

# KIC 006128330

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006128330-01	OBS	No	68.867256	181.335488	816.4	11.941	36.9	2.8	2.31	7485	6.99	95.80
006128330-02	OBS	No	68.565727	149.371198	17504.3	6.574	33.8	16.3	2.31	7485	52.57	96.37
006128330-03	OBS	No	51.594257	176.166760	12370.9	7.587	21.6	13.5	2.31	7485	44.52	140.80
006128330-04	OBS	No	59.350137	134.934911	5501.3	7.889	16.5	6.9	2.31	7485	30.29	116.82
006128330-05	OBS	No	59.381639	161.432537	727.5	3.500	12.8	-1.0	2.31	7485	6.33	116.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006128330-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006128330-03	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST
006128330-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

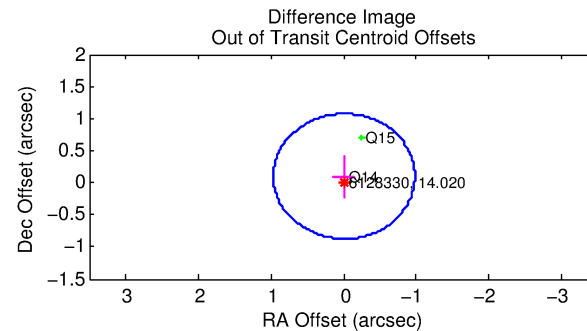
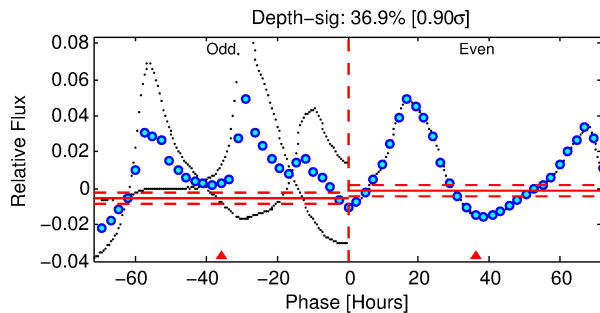
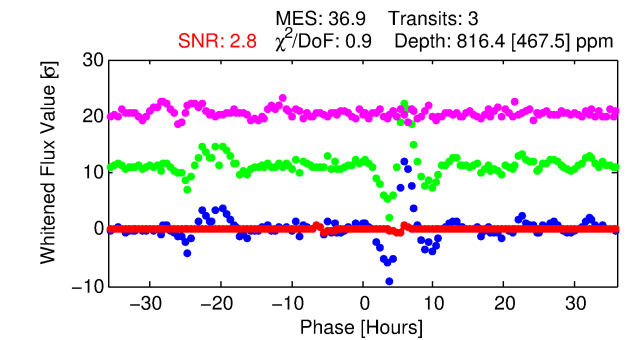
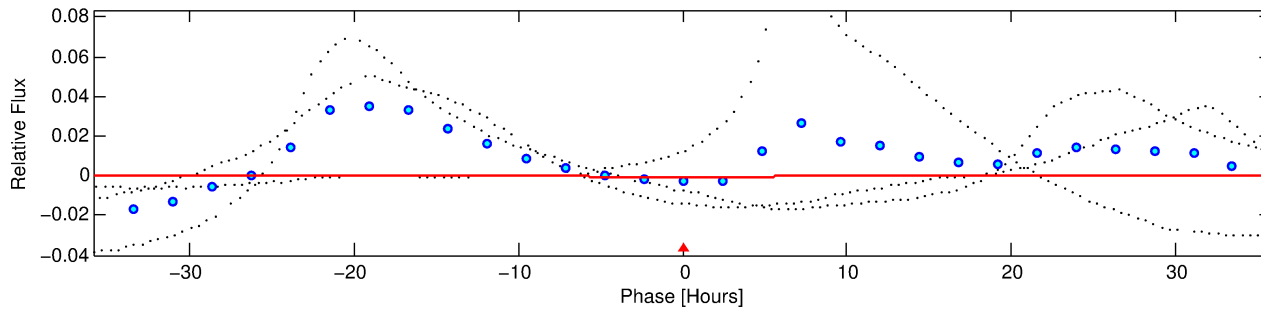
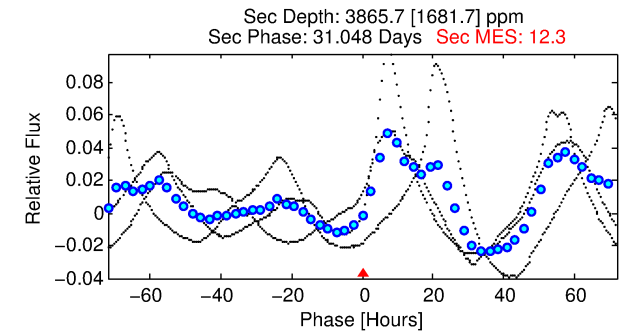
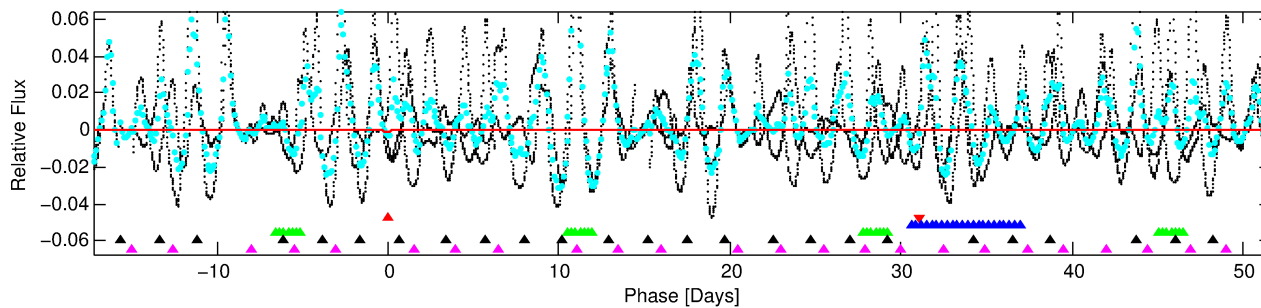
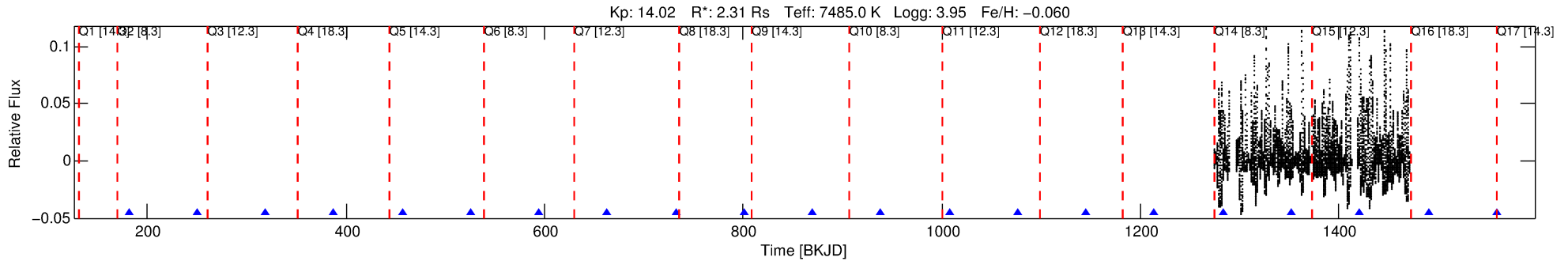
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006128330-01

No Significant Match Found

# DV One-Page Summary

KIC: 6128330 Candidate: 1 of 5 Period: 68.867 d



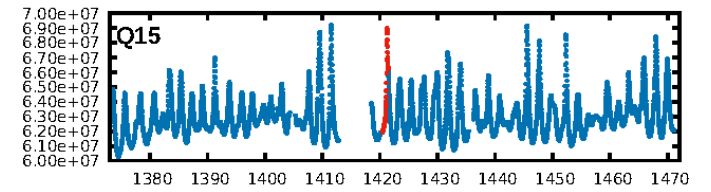
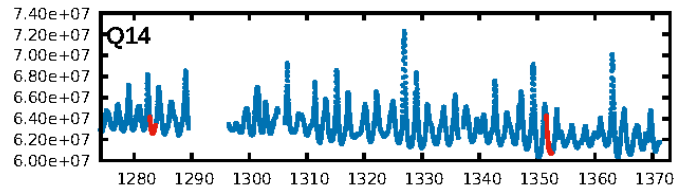
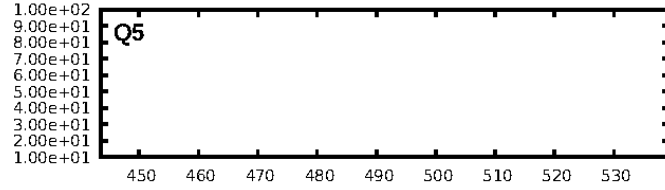
## DV Fit Results:

Period = 68.86726 [0.00553] d  
Epoch = 181.3355 [0.0988] BKJD  
Rp/R\* = 0.0277 [0.0120]  
a/R\* = 35.52 [60.21]  
b = 0.64 [1.57]  
Seff = 95.80 [45.66]  
Teq = 798 [95] K  
Rp = 6.99 [3.80] Re  
a = 0.3958 [0.1159] AU  
Ag = 6818.49 [7262.82] [0.94σ]  
**Teffp = 11208 [2751] K [3.78σ]**

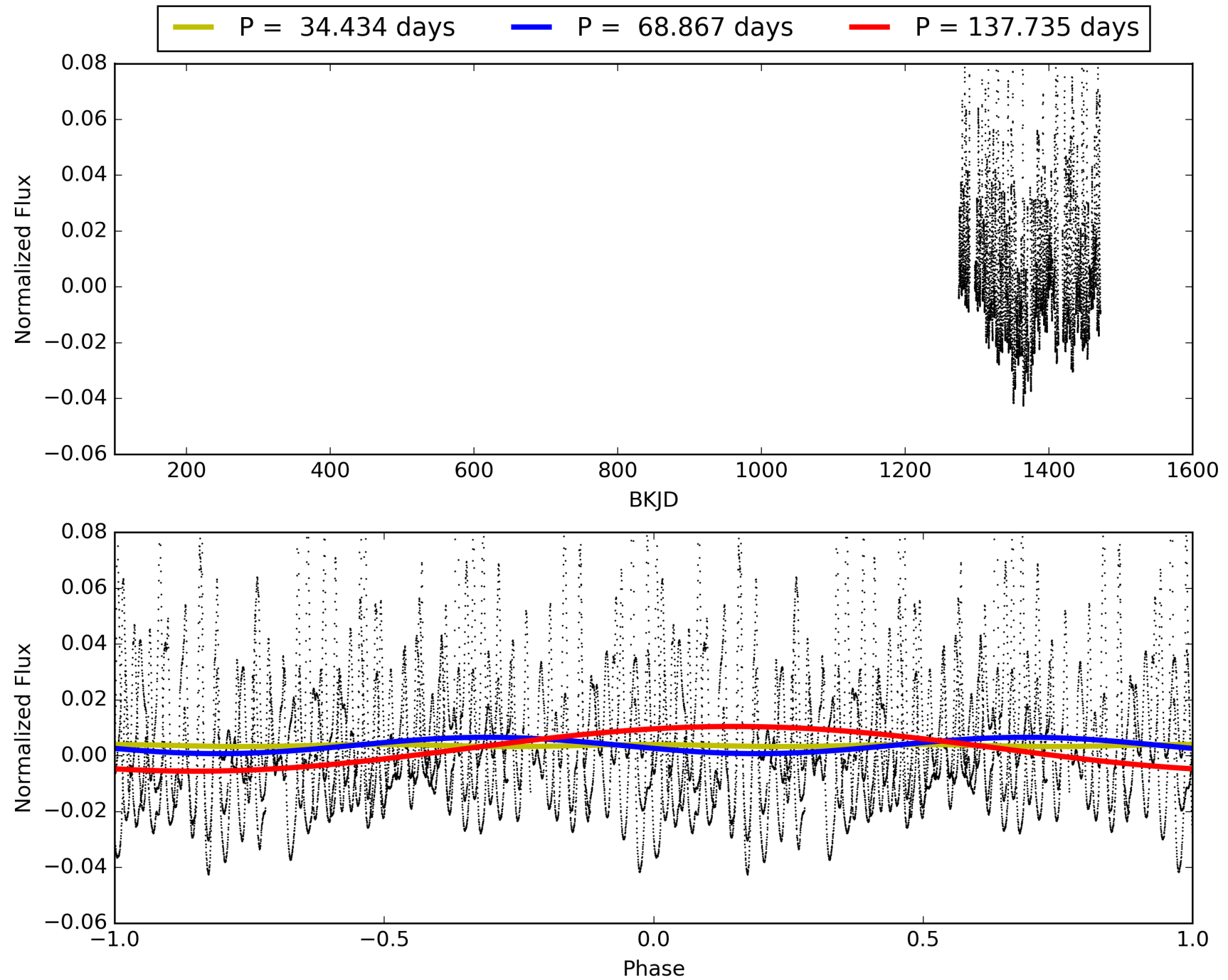
## DV Diagnostic Results:

ShortPeriod-sig: 40.5% [0.53σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 15.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.8692  
Centroid-sig: N/A  
Centroid-so: 2.233 arcsec [2.03σ]  
OotOffset-rm: 0.100 arcsec [0.31σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-rm: 0.281 arcsec [1.09σ]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 006128330-01, PDC Light Curves

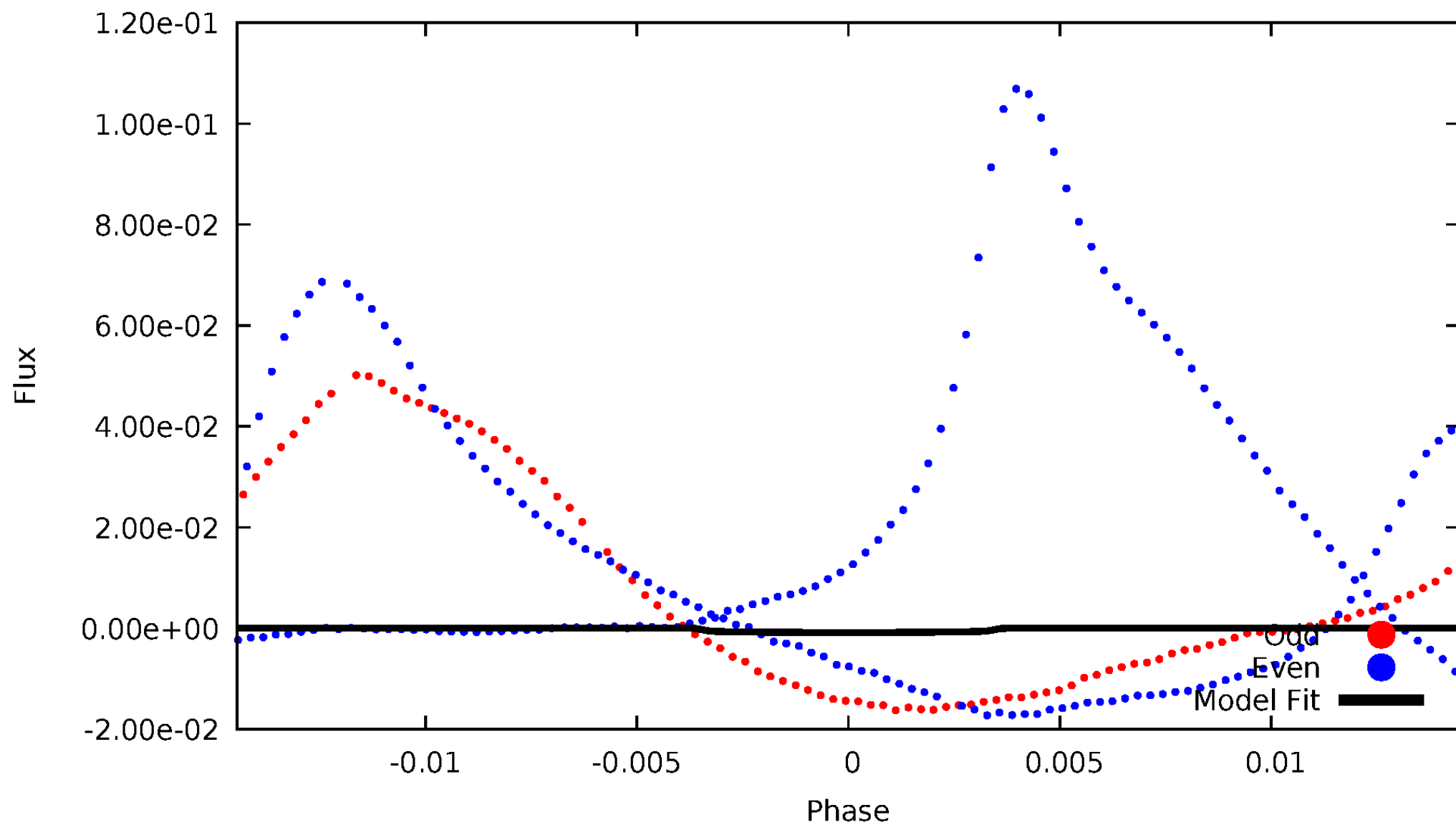


# TCE 006128330-01



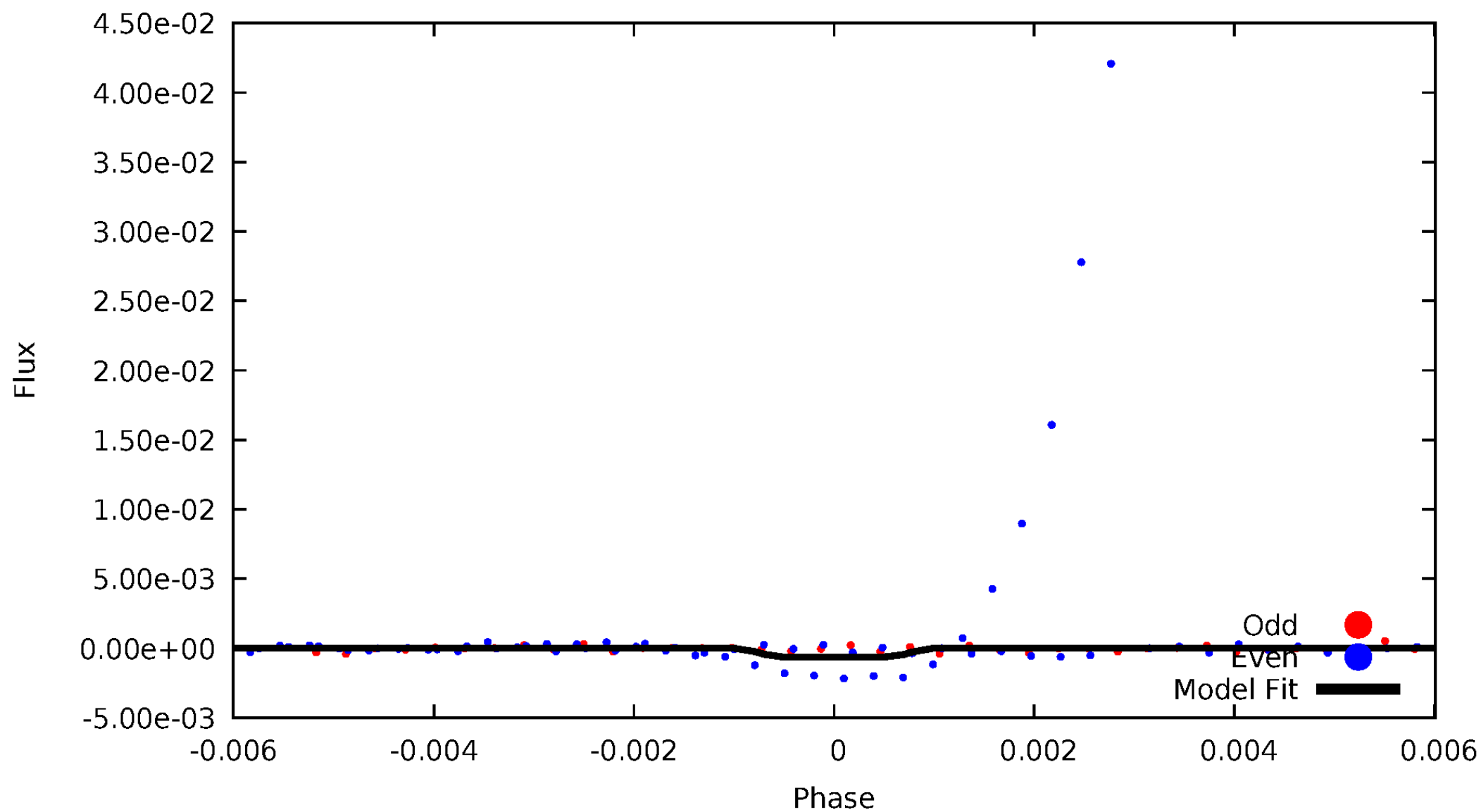
# DV Odd/Even

TCE 006128330-01



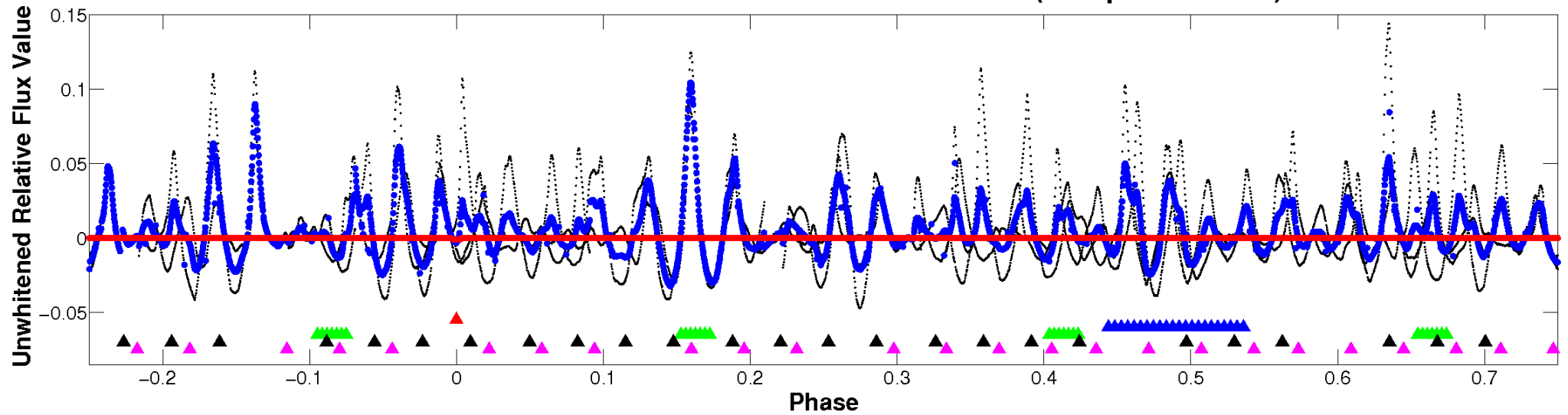
# ALT Odd/Even

TCE 006128330-01

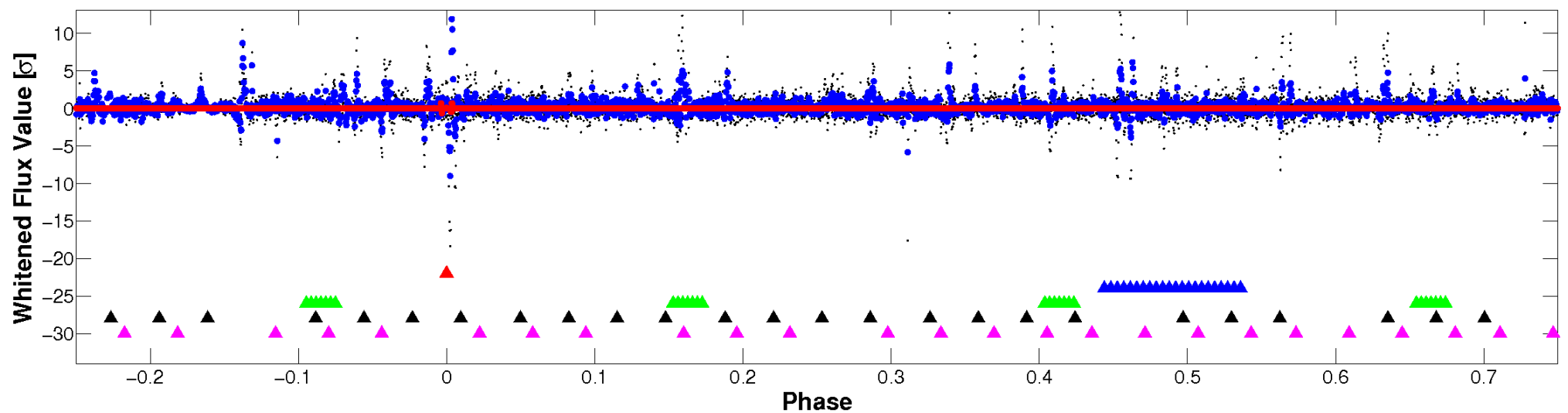


# Non-Whitened Vs. Whitened Light Curve

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

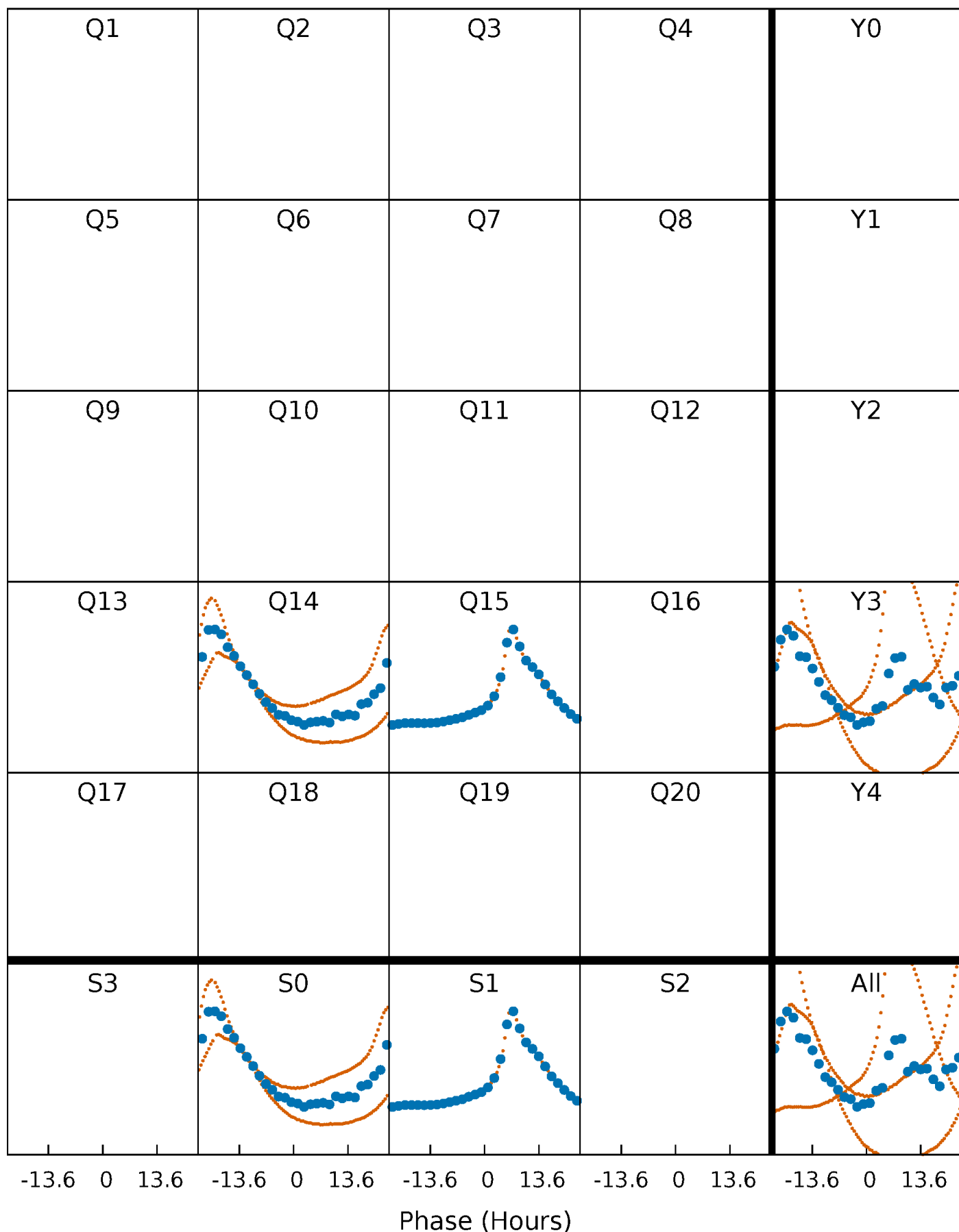


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

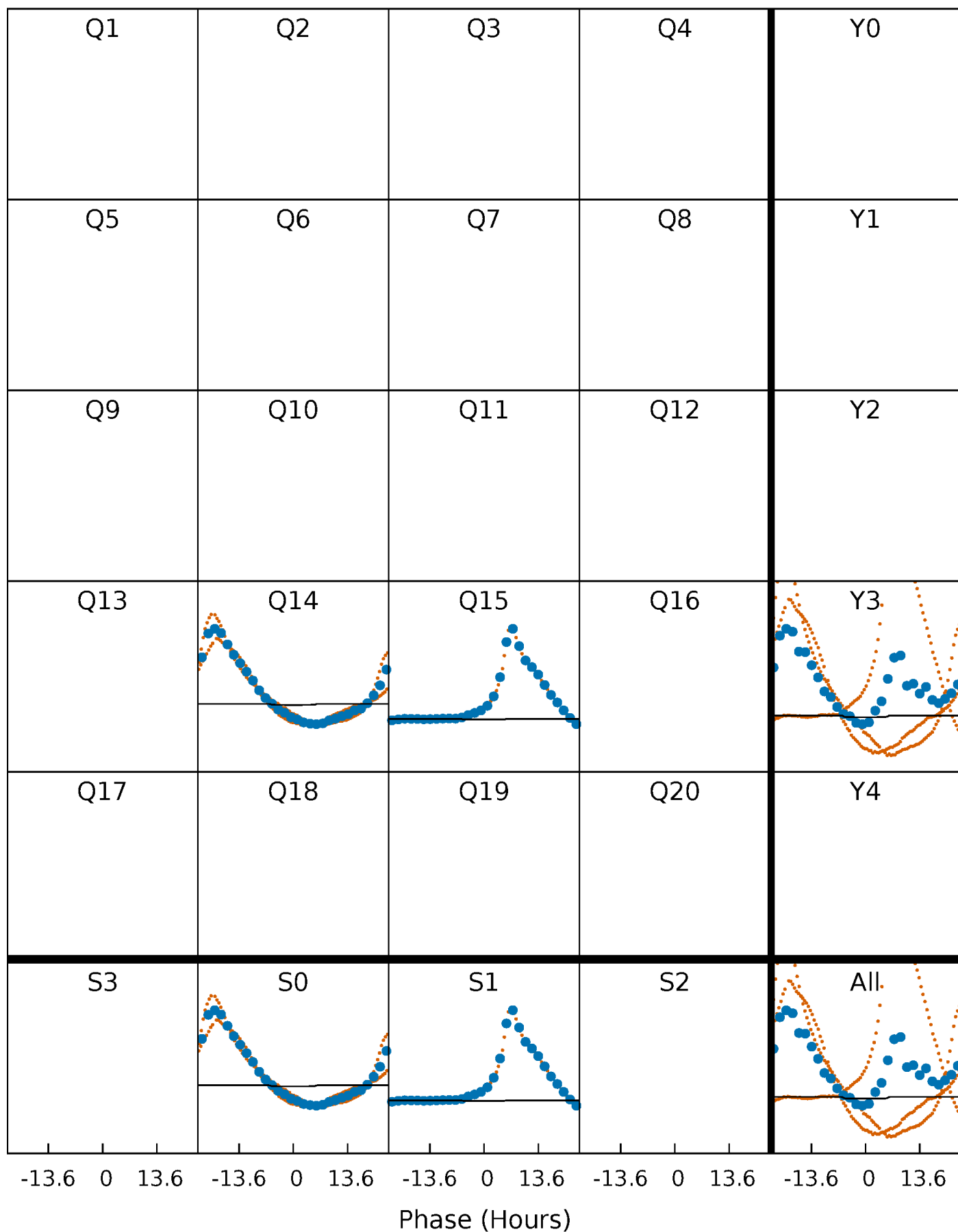
TCE 006128330-01 P= 68.867256 Days  $T_0=181.335488$  (BKJD)





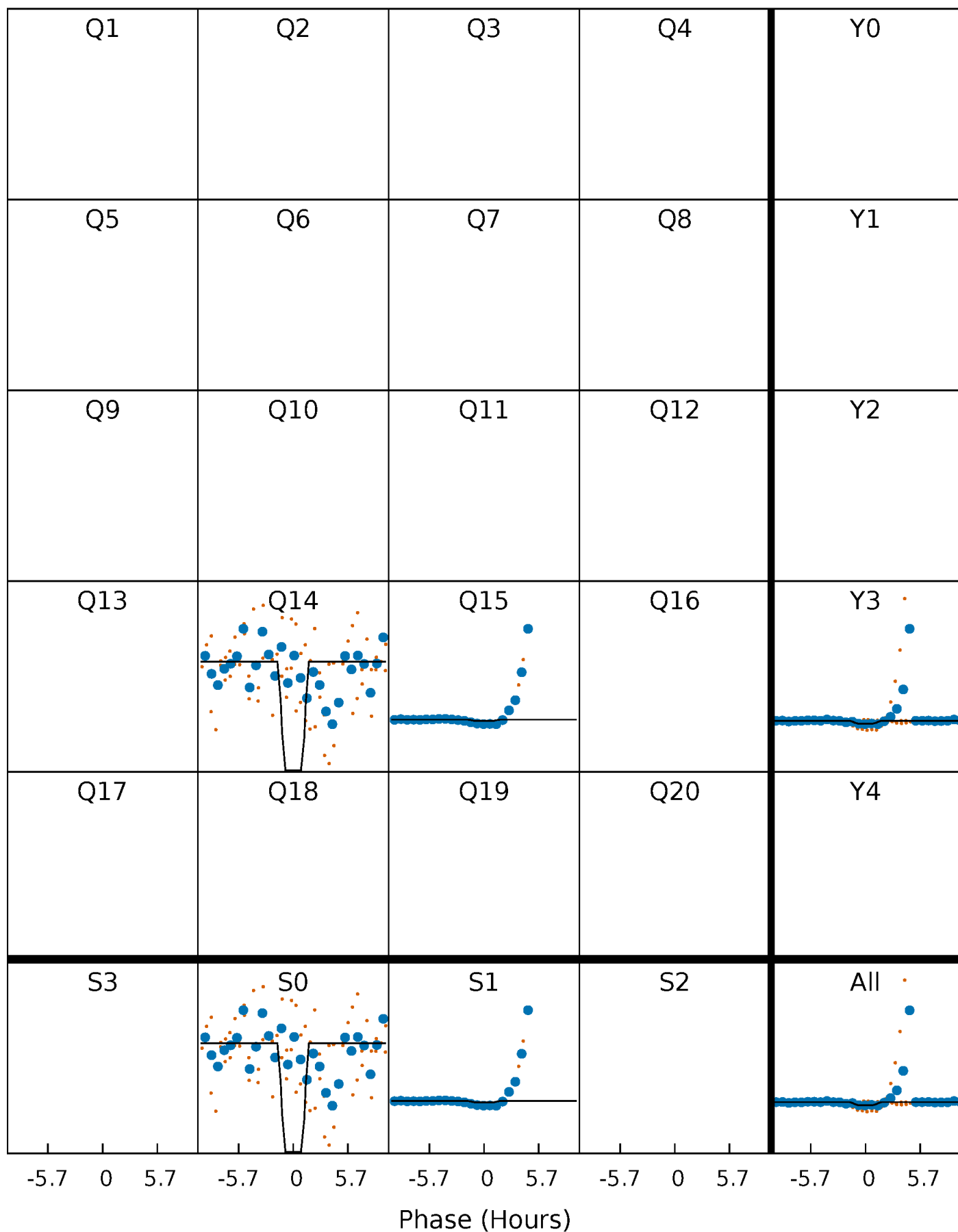
# DV Quarter-Phased Transit Curves

TCE 006128330-01 P= 68.867256 Days  $T_0=181.335488$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

