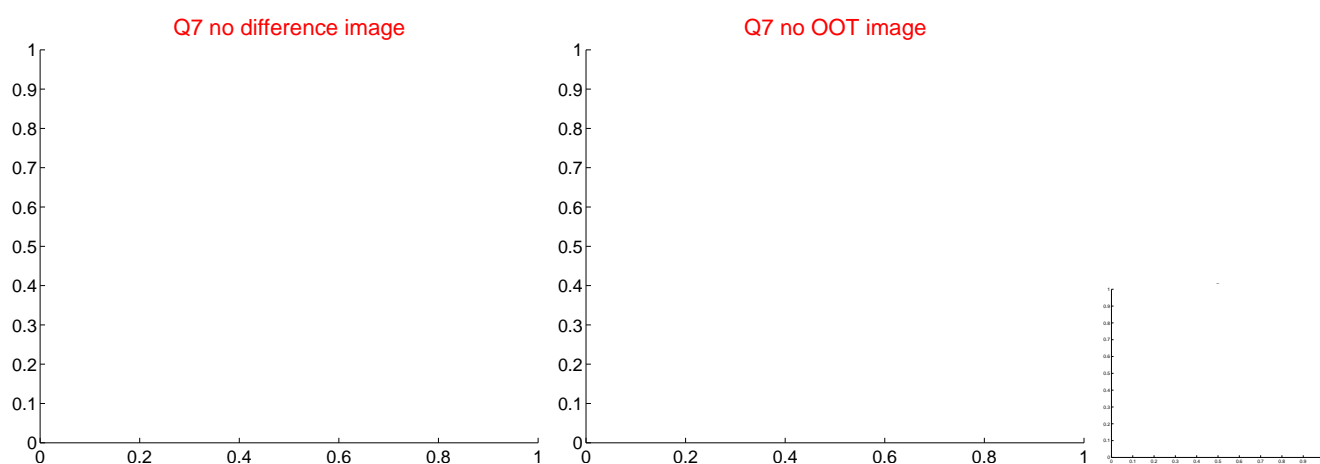
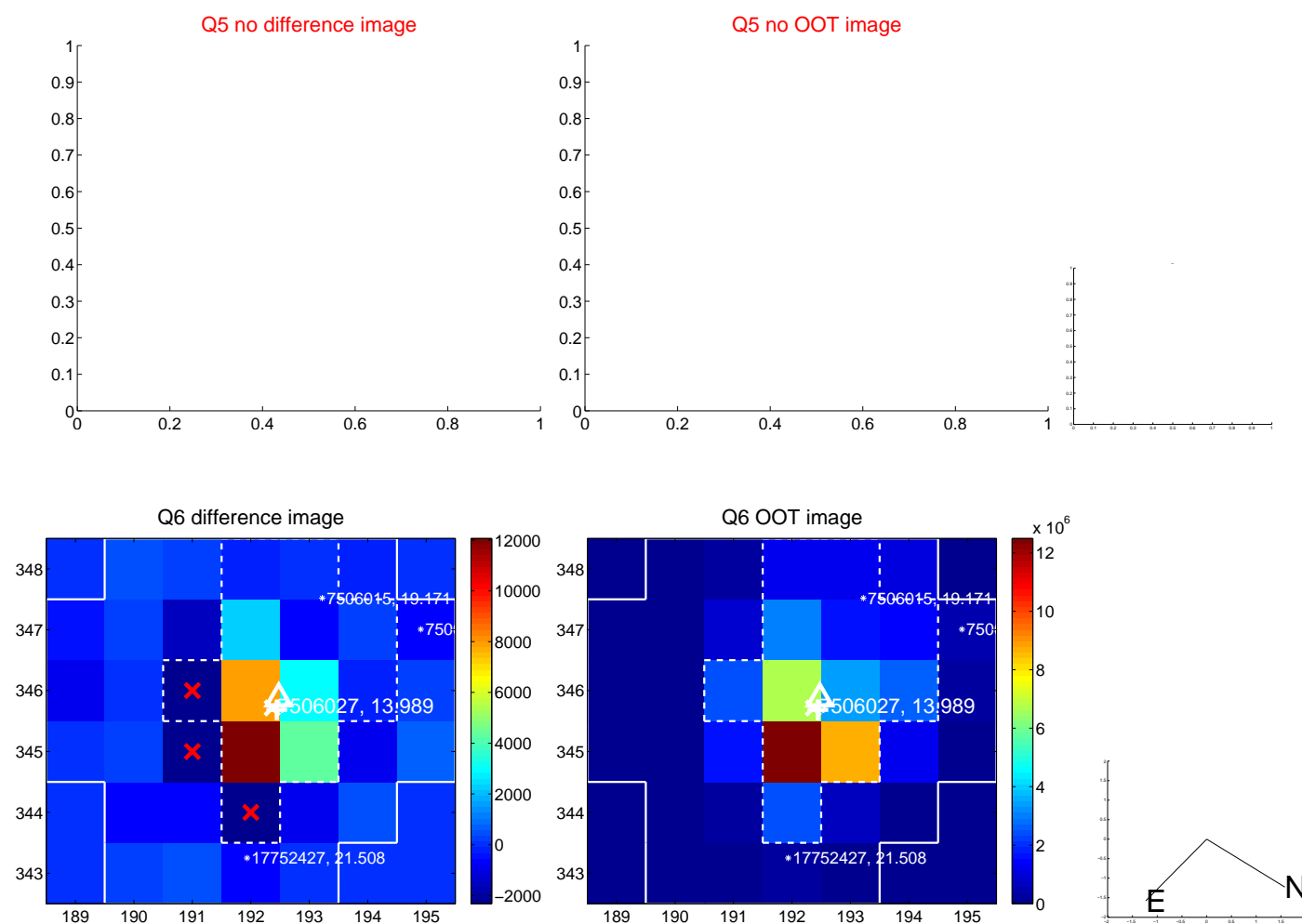
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

