

# KIC 005376642

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005376642-01	OBS	No	0.503812	131.921307	32.0	2.656	8.2	10.7	0.99	6191	0.57	8151.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005376642-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH

**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.

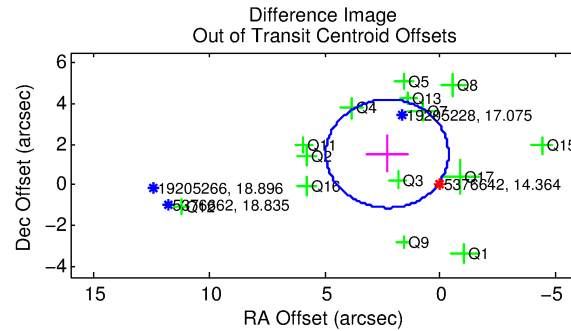
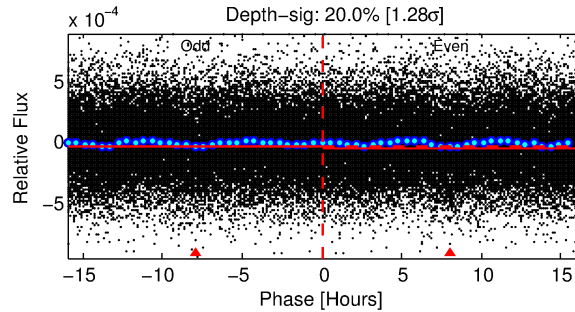
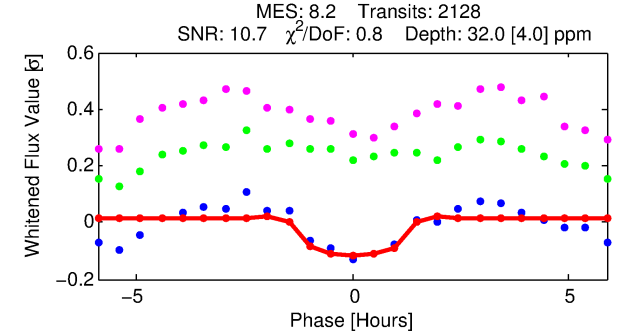
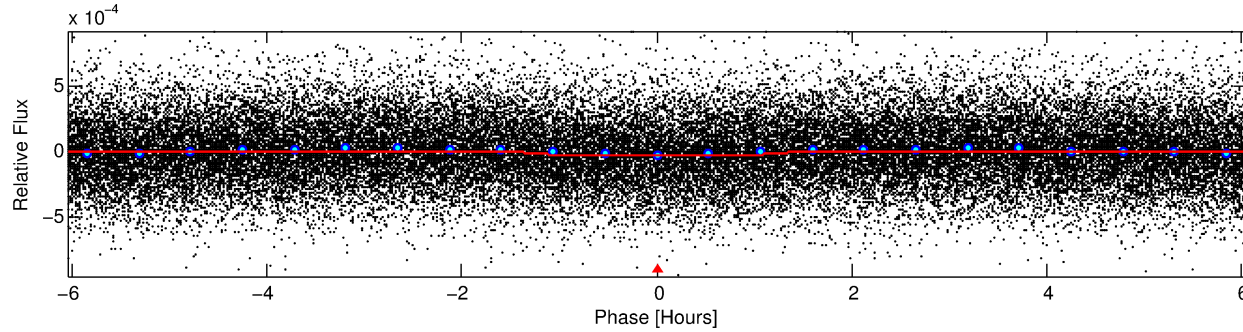
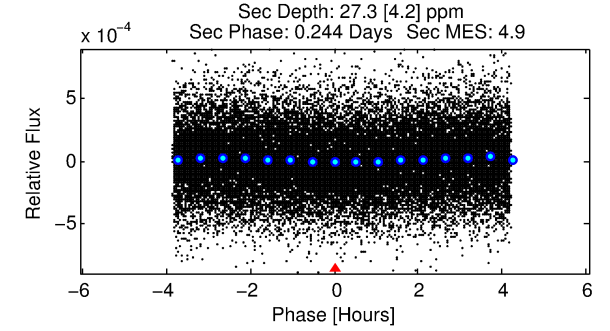
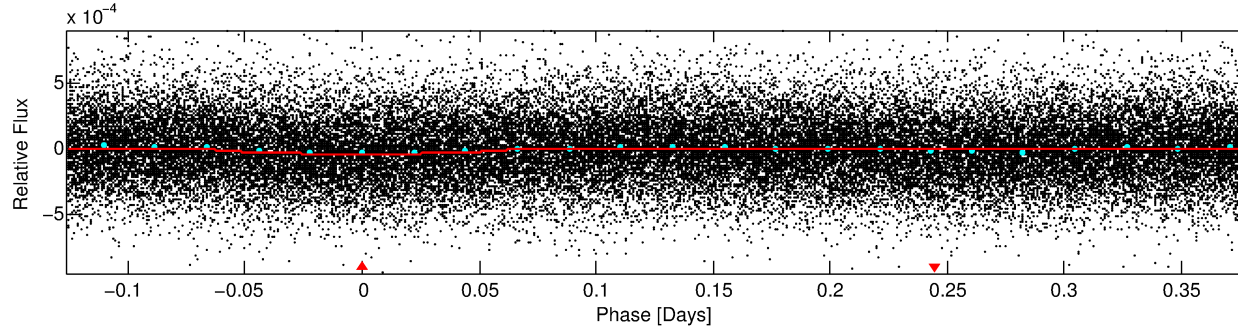
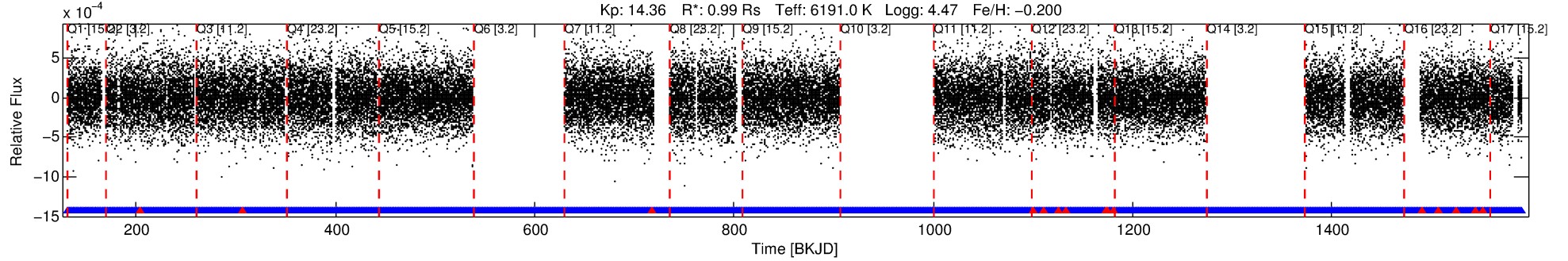
## Ephemeris Match Information For 005376642-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
005376642-01	5376642	005376552-sec	5376552	1:1	66.6	13	-11	12.86	14.36	9412.50	Direct-PRF	0	1.63	0.38

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 5376642 Candidate: 1 of 1 Period: 0.504 d



## DV Fit Results:

Period = 0.50381 [0.00001] d  
Epoch = 131.9213 [0.0029] BKJD  
Rp/R\* = 0.0053 [0.0034]  
a/R\* = 1.49 [2.65]  
b = 0.44 [6.07]  
Seff = 8151.81 [3422.95]  
Teff = 2423 [254] K  
Rp = 0.57 [0.42] Re  
a = 0.0126 [0.0034] AU  
Ag = 7.25 [9.88] [0.63σ]  
Teffp = 6147 [2017] K [1.83σ]

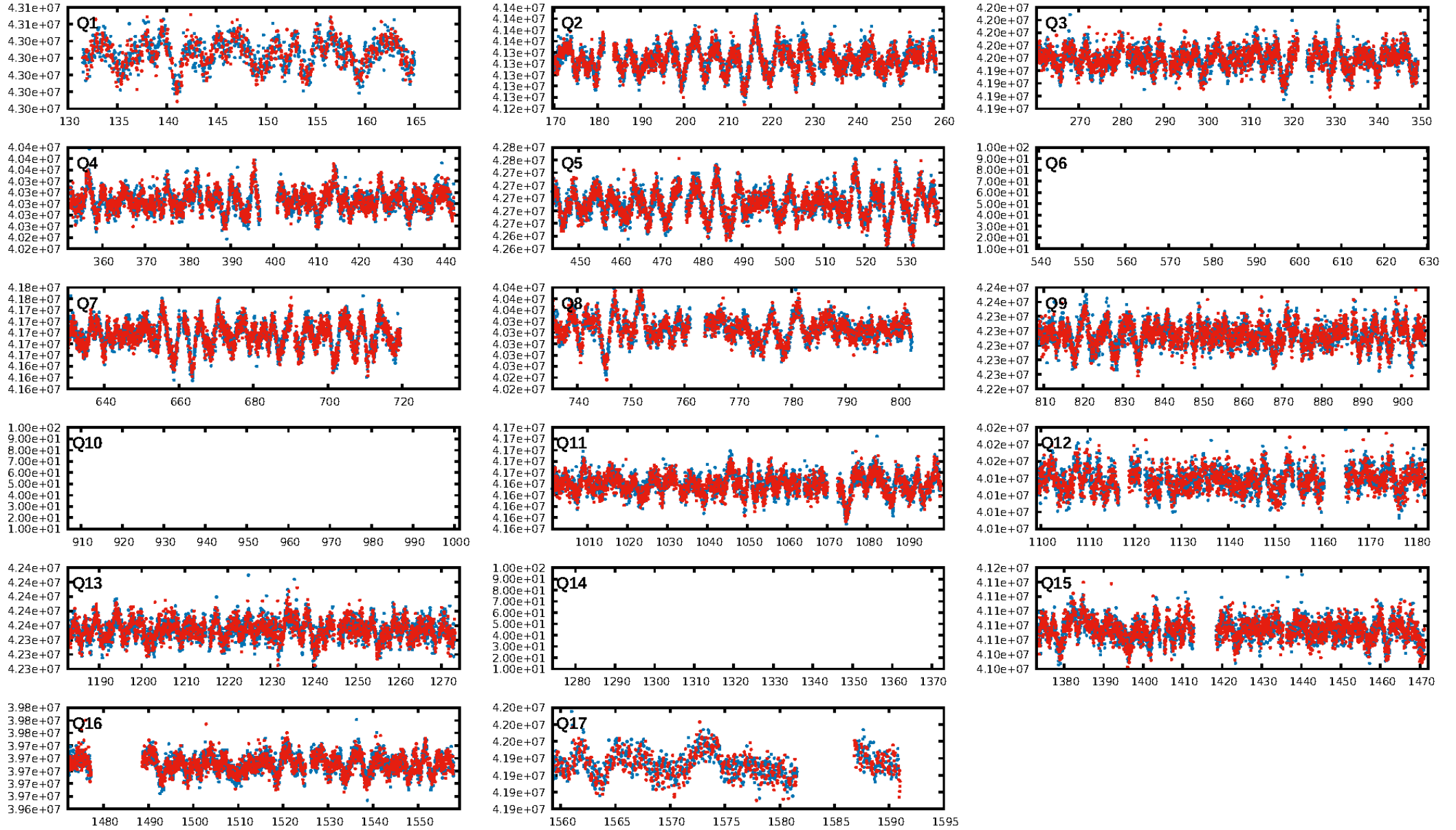
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 9.22e-13  
RollingBand-fgt: 0.99 [1993/2008]  
GhostDiagnostic-chr: -0.02541  
Centroid-sig: 0.0%  
Centroid-so: 2.177 arcsec [2.26σ]  
OotOffset-rm: 2.760 arcsec [3.12σ]  
KicOffset-rm: 2.766 arcsec [3.24σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.14 [2/14]  
DiffImageOverlap-fno: 1.00 [14/14]

