

# KIC 007117168

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007117168-01	OBS	No	0.566783	131.821516	6.8	4.545	8.4	5.8	1.75	6569	0.48	23706.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007117168-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_DIFFS—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.

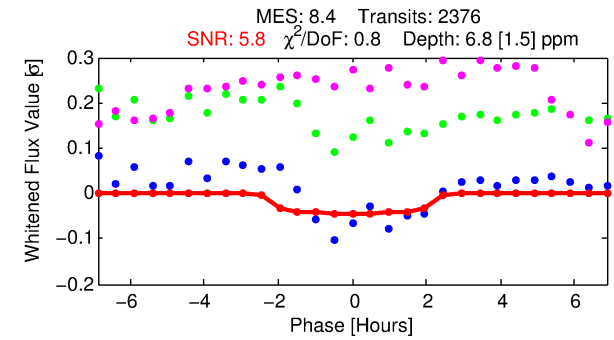
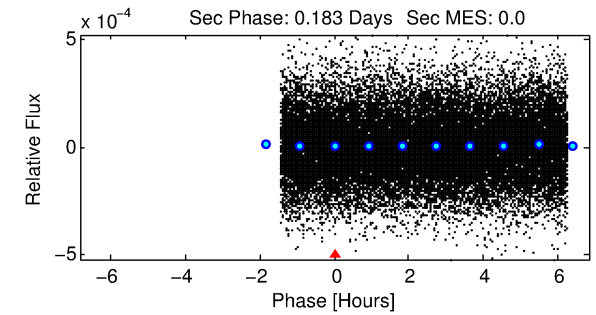
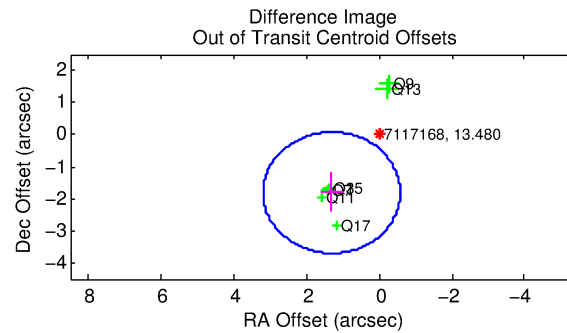
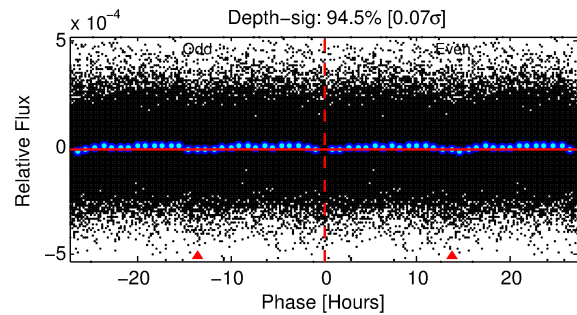
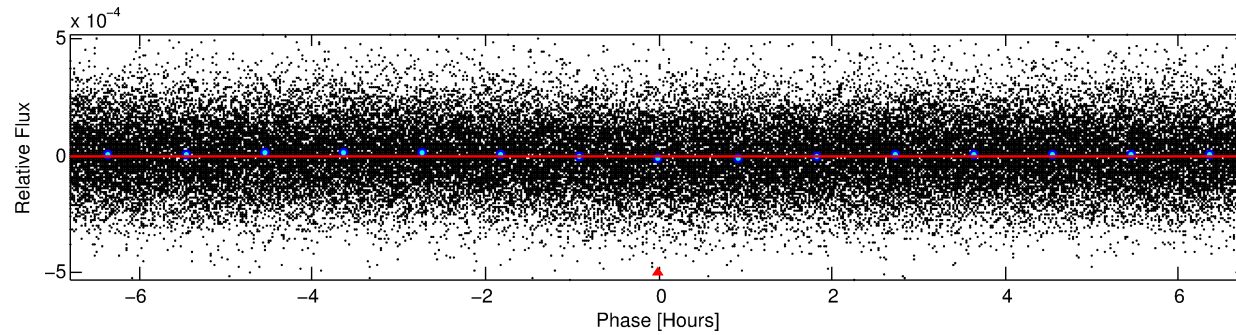
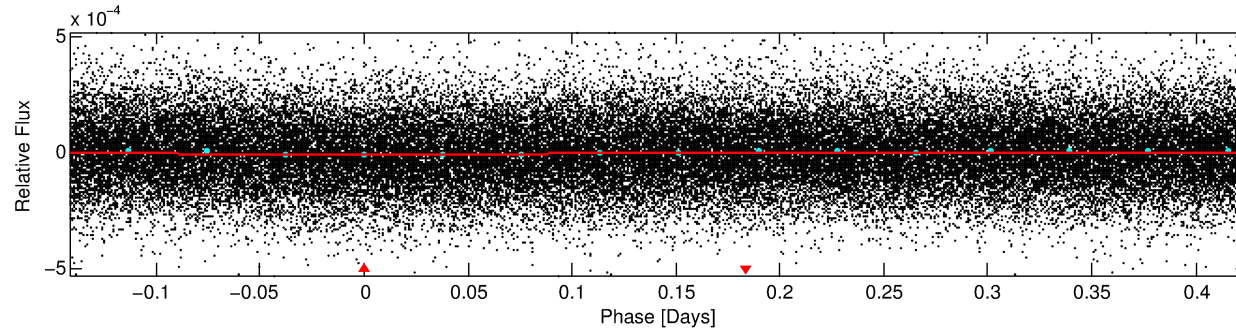
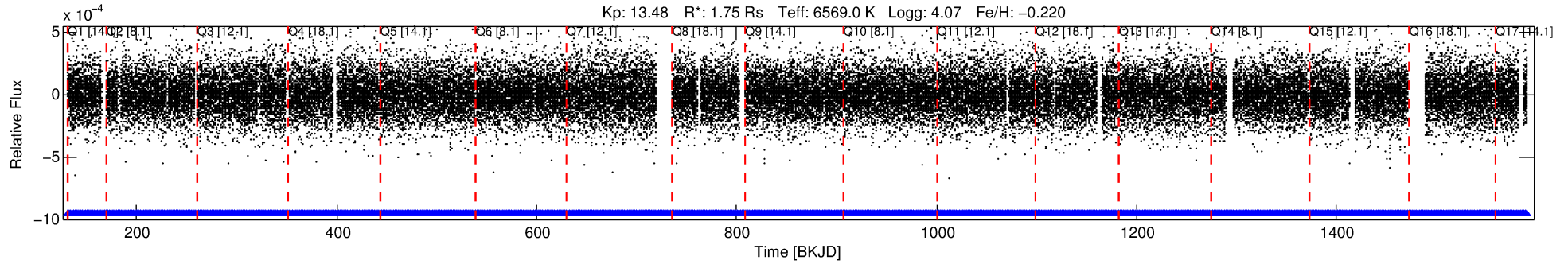
## Ephemeris Match Information For 007117168-01

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	$\sigma_P$	$\sigma_T$
007117168-01	7117168	RR-Lyr-pri	7198959	1:1	871.2	214	47	7.86	13.48	89042.00	Direct-PRF	0	2.91	19.29

**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: 7117168 Candidate: 1 of 1 Period: 0.567 d



## DV Fit Results:

Period = 0.56678 [0.00002] d  
Epoch = 131.8215 [0.0085] BKJD  
Rp/R\* = 0.0025 [0.0029]  
a/R\* = 1.10 [1.22]  
b = 0.61 [6.56]  
Seff = 23706.39 [9155.73]  
Teq = 3164 [305] K  
Rp = 0.48 [0.56] Re  
a = 0.0146 [0.0035] AU  
Ag = N/A  
Teffp = N/A

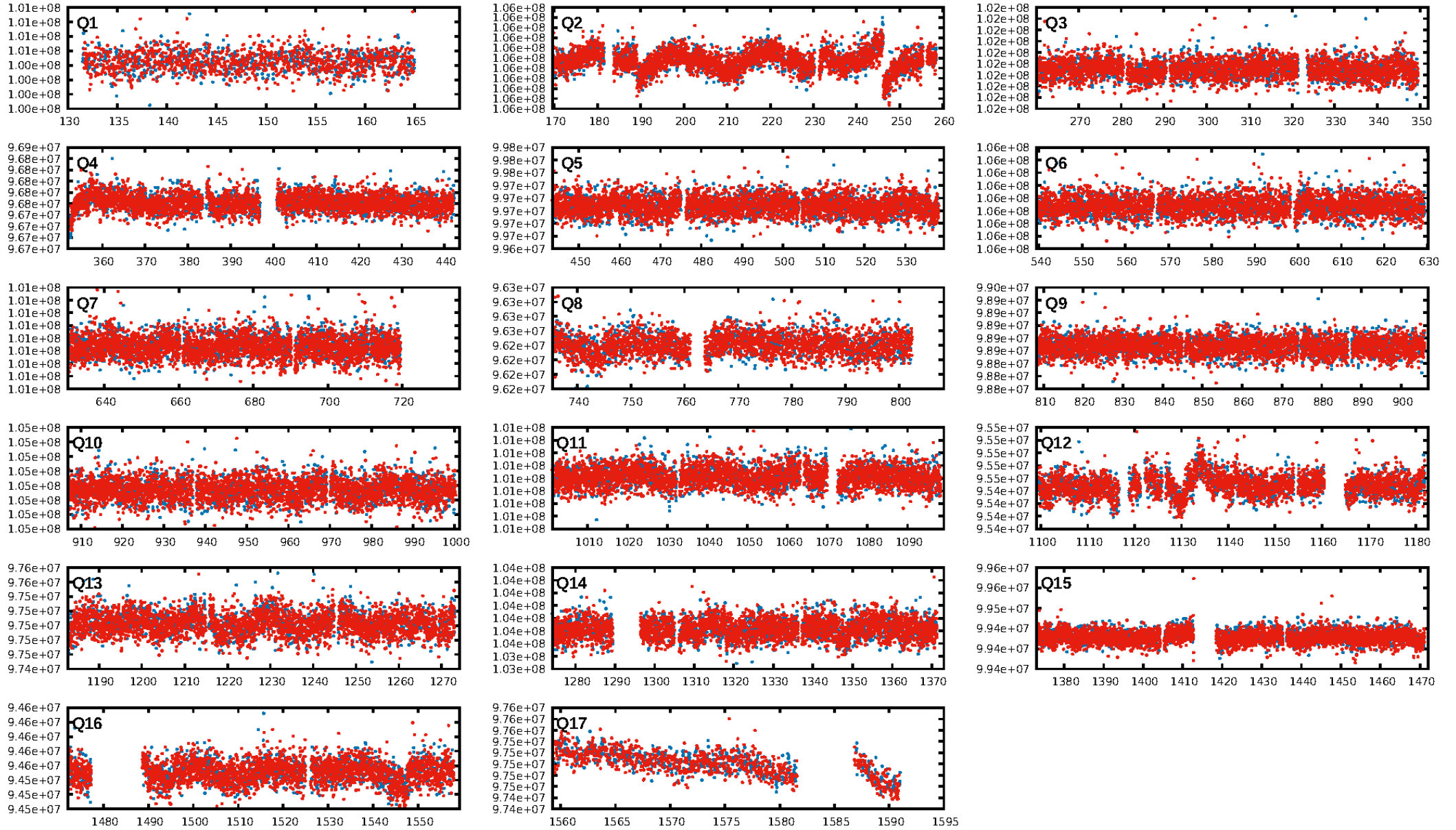
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2269/2269]  
GhostDiagnostic-chr: 0.2369  
Centroid-sig: 0.0%  
Centroid-so: 5.111 arcsec [2.64 $\sigma$ ]  
OotOffset-rm: 2.236 arcsec [3.56 $\sigma$ ]  
KicOffset-rm: 2.316 arcsec [3.83 $\sigma$ ]  
OotOffset-st: 0/4/0/3 [7]  
KicOffset-st: 0/4/0/3 [7]  
DiffImageQuality-fgm: 0.71 [5/7]  
DiffImageOverlap-fno: 1.00 [17/17]

