

# KIC 008554701

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008554701-01	OBS	3315.01	31.174947	159.098440	188.0	4.010	14.2	14.8	0.92	6086	1.48	27.67

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008554701-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT

**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.

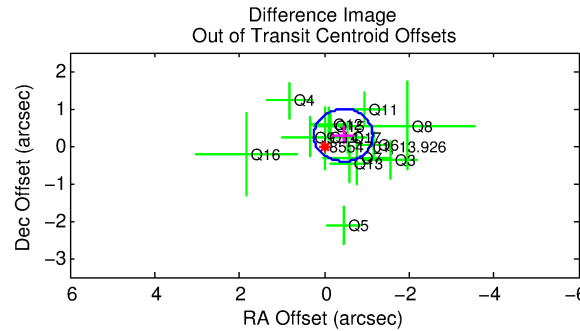
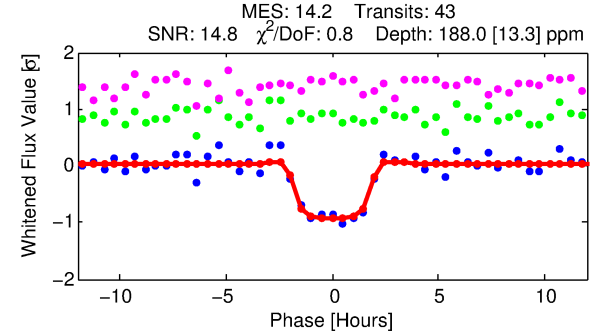
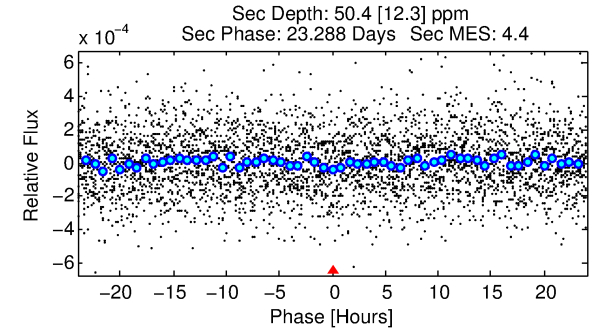
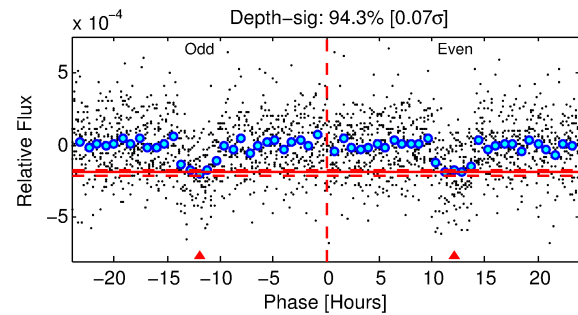
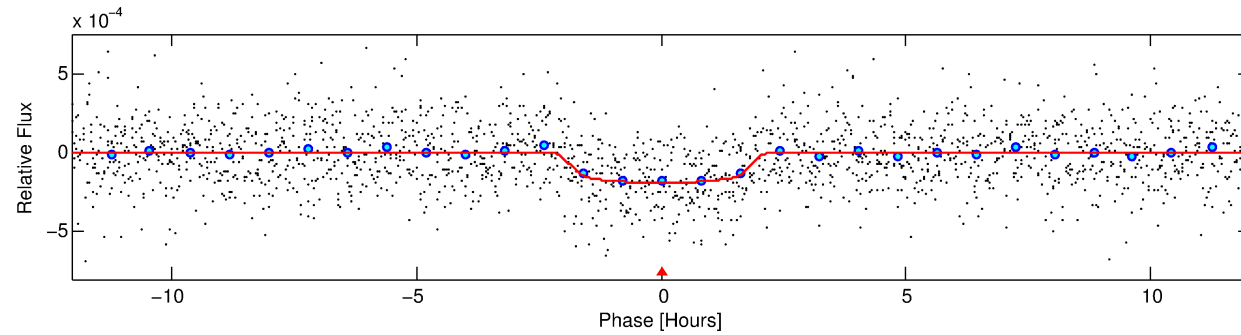
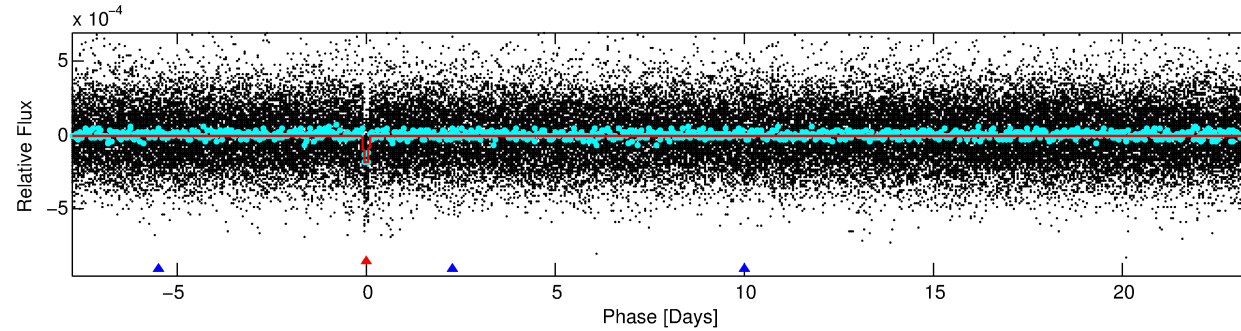
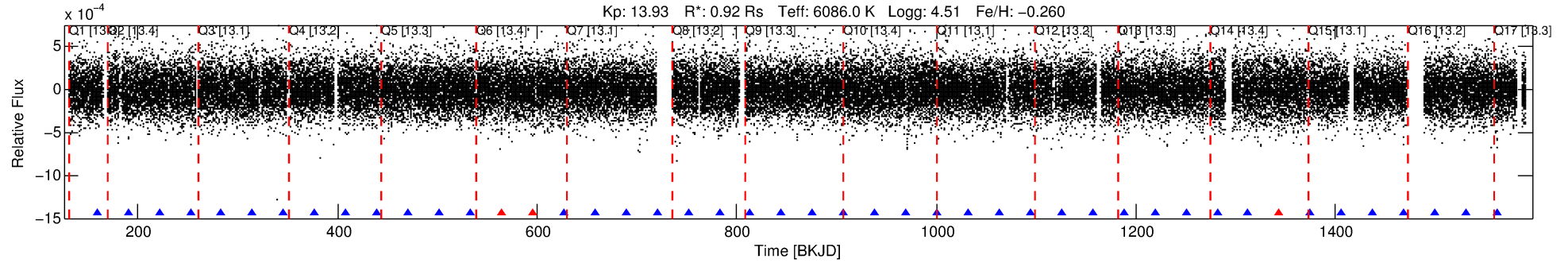
## Ephemeris Match Information For 008554701-01

No Significant Match Found

# DV One-Page Summary

KIC: 8554701 Candidate: 1 of 2 Period: 31.175 d

KOI: K03315.01 Corr: 0.993



## DV Fit Results:

Period = 31.17495 [0.00021] d  
Epoch = 159.0984 [0.0057] BKJD  
Rp/R\* = 0.0147 [0.0041]  
a/R\* = 28.16 [41.21]  
b = 0.90 [0.32]  
Seff = 27.67 [11.33]  
Teq = 585 [60] K  
Rp = 1.48 [0.62] Re  
a = 0.1941 [0.0517] AU  
Ag = 476.59 [344.63] [1.38σ]  
Teffp = 4225 [654] K [5.54σ]

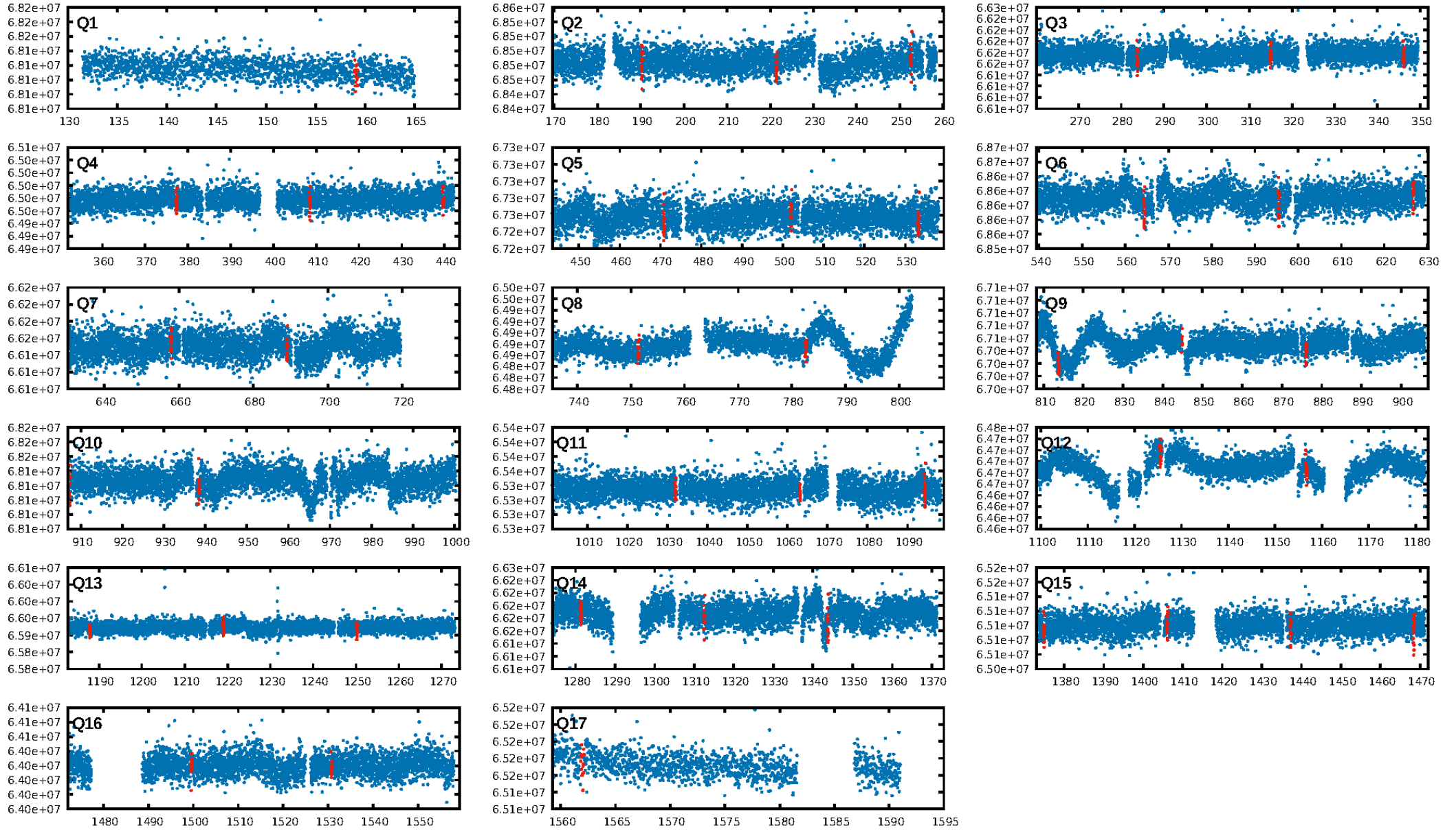
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [1559.56σ]  
ModelChiSquare2-sig: 90.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.50e-44  
RollingBand-fgt: 0.93 [38/41]  
GhostDiagnostic-chr: 5.618  
Centroid-sig: 90.4%  
Centroid-so: 0.140 arcsec [0.15σ]  
OotOffset-rm: 0.532 arcsec [2.28σ]  
OotOffset-st: 2/4/4/4 [14]  
KicOffset-rm: 0.503 arcsec [2.20σ]  
KicOffset-st: 2/4/4/4 [14]  
DiffImageQuality-fgm: 0.93 [13/14]  
DiffImageOverlap-fno: 1.00 [16/16]

