

# KIC 010553627

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010553627-01	OBS	No	0.712743	131.623300	28.9	8.553	7.5	7.9	0.86	5718	0.48	3001.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010553627-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_FEW_DIFFS—HALO_GHOST

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

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

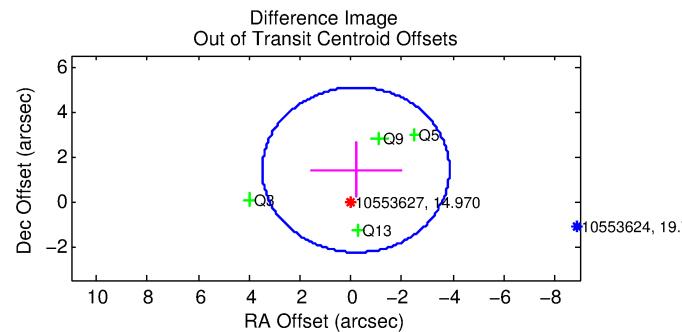
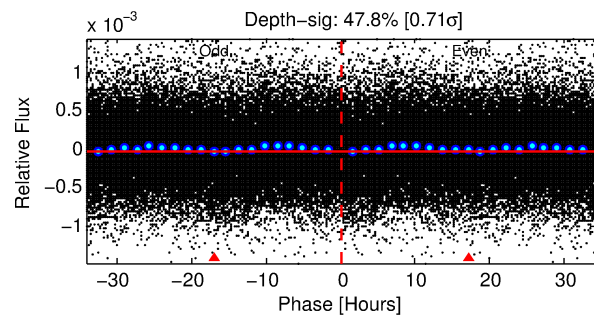
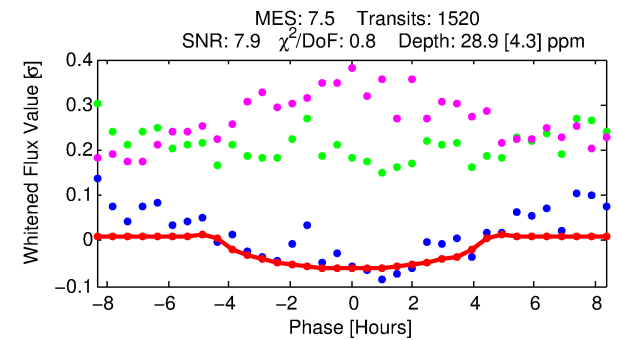
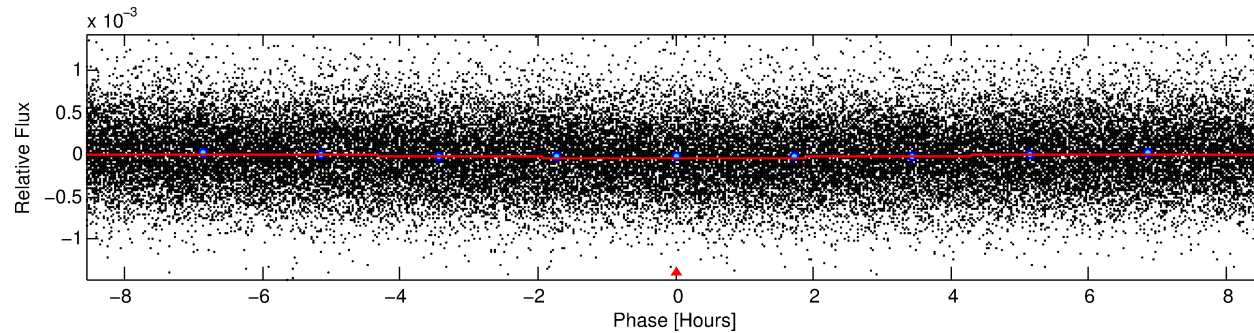
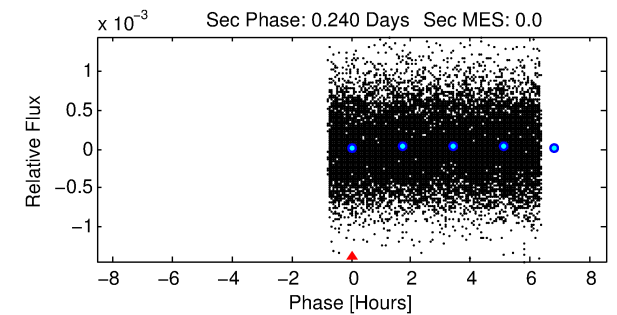
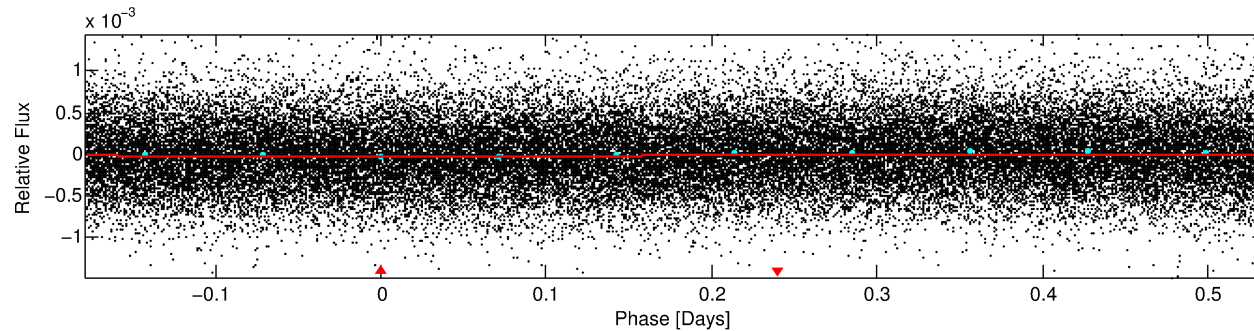
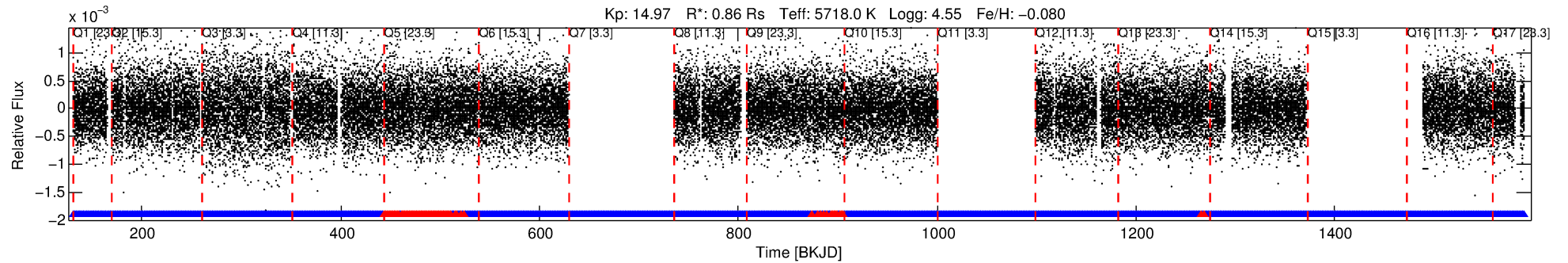
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010553627-01

No Significant Match Found

# DV One-Page Summary

KIC: 10553627 Candidate: 1 of 1 Period: 0.713 d



## DV Fit Results:

Period = 0.71274 [0.00002] d  
Epoch = 131.6233 [0.0118] BKJD  
Rp/R\* = 0.0051 [0.0035]  
a/R\* = 1.00 [0.01]  
b = 0.52 [4.40]  
Seff = 3001.24 [1127.78]  
Teff = 1887 [177] K  
Rp = 0.48 [0.36] Re  
a = 0.0154 [0.0038] AU  
Ag = N/A  
Teffp = N/A

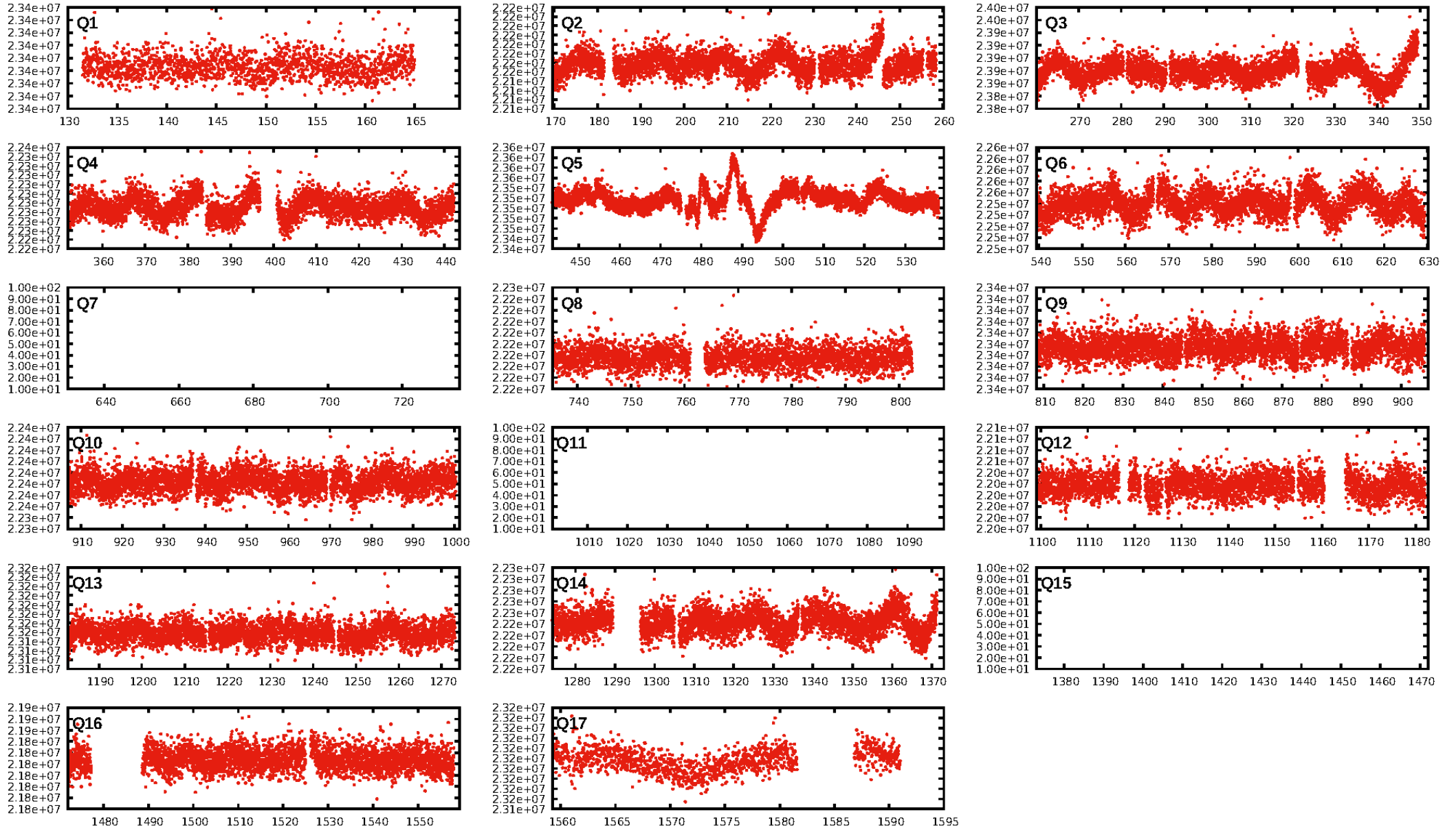
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.93 [1332/1434]  
**GhostDiagnostic-chr: 0.07375**  
Centroid-sig: 0.1%  
Centroid-so: 3.389 arcsec [2.05σ]  
OotOffset-rm: 1.416 arcsec [1.16σ]  
KicOffset-rm: 1.403 arcsec [1.15σ]  
OotOffset-st: 0/1/0/3 [4]  
KicOffset-st: 0/1/0/3 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [14/14]

