

# KIC 007216690

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007216690-01	OBS	No	1.607223	132.251578	23.1	5.150	11.5	10.6	2.41	6225	1.33	9058.48

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007216690-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

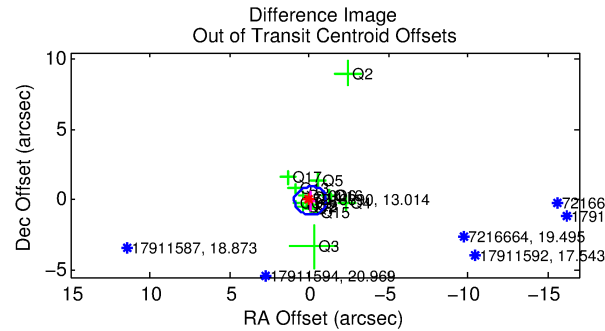
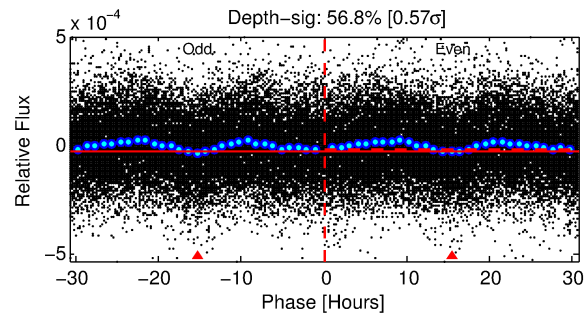
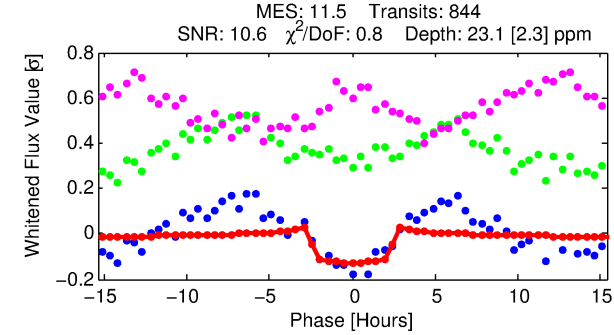
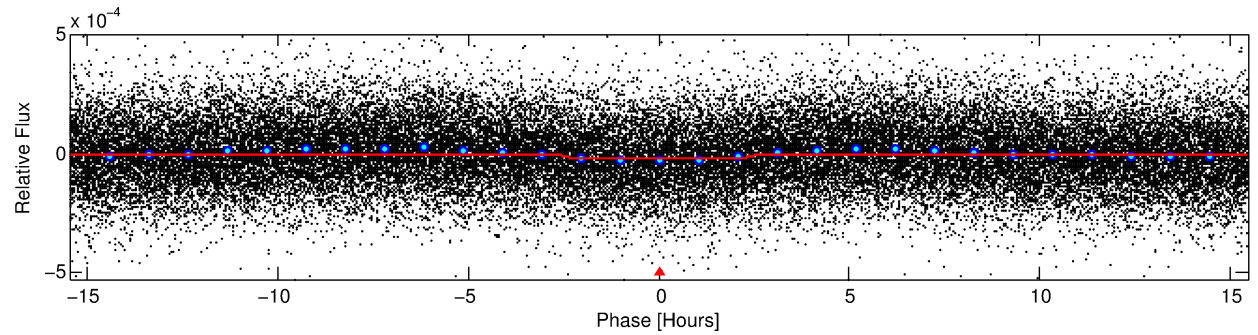
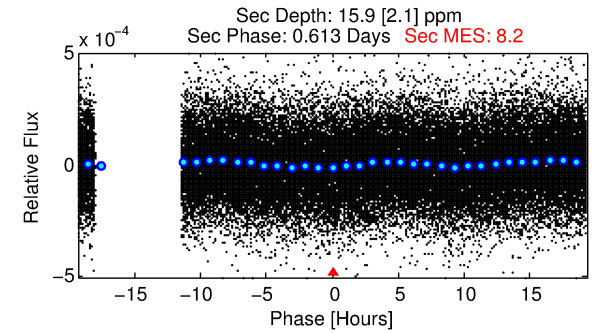
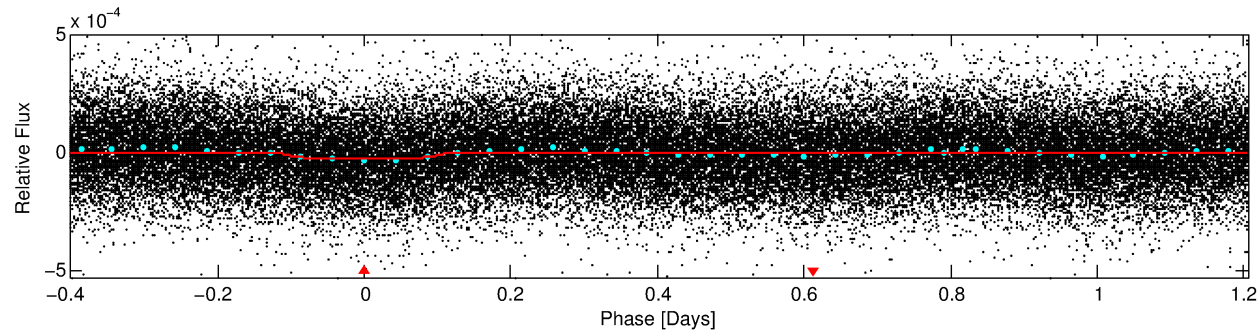
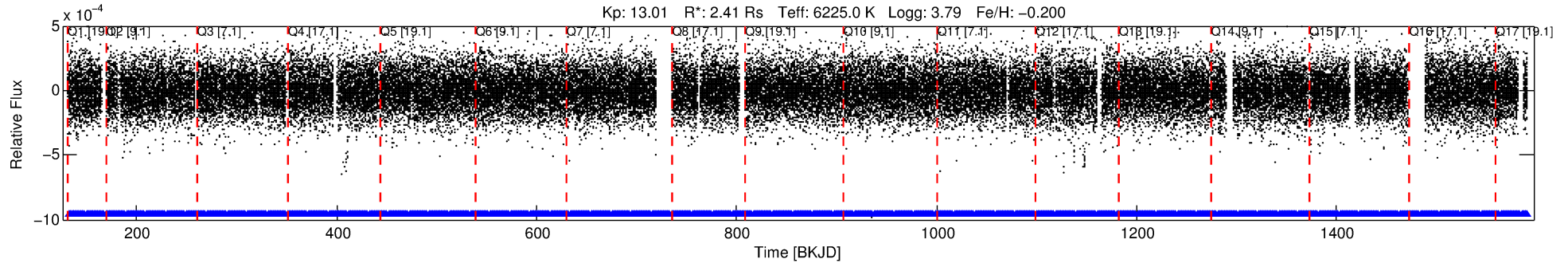
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007216690-01

No Significant Match Found

# DV One-Page Summary

KIC: 7216690 Candidate: 1 of 1 Period: 1.607 d



## DV Fit Results:

Period = 1.60722 [0.00002] d  
Epoch = 132.2516 [0.0043] BKJD  
Rp/R\* = 0.0050 [0.0015]  
a/R\* = 1.51 [1.42]  
b = 0.87 [0.47]  
Seff = 9058.48 [5022.10]  
Teff = 2488 [345] K  
Rp = 1.33 [0.62] Re  
a = 0.0294 [0.0099] AU  
Ag = 4.29 [3.56] [0.92σ]  
Teffp = 5536 [883] K [3.22σ]

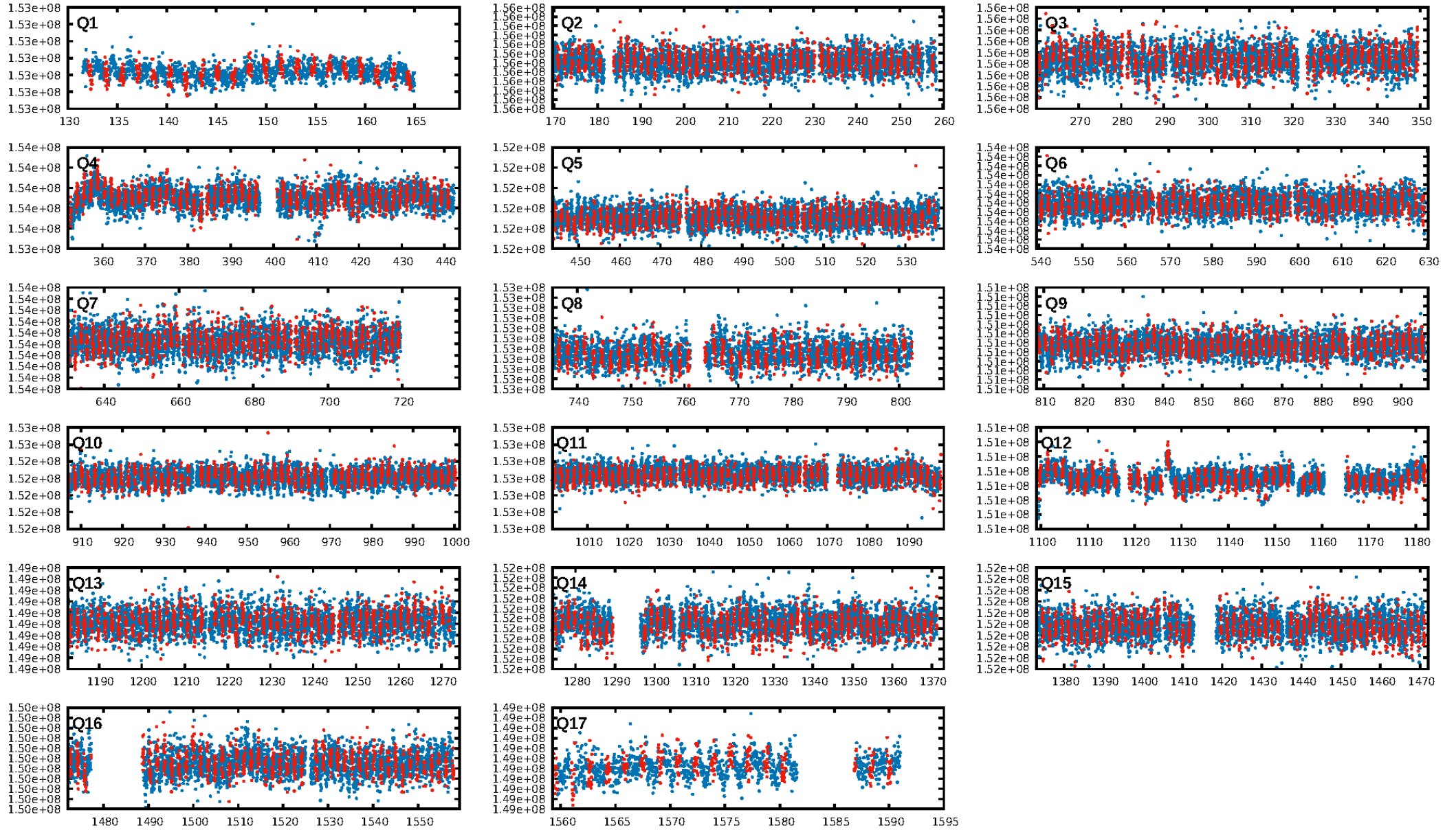
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 2.13e-22  
RollingBand-fgt: 1.00 [806/806]  
GhostDiagnostic-chr: 28.39  
Centroid-sig: 47.9%  
Centroid-so: 0.472 arcsec [0.67σ]  
OotOffset-rm: 0.123 arcsec [0.37σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-rm: 0.269 arcsec [0.76σ]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.81 [13/16]  
DiffImageOverlap-fno: 1.00 [17/17]

