

# KIC 007886329

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007886329-01	OBS	6930.01	1.134980	132.565100	7357.4	1.384	1078.6	1184.5	1.55	6370	15.89	7858.06
007886329-02	OBS	No	1.134985	131.993108	7516.7	1.338	1867.6	1348.1	1.55	6370	16.11	7858.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007886329-01	OBS	FP	0.00	1	0	0	0	LPP_ALT
007886329-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

**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.

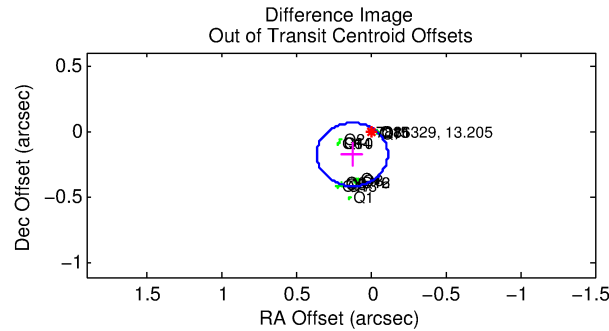
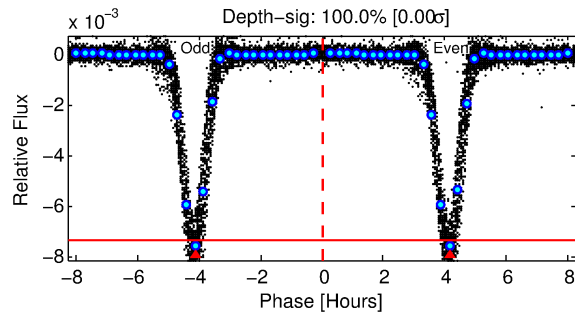
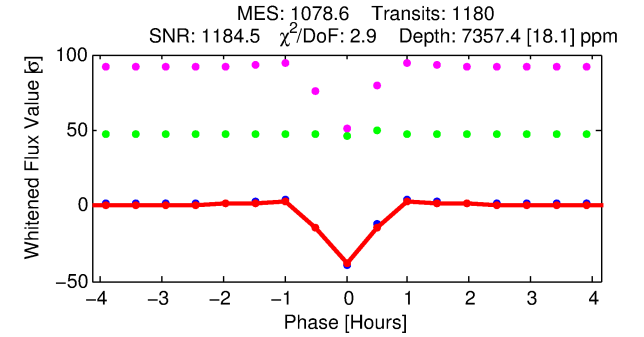
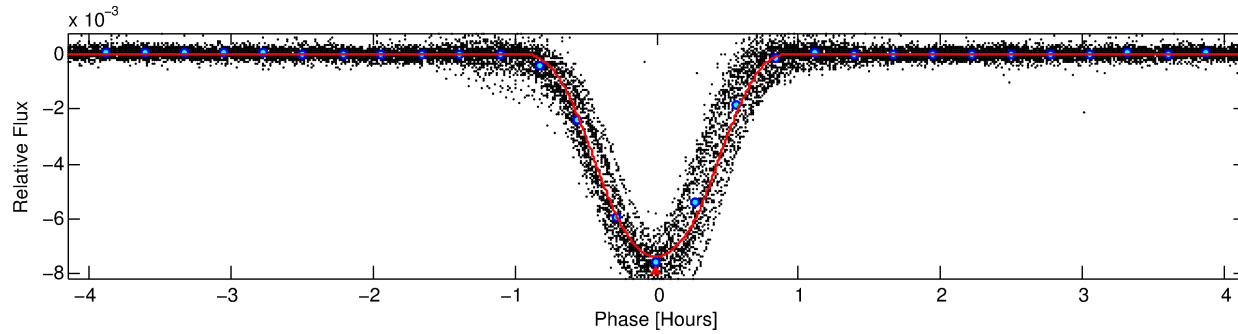
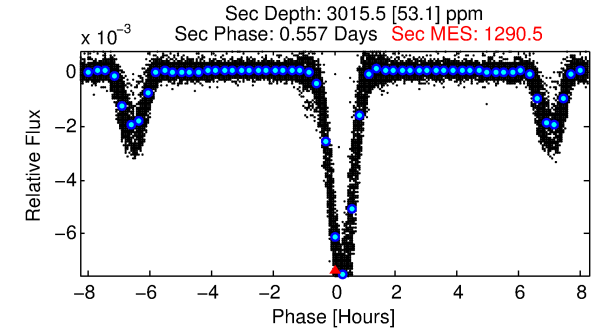
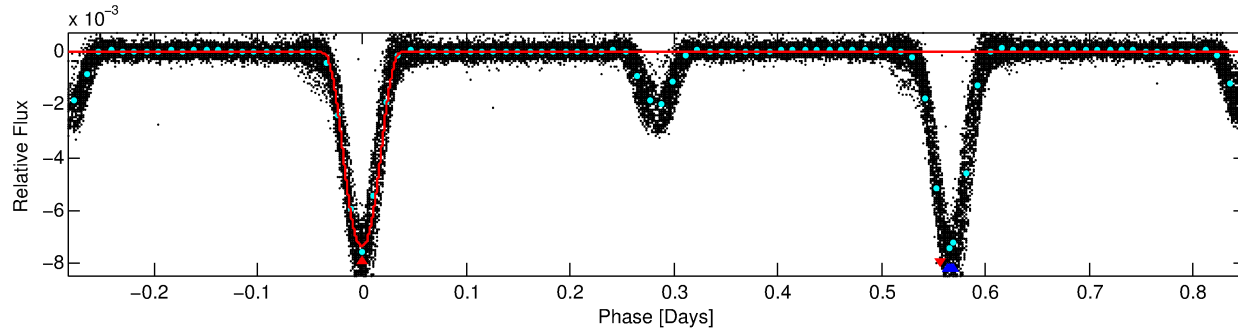
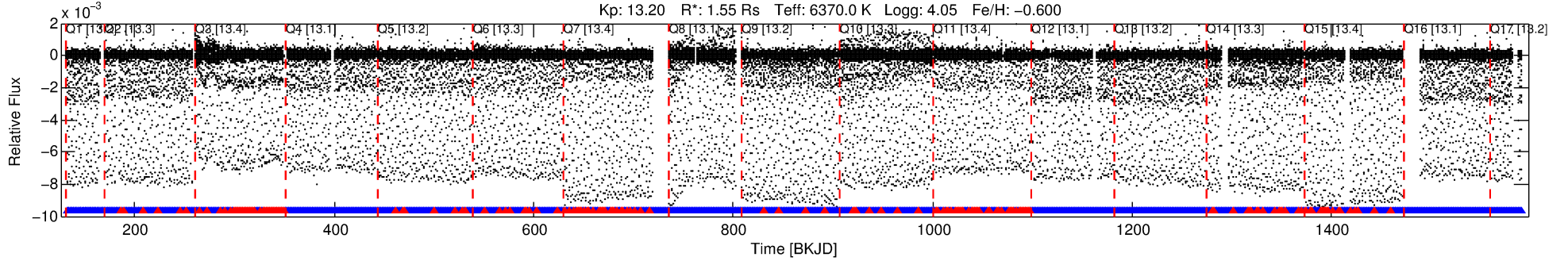
## Ephemeris Match Information For 007886329-01

No Significant Match Found

# DV One-Page Summary

KIC: 7886329 Candidate: 1 of 2 Period: 1.135 d  
KOI: K06930 Corr: No Ephemeris Match

Kp: 13.20 R\*: 1.55 Rs Teff: 6370.0 K Logg: 4.05 Fe/H: -0.600



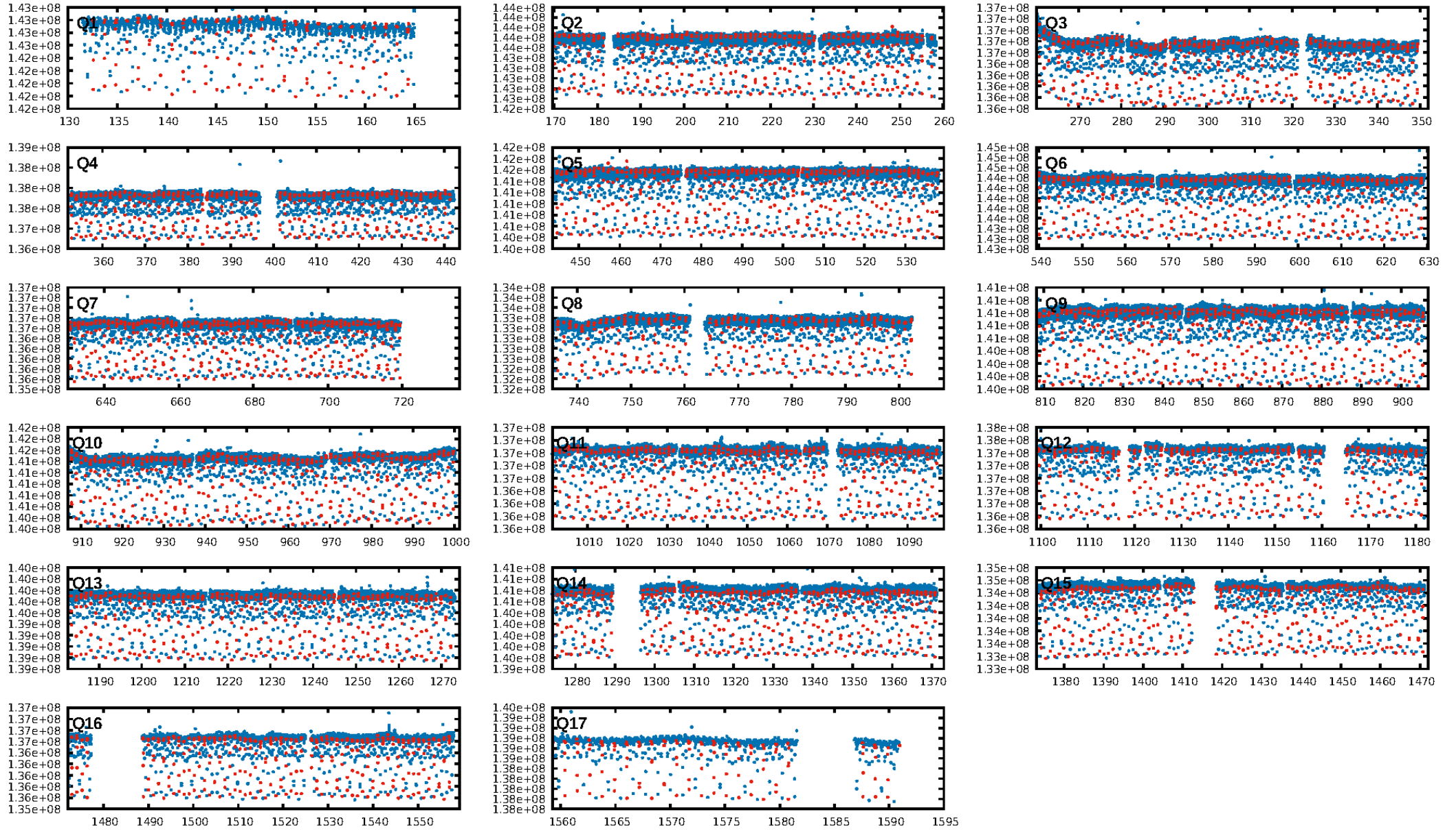
## DV Fit Results:

Period = 1.13498 [0.00000] d  
Epoch = 132.5651 [0.0000] BKJD  
Rp/R\* = 0.0941 [0.0004]  
a/R\* = 4.02 [0.03]  
b = 0.90 [0.00]  
Seff = 7858.06 [4815.52]  
Teq = 2401 [368] K  
Rp = 15.89 [5.87] Re  
a = 0.0212 [0.0078] AU  
Ag = 2.95 [1.78] [1.10σ]  
Teffp = 4866 [149] K [6.22σ]

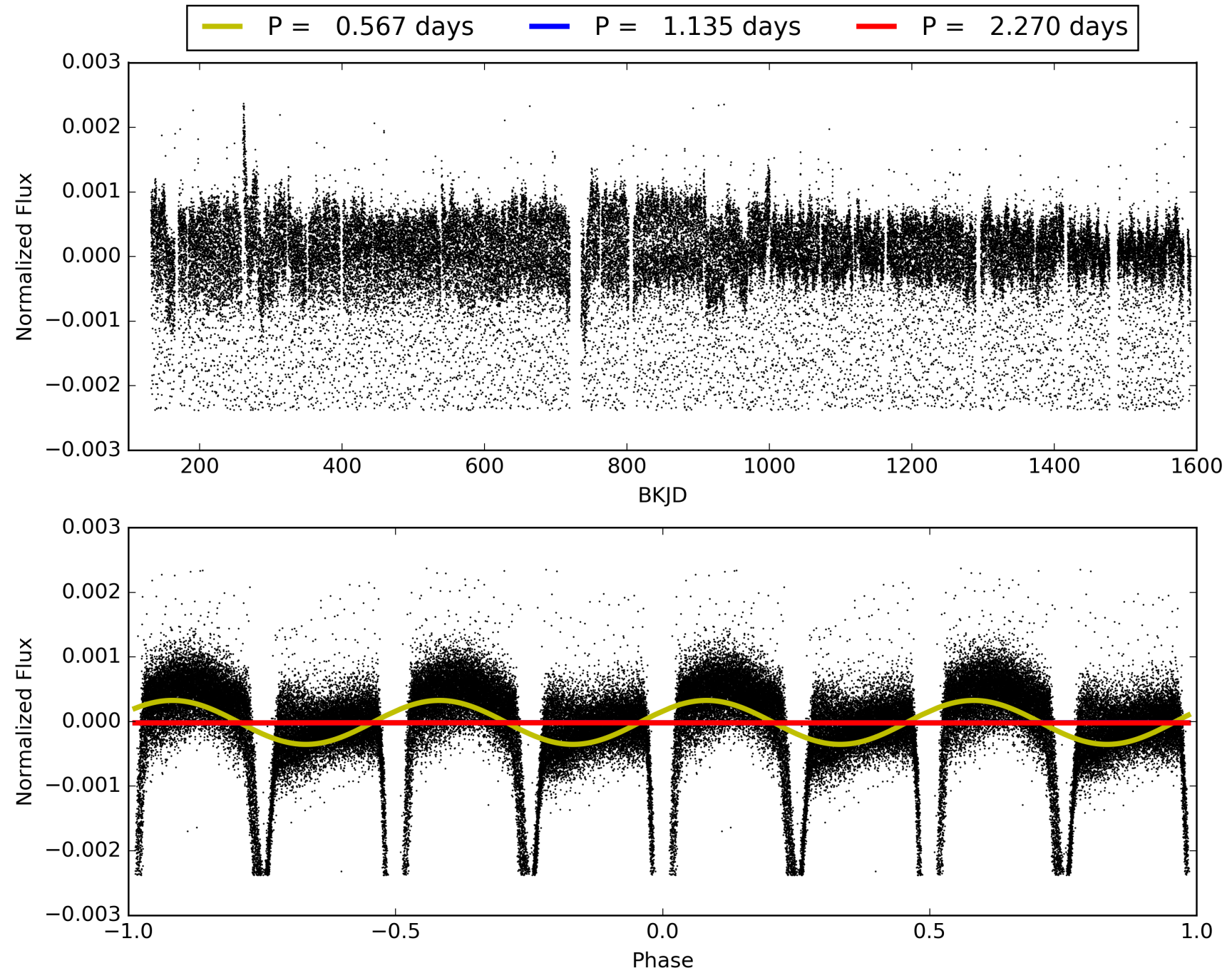
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.83 [934/1127]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.0%  
Centroid-so: 0.099 arcsec [17.87σ]  
OotOffset-rm: 0.213 arcsec [2.68σ]  
KicOffset-rm: 0.225 arcsec [3.11σ]  
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 007886329-01, PDC Light Curves

