

# KIC 008677057

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008677057-01	OBS	7903.01	0.694611	131.932720	96.9	1.095	7.3	9.1	0.66	4612	0.63	949.22

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008677057-01	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.

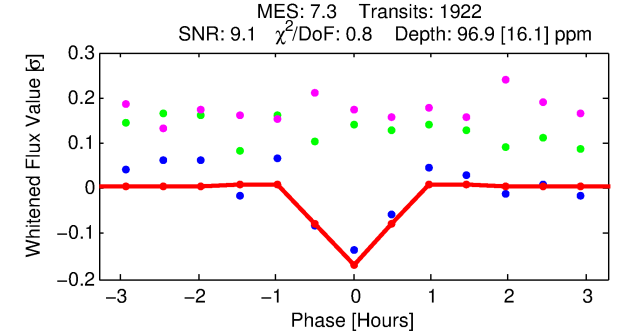
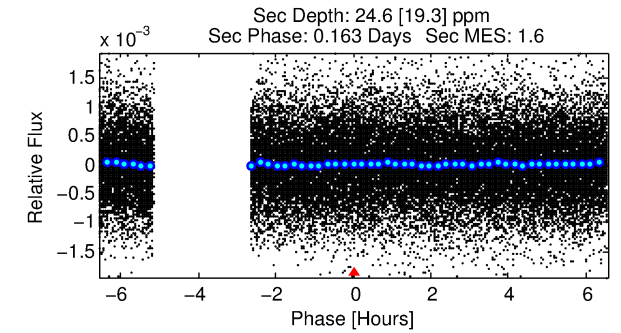
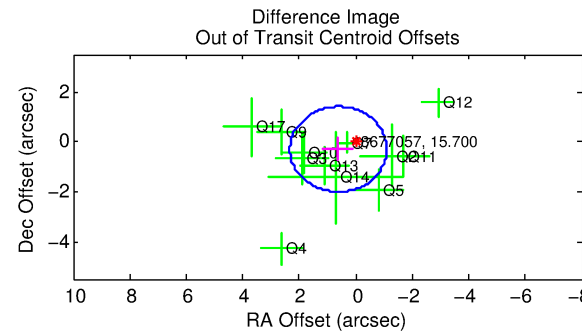
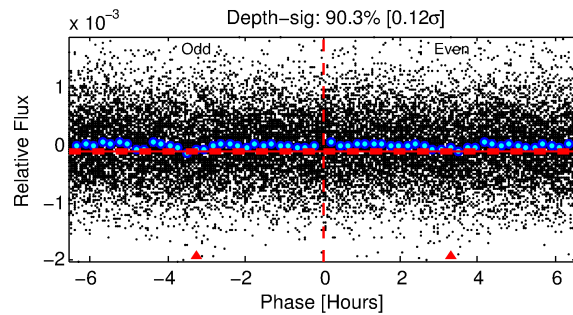
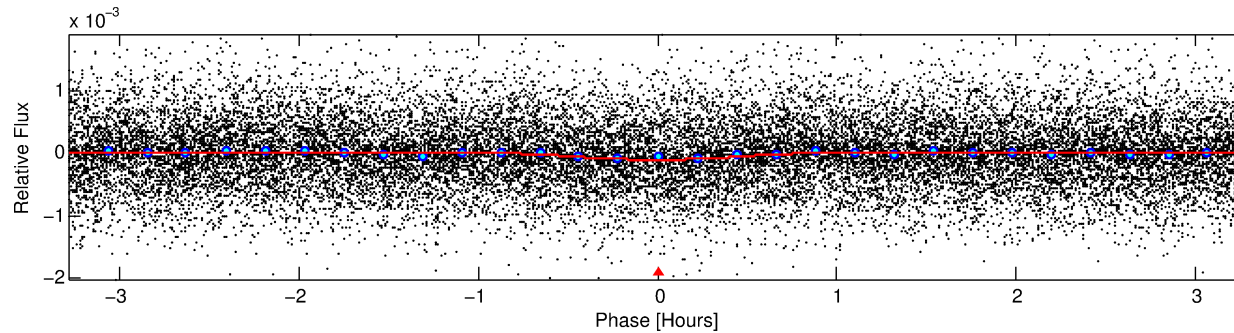
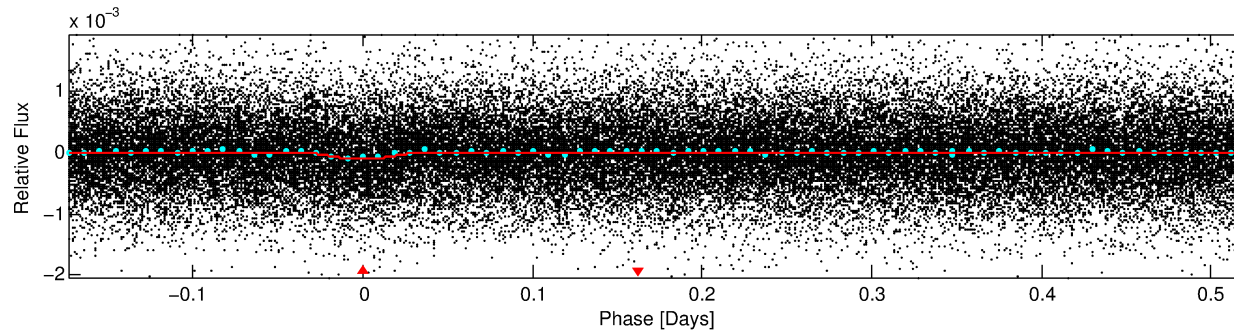
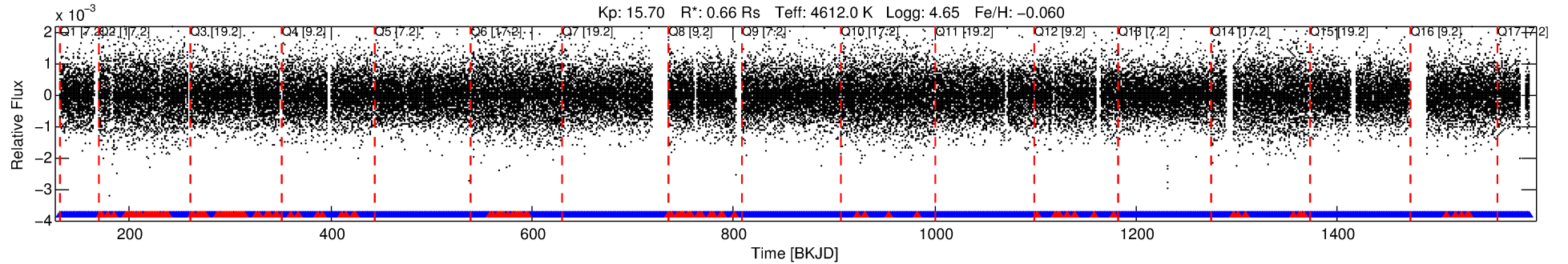
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008677057-01

No Significant Match Found

# DV One-Page Summary

KIC: 8677057 Candidate: 1 of 1 Period: 0.695 d



## DV Fit Results:

Period = 0.69461 [0.00001] d  
Epoch = 131.9327 [0.0020] BKJD  
Rp/R\* = 0.0087 [0.0157]  
a/R\* = 4.90 [25.72]  
b = 0.10 [54.90]  
Seff = 949.22 [149.64]  
Teq = 1415 [56] K  
Rp = 0.63 [1.13] Re  
a = 0.0137 [0.0010] AU  
Ag = 6.35 [23.29] [0.23 $\sigma$ ]  
Teffp = 3474 [3185] K [0.65 $\sigma$ ]

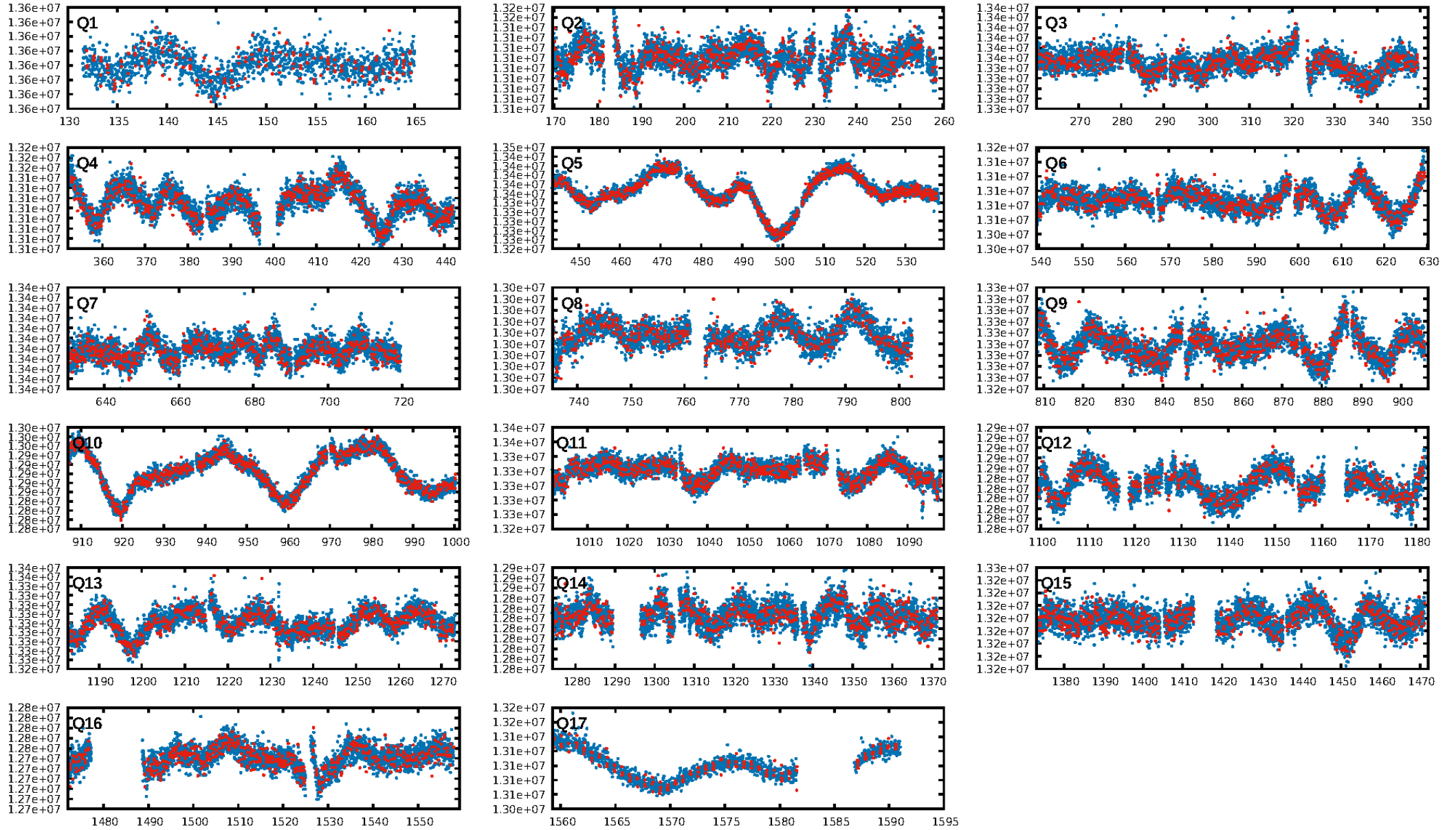
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.47e-13  
RollingBand-fgt: 0.91 [1679/1835]  
GhostDiagnostic-chr: 5.72  
Centroid-sig: 97.3%  
Centroid-so: 0.489 arcsec [0.31 $\sigma$ ]  
OotOffset-rm: 0.691 arcsec [1.21 $\sigma$ ]  
KicOffset-rm: 0.584 arcsec [1.02 $\sigma$ ]  
OotOffset-st: 3/3/2/4 [12]  
KicOffset-st: 3/3/2/4 [12]  
DiffImageQuality-fgm: 0.25 [3/12]  
DiffImageOverlap-fno: 1.00 [17/17]