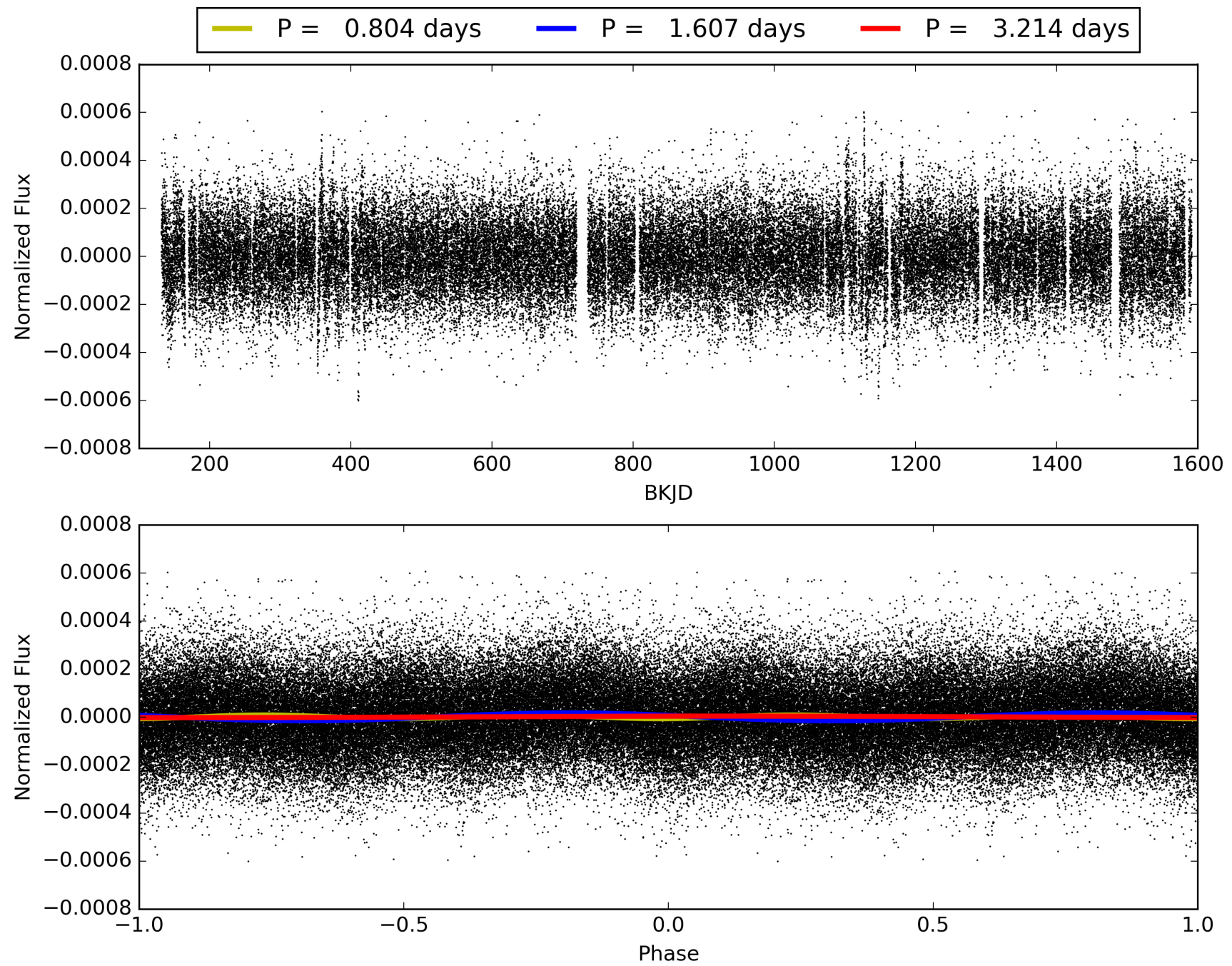
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:20:06 Z

