

# KIC 010788461

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010788461-01	OBS	3925.01	9.207615	135.796995	1205.8	3.164	29.0	31.9	1.30	5678	5.23	211.56
010788461-02	OBS	3925.02	2.590375	132.306877	333.0	2.238	13.1	15.2	1.30	5678	2.83	1147.68
010788461-03	OBS	3925.03	5.323263	133.135813	318.3	2.679	10.4	10.9	1.30	5678	2.34	439.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010788461-01	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS
010788461-02	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS
010788461-03	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS

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

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

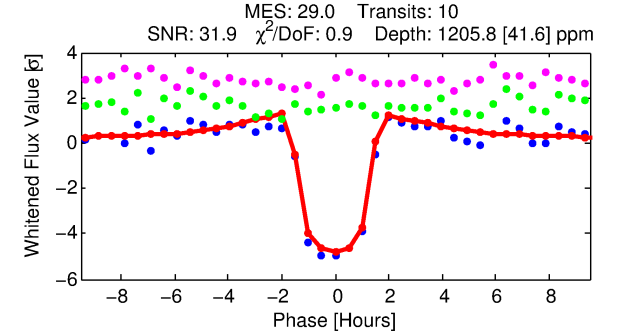
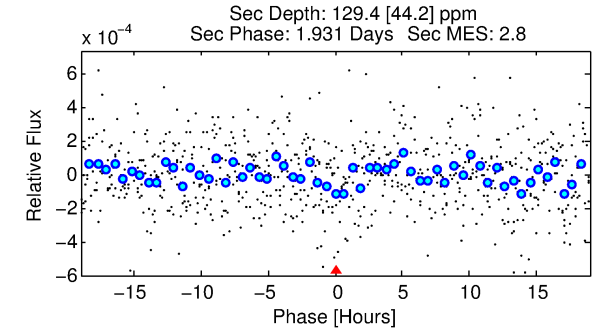
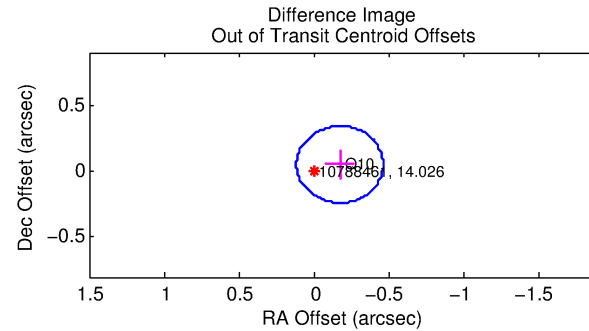
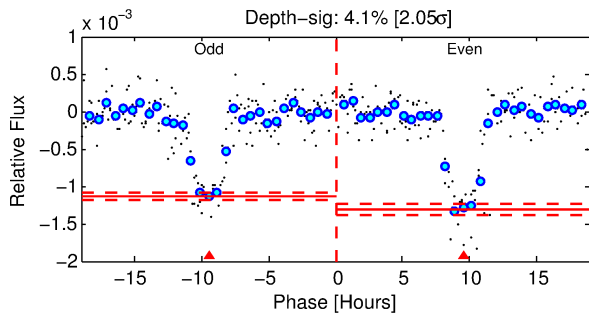
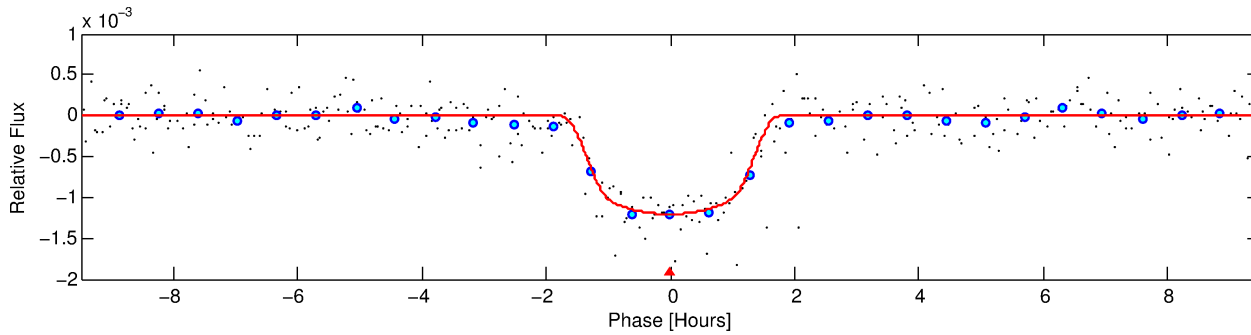
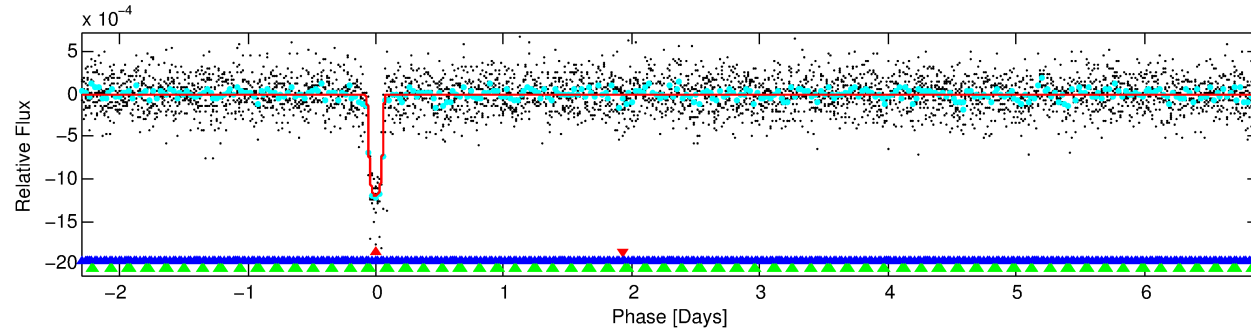
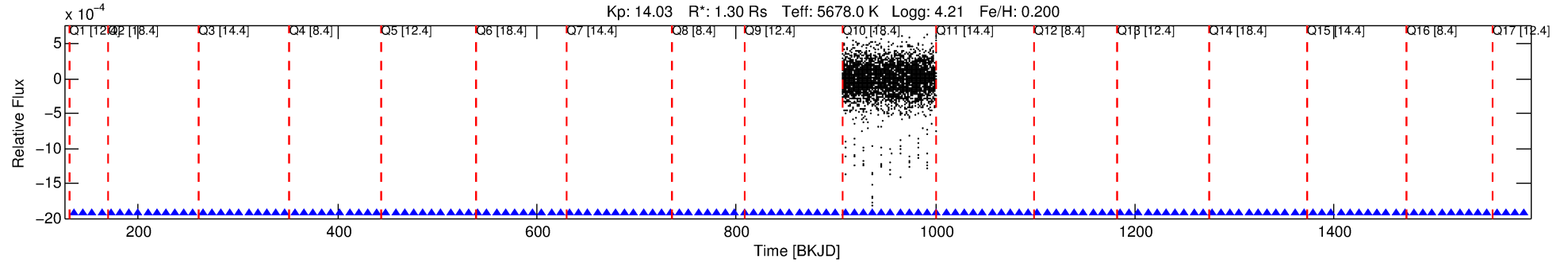
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 010788461-01

No Significant Match Found

# DV One-Page Summary

KIC: 10788461 Candidate: 1 of 3 Period: 9.208 d  
KOI: K03925.01 Corr: 0.933



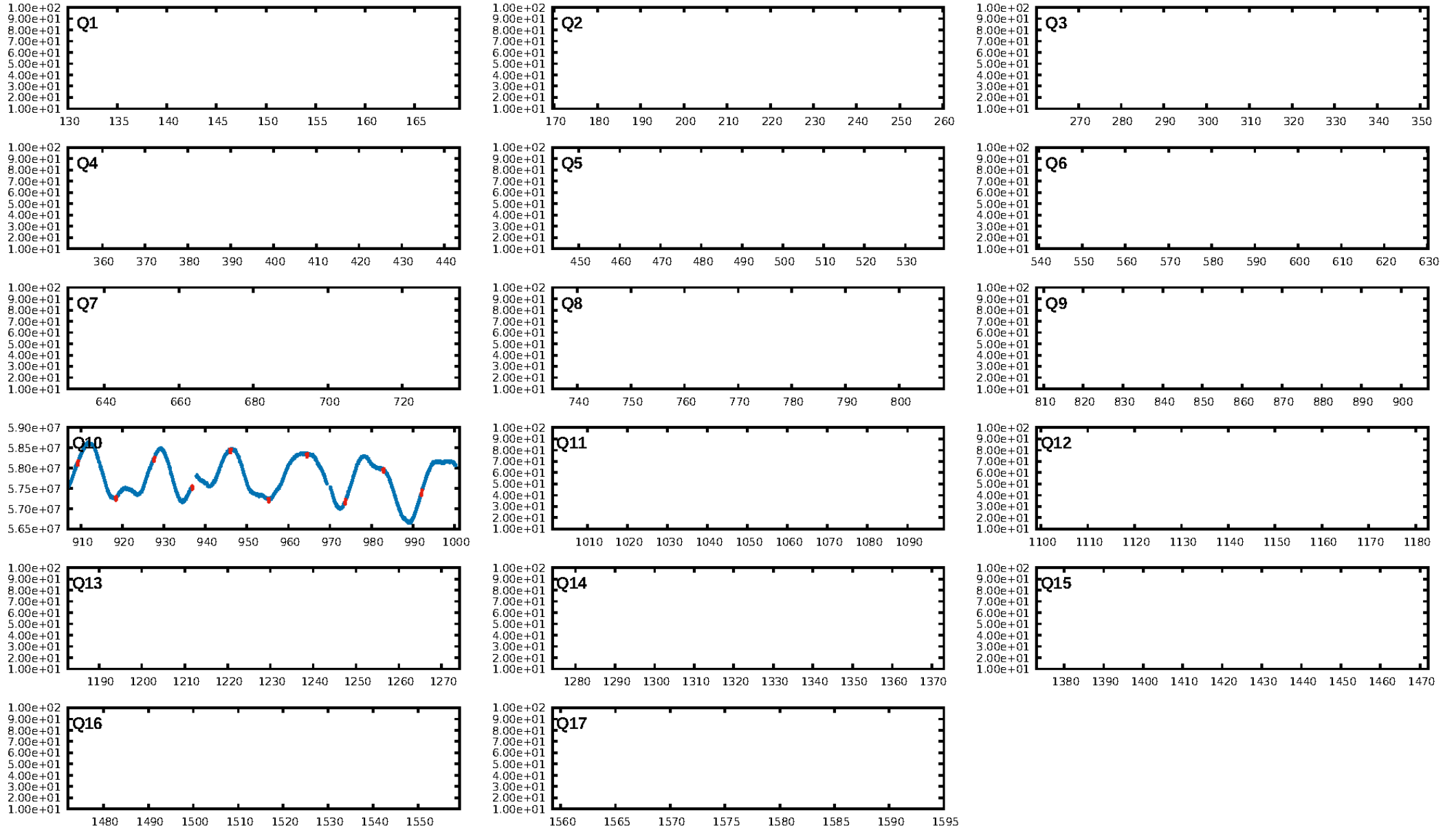
## DV Fit Results:

Period = 9.20761 [0.00011] d  
Epoch = 135.7970 [0.0092] BKJD  
Rp/R\* = 0.0368 [0.0050]  
a/R\* = 12.87 [7.56]  
b = 0.86 [0.18]  
Seff = 211.56 [92.36]  
Teq = 972 [106] K  
Rp = 5.23 [1.54] Re  
a = 0.0864 [0.0222] AU  
Ag = 19.42 [11.69] [1.58σ]  
Teffp = 3156 [359] K [5.83σ]

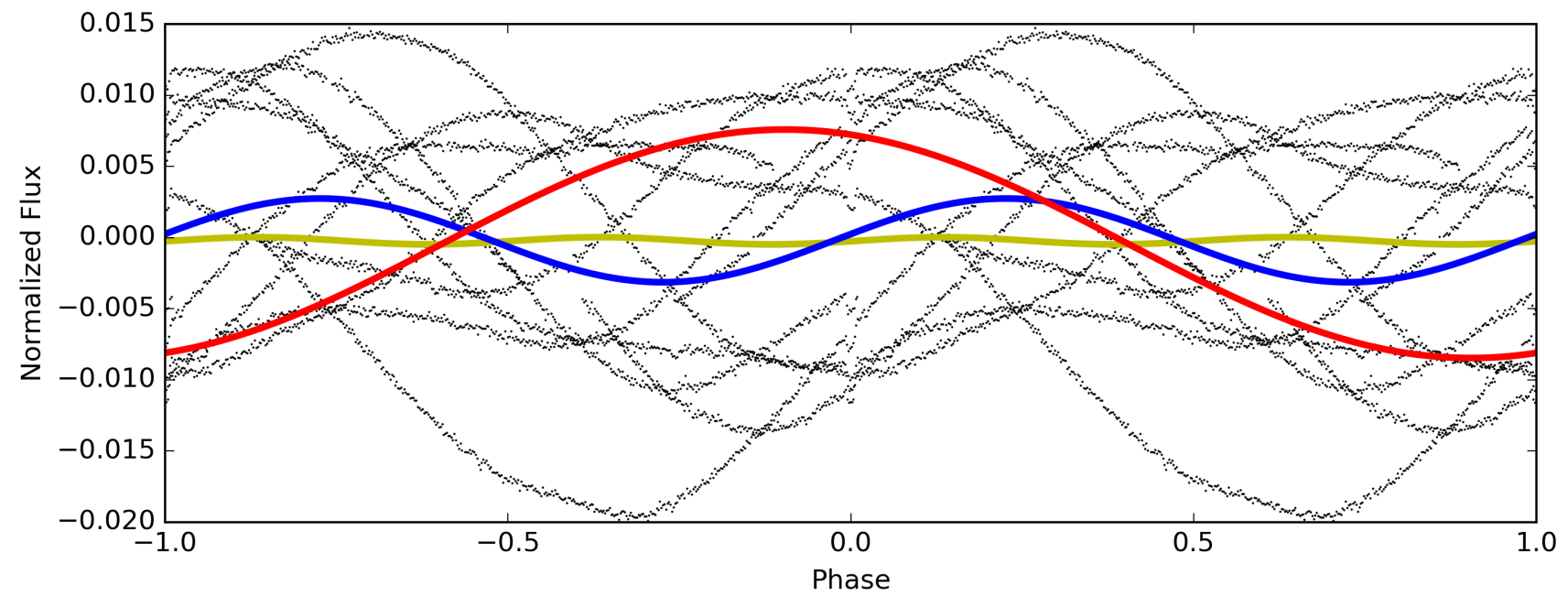
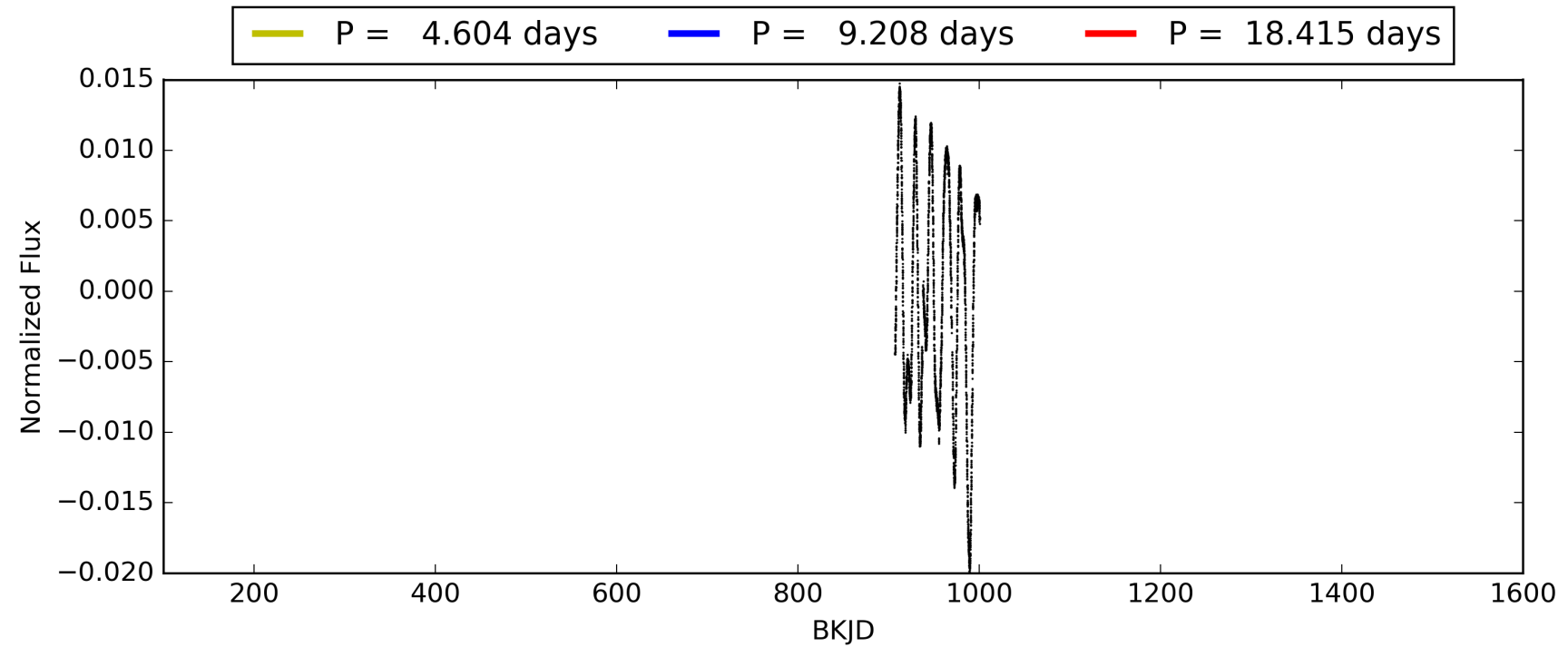
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.49σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.47e-191  
RollingBand-fgt: 1.00 [10/10]  
GhostDiagnostic-chr: 2.546  
Centroid-sig: N/A  
Centroid-so: 0.415 arcsec [1.30σ]  
OotOffset-rm: 0.183 arcsec [1.90σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-rm: 0.475 arcsec [4.84σ]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

