

# KIC 010753922

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010753922-01	OBS	4816.01	18.226030	133.578314	370.8	3.621	9.2	9.8	0.98	5440	2.28	41.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010753922-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET—HALO_GHOST

**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.

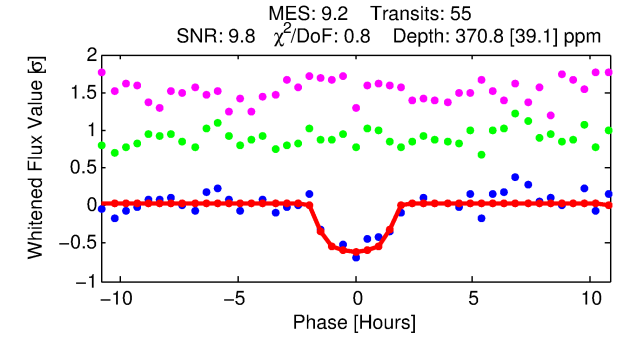
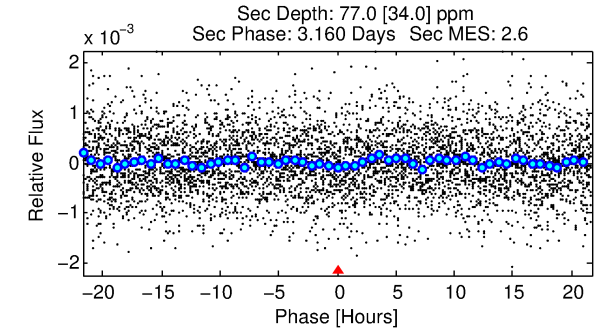
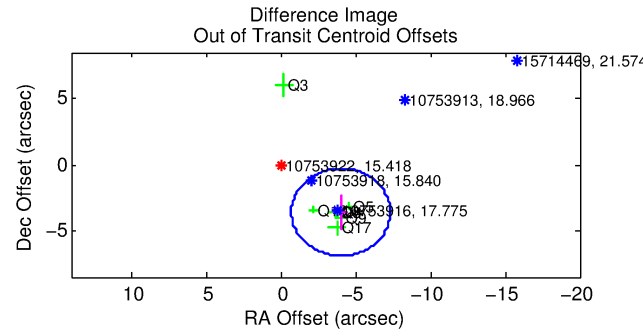
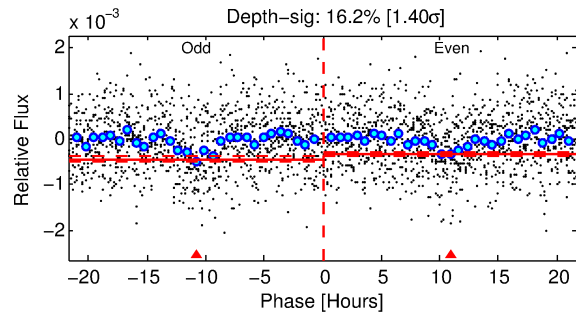
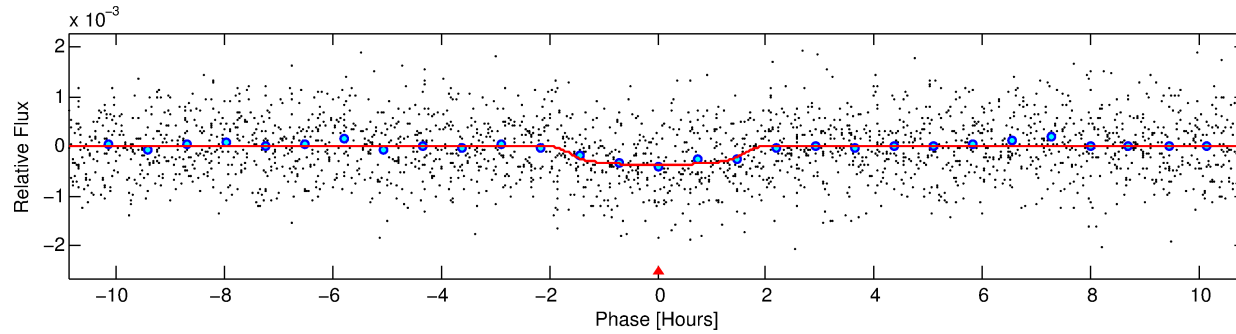
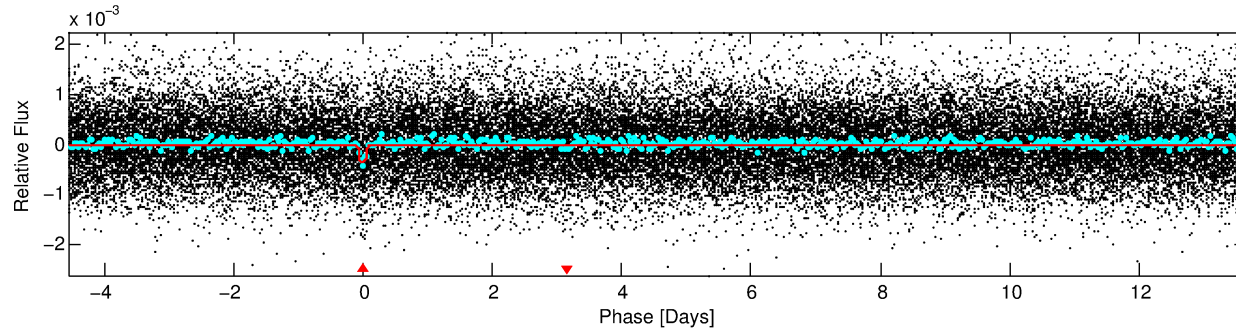
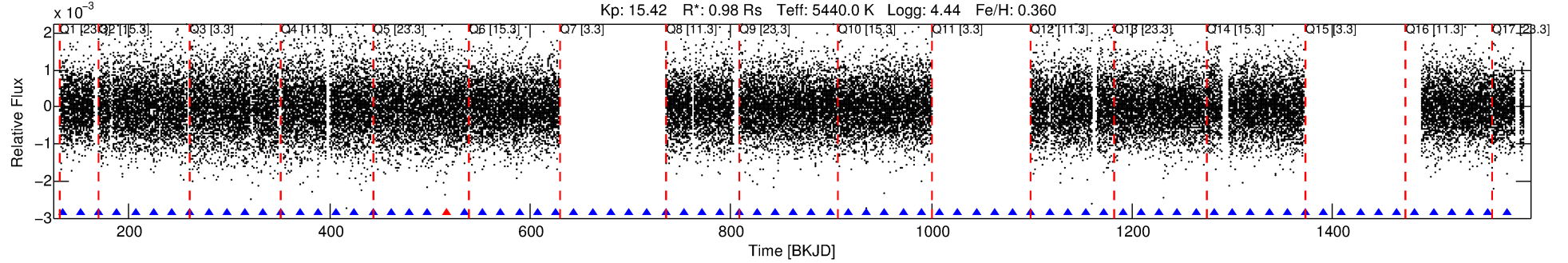
## Ephemeris Match Information For 010753922-01

No Significant Match Found

# DV One-Page Summary

KIC: 10753922 Candidate: 1 of 1 Period: 18.226 d

KOI: K04816.01 Corr: 0.980



## DV Fit Results:

Period = 18.22603 [0.00018] d  
Epoch = 133.5783 [0.0077] BKJD  
Rp/R\* = 0.0213 [0.0079]  
a/R\* = 18.46 [28.30]  
b = 0.90 [0.33]  
Seff = 41.74 [14.24]  
Teq = 648 [55] K  
Rp = 2.28 [1.03] Re  
a = 0.1344 [0.0293] AU  
Ag = 146.90 [134.99] [1.08 $\sigma$ ]  
Teffp = 3489 [759] K [3.73 $\sigma$ ]

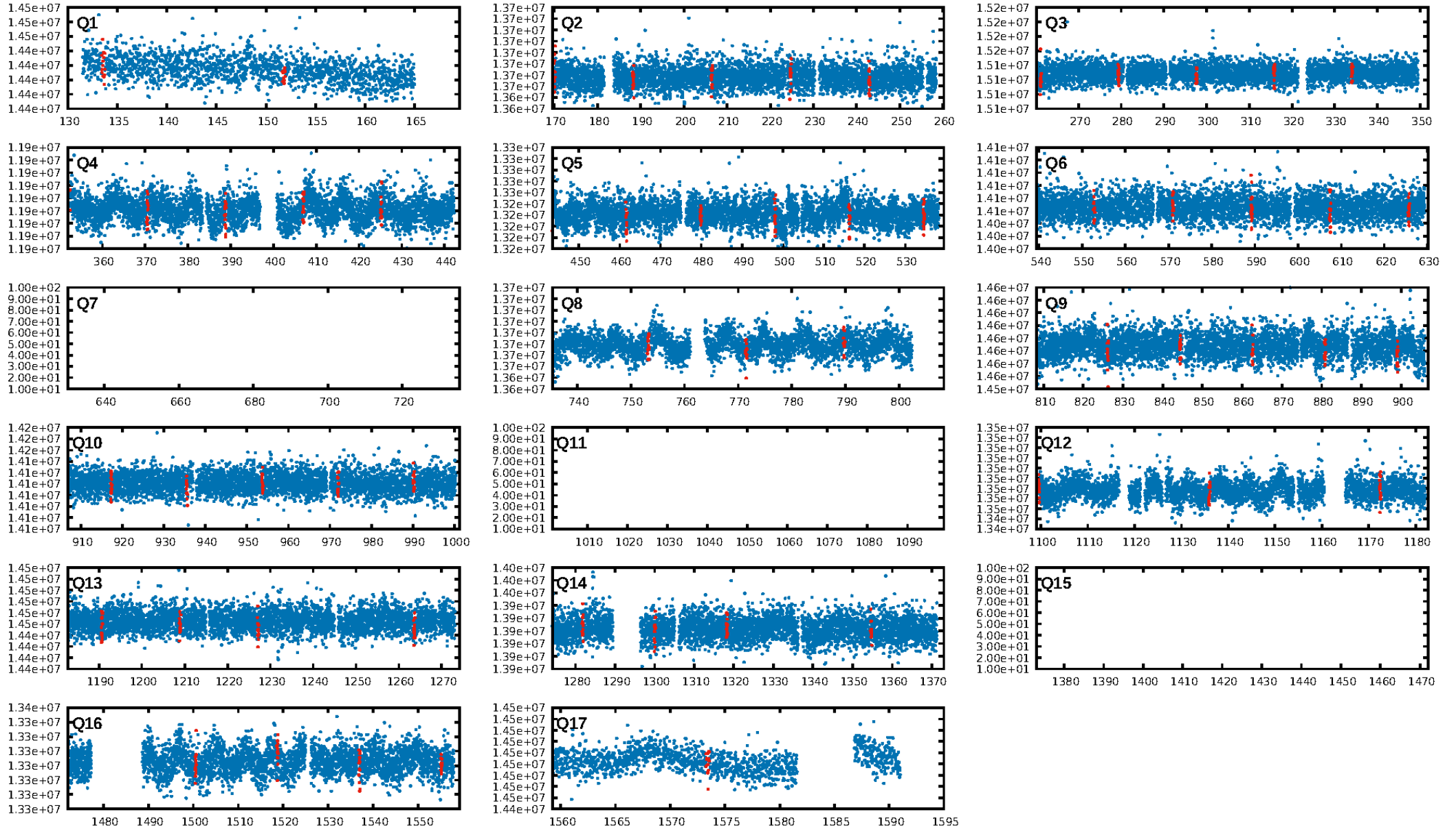
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 82.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.81e-20  
RollingBand-fgt: 0.98 [51/52]  
GhostDiagnostic-chr: -0.1761  
Centroid-sig: 0.0%  
Centroid-so: 8.782 arcsec [5.87 $\sigma$ ]  
OotOffset-rm: 5.394 arcsec [4.91 $\sigma$ ]  
KicOffset-rm: 5.020 arcsec [4.16 $\sigma$ ]  
OotOffset-st: 0/1/2/4 [7]  
KicOffset-st: 0/1/2/4 [7]  
DiffImageQuality-fgm: 0.86 [6/7]  
DiffImageOverlap-fno: 1.00 [14/14]