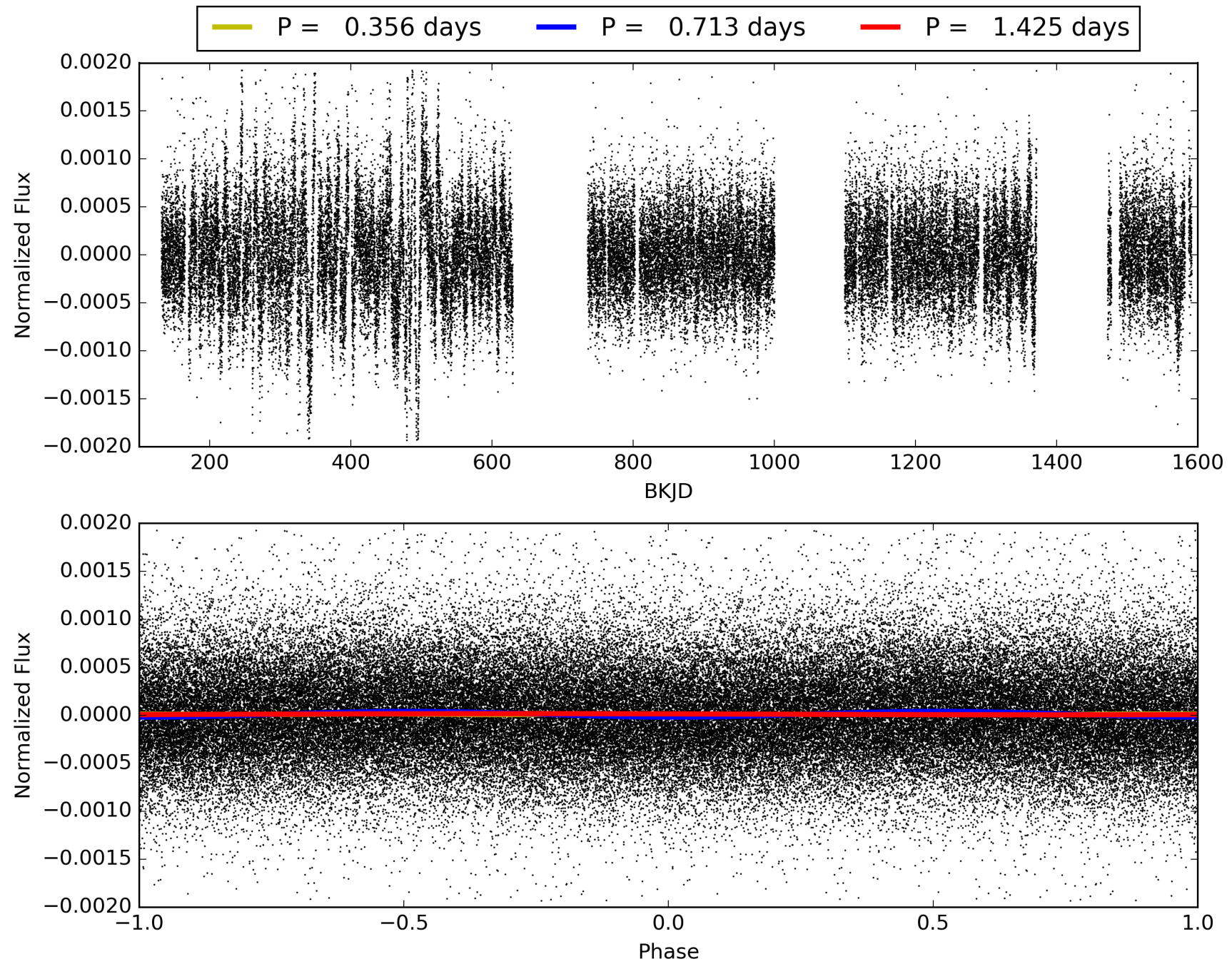
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:59:10 Z

