

# KIC 003097912

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003097912-01	OBS	No	0.690503	131.792115	21.0	2.797	10.1	9.3	4.41	8107	2.36	171660.12
003097912-02	OBS	No	0.690500	131.557591	27.8	2.356	11.1	11.7	4.41	8107	2.71	171660.88
003097912-03	OBS	No	0.837037	132.243527	84.9	4.064	12.9	15.3	4.41	8107	4.74	132809.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003097912-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003097912-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003097912-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

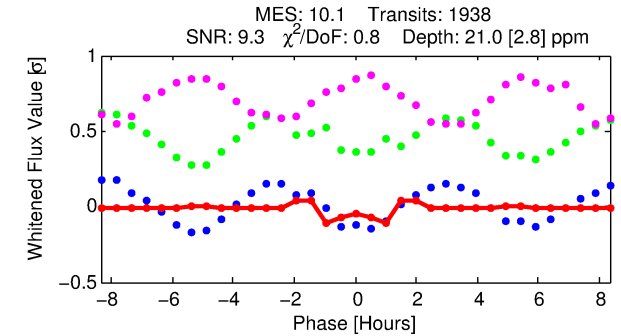
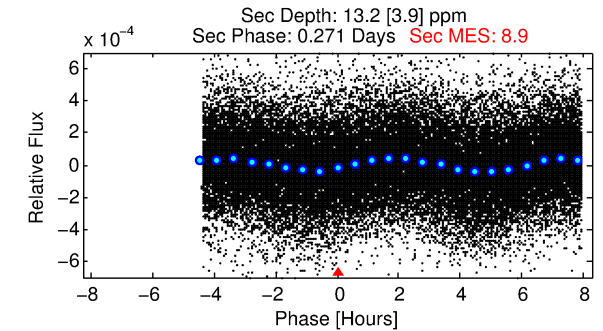
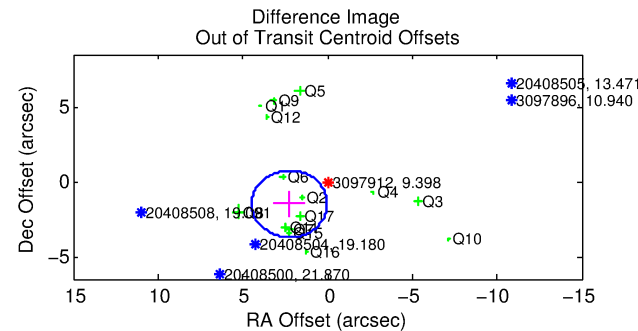
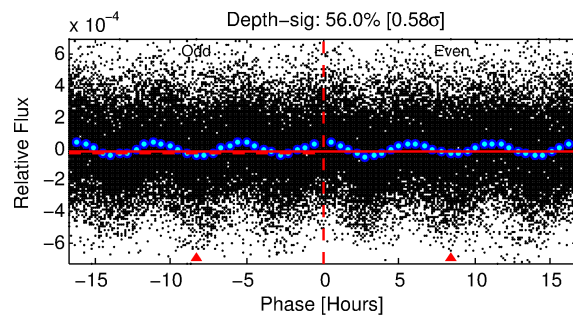
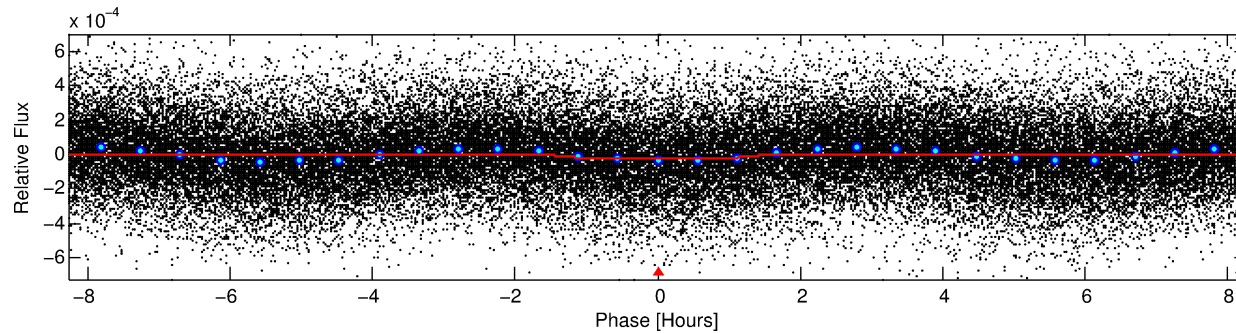
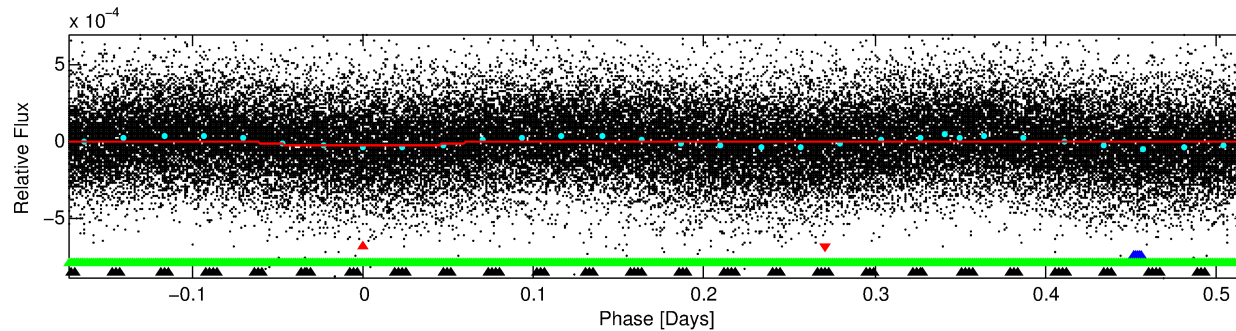
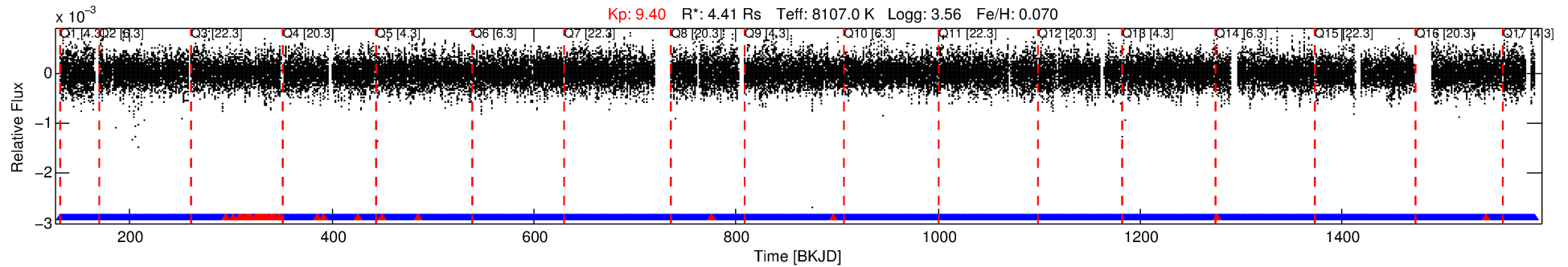
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003097912-01

No Significant Match Found

# DV One-Page Summary

KIC: 3097912 Candidate: 1 of 4 Period: 0.691 d



## DV Fit Results:

Period = 0.69050 [0.00001] d  
Epoch = 131.7921 [0.0013] BKJD  
 $R_p/R^*$  = 0.0049 [0.0007]  
 $a/R^*$  = 1.26 [0.35]  
 $b$  = 0.90 [0.16]  
 $\text{Seff}$  = 171660.12 [161779.80]  
 $T_{\text{eq}}$  = 5190 [1223] K  
 $R_p$  = 2.36 [1.39]  $R_e$   
 $a$  = 0.0210 [0.0119] AU  
 $Ag$  = 0.57 [0.58] [-0.74 $\sigma$ ]  
 $T_{\text{eff}}$  = 6982 [763] K [1.24 $\sigma$ ]

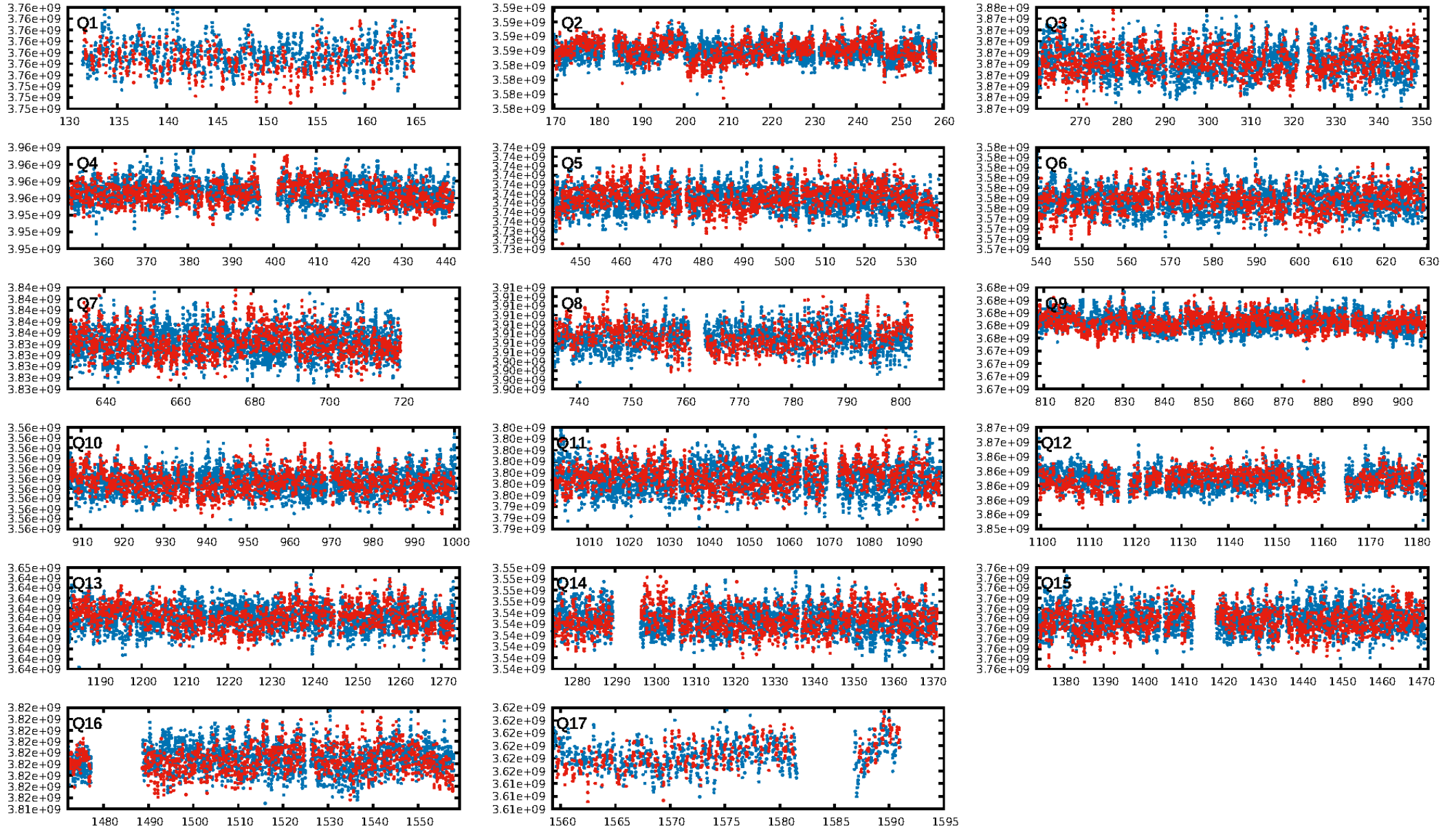
## DV Diagnostic Results:

**ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]**  
LongPeriod-sig: 52.4% [0.71 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 3.51e-07**  
RollingBand-fgt: 0.97 [1803/1851]  
GhostDiagnostic-chr: N/A  
**Centroid-sig: 0.0%**  
Centroid-so: 0.928 arcsec [1.43 $\sigma$ ]  
**OotOffset-rm: 2.703 arcsec [3.63 $\sigma$ ]**  
KicOffset-rm: 2.026 arcsec [2.57 $\sigma$ ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.00 [0/15]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:41:52 Z

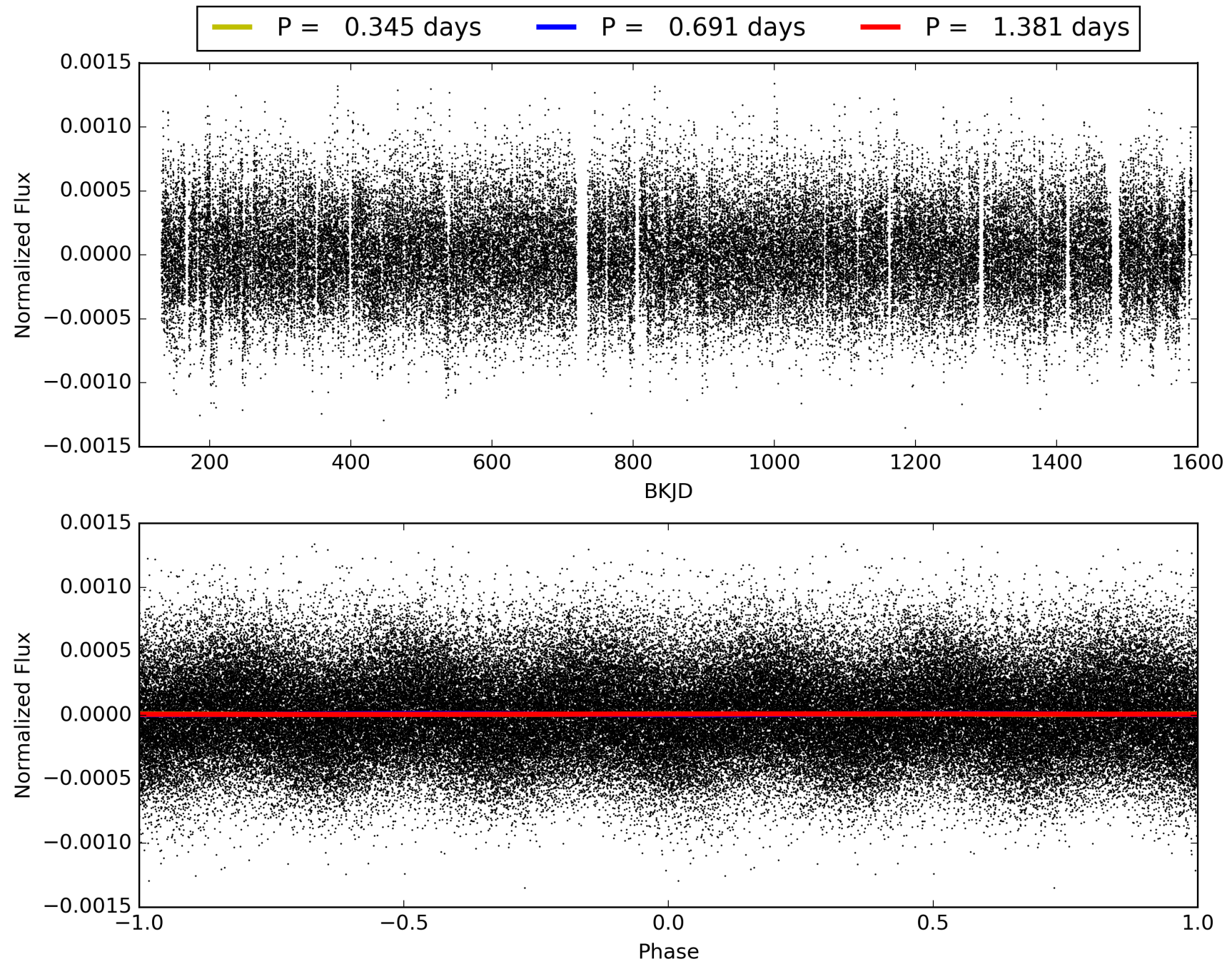
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003097912-01, PDC Light Curves