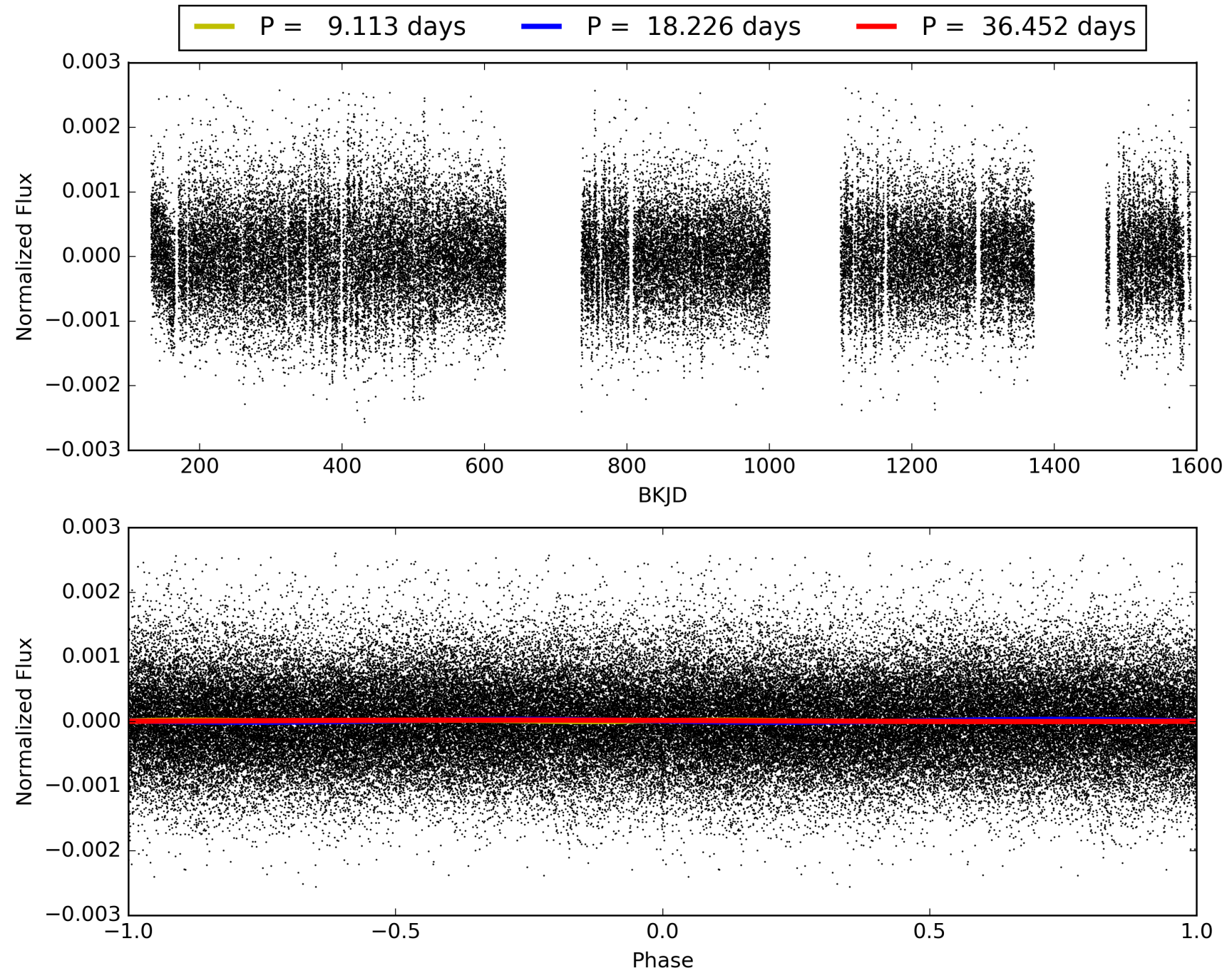
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:30:14 Z

