

# KIC 005598645

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005598645-01	OBS	7560.01	0.648750	131.751409	10.4	5.908	8.2	5.3	4.71	4973	1.53	0.00

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005598645-01	OBS	FP	0.00	0	0	1	1	PLANET_IN_STAR—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 005598645-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
005598645-01	5598645	005598639-01	5598639	1:1	84.0	-11	-18	10.20	11.69	10879.00	Direct-PRF	0	4.64	0.56

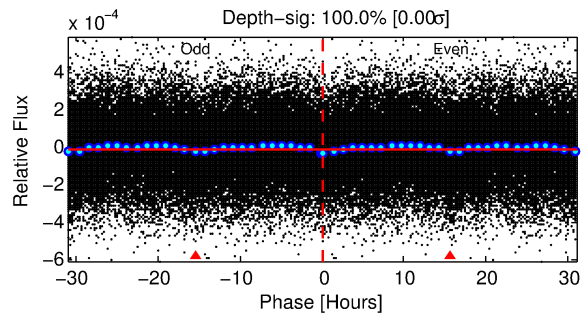
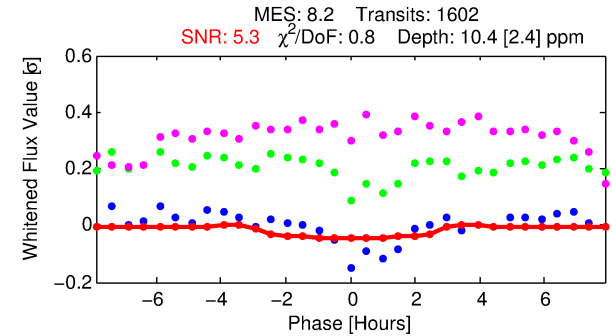
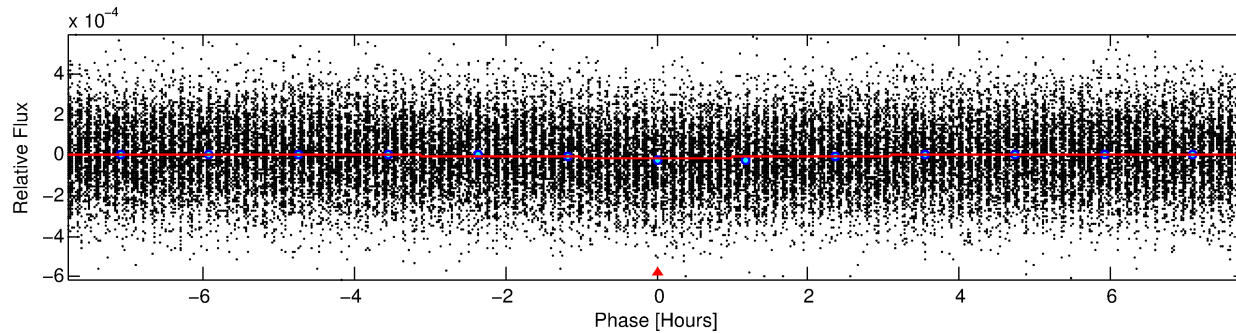
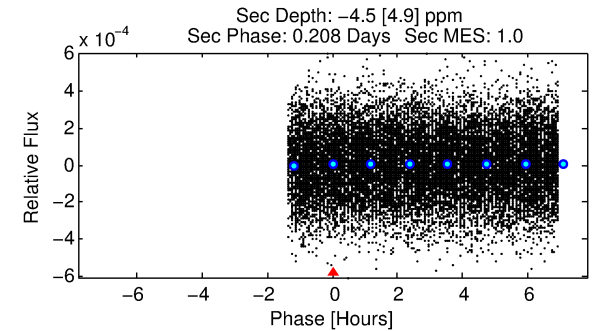
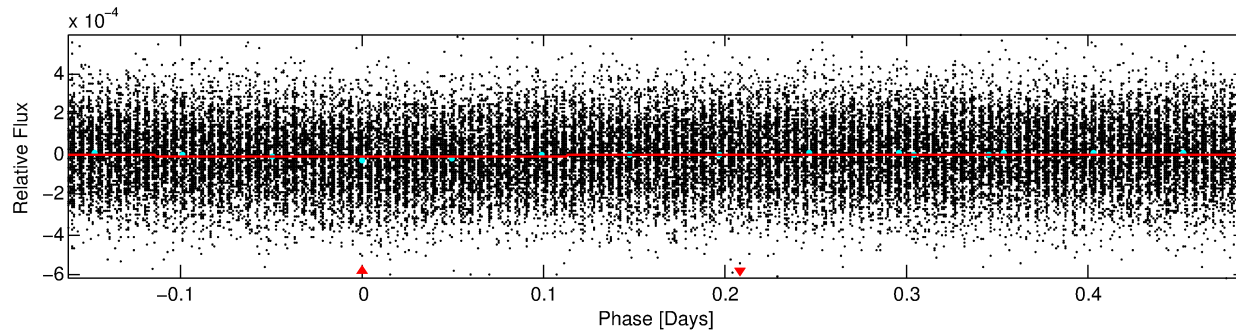
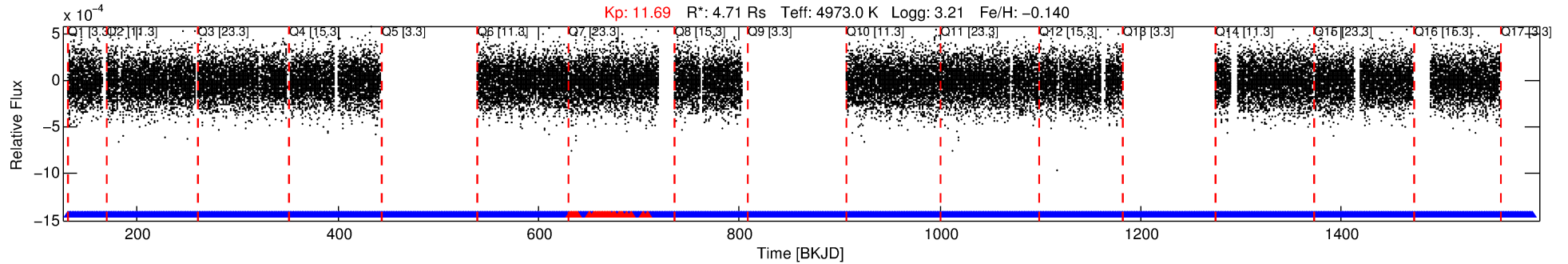
**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit 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: 5598645 Candidate: 1 of 1 Period: 0.649 d

KOI: K07560 Corr: No Ephemeris Match

Kp: 11.69 R\*: 4.71 Rs Teff: 4973.0 K Logg: 3.21 Fe/H: -0.140



## DV Fit Results:

Period = 0.64875 [0.00002] d  
Epoch = 131.7514 [0.0093] BKJD  
Rp/R\* = 0.0030 [0.0032]  
a/R\* = 1.06 [0.44]  
b = 0.50 [5.88]  
Seff = N/A  
Teq = N/A  
Rp = 1.53 [1.69] Re  
a = N/A  
Ag = N/A  
Teffp = N/A