# TCE 010788461-01, PDC Light Curves

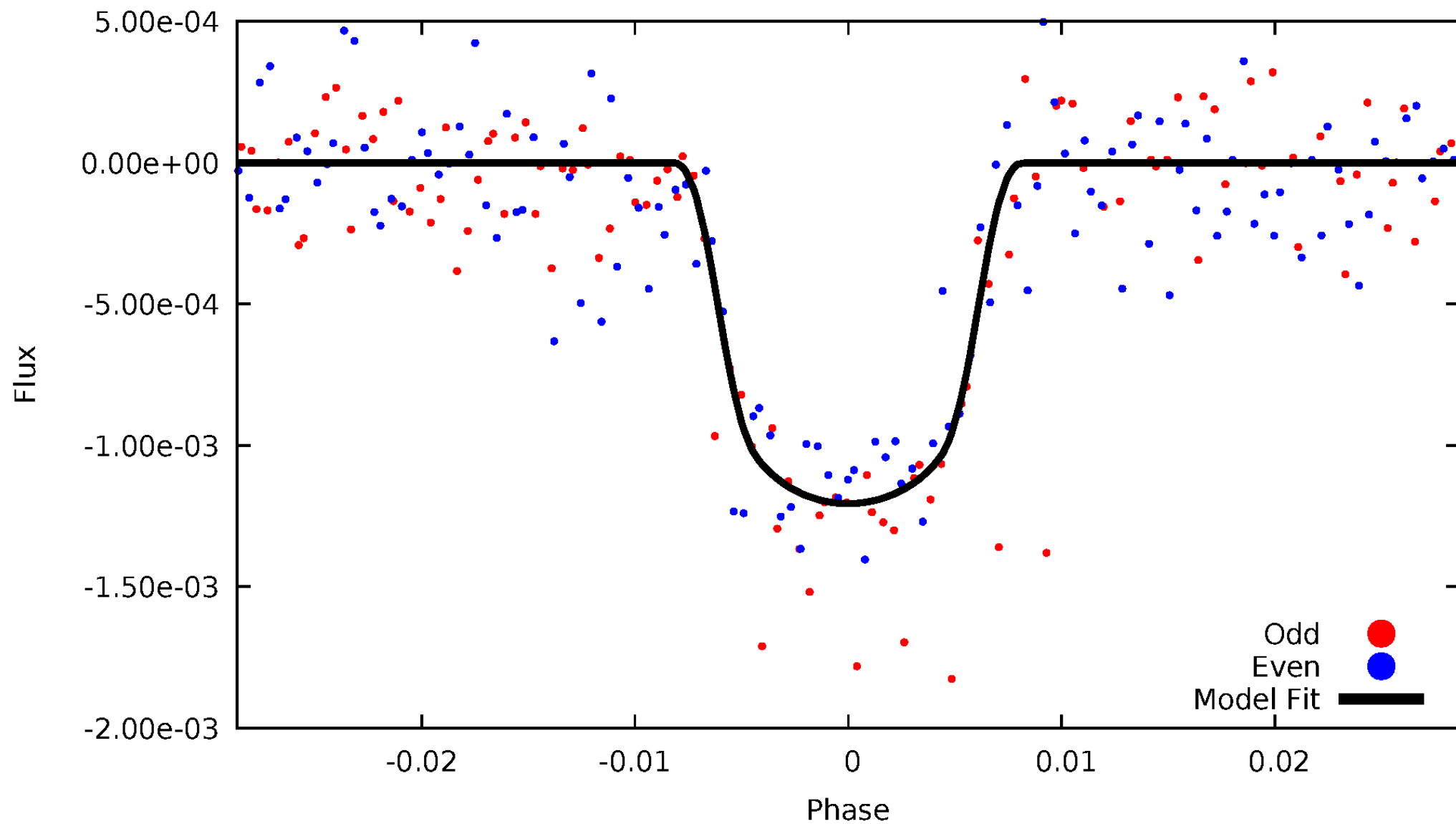


# TCE 010788461-01



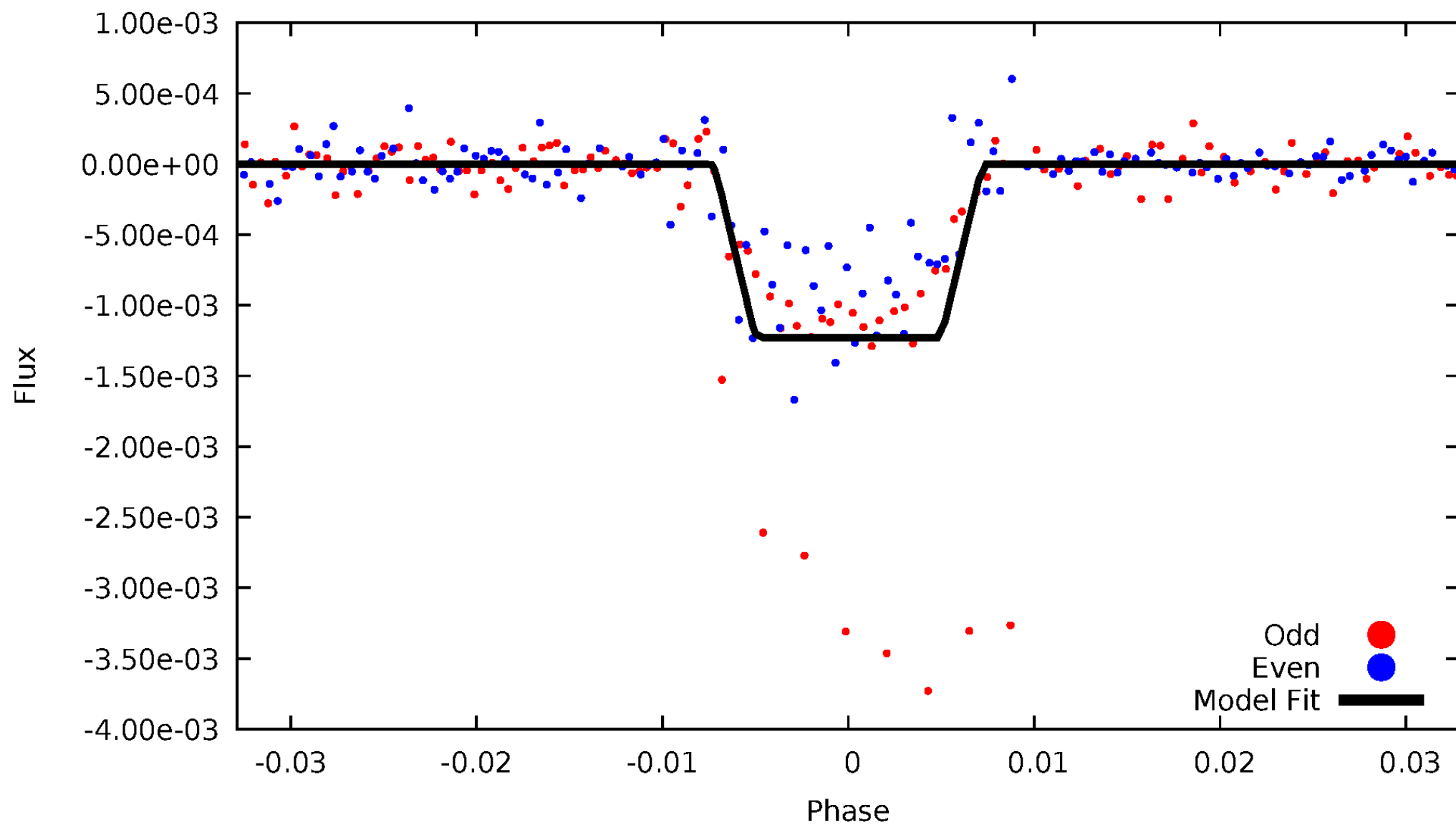
# DV Odd/Even

TCE 010788461-01



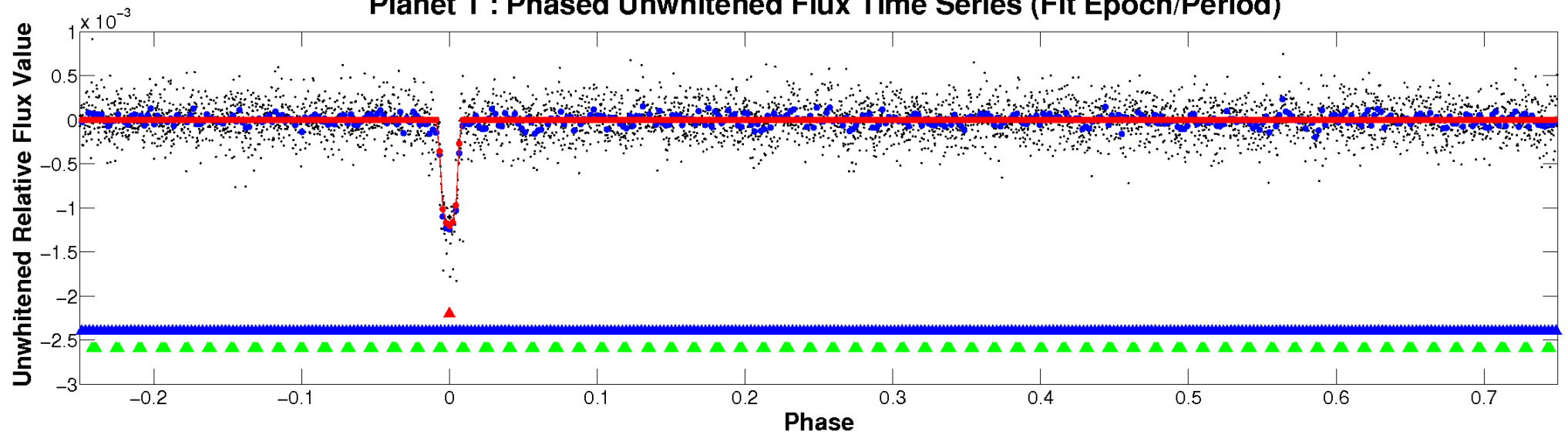
# ALT Odd/Even

TCE 010788461-01

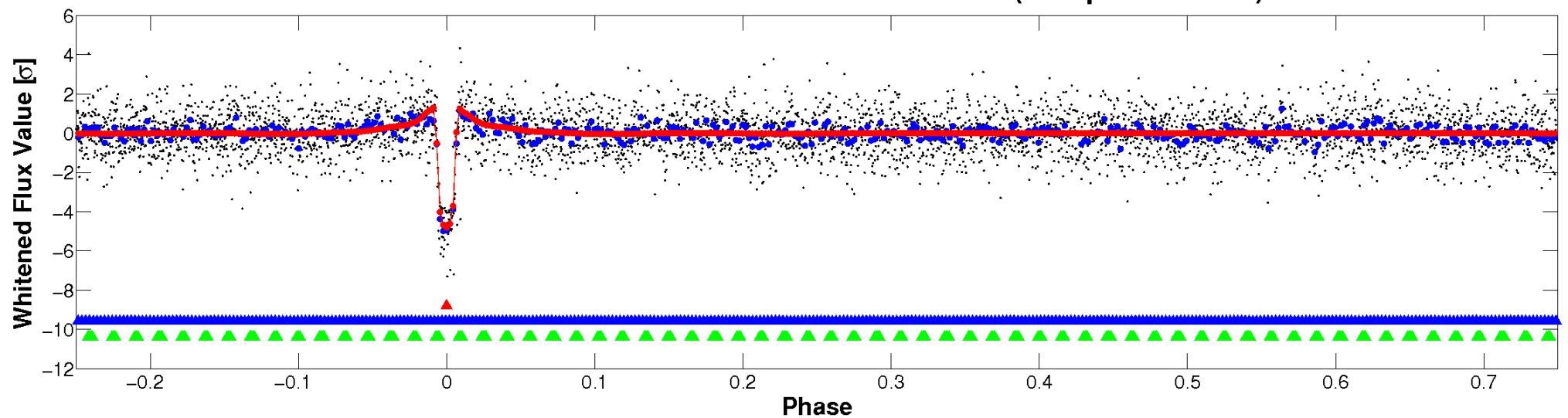


# Non-Whitened Vs. Whitened Light Curve

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

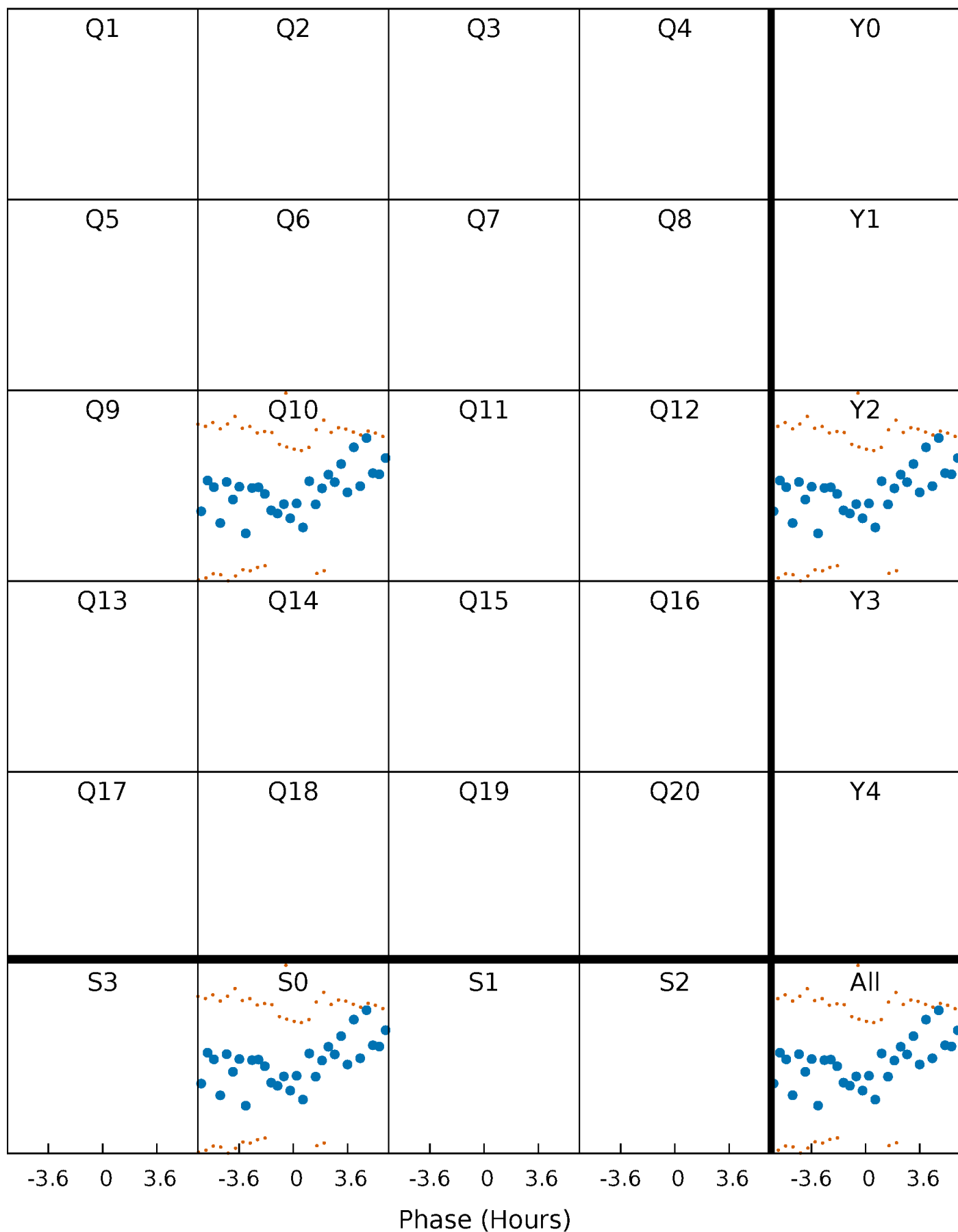


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

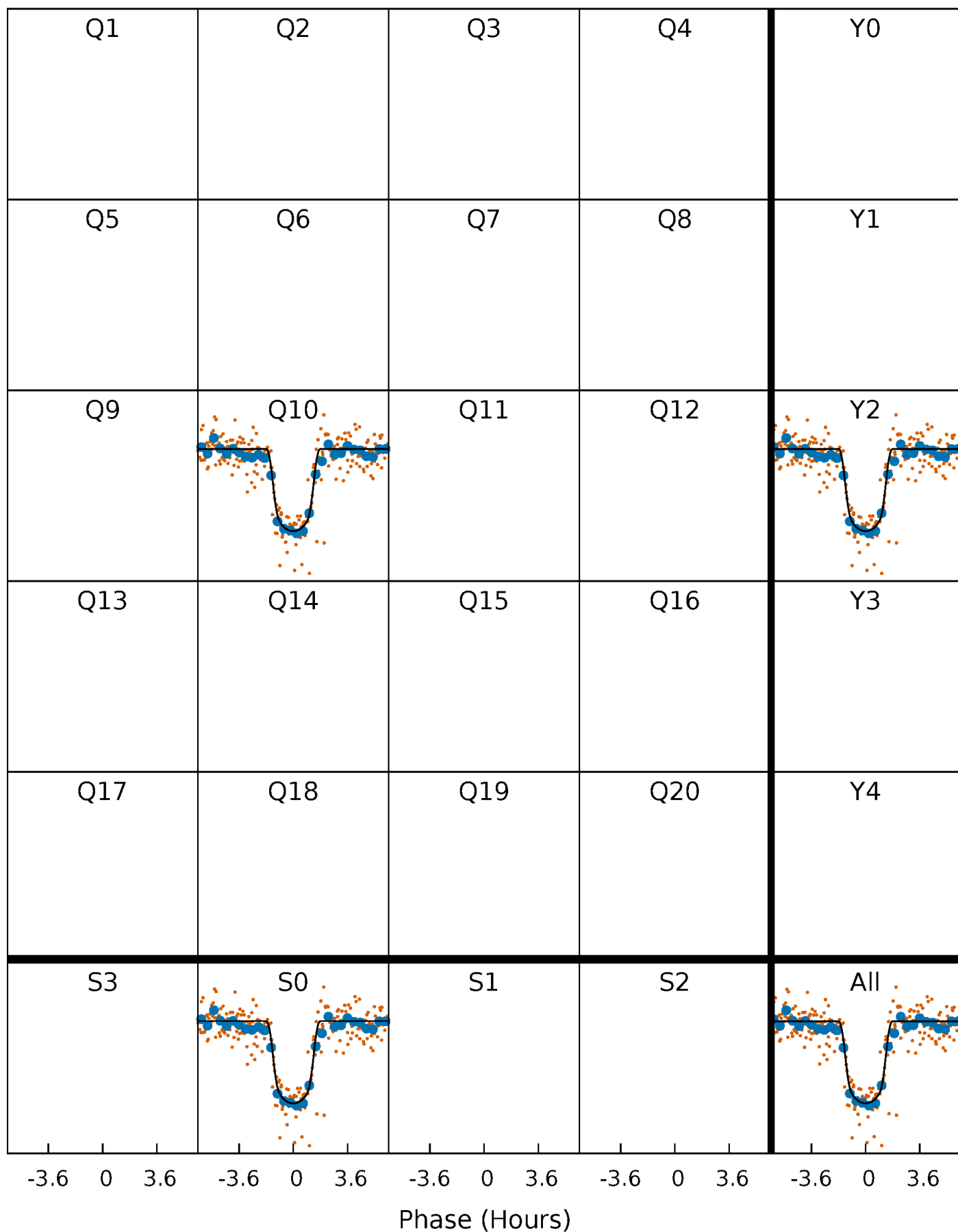
TCE 010788461-01 P= 9.207615 Days  $T_0=135.796996$  (BKJD)





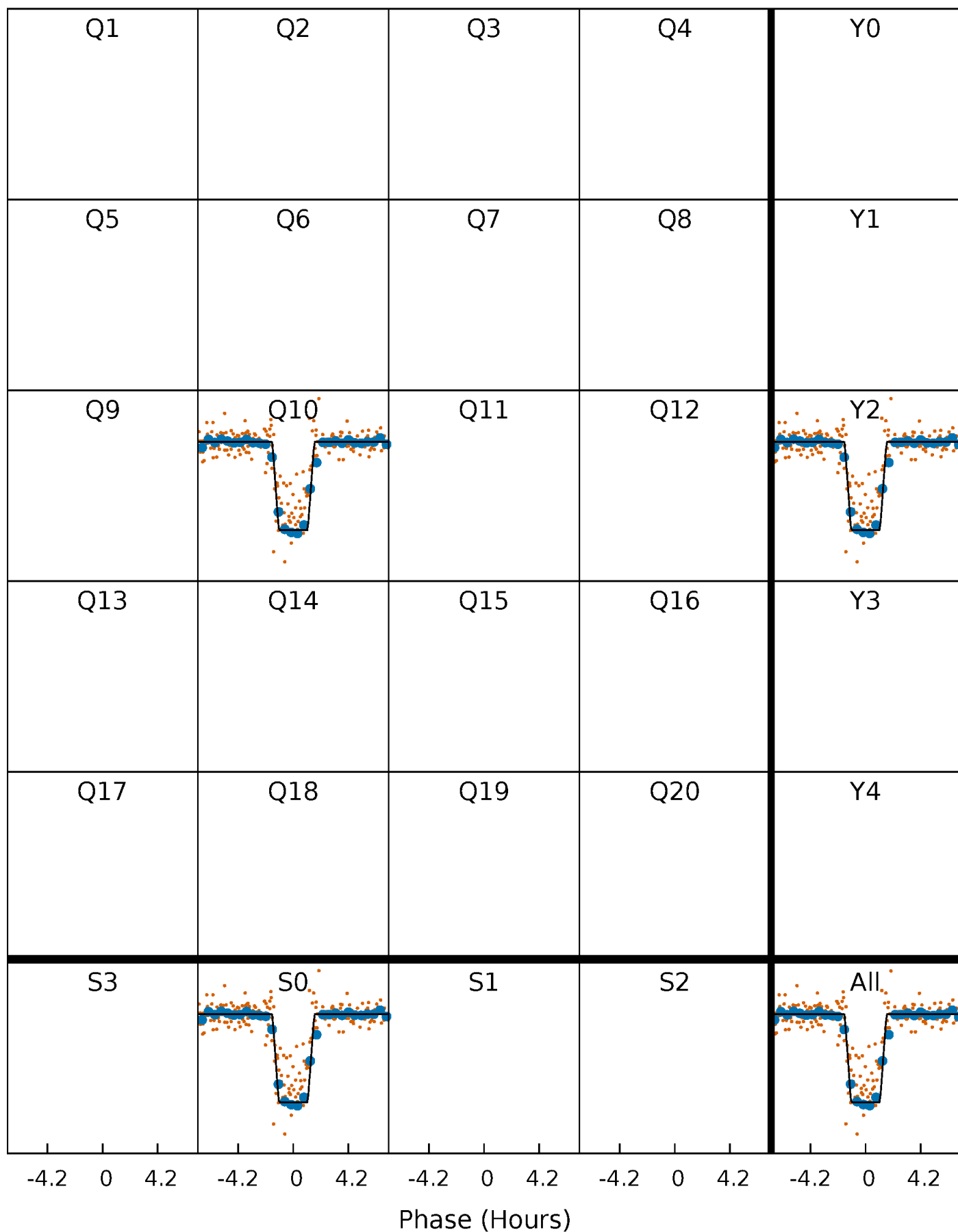
# DV Quarter-Phased Transit Curves

TCE 010788461-01 P= 9.207615 Days  $T_0=135.796996$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

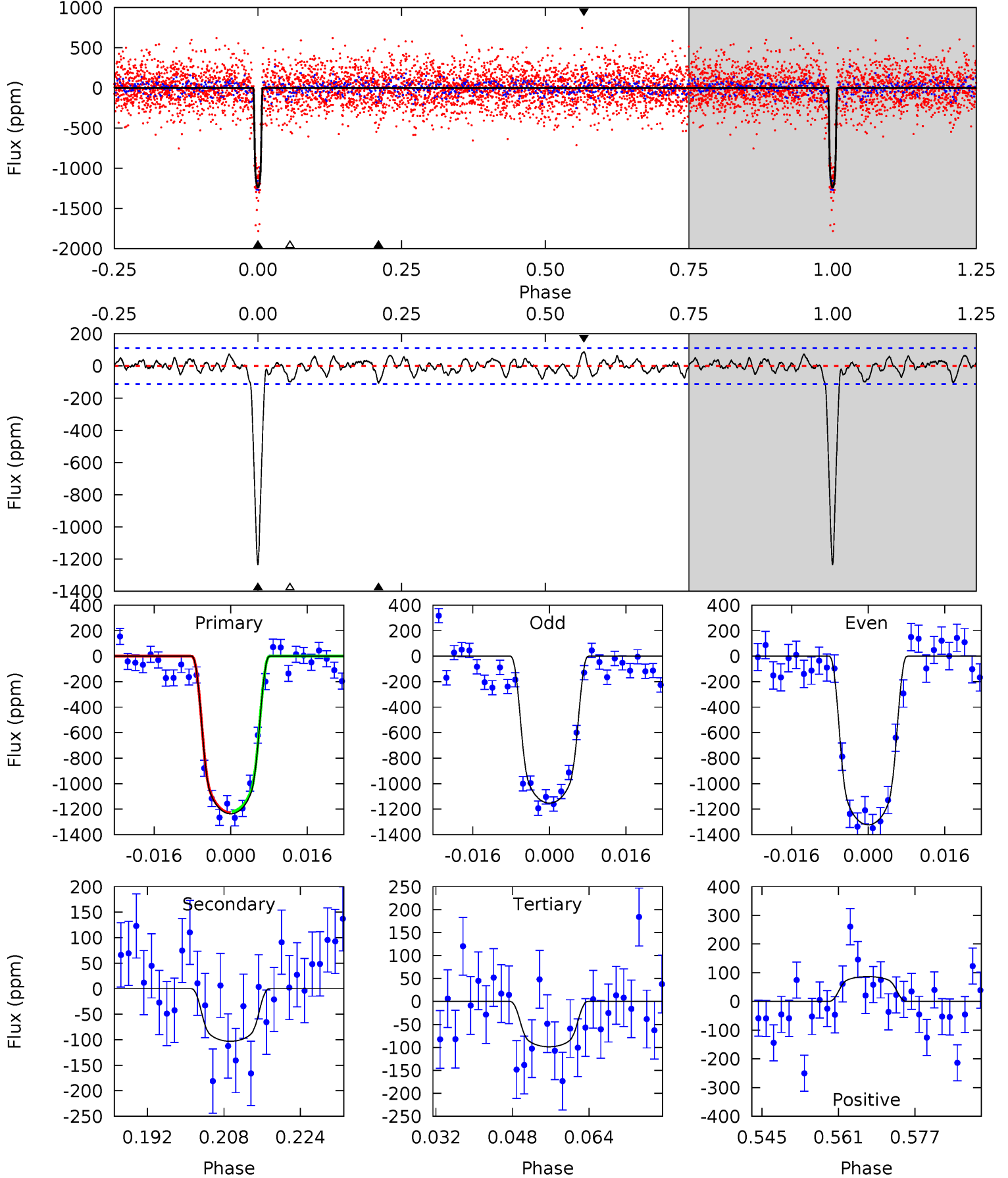
TCE 010788461-01 P= 9.207223 Days  $T_0=135.836186$  (BKJD)



