

# KIC 006677267

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006677267-01	OBS	3622.01	3.125833	134.476980	4067.5	2.498	728.4	474.7	2.85	6137	28.38	4496.39
006677267-02	OBS	No	3.125807	132.919350	499.7	2.680	160.0	96.8	2.85	6137	12.06	4496.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006677267-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET
006677267-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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

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

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

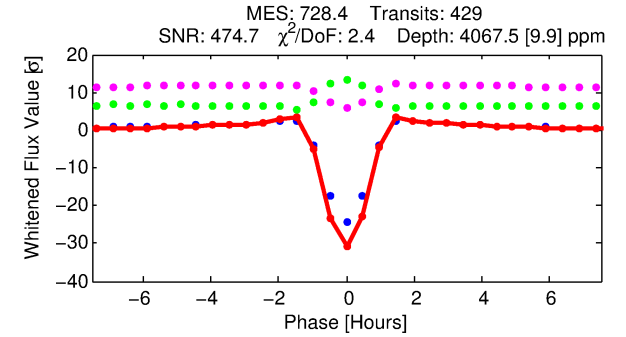
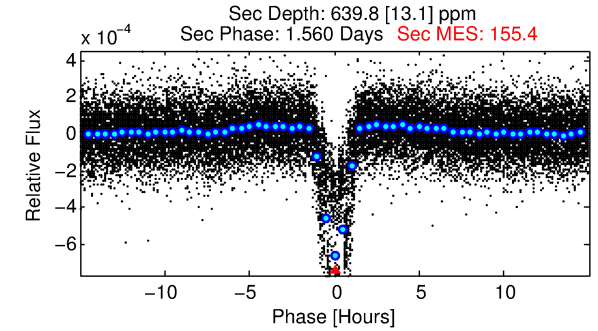
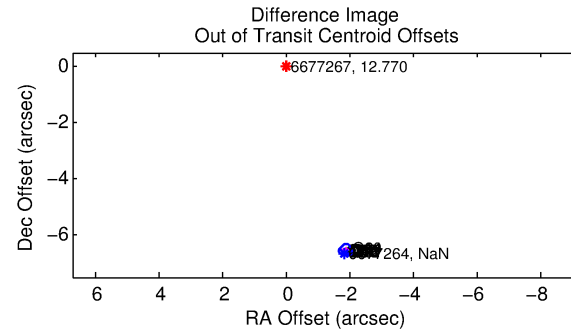
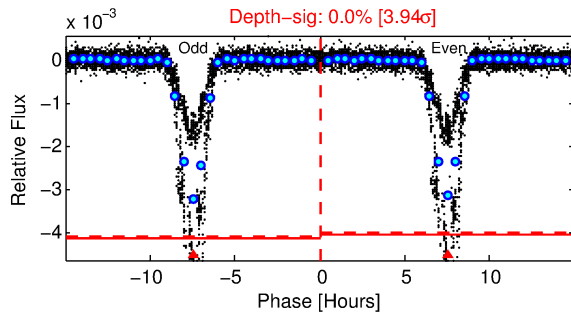
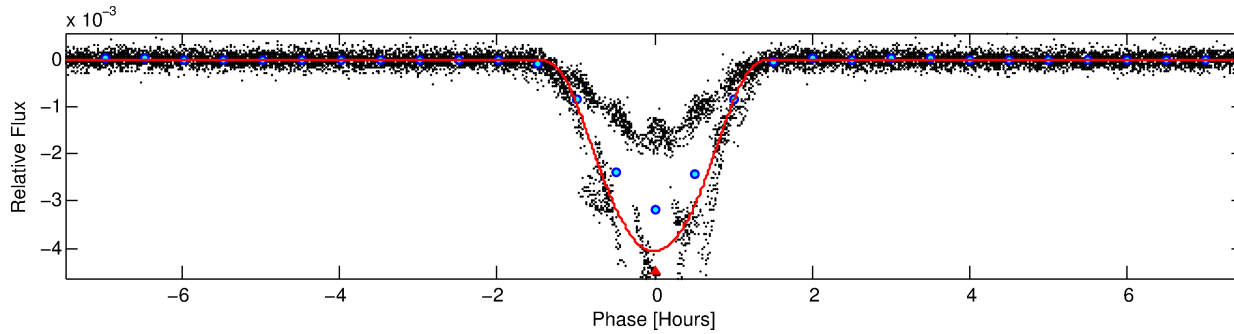
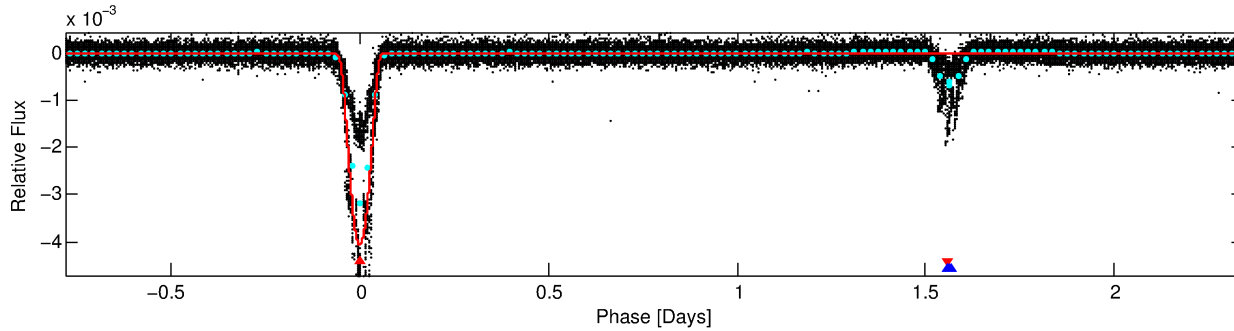
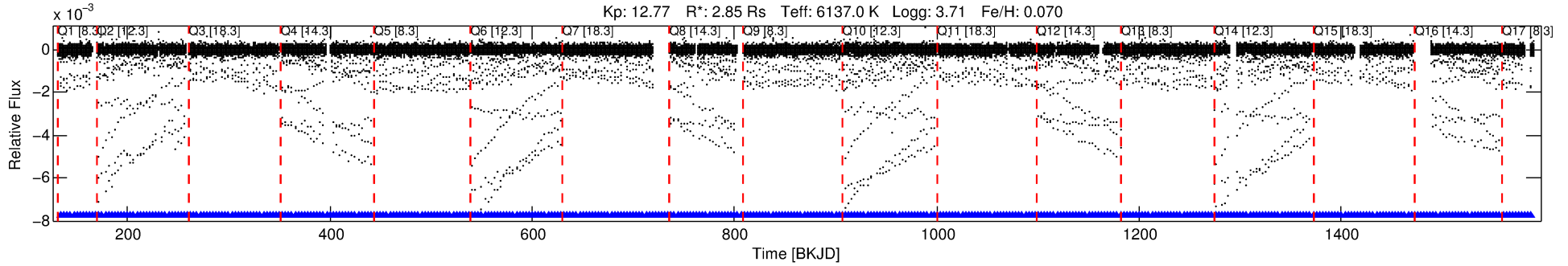
## Ephemeris Match Information For 006677267-01

No Significant Match Found

# DV One-Page Summary

KIC: 6677267 Candidate: 1 of 2 Period: 3.126 d  
KOI: K03622.01 Corr: 0.959

Kp: 12.77 R\*: 2.85 Rs Teff: 6137.0 K Logg: 3.71 Fe/H: 0.070



## DV Fit Results:

Period = 3.12583 [0.00000] d  
Epoch = 134.4770 [0.0001] BKJD  
Rp/R\* = 0.0912 [0.0043]  
a/R\* = 4.82 [0.06]  
b = 0.97 [0.01]  
Seff = 4496.39 [2383.97]  
Teq = 2088 [277] K  
Rp = 28.38 [10.27] Re  
a = 0.0479 [0.0159] AU  
Ag = 1.00 [0.53] [0.01σ]  
Teffp = 3232 [117] K [3.81σ]

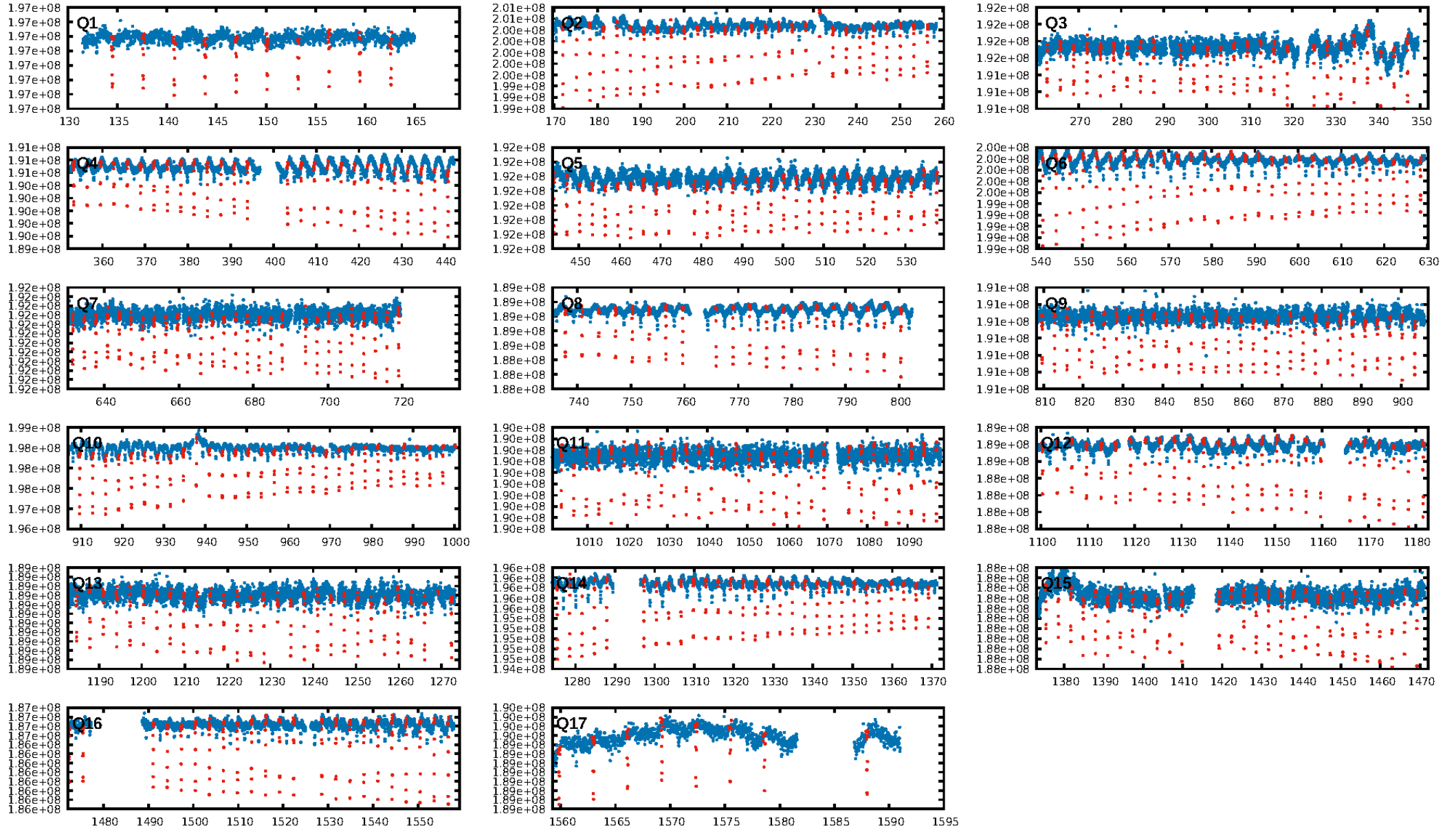
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [411/411]  
GhostDiagnostic-chr: -0.464  
Centroid-sig: 0.0%  
Centroid-so: 26.377 arcsec [1310.26σ]  
OotOffset-rm: 6.807 arcsec [100.53σ]  
KicOffset-rm: 6.993 arcsec [103.04σ]  
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]

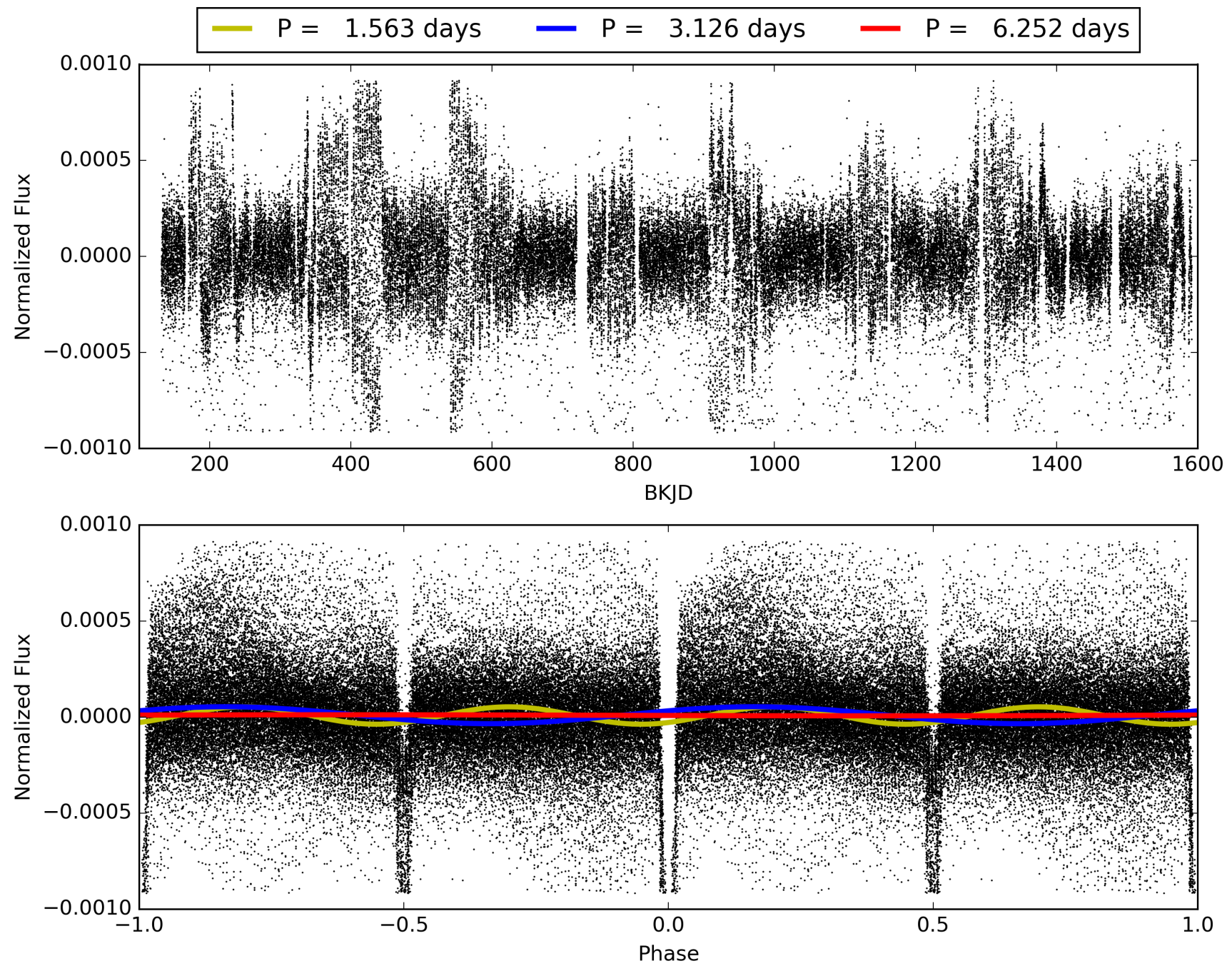
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:44:35 Z

