

# KIC 008279765

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008279765-01	OBS	1130.01	2.757794	132.475052	39511.3	2.802	2390.0	1900.3	0.89	5747	21.62	543.45
008279765-02	OBS	No	1.378886	132.480197	2817.7	2.639	186.8	179.9	0.89	5747	5.82	1369.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008279765-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
008279765-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

**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 008279765-01

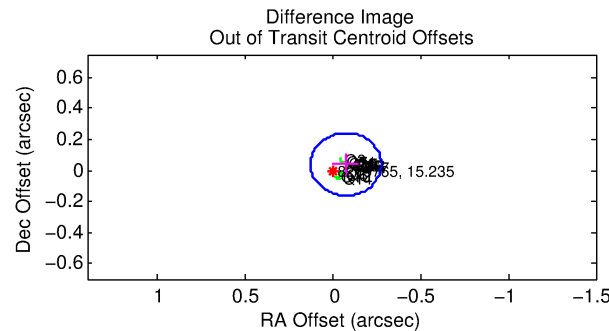
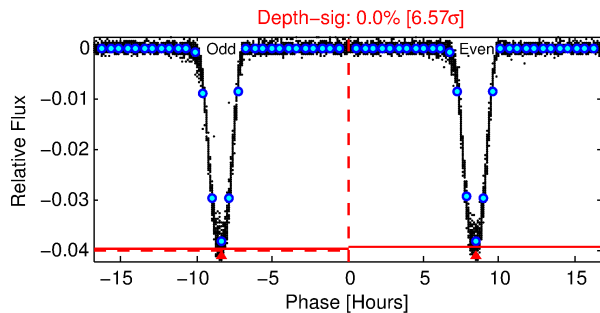
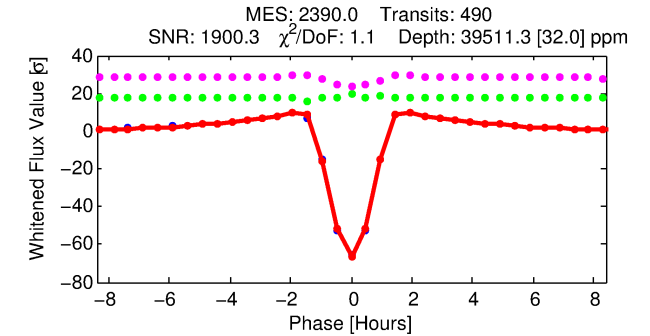
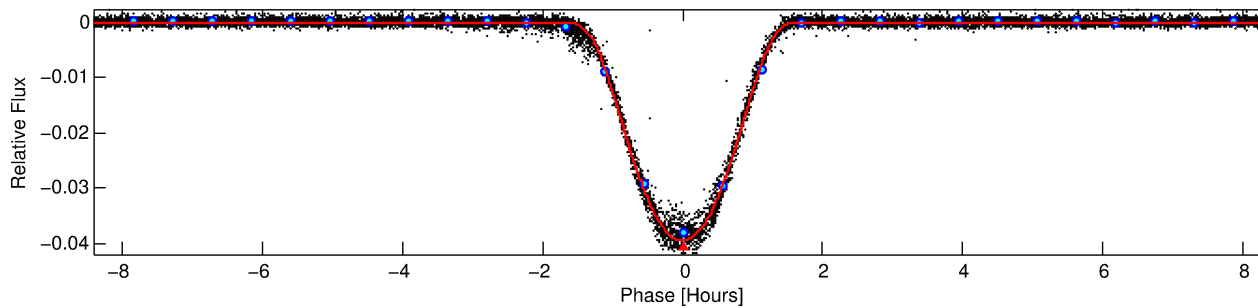
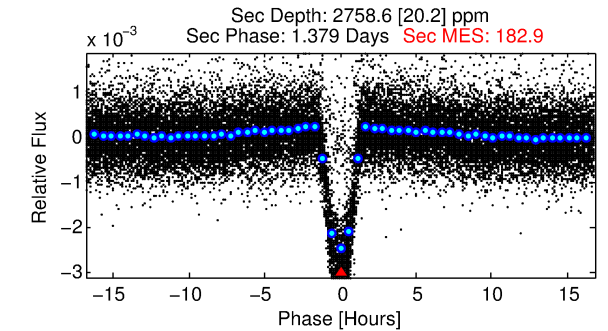
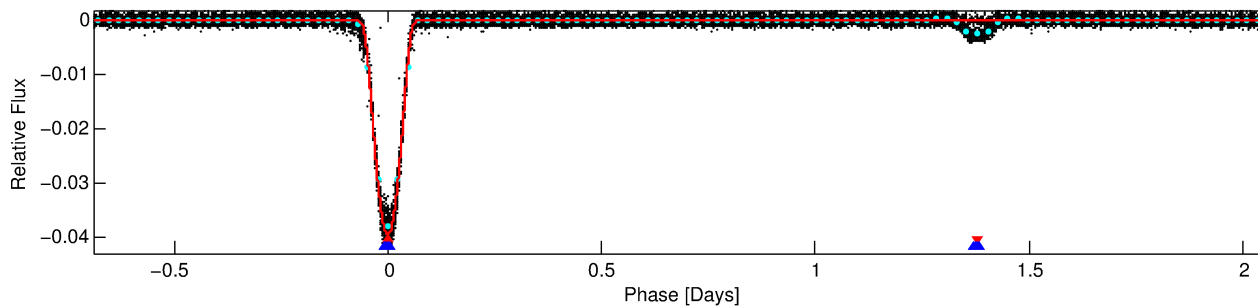
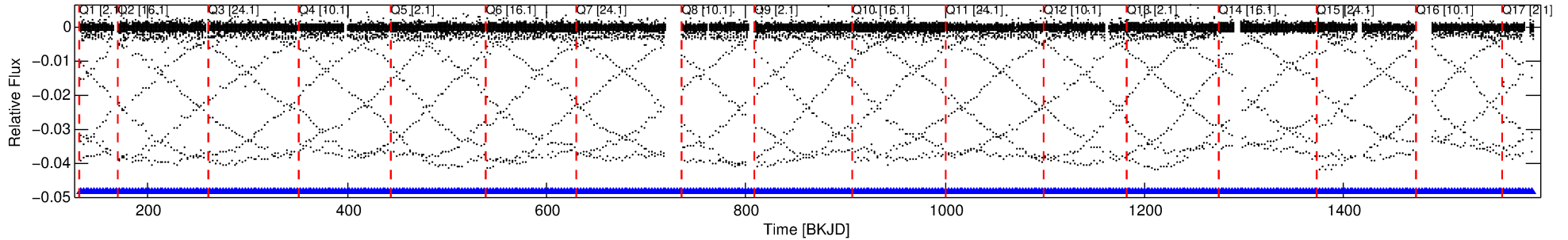
No Significant Match Found

# DV One-Page Summary

KIC: 8279765 Candidate: 1 of 2 Period: 2.758 d

KOI: K01130.01 Corr: 0.991

Kp: 15.23 R\*: 0.89 Rs Teff: 5747.0 K Logg: 4.51 Fe/H: -0.100



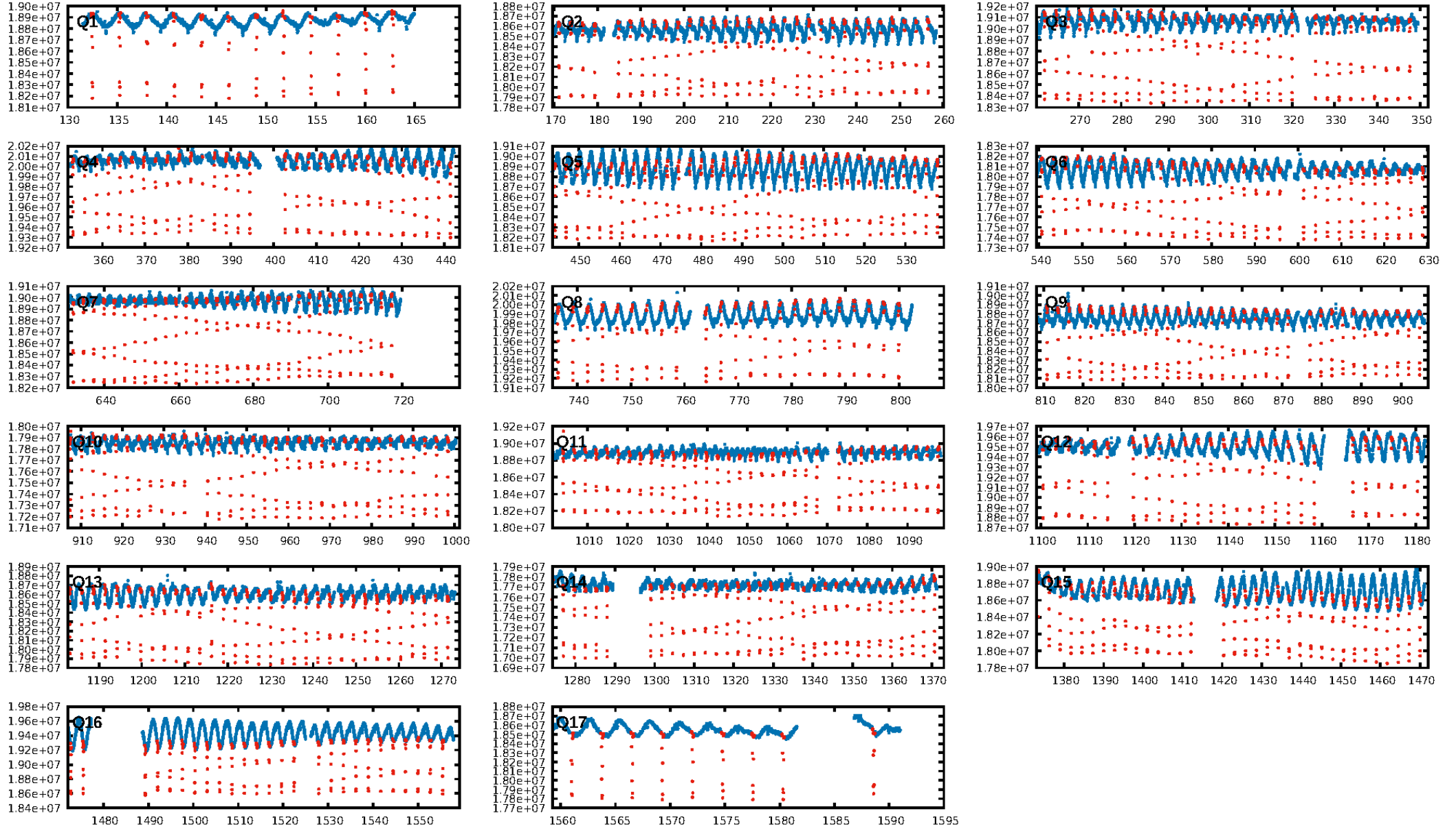
## DV Fit Results:

Period = 2.75779 [0.00000] d  
Epoch = 132.4751 [0.0000] BKJD  
Rp/R\* = 0.2224 [0.0012]  
a/R\* = 6.73 [0.01]  
b = 0.84 [0.00]  
Seff = 543.45 [204.28]  
Teq = 1231 [116] K  
Rp = 21.63 [6.31] Re  
a = 0.0378 [0.0092] AU  
Ag = 4.63 [1.61] [2.25σ]  
Teffp = 2793 [100] K [10.23σ]

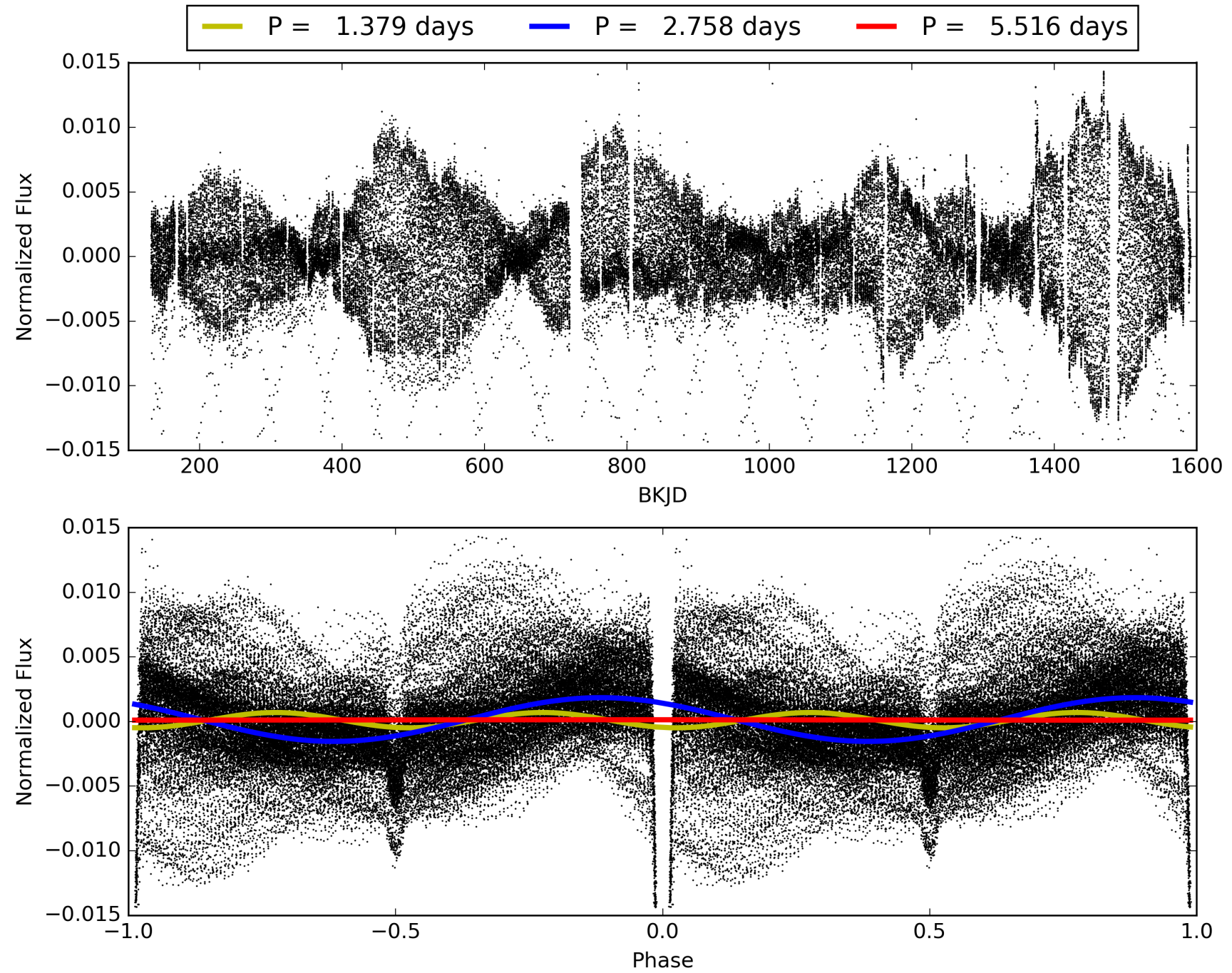
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.60σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [469/469]  
GhostDiagnostic-chr: 2.817  
Centroid-sig: 0.0%  
Centroid-so: 0.185 arcsec [29.00σ]  
OotOffset-rm: 0.084 arcsec [1.25σ]  
KicOffset-rm: 0.074 arcsec [1.09σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 008279765-01, PDC Light Curves

