

# KIC 005716932

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005716932-01	OBS	2358.01	56.493264	143.991817	377.3	8.592	21.5	22.0	2.05	6160	4.30	50.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005716932-01	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.

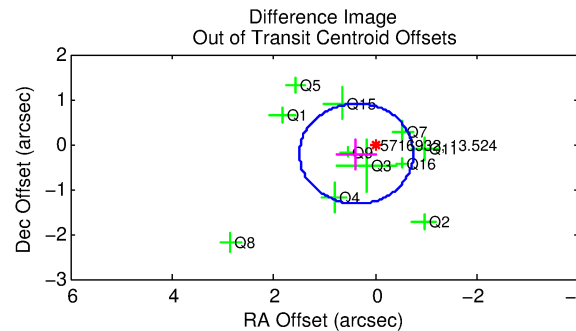
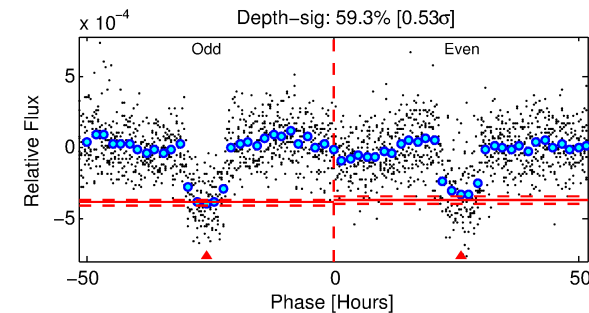
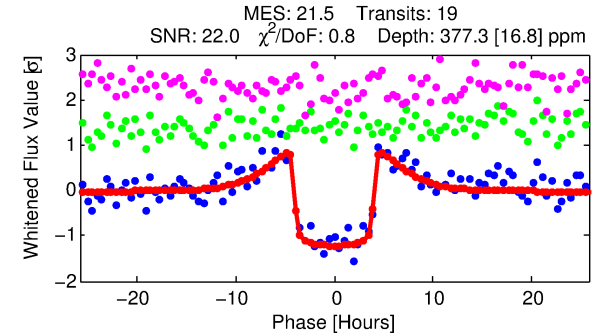
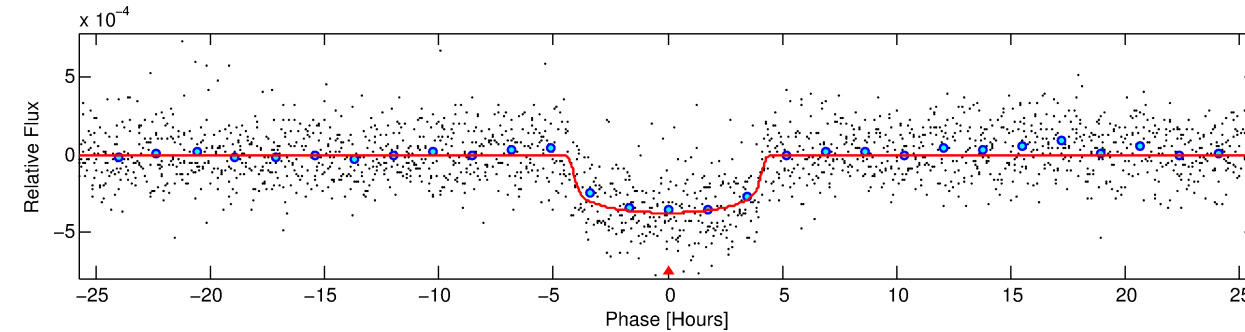
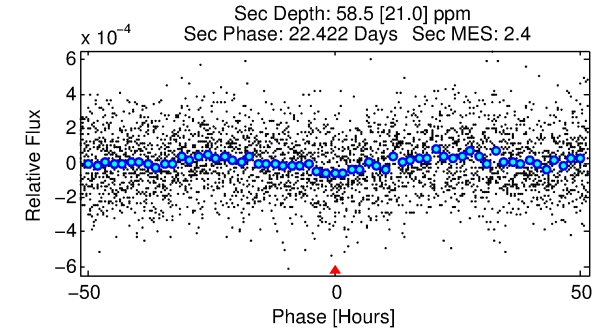
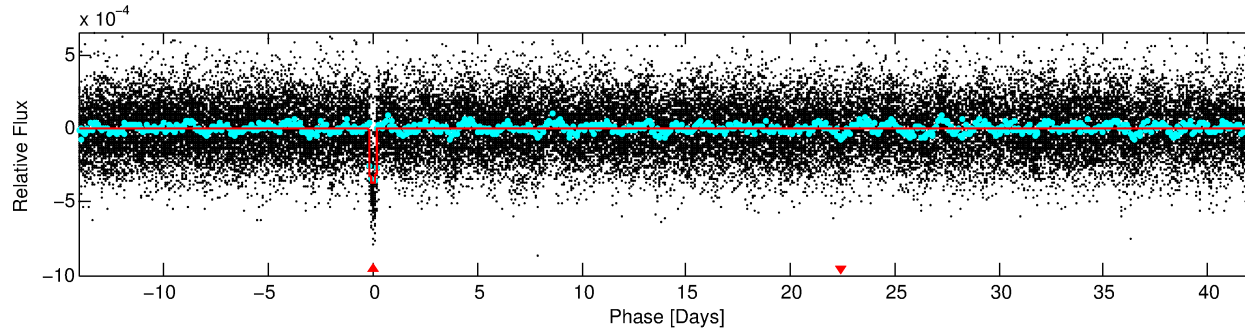
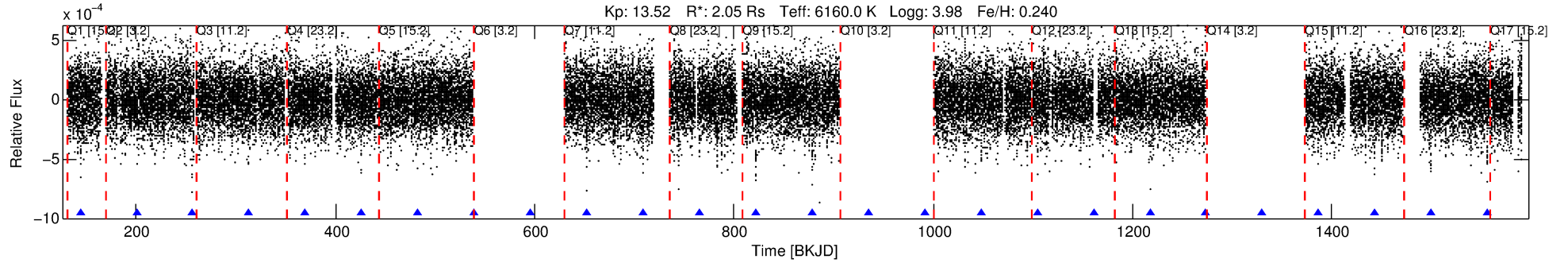
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005716932-01

No Significant Match Found

# DV One-Page Summary

KIC: 5716932 Candidate: 1 of 1 Period: 56.493 d  
KOI: K02358.01 Corr: 0.993



## DV Fit Results:

Period = 56.49326 [0.00028] d  
Epoch = 143.9918 [0.0042] BKJD  
Rp/R\* = 0.0193 [0.0026]  
a/R\* = 35.00 [22.06]  
b = 0.74 [0.38]  
Seff = 50.87 [17.04]  
Teff = 681 [57] K  
Rp = 4.30 [1.25] Re  
a = 0.3258 [0.0718] AU  
Ag = 184.52 [101.99] [1.80σ]  
Teffp = 3881 [440] K [7.21σ]

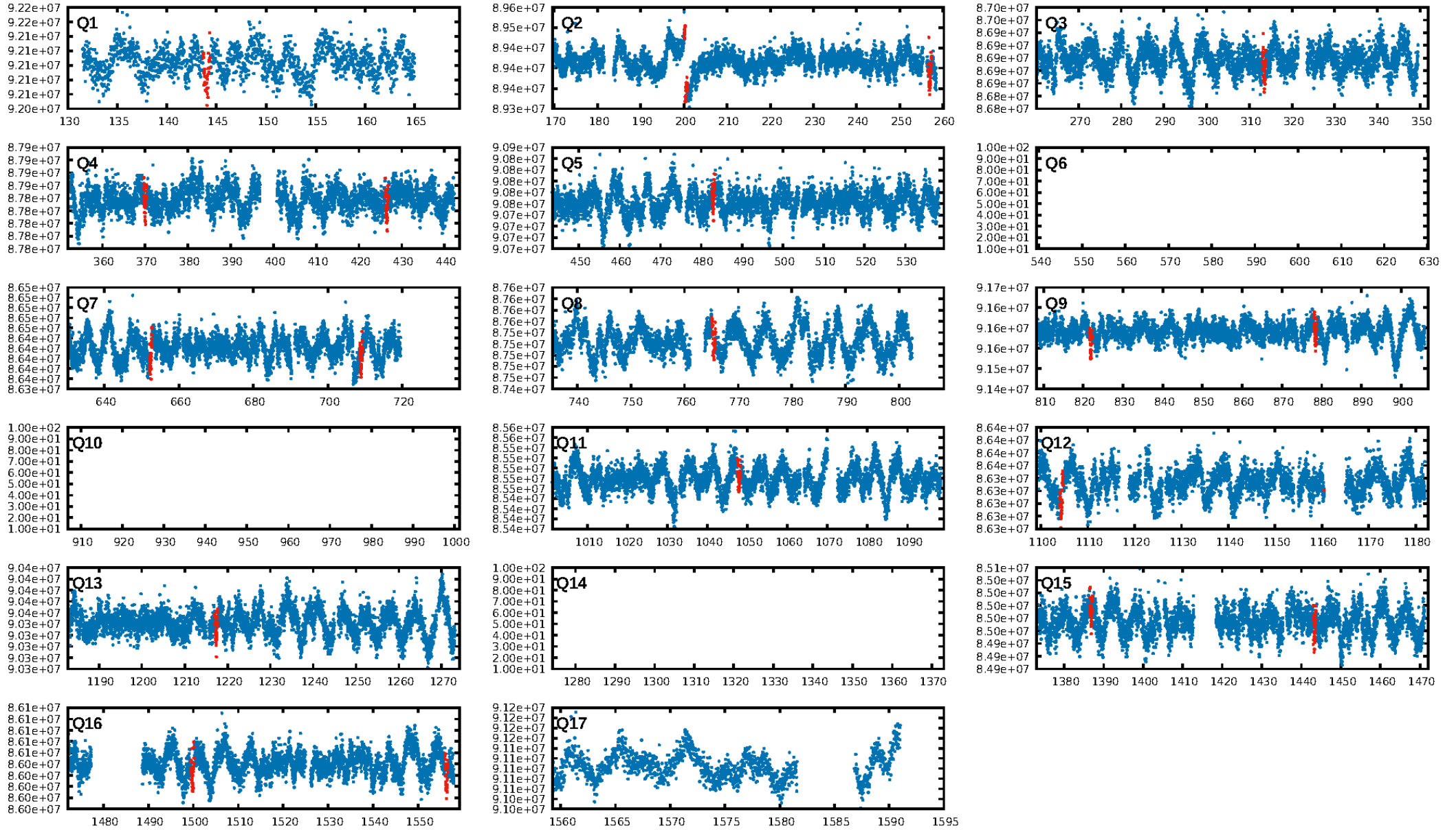
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 45.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.30e-102  
RollingBand-fgt: 1.00 [18/18]  
GhostDiagnostic-chr: 32.51  
Centroid-sig: 46.9%  
Centroid-so: 0.372 arcsec [1.07σ]  
OotOffset-rm: 0.433 arcsec [1.16σ]  
OotOffset-st: 1/4/3/3 [11]  
KicOffset-rm: 0.341 arcsec [0.87σ]  
KicOffset-st: 1/4/3/3 [11]  
DiffImageQuality-fgm: 1.00 [11/11]  
DiffImageOverlap-fno: 1.00 [11/11]

