

# KIC 005957027

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005957027-01	OBS	No	359.093549	165.115271	925.9	13.638	9.0	8.7	0.99	6217	3.05	1.29

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005957027-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

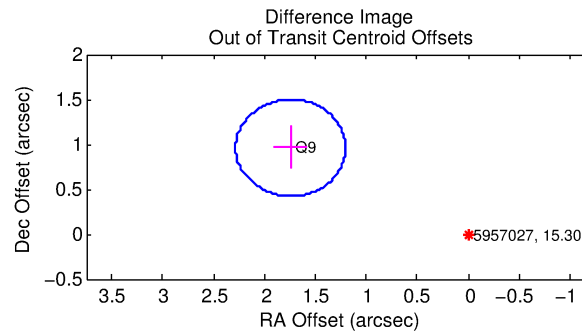
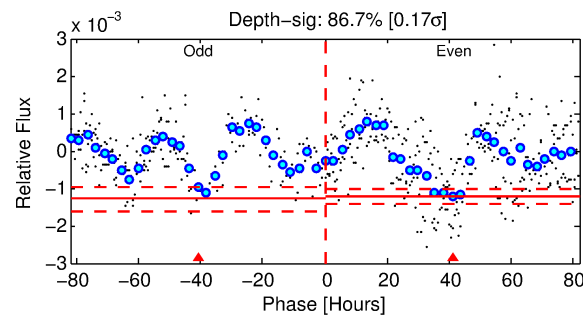
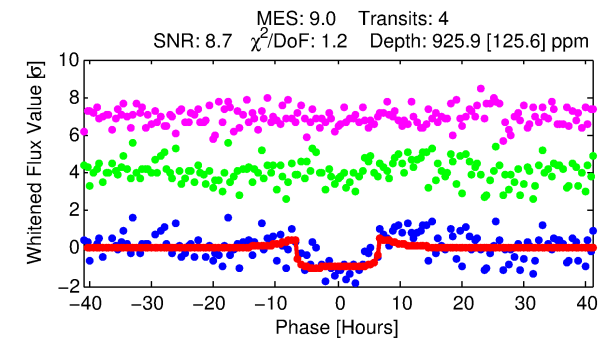
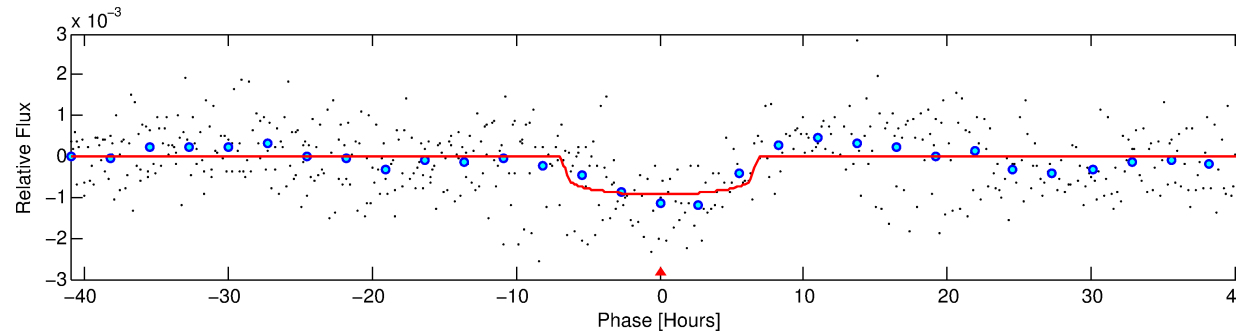
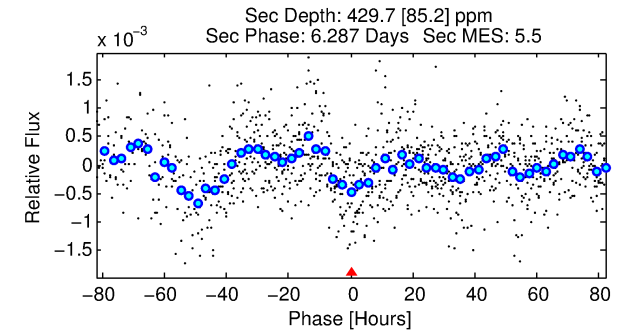
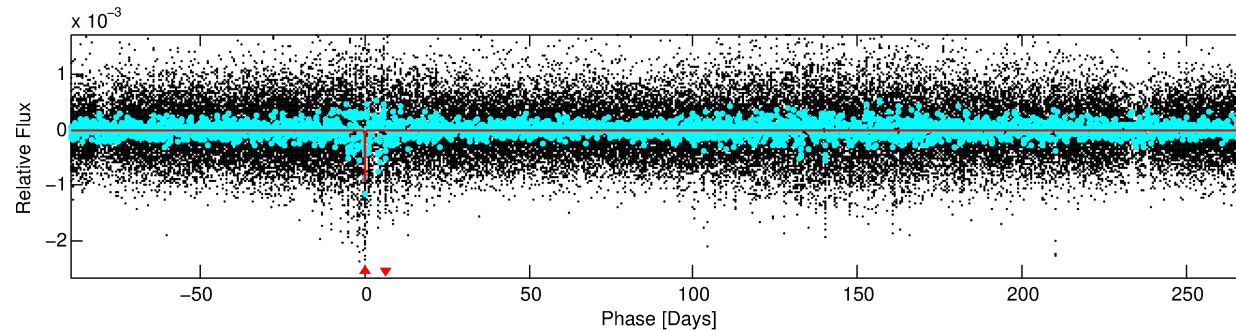
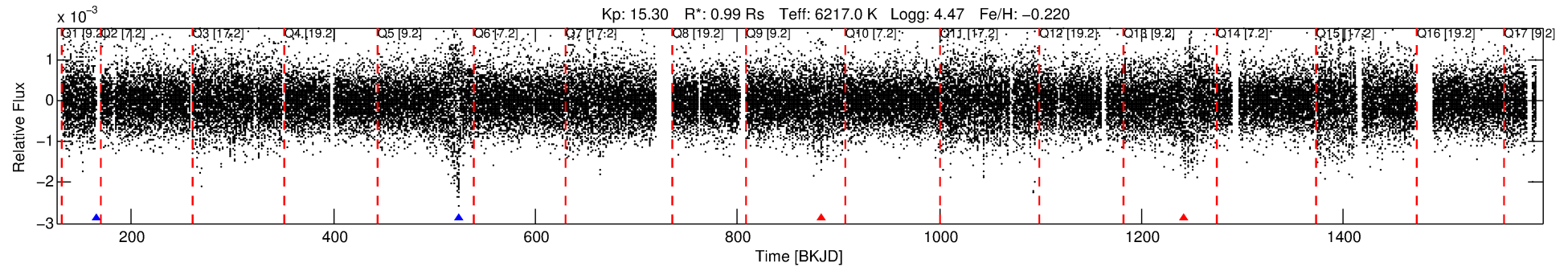
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005957027-01

No Significant Match Found

# DV One-Page Summary

KIC: 5957027 Candidate: 1 of 1 Period: 359.094 d



## DV Fit Results:

Period = 359.09355 [0.00783] d  
Epoch = 165.1153 [0.0168] BKJD  
Rp/R\* = 0.0282 [0.0123]  
a/R\* = 196.02 [422.41]  
b = 0.33 [5.89]  
Seff = 1.29 [0.57]  
Teq = 272 [30] K  
Rp = 3.05 [1.68] Re  
a = 1.0076 [0.2883] AU  
Ag = 25866.73 [25478.30] [1.02σ]  
Teff = 5328 [1206] K [4.19σ]