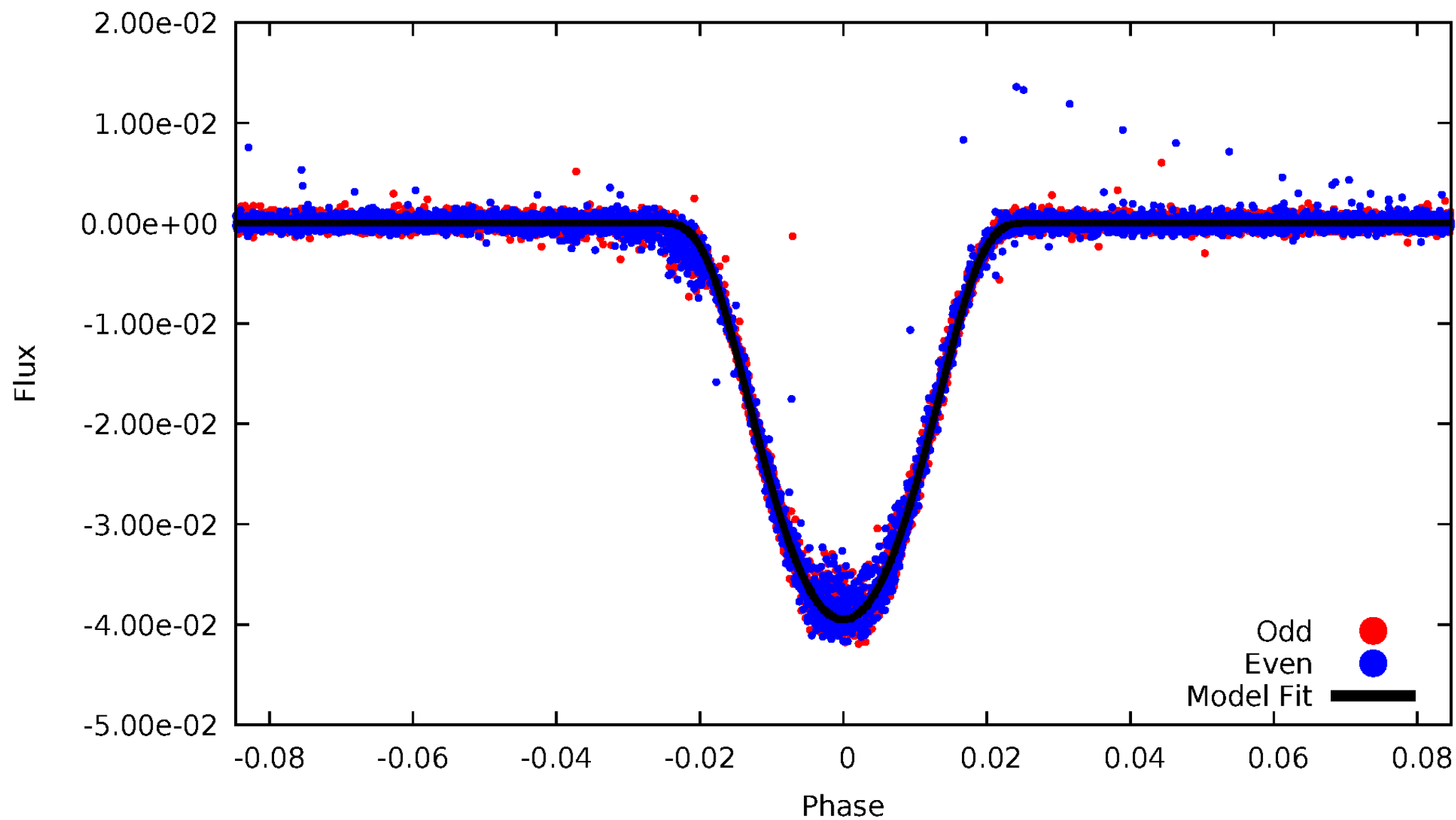


TCE 008279765-01



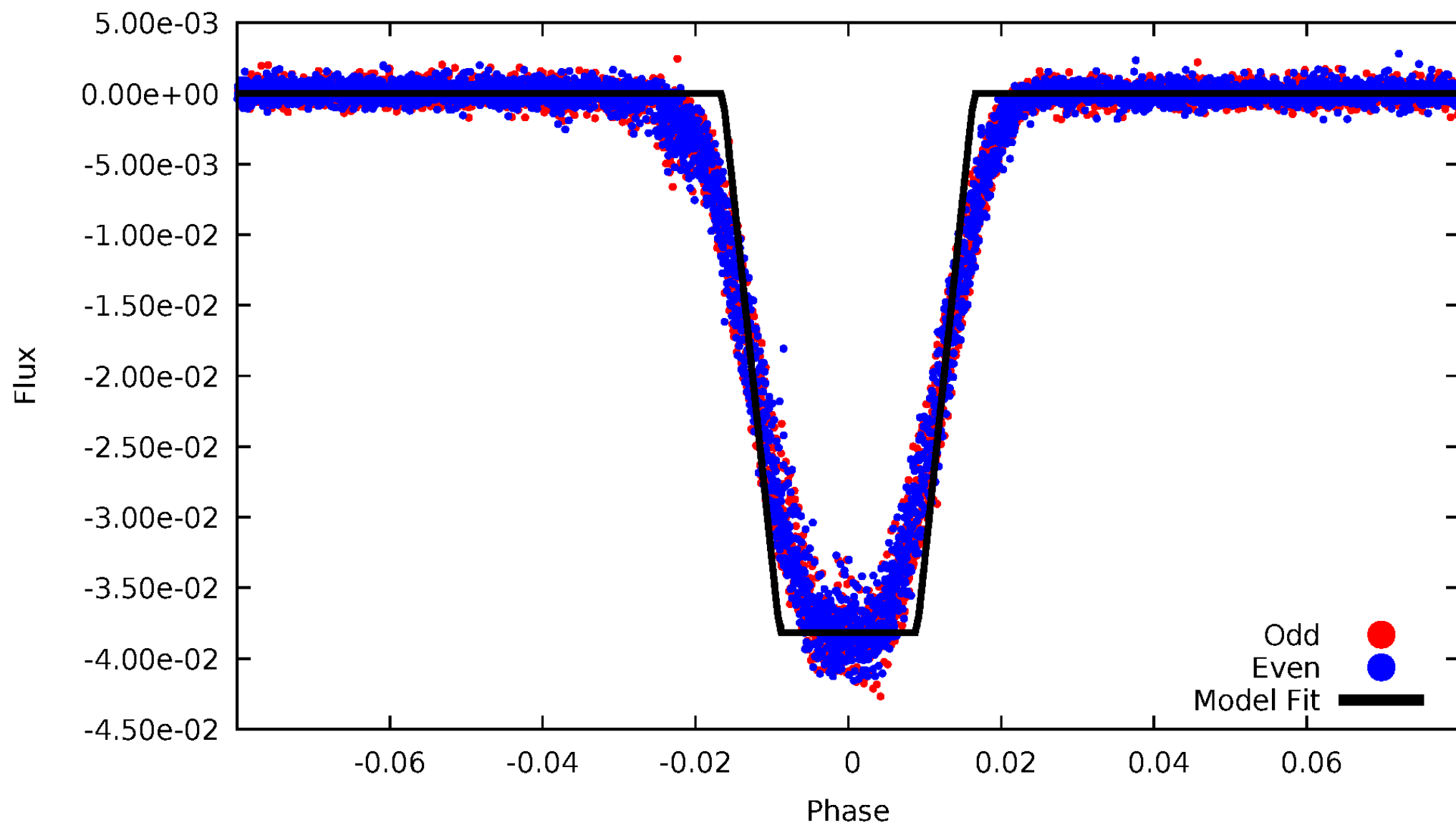
# DV Odd/Even

TCE 008279765-01



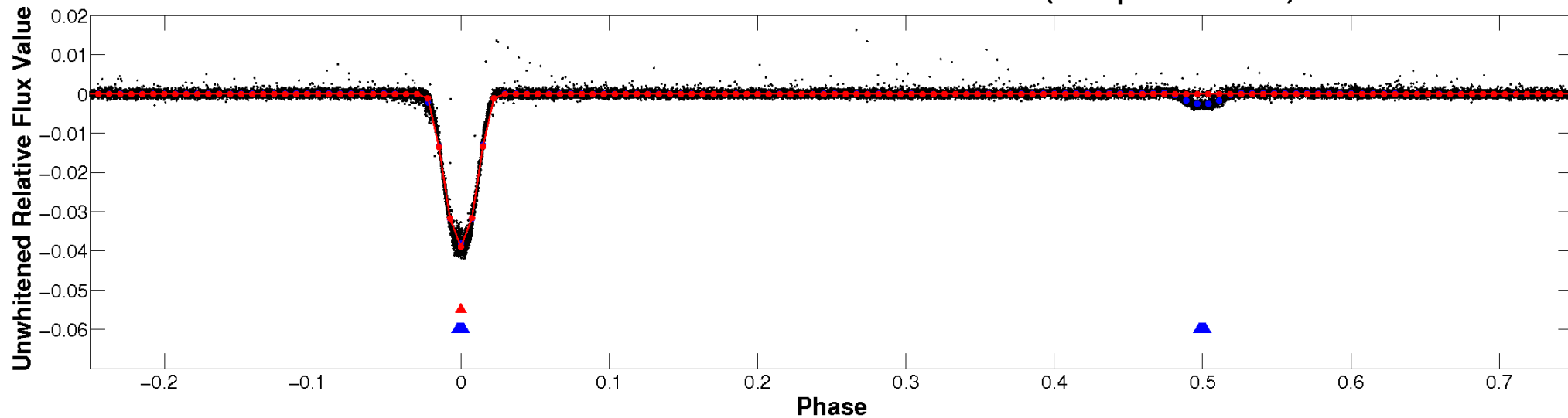
# ALT Odd/Even

TCE 008279765-01

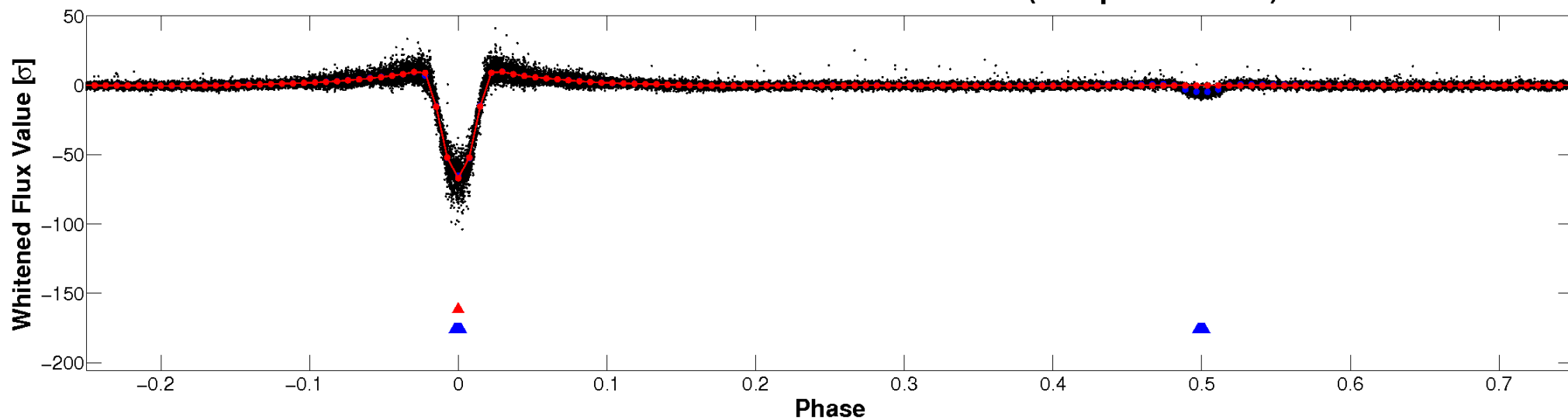


# Non-Whitened Vs. Whitened Light Curve

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



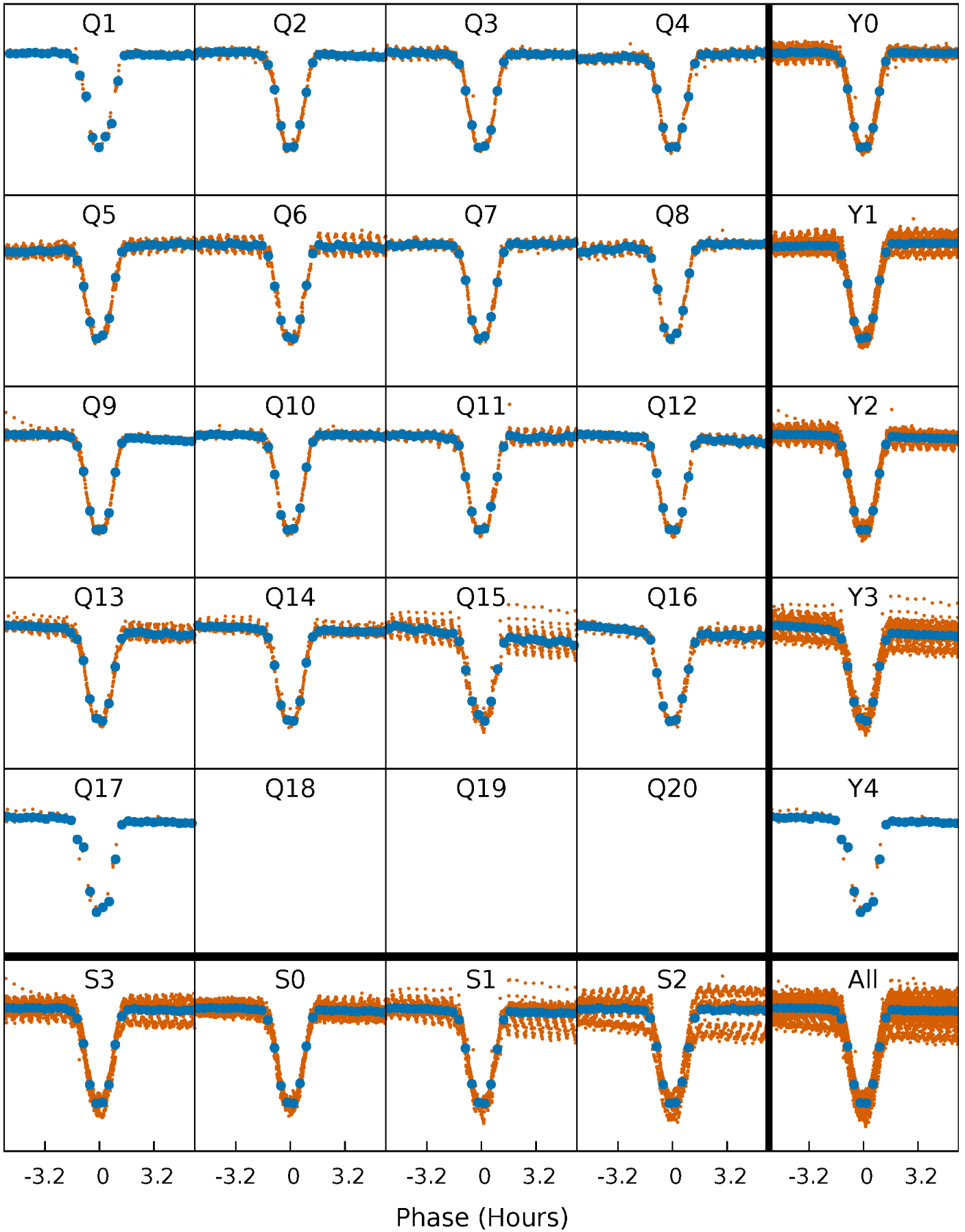
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

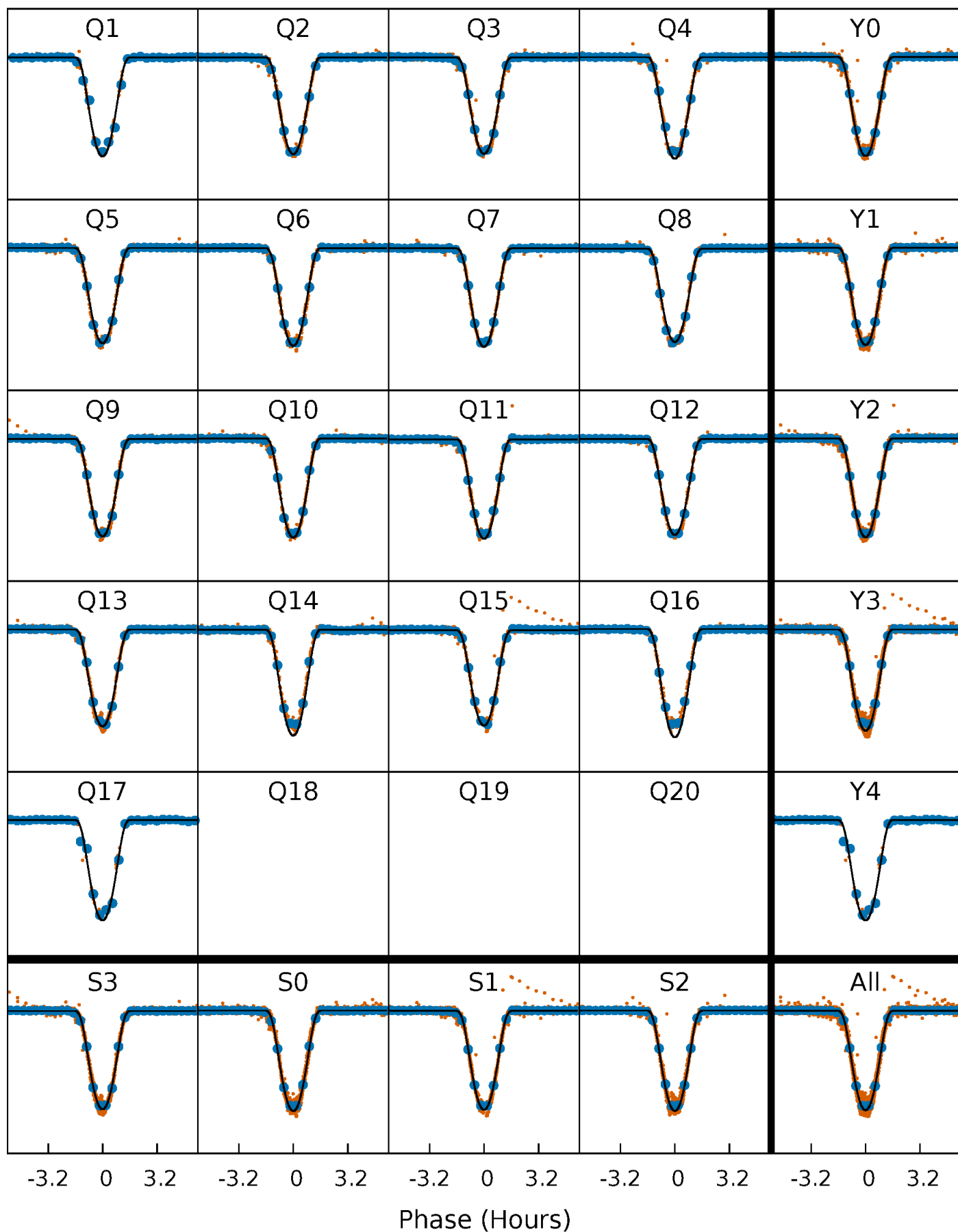
TCE 008279765-01 P= 2.757794 Days  $T_0=132.475052$  (BKJD)





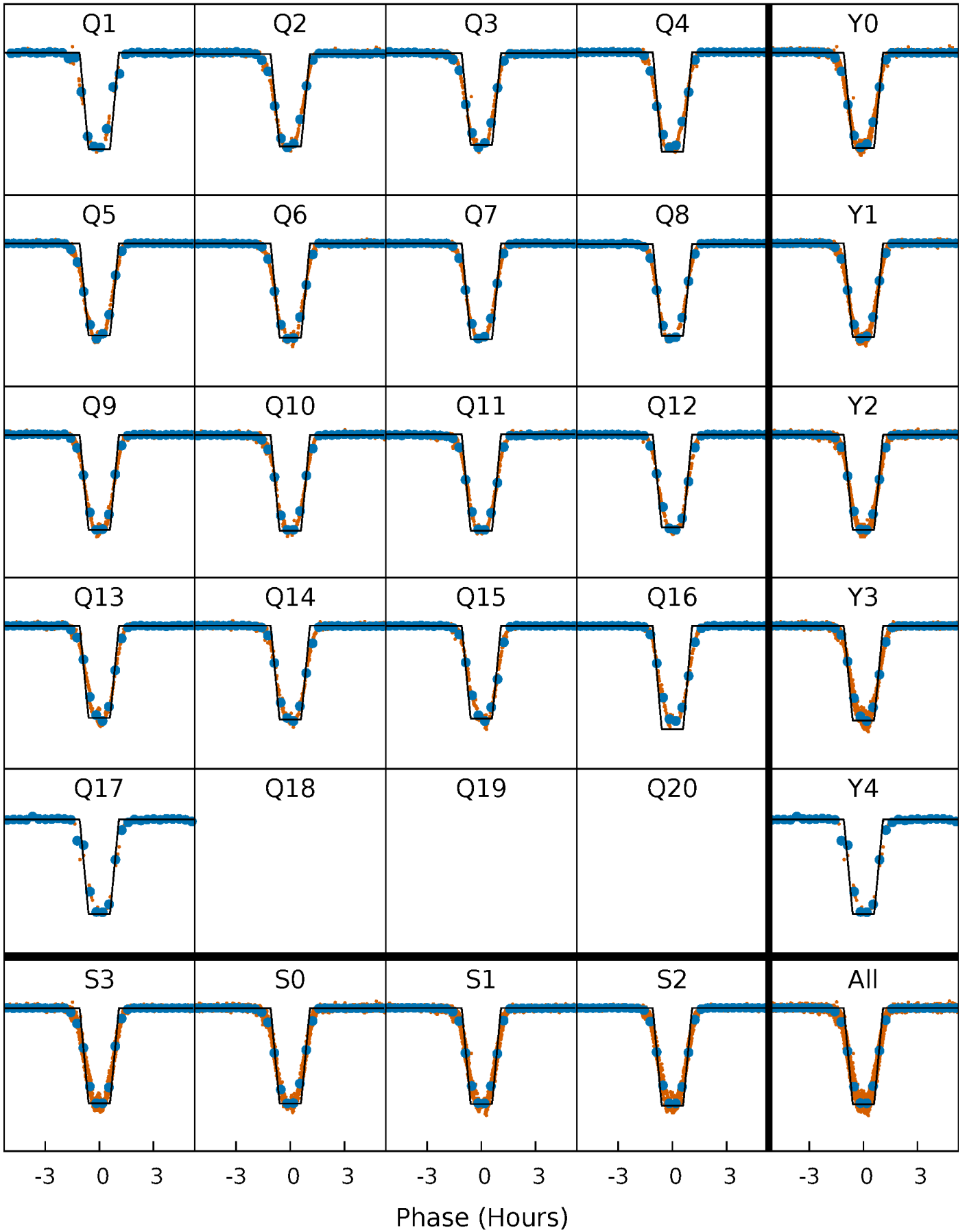
# DV Quarter-Phased Transit Curves

TCE 008279765-01 P= 2.757794 Days  $T_0=132.475052$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

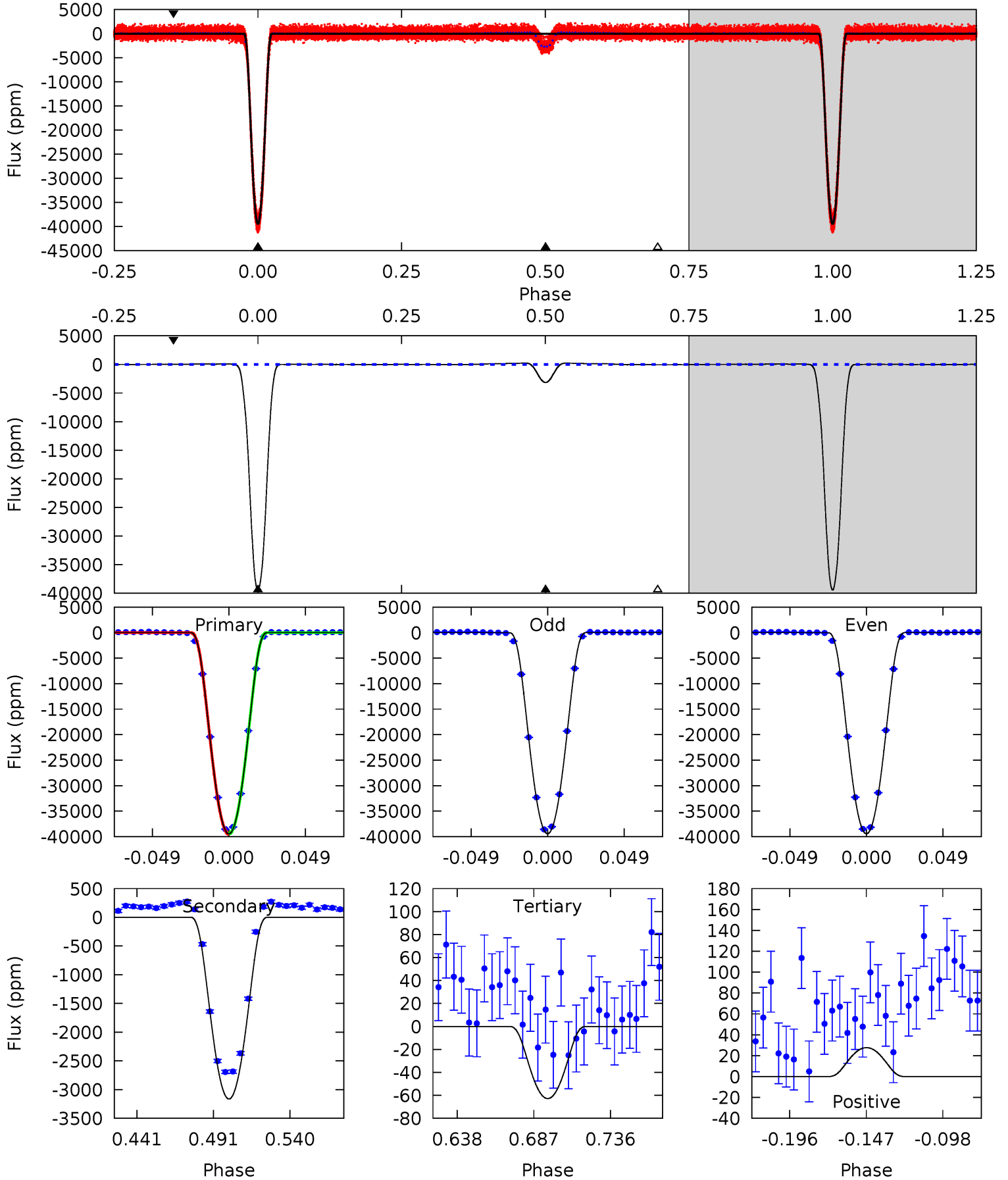
TCE 008279765-01   P= 2.757777 Days    $T_0=132.479528$  (BKJD)



# DV Model-Shift Uniqueness Test

008279765-01, P = 2.757794 Days, E = 129.717258 Days

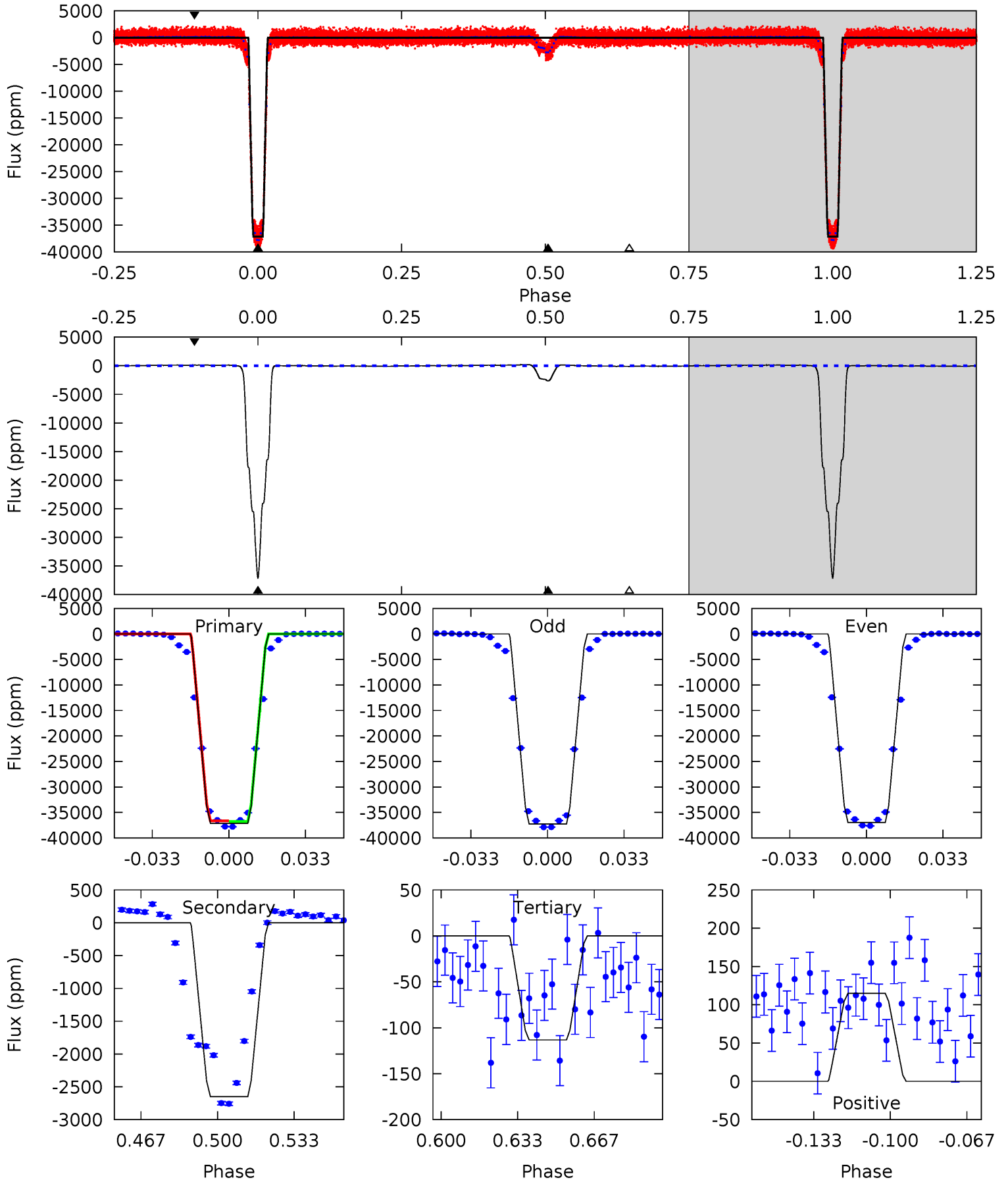
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4312	346.0	6.87	3.02	4.71	1.97	6.50	4305	4309	339.1	342.9	0.77	0.99	0.01	0



