

# KIC 005900235

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005900235-01	OBS	3426.01	58.770268	174.764590	241.3	7.776	10.4	11.9	1.01	6158	1.72	15.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005900235-01	OBS	FP	0.39	0	0	1	0	CENT_UNRESOLVED_OFFSET

**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.

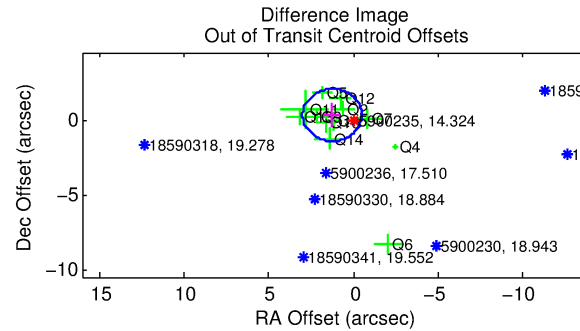
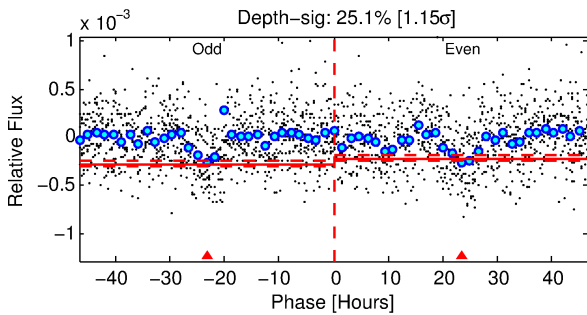
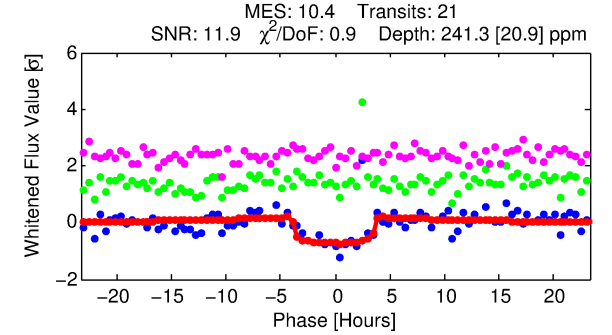
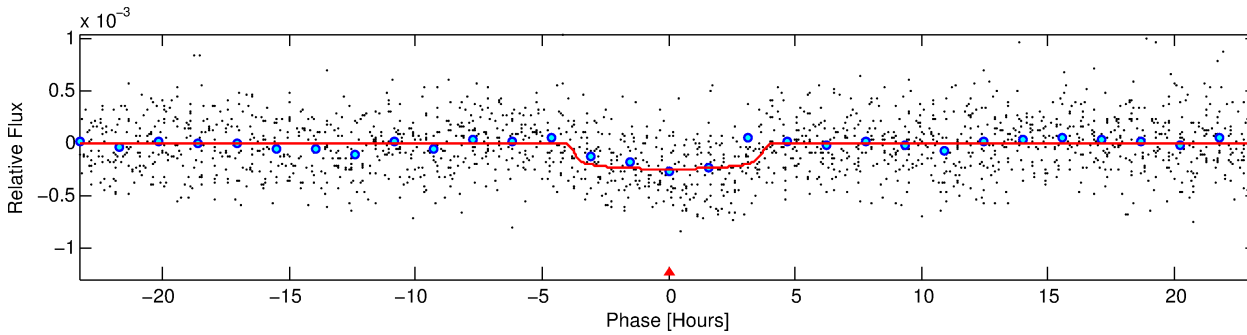
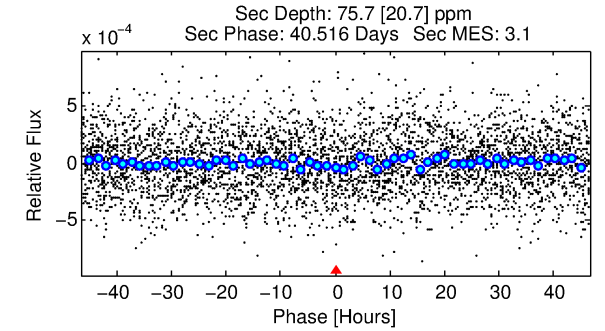
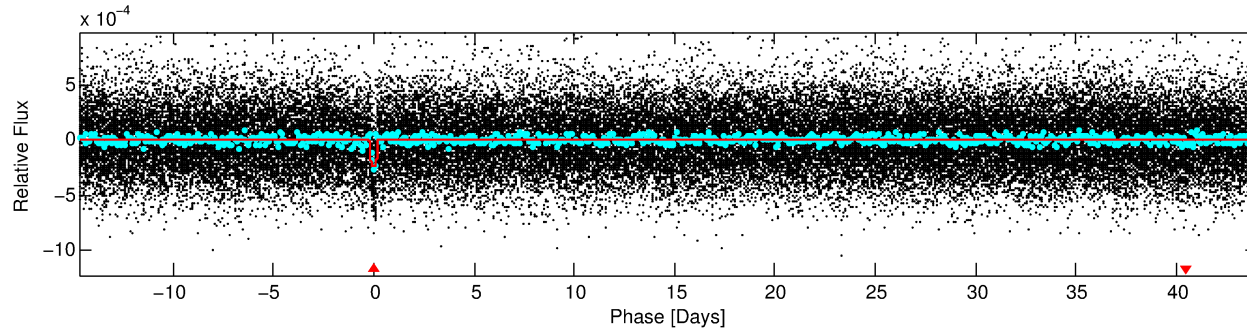
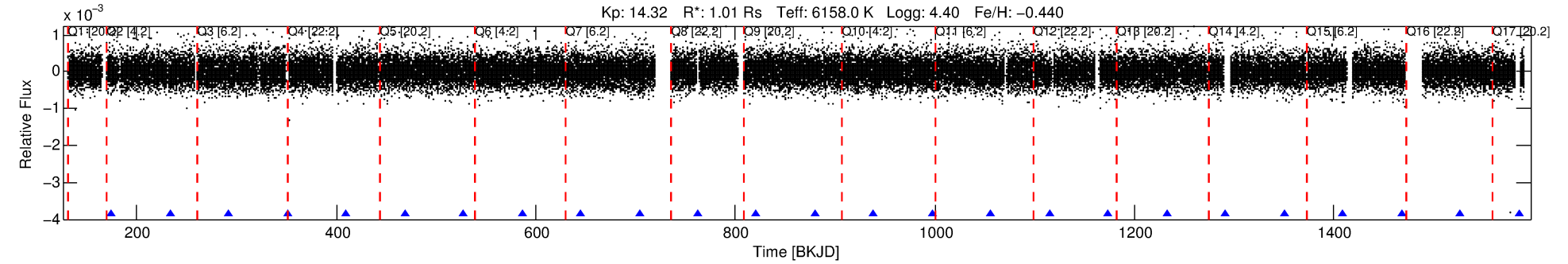
## Ephemeris Match Information For 005900235-01

No Significant Match Found

# DV One-Page Summary

KIC: 5900235 Candidate: 1 of 1 Period: 58.770 d

KOI: K03426.01 Corr: 0.958



## DV Fit Results:

Period = 58.77027 [0.00075] d  
Epoch = 174.7646 [0.0102] BKJD  
Rp/R\* = 0.0155 [0.0063]  
a/R\* = 38.49 [82.10]  
b = 0.77 [1.16]  
Seff = 15.81 [5.83]  
Teff = 508 [47] K  
Rp = 1.72 [0.85] Re  
a = 0.2892 [0.0692] AU  
Ag = 1182.08 [1089.59] [1.08 $\sigma$ ]  
Teffp = 4609 [997] K [4.11 $\sigma$ ]

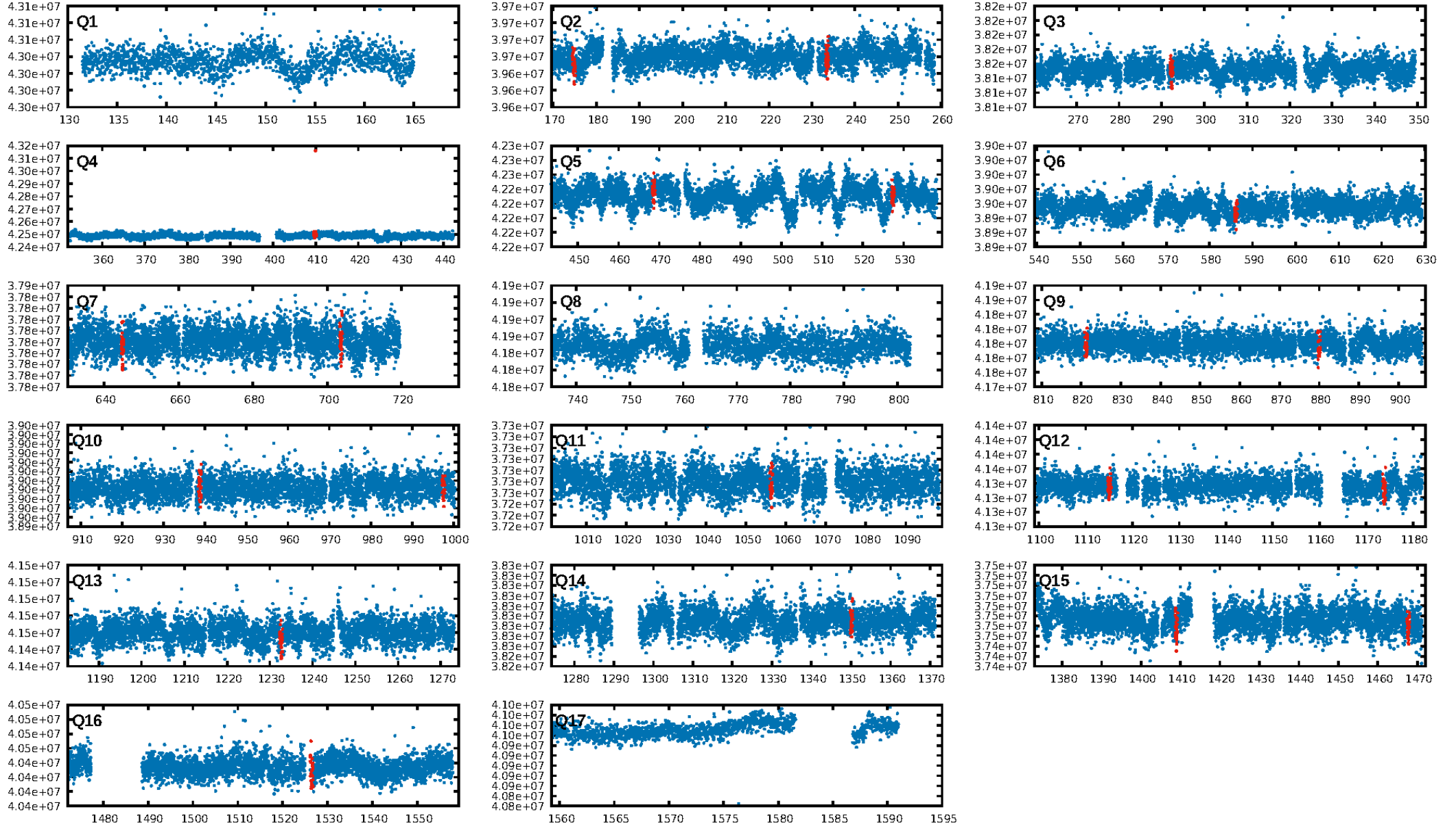
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 23.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.21e-23  
RollingBand-fgt: 1.00 [21/21]  
GhostDiagnostic-chr: 5.482  
Centroid-sig: 99.9%  
Centroid-so: 0.163 arcsec [0.15 $\sigma$ ]  
OotOffset-rm: 1.305 arcsec [2.25 $\sigma$ ]  
KicOffset-rm: 1.393 arcsec [2.14 $\sigma$ ]  
OotOffset-st: 4/3/2/3 [12]  
KicOffset-st: 4/3/2/3 [12]  
DiffImageQuality-fgm: 0.75 [9/12]  
DiffImageOverlap-fno: 1.00 [12/12]

