

# KIC 009719320

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009719320-01	OBS	No	356.107955	479.835159	259.4	8.296	7.2	7.0	1.09	5953	1.93	1.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009719320-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_ALT—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.

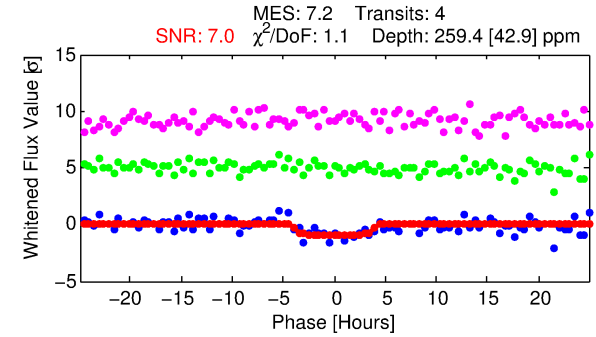
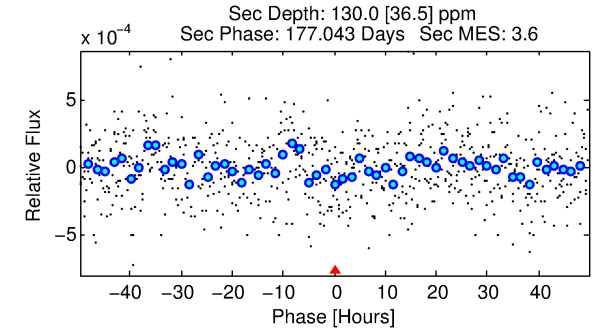
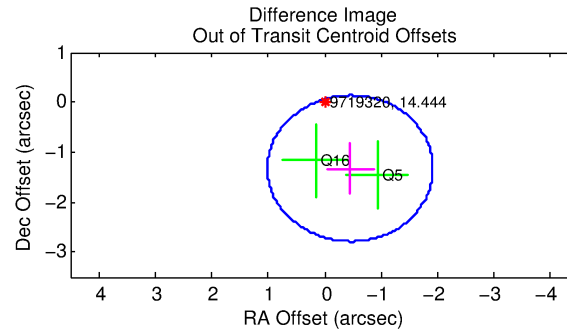
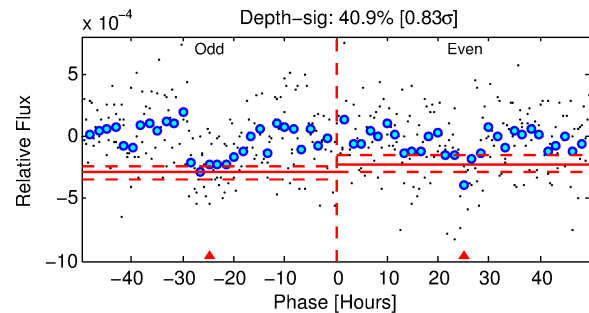
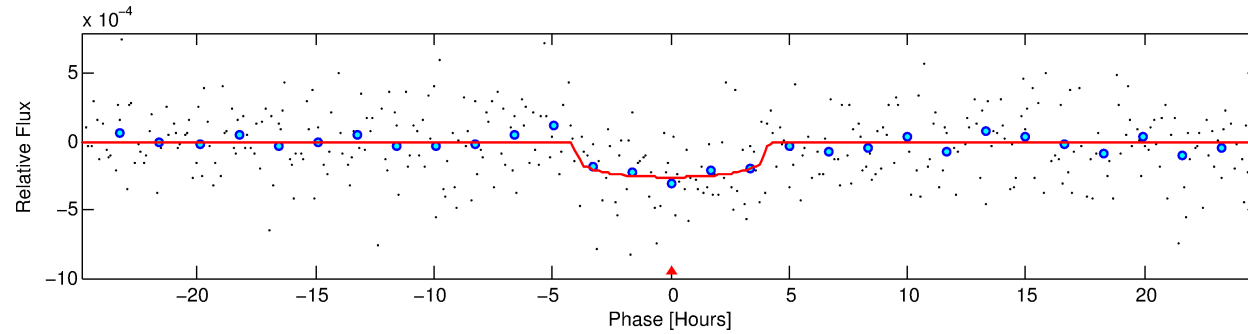
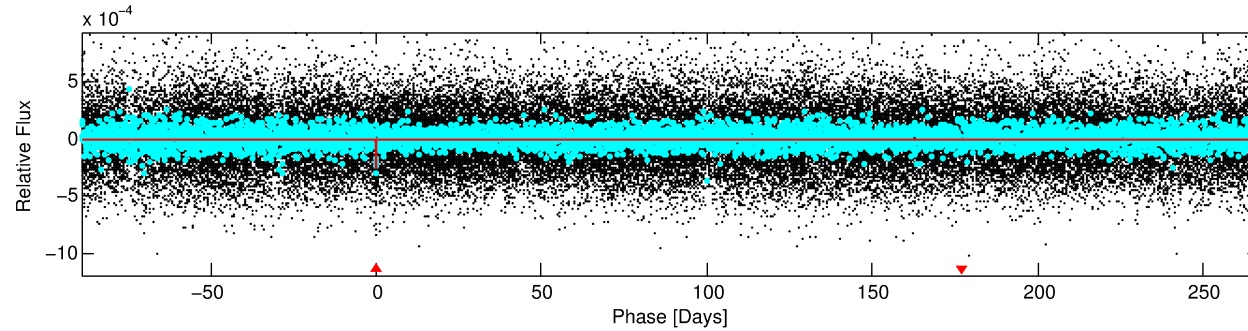
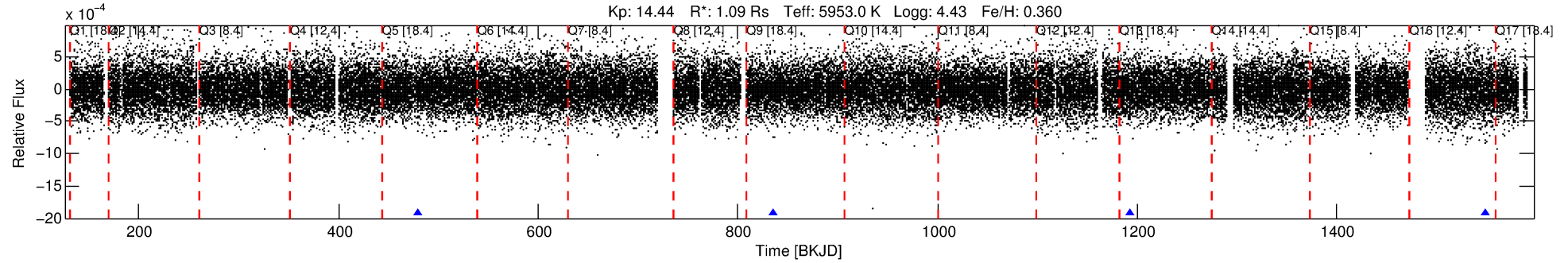
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009719320-01

No Significant Match Found

# DV One-Page Summary

KIC: 9719320 Candidate: 1 of 1 Period: 356.108 d



## DV Fit Results:

Period = 356.10795 [0.01189] d  
Epoch = 479.8352 [0.0214] BKJD  
Rp/R\* = 0.0162 [0.0145]  
a/R\* = 213.78 [855.57]  
b = 0.78 [2.04]  
Seff = 1.24 [0.52]  
Teq = 269 [28] K  
Rp = 1.93 [1.84] Re  
a = 1.0355 [0.2837] AU  
Ag = 20667.24 [38320.75] [0.54 $\sigma$ ]  
Teffp = 4990 [2267] K [2.08 $\sigma$ ]

