

# KIC 011244980

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011244980-01	OBS	No	368.192890	225.488633	667.6	2.244	18.3	5.3	0.97	5904	2.51	1.14
011244980-02	OBS	No	373.961393	484.657400	358.3	10.500	14.1	-1.0	0.97	5904	1.84	1.12
011244980-03	OBS	No	672.180612	161.862002	1546.0	11.731	14.1	6.4	0.97	5904	3.81	0.51
011244980-04	OBS	No	506.716437	509.320232	360.1	2.784	14.4	2.2	0.97	5904	2.17	0.75
011244980-05	OBS	No	248.870561	217.173307	847.5	4.117	11.2	7.1	0.97	5904	3.48	1.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244980-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
011244980-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS

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

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

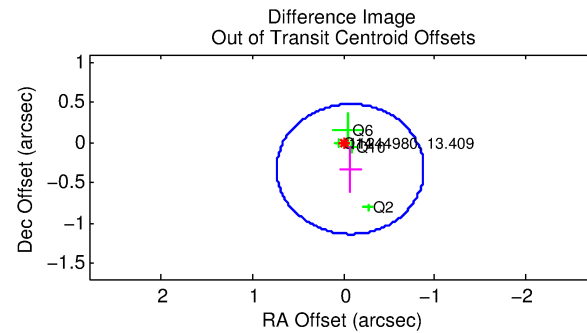
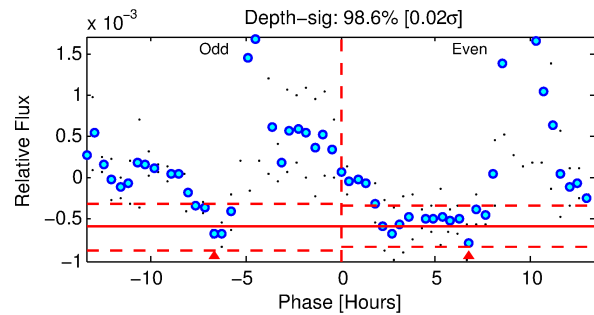
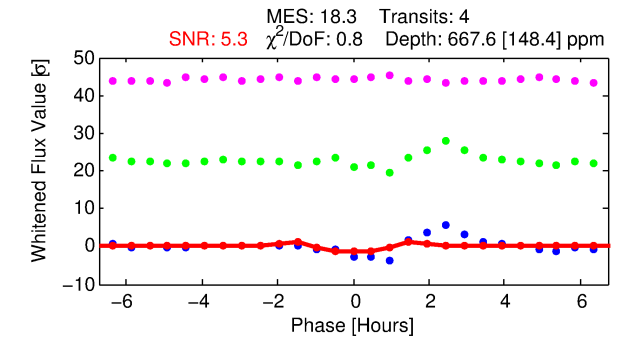
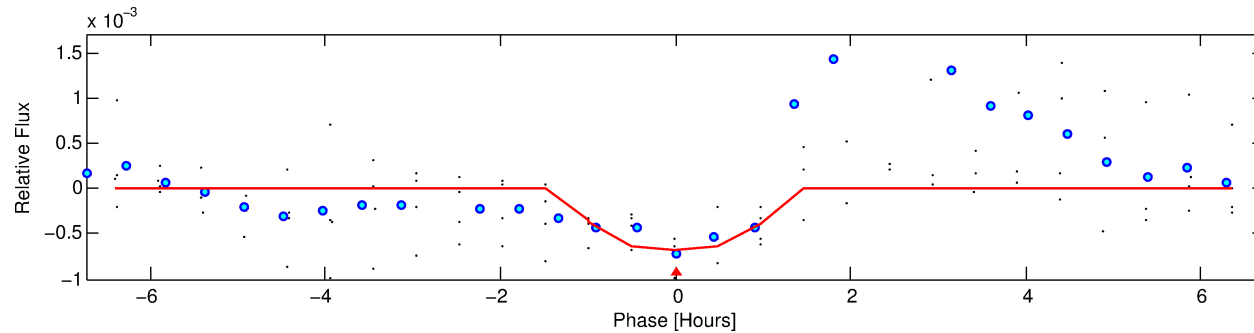
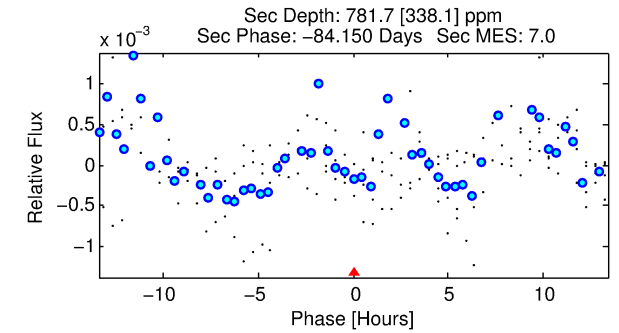
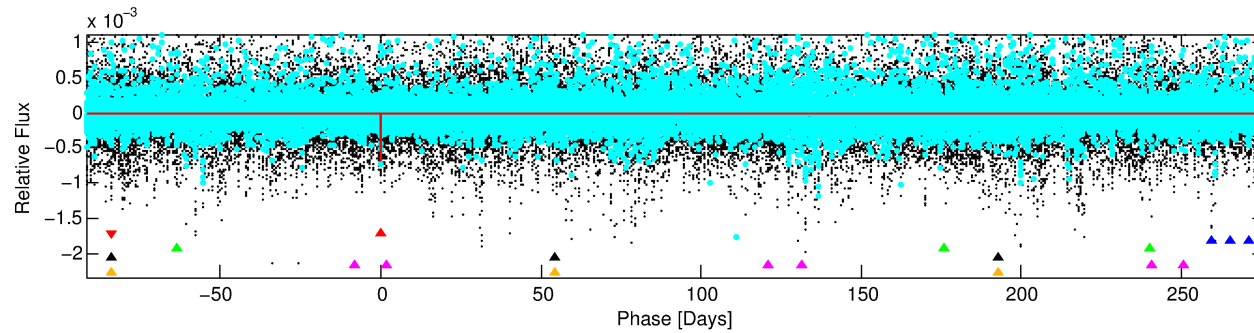
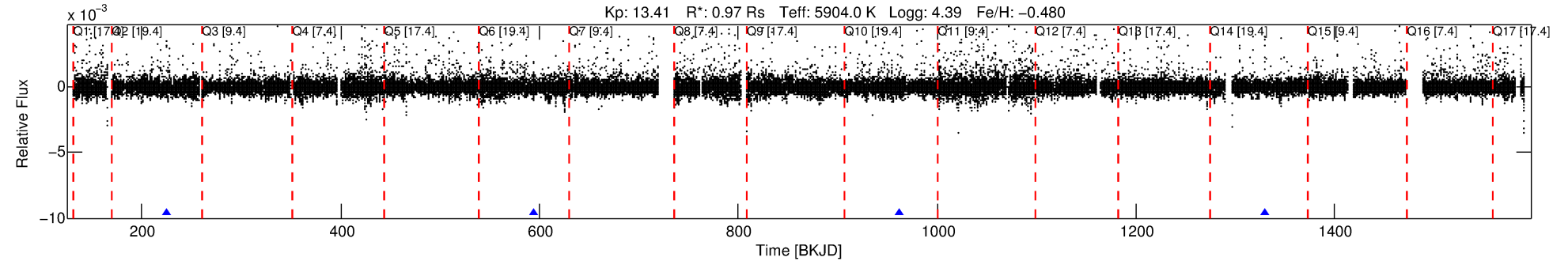
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011244980-01

No Significant Match Found

# DV One-Page Summary

KIC: 11244980 Candidate: 1 of 6 Period: 368.193 d



## DV Fit Results:

Period = 368.19289 [0.00352] d  
Epoch = 225.4886 [0.0133] BKJD  
Rp/R\* = 0.0237 [0.1610]  
a/R\* = 1279.41 [42072.39]  
b = 0.08 [419.90]  
Seff = 1.14 [0.40]  
Teq = 264 [23] K  
Rp = 2.51 [17.07] Re  
a = 0.9475 [0.2107] AU  
Ag = 61322.00 [834407.88] [0.07σ]  
Teffp = 6415 [21818] K [0.28σ]

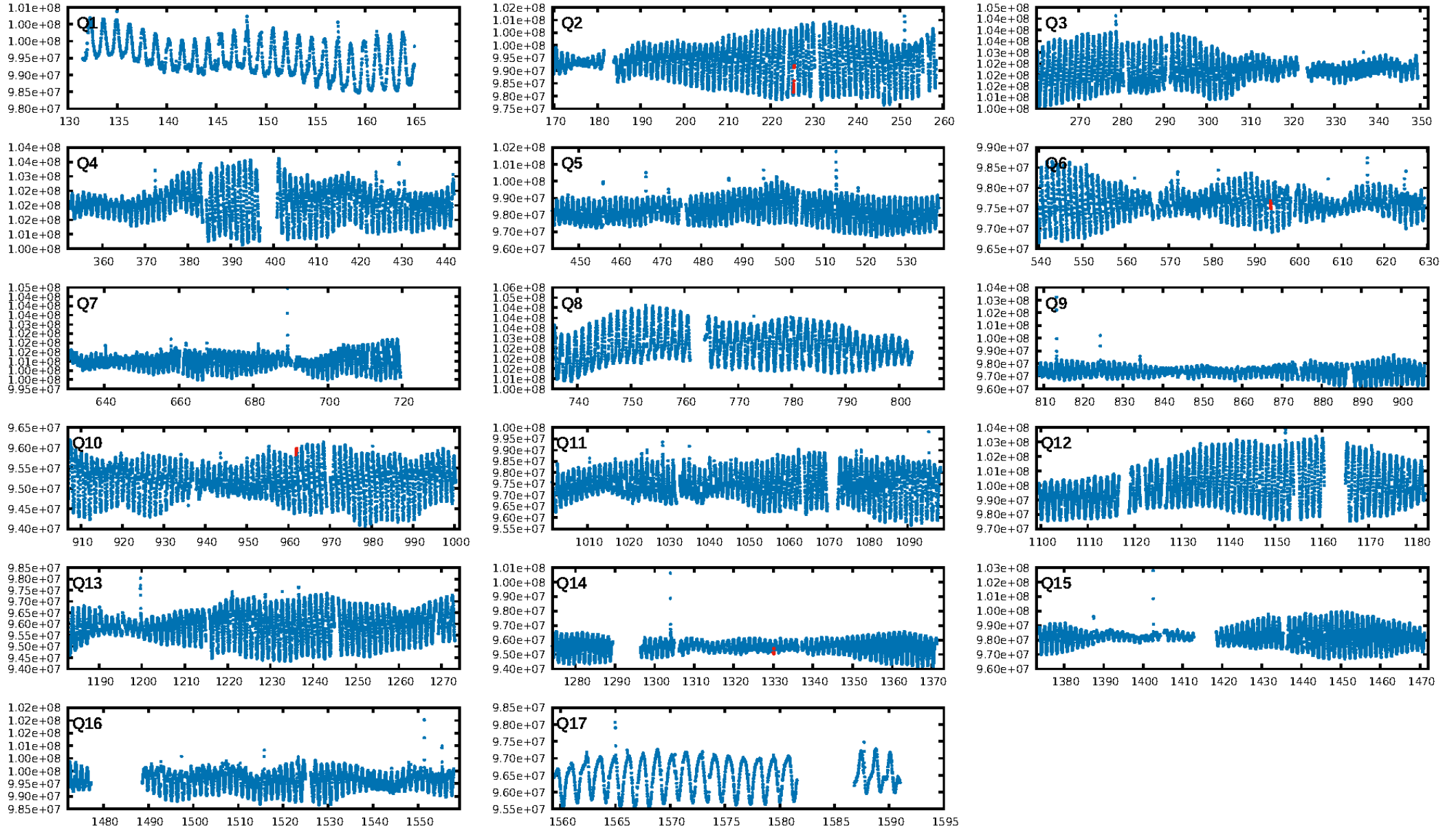
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [610.76σ]  
LongPeriod-sig: 100.0% [12.89σ]  
ModelChiSquare2-sig: 66.0%  
ModelChiSquareGof-sig: 97.2%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.6396  
Centroid-sig: 39.4%  
Centroid-so: 0.495 arcsec [0.69σ]  
OotOffset-rm: 0.340 arcsec [1.26σ]  
KicOffset-rm: 0.358 arcsec [1.45σ]  
OotOffset-st: 4/0/0/0 [4]  
KicOffset-st: 4/0/0/0 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [4/4]

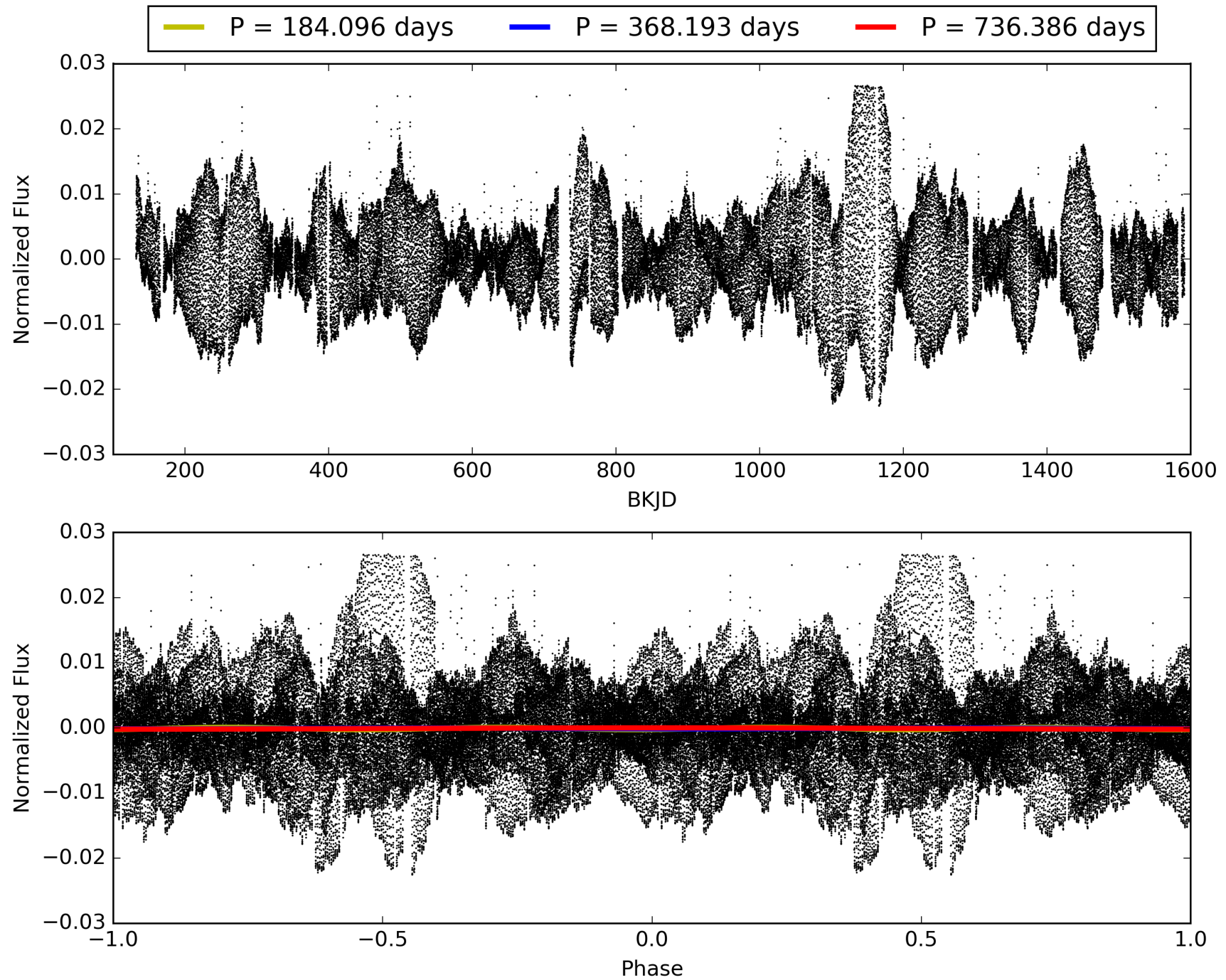
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:04 Z

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

# TCE 011244980-01, PDC Light Curves



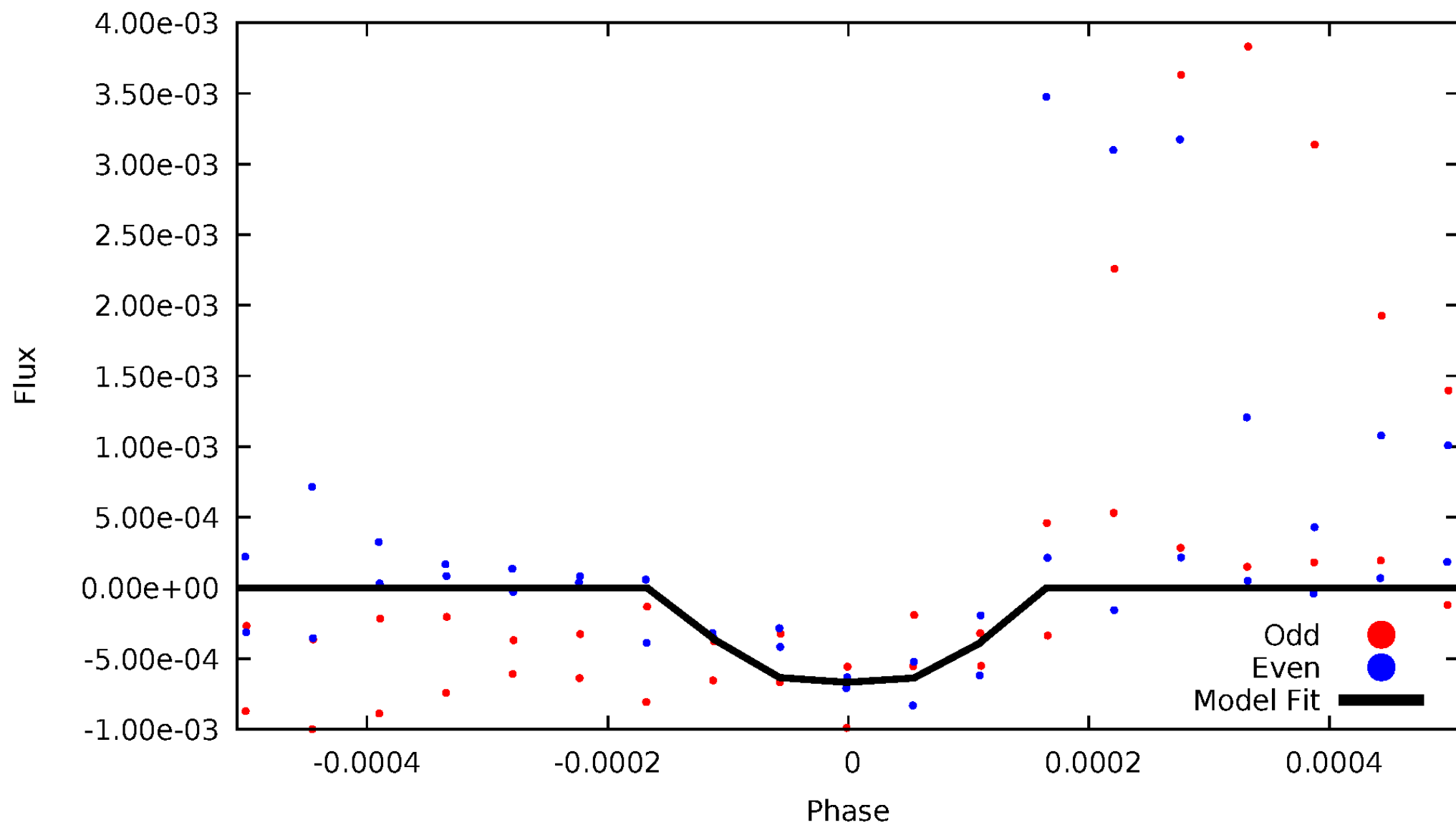
TCE 011244980-01





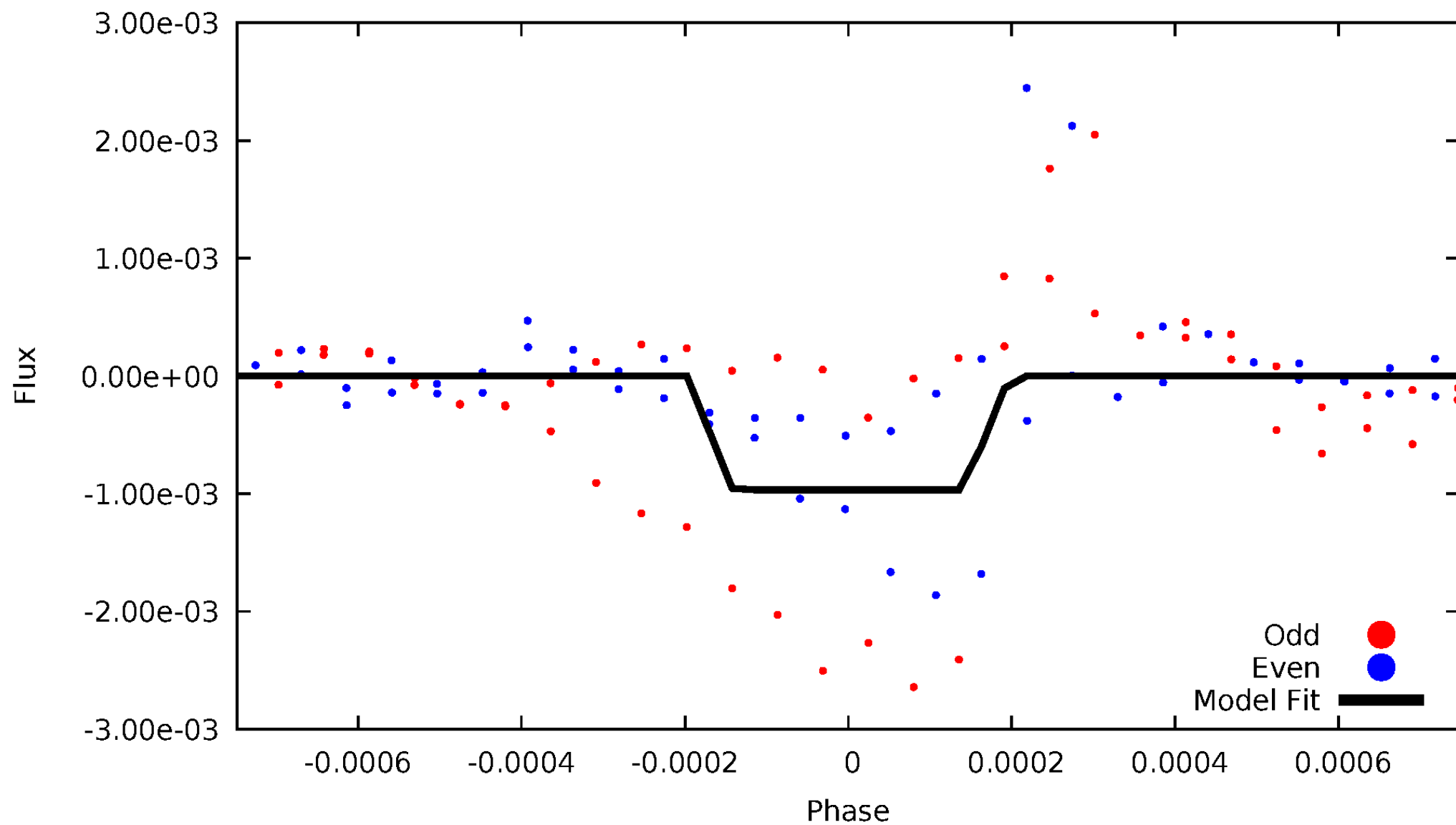
# DV Odd/Even

TCE 011244980-01



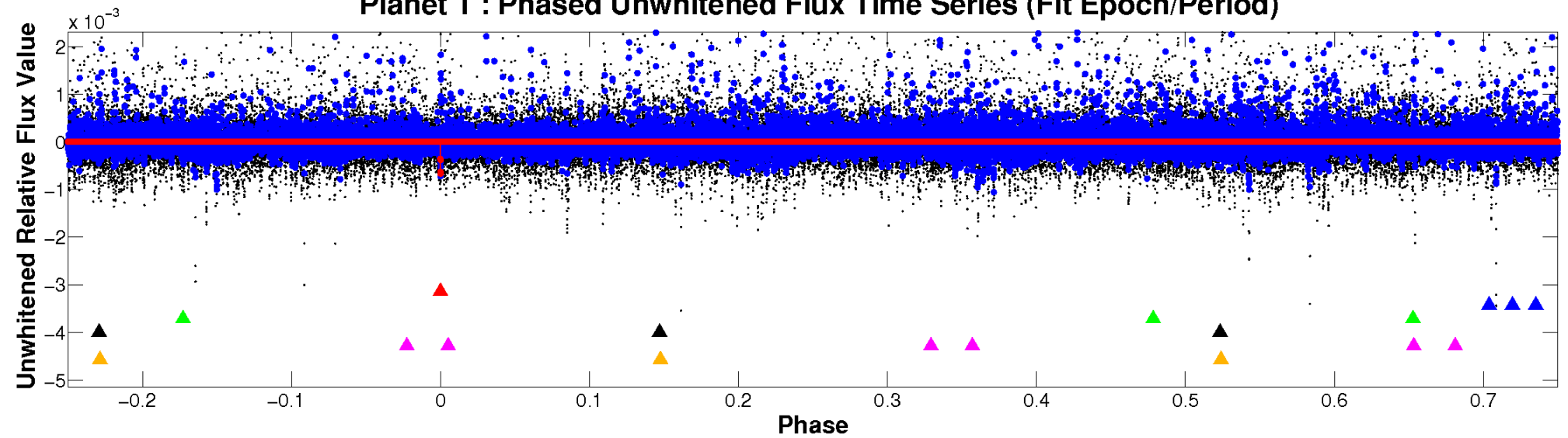
# ALT Odd/Even

TCE 011244980-01

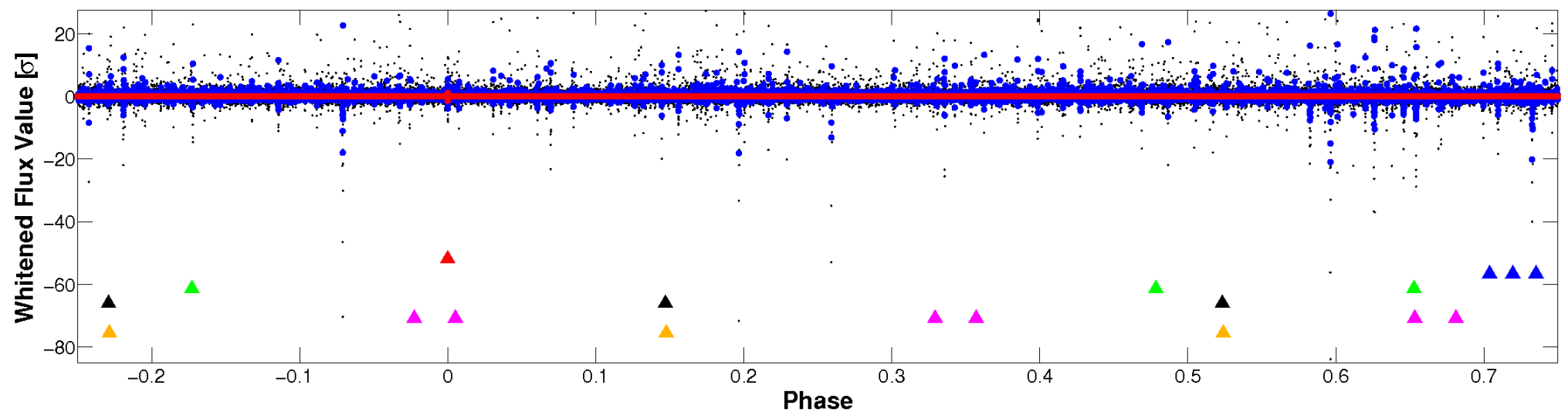


# Non-Whitened Vs. Whitened Light Curve

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

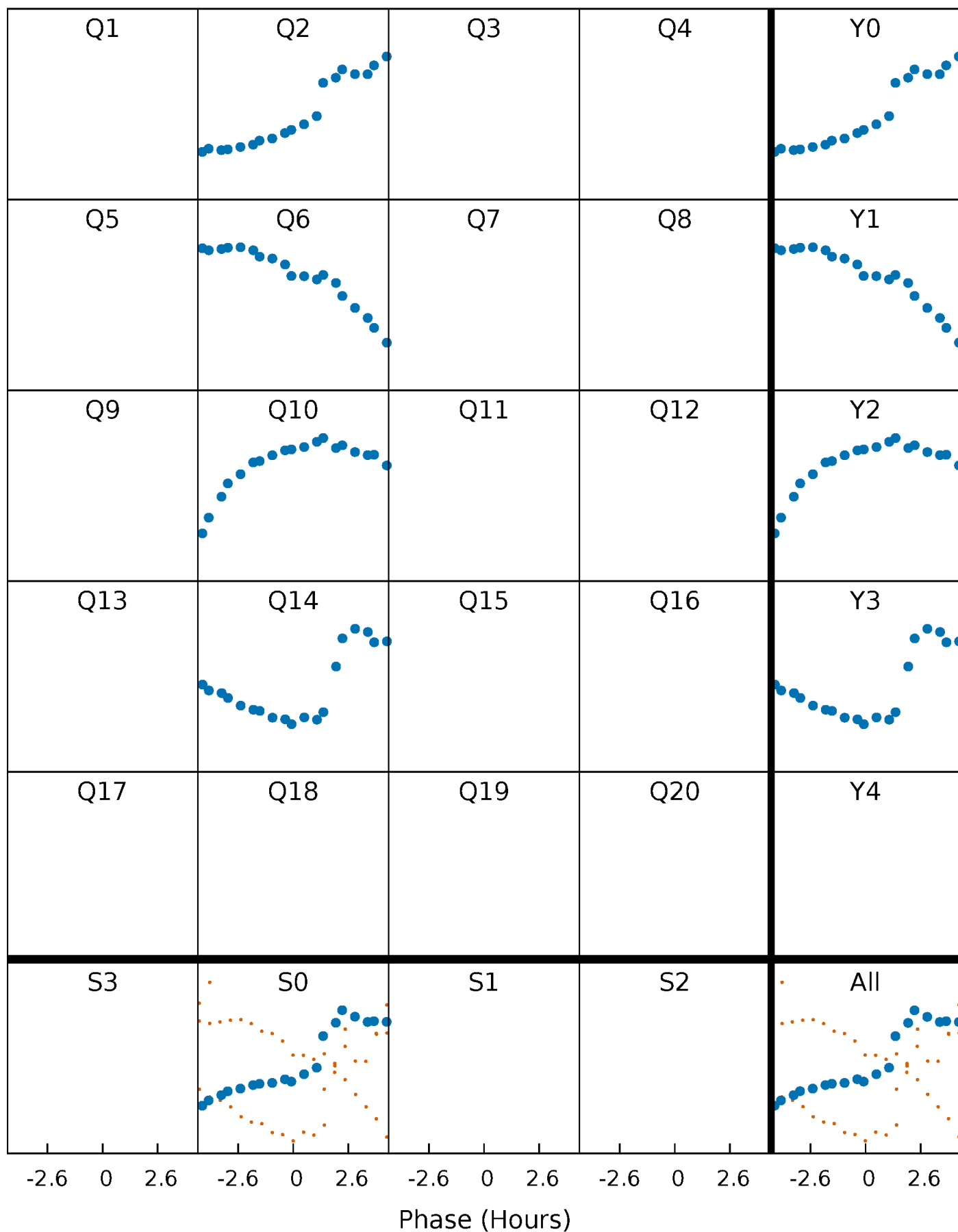


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



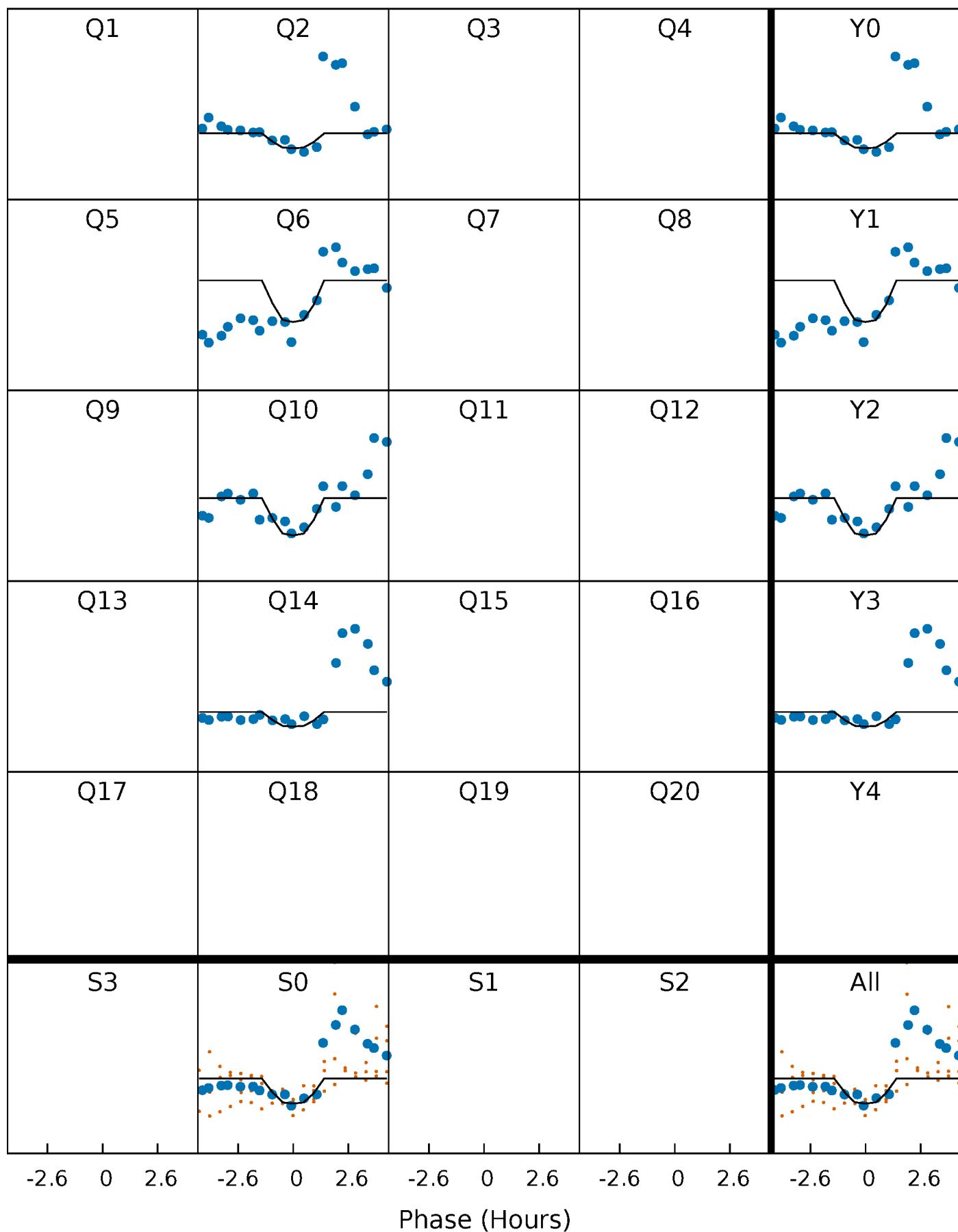
# PDC Quarter-Phased Transit Curves

TCE 011244980-01     $P=368.192890$  Days     $T_0=225.488633$  (BKJD)



# DV Quarter-Phased Transit Curves

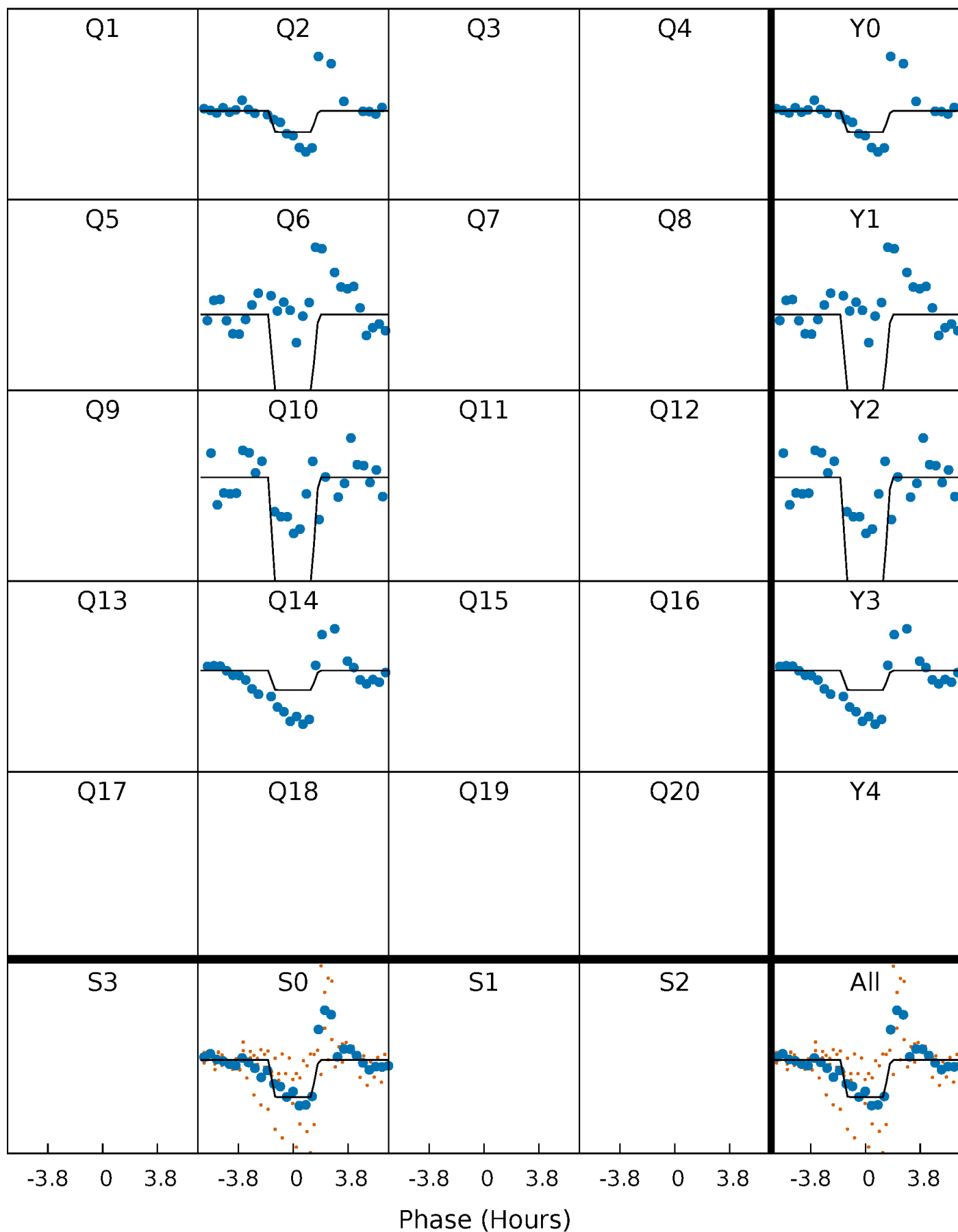
TCE 011244980-01 P=368.192890 Days  $T_0=225.488633$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

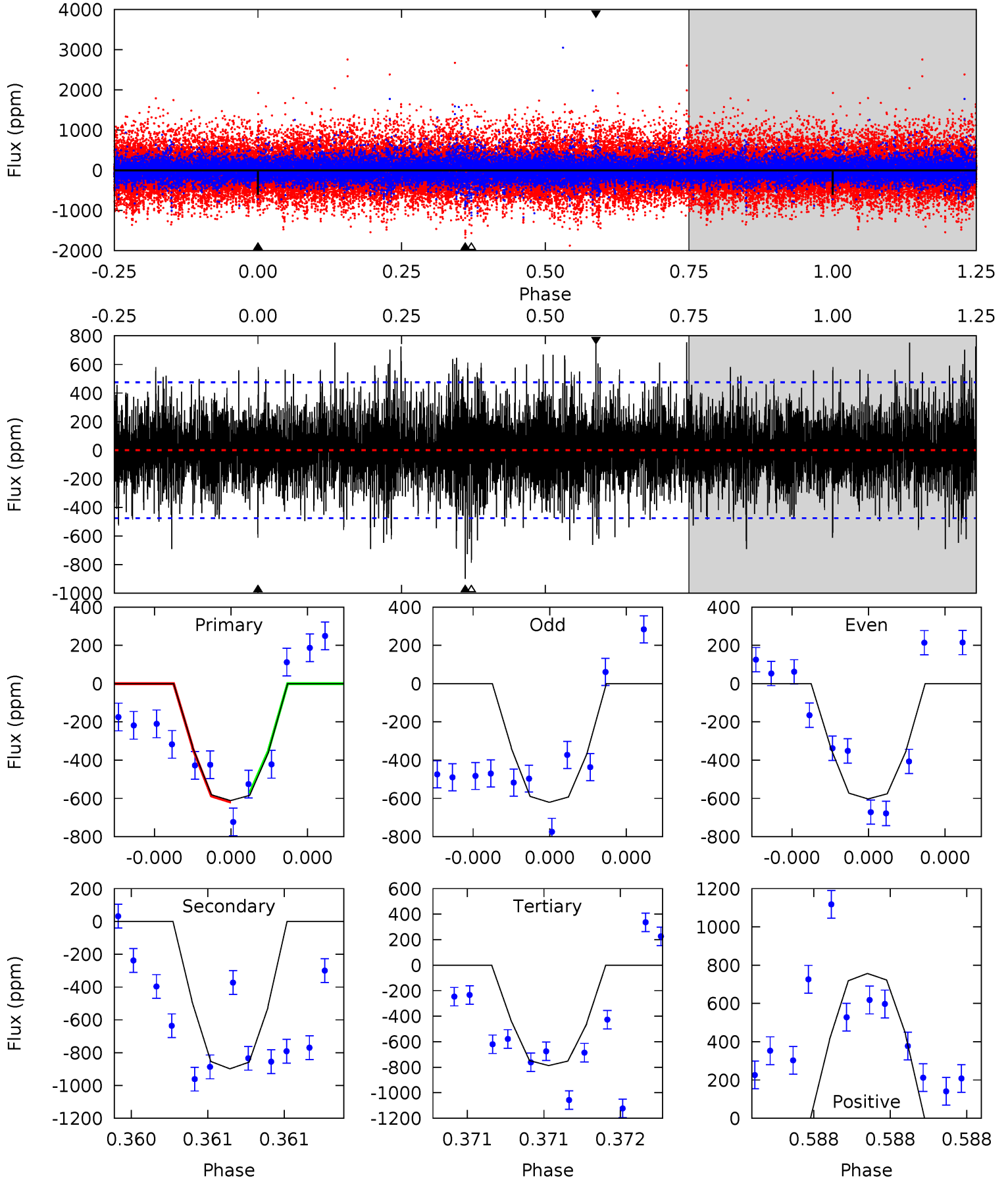
TCE 011244980-01 P=368.203188 Days  $T_0=225.468908$  (BKJD)