# Alt Model-Shift Uniqueness Test

008279765-01, P = 2.757777 Days, E = 129.721751 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
2353	168.1	7.18	7.28	4.79	2.13	4.47	2346	2346	160.9	160.8	9.81	1.00	0.01	3.52



### Stellar Parameters For KIC 008279765

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5747^{+170}_{-204}$	$4.514^{+0.050}_{-0.188}$	$-0.100^{+0.300}_{-0.300}$	$0.891^{+0.260}_{-0.087}$	$0.948^{+0.115}_{-0.115}$	$1.885^{+0.507}_{-0.967}$
	+3%/-4%	+1%/-4%	+300%/-300%	+29%/-10%	+12%/-12%	+27%/-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 008279765-01 / KOI 1130.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-3164 \pm 9$	$22.19^{+3.40}_{-1.60}$	$1748^{+121}_{-82}$	$3372^{+65}_{-78}$	$5.034^{+0.648}_{-1.147}$
Alt.	$-2651 \pm 16$	$19.45^{+2.78}_{-1.34}$	$1749^{+119}_{-84}$	$3418^{+64}_{-81}$	$5.415^{+0.748}_{-1.150}$

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

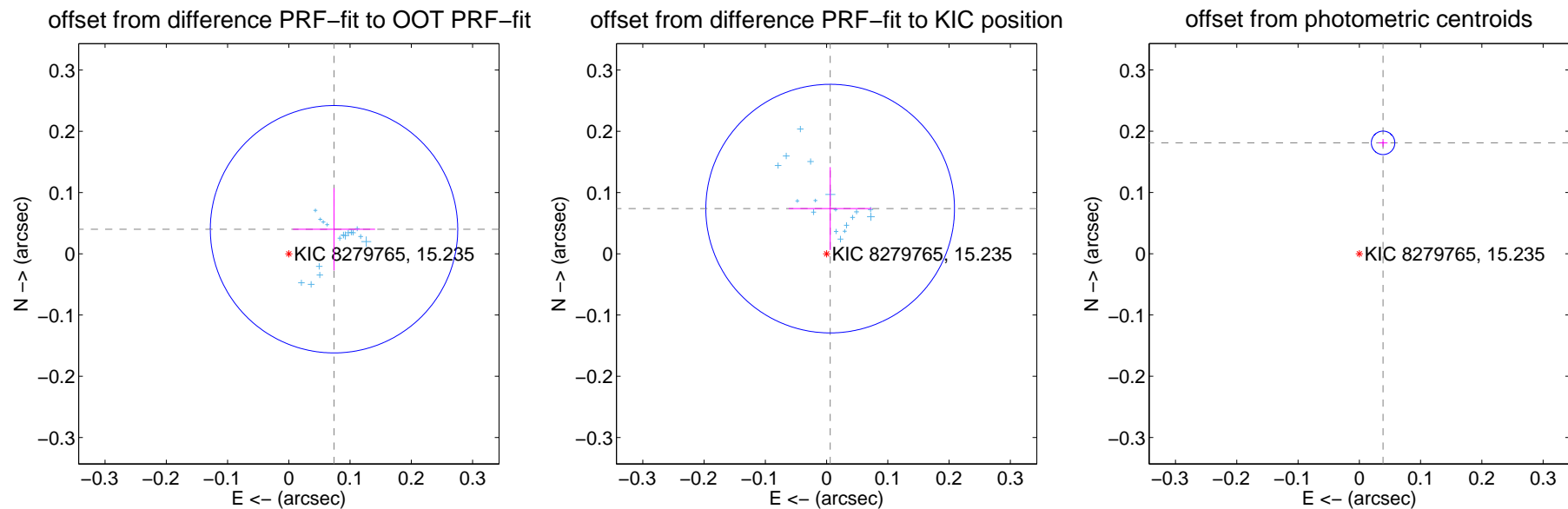
## DV Centroid Data

Supplemental centroid analysis for 008279765-01. Kepler magnitude: 15.23. Transit SNR 1900.32

There are 17 quarters with good PRF difference image offsets

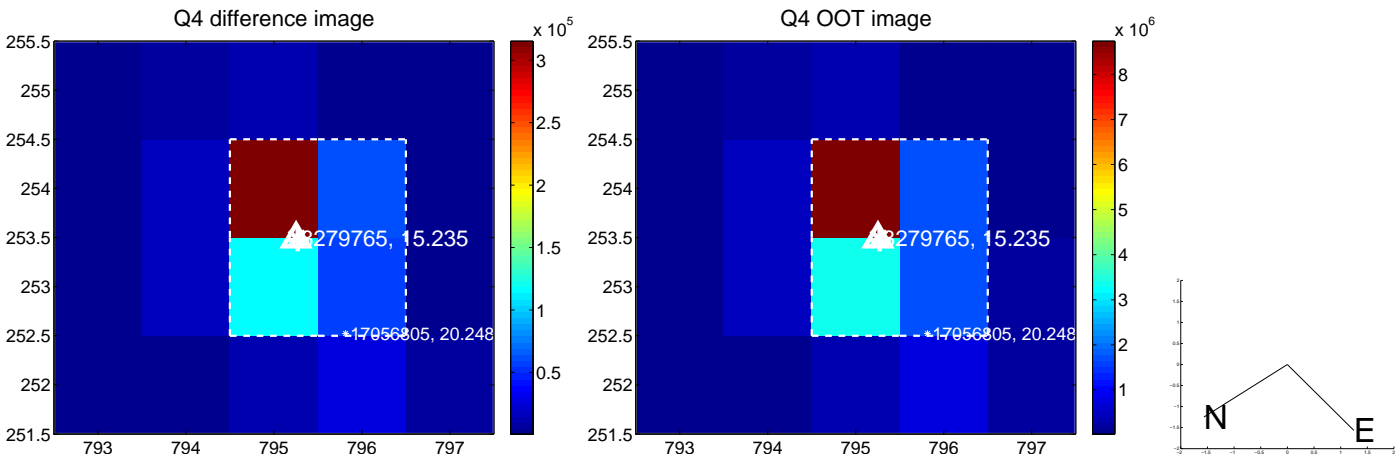
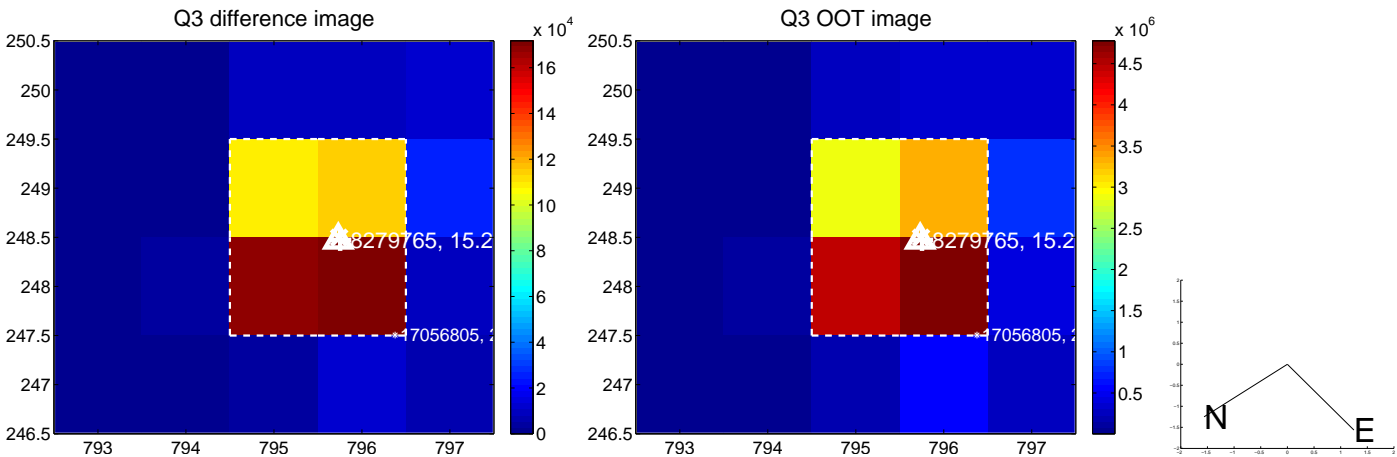
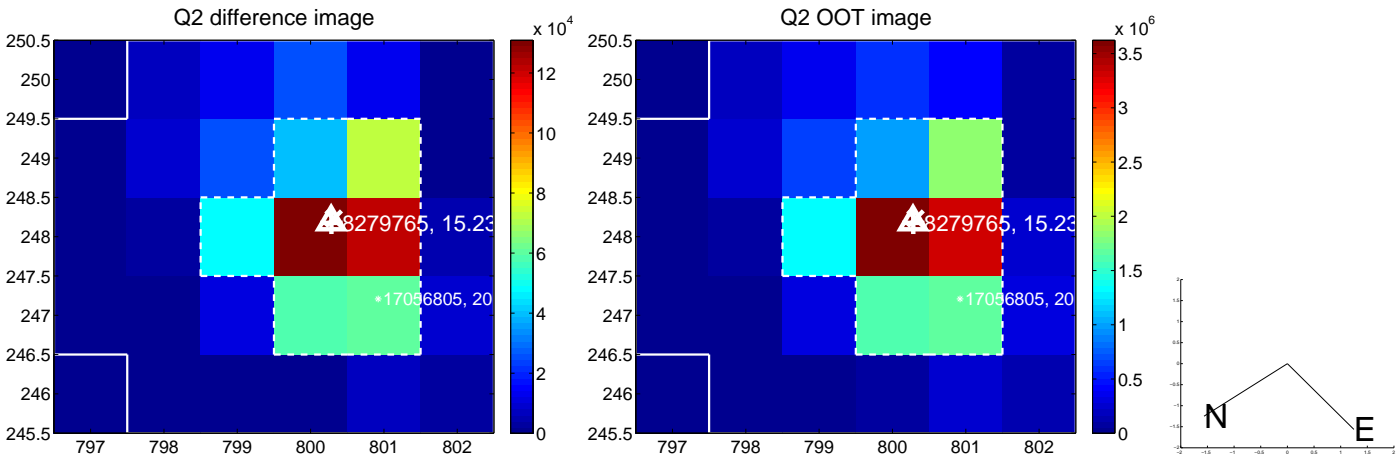
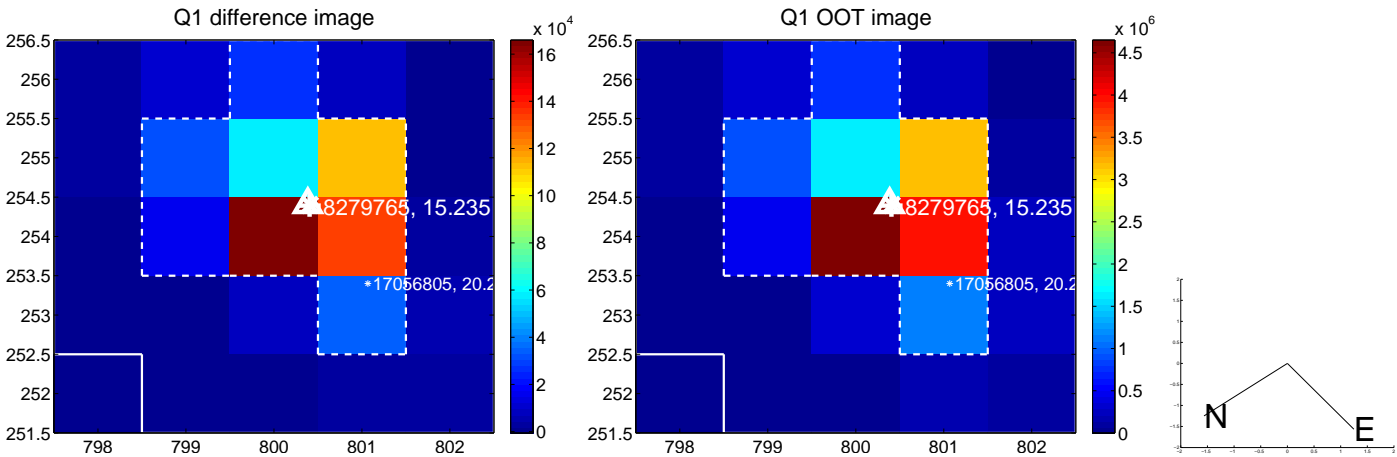
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.084 \pm 0.067$	1.25	$-0.074 \pm 0.067$	$0.040 \pm 0.067$
PRF-fit source offset from KIC position	$0.074 \pm 0.068$	1.09	$-0.006 \pm 0.068$	$0.074 \pm 0.068$
photometric centroid source offset	$0.19 \pm 0.01$	29.00	$-0.04 \pm 0.01$	$0.18 \pm 0.01$



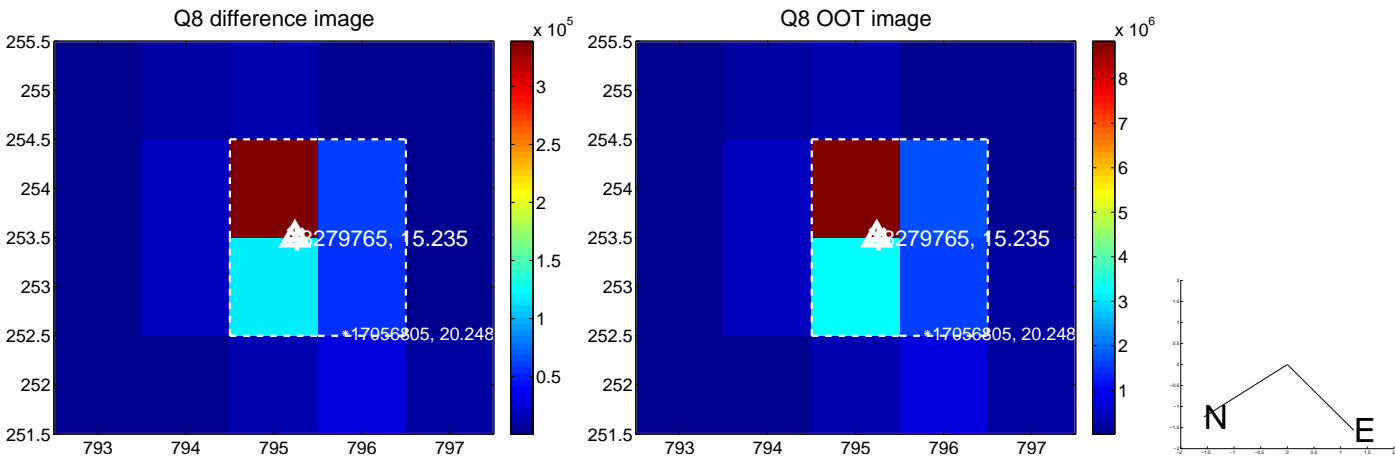
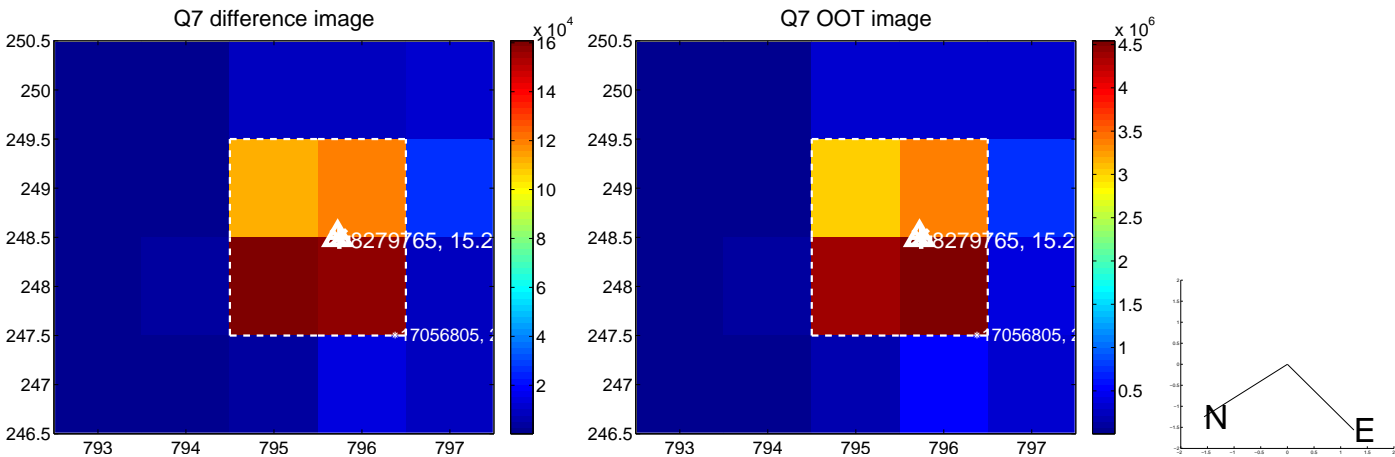
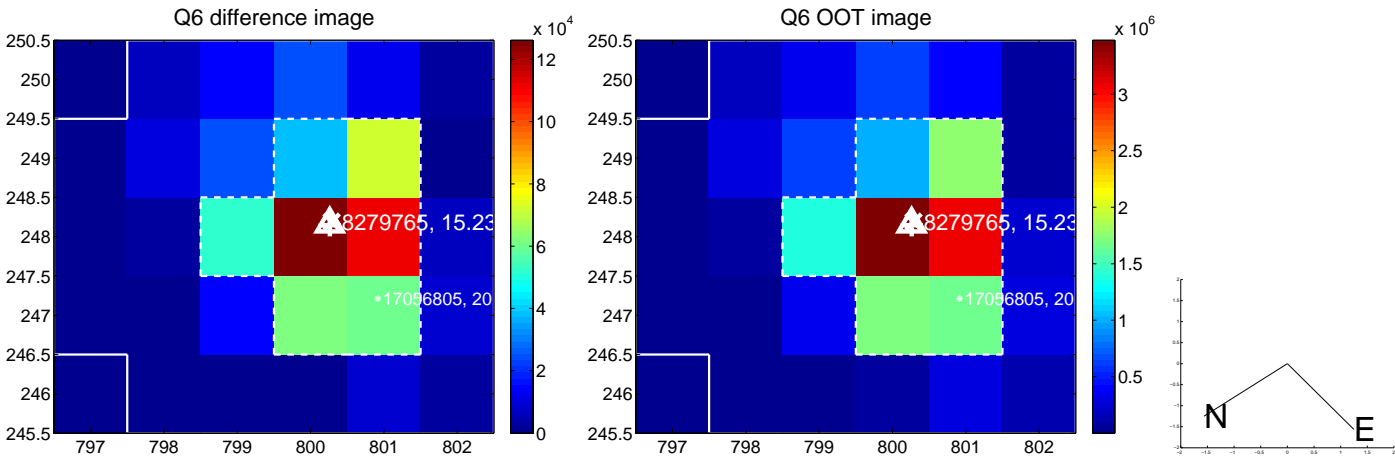
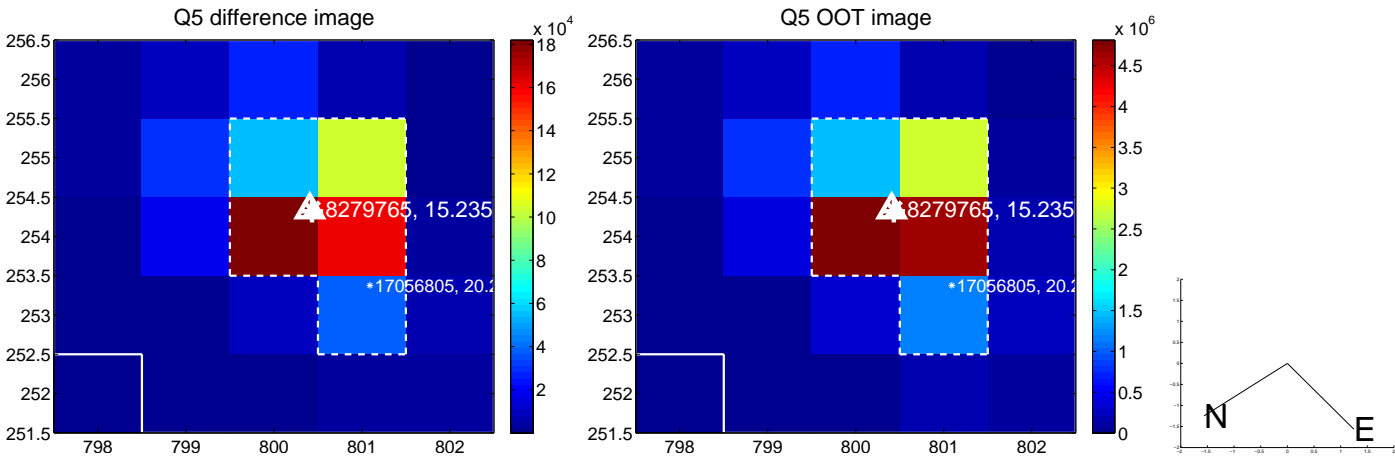
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