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

# TCE 010753922-01, PDC Light Curves

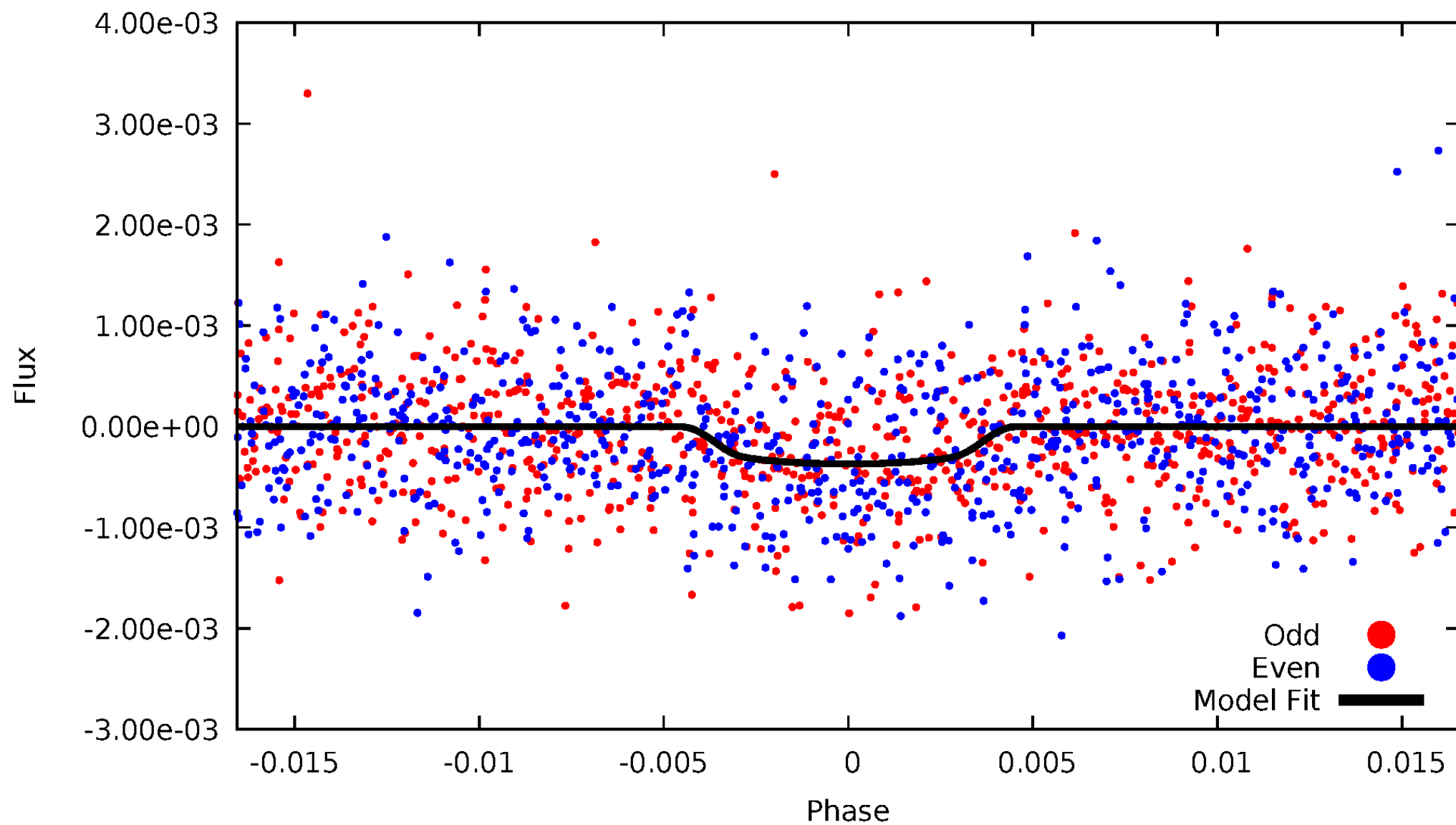


TCE 010753922-01



# DV Odd/Even

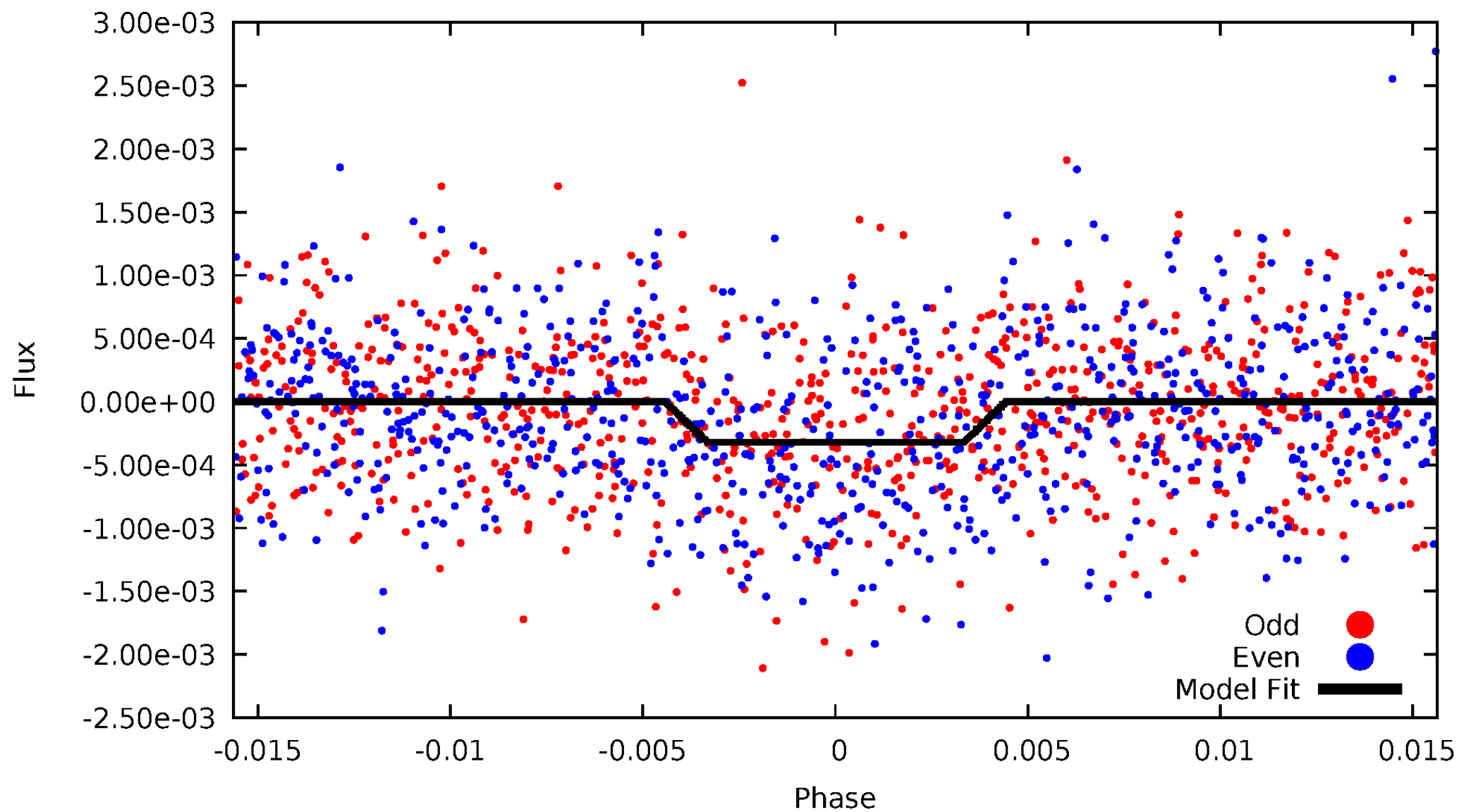
TCE 010753922-01



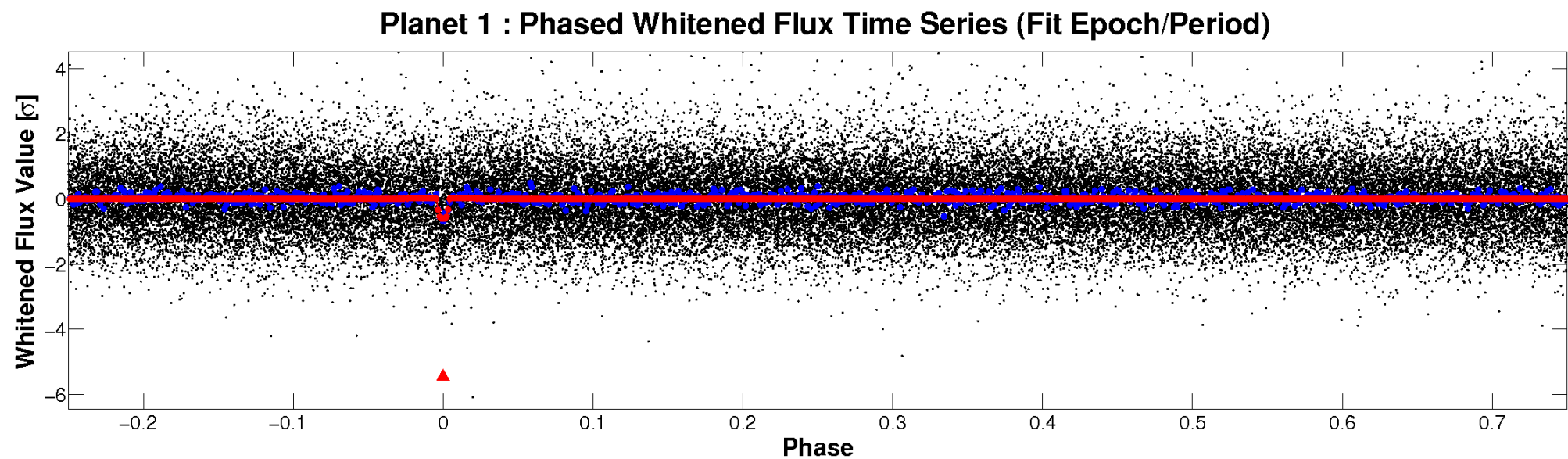
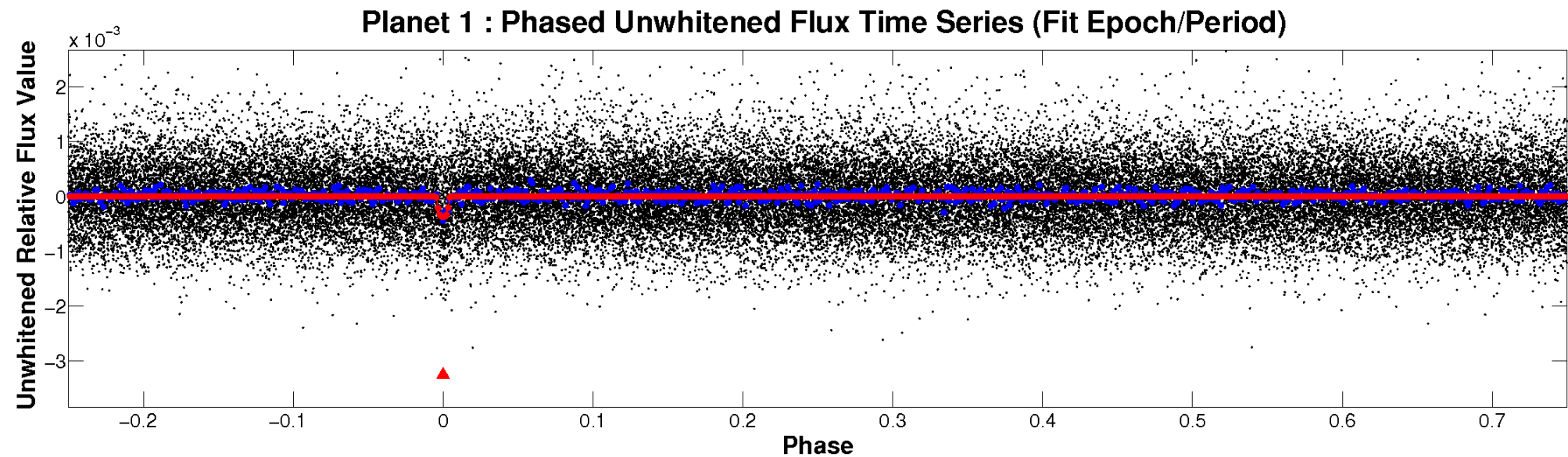