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

# TCE 010553627-01, PDC Light Curves



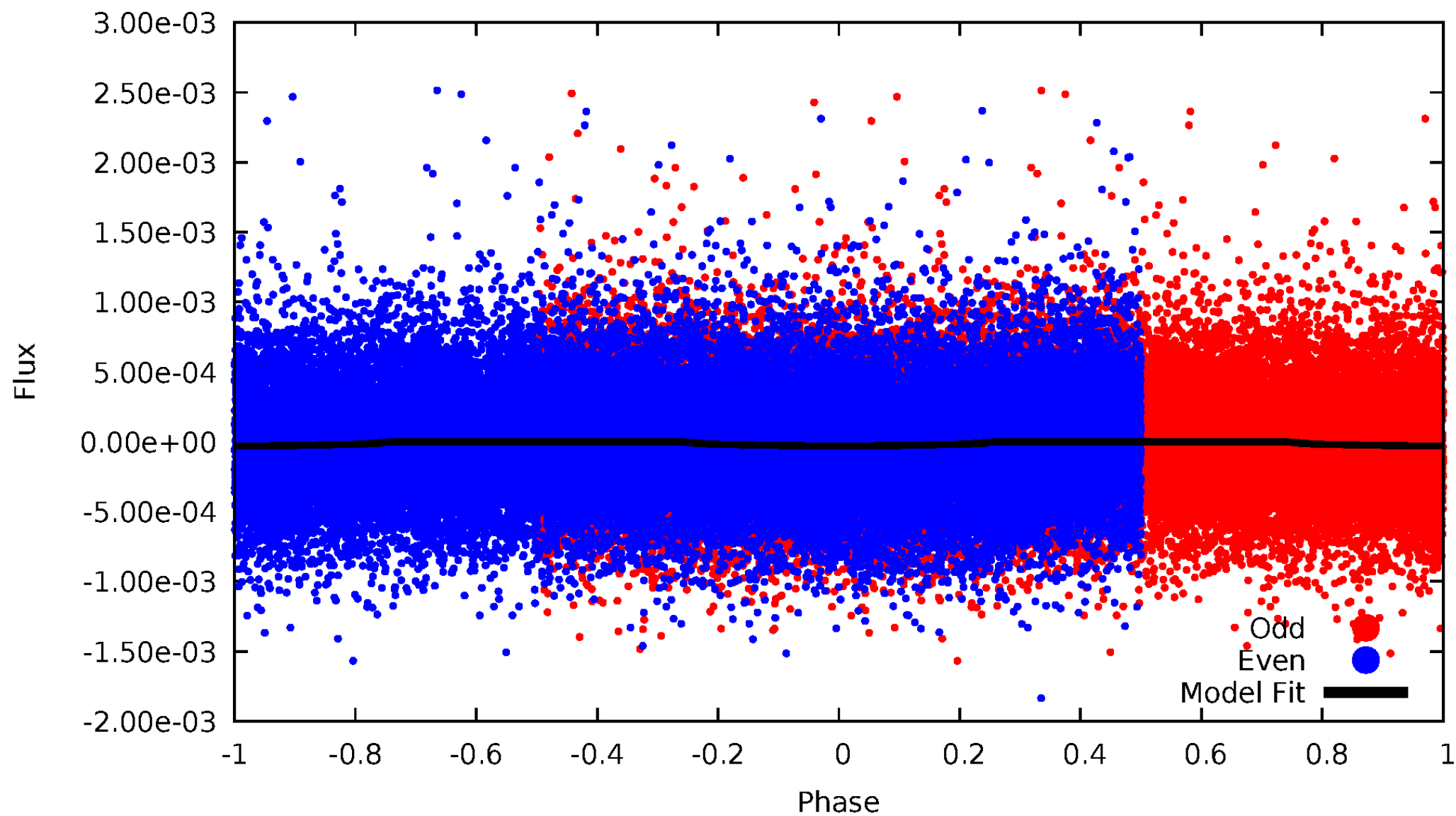
TCE 010553627-01





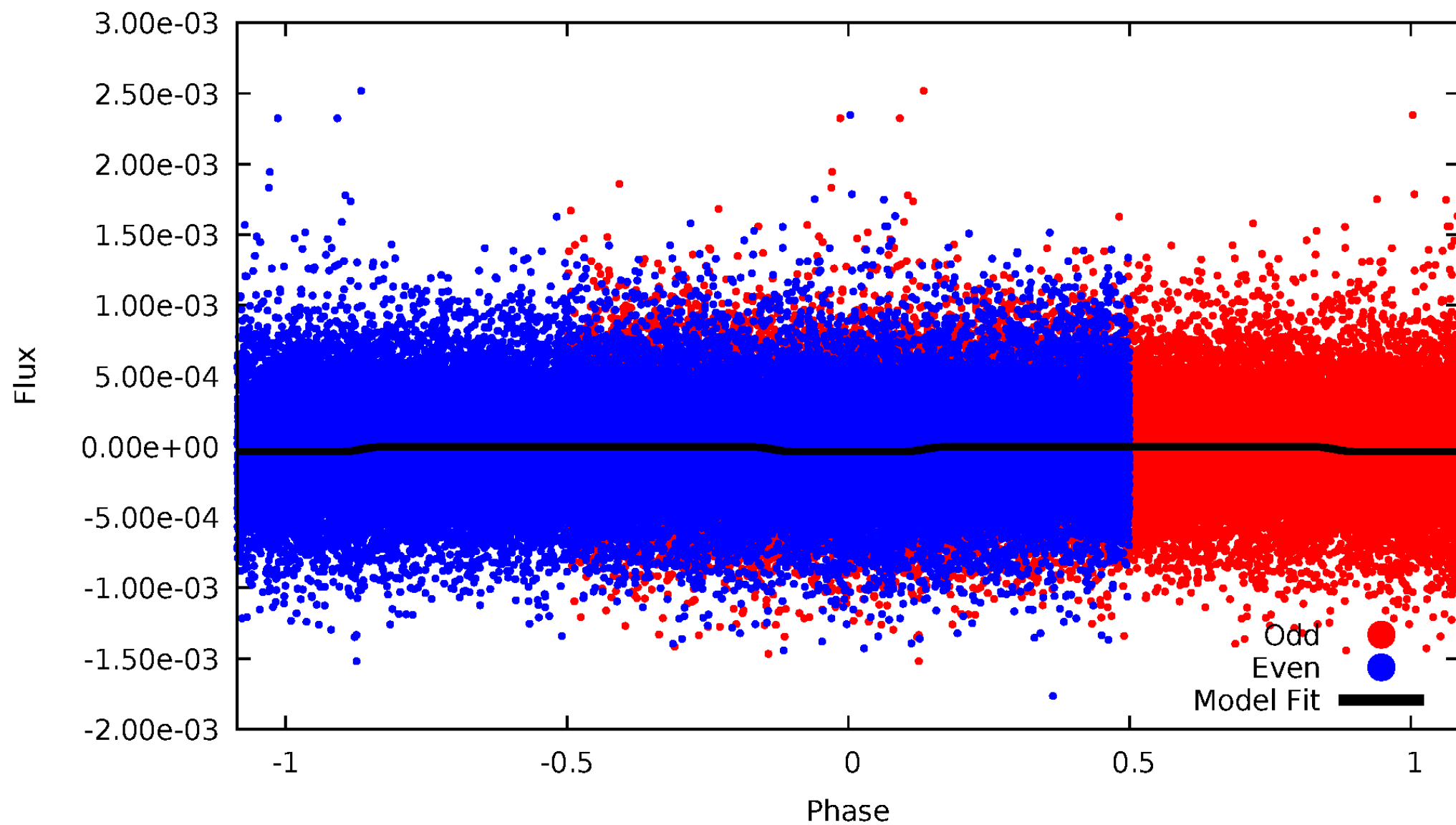
# DV Odd/Even

TCE 010553627-01

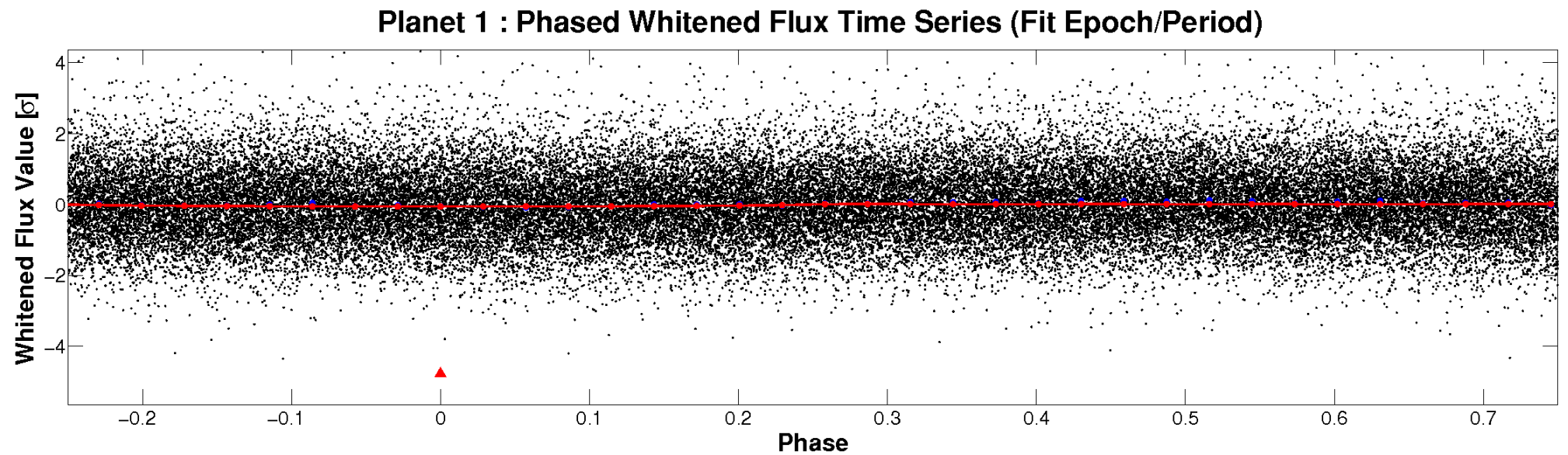
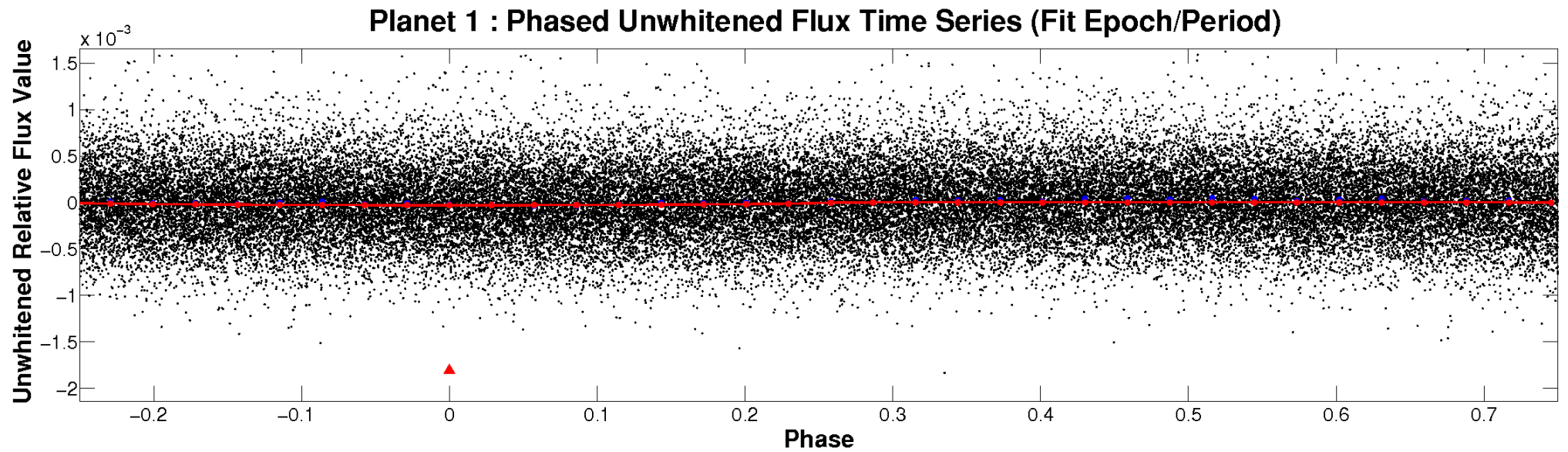


