

# KIC 011287726

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011287726-01	OBS	7433.01	4.737712	132.325597	102549.7	6.234	4536.0	4219.5	0.72	5335	26.82	143.60
011287726-02	OBS	No	2.368830	132.328336	16496.8	4.500	1778.2	-1.0	0.72	5335	9.09	361.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011287726-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011287726-02	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.

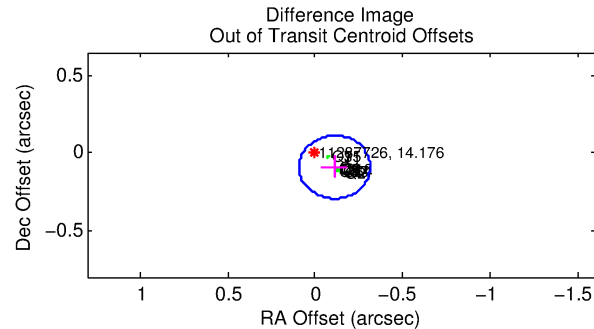
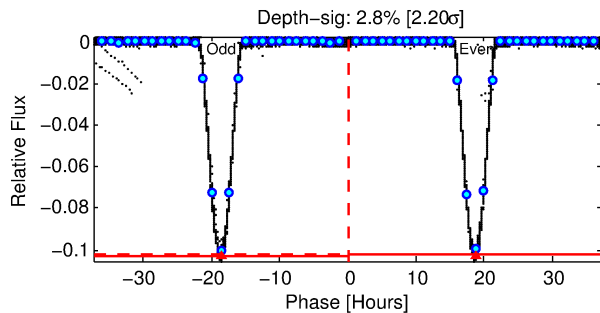
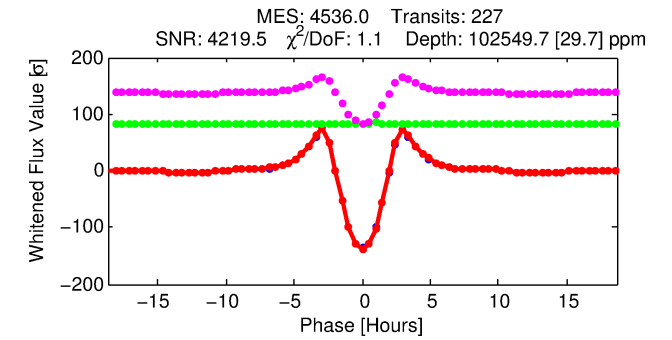
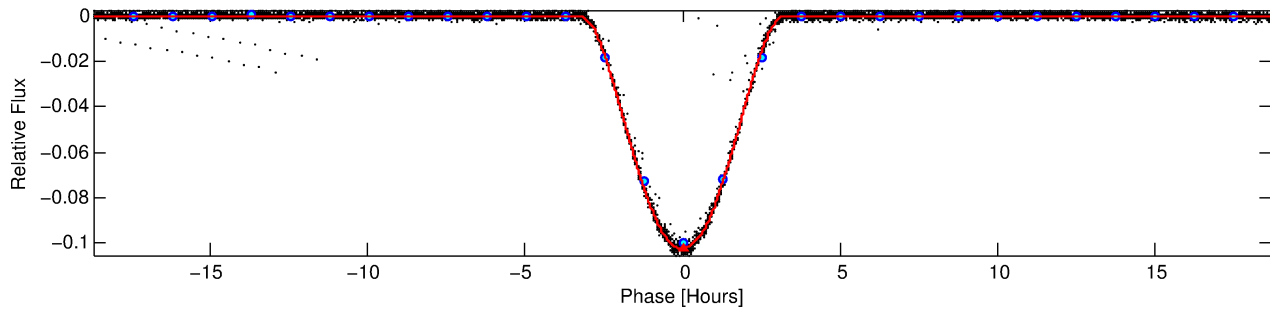
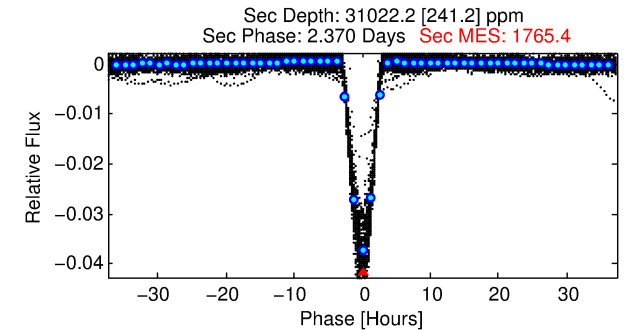
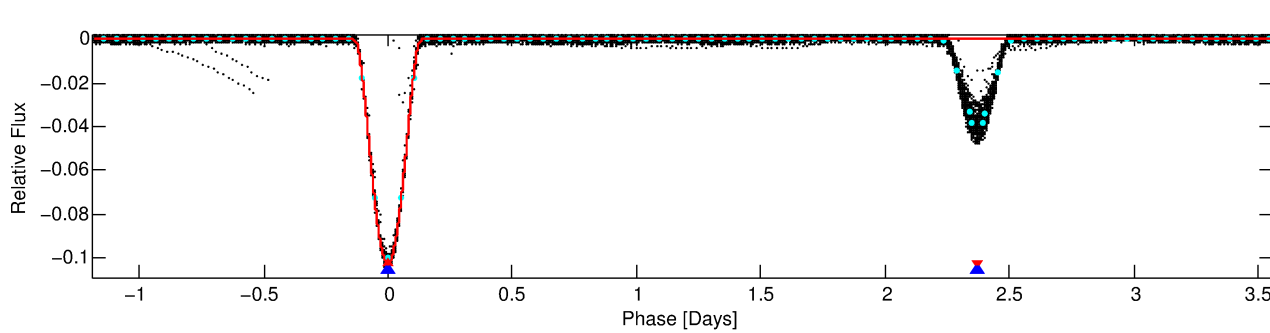
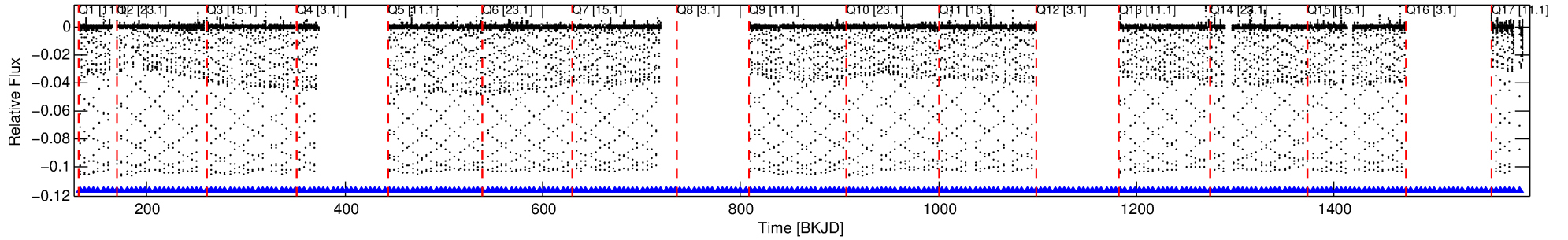
## Ephemeris Match Information For 011287726-01

No Significant Match Found

# DV One-Page Summary

KIC: 11287726 Candidate: 1 of 2 Period: 4.738 d  
KOI: K07433.01 Corr: 0.989

Kp: 14.18 R\*: 0.72 Rs Teff: 5335.0 K Logg: 4.62 Fe/H: -0.360



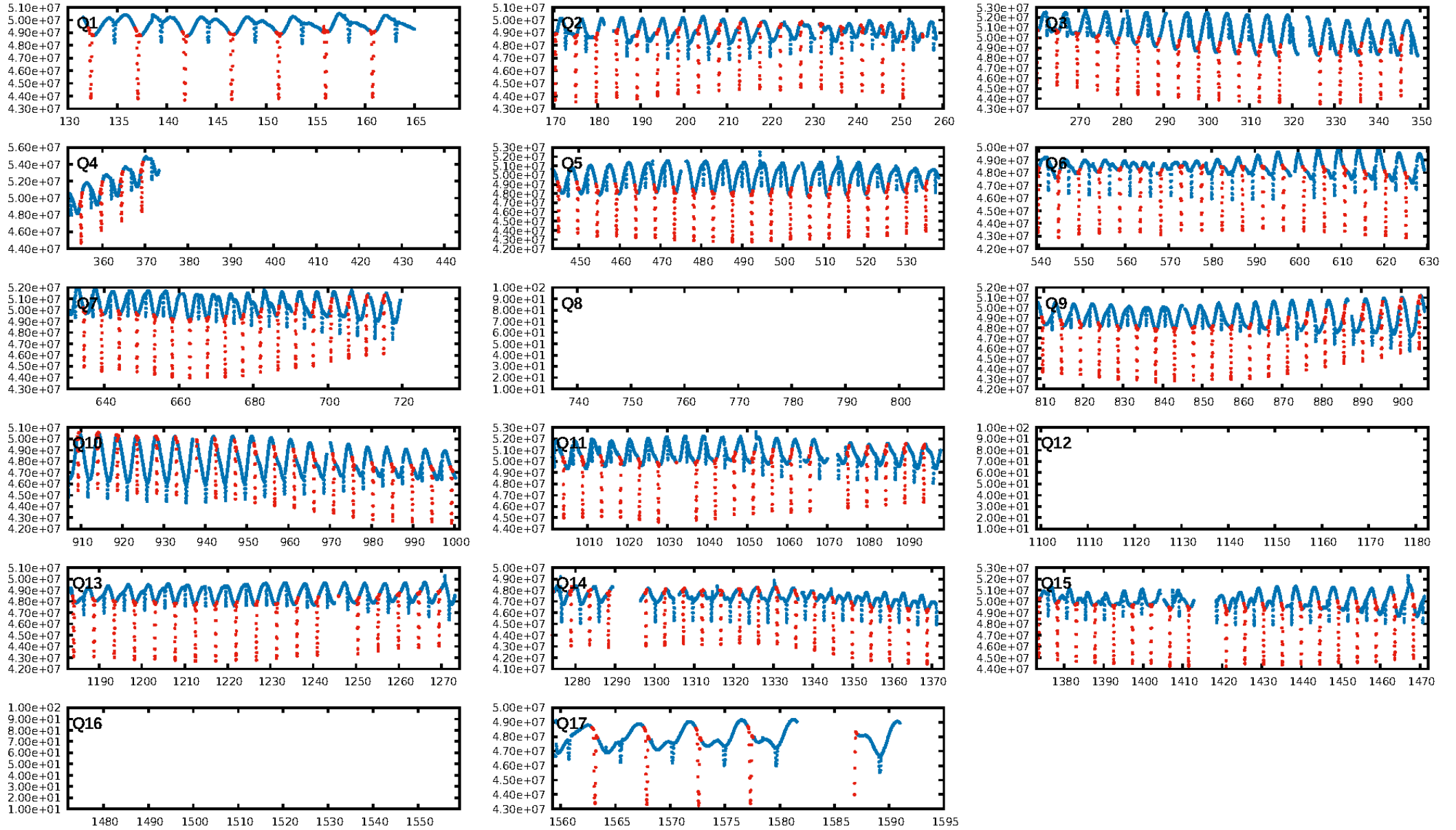
## DV Fit Results:

Period = 4.73771 [0.00000] d  
Epoch = 132.3256 [0.0000] BKJD  
Rp/R\* = 0.3419 [0.0004]  
a/R\* = 6.54 [0.00]  
b = 0.75 [0.00]  
Seff = 143.60 [31.58]  
Teq = 883 [49] K  
Rp = 26.83 [4.40] Re  
a = 0.0511 [0.0068] AU  
Ag = 61.97 [11.46] [5.32σ]  
Teffp = 3829 [114] K [23.71σ]

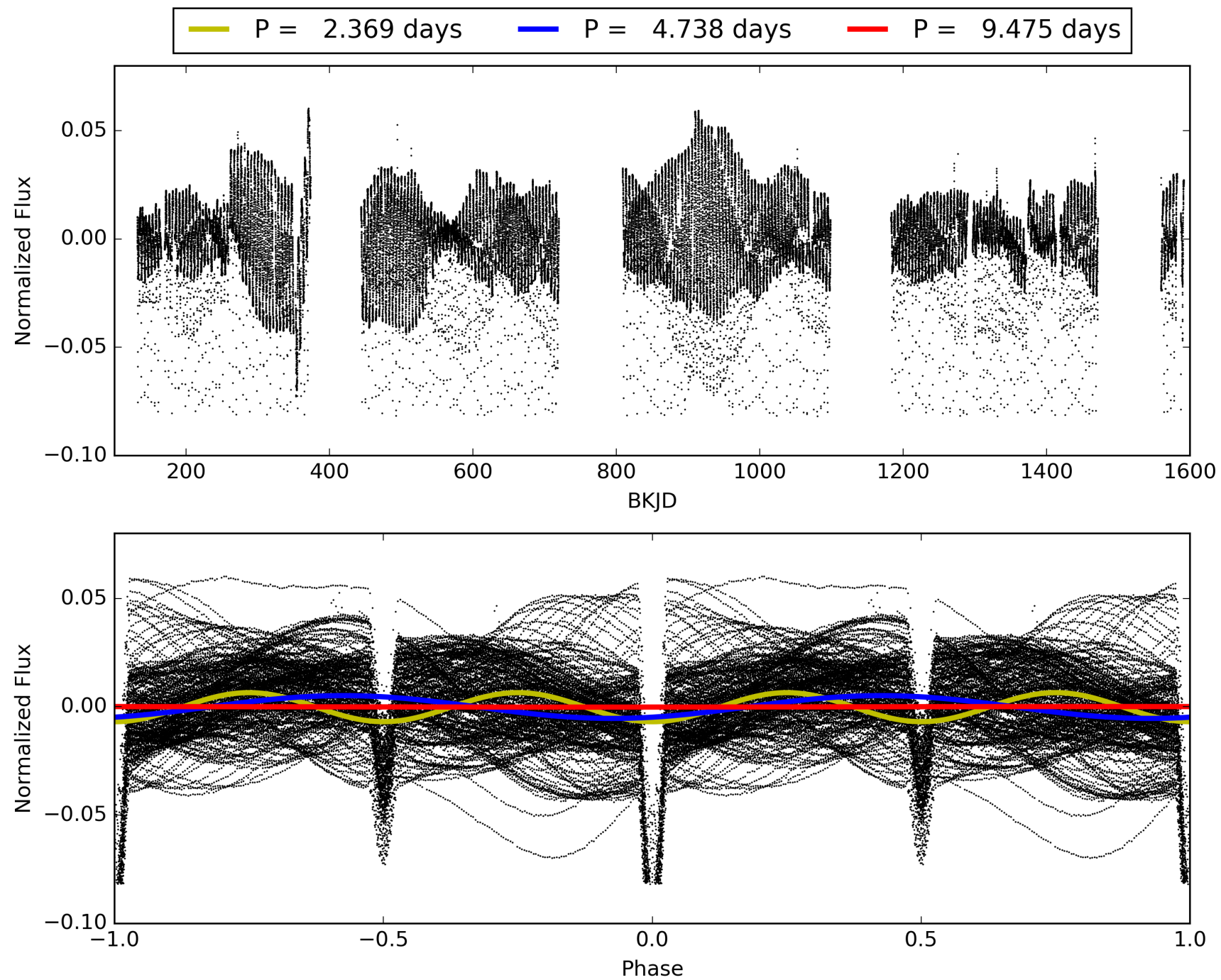
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.39σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [211/211]  
GhostDiagnostic-chr: 1.683  
Centroid-sig: 0.0%  
Centroid-so: 0.080 arcsec [43.82σ]  
OotOffset-rm: 0.142 arcsec [2.09σ]  
KicOffset-rm: 0.078 arcsec [1.15σ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 0.00 [0/14]