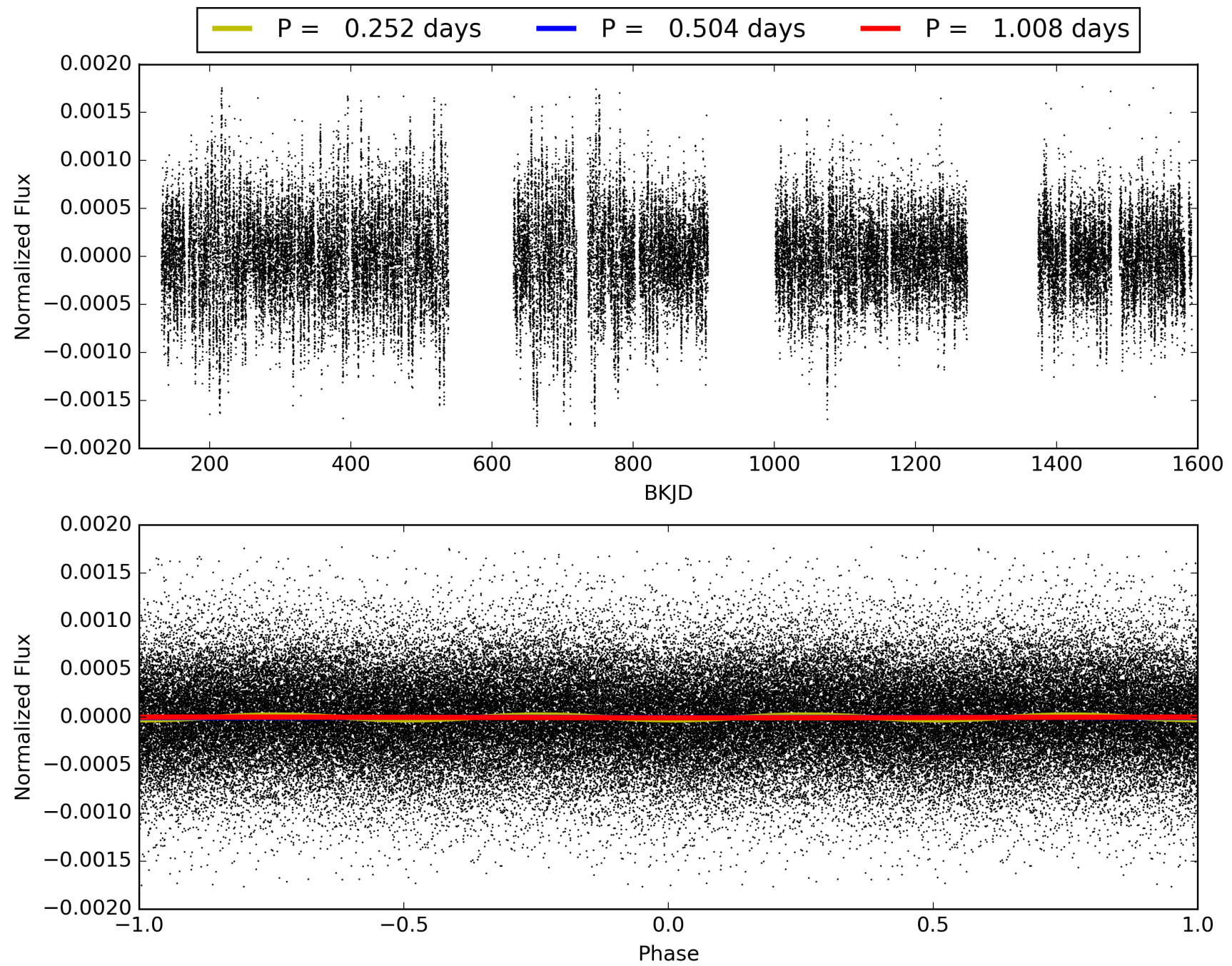
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:24:53 Z