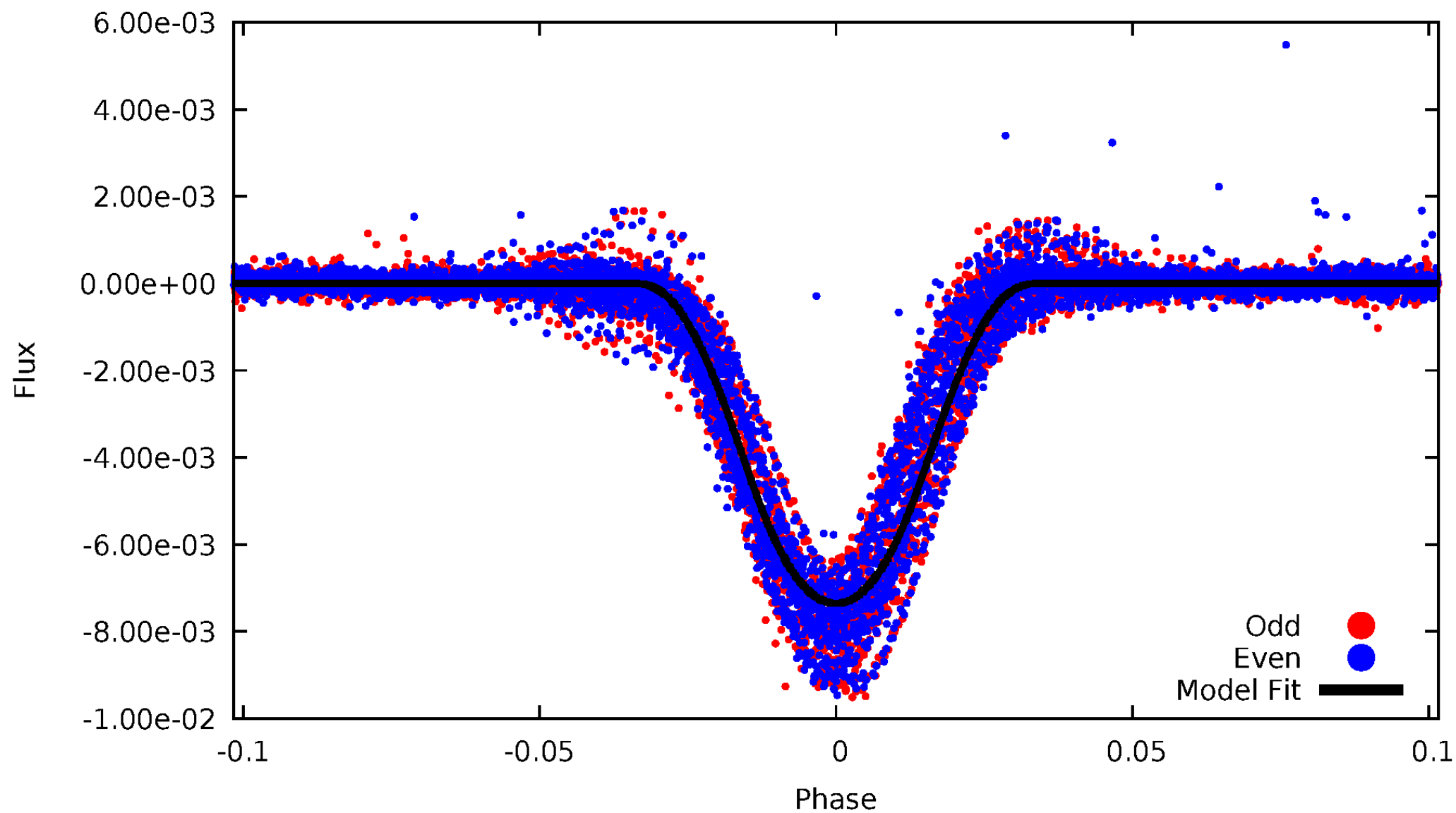


TCE 007886329-01



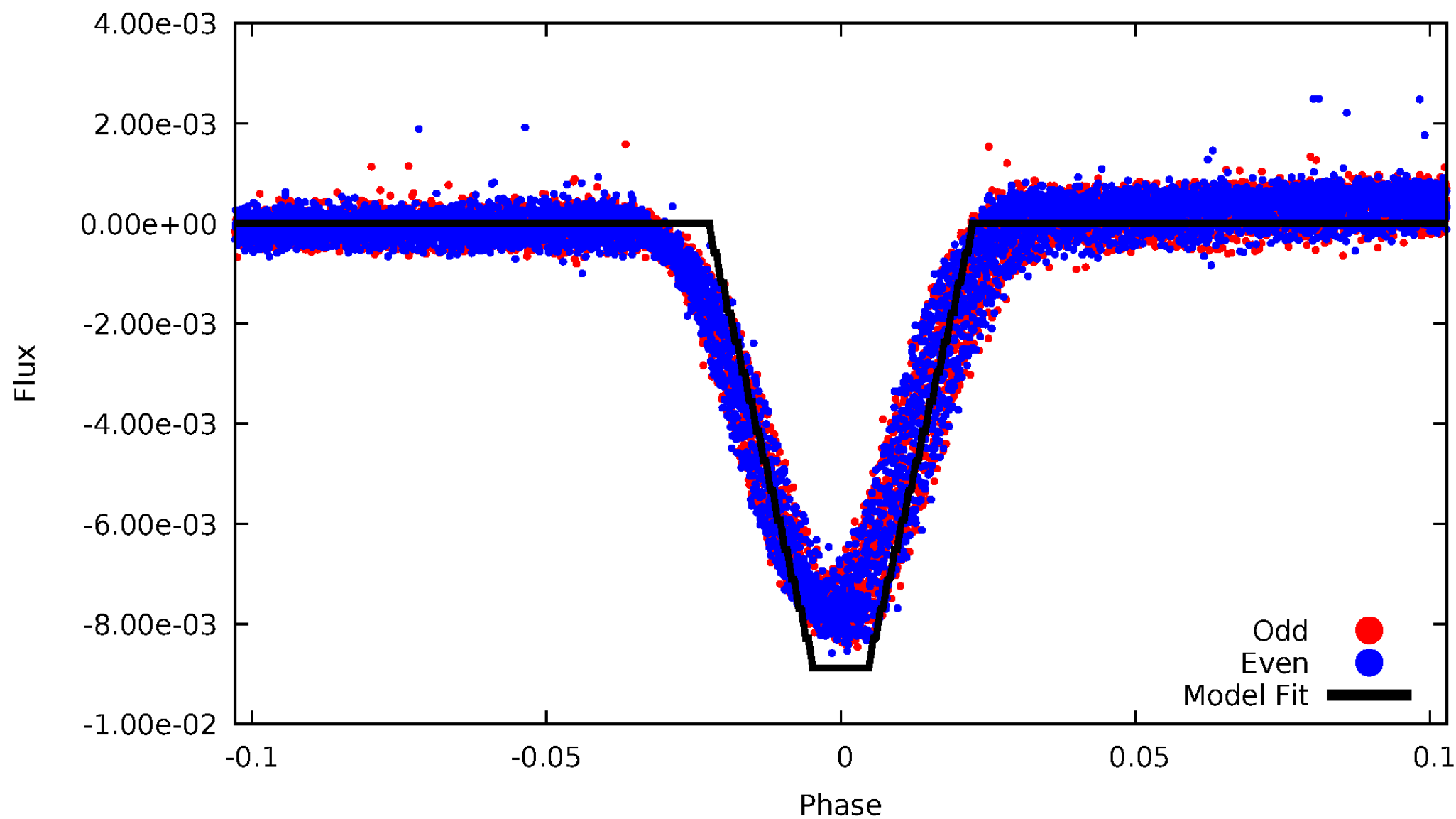
# DV Odd/Even

TCE 007886329-01



# ALT Odd/Even

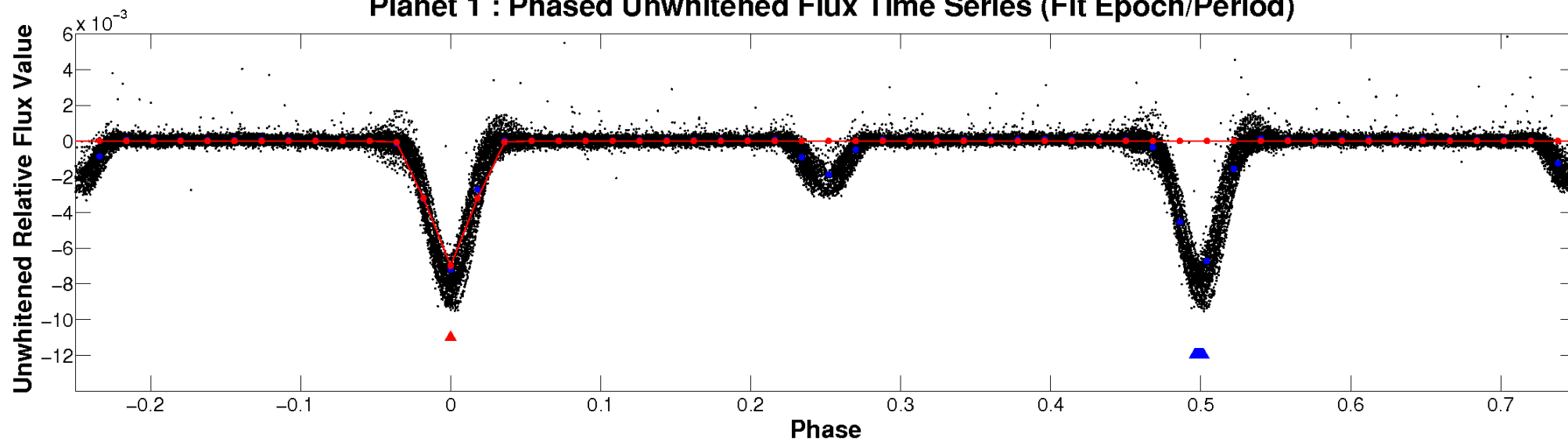
TCE 007886329-01



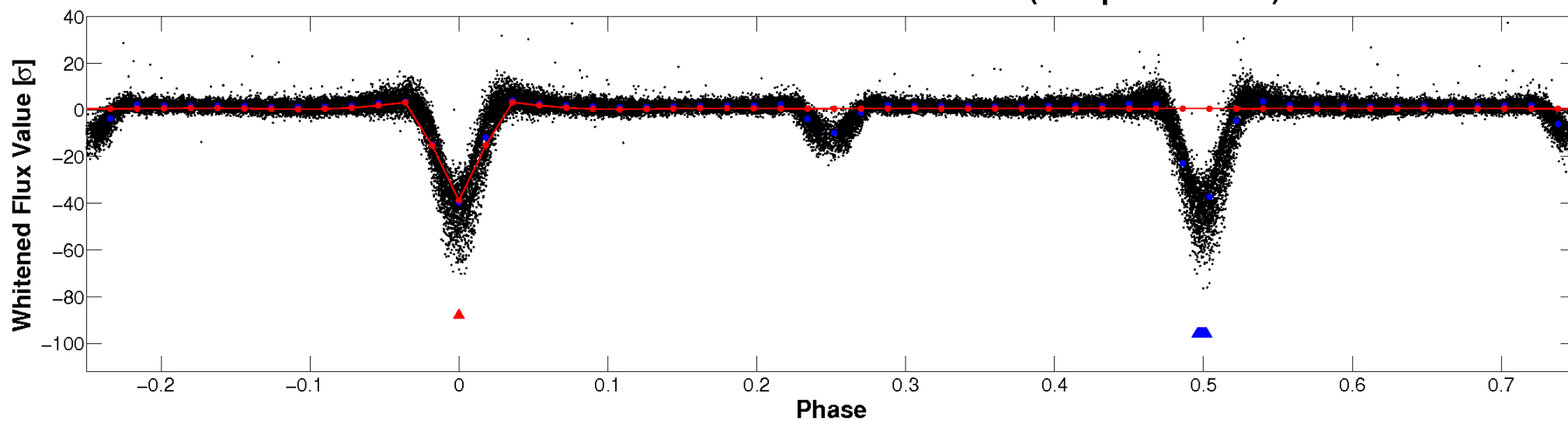


# Non-Whitened Vs. Whitened Light Curve

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

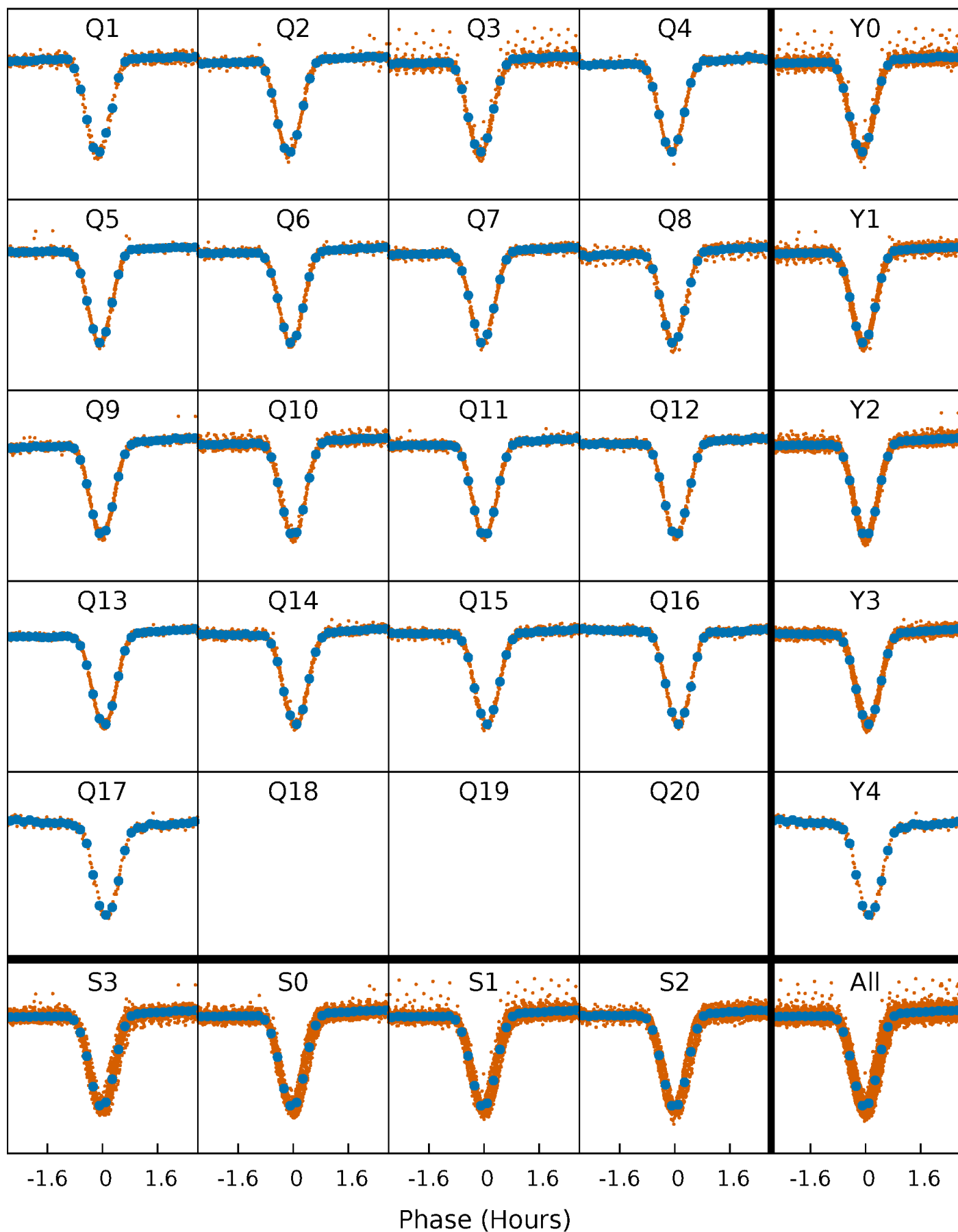


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

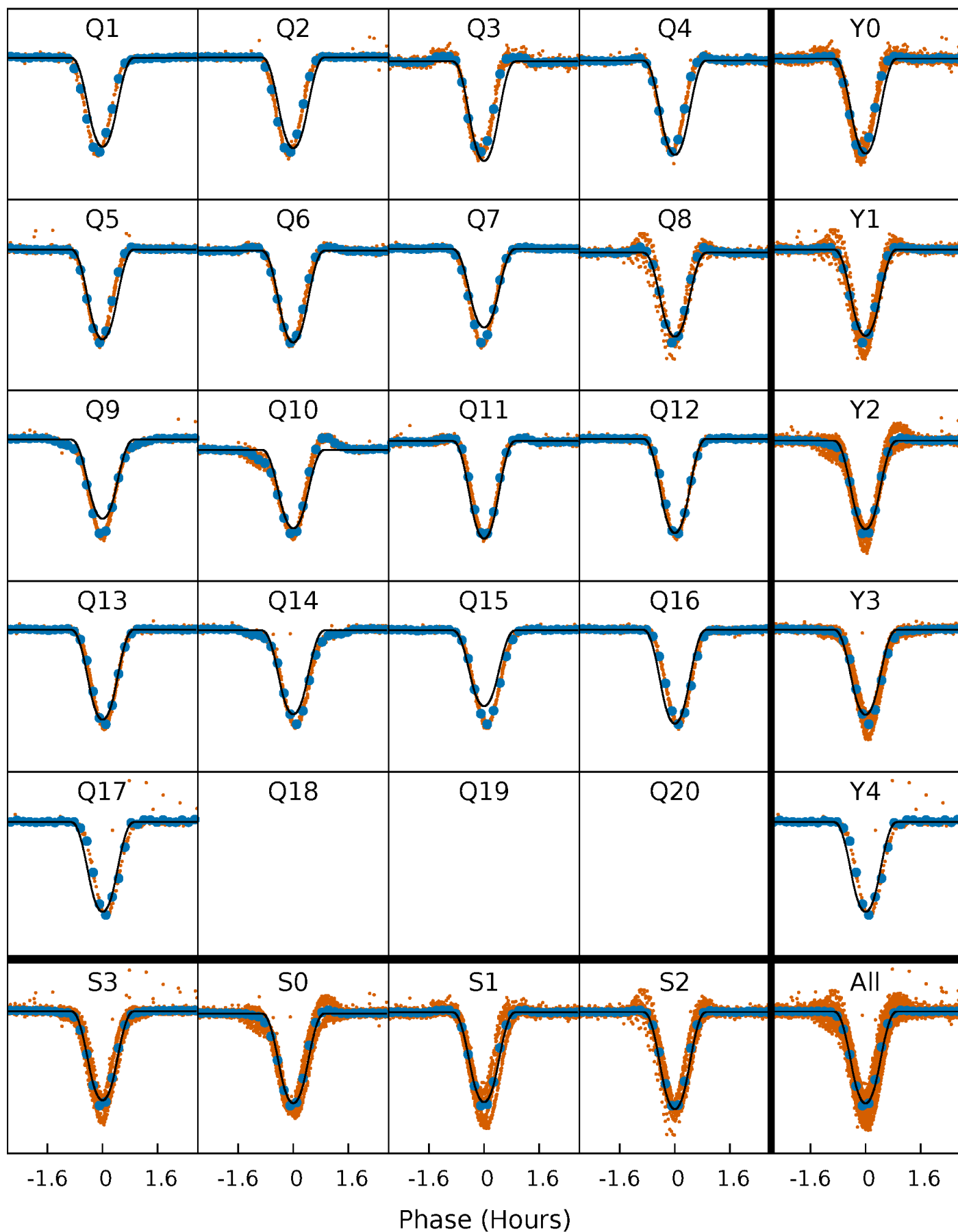
TCE 007886329-01 P= 1.134980 Days  $T_0=132.565100$  (BKJD)





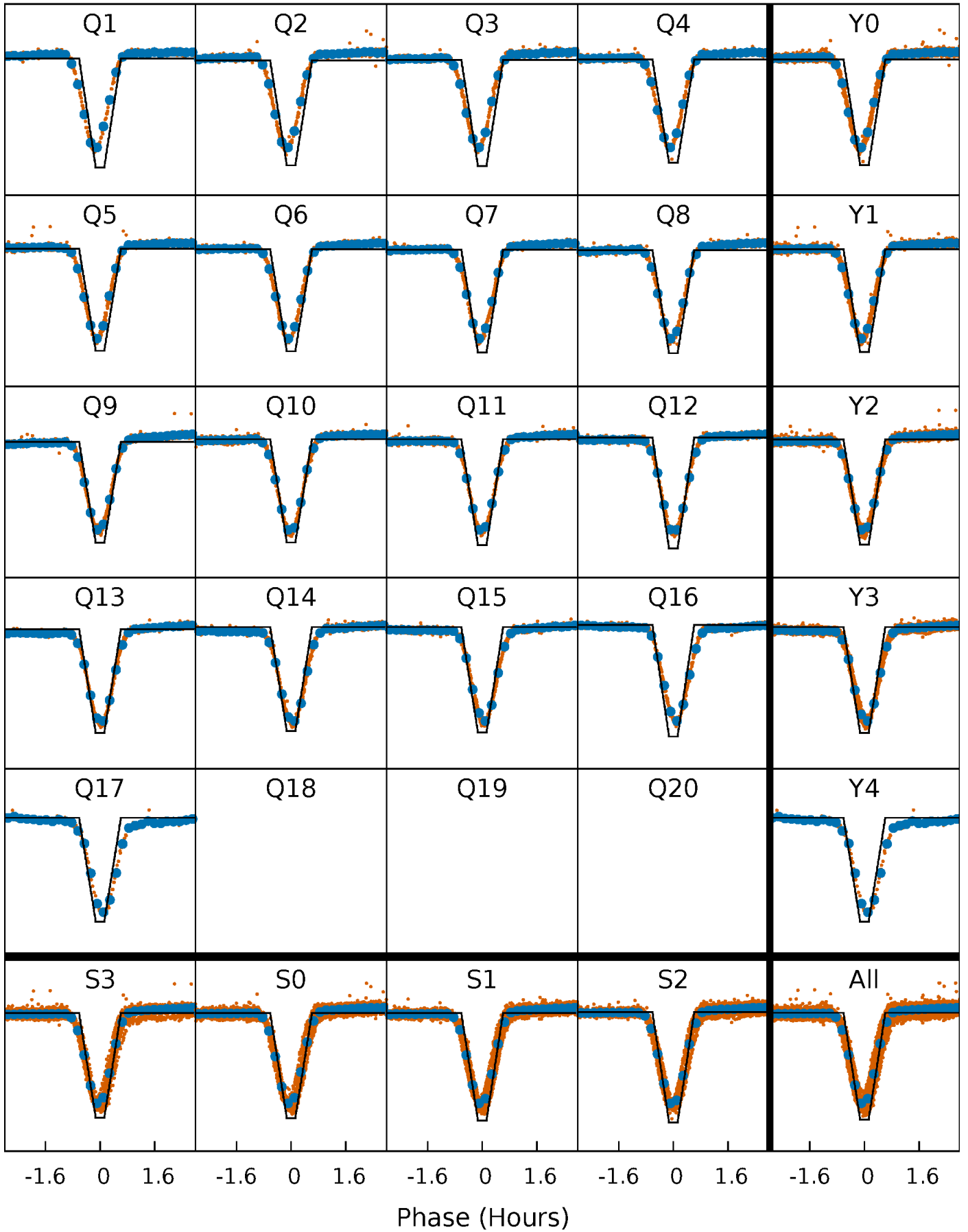
# DV Quarter-Phased Transit Curves

TCE 007886329-01 P= 1.134980 Days  $T_0=132.565100$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

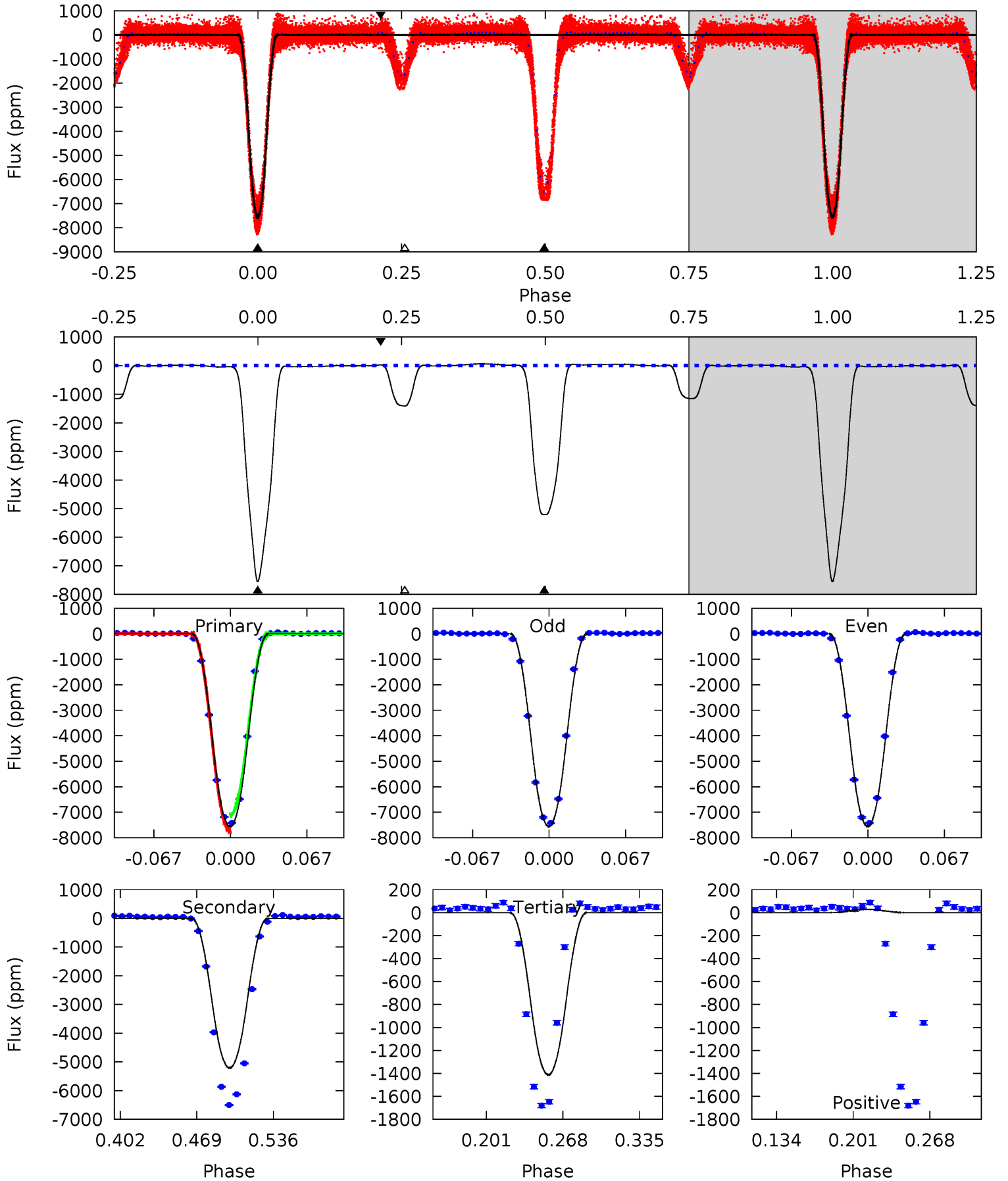
TCE 007886329-01 P= 1.134980 Days  $T_0=132.565349$  (BKJD)



# DV Model-Shift Uniqueness Test

007886329-01, P = 1.134980 Days, E = 131.430120 Days

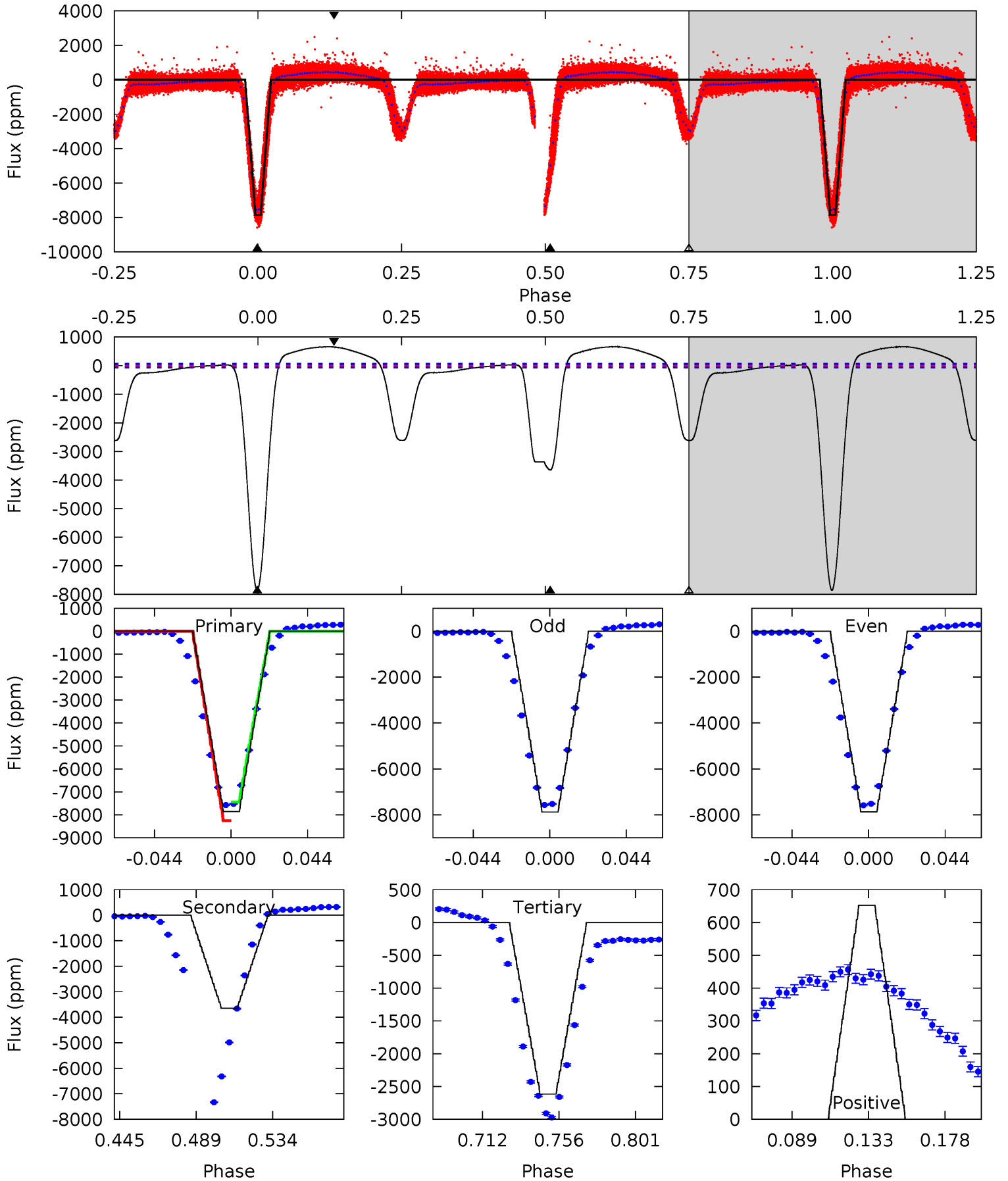
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1225	844.8	229.1	4.67	4.65	1.83	43.5	995.9	1220	615.7	840.2	0.02	1.02	0.01	48.7