# TCE 011287726-01, PDC Light Curves

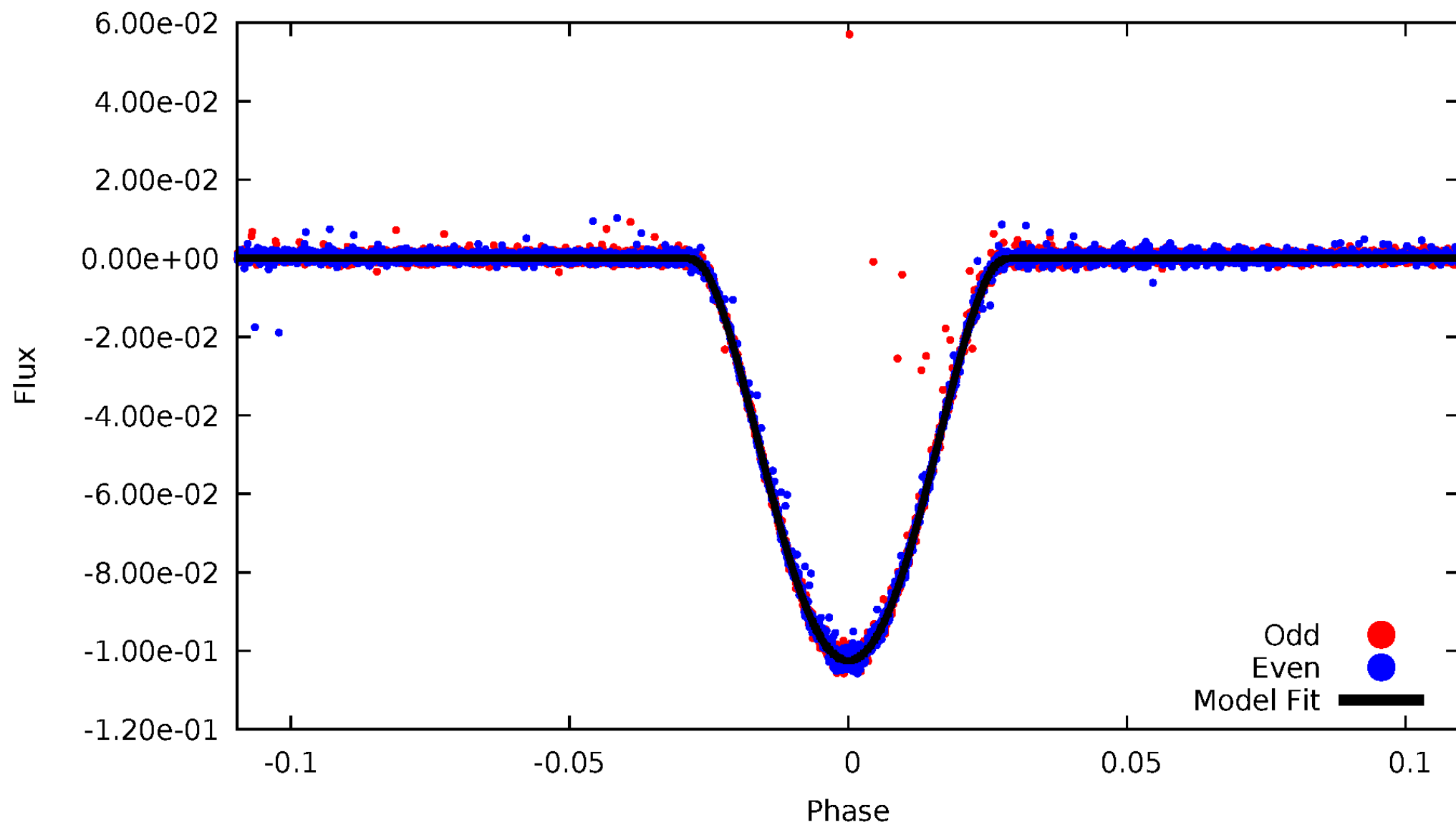


TCE 011287726-01



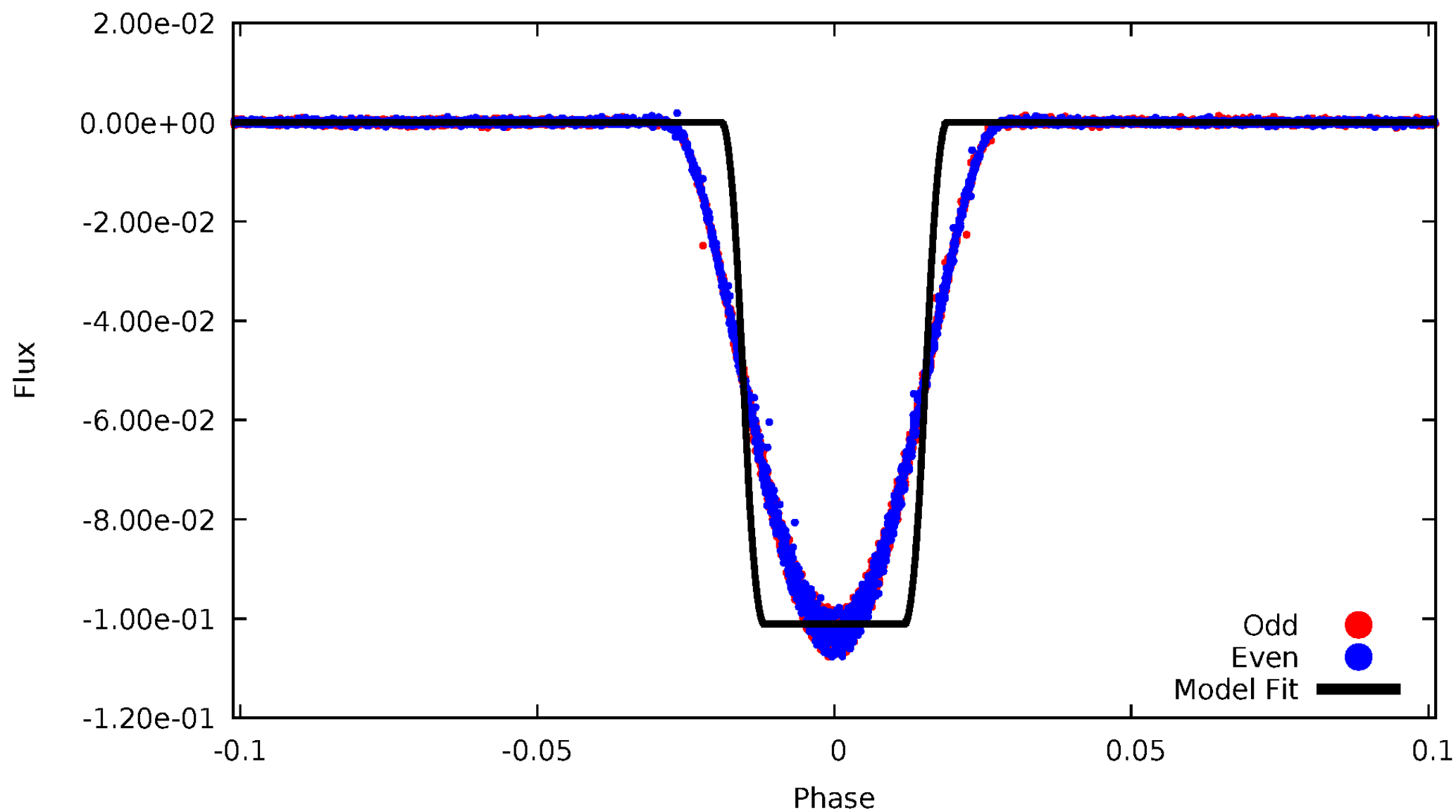
# DV Odd/Even

TCE 011287726-01



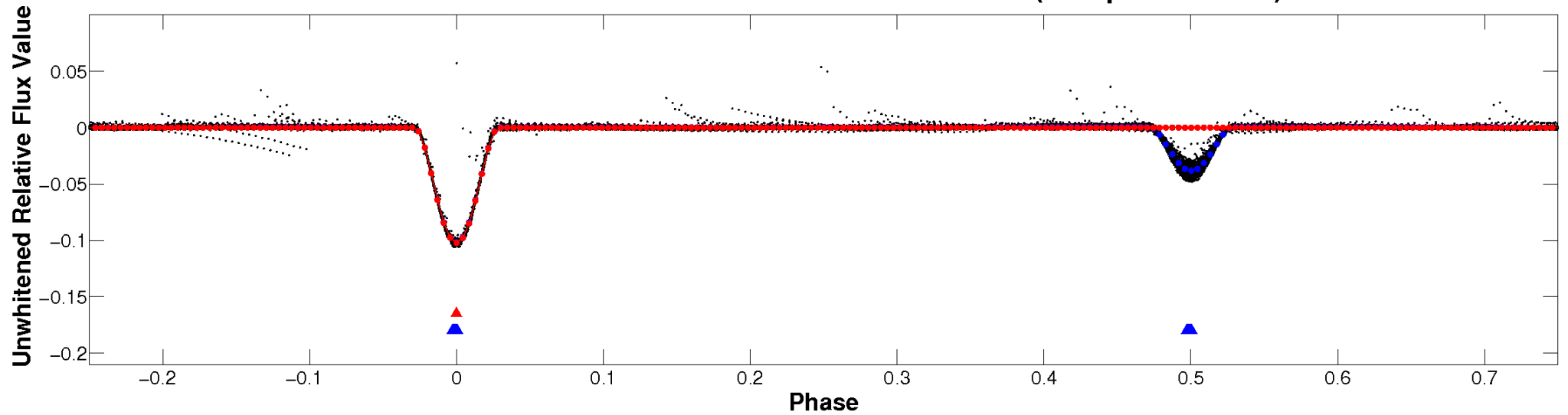
# ALT Odd/Even

TCE 011287726-01

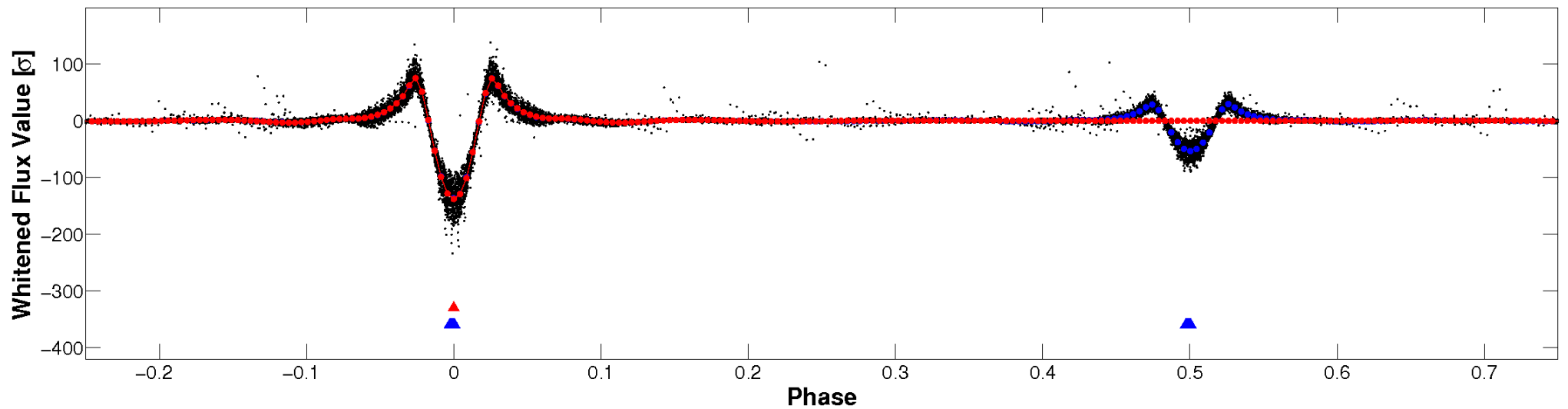


# Non-Whitened Vs. Whitened Light Curve

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

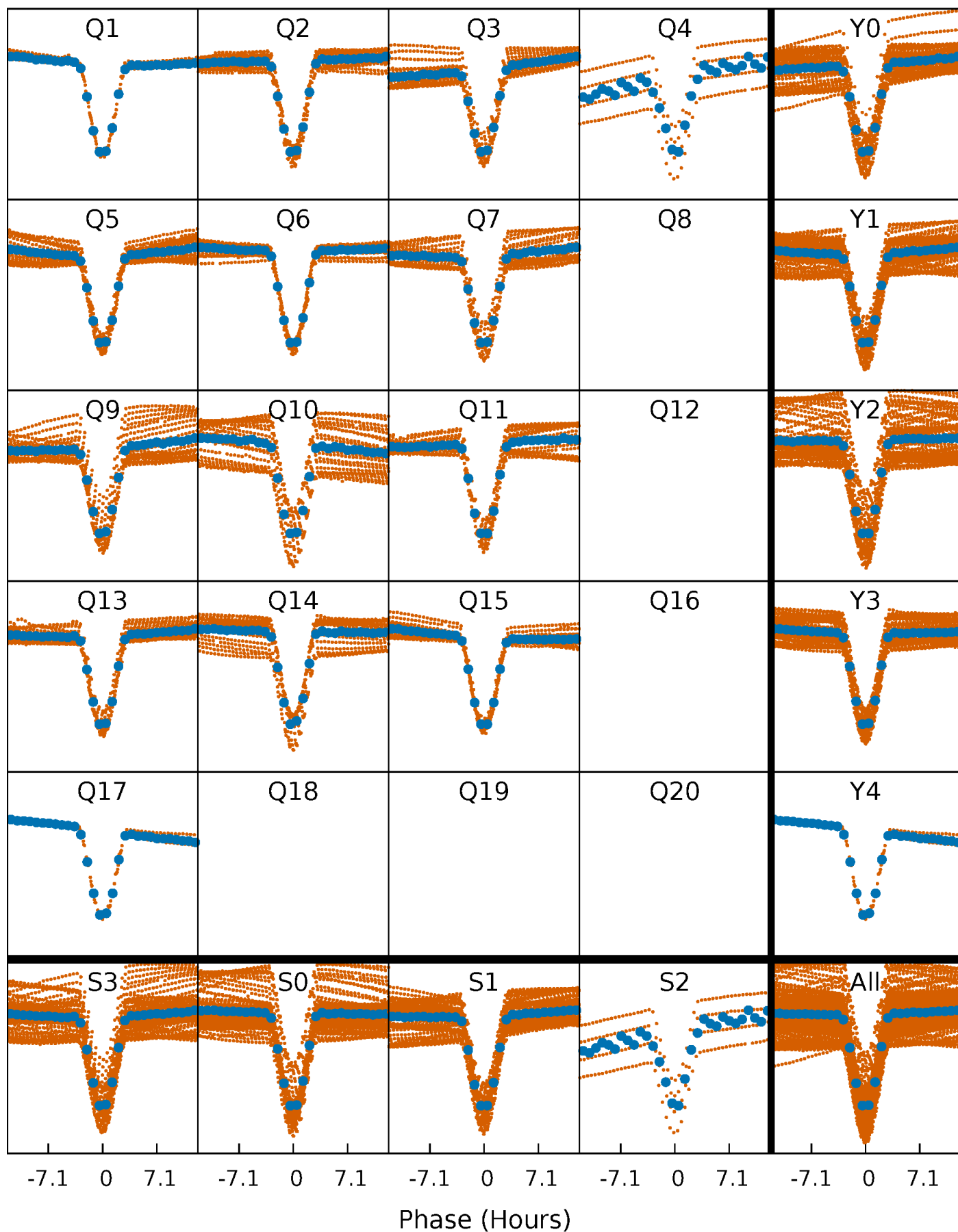


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

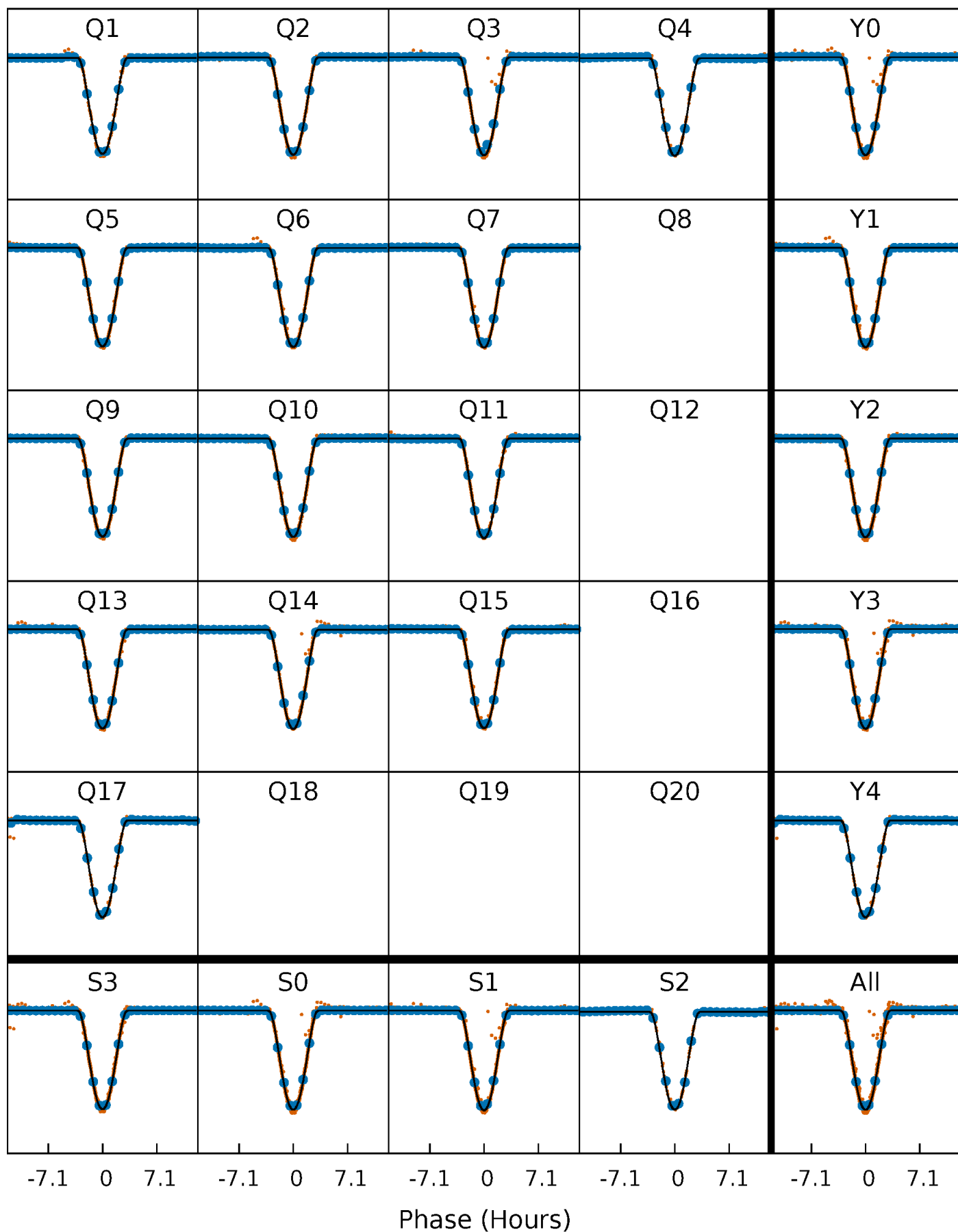
TCE 011287726-01   P= 4.737712 Days    $T_0=132.325597$  (BKJD)





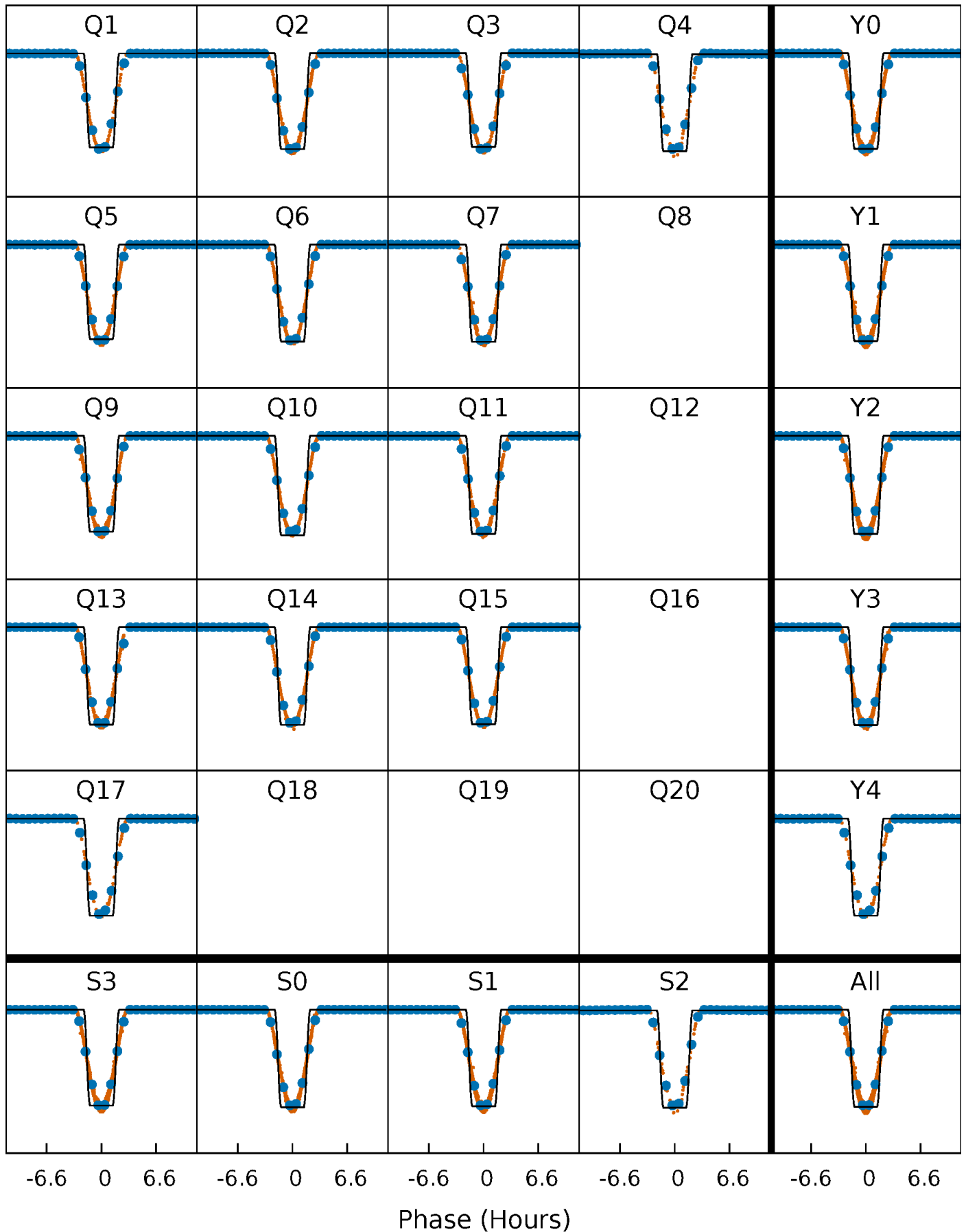
# DV Quarter-Phased Transit Curves

TCE 011287726-01 P= 4.737712 Days  $T_0=132.325597$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

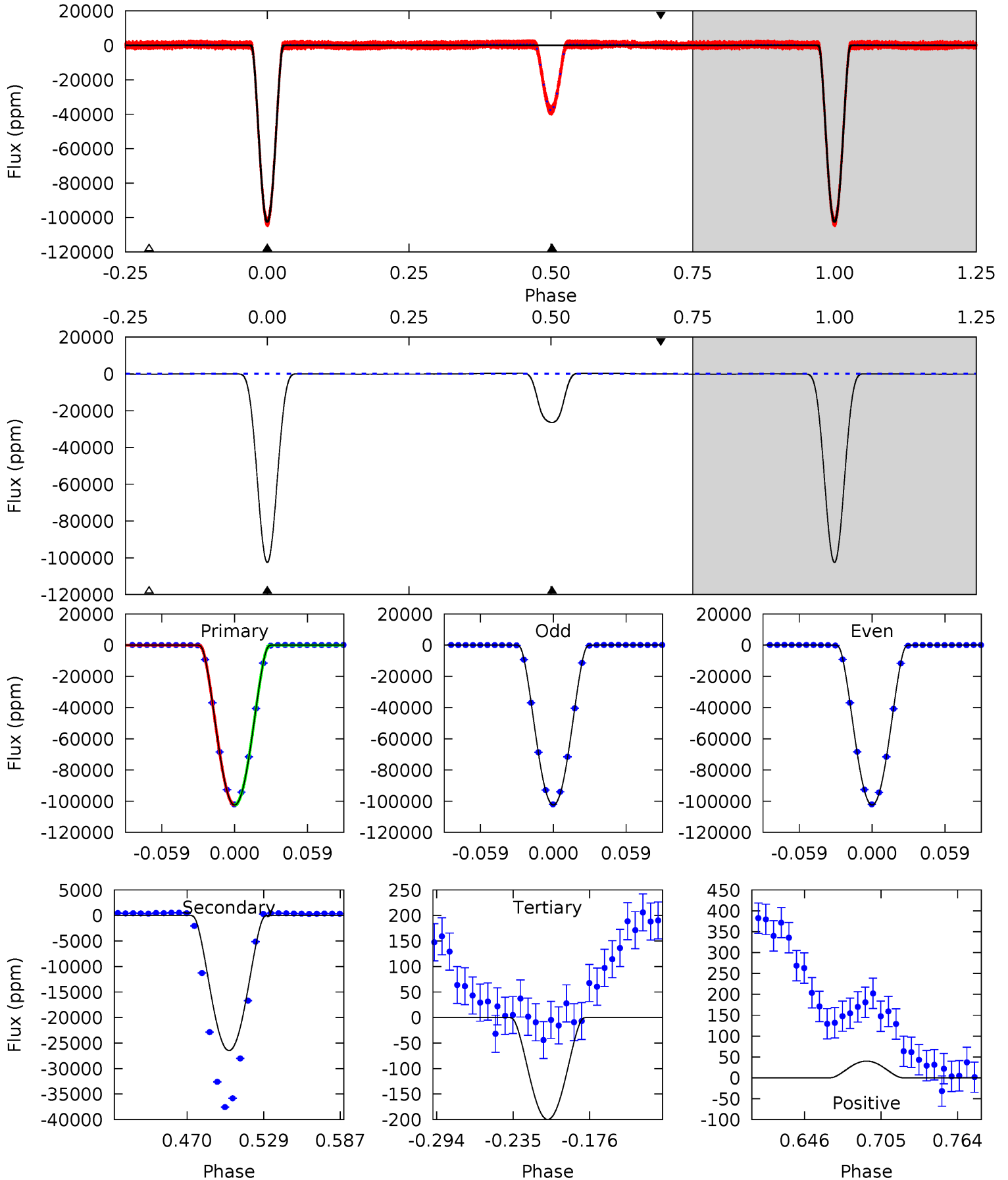
TCE 011287726-01   P= 4.737713 Days    $T_0=132.325391$  (BKJD)