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

# TCE 005376642-01, PDC Light Curves



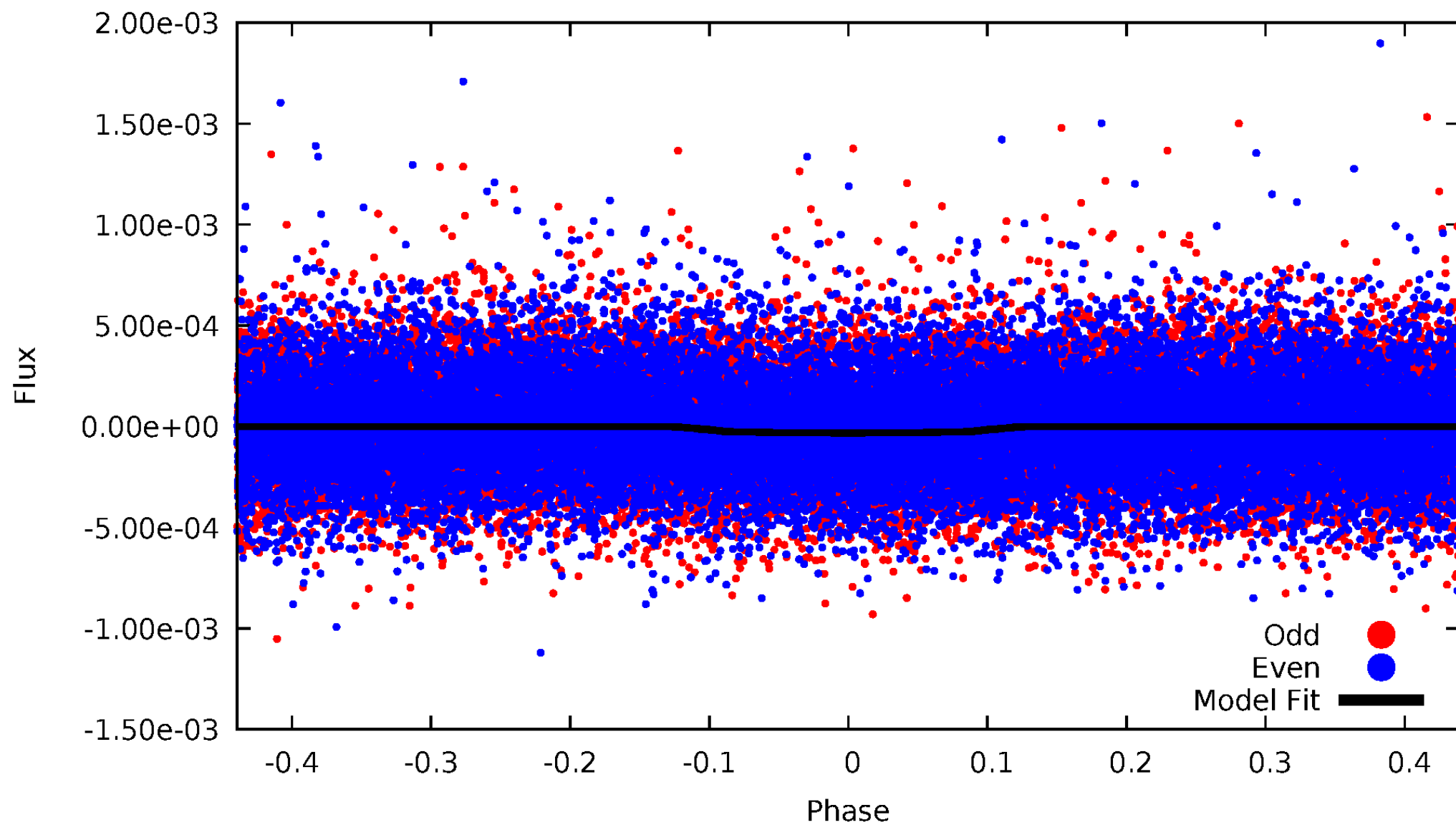
TCE 005376642-01





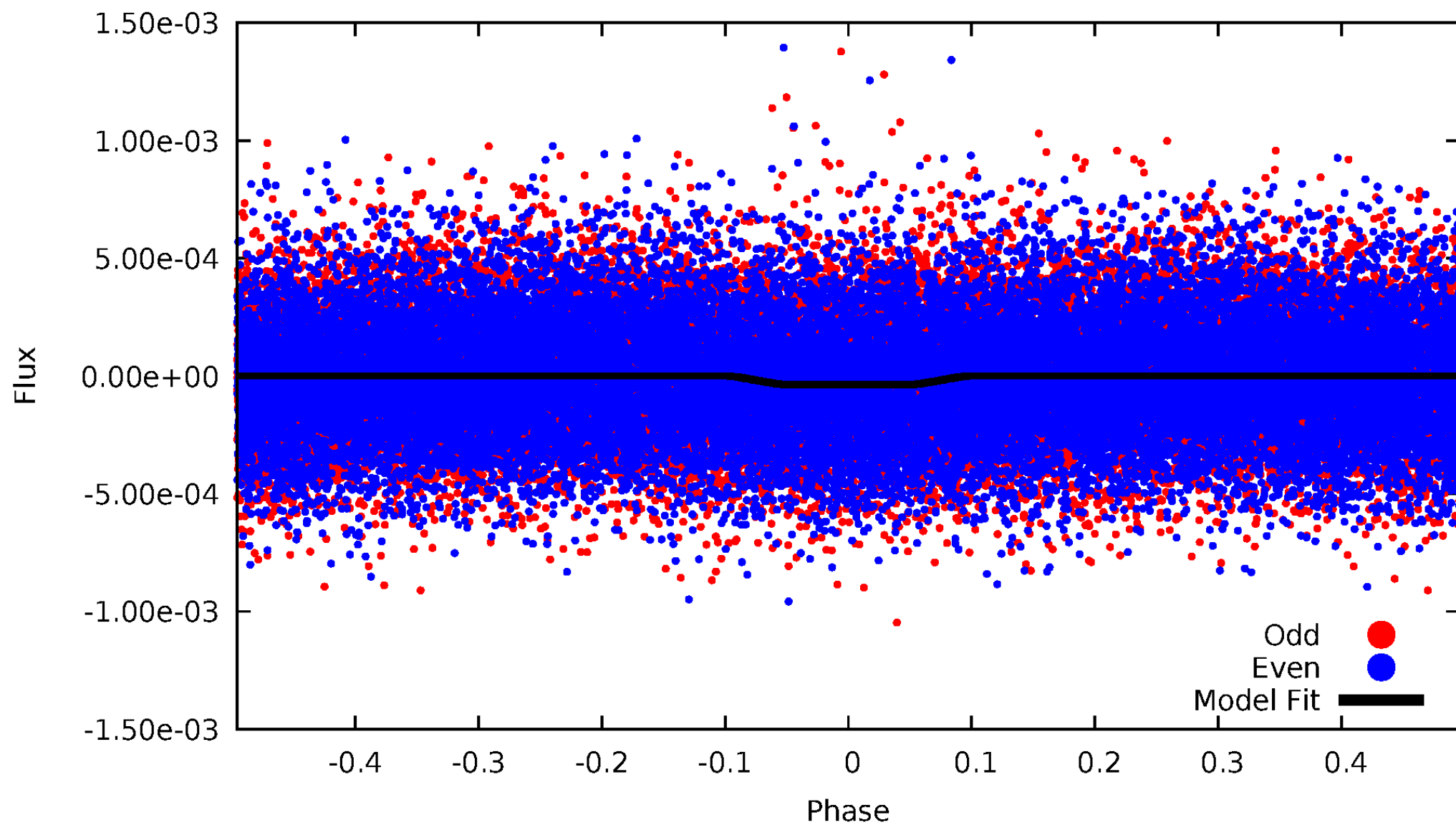
# DV Odd/Even

TCE 005376642-01

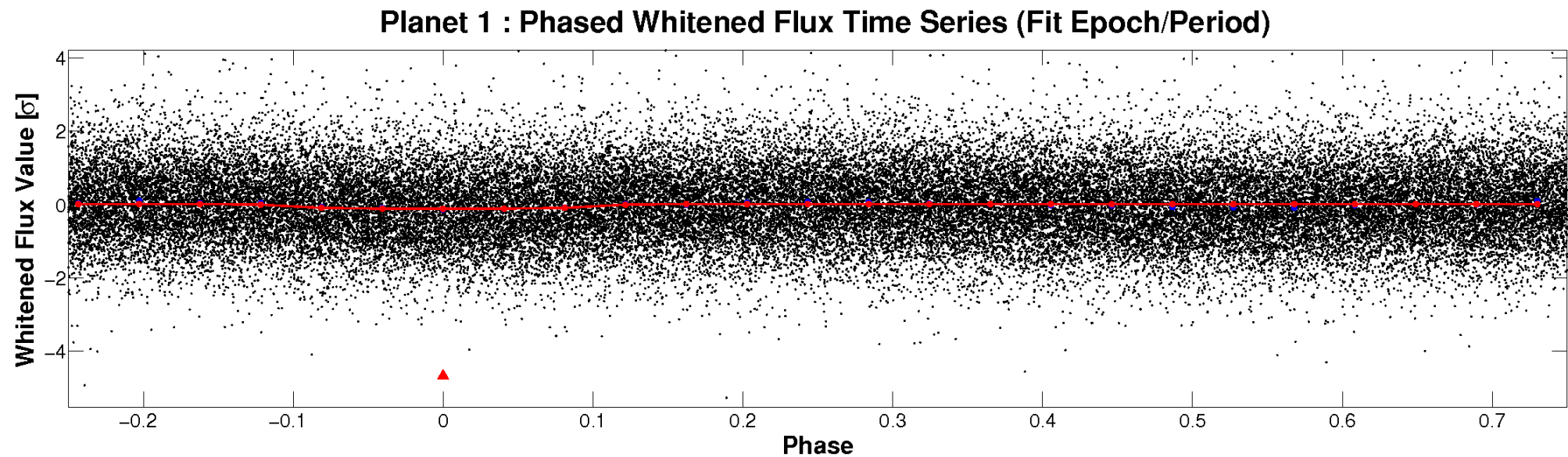
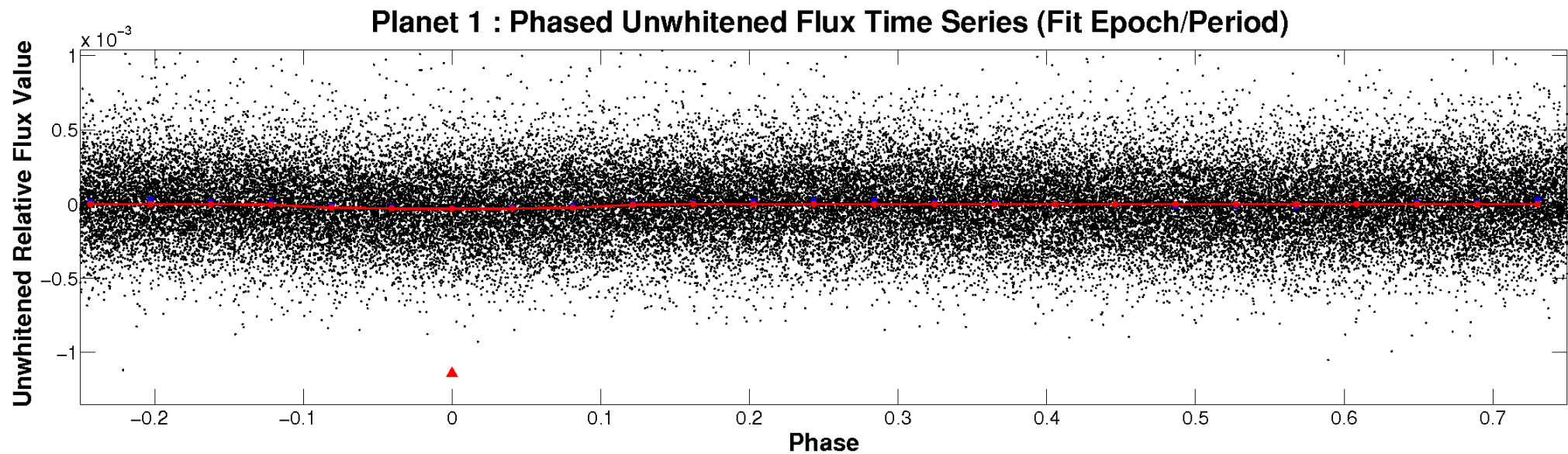