# Alt Model-Shift Uniqueness Test

007886329-01, P = 1.134980 Days, E = 131.430369 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
584.3	271.5	194.6	48.6	4.73	2.01	55.7	389.8	535.8	76.9	222.9	0.20	1.00	0.08	30.1



### Stellar Parameters For KIC 007886329

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6370^{+173}_{-192}$	$4.053^{+0.357}_{-0.153}$	$-0.600^{+0.300}_{-0.300}$	$1.548^{+0.382}_{-0.572}$	$0.986^{+0.144}_{-0.118}$	$0.374^{+1.000}_{-0.161}$
	+3%/-3%	+9%/-4%	+50%/-50%	+25%/-37%	+15%/-12%	+267%/-43%
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 007886329-01 / KOI 6930.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-5209 \pm 6$	$15.63^{+2.34}_{-2.83}$	$3299^{+266}_{-310}$	$5530^{+139}_{-146}$	$5.387^{+2.626}_{-1.272}$
Alt.	$-3650 \pm 13$	$15.60^{+2.33}_{-3.00}$	$3300^{+239}_{-319}$	$5062^{+124}_{-128}$	$3.769^{+1.834}_{-0.885}$

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

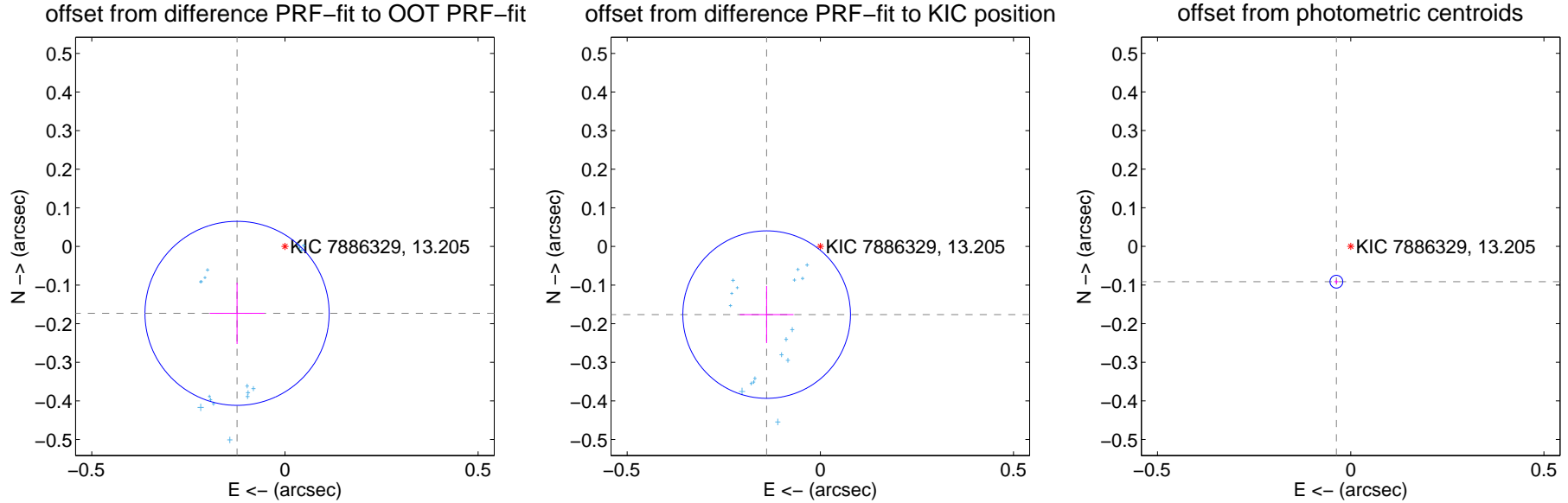
## DV Centroid Data

Supplemental centroid analysis for 007886329-01. Kepler magnitude: 13.21. Transit SNR 1184.55

There are 17 quarters with good PRF difference image offsets

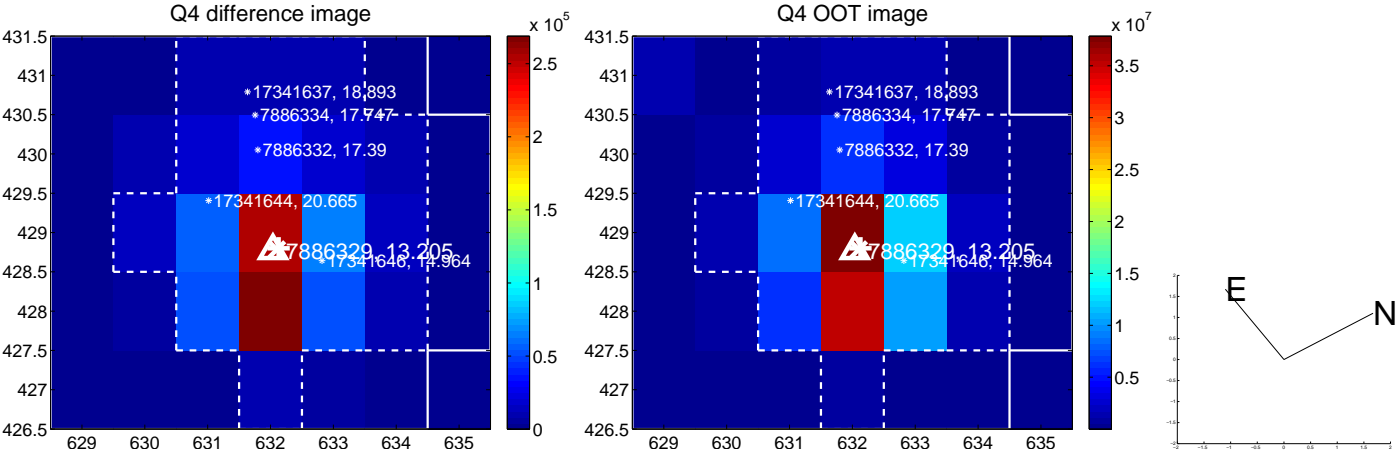
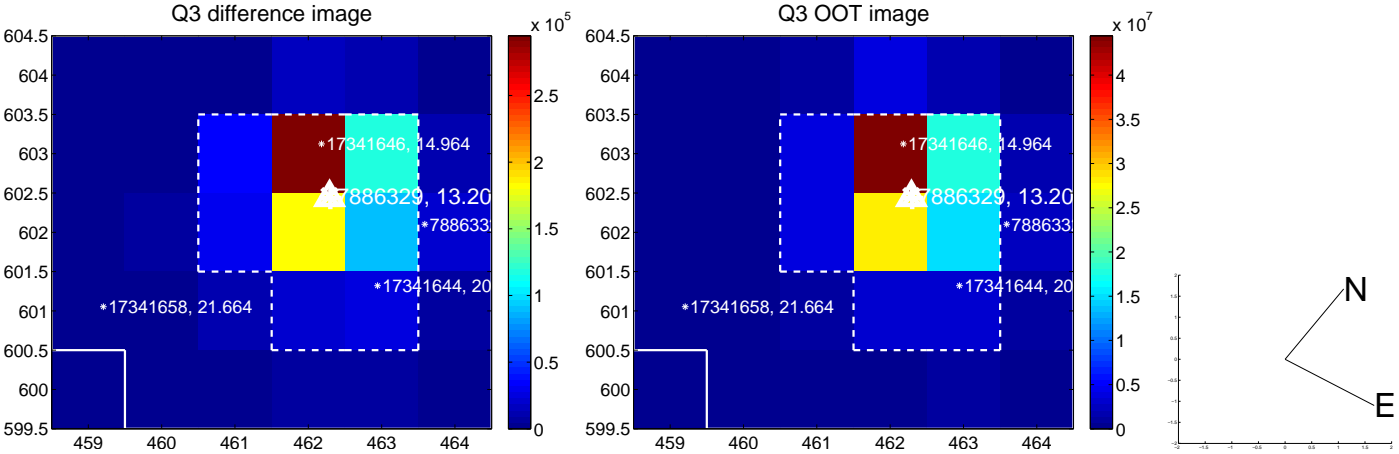
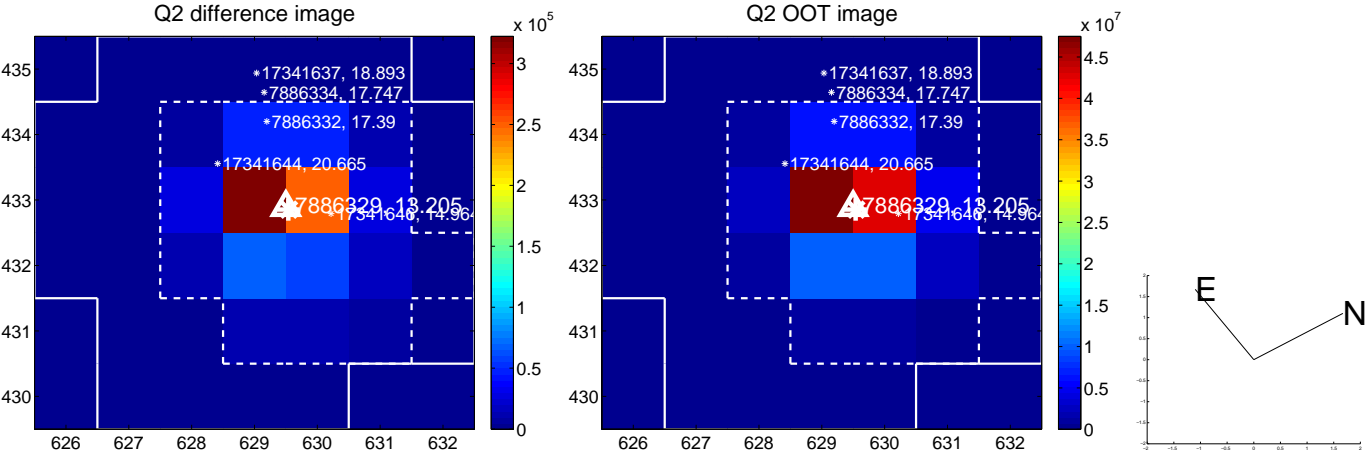
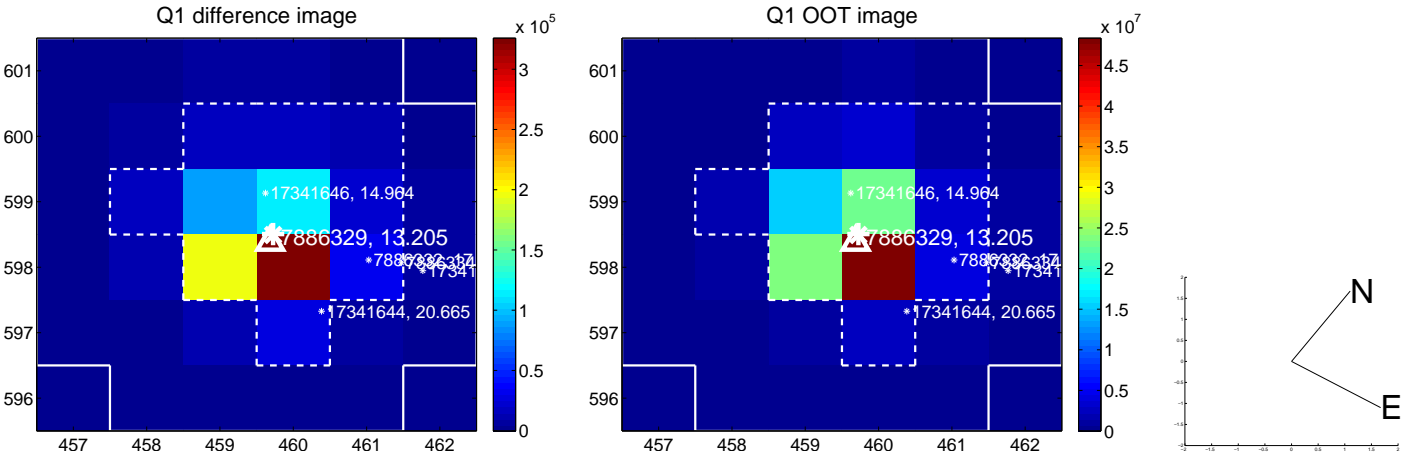
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.213 \pm 0.079$	2.68	$0.124 \pm 0.071$	$-0.173 \pm 0.079$
PRF-fit source offset from KIC position	$0.225 \pm 0.072$	3.11	$0.139 \pm 0.070$	$-0.176 \pm 0.074$
photometric centroid source offset	$0.10 \pm 0.01$	17.87	$0.04 \pm 0.01$	$-0.09 \pm 0.01$



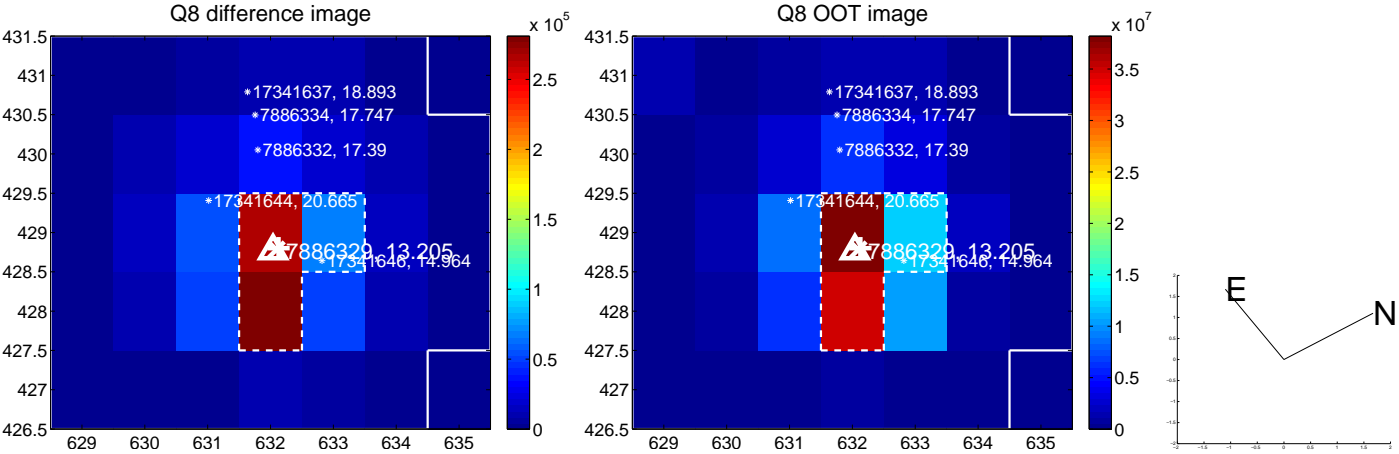
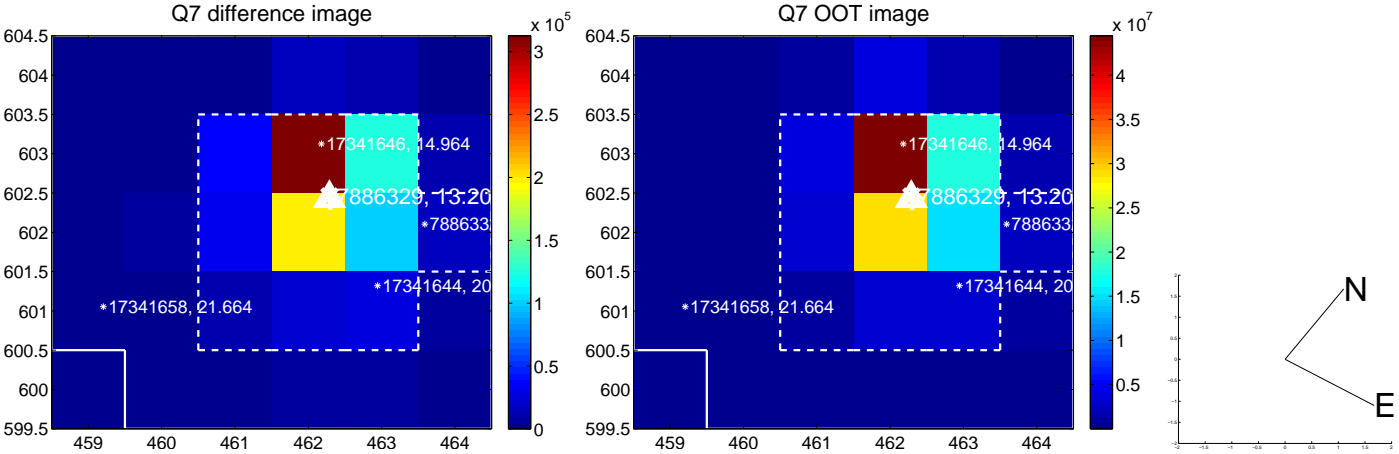
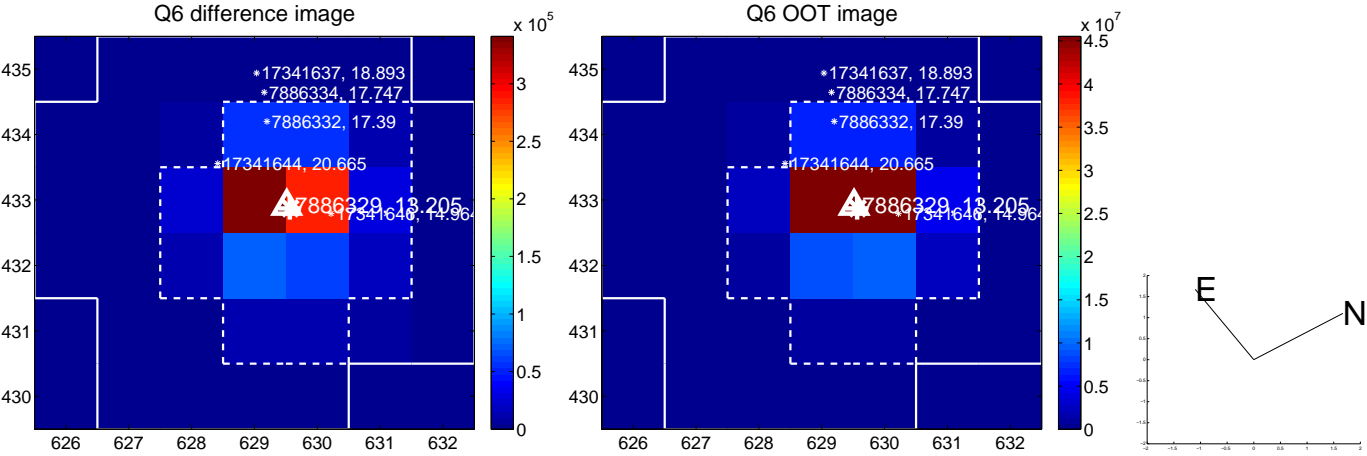
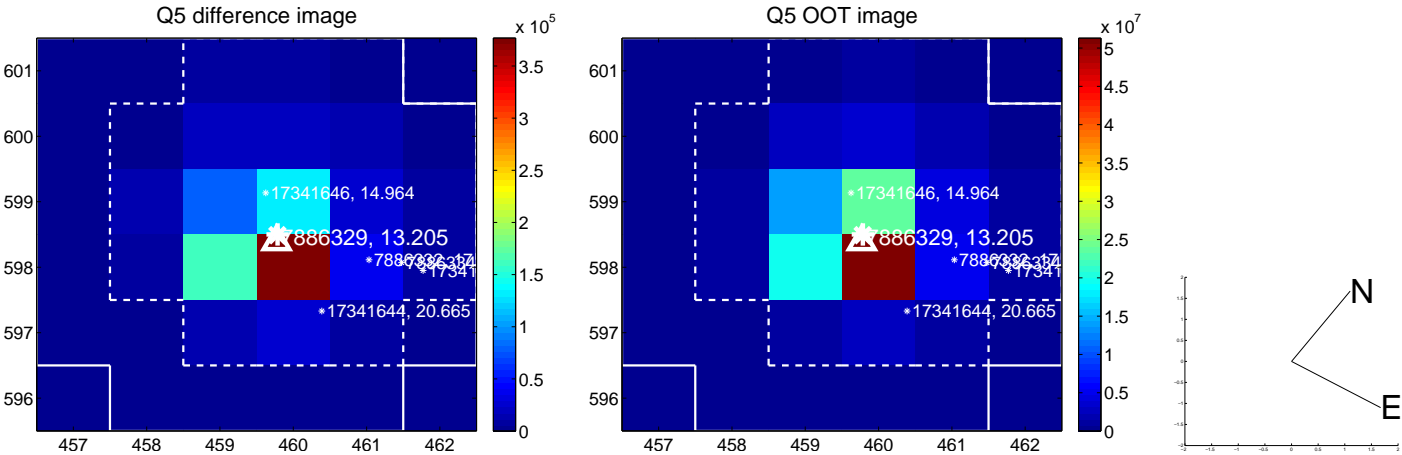
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