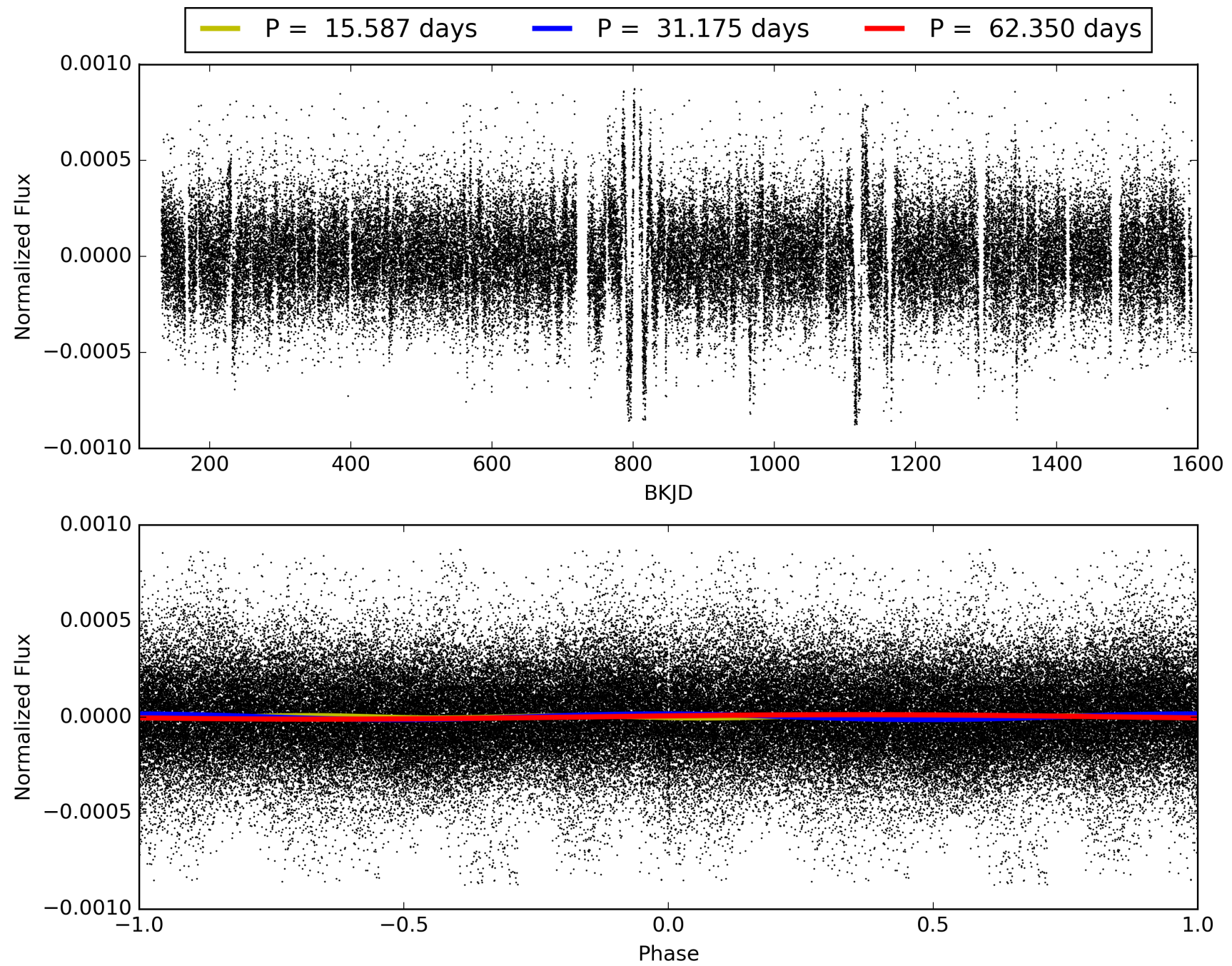
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:25:03 Z