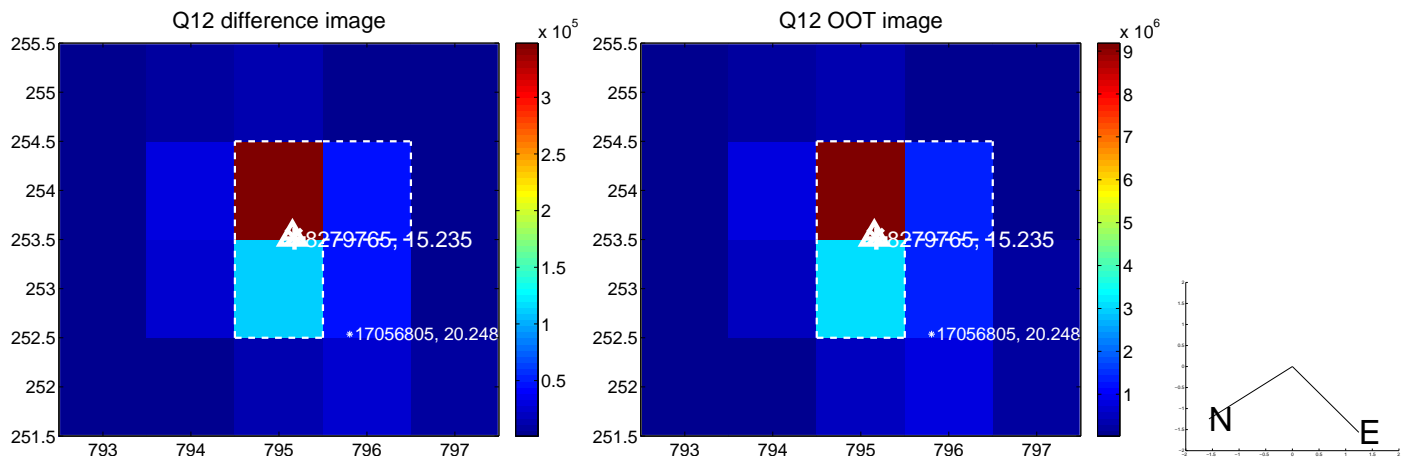
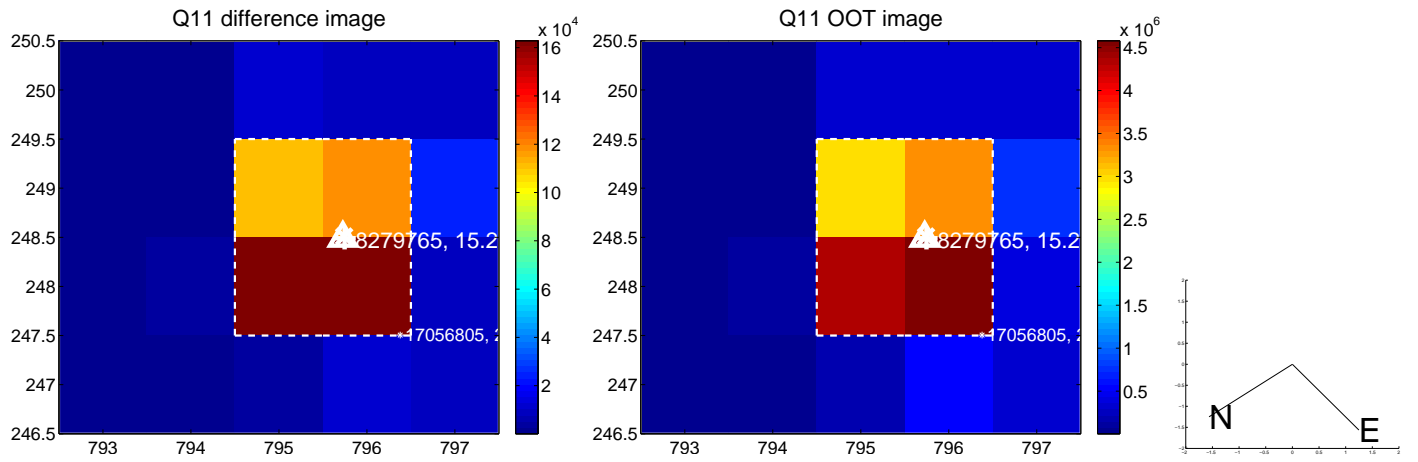
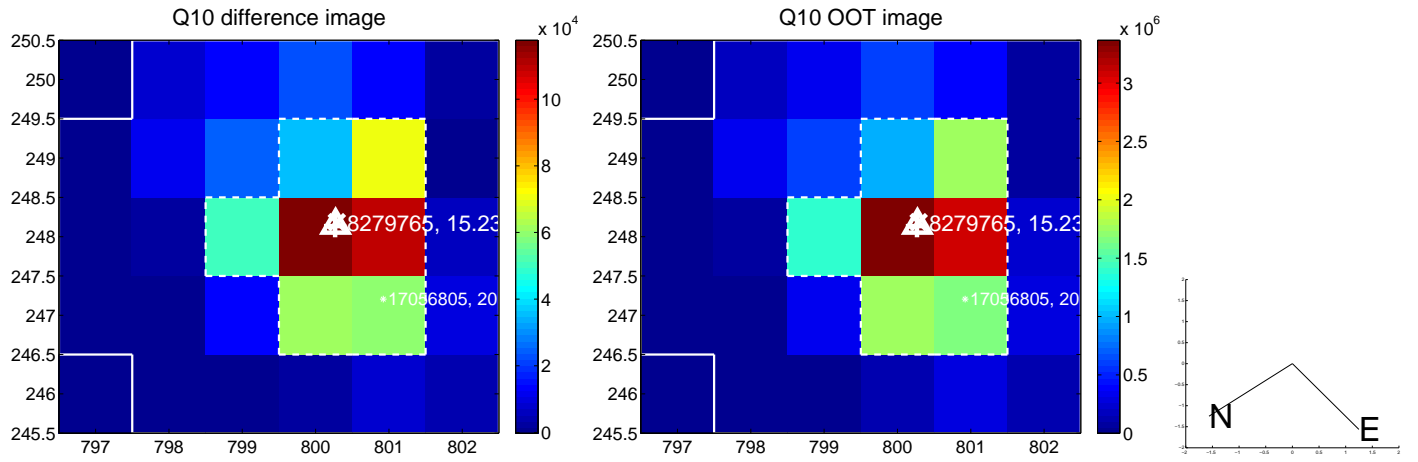
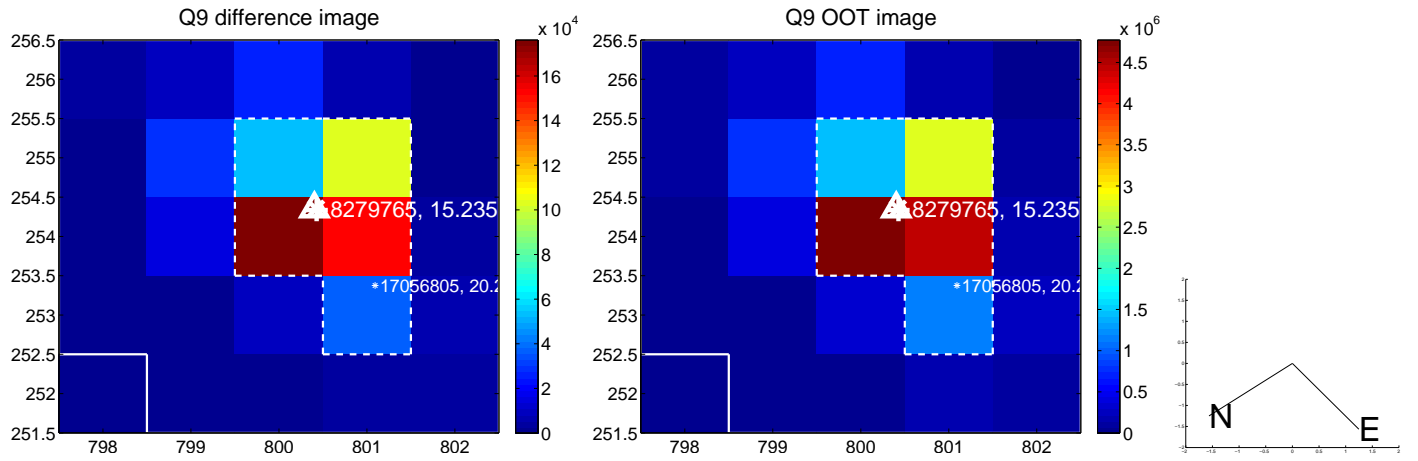




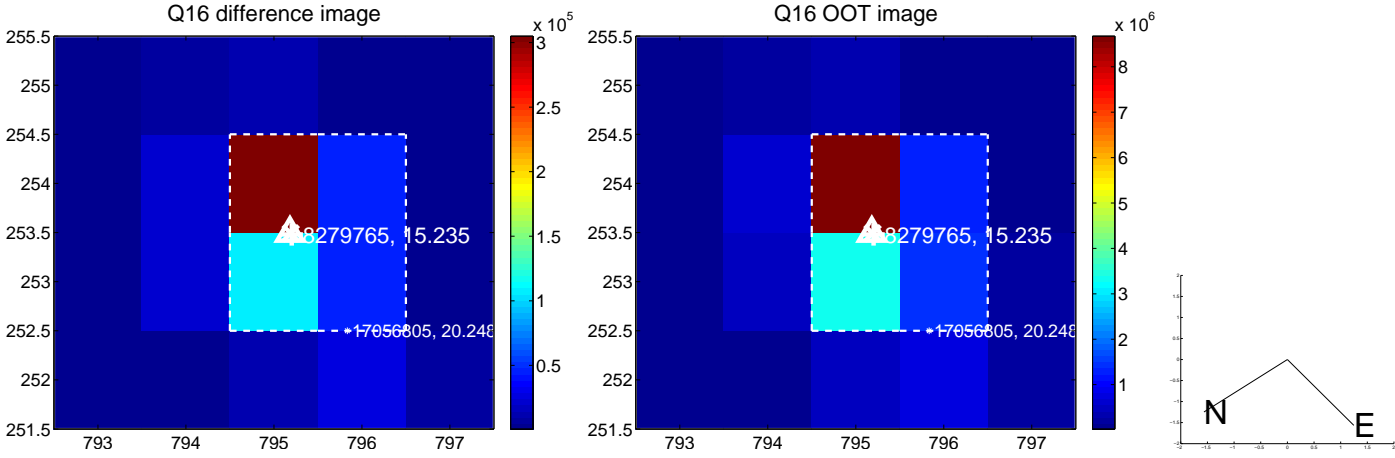
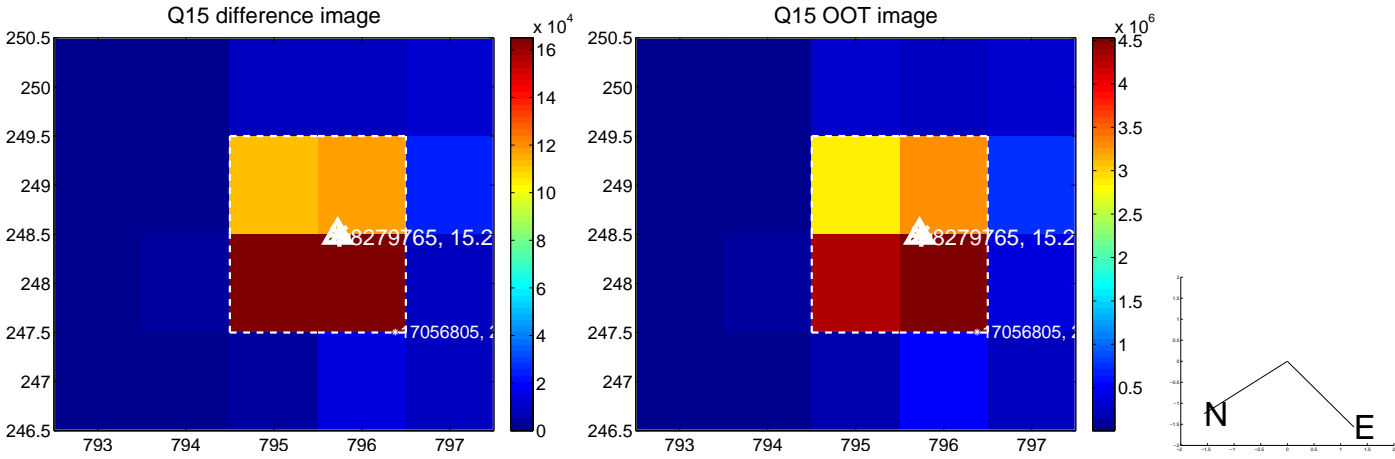
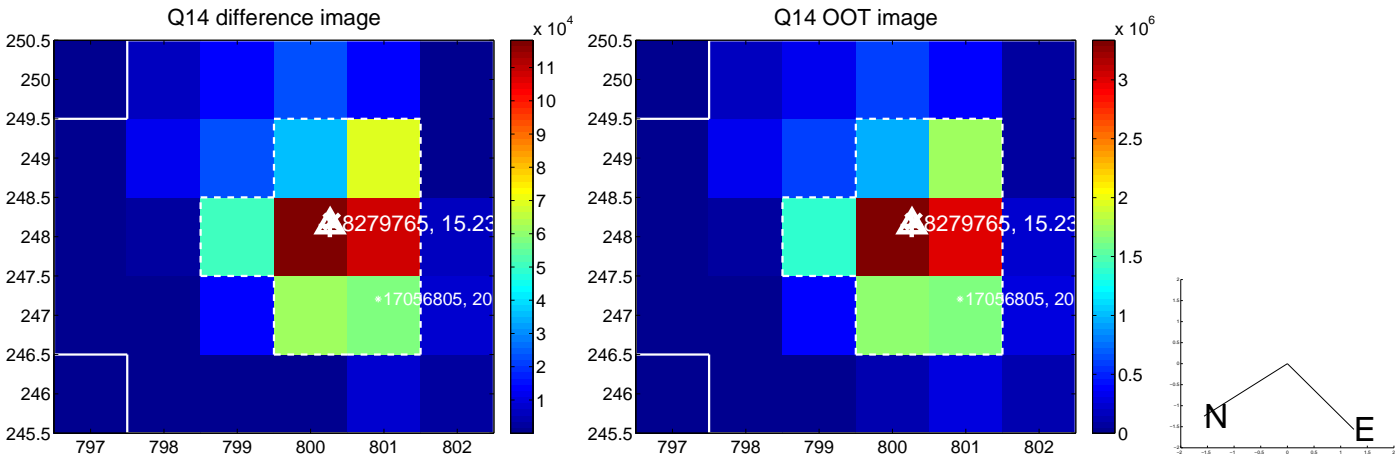
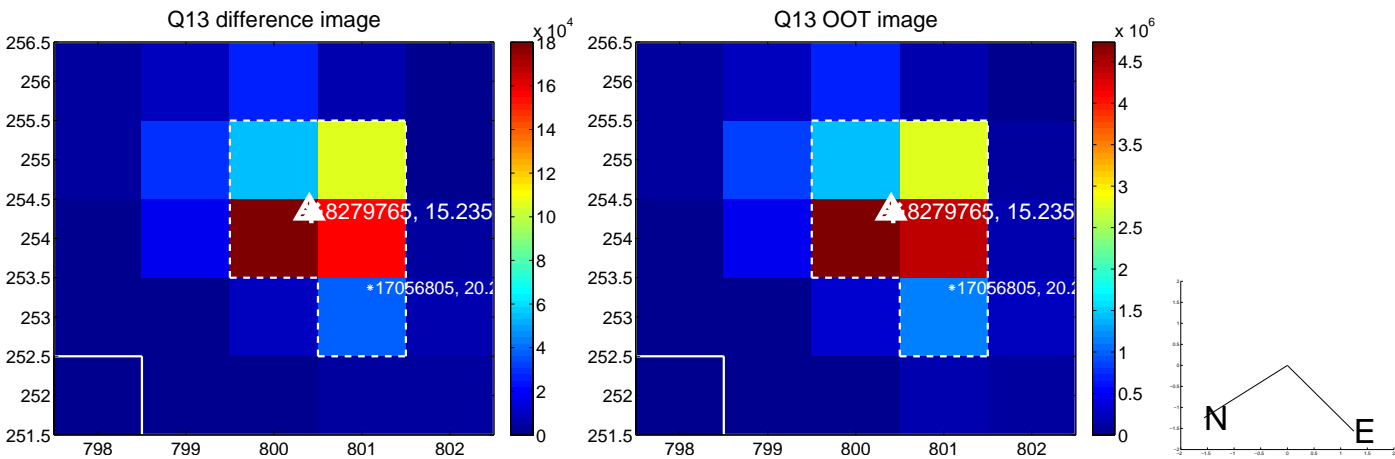
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



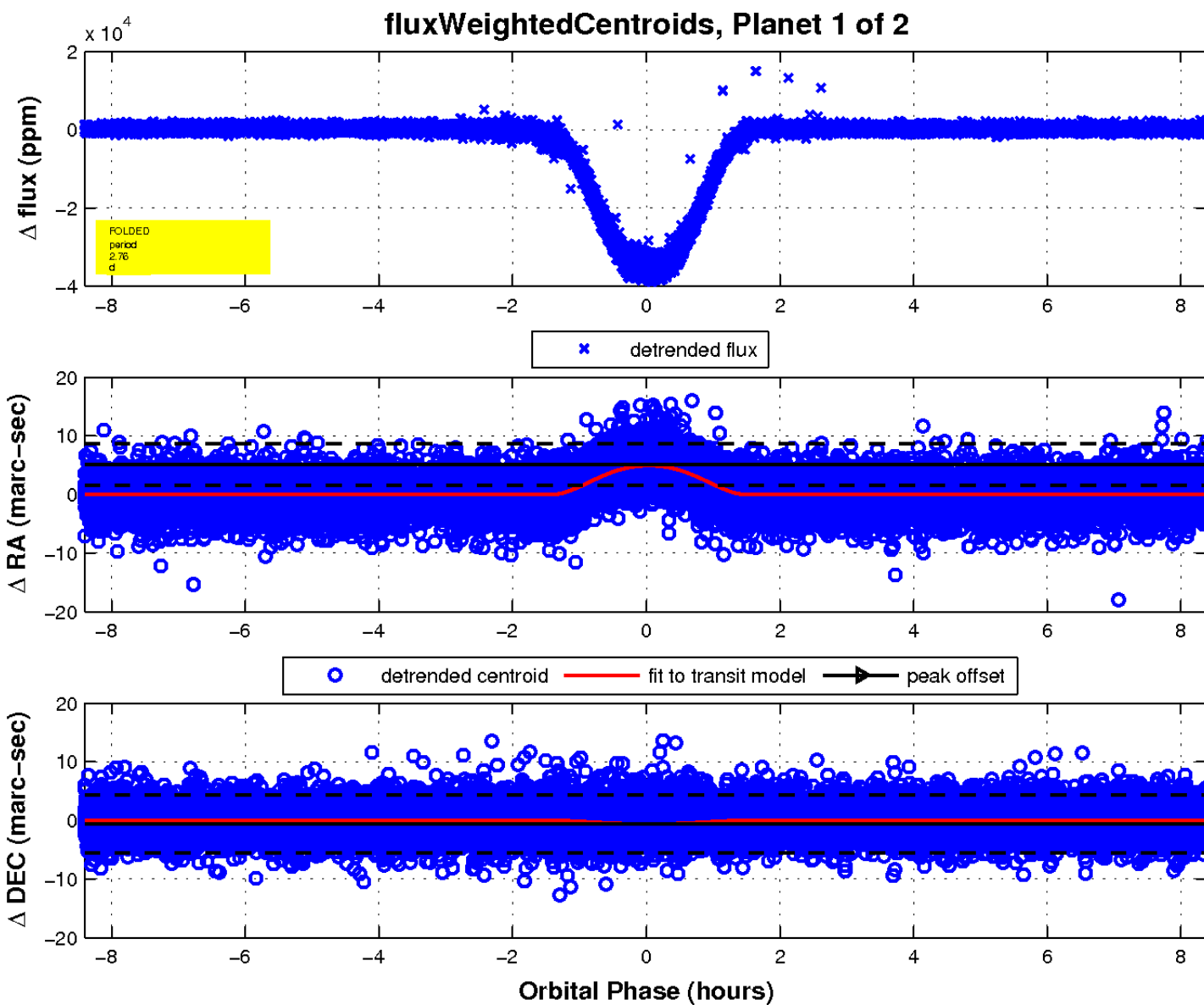
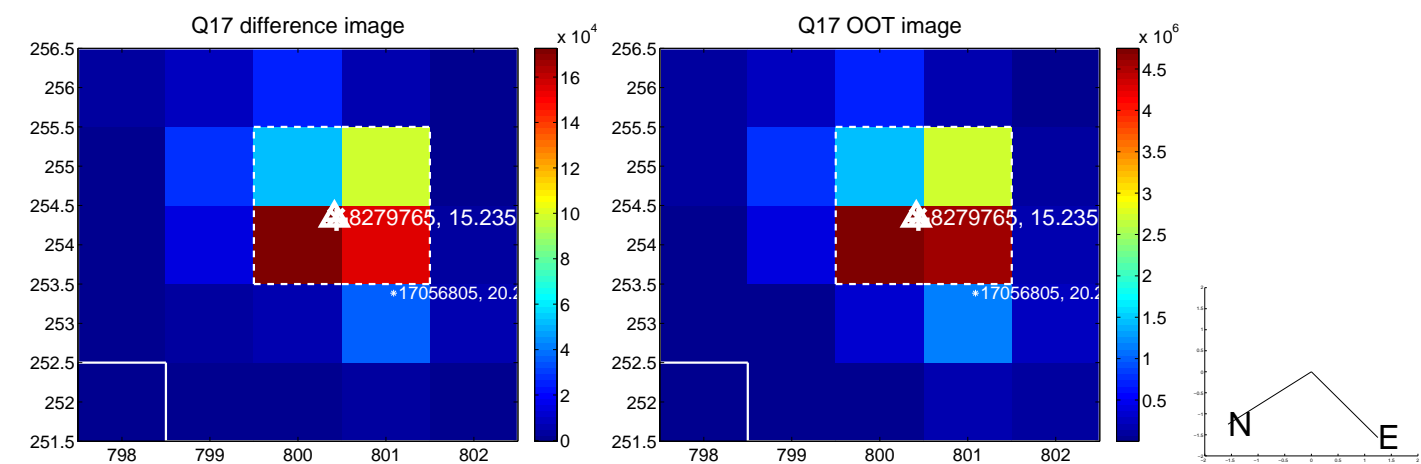
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