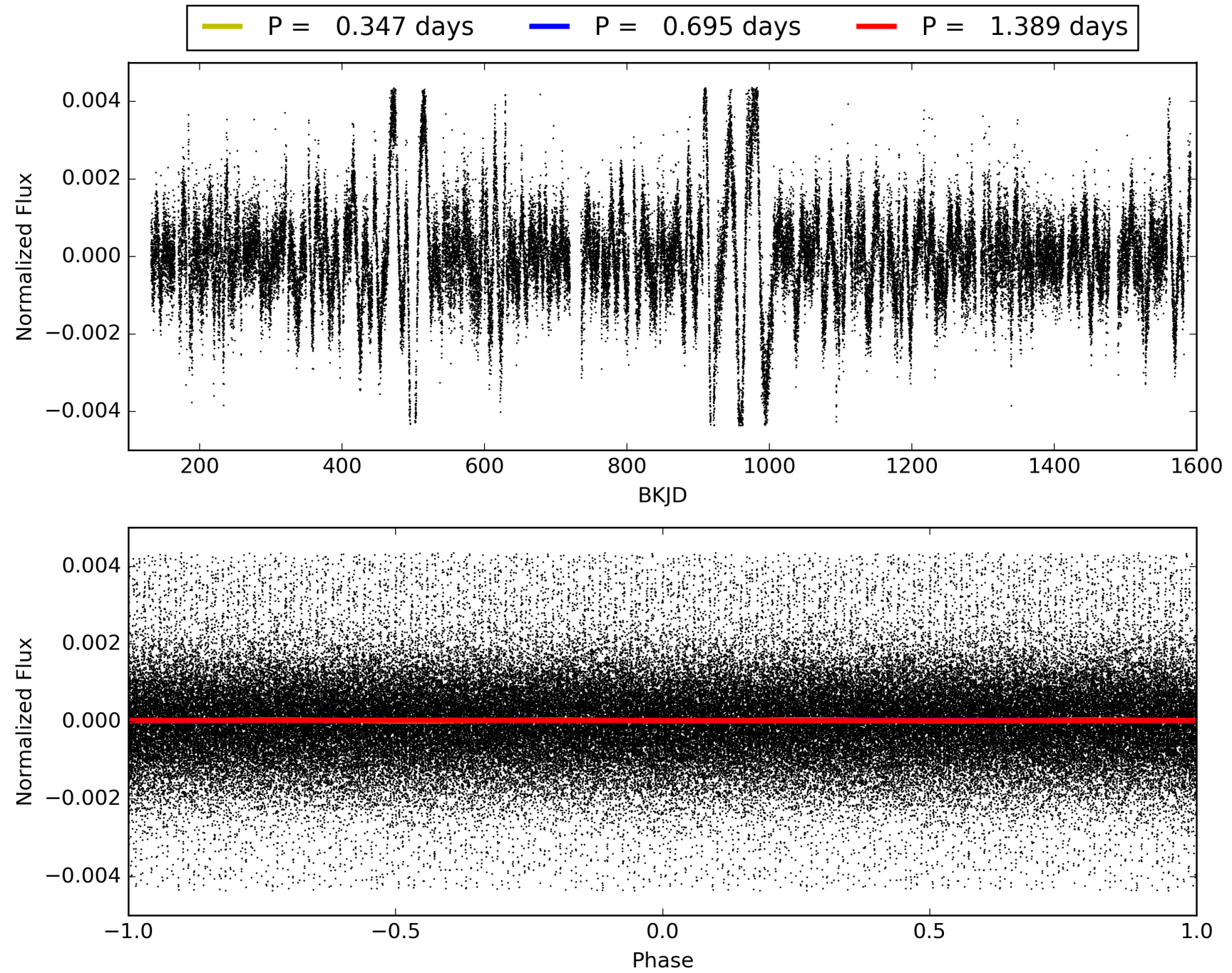
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:10:05 Z

