

# KIC 005623852

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005623852-01	OBS	No	0.566643	132.043686	23.9	1.848	70.5	8.2	1.11	5885	0.95	7366.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005623852-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—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.

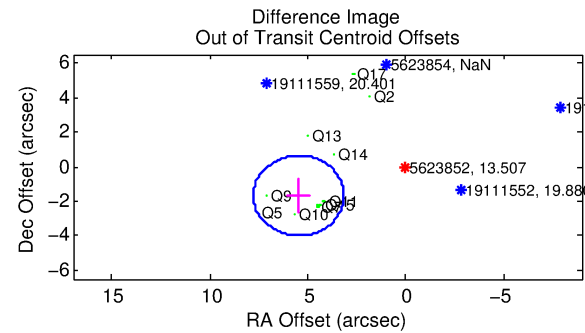
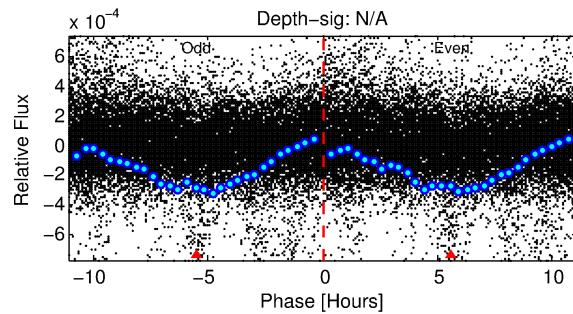
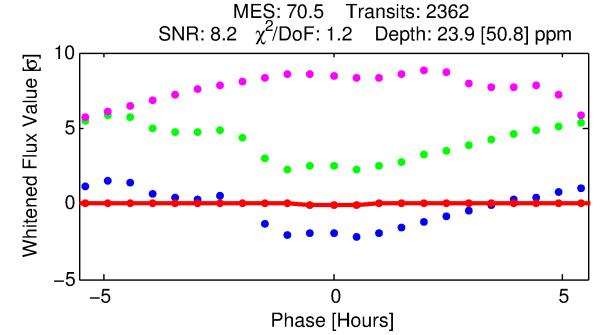
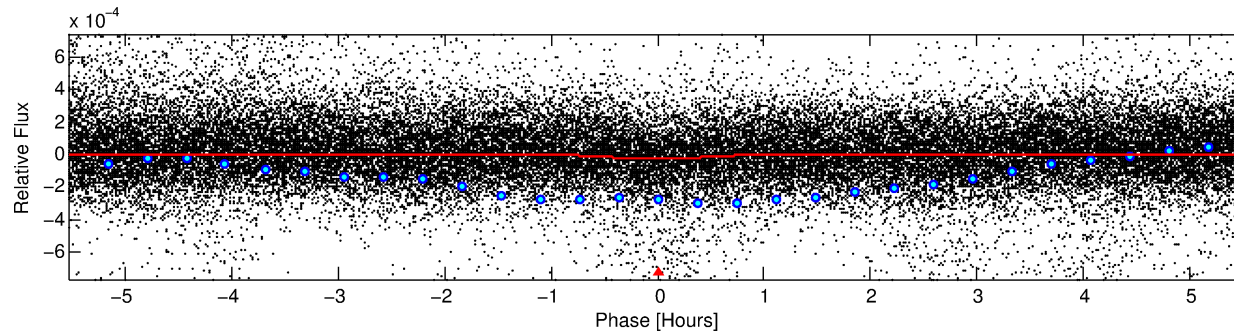
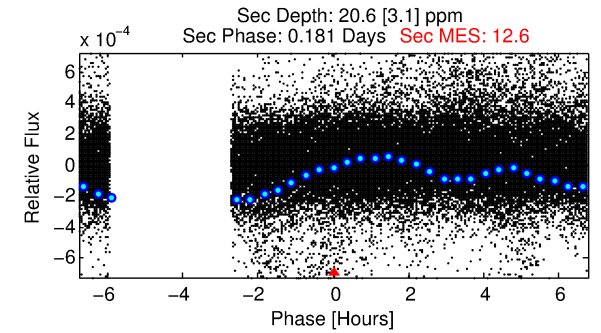
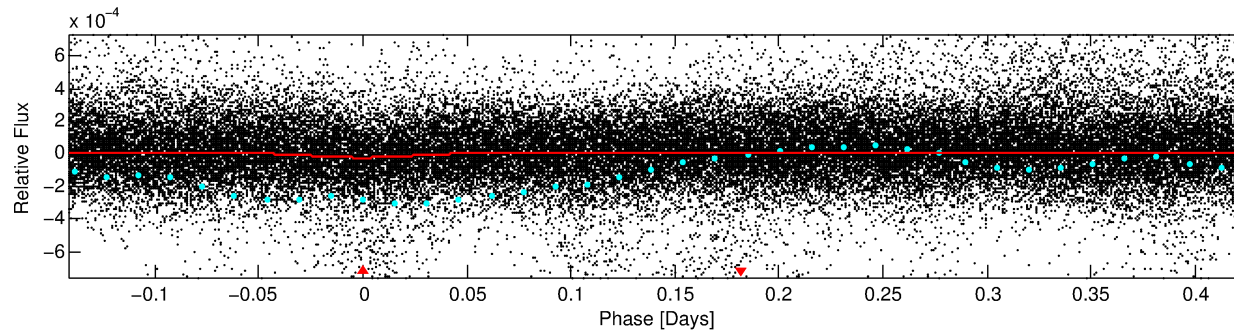
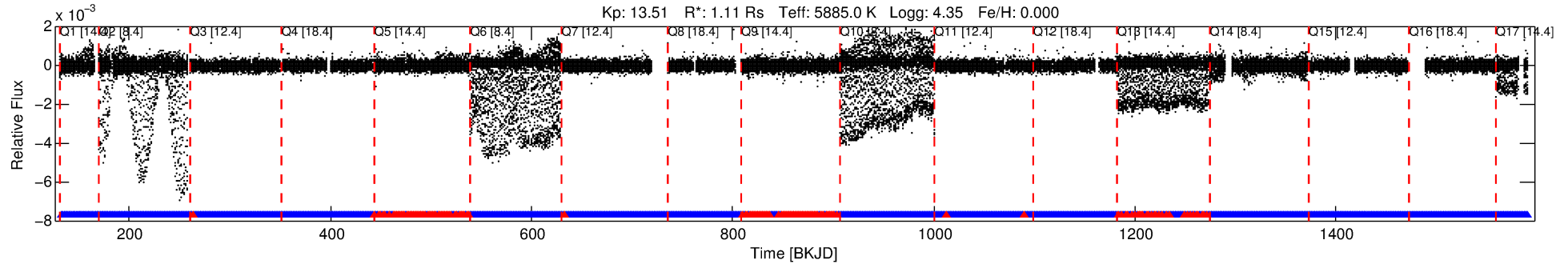
## Ephemeris Match Information For 005623852-01

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	$\sigma_P$	$\sigma_T$
005623852-01	5623852	RR-Lyr-pri	7198959	1:1	8235.2	-6	-3	7.86	13.50	25971.00	Cross-Talk	0	1.01	0.40

**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: 5623852 Candidate: 1 of 1 Period: 0.567 d



## DV Fit Results:

Period = 0.56664 [0.00001] d  
Epoch = 132.0437 [0.0030] BKJD  
Rp/R\* = 0.0078 [0.0177]  
a/R\* = 1.06 [0.10]  
b = 1.00 [0.04]  
Seff = 7366.77 [1570.61]  
Teq = 2362 [126] K  
Rp = 0.95 [2.15] Re  
a = 0.0134 [0.0019] AU  
Ag = 2.27 [10.27] [0.12σ]  
Teffp = 4484 [5063] K [0.42σ]