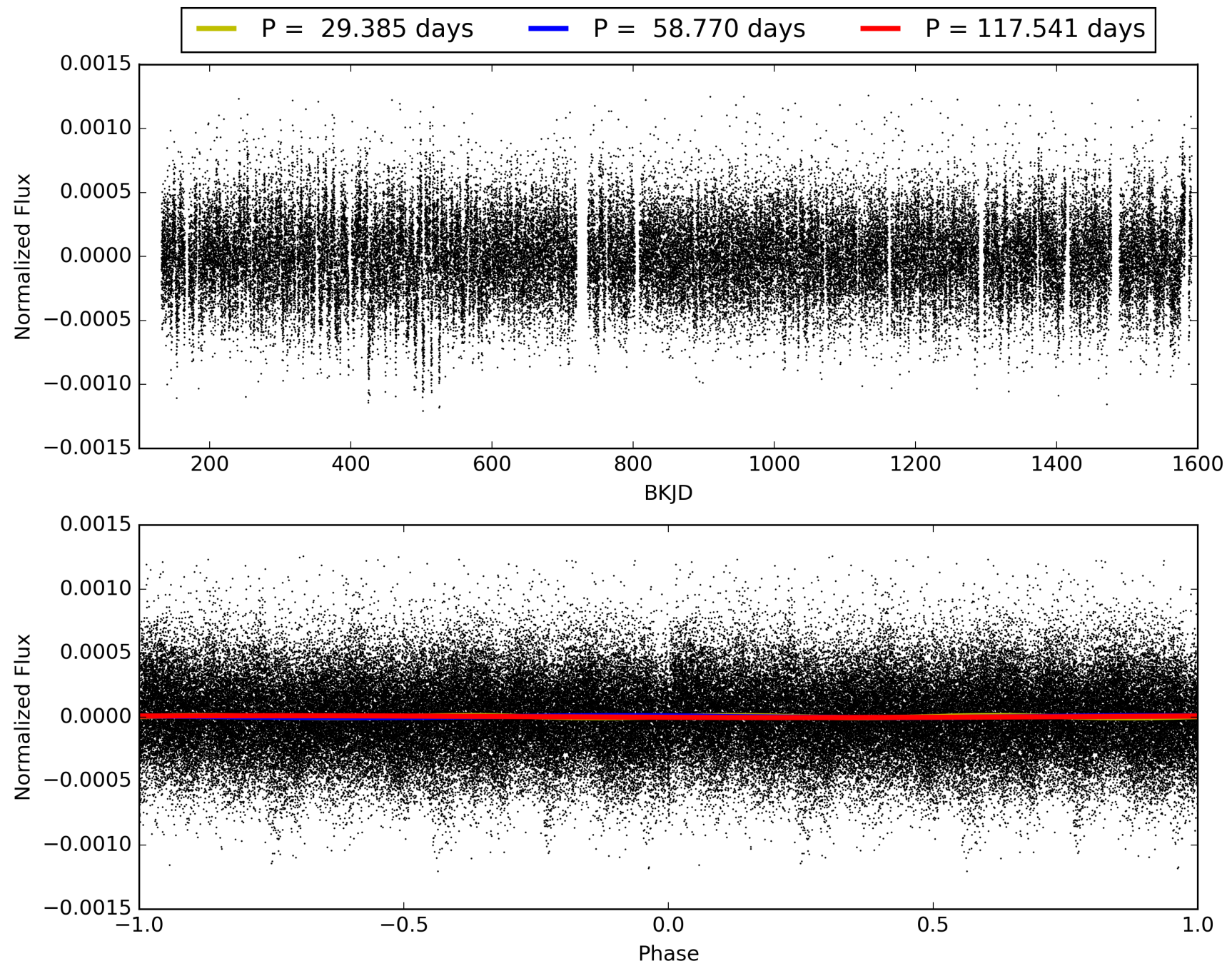
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:03:45 Z