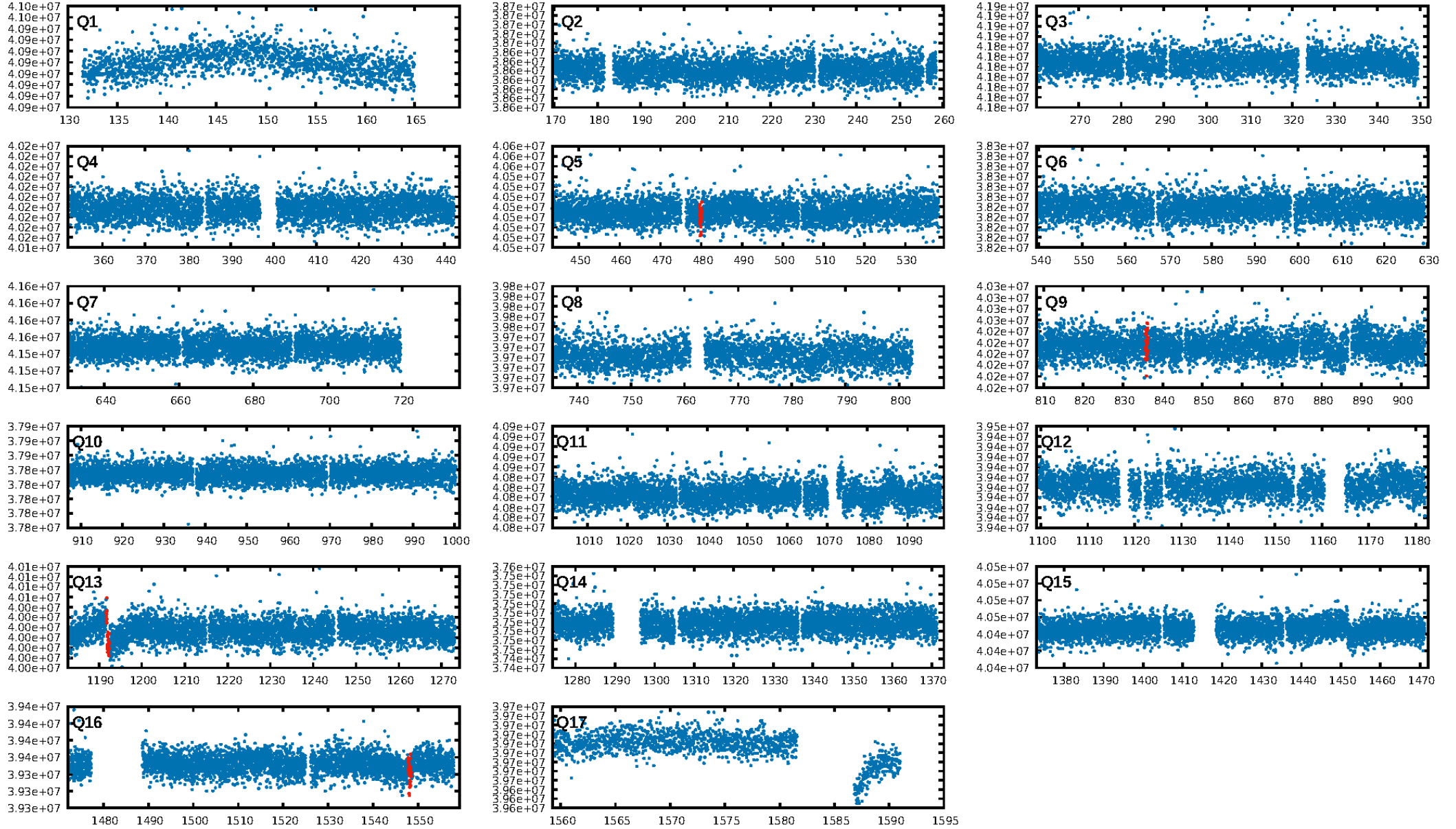
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 11.0%  
ModelChiSquareGof-sig: 96.8%  
Bootstrap-pfa: 1.01e-13  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -1.753  
Centroid-sig: 0.2%  
Centroid-so: 3.656 arcsec [2.02 $\sigma$ ]  
OotOffset-rm: 1.401 arcsec [2.87 $\sigma$ ]  
KicOffset-rm: 1.443 arcsec [2.97 $\sigma$ ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

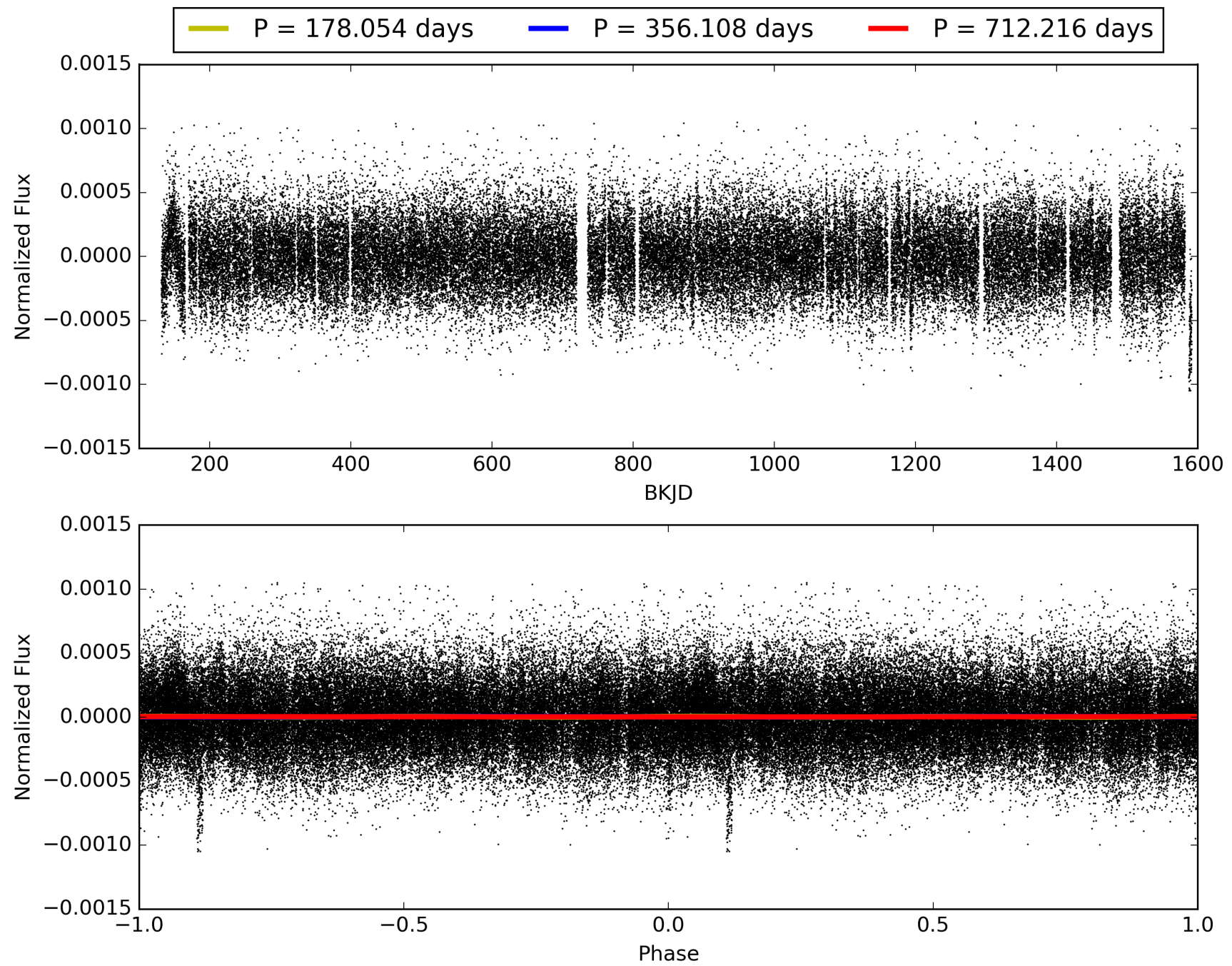
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:15:17 Z