# DV Model-Shift Uniqueness Test

011287726-01, P = 4.737712 Days, E = 127.587885 Days

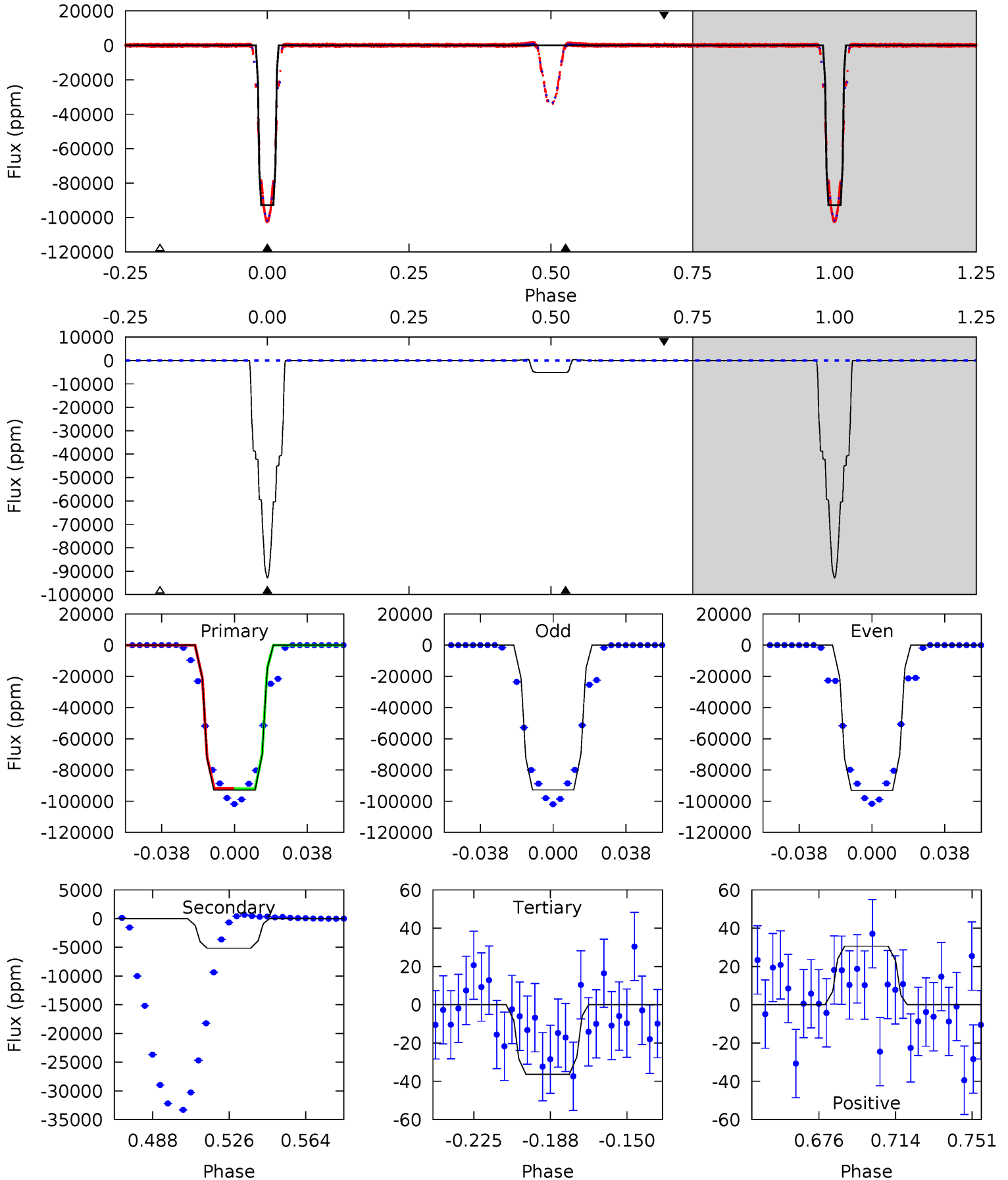
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7992	2066	15.6	3.12	4.68	1.89	12.5	7977	7989	2050	2062	0.39	0.99	0.00	2.99



# Alt Model-Shift Uniqueness Test

011287726-01, P = 4.737713 Days, E = 127.587678 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
3936	218.4	1.54	1.30	4.77	2.08	14.4	3935	3935	216.8	217.1	7.69	1.00	0.01	0



### Stellar Parameters For KIC 011287726

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5335^{+159}_{-143}$	$4.624^{+0.032}_{-0.097}$	$-0.360^{+0.350}_{-0.300}$	$0.719^{+0.118}_{-0.055}$	$0.803^{+0.078}_{-0.086}$	$3.048^{+0.437}_{-1.012}$
	+3%/-3%	+1%/-2%	+97%/-83%	+16%/-8%	+10%/-11%	+14%/-33%
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 011287726-01 / KOI 7433.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-26479 \pm 13$	$27.36^{+2.26}_{-1.52}$	$1248^{+54}_{-43}$	$3993^{+95}_{-88}$	$52^{+4}_{-6}$
Alt.	$-5150 \pm 24$	$25.30^{+2.18}_{-1.31}$	$1247^{+54}_{-43}$	$3125^{+61}_{-60}$	$12^{+1}_{-1}$

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

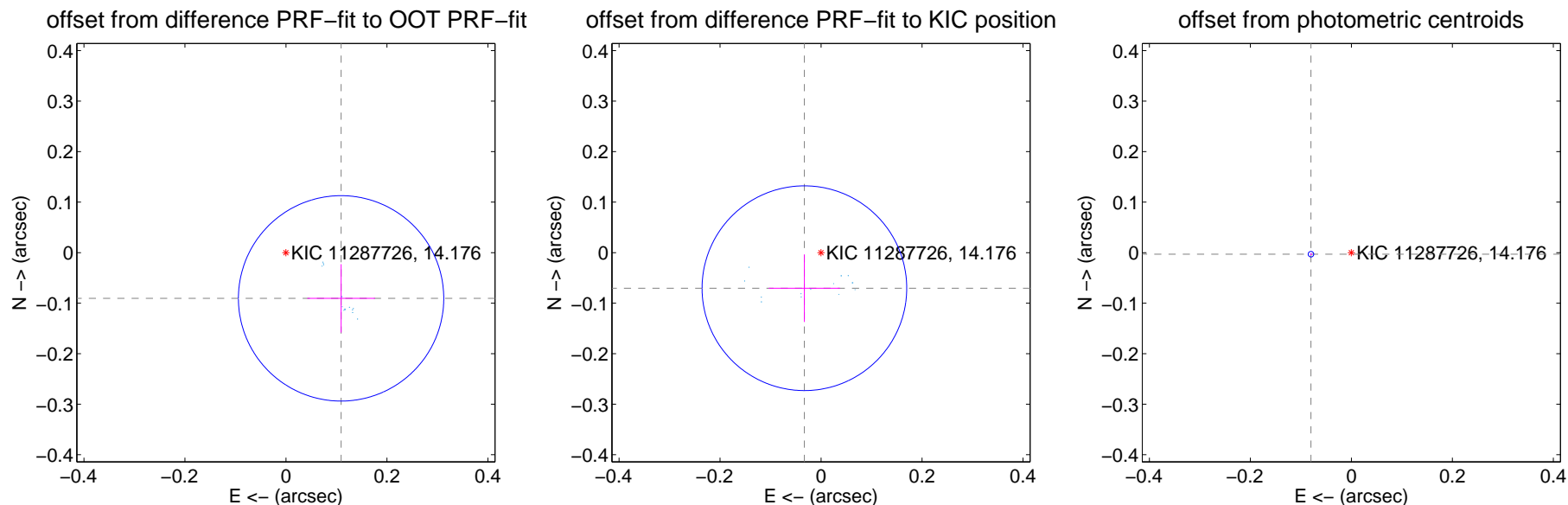
## DV Centroid Data

Supplemental centroid analysis for 011287726-01. Kepler magnitude: 14.18. Transit SNR 4219.46

There are 14 quarters with good PRF difference image offsets

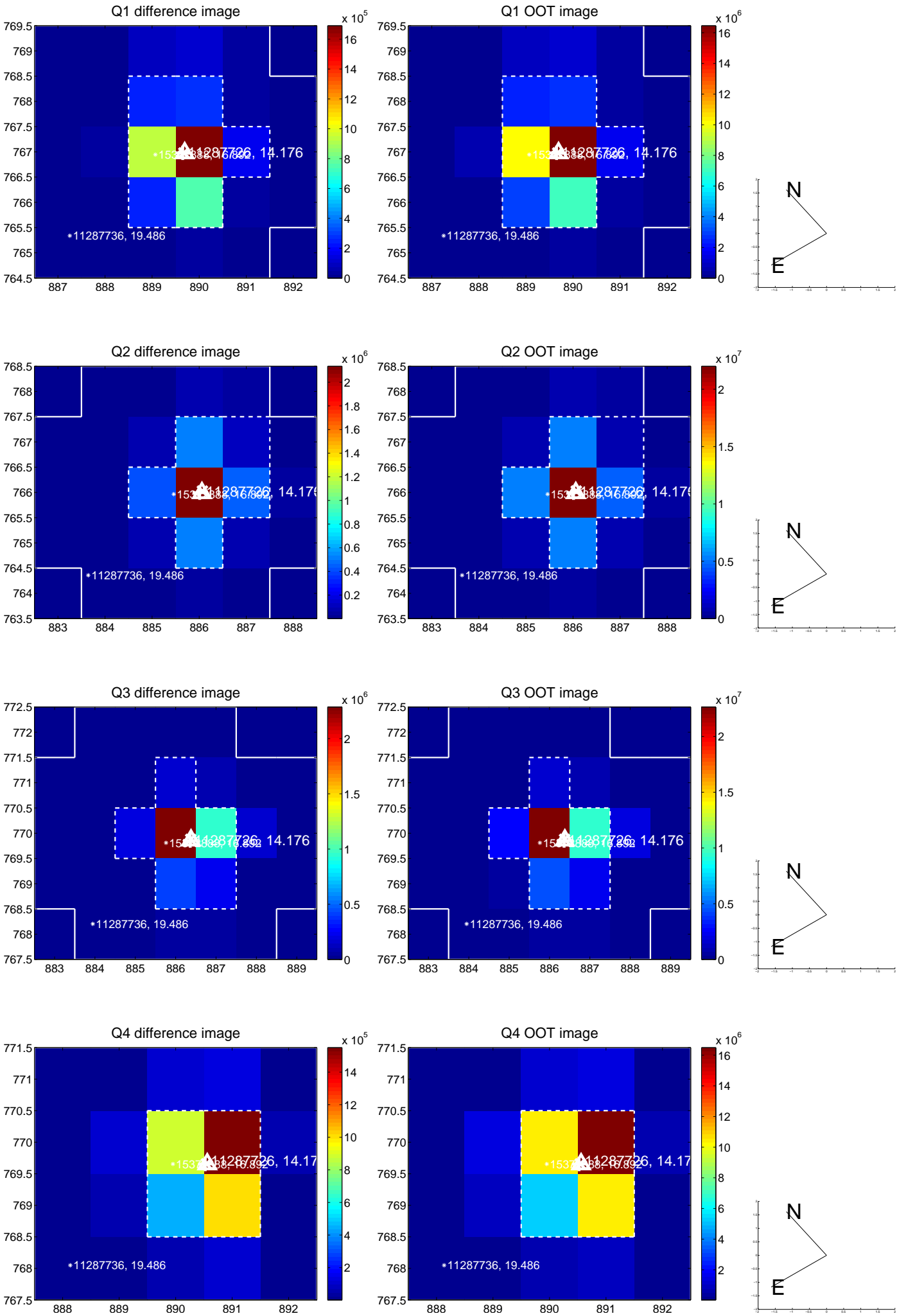
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.142 \pm 0.068$	2.09	$-0.109 \pm 0.067$	$-0.090 \pm 0.068$
PRF-fit source offset from KIC position	$0.078 \pm 0.068$	1.15	$0.033 \pm 0.070$	$-0.070 \pm 0.067$
photometric centroid source offset	$0.08 \pm 0.00$	43.82	$0.08 \pm 0.00$	$-0.00 \pm 0.00$

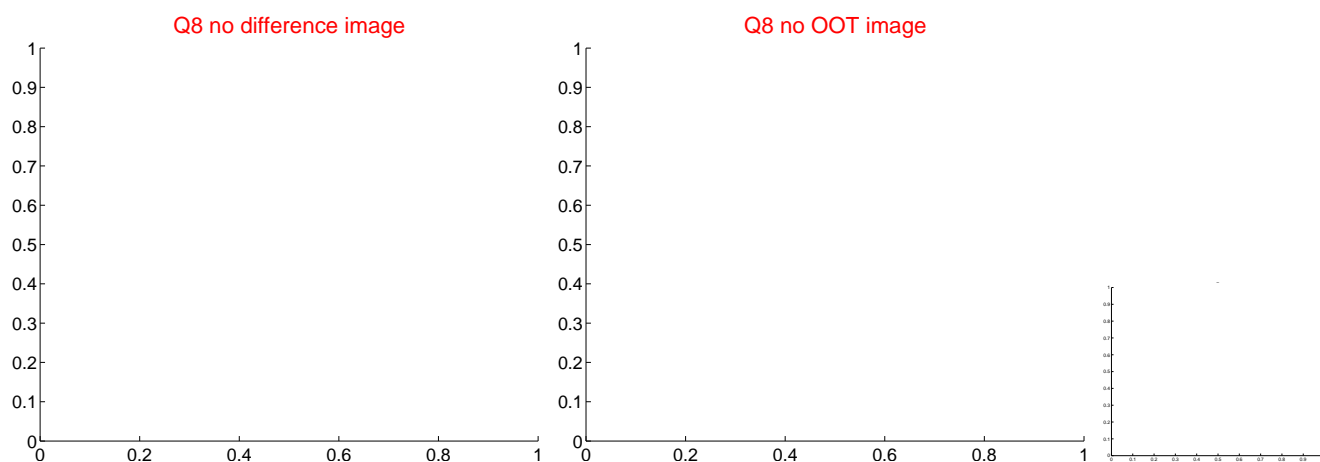
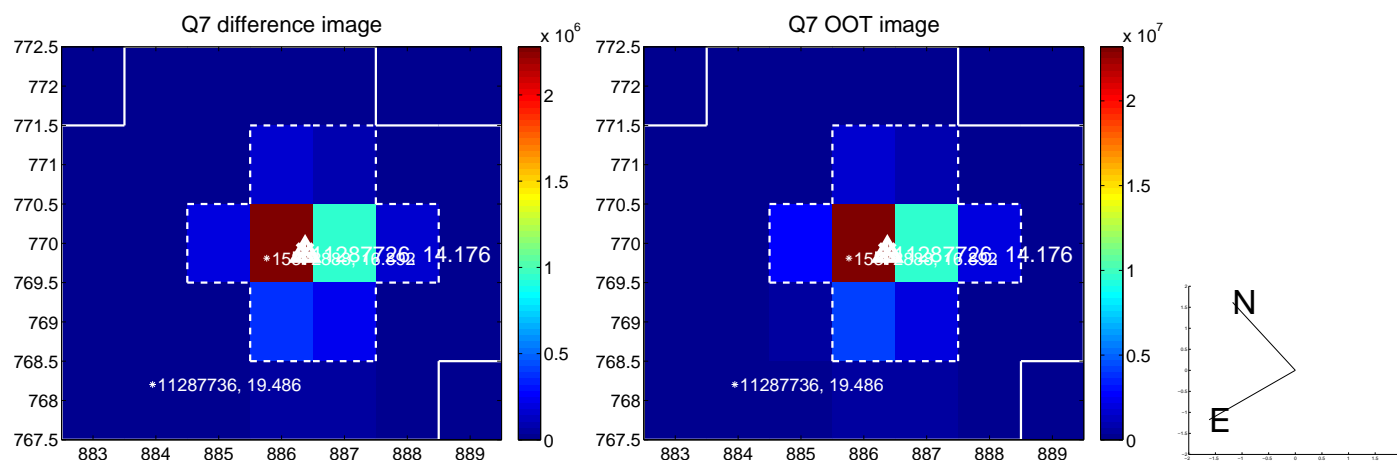
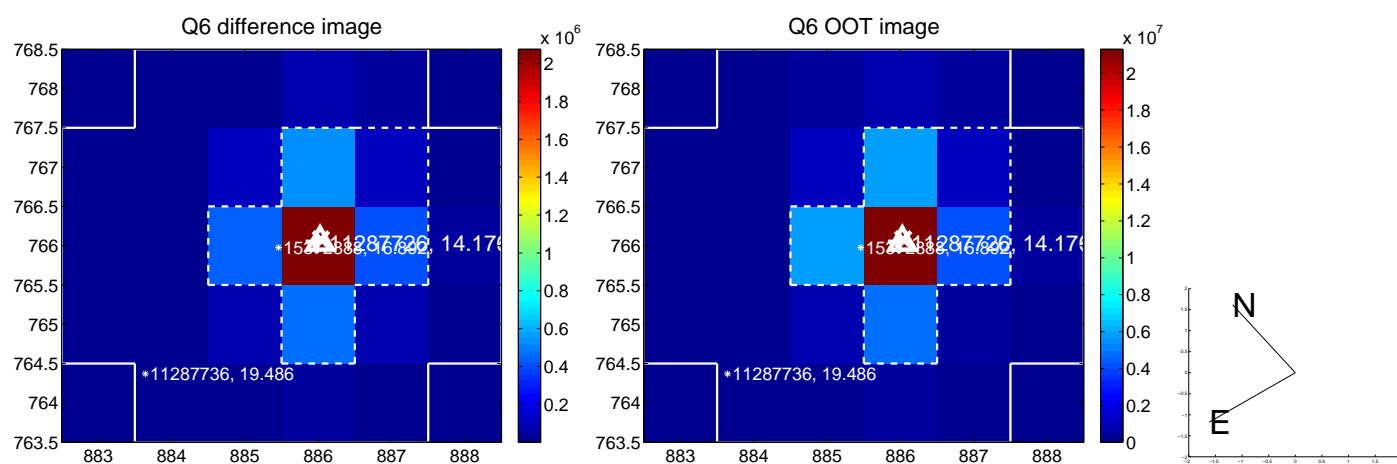
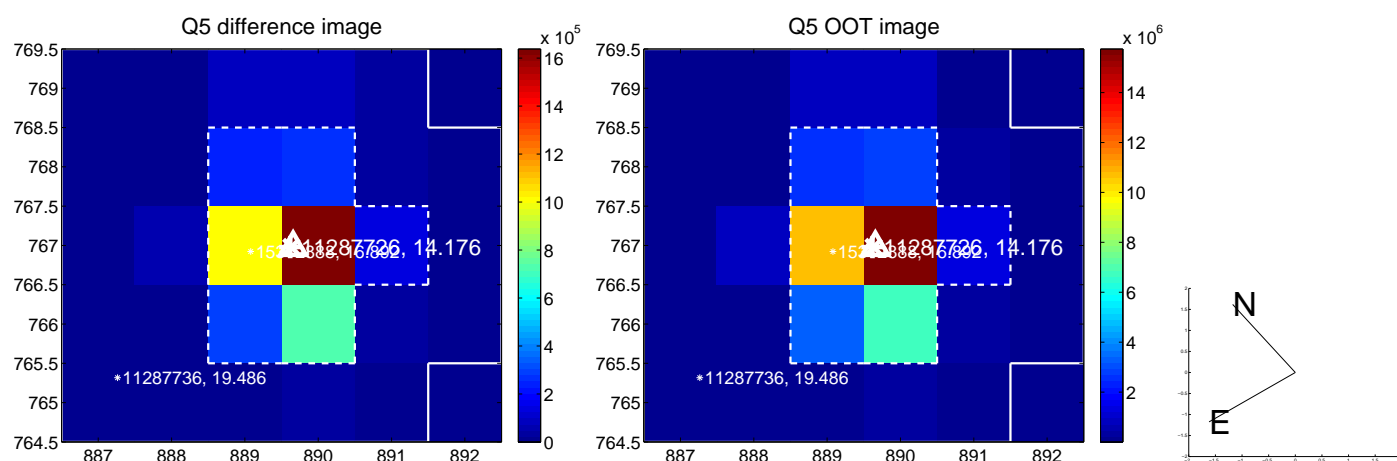