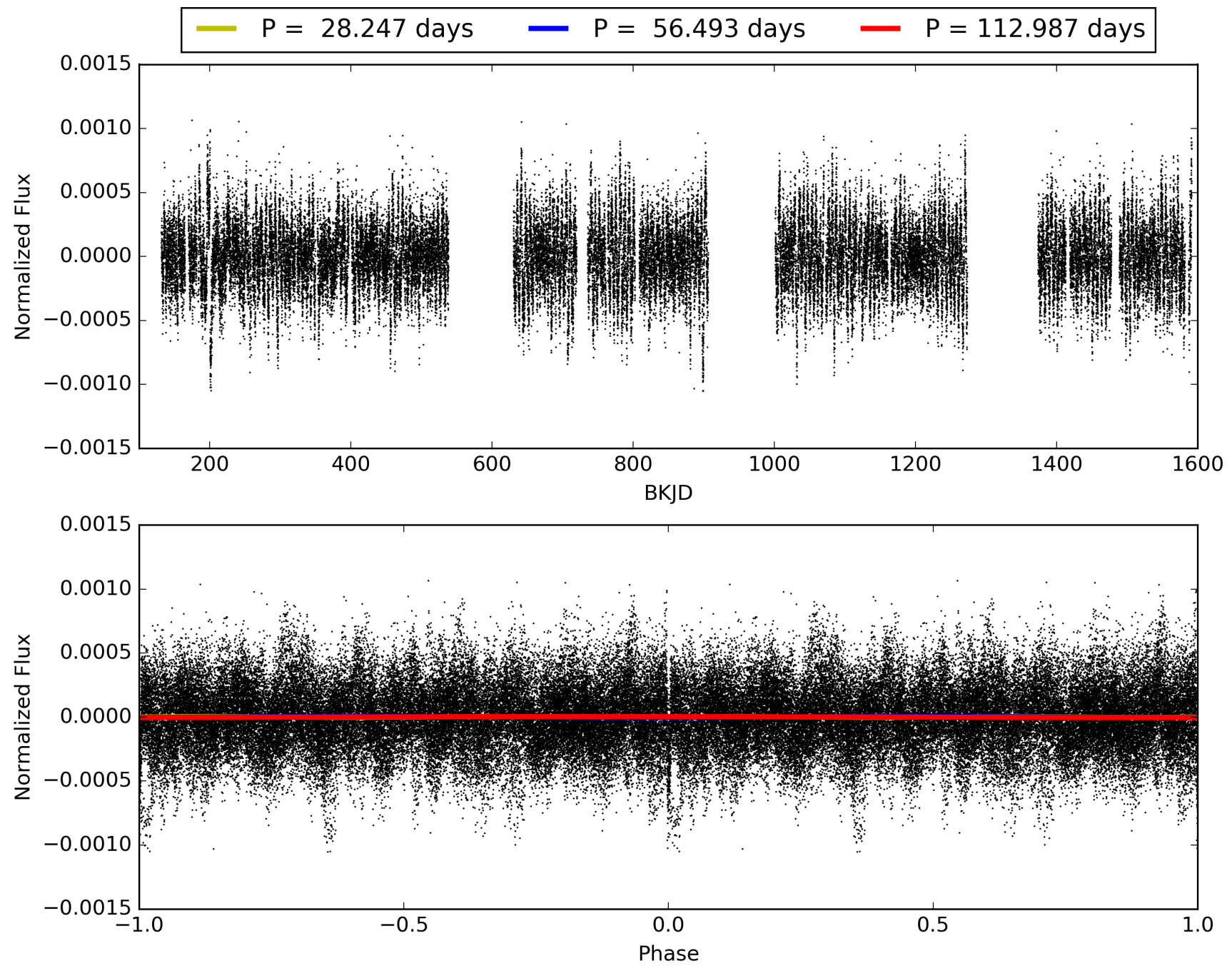
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:50:04 Z

