

# KIC 006934587

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006934587-01	OBS	6032.01	1.570966	132.458886	50539.0	2.830	2525.9	1026.3	1.16	6192	28.26	2470.59
006934587-02	OBS	No	1.570916	131.688077	451.9	2.500	16.8	-1.0	1.16	6192	2.48	2470.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006934587-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE
006934587-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

**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.

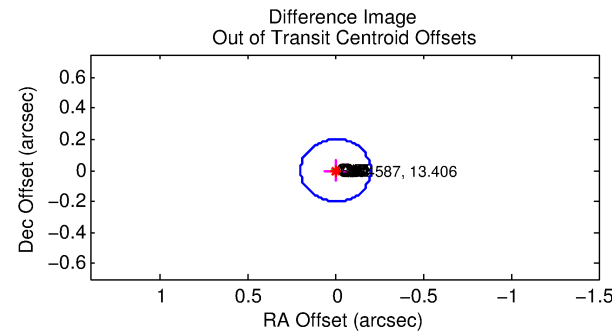
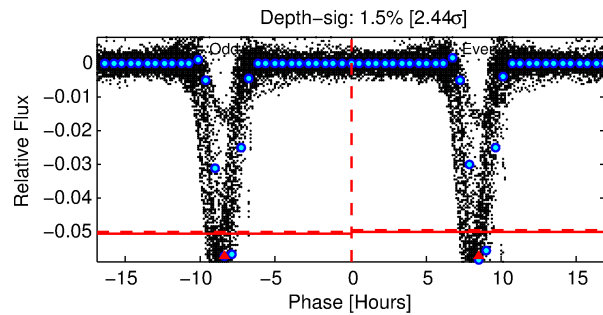
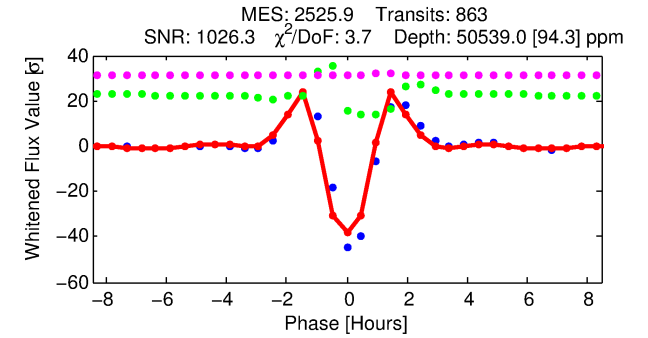
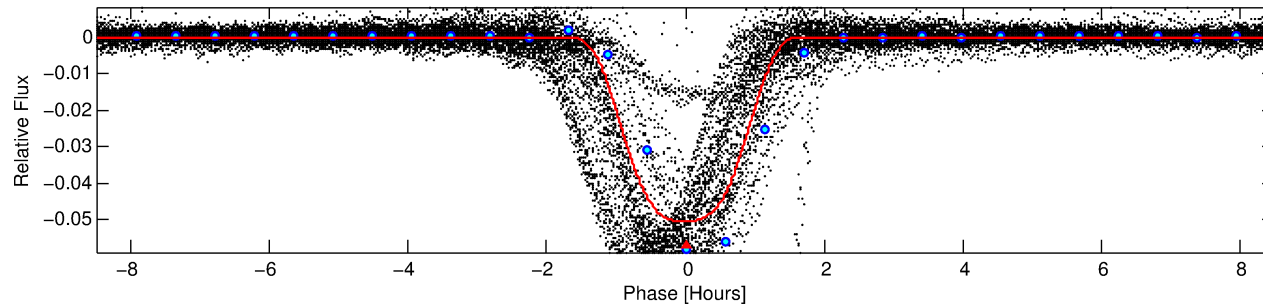
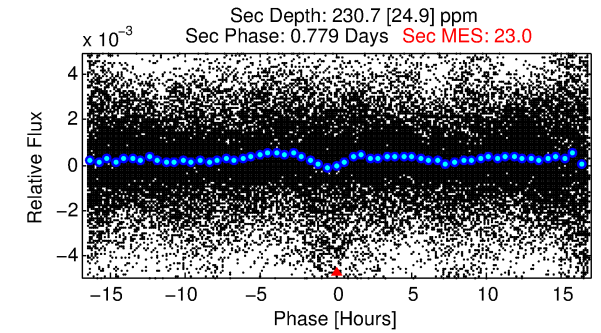
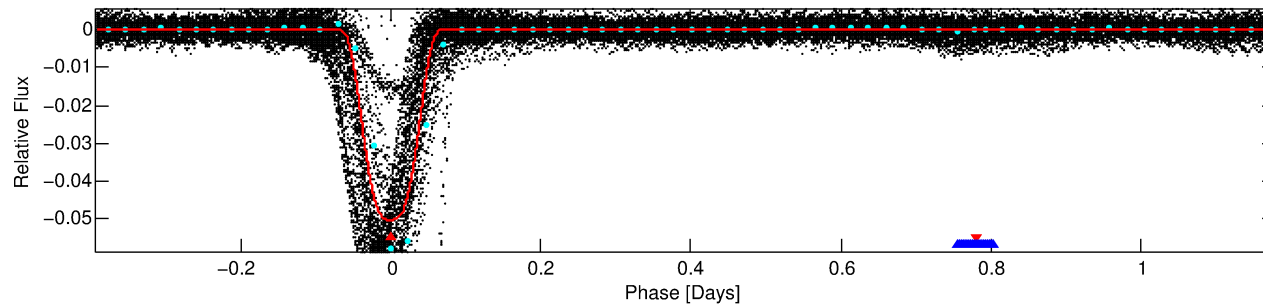
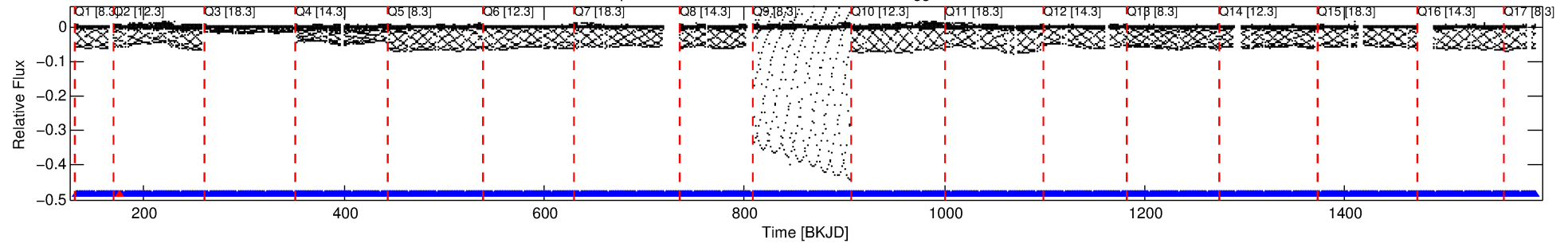
## Ephemeris Match Information For 006934587-01

No Significant Match Found

# DV One-Page Summary

KIC: 6934587 Candidate: 1 of 2 Period: 1.571 d  
KOI: K06032.01 Corr: 0.894

Kp: 13.41 R\*: 1.16 Rs Teff: 6192.0 K Logg: 4.33 Fe/H: -0.120



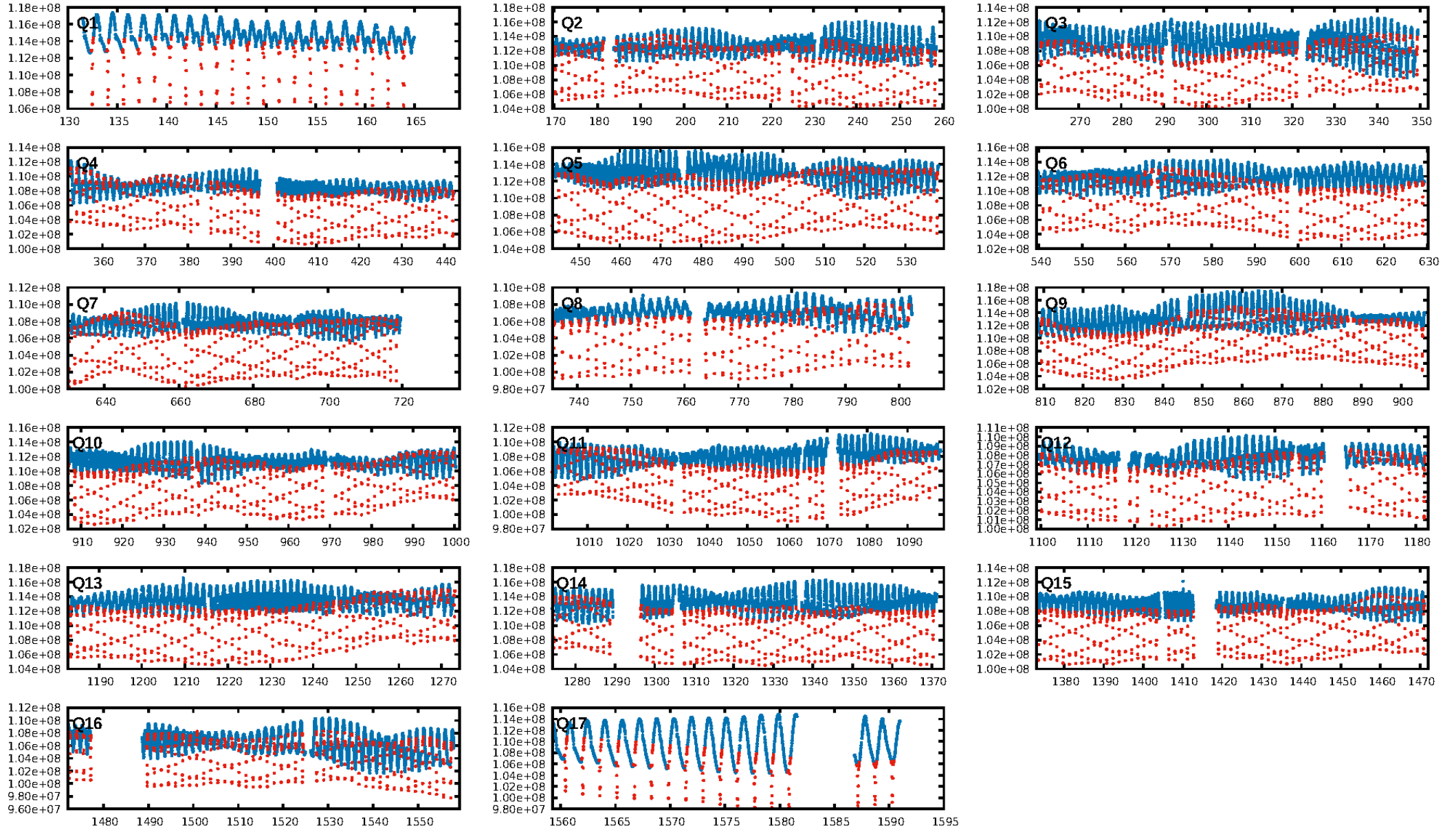
## DV Fit Results:

Period = 1.57097 [0.00000] d  
Epoch = 132.4589 [0.0000] BKJD  
Rp/R\* = 0.2229 [0.0003]  
a/R\* = 4.35 [0.01]  
b = 0.70 [0.00]  
Seff = 2470.59 [1014.93]  
Teff = 1798 [185] K  
Rp = 28.26 [8.83] Re  
a = 0.0268 [0.0070] AU  
Ag = 0.11 [0.05] [-19.54σ]  
Teffp = 1616 [76] K [-0.91σ]

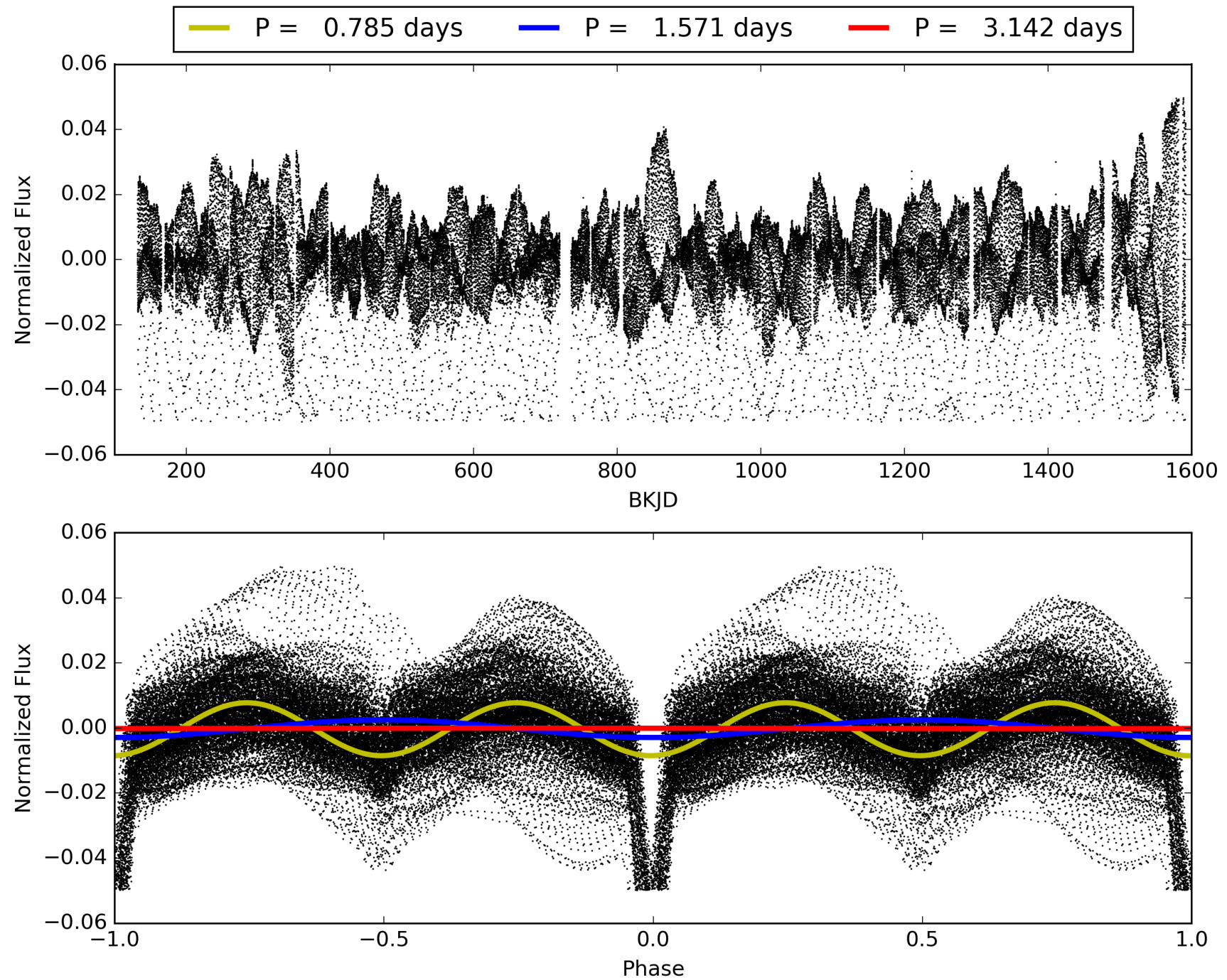
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [824/825]  
GhostDiagnostic-chr: 1.237  
Centroid-sig: 0.0%  
Centroid-so: 0.279 arcsec [355.74σ]  
OotOffset-rm: 0.001 arcsec [0.02σ]  
KicOffset-rm: 0.266 arcsec [3.96σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006934587-01, PDC Light Curves