# DV Model-Shift Uniqueness Test

010788461-01, P = 9.207615 Days, E = 135.796996 Days

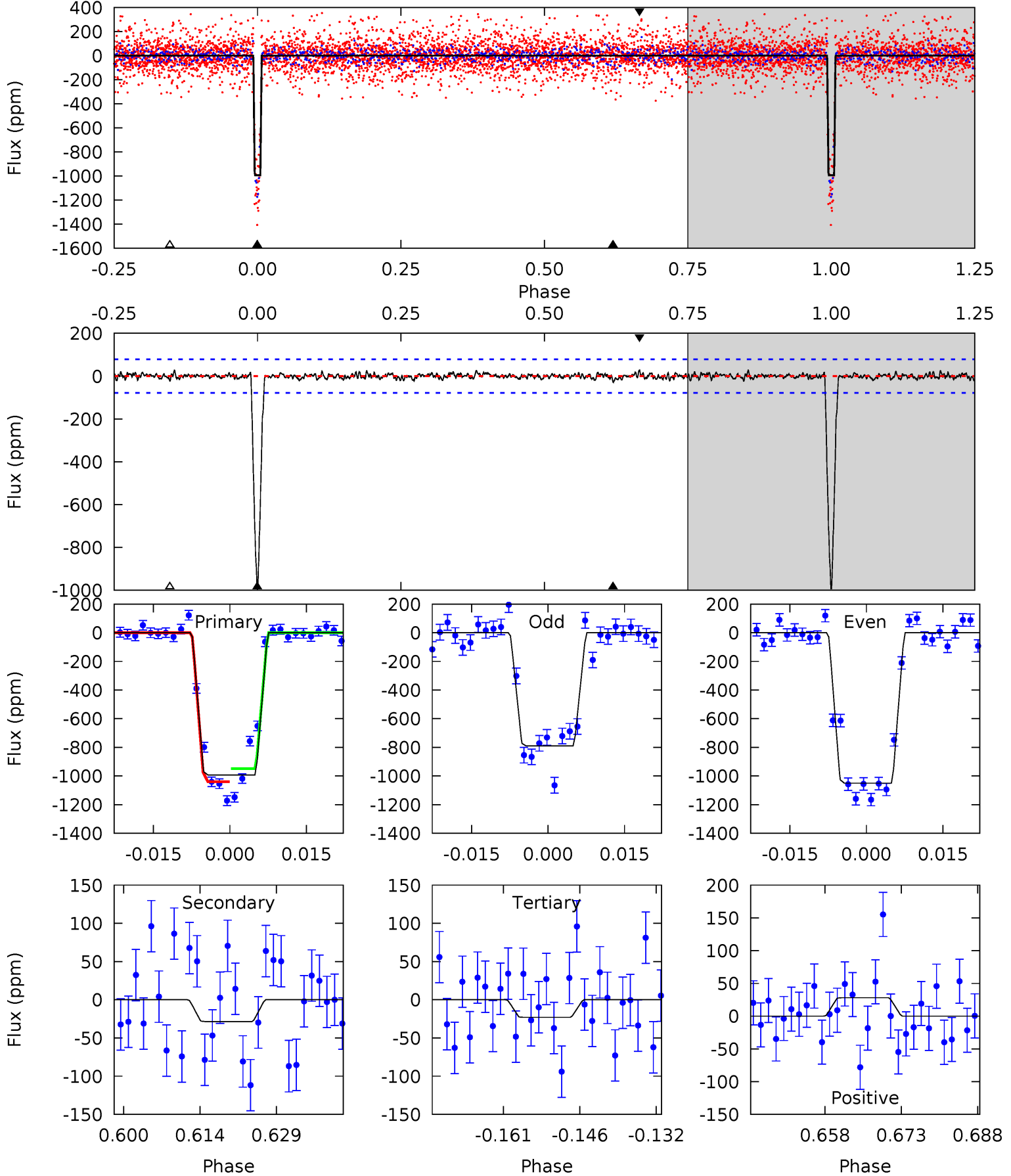
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.6	4.55	4.36	3.82	4.94	2.41	1.42	50.3	50.8	0.19	0.73	3.80	1.04	0.07	0.22



# Alt Model-Shift Uniqueness Test

010788461-01, P = 9.207223 Days, E = 135.836186 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
63.0	1.81	1.46	1.78	4.95	2.44	0.53	61.6	61.2	0.35	0.03	8.46	1.13	0.03	2.94



### Stellar Parameters For KIC 010788461

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5678^{+171}_{-188}$	$4.215^{+0.246}_{-0.164}$	$0.200^{+0.200}_{-0.300}$	$1.303^{+0.341}_{-0.341}$	$1.015^{+0.122}_{-0.111}$	$0.647^{+0.896}_{-0.281}$
	+3%/-3%	+6%/-4%	+100%/-150%	+26%/-26%	+12%/-11%	+139%/-43%
Source	KIC0	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 010788461-01 / KOI 3925.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-103 \pm 23$	$5.09^{+1.11}_{-1.00}$	$1348^{+110}_{-106}$	$3450^{+238}_{-192}$	$16^{+10}_{-6}$
Alt.	$-29 \pm 16$	$4.90^{+1.01}_{-0.90}$	$1350^{+100}_{-112}$	$2878^{+254}_{-322}$	$4.757^{+4.268}_{-2.771}$

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

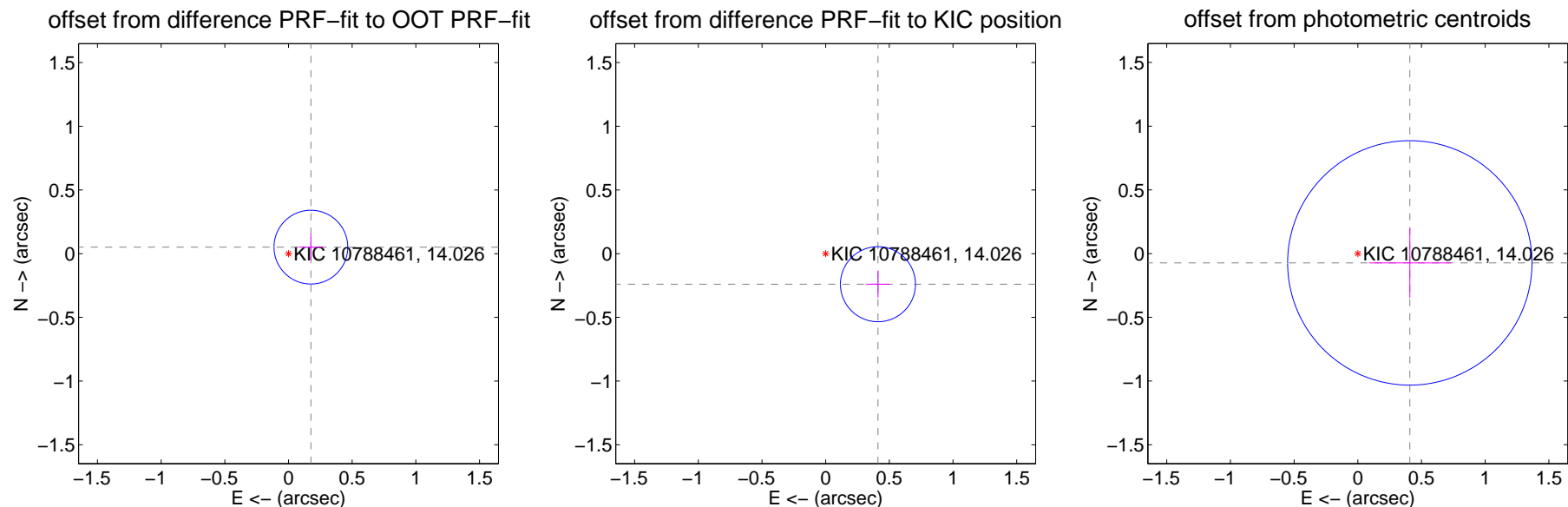
## DV Centroid Data

Supplemental centroid analysis for 010788461-01. Kepler magnitude: 14.03. Transit SNR 31.89

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.183 \pm 0.097$	1.90	$-0.176 \pm 0.096$	$0.051 \pm 0.105$
PRF-fit source offset from KIC position	<b><math>0.475 \pm 0.098</math></b>	<b>4.84</b>	$-0.410 \pm 0.096$	$-0.240 \pm 0.105$
photometric centroid source offset	$0.41 \pm 0.32$	1.30	$-0.41 \pm 0.32$	$-0.07 \pm 0.27$



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.

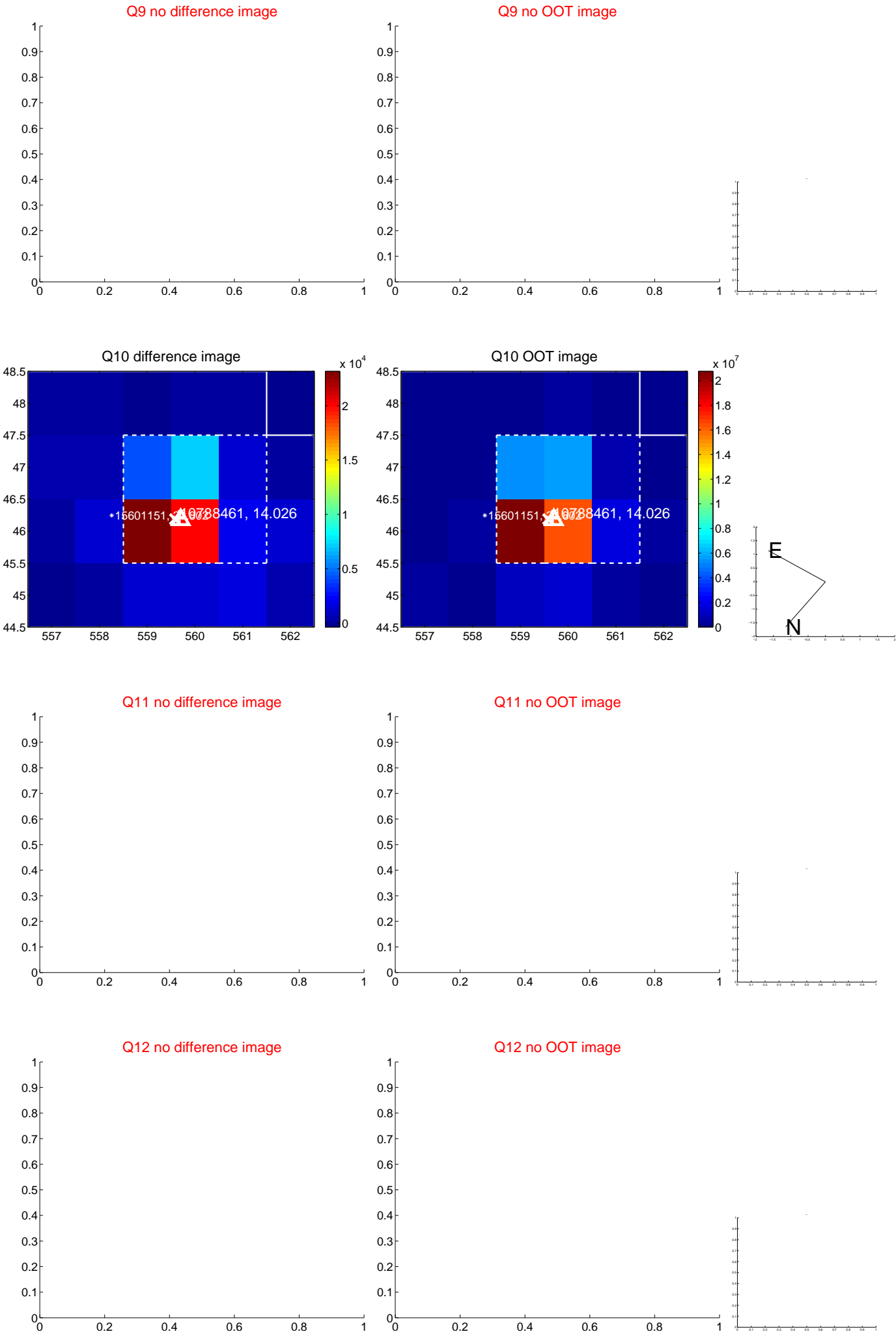


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





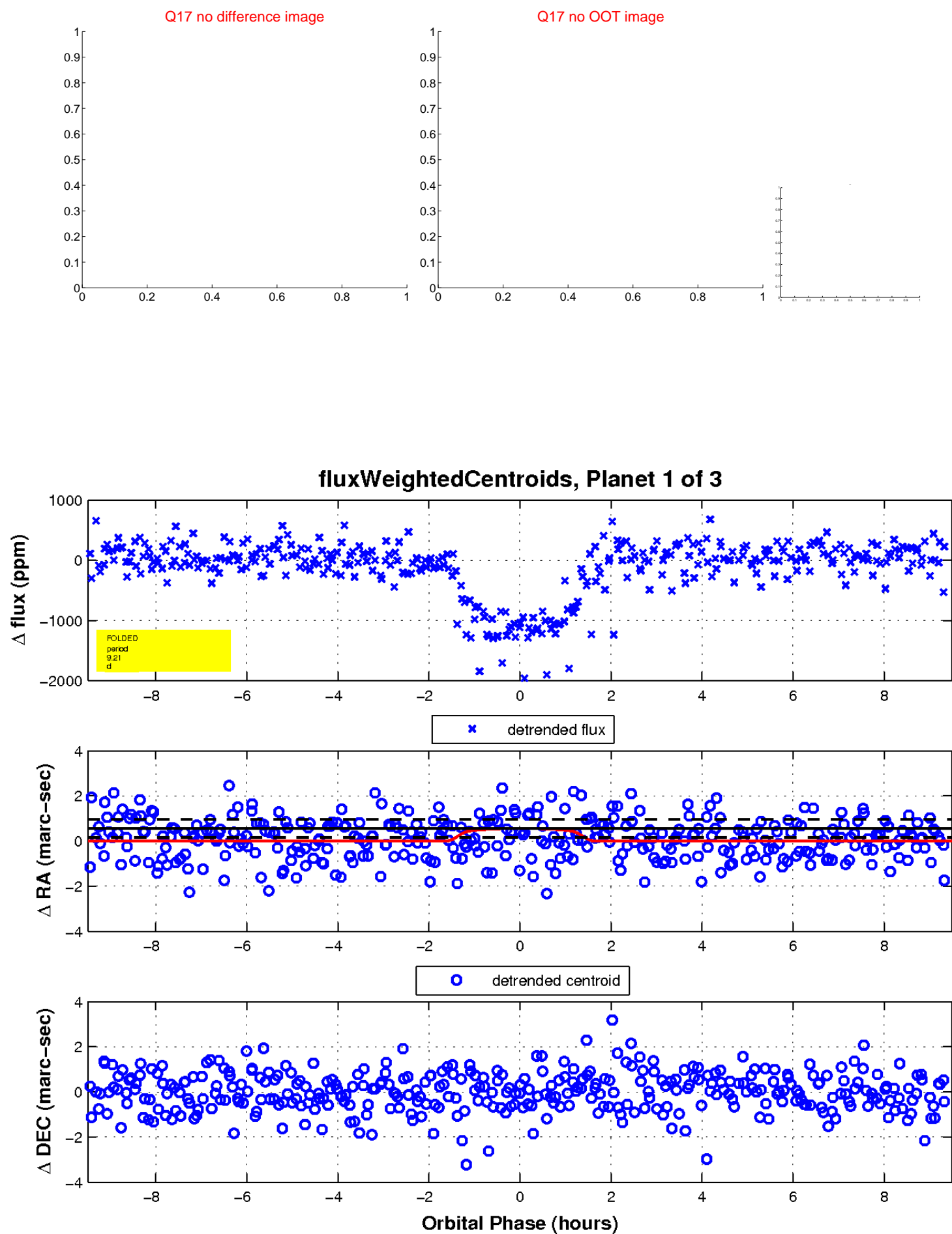
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

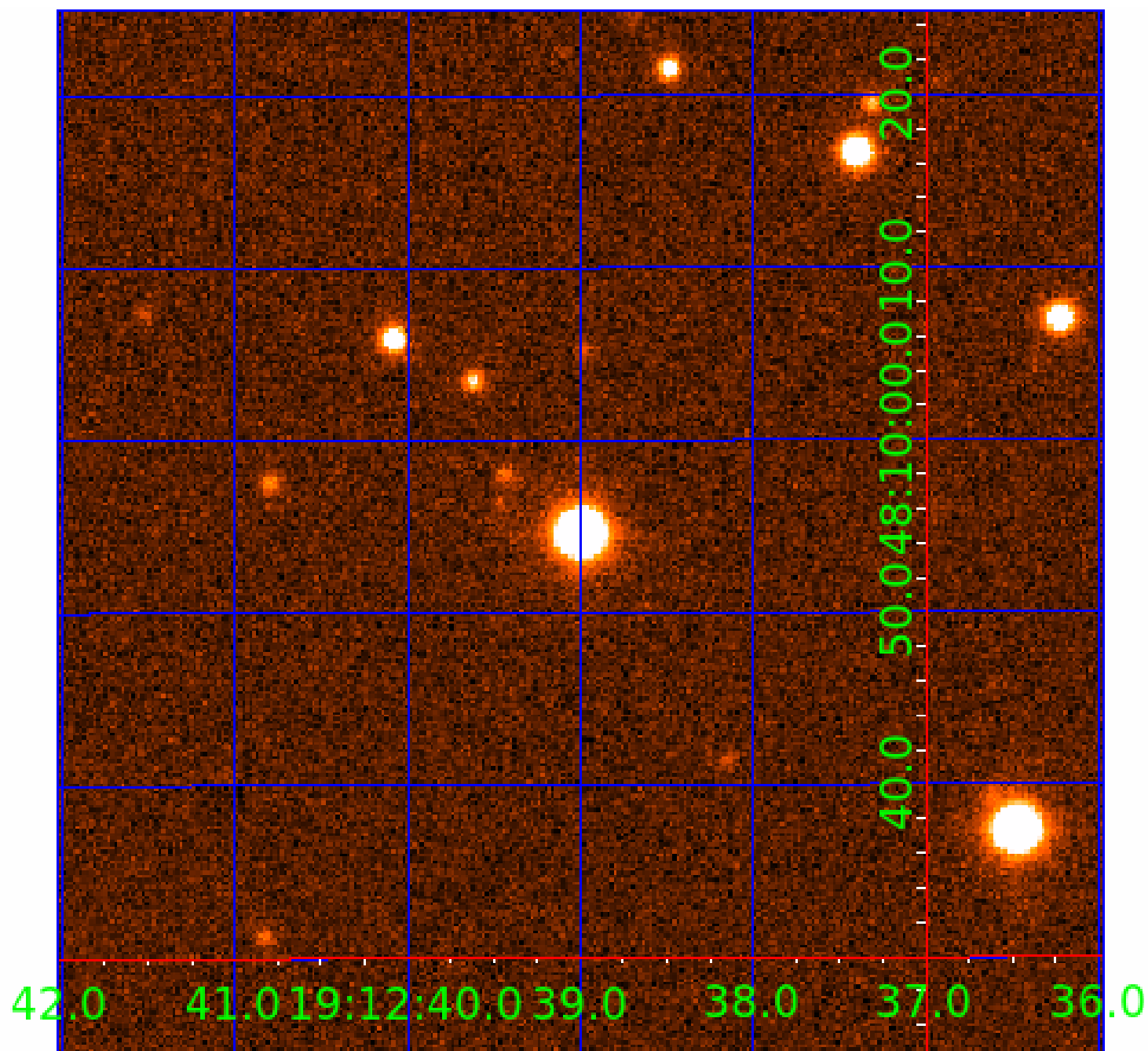


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 010788461

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010788461-01	OBS	3925.01	9.207615	135.796995	1205.8	3.164	29.0	31.9	1.30	5678	5.23	211.56
010788461-02	OBS	3925.02	2.590375	132.306877	333.0	2.238	13.1	15.2	1.30	5678	2.83	1147.68
010788461-03	OBS	3925.03	5.323263	133.135813	318.3	2.679	10.4	10.9	1.30	5678	2.34	439.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010788461-01	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS
010788461-02	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS
010788461-03	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS