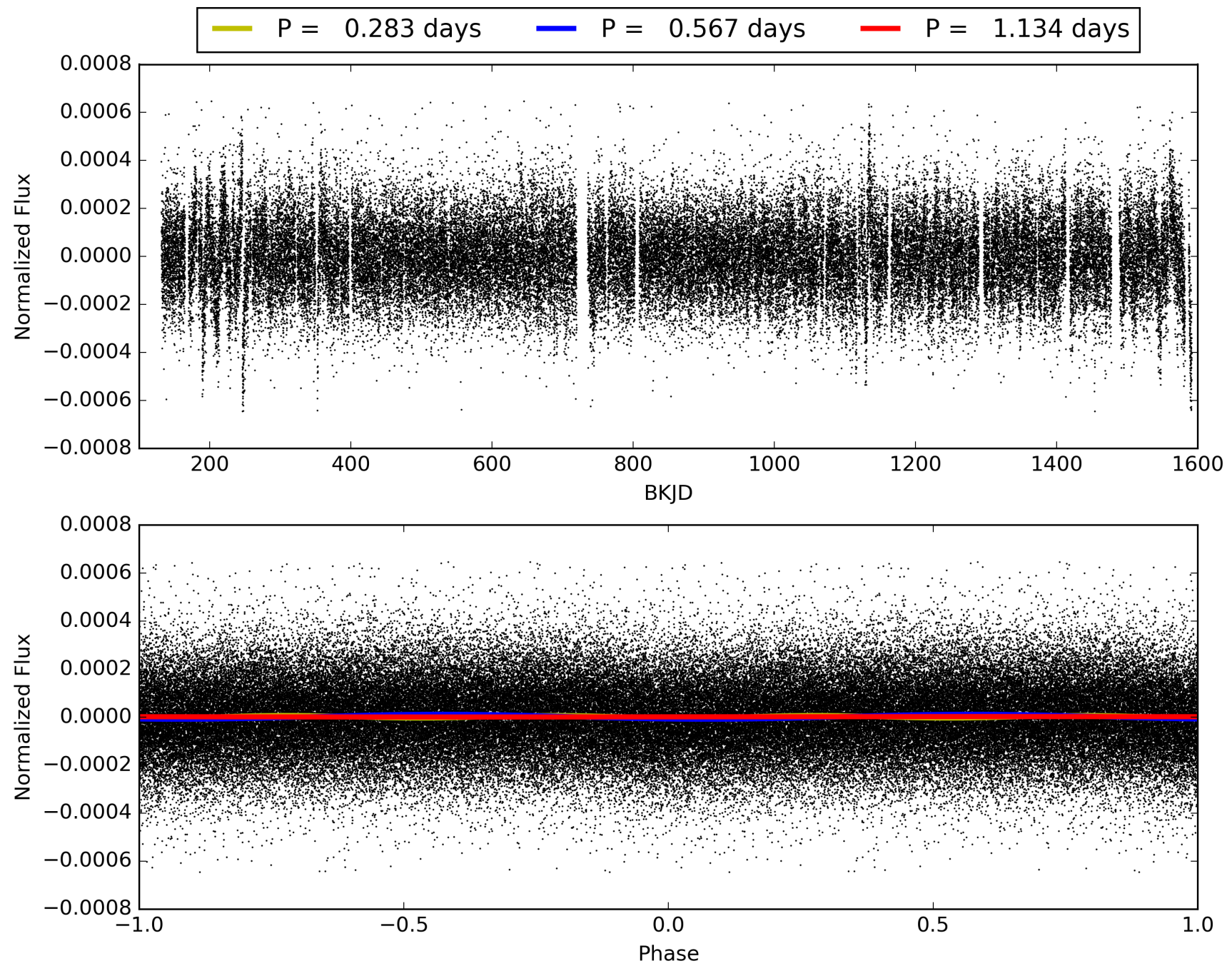
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:13:45 Z