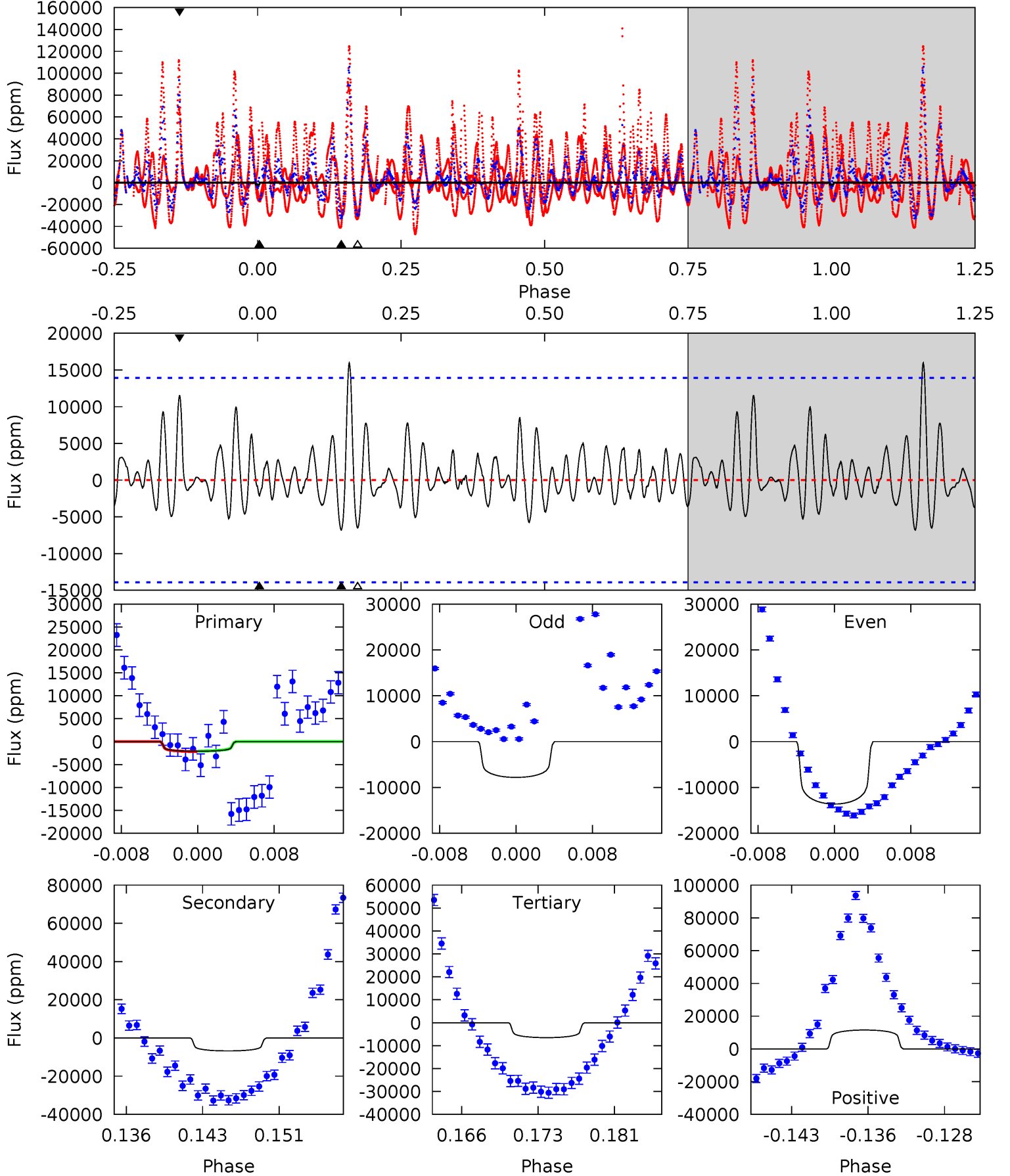
TCE 006128330-01 P= 68.904233 Days  $T_0=180.711692$  (BKJD)



# DV Model-Shift Uniqueness Test

006128330-01, P = 68.867256 Days, E = 181.335488 Days

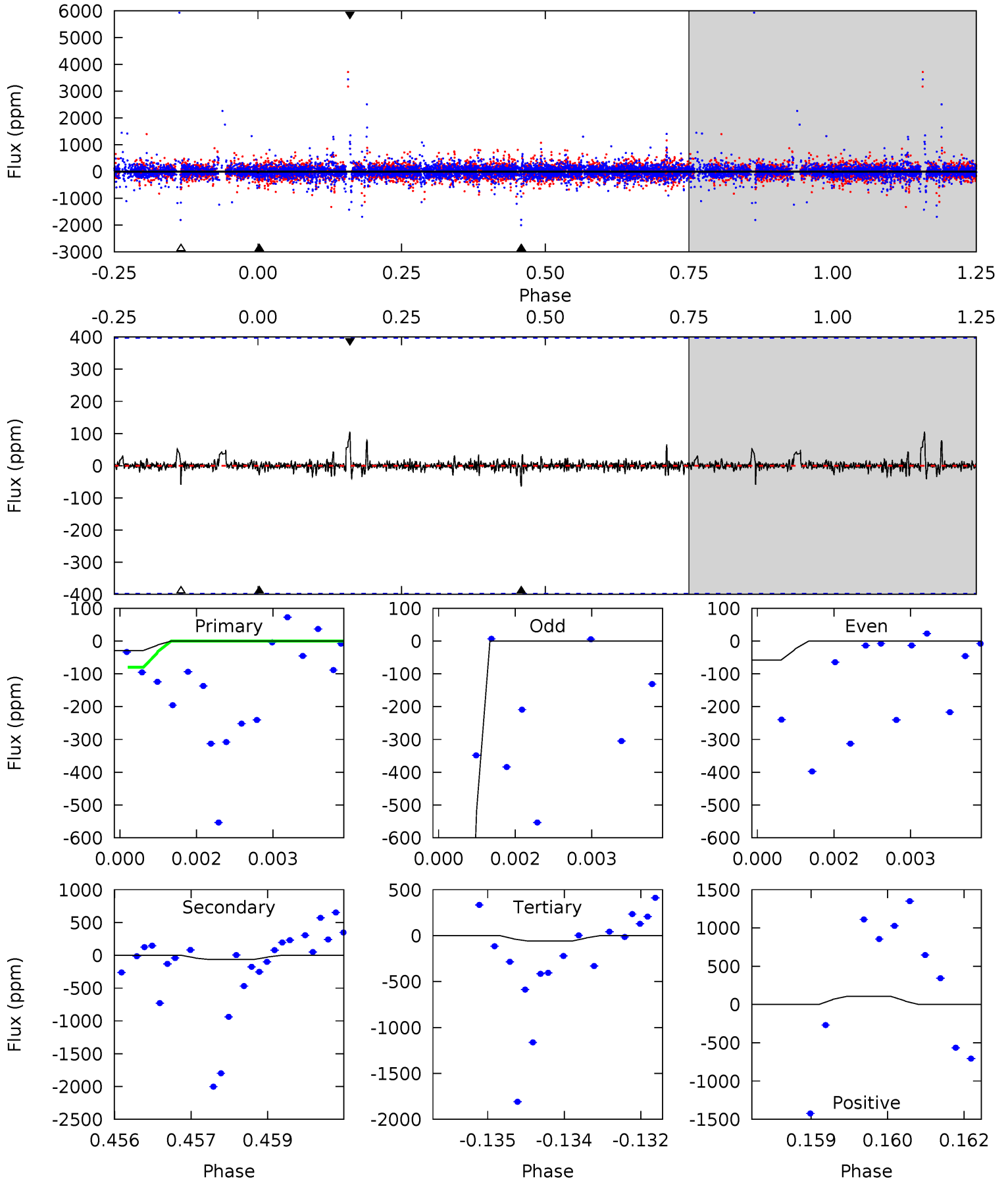
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.77	2.47	2.38	4.20	5.08	2.67	1.14	-1.61	-3.43	0.09	-1.73	0.99	-0.06	0.70	0.02



# Alt Model-Shift Uniqueness Test

006128330-01, P = 68.904233 Days, E = 180.711692 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.39	0.87	0.79	1.43	5.37	3.16	0.13	-0.40	-1.04	0.08	-0.55	5.65	12.5	0.62	0.42



### Stellar Parameters For KIC 006128330

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7485^{+209}_{-314}$	$3.952^{+0.253}_{-0.136}$	$-0.060^{+0.200}_{-0.350}$	$2.310^{+0.507}_{-0.760}$	$1.743^{+0.195}_{-0.363}$	$0.199^{+0.337}_{-0.084}$
	+3%/-4%	+6%/-3%	+333%/-583%	+22%/-33%	+11%/-21%	+169%/-42%
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 006128330-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-6778 \pm 2741$	$6.63^{+3.79}_{-2.88}$	$1100^{+85}_{-88}$	$17055^{+16320}_{-5811}$	$12496^{+29132}_{-7785}$
Alt.	$-65 \pm 74$	$6.09^{+3.10}_{-2.46}$	$1094^{+87}_{-95}$	$4225^{+1401}_{-7184}$	$122^{+385}_{-136}$

$T_{max}$  = 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

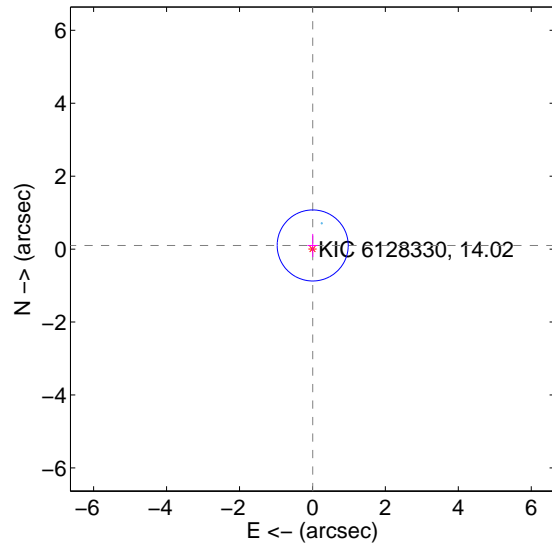
Supplemental centroid analysis for 006128330-01. Kepler magnitude: 14.02. Transit SNR 2.77

There are 2 quarters with good PRF difference image offsets

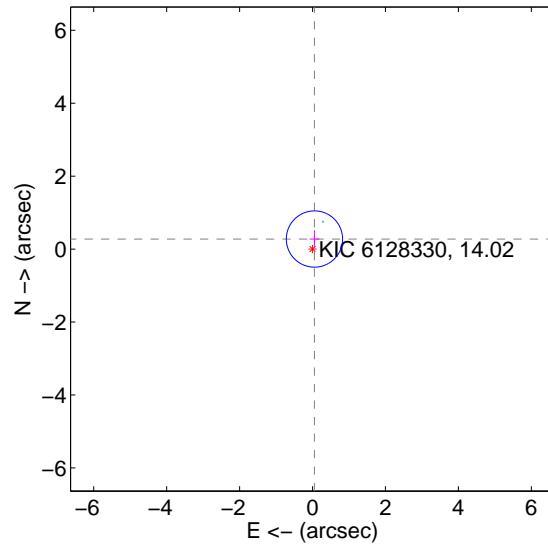
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.100 \pm 0.325$	0.31	$-0.007 \pm 0.143$	$0.100 \pm 0.317$
PRF-fit source offset from KIC position	$0.281 \pm 0.257$	1.09	$-0.053 \pm 0.133$	$0.276 \pm 0.240$
photometric centroid source offset	$2.23 \pm 1.10$	2.03	$1.69 \pm 1.32$	$1.46 \pm 0.69$

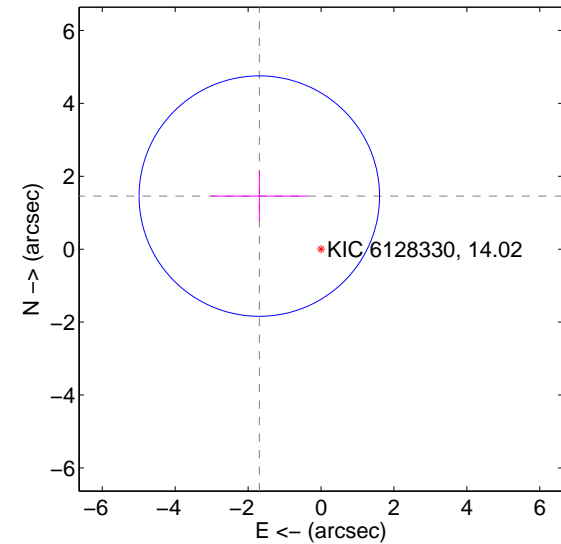
offset from difference PRF-fit to OOT PRF-fit



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.

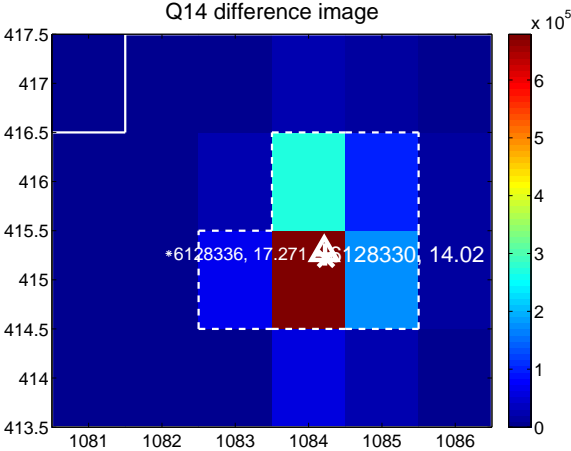
Q13 no difference image



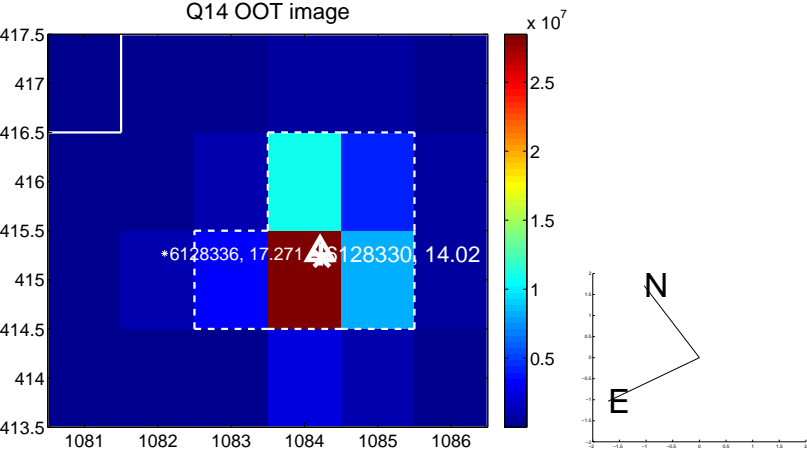
Q13 no OOT image



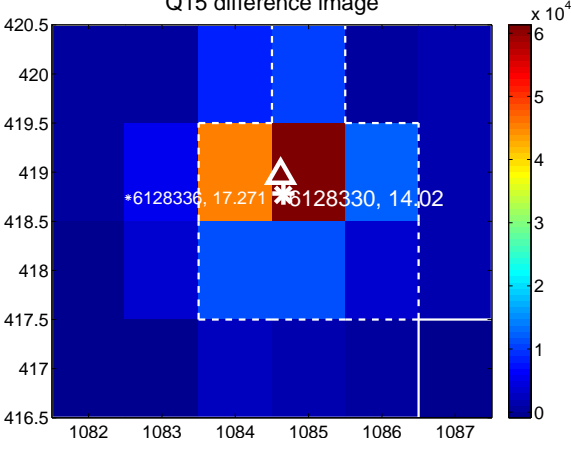
Q14 difference image



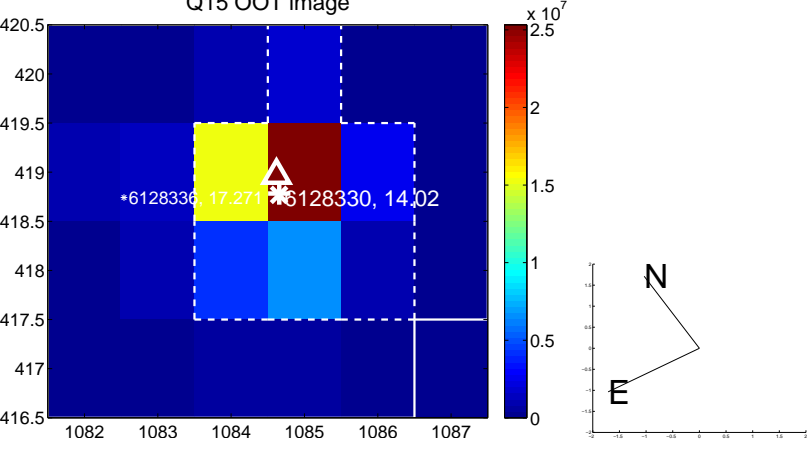
Q14 OOT image



Q15 difference image



Q15 OOT image



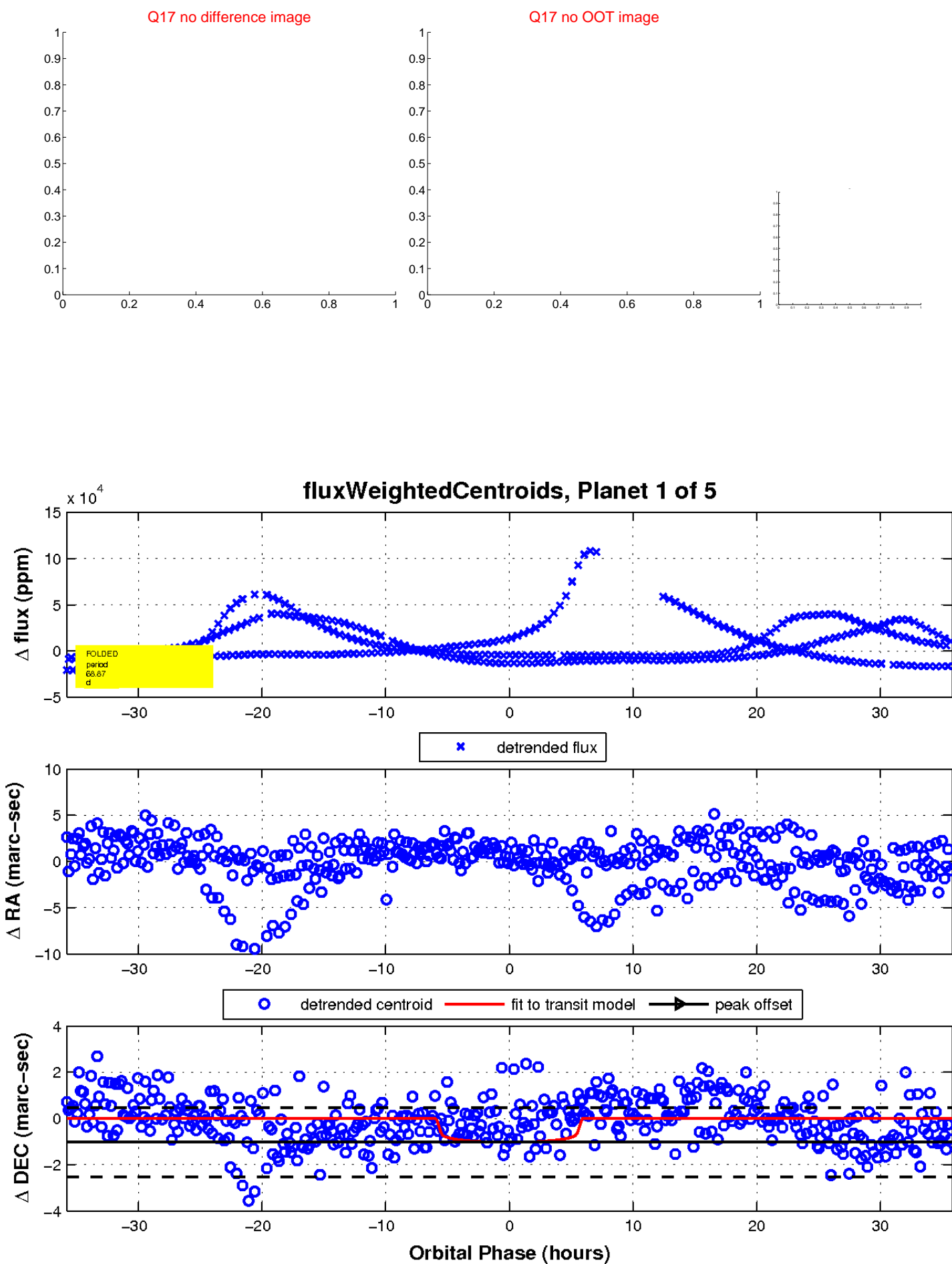
Q16 no difference image



Q16 no OOT image

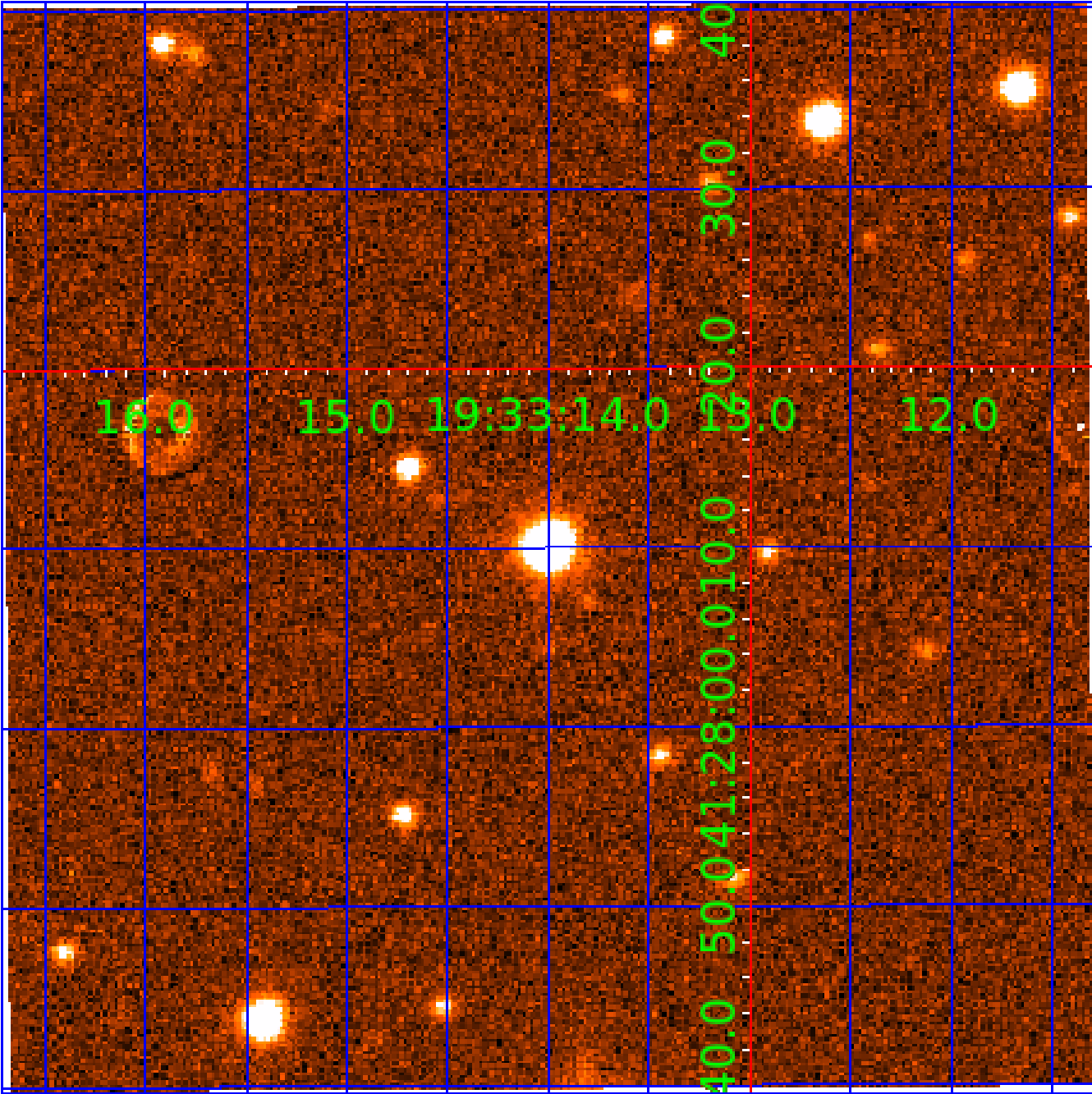


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006128330

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006128330-01	OBS	No	68.867256	181.335488	816.4	11.941	36.9	2.8	2.31	7485	6.99	95.80
006128330-02	OBS	No	68.565727	149.371198	17504.3	6.574	33.8	16.3	2.31	7485	52.57	96.37
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006128330-04	OBS	No	59.350137	134.934911	5501.3	7.889	16.5	6.9	2.31	7485	30.29	116.82
006128330-05	OBS	No	59.381639	161.432537	727.5	3.500	12.8	-1.0	2.31	7485	6.33	116.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006128330-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006128330-03	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST
006128330-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

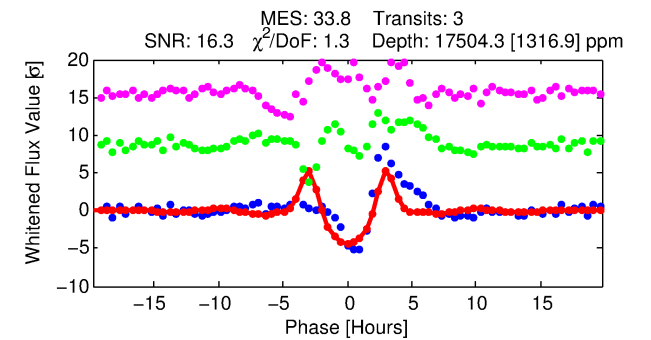
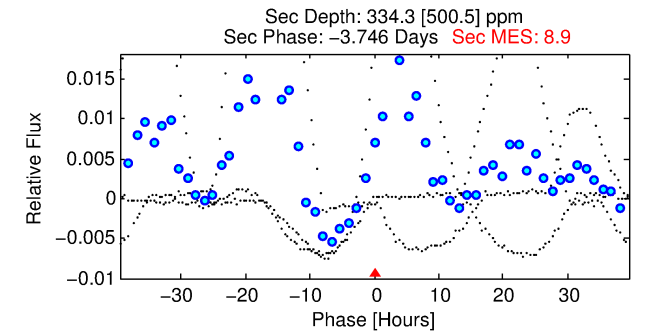
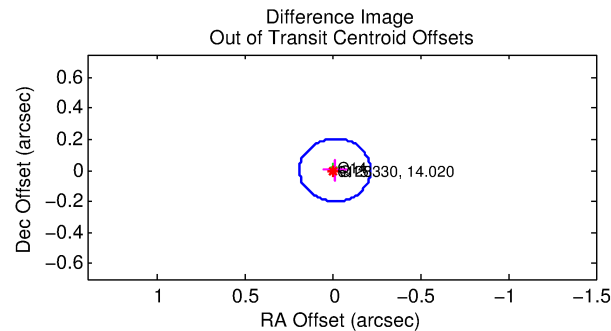
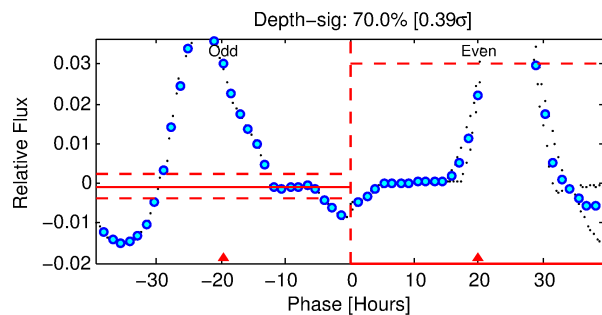
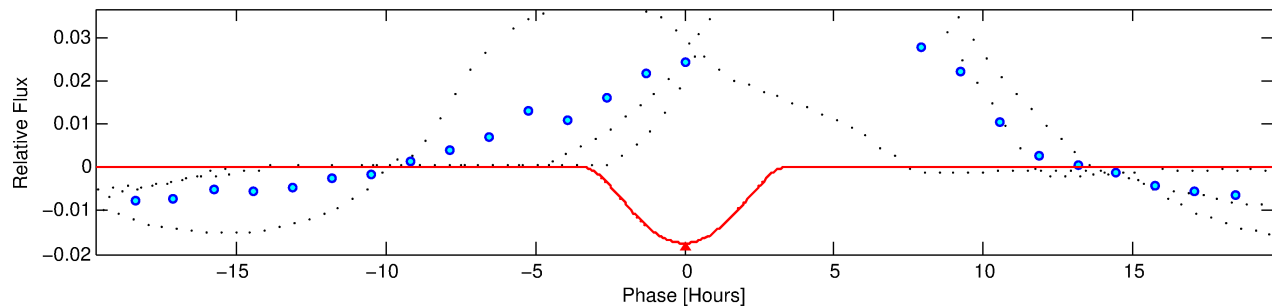
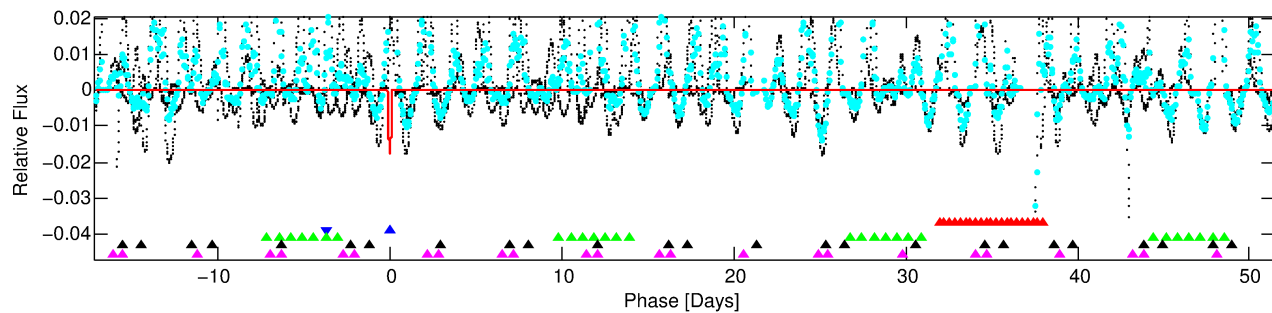
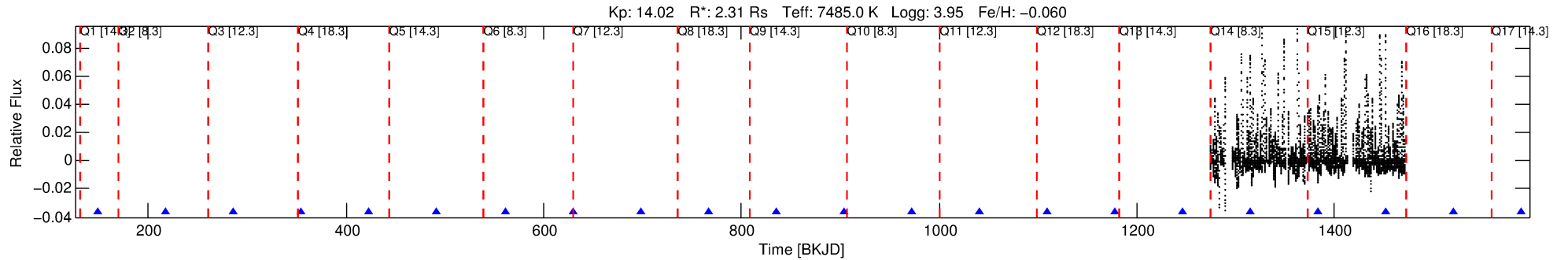
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006128330-02

No Significant Match Found

# DV One-Page Summary

KIC: 6128330 Candidate: 2 of 5 Period: 68.566 d



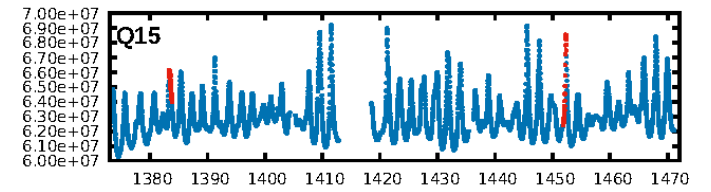
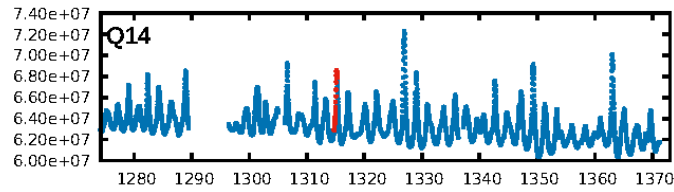
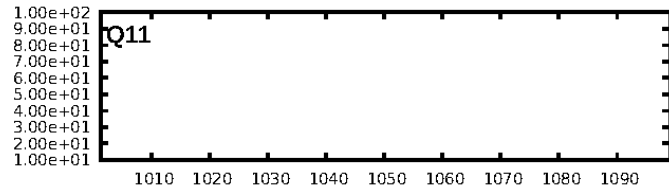
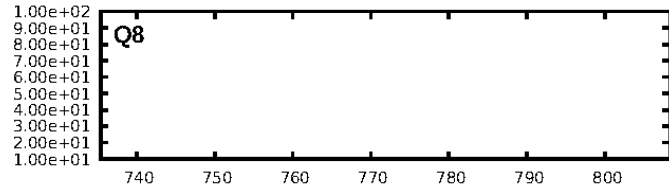
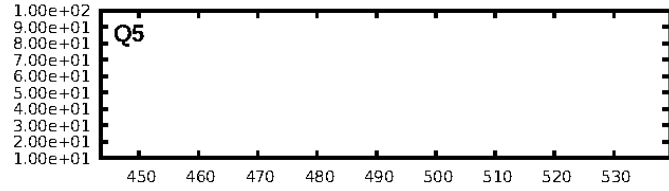
## DV Fit Results:

Period = 68.56573 [0.00183] d  
Epoch = 149.3712 [0.0330] BKJD  
Rp/R\* = 0.2085 [0.1191]  
a/R\* = 54.12 [3.76]  
b = 1.00 [0.16]  
Seff = 96.37 [45.92]  
Teff = 799 [95] K  
Rp = 52.57 [34.65] Re  
a = 0.3946 [0.1156] AU  
Ag = 10.36 [20.06] [0.47 $\sigma$ ]  
Teffp = 2216 [1048] K [1.35 $\sigma$ ]

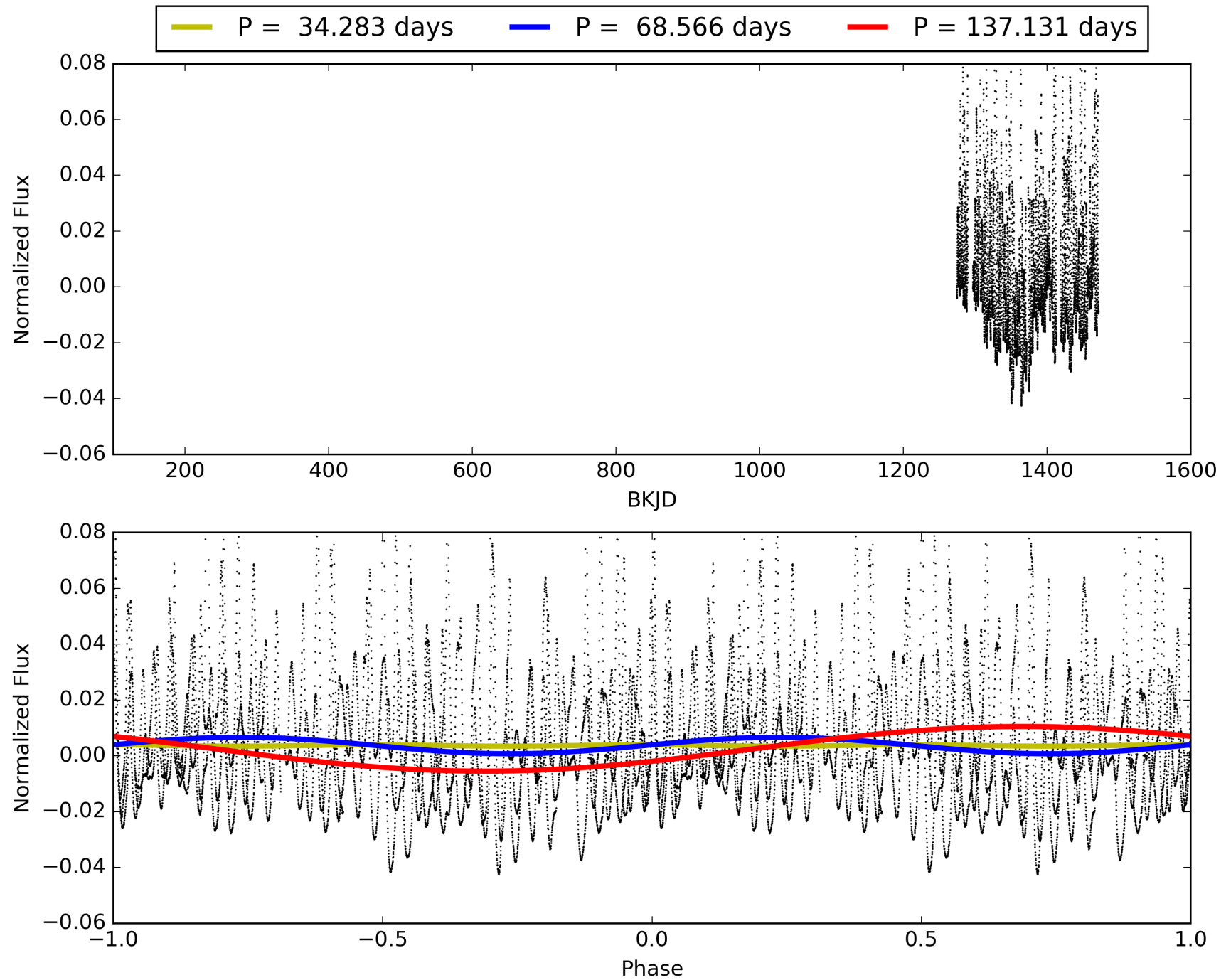
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [29.59 $\sigma$ ]  
LongPeriod-sig: 40.5% [0.53 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 51.9%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.873  
Centroid-sig: N/A  
Centroid-so: 0.180 arcsec [4.45 $\sigma$ ]  
OotOffset-rm: 0.012 arcsec [0.19 $\sigma$ ]  
KicOffset-rm: 0.092 arcsec [1.13 $\sigma$ ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 006128330-02, PDC Light Curves