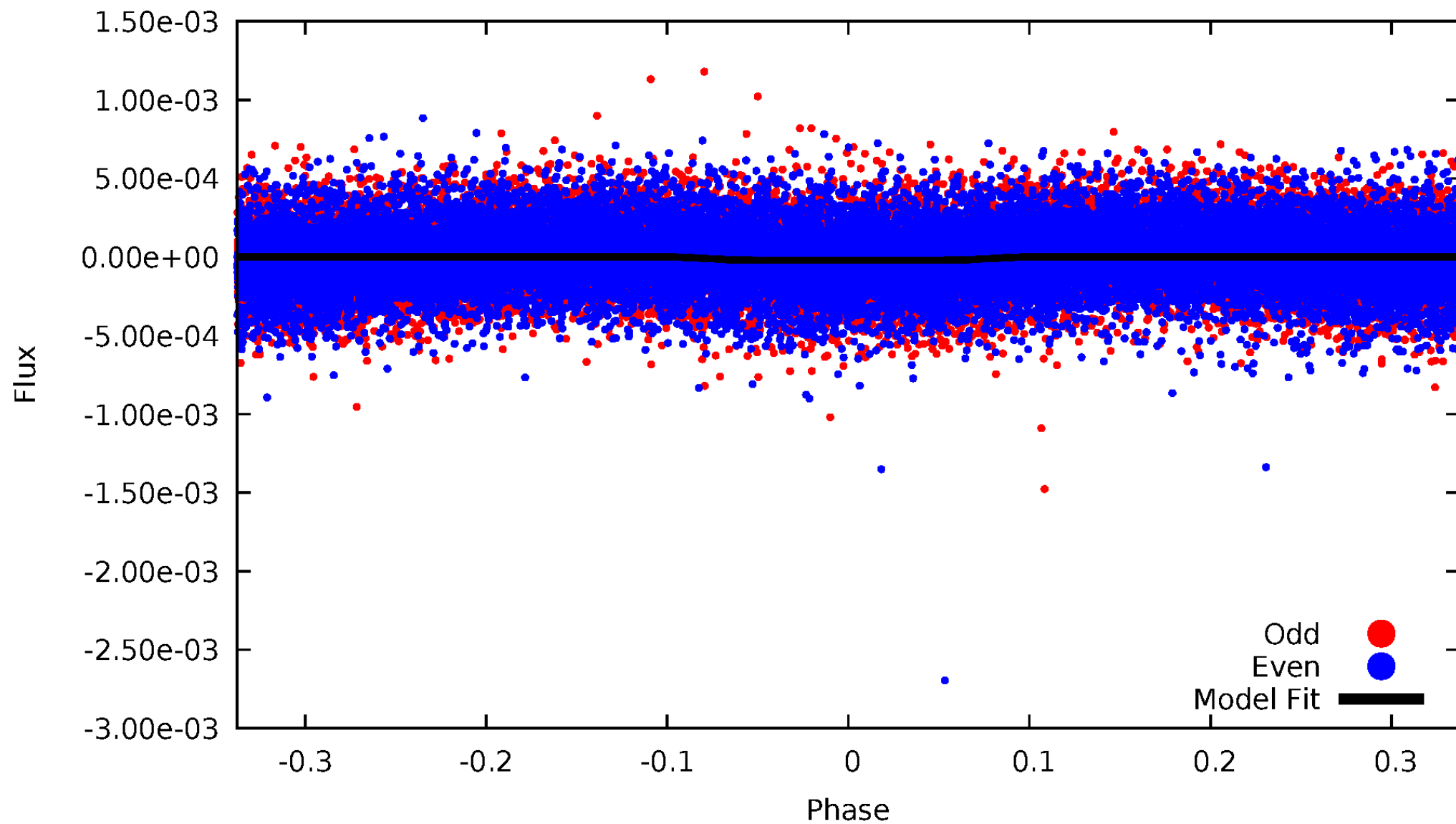
TCE 003097912-01





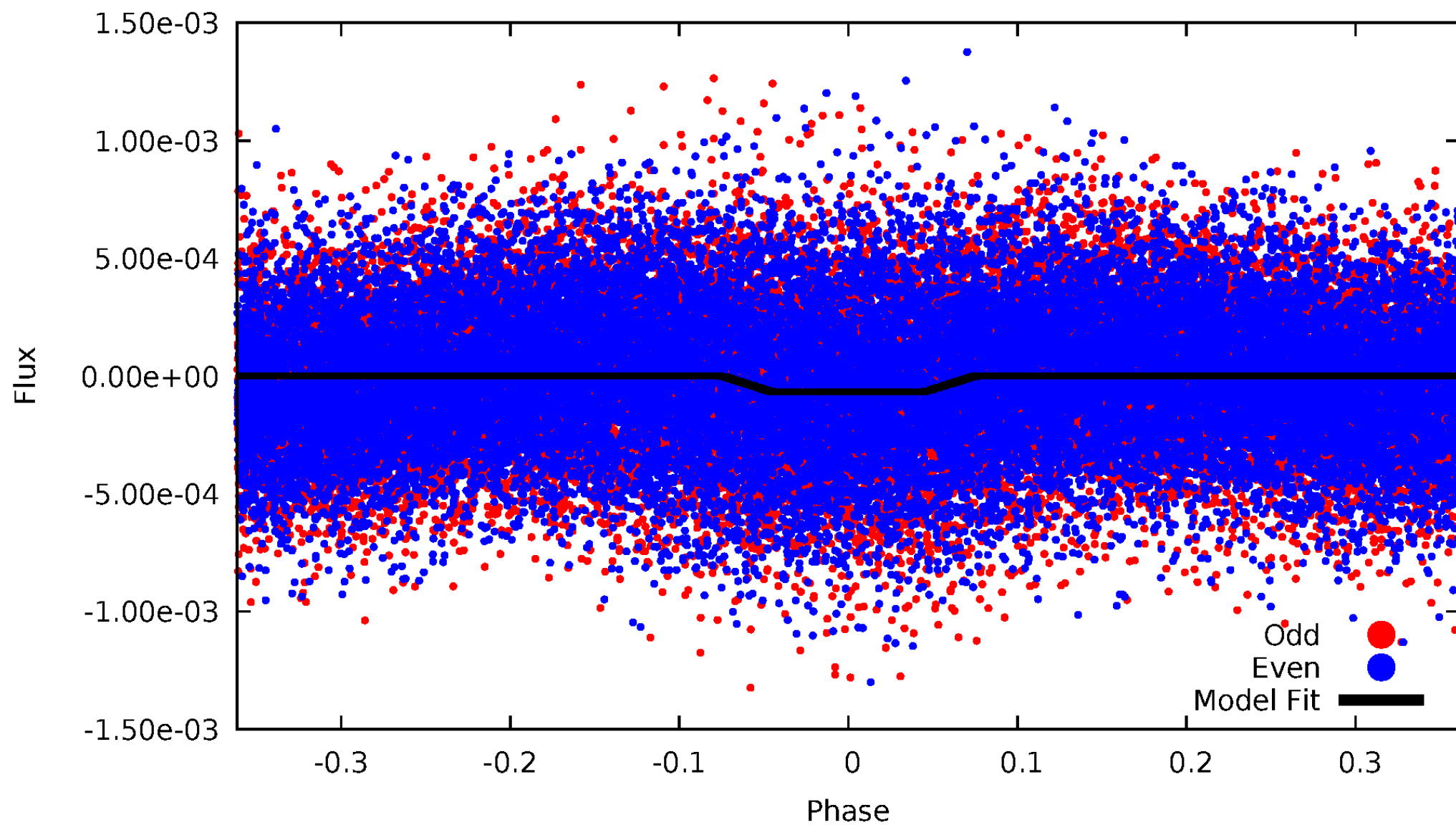
# DV Odd/Even

TCE 003097912-01

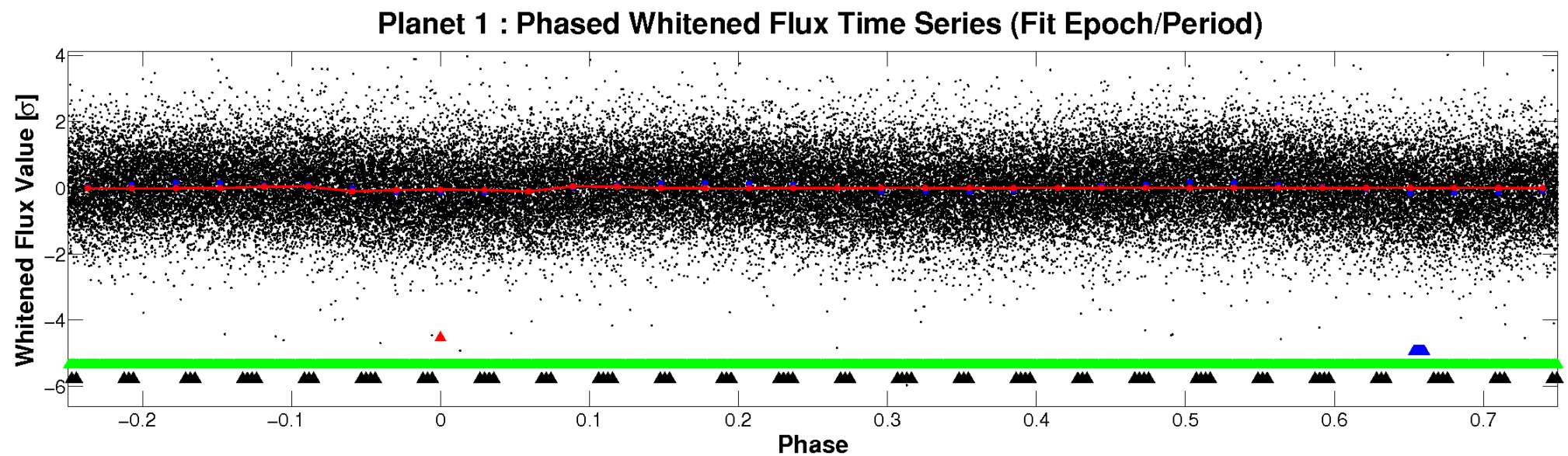
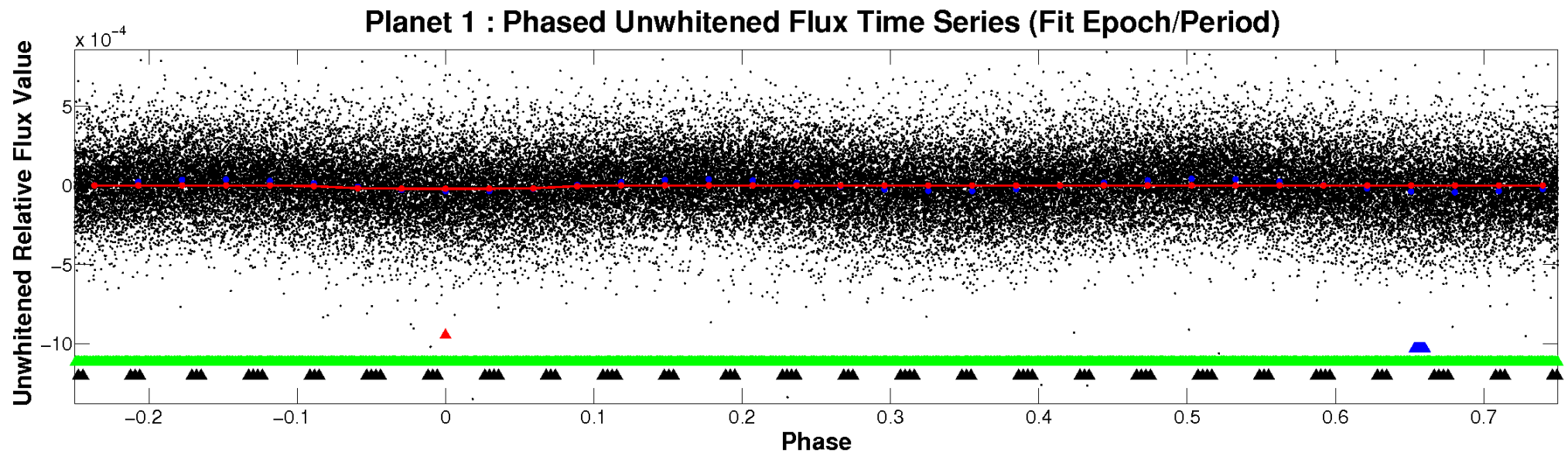


# ALT Odd/Even

TCE 003097912-01



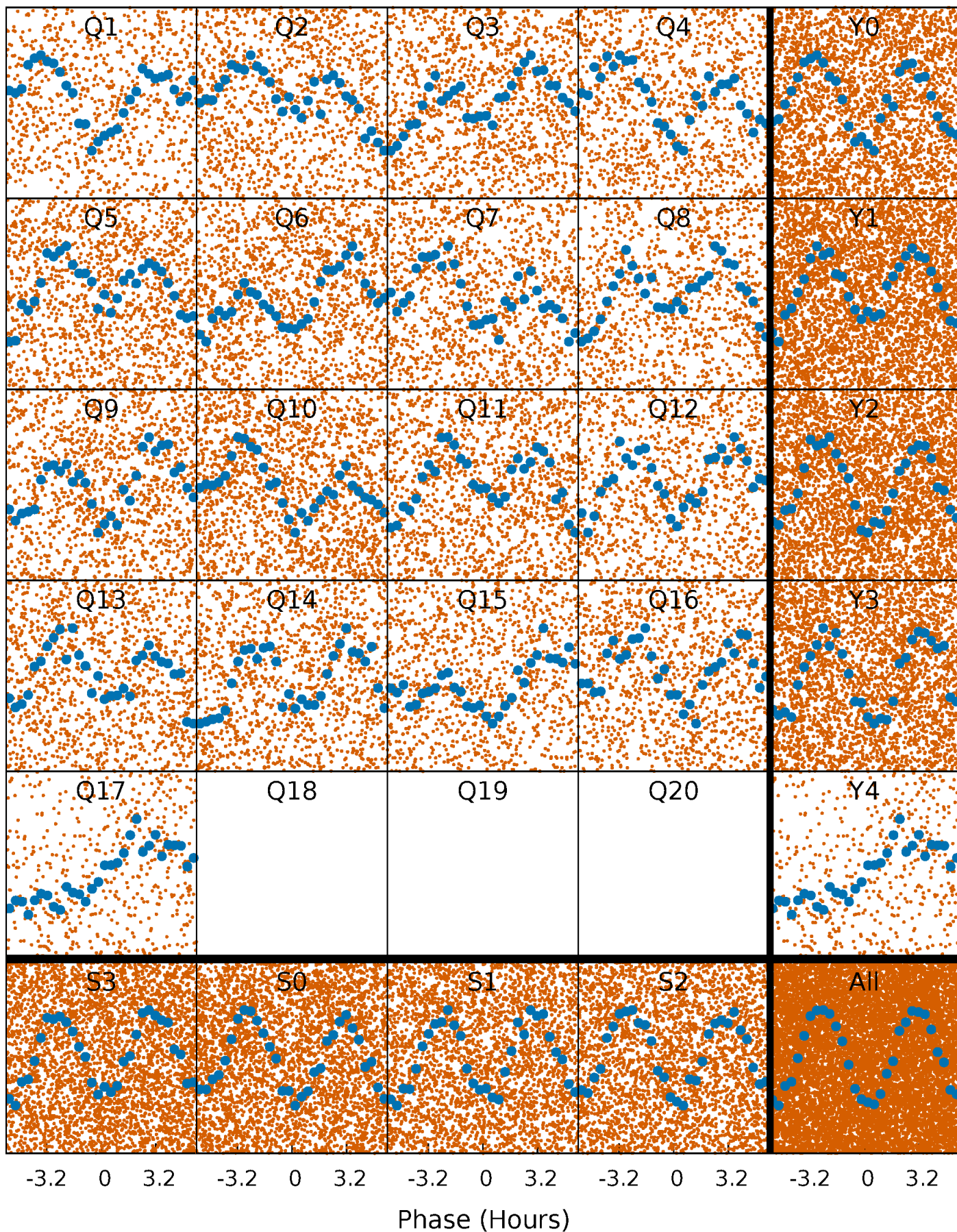
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