# ALT Odd/Even

TCE 005376642-01

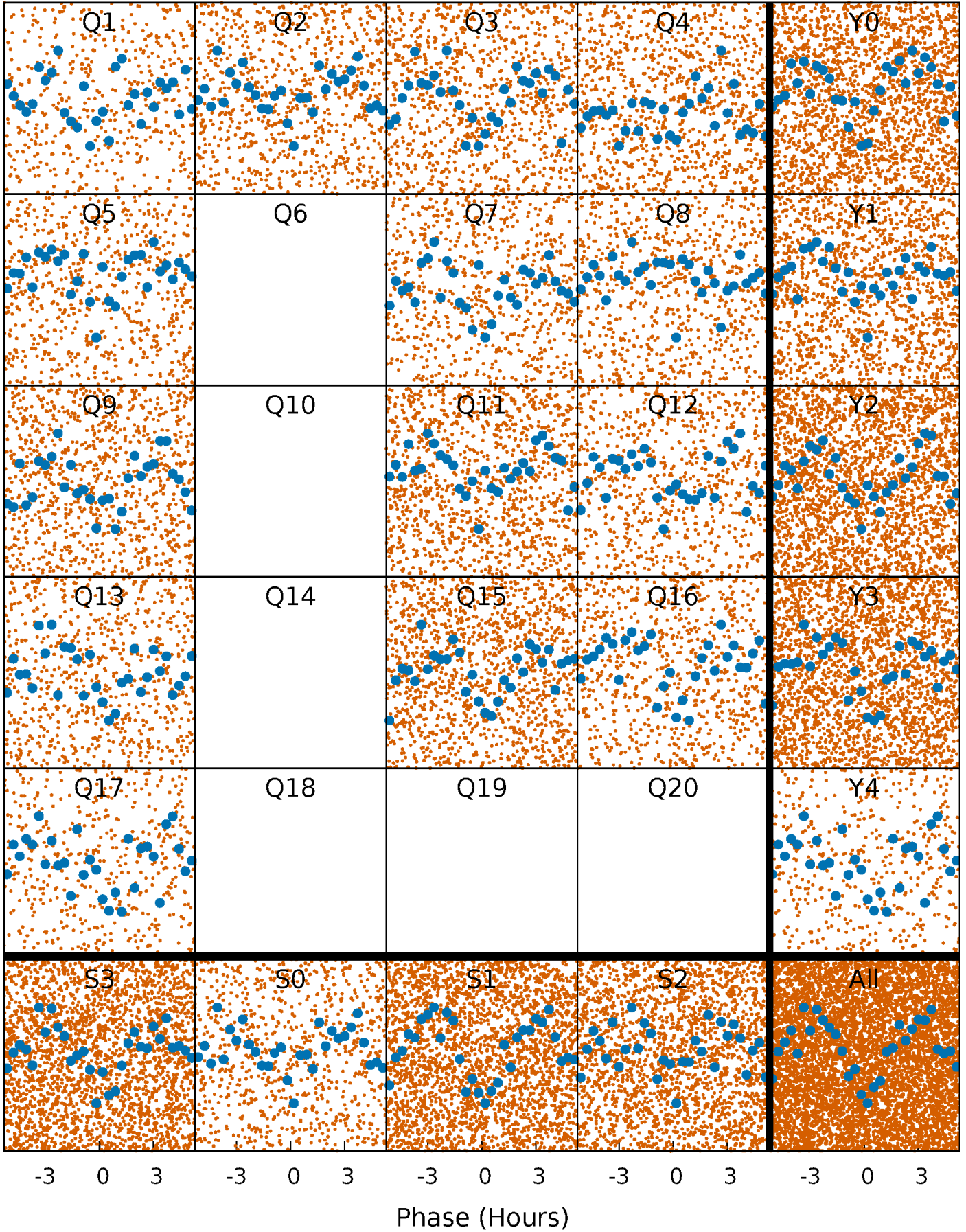


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

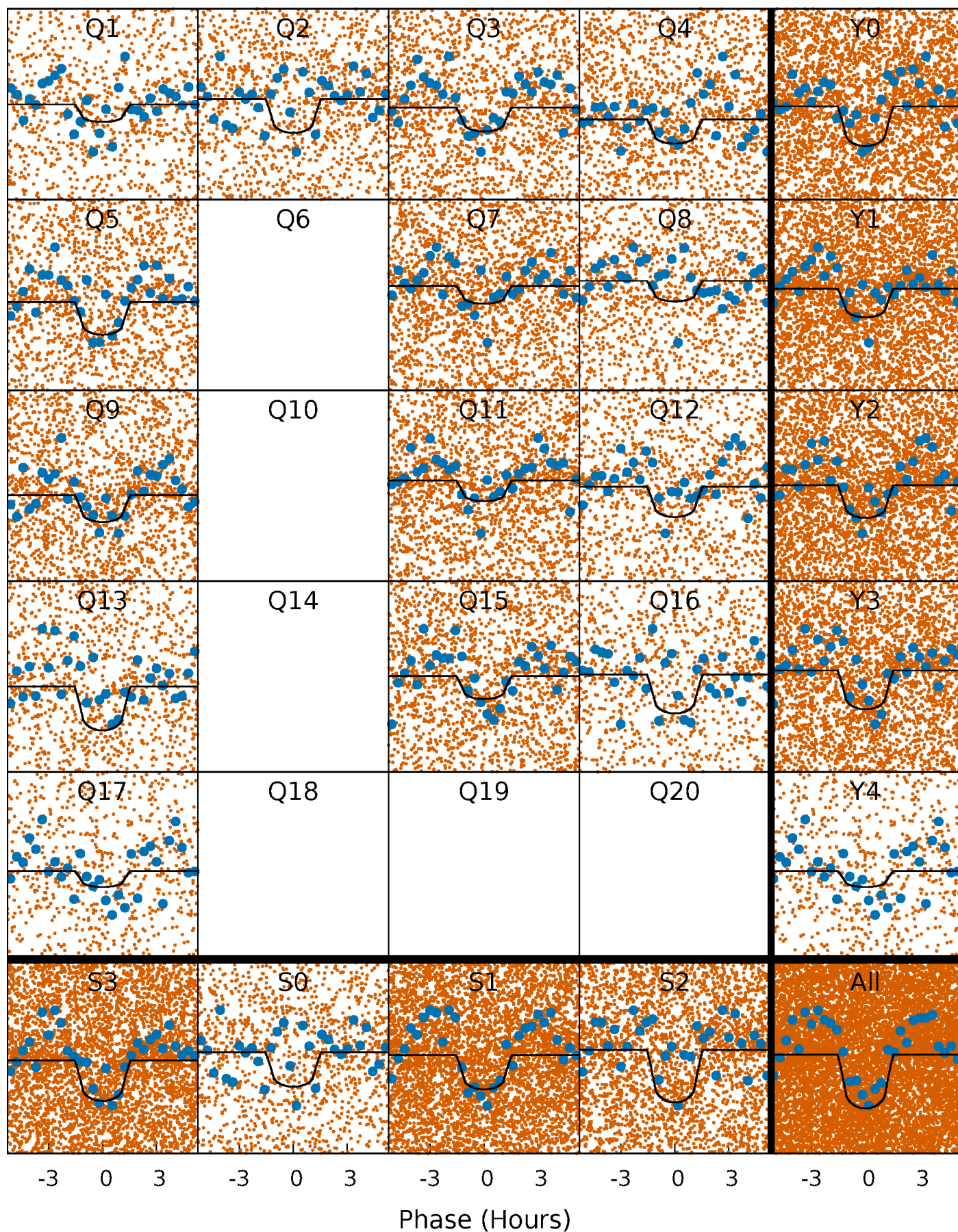
TCE 005376642-01 P= 0.503812 Days  $T_0=131.921307$  (BKJD)





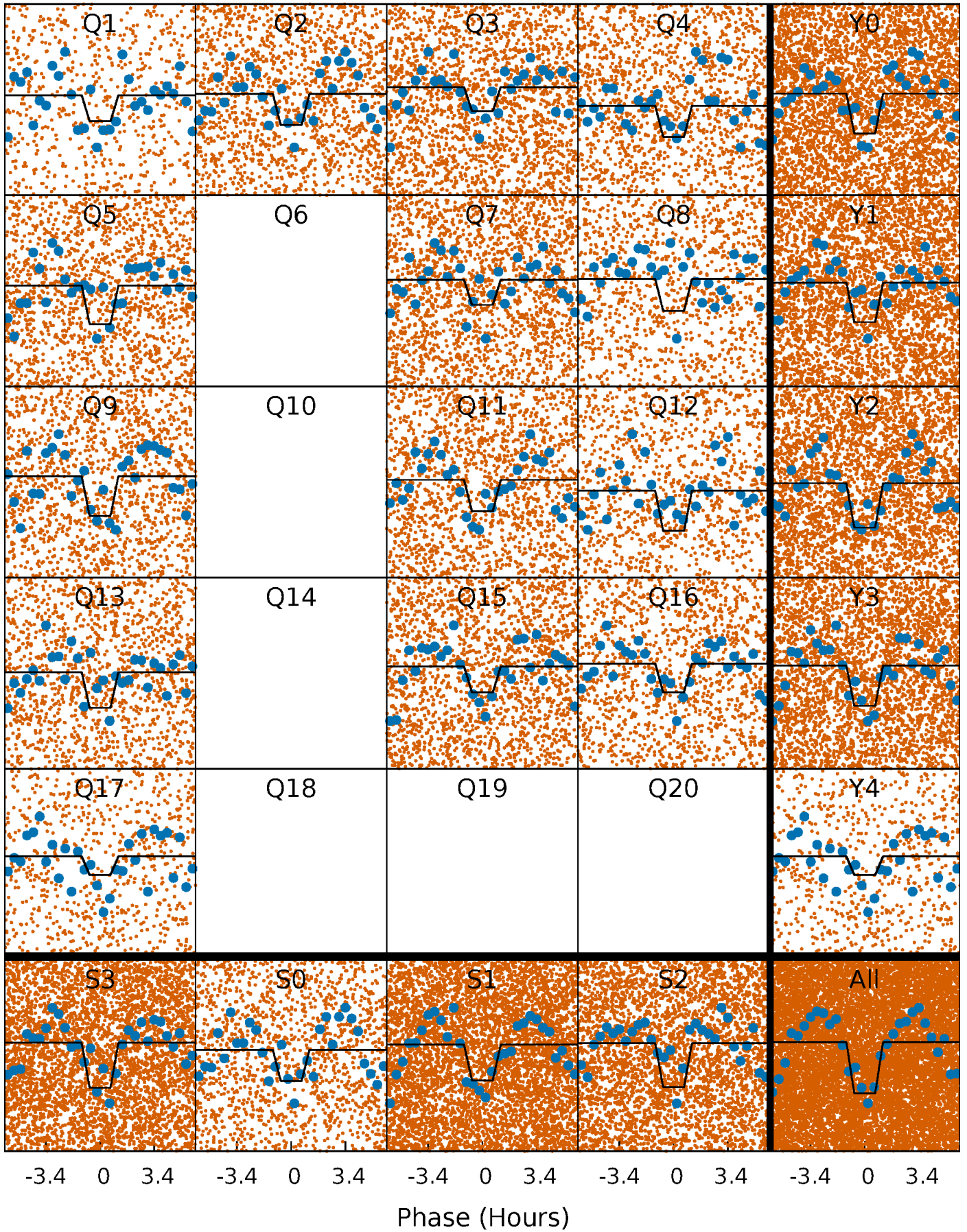
# DV Quarter-Phased Transit Curves

TCE 005376642-01 P= 0.503812 Days  $T_0=131.921307$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005376642-01 P= 0.503821 Days  $T_0=131.910158$  (BKJD)