# DV Model-Shift Uniqueness Test

011244980-01, P = 368.192890 Days, E = 225.488633 Days

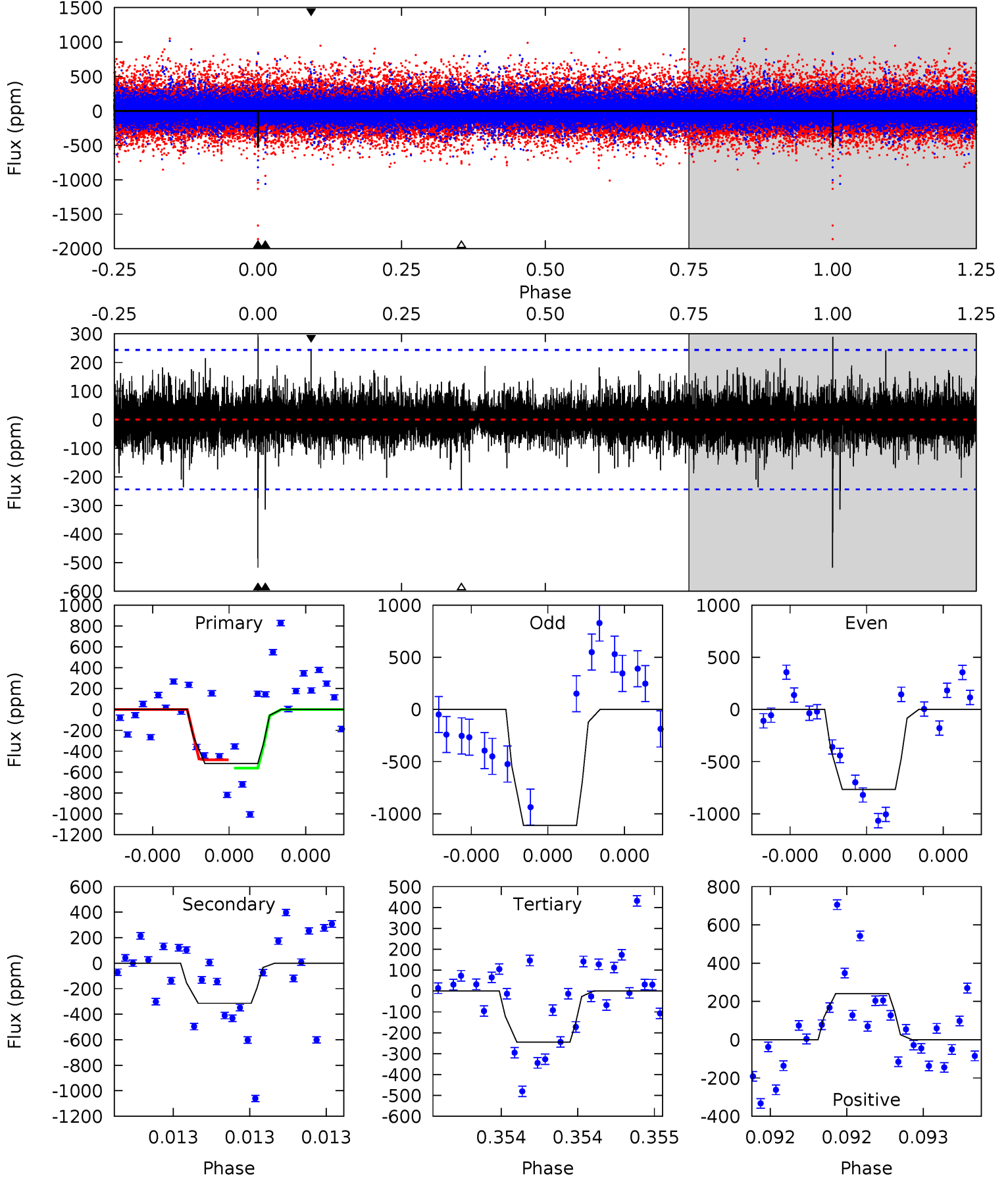
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.35	10.8	9.47	9.10	5.71	3.69	2.07	-2.11	-1.74	1.34	1.71	0.09	1.01	0.46	0.27



# Alt Model-Shift Uniqueness Test

011244980-01, P = 368.203188 Days, E = 225.468908 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
12.0	7.26	5.66	5.58	5.63	3.57	1.07	6.29	6.37	1.59	1.67	4.39	1.18	0.36	0.92



### Stellar Parameters For KIC 011244980

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5904^{+159}_{-159}$	$4.386^{+0.149}_{-0.182}$	$-0.480^{+0.300}_{-0.300}$	$0.971^{+0.252}_{-0.168}$	$0.837^{+0.114}_{-0.070}$	$1.287^{+0.913}_{-0.617}$
	+3%/-3%	+3%/-4%	+62%/-62%	+26%/-17%	+14%/-8%	+71%/-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 011244980-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-898 \pm 83$	$13.24^{+12.25}_{-9.42}$	$371^{+26}_{-21}$	$3437^{+1959}_{-618}$	$2675^{+29803}_{-1996}$
Alt.	$-314 \pm 43$	$12.61^{+14.69}_{-8.77}$	$368^{+26}_{-21}$	$2970^{+1341}_{-528}$	$986^{+9590}_{-774}$

$T_{max}$  = 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

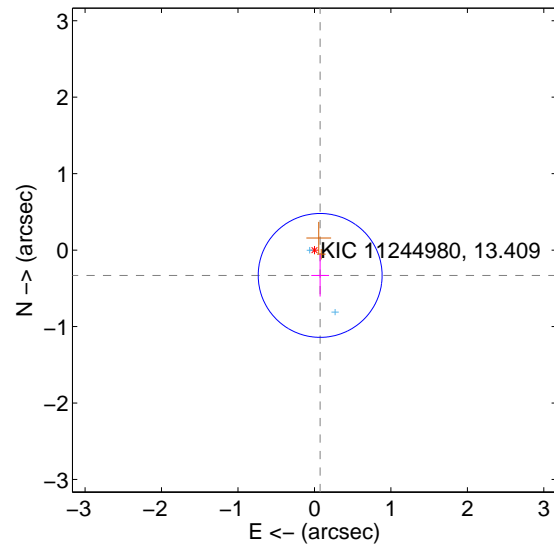
Supplemental centroid analysis for 011244980-01. Kepler magnitude: 13.41. Transit SNR 5.29

There are 2 quarters with good PRF difference image offsets

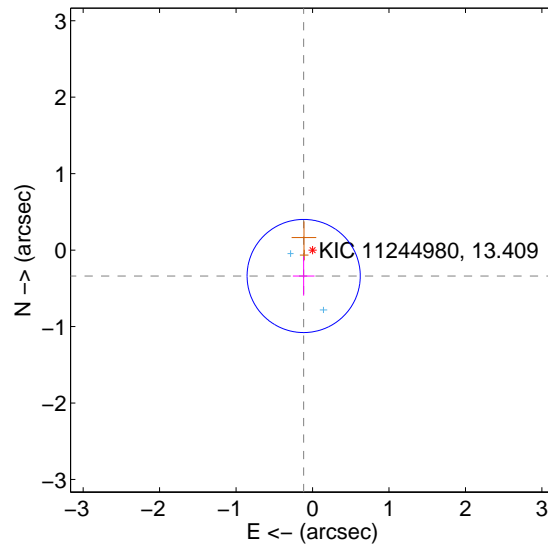
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.340 \pm 0.270$	1.26	$-0.075 \pm 0.116$	$-0.331 \pm 0.276$
PRF-fit source offset from KIC position	$0.358 \pm 0.247$	1.45	$0.116 \pm 0.142$	$-0.339 \pm 0.256$
photometric centroid source offset	$0.49 \pm 0.71$	0.69	$0.28 \pm 0.76$	$0.41 \pm 0.69$

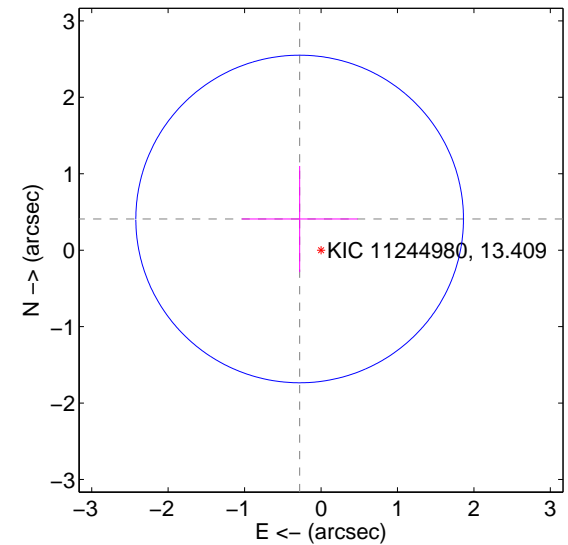
offset from difference PRF-fit to OOT PRF-fit



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.

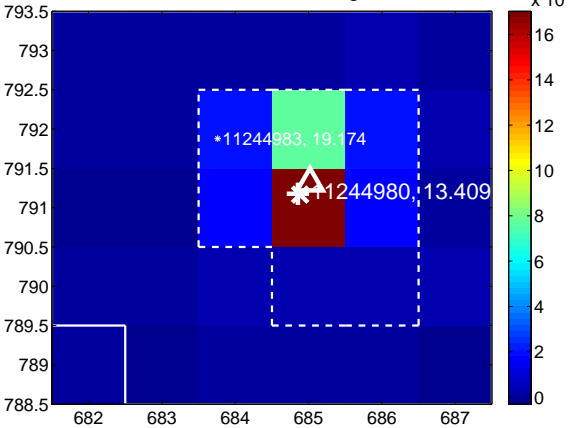
Q1 no difference image



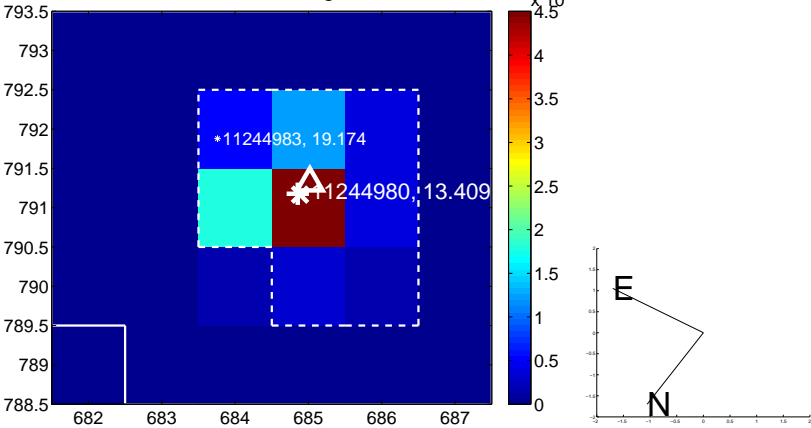
Q1 no OOT image



Q2 difference image



Q2 OOT image



Q3 no difference image



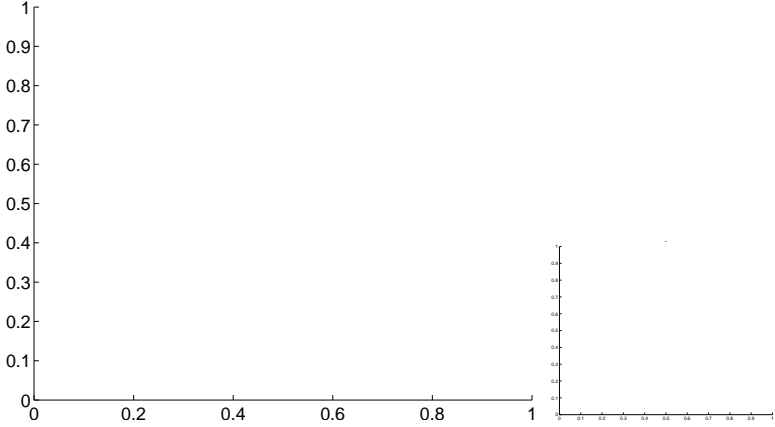
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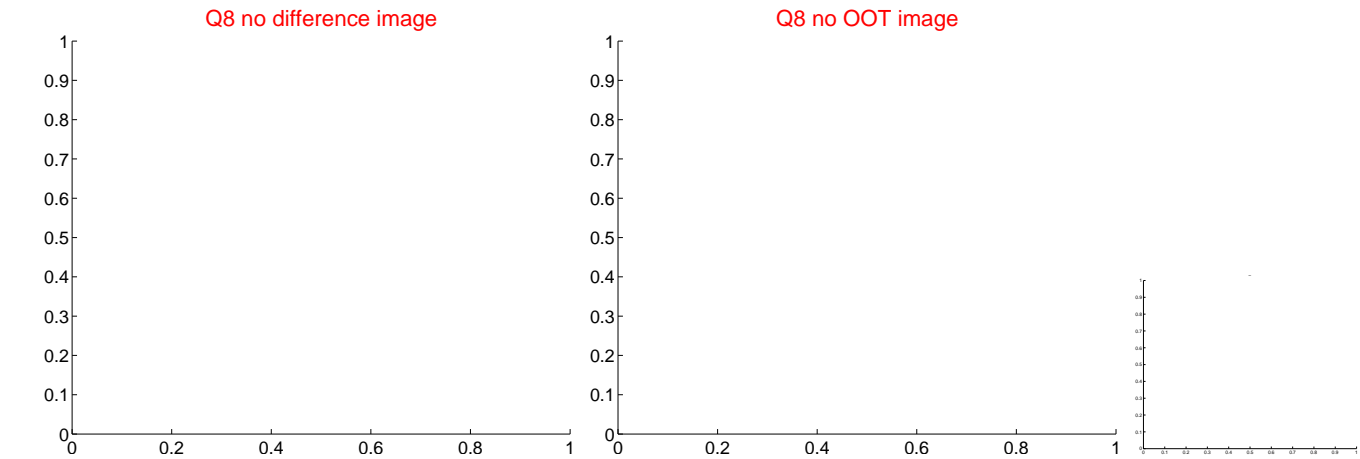
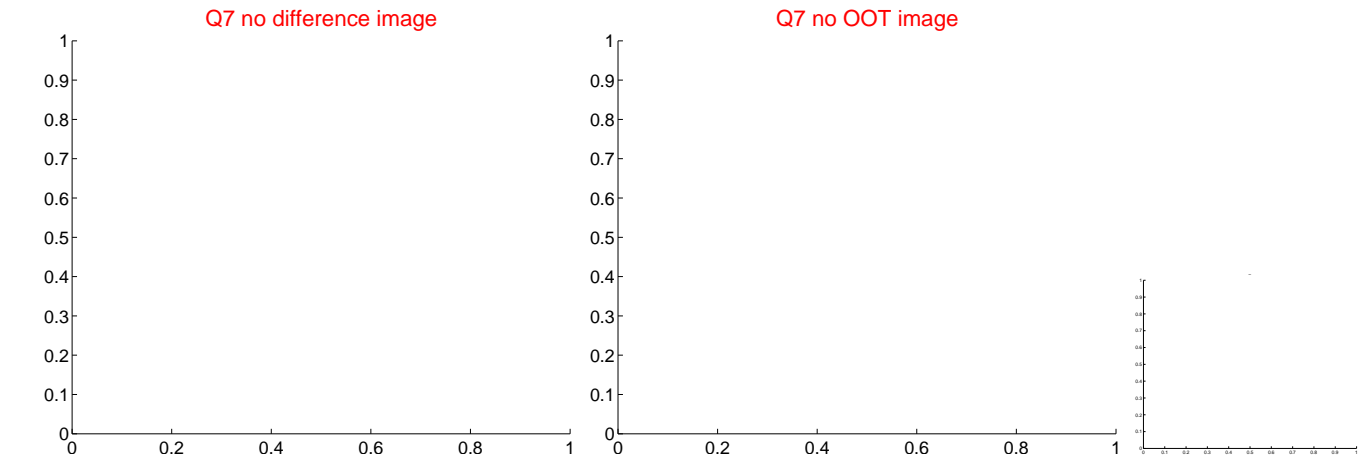
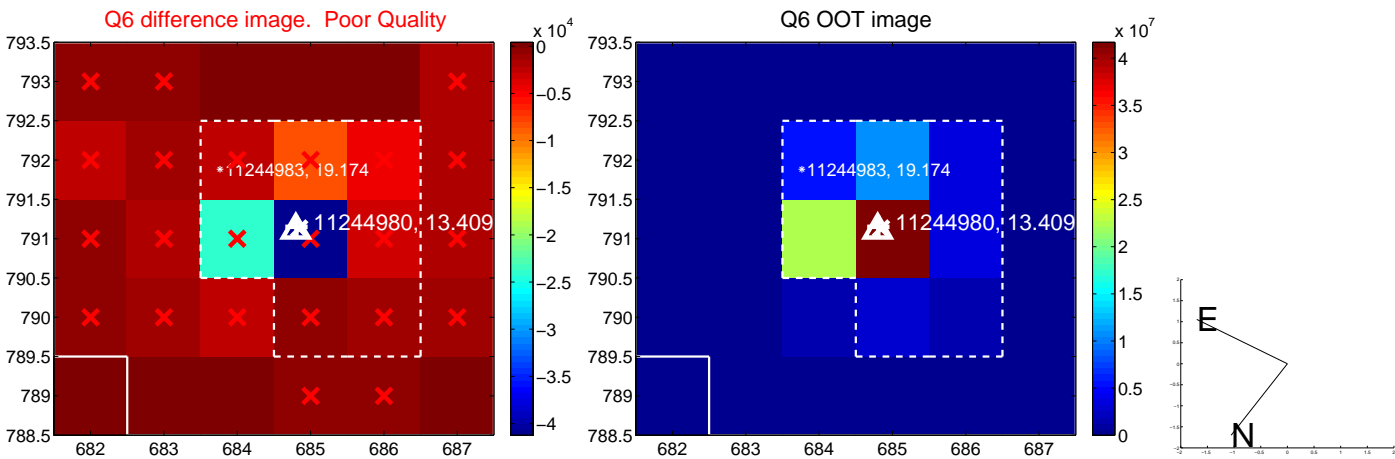
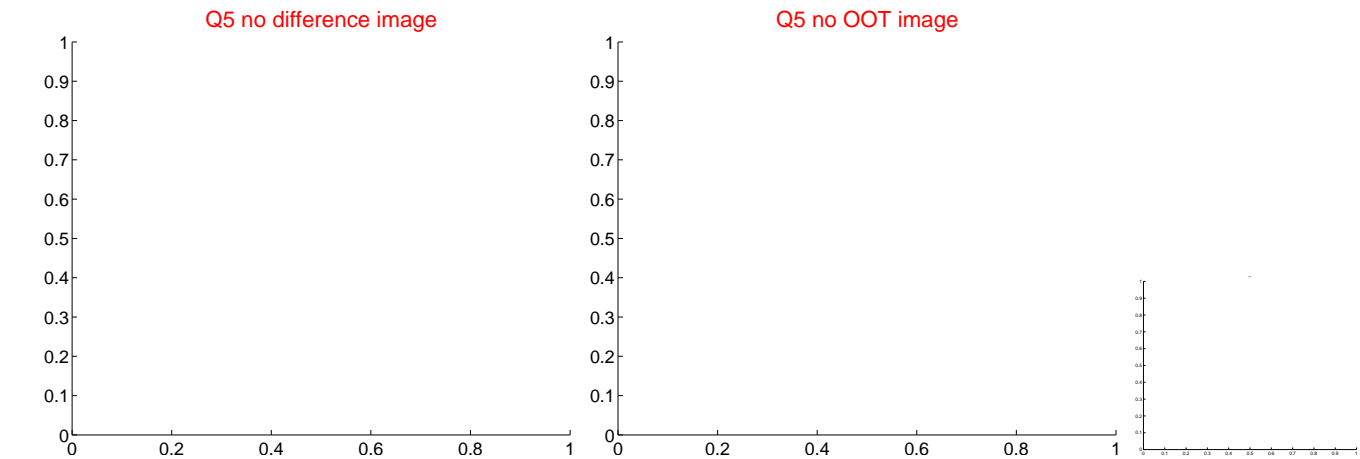
Q4 no difference image



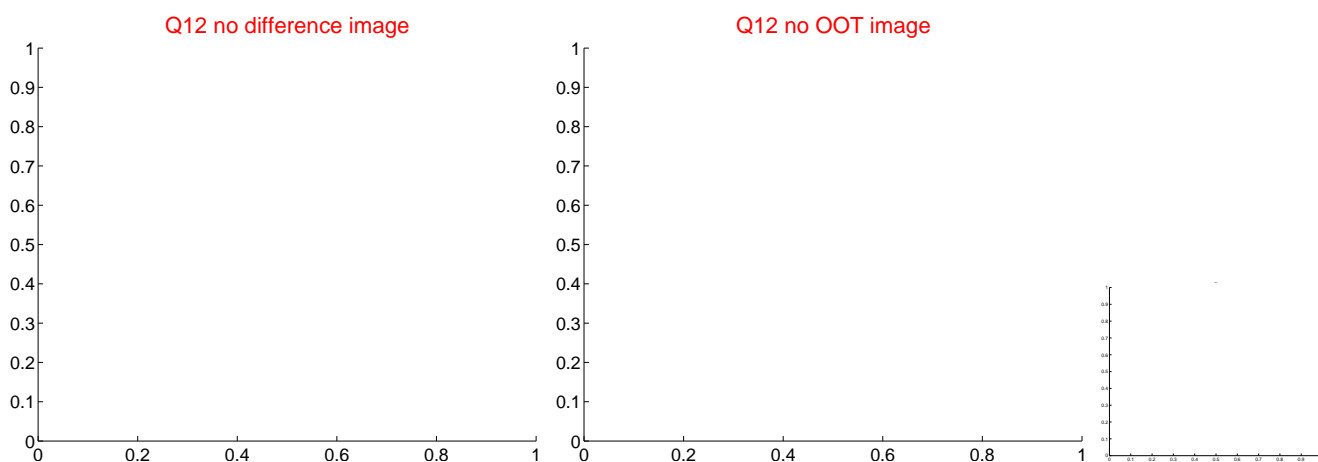
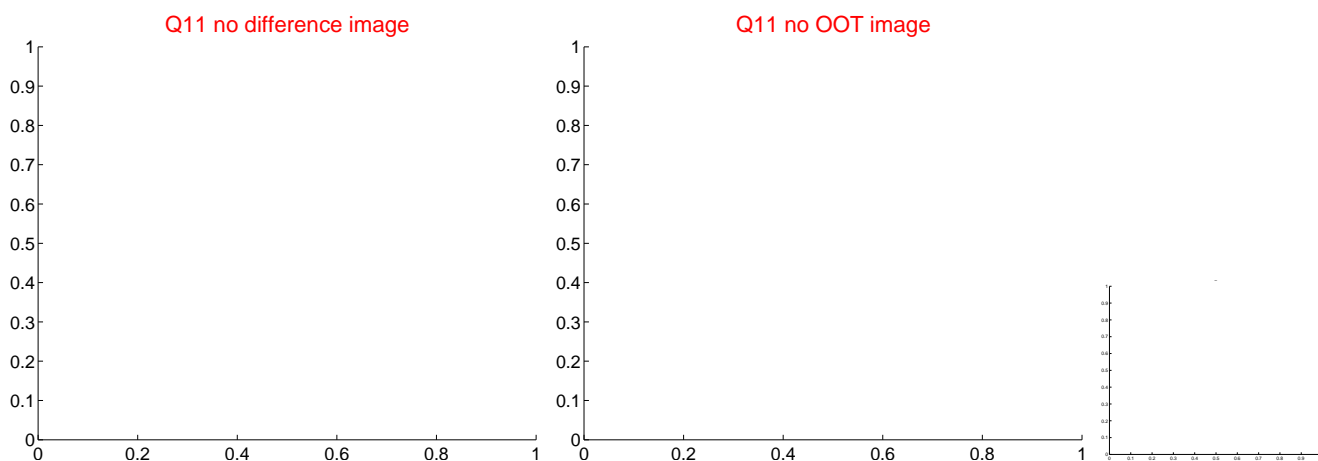
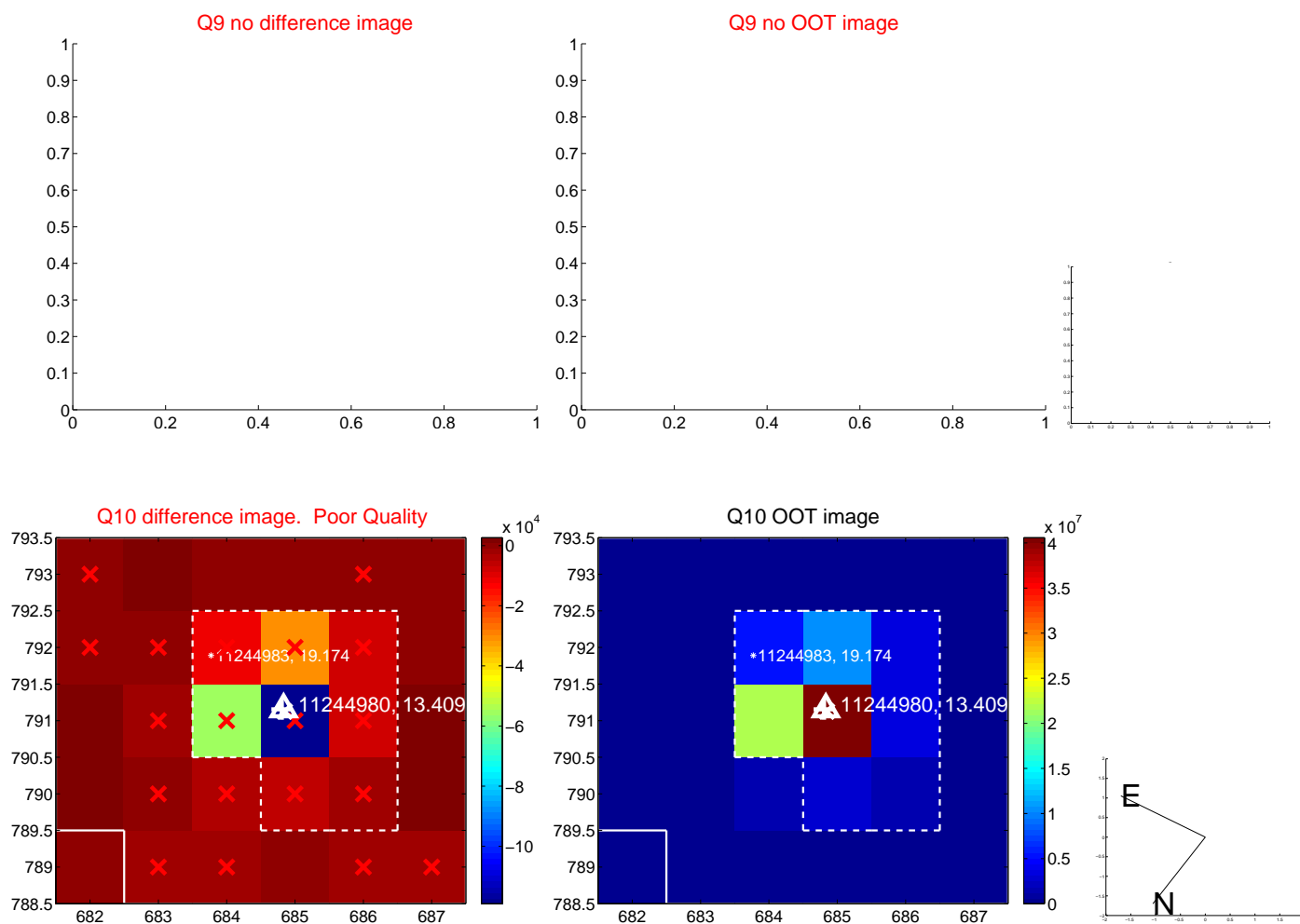
Q4 no OOT image



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.

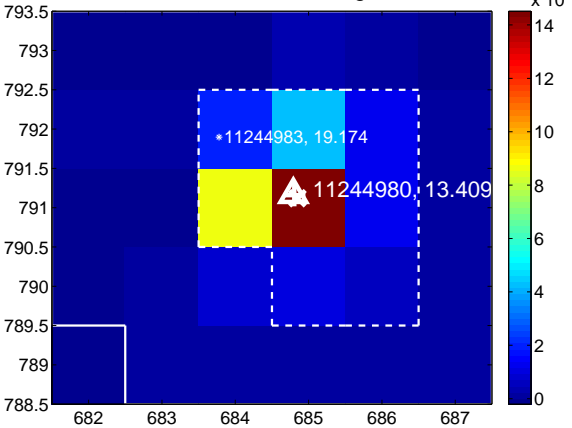
Q13 no difference image



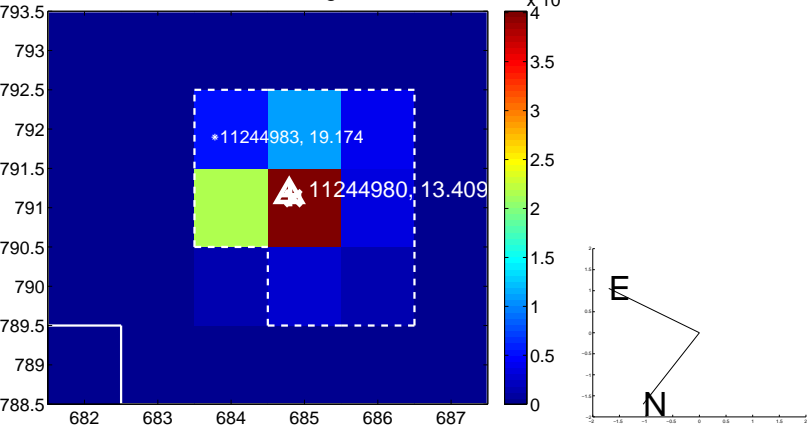
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



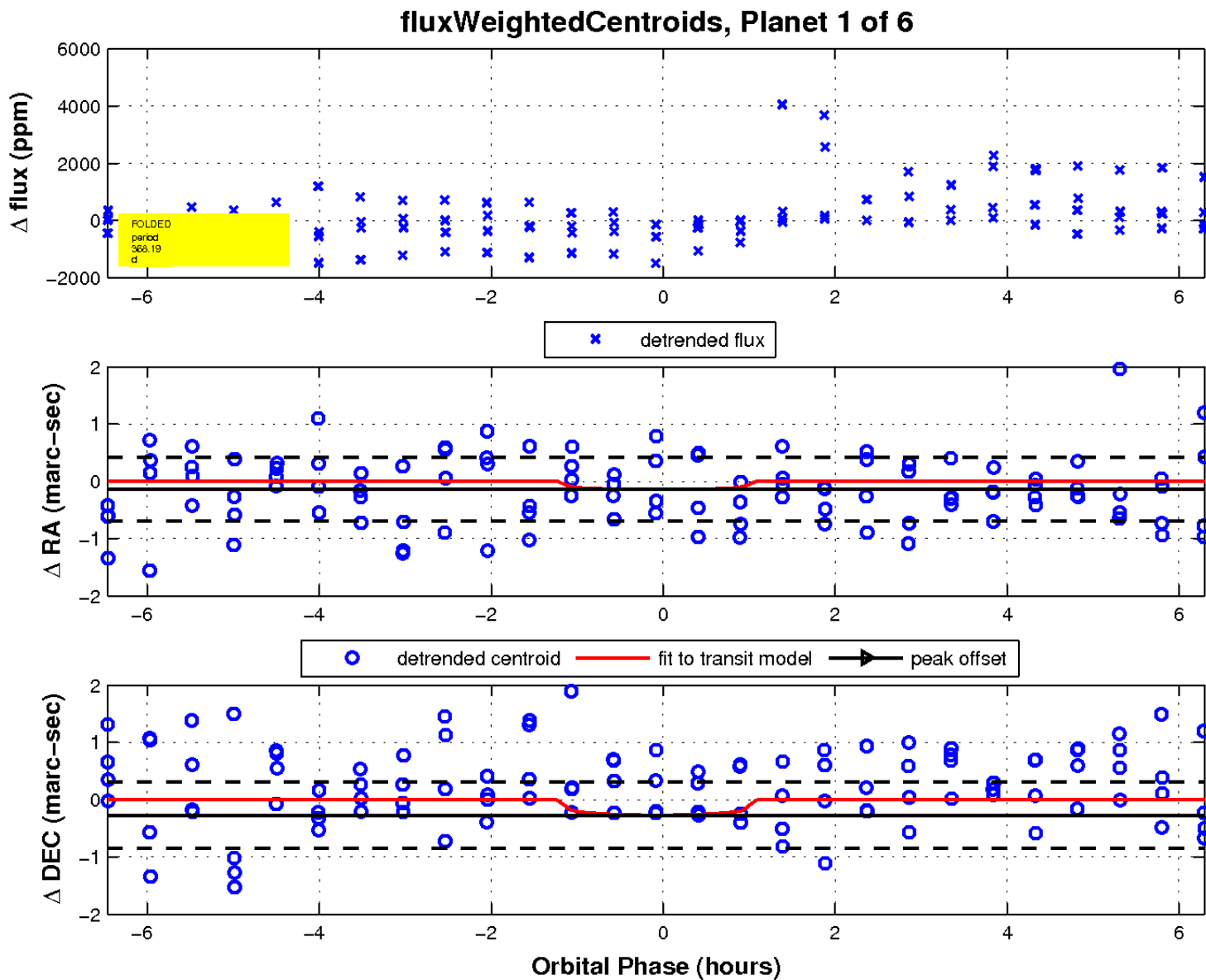
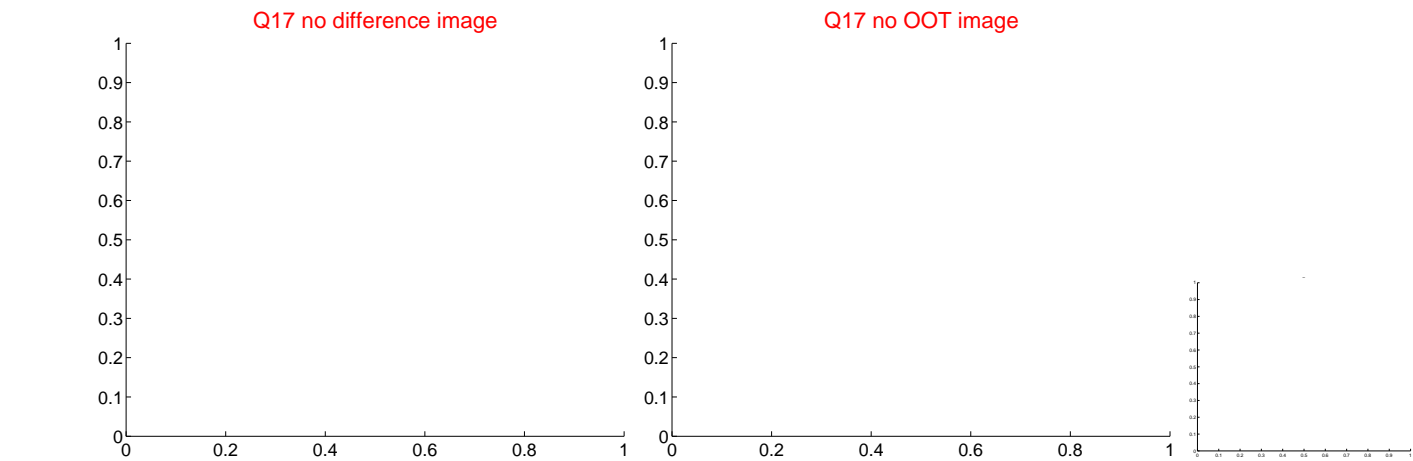
Q16 no difference image



Q16 no OOT image



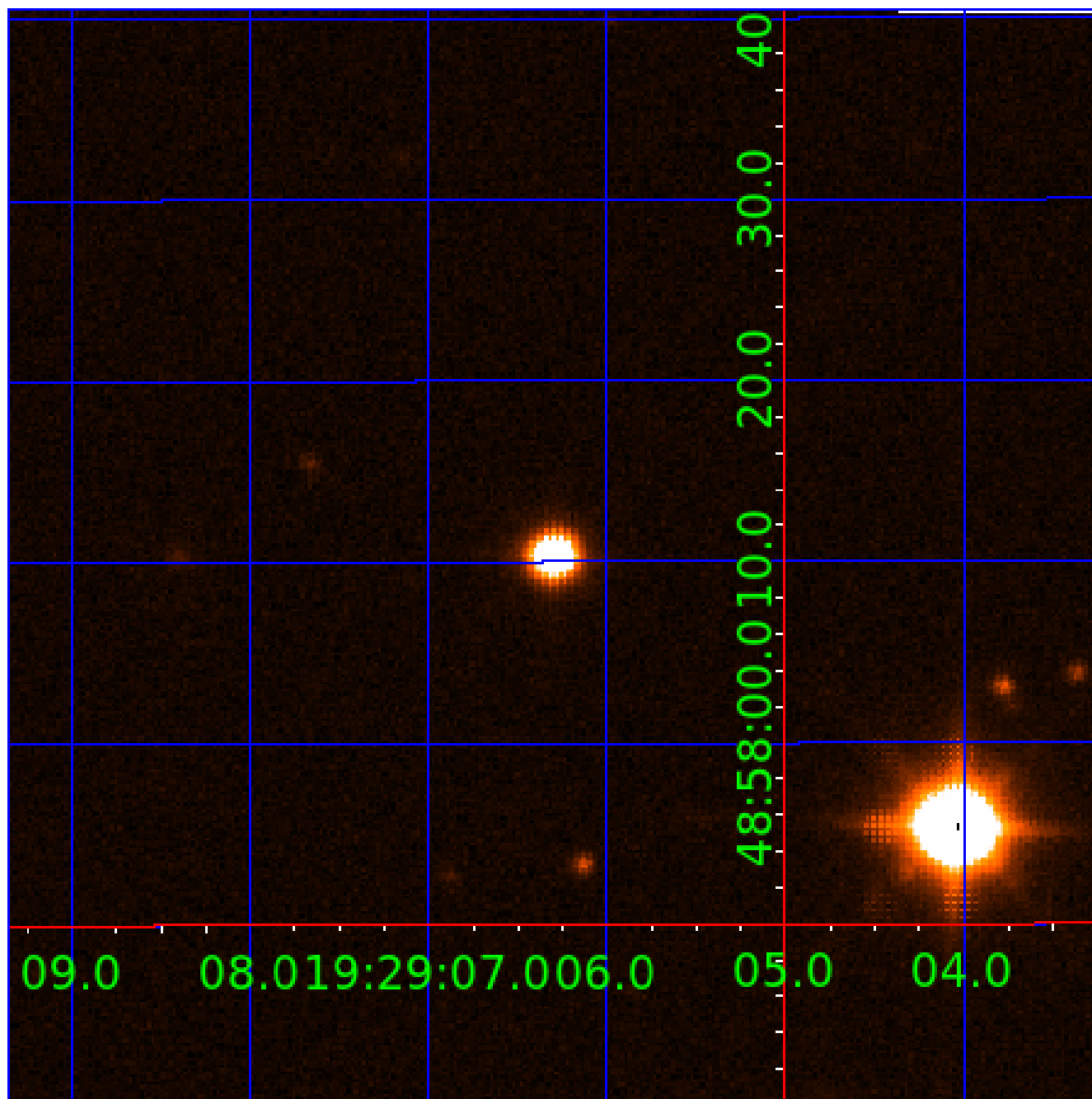
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination



# KIC 011244980

## Q1-17 DR25 TCE Parameters

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011244980-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
011244980-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

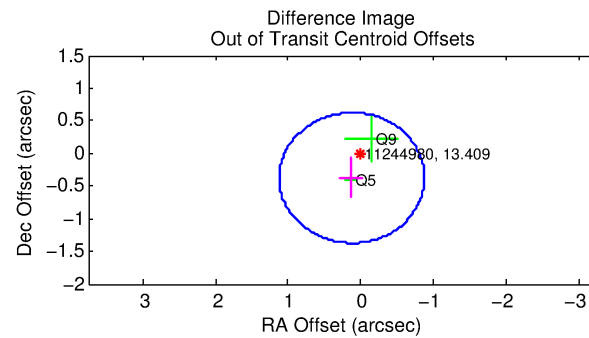
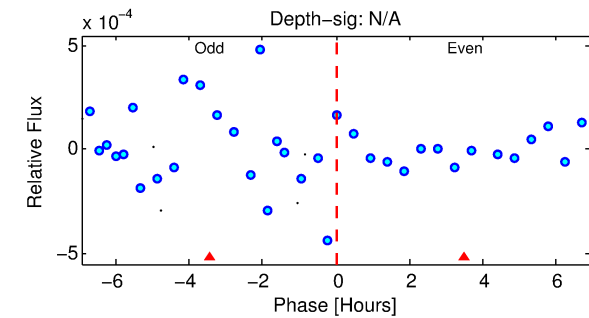
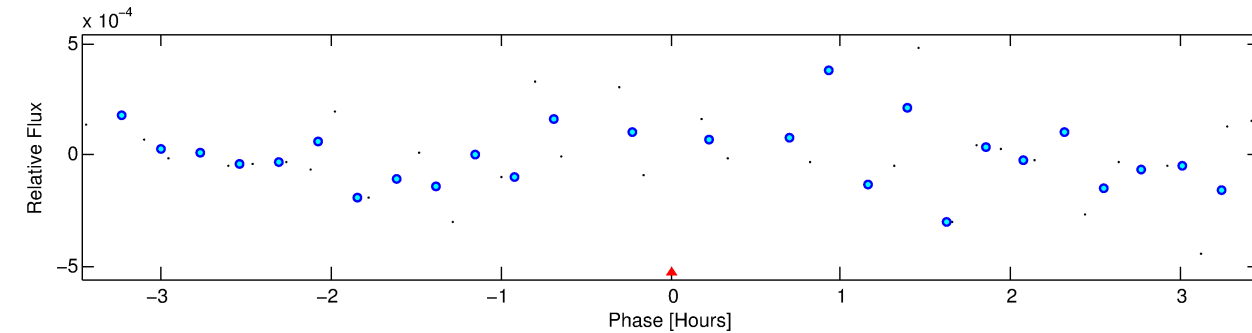
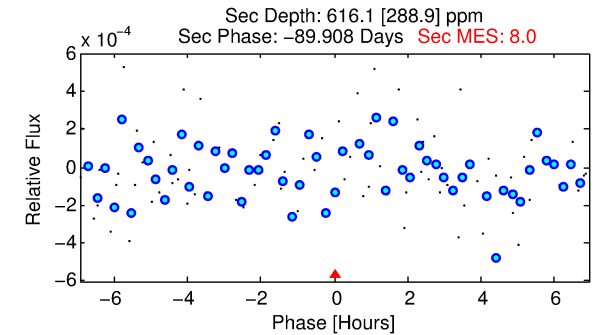
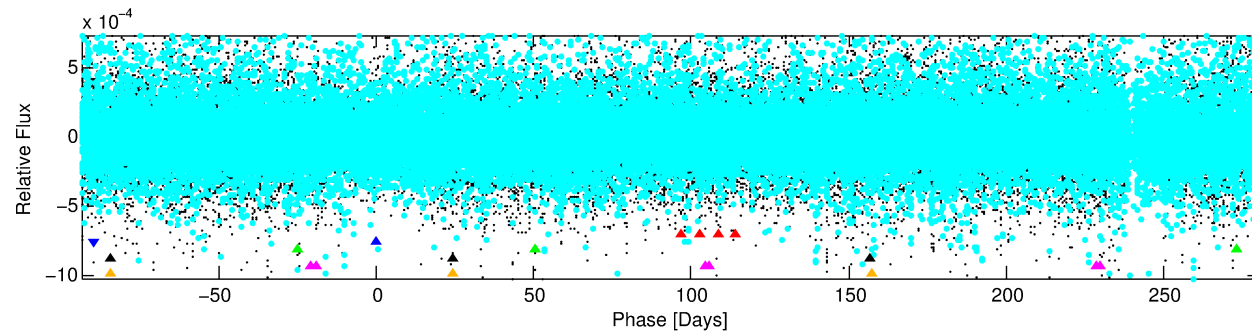
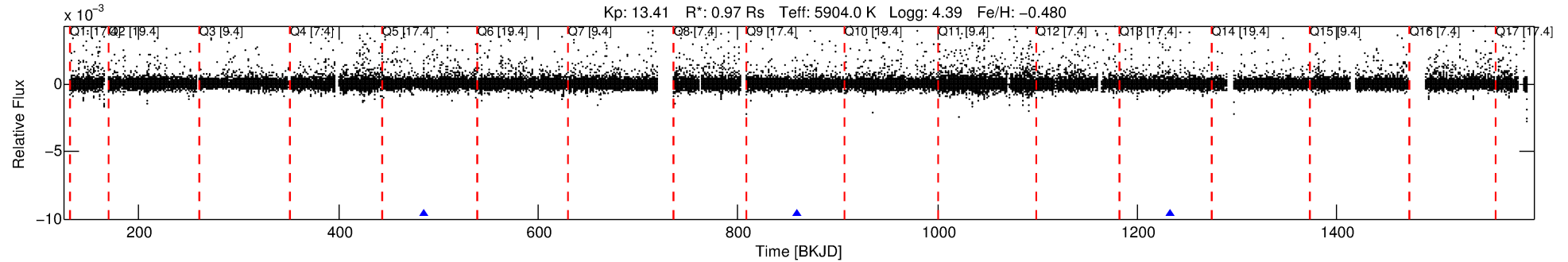
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011244980-02

