

# KIC 006859619

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006859619-01	OBS	No	9.416318	134.246090	71.0	35.198	8.7	10.7	1.96	6628	2.50	677.03

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006859619-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

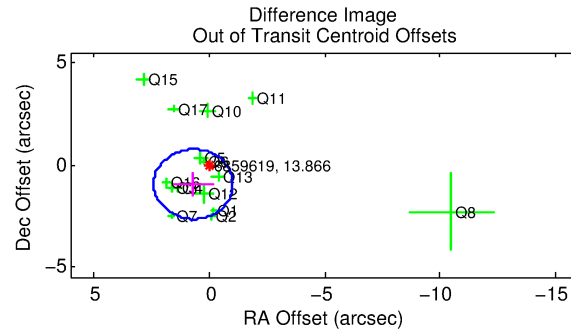
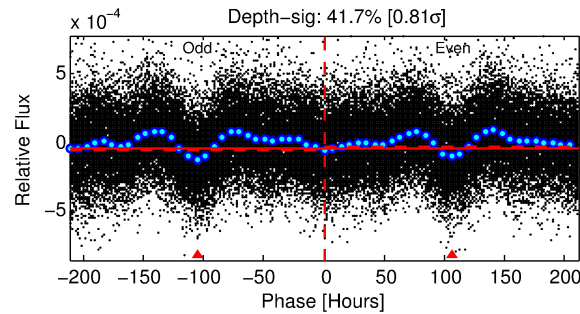
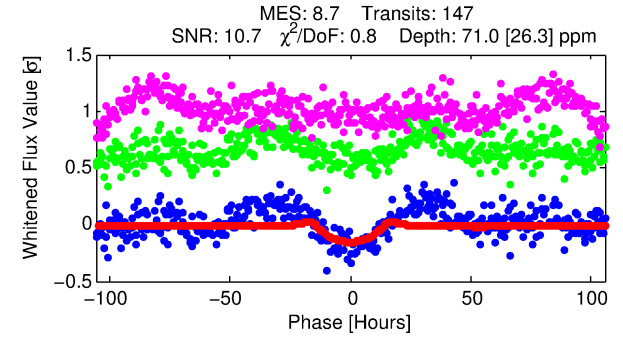
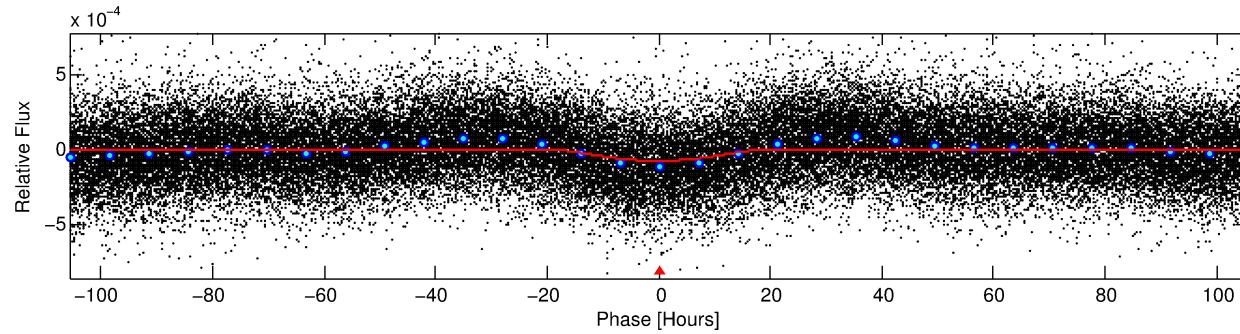
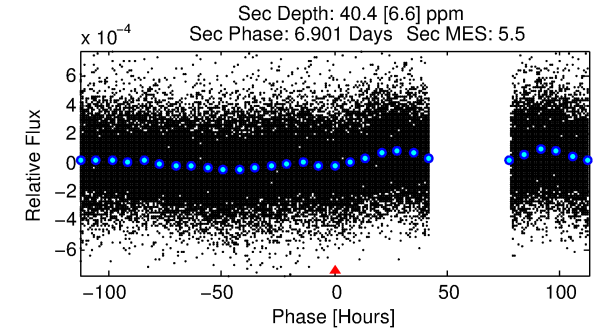
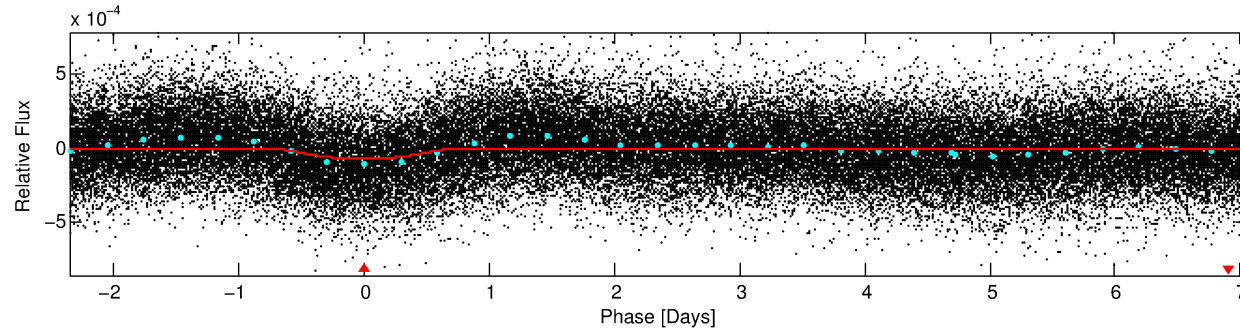
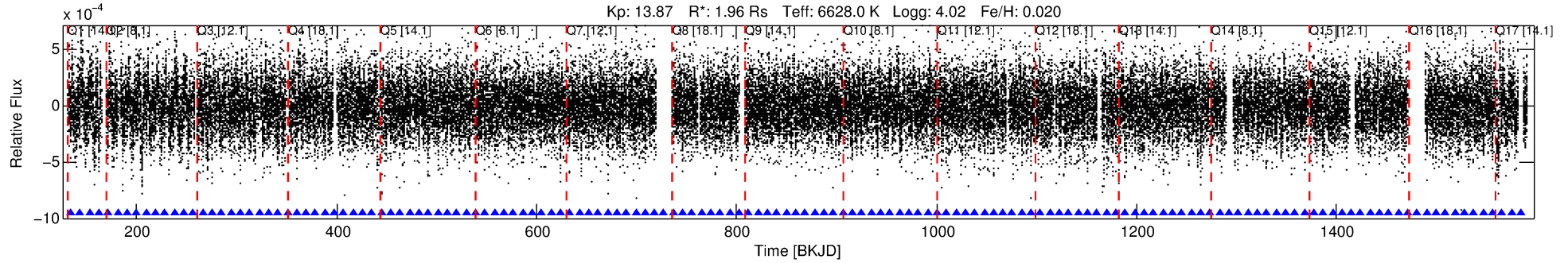
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006859619-01

No Significant Match Found

# DV One-Page Summary

KIC: 6859619 Candidate: 1 of 1 Period: 9.416 d



## DV Fit Results:

Period = 9.41632 [0.00076] d  
Epoch = 134.2461 [0.0670] BKJD  
Rp/R\* = 0.0117 [0.0045]  
a/R\* = 1.08 [0.02]  
b = 0.99 [0.01]  
Seff = 677.03 [207.98]  
Teff = 1301 [100] K  
Rp = 2.50 [1.11] Re  
a = 0.0990 [0.0193] AU  
Ag = 34.94 [29.65] [1.14σ]  
Teffp = 4889 [971] K [3.68σ]

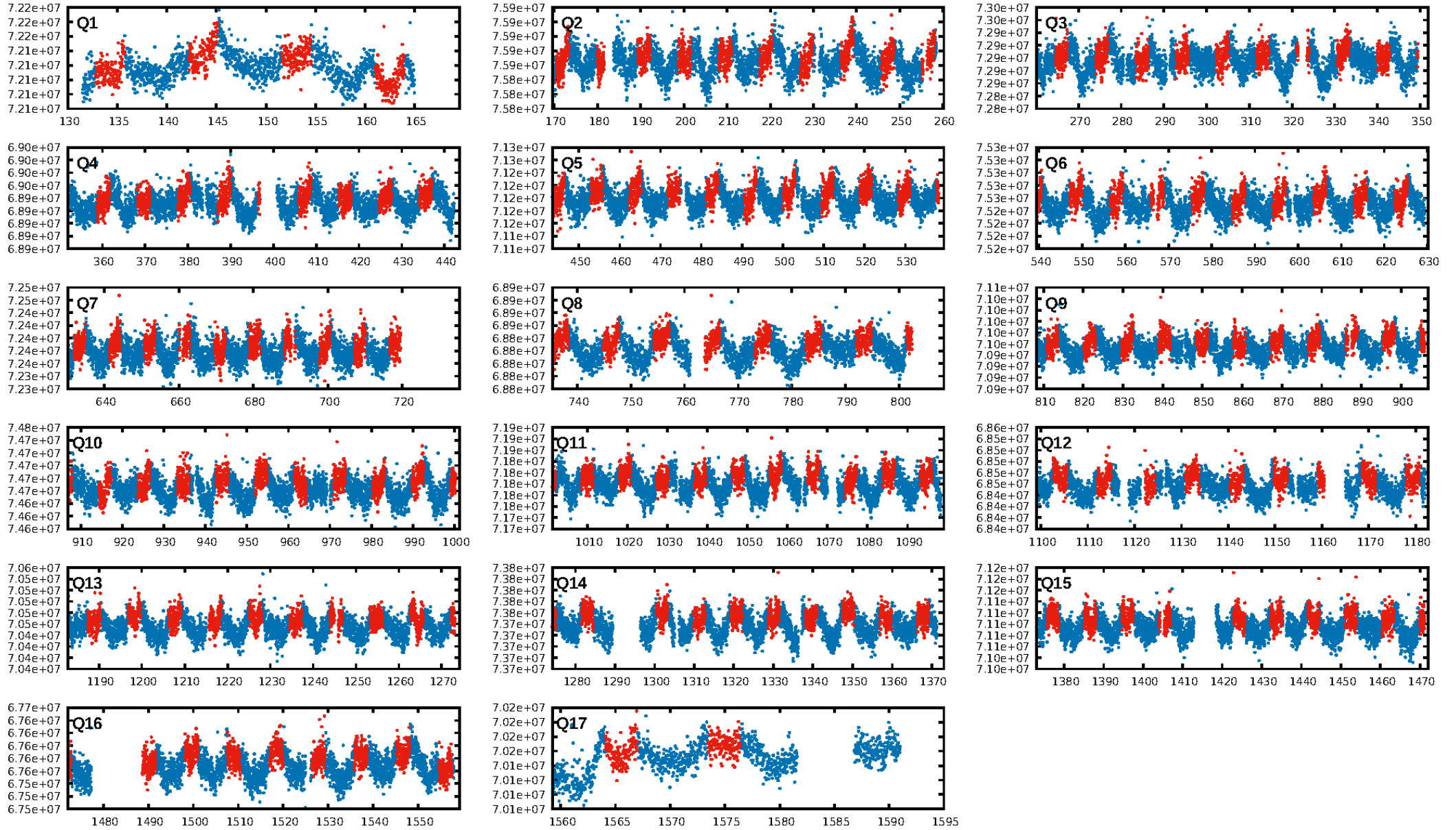
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.7%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 1.16e-15  
RollingBand-fgt: 1.00 [141/141]  
GhostDiagnostic-chr: 4.068  
Centroid-sig: 86.5%  
Centroid-so: 0.358 arcsec [0.73σ]  
OotOffset-rm: 1.174 arcsec [2.06σ]  
KicOffset-rm: 1.140 arcsec [2.07σ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.60 [9/15]  
DiffImageOverlap-fno: 1.00 [17/17]

