

# KIC 010747501

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010747501-01	OBS	4891.01	4.730809	135.207560	190.8	3.305	10.9	9.9	0.91	5941	1.49	304.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010747501-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT

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

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

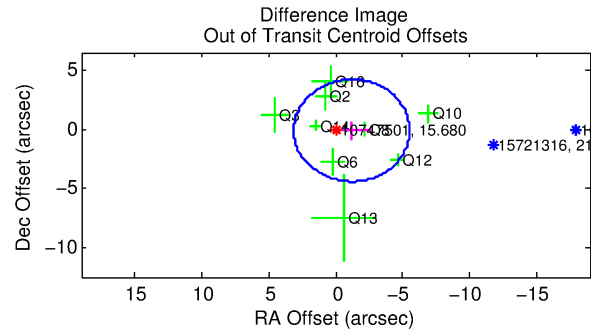
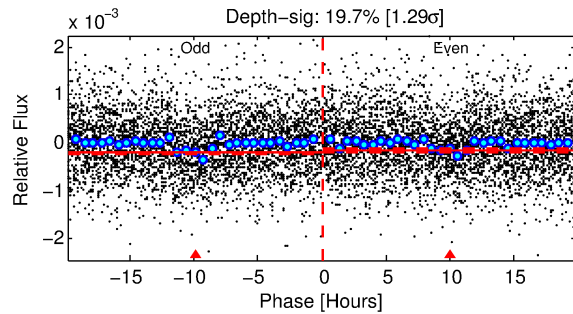
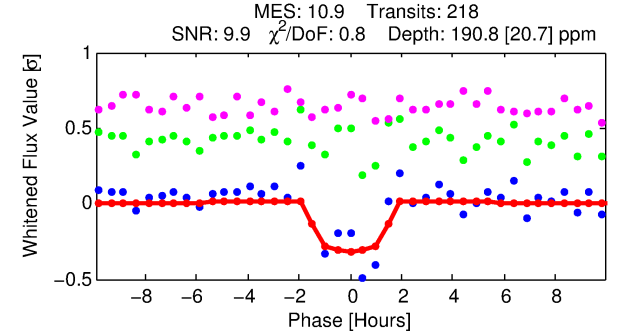
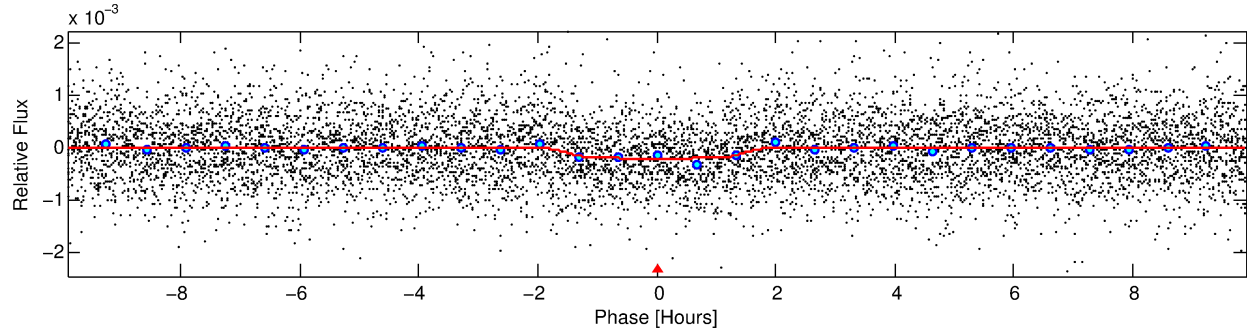
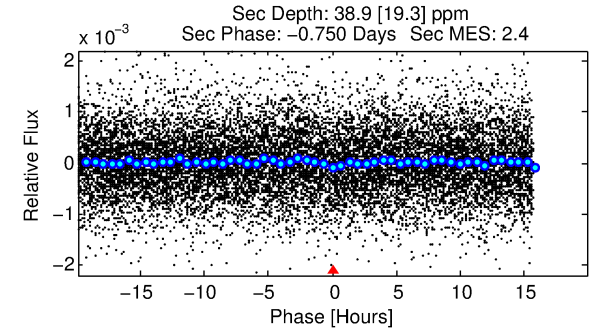
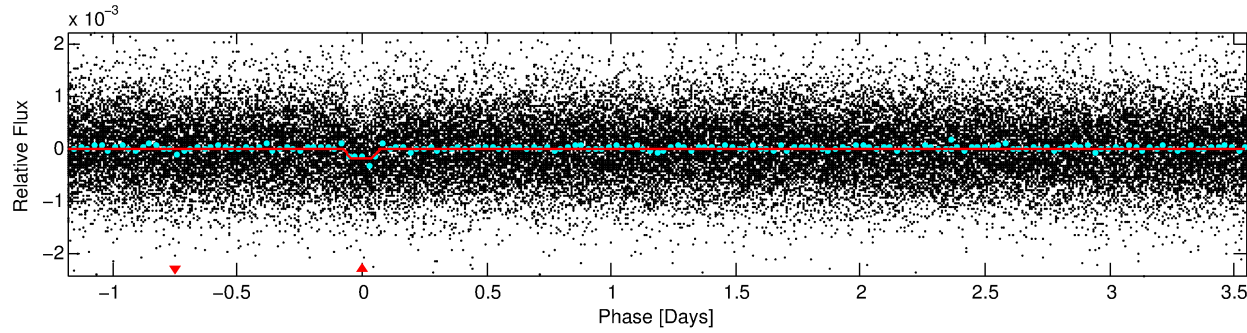
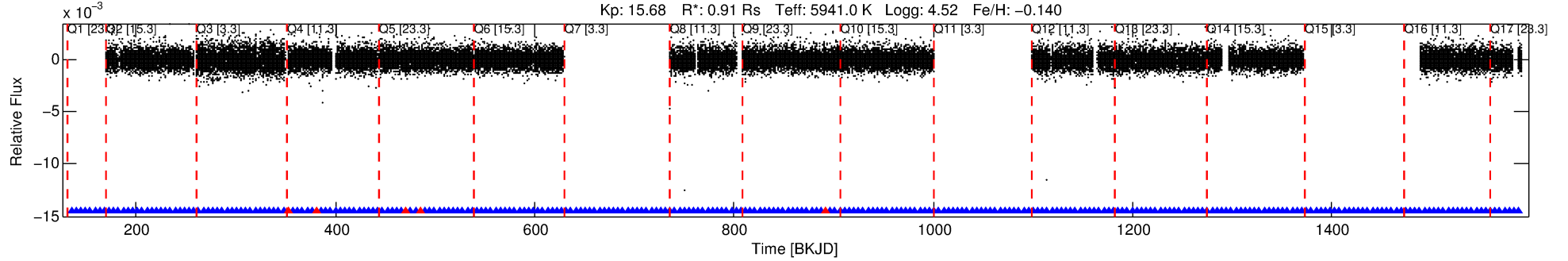
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010747501-01

No Significant Match Found

# DV One-Page Summary

KIC: 10747501 Candidate: 1 of 1 Period: 4.731 d  
KOI: K04891.01 Corr: 0.949



## DV Fit Results:

Period = 4.73081 [0.00004] d  
Epoch = 135.2076 [0.0056] BKJD  
Rp/R\* = 0.0150 [0.0074]  
b = 0.90 [0.51]  
Seff = 304.39 [124.13]  
Teff = 1065 [109] K  
Rp = 1.49 [0.86] Re  
a = 0.0552 [0.0145] AU  
Ag = 29.23 [34.03] [0.83σ]  
Teffp = 3829 [1059] K [2.60σ]

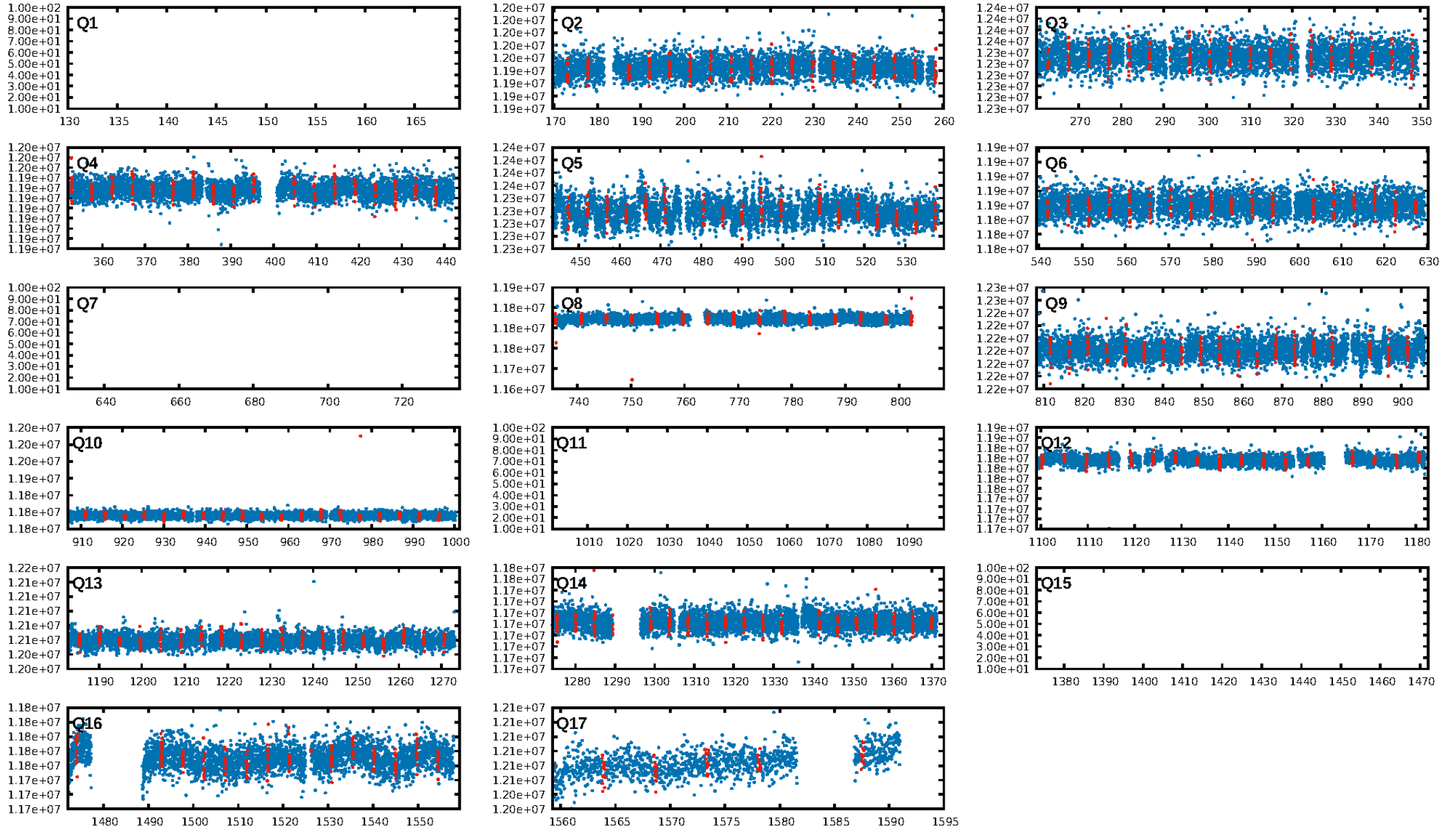
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.90e-27  
RollingBand-fgt: 0.98 [207/212]  
GhostDiagnostic-chr: -13.44  
Centroid-sig: 47.4%  
Centroid-so: 1.489 arcsec [0.97σ]  
OotOffset-rm: 1.199 arcsec [0.83σ]  
KicOffset-rm: 1.072 arcsec [0.76σ]  
OotOffset-st: 4/1/3/1 [9]  
KicOffset-st: 4/1/3/1 [9]  
DiffImageQuality-fgm: 0.44 [4/9]  
DiffImageOverlap-fno: 1.00 [13/13]