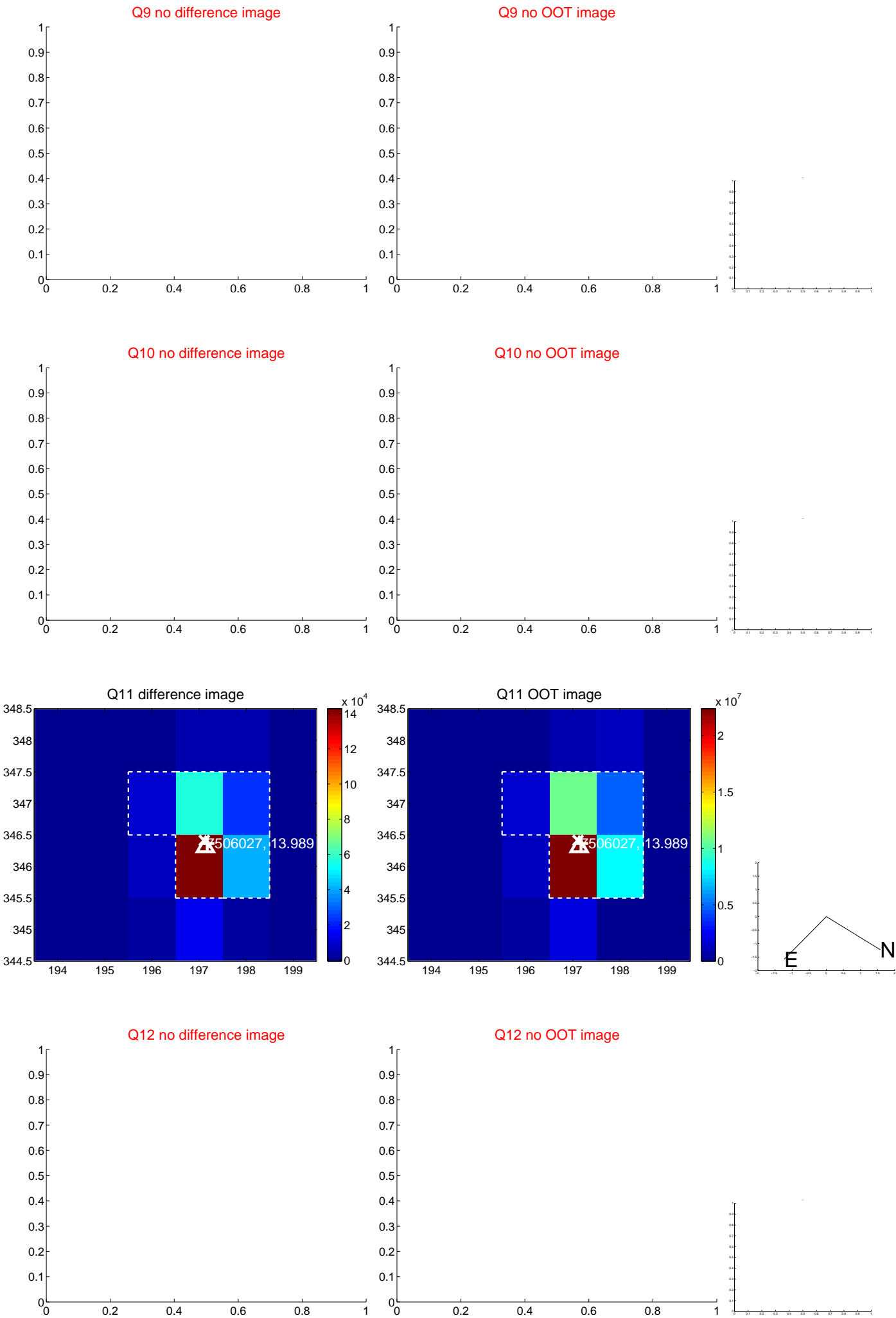




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



