

# KIC 008314801

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008314801-01	OBS	7018.01	37.183236	158.646089	218656.9	14.039	16099.3	6839.4	1.17	5657	54.61	29.45
008314801-02	OBS	No	37.183276	148.963605	227588.4	13.677	15060.2	10224.9	1.17	5657	56.84	29.45
008314801-03	OBS	No	246.758273	288.582871	277.4	44.721	47.2	7.4	1.17	5657	1.97	2.36
008314801-04	OBS	No	384.164550	373.982428	965.8	15.000	27.8	-1.0	1.17	5657	3.59	1.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008314801-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_ODDEVEN_DV—HAS_SEC_TCE—PERIOD_ALIAS_ALT
008314801-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
008314801-03	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008314801-04	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

**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.

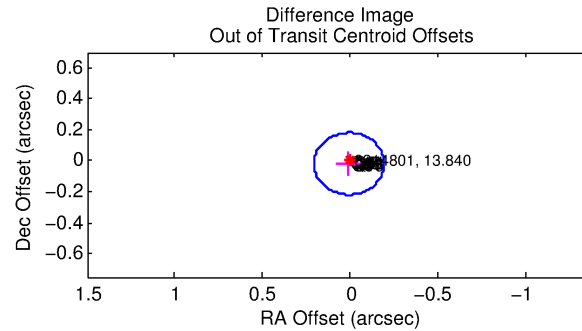
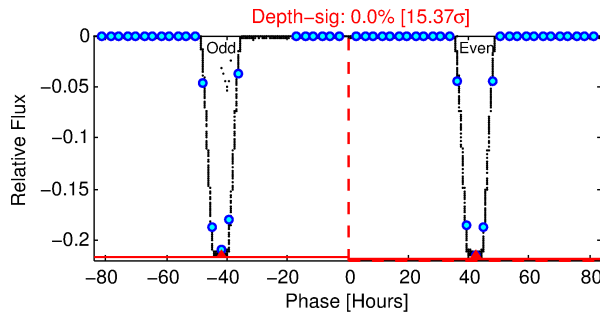
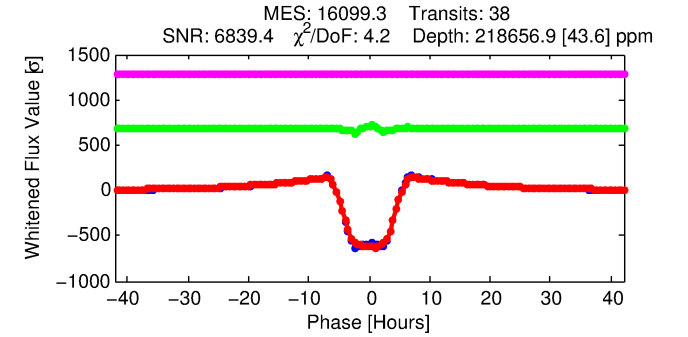
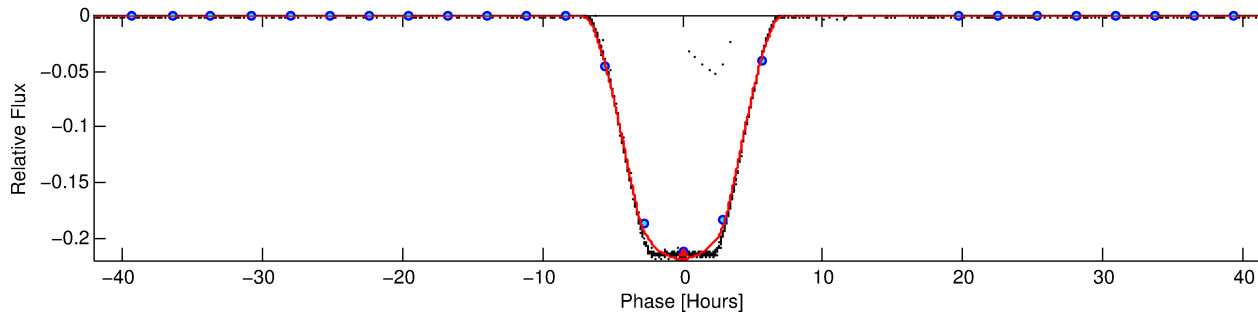
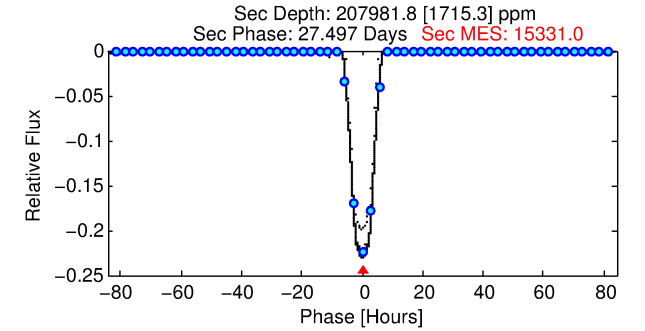
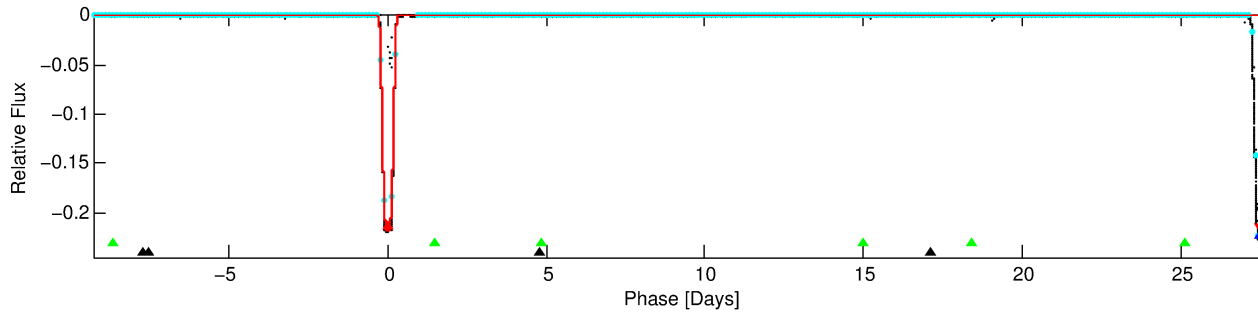
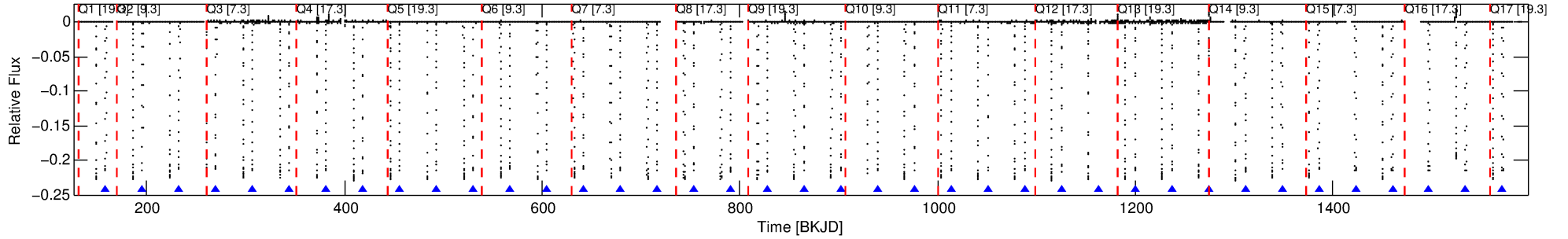
## Ephemeris Match Information For 008314801-01

No Significant Match Found

# DV One-Page Summary

KIC: 8314801 Candidate: 1 of 4 Period: 37.183 d  
KOI: K07018.01 Corr: 0.992

Kp: 13.84 R\*: 1.17 Rs Teff: 5657.0 K Logg: 4.23 Fe/H: -0.220



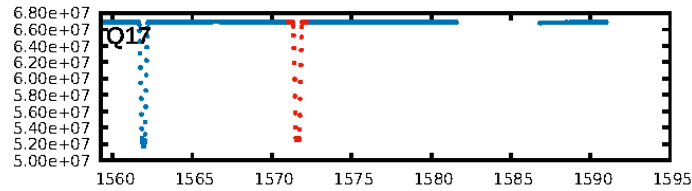
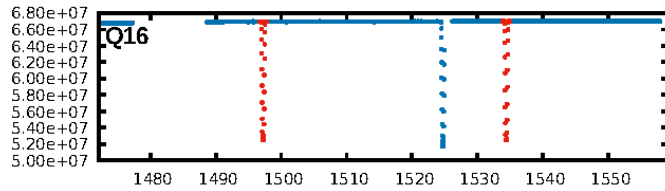
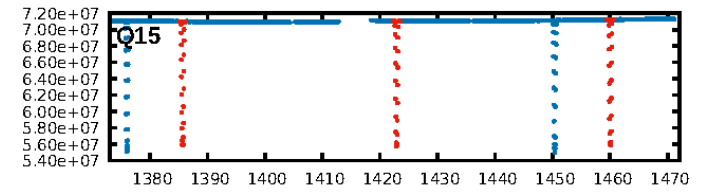
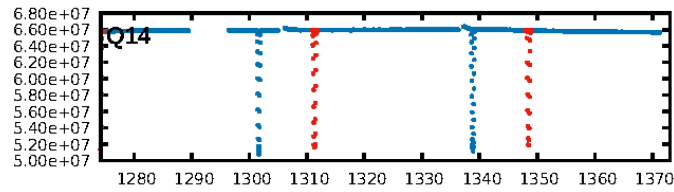
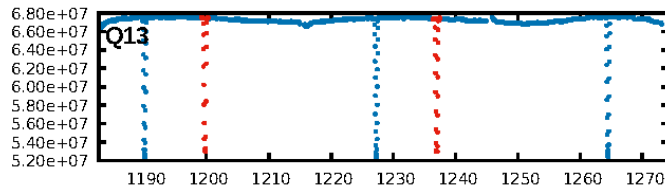
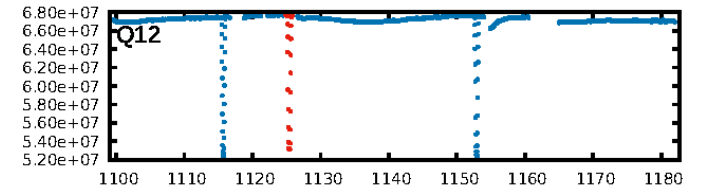
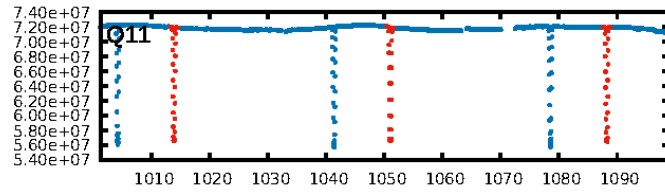
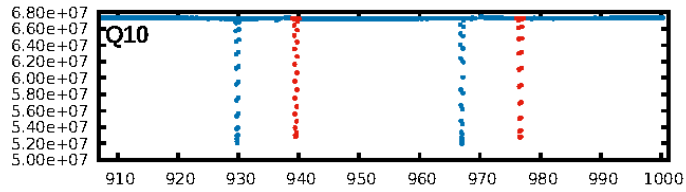
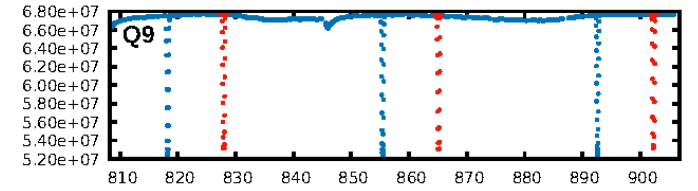
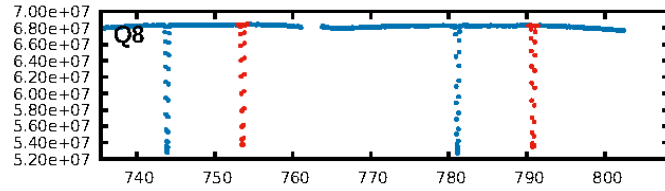
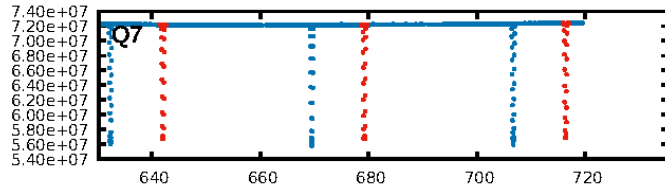
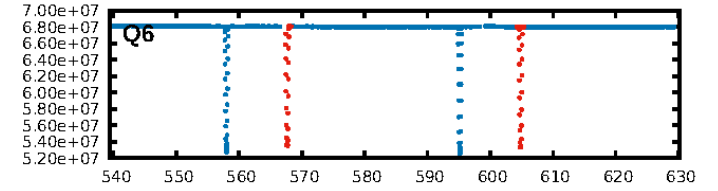
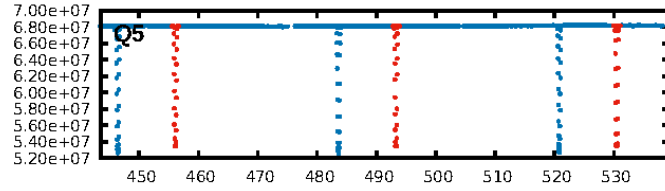
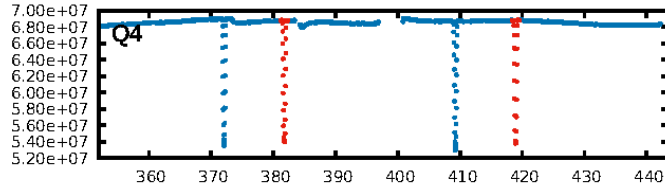
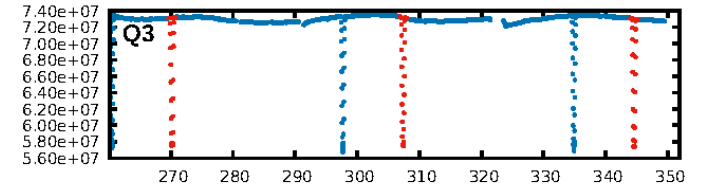
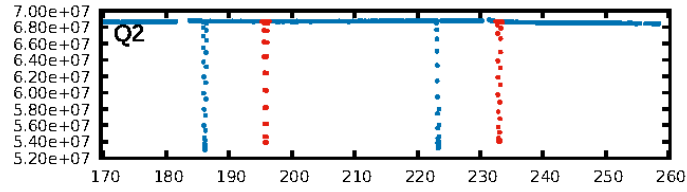
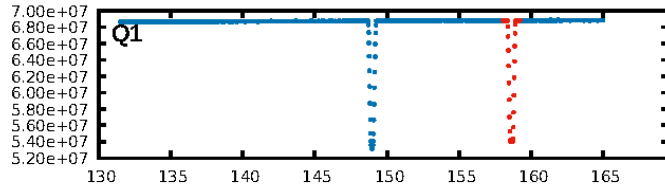
## DV Fit Results:

Period = 37.18324 [0.00000] d  
Epoch = 158.6461 [0.0000] BKJD  
Rp/R\* = 0.4284 [0.0001]  
a/R\* = 28.92 [0.01]  
b = 0.00 [4.16]  
Seff = 29.45 [14.93]  
Teq = 594 [75] K  
Rp = 54.61 [16.22] Re  
a = 0.2062 [0.0619] AU  
Ag = 1631.00 [803.96] [2.03σ]  
Teffp = 5836 [175] K [27.55σ]

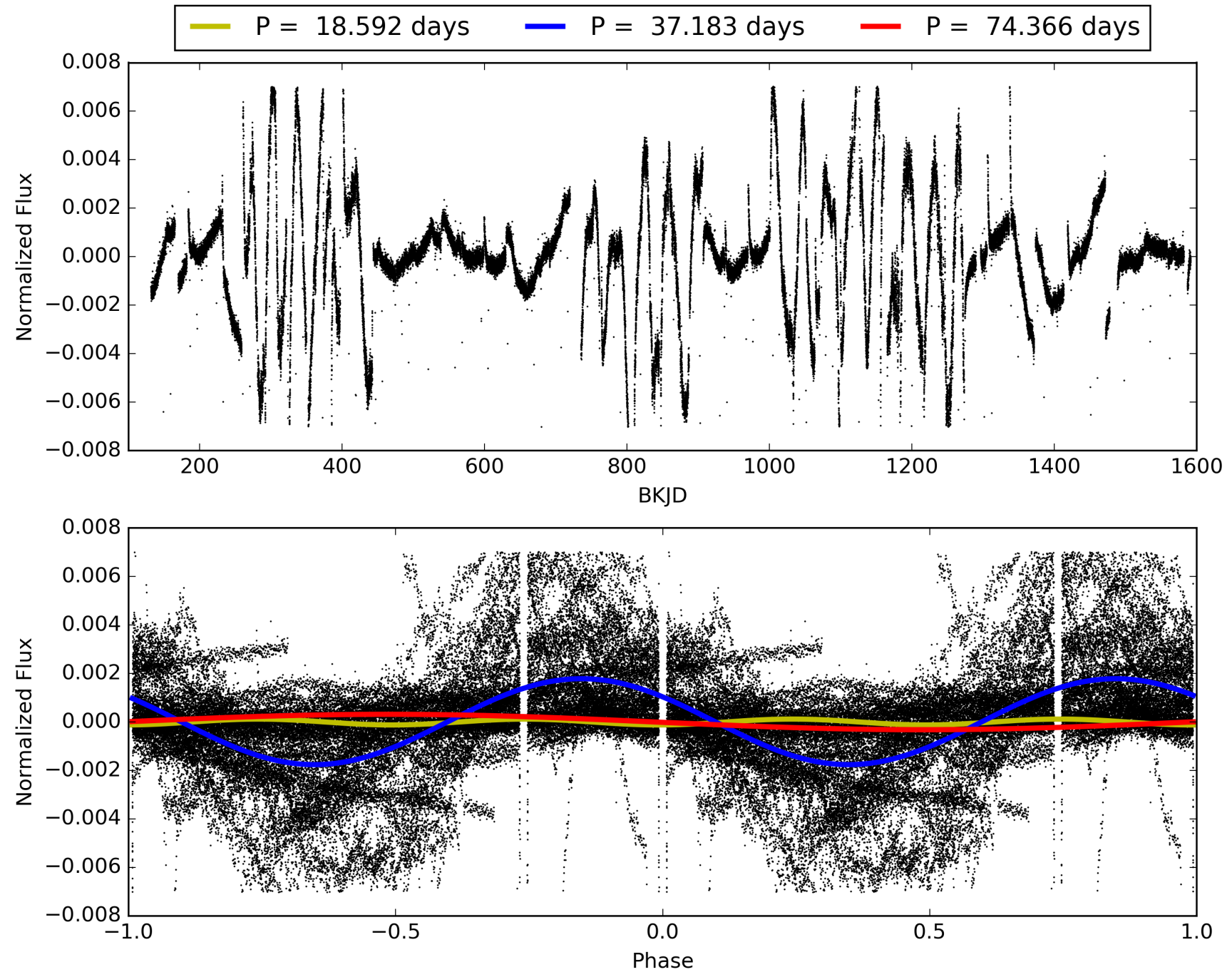
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [36/36]  
GhostDiagnostic-chr: 5.653  
Centroid-sig: N/A  
Centroid-so: 0.042 arcsec [77.05σ]  
OotOffset-rm: 0.021 arcsec [0.32σ]  
KicOffset-rm: 0.103 arcsec [1.53σ]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [16/16]

# TCE 008314801-01, PDC Light Curves

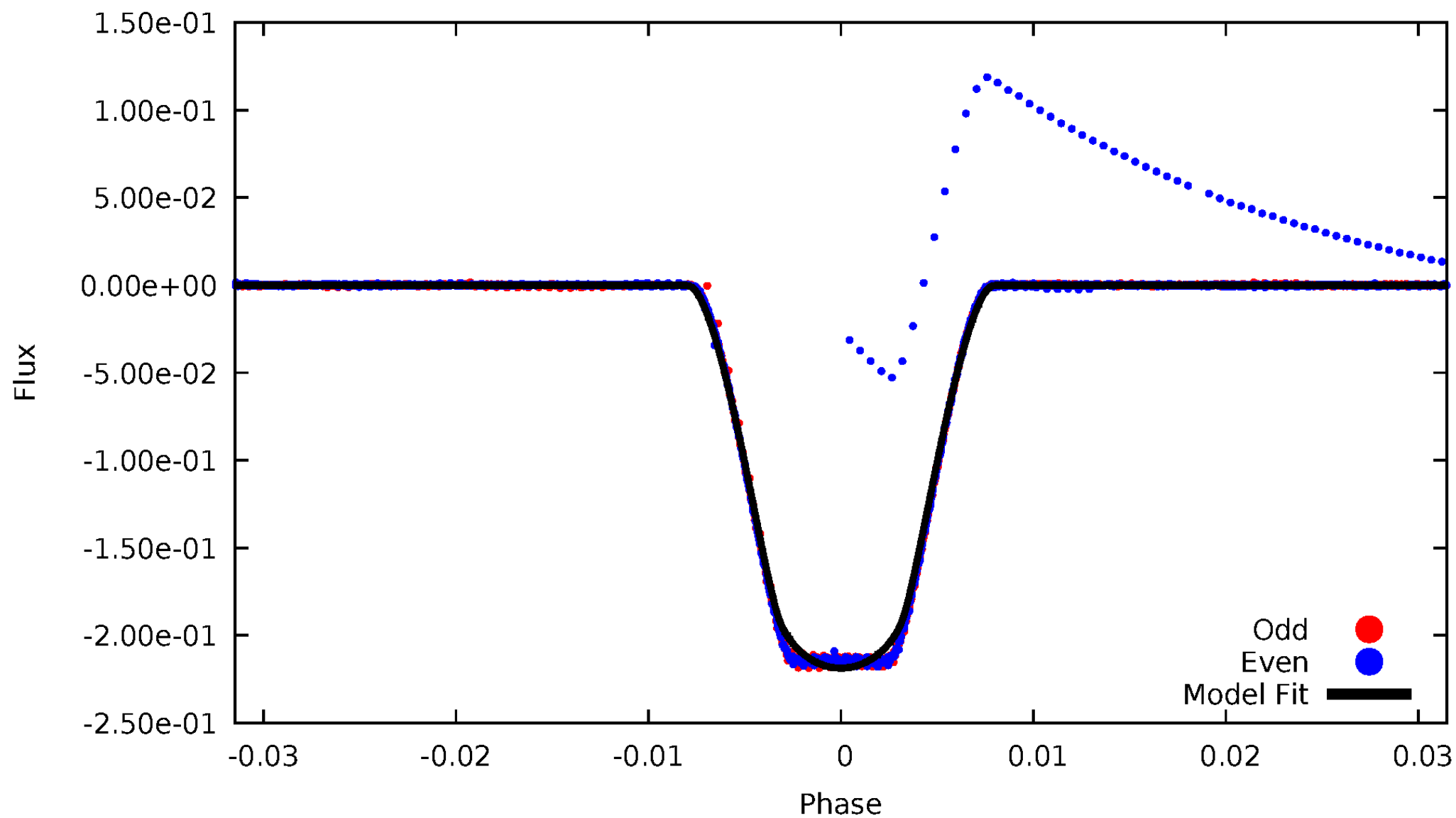


TCE 008314801-01



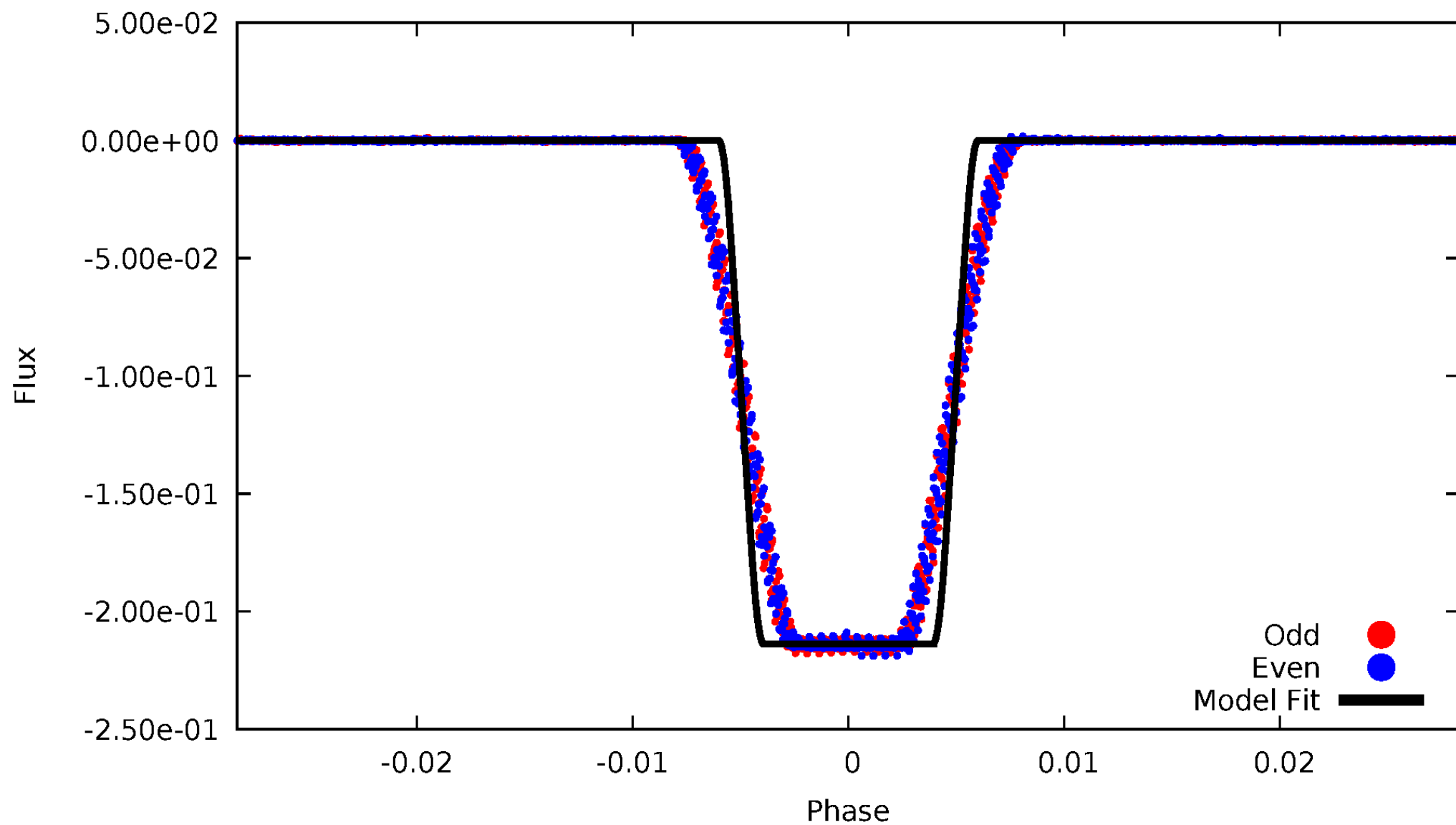
# DV Odd/Even

TCE 008314801-01



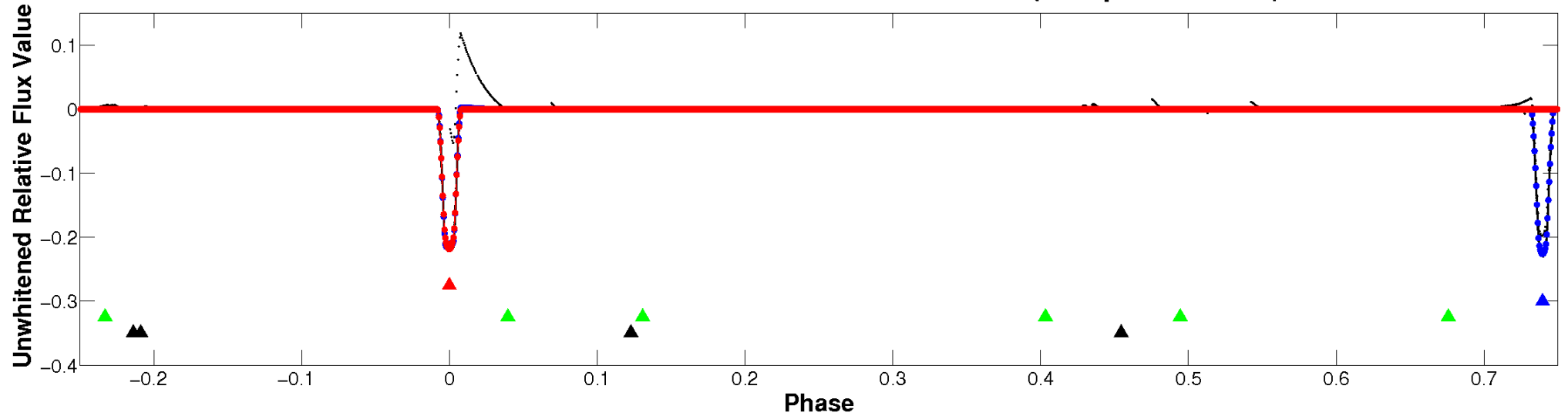
# ALT Odd/Even

TCE 008314801-01

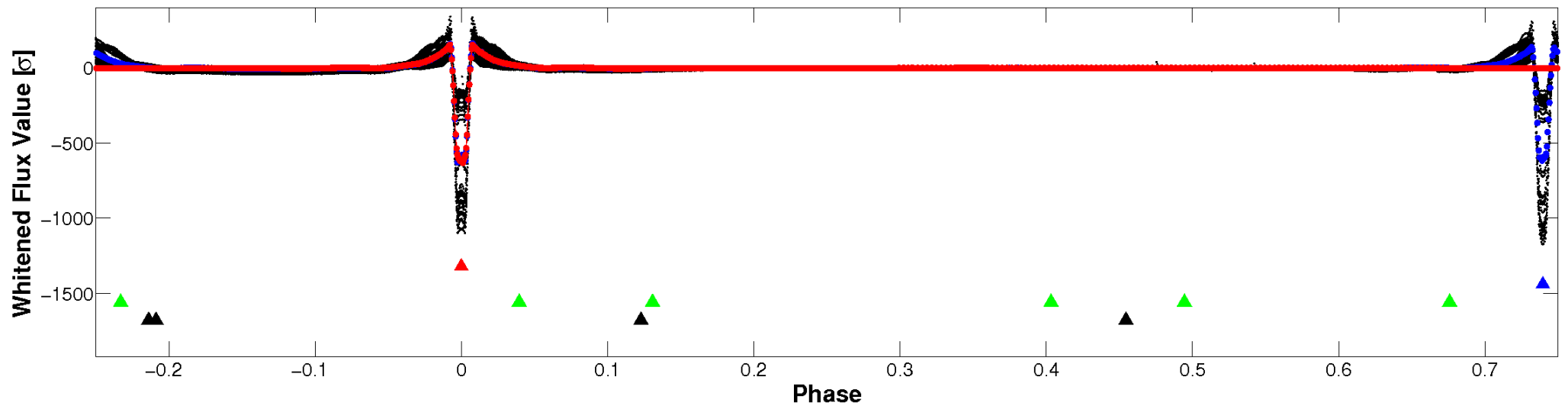


# Non-Whitened Vs. Whitened Light Curve

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

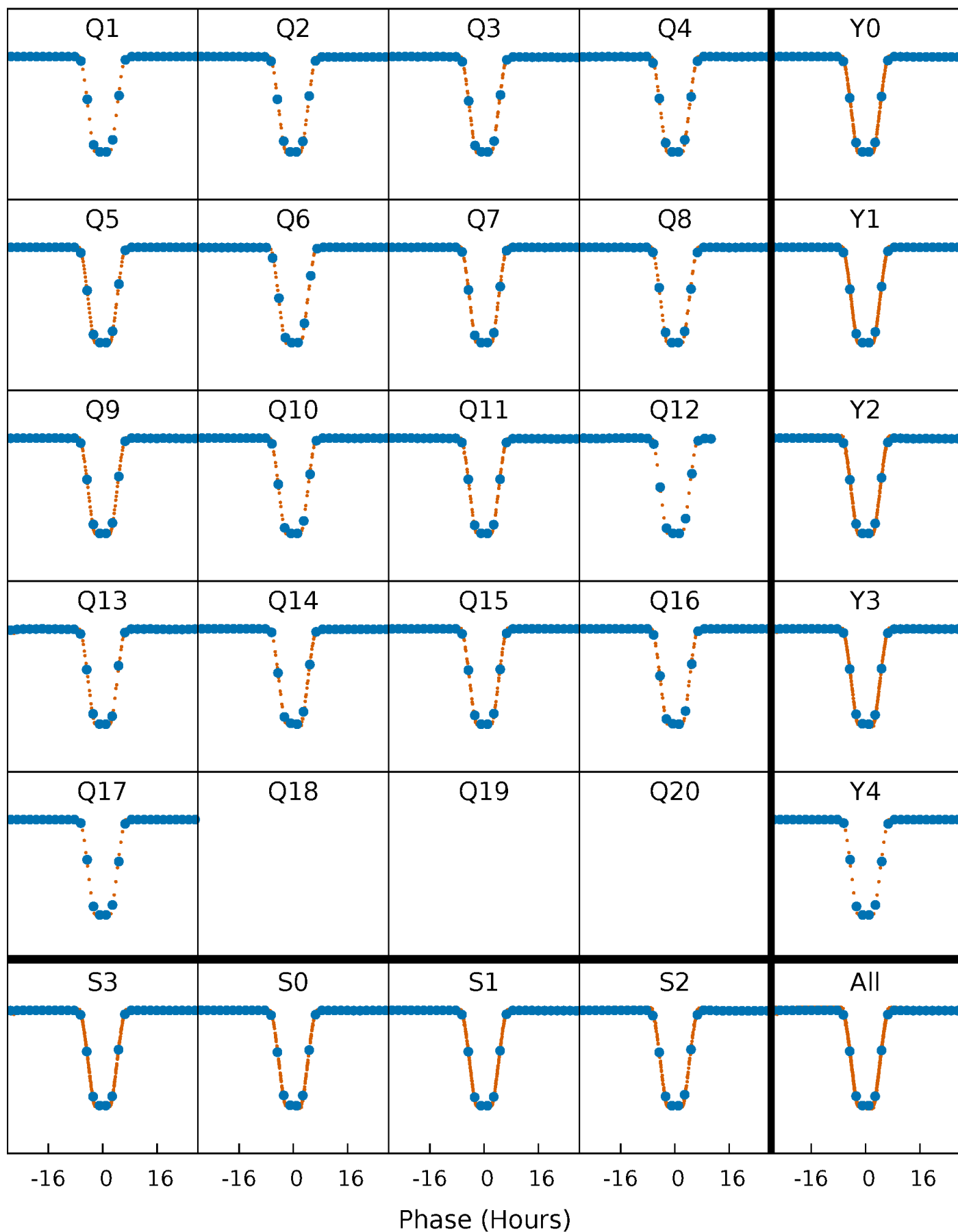


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

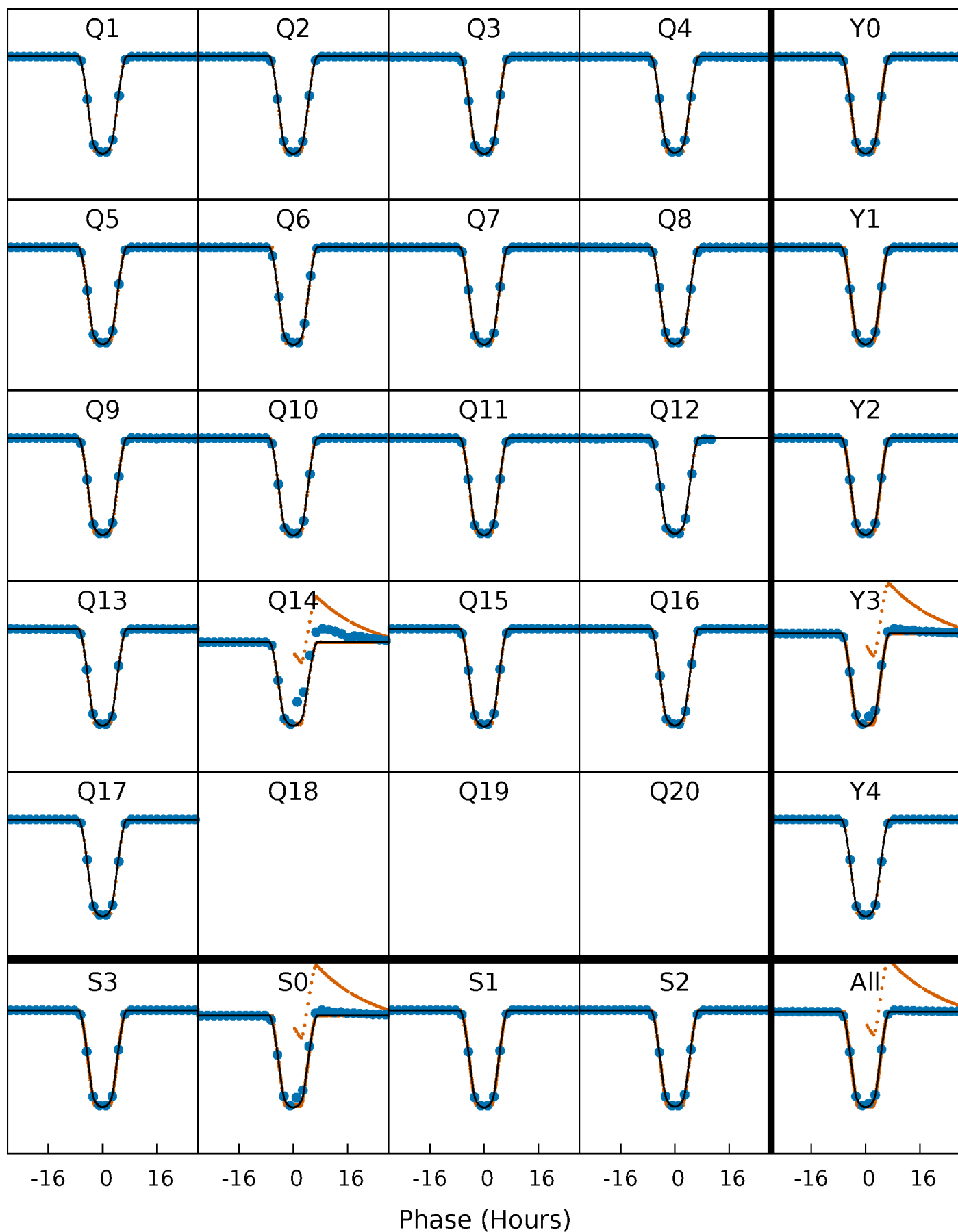
TCE 008314801-01 P= 37.183236 Days  $T_0=158.646089$  (BKJD)