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

# TCE 008554701-01, PDC Light Curves

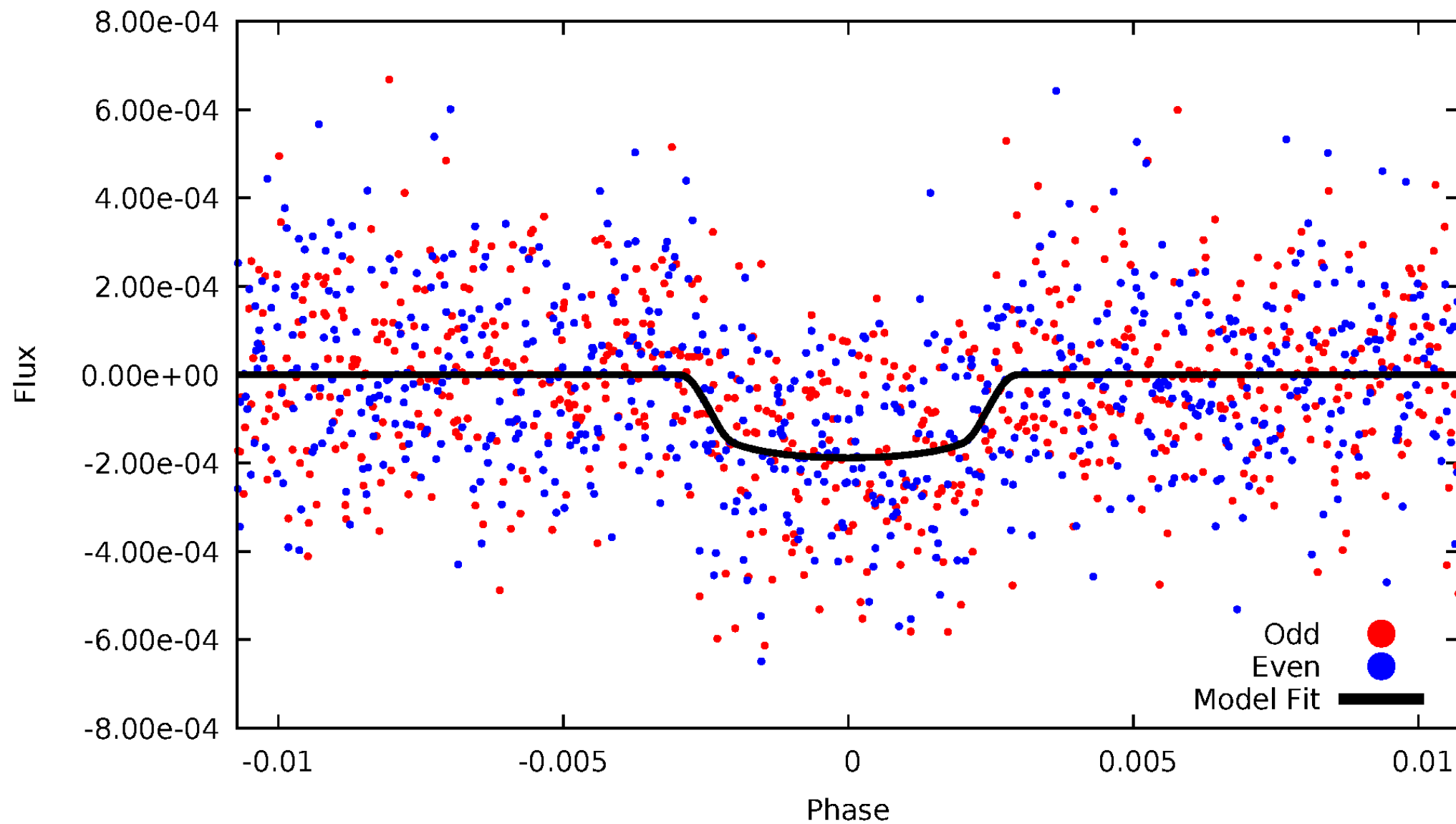


TCE 008554701-01



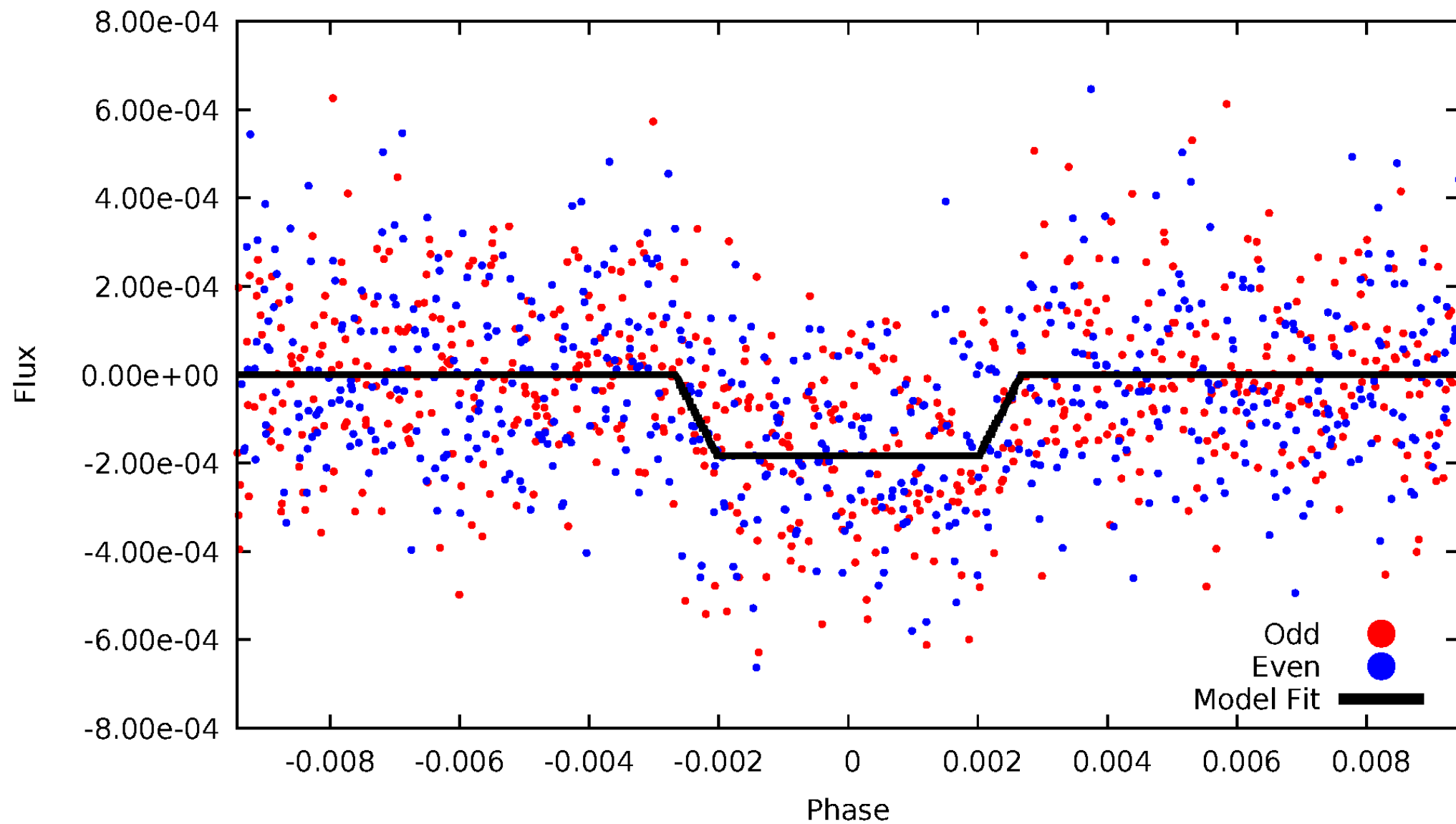
# DV Odd/Even

TCE 008554701-01



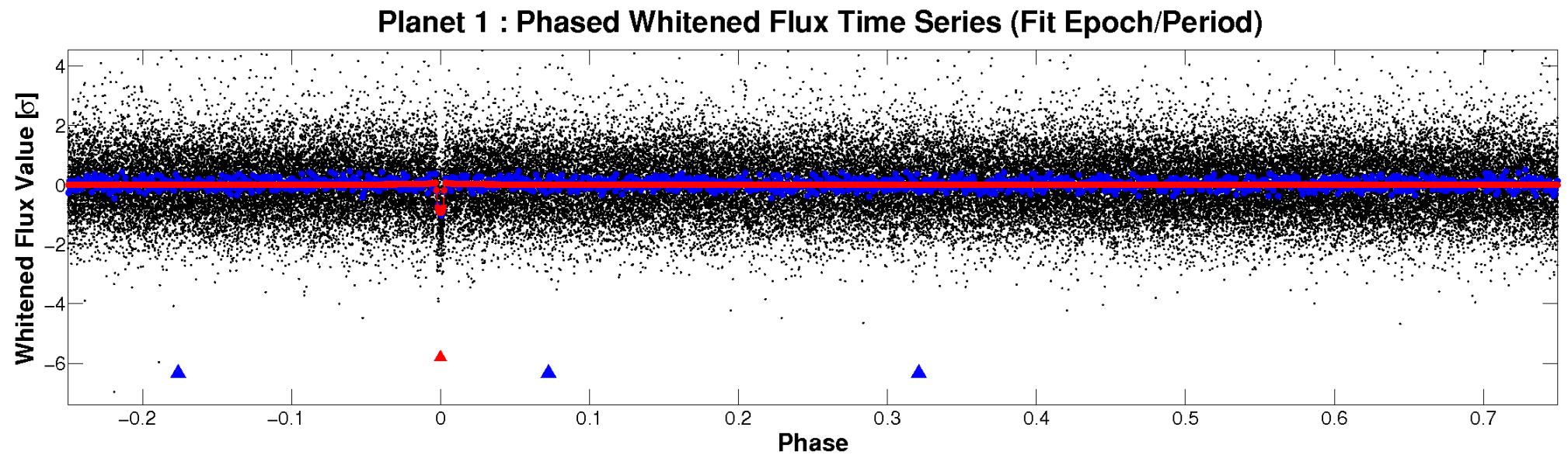
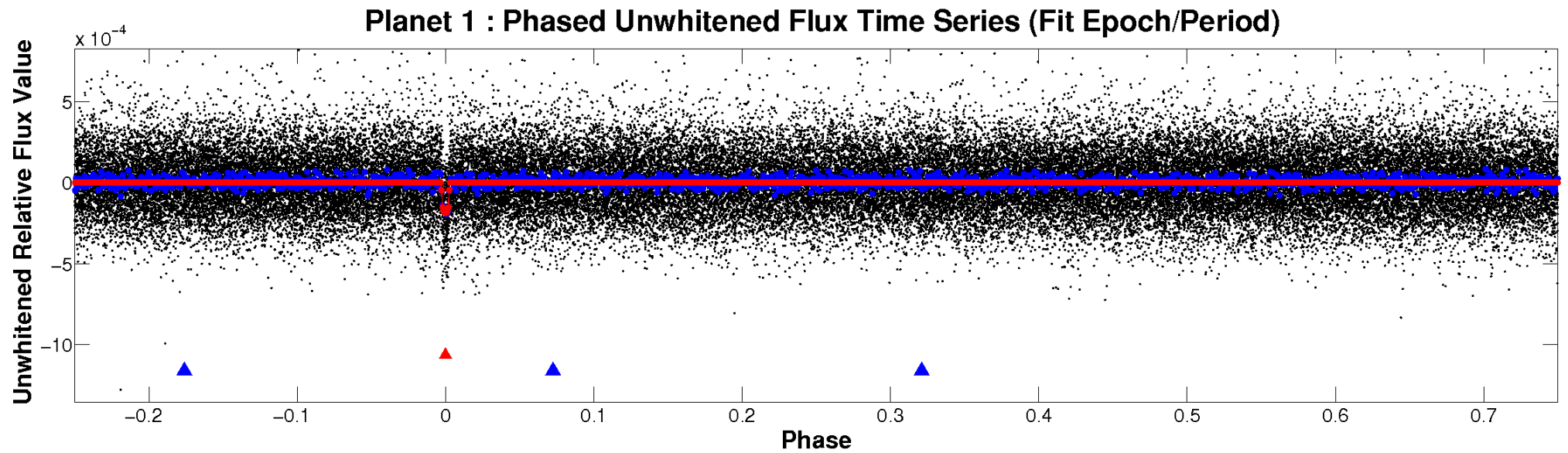
# ALT Odd/Even