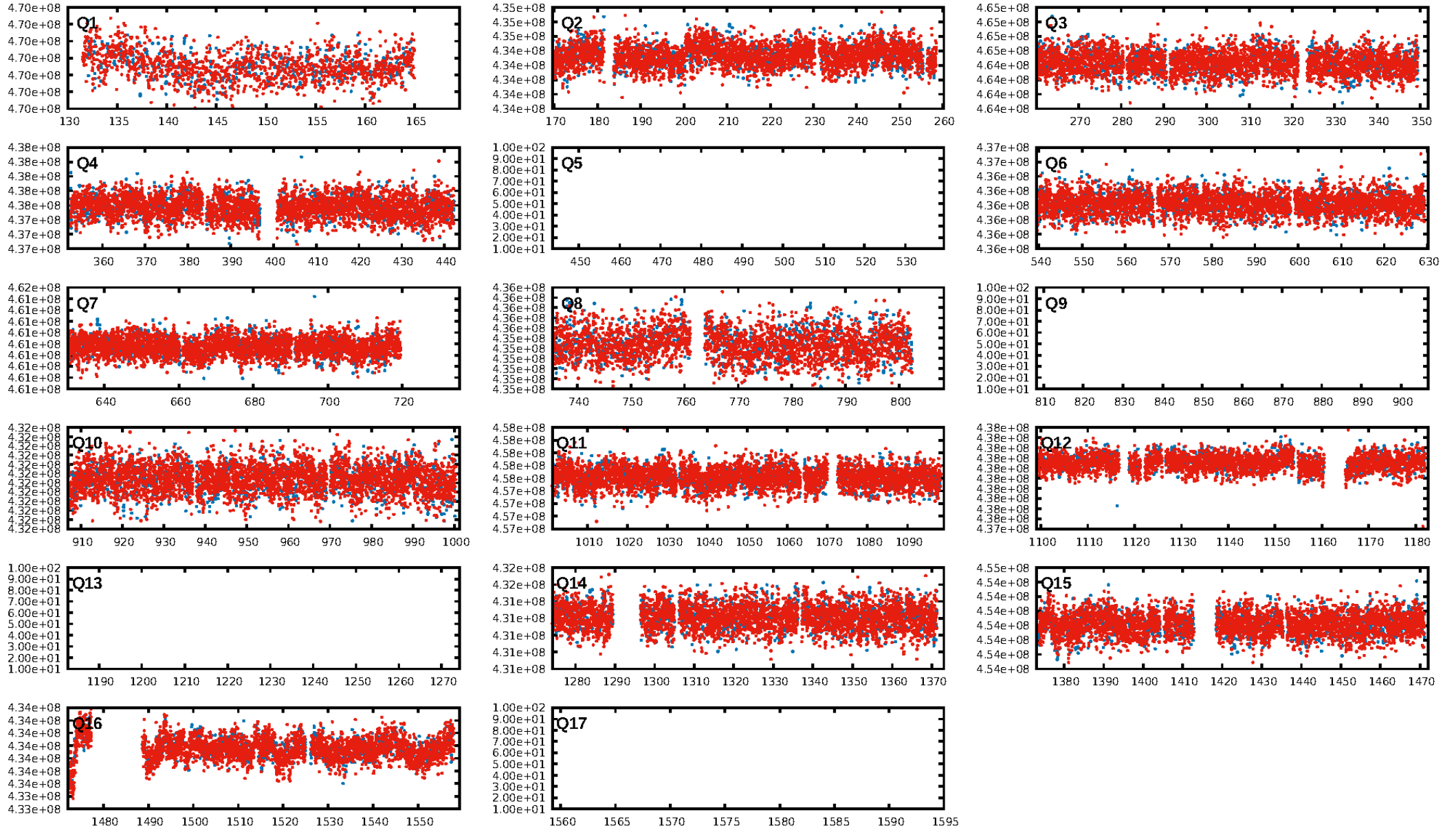
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.97 [1506/1550]  
GhostDiagnostic-chr: 0.1649  
Centroid-sig: 0.0%  
Centroid-so: 5.931 arcsec [6.47σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [13/13]

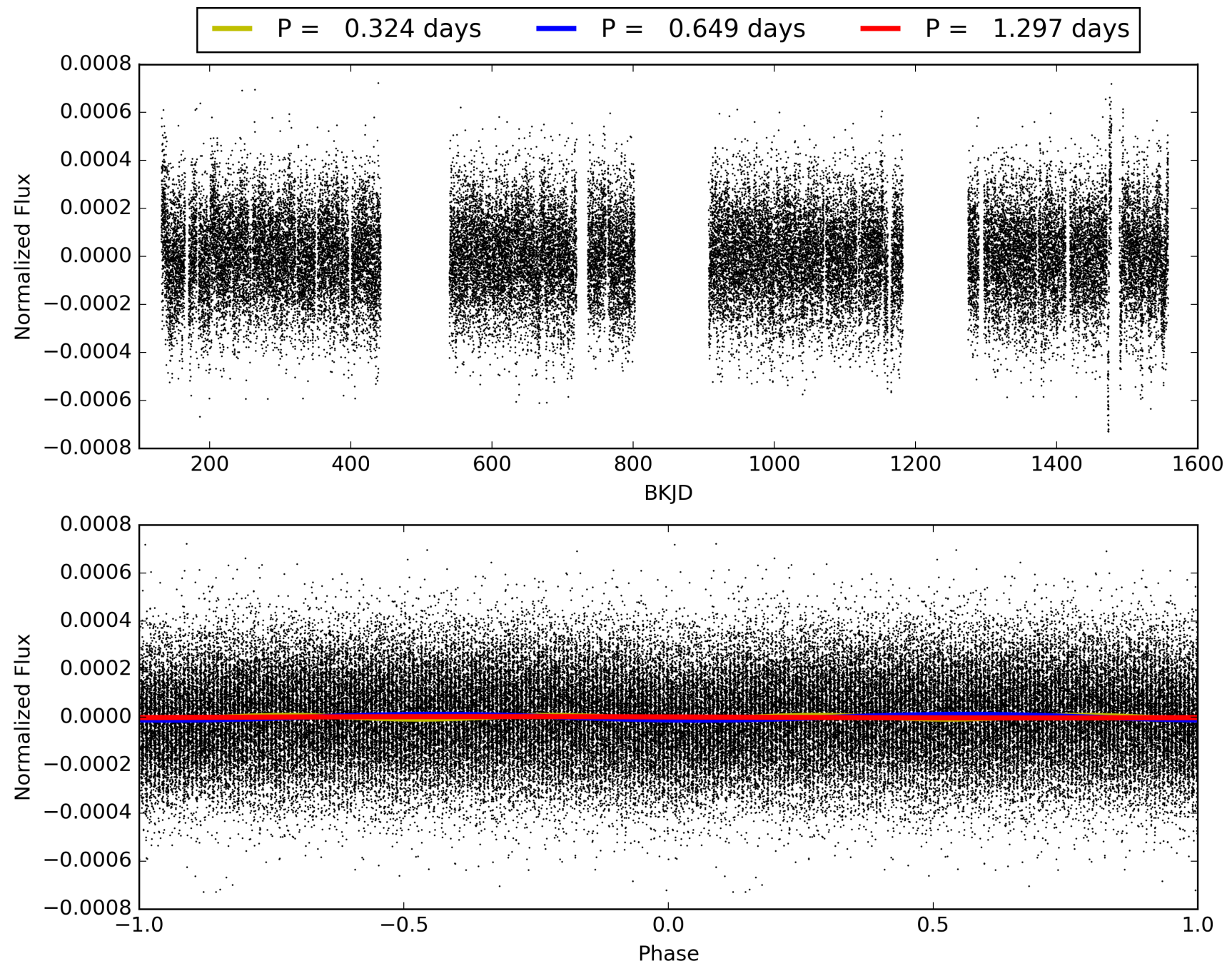
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:55:41 Z