No Significant Match Found

# DV One-Page Summary

KIC: 11244980 Candidate: 2 of 6 Period: 373.961 d



## TPS TCE Results:

Period = 373.96139 d  
Epoch = 484.6574 BKJD

**DV fit results are unavailable**

## DV Diagnostic Results:

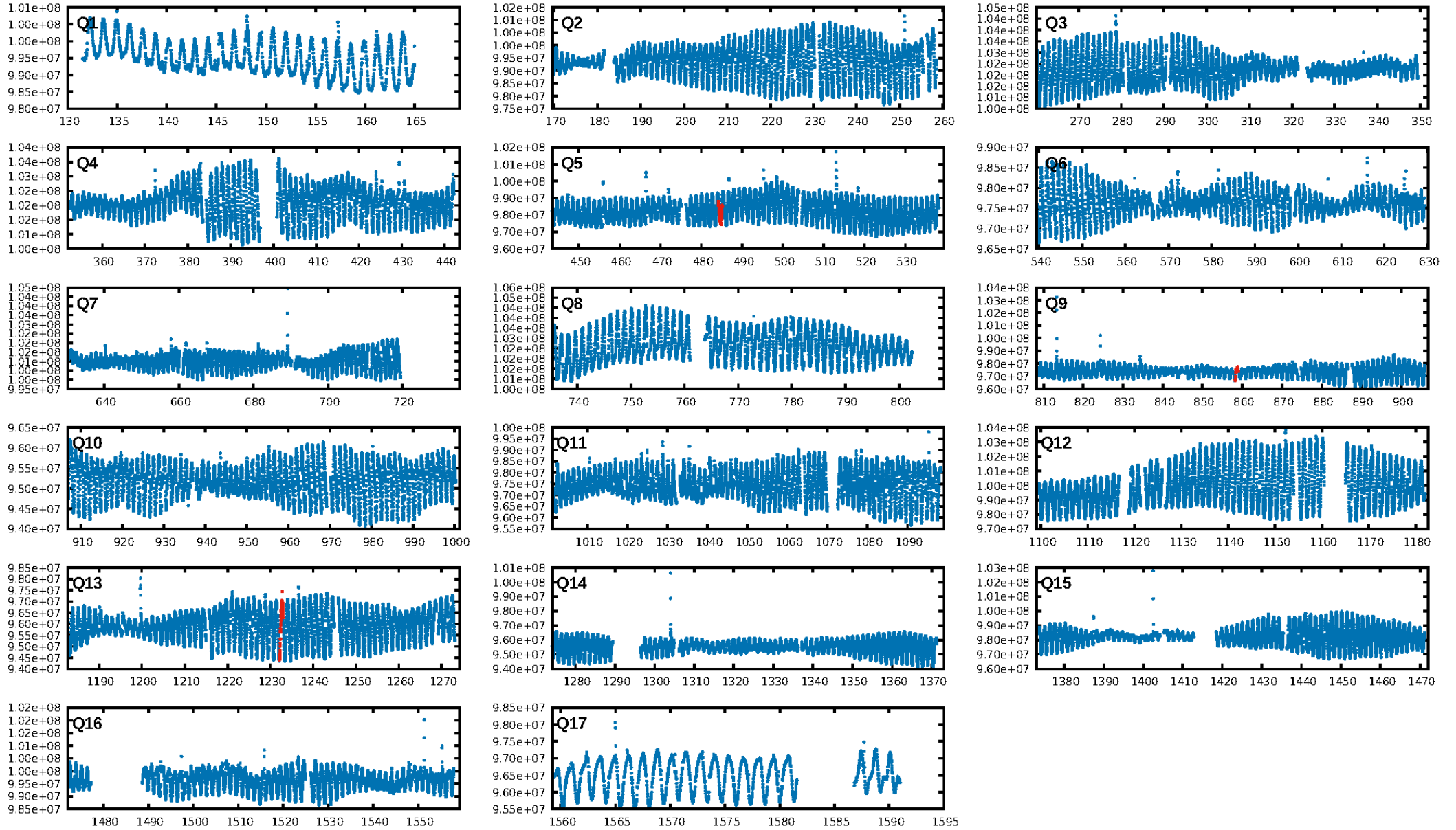
ShortPeriod-sig: 100.0% [12.89σ]  
LongPeriod-sig: 100.0% [293.30σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: -1.834**

Centroid-sig: 55.7%  
Centroid-so: 71.892 arcsec [0.59σ]  
OotOffset-rm: 0.395 arcsec [1.19σ]  
KicOffset-rm: 0.407 arcsec [2.09σ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [2/2]

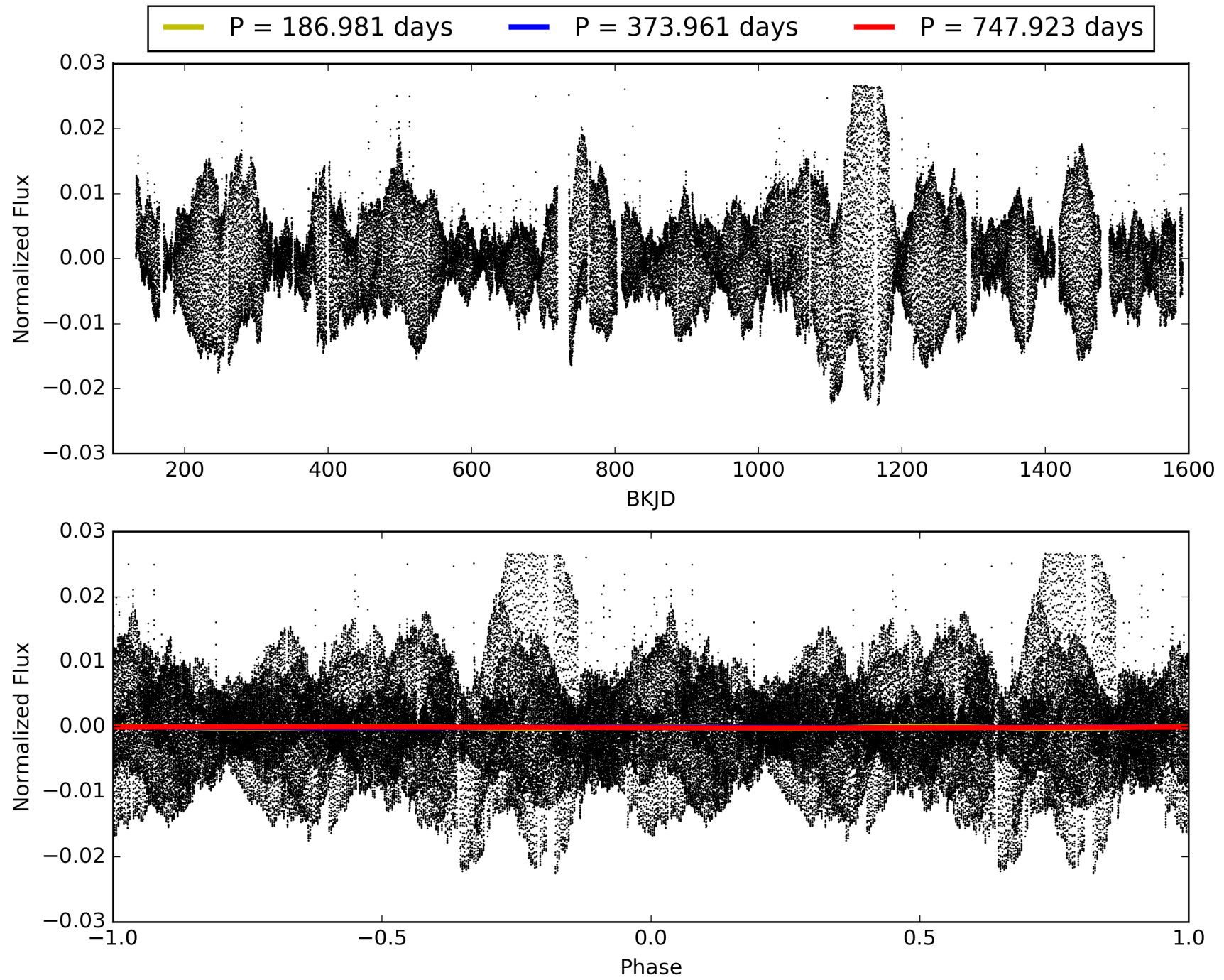
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:42 Z

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

# TCE 011244980-02, PDC Light Curves



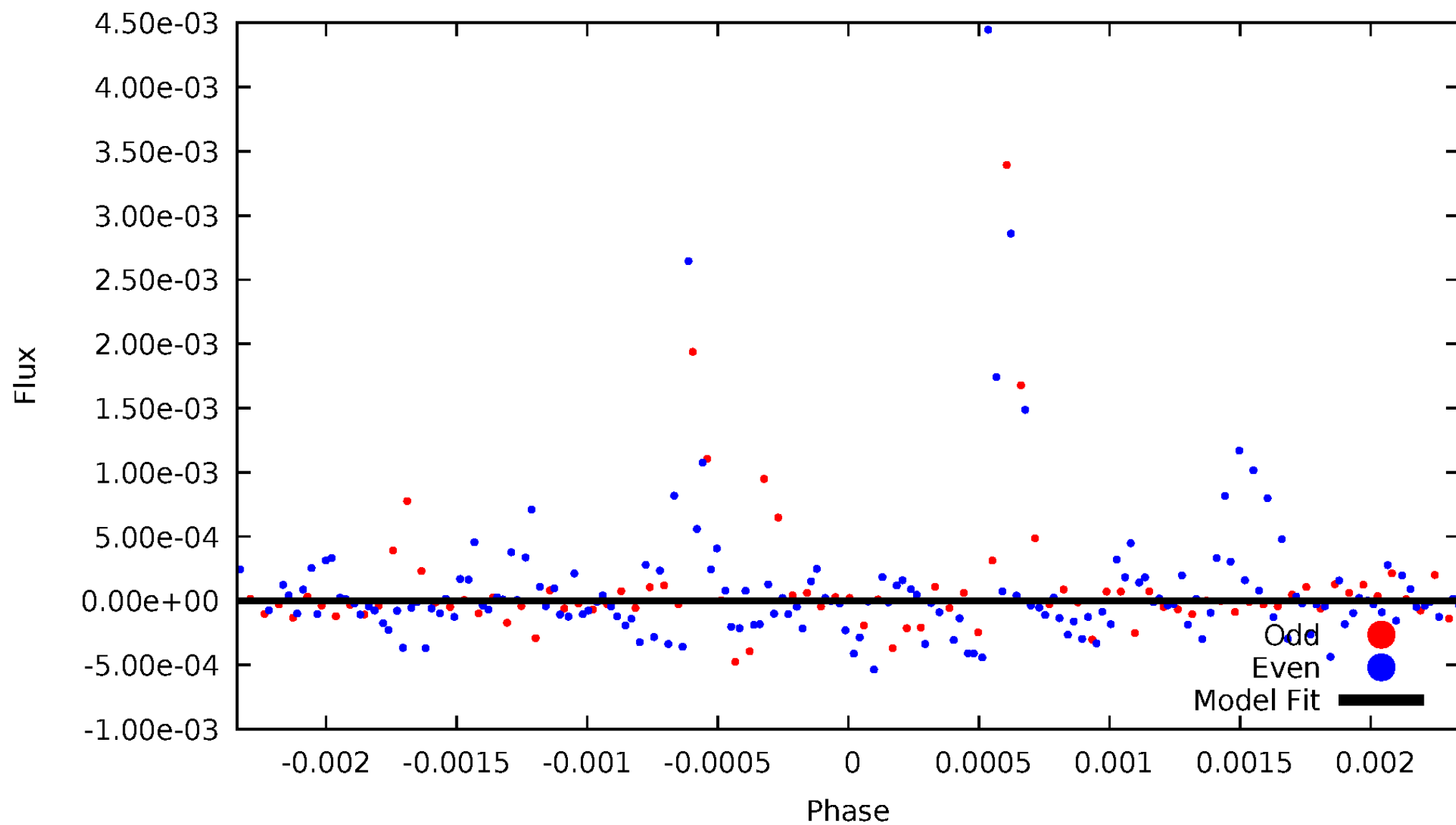
TCE 011244980-02





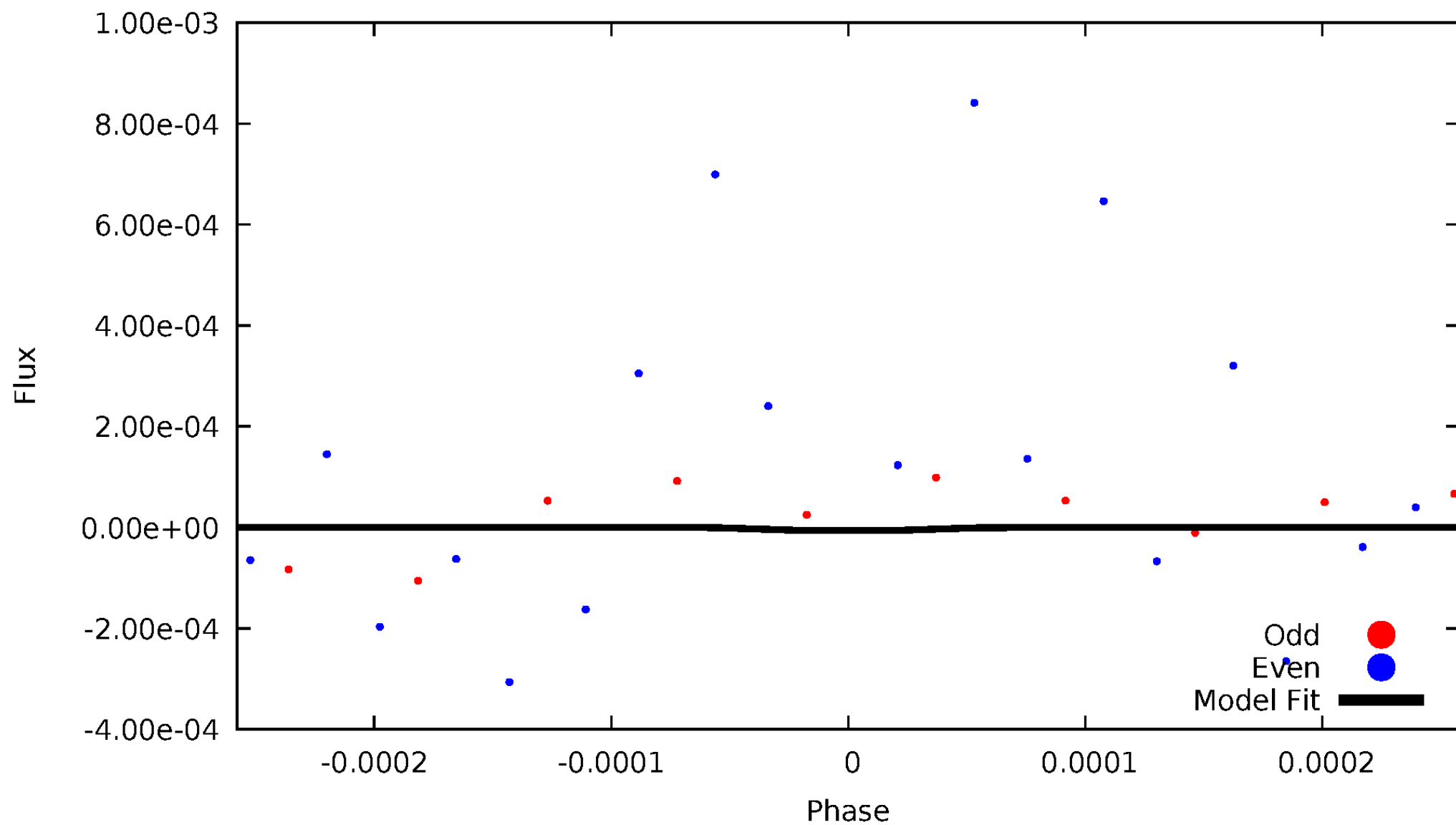
# DV Odd/Even

TCE 011244980-02



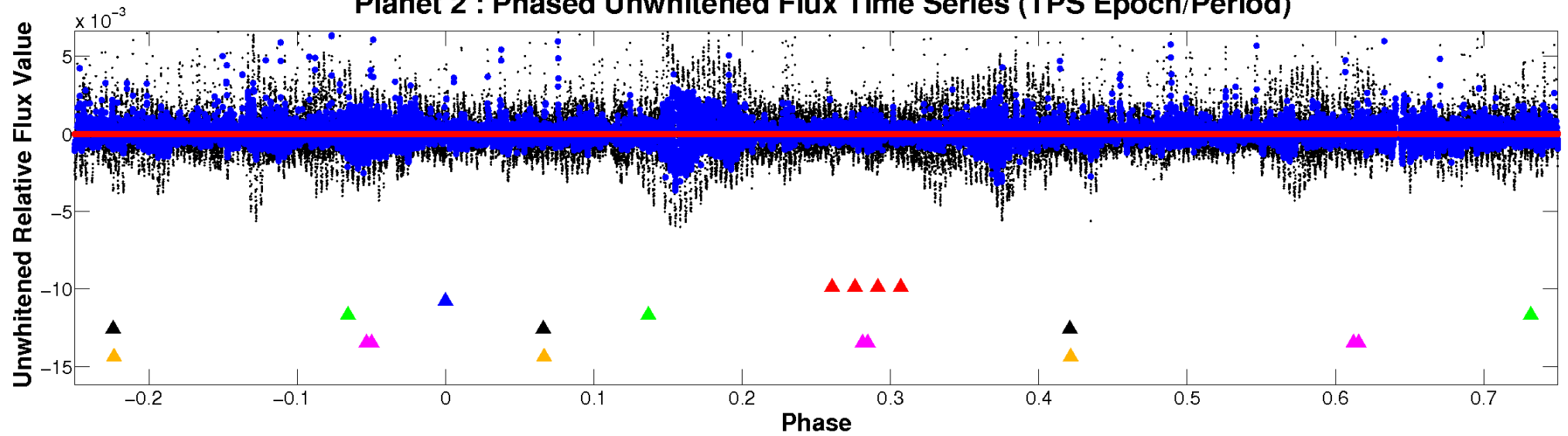
# ALT Odd/Even

TCE 011244980-02



# Non-Whitened Vs. Whitened Light Curve

**Planet 2 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

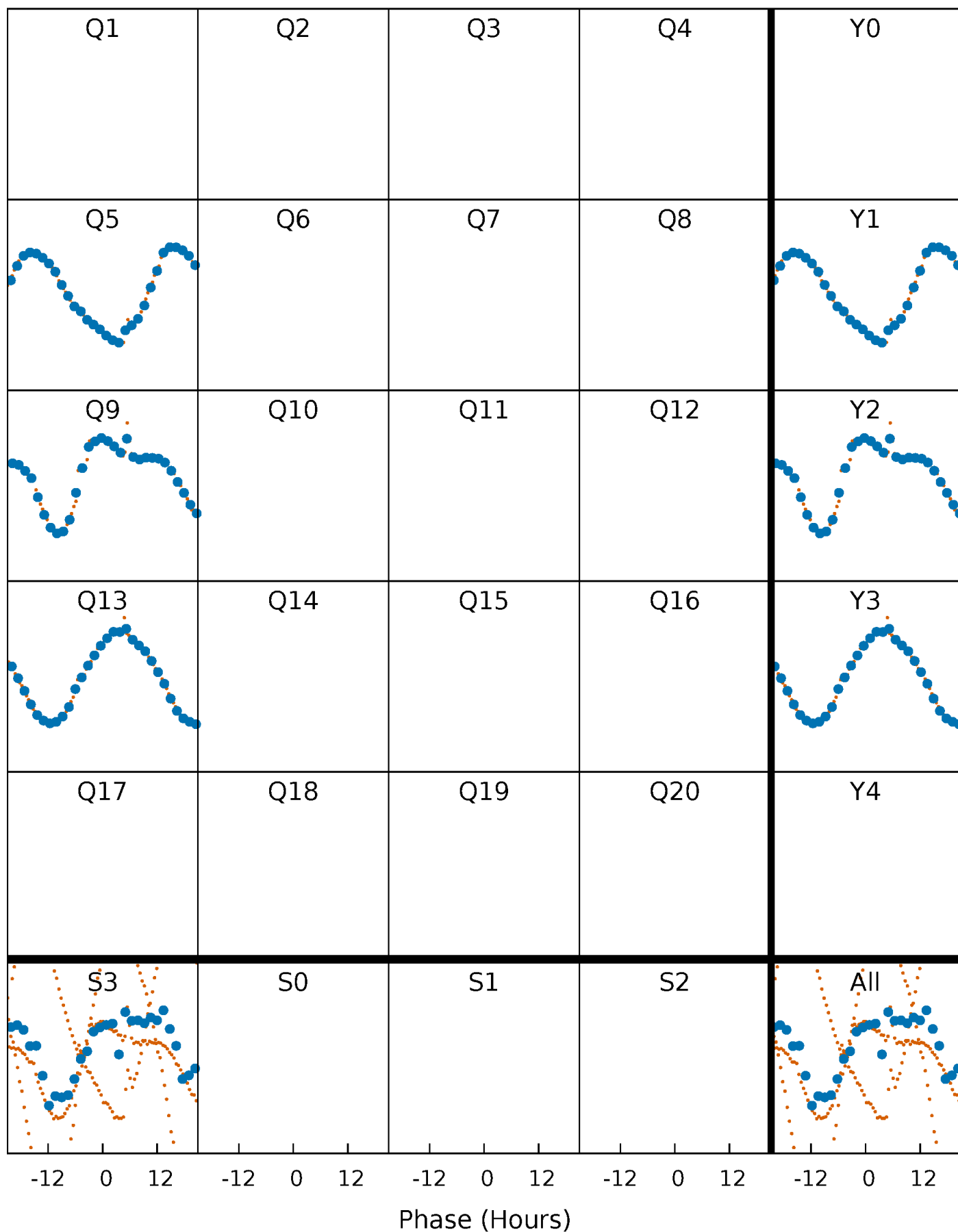


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



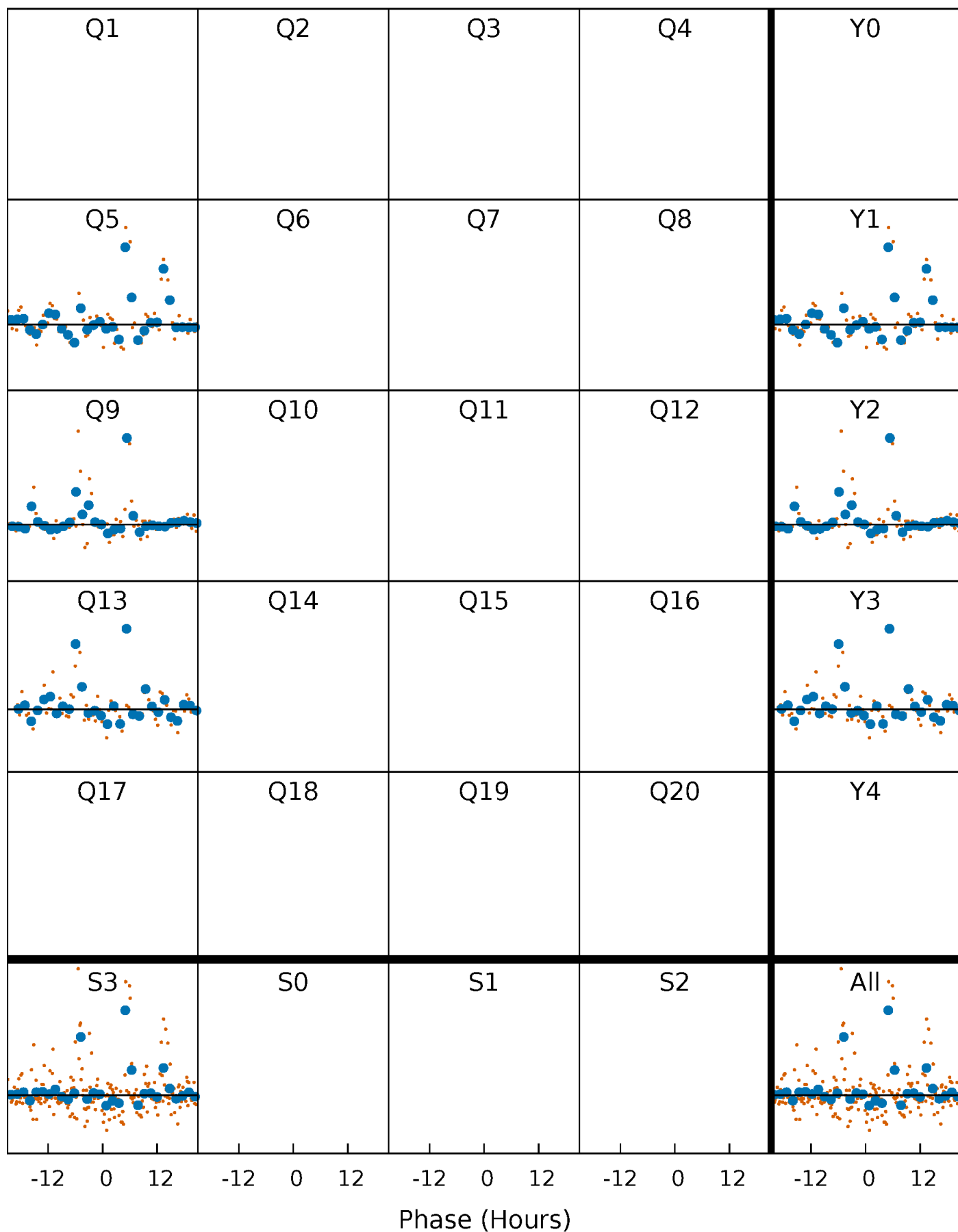
# PDC Quarter-Phased Transit Curves

TCE 011244980-02     $P=373.961393$  Days     $T_0=484.657400$  (BKJD)



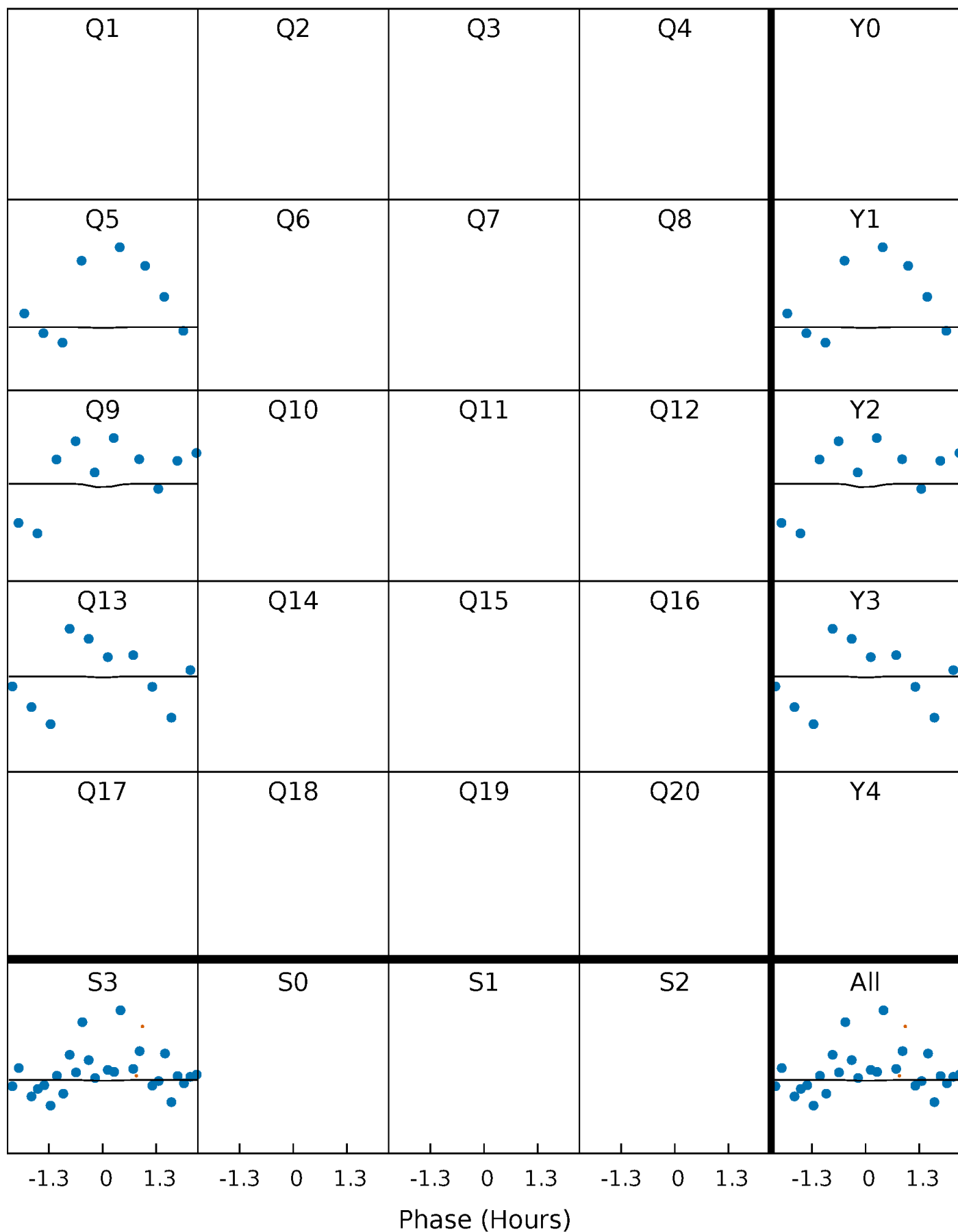
# DV Quarter-Phased Transit Curves

TCE 011244980-02     $P=373.961393$  Days     $T_0=484.657400$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

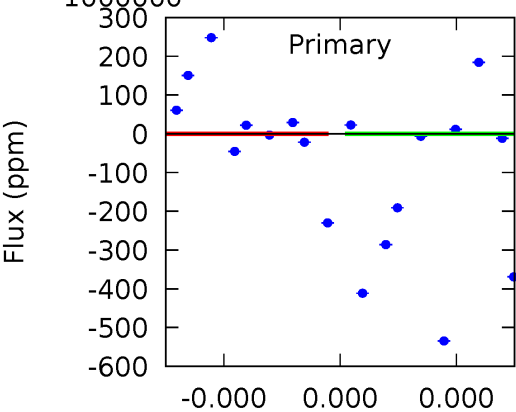
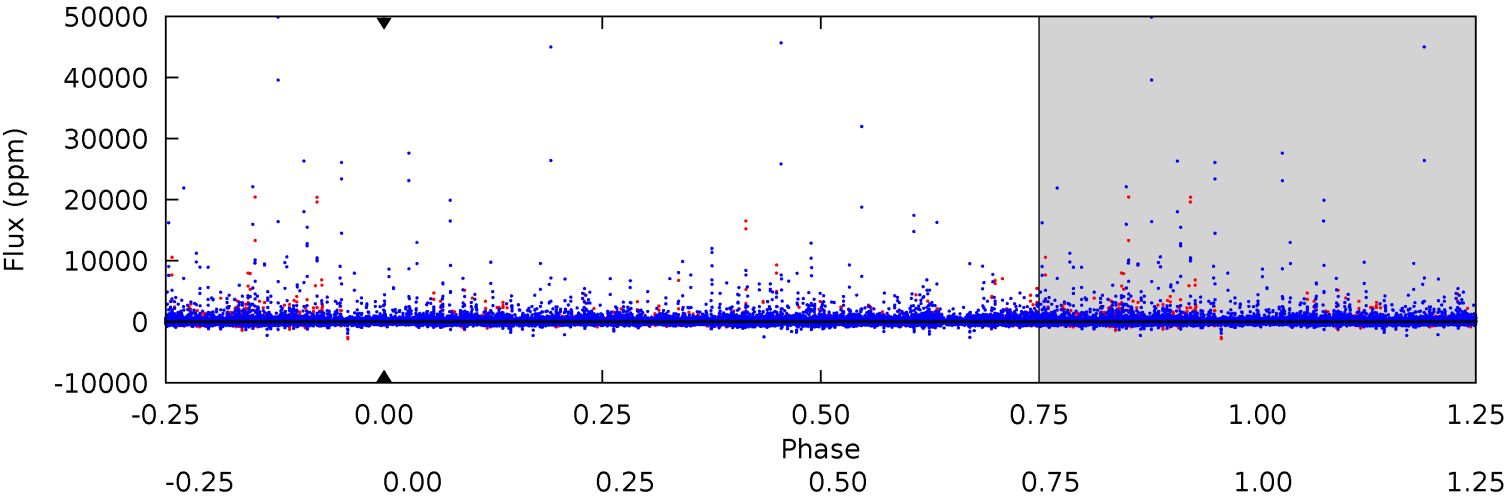
TCE 011244980-02     $P=373.961393$  Days     $T_0=485.217567$  (BKJD)



# DV Model-Shift Uniqueness Test

011244980-02, P = 373.961393 Days, E = 110.696007 Days

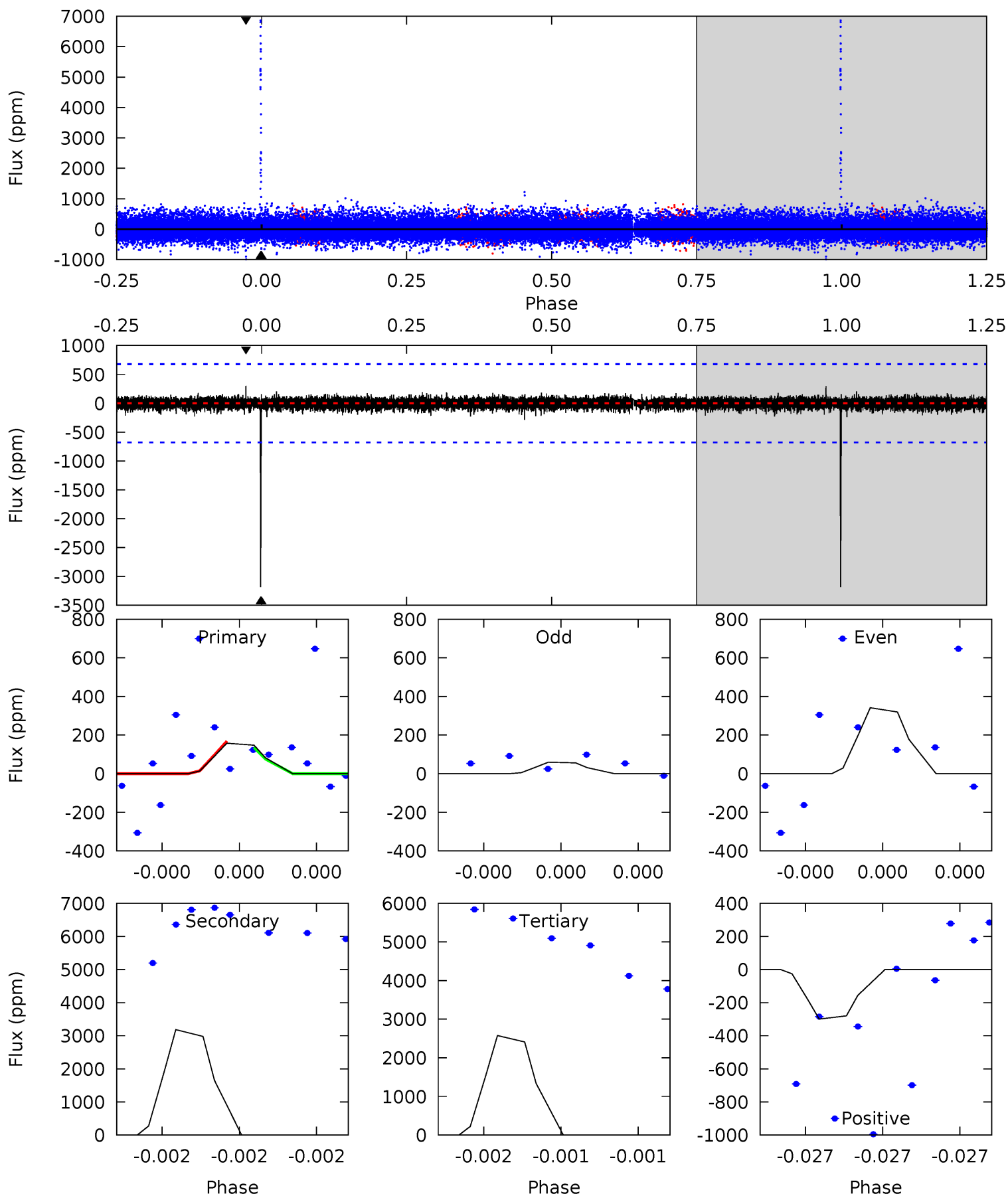
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

011244980-02, P = 373.961393 Days, E = 111.256174 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
1.36	27.4	22.2	2.58	5.83	3.87	0.53	-20.8	-1.22	5.24	24.8	1.37	9.15	0.09	0.13





### Stellar Parameters For KIC 011244980

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5904^{+159}_{-159}$	$4.386^{+0.149}_{-0.182}$	$-0.480^{+0.300}_{-0.300}$	$0.971^{+0.252}_{-0.168}$	$0.837^{+0.114}_{-0.070}$	$1.287^{+0.913}_{-0.617}$
	+3%/-3%	+3%/-4%	+62%/-62%	+26%/-17%	+14%/-8%	+71%/-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 011244980-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$7.97^{+8.50}_{-5.30}$	$367^{+25}_{-22}$	$-3705^{+24778}_{-15979}$	$-4140.649^{+1304234.945}_{-1281193.603}$
Alt.	$-3184 \pm 116$	$7.76^{+7.77}_{-5.45}$	$367^{+25}_{-22}$	$5265^{+5606}_{-1241}$	$27109^{+279804}_{-20230}$

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

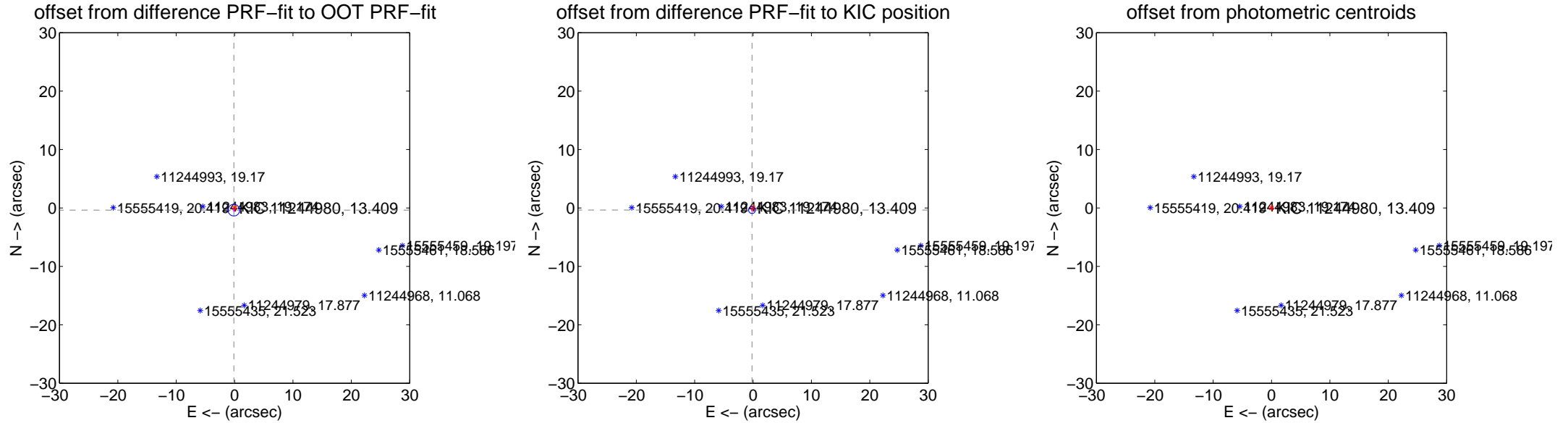
## DV Centroid Data

Supplemental centroid analysis for 011244980-02. Kepler magnitude: 13.41. 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 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.395 \pm 0.333$	1.19	$0.126 \pm 0.154$	$-0.374 \pm 0.305$
PRF-fit source offset from KIC position	$0.407 \pm 0.195$	2.09	$0.180 \pm 0.093$	$-0.365 \pm 0.185$
photometric centroid source offset	$71.90 \pm 121.64$	0.59	$-32.20 \pm 100.30$	$-64.28 \pm 126.44$