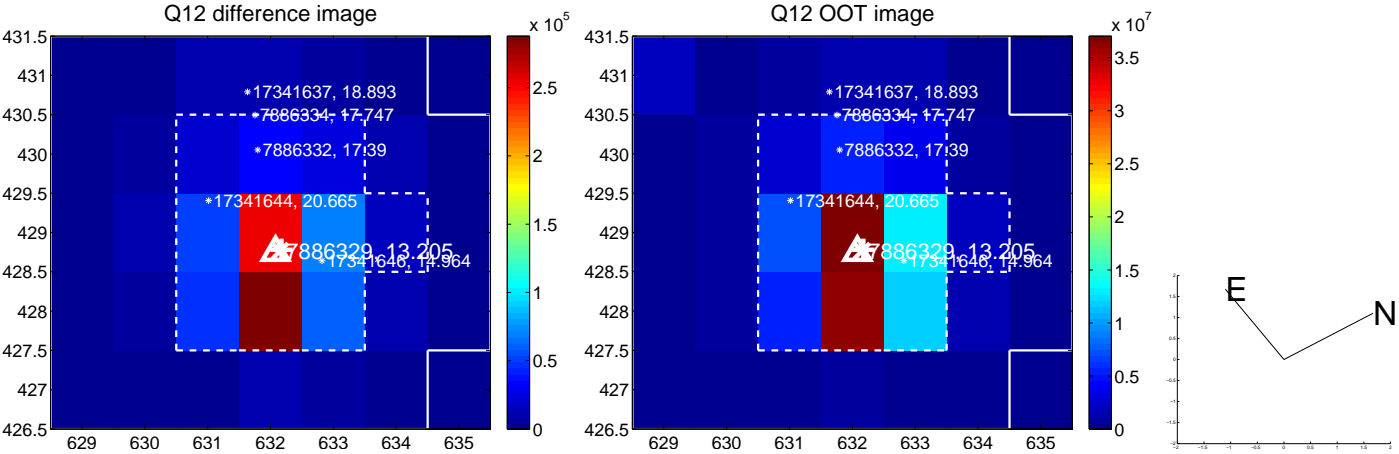
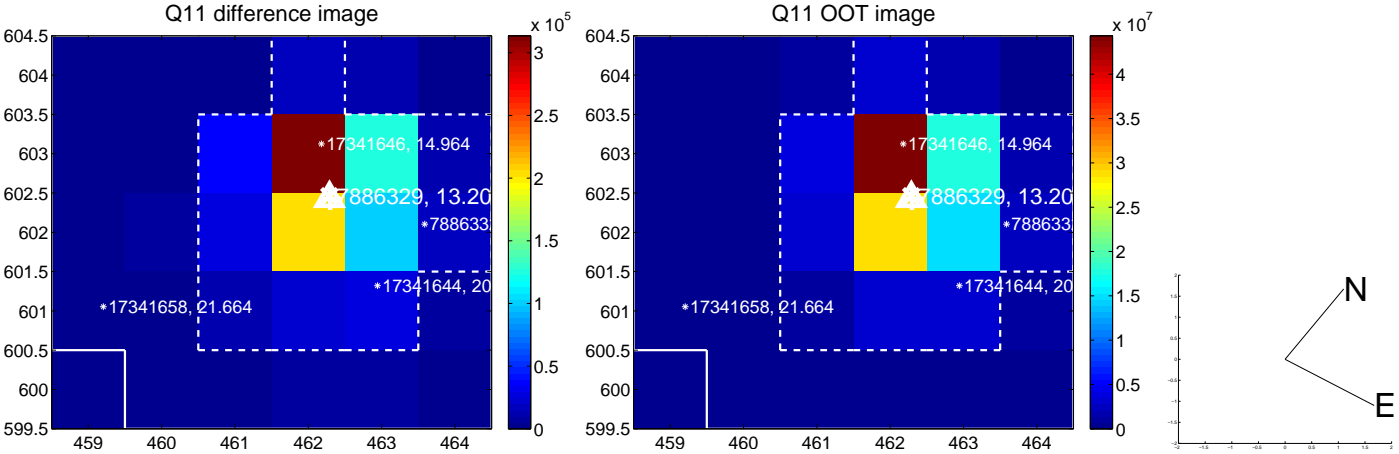
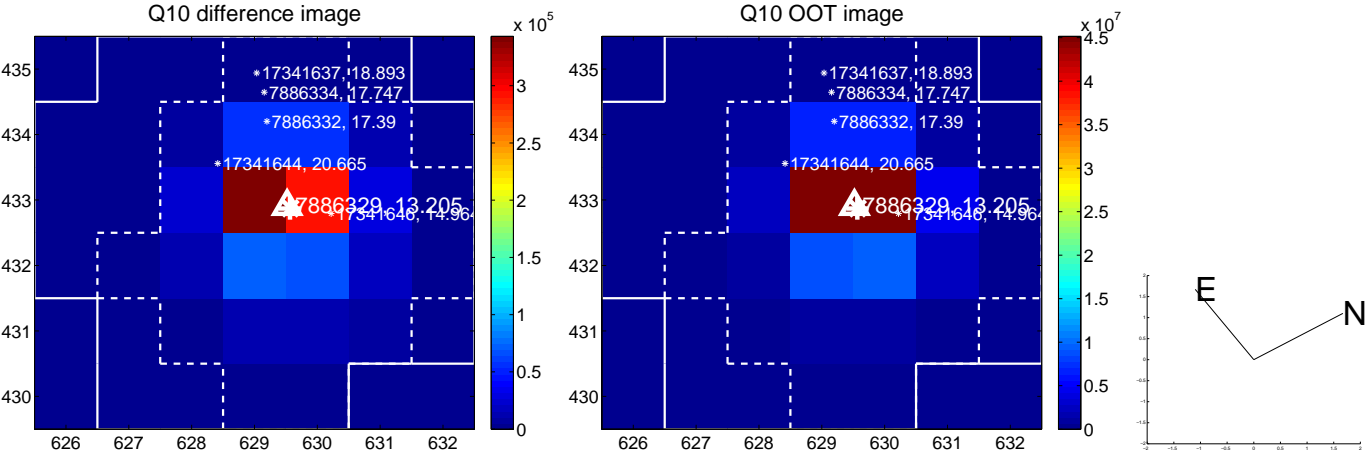
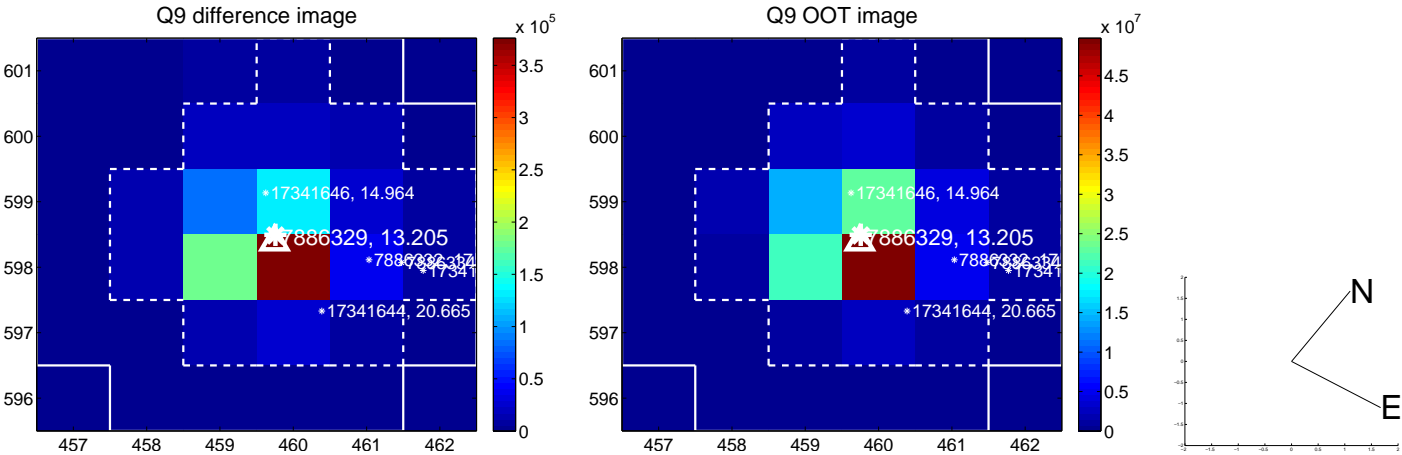




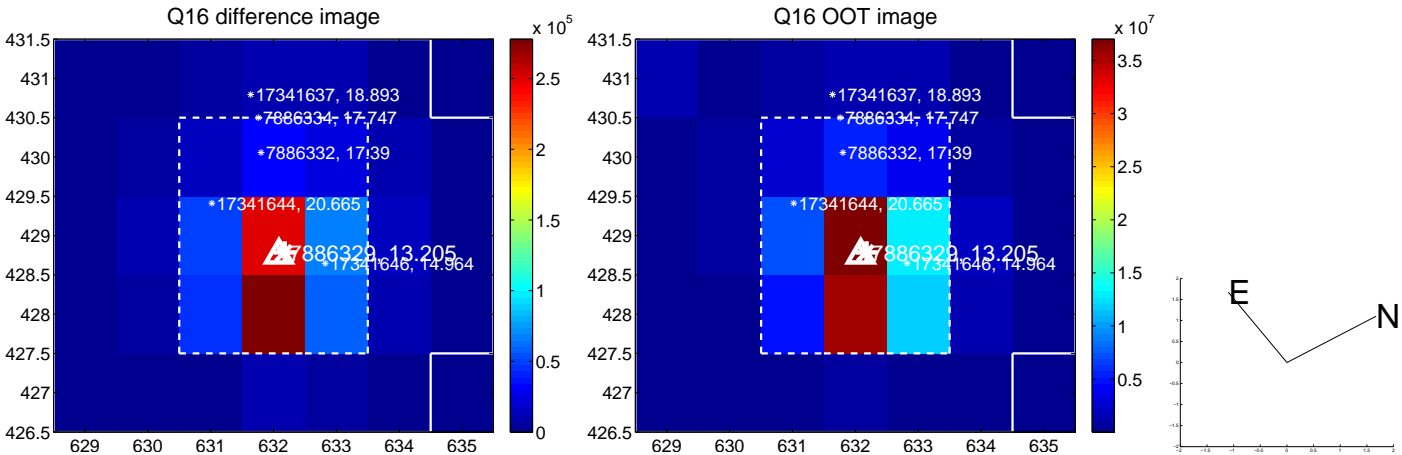
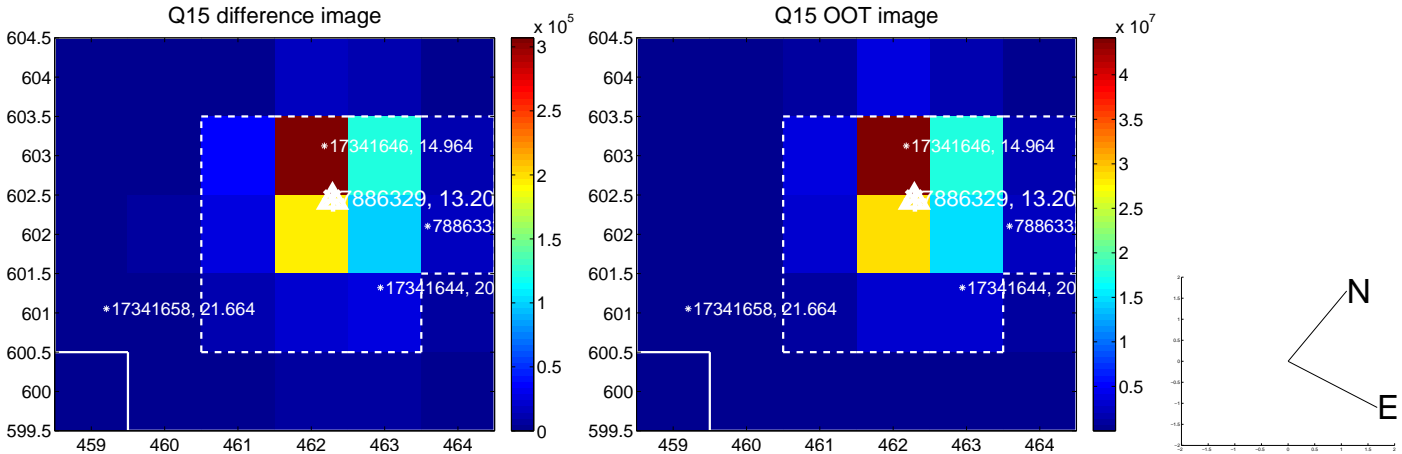
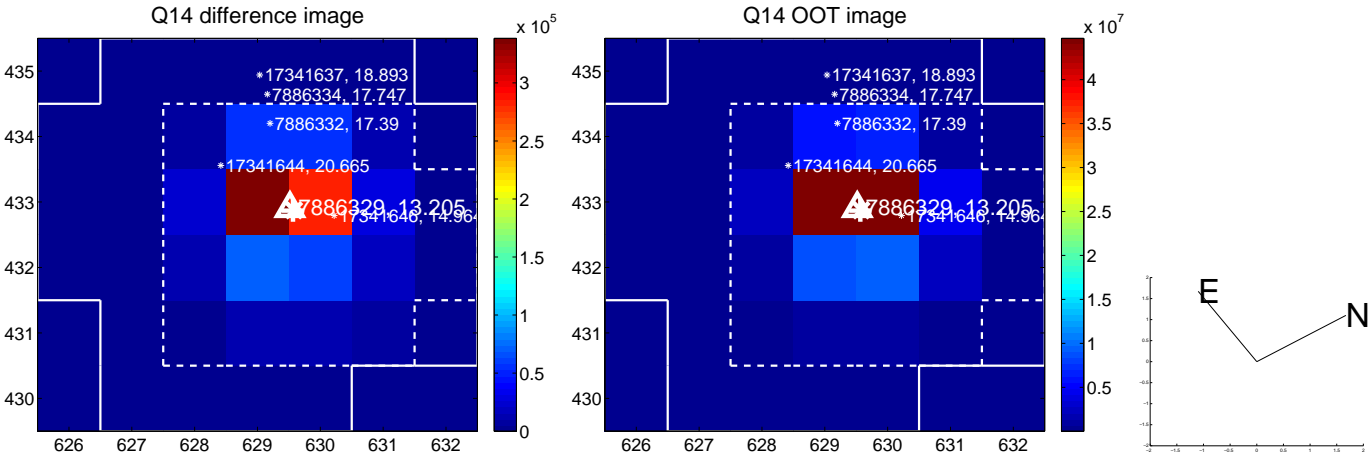
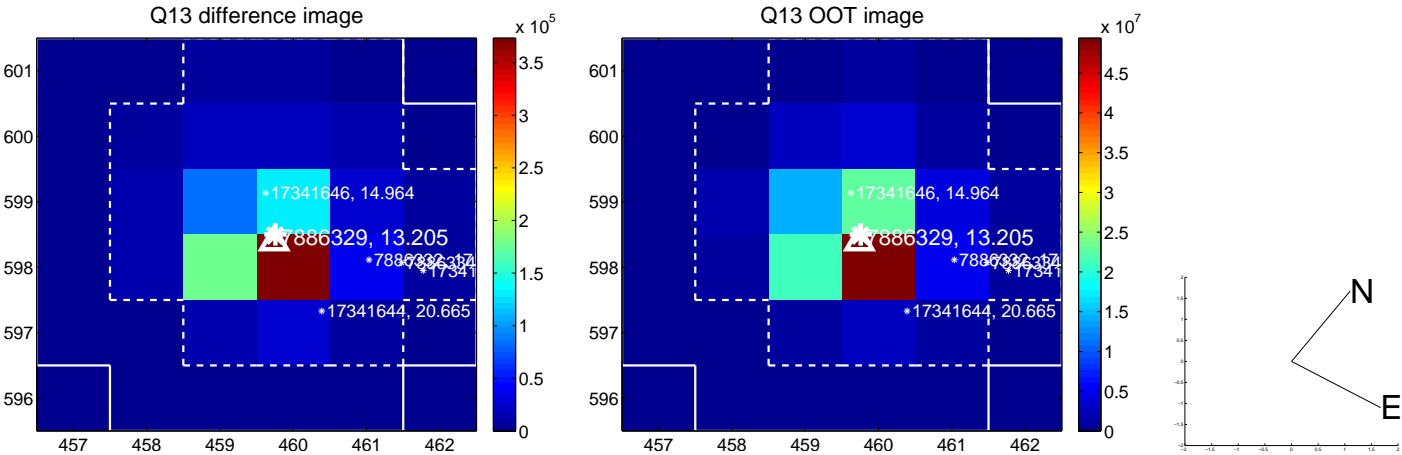
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



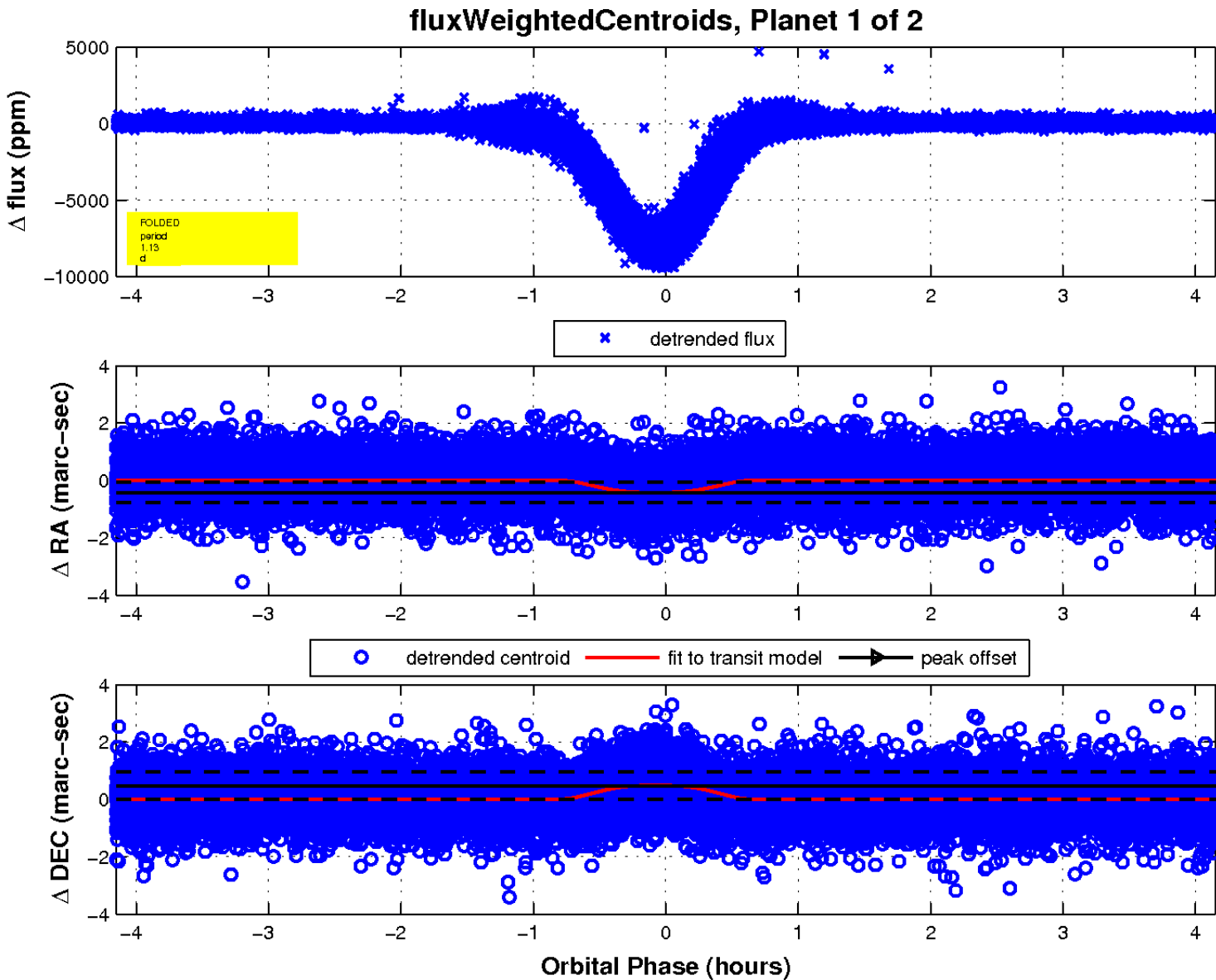
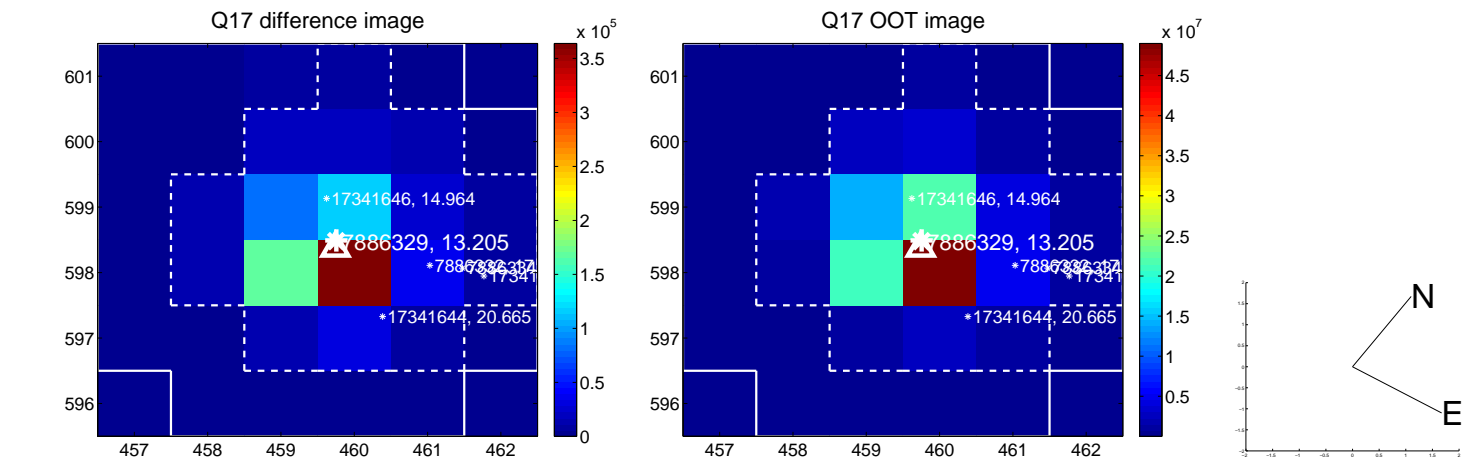
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