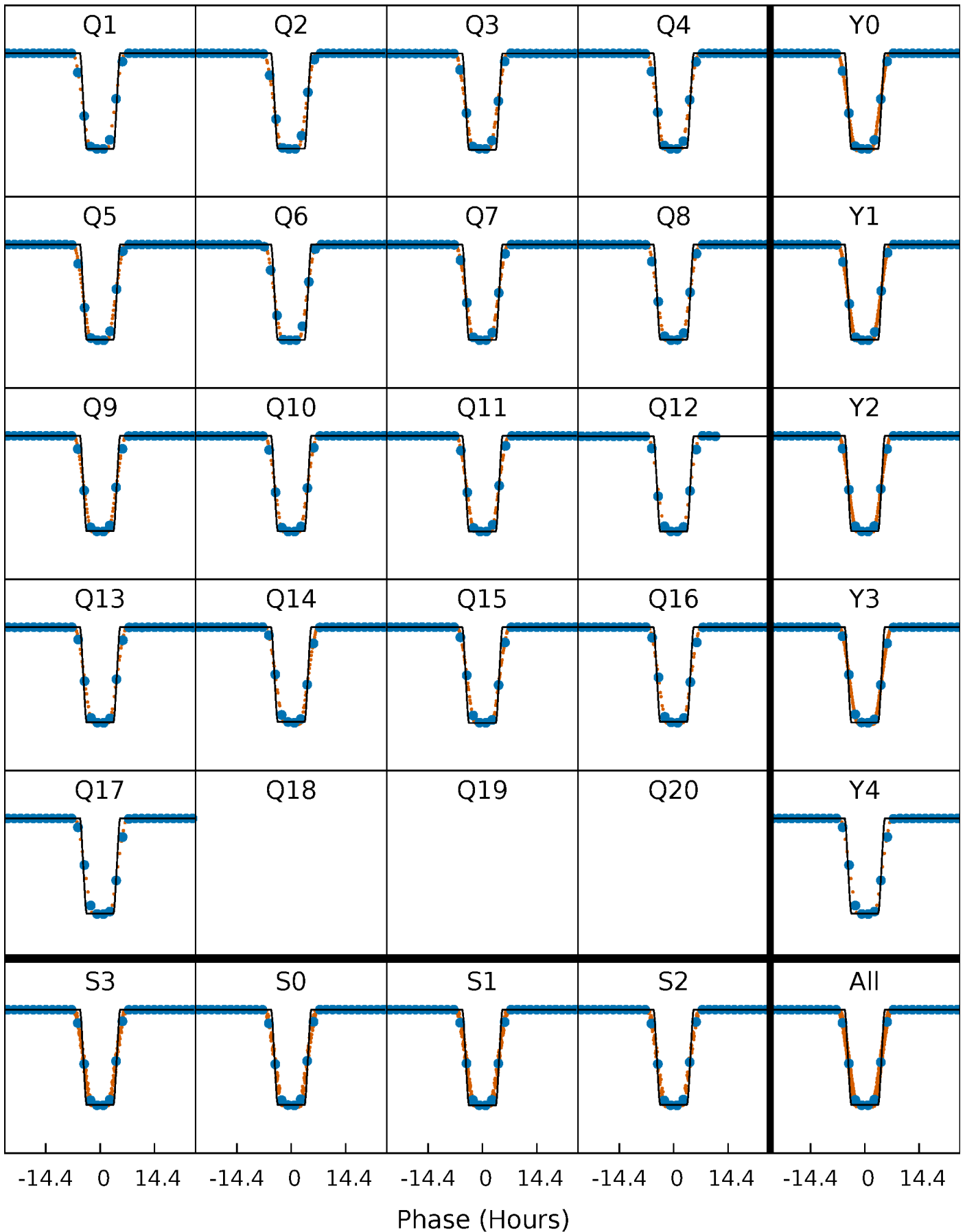
# DV Quarter-Phased Transit Curves

TCE 008314801-01 P= 37.183236 Days  $T_0=158.646089$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

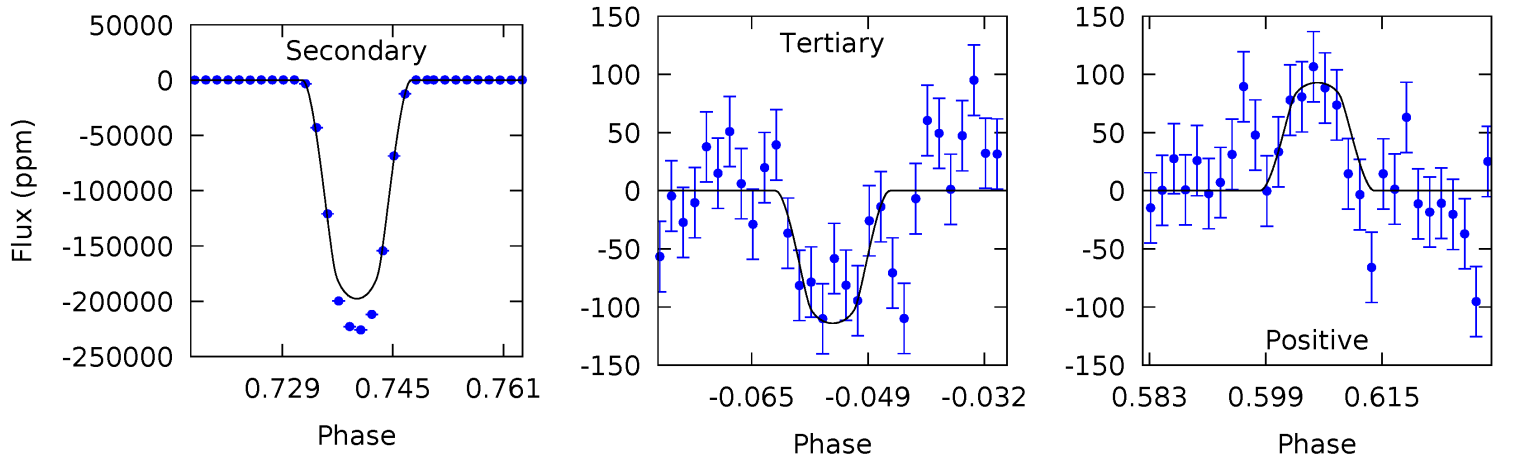
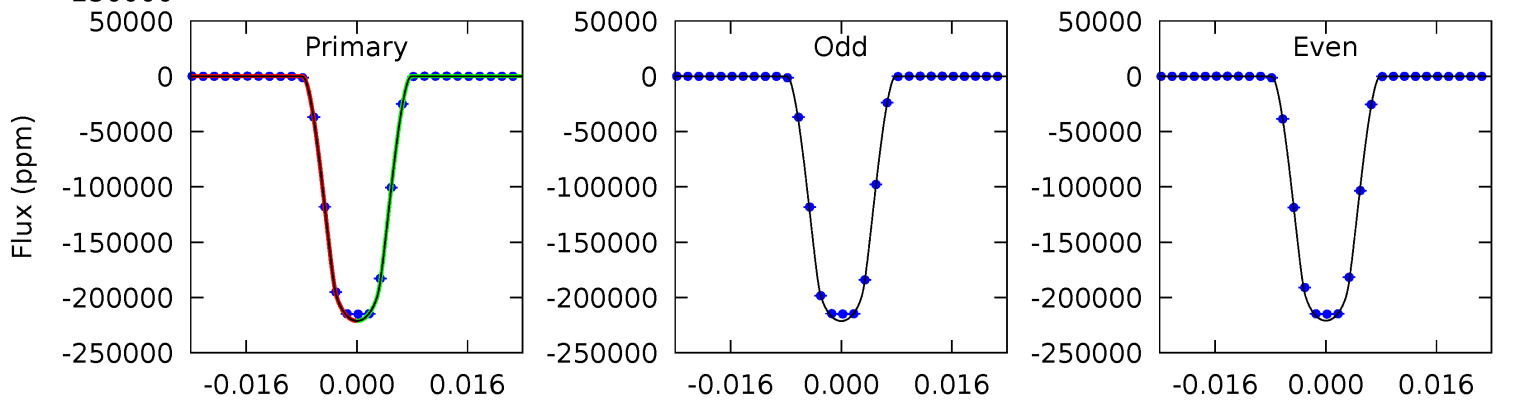
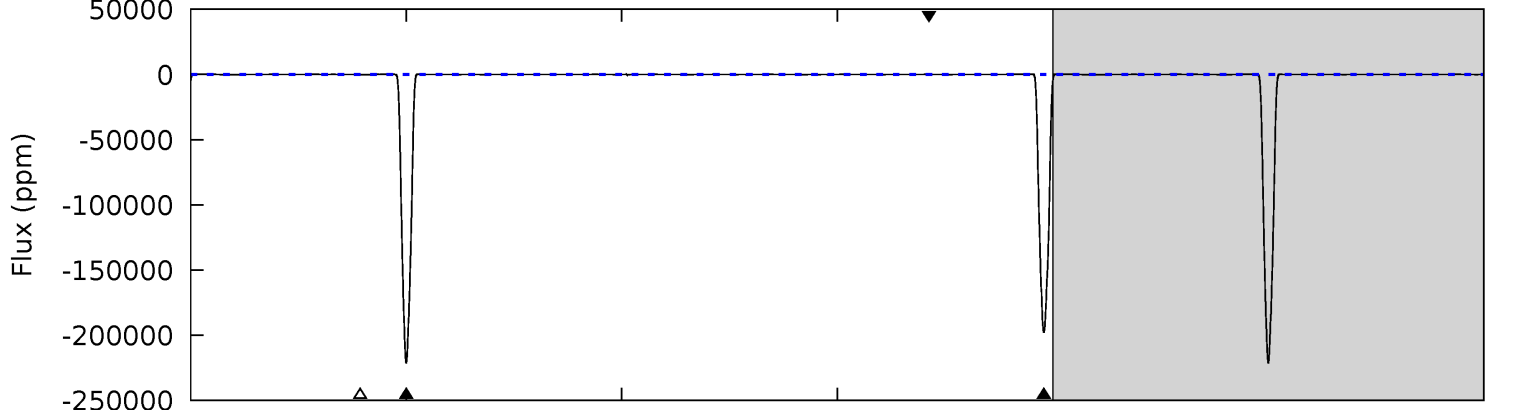
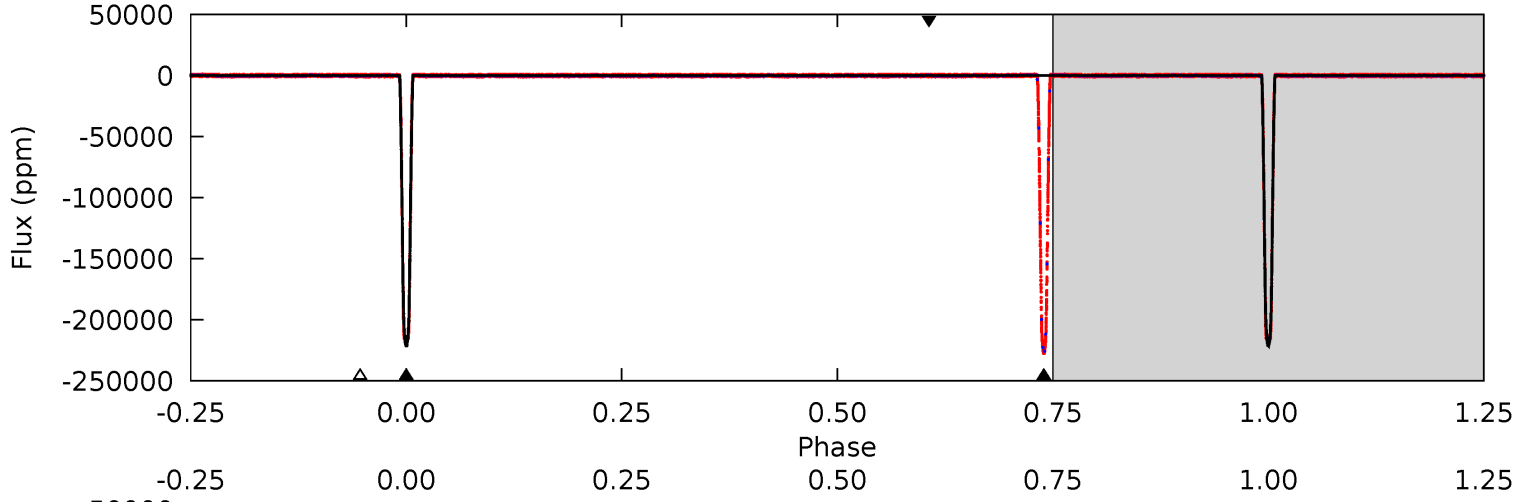
TCE 008314801-01 P= 37.182585 Days  $T_0=158.659503$  (BKJD)



# DV Model-Shift Uniqueness Test

008314801-01, P = 37.183236 Days, E = 121.462853 Days

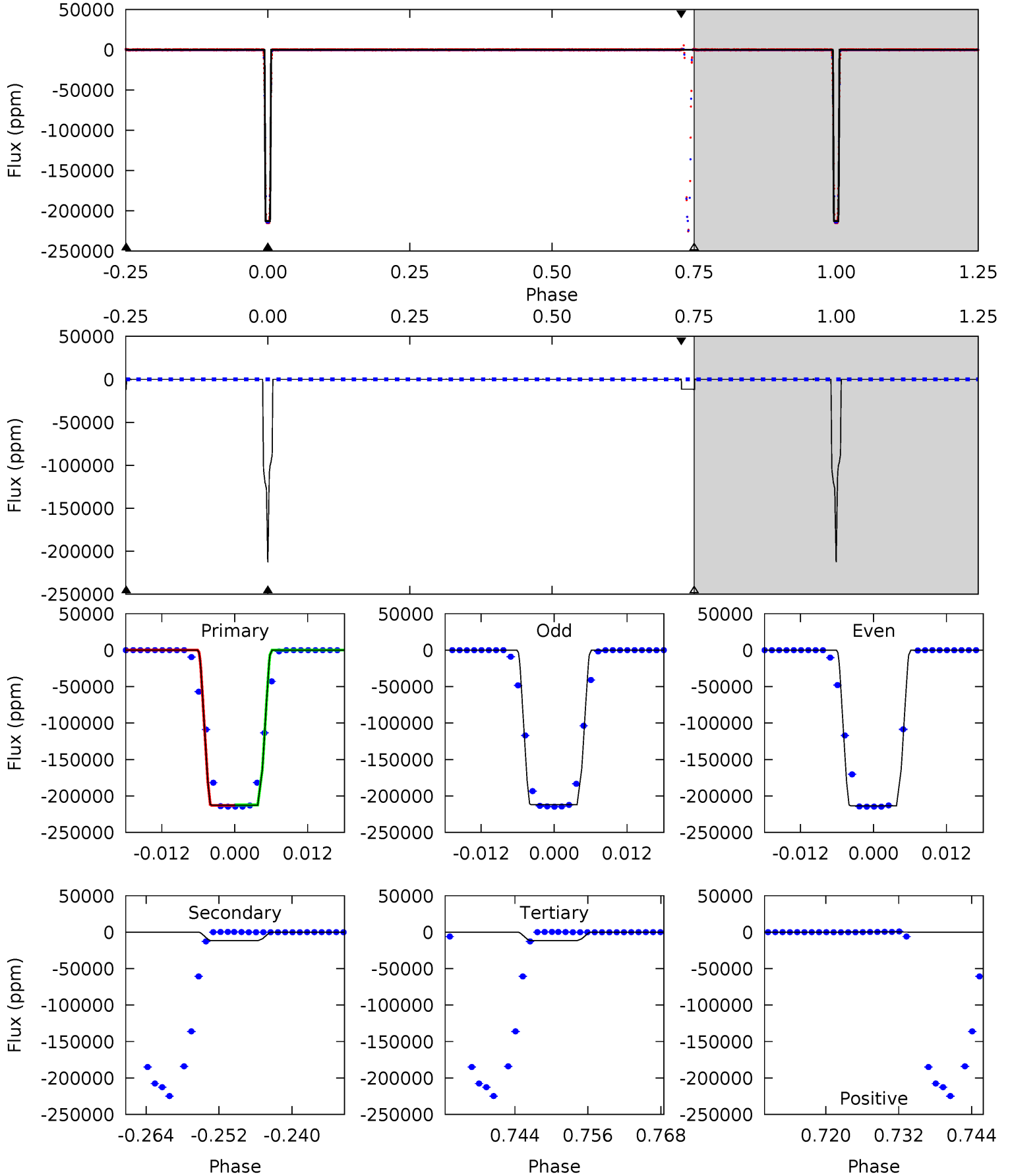
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20787	18570	10.7	8.73	4.93	2.40	4.24	20776	20778	18559	18561	16.2	0.98	0.00	2.75



# Alt Model-Shift Uniqueness Test

008314801-01, P = 37.182585 Days, E = 121.476918 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
1132	61.8	61.6	1.58	4.99	2.51	3.20	1071	1131	0.23	60.2	4.93	1.00	0.00	0



### Stellar Parameters For KIC 008314801

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5657^{+169}_{-152}$	$4.230^{+0.294}_{-0.196}$	$-0.220^{+0.300}_{-0.250}$	$1.168^{+0.347}_{-0.313}$	$0.846^{+0.122}_{-0.071}$	$0.747^{+1.319}_{-0.362}$
	+3%/-3%	+7%/-5%	+136%/-114%	+30%/-27%	+14%/-8%	+177%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008314801-01 / KOI 7018.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-197562 \pm 11$	$53.81^{+9.87}_{-8.74}$	$821^{+79}_{-69}$	$6078^{+191}_{-172}$	$2009^{+867}_{-555}$
Alt.	$-11604 \pm 188$	$58.51^{+10.19}_{-9.49}$	$824^{+73}_{-71}$	$3294^{+59}_{-60}$	$81^{+33}_{-22}$

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

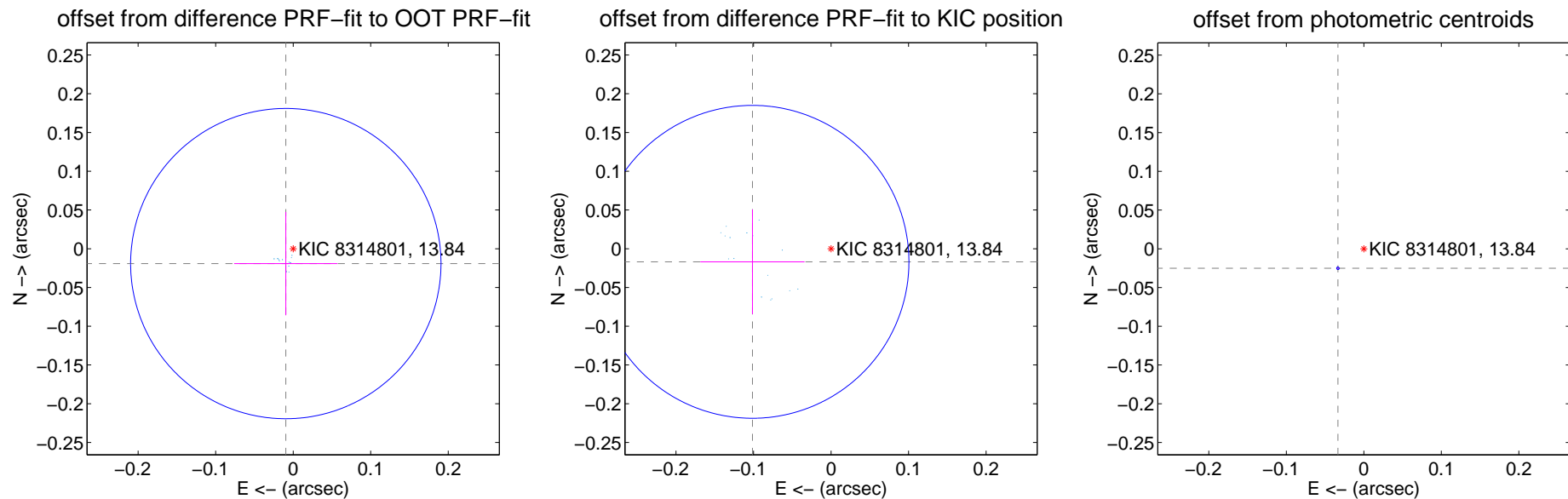
## DV Centroid Data

Supplemental centroid analysis for 008314801-01. Kepler magnitude: 13.84. Transit SNR 6839.39

There are 16 quarters with good PRF difference image offsets

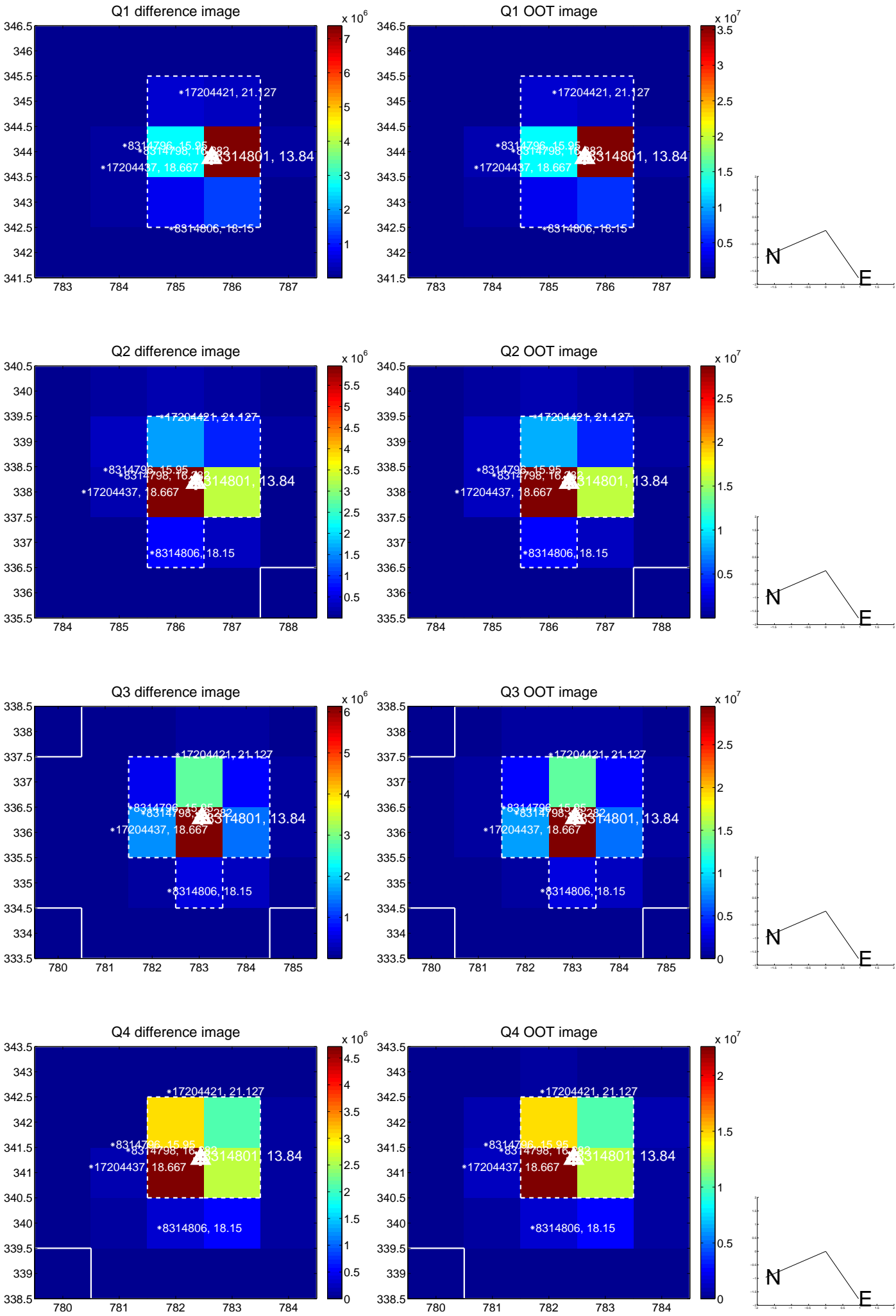
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.021 \pm 0.067$	0.32	$0.010 \pm 0.067$	$-0.019 \pm 0.067$
PRF-fit source offset from KIC position	$0.103 \pm 0.067$	1.53	$0.101 \pm 0.067$	$-0.017 \pm 0.068$
photometric centroid source offset	$0.04 \pm 0.00$	77.05	$0.03 \pm 0.00$	$-0.03 \pm 0.00$

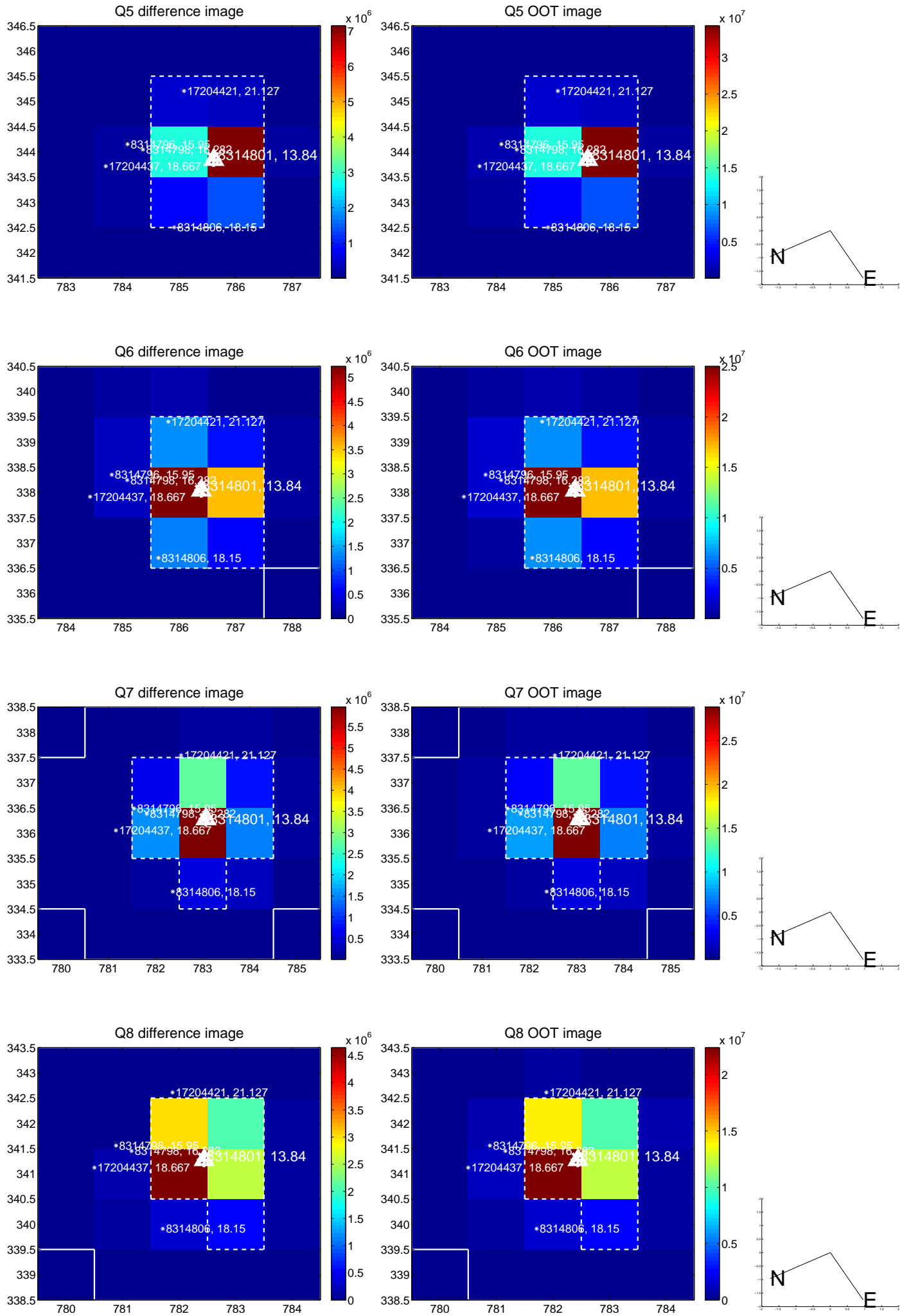


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

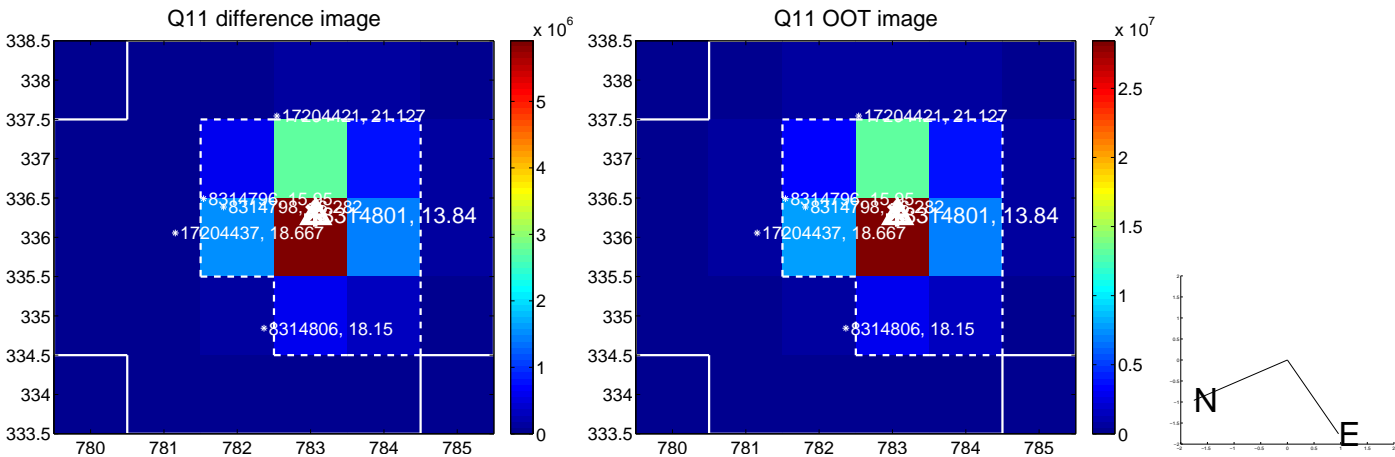
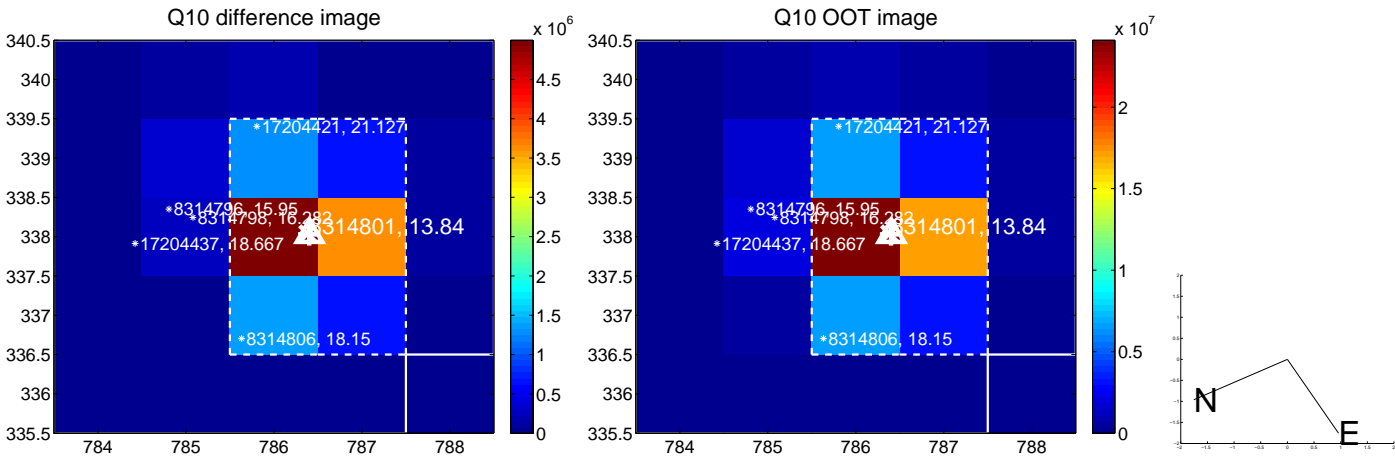
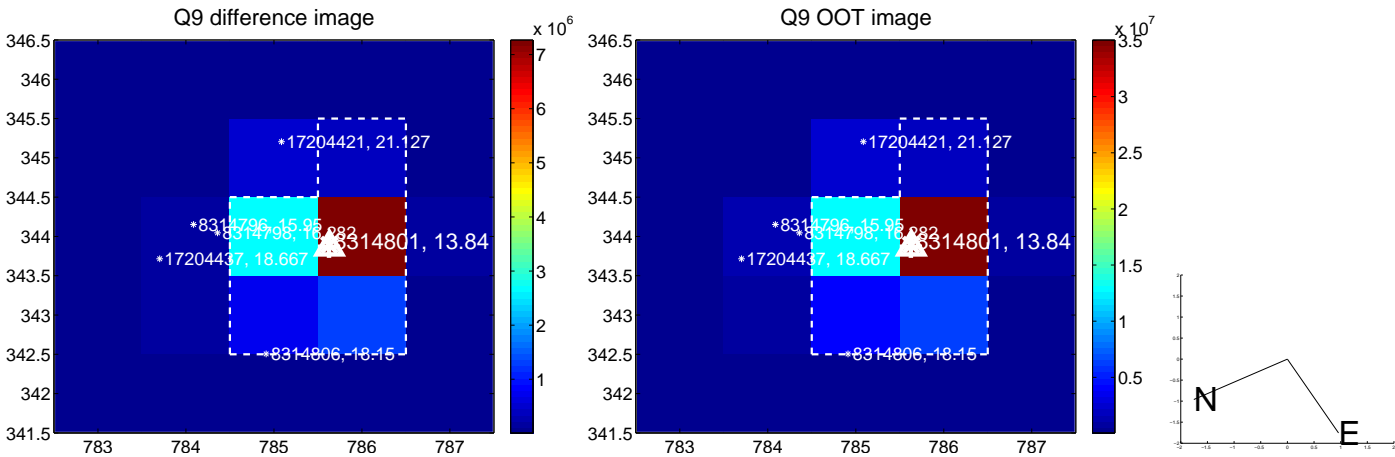


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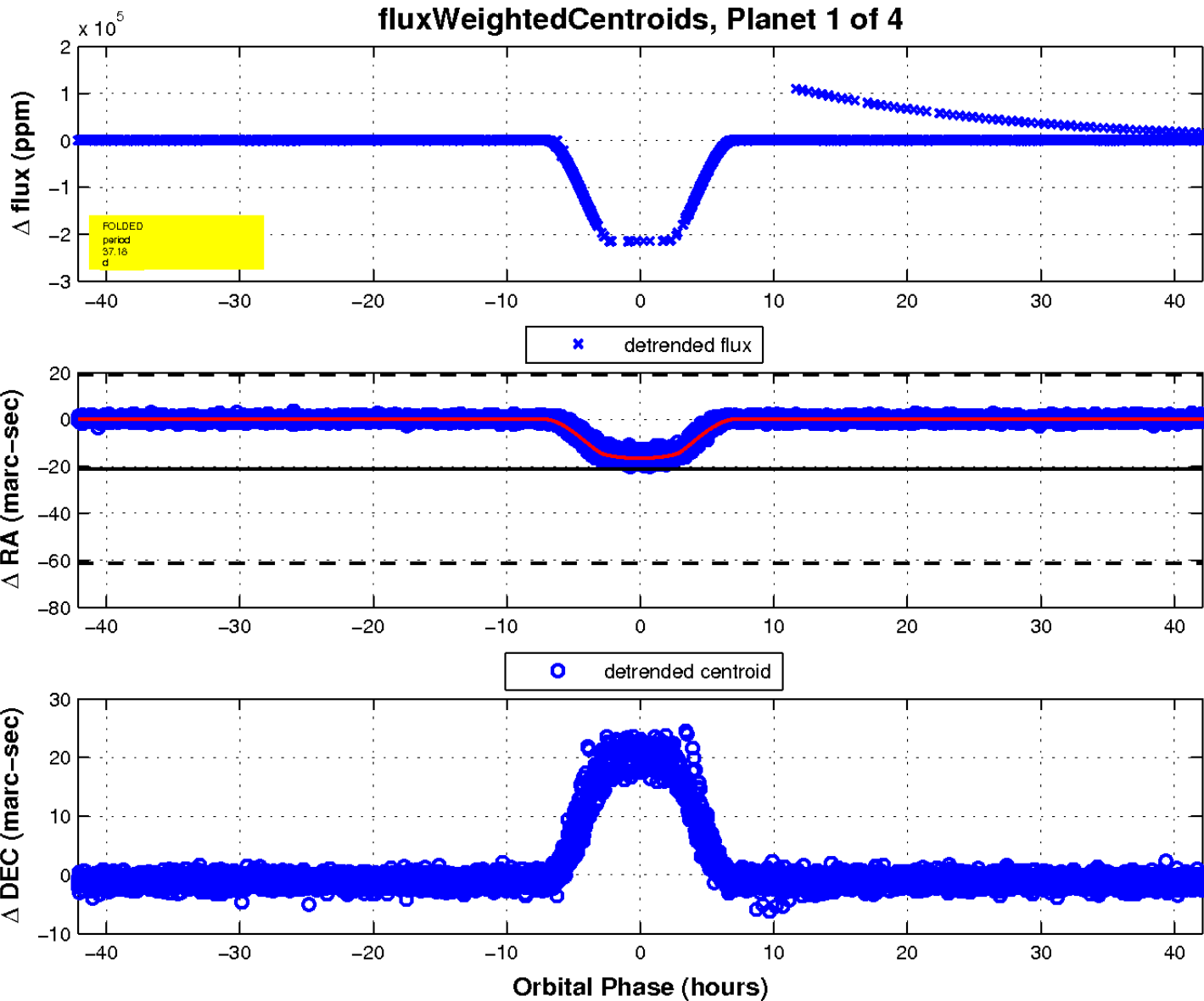
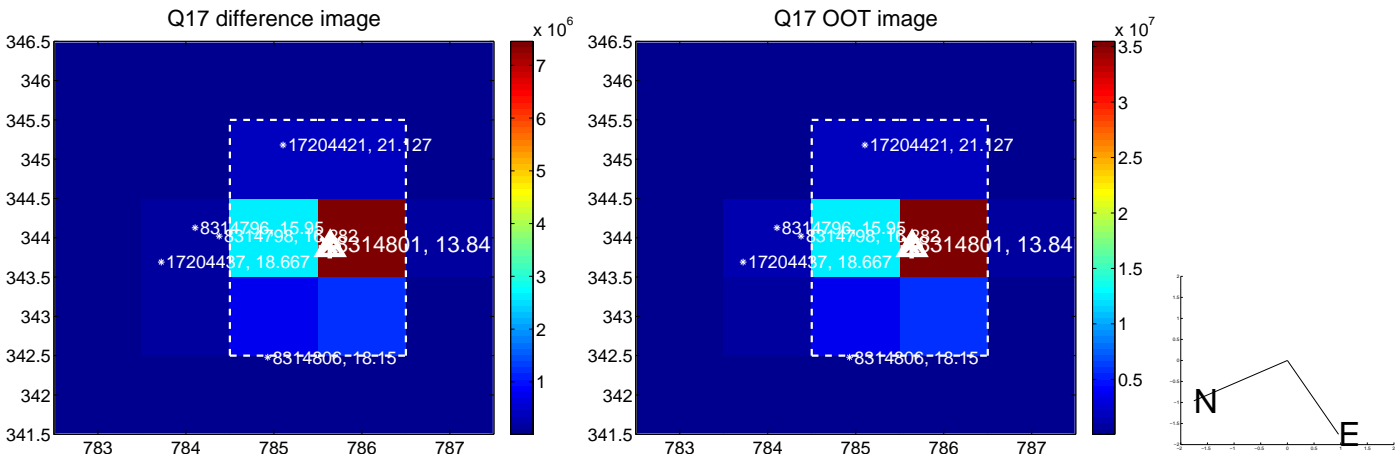


