

# KIC 005905822

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005905822-01	OBS	2801.01	6.992020	138.052965	32.5	4.937	17.7	19.2	1.47	6057	0.97	480.92

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005905822-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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 005905822-01

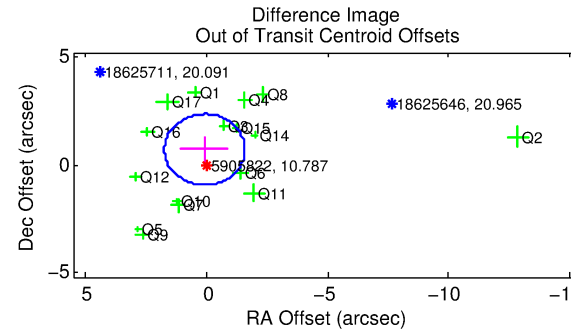
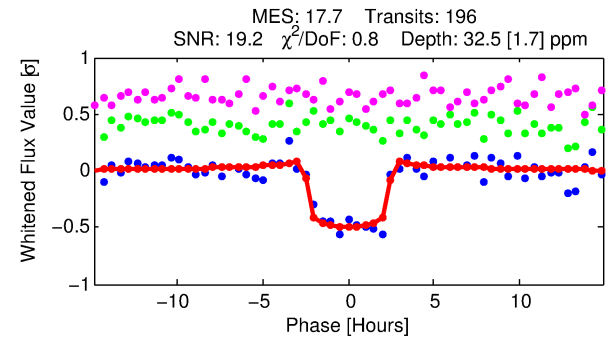
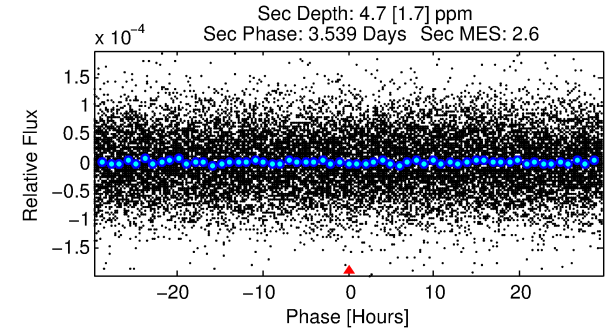
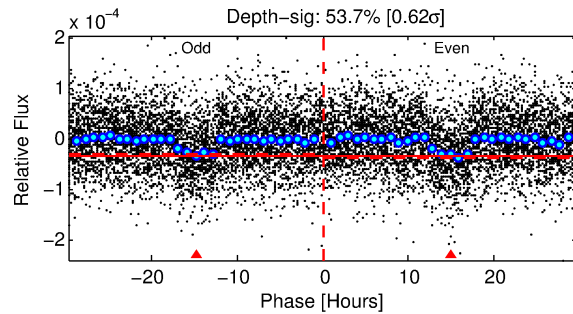
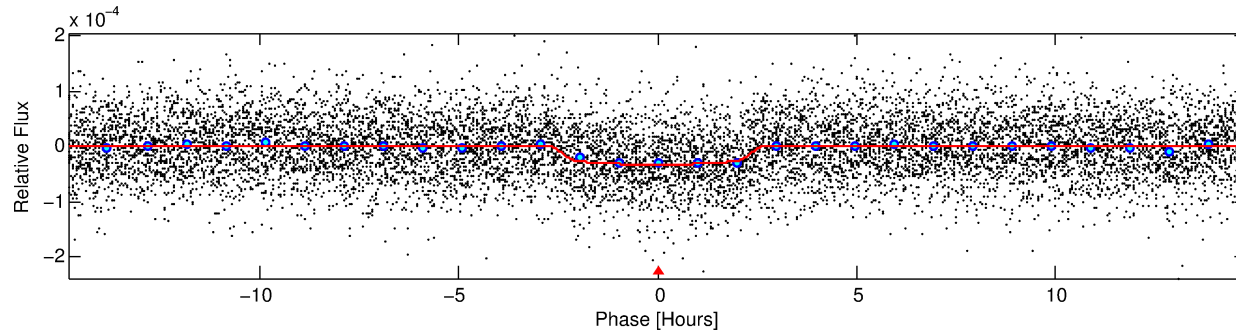
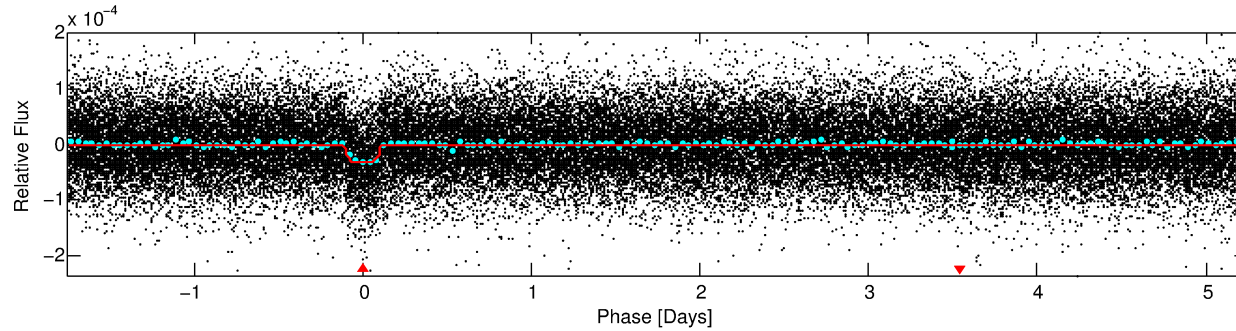
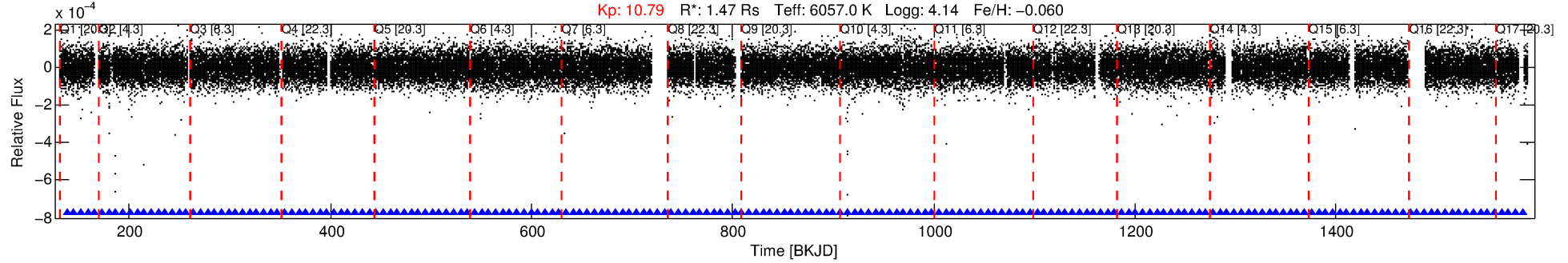
No Significant Match Found

# DV One-Page Summary

KIC: 5905822 Candidate: 1 of 1 Period: 6.992 d

KOI: K02801.01 Corr: 0.988

Kp: 10.79 R\*: 1.47 Rs Teff: 6057.0 K Logg: 4.14 Fe/H: -0.060



## DV Fit Results:

Period = 6.99202 [0.00003] d  
Epoch = 138.0530 [0.0037] BKJD  
Rp/R\* = 0.0061 [0.0012]  
a/R\* = 5.19 [5.04]  
b = 0.89 [0.24]  
Seff = 480.92 [144.42]  
Teq = 1194 [90] K  
Rp = 0.98 [0.26] Re  
a = 0.0735 [0.0132] AU  
Ag = 14.60 [8.83] [1.54σ]  
Teffp = 3609 [487] K [4.88σ]

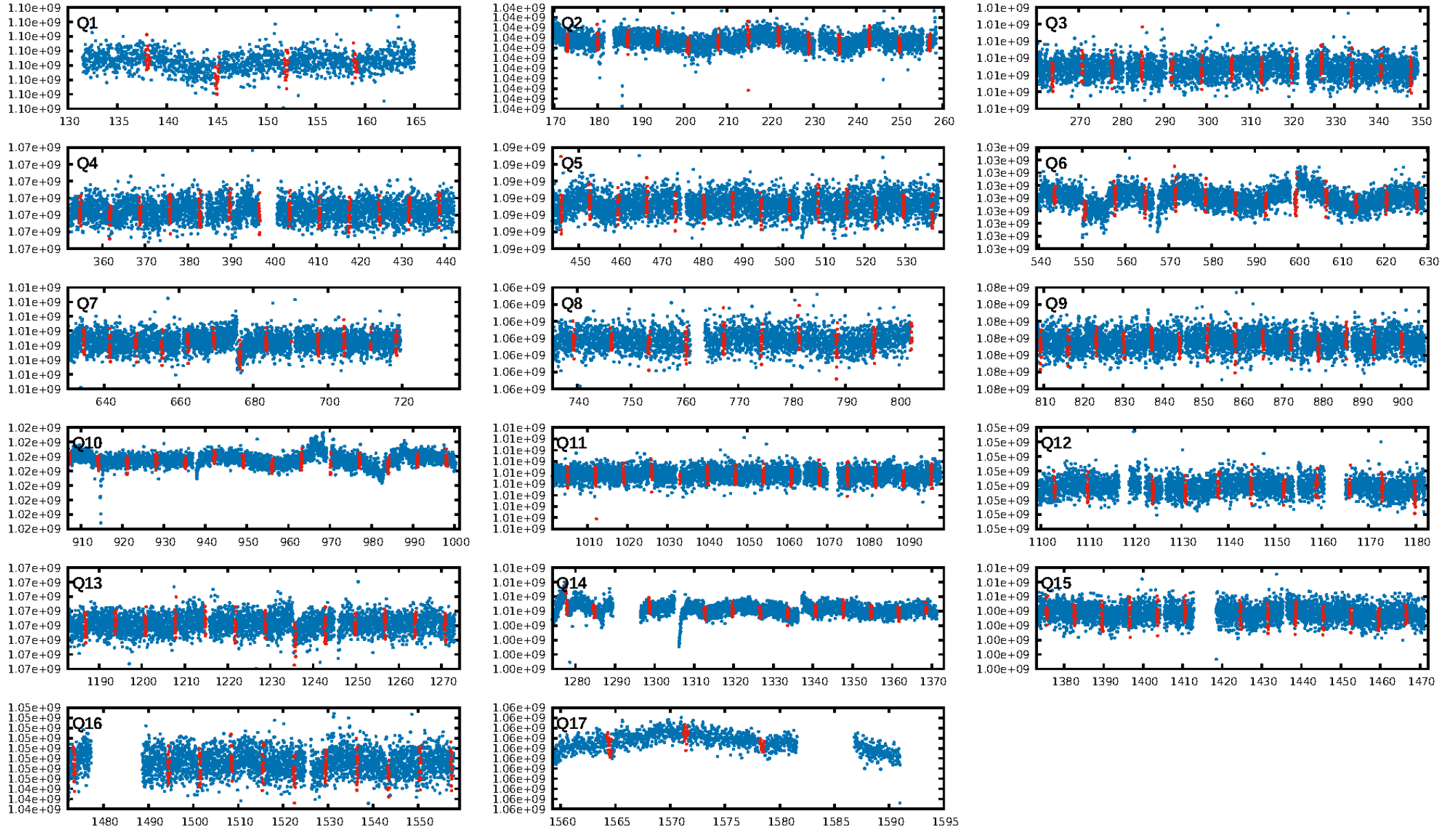
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.6%  
ModelChiSquareGosig: 100.0%  
Bootstrap-pfa: 1.11e-65  
RollingBand-fgt: 1.00 [189/189]  
GhostDiagnostic-chr: 8.772  
Centroid-sig: 14.1%  
Centroid-so: 1.255 arcsec [1.55σ]  
OotOffset-rm: 0.708 arcsec [1.28σ]  
KicOffset-rm: 0.994 arcsec [1.91σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.75 [12/16]  
DiffImageOverlap-fno: 1.00 [17/17]