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

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

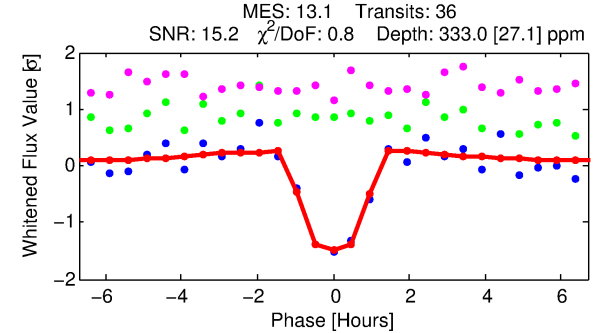
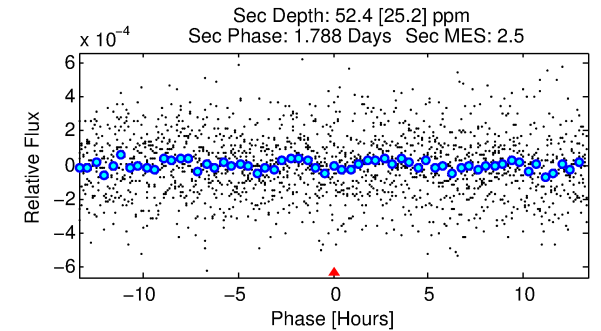
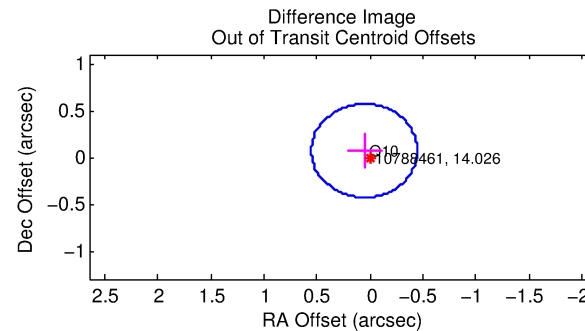
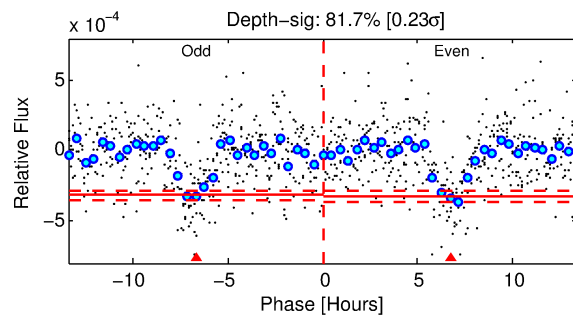
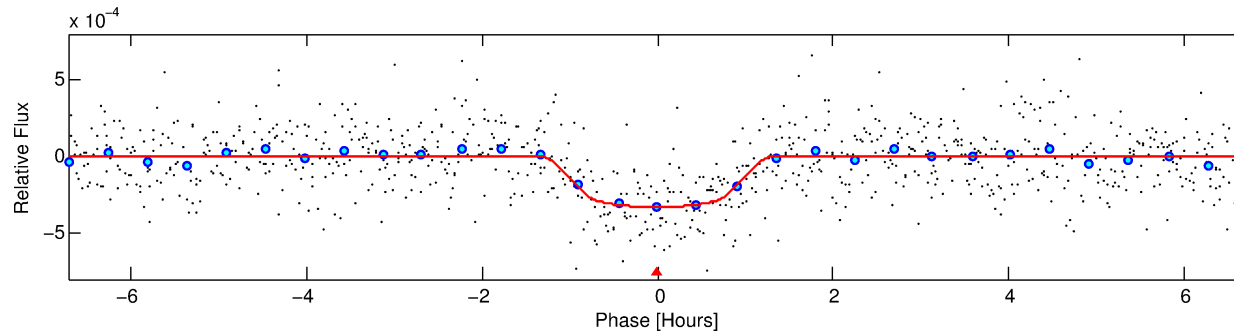
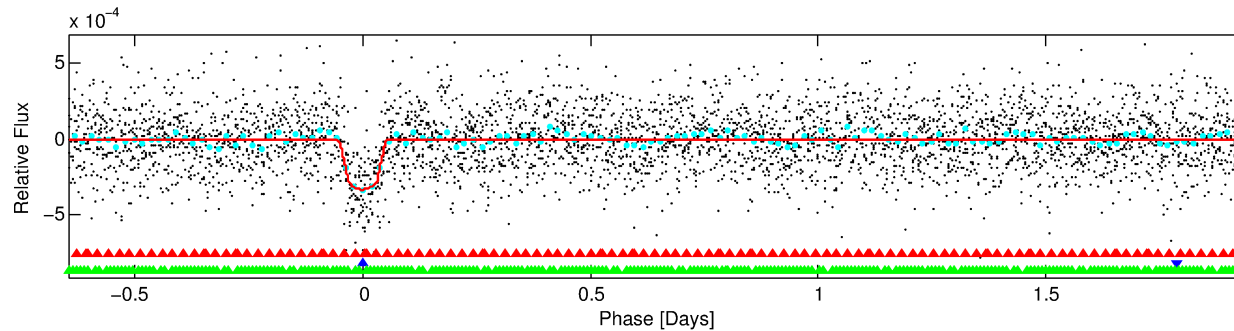
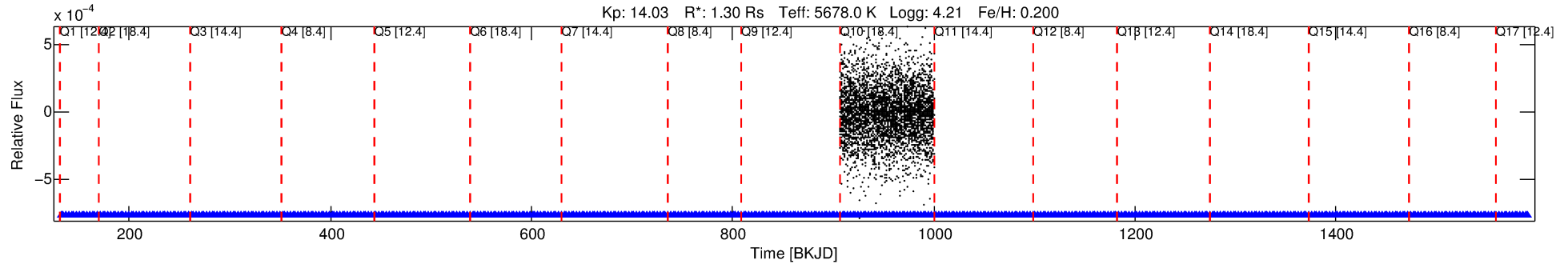
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010788461-02

No Significant Match Found

# DV One-Page Summary

KIC: 10788461 Candidate: 2 of 3 Period: 2.590 d  
KOI: K03925.02 Corr: 0.894



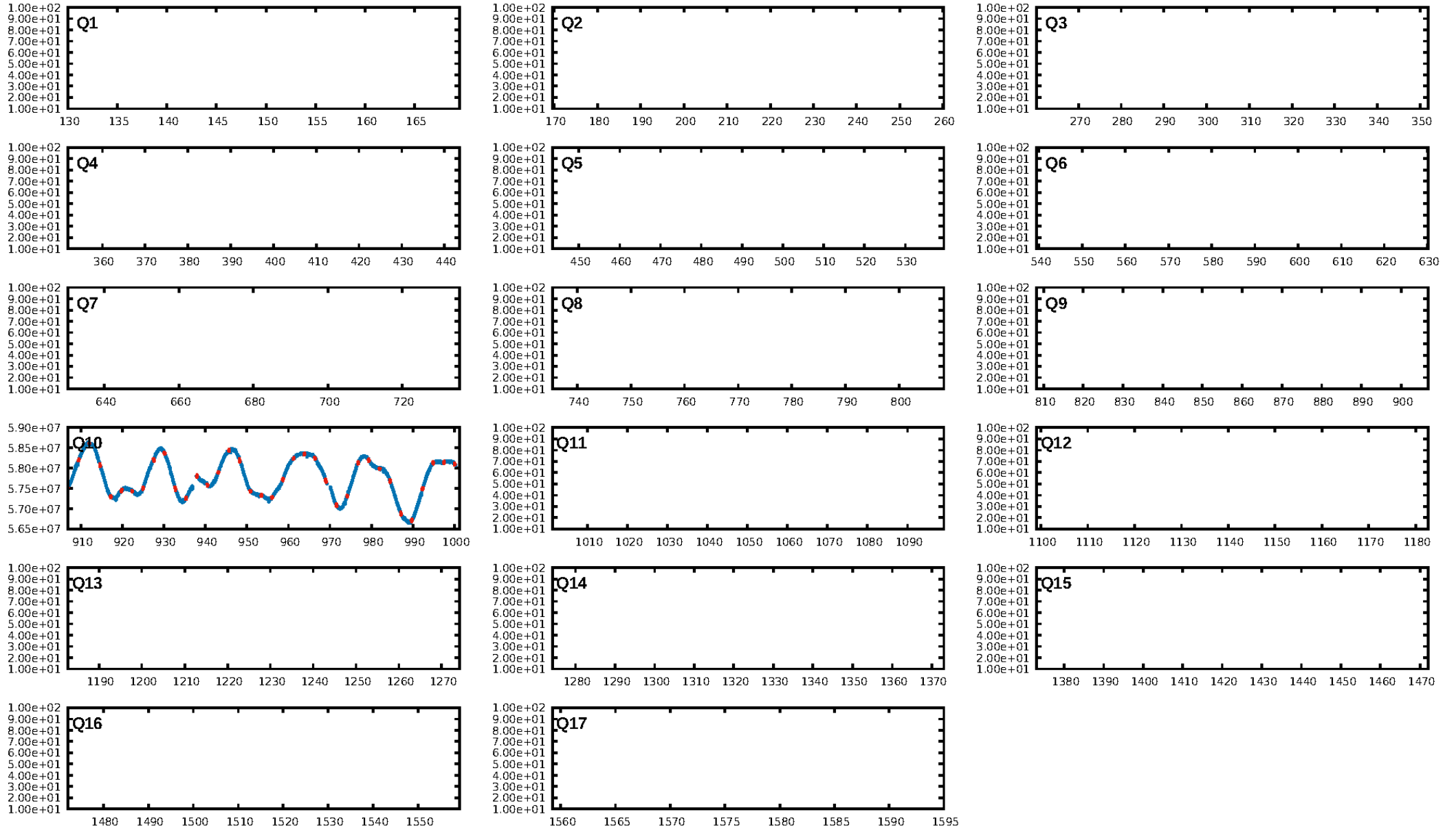
## DV Fit Results:

Period = 2.59037 [0.00001] d  
Epoch = 132.3069 [0.0022] BKJD  
Rp/R\* = 0.0199 [0.0077]  
a/R\* = 4.41 [7.23]  
b = 0.90 [0.39]  
Seff = 1147.68 [501.03]  
Teq = 1484 [162] K  
Rp = 2.83 [1.32] Re  
a = 0.0371 [0.0095] AU  
Ag = 4.94 [4.94] [0.80 $\sigma$ ]  
Teffp = 3422 [786] K [2.42 $\sigma$ ]

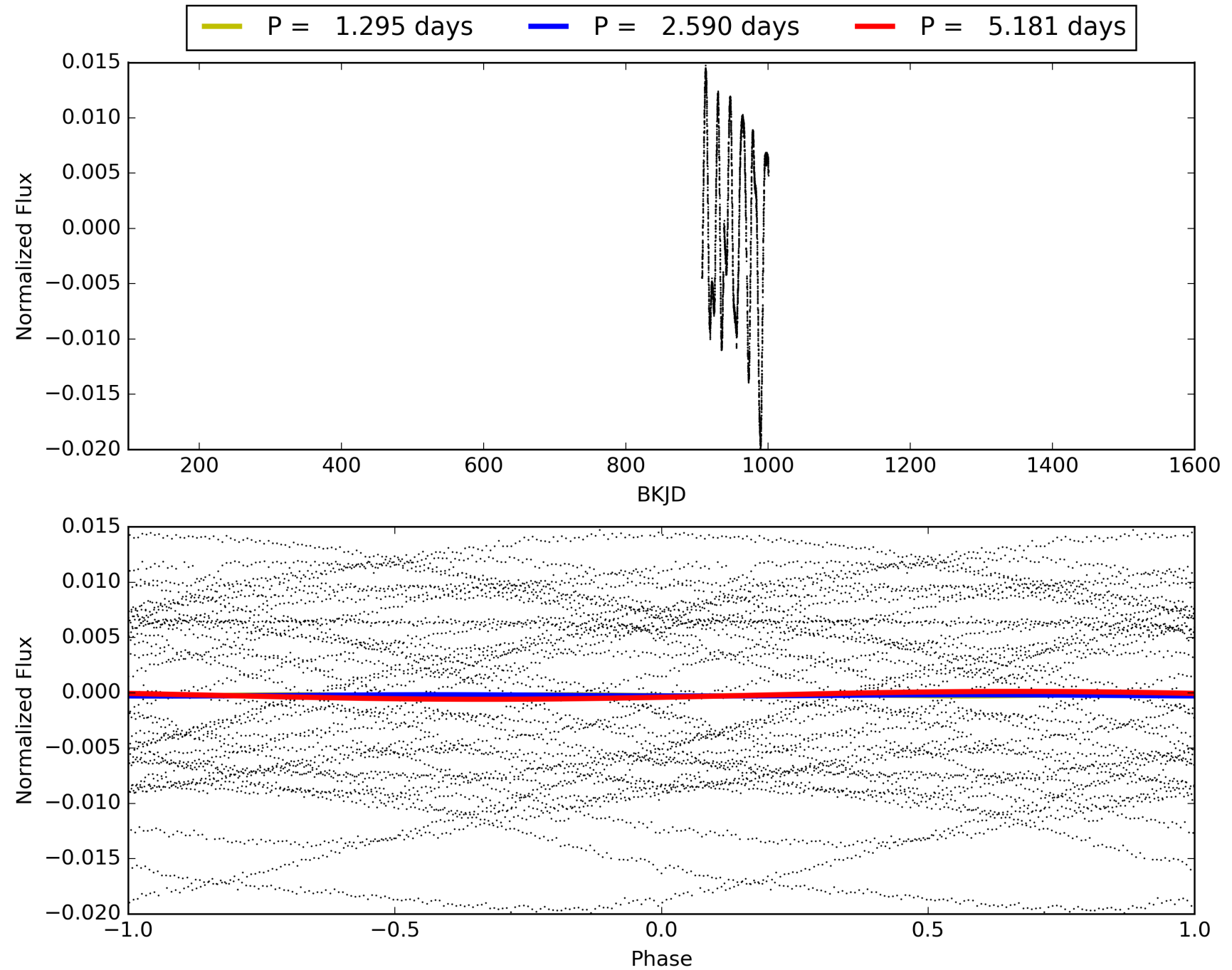
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [18.79 $\sigma$ ]  
ModelChiSquare2-sig: 96.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.33e-42  
RollingBand-fgt: 1.00 [36/36]  
GhostDiagnostic-chr: 2.711  
Centroid-sig: N/A  
Centroid-so: 0.570 arcsec [0.84 $\sigma$ ]  
OotOffset-rm: 0.089 arcsec [0.53 $\sigma$ ]  
KicOffset-rm: 0.272 arcsec [1.65 $\sigma$ ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