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

# TCE 007216690-01, PDC Light Curves



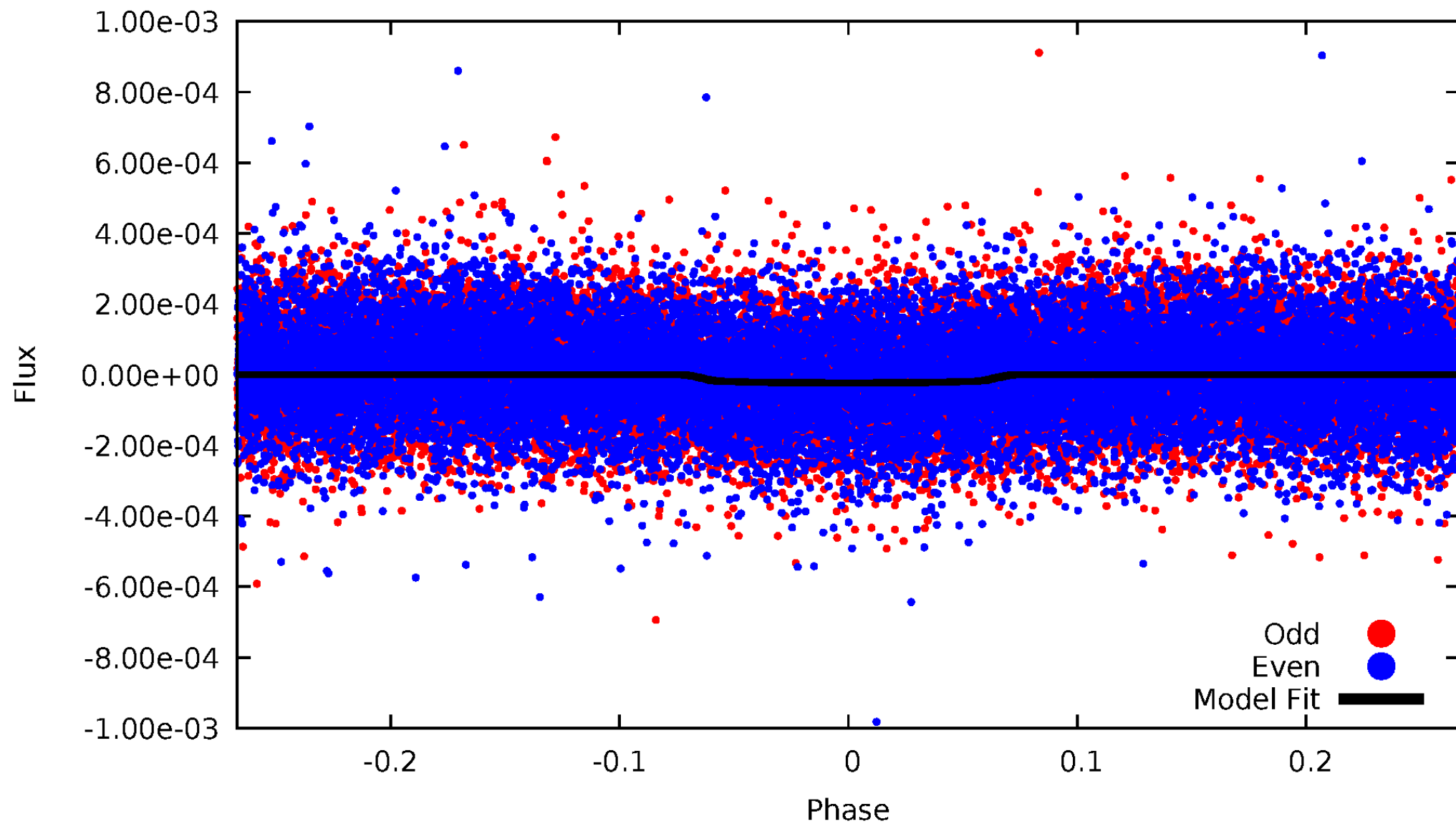
TCE 007216690-01





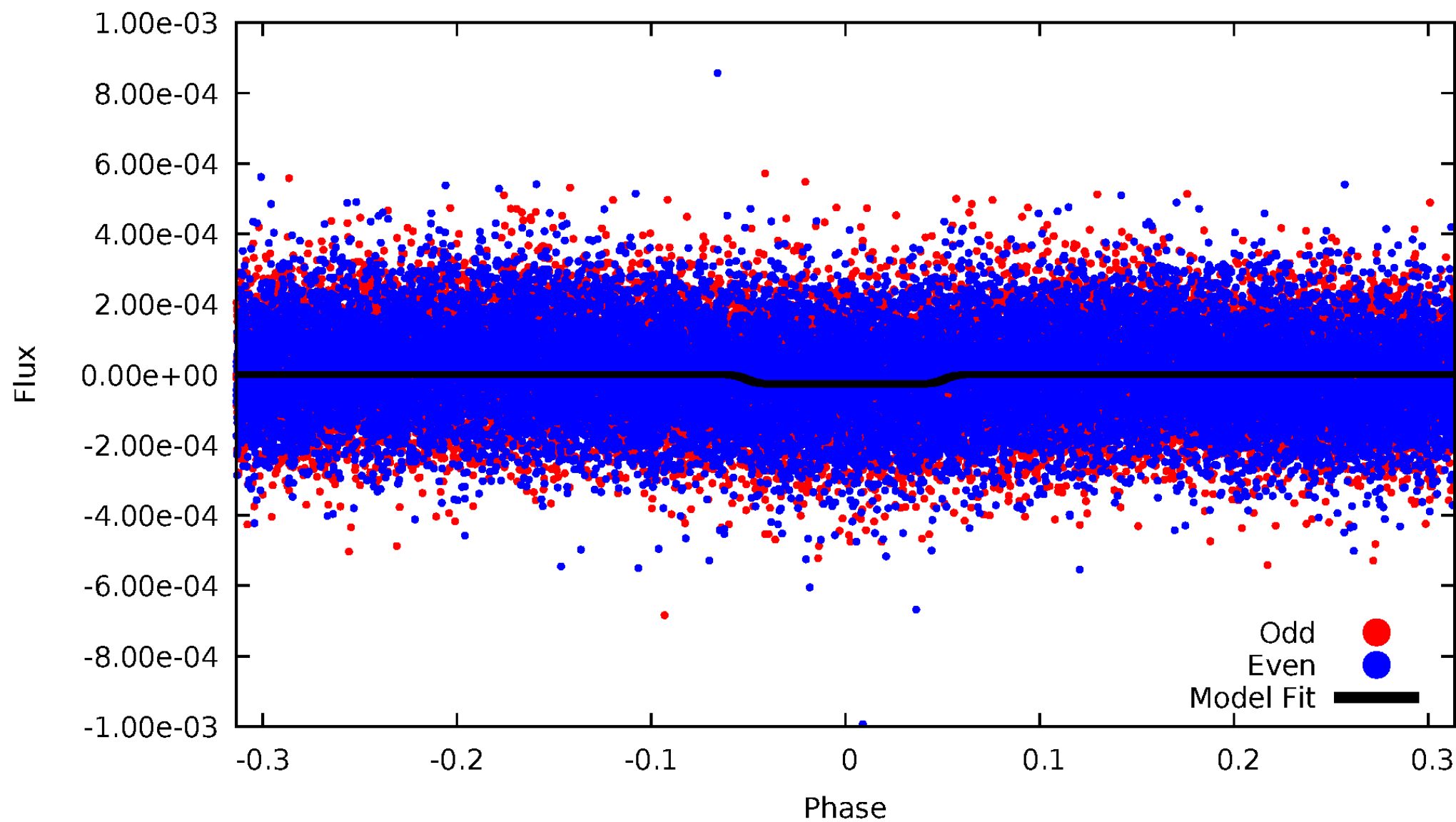
# DV Odd/Even

TCE 007216690-01

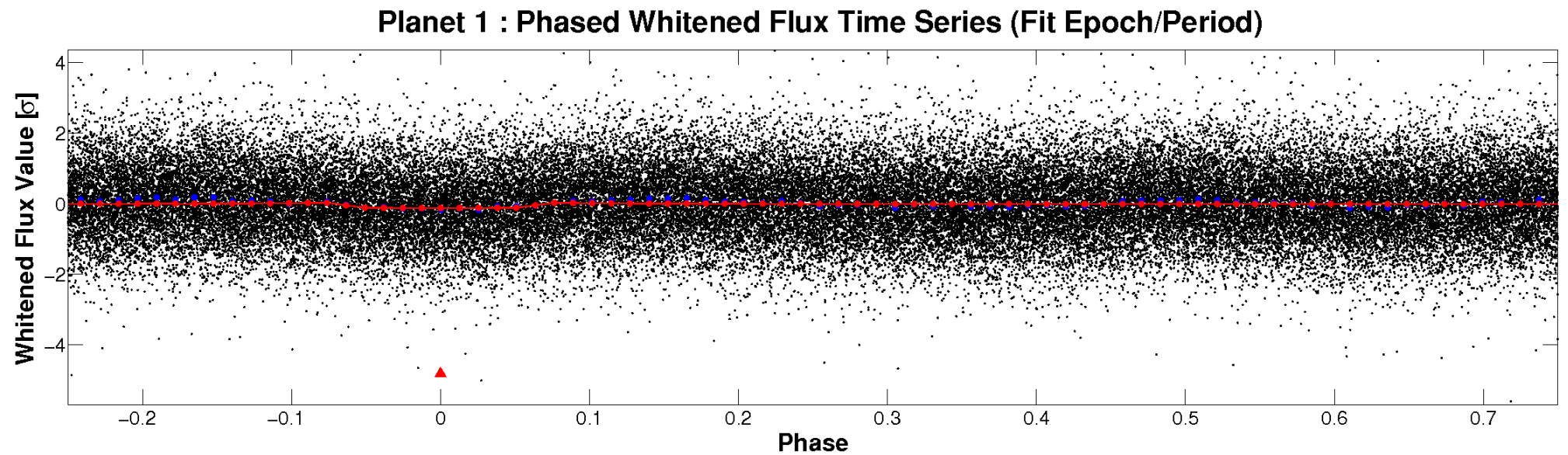
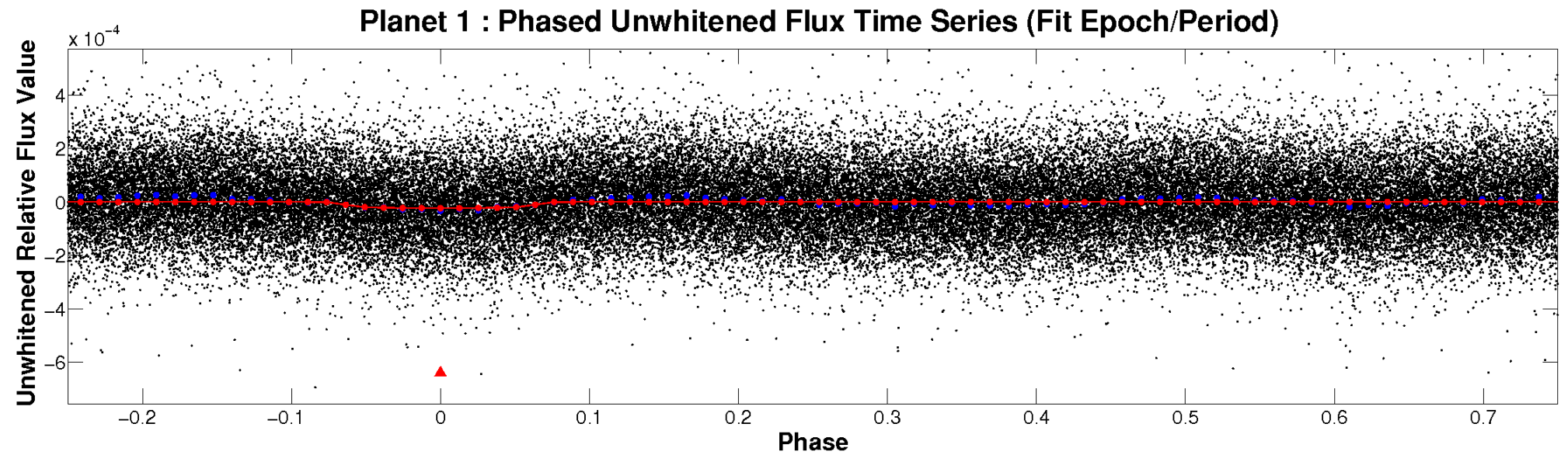


# ALT Odd/Even

TCE 007216690-01

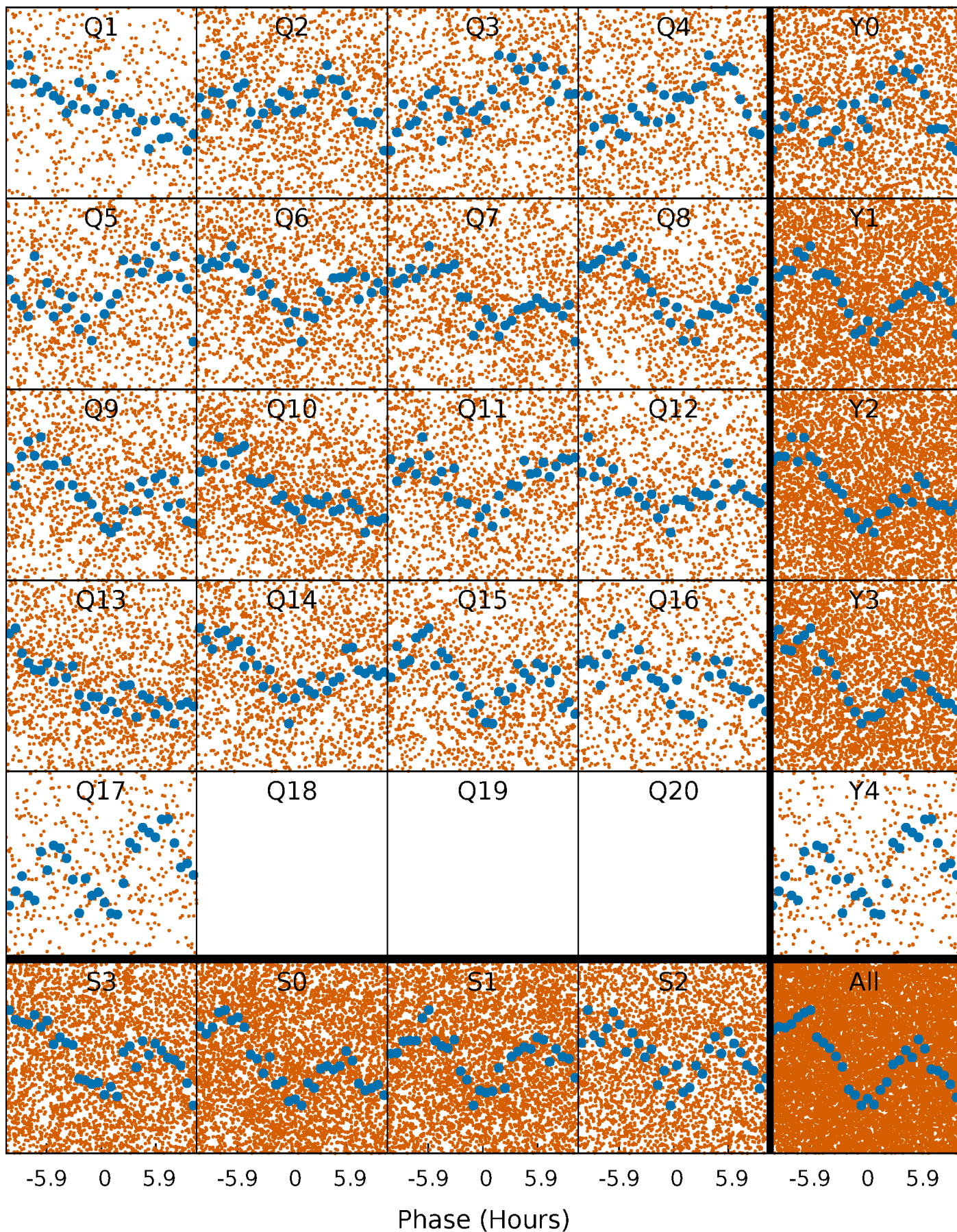


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

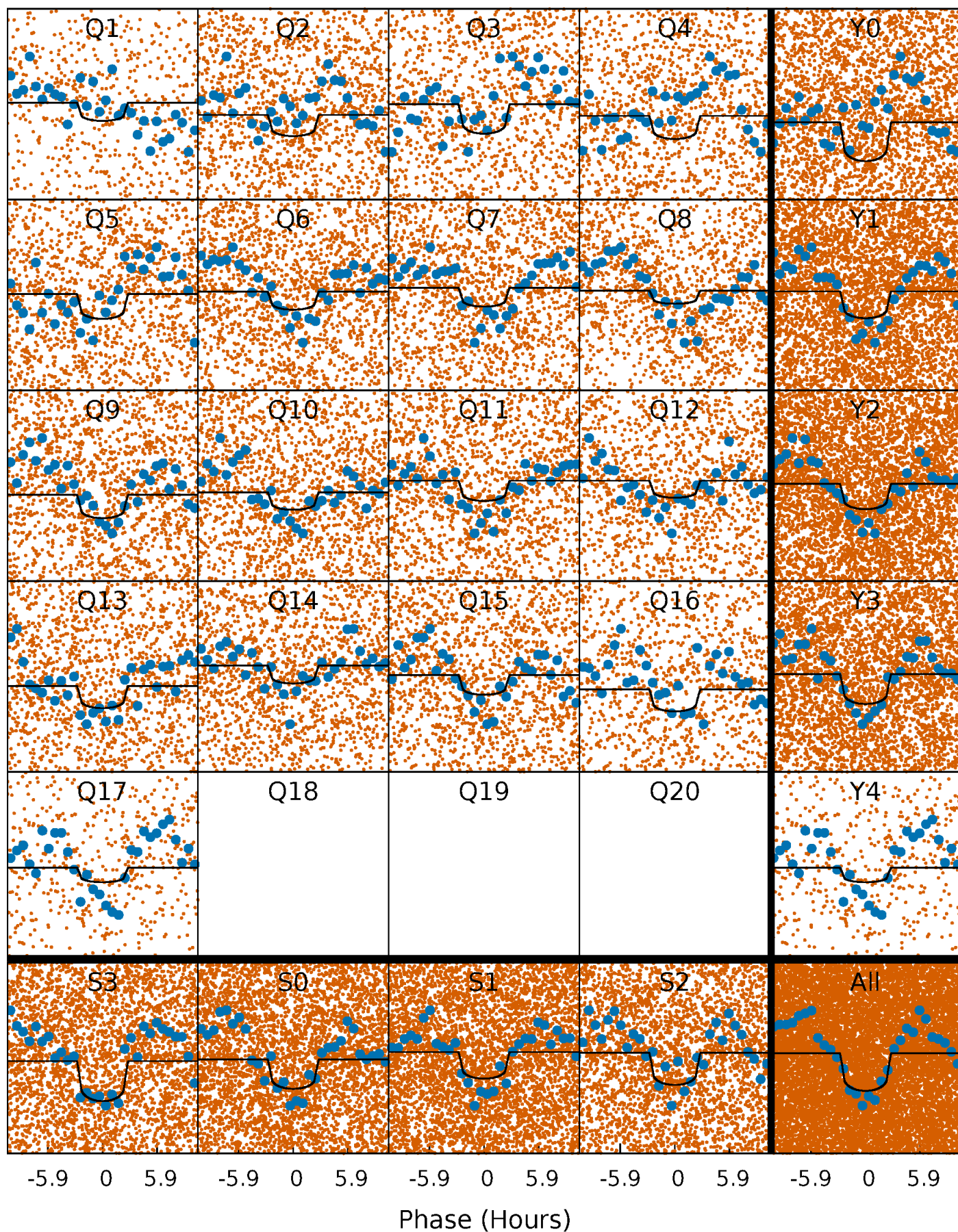
TCE 007216690-01 P= 1.607223 Days  $T_0=132.251578$  (BKJD)