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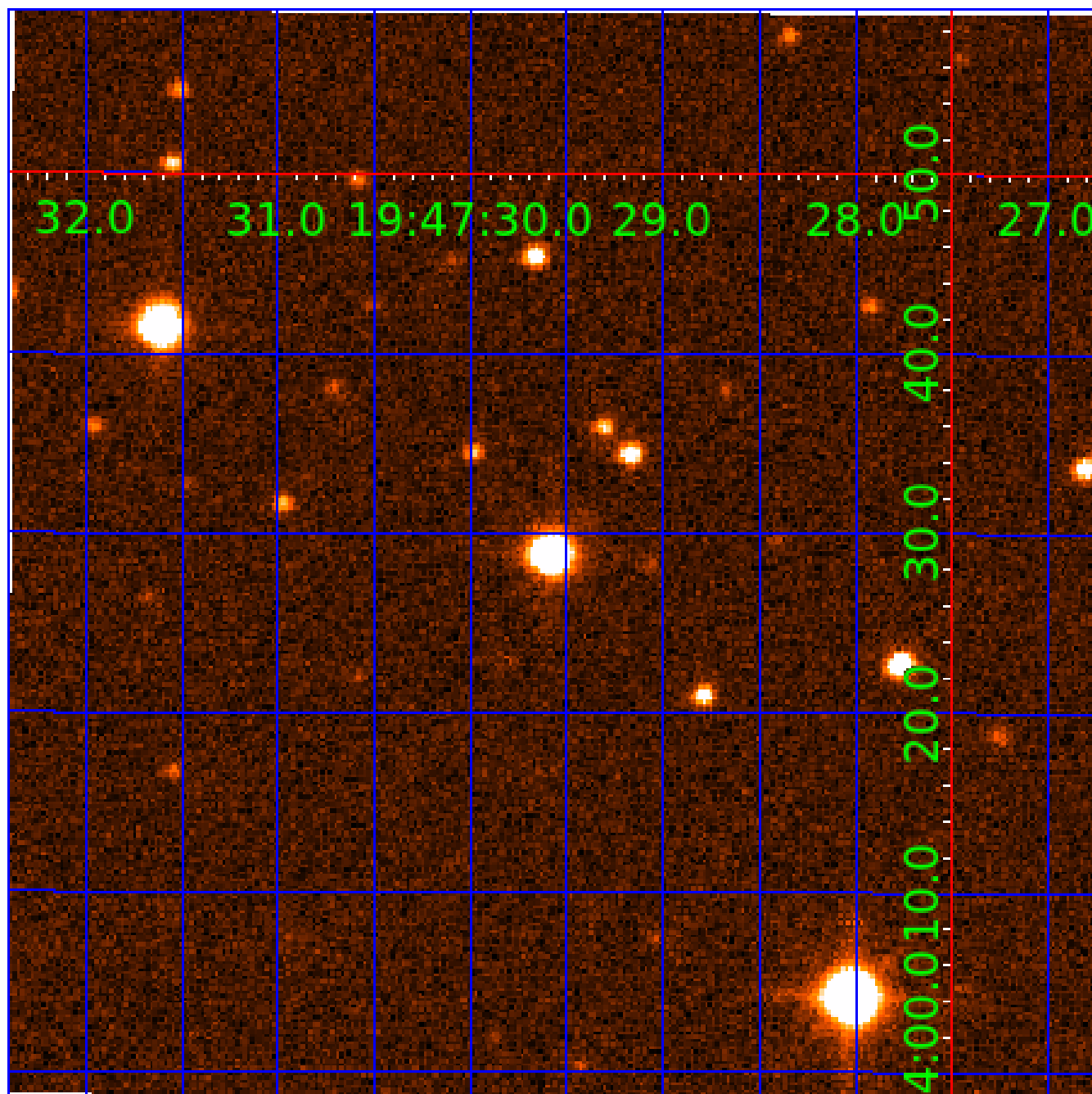


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UKIRT Image

Declination



# KIC 008314801

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008314801-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
008314801-03	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008314801-04	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

**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.

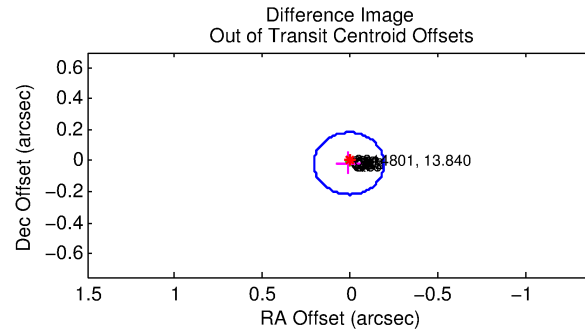
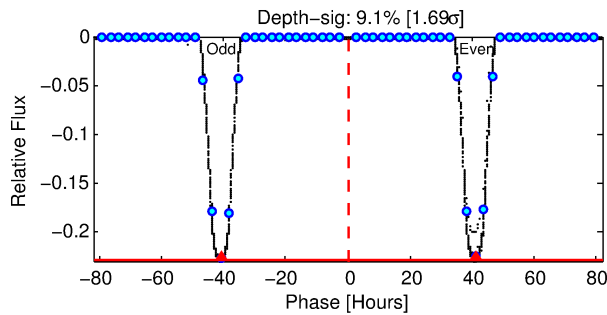
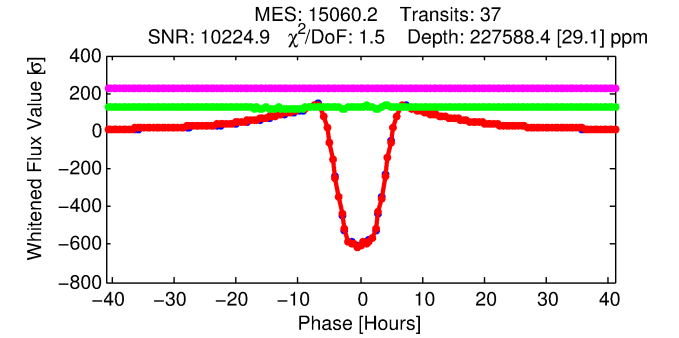
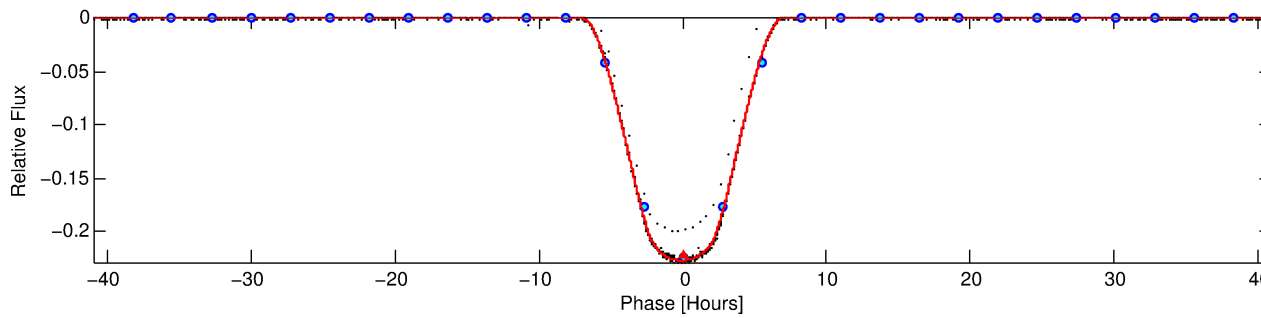
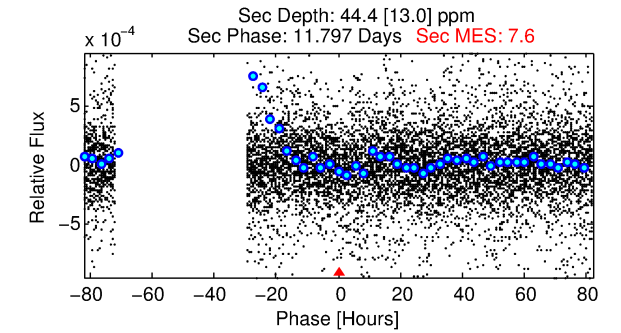
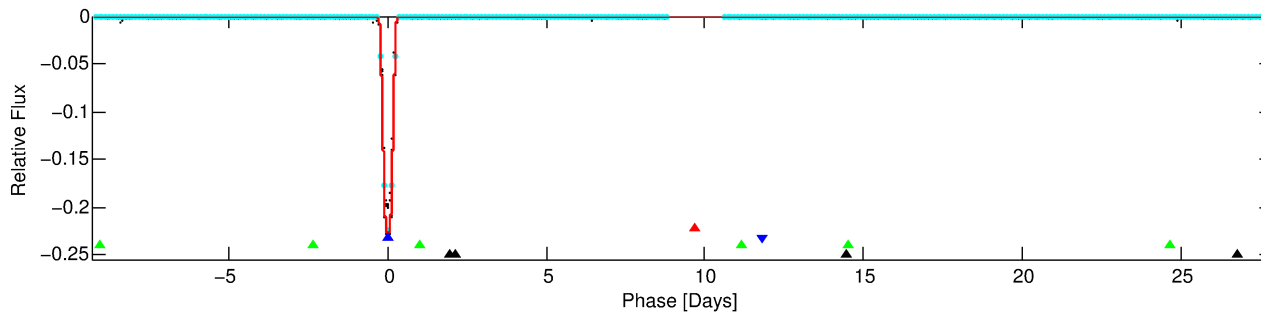
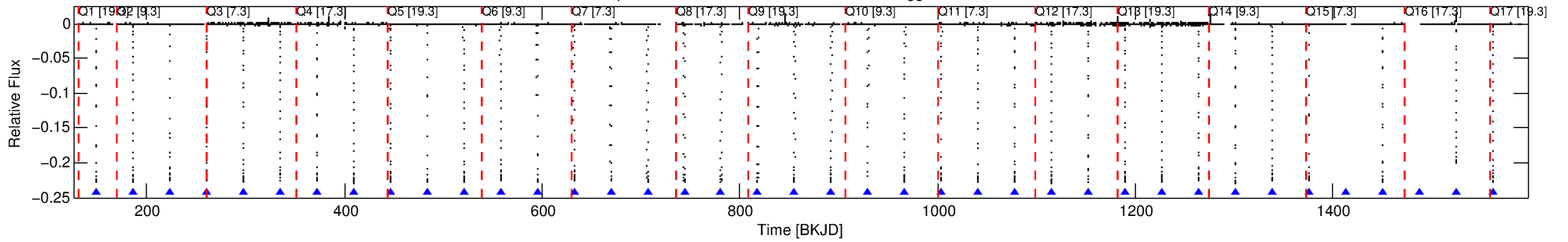
## Ephemeris Match Information For 008314801-02

No Significant Match Found

# DV One-Page Summary

KIC: 8314801 Candidate: 2 of 4 Period: 37.183 d  
KOI: K07018 Corr: No Ephemeris Match

Kp: 13.84 R\*: 1.17 Rs Teff: 5657.0 K Logg: 4.23 Fe/H: -0.220



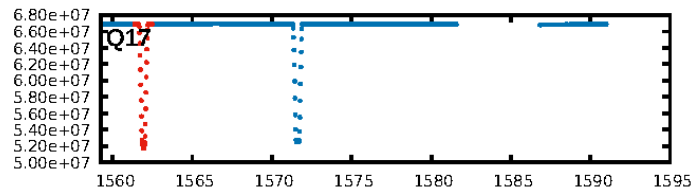
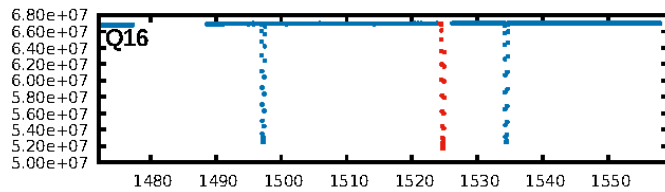
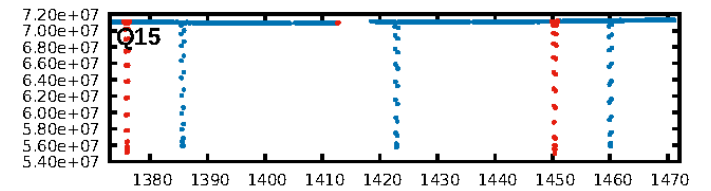
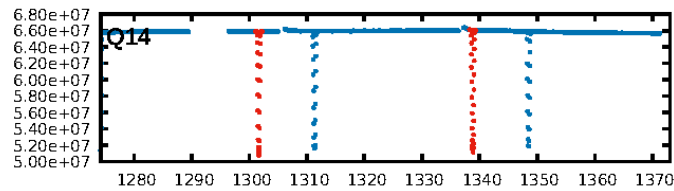
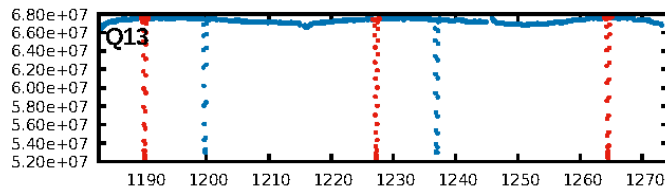
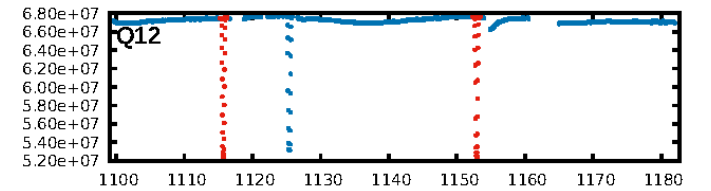
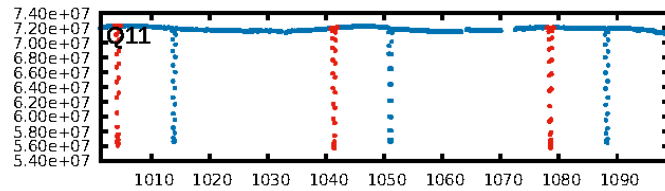
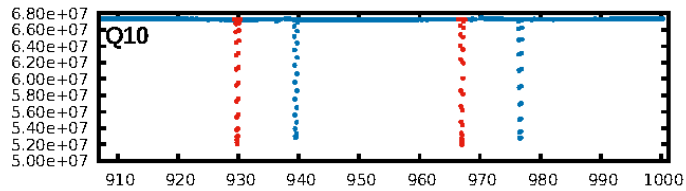
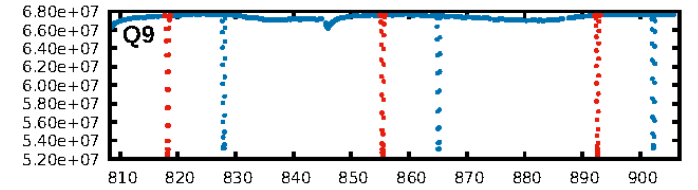
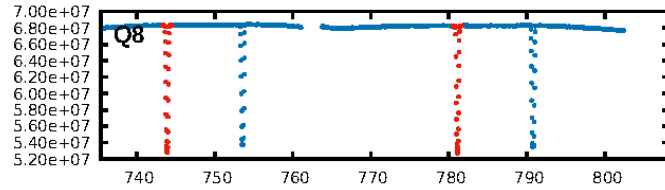
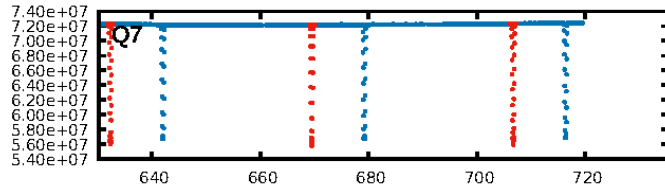
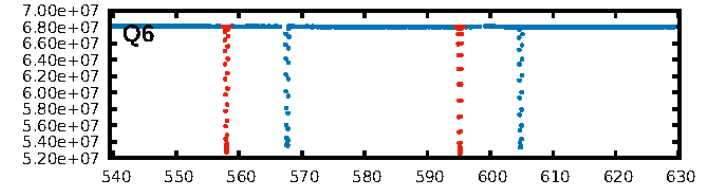
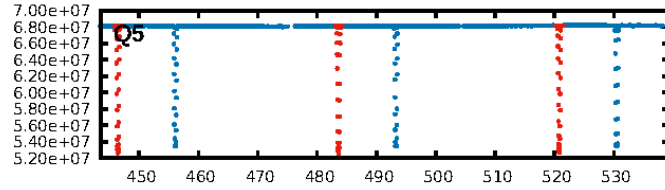
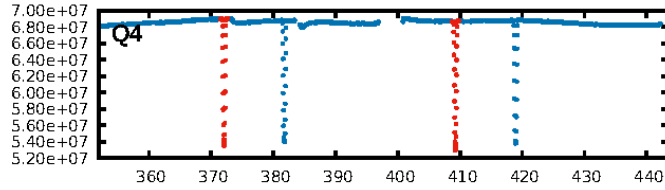
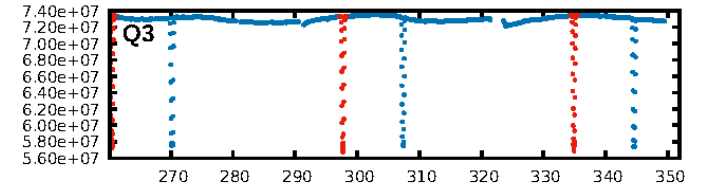
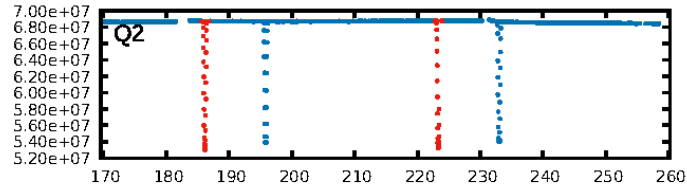
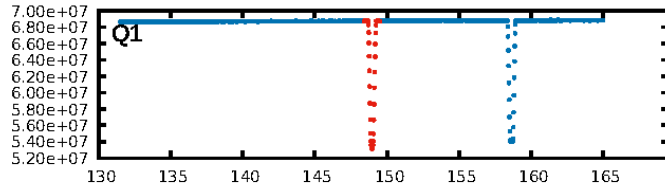
## DV Fit Results:

Period = 37.18328 [0.00000] d  
Epoch = 148.9636 [0.0000] BKJD  
Rp/R\* = 0.4460 [0.0000]  
a/R\* = 29.14 [0.01]  
b = 0.35 [0.00]  
Seff = 29.45 [14.93]  
Teq = 594 [75] K  
Rp = 56.84 [16.89] Re  
a = 0.2062 [0.0619] AU  
Ag = 0.32 [0.18] [-3.68σ]  
Teffp = 692 [55] K [1.05σ]

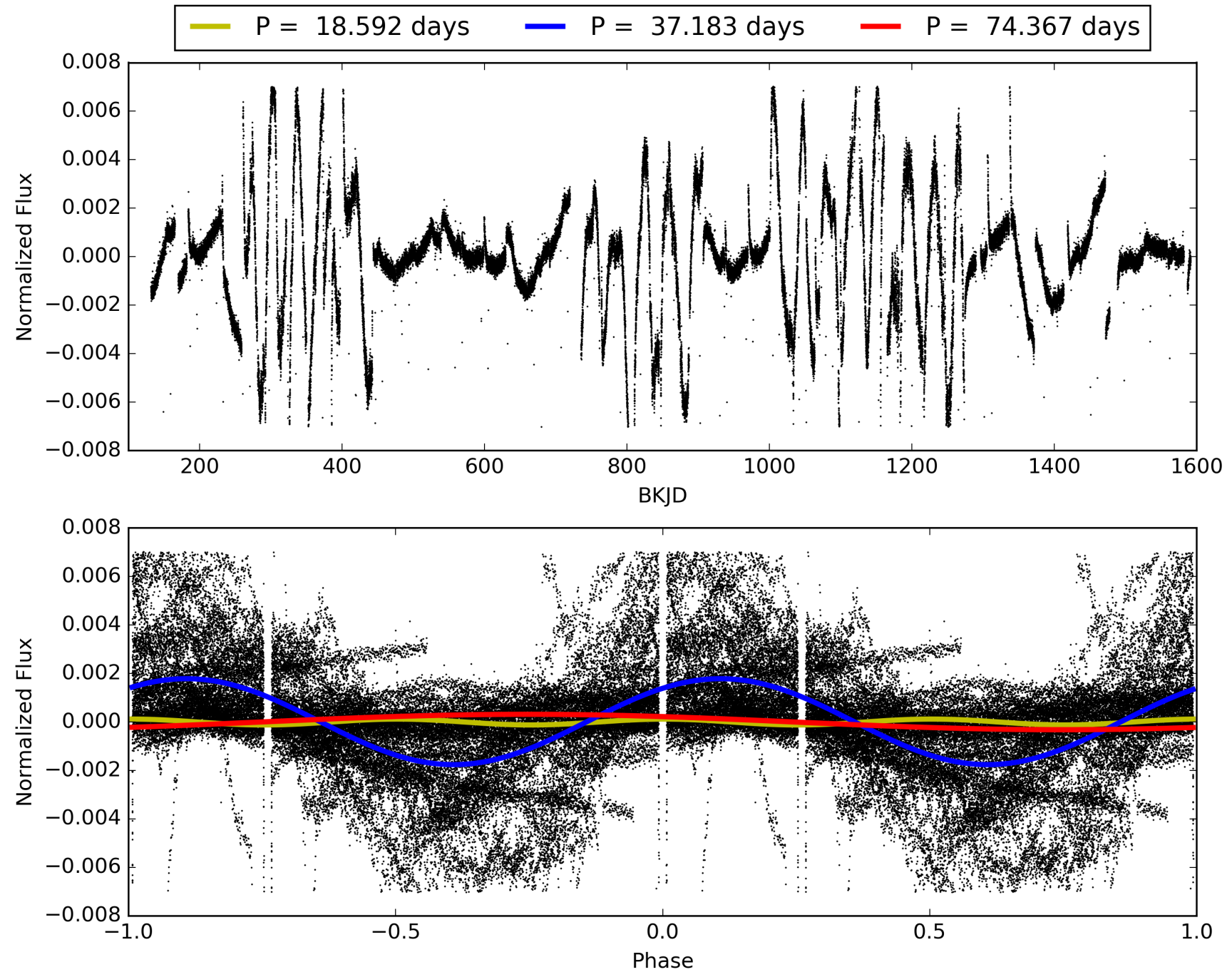
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 100.0% [107.55σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [35/35]  
GhostDiagnostic-chr: 8.034  
Centroid-sig: N/A  
Centroid-so: 0.039 arcsec [70.28σ]  
OotOffset-rm: 0.020 arcsec [0.31σ]  
KicOffset-rm: 0.102 arcsec [1.51σ]  
OotOffset-st: 3/4/3/5 [15]  
KicOffset-st: 3/4/3/5 [15]  
DiffImageQuality-fgm: 1.00 [15/15]  
DiffImageOverlap-fno: 1.00 [15/15]