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

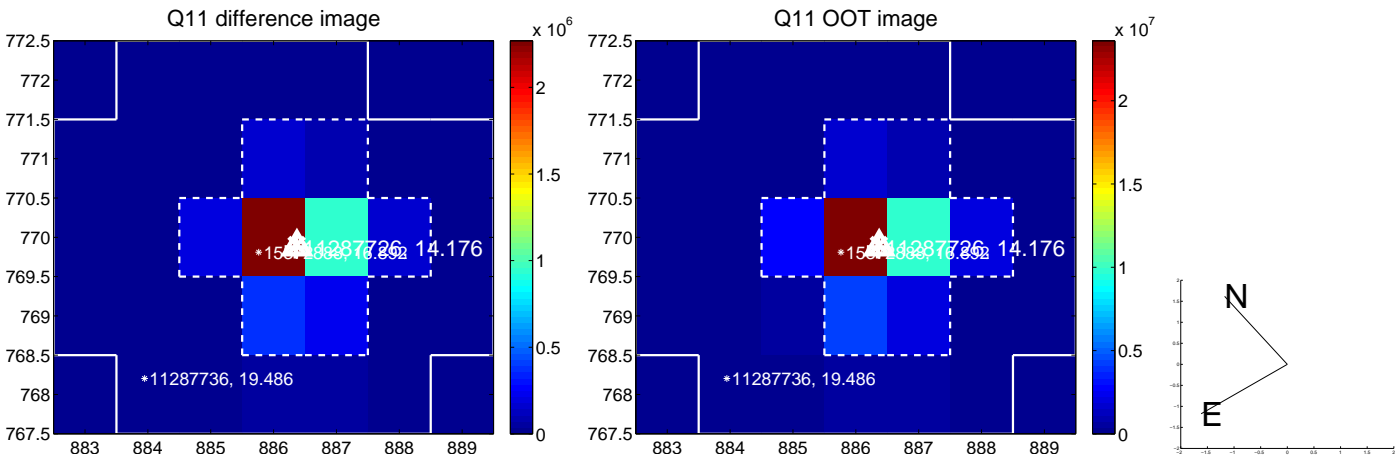
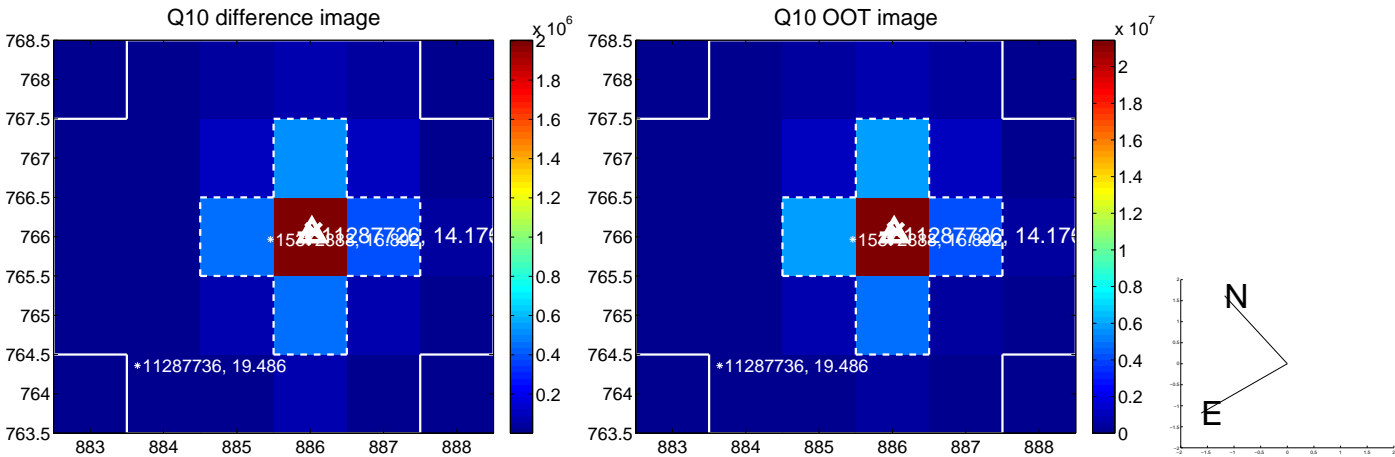
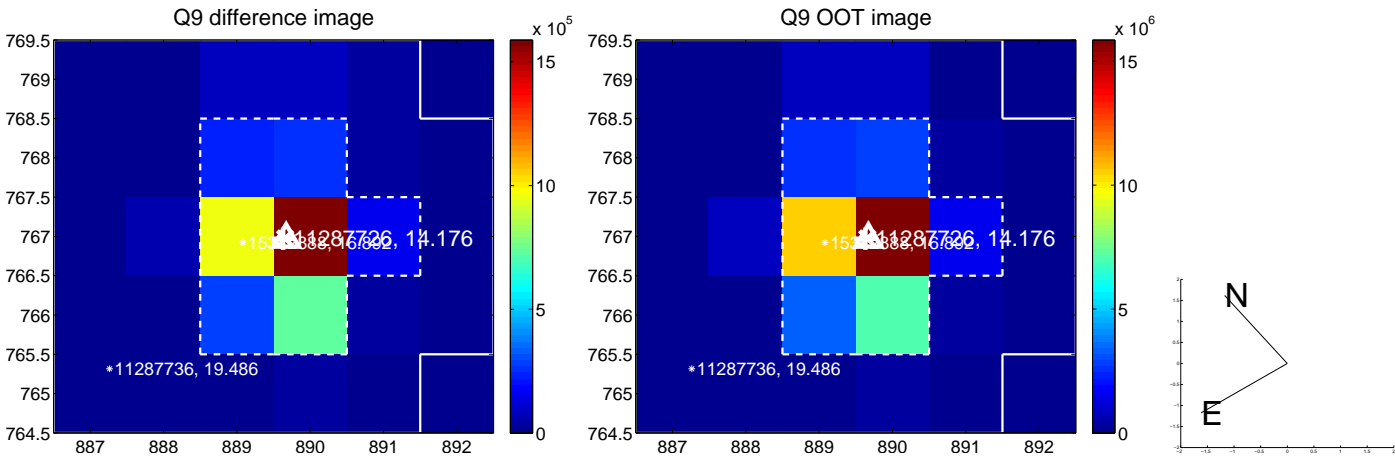


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

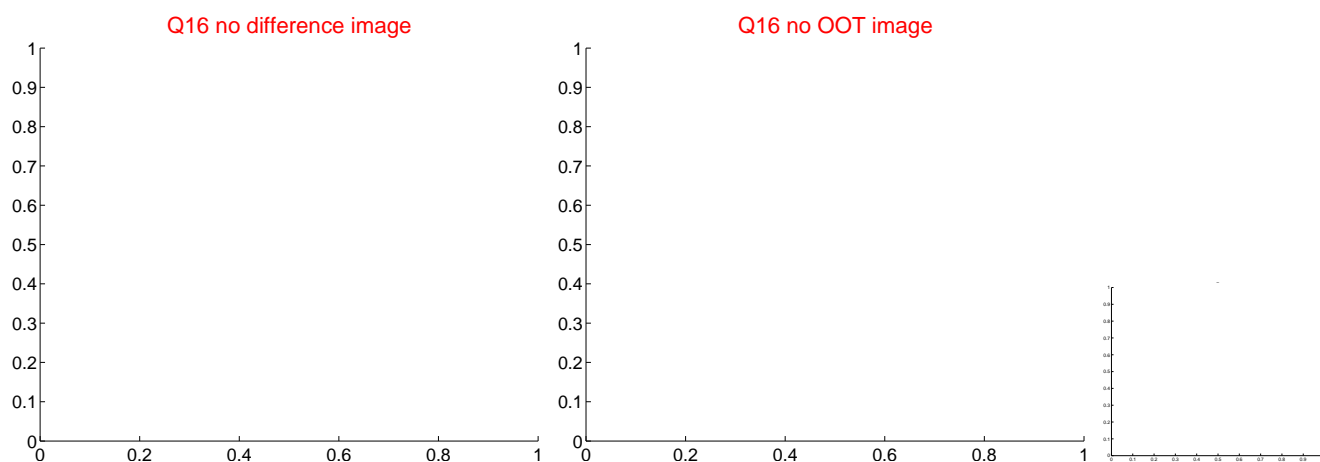
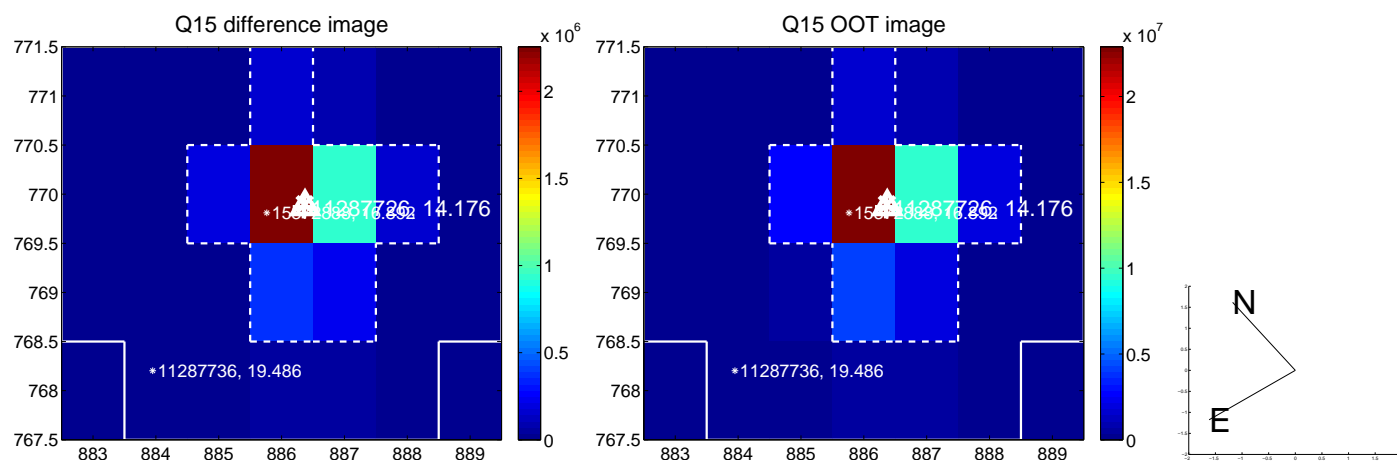
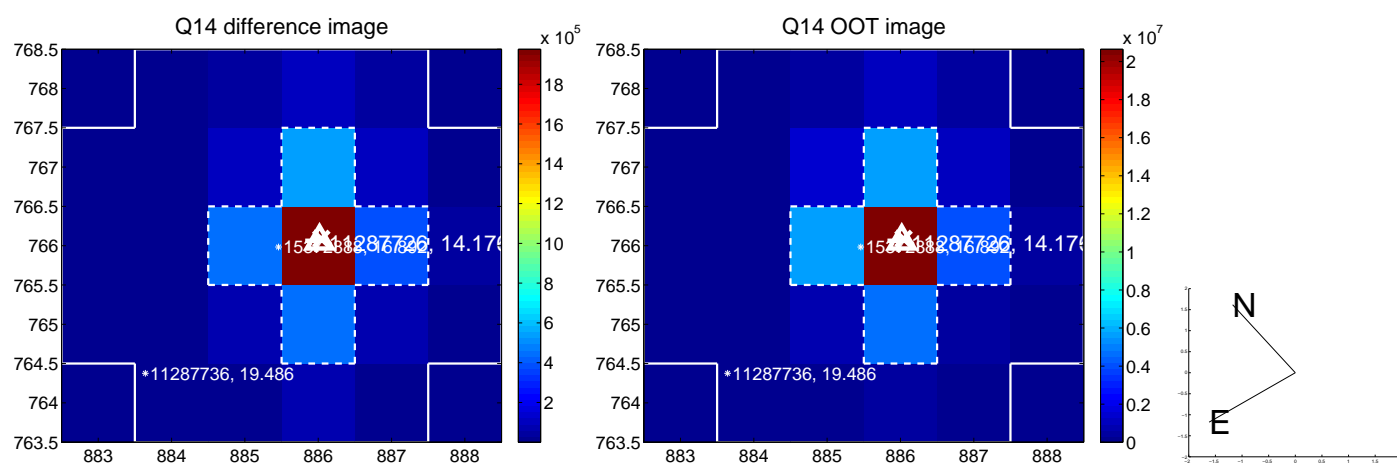
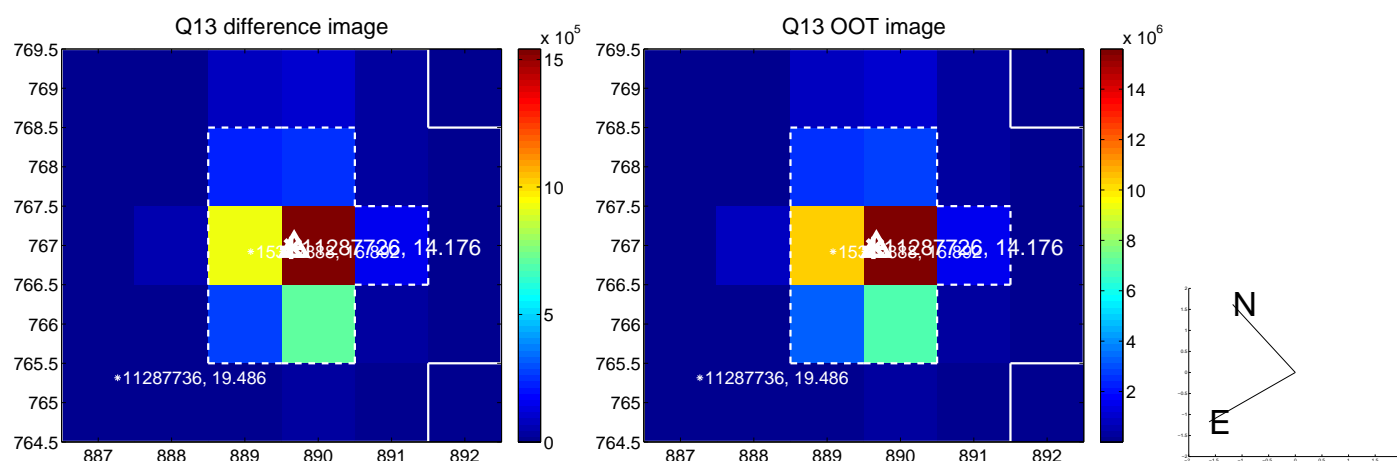




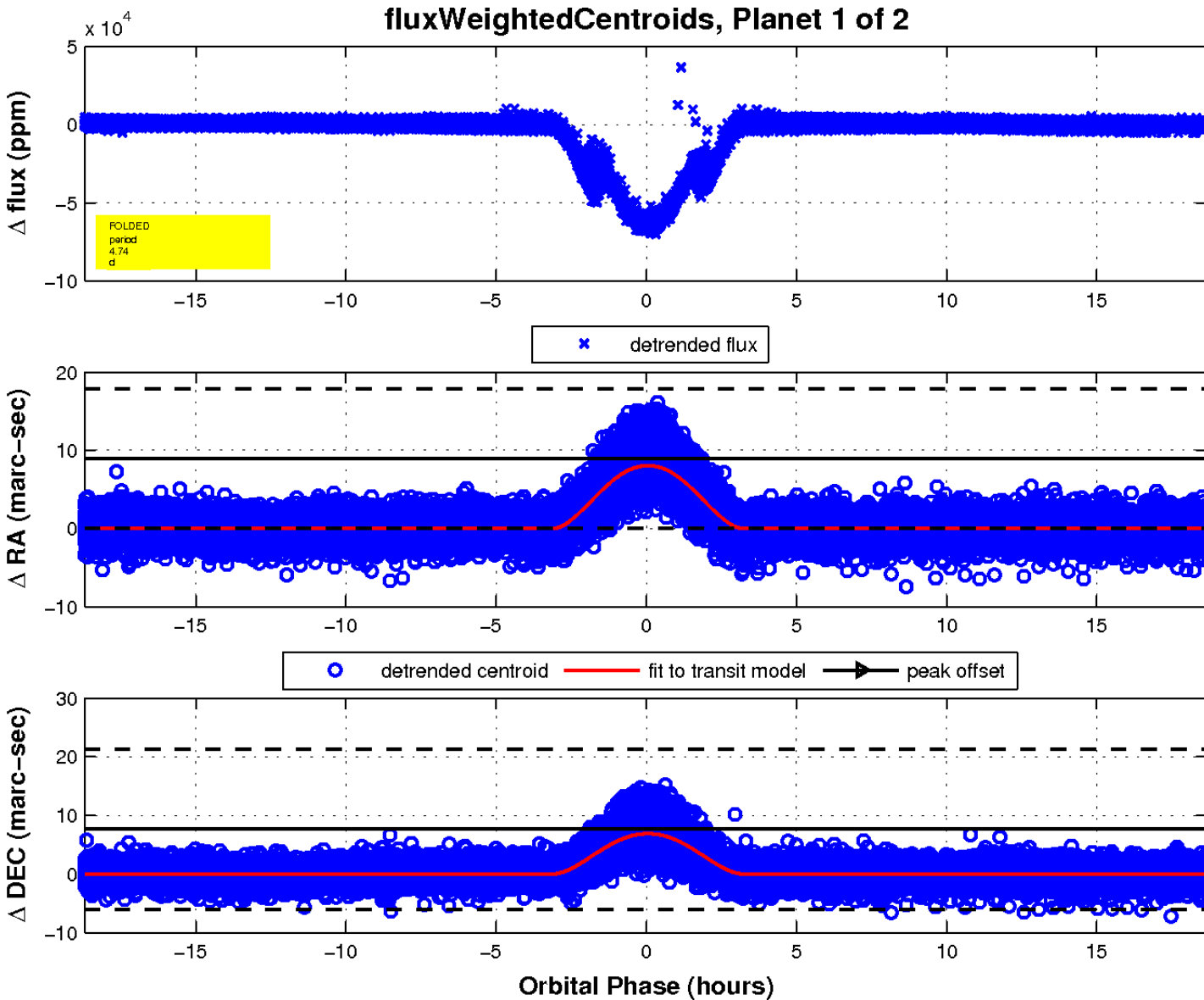
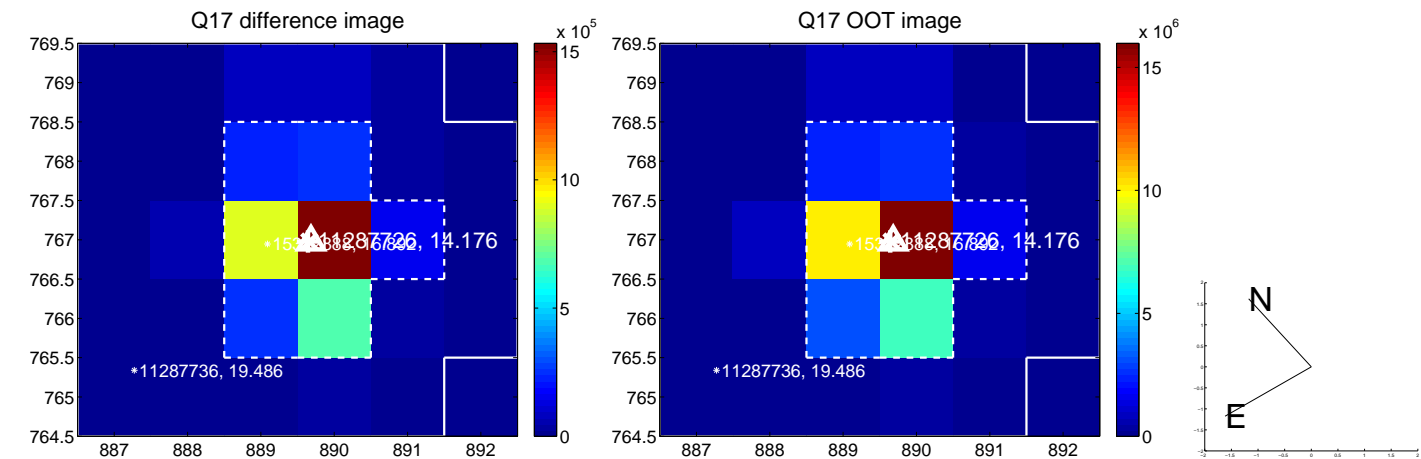
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

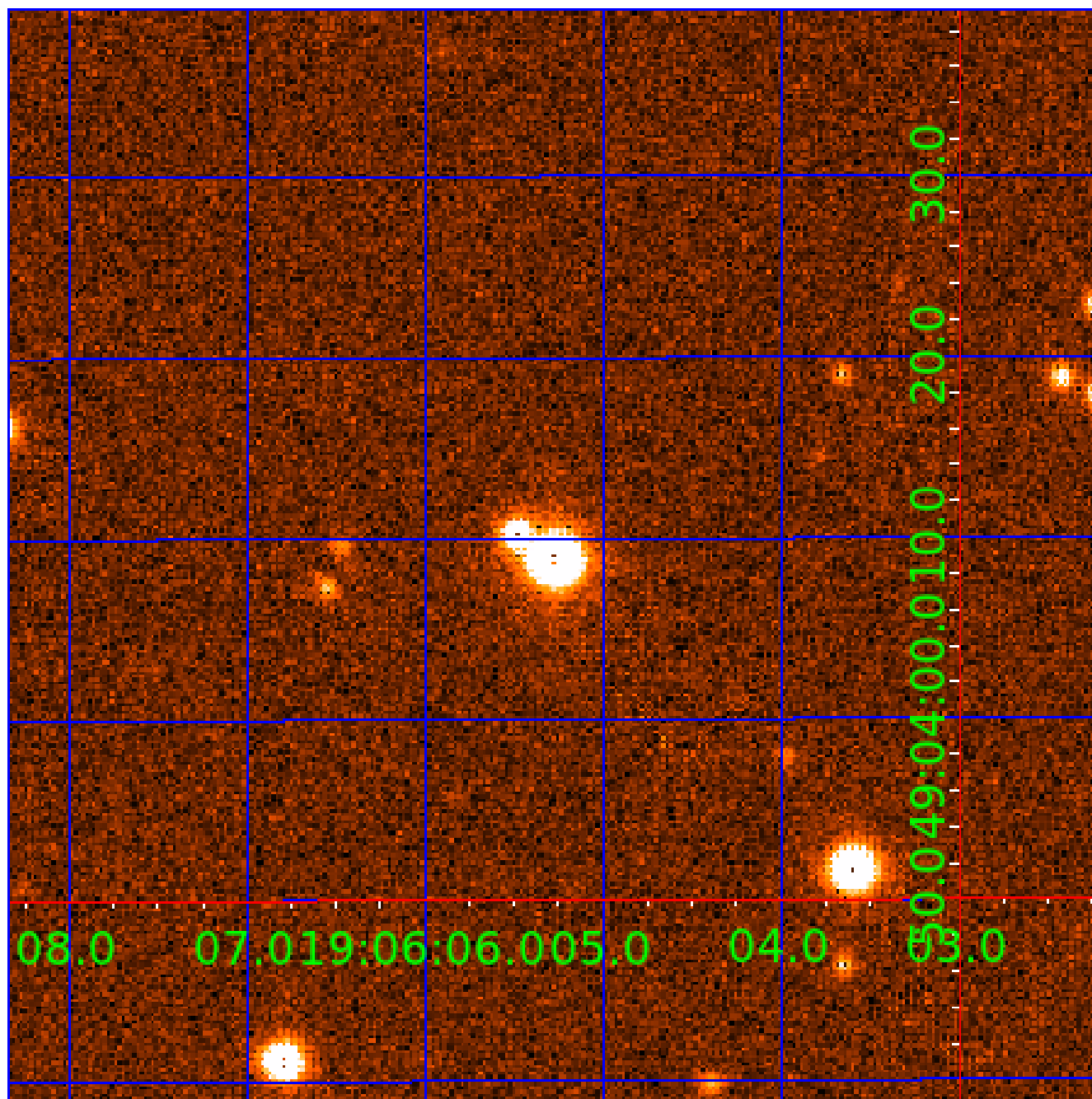


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011287726

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011287726-01	OBS	7433.01	4.737712	132.325597	102549.7	6.234	4536.0	4219.5	0.72	5335	26.82	143.60
011287726-02	OBS	No	2.368830	132.328336	16496.8	4.500	1778.2	-1.0	0.72	5335	9.09	361.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011287726-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011287726-02	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.