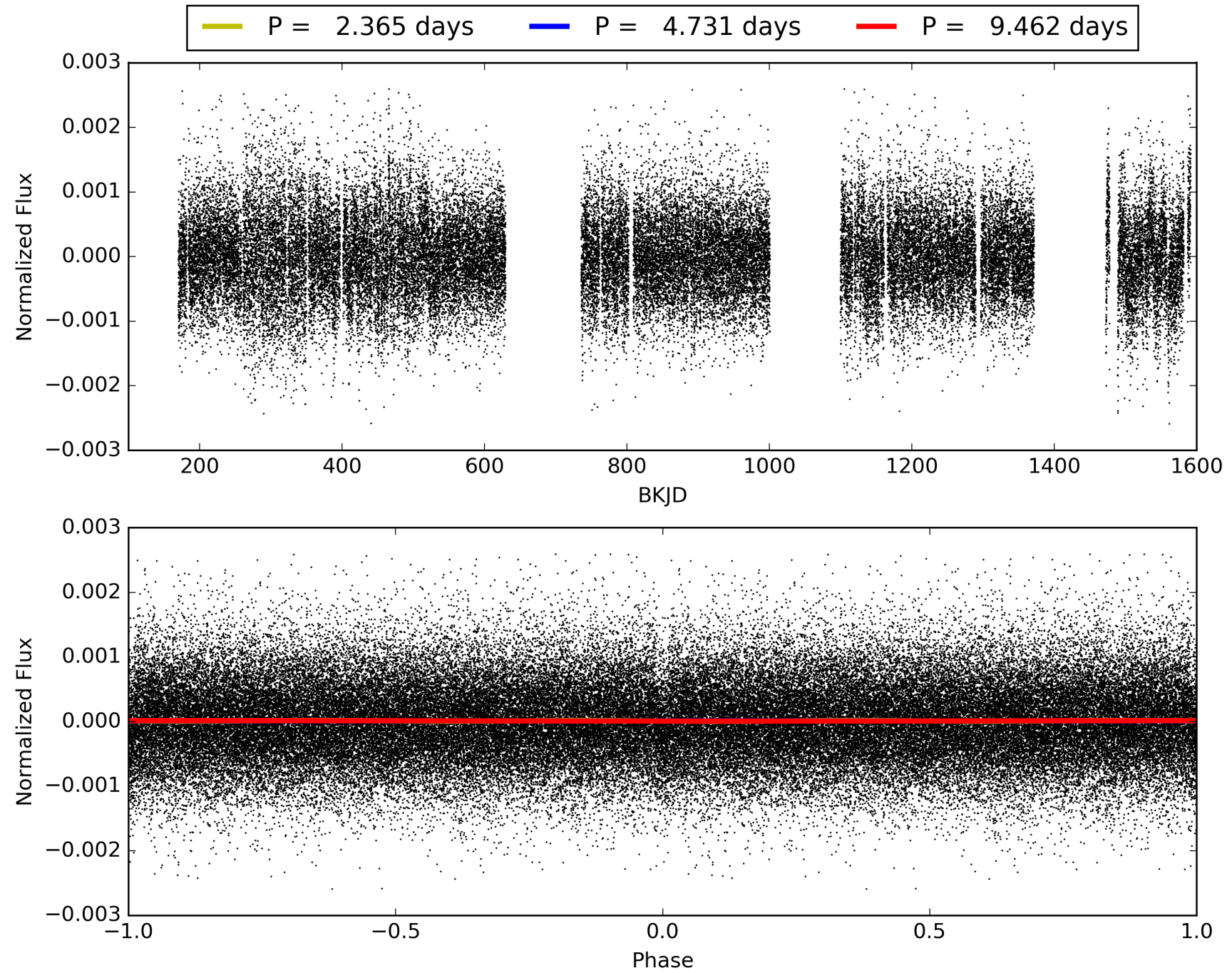
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:37:47 Z