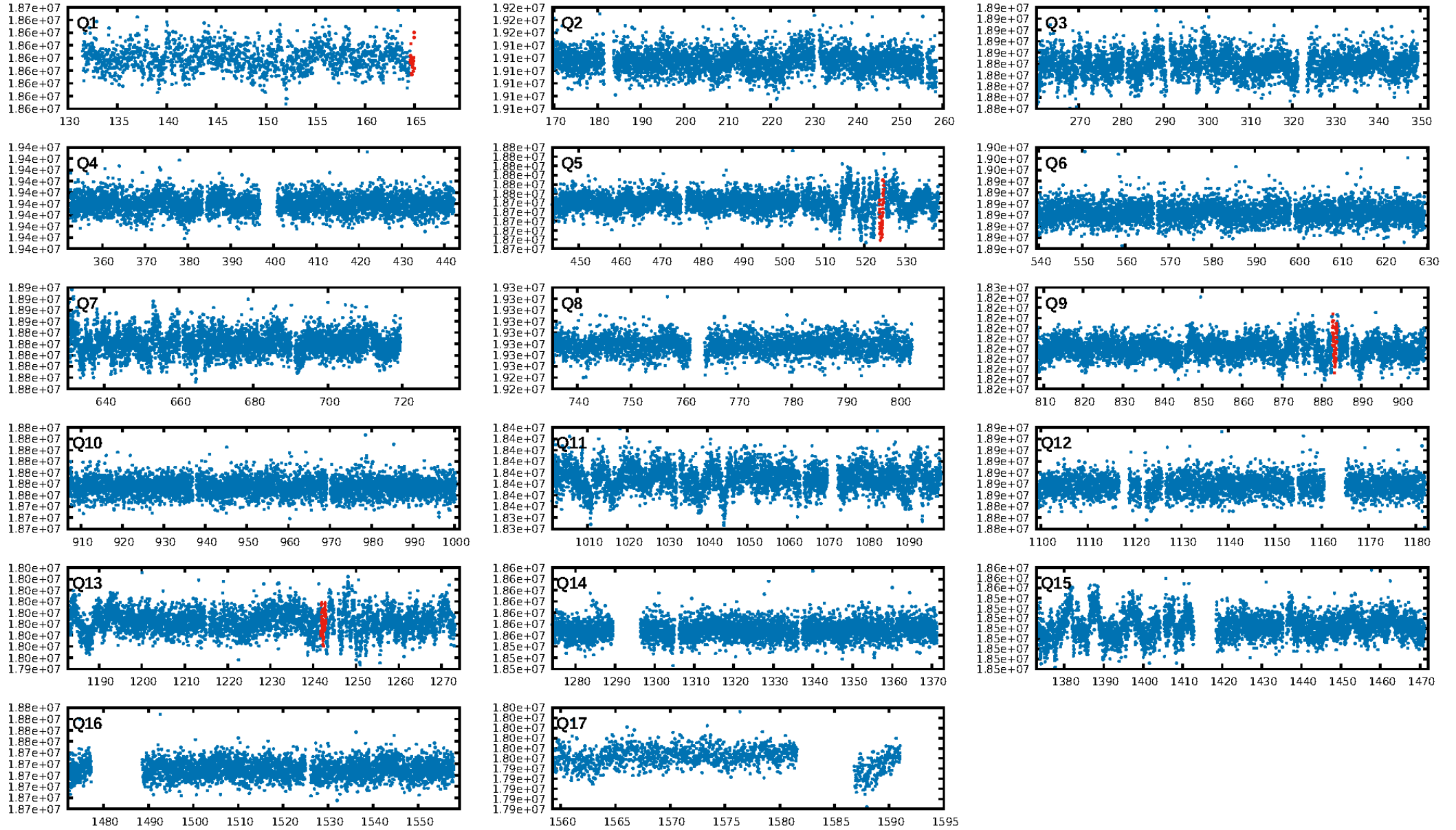
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.77e-10  
RollingBand-fgt: 0.33 [1/3]  
GhostDiagnostic-chr: -1.937  
Centroid-sig: 3.0%  
Centroid-so: 2.703 arcsec [1.44σ]  
OotOffset-rm: 1.991 arcsec [11.09σ]  
KicOffset-rm: 1.877 arcsec [10.20σ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [3/3]

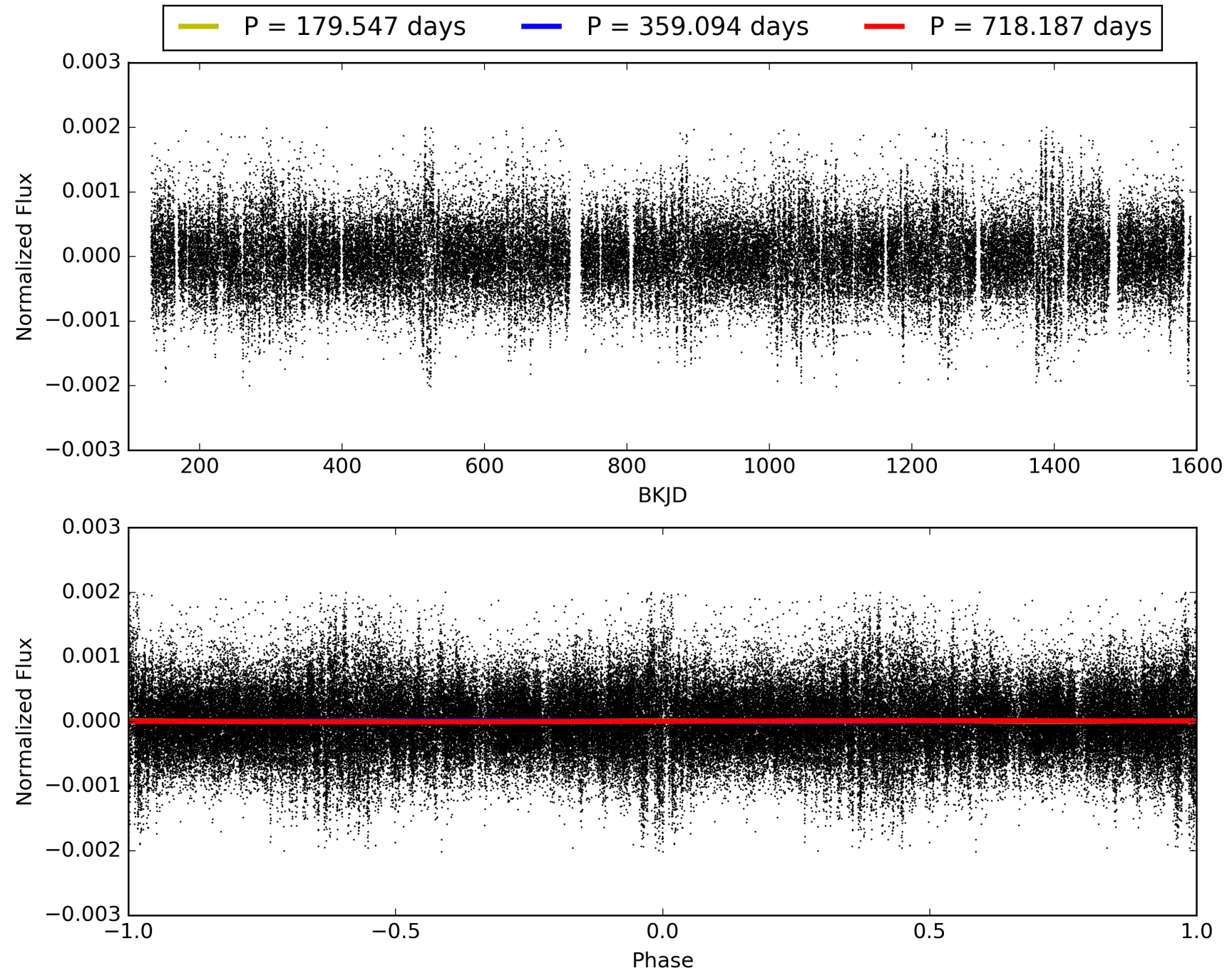
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:09:08 Z