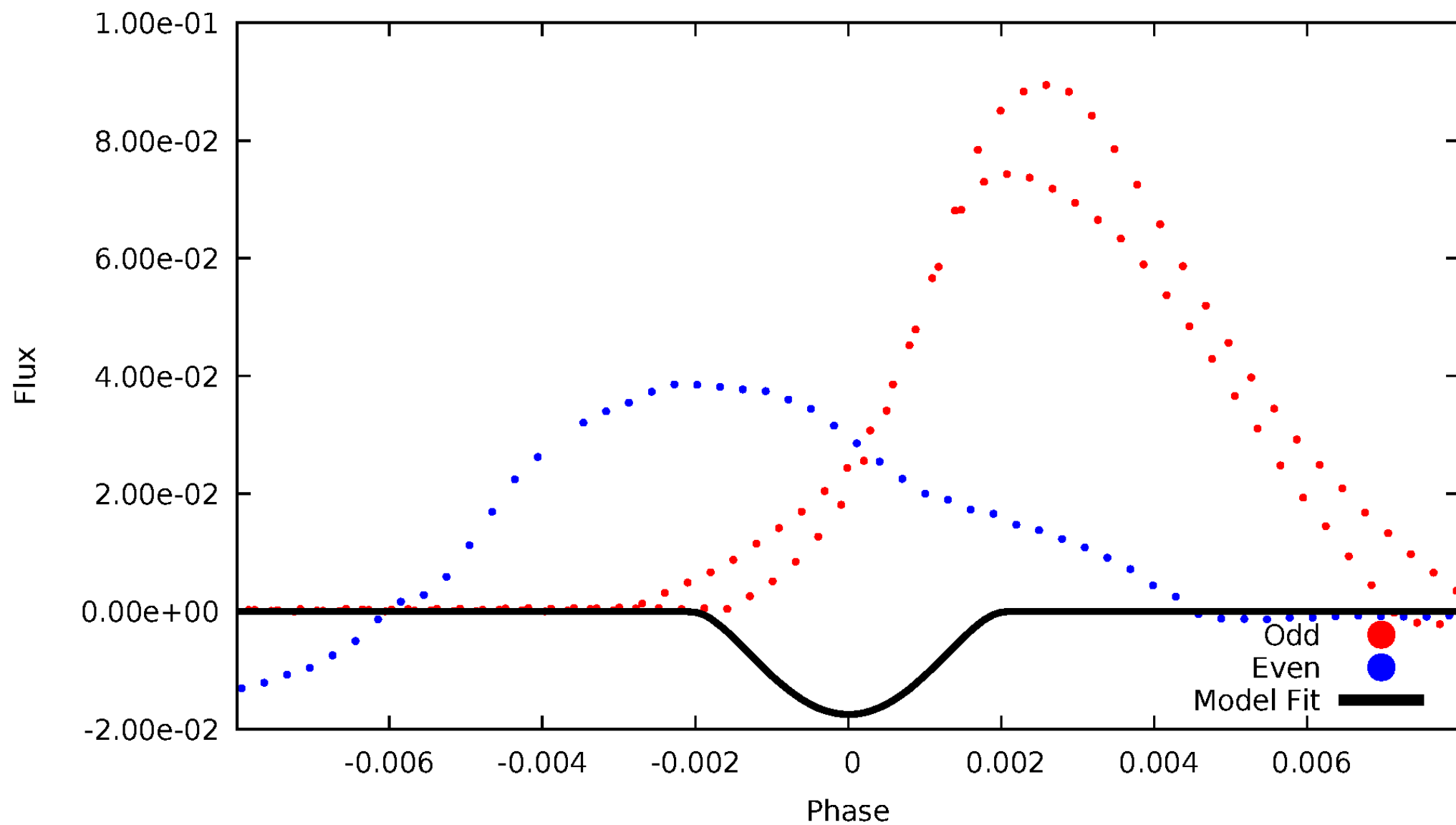
# TCE 006128330-02





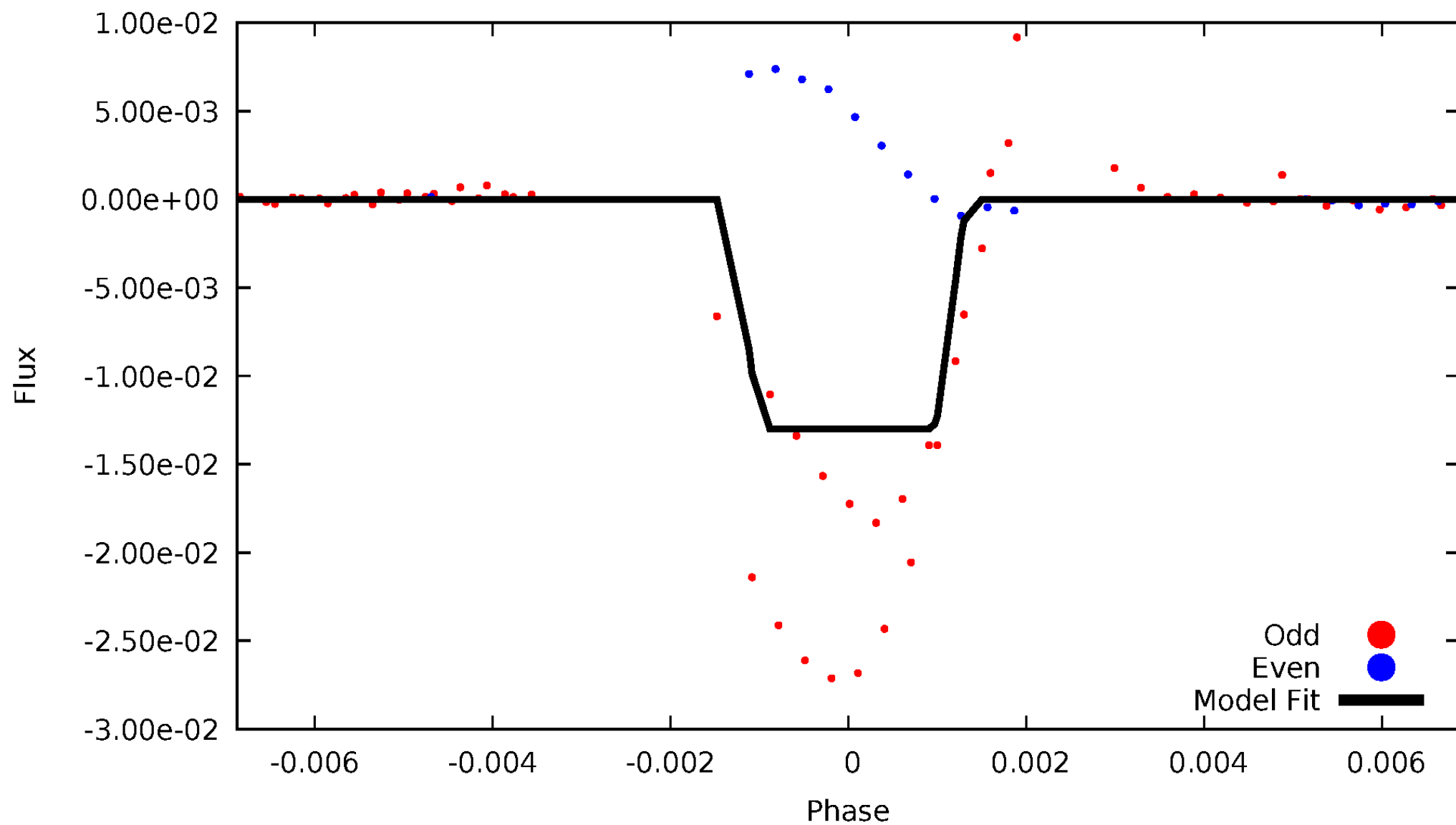
# DV Odd/Even

TCE 006128330-02



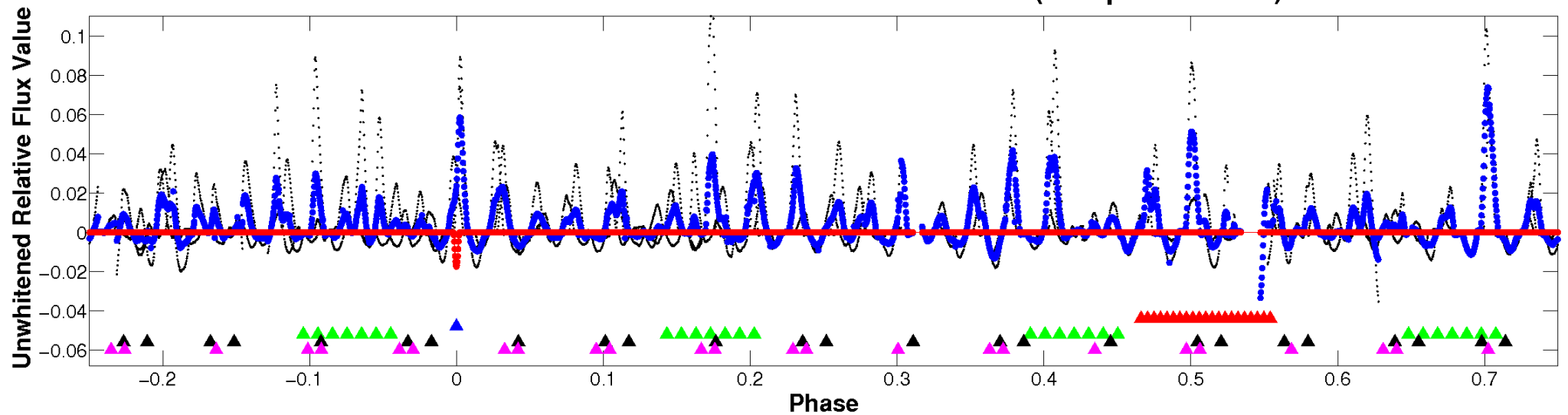
# ALT Odd/Even

TCE 006128330-02

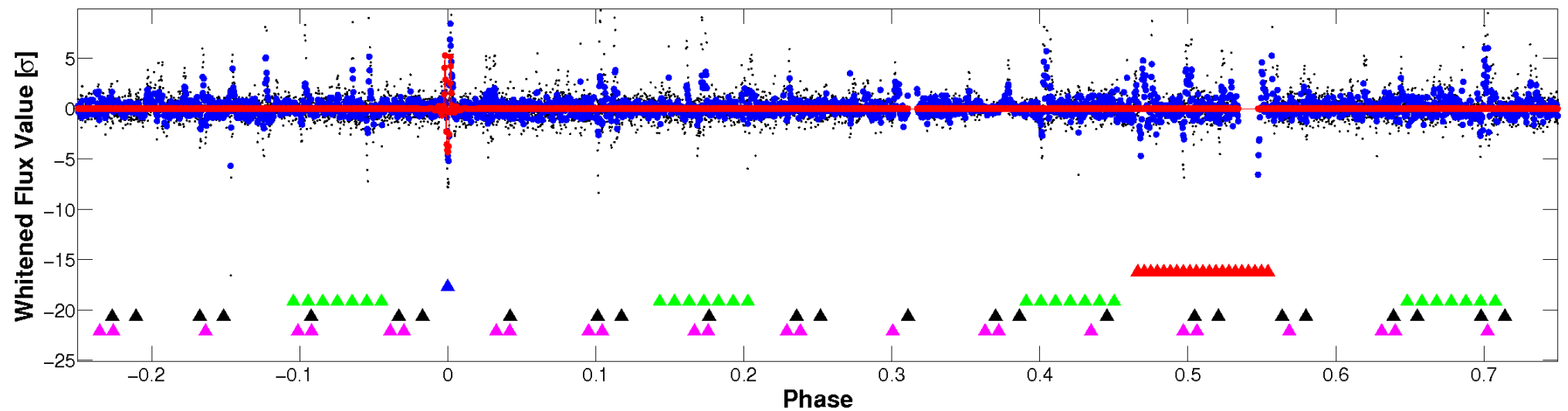


# Non-Whitened Vs. Whitened Light Curve

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

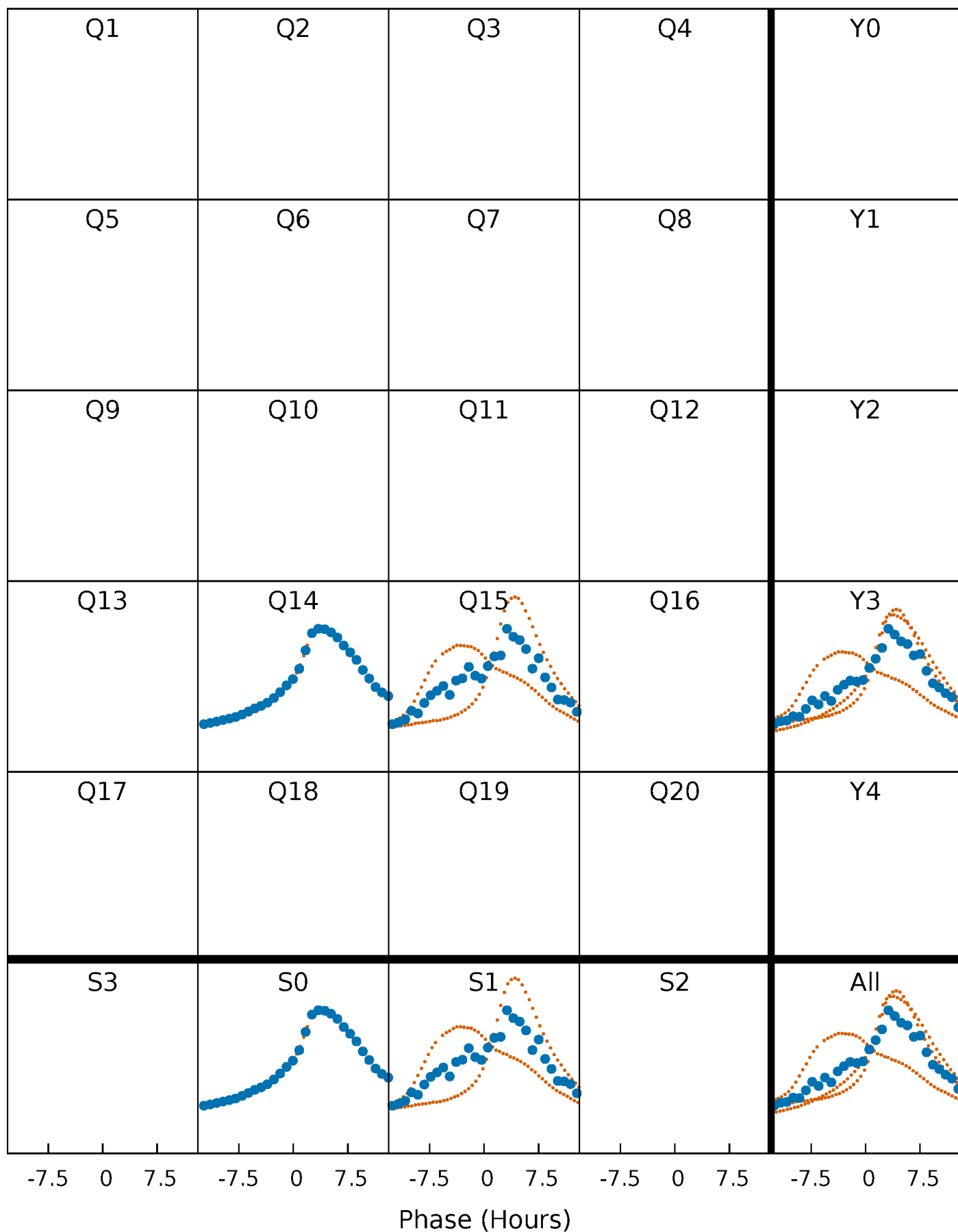


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



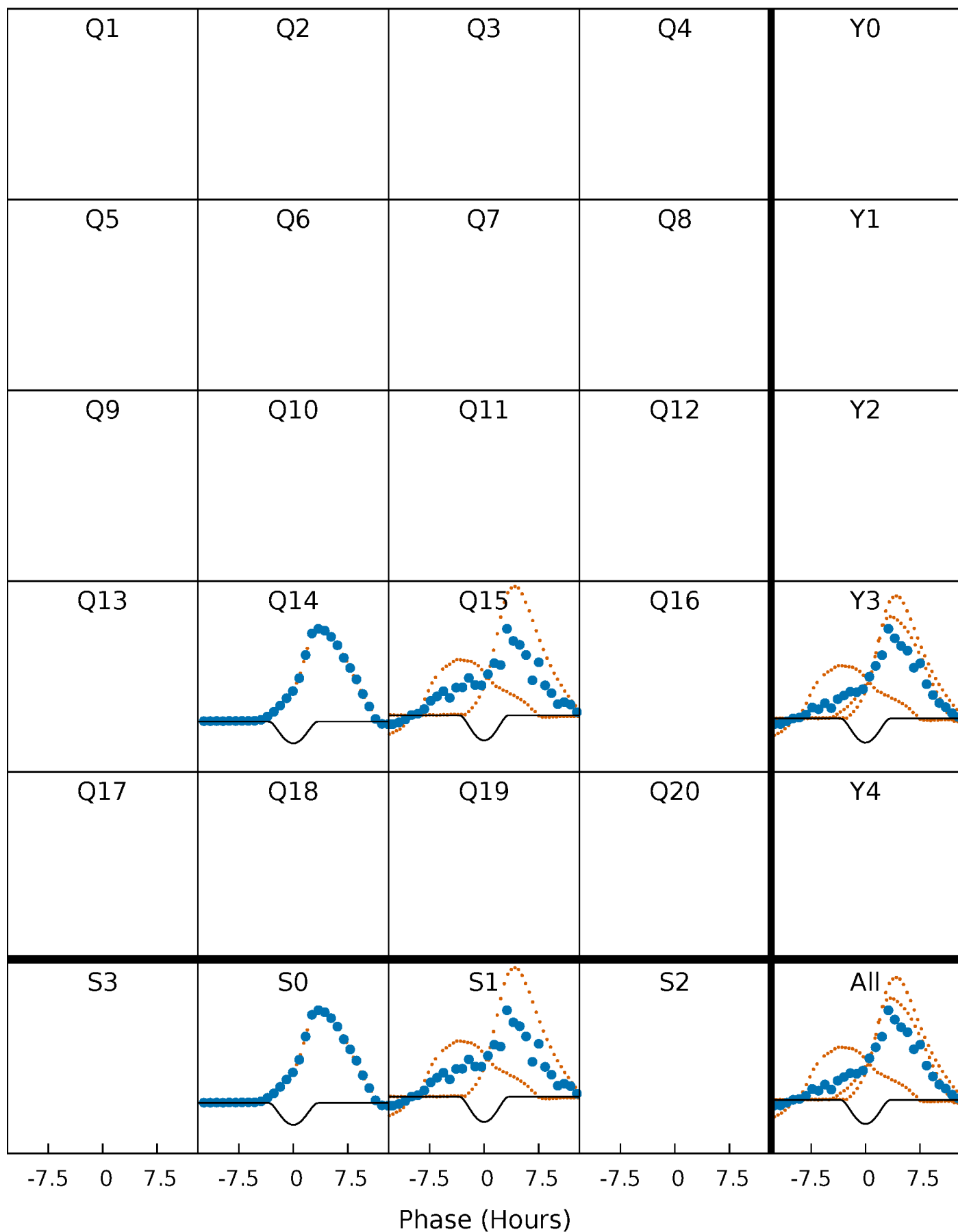
# PDC Quarter-Phased Transit Curves

TCE 006128330-02 P= 68.565727 Days  $T_0=149.371198$  (BKJD)



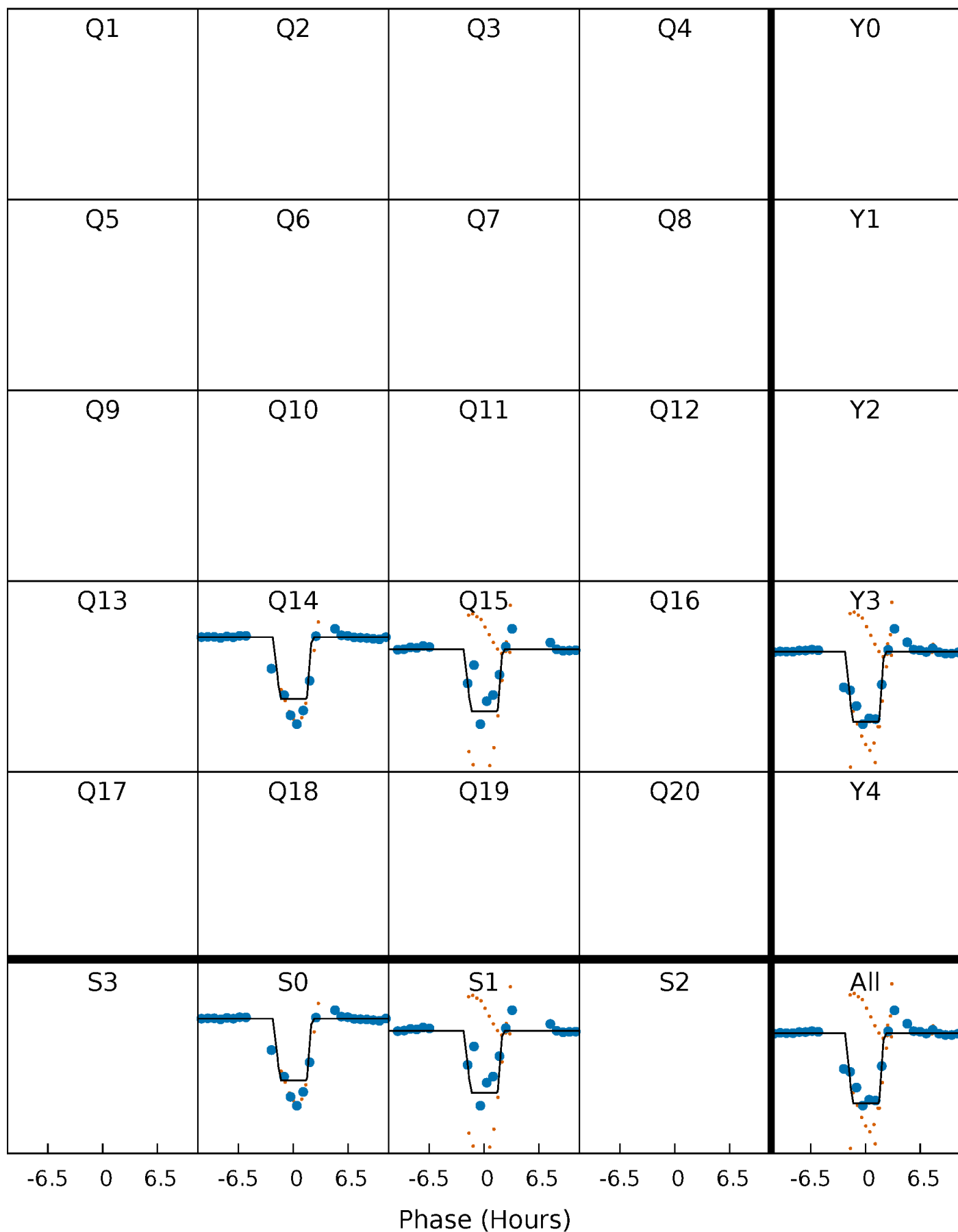
# DV Quarter-Phased Transit Curves

TCE 006128330-02 P= 68.565727 Days  $T_0=149.371198$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

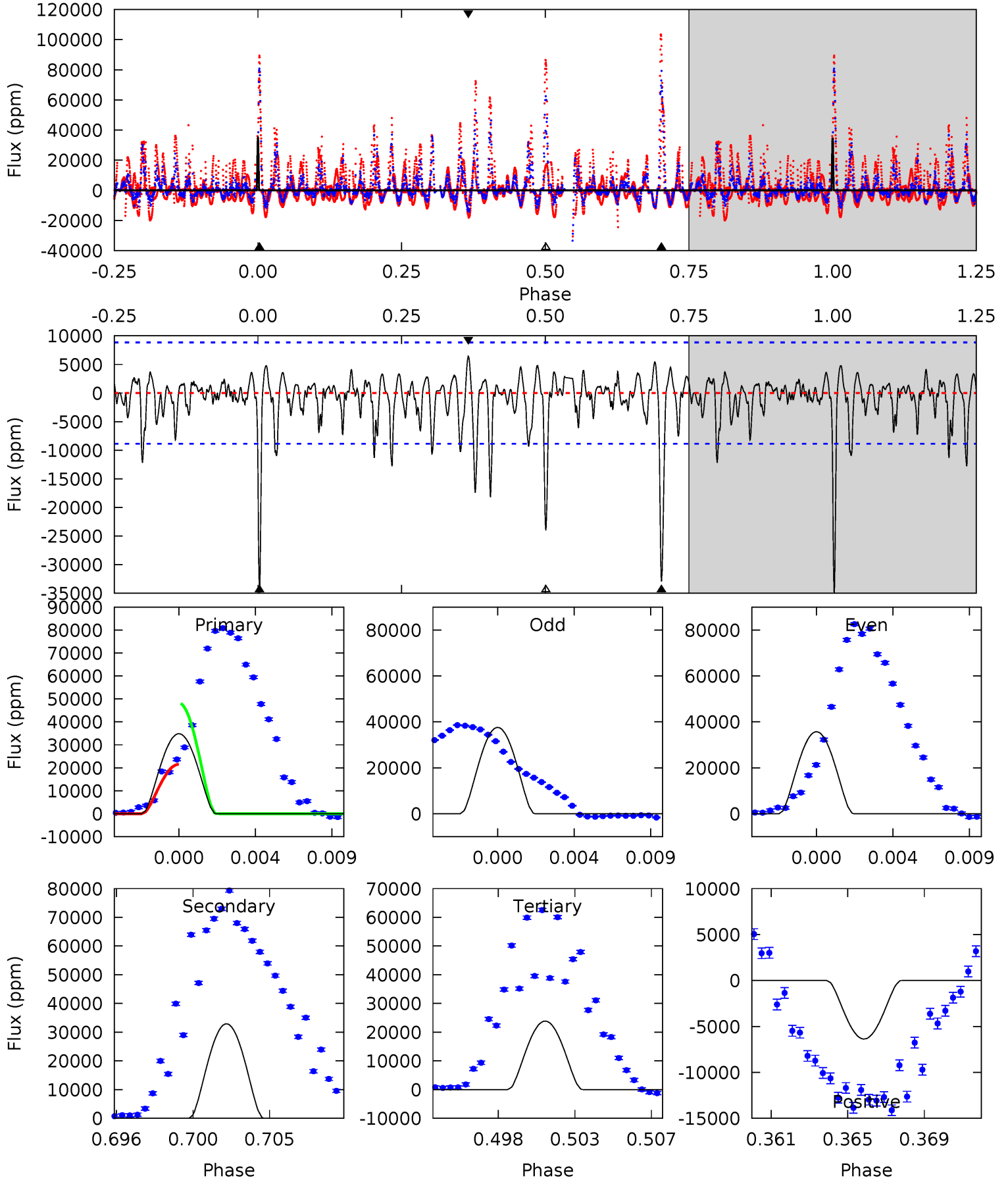
TCE 006128330-02 P= 68.569879 Days  $T_0=149.278363$  (BKJD)



# DV Model-Shift Uniqueness Test

006128330-02, P = 68.565727 Days, E = 149.371198 Days

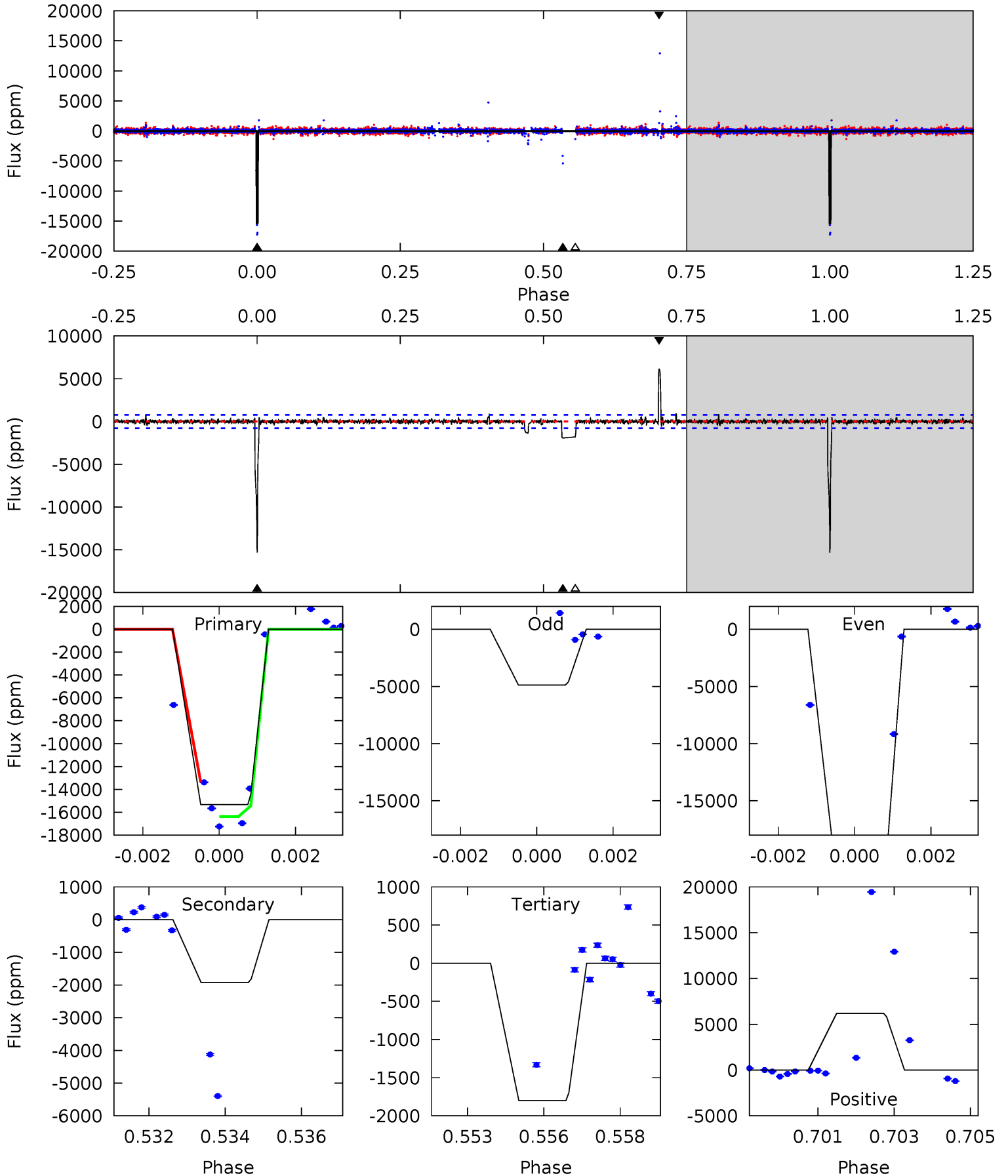
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	19.3	14.0	3.73	5.19	2.86	2.04	6.44	16.7	5.31	15.5	0.42	0.96	0.15	8.00



# Alt Model-Shift Uniqueness Test

006128330-02, P = 68.569879 Days, E = 149.278363 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
103.3	13.0	12.1	41.6	5.29	3.03	1.44	91.2	61.7	0.86	-28.6	65.6	0.75	0.29	0





### Stellar Parameters For KIC 006128330

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7485^{+209}_{-314}$	$3.952^{+0.253}_{-0.136}$	$-0.060^{+0.200}_{-0.350}$	$2.310^{+0.507}_{-0.760}$	$1.743^{+0.195}_{-0.363}$	$0.199^{+0.337}_{-0.084}$
	+3%/-4%	+6%/-3%	+333%/-583%	+22%/-33%	+11%/-21%	+169%/-42%
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 006128330-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-32927 \pm 1708$	$50.65^{+29.12}_{-26.39}$	$1104^{+77}_{-97}$	$6908^{+4058}_{-1352}$	$1165^{+3616}_{-714}$
Alt.	$-1929 \pm 148$	$32.07^{+27.00}_{-19.73}$	$1103^{+71}_{-91}$	$4424^{+2415}_{-844}$	$157^{+939}_{-110}$

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

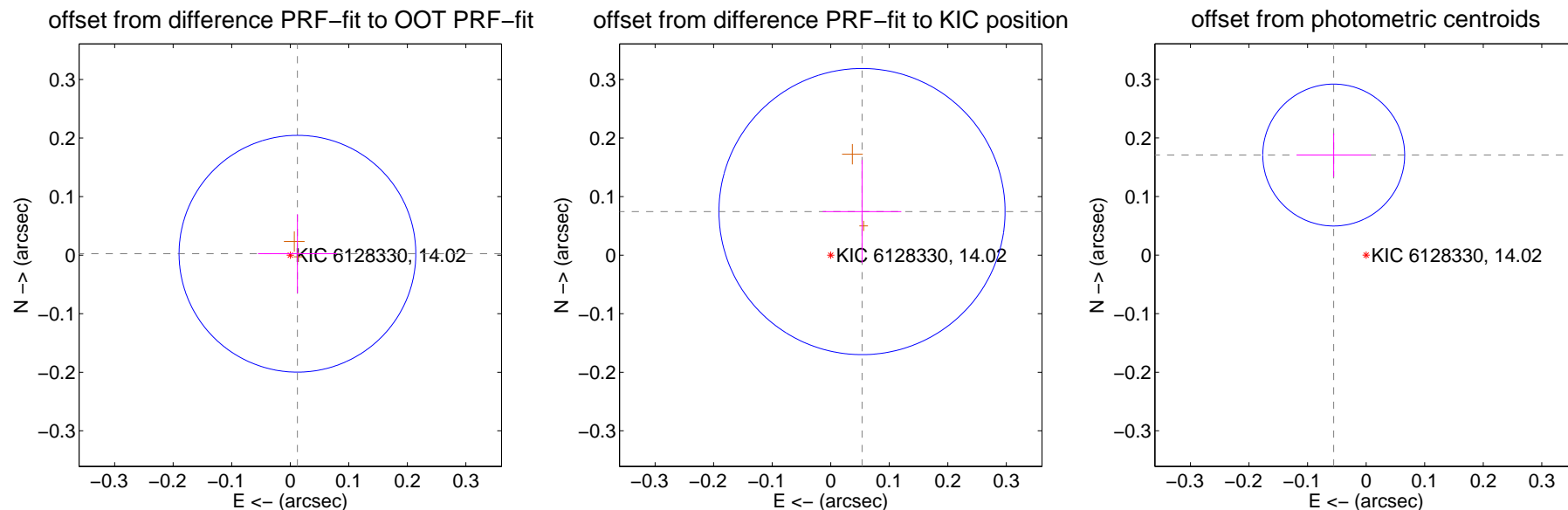
## DV Centroid Data

Supplemental centroid analysis for 006128330-02. Kepler magnitude: 14.02. Transit SNR 16.28

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.012 \pm 0.067$	0.19	$-0.012 \pm 0.067$	$0.002 \pm 0.067$
PRF-fit source offset from KIC position	$0.092 \pm 0.081$	1.13	$-0.053 \pm 0.067$	$0.074 \pm 0.088$
photometric centroid source offset	$0.18 \pm 0.04$	4.45	$0.06 \pm 0.06$	$0.17 \pm 0.04$



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.