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

# TCE 009719320-01, PDC Light Curves

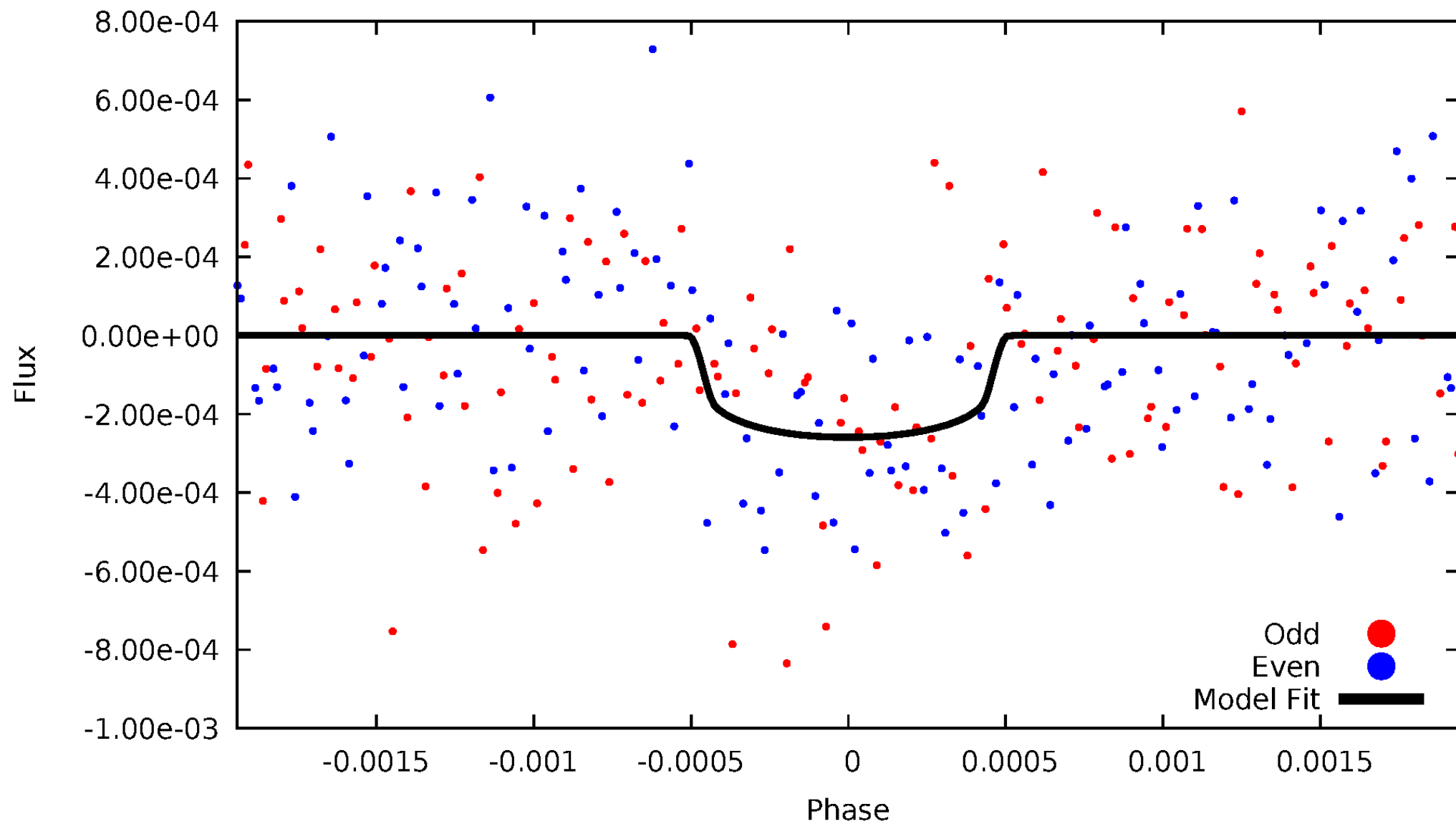


TCE 009719320-01



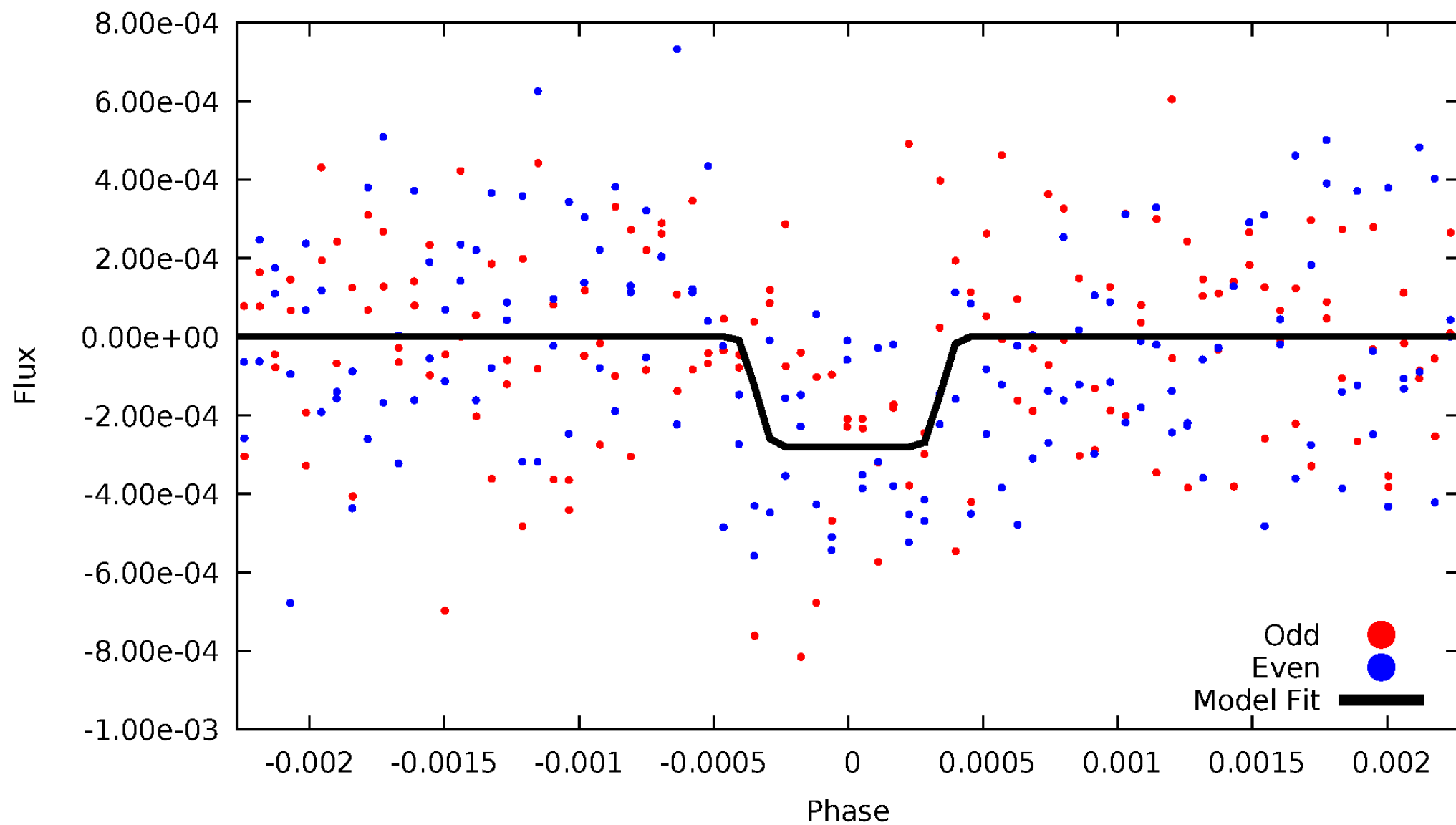
# DV Odd/Even

TCE 009719320-01

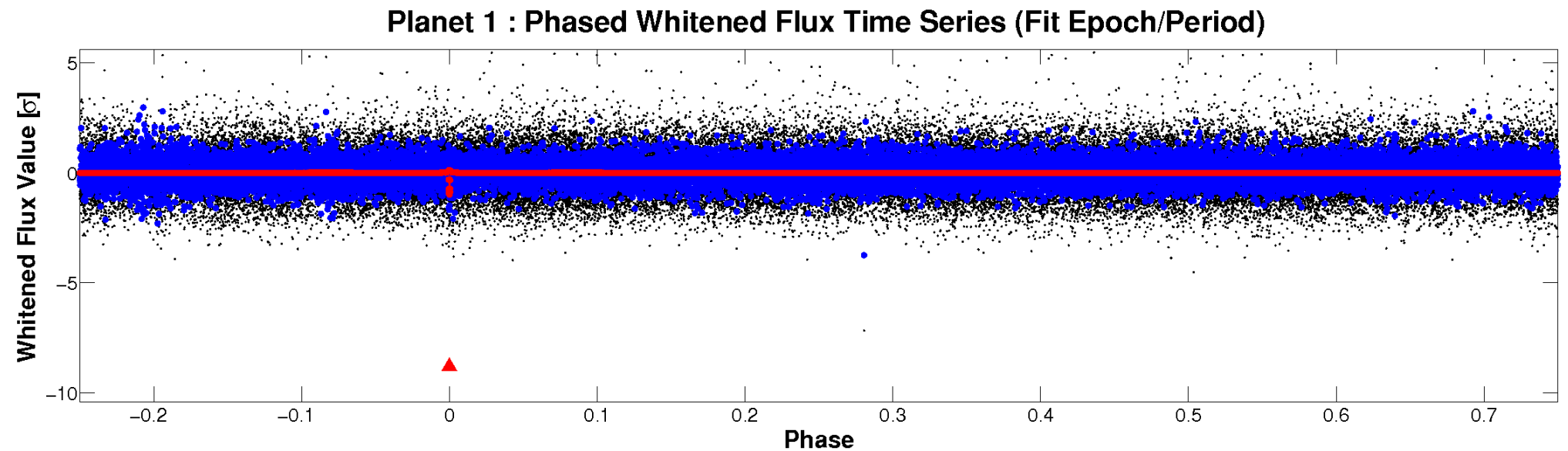
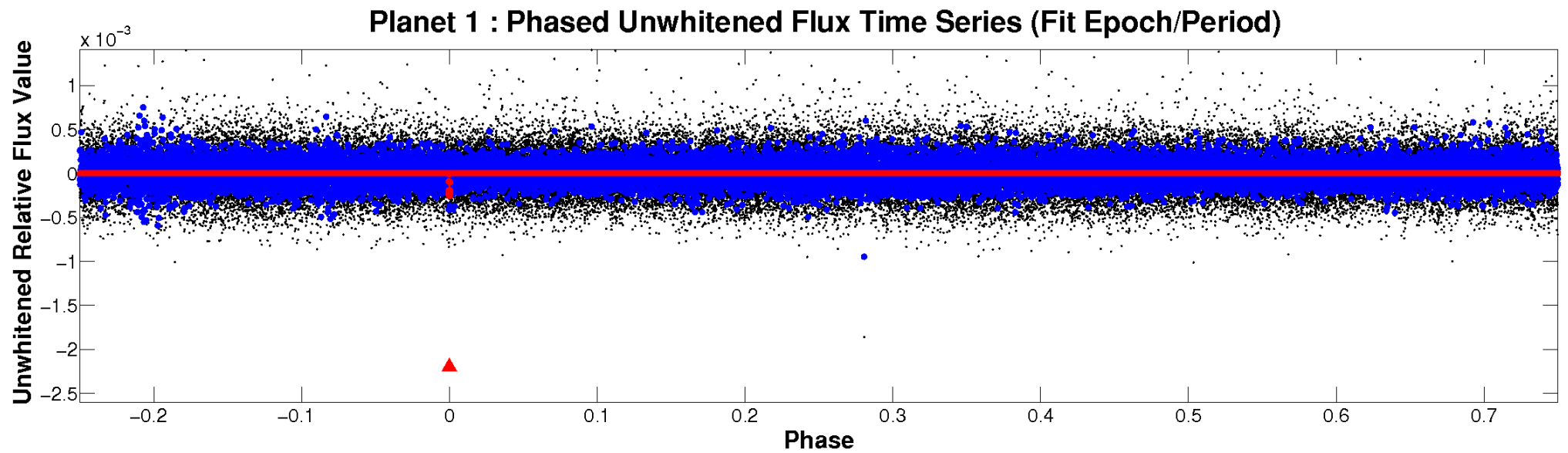