# ALT Odd/Even

TCE 010553627-01

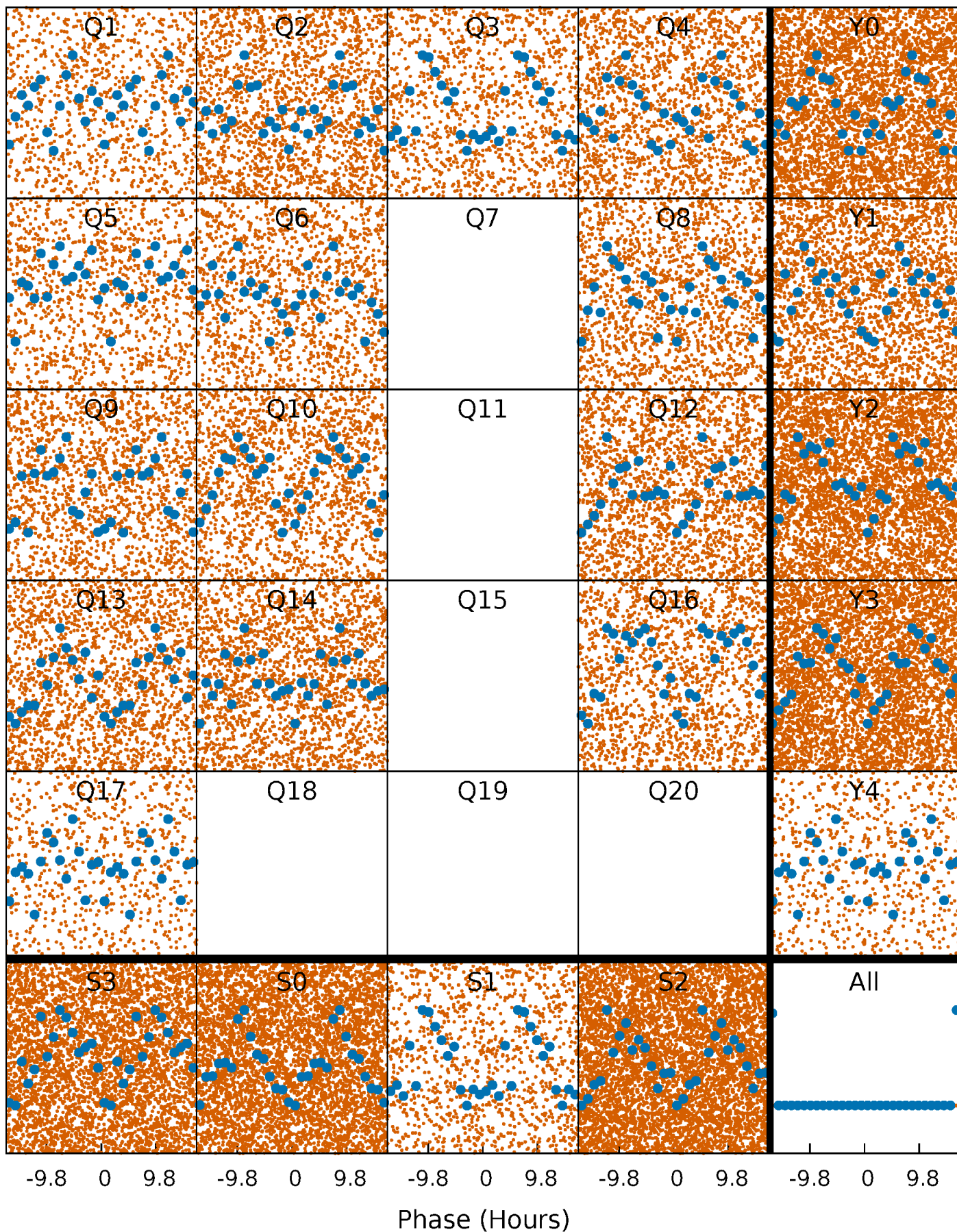


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

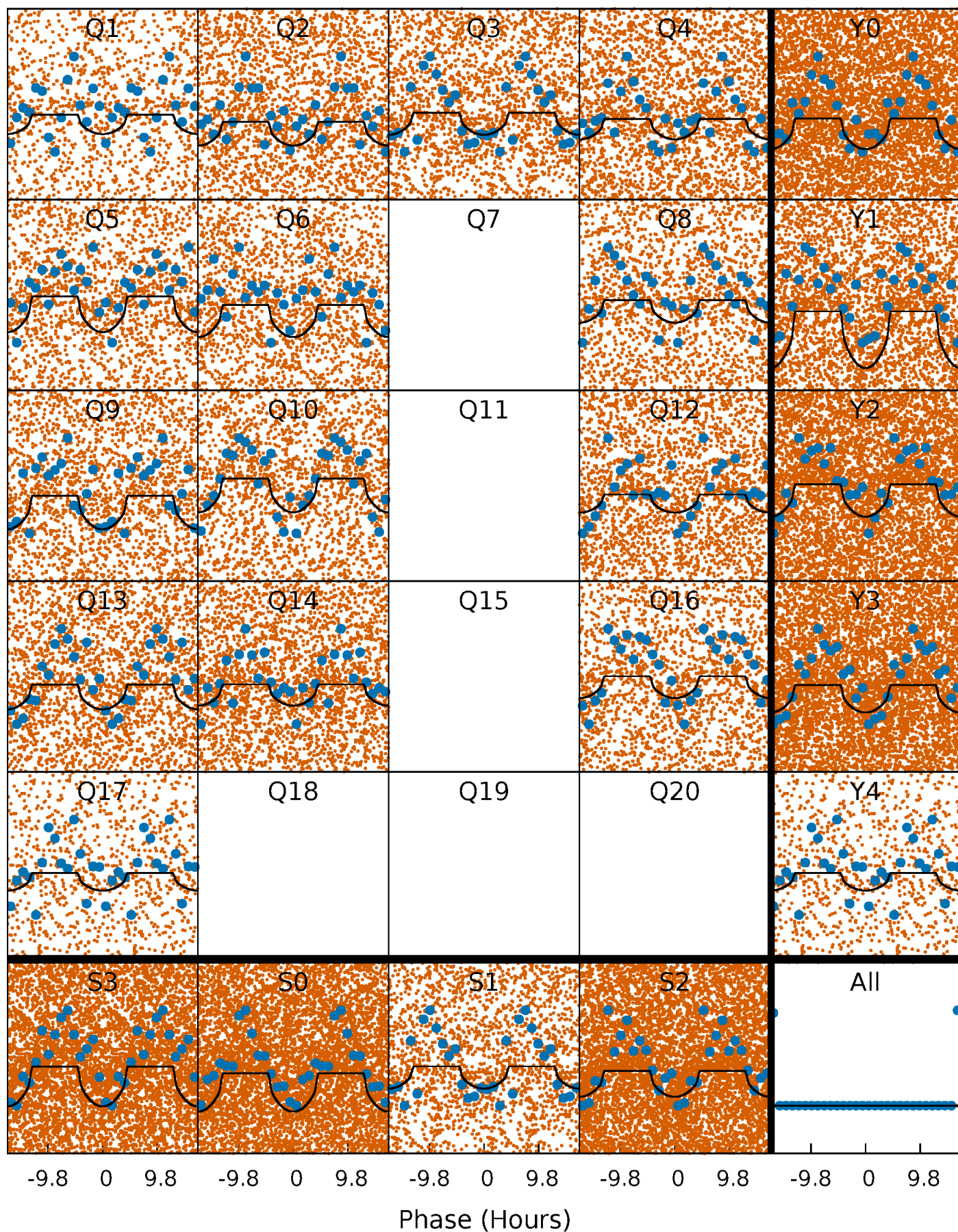
TCE 010553627-01 P= 0.712743 Days  $T_0=131.623300$  (BKJD)





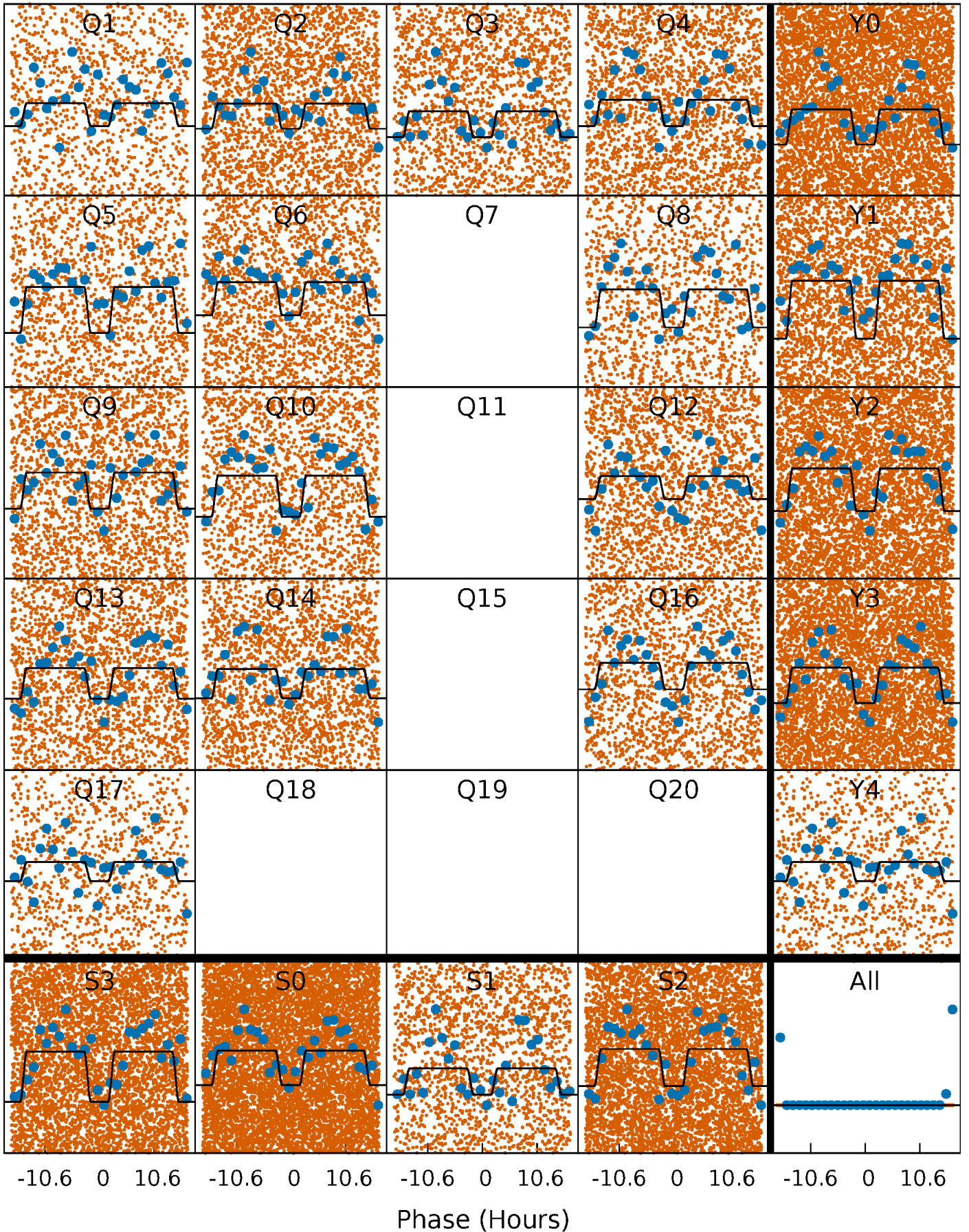
# DV Quarter-Phased Transit Curves

TCE 010553627-01 P= 0.712743 Days  $T_0=131.623300$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010553627-01   P= 0.712784 Days    $T_0=131.591590$  (BKJD)