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

# TCE 005900235-01, PDC Light Curves

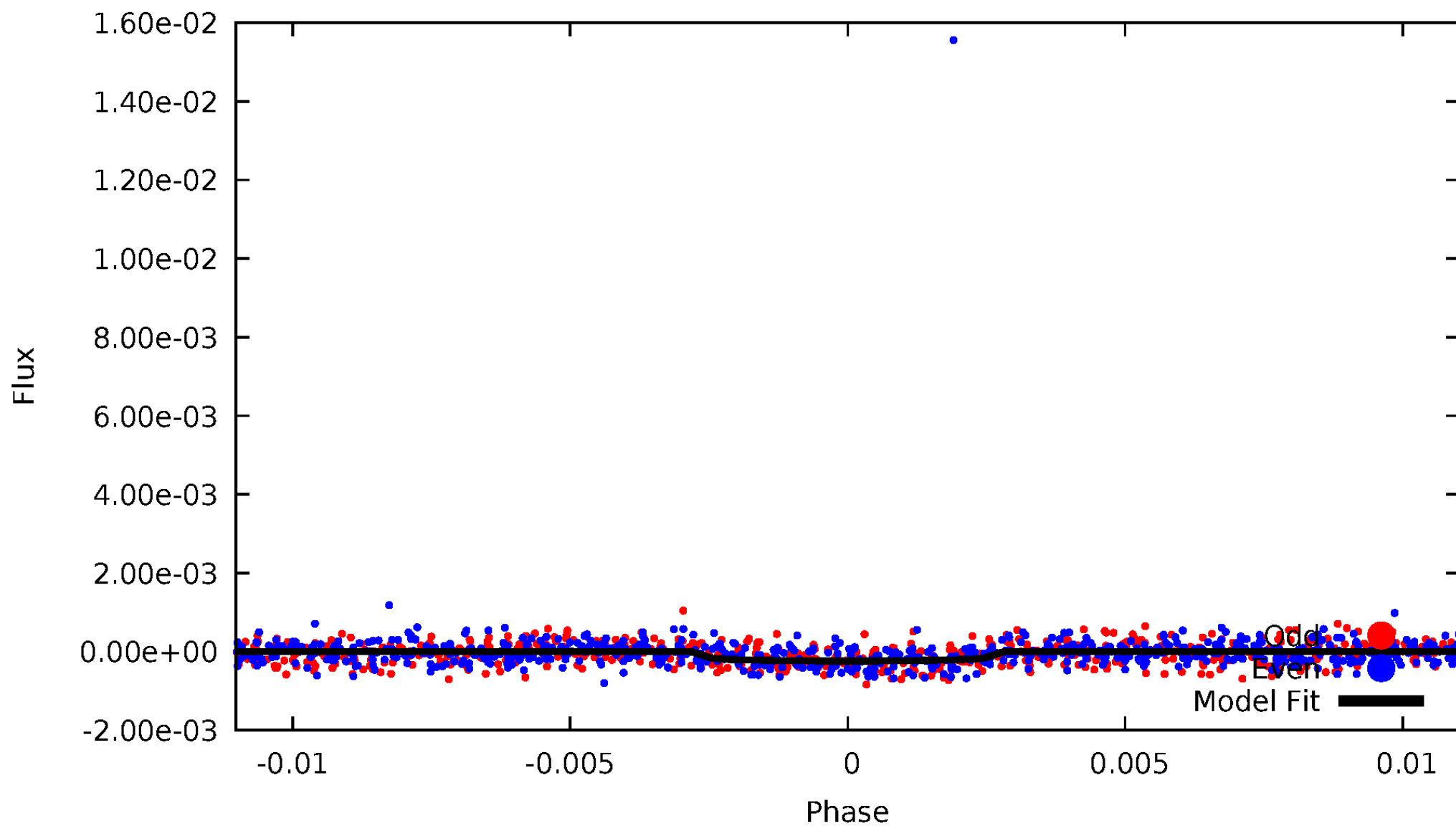


TCE 005900235-01



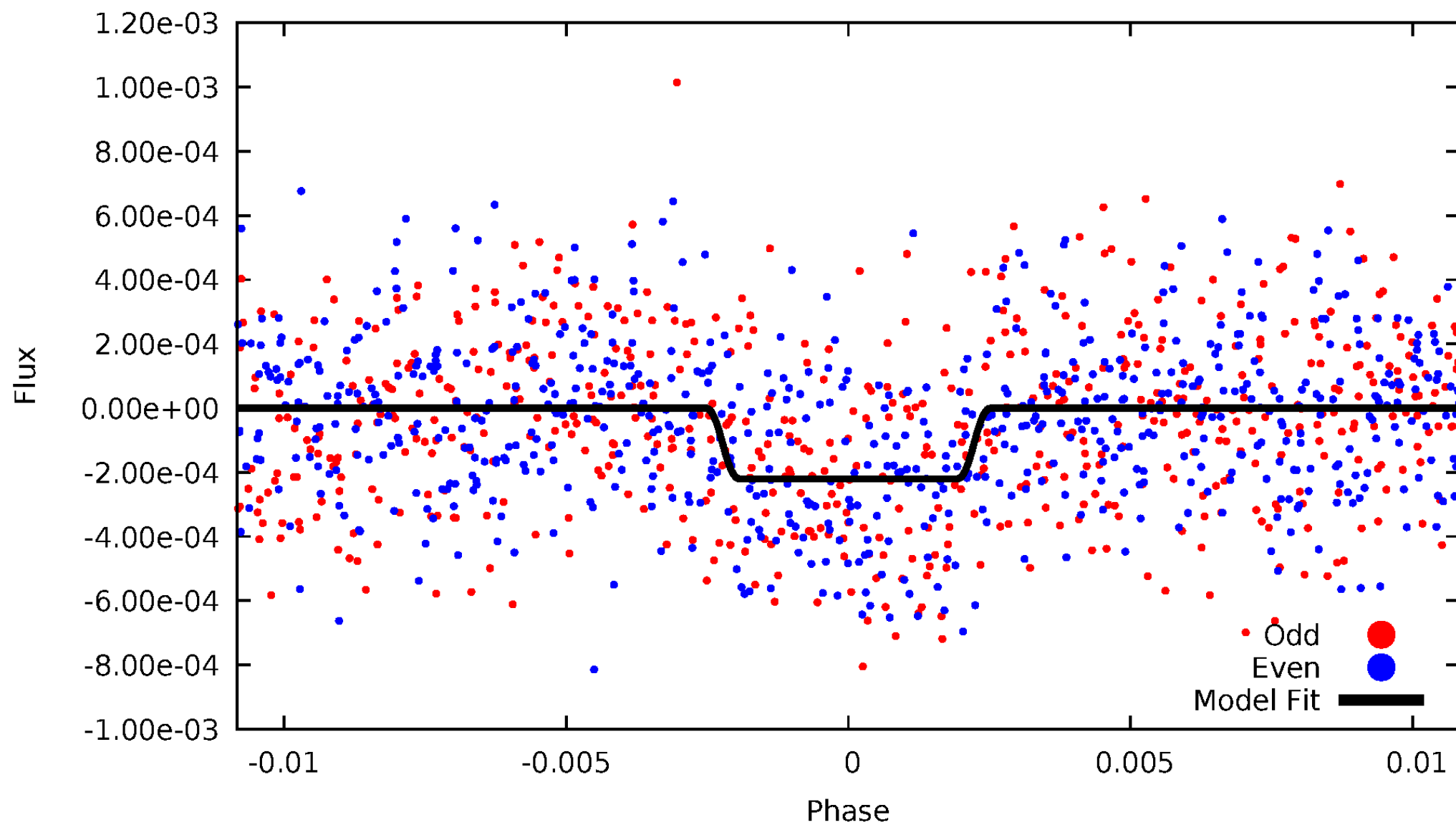
# DV Odd/Even

TCE 005900235-01



# ALT Odd/Even

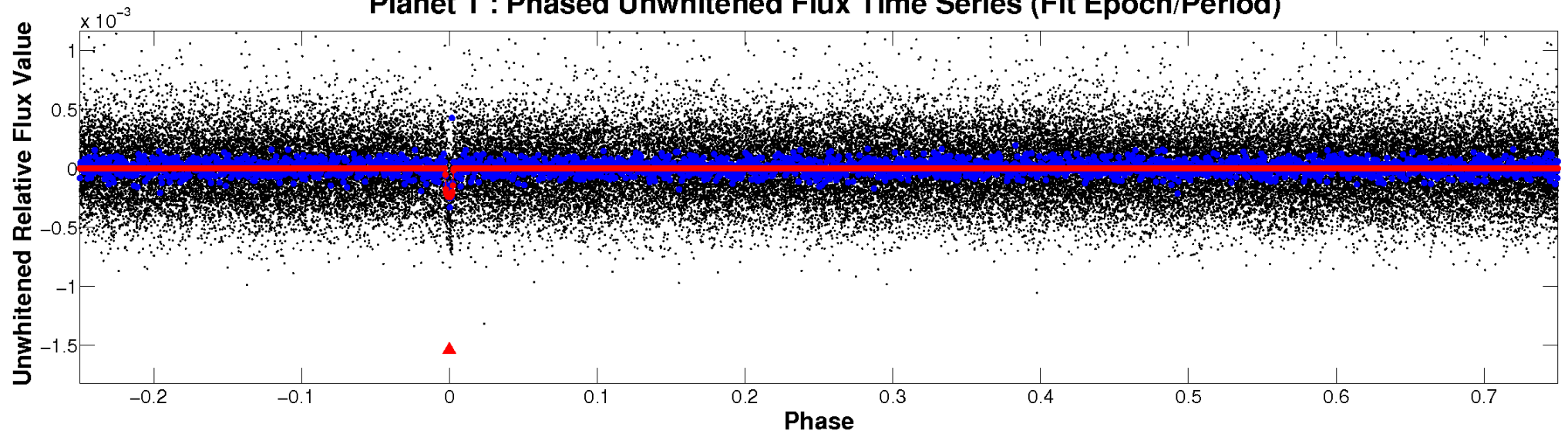
TCE 005900235-01



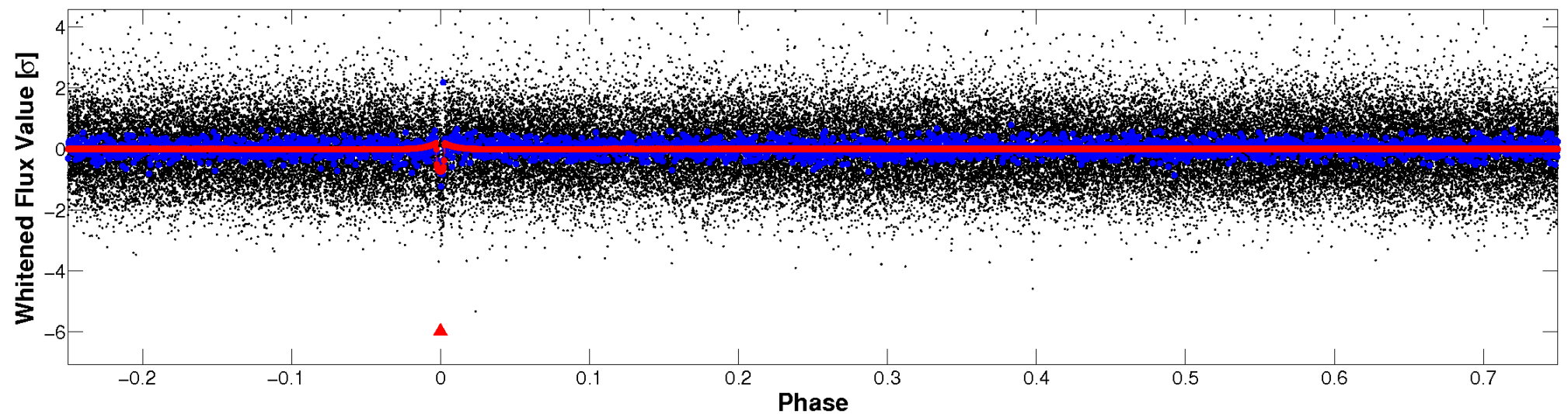


# Non-Whitened Vs. Whitened Light Curve

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

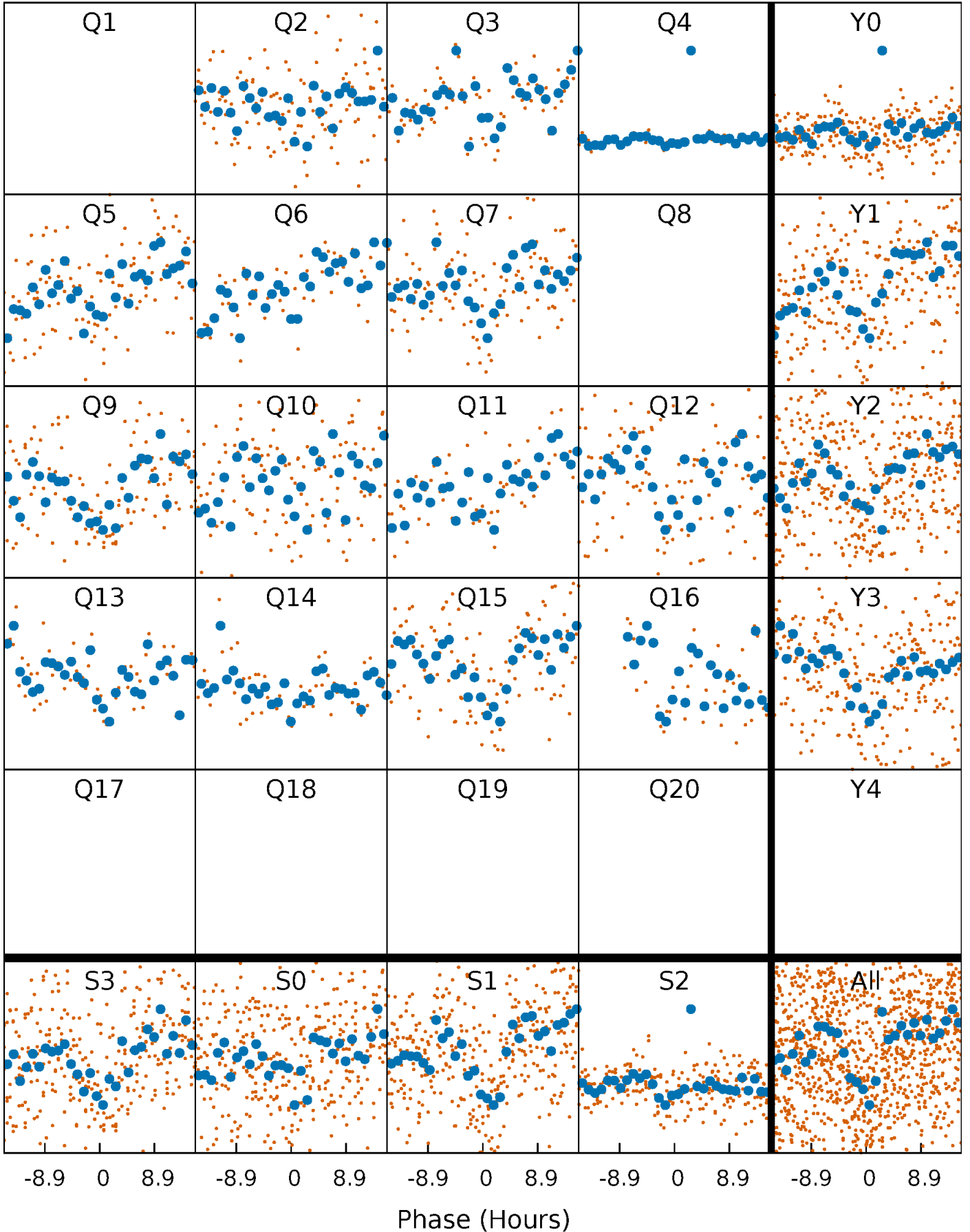