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

# TCE 008677057-01, PDC Light Curves



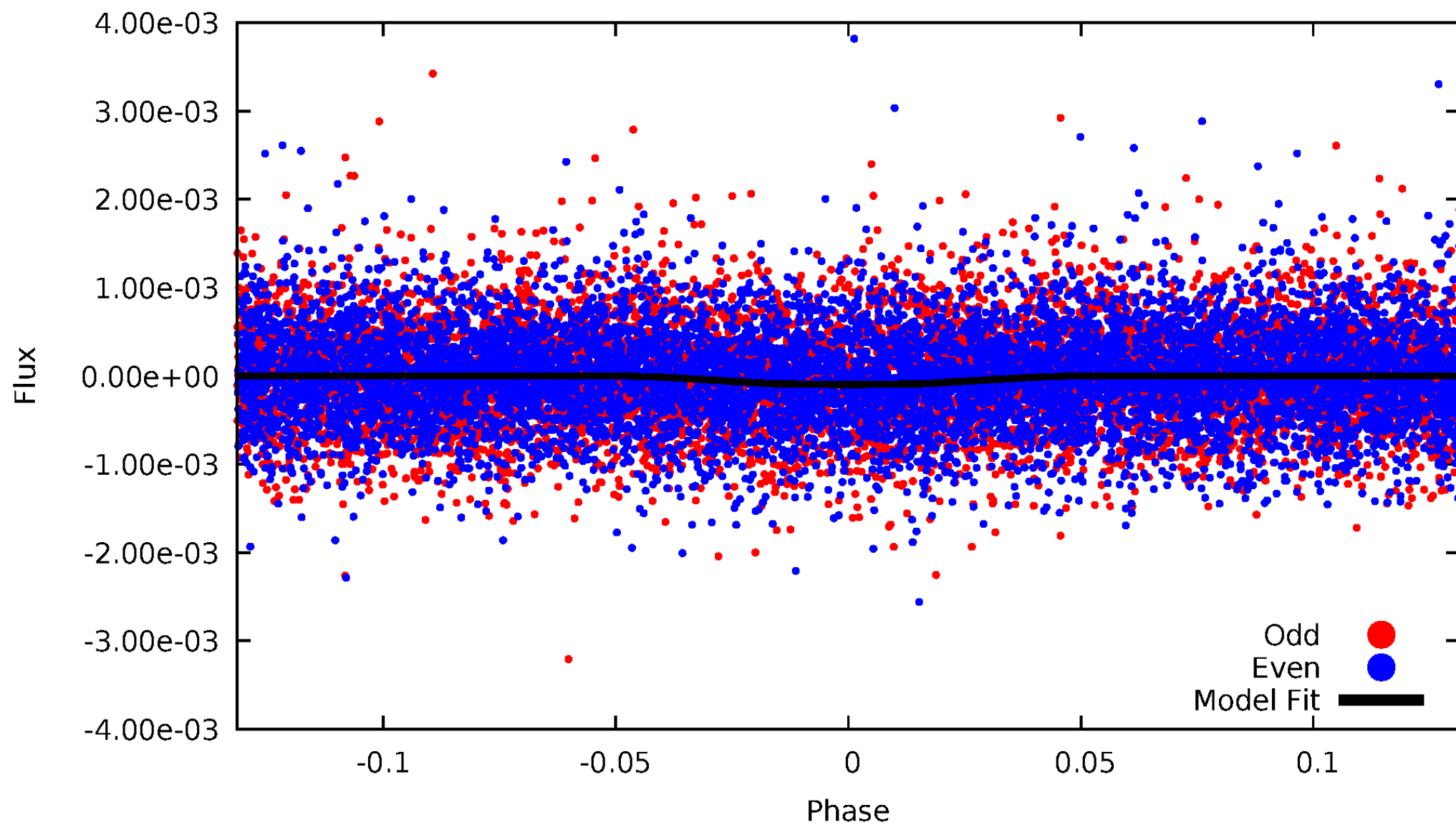
TCE 008677057-01





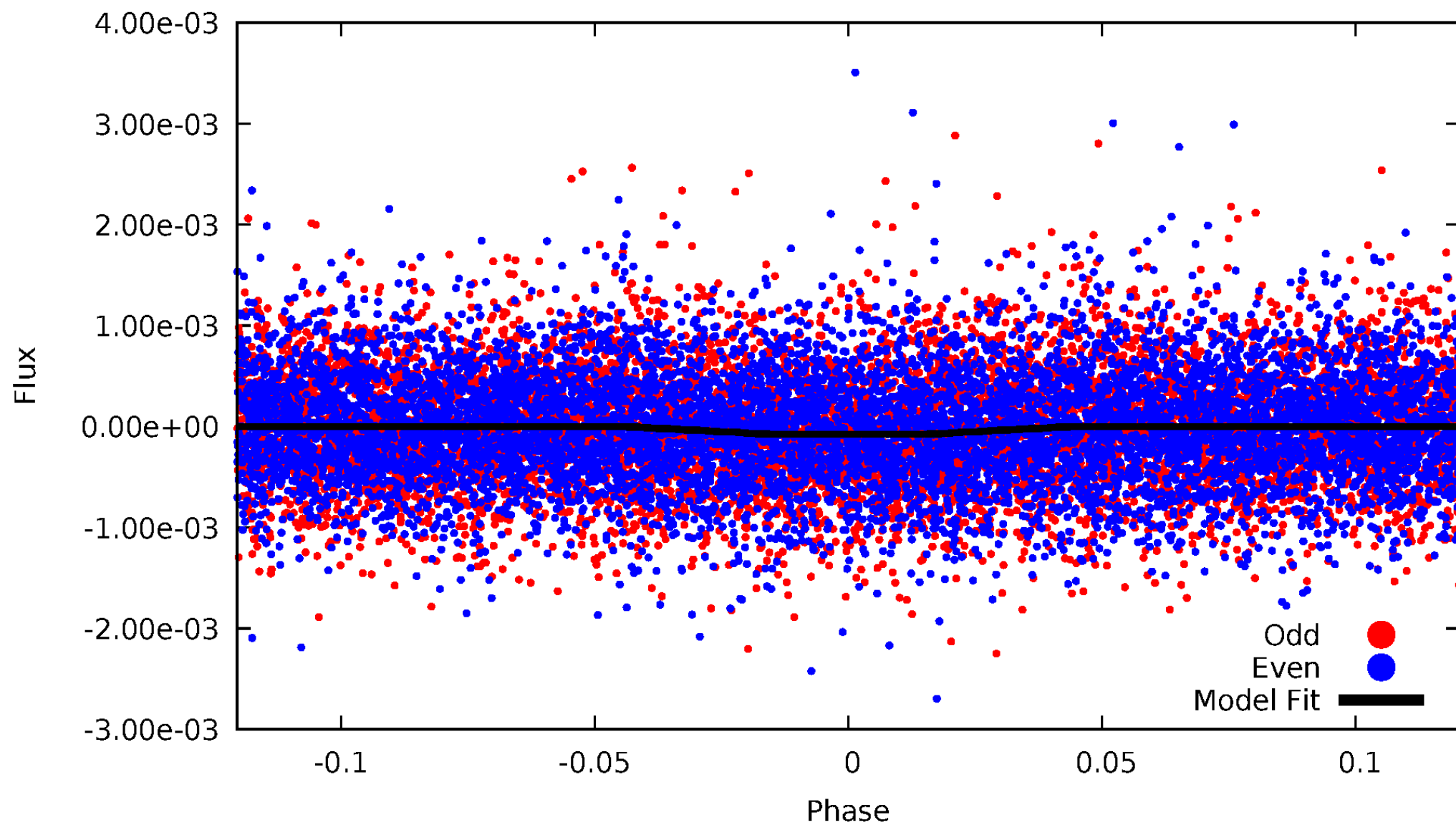
# DV Odd/Even

TCE 008677057-01

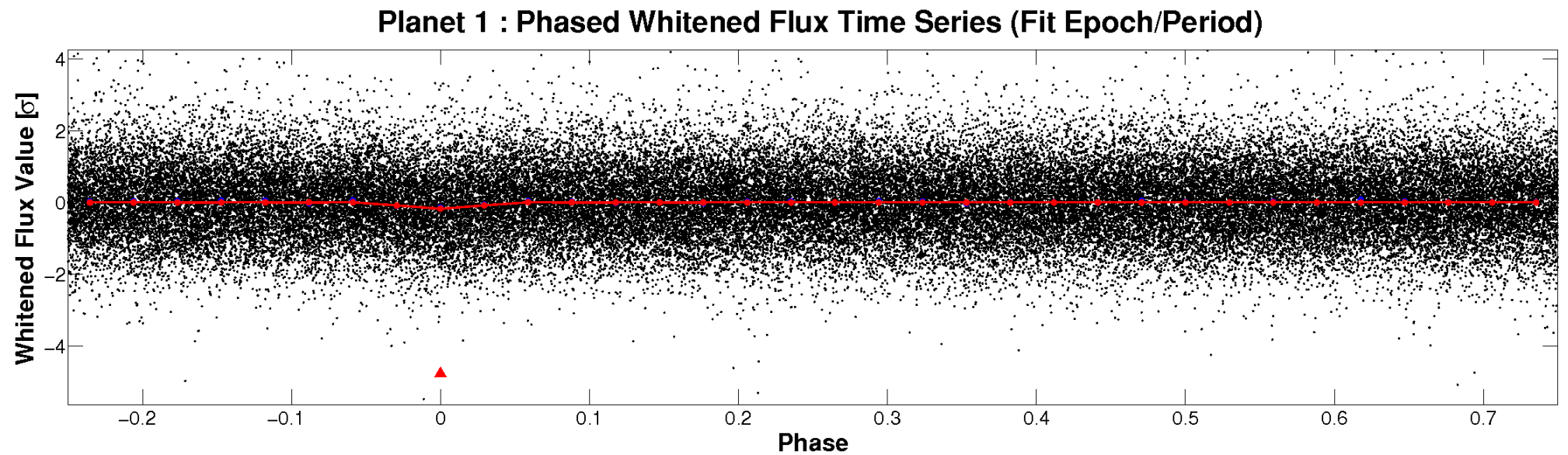
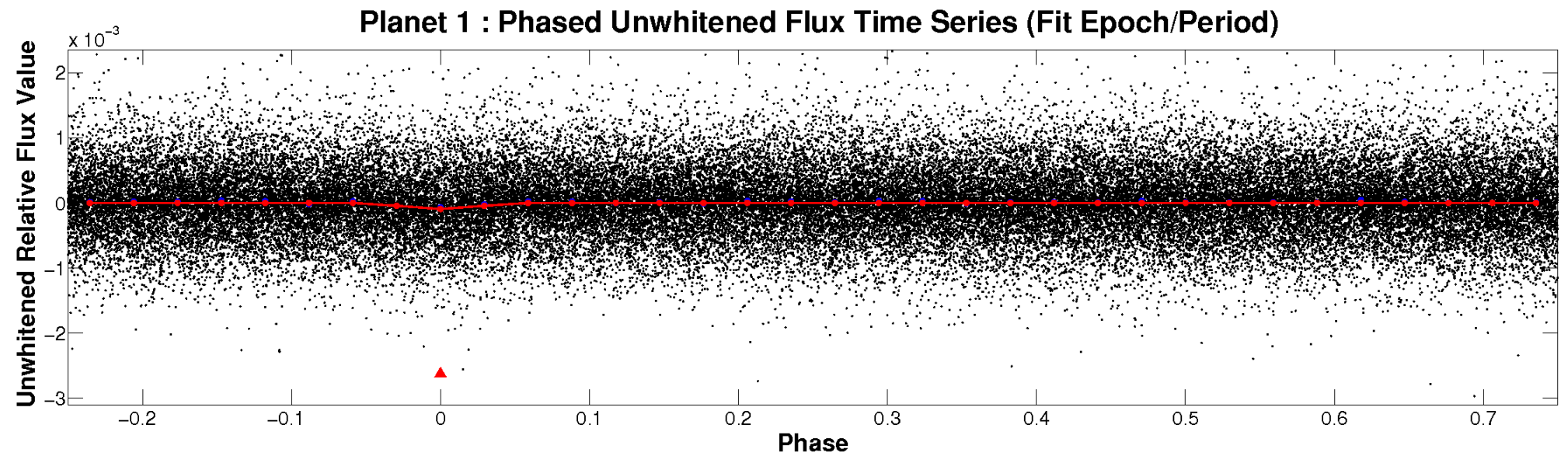