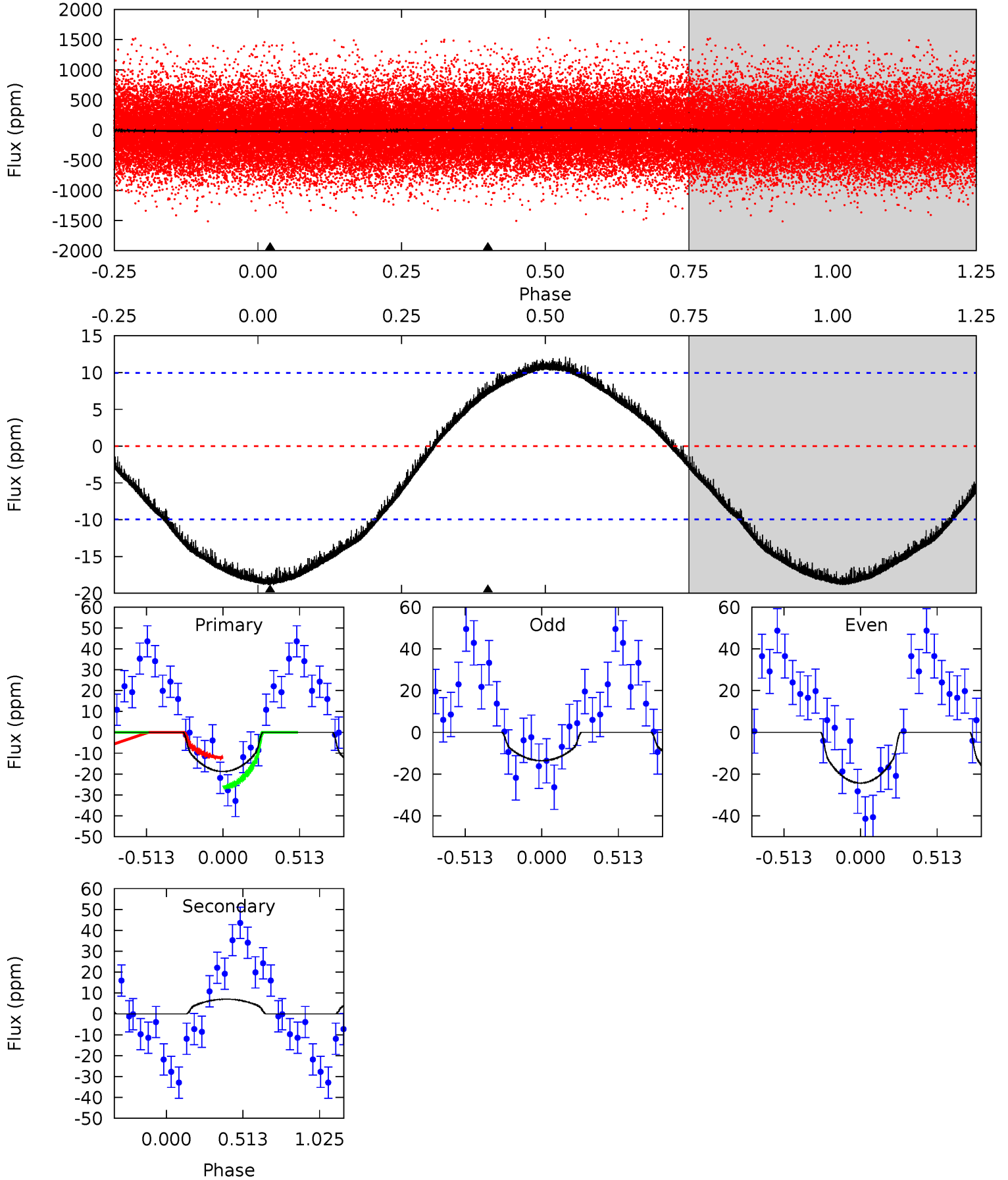




# DV Model-Shift Uniqueness Test

010553627-01, P = 0.712743 Days, E = 130.910557 Days

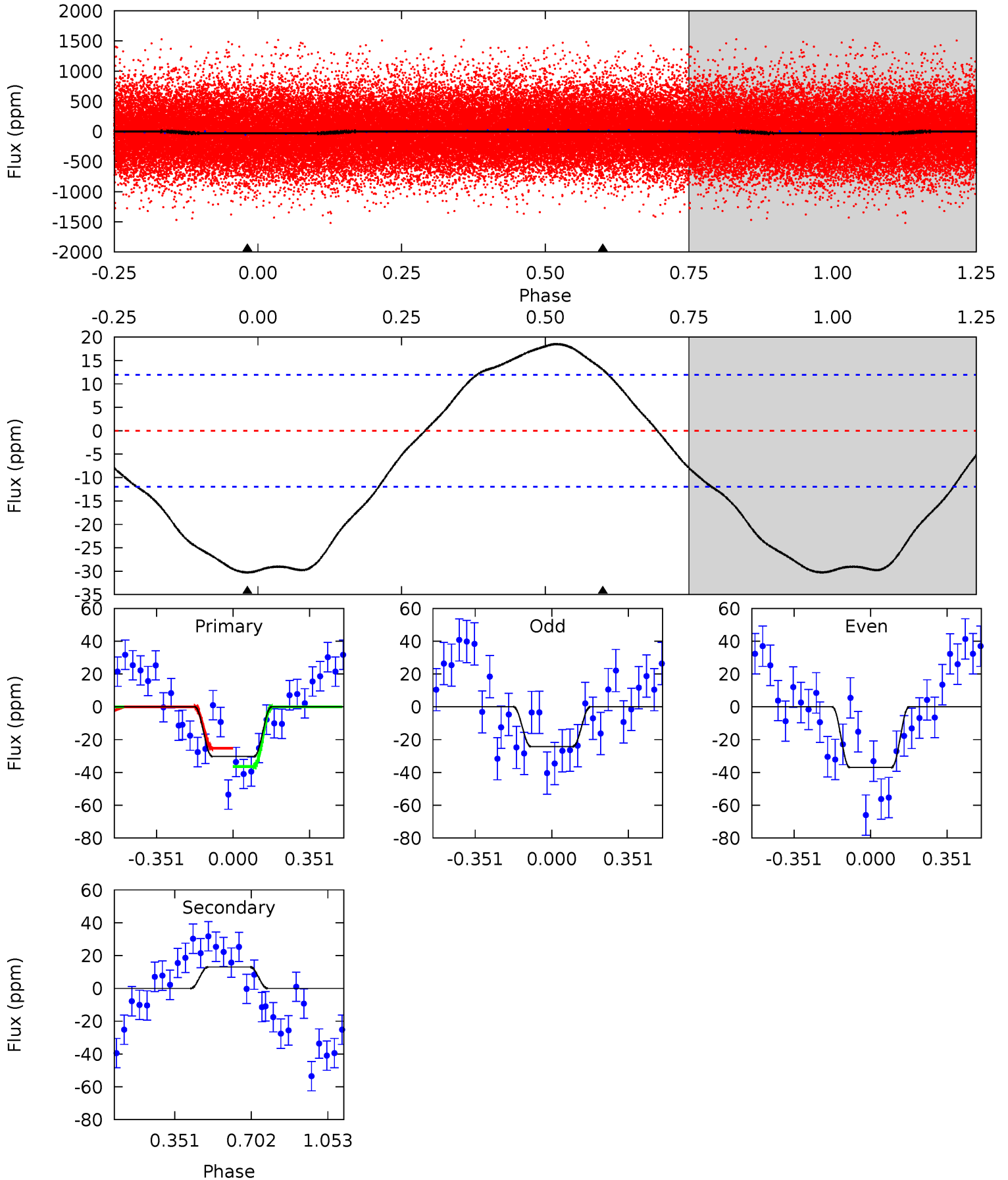
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.93	-2.98	0	0	4.21	0.65	1.05	7.93	7.93	-2.98	-2.98	2.30	0.95	0.39	2.95



# Alt Model-Shift Uniqueness Test

010553627-01, P = 0.712784 Days, E = 130.878806 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
10.9	-4.69	0	0	4.29	0.93	1.37	10.9	10.9	-4.69	-4.69	2.26	0.91	0.38	1.98





### Stellar Parameters For KIC 010553627

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5718^{+152}_{-169}$	$4.549^{+0.035}_{-0.196}$	$-0.080^{+0.300}_{-0.300}$	$0.863^{+0.248}_{-0.078}$	$0.960^{+0.094}_{-0.115}$	$2.107^{+0.402}_{-1.057}$
	+3%/-3%	+1%/-4%	+375%/-375%	+29%/-9%	+10%/-12%	+19%/-50%
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 010553627-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$7 \pm 2$	$0.55^{+0.32}_{-0.28}$	$2696^{+179}_{-119}$	$-4265^{+624}_{-1329}$	$-2.676^{+1.663}_{-9.397}$
Alt.	$13 \pm 3$	$0.60^{+0.35}_{-0.33}$	$2698^{+175}_{-124}$	$-4594^{+666}_{-1914}$	$-4.620^{+2.819}_{-18.883}$

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

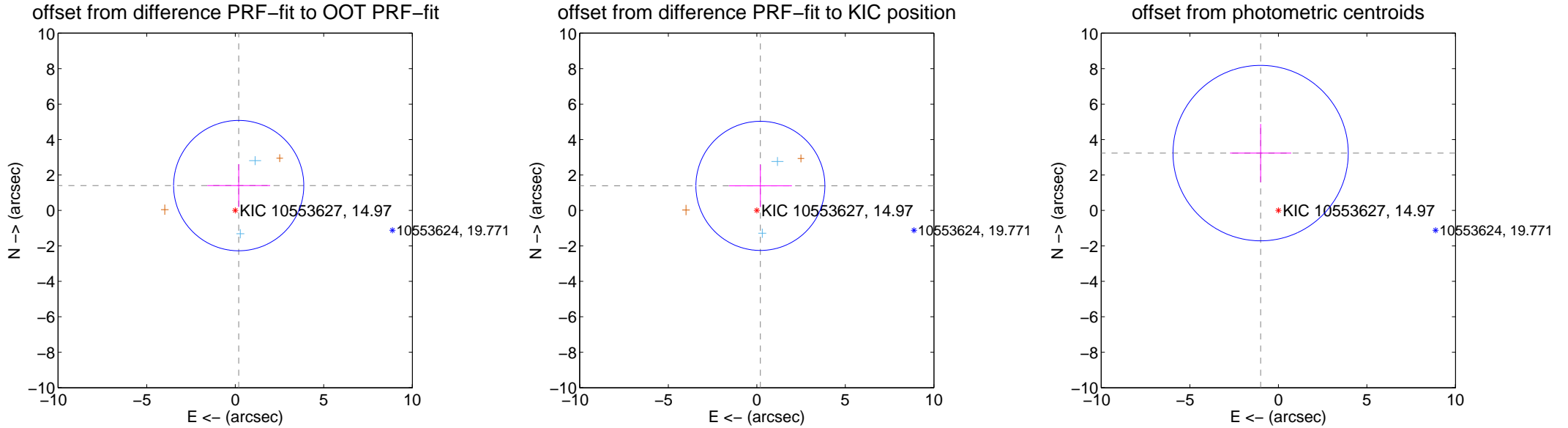
## DV Centroid Data

Supplemental centroid analysis for 010553627-01. Kepler magnitude: 14.97. Transit SNR 7.88