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

# TCE 006677267-01, PDC Light Curves

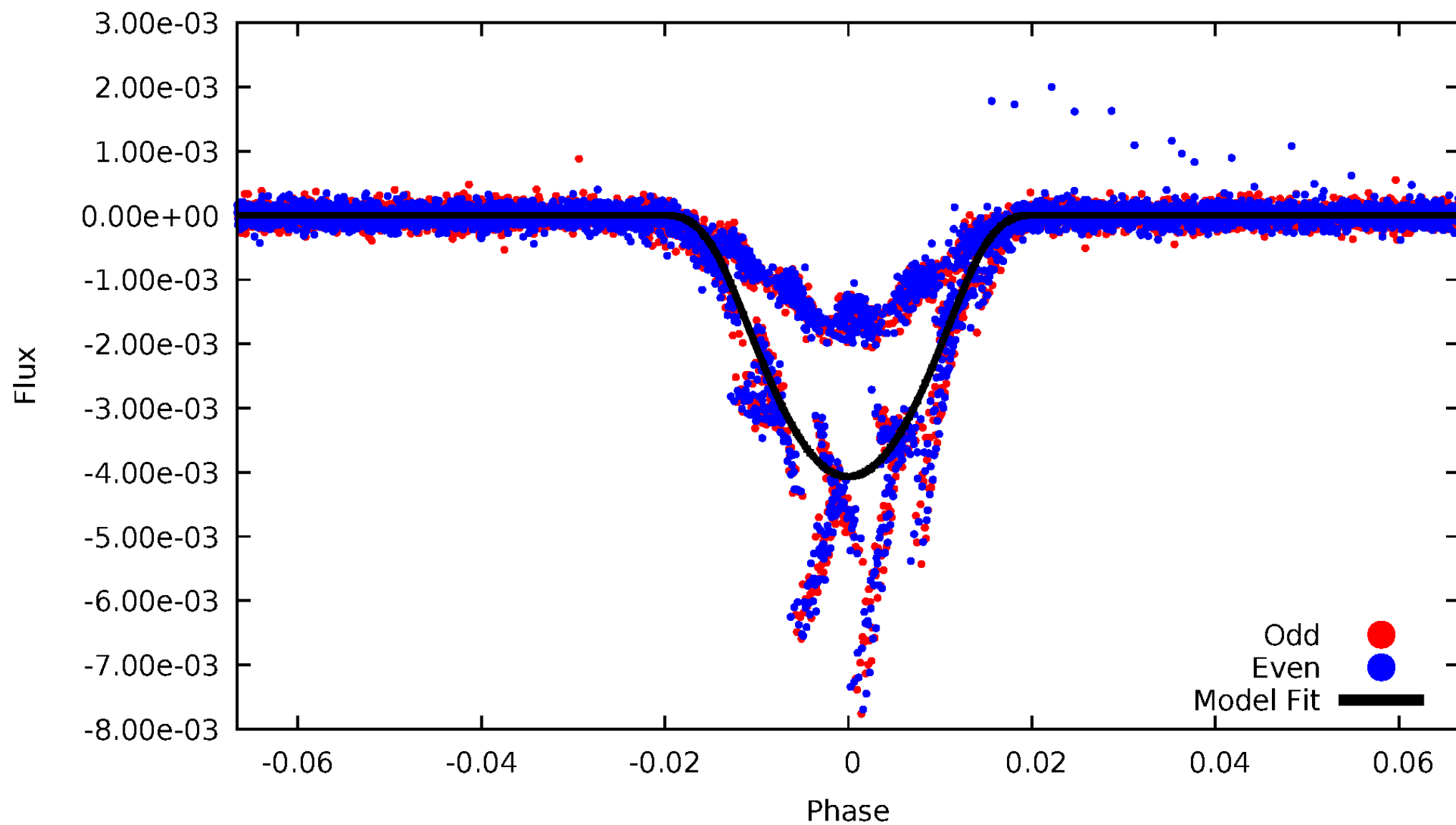


TCE 006677267-01



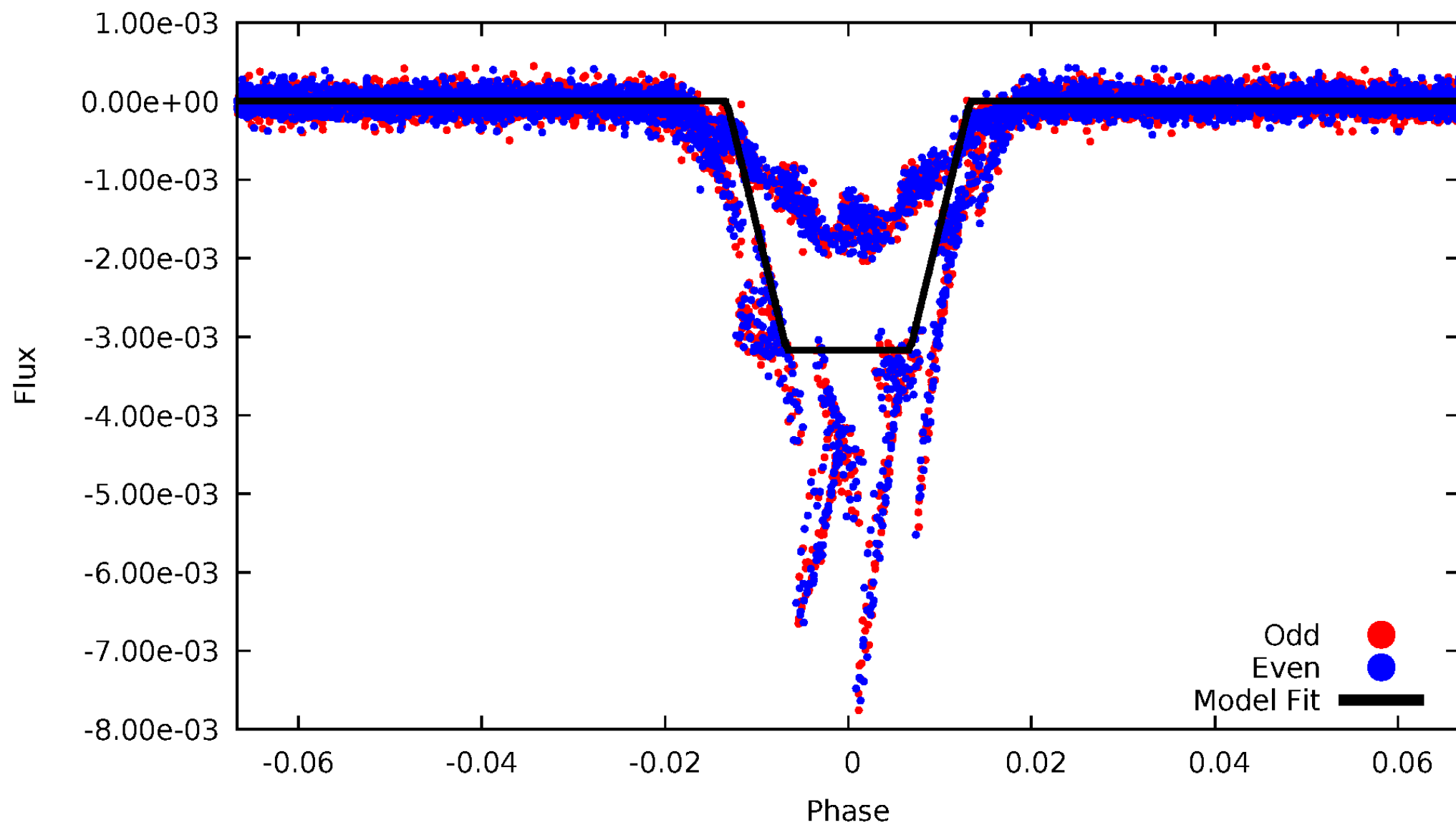
# DV Odd/Even

TCE 006677267-01



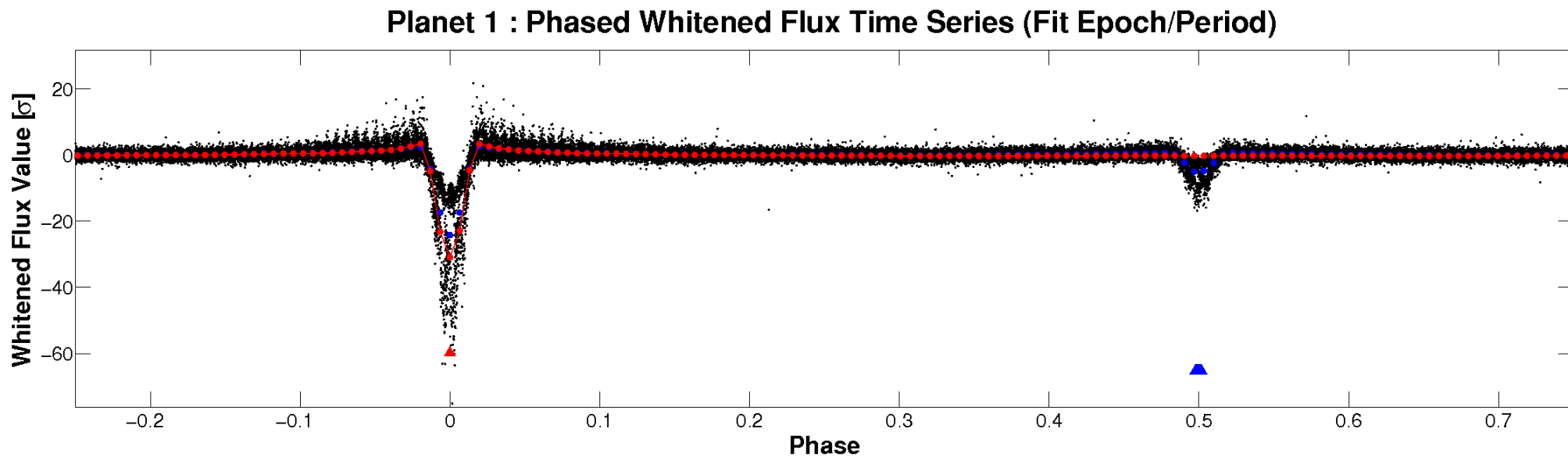
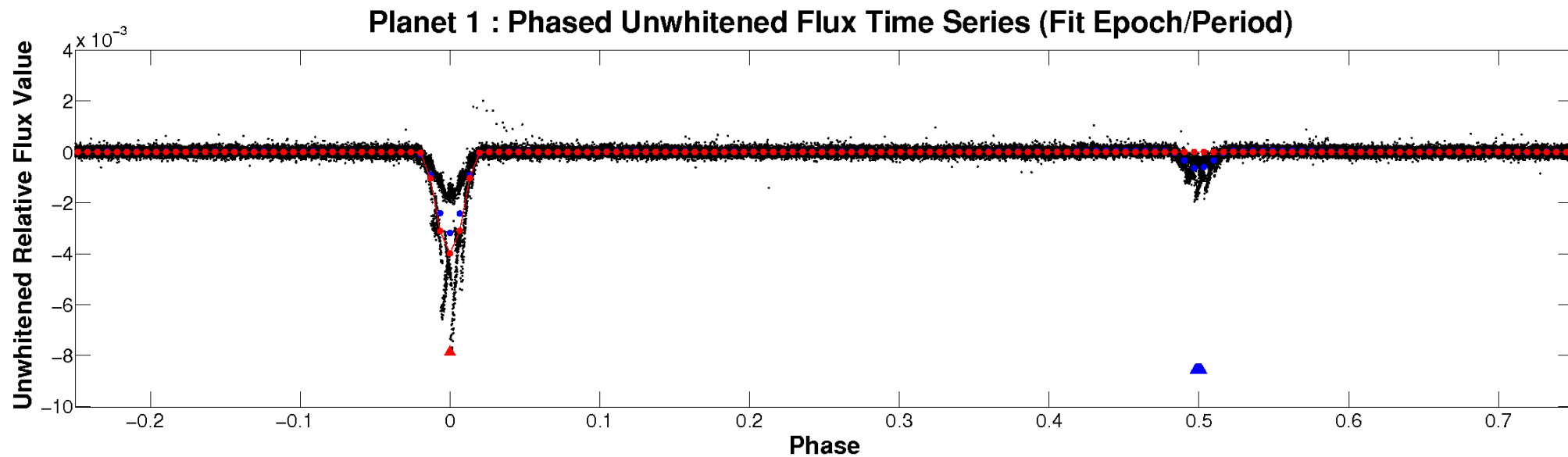
# ALT Odd/Even

TCE 006677267-01



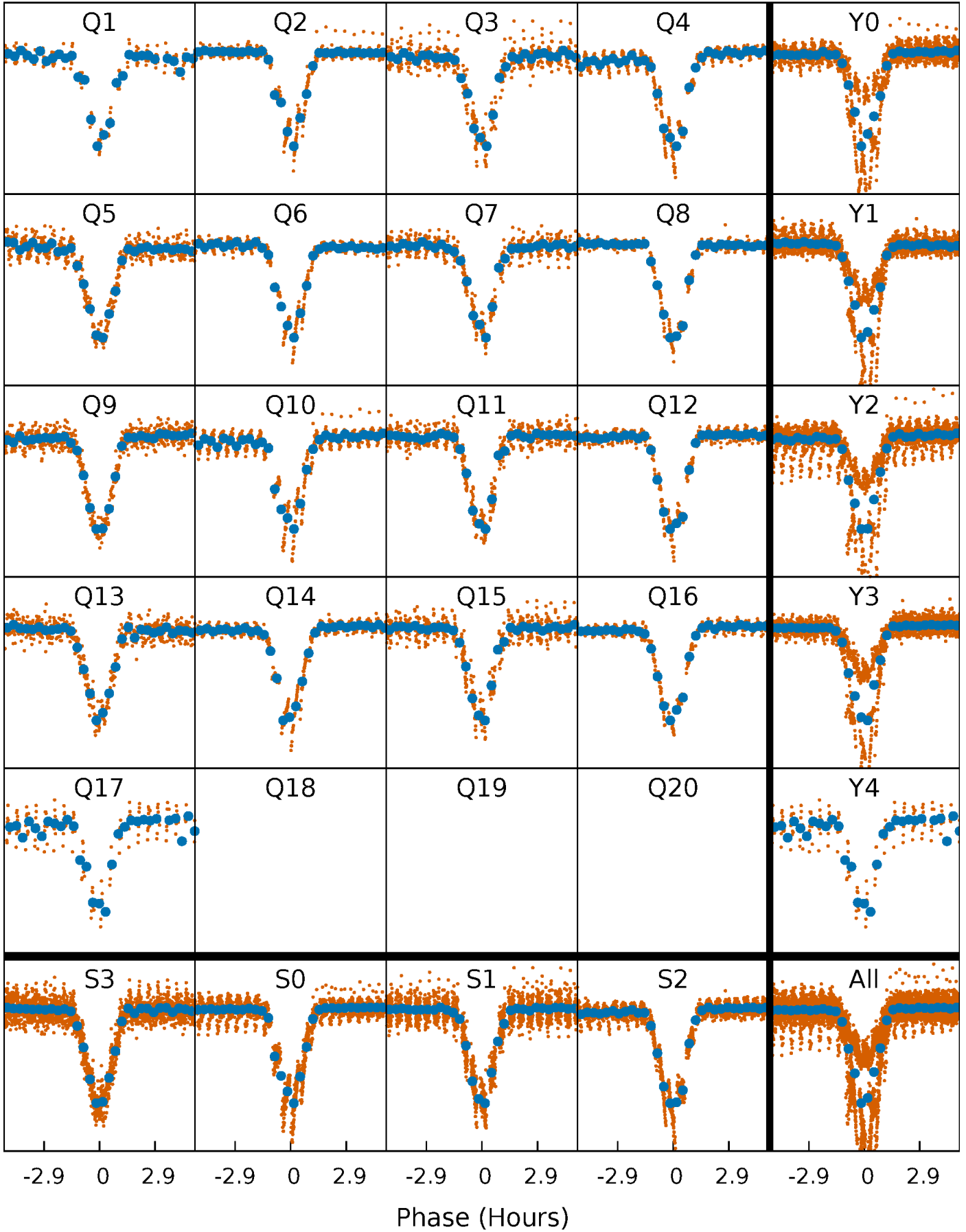


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

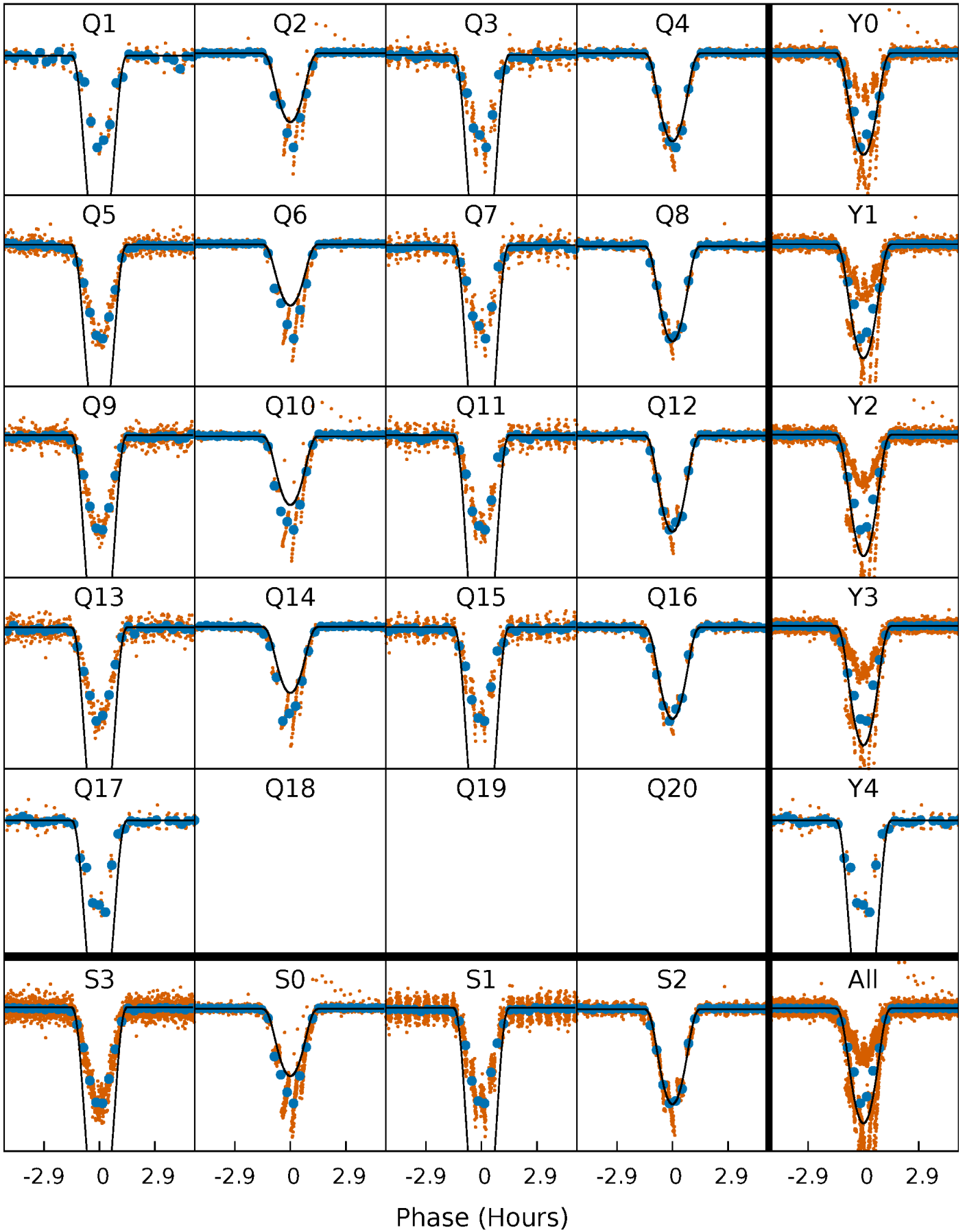
TCE 006677267-01 P= 3.125833 Days  $T_0=134.476980$  (BKJD)





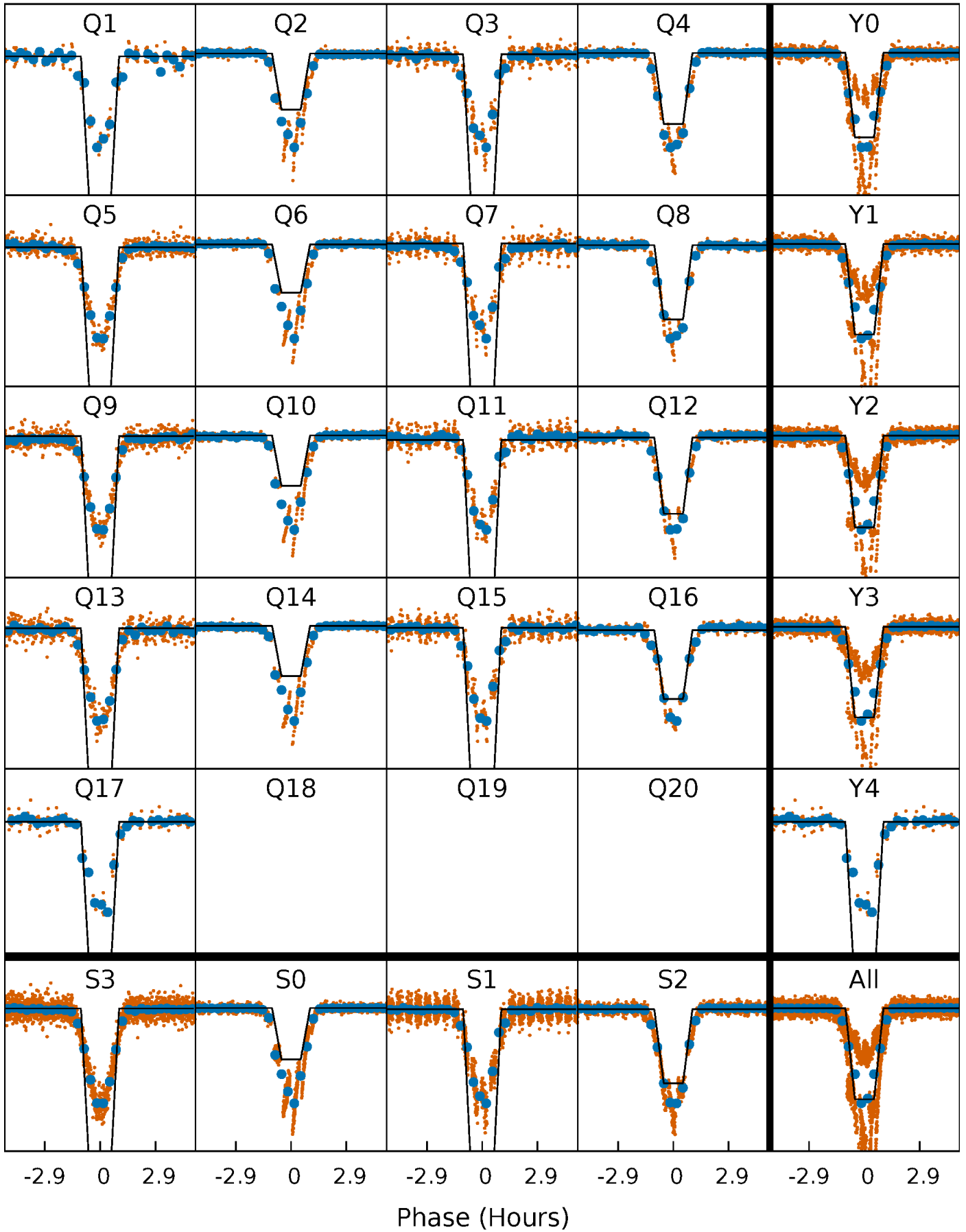
# DV Quarter-Phased Transit Curves

TCE 006677267-01 P= 3.125833 Days  $T_0=134.476980$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

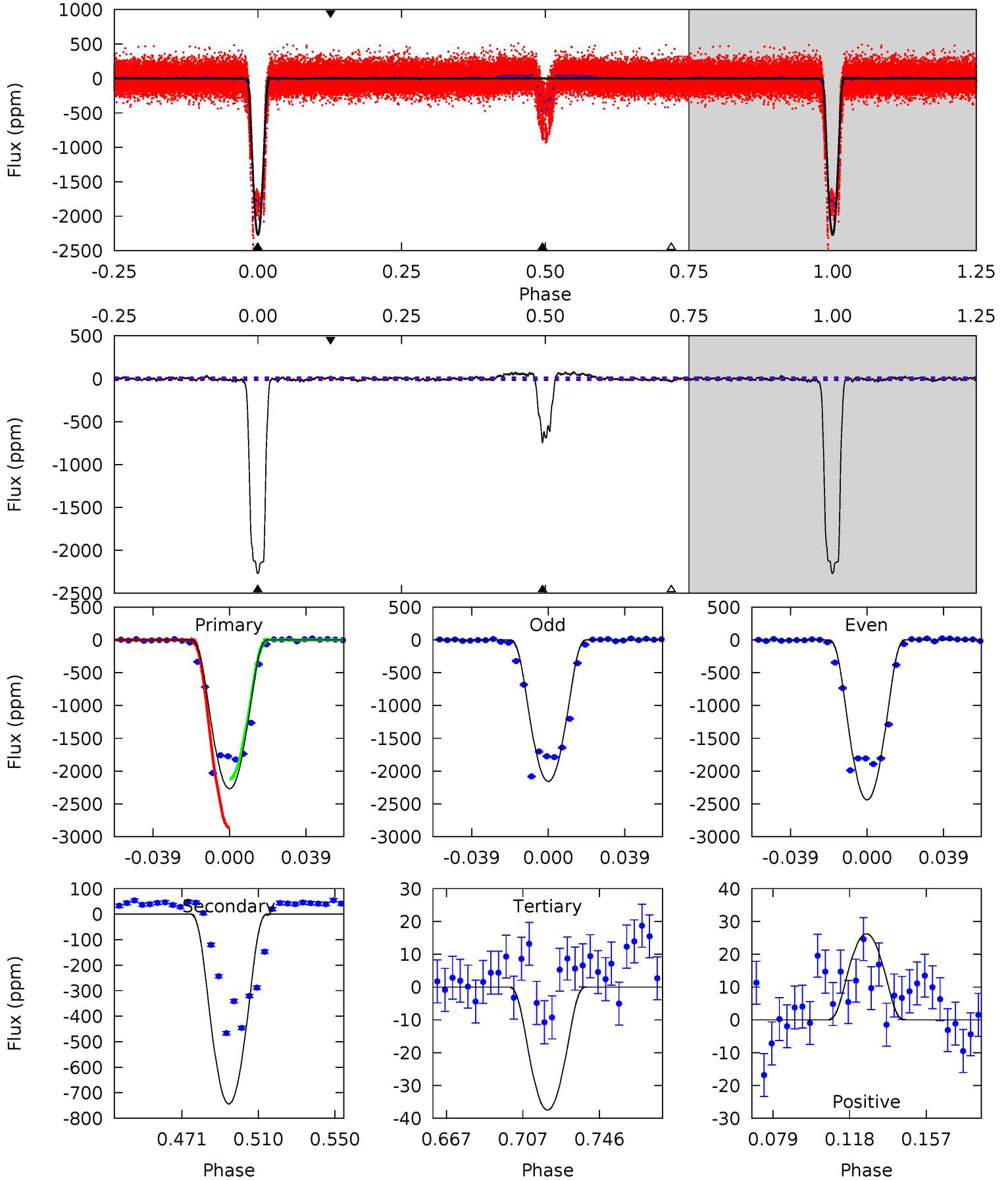
TCE 006677267-01 P= 3.125822 Days  $T_0=134.479345$  (BKJD)