# ALT Odd/Even

TCE 010753922-01

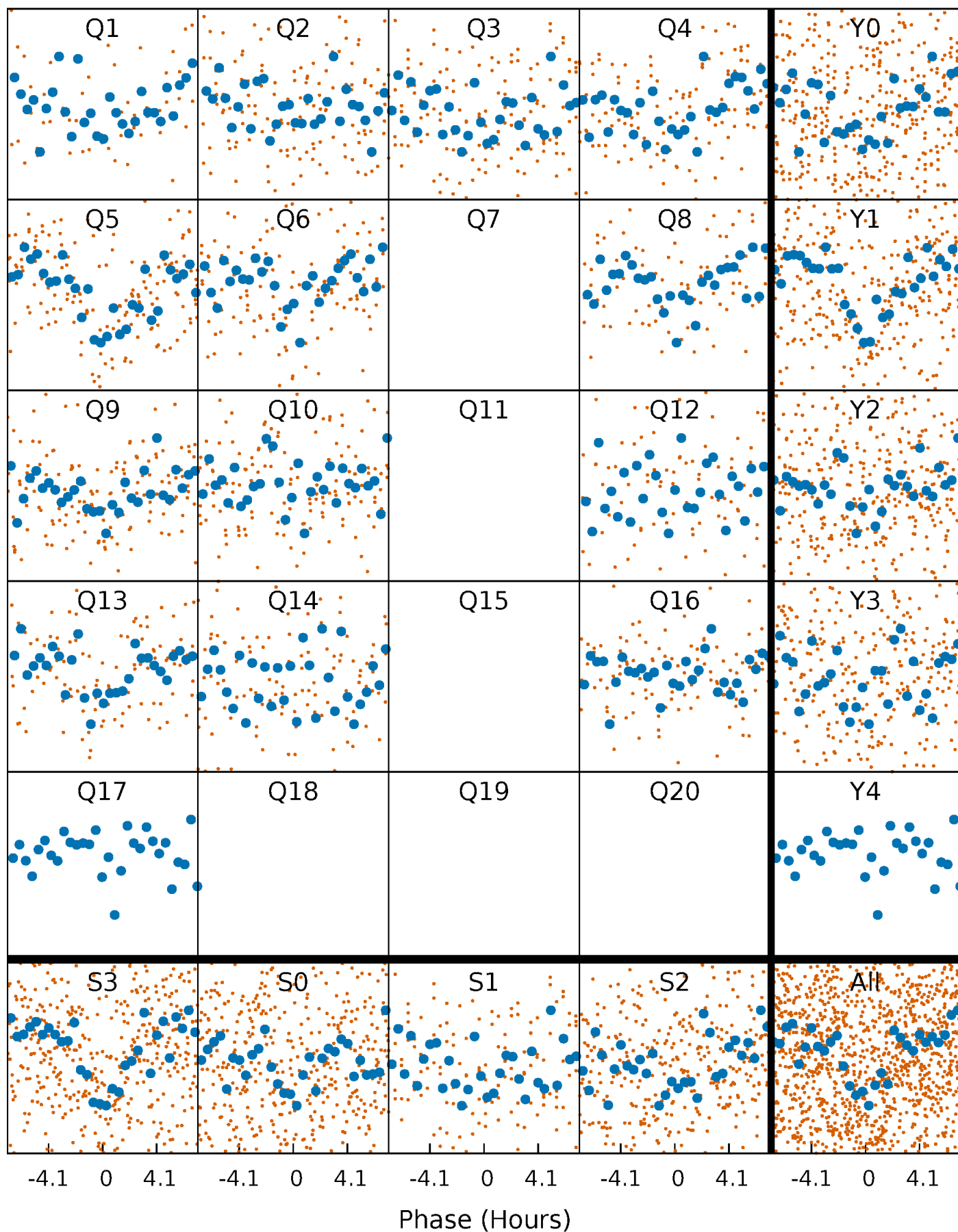


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

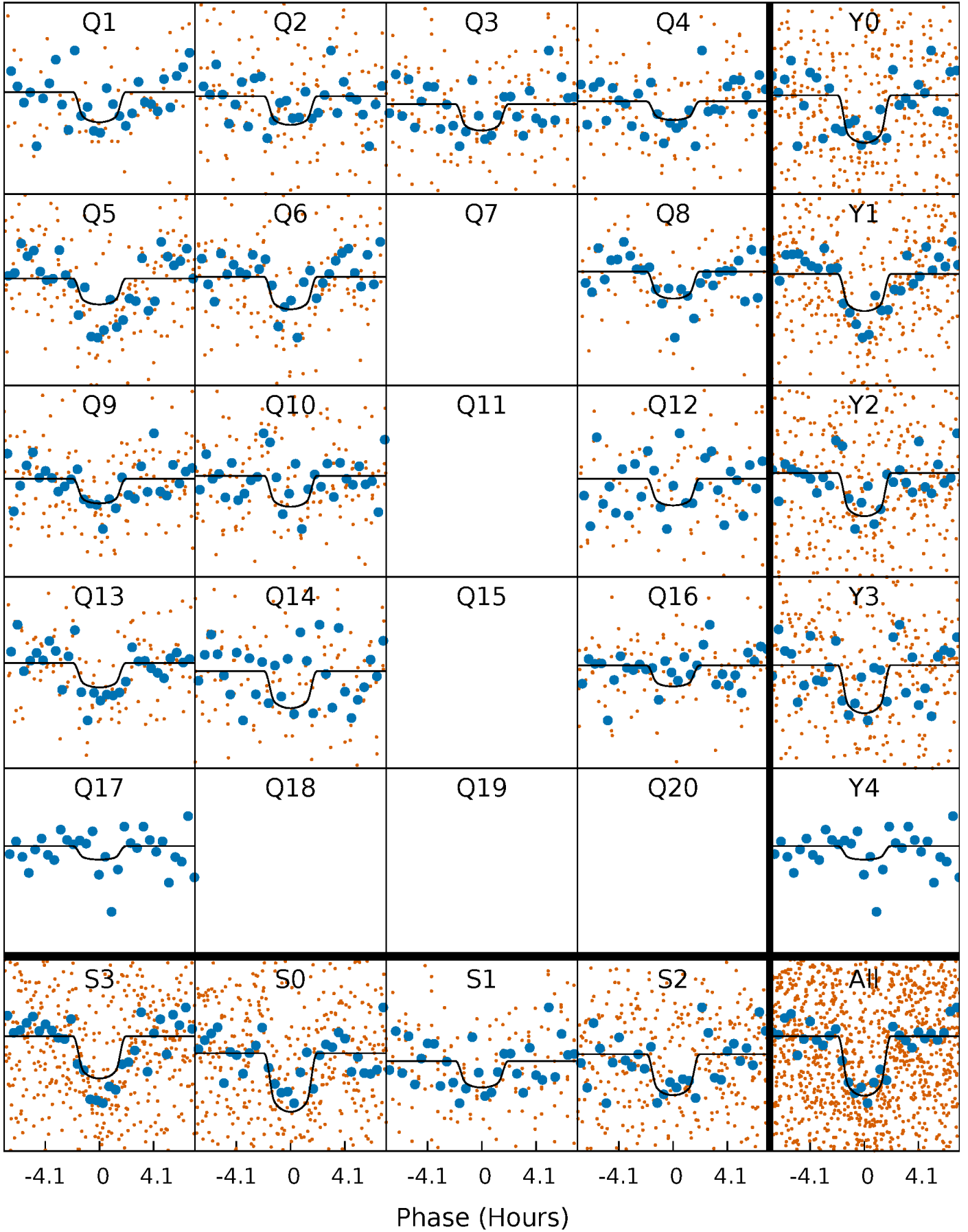
TCE 010753922-01 P= 18.226030 Days  $T_0=133.578314$  (BKJD)





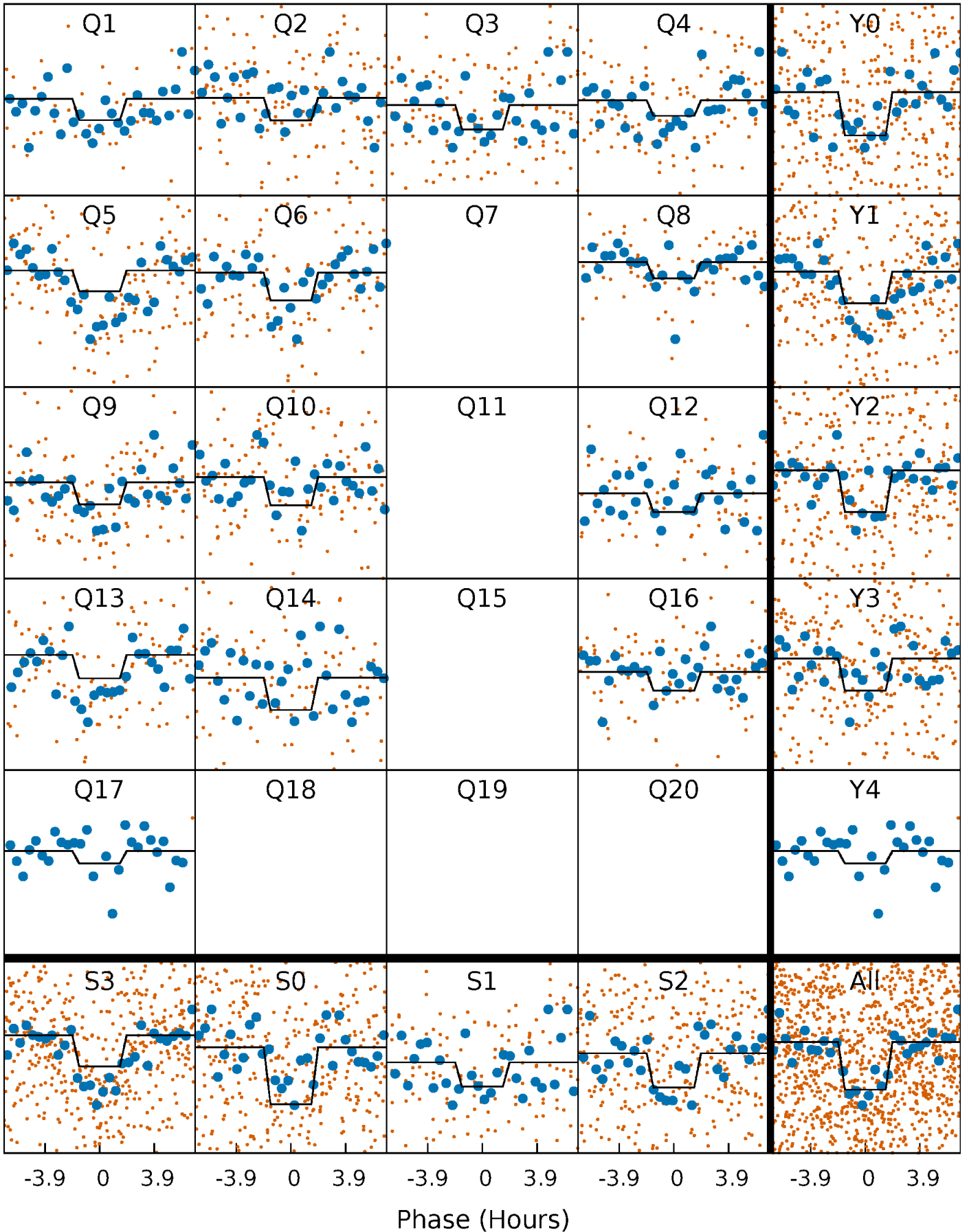
# DV Quarter-Phased Transit Curves

TCE 010753922-01 P= 18.226030 Days  $T_0=133.578314$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

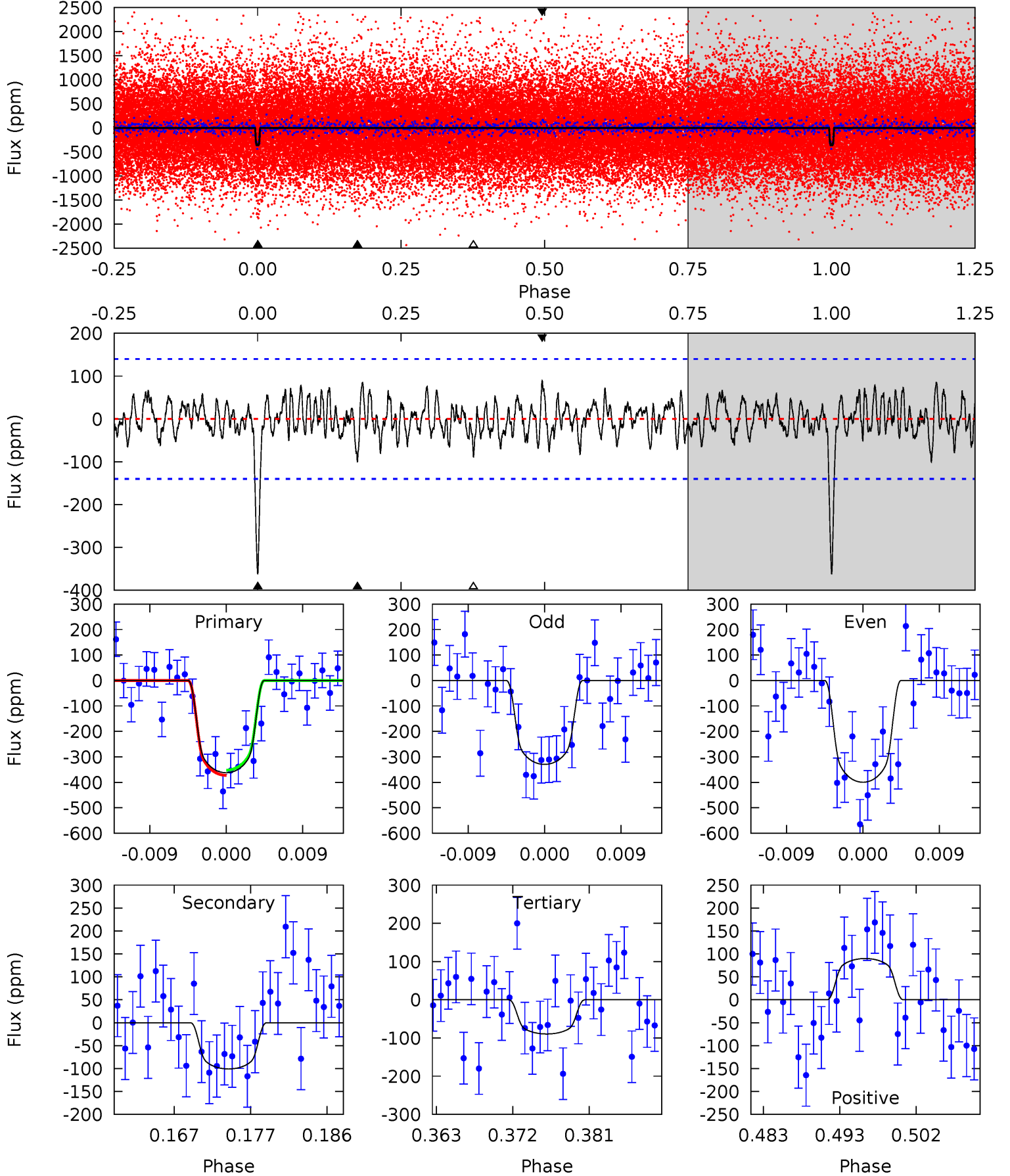
TCE 010753922-01 P= 18.225948 Days  $T_0=133.586641$  (BKJD)