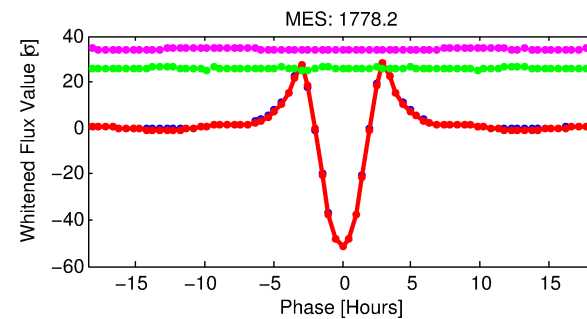
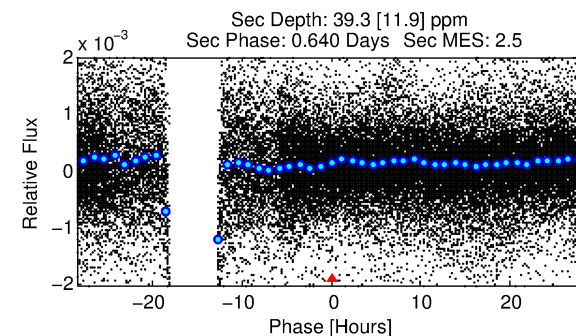
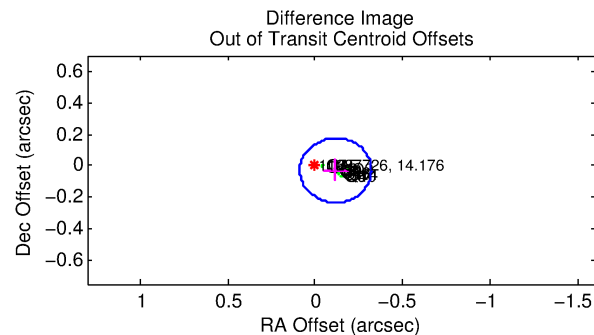
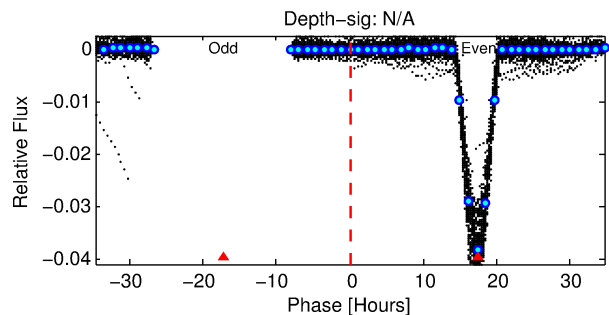
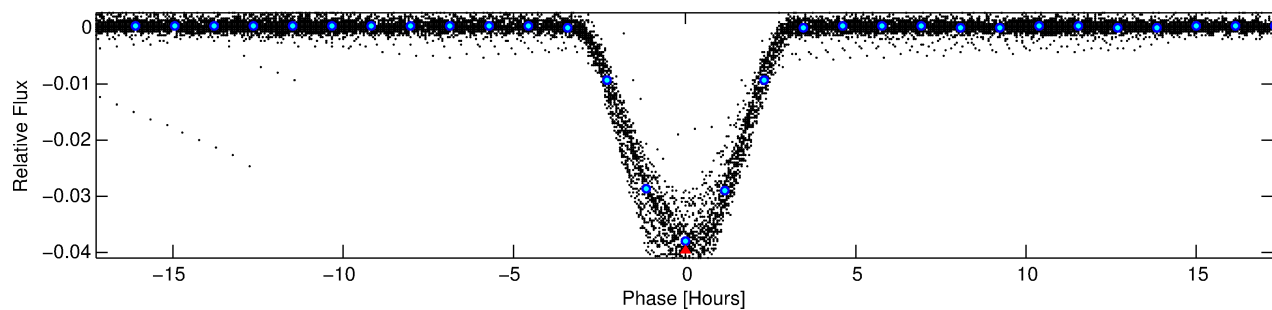
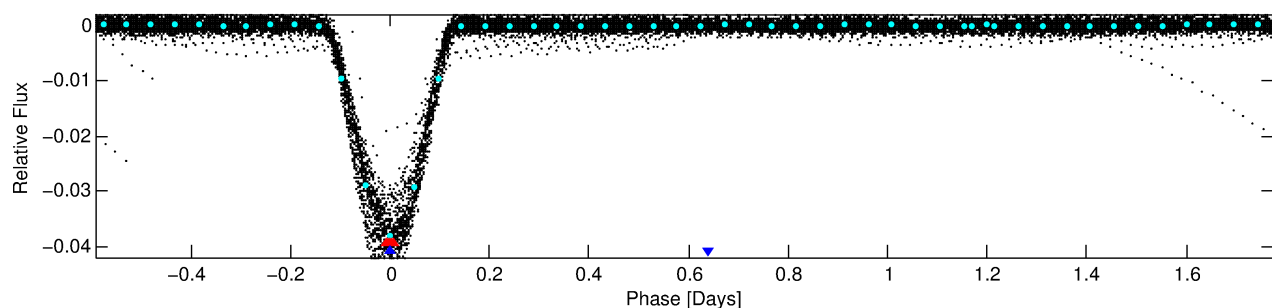
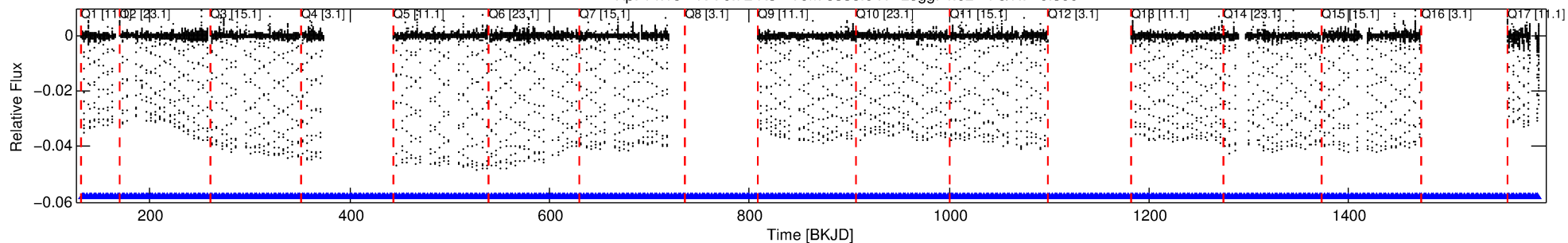
## Ephemeris Match Information For 011287726-02

No Significant Match Found

# DV One-Page Summary

KIC: 11287726 Candidate: 2 of 2 Period: 2.369 d  
KOI: K07433 Corr: No Ephemeris Match

Kp: 14.18 R\*: 0.72 Rs Teff: 5335.0 K Logg: 4.62 Fe/H: -0.360



TPS TCE Results:

Period = 2.36883 d  
Epoch = 132.3283 BKJD

DV fit results are unavailable

DV Diagnostic Results:

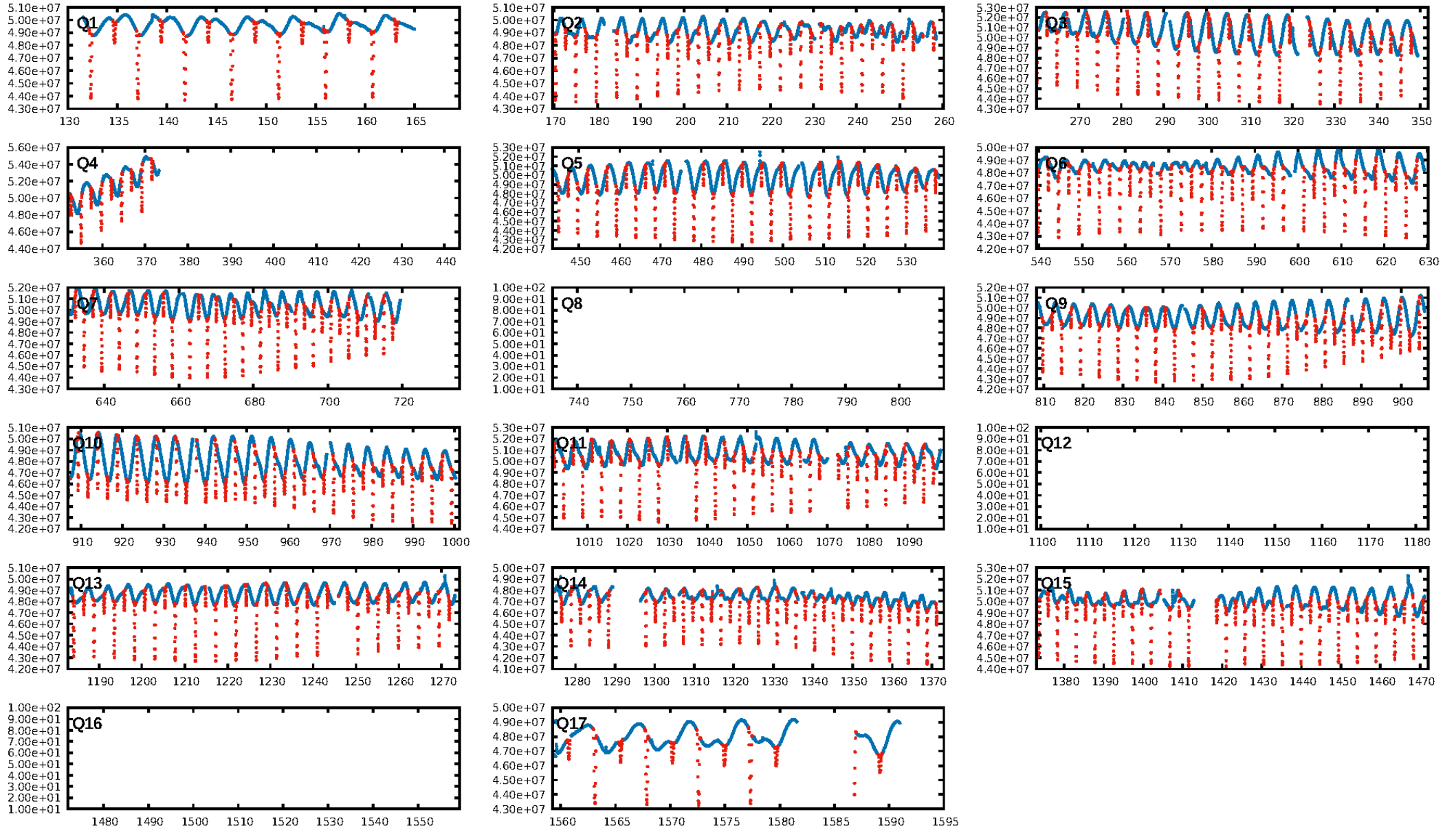
ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [7.39σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [208/208]  
GhostDiagnostic-chr: 0.9458

Centroid-sig: 0.0%  
Centroid-so: 0.124 arcsec [44.16σ]  
OotOffset-rm: 0.120 arcsec [1.75σ]  
KicOffset-rm: 0.039 arcsec [0.56σ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:43:17 Z

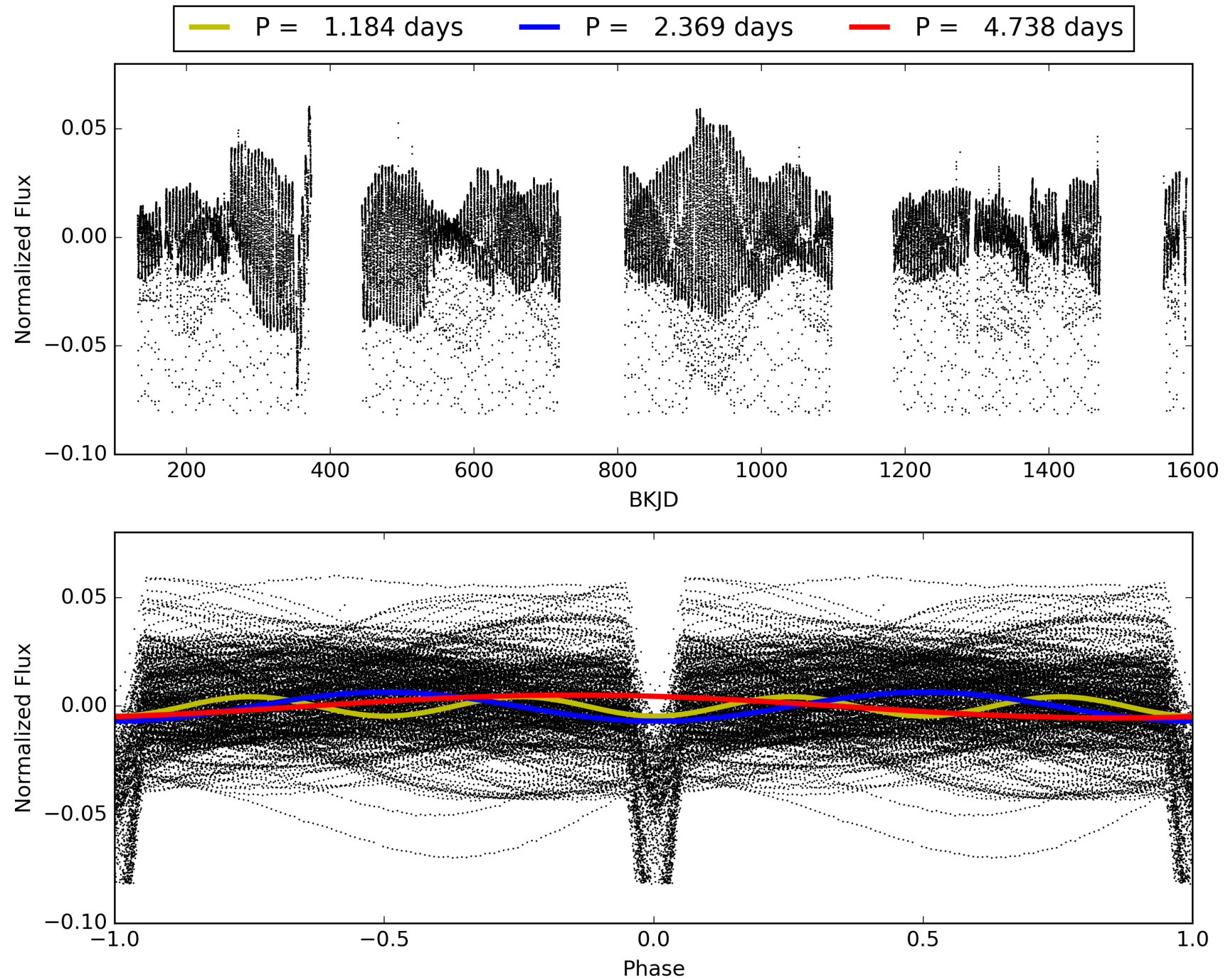
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011287726-02, PDC Light Curves