# ALT Odd/Even

TCE 008677057-01

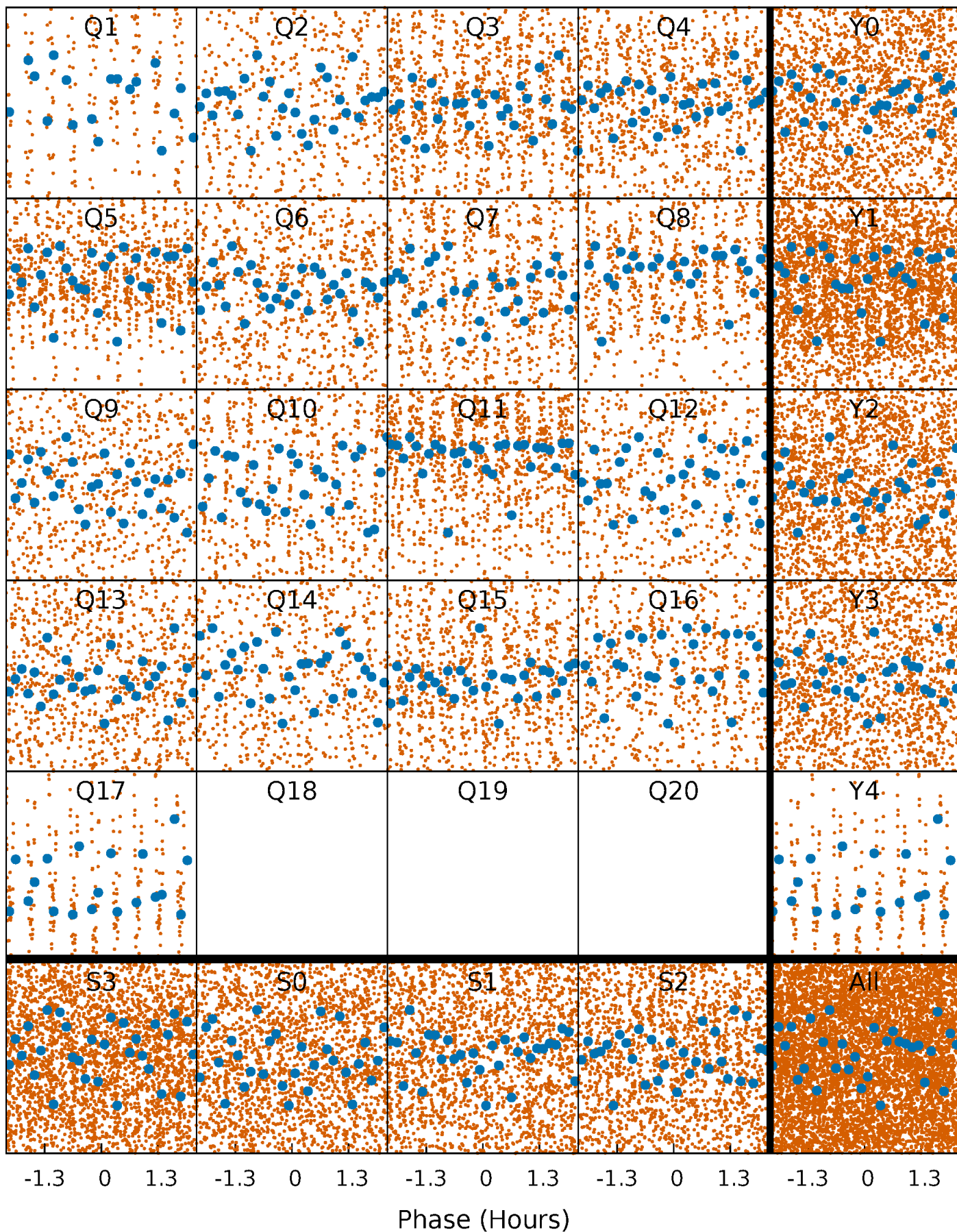


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

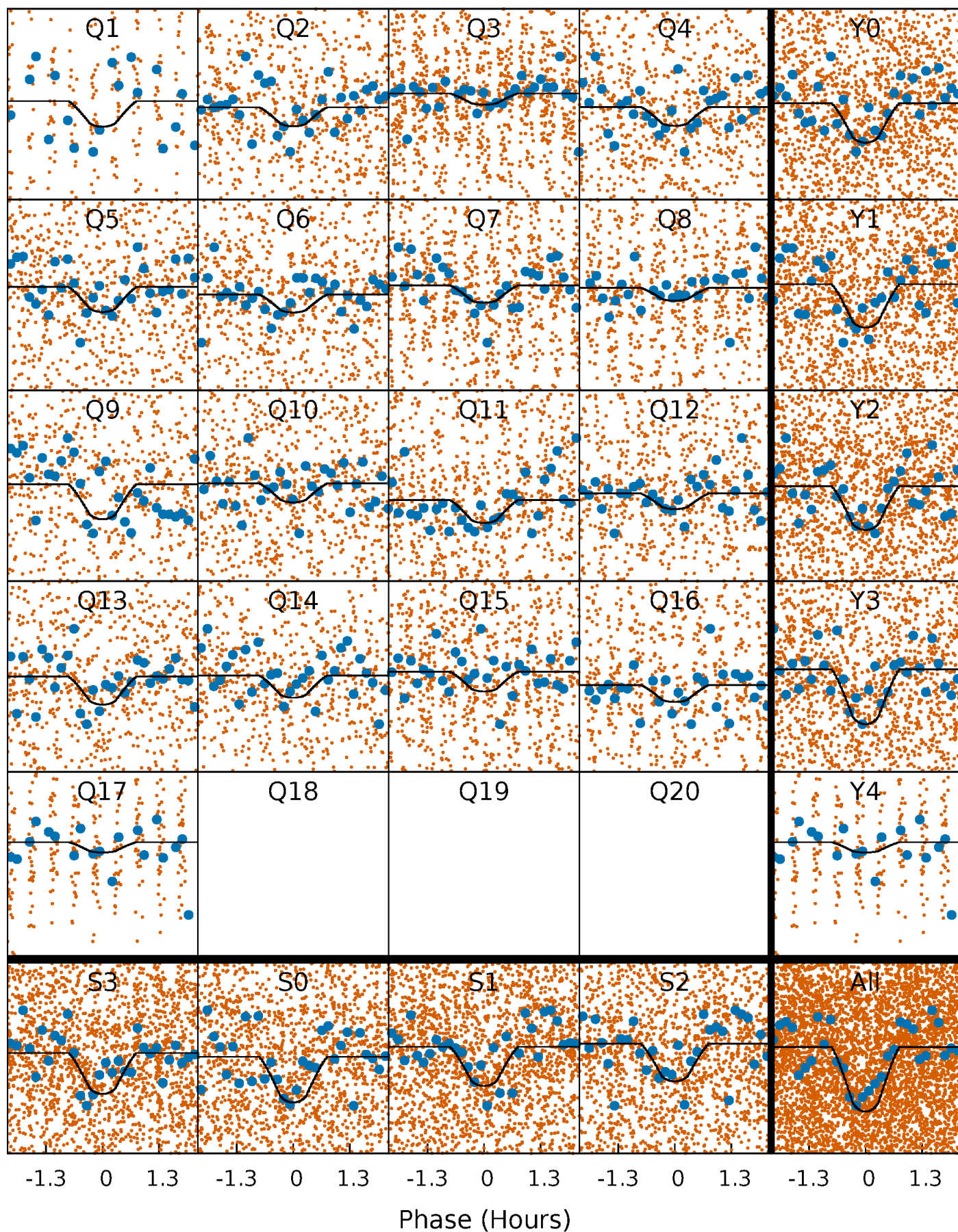
TCE 008677057-01 P= 0.694611 Days  $T_0=131.932720$  (BKJD)





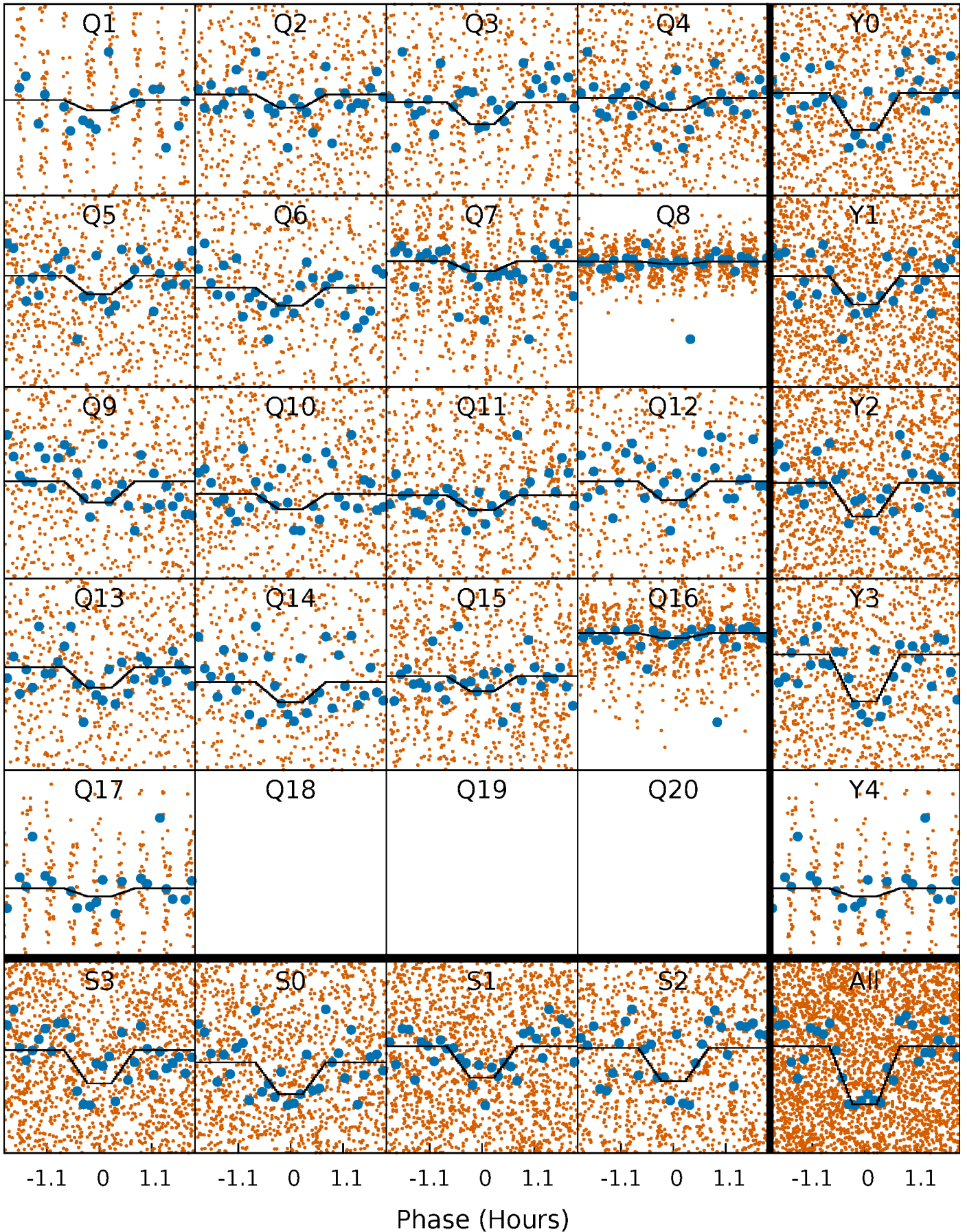
# DV Quarter-Phased Transit Curves

TCE 008677057-01 P= 0.694611 Days  $T_0=131.932720$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