# DV Model-Shift Uniqueness Test

010753922-01,  $P = 18.226030$  Days,  $E = 115.352284$  Days

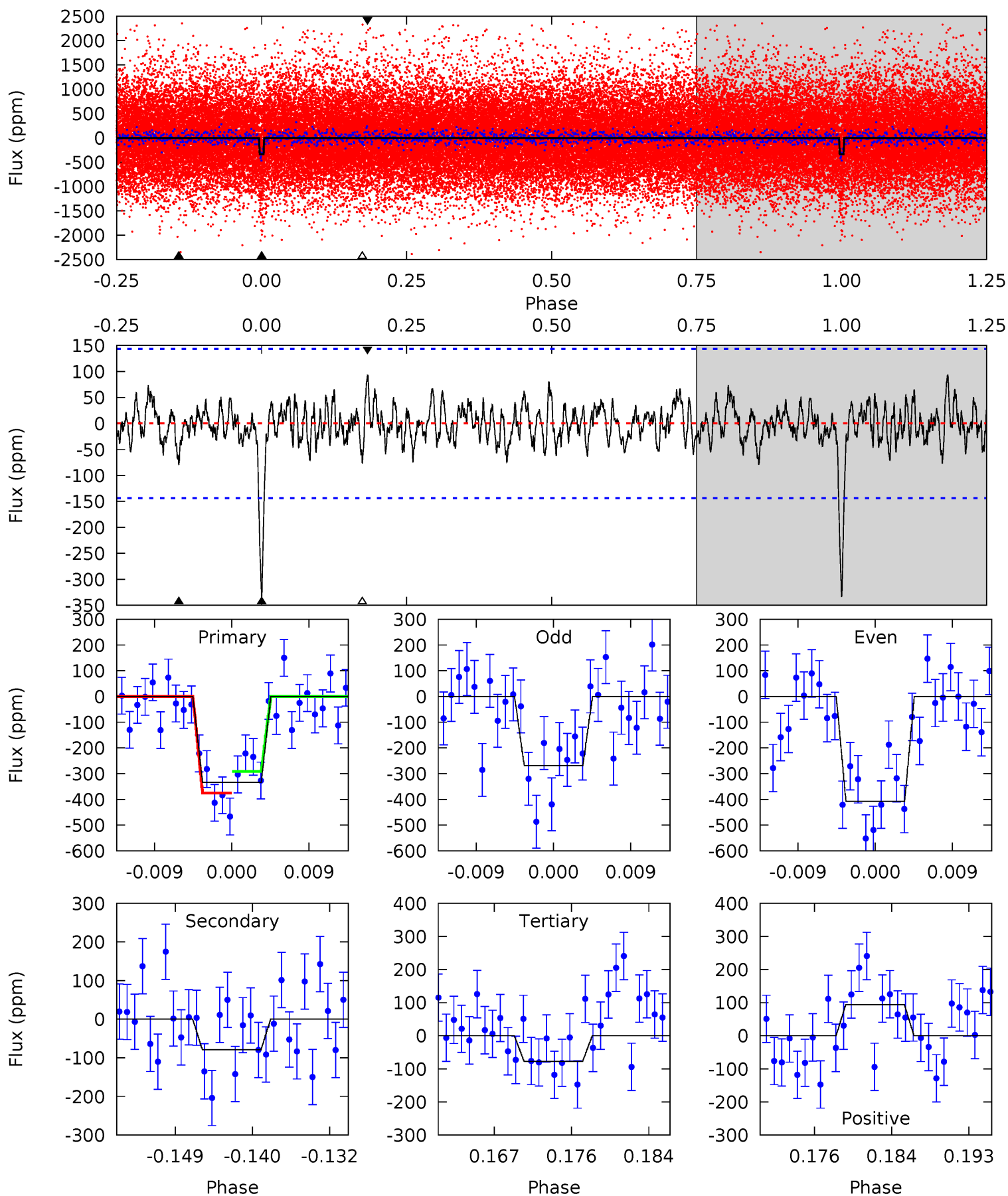
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	3.64	3.23	3.24	5.04	2.60	1.16	9.83	9.82	0.41	0.40	1.26	0.89	0.20	0.36



# Alt Model-Shift Uniqueness Test

010753922-01,  $P = 18.225948$  Days,  $E = 115.360693$  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	2.79	2.71	3.30	5.05	2.62	1.03	9.03	8.44	0.07	-0.52	2.45	0.92	0.22	1.48



### Stellar Parameters For KIC 010753922

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5440^{+164}_{-164}$	$4.444^{+0.075}_{-0.175}$	$0.360^{+0.100}_{-0.250}$	$0.980^{+0.253}_{-0.109}$	$0.972^{+0.074}_{-0.082}$	$1.454^{+0.480}_{-0.673}$
	+3%/-3%	+2%/-4%	+28%/-69%	+26%/-11%	+8%/-8%	+33%/-46%
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 010753922-01 / KOI 4816.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-101 \pm 28$	$2.30^{+0.91}_{-0.88}$	$918^{+64}_{-43}$	$4034^{+826}_{-466}$	$180^{+290}_{-94}$
Alt.	$-79 \pm 28$	$1.95^{+0.91}_{-0.81}$	$918^{+54}_{-44}$	$4092^{+1015}_{-569}$	$200^{+441}_{-119}$

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



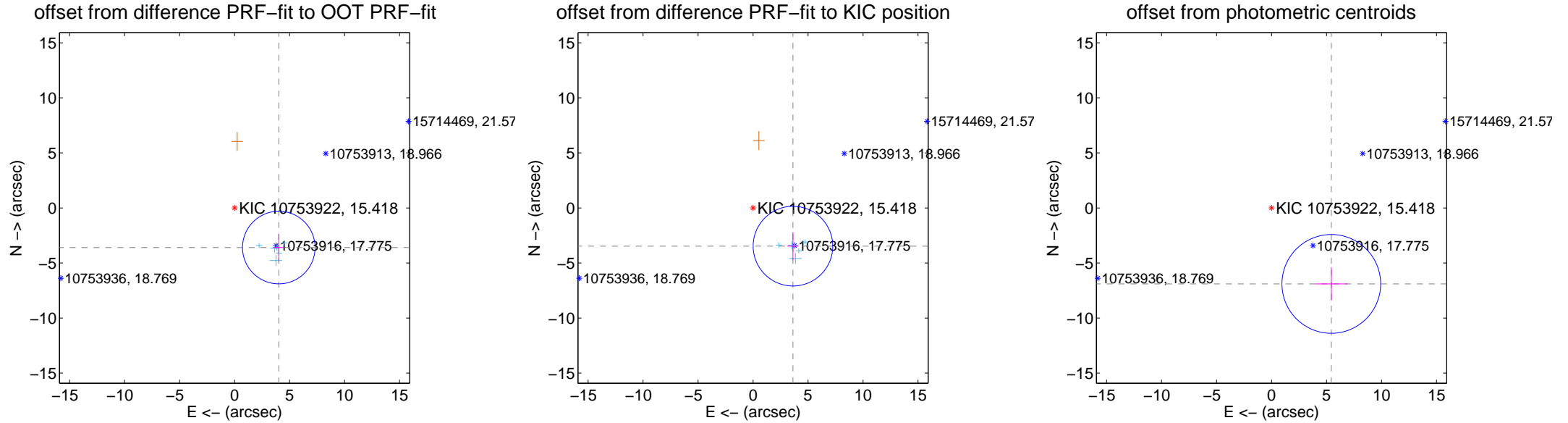
## DV Centroid Data

Supplemental centroid analysis for 010753922-01. Kepler magnitude: 15.42. Transit SNR 9.81

There are 6 quarters with good PRF difference image offsets

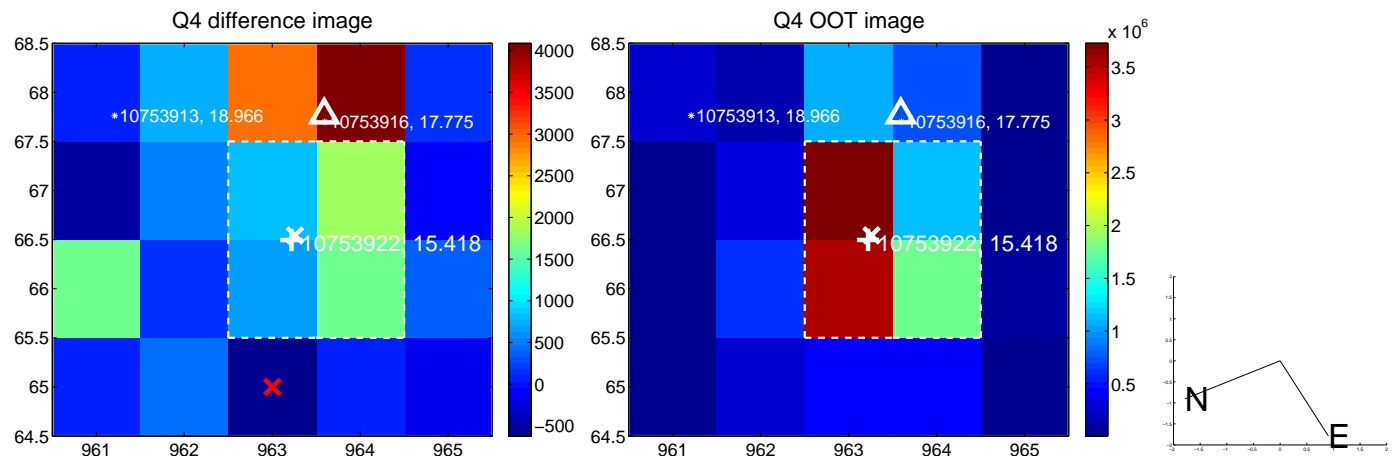
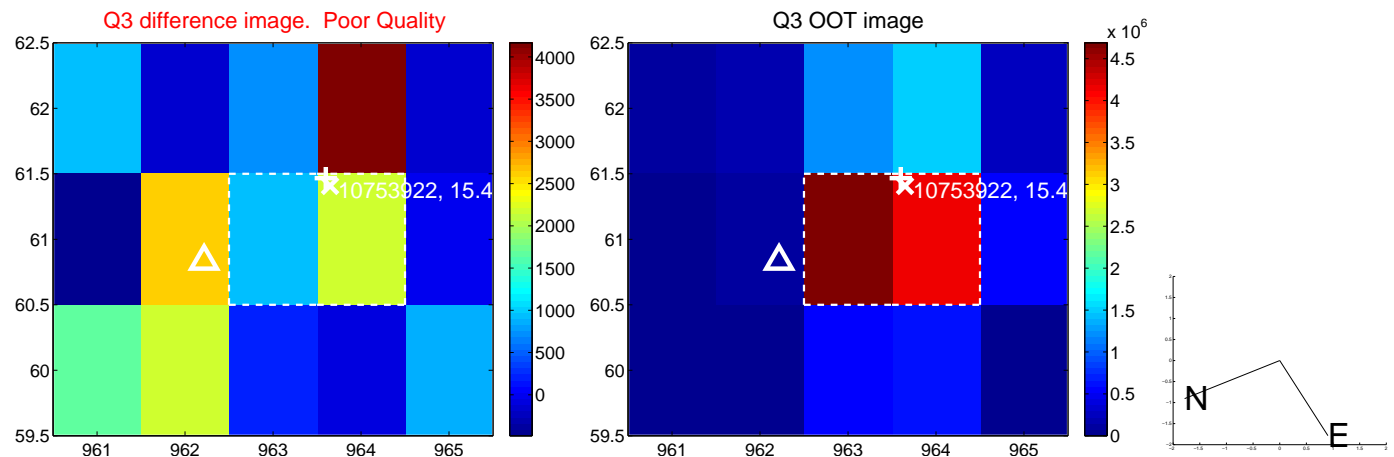
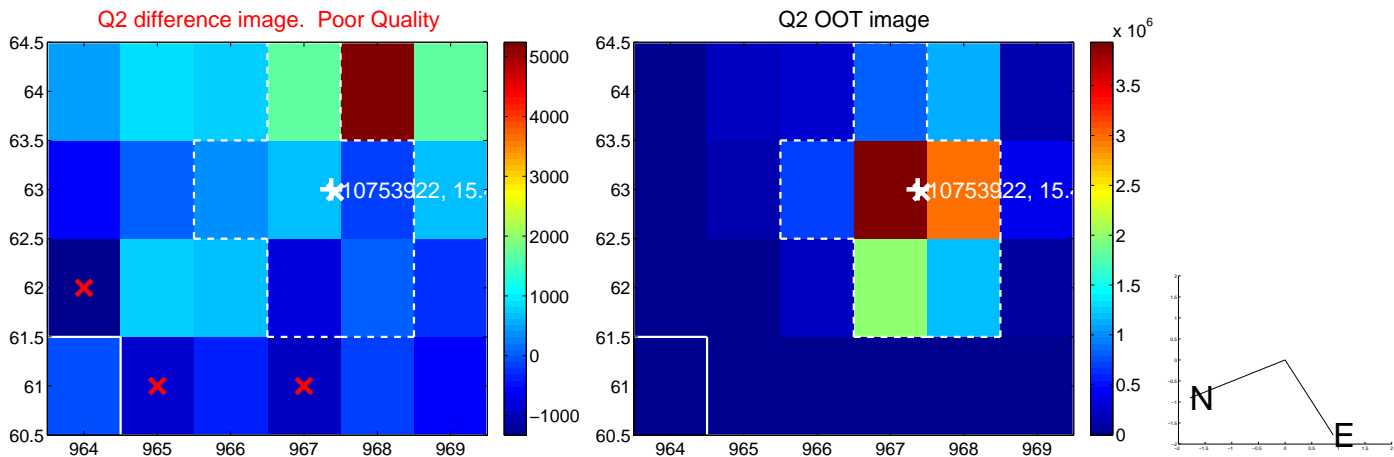
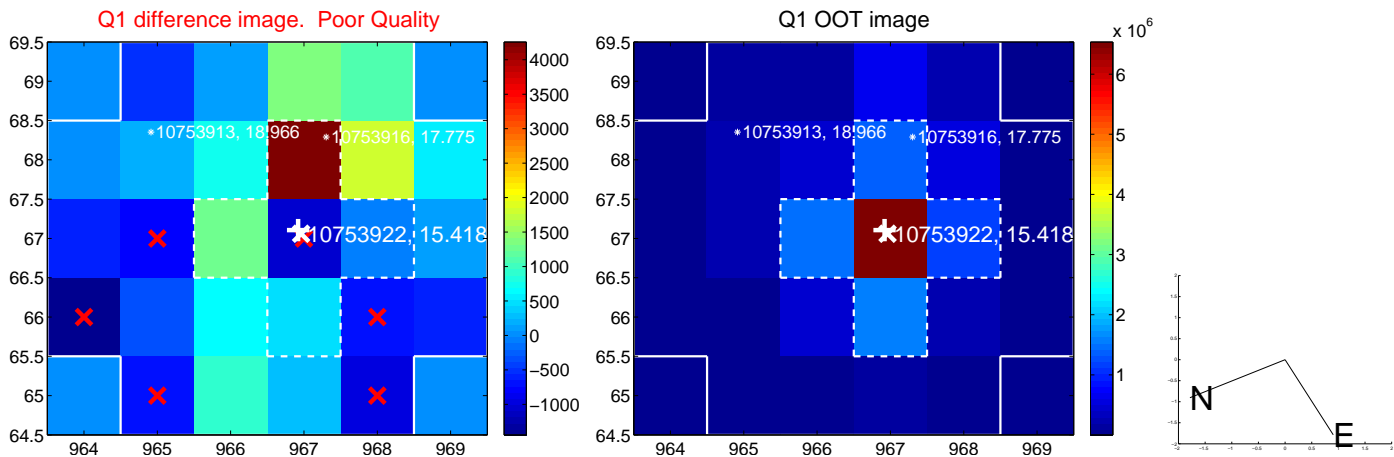
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.394 \pm 1.100$	4.91	$-4.020 \pm 0.436$	$-3.596 \pm 1.257$
PRF-fit source offset from KIC position	$5.020 \pm 1.207$	4.16	$-3.629 \pm 0.510$	$-3.469 \pm 1.266$
photometric centroid source offset	$8.78 \pm 1.50$	5.87	$-5.43 \pm 1.46$	$-6.90 \pm 1.52$