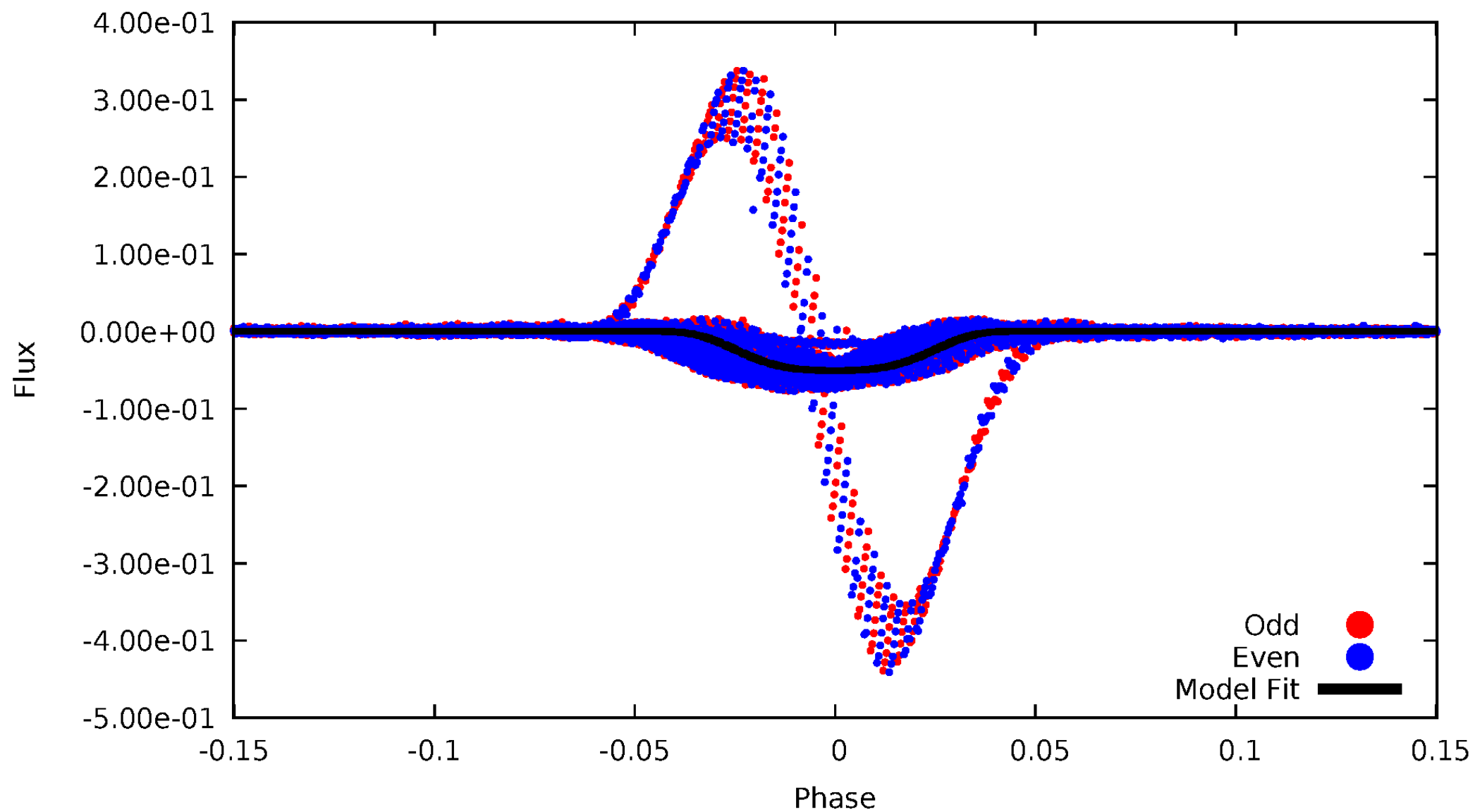


TCE 006934587-01



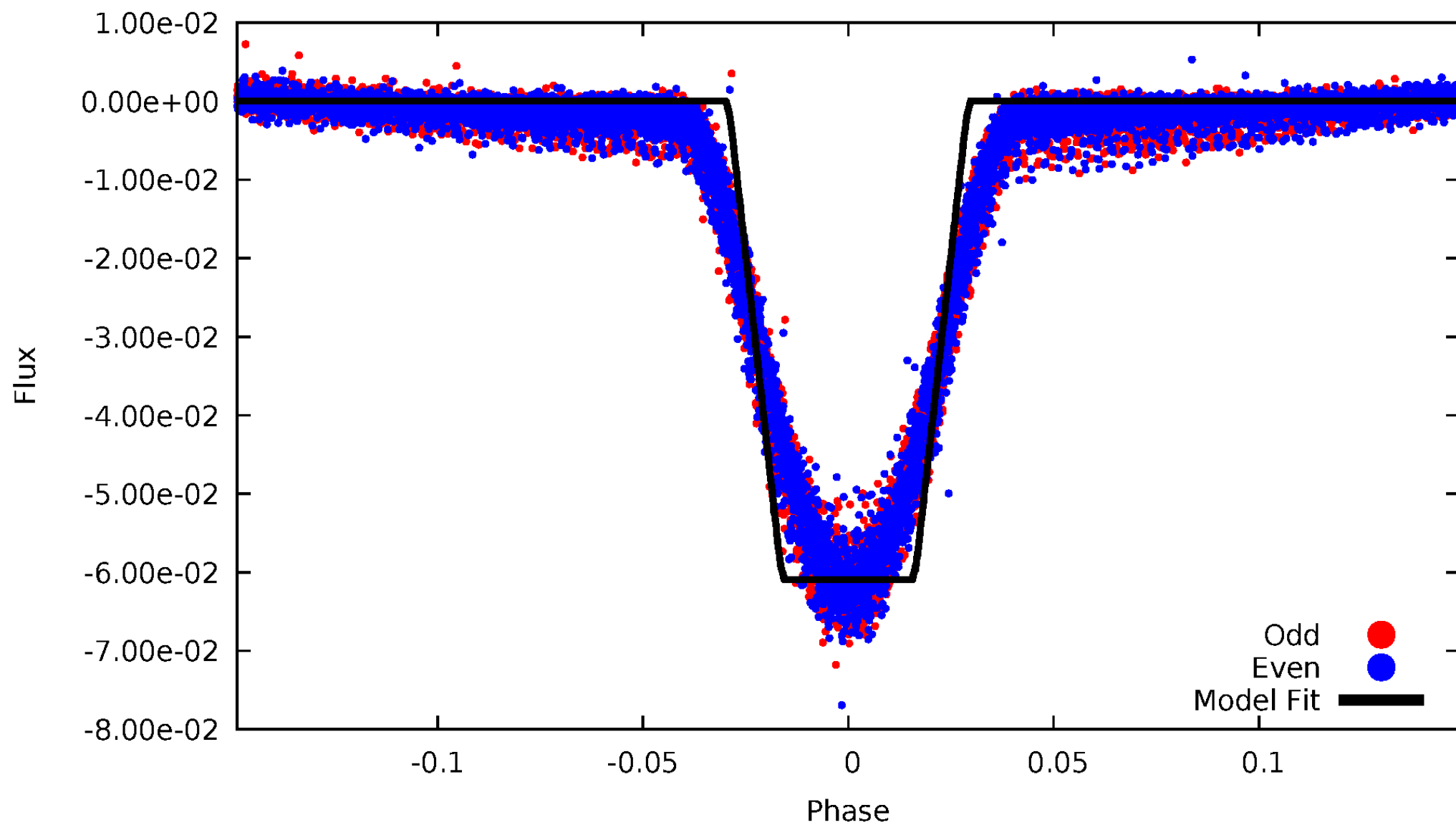
# DV Odd/Even

TCE 006934587-01



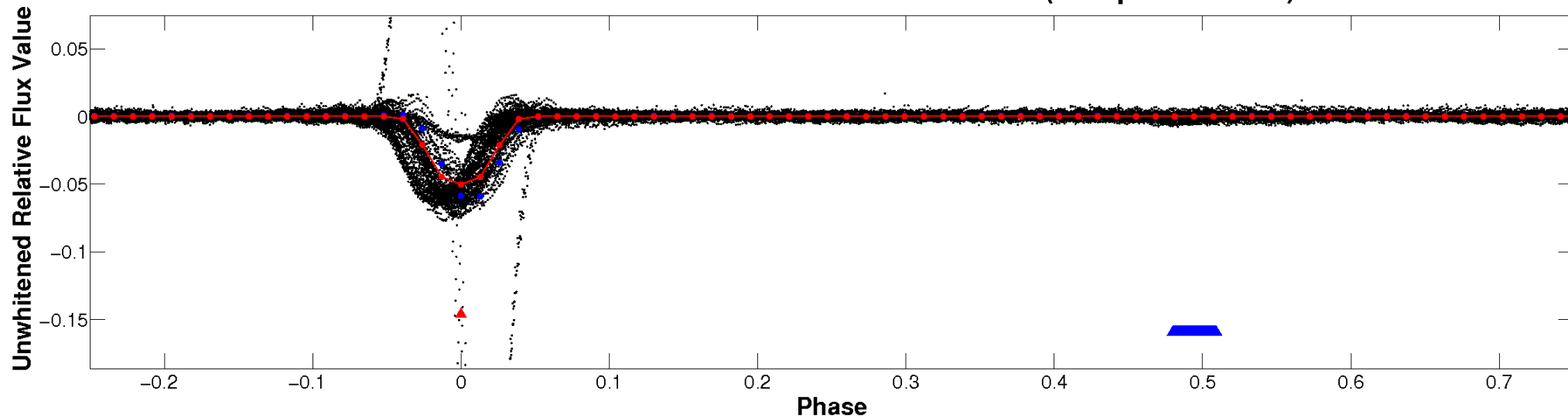
# ALT Odd/Even

TCE 006934587-01

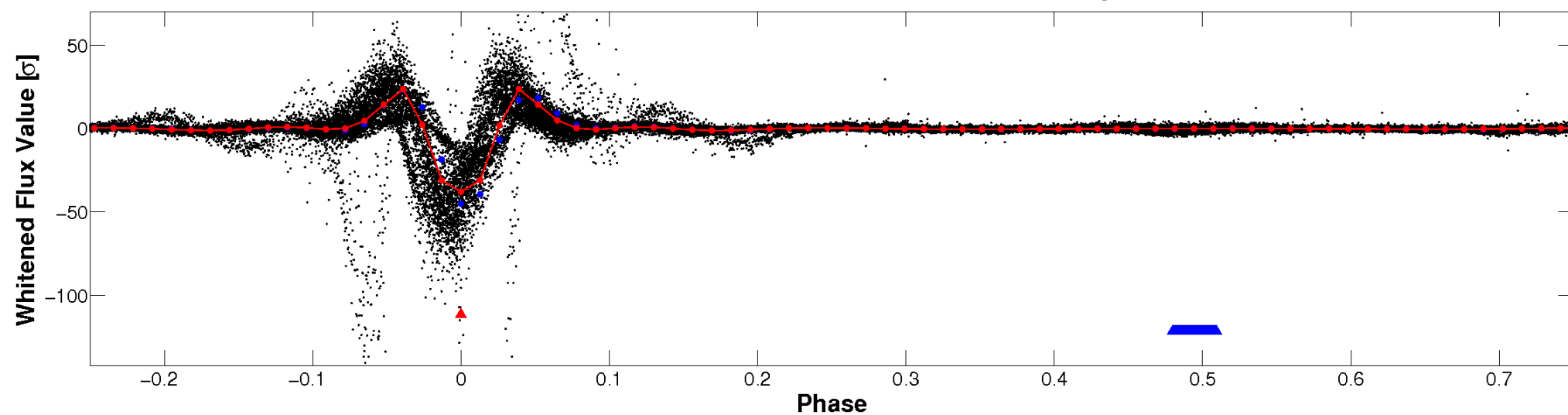


# Non-Whitened Vs. Whitened Light Curve

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



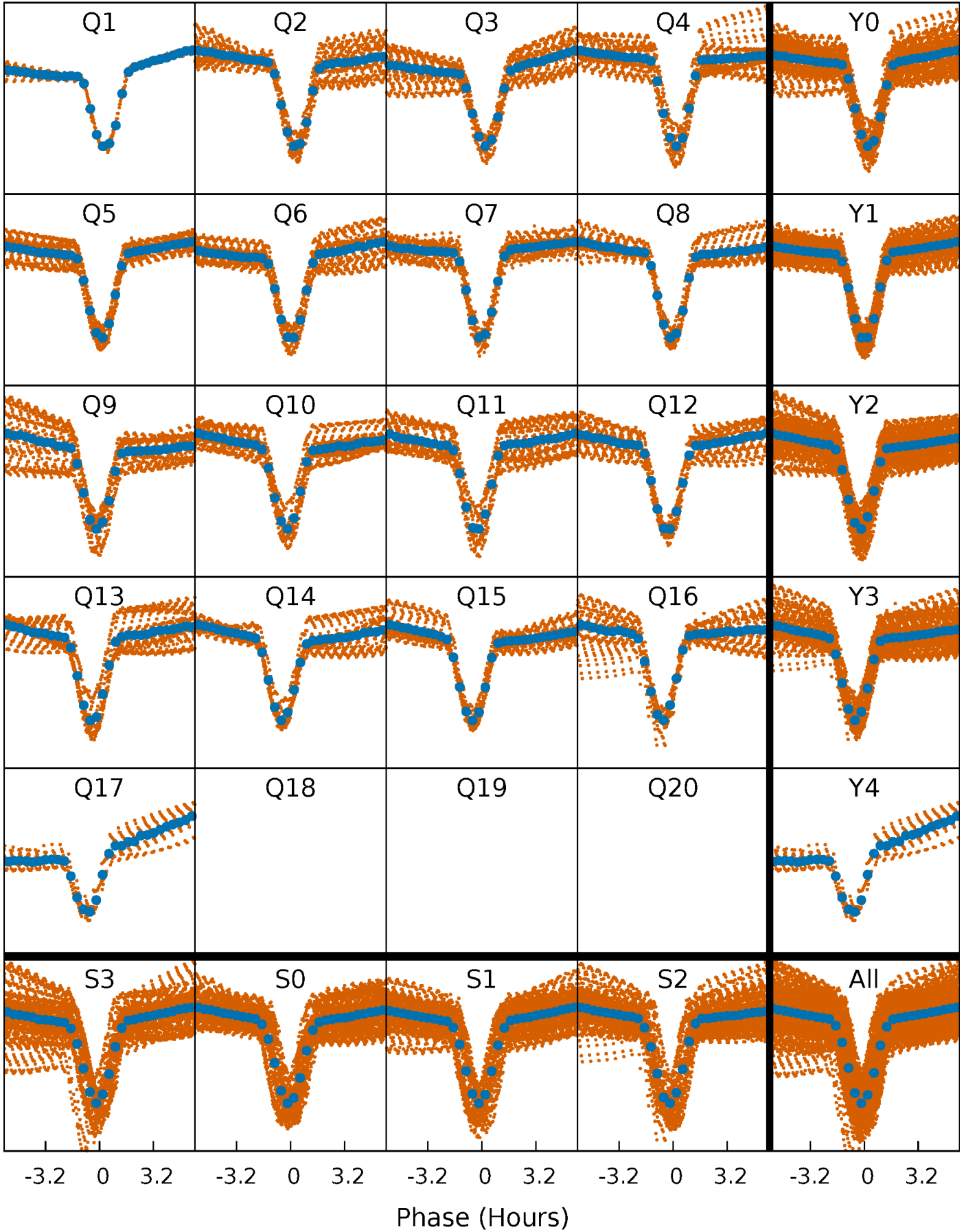
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

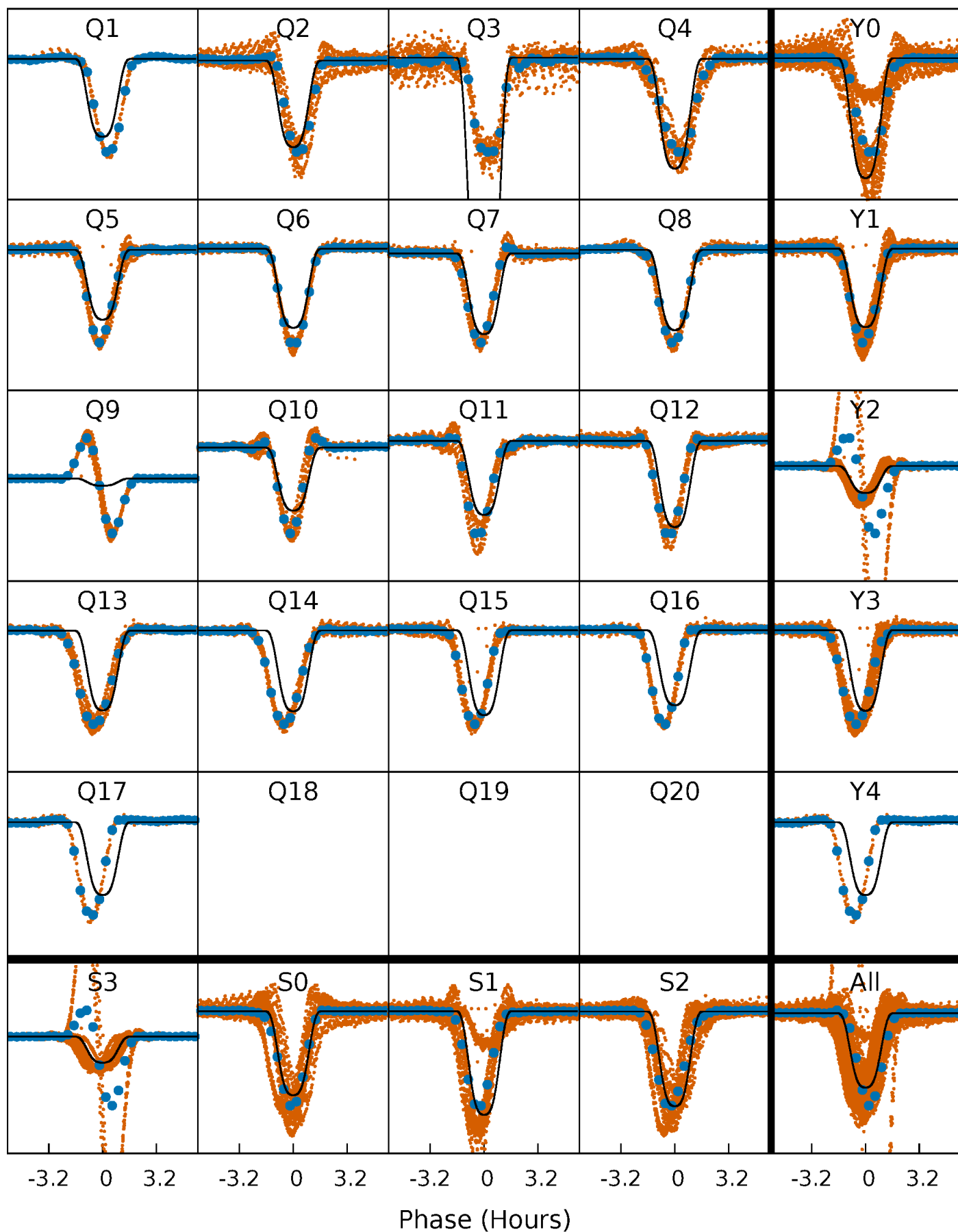
TCE 006934587-01 P= 1.570966 Days  $T_0=132.458886$  (BKJD)





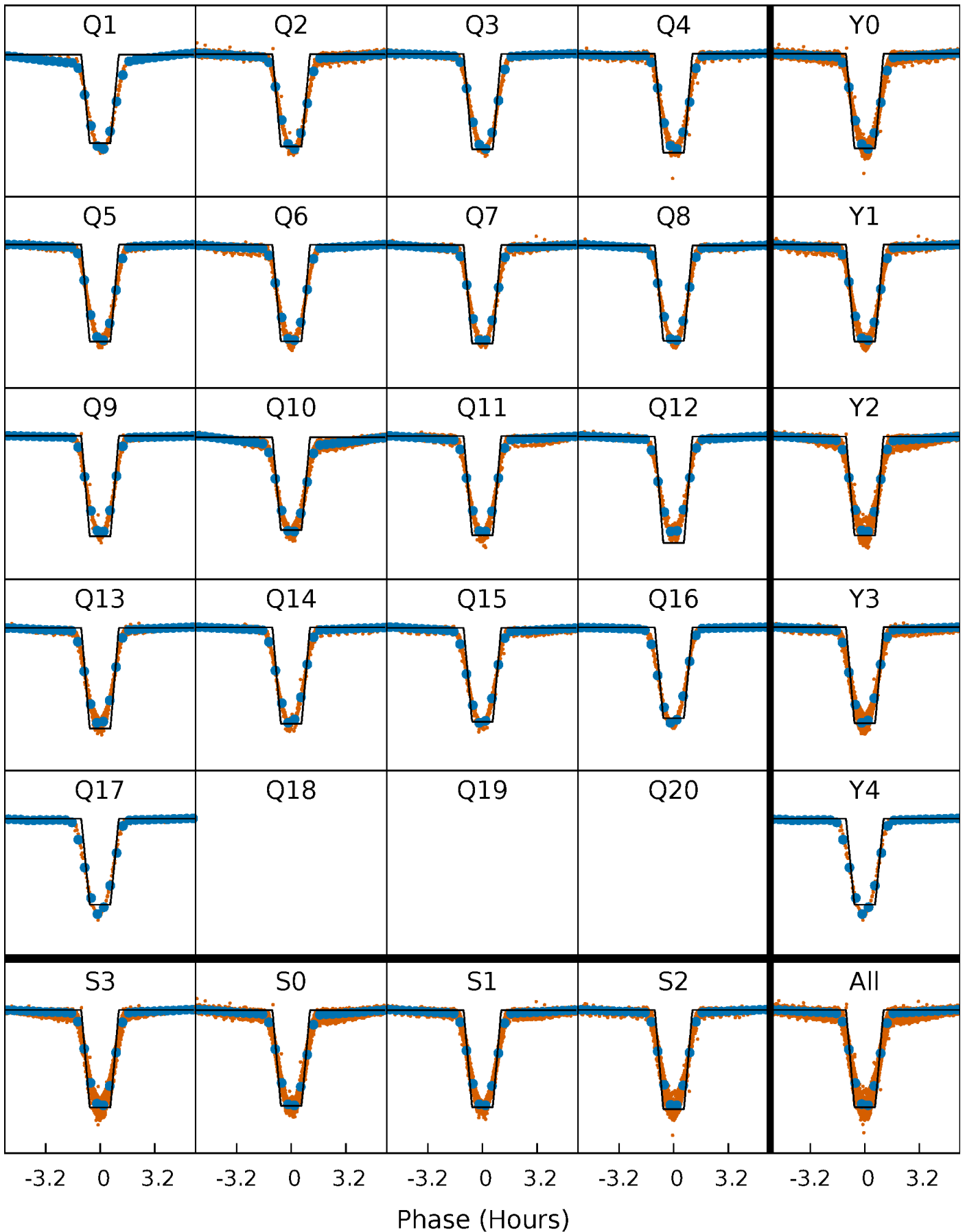
# DV Quarter-Phased Transit Curves

TCE 006934587-01 P= 1.570966 Days  $T_0=132.458886$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

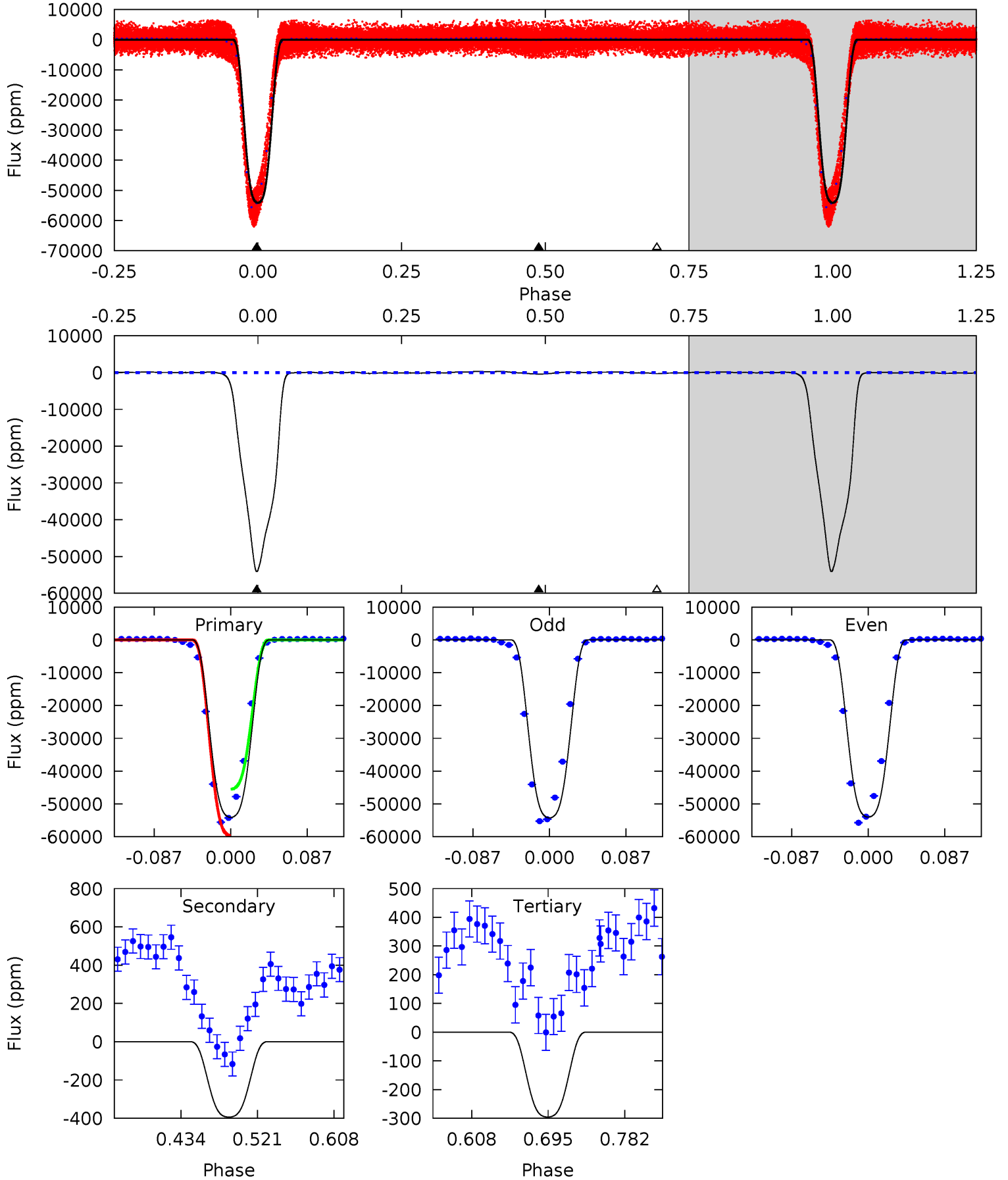
TCE 006934587-01 P= 1.570926 Days  $T_0=132.469803$  (BKJD)



# DV Model-Shift Uniqueness Test

006934587-01, P = 1.570966 Days, E = 130.887920 Days

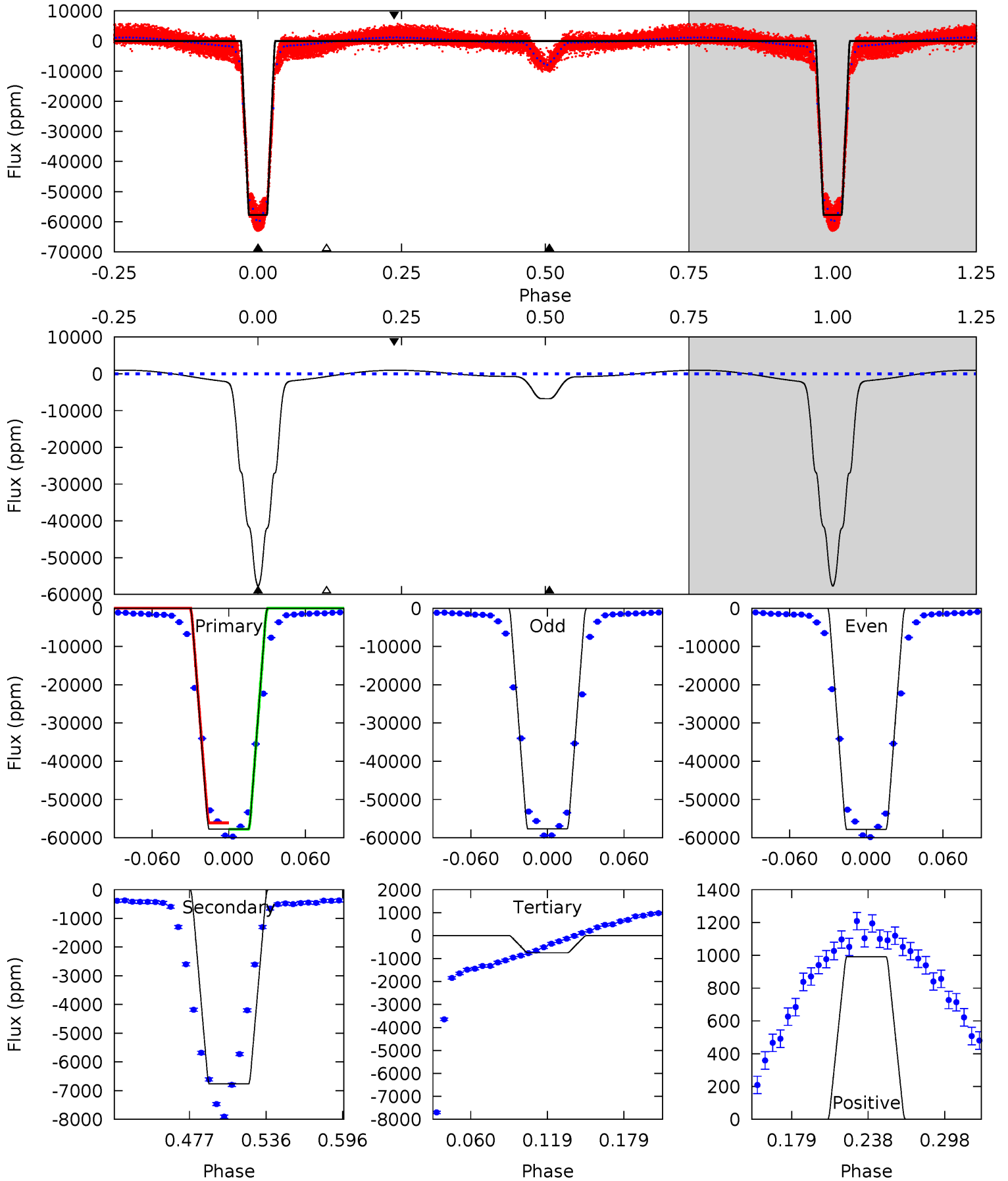
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1581	11.5	8.64	0	4.59	1.71	3.67	1572	1581	2.87	11.5	3.31	1.06	0.01	0