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

# TCE 005957027-01, PDC Light Curves

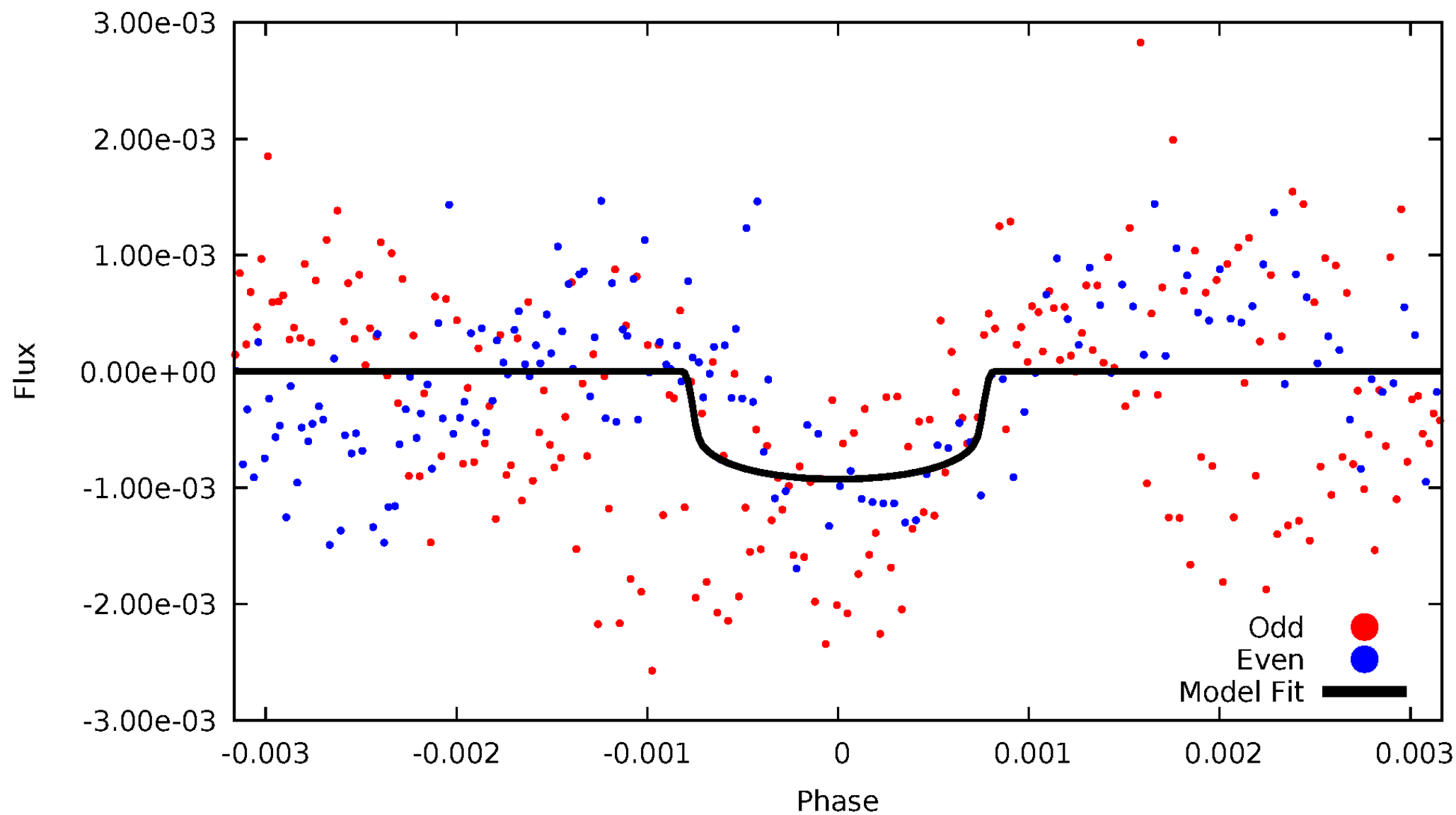


TCE 005957027-01



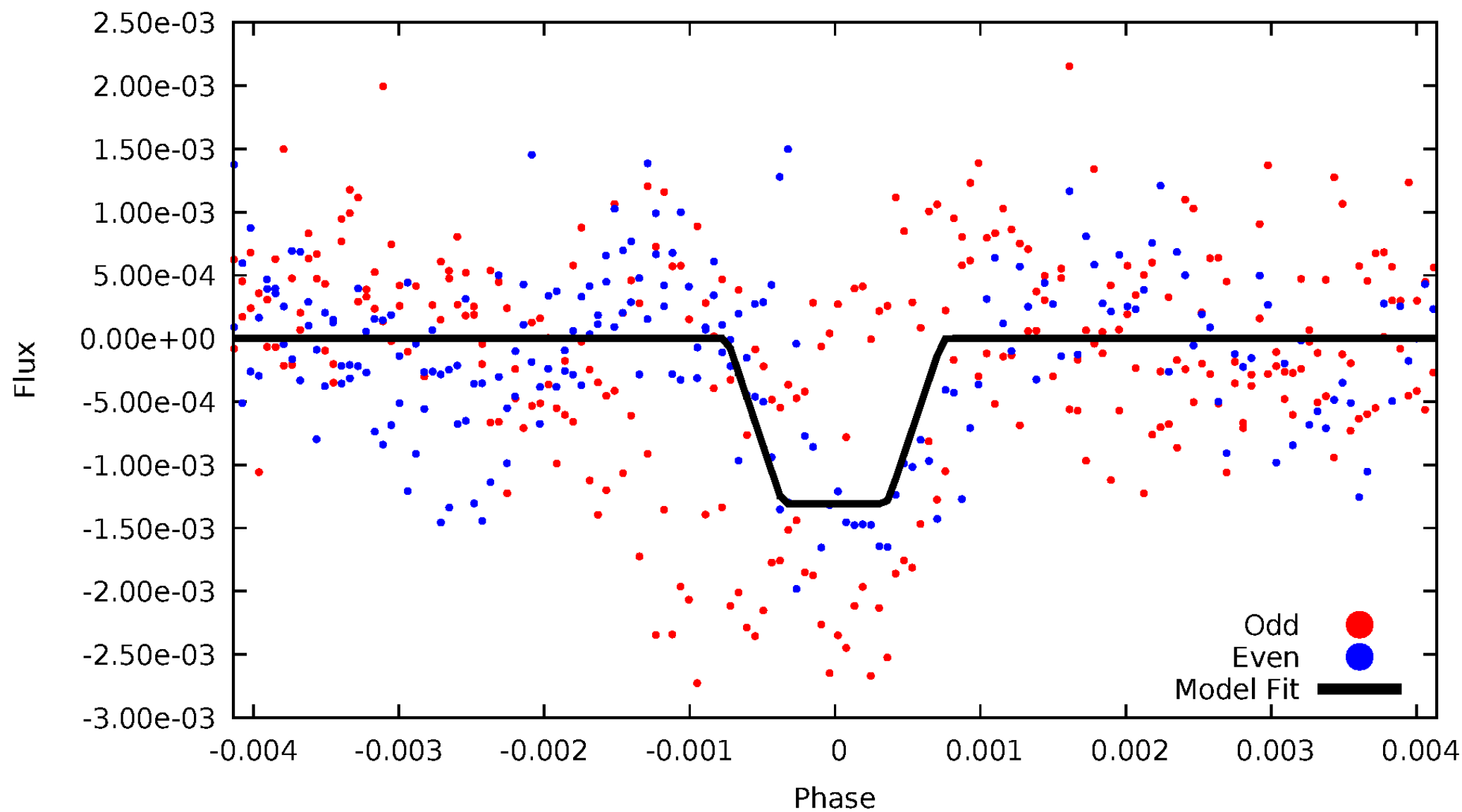
# DV Odd/Even

TCE 005957027-01



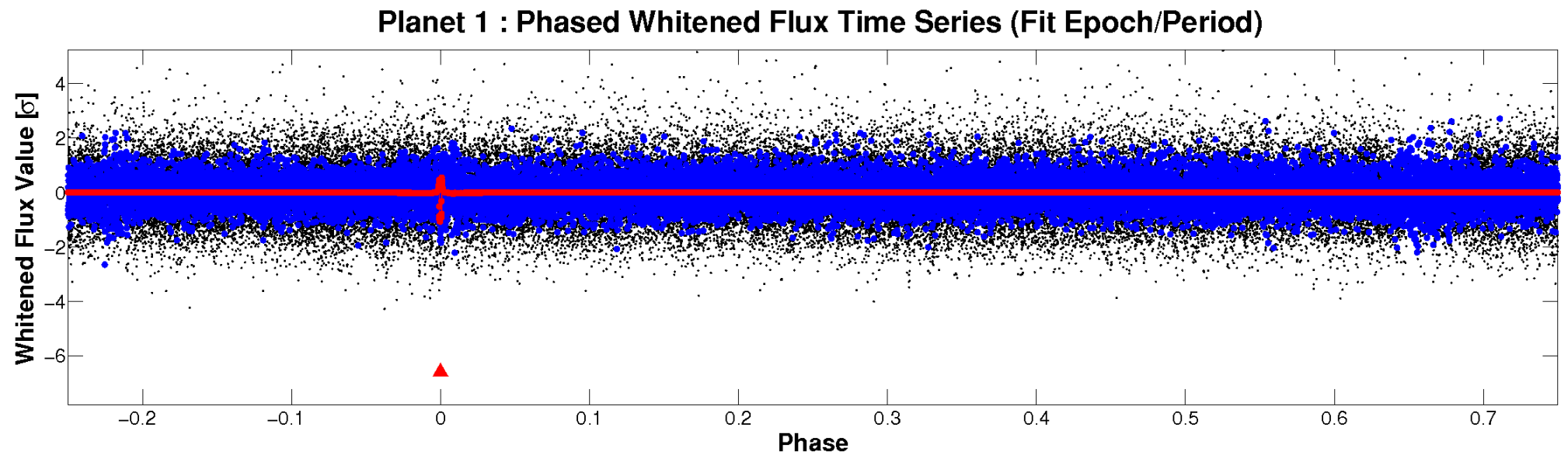