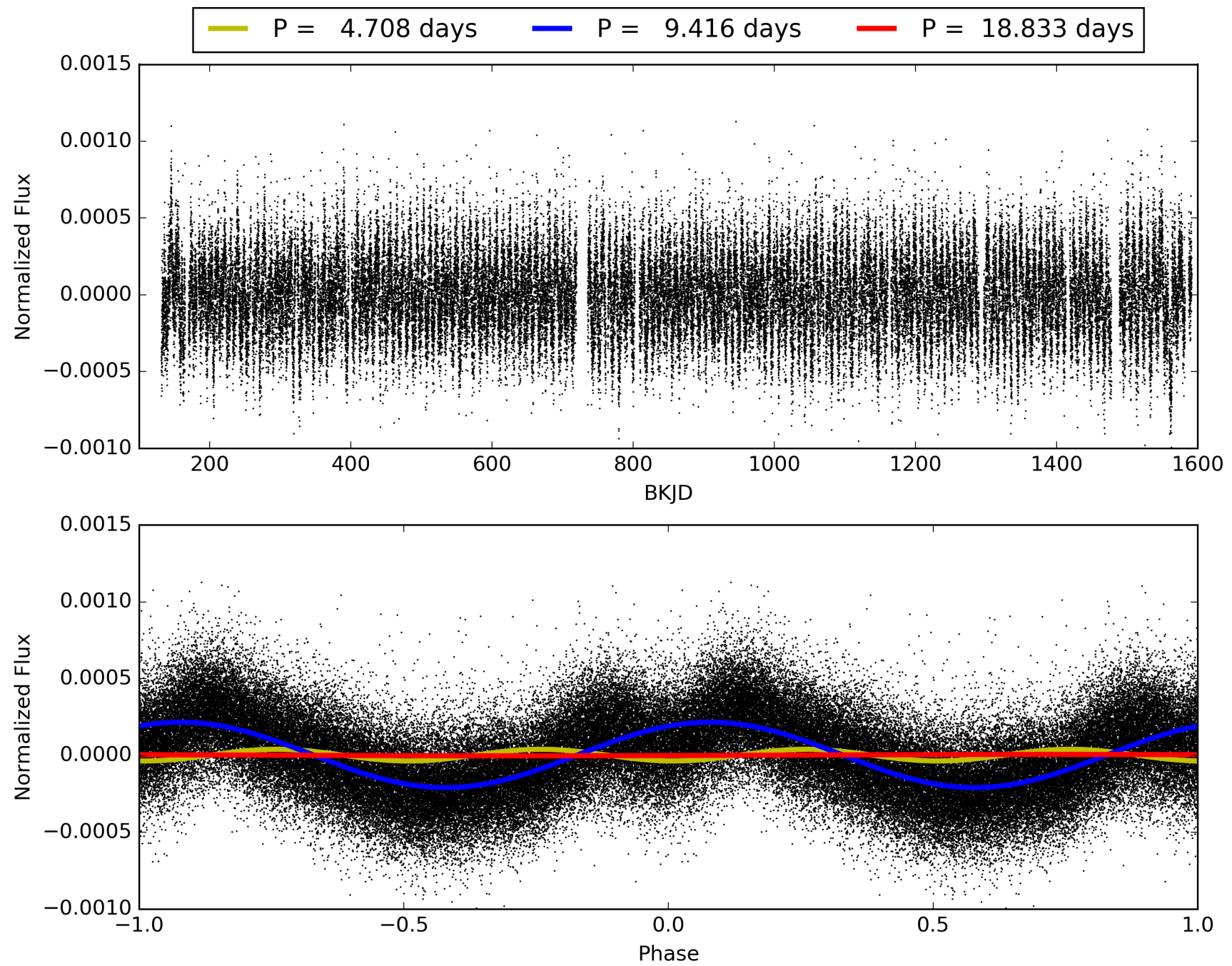
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:28:02 Z