TCE 008554701-01



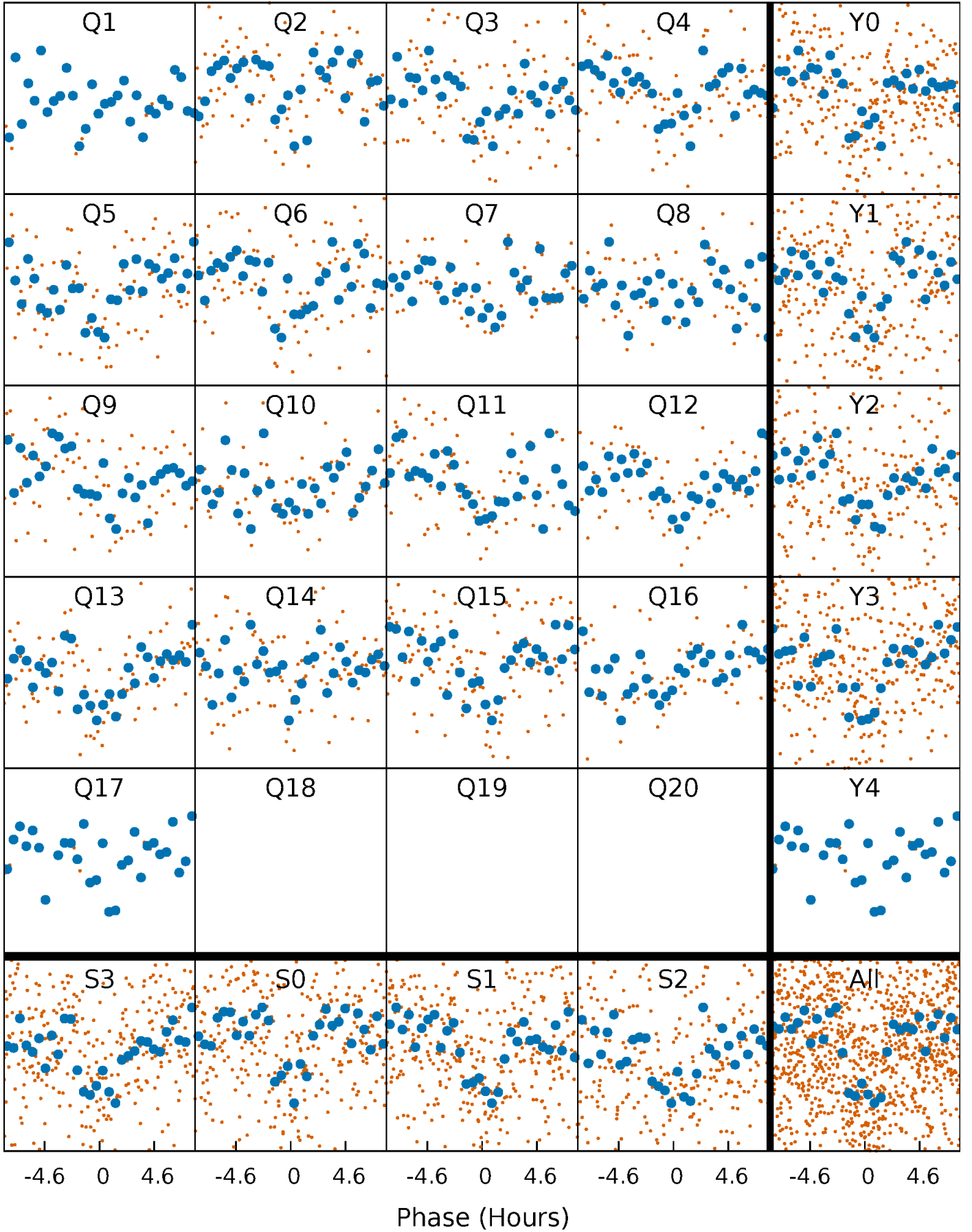


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

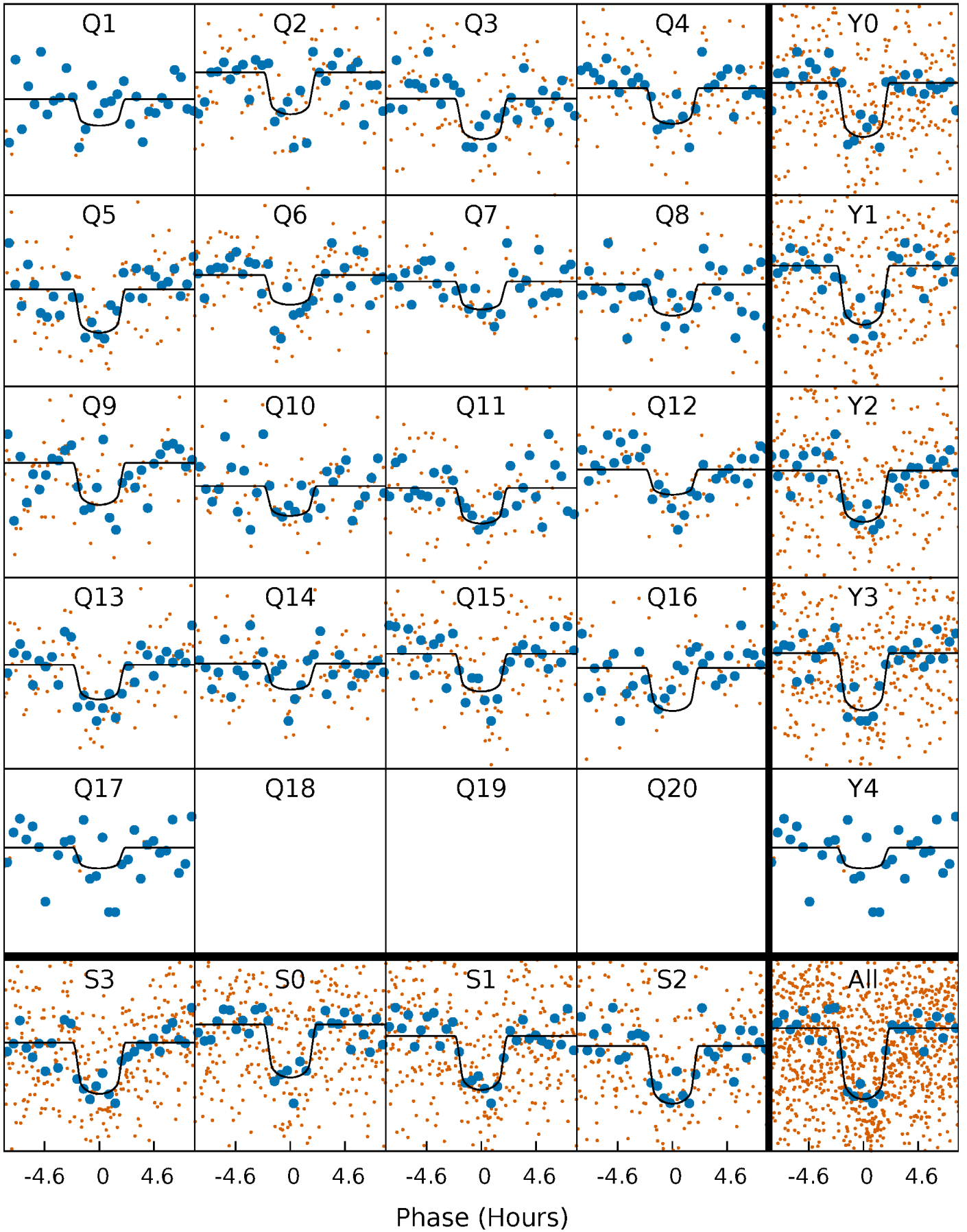
TCE 008554701-01   P= 31.174947 Days    $T_0=159.098440$  (BKJD)





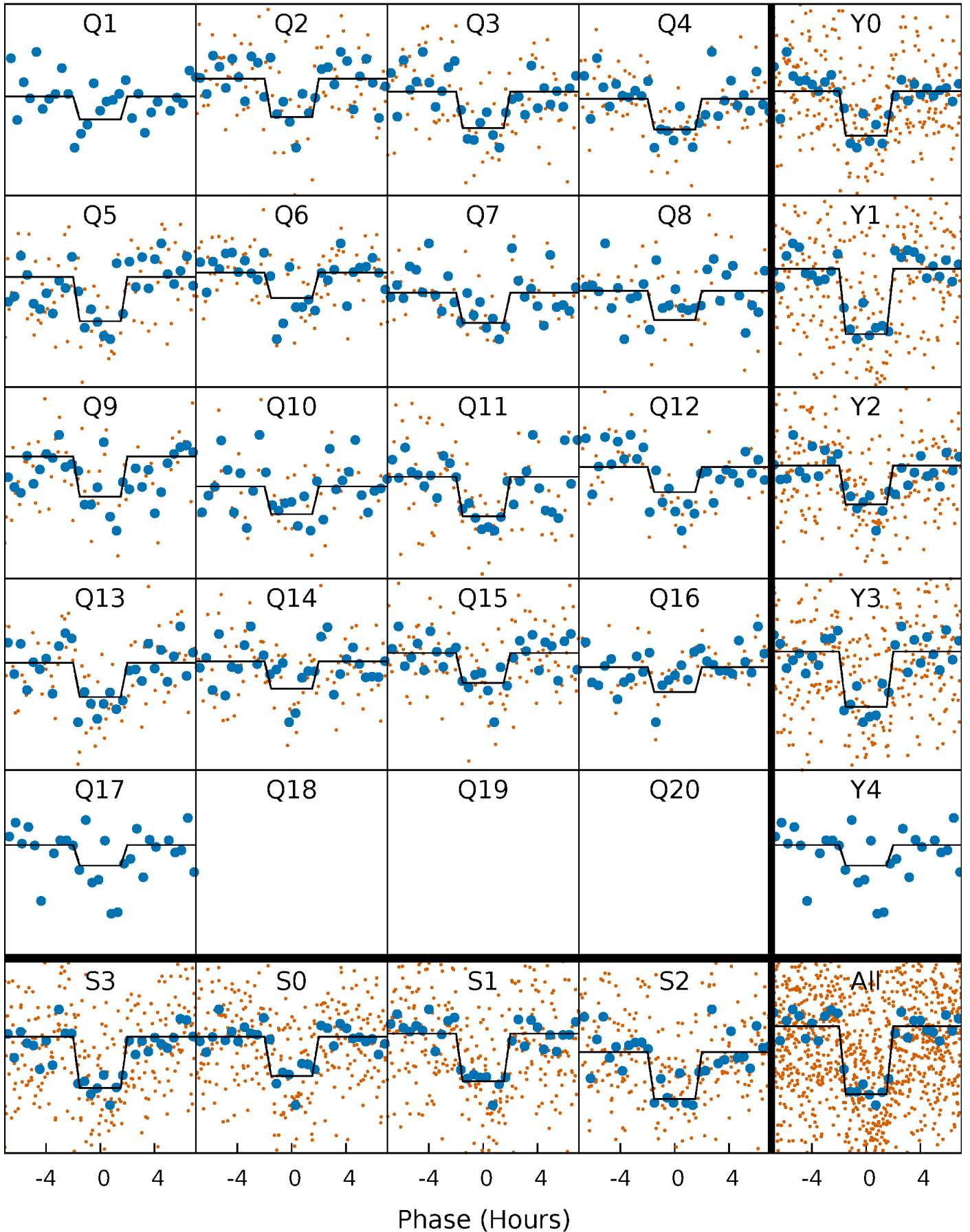
# DV Quarter-Phased Transit Curves

TCE 008554701-01 P= 31.174947 Days  $T_0=159.098440$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

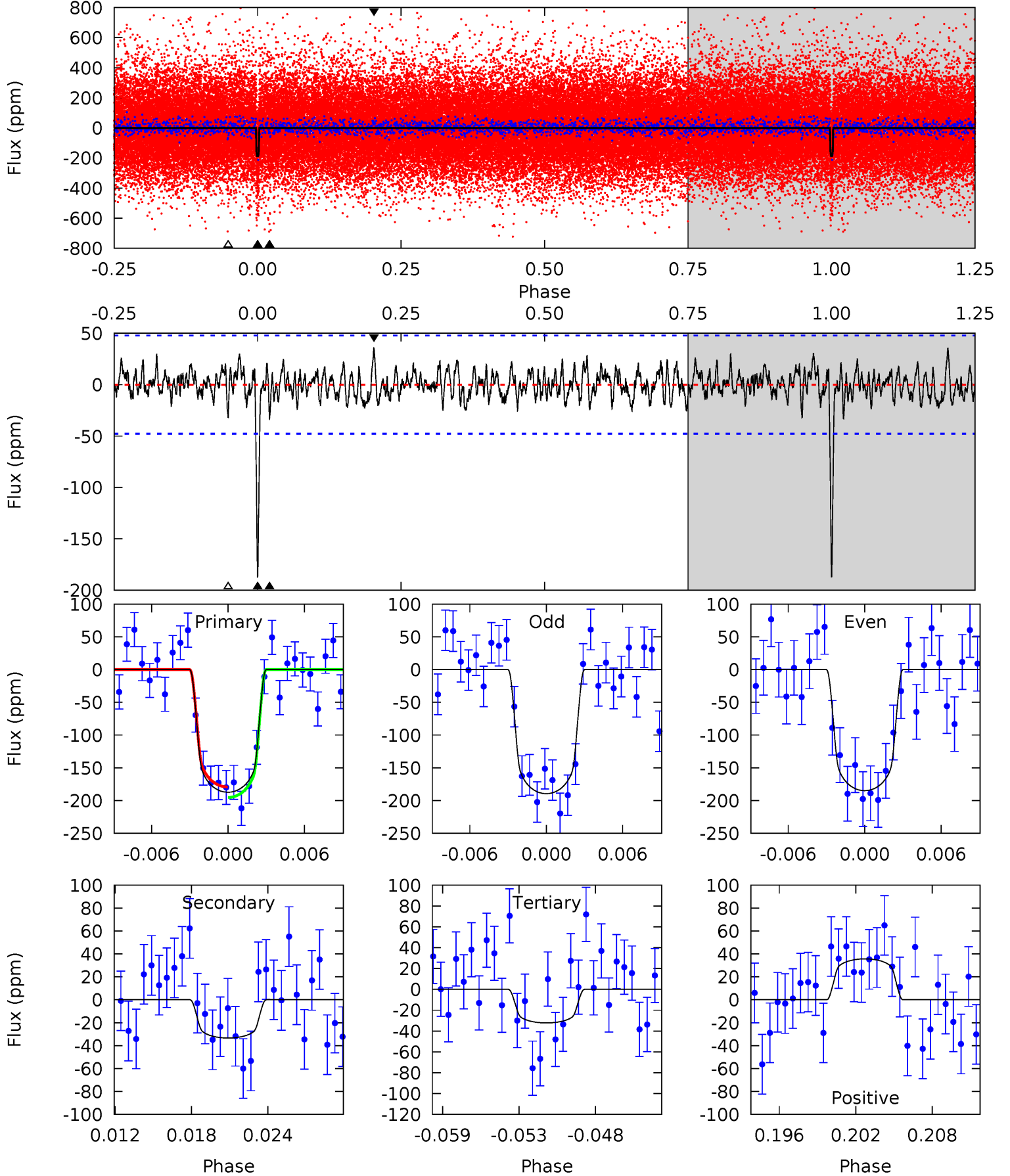
TCE 008554701-01 P= 31.174902 Days  $T_0=159.096957$  (BKJD)