# ALT Odd/Even

TCE 009719320-01



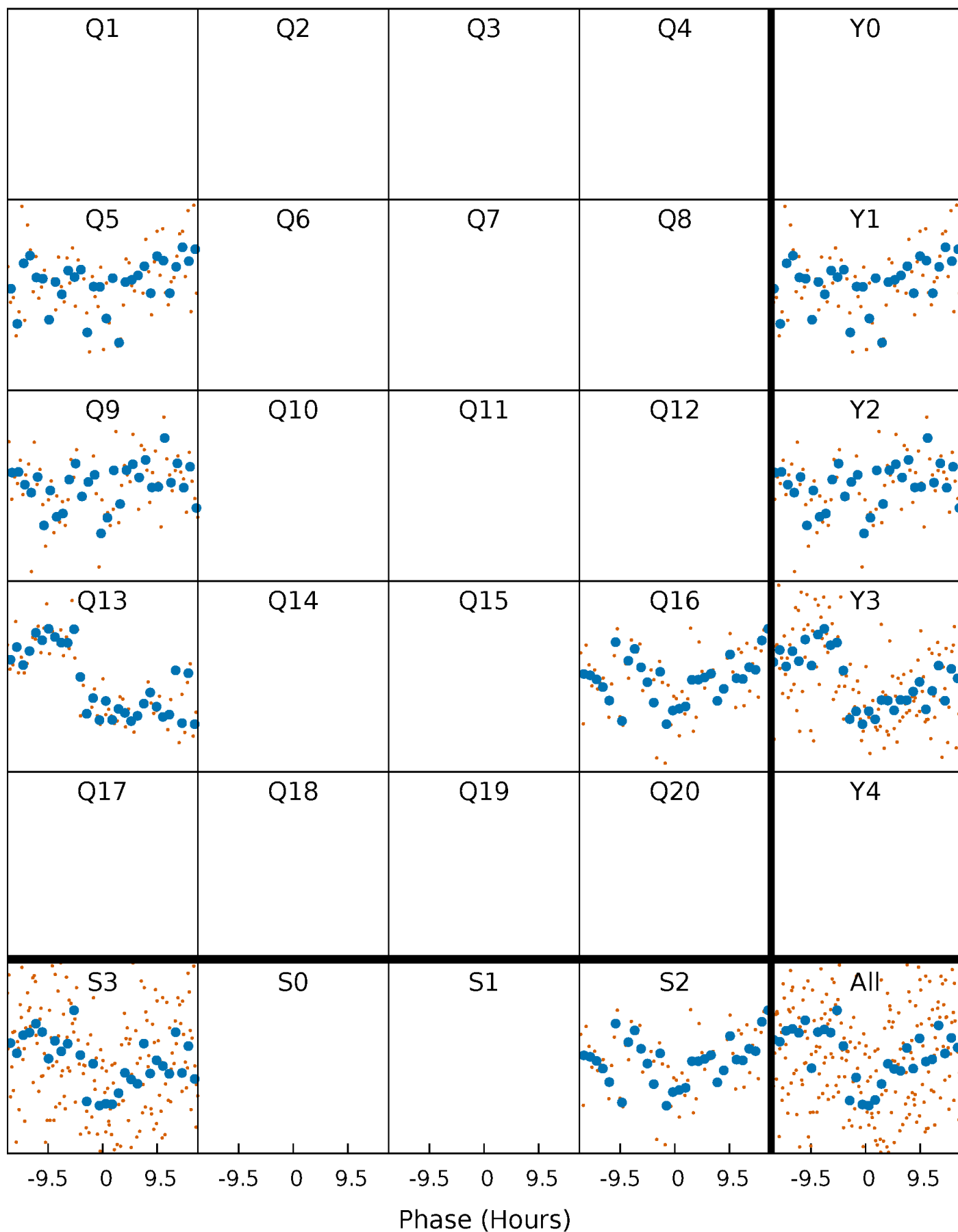
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

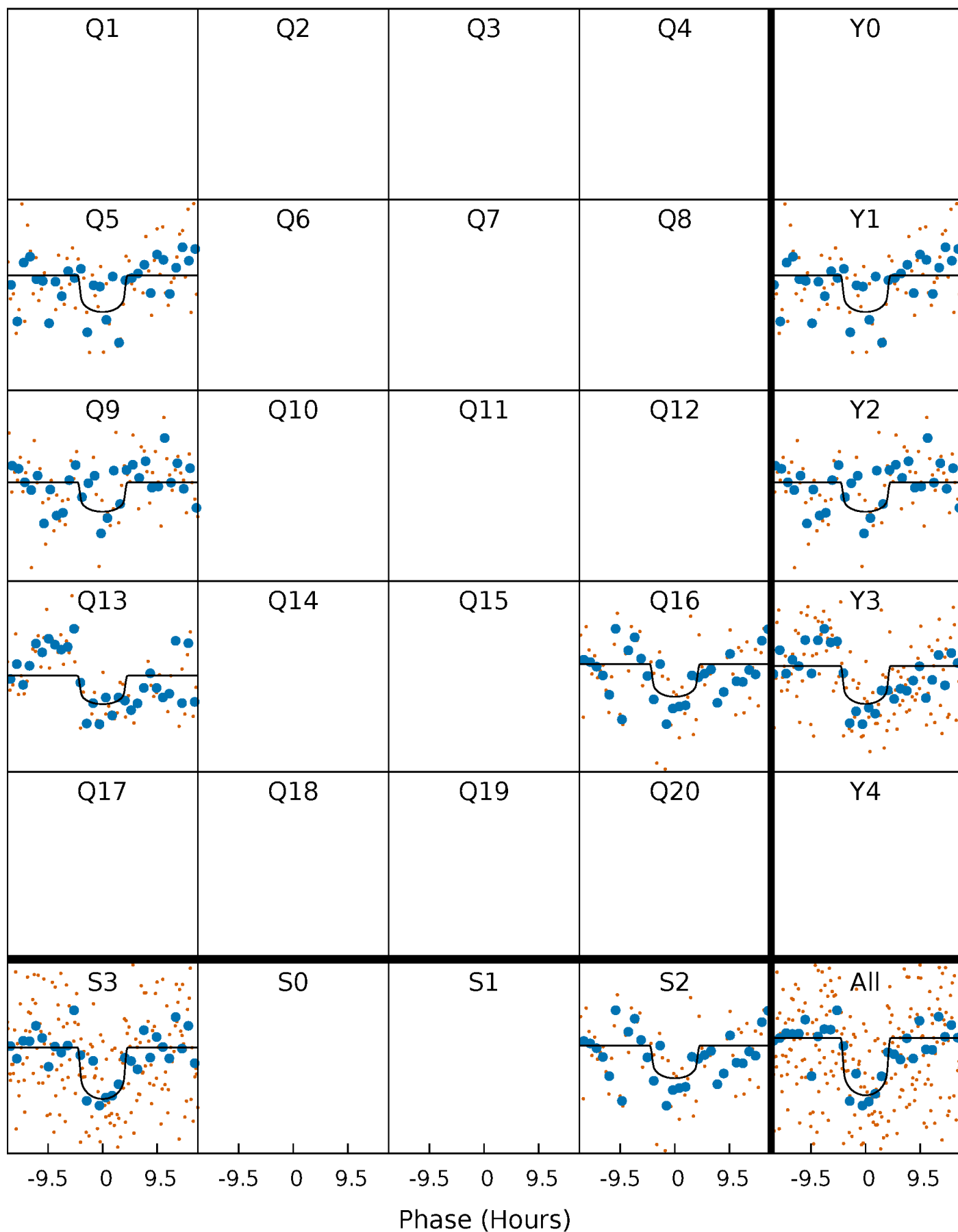
TCE 009719320-01 P=356.107955 Days  $T_0=479.835159$  (BKJD)