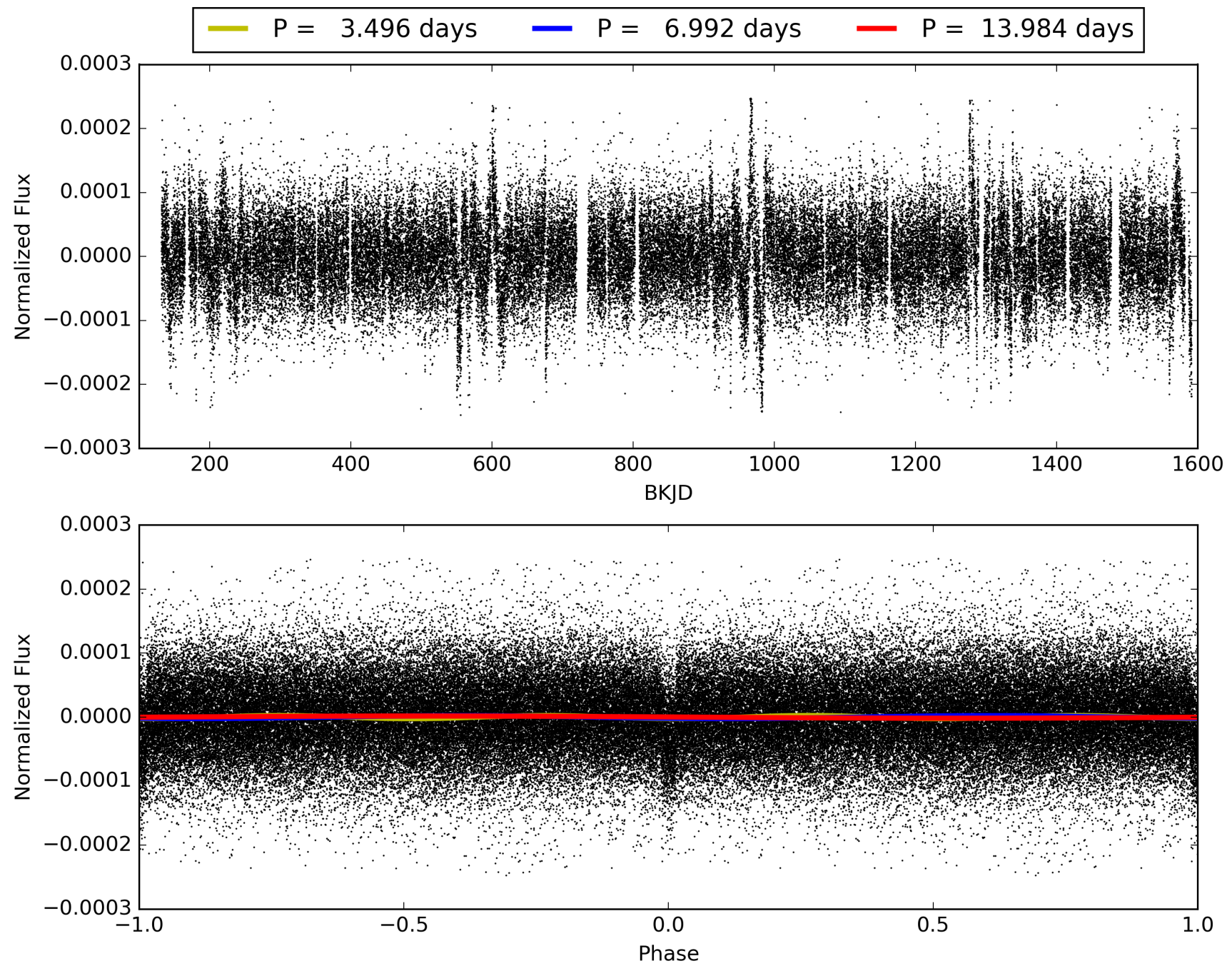
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:59:03 Z