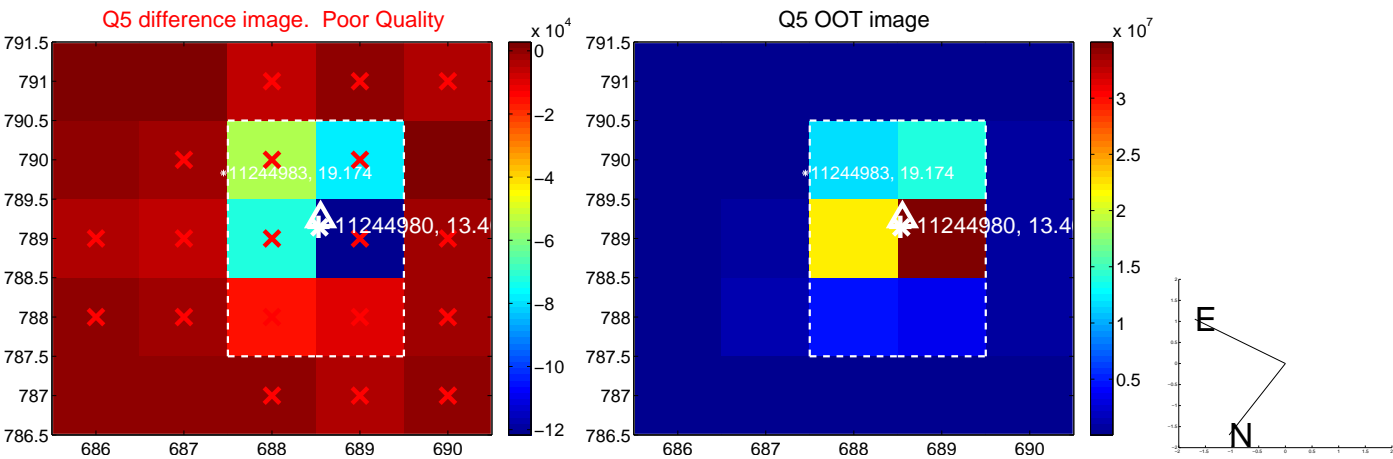


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

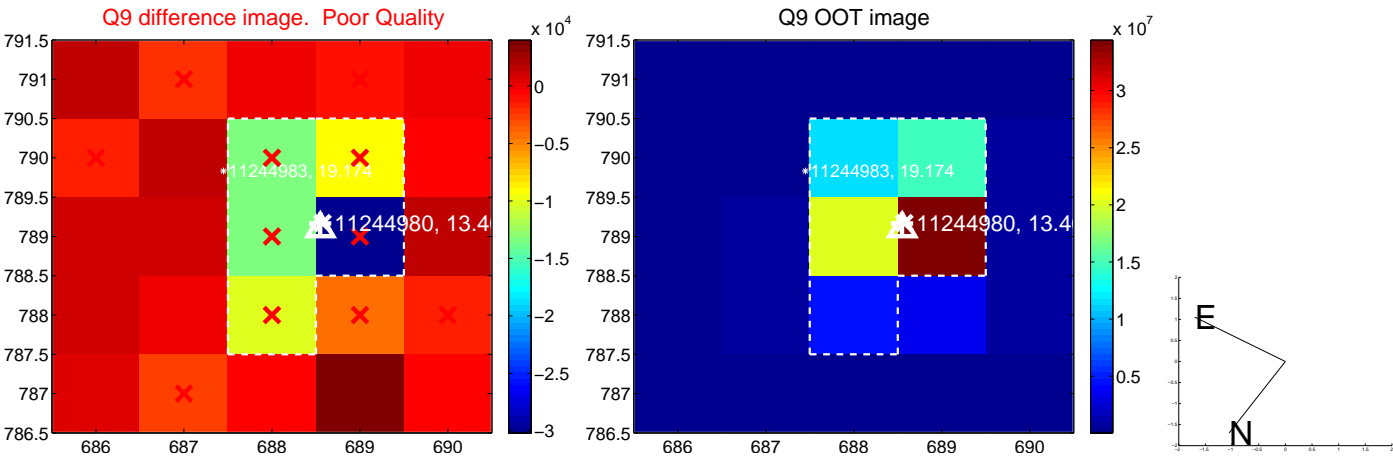
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



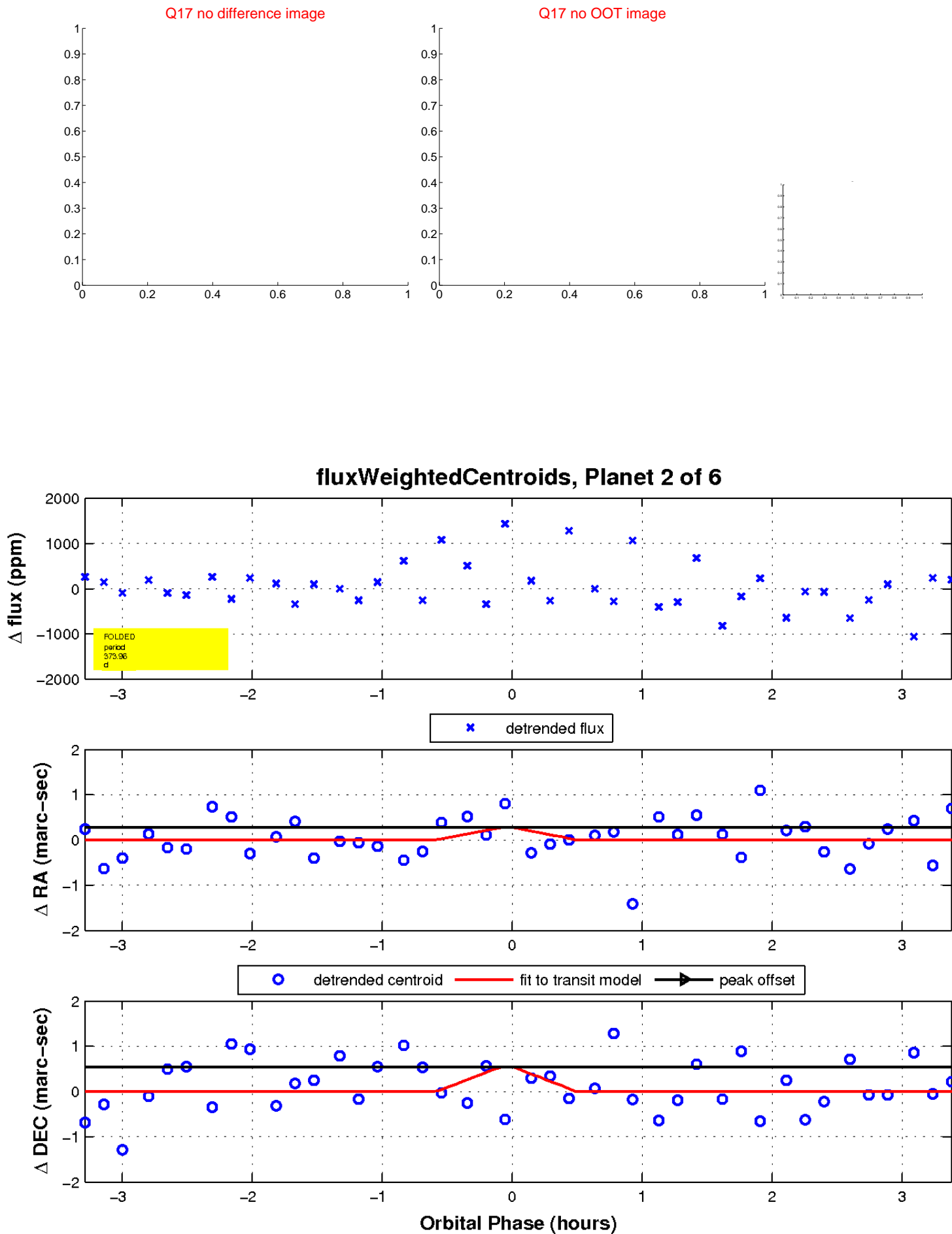
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

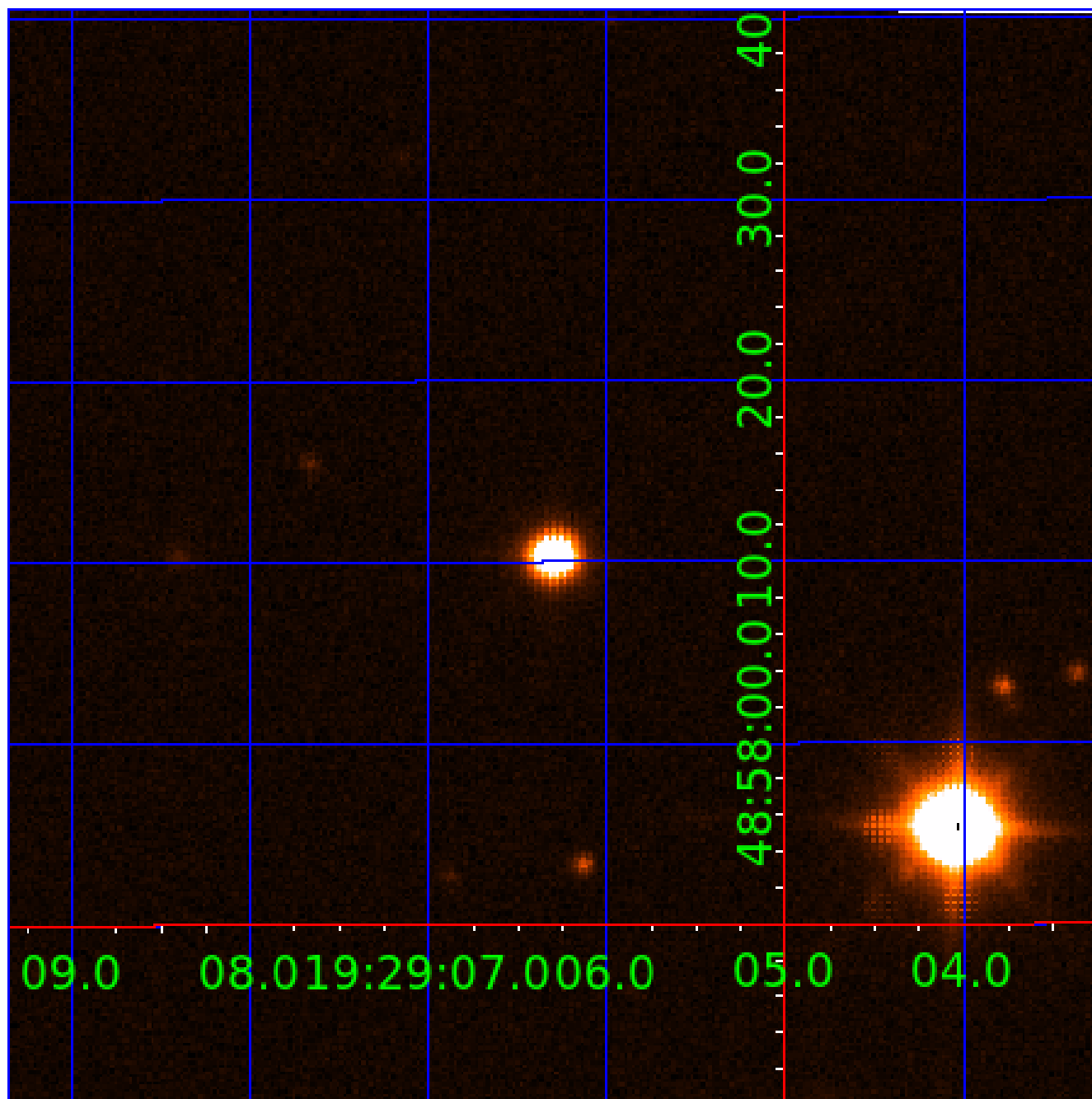


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 011244980

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011244980-01	OBS	No	368.192890	225.488633	667.6	2.244	18.3	5.3	0.97	5904	2.51	1.14
011244980-02	OBS	No	373.961393	484.657400	358.3	10.500	14.1	-1.0	0.97	5904	1.84	1.12
011244980-03	OBS	No	672.180612	161.862002	1546.0	11.731	14.1	6.4	0.97	5904	3.81	0.51
011244980-04	OBS	No	506.716437	509.320232	360.1	2.784	14.4	2.2	0.97	5904	2.17	0.75
011244980-05	OBS	No	248.870561	217.173307	847.5	4.117	11.2	7.1	0.97	5904	3.48	1.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244980-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
011244980-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

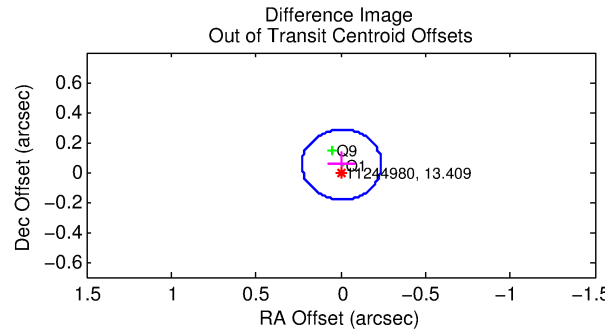
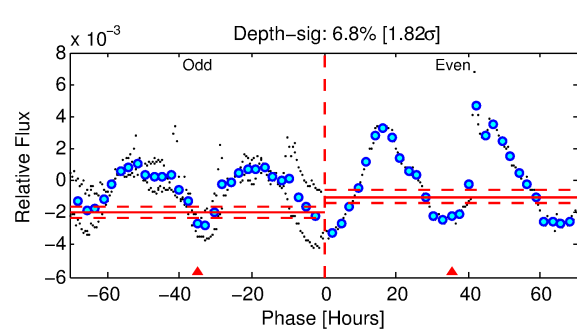
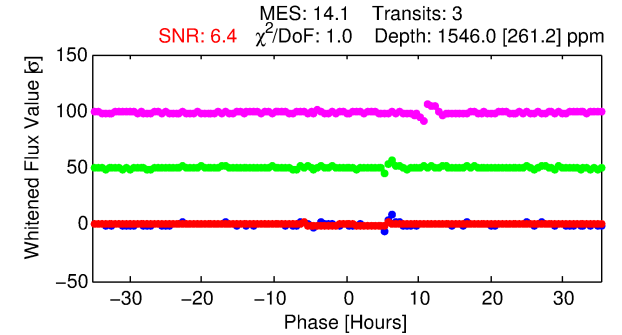
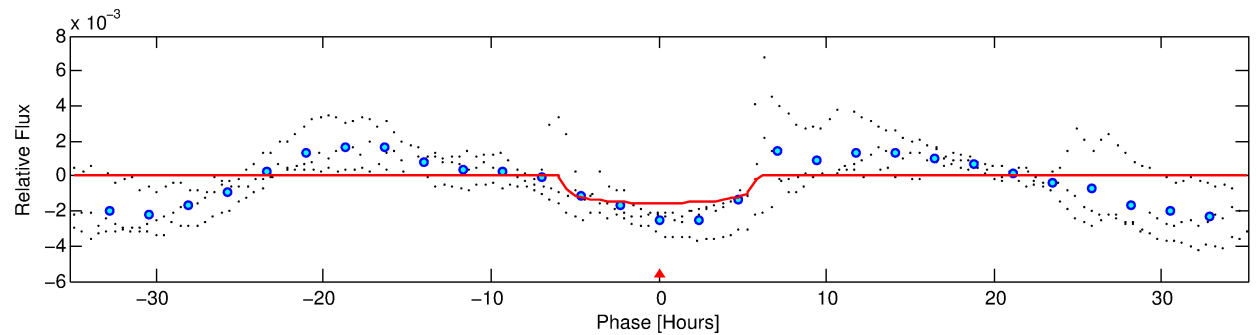
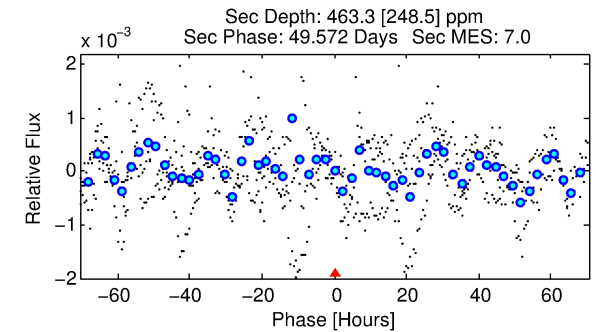
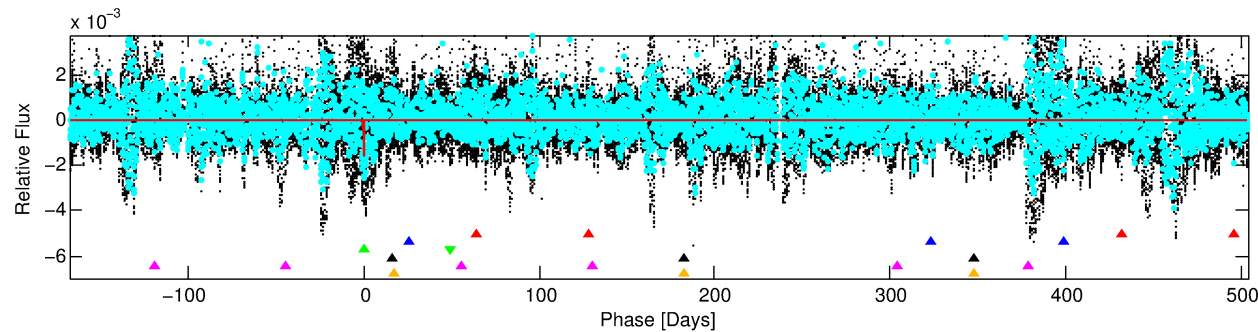
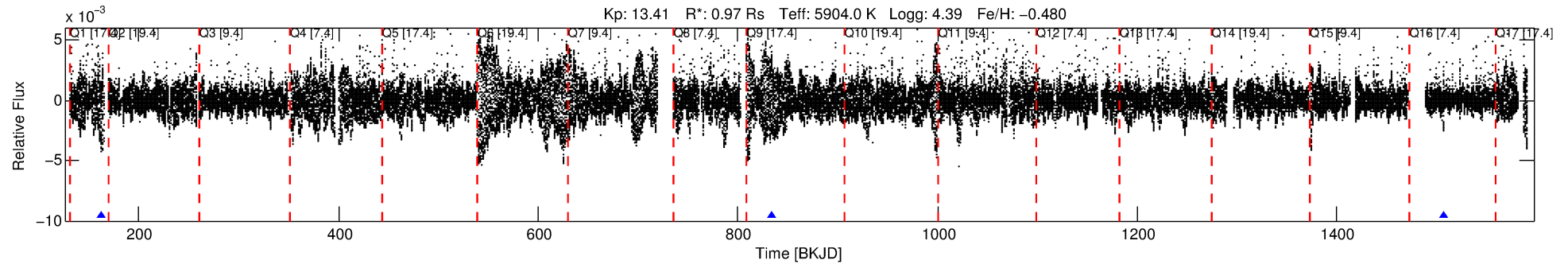
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011244980-03

No Significant Match Found

# DV One-Page Summary

KIC: 11244980 Candidate: 3 of 6 Period: 672.181 d



## DV Fit Results:

Period = 672.18061 [0.00401] d  
Epoch = 161.8620 [0.0049] BKJD  
Rp/R\* = 0.0360 [0.0089]  
a/R\* = 453.46 [447.96]  
b = 0.00 [386.98]  
Seff = 0.51 [0.18]  
Teq = 216 [19] K  
Rp = 3.81 [1.37] Re  
a = 1.4153 [0.3147] AU  
Ag = 35176.82 [28153.85] [1.25 $\sigma$ ]  
Teffp = 4568 [842] K [5.17 $\sigma$ ]

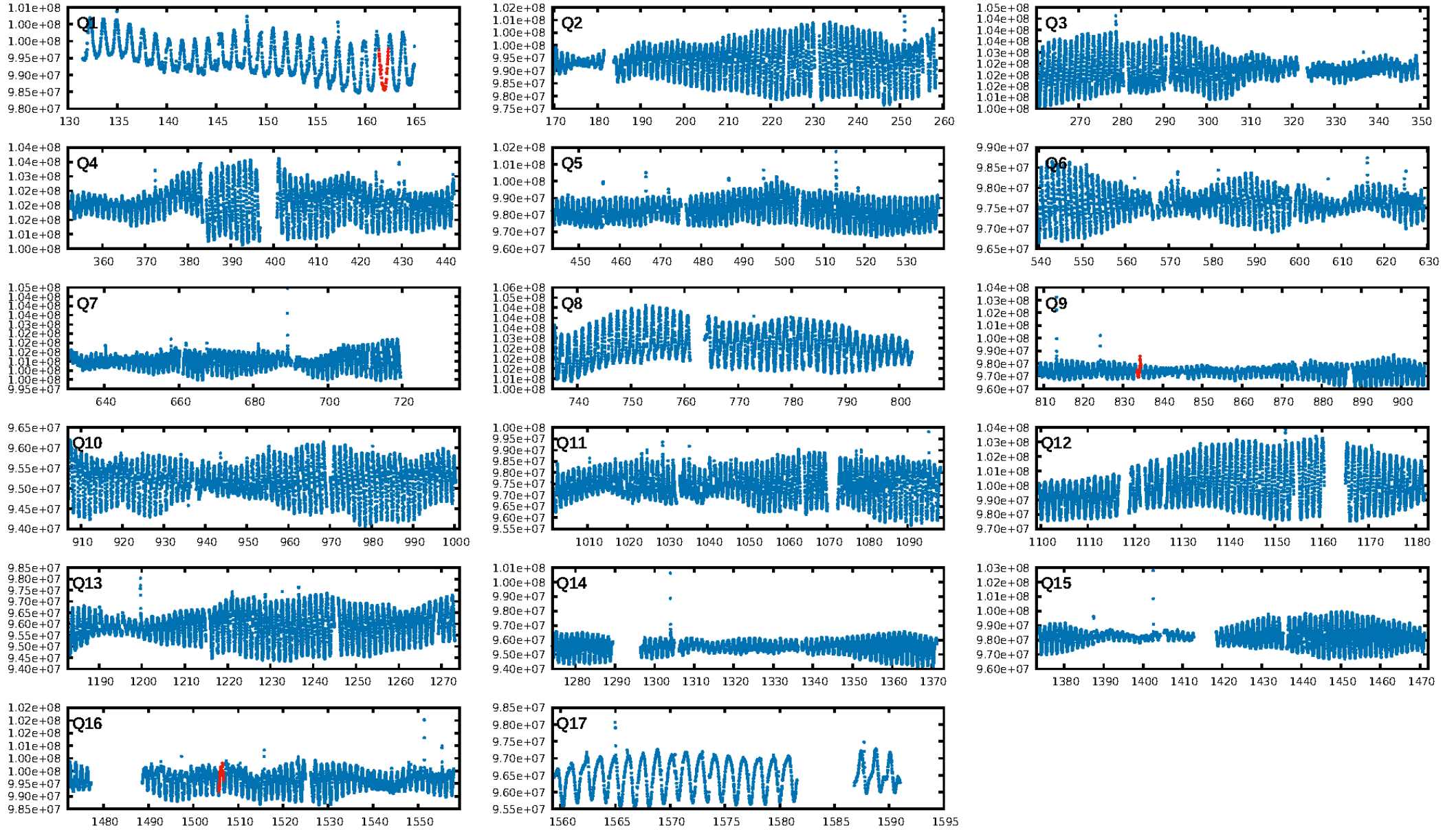
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [324.36 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 39.9%  
ModelChiSquareGof-sig: 99.6%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 1.281  
Centroid-sig: 43.7%  
Centroid-so: 0.201 arcsec [1.52 $\sigma$ ]  
OotOffset-rm: 0.051 arcsec [0.65 $\sigma$ ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-rm: 0.076 arcsec [0.99 $\sigma$ ]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

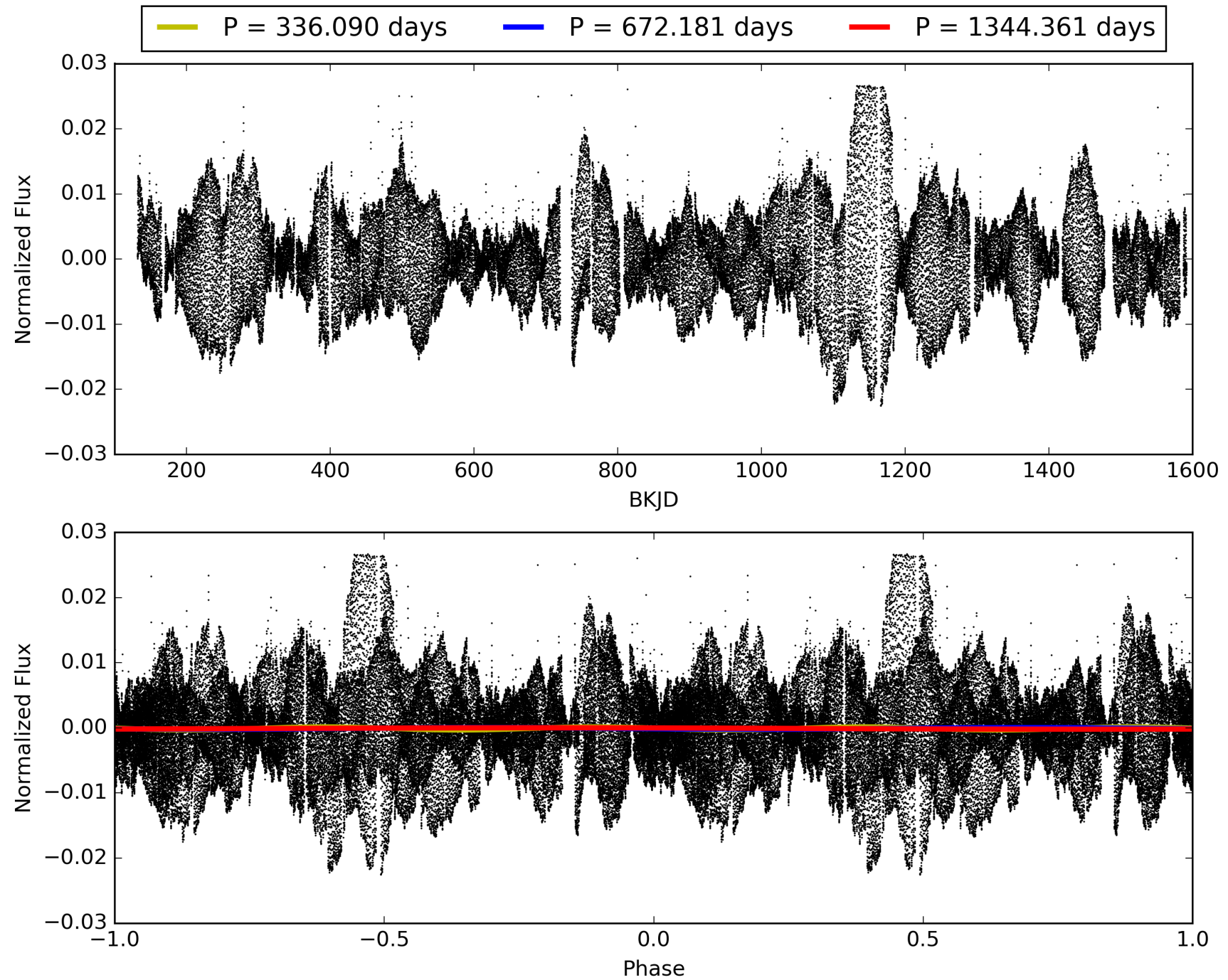
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:55 Z

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

# TCE 011244980-03, PDC Light Curves

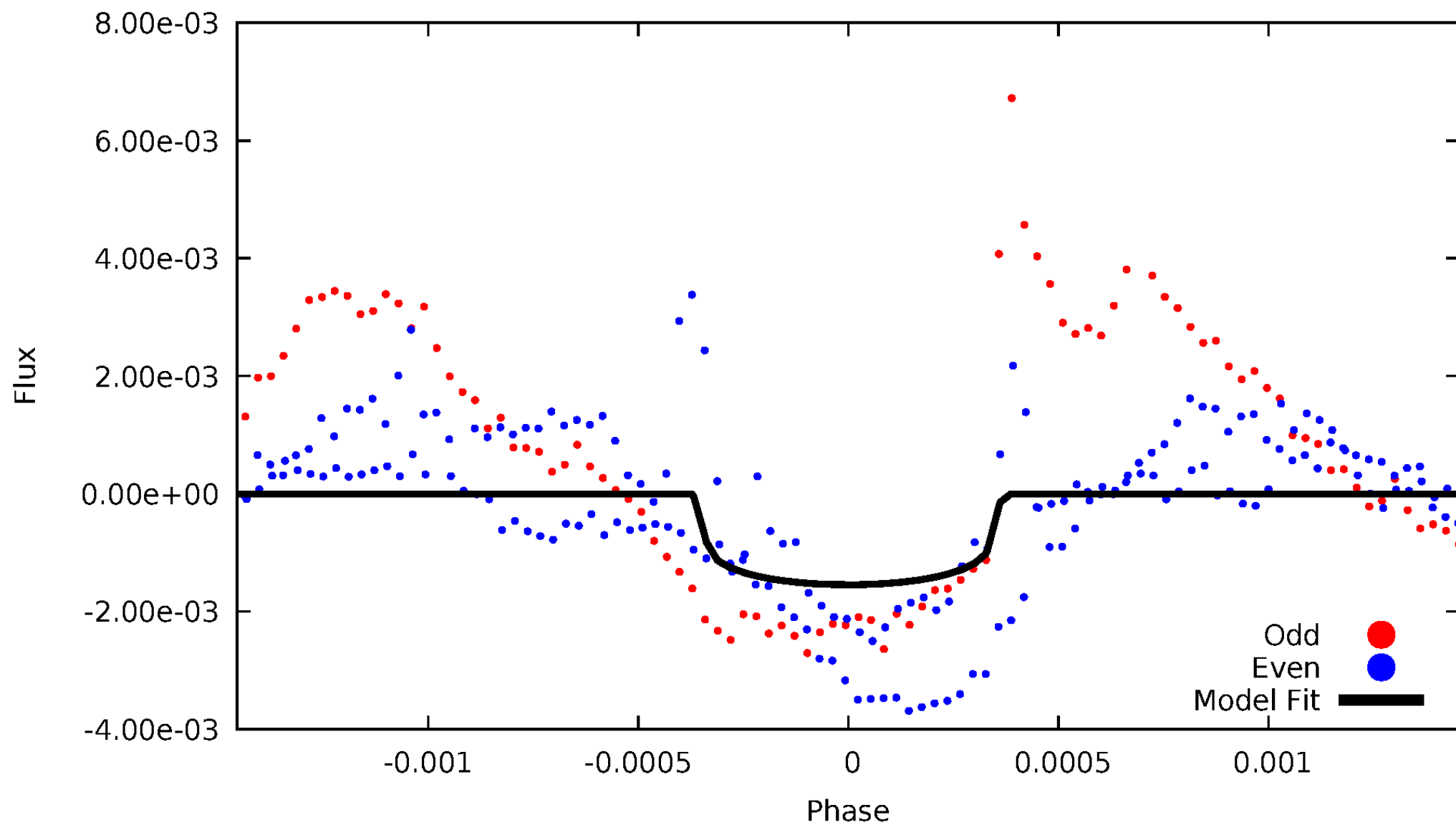


TCE 011244980-03



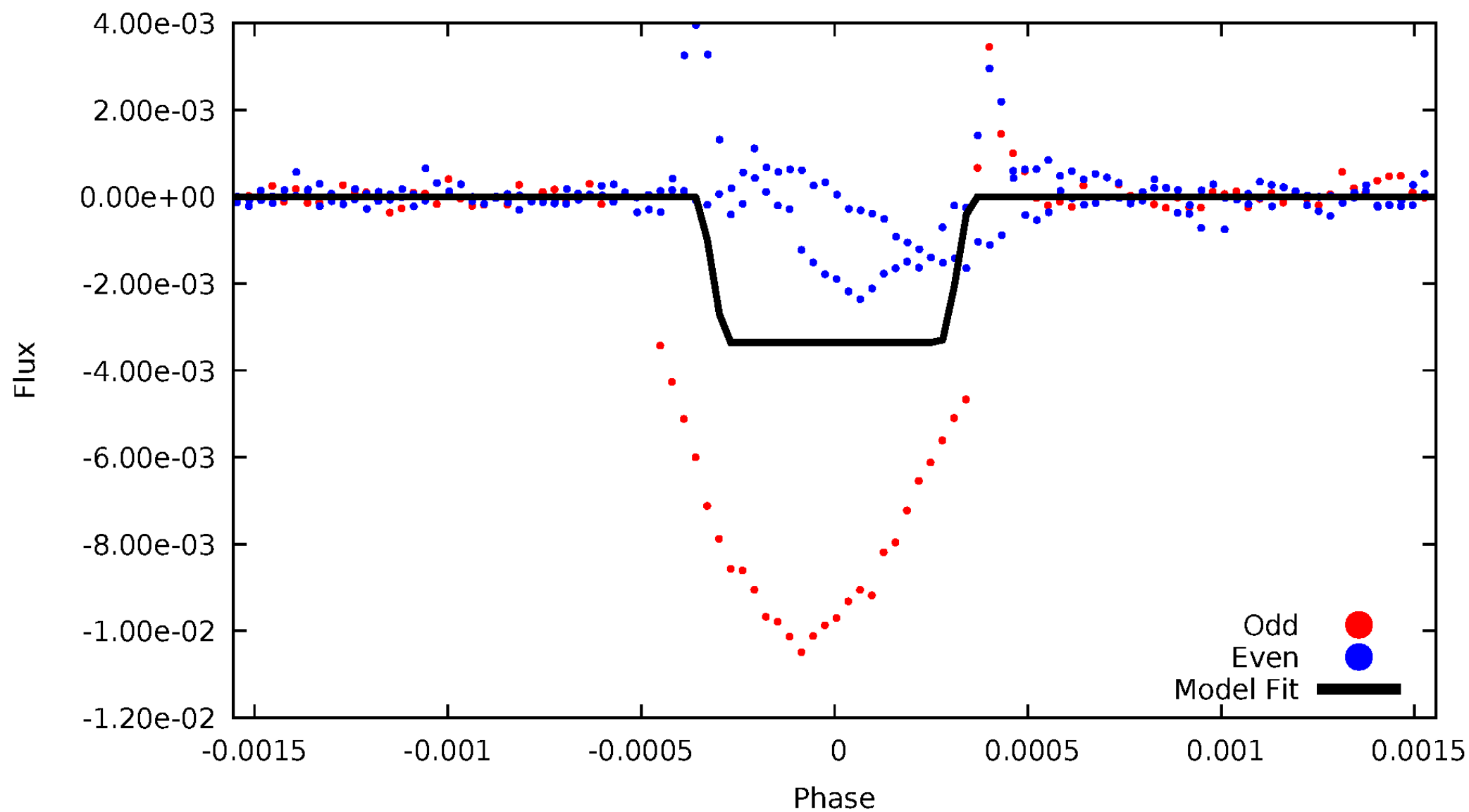
# DV Odd/Even

TCE 011244980-03



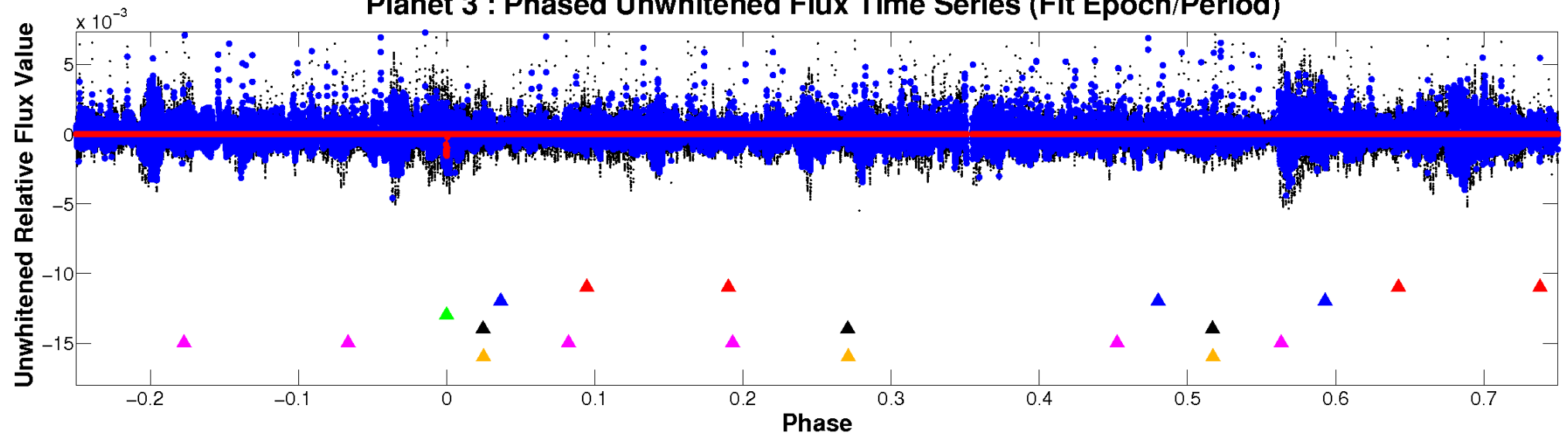
# ALT Odd/Even

TCE 011244980-03

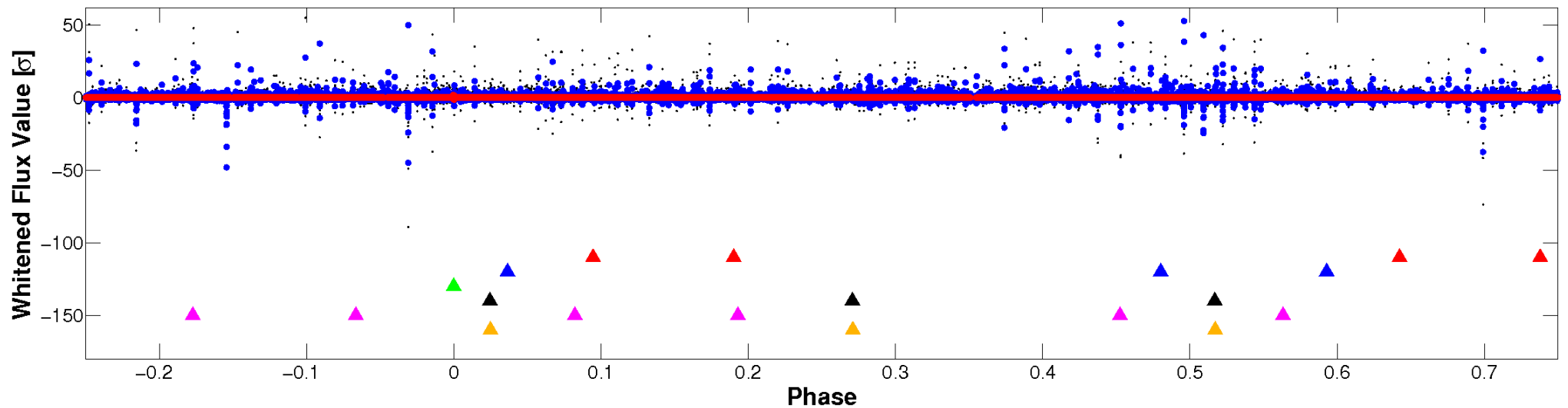


# Non-Whitened Vs. Whitened Light Curve

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

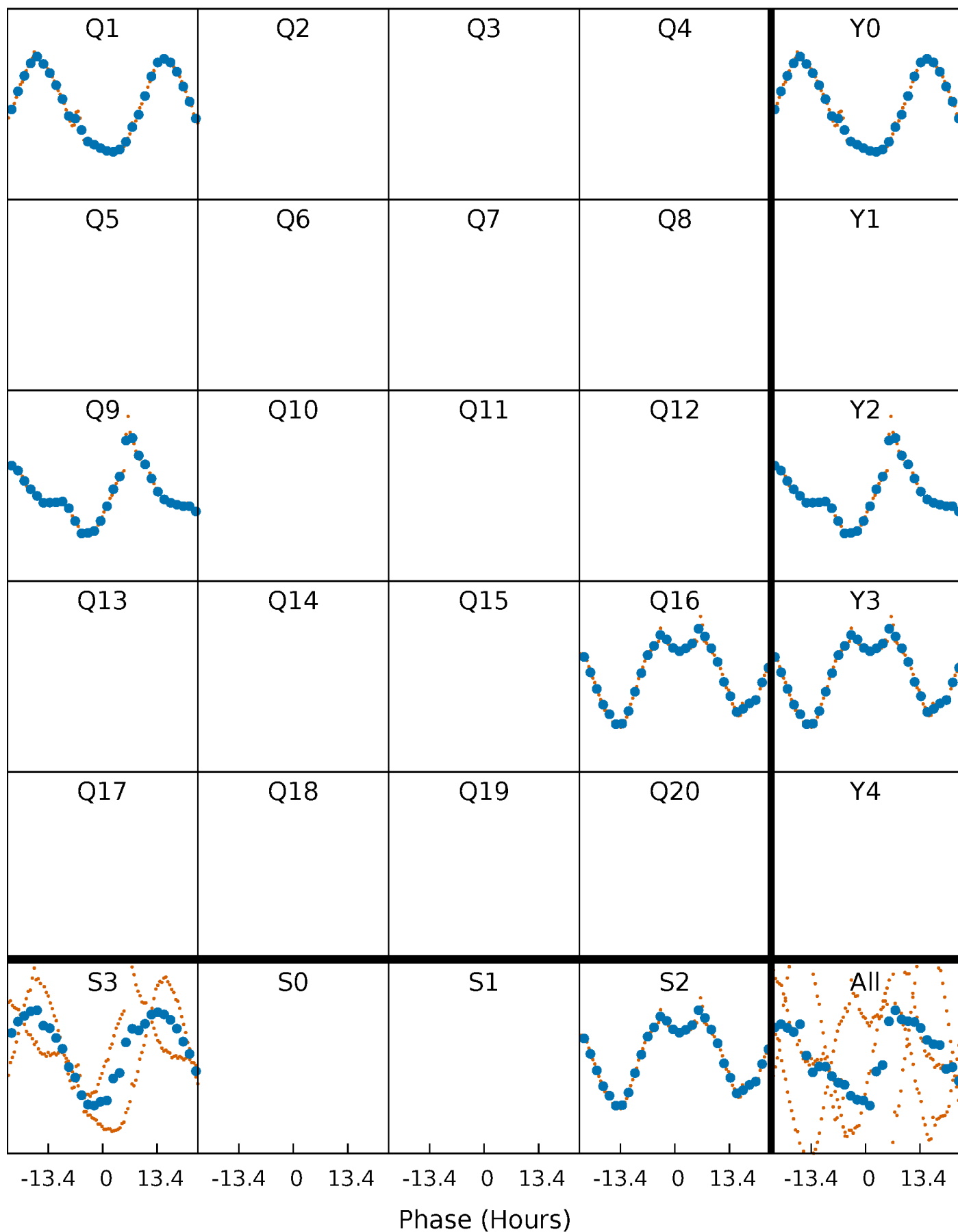


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

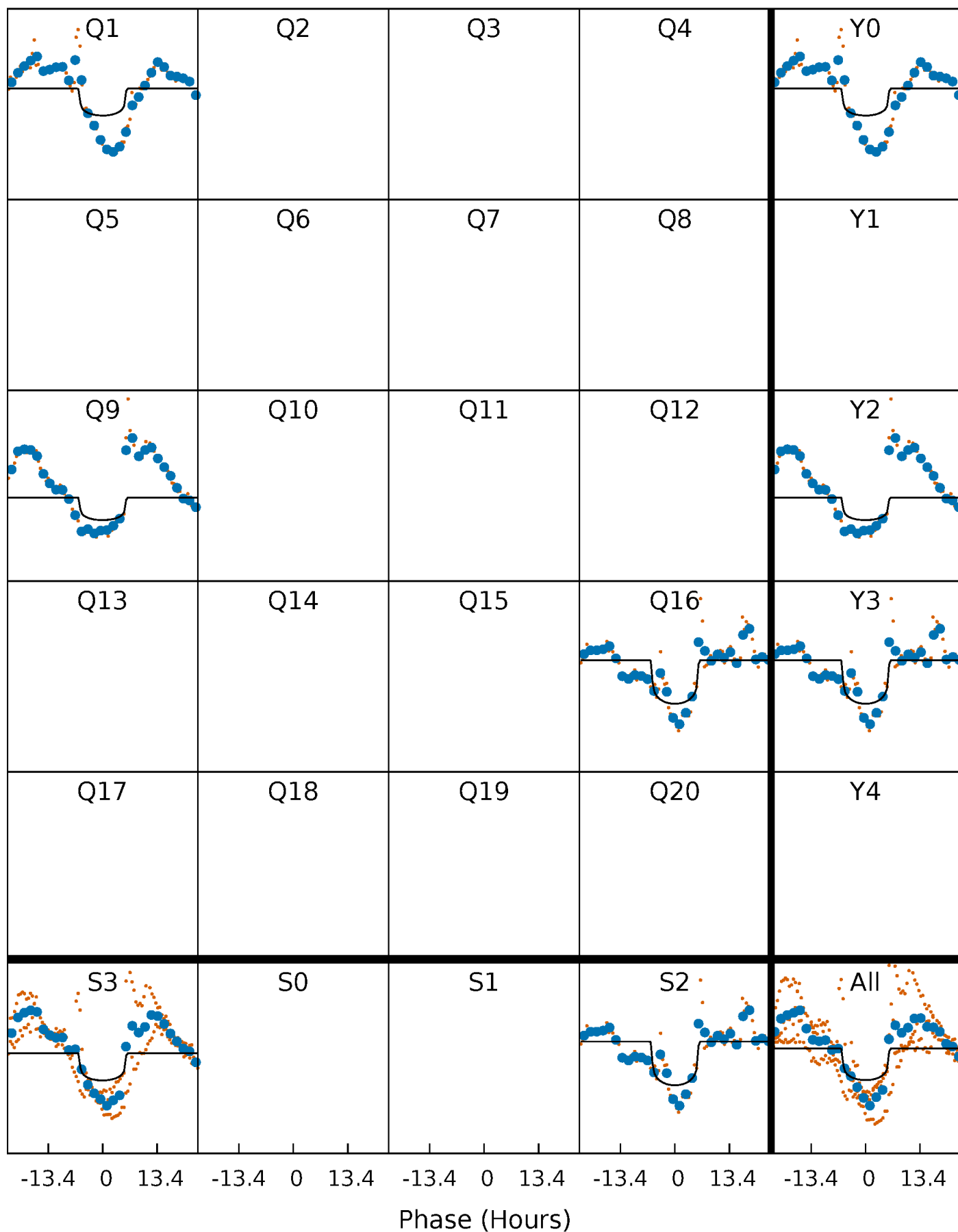
TCE 011244980-03     $P=672.180612$  Days     $T_0=161.862002$  (BKJD)