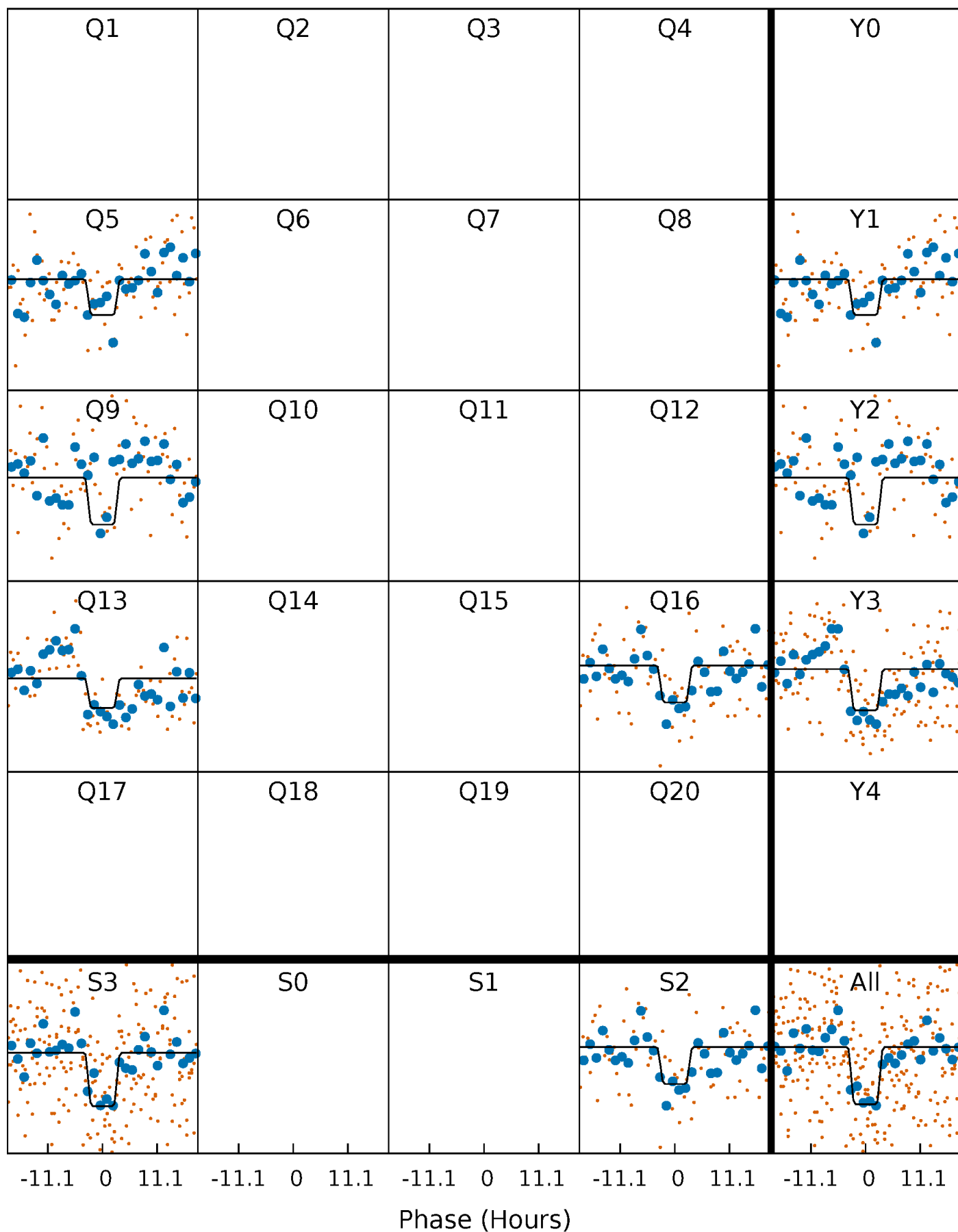
# DV Quarter-Phased Transit Curves

TCE 009719320-01     $P=356.107955$  Days     $T_0=479.835159$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

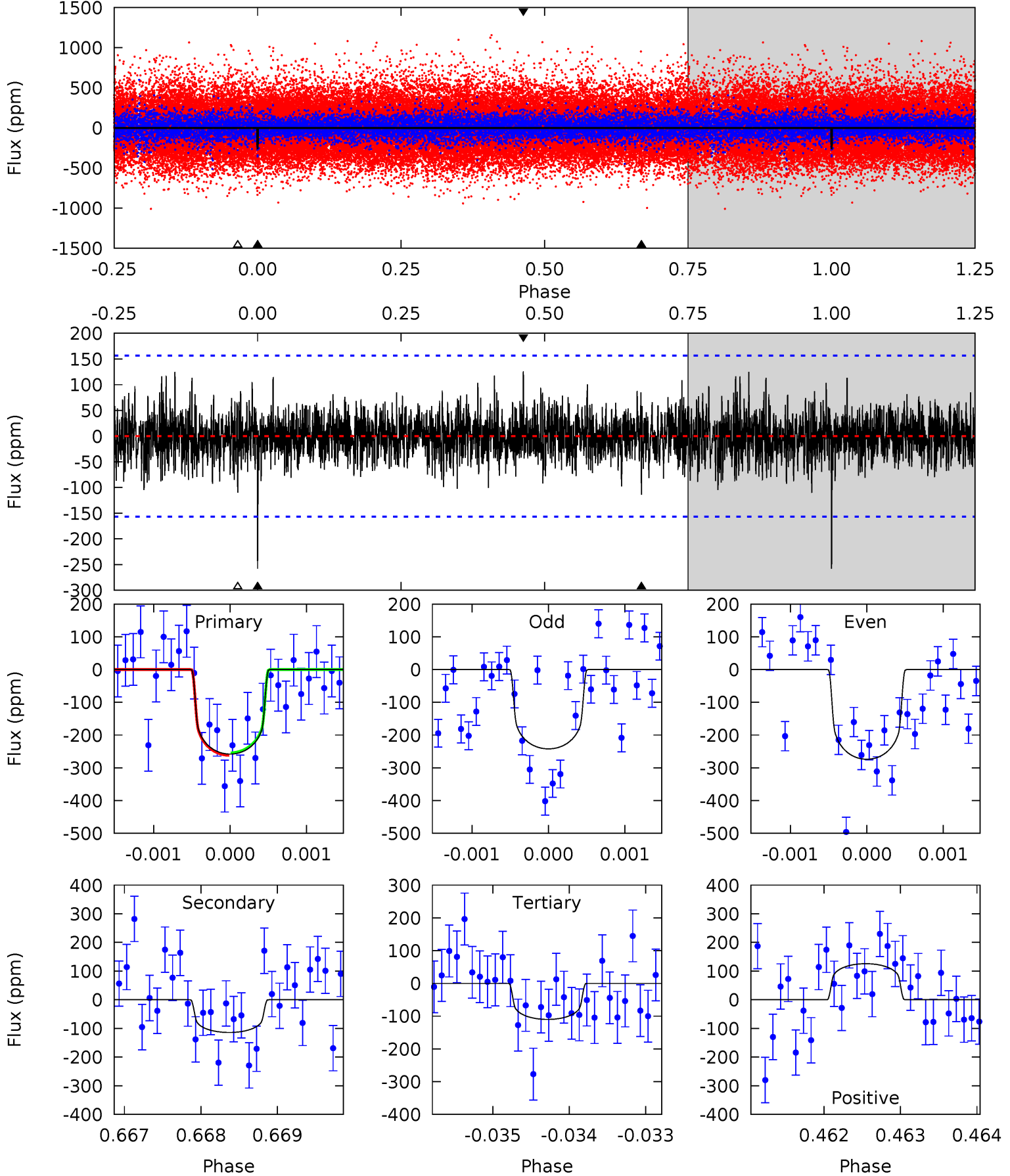
TCE 009719320-01 P=356.095650 Days  $T_0=479.864797$  (BKJD)



# DV Model-Shift Uniqueness Test

009719320-01,  $P = 356.107955$  Days,  $E = 123.727204$  Days

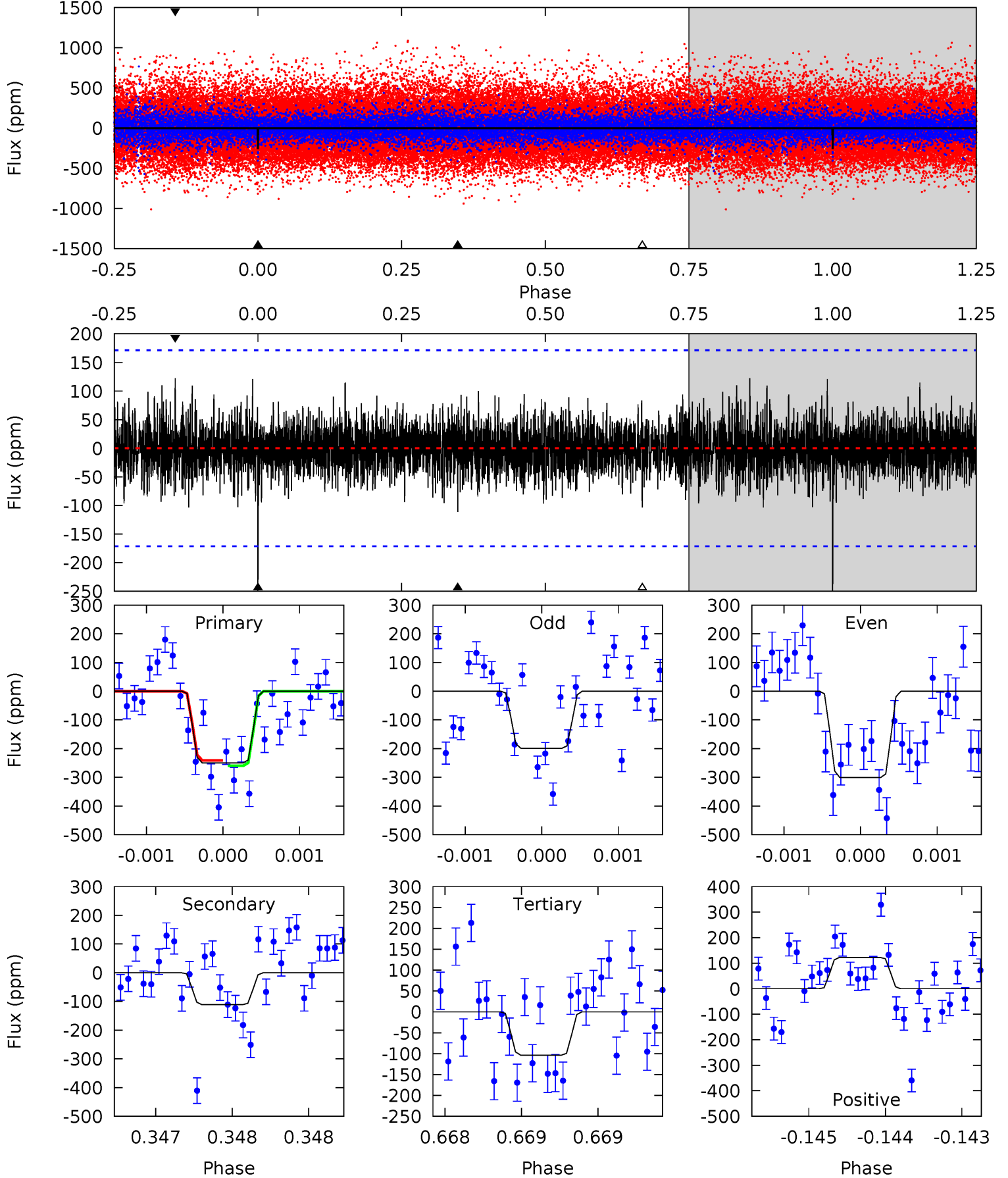
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.98	3.97	3.83	4.38	5.45	3.29	1.11	5.15	4.60	0.14	-0.41	0.56	0.94	0.33	0.14