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

# TCE 005905822-01, PDC Light Curves

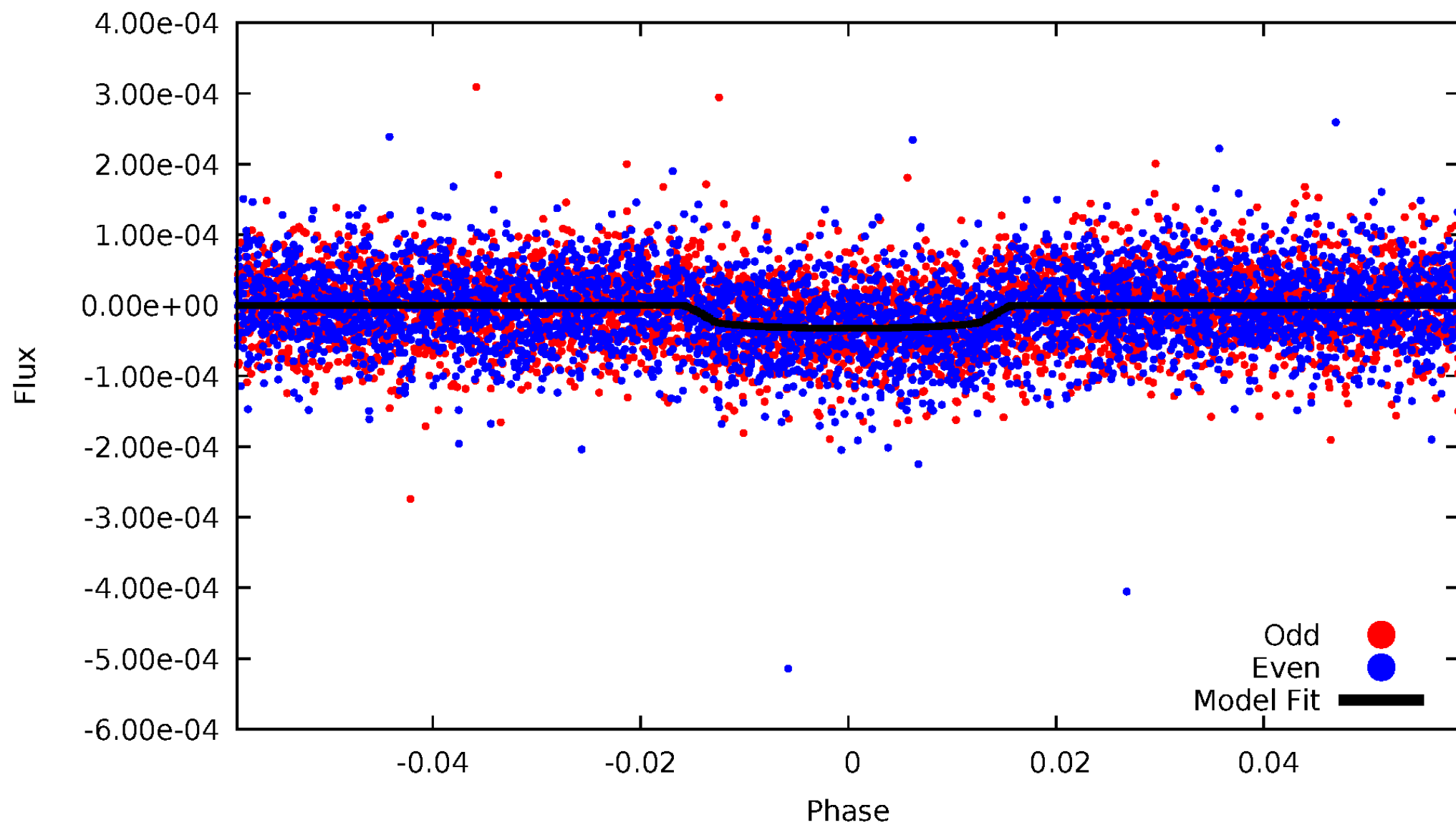


TCE 005905822-01



# DV Odd/Even

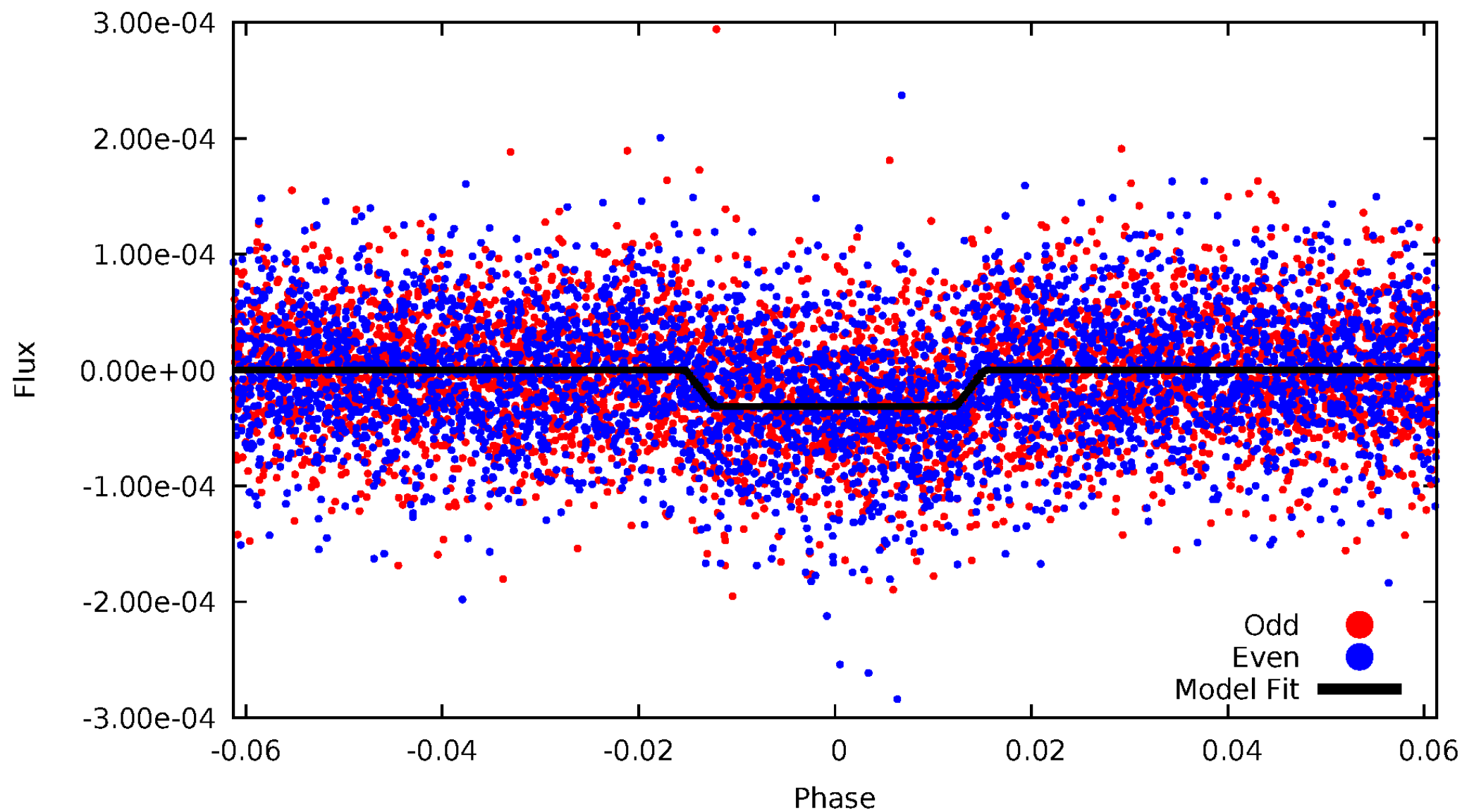
TCE 005905822-01





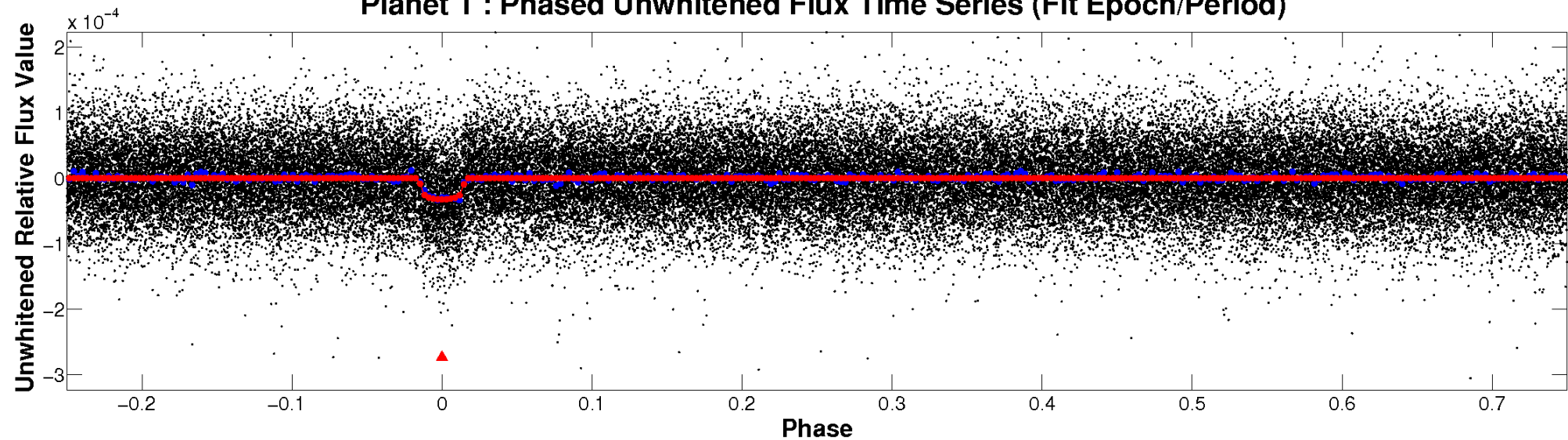
# ALT Odd/Even

TCE 005905822-01

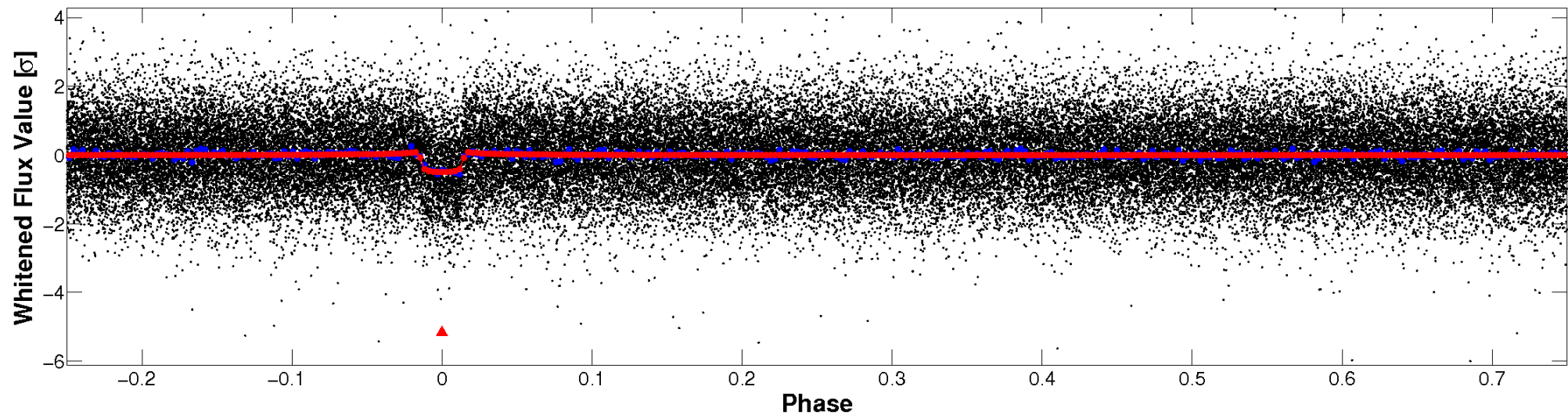


# Non-Whitened Vs. Whitened Light Curve

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

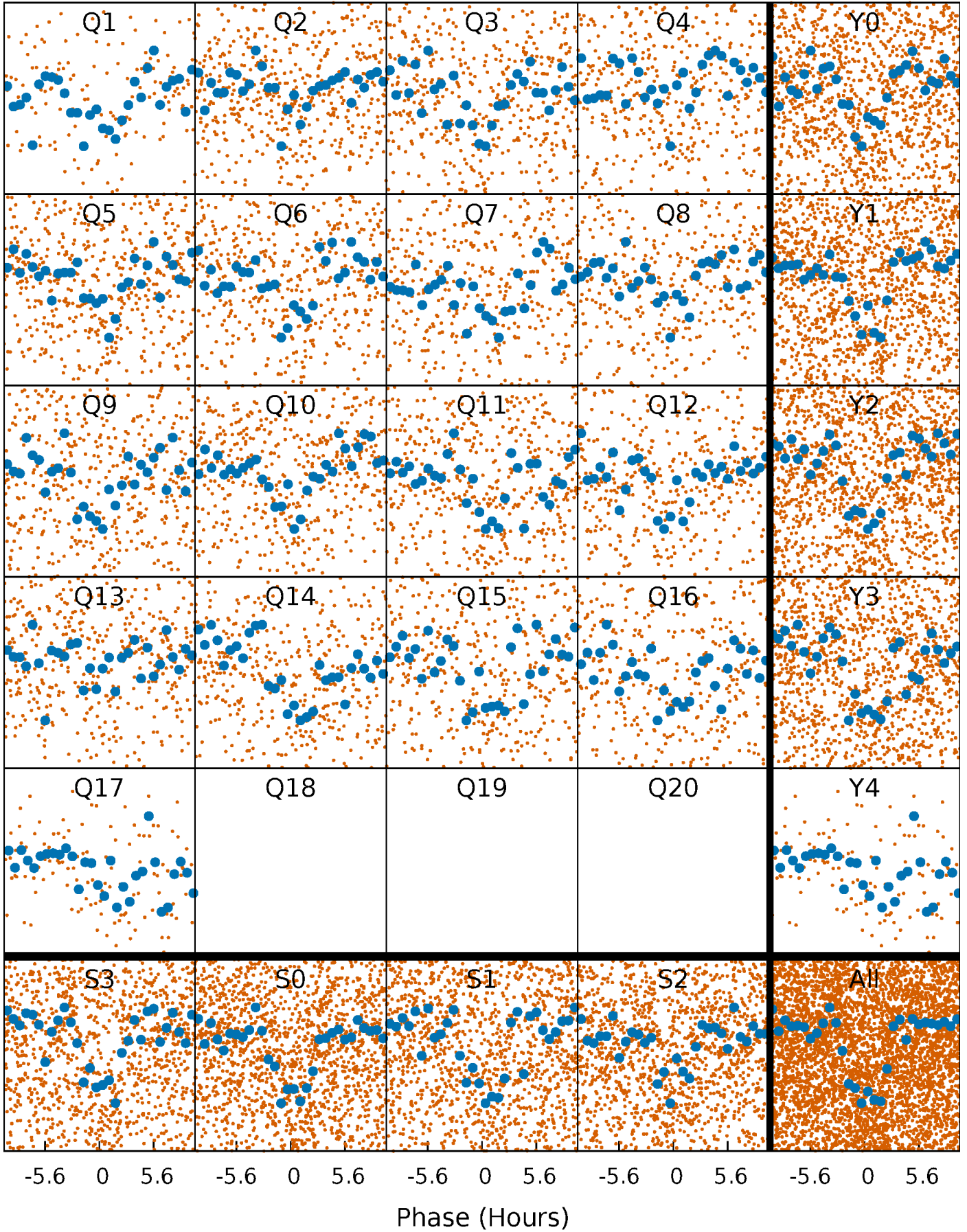


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

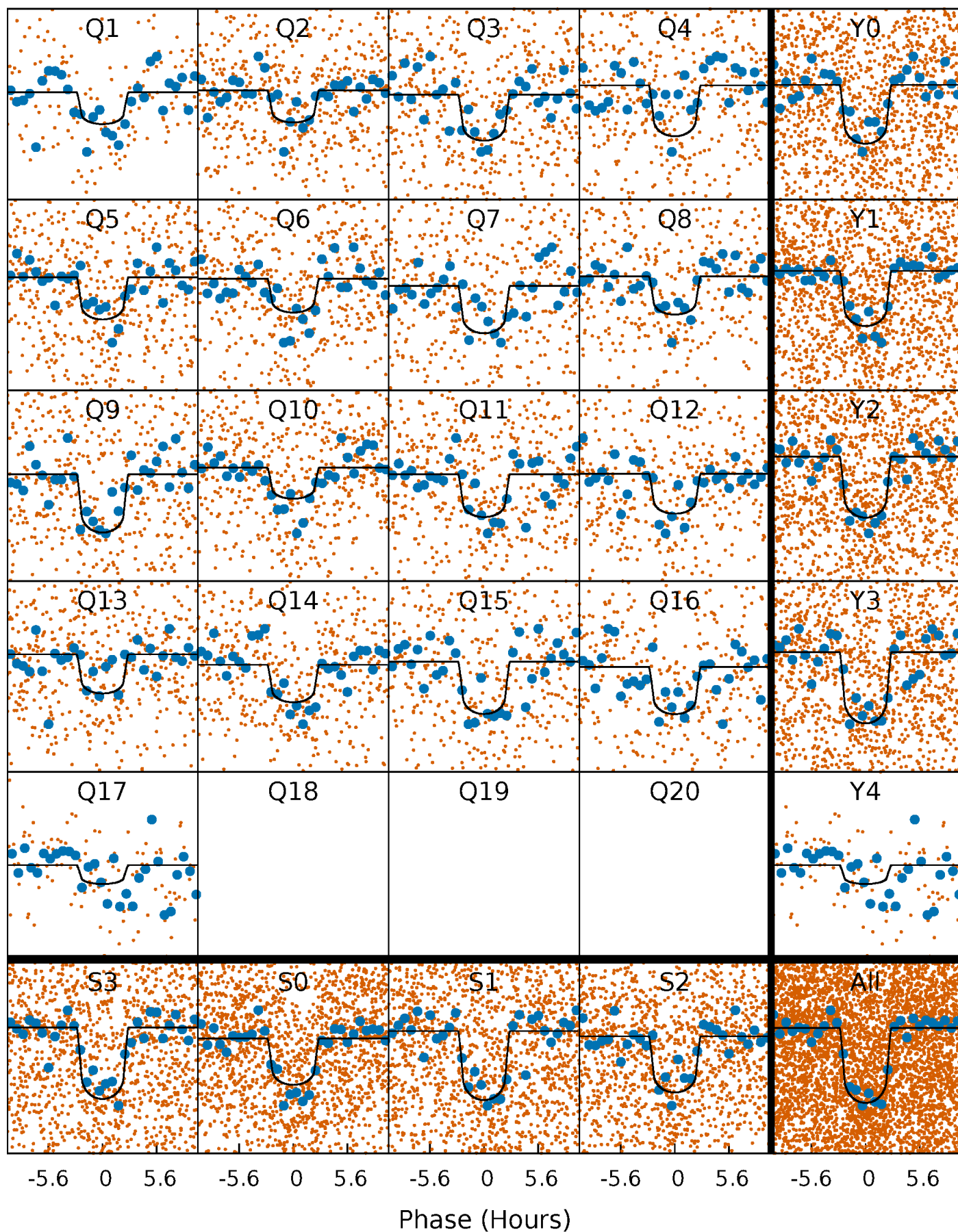
TCE 005905822-01 P= 6.992020 Days  $T_0=138.052965$  (BKJD)