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

# TCE 005598645-01, PDC Light Curves



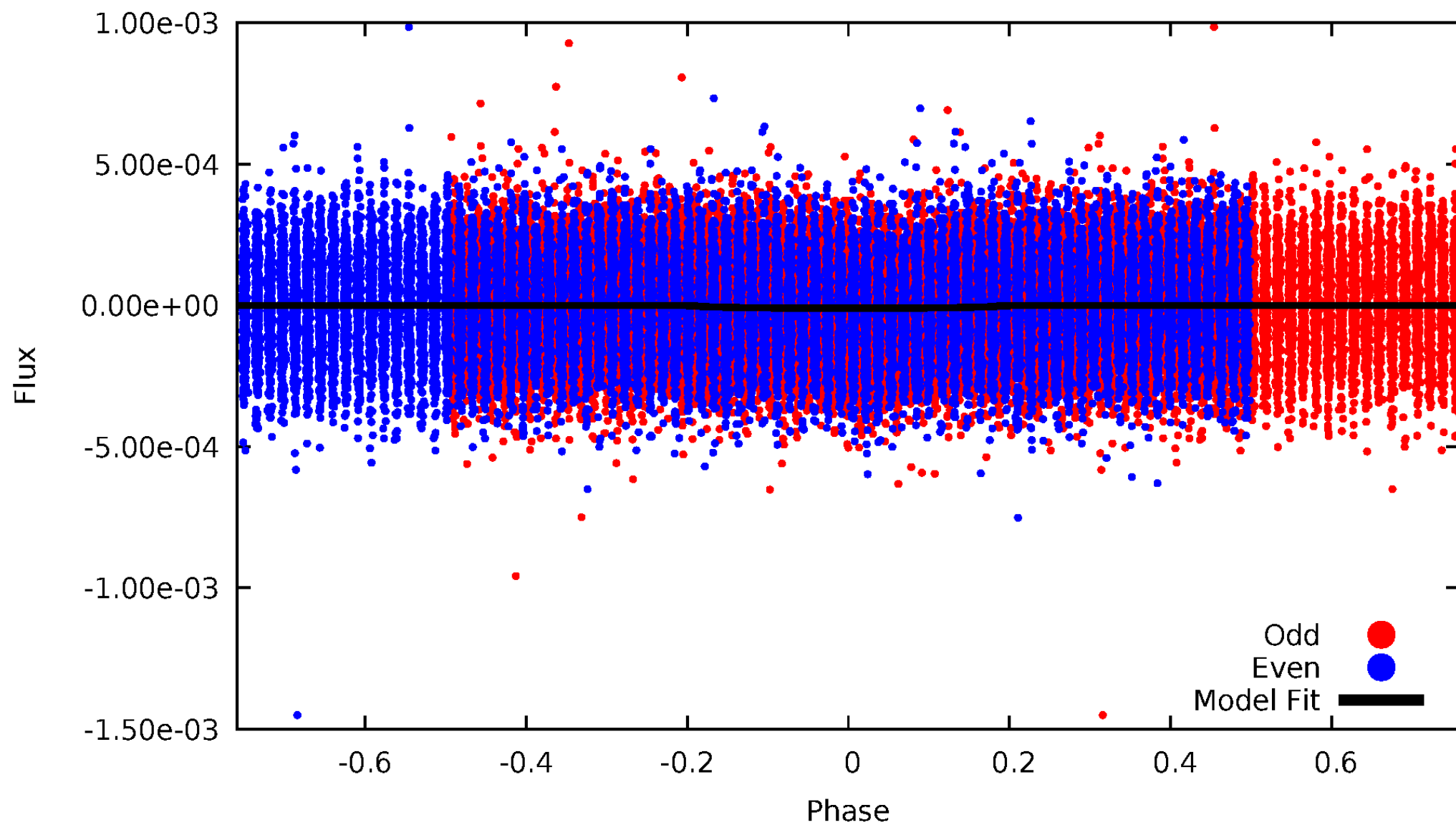
TCE 005598645-01





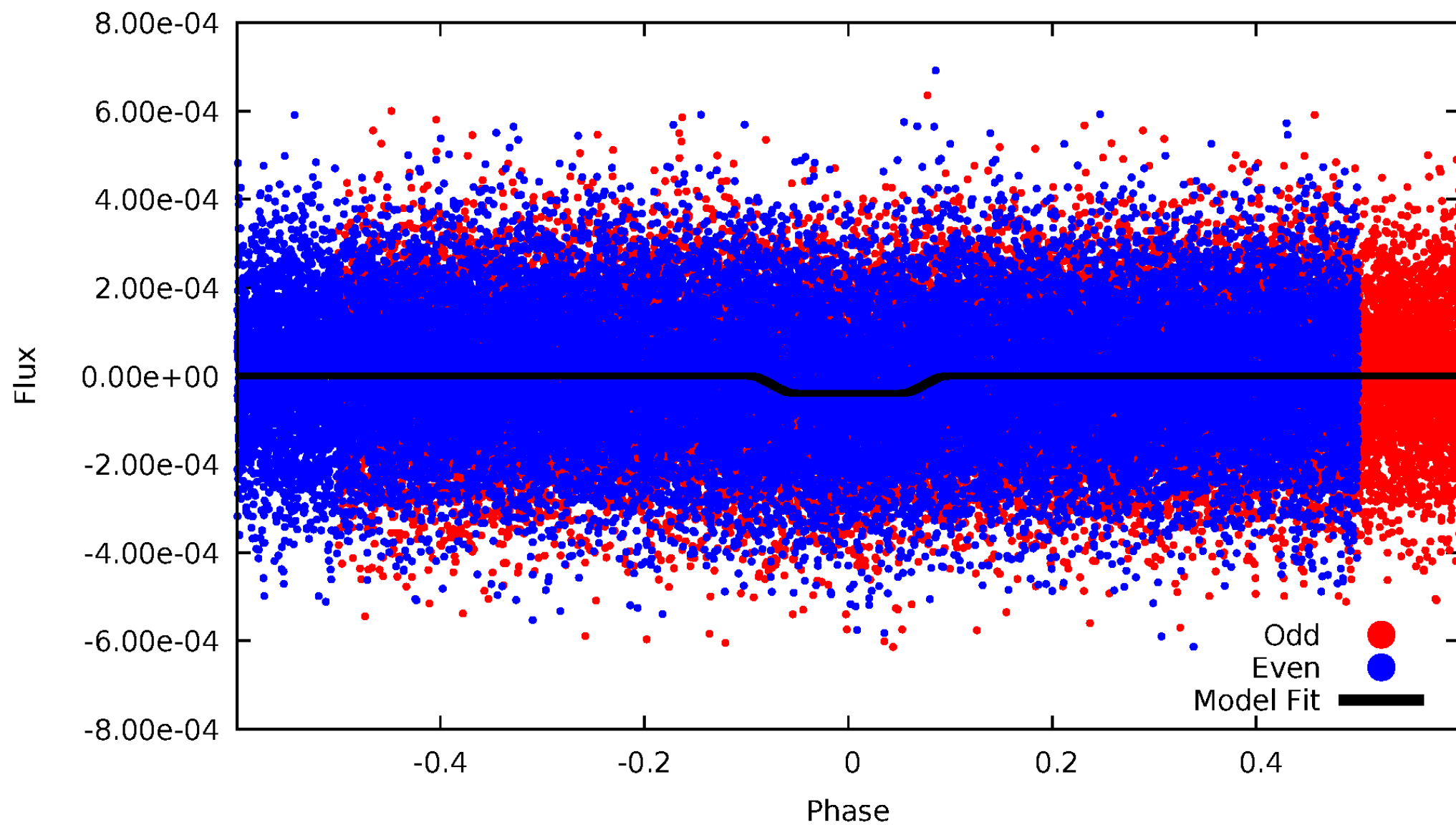
# DV Odd/Even

TCE 005598645-01

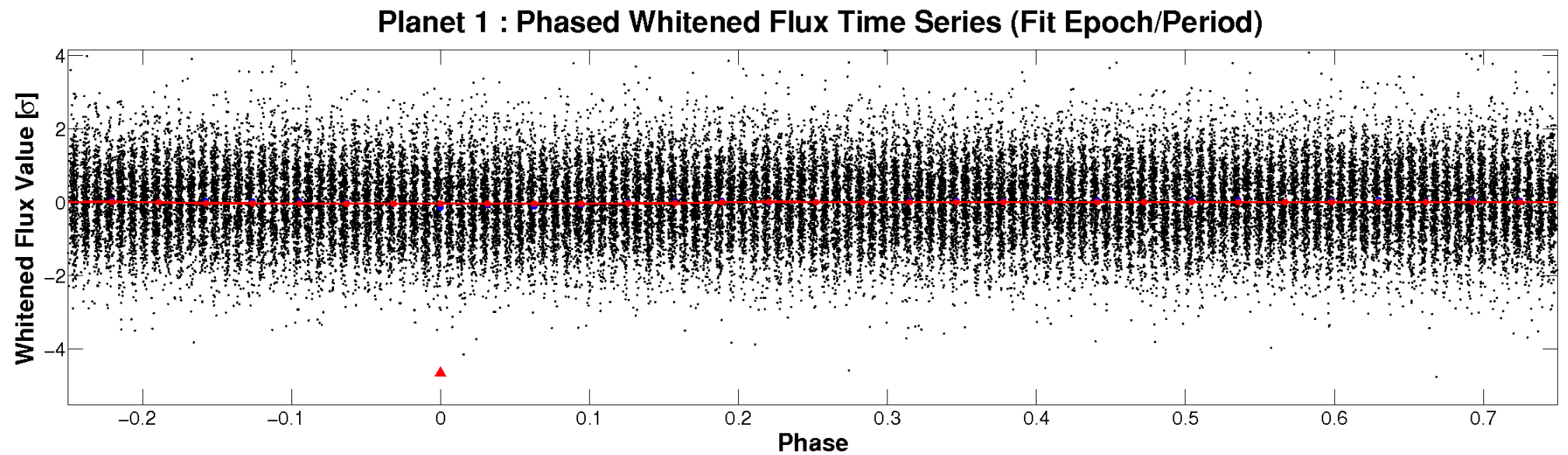
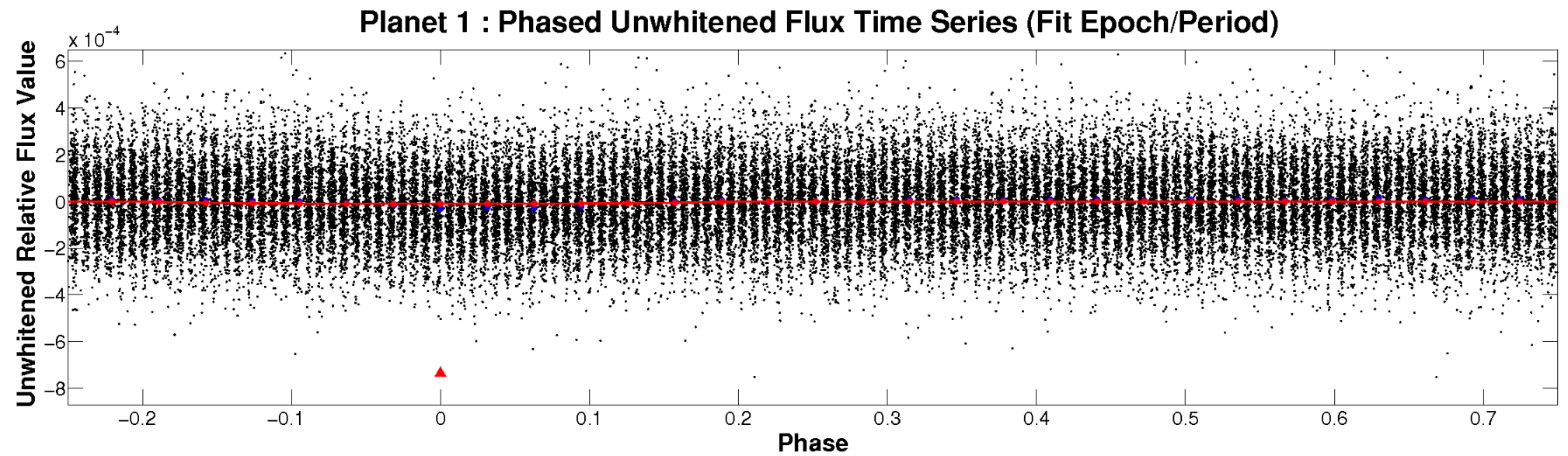