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

# TCE 006859619-01, PDC Light Curves



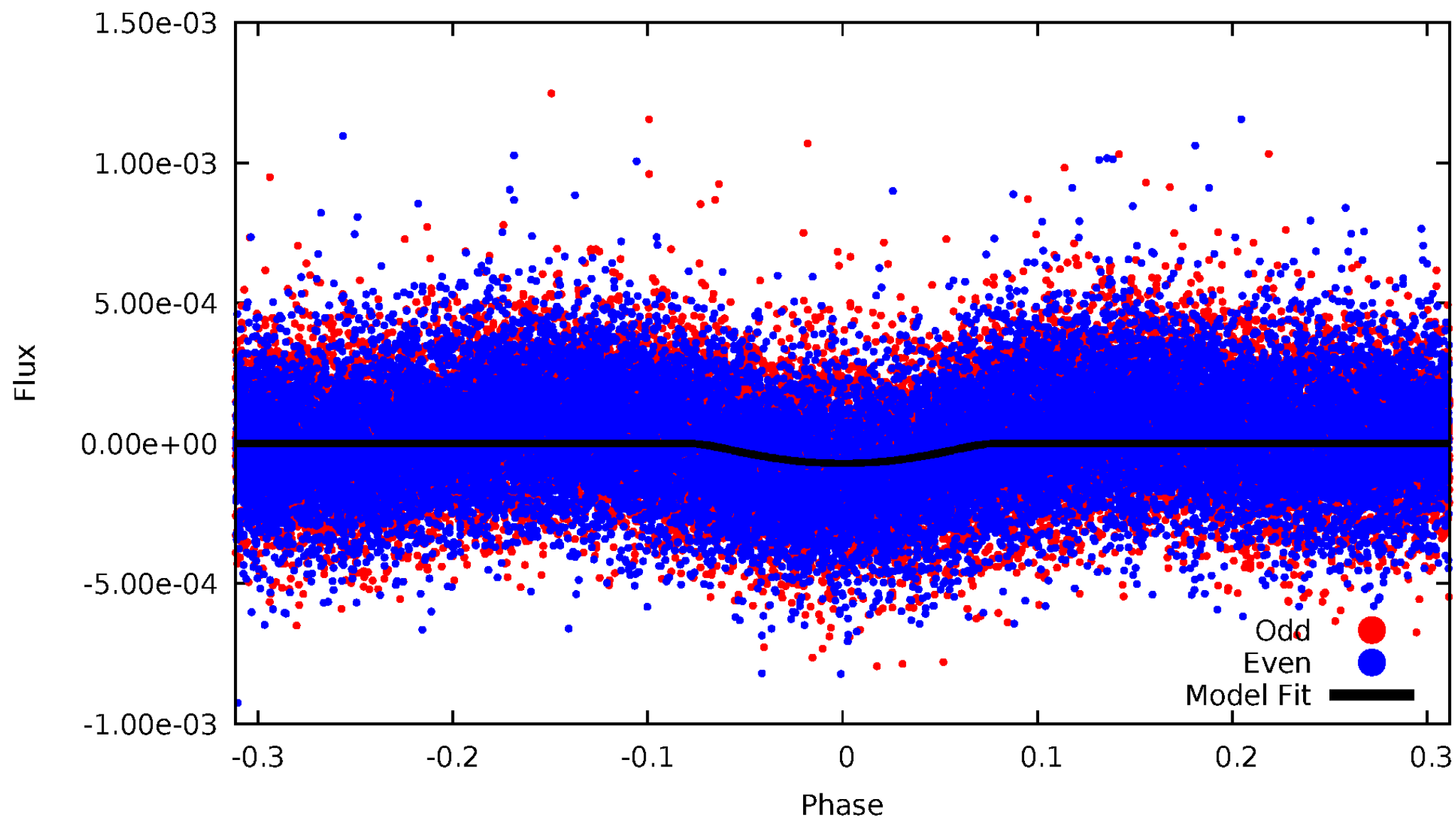
TCE 006859619-01





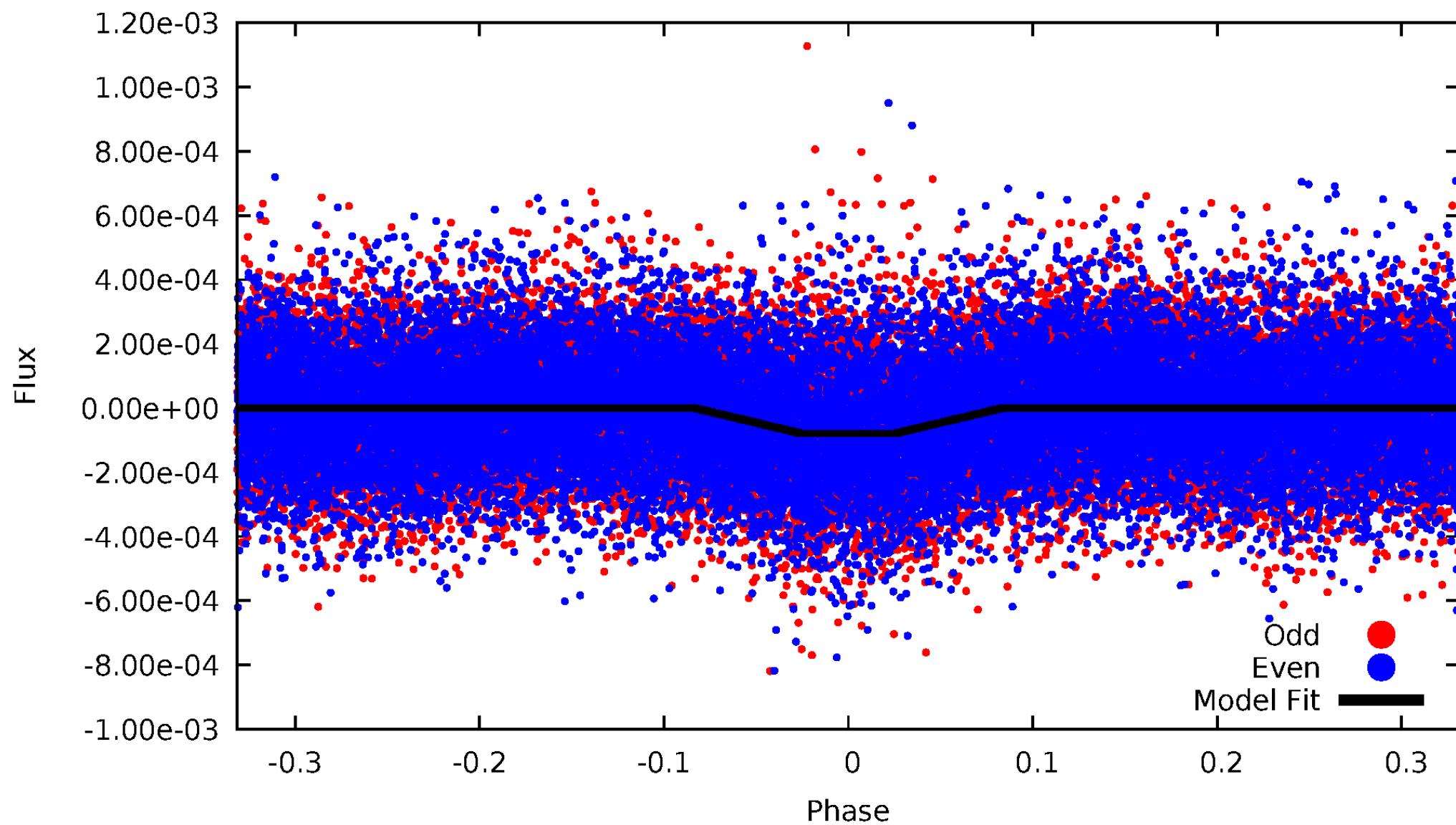
# DV Odd/Even

TCE 006859619-01

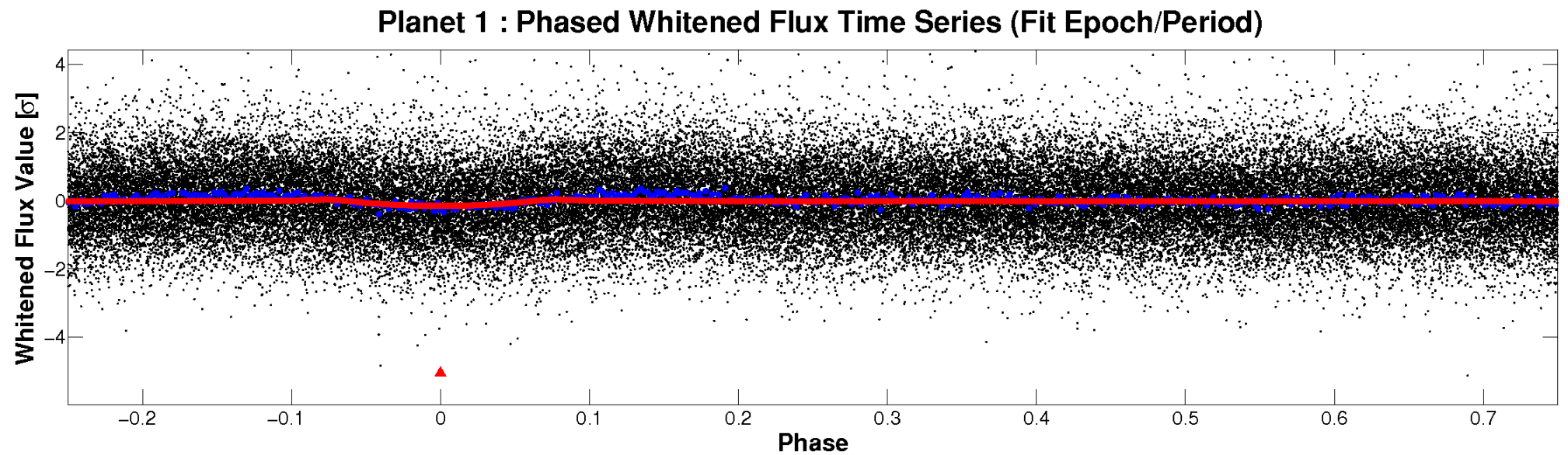
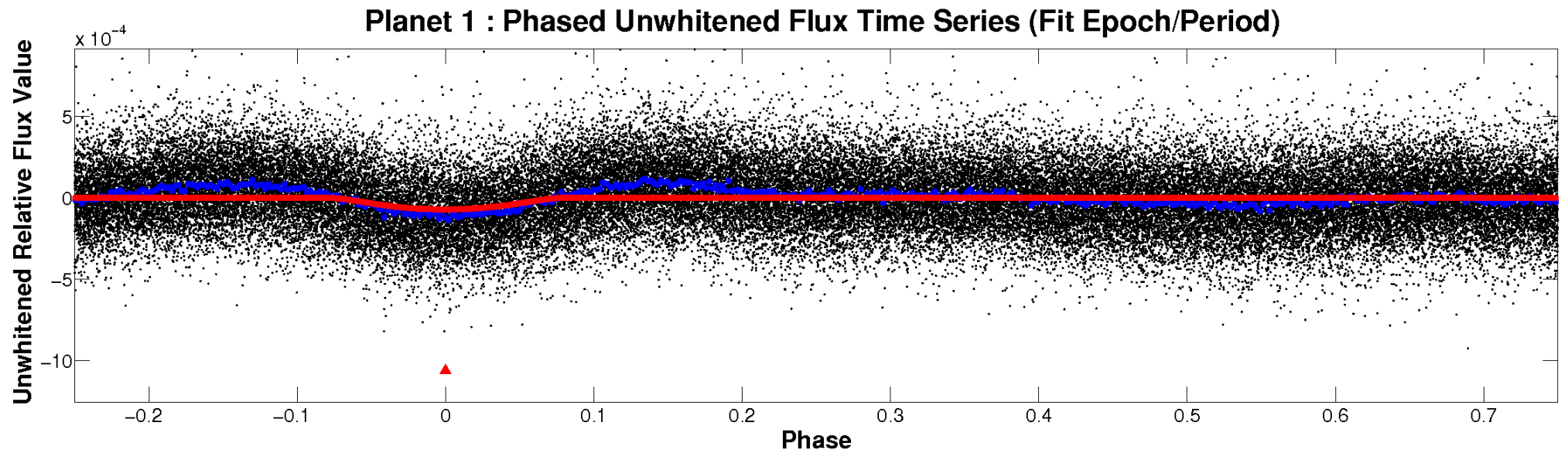


# ALT Odd/Even

TCE 006859619-01

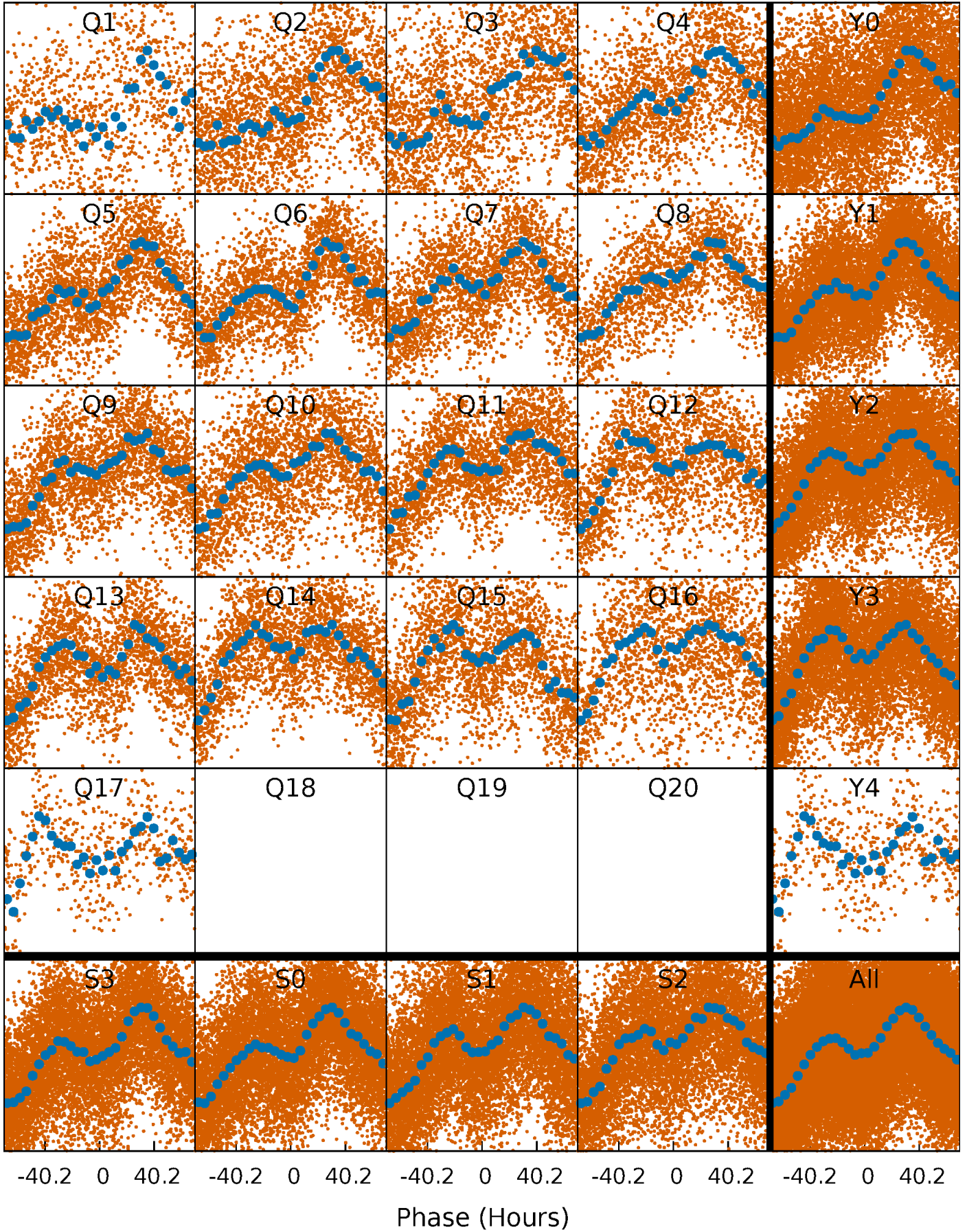


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

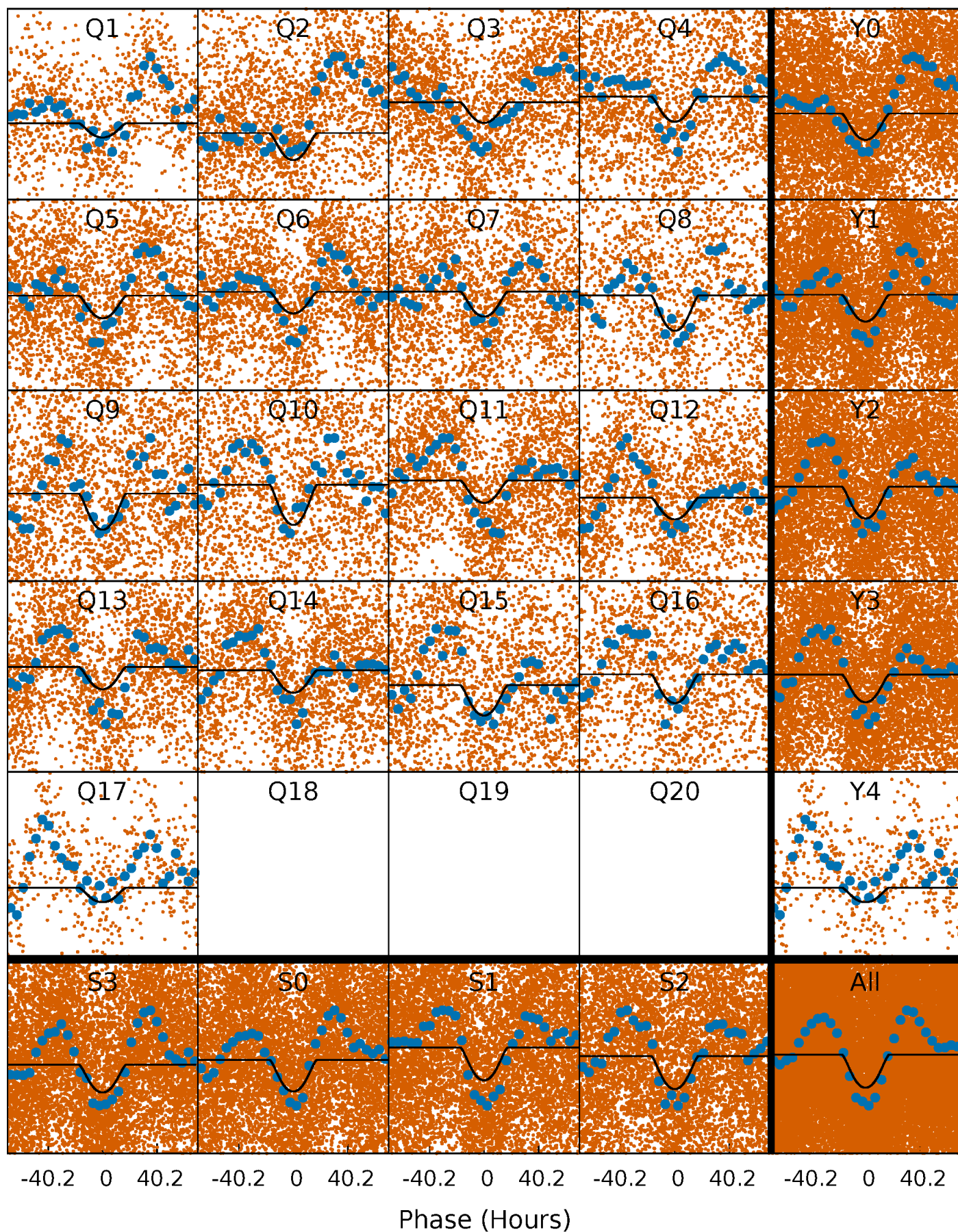
TCE 006859619-01 P= 9.416318 Days  $T_0=134.246090$  (BKJD)