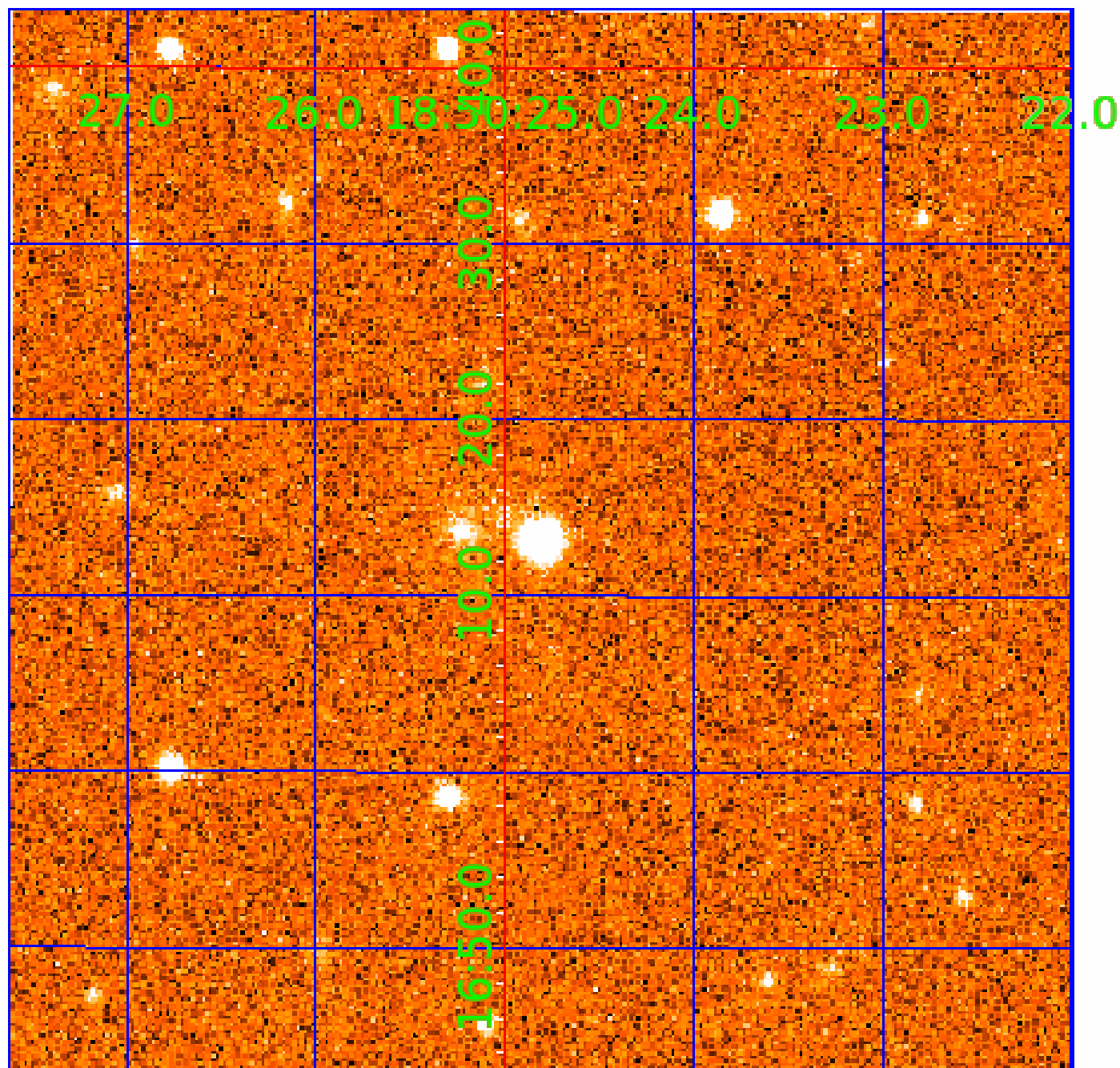


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008279765

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008279765-01	OBS	1130.01	2.757794	132.475052	39511.3	2.802	2390.0	1900.3	0.89	5747	21.62	543.45
008279765-02	OBS	No	1.378886	132.480197	2817.7	2.639	186.8	179.9	0.89	5747	5.82	1369.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008279765-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
008279765-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

**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.

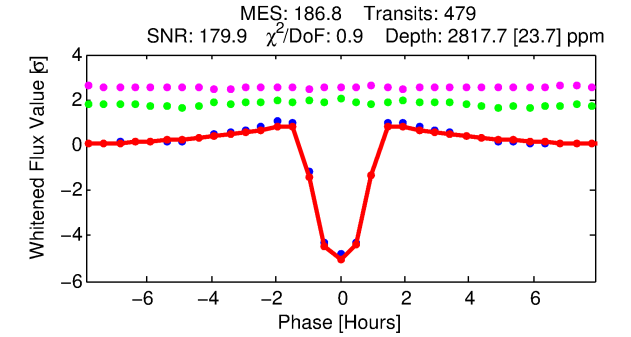
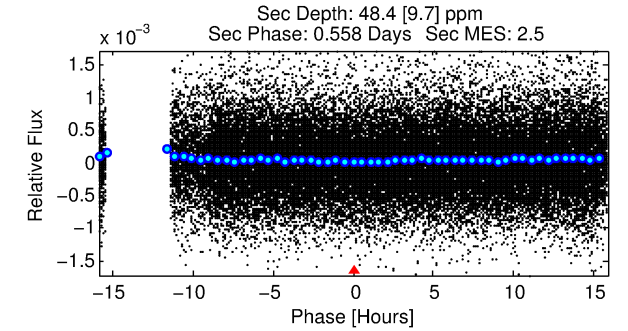
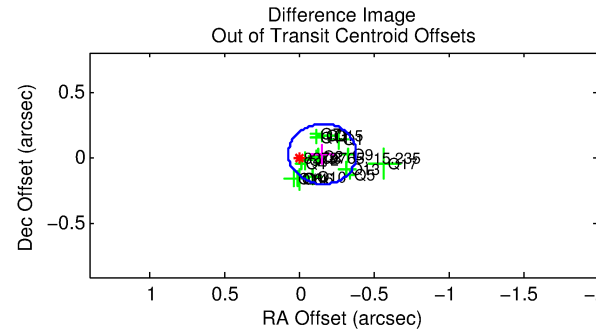
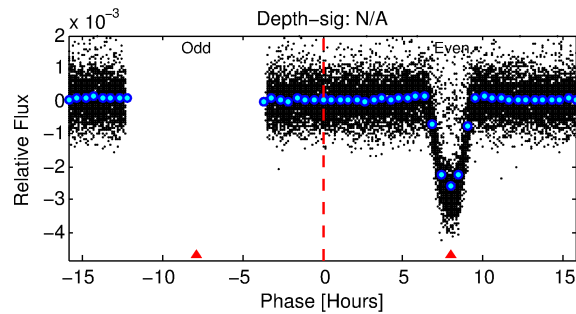
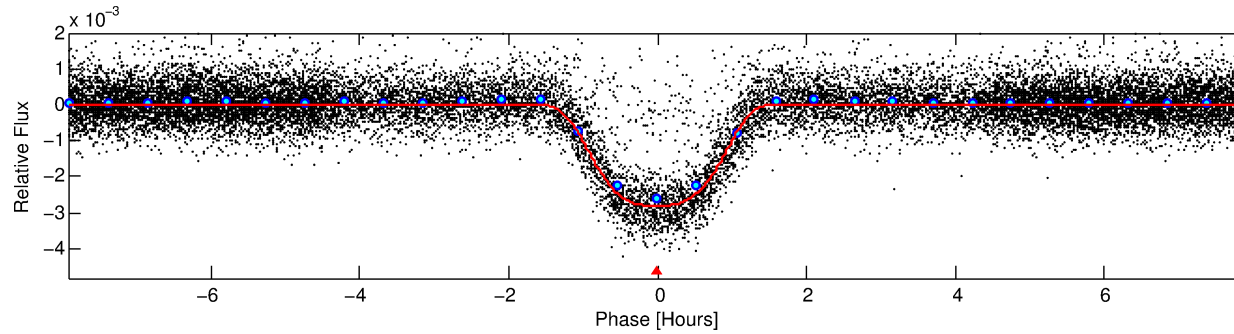
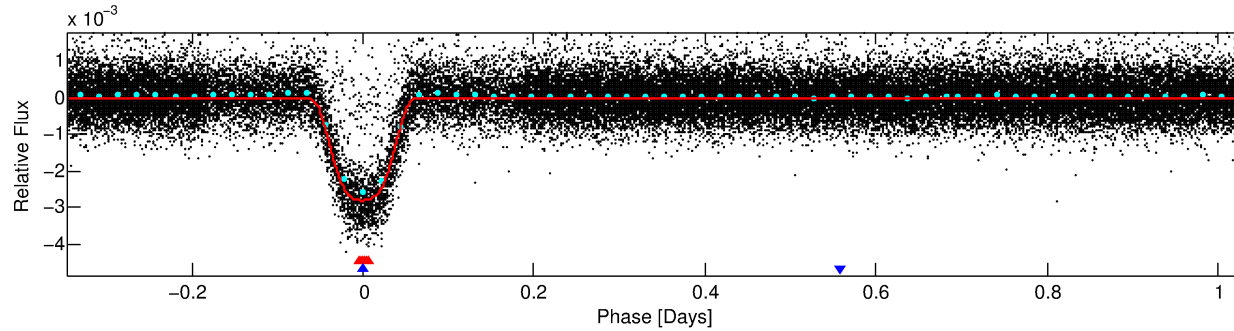
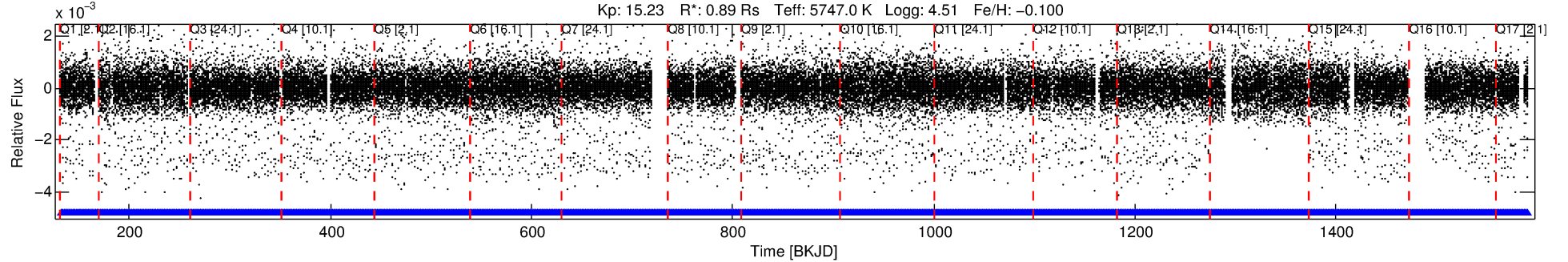
## Ephemeris Match Information For 008279765-02

No Significant Match Found

# DV One-Page Summary

KIC: 8279765 Candidate: 2 of 2 Period: 1.379 d  
KOI: K01130 Corr: No Ephemeris Match

Kp: 15.23 R\*: 0.89 Rs Teff: 5747.0 K Logg: 4.51 Fe/H: -0.100



## DV Fit Results:

Period = 1.37889 [0.00000] d  
Epoch = 132.4802 [0.0002] BKJD  
Rp/R\* = 0.0598 [0.0004]  
a/R\* = 2.29 [0.03]  
b = 0.92 [0.00]  
Seff = 1369.43 [514.75]  
Teq = 1551 [146] K  
Rp = 5.81 [1.70] Re  
a = 0.0238 [0.0058] AU  
Ag = 0.45 [0.18] [-3.09σ]  
Teffp = 1960 [120] K [2.16σ]

## DV Diagnostic Results:

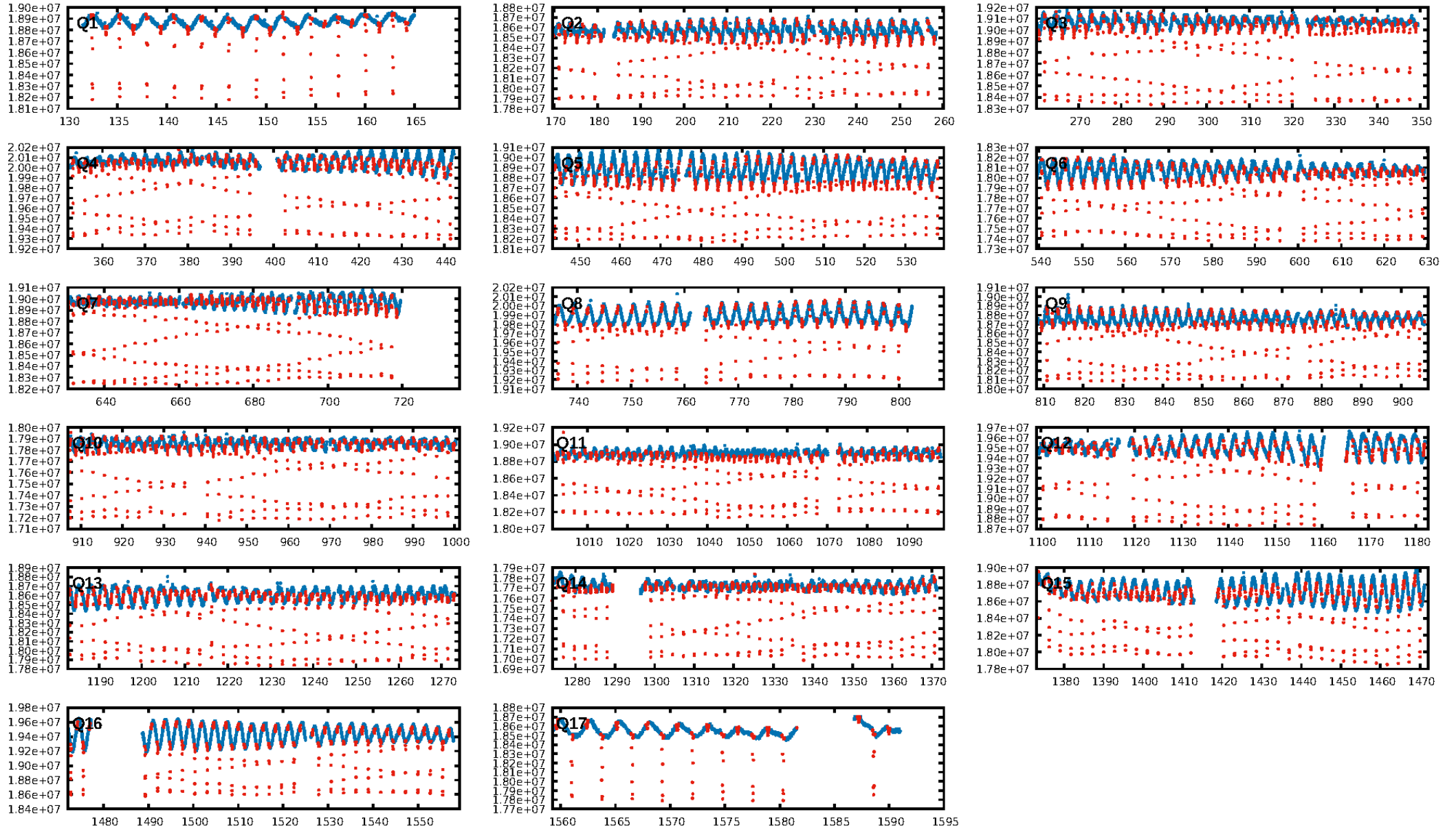
ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [8.60σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [457/457]  
GhostDiagnostic-chr: 2.539  
Centroid-sig: 0.0%  
Centroid-so: 0.381 arcsec [6.37σ]  
OotOffset-rm: 0.162 arcsec [2.14σ]  
KicOffset-rm: 0.133 arcsec [1.78σ]  
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 07:01:08 Z

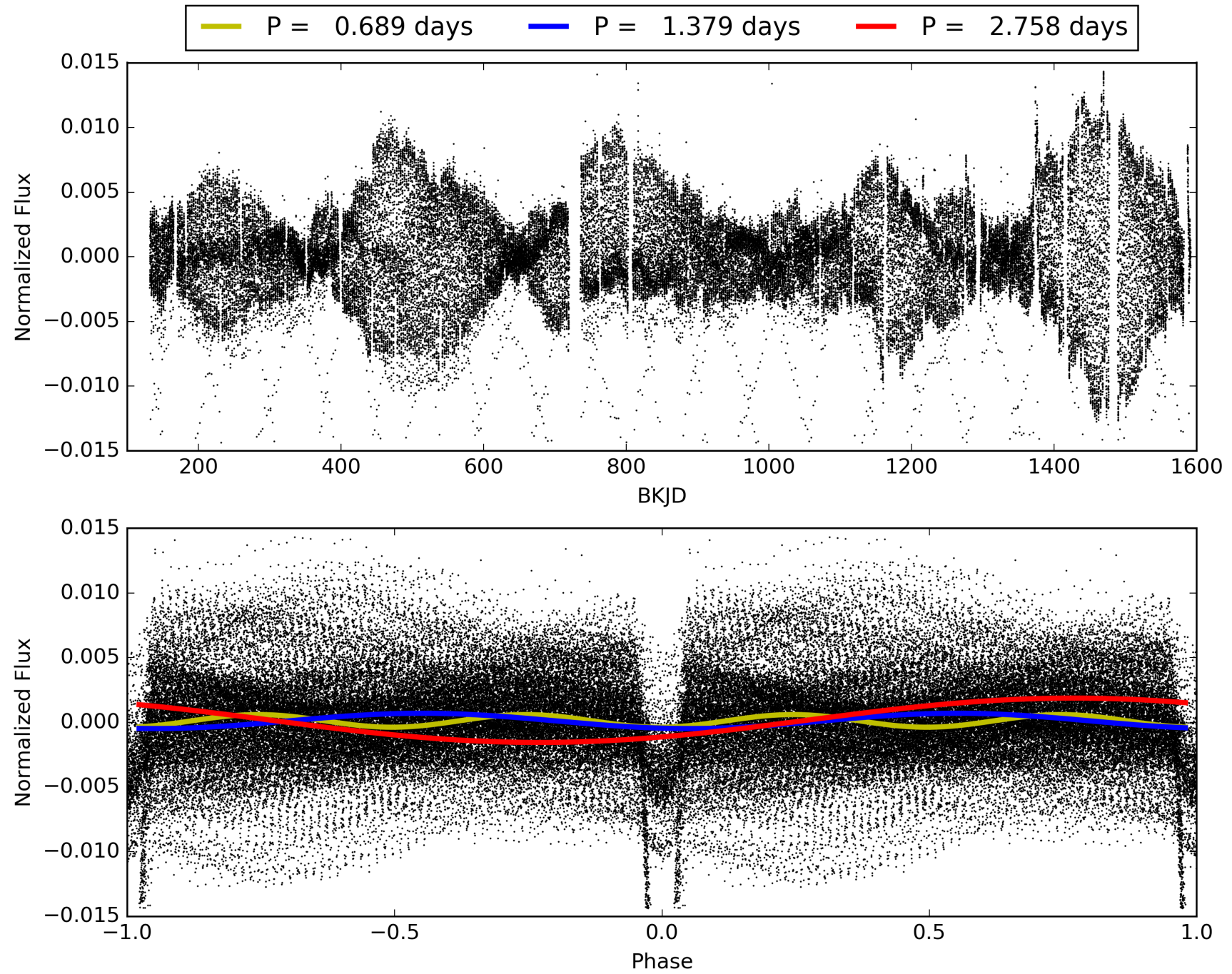
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 008279765-02, PDC Light Curves