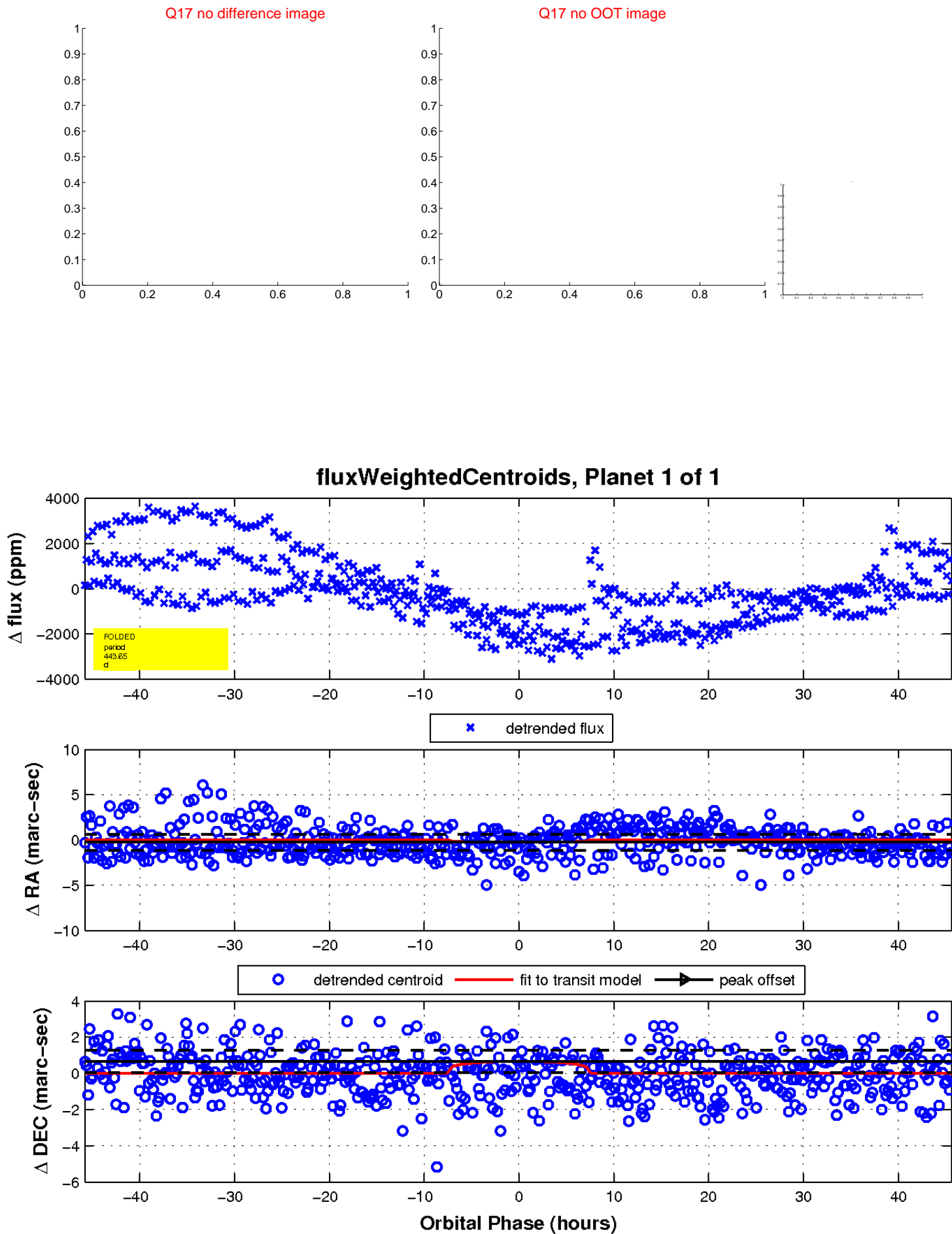
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

Declination