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

# TCE 005716932-01, PDC Light Curves

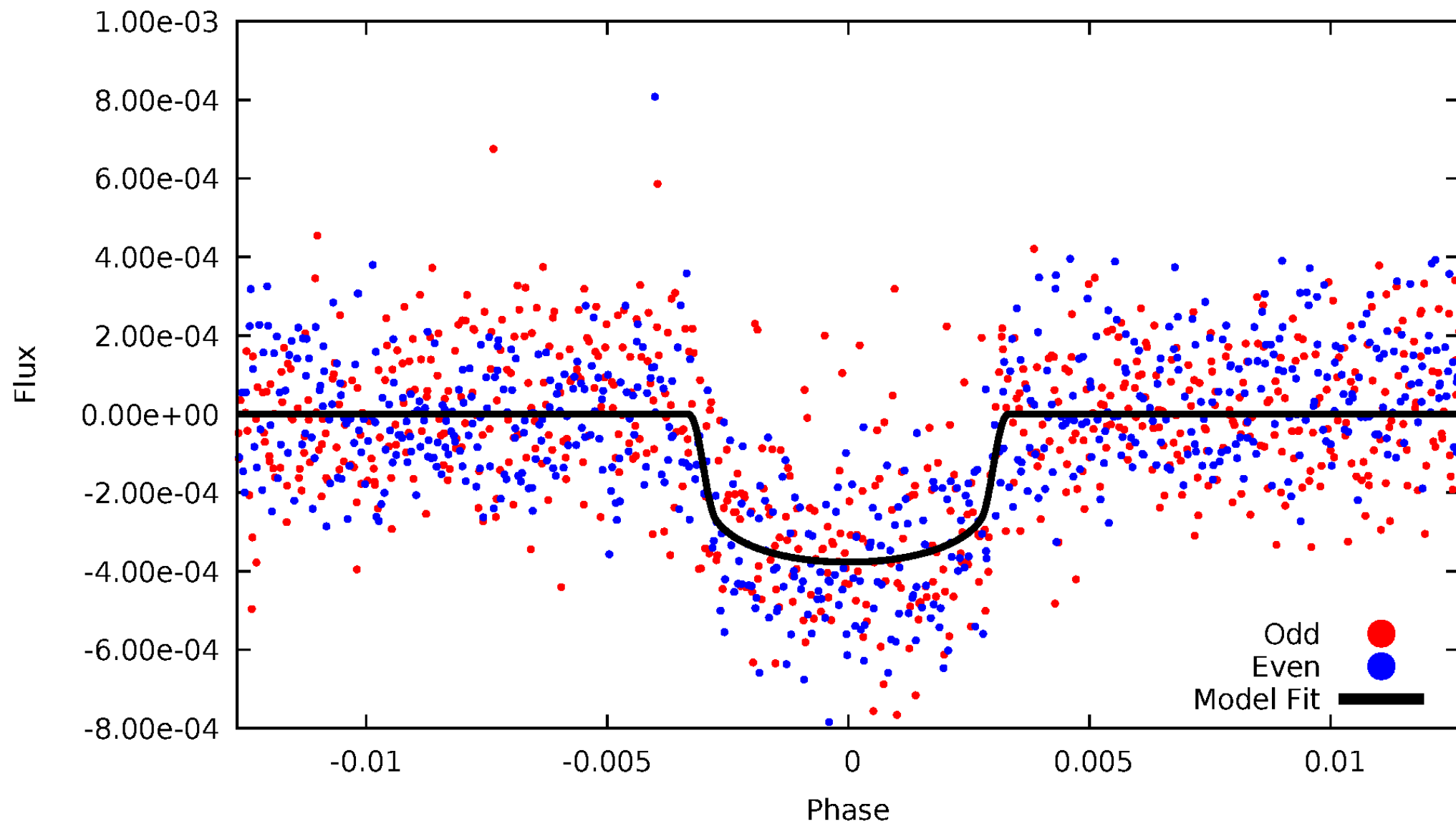


TCE 005716932-01



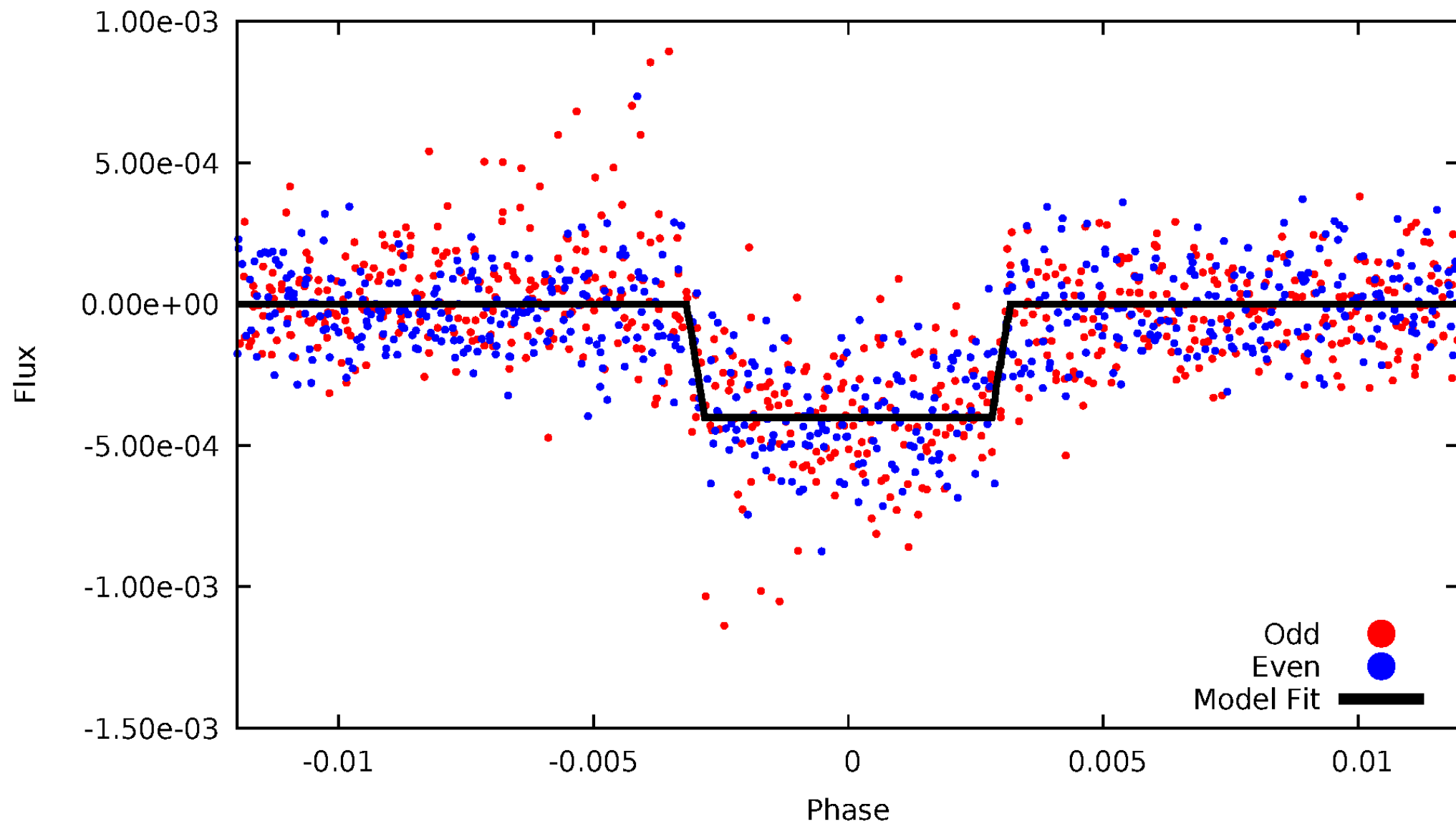
# DV Odd/Even

TCE 005716932-01



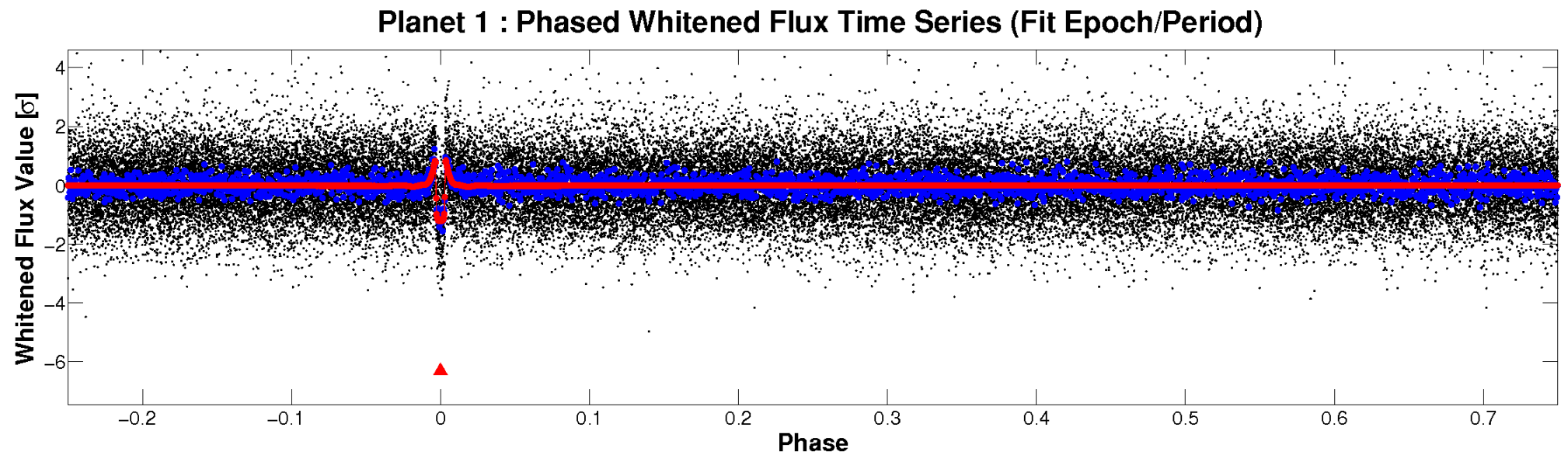
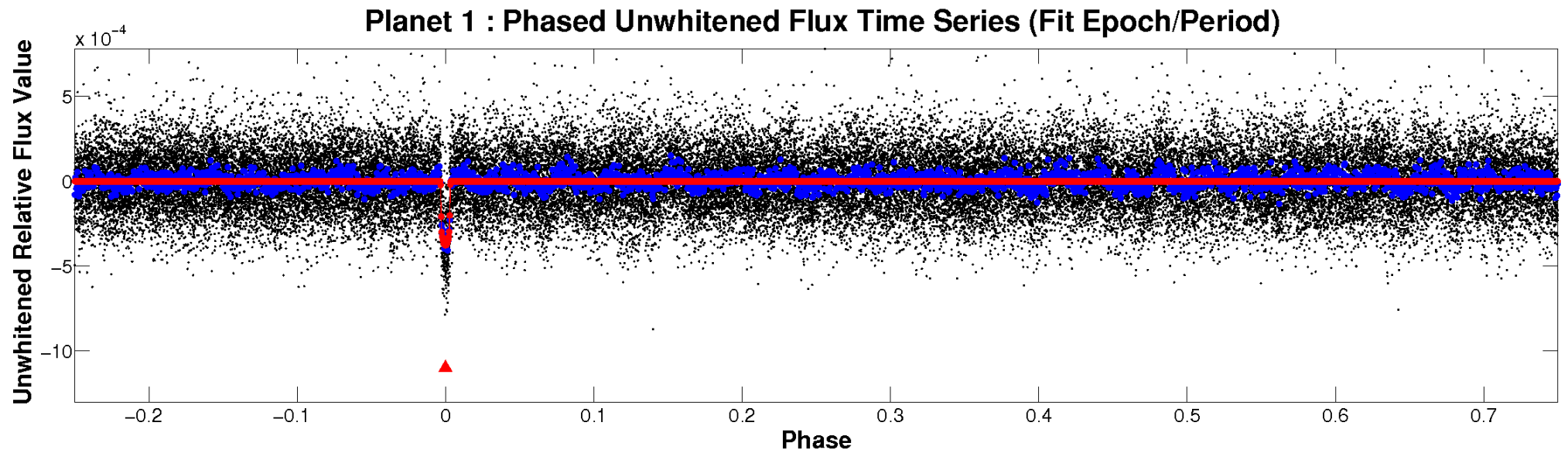
# ALT Odd/Even