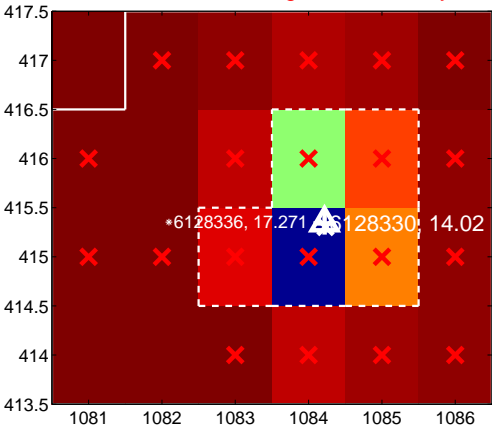
Q13 no difference image



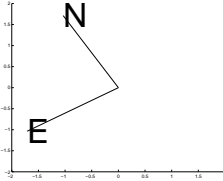
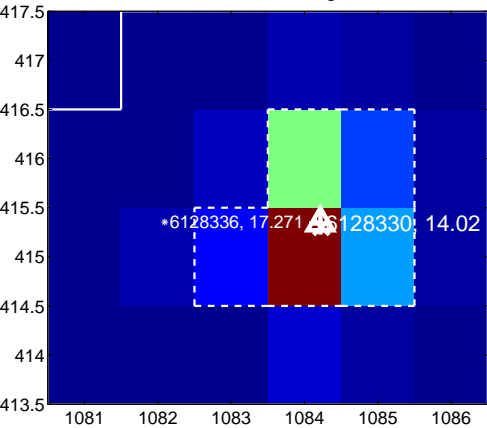
Q13 no OOT image



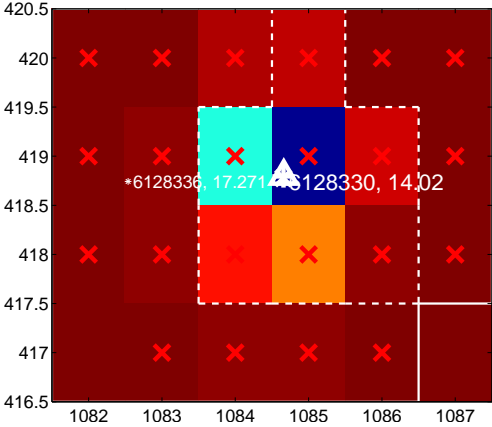
Q14 difference image. Poor Quality



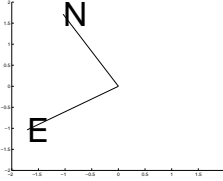
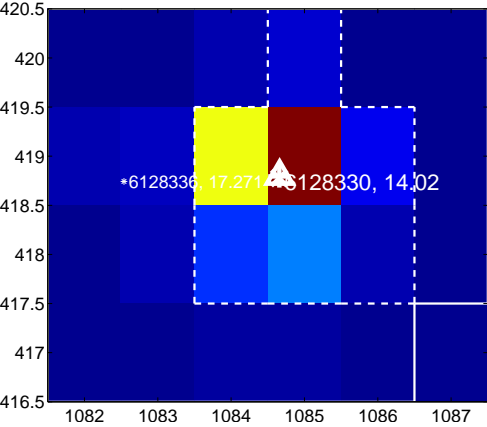
Q14 OOT image



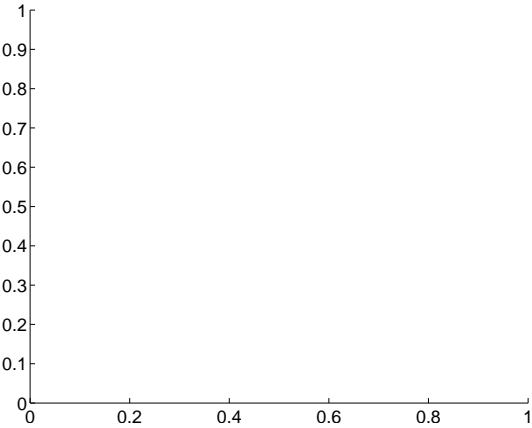
Q15 difference image. Poor Quality



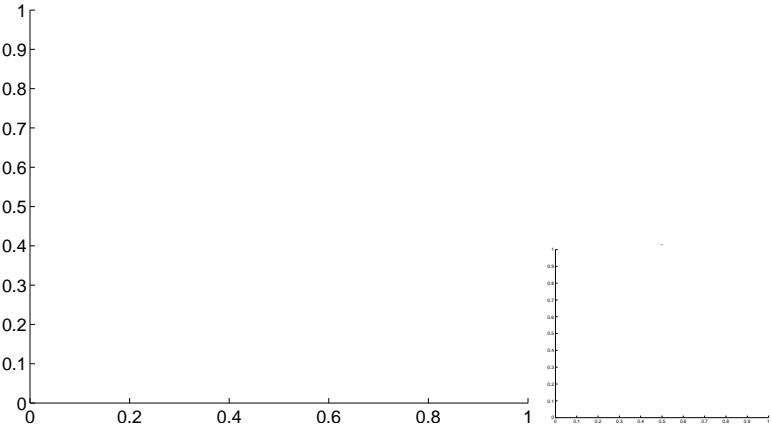
Q15 OOT image



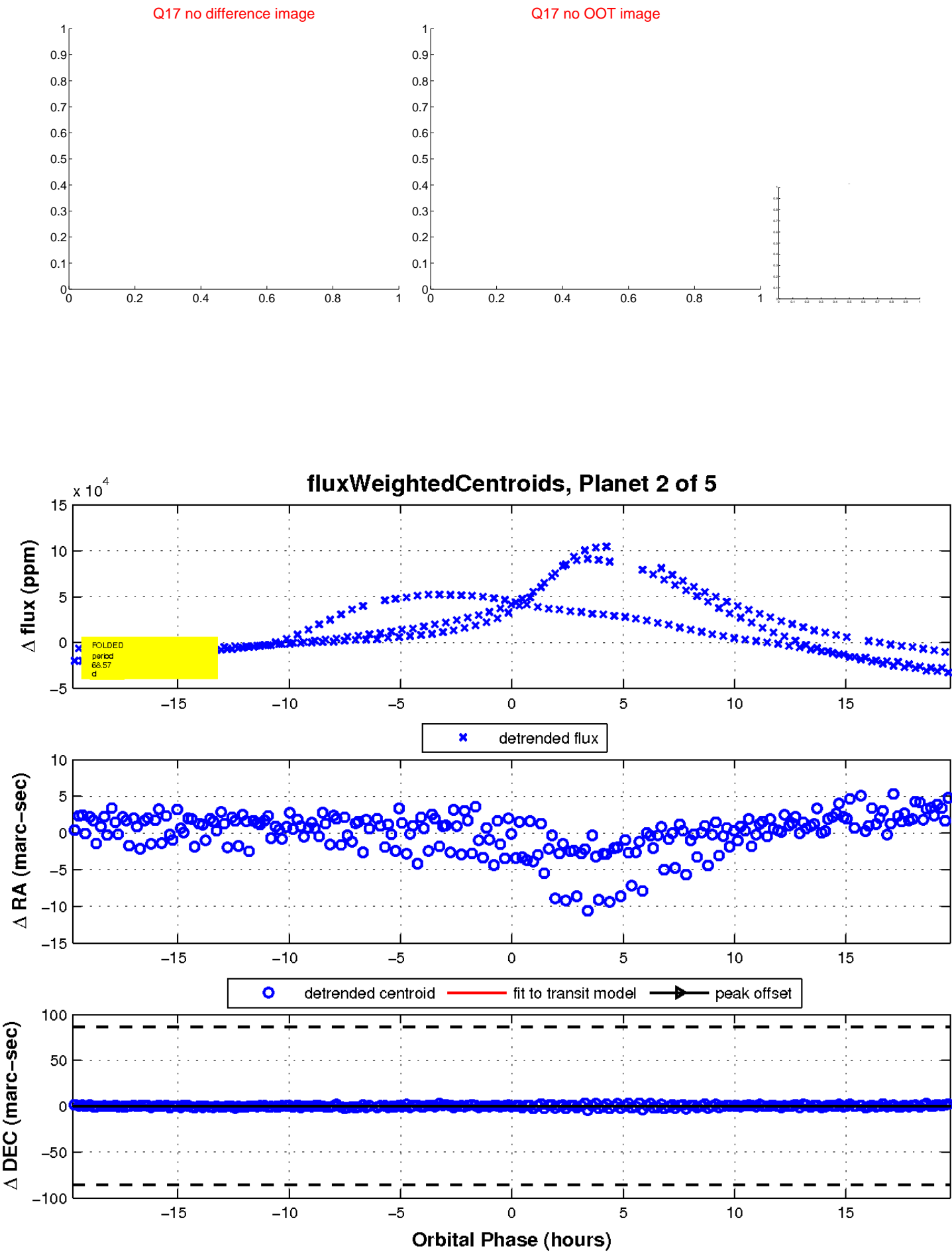
Q16 no difference image



Q16 no OOT image

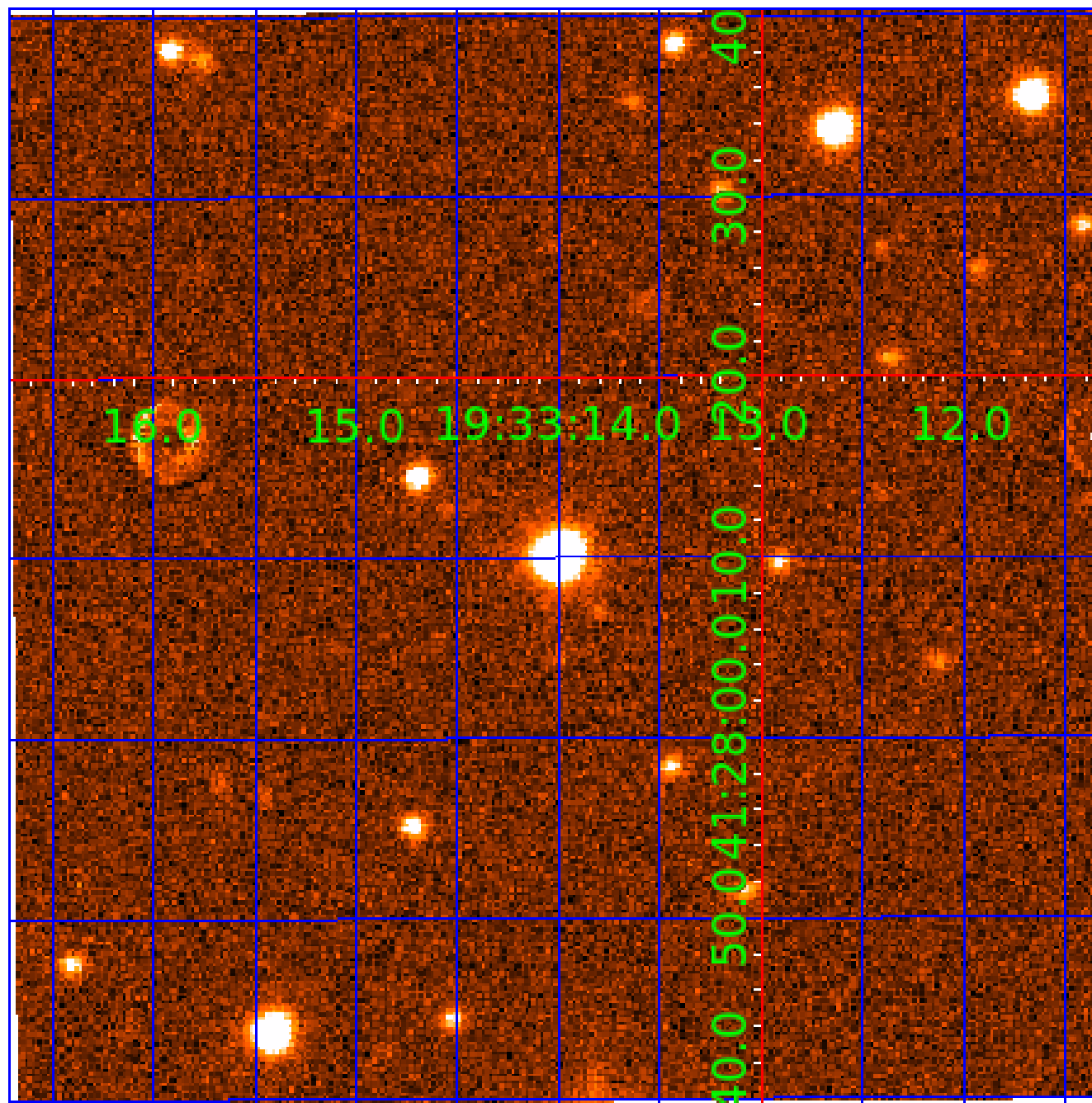


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 006128330

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006128330-01	OBS	No	68.867256	181.335488	816.4	11.941	36.9	2.8	2.31	7485	6.99	95.80
006128330-02	OBS	No	68.565727	149.371198	17504.3	6.574	33.8	16.3	2.31	7485	52.57	96.37
006128330-03	OBS	No	51.594257	176.166760	12370.9	7.587	21.6	13.5	2.31	7485	44.52	140.80
006128330-04	OBS	No	59.350137	134.934911	5501.3	7.889	16.5	6.9	2.31	7485	30.29	116.82
006128330-05	OBS	No	59.381639	161.432537	727.5	3.500	12.8	-1.0	2.31	7485	6.33	116.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006128330-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006128330-03	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST
006128330-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

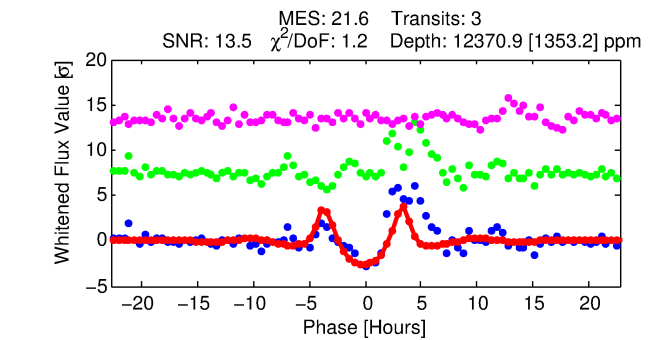
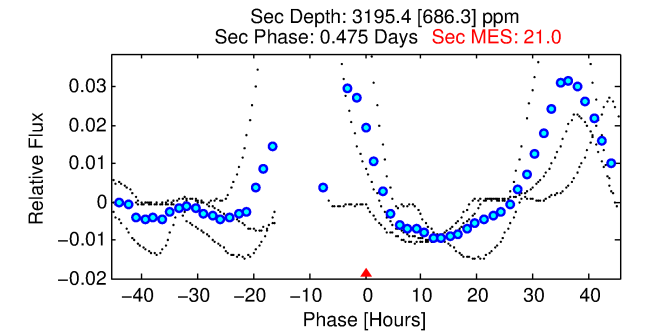
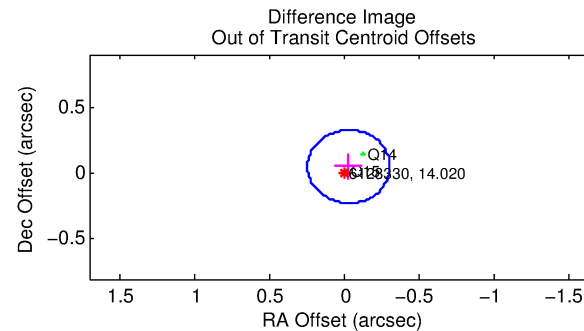
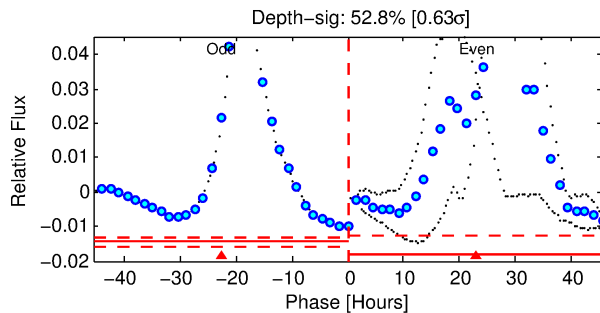
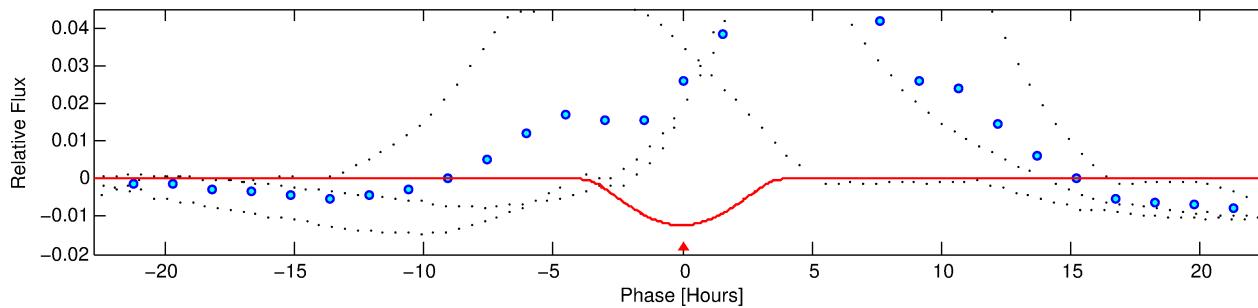
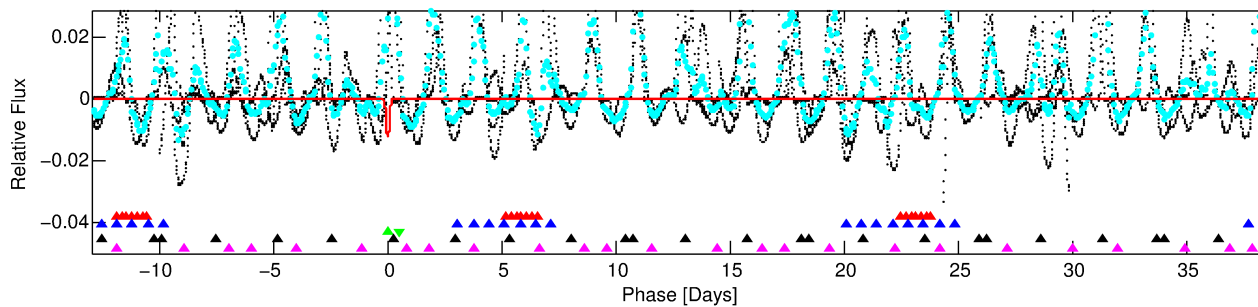
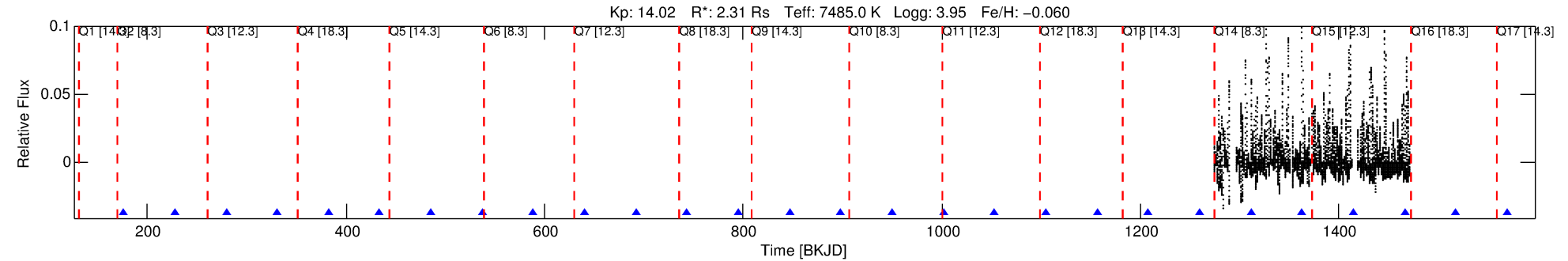
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006128330-03

No Significant Match Found

# DV One-Page Summary

KIC: 6128330 Candidate: 3 of 5 Period: 51.594 d



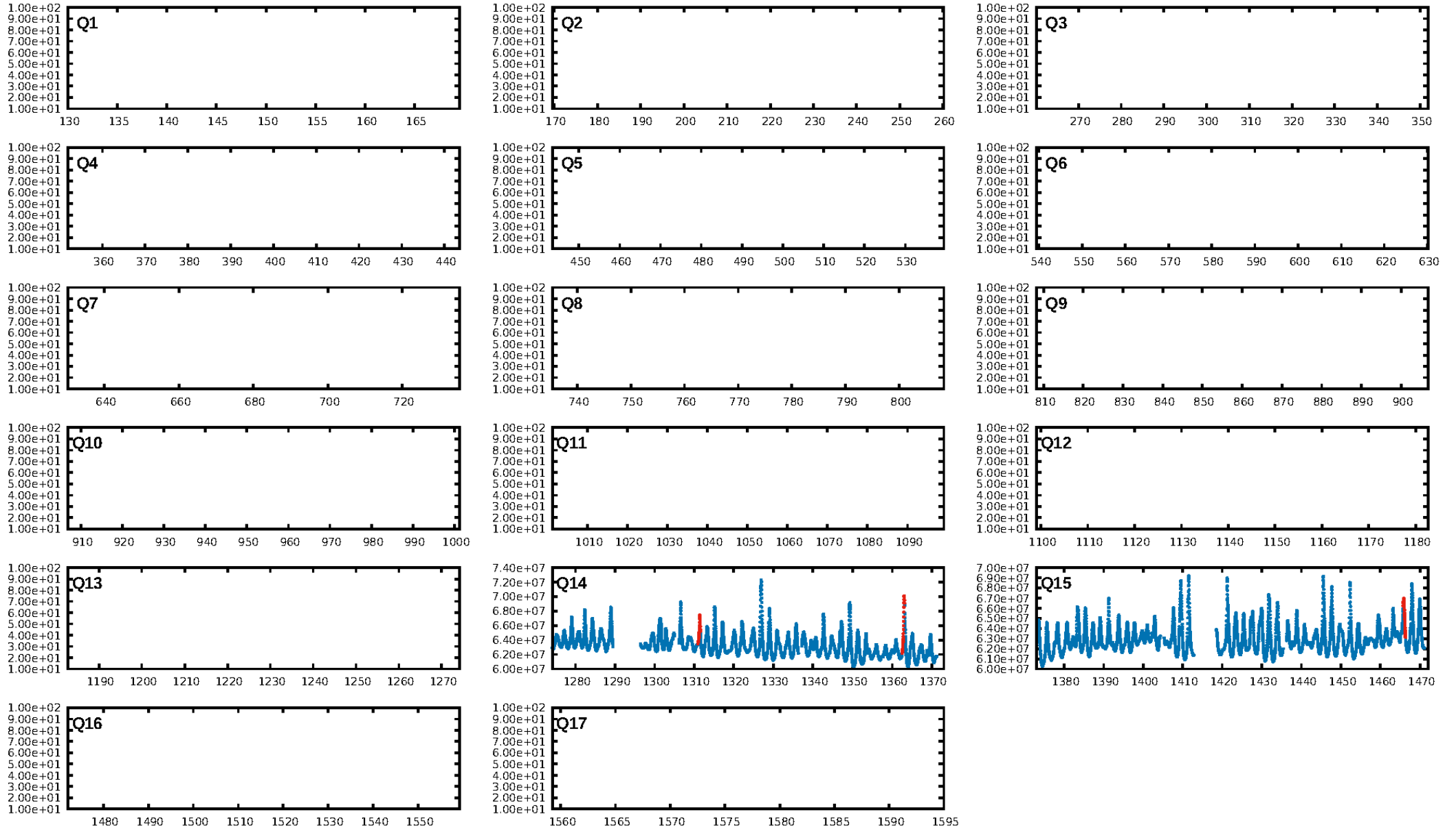
## DV Fit Results:

Period = 51.59426 [0.00236] d  
Epoch = 176.1668 [0.0539] BKJD  
Rp/R\* = 0.1766 [0.1210]  
a/R\* = 32.25 [3.09]  
b = 1.00 [0.16]  
Seff = 140.80 [67.10]  
Teq = 878 [105] K  
**Rp = 44.52 [33.83] Re**  
a = 0.3265 [0.0956] AU  
Ag = 94.52 [137.69] [0.68 $\sigma$ ]  
Teffp = 4234 [1479] K [2.26 $\sigma$ ]

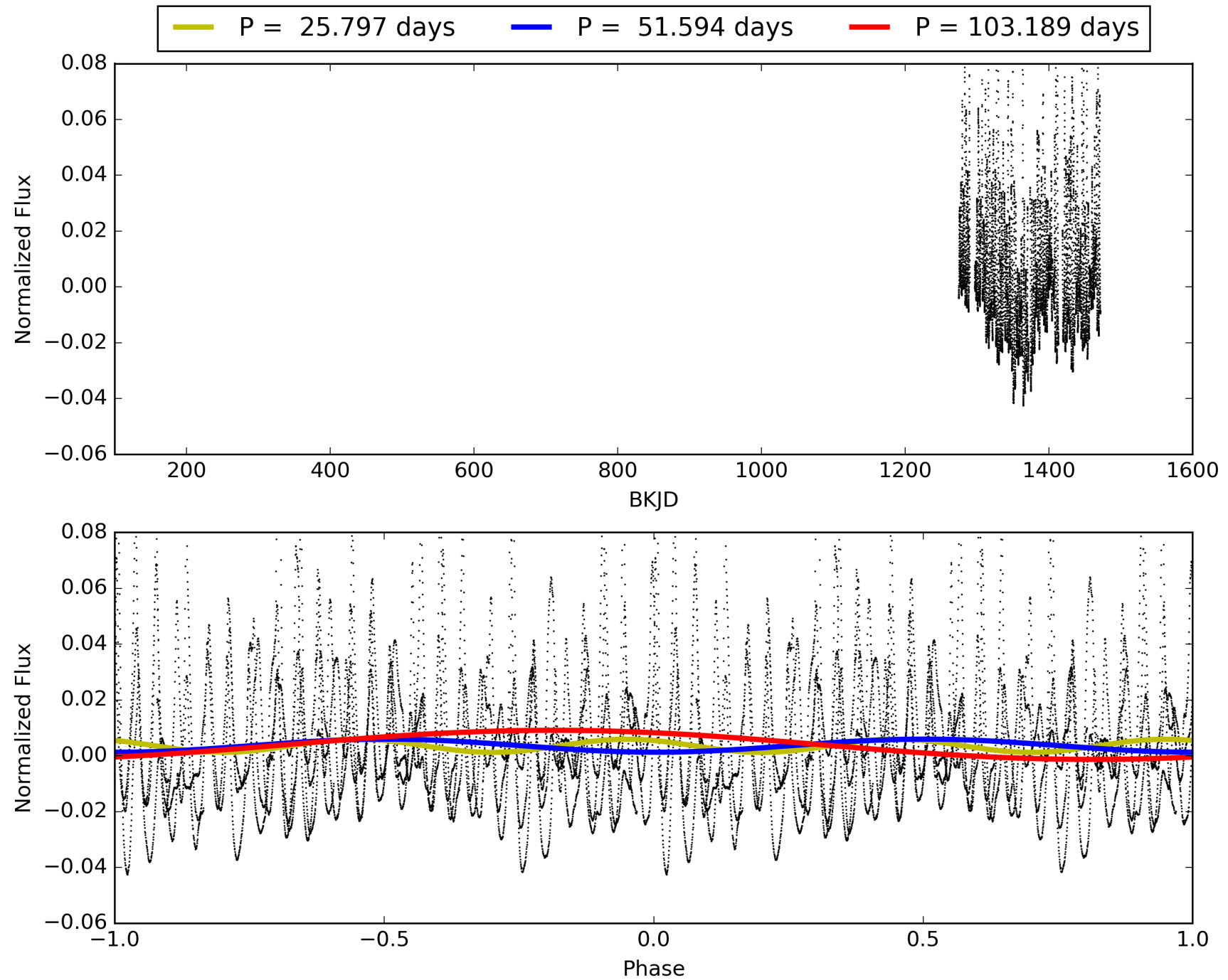
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [17.01 $\sigma$ ]  
ModelChiSquare2-sig: 4.7%  
ModelChiSquareGof-sig: 60.8%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.02214  
Centroid-sig: N/A  
Centroid-so: 0.132 arcsec [2.42 $\sigma$ ]  
OotOffset-rm: 0.060 arcsec [0.66 $\sigma$ ]  
KicOffset-rm: 0.151 arcsec [1.09 $\sigma$ ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 006128330-03, PDC Light Curves