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

# TCE 007117168-01, PDC Light Curves



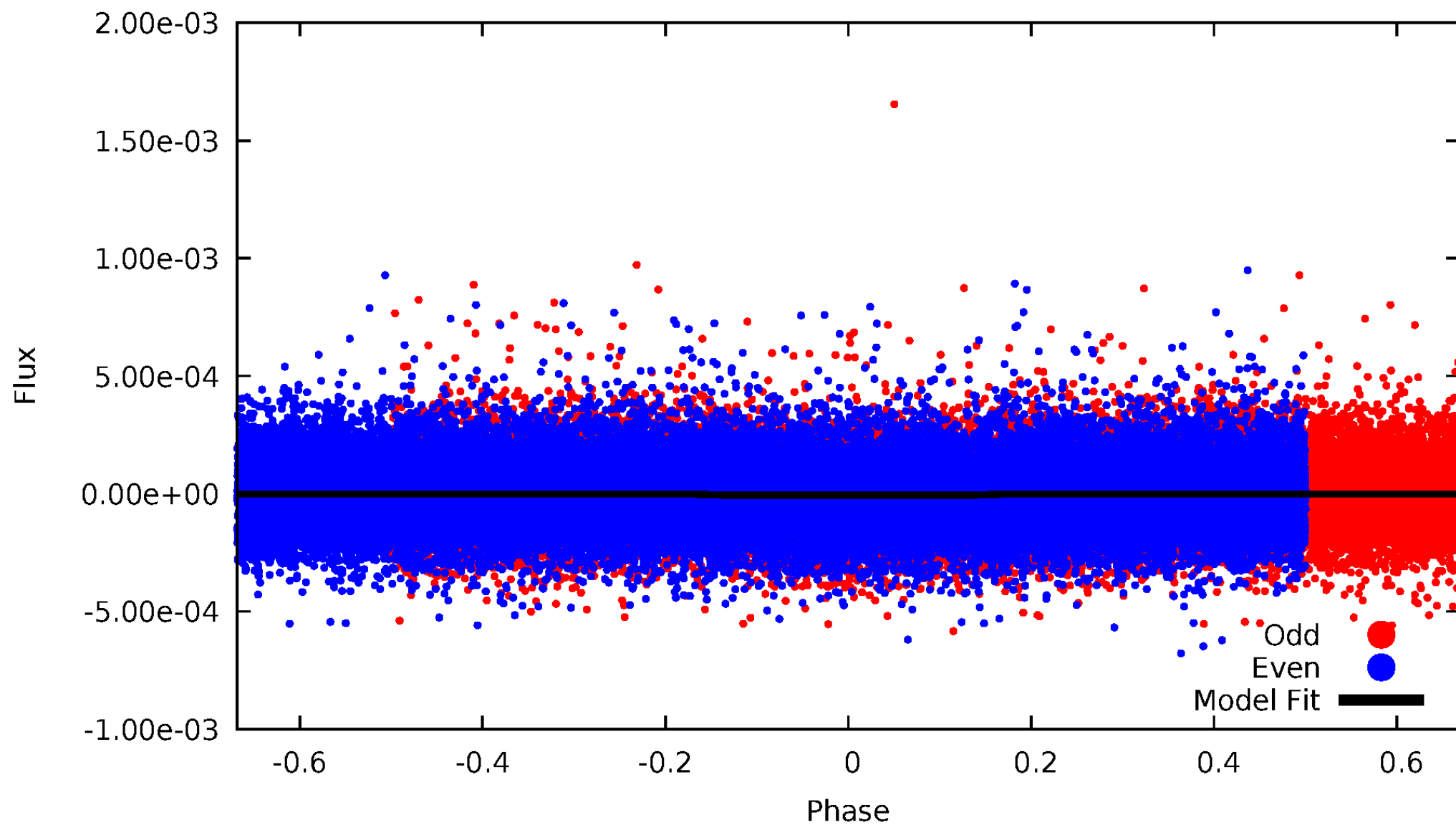
# TCE 007117168-01





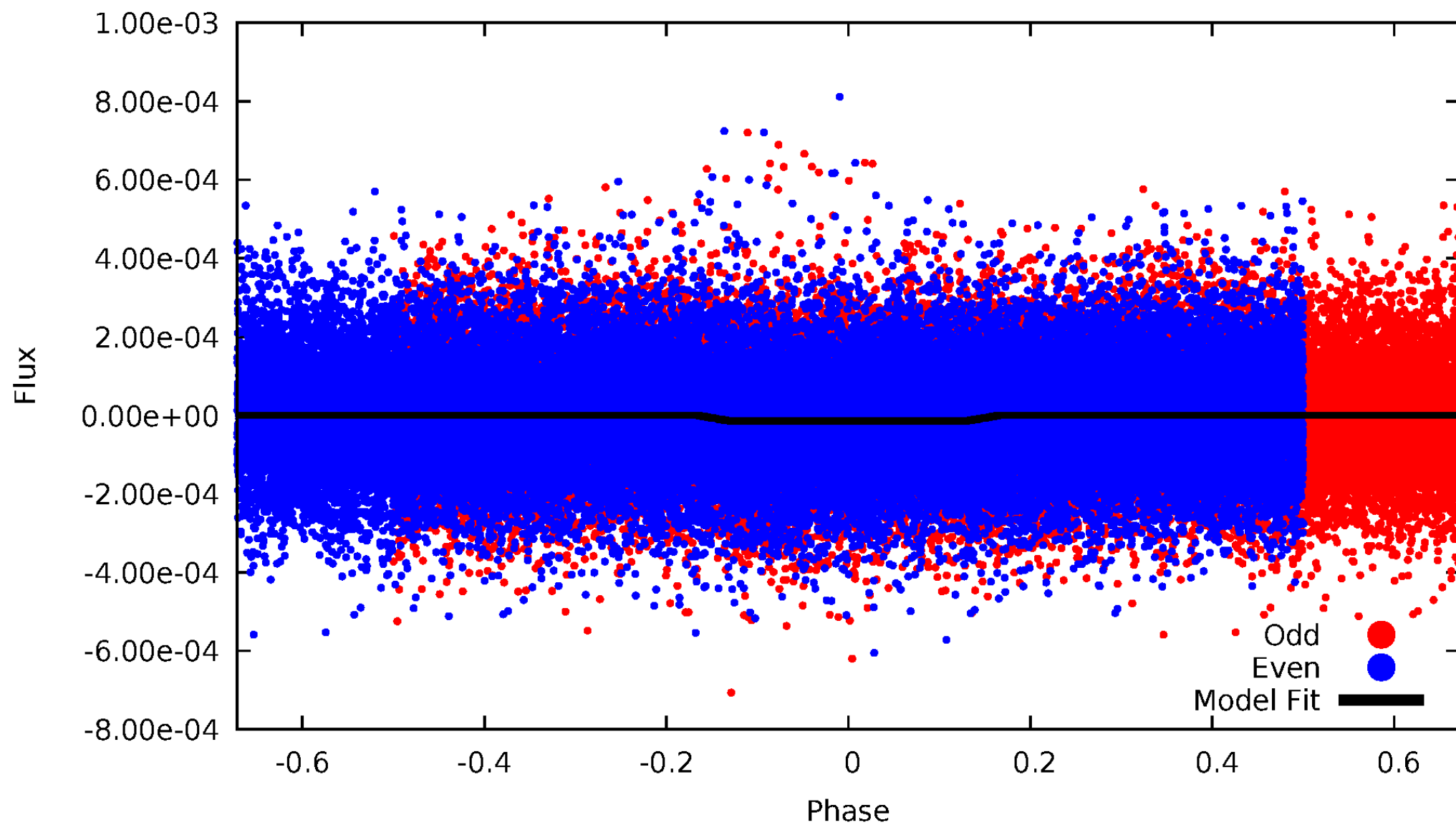
# DV Odd/Even

TCE 007117168-01



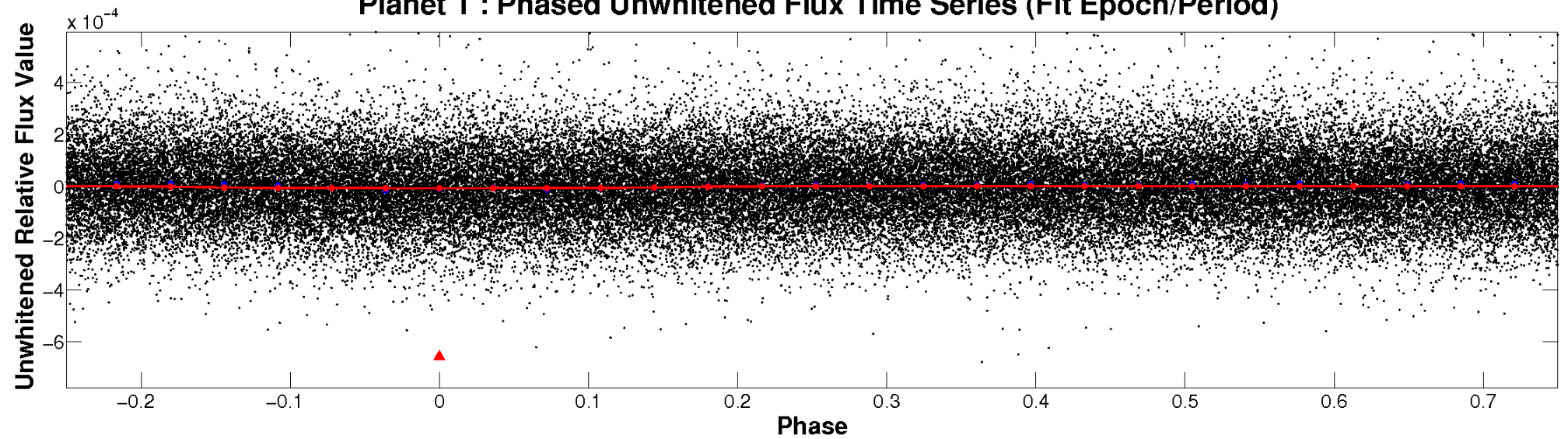
# ALT Odd/Even

TCE 007117168-01

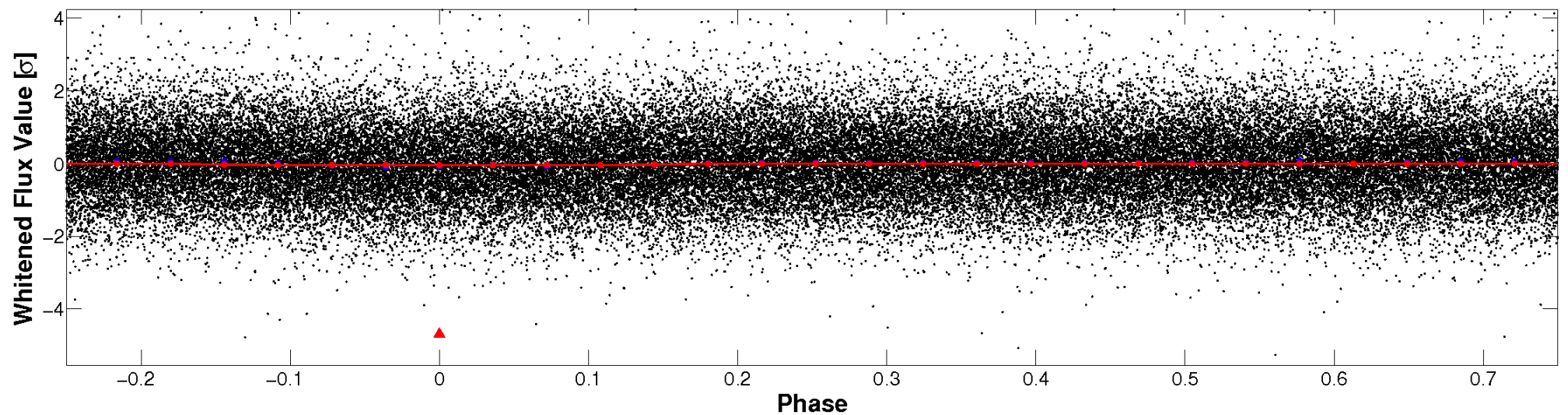


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

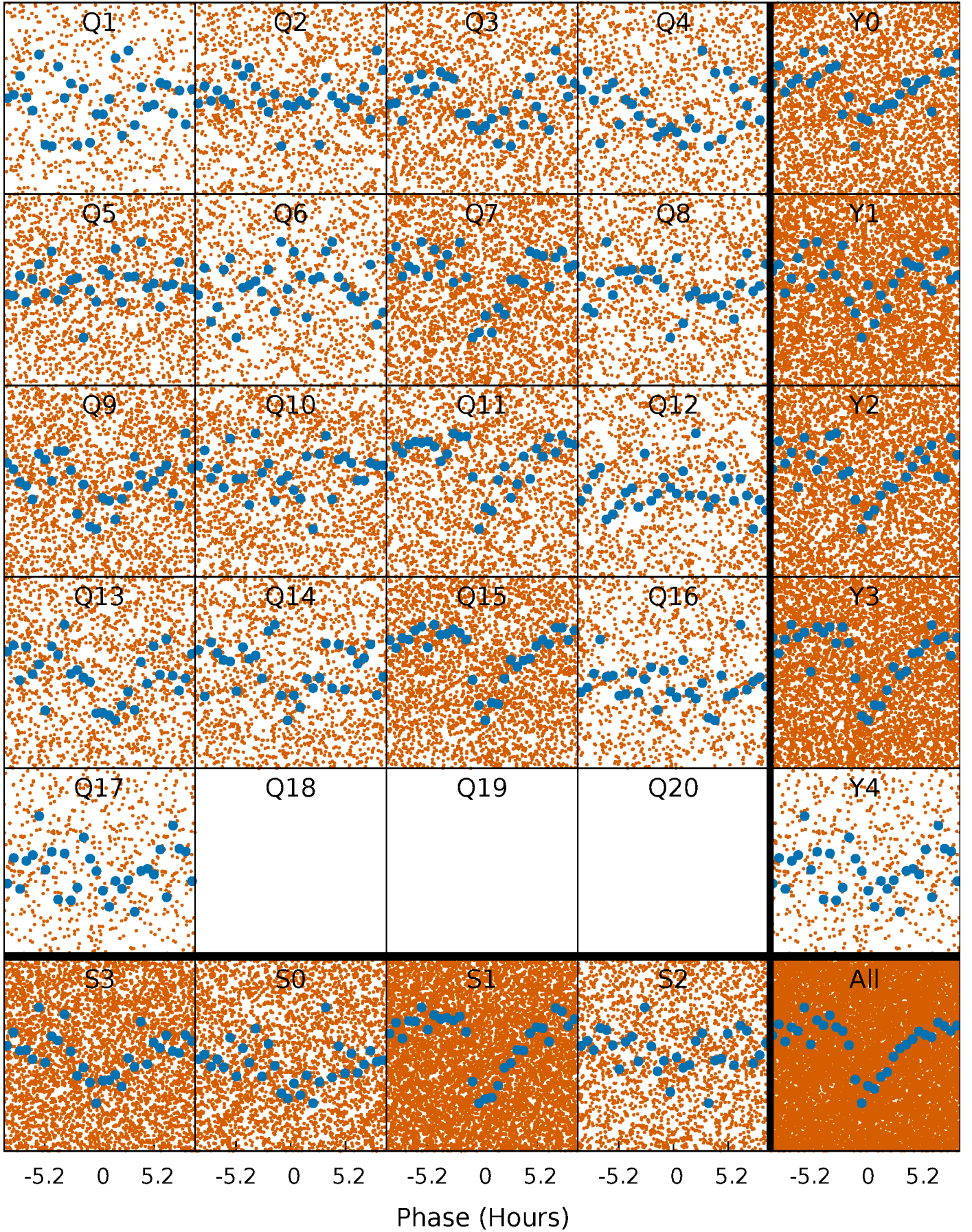


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

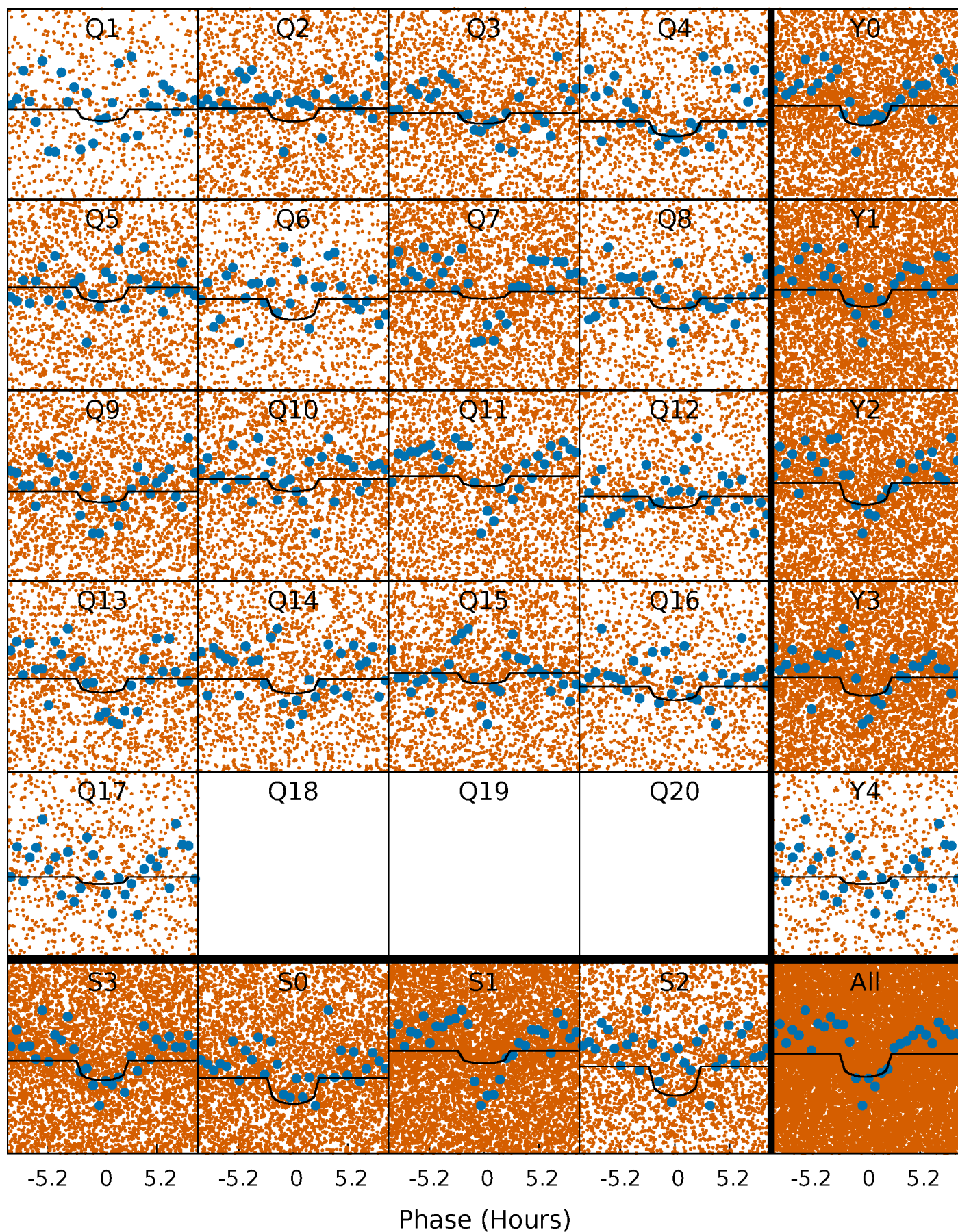
TCE 007117168-01 P= 0.566783 Days  $T_0=131.821516$  (BKJD)