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

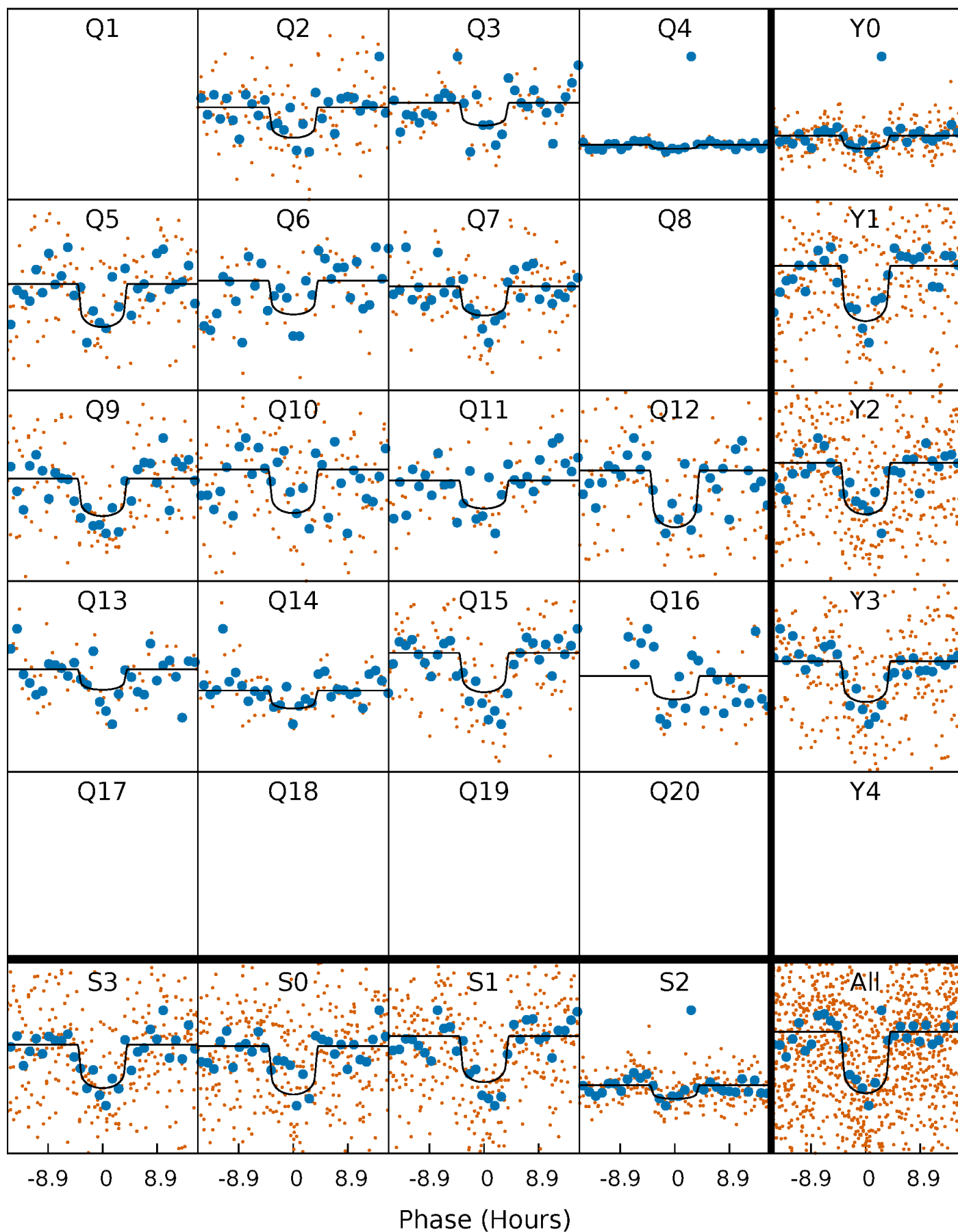
TCE 005900235-01 P= 58.770268 Days  $T_0=174.764590$  (BKJD)





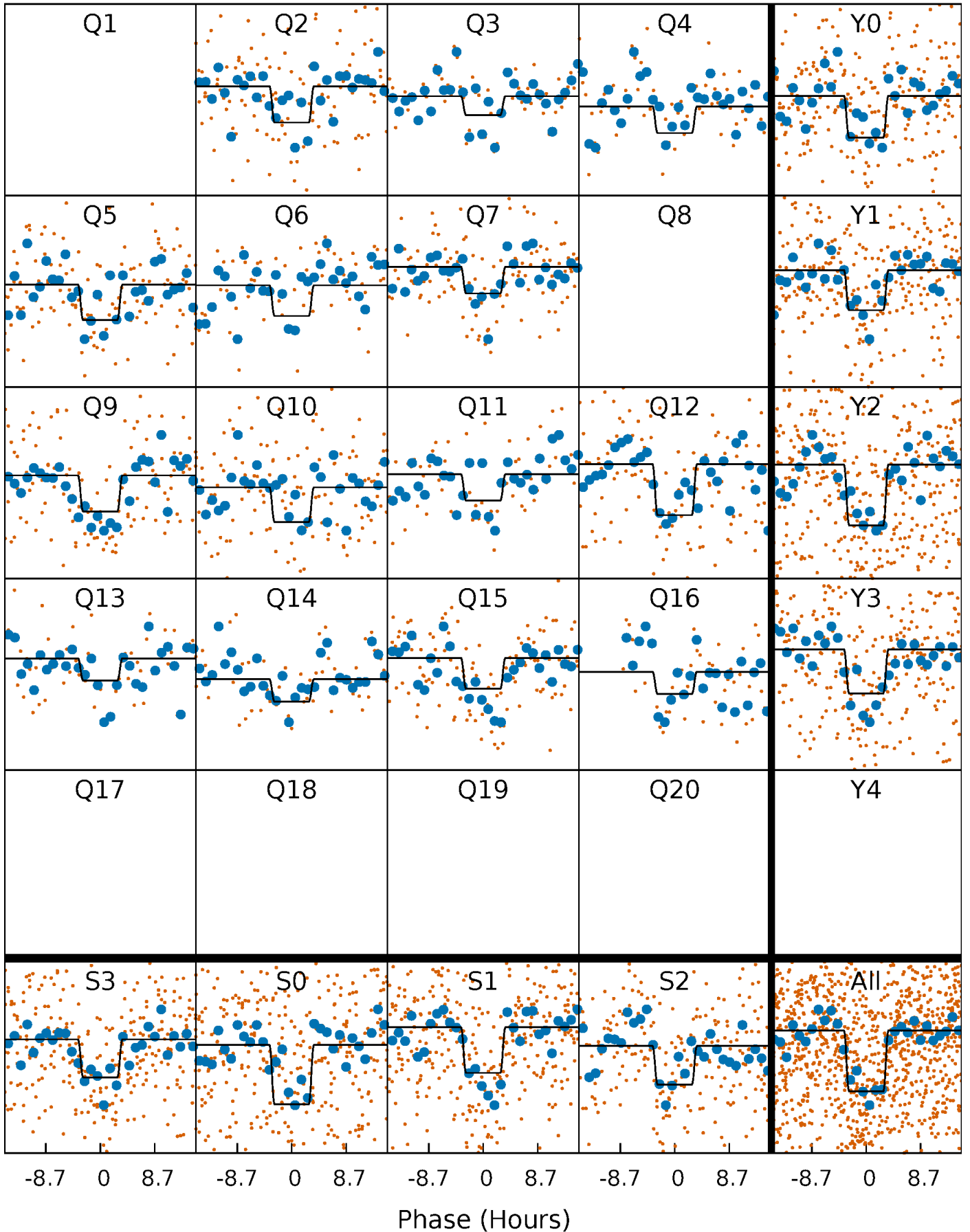
# DV Quarter-Phased Transit Curves

TCE 005900235-01 P= 58.770268 Days  $T_0=174.764590$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

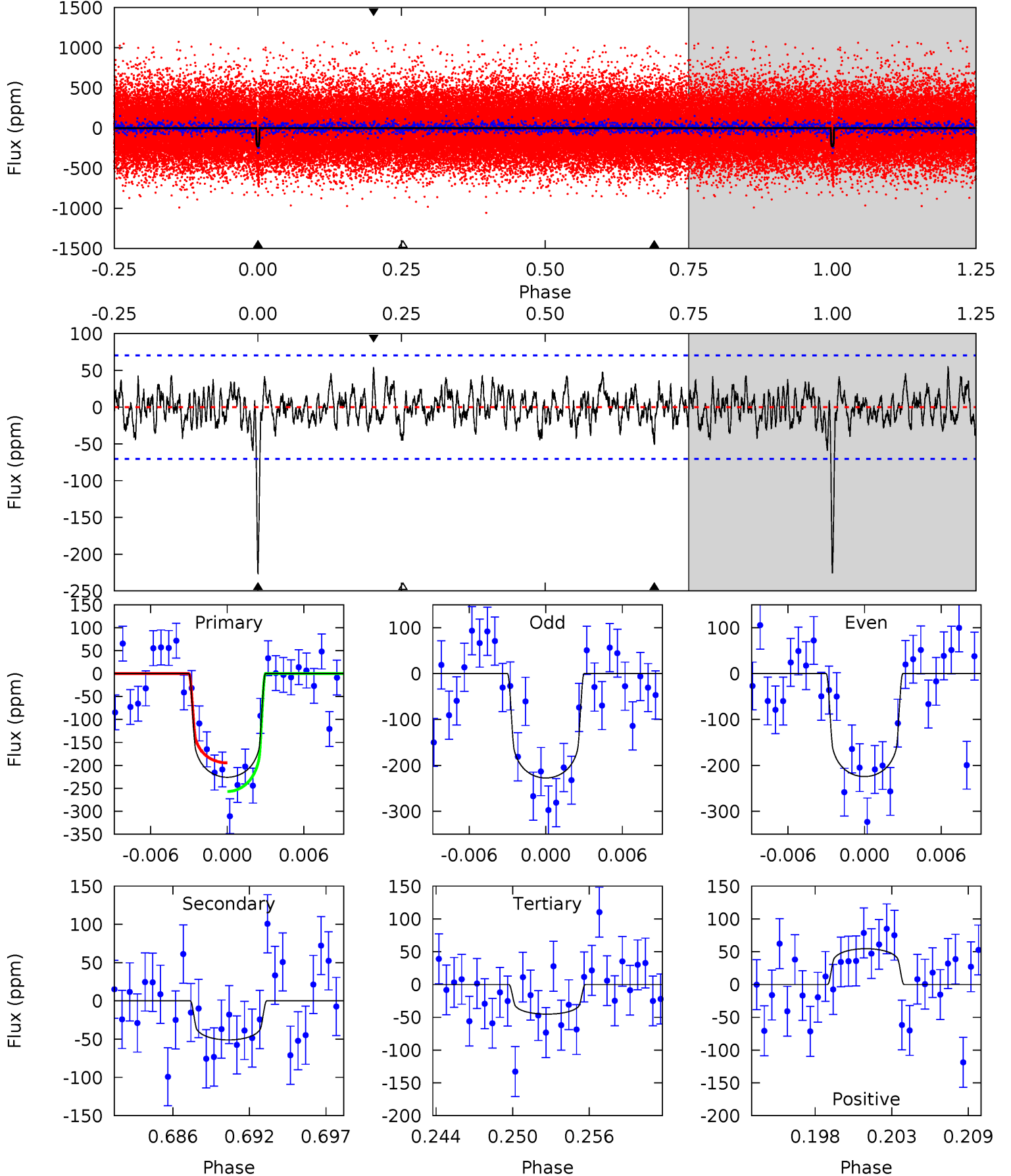
TCE 005900235-01 P= 58.770048 Days  $T_0=174.773929$  (BKJD)