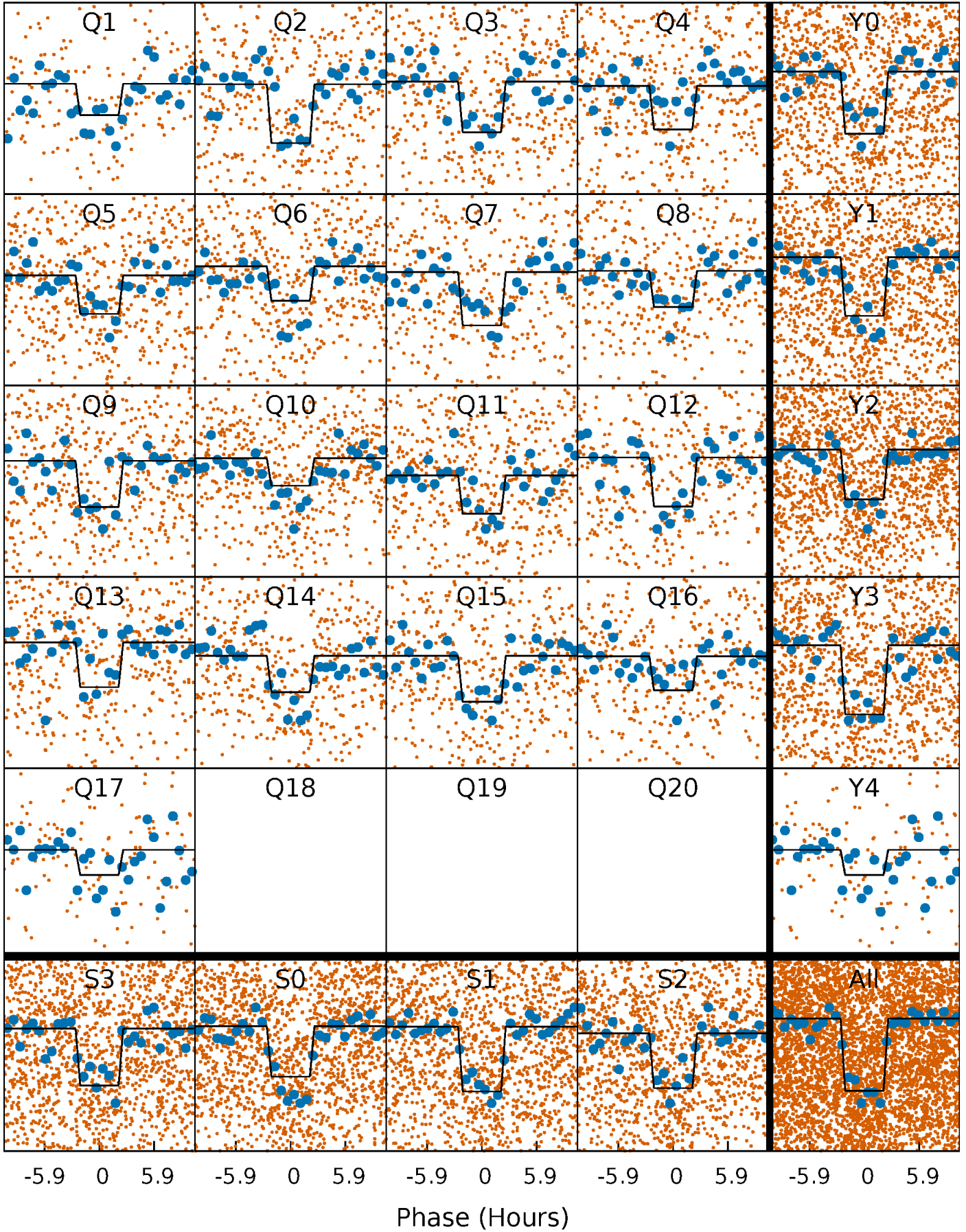
# DV Quarter-Phased Transit Curves

TCE 005905822-01 P= 6.992020 Days  $T_0=138.052965$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

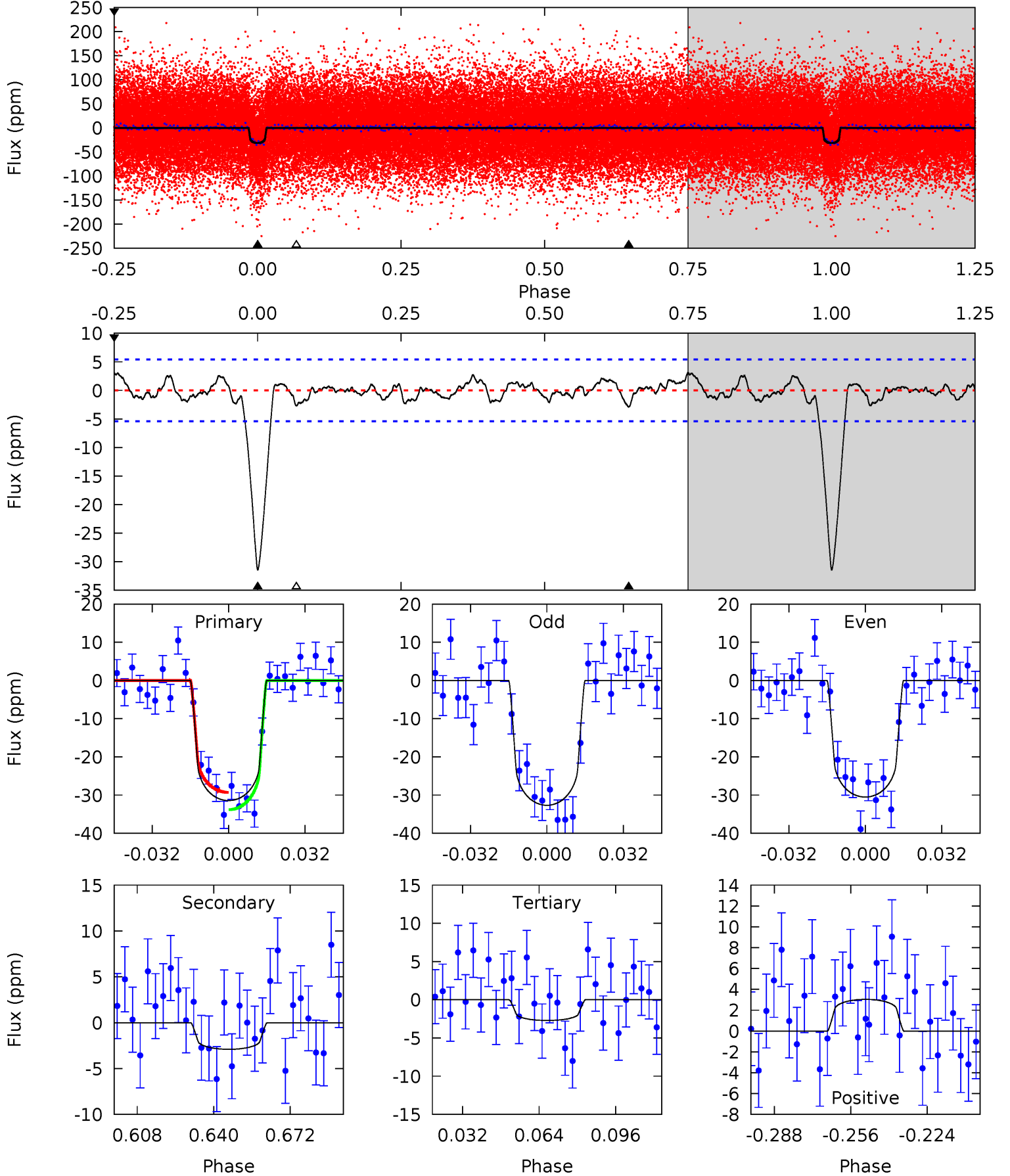
TCE 005905822-01 P= 6.992092 Days  $T_0=138.047198$  (BKJD)



# DV Model-Shift Uniqueness Test

005905822-01, P = 6.992020 Days, E = 131.060945 Days

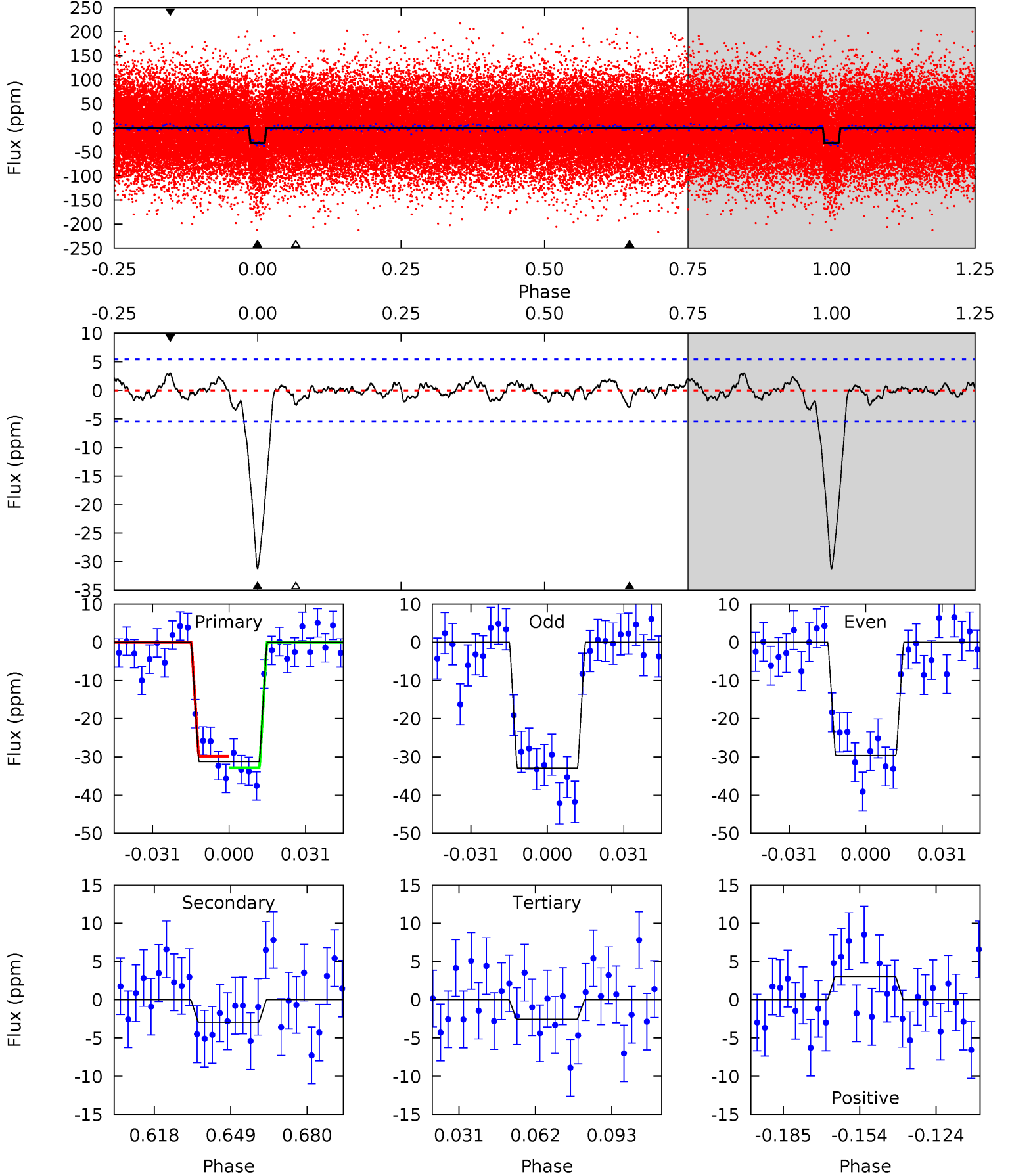
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	2.58	2.41	2.70	4.80	2.14	1.08	25.5	25.2	0.17	-0.12	0.96	1.01	0.09	2.01