# Alt Model-Shift Uniqueness Test

009719320-01, P = 356.095650 Days, E = 123.769147 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
7.99	3.55	3.31	3.92	5.48	3.33	0.97	4.68	4.08	0.24	-0.36	1.63	0.93	0.33	0.31



### Stellar Parameters For KIC 009719320

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5953^{+169}_{-211}$	$4.432^{+0.054}_{-0.216}$	$0.360^{+0.100}_{-0.300}$	$1.088^{+0.356}_{-0.111}$	$1.171^{+0.125}_{-0.152}$	$1.279^{+0.366}_{-0.712}$
	+3%/-4%	+1%/-5%	+28%/-83%	+33%/-10%	+11%/-13%	+29%/-56%
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 009719320-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-114 \pm 29$	$2.31^{+1.68}_{-1.38}$	$385^{+32}_{-19}$	$4649^{+2318}_{-848}$	$12224^{+57874}_{-8225}$
Alt.	$-111 \pm 31$	$2.33^{+1.85}_{-1.43}$	$384^{+28}_{-18}$	$4551^{+2734}_{-857}$	$10862^{+73837}_{-7414}$

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

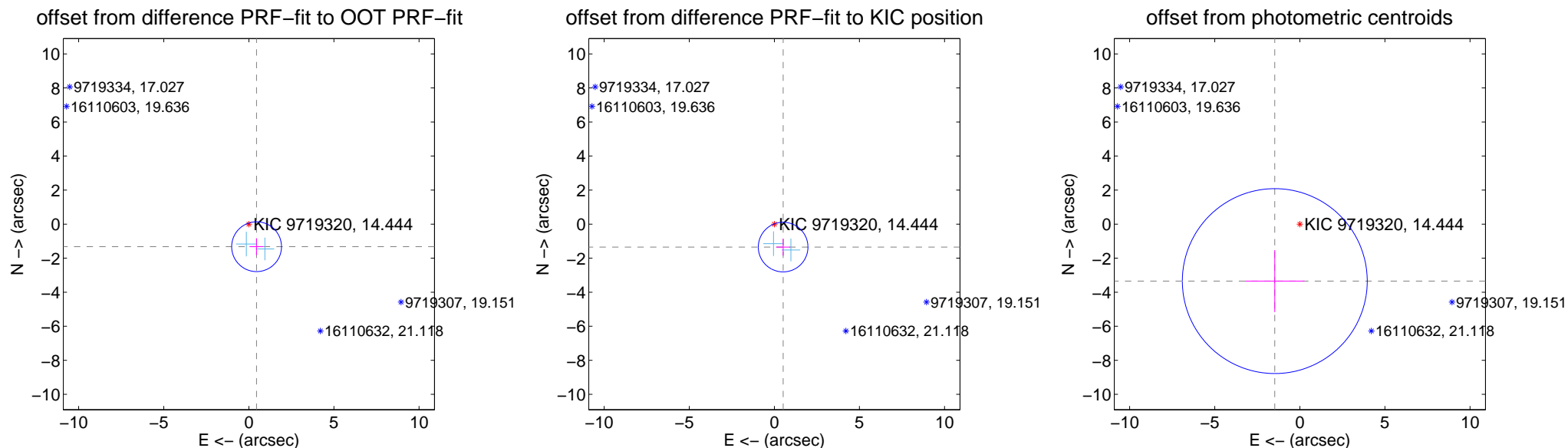
## DV Centroid Data

Supplemental centroid analysis for 009719320-01. Kepler magnitude: 14.44. Transit SNR 7.00

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.401 \pm 0.488$	2.87	$-0.454 \pm 0.413$	$-1.325 \pm 0.496$
PRF-fit source offset from KIC position	$1.443 \pm 0.486$	2.97	$-0.516 \pm 0.413$	$-1.348 \pm 0.496$
photometric centroid source offset	$3.66 \pm 1.81$	2.02	$1.47 \pm 1.74$	$-3.35 \pm 1.82$



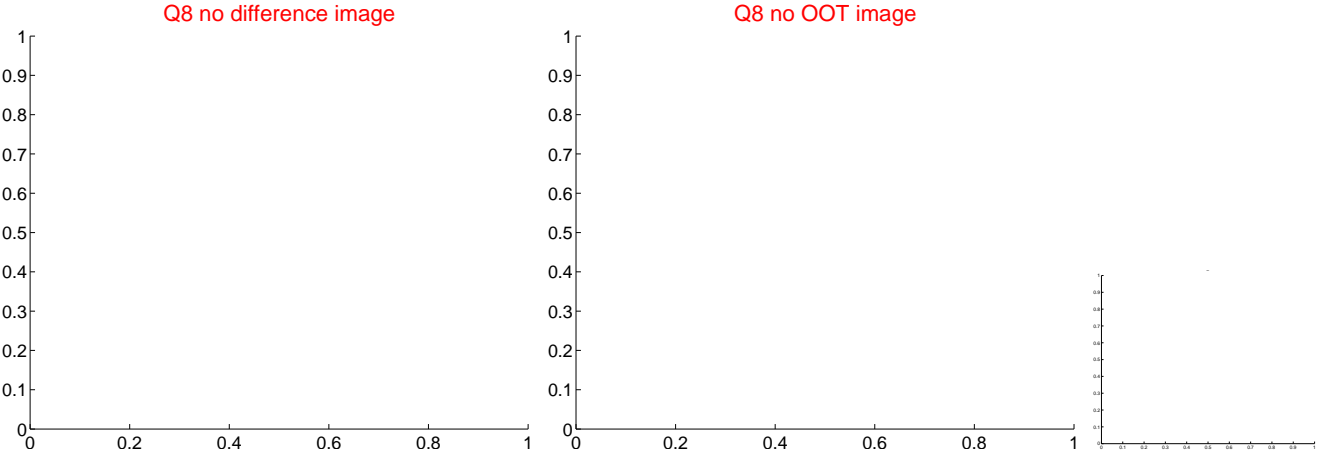
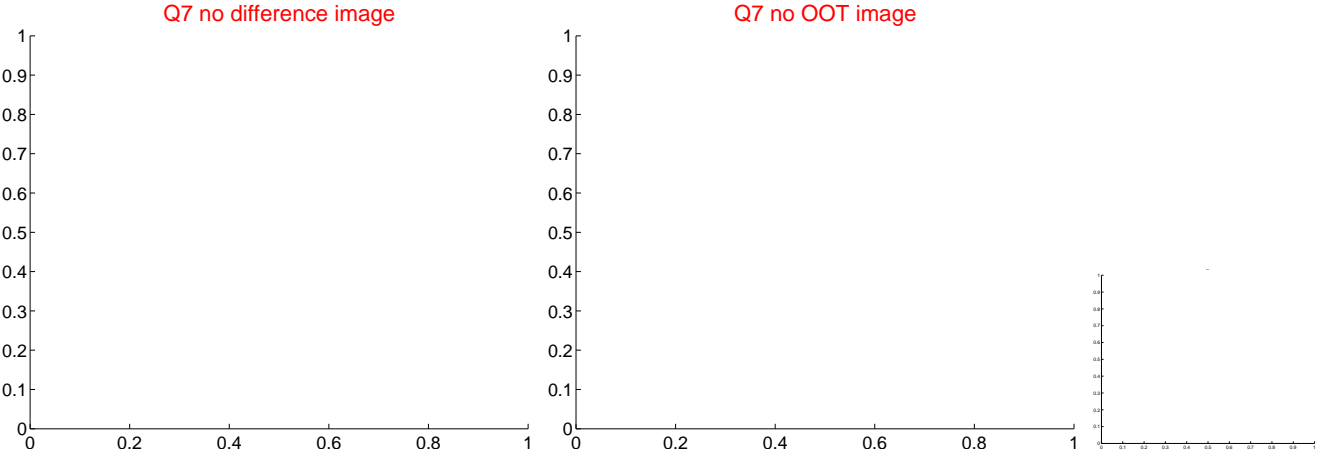
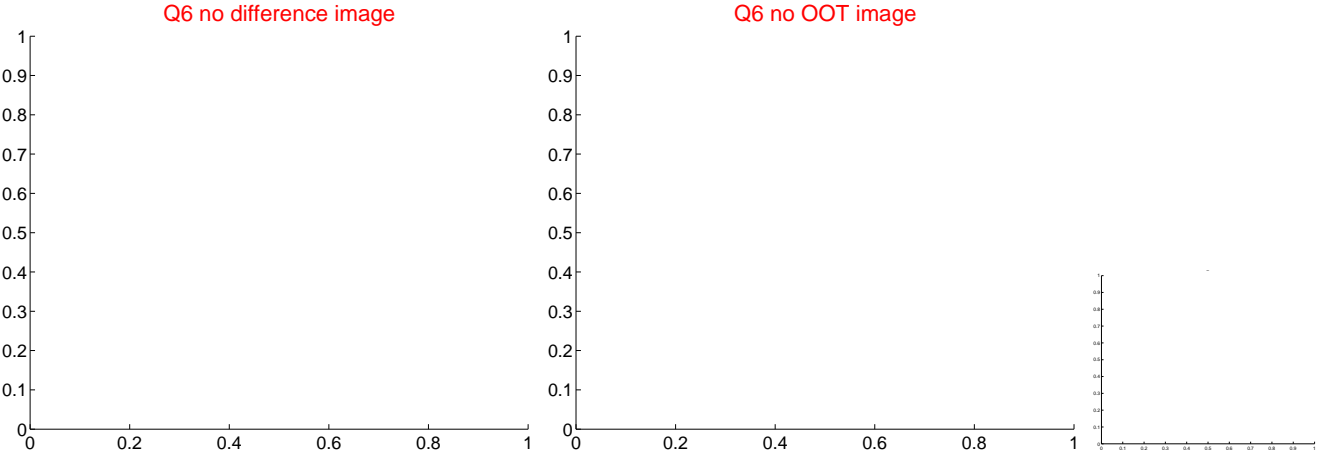
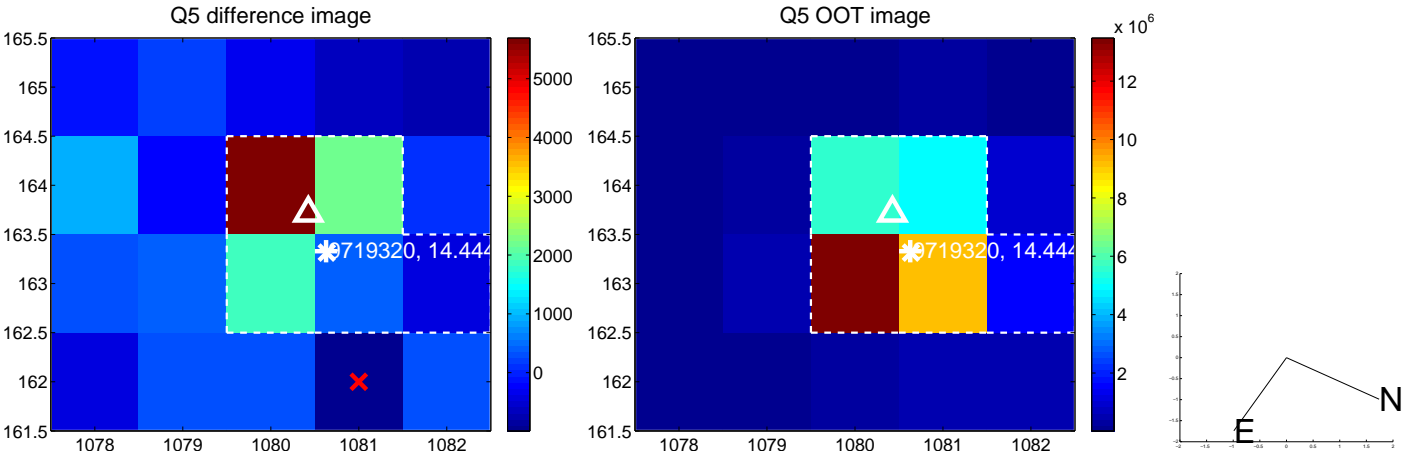
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