# ALT Odd/Even

TCE 005598645-01

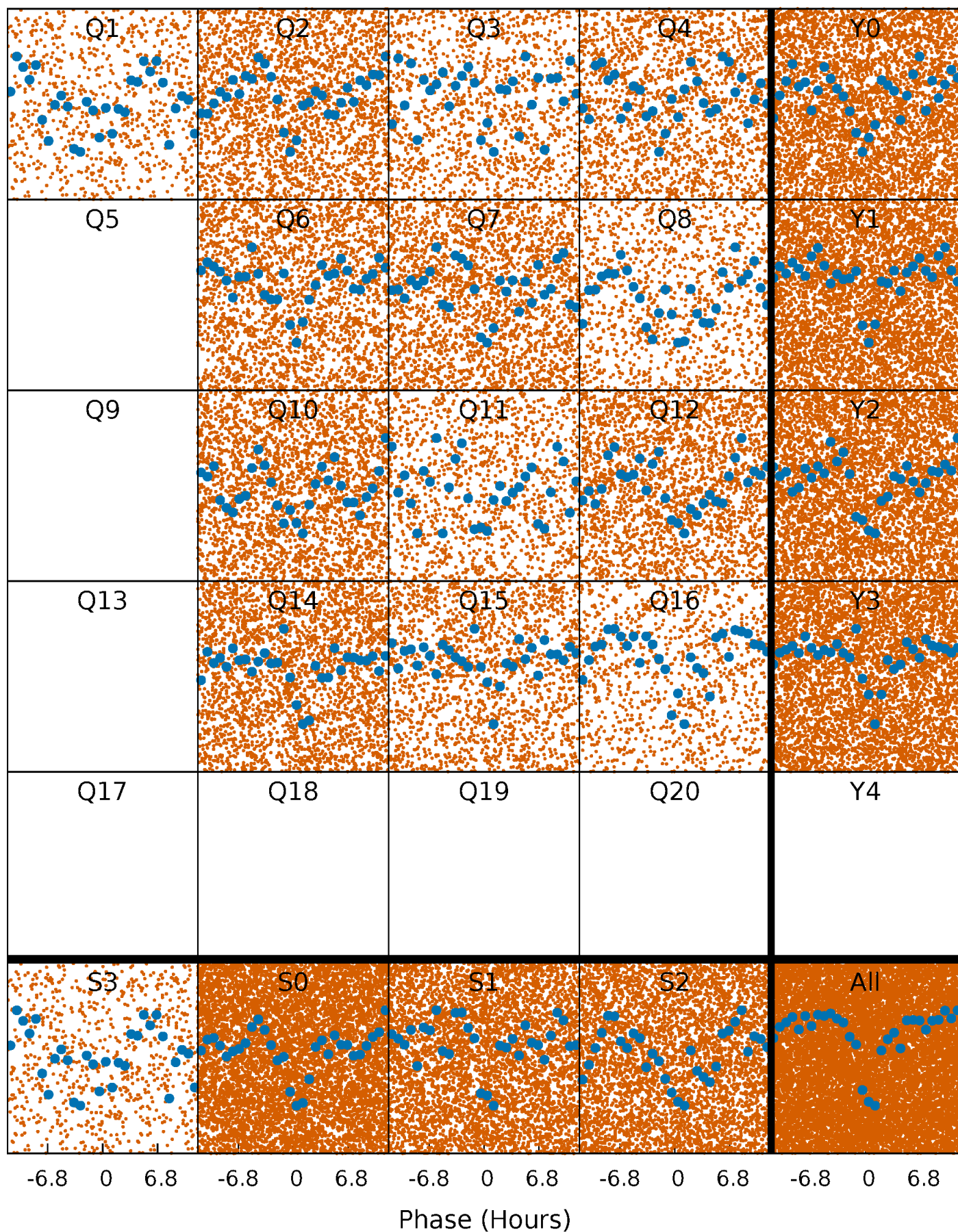


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

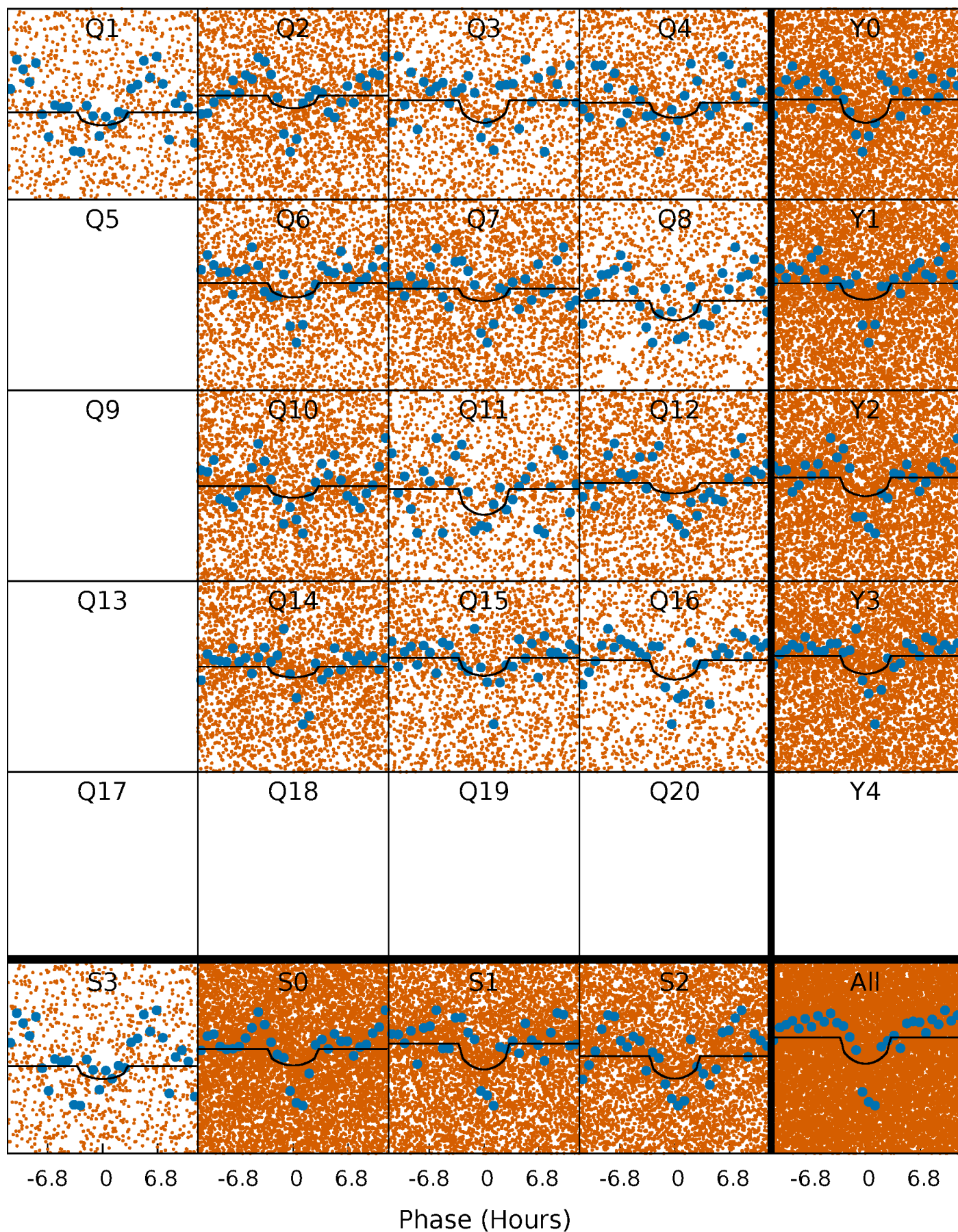
TCE 005598645-01 P= 0.648750 Days  $T_0=131.751409$  (BKJD)