# DV Model-Shift Uniqueness Test

005900235-01,  $P = 58.770268$  Days,  $E = 115.994322$  Days

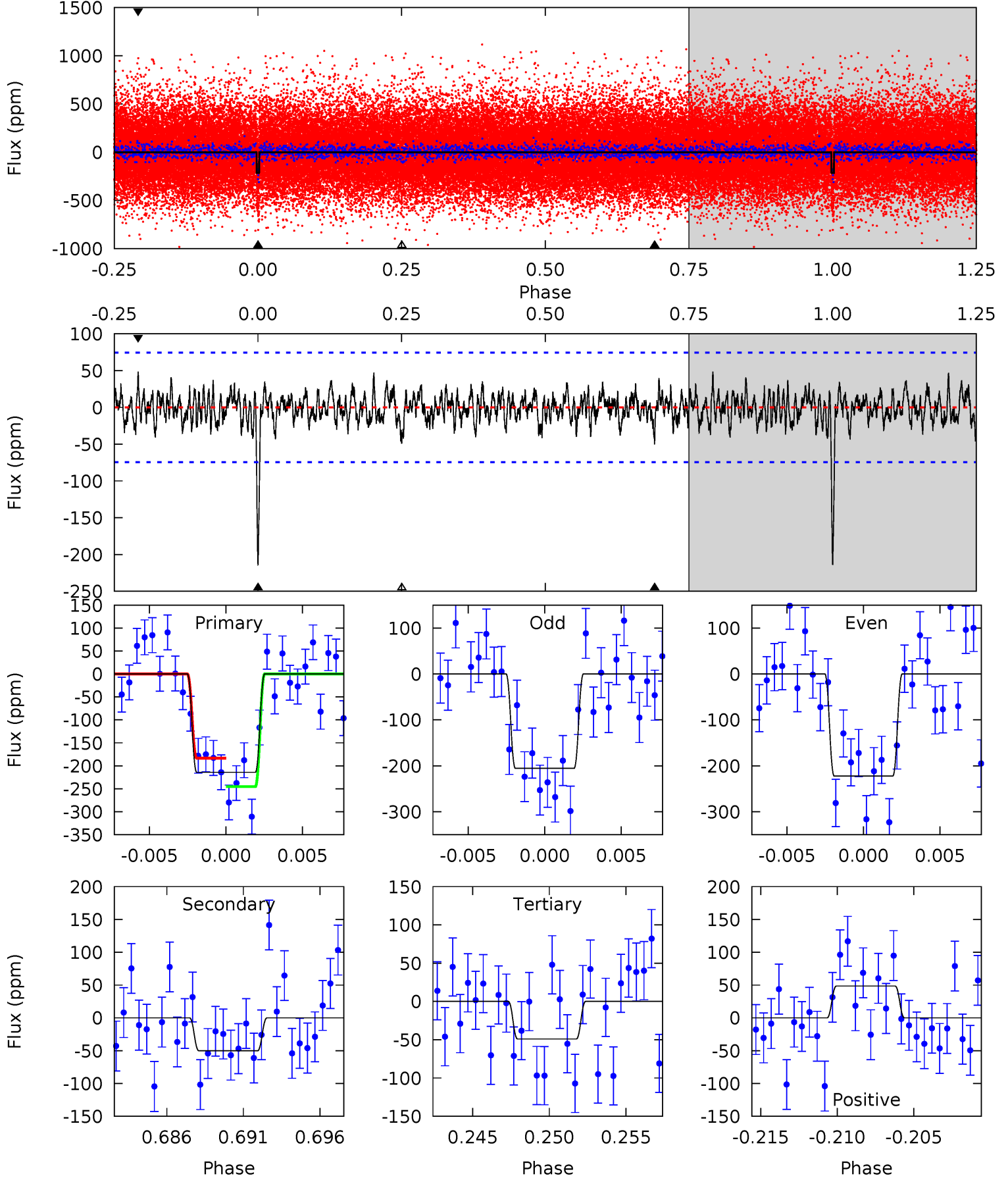
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	3.72	3.30	3.98	5.13	2.76	1.28	13.2	12.5	0.42	-0.26	0.11	0.86	0.19	2.28



# Alt Model-Shift Uniqueness Test

005900235-01, P = 58.770048 Days, E = 116.003881 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
14.8	3.47	3.39	3.36	5.16	2.81	1.07	11.4	11.5	0.08	0.11	0.57	0.99	0.18	2.15



### Stellar Parameters For KIC 005900235

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6158^{+184}_{-203}$	$4.397^{+0.108}_{-0.186}$	$-0.440^{+0.300}_{-0.300}$	$1.013^{+0.292}_{-0.157}$	$0.934^{+0.128}_{-0.107}$	$1.267^{+0.703}_{-0.656}$
	+3%/-3%	+2%/-4%	+68%/-68%	+29%/-15%	+14%/-11%	+56%/-52%
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 005900235-01 / KOI 3426.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-51 \pm 14$	$1.73^{+0.76}_{-0.67}$	$717^{+54}_{-43}$	$4379^{+1101}_{-536}$	$748^{+1407}_{-393}$
Alt.	$-50 \pm 14$	$1.70^{+0.74}_{-0.76}$	$716^{+47}_{-44}$	$4419^{+1170}_{-614}$	$791^{+1806}_{-433}$

$T_{\text{max}}$  = 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

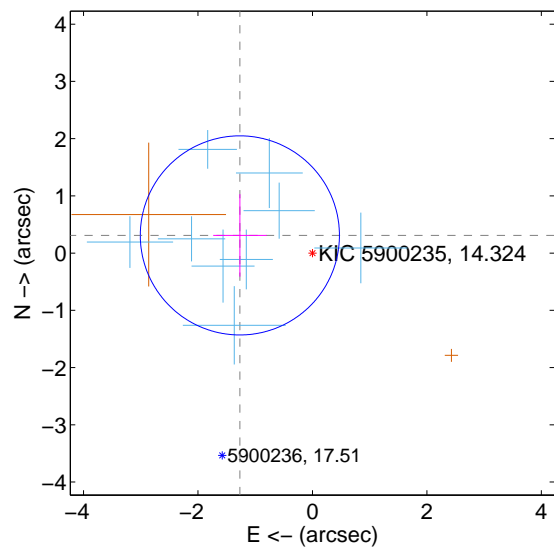
Supplemental centroid analysis for 005900235-01. Kepler magnitude: 14.32. Transit SNR 11.86

There are 9 quarters with good PRF difference image offsets

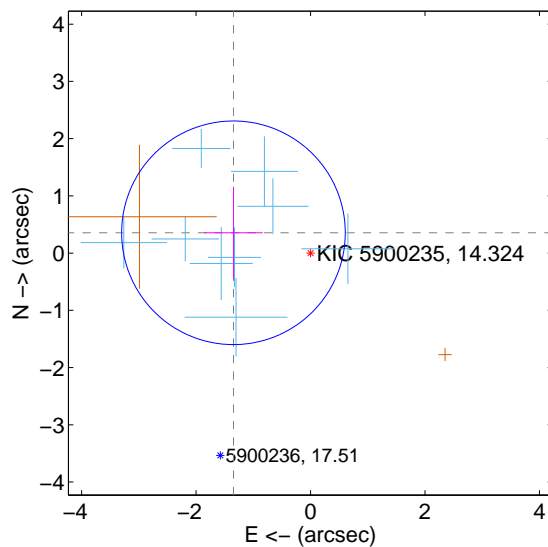
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.305 \pm 0.580$	2.25	$1.268 \pm 0.466$	$0.309 \pm 0.721$
PRF-fit source offset from KIC position	$1.393 \pm 0.651$	2.14	$1.347 \pm 0.514$	$0.355 \pm 0.803$
photometric centroid source offset	$0.16 \pm 1.12$	0.15	$0.14 \pm 1.15$	$-0.08 \pm 1.03$

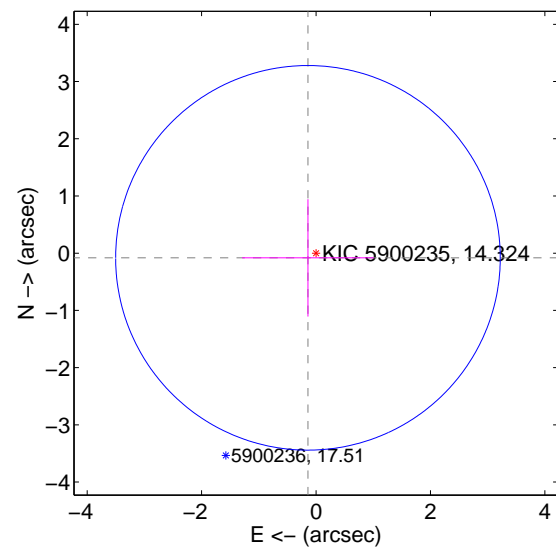
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