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

# TCE 010747501-01, PDC Light Curves

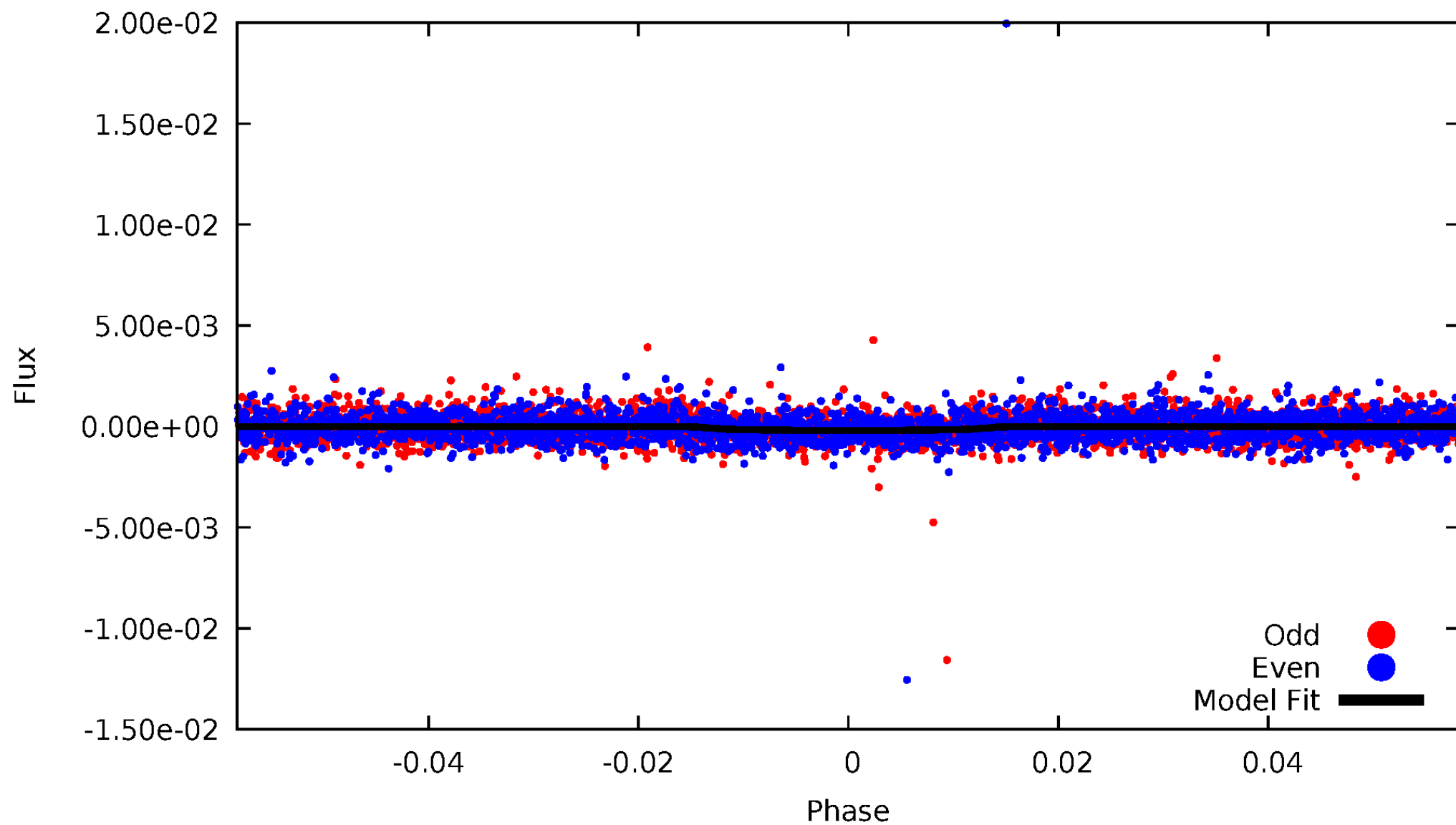


TCE 010747501-01



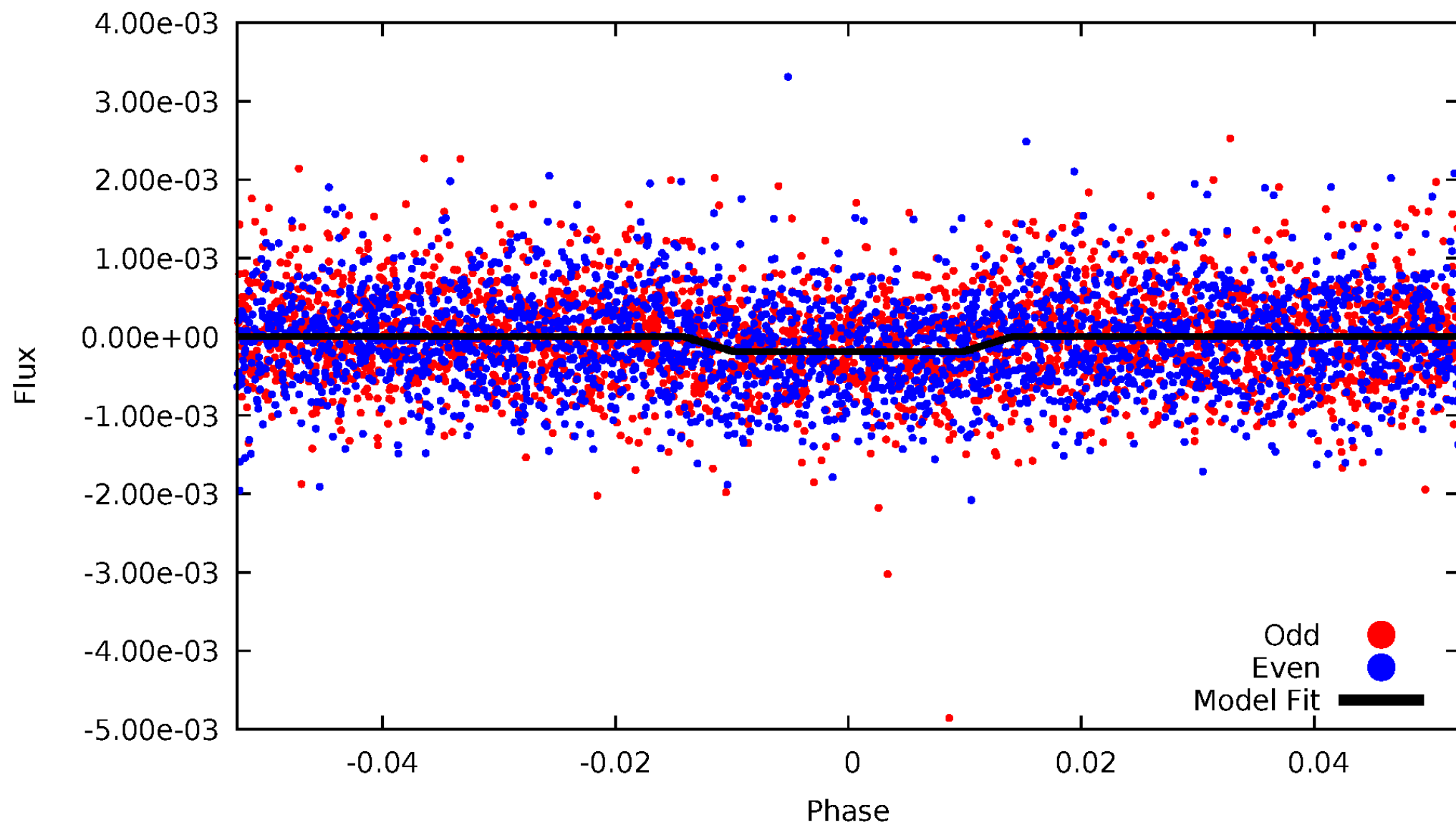
# DV Odd/Even

TCE 010747501-01



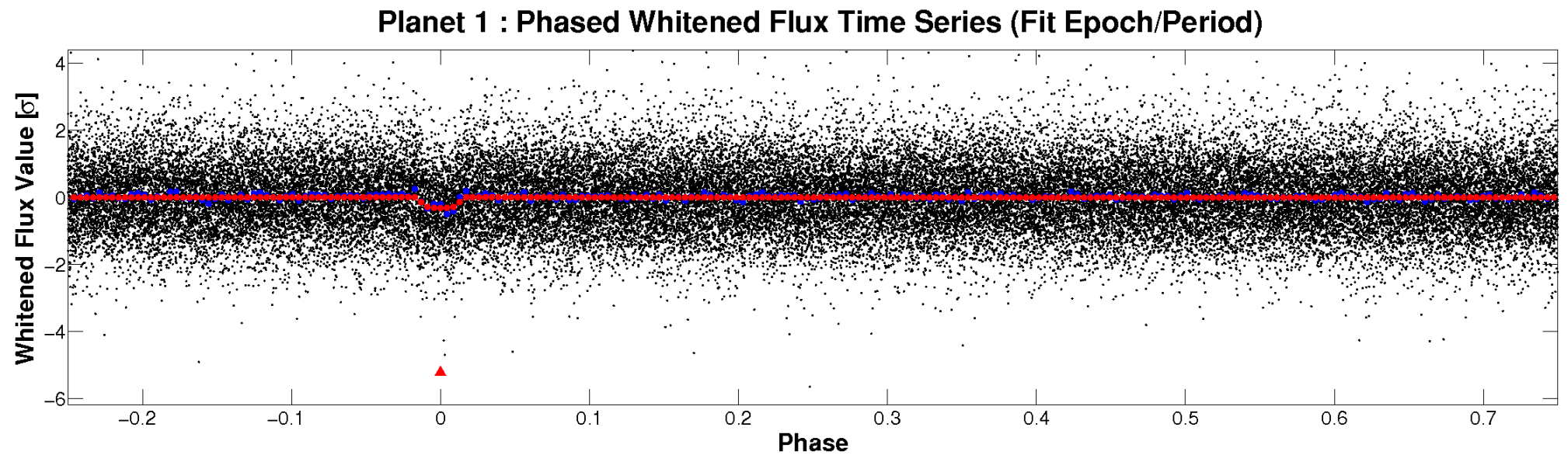
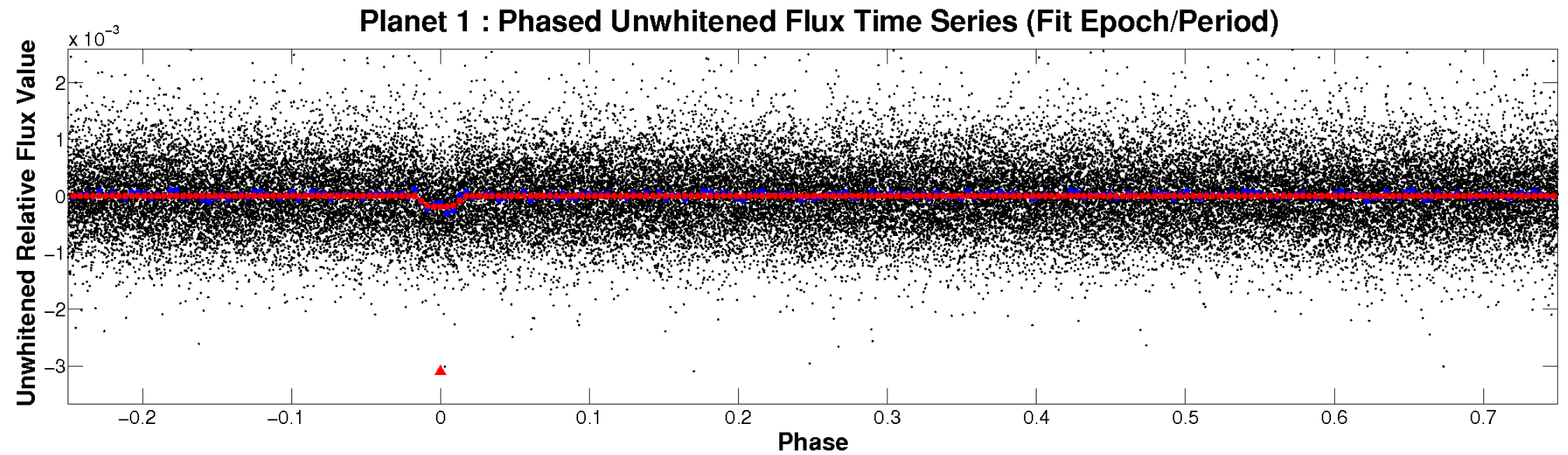
# ALT Odd/Even