TCE 005716932-01



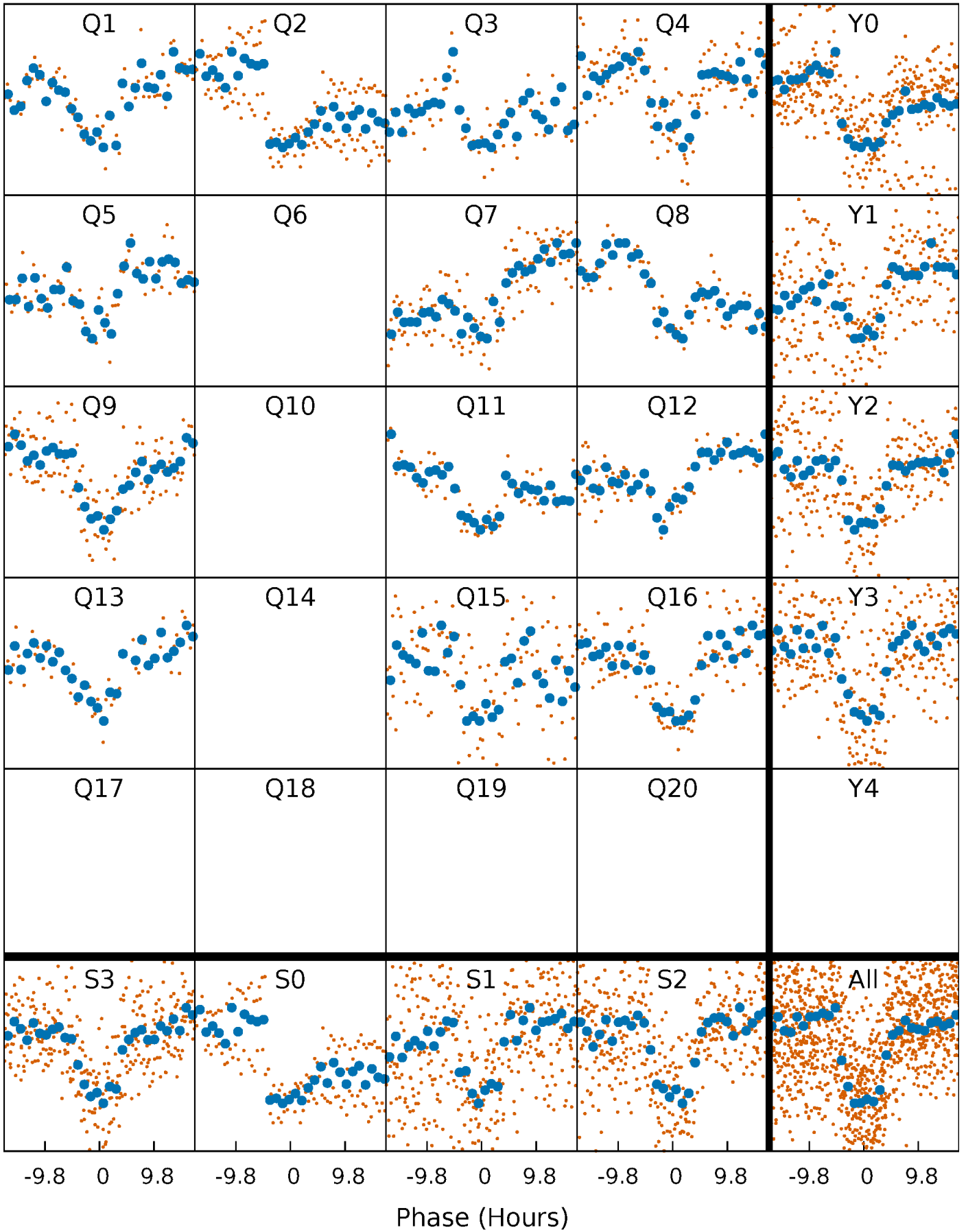


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

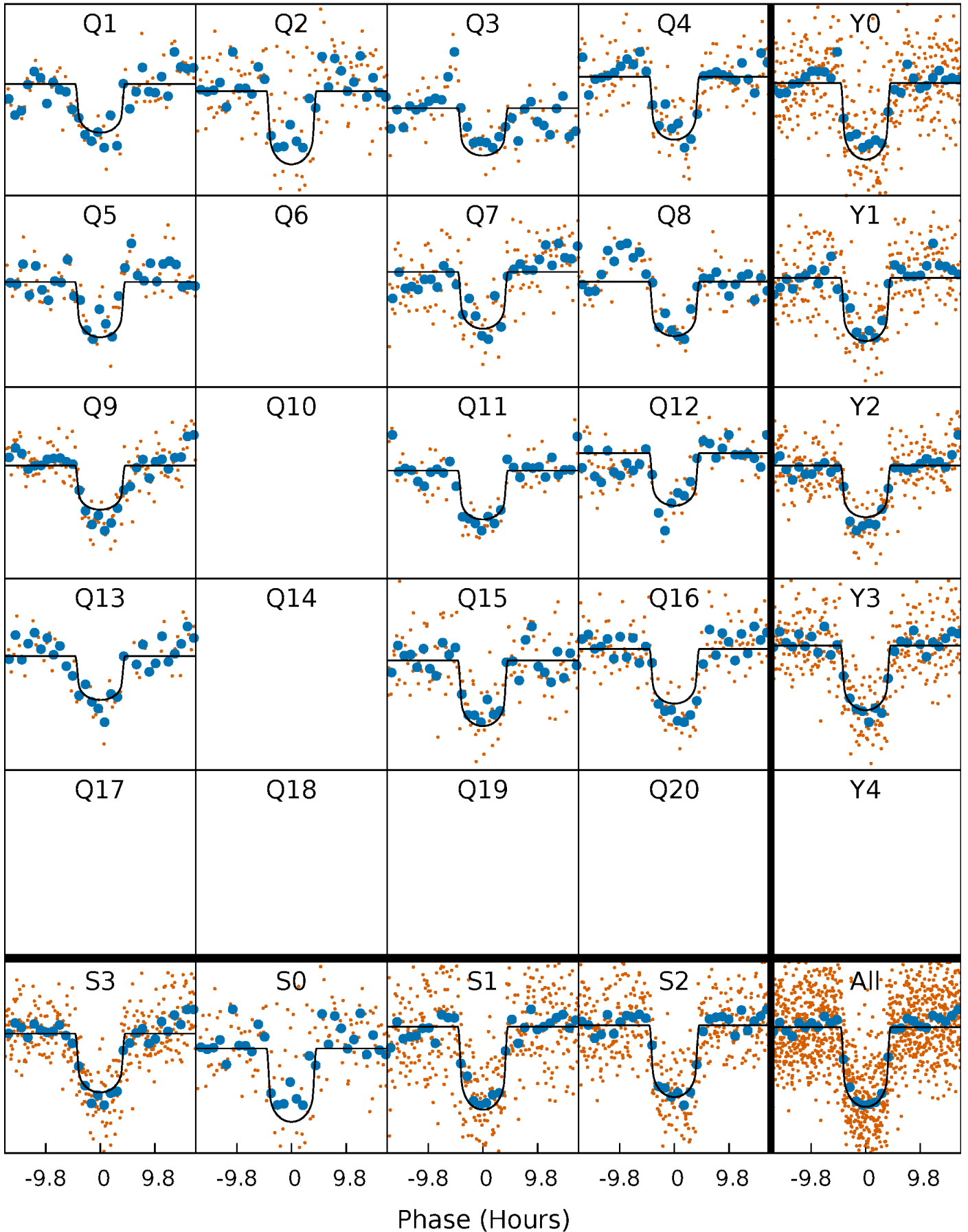
TCE 005716932-01 P= 56.493264 Days  $T_0=143.991817$  (BKJD)





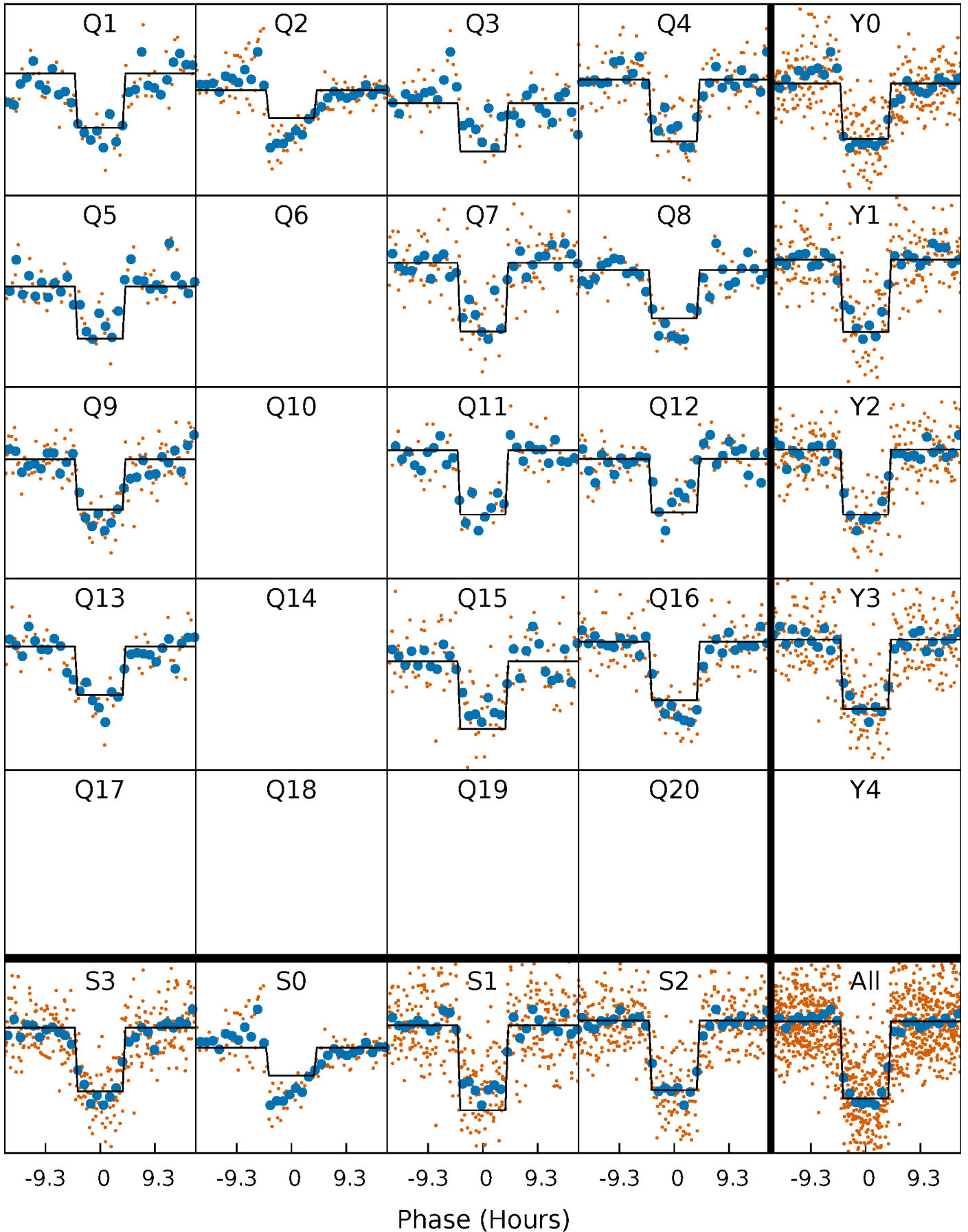
# DV Quarter-Phased Transit Curves

TCE 005716932-01 P= 56.493264 Days  $T_0=143.991817$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