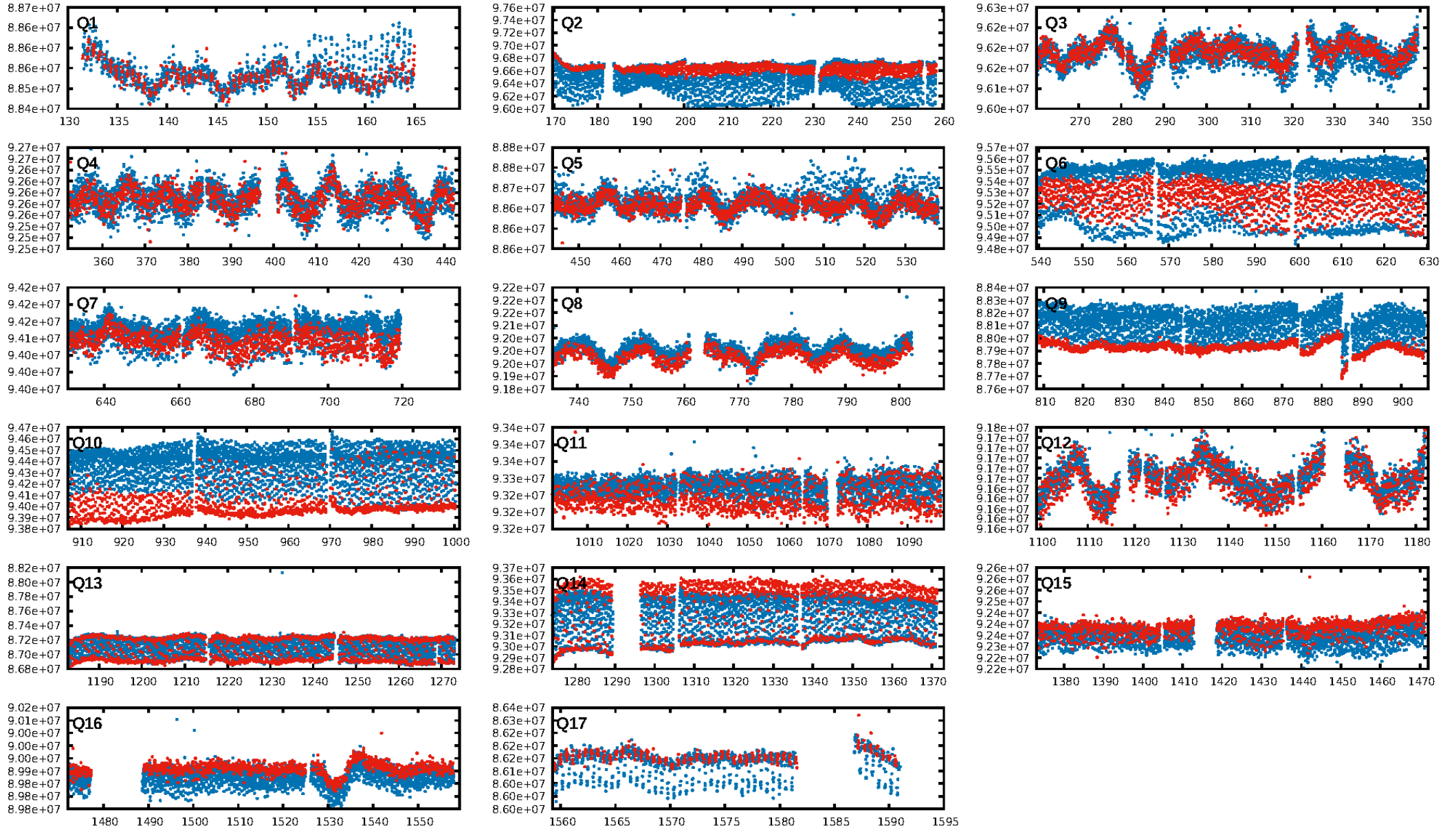
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.91 [2042/2255]  
GhostDiagnostic-chr: 0.5652  
Centroid-sig: N/A  
Centroid-so: 6.441 arcsec [3.79σ]  
OotOffset-rm: 5.730 arcsec [7.41σ]  
KicOffset-rm: 6.042 arcsec [9.31σ]  
OotOffset-st: 3/3/0/4 [10]  
KicOffset-st: 3/3/0/4 [10]  
DiffImageQuality-fgm: 0.50 [5/10]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 10:47:27 Z

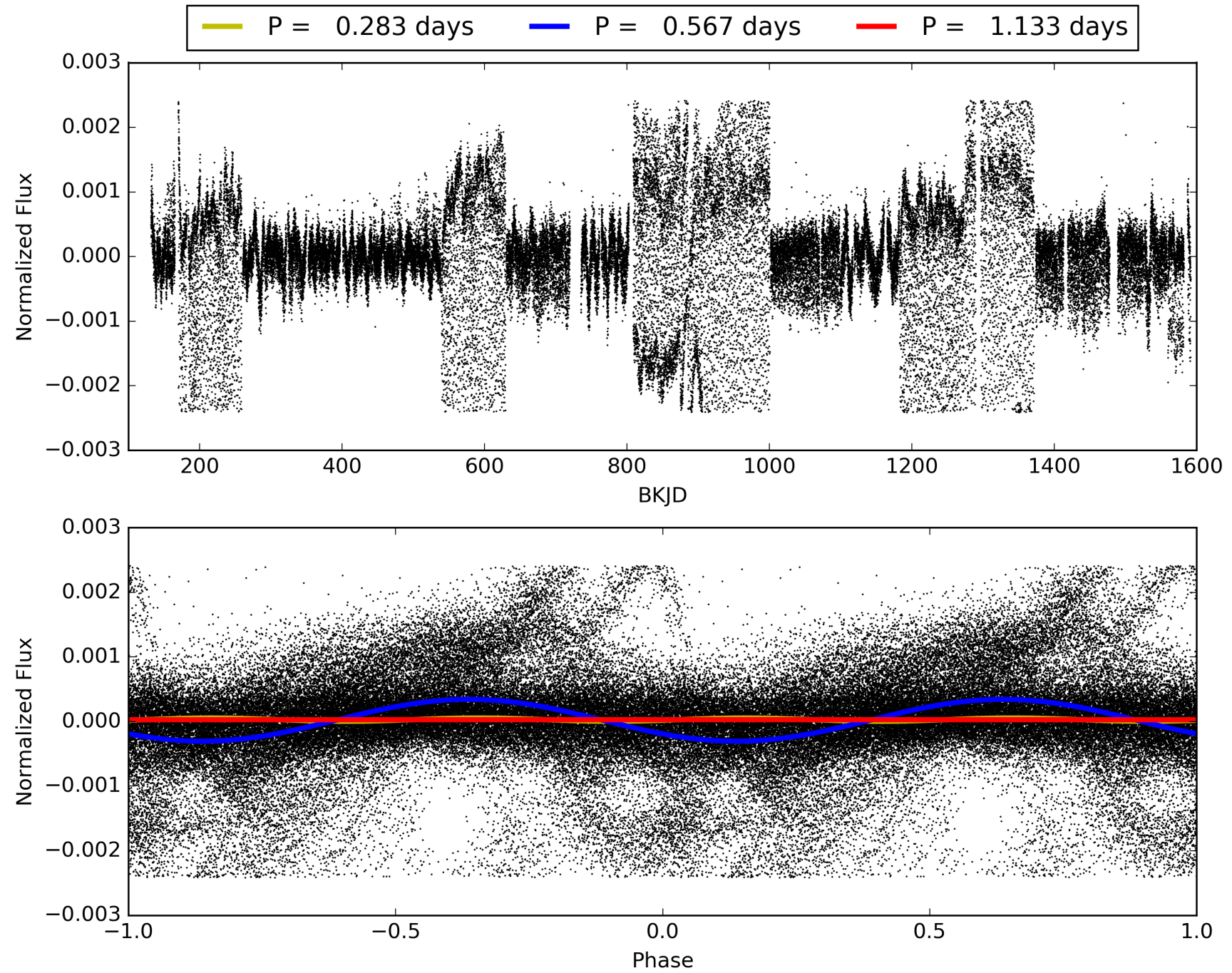
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005623852-01, PDC Light Curves