# DV Quarter-Phased Transit Curves

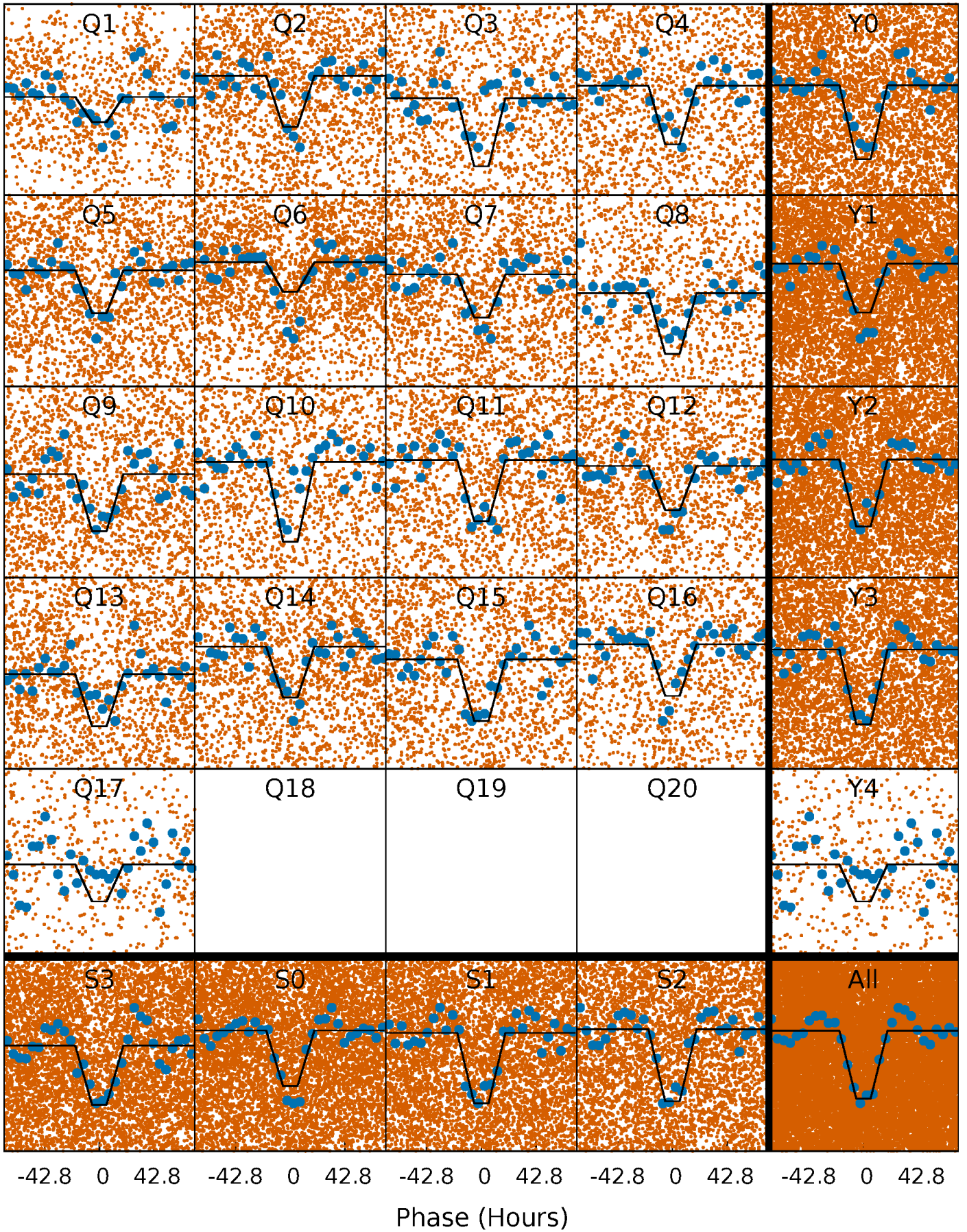
TCE 006859619-01 P= 9.416318 Days  $T_0=134.246090$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

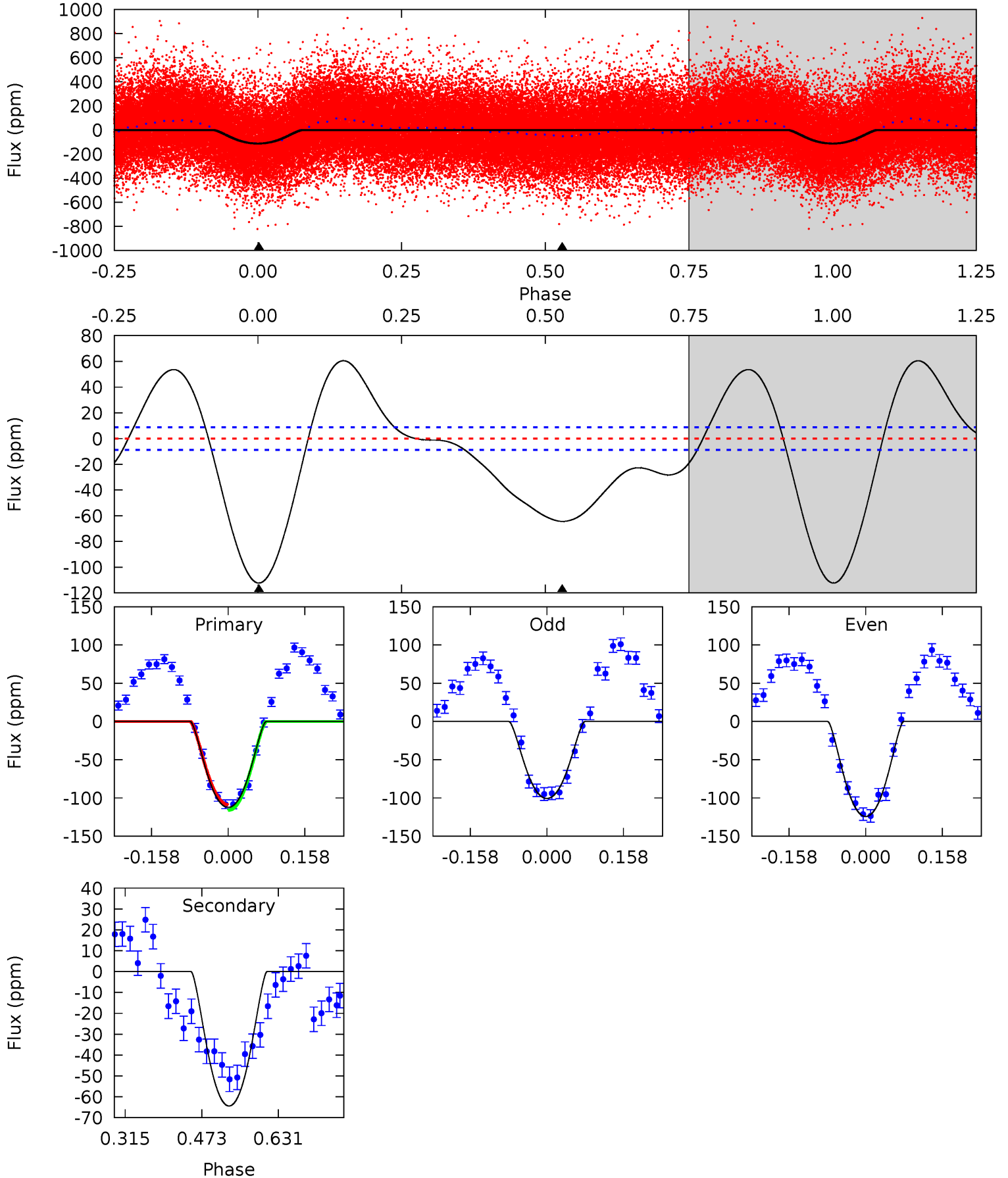
TCE 006859619-01 P= 9.414806 Days  $T_0=134.388166$  (BKJD)



# DV Model-Shift Uniqueness Test

006859619-01, P = 9.416318 Days, E = 124.829772 Days

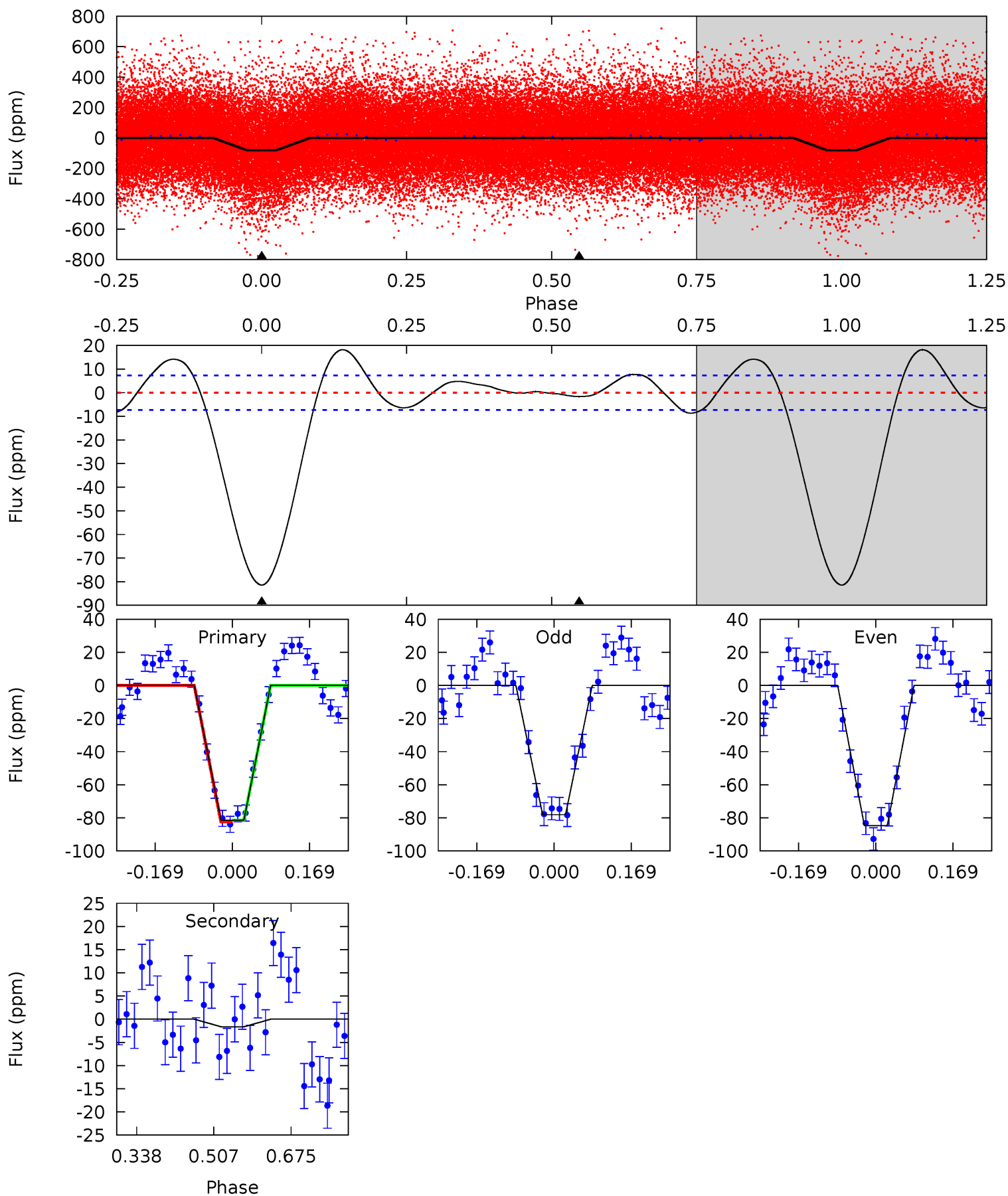
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.4	32.9	0	0	4.47	1.41	12.6	57.4	57.4	32.9	32.9	6.02	0.99	0.35	1.81