# DV Model-Shift Uniqueness Test

006677267-01, P = 3.125833 Days, E = 131.351147 Days

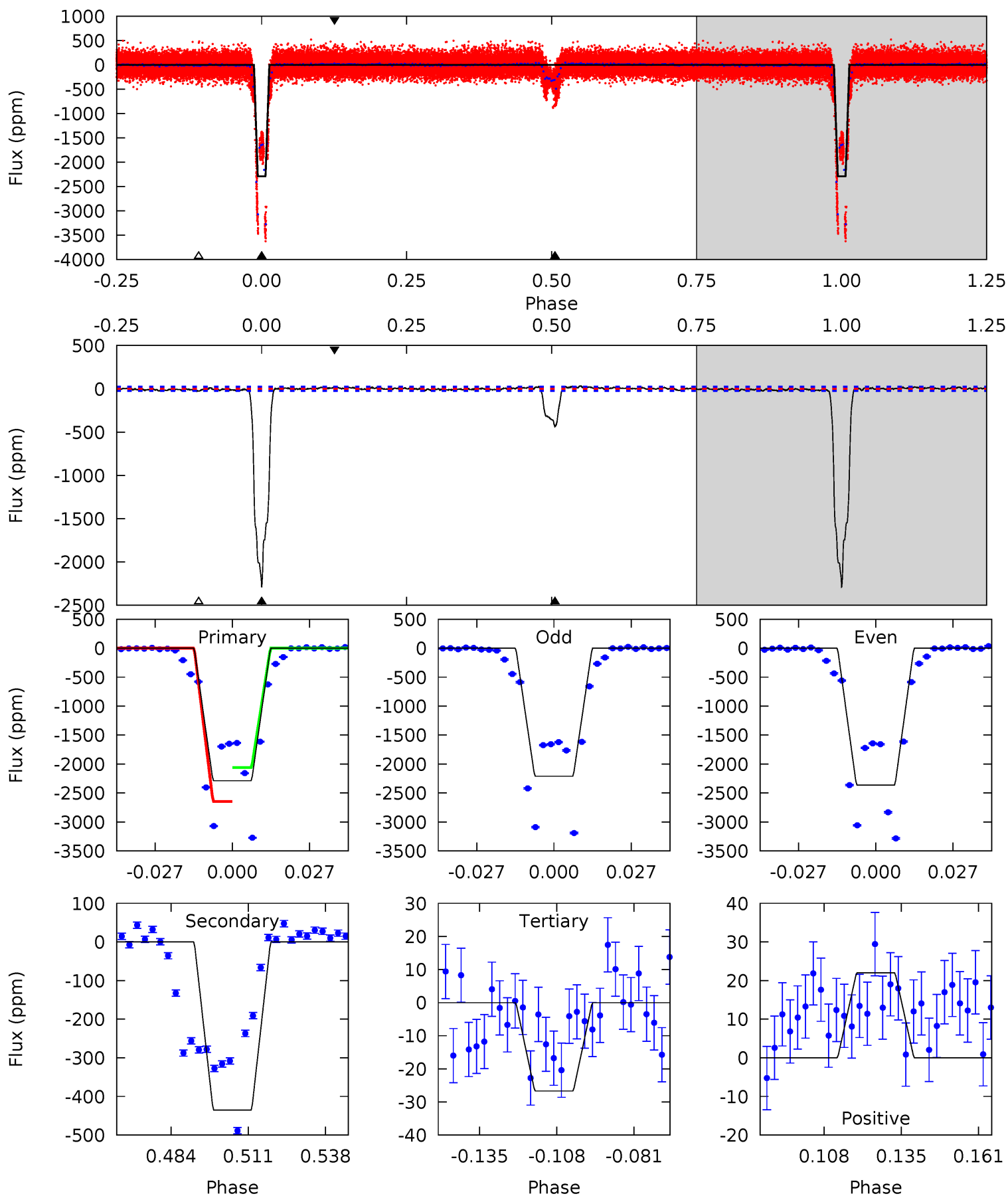
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
675.0	221.2	11.2	7.80	4.76	2.06	5.77	663.8	667.2	210.1	213.4	41.5	1.66	0.03	0



# Alt Model-Shift Uniqueness Test

006677267-01, P = 3.125822 Days, E = 131.353523 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
457.0	86.8	5.33	4.39	4.83	2.21	2.01	451.7	452.6	81.5	82.5	15.2	1.64	0.01	58.5



### Stellar Parameters For KIC 006677267

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6137^{+167}_{-167}$	$3.705^{+0.300}_{-0.080}$	$0.070^{+0.300}_{-0.250}$	$2.852^{+0.438}_{-1.023}$	$1.505^{+0.194}_{-0.306}$	$0.091^{+0.198}_{-0.027}$
	+3%/-3%	+8%/-2%	+429%/-357%	+15%/-36%	+13%/-20%	+217%/-30%
Source	PHO1	FLK73	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 006677267-01 / KOI 3622.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-744 \pm 3$	$27.48^{+3.34}_{-5.08}$	$2853^{+169}_{-230}$	$3593^{+117}_{-103}$	$1.264^{+0.537}_{-0.233}$
Alt.	$-435 \pm 5$	$16.72^{+2.77}_{-3.15}$	$2859^{+168}_{-255}$	$3934^{+147}_{-137}$	$1.981^{+0.888}_{-0.463}$

$T_{max}$  = 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

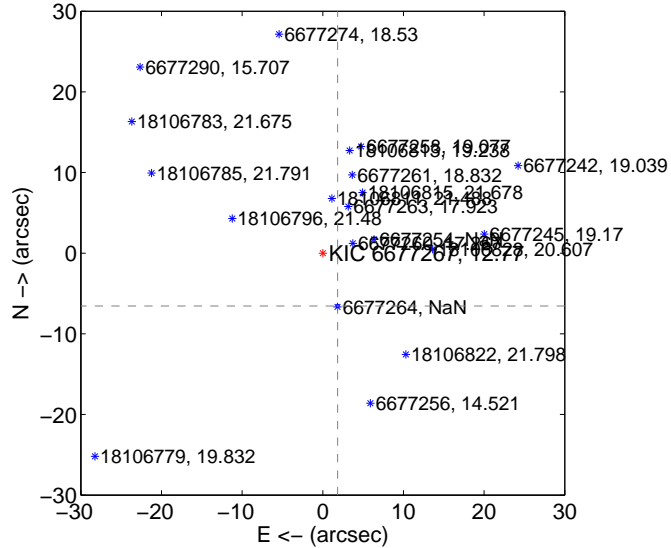
Supplemental centroid analysis for 006677267-01. Kepler magnitude: 12.77. Transit SNR 474.73

There are 17 quarters with good PRF difference image offsets

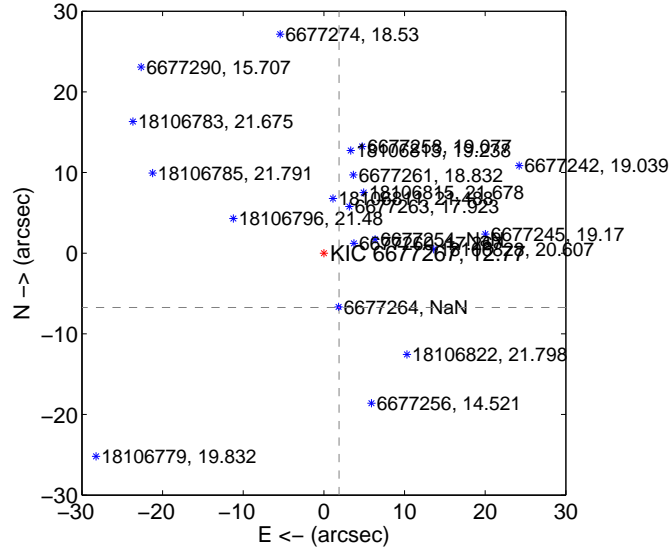
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.807 \pm 0.068$	100.53	$-1.841 \pm 0.068$	$-6.553 \pm 0.068$
PRF-fit source offset from KIC position	$6.993 \pm 0.068$	103.04	$-1.886 \pm 0.067$	$-6.734 \pm 0.068$
photometric centroid source offset	$26.38 \pm 0.02$	1310.27	$-6.85 \pm 0.01$	$-25.47 \pm 0.02$

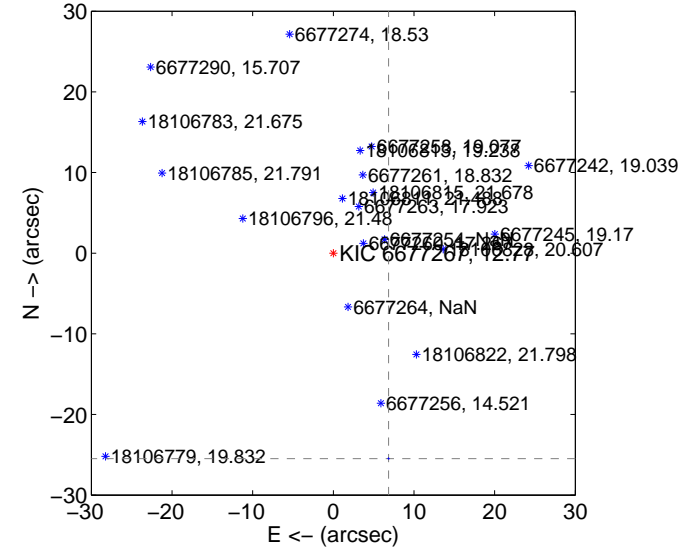
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

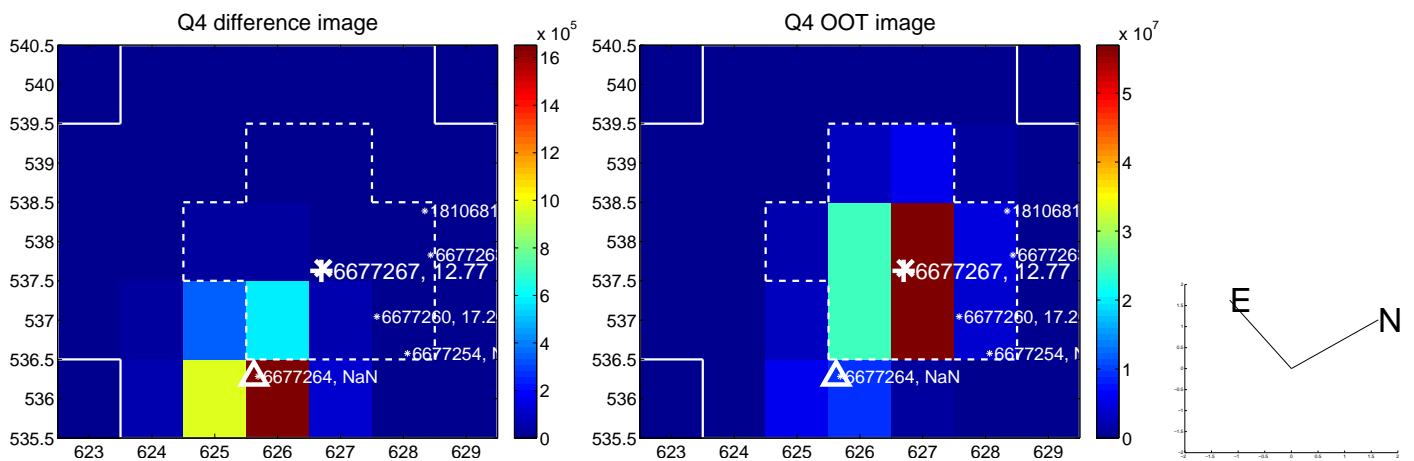
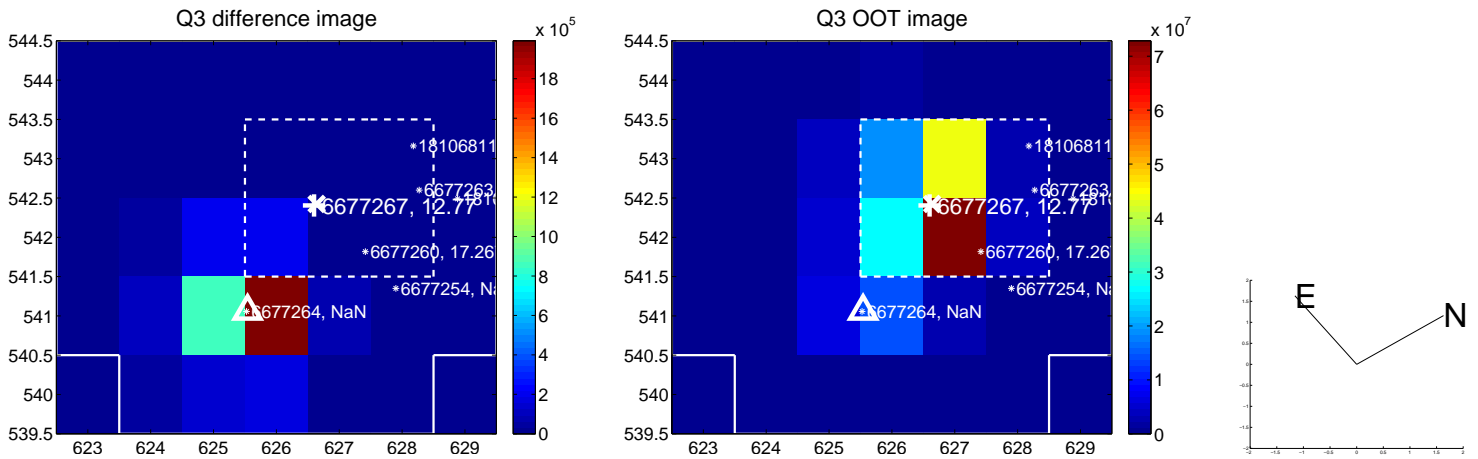
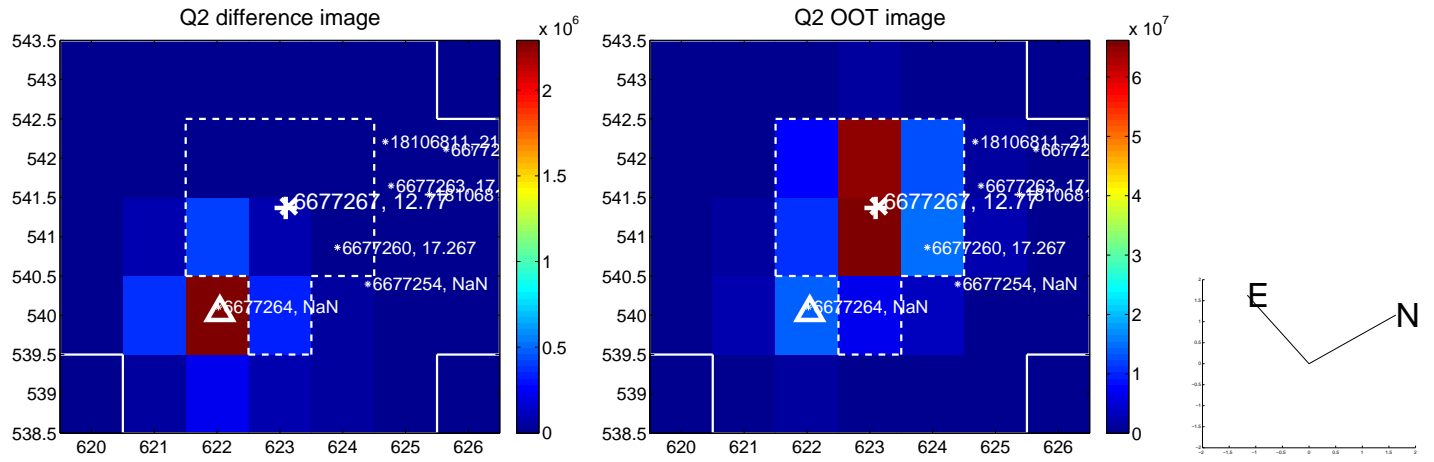
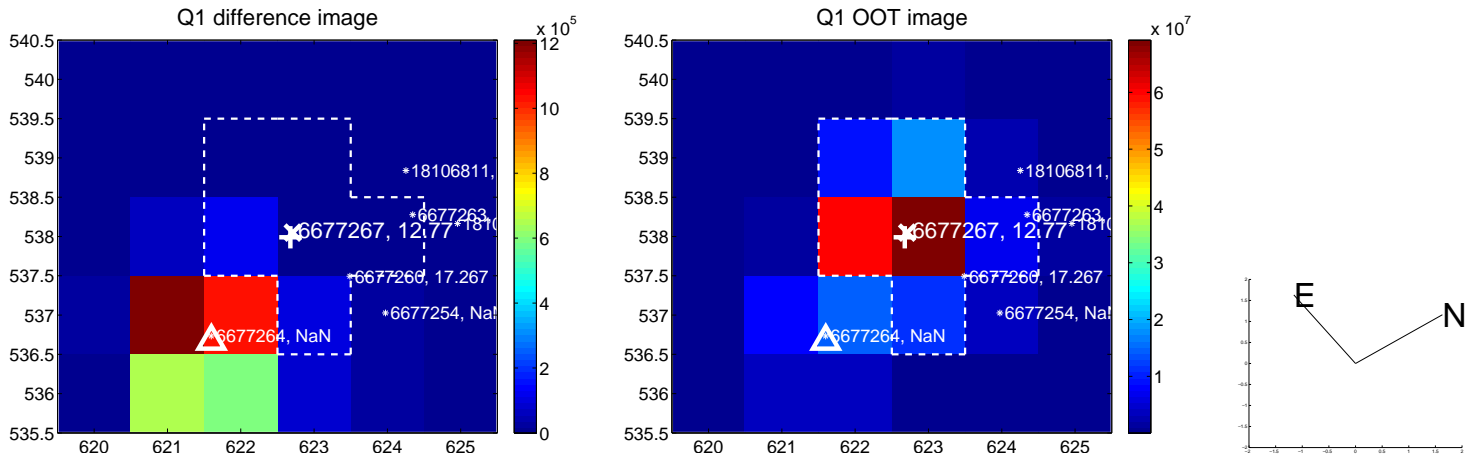


offset from photometric centroids



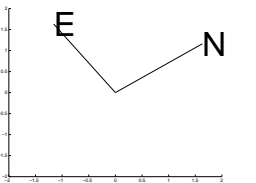
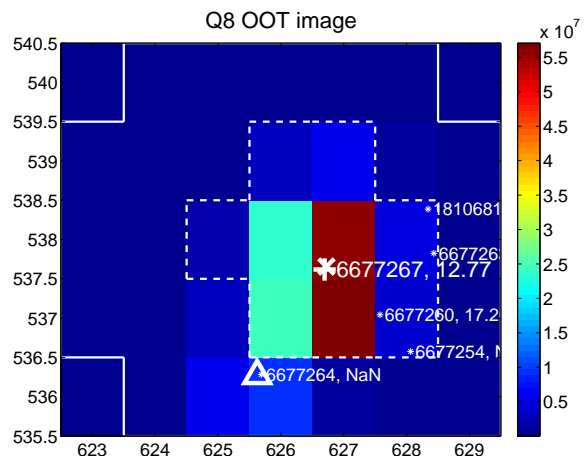
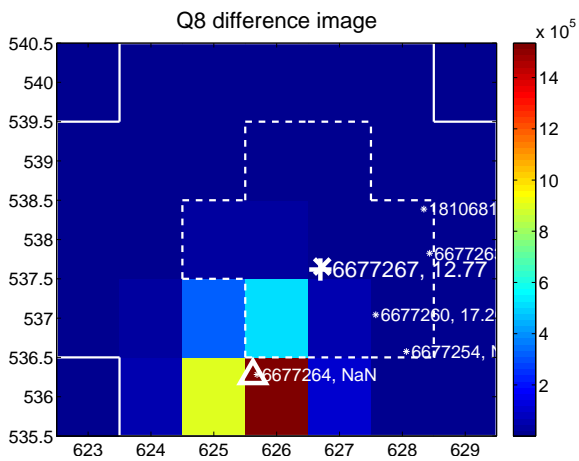
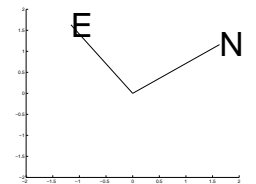
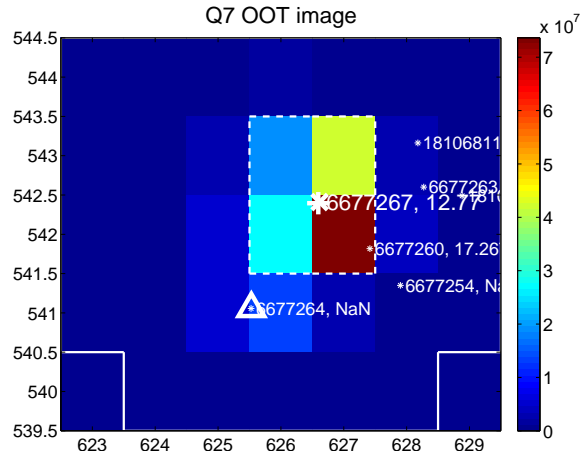
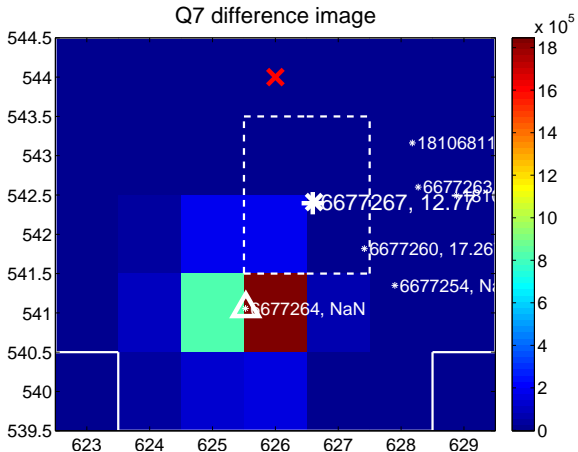
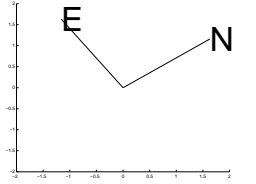
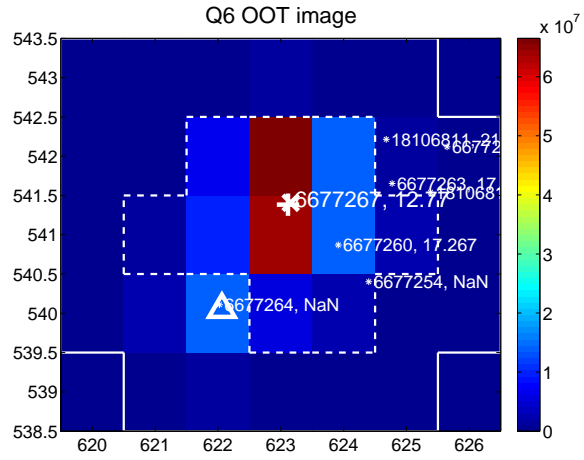
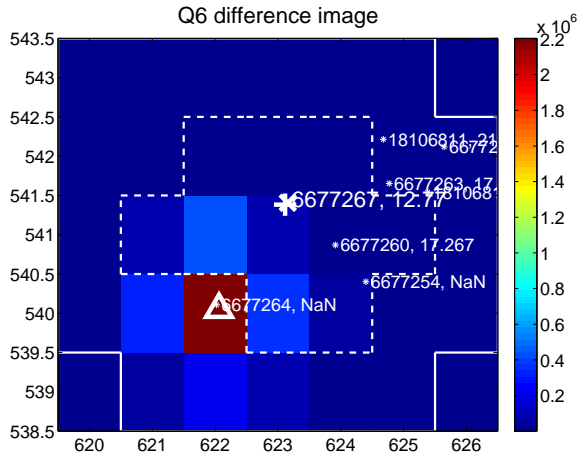
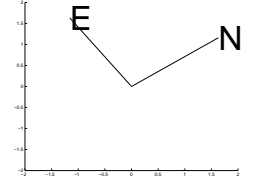
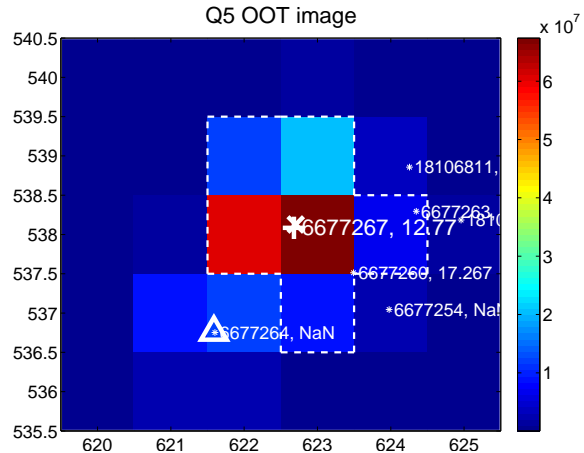
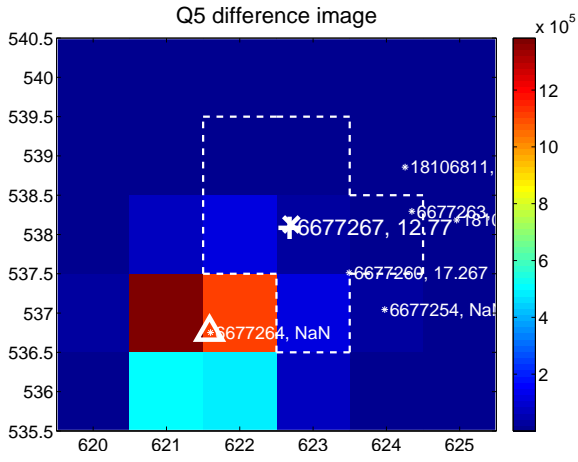
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