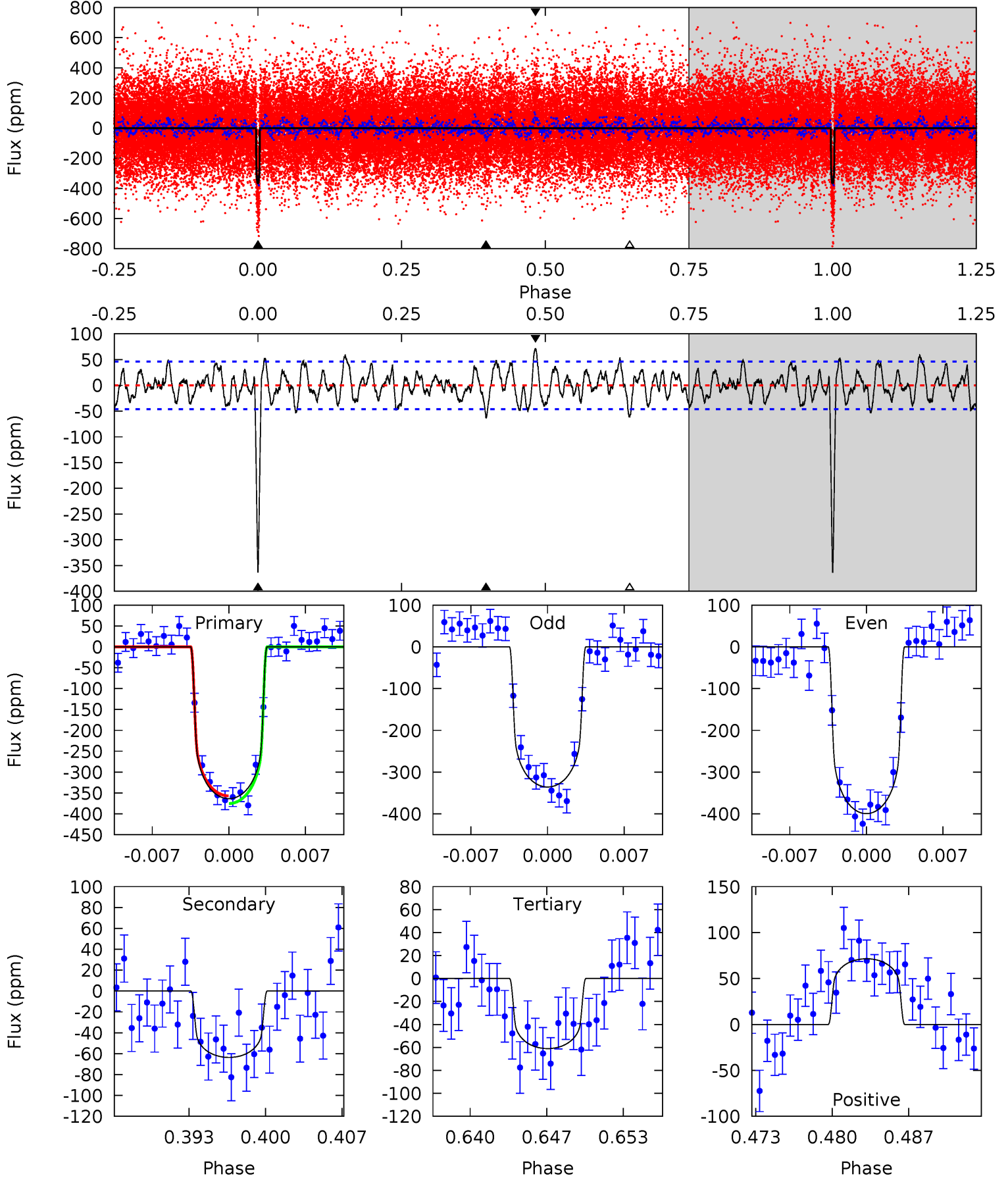
TCE 005716932-01 P= 56.492737 Days  $T_0=144.000091$  (BKJD)



# DV Model-Shift Uniqueness Test

005716932-01, P = 56.493264 Days, E = 87.498553 Days

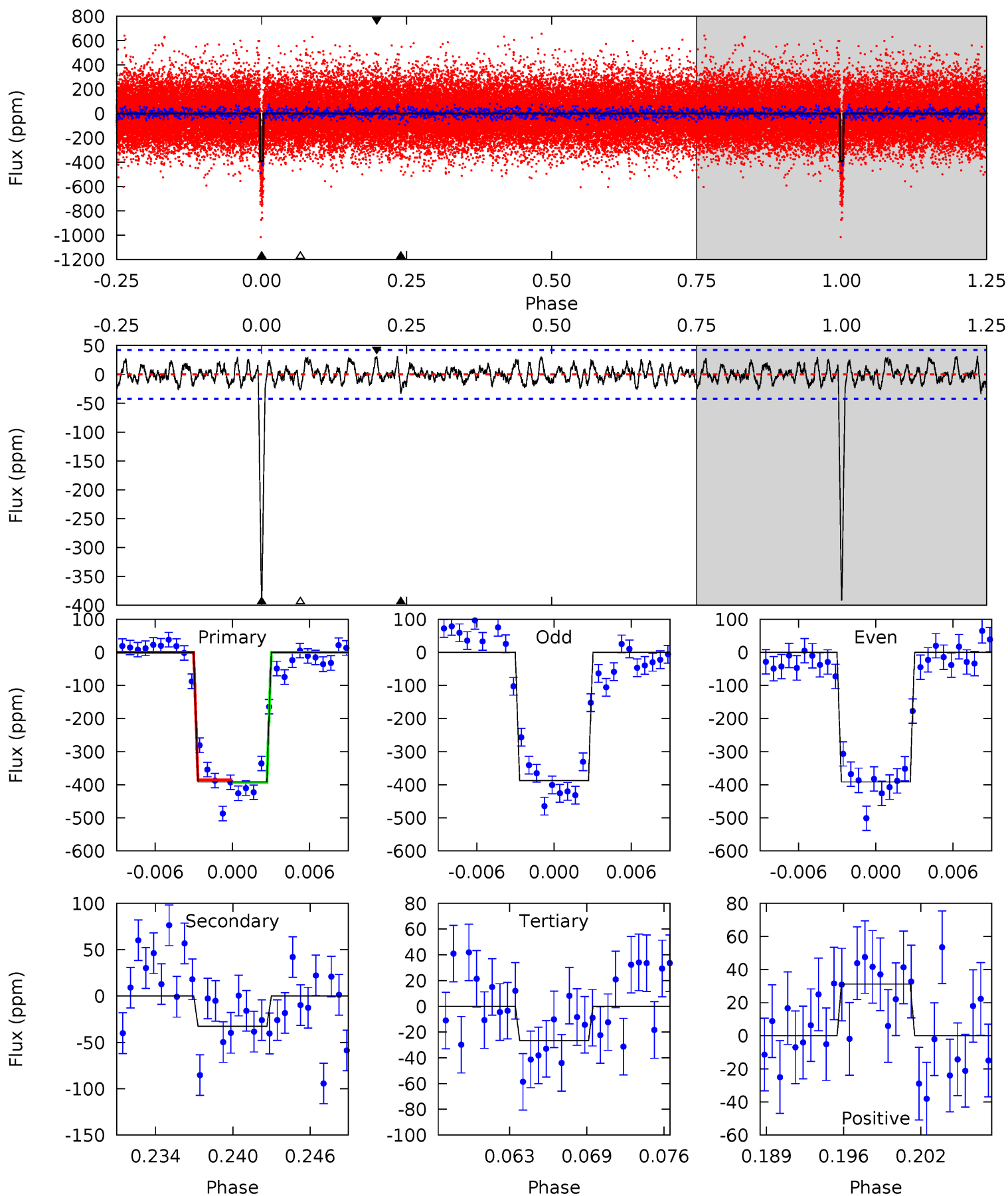
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.1	7.01	6.73	7.88	5.10	2.71	2.51	33.4	32.2	0.28	-0.86	3.51	1.01	0.16	1.01



# Alt Model-Shift Uniqueness Test

005716932-01, P = 56.492737 Days, E = 87.507354 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
47.5	3.96	3.23	3.78	5.11	2.73	1.36	44.2	43.7	0.73	0.18	0.24	1.05	0.07	0.49



### Stellar Parameters For KIC 005716932

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6160^{+123}_{-123}$	$3.976^{+0.180}_{-0.105}$	$0.240^{+0.150}_{-0.150}$	$2.046^{+0.352}_{-0.527}$	$1.443^{+0.129}_{-0.193}$	$0.237^{+0.256}_{-0.077}$
	+2%/-2%	+5%/-3%	+62%/-62%	+17%/-26%	+9%/-13%	+108%/-33%
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 005716932-01 / KOI 2358.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-64 \pm 9$	$4.20^{+0.80}_{-0.77}$	$945^{+50}_{-55}$	$4217^{+280}_{-219}$	$208^{+102}_{-61}$
Alt.	$-33 \pm 8$	$4.35^{+0.78}_{-0.79}$	$947^{+52}_{-60}$	$3712^{+225}_{-227}$	$101^{+53}_{-37}$

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

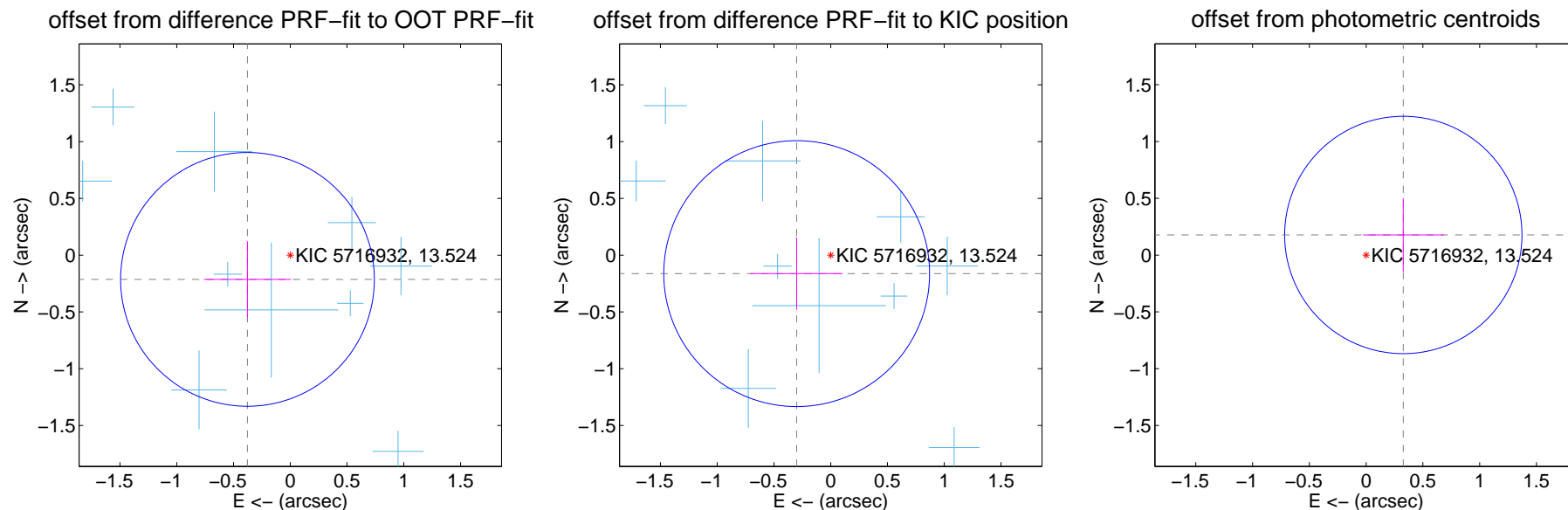
## DV Centroid Data

Supplemental centroid analysis for 005716932-01. Kepler magnitude: 13.52. Transit SNR 21.99