# DV Quarter-Phased Transit Curves

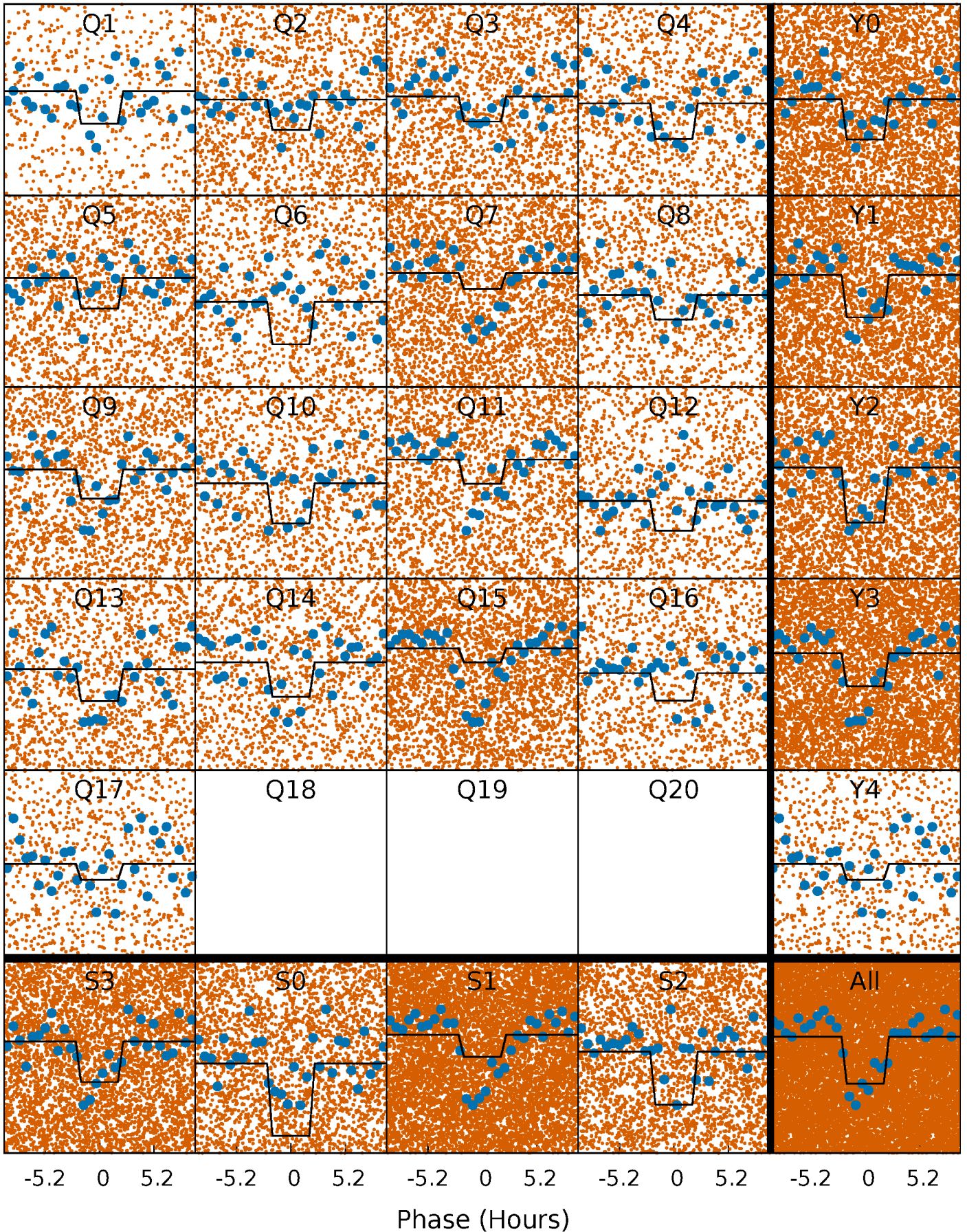
TCE 007117168-01 P= 0.566783 Days  $T_0=131.821516$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

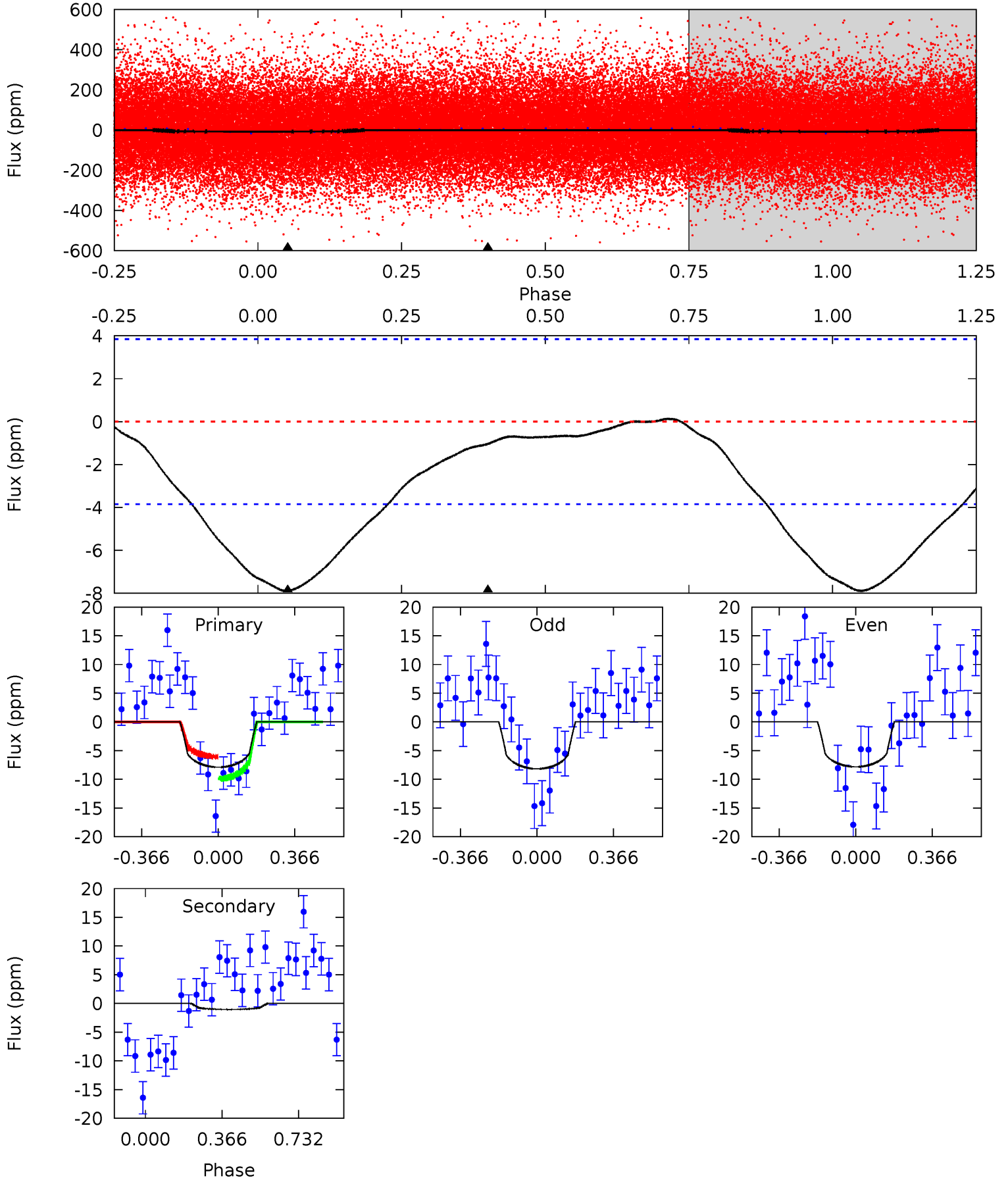
TCE 007117168-01 P= 0.566814 Days  $T_0=131.812641$  (BKJD)



# DV Model-Shift Uniqueness Test

007117168-01, P = 0.566783 Days, E = 131.254733 Days

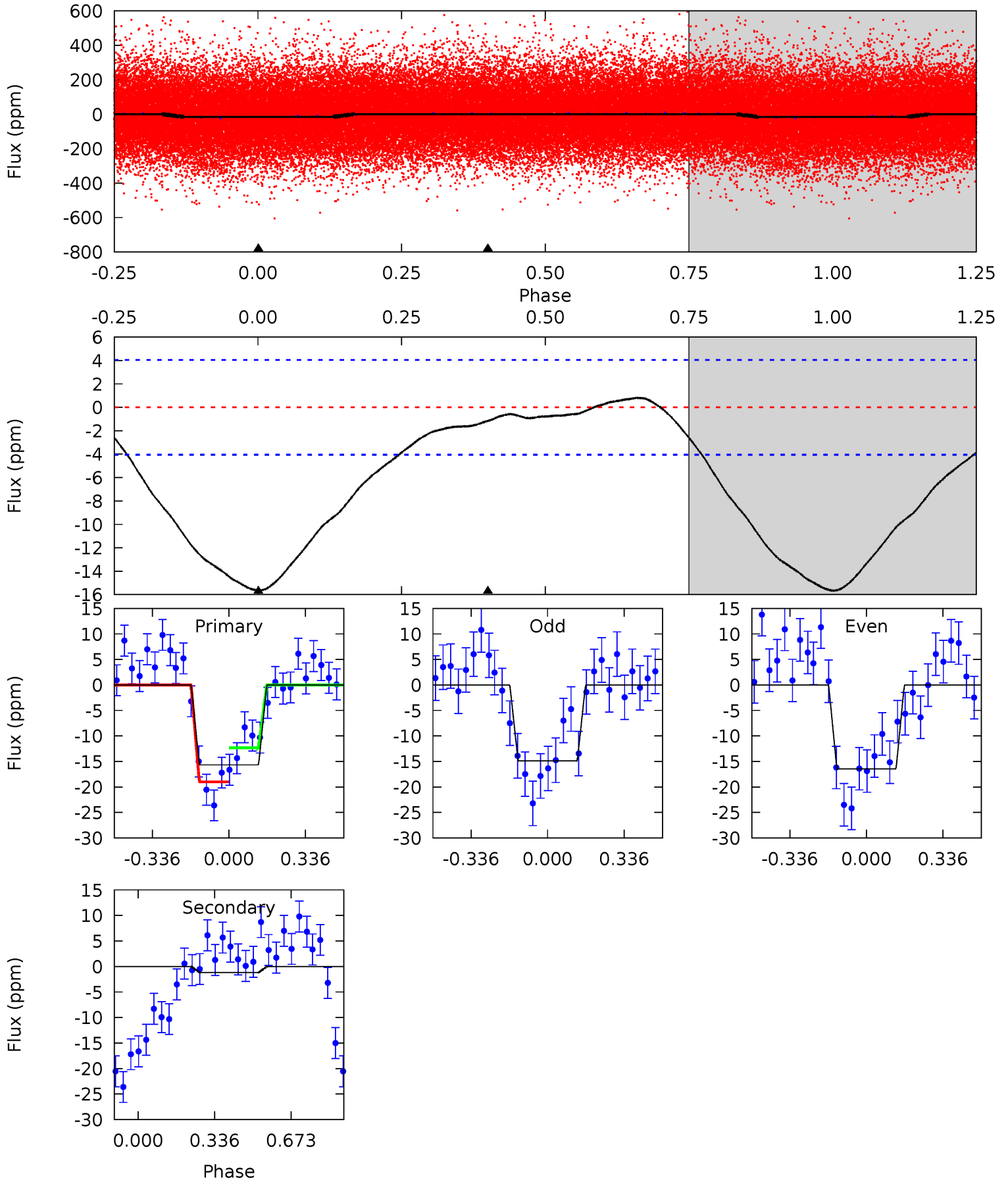
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.80	1.16	0	0	4.28	0.90	0.29	8.80	8.80	1.16	1.16	0.20	1.40	0.02	2.17