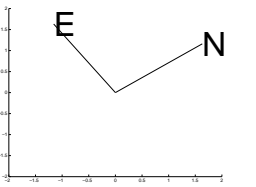
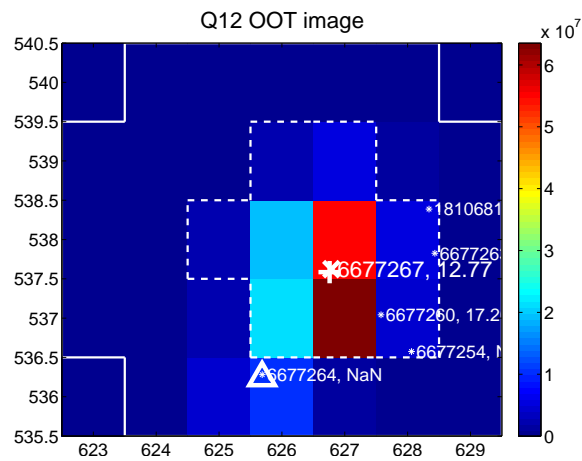
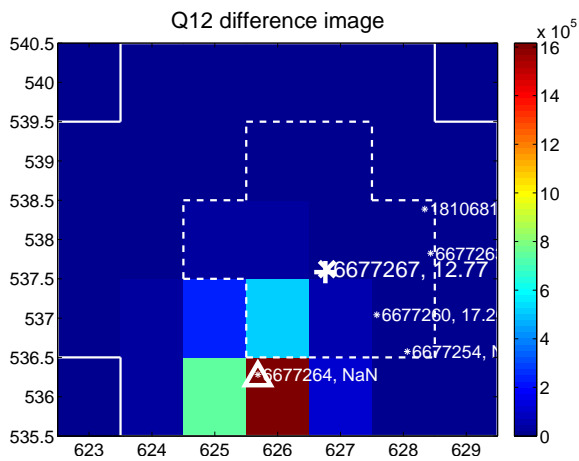
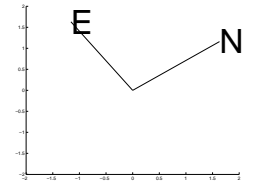
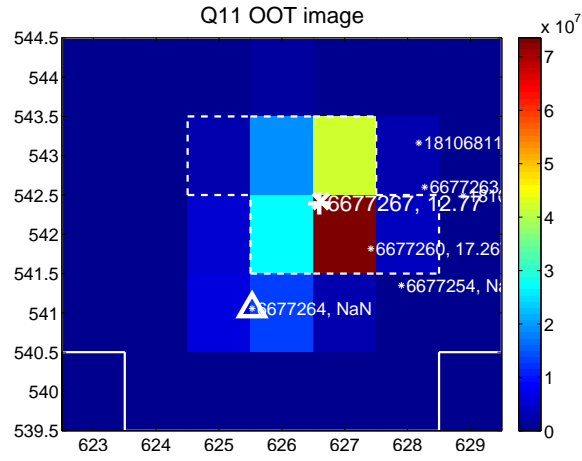
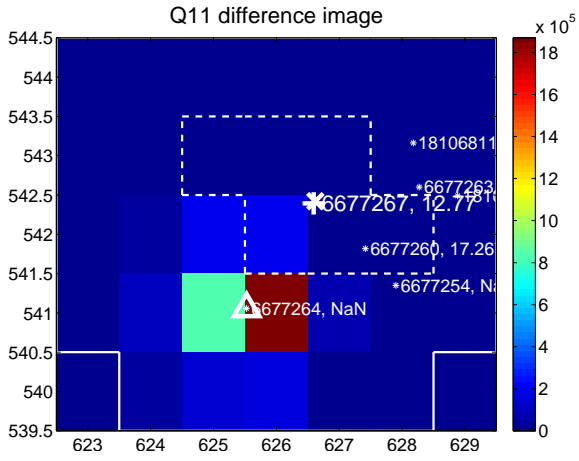
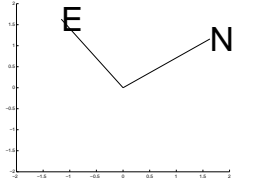
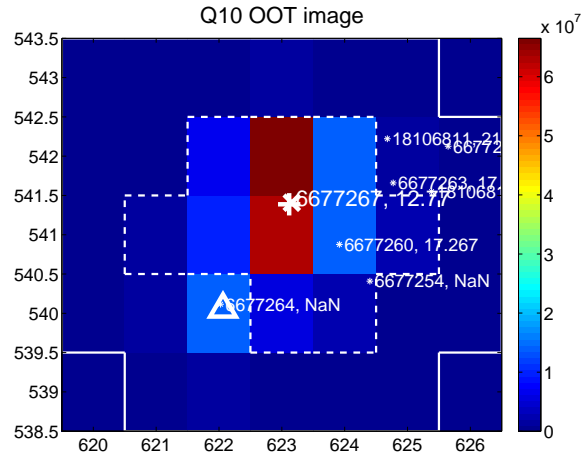
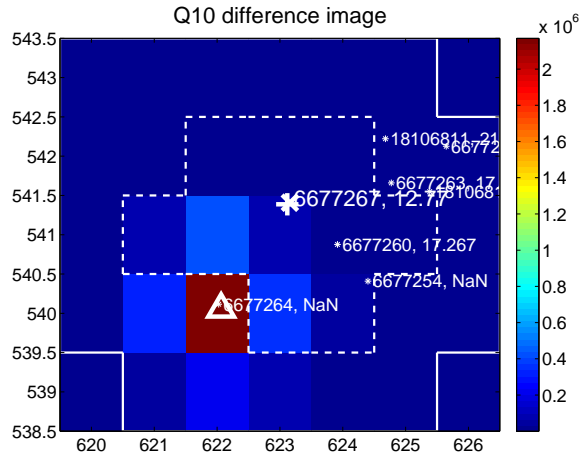
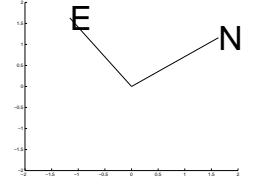
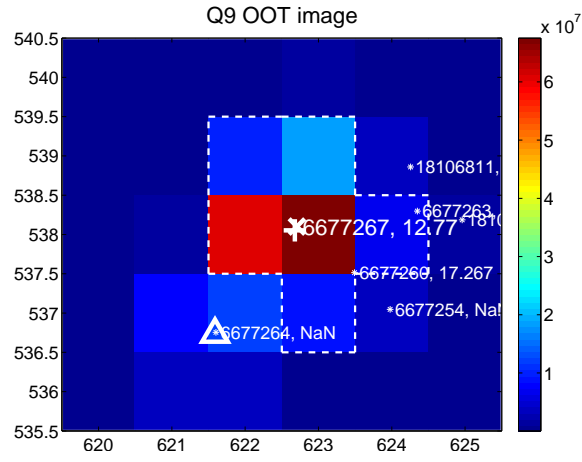
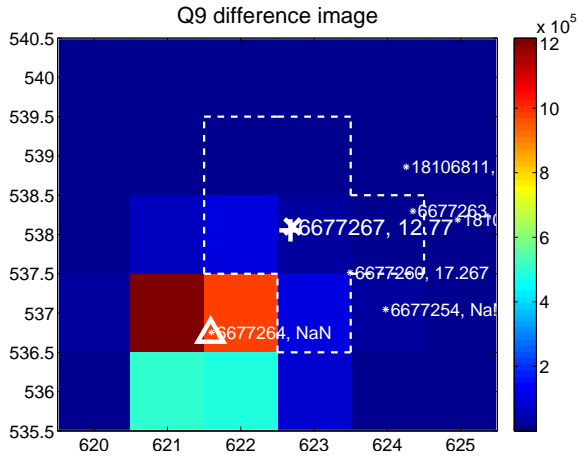




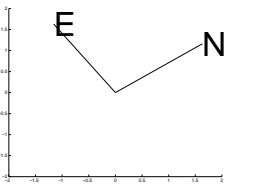
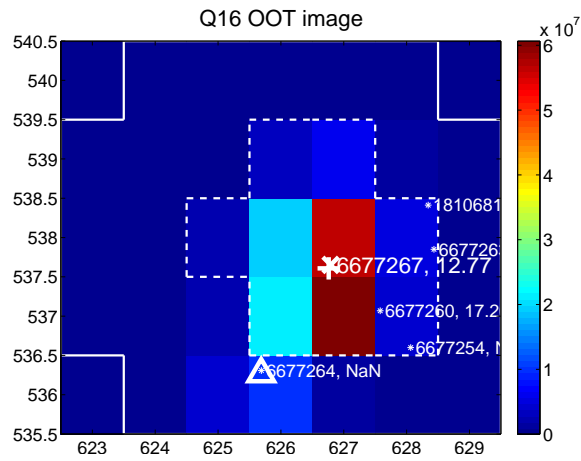
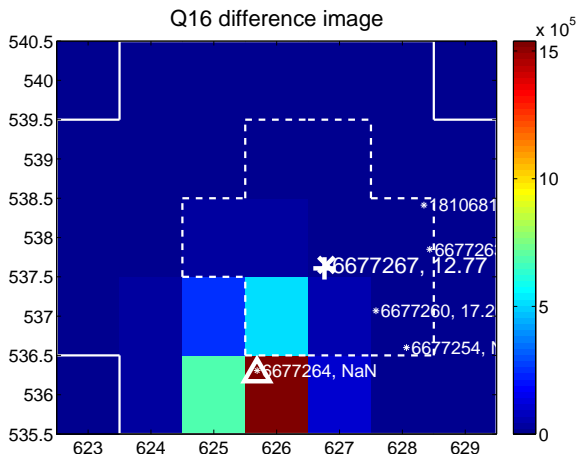
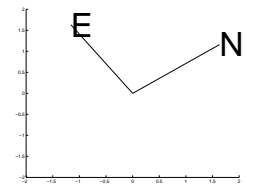
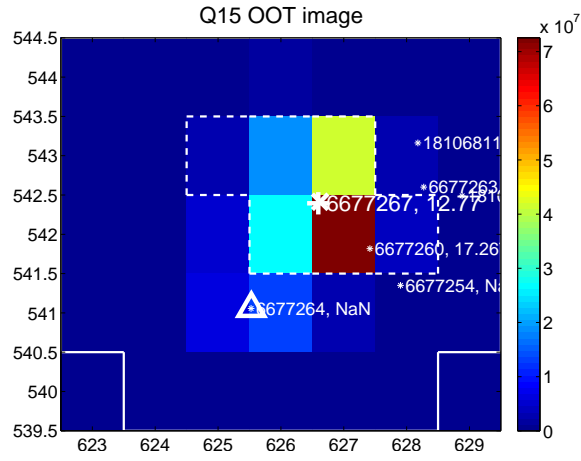
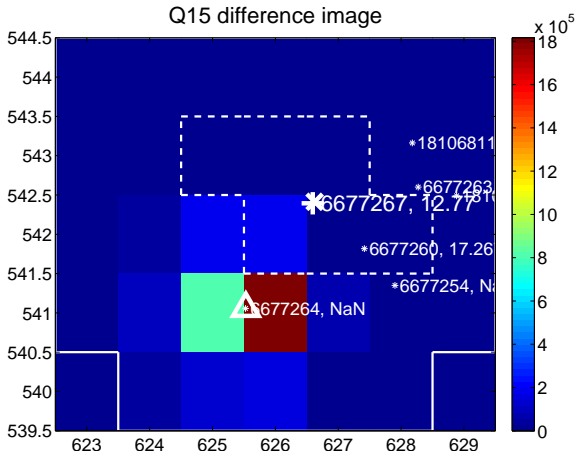
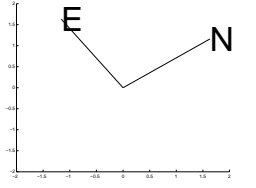
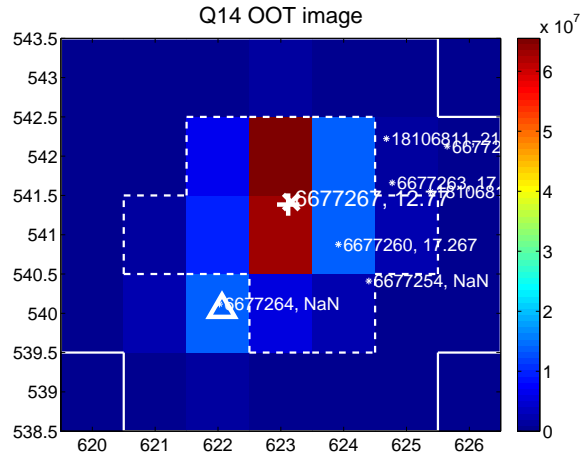
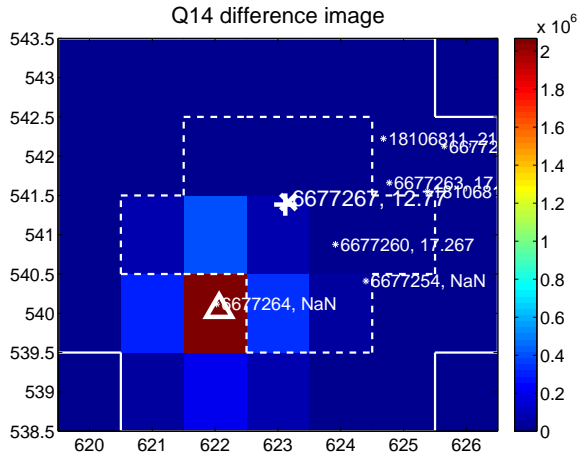
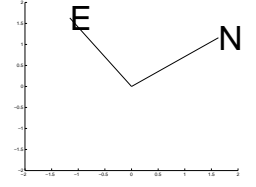
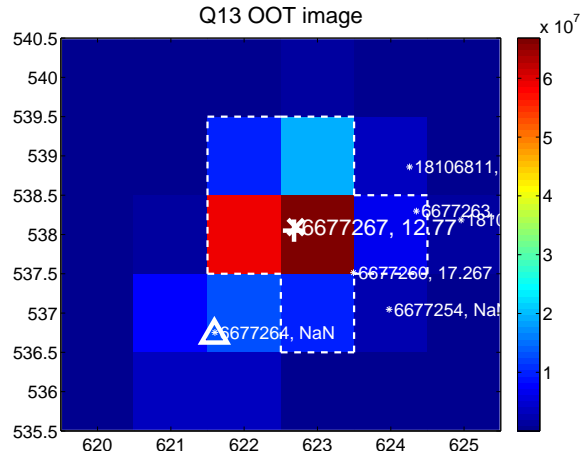
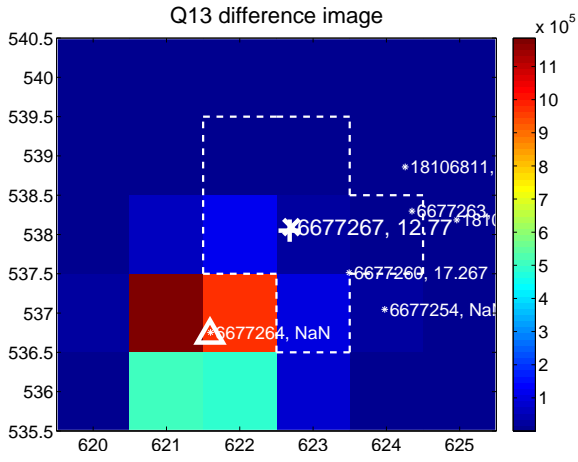
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