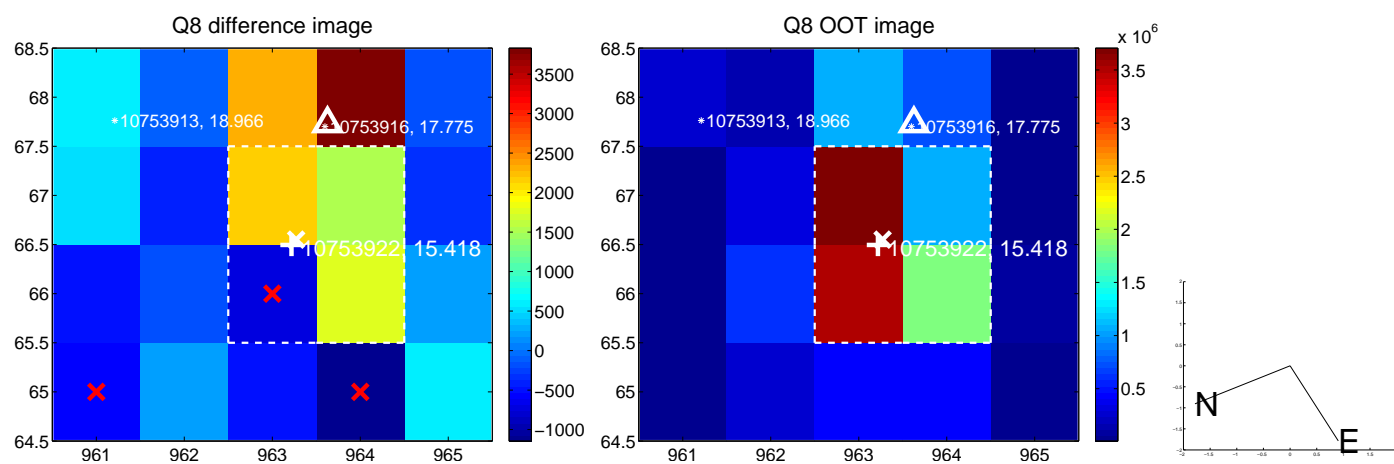
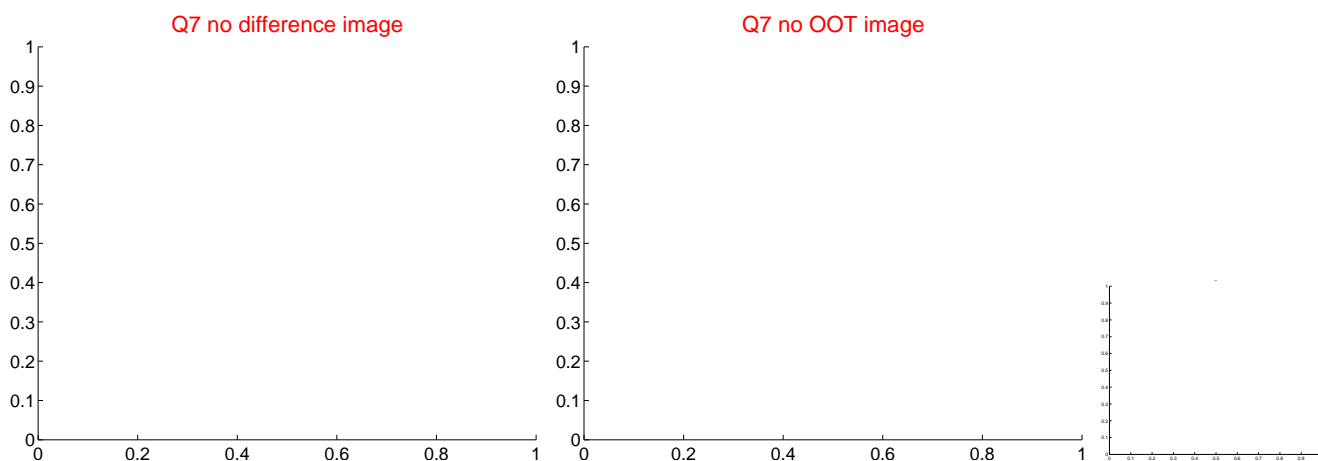
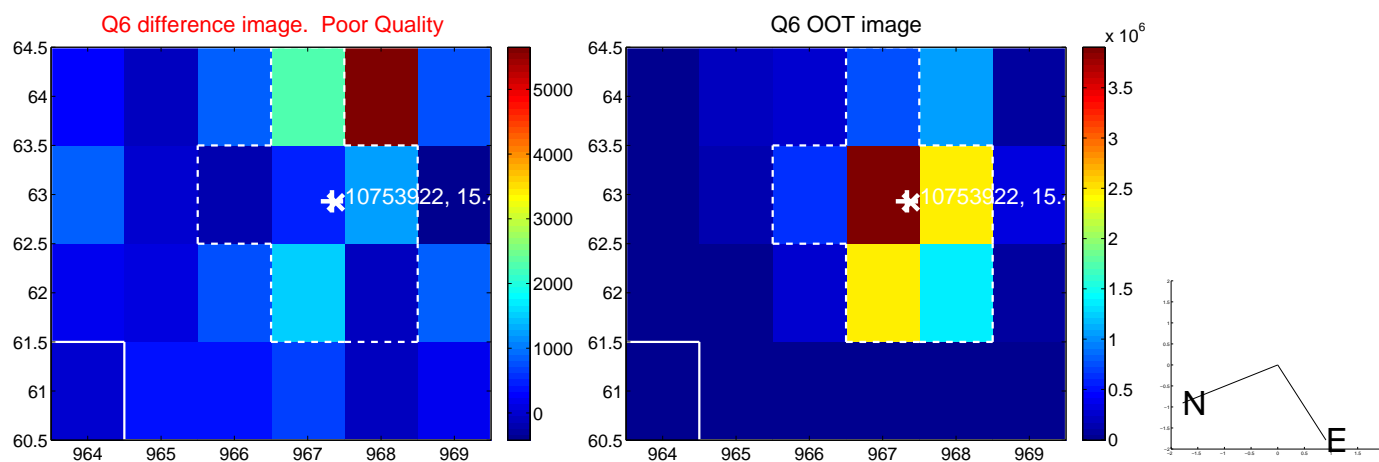
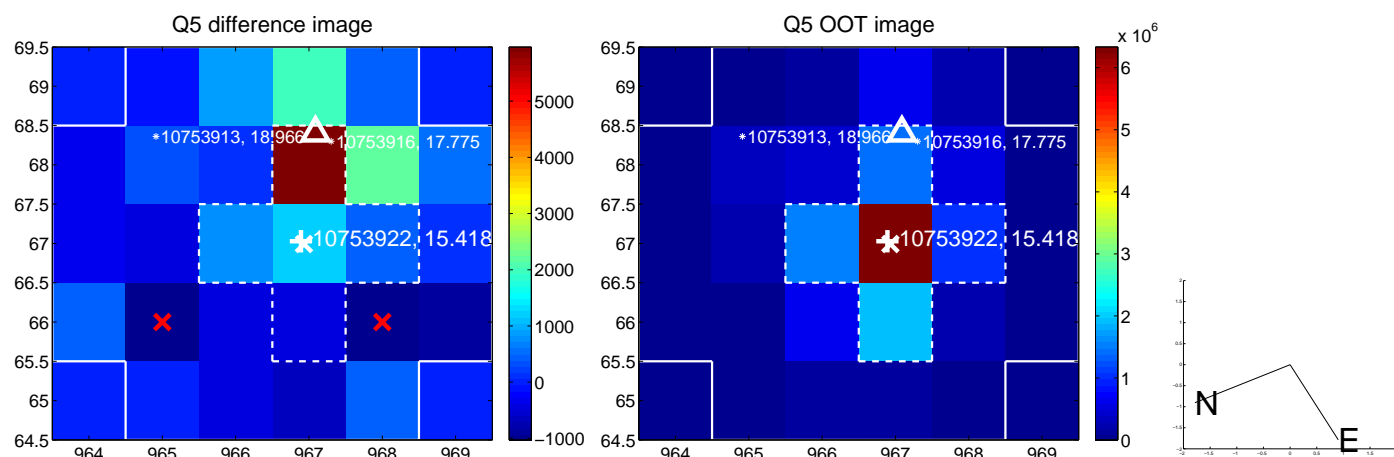