TCE 010747501-01



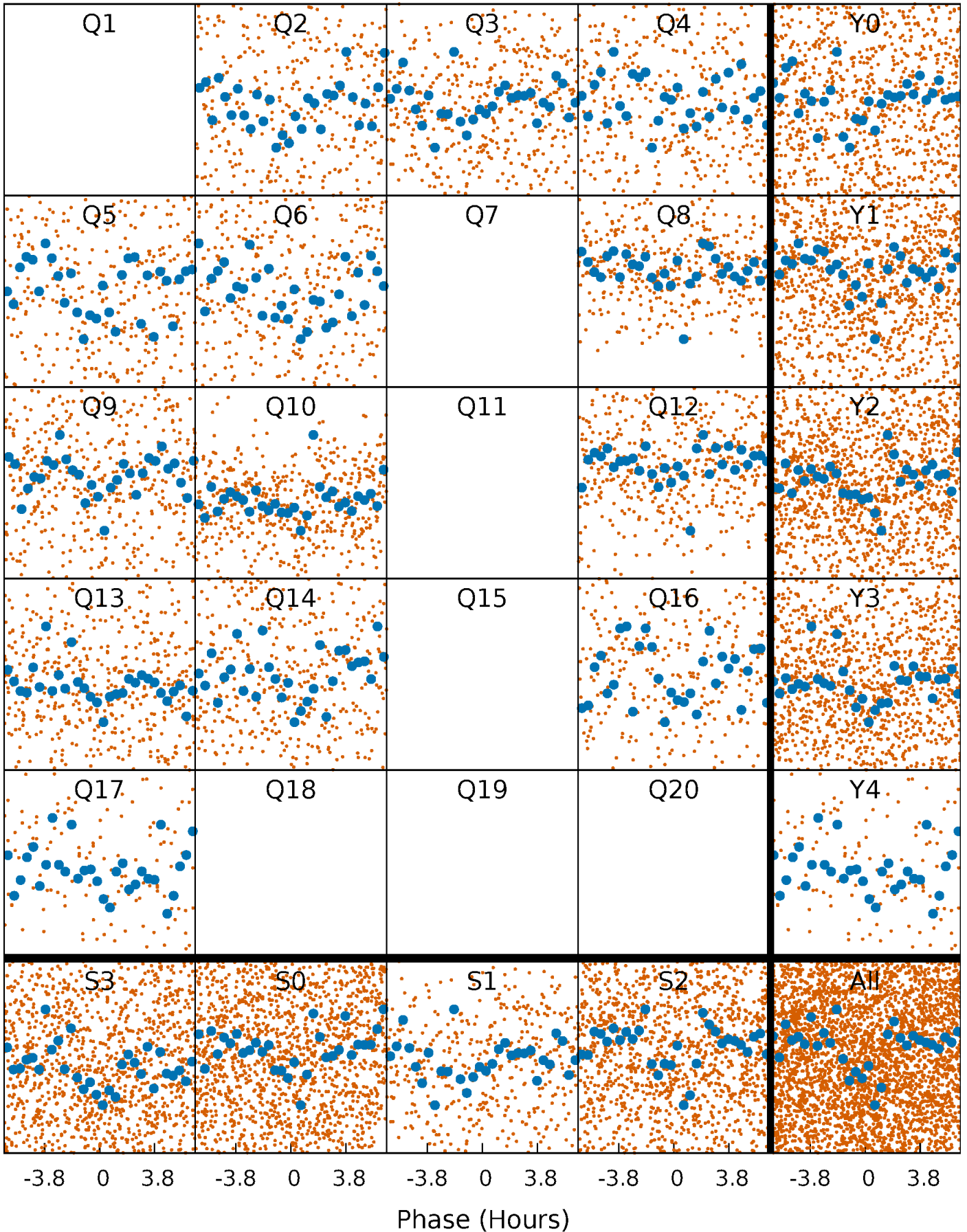


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

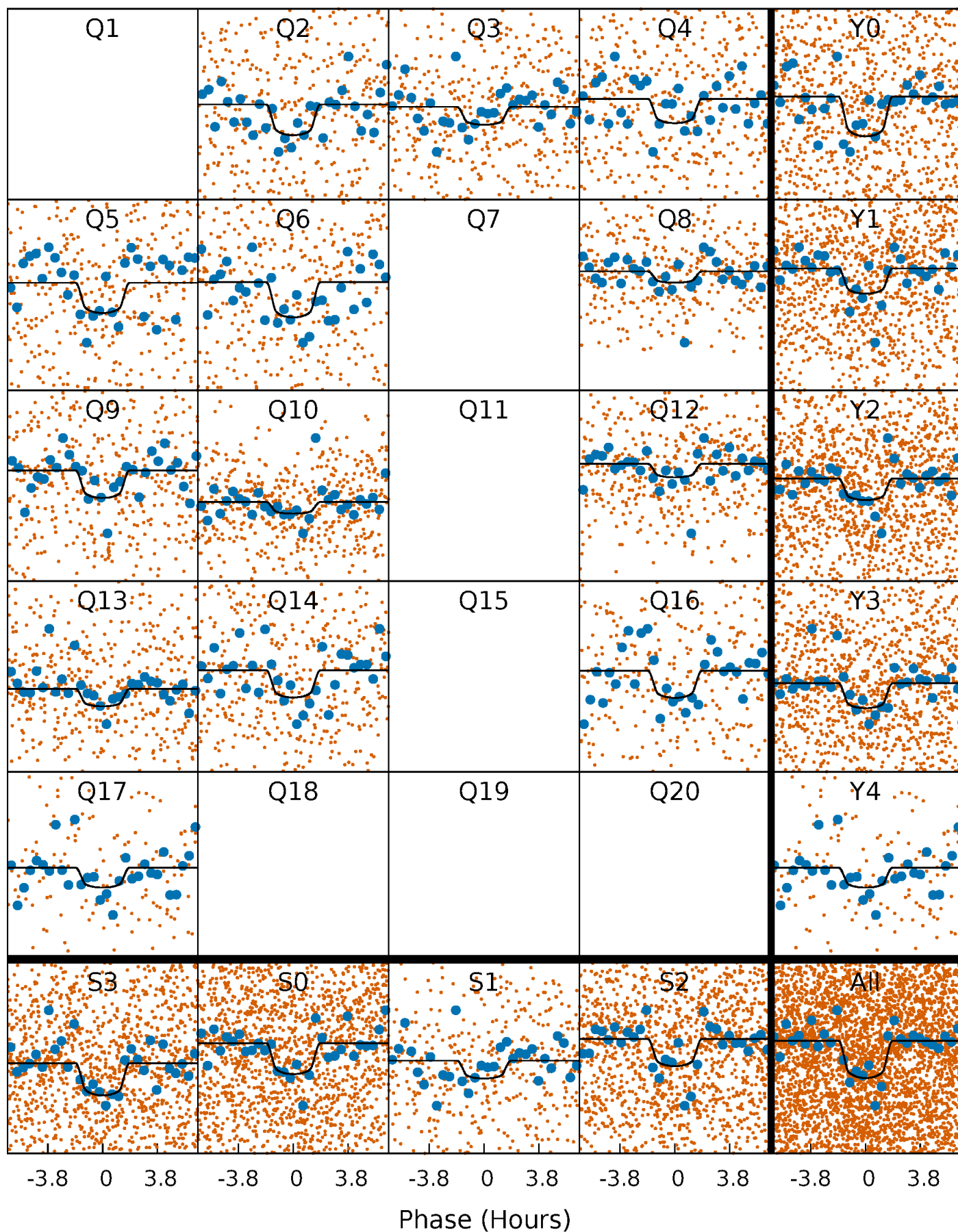
TCE 010747501-01 P= 4.730809 Days  $T_0=135.207560$  (BKJD)





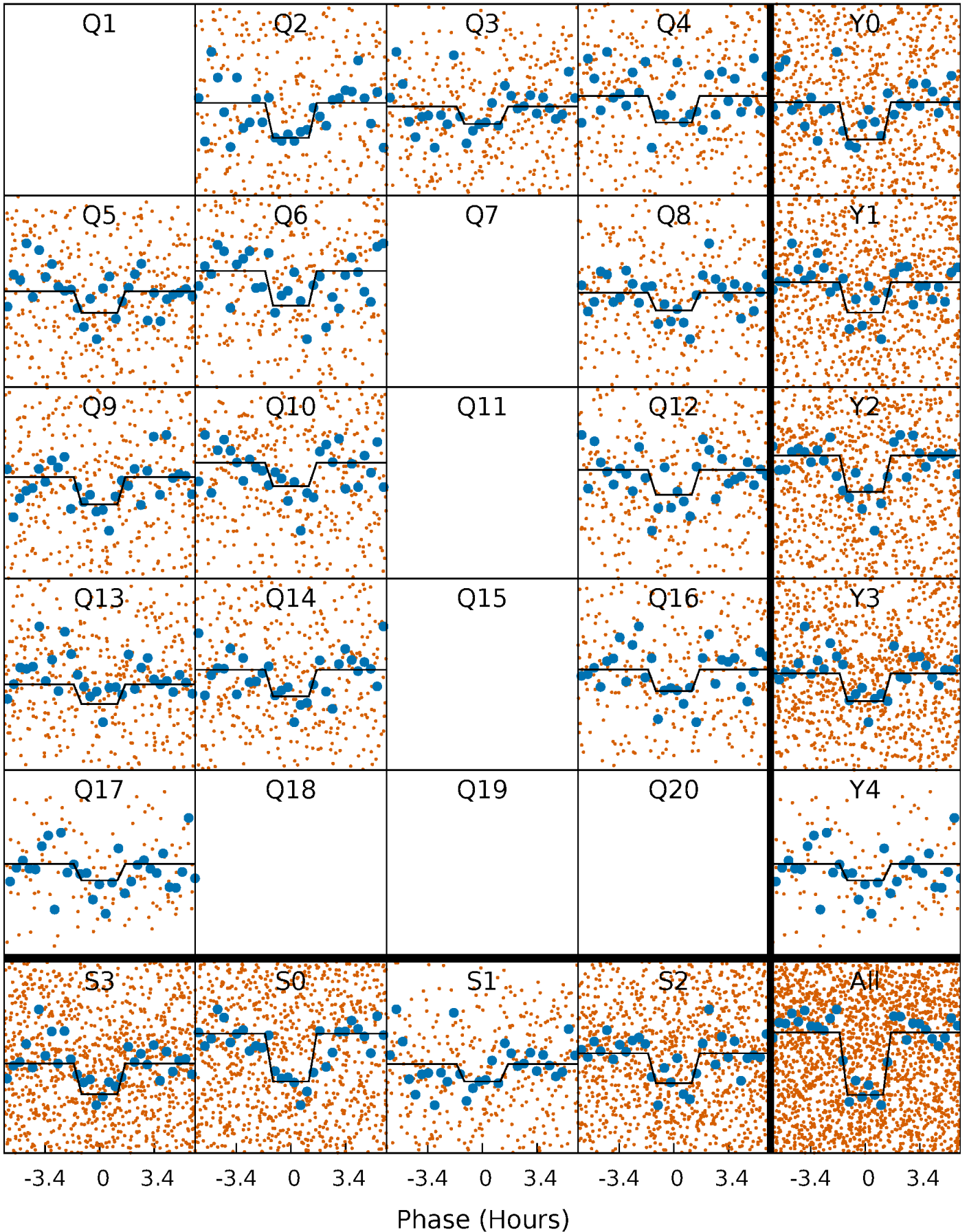
# DV Quarter-Phased Transit Curves

TCE 010747501-01 P= 4.730809 Days  $T_0=135.207560$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

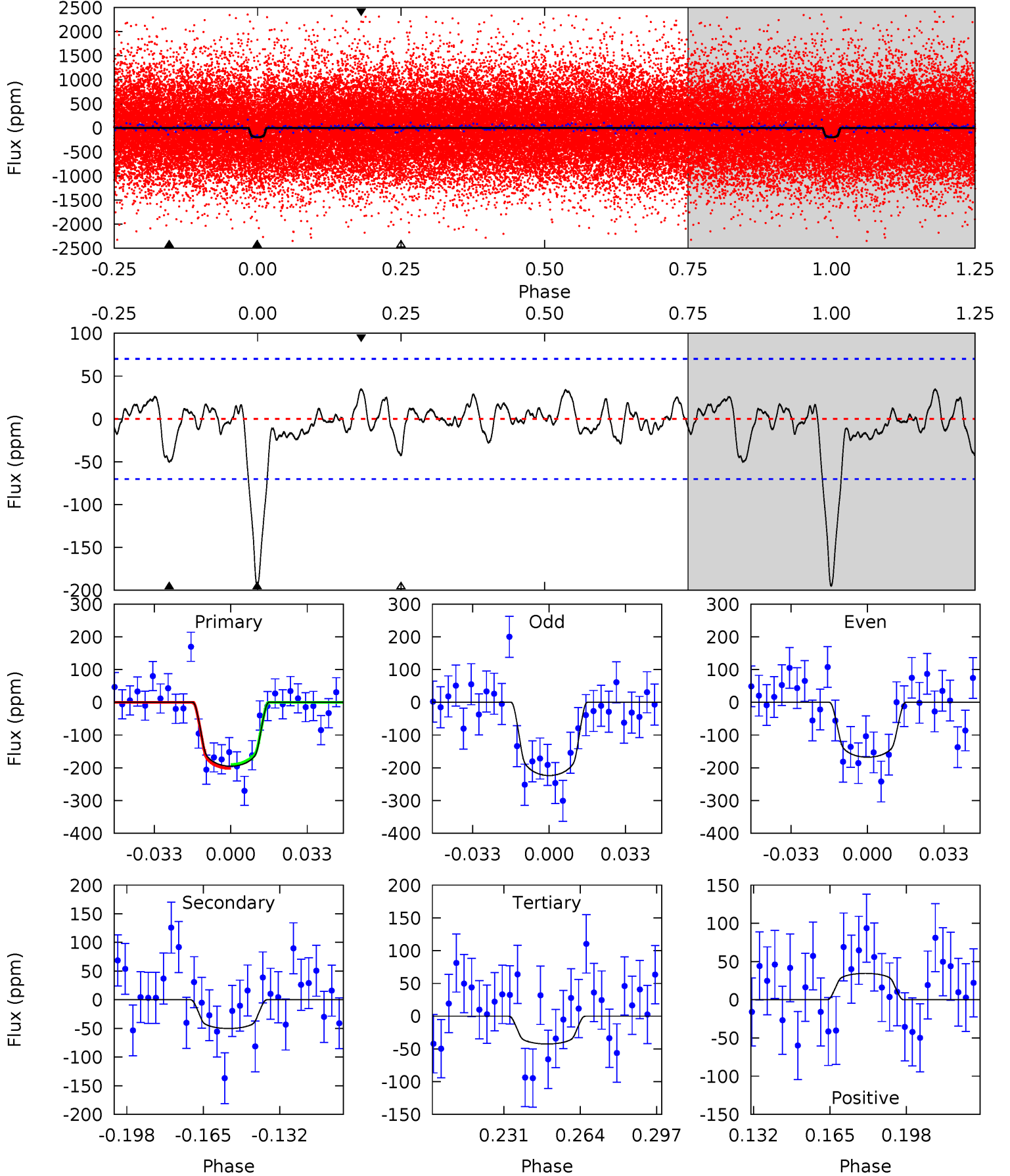
TCE 010747501-01   P= 4.730871 Days    $T_0=135.196951$  (BKJD)