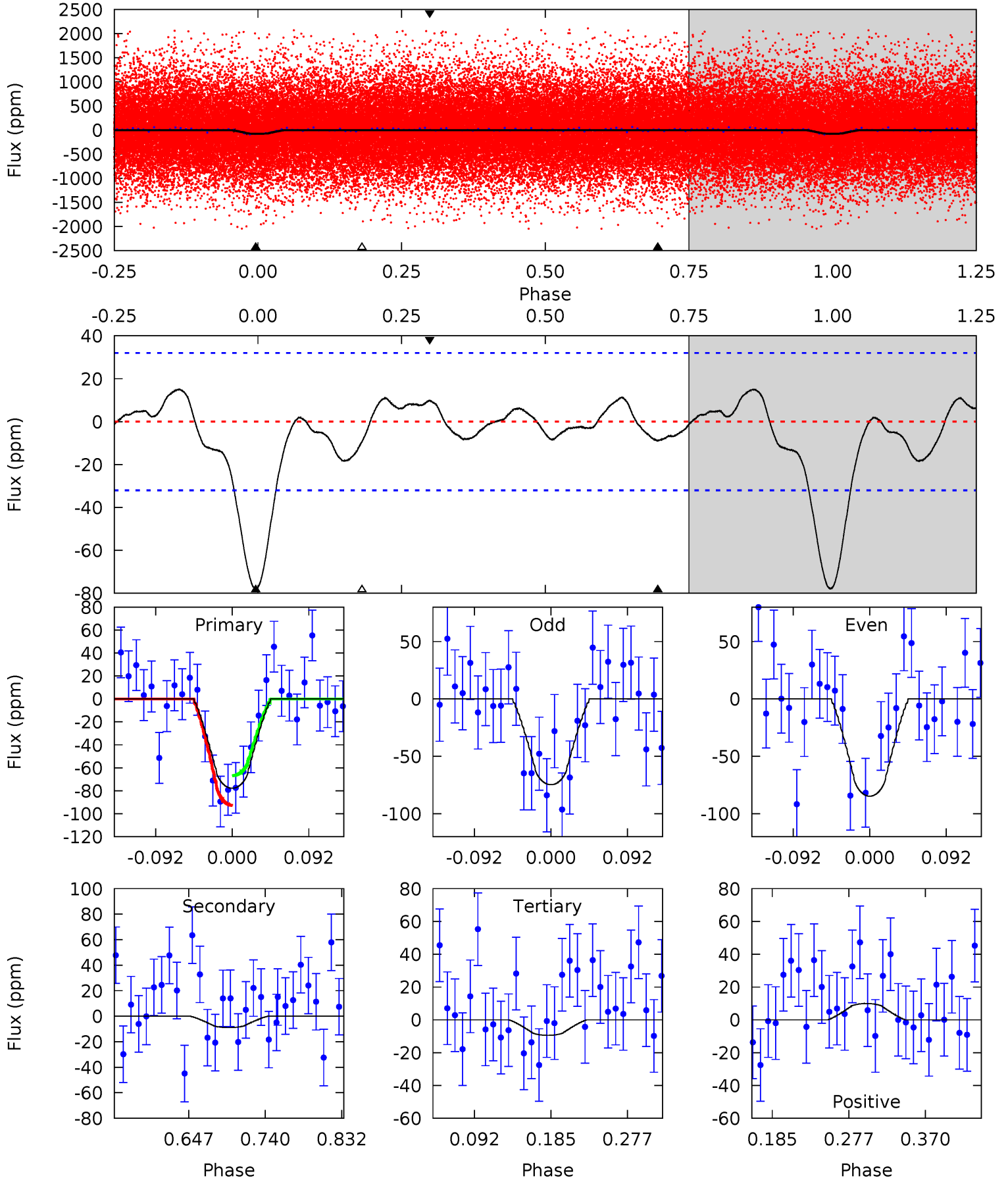
TCE 008677057-01 P= 0.694609 Days  $T_0=131.932803$  (BKJD)



# DV Model-Shift Uniqueness Test

008677057-01, P = 0.694611 Days, E = 131.238109 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
11.1	1.28	1.35	1.43	4.58	1.68	1.11	9.78	9.71	-0.07	-0.15	0.72	0.77	0.16	1.86

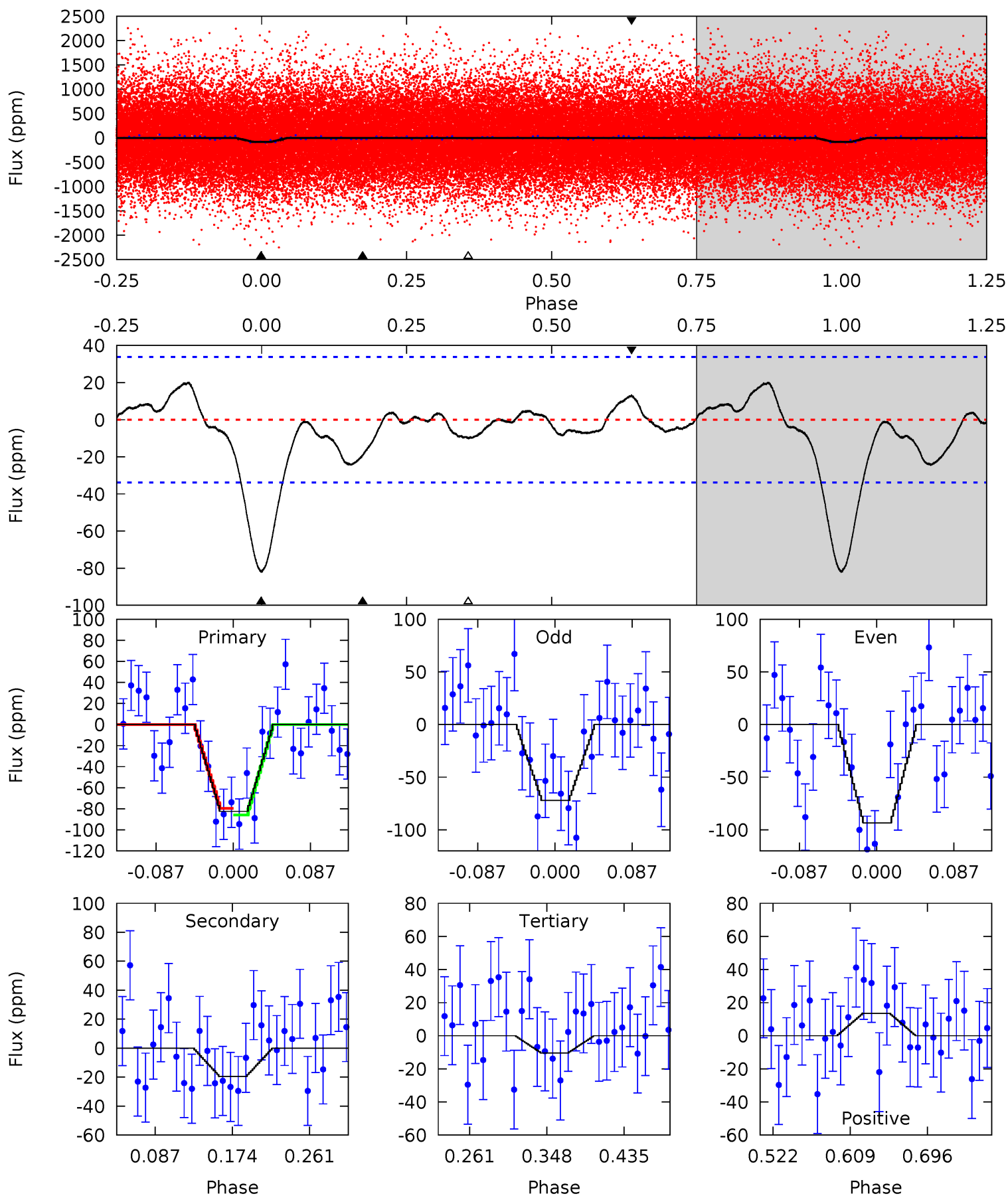




# Alt Model-Shift Uniqueness Test

008677057-01, P = 0.694609 Days, E = 131.238194 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
11.2	2.65	1.41	1.84	4.59	1.71	0.97	9.79	9.36	1.23	0.81	1.44	0.89	0.20	0.43





### Stellar Parameters For KIC 008677057

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4612^{+124}_{-138}$	$4.646^{+0.024}_{-0.052}$	$-0.060^{+0.300}_{-0.300}$	$0.662^{+0.064}_{-0.045}$	$0.726^{+0.050}_{-0.074}$	$3.529^{+0.454}_{-0.711}$
	+3%/-3%	+1%/-1%	+500%/-500%	+10%/-7%	+7%/-10%	+13%/-20%
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 008677057-01 / KOI 7903.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-9 \pm 7$	$1.09^{+0.99}_{-0.72}$	$1991^{+66}_{-72}$	$2477^{+1224}_{-4837}$	$0.646^{+5.737}_{-0.558}$
Alt.	$-19 \pm 7$	$1.08^{+0.97}_{-0.72}$	$1996^{+64}_{-71}$	$2979^{+1336}_{-829}$	$1.681^{+12.699}_{-1.284}$