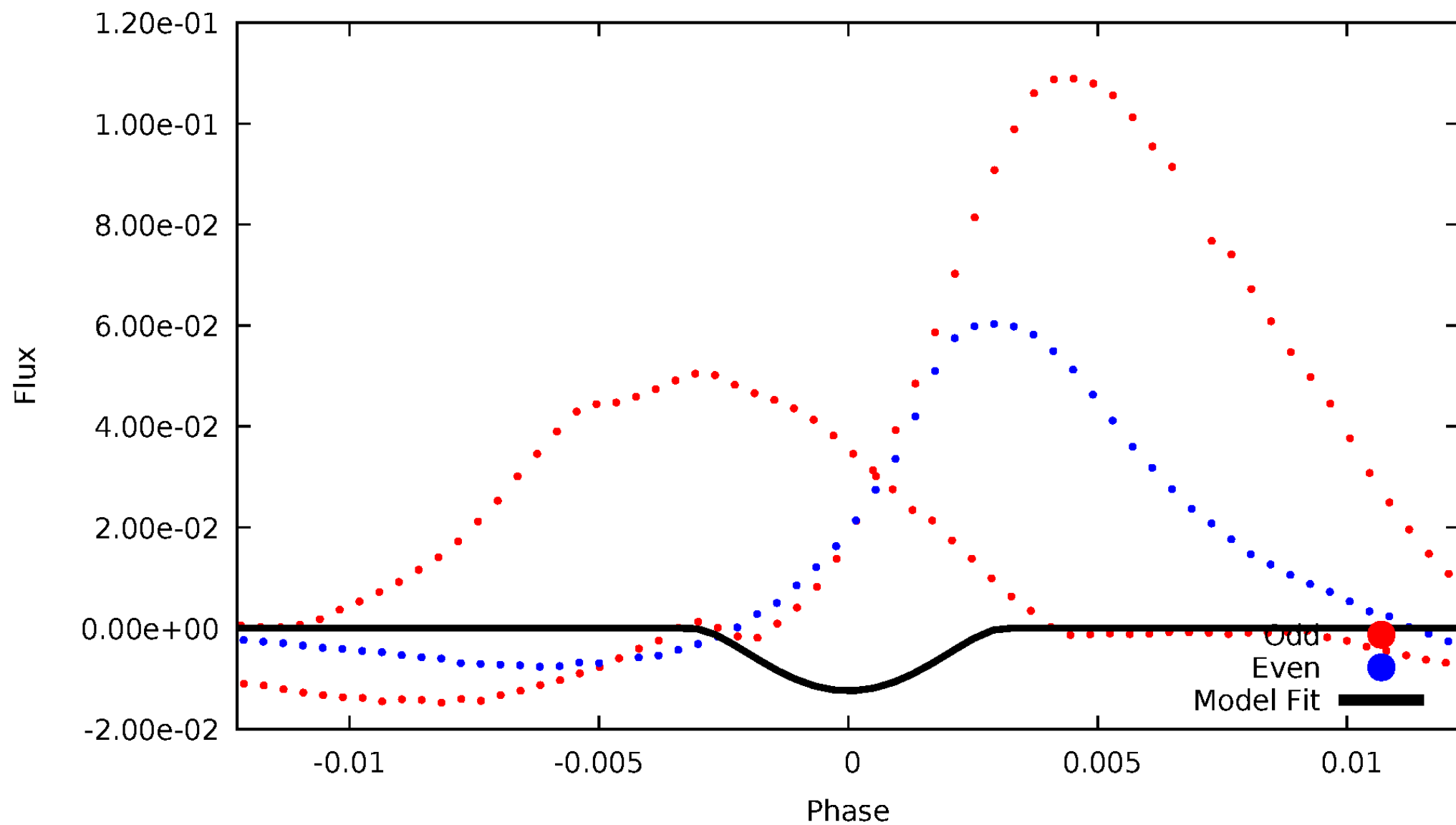


# TCE 006128330-03



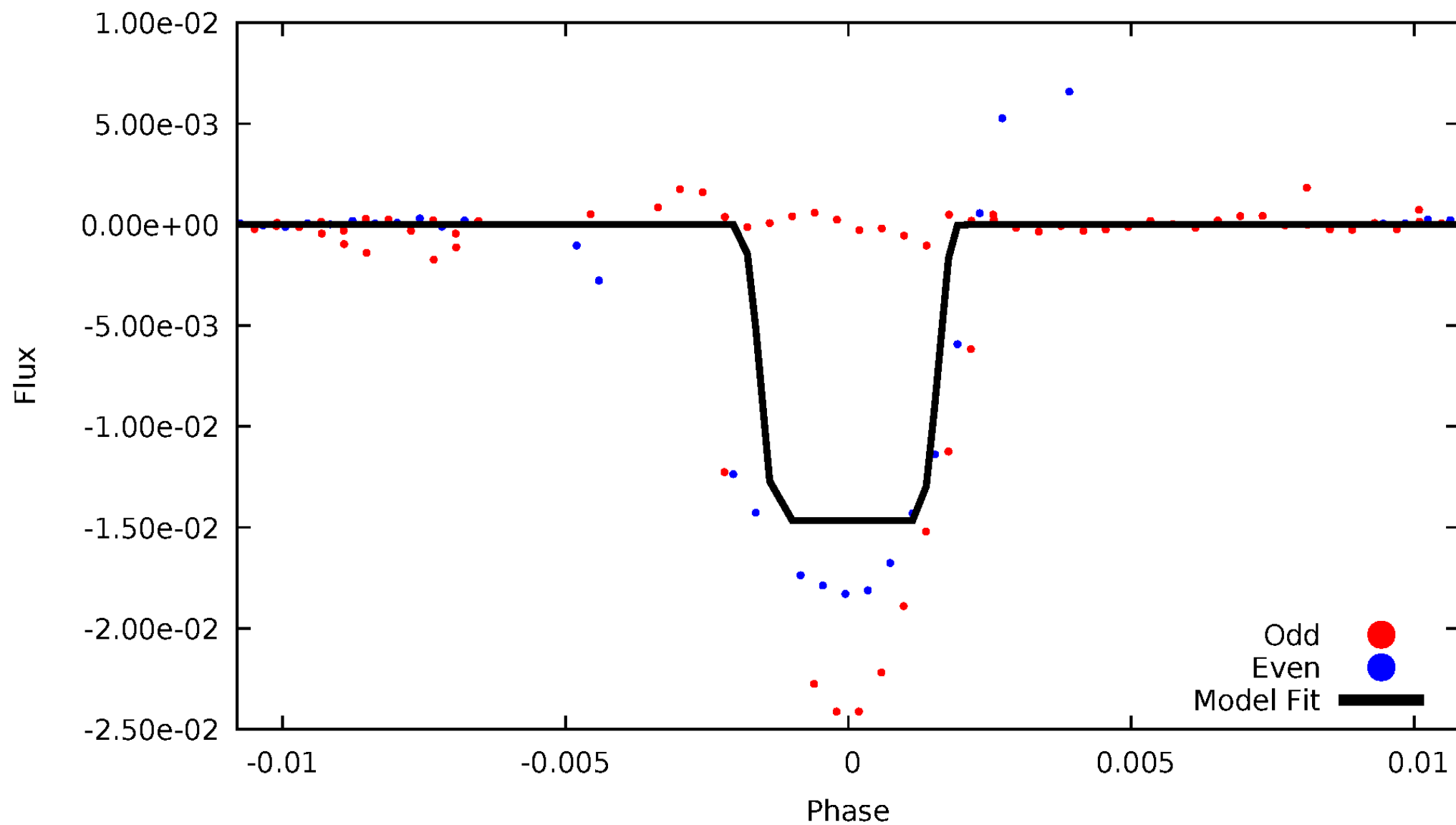
# DV Odd/Even

TCE 006128330-03



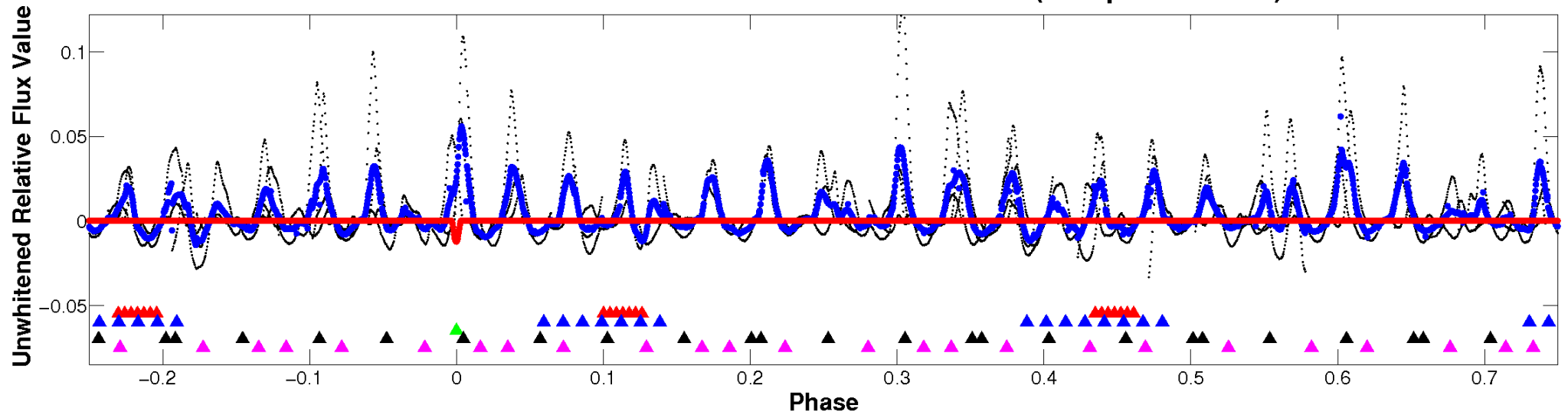
# ALT Odd/Even

TCE 006128330-03

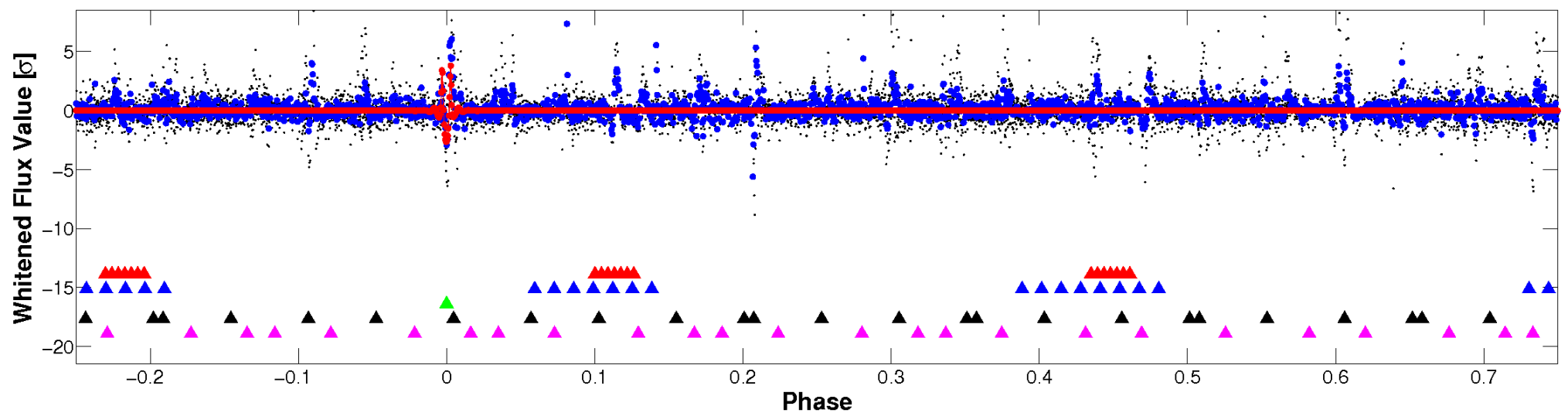


# Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

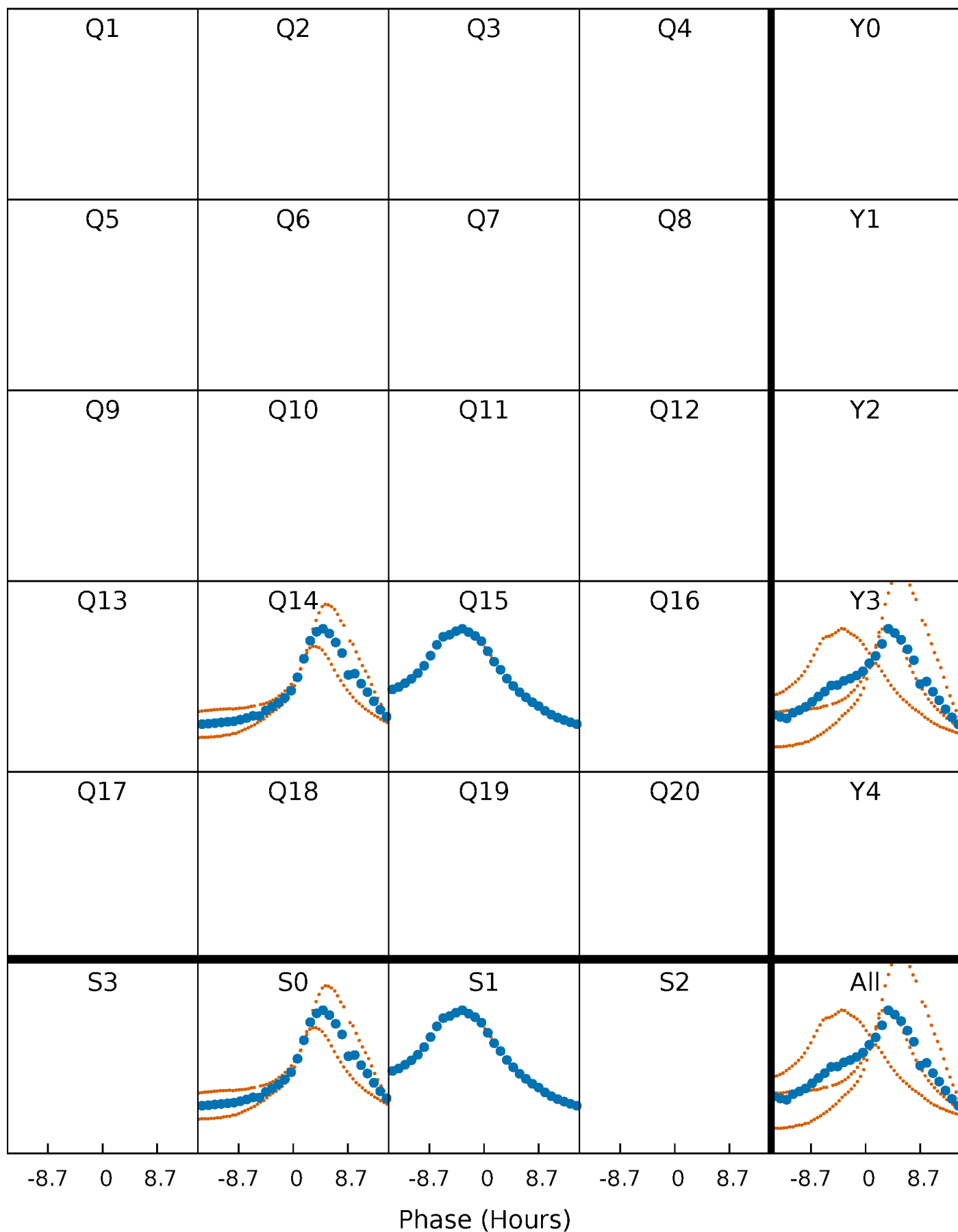


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

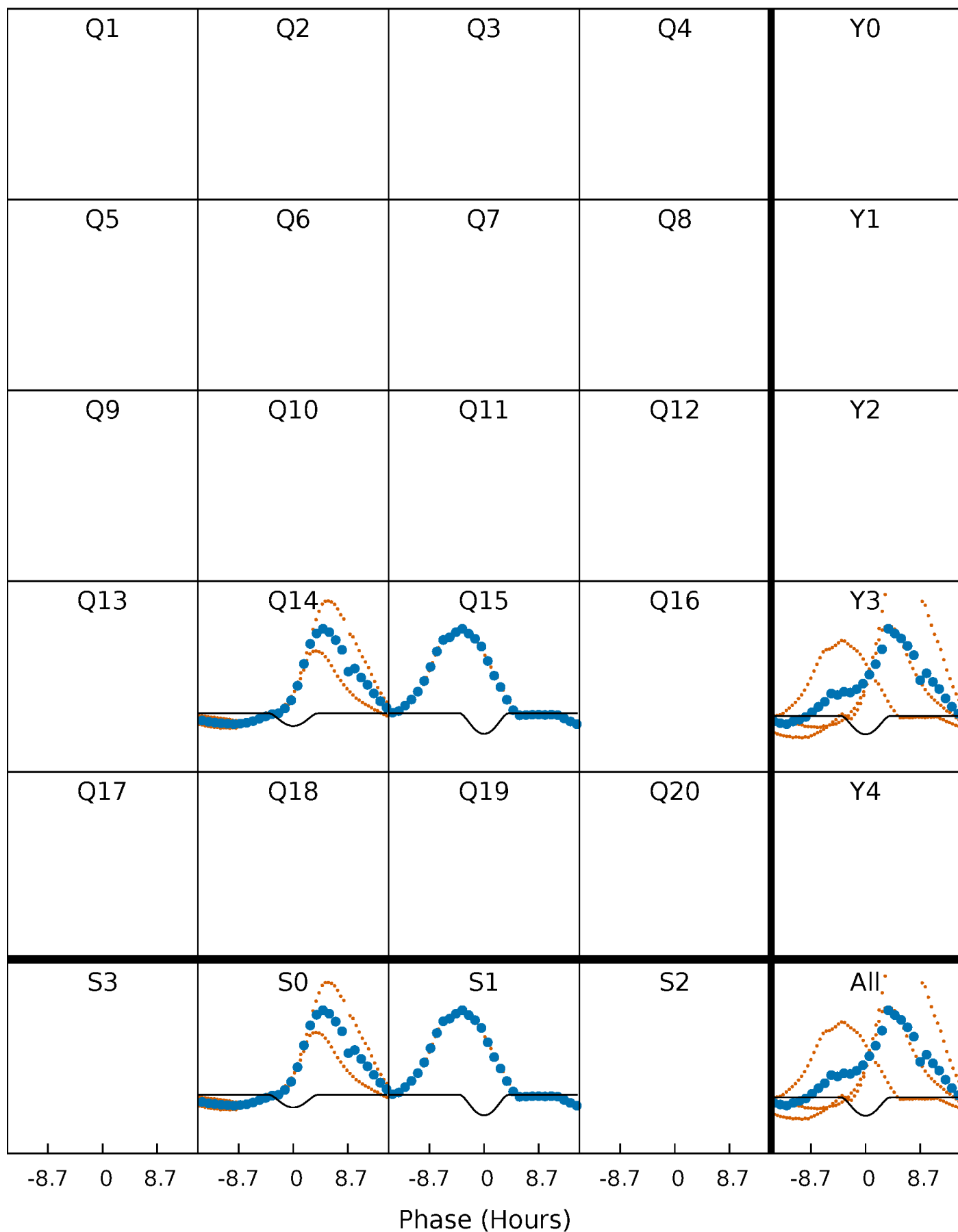
TCE 006128330-03 P= 51.594257 Days  $T_0=176.166760$  (BKJD)





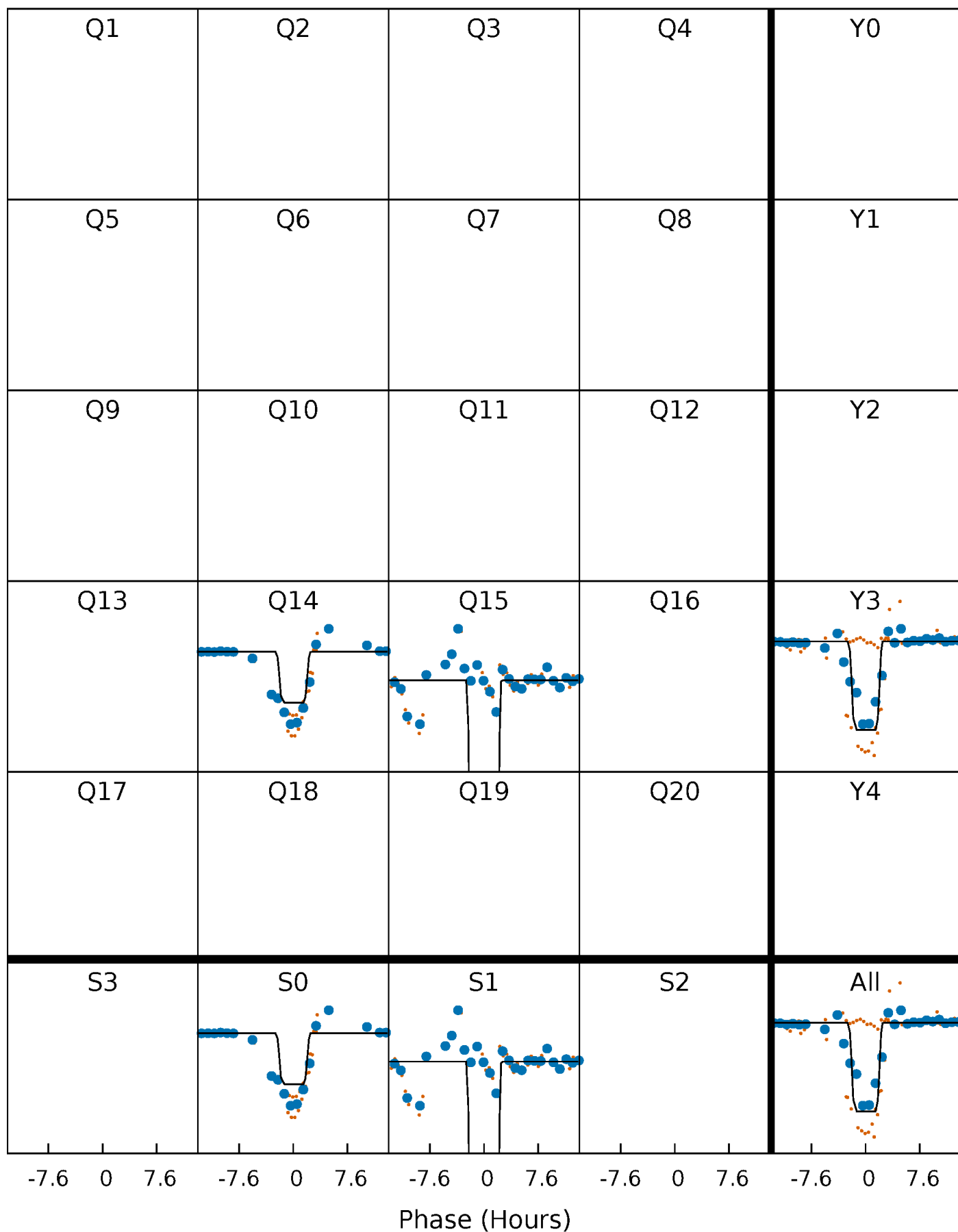
# DV Quarter-Phased Transit Curves

TCE 006128330-03 P= 51.594257 Days  $T_0=176.166760$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

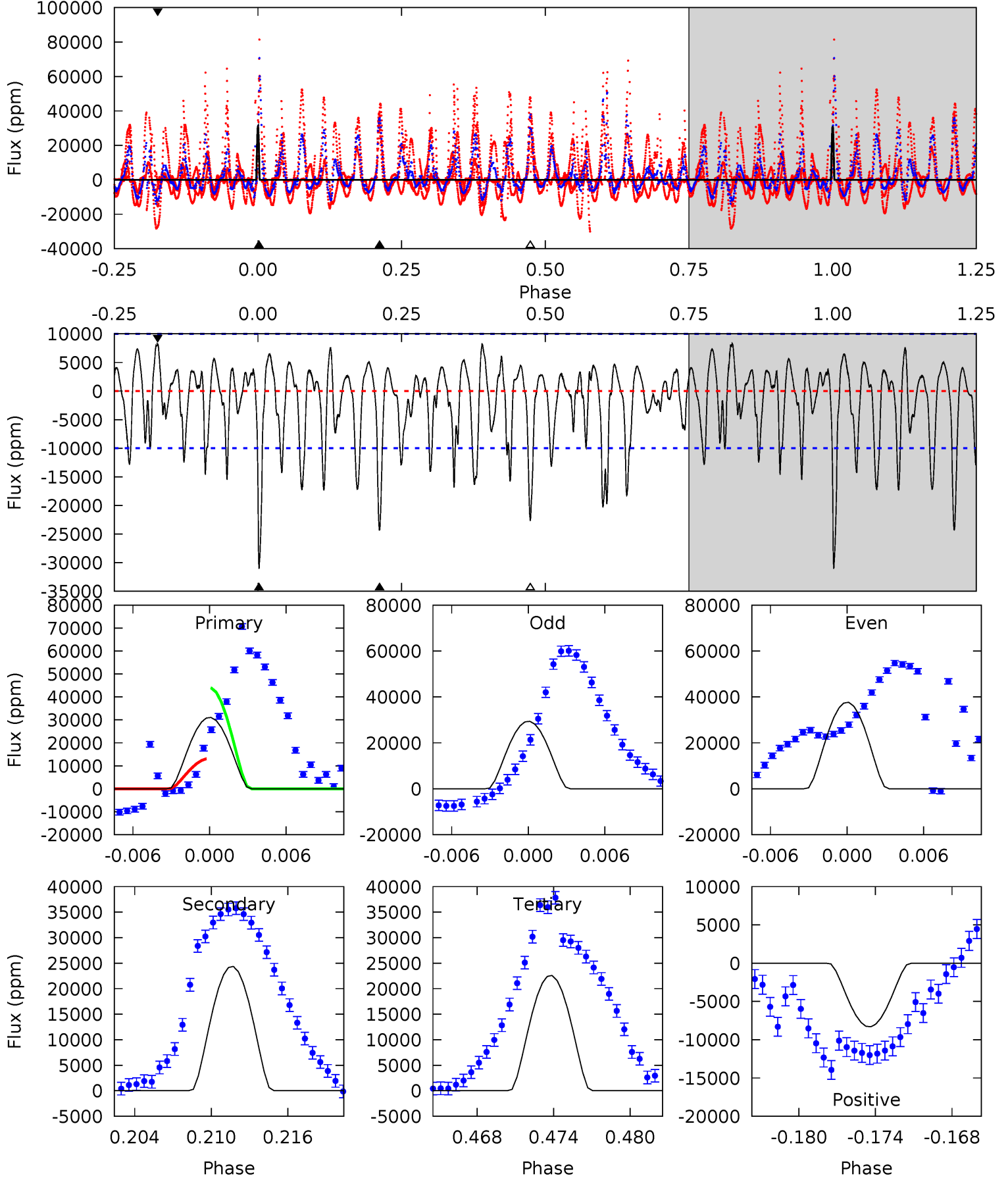
TCE 006128330-03 P= 51.602706 Days  $T_0=175.950540$  (BKJD)



# DV Model-Shift Uniqueness Test

006128330-03, P = 51.594257 Days, E = 176.166760 Days

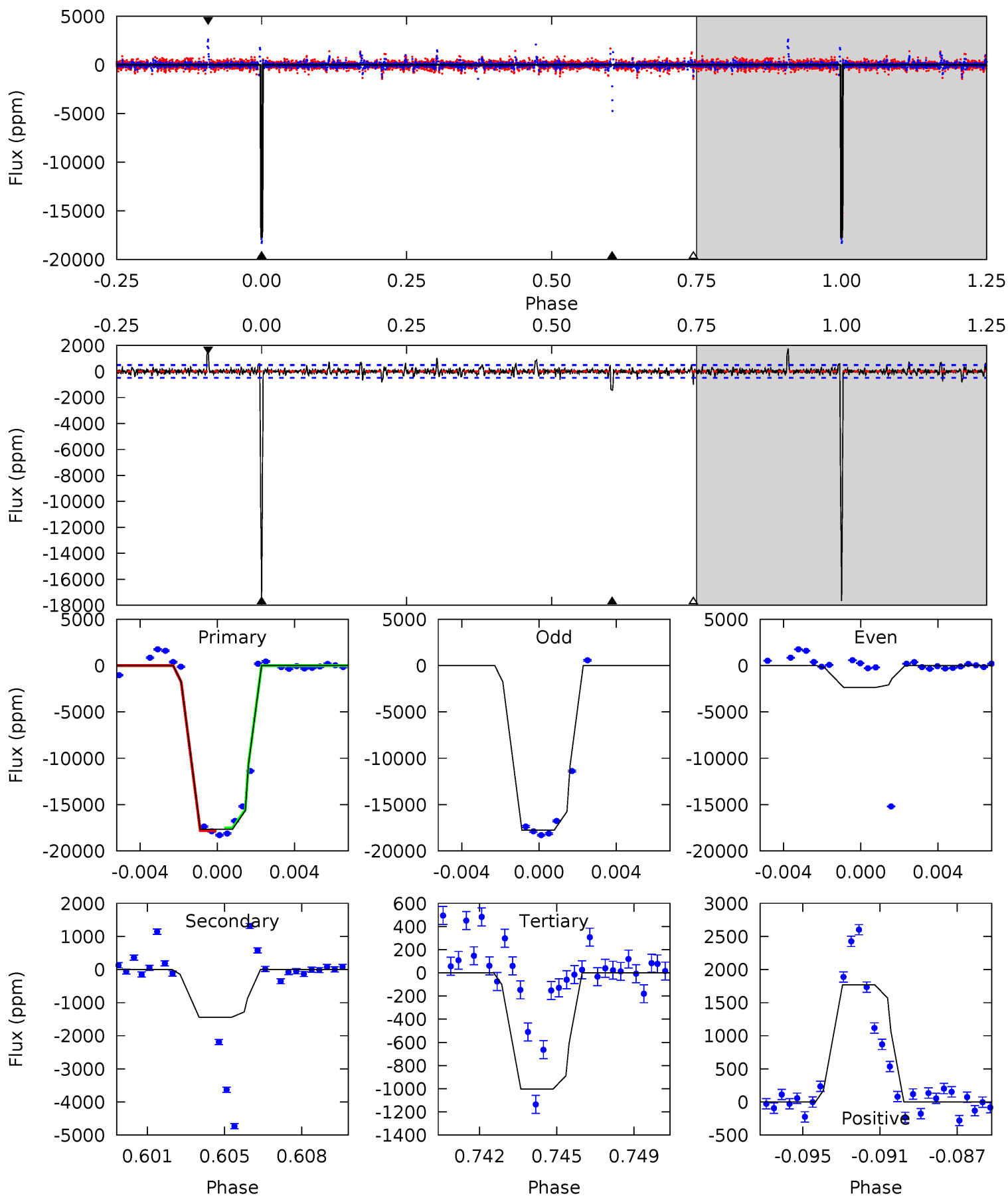
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	12.5	11.6	4.26	5.12	2.75	2.90	4.34	11.7	0.91	8.23	1.72	1.14	0.21	8.17



# Alt Model-Shift Uniqueness Test

006128330-03, P = 51.602706 Days, E = 175.950540 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
186.7	15.3	10.6	18.7	5.21	2.89	1.46	176.1	168.0	4.66	-3.45	96.3	0.75	0.09	1.30



### Stellar Parameters For KIC 006128330

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7485^{+209}_{-314}$	$3.952^{+0.253}_{-0.136}$	$-0.060^{+0.200}_{-0.350}$	$2.310^{+0.507}_{-0.760}$	$1.743^{+0.195}_{-0.363}$	$0.199^{+0.337}_{-0.084}$
	+3%/-4%	+6%/-3%	+333%/-583%	+22%/-33%	+11%/-21%	+169%/-42%
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 006128330-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-24359 \pm 1950$	$47.24^{+27.24}_{-26.27}$	$1209^{+84}_{-111}$	$6610^{+4527}_{-1273}$	$651^{+2658}_{-390}$
Alt.	$-1444 \pm 95$	$34.10^{+28.82}_{-21.63}$	$1210^{+86}_{-107}$	$4062^{+2238}_{-700}$	$72^{+471}_{-51}$

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

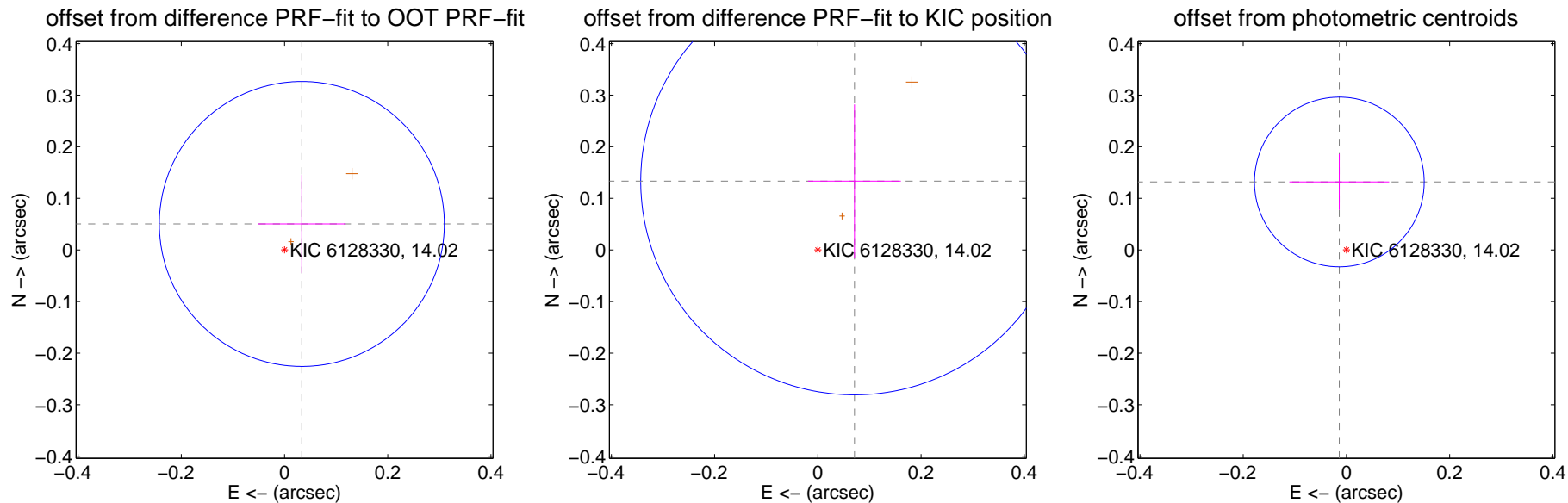
## DV Centroid Data

Supplemental centroid analysis for 006128330-03. Kepler magnitude: 14.02. Transit SNR 13.46

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.060 \pm 0.092$	0.66	$-0.034 \pm 0.085$	$0.050 \pm 0.095$
PRF-fit source offset from KIC position	$0.151 \pm 0.138$	1.09	$-0.071 \pm 0.090$	$0.133 \pm 0.149$
photometric centroid source offset	$0.13 \pm 0.05$	2.42	$0.01 \pm 0.10$	$0.13 \pm 0.05$



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.

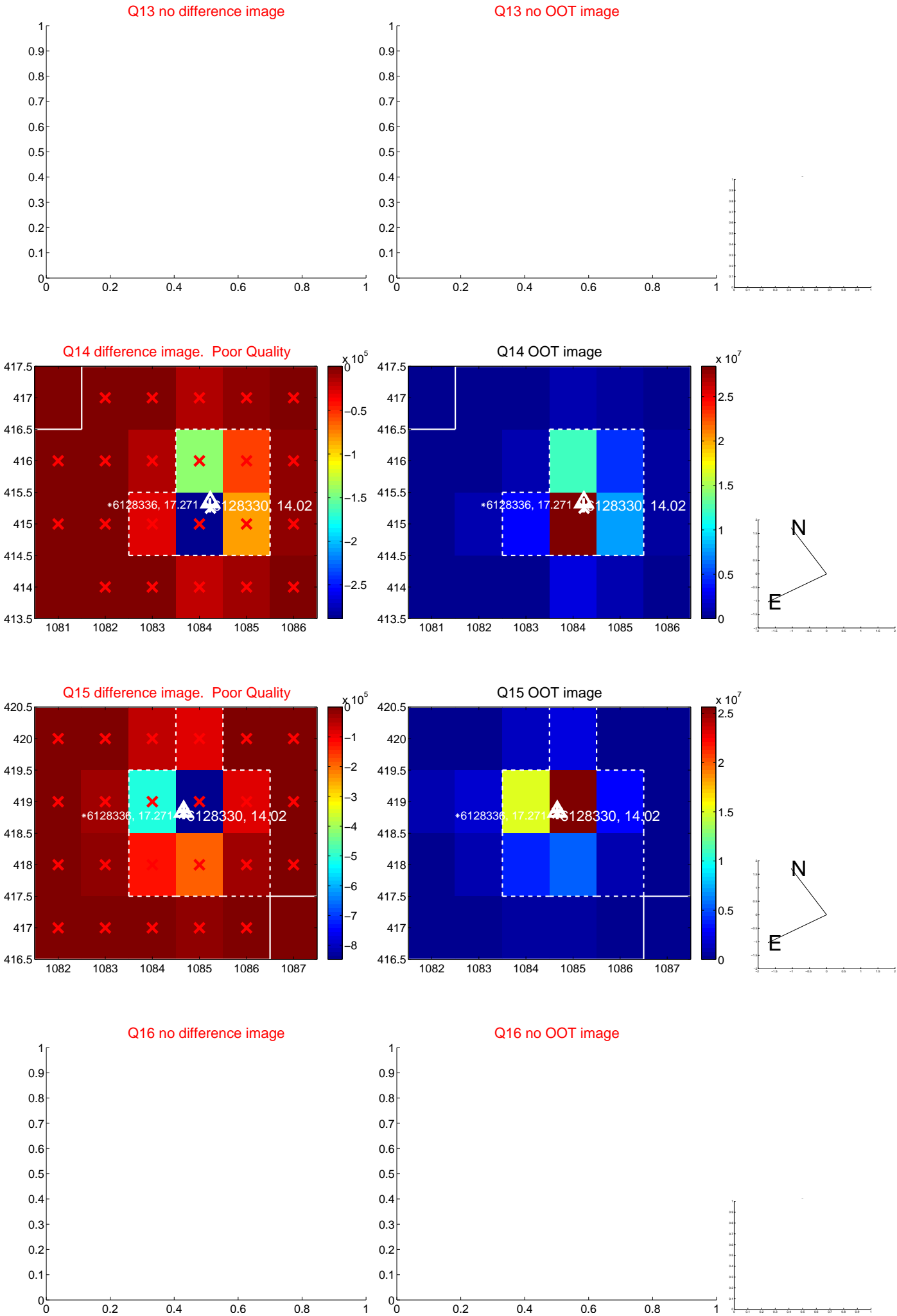




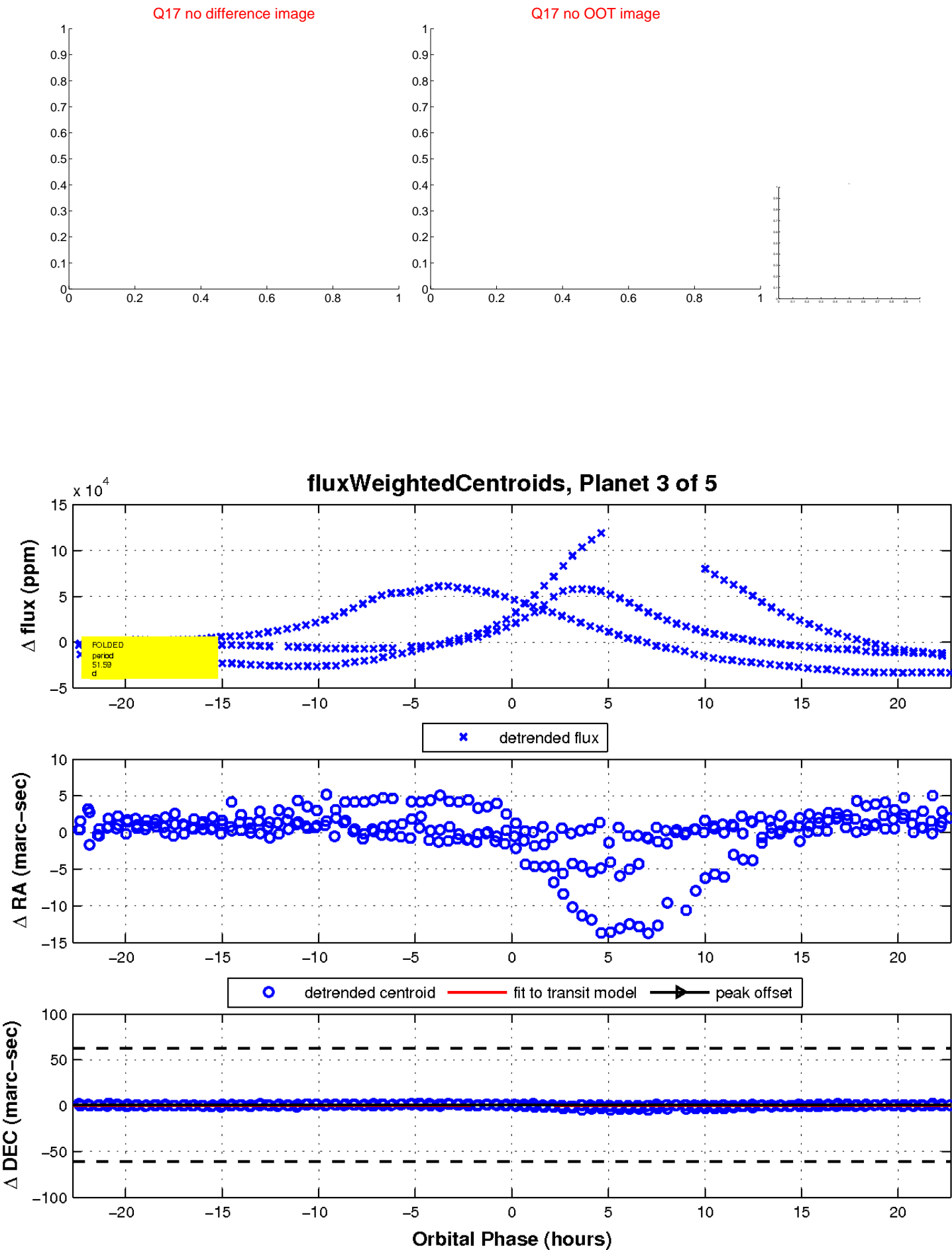
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

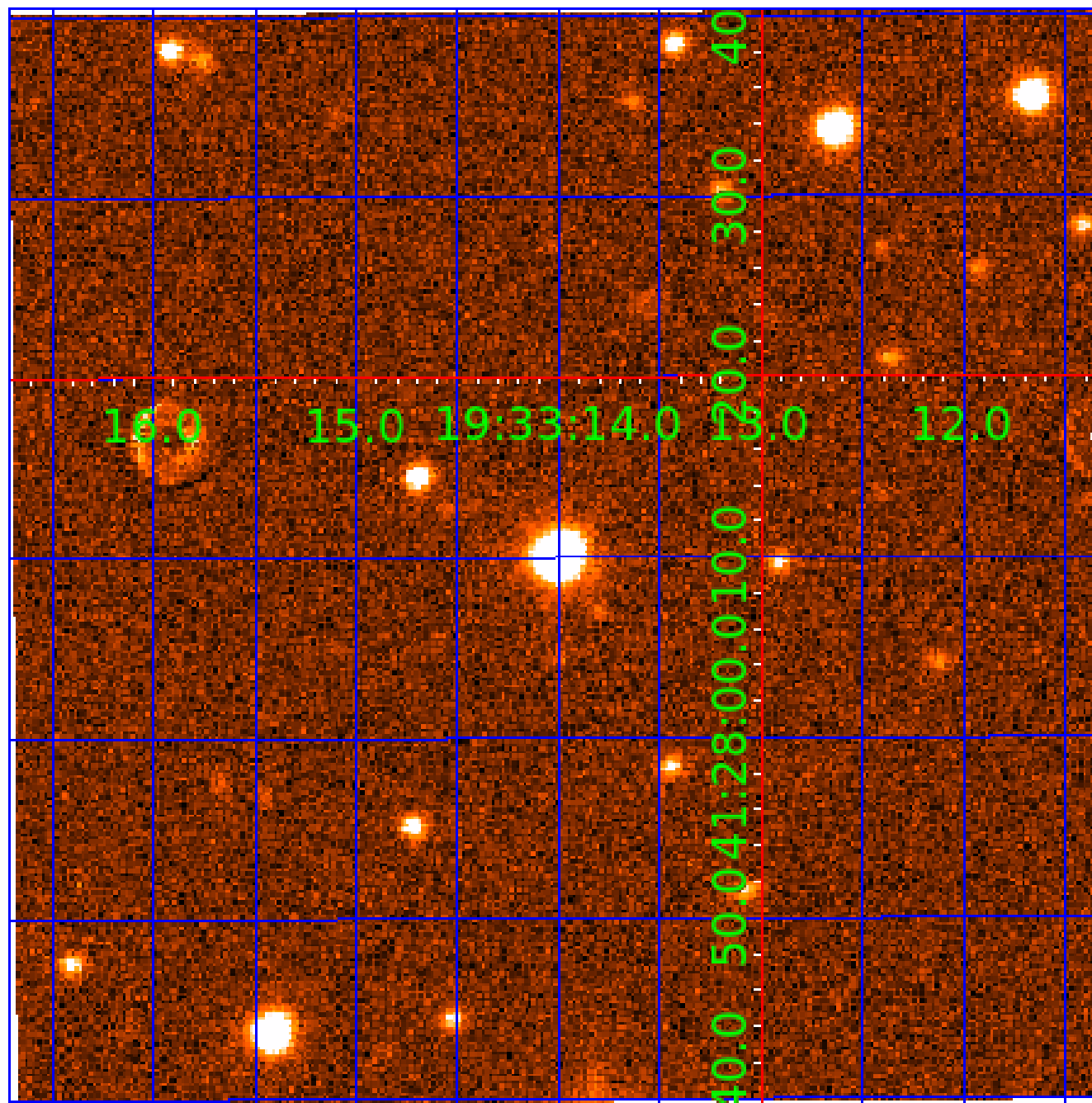


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006128330

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006128330-01	OBS	No	68.867256	181.335488	816.4	11.941	36.9	2.8	2.31	7485	6.99	95.80
006128330-02	OBS	No	68.565727	149.371198	17504.3	6.574	33.8	16.3	2.31	7485	52.57	96.37
006128330-03	OBS	No	51.594257	176.166760	12370.9	7.587	21.6	13.5	2.31	7485	44.52	140.80
006128330-04	OBS	No	59.350137	134.934911	5501.3	7.889	16.5	6.9	2.31	7485	30.29	116.82
006128330-05	OBS	No	59.381639	161.432537	727.5	3.500	12.8	-1.0	2.31	7485	6.33	116.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006128330-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006128330-03	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST
006128330-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

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

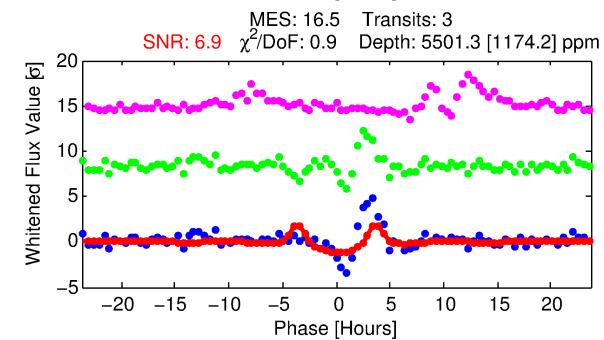
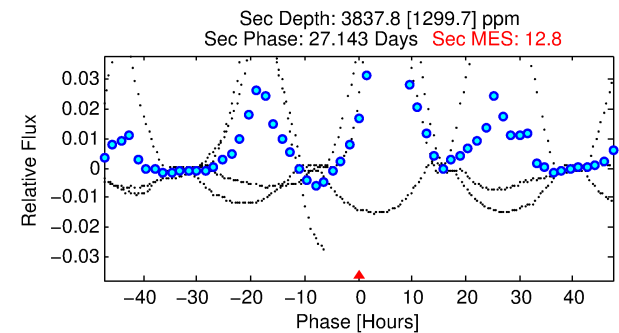
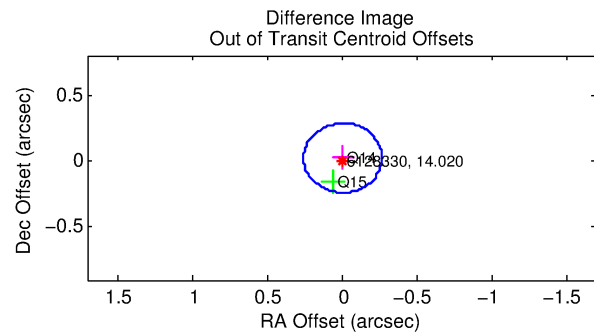
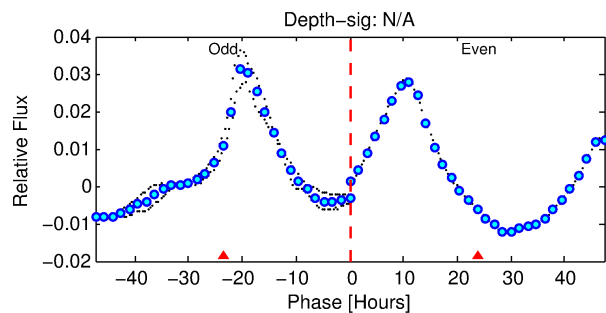
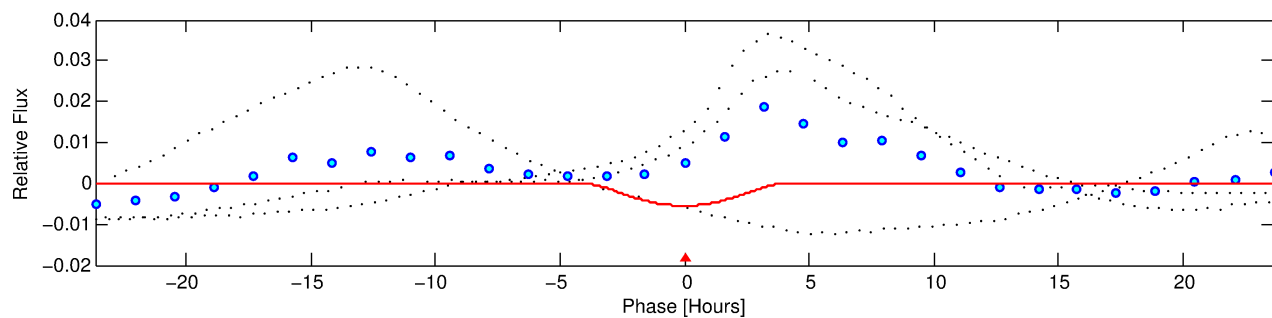
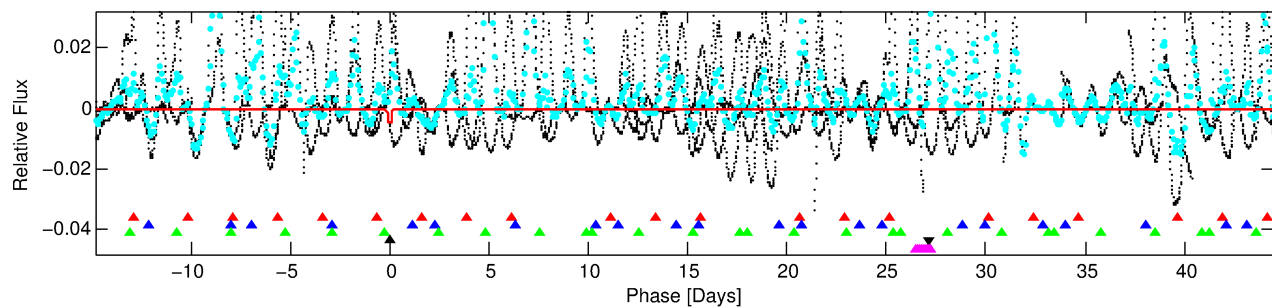
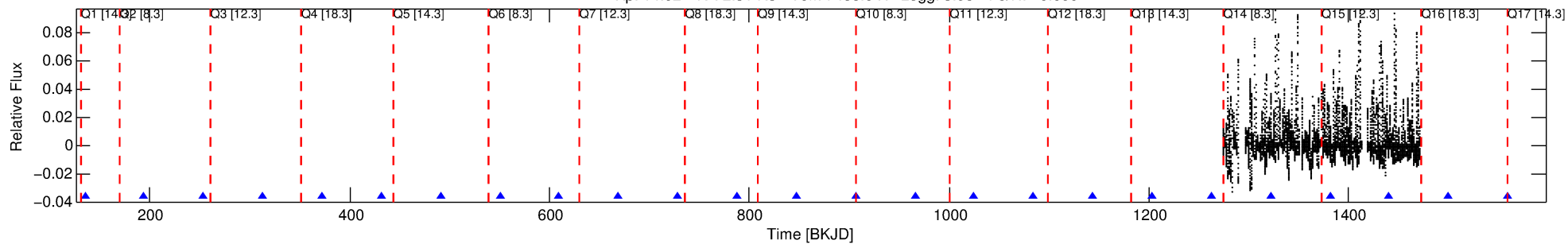
## Ephemeris Match Information For 006128330-04