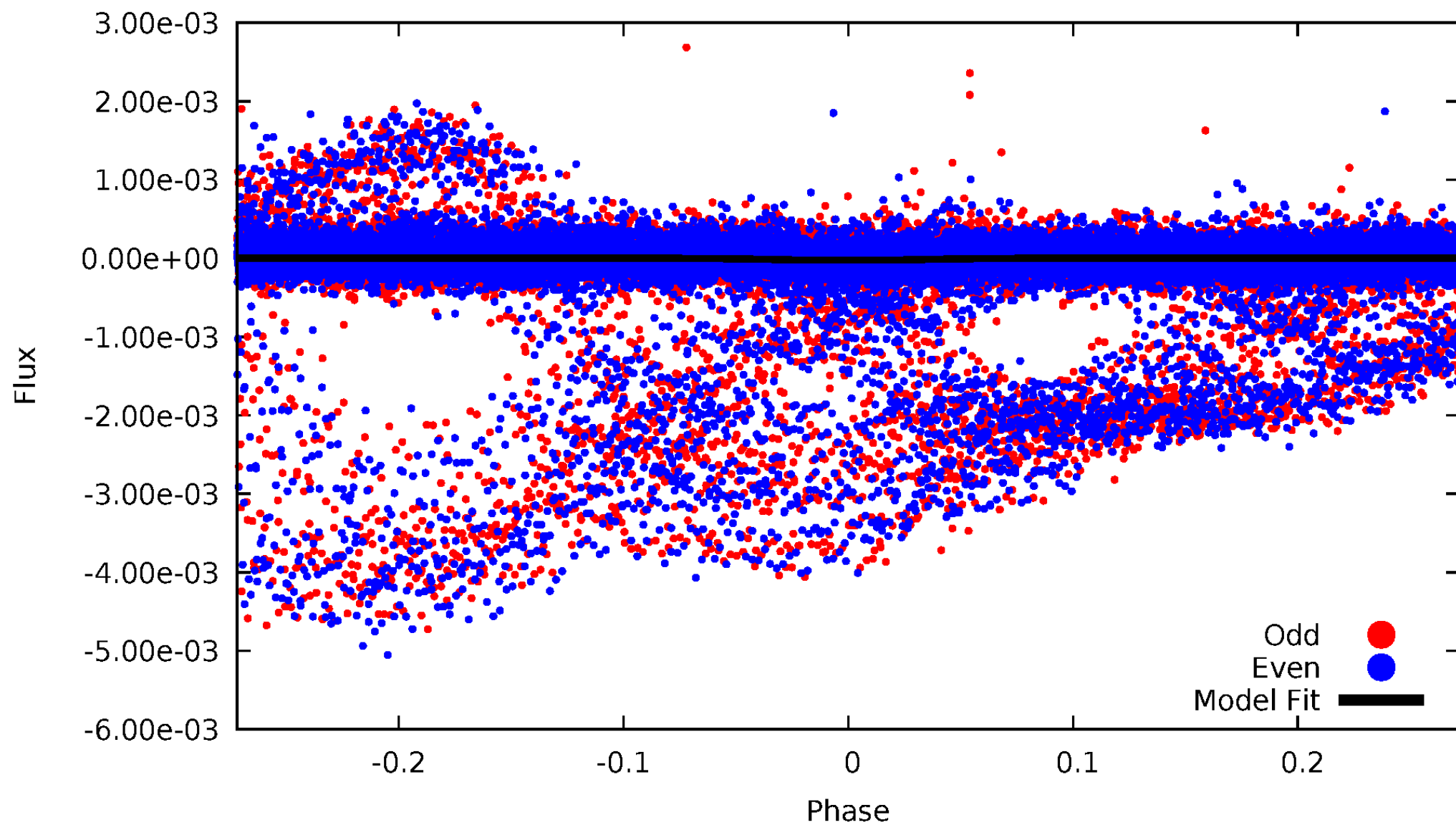


TCE 005623852-01



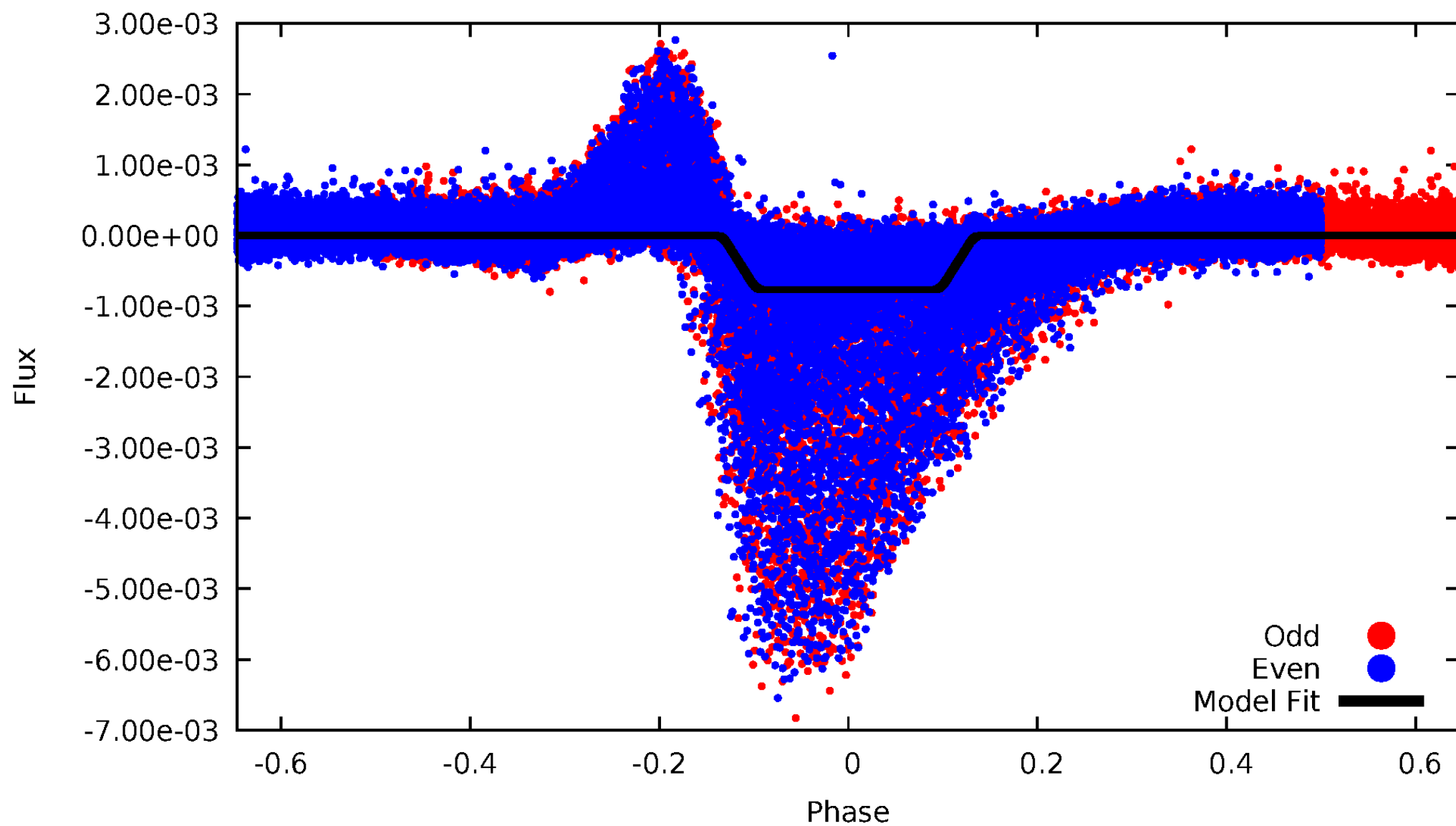
# DV Odd/Even

TCE 005623852-01



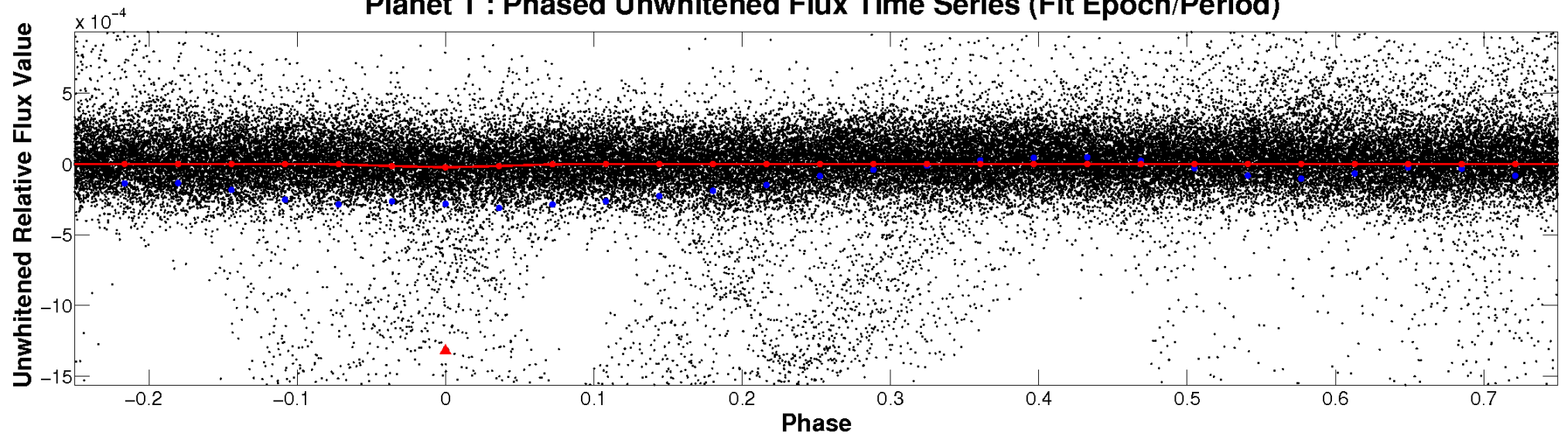
# ALT Odd/Even

TCE 005623852-01

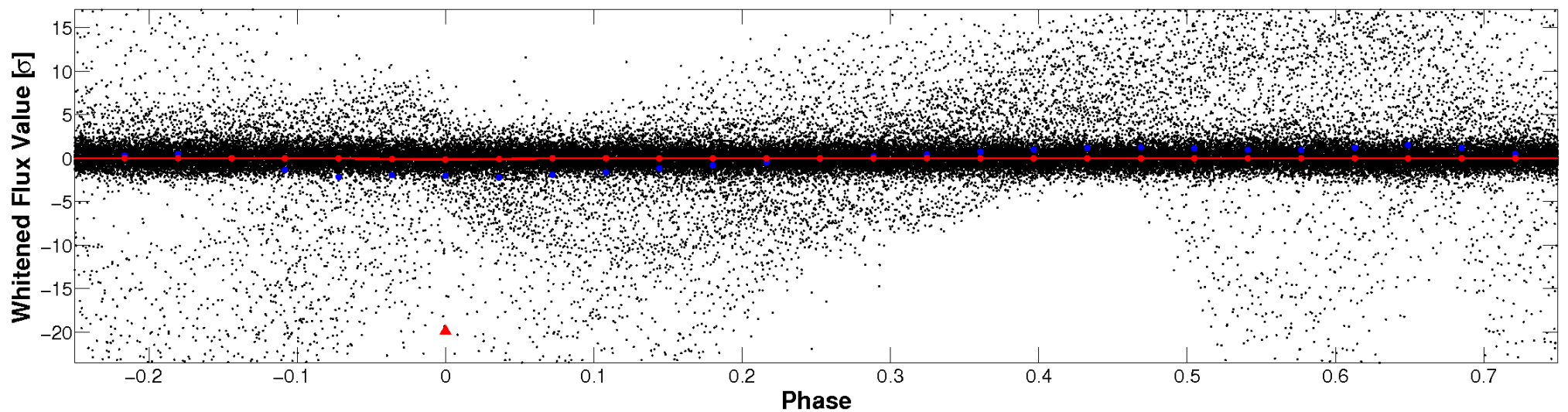


# Non-Whitened Vs. Whitened Light Curve

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