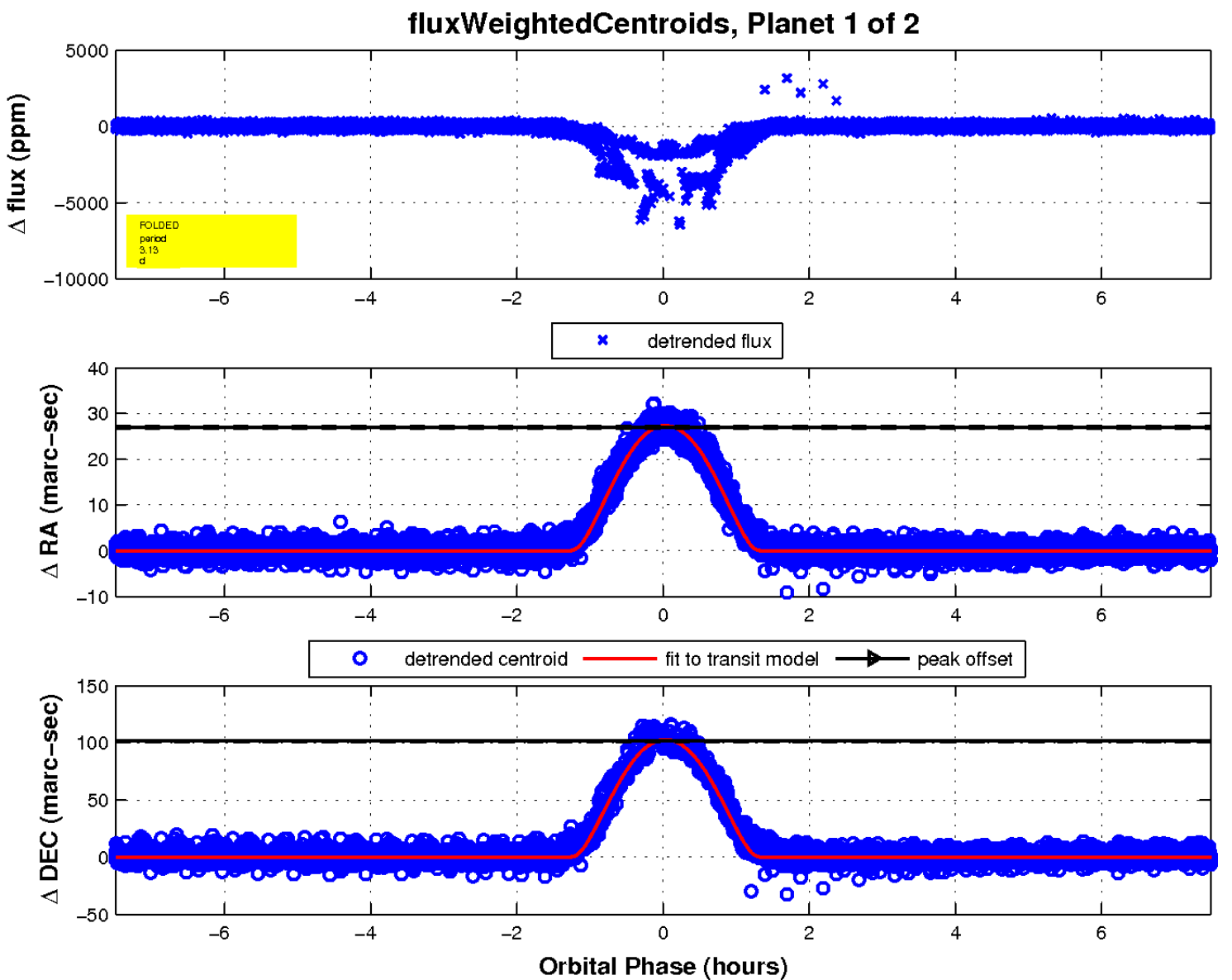
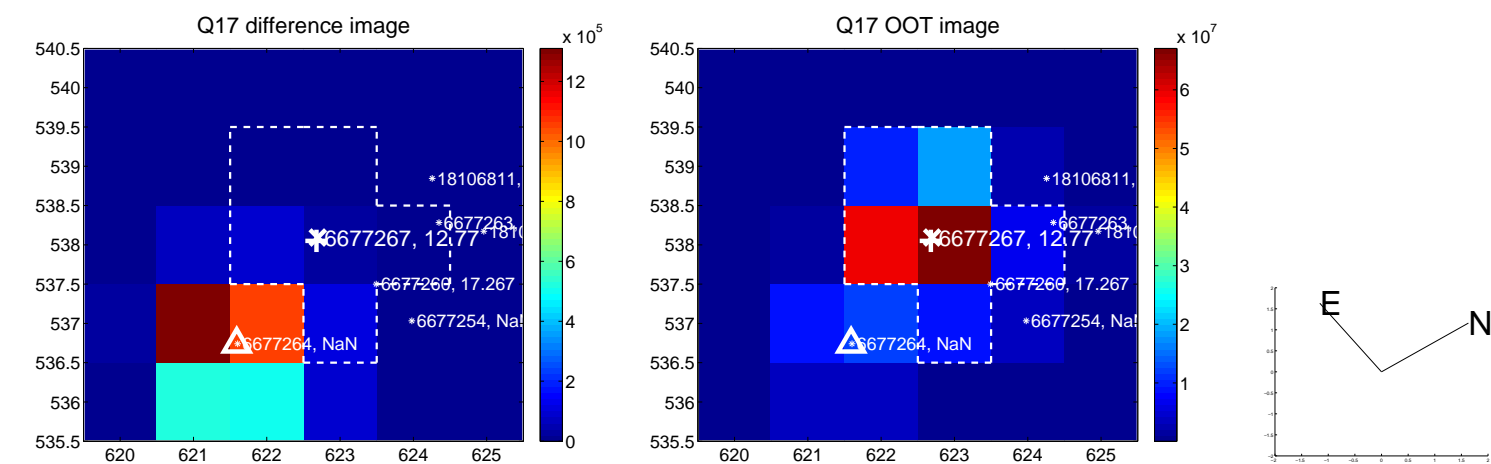
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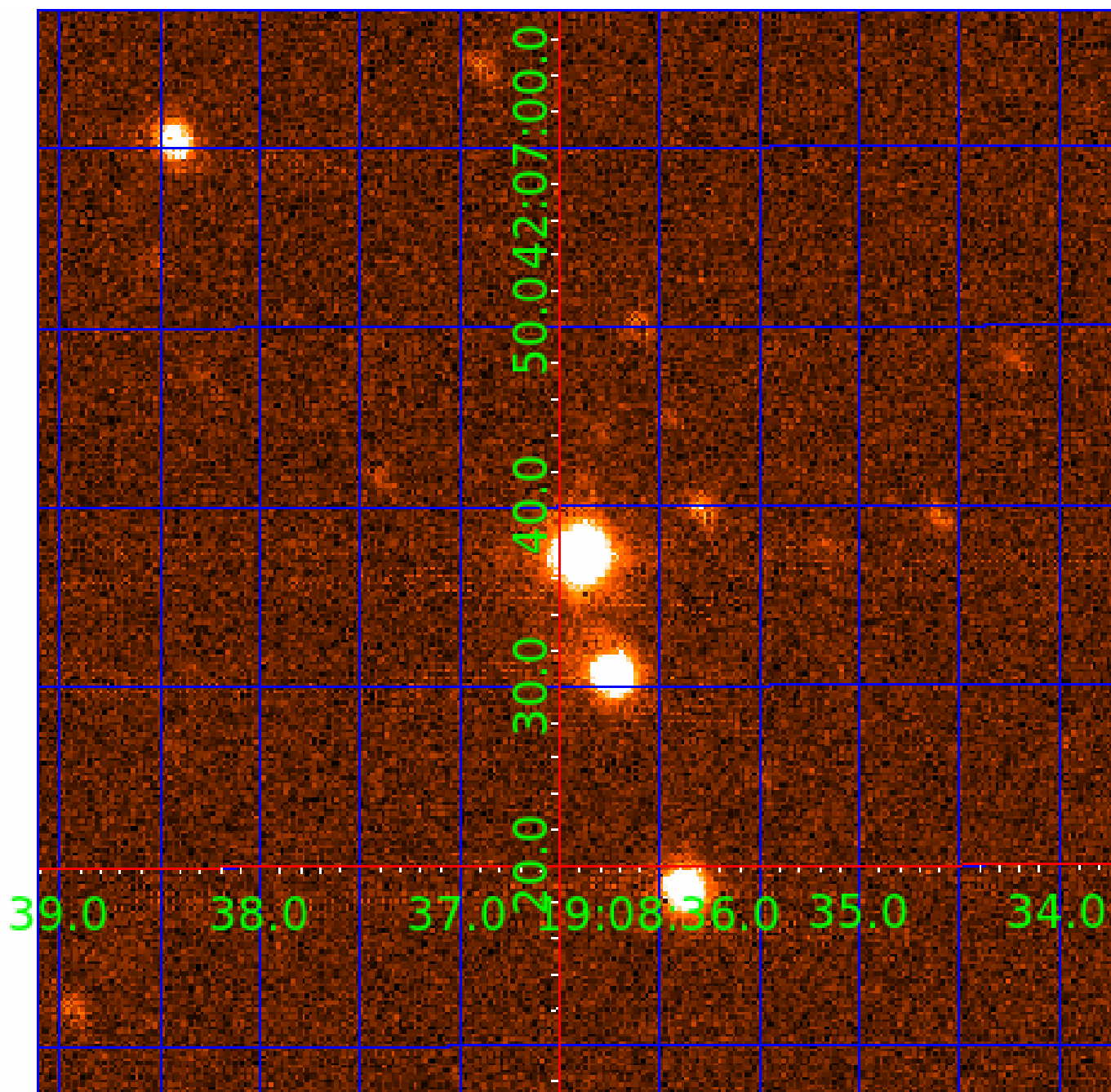


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006677267

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006677267-01	OBS	3622.01	3.125833	134.476980	4067.5	2.498	728.4	474.7	2.85	6137	28.38	4496.39
006677267-02	OBS	No	3.125807	132.919350	499.7	2.680	160.0	96.8	2.85	6137	12.06	4496.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006677267-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVN_DV—DEEP_V_SHAPED—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET
006677267-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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

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

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

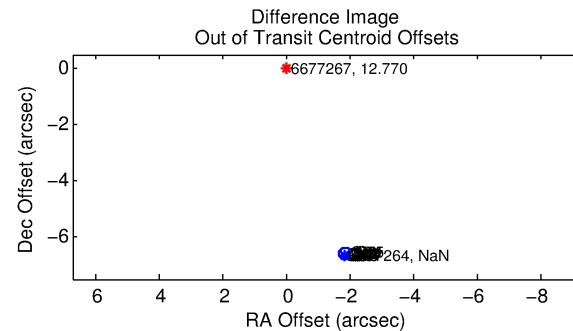
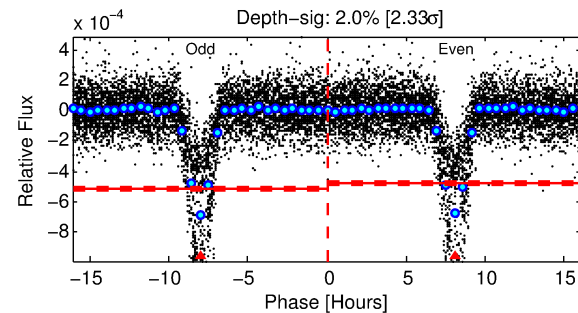
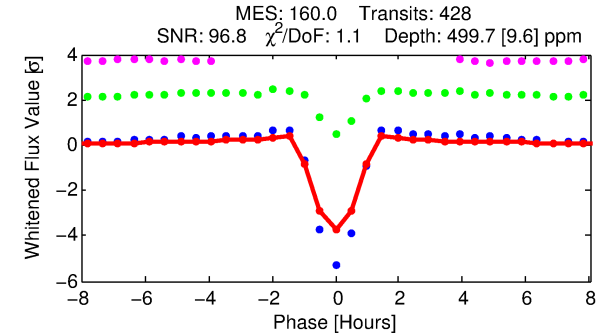
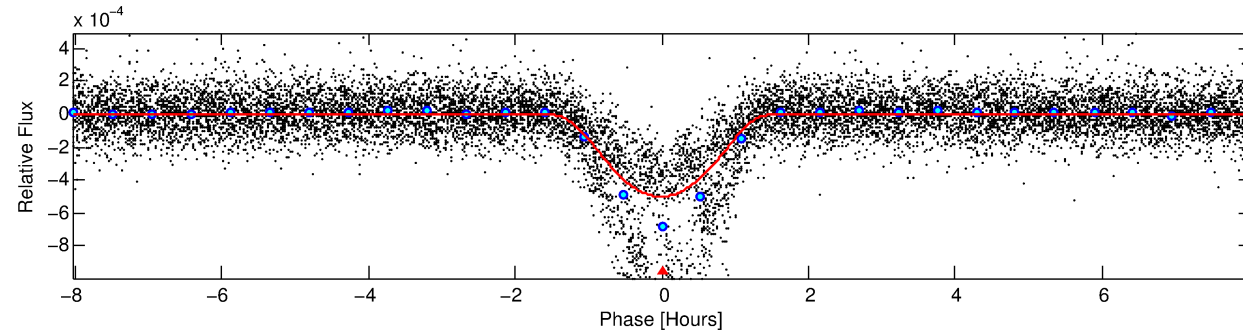
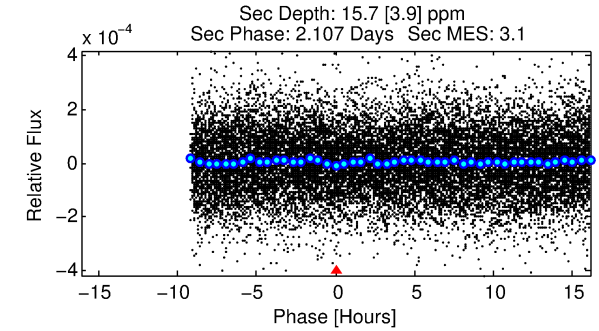
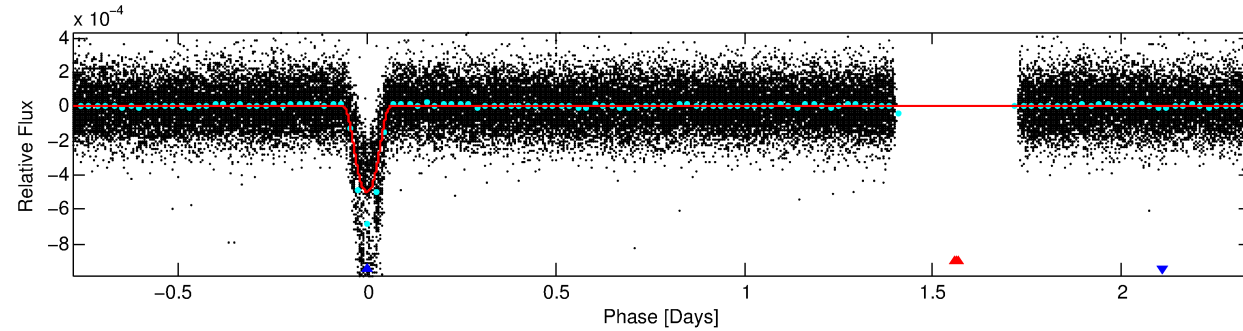
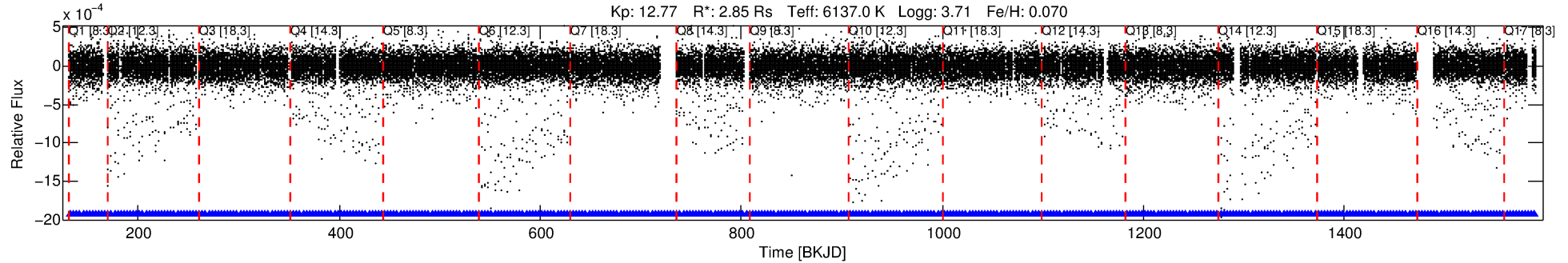
## Ephemeris Match Information For 006677267-02

No Significant Match Found

# DV One-Page Summary

KIC: 6677267 Candidate: 2 of 2 Period: 3.126 d  
KOI: K03622 Corr: No Ephemeris Match

Kp: 12.77 R\*: 2.85 Rs Teff: 6137.0 K Logg: 3.71 Fe/H: 0.070



## DV Fit Results:

Period = 3.12581 [0.00000] d  
Epoch = 132.9193 [0.0004] BKJD  
Rp/R\* = 0.0387 [0.0132]  
a/R\* = 2.77 [0.22]  
b = 1.00 [0.02]  
Seff = 4496.44 [2383.99]  
Teq = 2088 [277] K  
Rp = 12.06 [5.97] Re  
a = 0.0479 [0.0159] AU  
Ag = 0.14 [0.12] [-7.10σ]  
Teffp = 1962 [360] K [-0.28σ]

## DV Diagnostic Results:

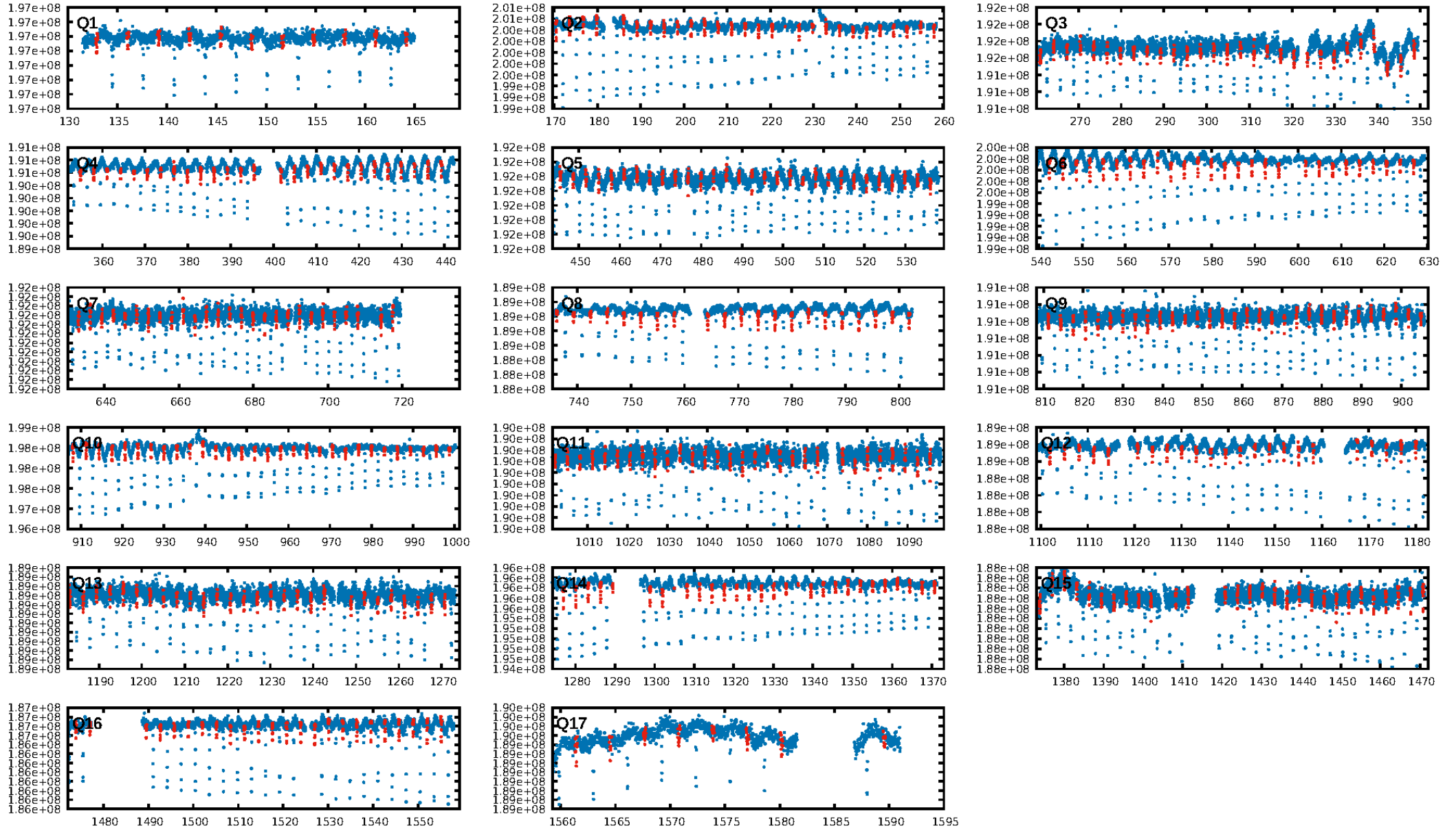
ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [409/409]  
GhostDiagnostic-chr: -0.3384  
Centroid-sig: 0.0%  
Centroid-so: 46.499 arcsec [300.66σ]  
OotOffset-rm: 6.854 arcsec [100.44σ]  
KicOffset-rm: 7.055 arcsec [102.46σ]  
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 22:44:47 Z

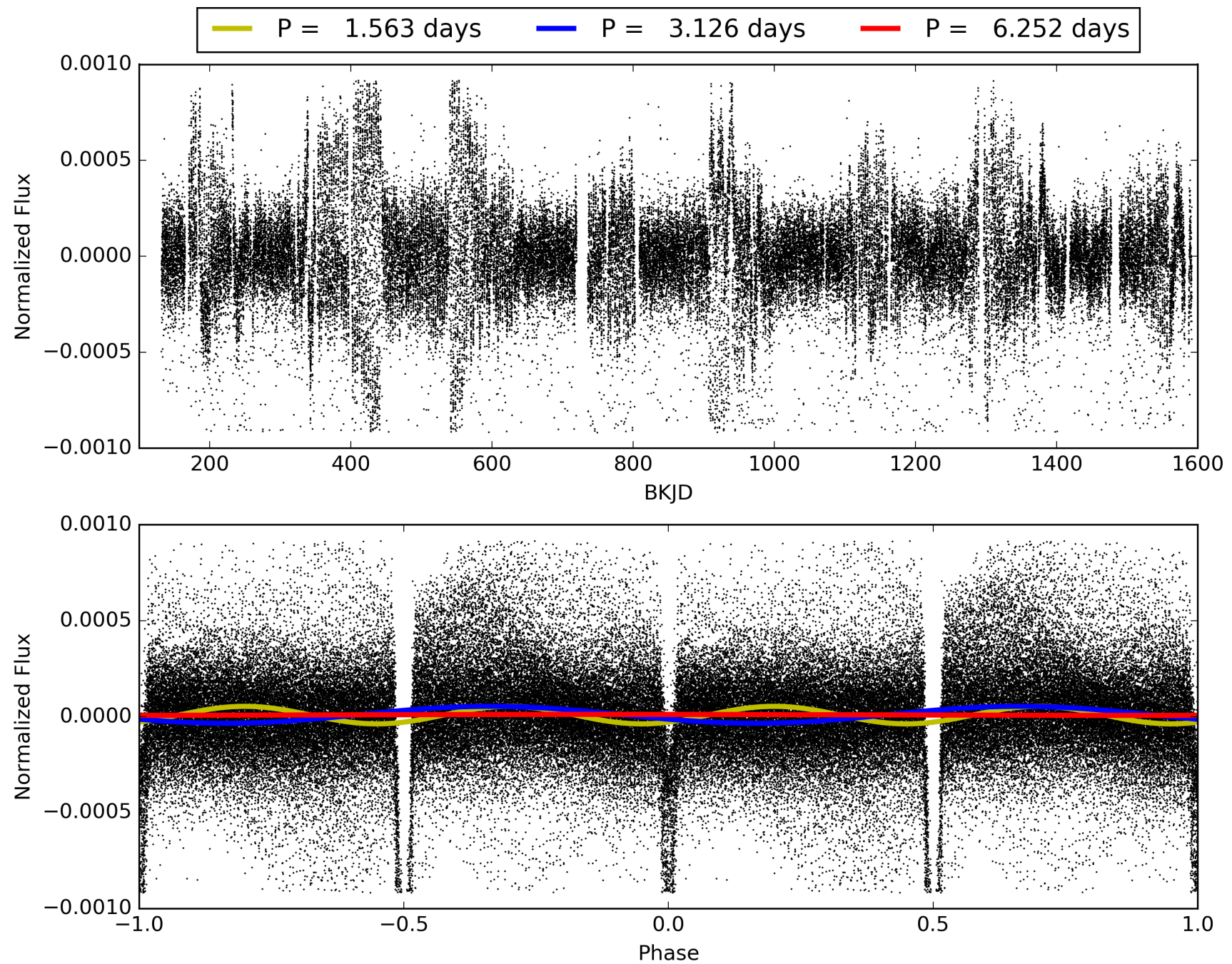
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 006677267-02, PDC Light Curves