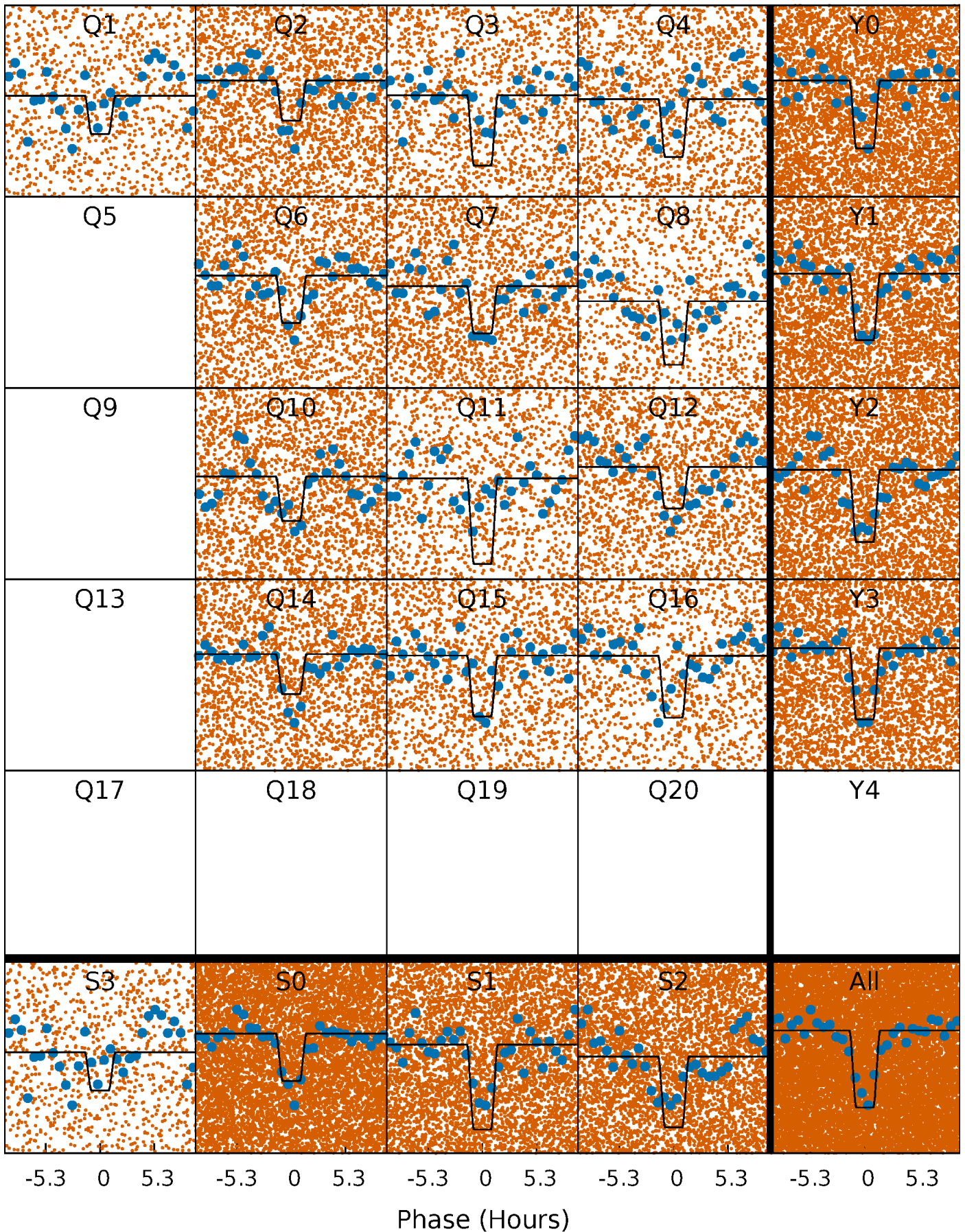
# DV Quarter-Phased Transit Curves

TCE 005598645-01 P= 0.648750 Days  $T_0=131.751409$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005598645-01 P= 0.648780 Days  $T_0=131.739636$  (BKJD)