# DV Quarter-Phased Transit Curves

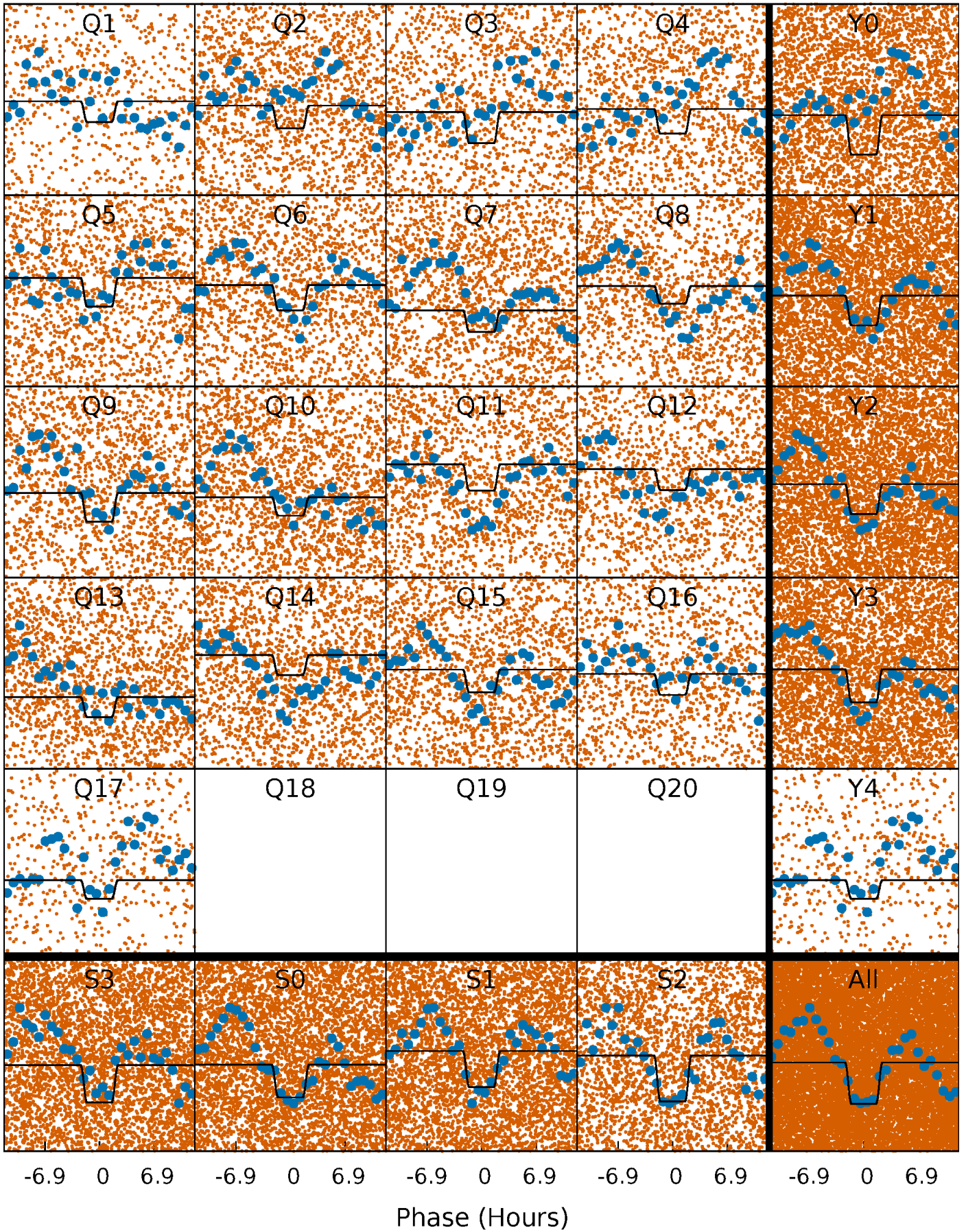
TCE 007216690-01 P= 1.607223 Days  $T_0=132.251578$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

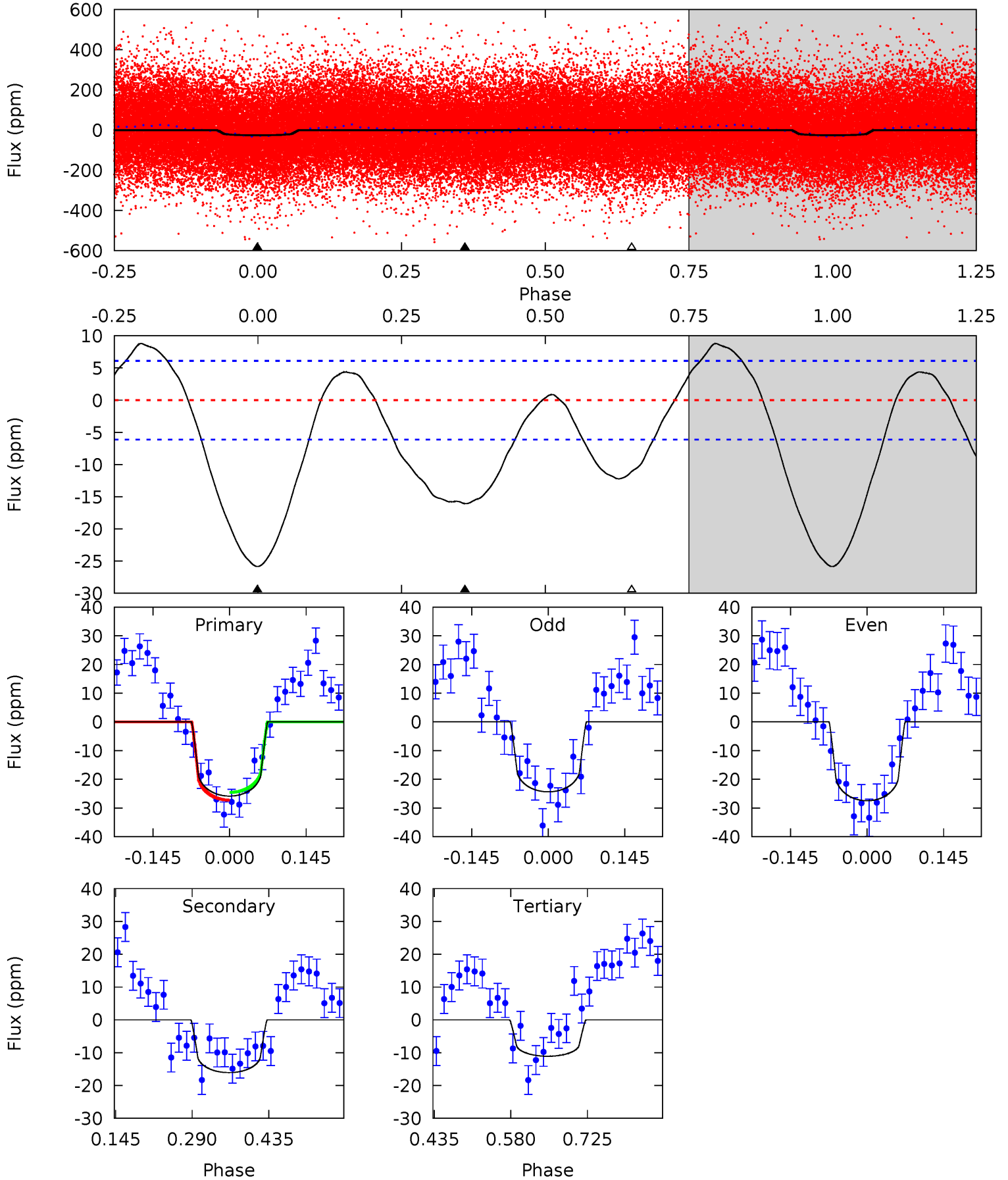
TCE 007216690-01 P= 1.607283 Days  $T_0=132.226753$  (BKJD)



# DV Model-Shift Uniqueness Test

007216690-01, P = 1.607223 Days, E = 130.644355 Days

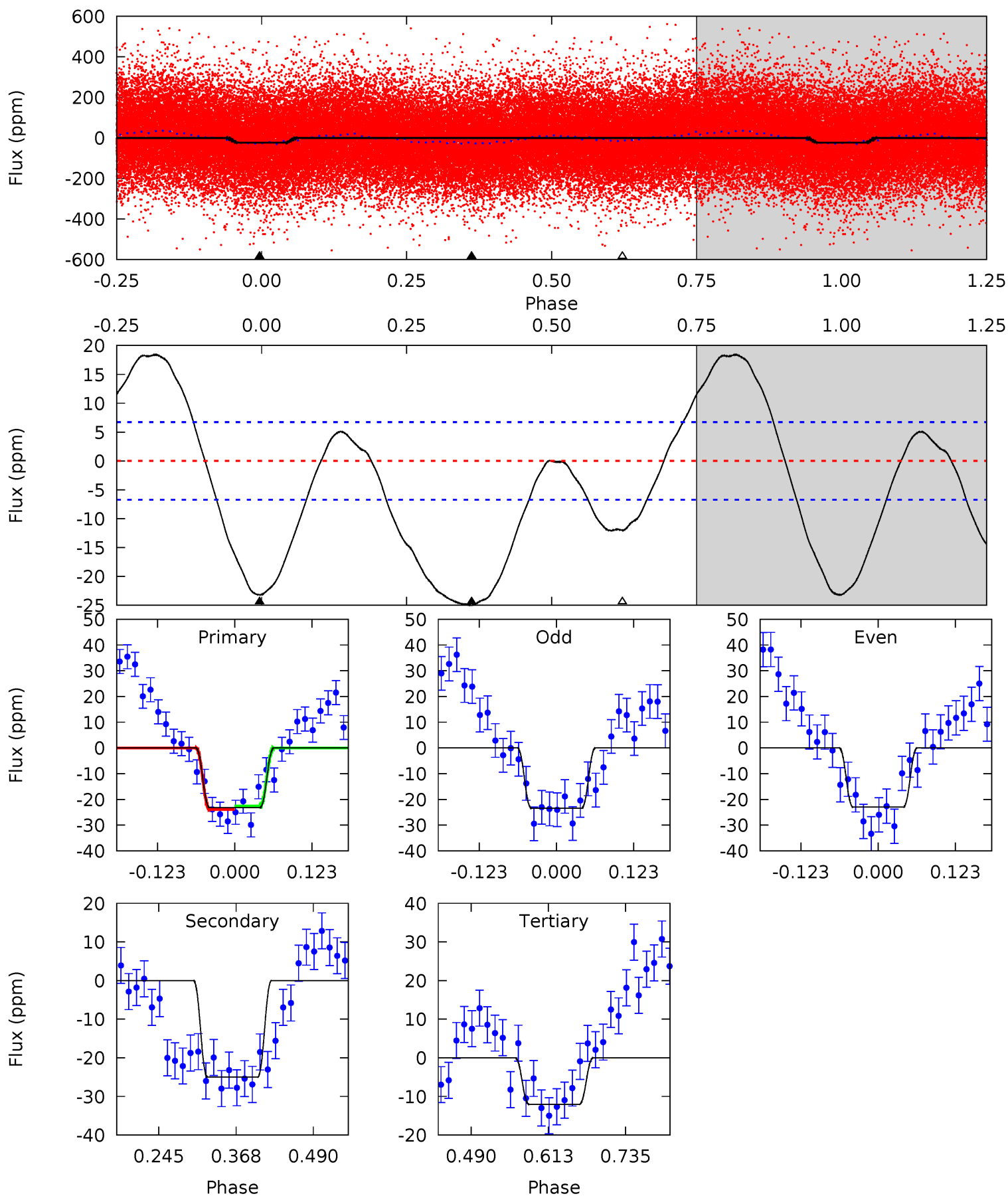
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	11.8	8.13	0	4.49	1.46	4.97	10.8	18.9	3.65	11.8	1.15	1.02	0.25	0.99