# DV Model-Shift Uniqueness Test

010747501-01, P = 4.730809 Days, E = 135.207560 Days

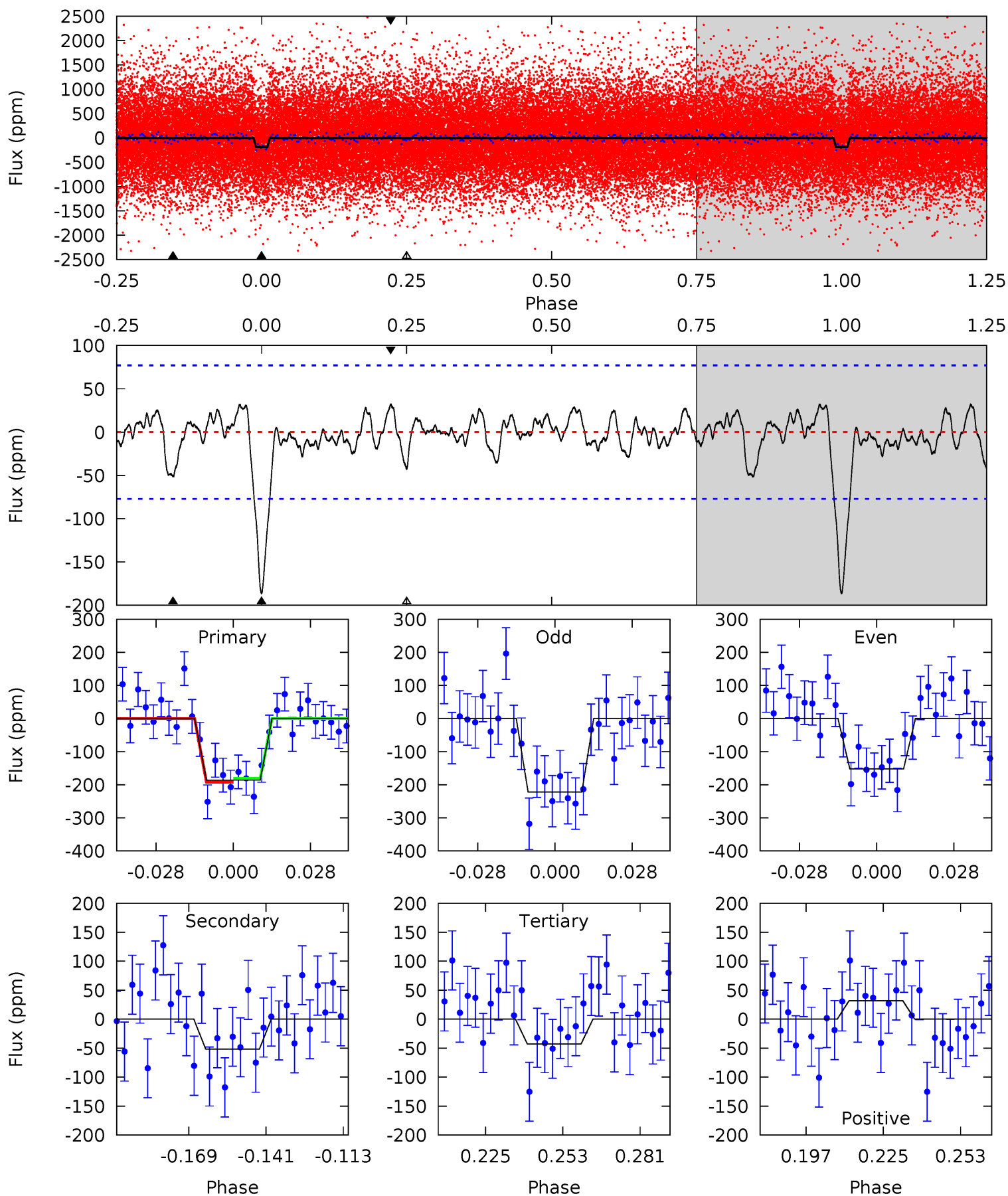
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	3.43	2.90	2.36	4.79	2.13	0.95	10.4	11.0	0.52	1.07	1.91	1.11	0.15	0.40



# Alt Model-Shift Uniqueness Test

010747501-01, P = 4.730871 Days, E = 135.196951 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
11.7	3.23	2.67	2.00	4.82	2.20	0.90	8.99	9.67	0.55	1.23	2.19	1.13	0.15	0.35



### Stellar Parameters For KIC 010747501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5941^{+178}_{-196}$	$4.519^{+0.037}_{-0.213}$	$-0.140^{+0.300}_{-0.300}$	$0.911^{+0.280}_{-0.093}$	$1.001^{+0.122}_{-0.122}$	$1.865^{+0.372}_{-0.959}$
	+3%/-3%	+1%/-5%	+214%/-214%	+31%/-10%	+12%/-12%	+20%/-51%
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 010747501-01 / KOI 4891.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-50 \pm 15$	$1.60^{+0.78}_{-0.80}$	$1531^{+97}_{-68}$	$4315^{+1329}_{-640}$	$32^{+85}_{-18}$
Alt.	$-52 \pm 16$	$1.56^{+0.73}_{-0.75}$	$1534^{+102}_{-79}$	$4377^{+1325}_{-649}$	$36^{+97}_{-21}$

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



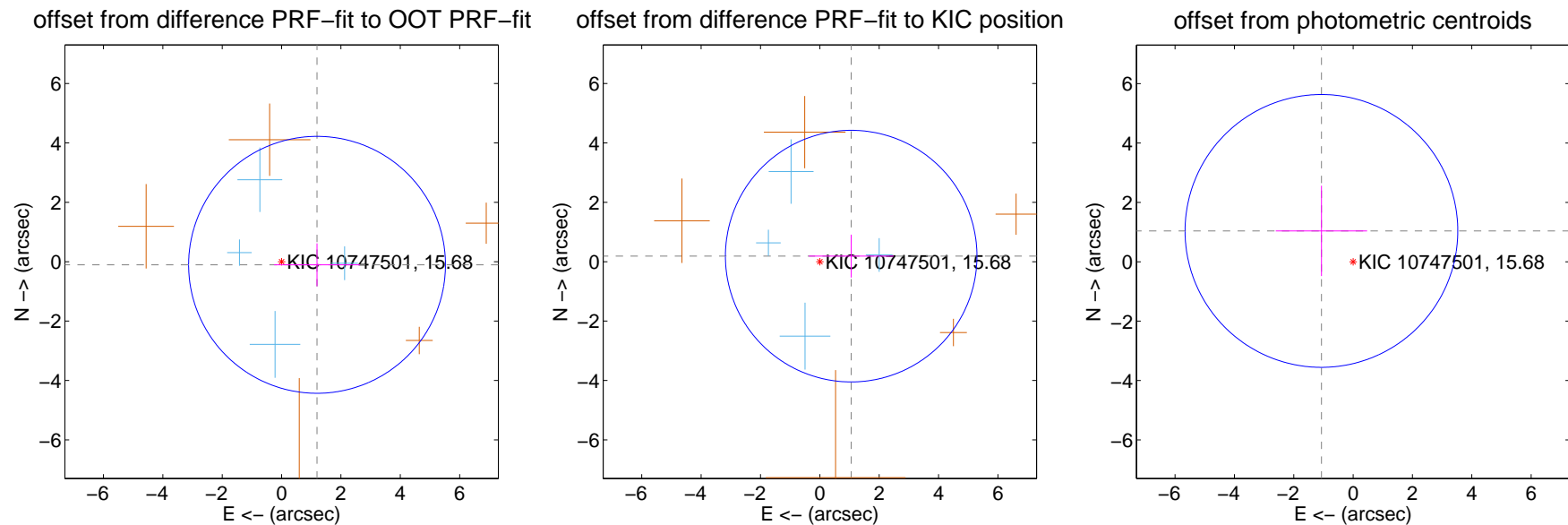
## DV Centroid Data

Supplemental centroid analysis for 010747501-01. Kepler magnitude: 15.68. Transit SNR 9.94