# Alt Model-Shift Uniqueness Test

006934587-01, P = 1.570926 Days, E = 130.898877 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
2174	254.9	28.1	37.3	4.67	1.88	30.3	2145	2136	226.8	217.6	2.72	1.00	0.02	29.8



### Stellar Parameters For KIC 006934587

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6192^{+194}_{-237}$	$4.326^{+0.128}_{-0.208}$	$-0.120^{+0.250}_{-0.300}$	$1.162^{+0.363}_{-0.195}$	$1.040^{+0.168}_{-0.122}$	$0.934^{+0.570}_{-0.475}$
	+3%/-4%	+3%/-5%	+208%/-250%	+31%/-17%	+16%/-12%	+61%/-51%
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 006934587-01 / KOI 6032.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-394 \pm 34$	$28.60^{+5.15}_{-2.93}$	$2540^{+209}_{-171}$	$-2488^{+210}_{-215}$	$0.184^{+0.051}_{-0.046}$
Alt.	$-6769 \pm 27$	$31.44^{+6.08}_{-3.06}$	$2535^{+208}_{-162}$	$3837^{+87}_{-104}$	$2.671^{+0.593}_{-0.690}$

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

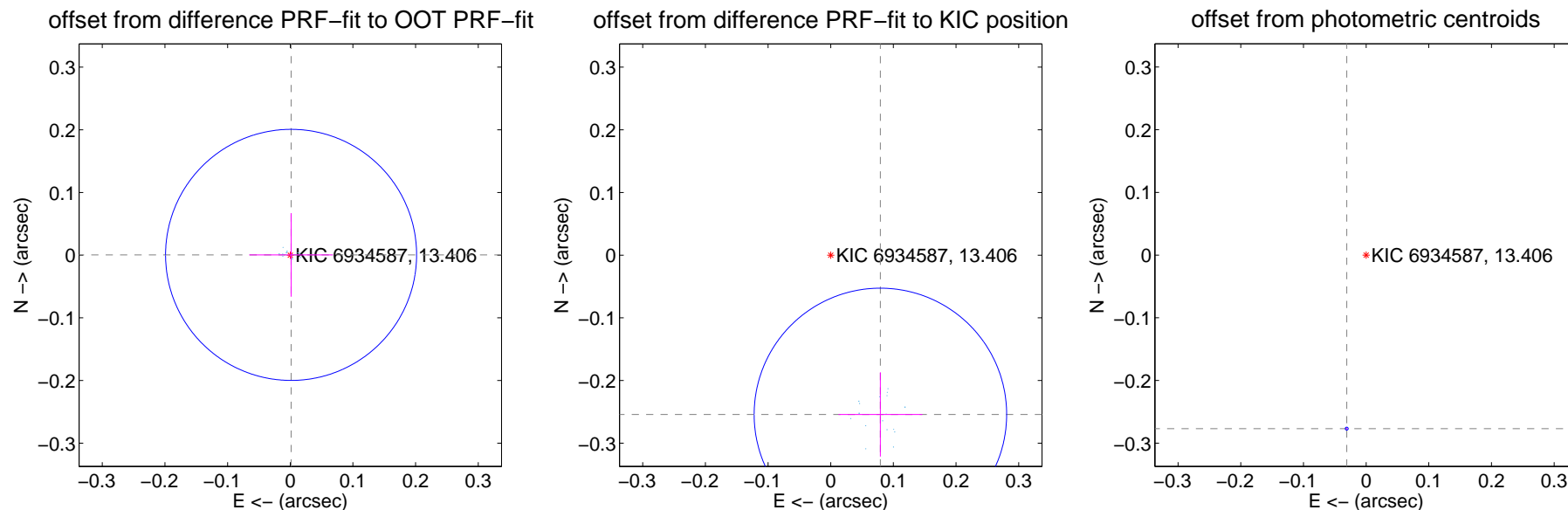
## DV Centroid Data

Supplemental centroid analysis for 006934587-01. Kepler magnitude: 13.41. Transit SNR 1026.27

There are 17 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

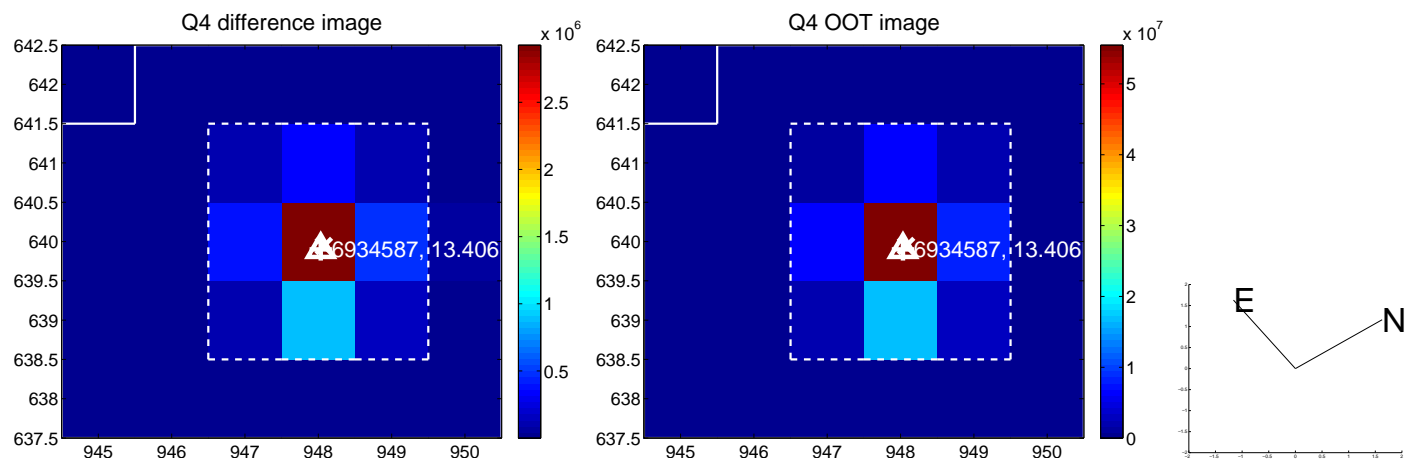
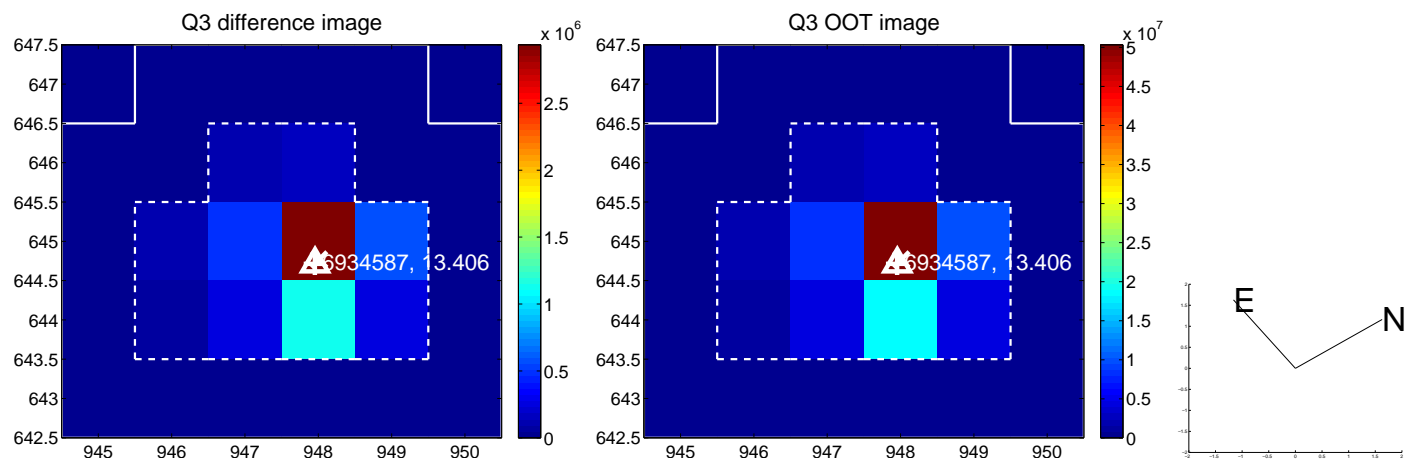
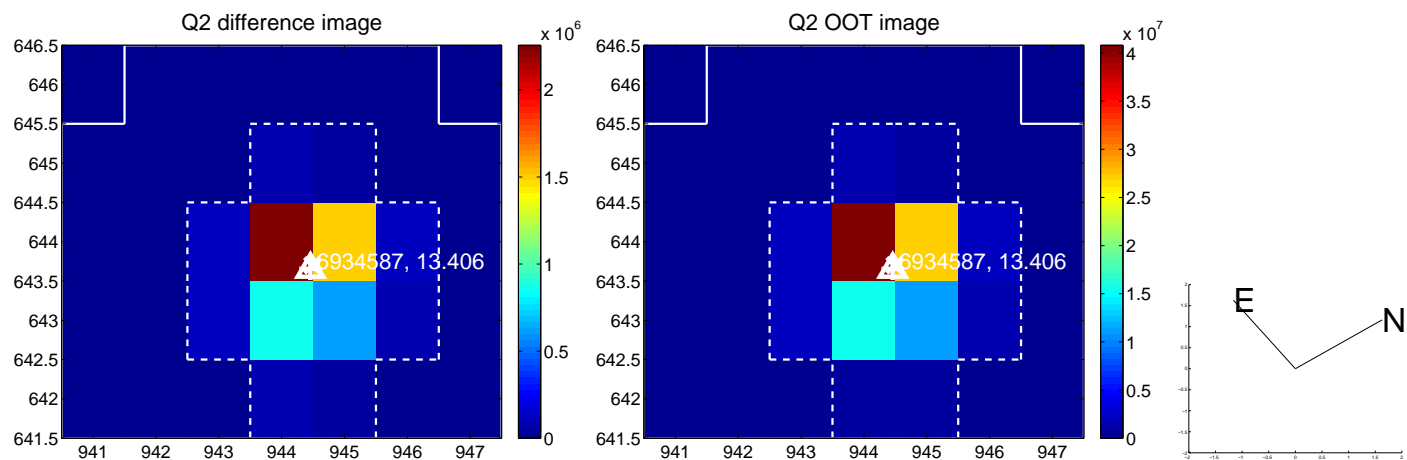
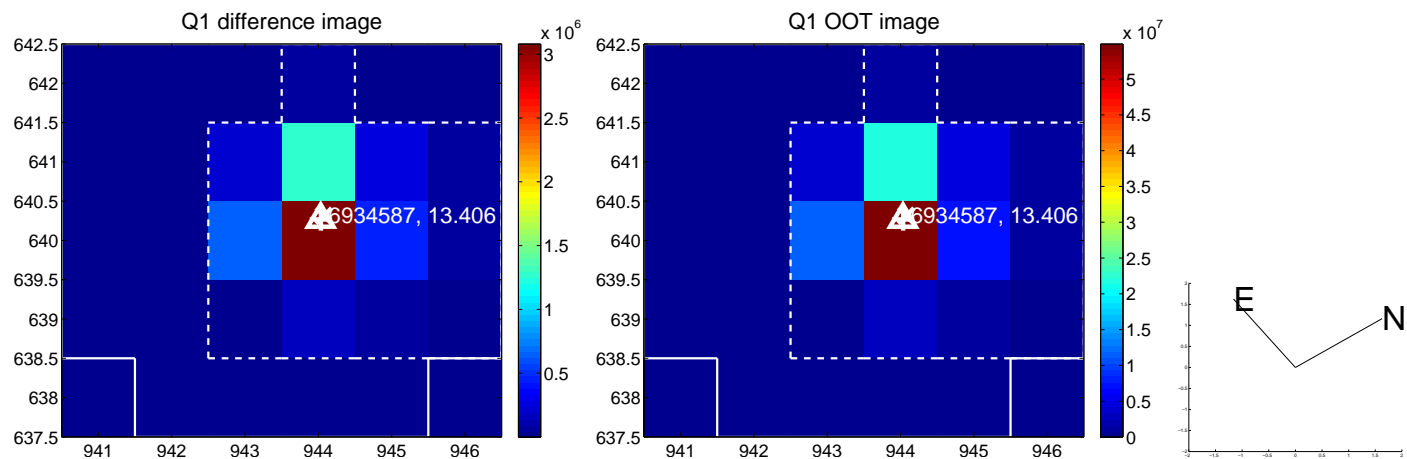
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.001 \pm 0.067$	0.02	$-0.001 \pm 0.067$	$0.000 \pm 0.067$
PRF-fit source offset from KIC position	$0.266 \pm 0.067$	3.96	$-0.079 \pm 0.067$	$-0.254 \pm 0.067$
photometric centroid source offset	$0.28 \pm 0.00$	355.74	$0.03 \pm 0.00$	$-0.28 \pm 0.00$



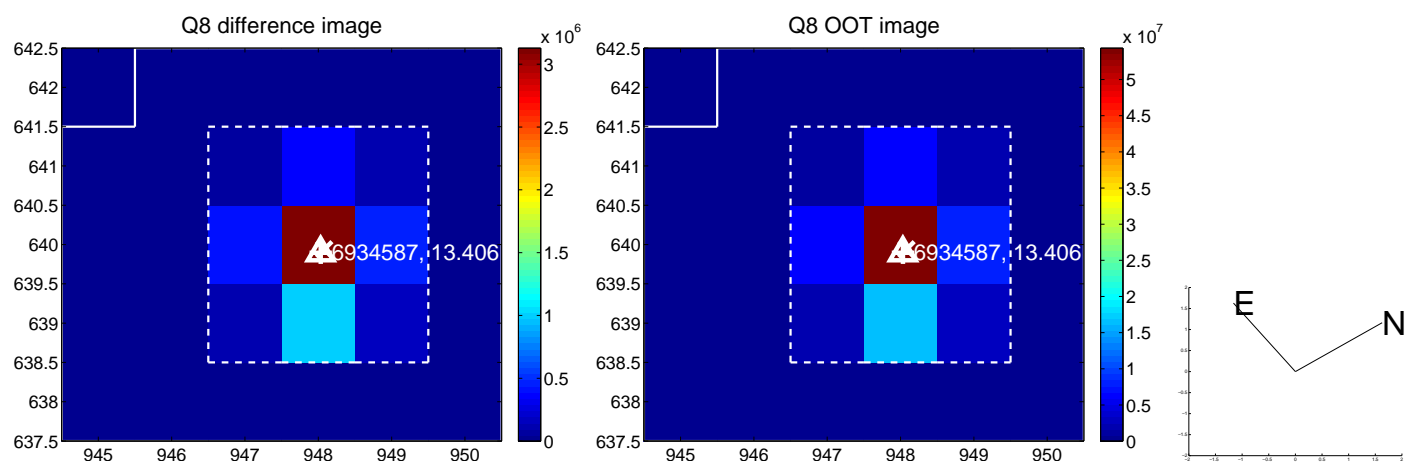
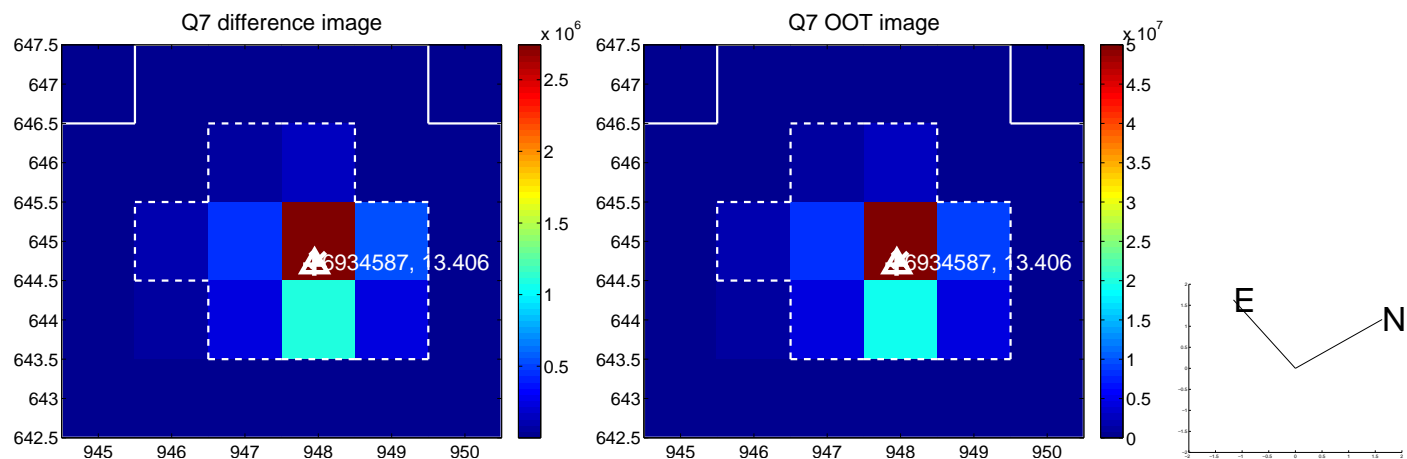
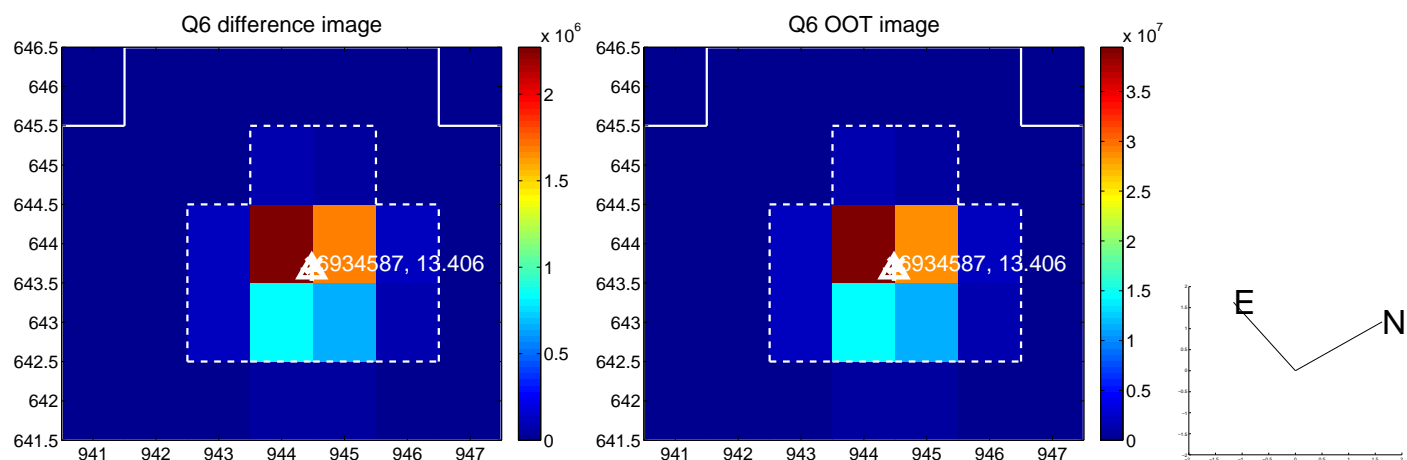
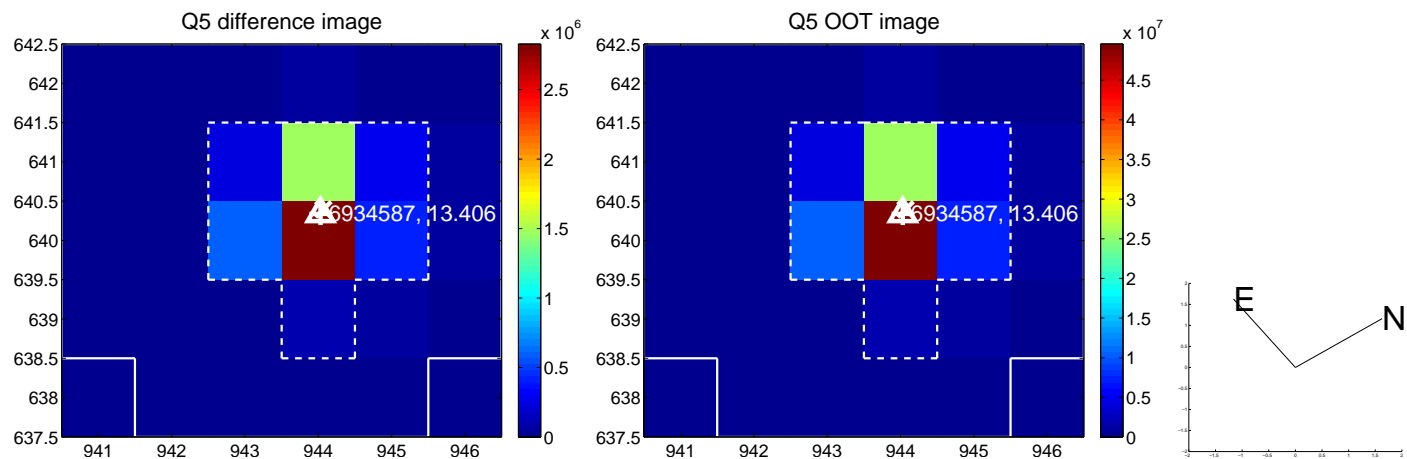
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