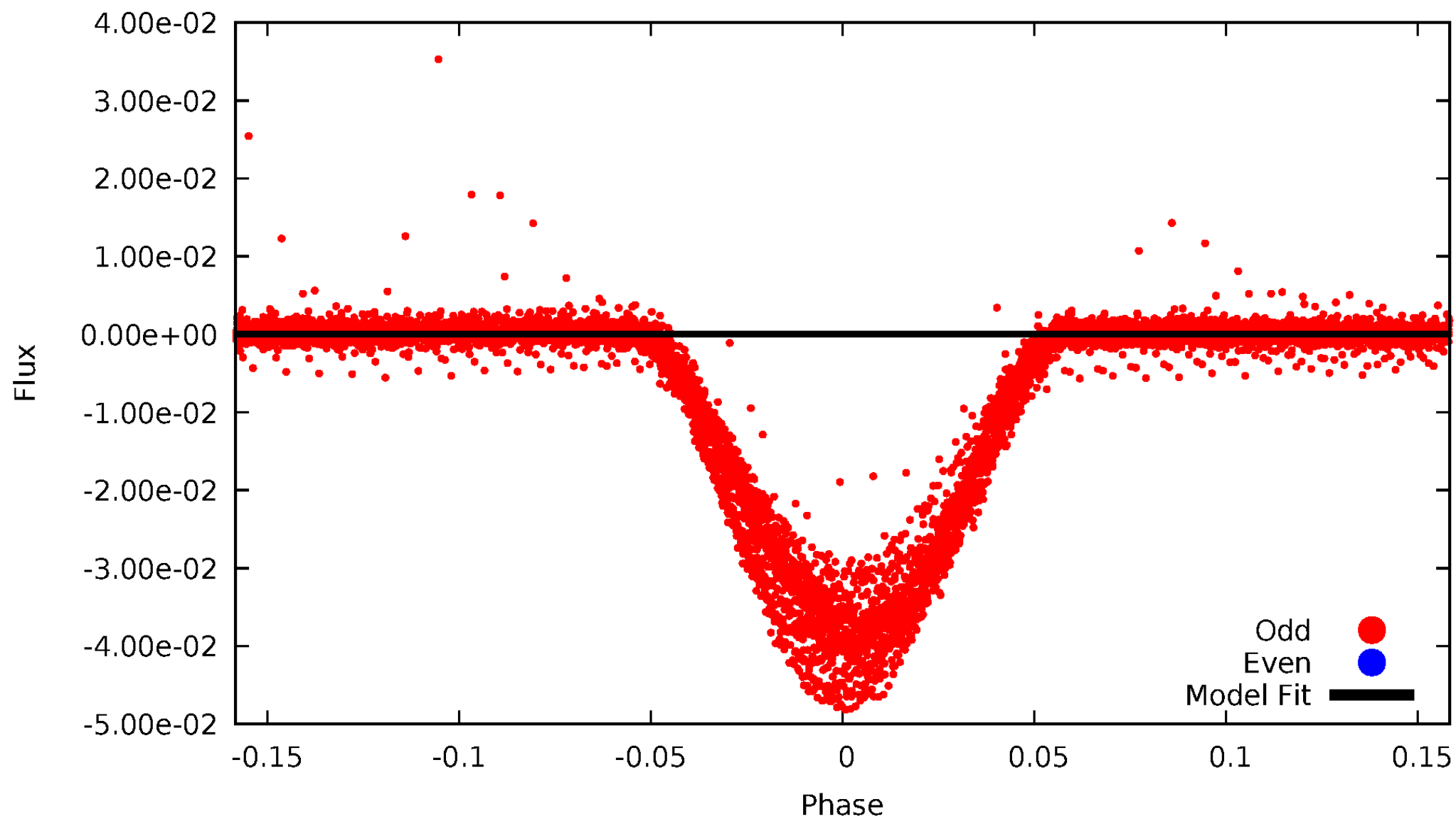
TCE 011287726-02





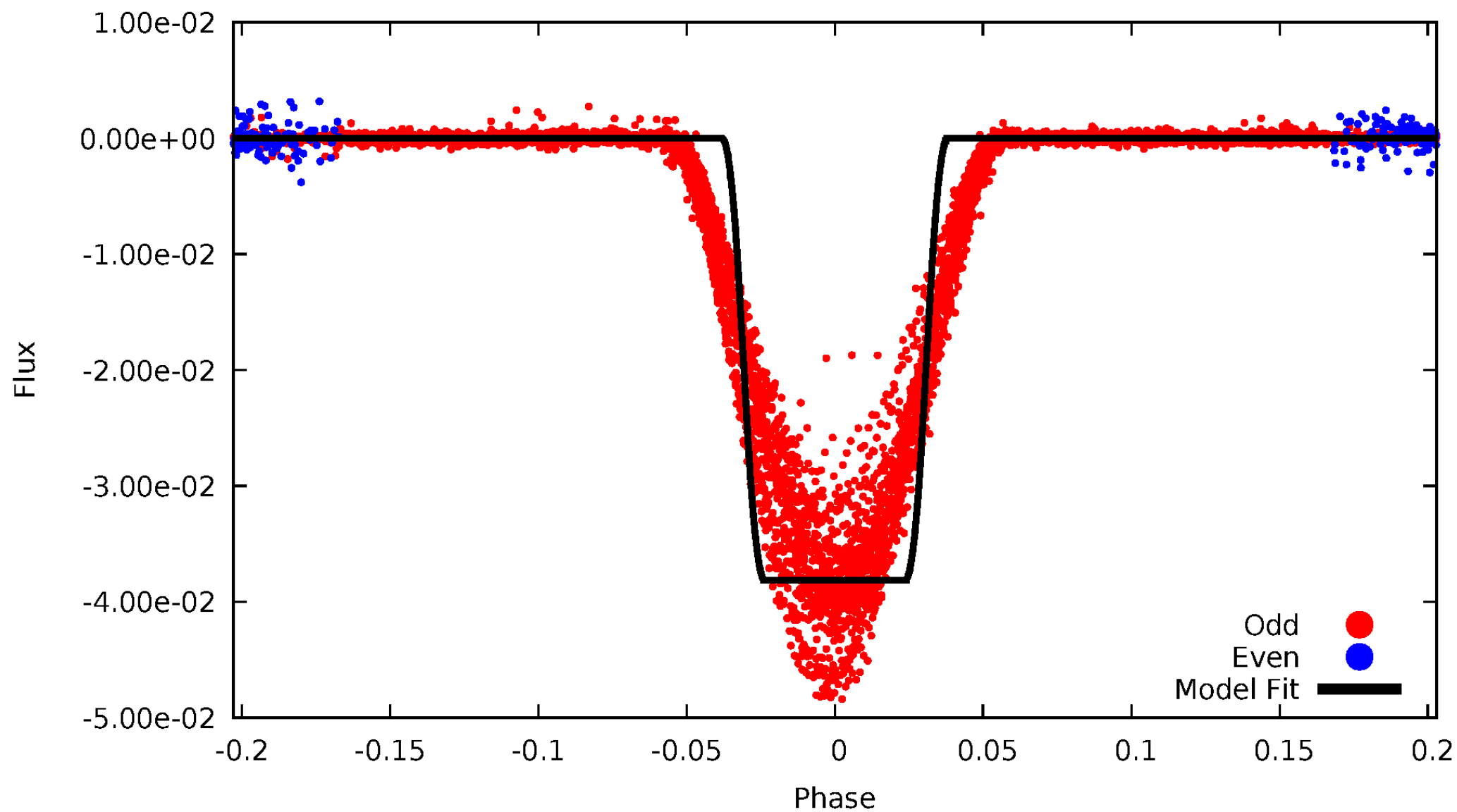
# DV Odd/Even

TCE 011287726-02



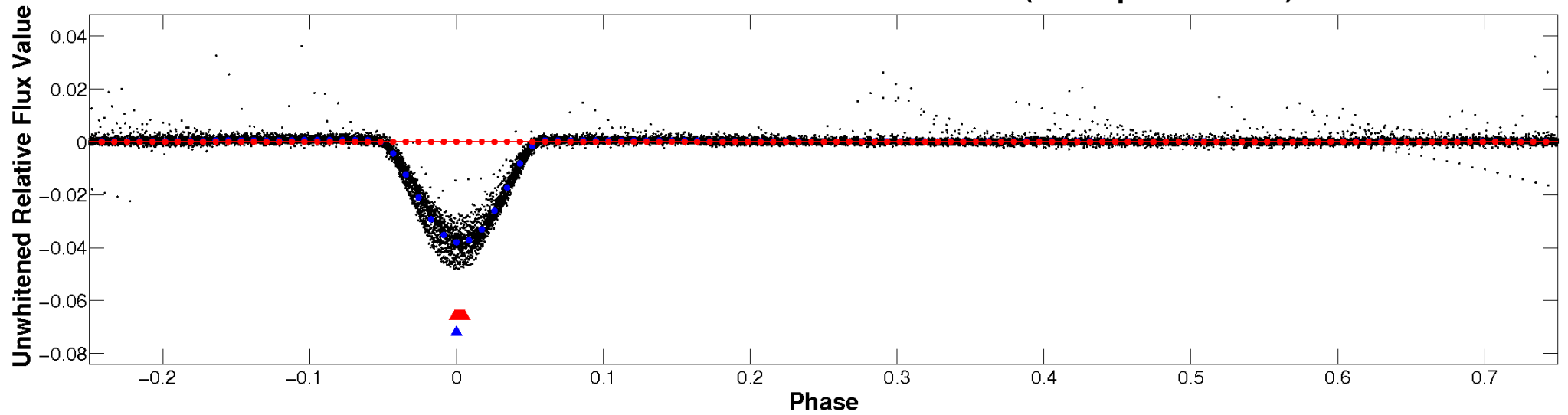
# ALT Odd/Even

TCE 011287726-02

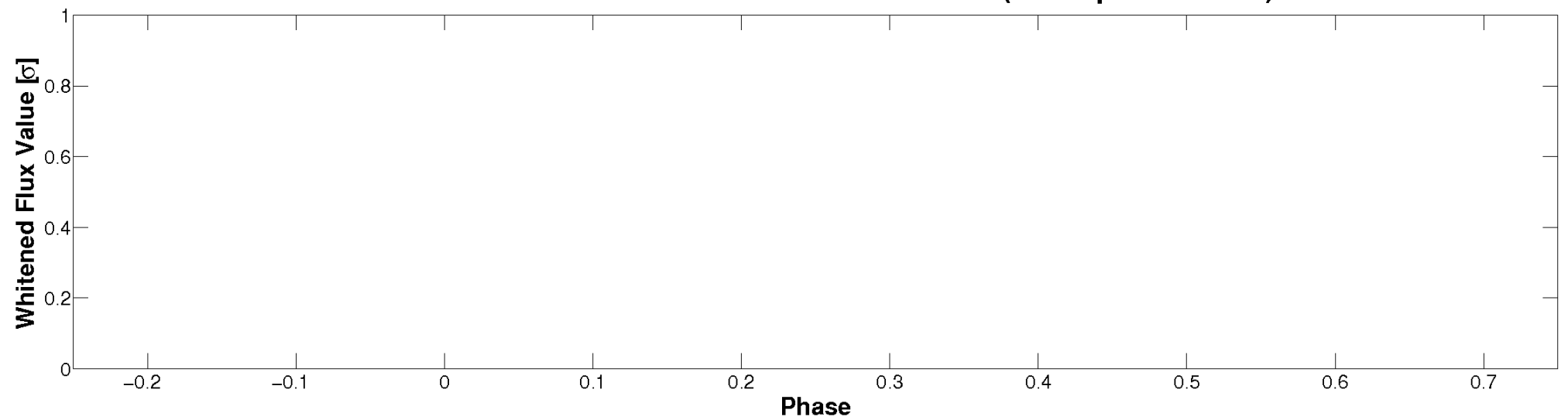


# Non-Whitened Vs. Whitened Light Curve

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

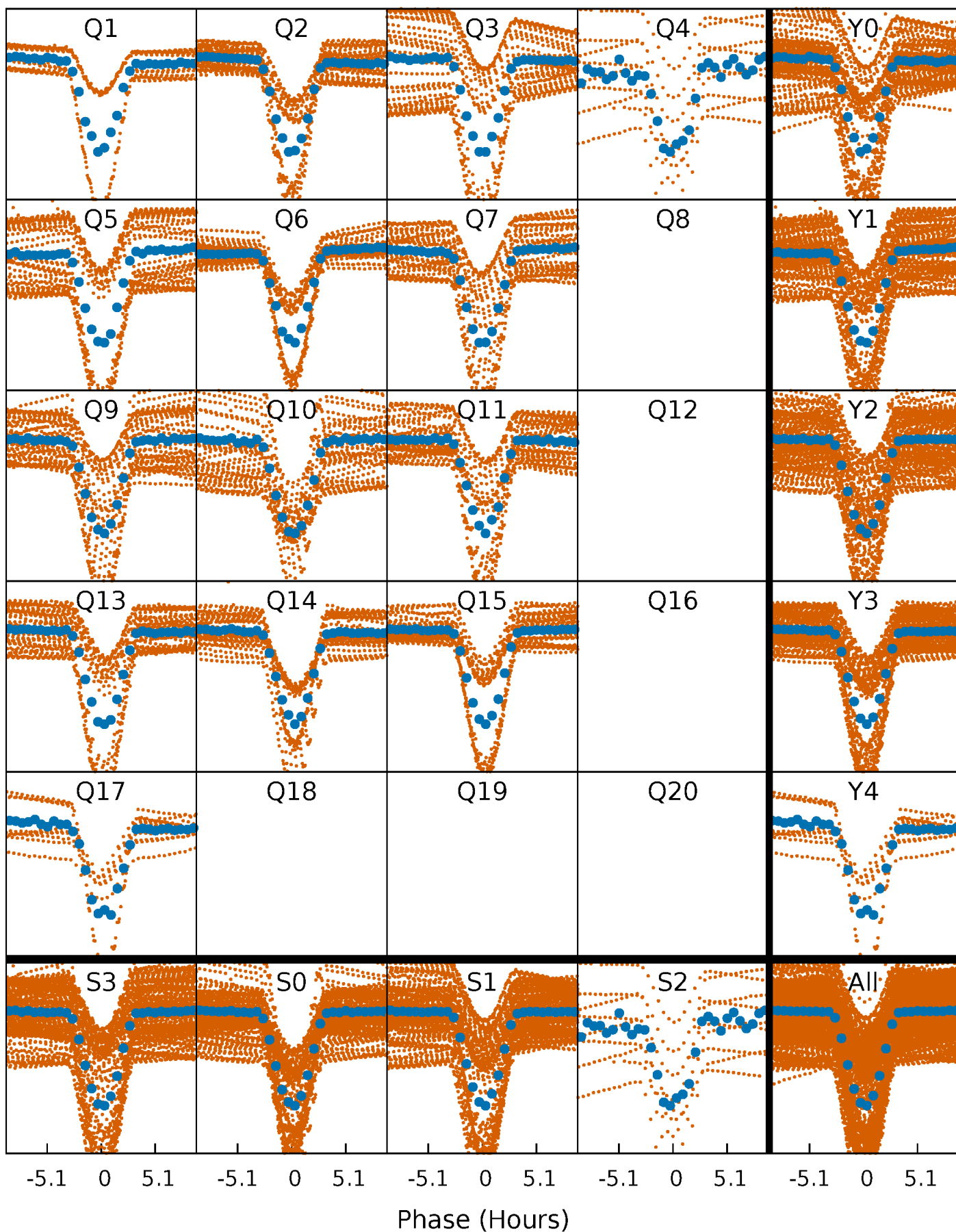


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



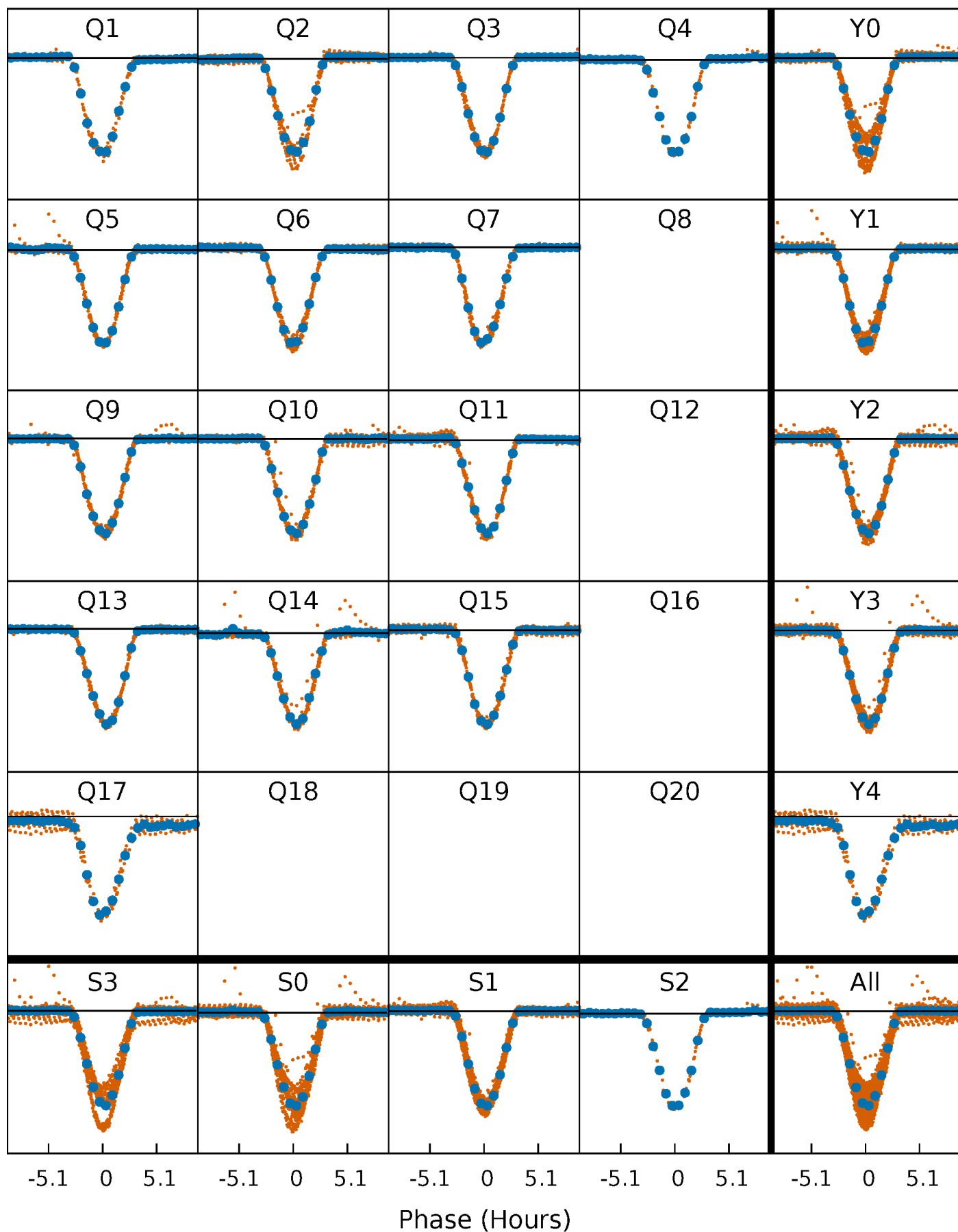
# PDC Quarter-Phased Transit Curves

TCE 011287726-02 P= 2.368830 Days  $T_0=132.328336$  (BKJD)



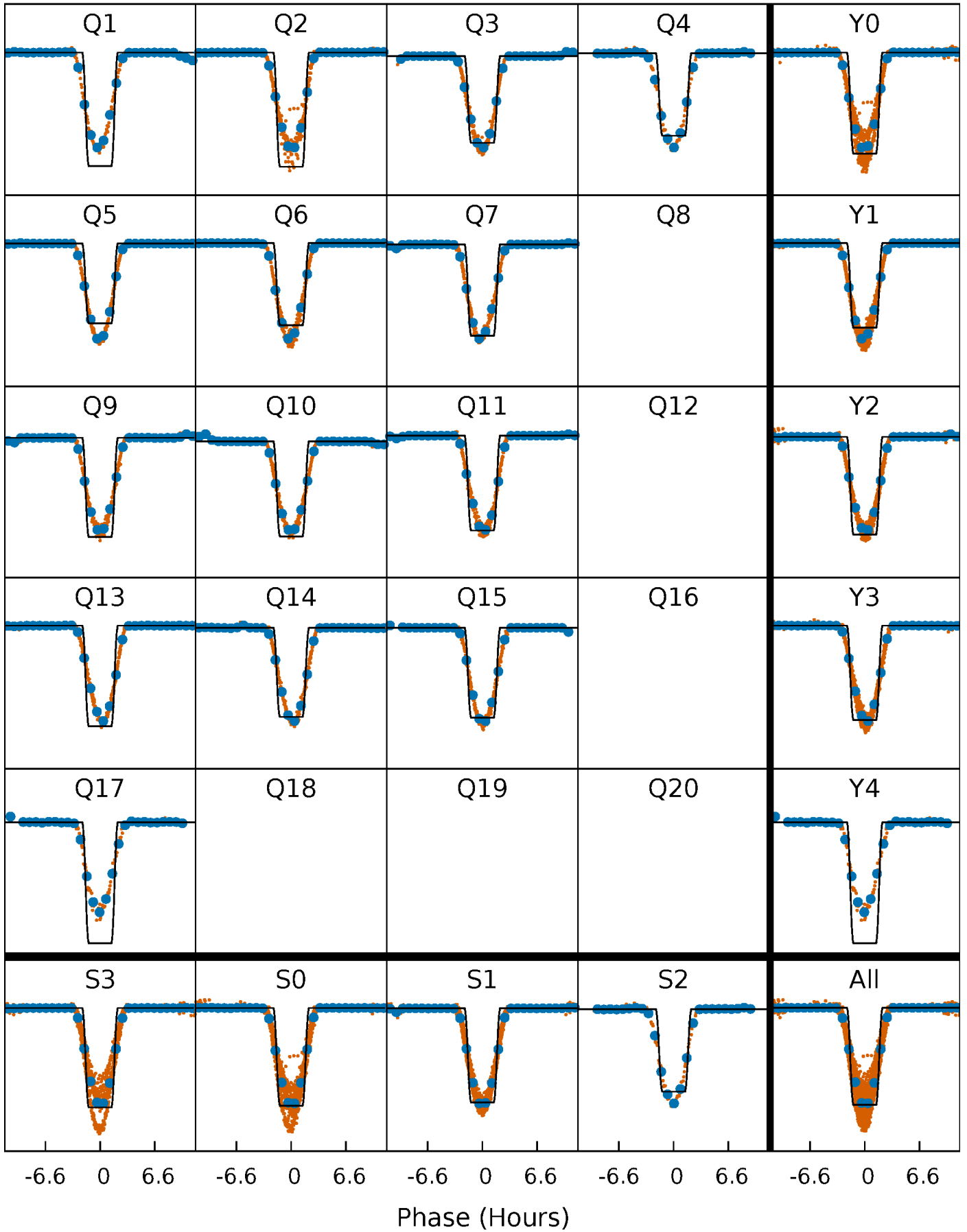
# DV Quarter-Phased Transit Curves

TCE 011287726-02 P= 2.368830 Days  $T_0=132.328336$  (BKJD)