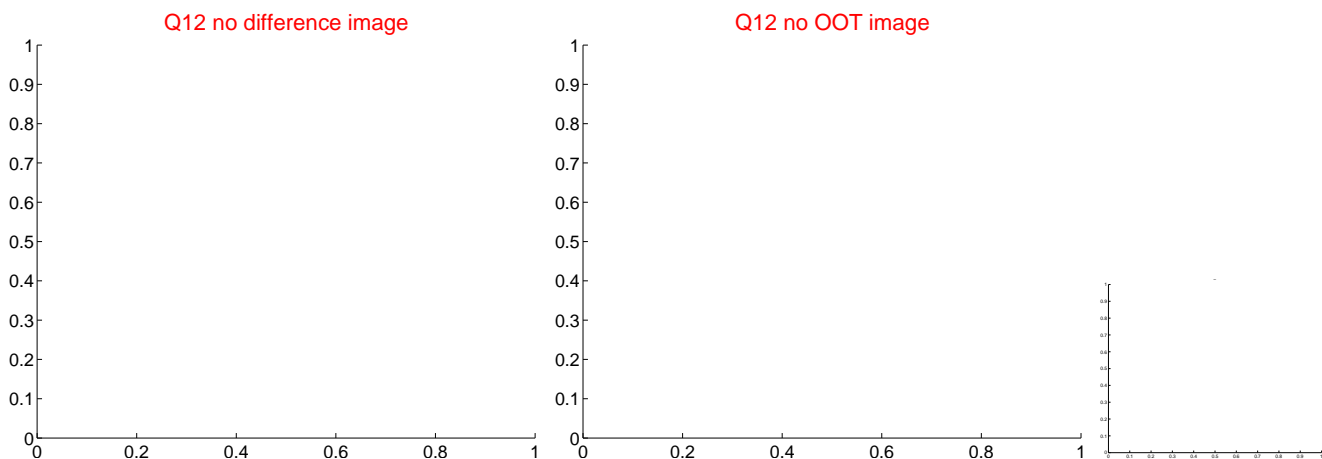
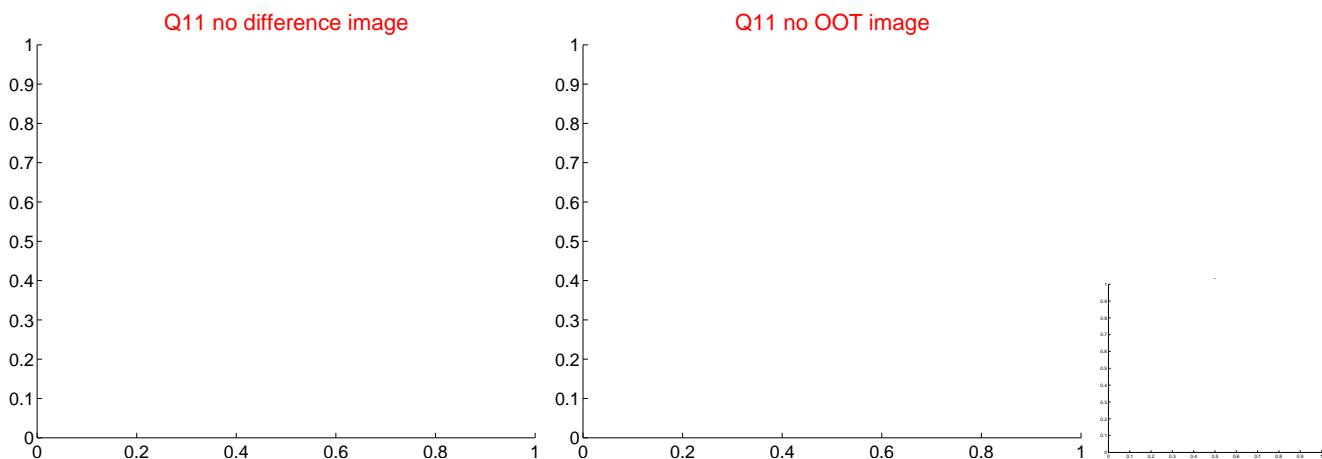
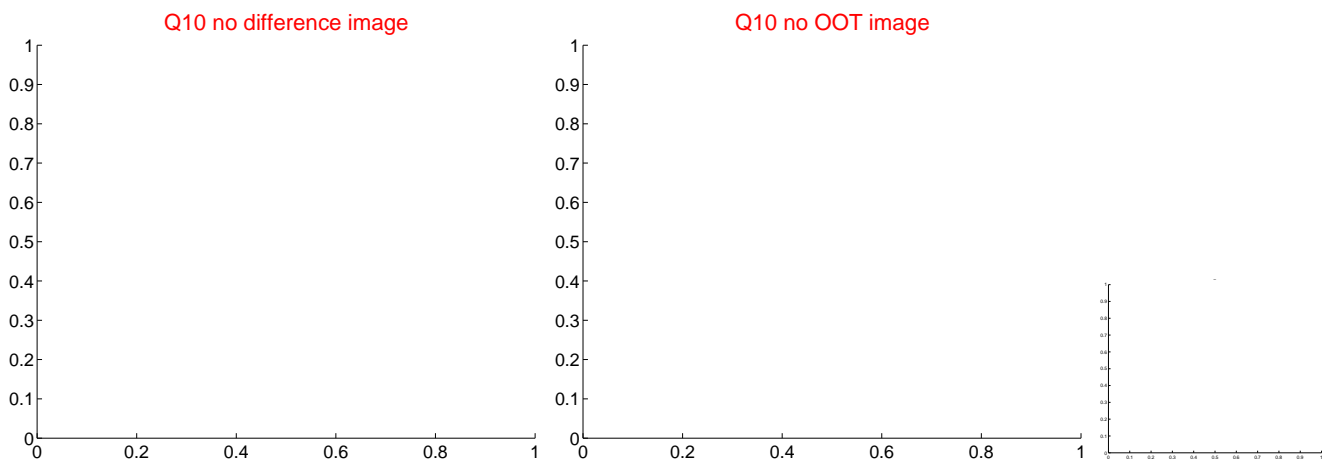
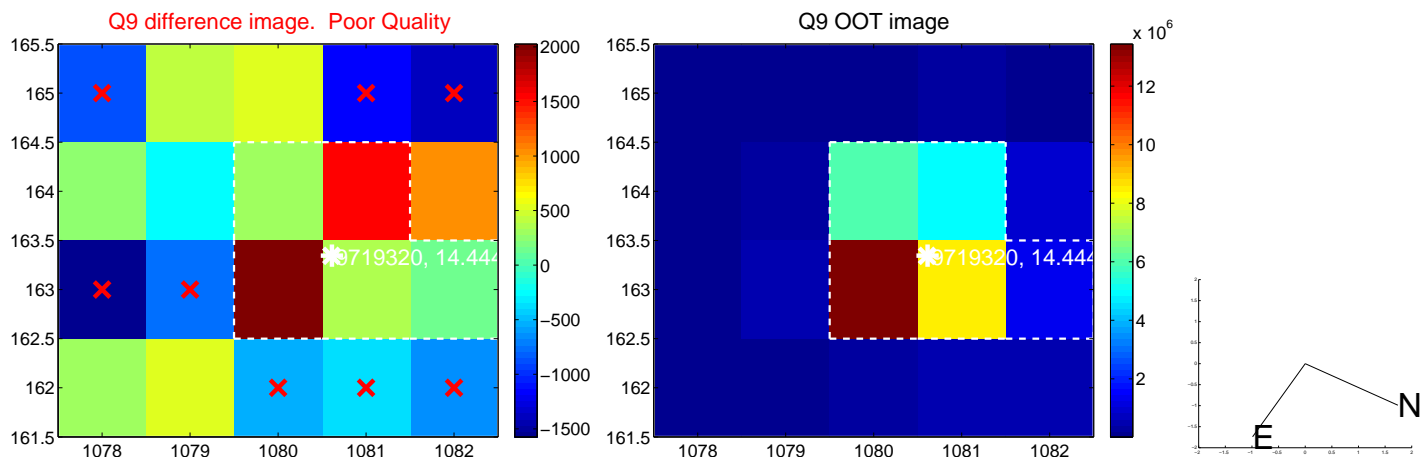