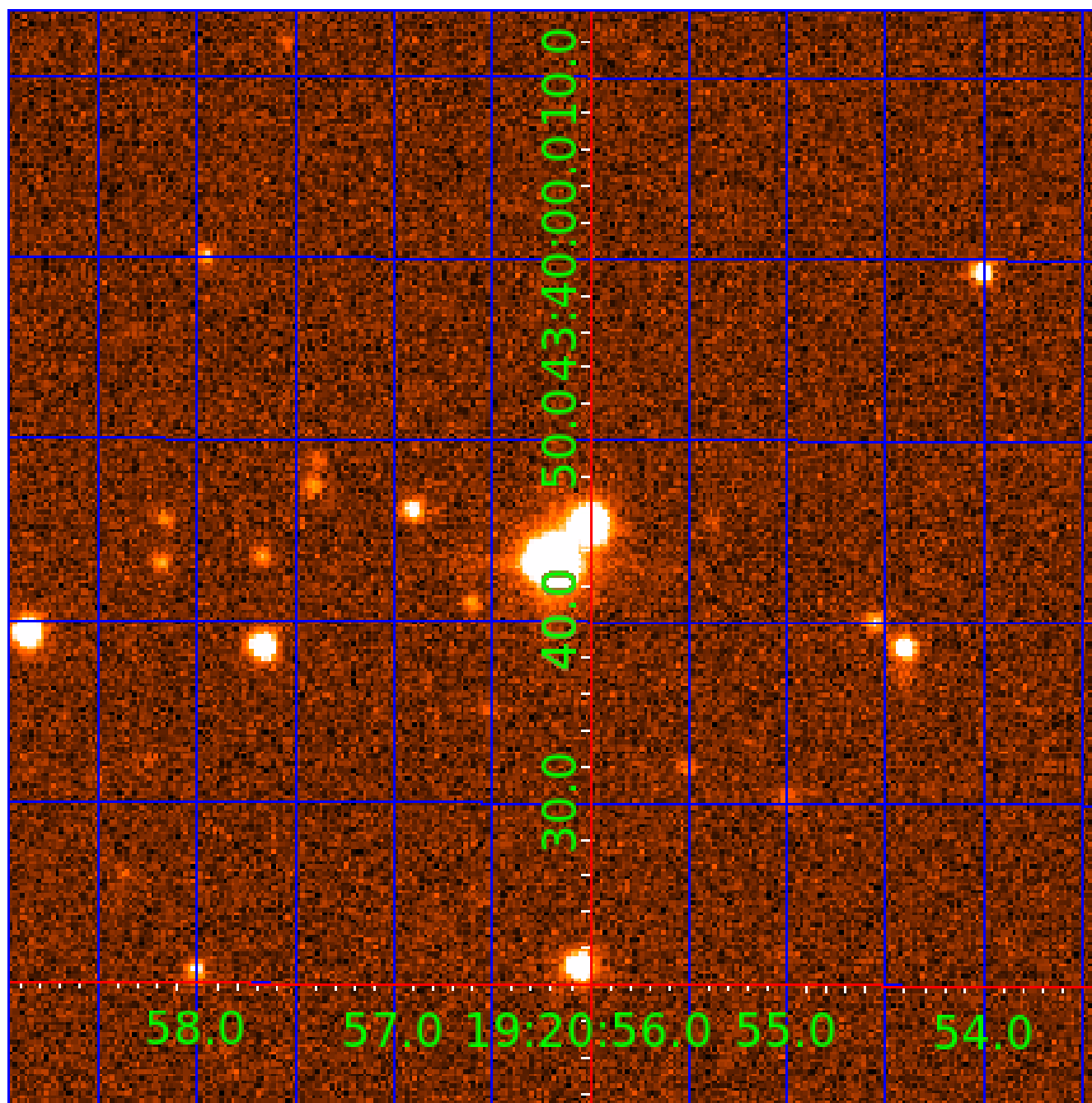


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007886329

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007886329-01	OBS	6930.01	1.134980	132.565100	7357.4	1.384	1078.6	1184.5	1.55	6370	15.89	7858.06
007886329-02	OBS	No	1.134985	131.993108	7516.7	1.338	1867.6	1348.1	1.55	6370	16.11	7858.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007886329-01	OBS	FP	0.00	1	0	0	0	LPP_ALT
007886329-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

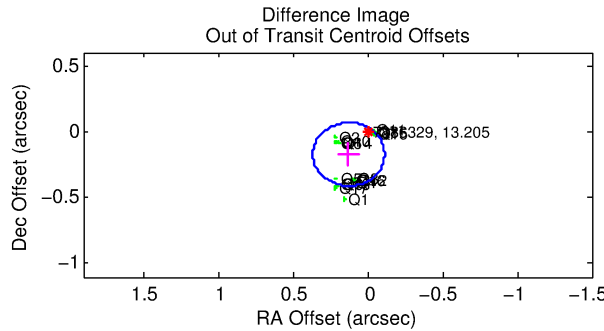
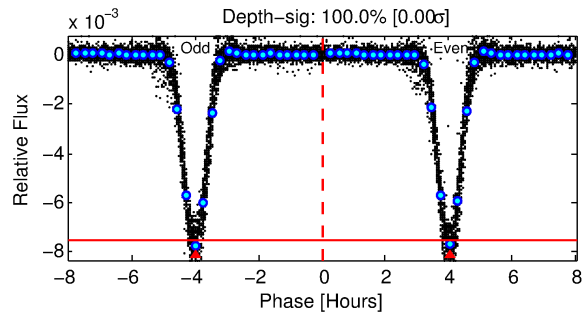
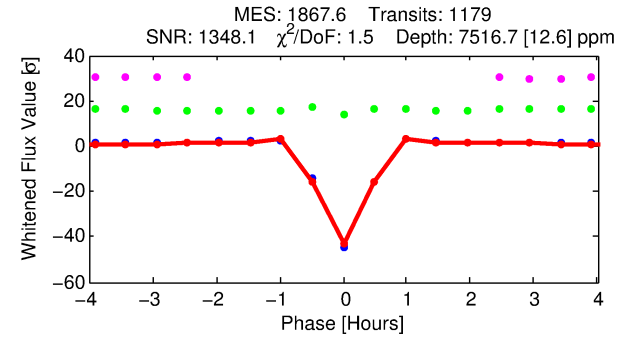
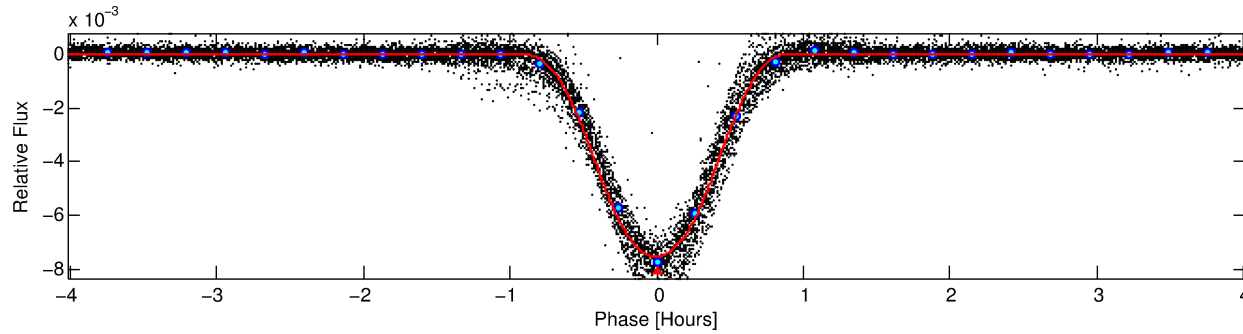
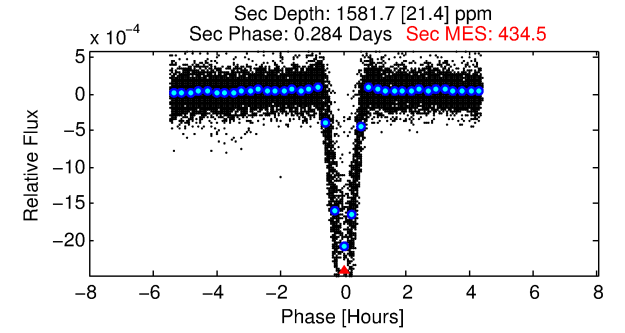
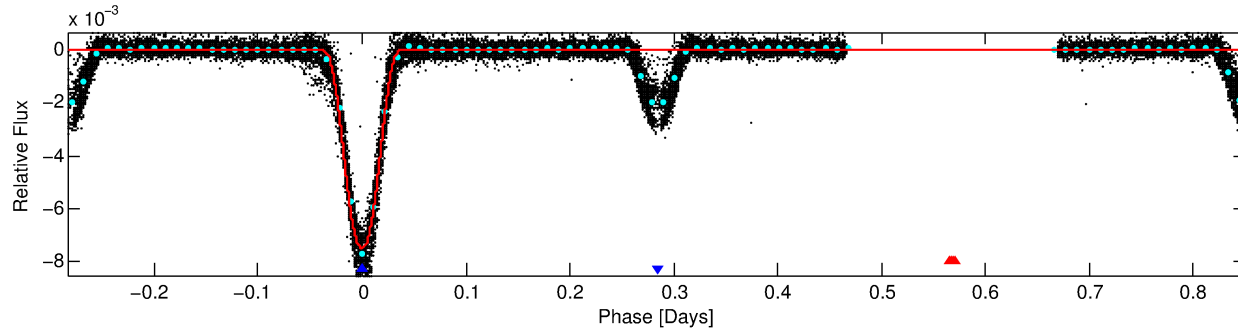
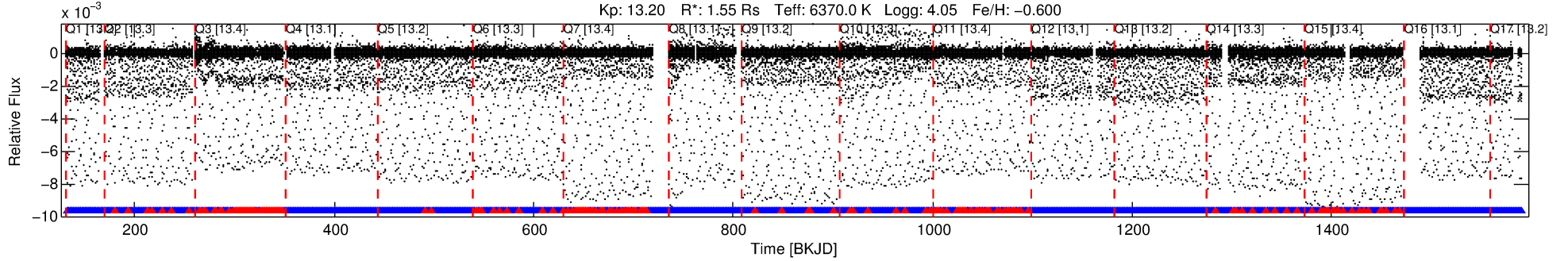
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007886329-02

No Significant Match Found

# DV One-Page Summary

KIC: 7886329 Candidate: 2 of 2 Period: 1.135 d  
KOI: K06930 Corr: No Ephemeris Match



## DV Fit Results:

Period = 1.13498 [0.00000] d  
Epoch = 131.9931 [0.0000] BKJD  
Rp/R\* = 0.0954 [0.0003]  
a/R\* = 4.16 [0.02]  
b = 0.90 [0.00]  
Seff = 7858.01 [4815.49]  
Teq = 2401 [368] K  
Rp = 16.11 [5.95] Re  
a = 0.0212 [0.0078] AU  
Ag = 1.51 [0.91] [0.56 $\sigma$ ]  
Teffp = 4114 [125] K [4.41 $\sigma$ ]

## DV Diagnostic Results:

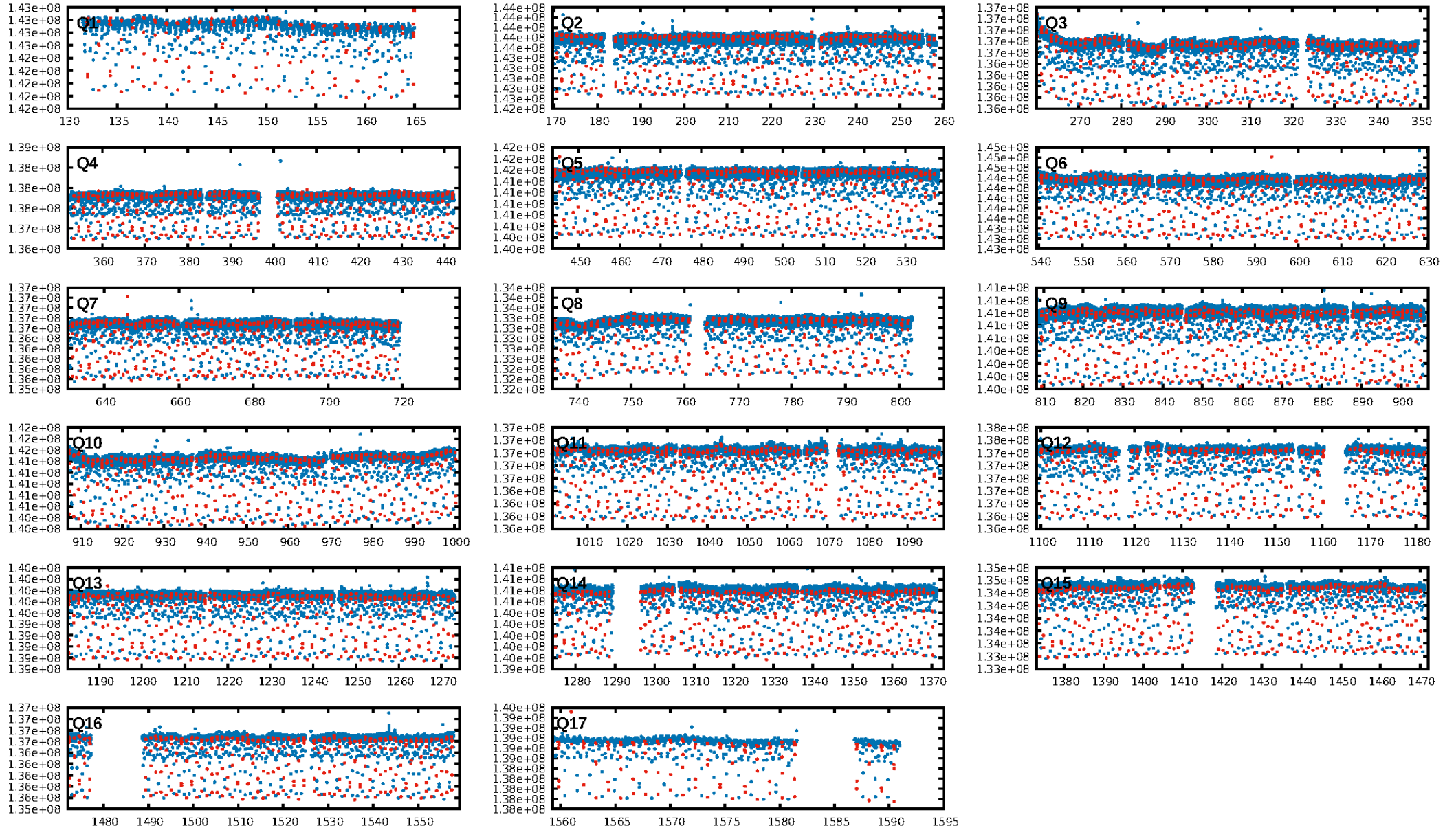
ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.83 [935/1125]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.0%  
Centroid-so: 0.091 arcsec [16.47 $\sigma$ ]  
OotOffset-rm: 0.213 arcsec [2.67 $\sigma$ ]  
KicOffset-rm: 0.224 arcsec [3.09 $\sigma$ ]  
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: 01-Feb-2016 00:31:43 Z

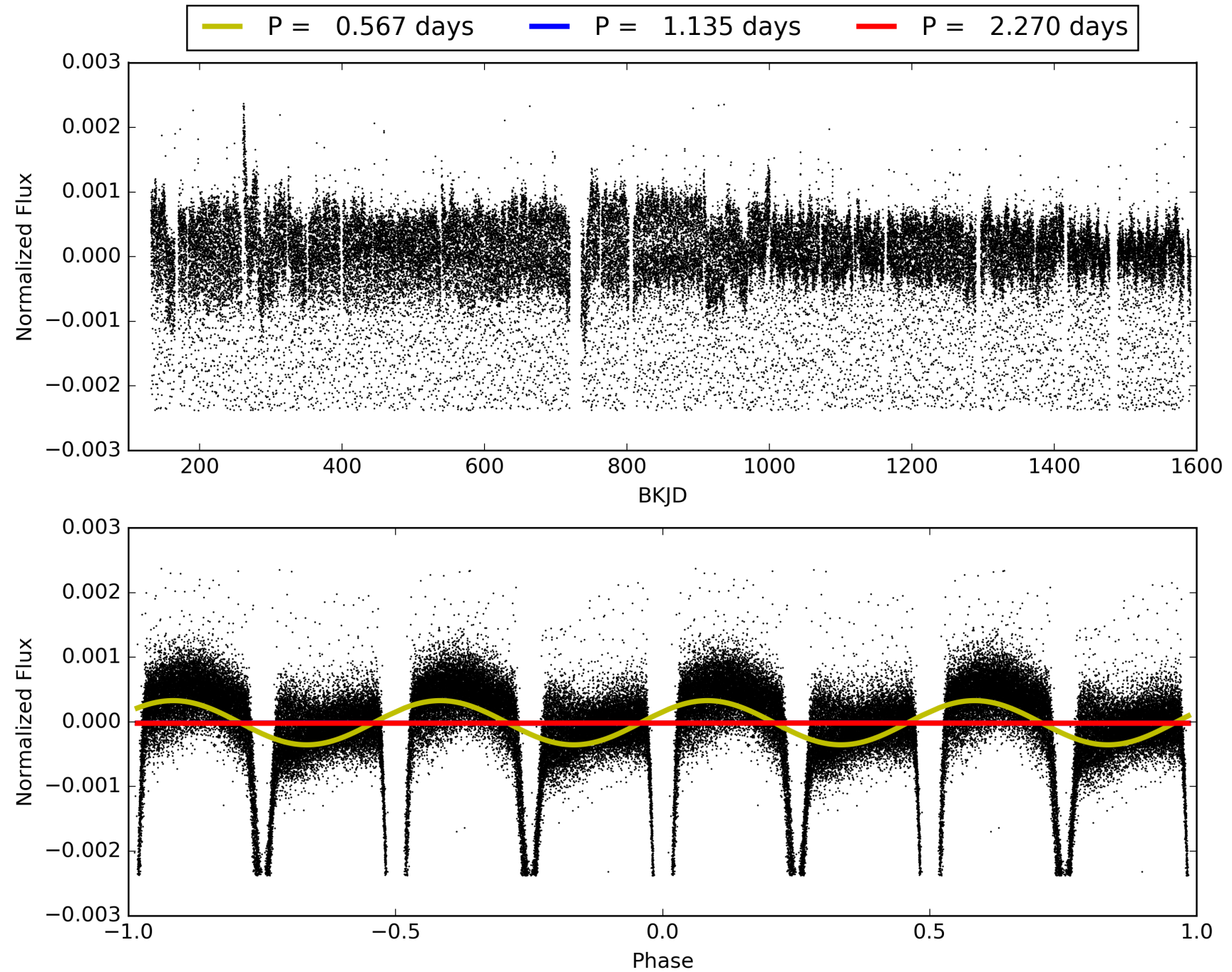
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 007886329-02, PDC Light Curves