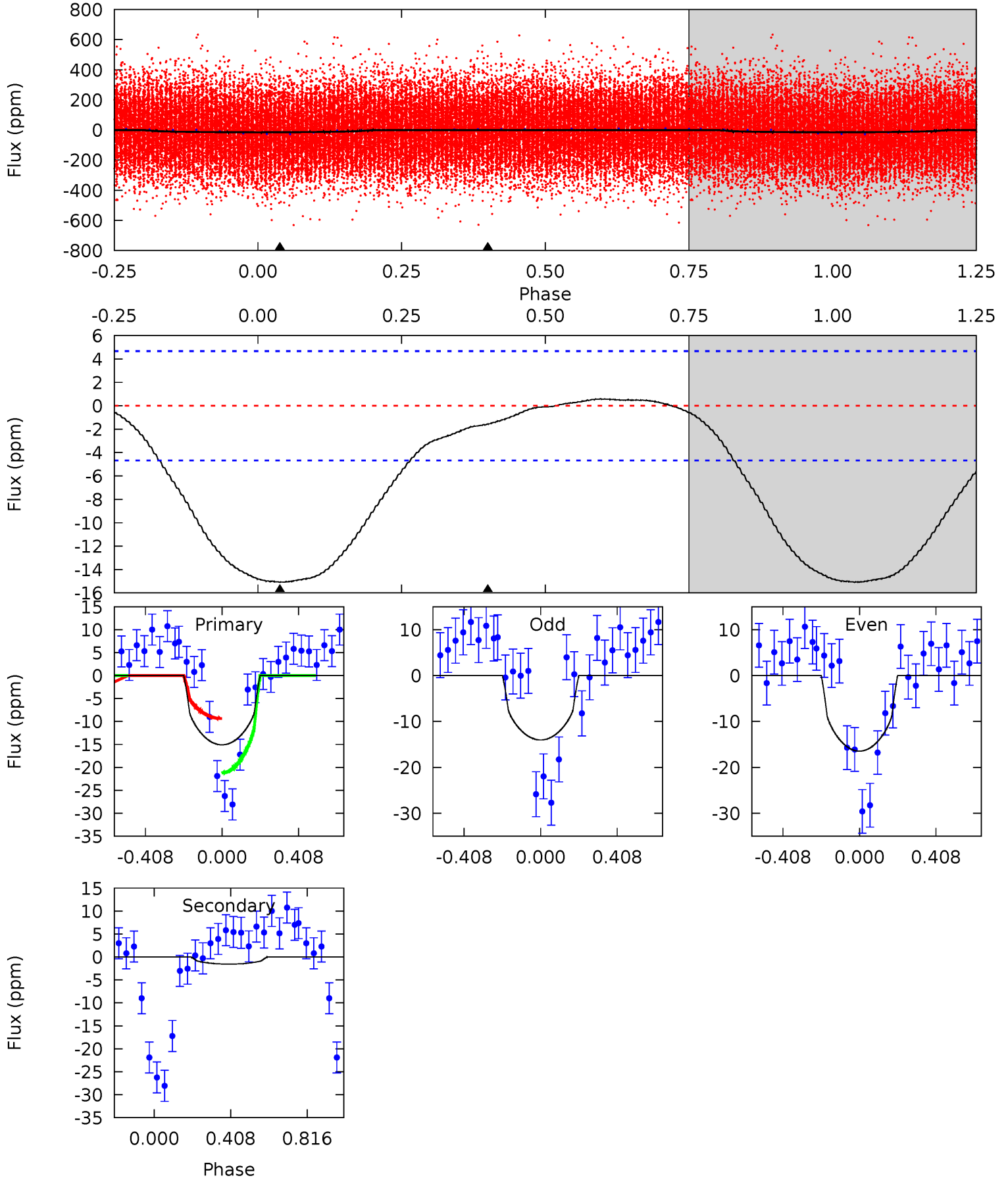




# DV Model-Shift Uniqueness Test

005598645-01, P = 0.648750 Days, E = 131.102659 Days

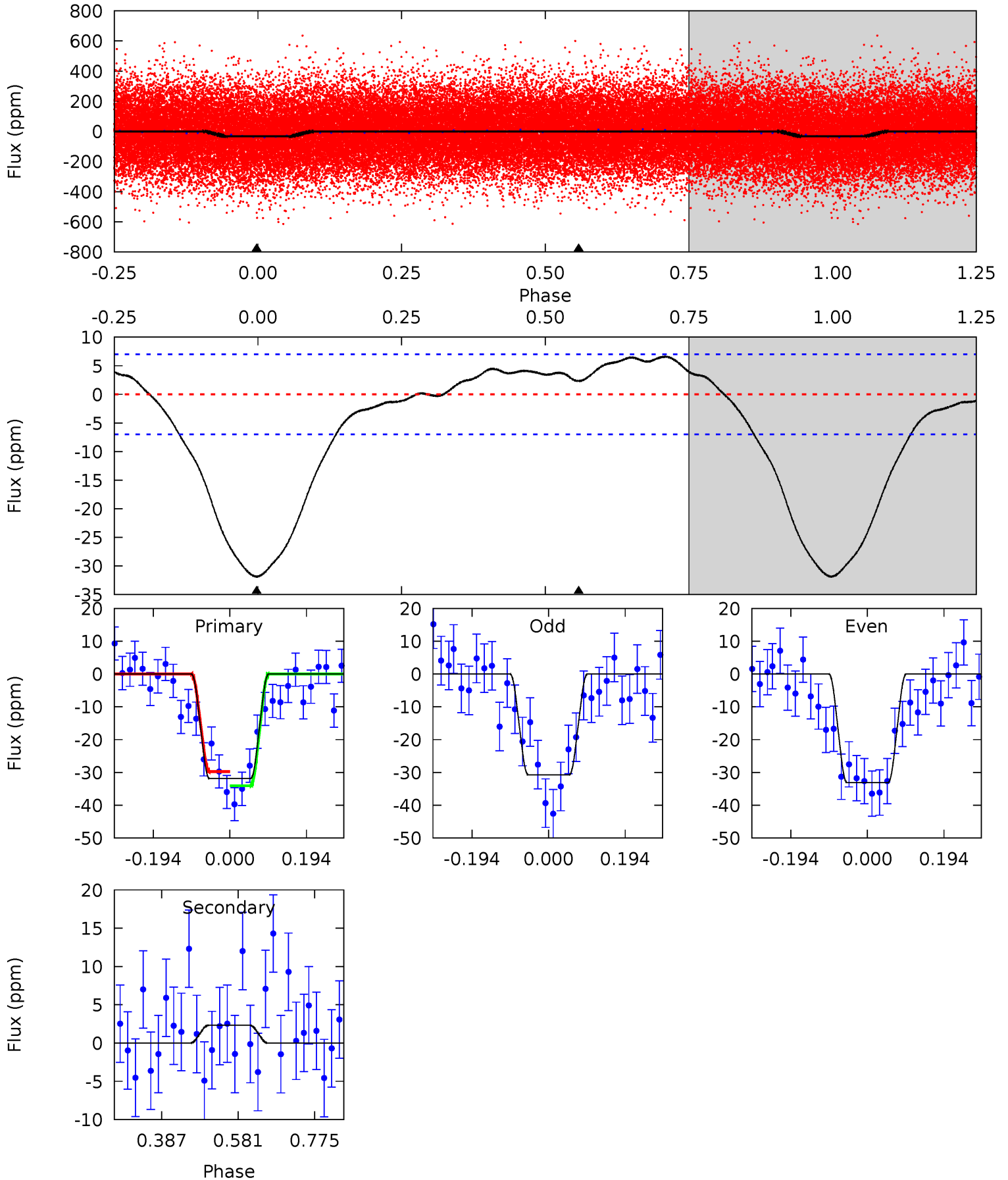
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	1.43	0	0	4.26	0.83	0.45	13.8	13.8	1.43	1.43	1.11	1.23	0.04	5.42



# Alt Model-Shift Uniqueness Test

005598645-01, P = 0.648780 Days, E = 131.090856 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
20.2	-1.47	0	0	4.42	1.30	1.11	20.2	20.2	-1.47	-1.47	0.74	1.12	0.17	1.35





### Stellar Parameters For KIC 005598645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4973^{+59}_{-69}$	$3.208^{+0.174}_{-0.116}$	$-0.140^{+0.150}_{-0.150}$	$4.708^{+0.871}_{-1.161}$	$1.306^{+0.157}_{-0.291}$	$0.018^{+0.016}_{-0.006}$
	+1%/-1%	+5%/-4%	+107%/-107%	+19%/-25%	+12%/-22%	+90%/-34%
Source	SPE74	SPE74	SPE74	DSEP		

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

### Secondary Eclipse Parameters for KIC 005598645-01 / KOI 7560.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-2 \pm 1$	$1.79^{+1.52}_{-1.15}$	$5234^{+242}_{-328}$	$-4185^{+7746}_{-281}$	$0.053^{+0.351}_{-0.045}$
Alt.	$2 \pm 2$	$3.24^{+1.54}_{-1.52}$	$5229^{+248}_{-308}$	$-4510^{+197}_{-280}$	$-0.029^{+0.022}_{-0.081}$

$T_{max}$  = 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

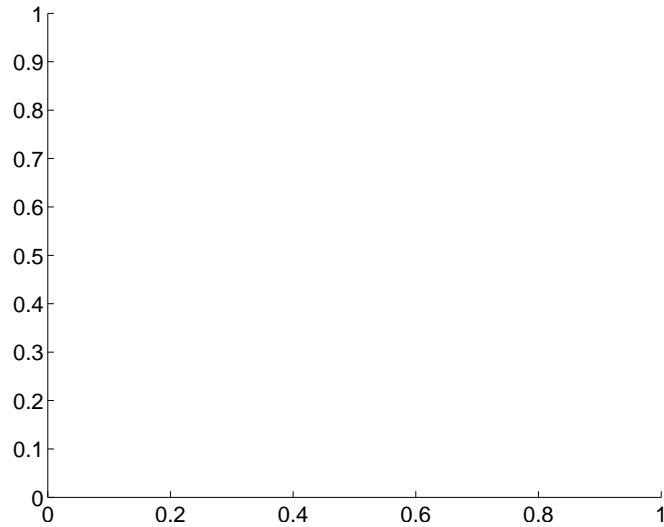
Supplemental centroid analysis for 005598645-01. **Kepler magnitude: 11.69.** Transit SNR 5.29

**There are 0 quarters with good PRF difference image offsets**

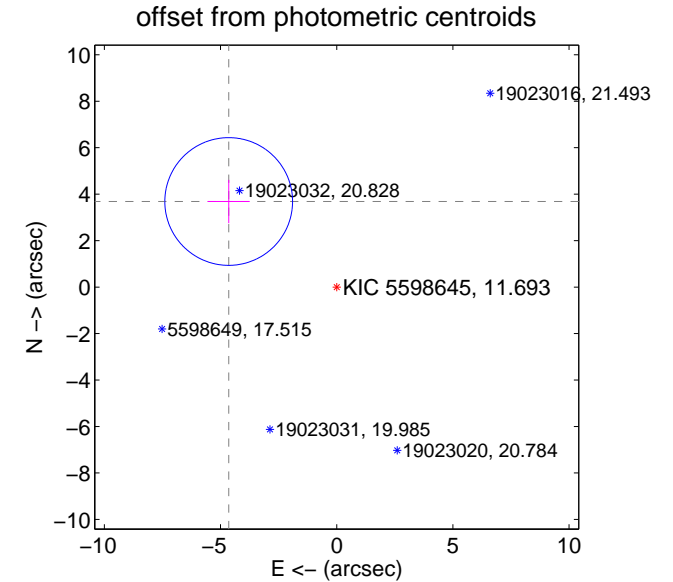
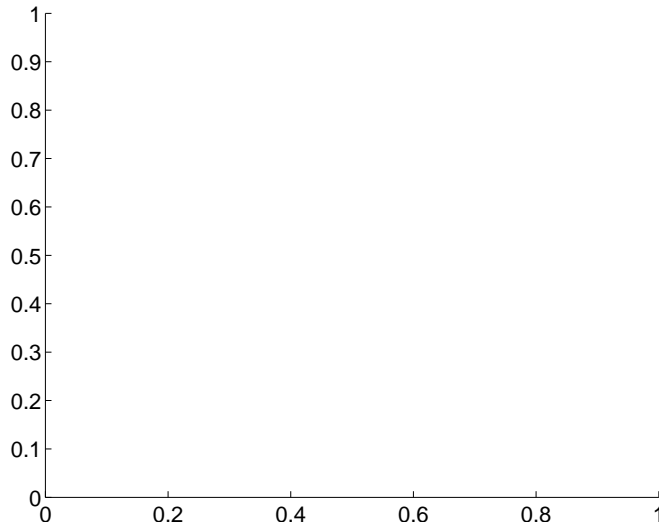
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	<b><math>5.93 \pm 0.92</math></b>	<b>6.47</b>	$4.65 \pm 0.90$	$3.68 \pm 0.93$