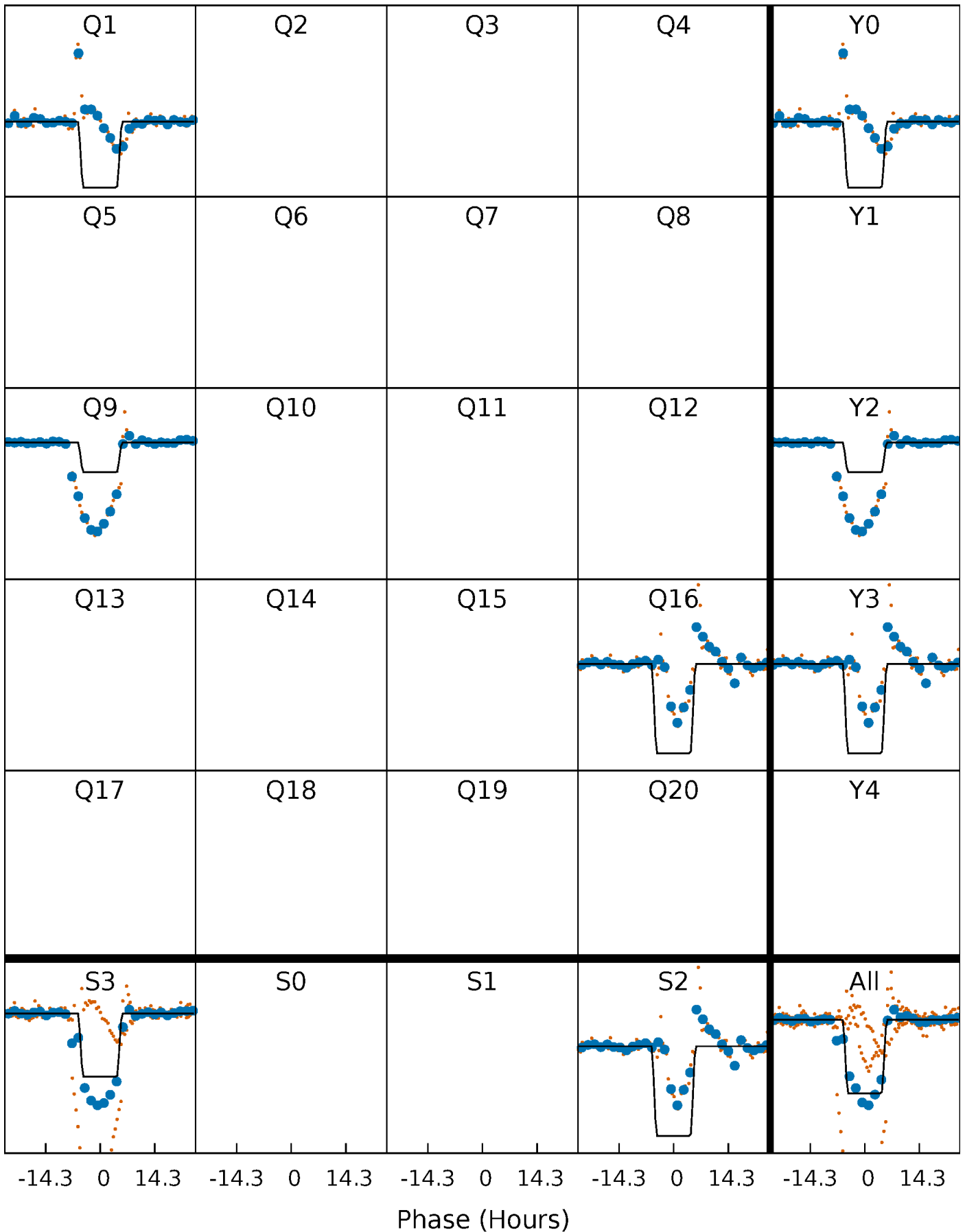
# DV Quarter-Phased Transit Curves

TCE 011244980-03 P=672.180612 Days  $T_0=161.862002$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

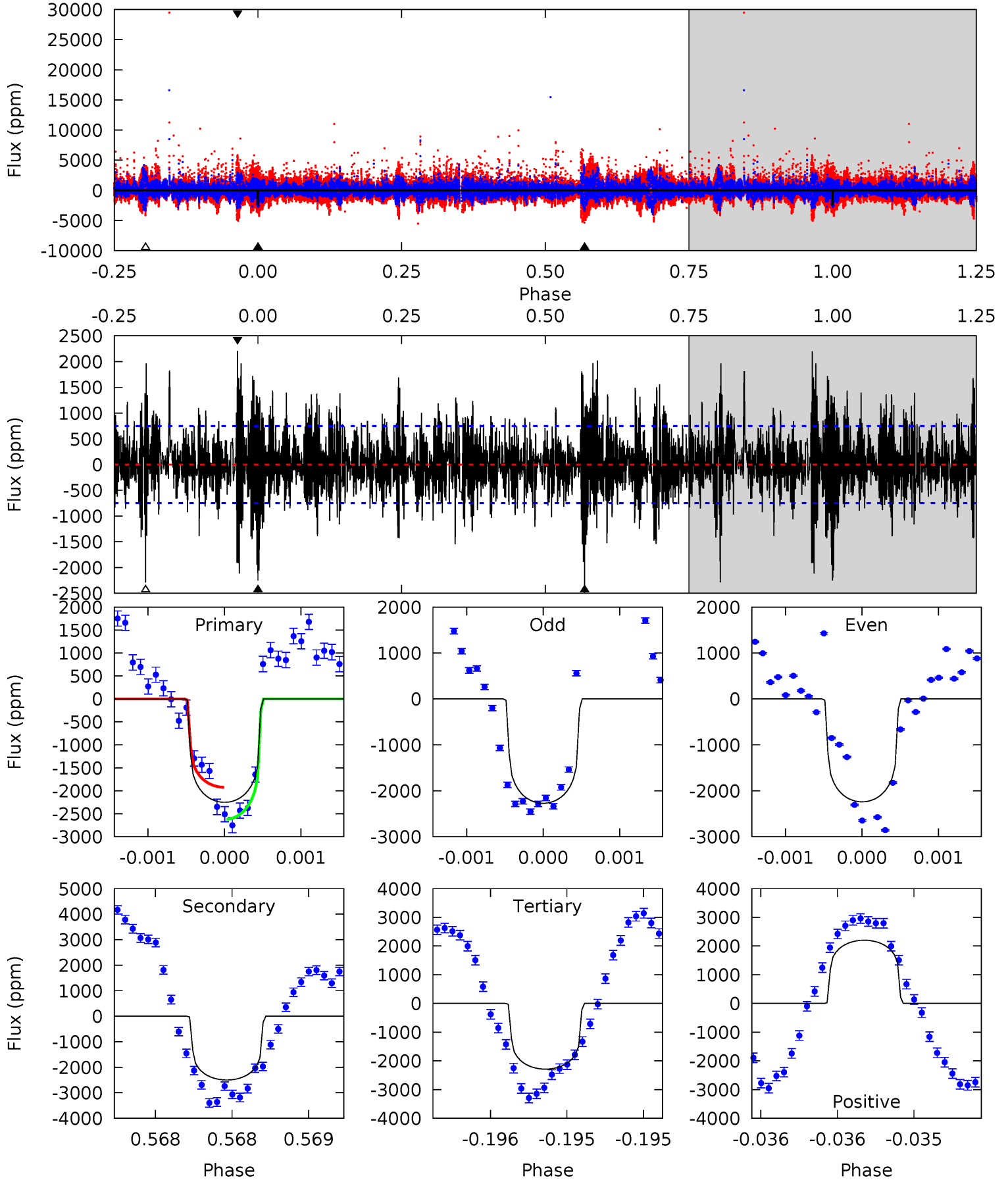
TCE 011244980-03     $P=672.182390$  Days     $T_0=161.852423$  (BKJD)



# DV Model-Shift Uniqueness Test

011244980-03, P = 672.180612 Days, E = 161.862002 Days

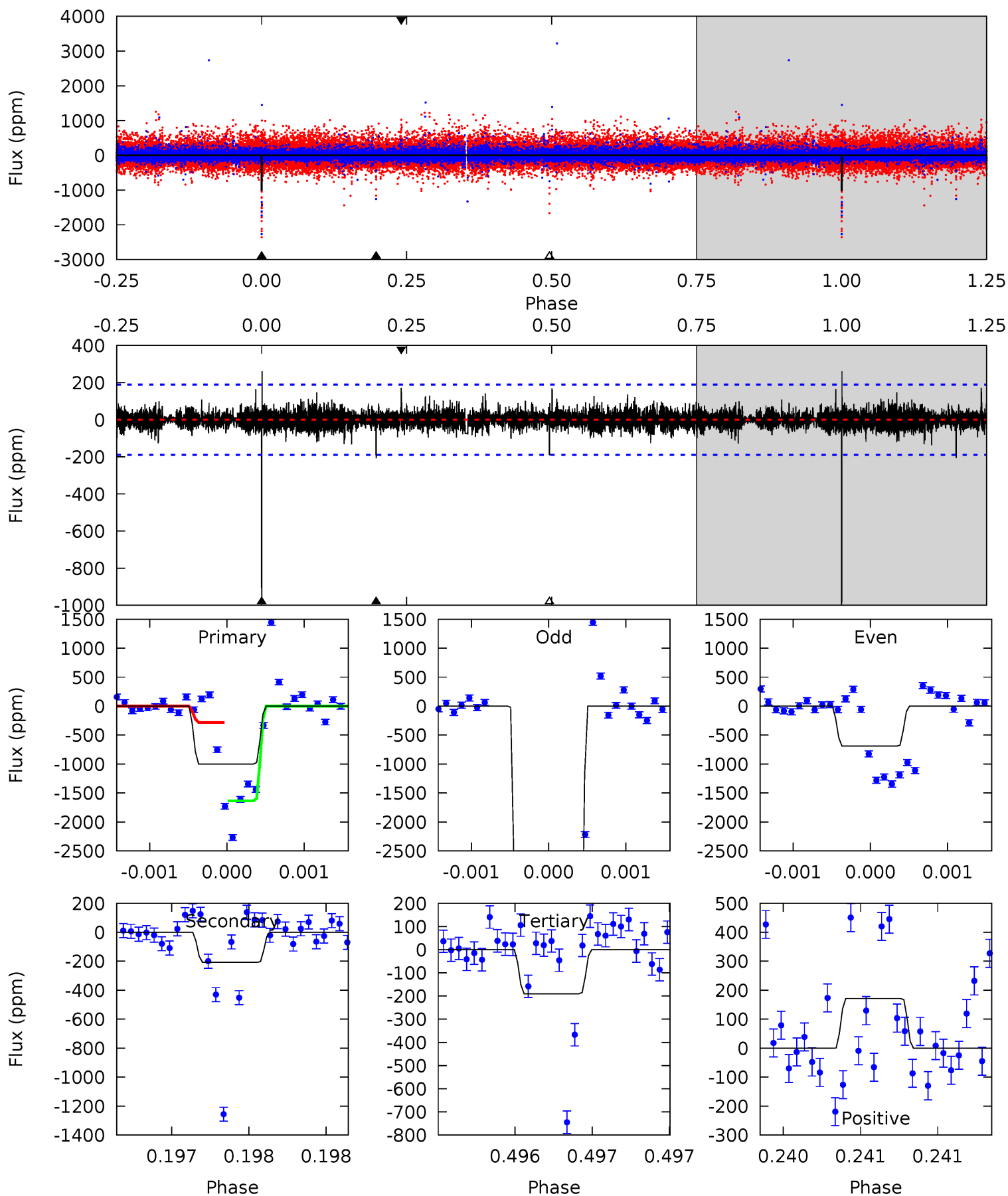
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	18.4	16.8	16.2	5.50	3.37	3.74	-0.26	0.37	1.56	2.19	0.09	0.99	0.47	2.55



# Alt Model-Shift Uniqueness Test

011244980-03, P = 672.182390 Days, E = 161.852423 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
29.1	6.05	5.53	4.99	5.51	3.38	0.91	23.5	24.1	0.51	1.06	143.5	3.09	0.21	0



### Stellar Parameters For KIC 011244980

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5904^{+159}_{-159}$	$4.386^{+0.149}_{-0.182}$	$-0.480^{+0.300}_{-0.300}$	$0.971^{+0.252}_{-0.168}$	$0.837^{+0.114}_{-0.070}$	$1.287^{+0.913}_{-0.617}$
	+3%/-3%	+3%/-4%	+62%/-62%	+26%/-17%	+14%/-8%	+71%/-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 011244980-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-2499 \pm 136$	$3.88^{+1.23}_{-1.05}$	$302^{+22}_{-17}$	$7009^{+1305}_{-831}$	$184645^{+158751}_{-78195}$
Alt.	$-208 \pm 34$	$6.26^{+1.21}_{-1.16}$	$302^{+21}_{-17}$	$3452^{+209}_{-192}$	$5911^{+3343}_{-1852}$

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

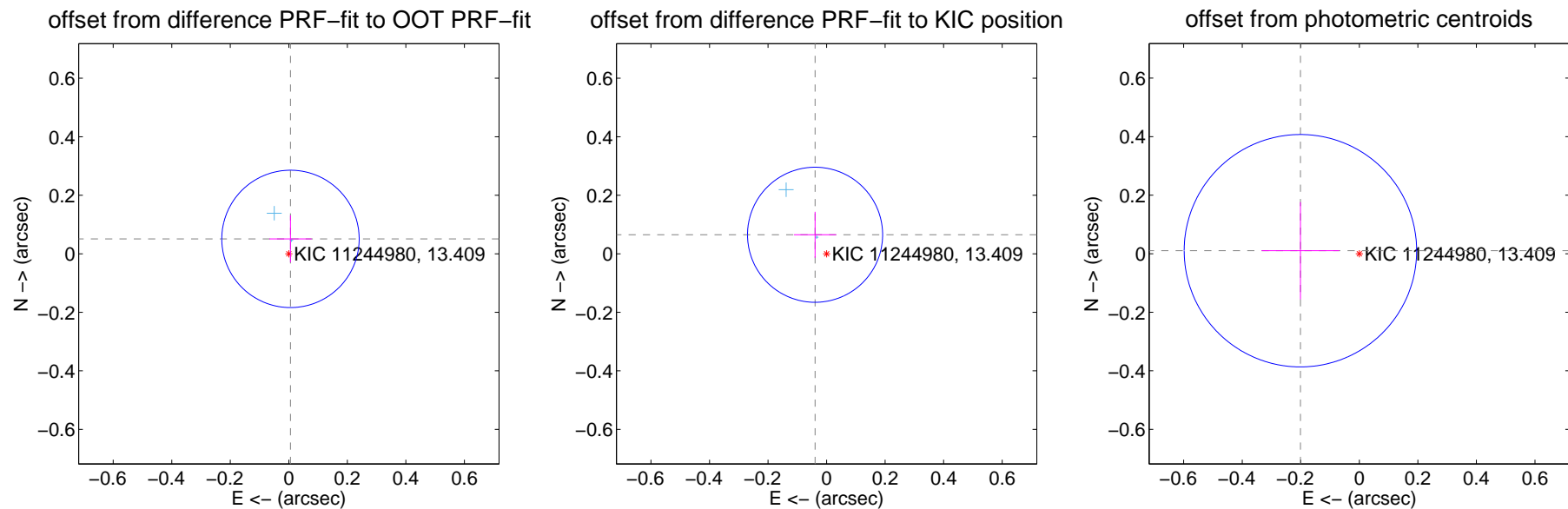
## DV Centroid Data

Supplemental centroid analysis for 011244980-03. Kepler magnitude: 13.41. Transit SNR 6.44

There are 2 quarters with good PRF difference image offsets

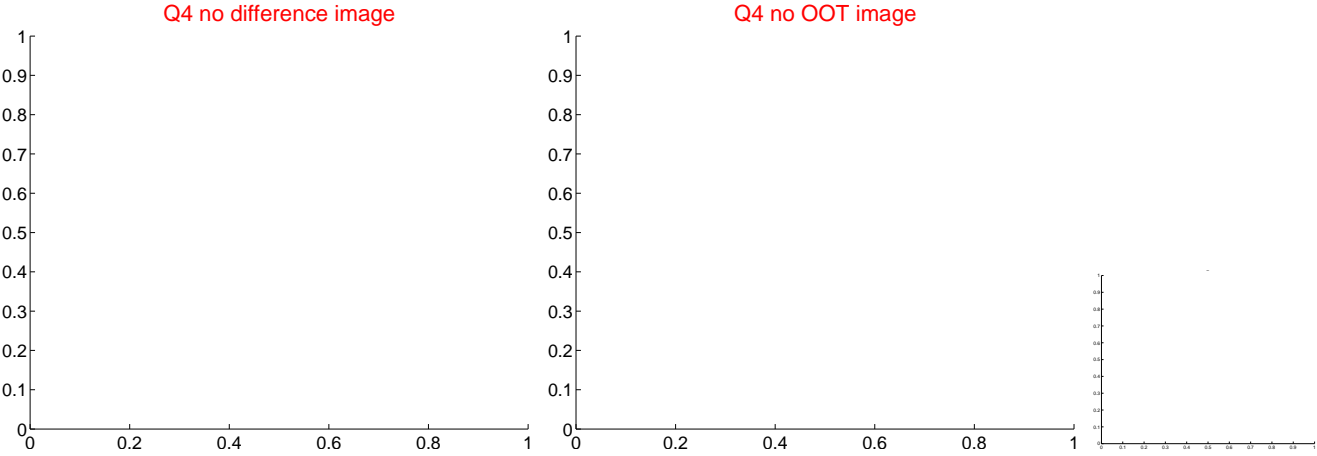
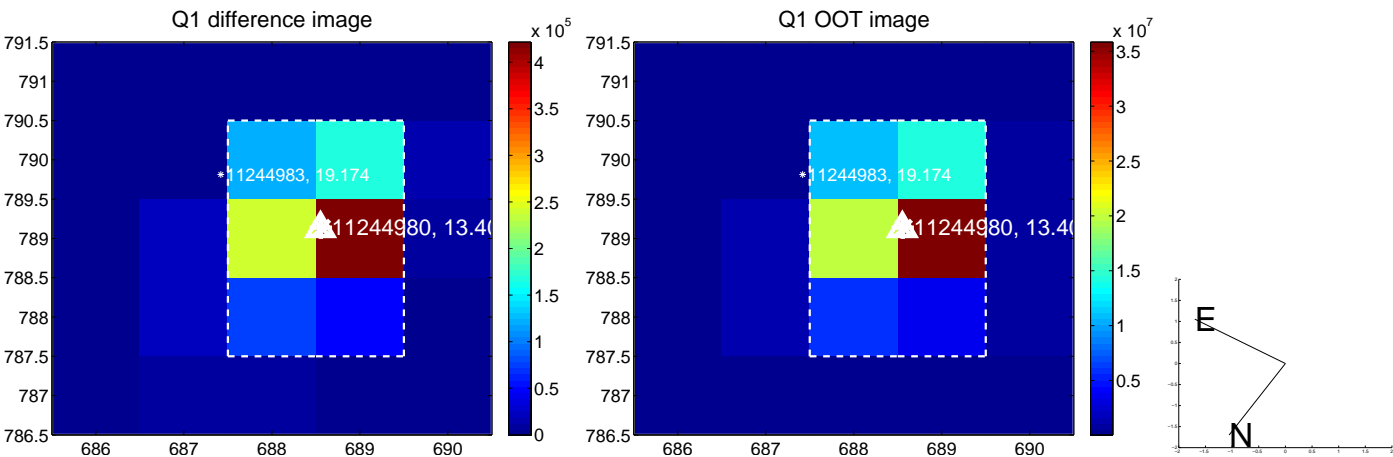
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.051 \pm 0.078$	0.65	$-0.006 \pm 0.072$	$0.051 \pm 0.080$
PRF-fit source offset from KIC position	$0.076 \pm 0.077$	0.99	$0.039 \pm 0.072$	$0.065 \pm 0.079$
photometric centroid source offset	$0.20 \pm 0.13$	1.52	$0.20 \pm 0.13$	$0.01 \pm 0.17$



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.

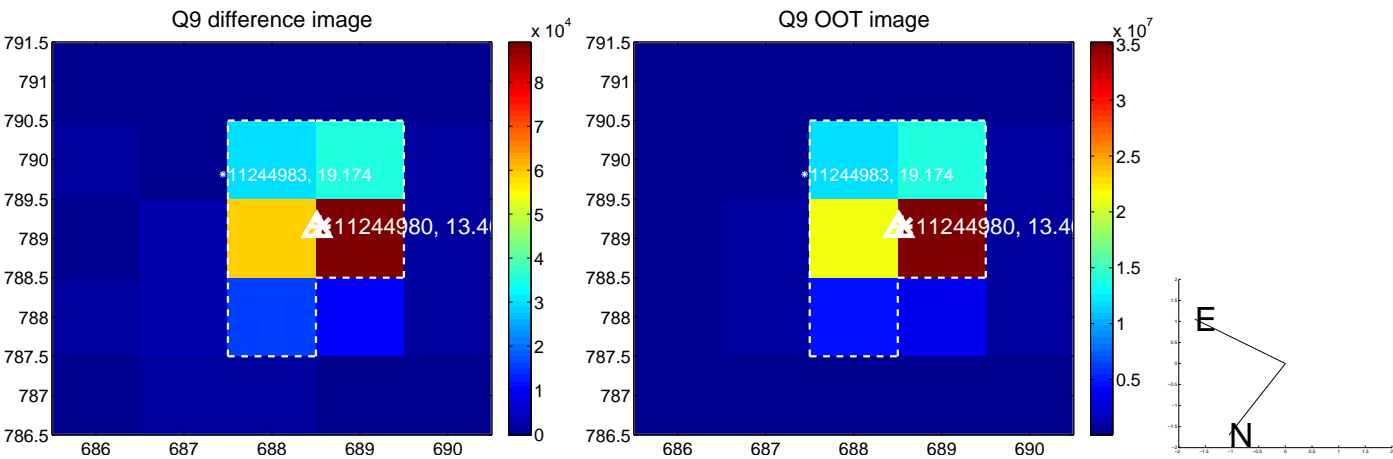


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





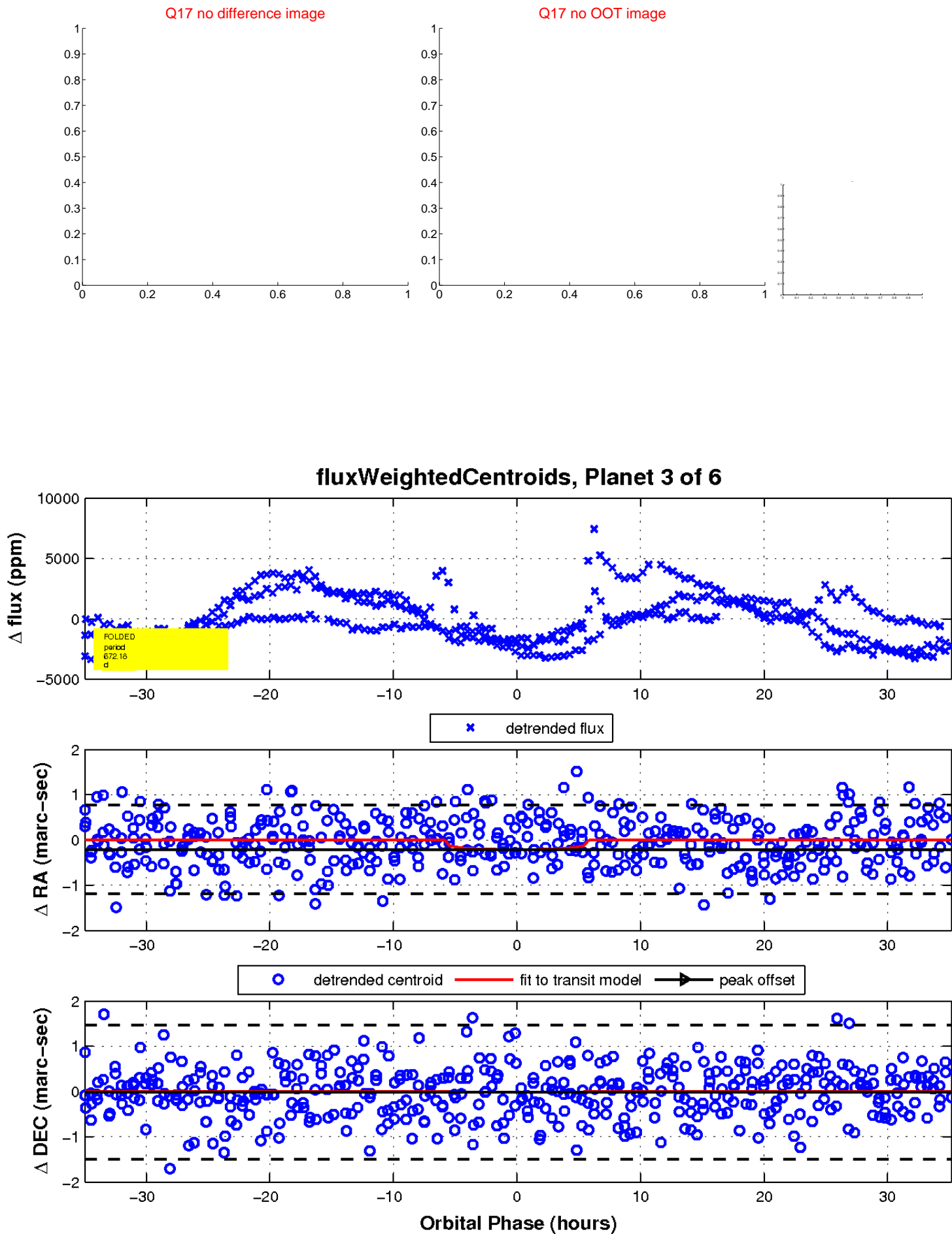
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

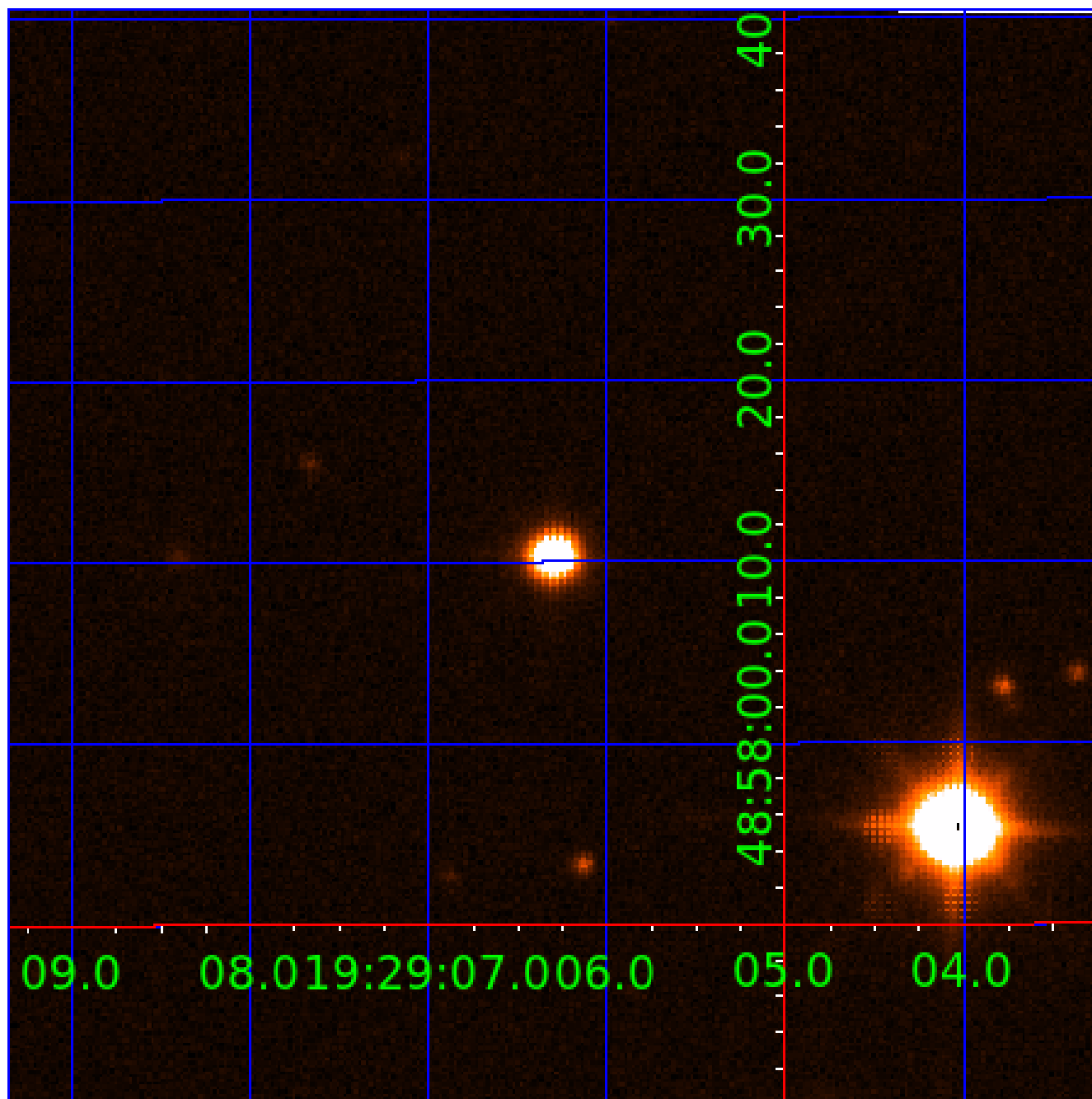


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011244980

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011244980-01	OBS	No	368.192890	225.488633	667.6	2.244	18.3	5.3	0.97	5904	2.51	1.14
011244980-02	OBS	No	373.961393	484.657400	358.3	10.500	14.1	-1.0	0.97	5904	1.84	1.12
011244980-03	OBS	No	672.180612	161.862002	1546.0	11.731	14.1	6.4	0.97	5904	3.81	0.51
011244980-04	OBS	No	506.716437	509.320232	360.1	2.784	14.4	2.2	0.97	5904	2.17	0.75
011244980-05	OBS	No	248.870561	217.173307	847.5	4.117	11.2	7.1	0.97	5904	3.48	1.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244980-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
011244980-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

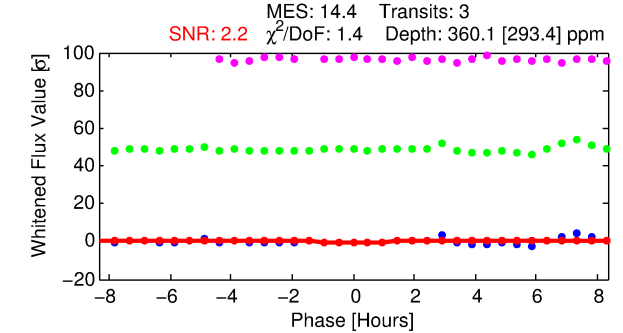
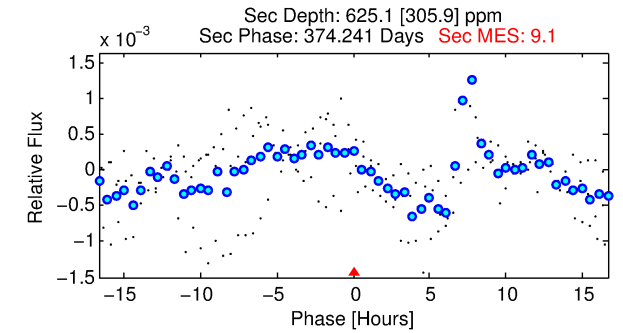
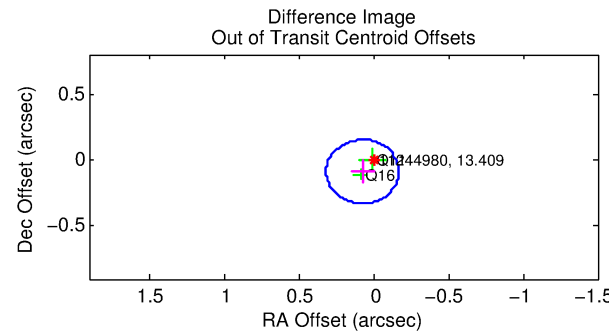
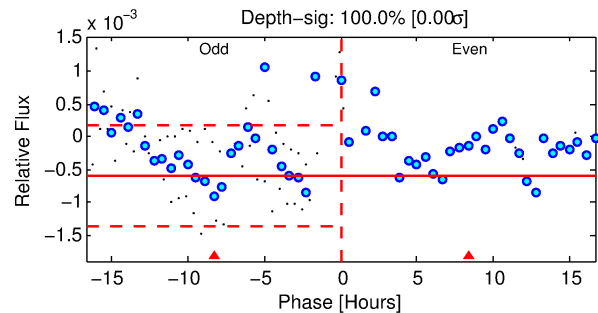
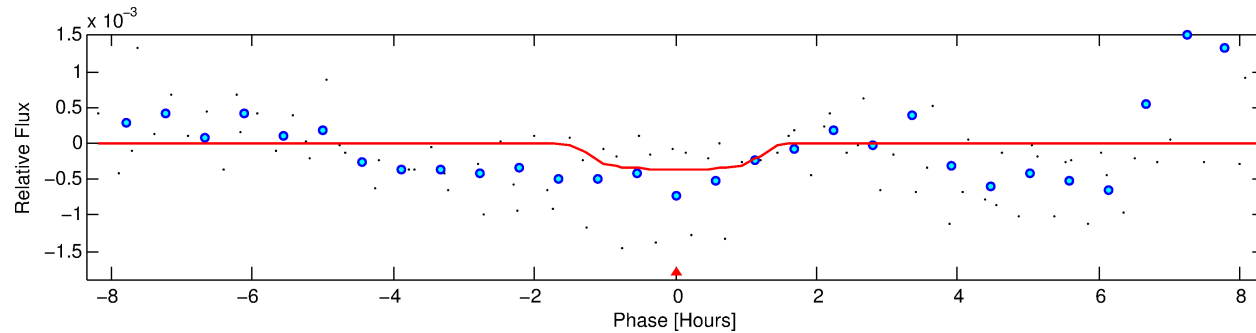
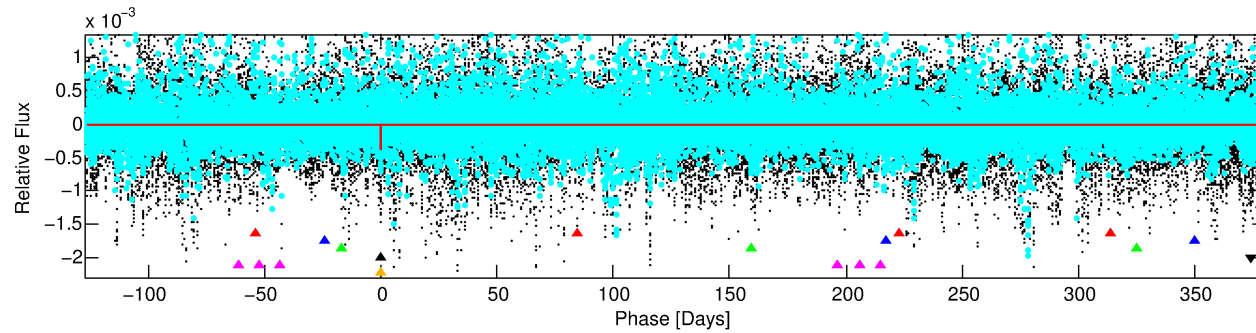
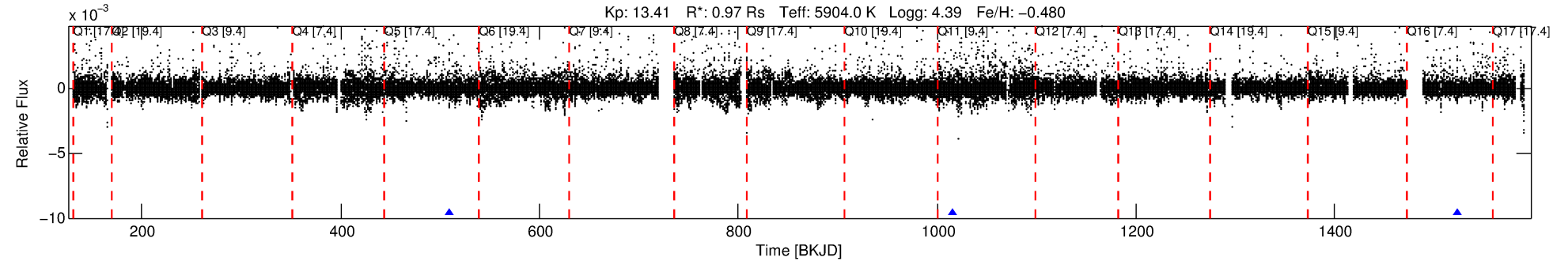
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011244980-04

No Significant Match Found

# DV One-Page Summary

KIC: 11244980 Candidate: 4 of 6 Period: 506.716 d



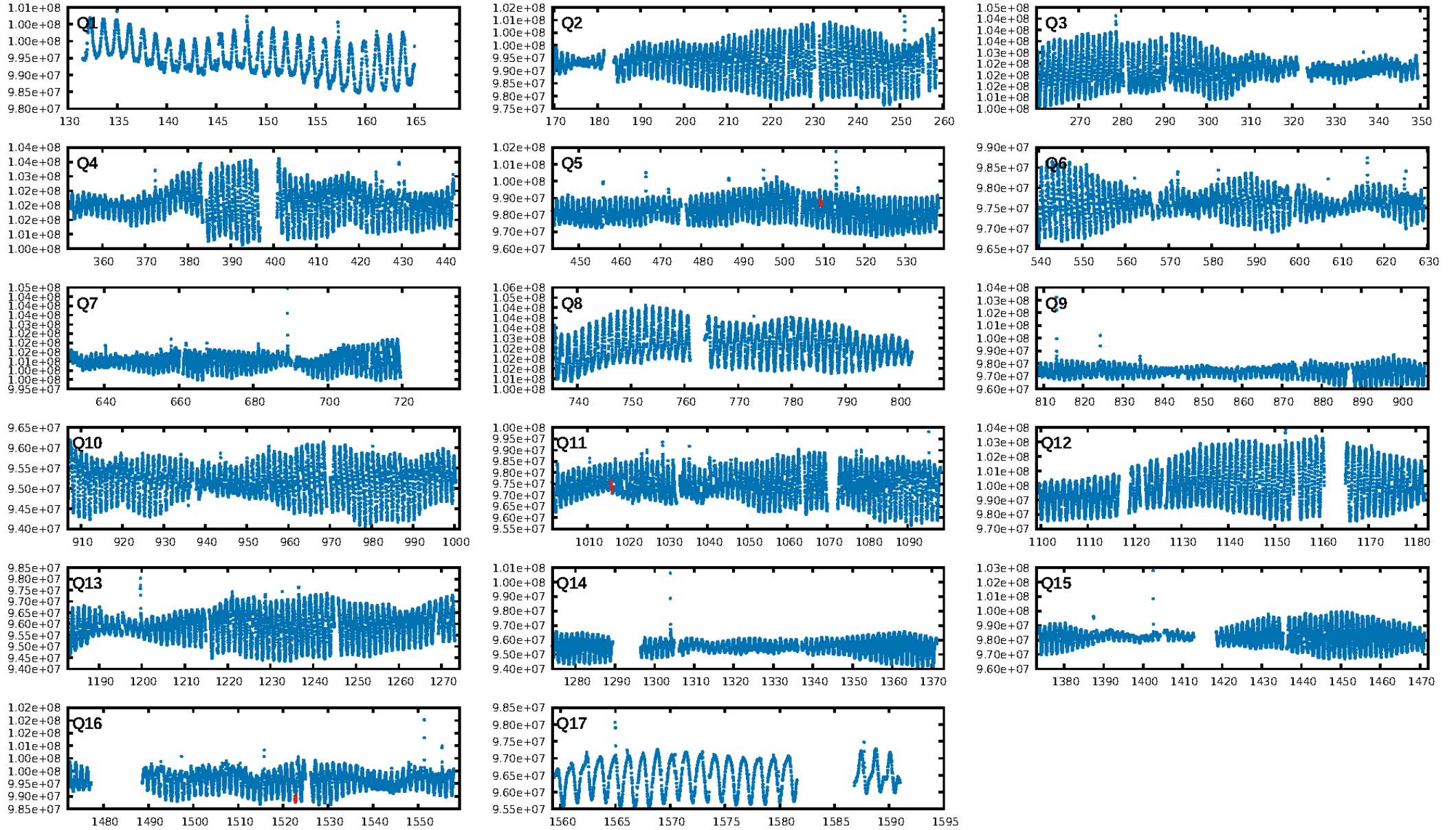
## DV Fit Results:

Period = 506.71644 [0.01792] d  
Epoch = 509.3202 [0.0207] BKJD  
Rp/R\* = 0.0205 [0.0324]  
a/R\* = 668.19 [4912.34]  
b = 0.90 [1.58]  
Seff = 0.75 [0.26]  
Teq = 237 [20] K  
Rp = 2.17 [3.48] Re  
a = 1.1722 [0.2607] AU  
Ag = 100219.33 [322228.46] [0.31 $\sigma$ ]  
Teffp = 6521 [5217] K [1.20 $\sigma$ ]