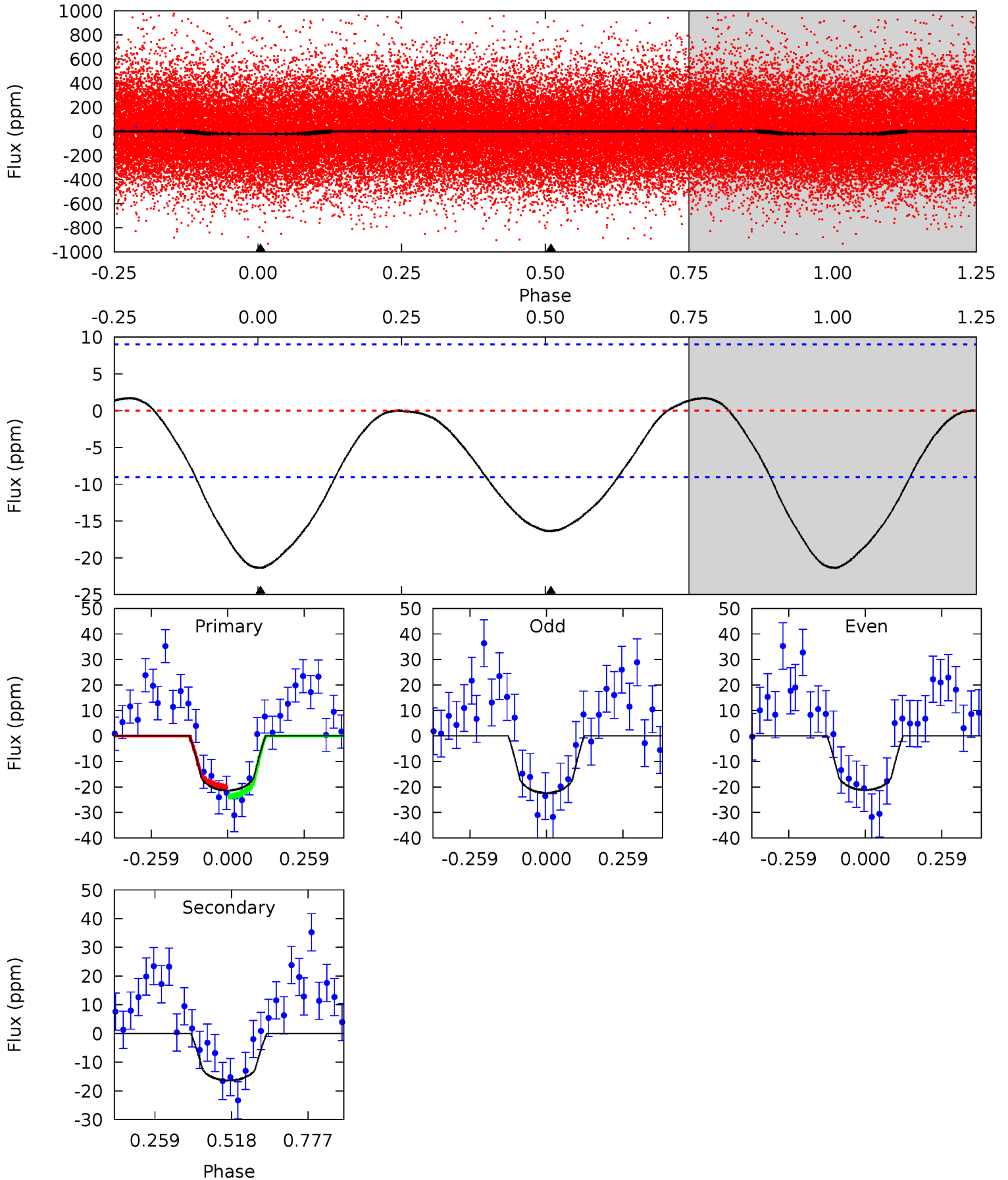




# DV Model-Shift Uniqueness Test

005376642-01, P = 0.503812 Days, E = 131.417495 Days

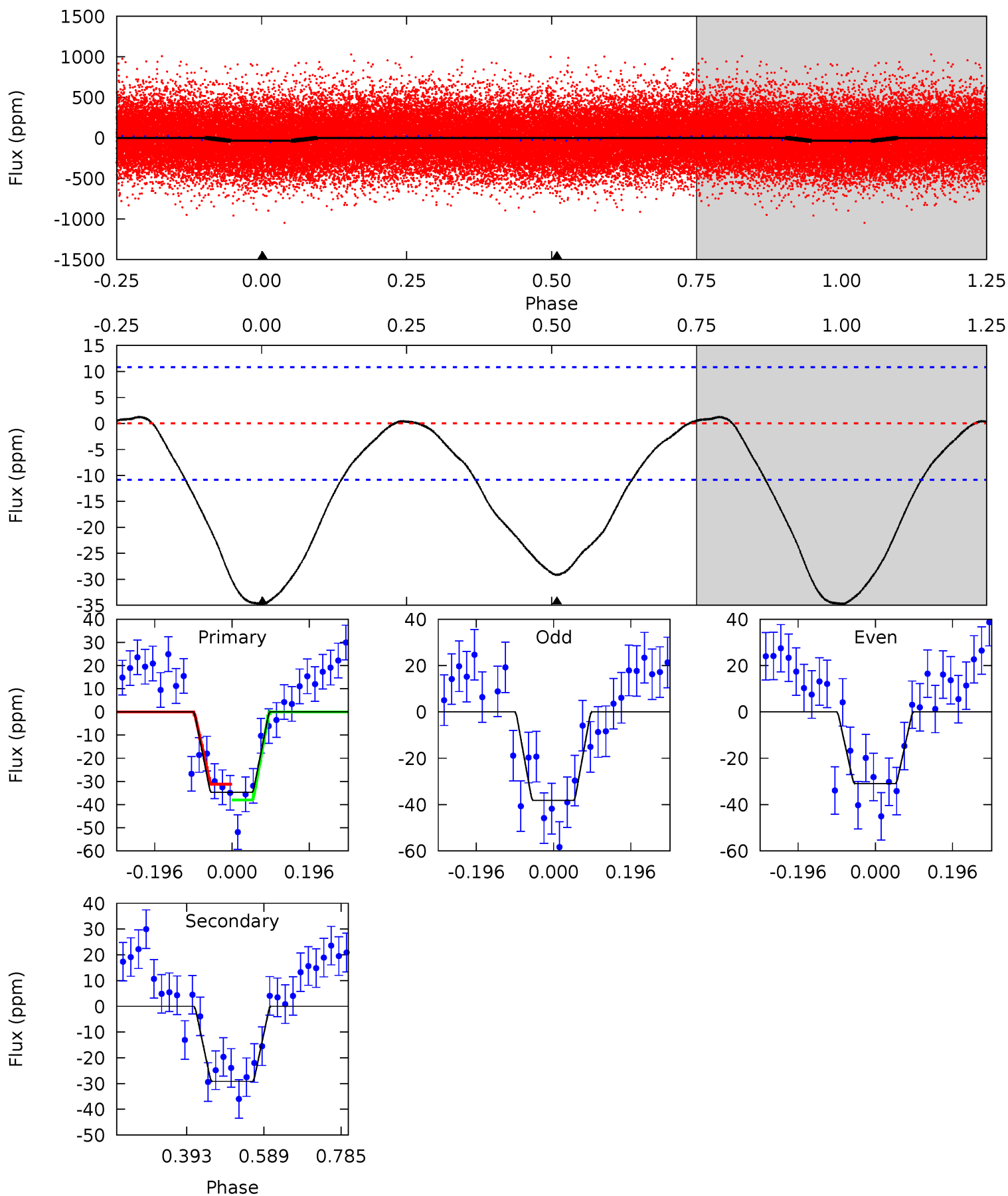
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	7.92	0	0	4.36	1.13	0.39	10.3	10.3	7.92	7.92	0.28	0.97	0.08	0.91



# Alt Model-Shift Uniqueness Test

005376642-01, P = 0.503821 Days, E = 131.406337 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
14.2	11.9	0	0	4.42	1.29	0.48	14.2	14.2	11.9	11.9	1.48	0.94	0.04	1.39





### Stellar Parameters For KIC 005376642

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6191^{+175}_{-218}$	$4.467^{+0.054}_{-0.216}$	$-0.200^{+0.250}_{-0.300}$	$0.992^{+0.321}_{-0.107}$	$1.053^{+0.144}_{-0.144}$	$1.520^{+0.438}_{-0.852}$
	+3%/-4%	+1%/-5%	+125%/-150%	+32%/-11%	+14%/-14%	+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 005376642-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-16 \pm 2$	$0.63^{+0.38}_{-0.34}$	$3457^{+253}_{-180}$	$5234^{+2777}_{-1016}$	$3.568^{+13.436}_{-2.191}$
Alt.	$-29 \pm 2$	$0.68^{+0.43}_{-0.34}$	$3470^{+236}_{-177}$	$5752^{+3109}_{-1160}$	$5.413^{+16.698}_{-3.438}$

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

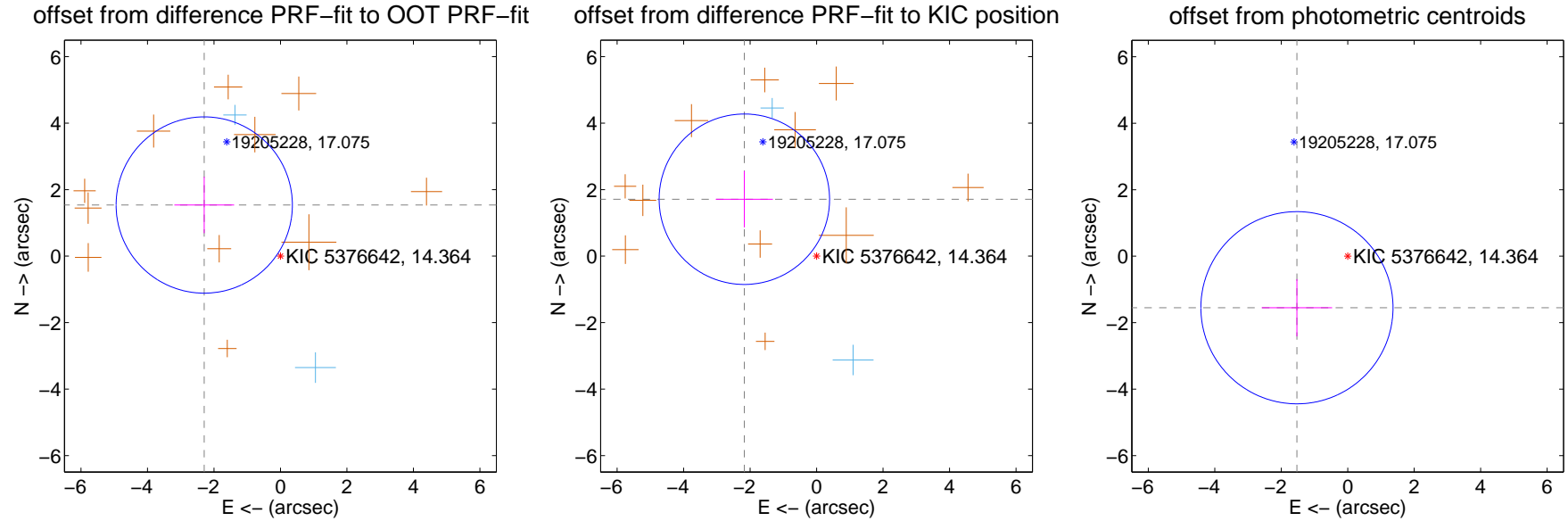
## DV Centroid Data

Supplemental centroid analysis for 005376642-01. Kepler magnitude: 14.36. Transit SNR 10.66