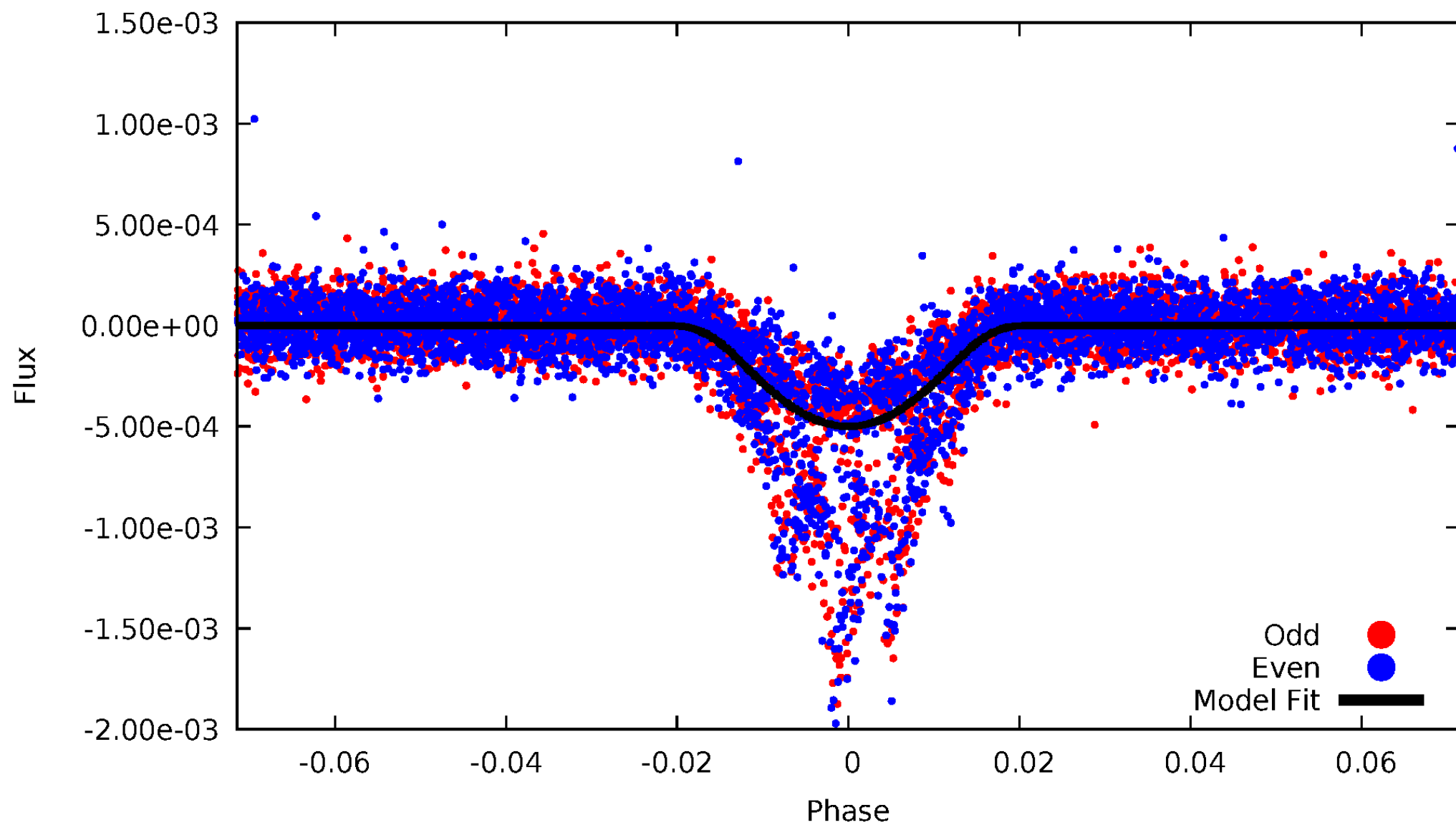


TCE 006677267-02



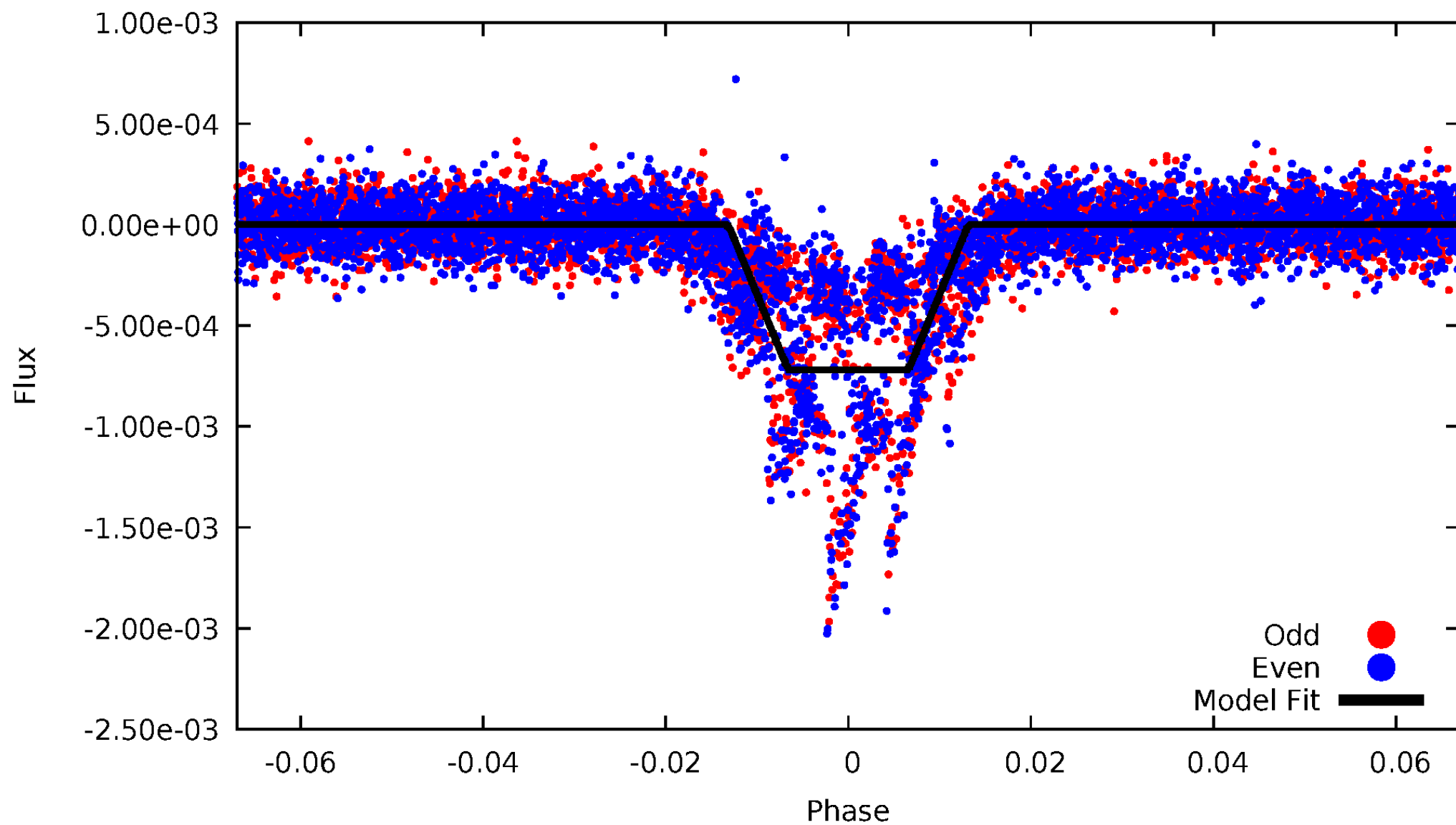
# DV Odd/Even

TCE 006677267-02



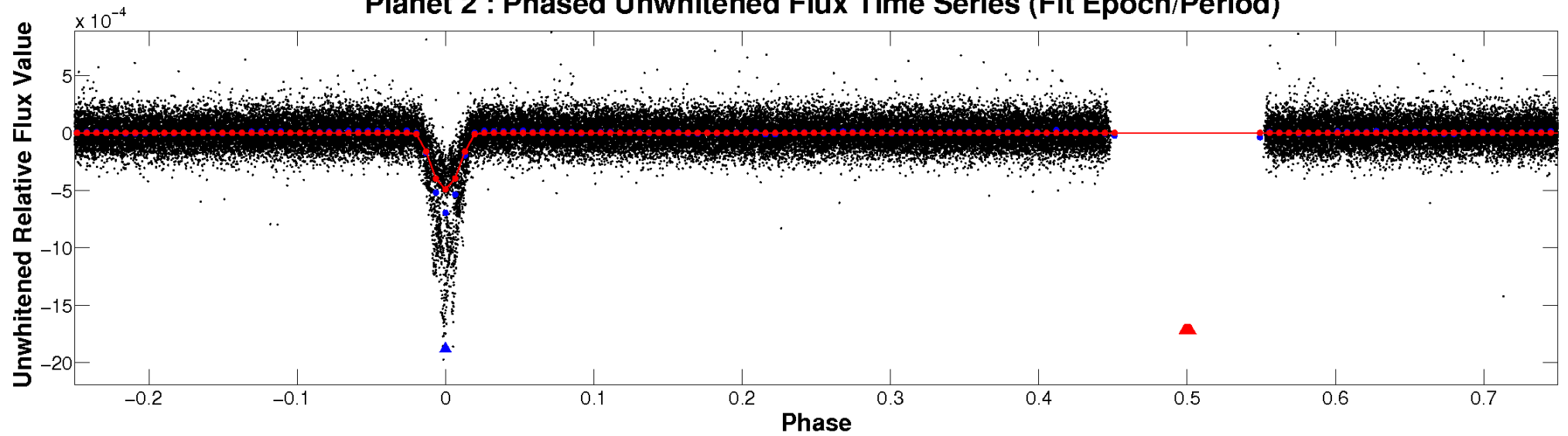
# ALT Odd/Even

TCE 006677267-02

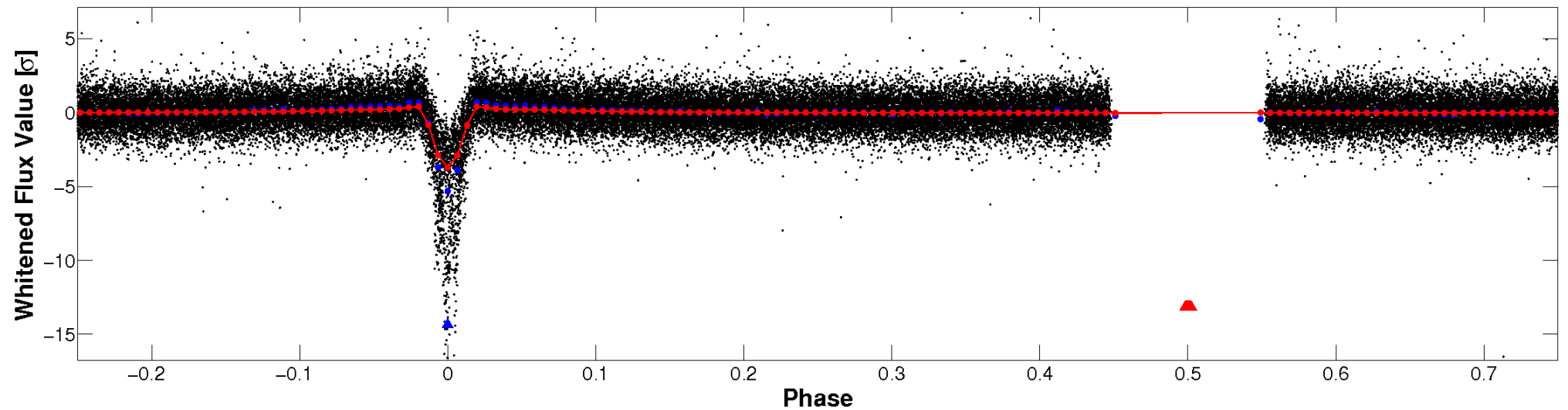


# Non-Whitened Vs. Whitened Light Curve

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



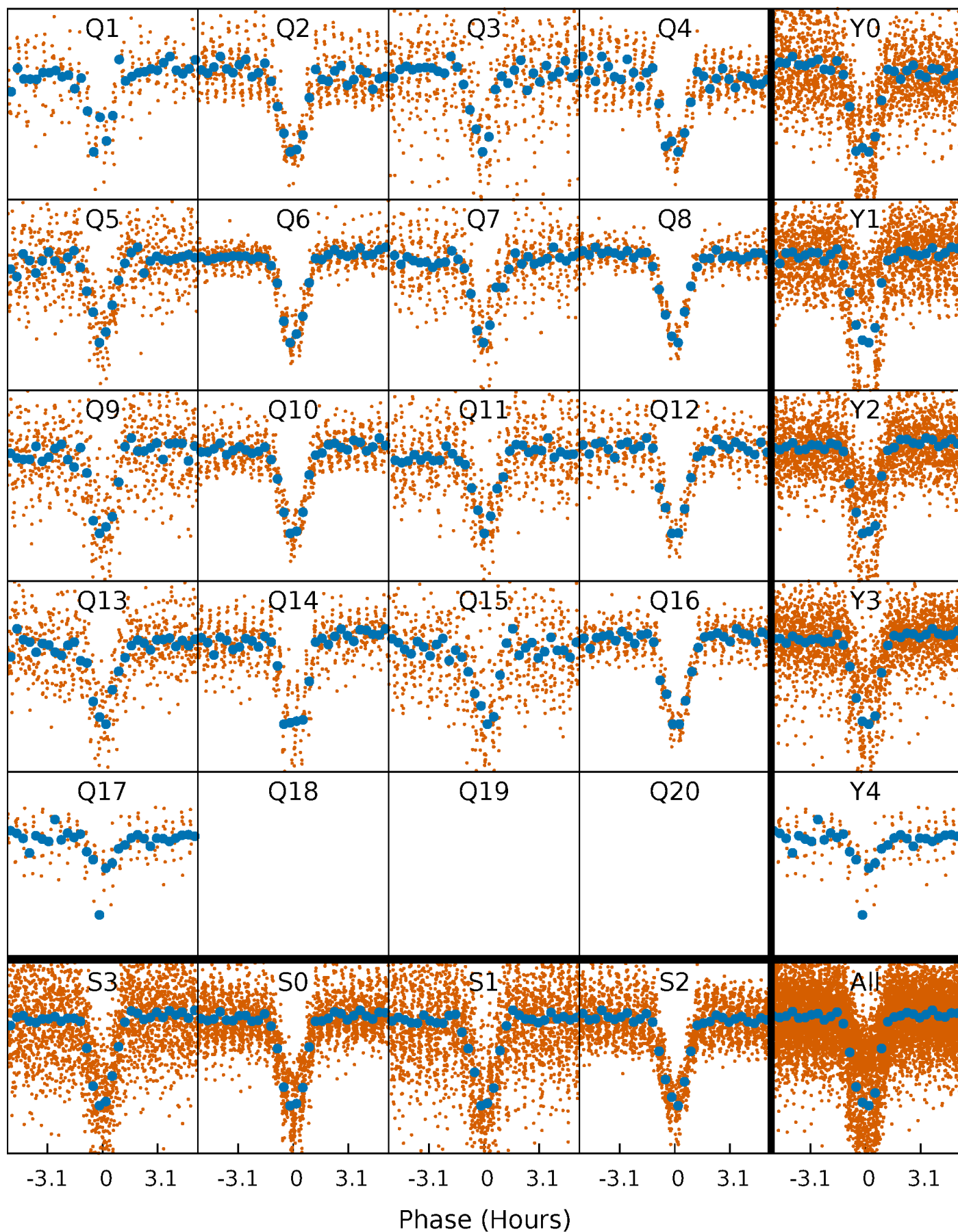
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





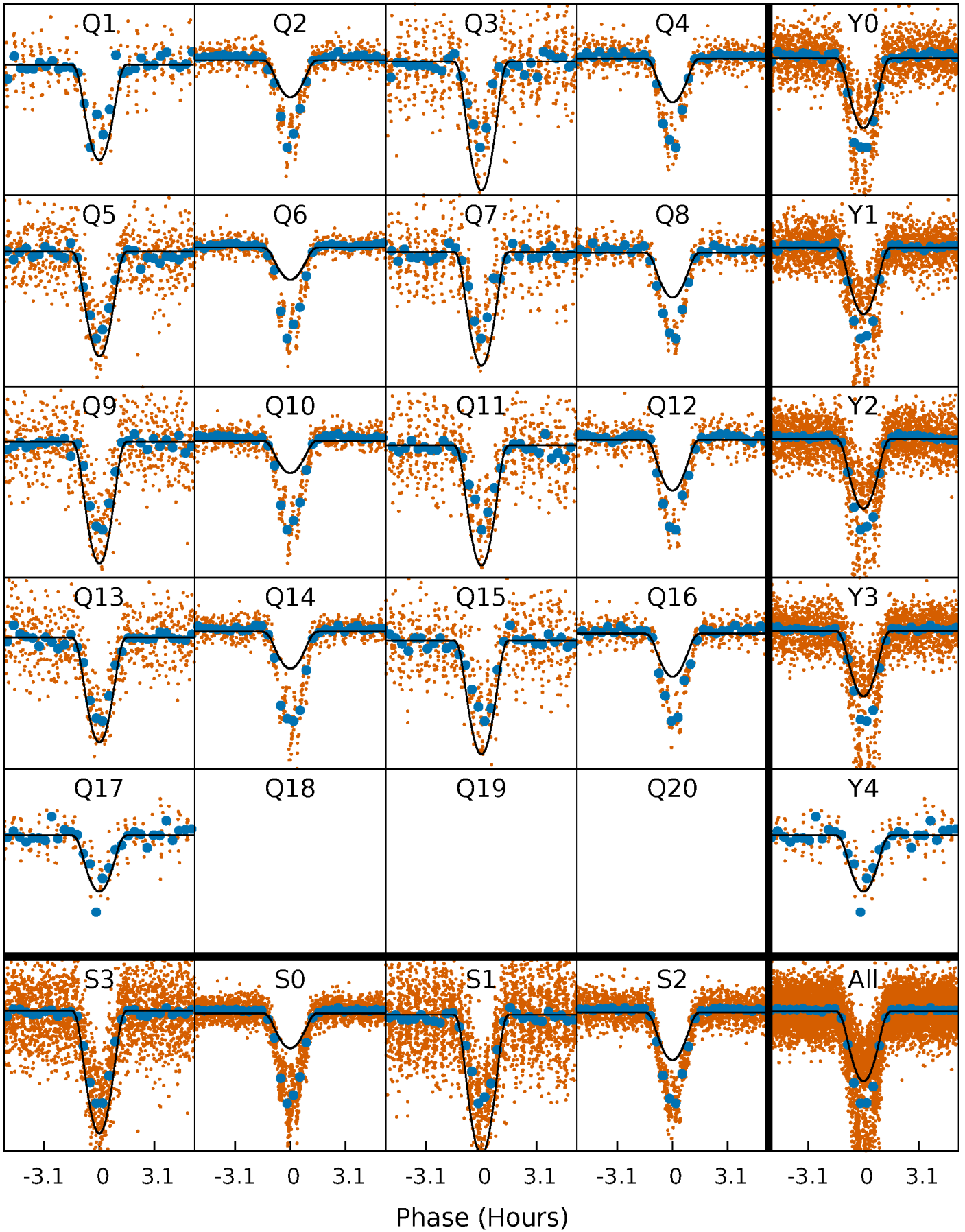
# PDC Quarter-Phased Transit Curves

TCE 006677267-02     $P = 3.125807$  Days     $T_0 = 132.919350$  (BKJD)



# DV Quarter-Phased Transit Curves

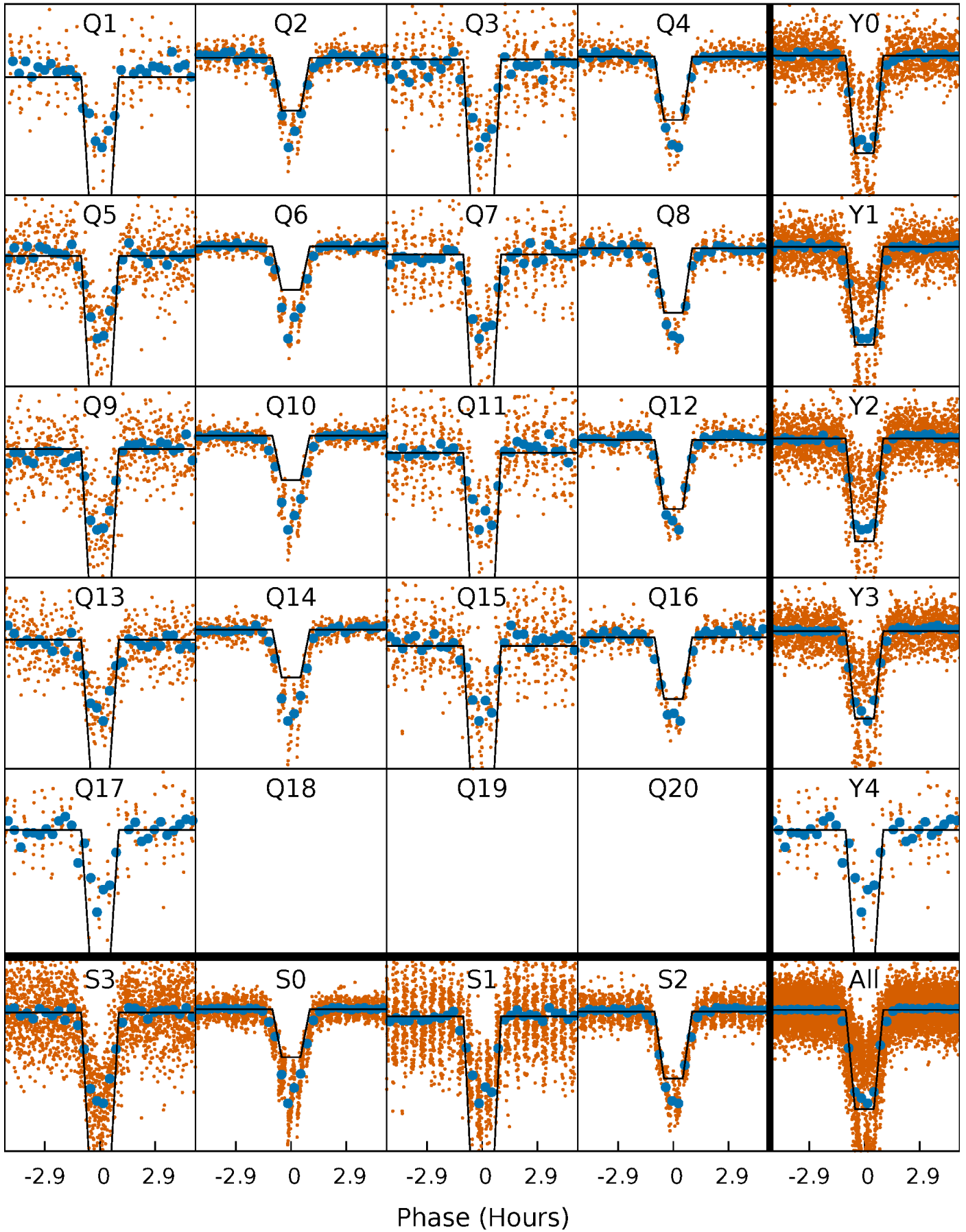
TCE 006677267-02   P= 3.125807 Days    $T_0=132.919350$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