# DV Model-Shift Uniqueness Test

008554701-01,  $P = 31.174947$  Days,  $E = 127.923493$  Days

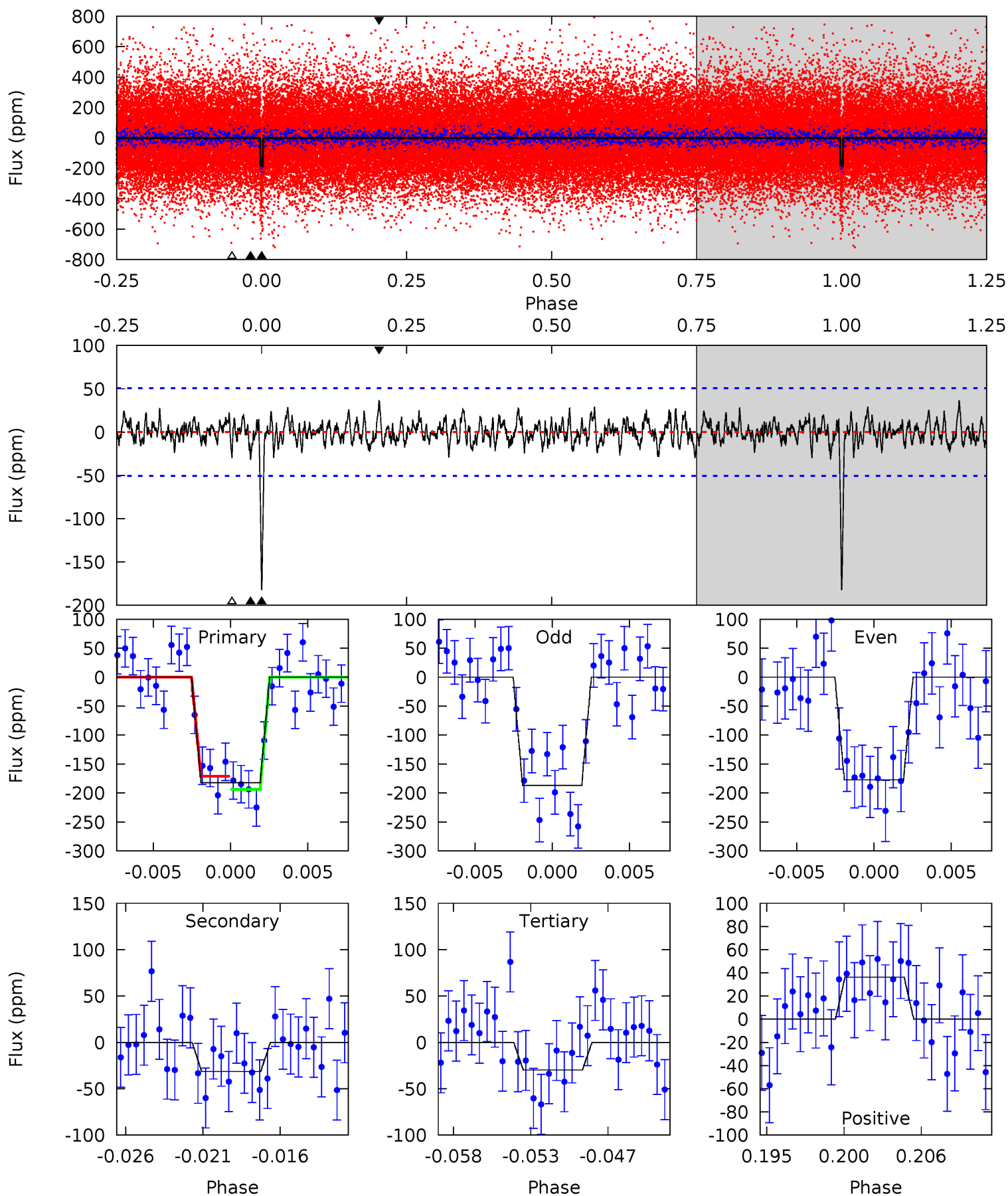
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	3.58	3.46	3.83	5.13	2.75	1.17	16.6	16.3	0.13	-0.24	0.25	1.01	0.16	0.86



# Alt Model-Shift Uniqueness Test

008554701-01, P = 31.174902 Days, E = 127.922055 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	3.19	3.03	3.69	5.15	2.79	1.08	15.5	14.8	0.17	-0.49	0.49	1.01	0.17	1.15



### Stellar Parameters For KIC 008554701

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6086^{+164}_{-182}$	$4.511^{+0.054}_{-0.216}$	$-0.260^{+0.300}_{-0.300}$	$0.921^{+0.288}_{-0.096}$	$1.003^{+0.129}_{-0.129}$	$1.808^{+0.385}_{-0.972}$
	+3%/-3%	+1%/-5%	+115%/-115%	+31%/-10%	+13%/-13%	+21%/-54%
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 008554701-01 / KOI 3315.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-33 \pm 9$	$1.53^{+0.54}_{-0.45}$	$839^{+57}_{-42}$	$4152^{+569}_{-438}$	$294^{+304}_{-142}$
Alt.	$-31 \pm 10$	$1.38^{+0.53}_{-0.43}$	$834^{+60}_{-37}$	$4180^{+736}_{-490}$	$312^{+404}_{-162}$

$T_{\text{max}}$  = 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

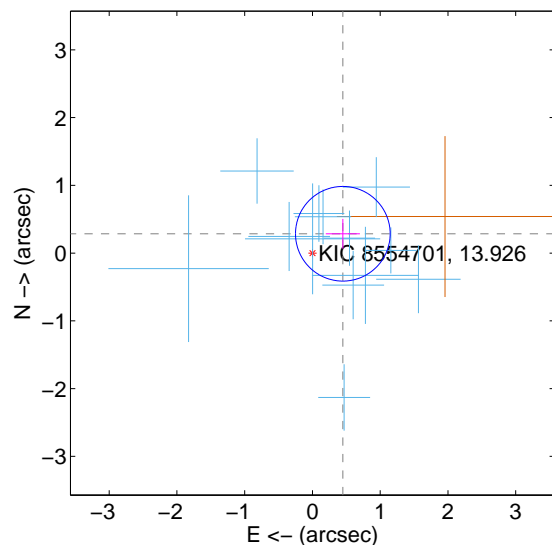
Supplemental centroid analysis for 008554701-01. Kepler magnitude: 13.93. Transit SNR 14.84

There are 13 quarters with good PRF difference image offsets

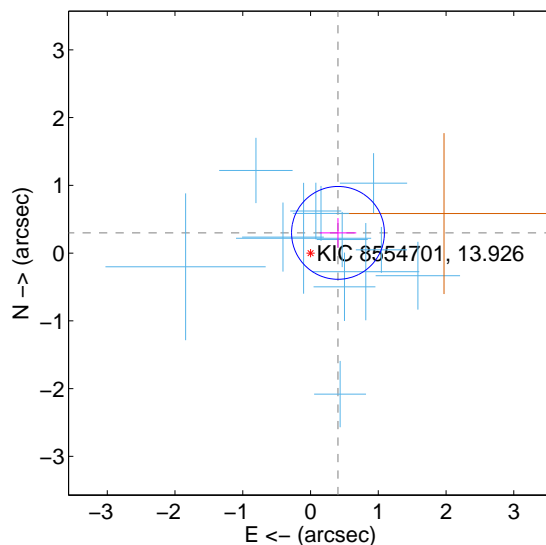
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.532 \pm 0.233$	2.28	$-0.449 \pm 0.252$	$0.285 \pm 0.220$
PRF-fit source offset from KIC position	$0.503 \pm 0.228$	2.20	$-0.405 \pm 0.269$	$0.298 \pm 0.218$
photometric centroid source offset	$0.14 \pm 0.95$	0.15	$-0.14 \pm 0.95$	$0.03 \pm 0.85$

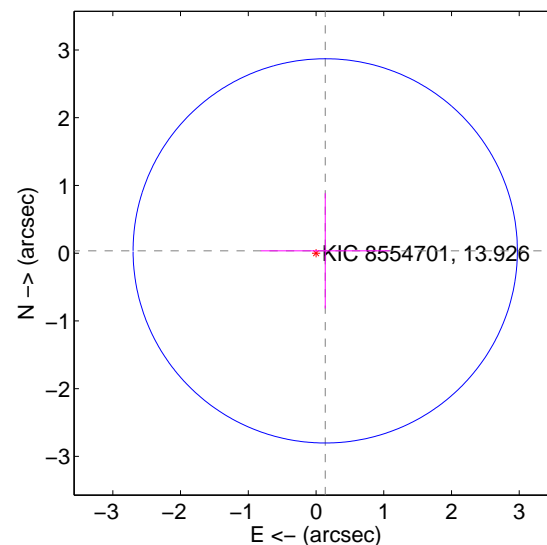
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