# TCE 008314801-02, PDC Light Curves



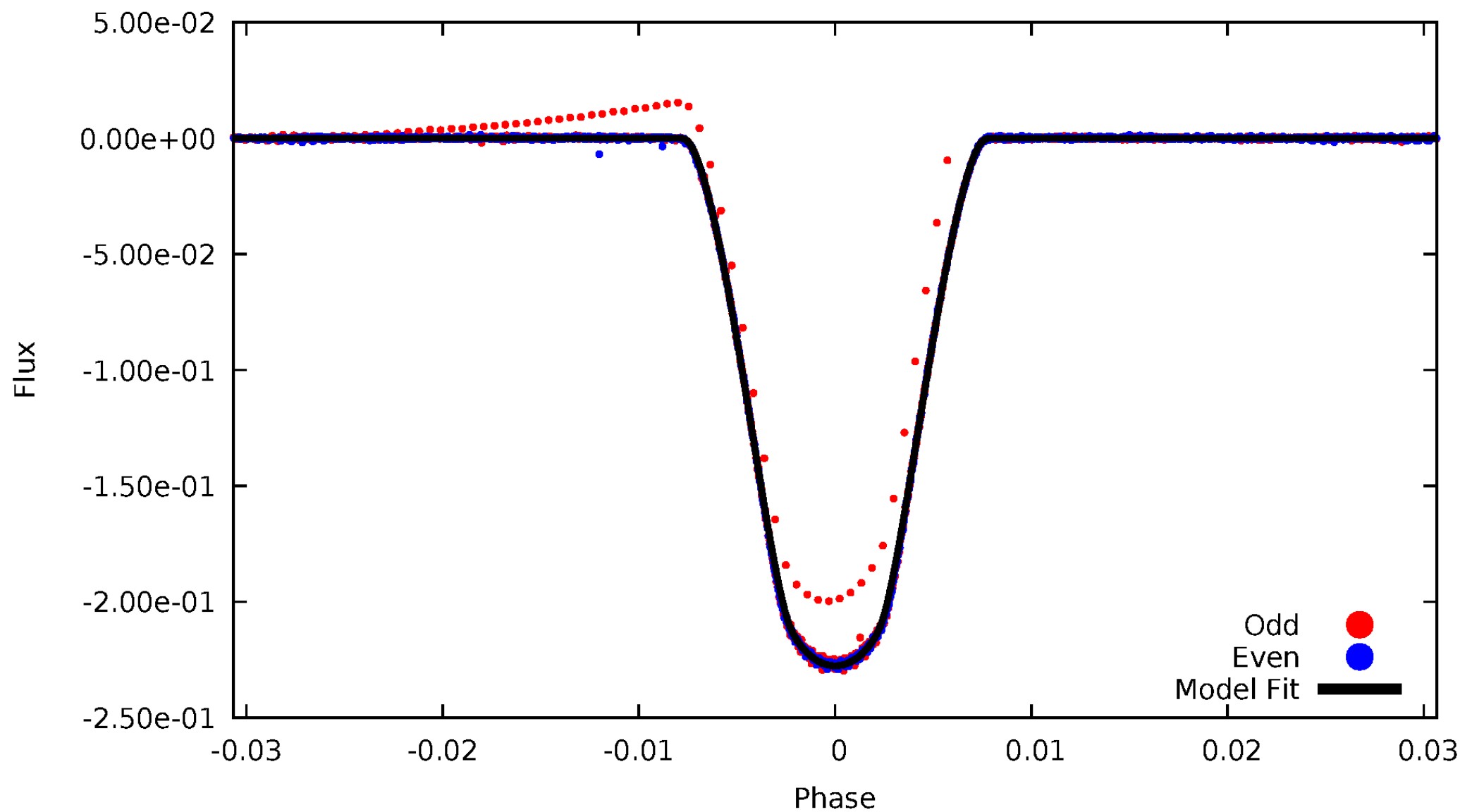
# TCE 008314801-02





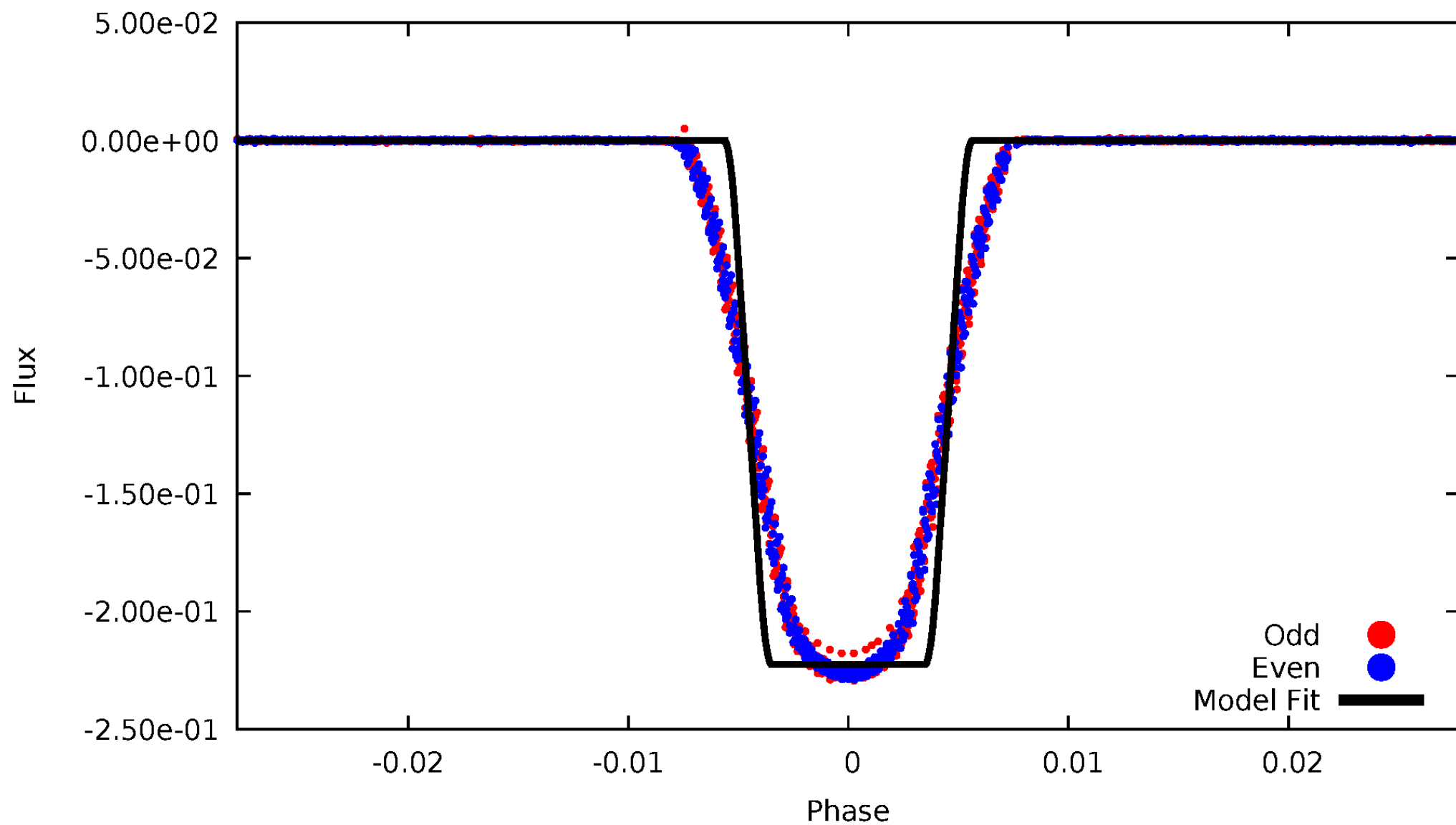
# DV Odd/Even

TCE 008314801-02



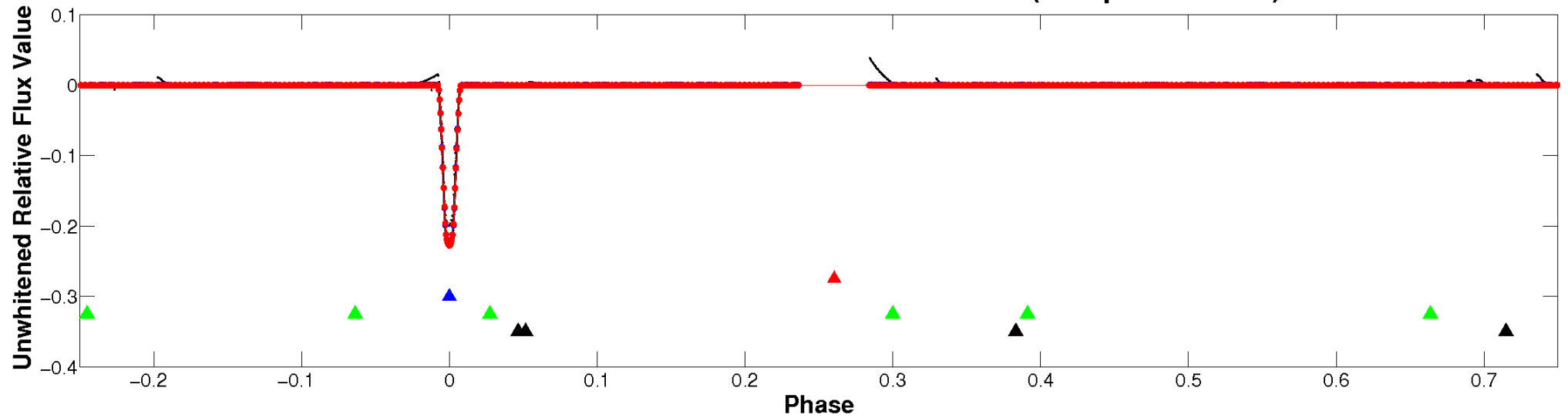
# ALT Odd/Even

TCE 008314801-02

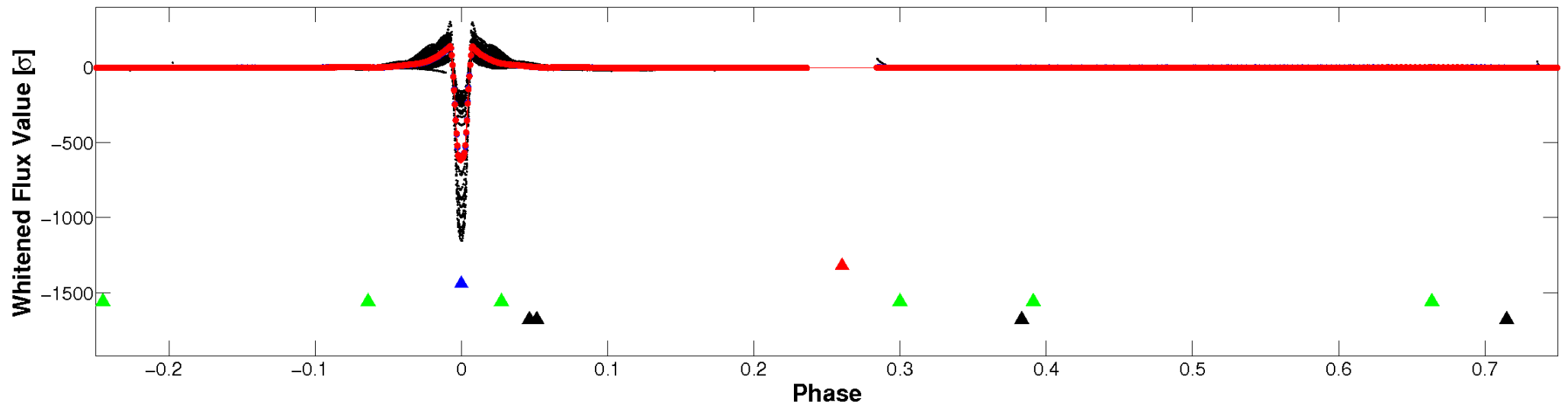


# Non-Whitened Vs. Whitened Light Curve

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

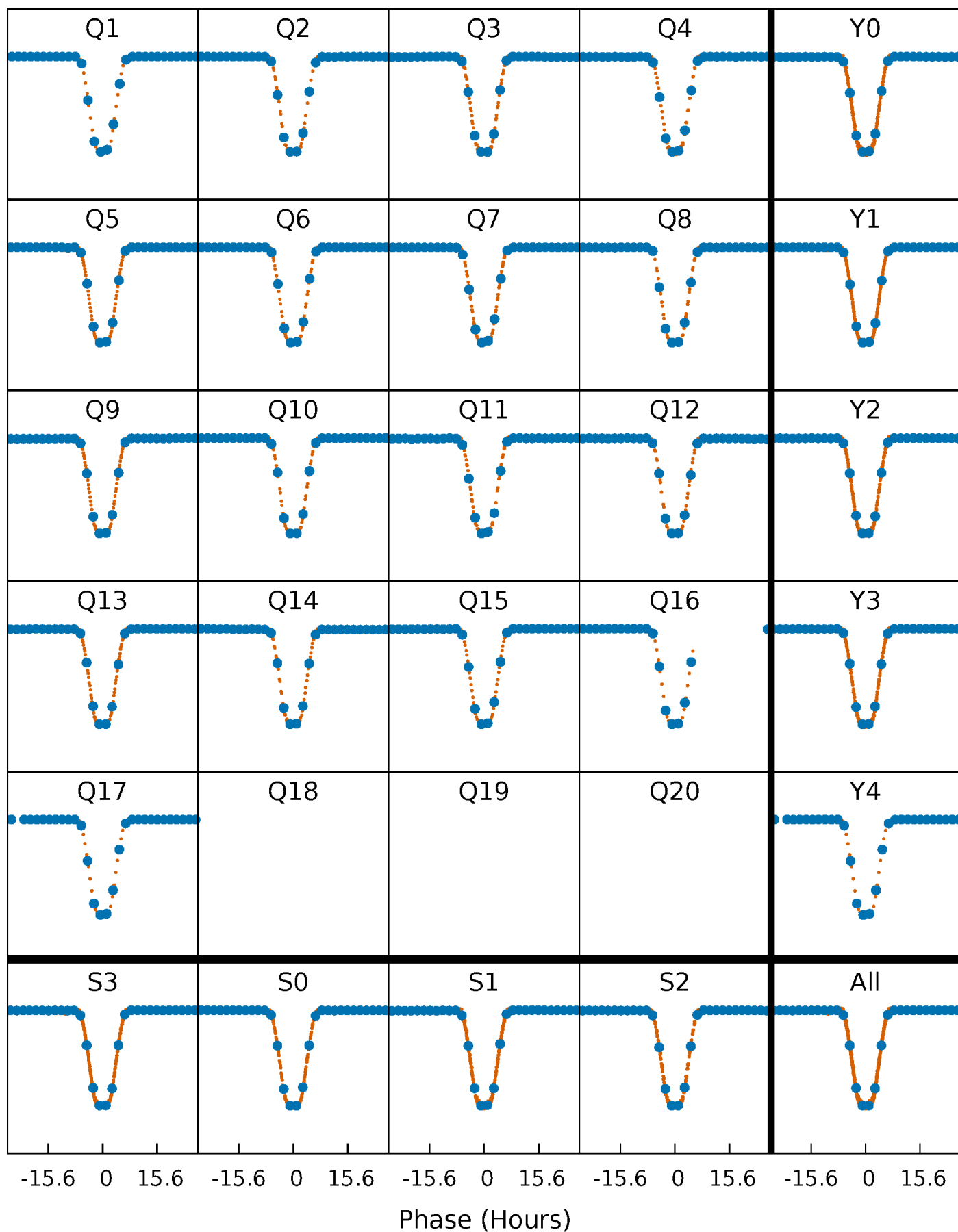


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



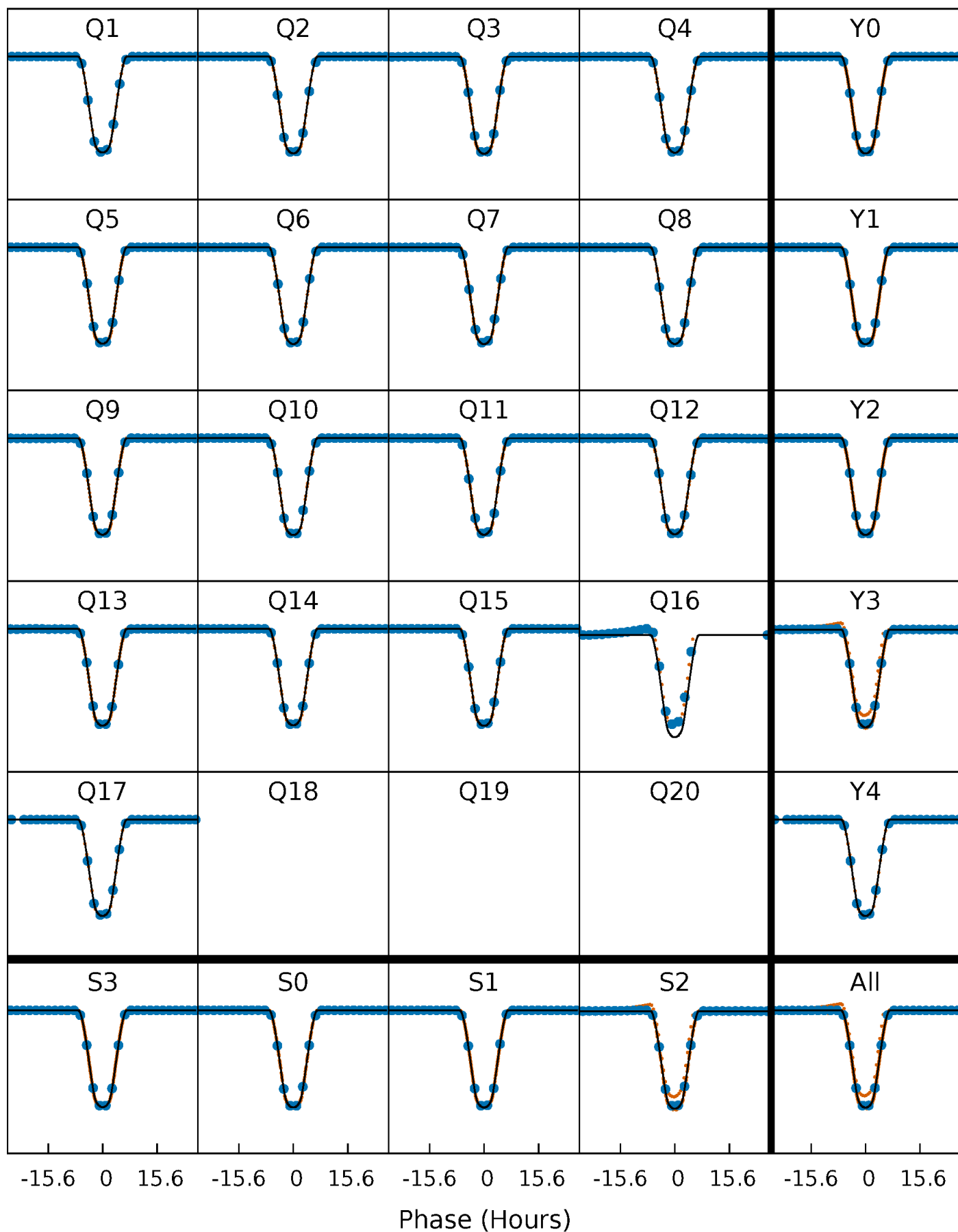
# PDC Quarter-Phased Transit Curves

TCE 008314801-02   P= 37.183276 Days    $T_0=148.963605$  (BKJD)



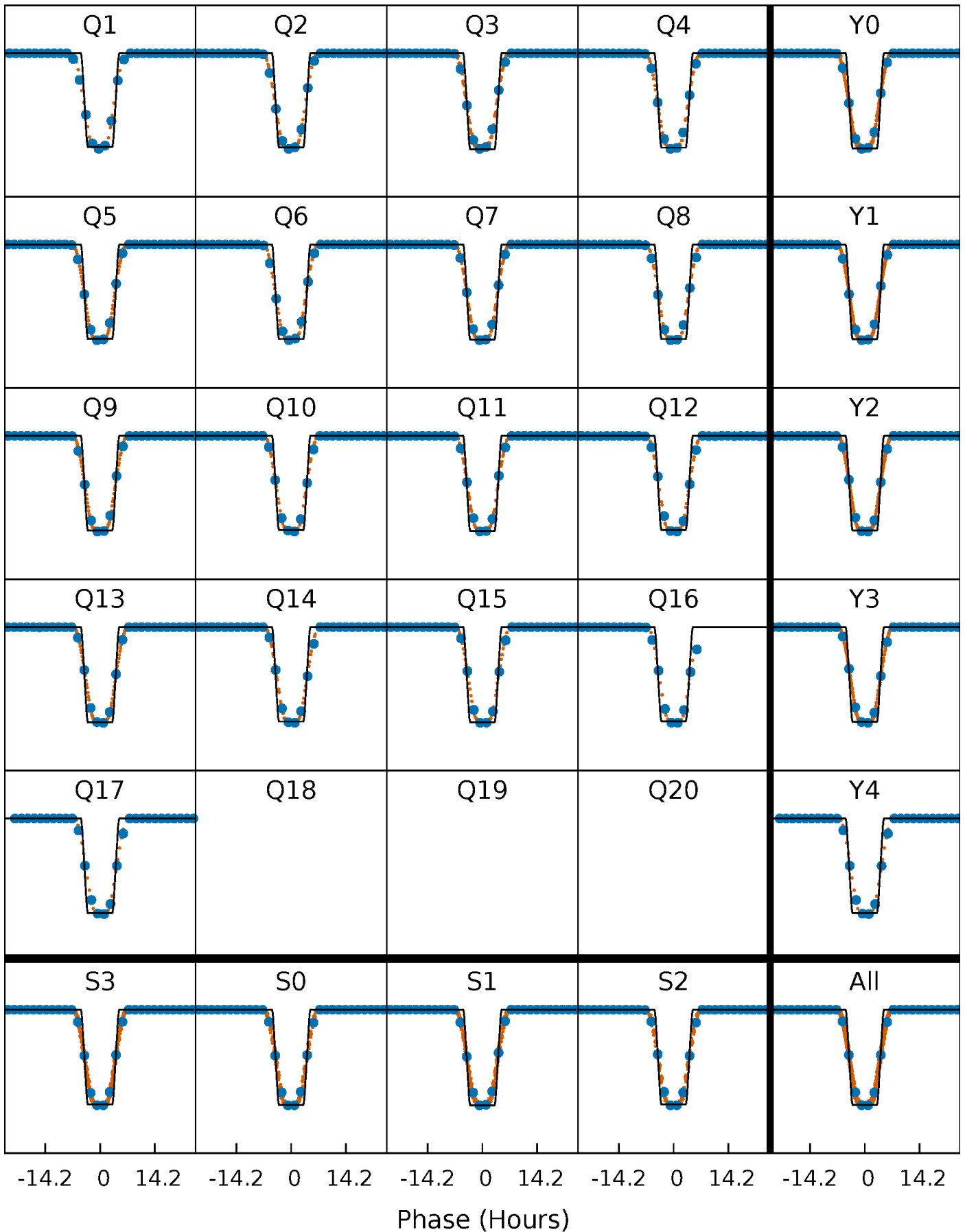
# DV Quarter-Phased Transit Curves

TCE 008314801-02   P= 37.183276 Days    $T_0=148.963605$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

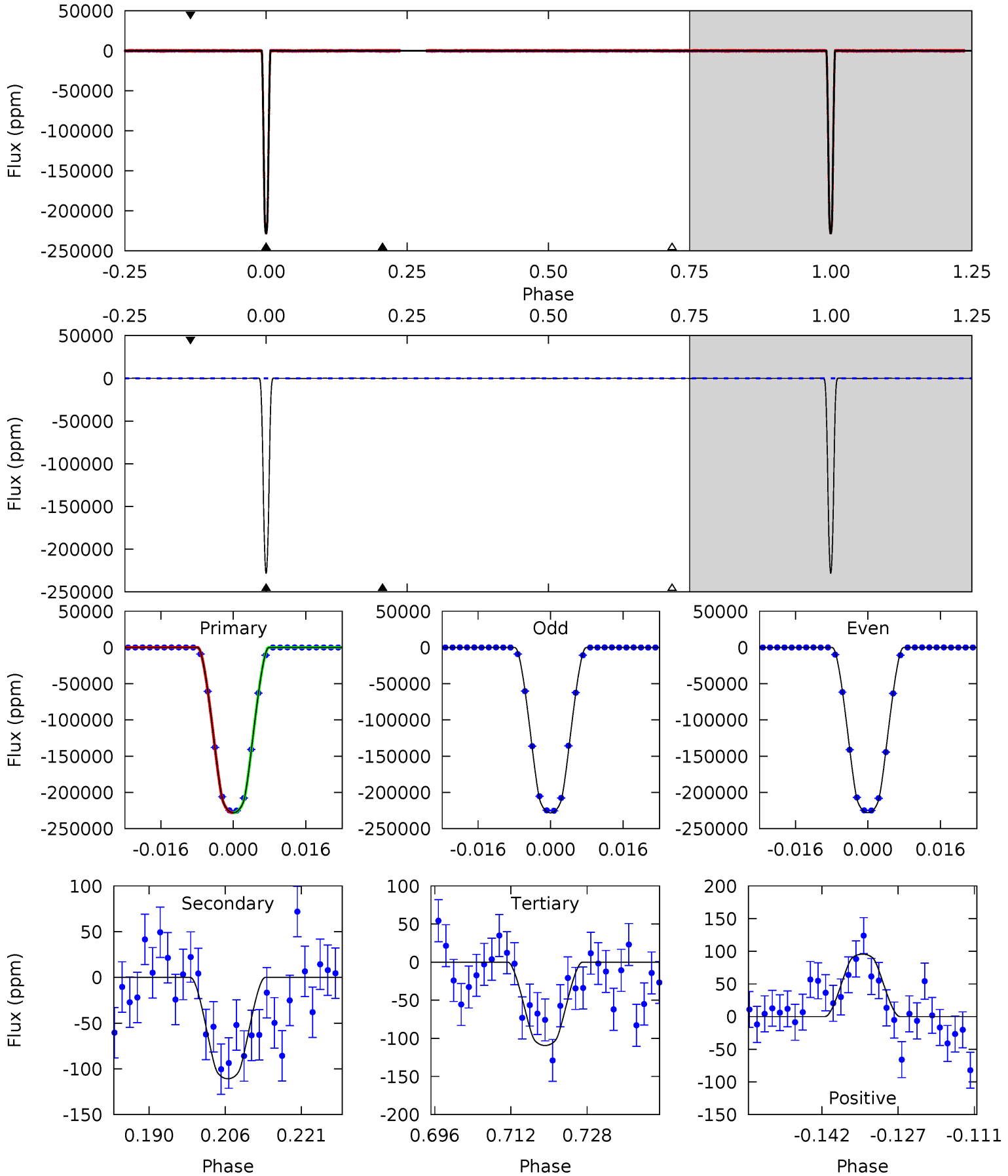
TCE 008314801-02     $P = 37.182684$  Days     $T_0 = 148.974410$  (BKJD)



# DV Model-Shift Uniqueness Test

008314801-02, P = 37.183276 Days, E = 111.780329 Days

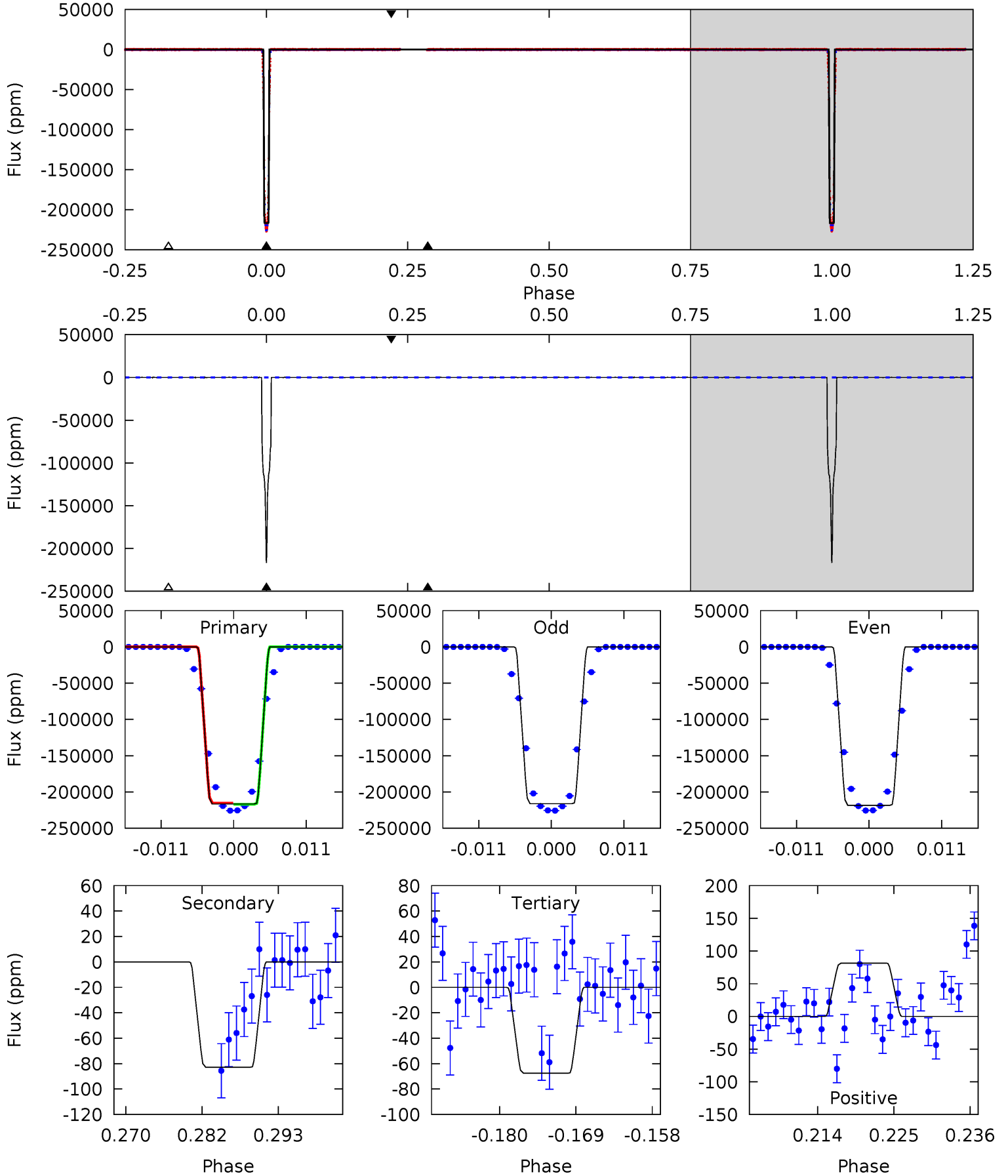
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22235	10.8	10.7	9.32	4.94	2.41	3.73	22225	22226	0.15	1.49	8.64	1.00	0.00	1.31



# Alt Model-Shift Uniqueness Test

008314801-02, P = 37.182684 Days, E = 111.791726 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
12253	4.69	3.82	4.61	5.00	2.53	1.25	12249	12249	0.87	0.08	68.8	1.00	0.00	0





### Stellar Parameters For KIC 008314801

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5657^{+169}_{-152}$	$4.230^{+0.294}_{-0.196}$	$-0.220^{+0.300}_{-0.250}$	$1.168^{+0.347}_{-0.313}$	$0.846^{+0.122}_{-0.071}$	$0.747^{+1.319}_{-0.362}$
	+3%/-3%	+7%/-5%	+136%/-114%	+30%/-27%	+14%/-8%	+177%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008314801-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-111 \pm 10$	$56.12^{+10.03}_{-8.48}$	$824^{+67}_{-71}$	$1808^{+42}_{-46}$	$0.821^{+0.347}_{-0.210}$
Alt.	$-83 \pm 18$	$60.18^{+10.69}_{-9.76}$	$828^{+75}_{-71}$	$1688^{+76}_{-149}$	$0.539^{+0.266}_{-0.172}$

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

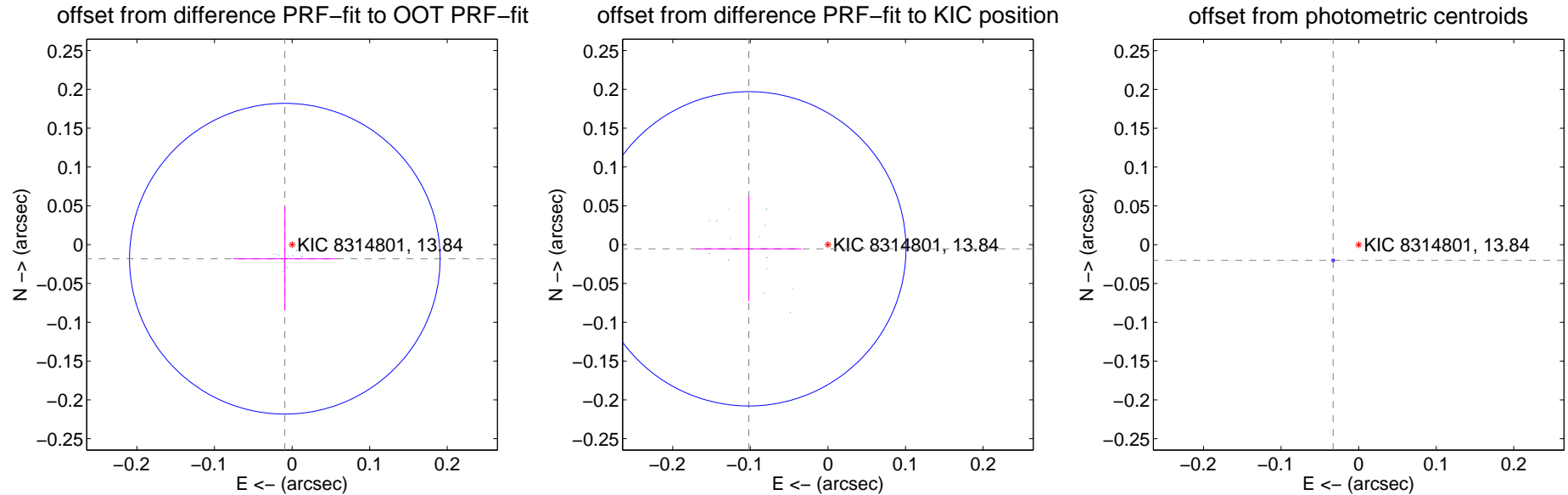
## DV Centroid Data

Supplemental centroid analysis for 008314801-02. Kepler magnitude: 13.84. Transit SNR 10224.94

There are 15 quarters with good PRF difference image offsets

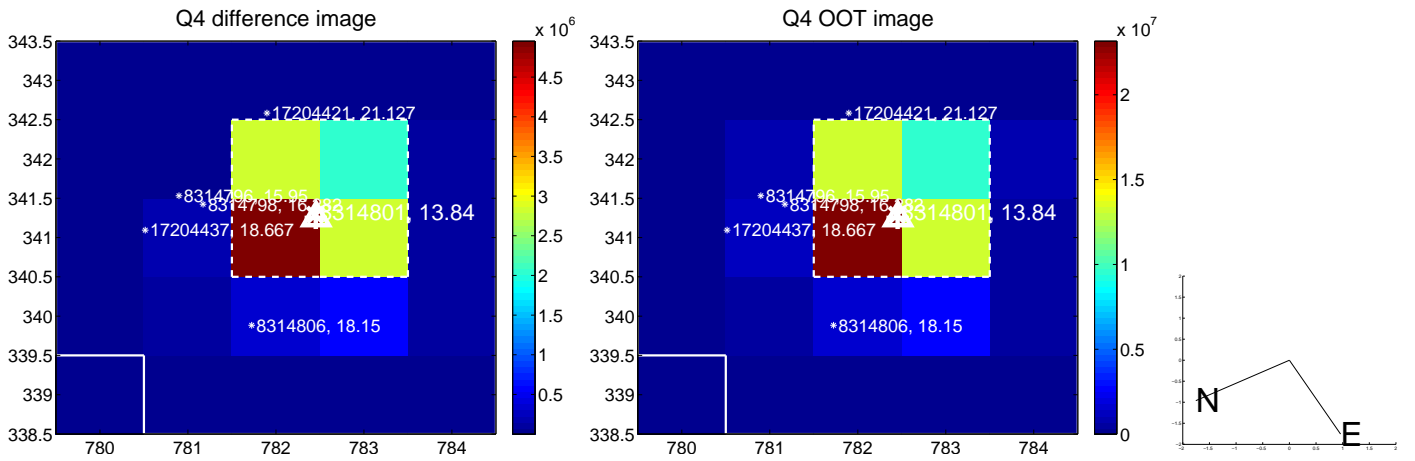
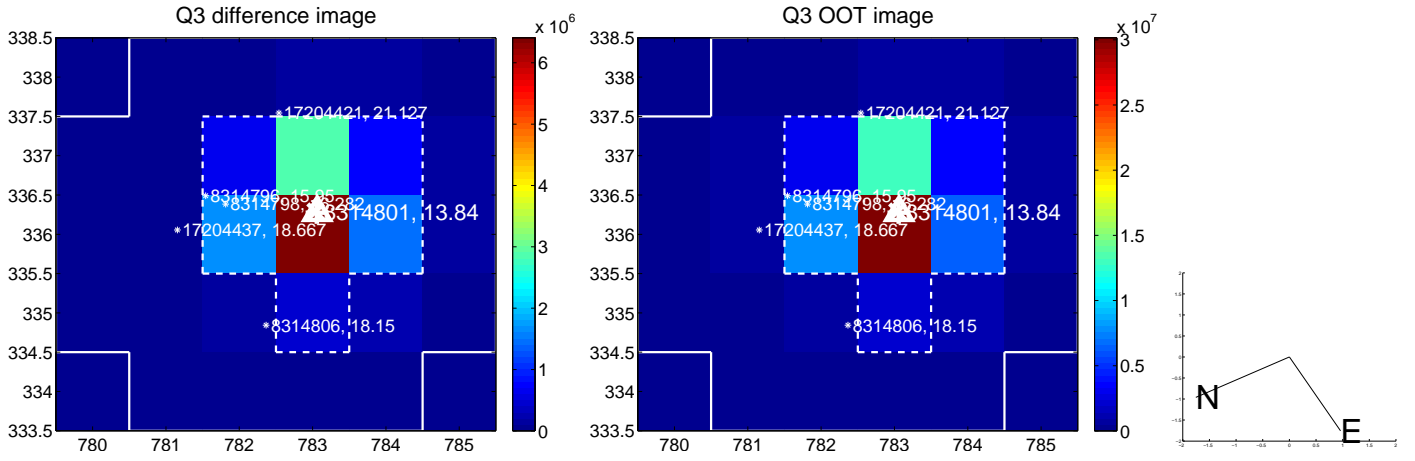
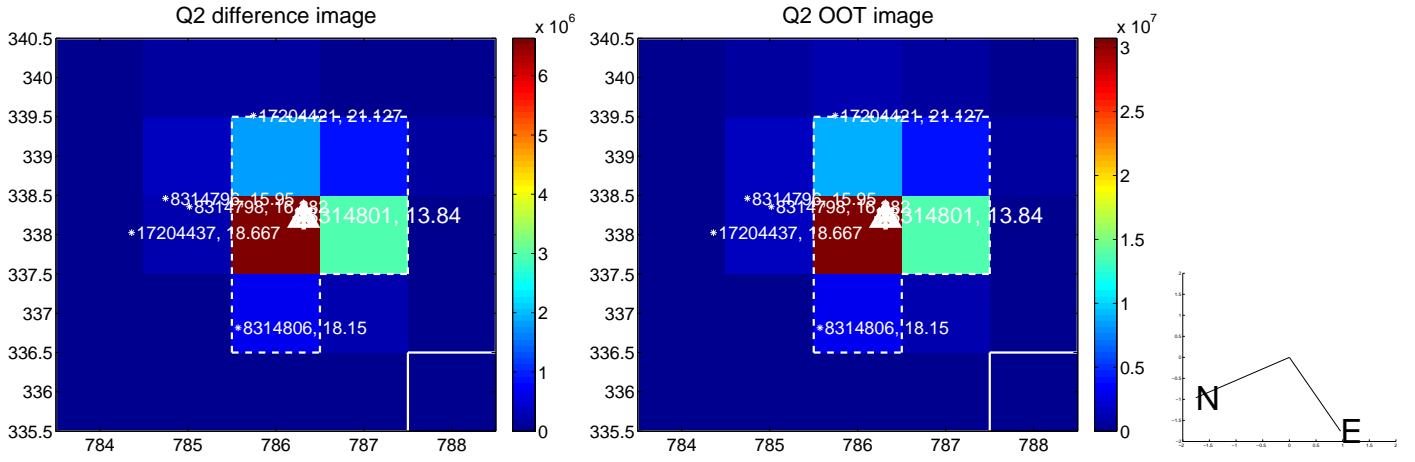
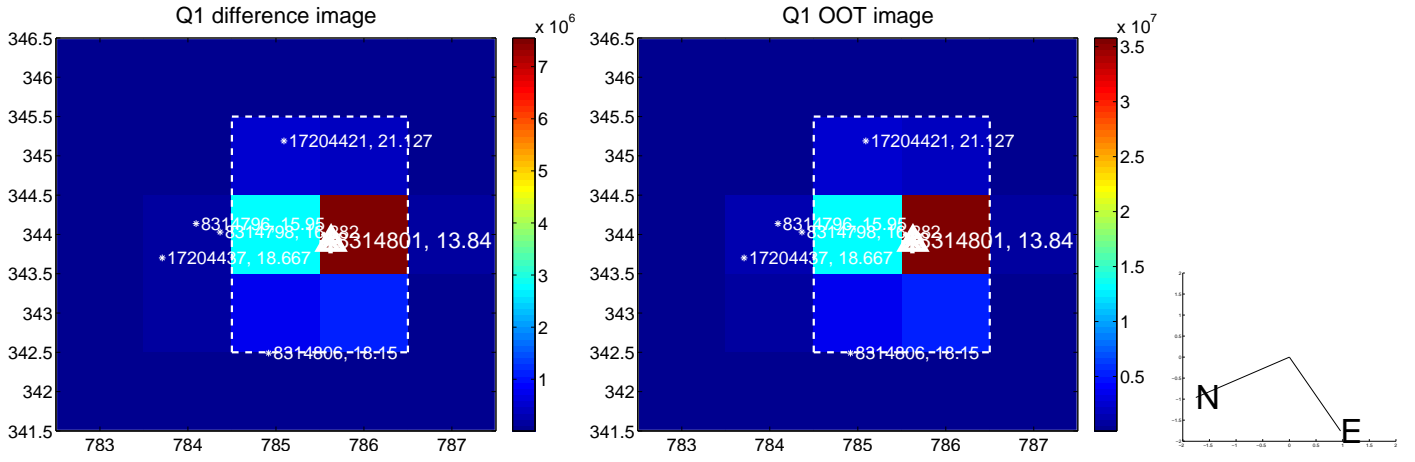
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.020 \pm 0.067$	0.31	$0.009 \pm 0.067$	$-0.018 \pm 0.067$
PRF-fit source offset from KIC position	$0.102 \pm 0.068$	1.51	$0.102 \pm 0.068$	$-0.005 \pm 0.068$
photometric centroid source offset	$0.04 \pm 0.00$	70.28	$0.03 \pm 0.00$	$-0.02 \pm 0.00$

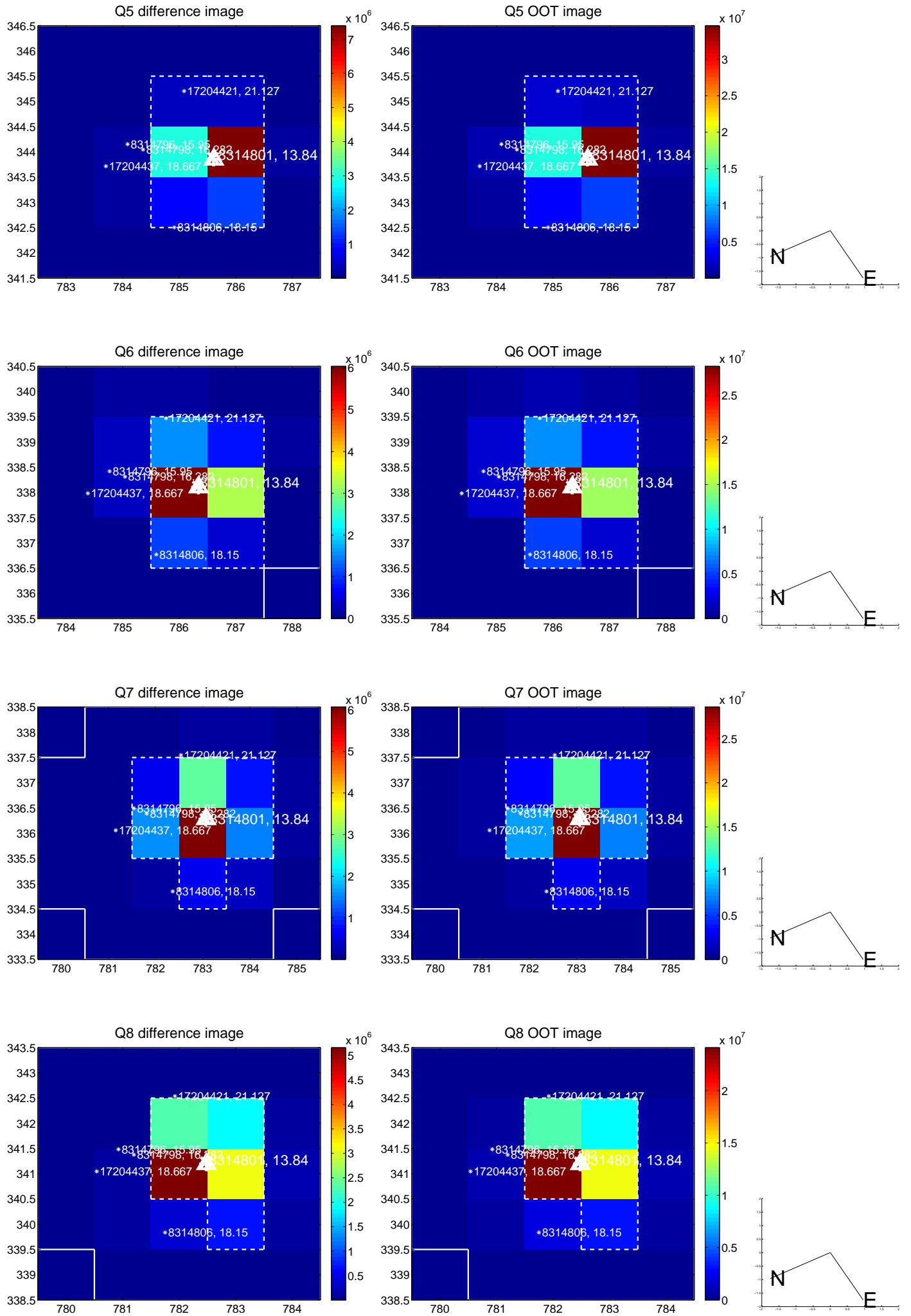


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

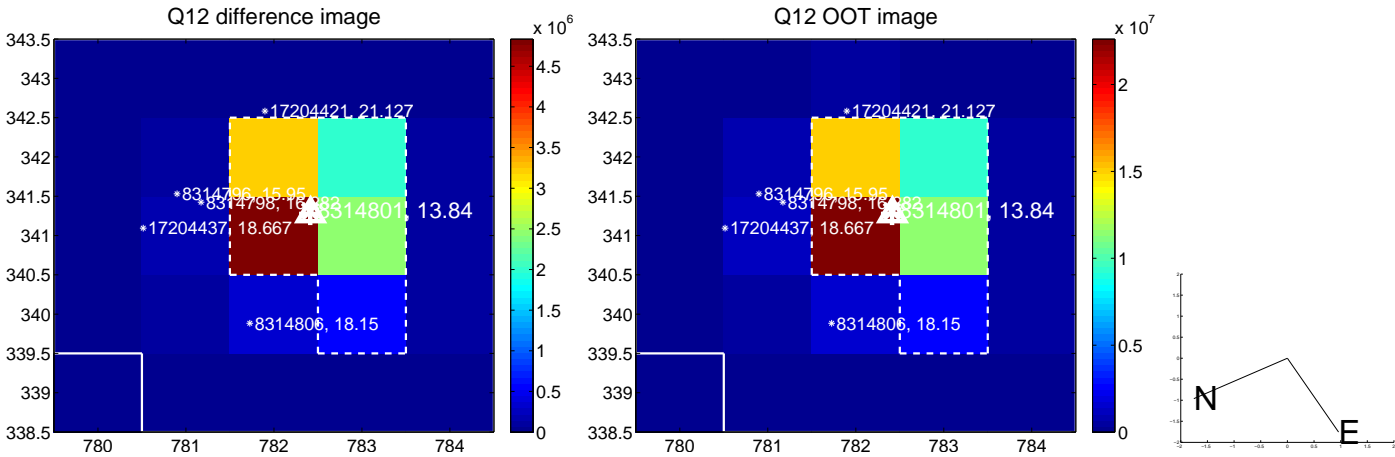
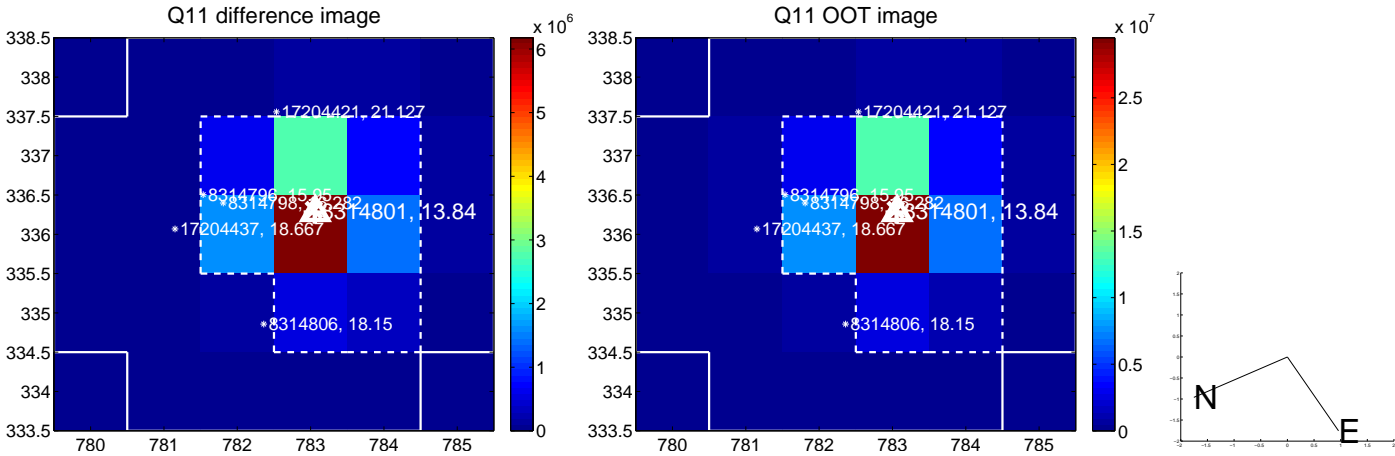
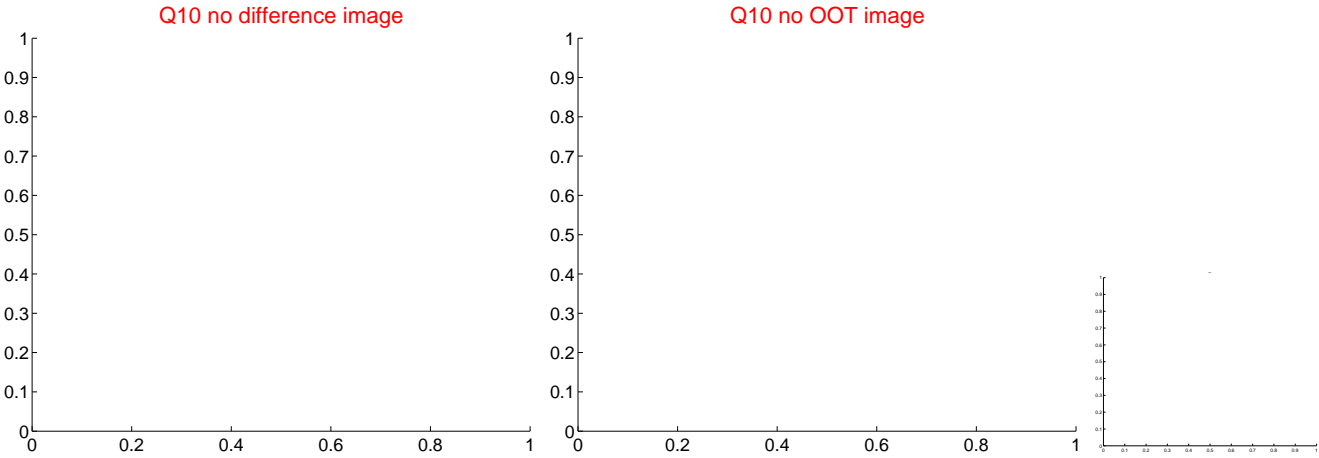
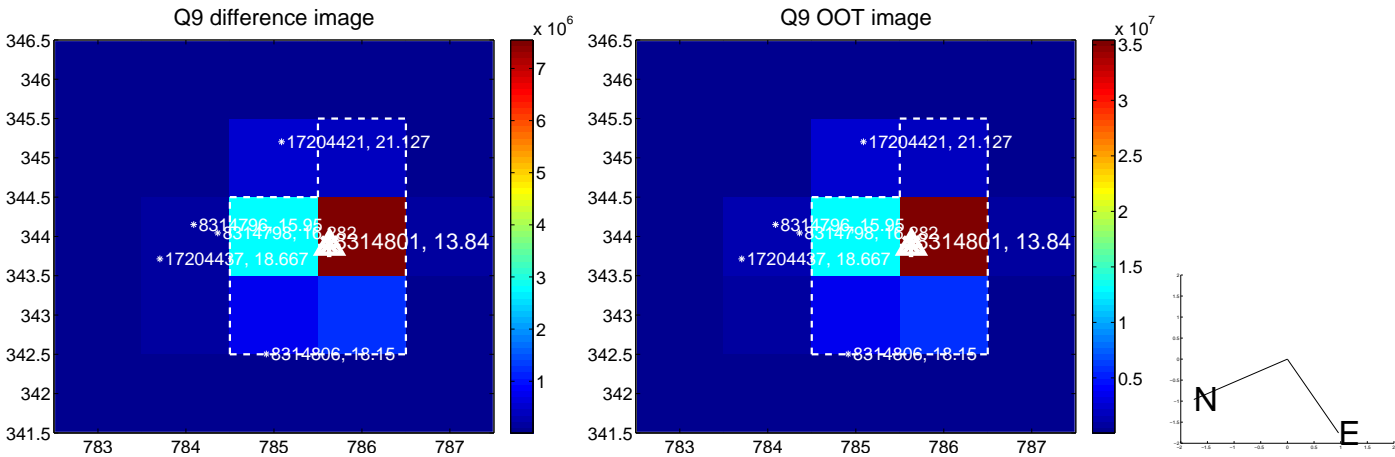
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