There are 11 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

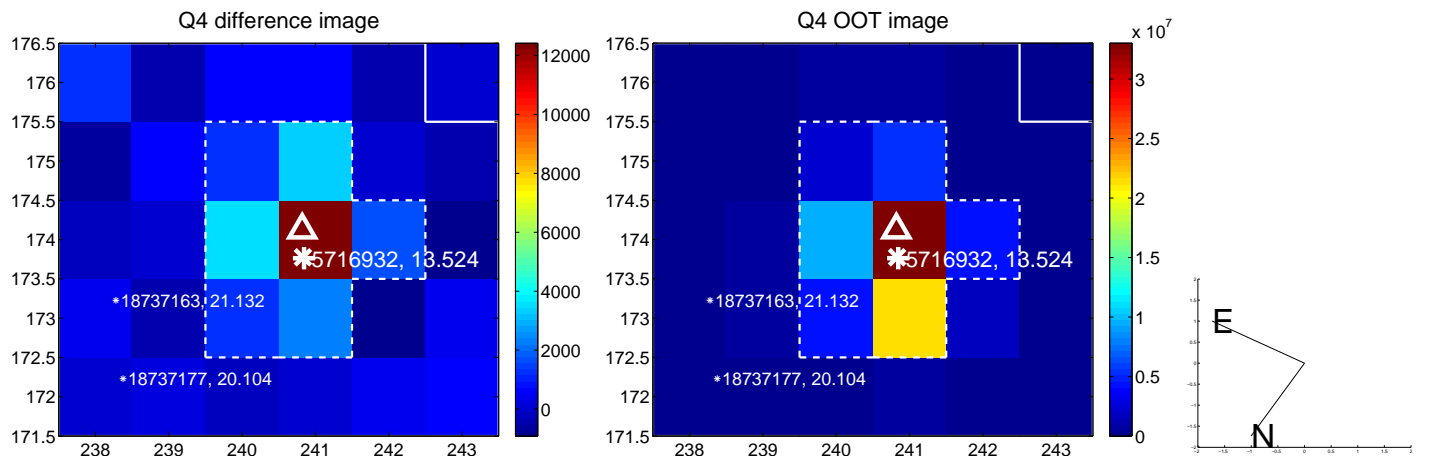
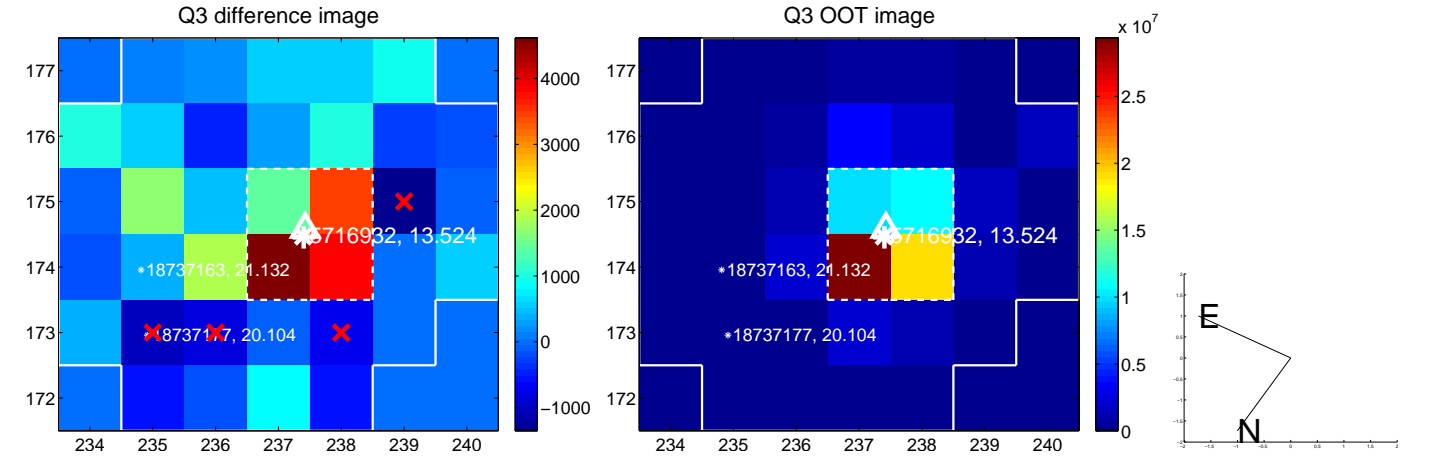
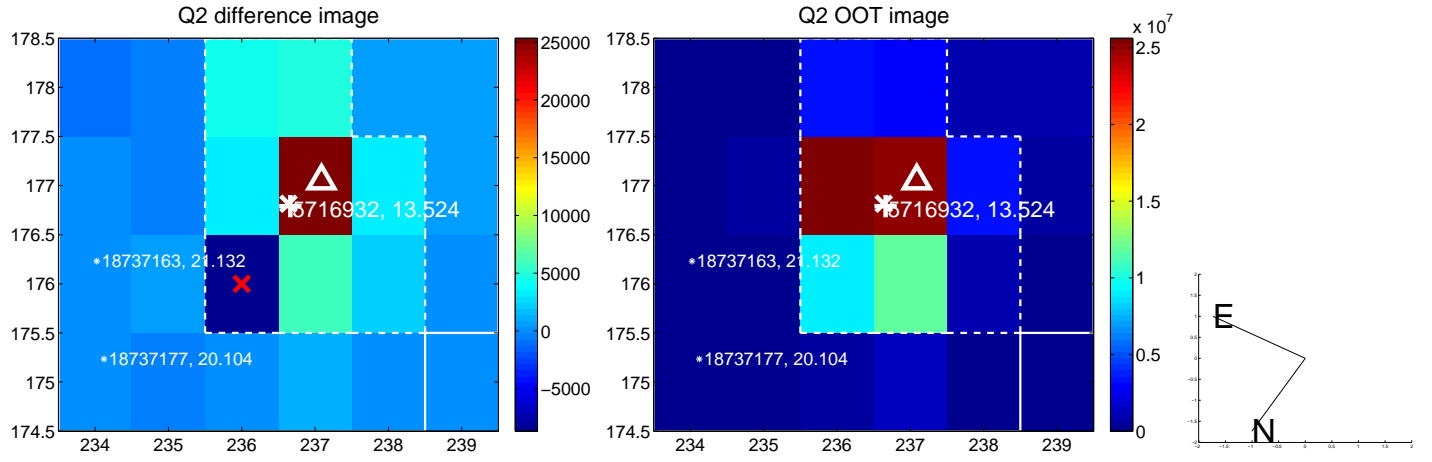
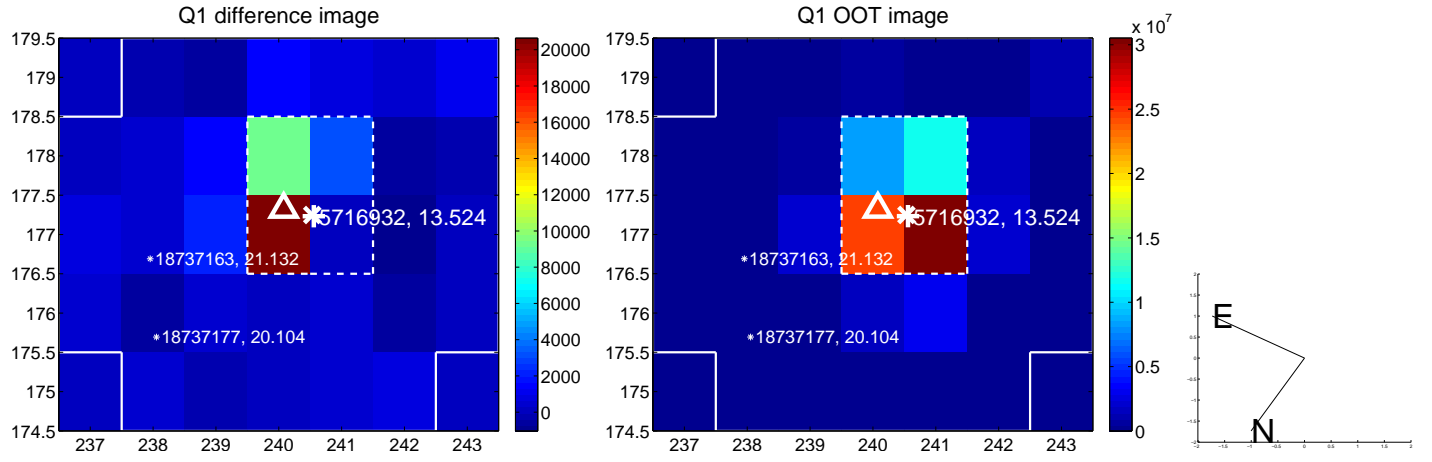
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.433 \pm 0.372$	1.16	$0.377 \pm 0.383$	$-0.213 \pm 0.336$
PRF-fit source offset from KIC position	$0.341 \pm 0.390$	0.87	$0.300 \pm 0.406$	$-0.163 \pm 0.318$
photometric centroid source offset	$0.37 \pm 0.35$	1.07	$-0.33 \pm 0.36$	$0.18 \pm 0.32$