There are 4 quarters with good PRF difference image offsets

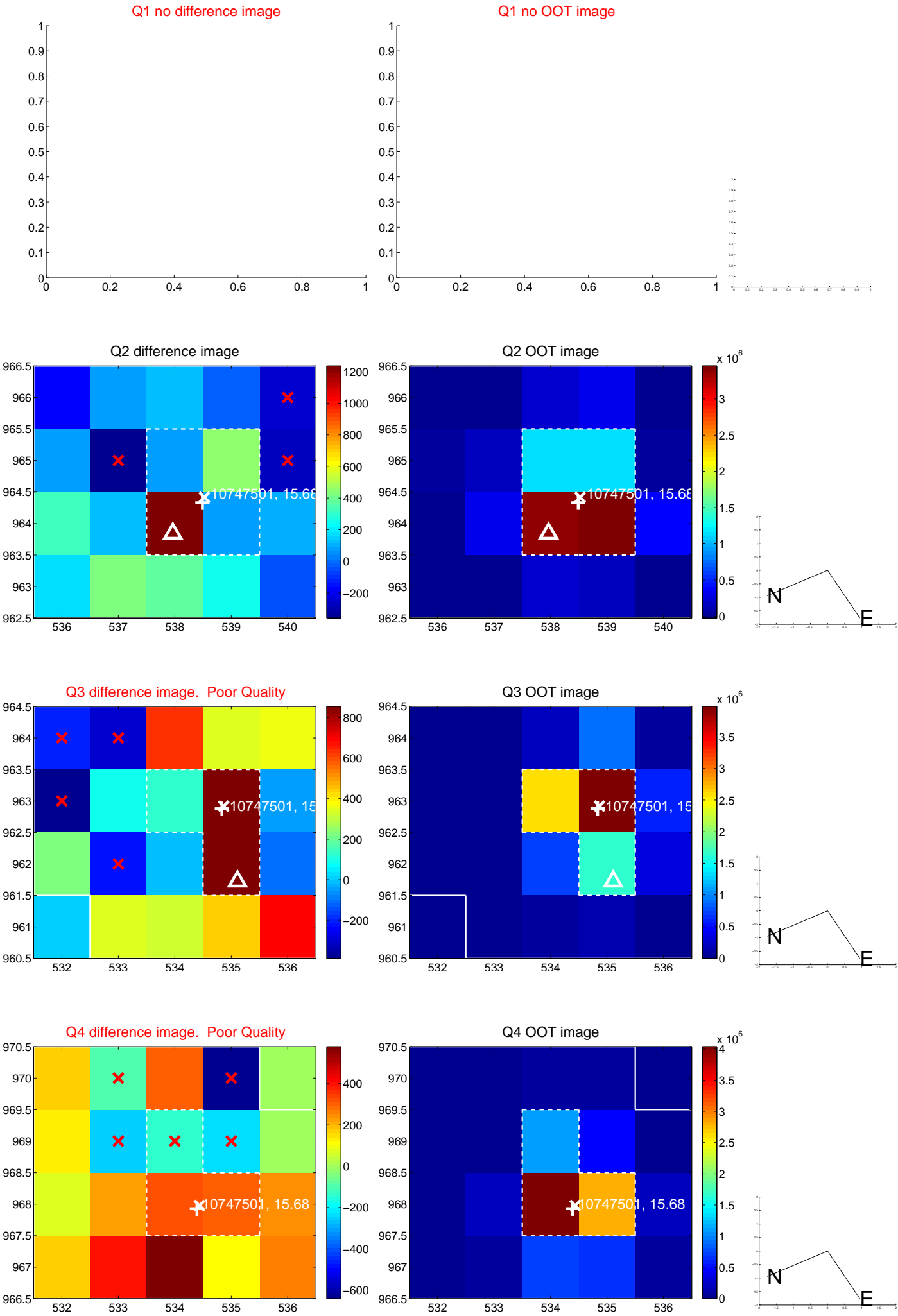
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.199 \pm 1.442$	0.83	$-1.195 \pm 1.446$	$-0.106 \pm 0.722$
PRF-fit source offset from KIC position	$1.072 \pm 1.412$	0.76	$-1.056 \pm 1.428$	$0.188 \pm 0.722$
photometric centroid source offset	$1.49 \pm 1.53$	0.97	$1.07 \pm 1.54$	$1.04 \pm 1.52$

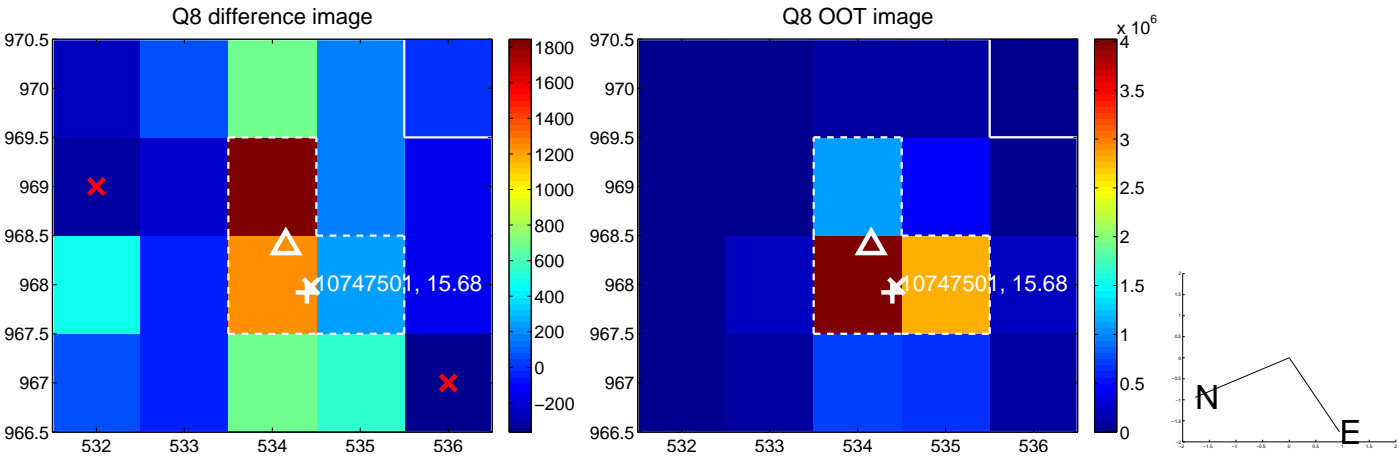
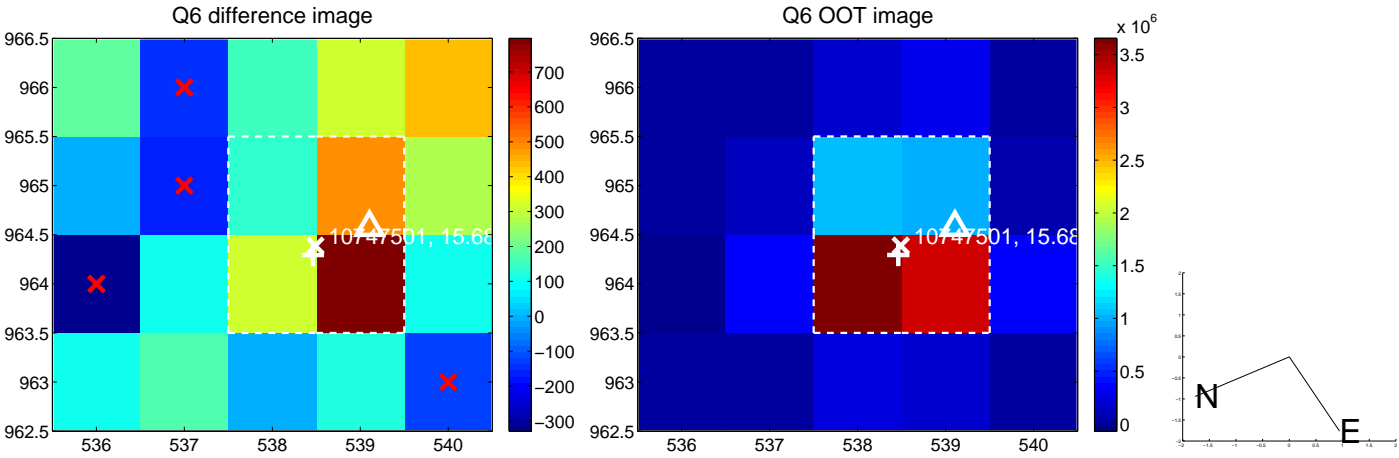
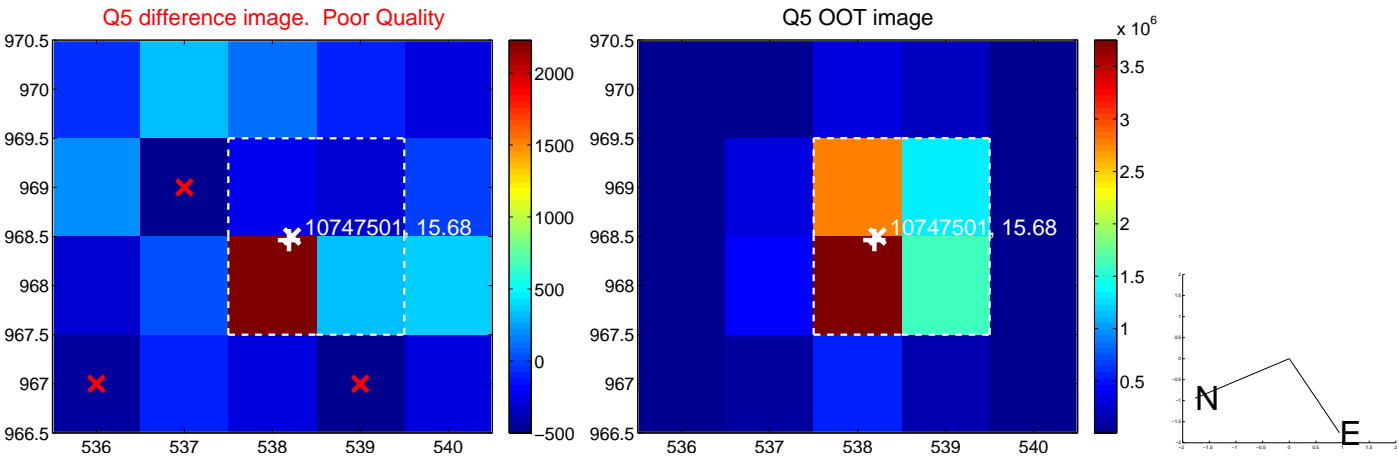