No Significant Match Found

# DV One-Page Summary

KIC: 6128330 Candidate: 4 of 5 Period: 59.350 d

Kp: 14.02 R\*: 2.31 Rs Teff: 7485.0 K Logg: 3.95 Fe/H: -0.060



## DV Fit Results:

Period = 59.35014 [0.00458] d  
Epoch = 134.9349 [0.0956] BKJD  
Rp/R\* = 0.1201 [0.1166]  
a/R\* = 29.03 [5.06]  
b = 1.00 [0.16]  
Seff = 116.82 [55.67]  
Teq = 838 [100] K  
Rp = 30.29 [31.03] Re  
a = 0.3584 [0.1050] AU  
Ag = 295.70 [597.25] [0.49σ]  
Teffp = 5375 [2657] K [1.71σ]

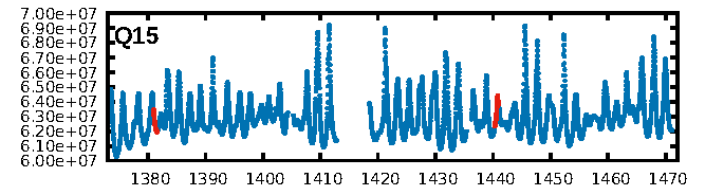
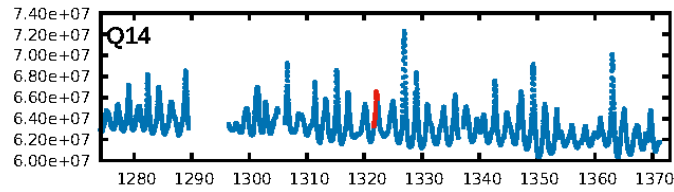
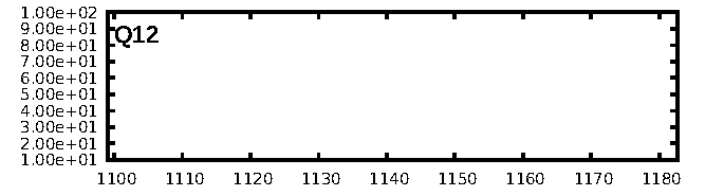
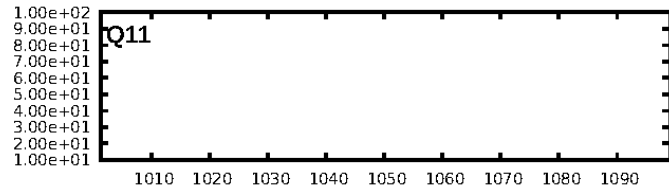
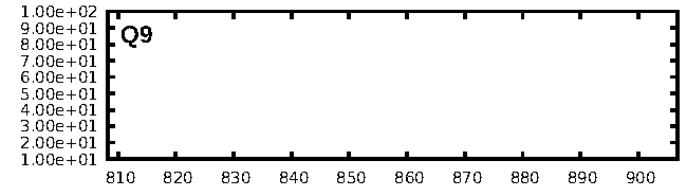
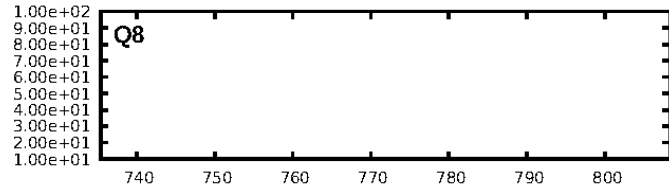
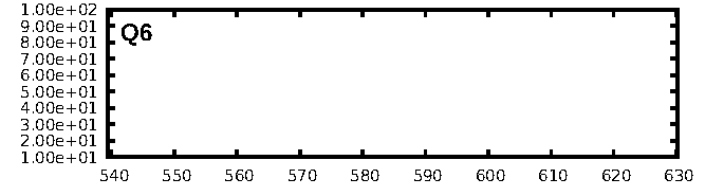
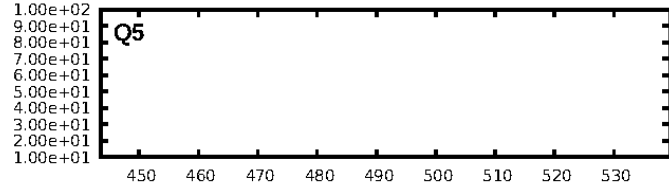
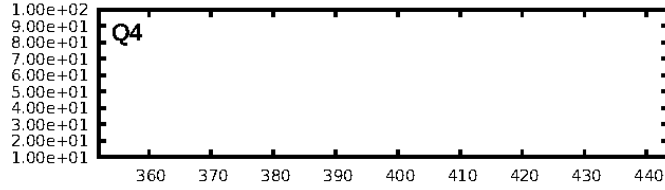
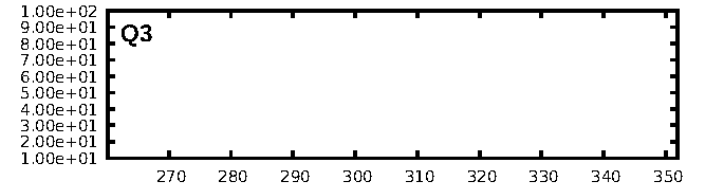
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.01σ]  
LongPeriod-sig: 7.0% [0.09σ]  
ModelChiSquare2-sig: 1.3%  
ModelChiSquareGof-sig: 99.5%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.5503  
Centroid-sig: N/A  
Centroid-so: 0.235 arcsec [1.99σ]  
OotOffset-rm: 0.024 arcsec [0.28σ]  
KicOffset-rm: 0.180 arcsec [1.32σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

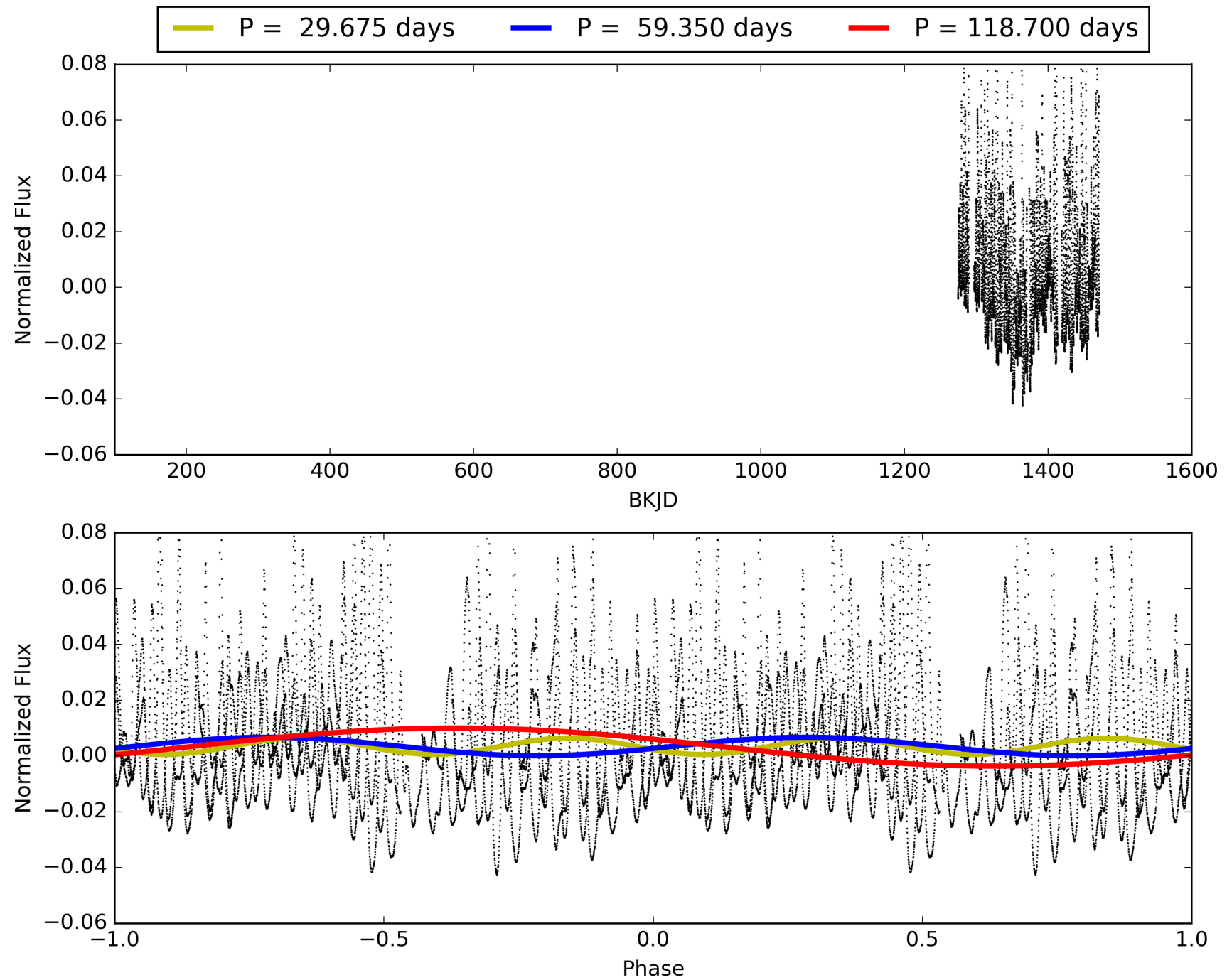
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:30:27 Z

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

# TCE 006128330-04, PDC Light Curves



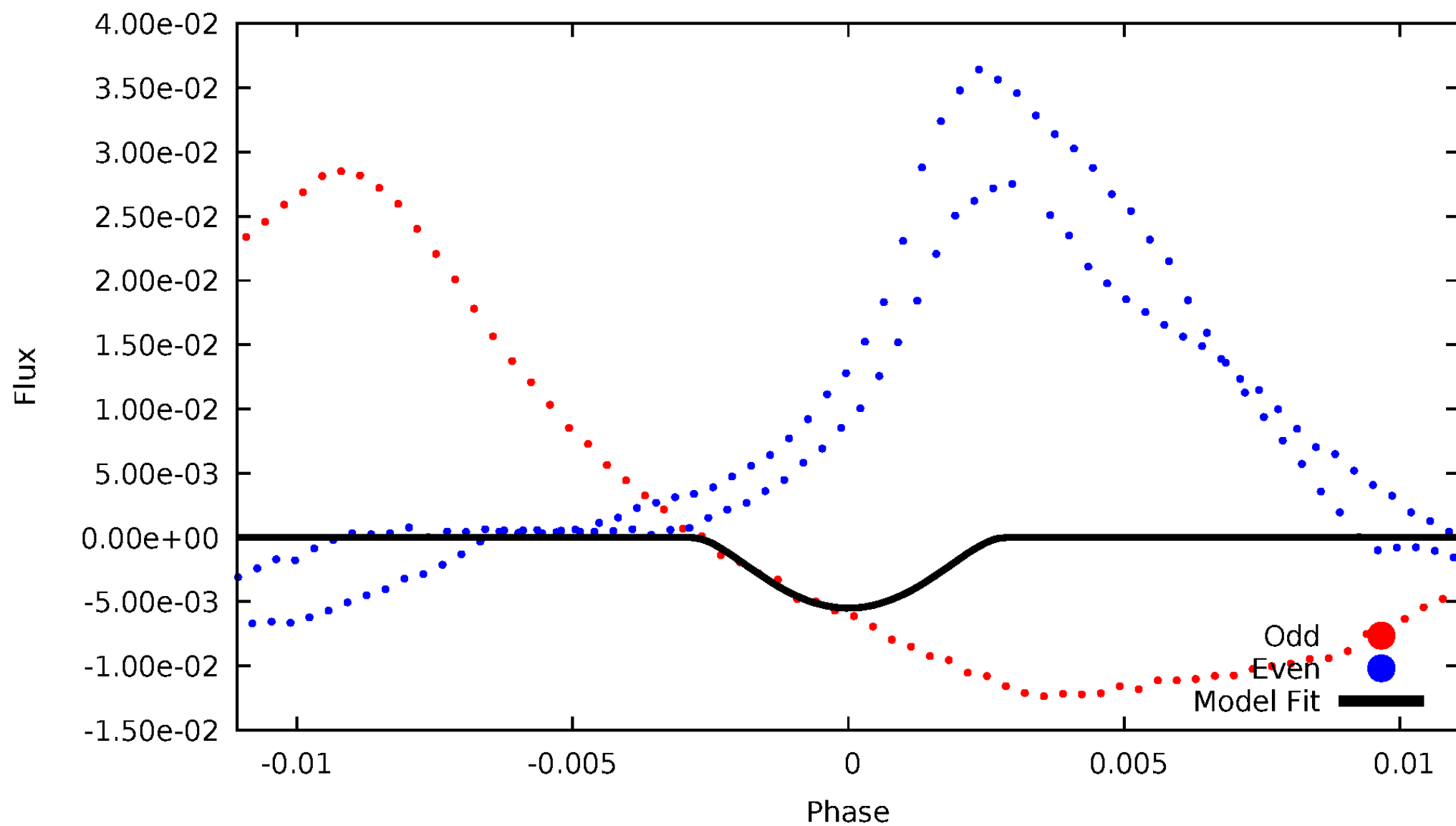
# TCE 006128330-04





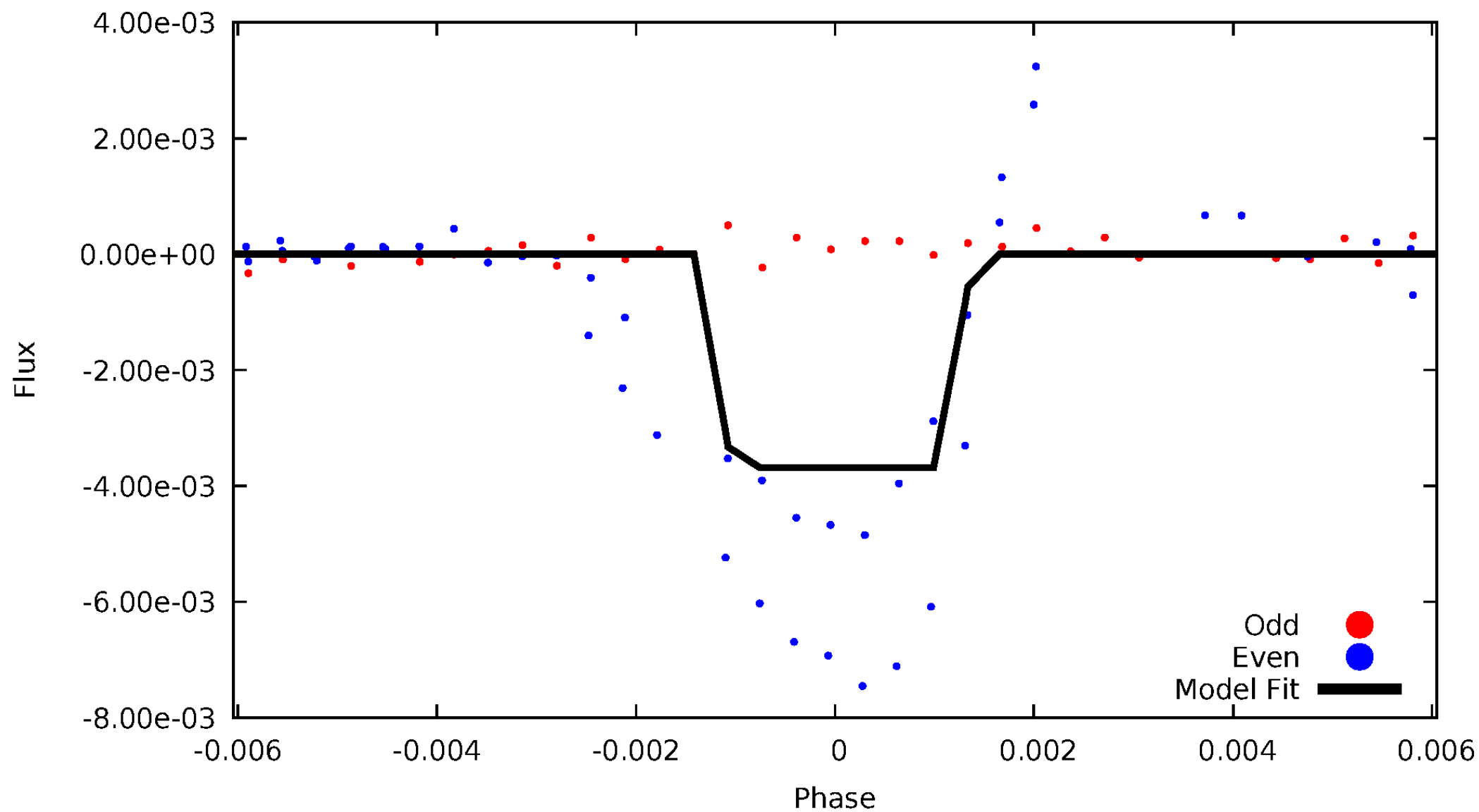
# DV Odd/Even

TCE 006128330-04



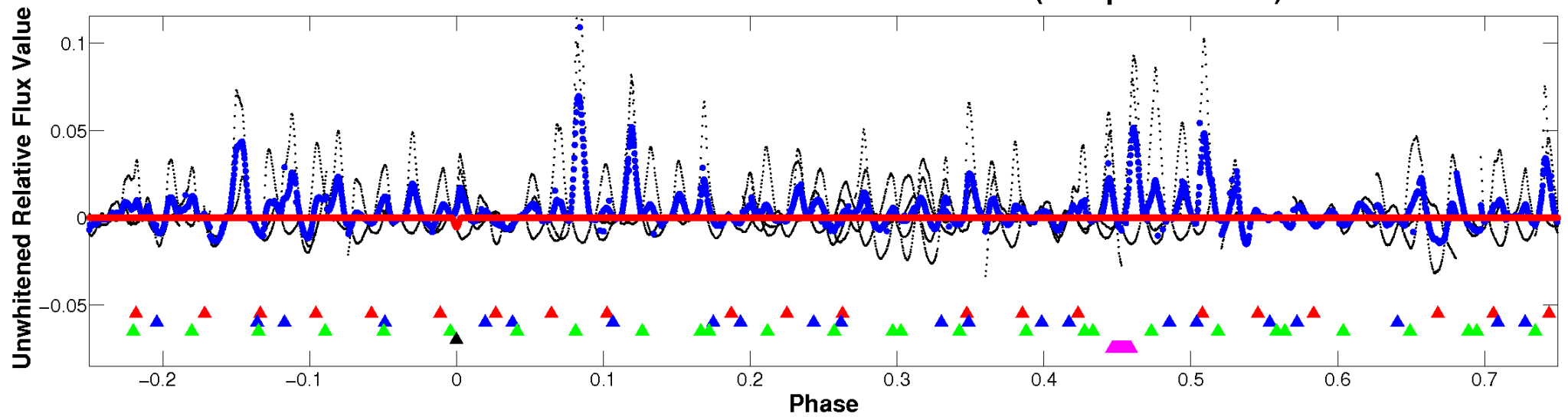
# ALT Odd/Even

TCE 006128330-04

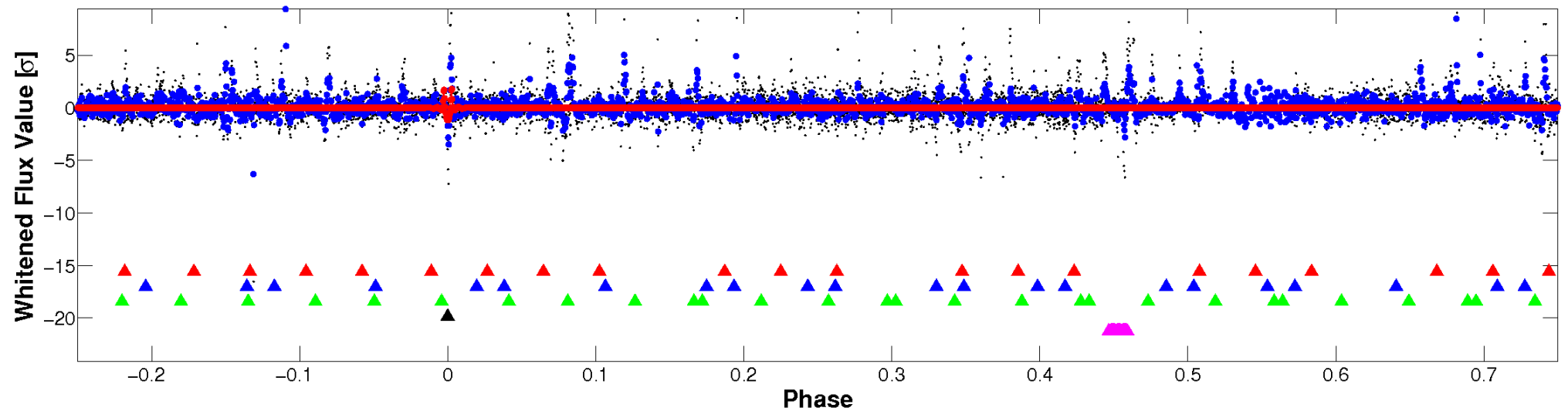


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

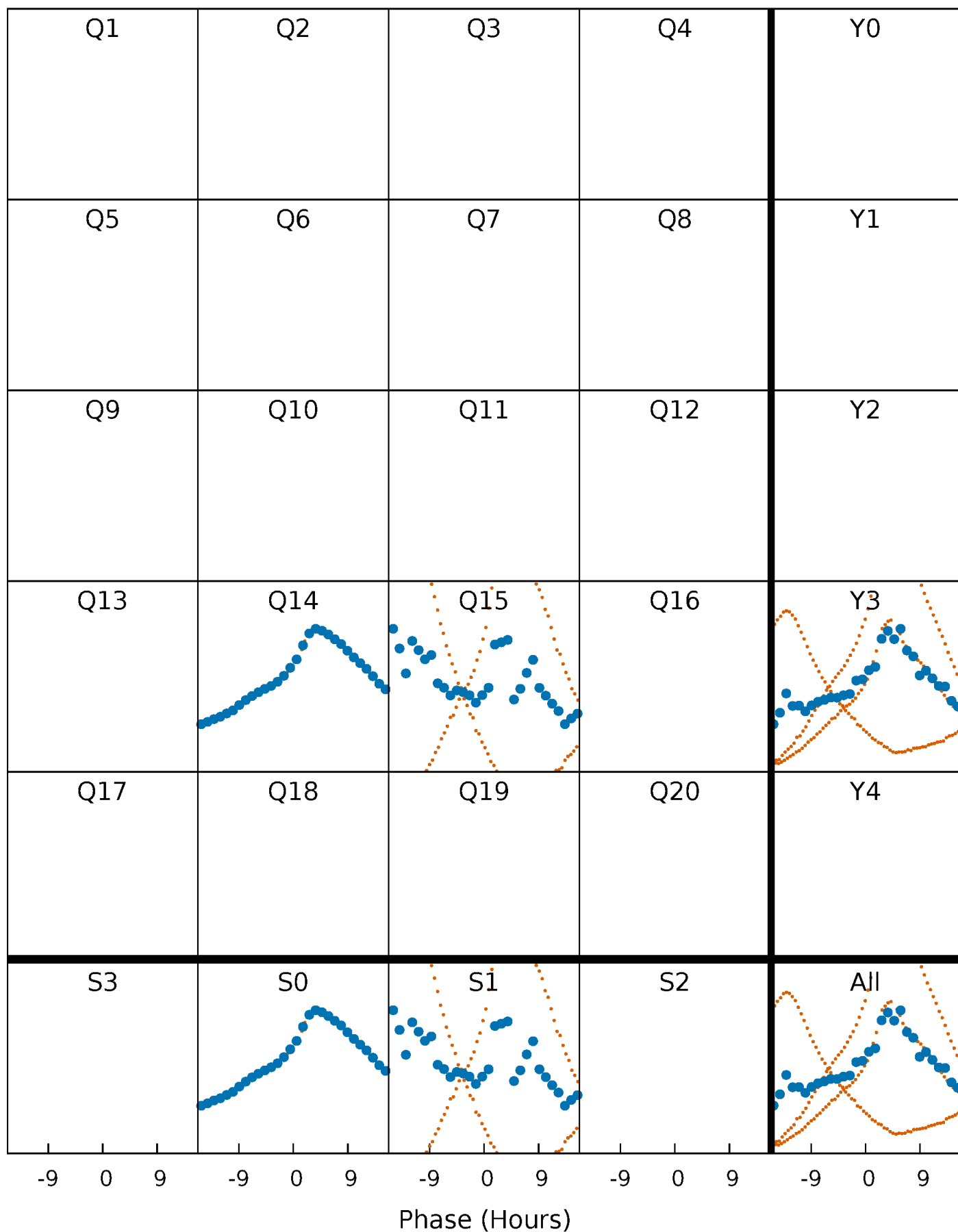


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



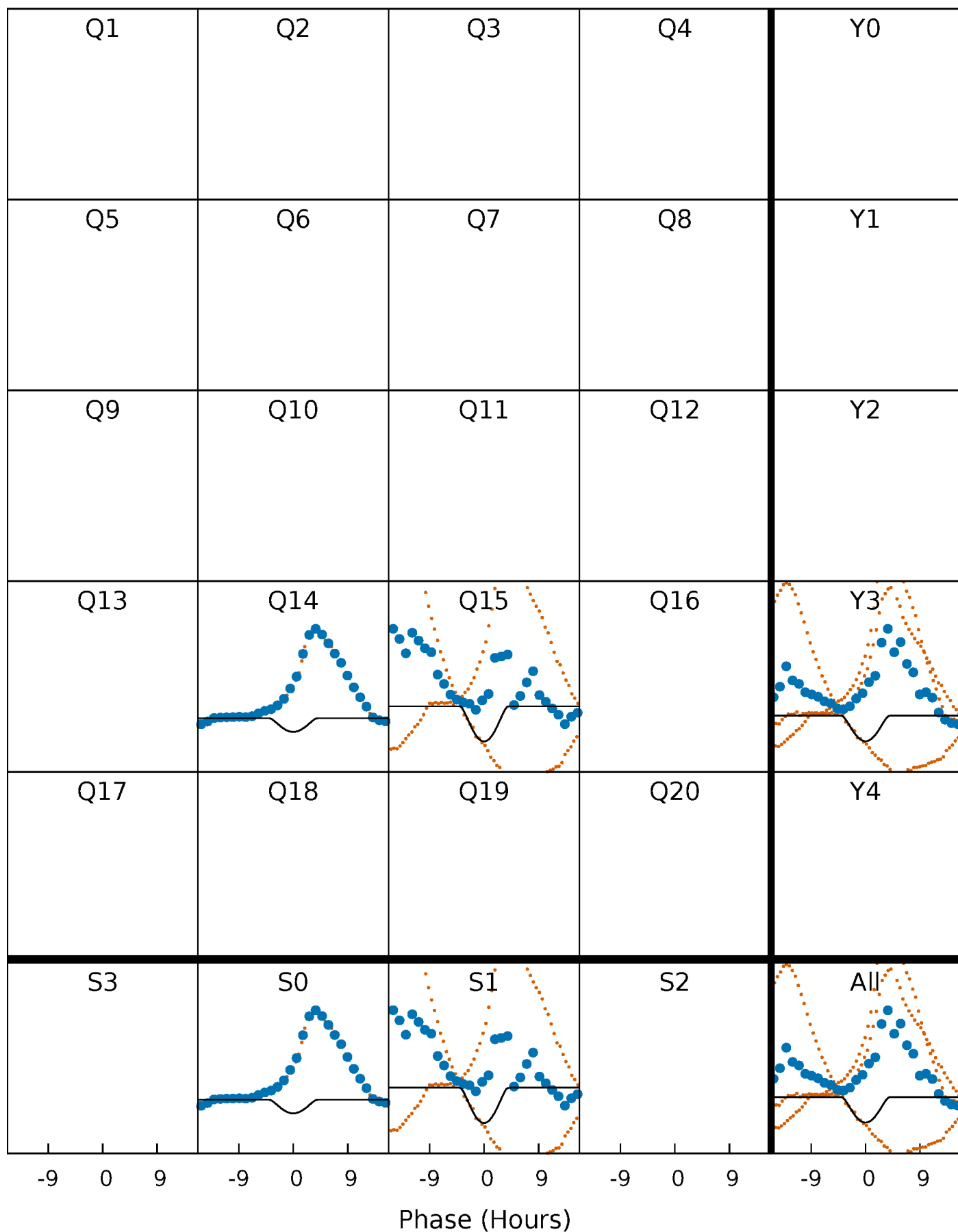
# PDC Quarter-Phased Transit Curves

TCE 006128330-04 P= 59.350137 Days  $T_0=134.934911$  (BKJD)



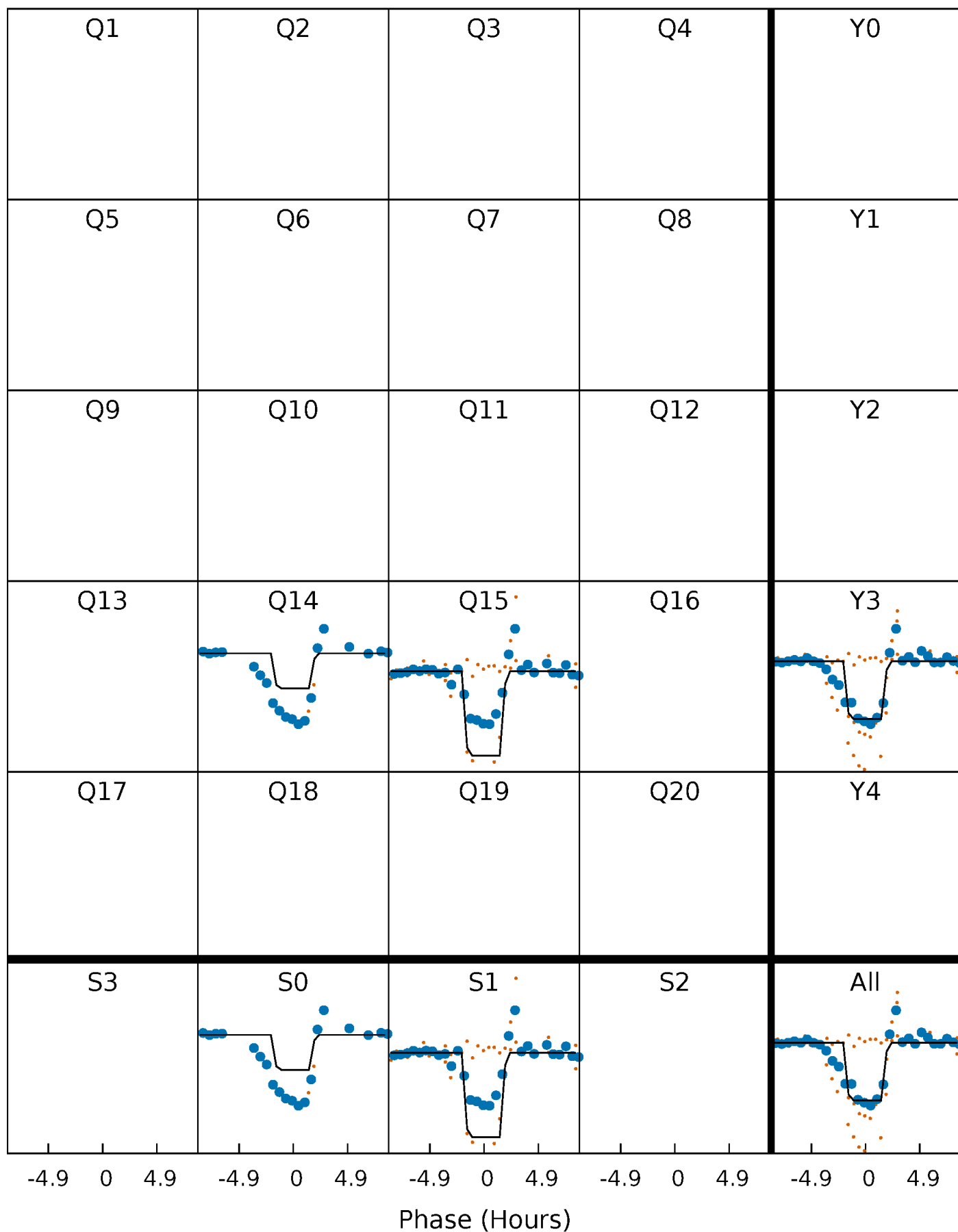
# DV Quarter-Phased Transit Curves

TCE 006128330-04 P= 59.350137 Days  $T_0=134.934911$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

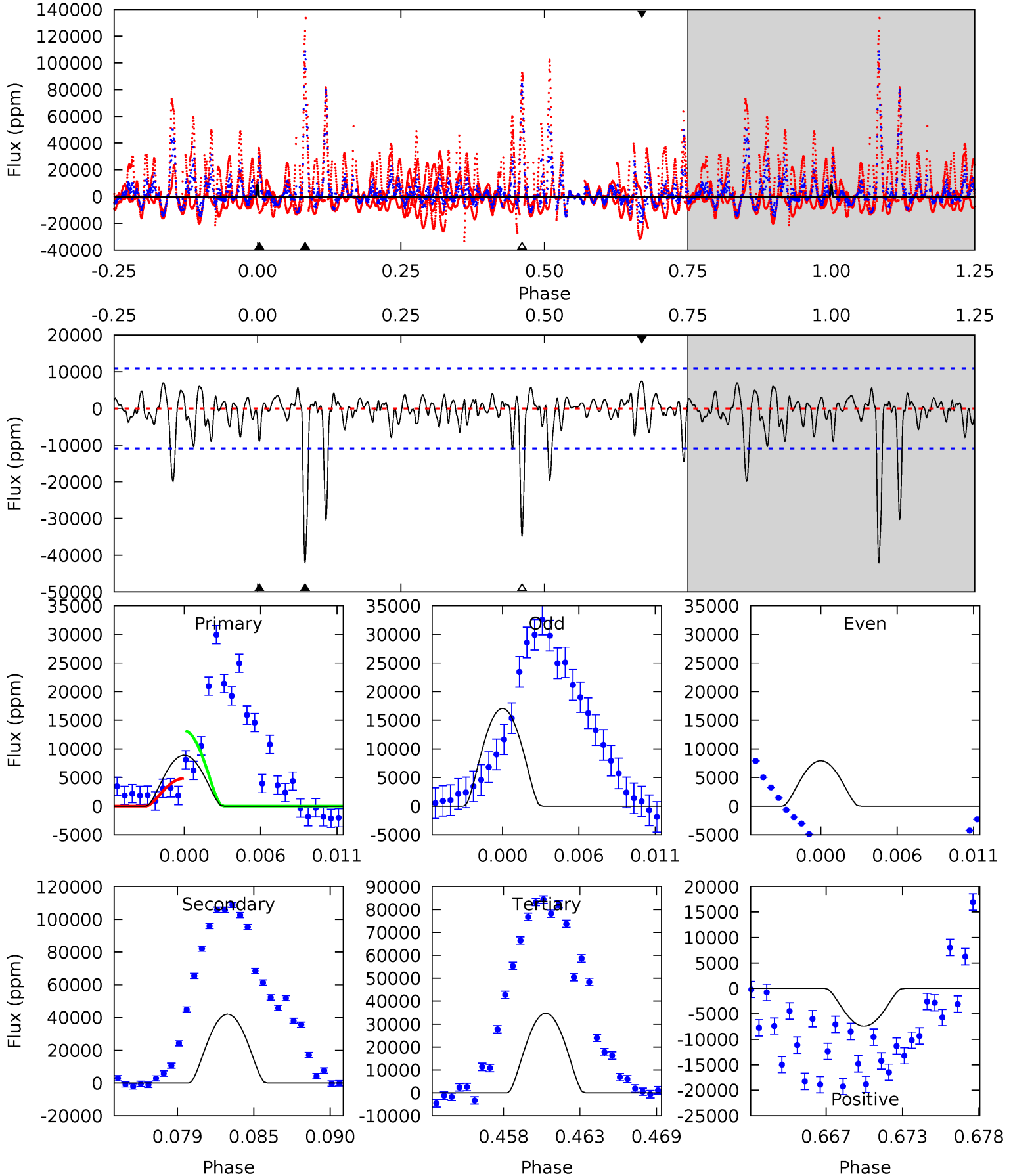
TCE 006128330-04 P= 59.357139 Days  $T_0=134.775980$  (BKJD)