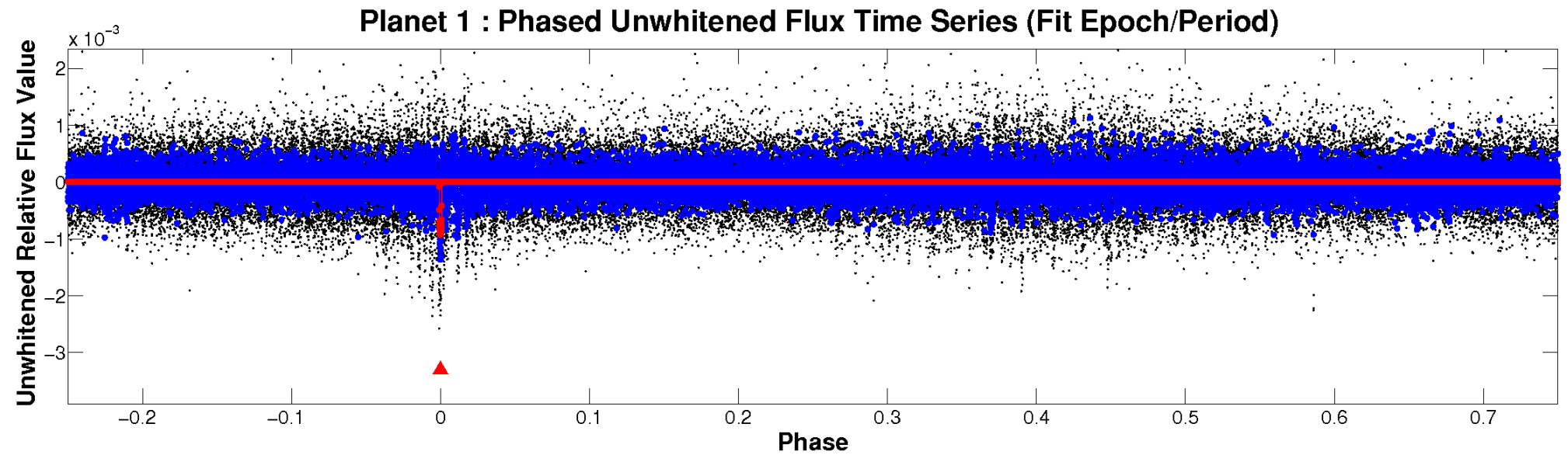
# ALT Odd/Even

TCE 005957027-01



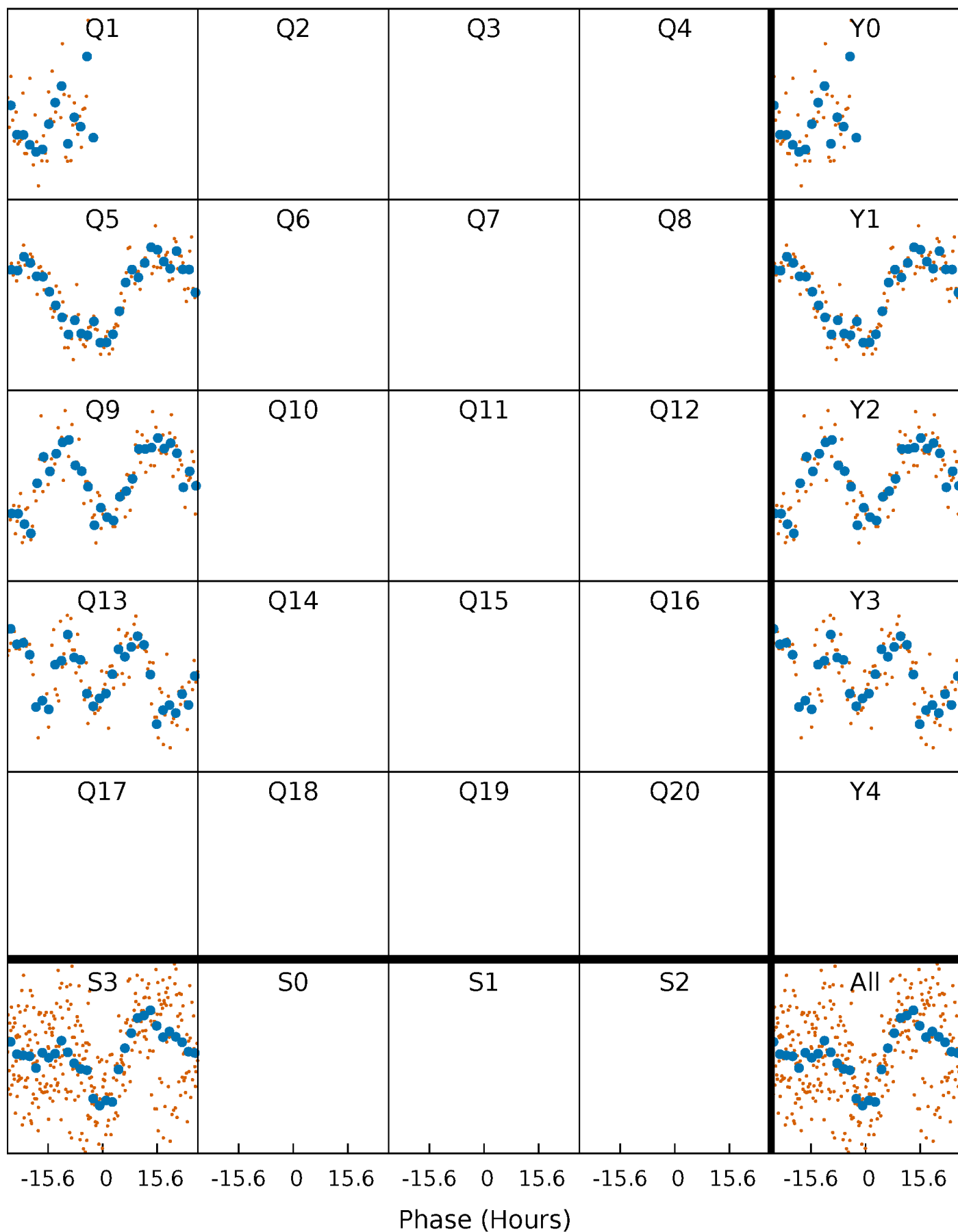


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

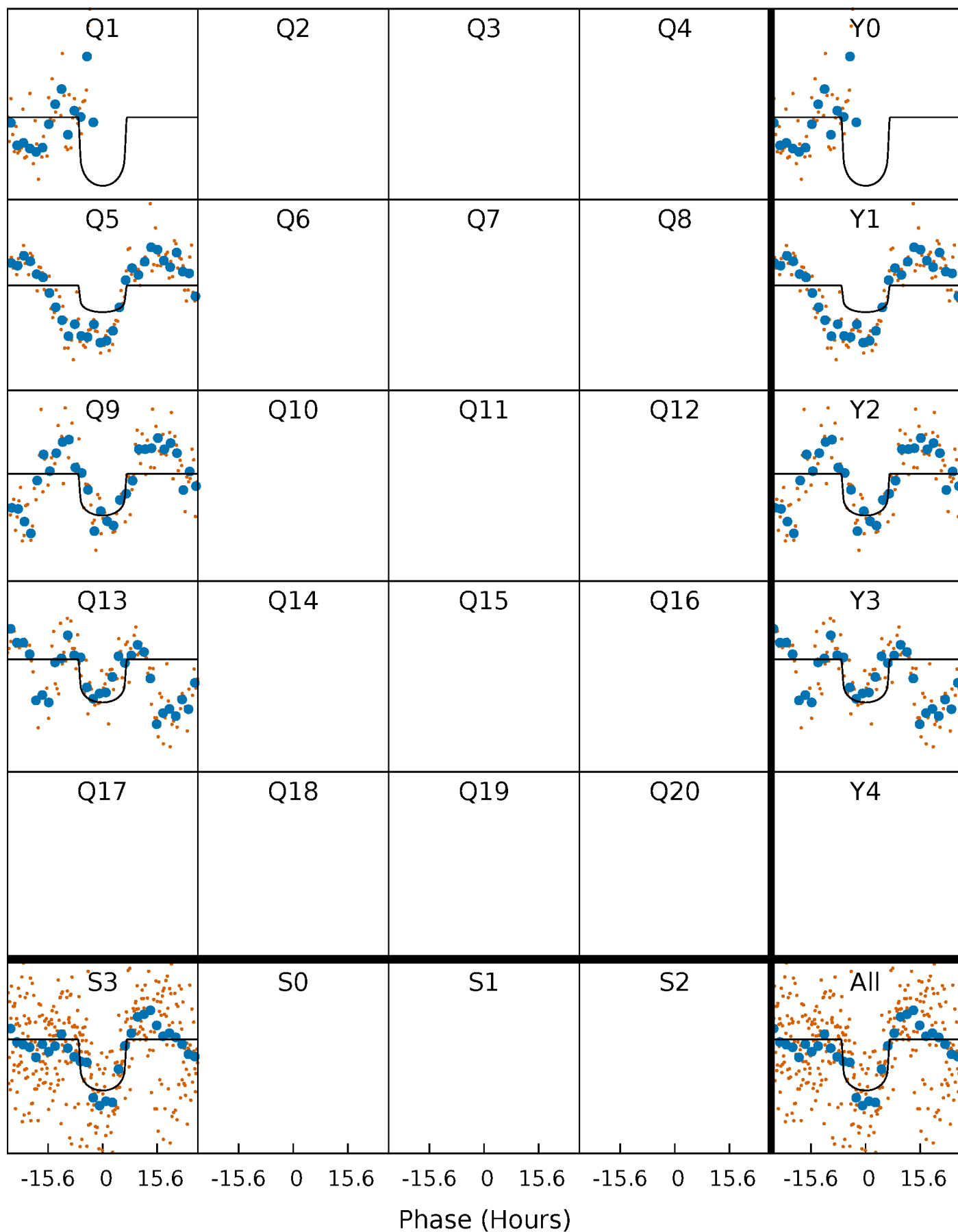
TCE 005957027-01     $P=359.093549$  Days     $T_0=165.115271$  (BKJD)