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

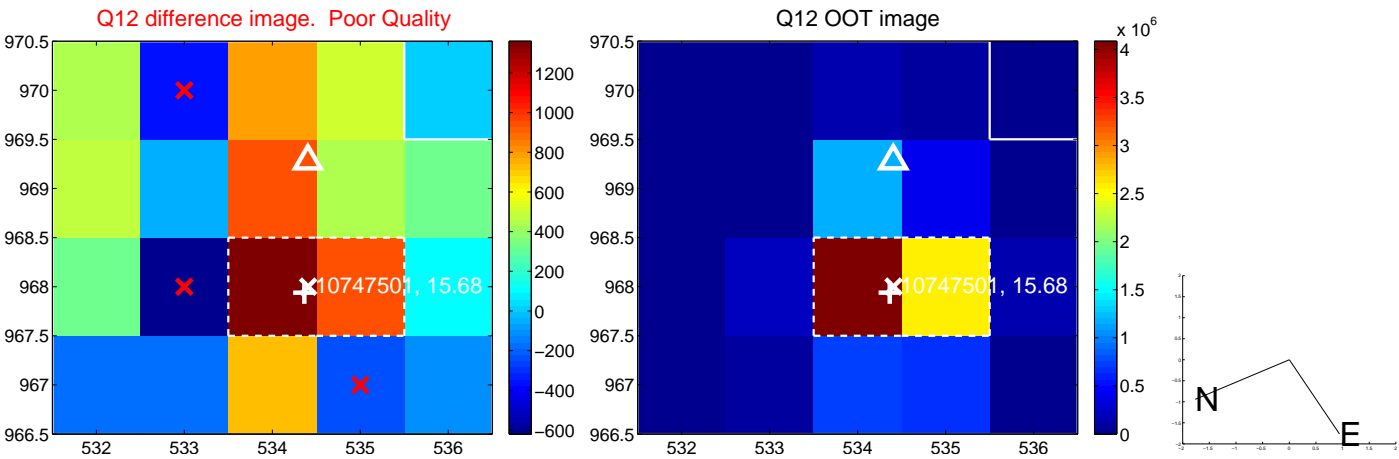
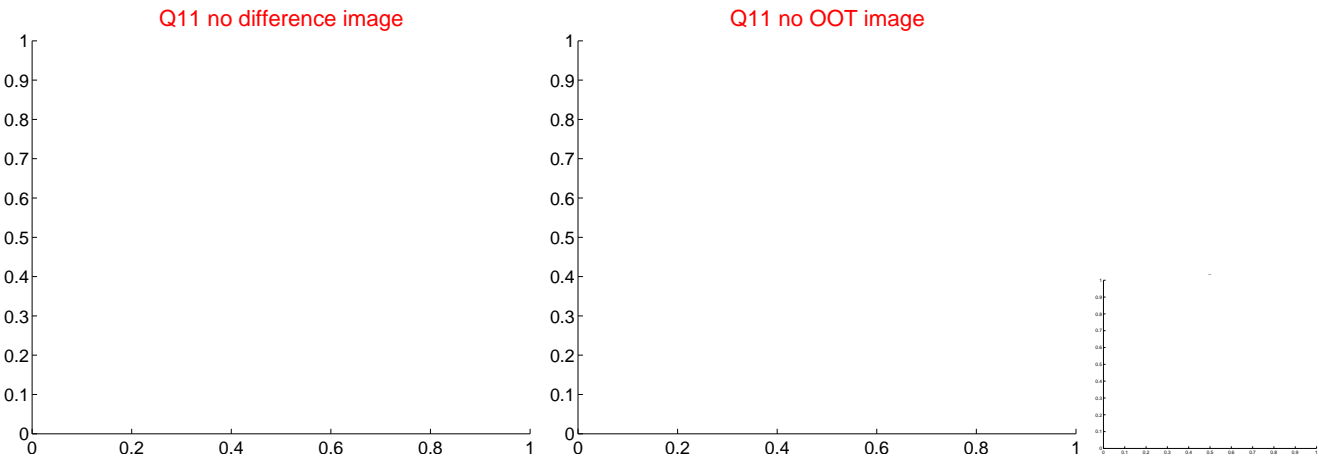
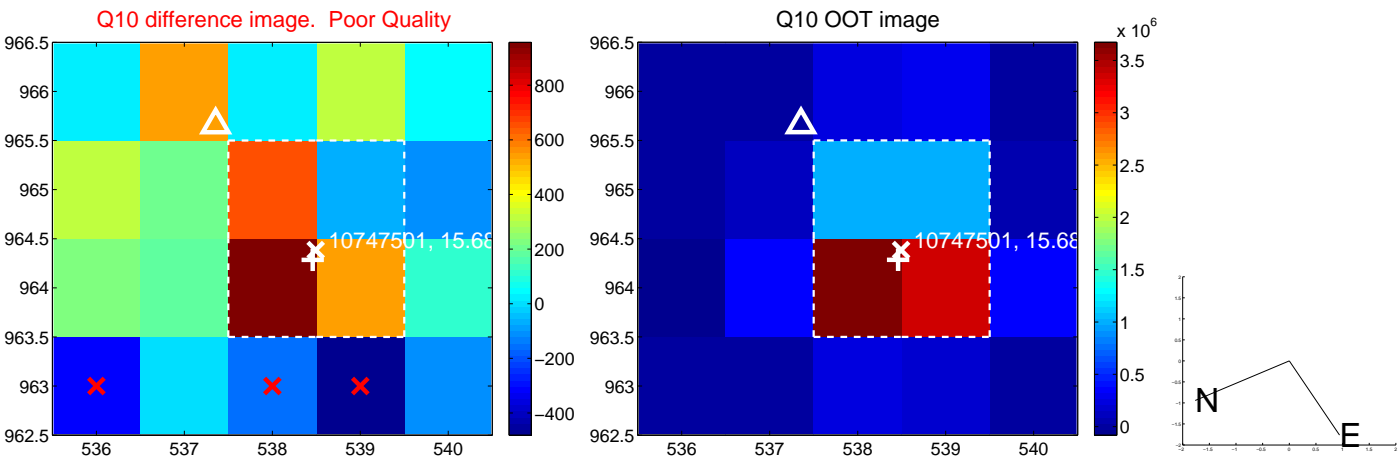
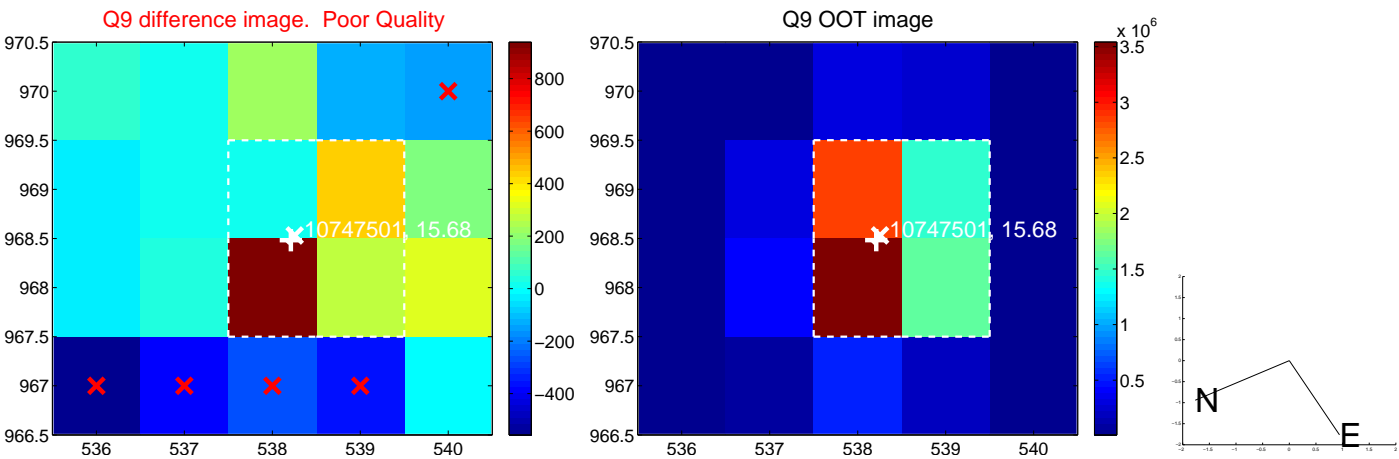
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