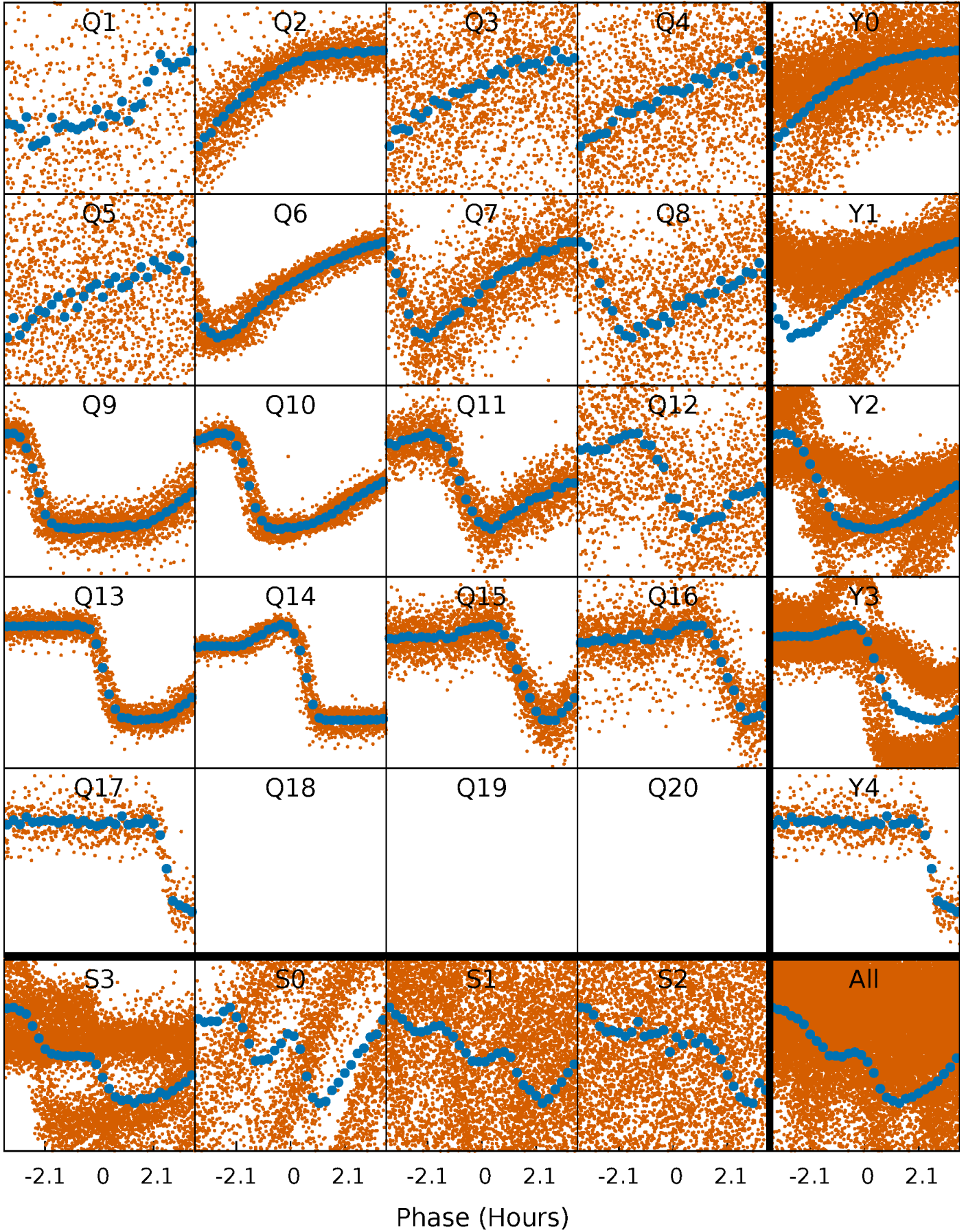
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

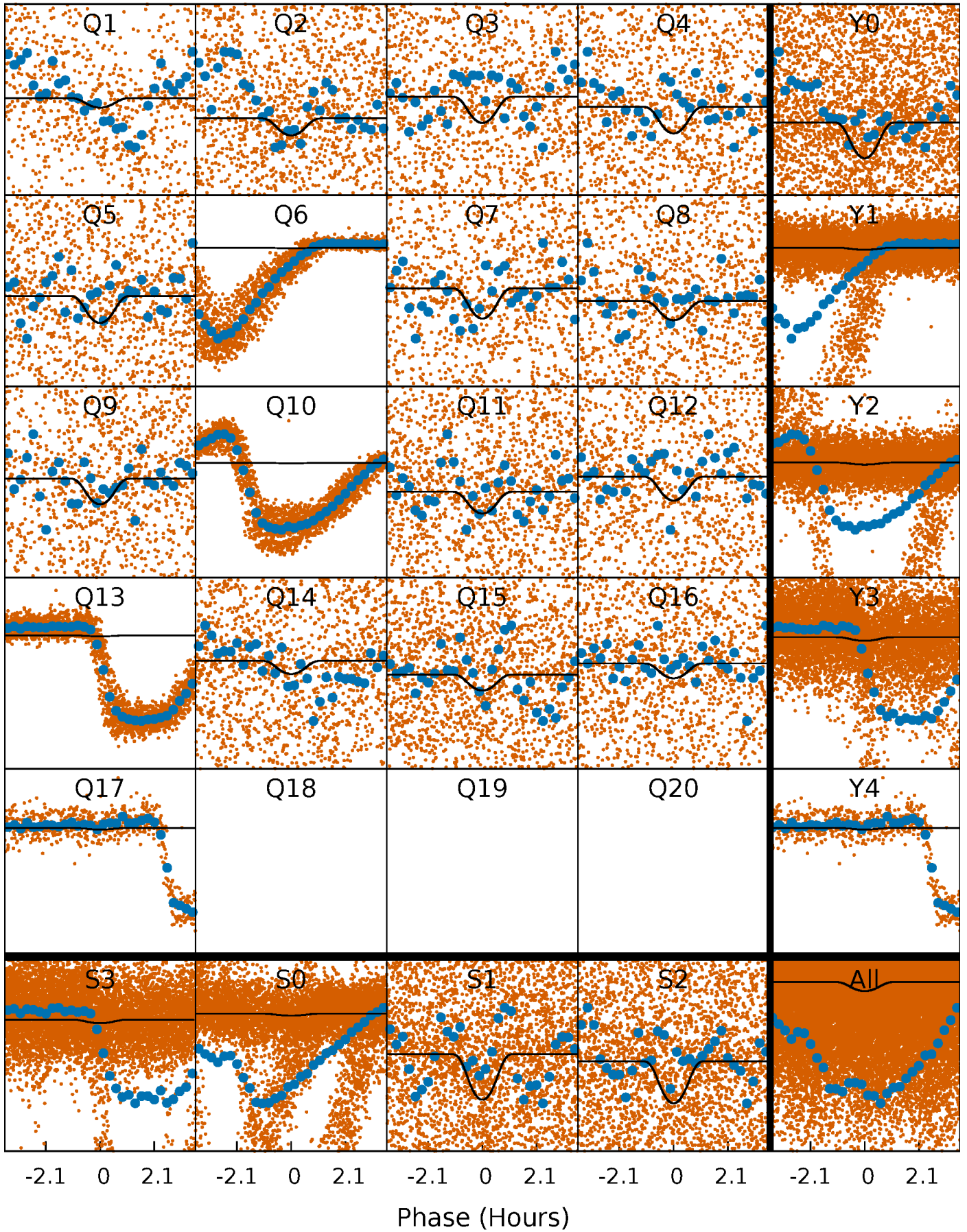
TCE 005623852-01 P= 0.566643 Days  $T_0=132.043686$  (BKJD)





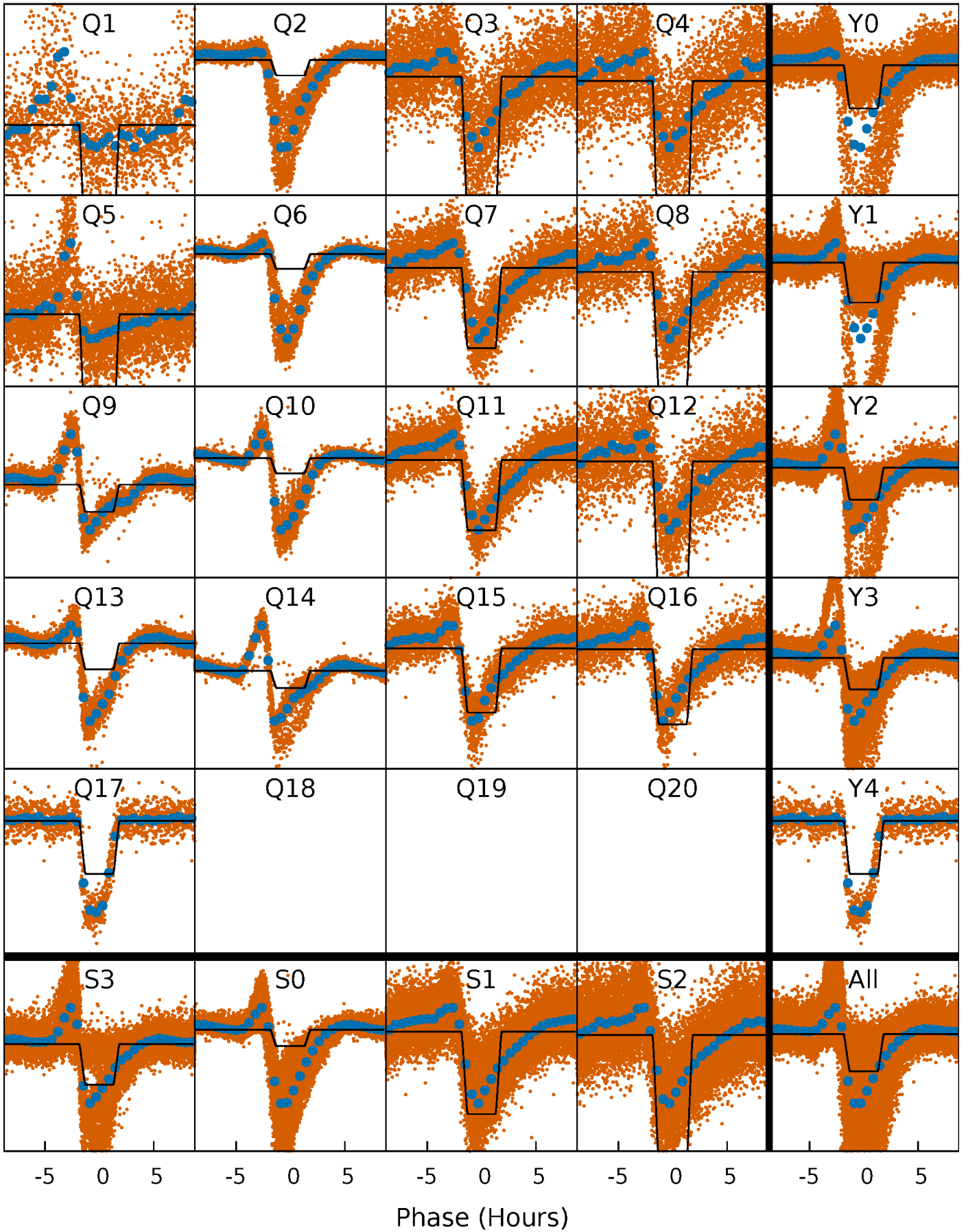
# DV Quarter-Phased Transit Curves

TCE 005623852-01 P= 0.566643 Days  $T_0=132.043686$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