# Alt Model-Shift Uniqueness Test

005905822-01, P = 6.992092 Days, E = 131.055106 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
27.4	2.57	2.23	2.68	4.81	2.16	0.95	25.1	24.7	0.34	-0.11	1.47	1.06	0.09	1.34





### Stellar Parameters For KIC 005905822

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6057^{+134}_{-121}$	$4.139^{+0.168}_{-0.112}$	$-0.060^{+0.150}_{-0.150}$	$1.467^{+0.250}_{-0.277}$	$1.081^{+0.113}_{-0.083}$	$0.482^{+0.425}_{-0.167}$
	+2%/-2%	+4%/-3%	+250%/-250%	+17%/-19%	+10%/-8%	+88%/-35%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 005905822-01 / KOI 2801.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-3 \pm 1$	$0.96^{+0.21}_{-0.22}$	$1655^{+87}_{-88}$	$3605^{+380}_{-340}$	$9.206^{+7.580}_{-4.308}$
Alt.	$-3 \pm 1$	$0.91^{+0.21}_{-0.21}$	$1663^{+88}_{-86}$	$3709^{+375}_{-373}$	$11^{+8}_{-5}$

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

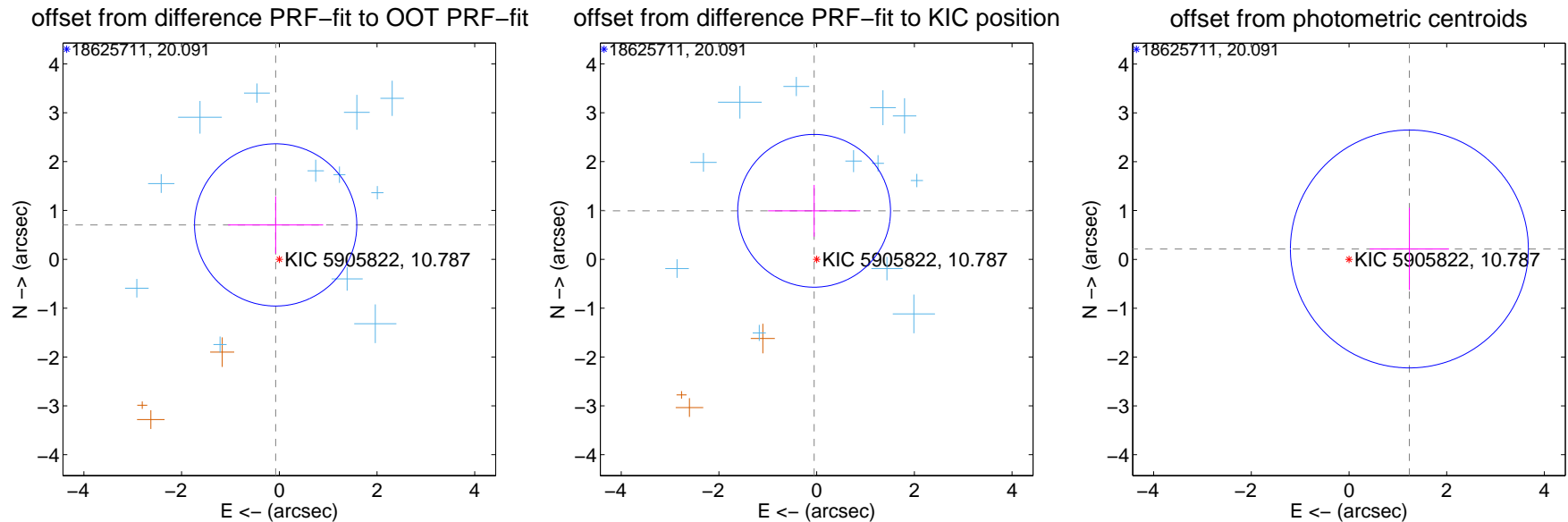
## DV Centroid Data

Supplemental centroid analysis for 005905822-01. **Kepler magnitude: 10.79.** Transit SNR 19.20

There are 12 quarters with good PRF difference image offsets

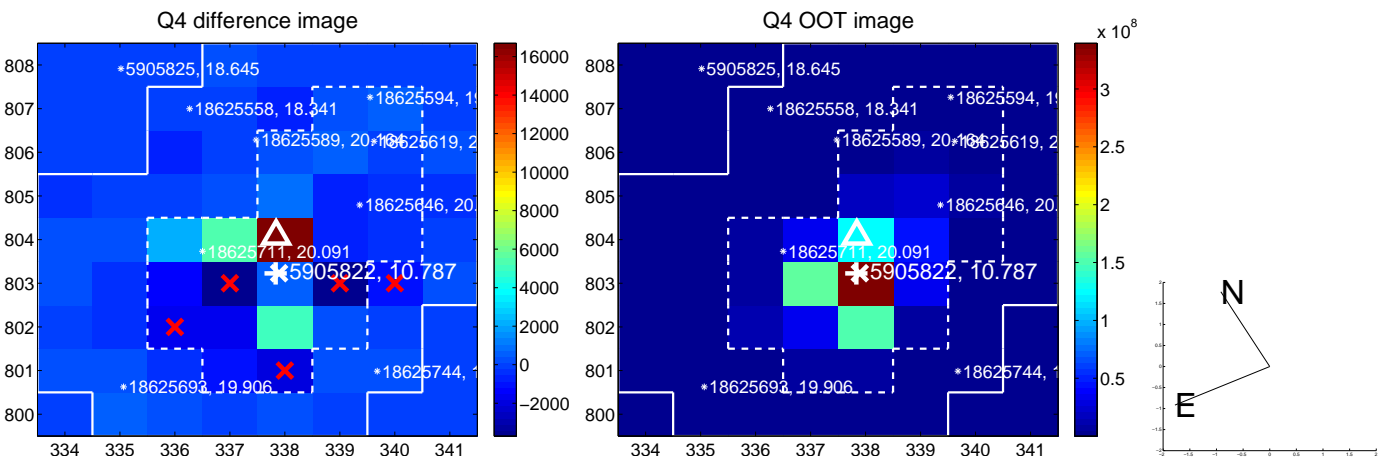
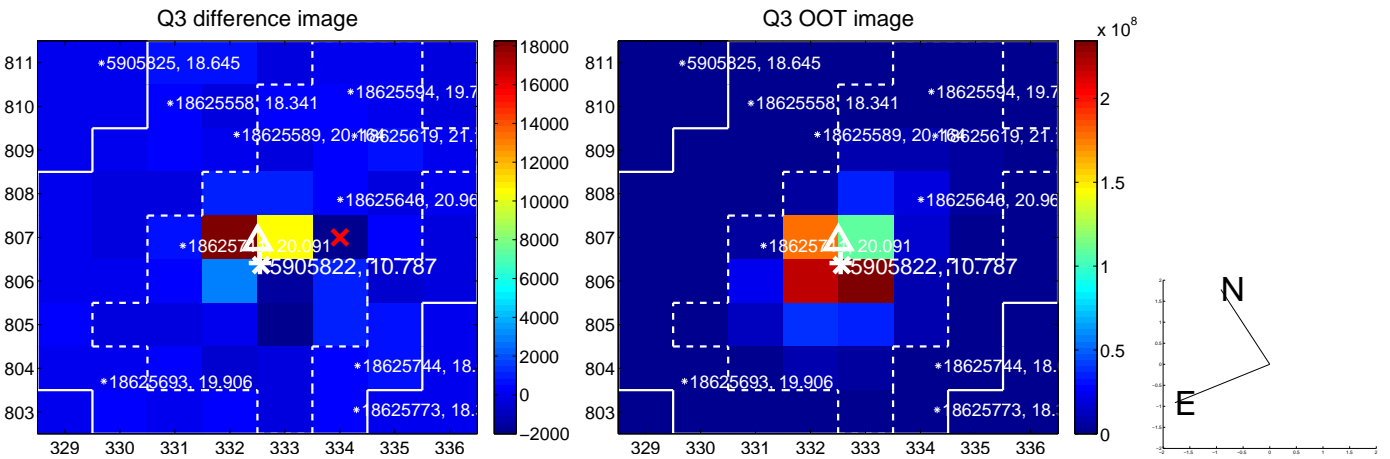
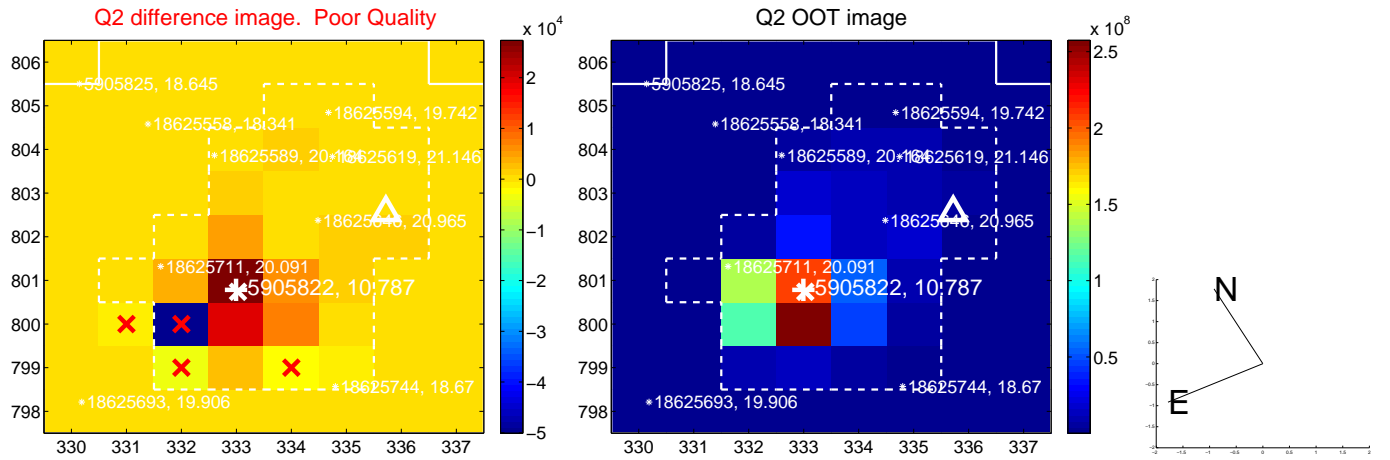
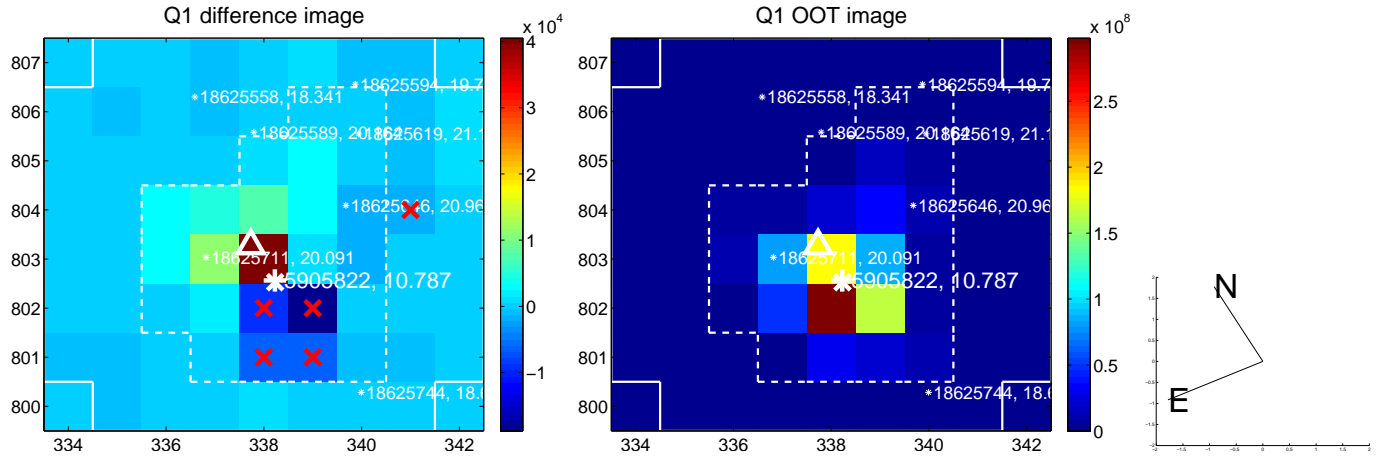
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.708 \pm 0.554$	1.28	$0.075 \pm 0.974$	$0.704 \pm 0.586$
PRF-fit source offset from KIC position	$0.994 \pm 0.521$	1.91	$0.052 \pm 0.943$	$0.993 \pm 0.529$
photometric centroid source offset	$1.25 \pm 0.81$	1.55	$-1.24 \pm 0.81$	$0.21 \pm 0.84$