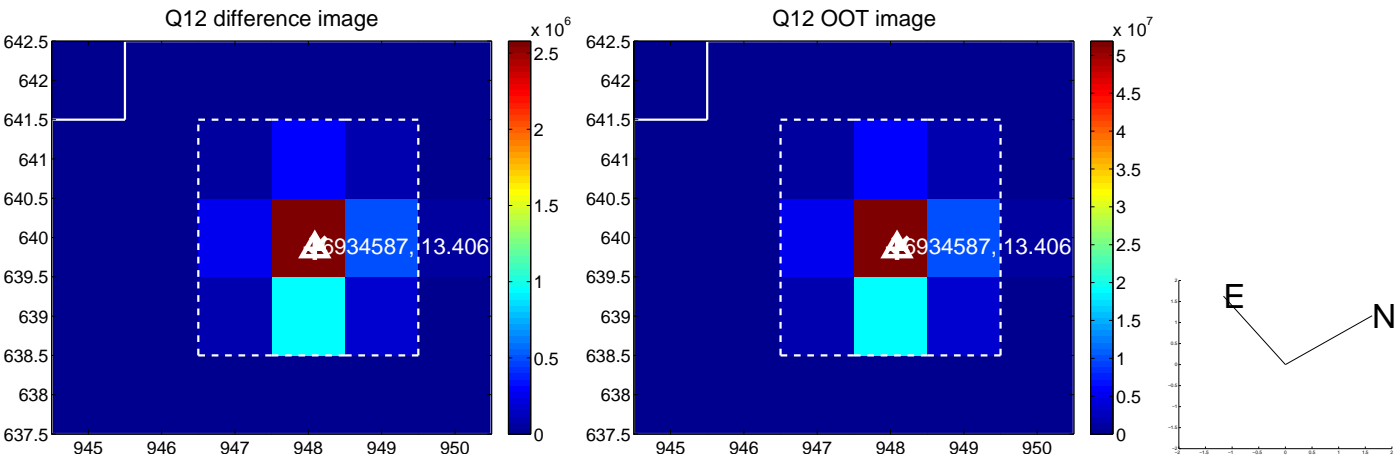
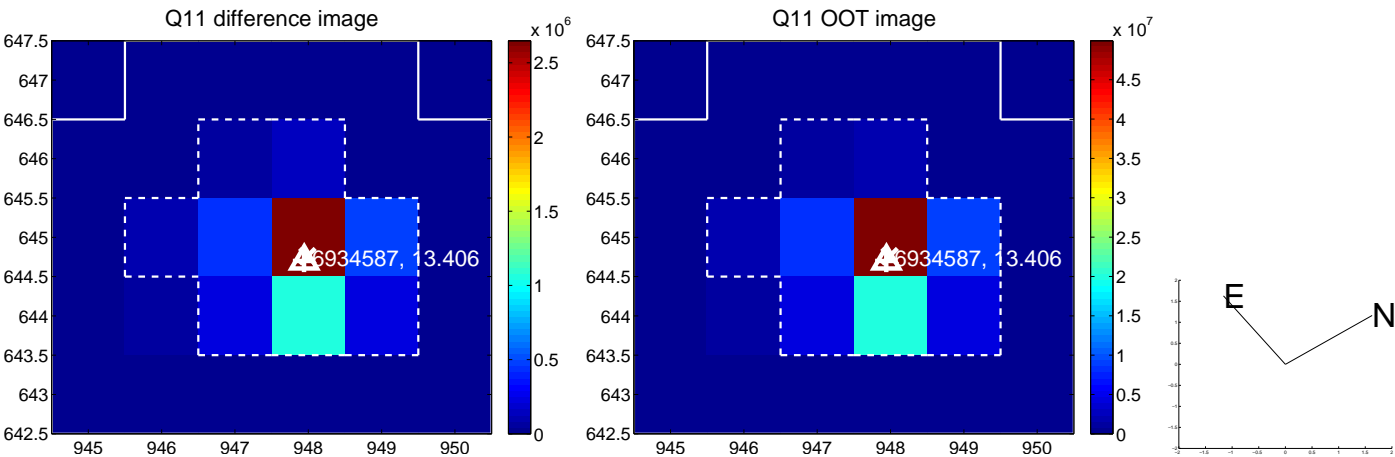
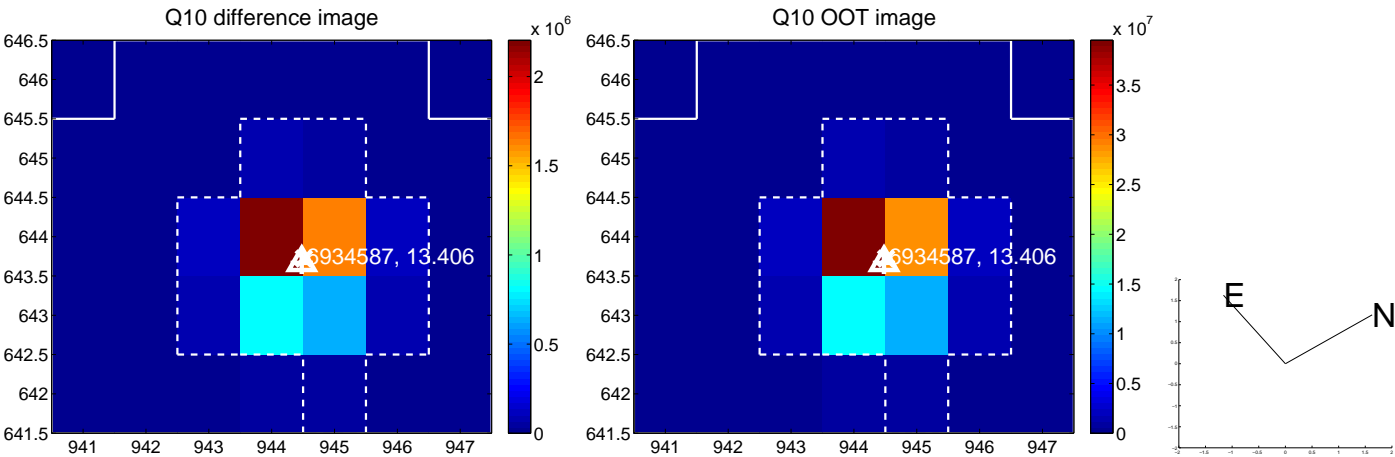
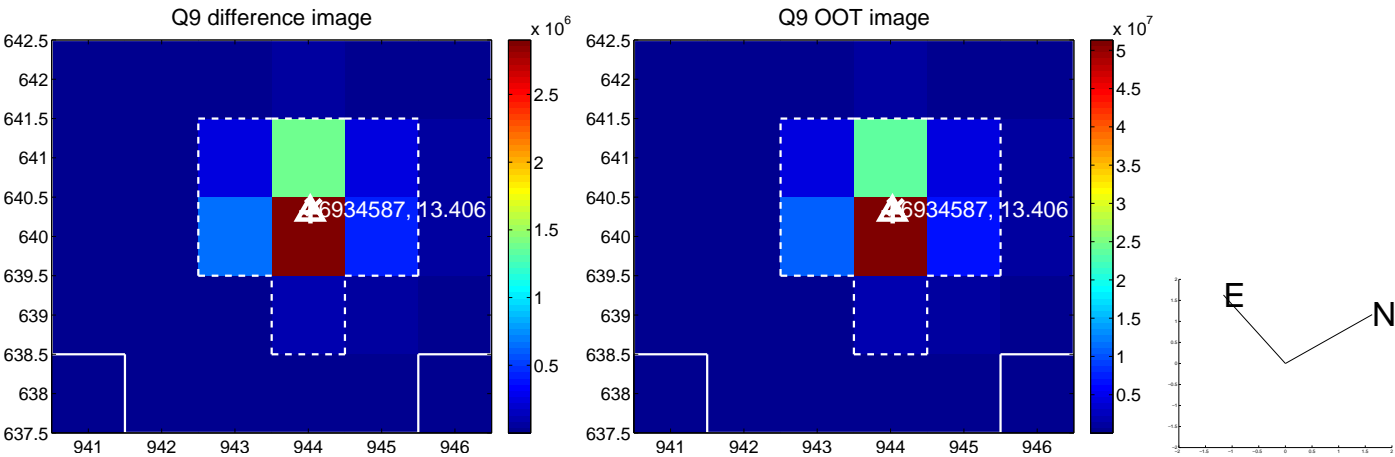
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



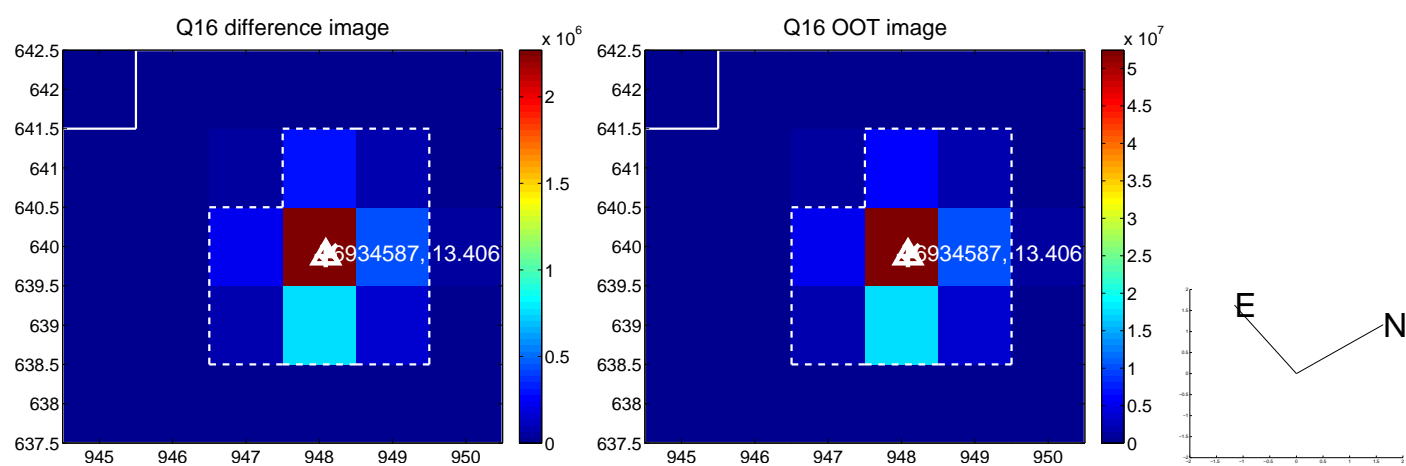
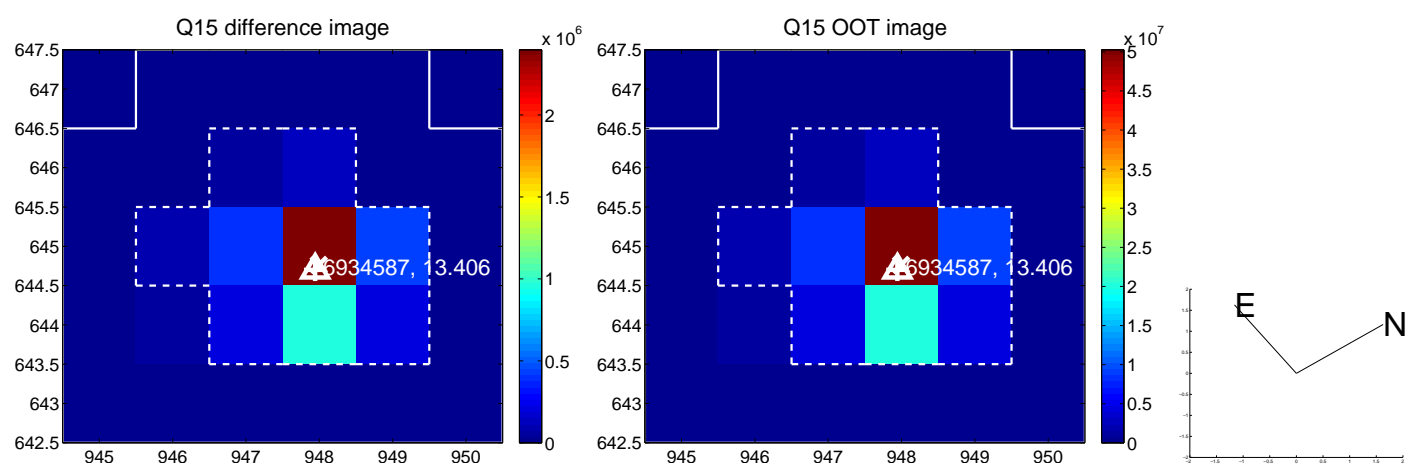
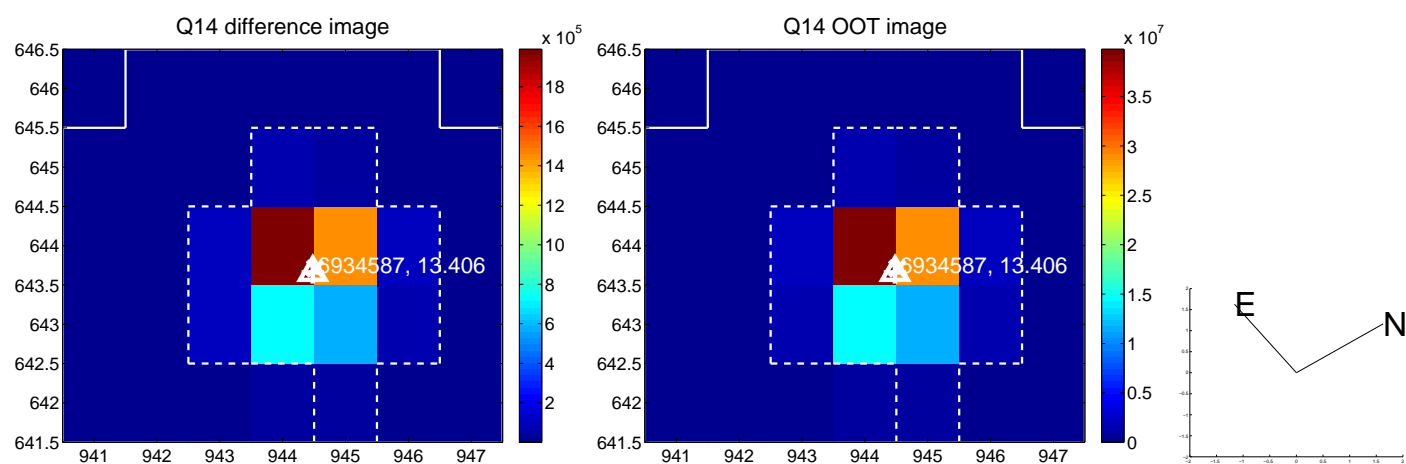
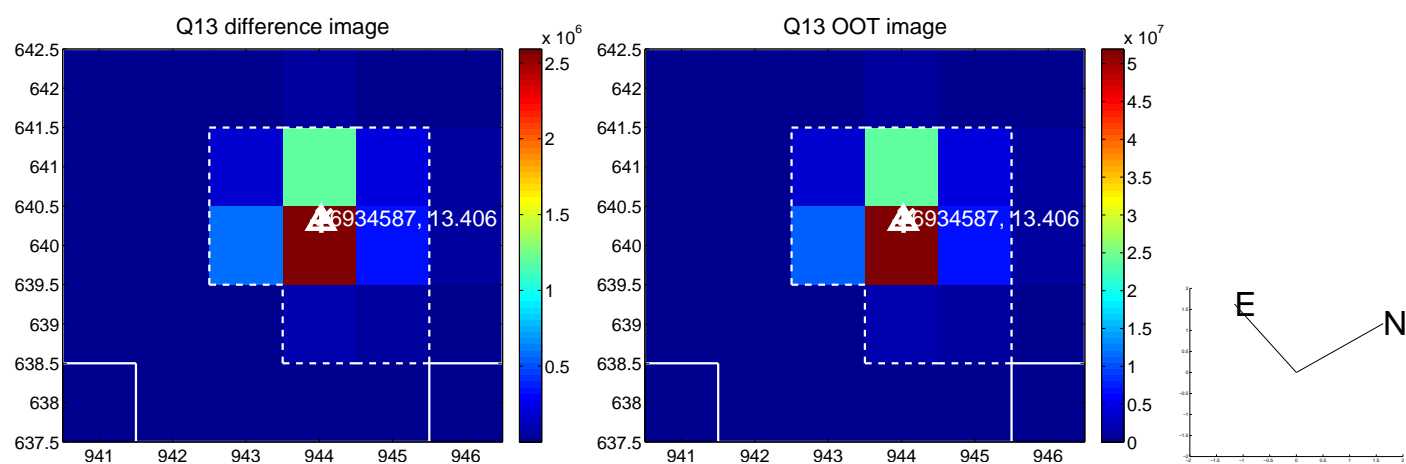
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



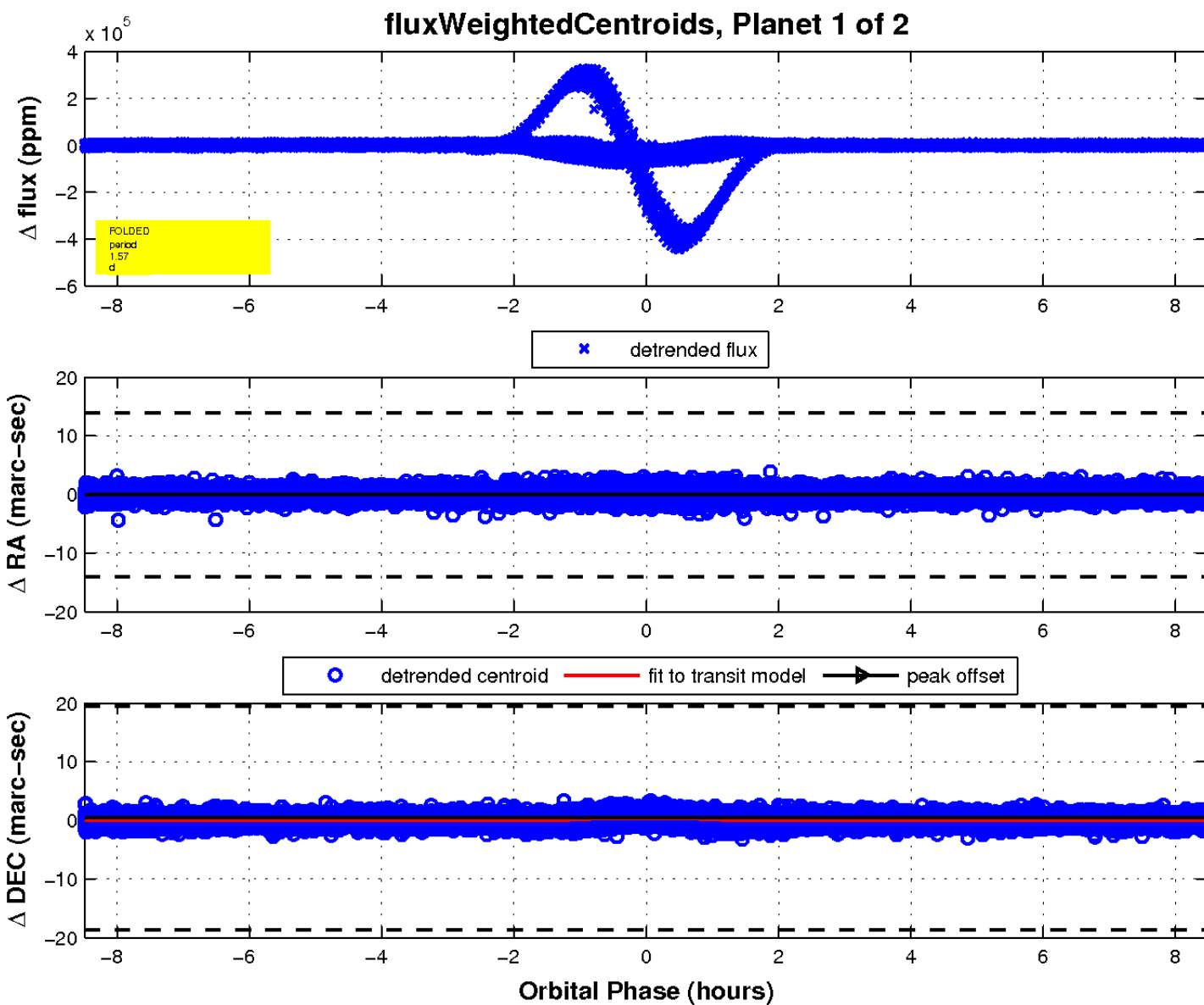
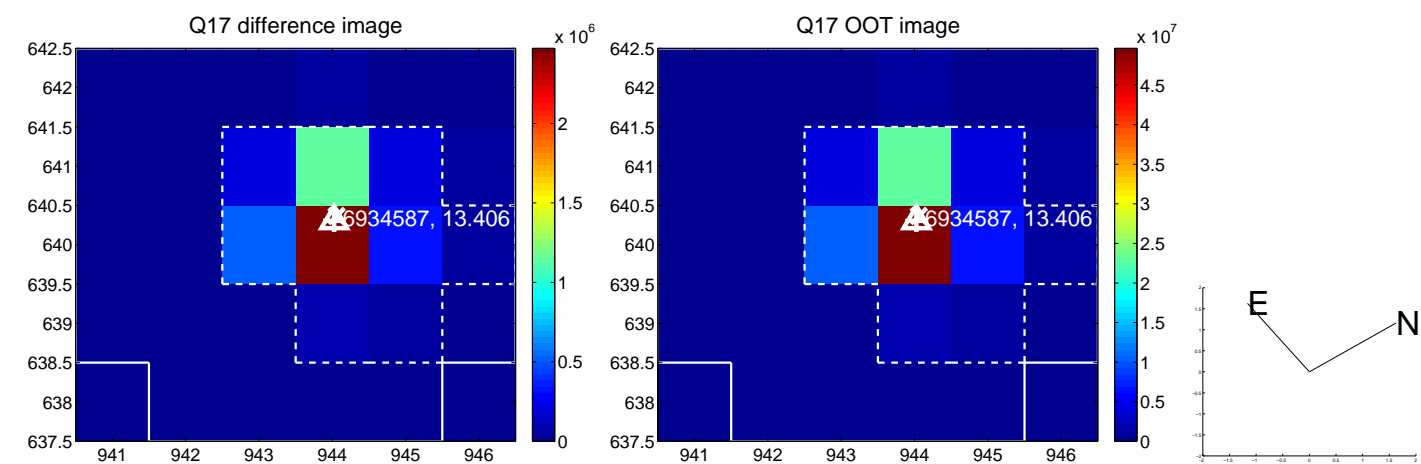
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