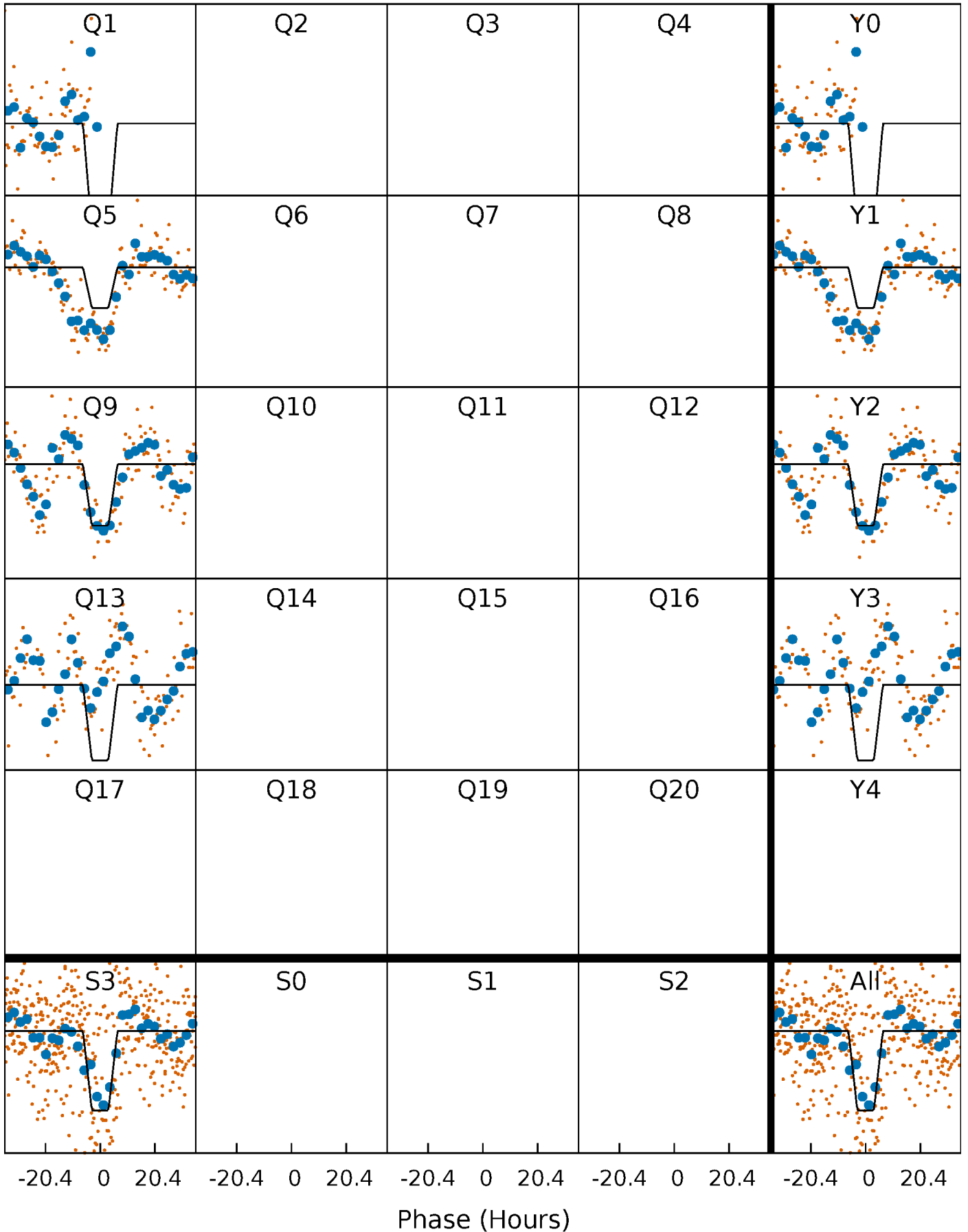
# DV Quarter-Phased Transit Curves

TCE 005957027-01     $P=359.093549$  Days     $T_0=165.115271$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

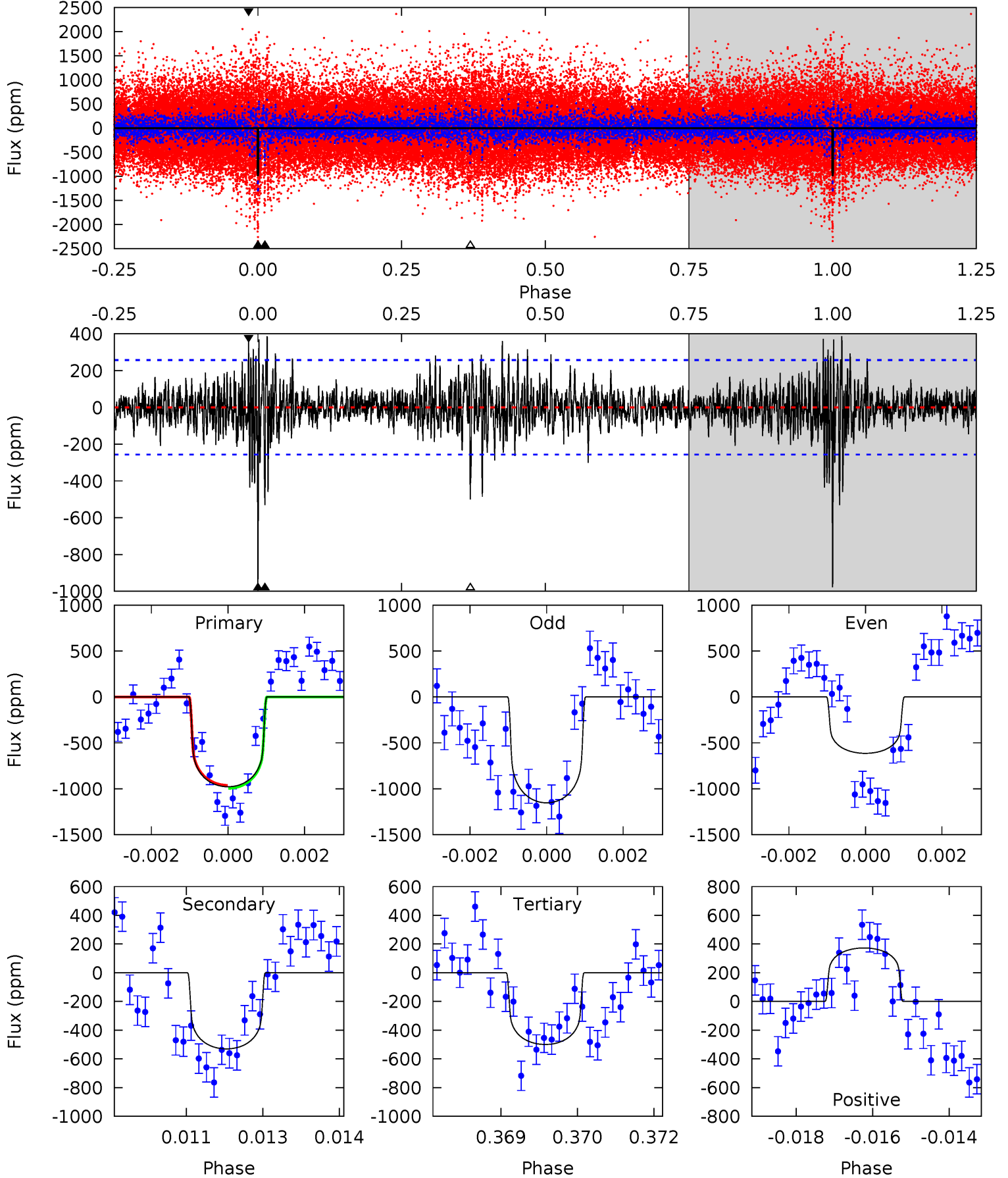
TCE 005957027-01 P=359.119817 Days  $T_0=165.079526$  (BKJD)