# TCE 010788461-02, PDC Light Curves



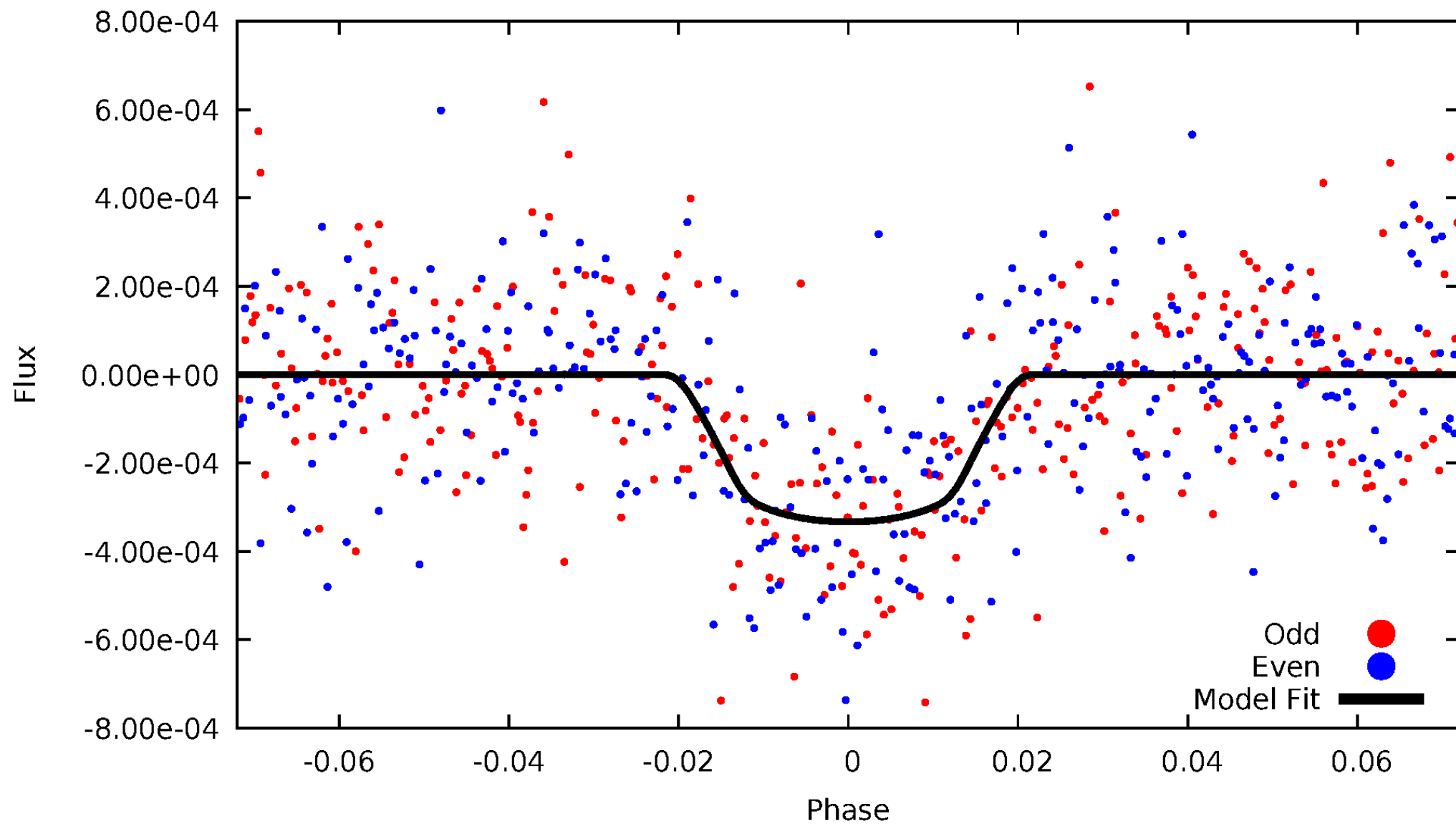
# TCE 010788461-02





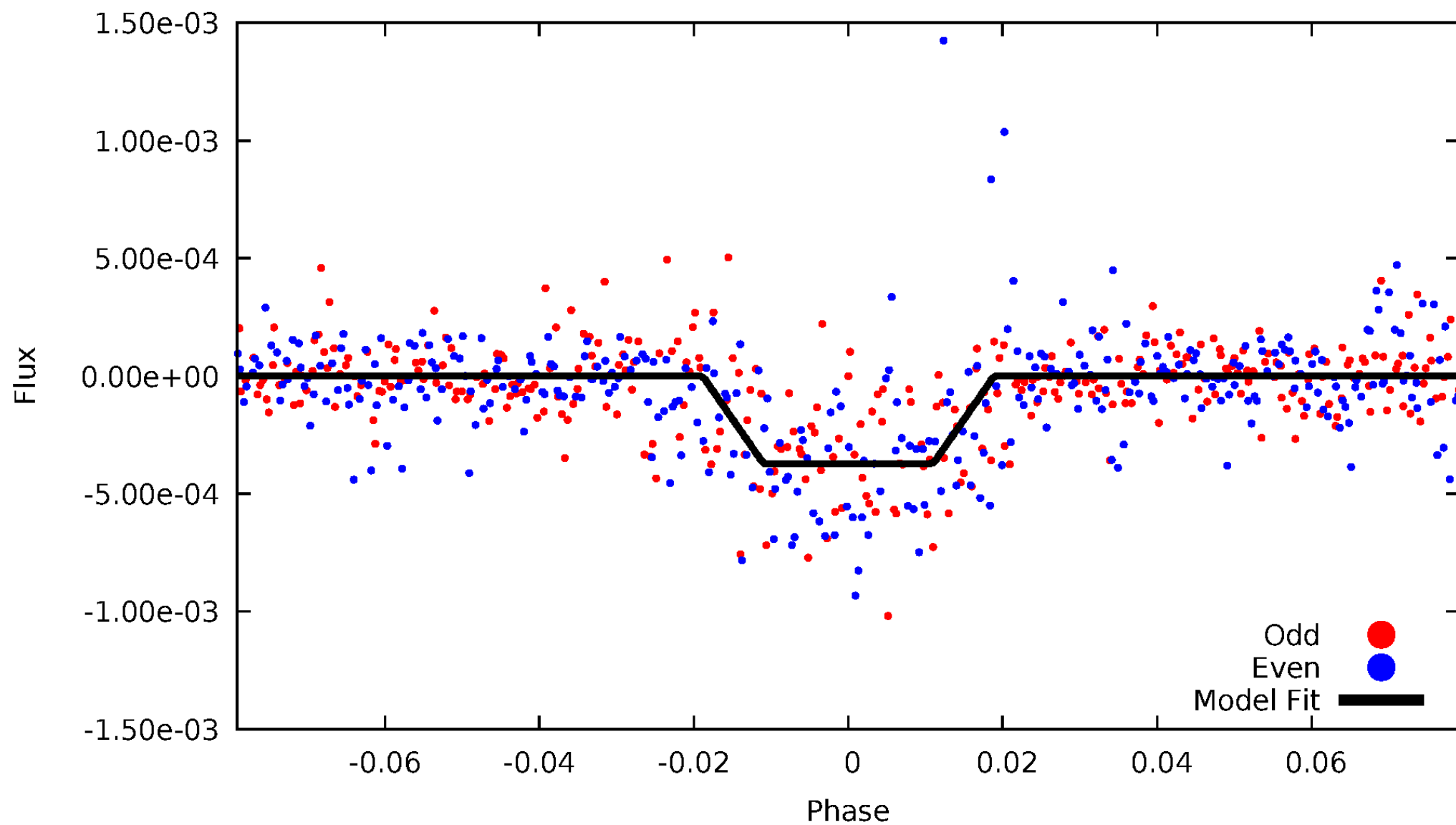
# DV Odd/Even

TCE 010788461-02



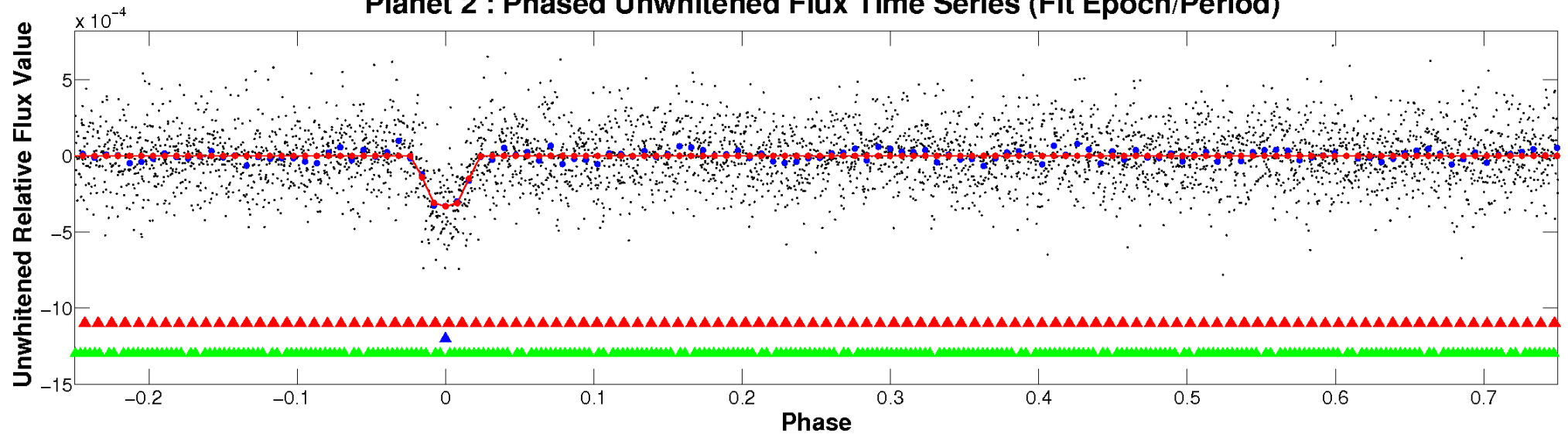
# ALT Odd/Even

TCE 010788461-02

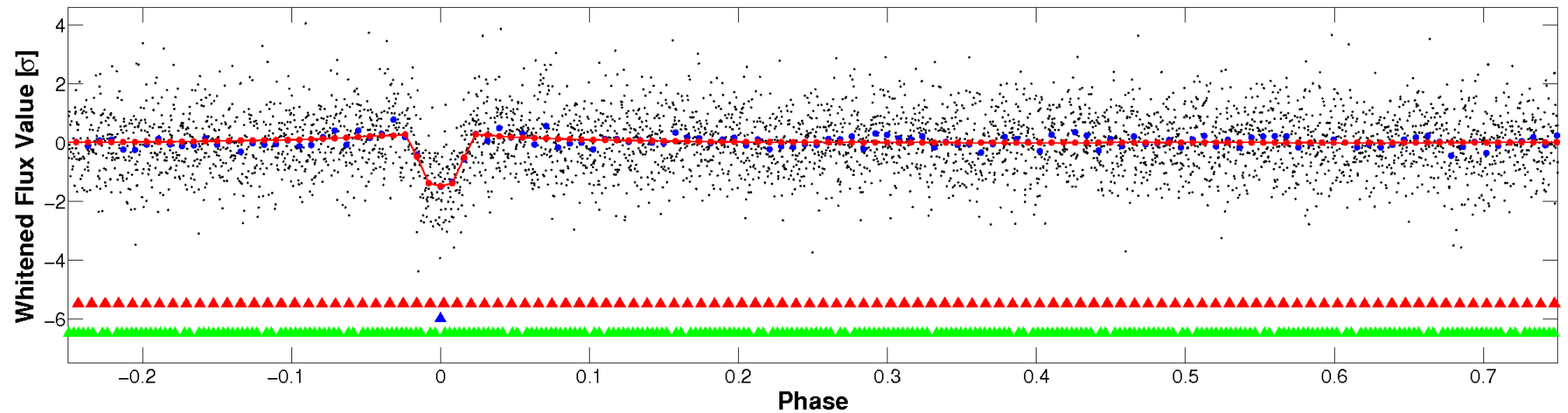


# Non-Whitened Vs. Whitened Light Curve

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

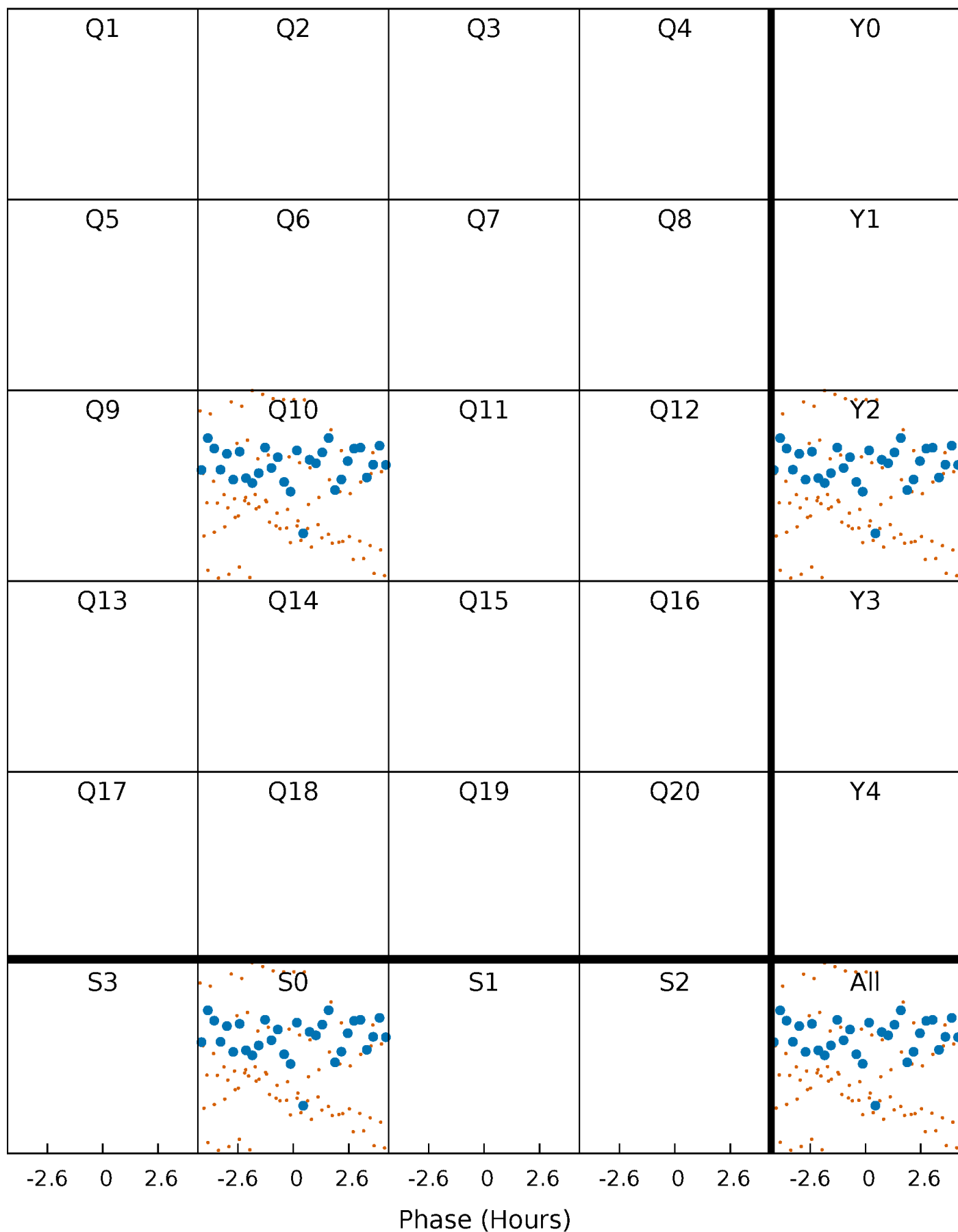


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



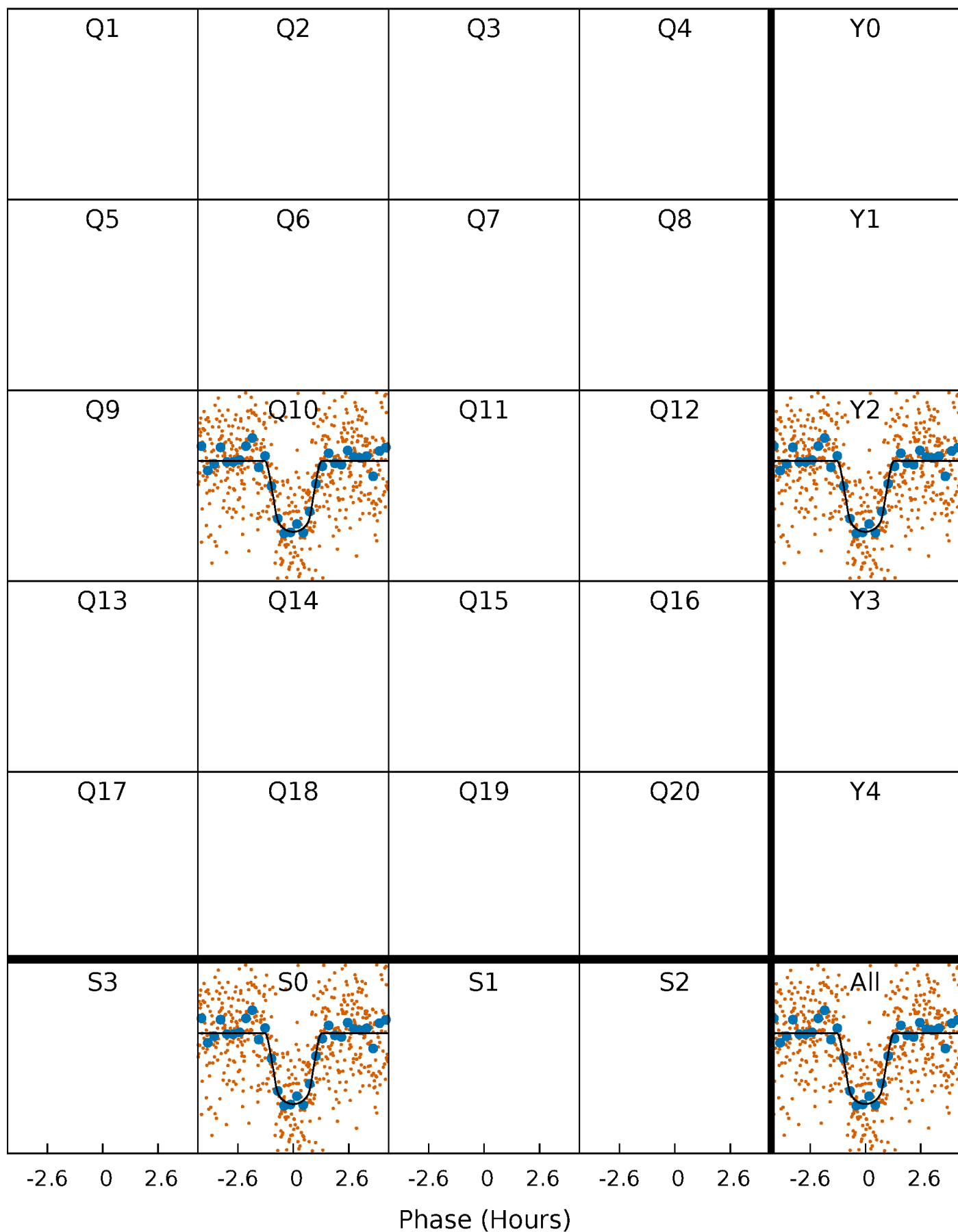
# PDC Quarter-Phased Transit Curves

TCE 010788461-02     $P = 2.590375$  Days     $T_0 = 132.306877$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 010788461-02   P= 2.590375 Days    $T_0=132.306877$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

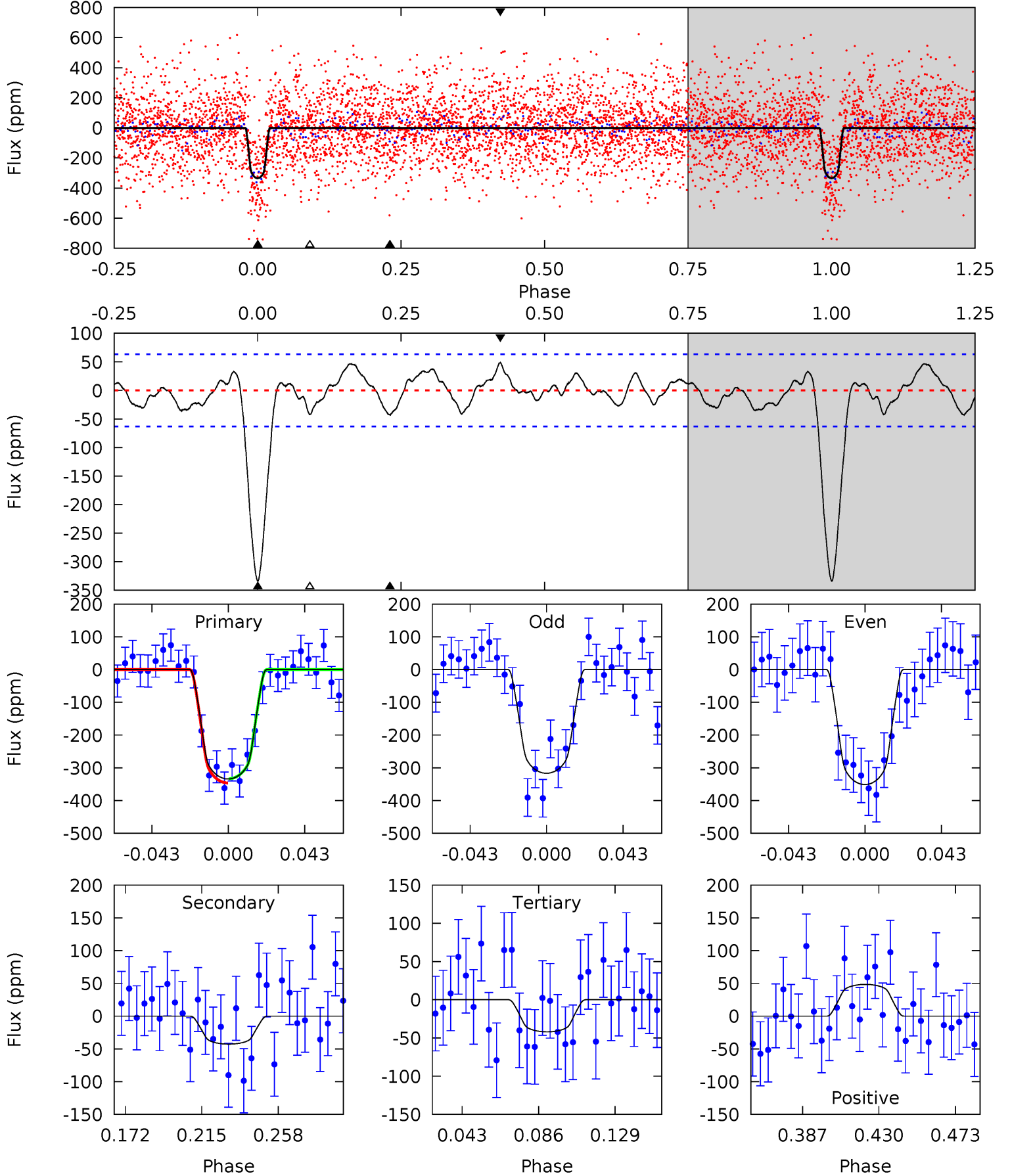
TCE 010788461-02    P= 2.590462 Days     $T_0=132.274904$  (BKJD)



# DV Model-Shift Uniqueness Test

010788461-02, P = 2.590375 Days, E = 132.306877 Days

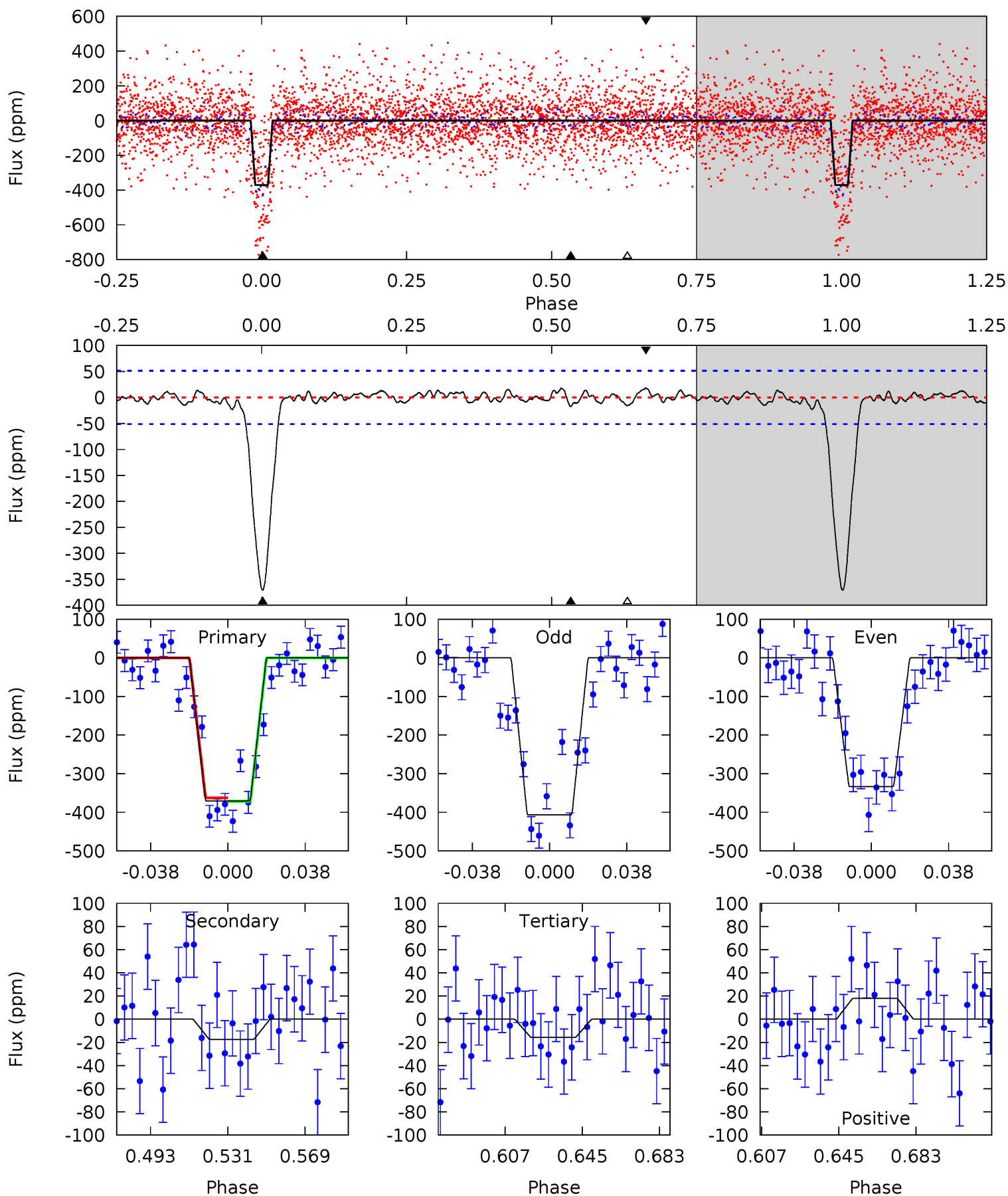
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	3.20	3.14	3.63	4.74	2.02	1.52	21.9	21.4	0.06	-0.43	1.30	0.95	0.13	0.48



# Alt Model-Shift Uniqueness Test

010788461-02, P = 2.590462 Days, E = 132.274904 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
34.5	1.62	1.47	1.67	4.76	2.08	0.69	33.1	32.9	0.15	-0.05	3.37	1.00	0.05	0.42





### Stellar Parameters For KIC 010788461

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5678^{+171}_{-188}$	$4.215^{+0.246}_{-0.164}$	$0.200^{+0.200}_{-0.300}$	$1.303^{+0.341}_{-0.341}$	$1.015^{+0.122}_{-0.111}$	$0.647^{+0.896}_{-0.281}$
	+3%/-3%	+6%/-4%	+100%/-150%	+26%/-26%	+12%/-11%	+139%/-43%
Source	KIC0	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 010788461-02 / KOI 3925.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-43 \pm 13$	$2.75^{+1.23}_{-1.04}$	$2060^{+155}_{-156}$	$3614^{+750}_{-459}$	$4.106^{+7.399}_{-2.261}$
Alt.	$-17 \pm 11$	$2.65^{+1.23}_{-0.99}$	$2060^{+154}_{-150}$	$3110^{+598}_{-637}$	$1.727^{+3.465}_{-1.198}$

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

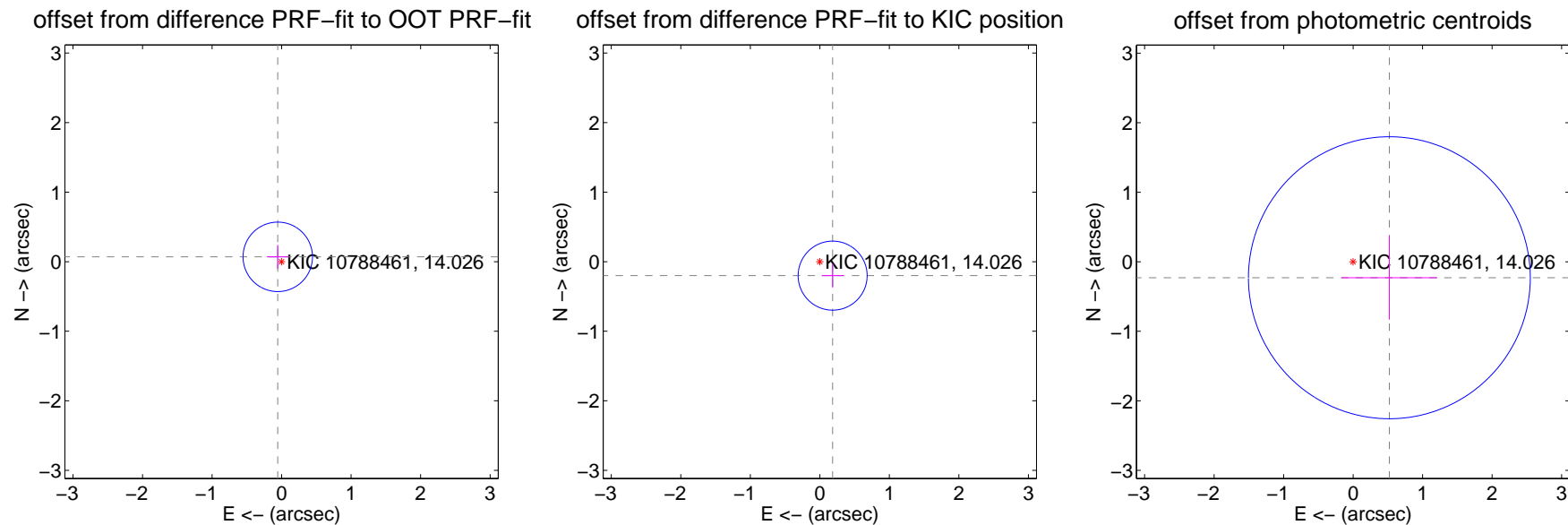
## DV Centroid Data

Supplemental centroid analysis for 010788461-02. Kepler magnitude: 14.03. Transit SNR 15.19

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.089 \pm 0.166$	0.53	$0.055 \pm 0.158$	$0.070 \pm 0.171$
PRF-fit source offset from KIC position	$0.272 \pm 0.165$	1.65	$-0.184 \pm 0.158$	$-0.201 \pm 0.171$
photometric centroid source offset	$0.57 \pm 0.68$	0.84	$-0.52 \pm 0.69$	$-0.23 \pm 0.60$



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.