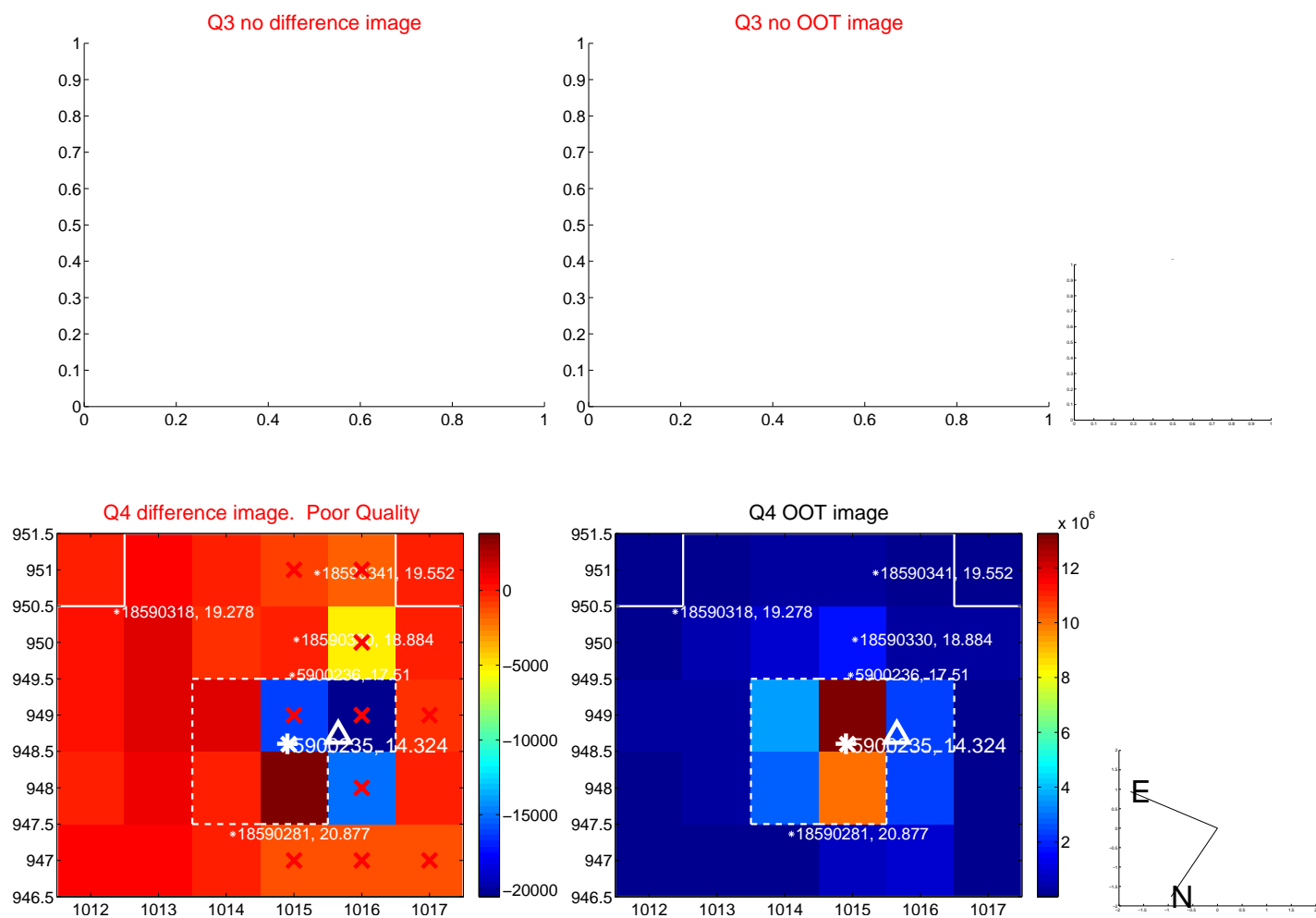
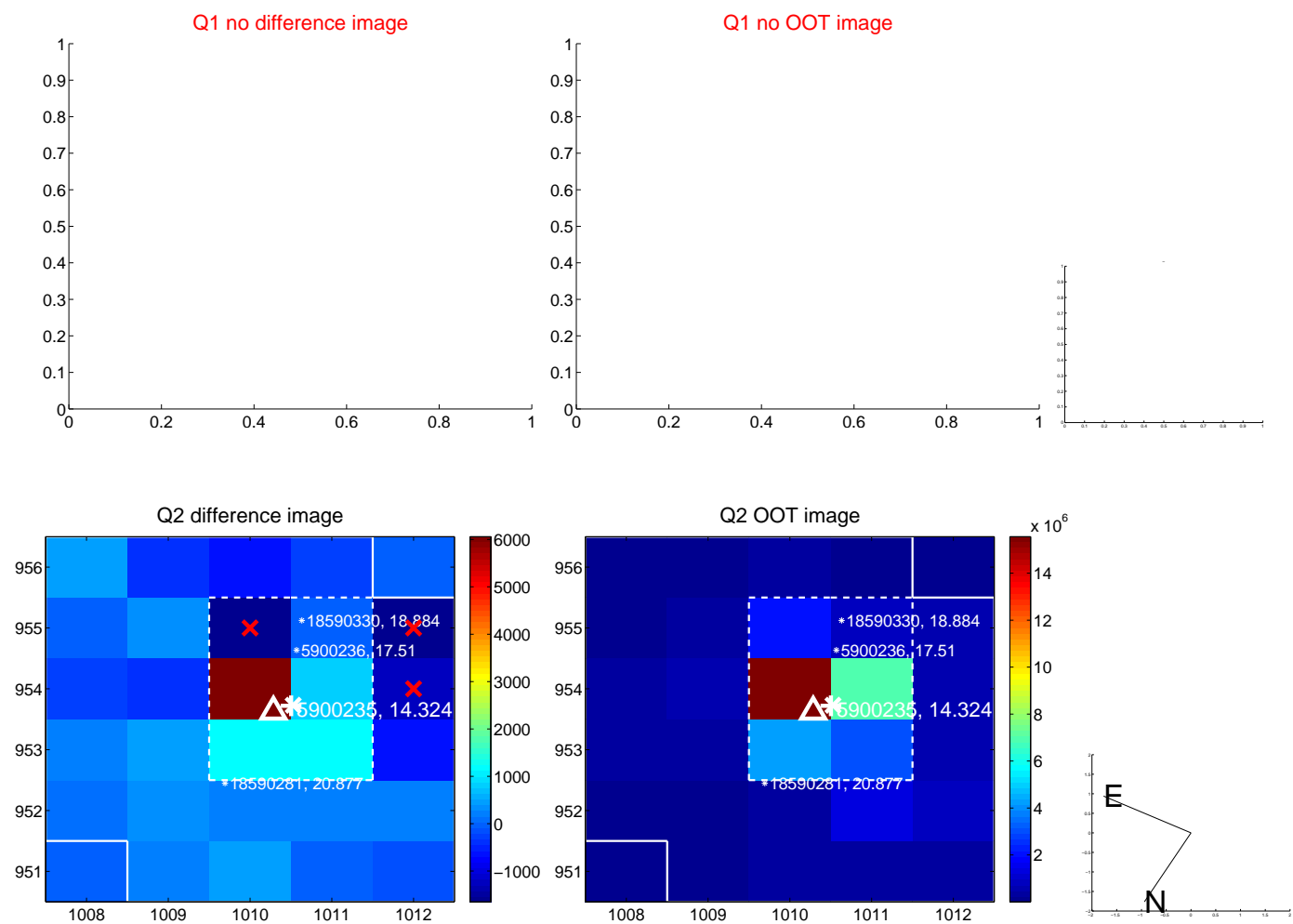
offset from photometric centroids



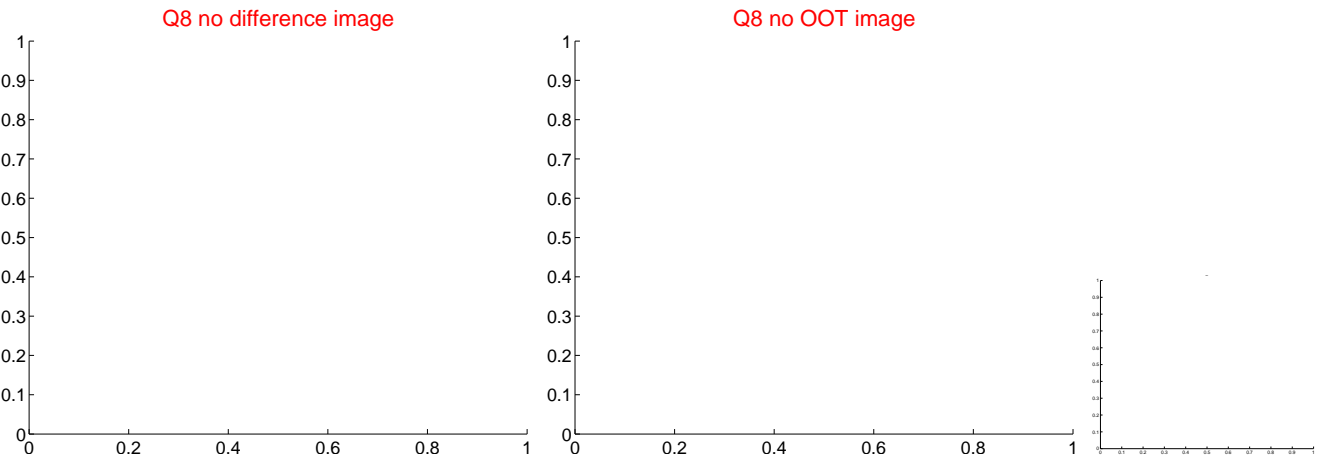
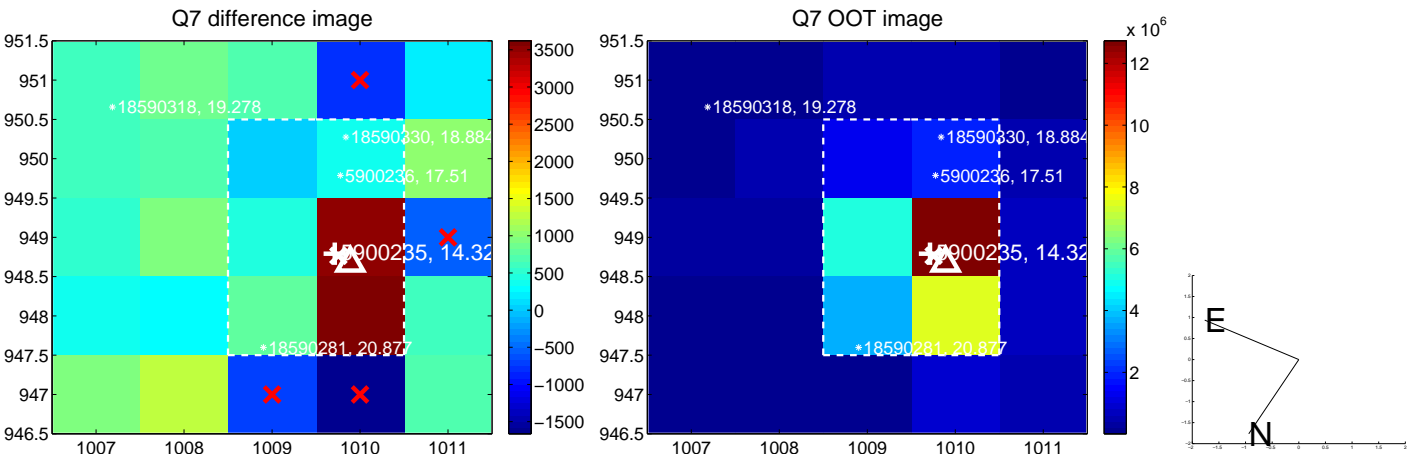
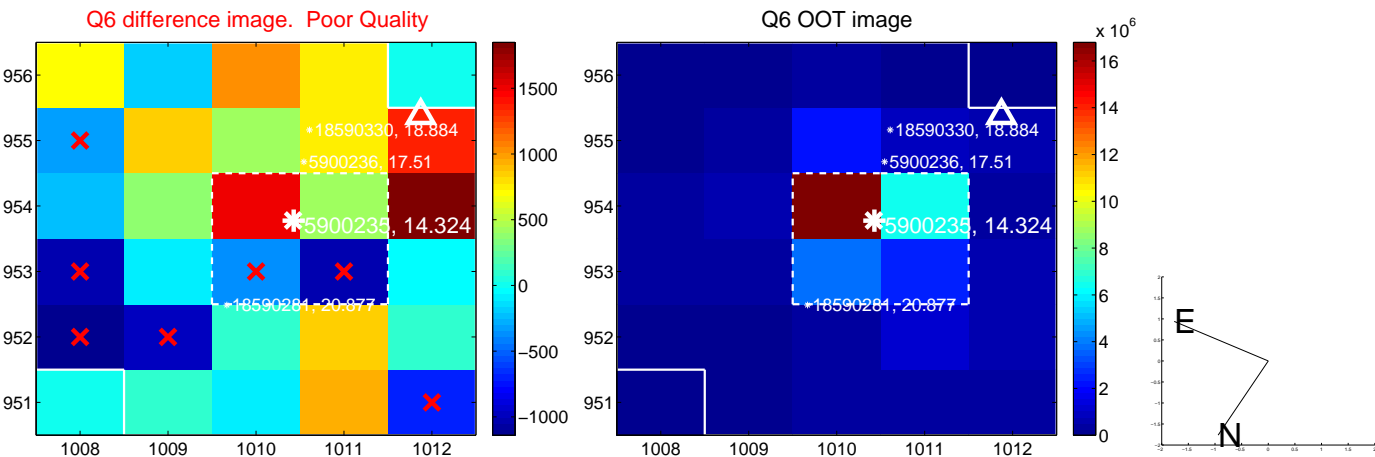
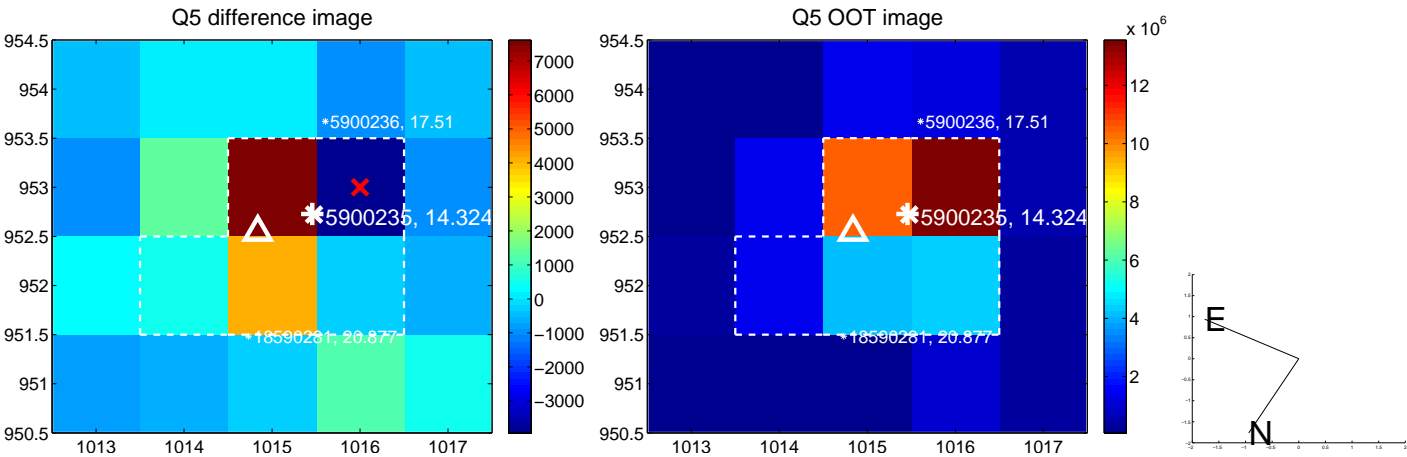
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