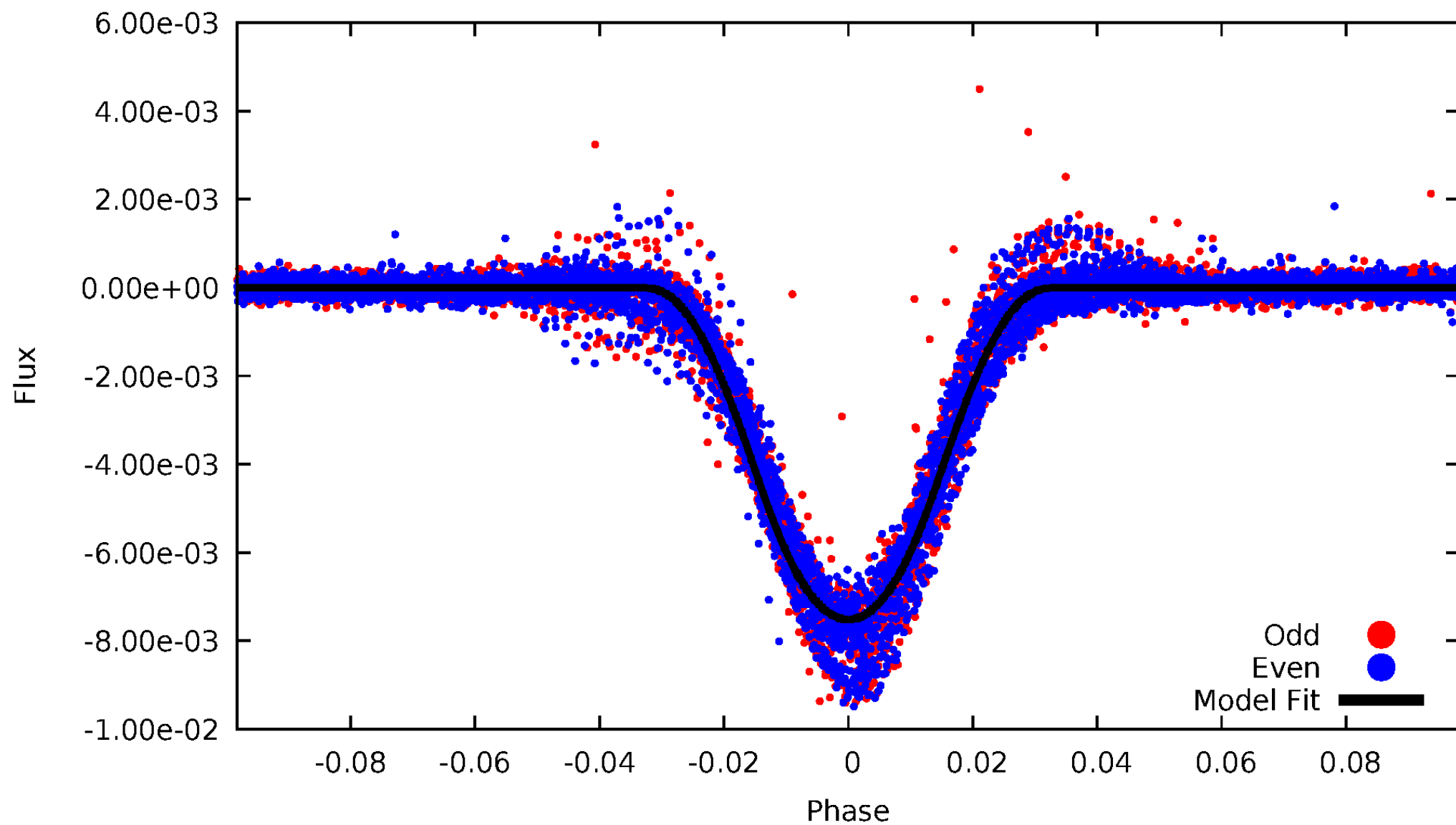


TCE 007886329-02



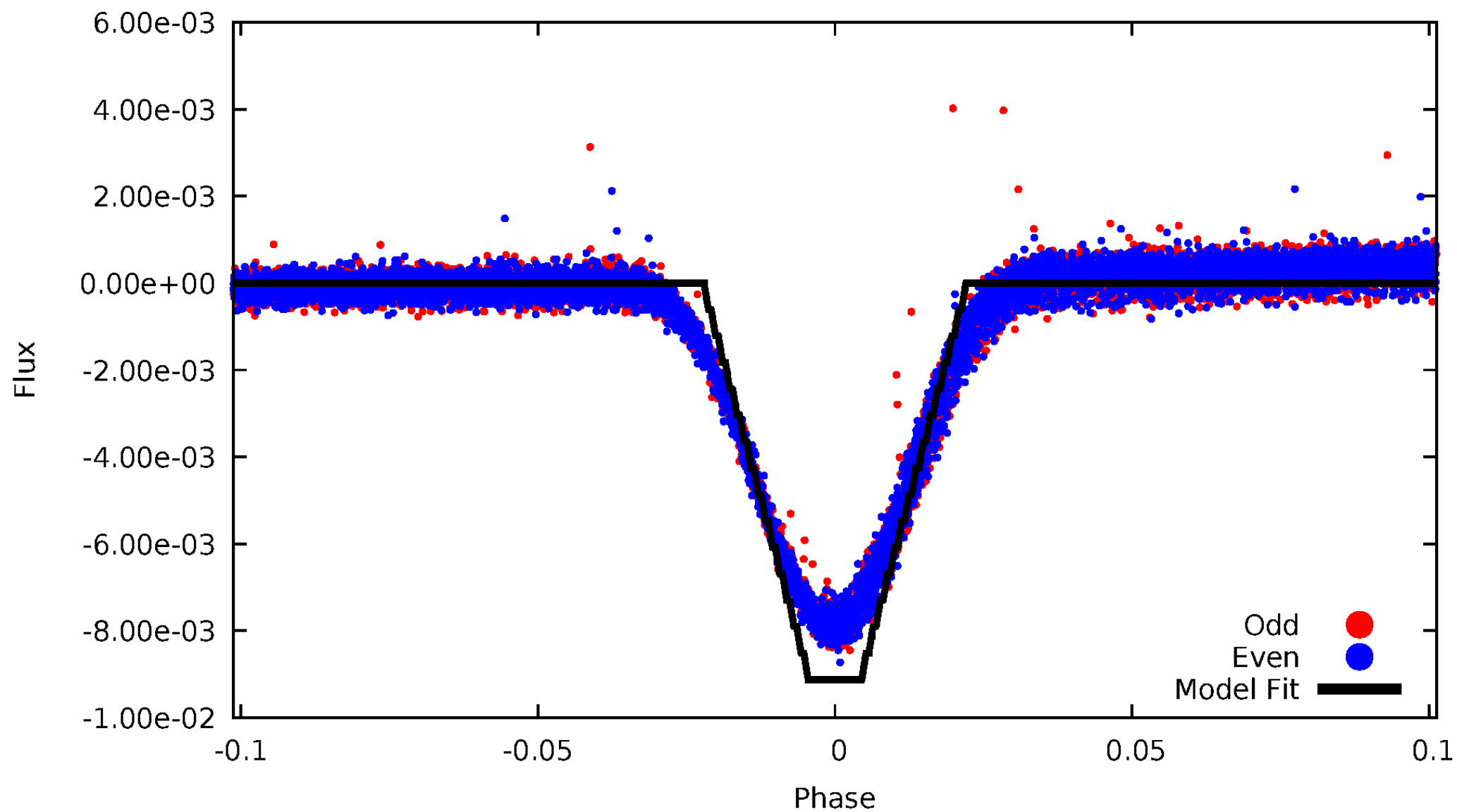
# DV Odd/Even

TCE 007886329-02



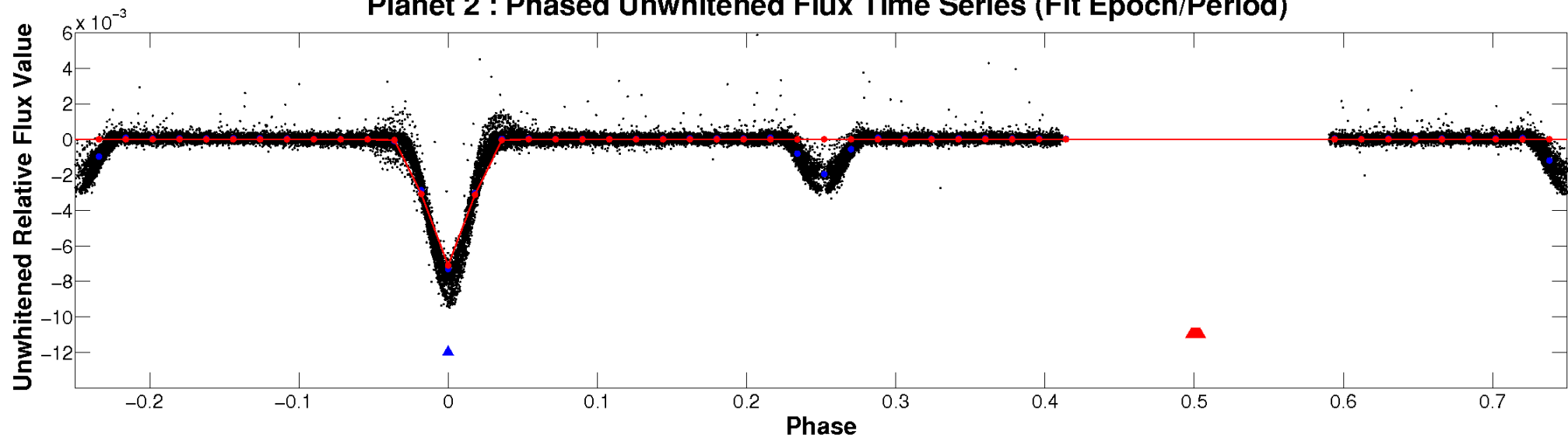
# ALT Odd/Even

TCE 007886329-02

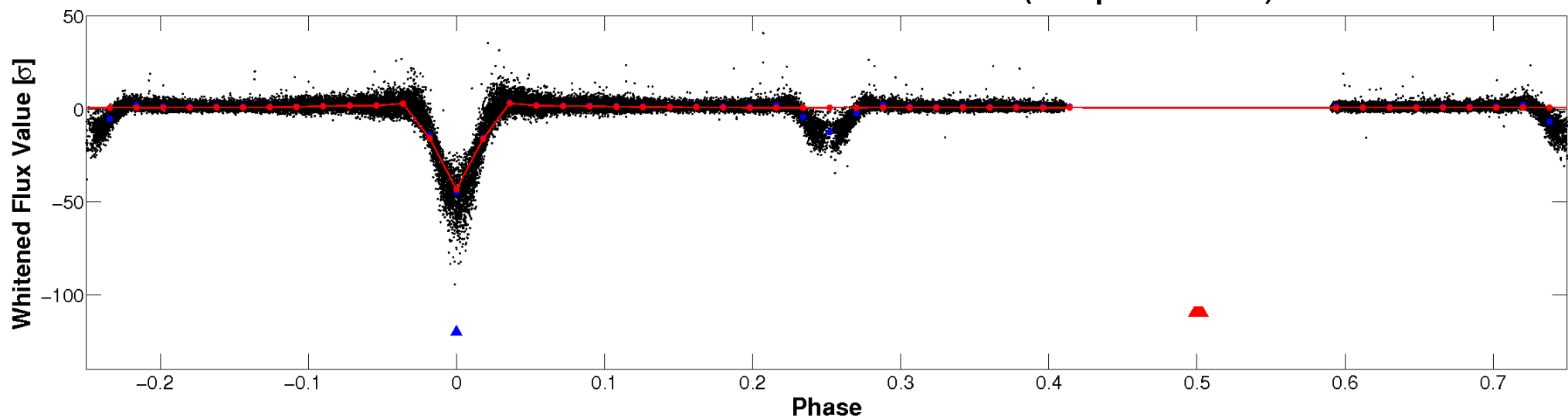


# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

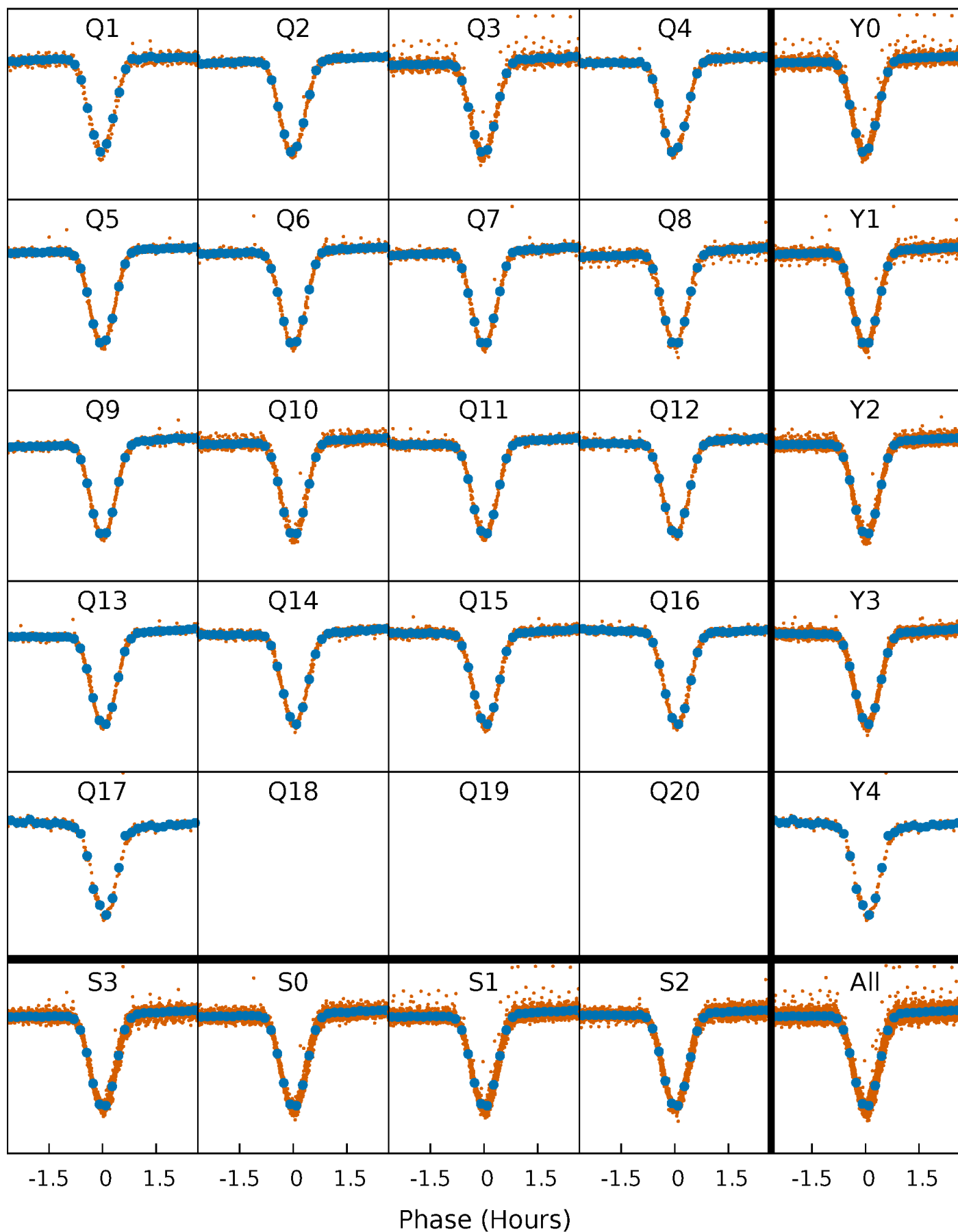


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



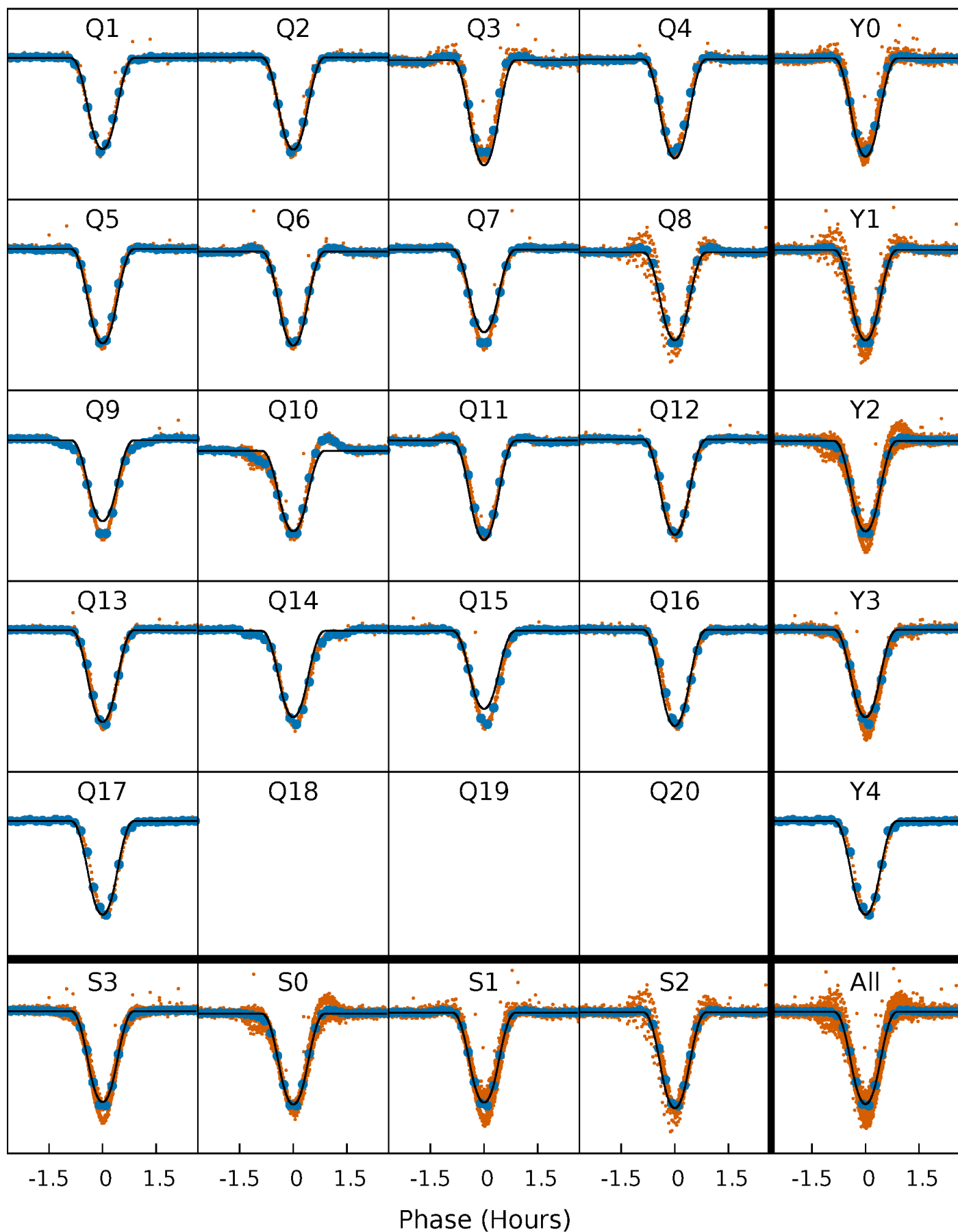
# PDC Quarter-Phased Transit Curves

TCE 007886329-02 P= 1.134985 Days  $T_0=131.993108$  (BKJD)



# DV Quarter-Phased Transit Curves

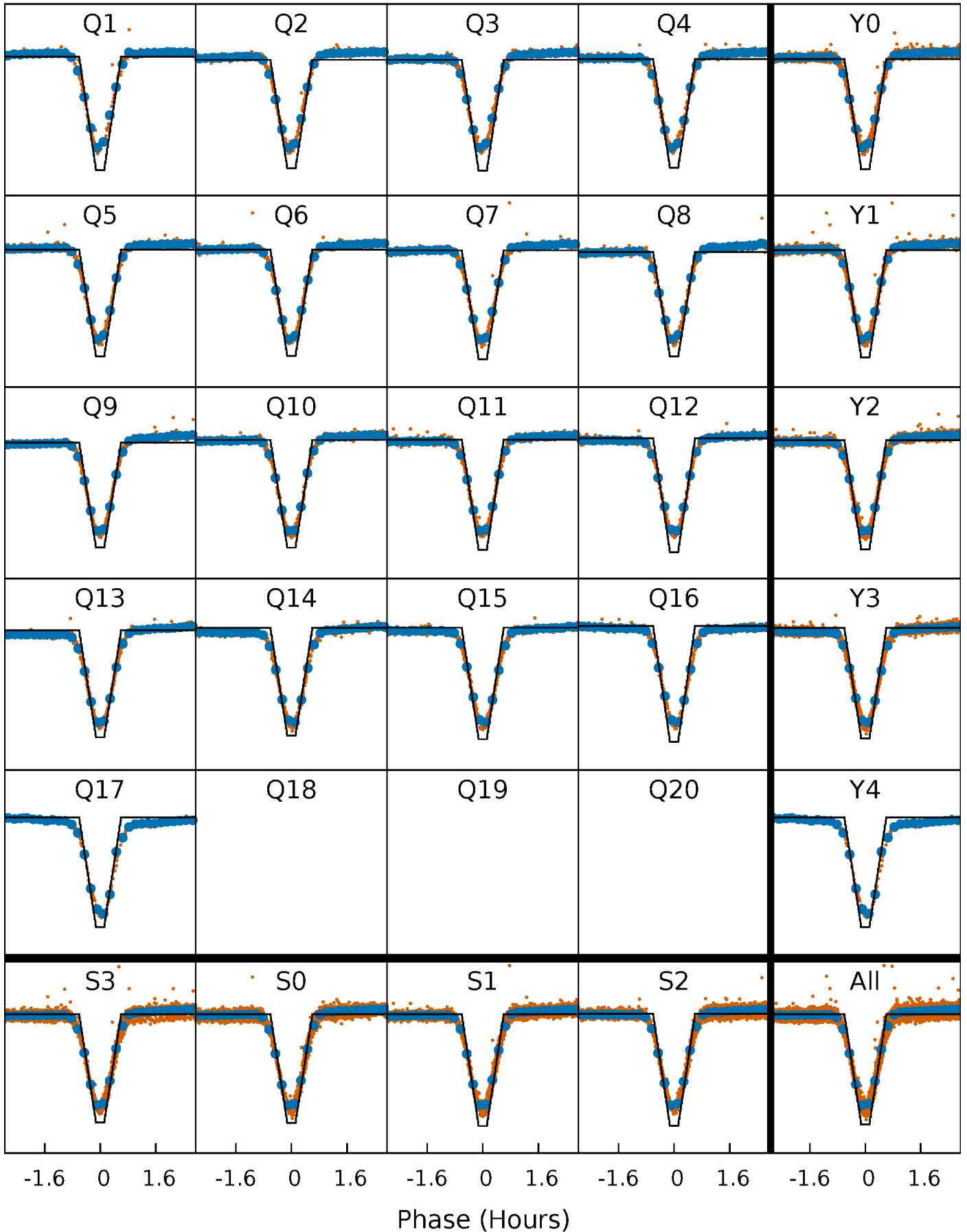
TCE 007886329-02   P= 1.134985 Days    $T_0=131.993108$  (BKJD)





## Alt. Detrend Quarter-Phased Transit Curves

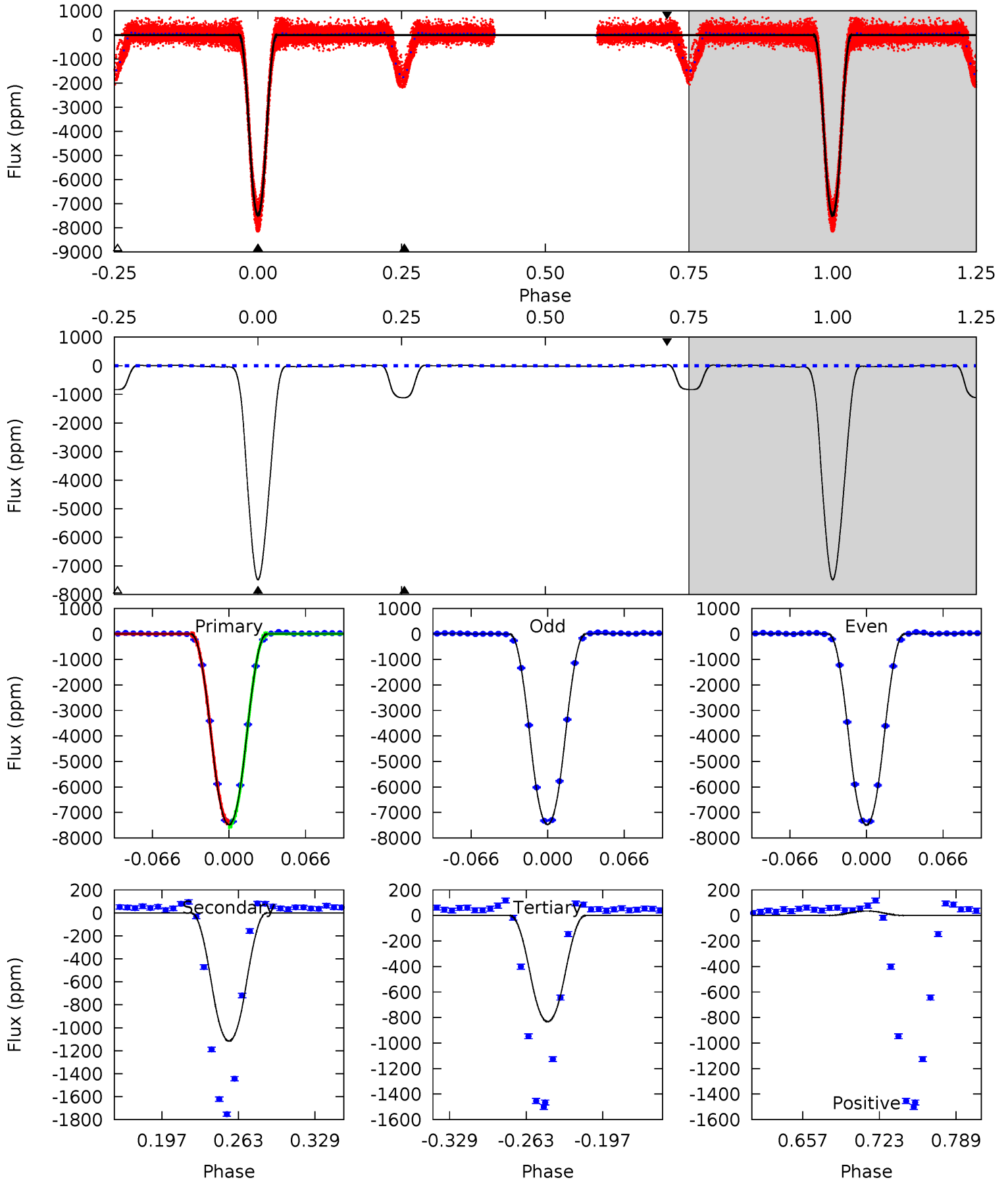
TCE 007886329-02   P= 1.134986 Days    $T_0=131.993341$  (BKJD)