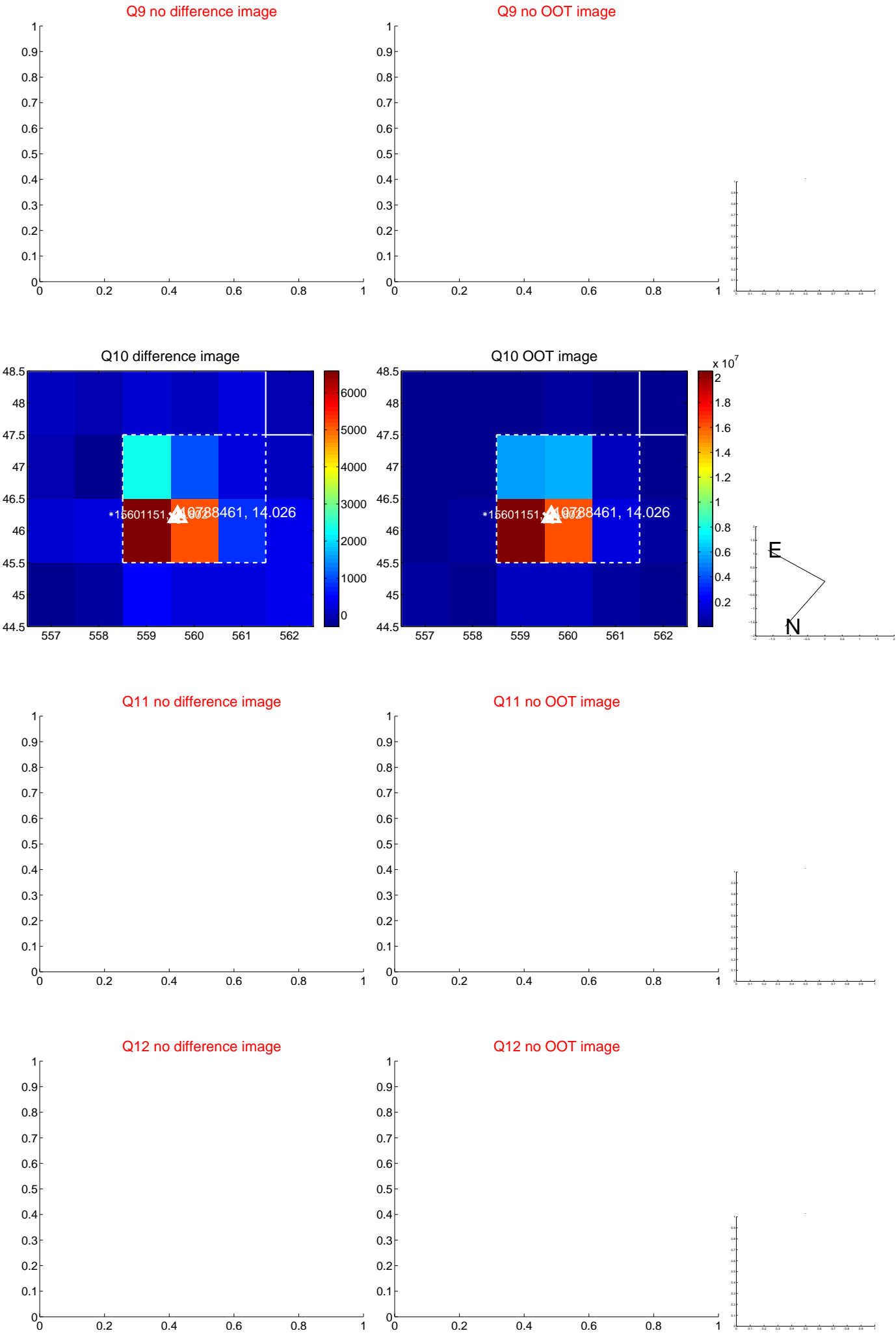
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



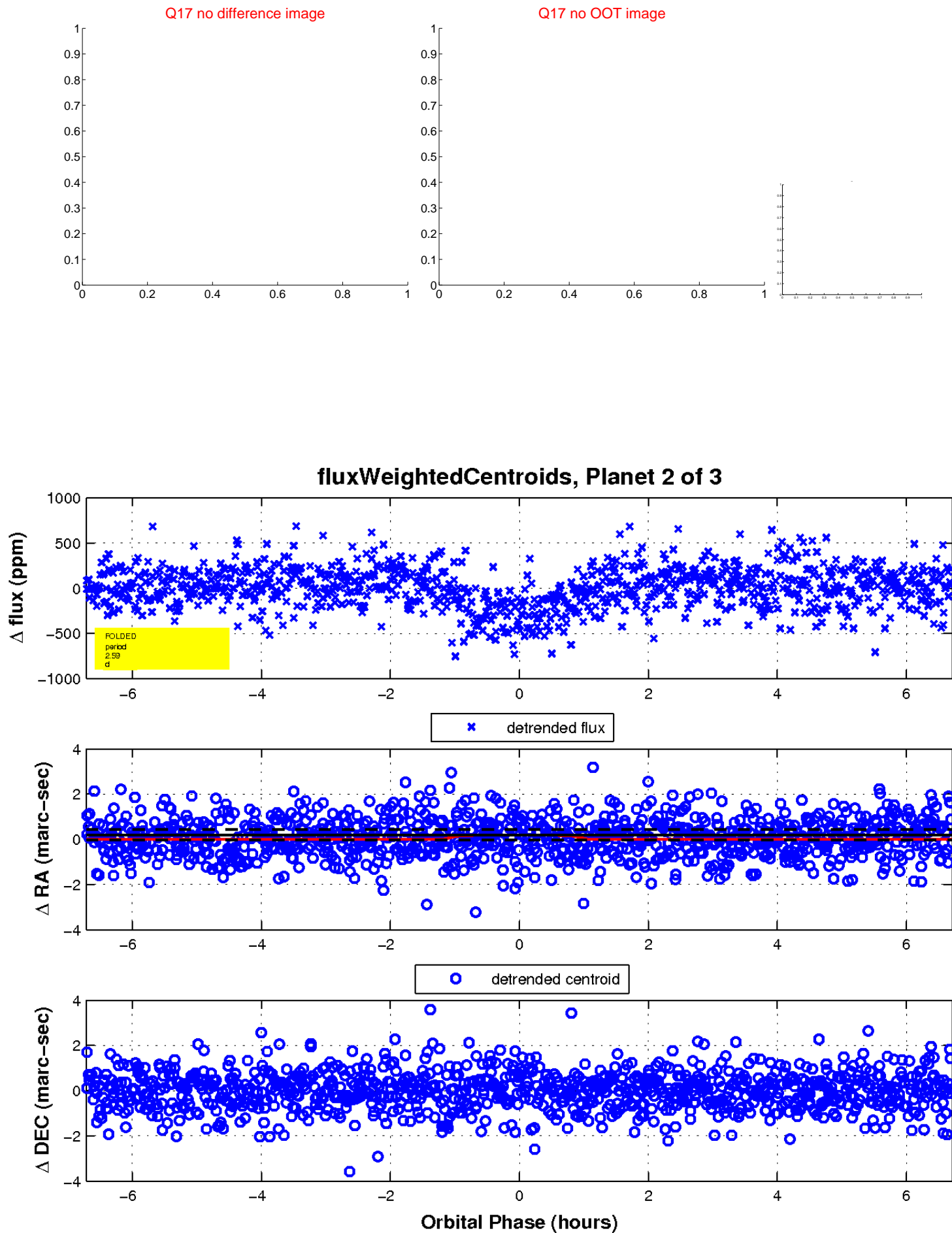
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

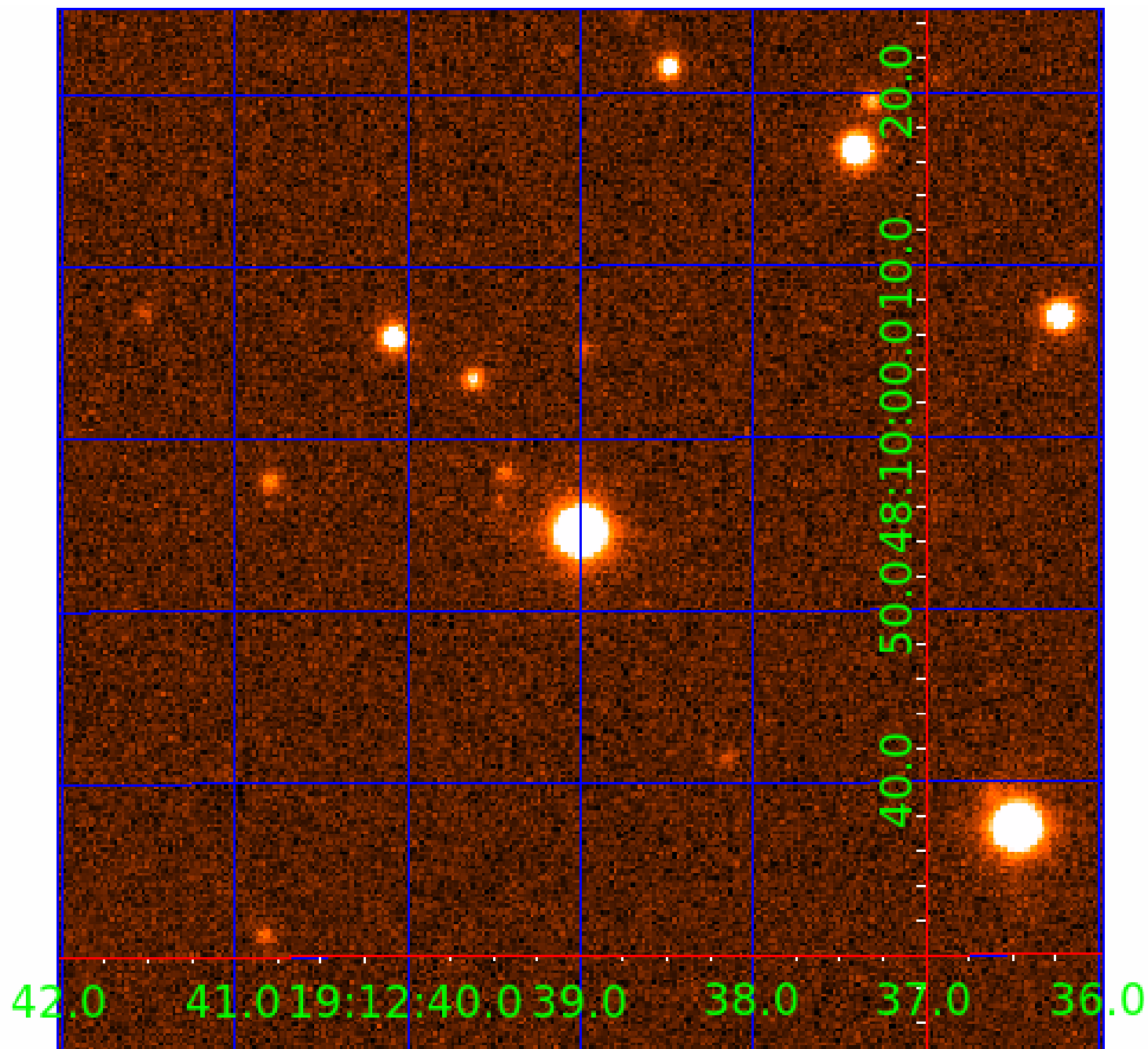


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 010788461

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010788461-01	OBS	3925.01	9.207615	135.796995	1205.8	3.164	29.0	31.9	1.30	5678	5.23	211.56
010788461-02	OBS	3925.02	2.590375	132.306877	333.0	2.238	13.1	15.2	1.30	5678	2.83	1147.68
010788461-03	OBS	3925.03	5.323263	133.135813	318.3	2.679	10.4	10.9	1.30	5678	2.34	439.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010788461-01	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS
010788461-02	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS
010788461-03	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS

**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.

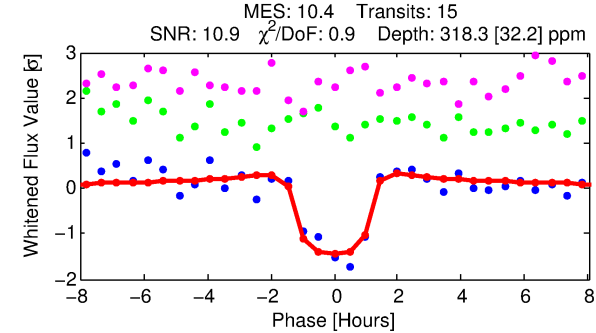
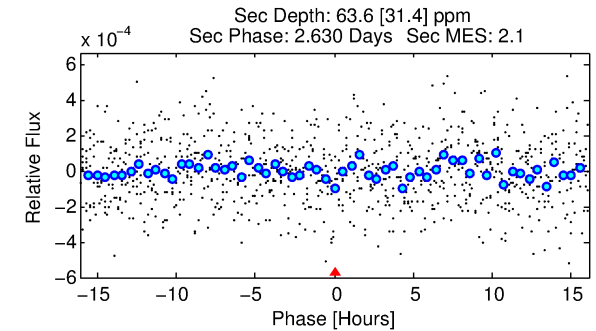
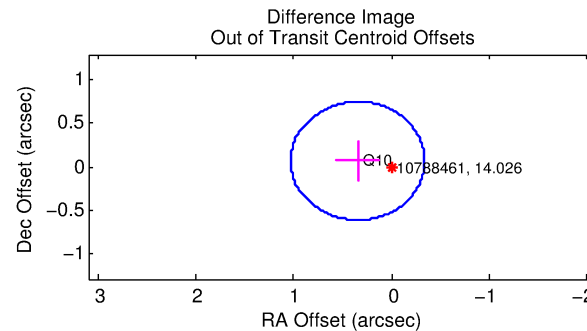
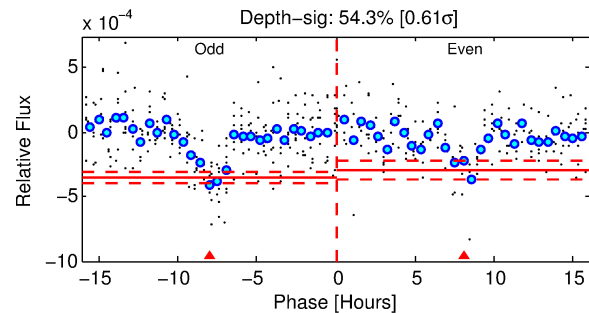
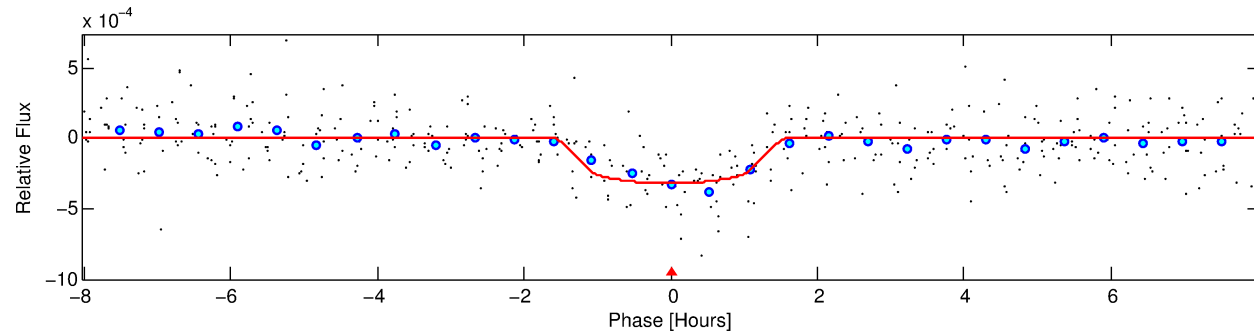
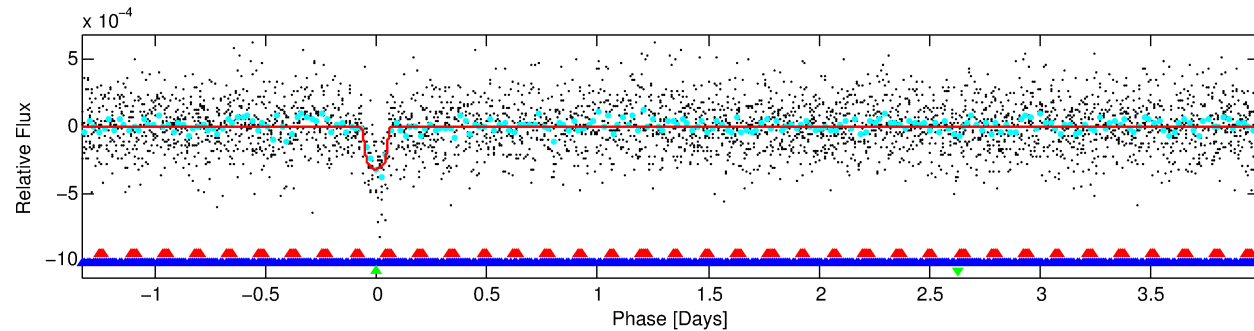
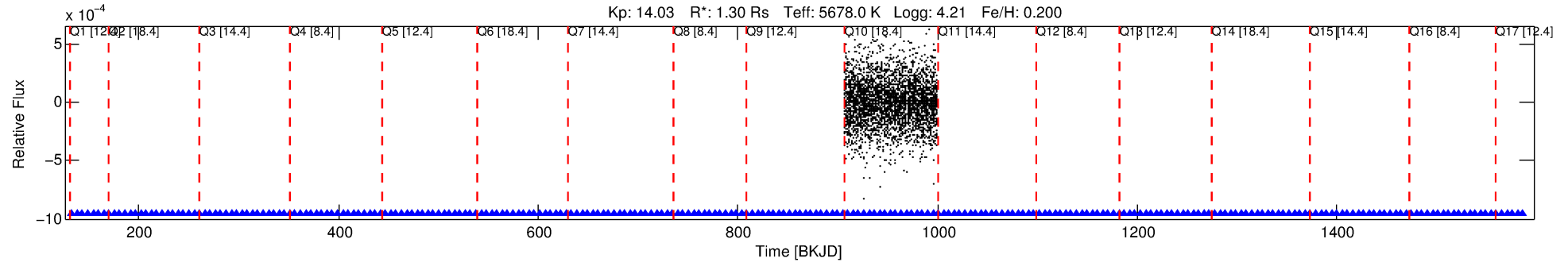
## Ephemeris Match Information For 010788461-03