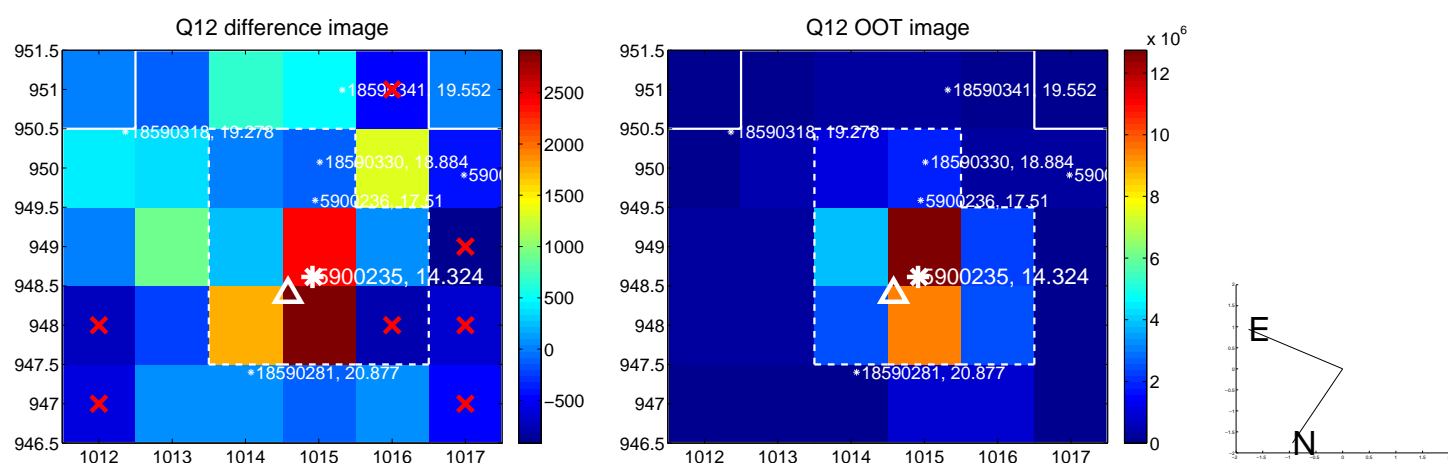
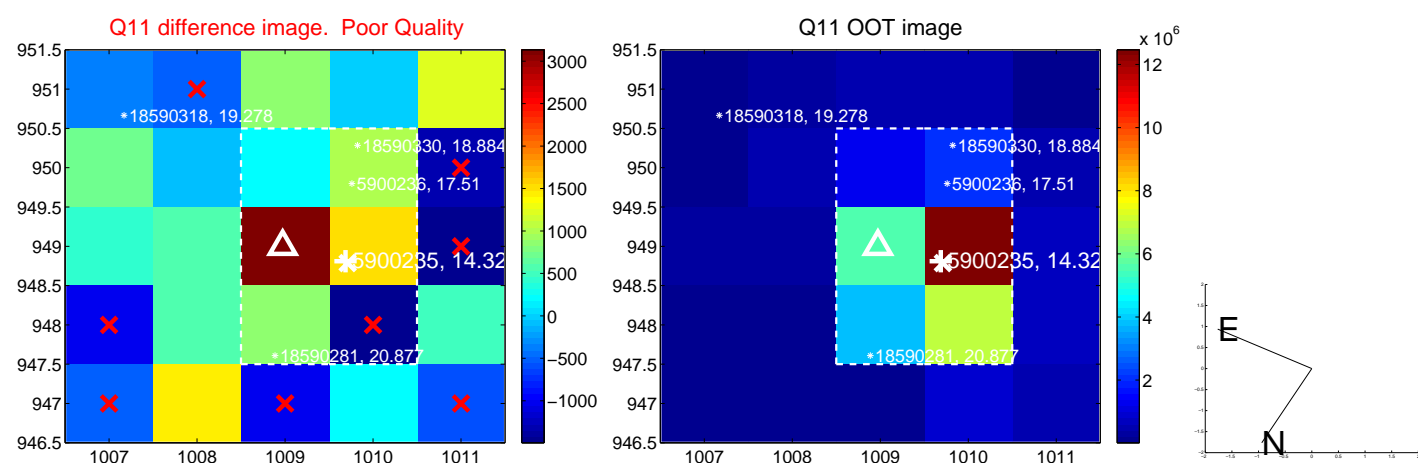
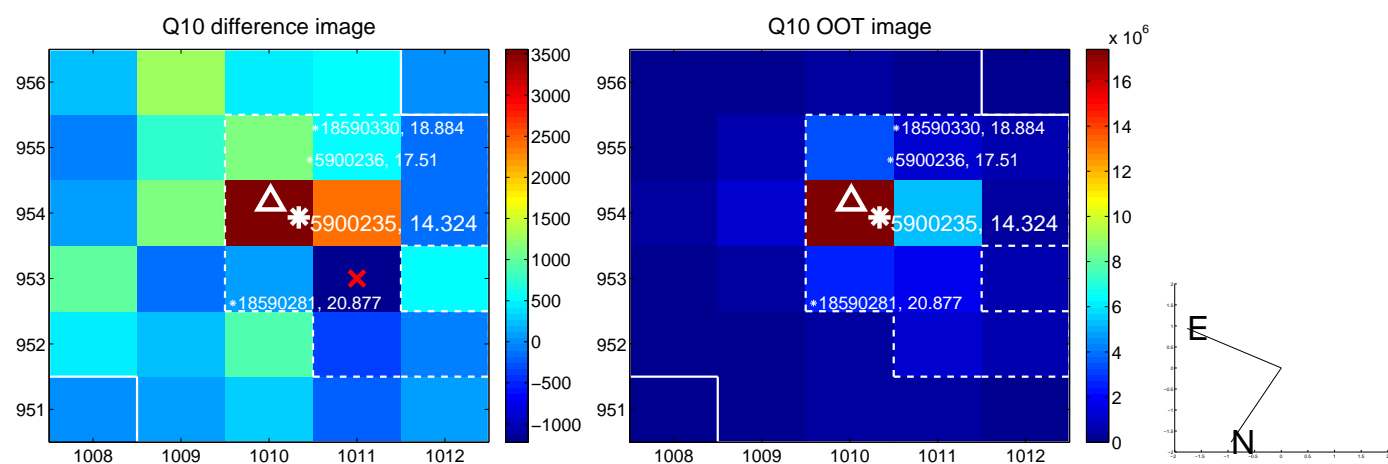
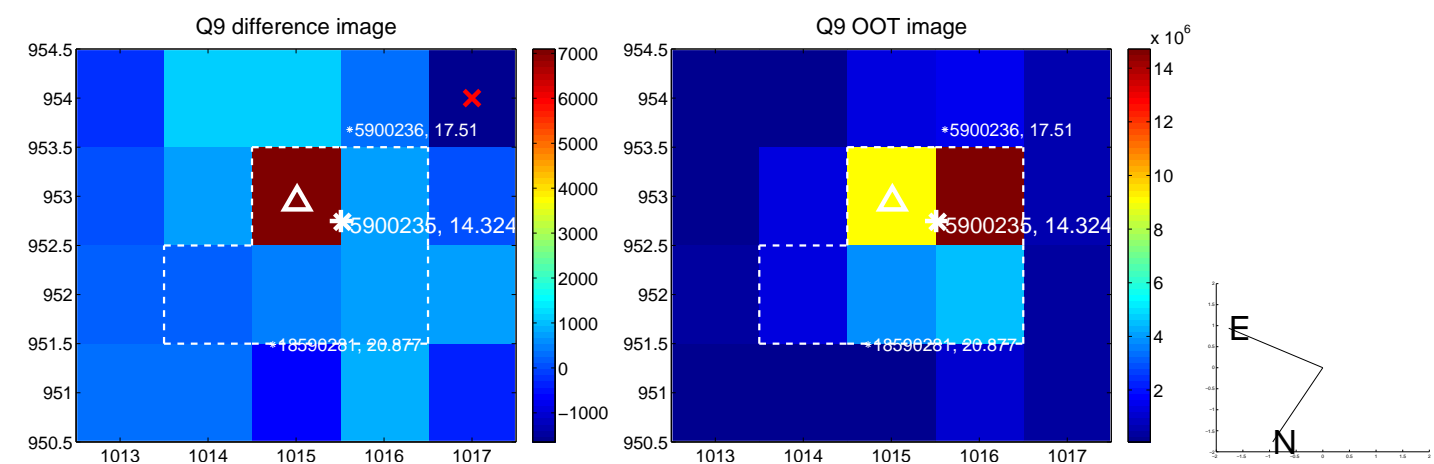
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