# Alt Model-Shift Uniqueness Test

007117168-01, P = 0.566814 Days, E = 131.245827 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
16.6	1.23	0	0	4.30	0.96	1.16	16.6	16.6	1.23	1.23	0.85	0.97	0.05	3.55





### Stellar Parameters For KIC 007117168

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6569^{+155}_{-194}$	$4.069^{+0.210}_{-0.123}$	$-0.220^{+0.250}_{-0.250}$	$1.745^{+0.378}_{-0.463}$	$1.311^{+0.161}_{-0.241}$	$0.347^{+0.407}_{-0.127}$
	+2%/-3%	+5%/-3%	+114%/-114%	+22%/-27%	+12%/-18%	+117%/-36%
Source	PHO1	FLK73	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 007117168-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1 \pm 1$	$0.61^{+0.51}_{-0.40}$	$4379^{+272}_{-316}$	$-2828^{+8664}_{-1100}$	$0.262^{+2.167}_{-0.248}$
Alt.	$-1 \pm 1$	$0.77^{+0.49}_{-0.44}$	$4380^{+267}_{-333}$	$-3248^{+7912}_{-688}$	$0.205^{+0.909}_{-0.187}$

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

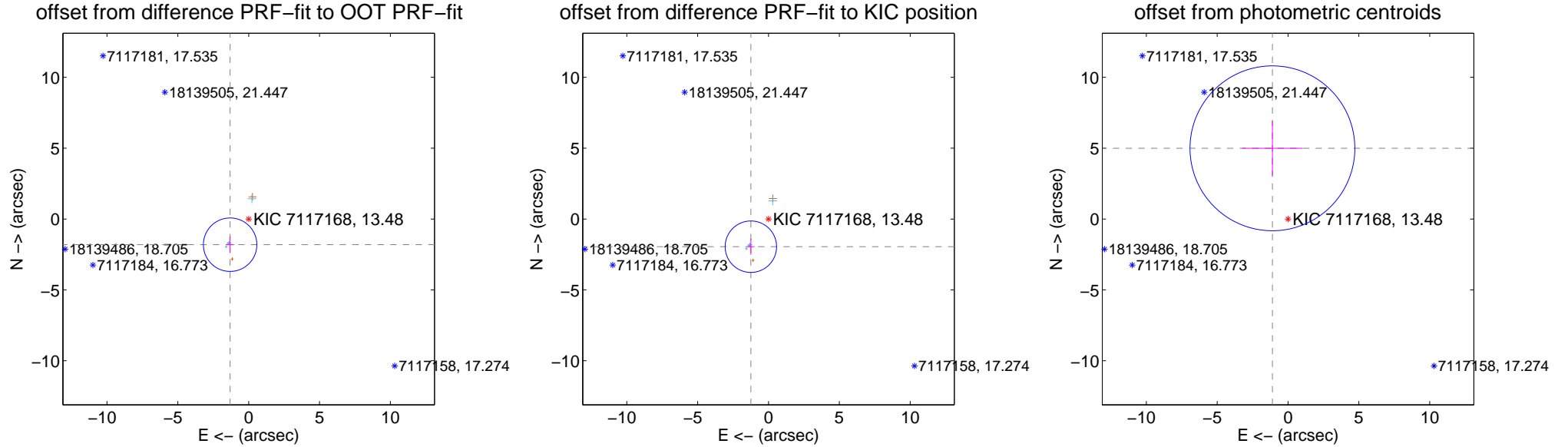
## DV Centroid Data

Supplemental centroid analysis for 007117168-01. Kepler magnitude: 13.48. Transit SNR 5.81

There are 5 quarters with good PRF difference image offsets

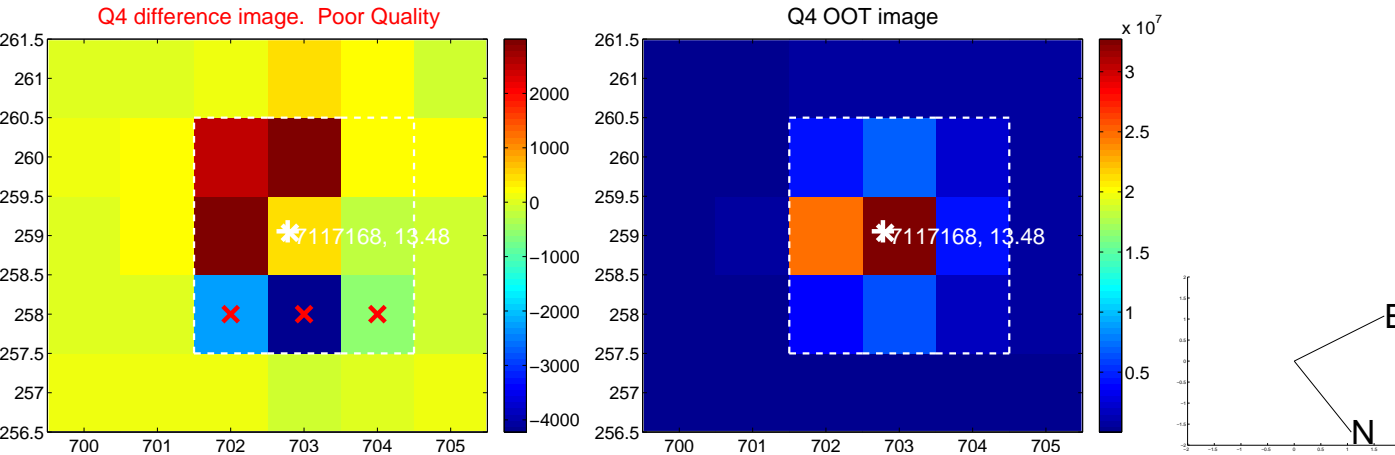
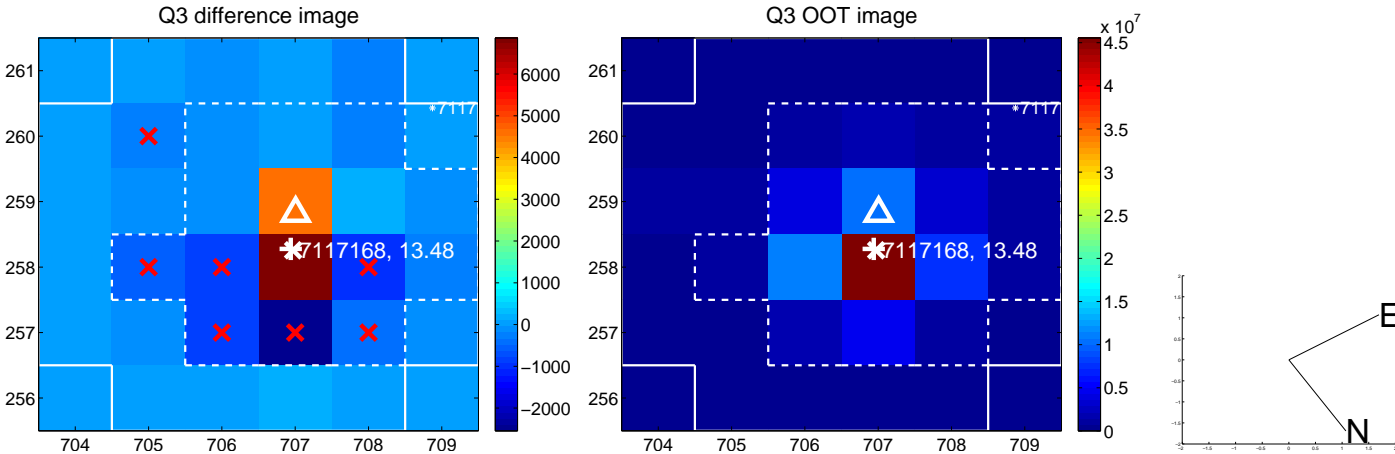
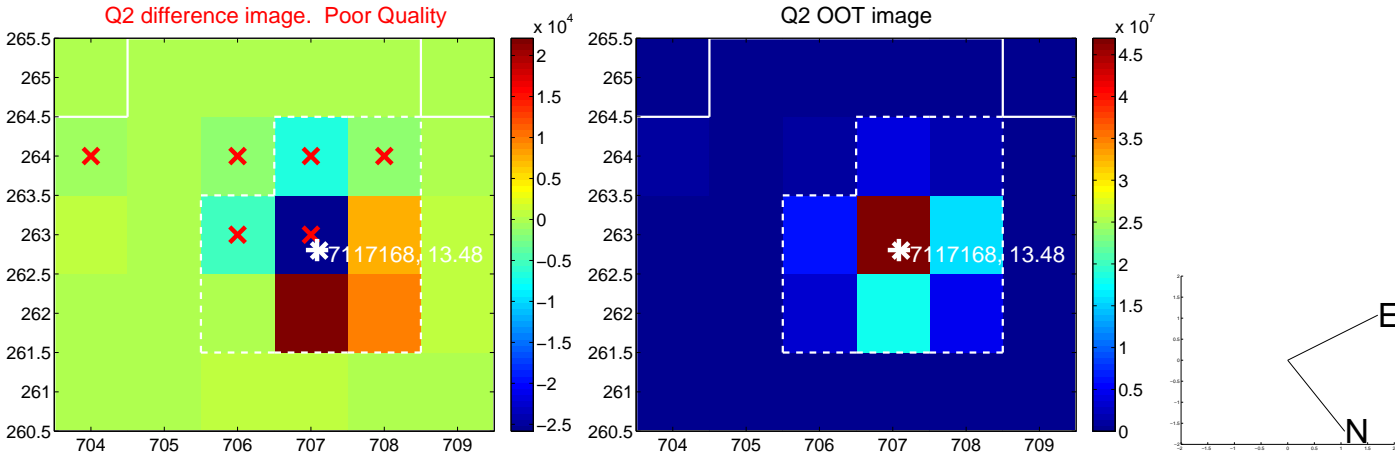
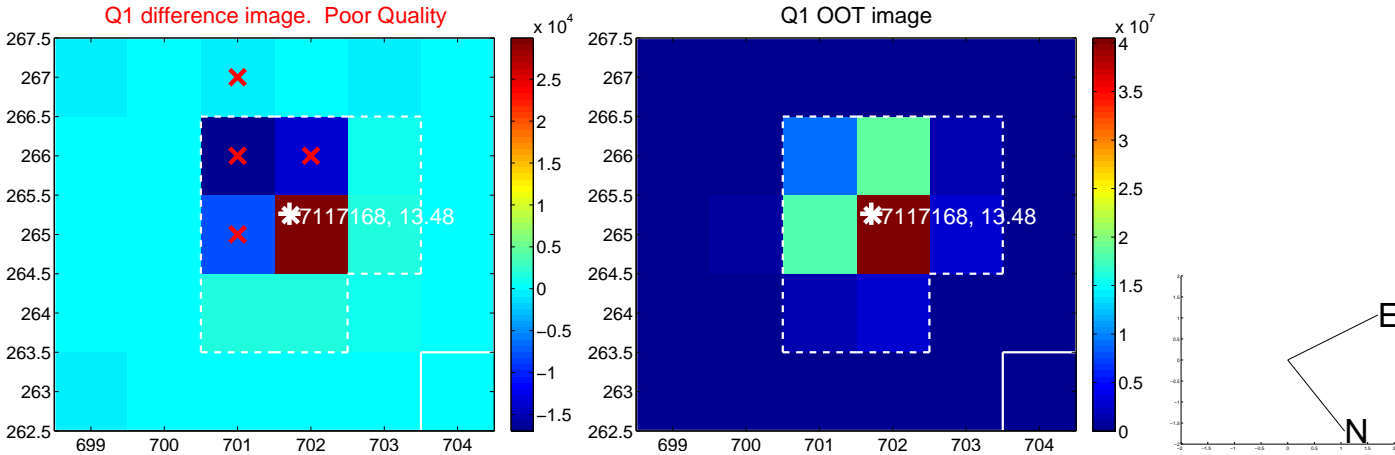
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>2.236 <math>\pm</math> 0.629</b>	<b>3.56</b>	1.310 $\pm$ 0.283	-1.812 $\pm$ 0.584
PRF-fit source offset from KIC position	<b>2.316 <math>\pm</math> 0.605</b>	<b>3.83</b>	1.245 $\pm$ 0.250	-1.953 $\pm$ 0.572
photometric centroid source offset	5.11 $\pm$ 1.94	2.64	1.10 $\pm$ 2.14	4.99 $\pm$ 1.93