# DV Model-Shift Uniqueness Test

005957027-01, P = 359.093549 Days, E = 165.115271 Days

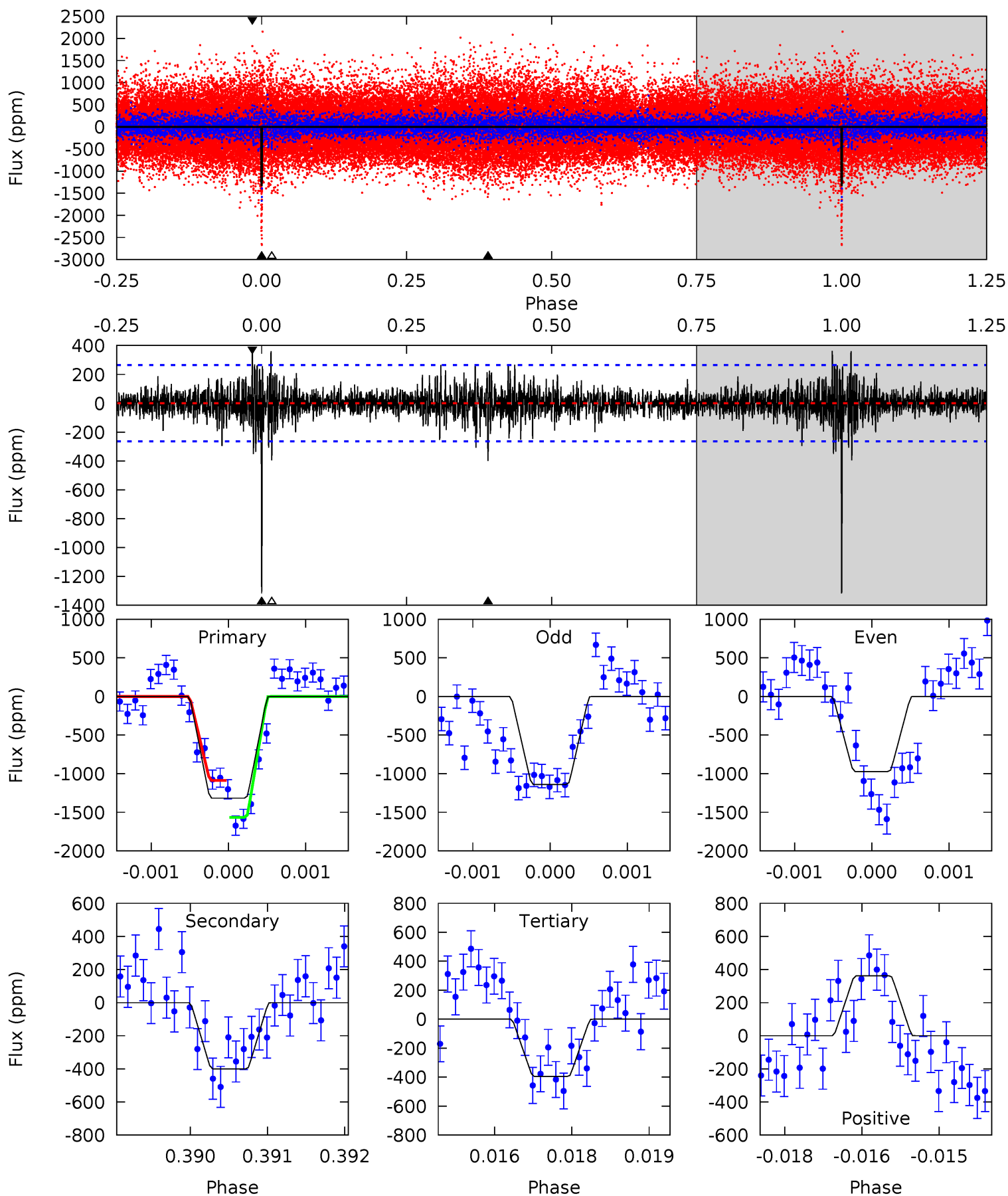
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	11.1	10.4	7.78	5.37	3.15	1.93	9.98	12.6	0.64	3.29	5.54	0.90	0.28	0.33



# Alt Model-Shift Uniqueness Test

005957027-01,  $P = 359.119817$  Days,  $E = 165.079526$  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
26.8	8.15	8.07	7.39	5.38	3.18	1.51	18.8	19.5	0.09	0.77	1.76	1.06	0.22	4.80



### Stellar Parameters For KIC 005957027

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6217^{+175}_{-241}$	$4.472^{+0.054}_{-0.229}$	$-0.220^{+0.250}_{-0.300}$	$0.989^{+0.335}_{-0.112}$	$1.056^{+0.144}_{-0.144}$	$1.540^{+0.456}_{-0.832}$
	+3%/-4%	+1%/-5%	+114%/-136%	+34%/-11%	+14%/-14%	+30%/-54%
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 005957027-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-530 \pm 48$	$3.27^{+1.46}_{-1.43}$	$388^{+31}_{-21}$	$5595^{+1862}_{-837}$	$27034^{+57875}_{-14270}$
Alt.	$-400 \pm 49$	$3.98^{+1.70}_{-1.40}$	$388^{+32}_{-19}$	$4780^{+987}_{-567}$	$13642^{+18041}_{-6860}$

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

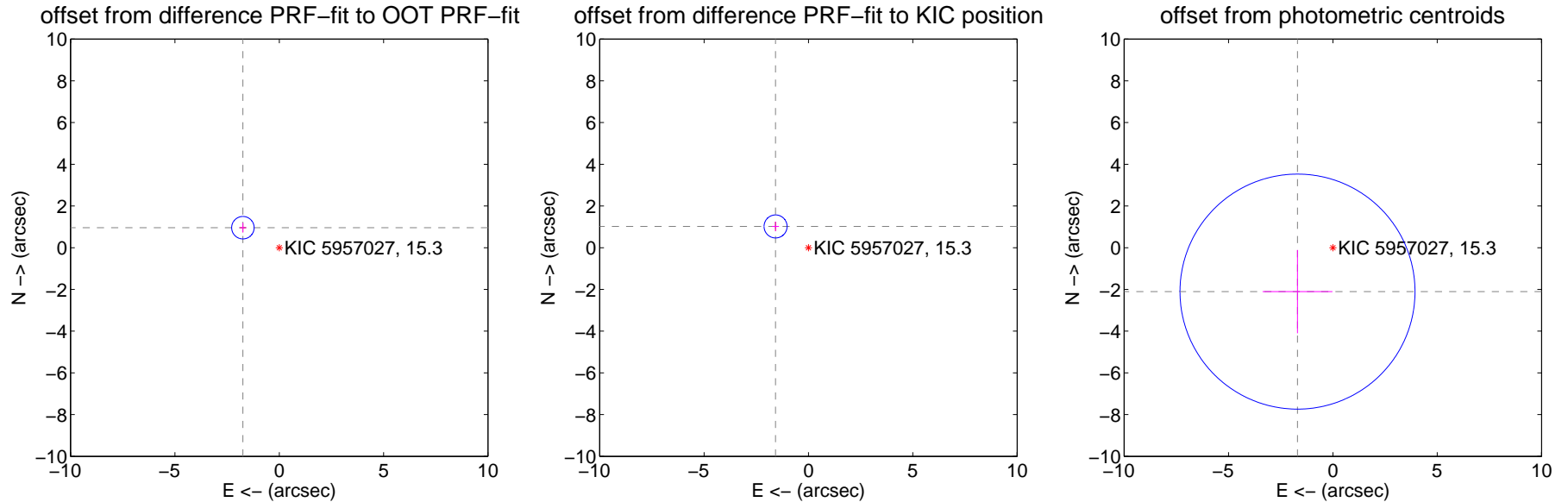
## DV Centroid Data

Supplemental centroid analysis for 005957027-01. Kepler magnitude: 15.30. Transit SNR 8.70