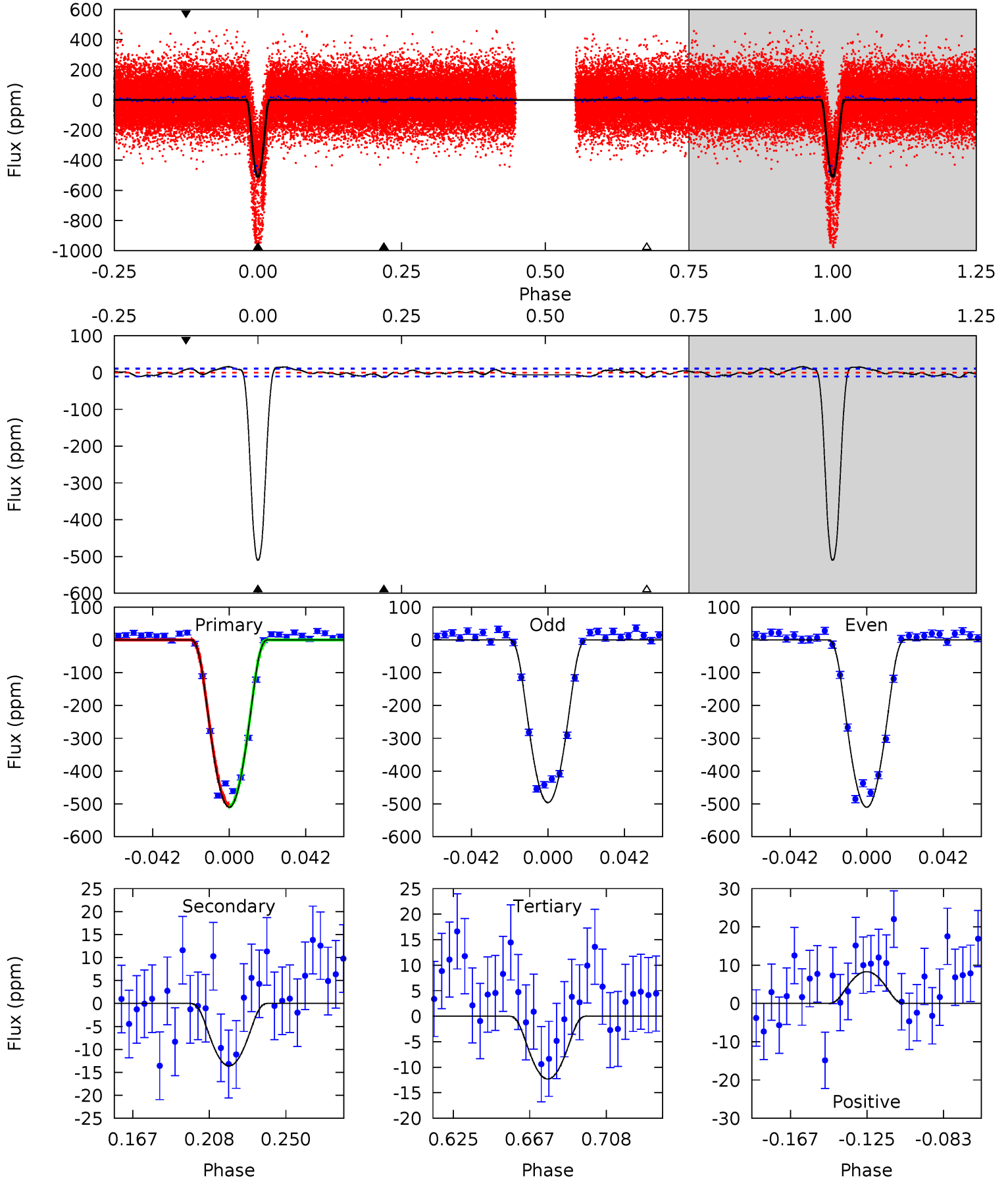
TCE 006677267-02     $P = 3.125822$  Days     $T_0 = 132.916395$  (BKJD)



# DV Model-Shift Uniqueness Test

006677267-02, P = 3.125807 Days, E = 129.793543 Days

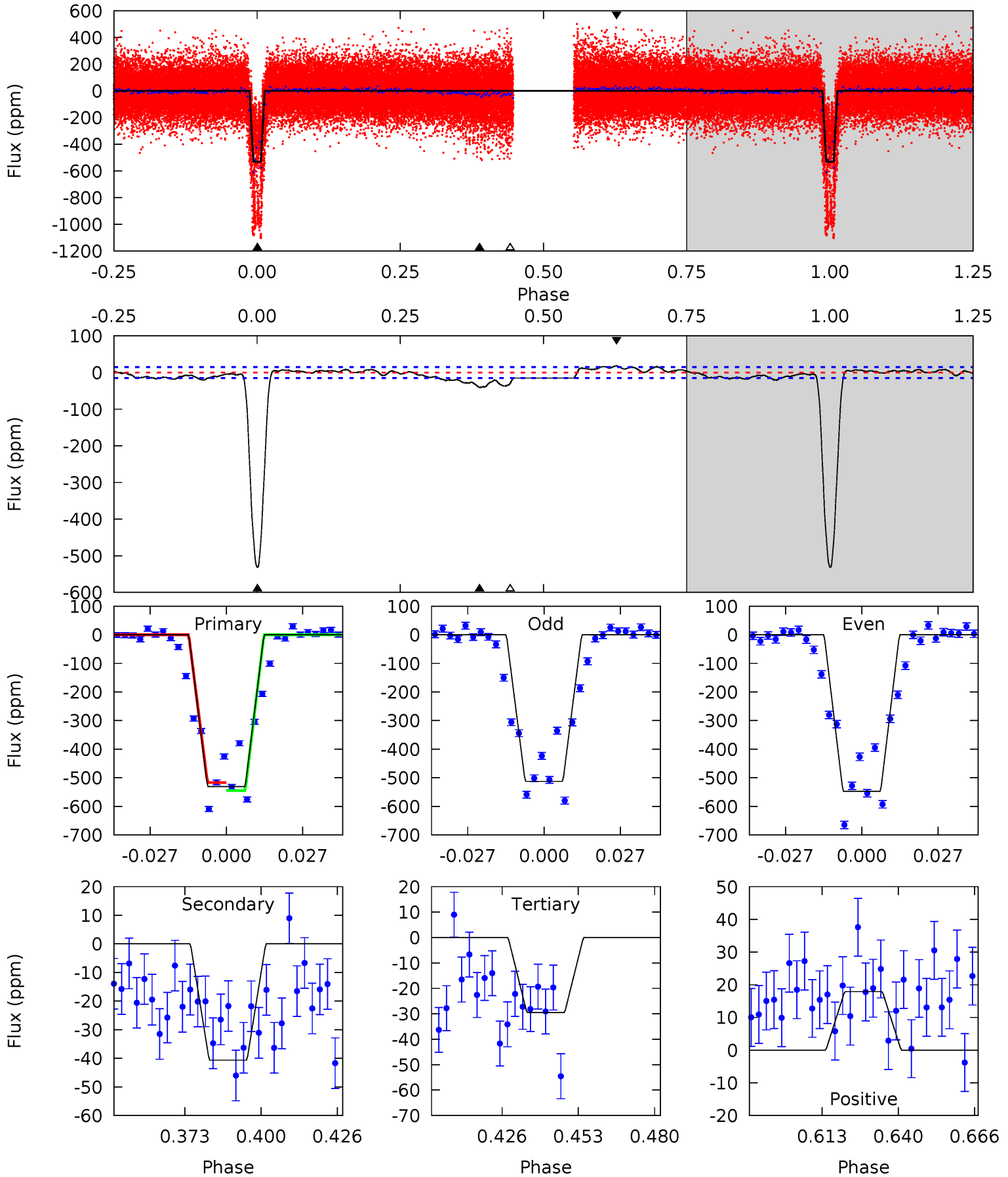
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
226.7	6.04	5.47	3.69	4.75	2.04	2.67	221.2	223.0	0.57	2.35	3.15	1.39	0.03	1.05



# Alt Model-Shift Uniqueness Test

006677267-02, P = 3.125822 Days, E = 129.790573 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
173.3	13.3	9.64	5.84	4.83	2.22	3.79	163.7	167.5	3.63	7.43	5.58	1.40	0.03	4.62



### Stellar Parameters For KIC 006677267

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6137^{+167}_{-167}$	$3.705^{+0.300}_{-0.080}$	$0.070^{+0.300}_{-0.250}$	$2.852^{+0.438}_{-1.023}$	$1.505^{+0.194}_{-0.306}$	$0.091^{+0.198}_{-0.027}$
	+3%/-3%	+8%/-2%	+429%/-357%	+15%/-36%	+13%/-20%	+217%/-30%
Source	PHO1	FLK73	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 006677267-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-14 \pm 2$	$11.03^{+4.98}_{-3.95}$	$2861^{+154}_{-246}$	$-2725^{+4927}_{-217}$	$0.139^{+0.190}_{-0.071}$
Alt.	$-41 \pm 3$	$7.79^{+4.26}_{-3.75}$	$2866^{+155}_{-244}$	$3261^{+954}_{-820}$	$0.848^{+2.293}_{-0.489}$

$T_{max}$  = 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

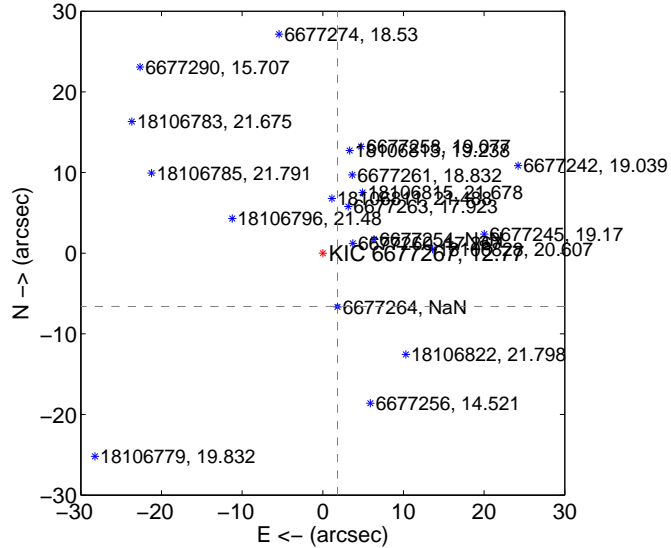
Supplemental centroid analysis for 006677267-02. Kepler magnitude: 12.77. Transit SNR 96.81

There are 17 quarters with good PRF difference image offsets

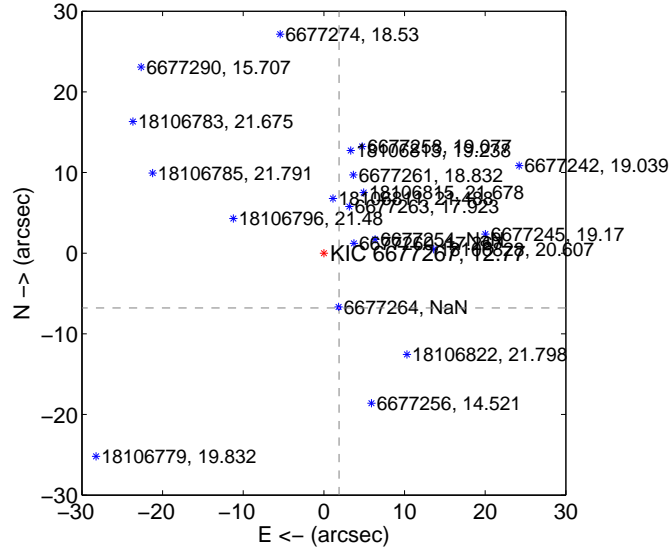
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.854 \pm 0.068$	100.44	$-1.822 \pm 0.071$	$-6.608 \pm 0.068$
PRF-fit source offset from KIC position	$7.055 \pm 0.069$	102.46	$-1.879 \pm 0.068$	$-6.800 \pm 0.069$
photometric centroid source offset	$46.50 \pm 0.15$	300.67	$-12.31 \pm 0.09$	$-44.84 \pm 0.16$

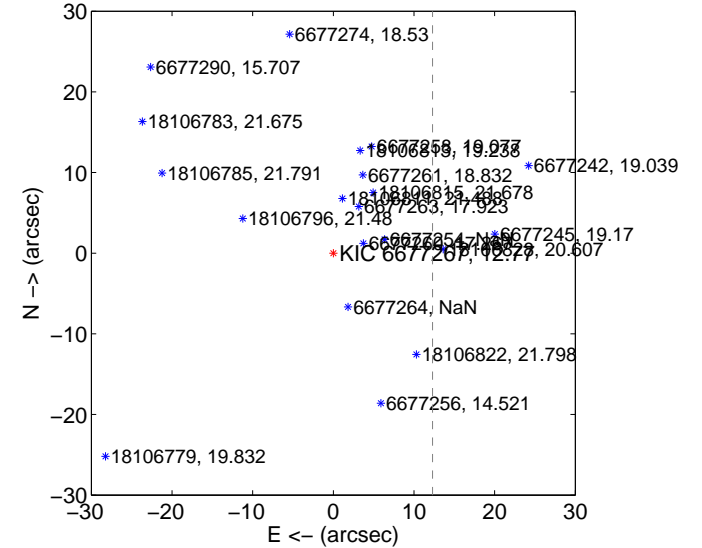
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

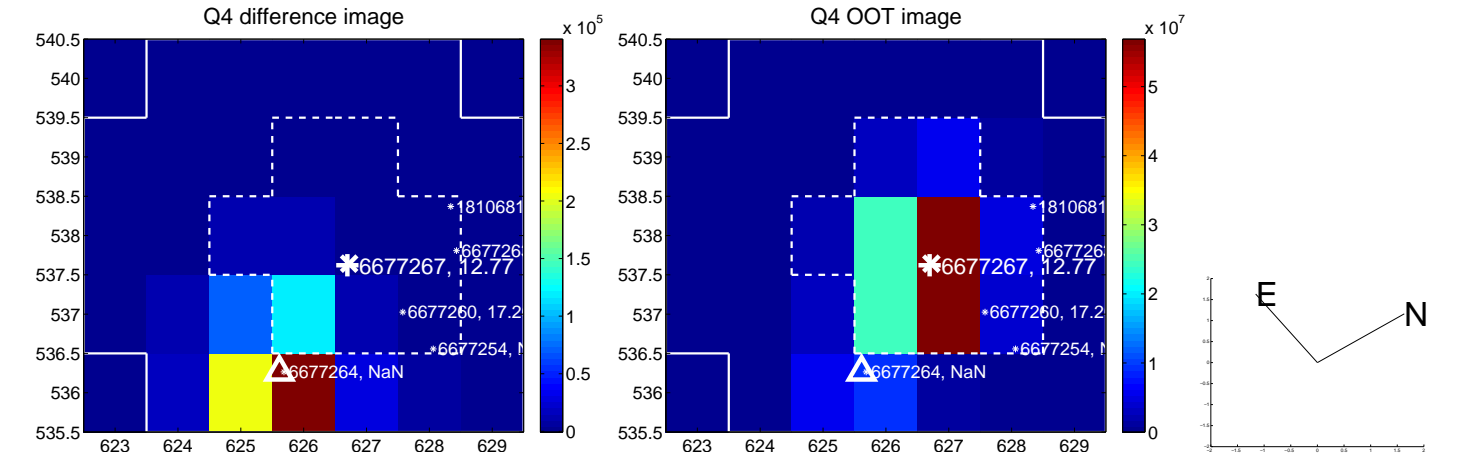
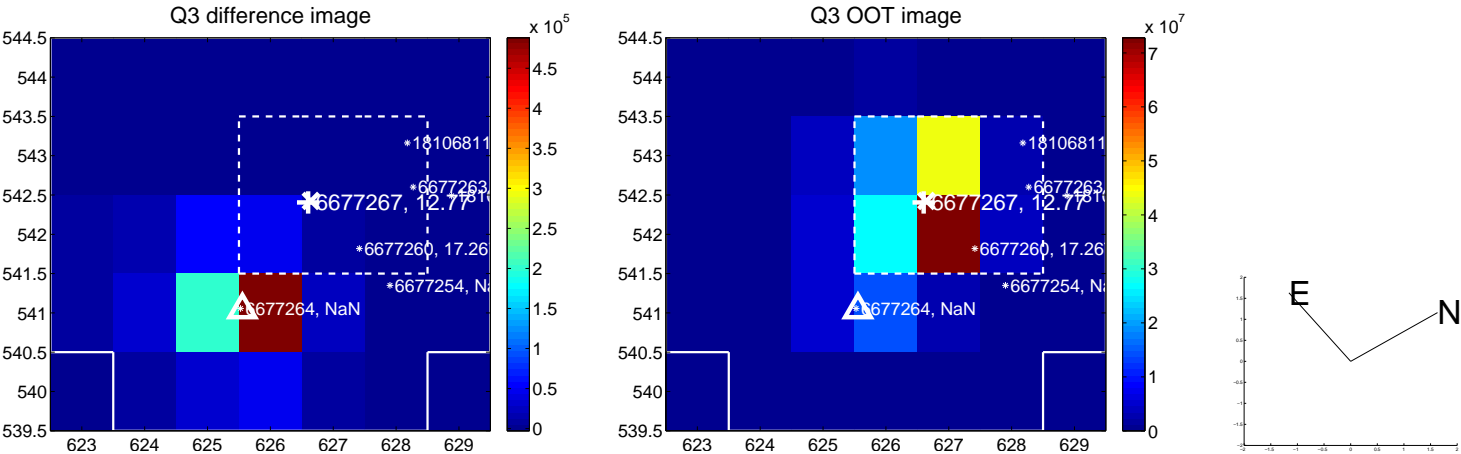
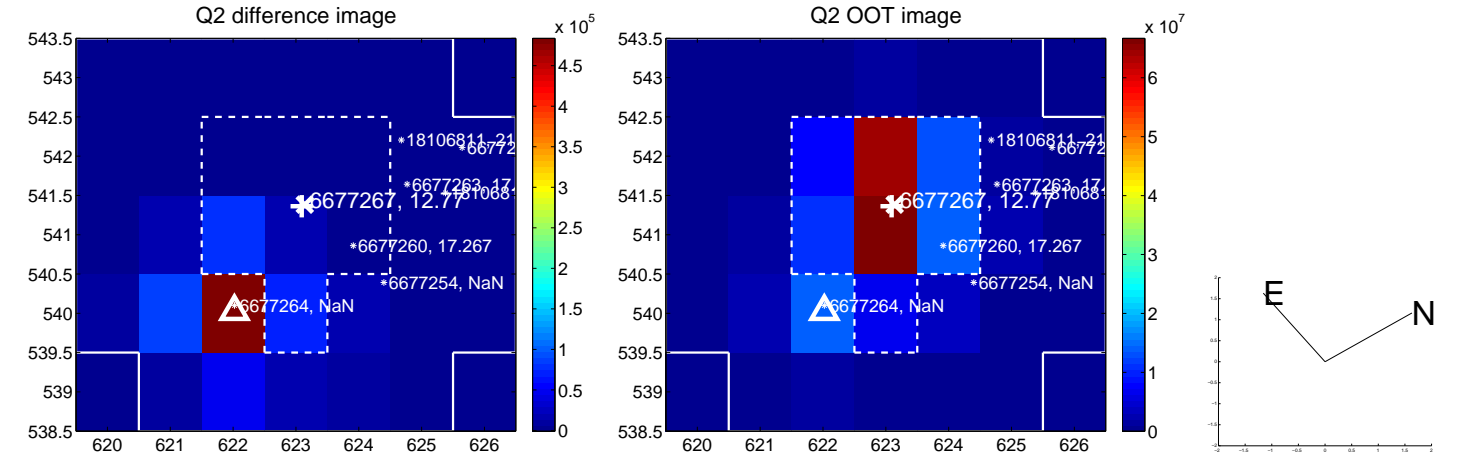
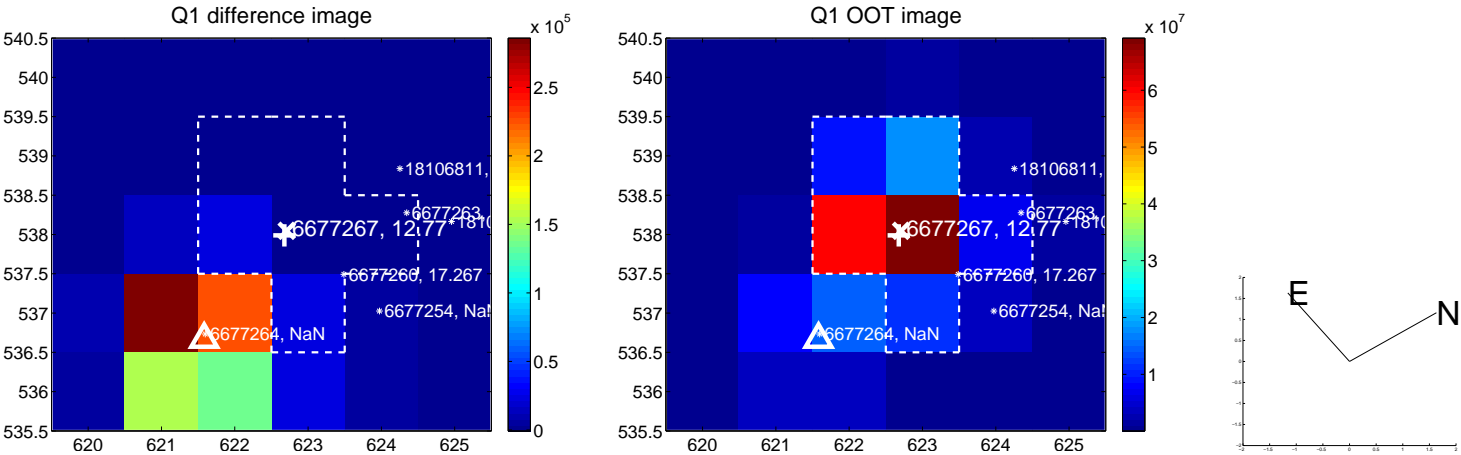