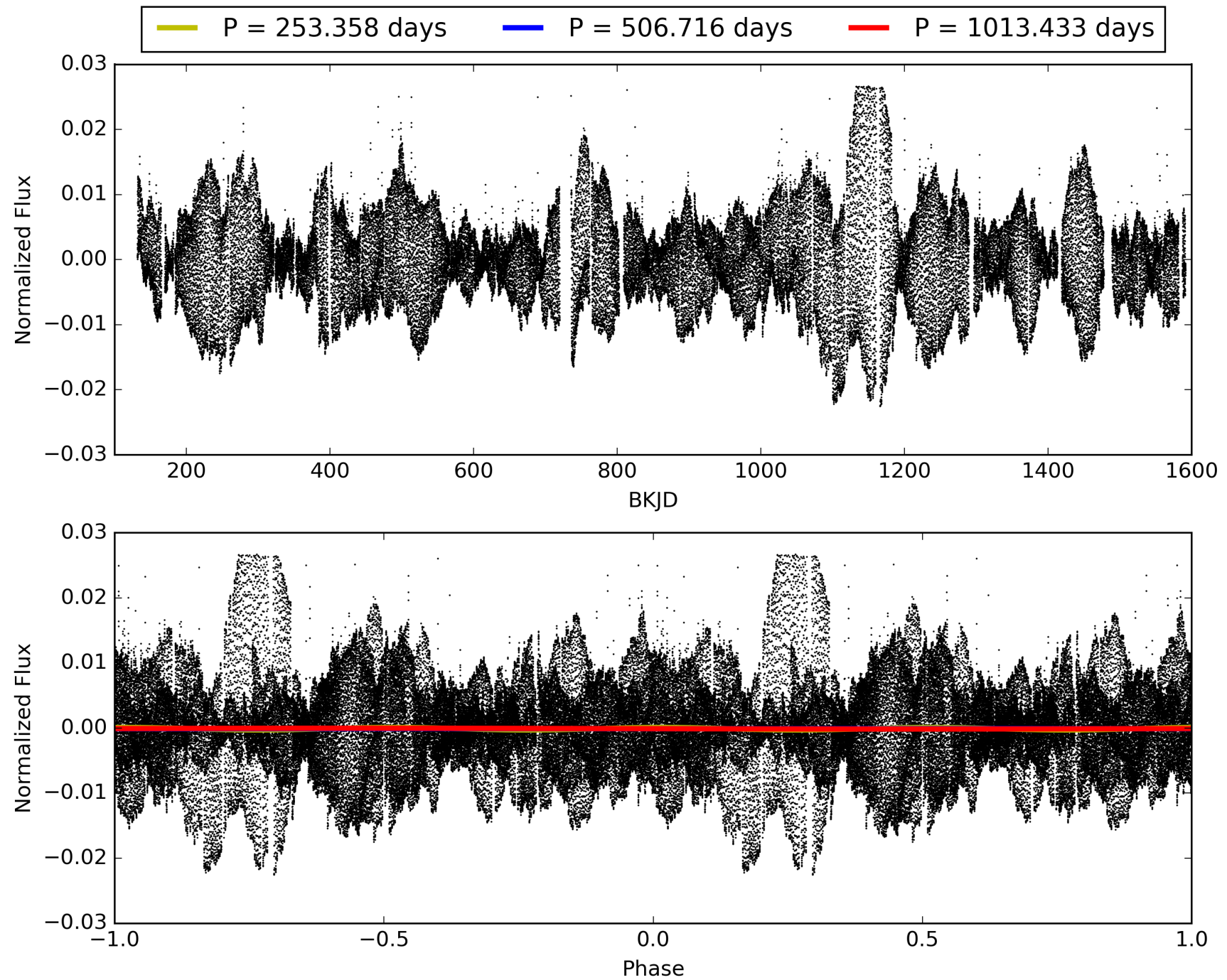
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [293.30 $\sigma$ ]  
LongPeriod-sig: 3.7% [0.05 $\sigma$ ]  
ModelChiSquare2-sig: 1.7%  
ModelChiSquareGof-sig: 94.9%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 6.897  
Centroid-sig: 68.0%  
Centroid-so: 0.782 arcsec [0.59 $\sigma$ ]  
OotOffset-rm: 0.115 arcsec [1.43 $\sigma$ ]  
KicOffset-rm: 0.209 arcsec [2.28 $\sigma$ ]  
OotOffset-st: 0/1/1/0 [2]  
KicOffset-st: 0/1/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 0.00 [0/3]

# TCE 011244980-04, PDC Light Curves



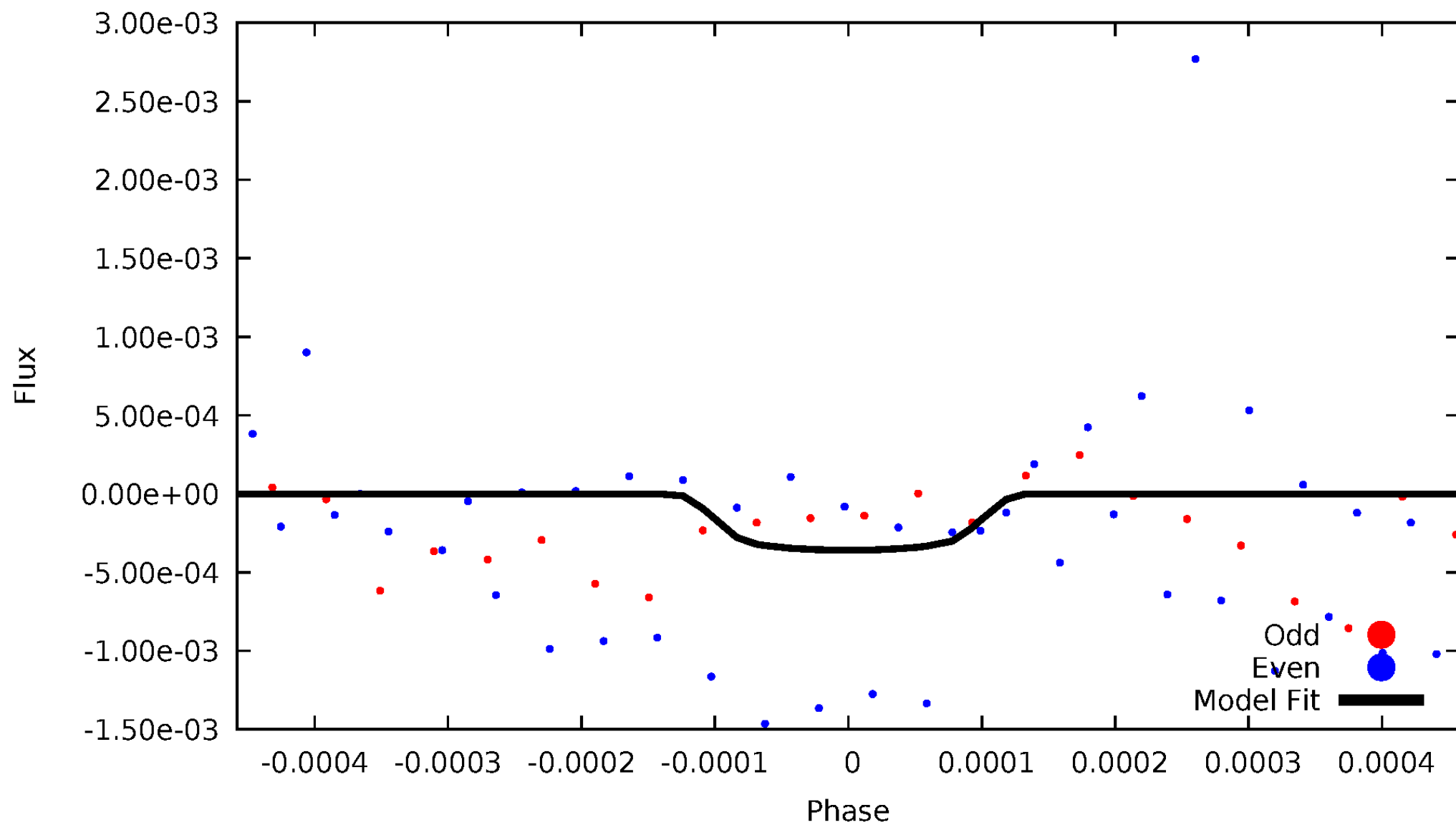
TCE 011244980-04





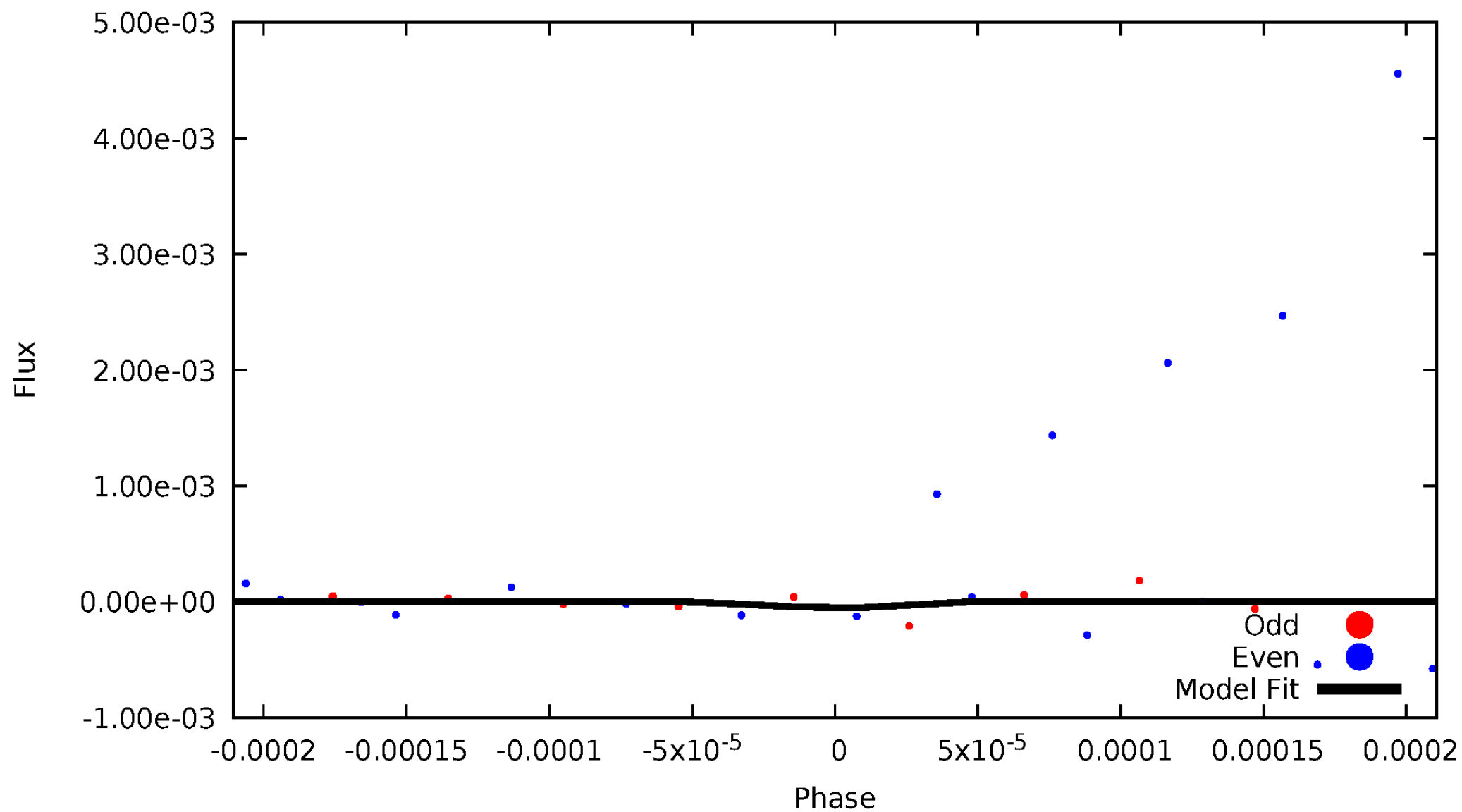
# DV Odd/Even

TCE 011244980-04



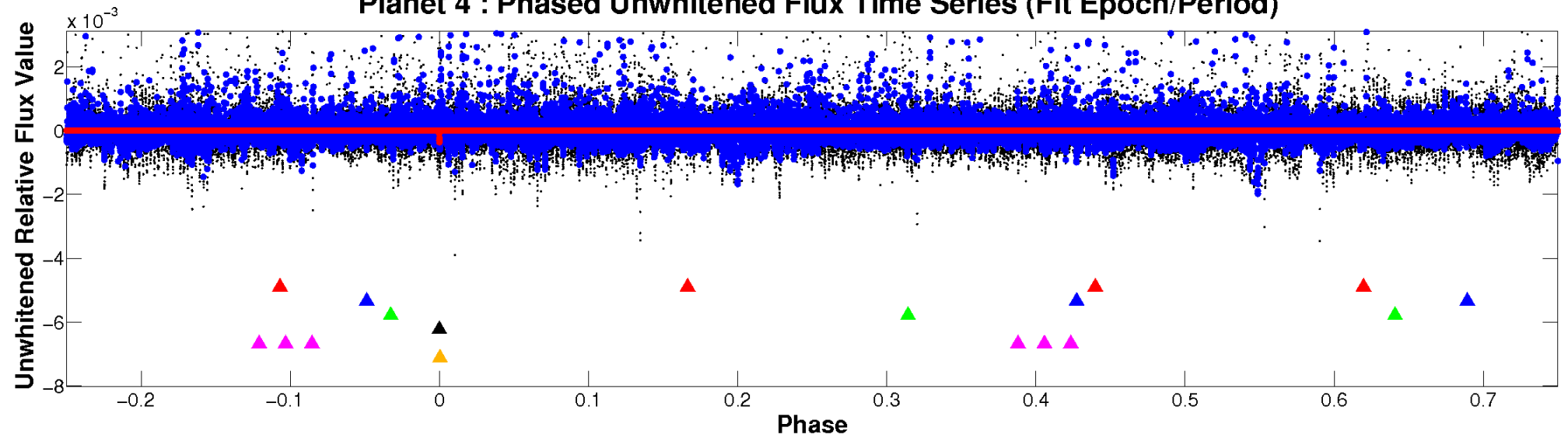
# ALT Odd/Even

TCE 011244980-04

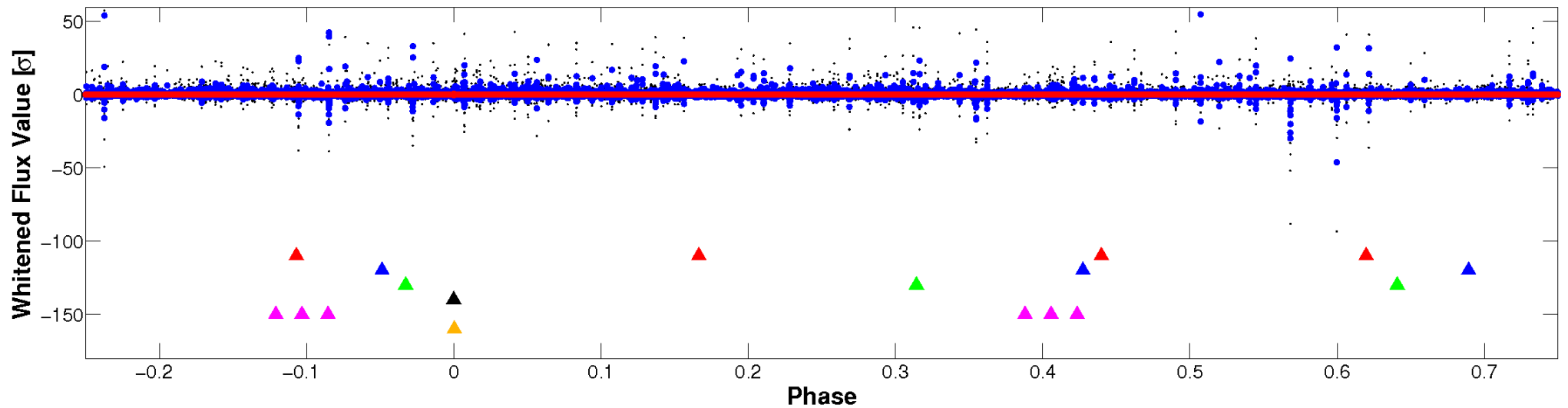


# Non-Whitened Vs. Whitened Light Curve

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

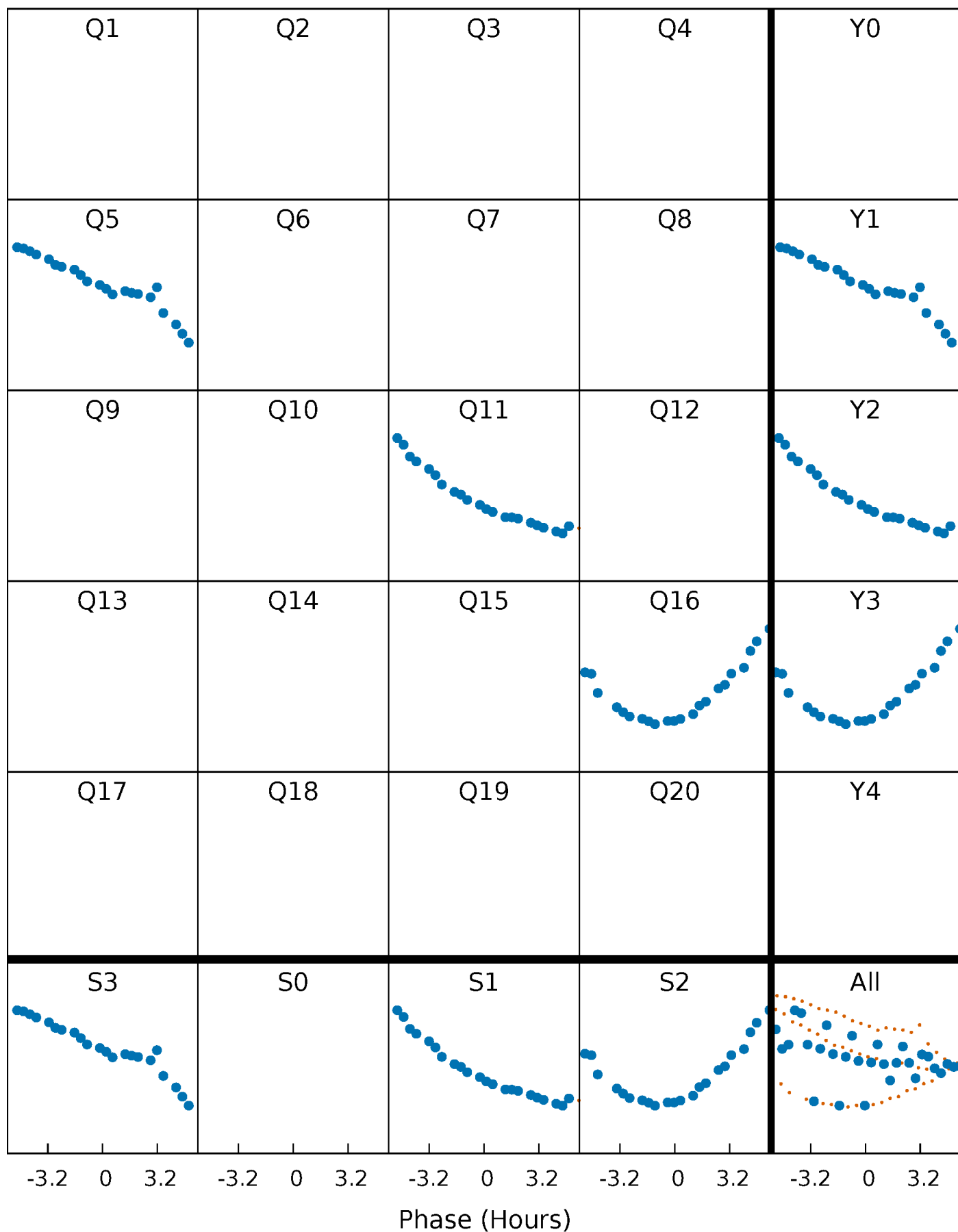


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



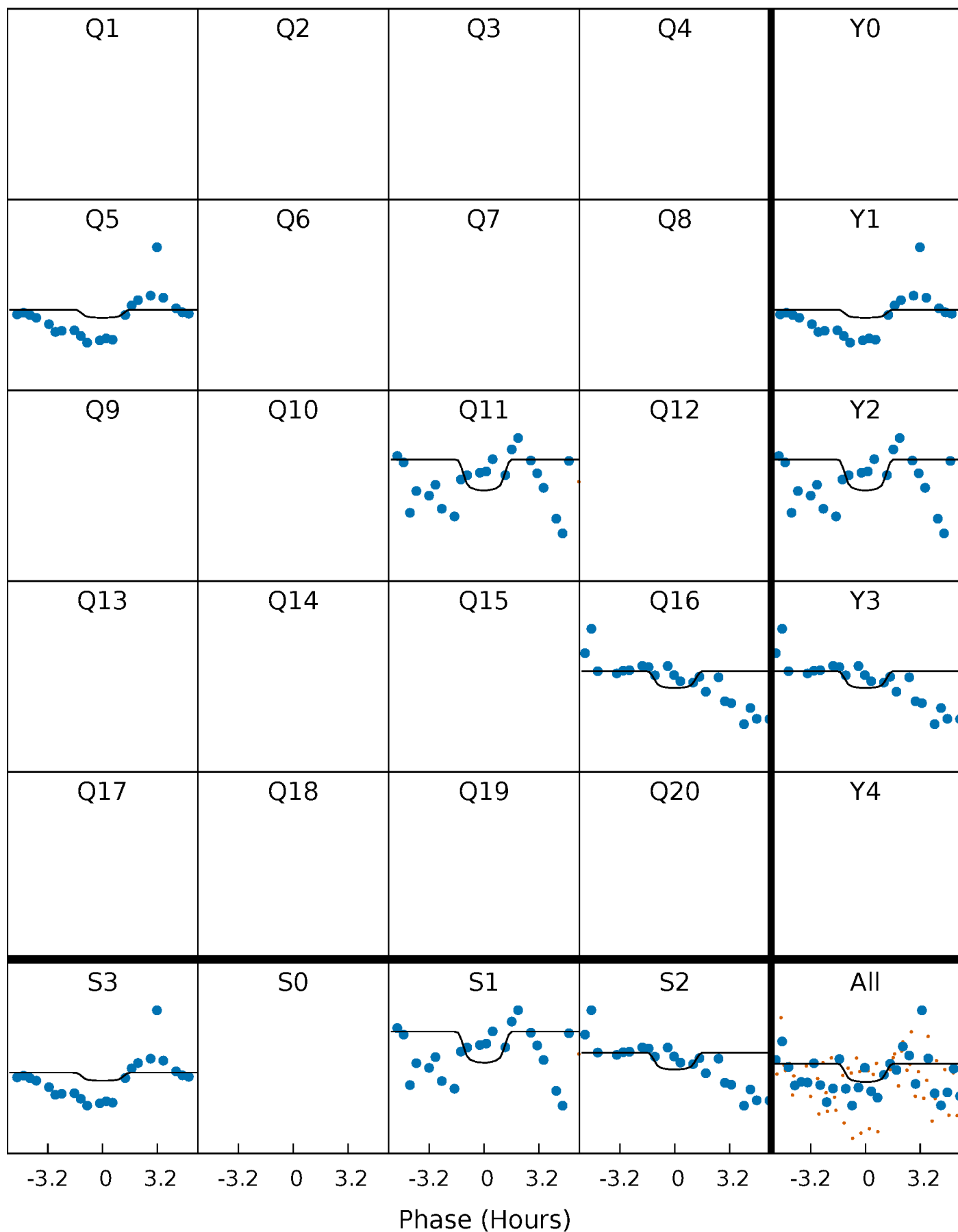
# PDC Quarter-Phased Transit Curves

TCE 011244980-04 P=506.716437 Days  $T_0=509.320232$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 011244980-04     $P=506.716437$  Days     $T_0=509.320232$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

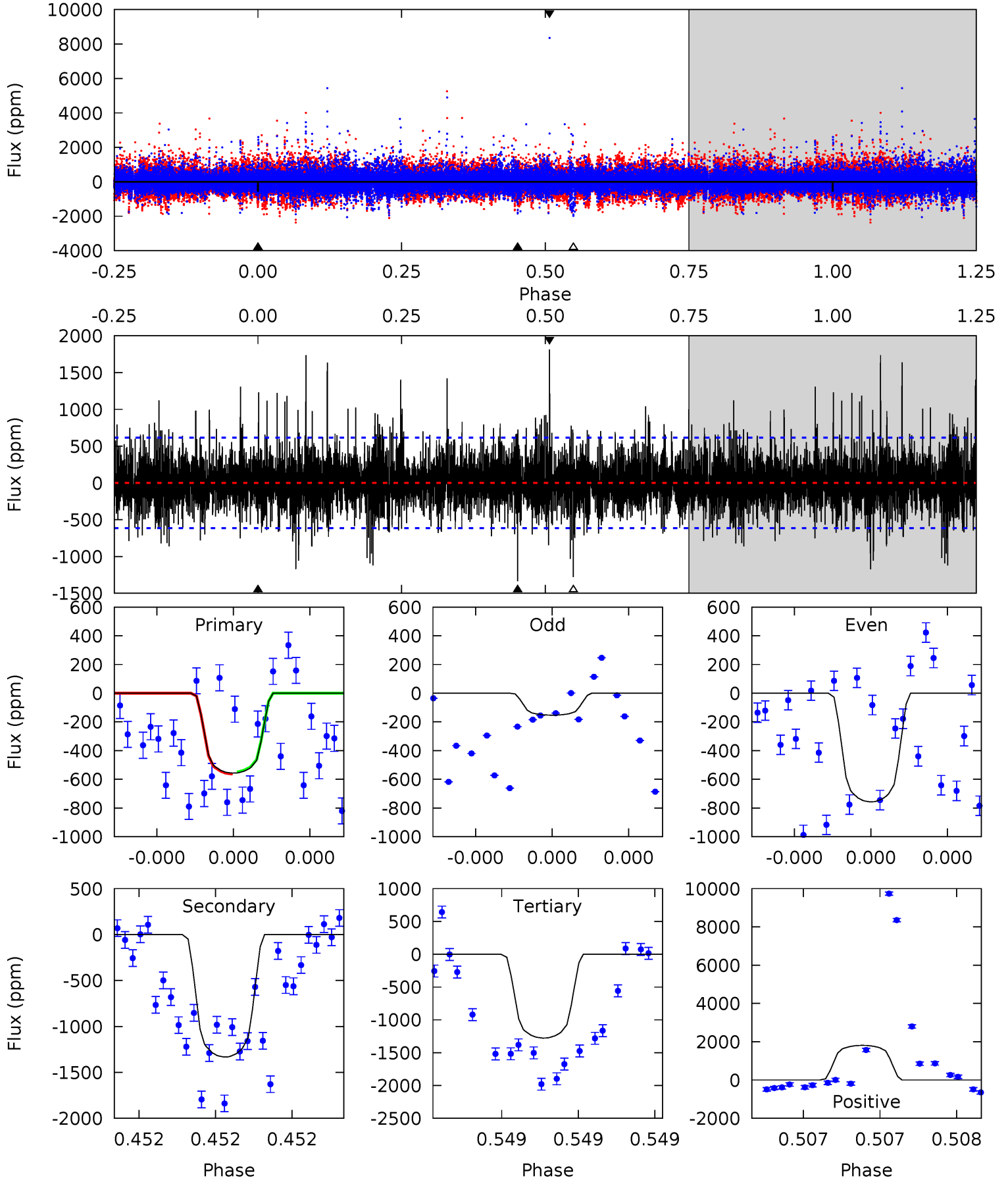
TCE 011244980-04     $P=506.718232$  Days     $T_0=509.352238$  (BKJD)



# DV Model-Shift Uniqueness Test

011244980-04, P = 506.716437 Days, E = 2.603795 Days

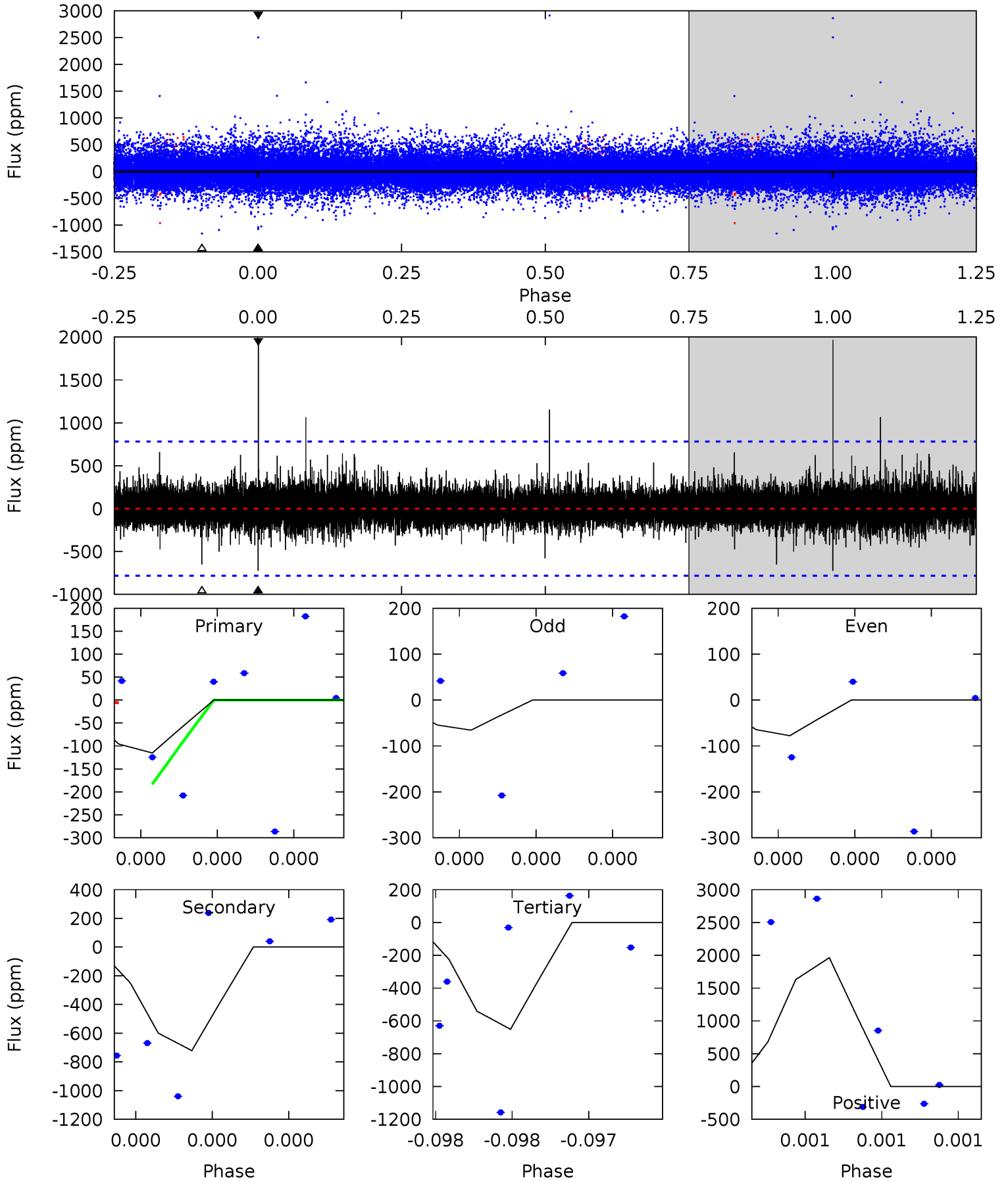
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.15	12.3	11.8	16.8	5.69	3.66	2.37	-6.67	-11.6	0.51	-4.42	1.94	3.67	0.58	0.07



# Alt Model-Shift Uniqueness Test

011244980-04, P = 506.718232 Days, E = 2.634006 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
0.88	5.50	4.96	15.0	5.96	4.05	0.78	-4.08	-14.1	0.54	-9.46	0.04	1.00	0.73	0.00





### Stellar Parameters For KIC 011244980

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5904^{+159}_{-159}$	$4.386^{+0.149}_{-0.182}$	$-0.480^{+0.300}_{-0.300}$	$0.971^{+0.252}_{-0.168}$	$0.837^{+0.114}_{-0.070}$	$1.287^{+0.913}_{-0.617}$
	+3%/-3%	+3%/-4%	+62%/-62%	+26%/-17%	+14%/-8%	+71%/-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 011244980-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1333 \pm 108$	$3.28^{+3.06}_{-2.17}$	$333^{+23}_{-19}$	$6396^{+7131}_{-1601}$	$93395^{+752362}_{-68770}$
Alt.	$-722 \pm 131$	$2.56^{+2.91}_{-1.80}$	$333^{+23}_{-20}$	$6228^{+7883}_{-1708}$	$80695^{+834232}_{-62388}$

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

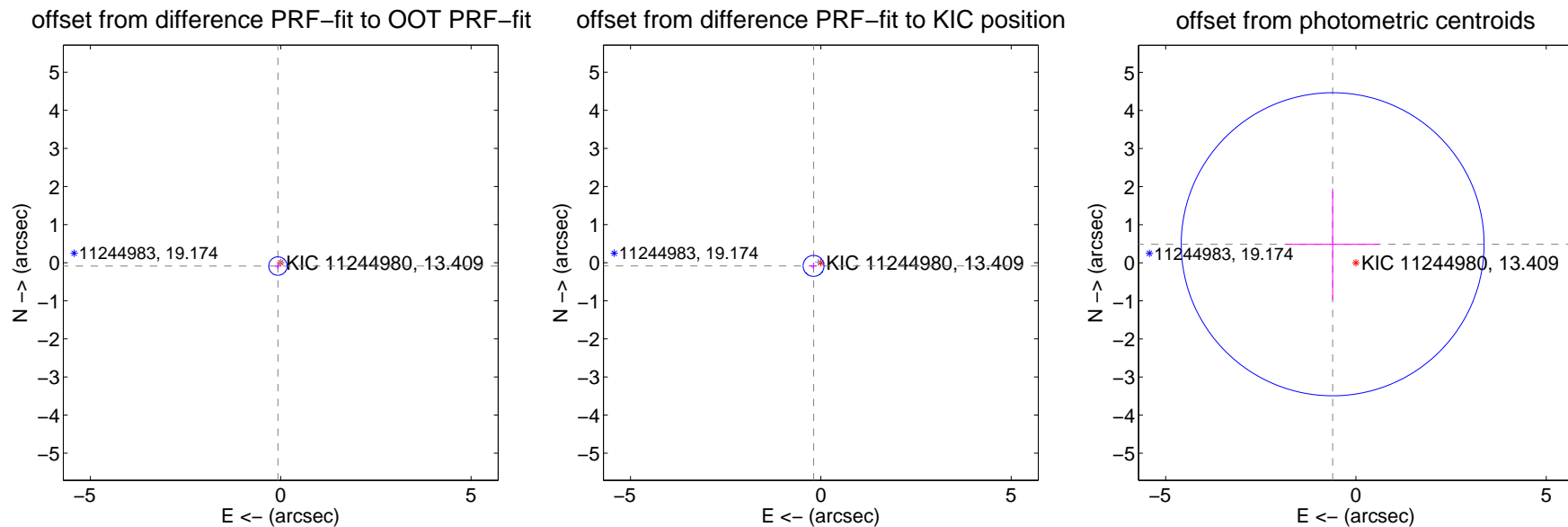
## DV Centroid Data

Supplemental centroid analysis for 011244980-04. Kepler magnitude: 13.41. Transit SNR 2.21

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.115 \pm 0.081$	1.43	$0.074 \pm 0.075$	$-0.088 \pm 0.084$
PRF-fit source offset from KIC position	$0.209 \pm 0.092$	2.28	$0.192 \pm 0.092$	$-0.084 \pm 0.088$
photometric centroid source offset	$0.78 \pm 1.33$	0.59	$0.61 \pm 1.23$	$0.49 \pm 1.46$

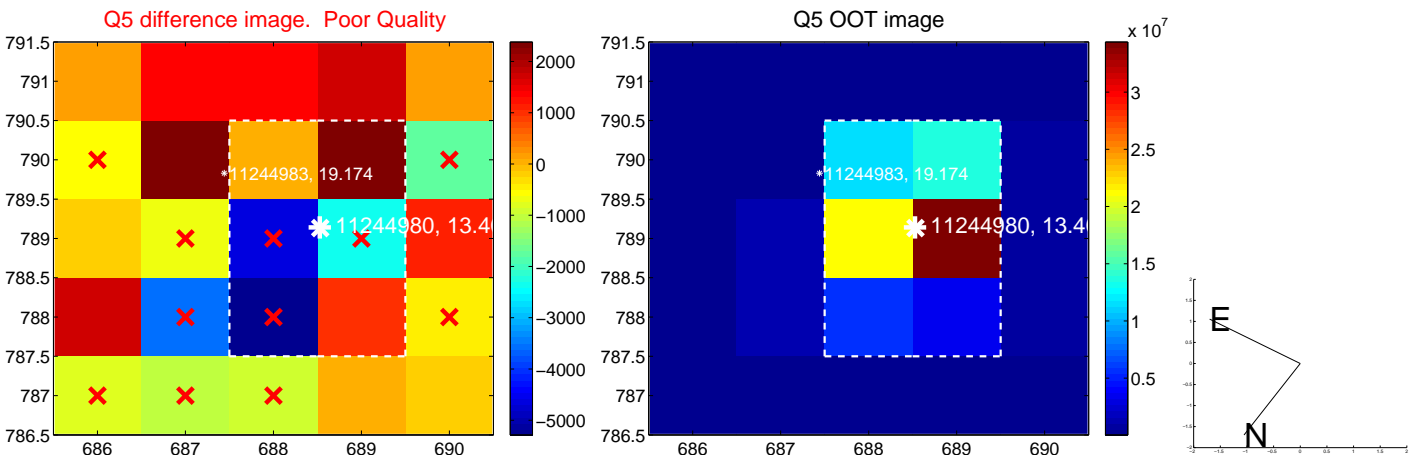


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

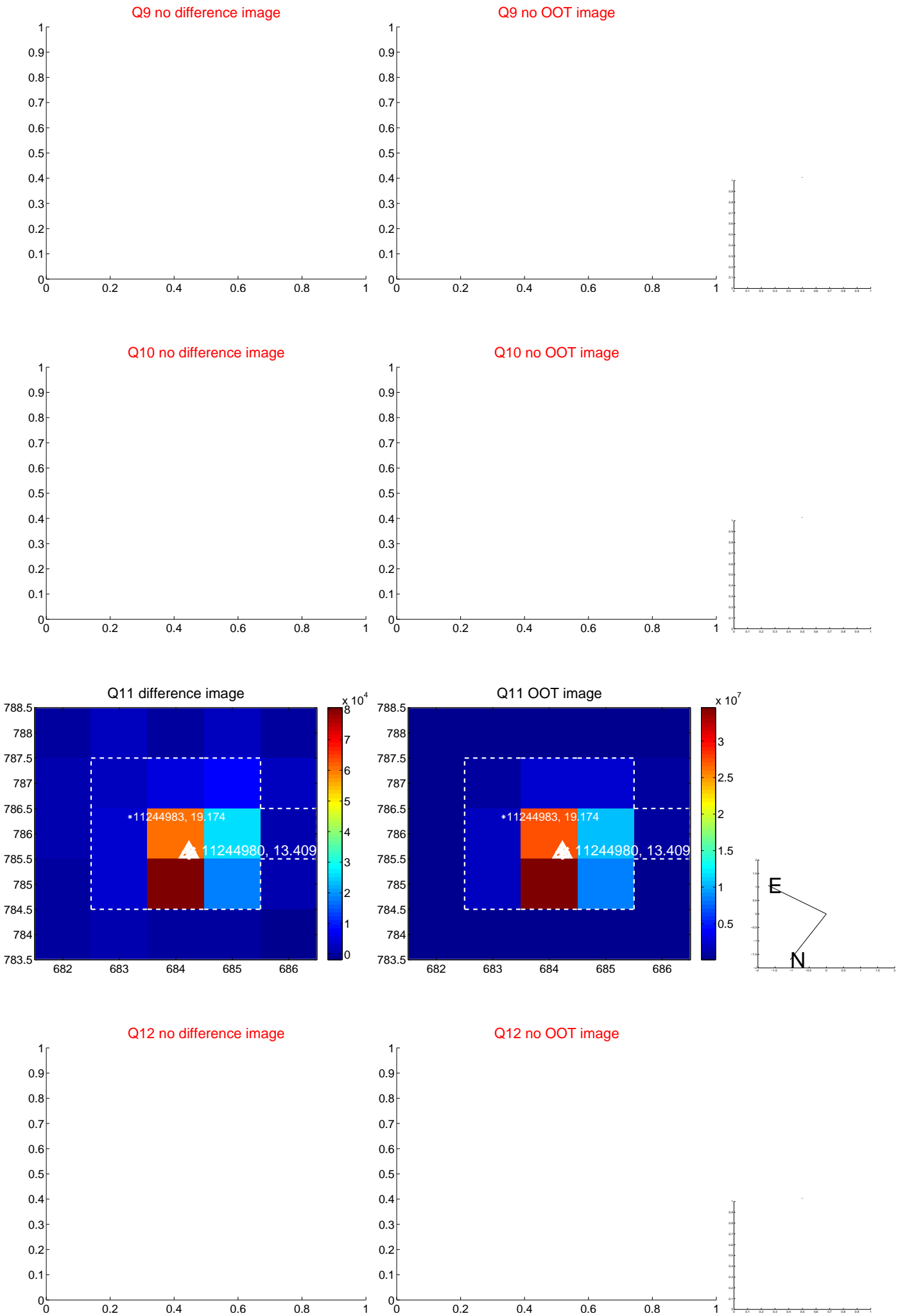
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