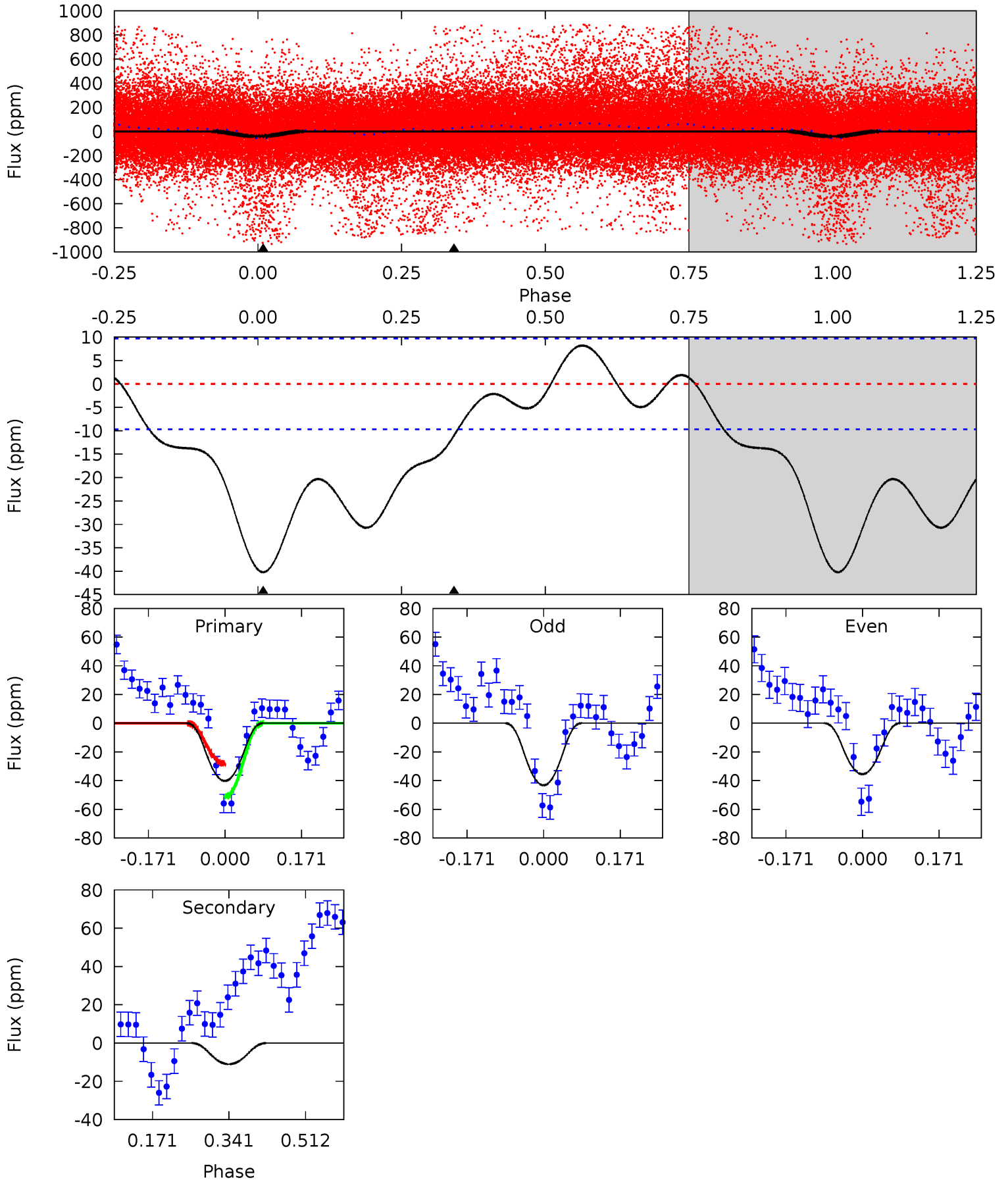
TCE 005623852-01 P= 0.566803 Days  $T_0=131.809927$  (BKJD)



# DV Model-Shift Uniqueness Test

005623852-01, P = 0.566643 Days, E = 131.477043 Days

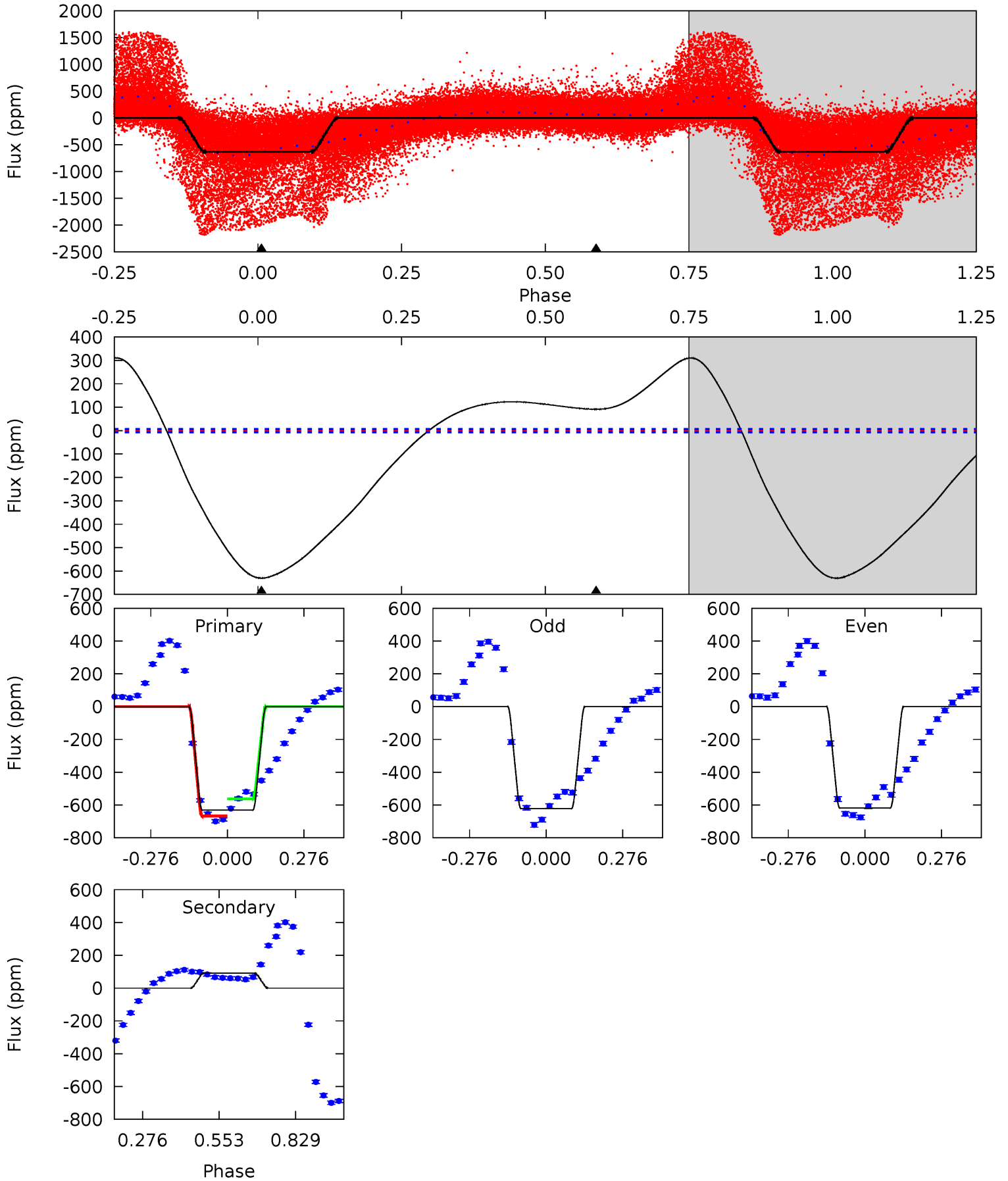
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	5.07	0	0	4.45	1.37	2.54	18.5	18.5	5.07	5.07	1.80	8.97	0.17	5.52



# Alt Model-Shift Uniqueness Test

005623852-01, P = 0.566803 Days, E = 131.243124 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
403.1	-58.2	0	0	4.35	1.09	33.9	403.1	403.1	-58.2	-58.2	1.11	1.88	0.33	15.9





### Stellar Parameters For KIC 005623852

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5885^{+79}_{-79}$	$4.348^{+0.103}_{-0.115}$	$0.000^{+0.150}_{-0.150}$	$1.111^{+0.178}_{-0.134}$	$1.004^{+0.082}_{-0.059}$	$1.031^{+0.431}_{-0.357}$
	+1%/-1%	+2%/-3%	+inf%/-inf%	+16%/-12%	+8%/-6%	+42%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 005623852-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-11 \pm 2$	$1.88^{+1.82}_{-1.30}$	$3306^{+137}_{-123}$	$-2127^{+6956}_{-999}$	$0.290^{+2.704}_{-0.210}$
Alt.	$91 \pm 2$	$3.50^{+2.01}_{-1.84}$	$3299^{+141}_{-123}$	$-4011^{+372}_{-1135}$	$-0.750^{+0.453}_{-2.459}$