offset from photometric centroids

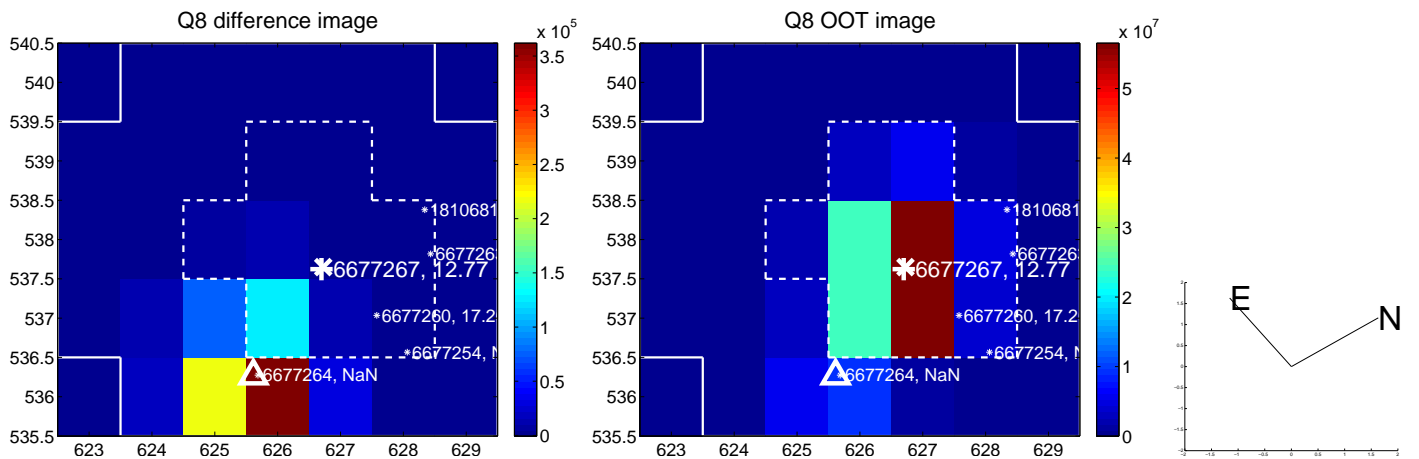
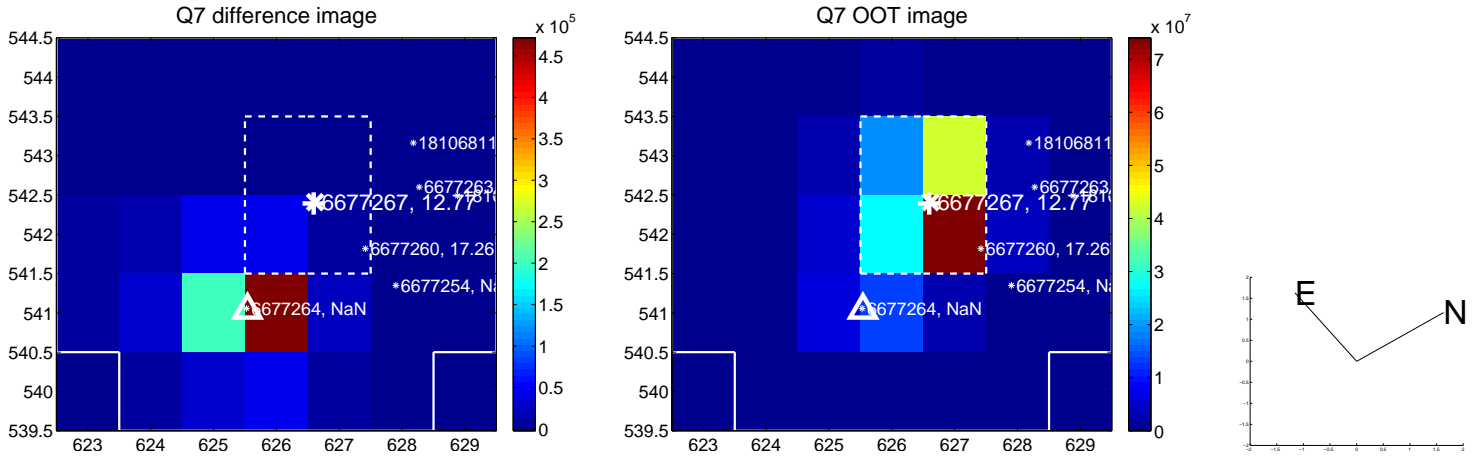
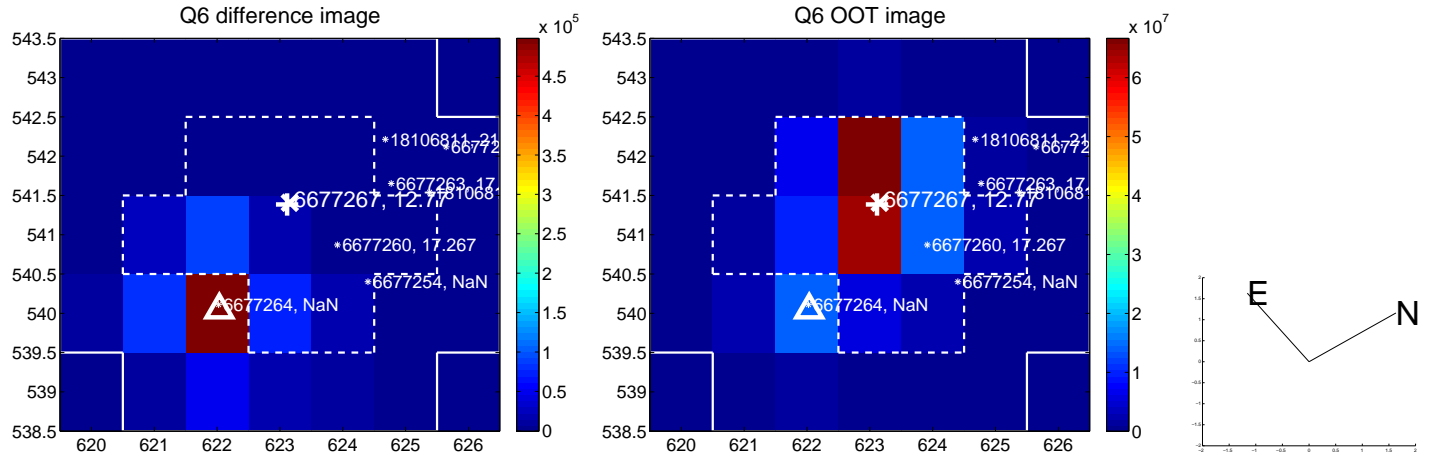
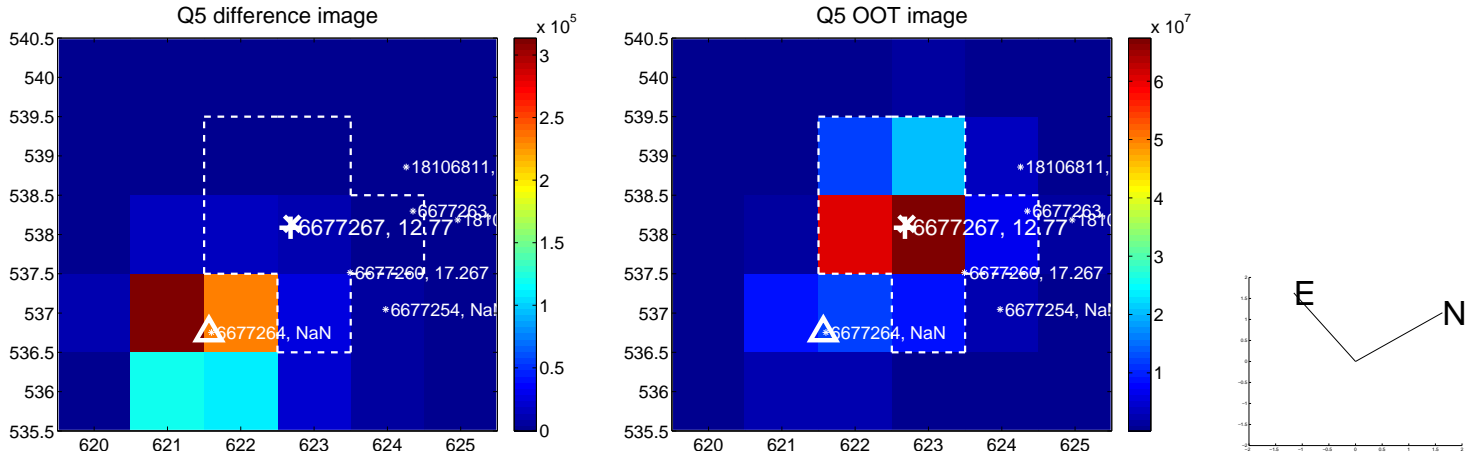


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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



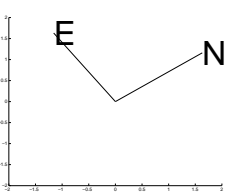
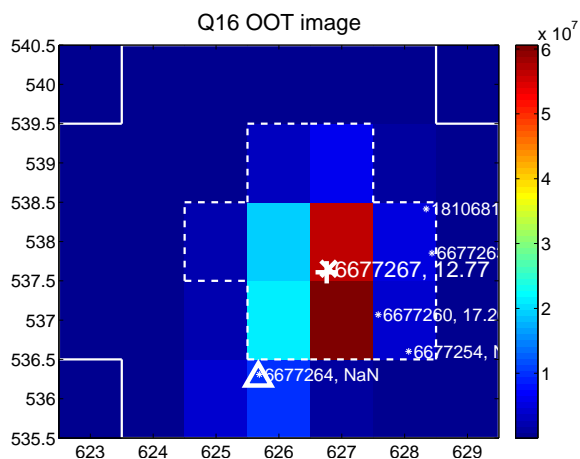
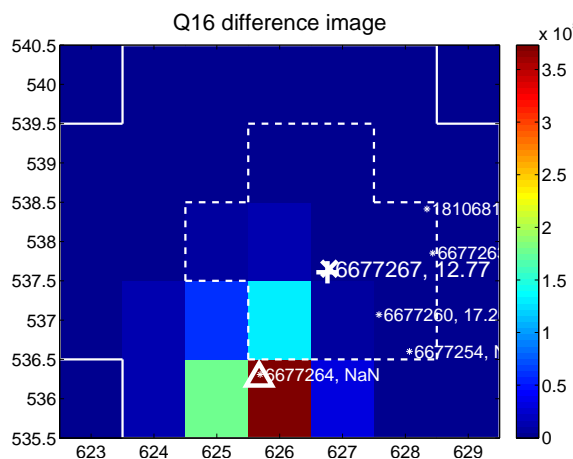
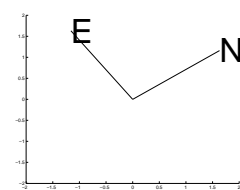
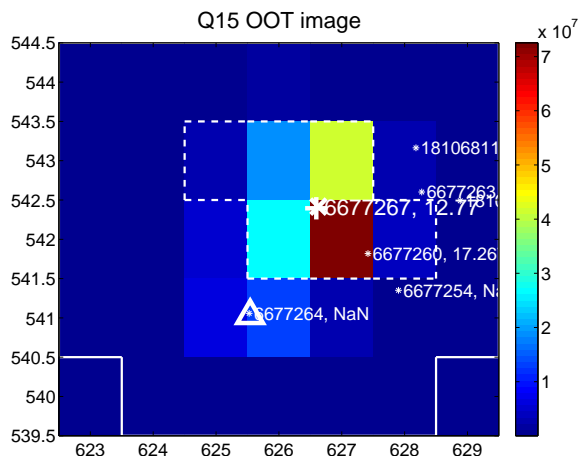
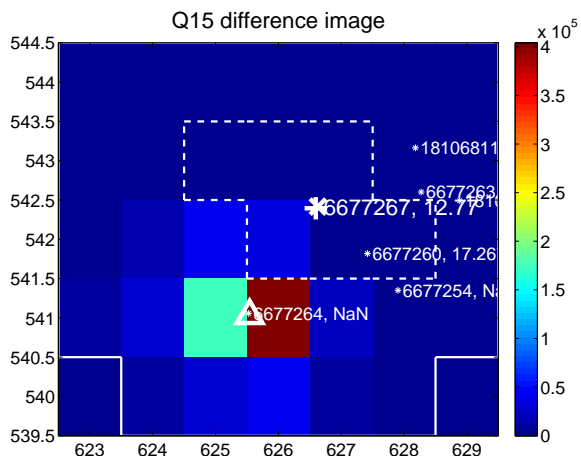
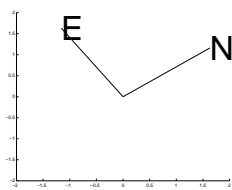
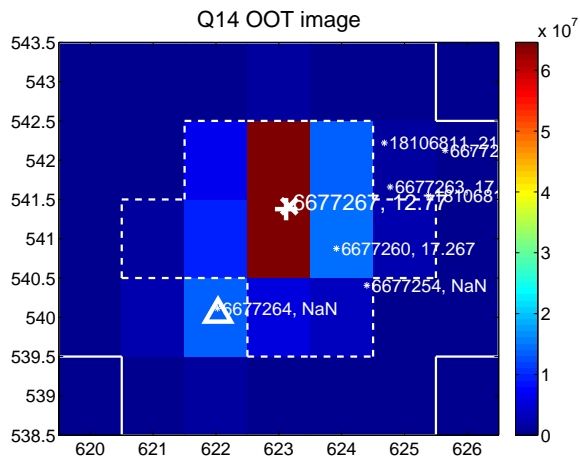
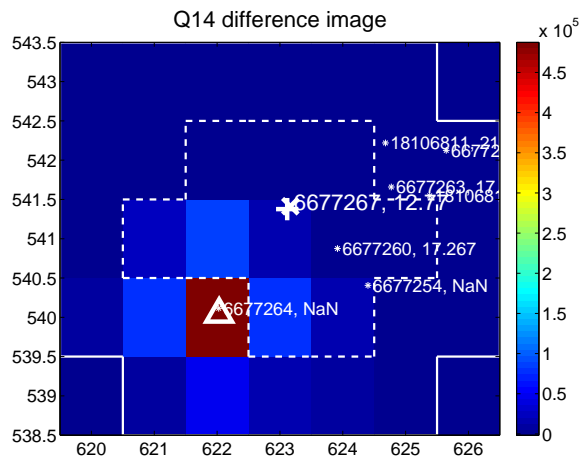
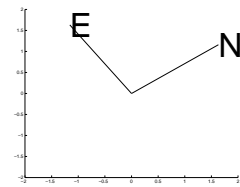
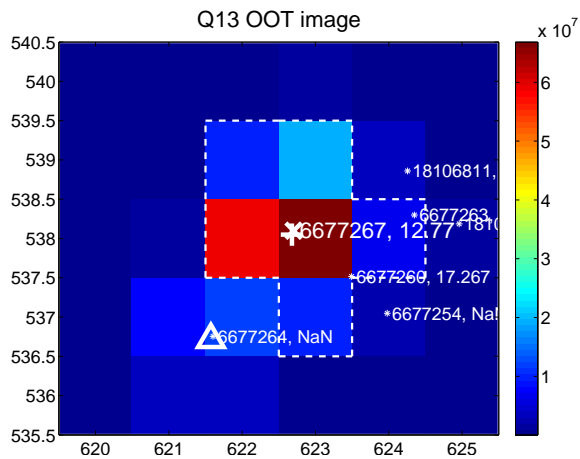
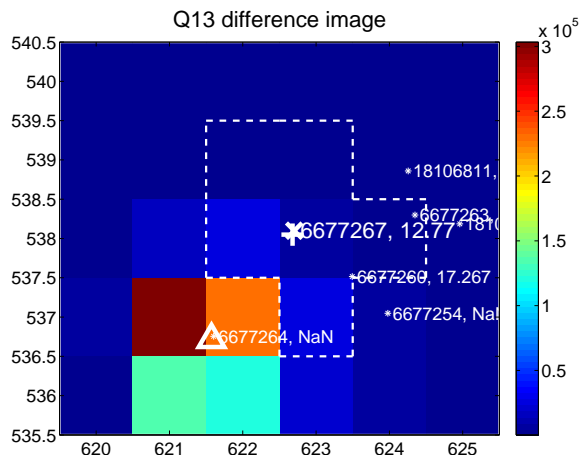
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



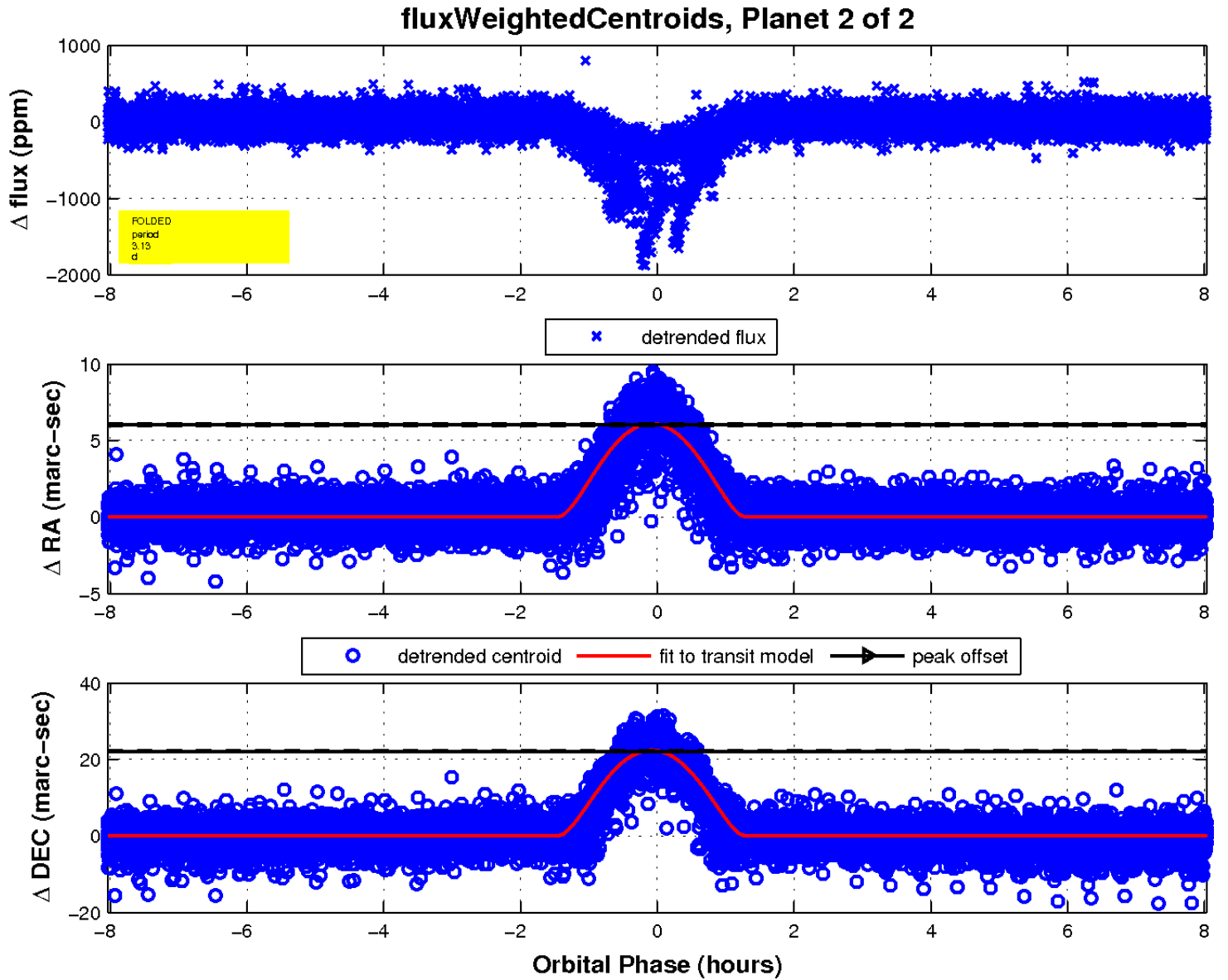
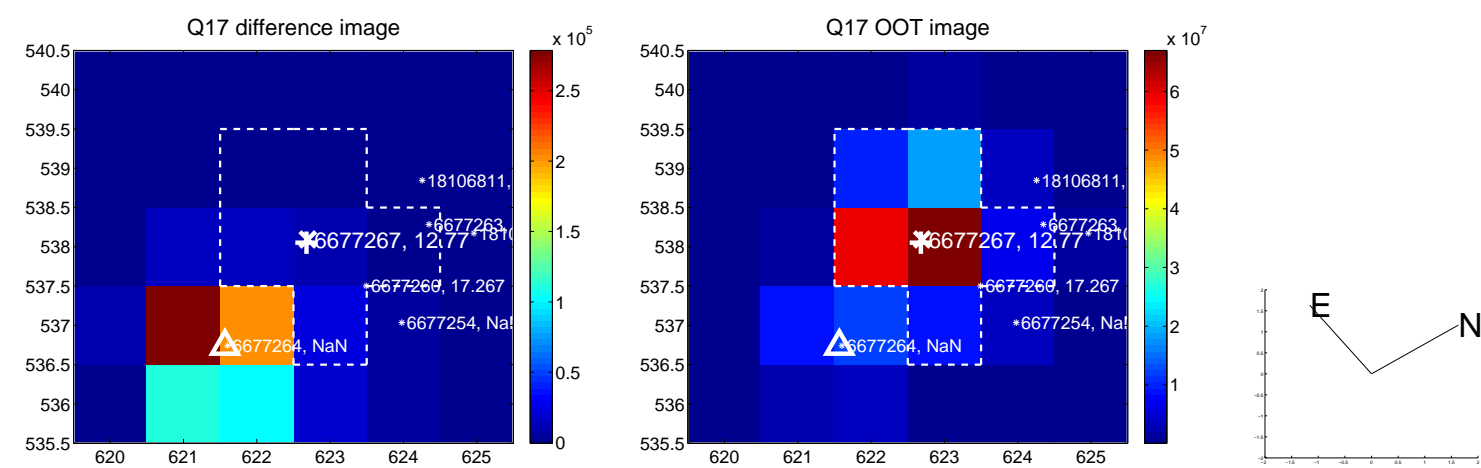




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