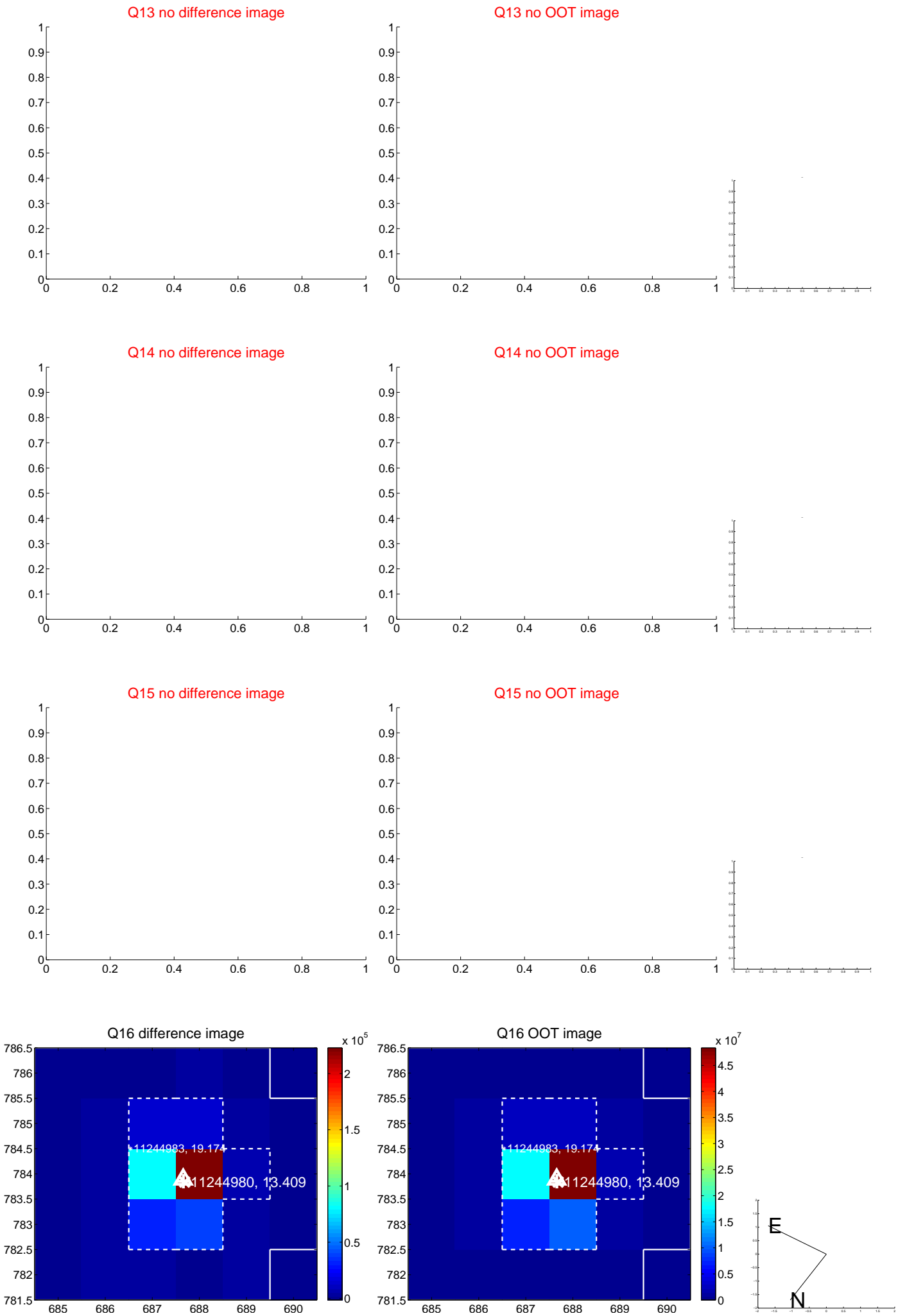
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



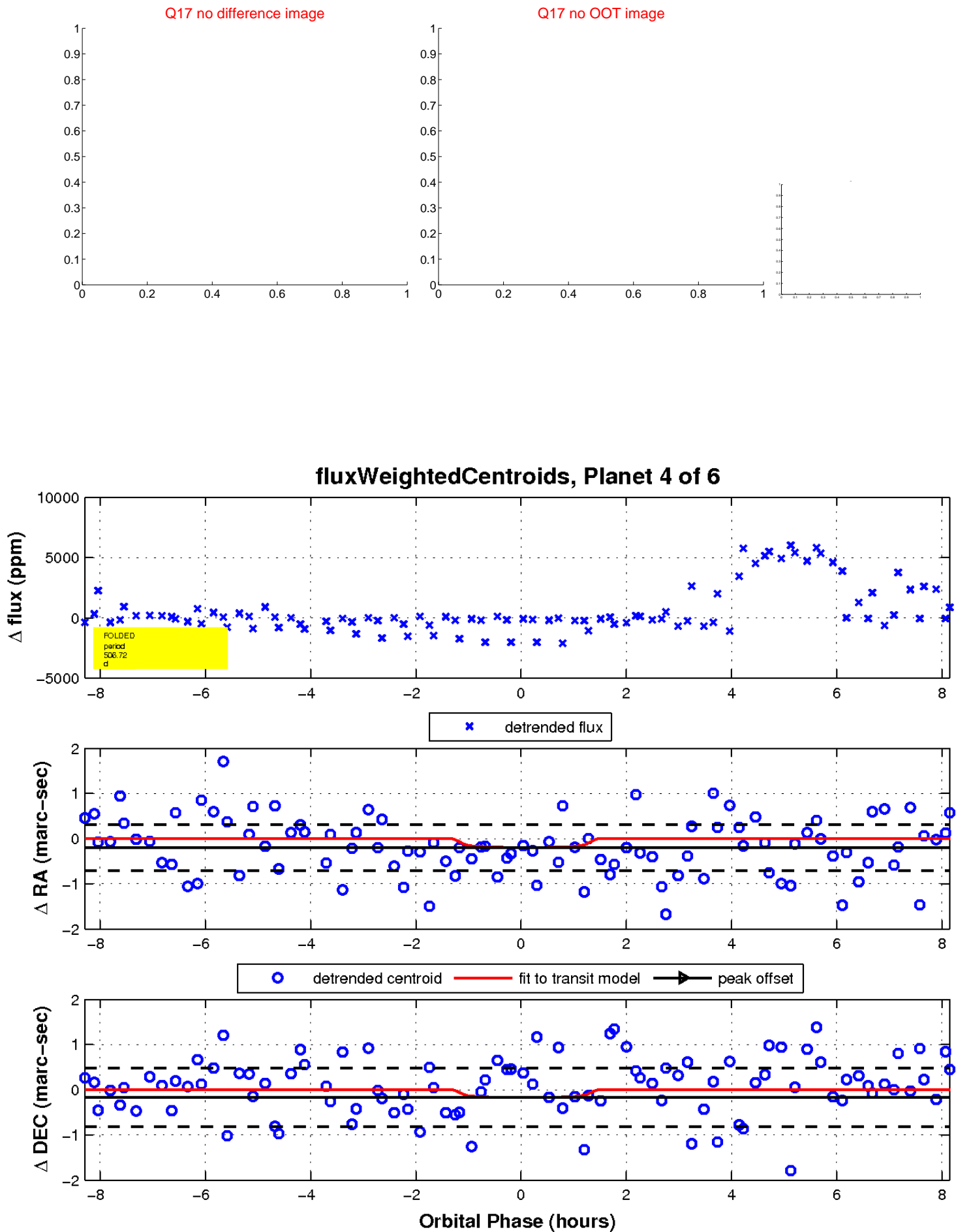
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

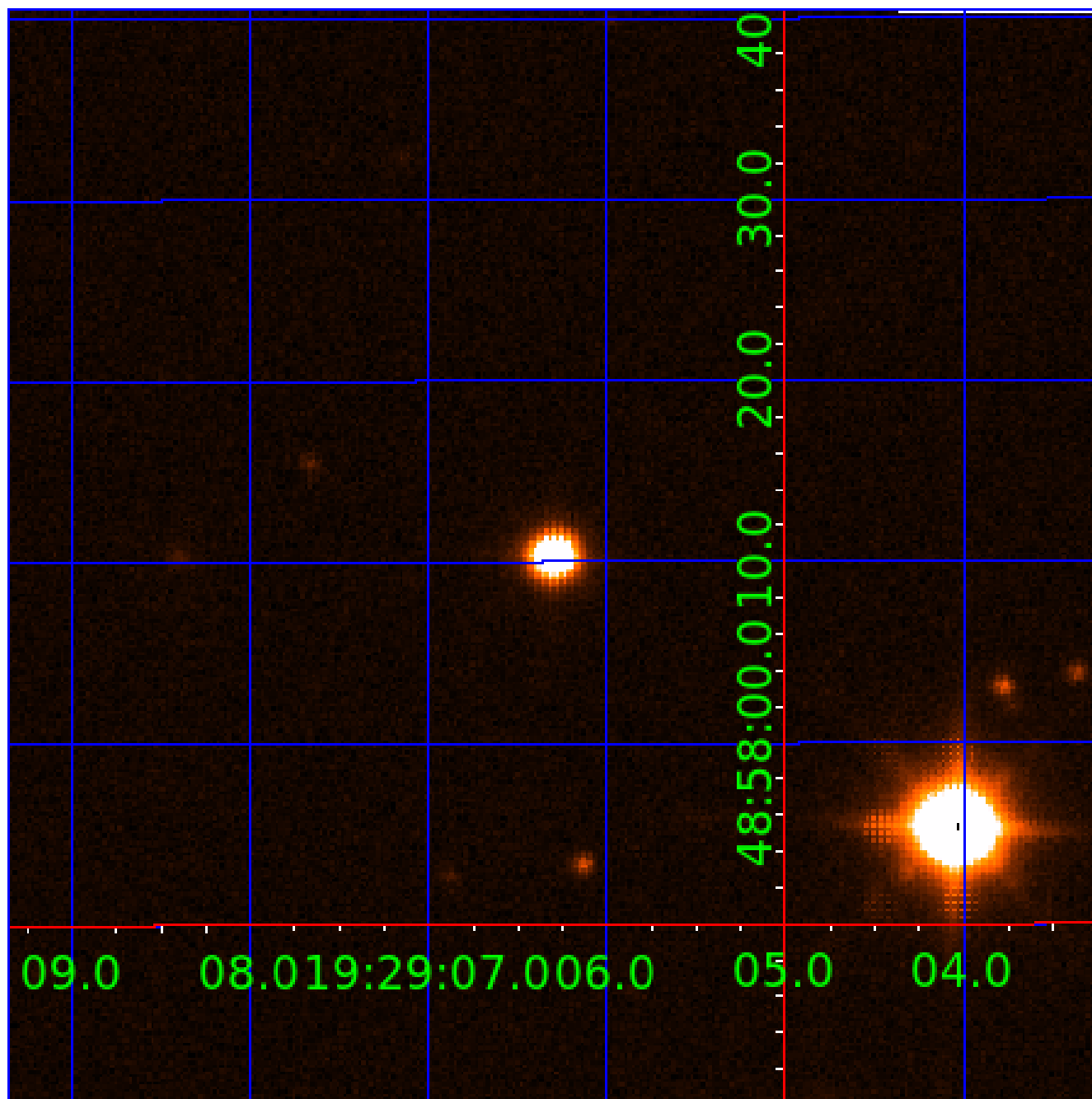


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 011244980

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011244980-01	OBS	No	368.192890	225.488633	667.6	2.244	18.3	5.3	0.97	5904	2.51	1.14
011244980-02	OBS	No	373.961393	484.657400	358.3	10.500	14.1	-1.0	0.97	5904	1.84	1.12
011244980-03	OBS	No	672.180612	161.862002	1546.0	11.731	14.1	6.4	0.97	5904	3.81	0.51
011244980-04	OBS	No	506.716437	509.320232	360.1	2.784	14.4	2.2	0.97	5904	2.17	0.75
011244980-05	OBS	No	248.870561	217.173307	847.5	4.117	11.2	7.1	0.97	5904	3.48	1.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244980-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
011244980-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244980-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

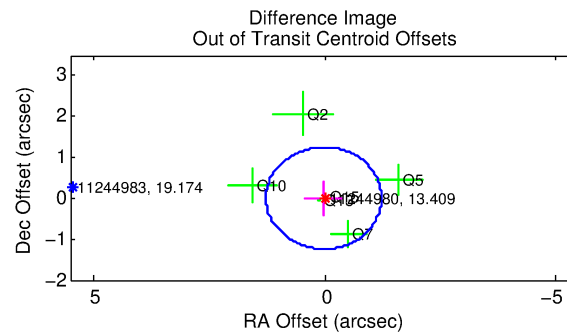
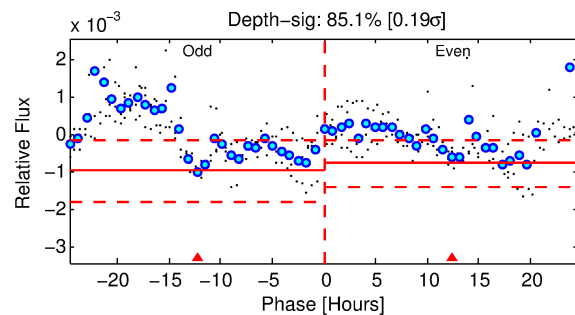
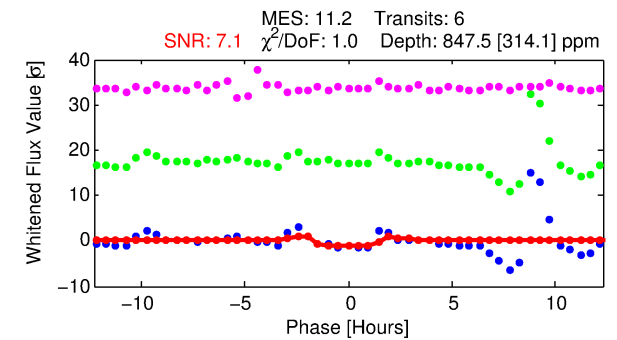
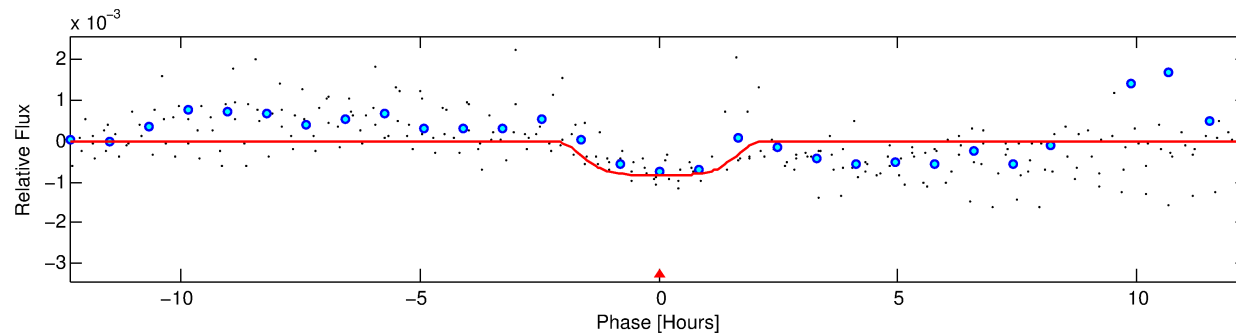
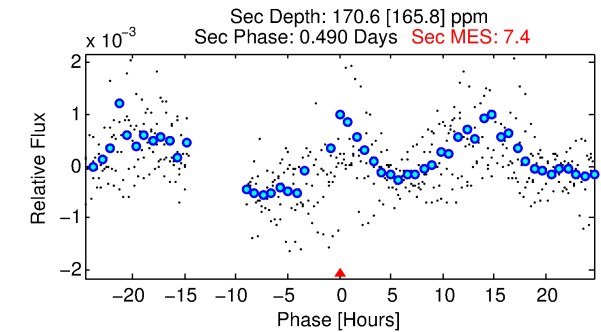
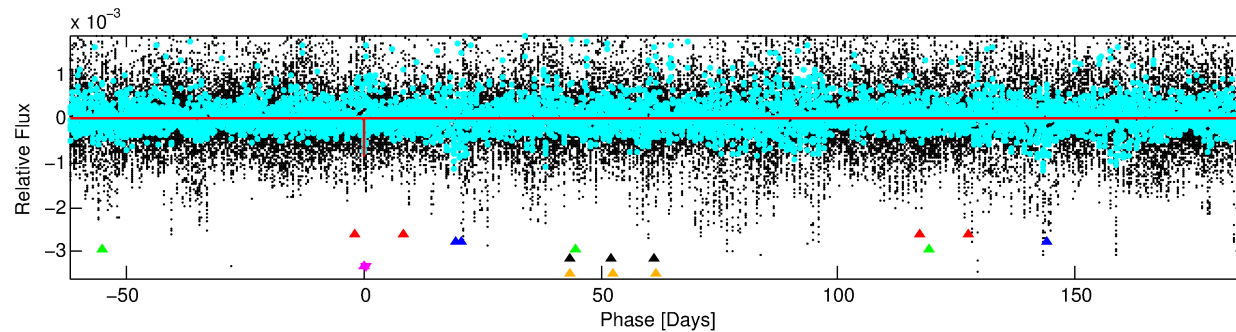
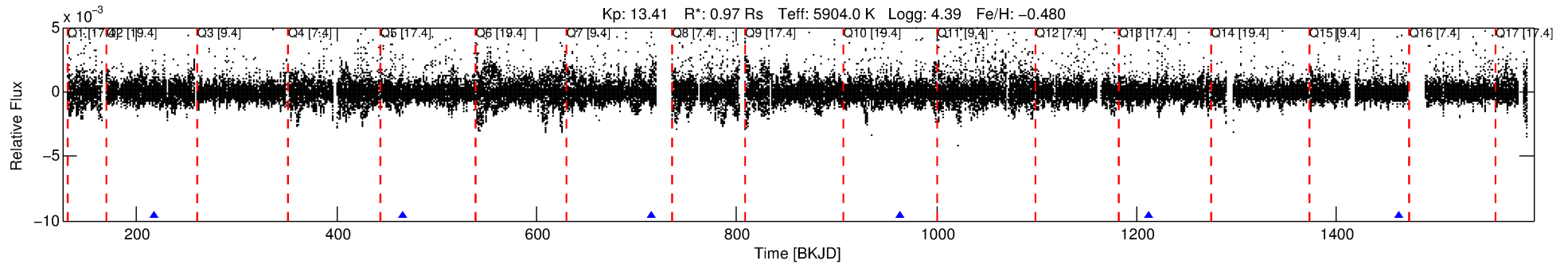
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011244980-05

No Significant Match Found

# DV One-Page Summary

KIC: 11244980 Candidate: 5 of 6 Period: 248.871 d



## DV Fit Results:

Period = 248.87056 [0.00427] d  
Epoch = 217.1733 [0.0146] BKJD  
Rp/R\* = 0.0329 [0.0072]  
a/R\* = 198.77 [82.01]  
b = 0.94 [0.05]  
Seff = 1.93 [0.67]  
Teq = 300 [26] K  
Rp = 3.48 [1.18] Re  
a = 0.7297 [0.1623] AU  
Ag = 4120.04 [4597.35] [0.90σ]  
**Teffp = 3722 [997] K [3.43σ]**

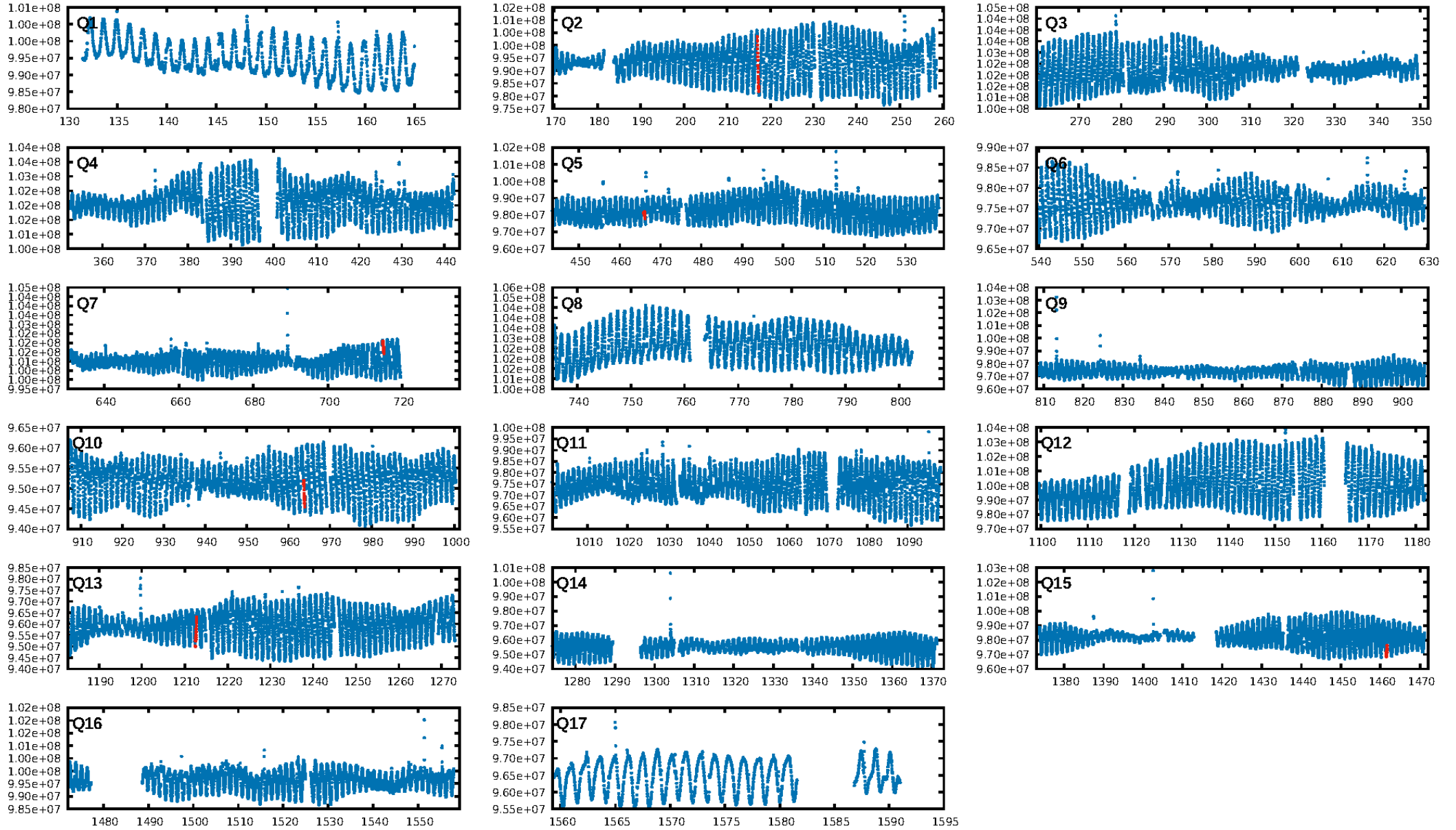
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [610.76σ]  
ModelChiSquare2-sig: 15.8%  
ModelChiSquareGof-sig: 93.8%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [6/6]  
**GhostDiagnostic-chr: 0.6849**  
Centroid-sig: 79.5%  
Centroid-so: 0.256 arcsec [0.68σ]  
OotOffset-rm: 0.020 arcsec [0.05σ]  
KicOffset-rm: 0.114 arcsec [0.28σ]  
OotOffset-st: 2/2/0/2 [6]  
KicOffset-st: 2/2/0/2 [6]  
DiffImageQuality-fgm: 0.67 [4/6]  
DiffImageOverlap-fno: 1.00 [6/6]

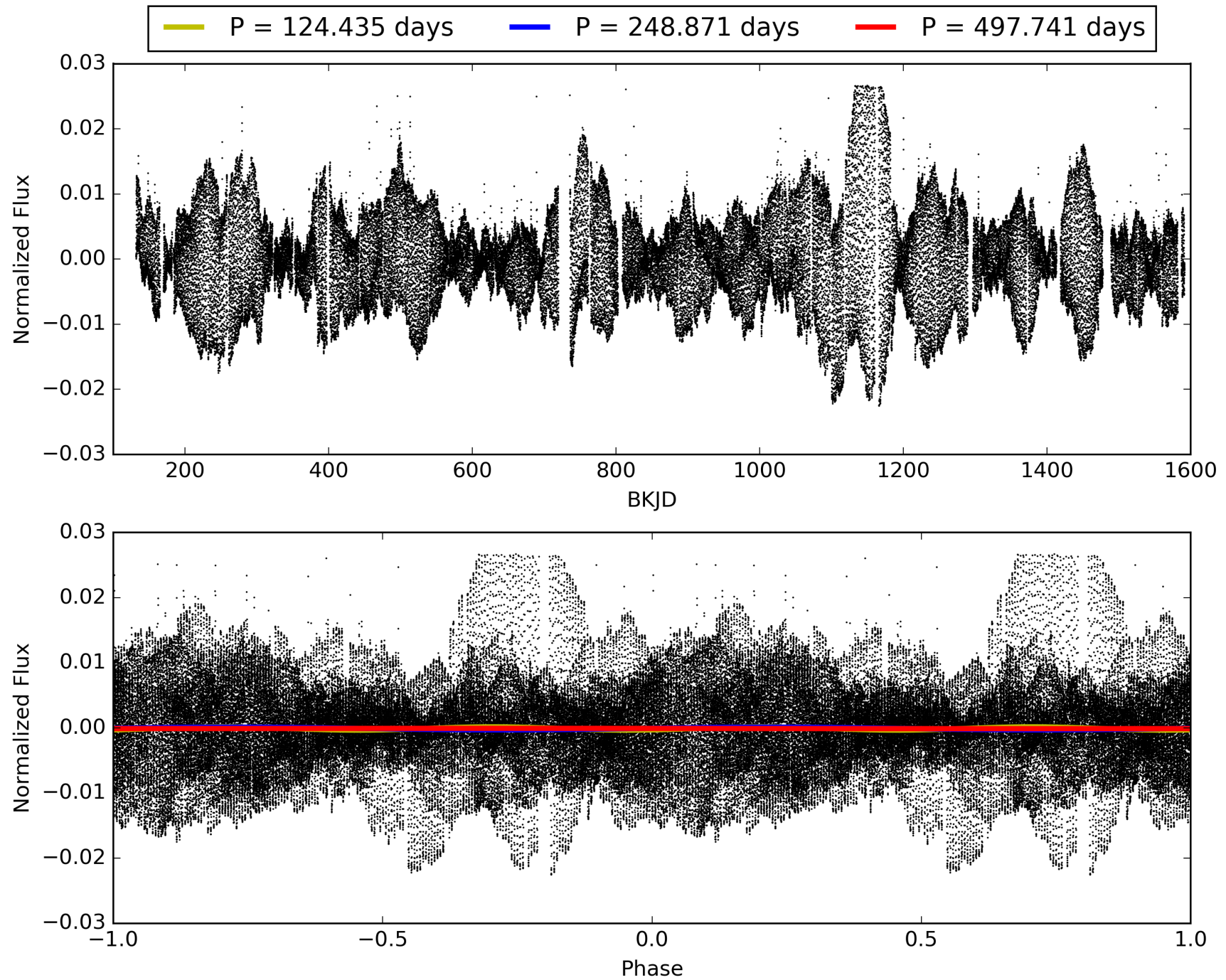
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:30 Z

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

# TCE 011244980-05, PDC Light Curves

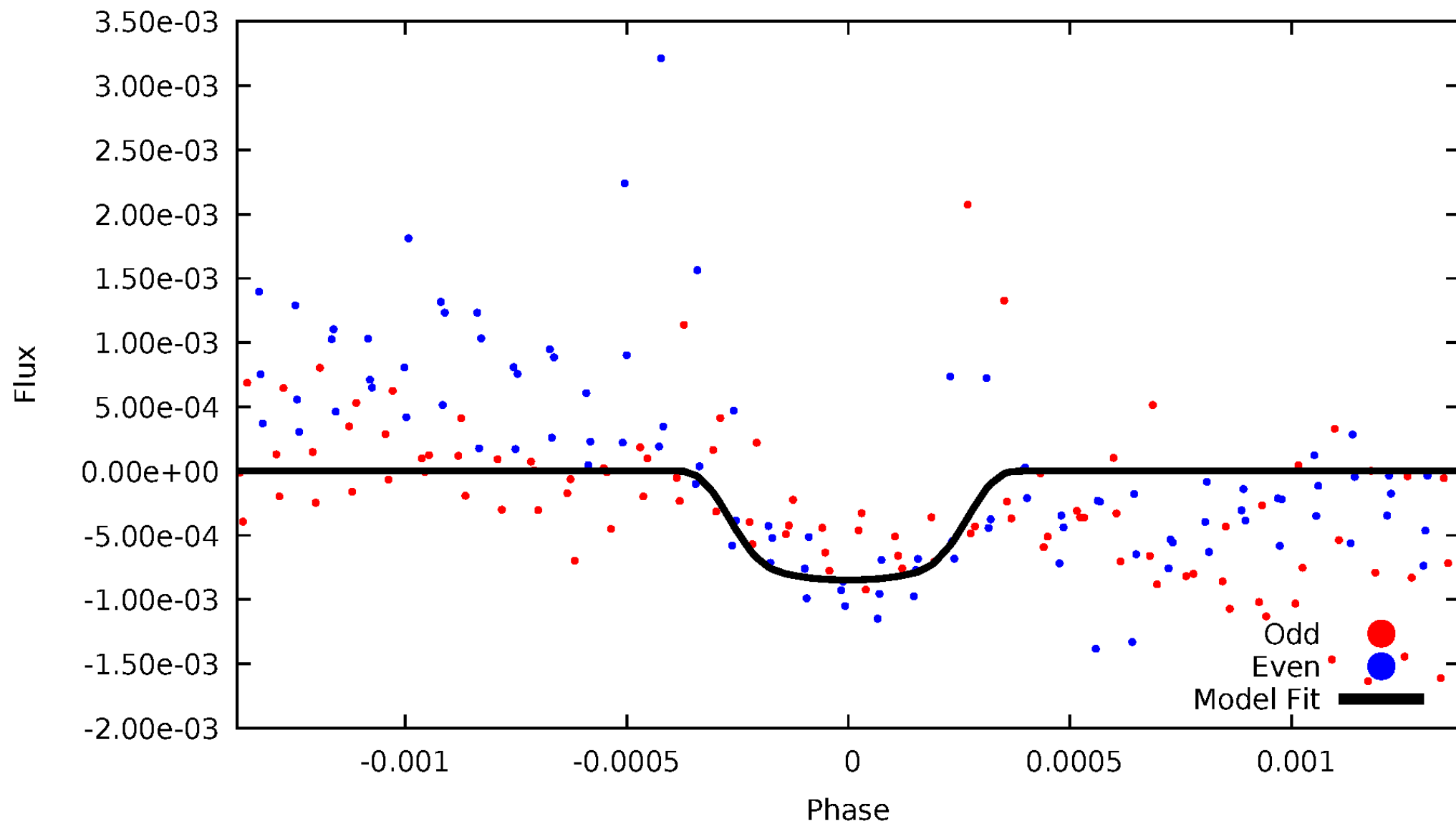


TCE 011244980-05



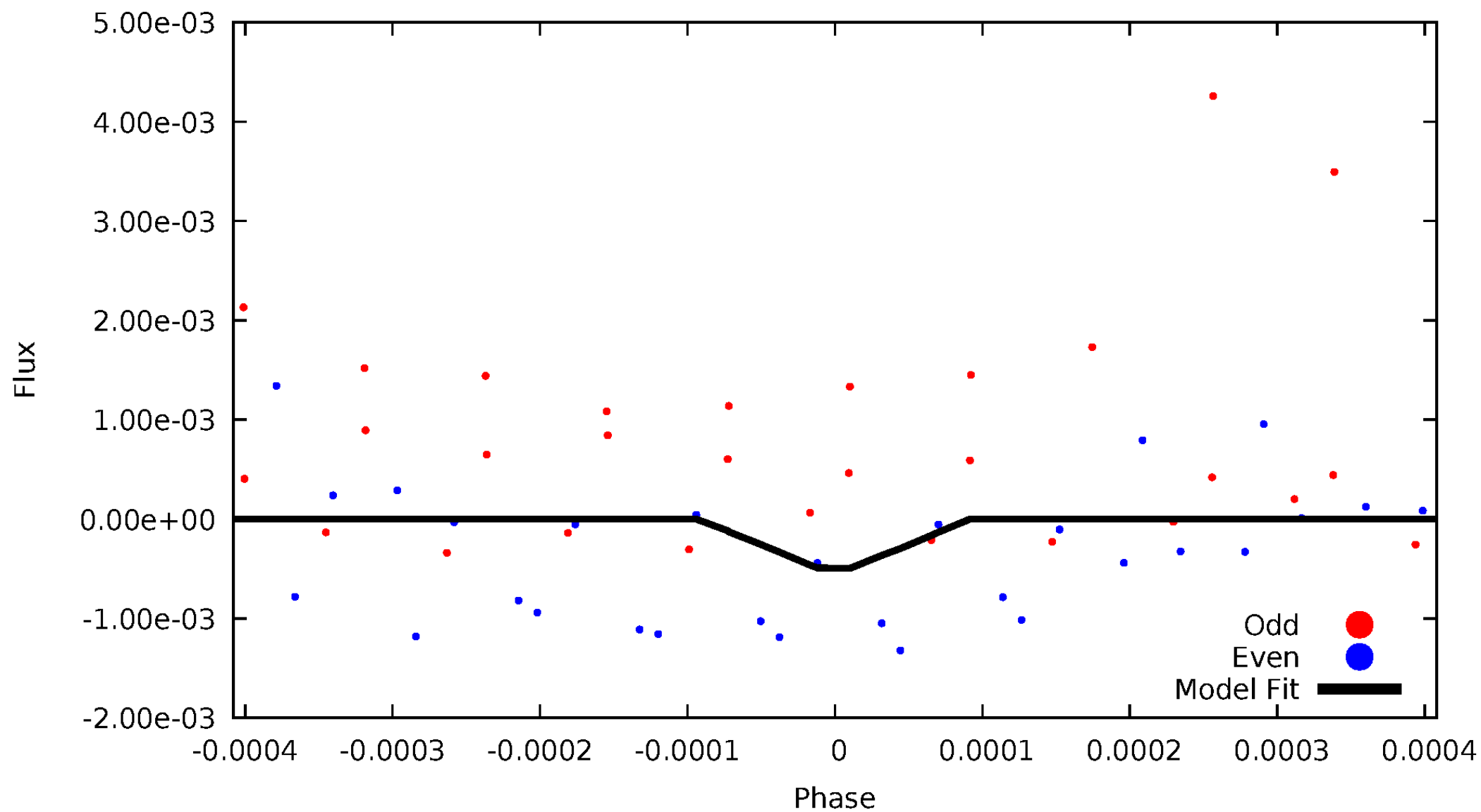
# DV Odd/Even

TCE 011244980-05



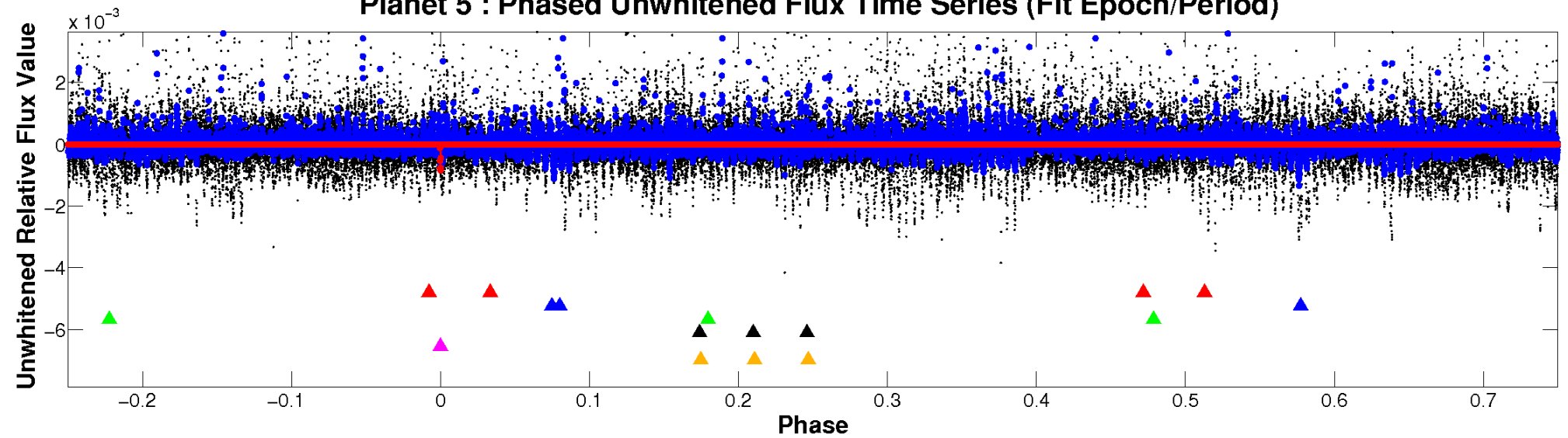
# ALT Odd/Even

TCE 011244980-05

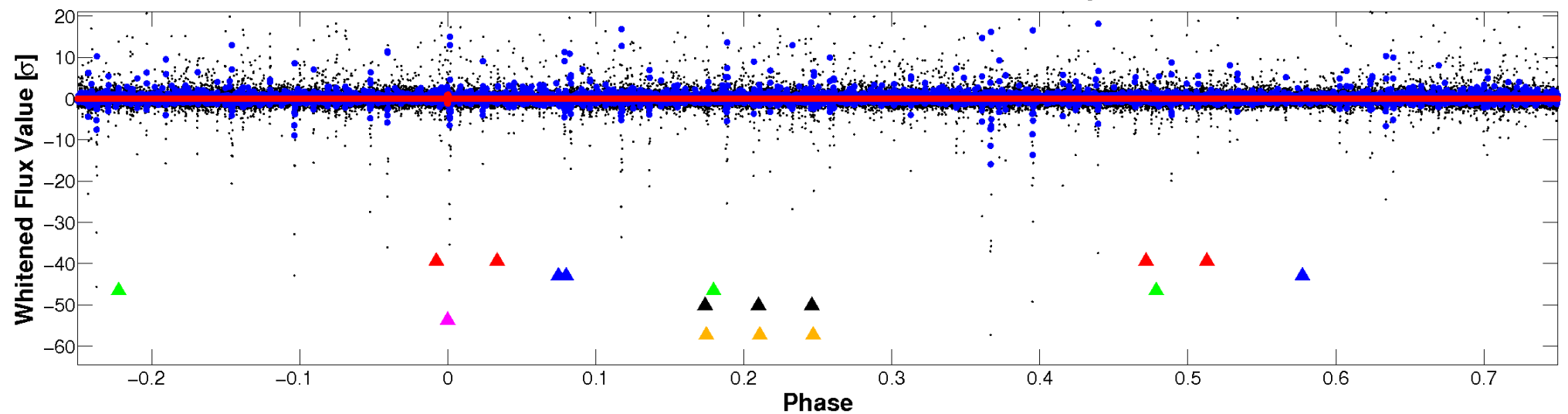


# Non-Whitened Vs. Whitened Light Curve

## Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



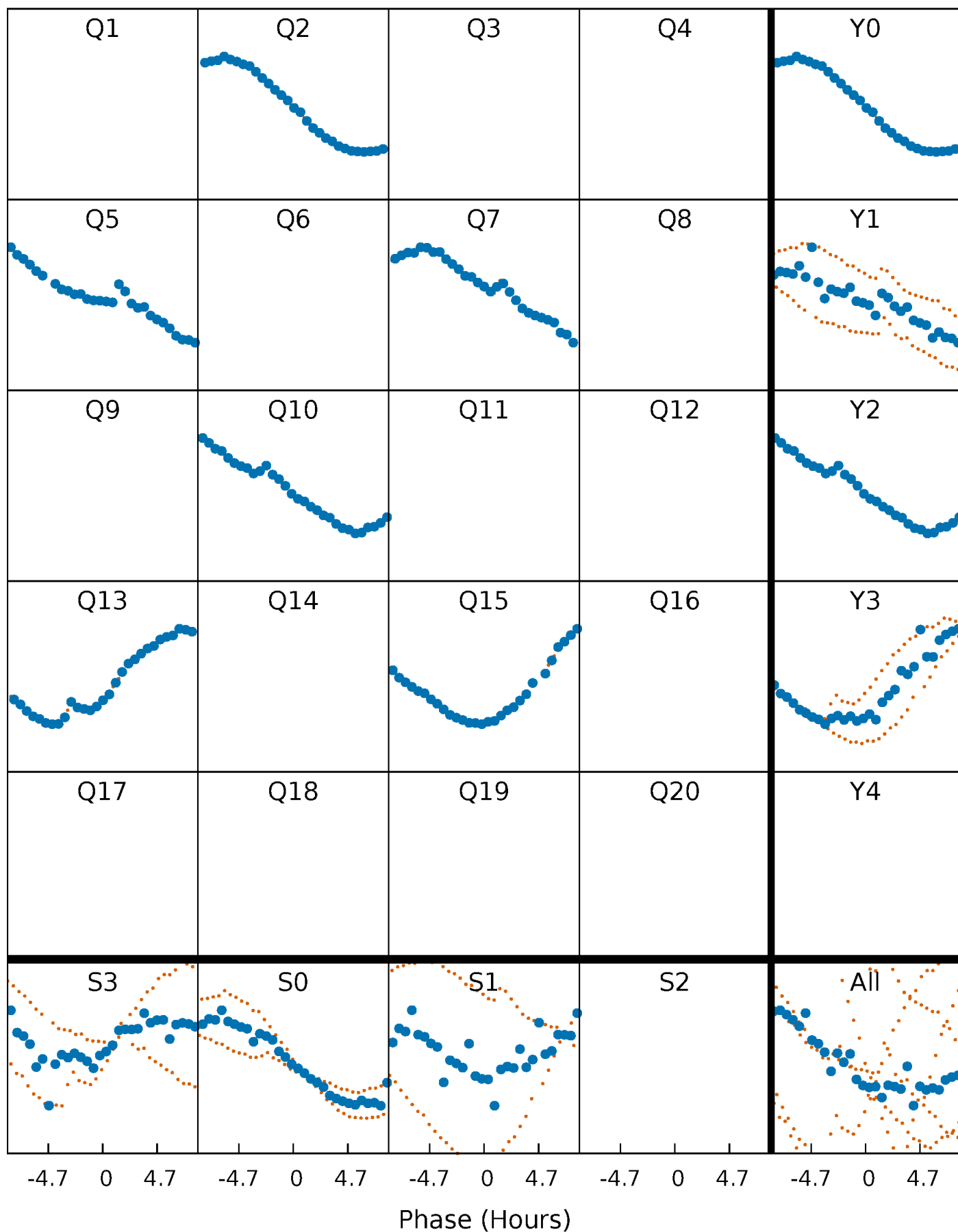
## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

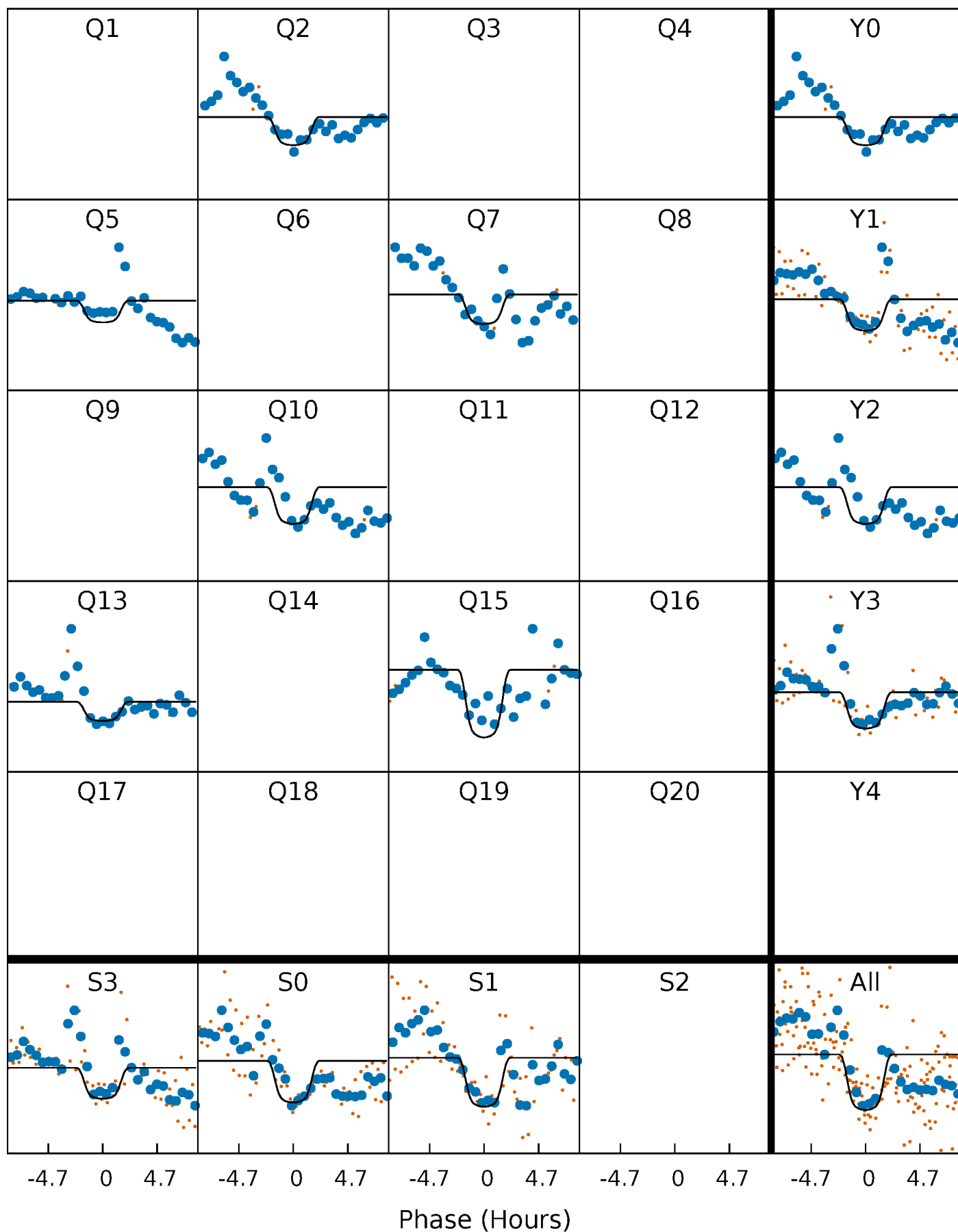
TCE 011244980-05     $P=248.870561$  Days     $T_0=217.173307$  (BKJD)