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

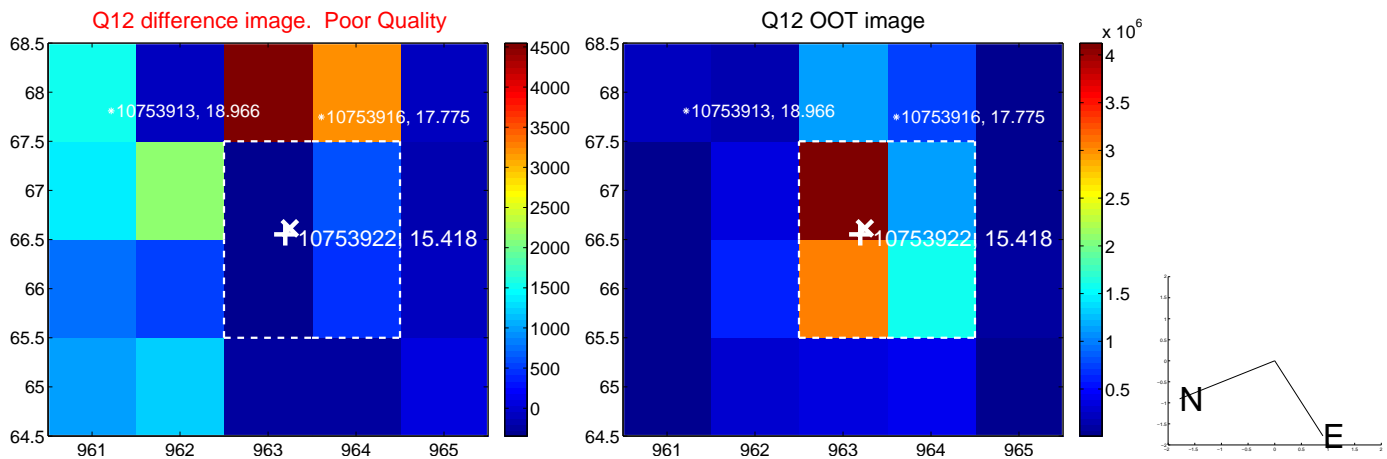
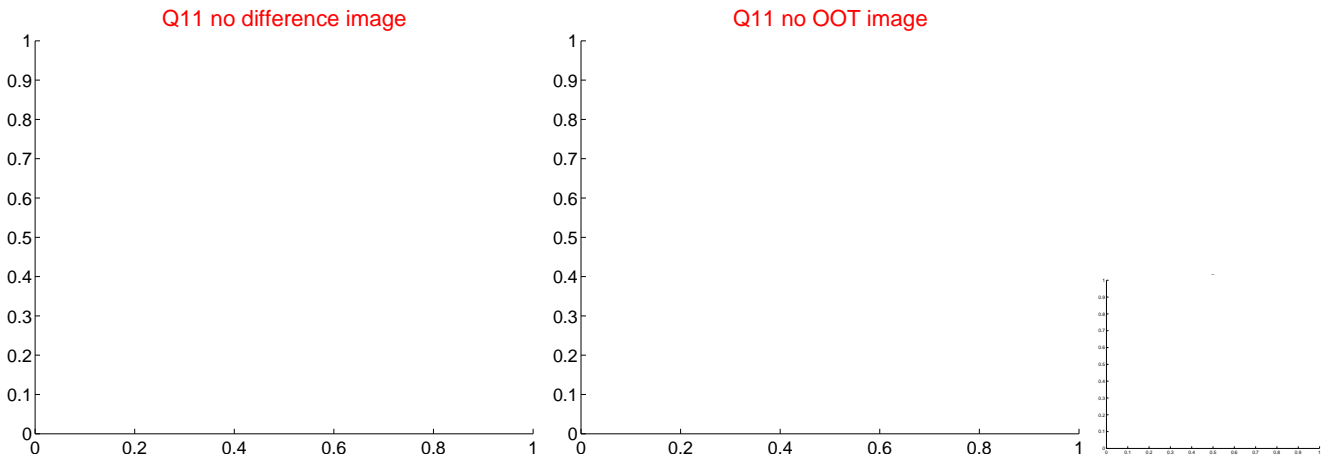
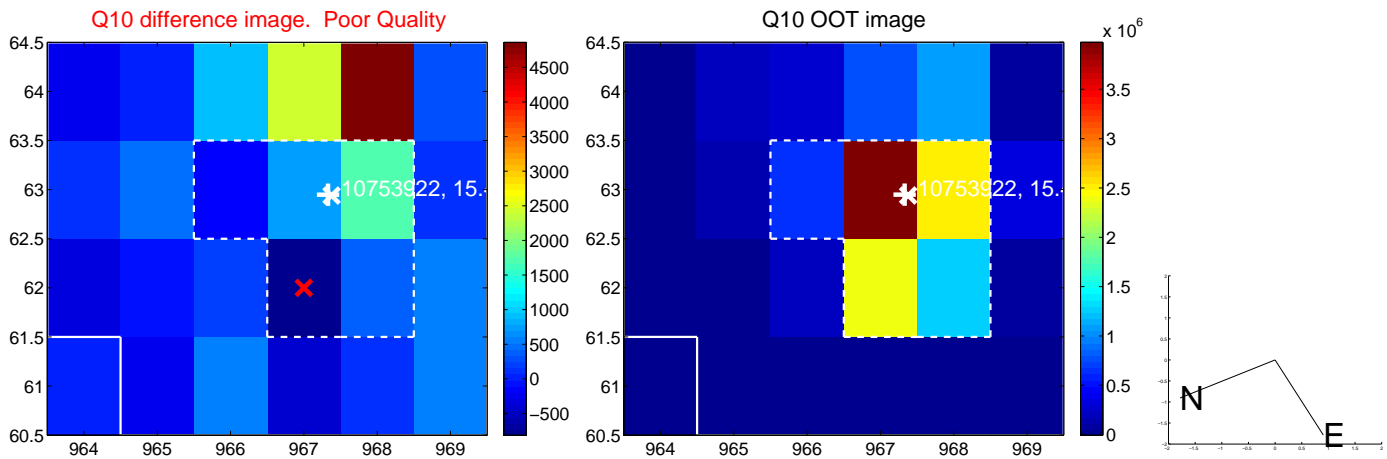
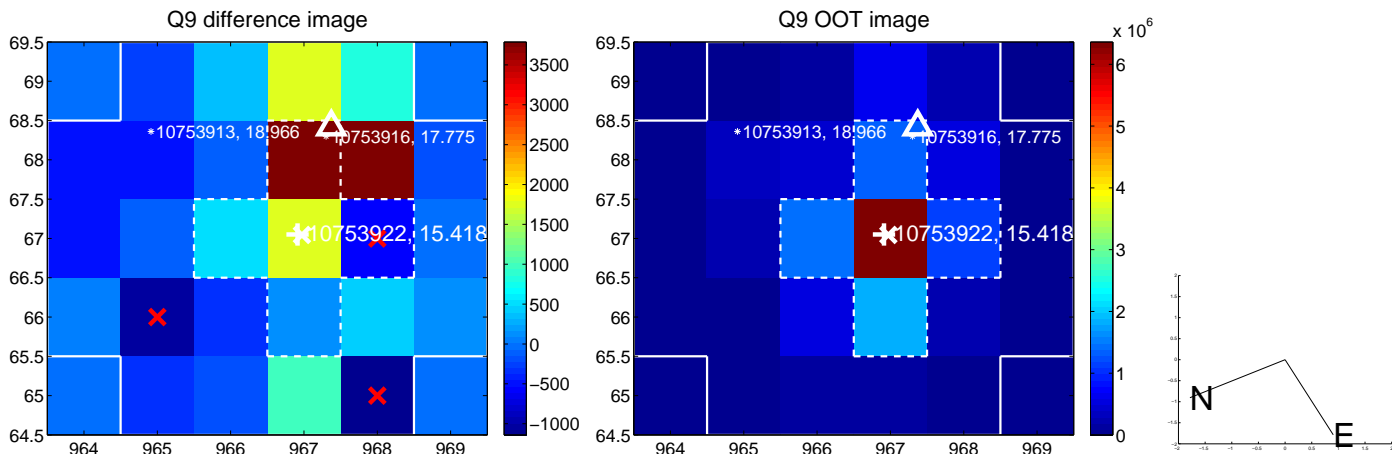
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