# Alt Model-Shift Uniqueness Test

007216690-01, P = 1.607283 Days, E = 130.619470 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
15.6	16.8	8.07	0	4.52	1.54	6.53	7.50	15.6	8.69	16.8	0.14	0.95	0.42	0.46





### Stellar Parameters For KIC 007216690

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6225^{+172}_{-172}$	$3.791^{+0.320}_{-0.080}$	$-0.200^{+0.300}_{-0.250}$	$2.413^{+0.388}_{-0.840}$	$1.311^{+0.217}_{-0.265}$	$0.131^{+0.289}_{-0.043}$
	+3%/-3%	+8%/-2%	+150%/-125%	+16%/-35%	+17%/-20%	+220%/-33%
Source	PHO1	FLK73	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 007216690-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-16 \pm 1$	$1.26^{+0.47}_{-0.43}$	$3383^{+216}_{-304}$	$5436^{+1217}_{-664}$	$4.888^{+6.276}_{-2.276}$
Alt.	$-25 \pm 1$	$1.25^{+0.48}_{-0.40}$	$3391^{+206}_{-289}$	$6104^{+1310}_{-768}$	$7.804^{+9.009}_{-3.725}$

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

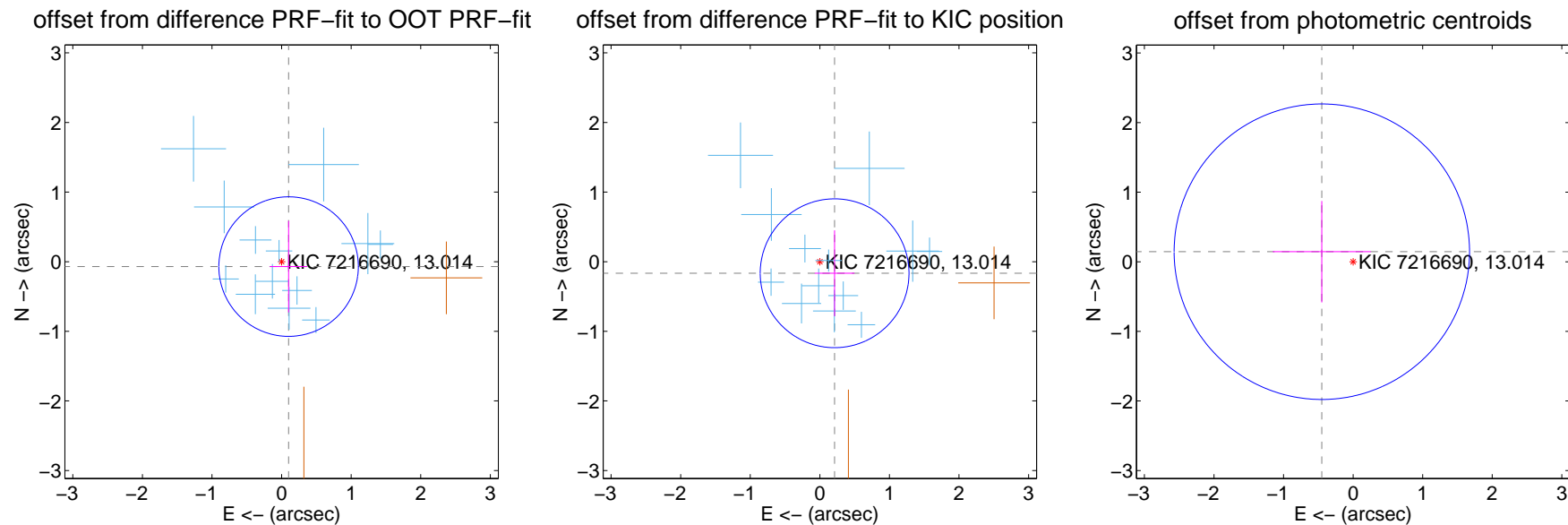
## DV Centroid Data

Supplemental centroid analysis for 007216690-01. Kepler magnitude: 13.01. Transit SNR 10.56

There are 13 quarters with good PRF difference image offsets

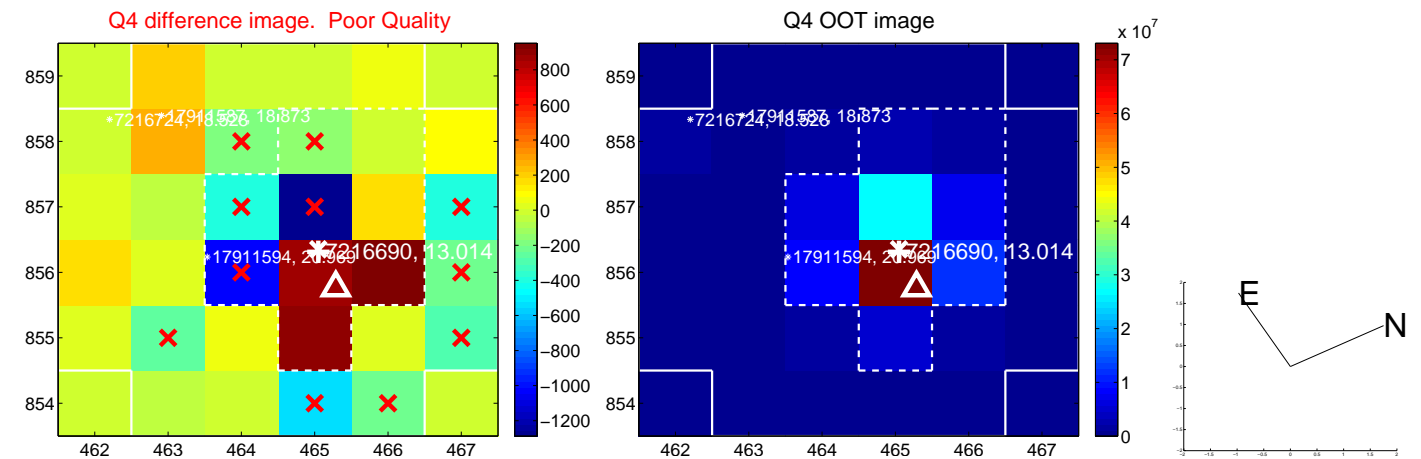
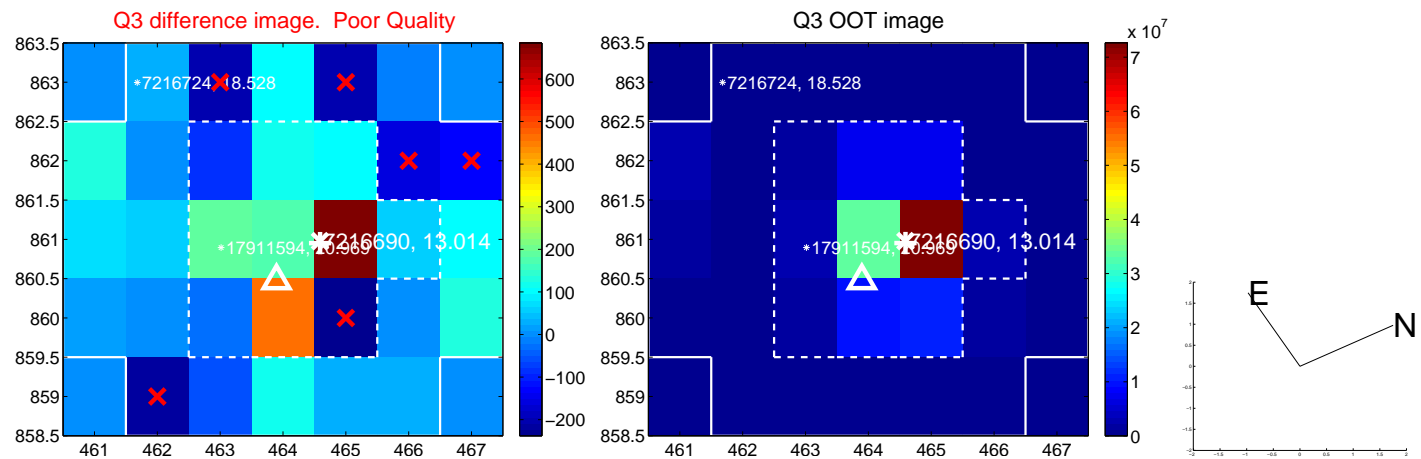
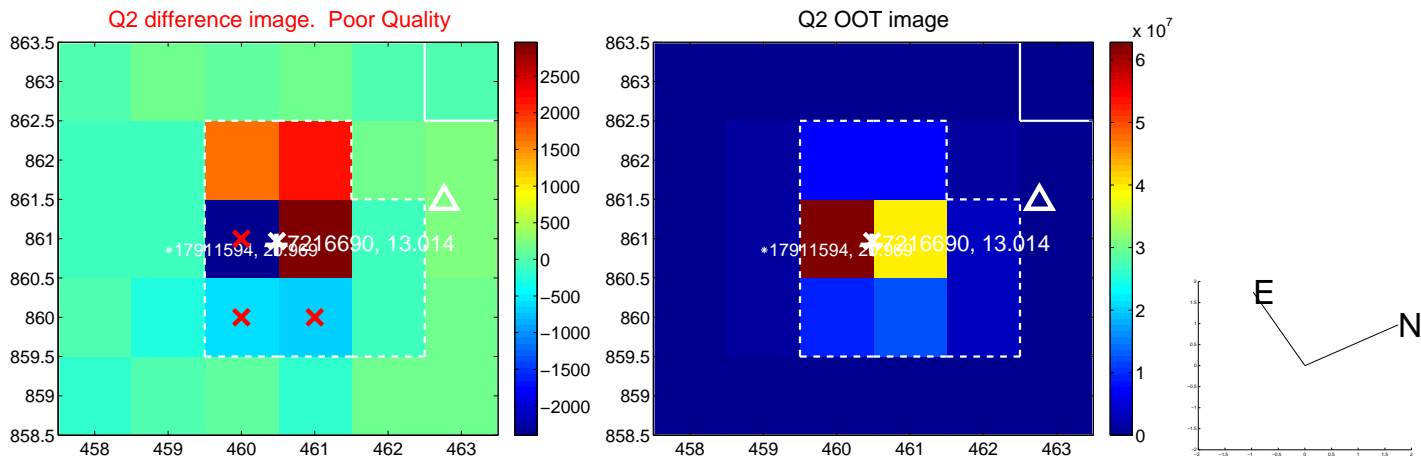
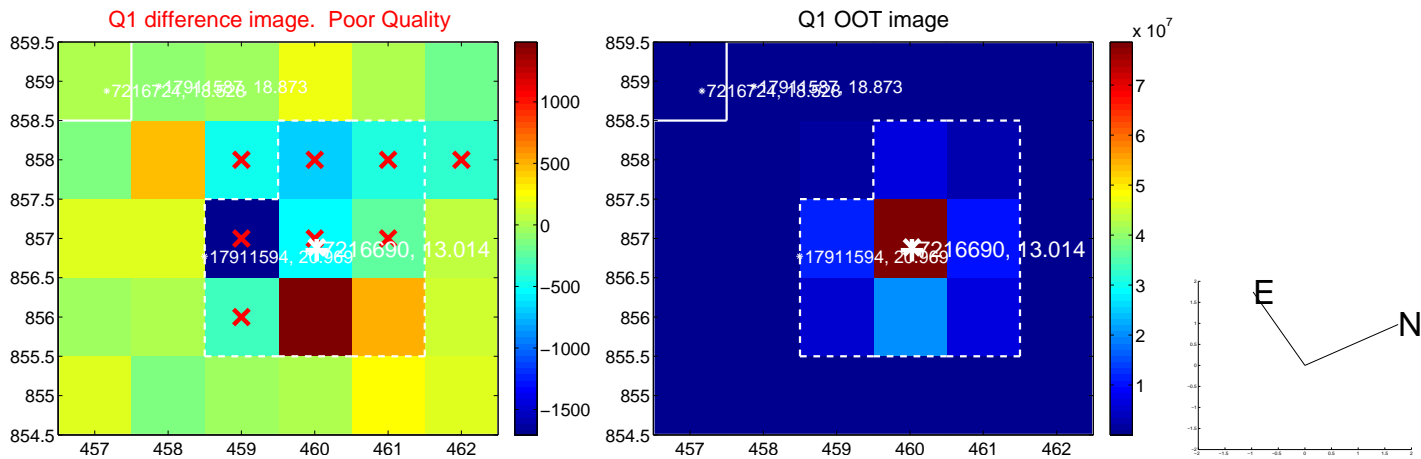
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.123 \pm 0.334$	0.37	$-0.101 \pm 0.269$	$-0.070 \pm 0.657$
PRF-fit source offset from KIC position	$0.269 \pm 0.356$	0.76	$-0.212 \pm 0.285$	$-0.166 \pm 0.617$
photometric centroid source offset	$0.47 \pm 0.71$	0.67	$0.45 \pm 0.71$	$0.14 \pm 0.73$