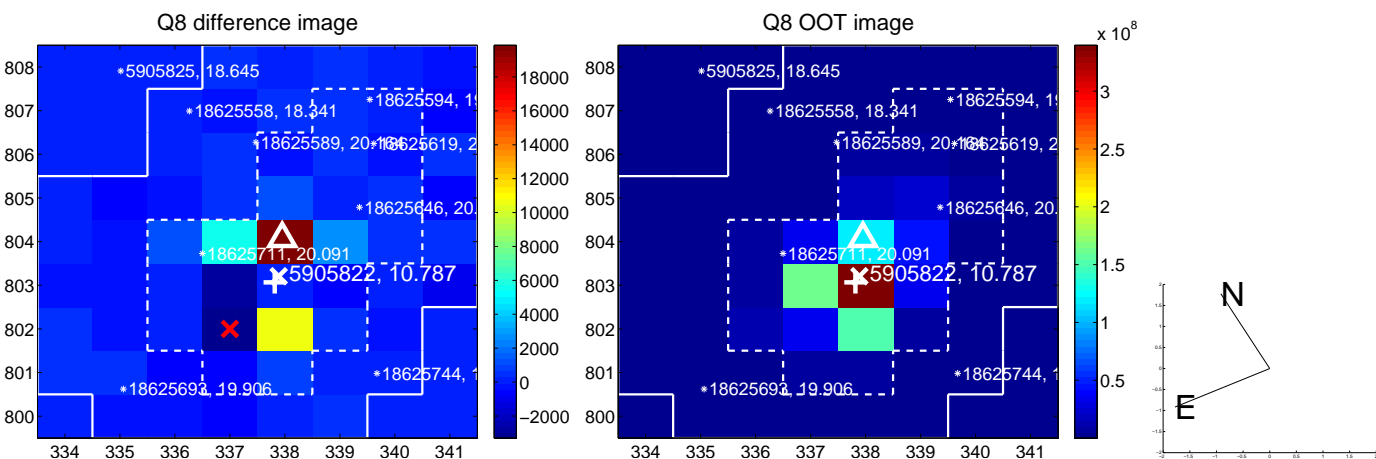
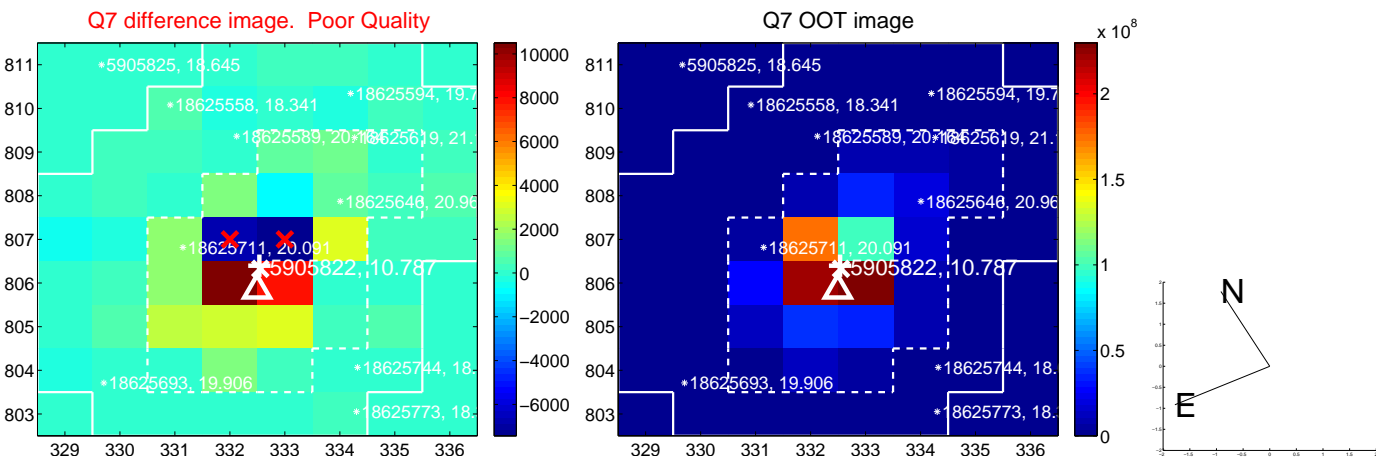
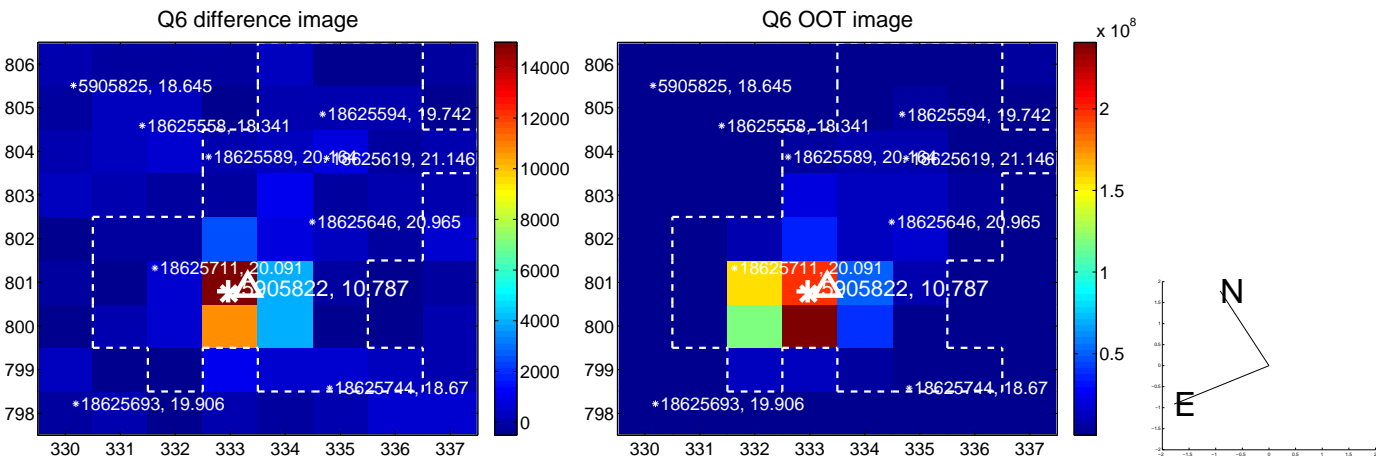
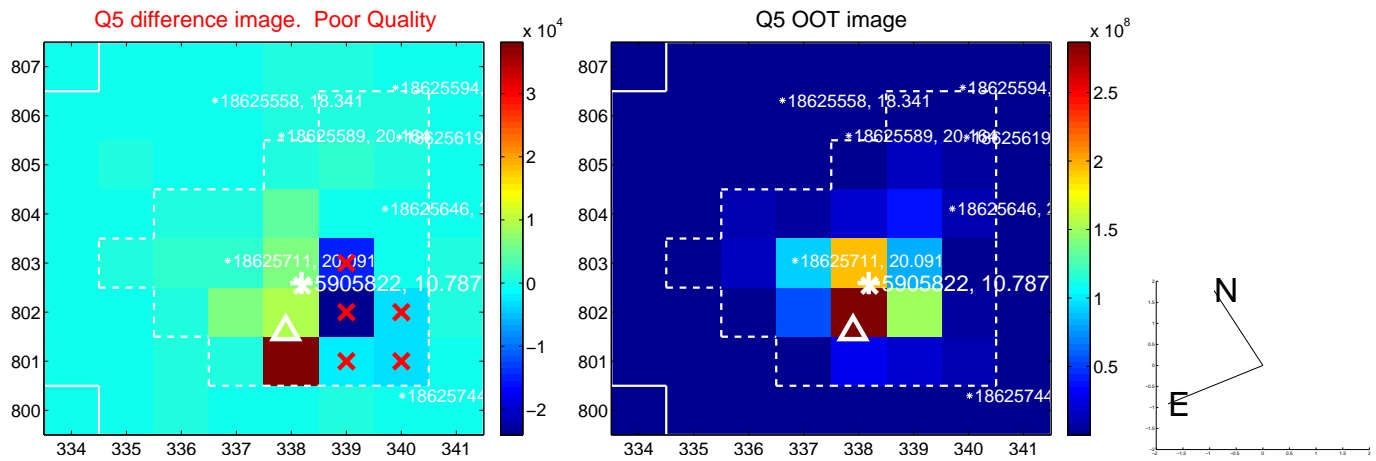