## Alt. Detrend Quarter-Phased Transit Curves

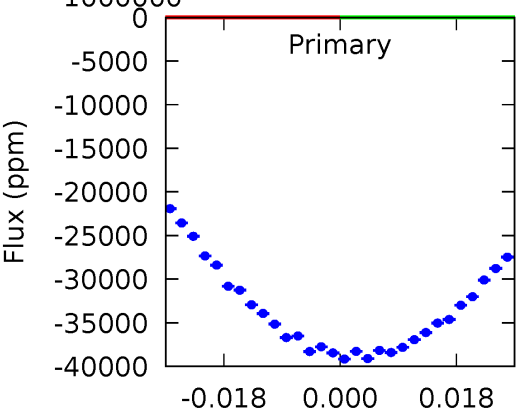
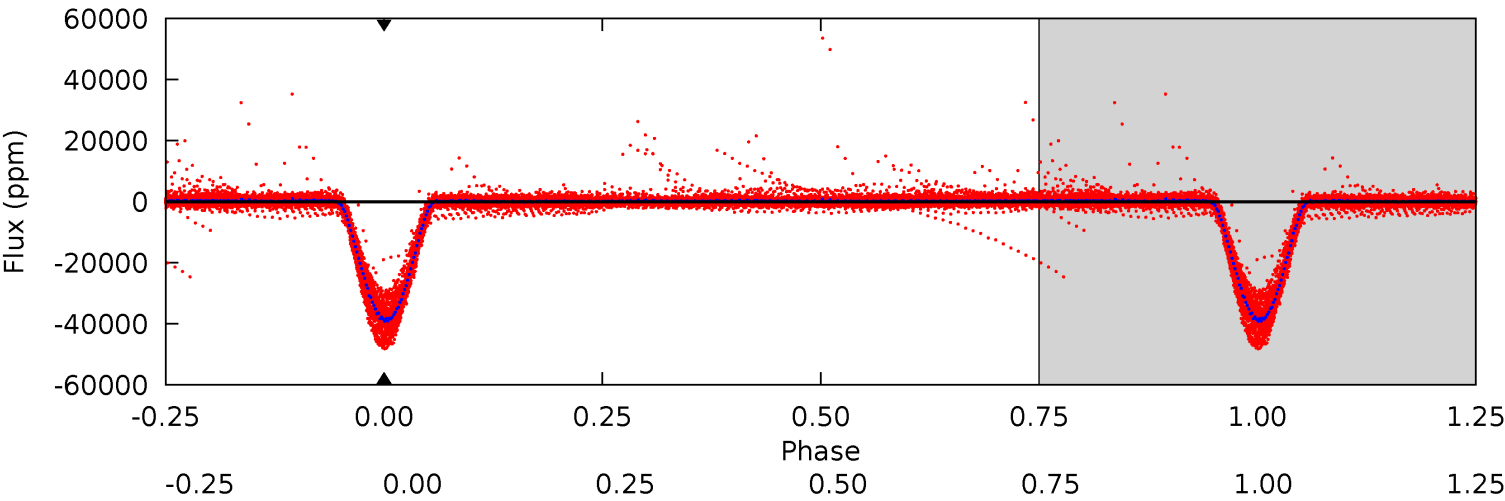
TCE 011287726-02   P= 2.368830 Days    $T_0=132.333679$  (BKJD)



# DV Model-Shift Uniqueness Test

011287726-02, P = 2.368830 Days, E = 129.959506 Days

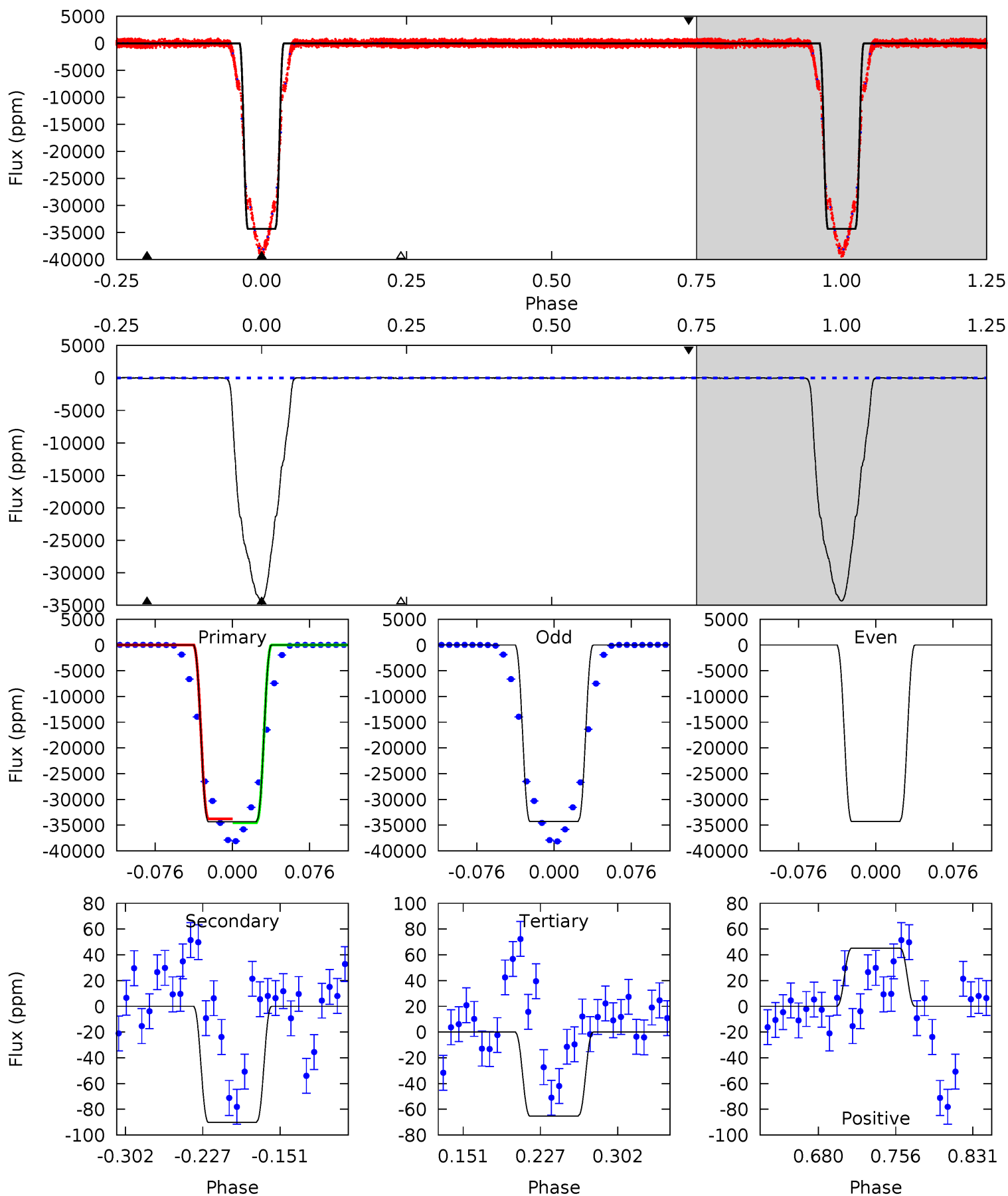
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

011287726-02, P = 2.368830 Days, E = 129.964849 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
2774	7.28	5.28	3.65	4.62	1.78	1.52	2769	2771	2.00	3.62	0	0.99	0.00	28.7





### Stellar Parameters For KIC 011287726

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5335^{+159}_{-143}$	$4.624^{+0.032}_{-0.097}$	$-0.360^{+0.350}_{-0.300}$	$0.719^{+0.118}_{-0.055}$	$0.803^{+0.078}_{-0.086}$	$3.048^{+0.437}_{-1.012}$
	+3%/-3%	+1%/-2%	+97%/-83%	+16%/-8%	+10%/-11%	+14%/-33%
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 011287726-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$10.22^{+8.35}_{-6.43}$	$1573^{+71}_{-58}$	$3400^{+8072}_{-13655}$	$6.858^{+1168.922}_{-832.953}$
Alt.	$-90 \pm 12$	$16.29^{+7.93}_{-7.22}$	$1577^{+68}_{-58}$	$-1994^{+4219}_{-155}$	$0.195^{+0.417}_{-0.110}$

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

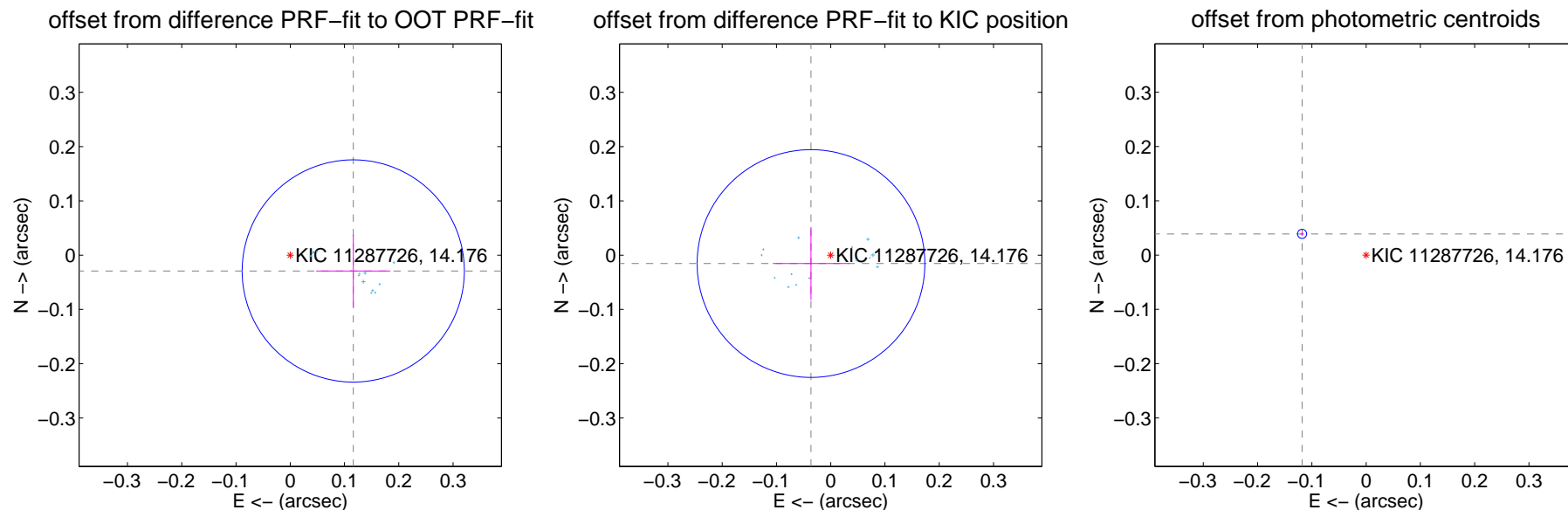
## DV Centroid Data

Supplemental centroid analysis for 011287726-02. Kepler magnitude: 14.18. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

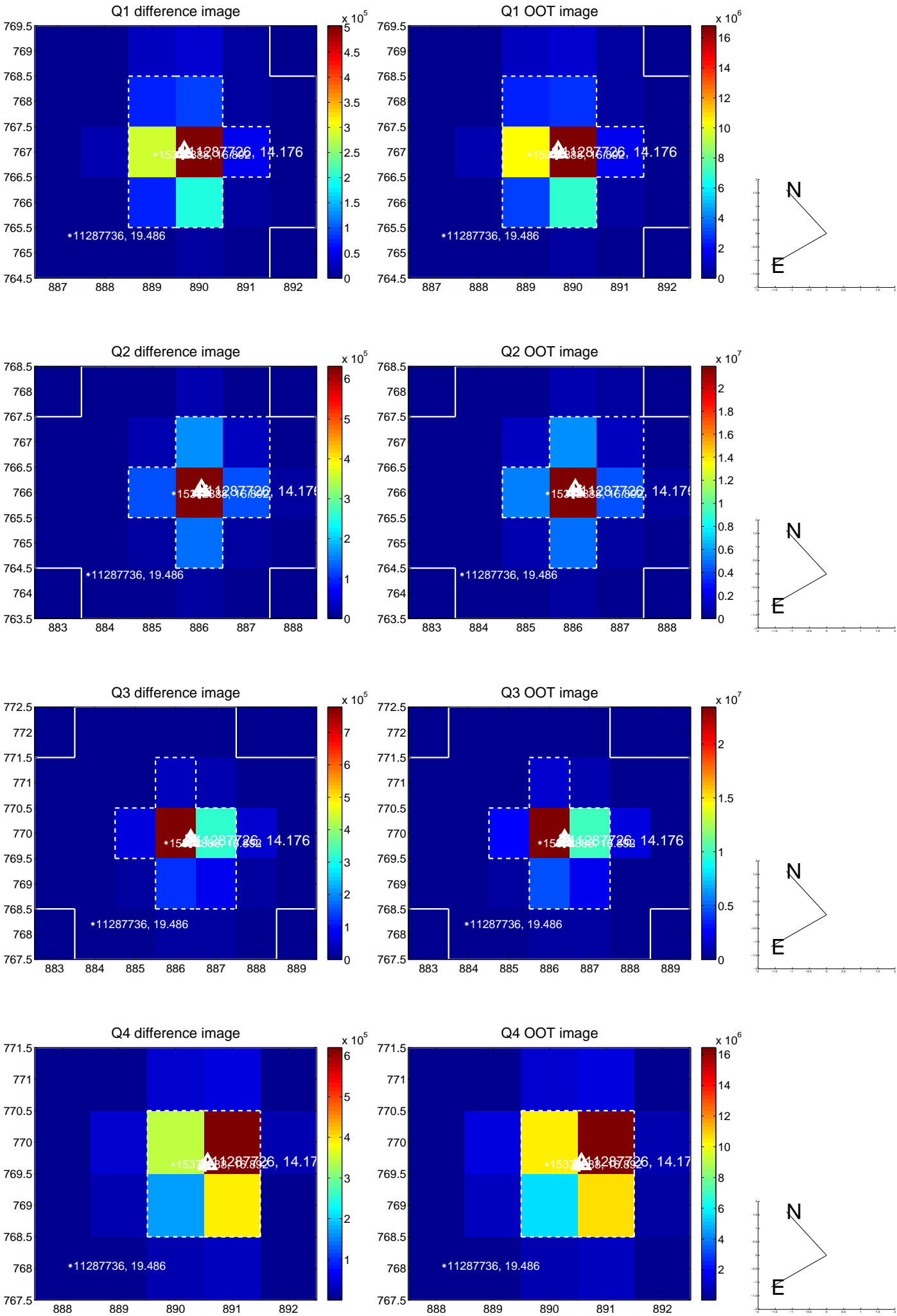
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.120 \pm 0.068$	1.75	$-0.116 \pm 0.068$	$-0.029 \pm 0.067$
PRF-fit source offset from KIC position	$0.039 \pm 0.070$	0.56	$0.036 \pm 0.070$	$-0.015 \pm 0.067$
photometric centroid source offset	$0.12 \pm 0.00$	44.16	$0.12 \pm 0.00$	$0.04 \pm 0.00$

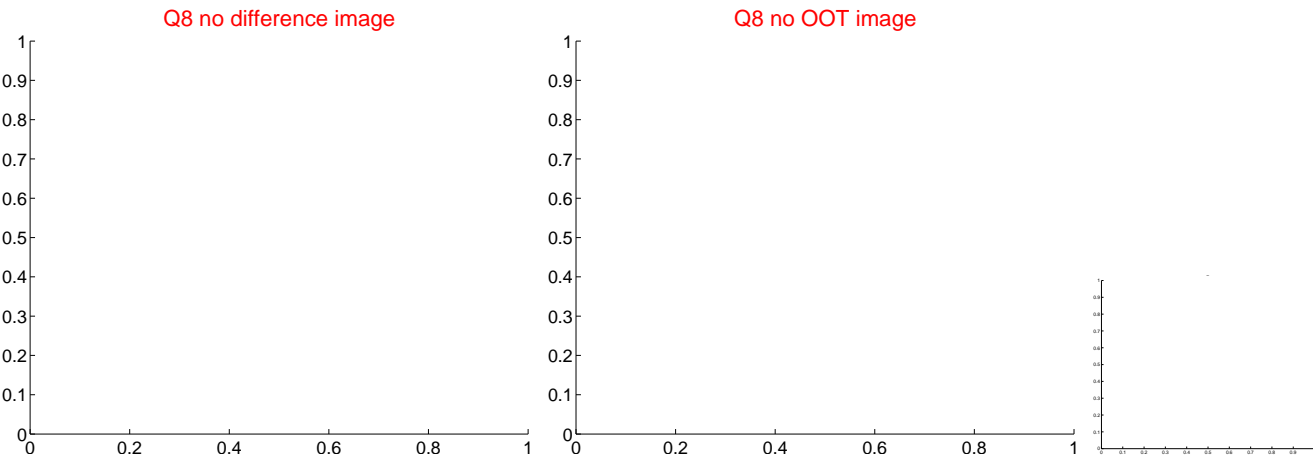
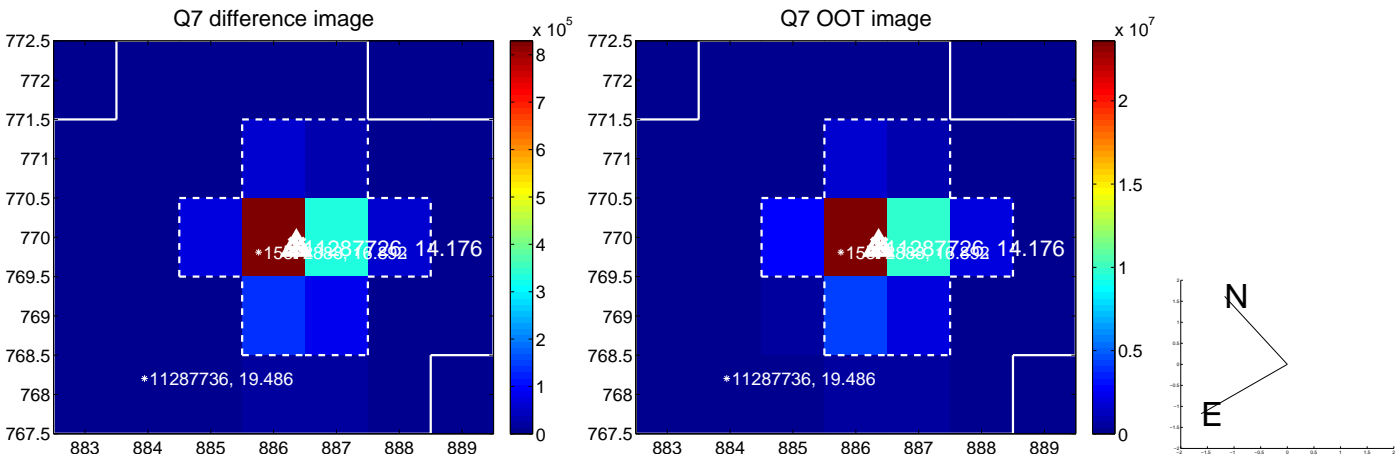
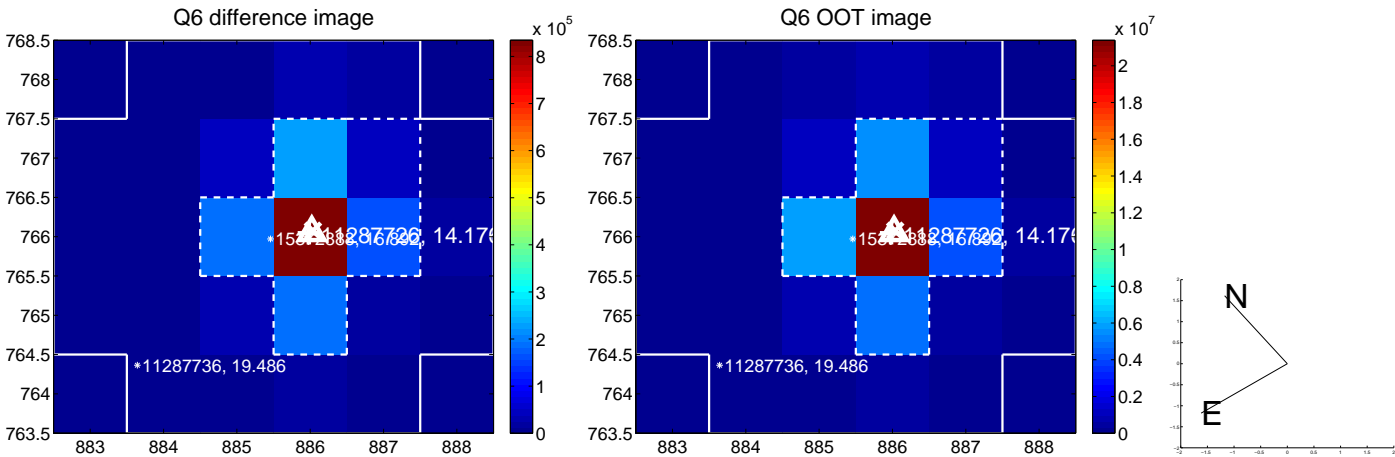
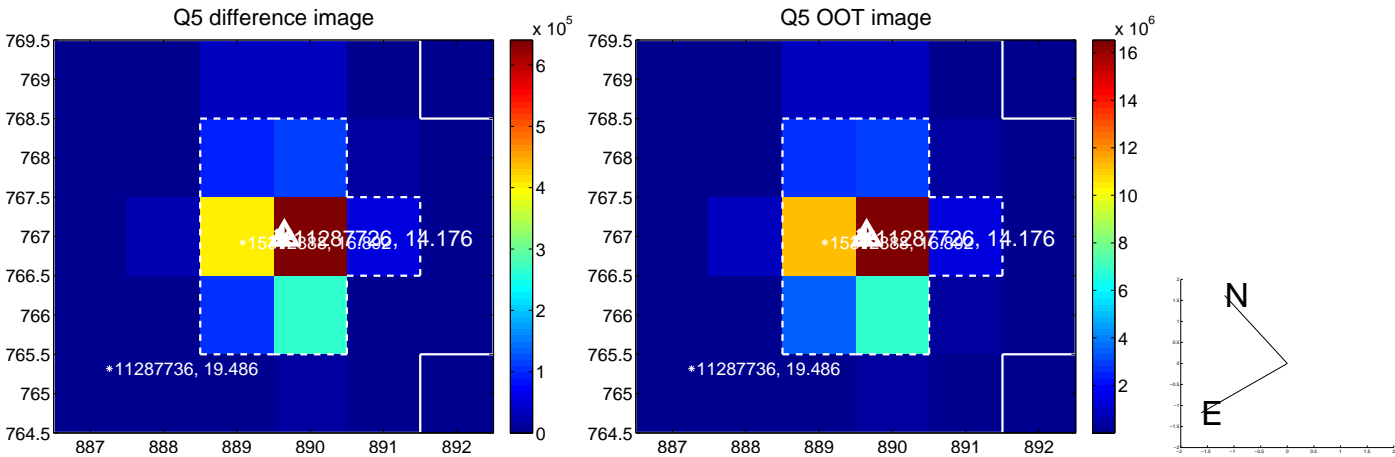