# Alt Model-Shift Uniqueness Test

006859619-01, P = 9.414806 Days, E = 124.973360 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
49.6	1.00	0	0	4.45	1.38	3.52	49.6	49.6	1.00	1.00	2.01	0.94	0.18	0.33





### Stellar Parameters For KIC 006859619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6628^{+72}_{-86}$	$4.018^{+0.174}_{-0.116}$	$0.020^{+0.150}_{-0.150}$	$1.959^{+0.377}_{-0.419}$	$1.459^{+0.129}_{-0.158}$	$0.273^{+0.260}_{-0.099}$
	+1%/-1%	+4%/-3%	+750%/-750%	+19%/-21%	+9%/-11%	+95%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006859619-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-64 \pm 2$	$2.42^{+1.04}_{-0.94}$	$1814^{+83}_{-112}$	$5503^{+1524}_{-719}$	$60^{+100}_{-30}$
Alt.	$-2 \pm 2$	$1.89^{+1.02}_{-0.88}$	$1808^{+89}_{-106}$	$3004^{+740}_{-5455}$	$2.154^{+6.858}_{-2.246}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

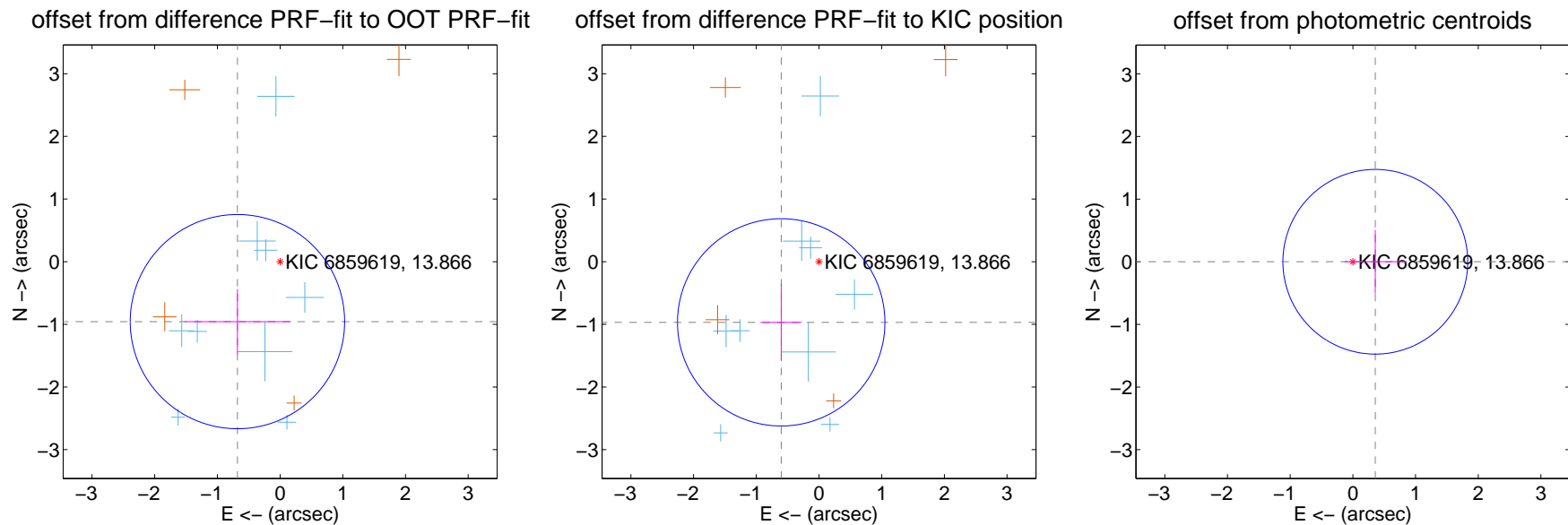
## DV Centroid Data

Supplemental centroid analysis for 006859619-01. Kepler magnitude: 13.87. Transit SNR 10.66

There are 9 quarters with good PRF difference image offsets

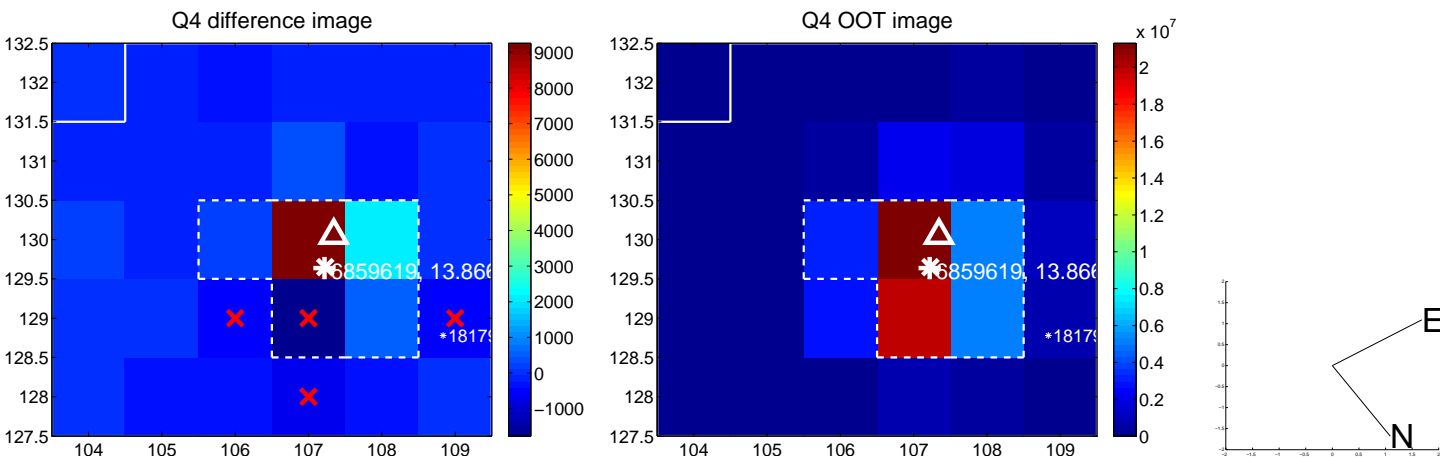
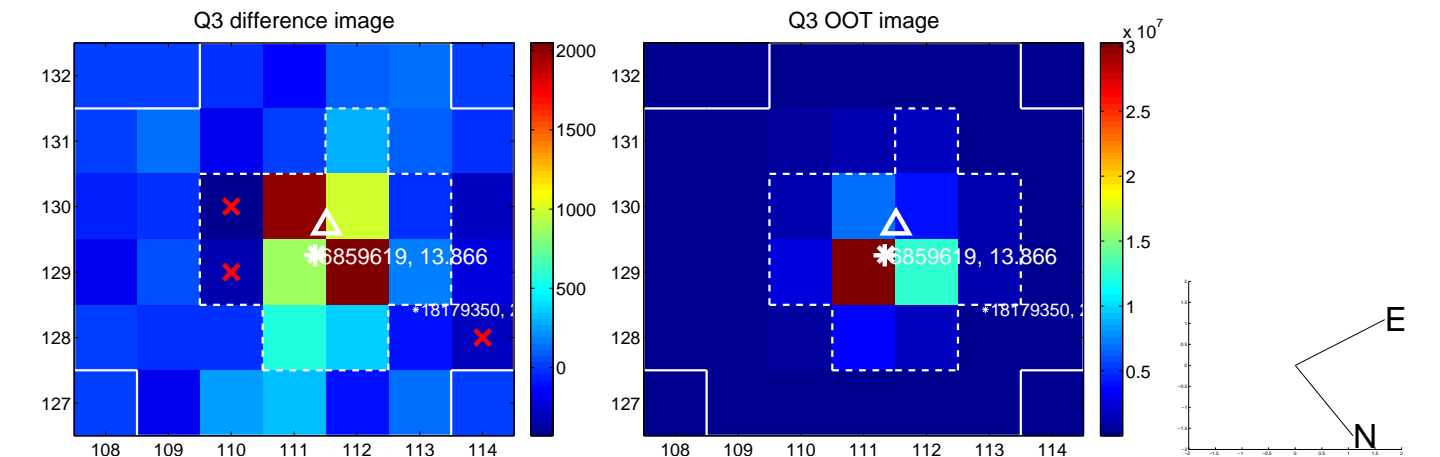
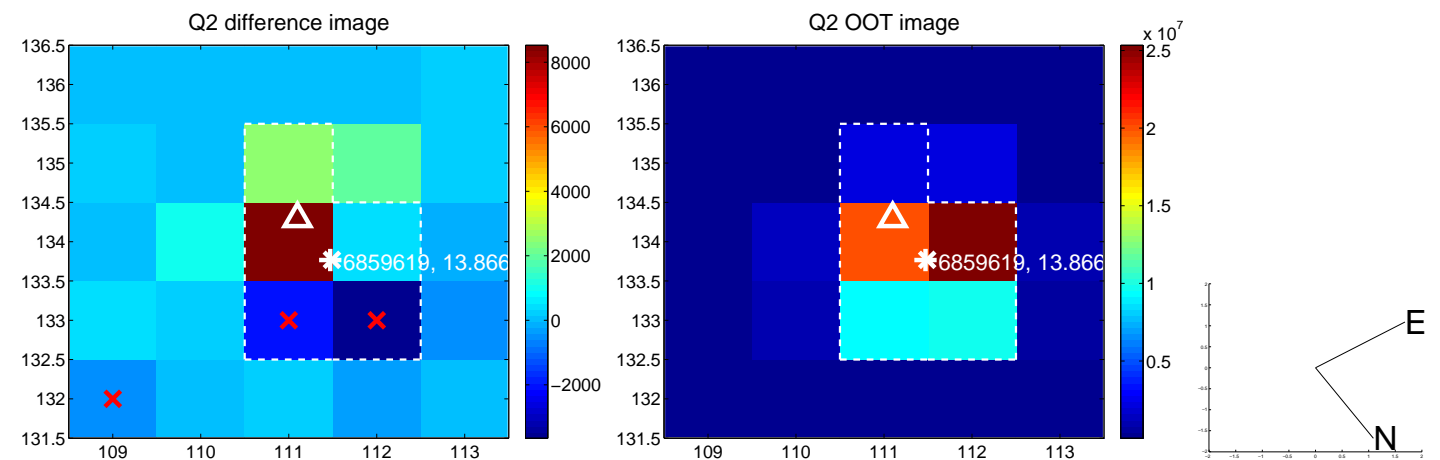
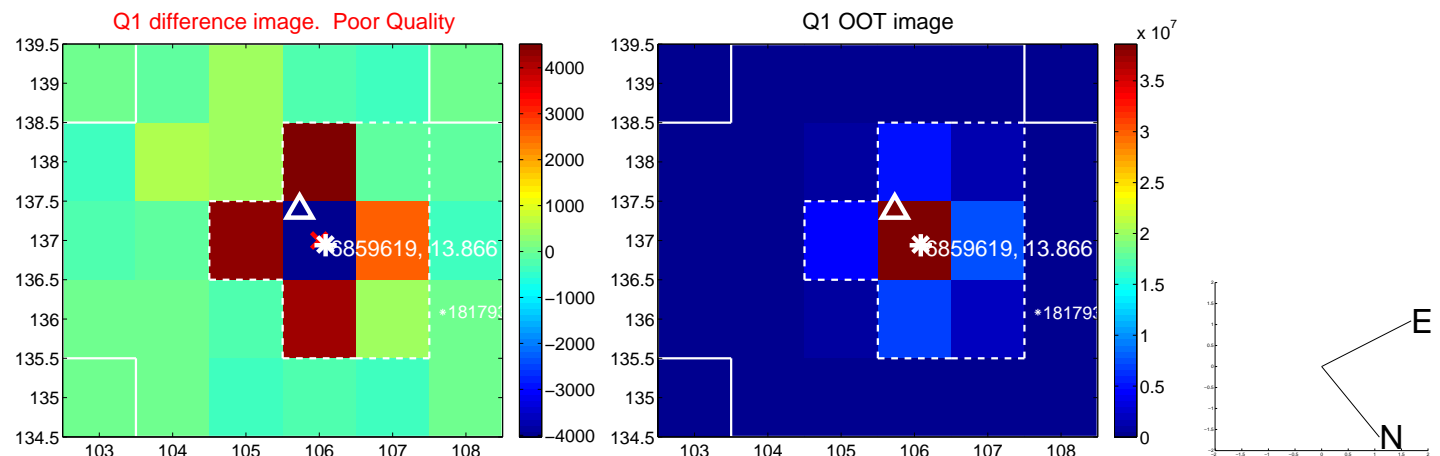
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.174 \pm 0.570$	2.06	$0.681 \pm 0.845$	$-0.957 \pm 0.519$
PRF-fit source offset from KIC position	$1.140 \pm 0.551$	2.07	$0.603 \pm 0.330$	$-0.968 \pm 0.616$
photometric centroid source offset	$0.36 \pm 0.49$	0.73	$-0.36 \pm 0.49$	$0.00 \pm 0.51$