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.991 \pm 0.180$	11.09	$1.744 \pm 0.162$	$0.960 \pm 0.229$
PRF-fit source offset from KIC position	$1.877 \pm 0.184$	10.20	$1.577 \pm 0.162$	$1.019 \pm 0.229$
photometric centroid source offset	$2.70 \pm 1.88$	1.44	$1.70 \pm 1.67$	$-2.11 \pm 2.00$



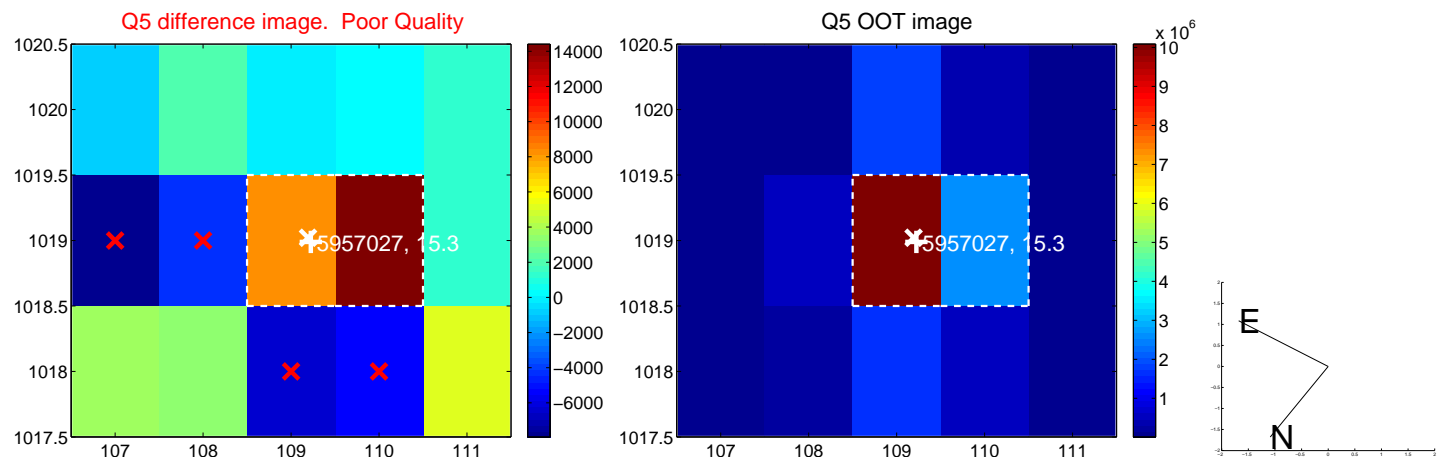
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