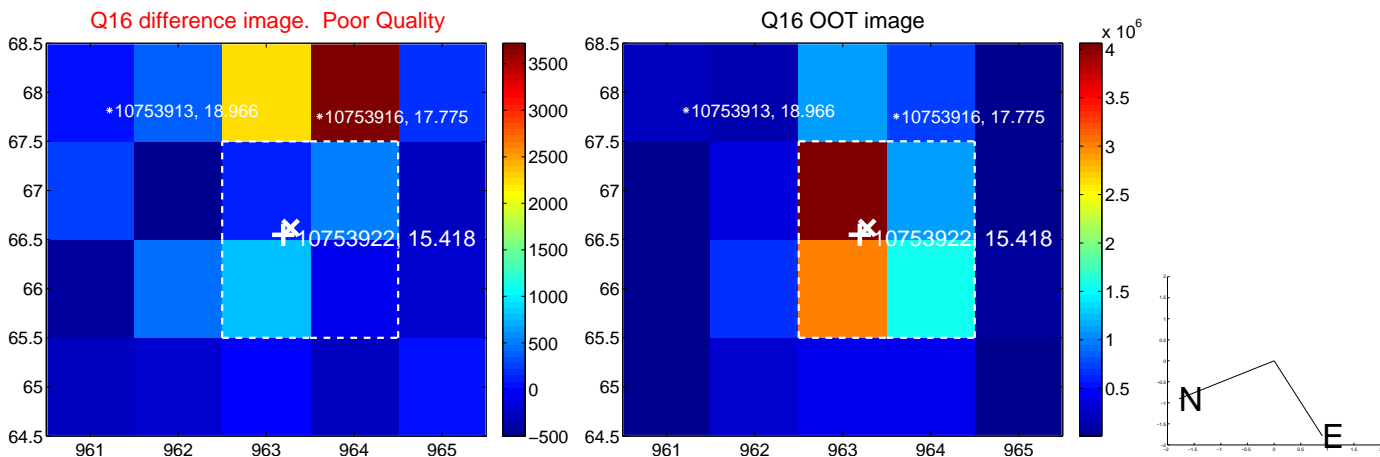
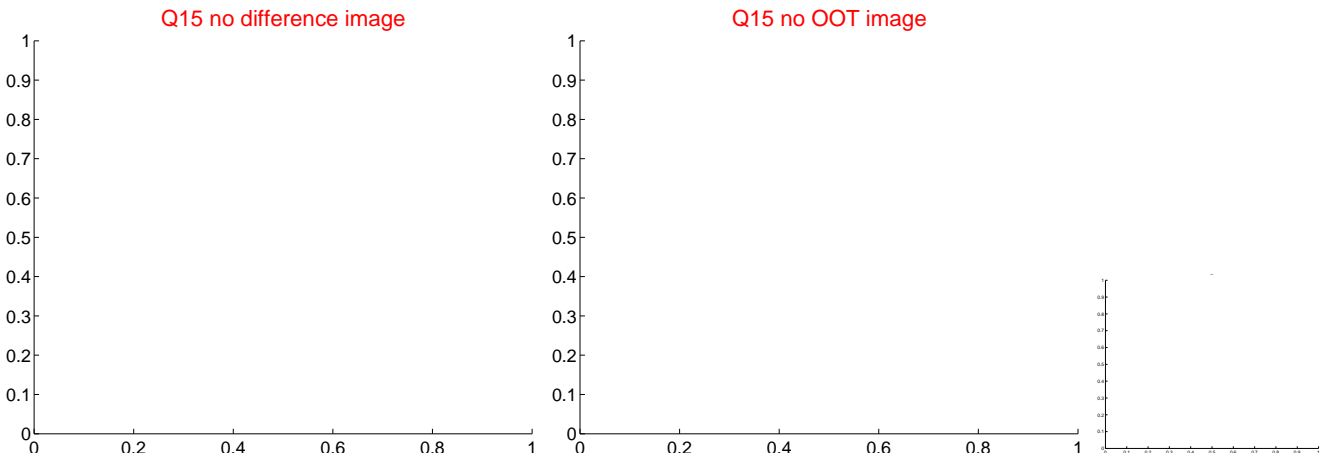
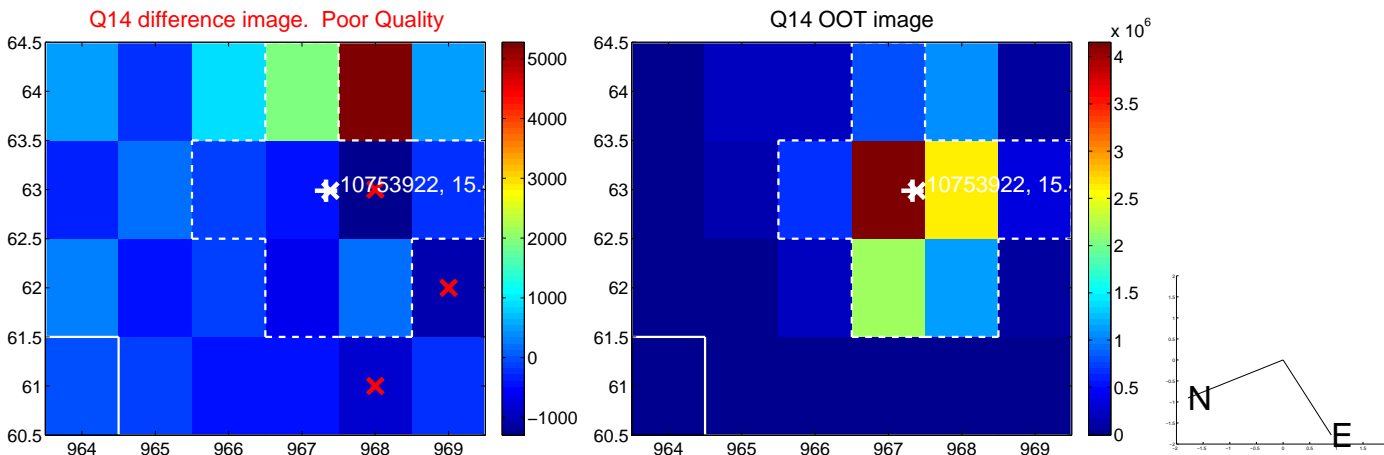
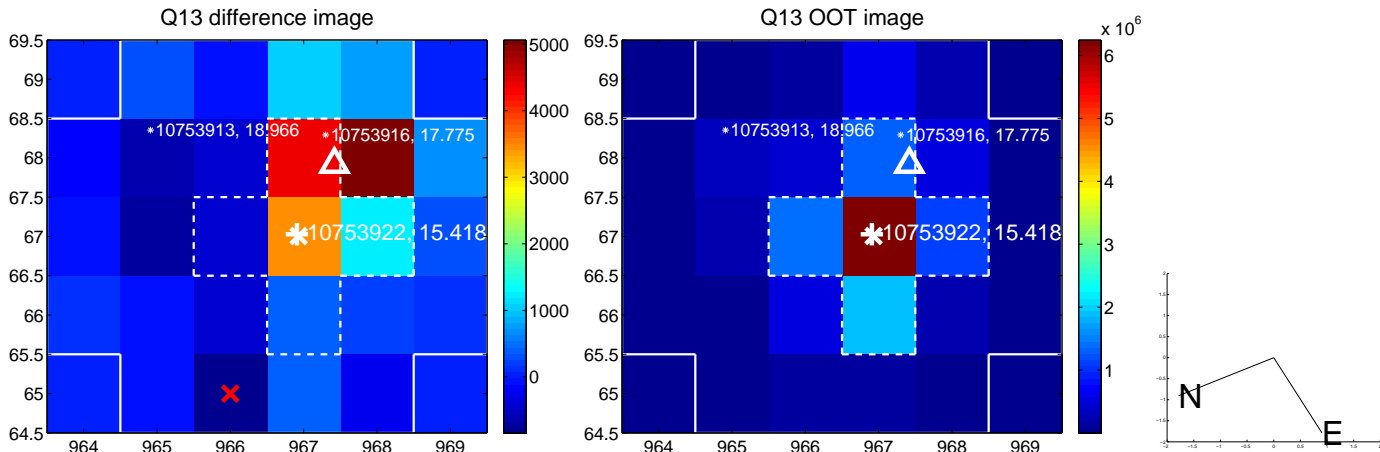
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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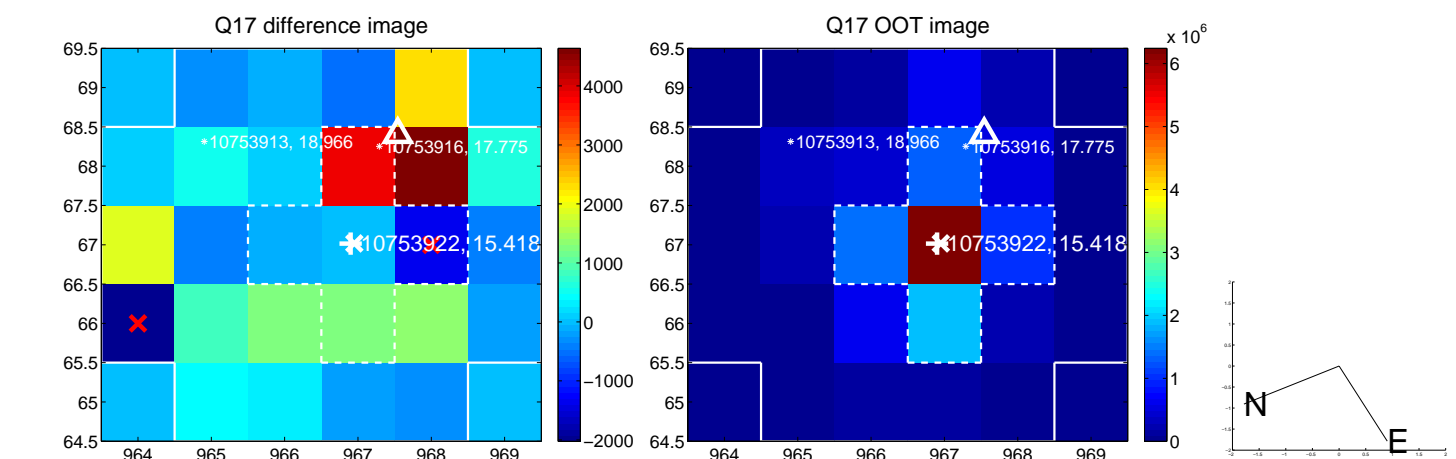


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

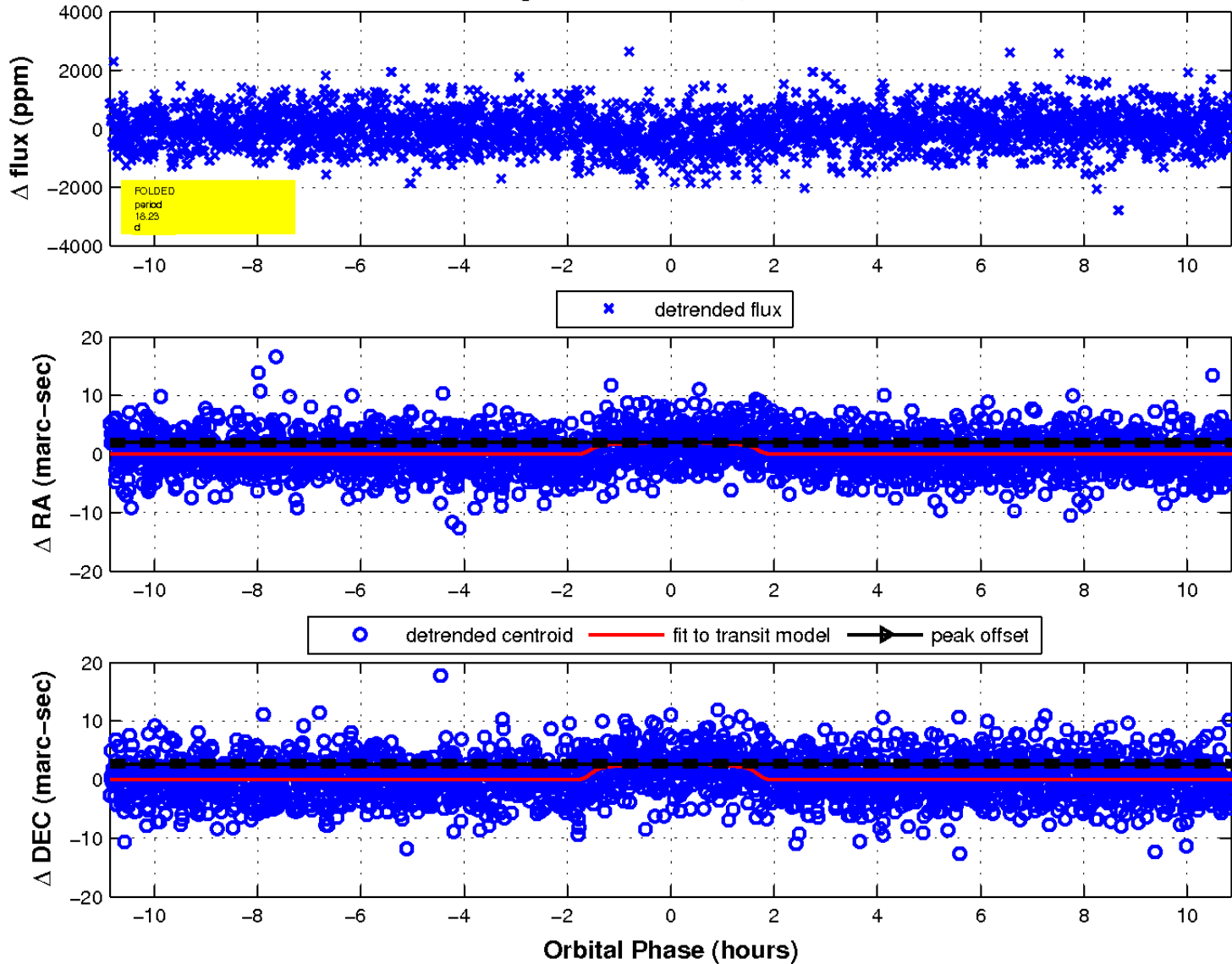




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