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

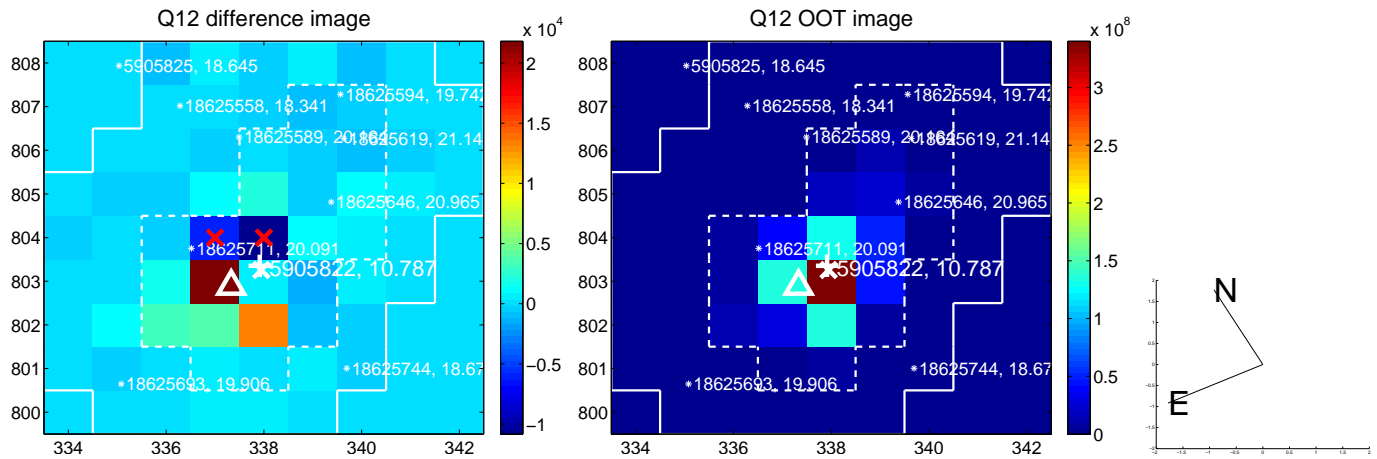
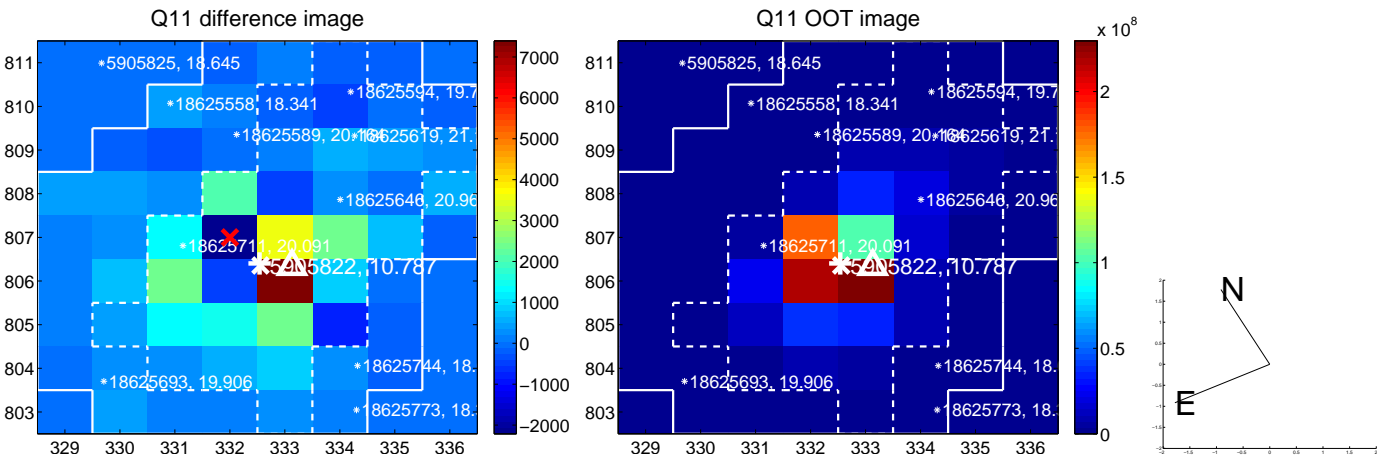
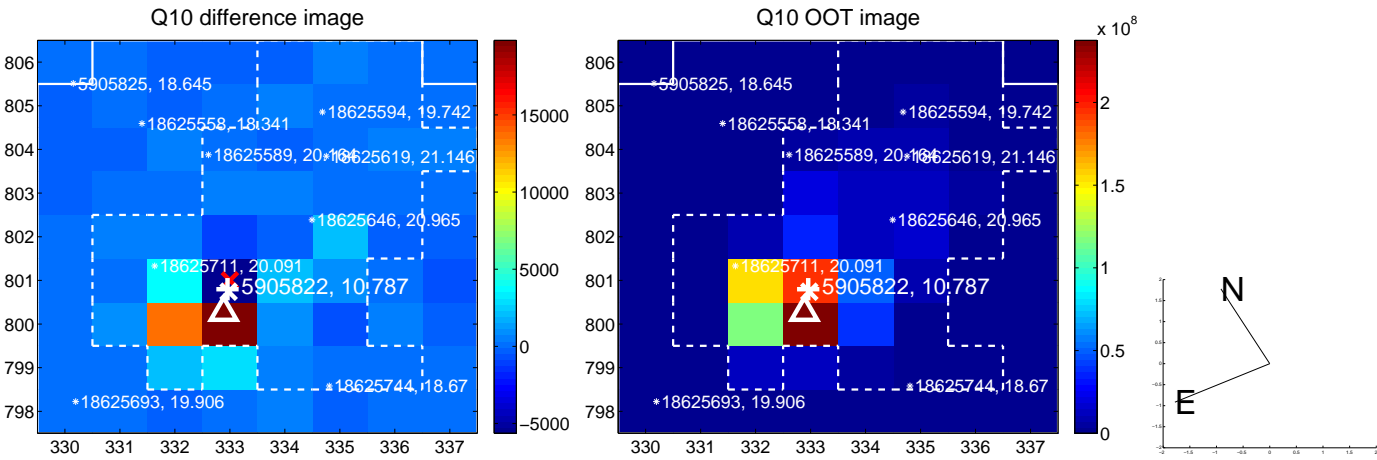
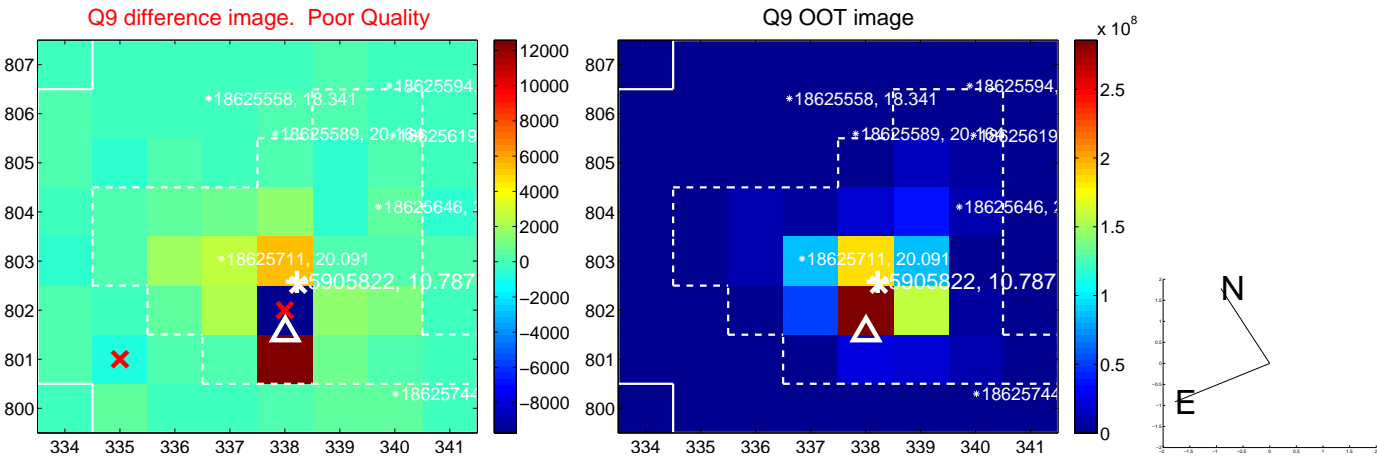