# DV Model-Shift Uniqueness Test

006128330-04, P = 59.350137 Days, E = 134.934911 Days

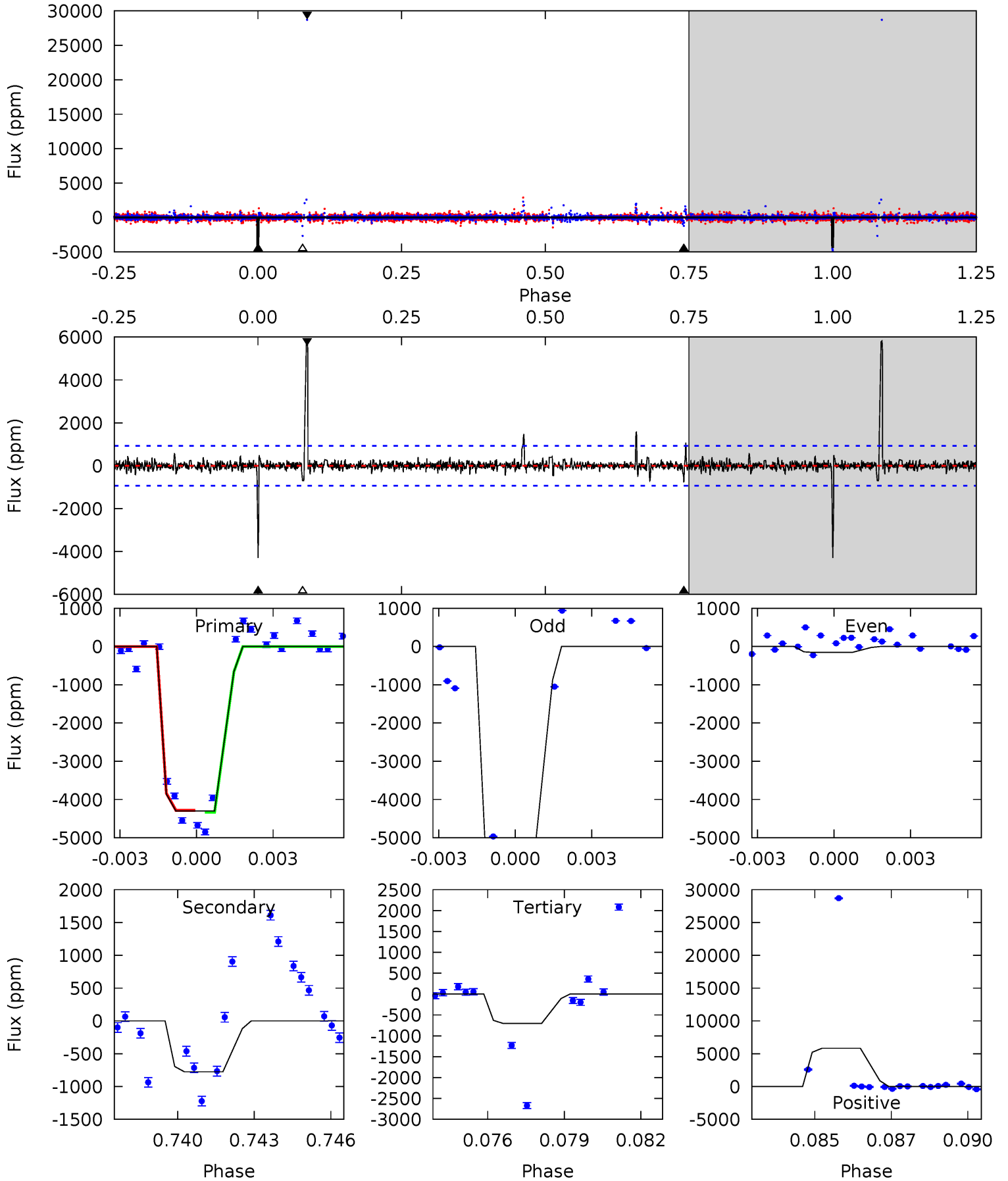
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.17	19.7	16.3	3.48	5.13	2.77	2.09	-12.1	0.69	3.43	16.3	1.95	0.63	0.15	2.03



# Alt Model-Shift Uniqueness Test

006128330-04, P = 59.357139 Days, E = 134.775980 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
24.4	4.40	3.99	33.0	5.27	3.00	1.19	20.4	-8.60	0.41	-28.6	21.6	0.87	0.57	0





### Stellar Parameters For KIC 006128330

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7485^{+209}_{-314}$	$3.952^{+0.253}_{-0.136}$	$-0.060^{+0.200}_{-0.350}$	$2.310^{+0.507}_{-0.760}$	$1.743^{+0.195}_{-0.363}$	$0.199^{+0.337}_{-0.084}$
	+3%/-4%	+6%/-3%	+333%/-583%	+22%/-33%	+11%/-21%	+169%/-42%
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 006128330-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-42041 \pm 2130$	$34.61^{+26.84}_{-20.62}$	$1158^{+77}_{-91}$	$9424^{+11559}_{-2715}$	$2591^{+13315}_{-1795}$
Alt.	$-776 \pm 176$	$24.49^{+23.29}_{-17.01}$	$1150^{+87}_{-97}$	$4068^{+2806}_{-777}$	$85^{+842}_{-63}$

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

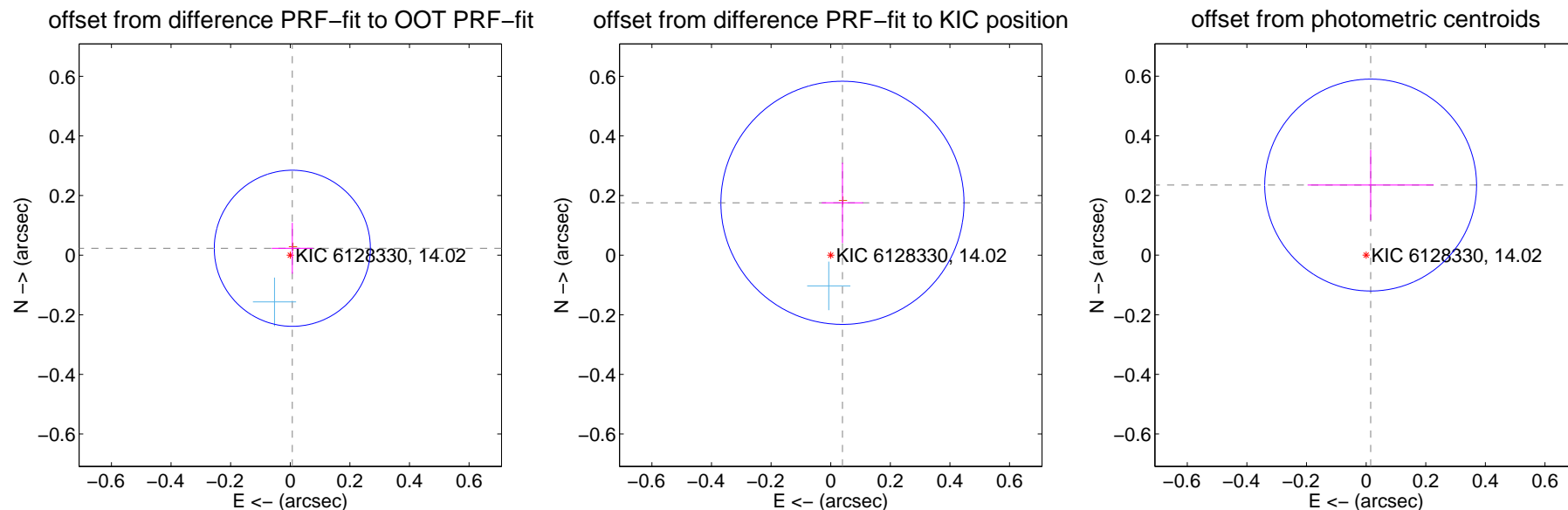
## DV Centroid Data

Supplemental centroid analysis for 006128330-04. Kepler magnitude: 14.02. Transit SNR 6.92

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.024 \pm 0.087$	0.28	$-0.007 \pm 0.069$	$0.023 \pm 0.085$
PRF-fit source offset from KIC position	$0.180 \pm 0.136$	1.32	$-0.039 \pm 0.069$	$0.176 \pm 0.135$
photometric centroid source offset	$0.24 \pm 0.12$	1.99	$-0.02 \pm 0.21$	$0.23 \pm 0.12$



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.

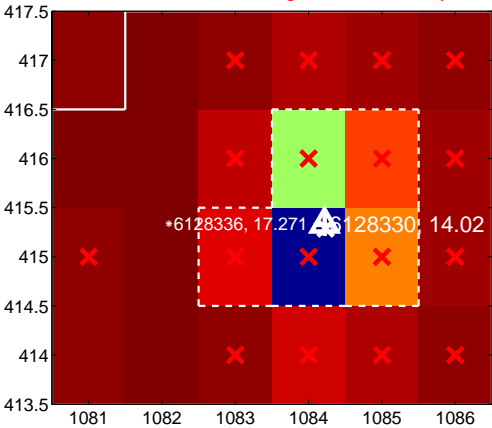
Q13 no difference image



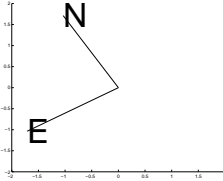
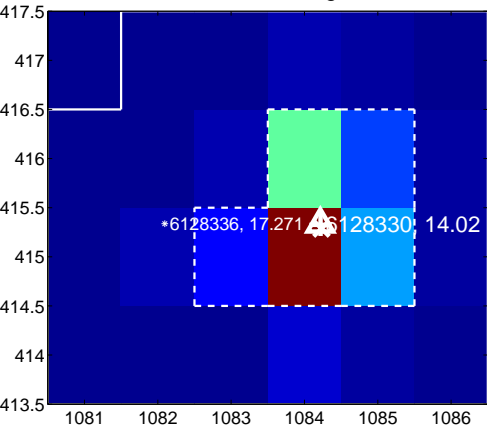
Q13 no OOT image



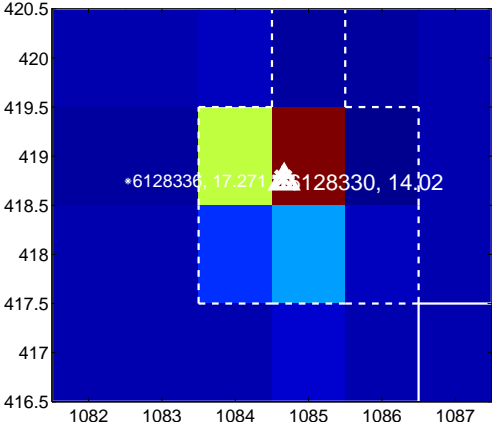
Q14 difference image. Poor Quality



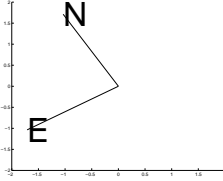
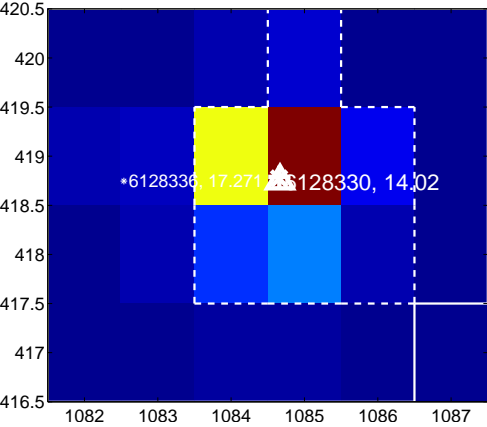
Q14 OOT image



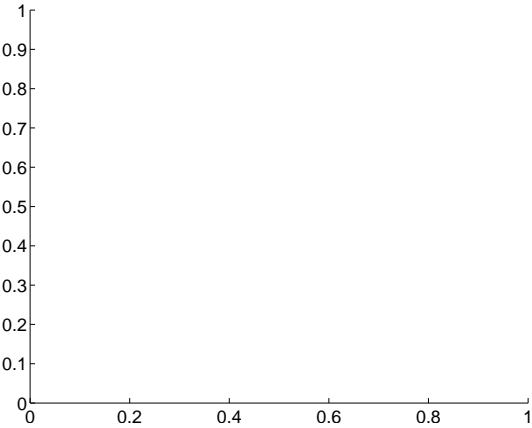
Q15 difference image



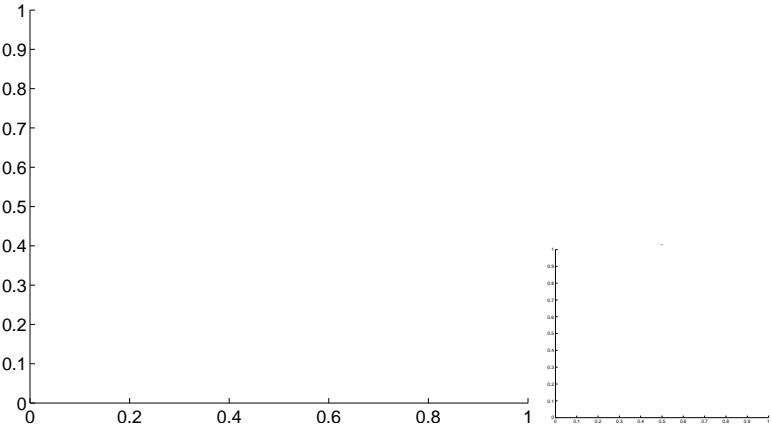
Q15 OOT image



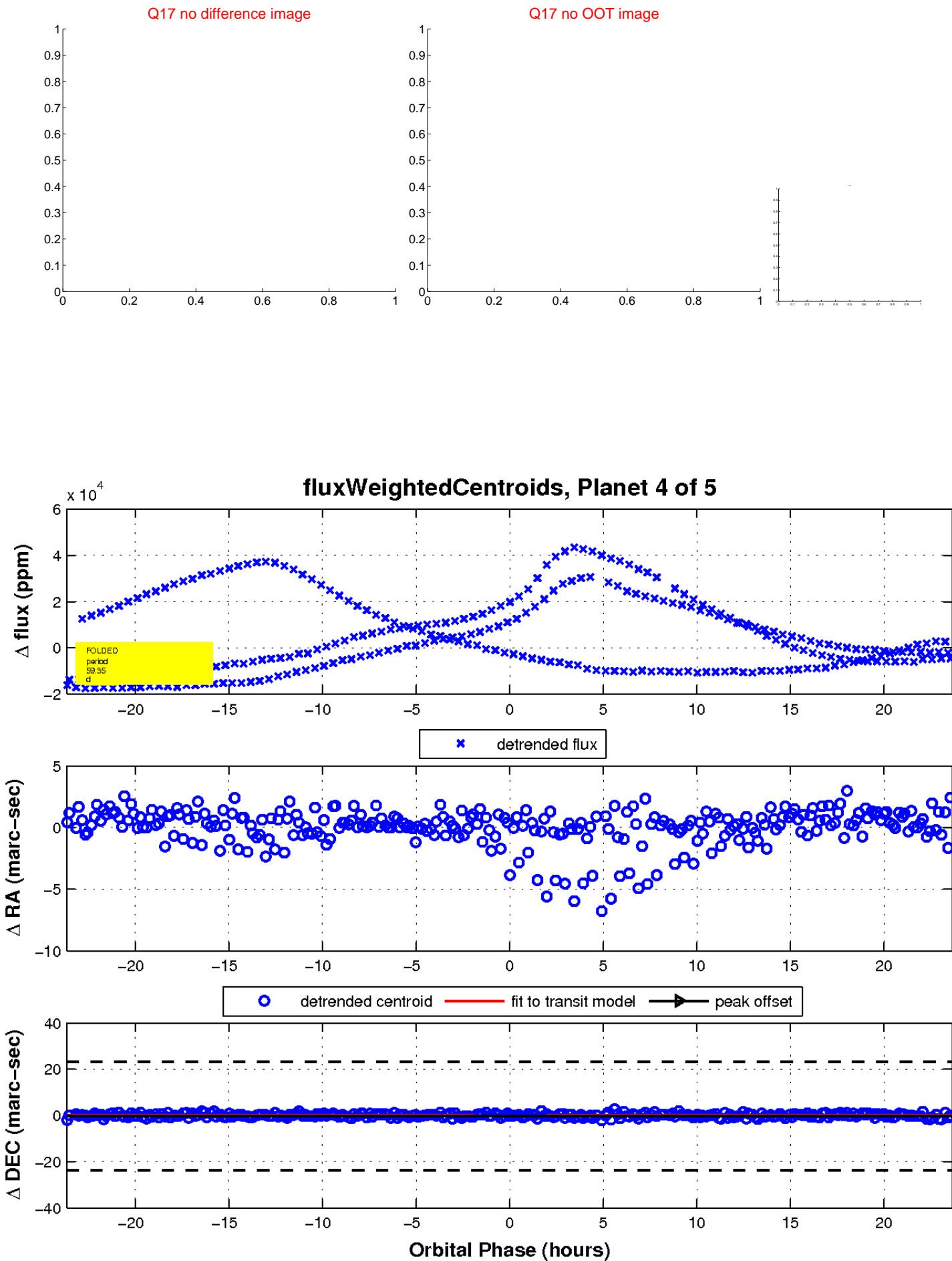
Q16 no difference image



Q16 no OOT image

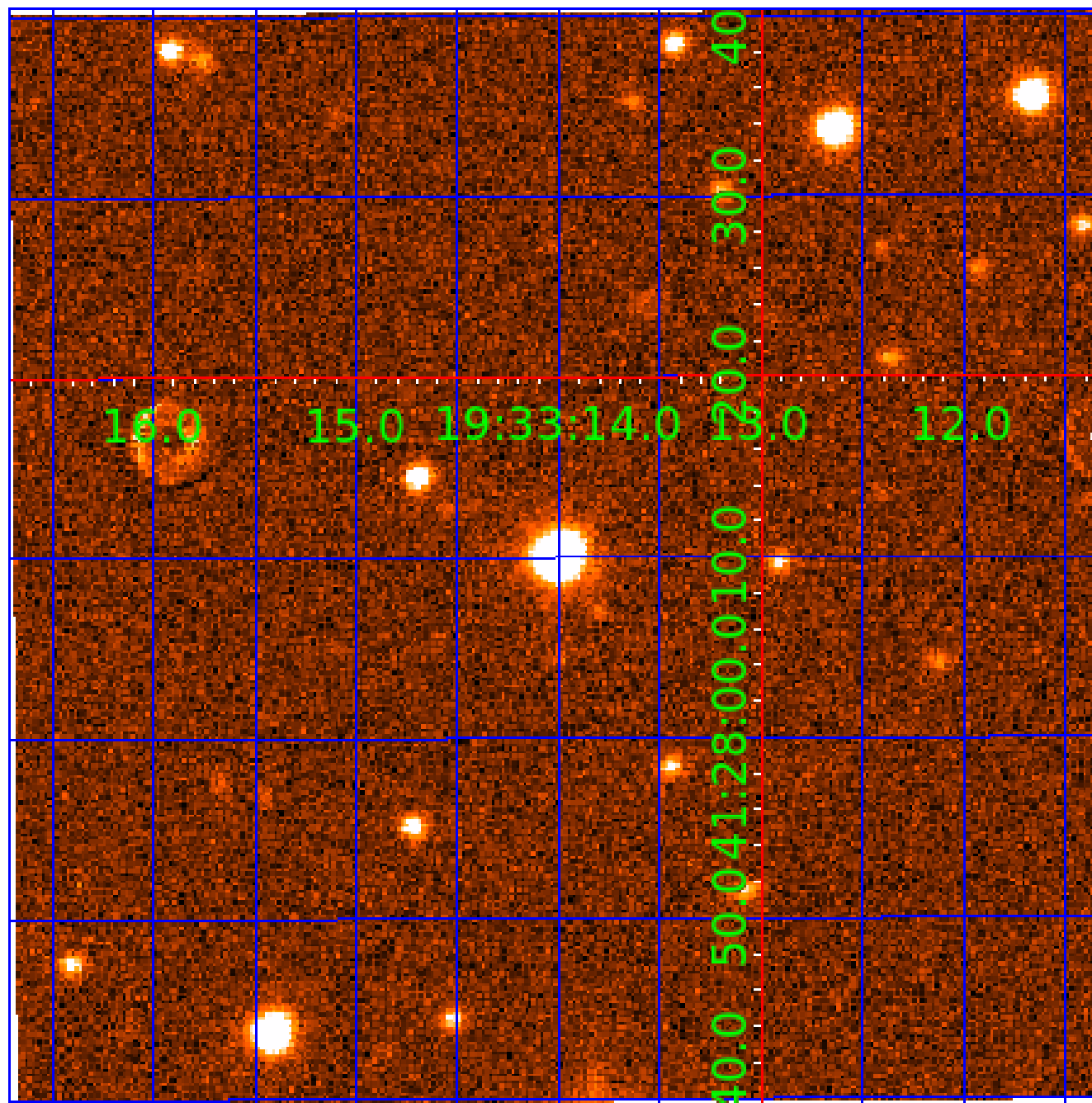


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 006128330

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006128330-01	OBS	No	68.867256	181.335488	816.4	11.941	36.9	2.8	2.31	7485	6.99	95.80
006128330-02	OBS	No	68.565727	149.371198	17504.3	6.574	33.8	16.3	2.31	7485	52.57	96.37
006128330-03	OBS	No	51.594257	176.166760	12370.9	7.587	21.6	13.5	2.31	7485	44.52	140.80
006128330-04	OBS	No	59.350137	134.934911	5501.3	7.889	16.5	6.9	2.31	7485	30.29	116.82
006128330-05	OBS	No	59.381639	161.432537	727.5	3.500	12.8	-1.0	2.31	7485	6.33	116.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006128330-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006128330-03	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST
006128330-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_ALT—CENT_FEW_DIFFS
006128330-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

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

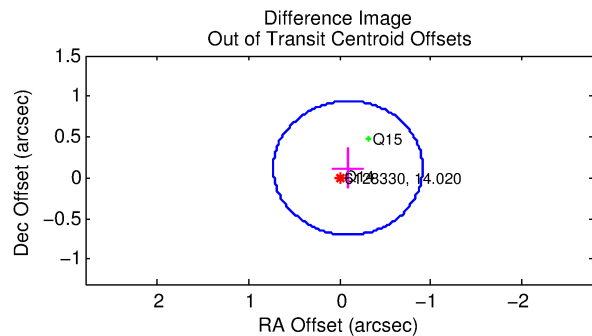
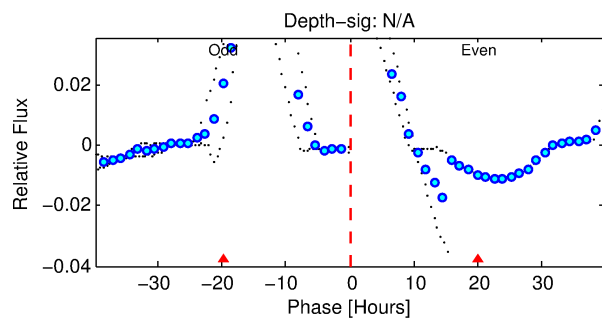
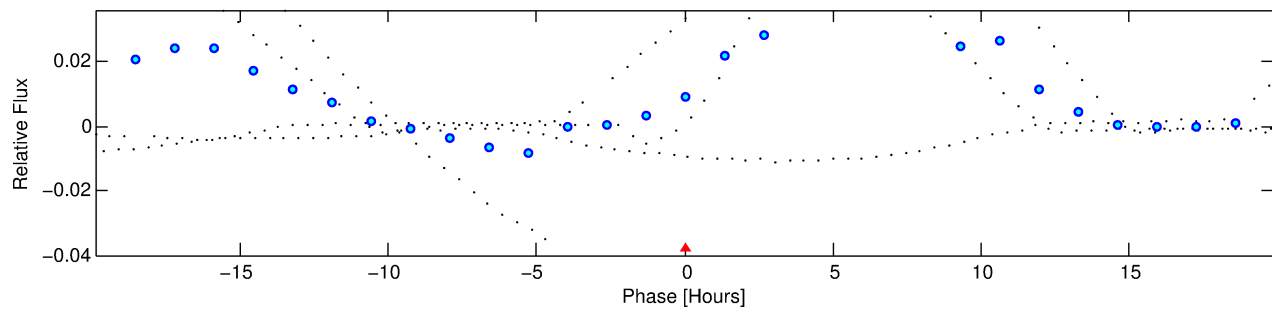
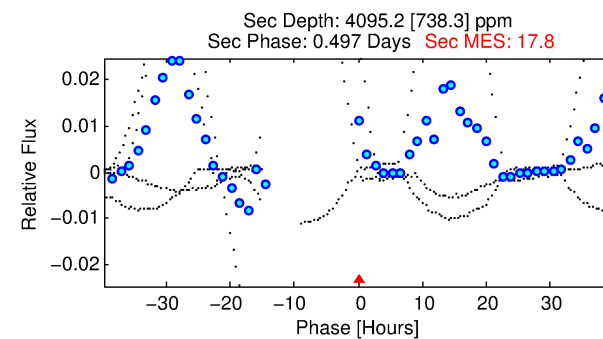
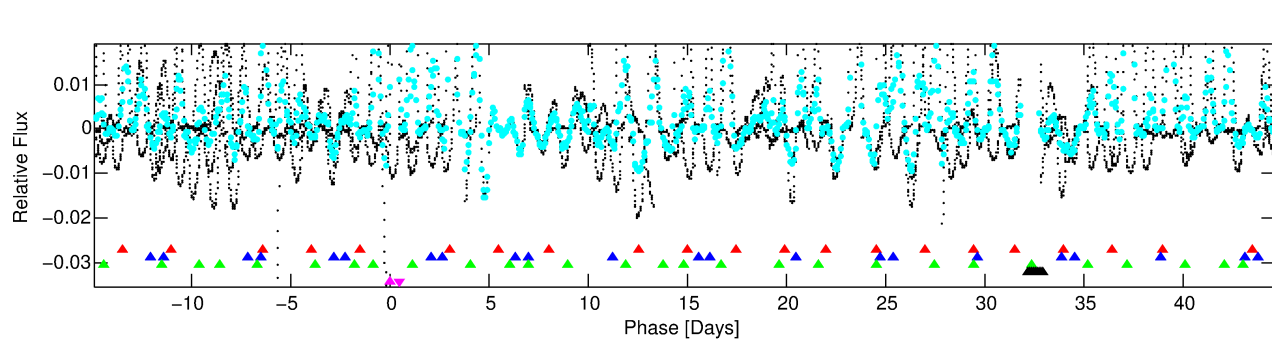
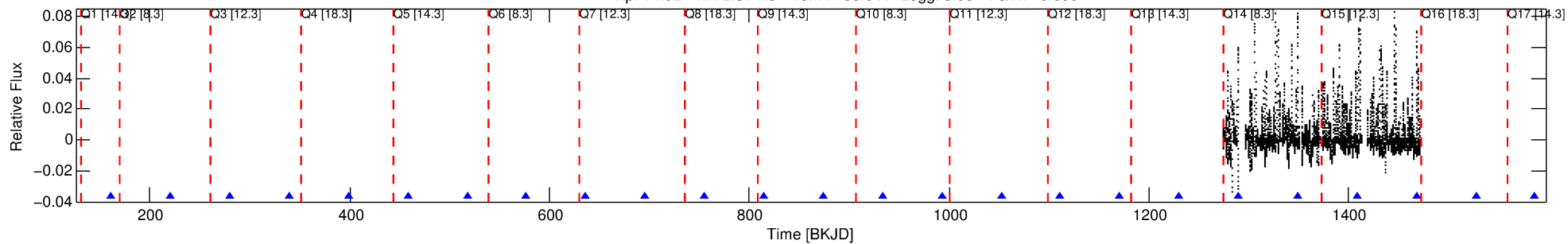
Ephemeris Match Information For 006128330-05

No Significant Match Found

# DV One-Page Summary

KIC: 6128330 Candidate: 5 of 5 Period: 59.382 d

Kp: 14.02 R\*: 2.31 Rs Teff: 7485.0 K Logg: 3.95 Fe/H: -0.060



## TPS TCE Results:

Period = 59.38164 d  
Epoch = 161.4325 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

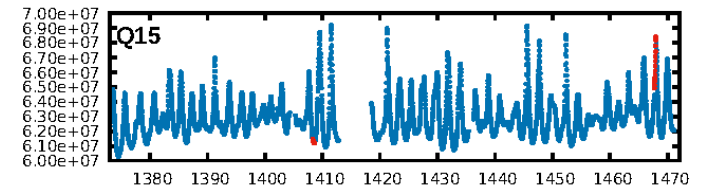
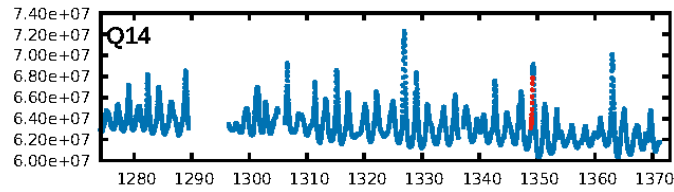
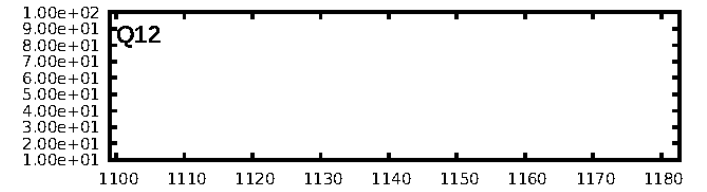
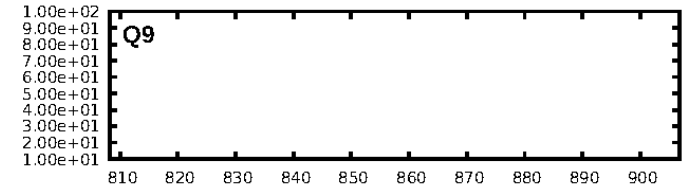
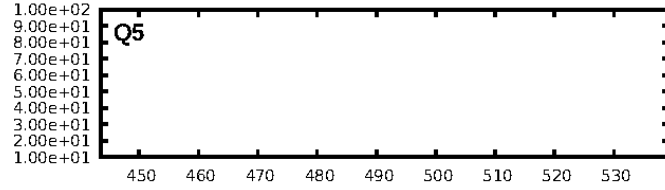
ShortPeriod-sig: 7.0% [0.09σ]  
LongPeriod-sig: 100.0% [29.59σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.8286

Centroid-sig: N/A  
Centroid-so: 0.141 arcsec [2.04σ]  
OotOffset-rm: 0.152 arcsec [0.56σ]  
KicOffset-rm: 0.301 arcsec [1.71σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

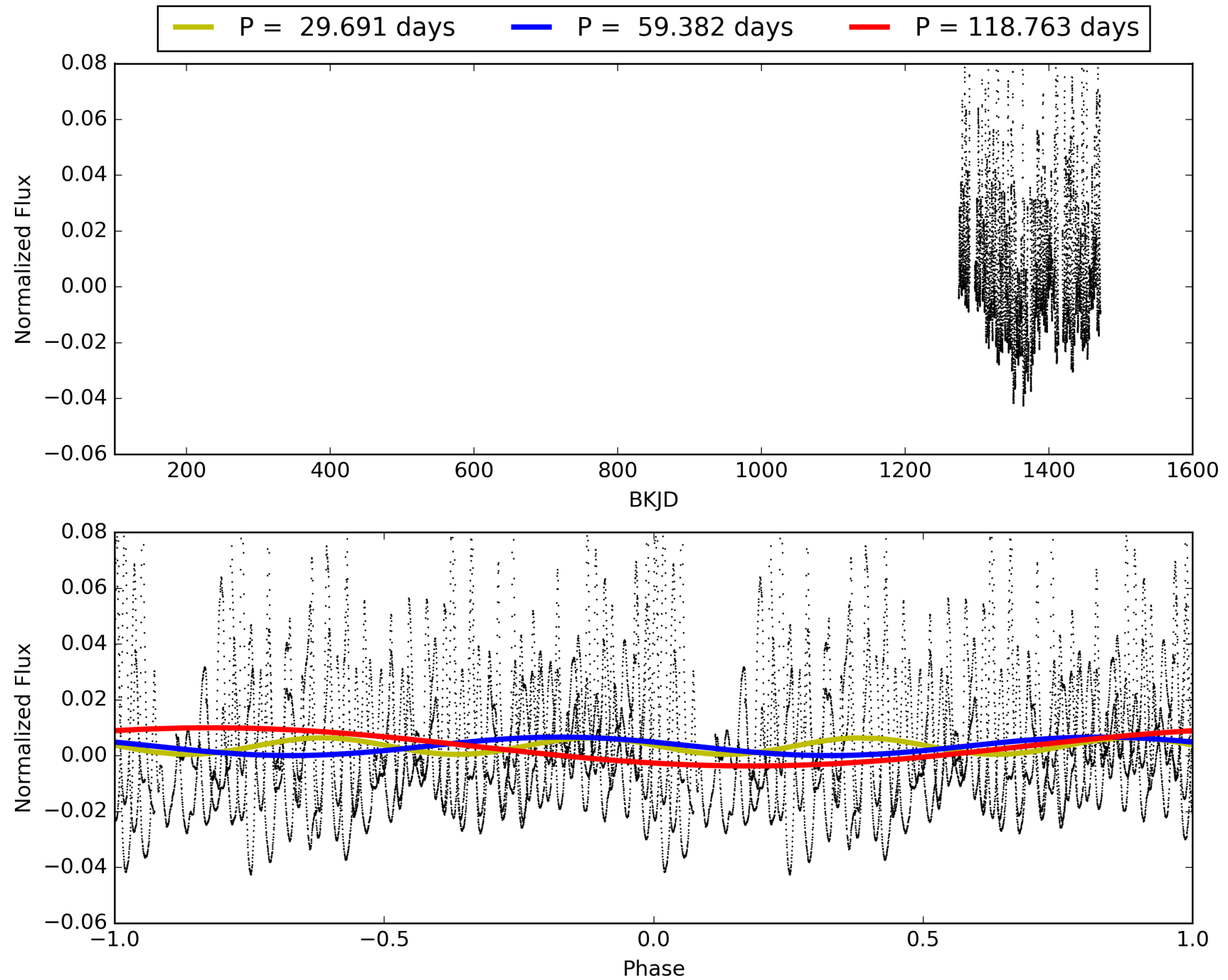
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:30:30 Z