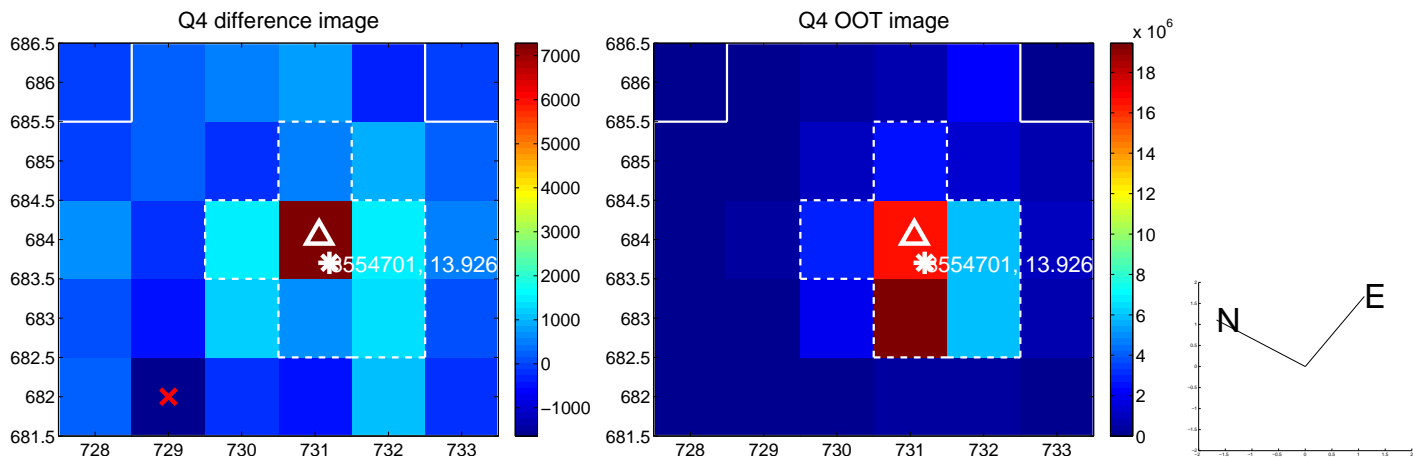
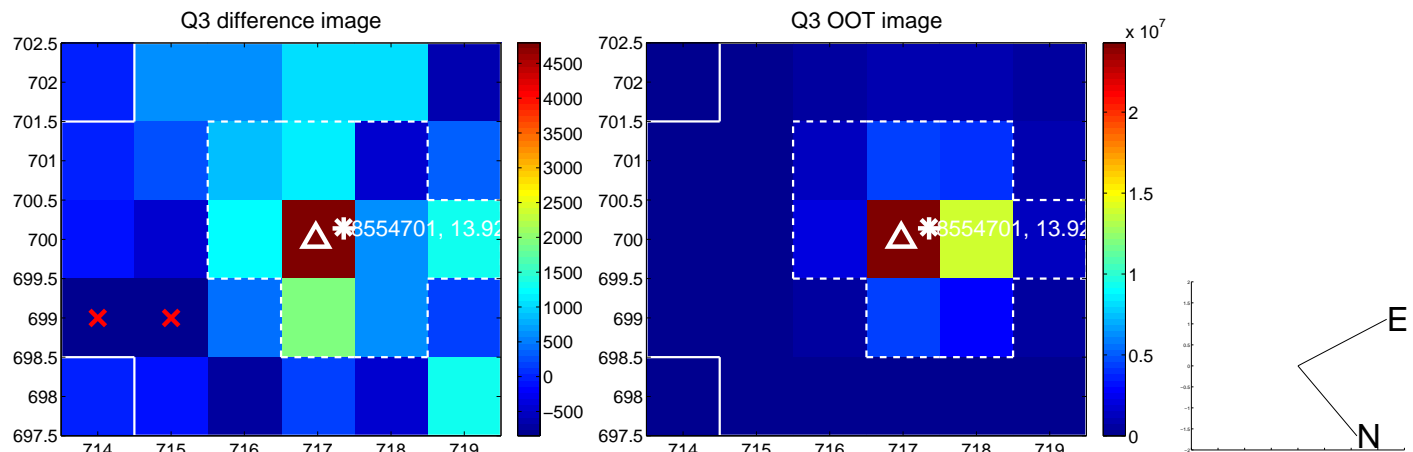
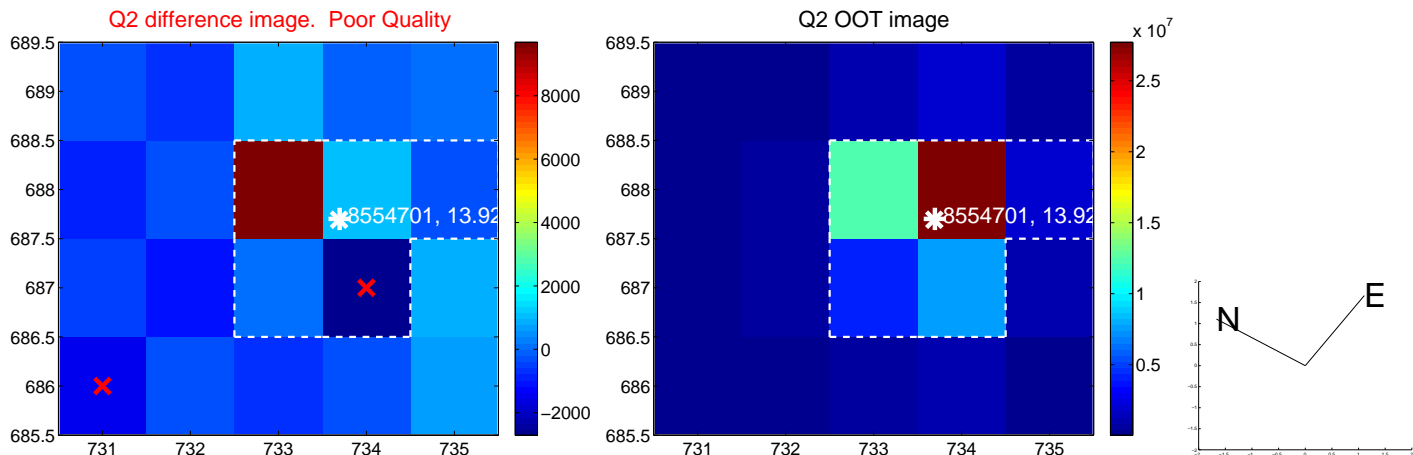
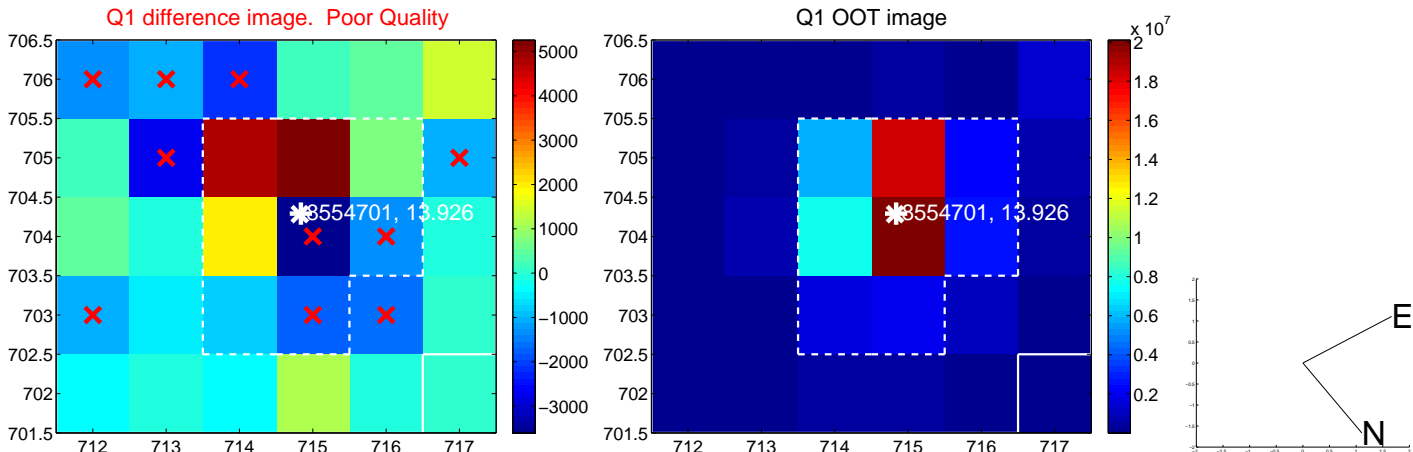