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

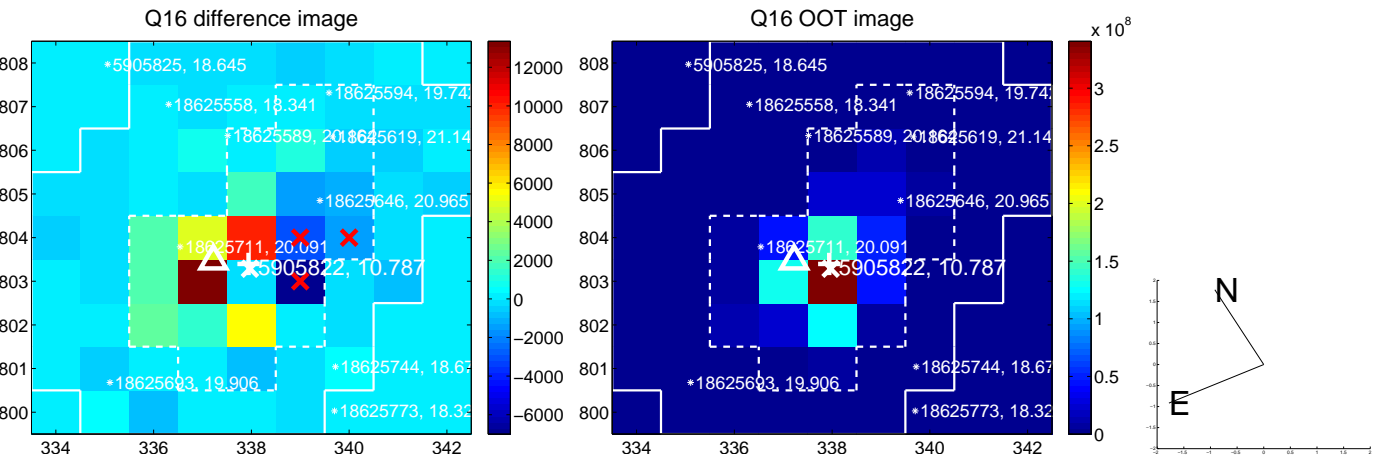
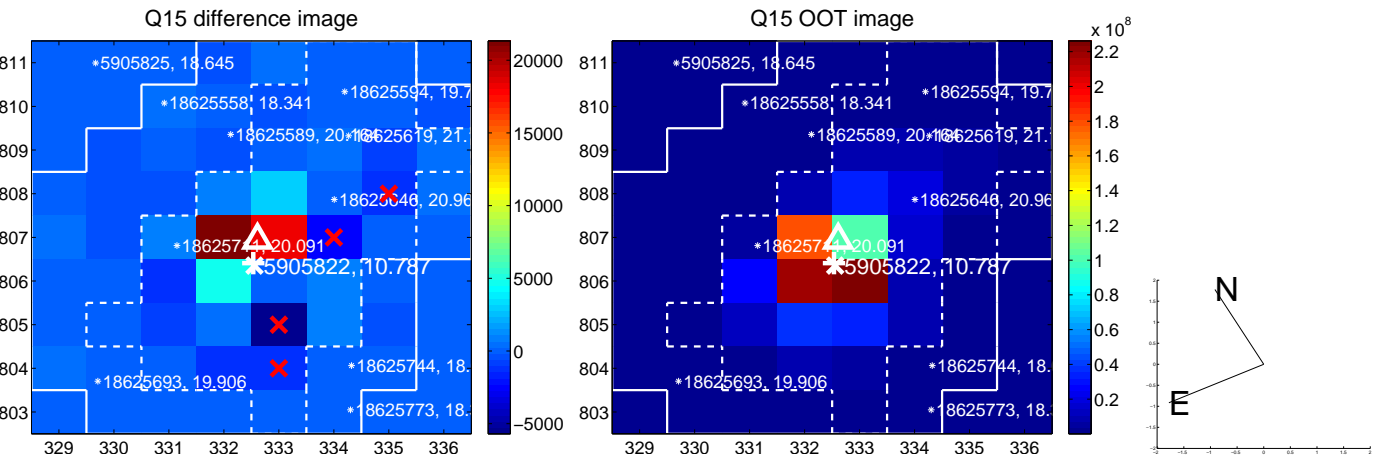
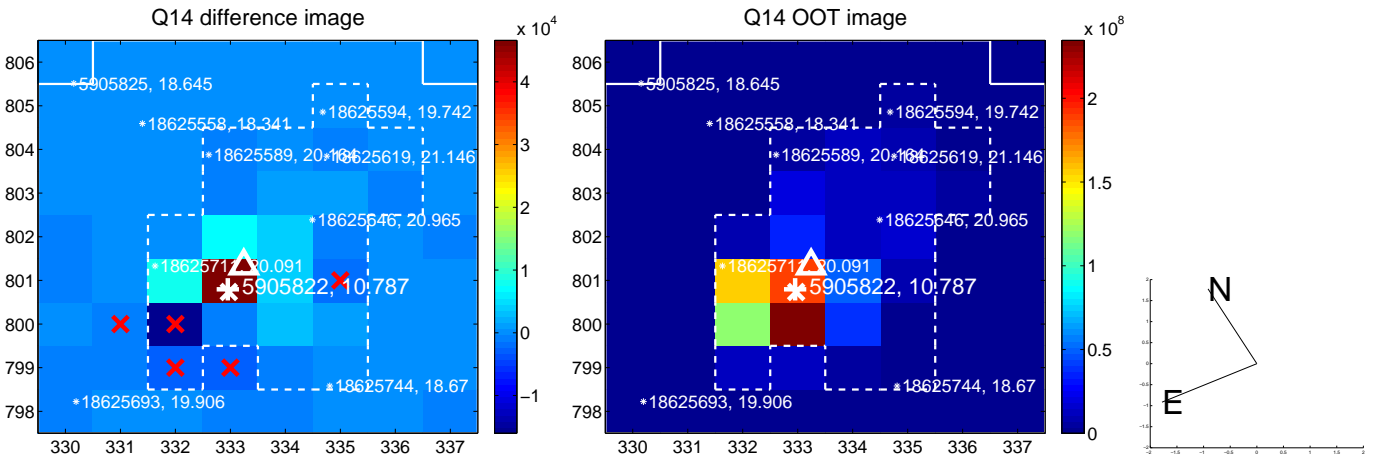
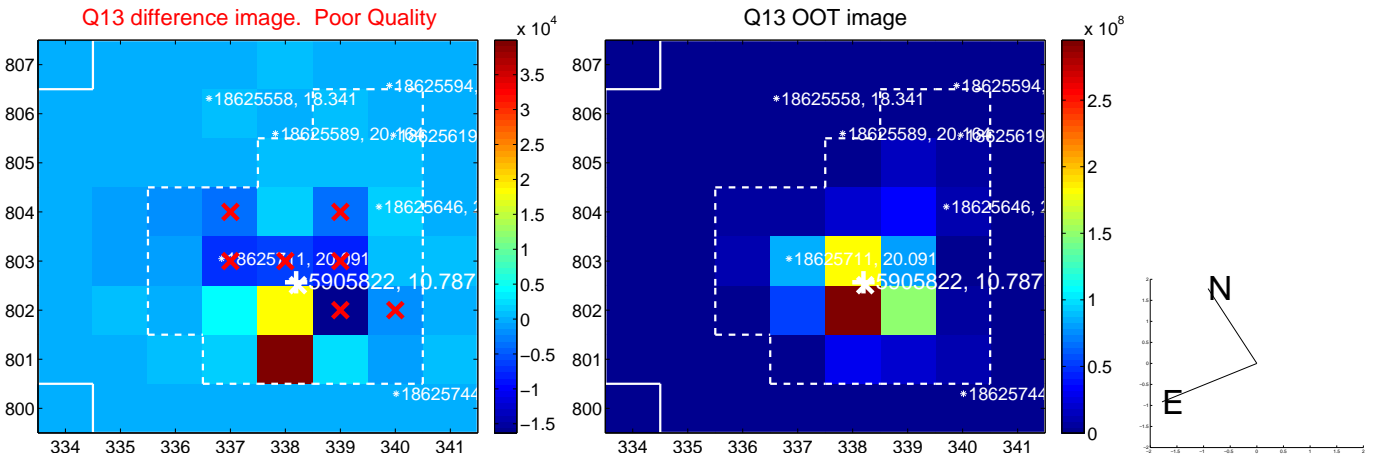




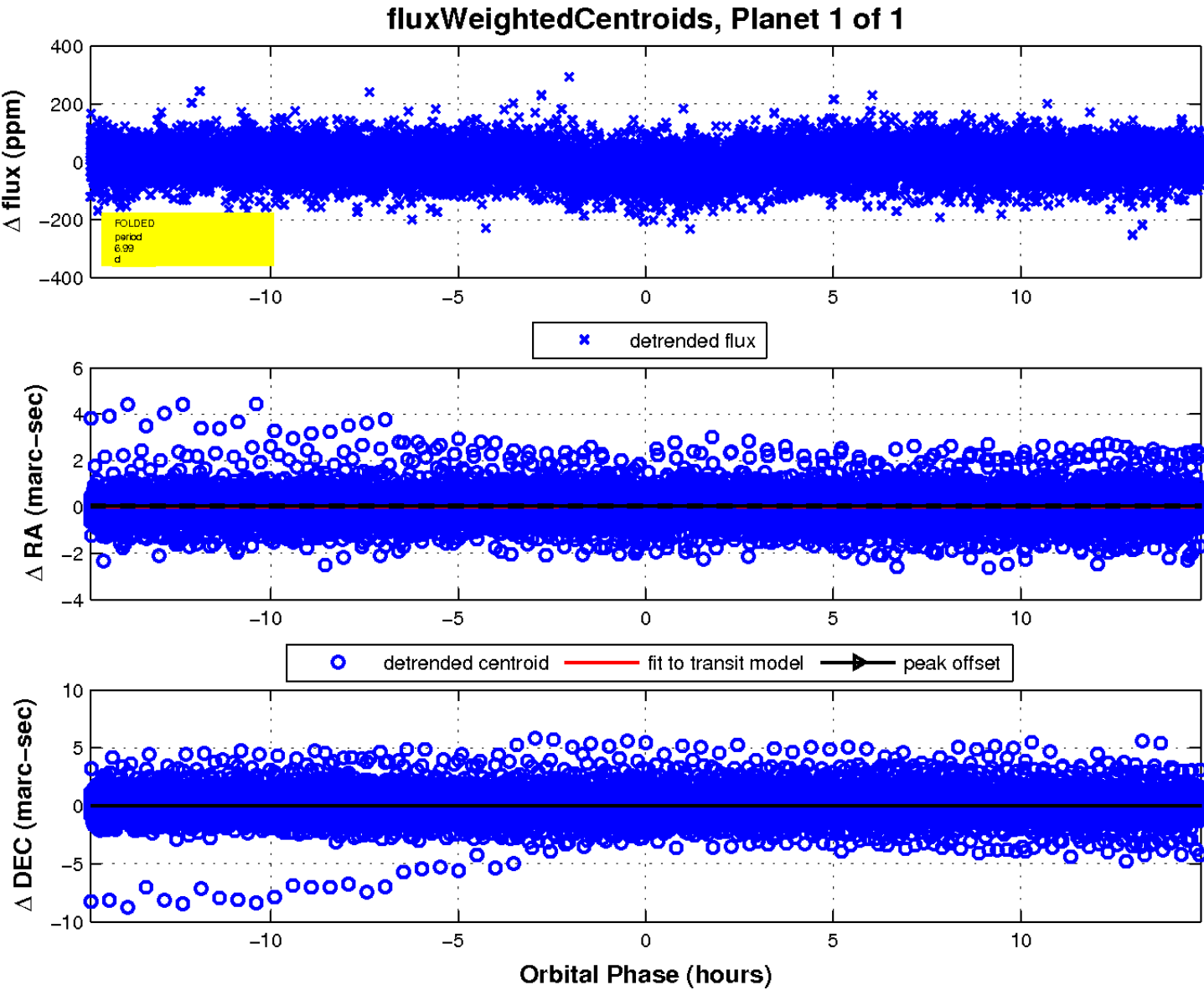
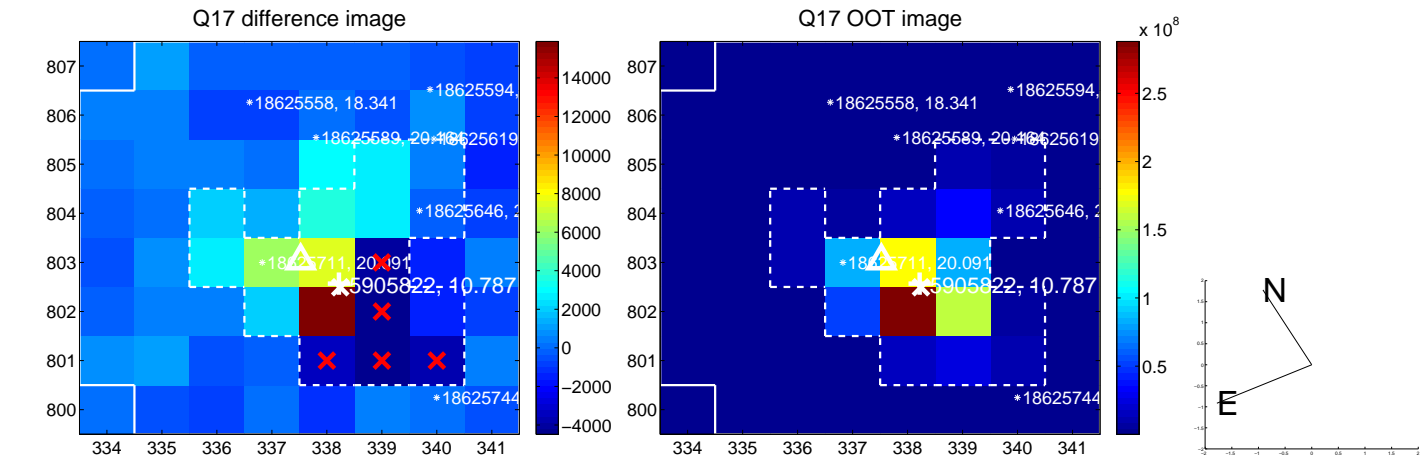
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