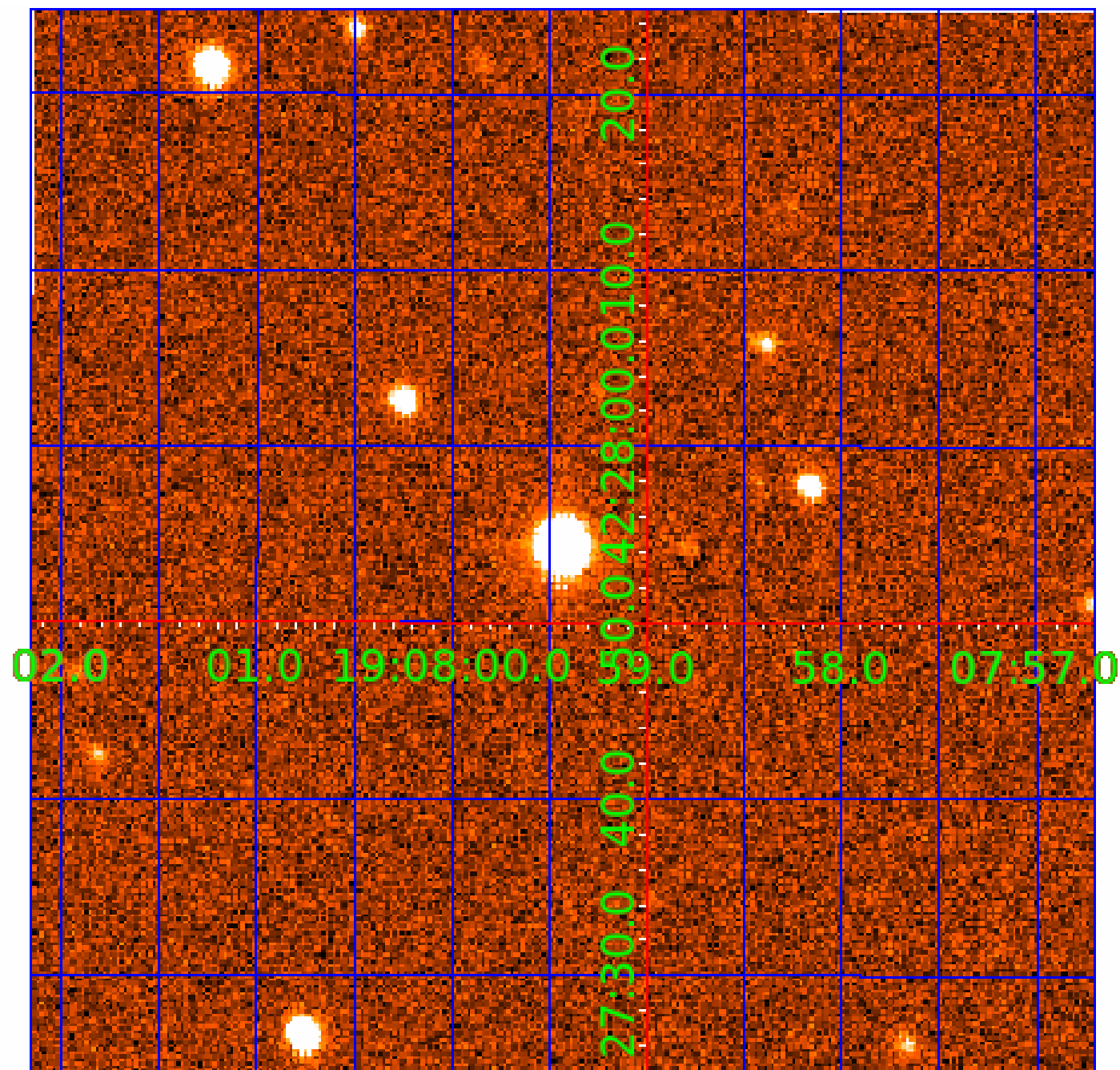


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 006934587

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006934587-01	OBS	6032.01	1.570966	132.458886	50539.0	2.830	2525.9	1026.3	1.16	6192	28.26	2470.59
006934587-02	OBS	No	1.570916	131.688077	451.9	2.500	16.8	-1.0	1.16	6192	2.48	2470.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006934587-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE
006934587-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

**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 006934587-02

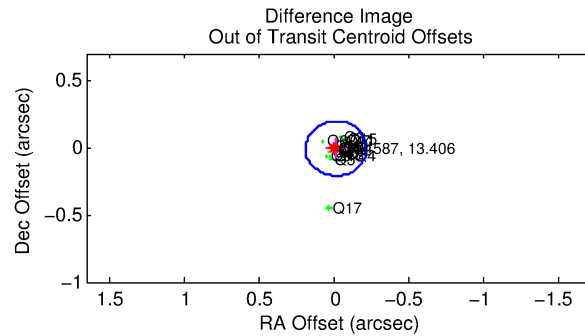
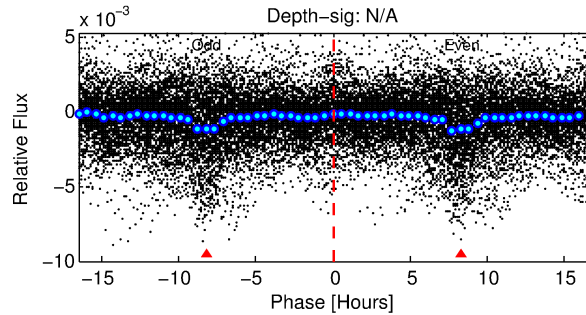
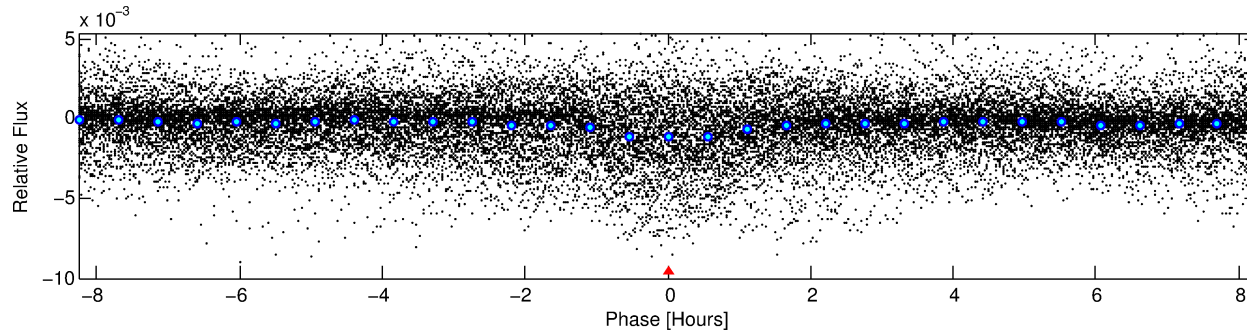
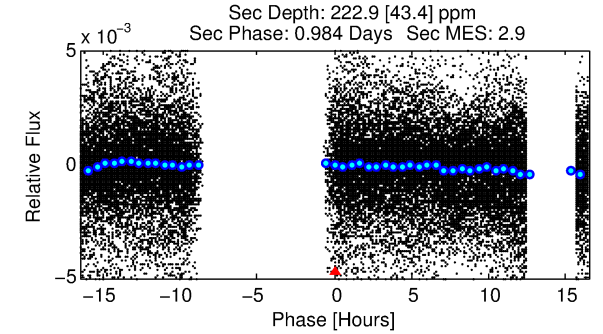
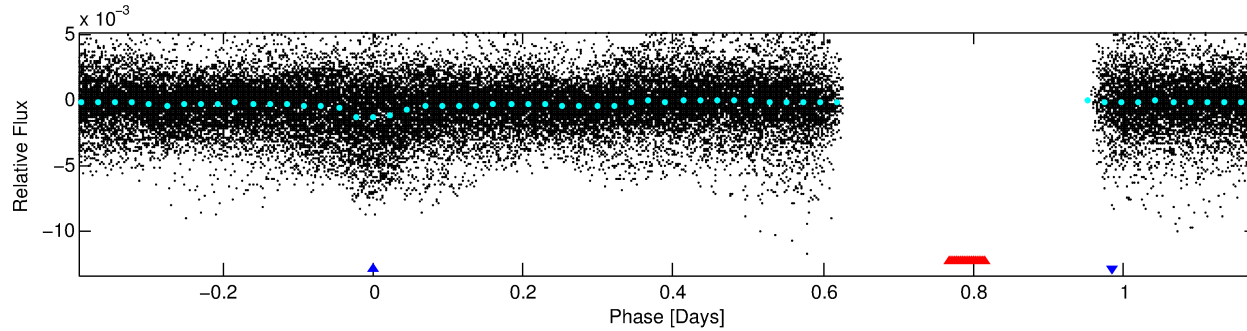
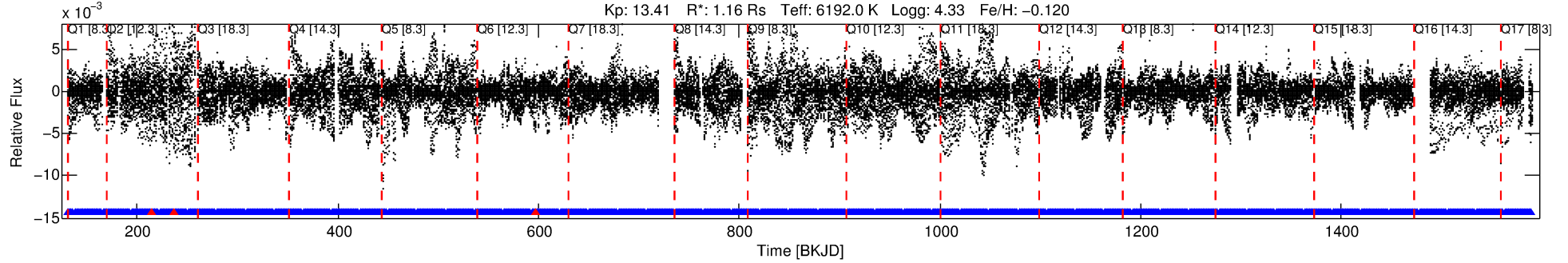
No Significant Match Found

# DV One-Page Summary

KIC: 6934587 Candidate: 2 of 2 Period: 1.571 d

KOI: K06032 Corr: No Ephemeris Match

Kp: 13.41 R\*: 1.16 Rs Teff: 6192.0 K Logg: 4.33 Fe/H: -0.120



## TPS TCE Results:

Period = 1.57092 d  
Epoch = 131.6881 BKJD

DV fit results are unavailable

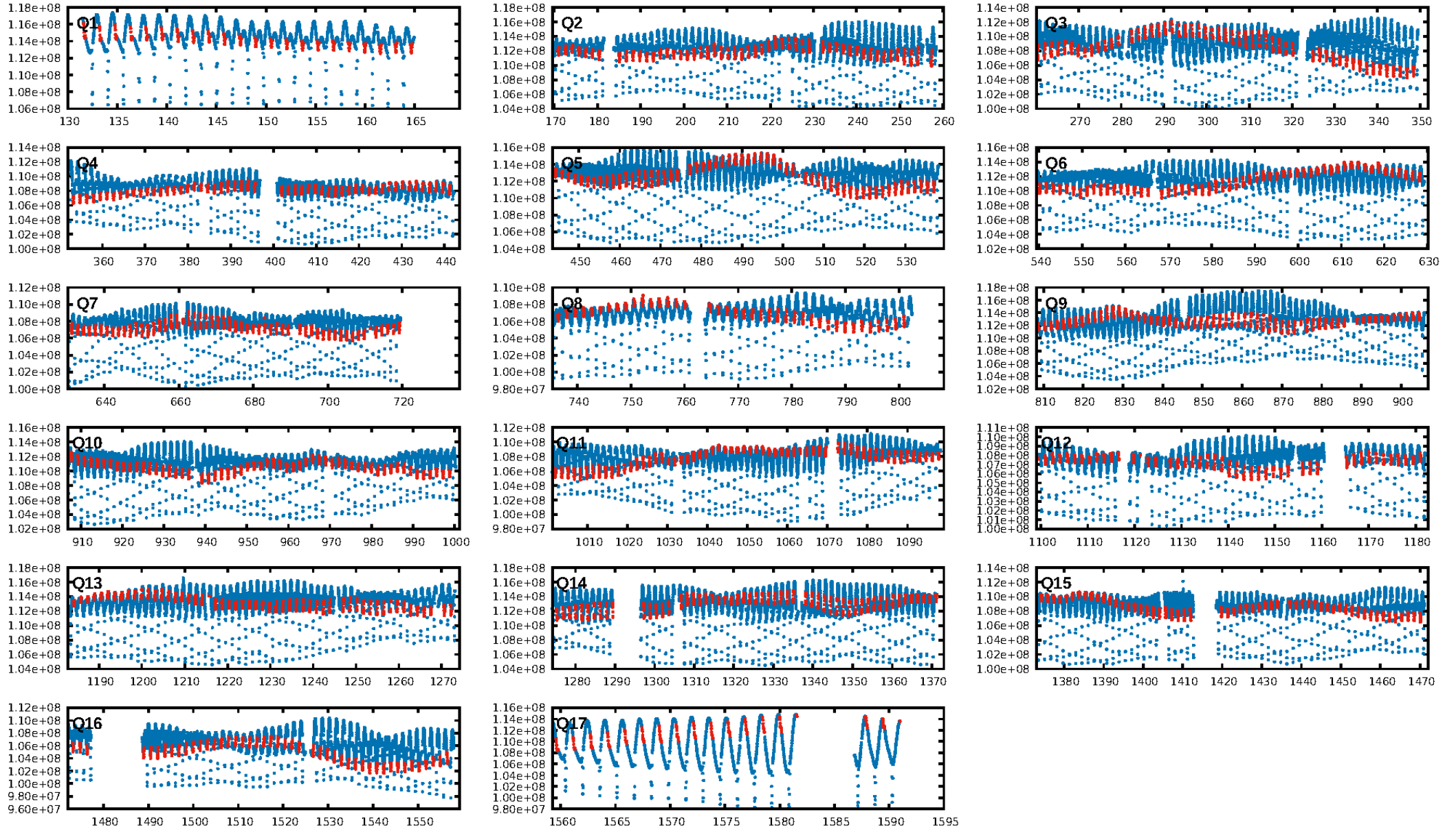
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [802/805]  
GhostDiagnostic-chr: 0.2987  
Centroid-sig: 0.0%  
Centroid-so: 0.282 arcsec [55.74σ]  
OotOffset-rm: 0.020 arcsec [0.29σ]  
KicOffset-rm: 0.276 arcsec [3.86σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

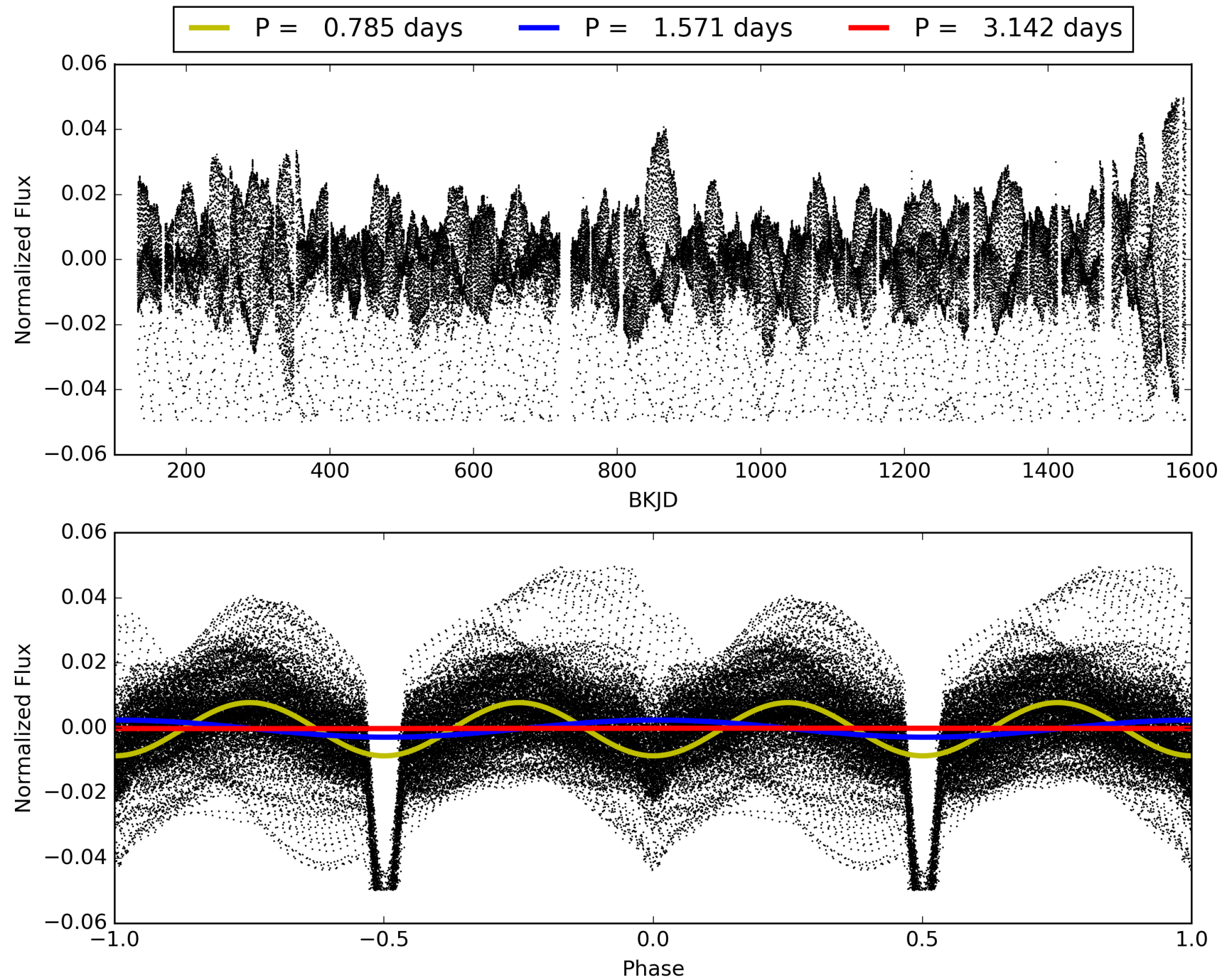
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 02:06:47 Z