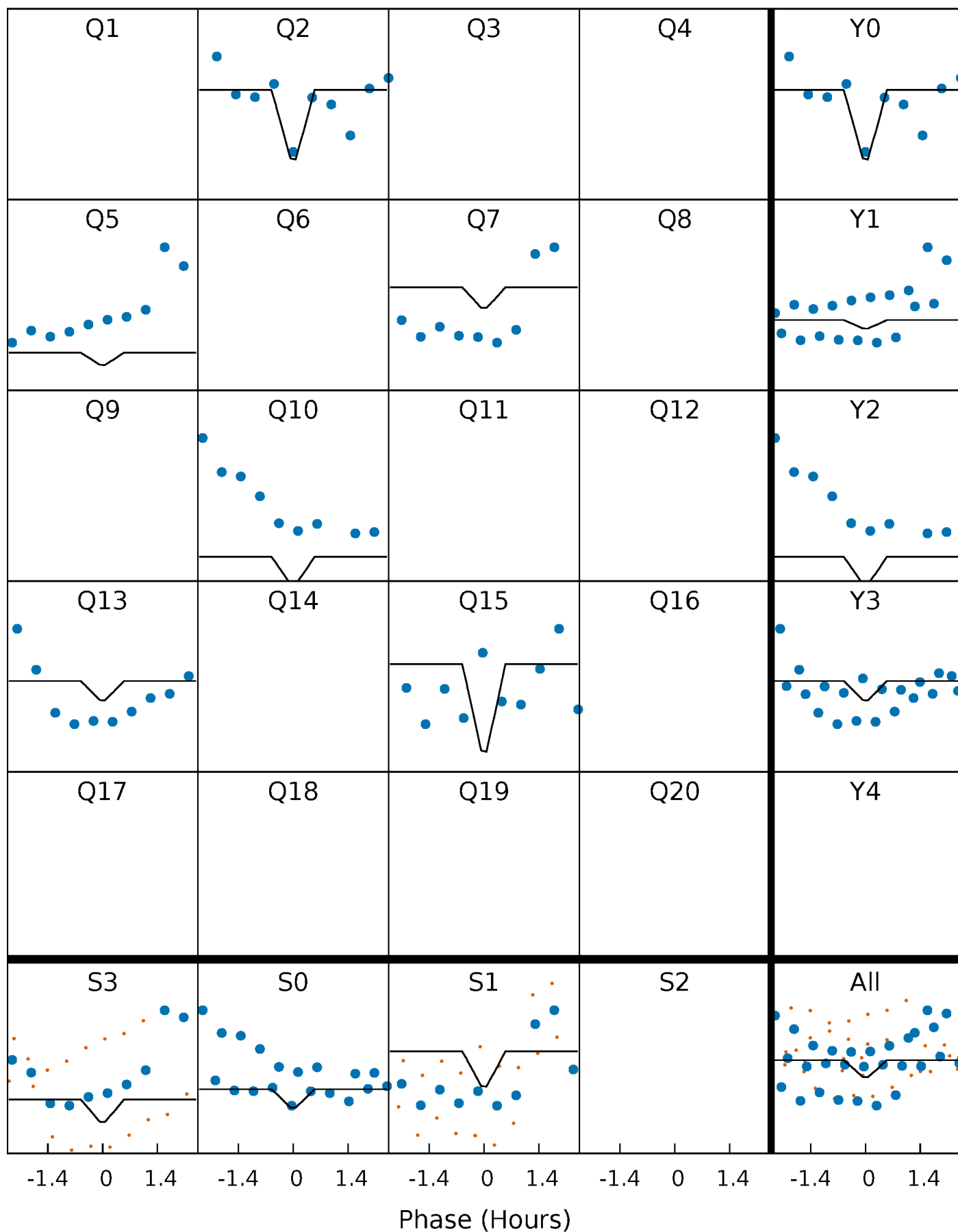
# DV Quarter-Phased Transit Curves

TCE 011244980-05     $P=248.870561$  Days     $T_0=217.173307$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

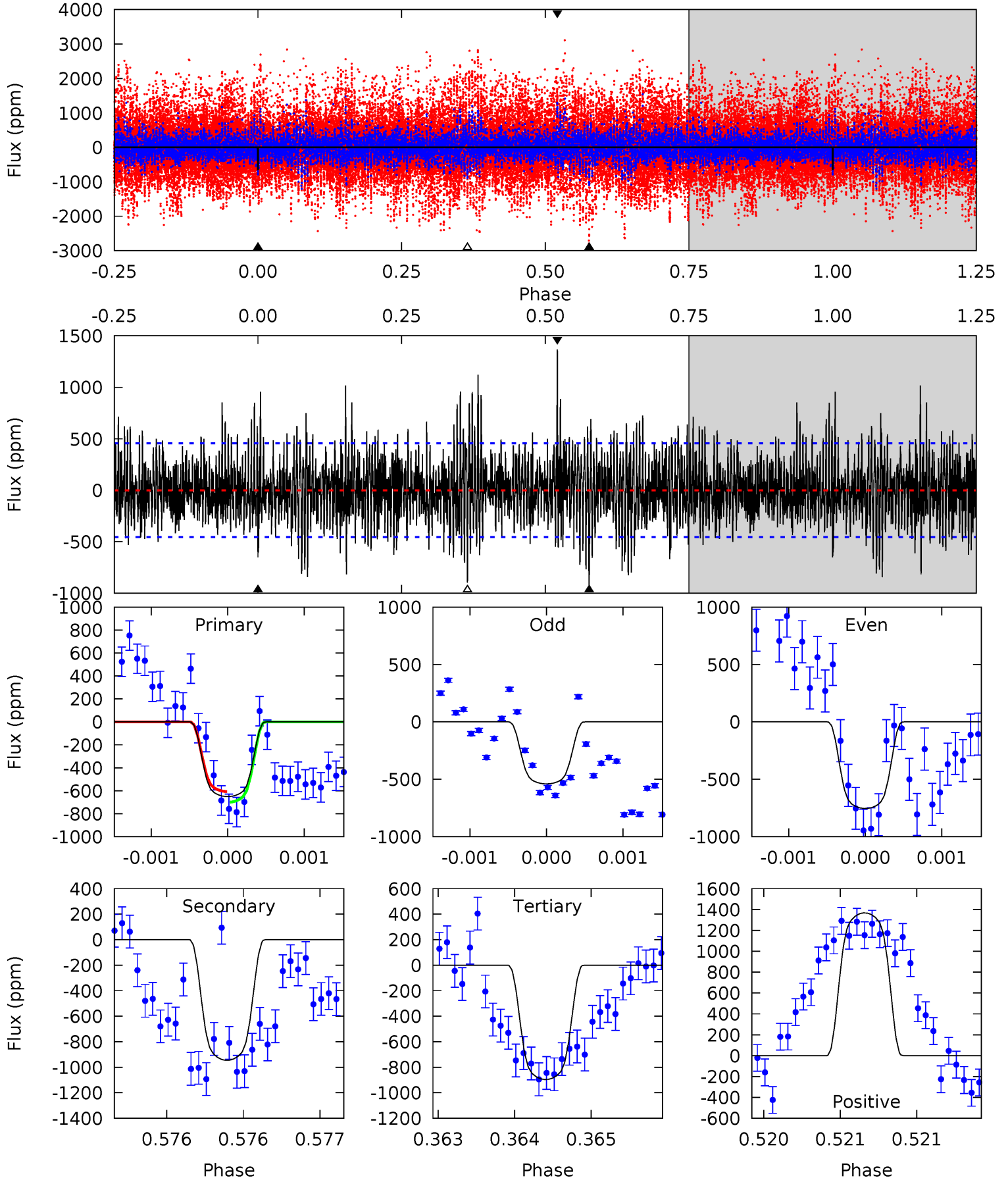
TCE 011244980-05     $P=248.872664$  Days     $T_0=217.174455$  (BKJD)



# DV Model-Shift Uniqueness Test

011244980-05, P = 248.870561 Days, E = 217.173307 Days

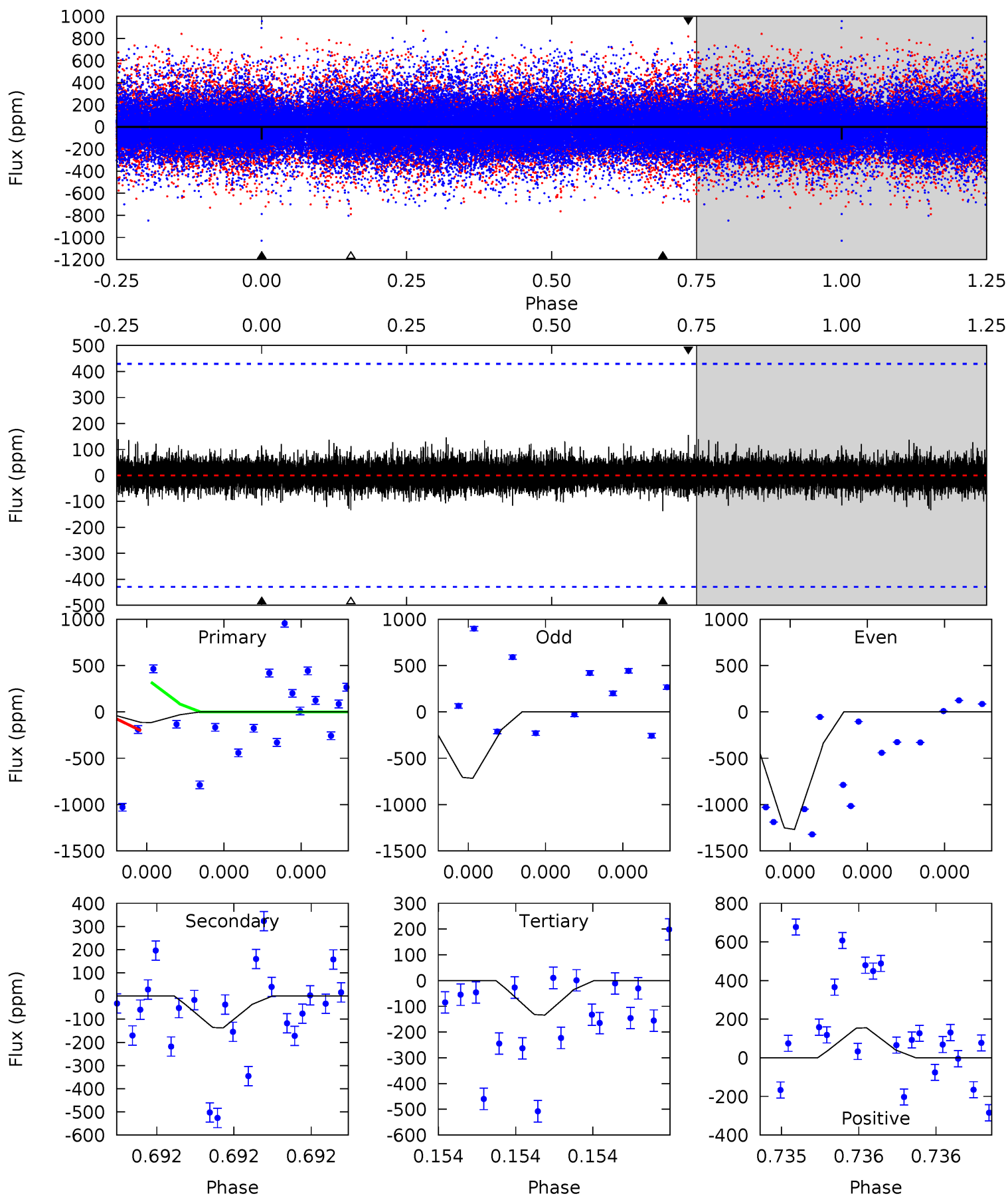
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.85	11.4	10.8	16.5	5.50	3.36	3.08	-2.96	-8.66	0.60	-5.10	1.27	0.93	0.59	0.57



# Alt Model-Shift Uniqueness Test

011244980-05, P = 248.872664 Days, E = 217.174455 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
1.55	1.85	1.80	2.09	5.76	3.77	0.40	-0.26	-0.54	0.05	-0.24	4.43	1.46	0.53	0.72



### Stellar Parameters For KIC 011244980

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5904^{+159}_{-159}$	$4.386^{+0.149}_{-0.182}$	$-0.480^{+0.300}_{-0.300}$	$0.971^{+0.252}_{-0.168}$	$0.837^{+0.114}_{-0.070}$	$1.287^{+0.913}_{-0.617}$
	+3%/-3%	+3%/-4%	+62%/-62%	+26%/-17%	+14%/-8%	+71%/-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 011244980-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-945 \pm 83$	$3.55^{+0.99}_{-0.88}$	$421^{+31}_{-24}$	$5680^{+800}_{-491}$	$22028^{+17072}_{-8552}$
Alt.	$-138 \pm 74$	$2.40^{+0.89}_{-0.82}$	$423^{+26}_{-24}$	$4436^{+923}_{-754}$	$6572^{+10916}_{-4395}$

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

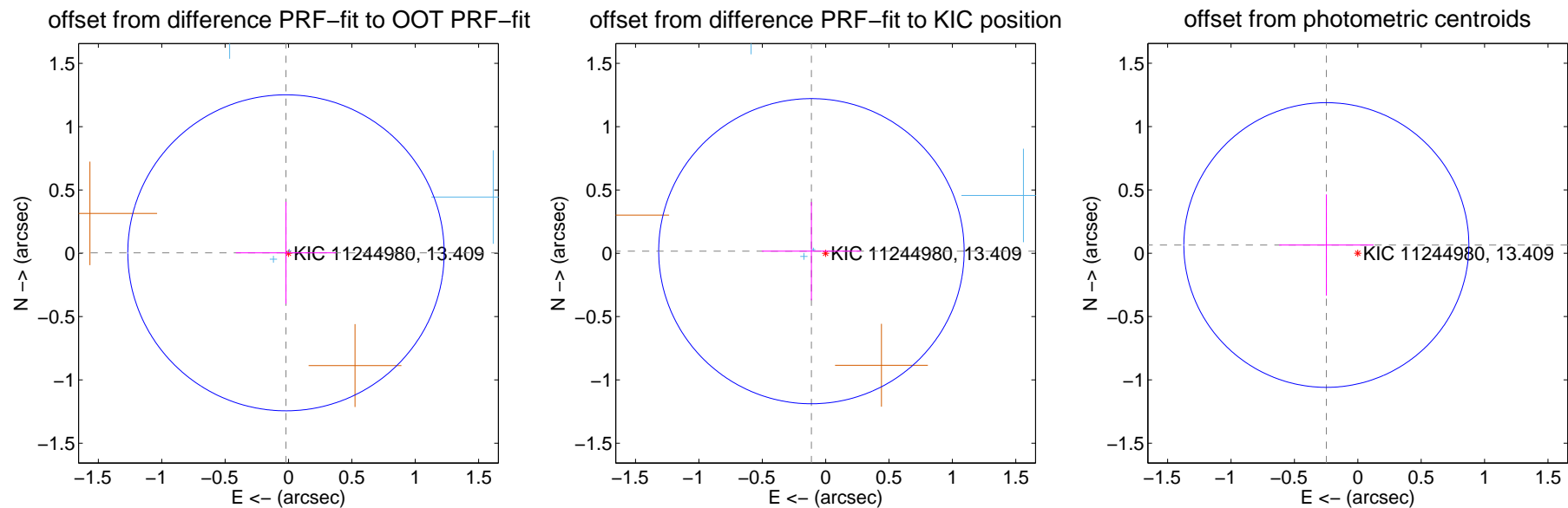
## DV Centroid Data

Supplemental centroid analysis for 011244980-05. Kepler magnitude: 13.41. Transit SNR 7.08

There are 4 quarters with good PRF difference image offsets

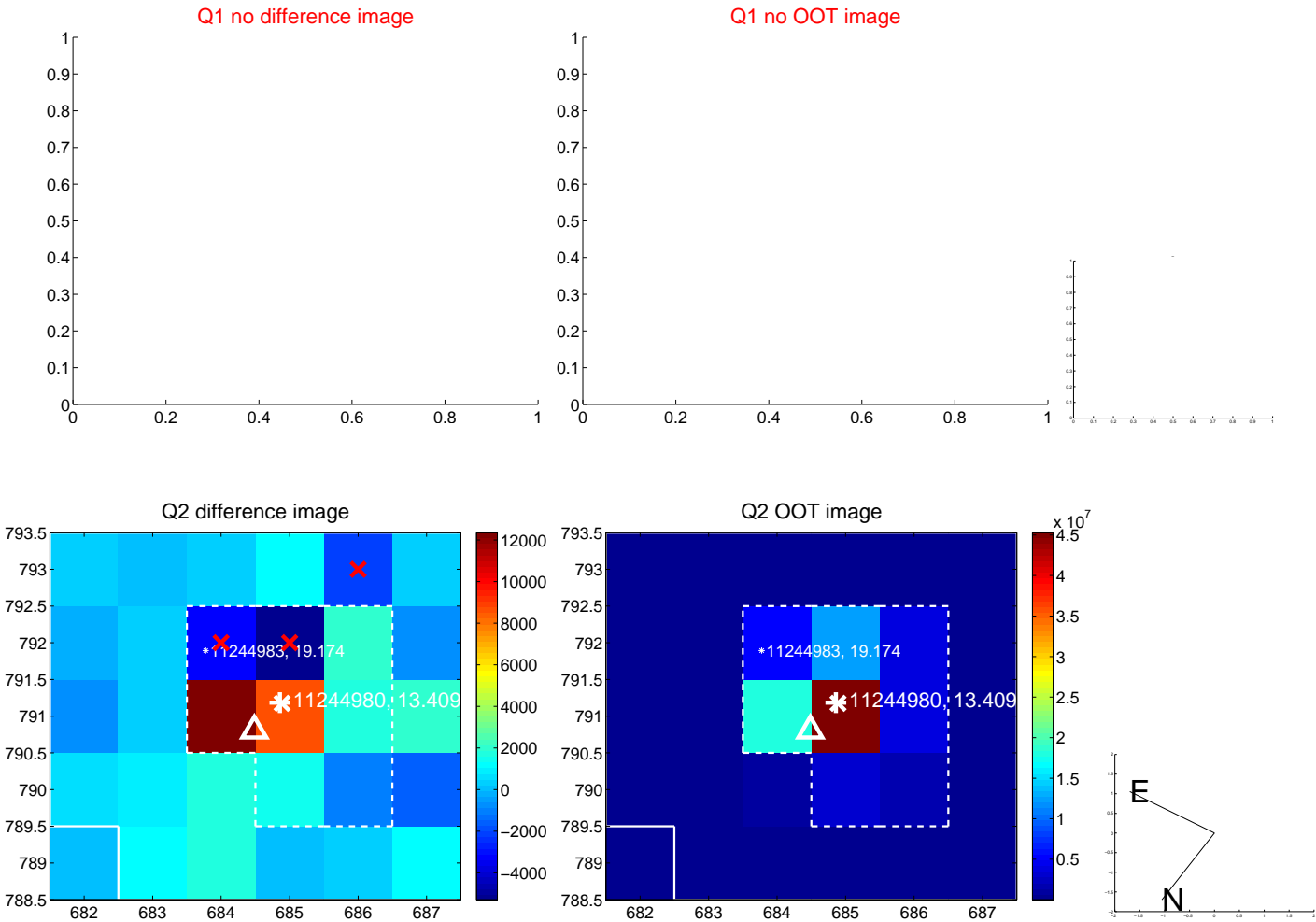
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.020 \pm 0.416$	0.05	$0.020 \pm 0.395$	$0.004 \pm 0.403$
PRF-fit source offset from KIC position	$0.114 \pm 0.402$	0.28	$0.112 \pm 0.391$	$0.017 \pm 0.388$
photometric centroid source offset	$0.26 \pm 0.37$	0.68	$0.25 \pm 0.37$	$0.06 \pm 0.40$

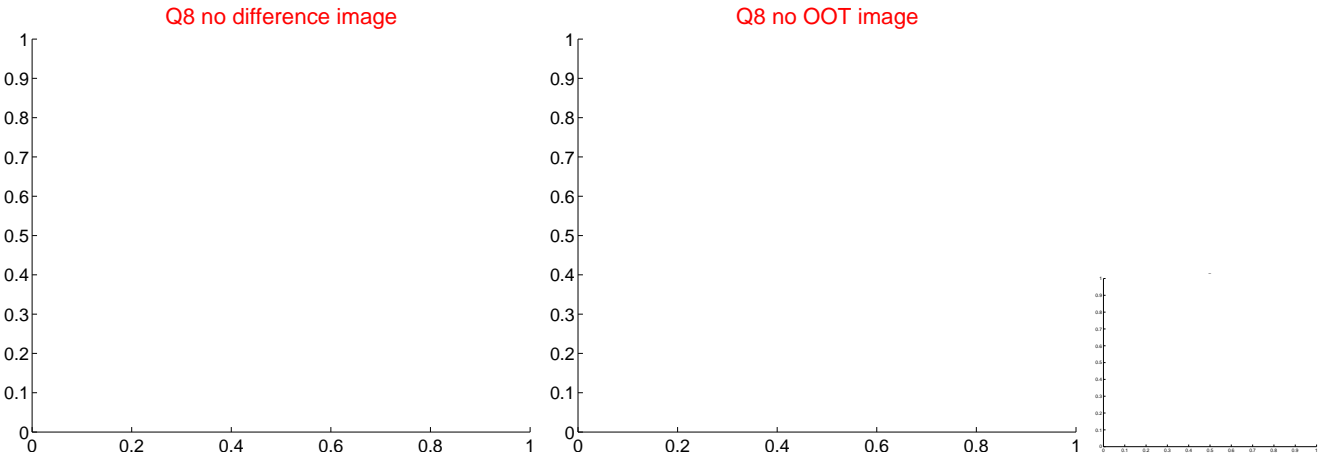
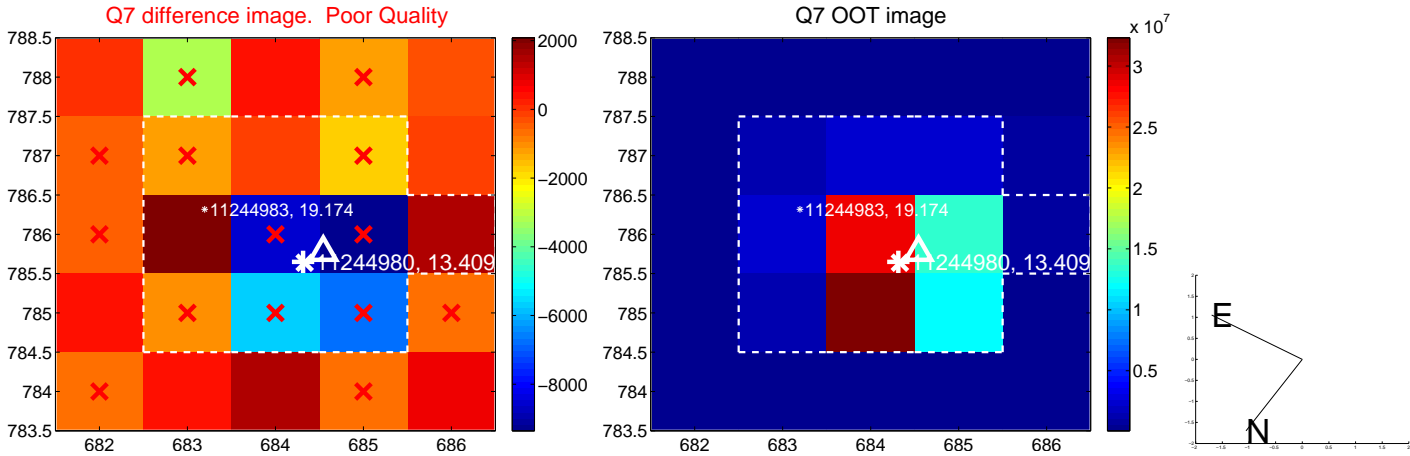
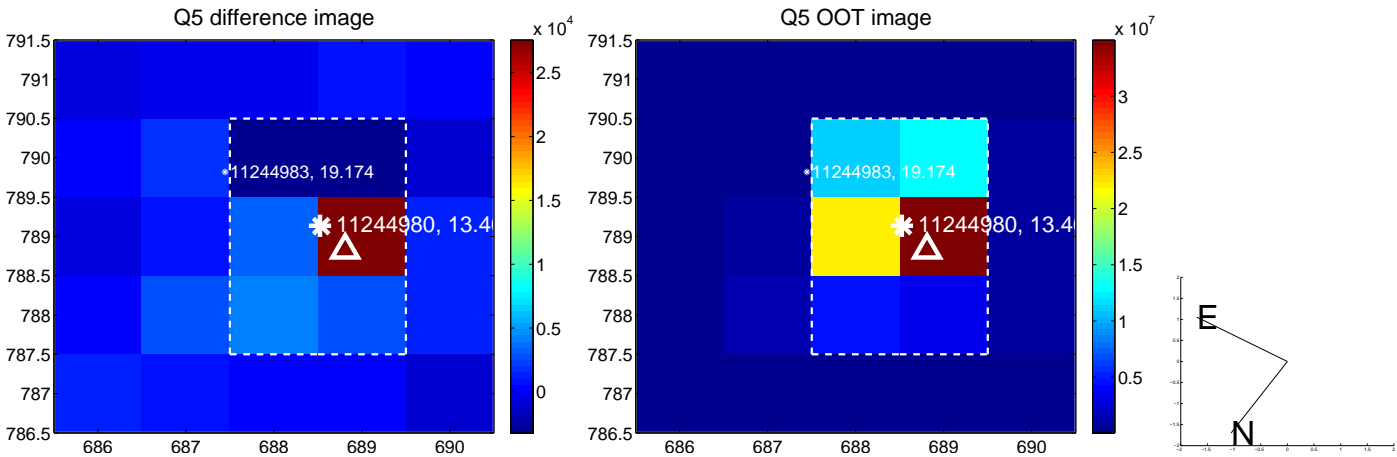


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

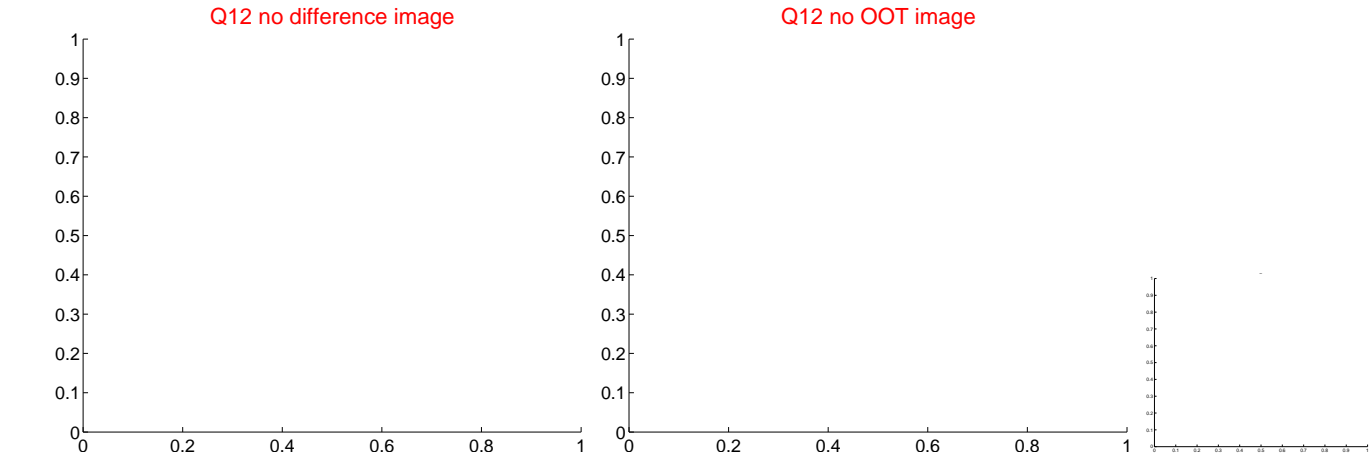
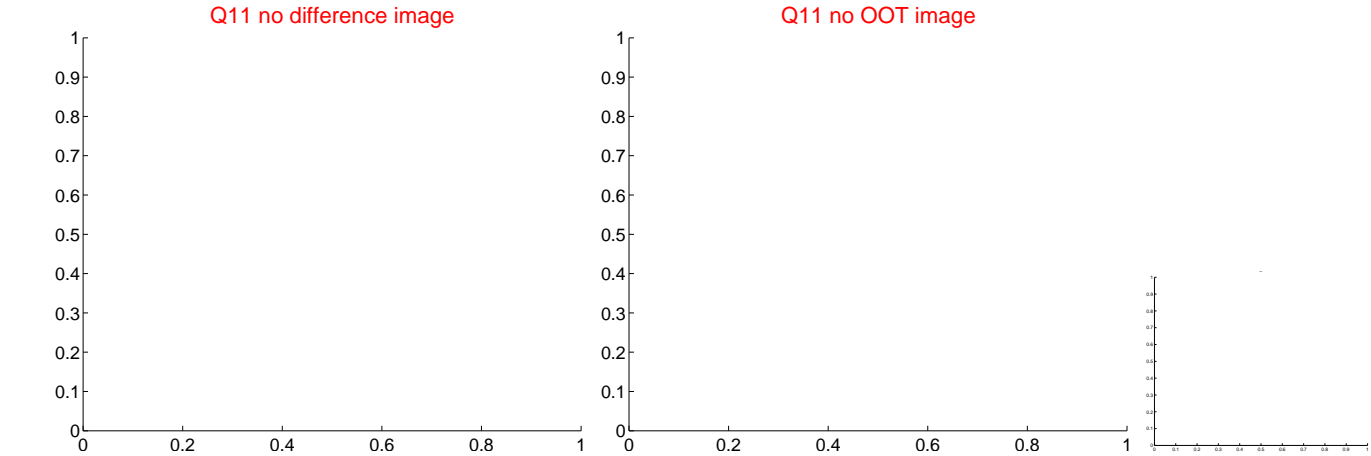
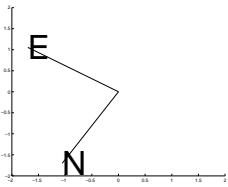
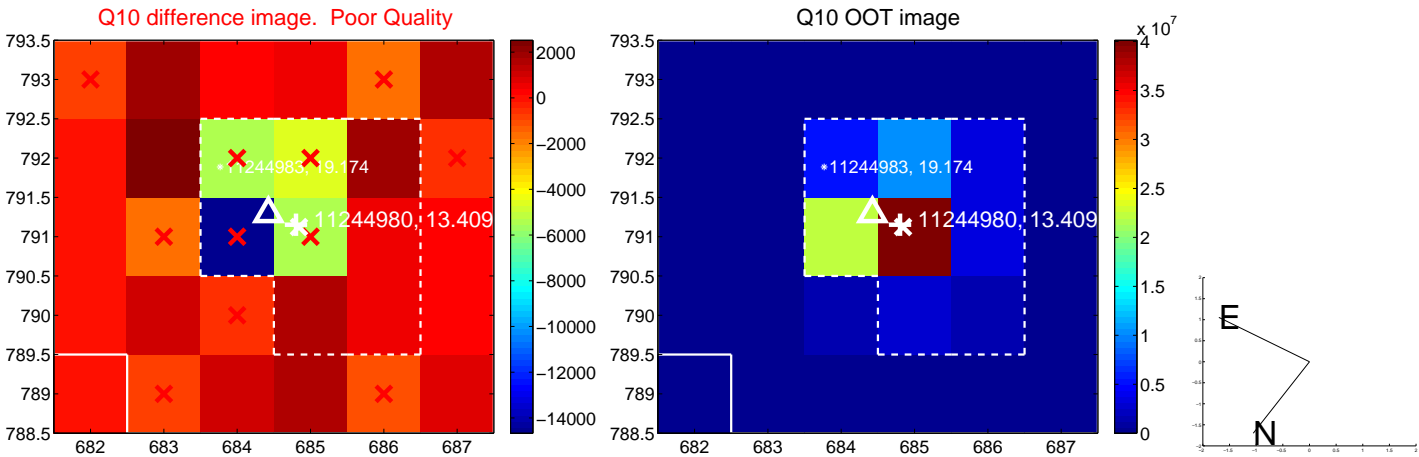
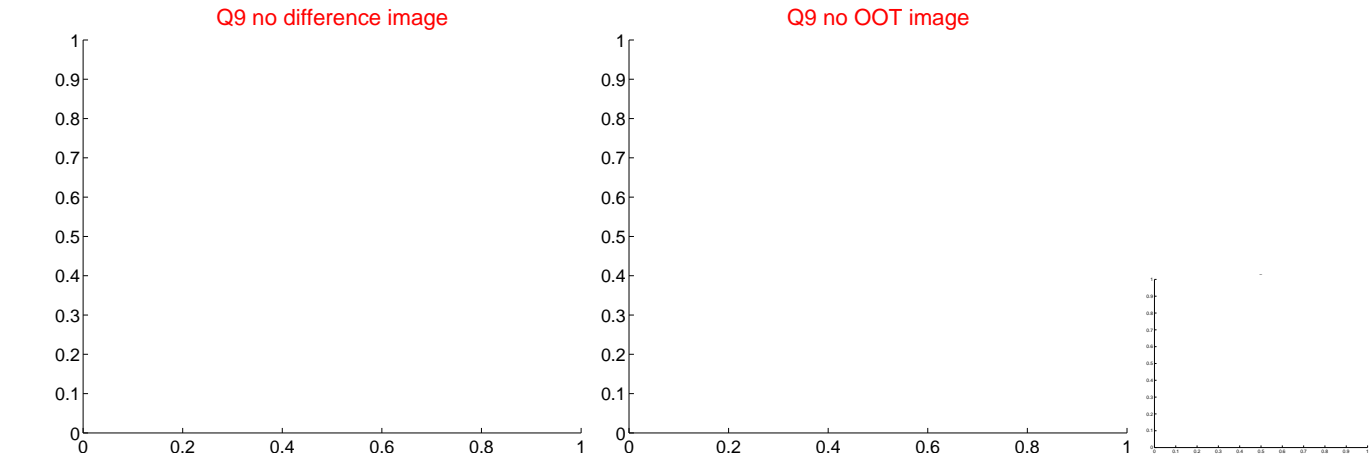


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

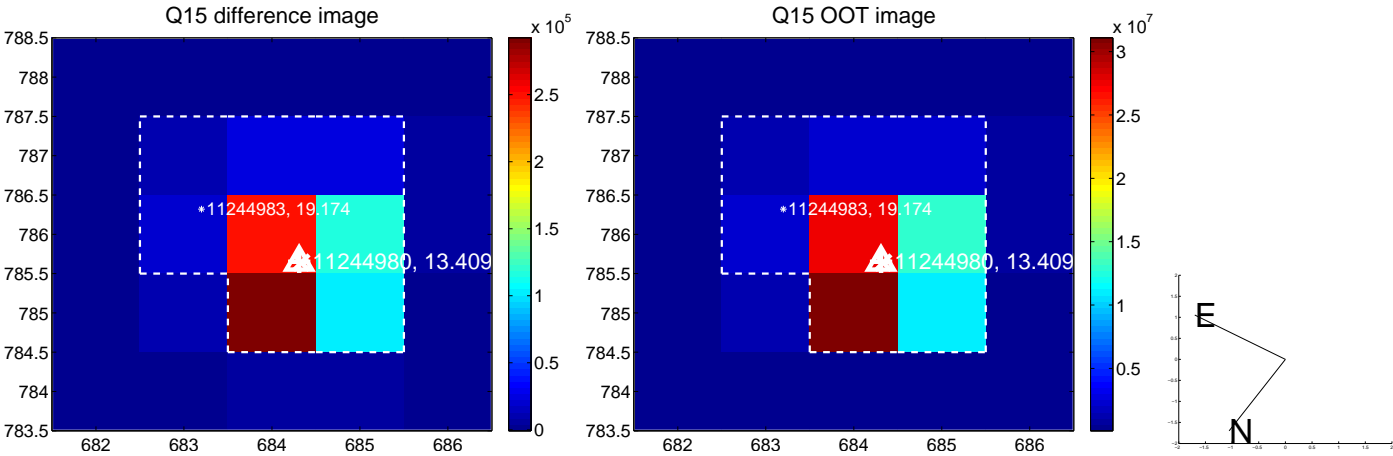
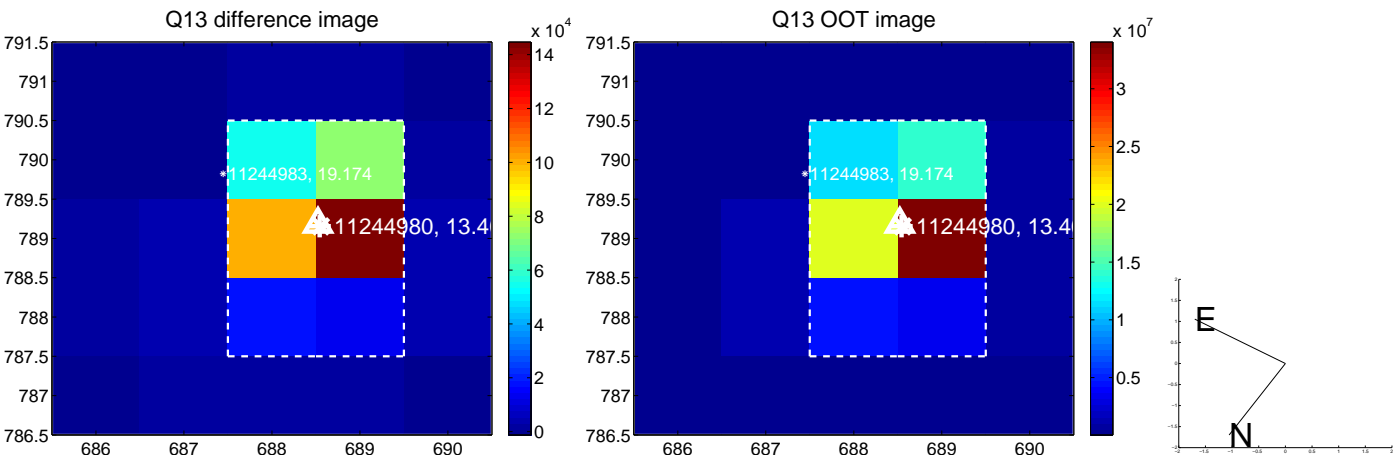




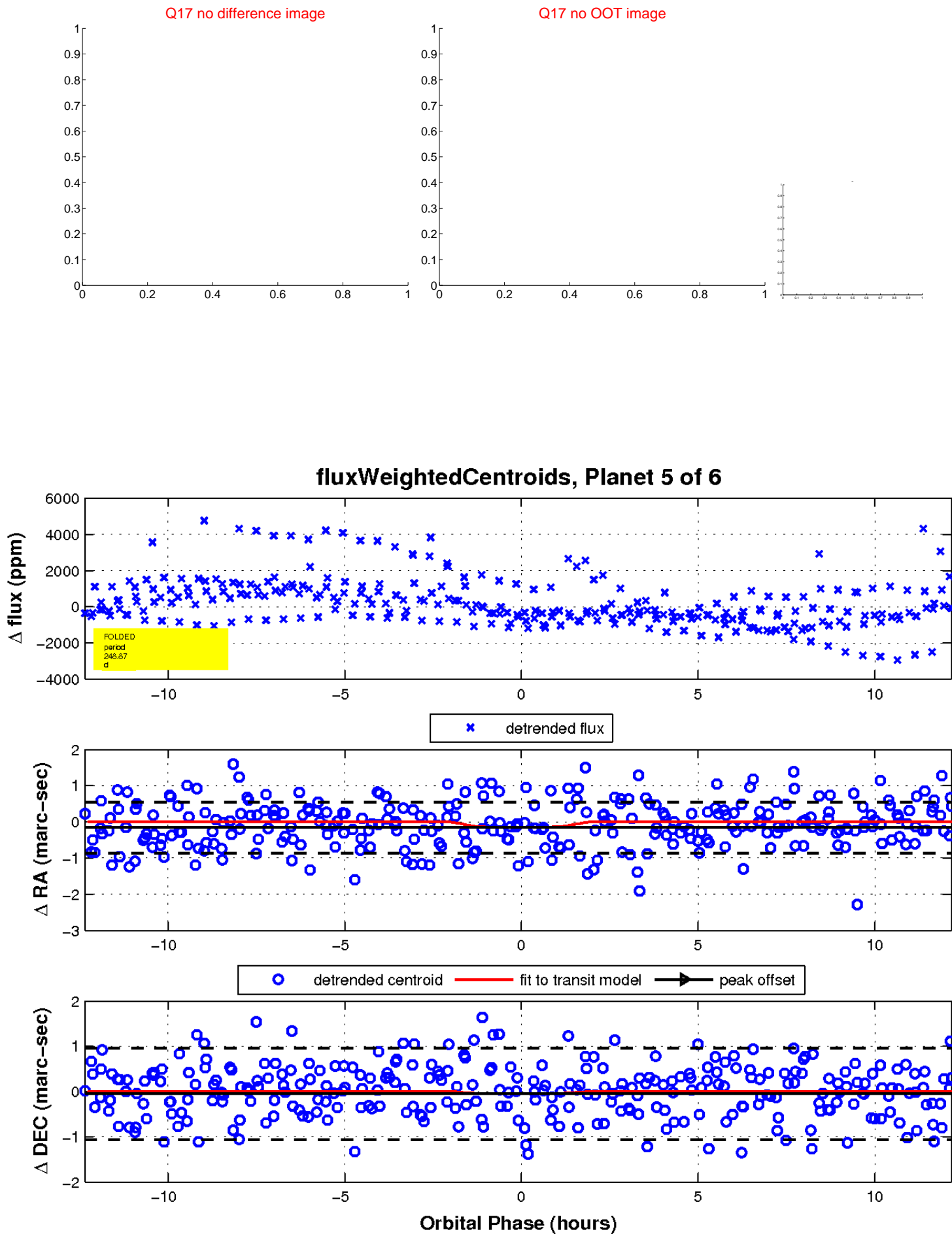
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