# DV Model-Shift Uniqueness Test

007886329-02, P = 1.134985 Days, E = 130.858123 Days

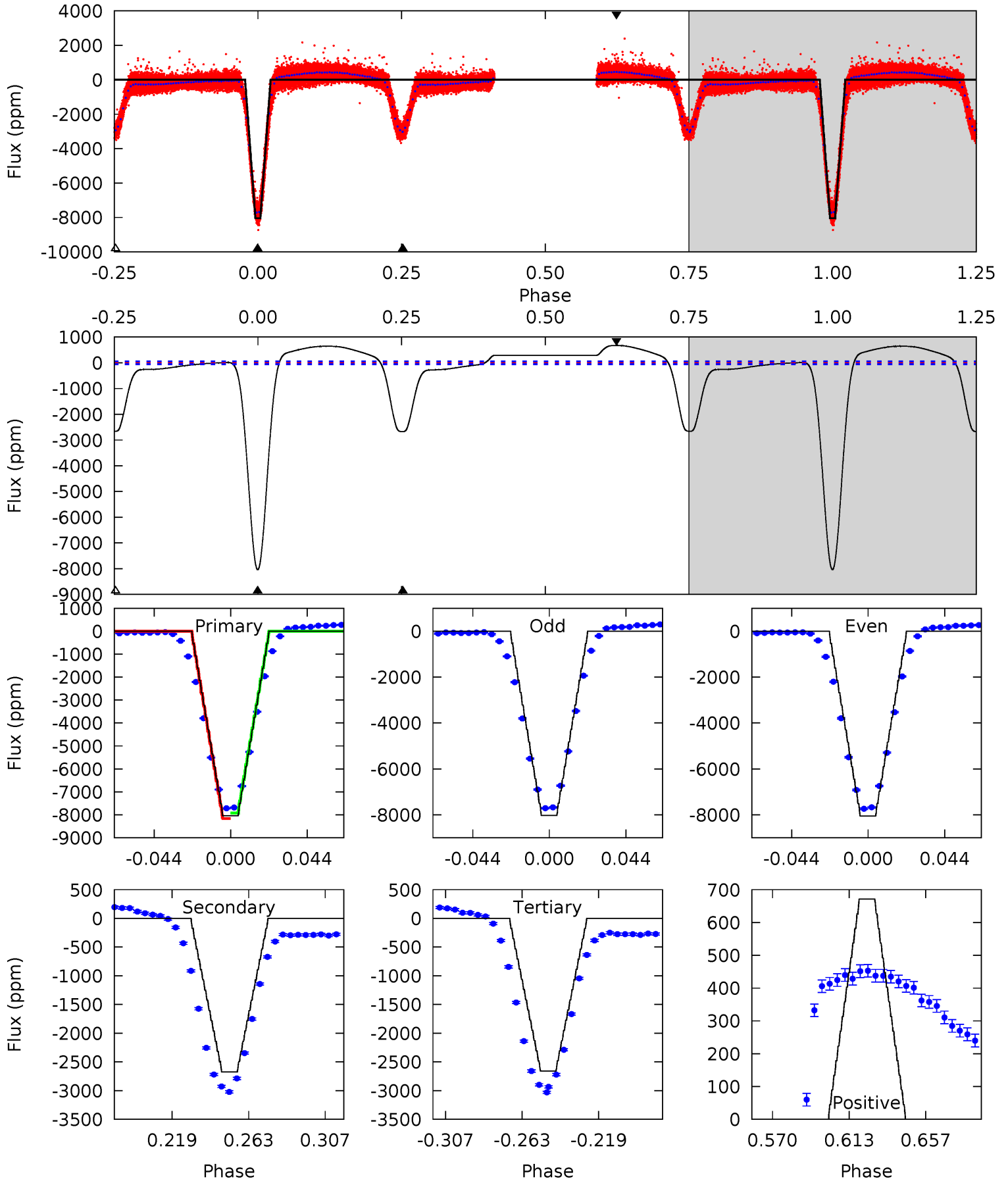
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1837	274.2	204.6	8.59	4.65	1.84	35.8	1632	1828	69.6	265.6	3.09	1.02	0.00	11.6



# Alt Model-Shift Uniqueness Test

007886329-02, P = 1.134986 Days, E = 130.858355 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
700.6	233.1	231.8	58.5	4.73	2.02	56.8	468.8	642.1	1.28	174.6	0.71	1.00	0.08	7.98



### Stellar Parameters For KIC 007886329

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6370^{+173}_{-192}$	$4.053^{+0.357}_{-0.153}$	$-0.600^{+0.300}_{-0.300}$	$1.548^{+0.382}_{-0.572}$	$0.986^{+0.144}_{-0.118}$	$0.374^{+1.000}_{-0.161}$
	+3%/-3%	+9%/-4%	+50%/-50%	+25%/-37%	+15%/-12%	+267%/-43%
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 007886329-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1116 \pm 4$	$15.79^{+2.39}_{-3.08}$	$3304^{+248}_{-332}$	$3851^{+107}_{-106}$	$1.122^{+0.594}_{-0.259}$
Alt.	$-2675 \pm 11$	$15.91^{+2.53}_{-3.36}$	$3302^{+273}_{-360}$	$4695^{+112}_{-122}$	$2.679^{+1.449}_{-0.676}$

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

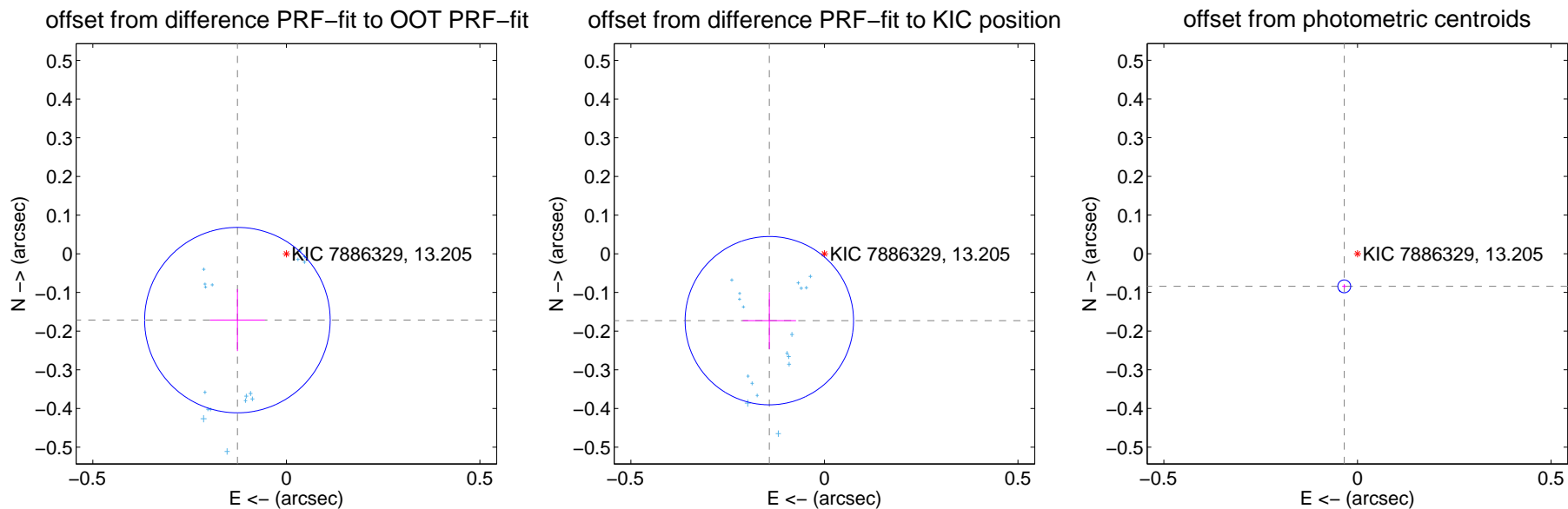
## DV Centroid Data

Supplemental centroid analysis for 007886329-02. Kepler magnitude: 13.21. Transit SNR 1348.11

There are 17 quarters with good PRF difference image offsets

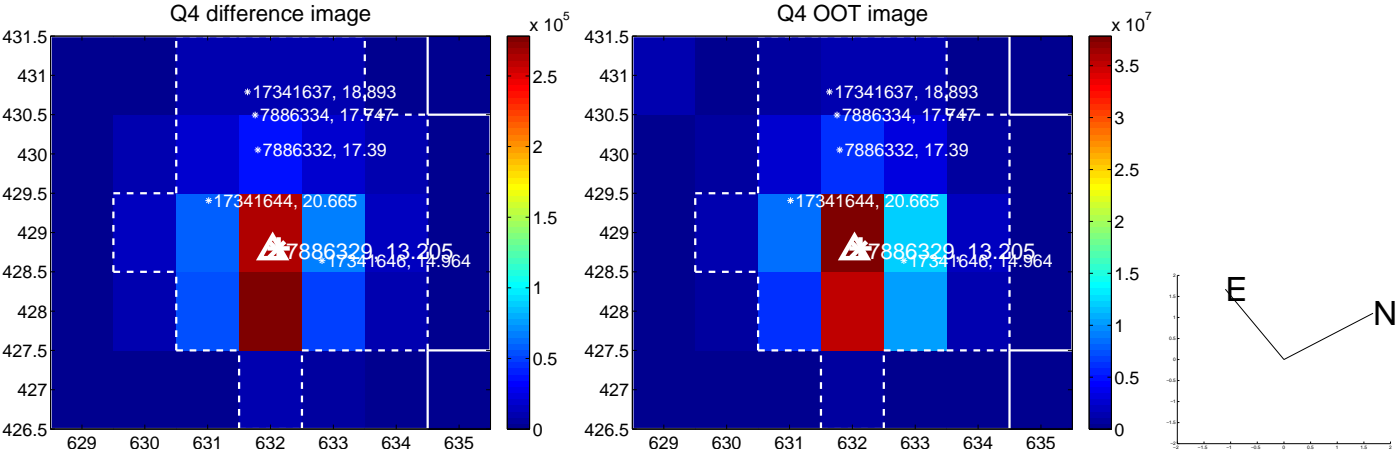
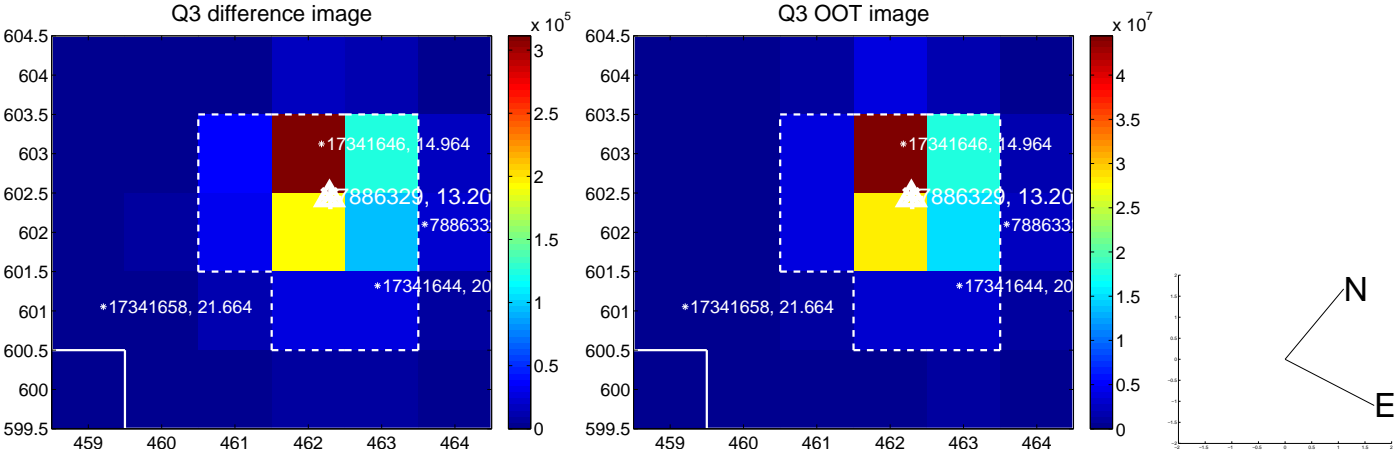
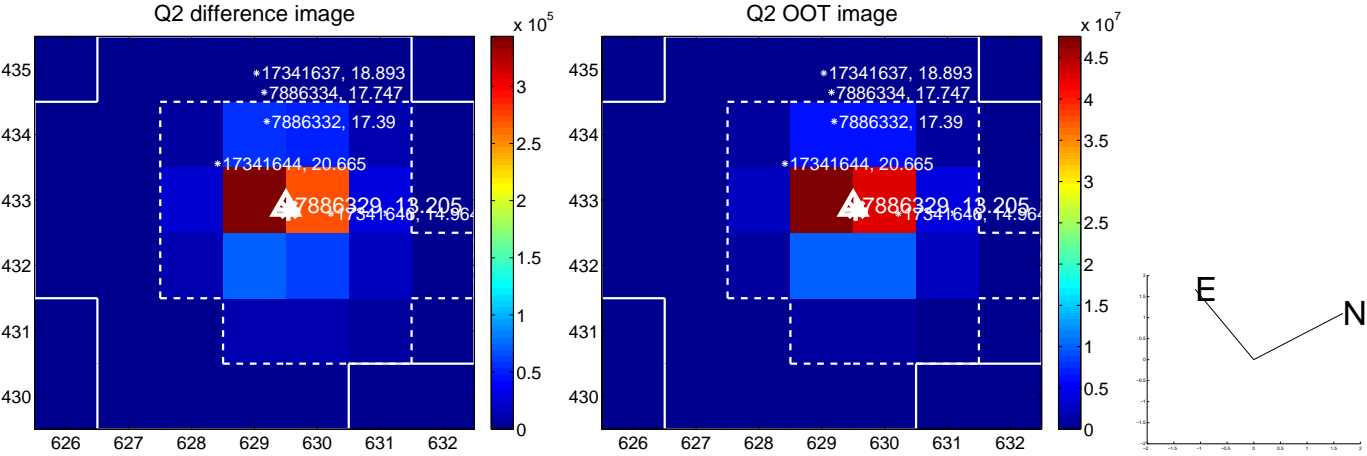
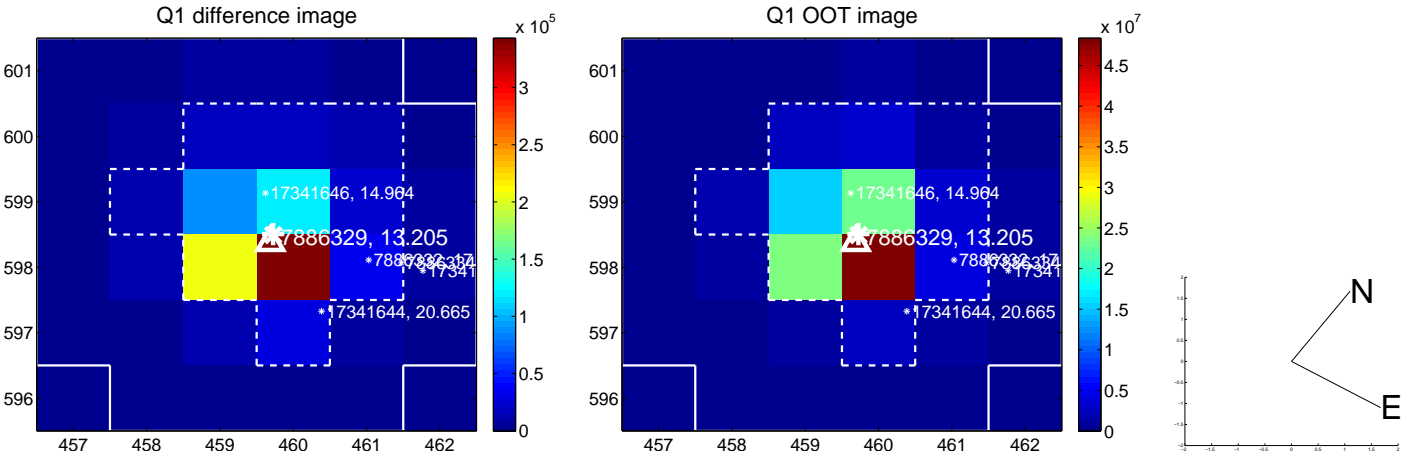
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.213 \pm 0.080$	2.67	$0.127 \pm 0.071$	$-0.172 \pm 0.080$
PRF-fit source offset from KIC position	$0.224 \pm 0.073$	3.09	$0.142 \pm 0.069$	$-0.173 \pm 0.073$
photometric centroid source offset	$0.09 \pm 0.01$	16.47	$0.03 \pm 0.01$	$-0.08 \pm 0.01$

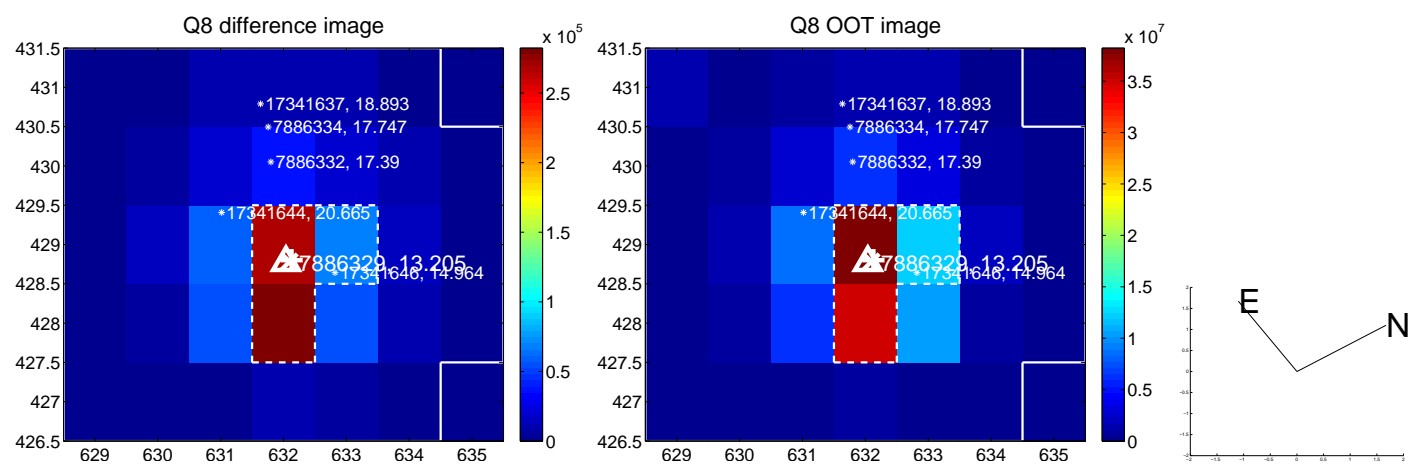
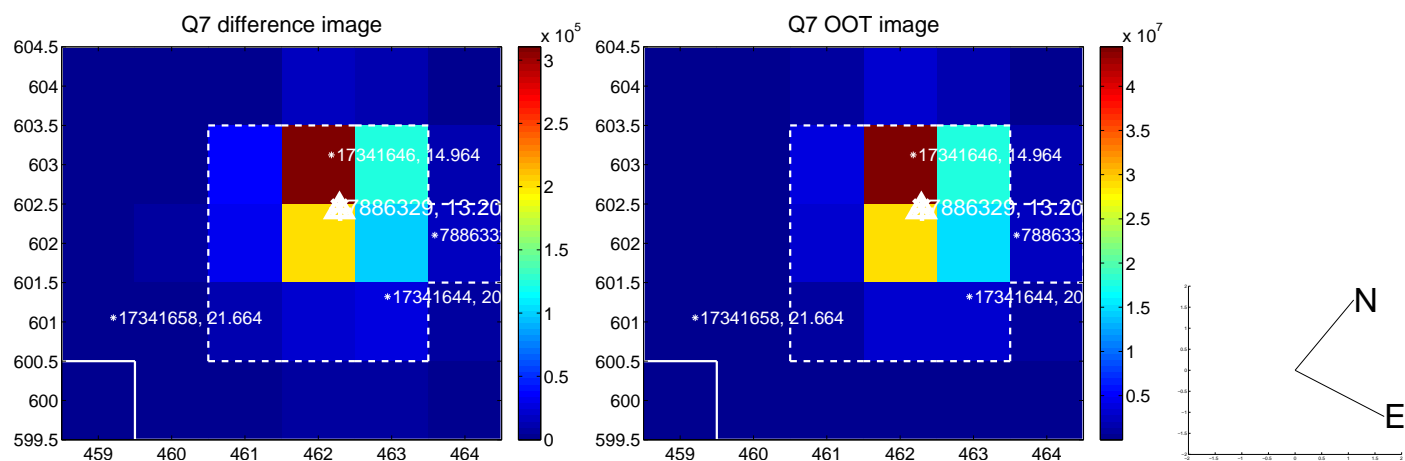
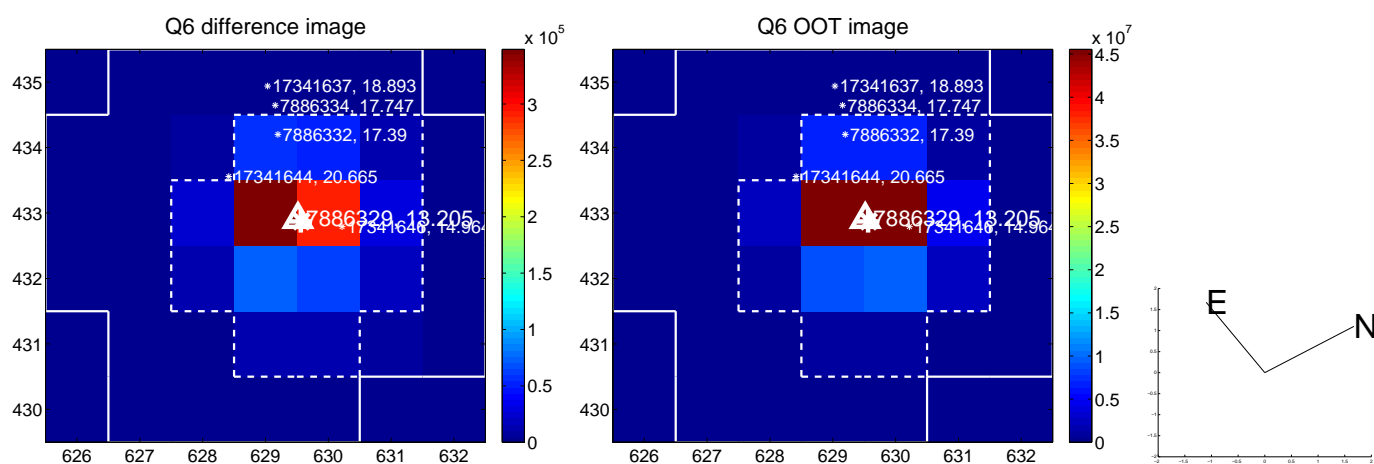
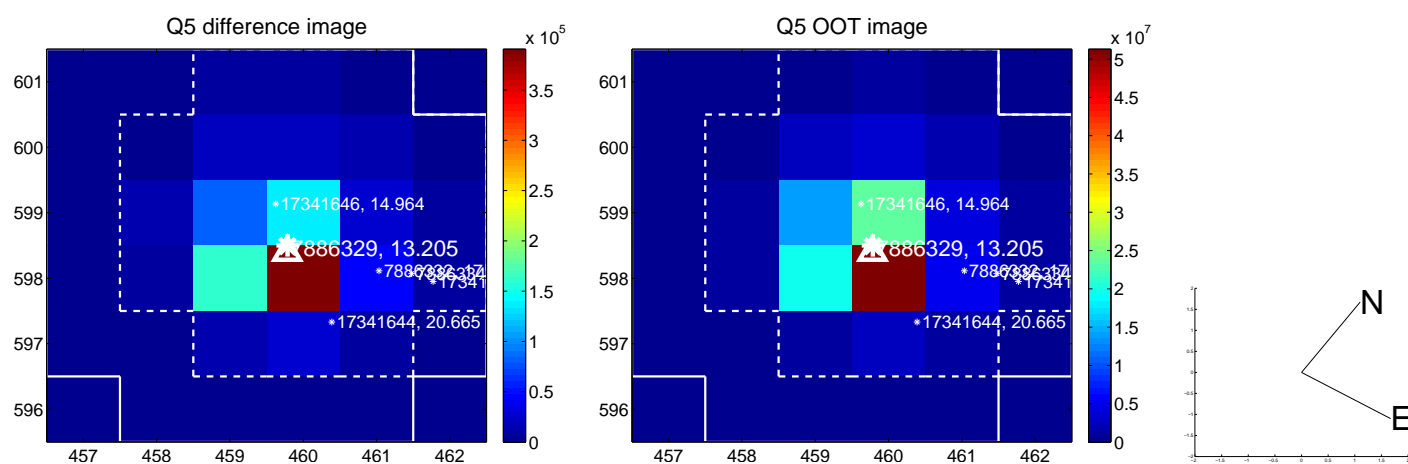