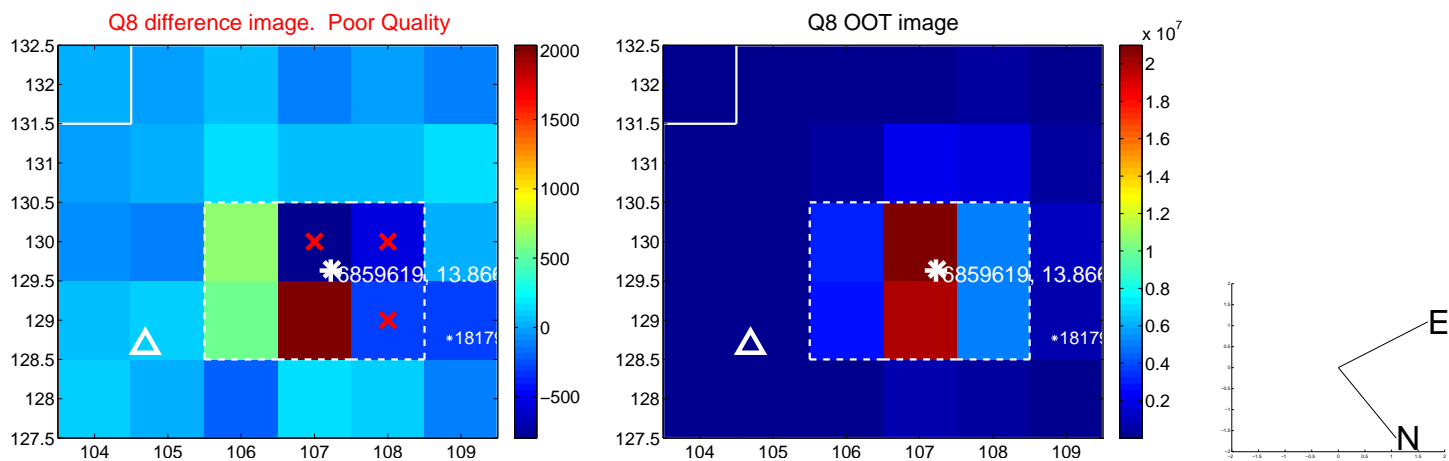
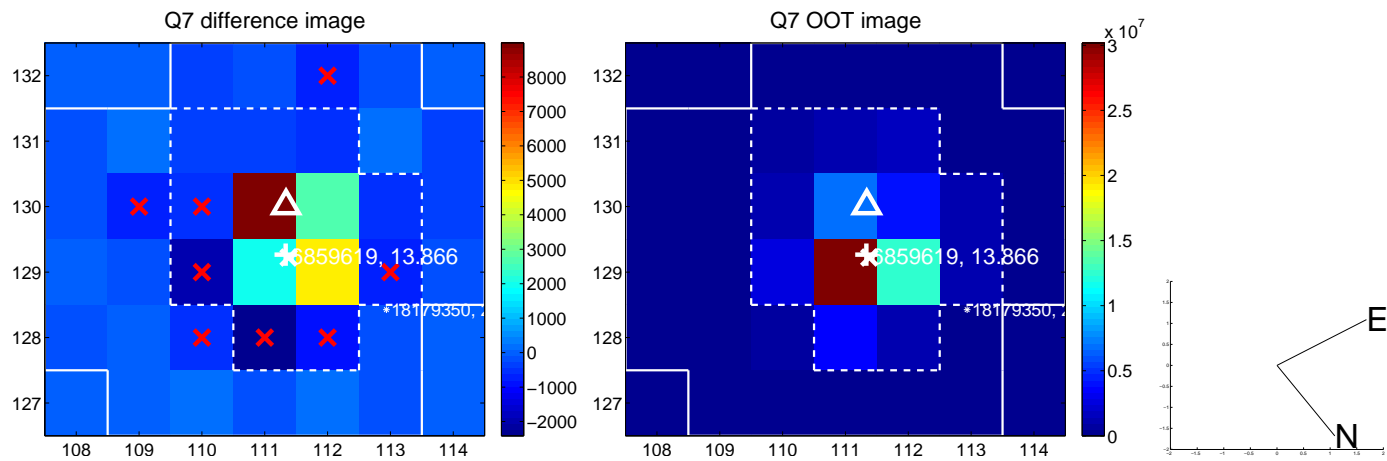
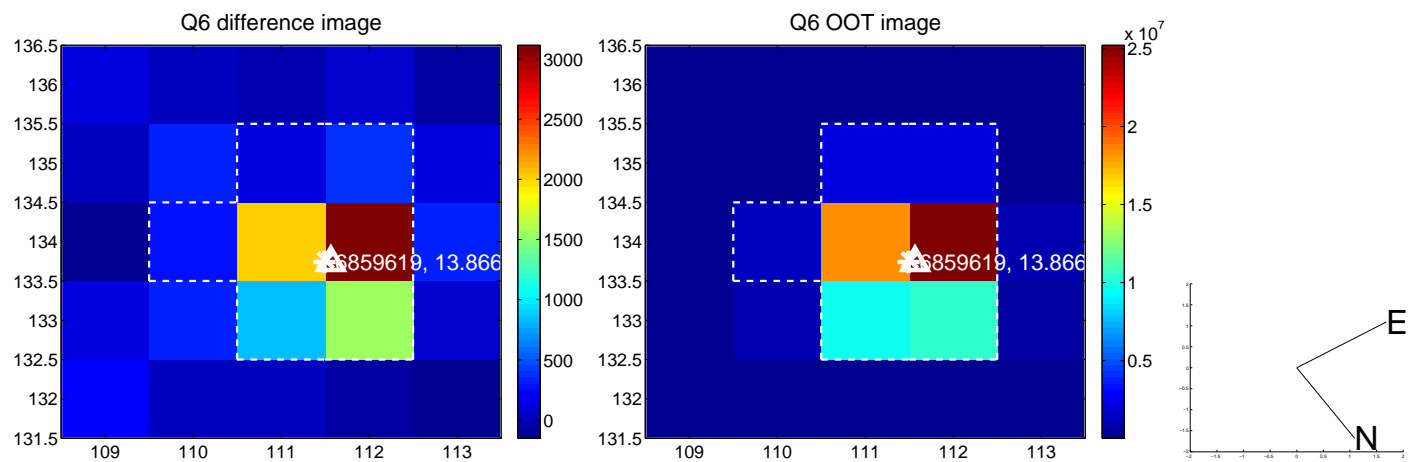
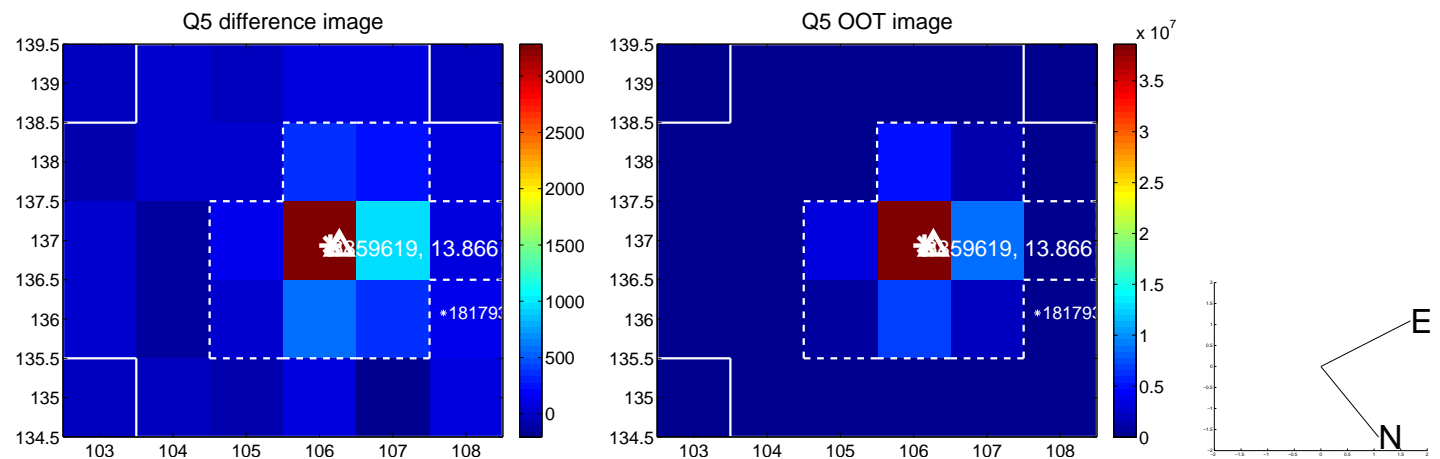