No Significant Match Found

# DV One-Page Summary

KIC: 10788461 Candidate: 3 of 3 Period: 5.323 d

KOI: K03925 Corr: No Ephemeris Match



## DV Fit Results:

Period = 5.32326 [0.00004] d  
Epoch = 133.1358 [0.0061] BKJD  
Rp/R\* = 0.0165 [0.0227]  
a/R\* = 14.13 [79.50]  
b = 0.41 [11.56]  
Seff = 439.27 [191.77]  
Teq = 1167 [127] K  
Rp = 2.34 [3.29] Re  
a = 0.0600 [0.0154] AU  
Ag = 22.96 [65.09] [0.34 $\sigma$ ]  
Teffp = 3951 [2773] K [1.00 $\sigma$ ]

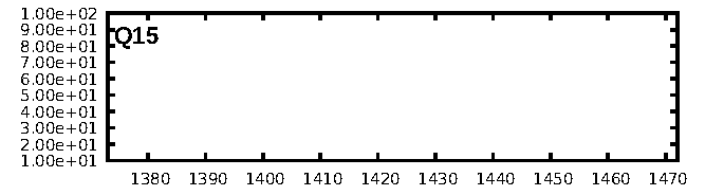
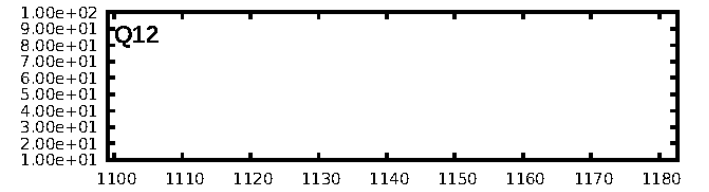
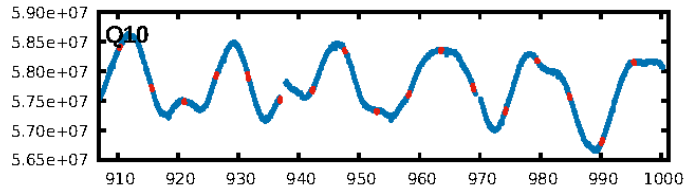
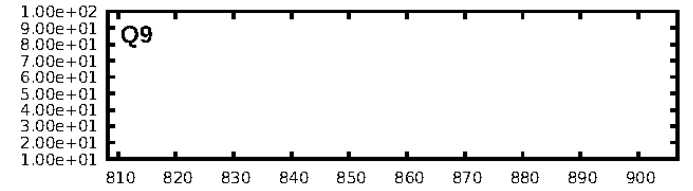
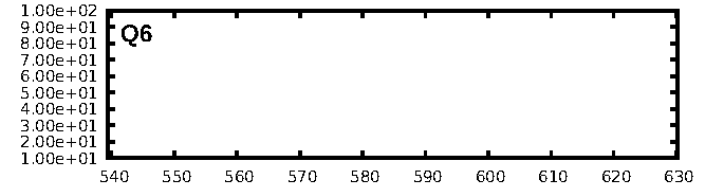
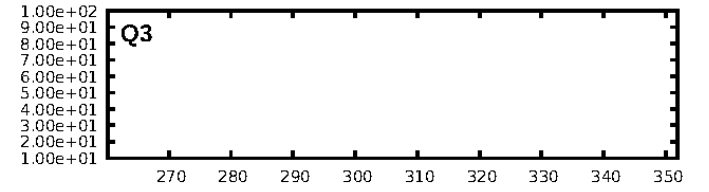
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.79 $\sigma$ ]  
LongPeriod-sig: 100.0% [22.49 $\sigma$ ]  
ModelChiSquare2-sig: 37.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 8.62e-28  
RollingBand-fgt: 1.00 [15/15]  
GhostDiagnostic-chr: -0.8745  
Centroid-sig: N/A  
Centroid-so: 1.598 arcsec [1.69 $\sigma$ ]  
OotOffset-rm: 0.353 arcsec [1.55 $\sigma$ ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-rm: 0.232 arcsec [1.04 $\sigma$ ]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

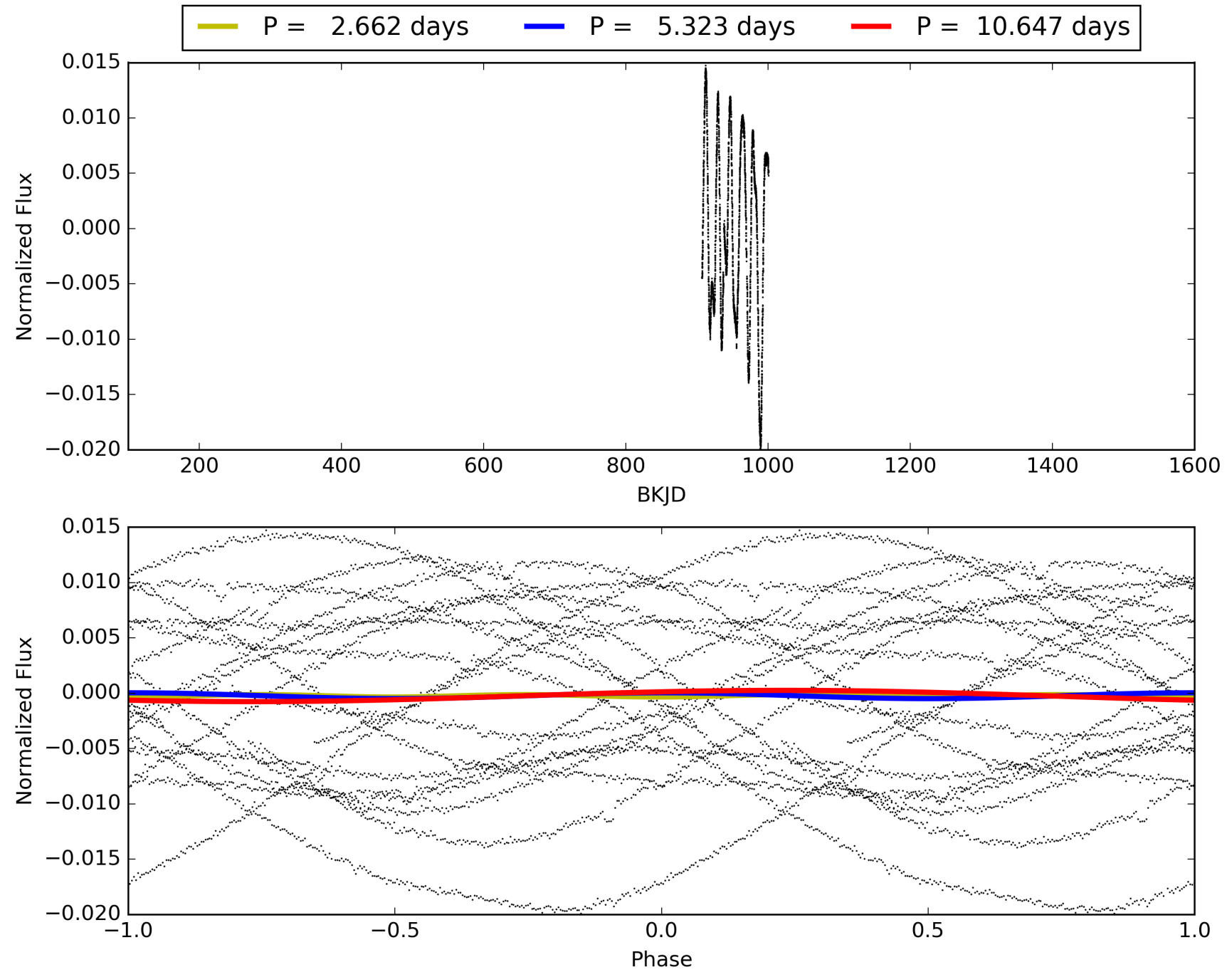
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:18:40 Z

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

# TCE 010788461-03, PDC Light Curves

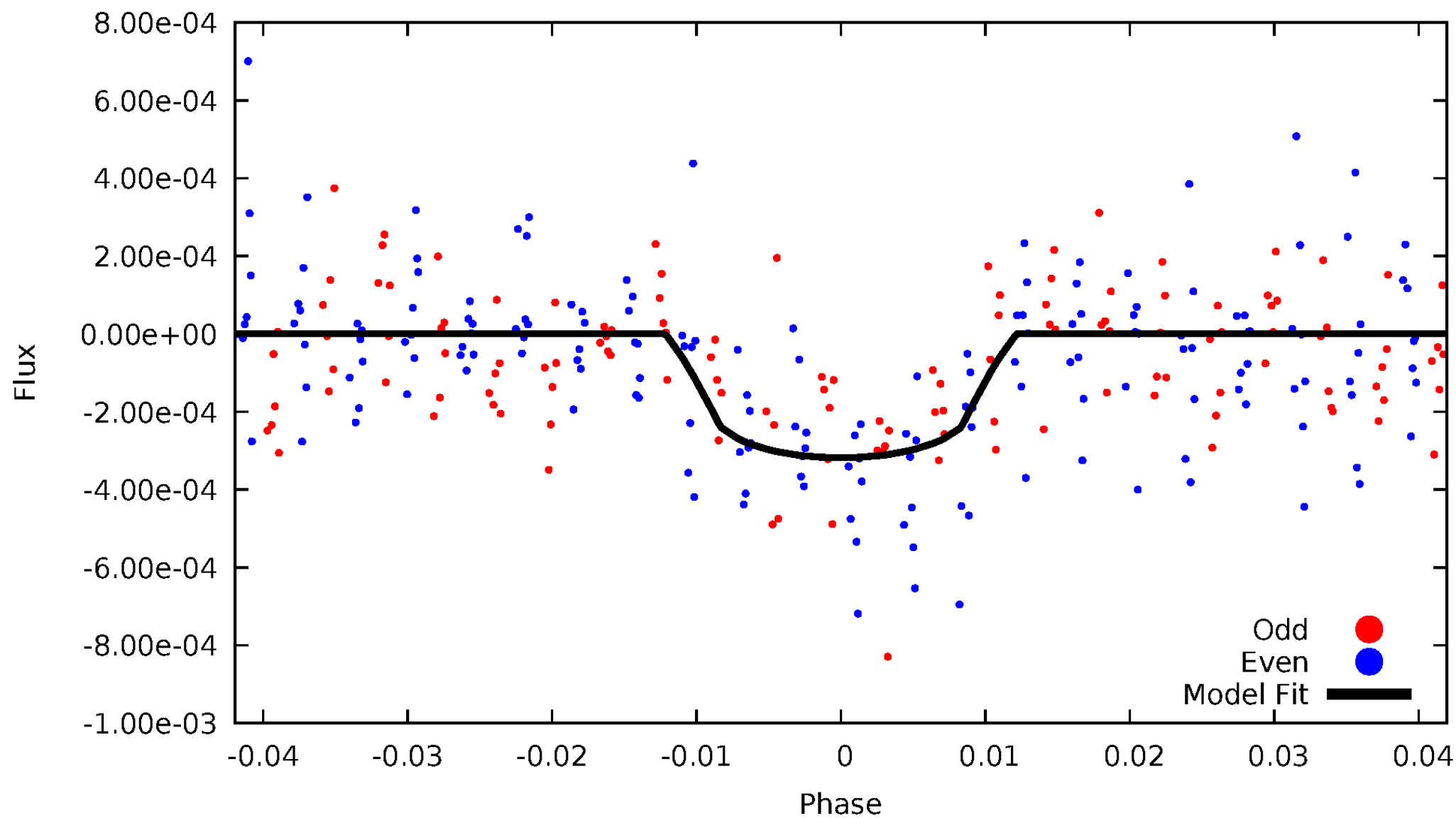


# TCE 010788461-03



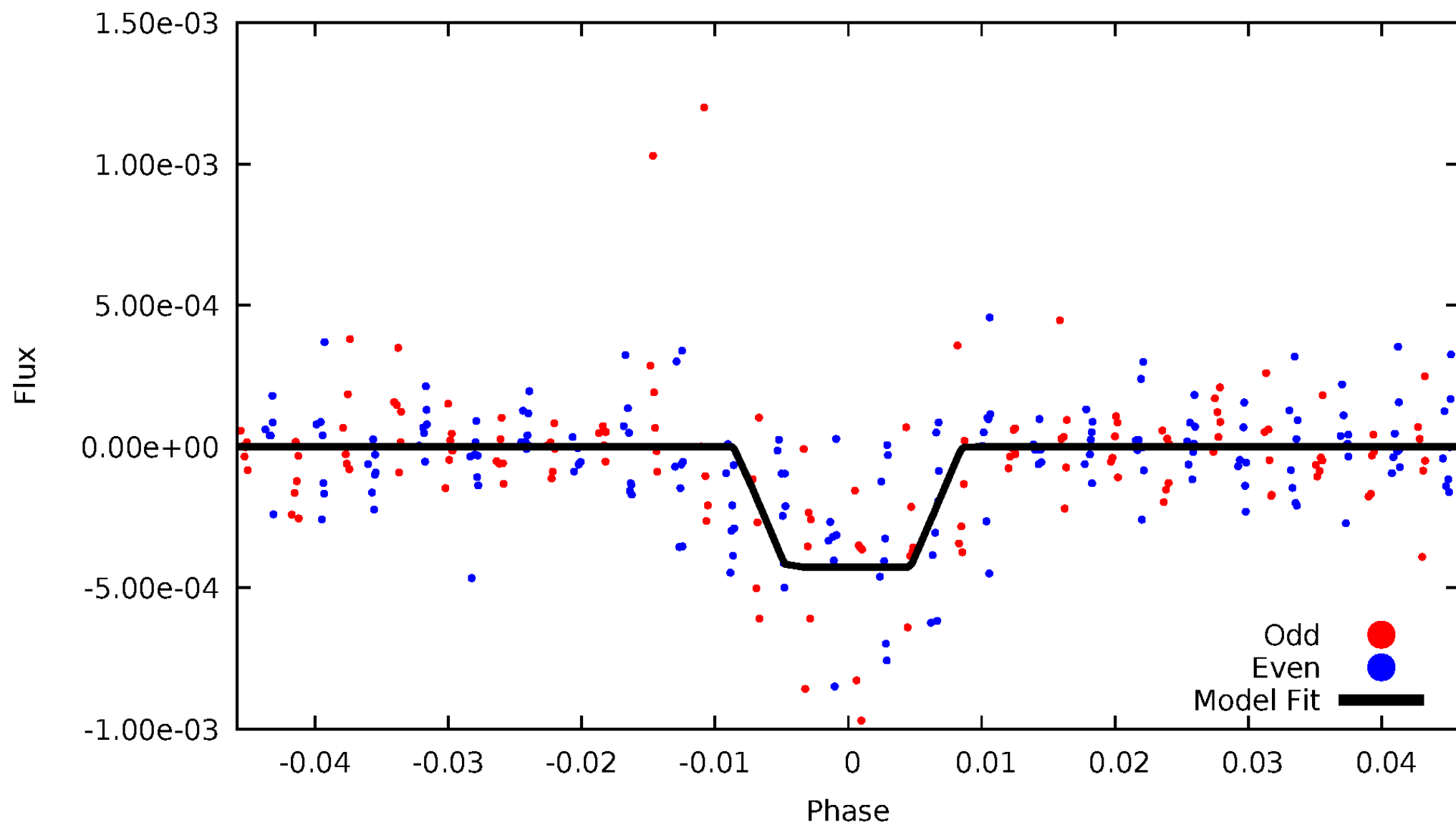
# DV Odd/Even

TCE 010788461-03

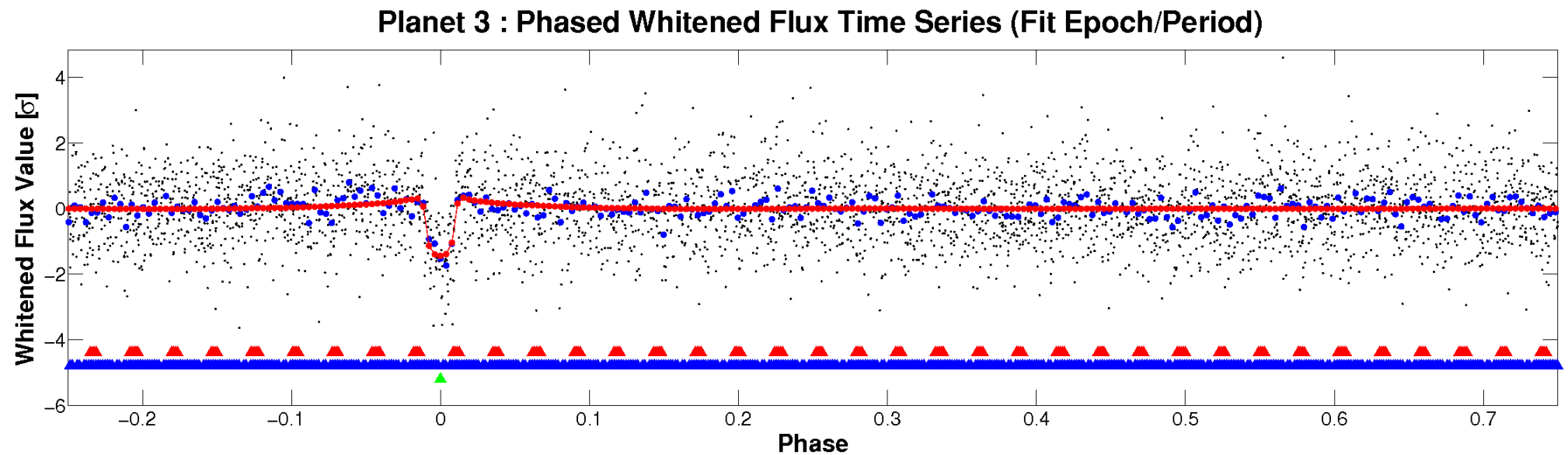
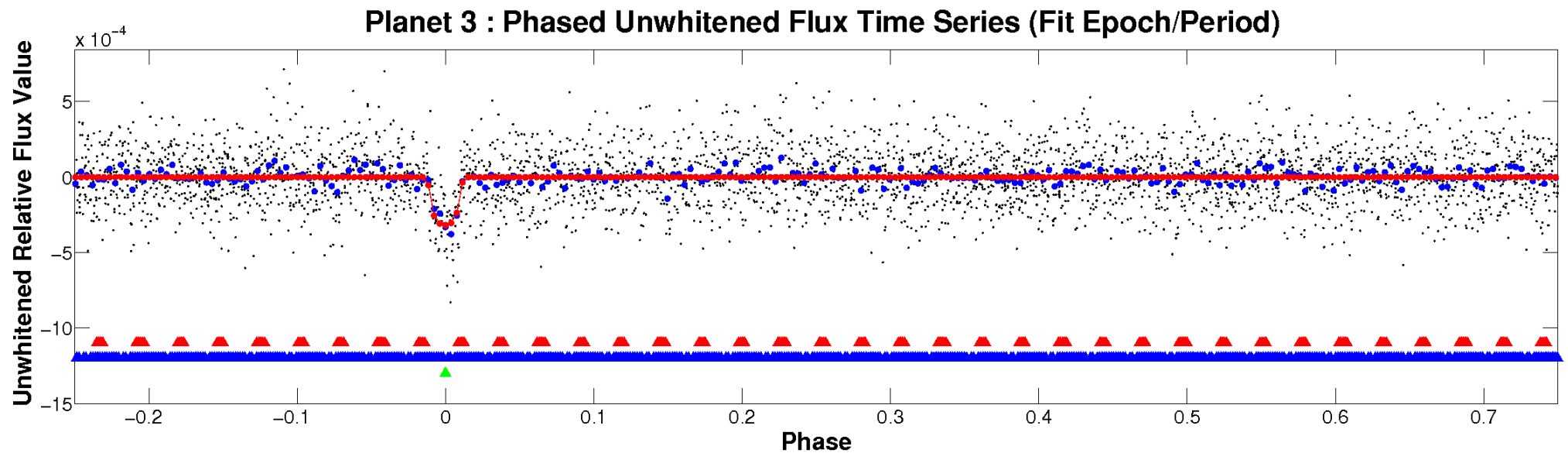


# ALT Odd/Even

TCE 010788461-03



# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 010788461-03 P= 5.323263 Days  $T_0=133.135813$  (BKJD)





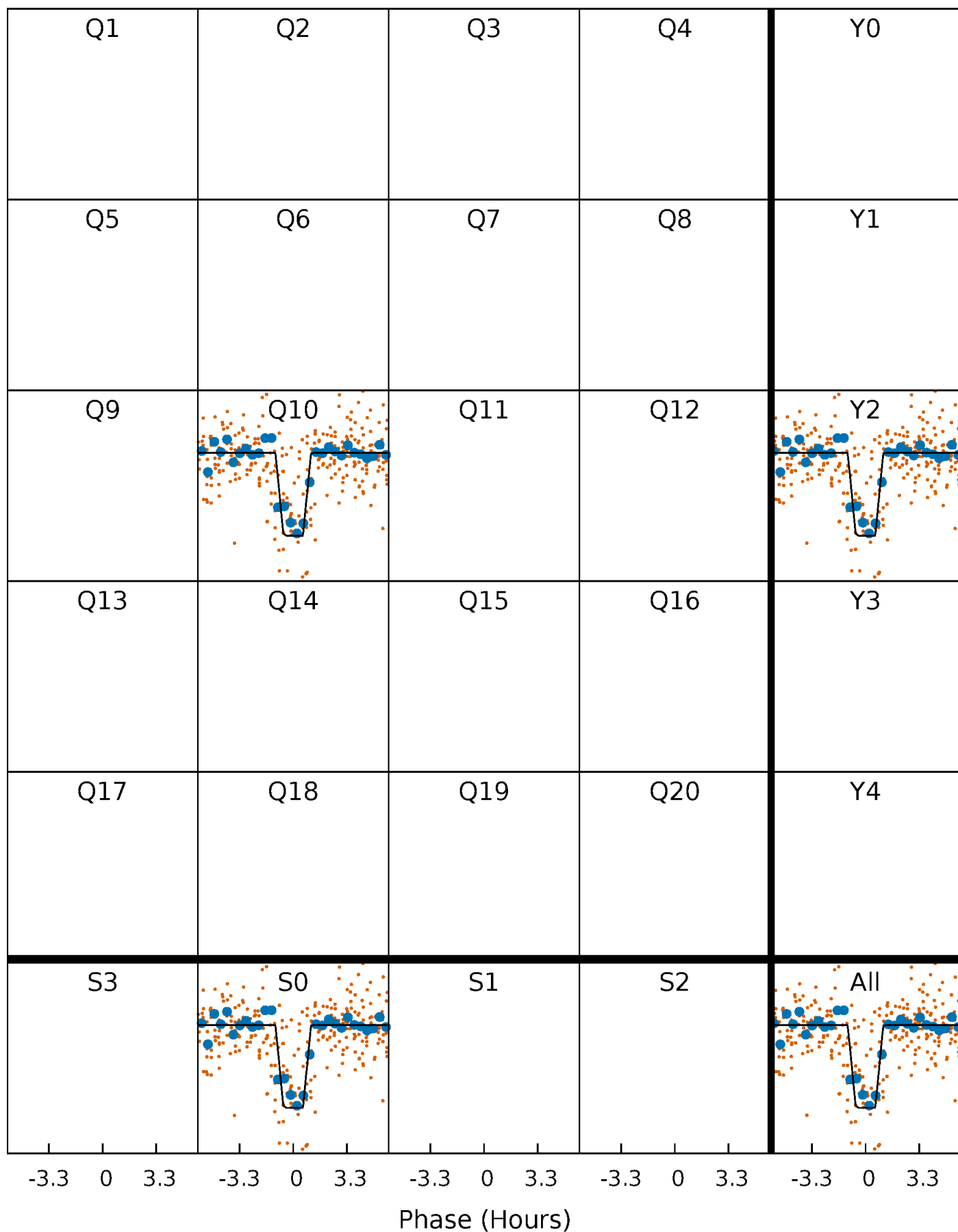
# DV Quarter-Phased Transit Curves

TCE 010788461-03     $P = 5.323263$  Days     $T_0 = 133.135813$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