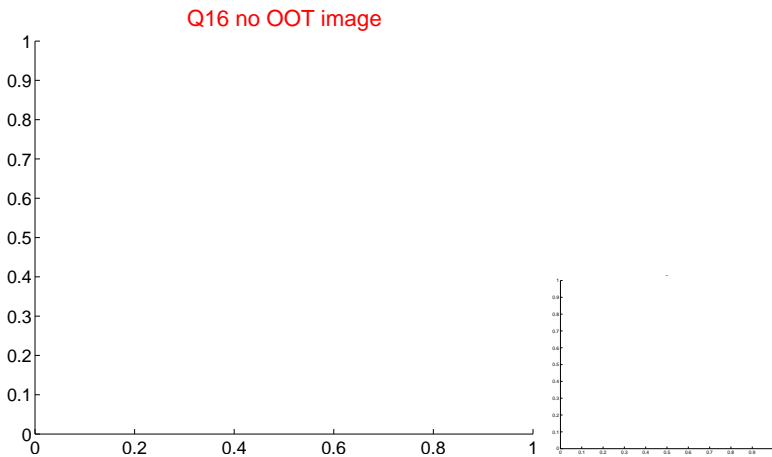
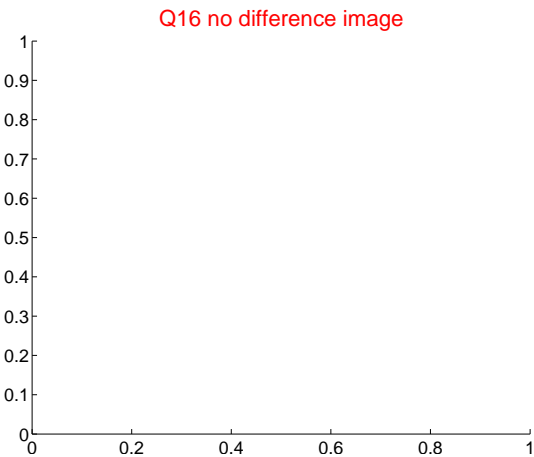
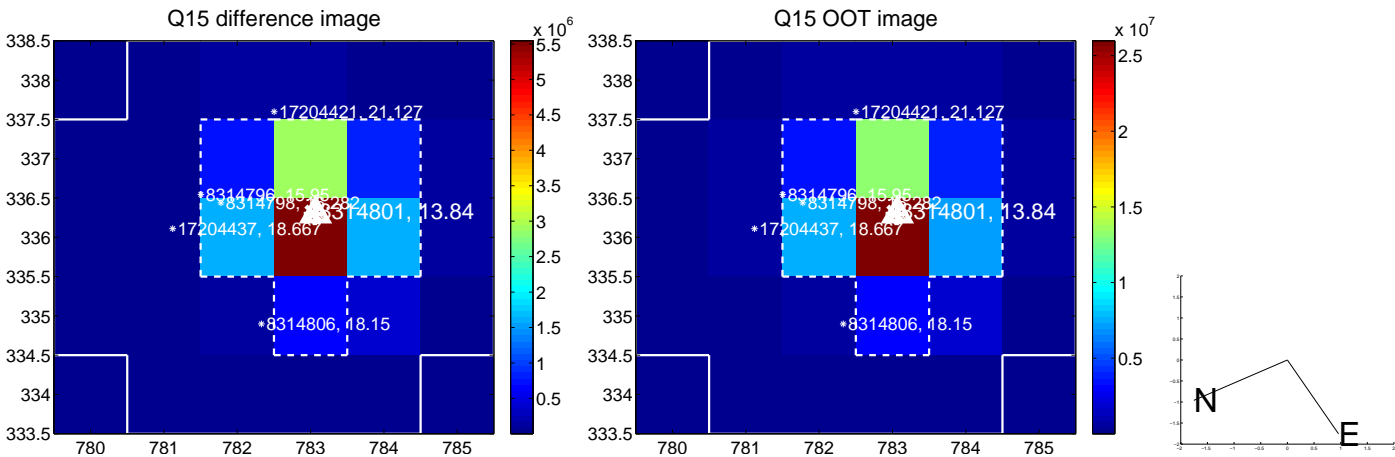
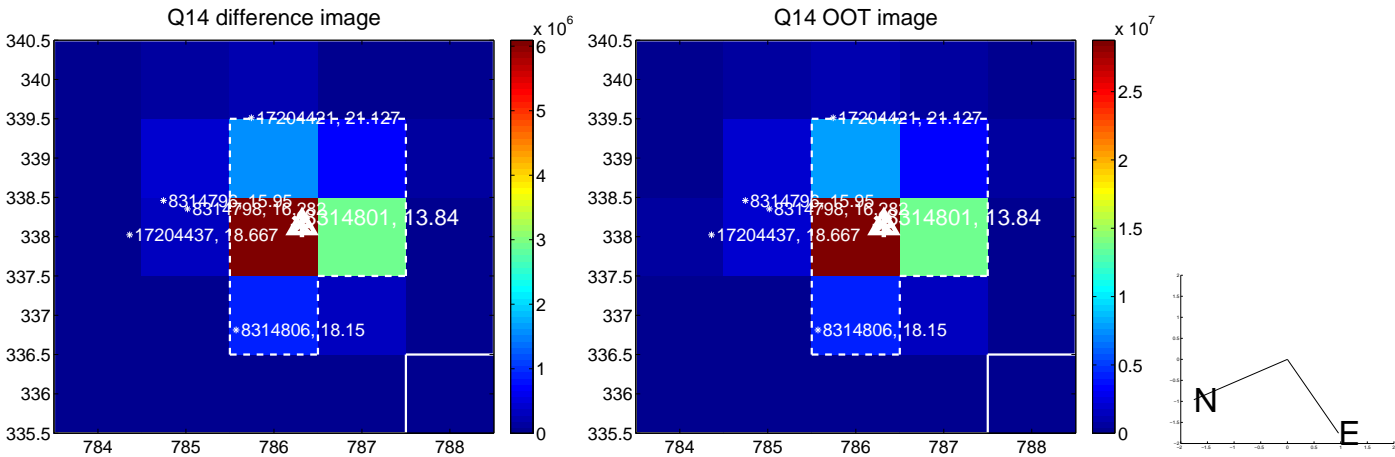
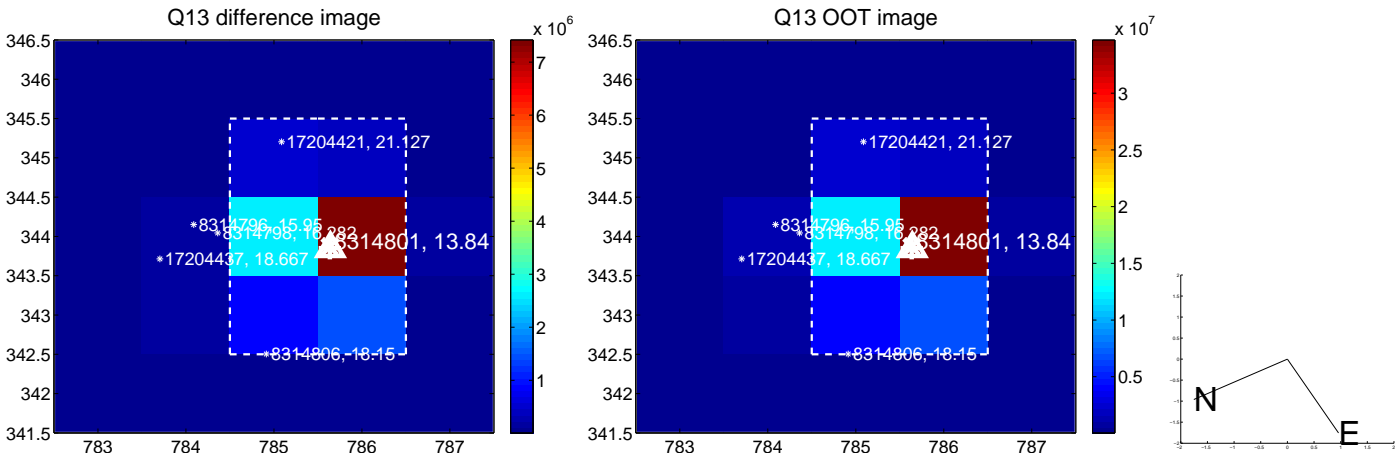
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



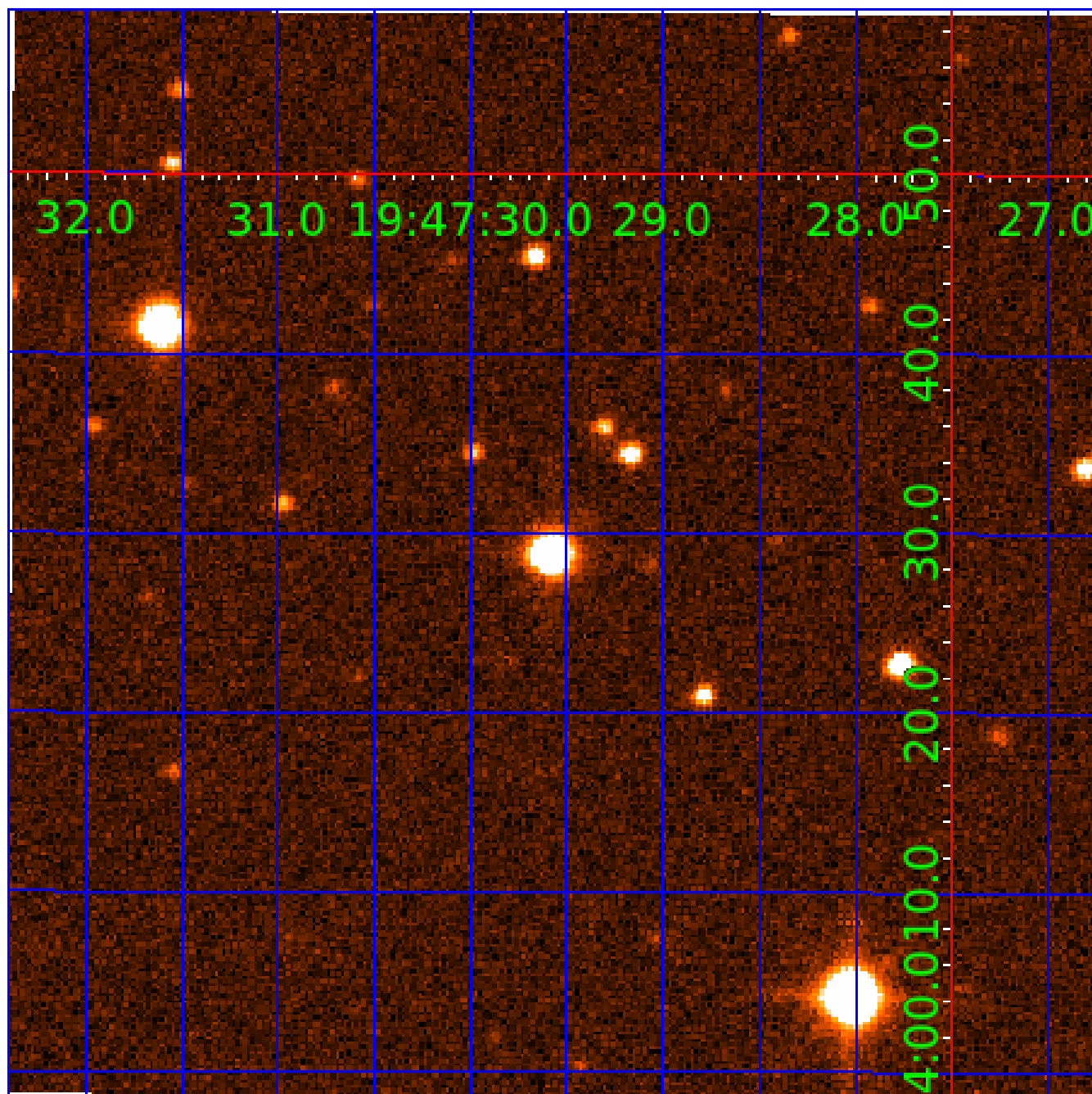
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination





# KIC 008314801

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008314801-01	OBS	7018.01	37.183236	158.646089	218656.9	14.039	16099.3	6839.4	1.17	5657	54.61	29.45
008314801-02	OBS	No	37.183276	148.963605	227588.4	13.677	15060.2	10224.9	1.17	5657	56.84	29.45
008314801-03	OBS	No	246.758273	288.582871	277.4	44.721	47.2	7.4	1.17	5657	1.97	2.36
008314801-04	OBS	No	384.164550	373.982428	965.8	15.000	27.8	-1.0	1.17	5657	3.59	1.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008314801-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_ODDEVEN_DV—HAS_SEC_TCE—PERIOD_ALIAS_ALT
008314801-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
008314801-03	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008314801-04	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

**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 008314801-03

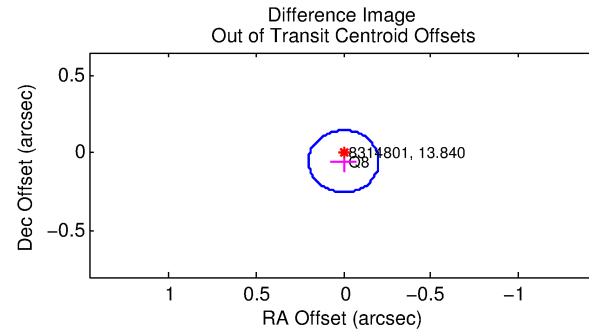
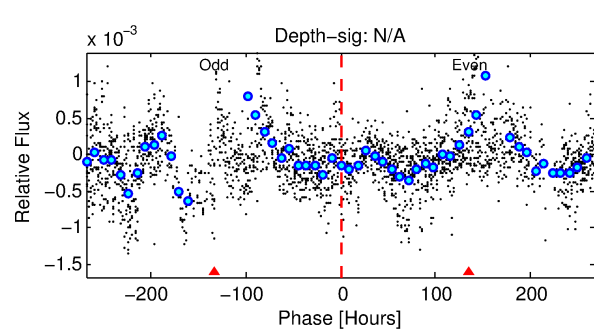
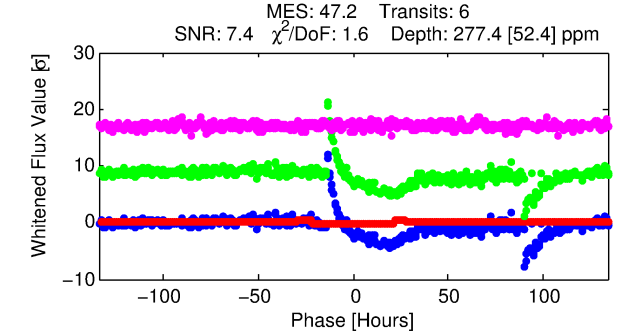
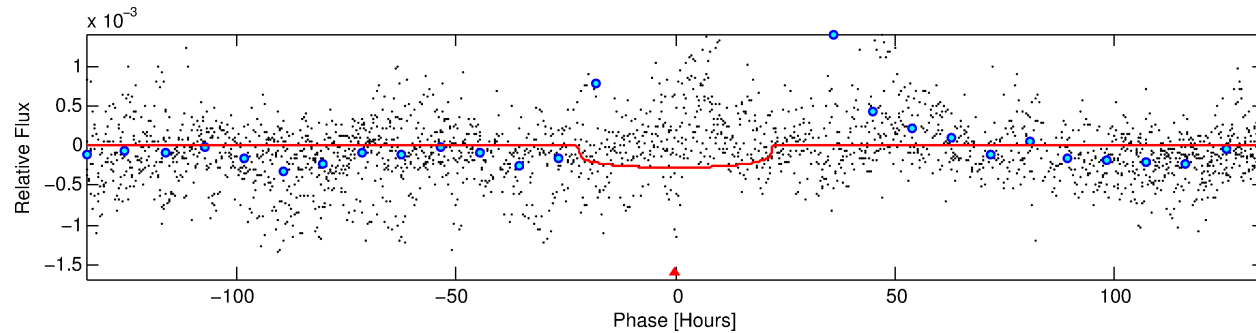
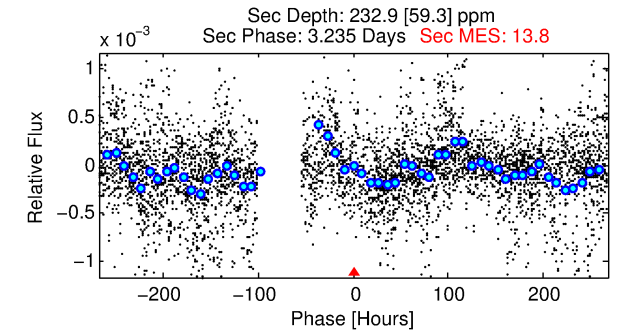
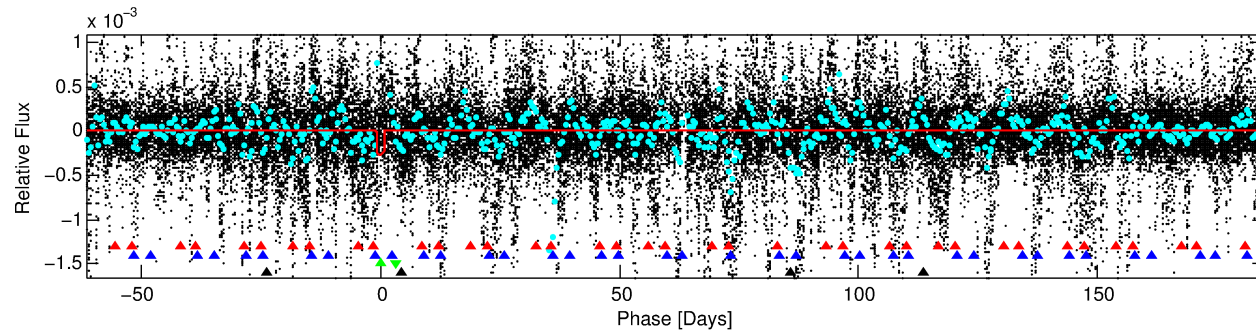
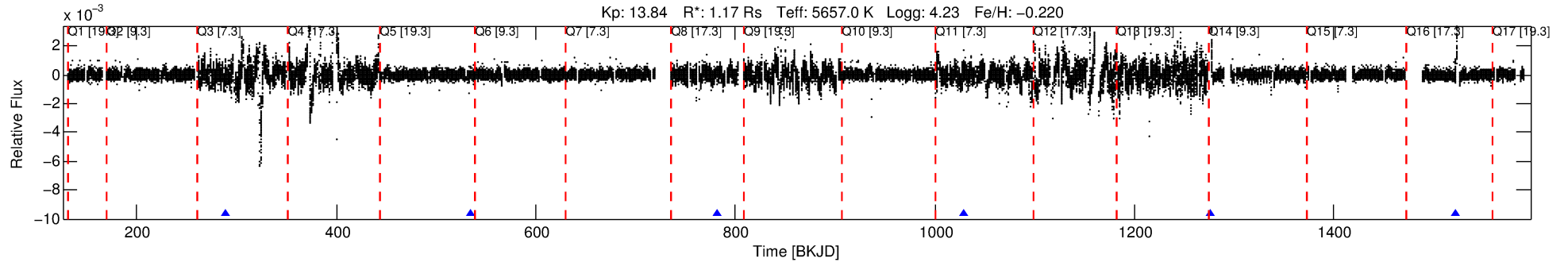
No Significant Match Found

# DV One-Page Summary

KIC: 8314801 Candidate: 3 of 4 Period: 246.758 d

KOI: K07018 Corr: No Ephemeris Match

Kp: 13.84 R\*: 1.17 Rs Teff: 5657.0 K Logg: 4.23 Fe/H: -0.220



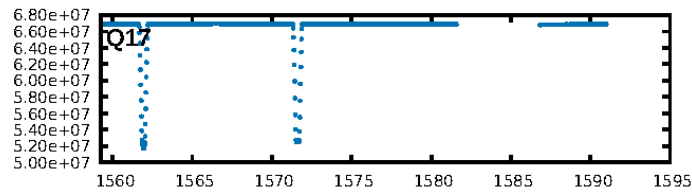
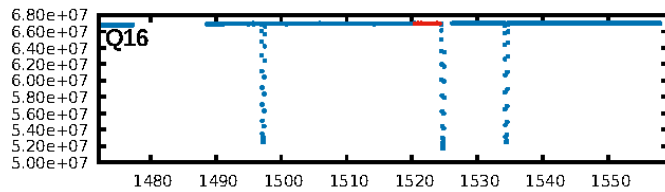
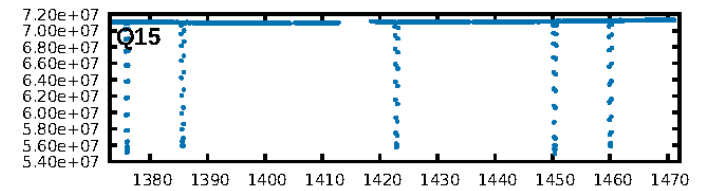
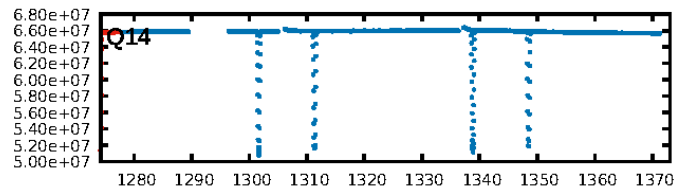
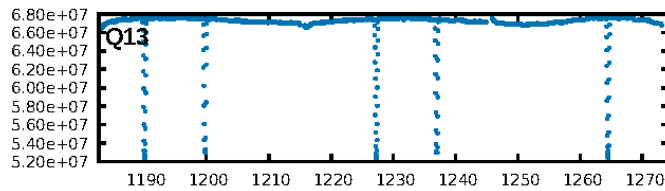
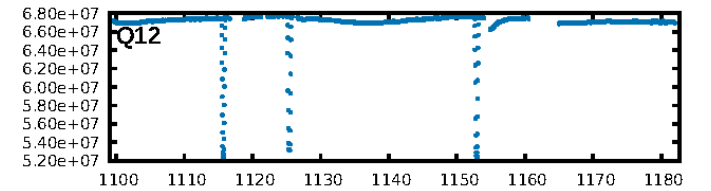
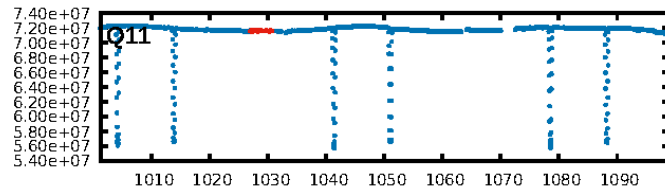
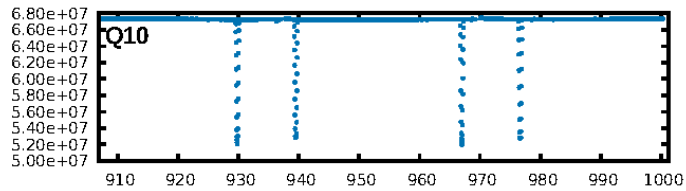
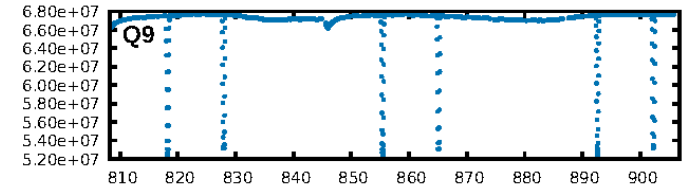
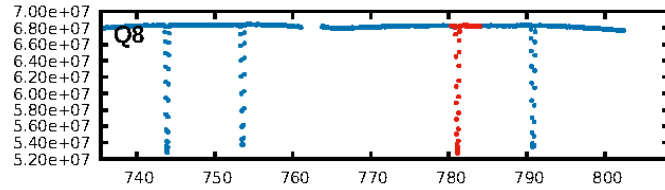
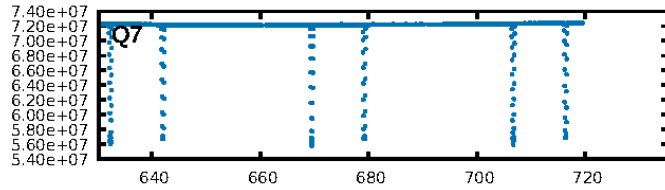
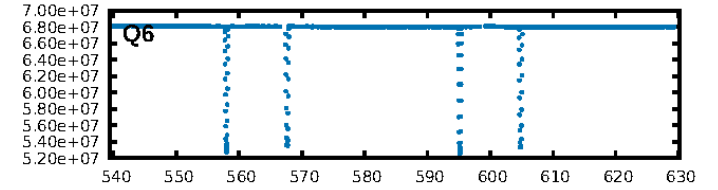
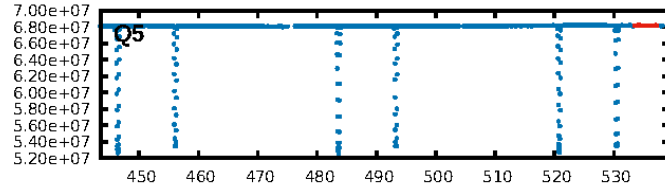
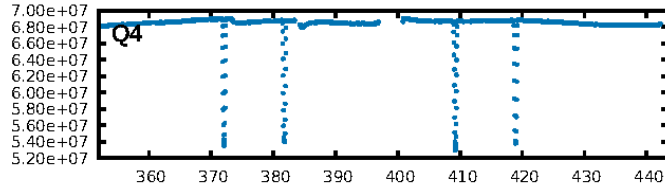
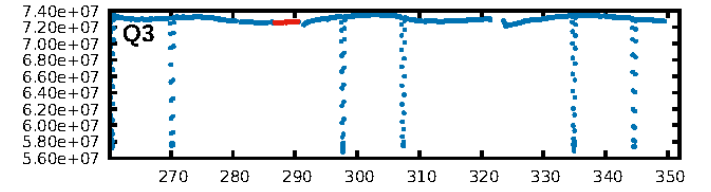
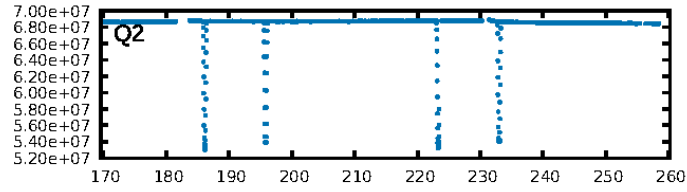
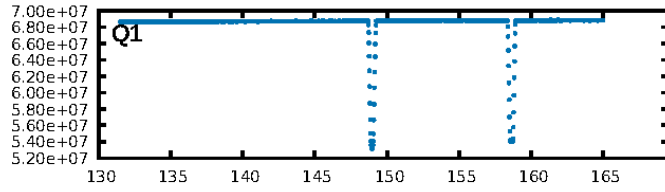
## DV Fit Results:

Period = 246.75827 [0.01135] d  
Epoch = 288.5829 [0.0369] BKJD  
Rp/R\* = 0.0155 [0.0048]  
a/R\* = 38.41 [49.07]  
b = 0.45 [2.29]  
Seff = 2.36 [1.20]  
Teq = 316 [40] K  
Rp = 1.97 [0.85] Re  
a = 0.7281 [0.2186] AU  
Ag = 17447.71 [14528.82] [1.20σ]  
Teffp = 5617 [957] K [5.53σ]

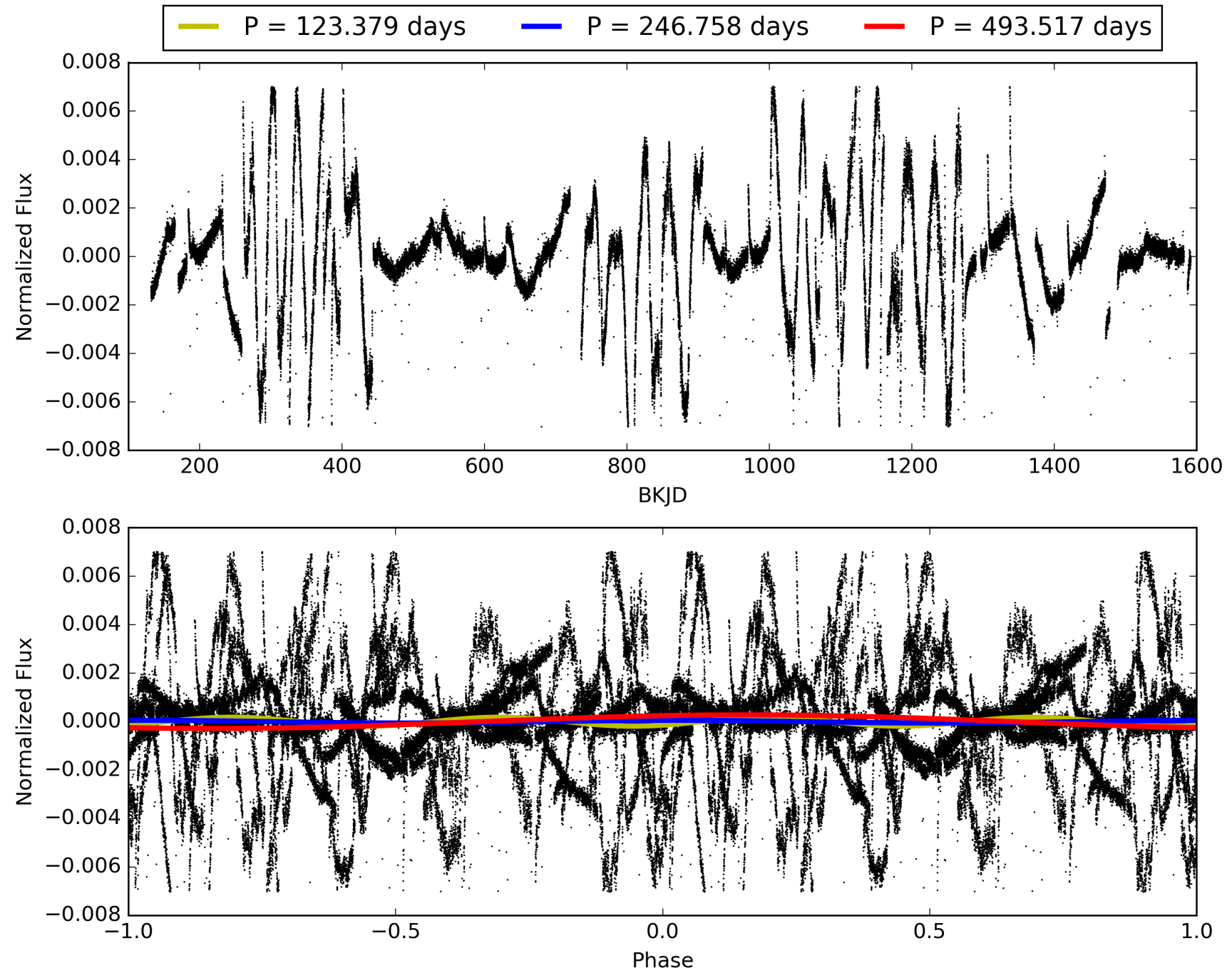
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [107.55σ]  
LongPeriod-sig: 100.0% [69.91σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: -218.1  
Centroid-sig: N/A  
Centroid-so: 1.132 arcsec [1.78σ]  
OotOffset-rm: 0.054 arcsec [0.80σ]  
KicOffset-rm: 0.138 arcsec [2.07σ]  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 0.00 [0/1]