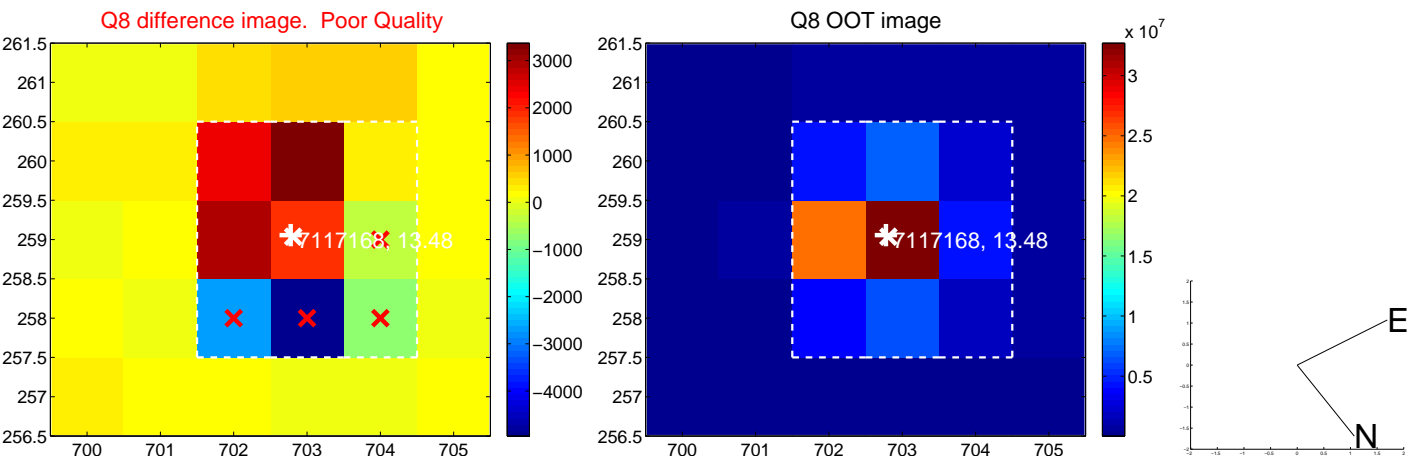
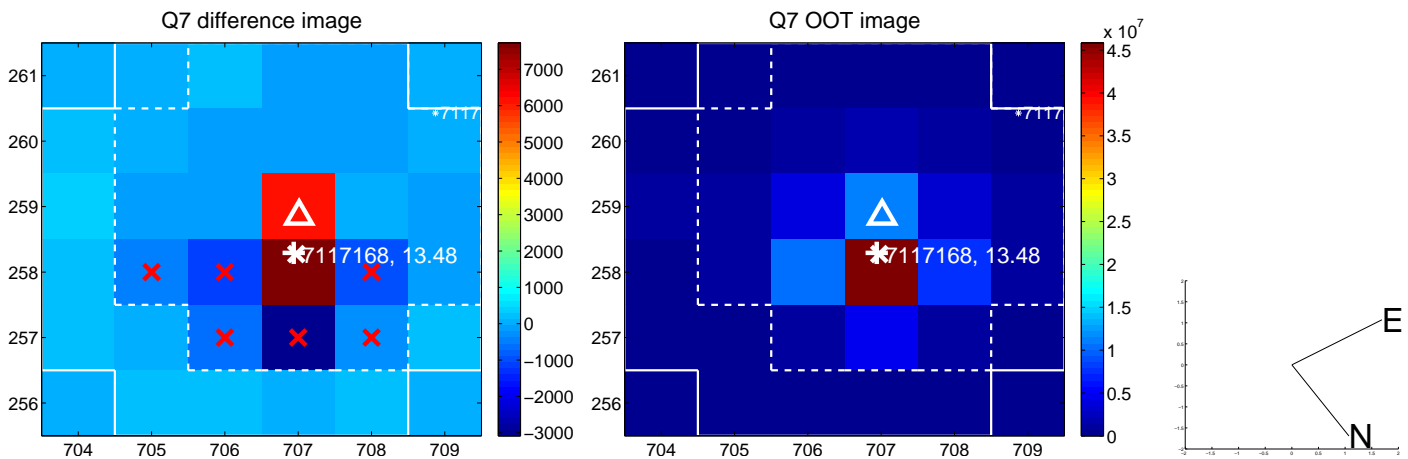
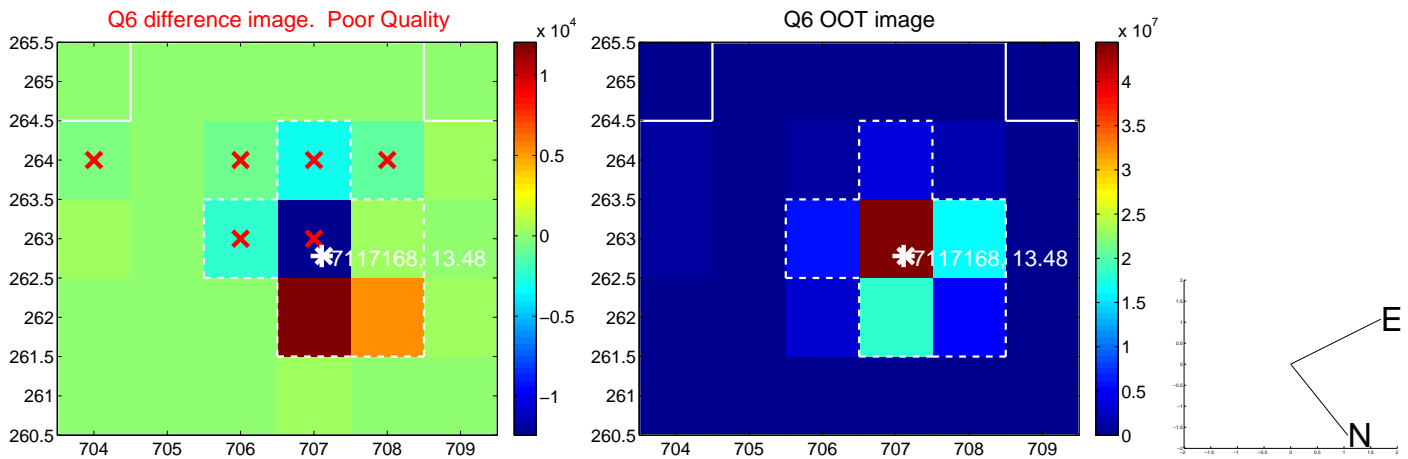
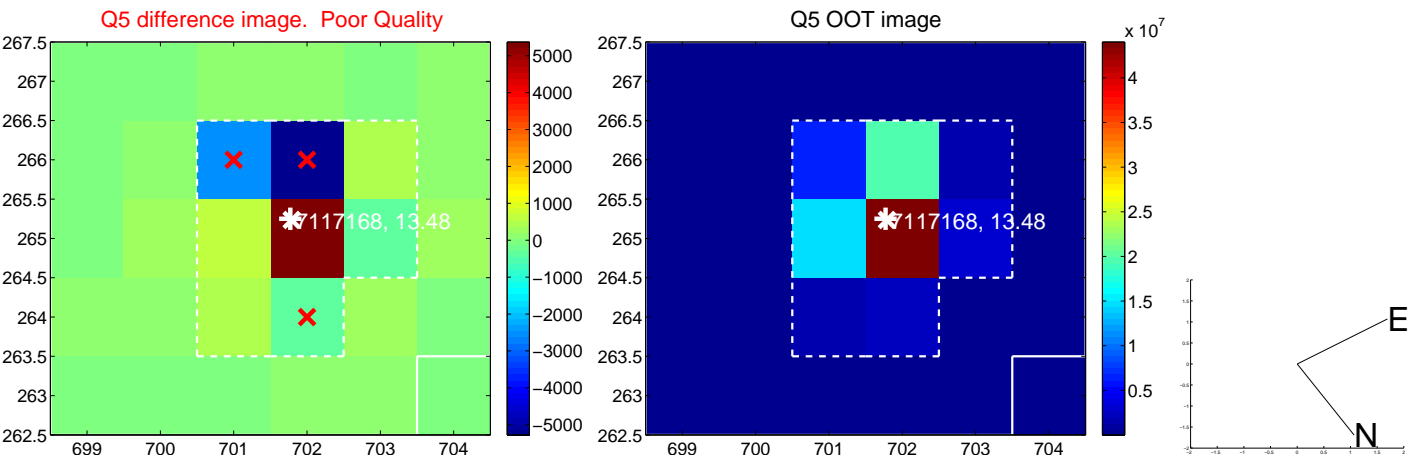