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

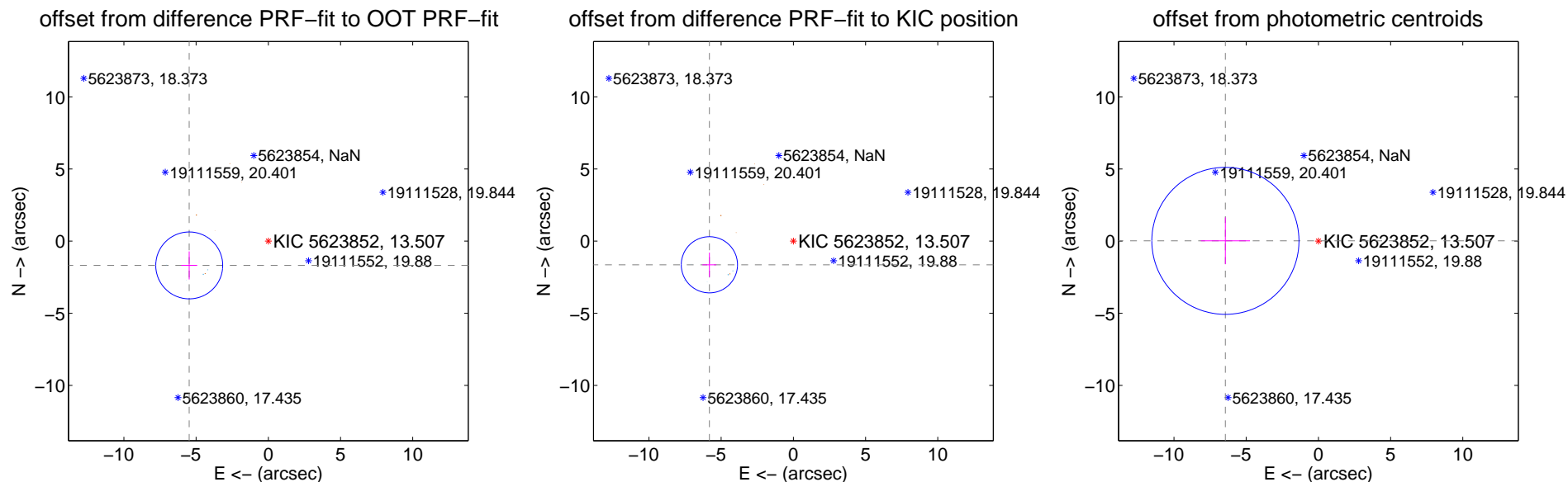
## DV Centroid Data

Supplemental centroid analysis for 005623852-01. Kepler magnitude: 13.51. Transit SNR 8.17

There are 5 quarters with good PRF difference image offsets

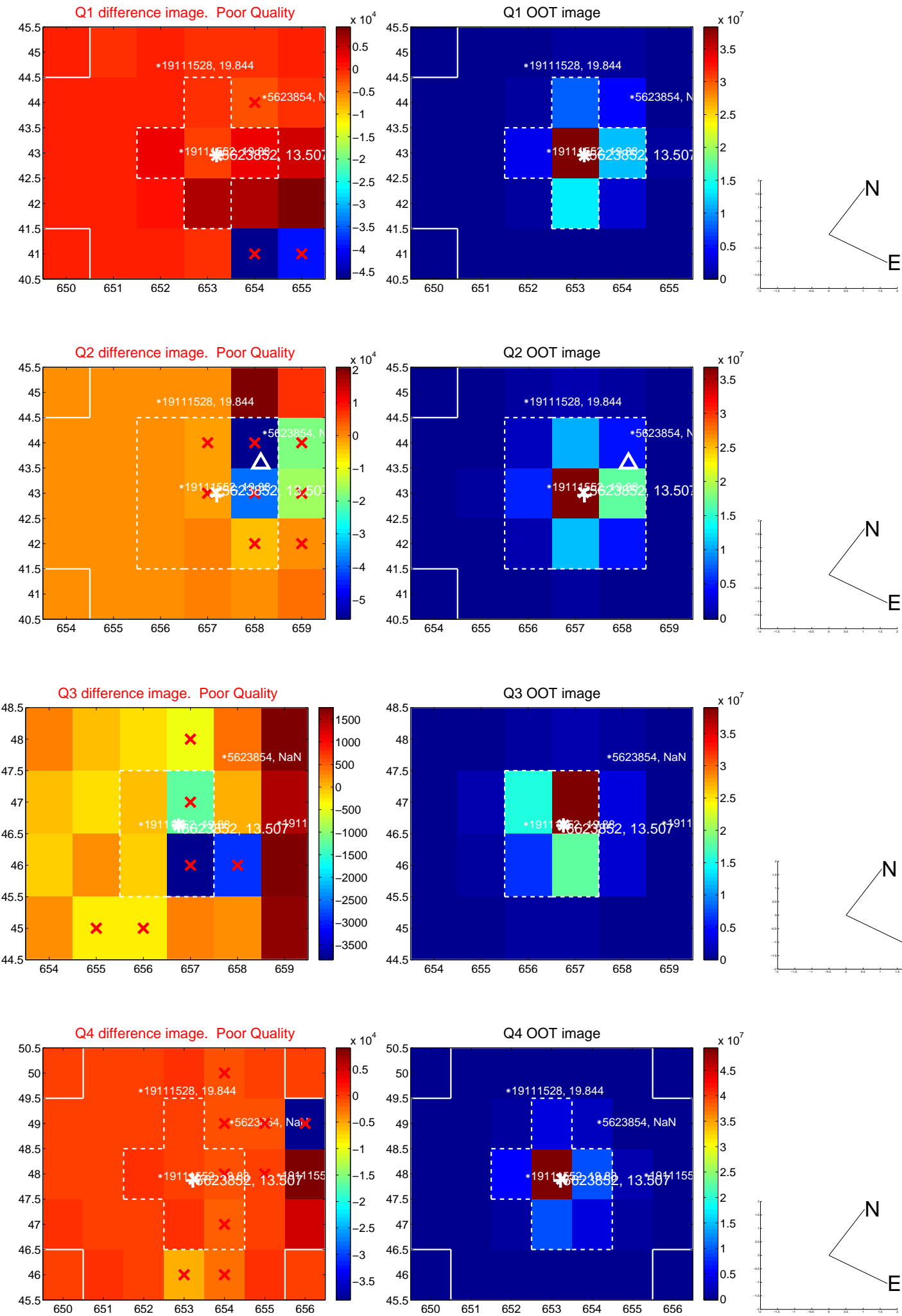
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>5.730 \pm 0.773</math></b>	<b>7.41</b>	$5.478 \pm 0.556$	$-1.682 \pm 0.973$
PRF-fit source offset from KIC position	<b><math>6.042 \pm 0.649</math></b>	<b>9.31</b>	$5.816 \pm 0.482$	$-1.639 \pm 0.841$
photometric centroid source offset	<b><math>6.44 \pm 1.70</math></b>	<b>3.79</b>	$6.44 \pm 1.70$	$0.02 \pm 1.63$