# TCE 008314801-03, PDC Light Curves

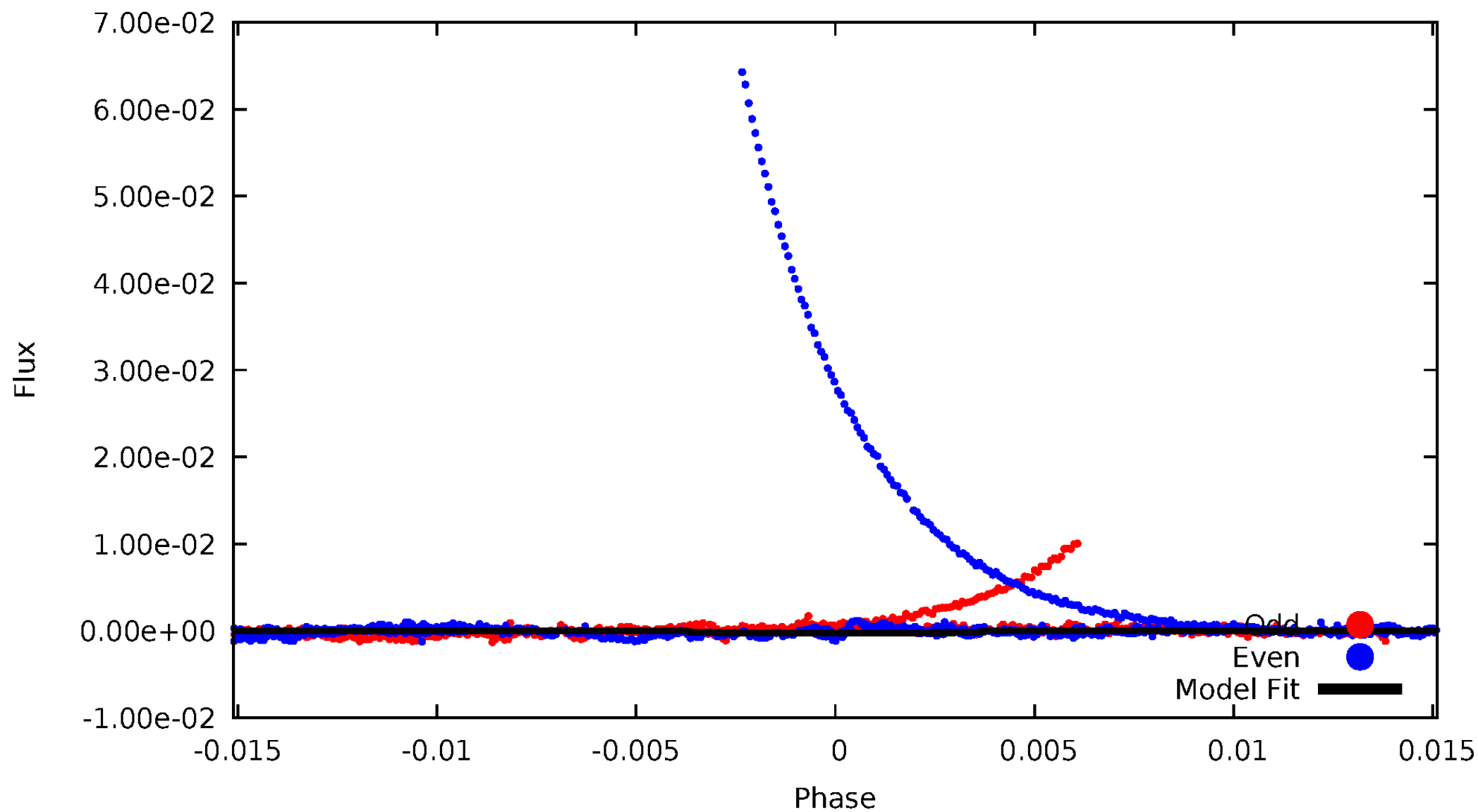


TCE 008314801-03



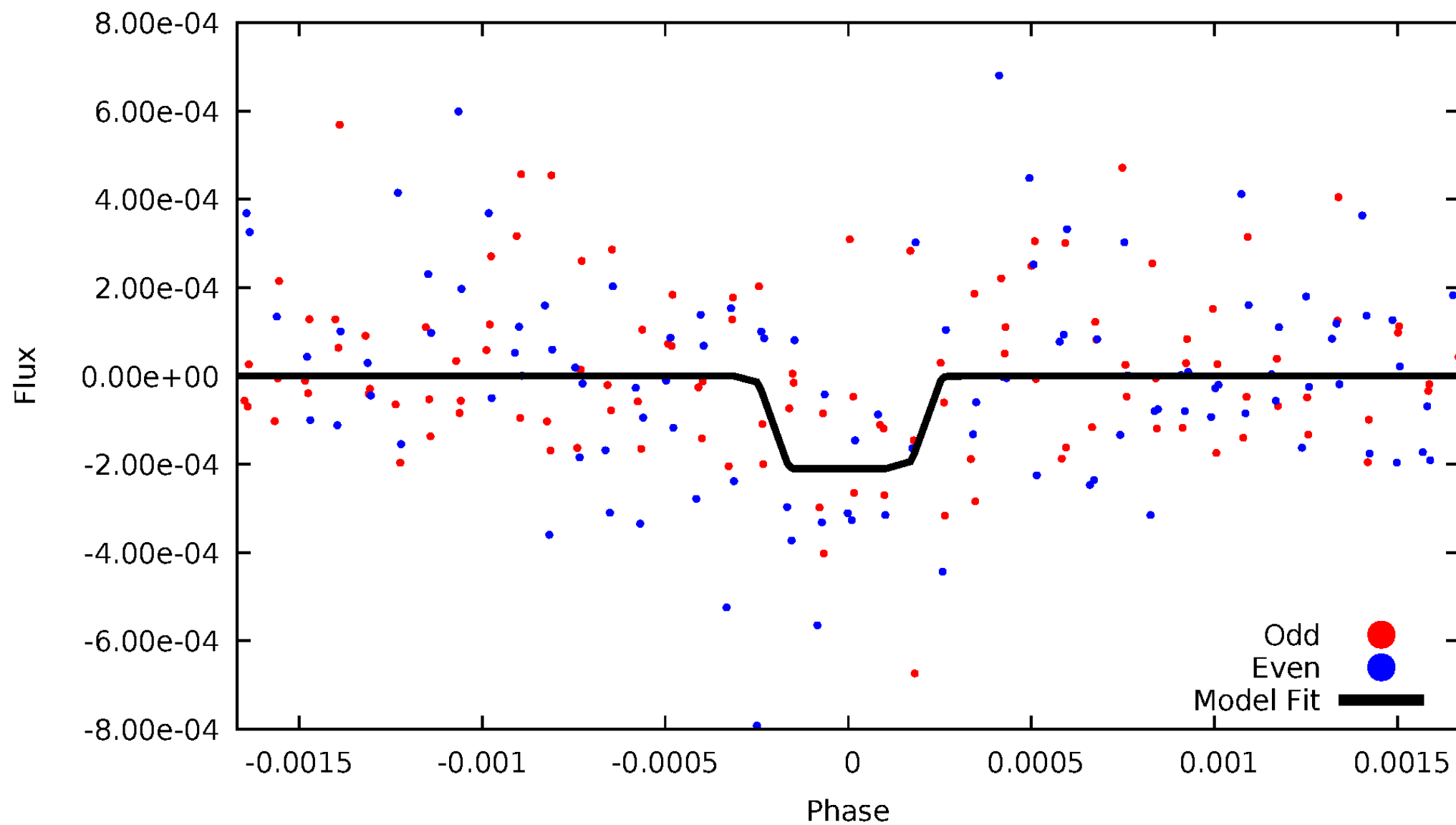
# DV Odd/Even

TCE 008314801-03



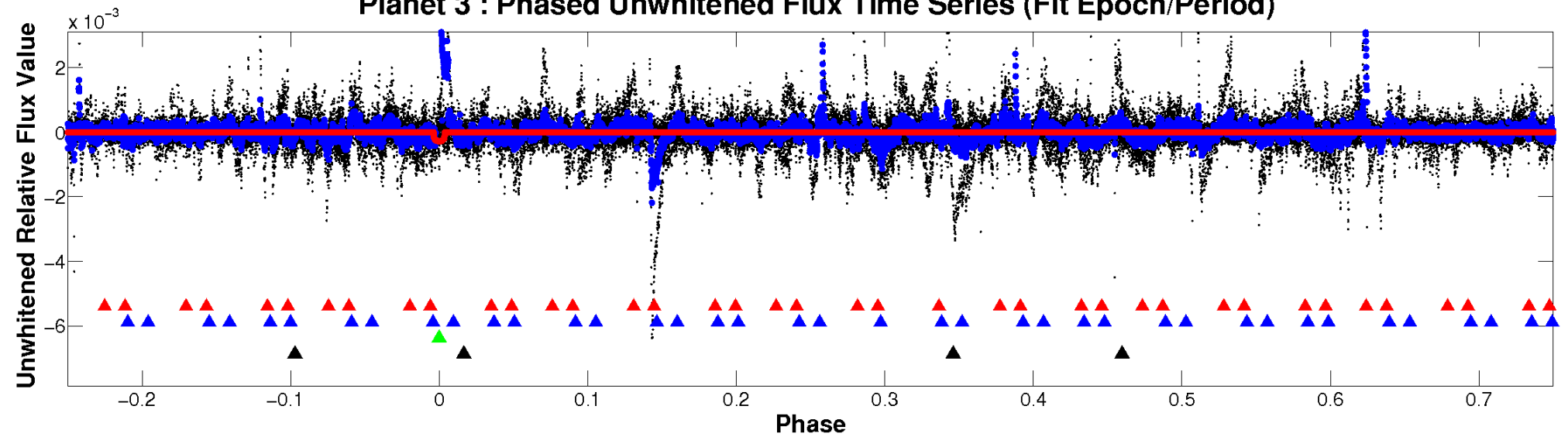
# ALT Odd/Even

TCE 008314801-03

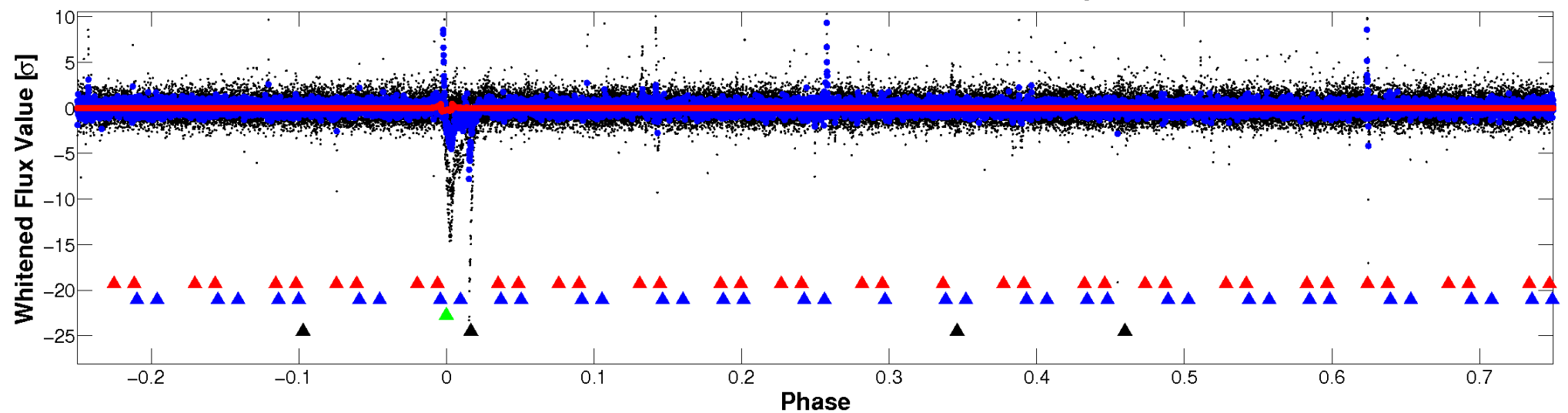


# Non-Whitened Vs. Whitened Light Curve

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

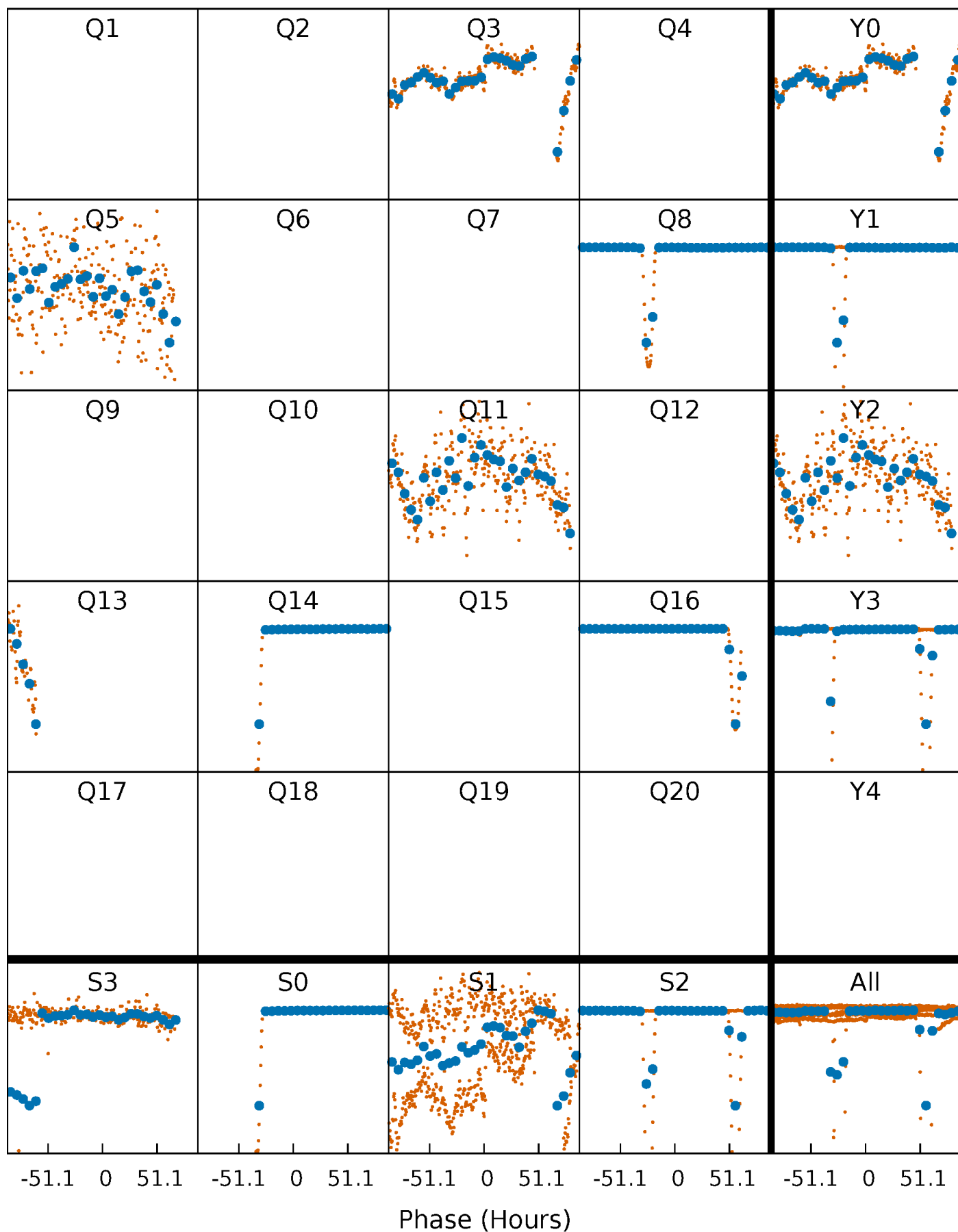


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

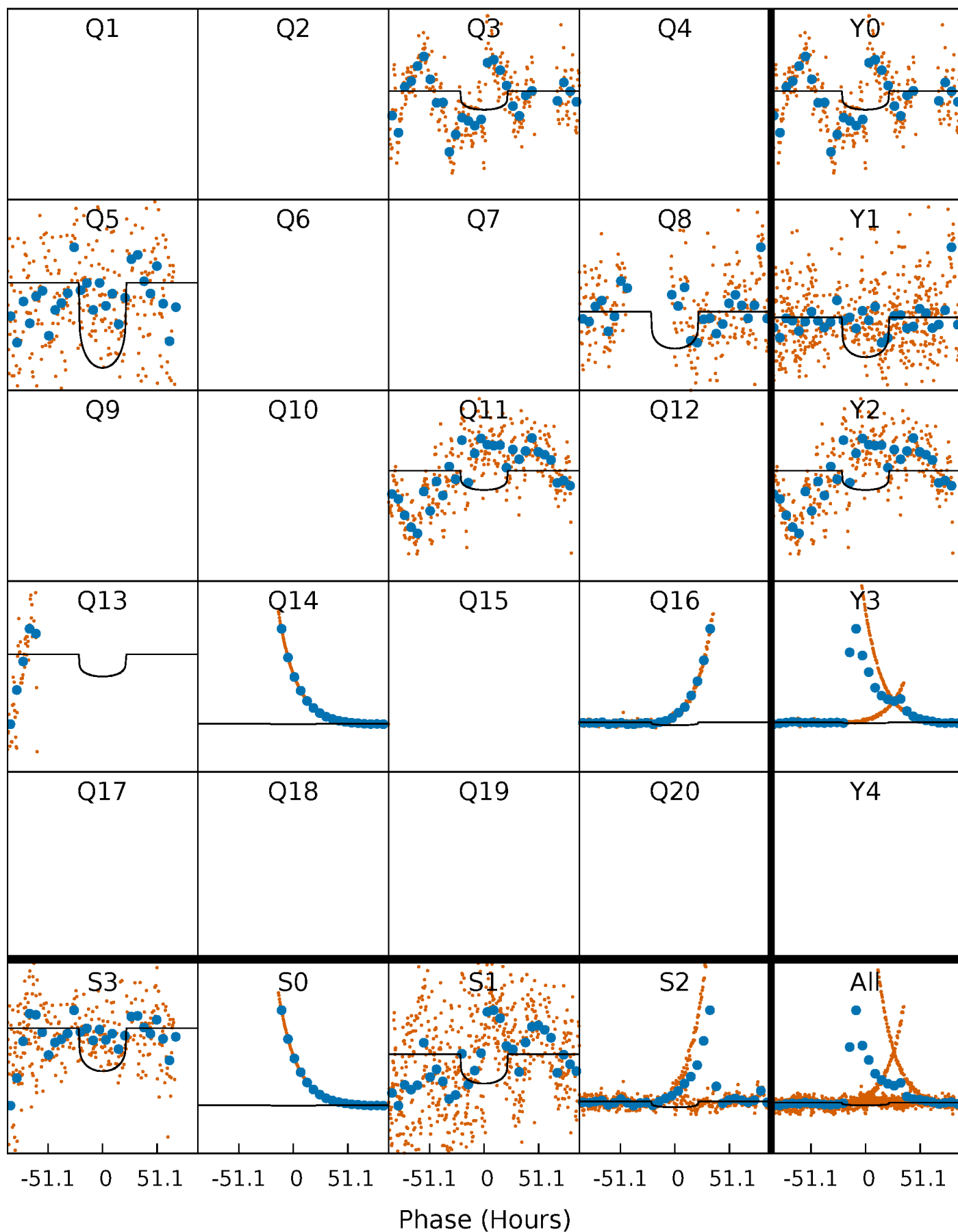
TCE 008314801-03     $P=246.758273$  Days     $T_0=288.582871$  (BKJD)





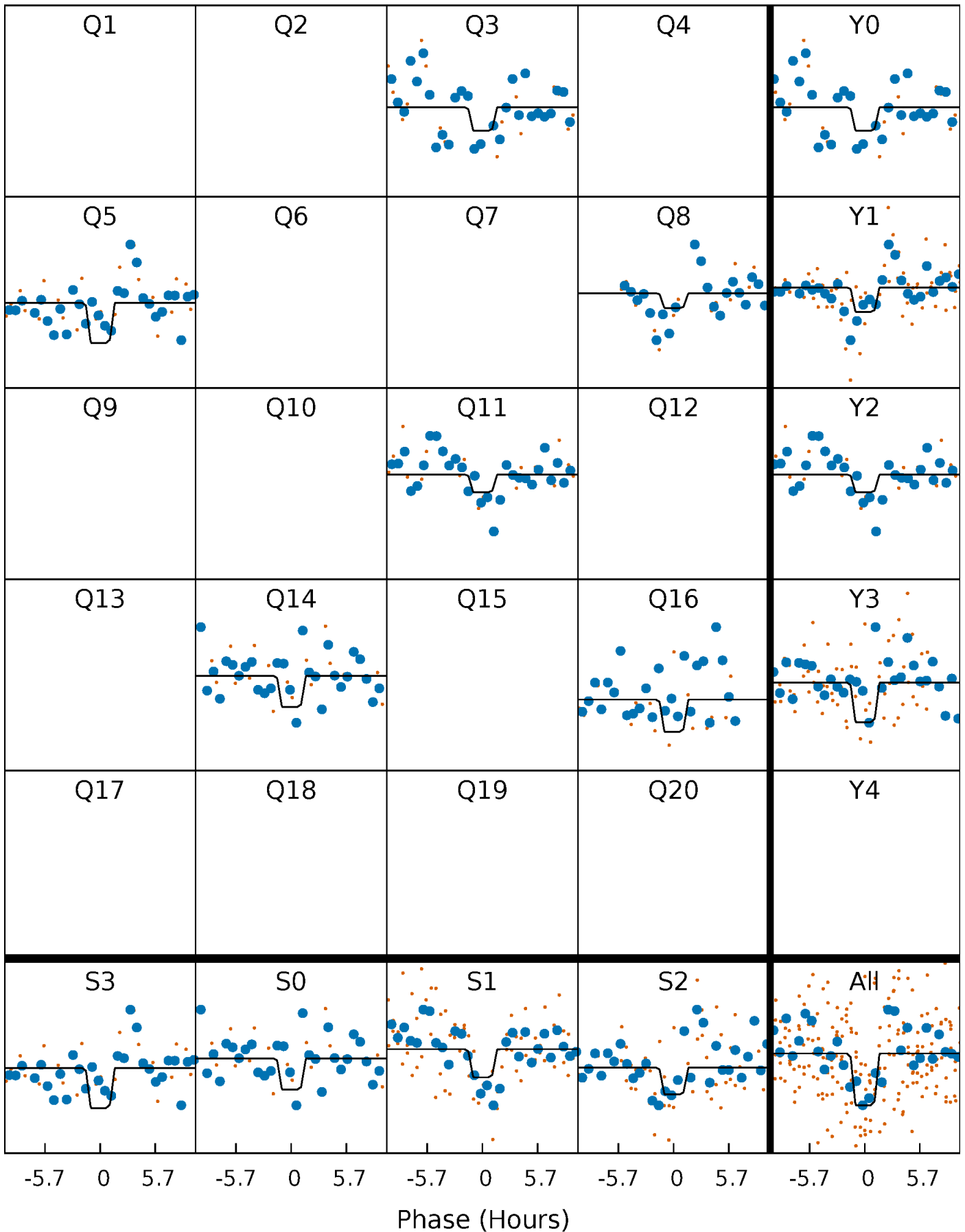
# DV Quarter-Phased Transit Curves

TCE 008314801-03     $P=246.758273$  Days     $T_0=288.582871$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

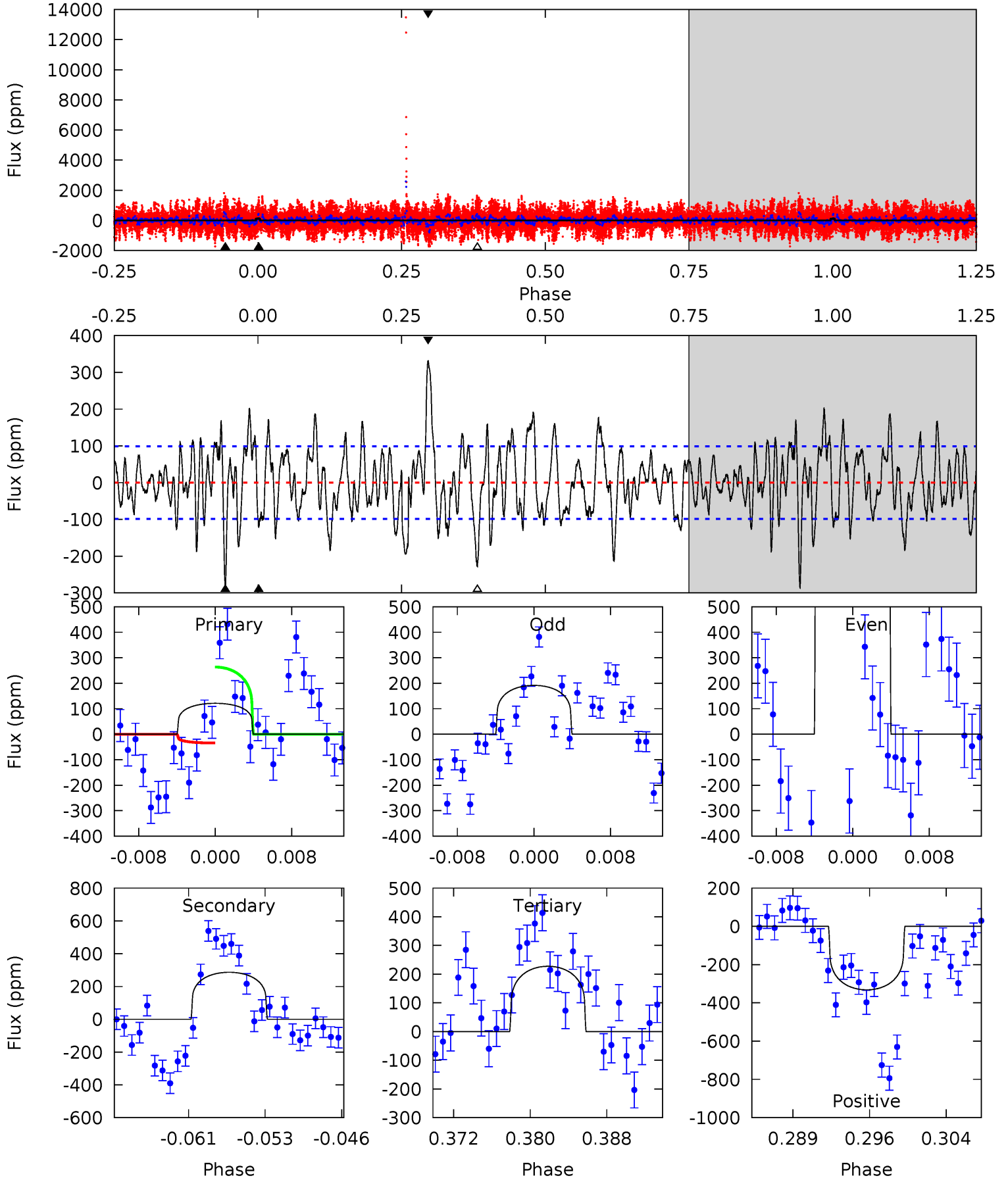
TCE 008314801-03     $P=247.143908$  Days     $T_0=287.888832$  (BKJD)



# DV Model-Shift Uniqueness Test

008314801-03, P = 246.758273 Days, E = 41.824598 Days

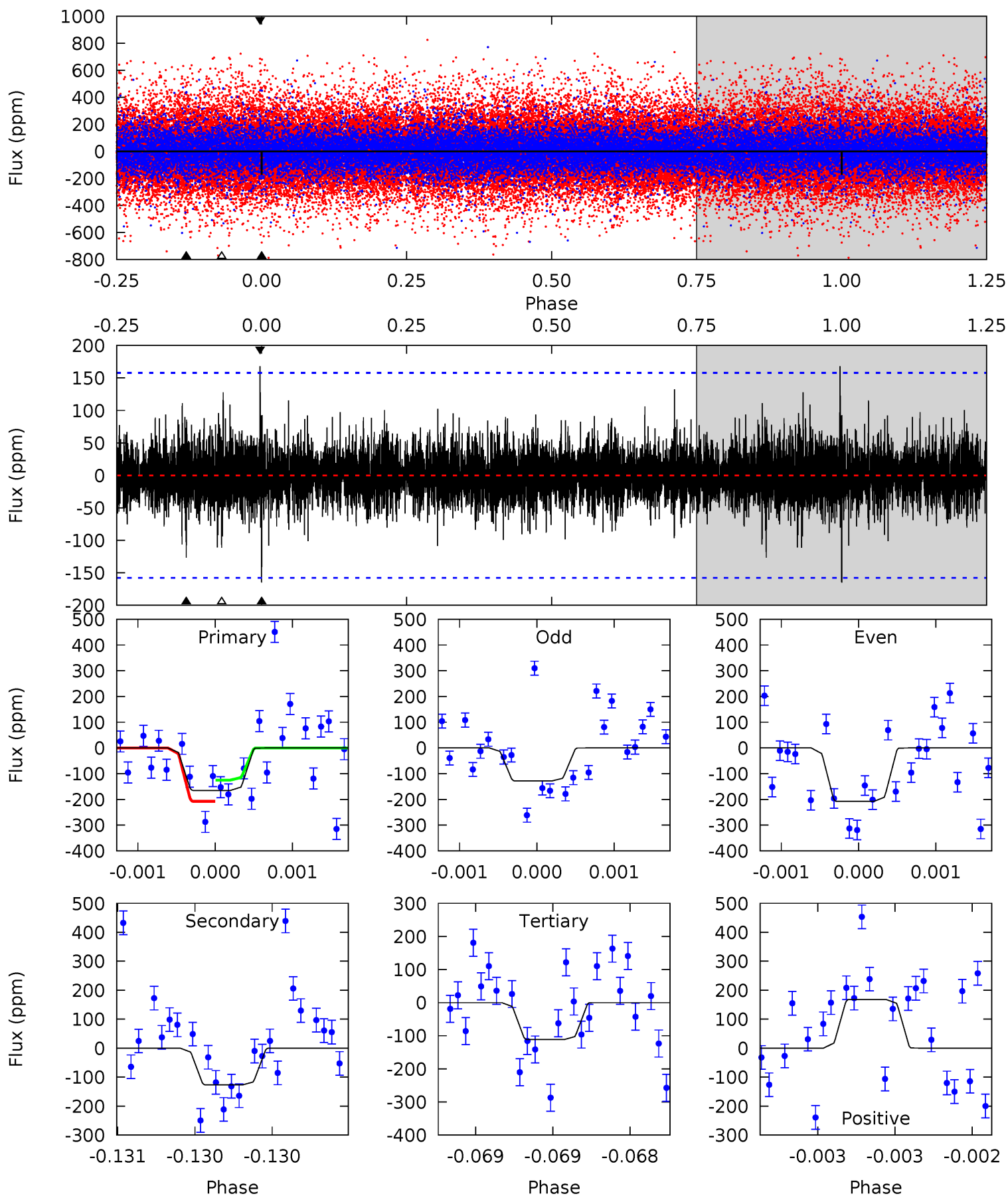
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.24	14.7	11.7	17.1	5.08	2.67	4.25	-5.47	-10.8	3.04	-2.33	79.3	34.3	0.54	6.23



# Alt Model-Shift Uniqueness Test

008314801-03, P = 247.143908 Days, E = 40.744924 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
5.83	4.47	3.93	5.93	5.57	3.48	0.99	1.90	-0.10	0.54	-1.46	1.40	0.91	0.50	1.46



### Stellar Parameters For KIC 008314801

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5657^{+169}_{-152}$	$4.230^{+0.294}_{-0.196}$	$-0.220^{+0.300}_{-0.250}$	$1.168^{+0.347}_{-0.313}$	$0.846^{+0.122}_{-0.071}$	$0.747^{+1.319}_{-0.362}$
	+3%/-3%	+7%/-5%	+136%/-114%	+30%/-27%	+14%/-8%	+177%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008314801-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-287 \pm 19$	$1.98^{+0.69}_{-0.67}$	$440^{+34}_{-39}$	$5859^{+1205}_{-688}$	$21528^{+29012}_{-9589}$
Alt.	$-127 \pm 28$	$1.77^{+0.66}_{-0.58}$	$440^{+34}_{-38}$	$5112^{+1079}_{-652}$	$12164^{+15140}_{-6466}$

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

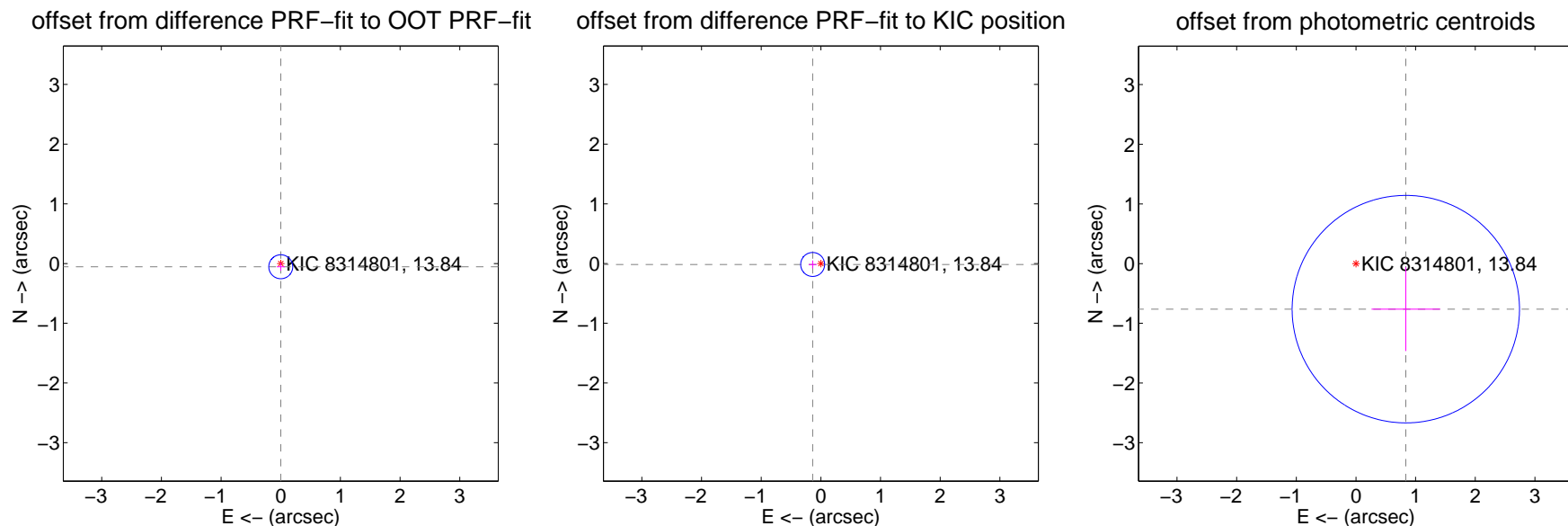
## DV Centroid Data

Supplemental centroid analysis for 008314801-03. Kepler magnitude: 13.84. Transit SNR 7.35

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.054 \pm 0.067$	0.80	$-0.000 \pm 0.067$	$-0.054 \pm 0.067$
PRF-fit source offset from KIC position	$0.138 \pm 0.067$	2.07	$0.137 \pm 0.067$	$-0.016 \pm 0.067$
photometric centroid source offset	$1.13 \pm 0.64$	1.78	$-0.84 \pm 0.57$	$-0.76 \pm 0.70$

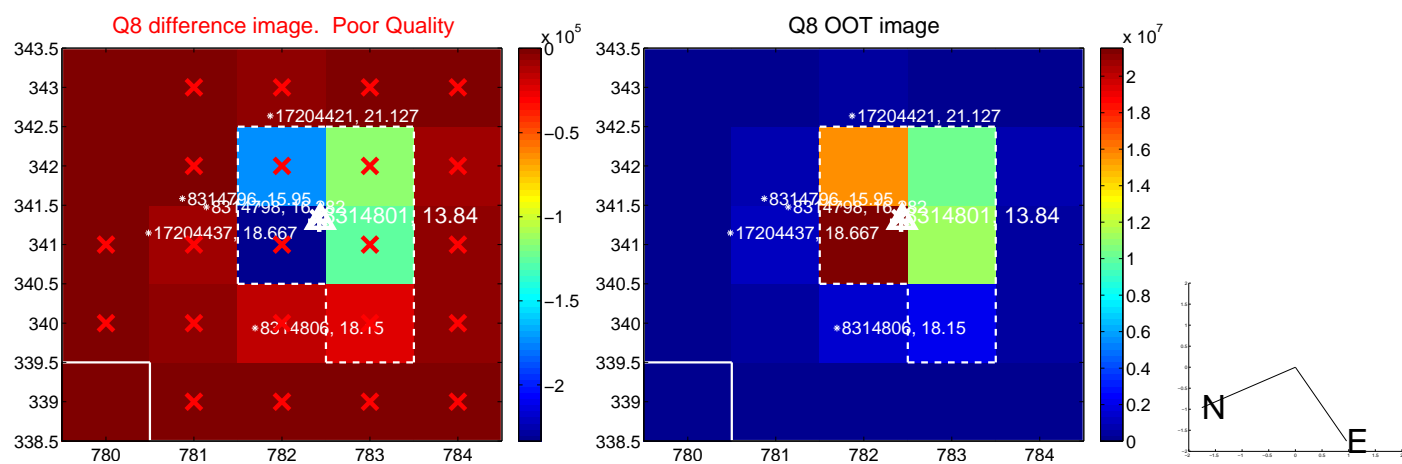
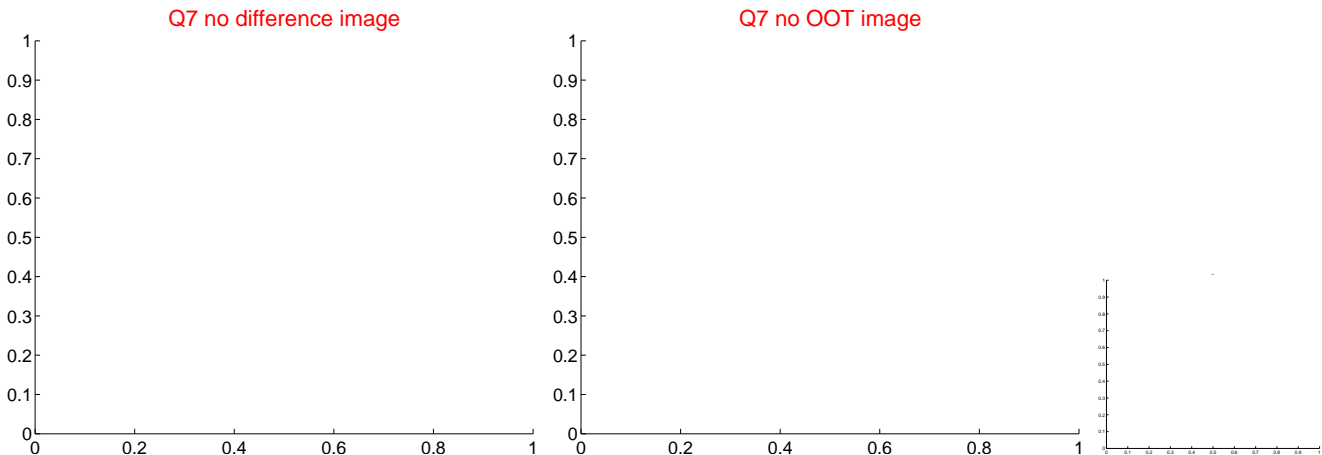
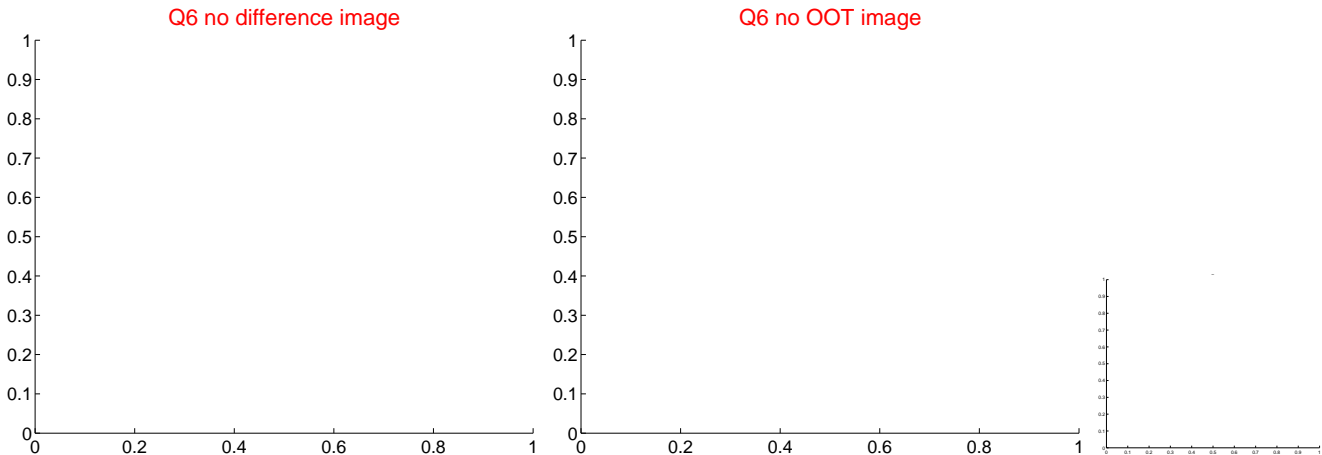
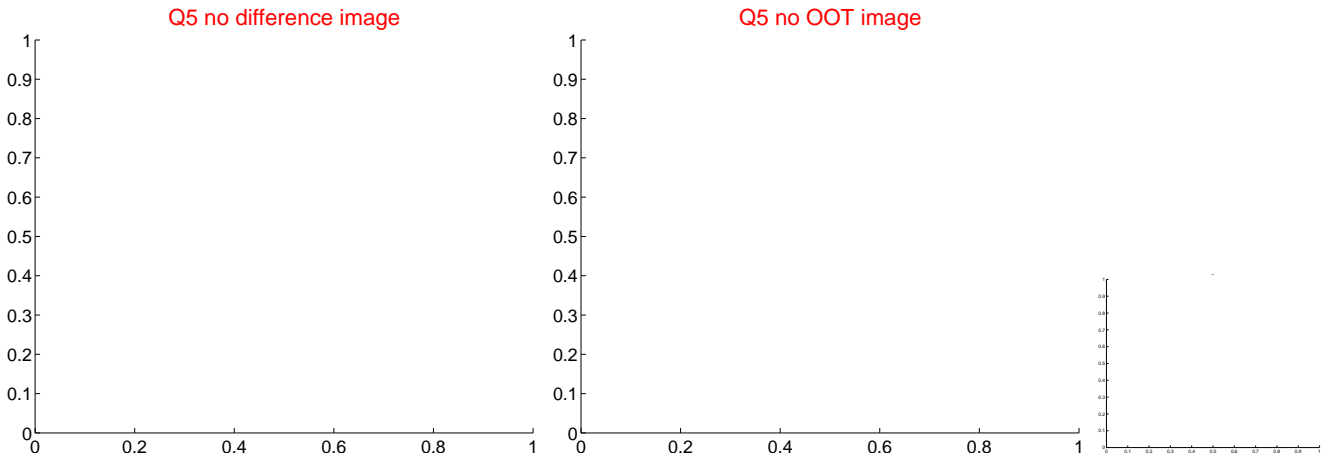