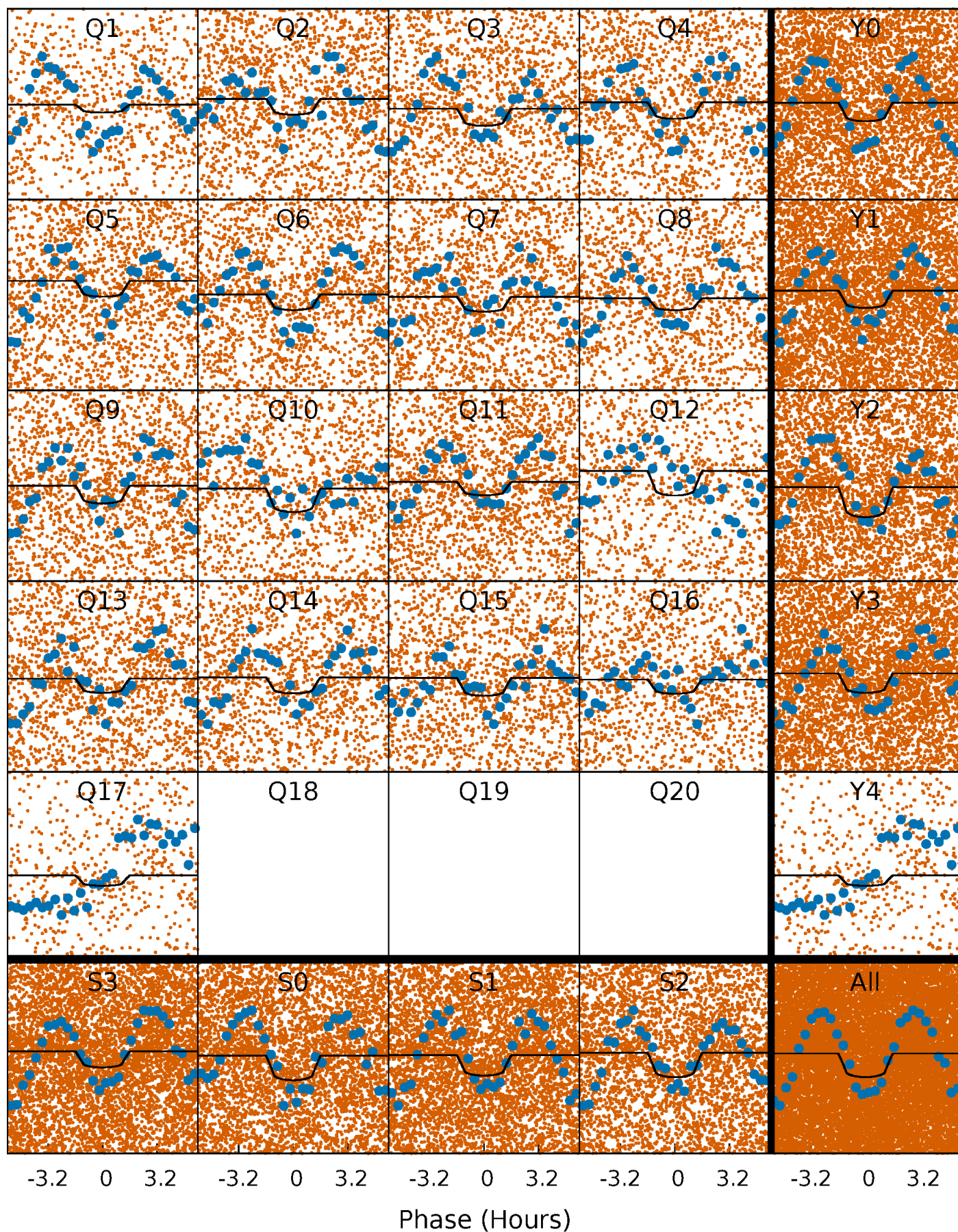
TCE 003097912-01 P= 0.690503 Days  $T_0=131.792115$  (BKJD)





# DV Quarter-Phased Transit Curves

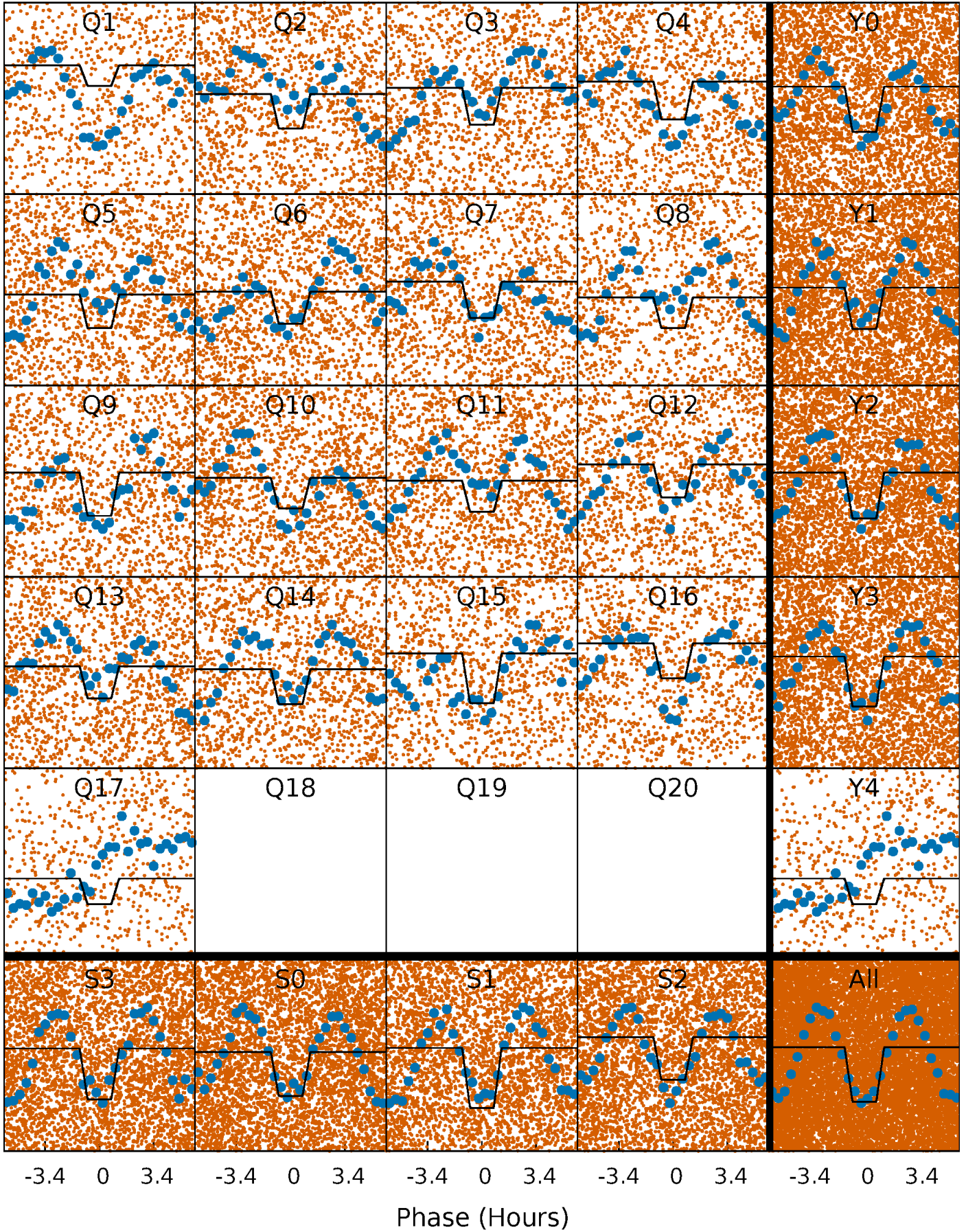
TCE 003097912-01 P= 0.690503 Days  $T_0=131.792115$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 003097912-01 P= 0.690517 Days  $T_0=131.788998$  (BKJD)

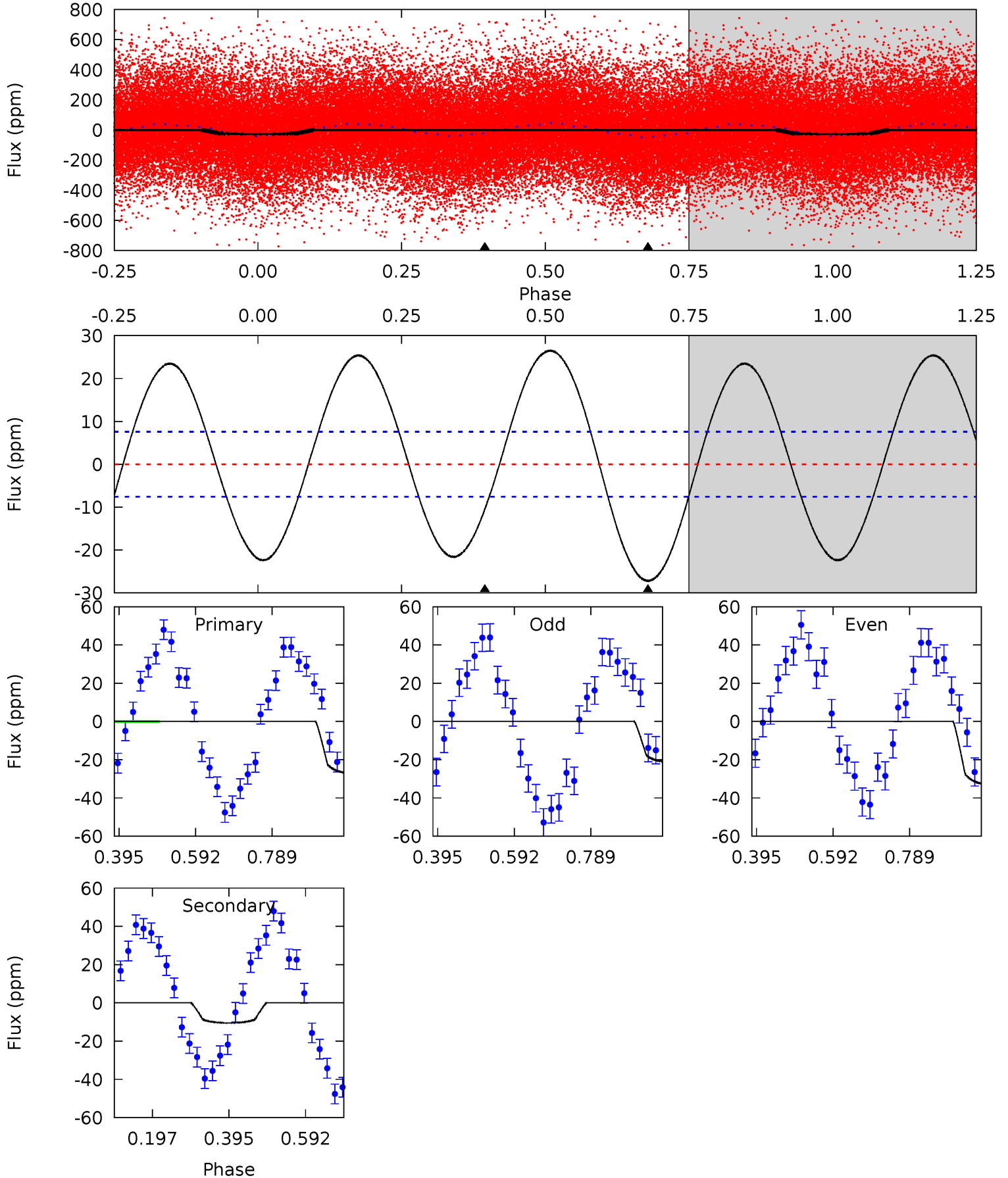




# DV Model-Shift Uniqueness Test

003097912-01, P = 0.690503 Days, E = 131.101612 Days

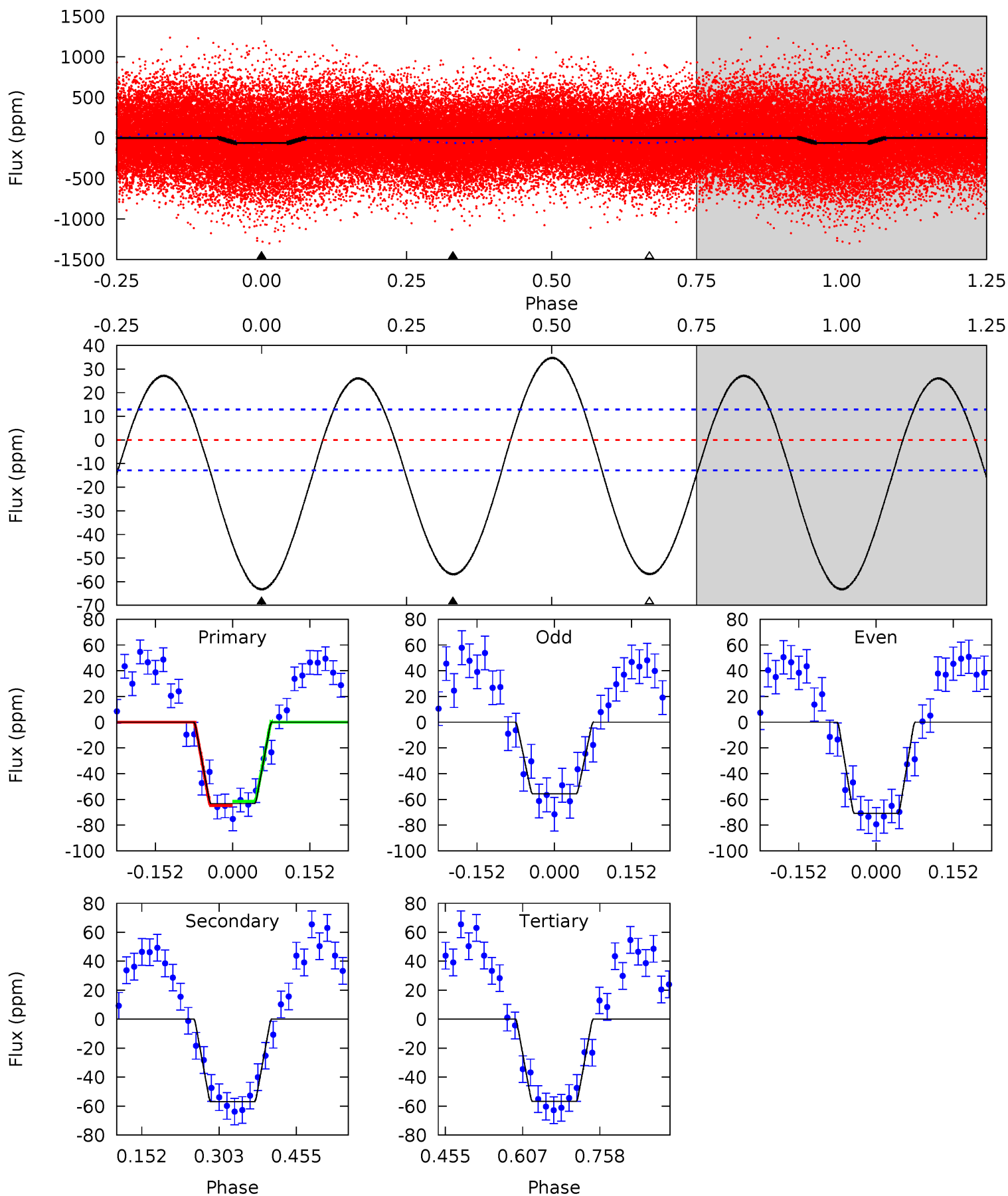
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	6.12	0	0	4.42	1.29	9.69	15.9	15.9	6.12	6.12	3.43	0.97	0.49	1.81



# Alt Model-Shift Uniqueness Test

003097912-01, P = 0.690517 Days, E = 131.098481 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
22.0	19.8	19.8	0	4.48	1.43	11.3	2.24	22.0	0.03	19.8	2.65	0.95	0.35	0.50



### Stellar Parameters For KIC 003097912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8107^{+223}_{-363}$	$3.559^{+0.549}_{-0.061}$	$0.070^{+0.250}_{-0.400}$	$4.414^{+0.446}_{-2.529}$	$2.576^{+0.227}_{-0.963}$	$0.042^{+0.290}_{-0.008}$
	+3%/-4%	+15%/-2%	+357%/-571%	+10%/-57%	+9%/-37%	+687%/-20%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003097912-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-10 \pm 2$	$2.18^{+0.48}_{-0.69}$	$6956^{+486}_{-998}$	$5254^{+995}_{-1328}$	$0.537^{+0.503}_{-0.191}$
Alt.	$-57 \pm 3$	$3.72^{+0.60}_{-1.13}$	$6949^{+482}_{-894}$	$6943^{+582}_{-612}$	$1.008^{+0.794}_{-0.258}$