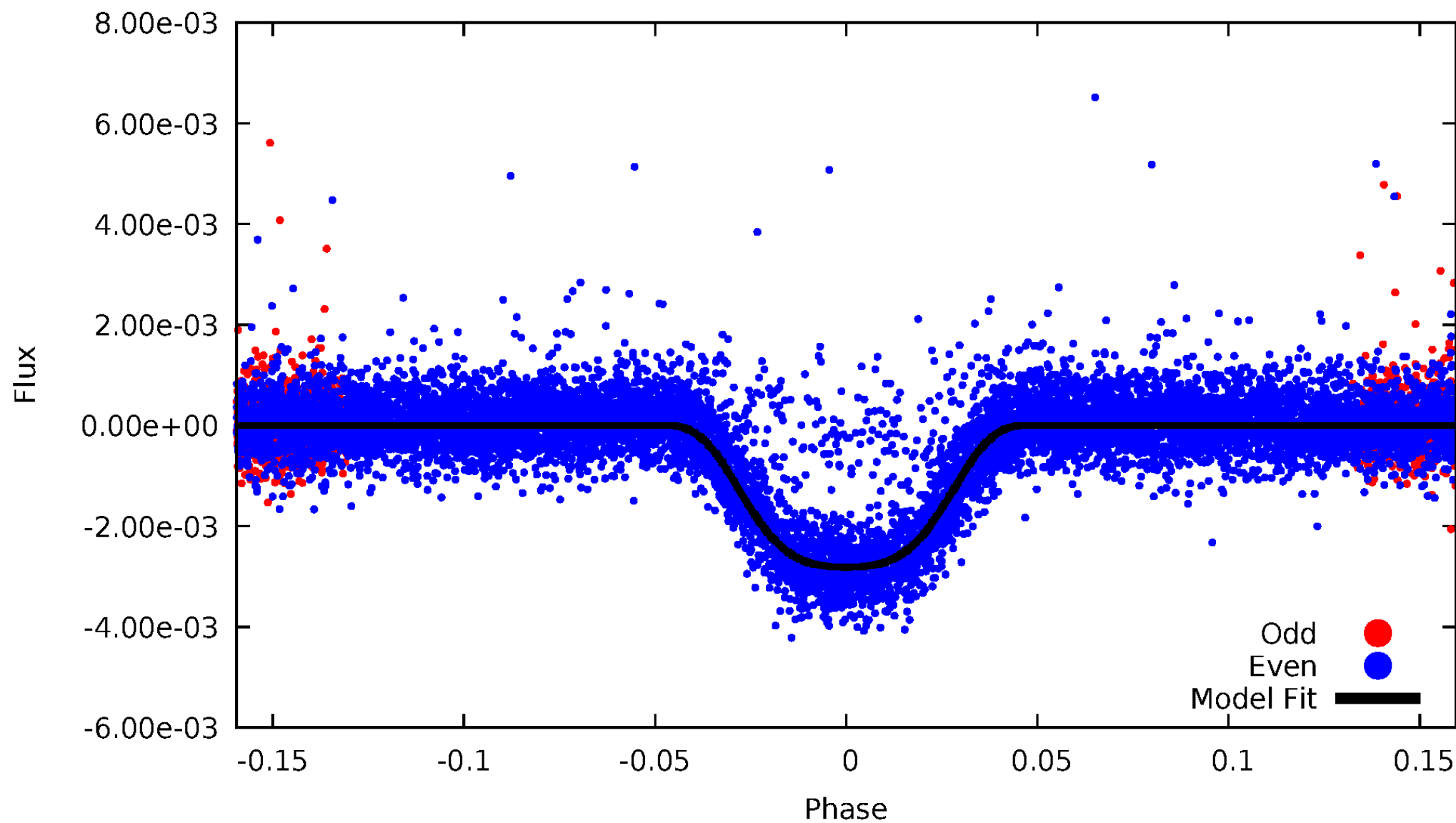


TCE 008279765-02



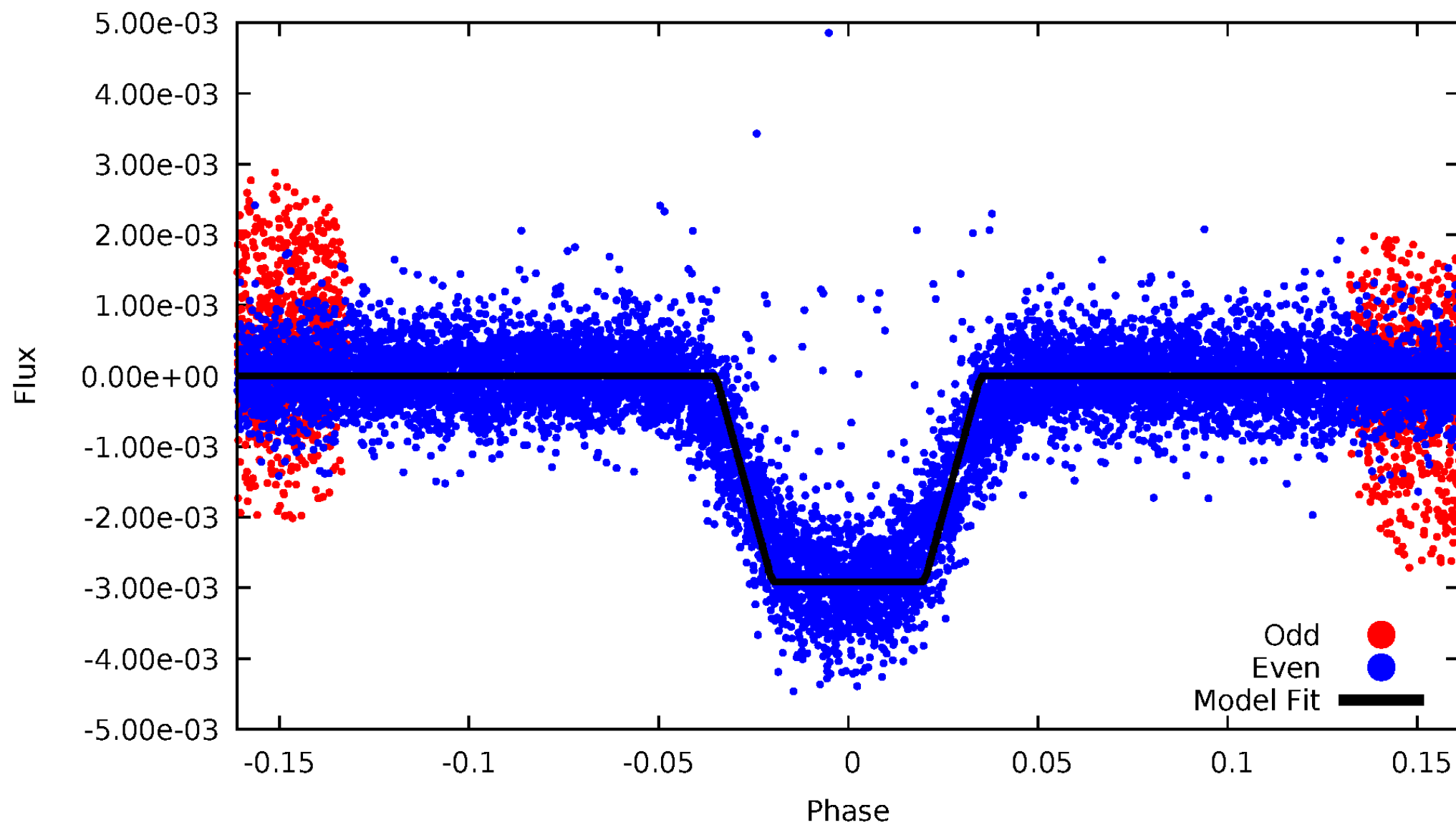
# DV Odd/Even

TCE 008279765-02



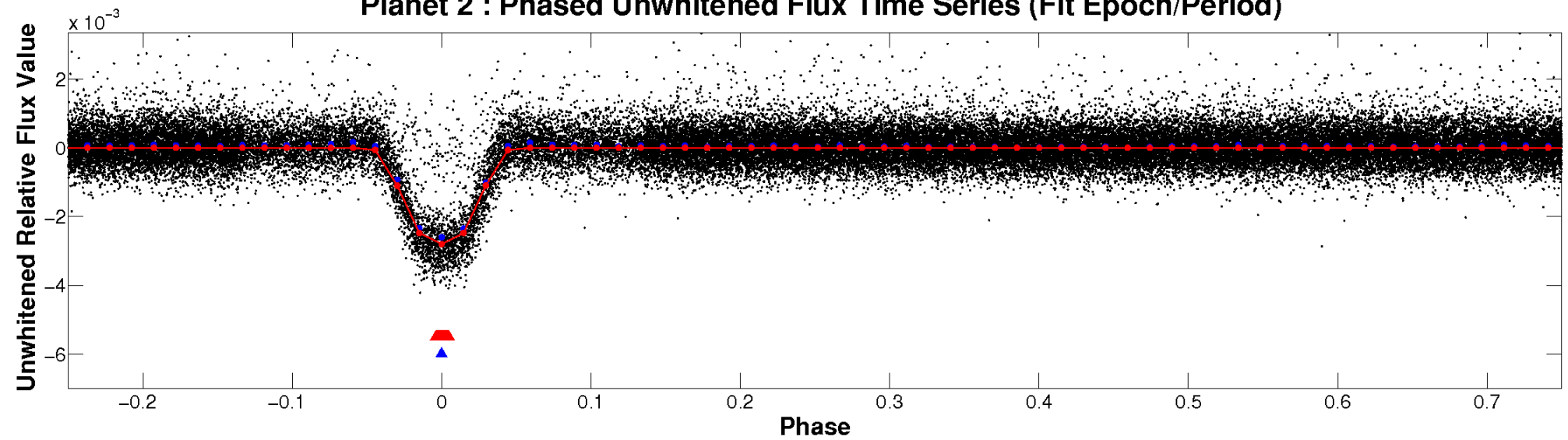
# ALT Odd/Even

TCE 008279765-02

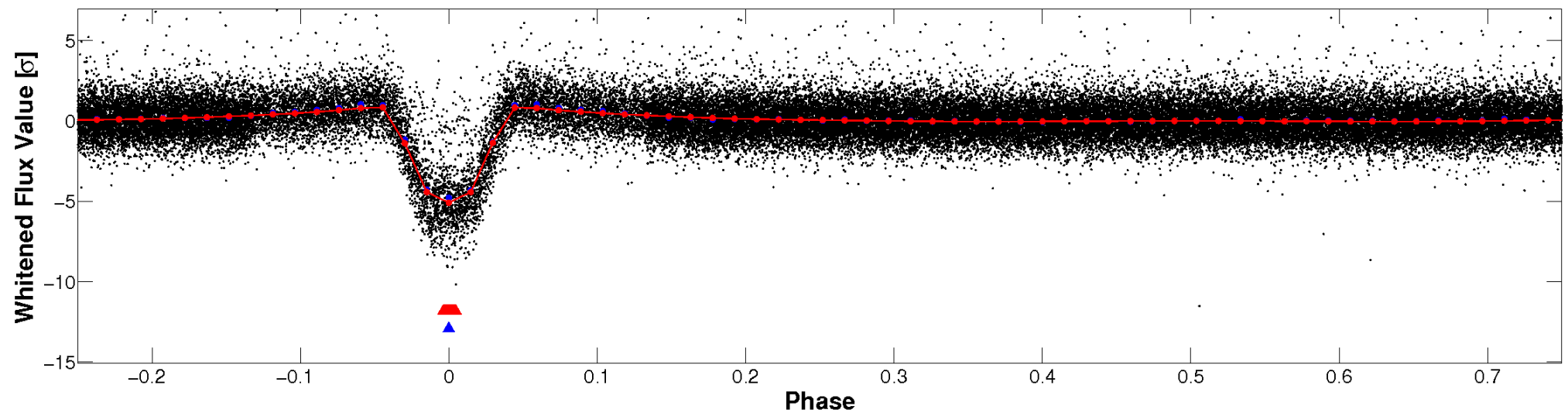


# Non-Whitened Vs. Whitened Light Curve

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



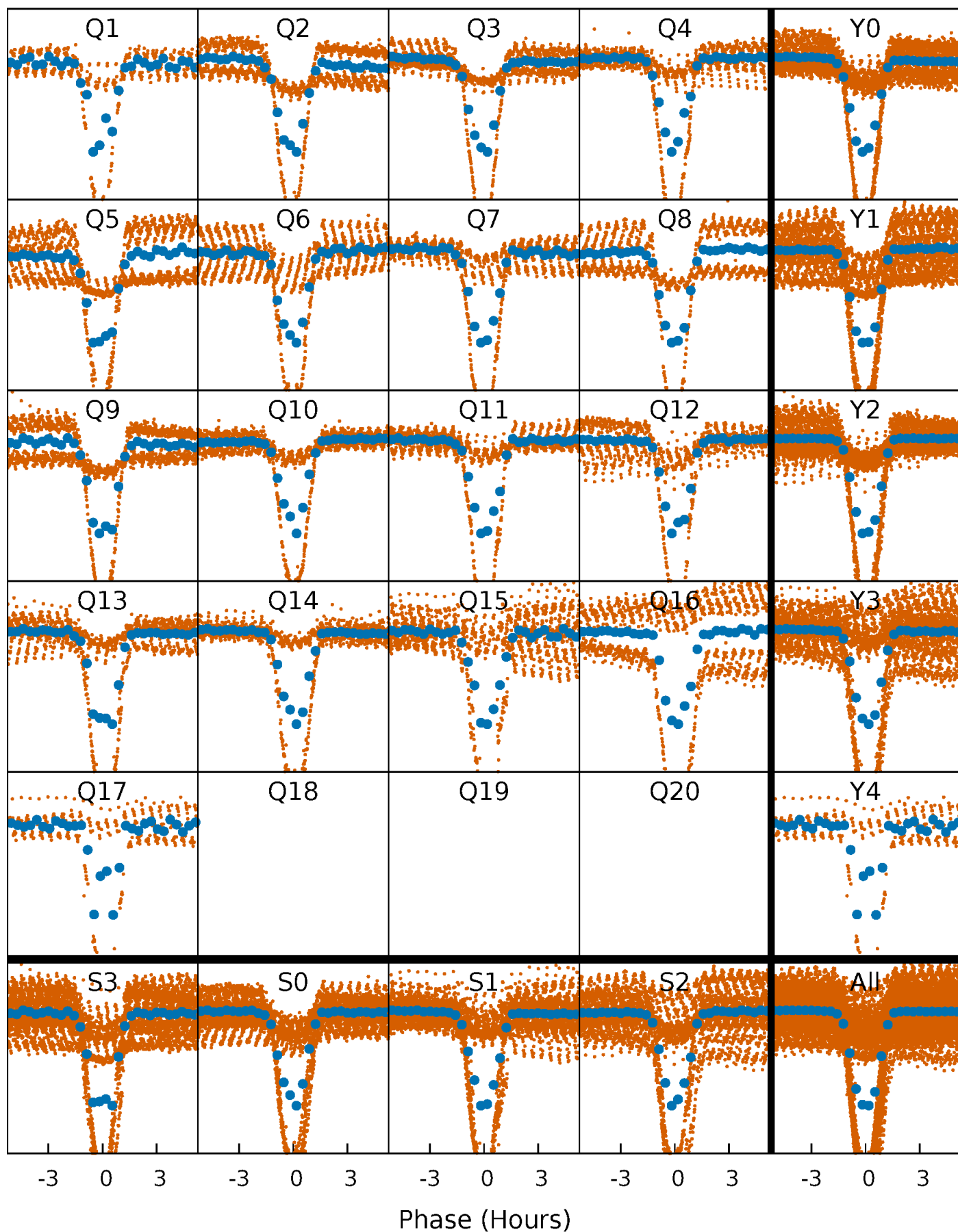
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





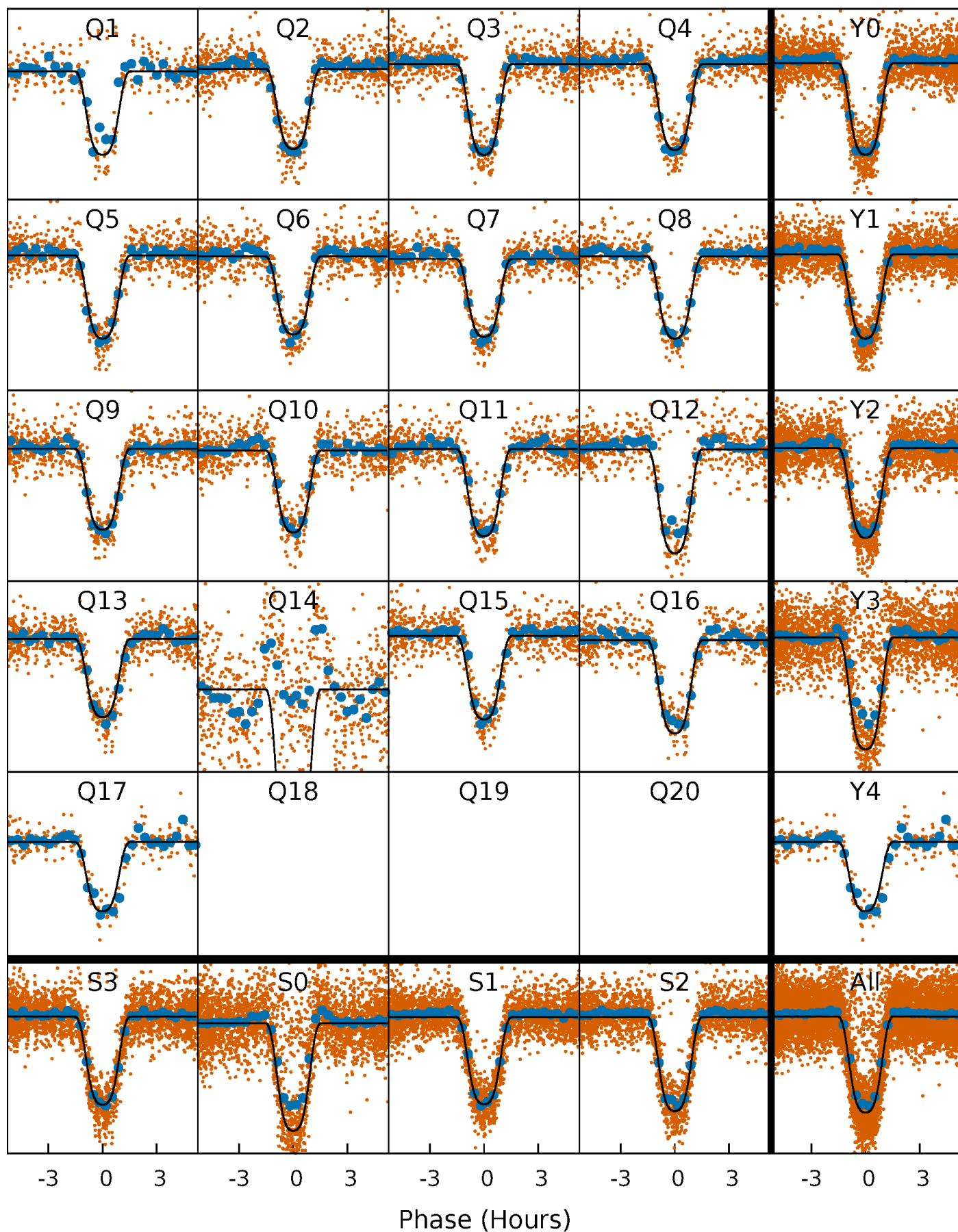
# PDC Quarter-Phased Transit Curves

TCE 008279765-02   P= 1.378886 Days    $T_0=132.480197$  (BKJD)



# DV Quarter-Phased Transit Curves

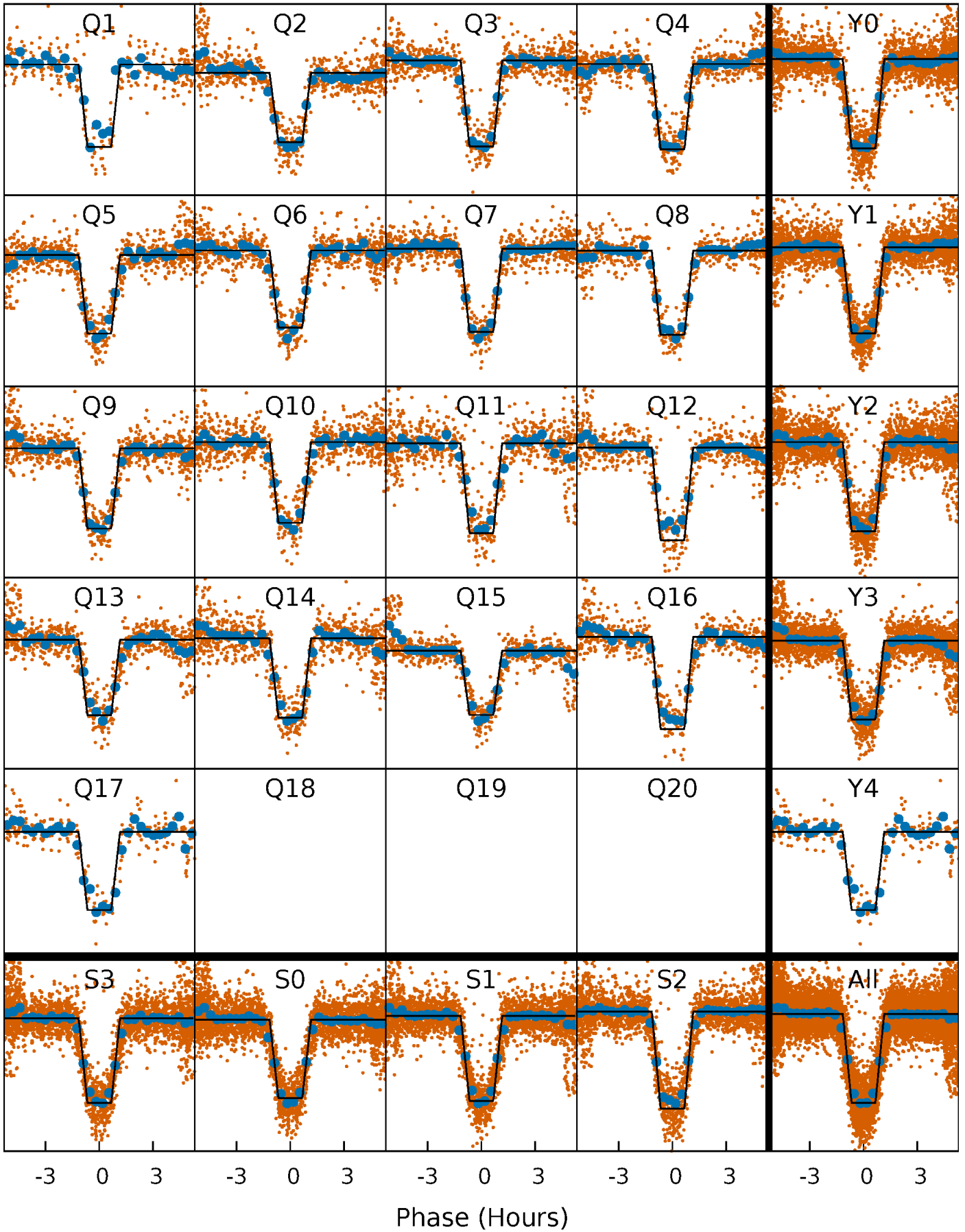
TCE 008279765-02 P= 1.378886 Days  $T_0=132.480197$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