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

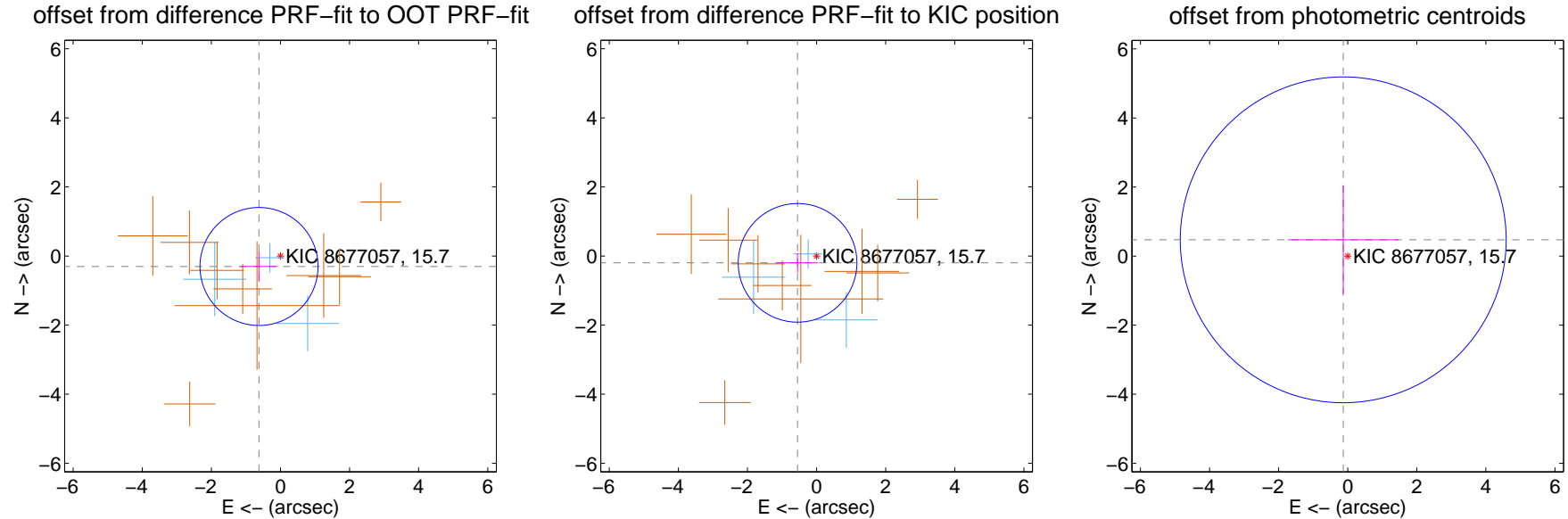
## DV Centroid Data

Supplemental centroid analysis for 008677057-01. Kepler magnitude: 15.70. Transit SNR 9.11

There are 3 quarters with good PRF difference image offsets

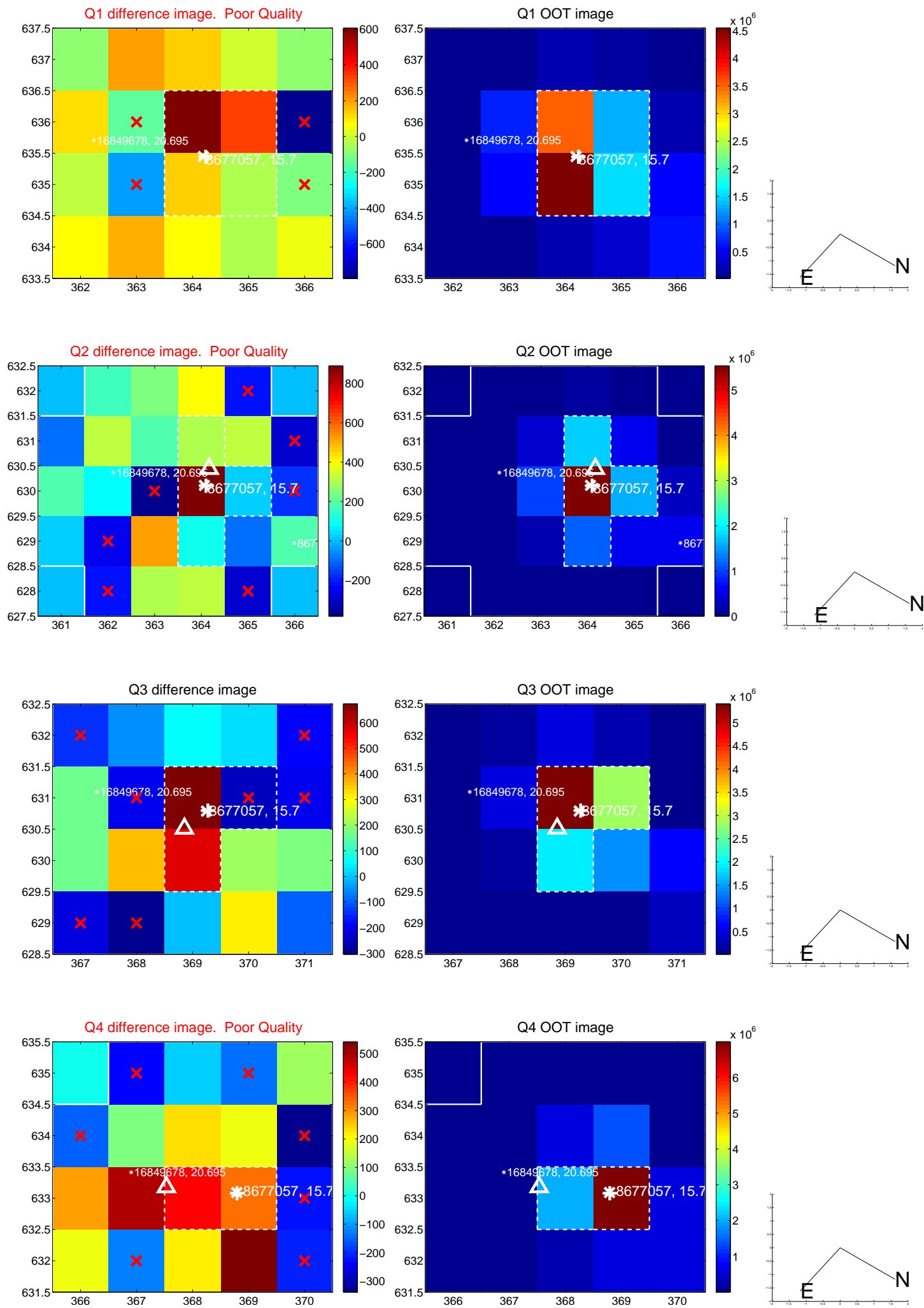
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.691 \pm 0.569$	1.21	$0.621 \pm 0.541$	$-0.303 \pm 0.439$
PRF-fit source offset from KIC position	$0.584 \pm 0.572$	1.02	$0.550 \pm 0.600$	$-0.197 \pm 0.280$
photometric centroid source offset	$0.49 \pm 1.57$	0.31	$0.13 \pm 1.60$	$0.47 \pm 1.57$