offset from photometric centroids

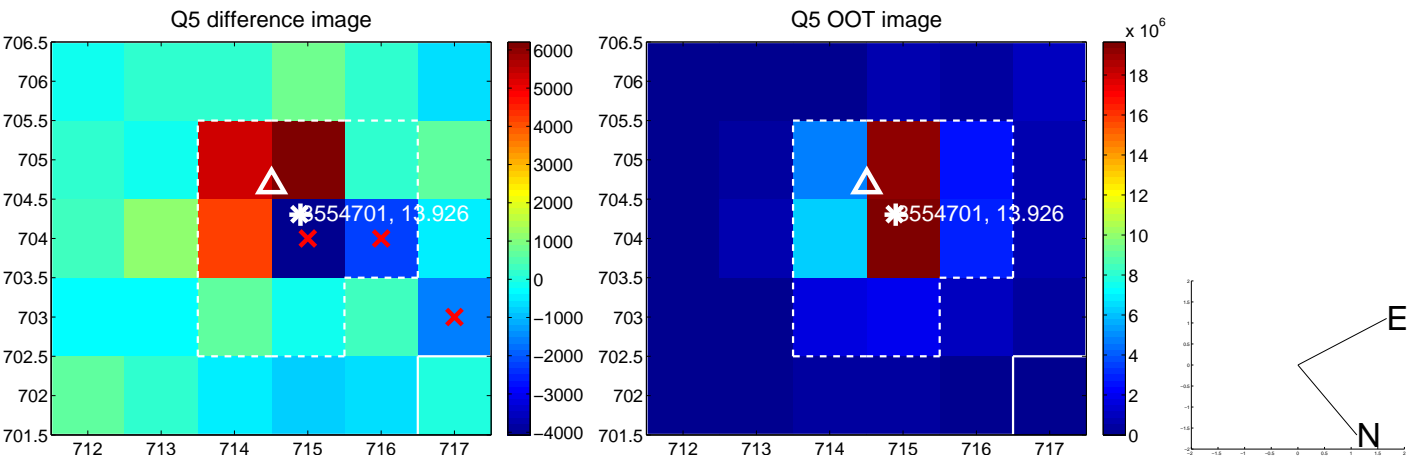


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

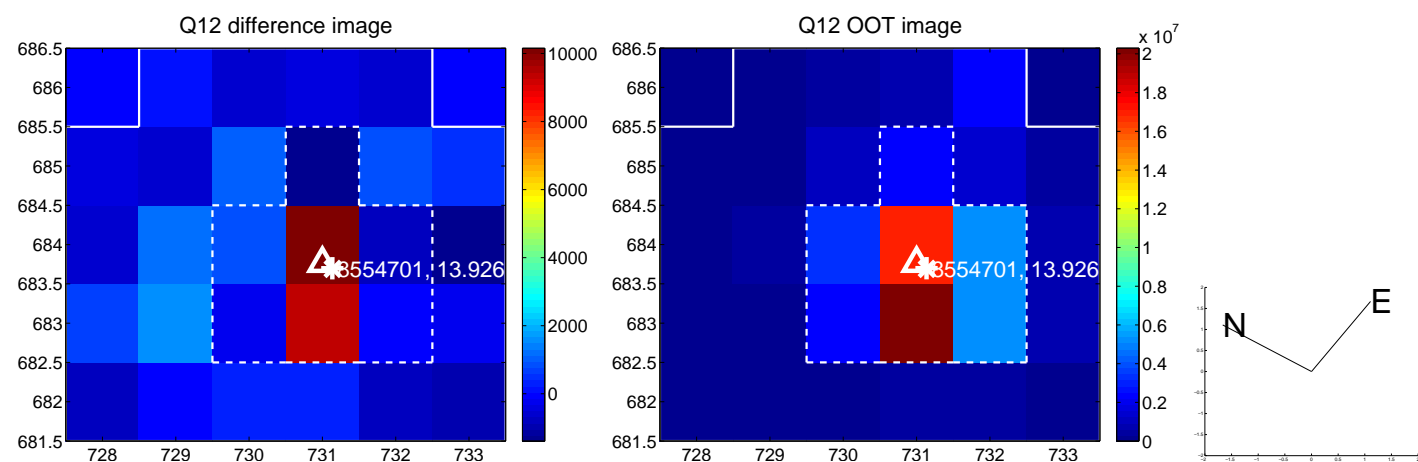
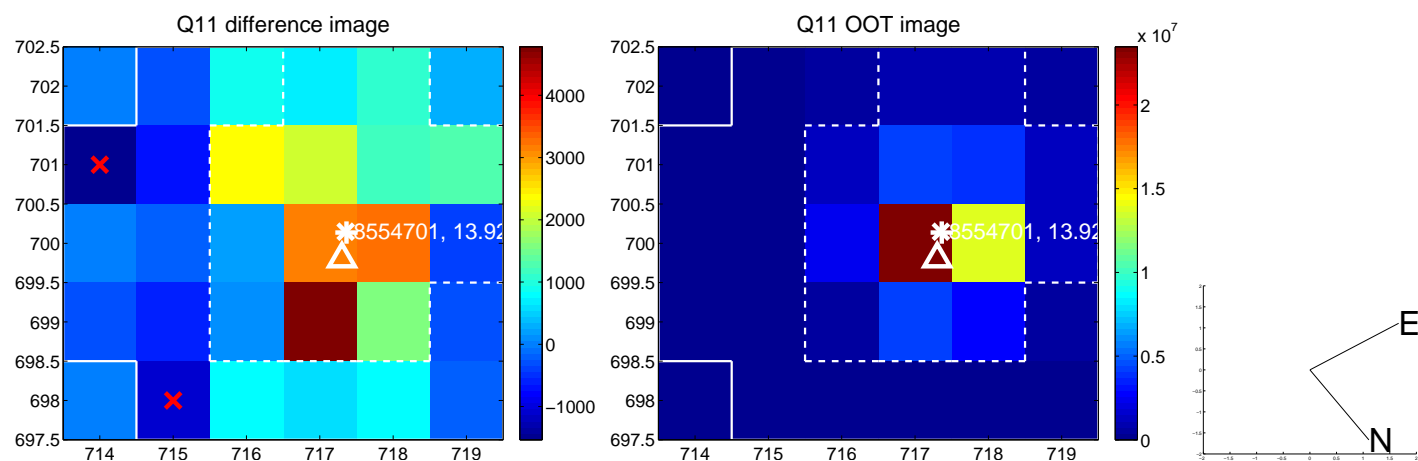
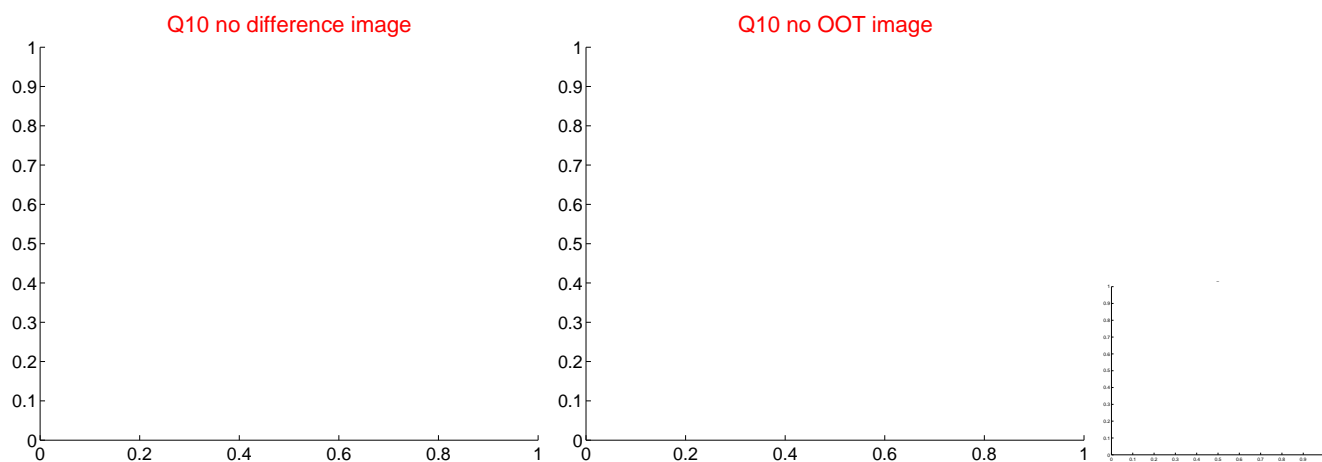
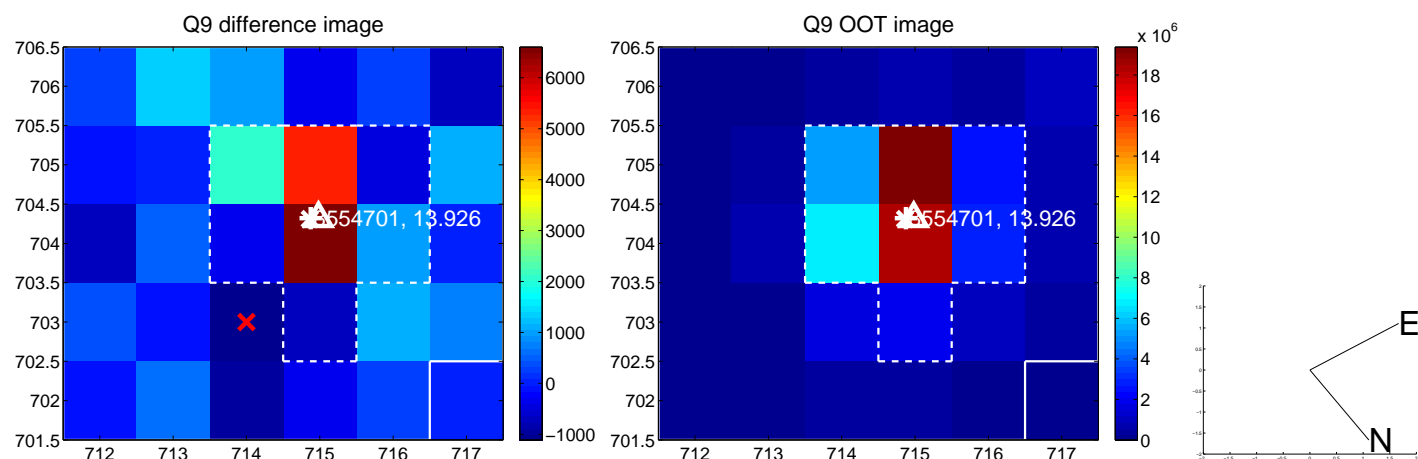
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