$T_{max}$  = 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

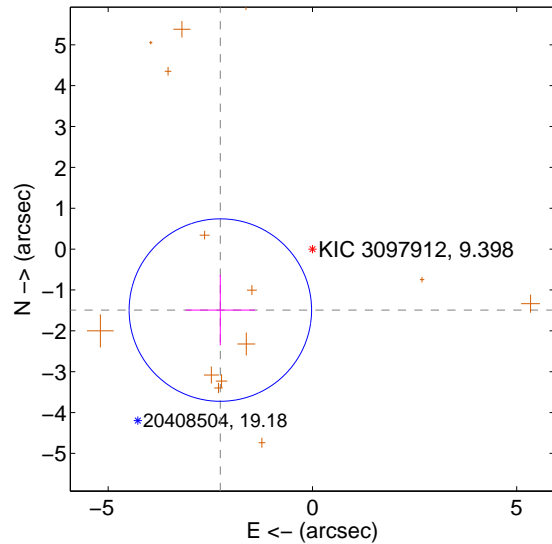
Supplemental centroid analysis for 003097912-01. **Kepler magnitude: 9.40.** Transit SNR 9.35

There are 0 quarters with good PRF difference image offsets

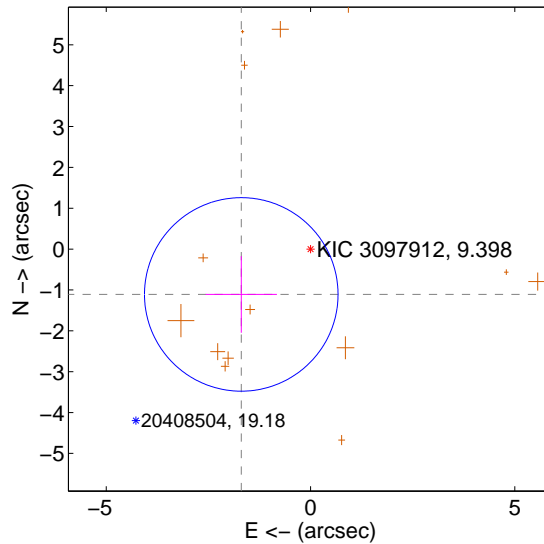
The OOT PRF centroid is offset from the target star catalog position by about 2.47 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>2.703 \pm 0.744</math></b>	<b>3.63</b>	$2.253 \pm 0.850$	$-1.492 \pm 0.864$
PRF-fit source offset from KIC position	$2.026 \pm 0.789$	2.57	$1.695 \pm 0.873$	$-1.109 \pm 0.938$
photometric centroid source offset	$0.93 \pm 0.65$	1.43	$0.65 \pm 0.72$	$0.66 \pm 0.57$

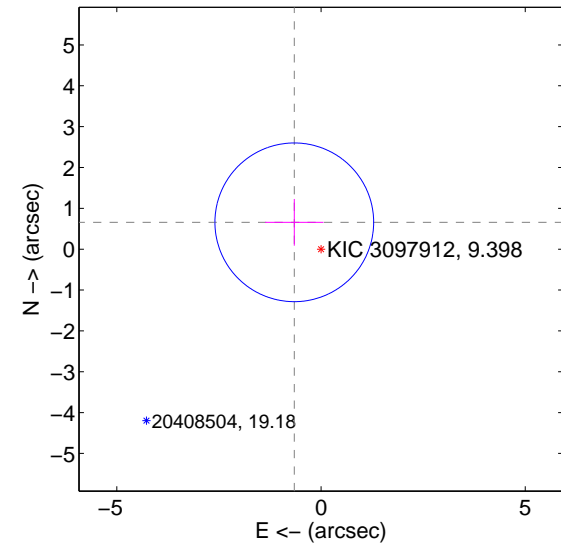
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