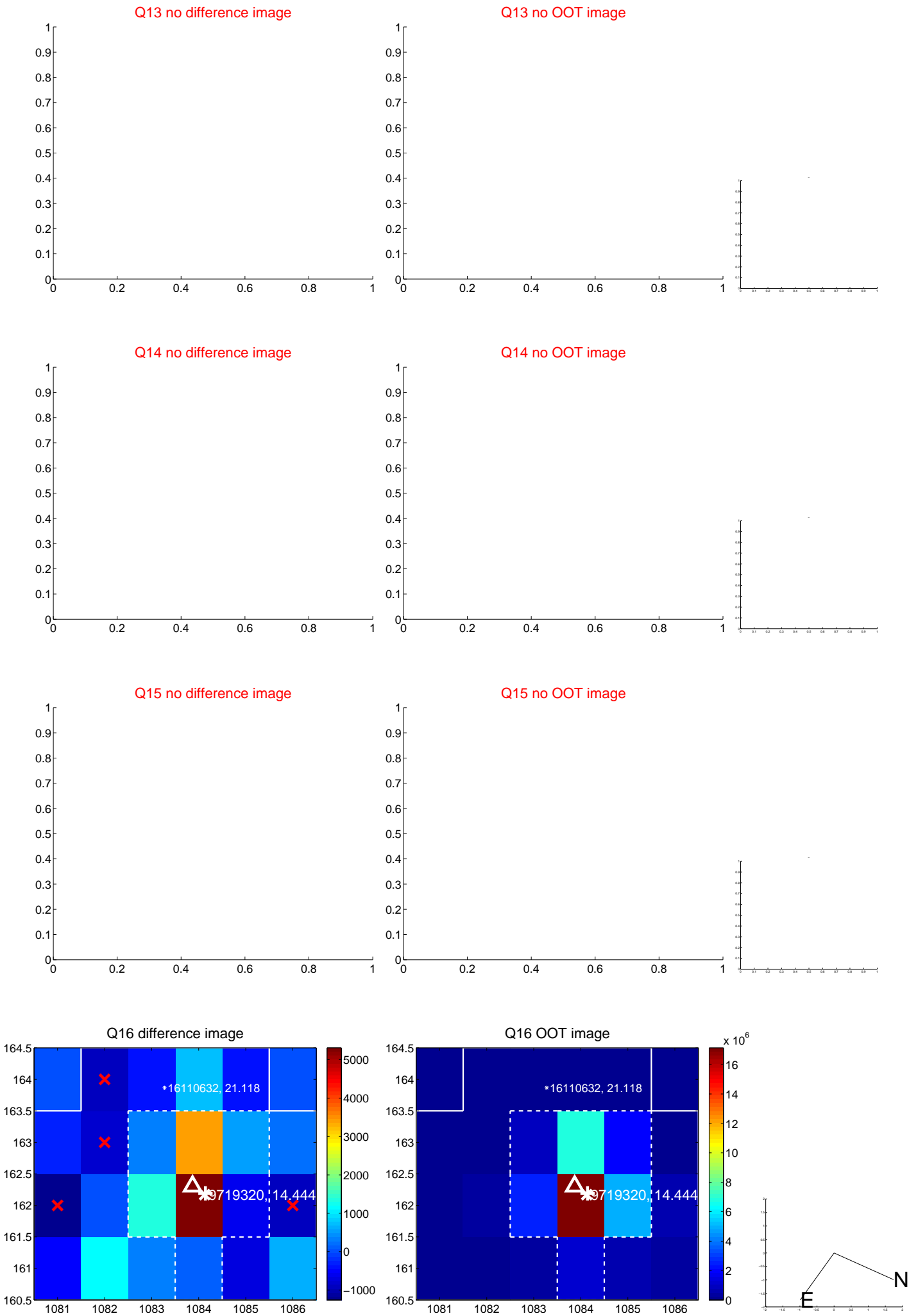
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



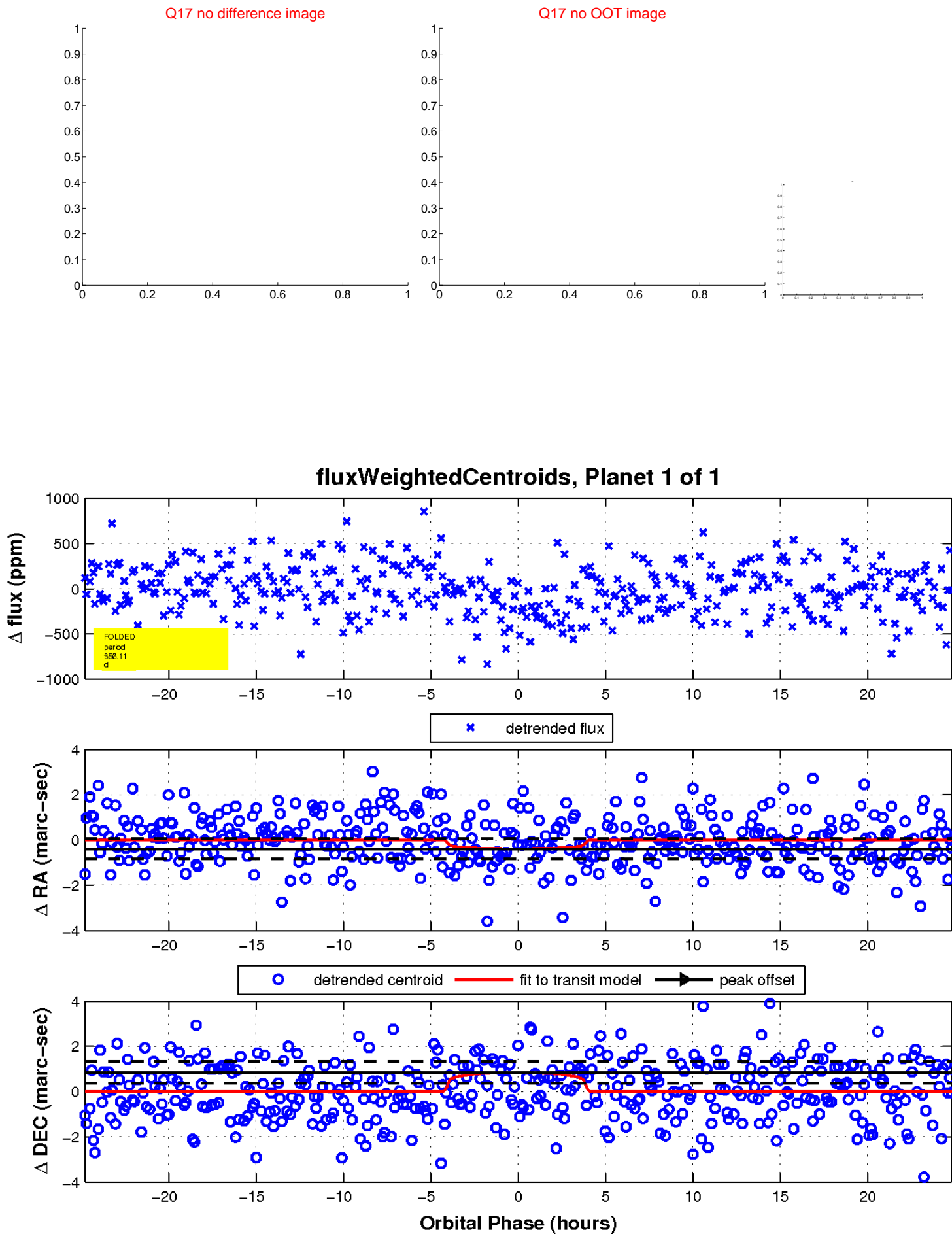
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