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

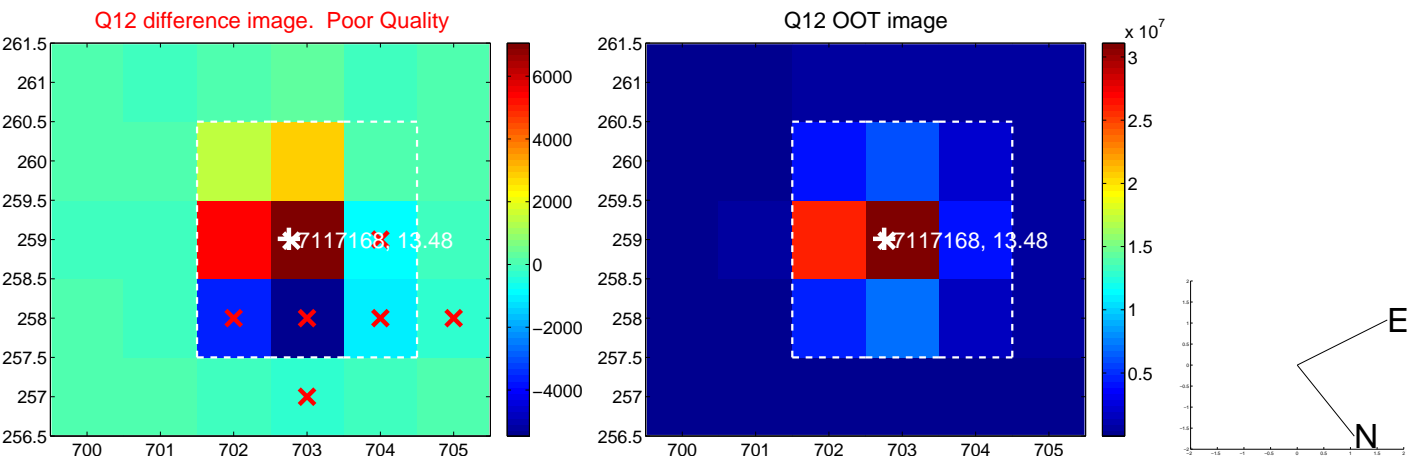
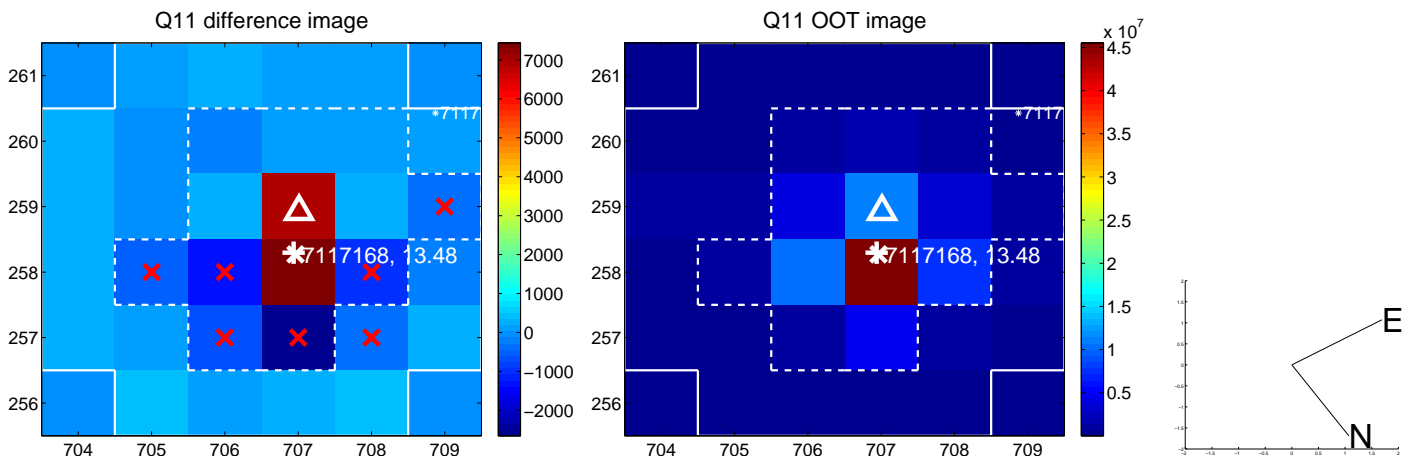
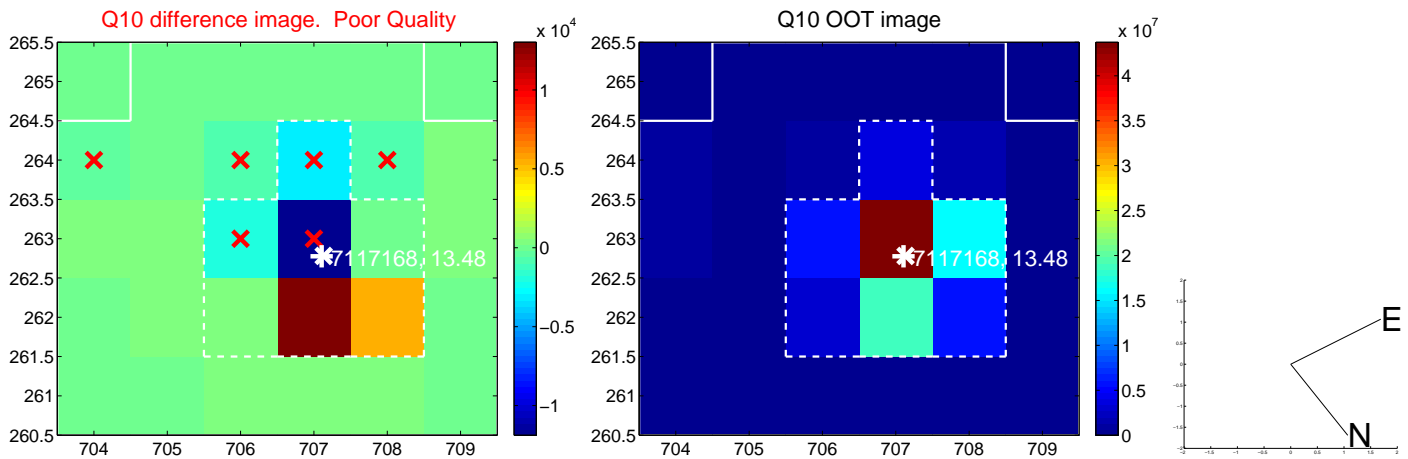
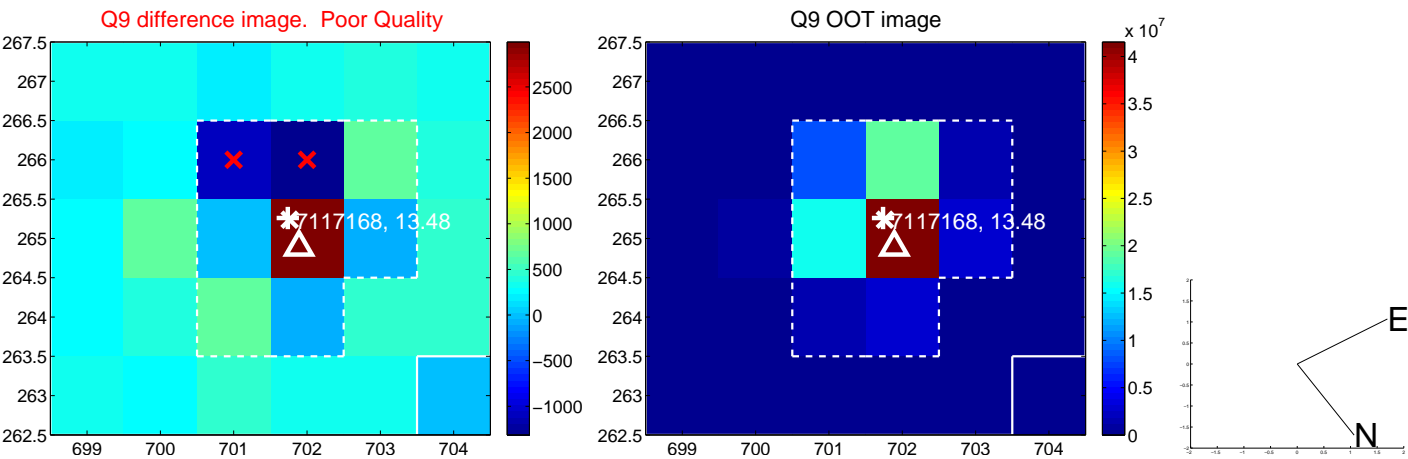