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





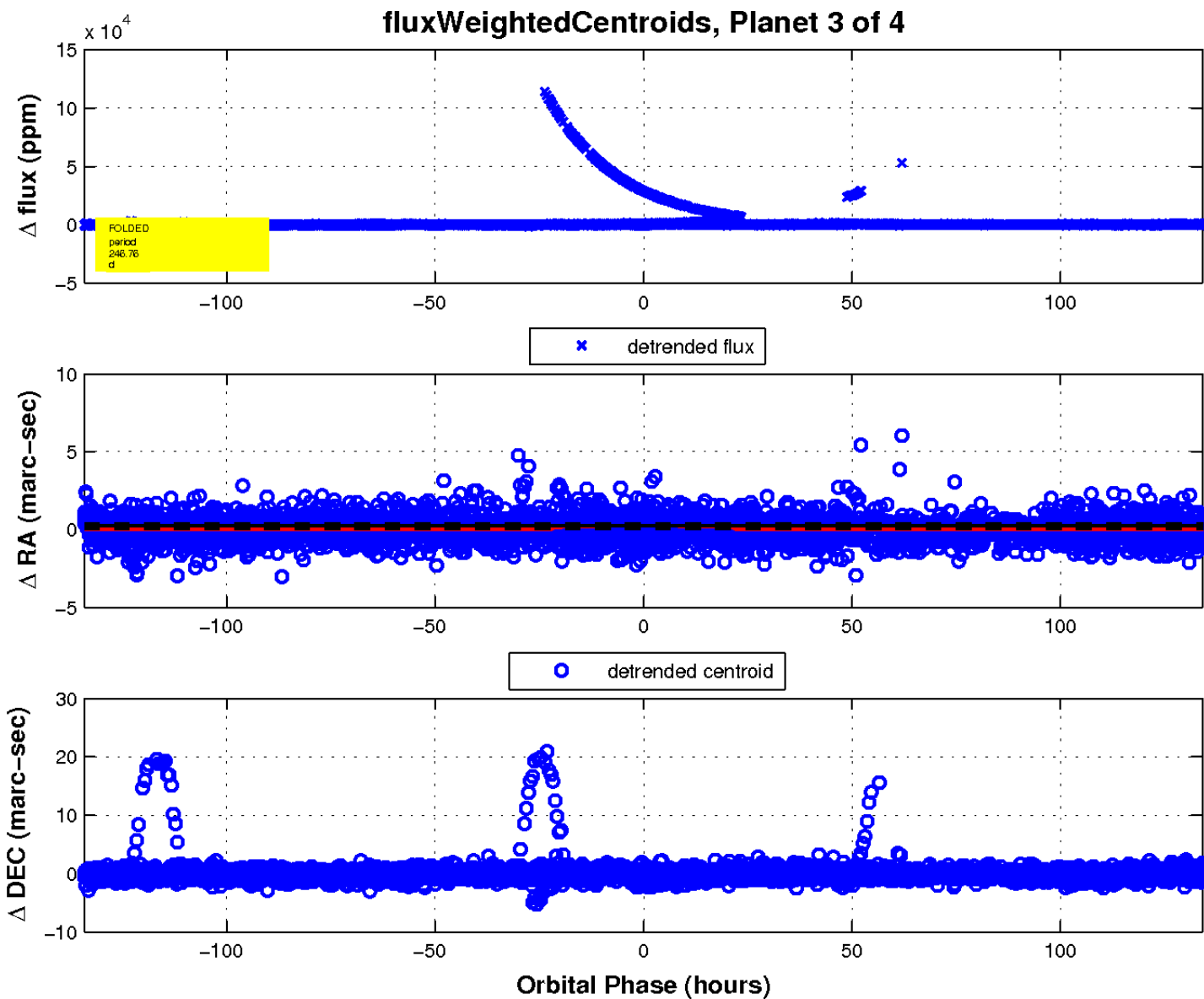
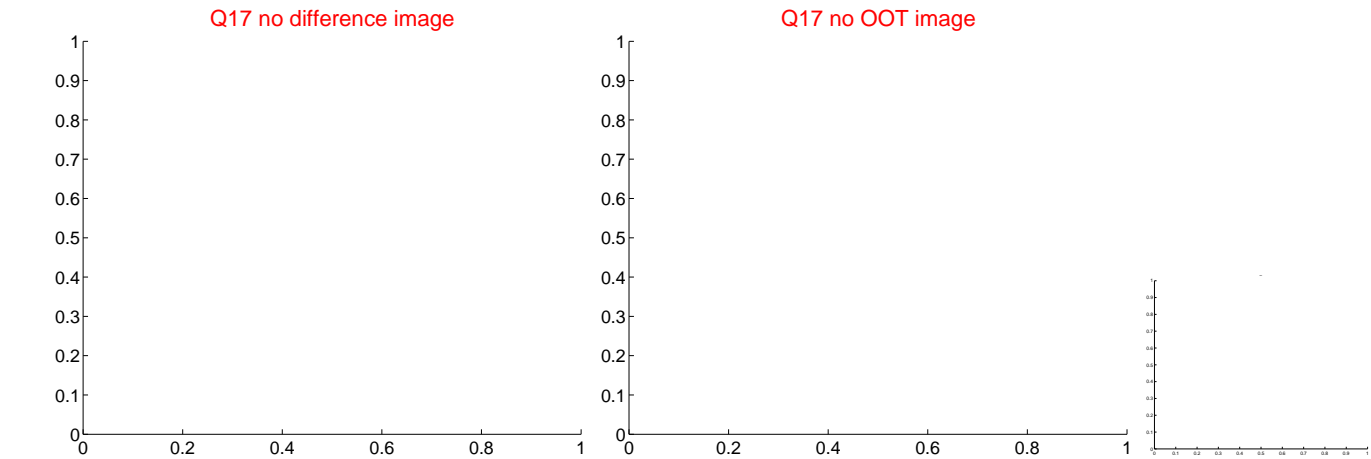
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

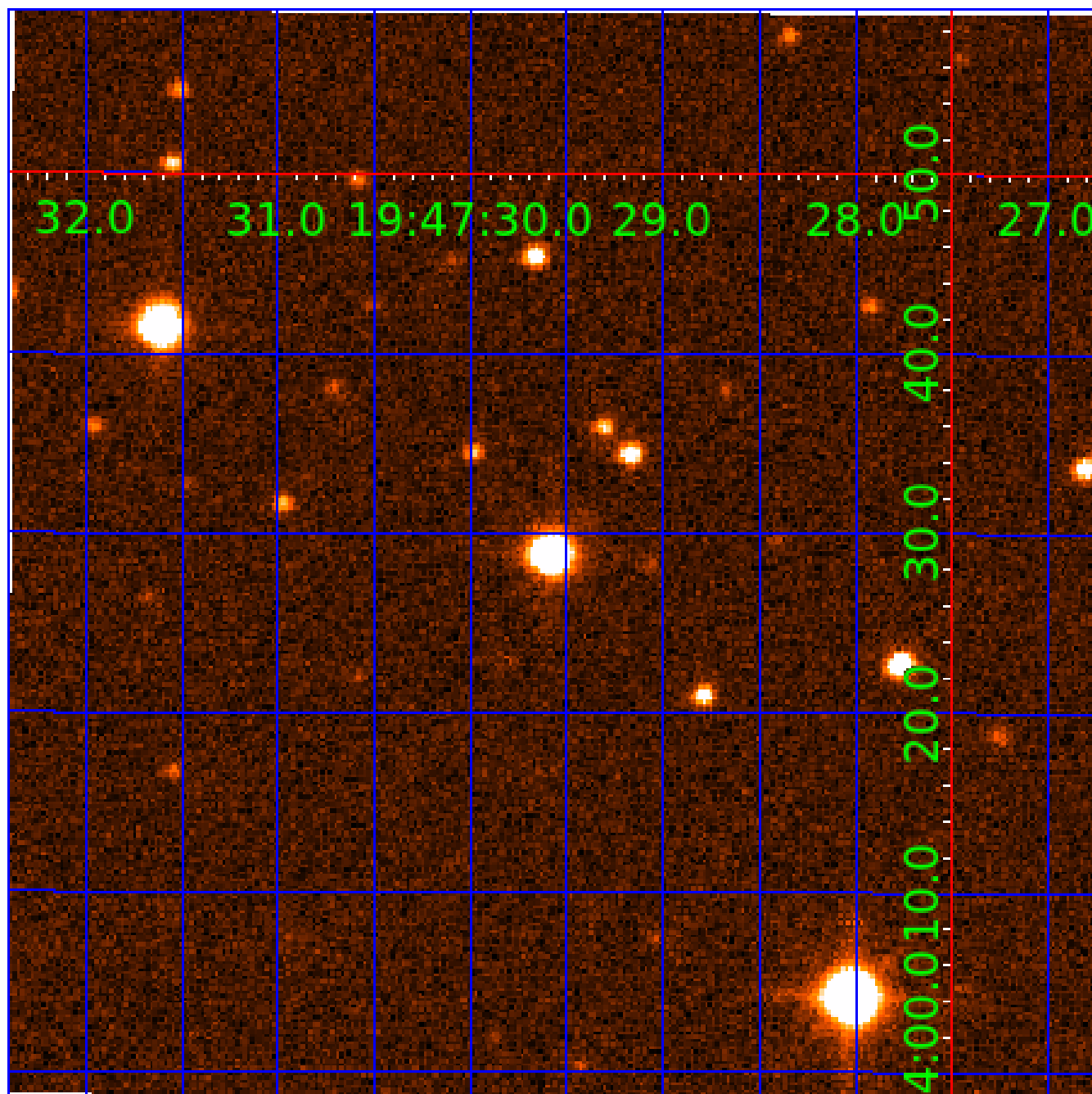


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008314801

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008314801-01	OBS	7018.01	37.183236	158.646089	218656.9	14.039	16099.3	6839.4	1.17	5657	54.61	29.45
008314801-02	OBS	No	37.183276	148.963605	227588.4	13.677	15060.2	10224.9	1.17	5657	56.84	29.45
008314801-03	OBS	No	246.758273	288.582871	277.4	44.721	47.2	7.4	1.17	5657	1.97	2.36
008314801-04	OBS	No	384.164550	373.982428	965.8	15.000	27.8	-1.0	1.17	5657	3.59	1.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008314801-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_ODDEVEN_DV—HAS_SEC_TCE—PERIOD_ALIAS_ALT
008314801-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
008314801-03	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008314801-04	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

**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 008314801-04

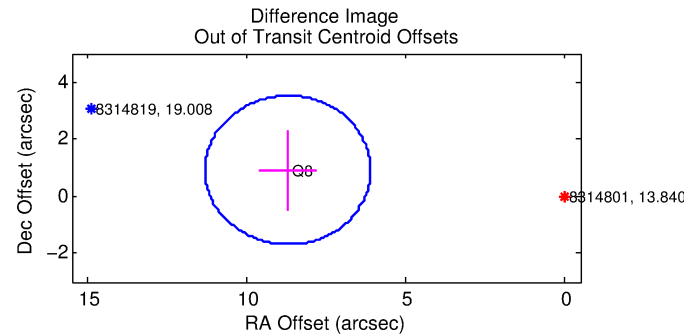
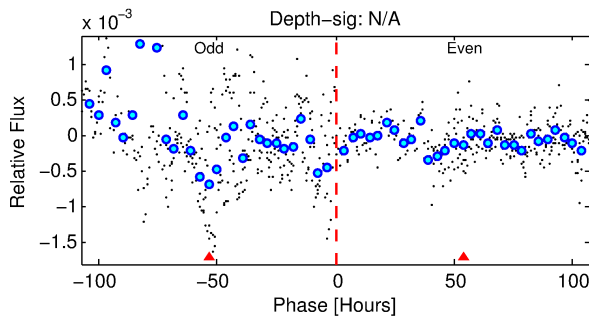
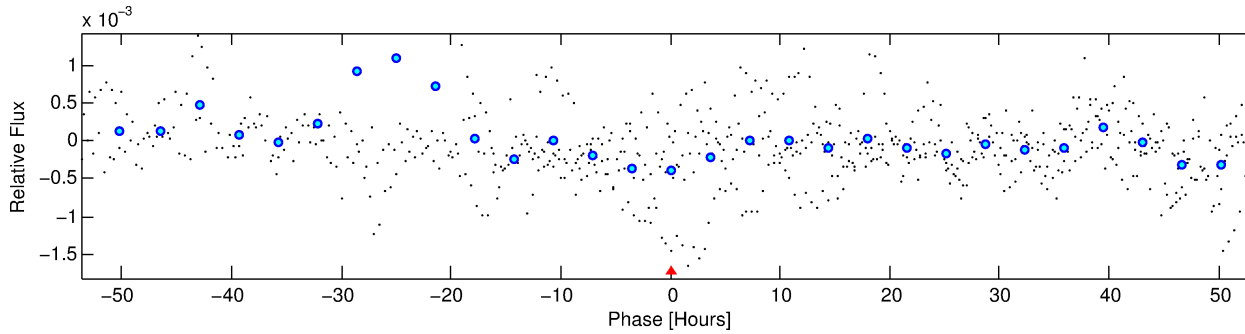
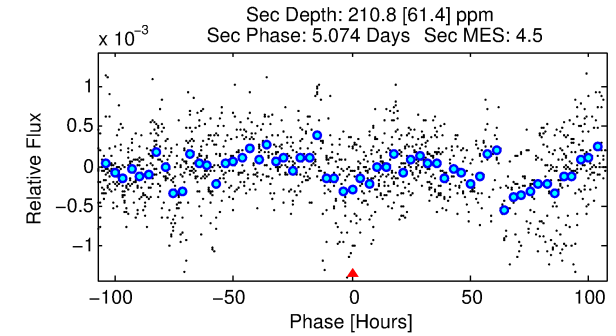
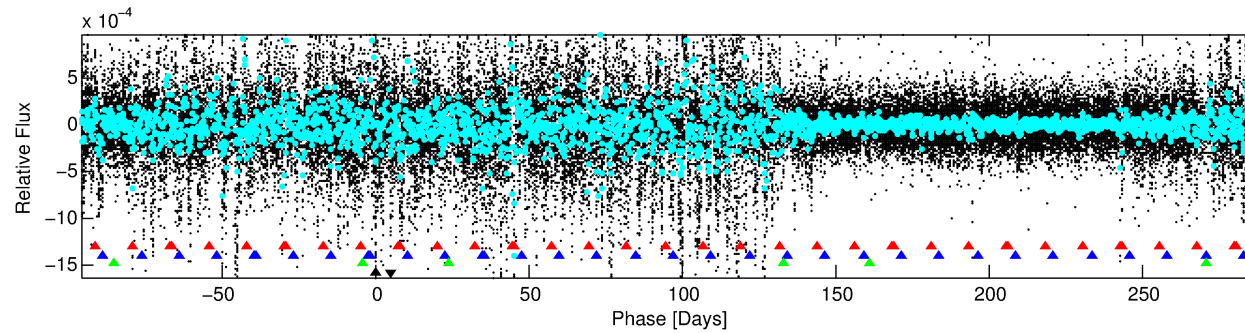
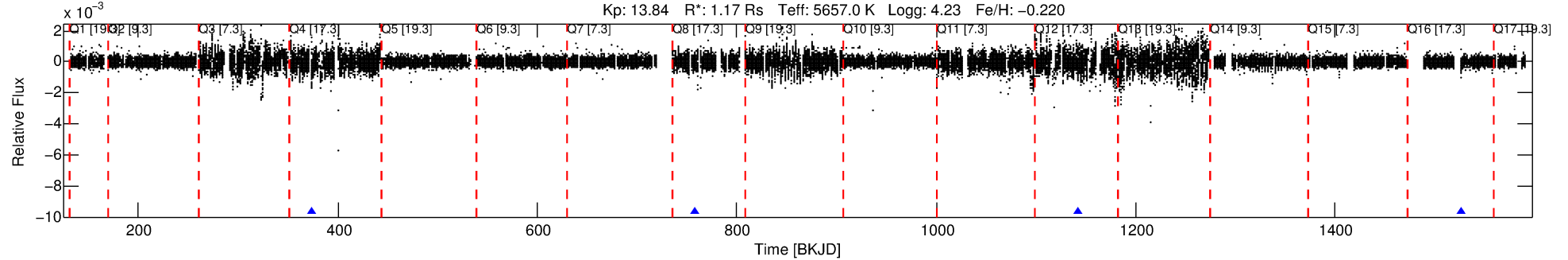
No Significant Match Found

# DV One-Page Summary

KIC: 8314801 Candidate: 4 of 4 Period: 384.165 d

KOI: K07018 Corr: No Ephemeris Match

Kp: 13.84 R\*: 1.17 Rs Teff: 5657.0 K Logg: 4.23 Fe/H: -0.220



## TPS TCE Results:

Period = 384.16455 d  
Epoch = 373.9824 BKJD

DV fit results are unavailable

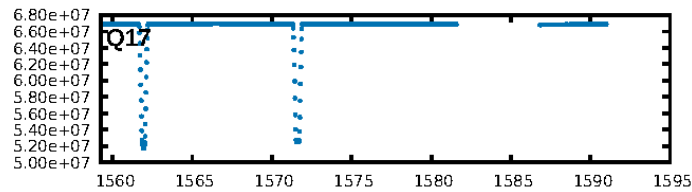
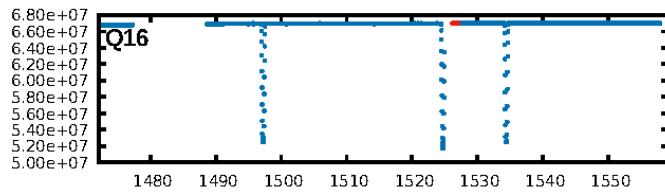
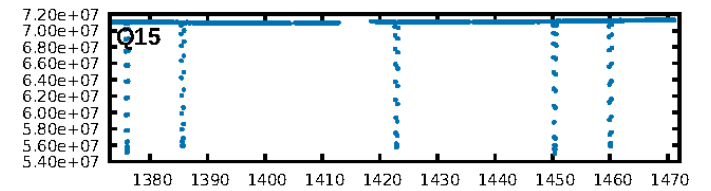
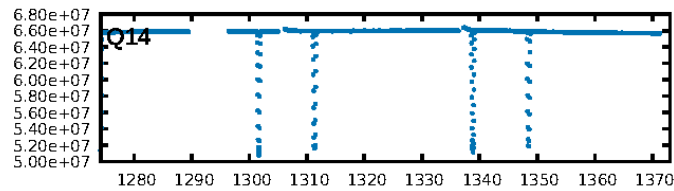
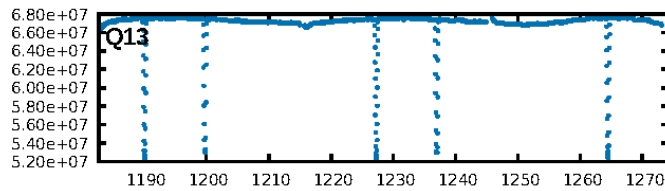
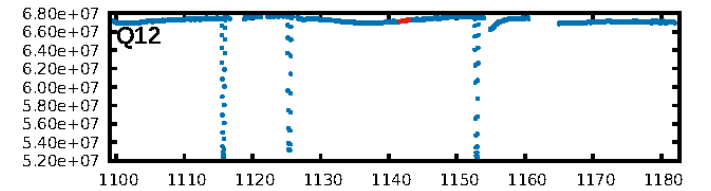
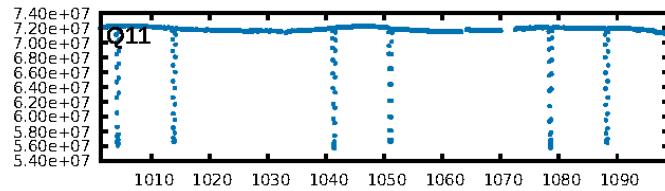
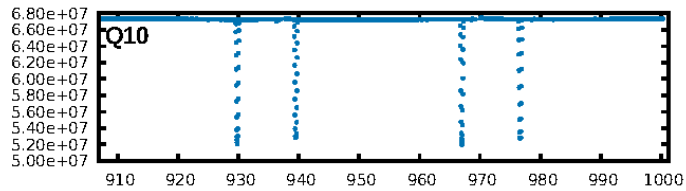
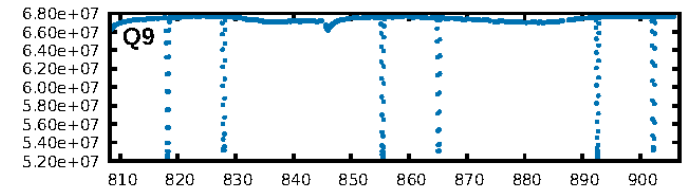
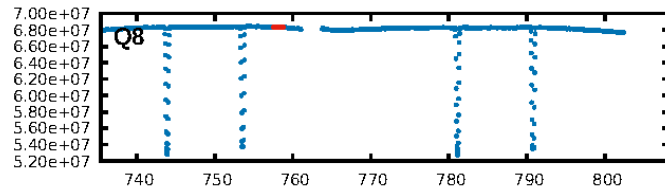
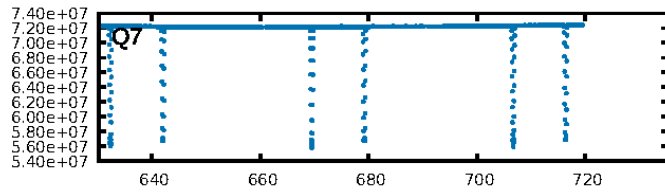
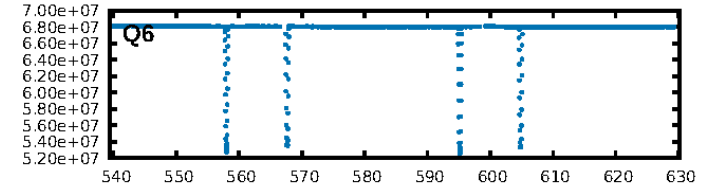
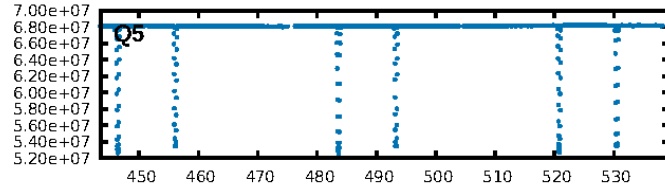
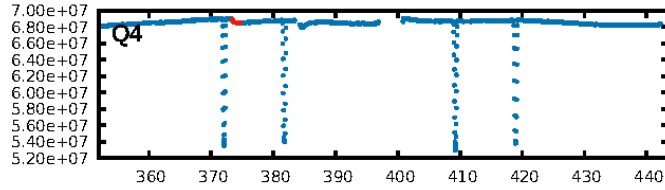
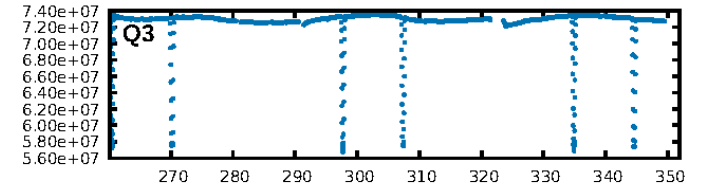
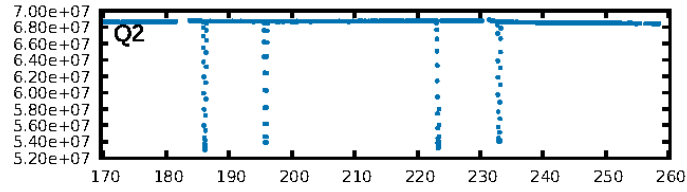
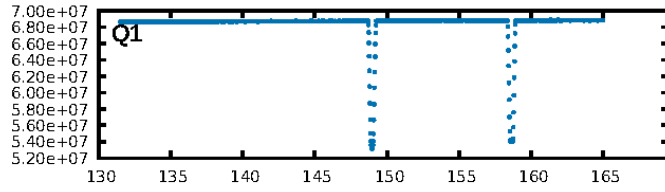
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [69.91 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.01563  
Centroid-sig: N/A  
Centroid-so: 0.960 arcsec [1.11 $\sigma$ ]  
OotOffset-rm: 8.756 arcsec [10.08 $\sigma$ ]  
KicOffset-rm: 8.904 arcsec [10.25 $\sigma$ ]  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

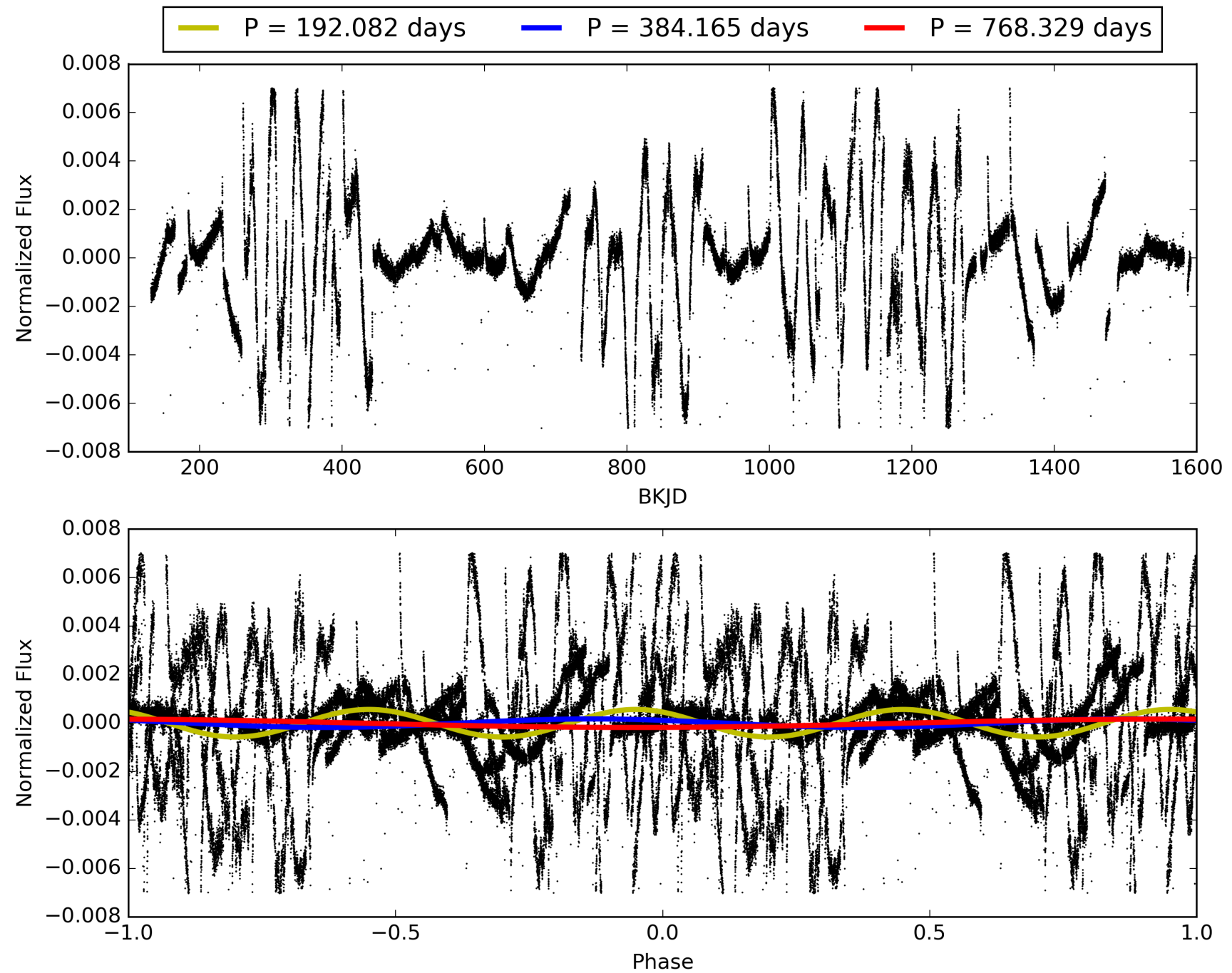
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:33:12 Z