**There is no PRF-fit offset from OOT-fit**

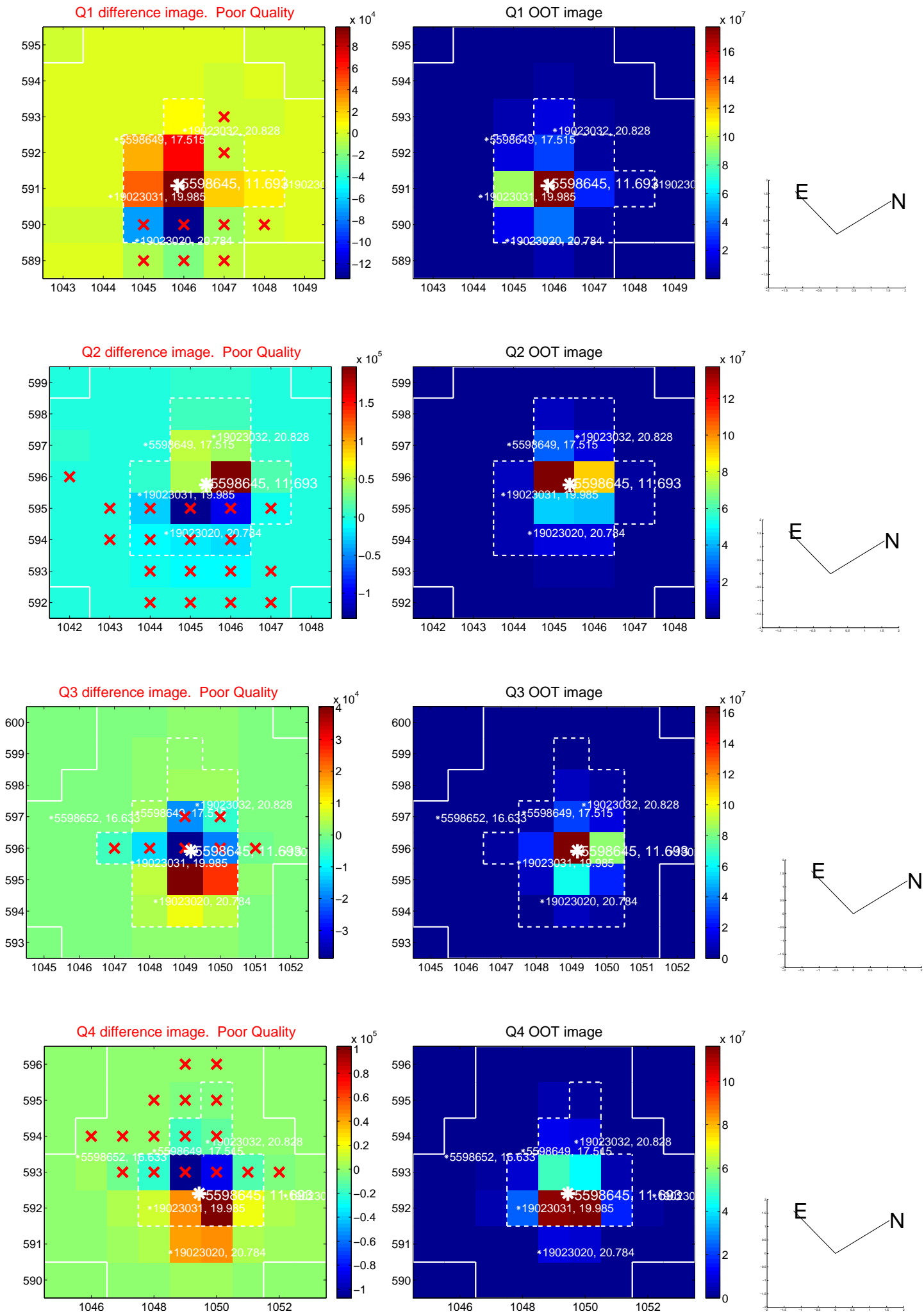


**There is no PRF-fit offset from KIC**

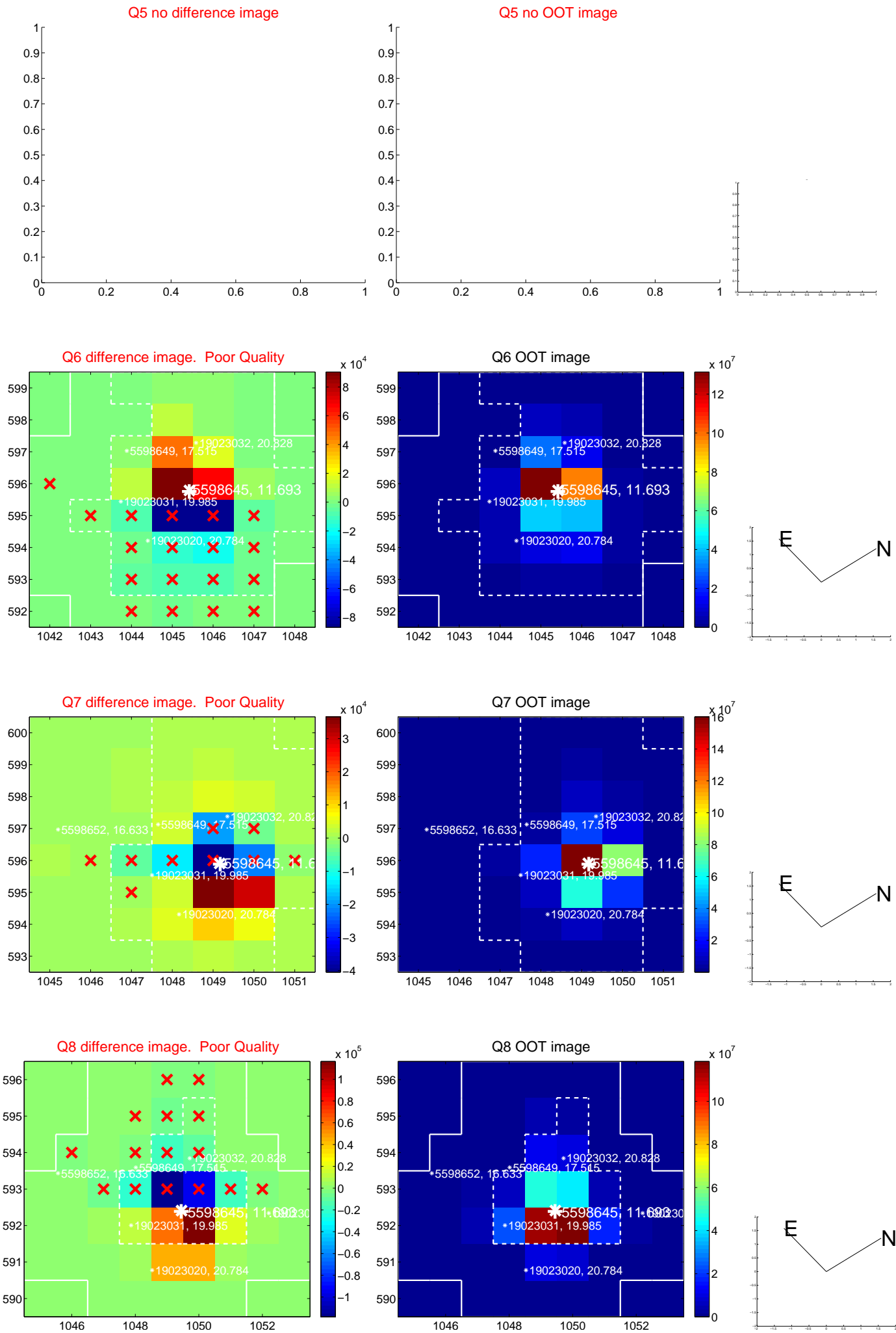


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