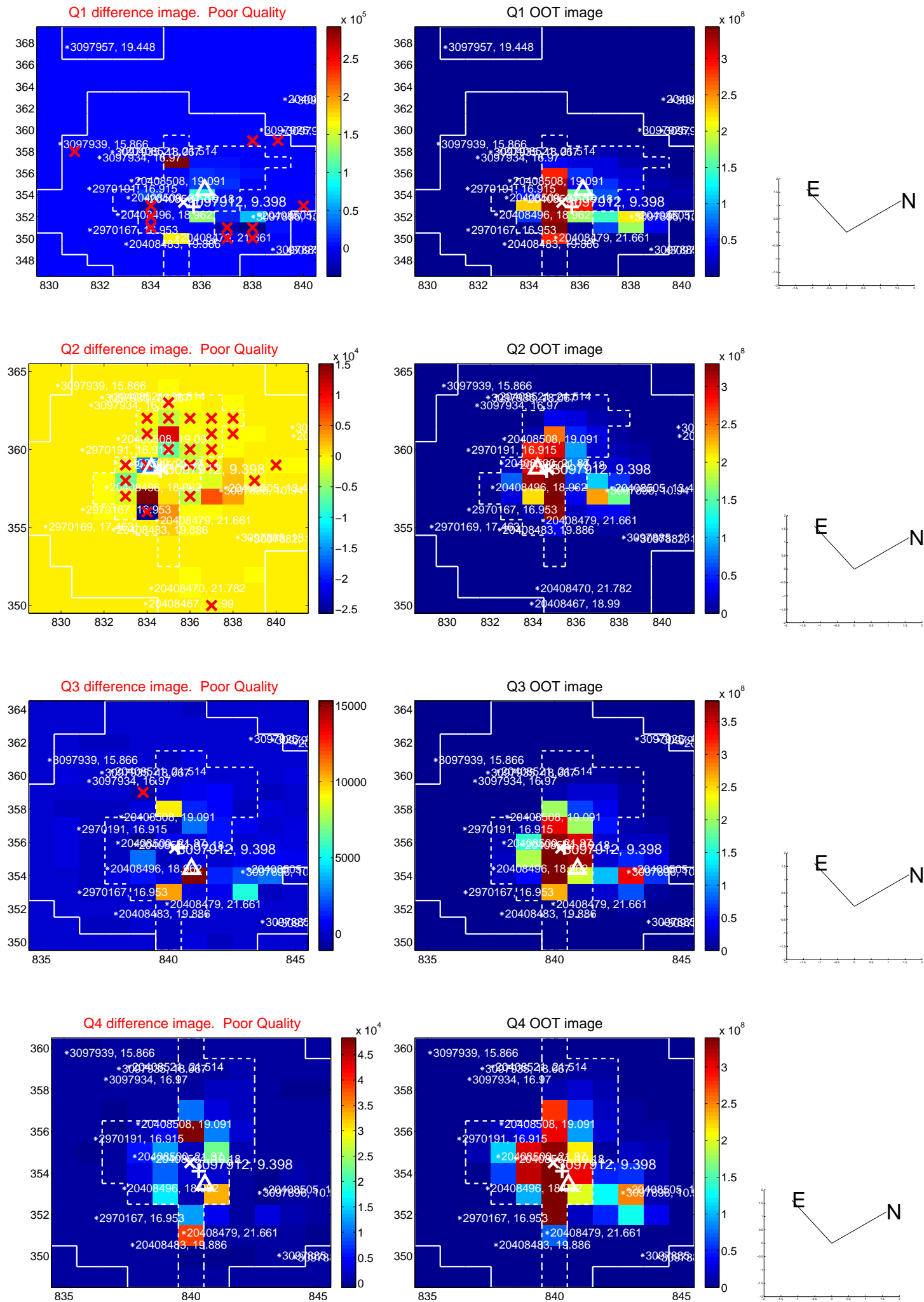


offset from photometric centroids

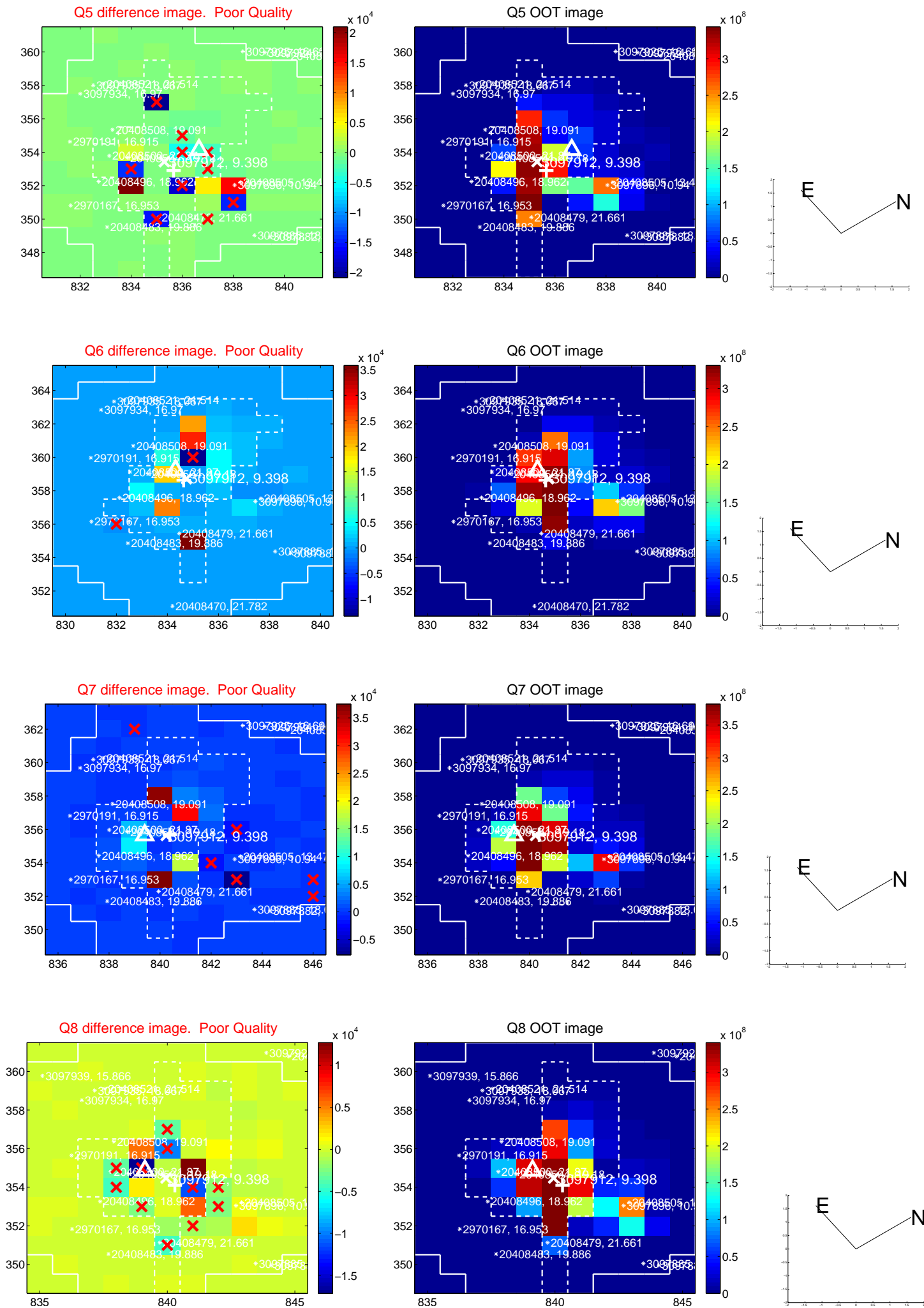


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

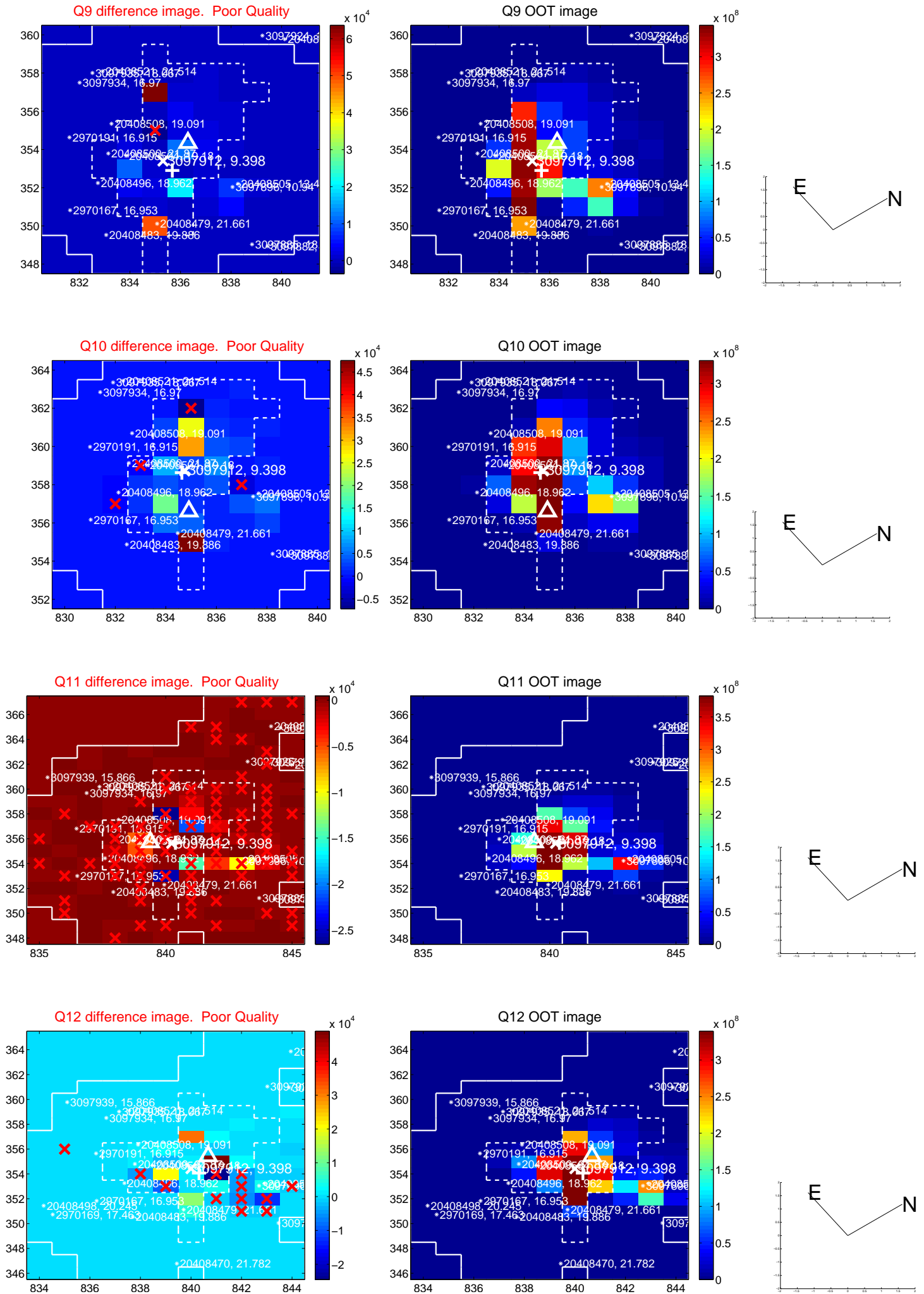


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

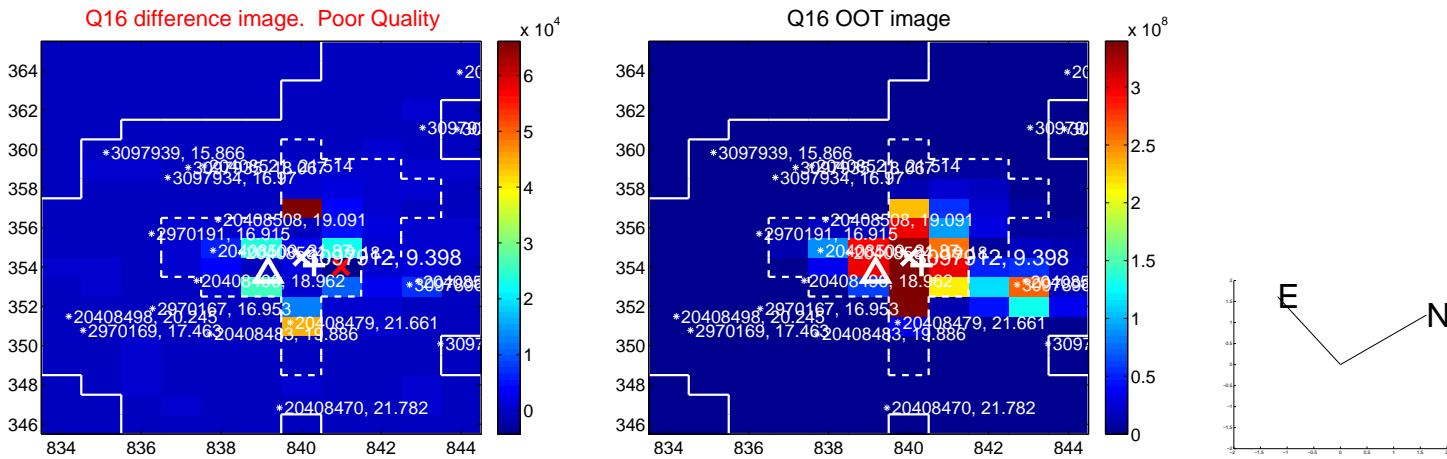
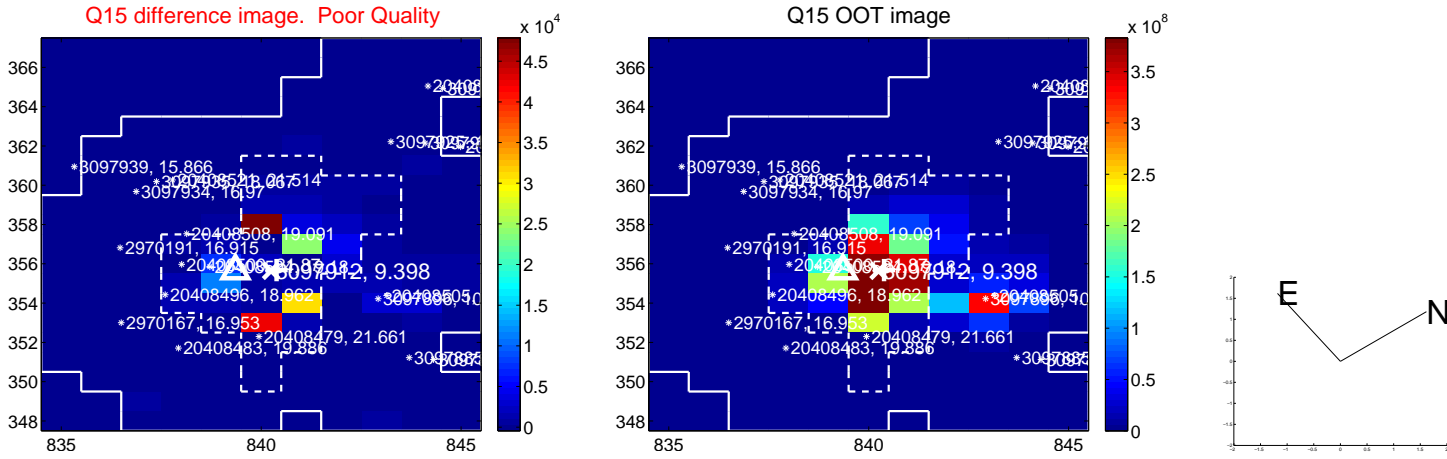
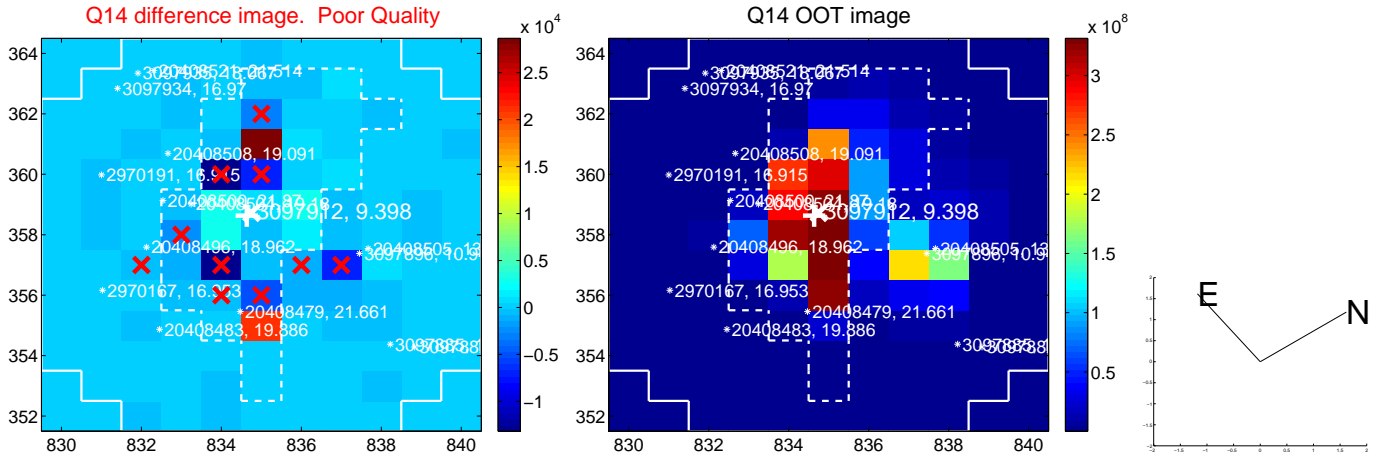
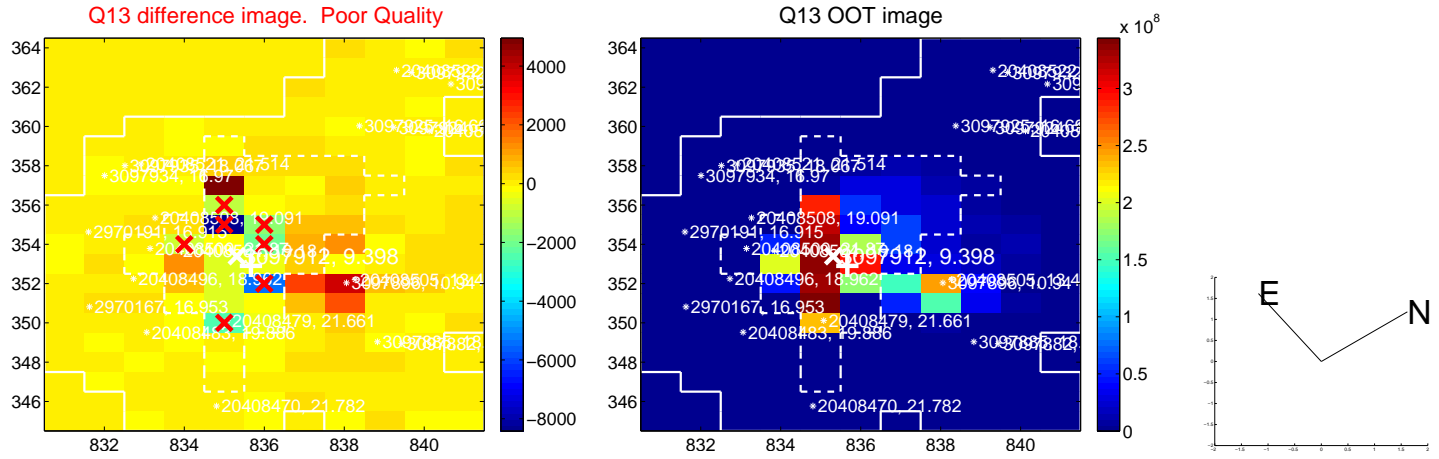




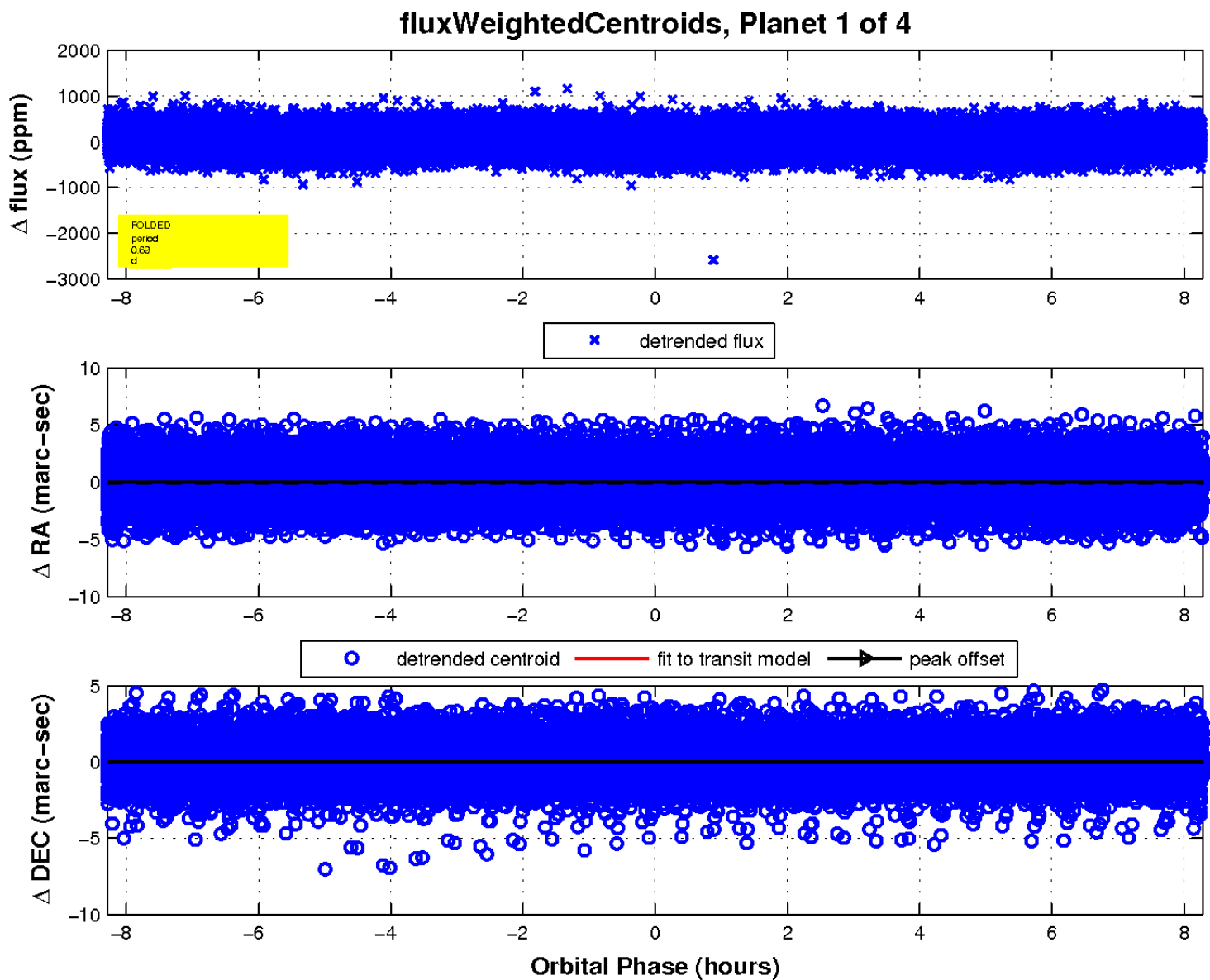
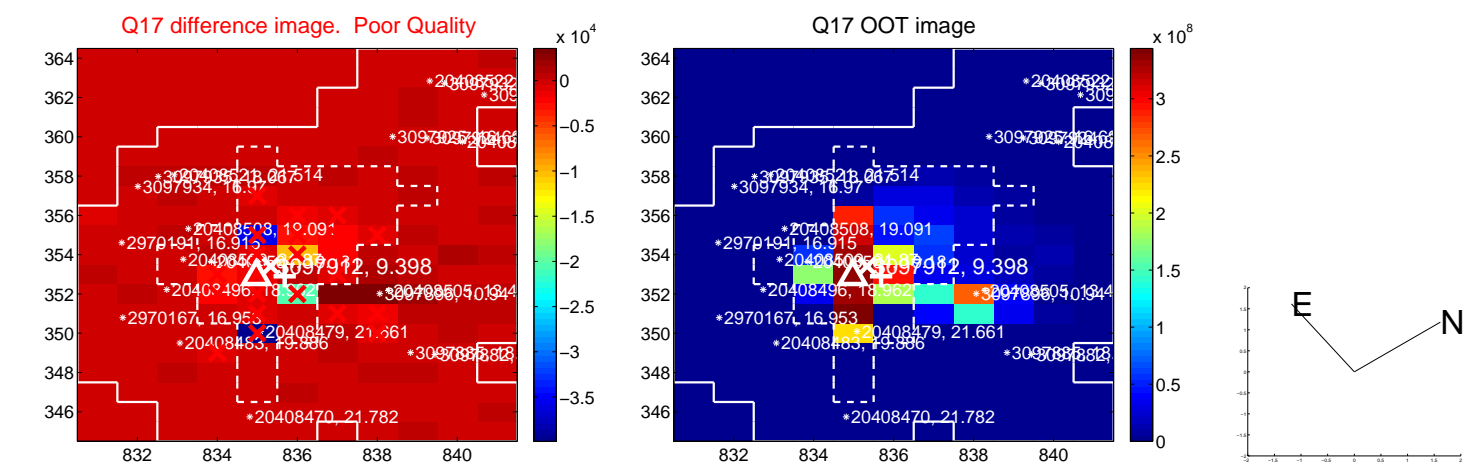
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

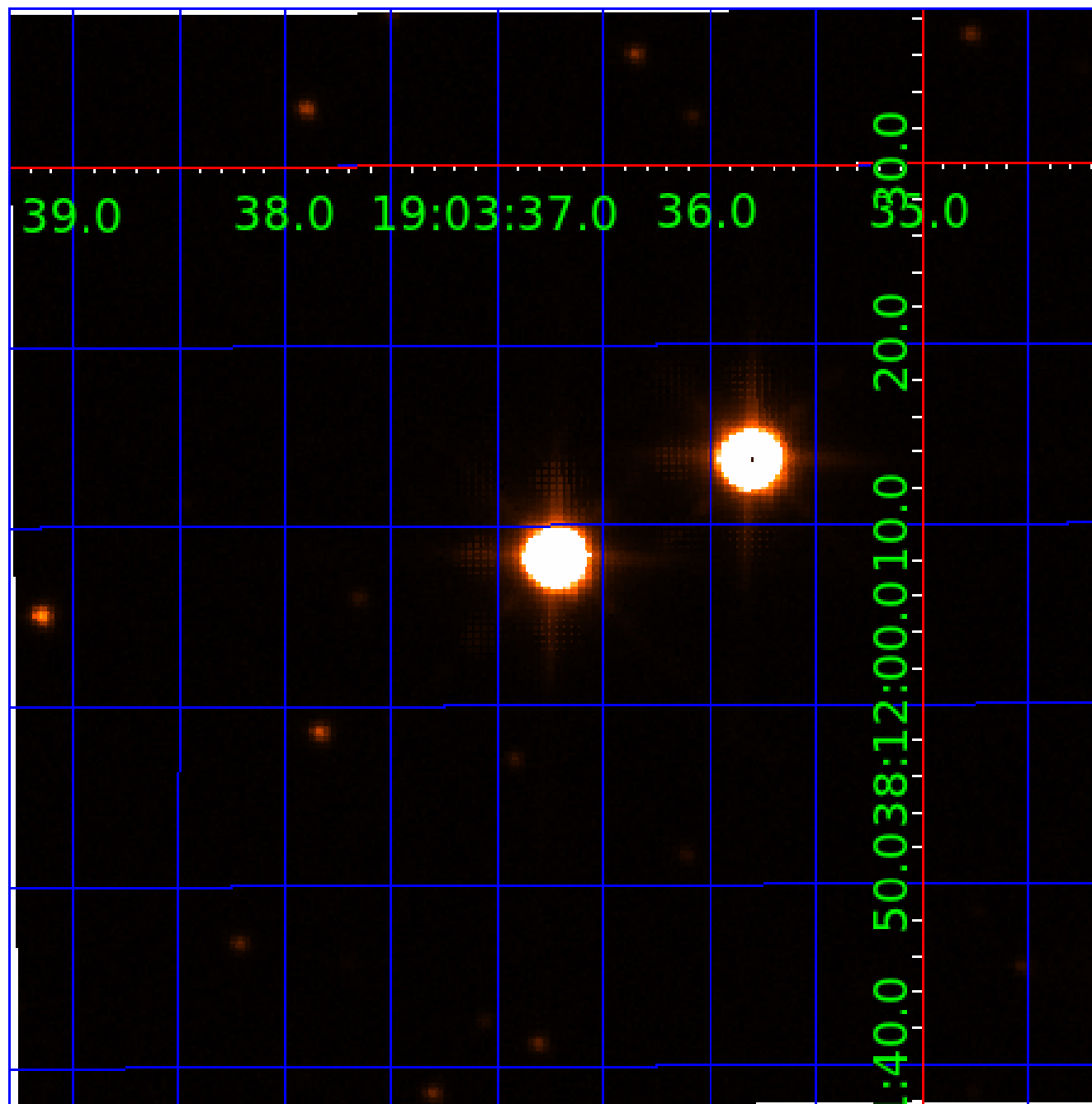


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 003097912

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003097912-01	OBS	No	0.690503	131.792115	21.0	2.797	10.1	9.3	4.41	8107	2.36	171660.12
003097912-02	OBS	No	0.690500	131.557591	27.8	2.356	11.1	11.7	4.41	8107	2.71	171660.88
003097912-03	OBS	No	0.837037	132.243527	84.9	4.064	12.9	15.3	4.41	8107	4.74	132809.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003097912-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003097912-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003097912-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