There are 2 quarters with good PRF difference image offsets

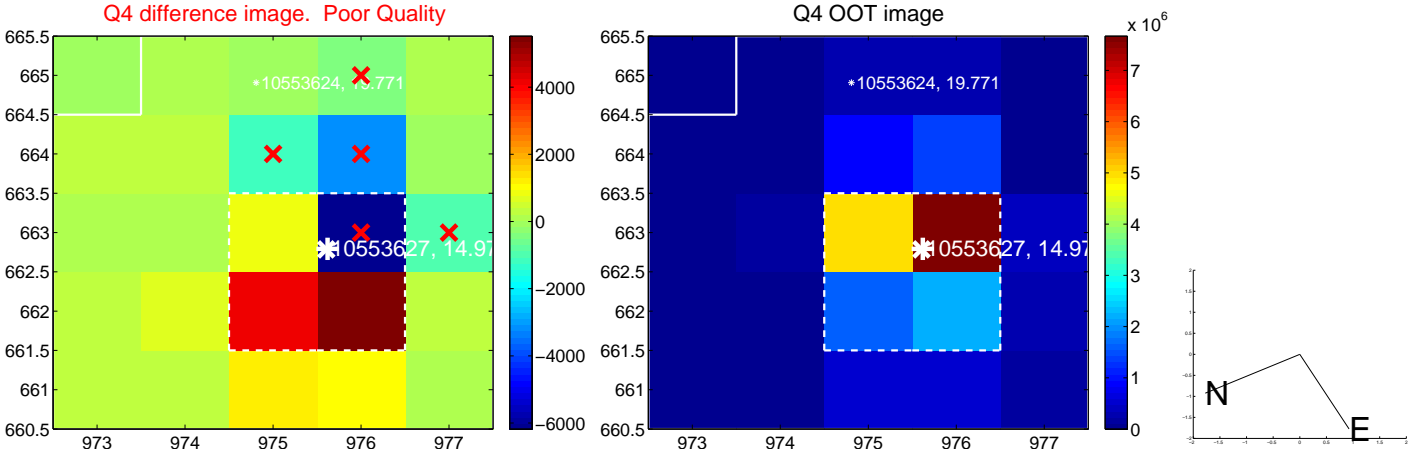
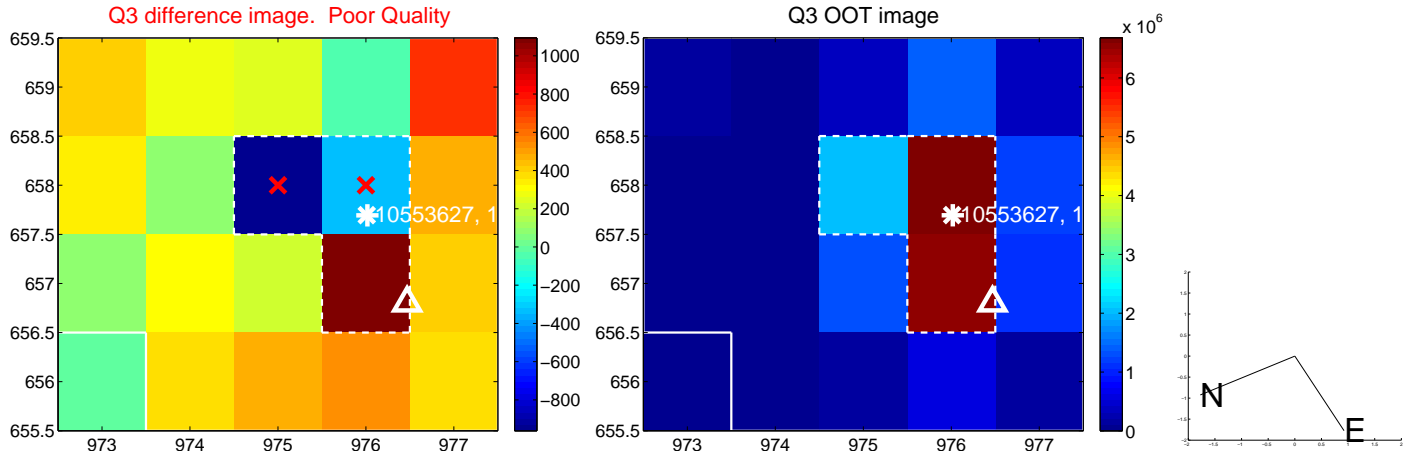
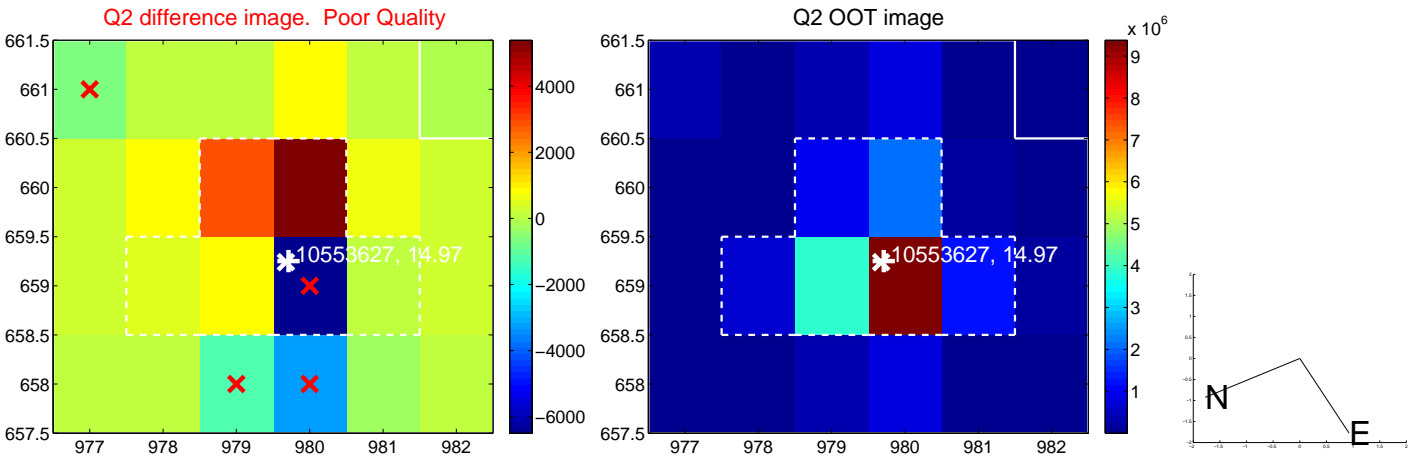
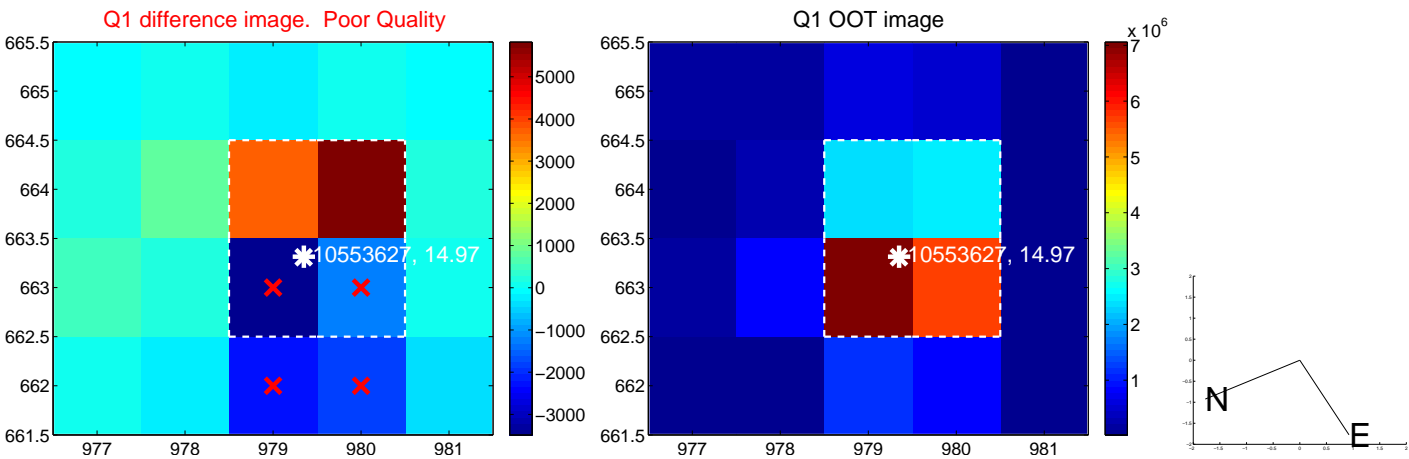
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.416 \pm 1.226$	1.16	$-0.195 \pm 1.777$	$1.403 \pm 1.213$
PRF-fit source offset from KIC position	$1.403 \pm 1.215$	1.15	$-0.202 \pm 1.779$	$1.388 \pm 1.200$
photometric centroid source offset	$3.39 \pm 1.65$	2.05	$1.00 \pm 1.73$	$3.24 \pm 1.64$

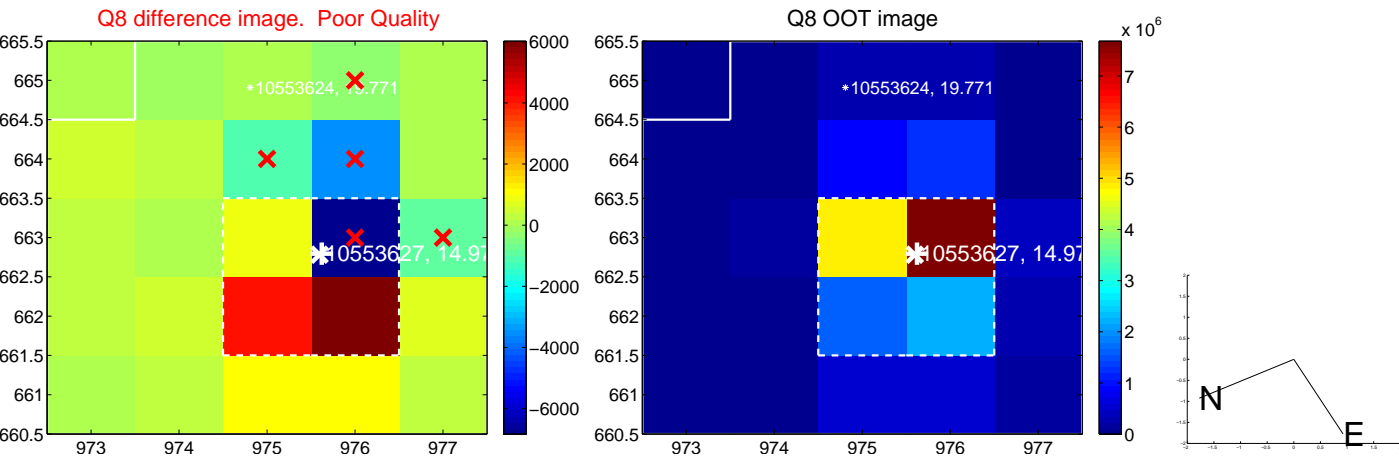
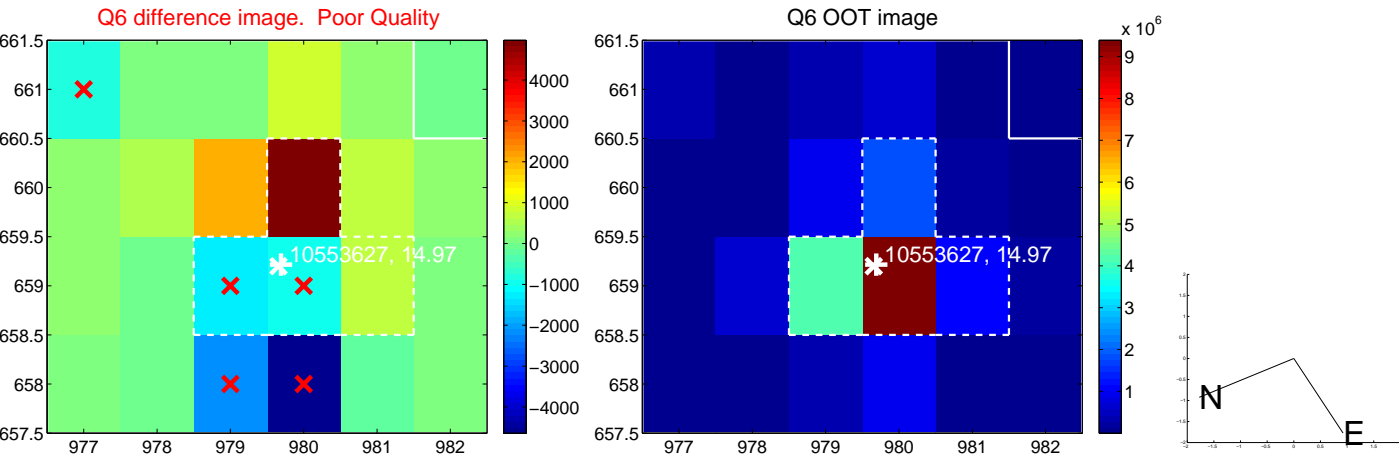
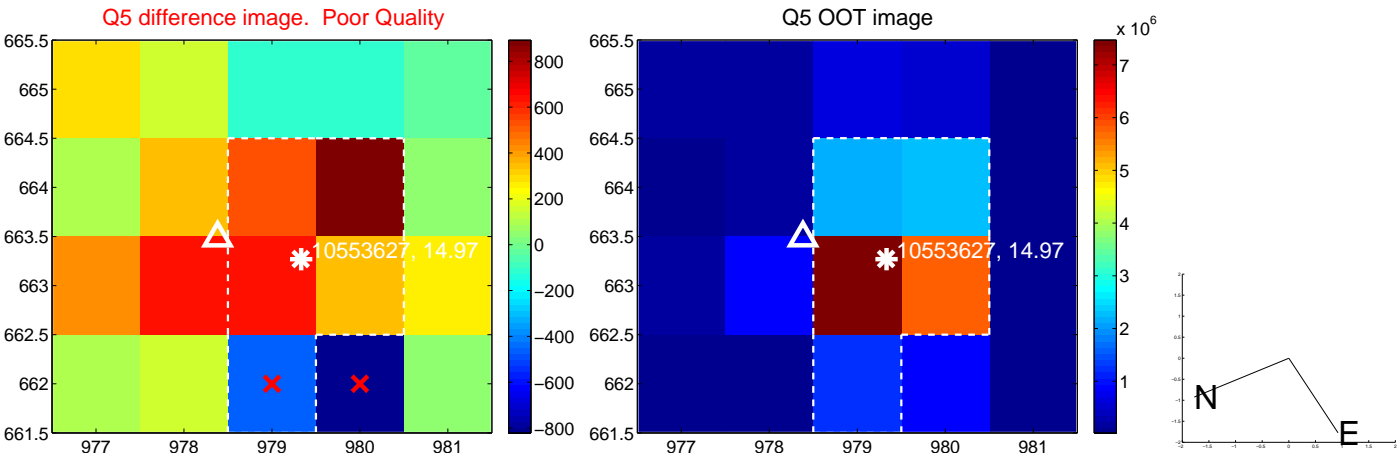