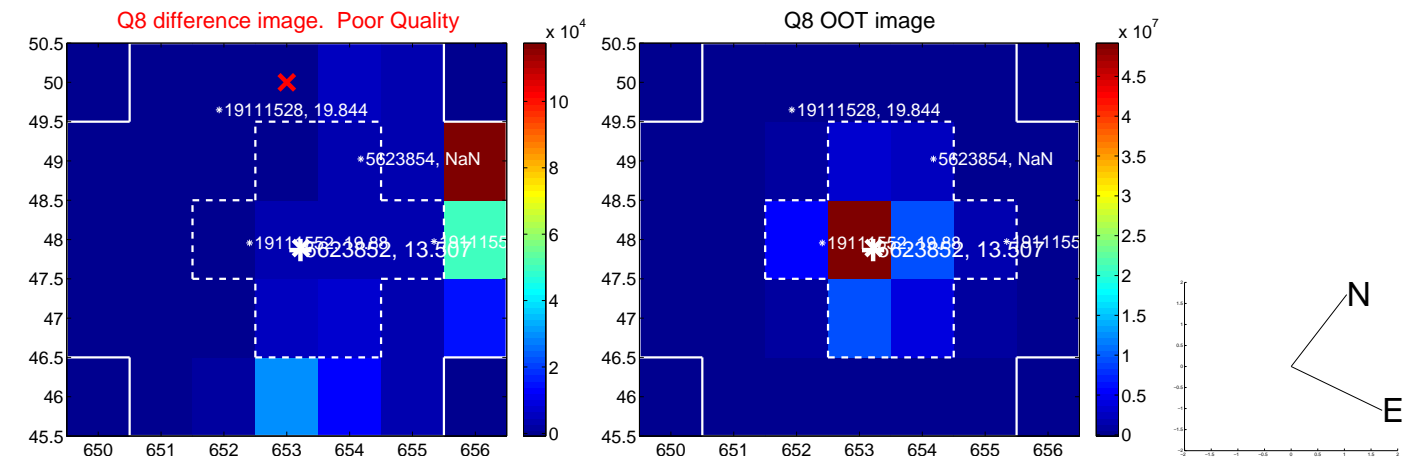
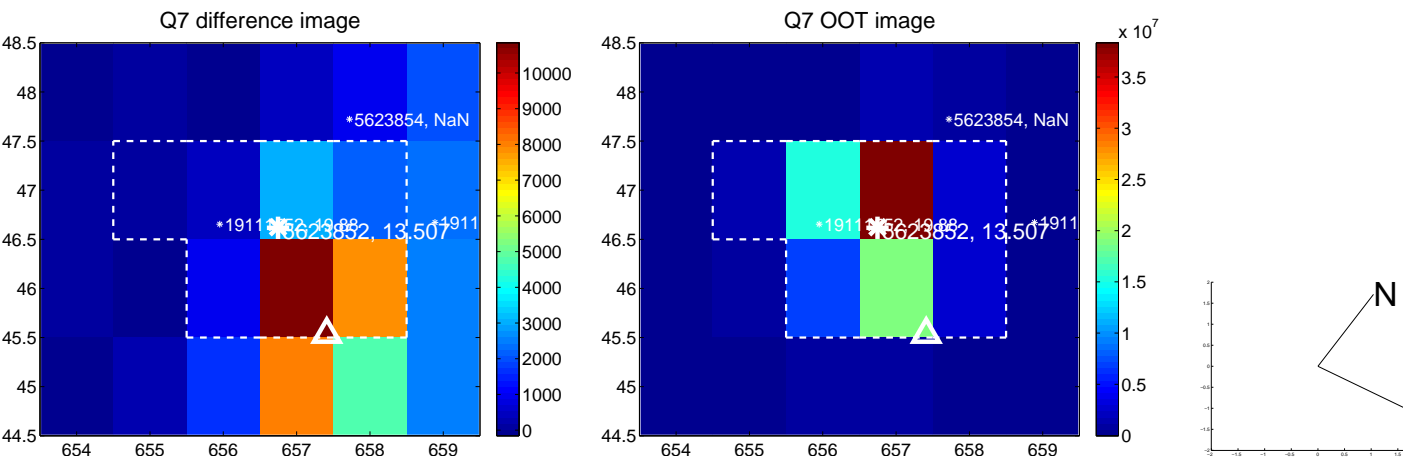
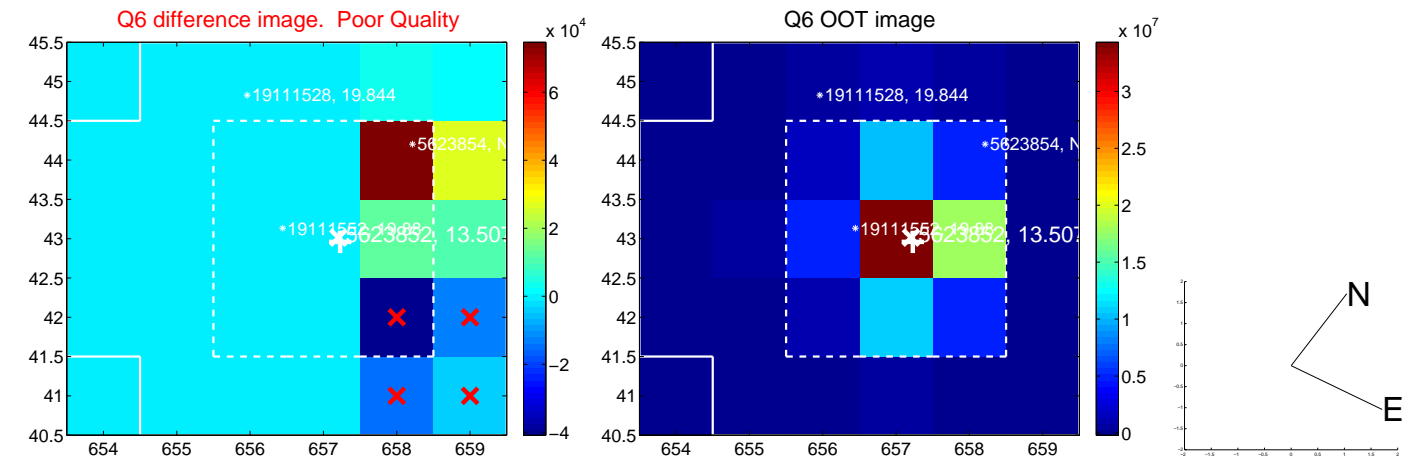
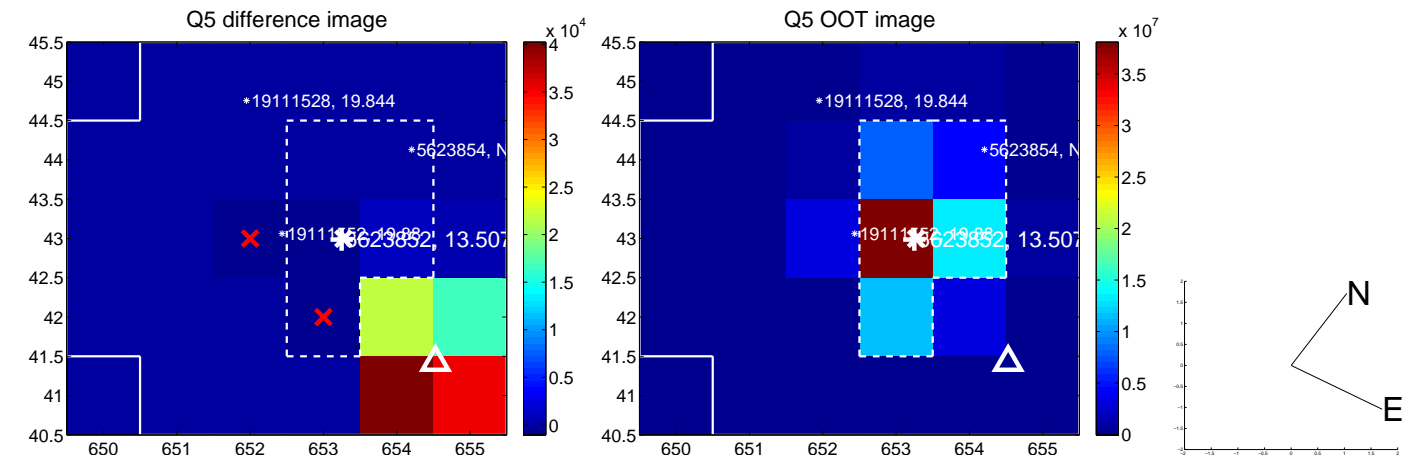