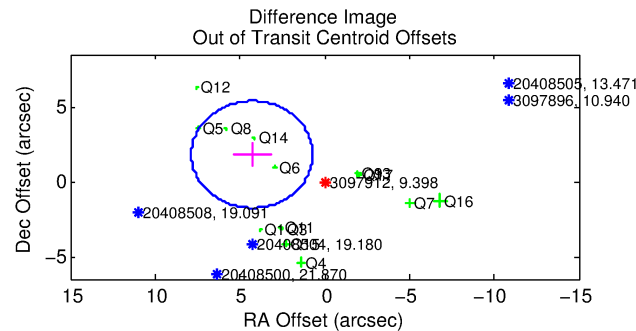
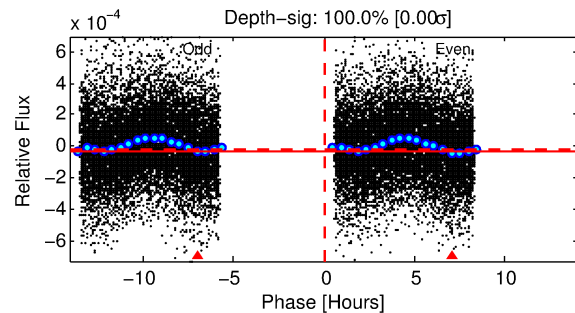
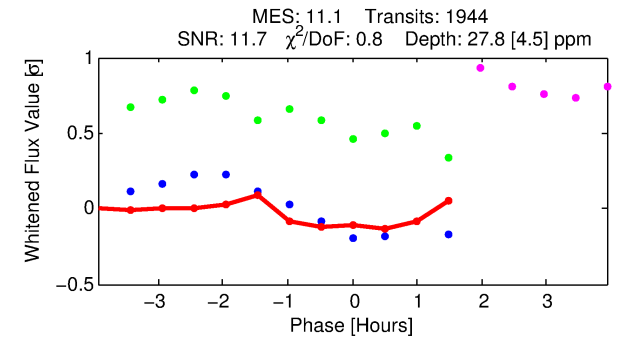
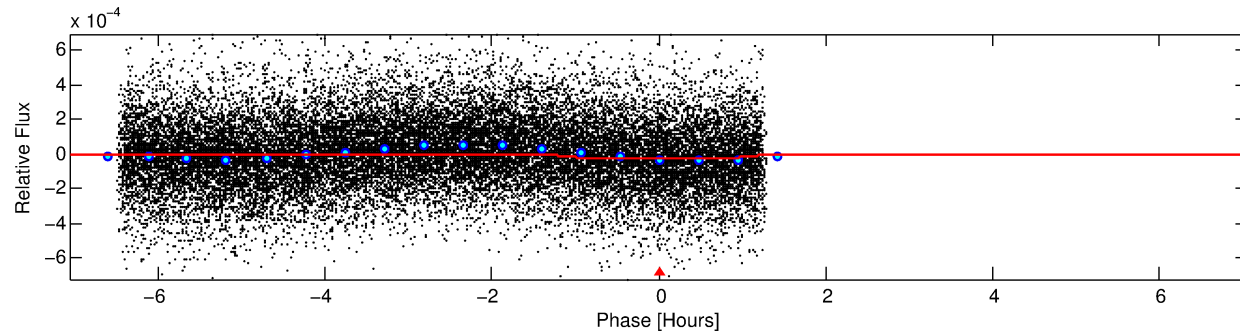
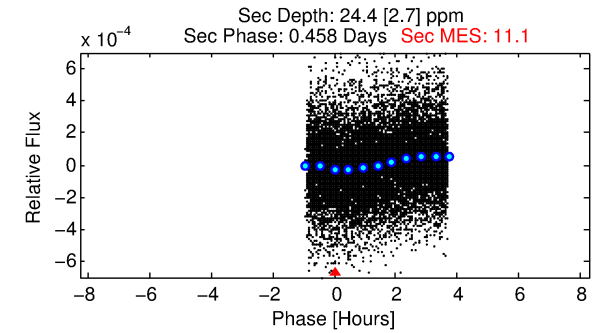
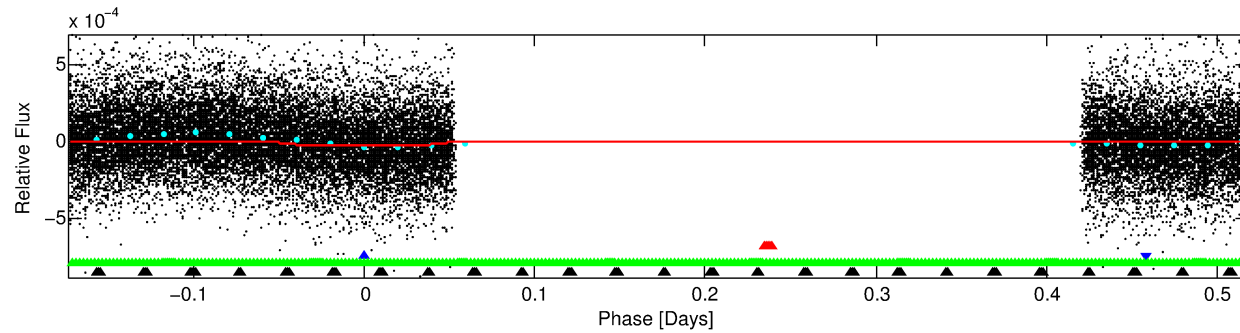
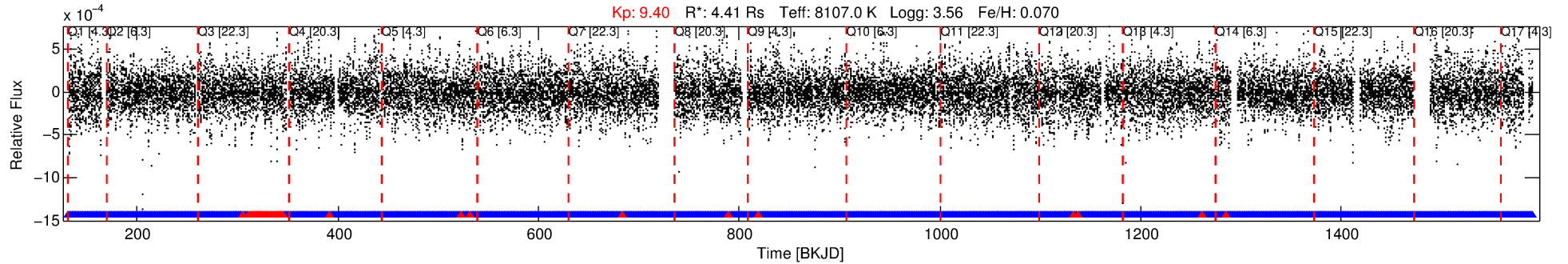
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003097912-02

No Significant Match Found

# DV One-Page Summary

KIC: 3097912 Candidate: 2 of 4 Period: 0.691 d



## DV Fit Results:

Period = 0.69050 [0.00002] d  
Epoch = 131.5576 [0.0013] BKJD  
Rp/R\* = 0.0056 [0.0010]  
a/R\* = 1.37 [0.62]  
b = 0.90 [0.21]  
Seff = 171660.88 [161780.51]  
Teq = 5190 [1223] K  
Rp = 2.71 [1.62] Re  
a = 0.0210 [0.0119] AU  
Ag = 0.80 [0.80] [-0.25σ]  
Teffp = 7598 [769] K [1.67σ]

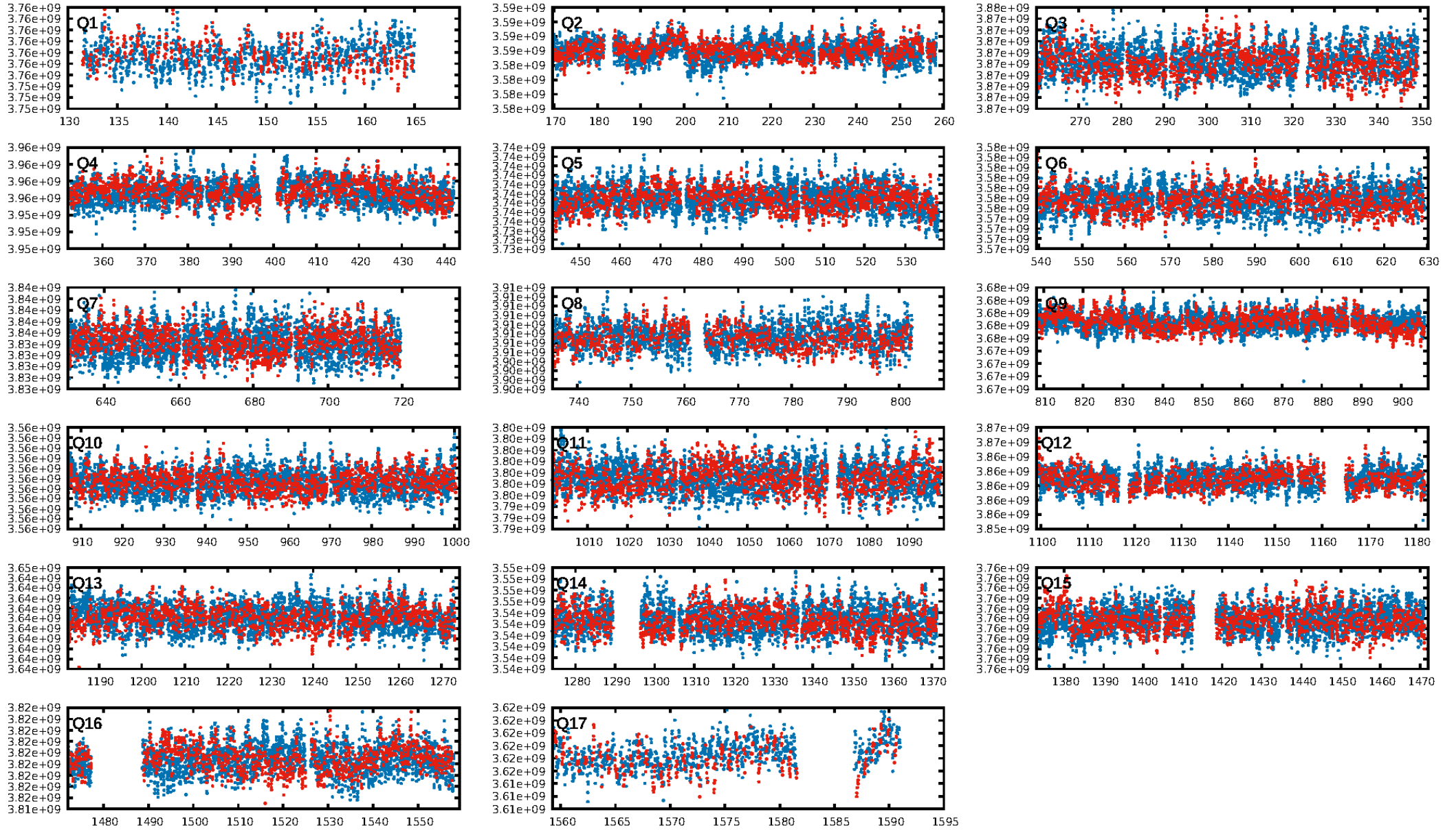
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.57e-06  
RollingBand-fgt: 0.97 [1804/1856]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 83.5%  
Centroid-so: 1.217 arcsec [2.31σ]  
OotOffset-rm: 4.655 arcsec [3.91σ]  
OotOffset-st: 2/4/4/5 [15]  
KicOffset-rm: 3.245 arcsec [2.66σ]  
KicOffset-st: 2/4/4/5 [15]  
DiffImageQuality-fgm: 0.00 [0/15]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:42:12 Z

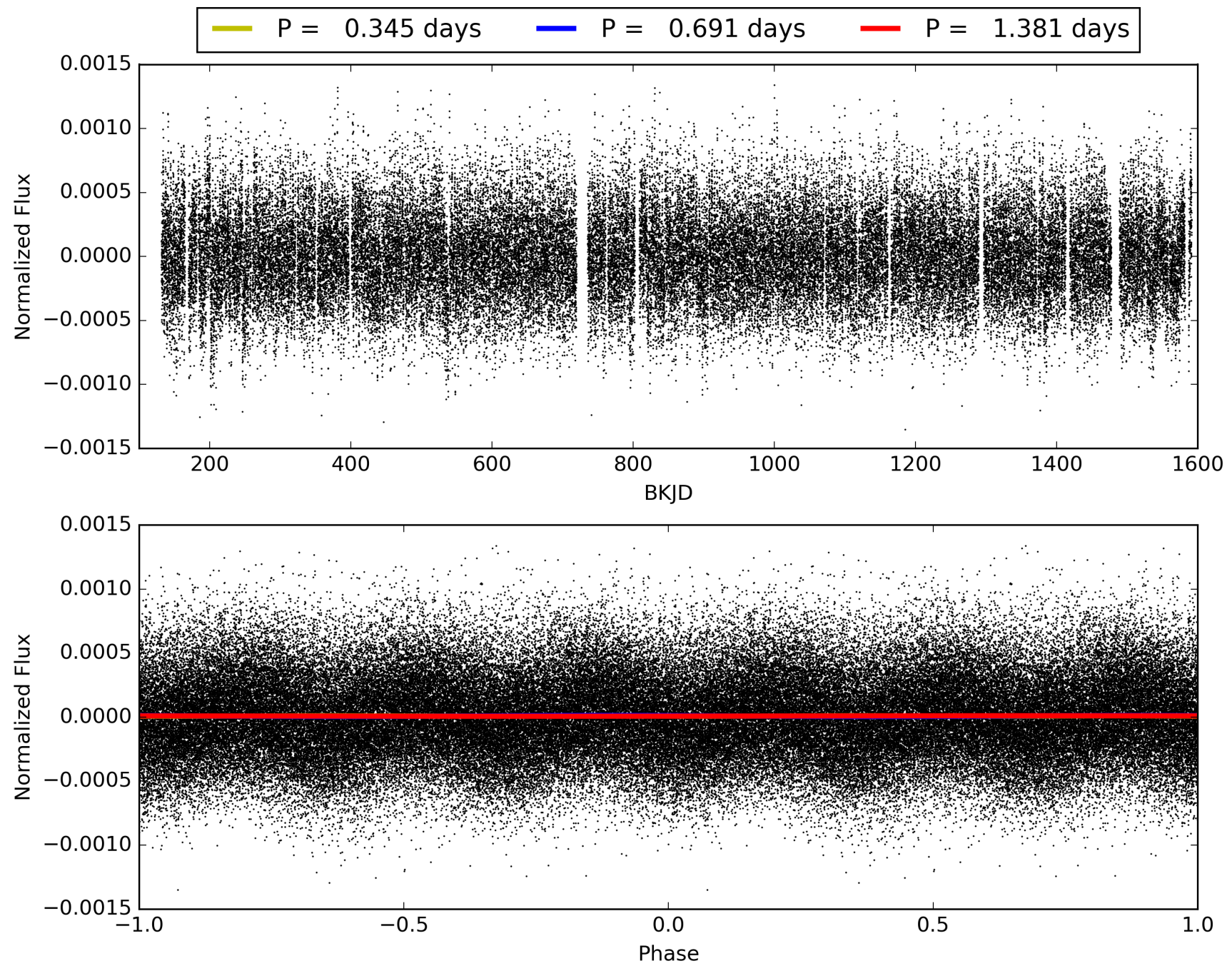
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003097912-02, PDC Light Curves