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

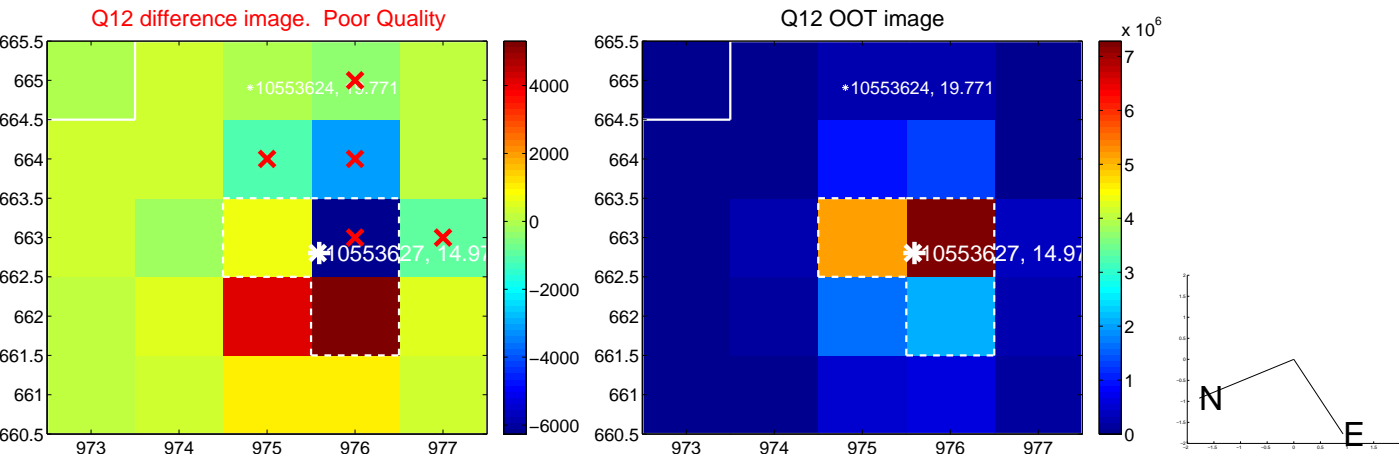
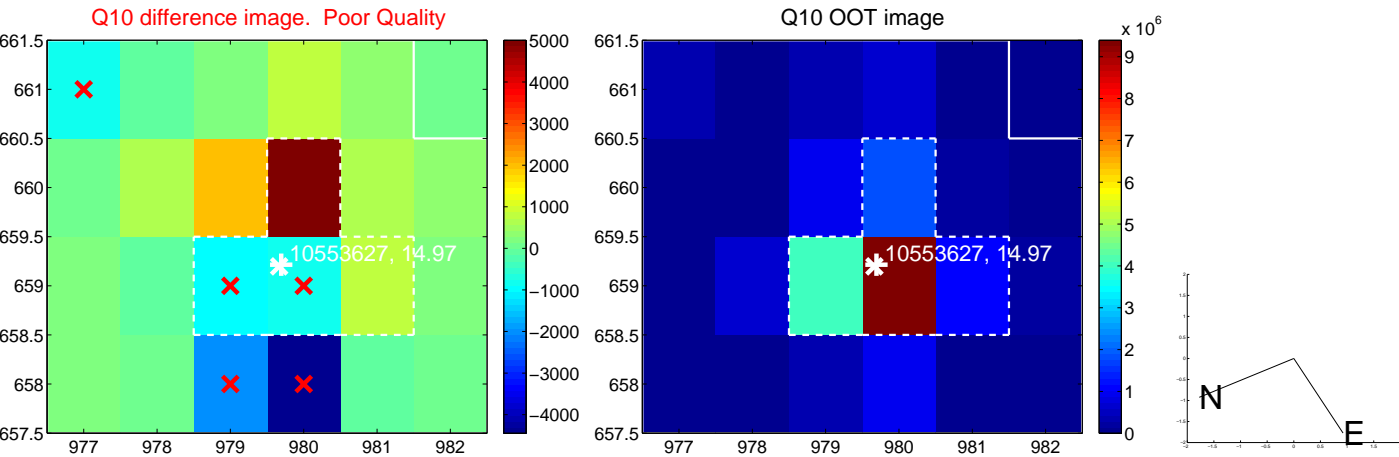
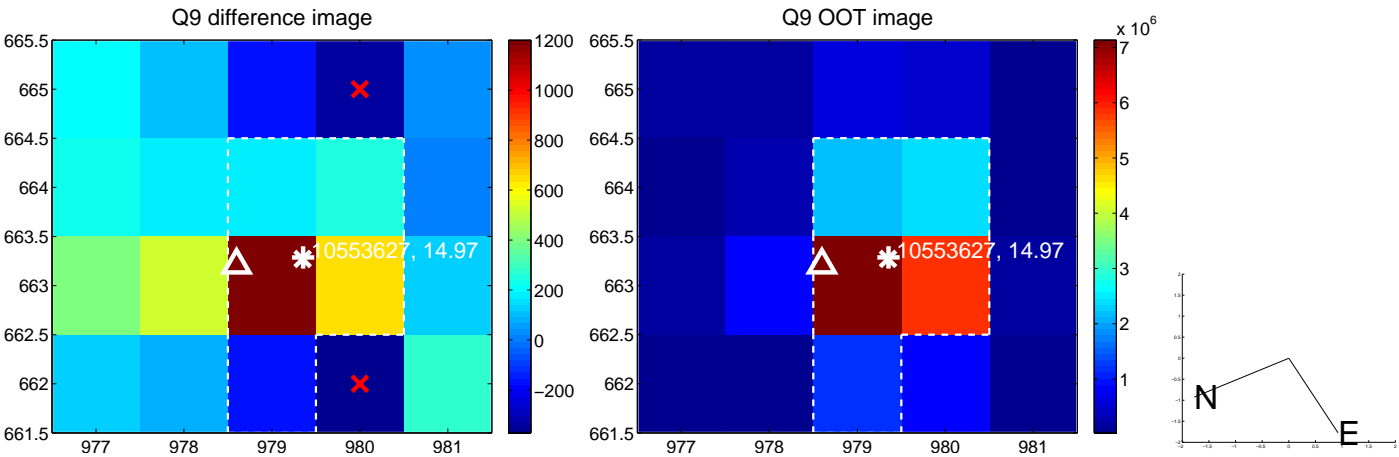