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

# TCE 006934587-02, PDC Light Curves



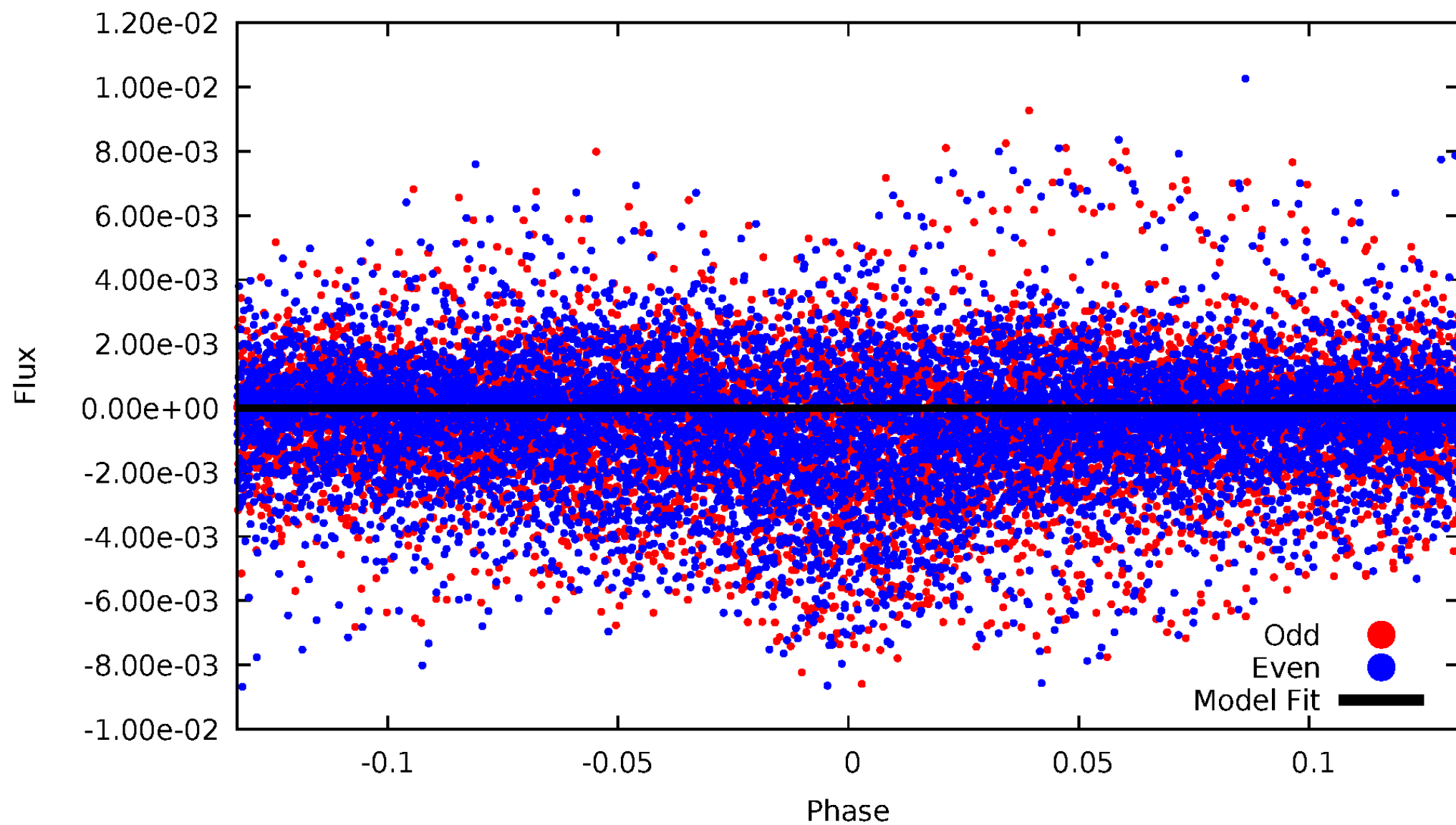
TCE 006934587-02





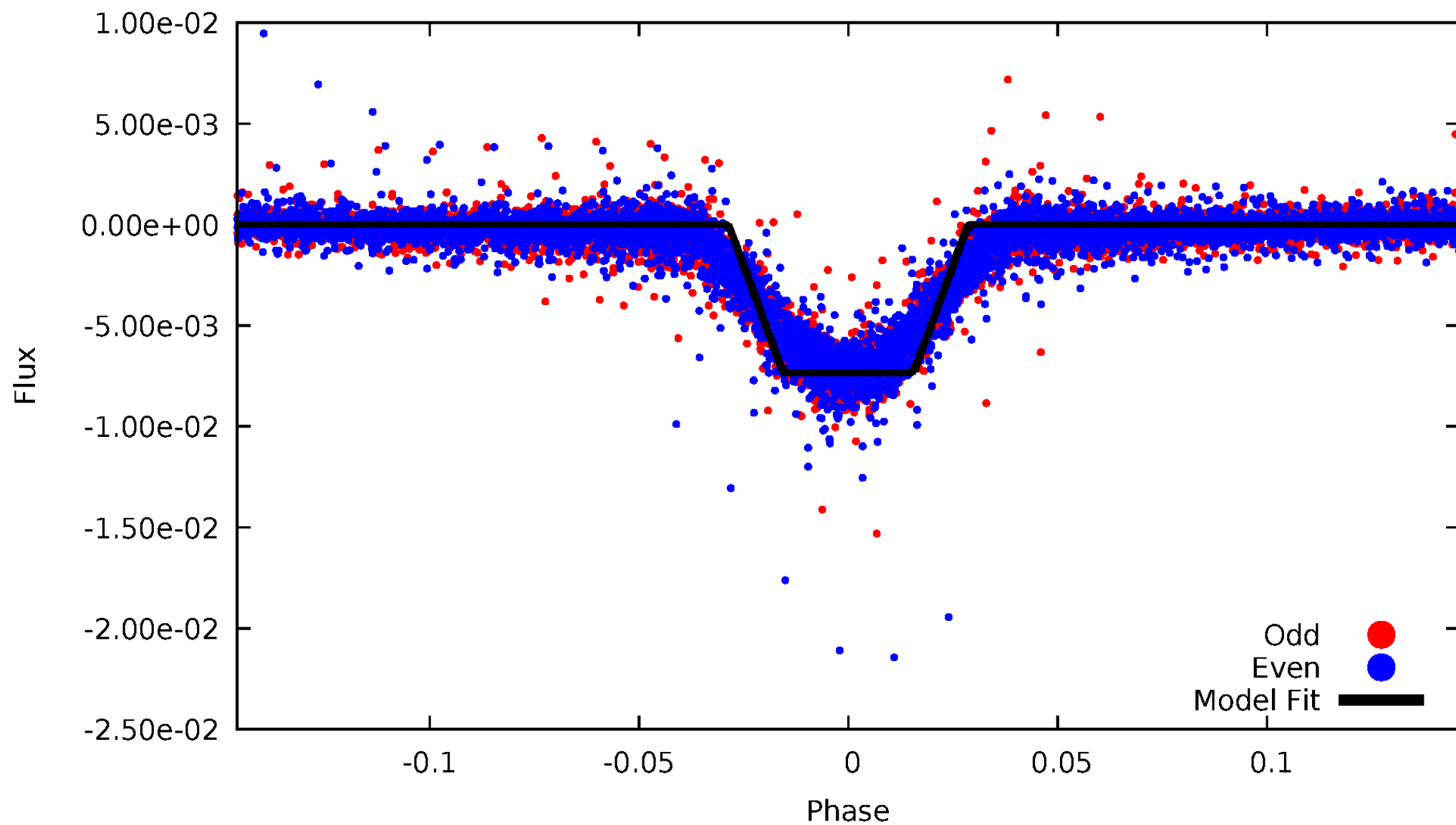
DV Odd/Even

TCE 006934587-02



# ALT Odd/Even

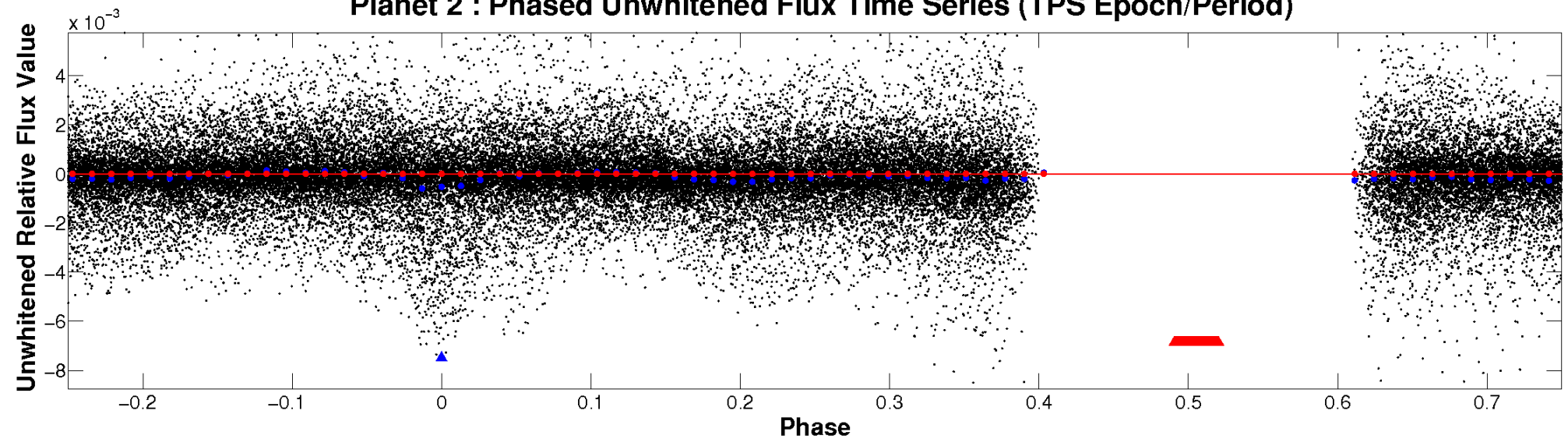
TCE 006934587-02



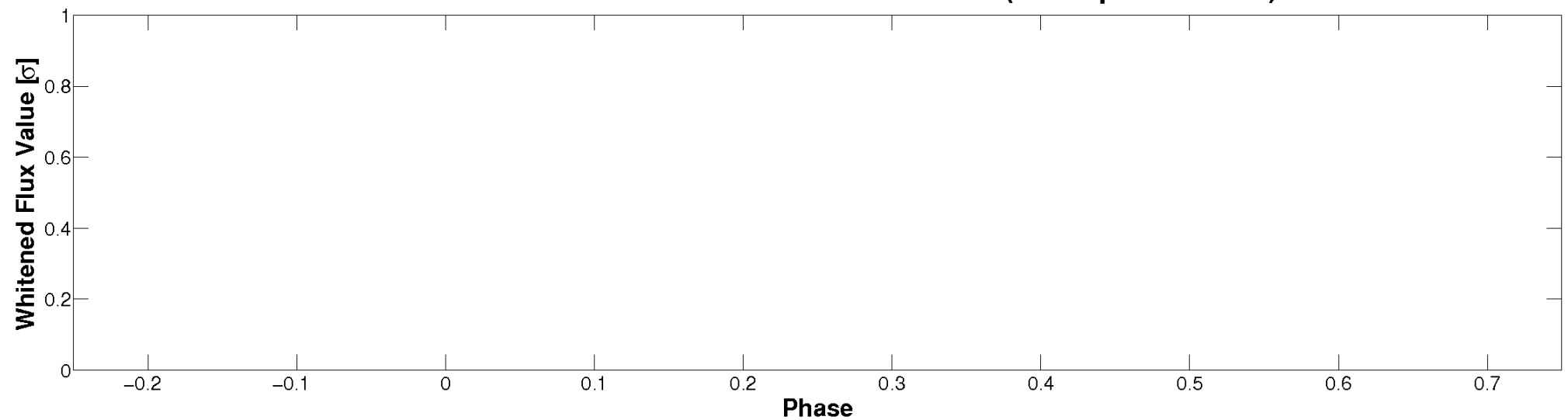


# Non-Whitened Vs. Whitened Light Curve

**Planet 2 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

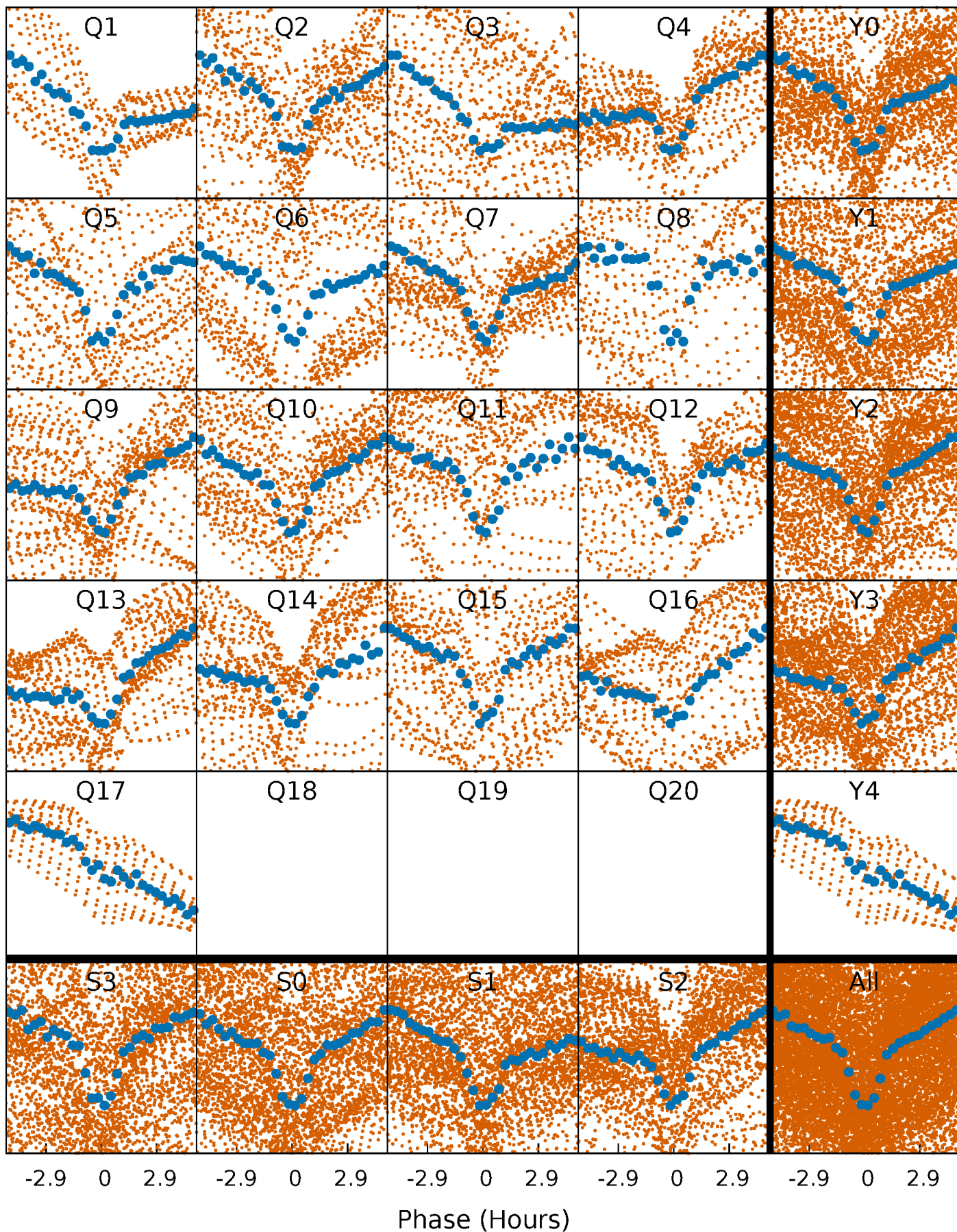


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



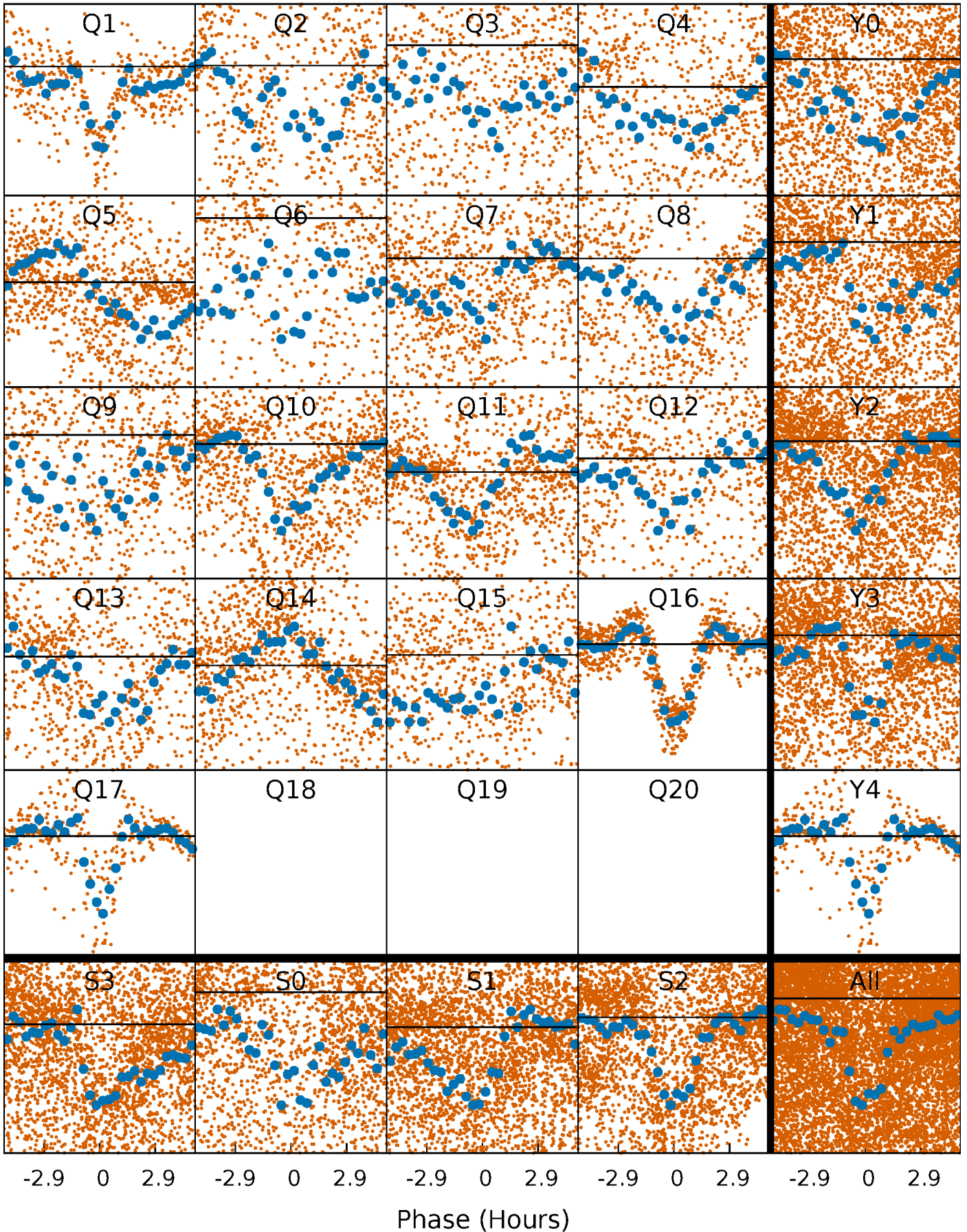
# PDC Quarter-Phased Transit Curves

TCE 006934587-02   P= 1.570916 Days    $T_0=131.688077$  (BKJD)



# DV Quarter-Phased Transit Curves

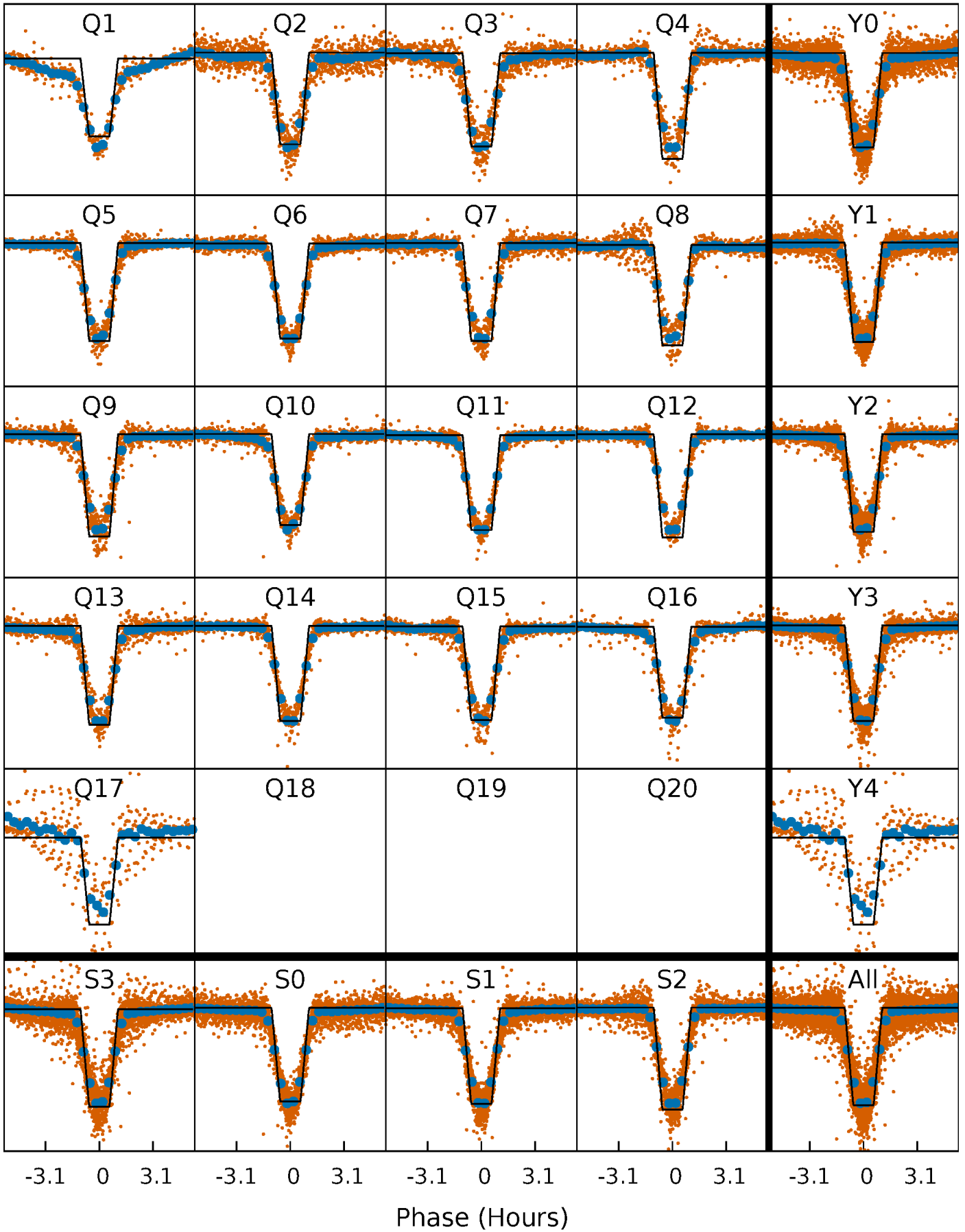
TCE 006934587-02   P= 1.570916 Days    $T_0=131.688077$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

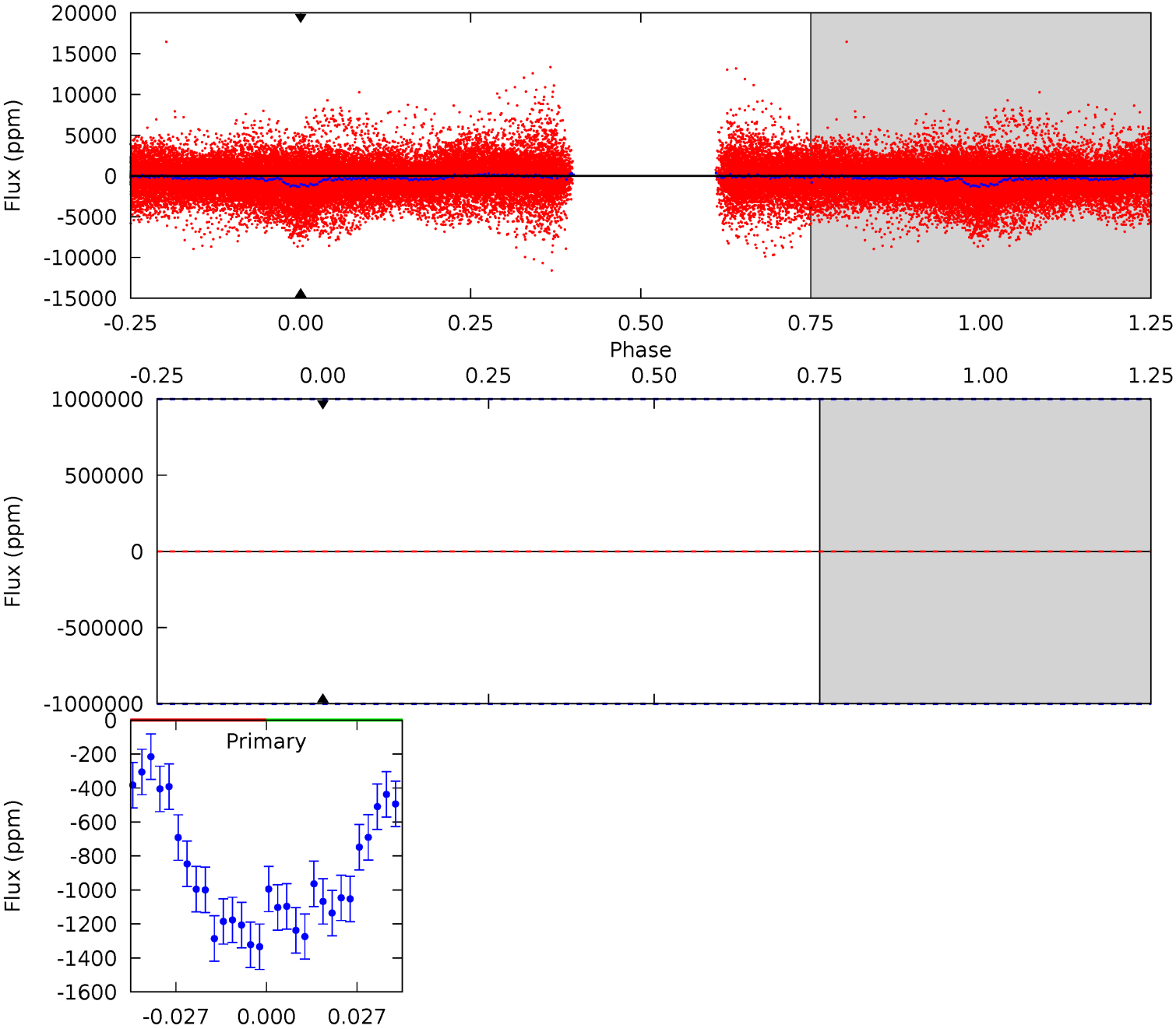
TCE 006934587-02   P= 1.570916 Days    $T_0=131.689801$  (BKJD)