There are 2 quarters with good PRF difference image offsets

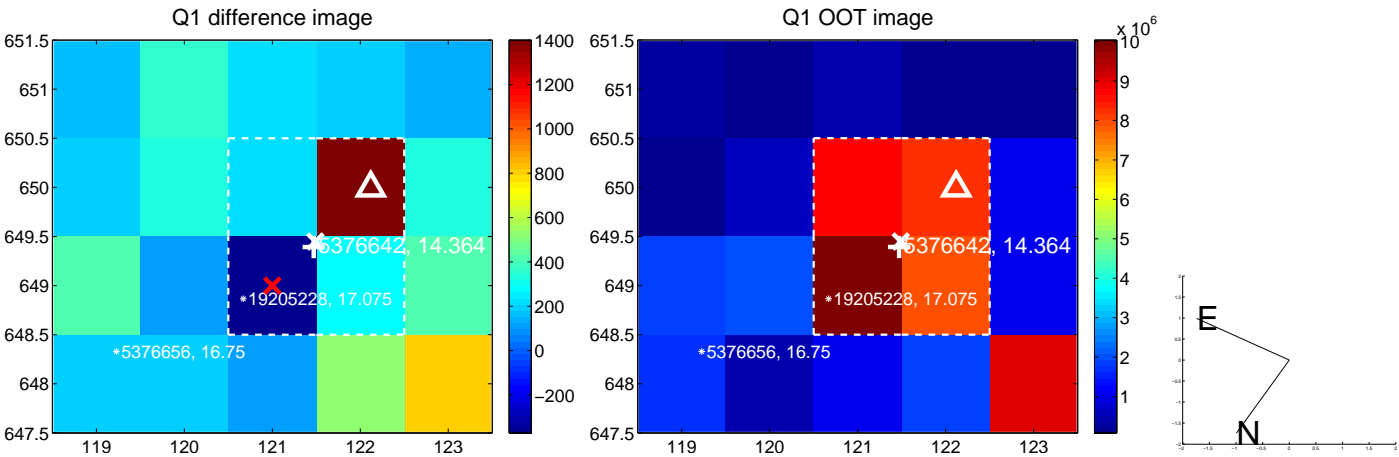
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.760 \pm 0.884$	3.12	$2.293 \pm 0.899$	$1.537 \pm 0.849$
PRF-fit source offset from KIC position	$2.766 \pm 0.854$	3.24	$2.173 \pm 0.860$	$1.711 \pm 0.846$
photometric centroid source offset	$2.18 \pm 0.96$	2.26	$1.53 \pm 1.06$	$-1.55 \pm 0.86$

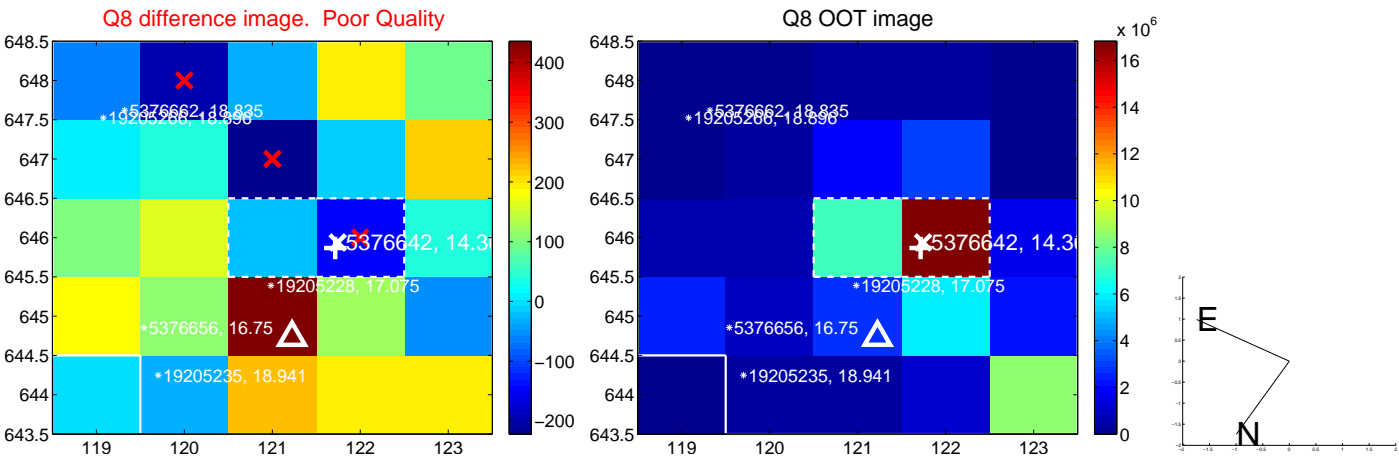
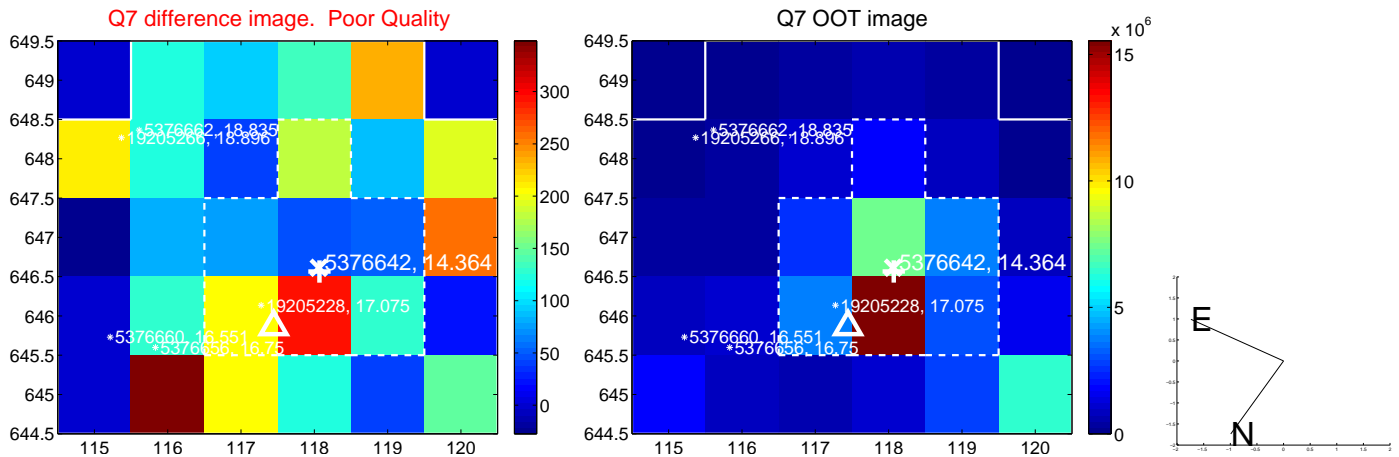
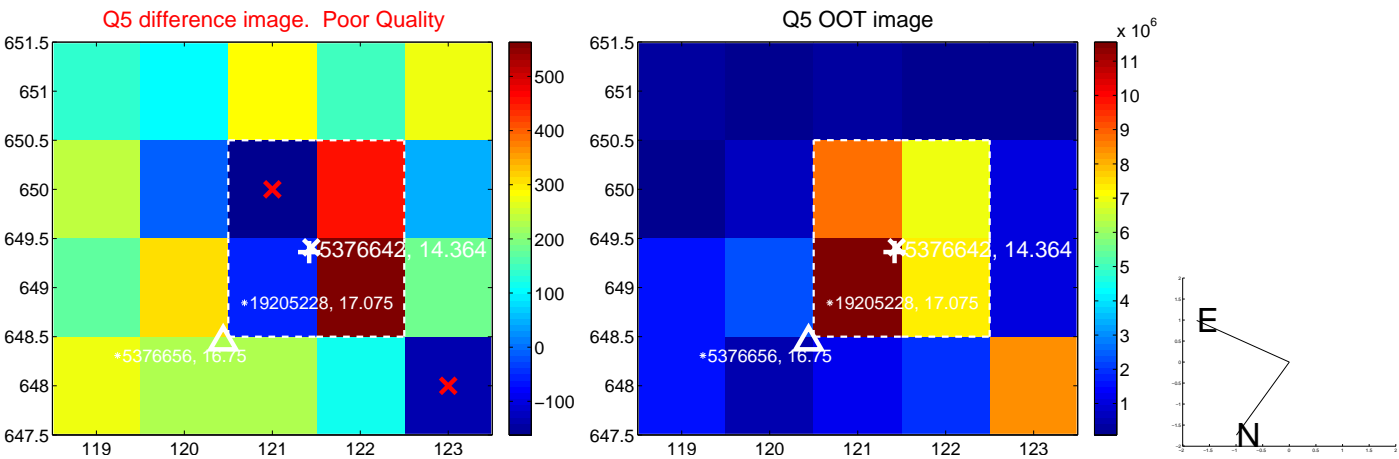