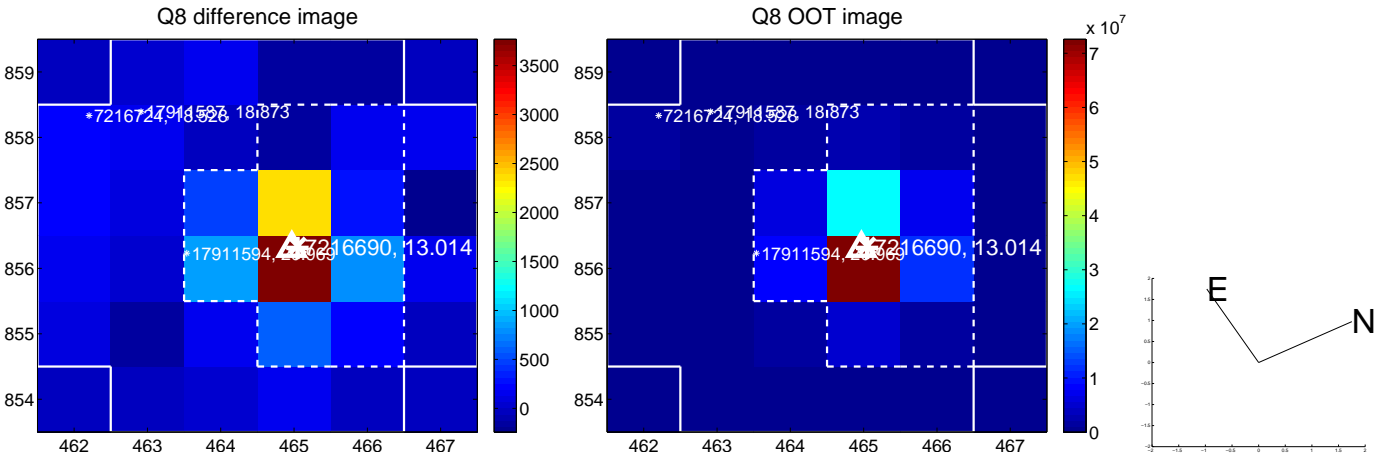
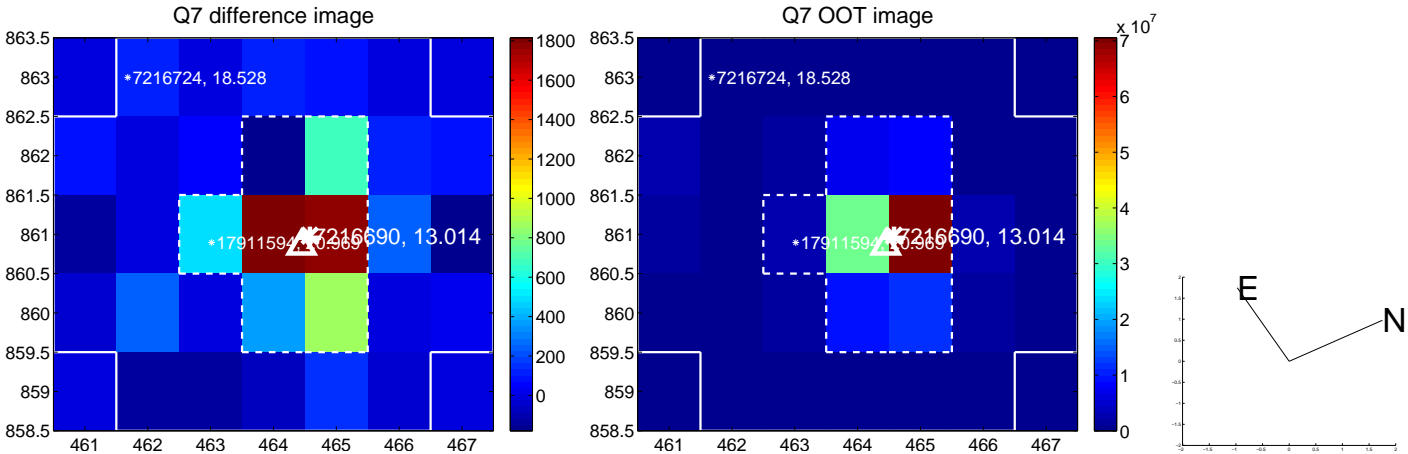
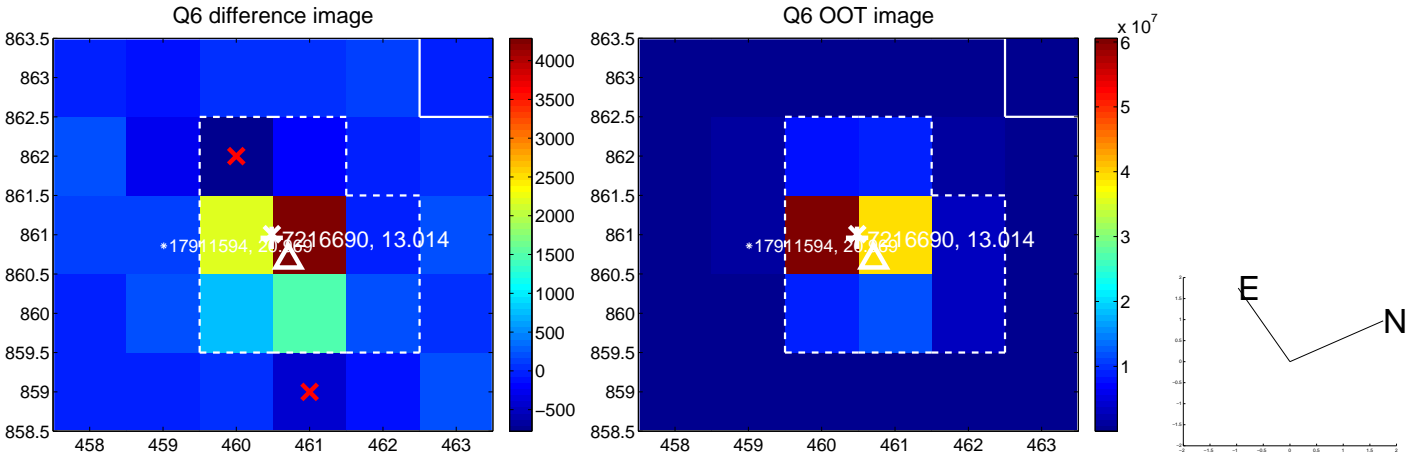
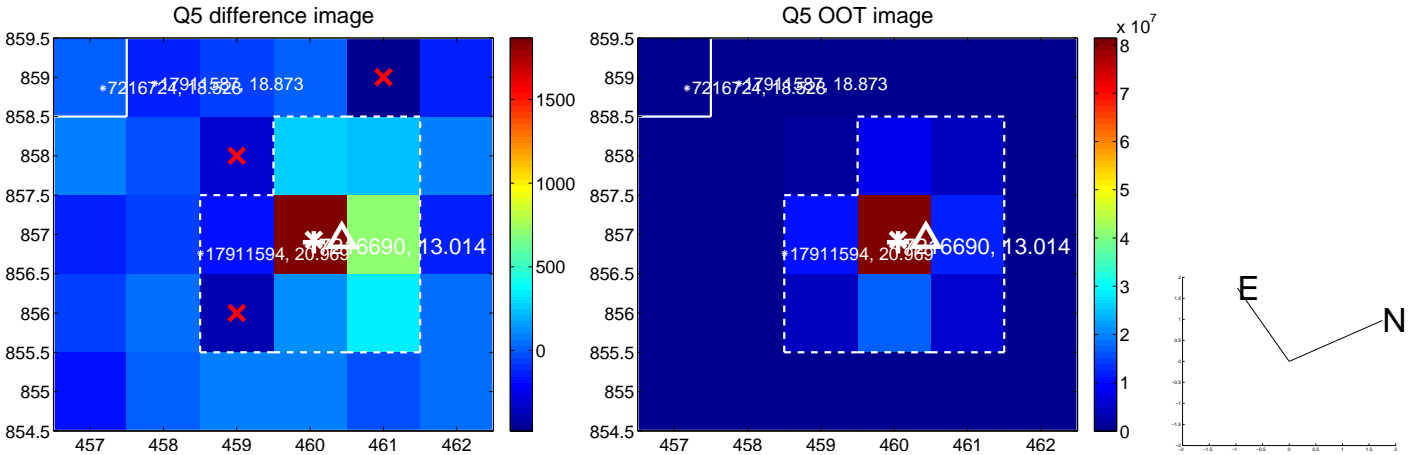