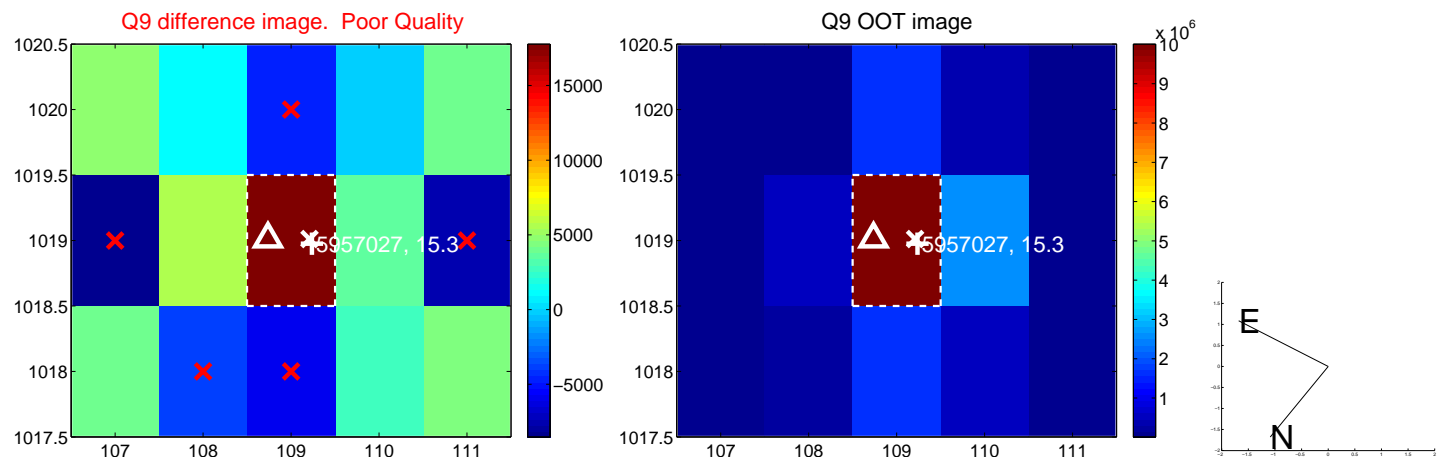




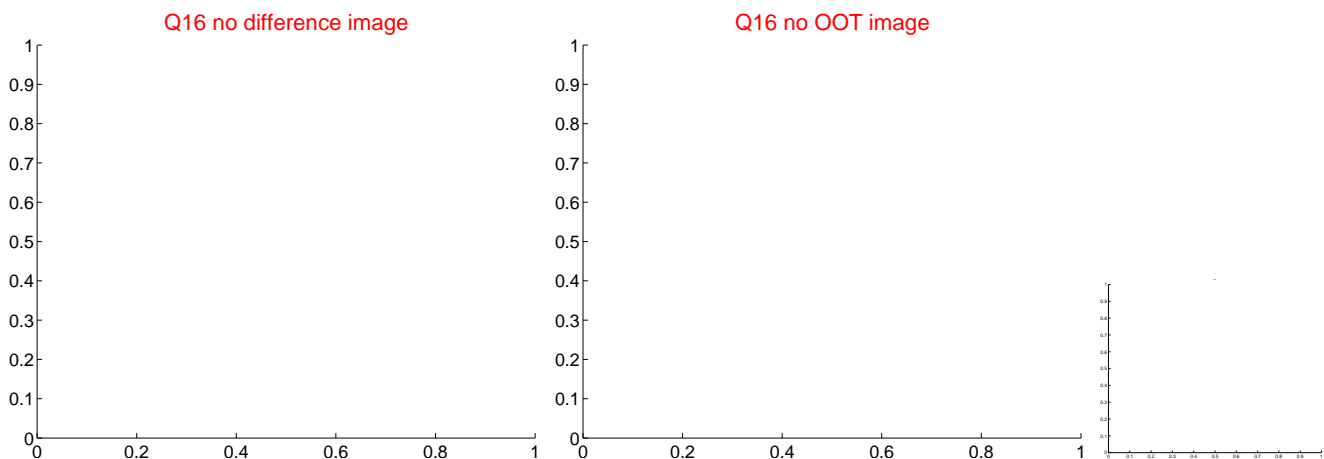
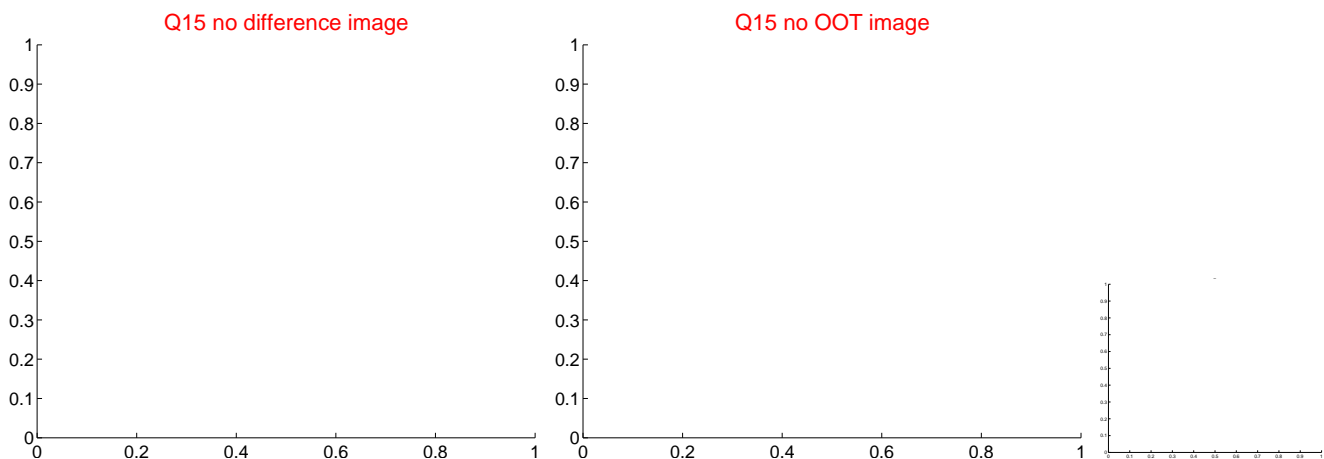
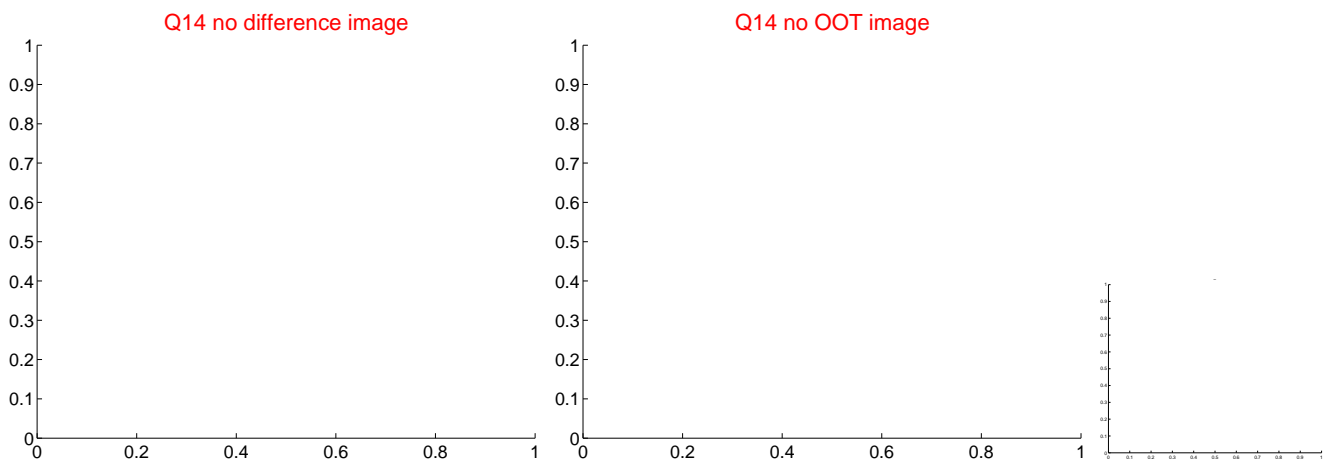
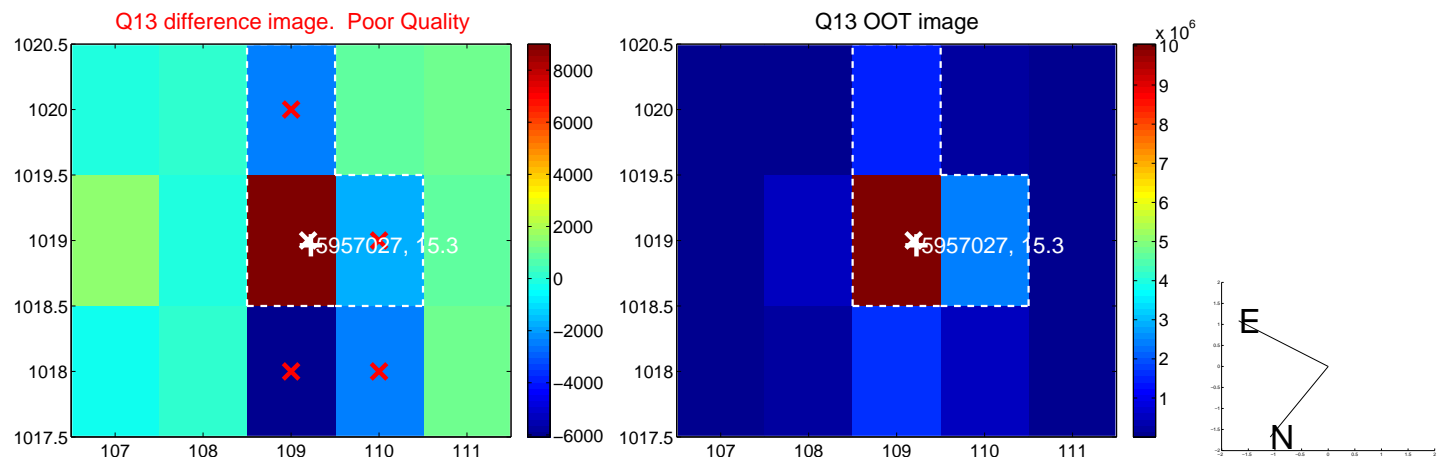
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



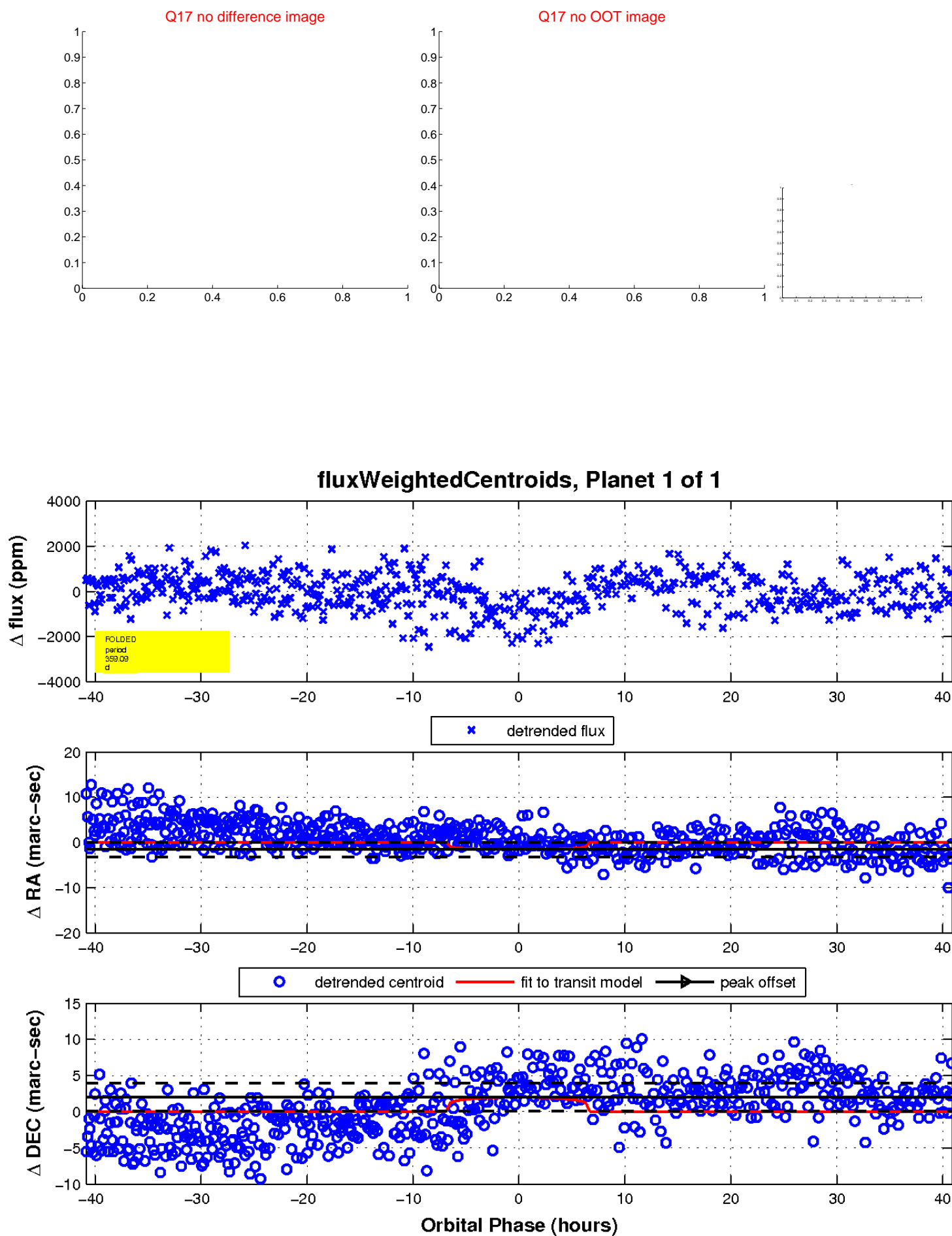
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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

Declination