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

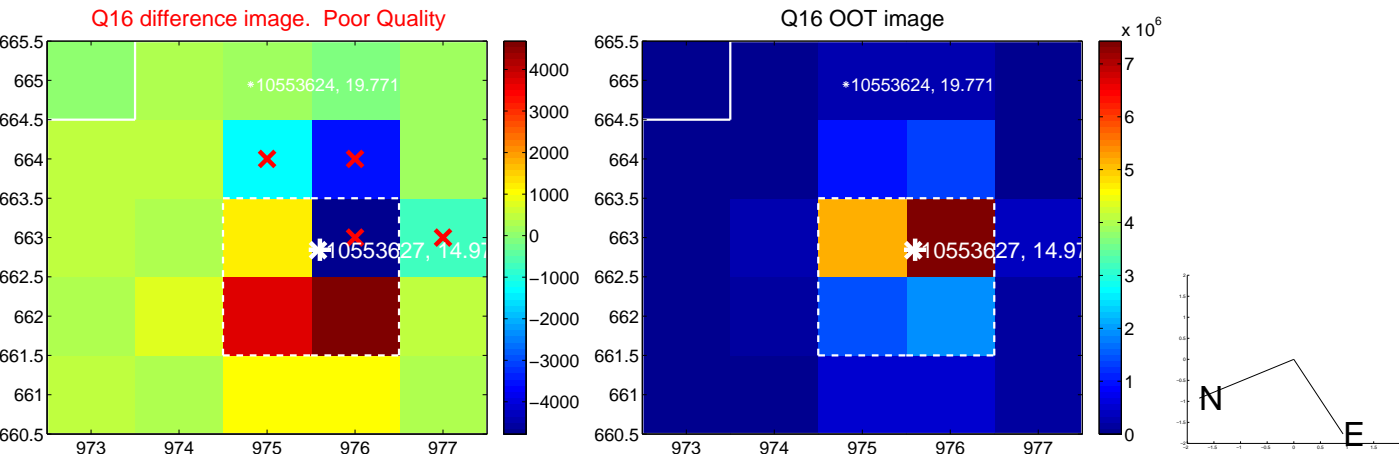
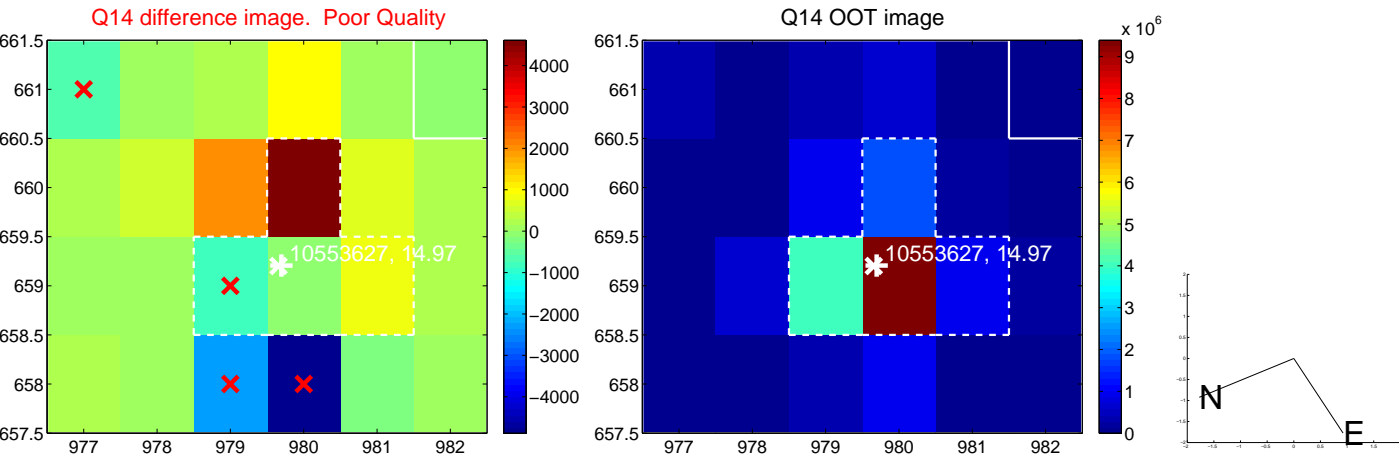
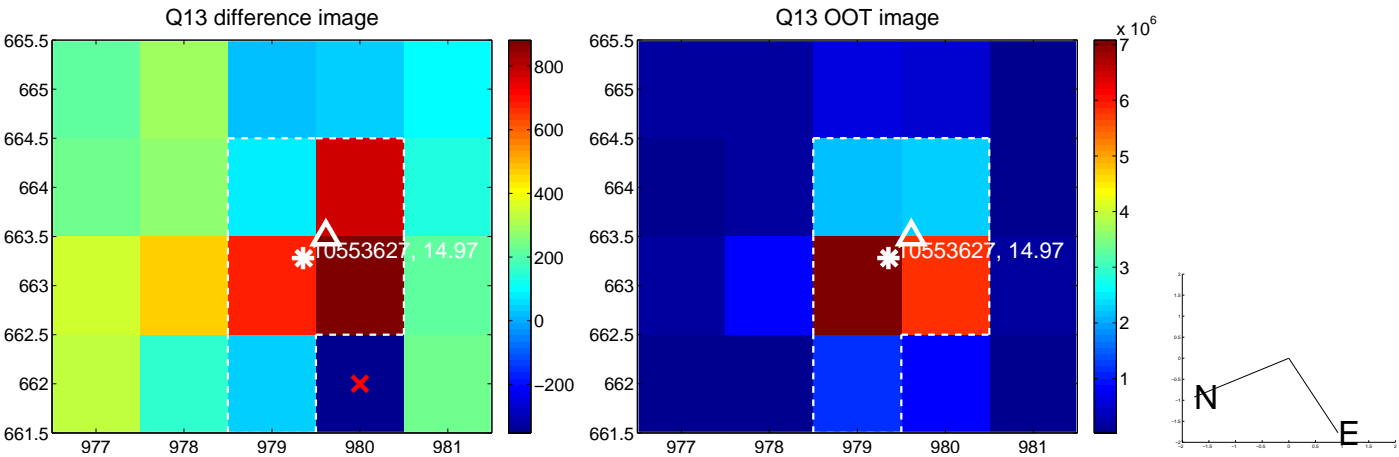




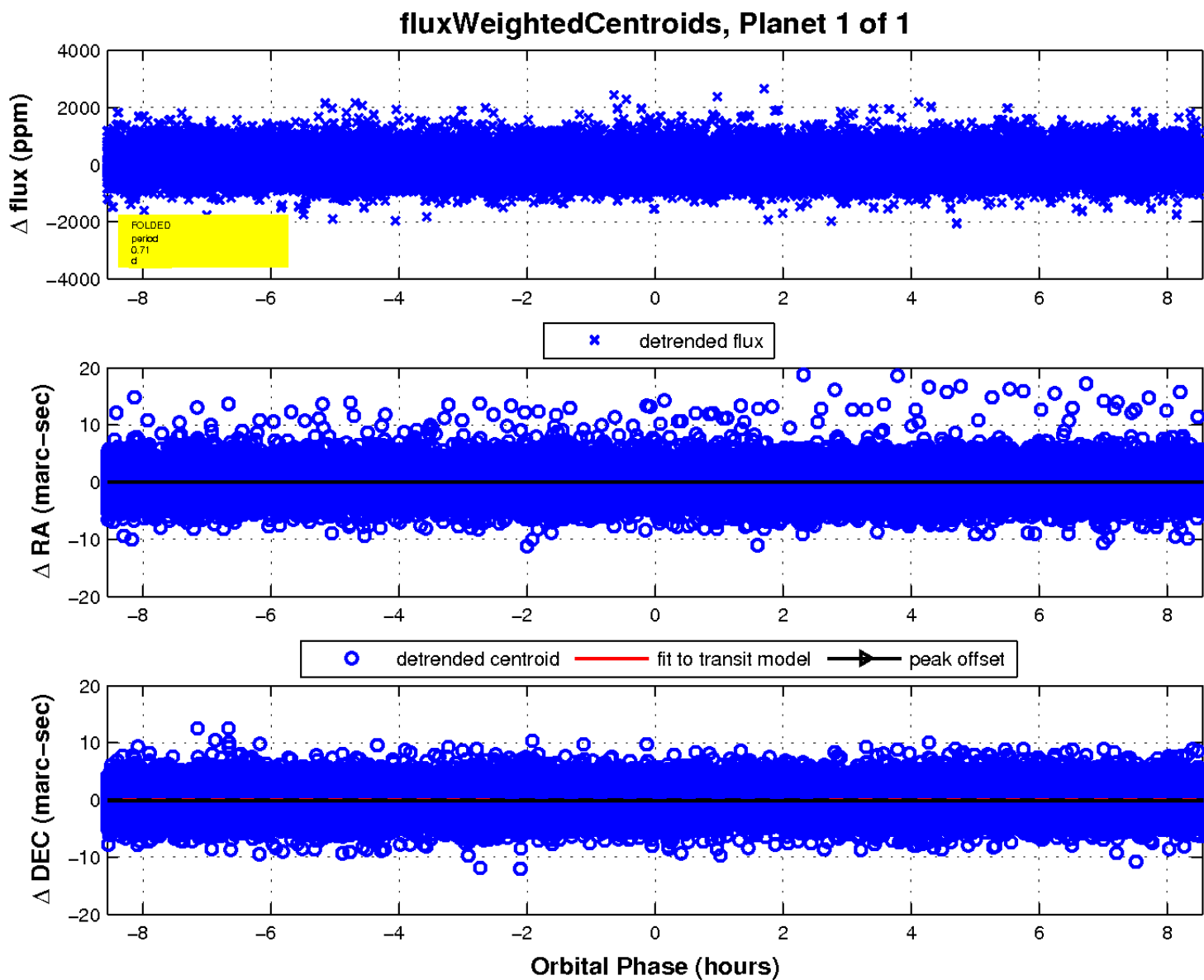
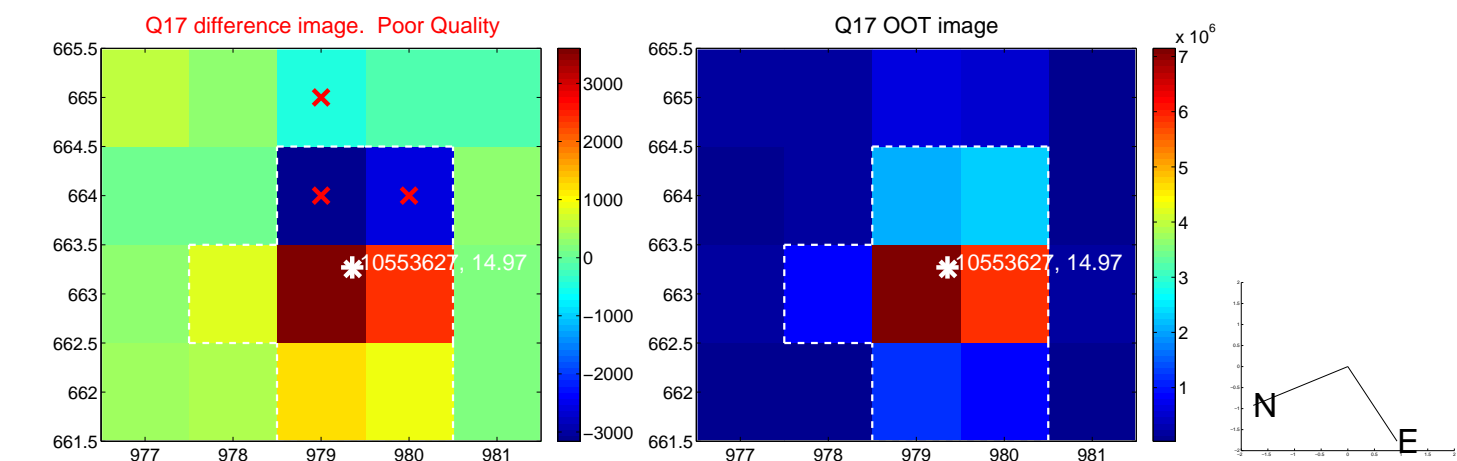
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