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

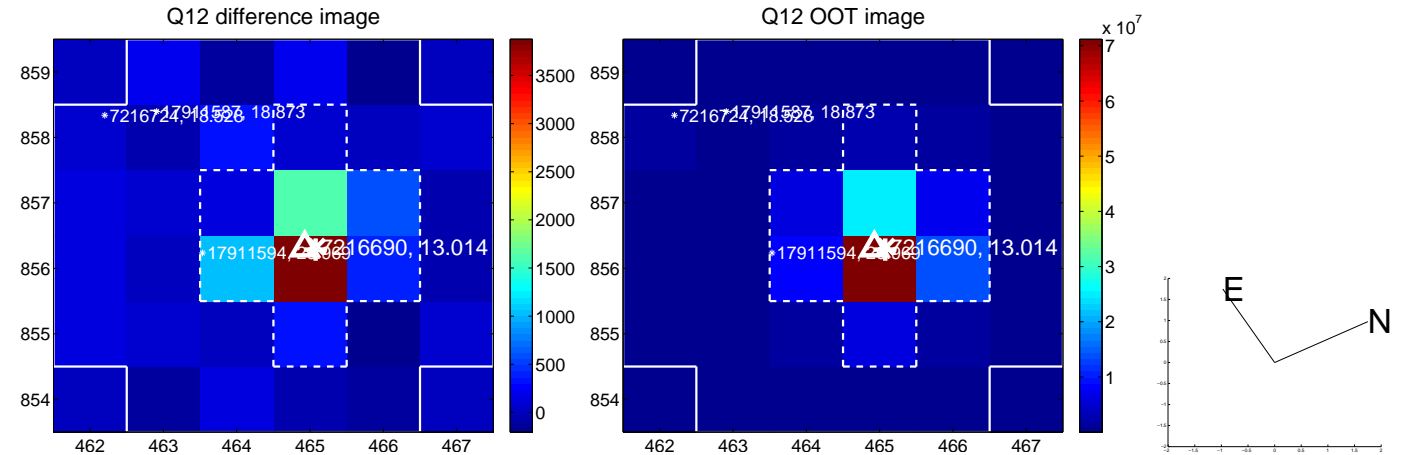
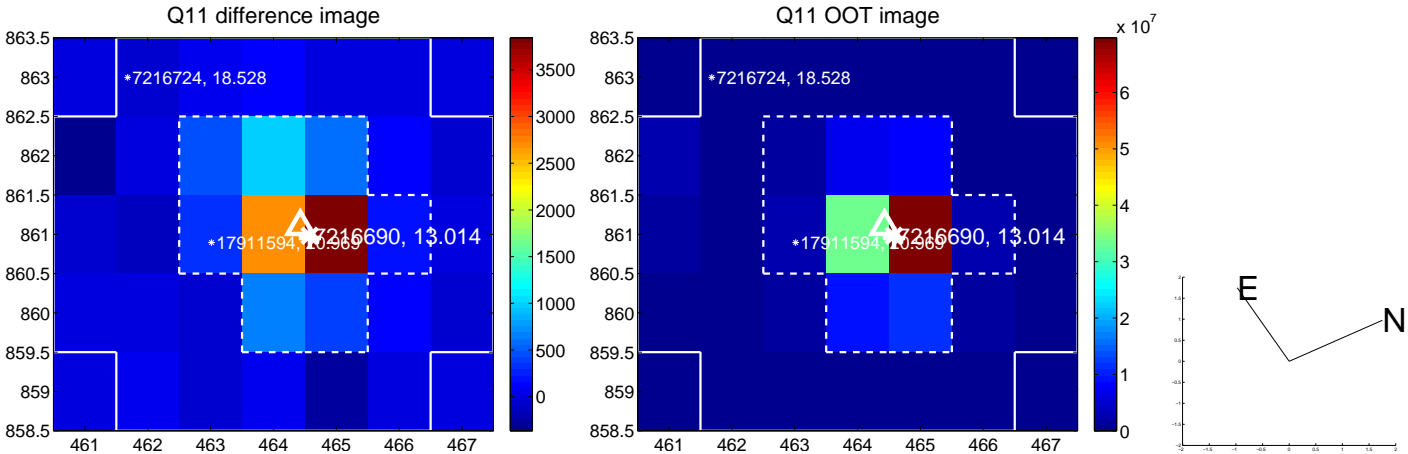
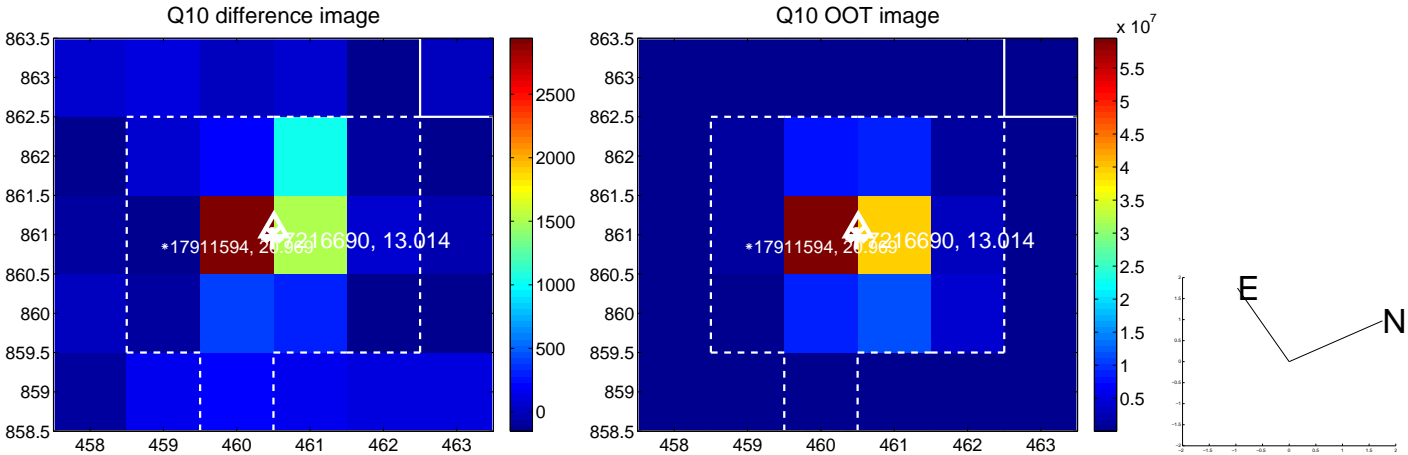
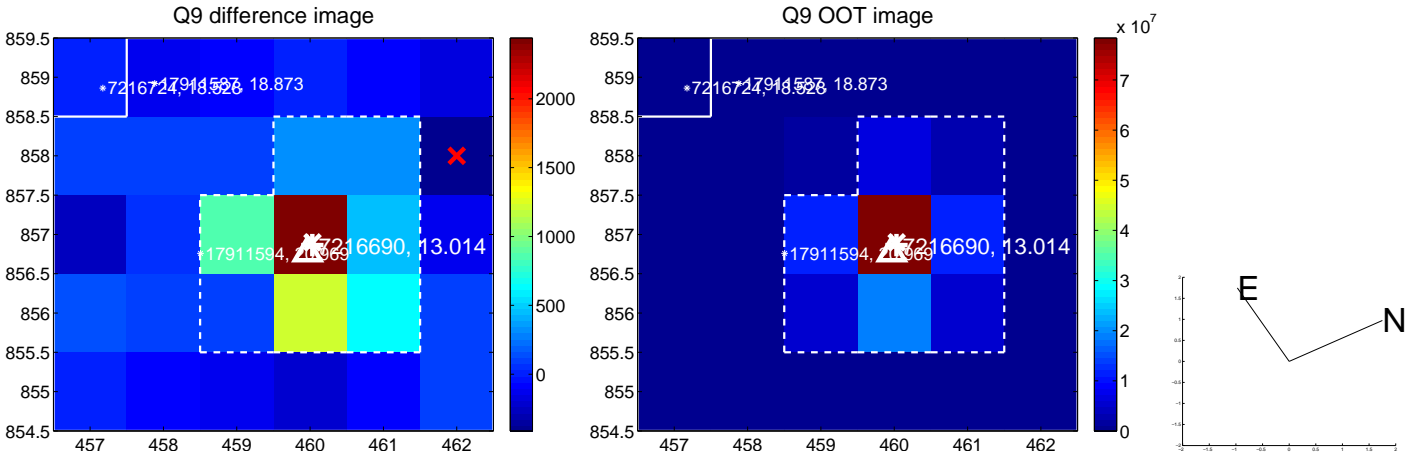