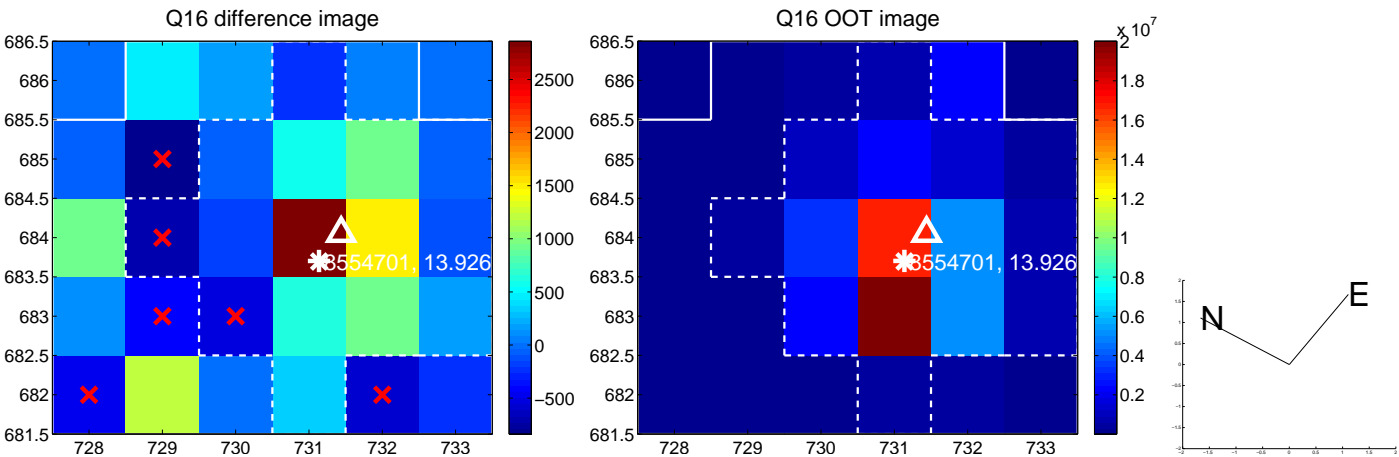
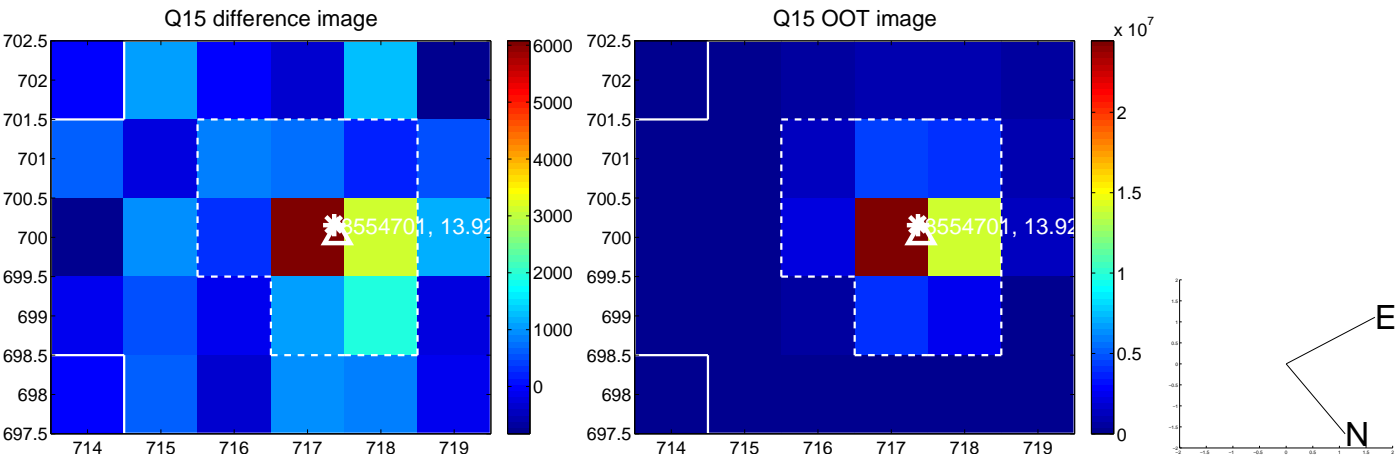
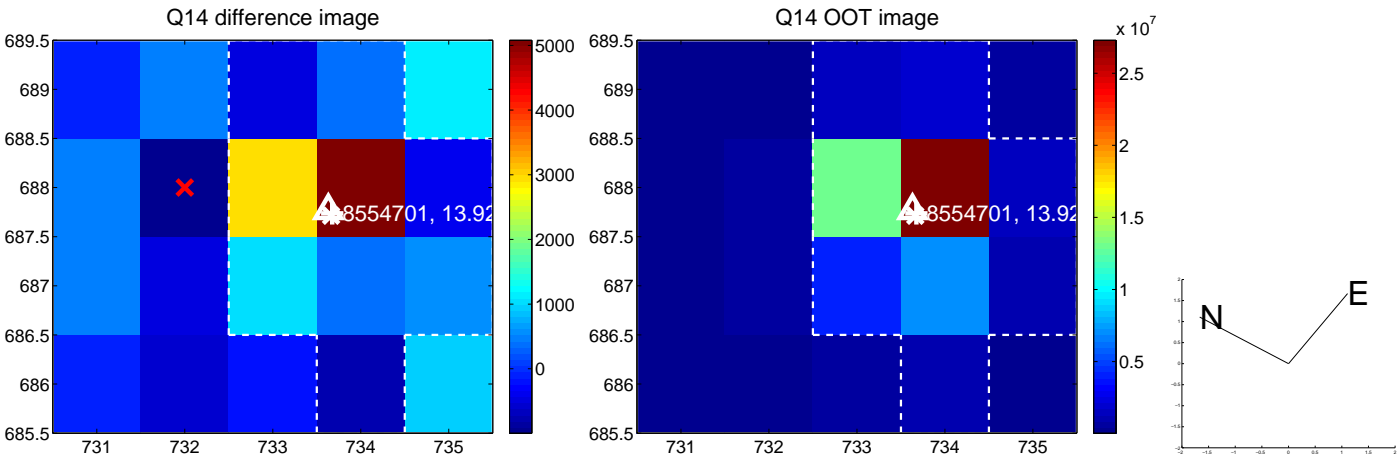
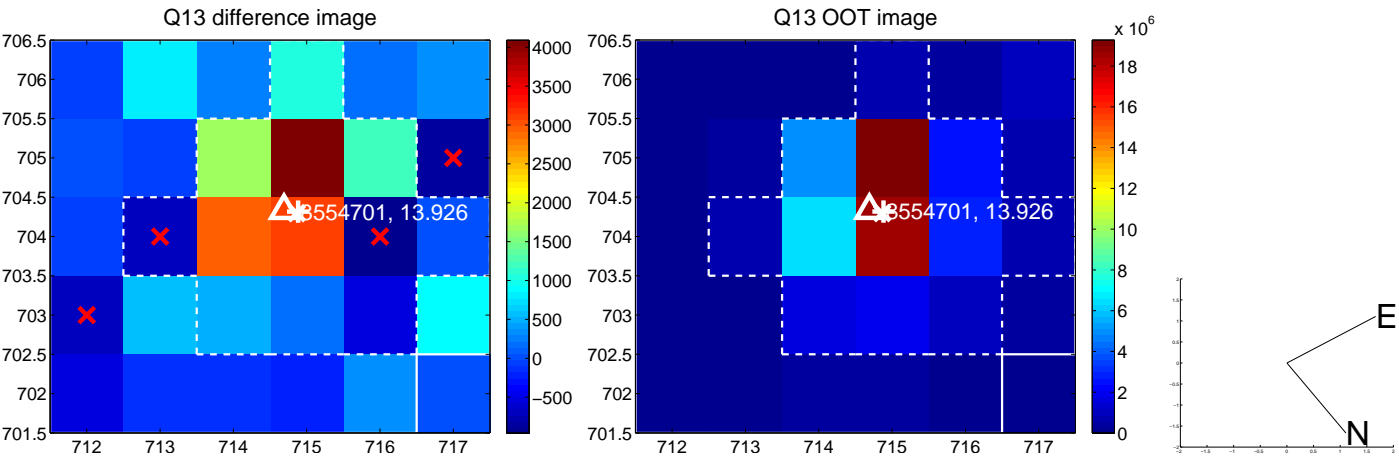
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

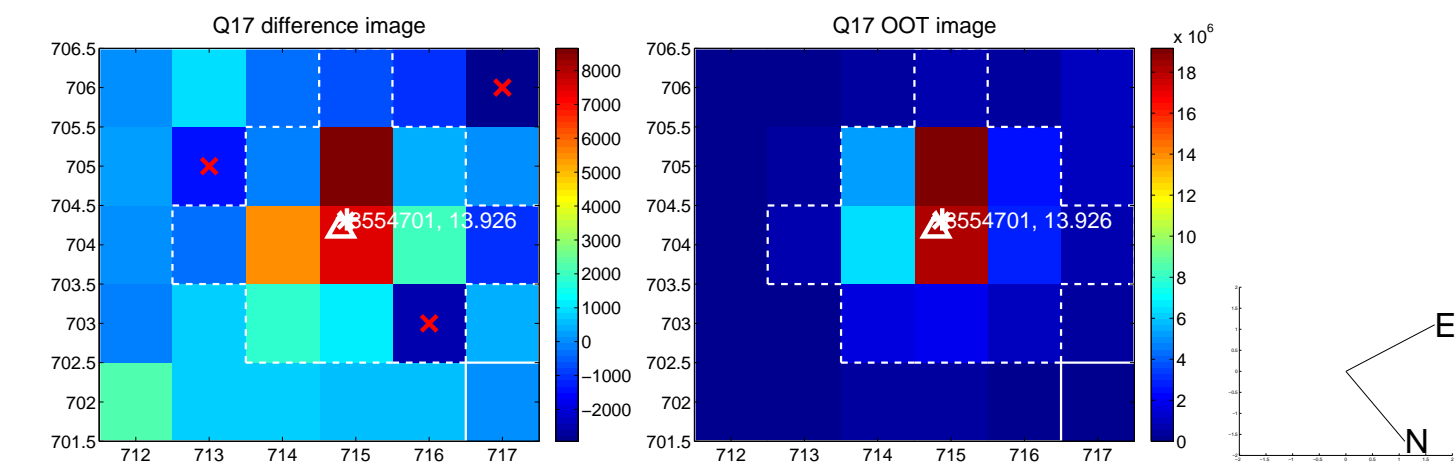


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

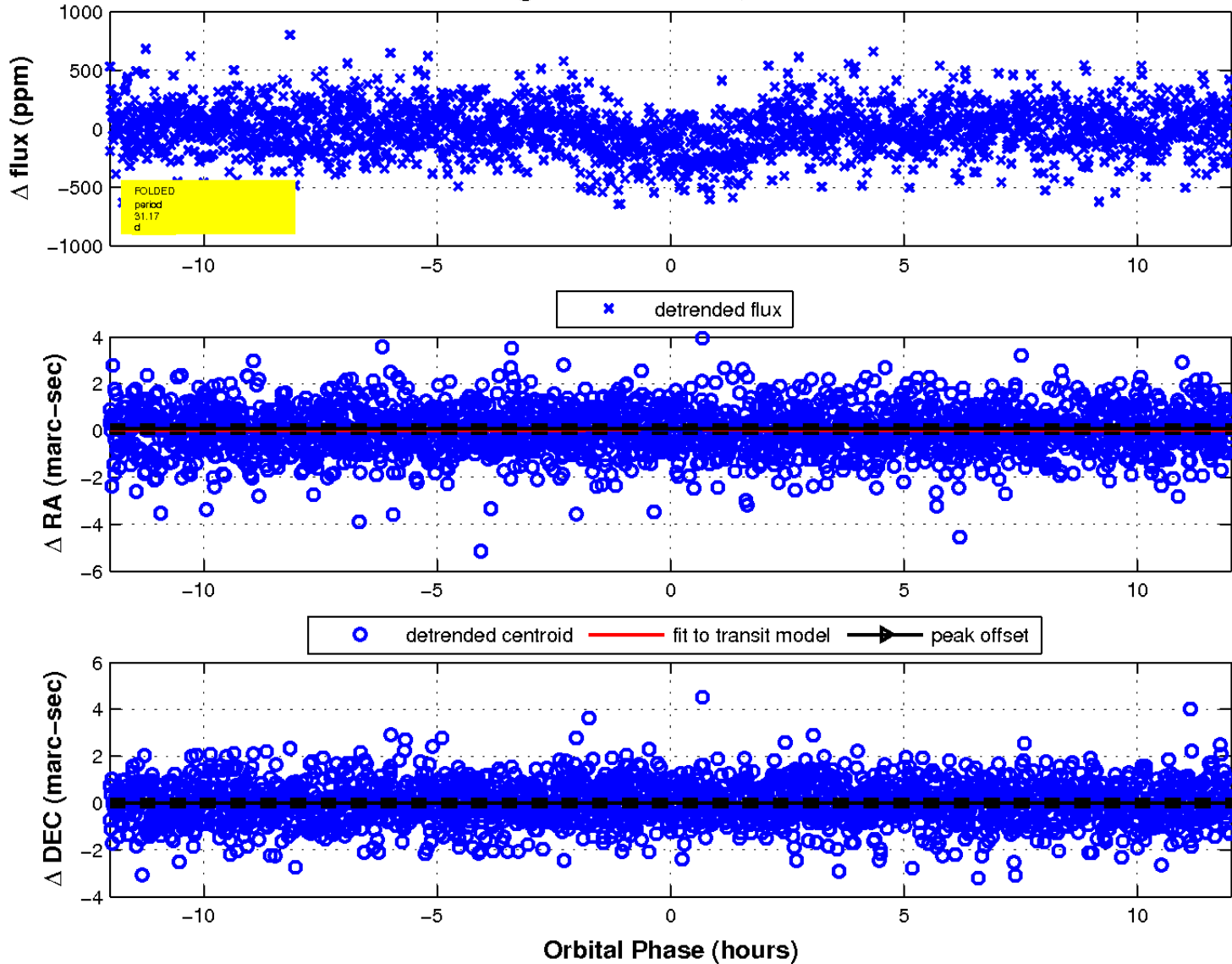




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



# UKIRT Image

Declination