DV Model-Shift Uniqueness Test

006934587-02, P = 1.570916 Days, E = 130.117161 Days

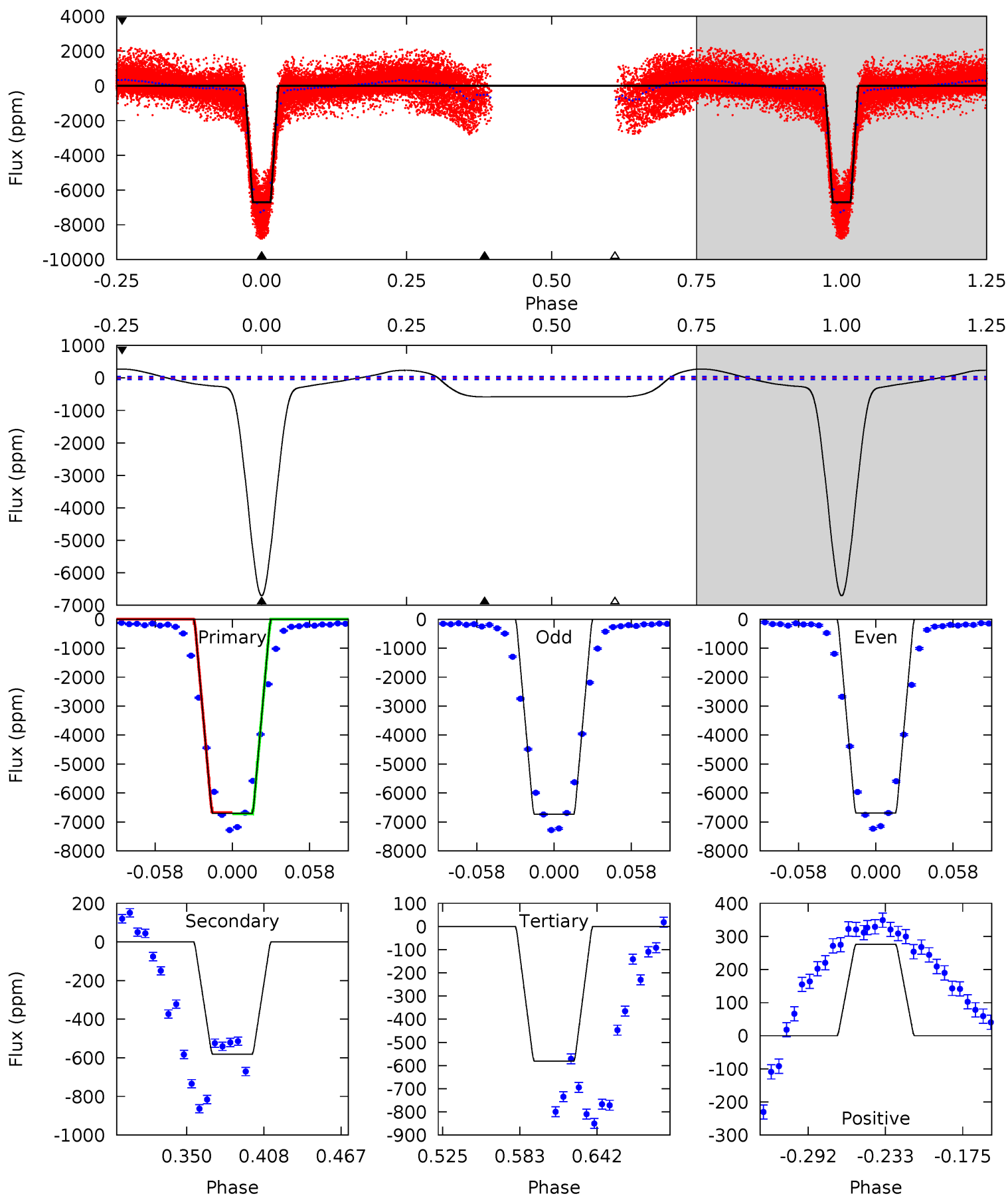
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006934587-02, P = 1.570916 Days, E = 130.118885 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
754.8	65.5	65.4	31.1	4.68	1.89	22.8	689.3	723.7	0.08	34.4	2.03	1.01	0.04	2.61





### Stellar Parameters For KIC 006934587

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6192^{+194}_{-237}$	$4.326^{+0.128}_{-0.208}$	$-0.120^{+0.250}_{-0.300}$	$1.162^{+0.363}_{-0.195}$	$1.040^{+0.168}_{-0.122}$	$0.934^{+0.570}_{-0.475}$
	+3%/-4%	+3%/-5%	+208%/-250%	+31%/-17%	+16%/-12%	+61%/-51%
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 006934587-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$9.14^{+9.84}_{-6.53}$	$2529^{+193}_{-167}$	$3772^{+24205}_{-29834}$	$2.360^{+912.902}_{-794.100}$
Alt.	$-582 \pm 9$	$14.62^{+11.01}_{-8.83}$	$2532^{+205}_{-157}$	$3214^{+1468}_{-1008}$	$1.088^{+5.623}_{-0.747}$

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

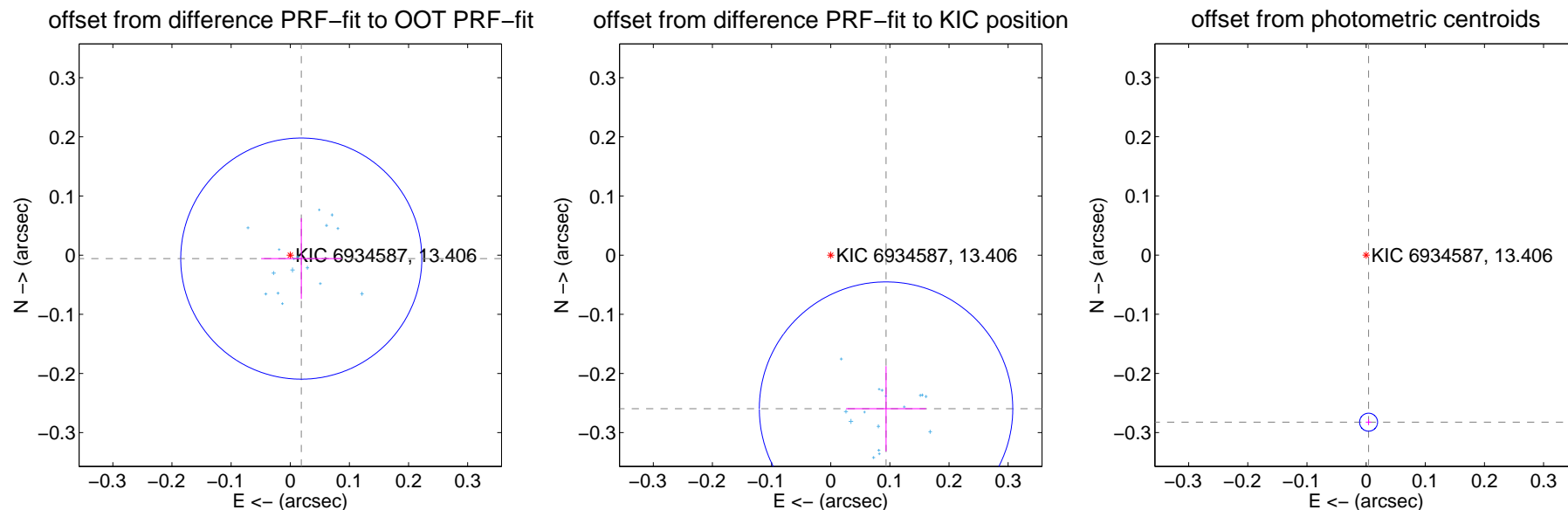
## DV Centroid Data

Supplemental centroid analysis for 006934587-02. Kepler magnitude: 13.41. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

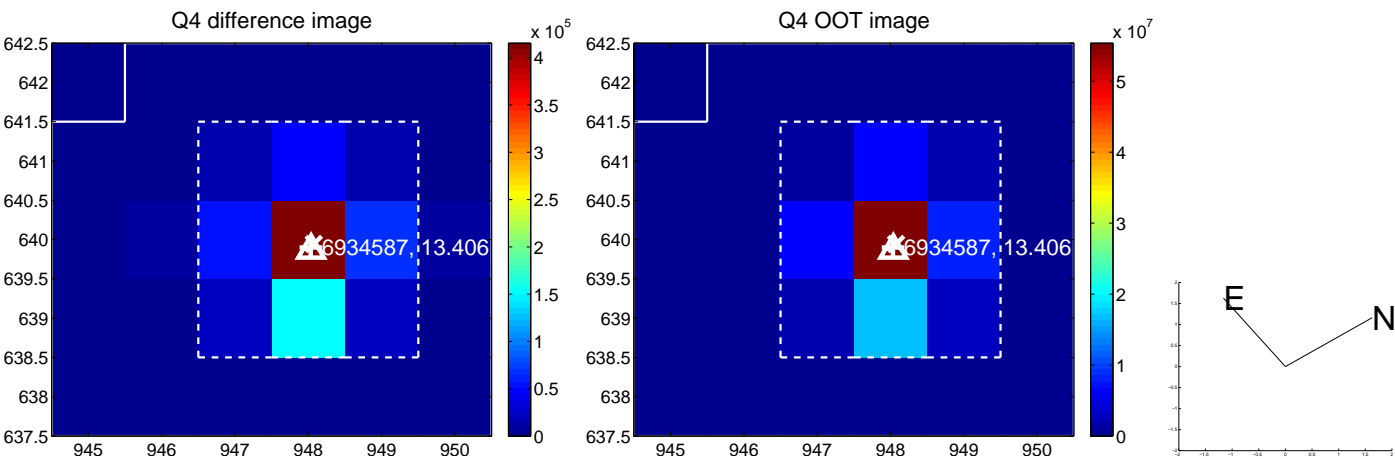
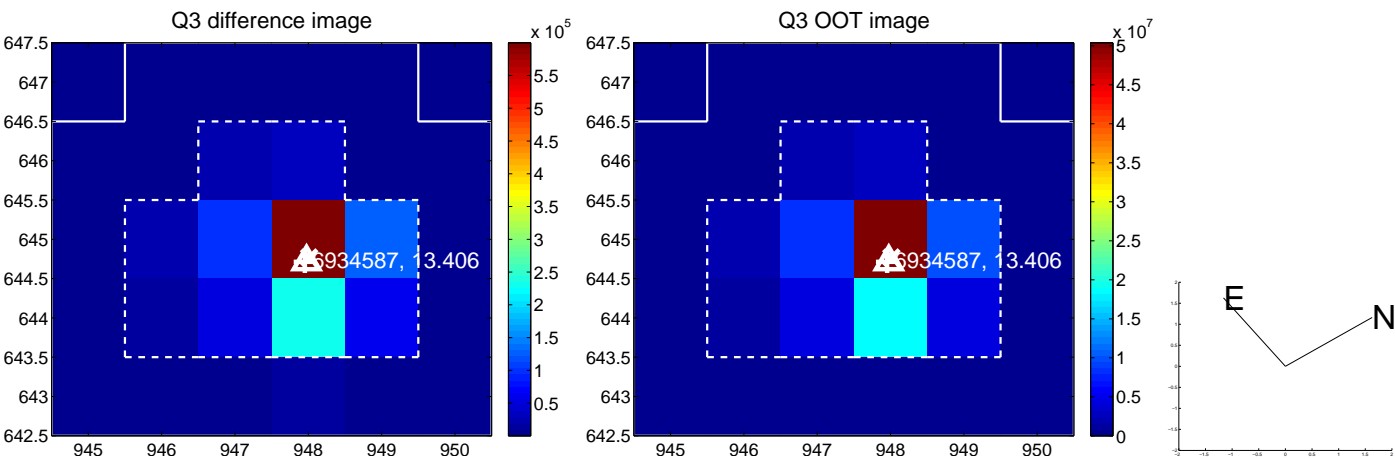
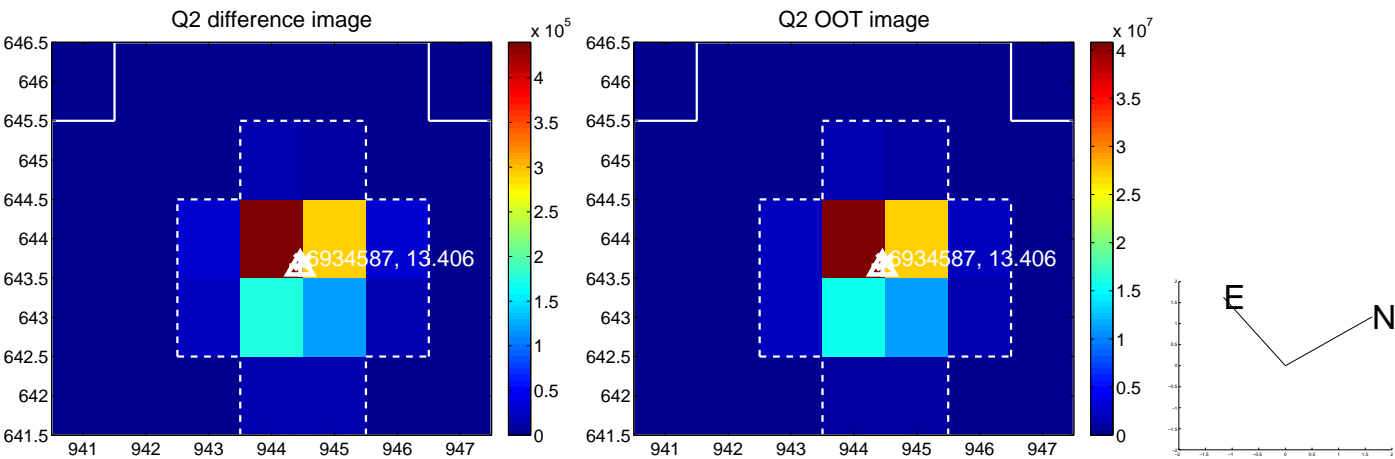
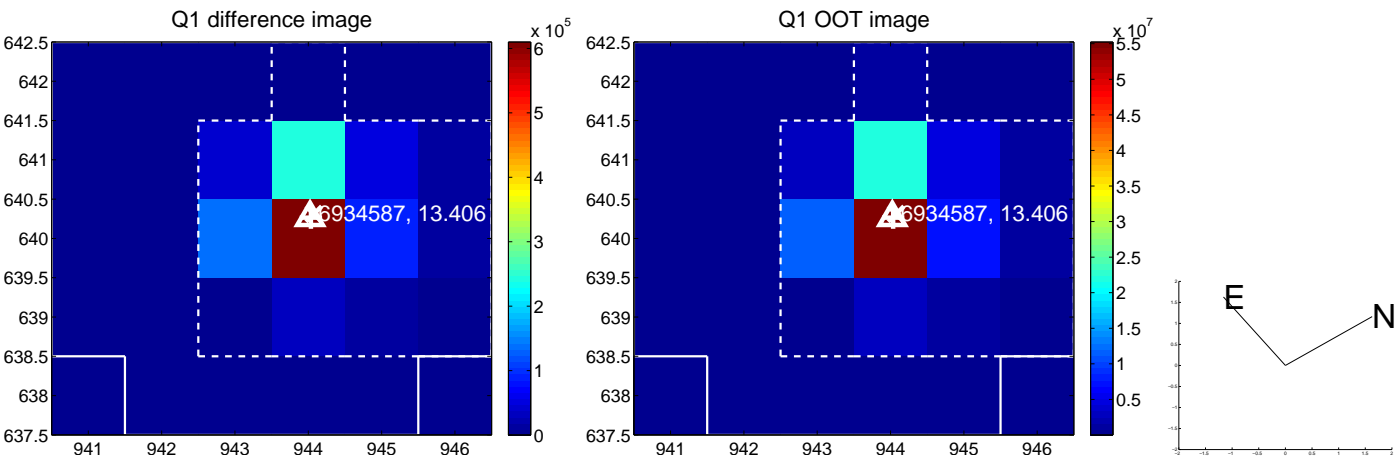
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.020 \pm 0.068$	0.29	$-0.019 \pm 0.068$	$-0.006 \pm 0.068$
PRF-fit source offset from KIC position	$0.276 \pm 0.071$	3.86	$-0.094 \pm 0.068$	$-0.259 \pm 0.072$
photometric centroid source offset	$0.28 \pm 0.01$	55.74	$-0.00 \pm 0.00$	$-0.28 \pm 0.01$

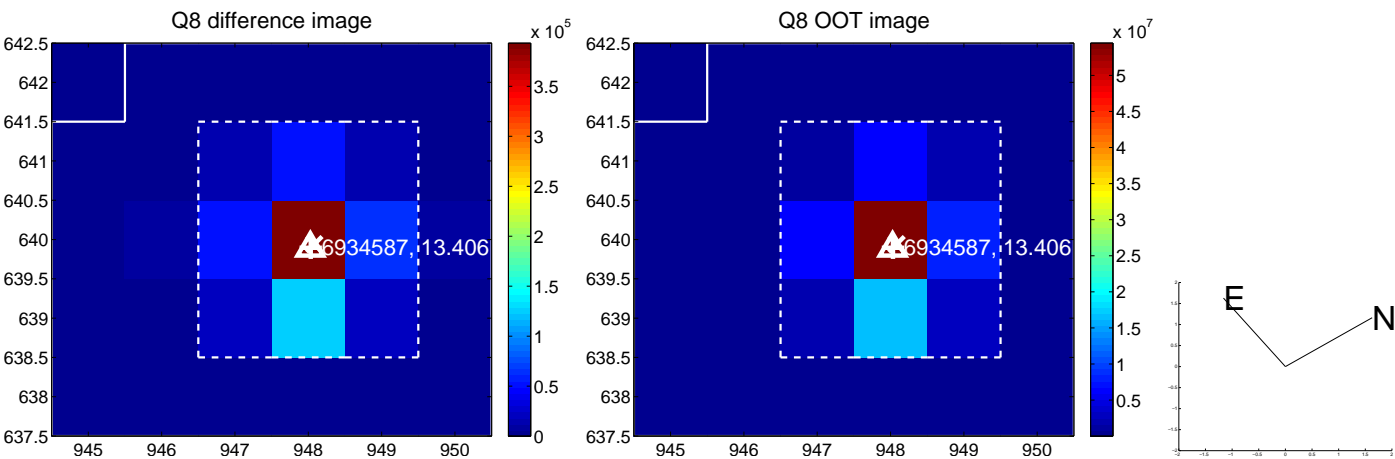
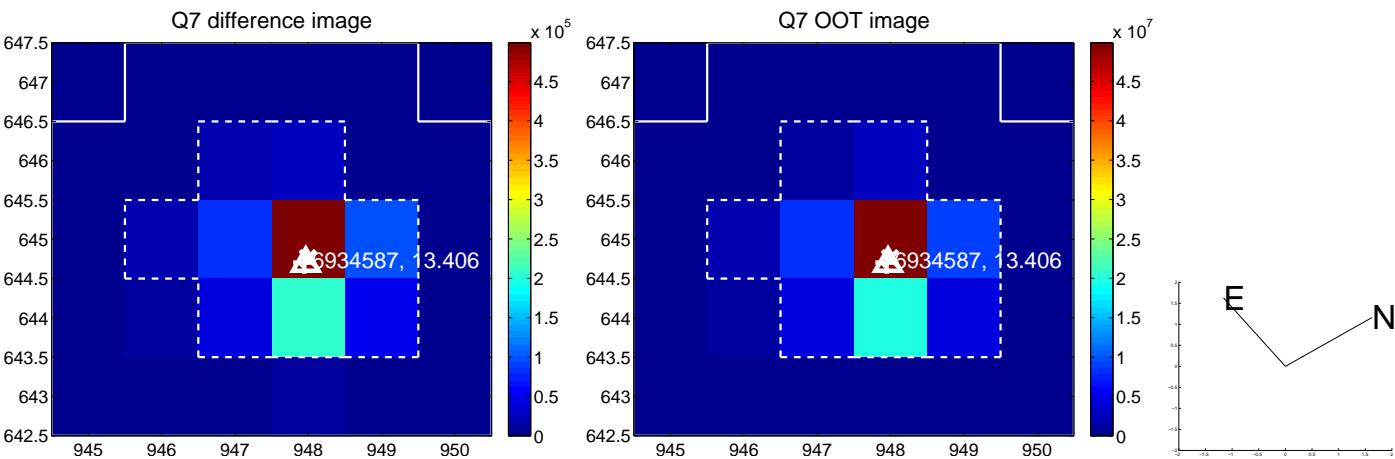
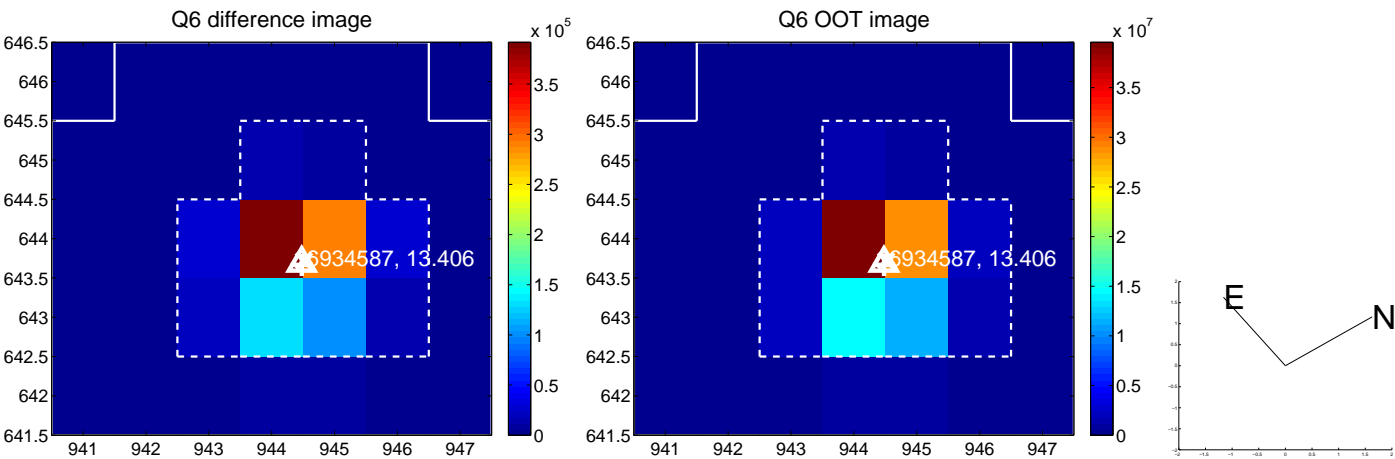
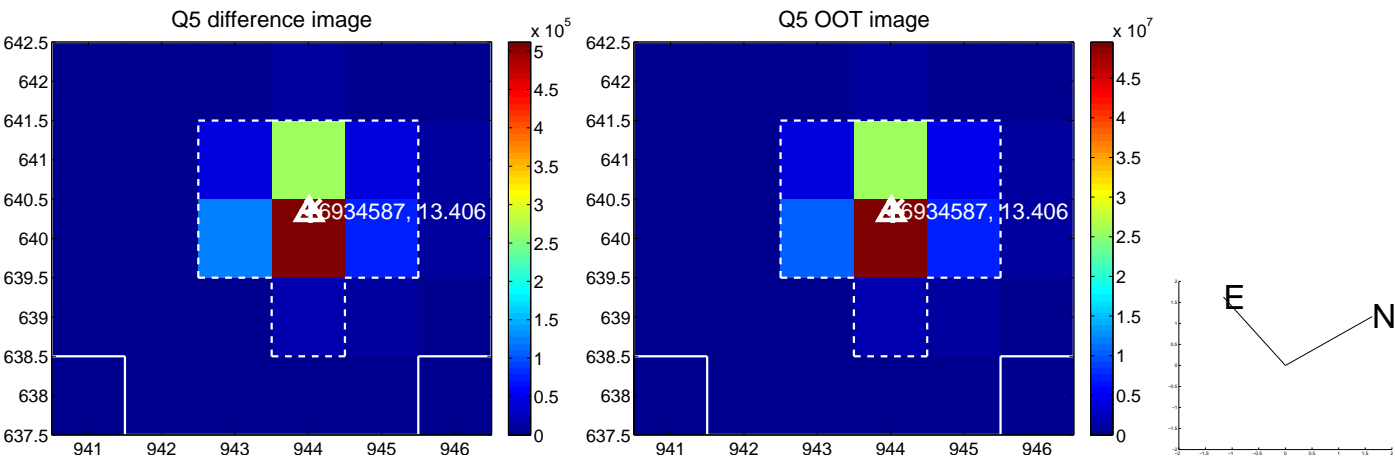