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

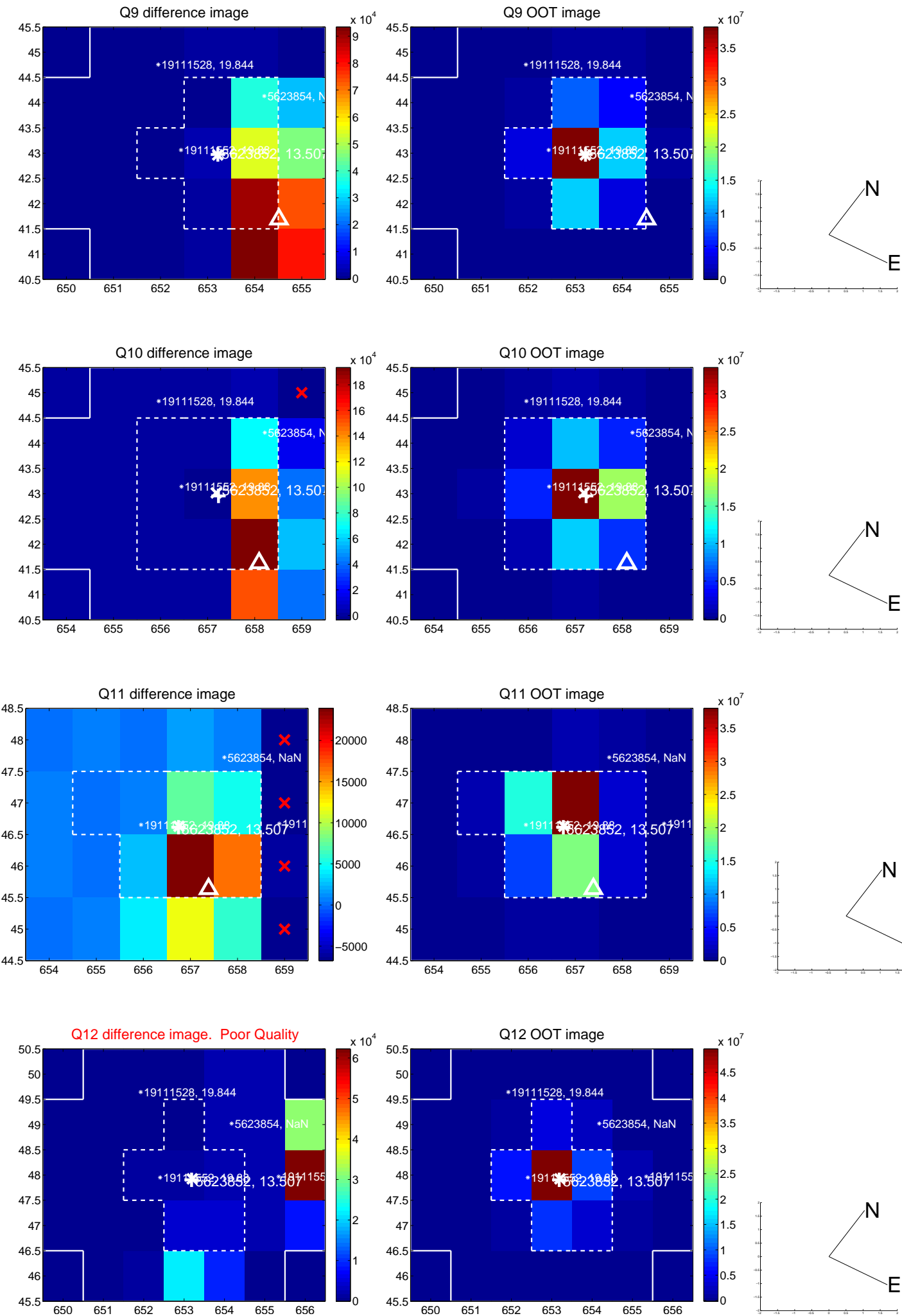


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

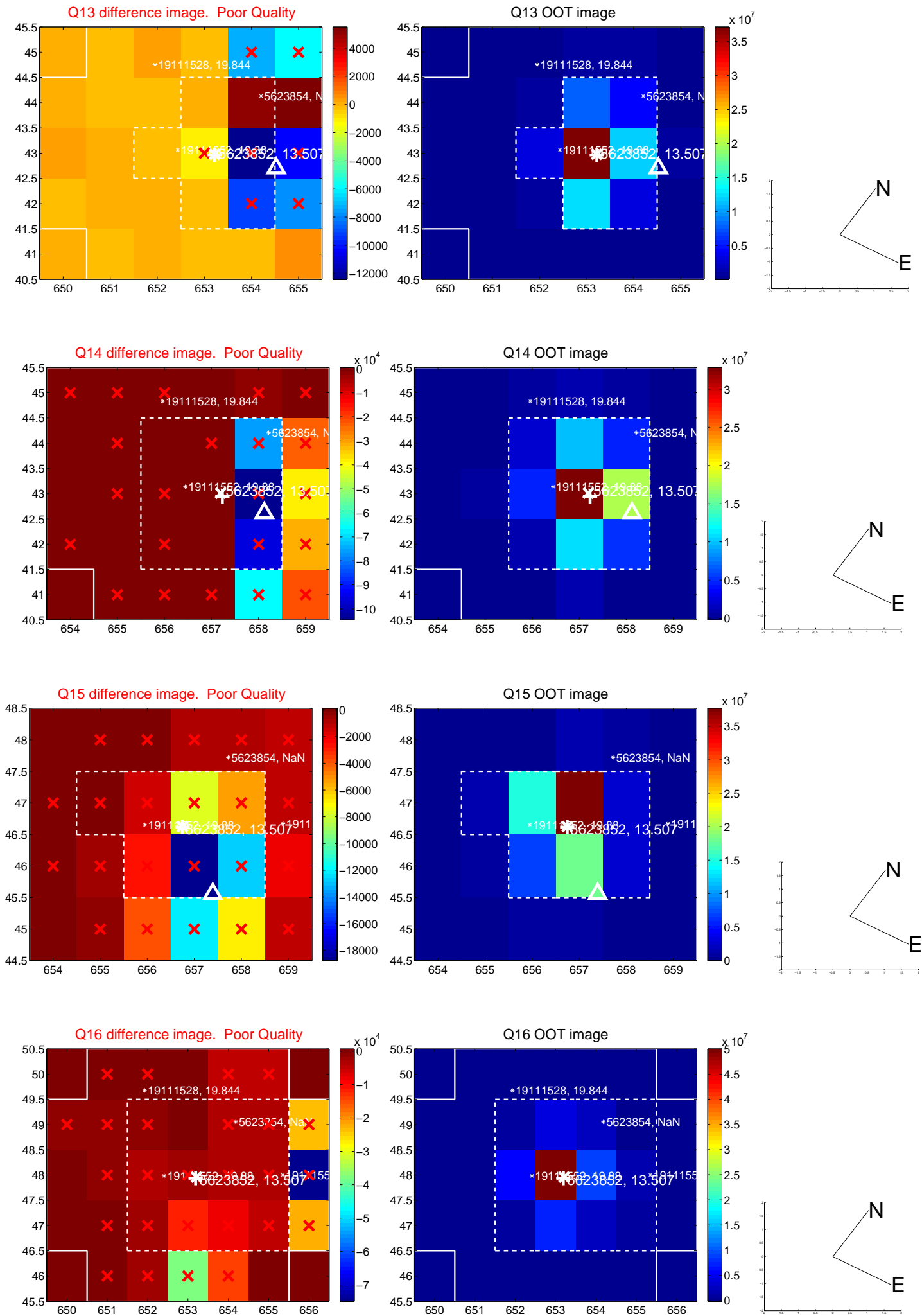




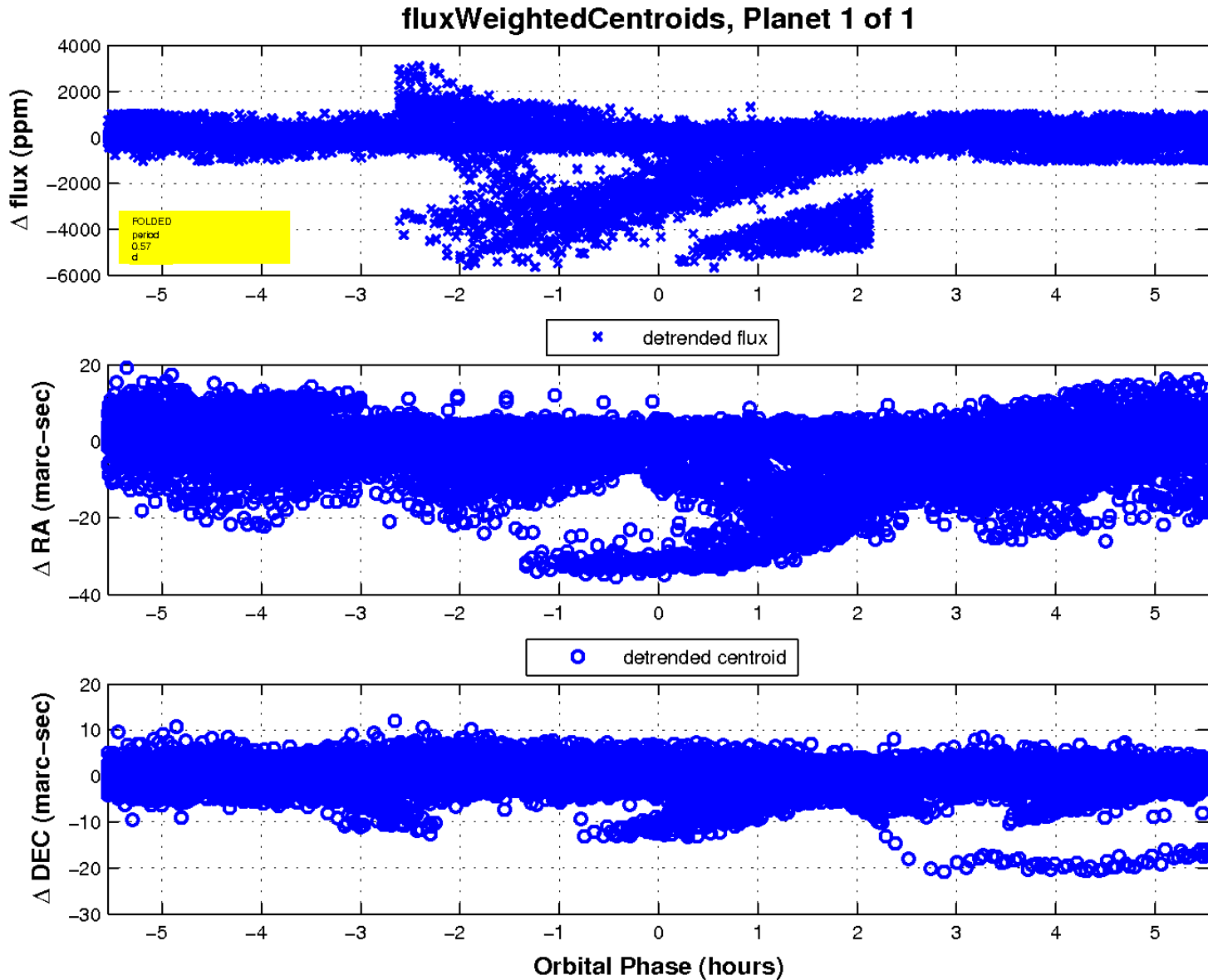
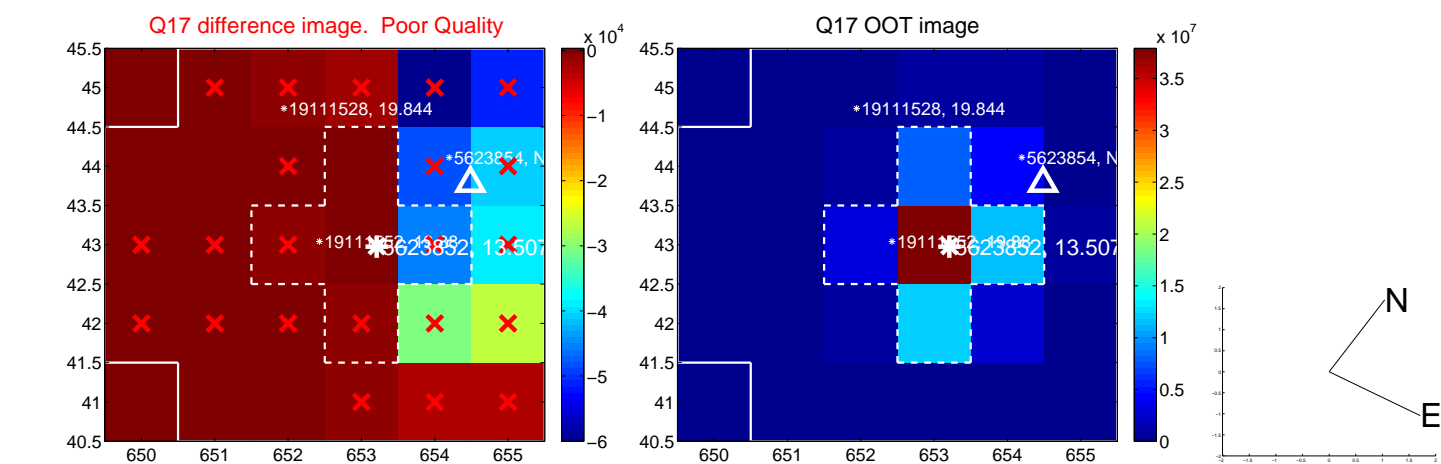
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