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

# TCE 008314801-04, PDC Light Curves



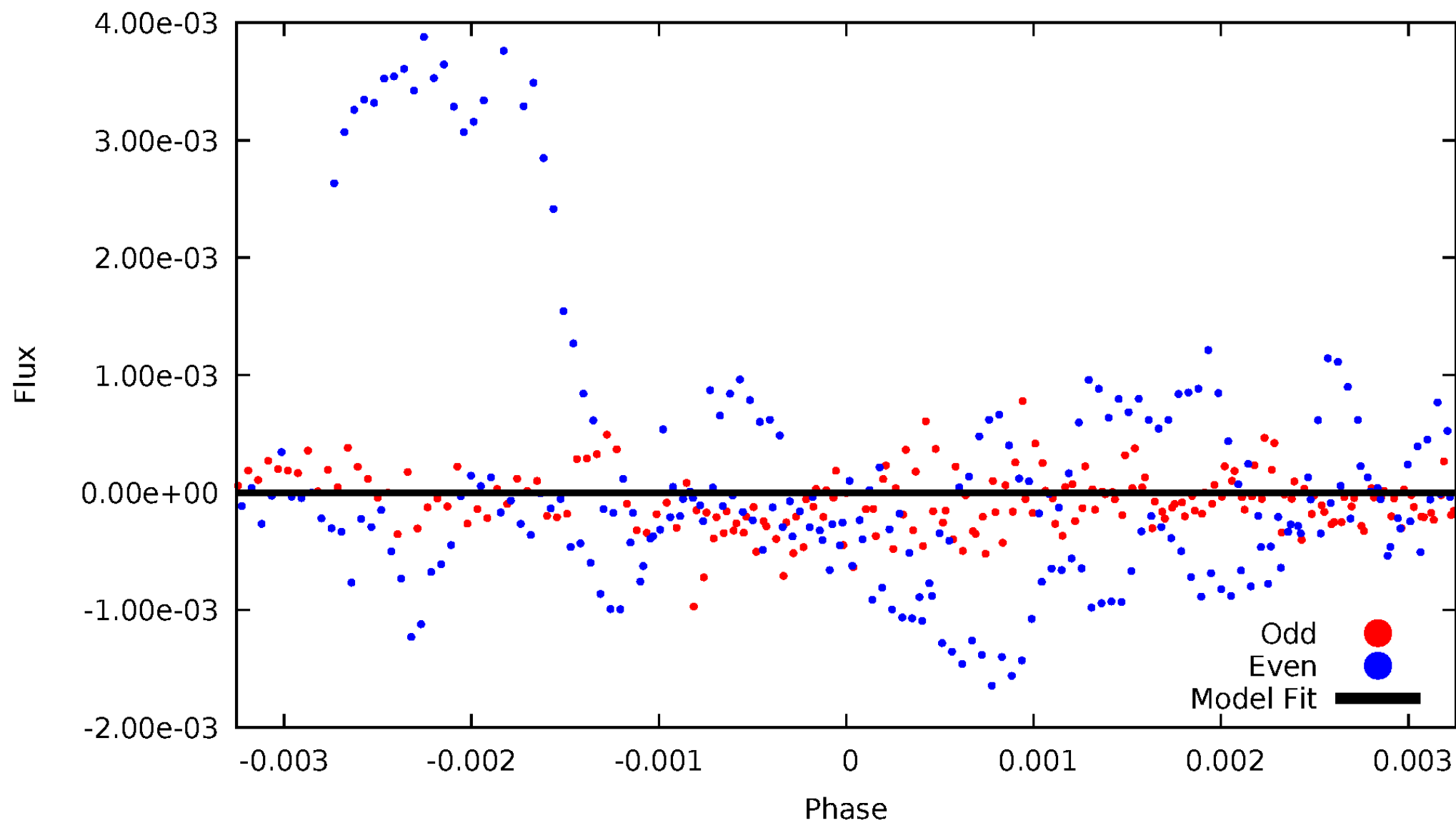
TCE 008314801-04





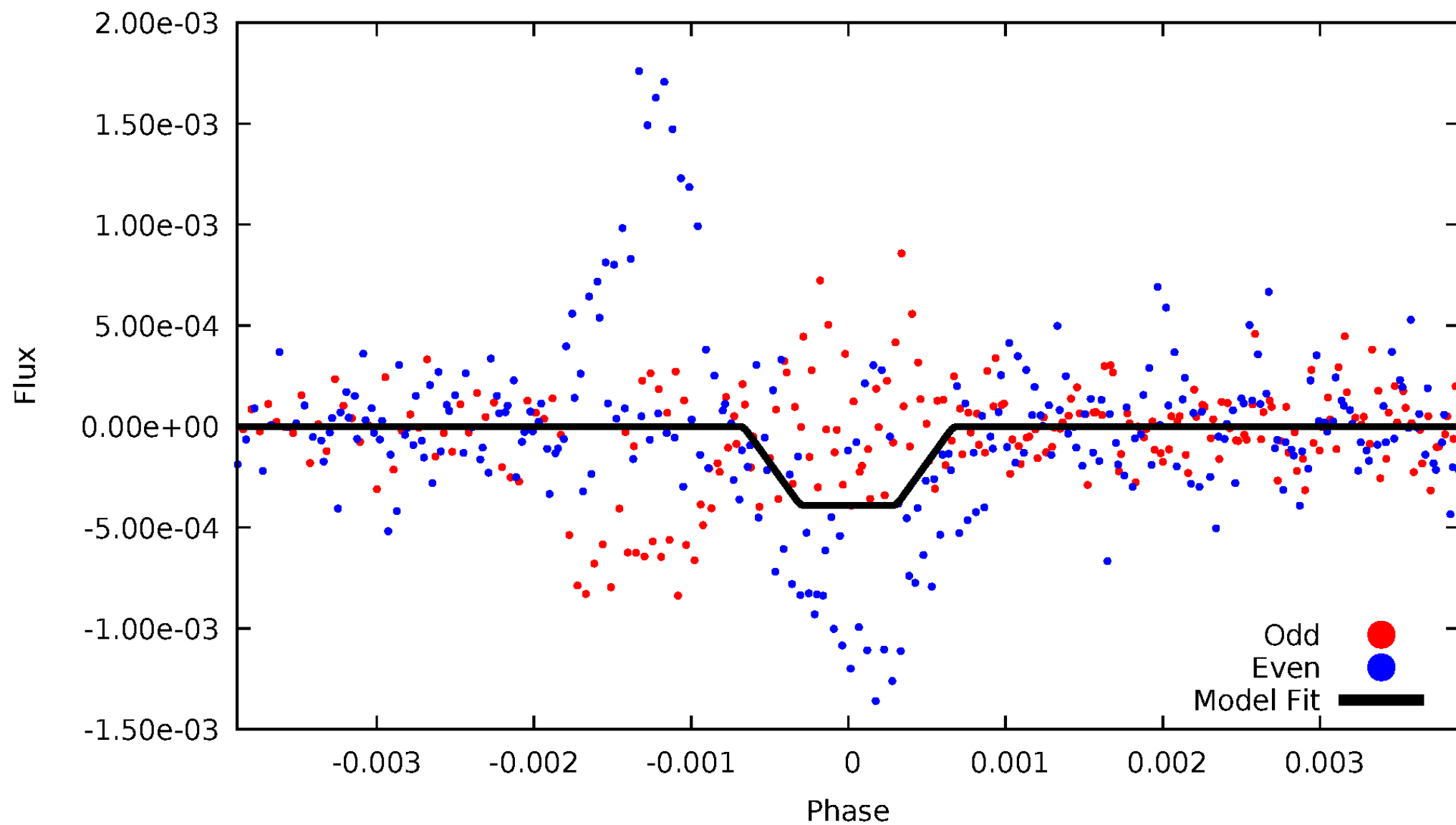
# DV Odd/Even

TCE 008314801-04



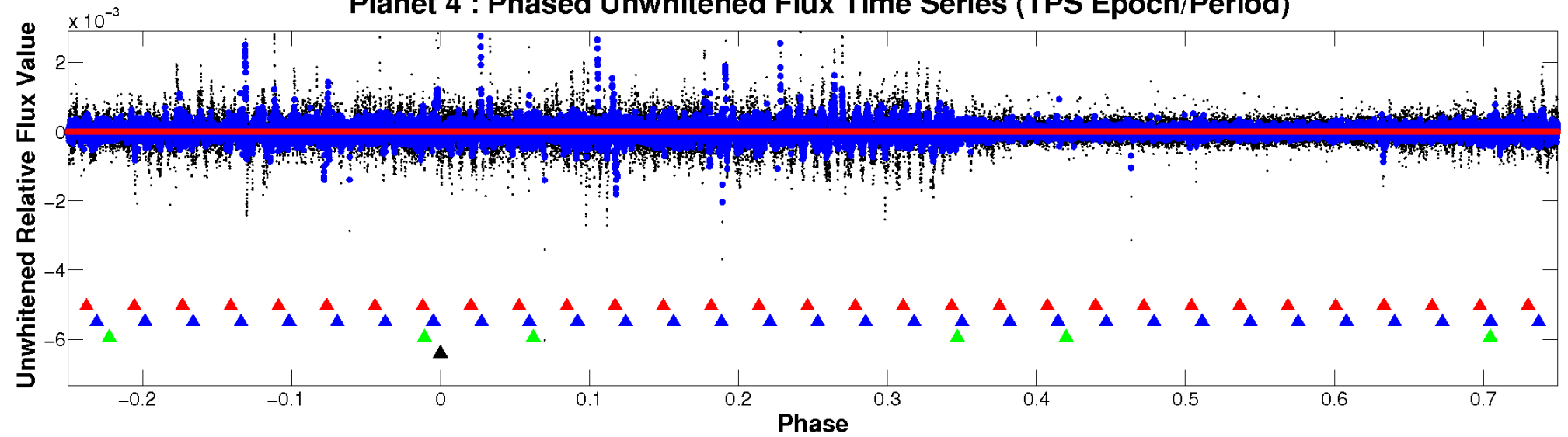
# ALT Odd/Even

TCE 008314801-04



# Non-Whitened Vs. Whitened Light Curve

**Planet 4 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

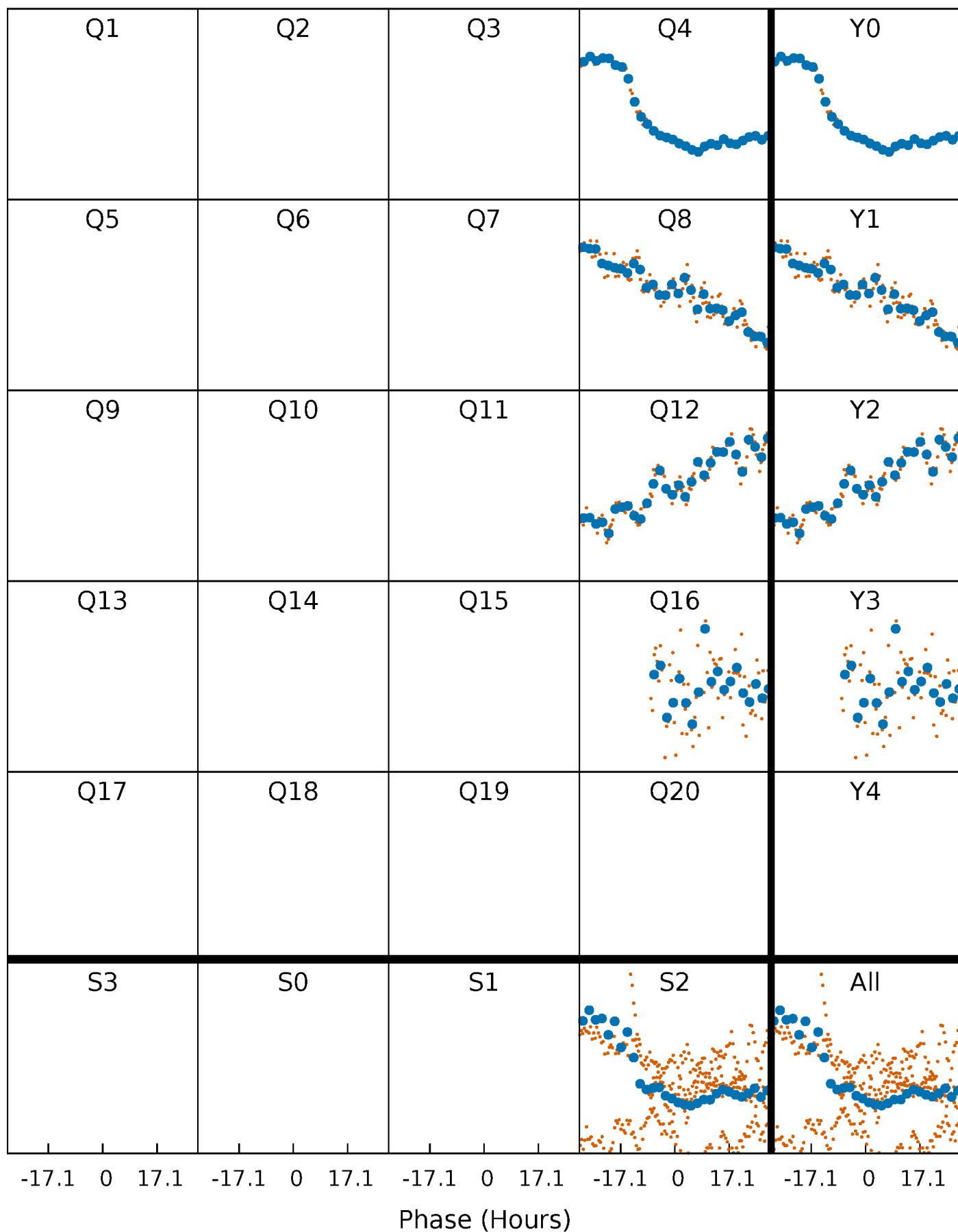


**Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



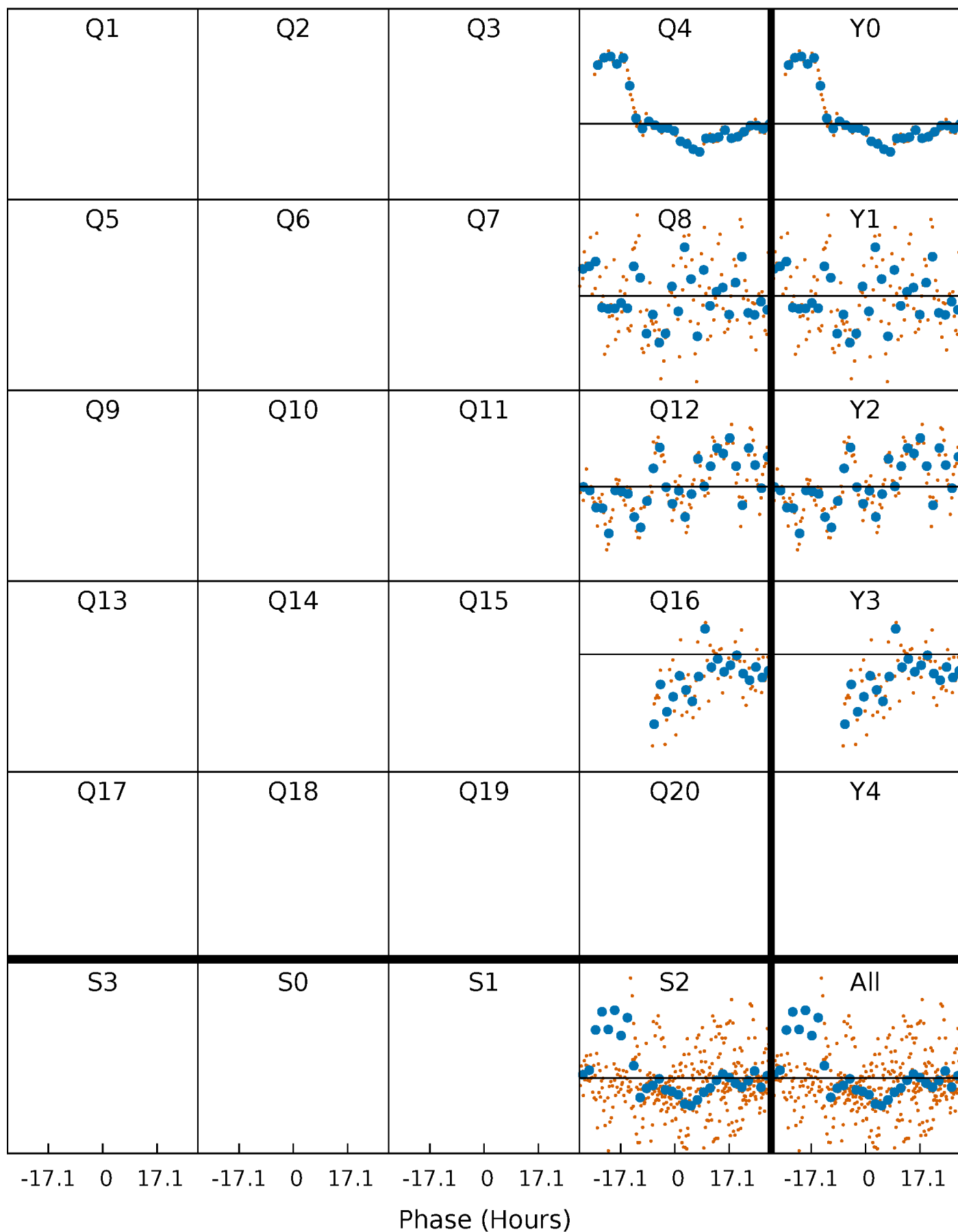
# PDC Quarter-Phased Transit Curves

TCE 008314801-04     $P=384.164550$  Days     $T_0=373.982428$  (BKJD)



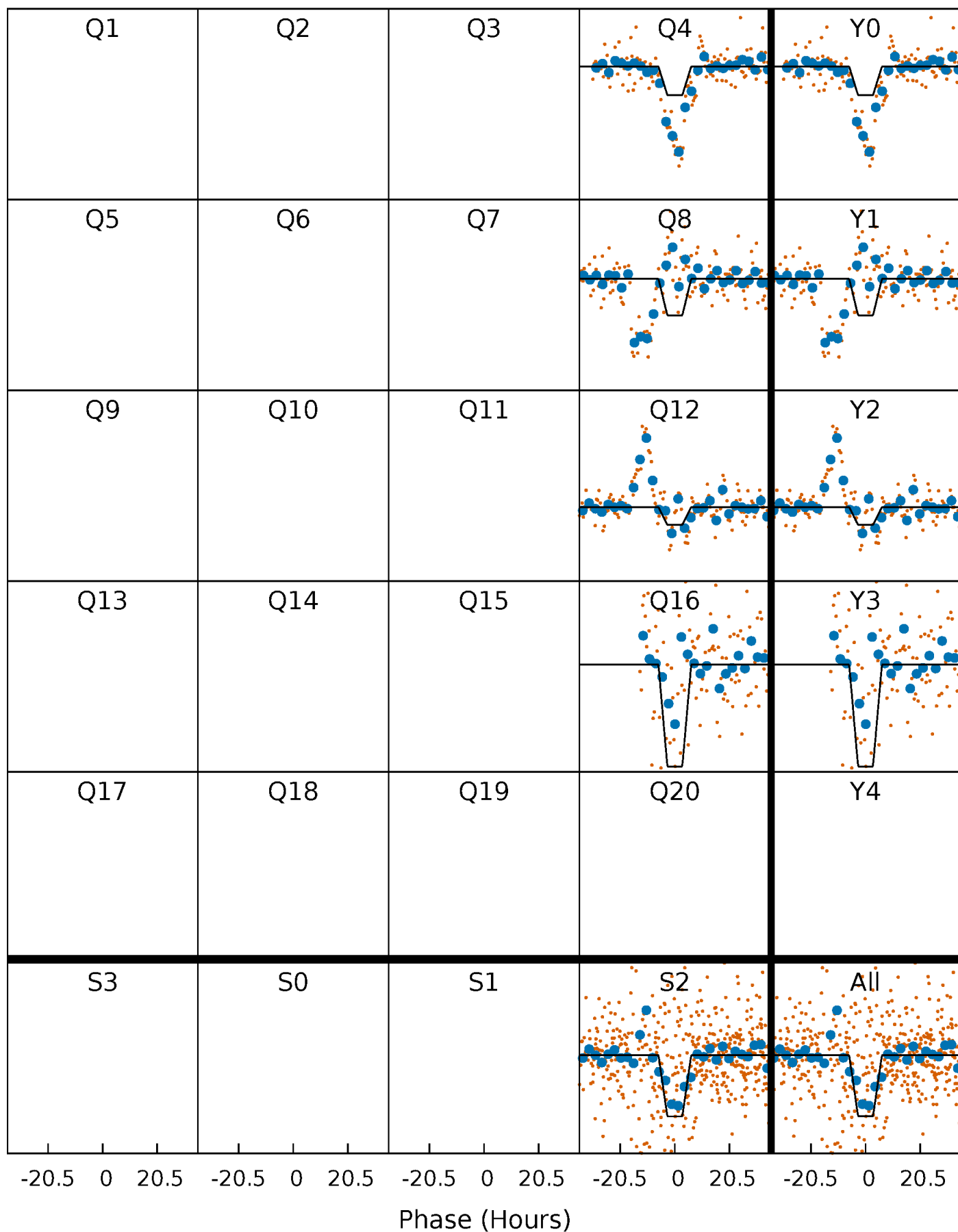
# DV Quarter-Phased Transit Curves

TCE 008314801-04     $P=384.164550$  Days     $T_0=373.982428$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

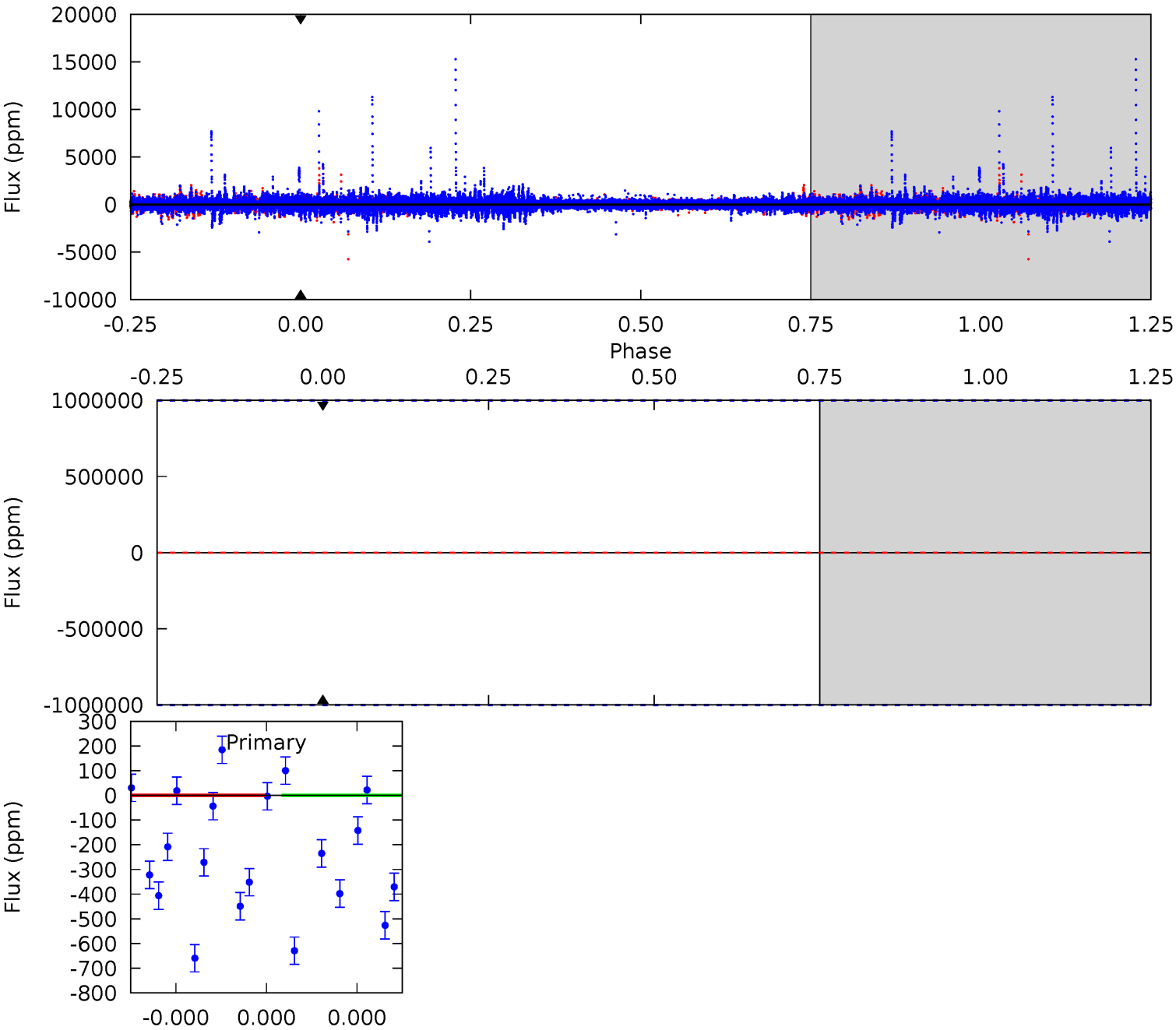
TCE 008314801-04     $P=384.164550$  Days     $T_0=374.214365$  (BKJD)



# DV Model-Shift Uniqueness Test

008314801-04, P = 384.164550 Days, E = 373.982428 Days

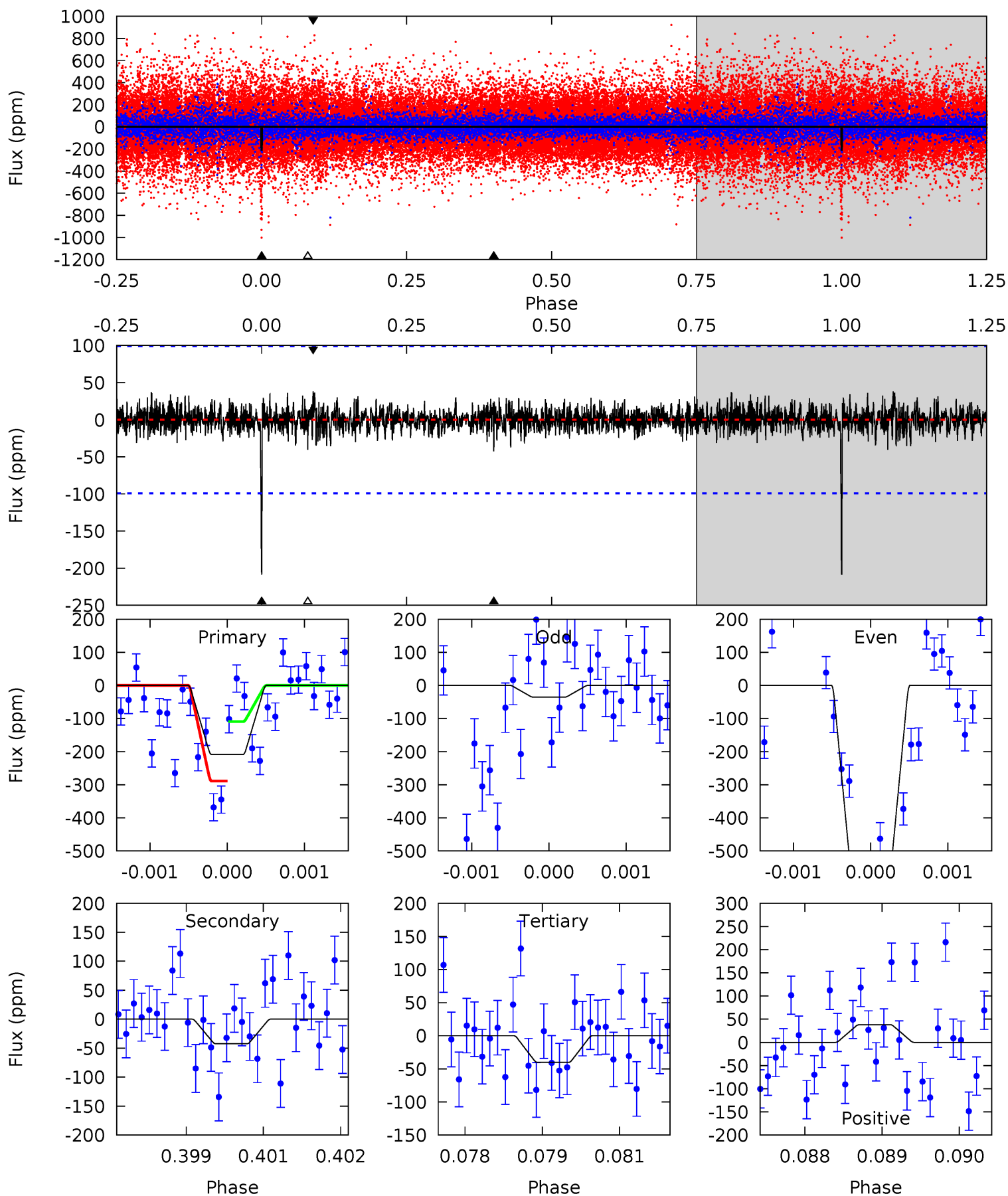
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008314801-04, P = 384.164550 Days, E = 374.214365 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
11.4	2.30	2.19	2.07	5.40	3.20	0.58	9.18	9.30	0.12	0.24	17.6	1.61	0.15	4.90





### Stellar Parameters For KIC 008314801

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5657^{+169}_{-152}$	$4.230^{+0.294}_{-0.196}$	$-0.220^{+0.300}_{-0.250}$	$1.168^{+0.347}_{-0.313}$	$0.846^{+0.122}_{-0.071}$	$0.747^{+1.319}_{-0.362}$
	+3%/-3%	+7%/-5%	+136%/-114%	+30%/-27%	+14%/-8%	+177%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008314801-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$9.55^{+11.51}_{-6.70}$	$378^{+33}_{-31}$	$4137^{+14701}_{-21980}$	$6359^{+1005908}_{-976548}$
Alt.	$-42 \pm 18$	$9.79^{+10.24}_{-6.59}$	$378^{+32}_{-33}$	$2467^{+887}_{-394}$	$228^{+1859}_{-181}$

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

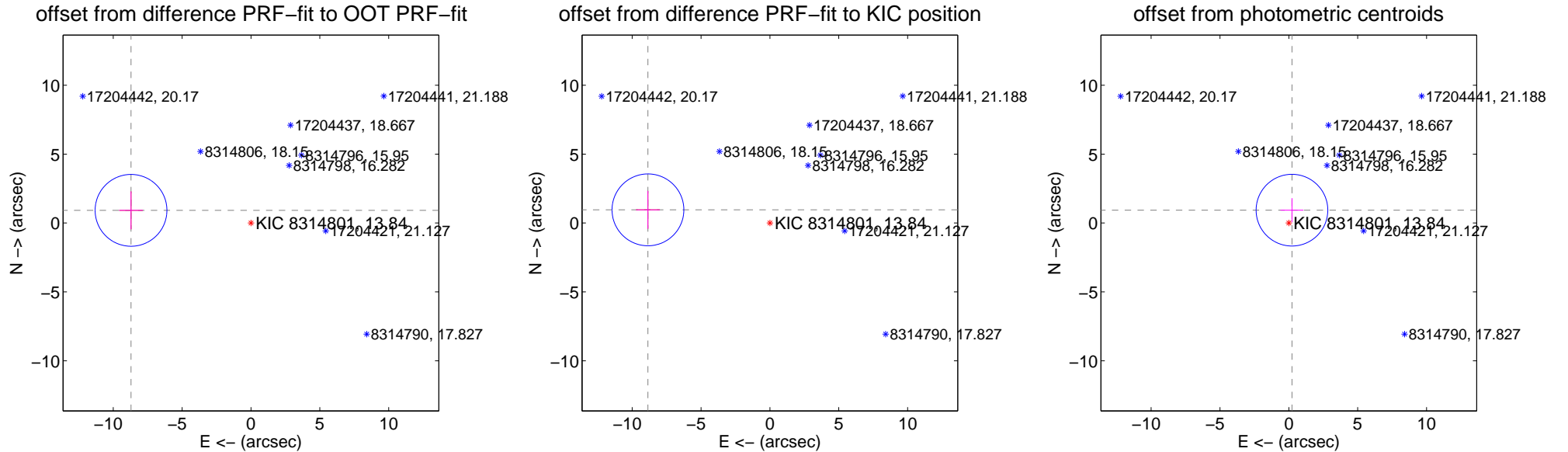
## DV Centroid Data

Supplemental centroid analysis for 008314801-04. Kepler magnitude: 13.84. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	8.756 $\pm$ 0.868	10.08	8.707 $\pm$ 0.861	0.920 $\pm$ 1.375
PRF-fit source offset from KIC position	8.904 $\pm$ 0.869	10.25	8.853 $\pm$ 0.861	0.956 $\pm$ 1.375
photometric centroid source offset	0.96 $\pm$ 0.87	1.11	-0.23 $\pm$ 0.83	0.93 $\pm$ 0.87

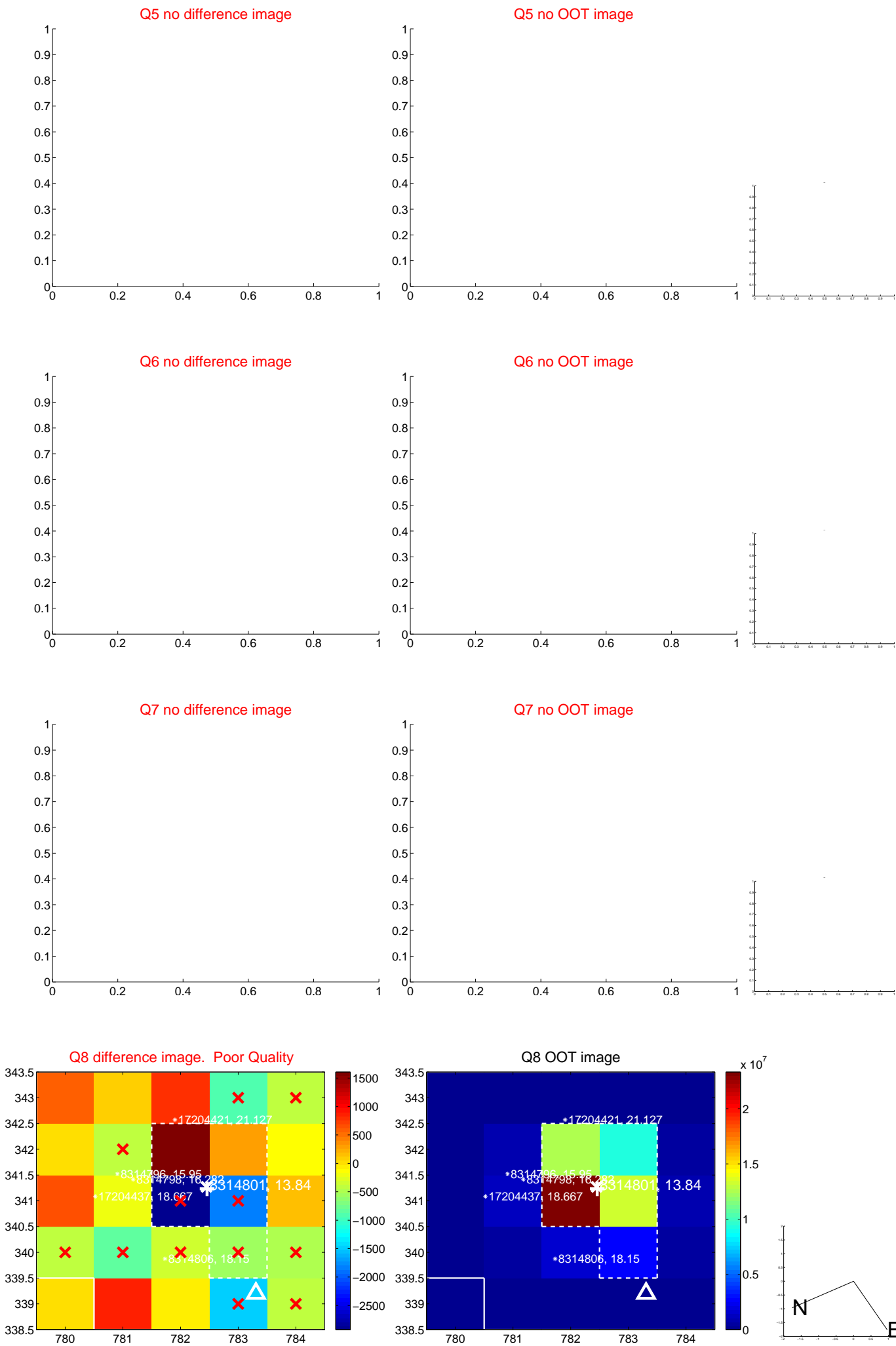


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

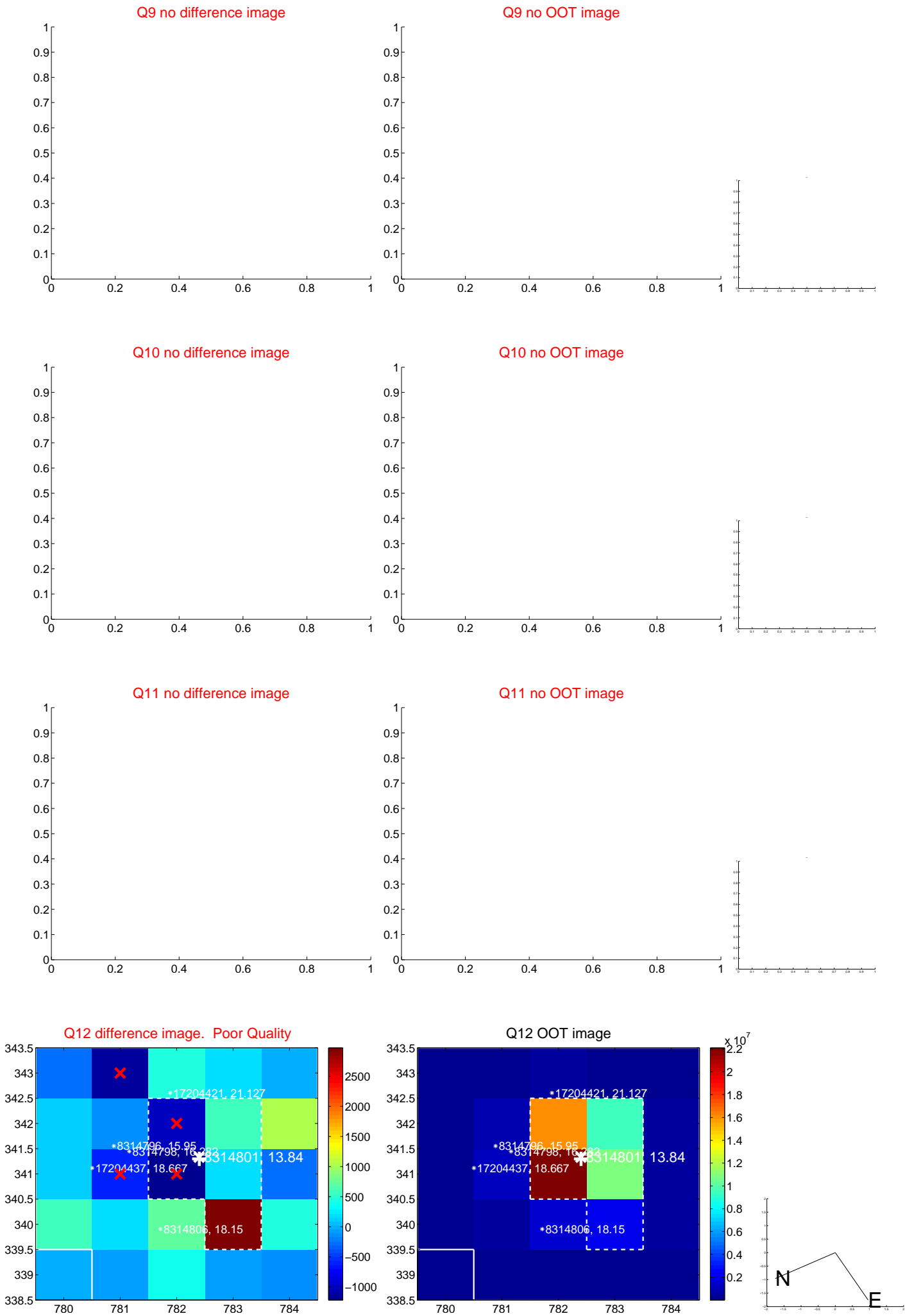
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



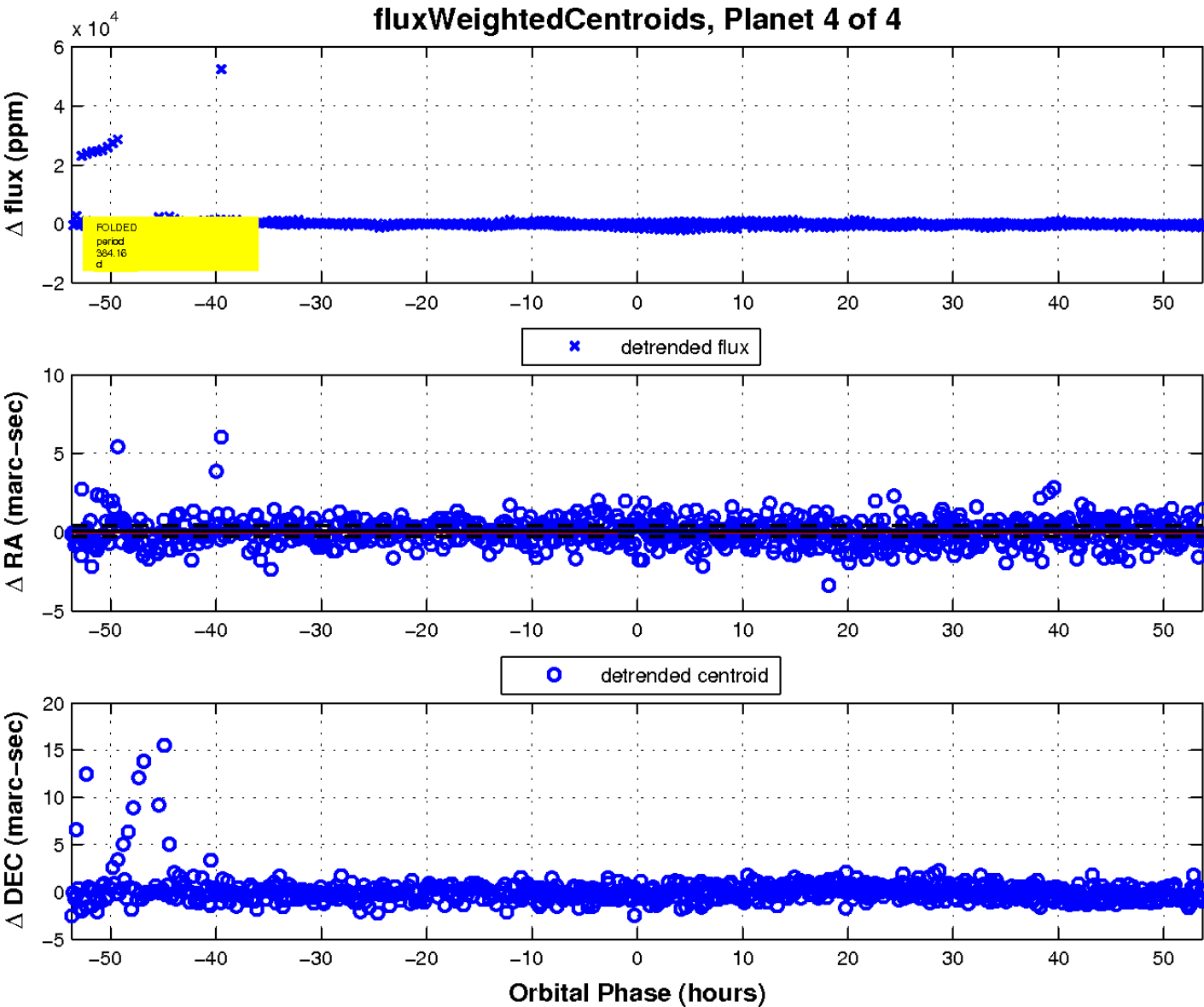
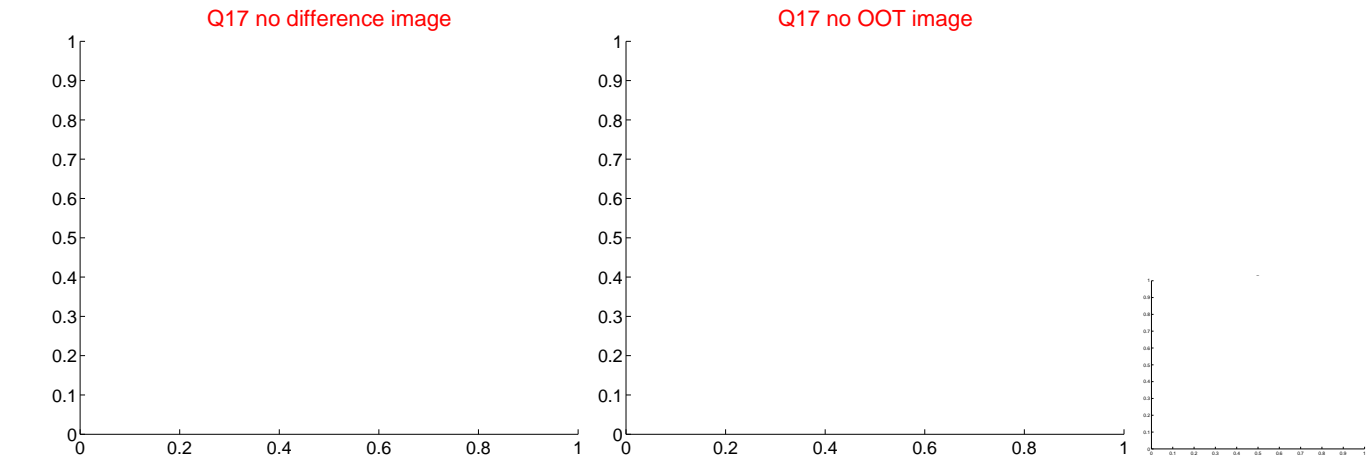
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