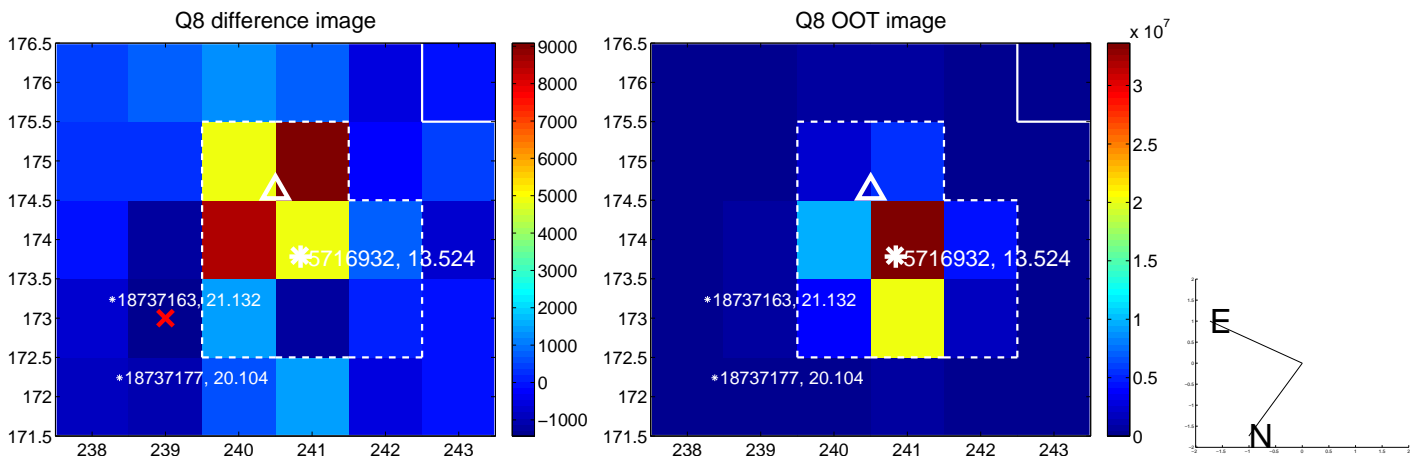
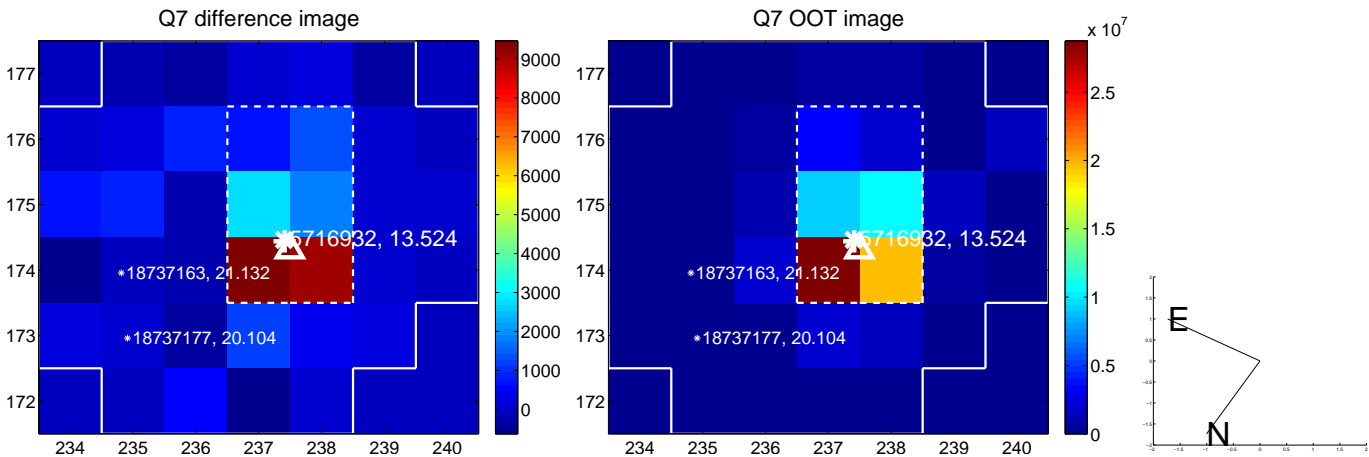
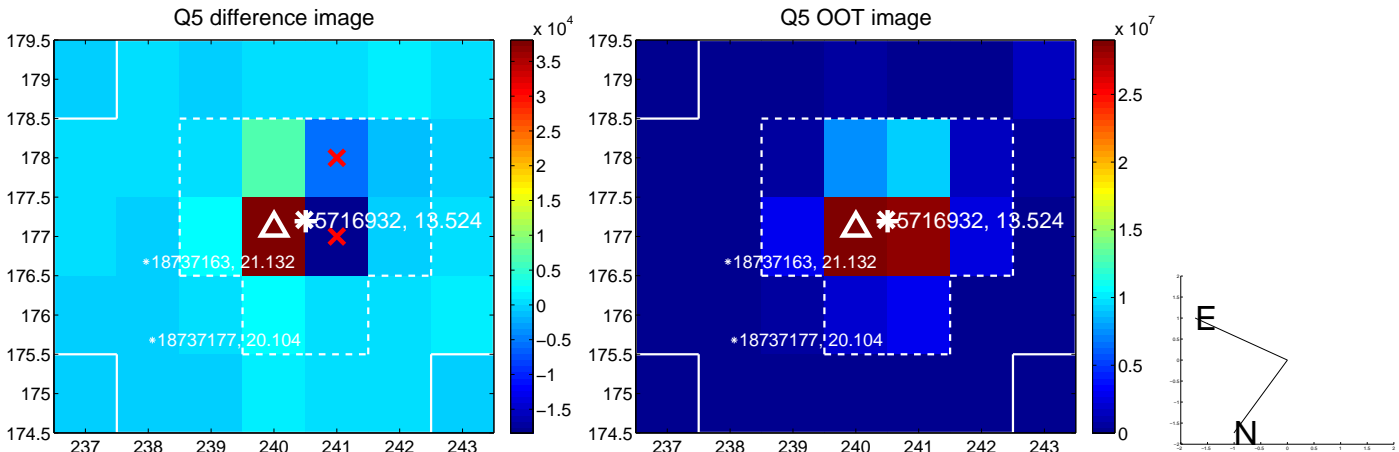
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



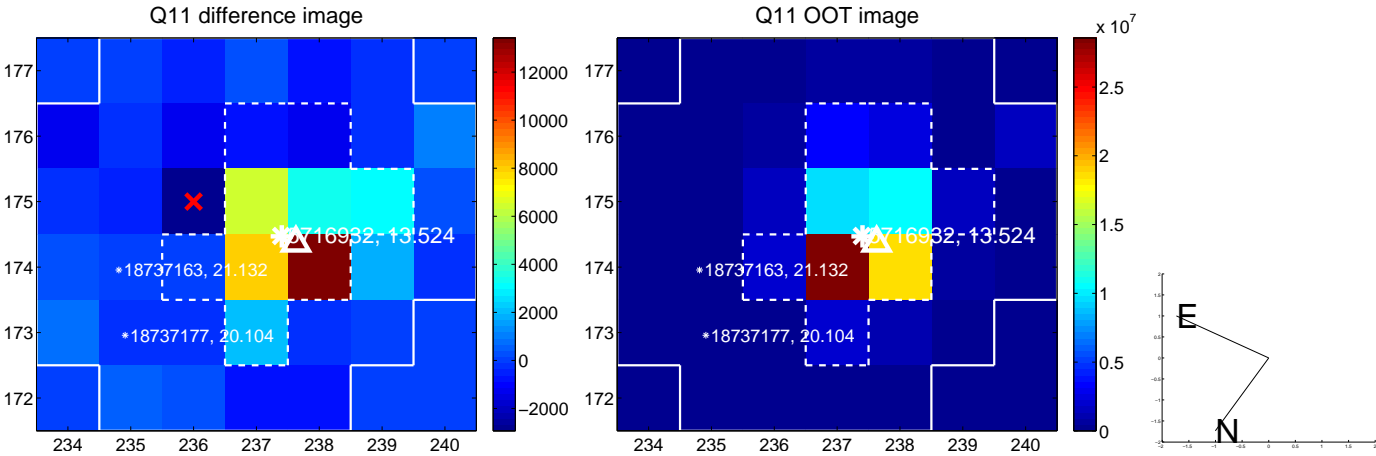
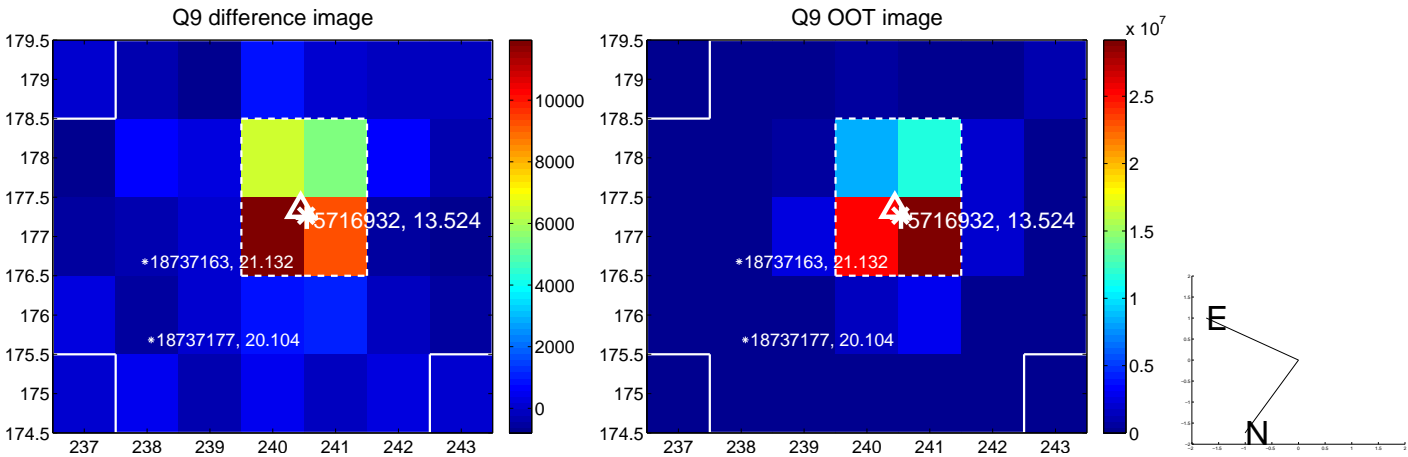
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