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

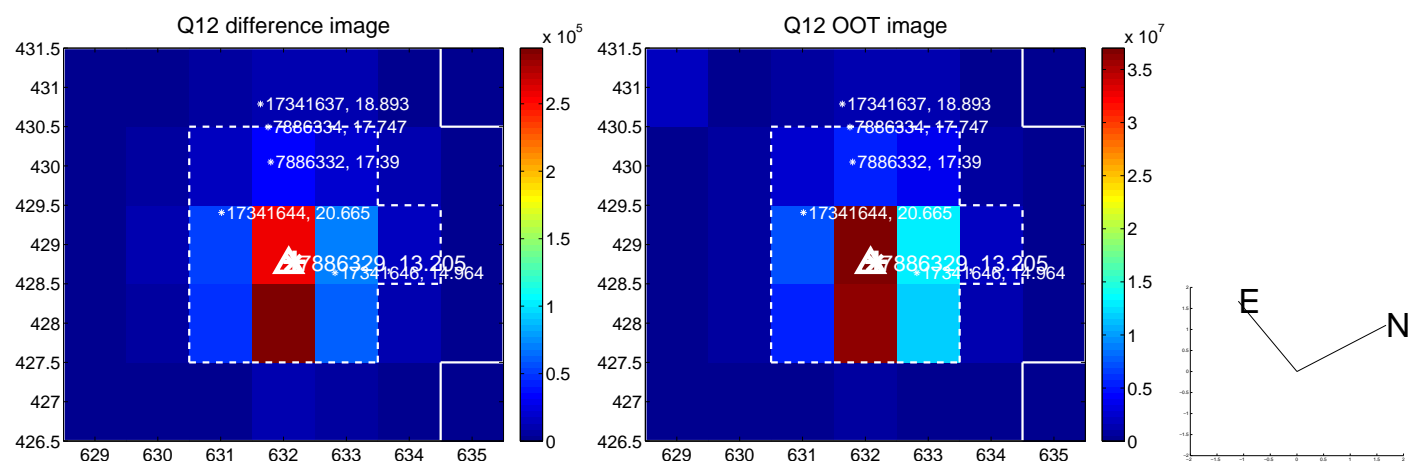
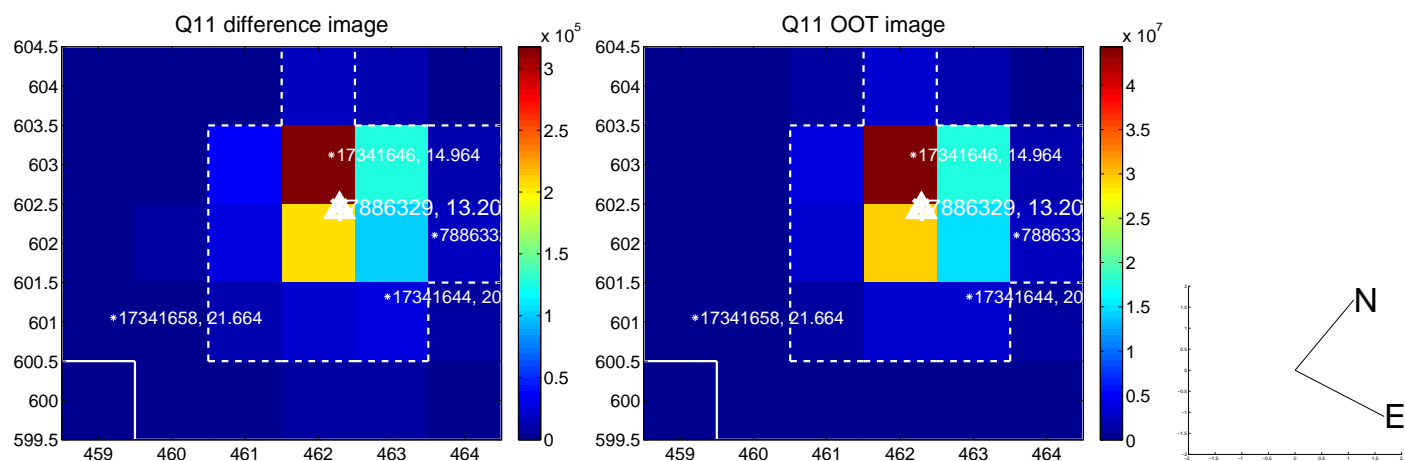
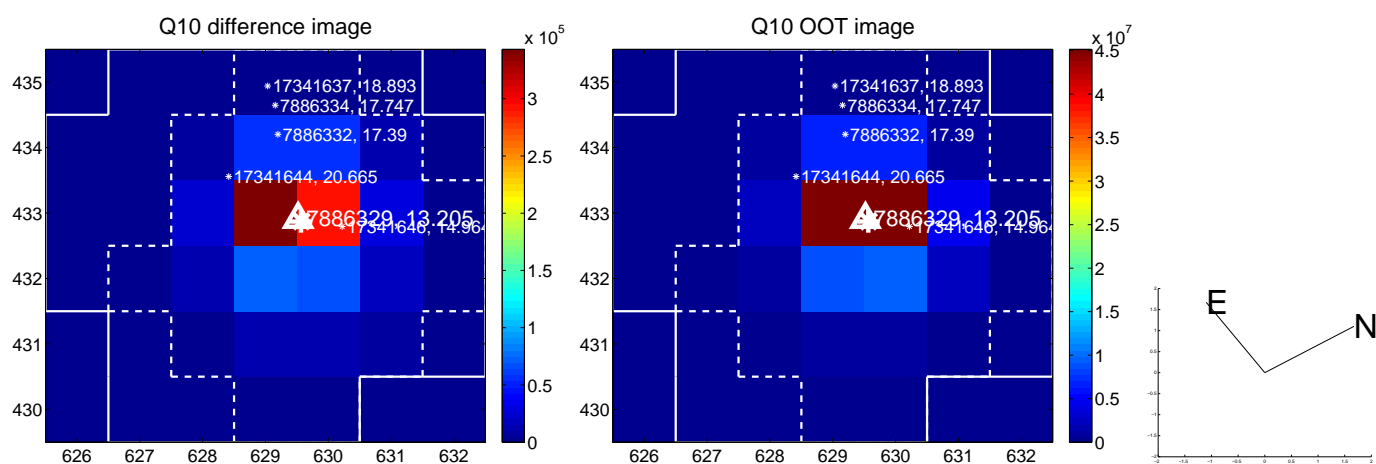
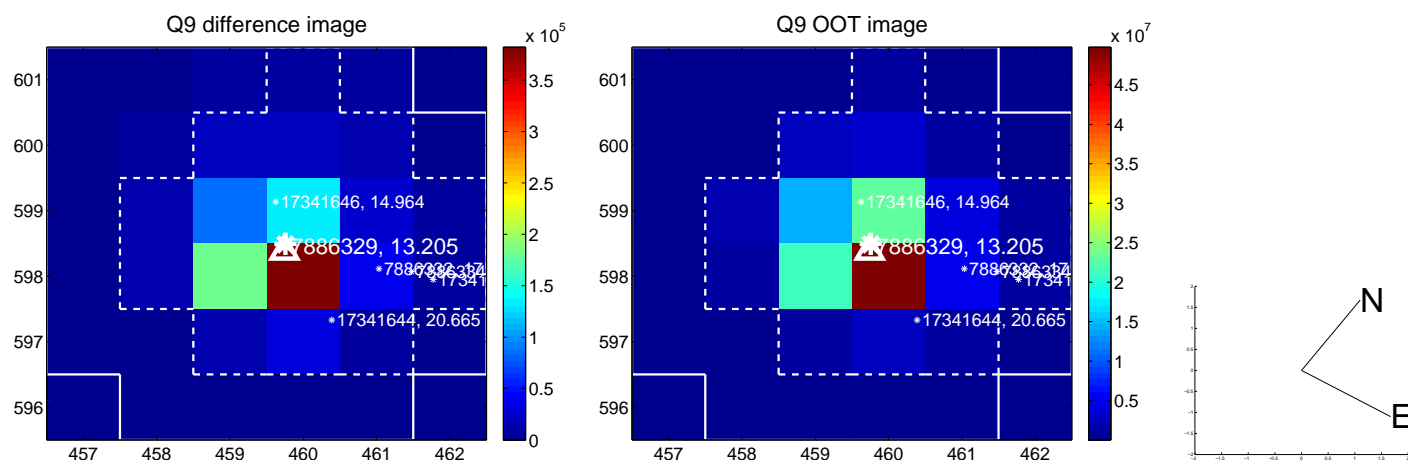


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

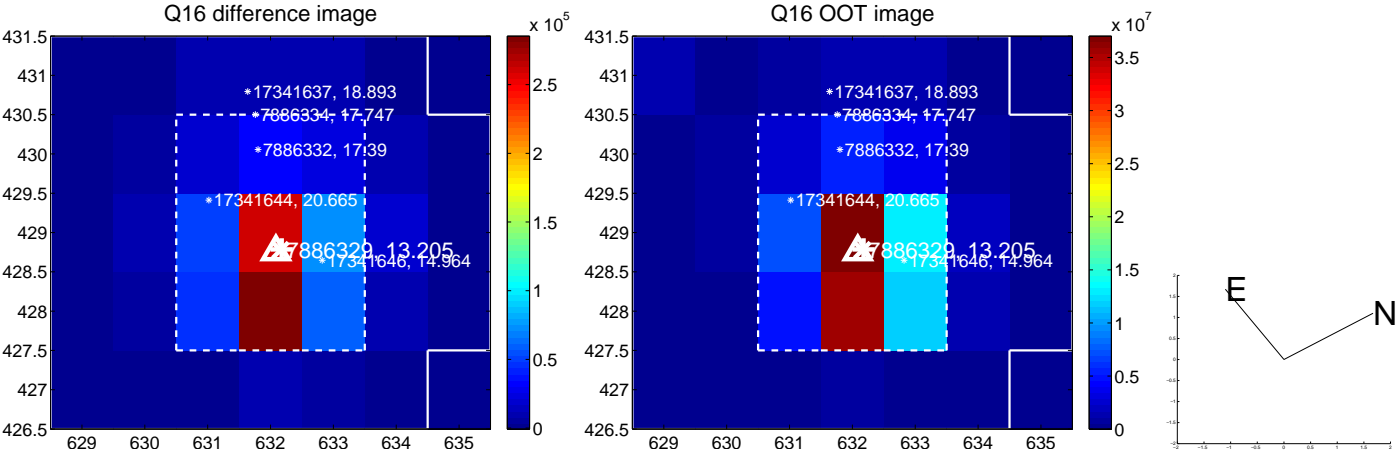
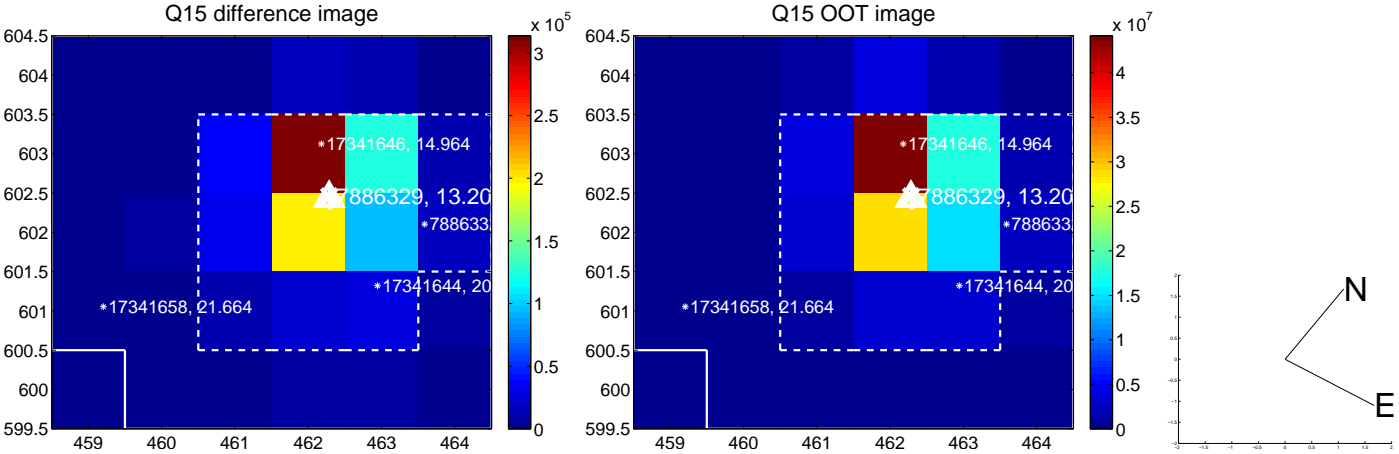
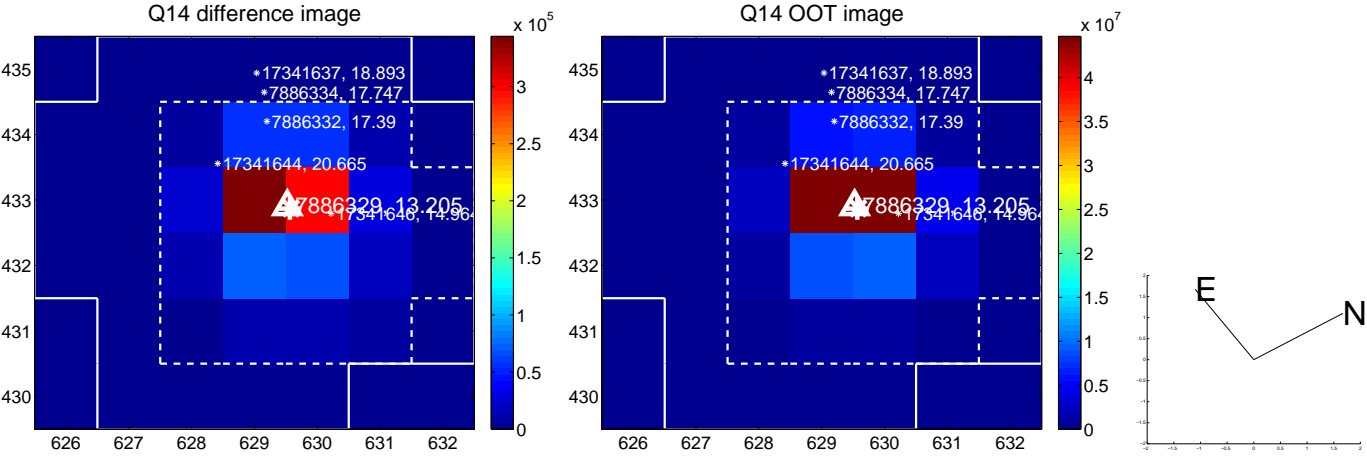
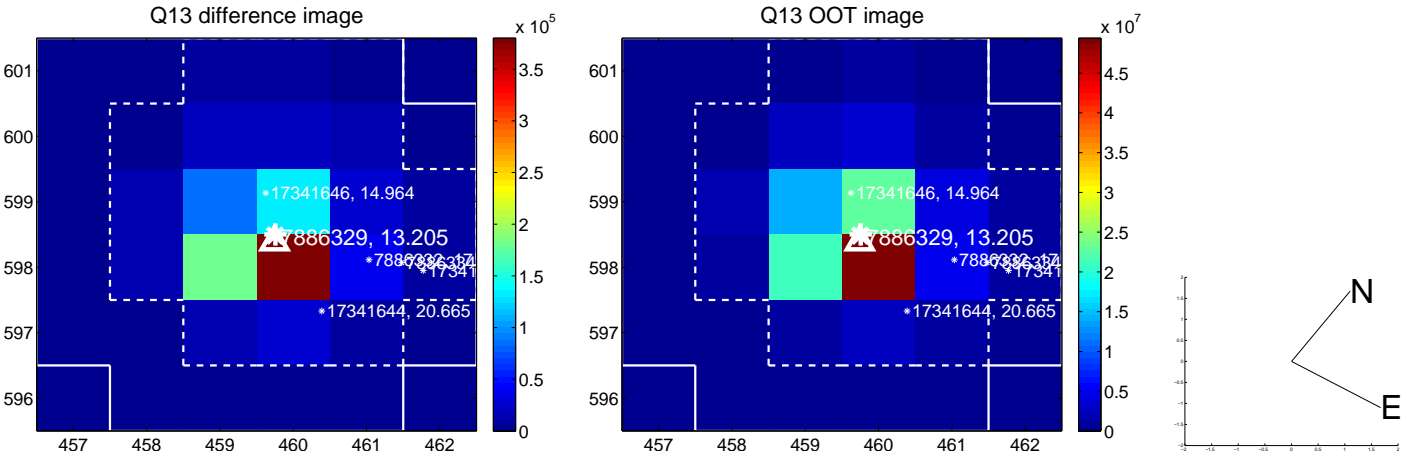




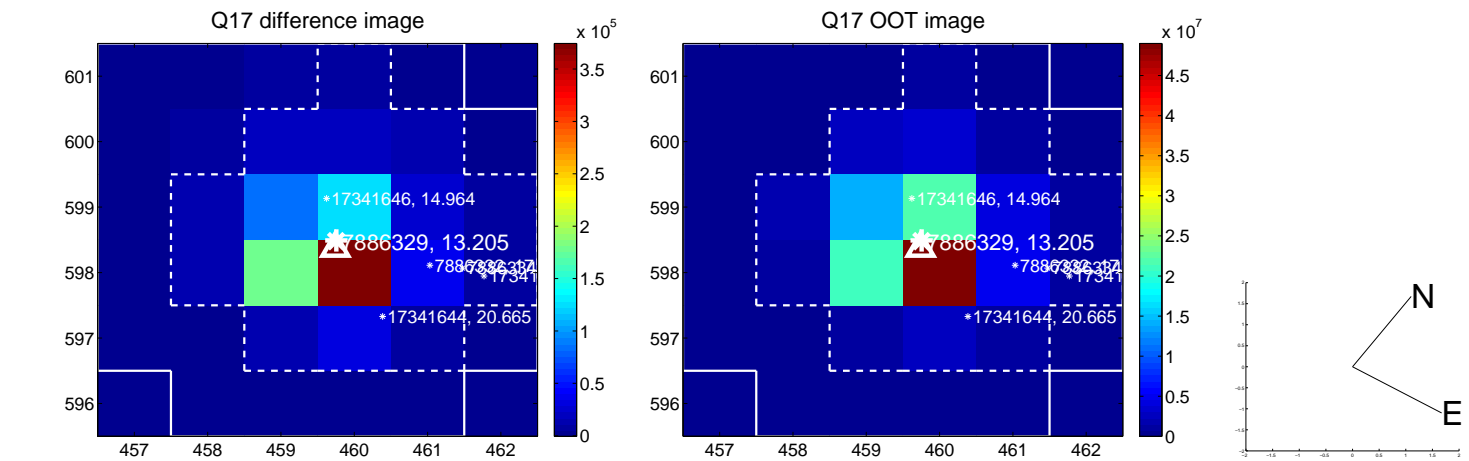
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



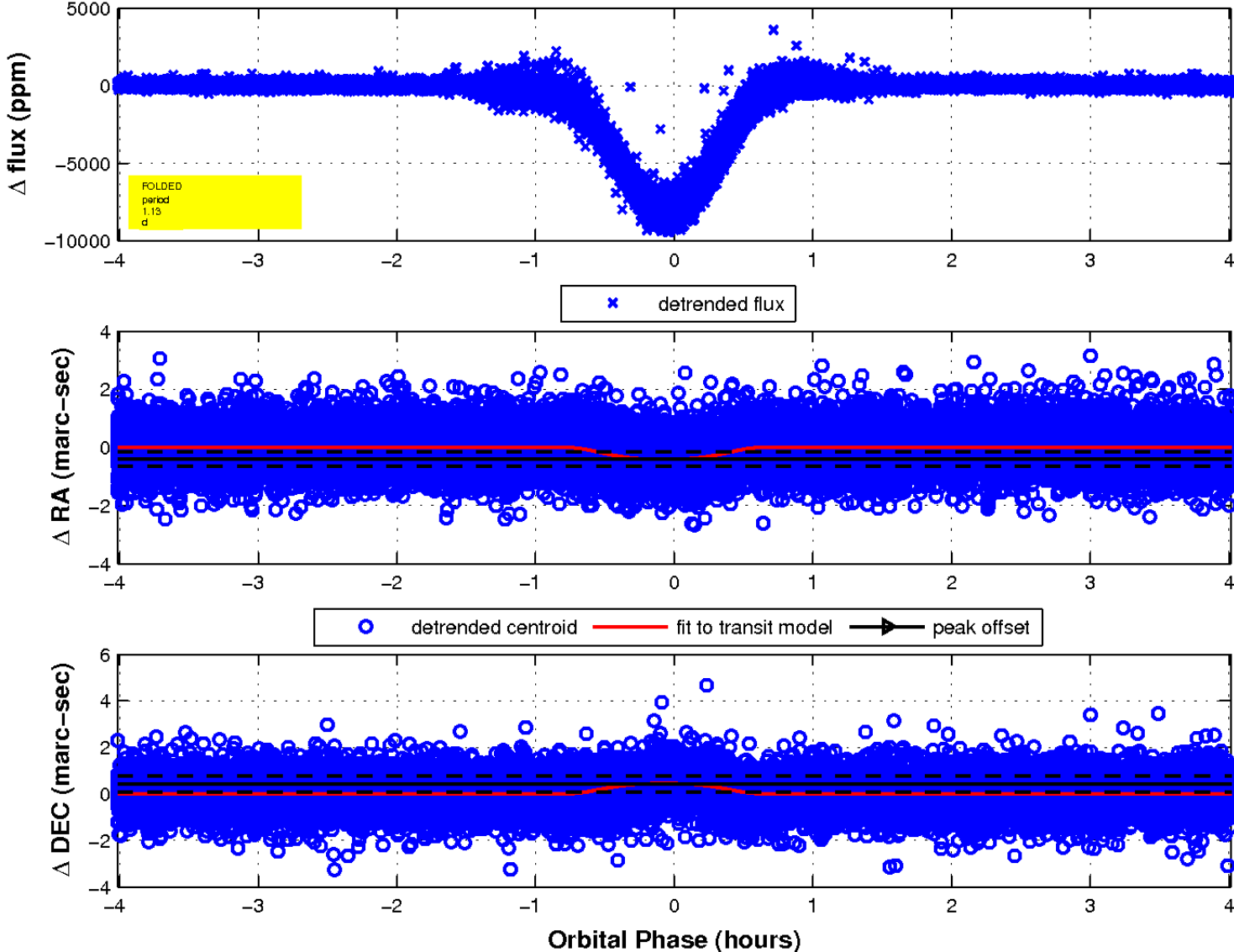
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



# UKIRT Image

Declination