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

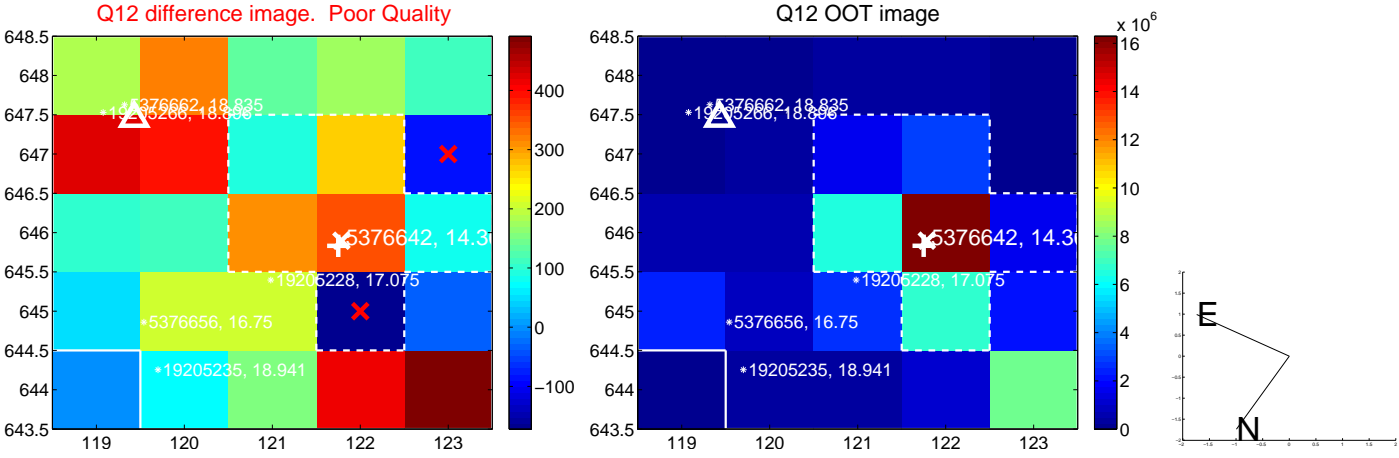
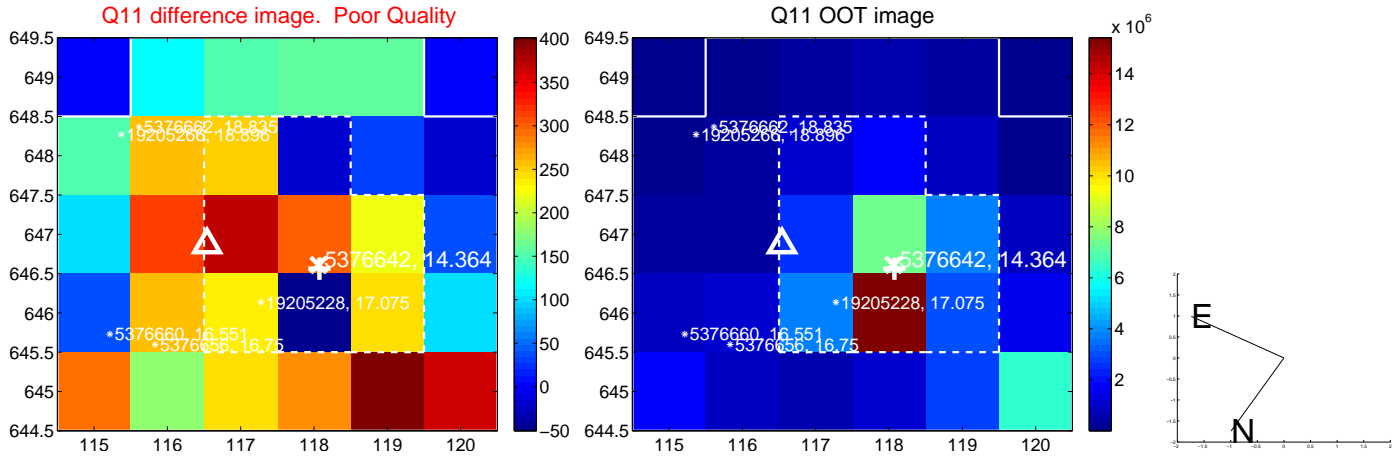
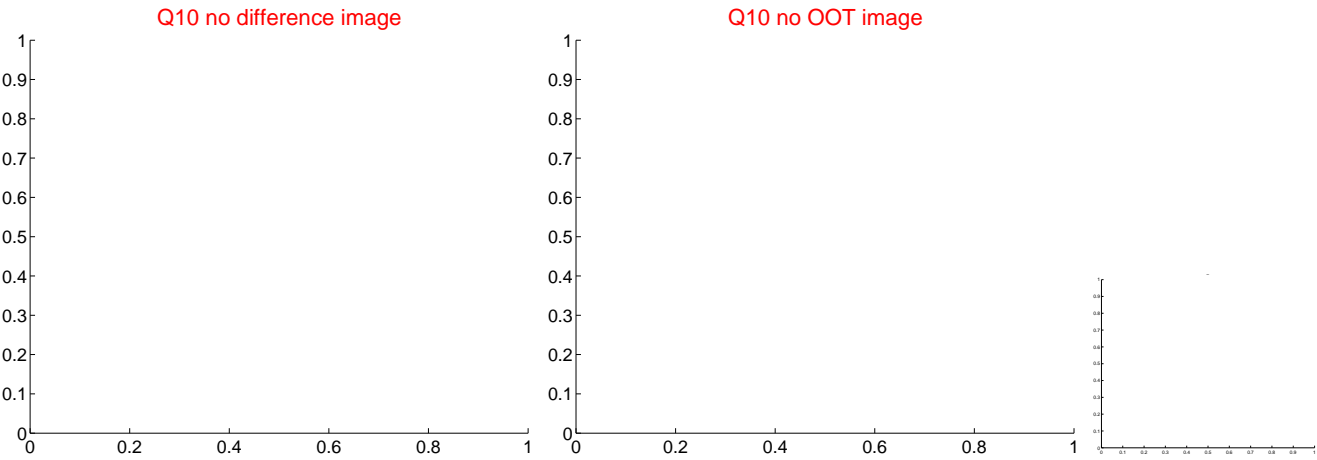
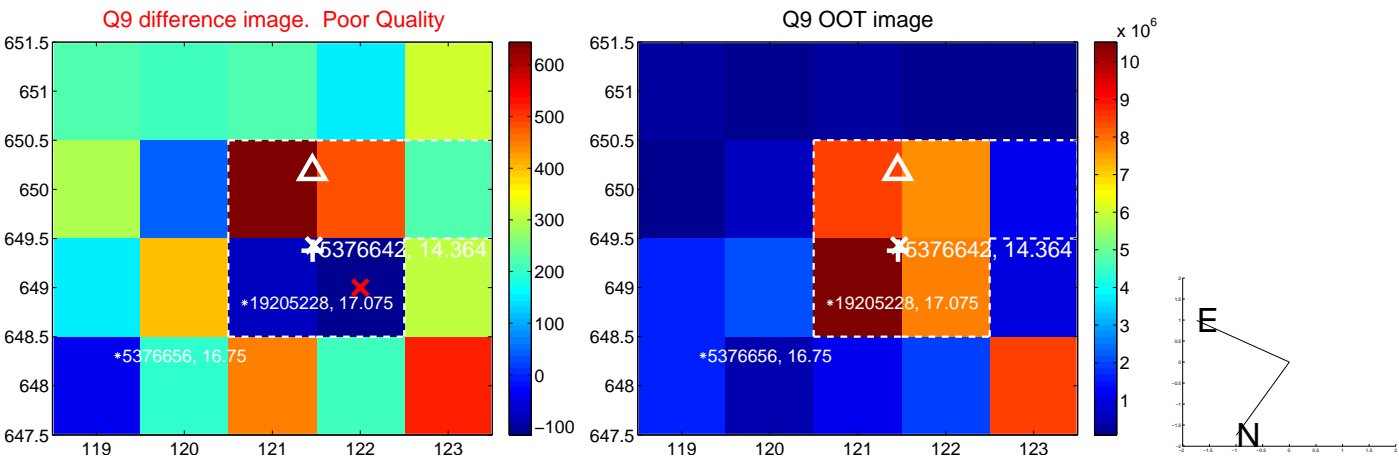