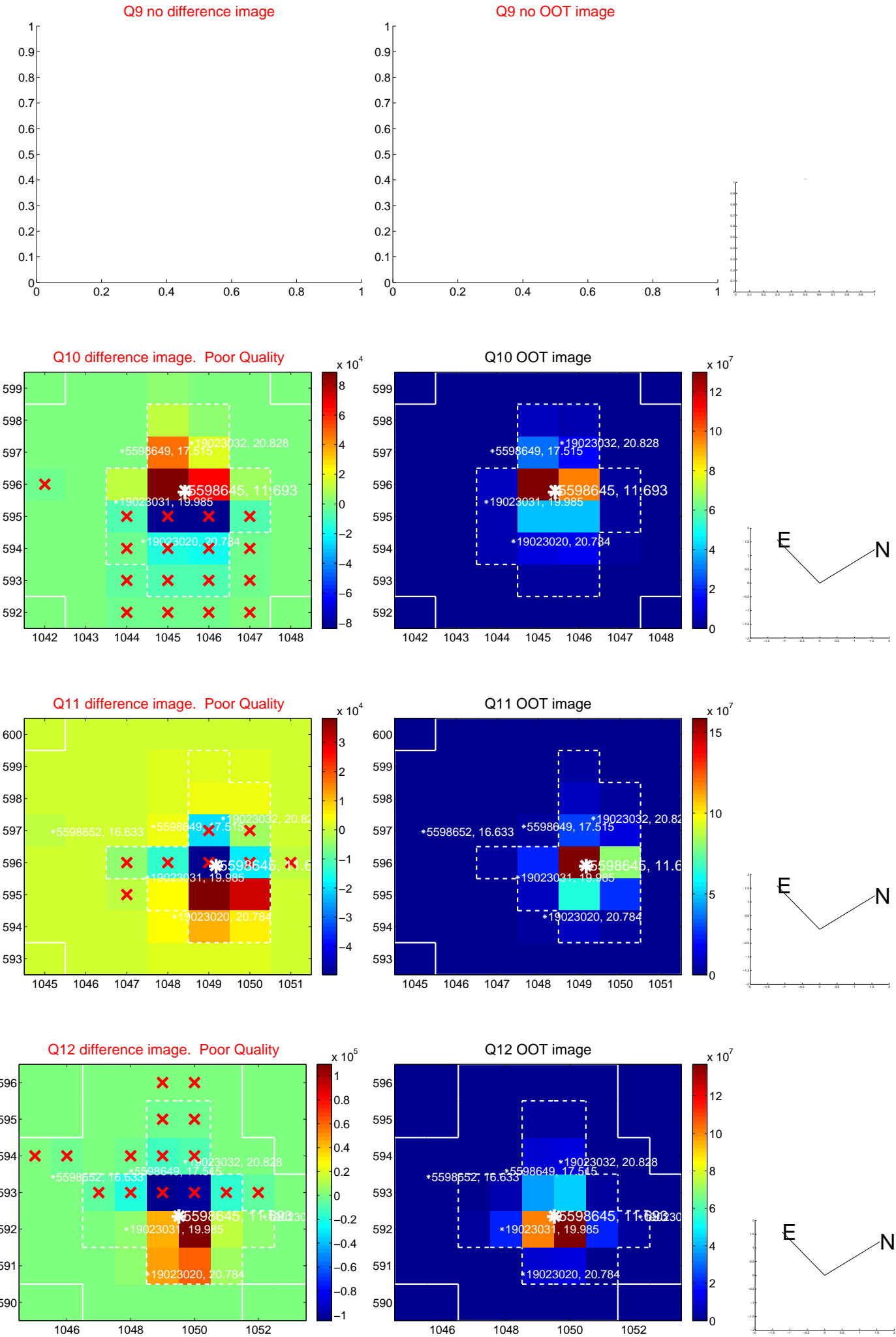


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

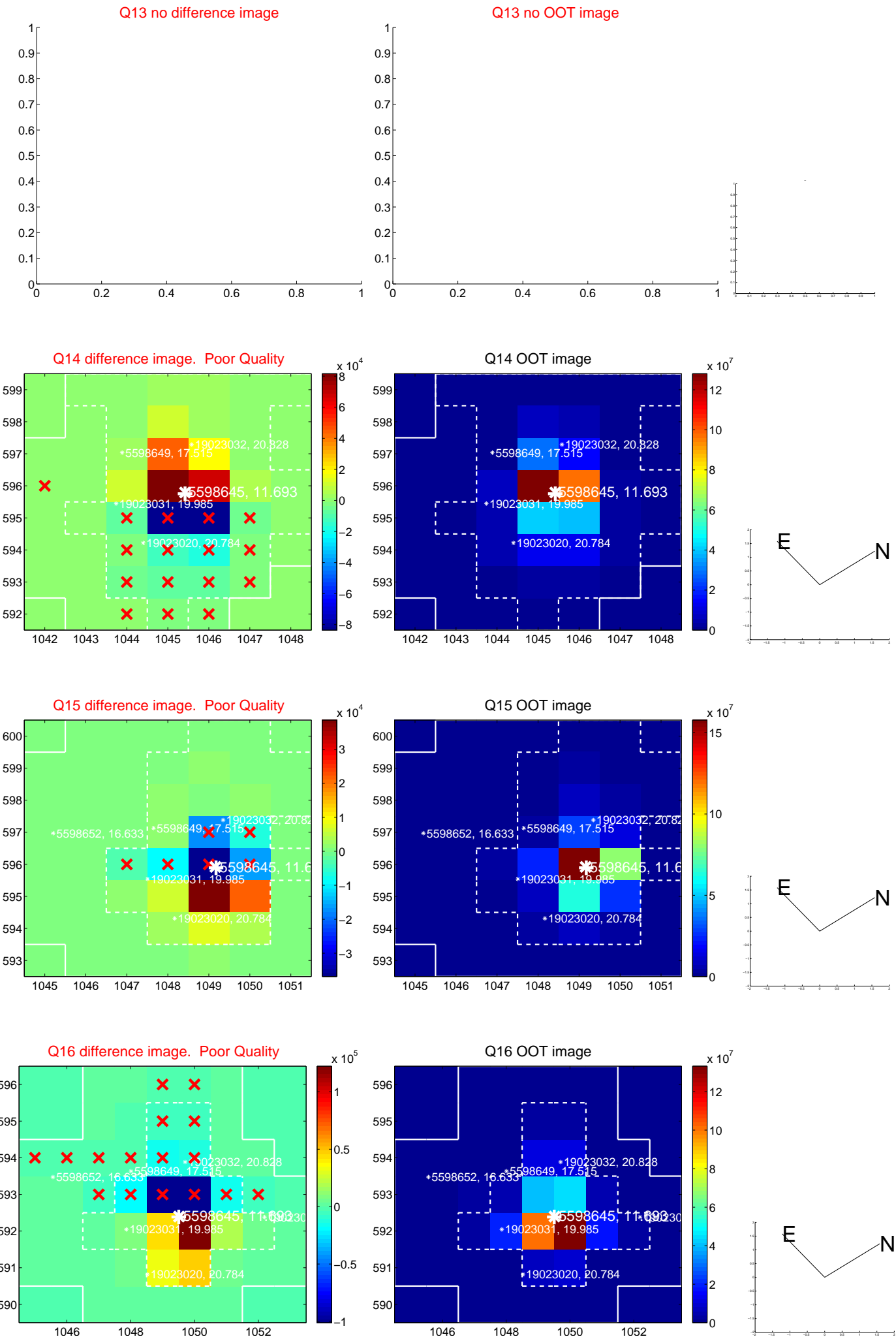




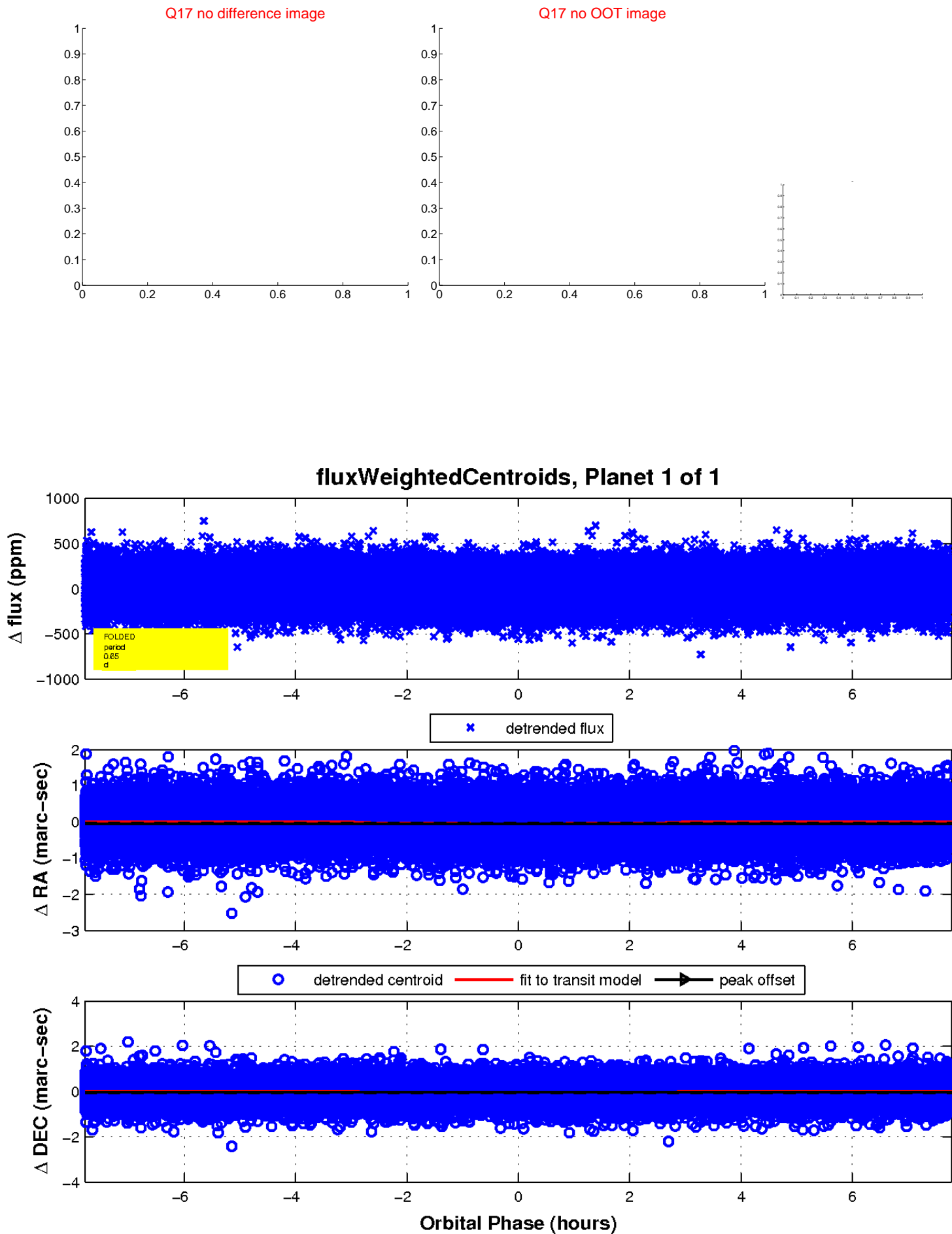
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