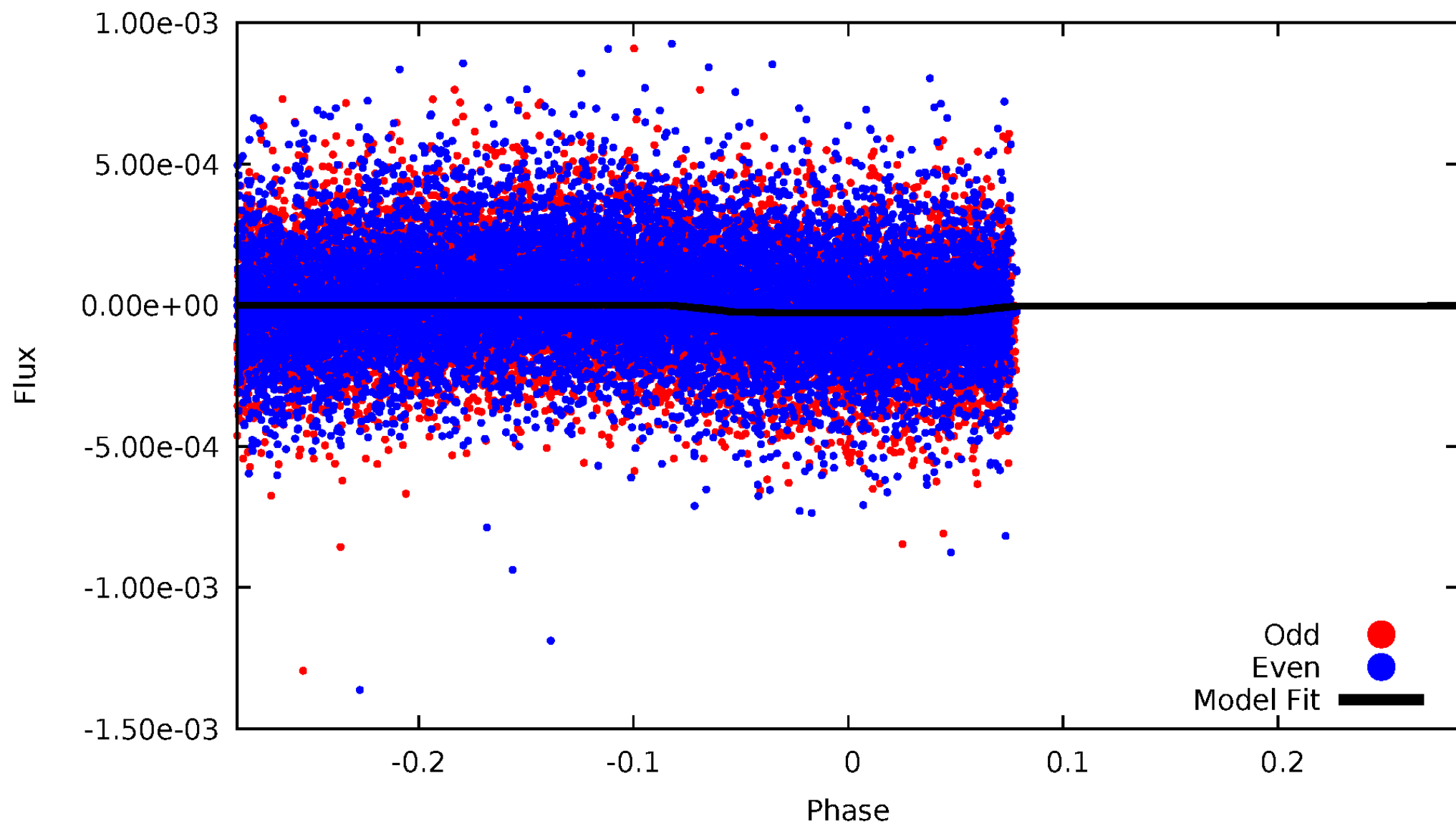


TCE 003097912-02



DV Odd/Even

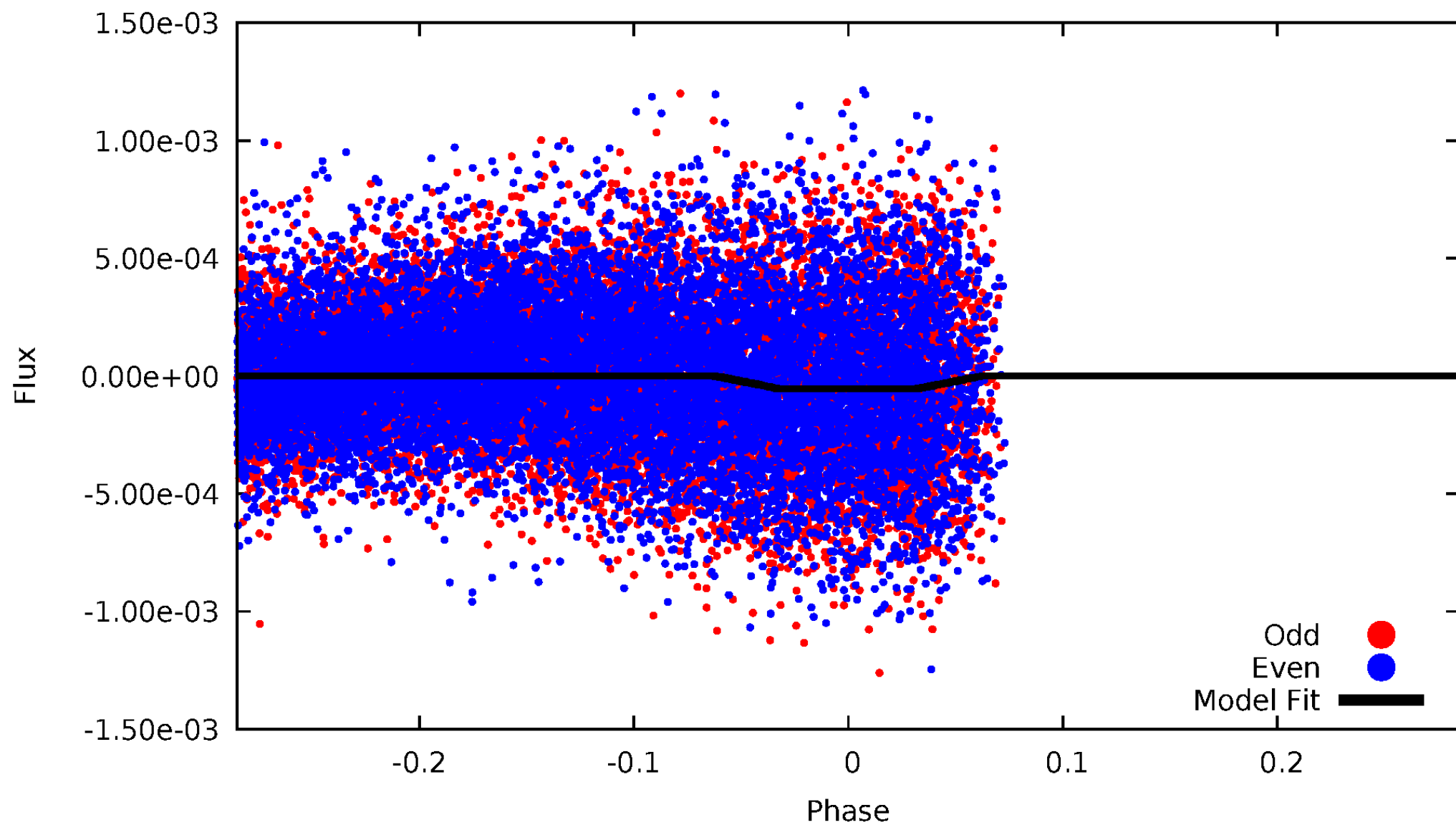
TCE 003097912-02





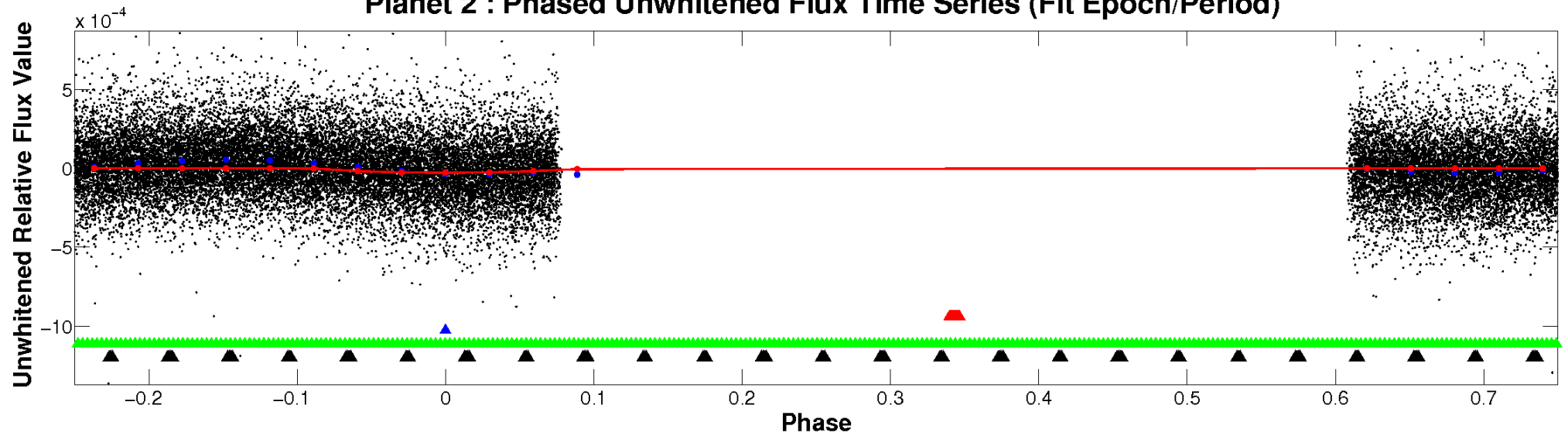
# ALT Odd/Even

TCE 003097912-02

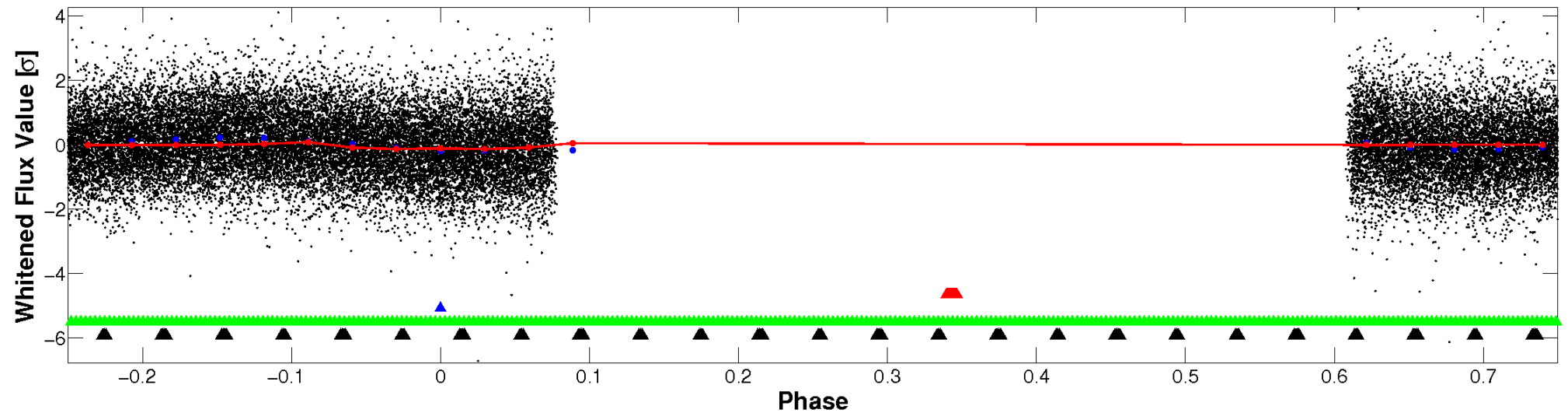


# Non-Whitened Vs. Whitened Light Curve

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

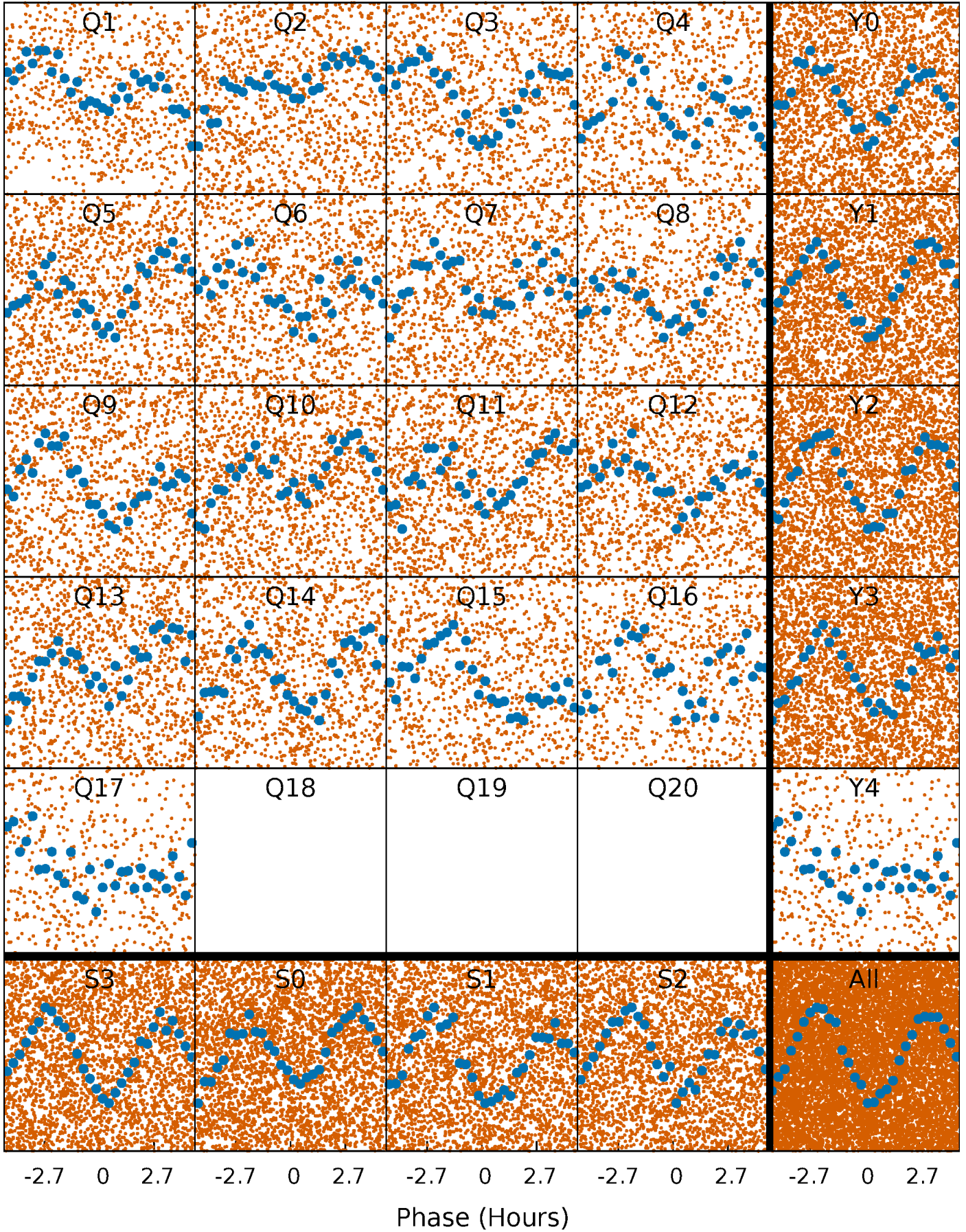


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

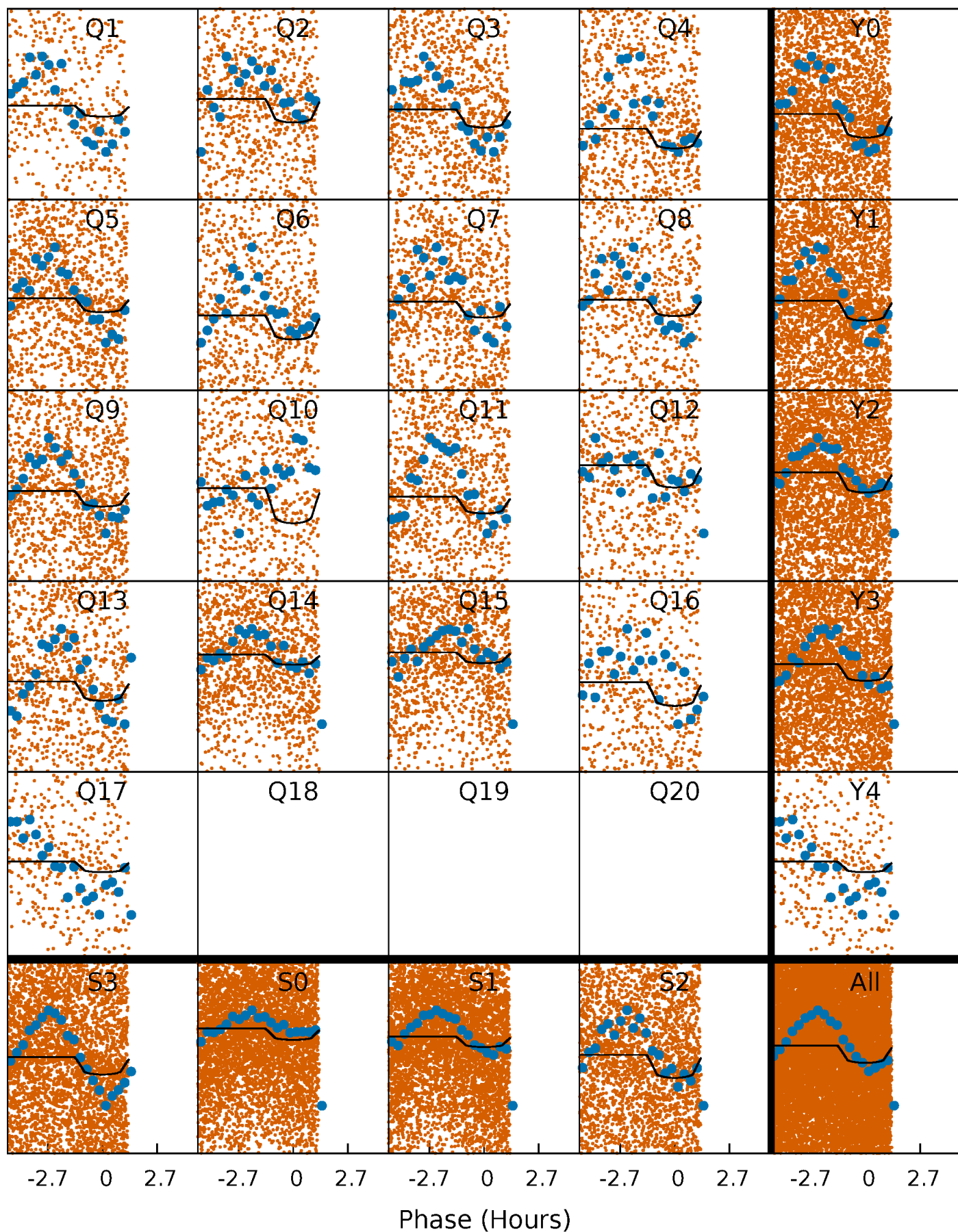
TCE 003097912-02 P= 0.690500 Days  $T_0=131.557591$  (BKJD)





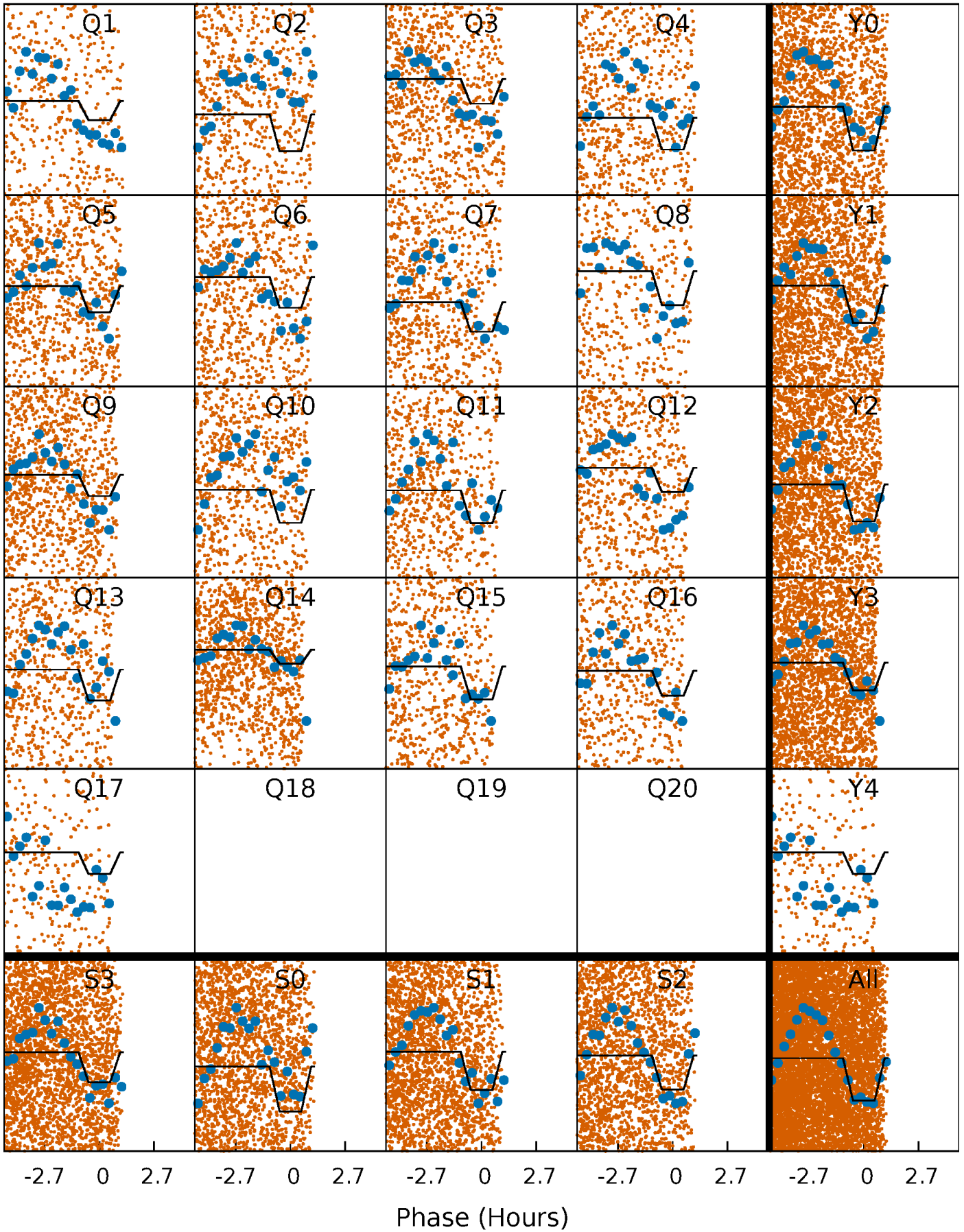
# DV Quarter-Phased Transit Curves

TCE 003097912-02   P= 0.690500 Days    $T_0=131.557591$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003097912-02     $P = 0.690517$  Days     $T_0 = 131.556256$  (BKJD)

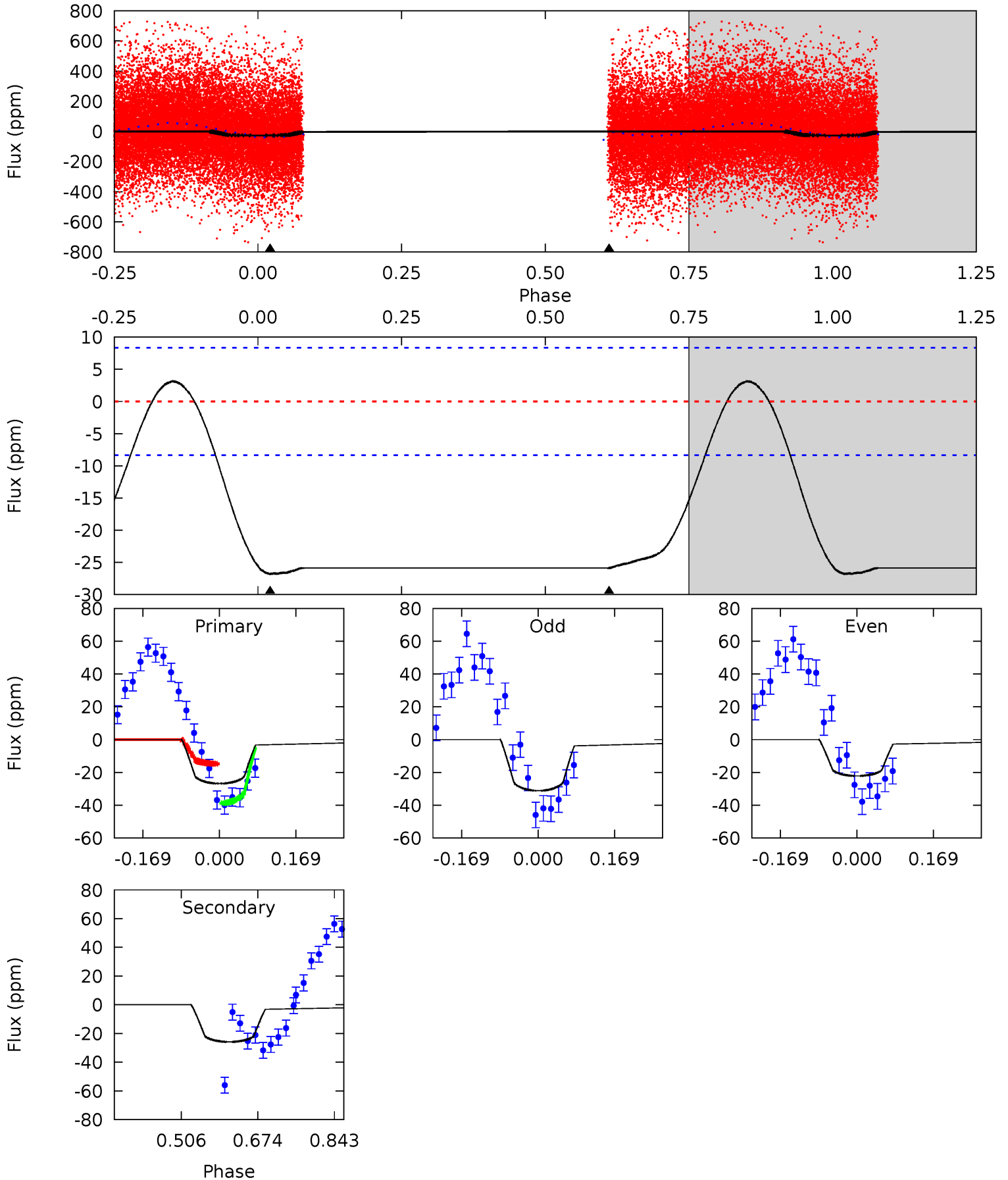