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

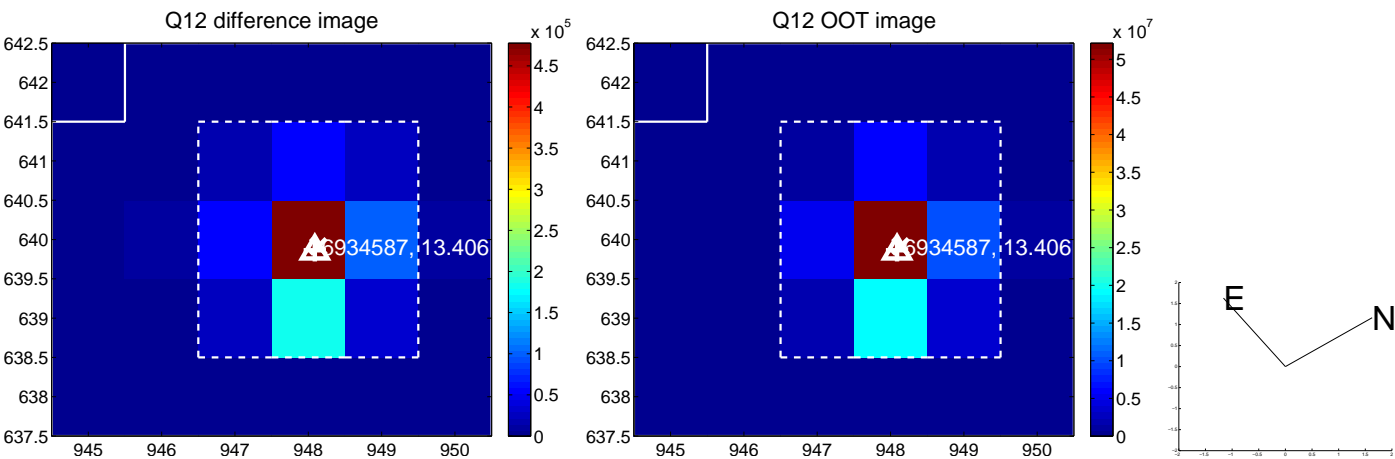
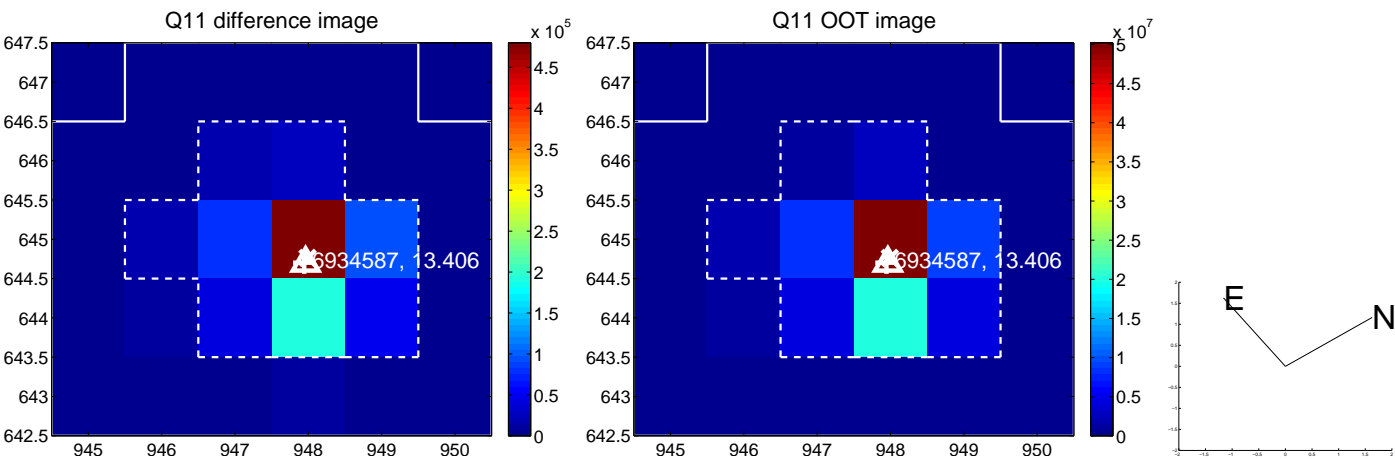
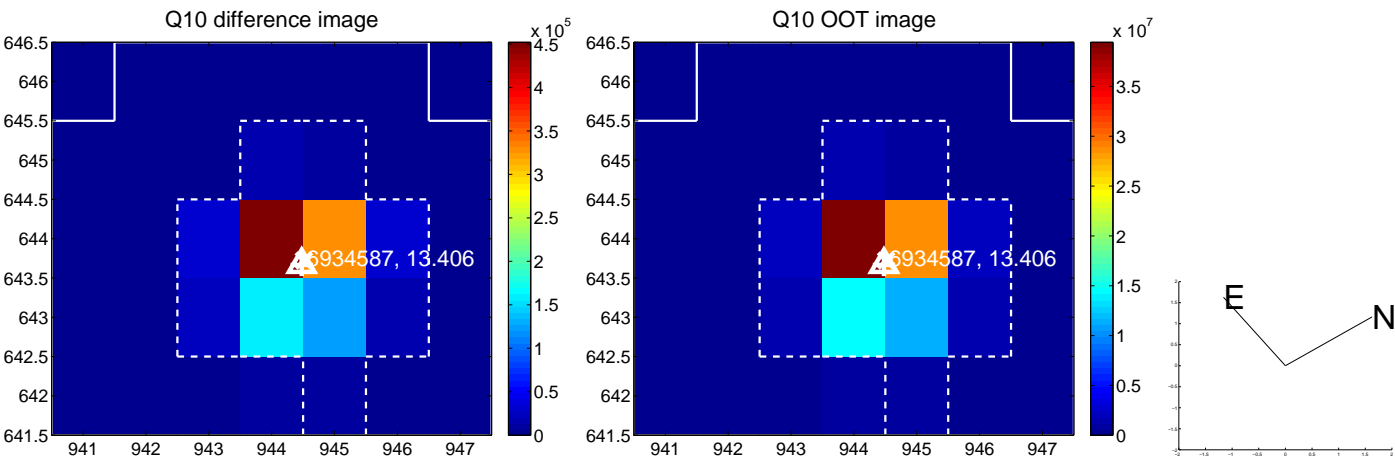
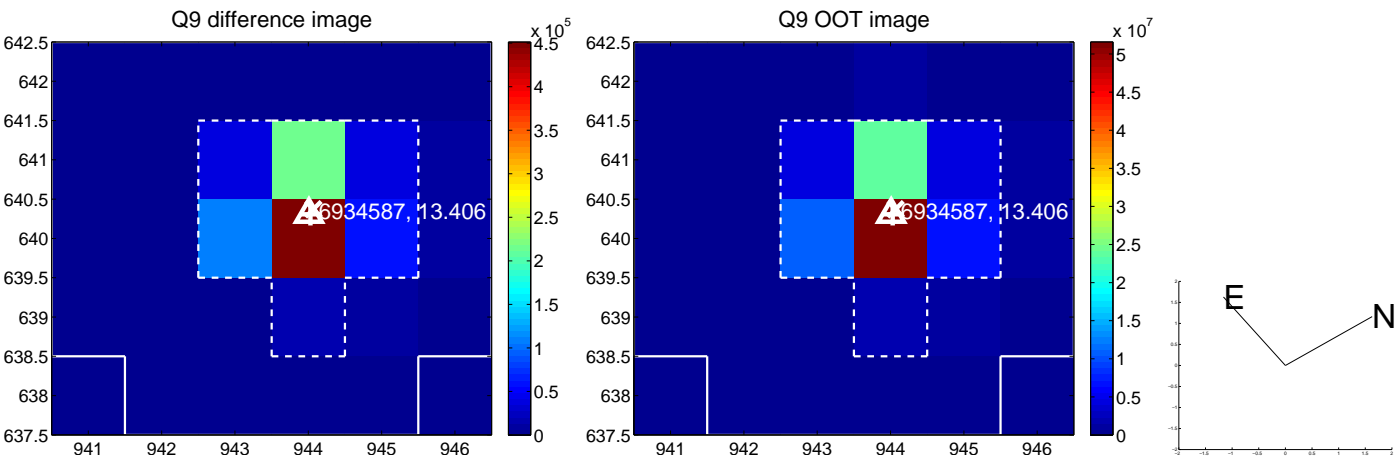
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



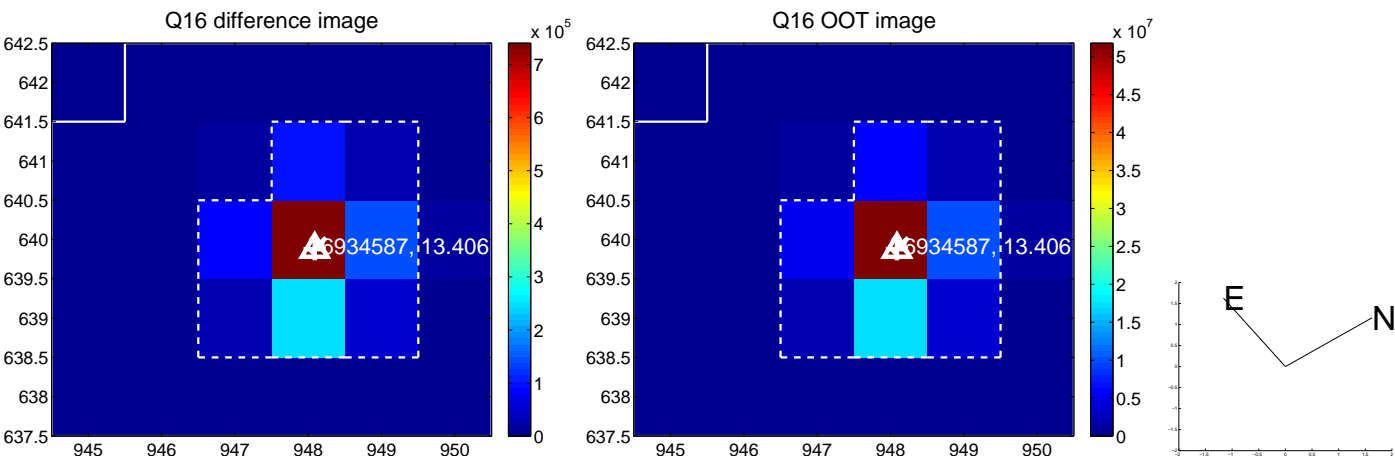
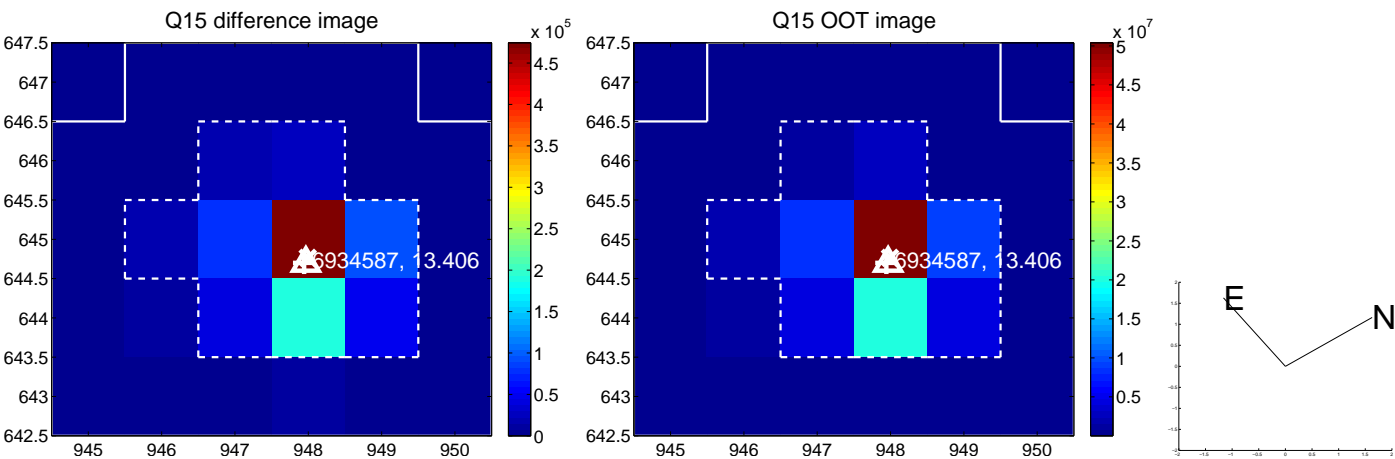
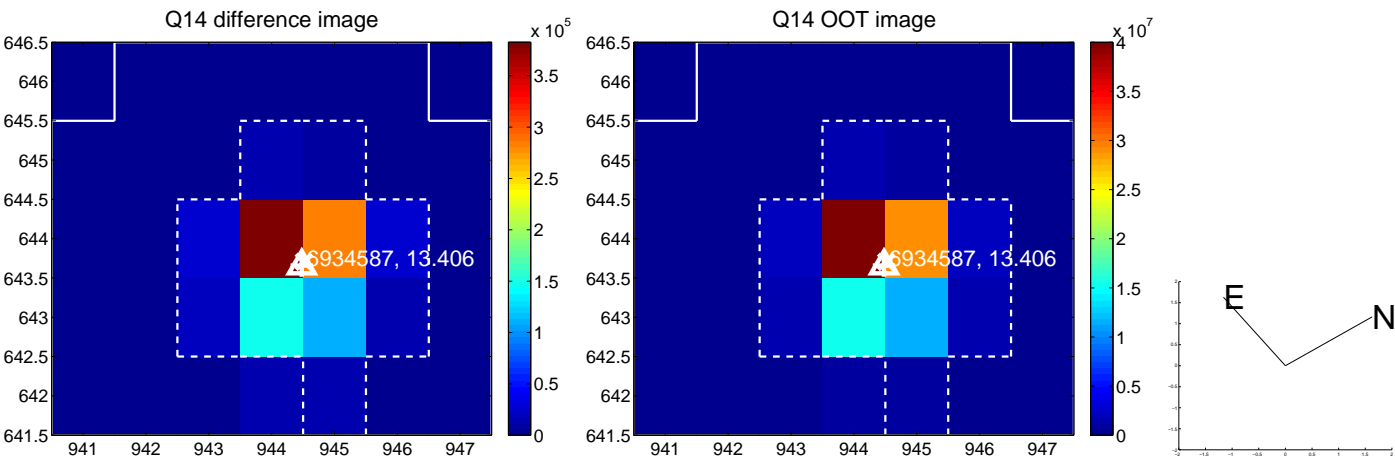
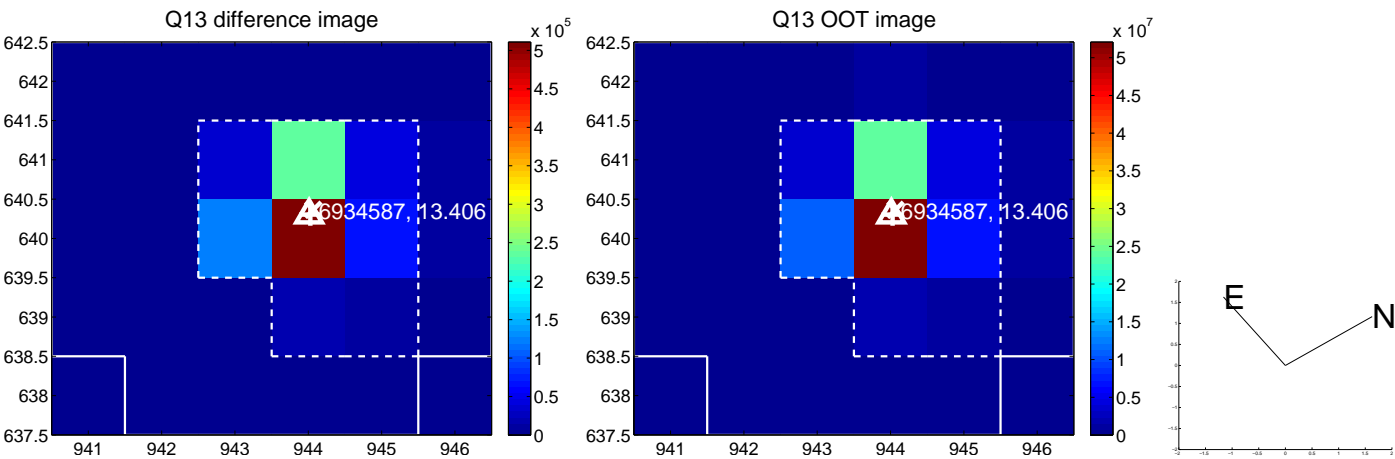
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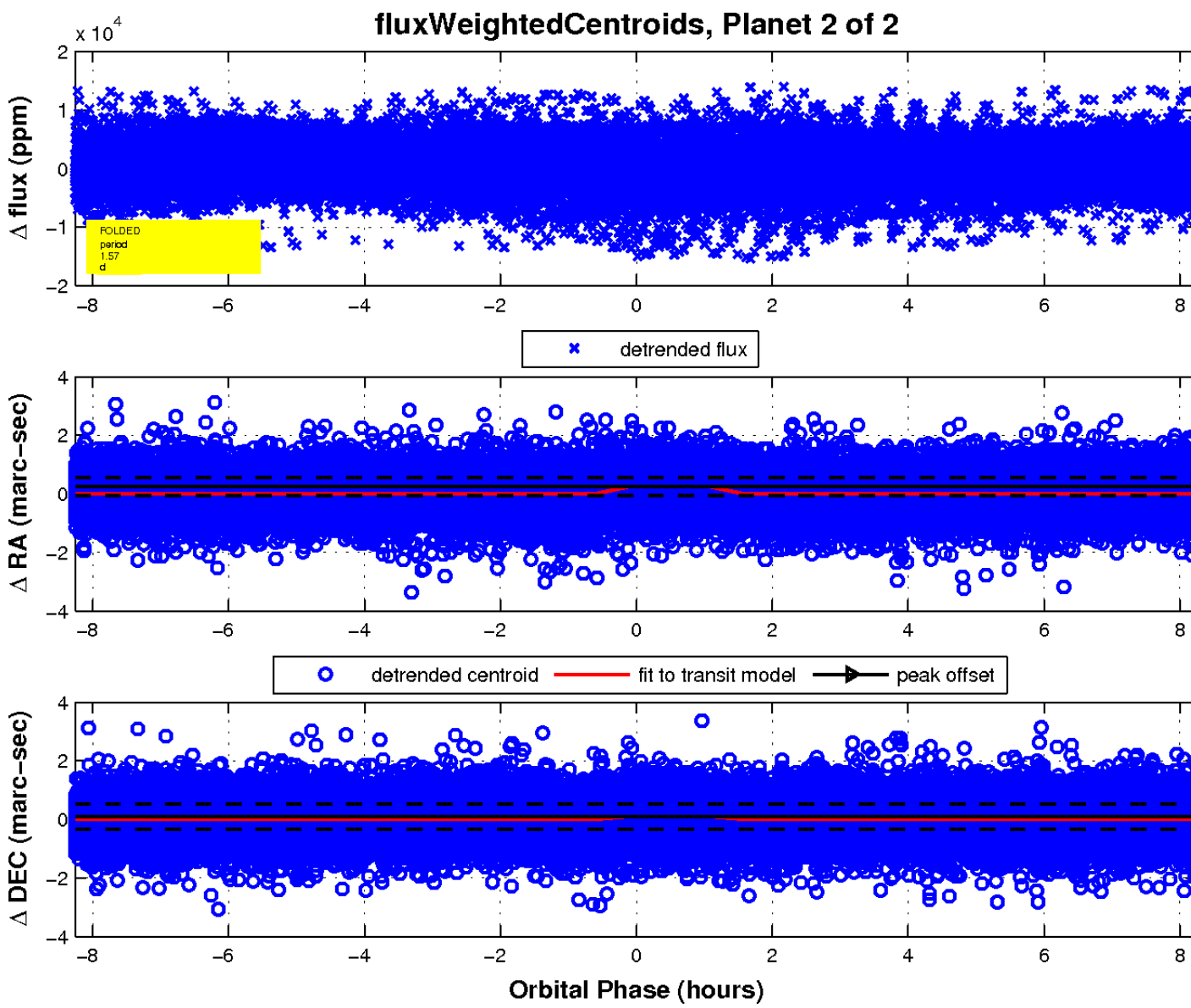
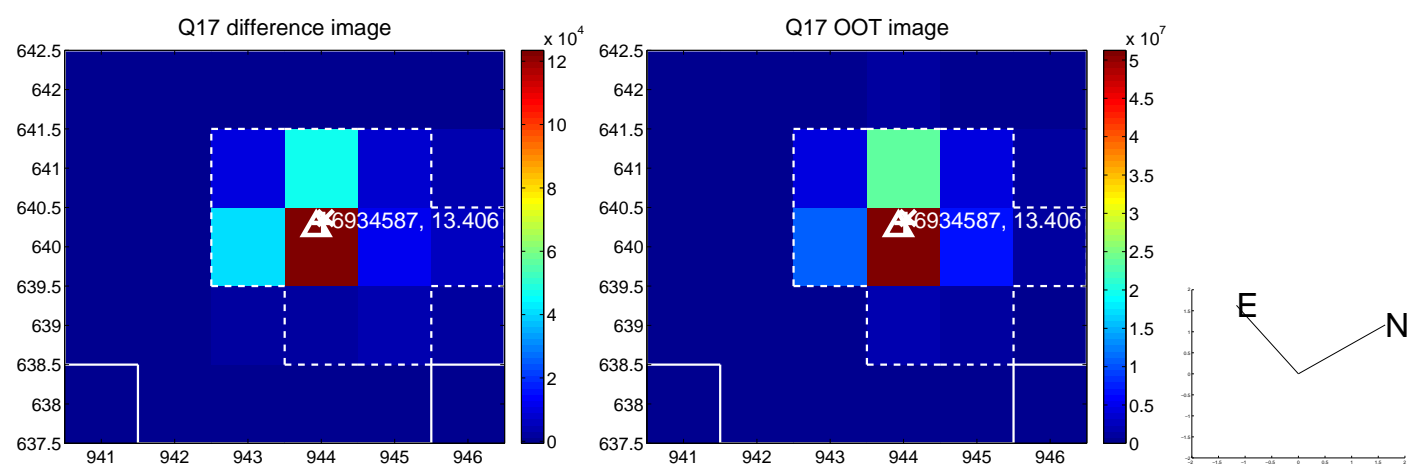
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

Declination