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

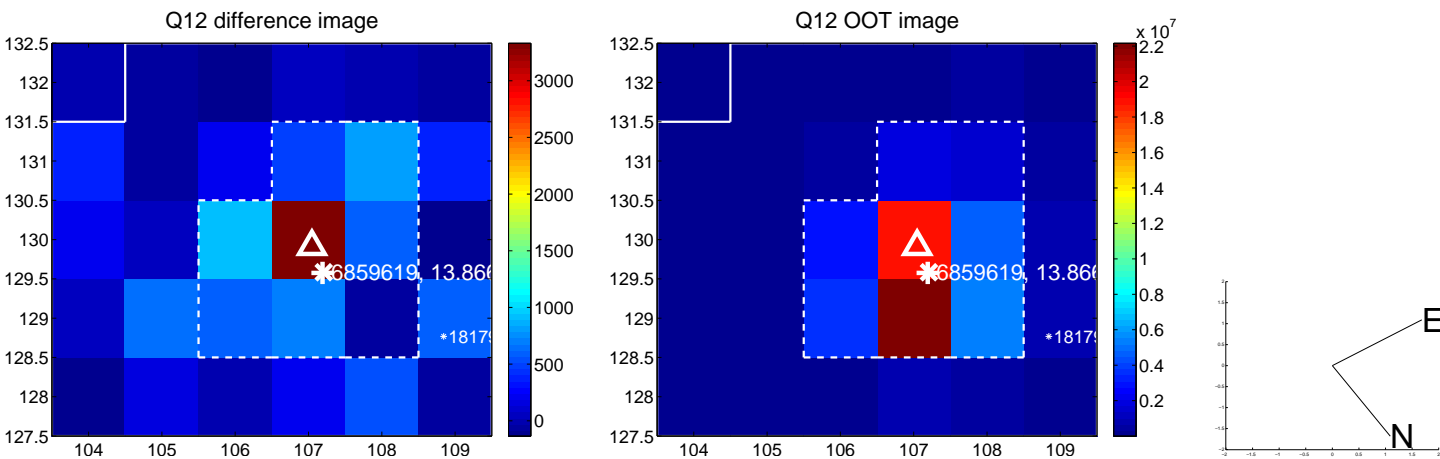
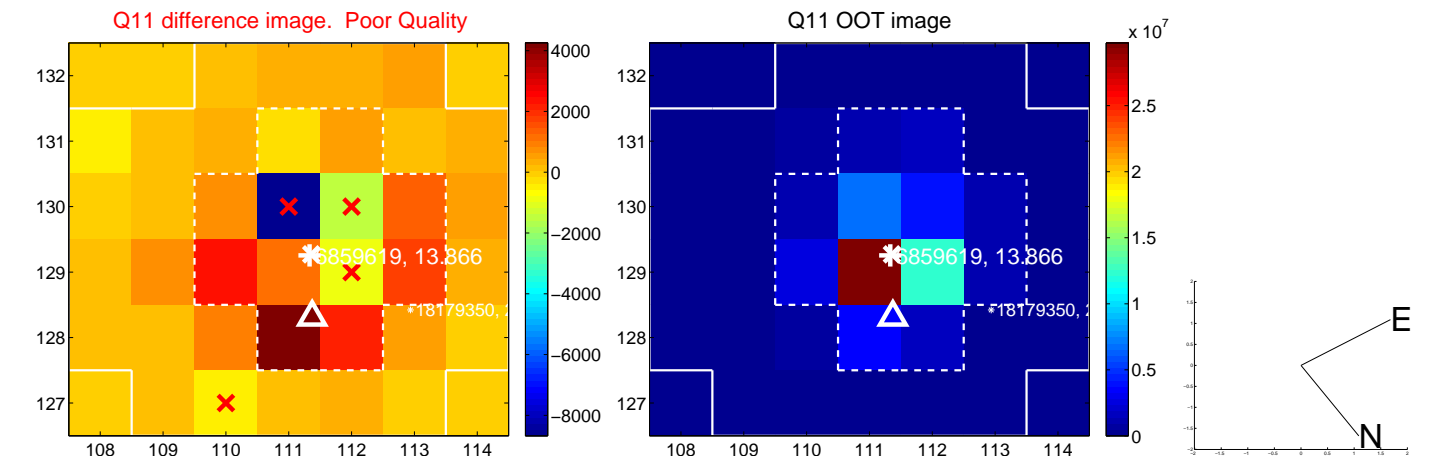
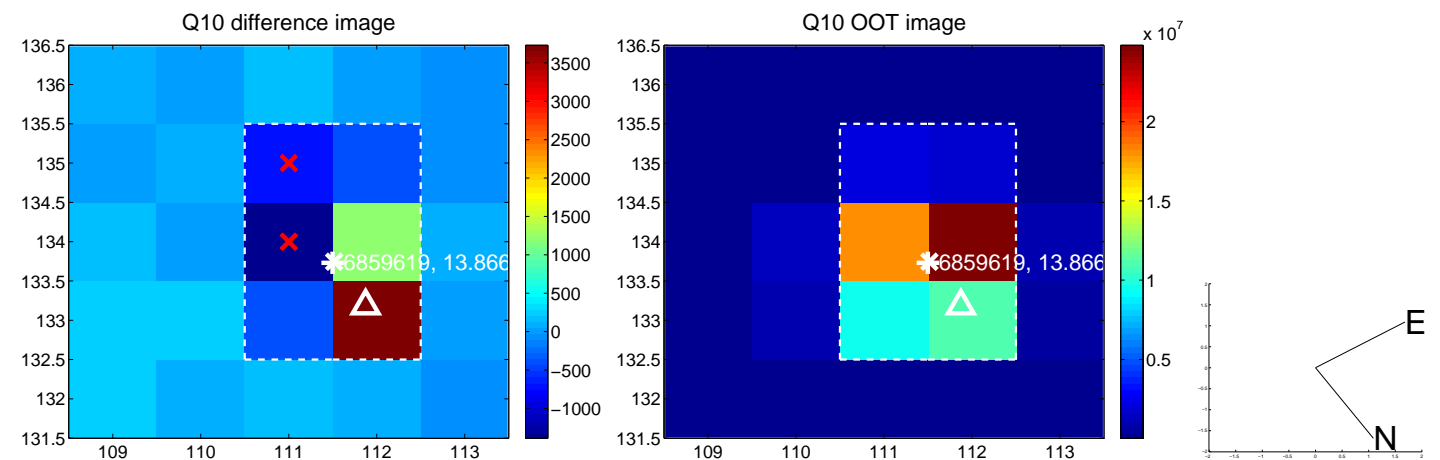
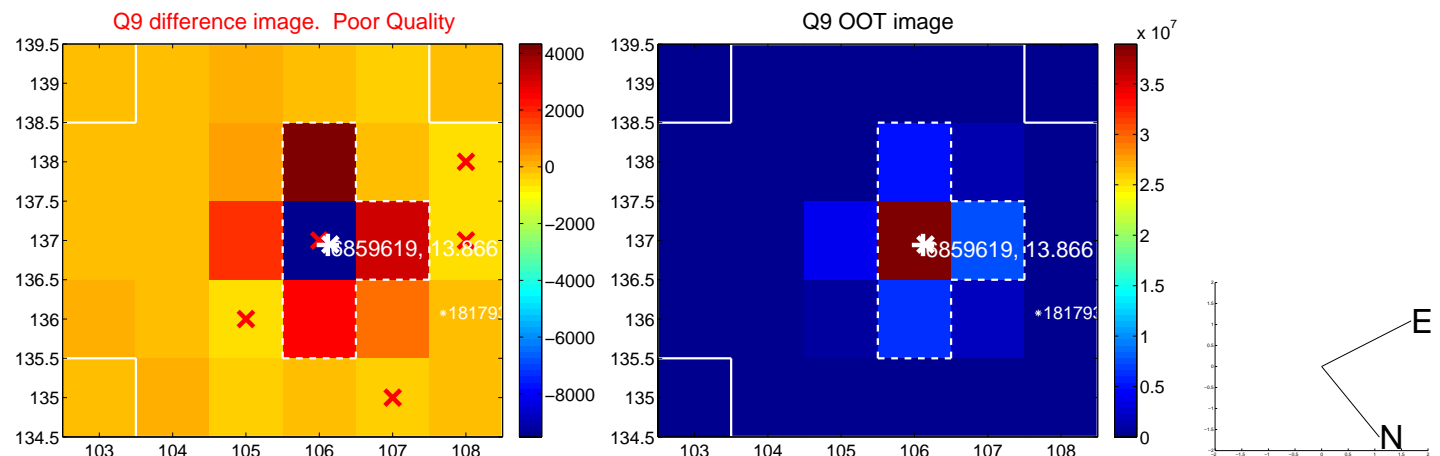