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

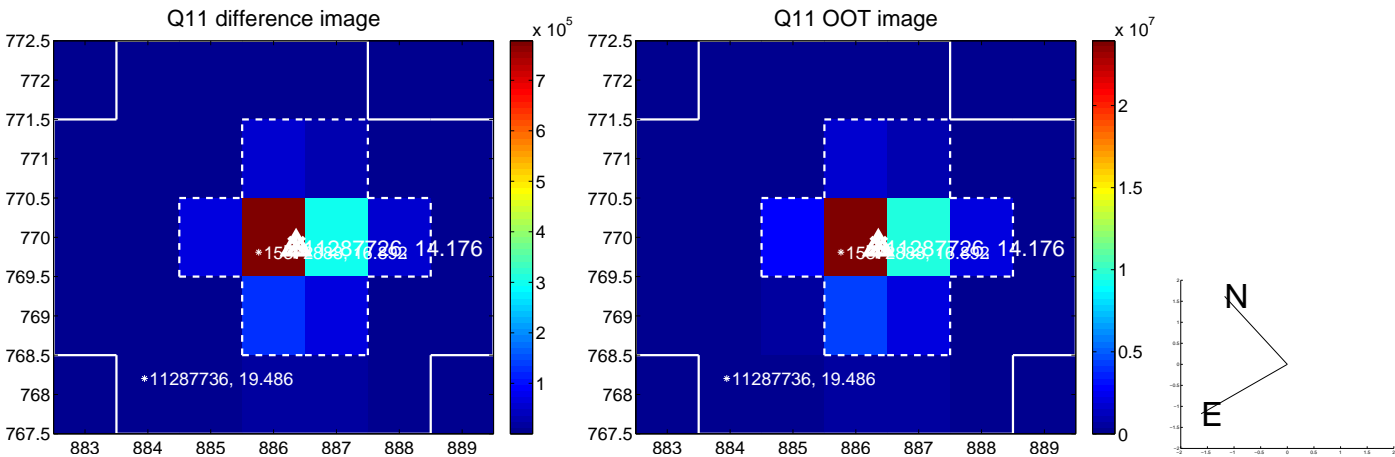
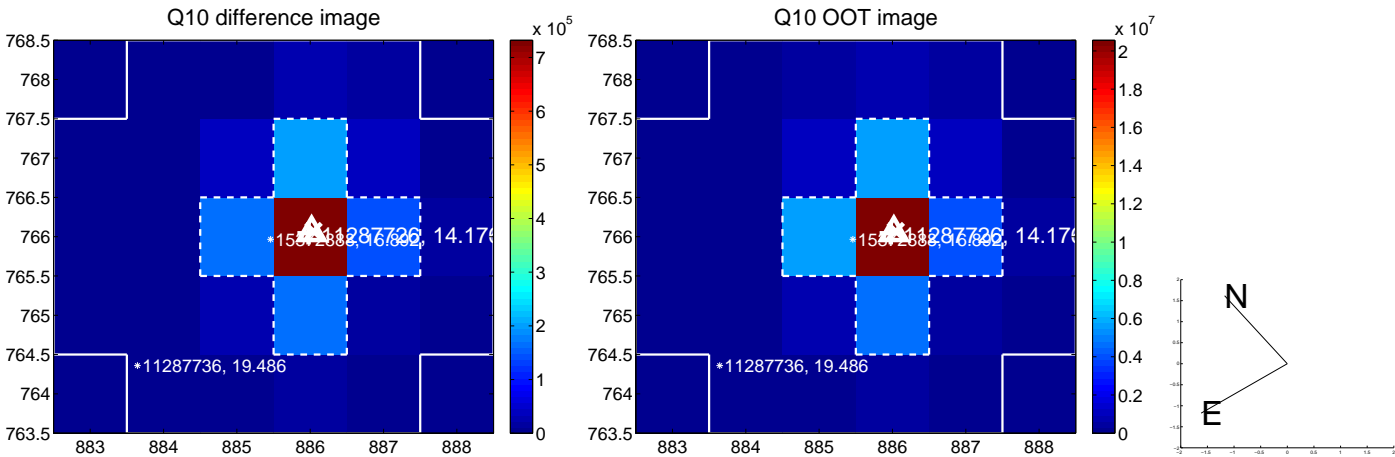
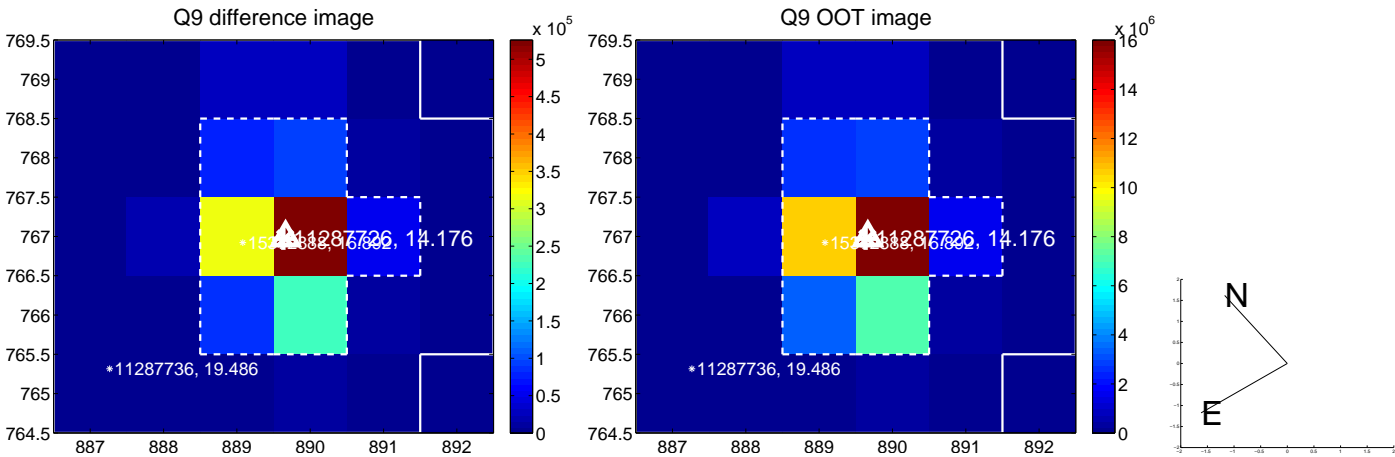
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



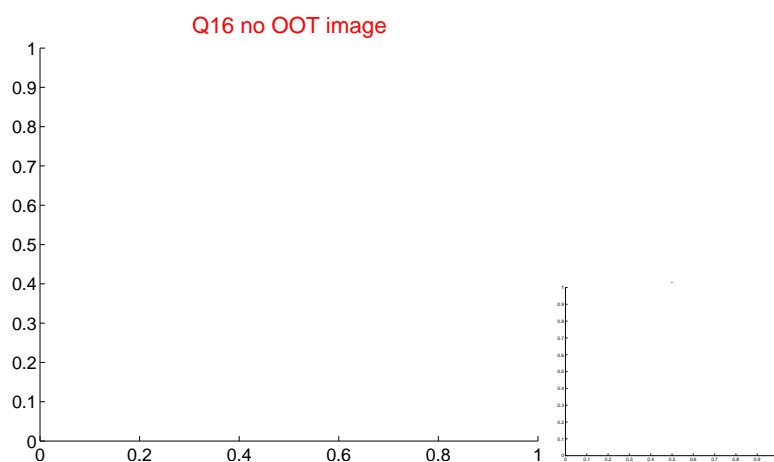
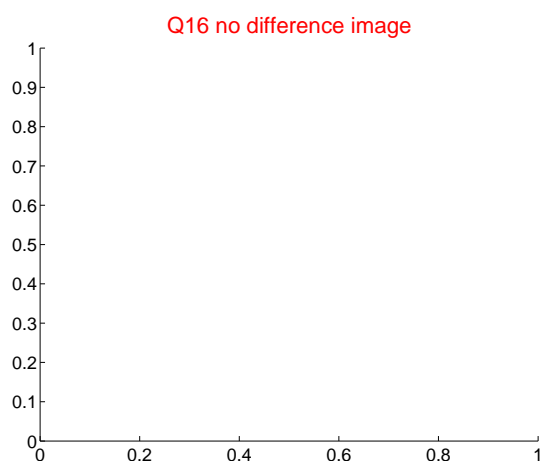
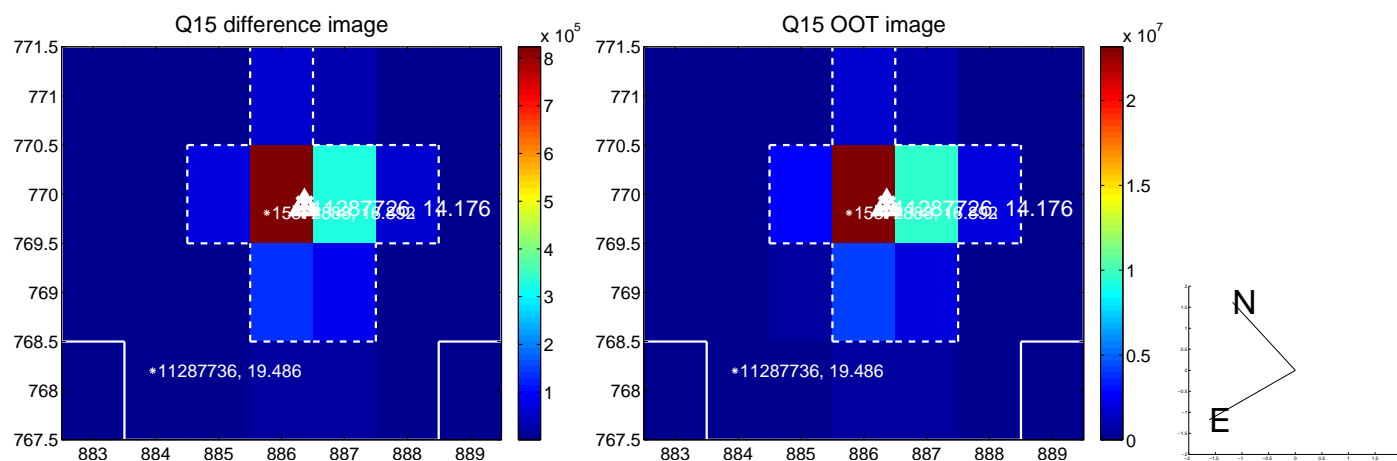
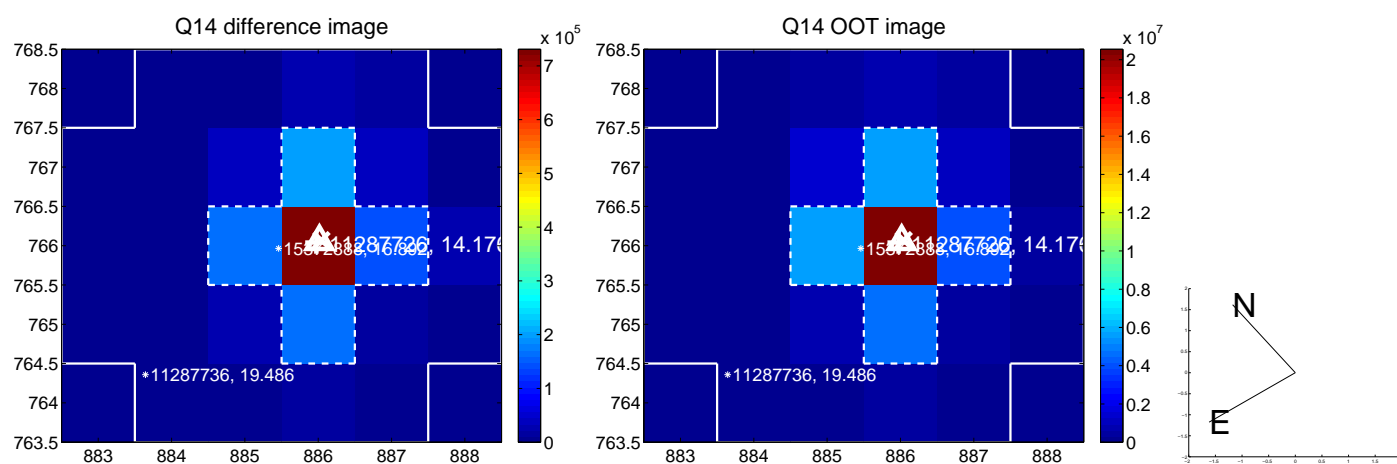
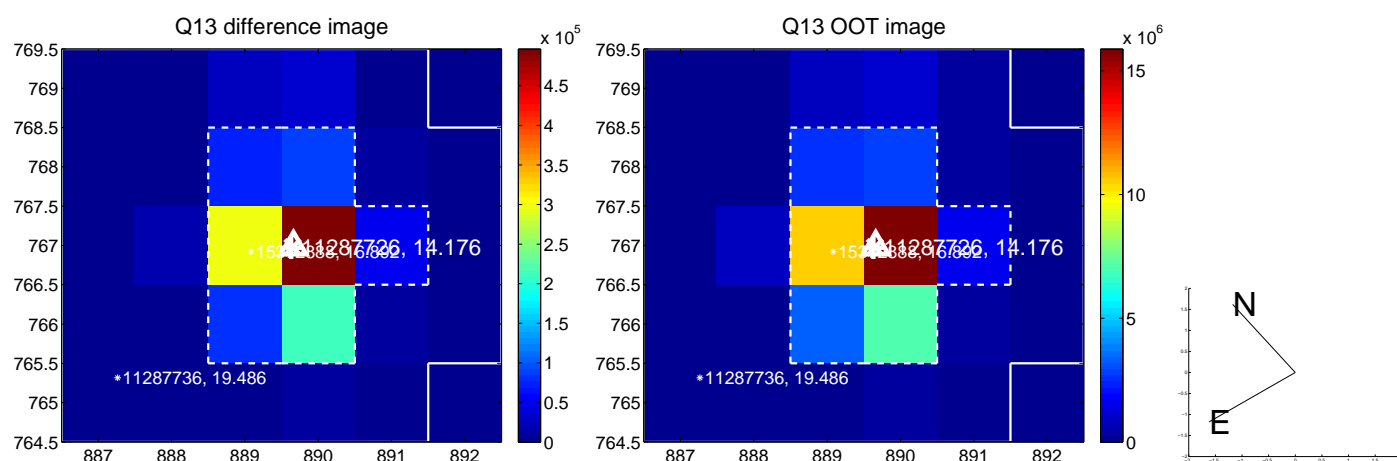
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



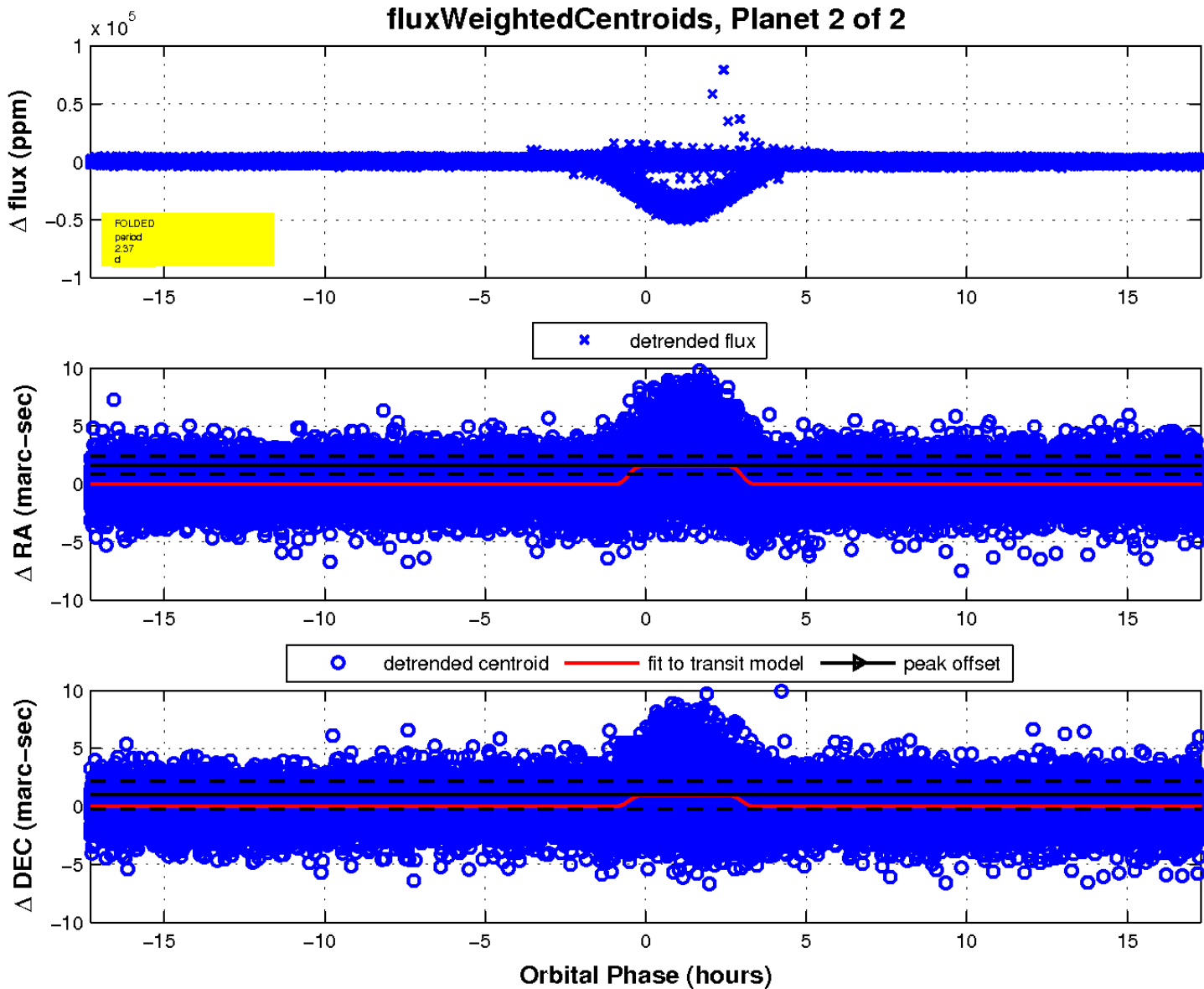
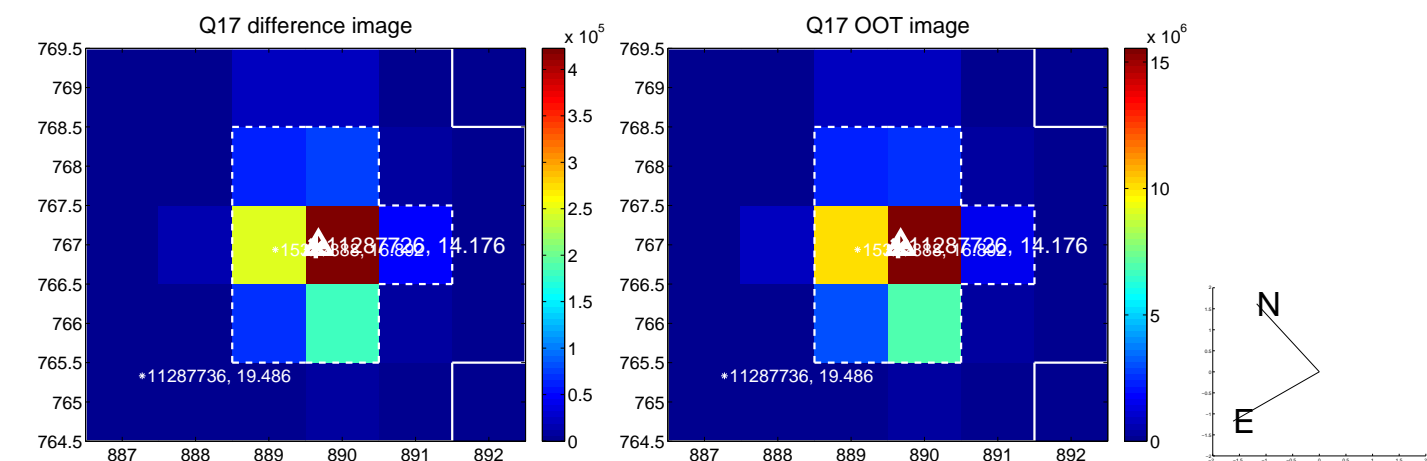
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