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

# TCE 006128330-05, PDC Light Curves

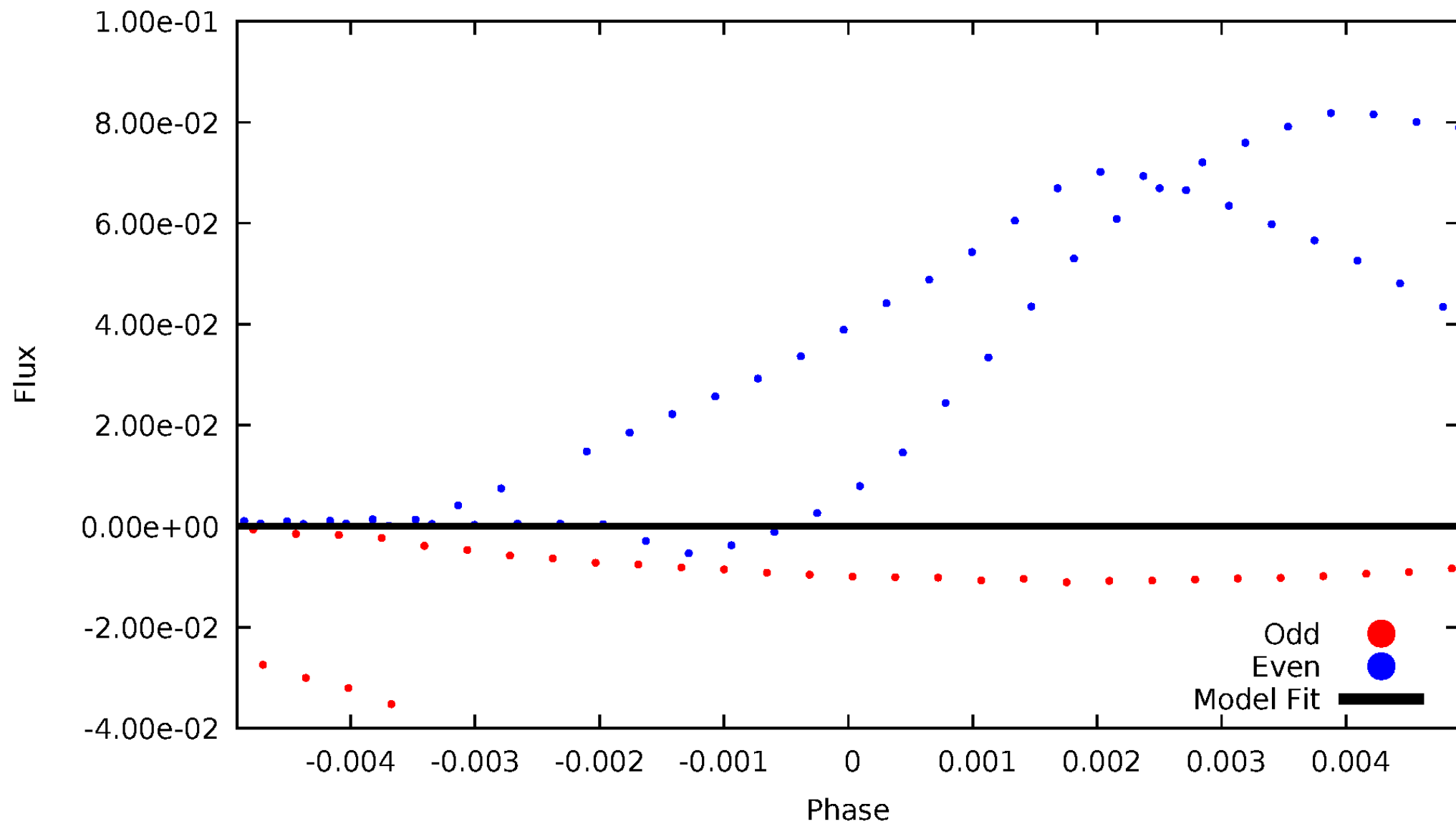


# TCE 006128330-05



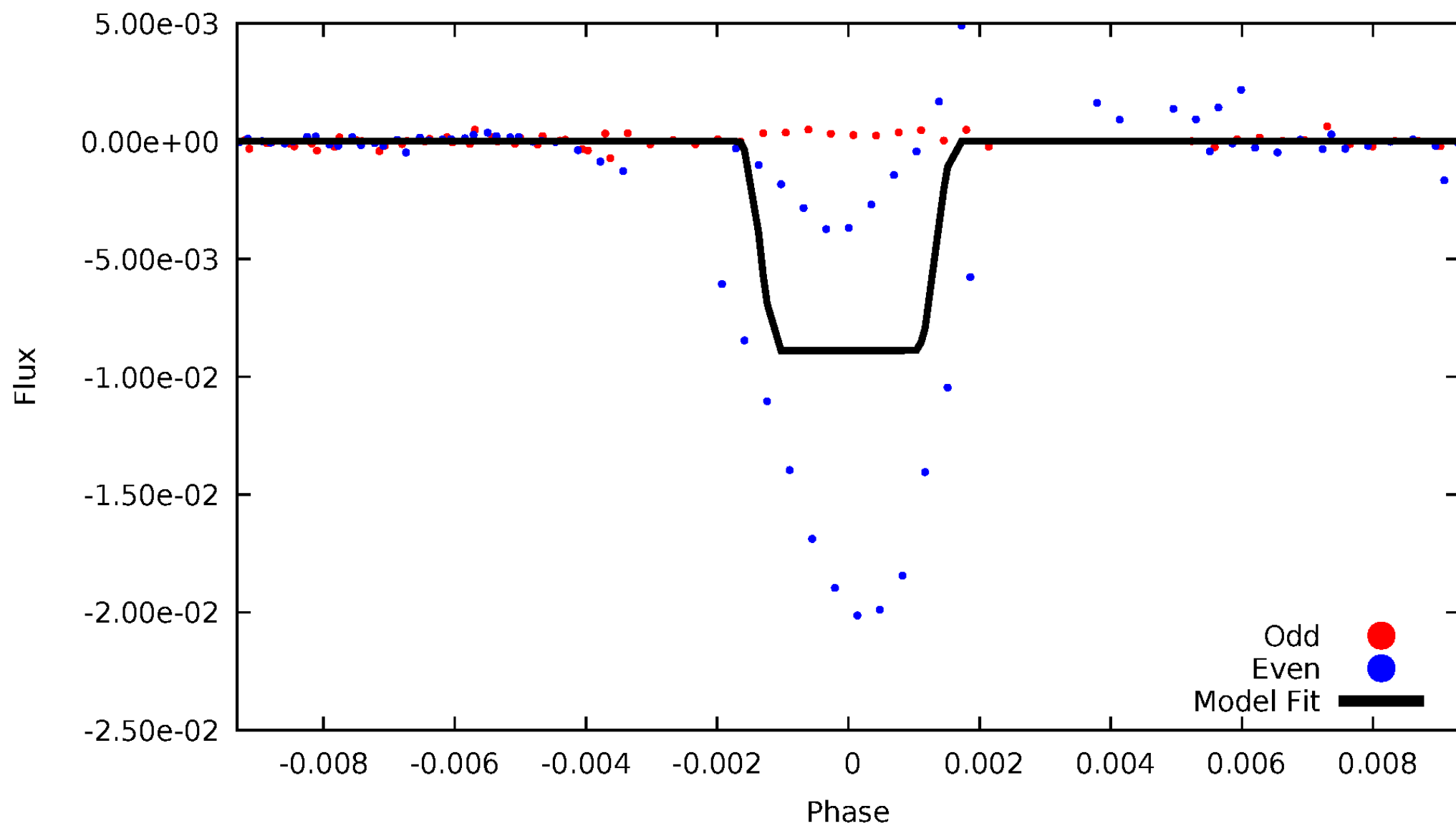
# DV Odd/Even

TCE 006128330-05



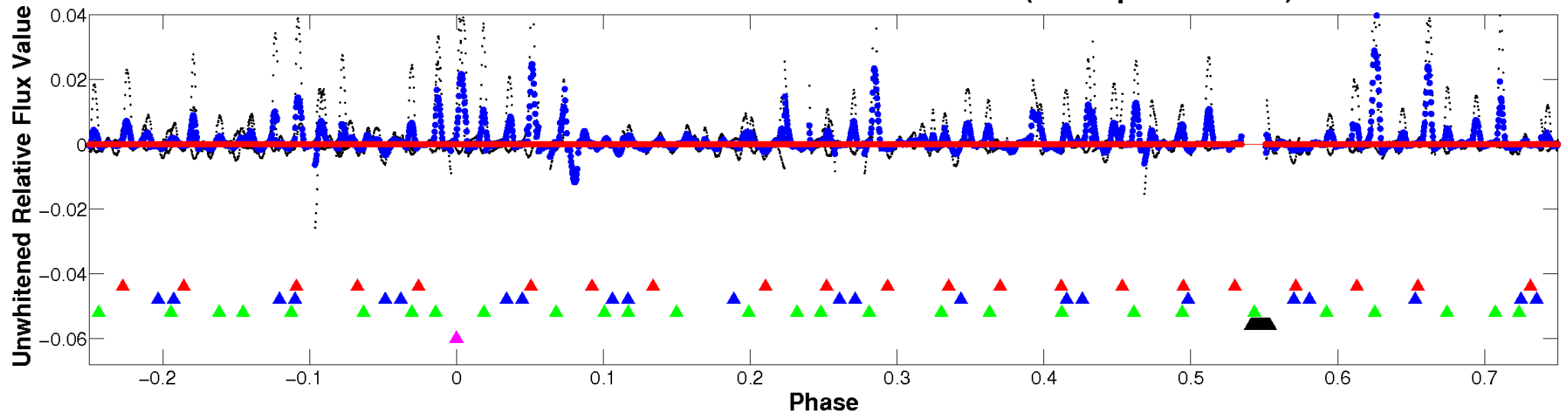
# ALT Odd/Even

TCE 006128330-05



# Non-Whitened Vs. Whitened Light Curve

**Planet 5 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

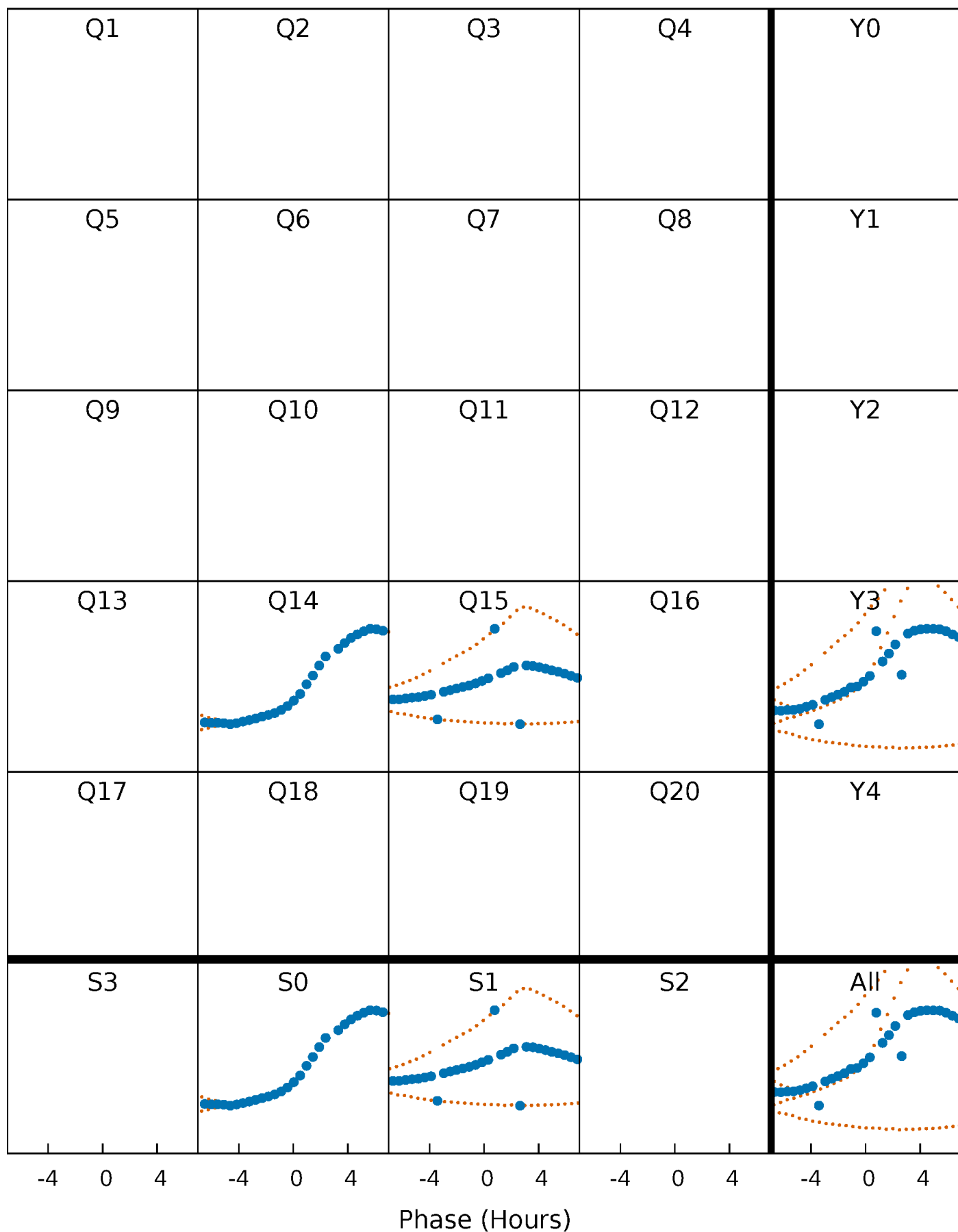


**Planet 5 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

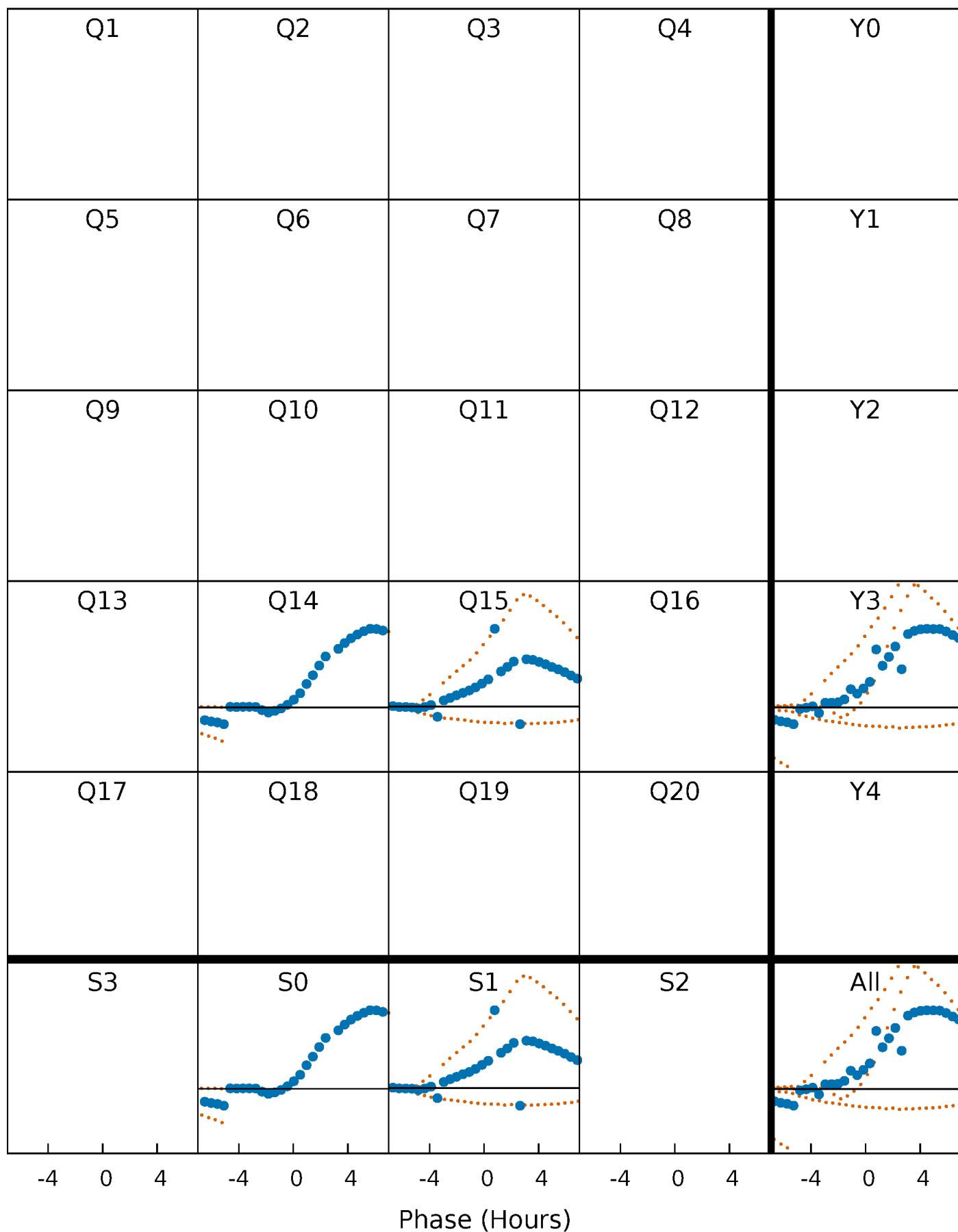
TCE 006128330-05   P= 59.381639 Days    $T_0=161.432537$  (BKJD)





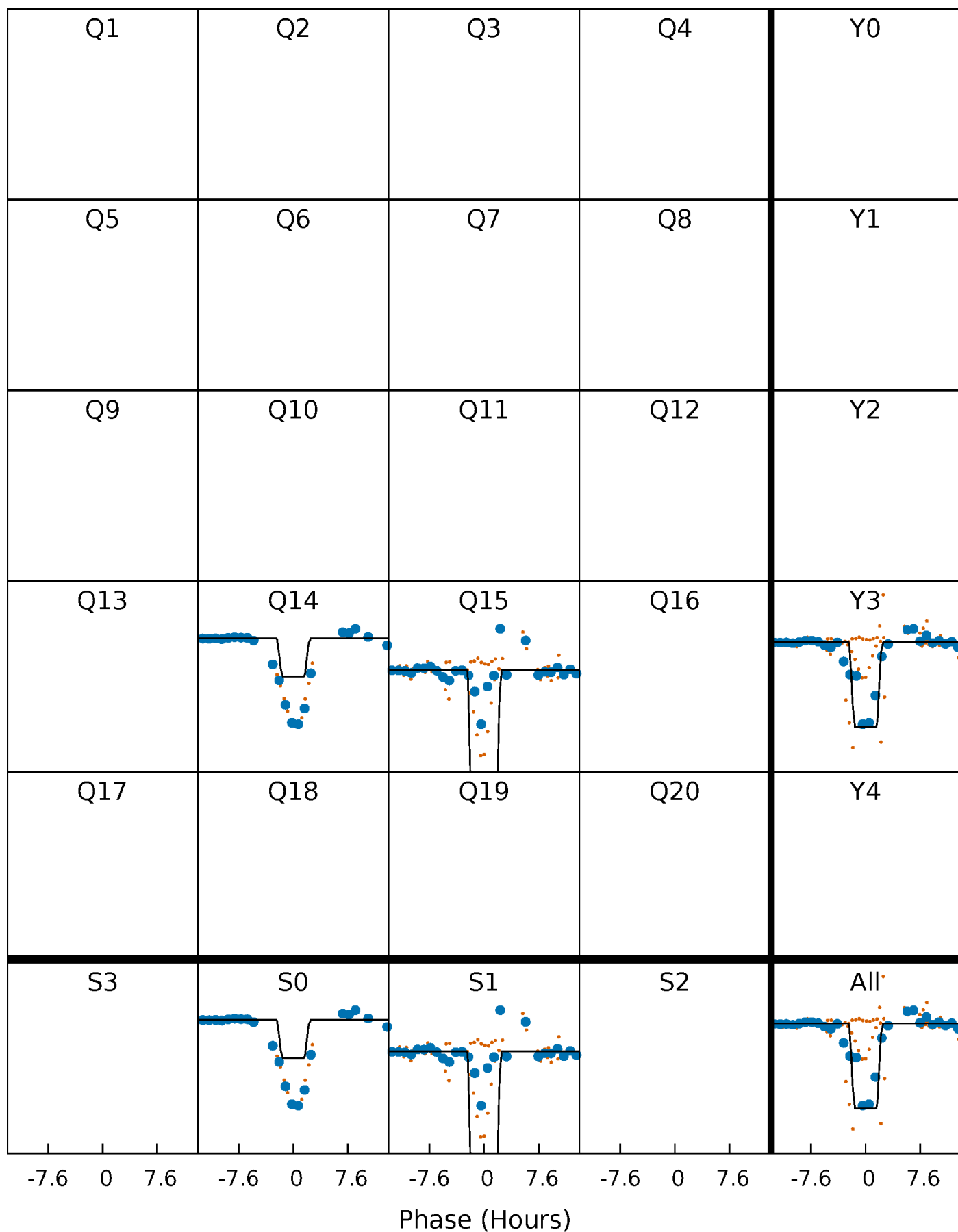
# DV Quarter-Phased Transit Curves

TCE 006128330-05   P= 59.381639 Days    $T_0=161.432537$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

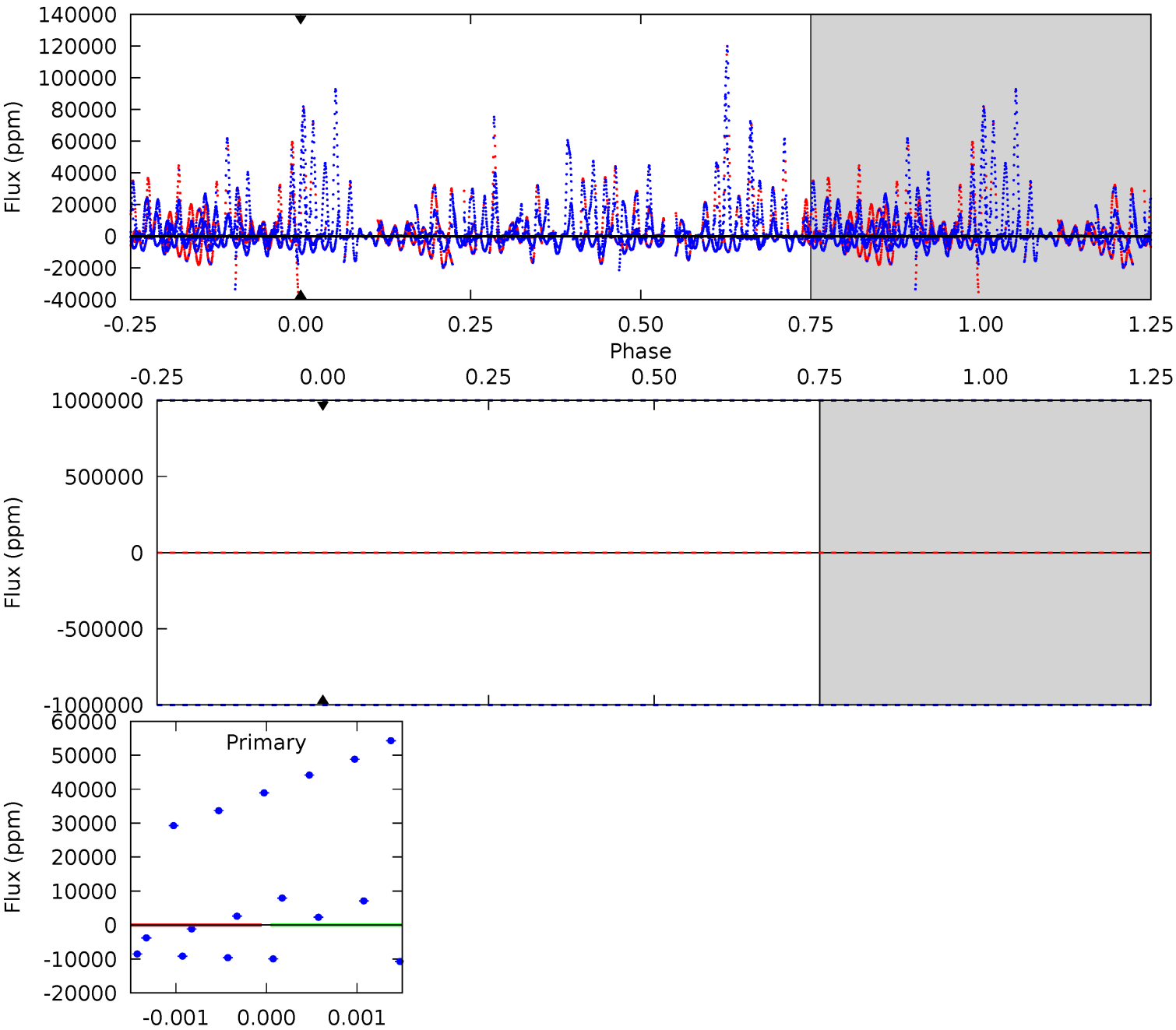
TCE 006128330-05     $P = 59.381639$  Days     $T_0 = 161.409471$  (BKJD)



# DV Model-Shift Uniqueness Test

006128330-05, P = 59.381639 Days, E = 161.432537 Days

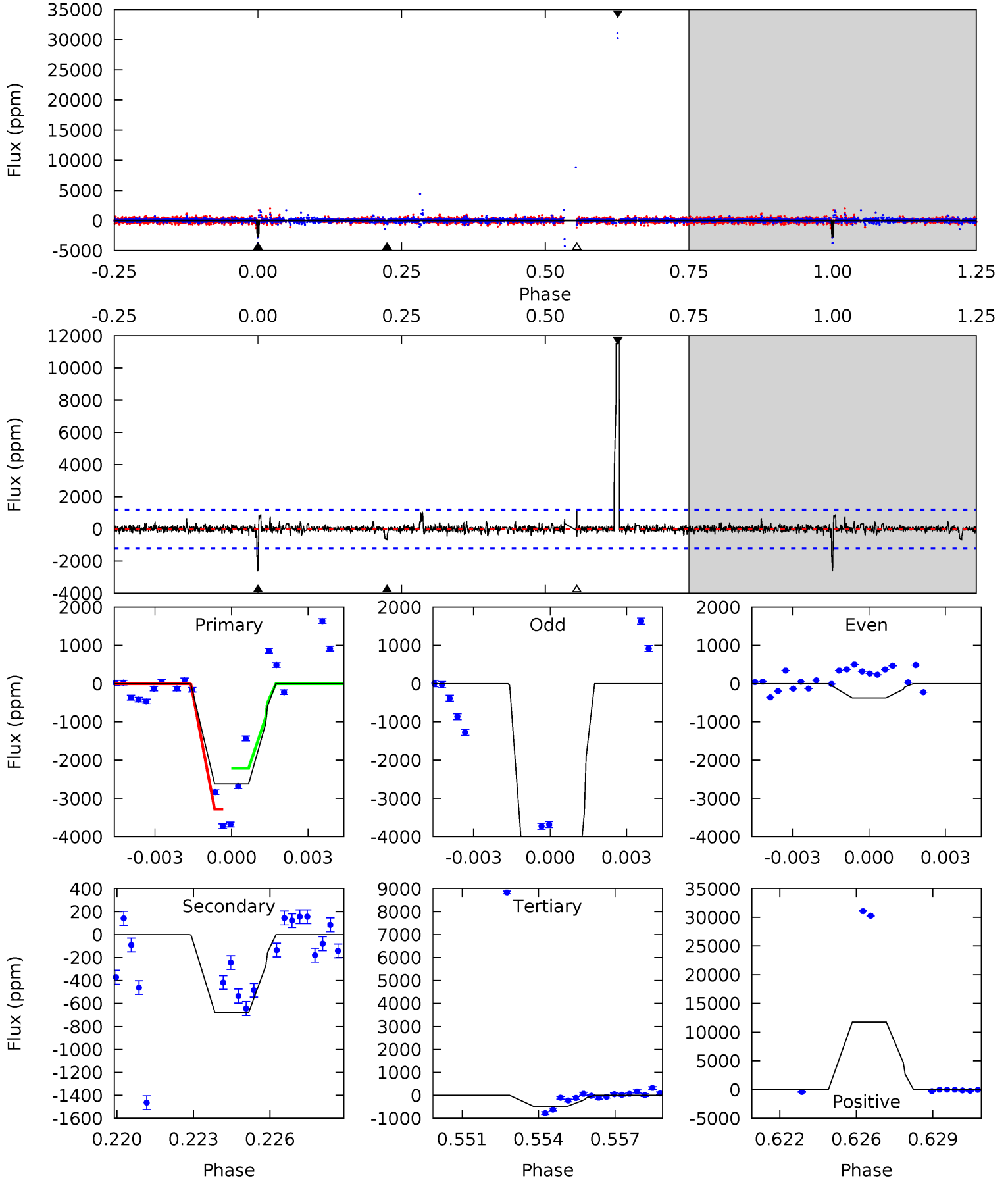
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006128330-05, P = 59.381639 Days, E = 161.409471 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
11.5	2.98	2.13	51.7	5.25	2.96	1.49	9.42	-40.2	0.85	-48.7	18.6	2.92	0.82	0



### Stellar Parameters For KIC 006128330

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7485^{+209}_{-314}$	$3.952^{+0.253}_{-0.136}$	$-0.060^{+0.200}_{-0.350}$	$2.310^{+0.507}_{-0.760}$	$1.743^{+0.195}_{-0.363}$	$0.199^{+0.337}_{-0.084}$
	+3%/-4%	+6%/-3%	+333%/-583%	+22%/-33%	+11%/-21%	+169%/-42%
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 006128330-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$19.59^{+18.46}_{-13.08}$	$1157^{+79}_{-100}$	$-3978^{+42136}_{-26408}$	$-69.141^{+37264.379}_{-25974.393}$
Alt.	$-676 \pm 227$	$28.69^{+21.13}_{-19.24}$	$1160^{+77}_{-98}$	$3821^{+1959}_{-692}$	$56^{+440}_{-40}$

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

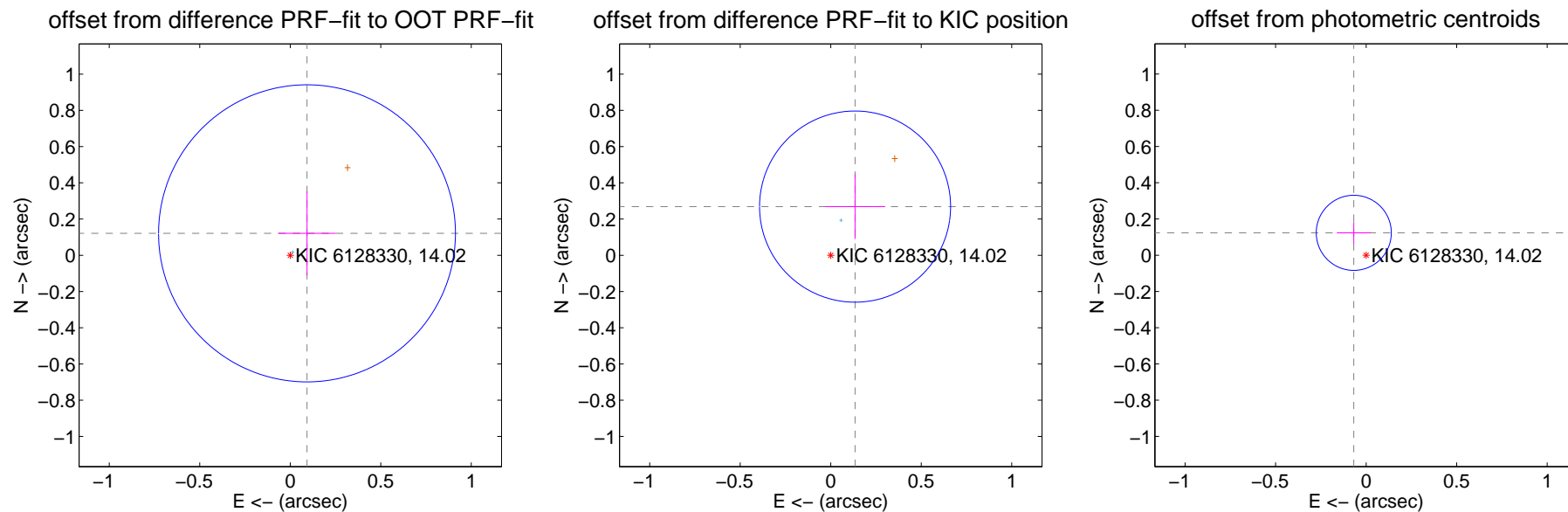
## DV Centroid Data

Supplemental centroid analysis for 006128330-05. Kepler magnitude: 14.02. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.152 \pm 0.273$	0.56	$-0.093 \pm 0.160$	$0.121 \pm 0.233$
PRF-fit source offset from KIC position	$0.301 \pm 0.176$	1.71	$-0.135 \pm 0.166$	$0.269 \pm 0.178$
photometric centroid source offset	$0.14 \pm 0.07$	2.04	$0.07 \pm 0.09$	$0.12 \pm 0.06$



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.

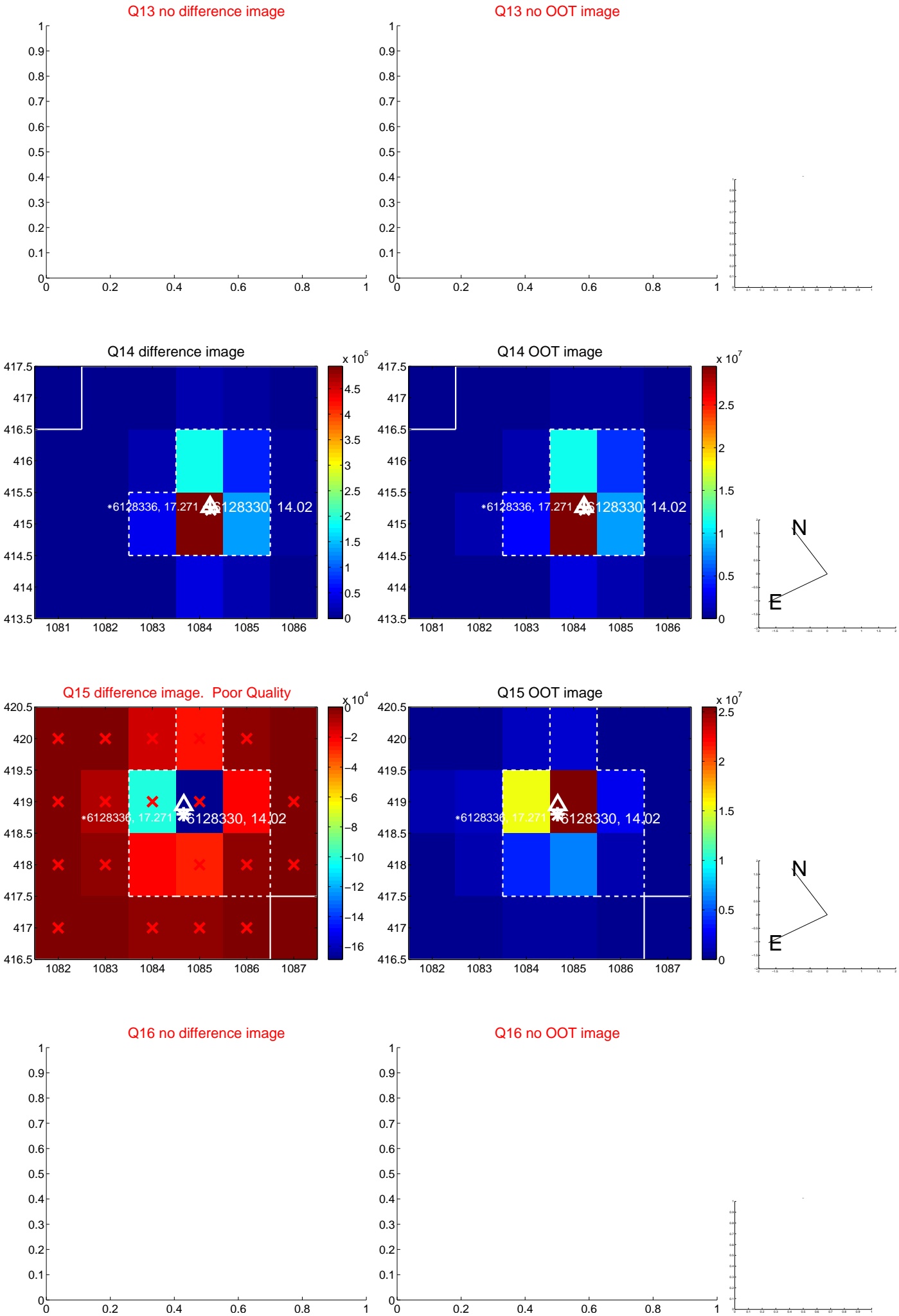




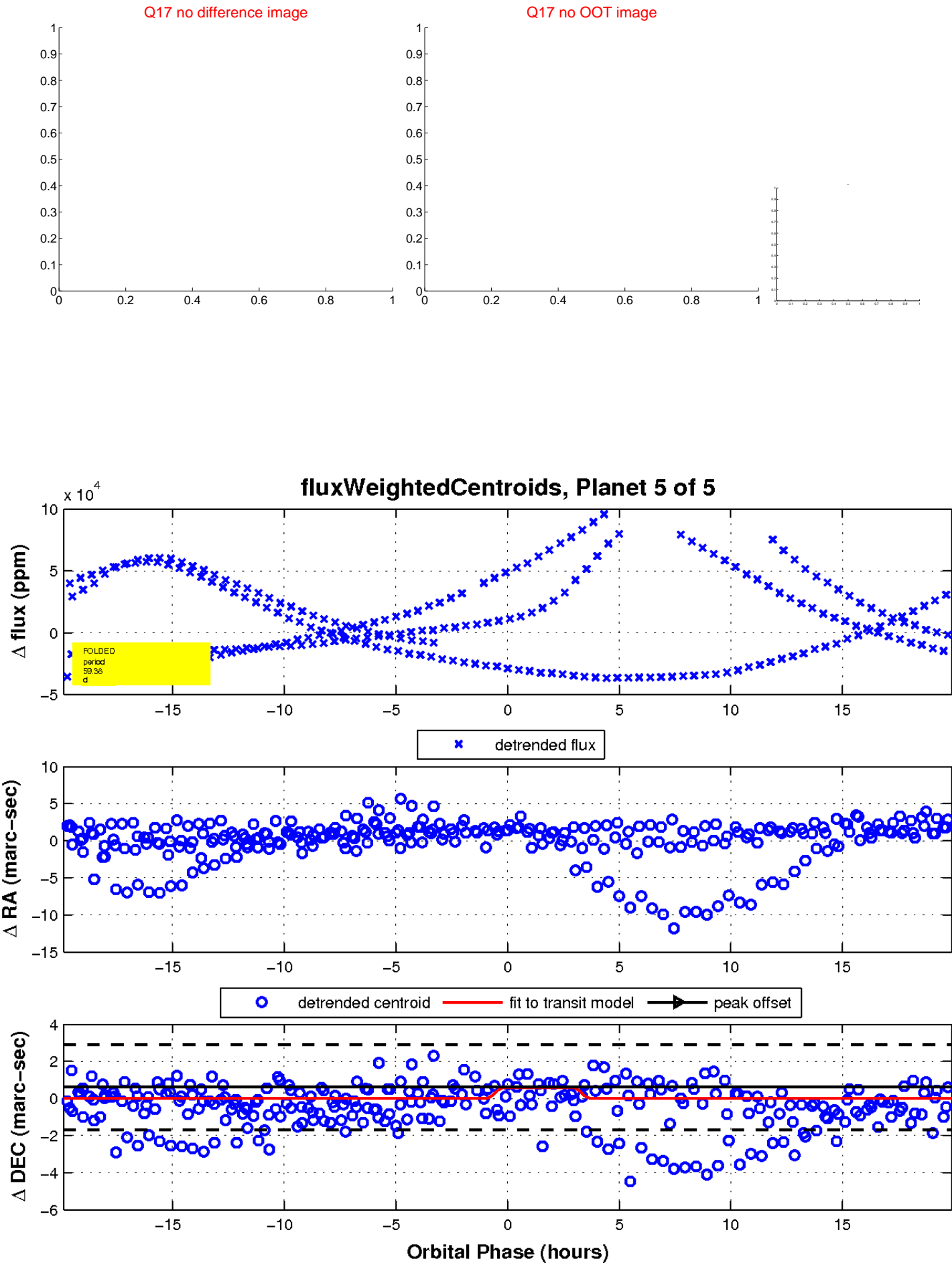
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