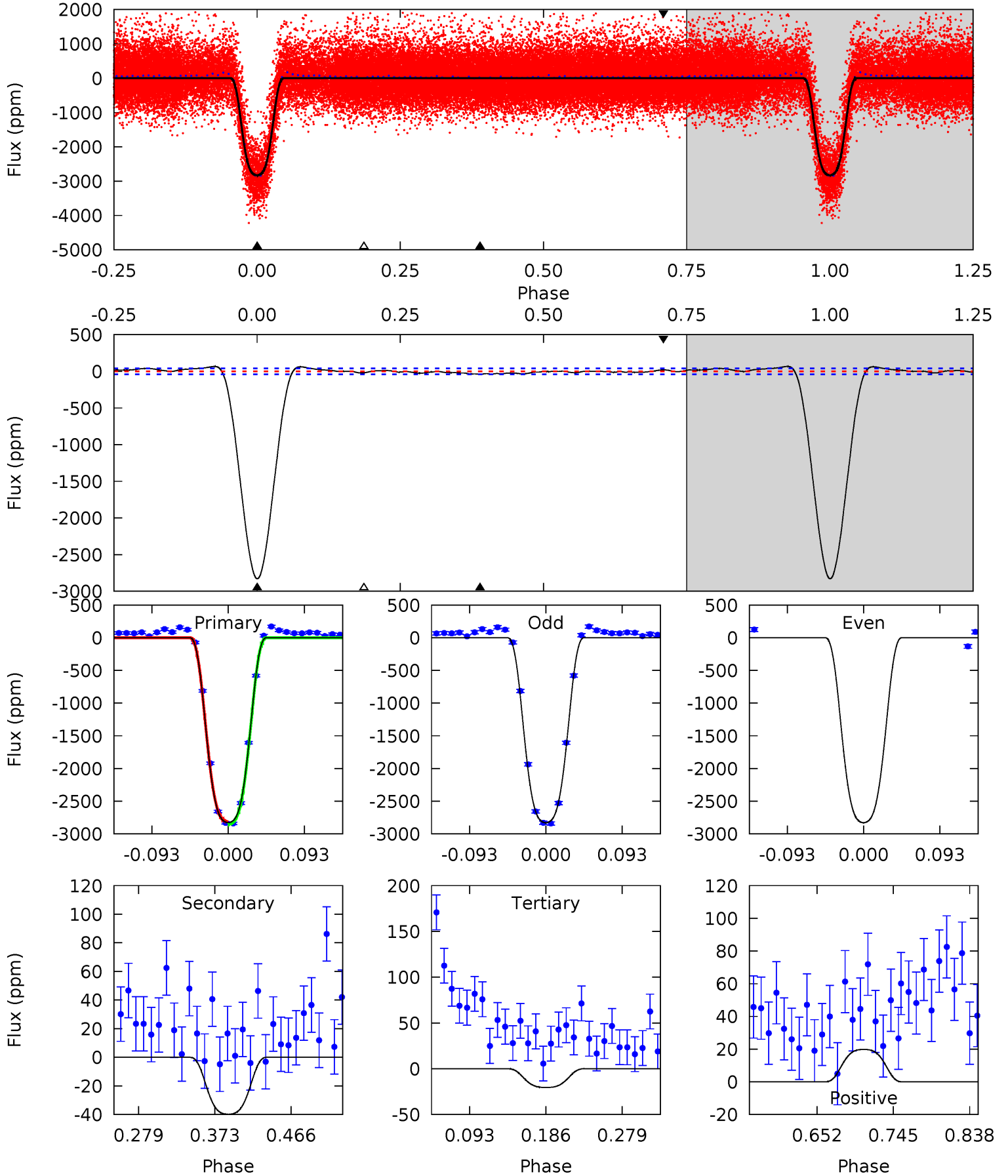
TCE 008279765-02   P= 1.378887 Days    $T_0=132.480167$  (BKJD)



# DV Model-Shift Uniqueness Test

008279765-02, P = 1.378886 Days, E = 131.101311 Days

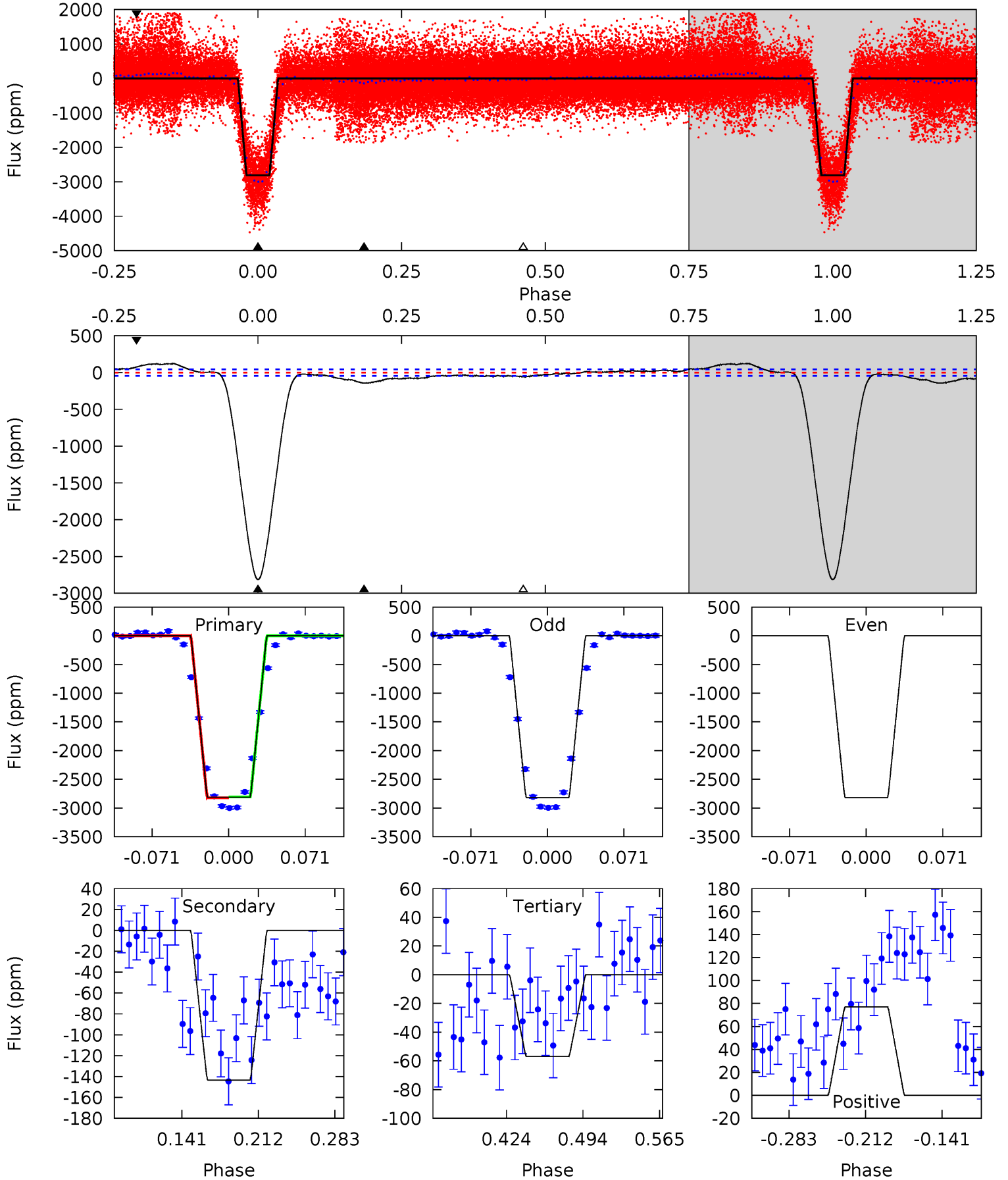
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
319.5	4.50	2.32	2.24	4.58	1.68	1.76	317.2	317.3	2.18	2.26	0	0.92	0.02	2.00



# Alt Model-Shift Uniqueness Test

008279765-02, P = 1.378887 Days, E = 131.101280 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
290.2	14.8	5.87	7.95	4.64	1.81	5.38	284.4	282.3	8.93	6.85	0	0.99	0.04	0.63



### Stellar Parameters For KIC 008279765

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5747^{+170}_{-204}$	$4.514^{+0.050}_{-0.188}$	$-0.100^{+0.300}_{-0.300}$	$0.891^{+0.260}_{-0.087}$	$0.948^{+0.115}_{-0.115}$	$1.885^{+0.507}_{-0.967}$
	+3%/-4%	+1%/-4%	+300%/-300%	+29%/-10%	+12%/-12%	+27%/-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 008279765-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-40 \pm 9$	$5.88^{+1.01}_{-0.36}$	$2198^{+156}_{-100}$	$2026^{+311}_{-4261}$	$0.333^{+0.097}_{-0.102}$
Alt.	$-143 \pm 10$	$5.35^{+0.79}_{-0.37}$	$2202^{+154}_{-98}$	$3153^{+80}_{-81}$	$1.504^{+0.245}_{-0.326}$

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

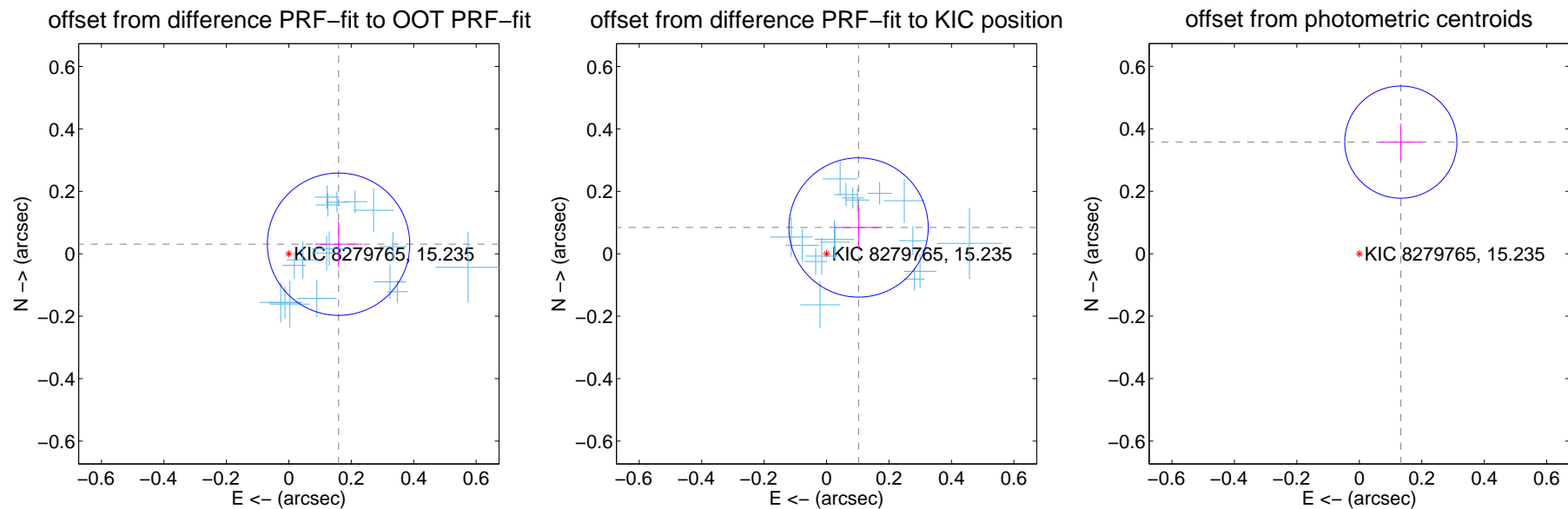
## DV Centroid Data

Supplemental centroid analysis for 008279765-02. Kepler magnitude: 15.23. Transit SNR 179.92

There are 17 quarters with good PRF difference image offsets

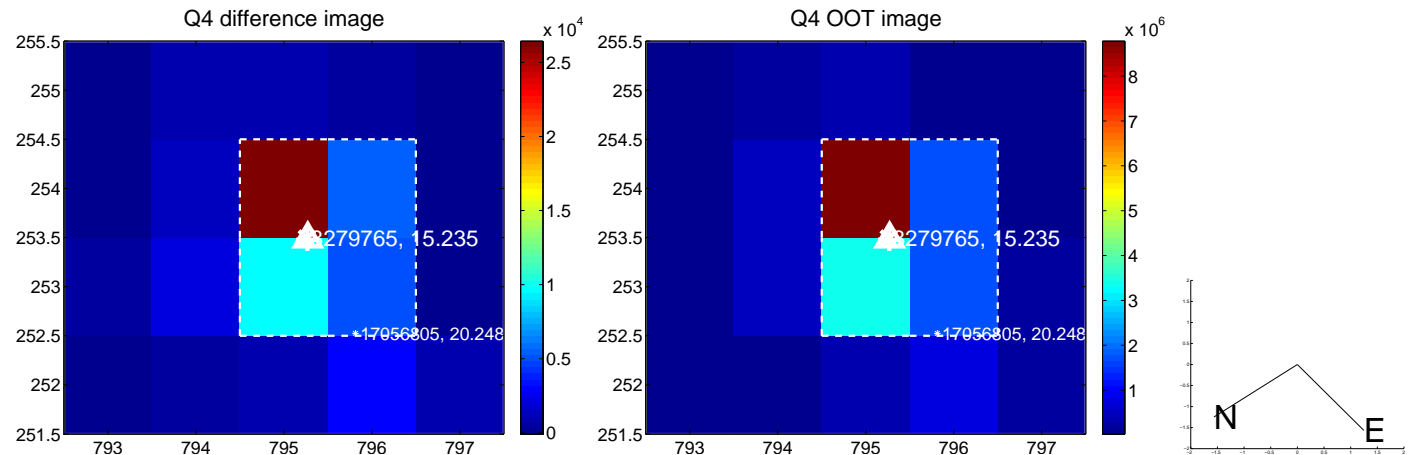
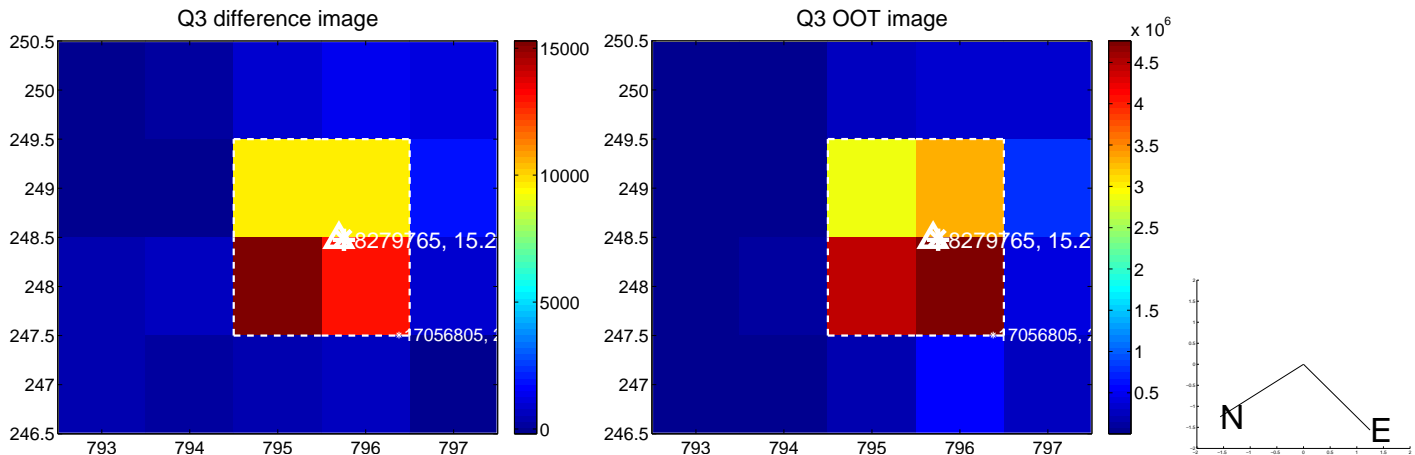
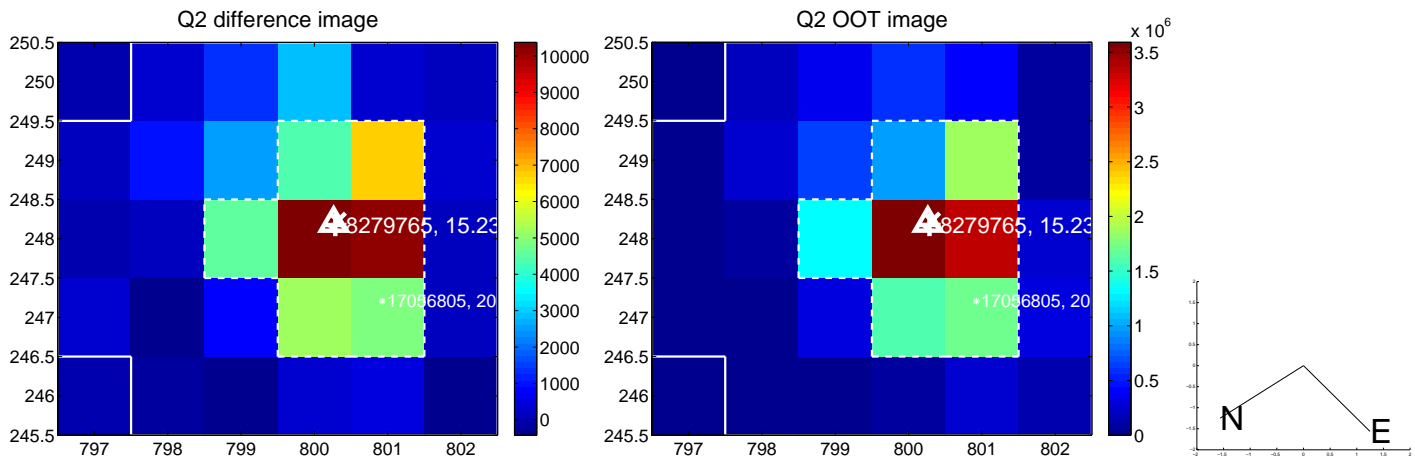
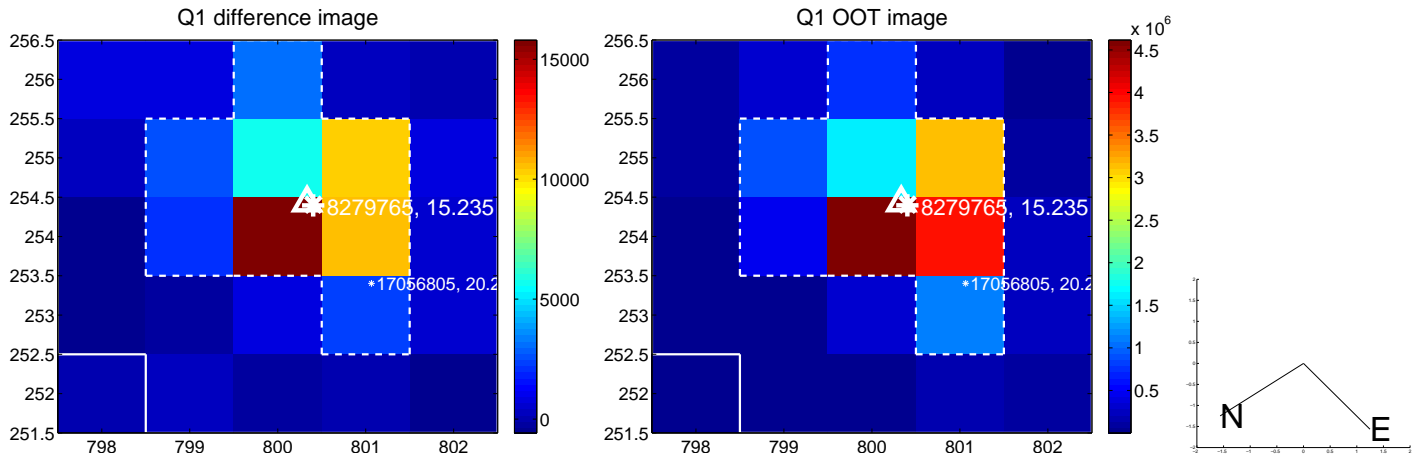
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.162 \pm 0.076$	2.14	$-0.159 \pm 0.075$	$0.031 \pm 0.073$
PRF-fit source offset from KIC position	$0.133 \pm 0.074$	1.78	$-0.102 \pm 0.076$	$0.084 \pm 0.072$
photometric centroid source offset	$0.38 \pm 0.06$	6.37	$-0.13 \pm 0.07$	$0.36 \pm 0.06$