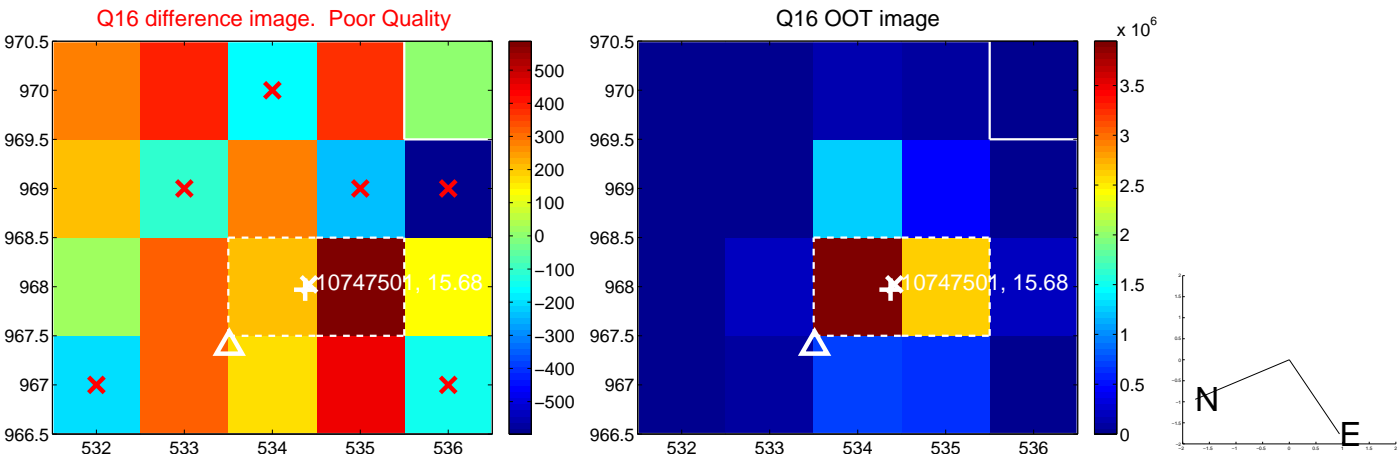
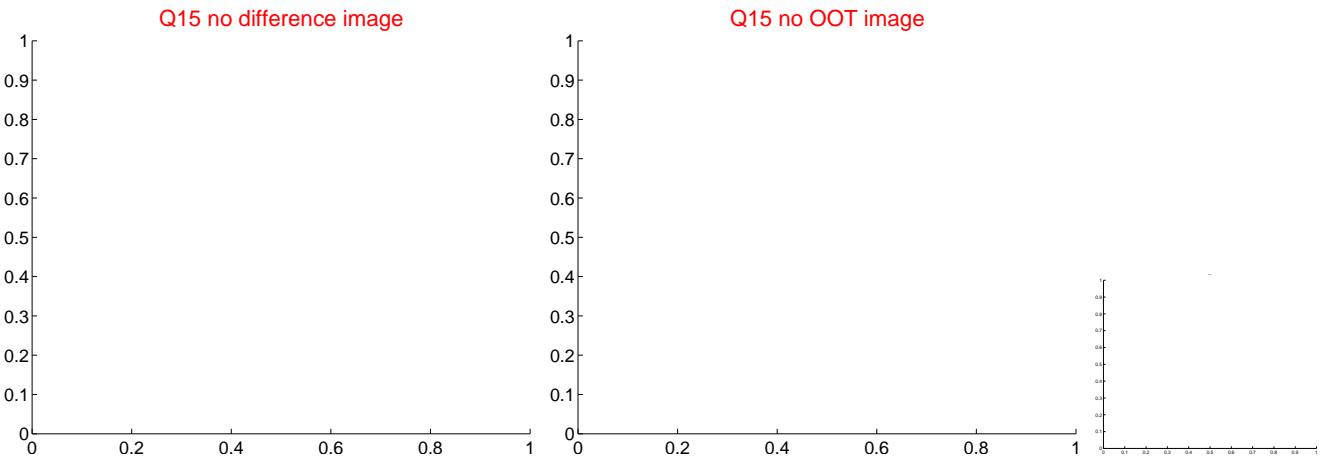
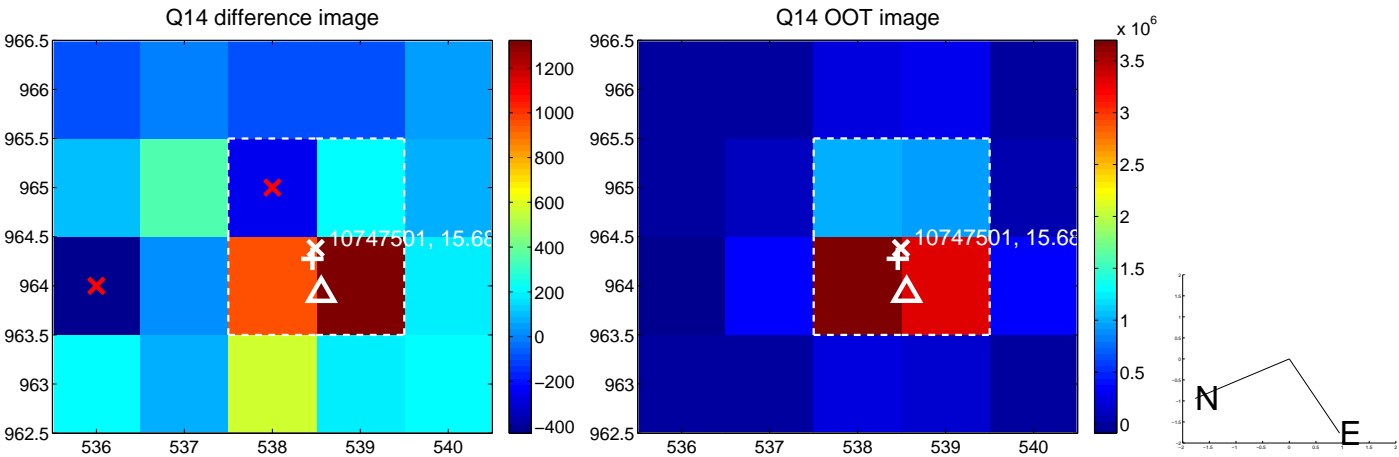
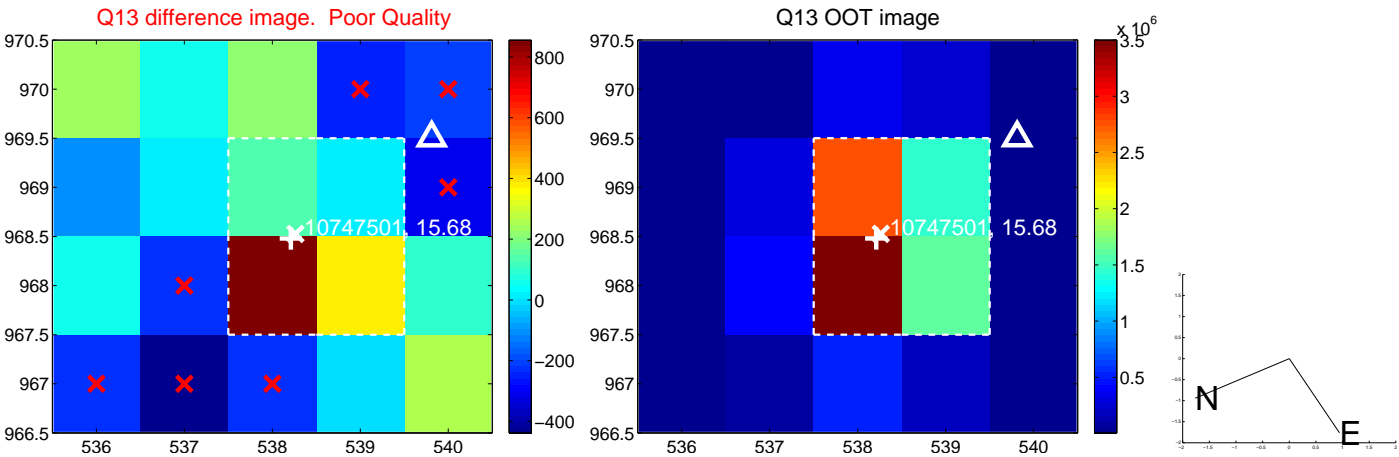
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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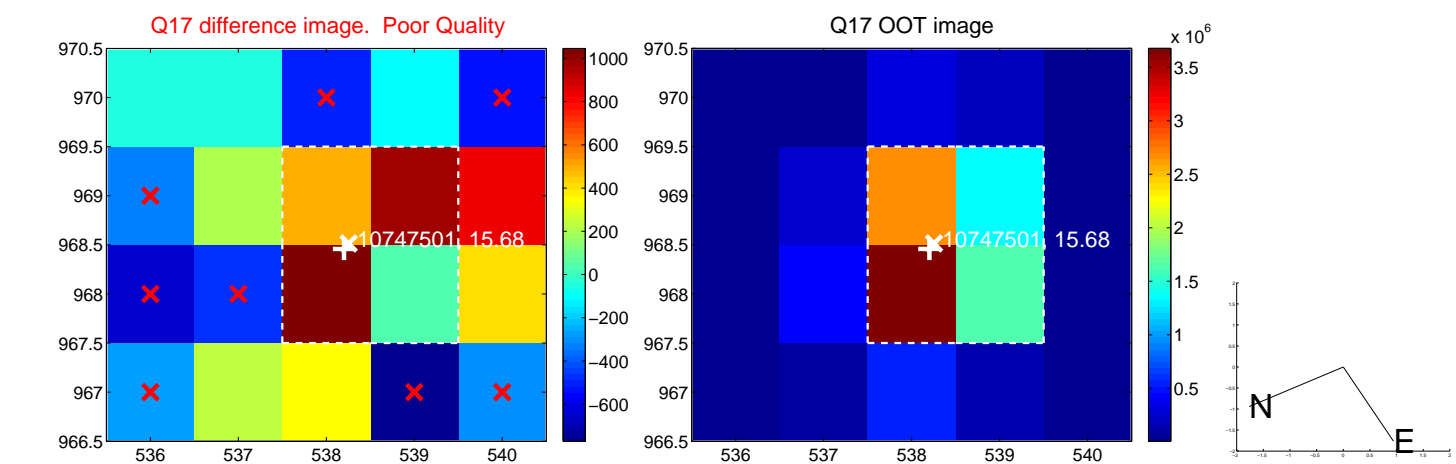


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

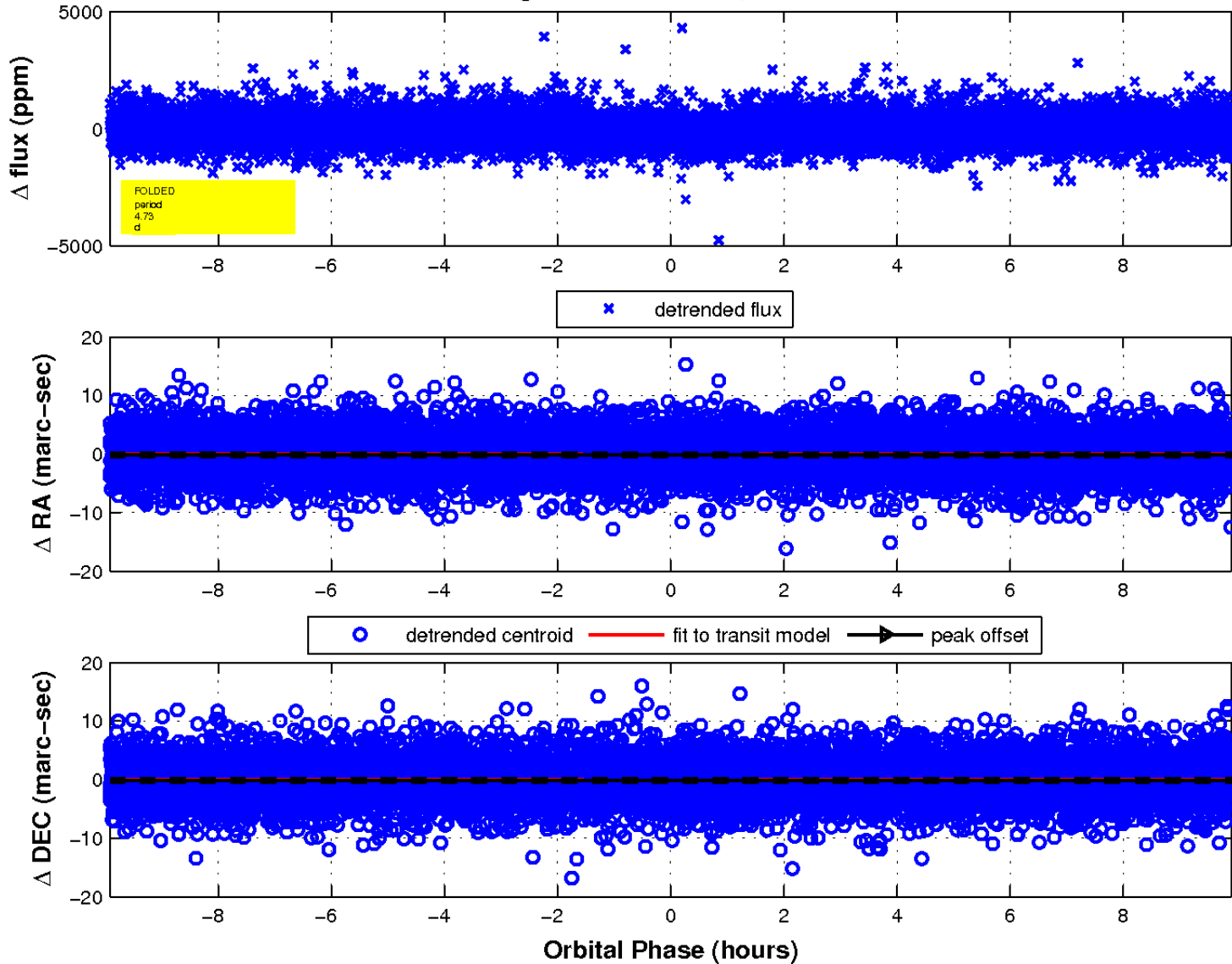




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