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

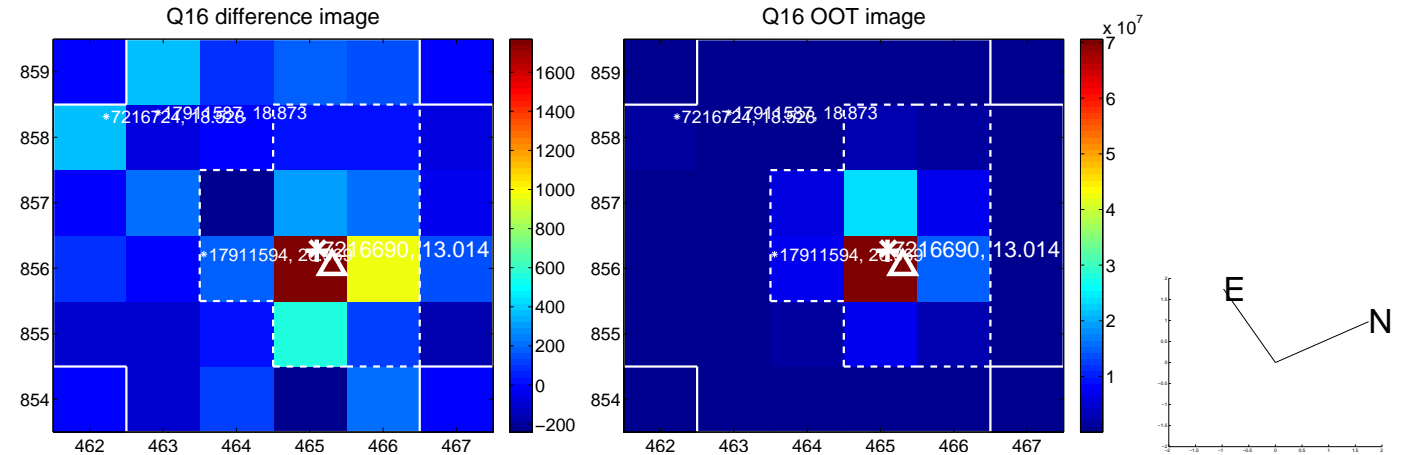
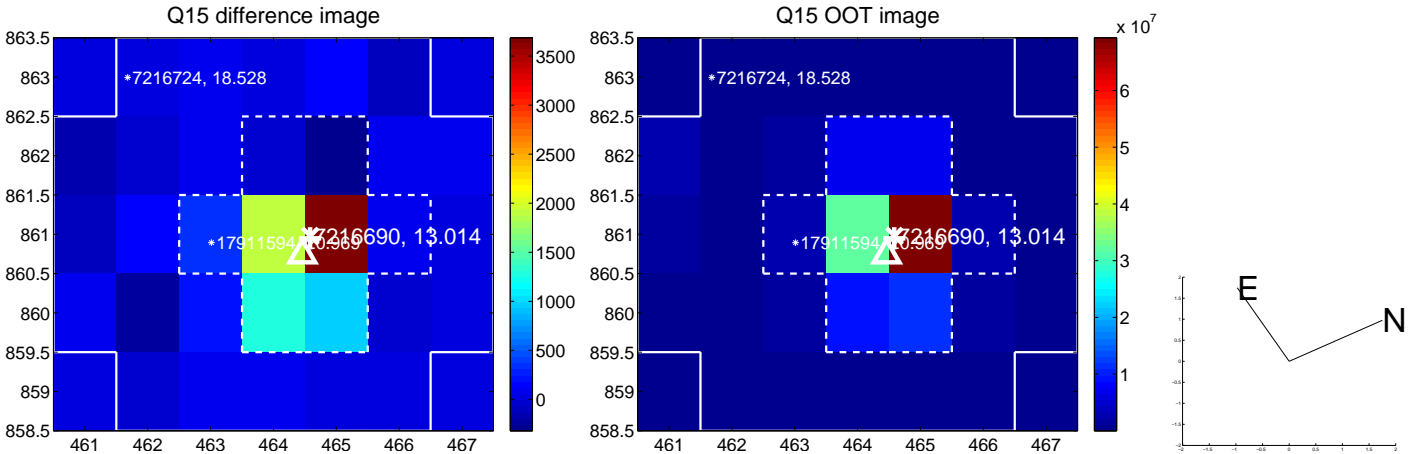
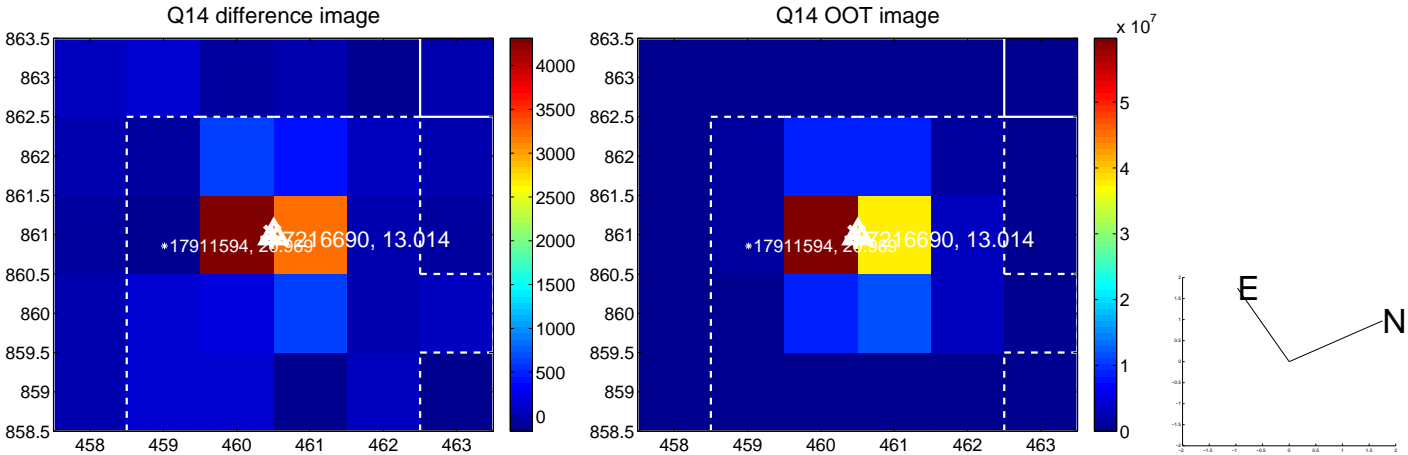
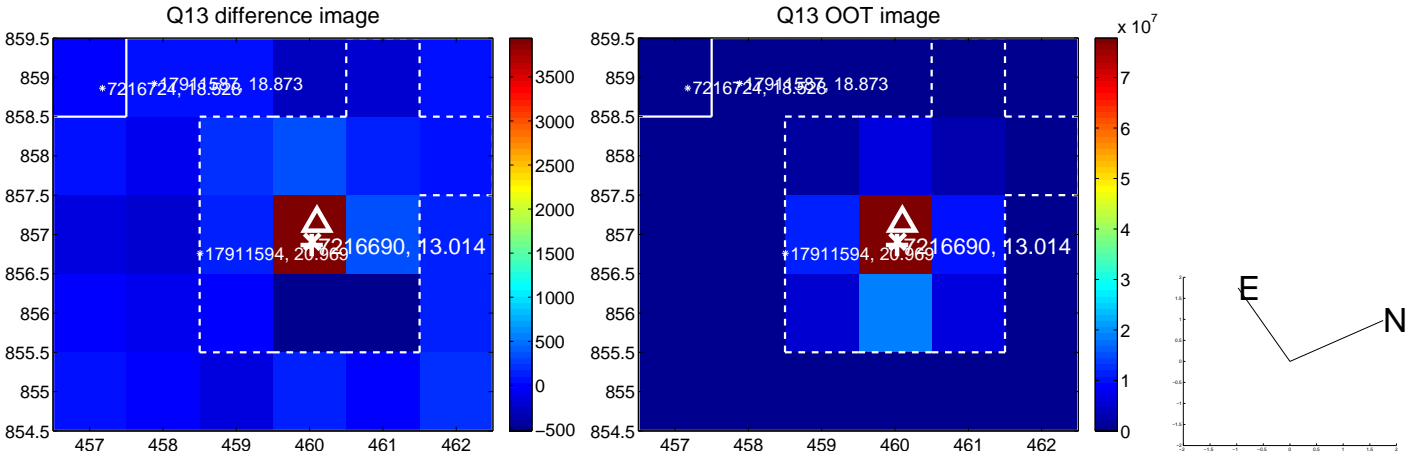




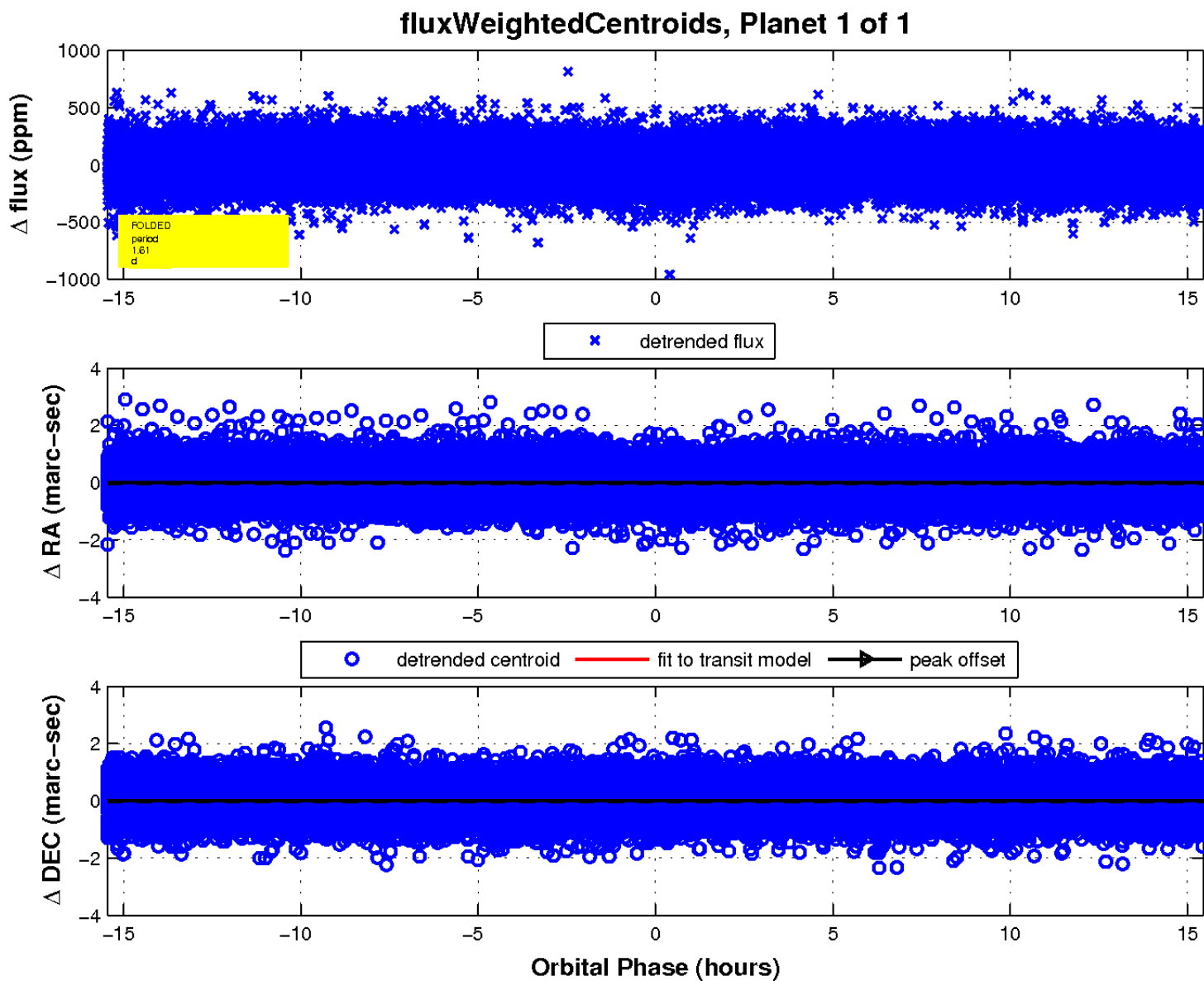
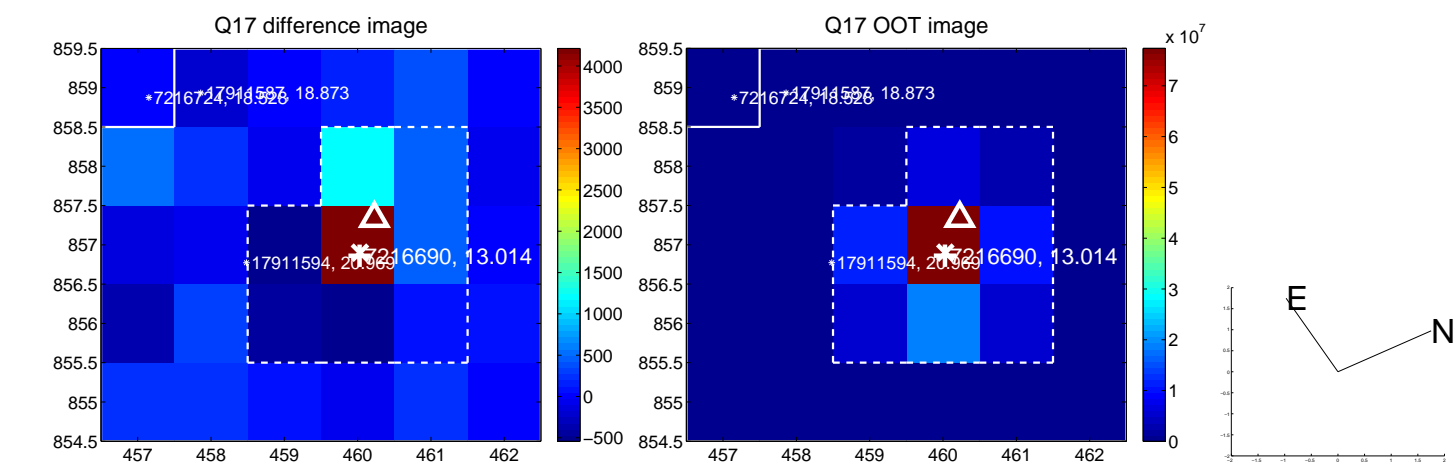
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