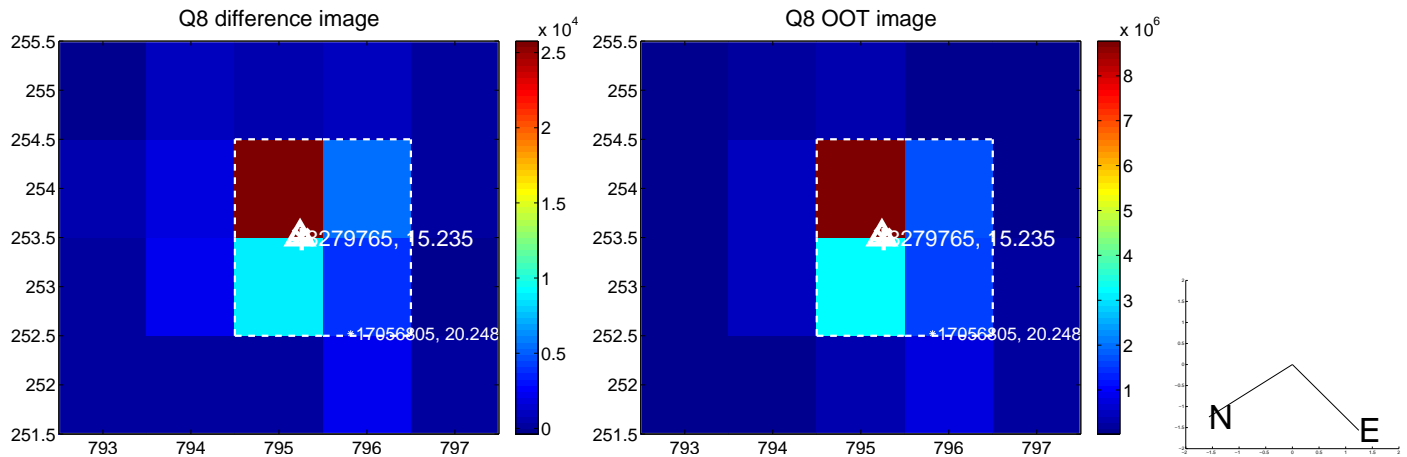
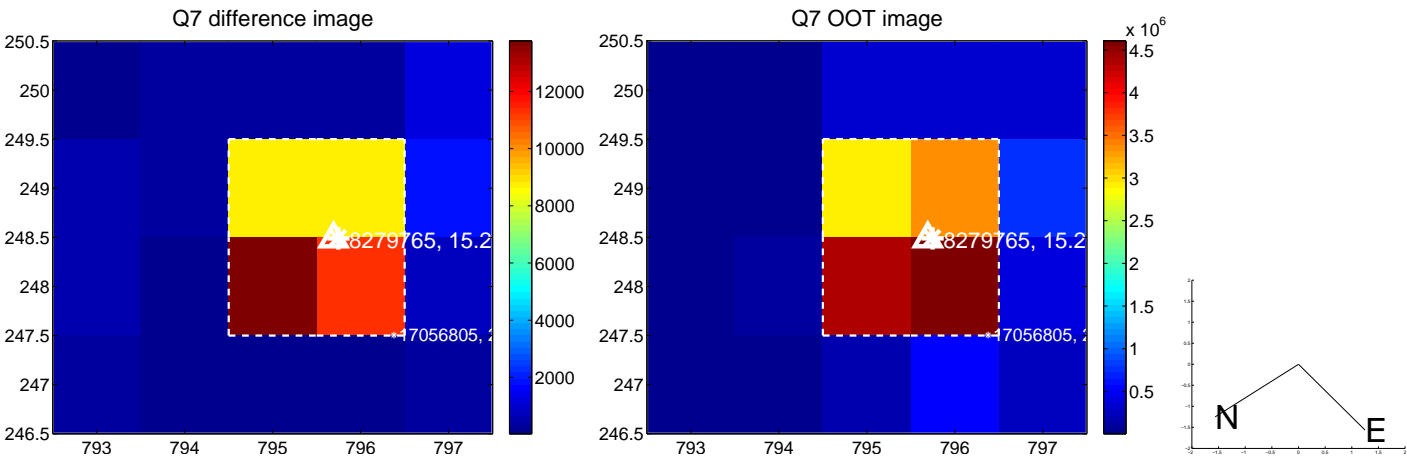
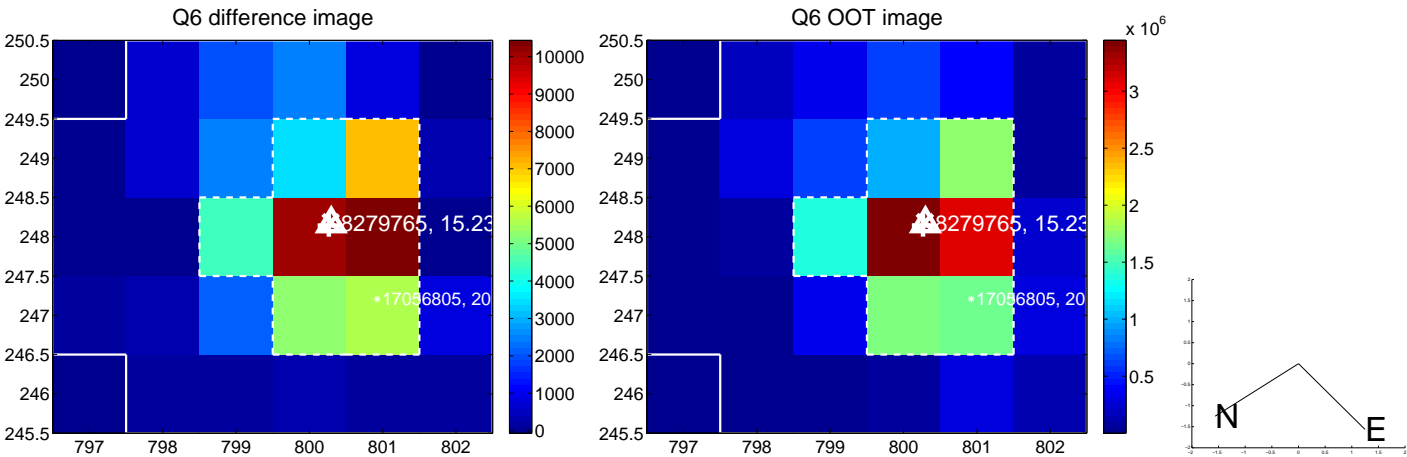
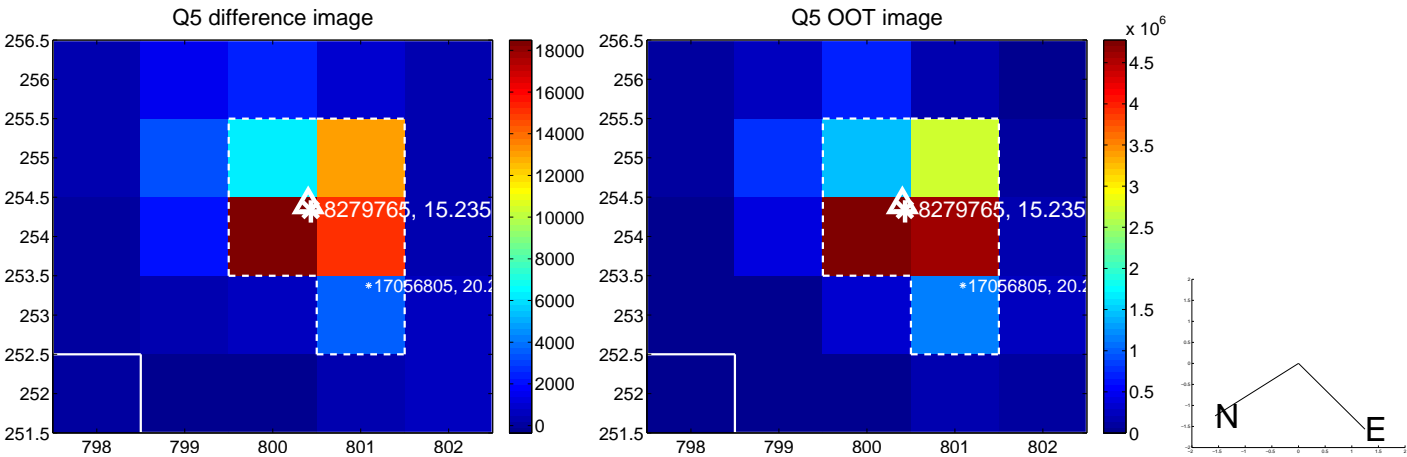


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

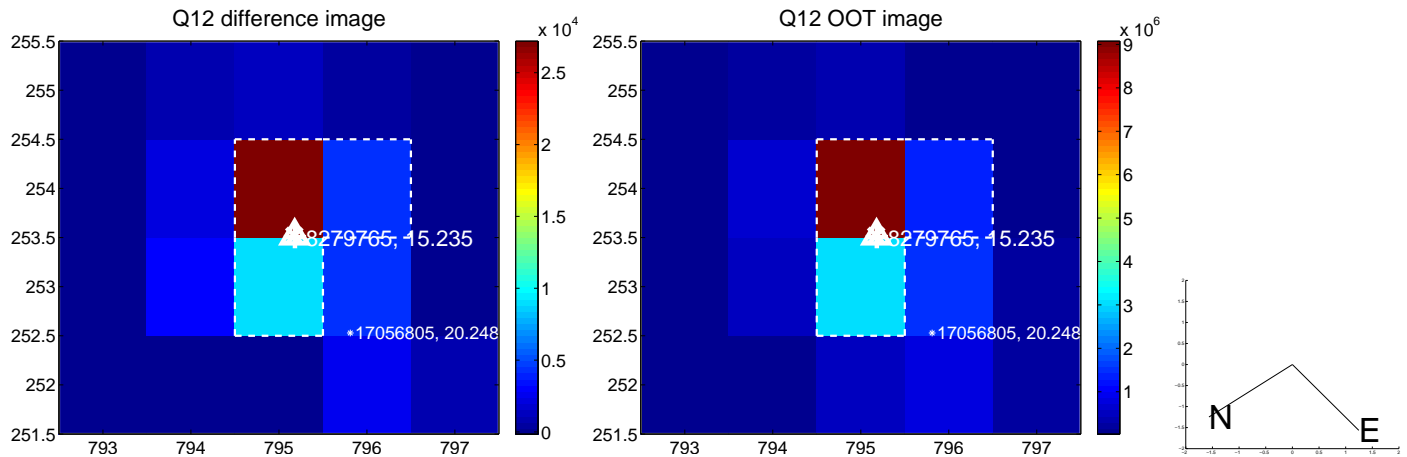
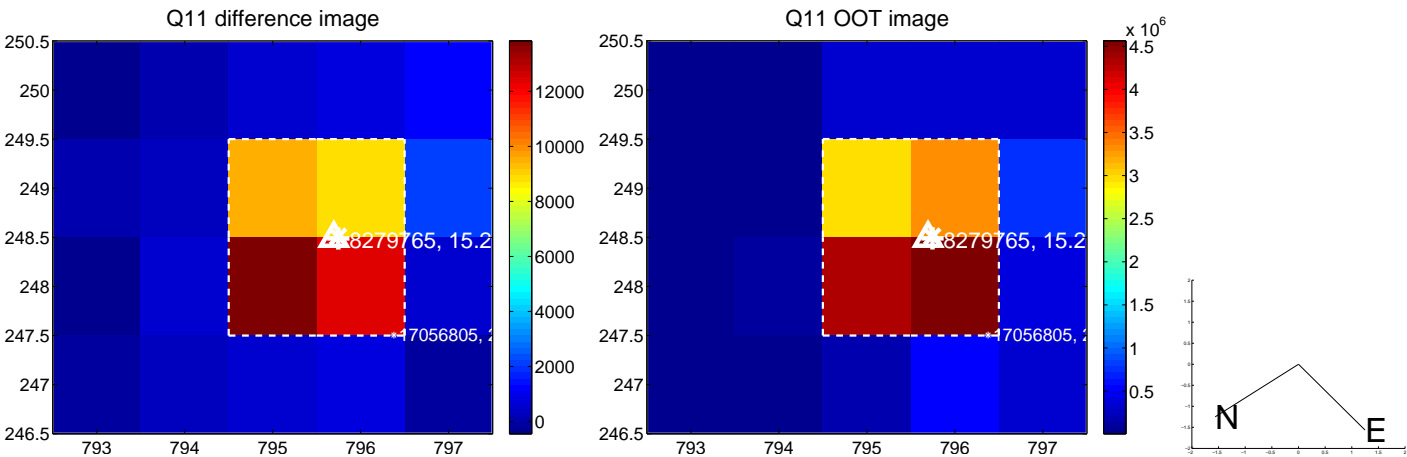
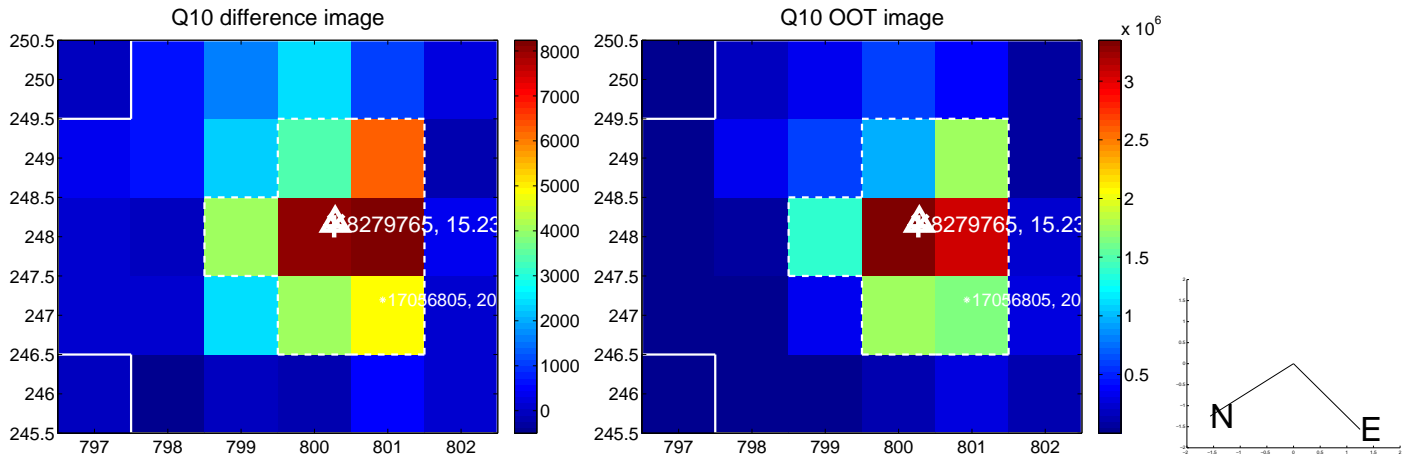
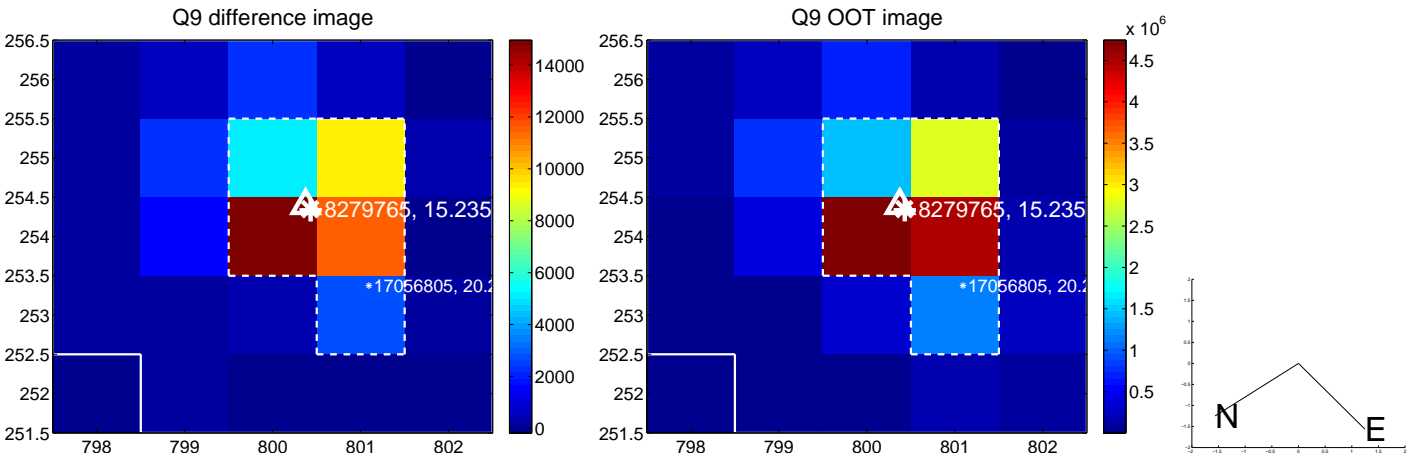


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

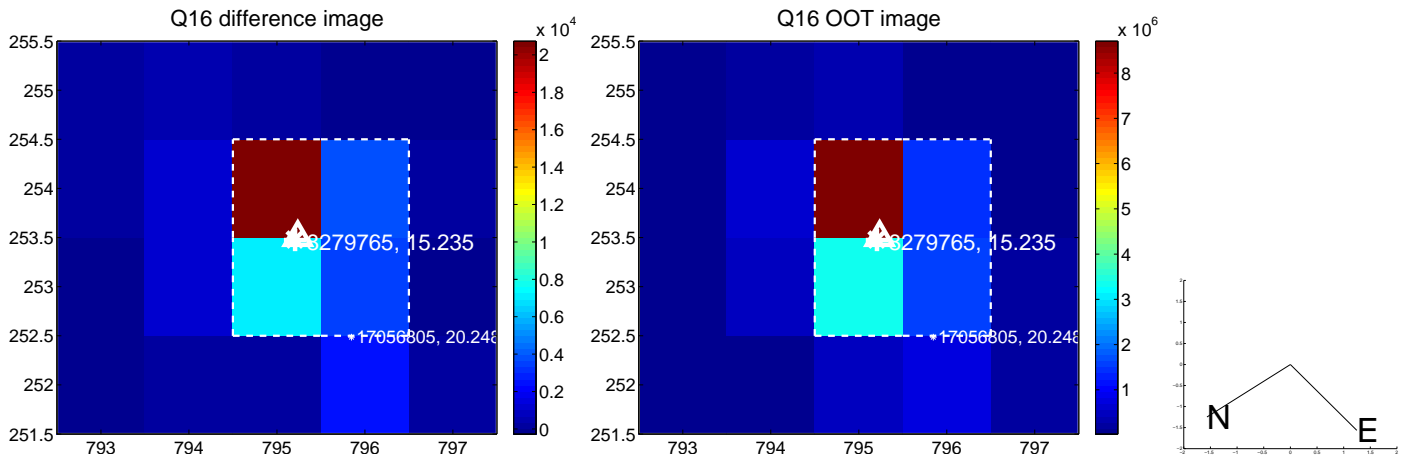
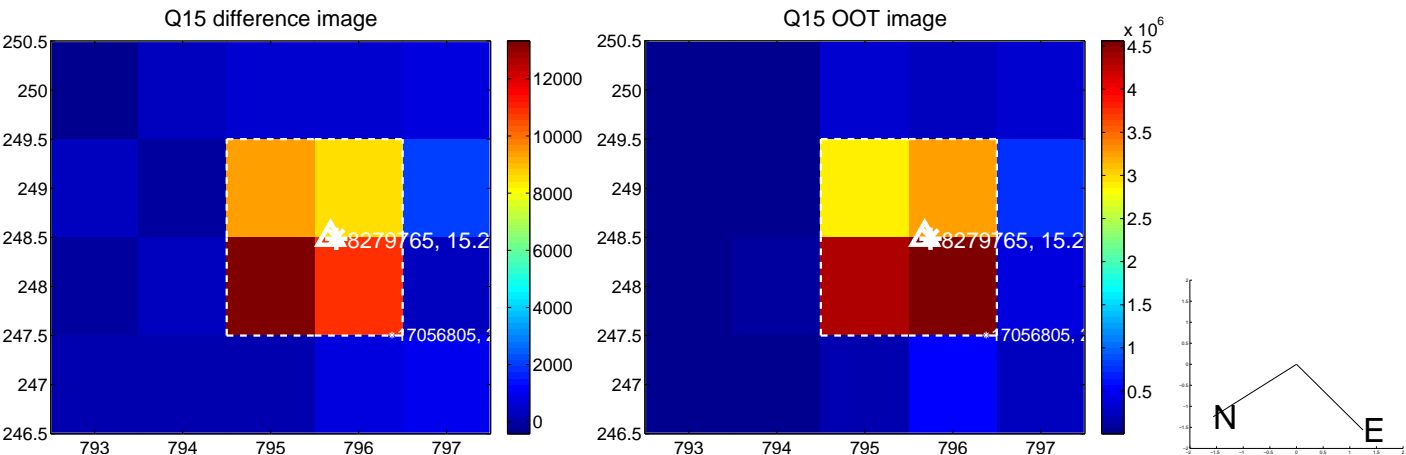
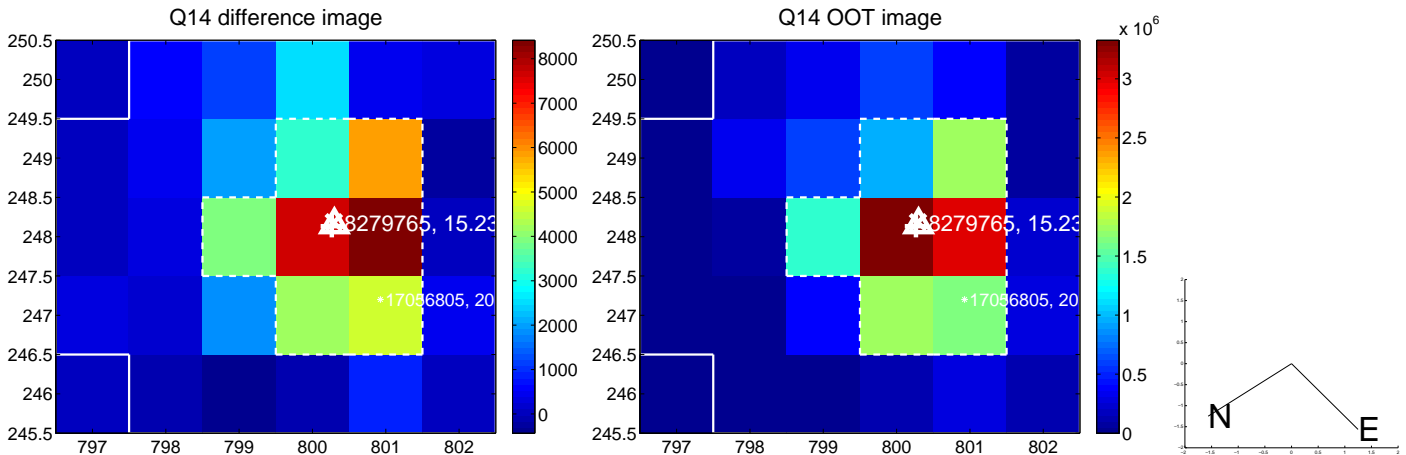
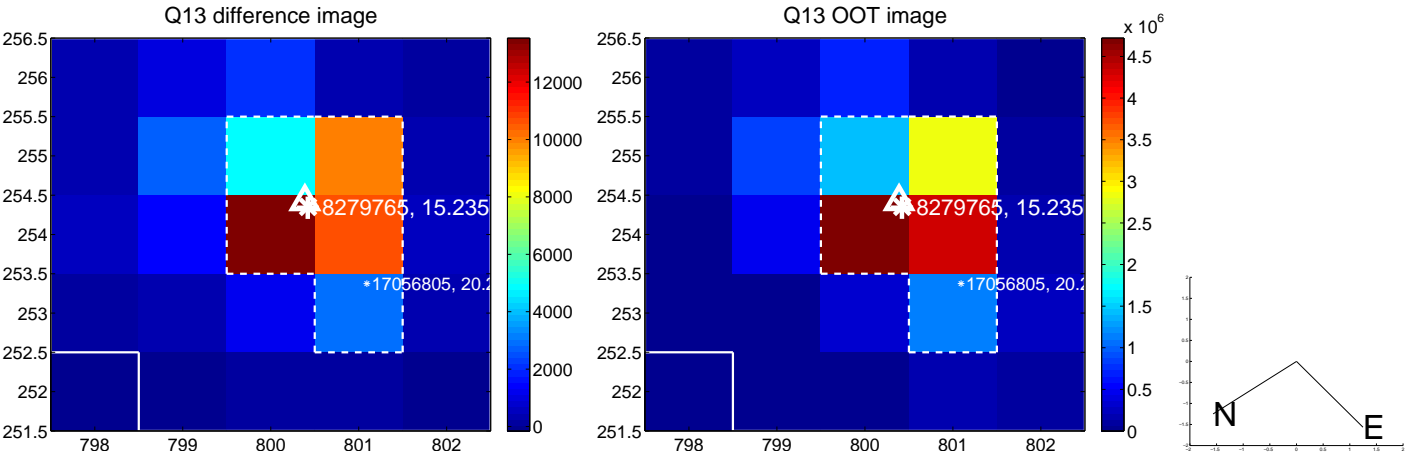




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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





UKIRT Image

Declination