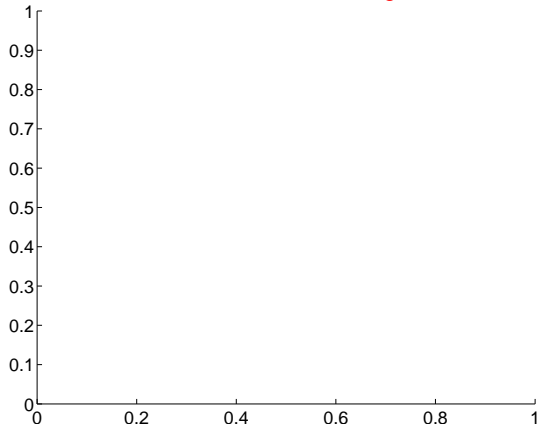


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

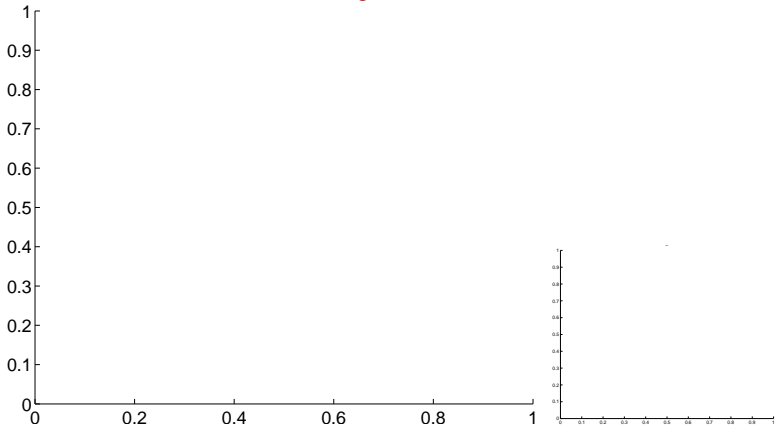


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

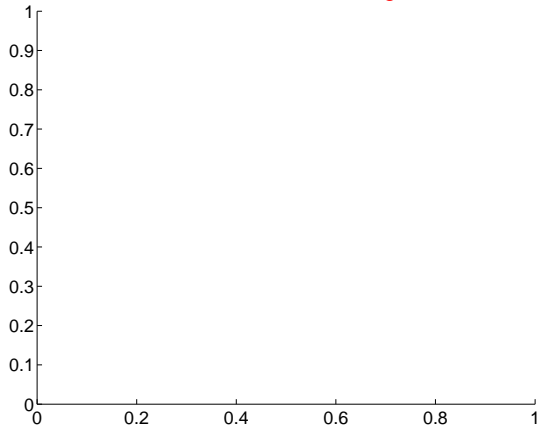
Q13 no difference image



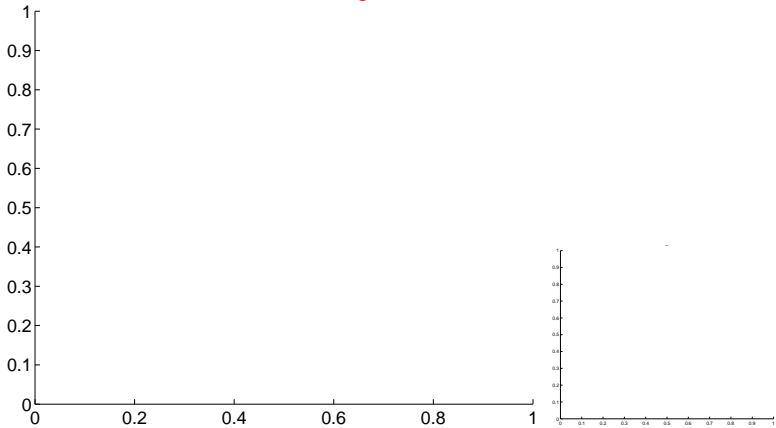
Q13 no OOT image



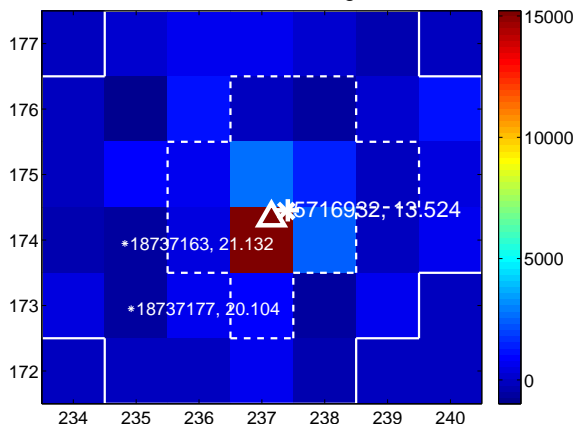
Q14 no difference image



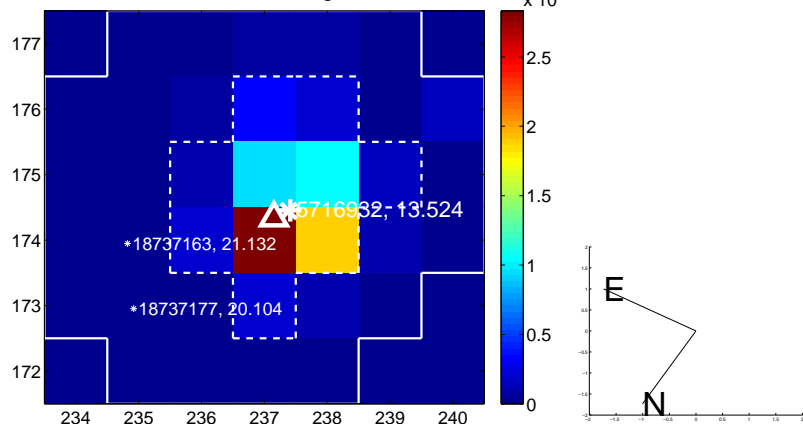
Q14 no OOT image



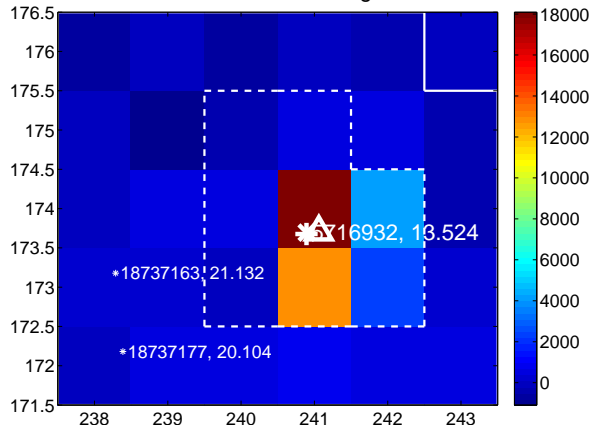
Q15 difference image



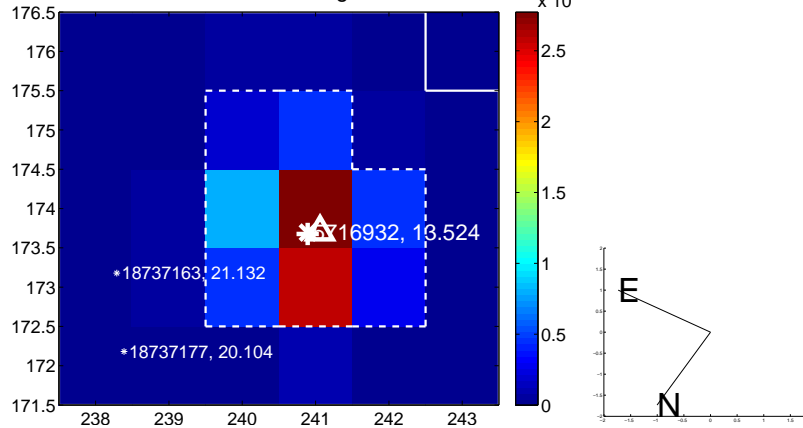
Q15 OOT image



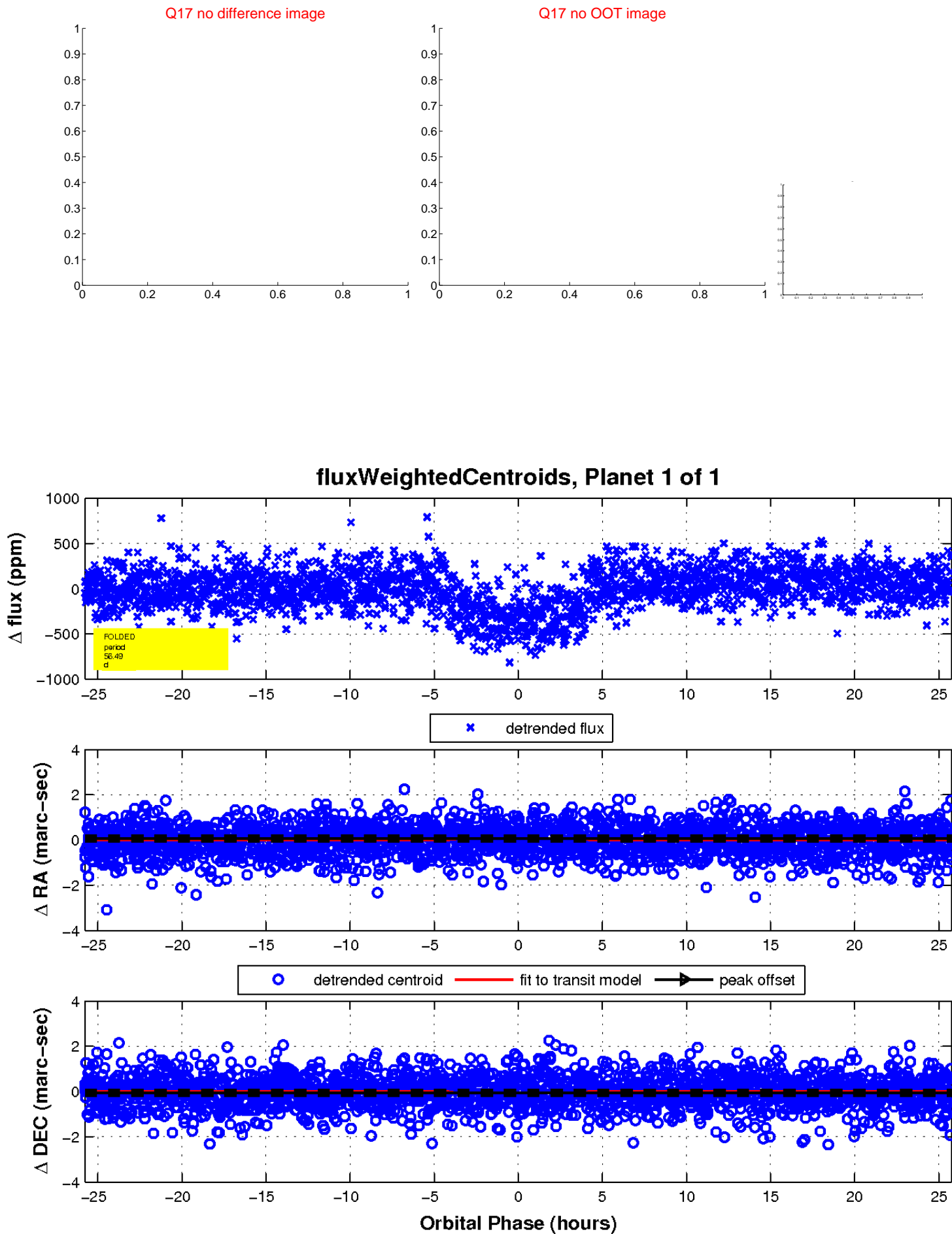
Q16 difference image



Q16 OOT image



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



UKIRT Image

Declination