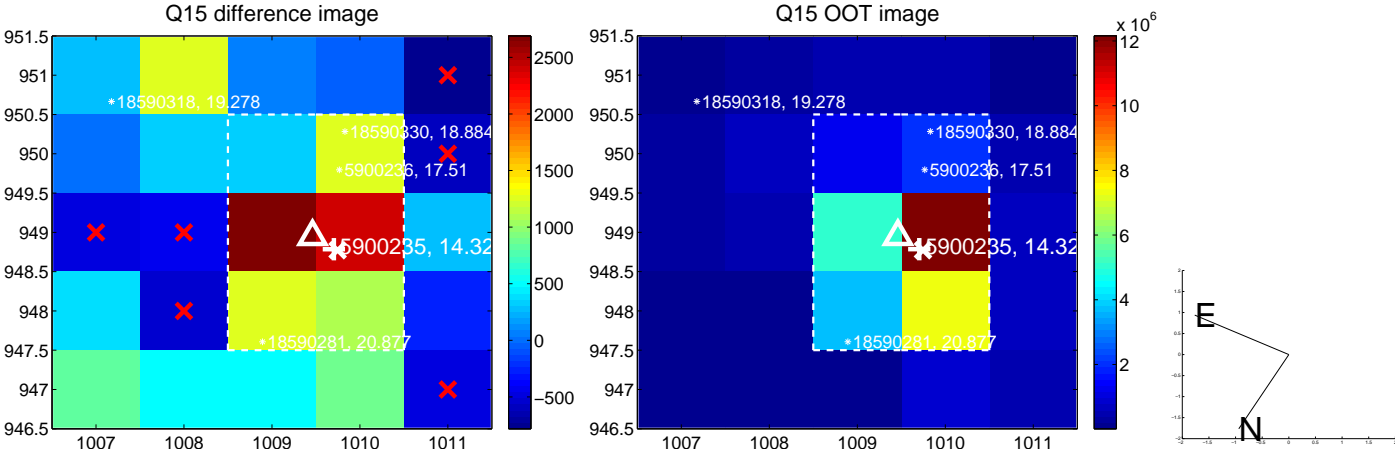
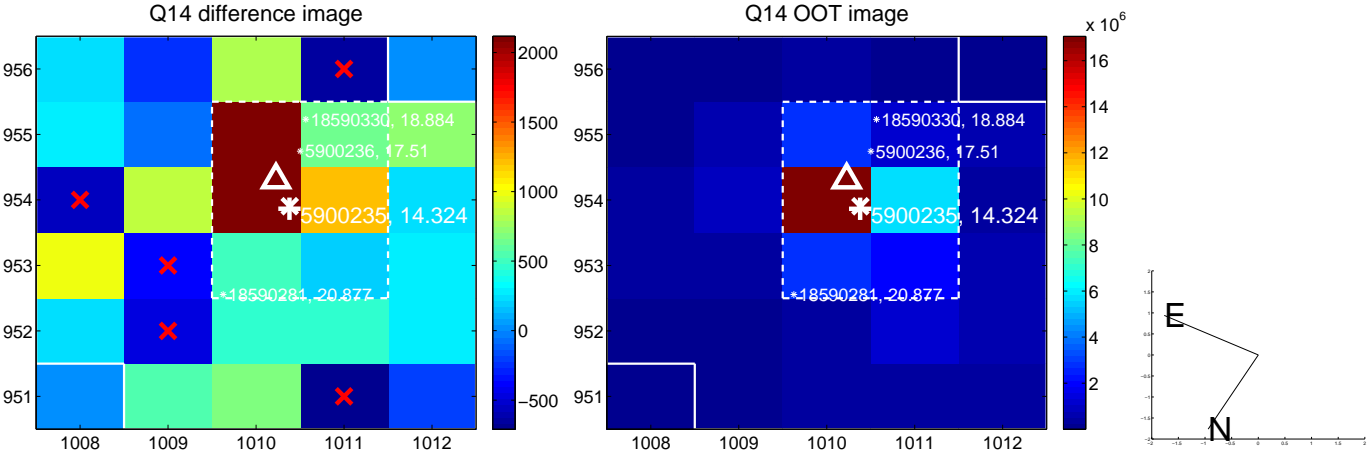
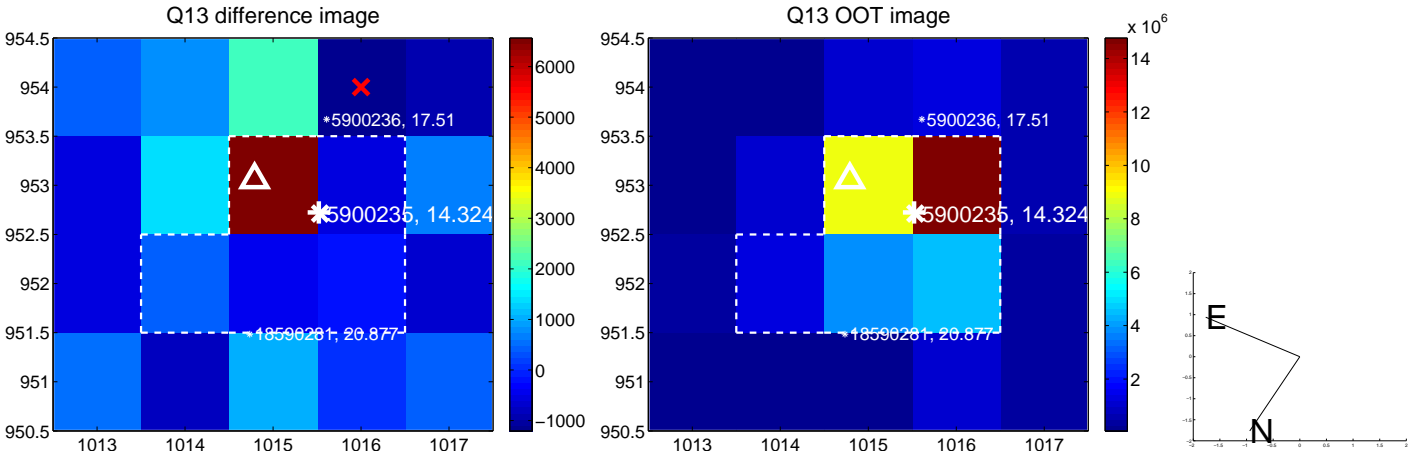
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



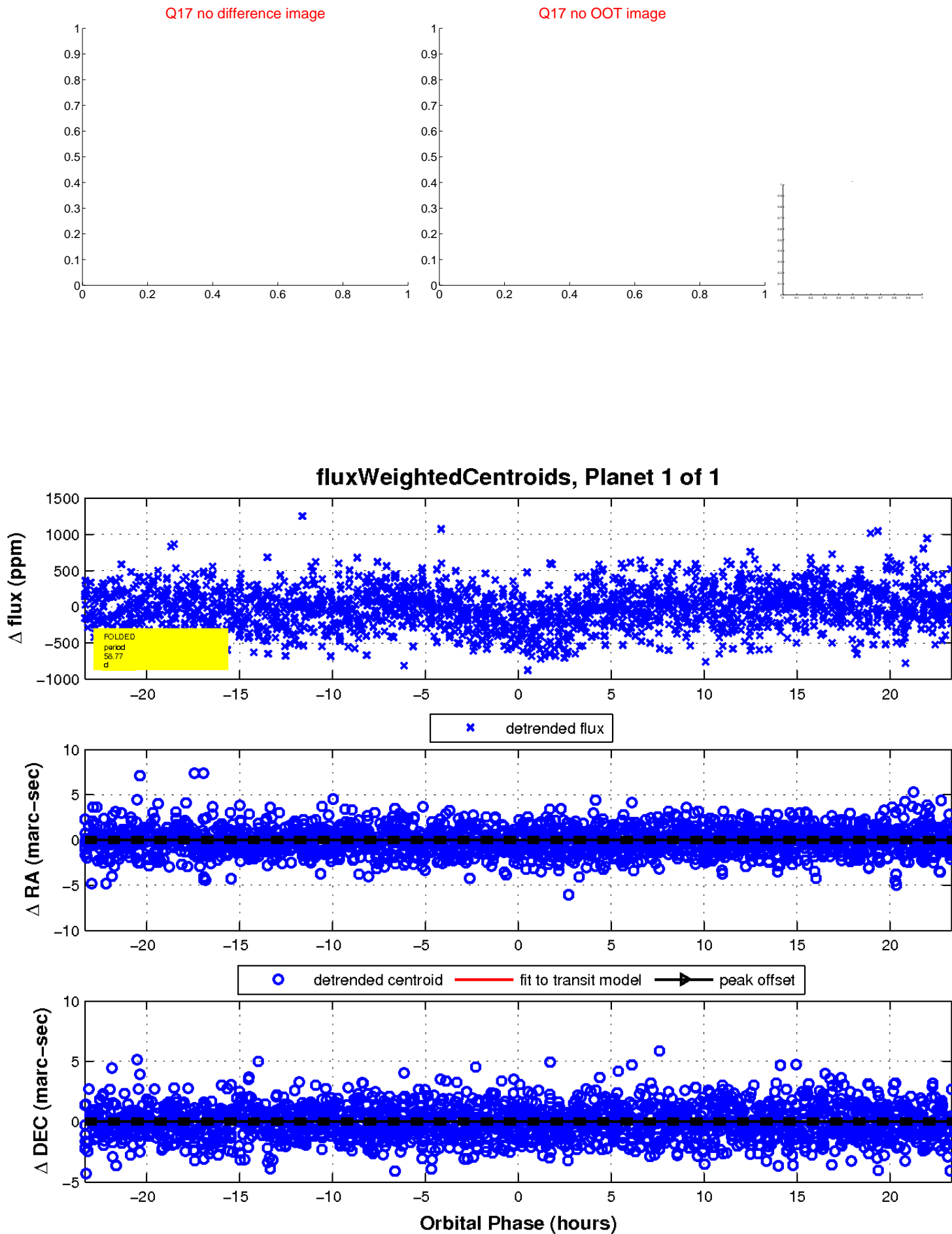
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position; +: OOT centroid;  $\Delta$ : 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