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

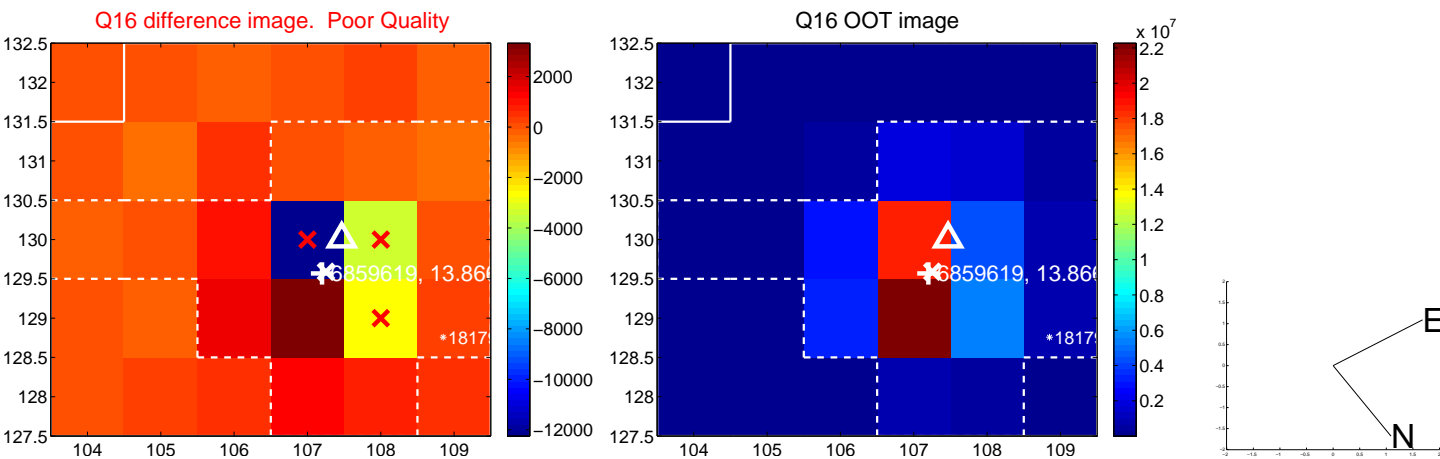
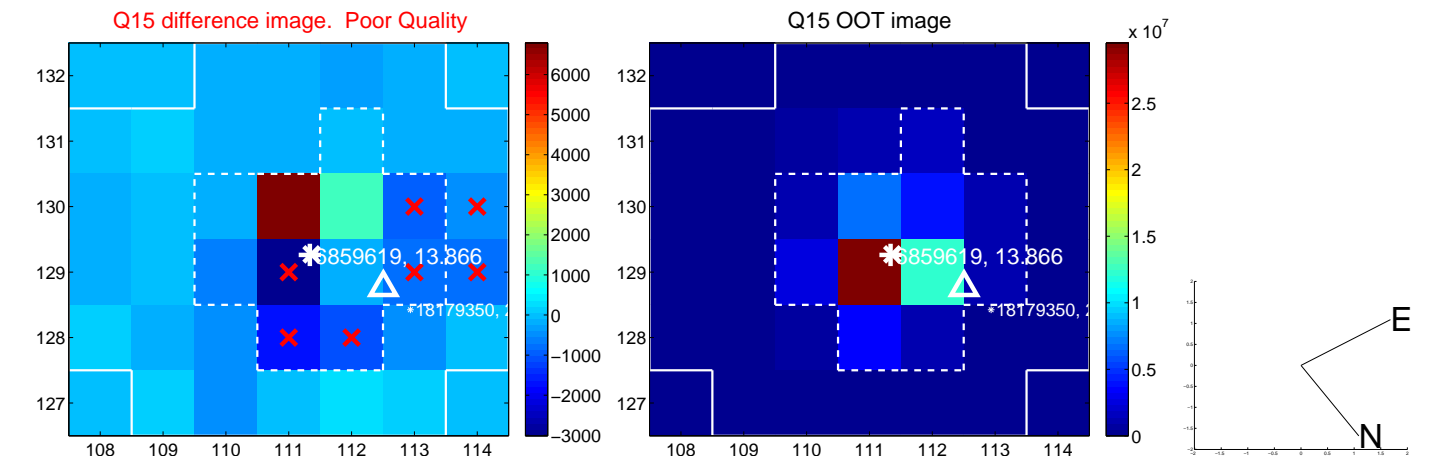
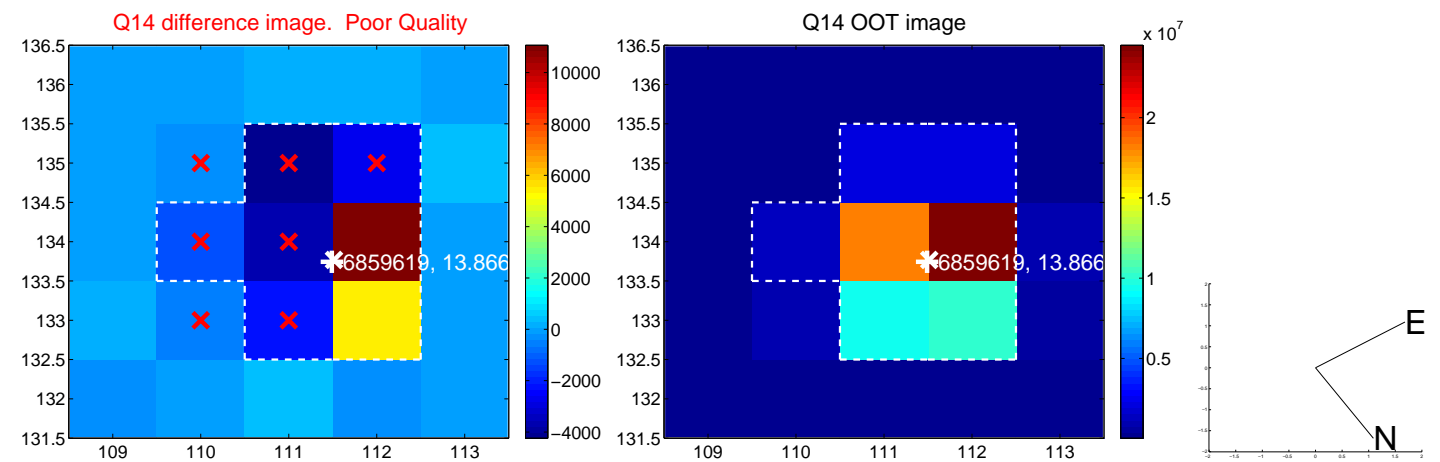
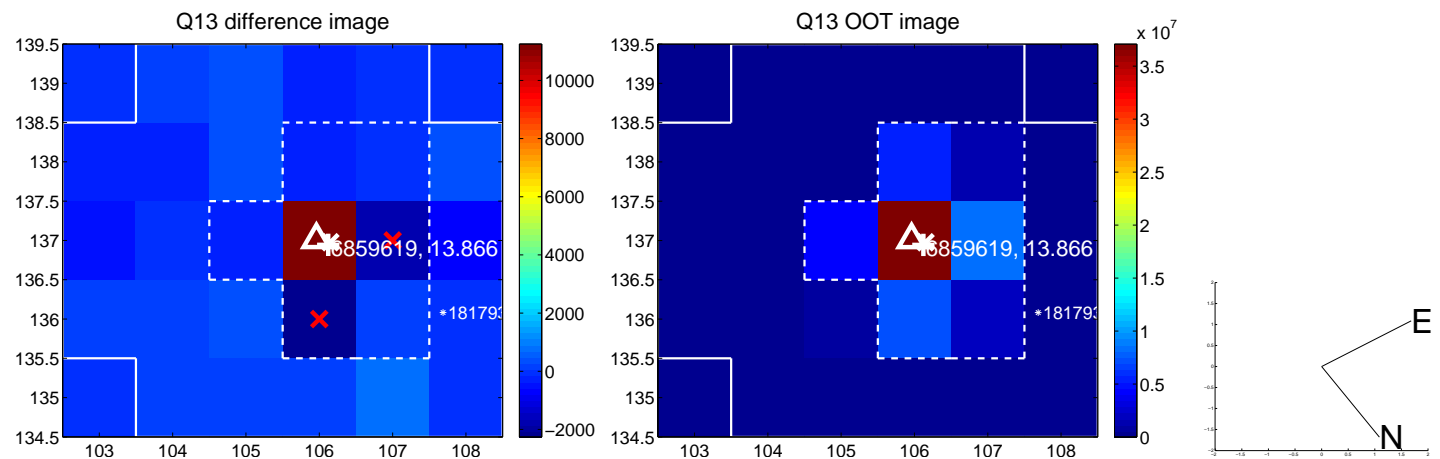




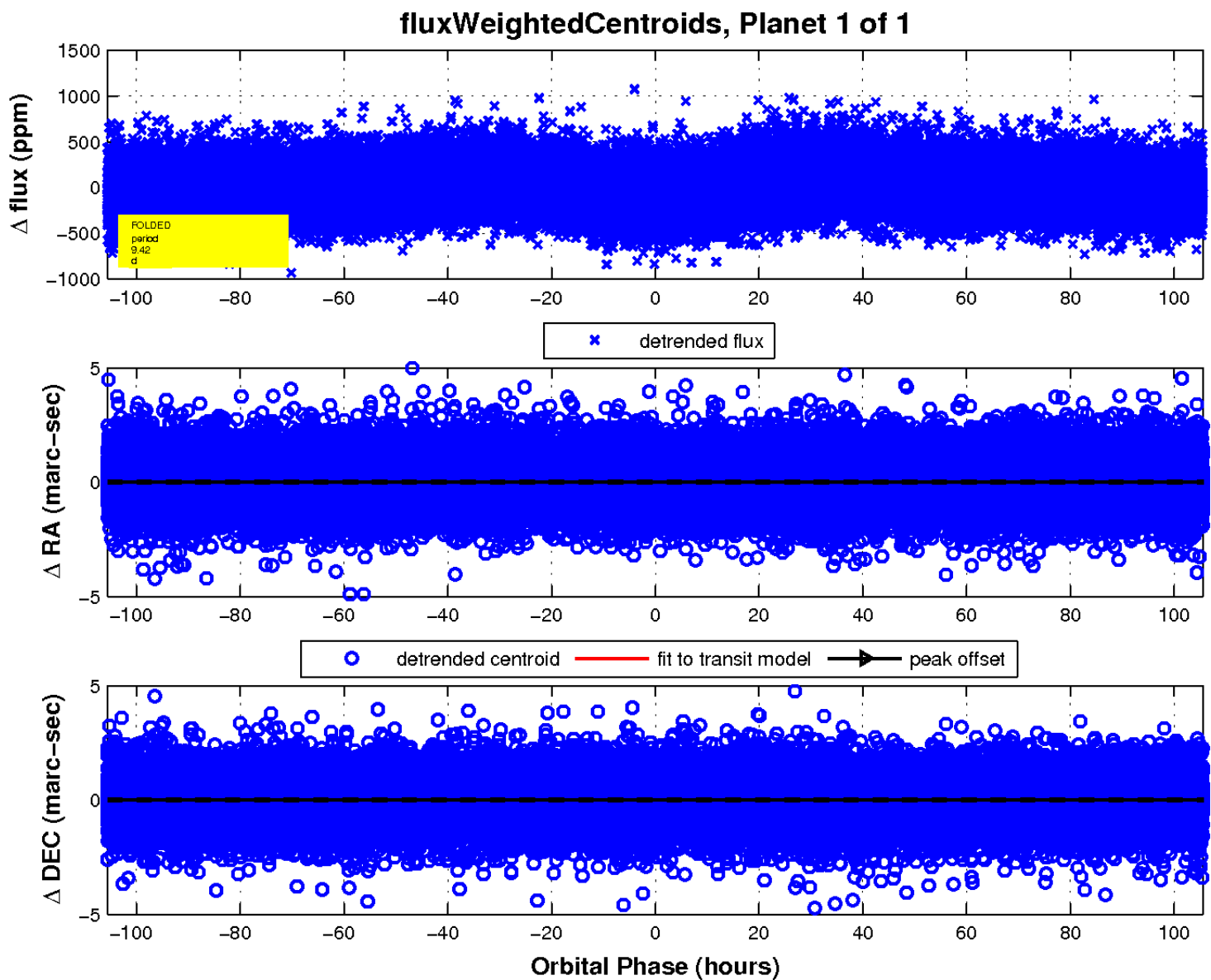
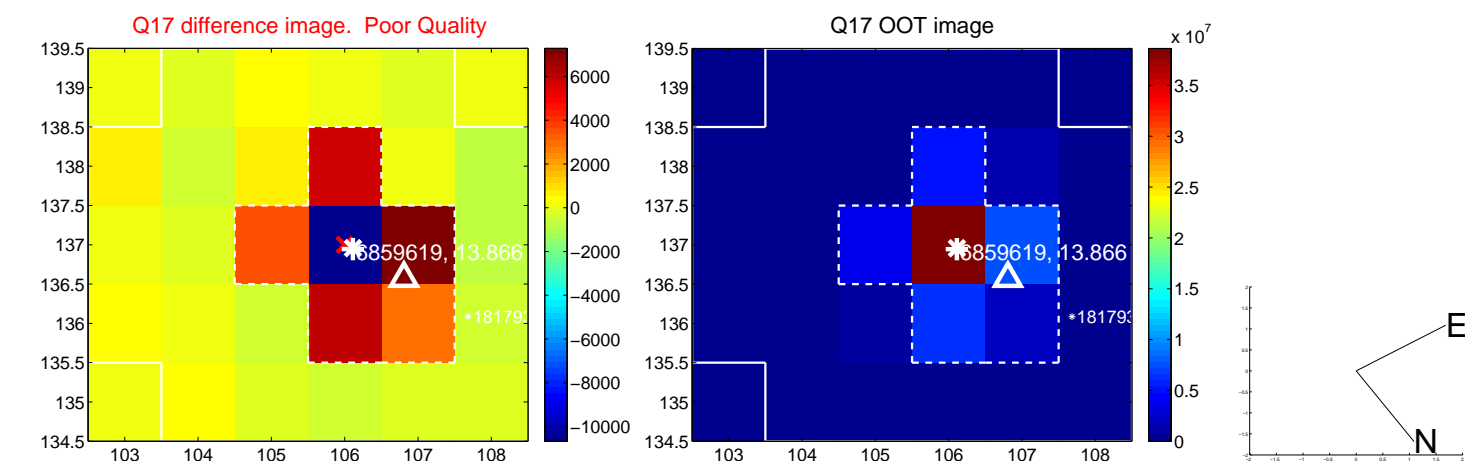
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination