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

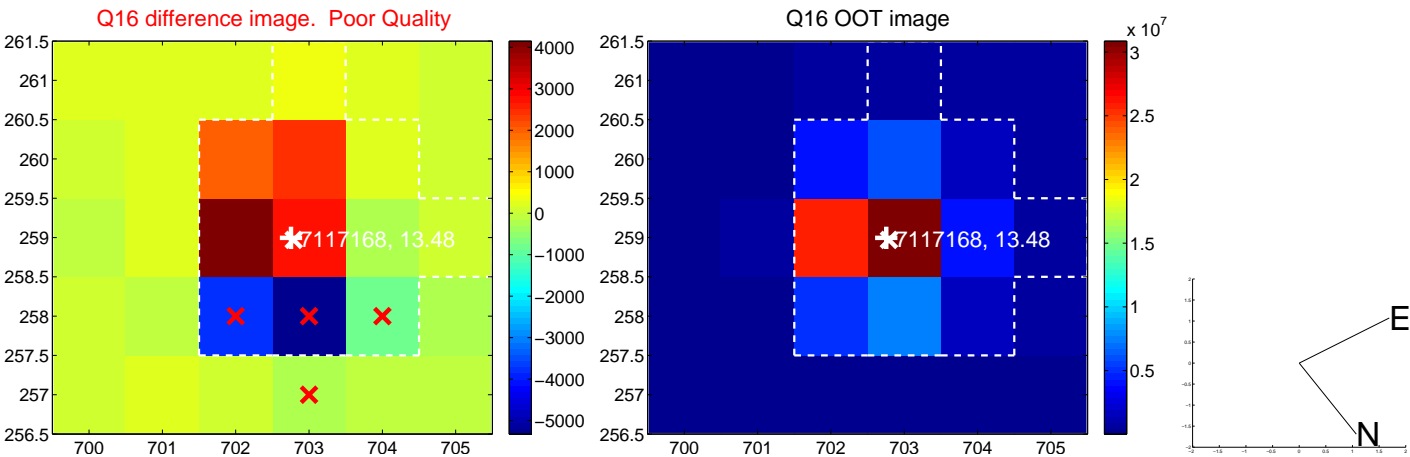
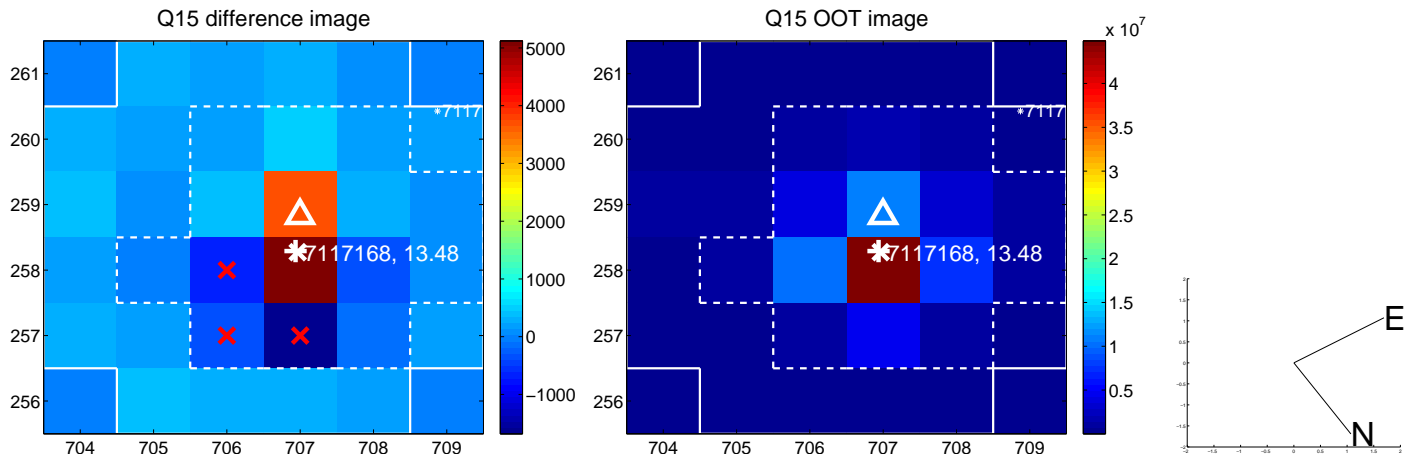
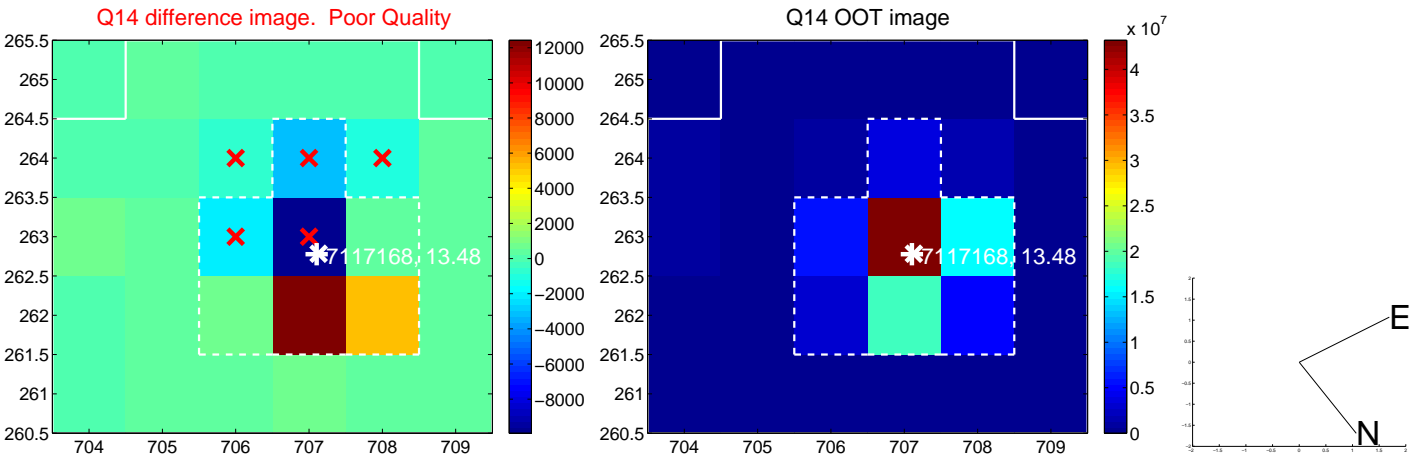
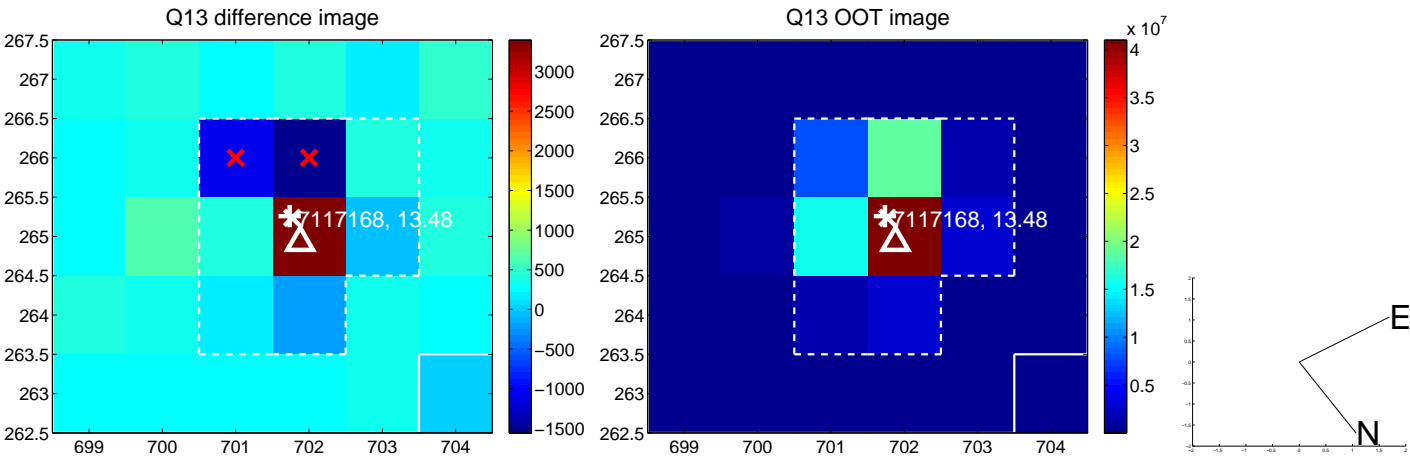




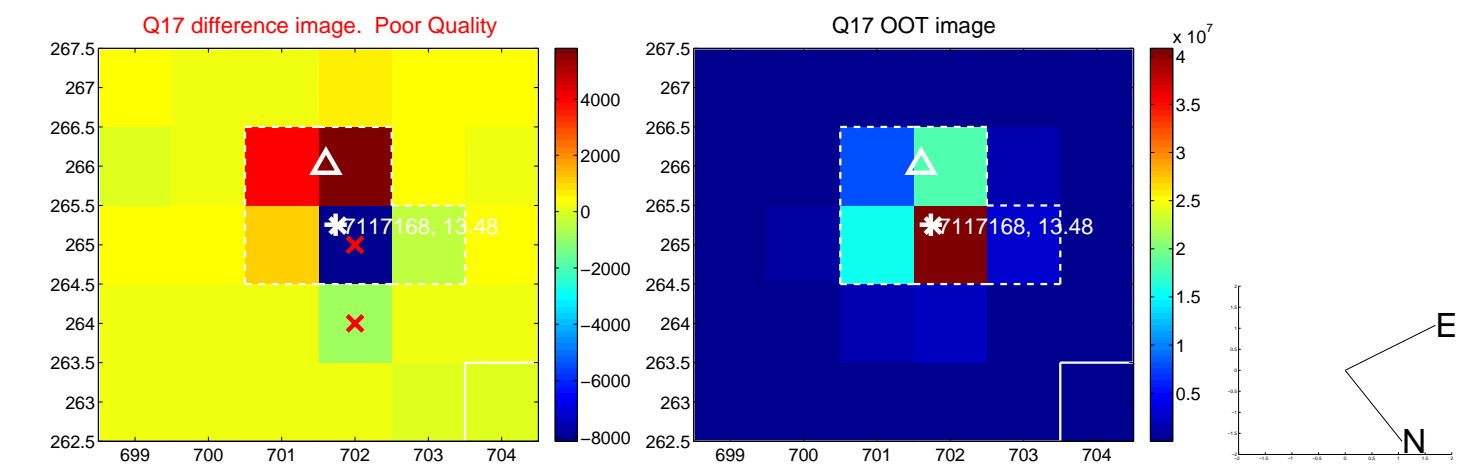
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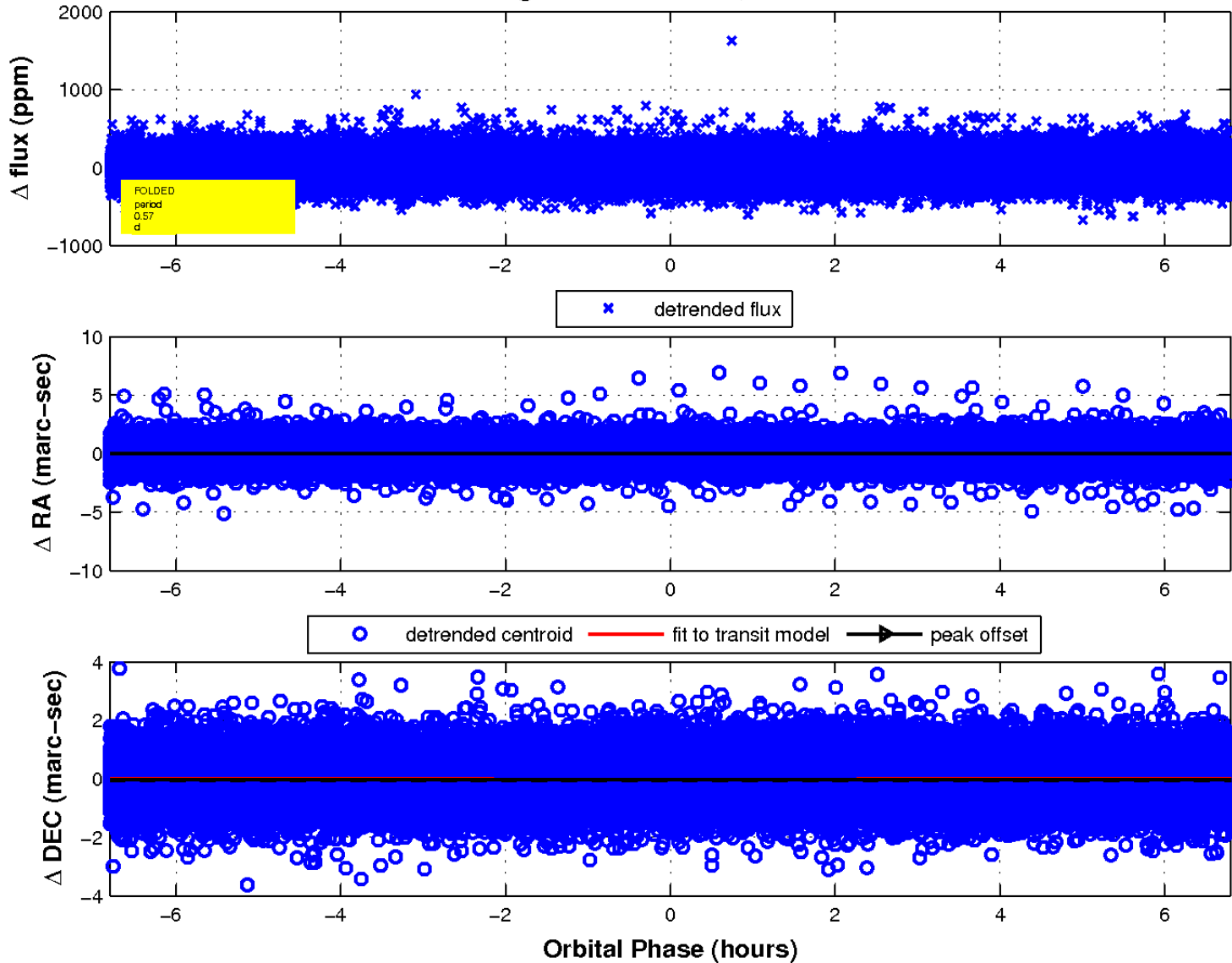
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