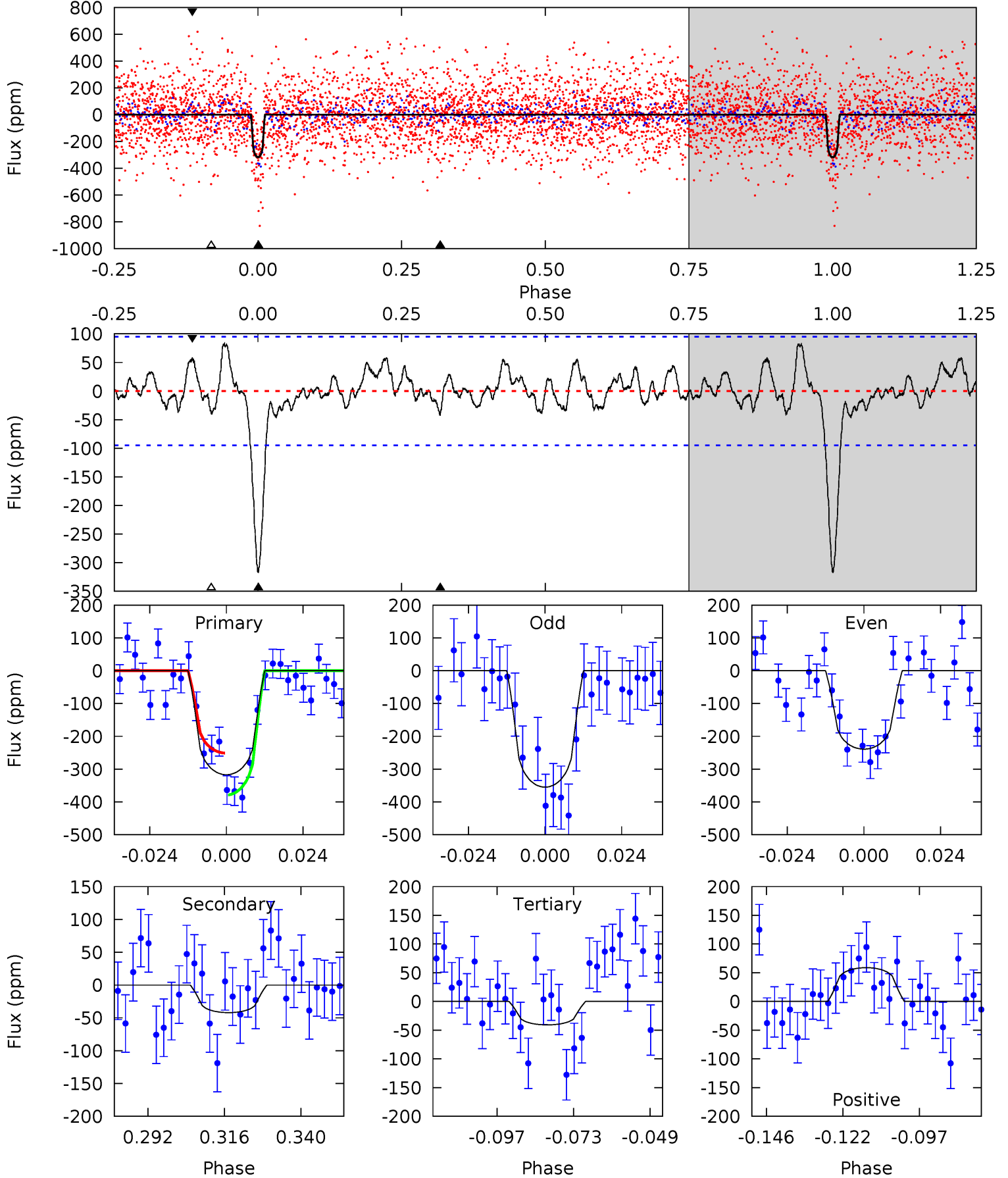
TCE 010788461-03 P= 5.323158 Days  $T_0=133.163589$  (BKJD)



# DV Model-Shift Uniqueness Test

010788461-03, P = 5.323263 Days, E = 133.135813 Days

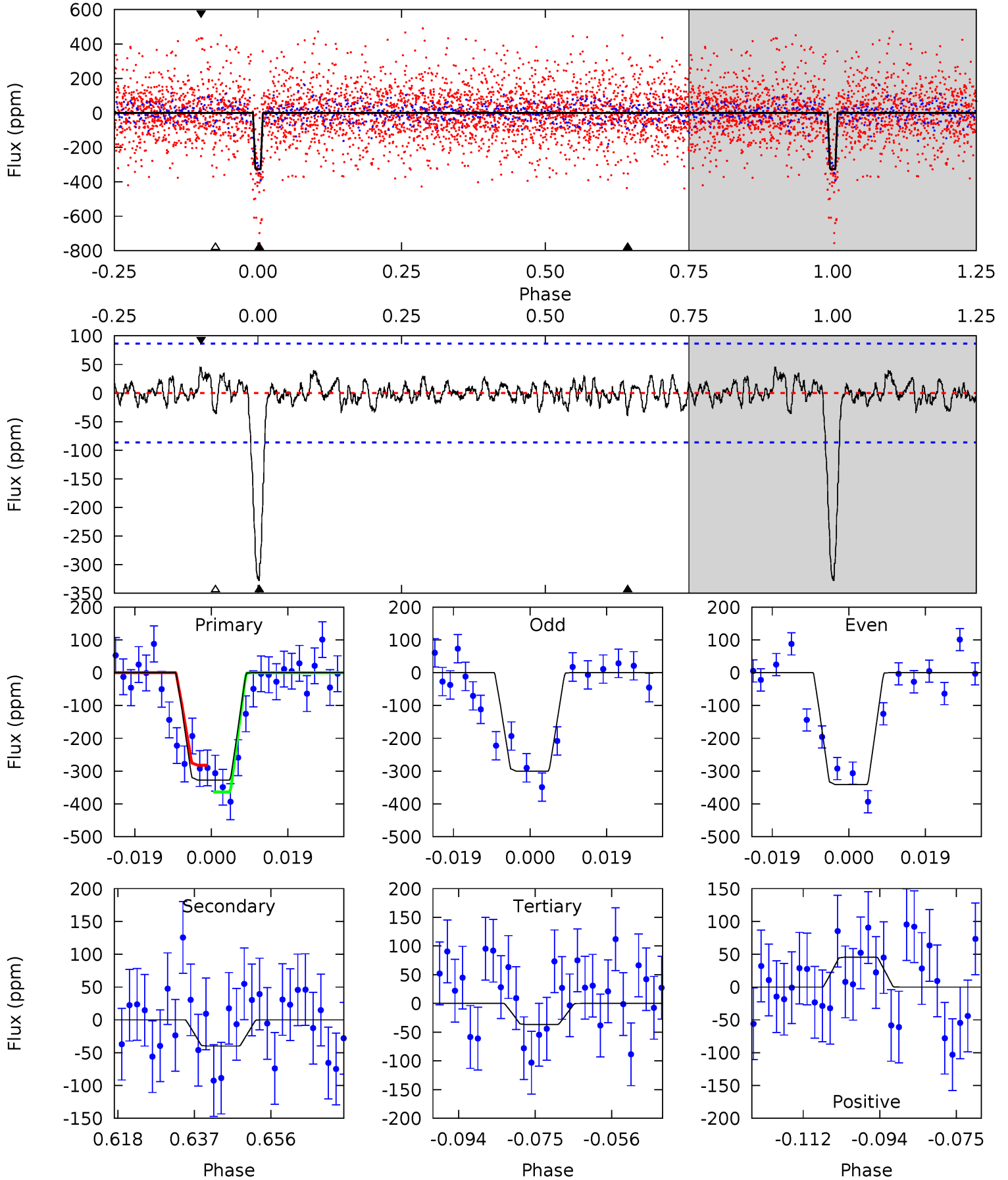
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	2.15	2.08	3.01	4.85	2.25	1.23	14.1	13.2	0.06	-0.86	2.93	1.01	0.21	3.27



# Alt Model-Shift Uniqueness Test

010788461-03, P = 5.323158 Days, E = 133.163589 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
18.6	2.27	2.08	2.59	4.90	2.35	0.82	16.5	16.0	0.19	-0.32	1.16	1.06	0.12	2.35



### Stellar Parameters For KIC 010788461

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5678^{+171}_{-188}$	$4.215^{+0.246}_{-0.164}$	$0.200^{+0.200}_{-0.300}$	$1.303^{+0.341}_{-0.341}$	$1.015^{+0.122}_{-0.111}$	$0.647^{+0.896}_{-0.281}$
	+3%/-3%	+6%/-4%	+100%/-150%	+26%/-26%	+12%/-11%	+139%/-43%
Source	KIC0	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 010788461-03 / KOI 3925.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-42 \pm 20$	$3.26^{+2.73}_{-2.07}$	$1632^{+117}_{-128}$	$3434^{+1745}_{-670}$	$7.712^{+56.855}_{-5.937}$
Alt.	$-40 \pm 18$	$3.62^{+2.83}_{-2.31}$	$1618^{+119}_{-130}$	$3285^{+1418}_{-600}$	$5.882^{+36.531}_{-4.263}$

$T_{\text{max}}$  = 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

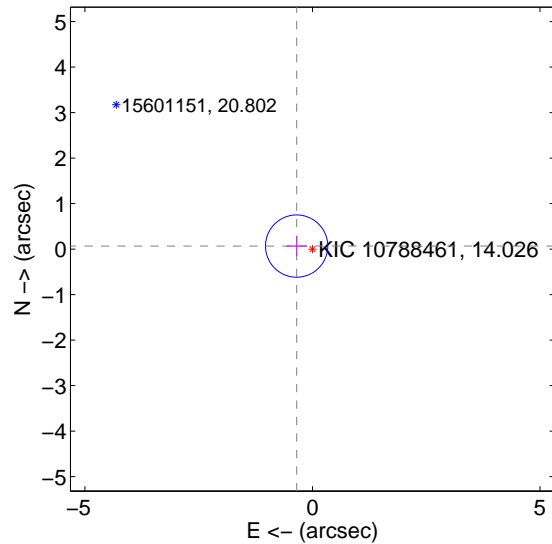
Supplemental centroid analysis for 010788461-03. Kepler magnitude: 14.03. Transit SNR 10.89

There are 1 quarters with good PRF difference image offsets

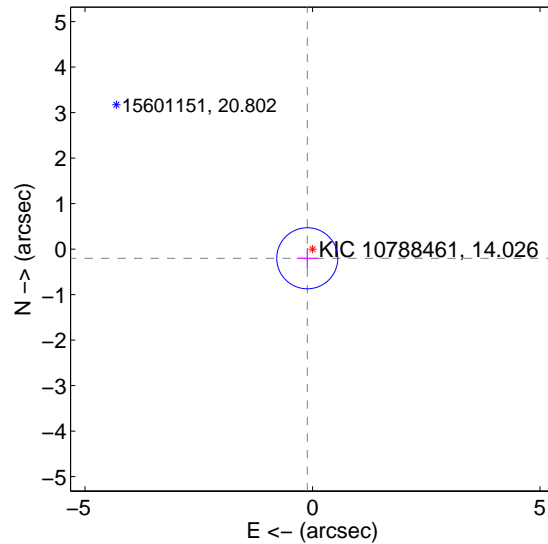
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.353 \pm 0.228$	1.55	$0.347 \pm 0.228$	$0.066 \pm 0.222$
PRF-fit source offset from KIC position	$0.232 \pm 0.224$	1.04	$0.115 \pm 0.228$	$-0.202 \pm 0.222$
photometric centroid source offset	$1.60 \pm 0.94$	1.69	$1.55 \pm 0.95$	$-0.39 \pm 0.82$

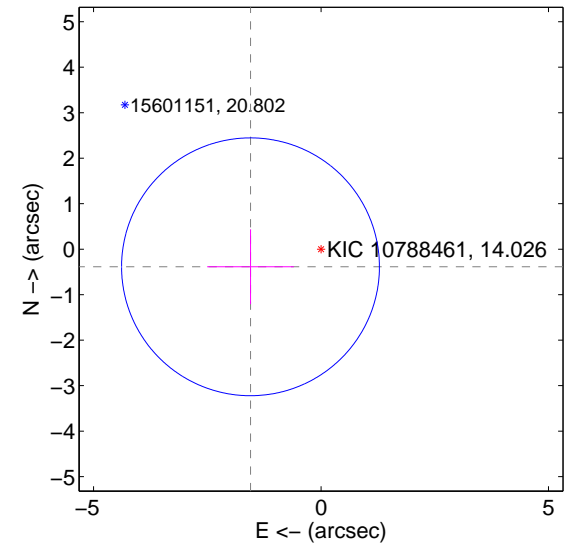
offset from difference PRF-fit to OOT PRF-fit



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.

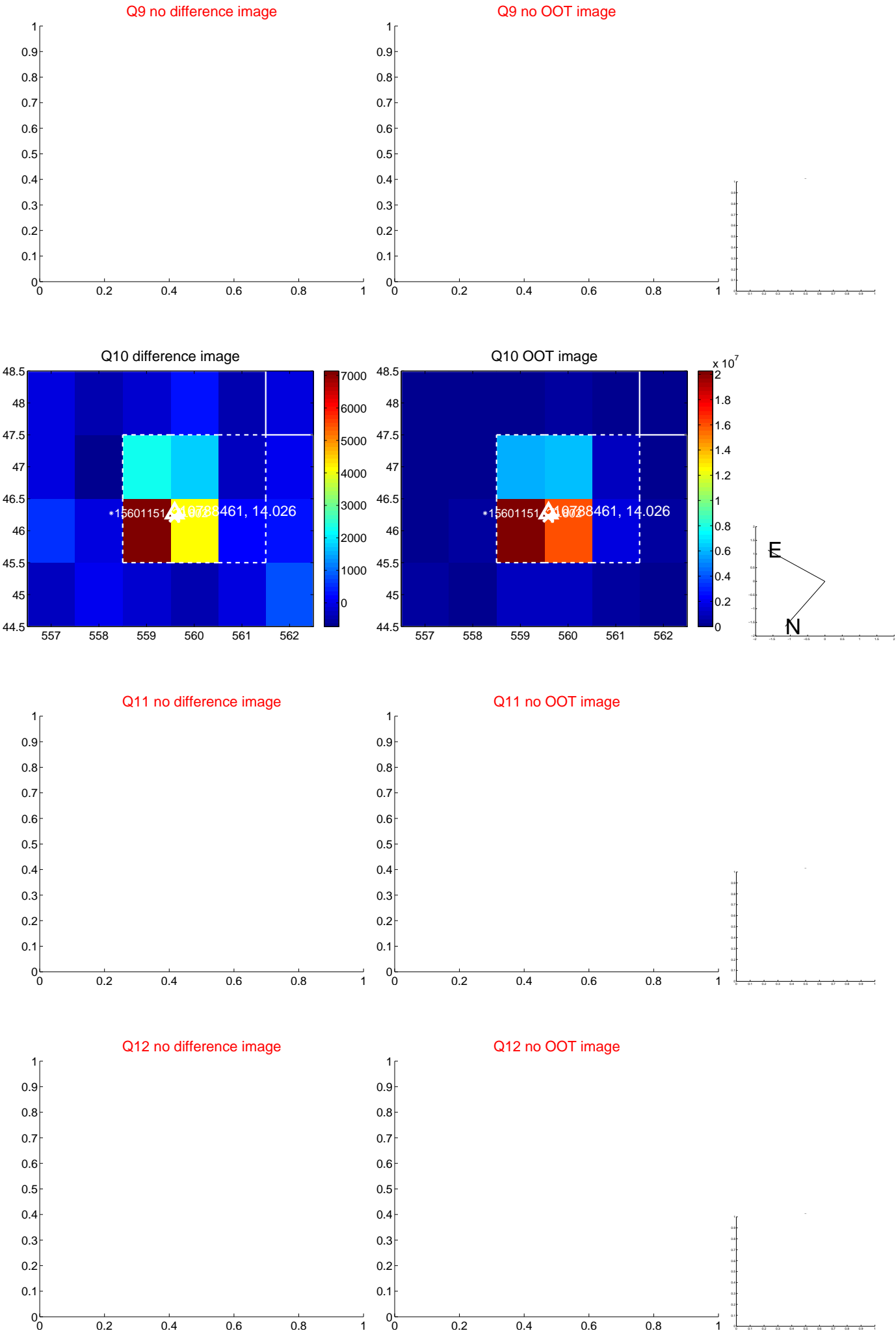


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





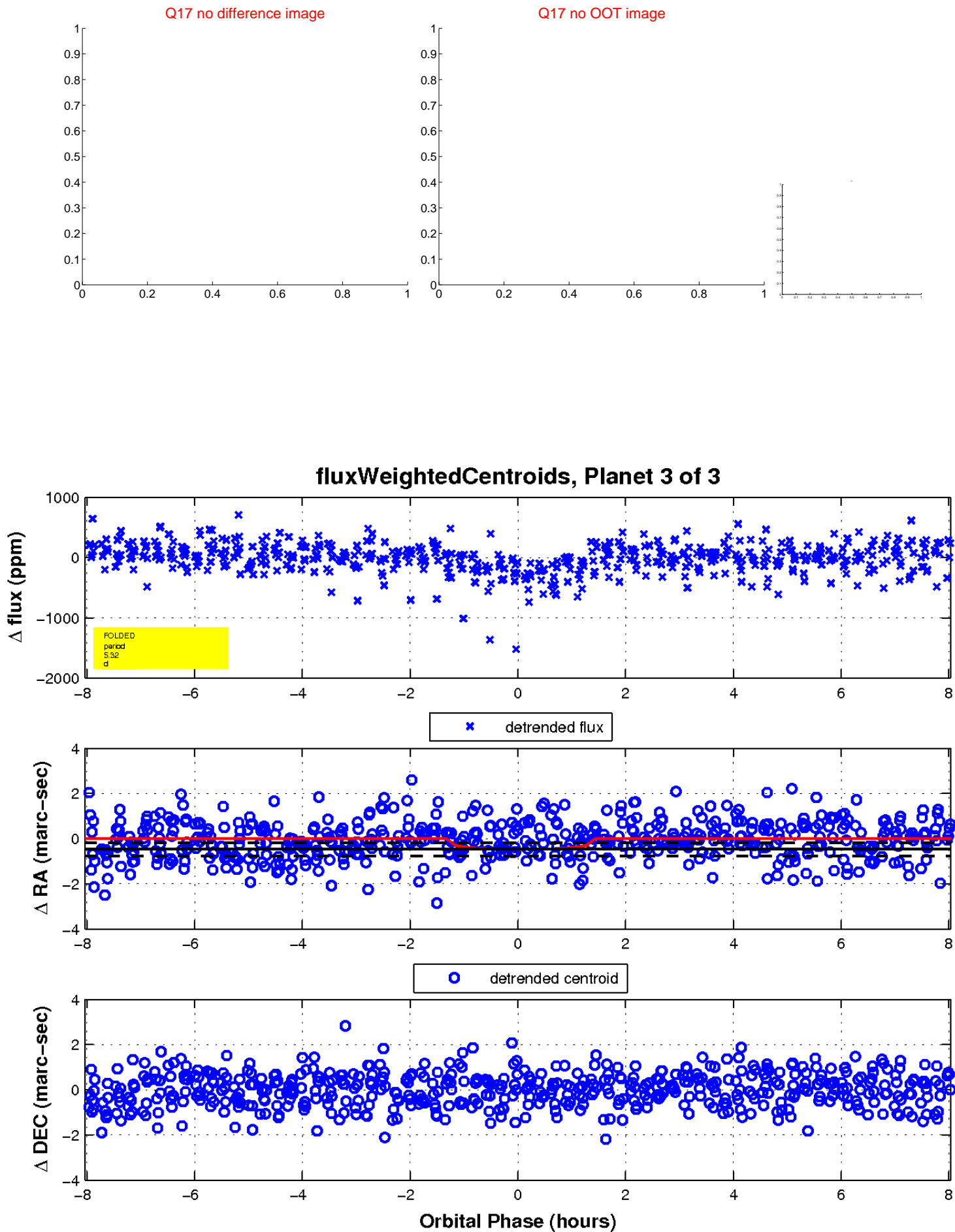
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