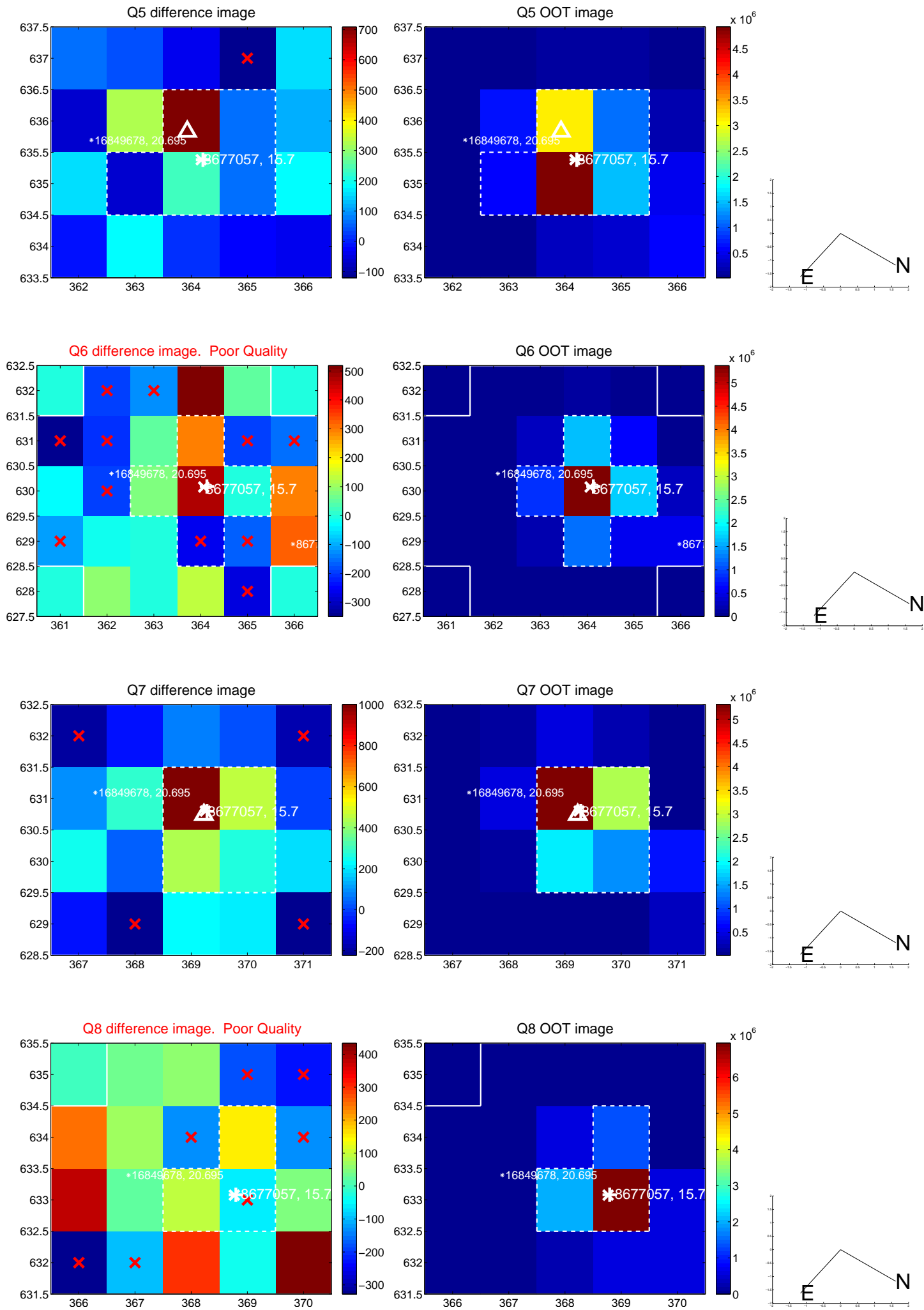


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

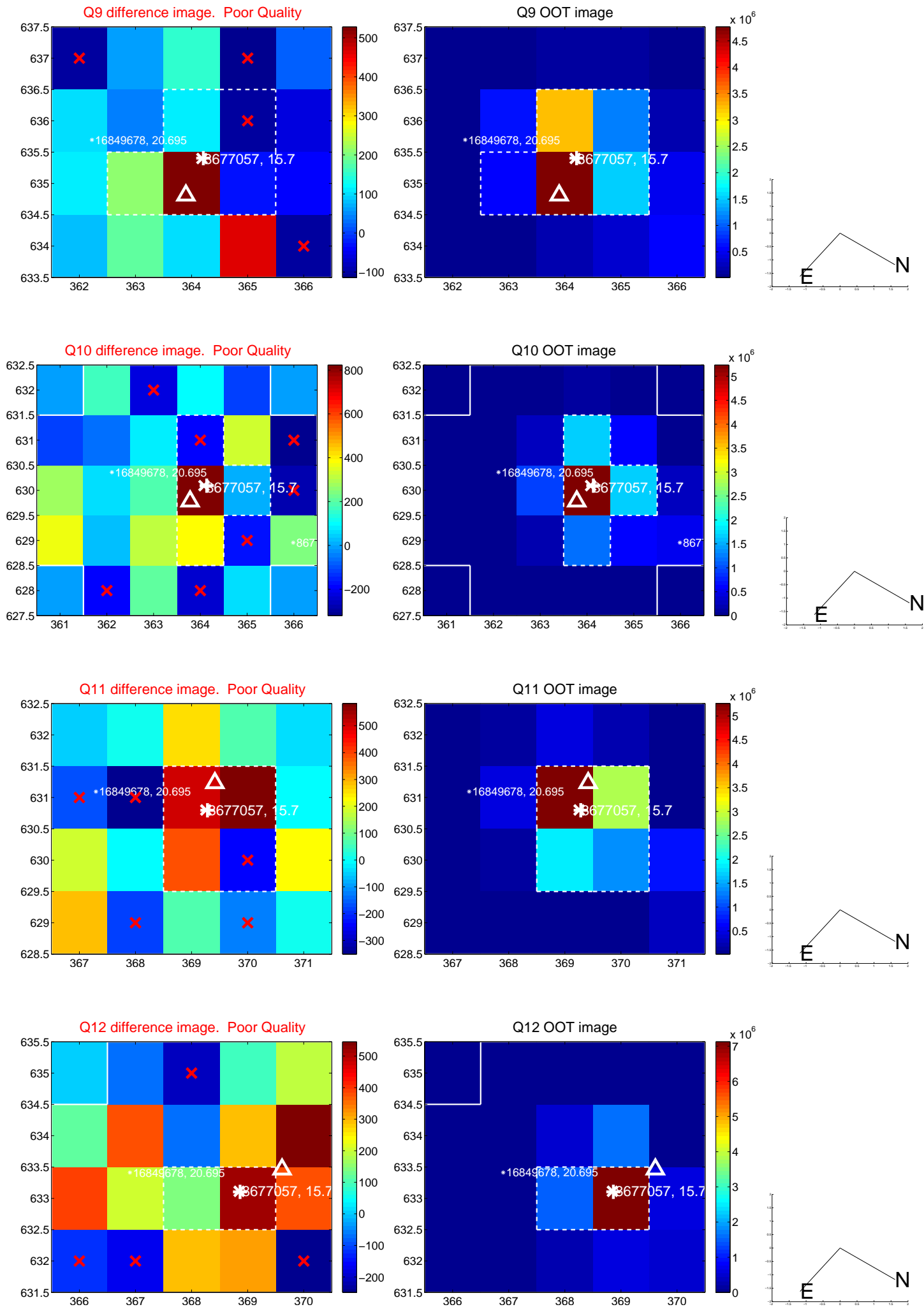


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

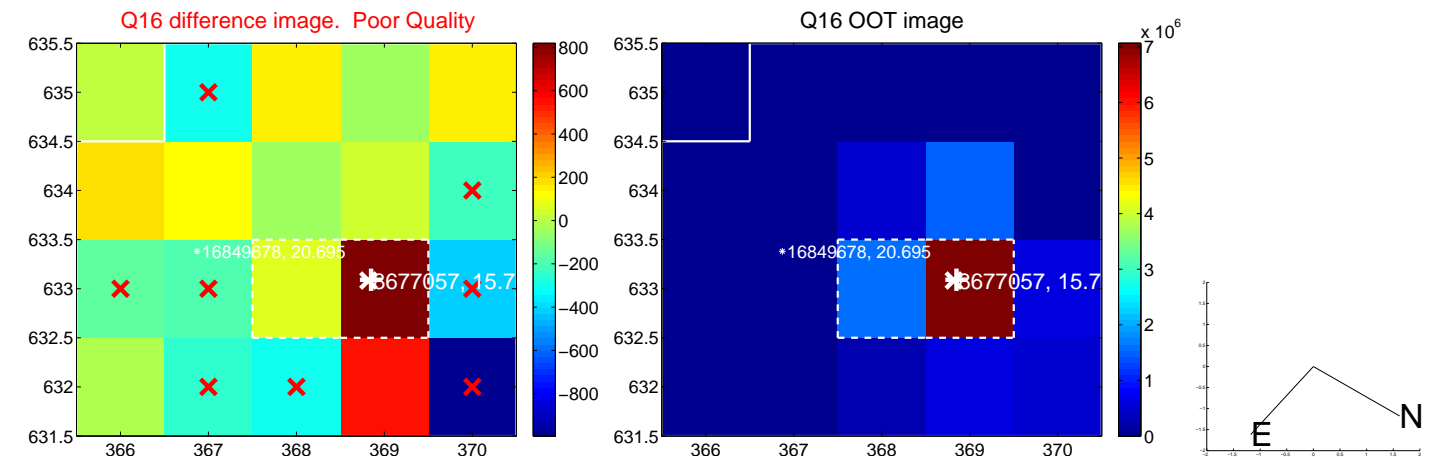
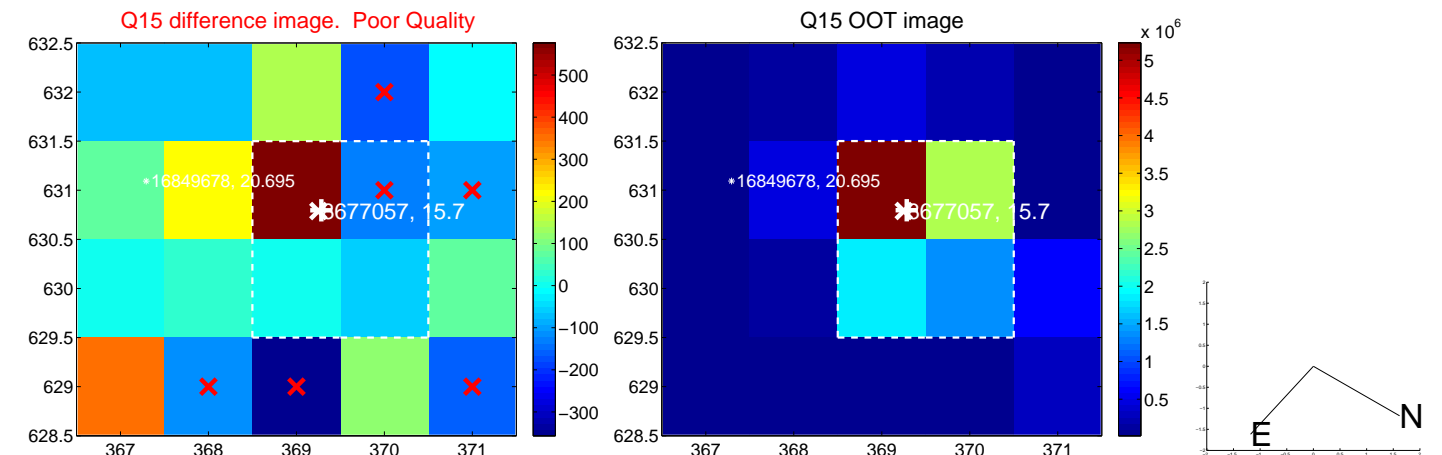
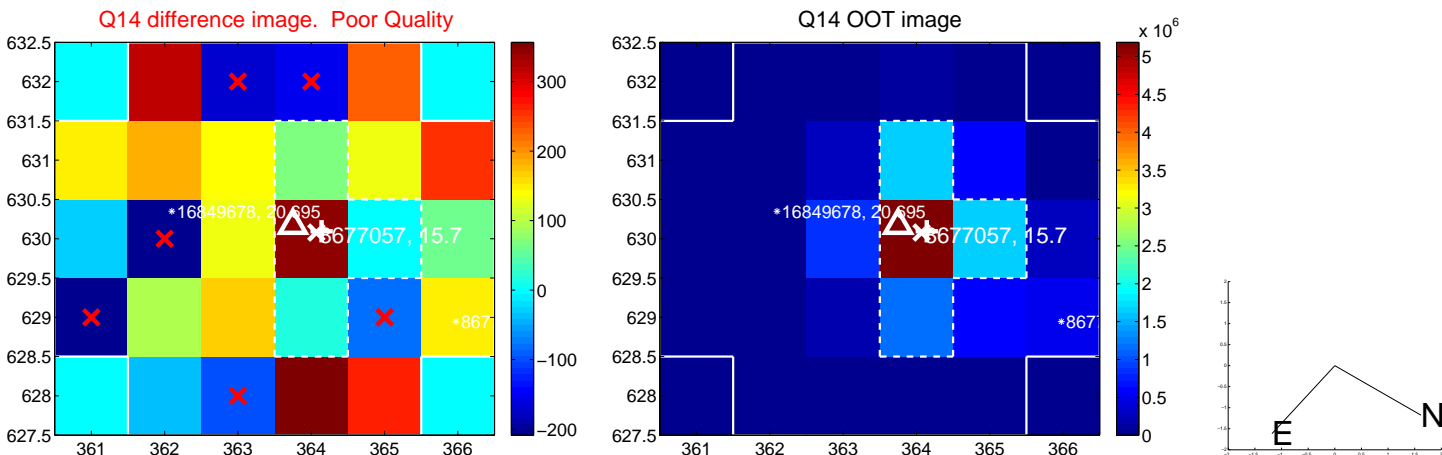
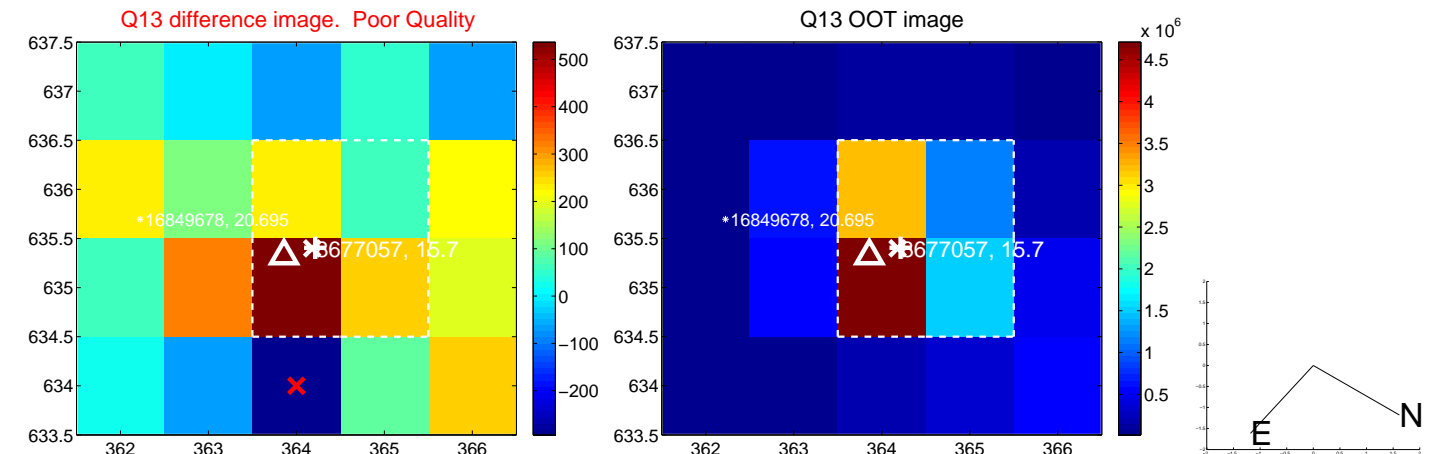