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

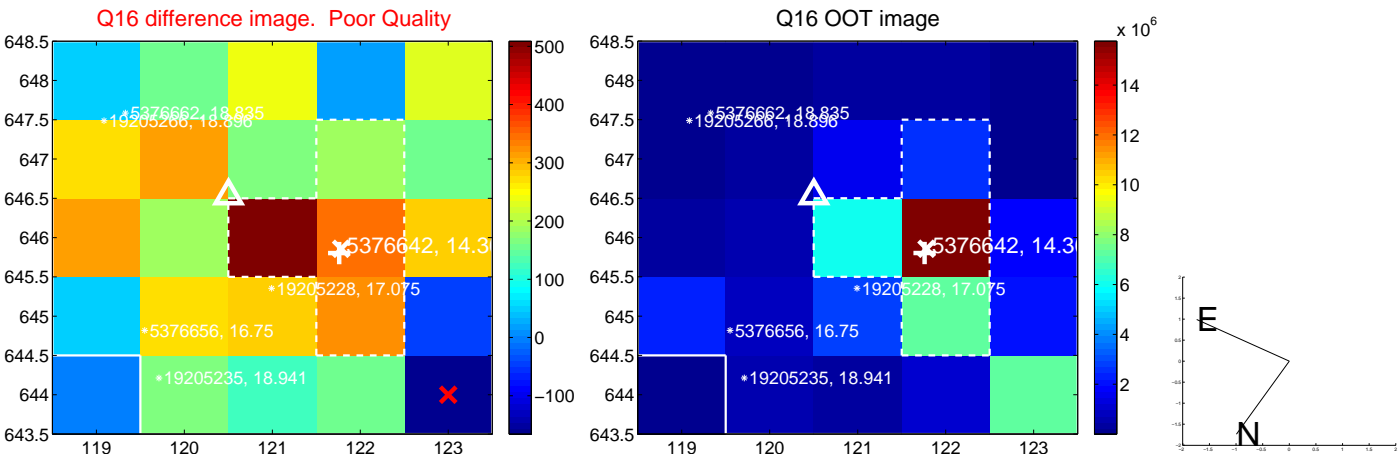
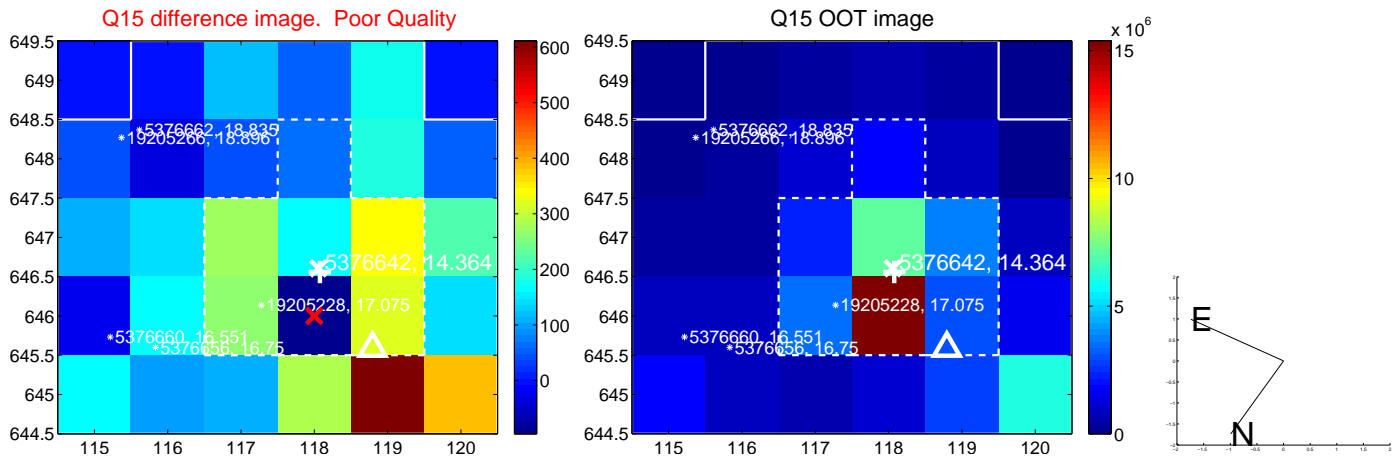
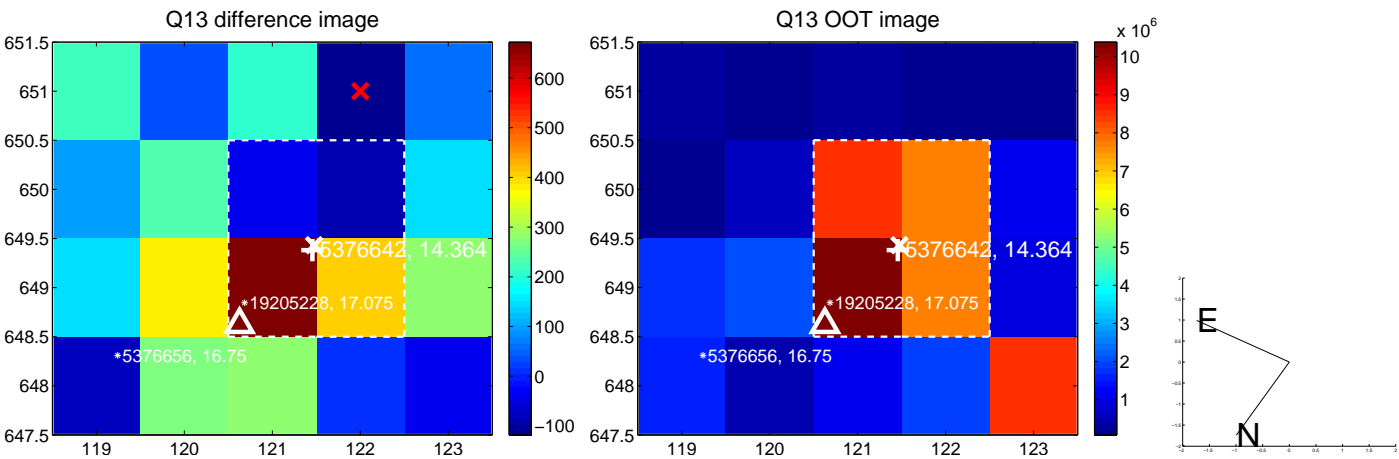




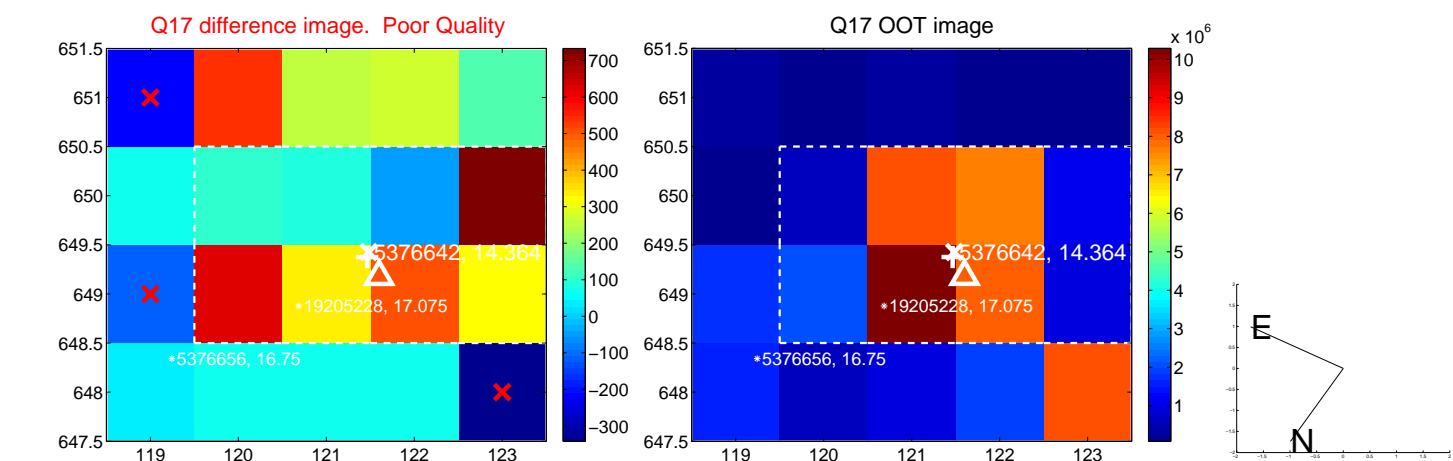
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



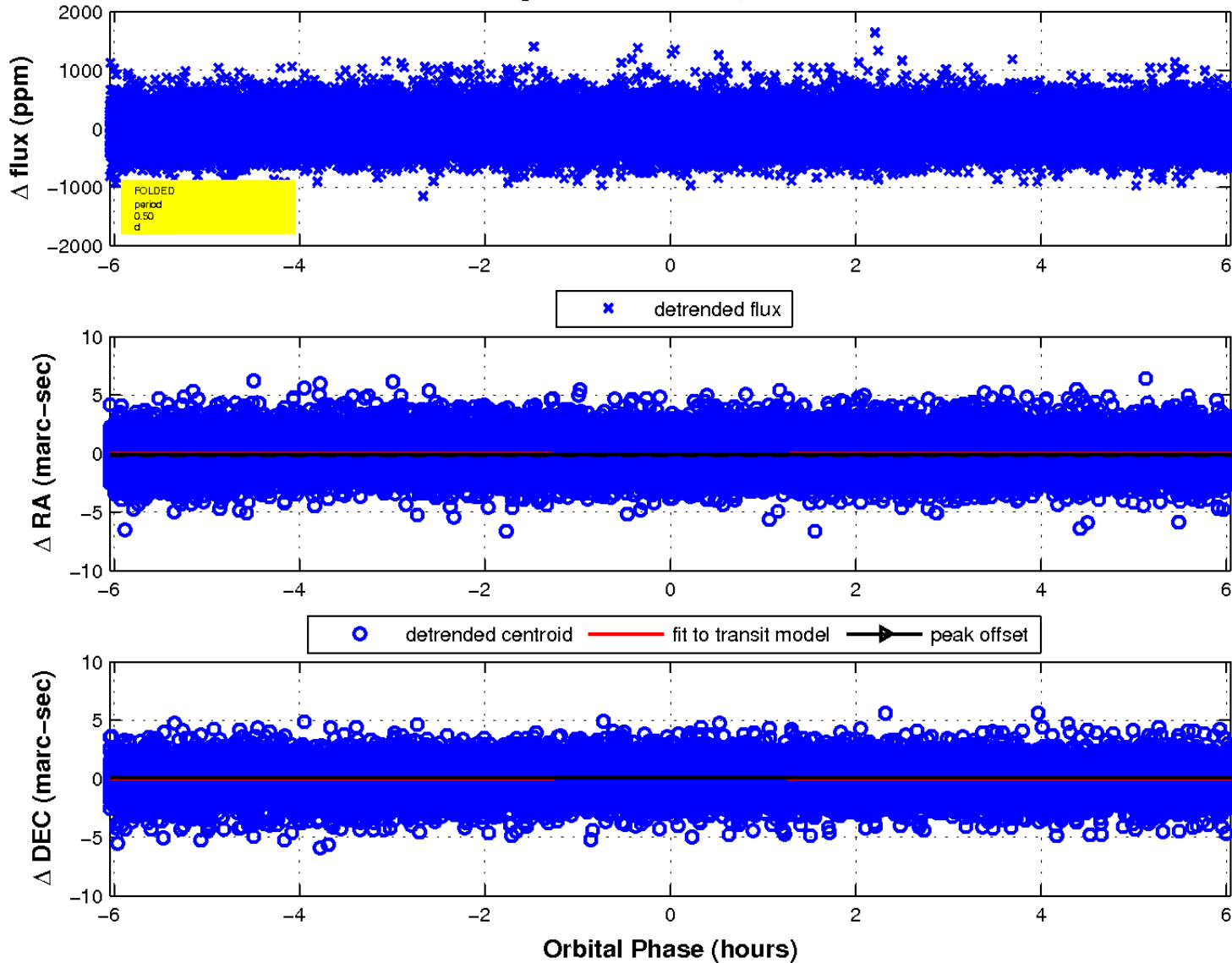
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