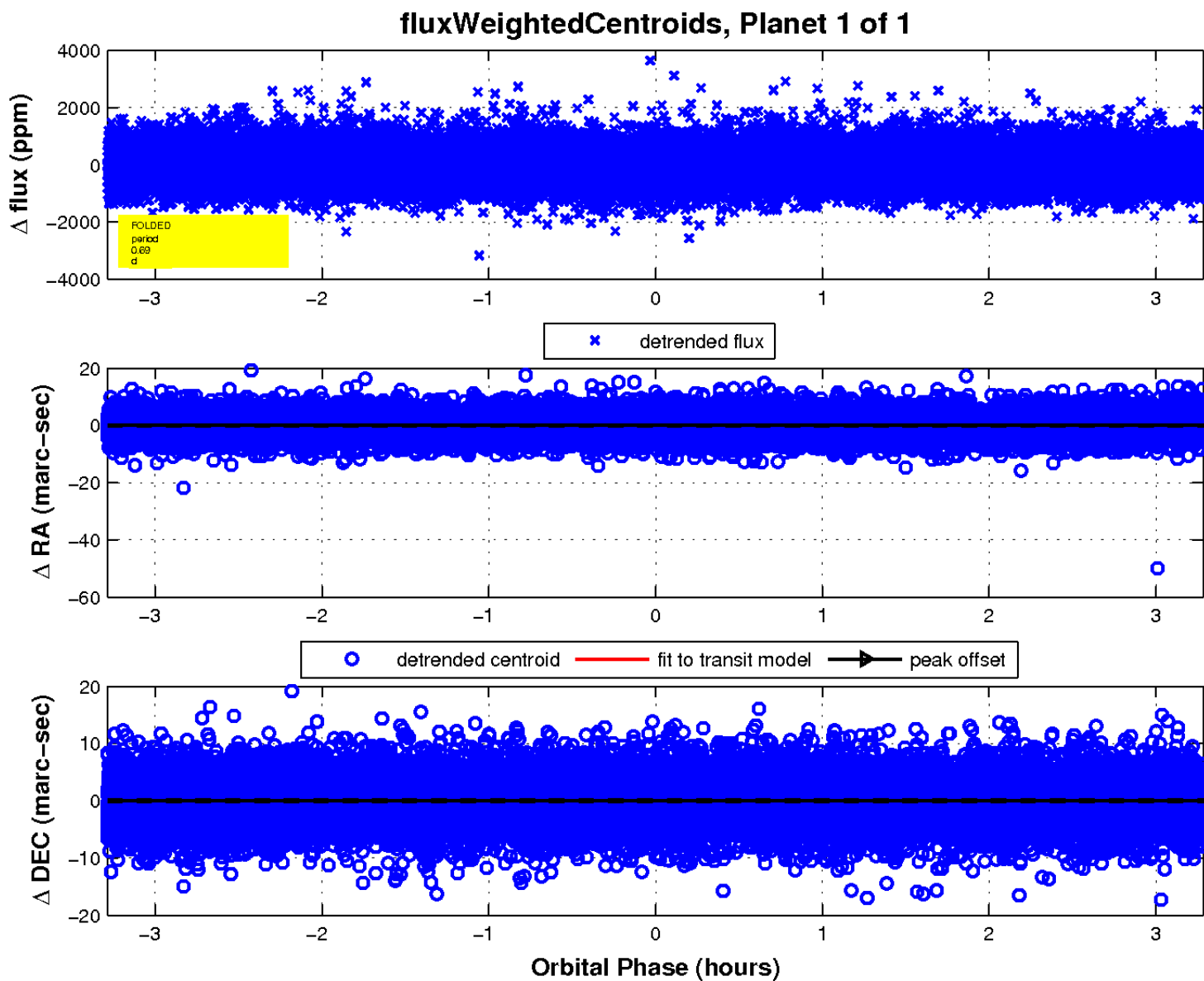
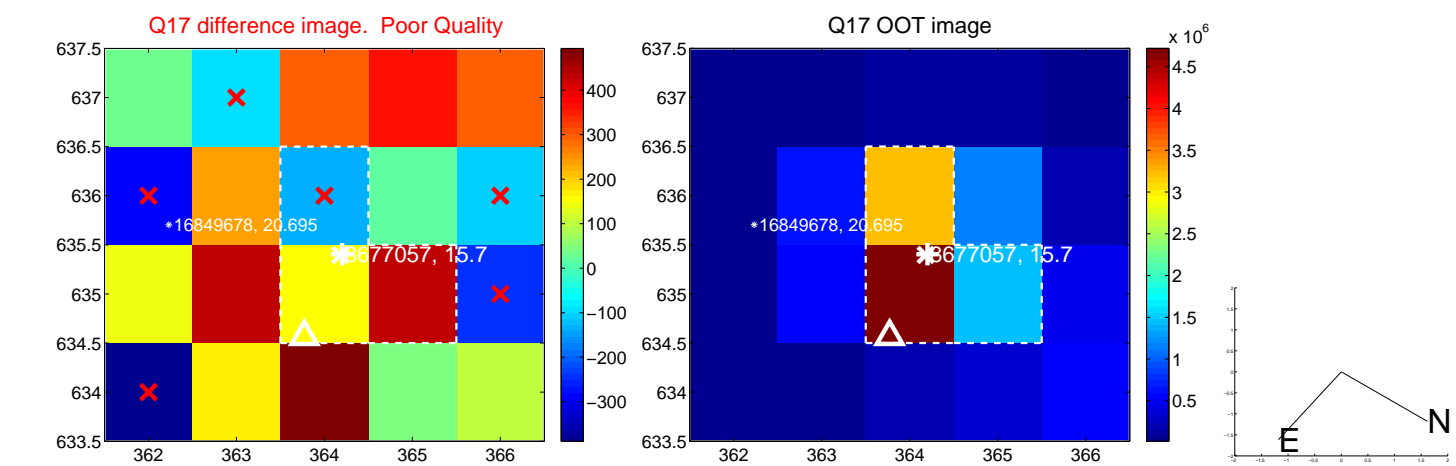
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