# DV Model-Shift Uniqueness Test

003097912-02, P = 0.690500 Days, E = 130.867091 Days

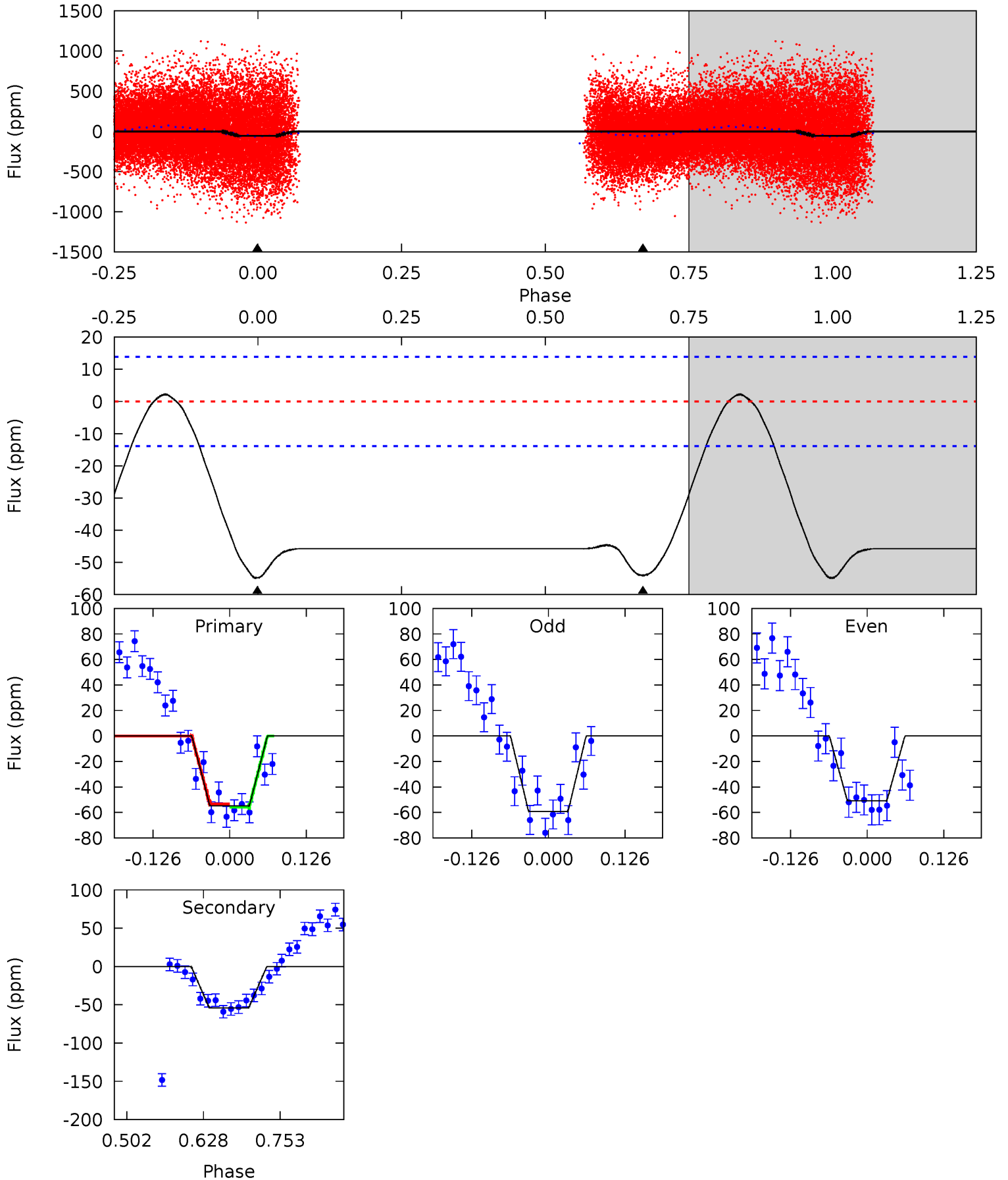
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	13.8	0	0	4.45	1.38	1.82	14.3	14.3	13.8	13.8	2.41	1.03	0.11	6.39



# Alt Model-Shift Uniqueness Test

003097912-02, P = 0.690517 Days, E = 130.865739 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
17.9	17.6	0	0	4.52	1.53	0.80	17.9	17.9	17.6	17.6	1.37	0.86	0.04	0.33



### Stellar Parameters For KIC 003097912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8107^{+223}_{-363}$	$3.559^{+0.549}_{-0.061}$	$0.070^{+0.250}_{-0.400}$	$4.414^{+0.446}_{-2.529}$	$2.576^{+0.227}_{-0.963}$	$0.042^{+0.290}_{-0.008}$
	+3%/-4%	+15%/-2%	+357%/-571%	+10%/-57%	+9%/-37%	+687%/-20%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003097912-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-26 \pm 2$	$2.41^{+0.64}_{-0.81}$	$6966^{+484}_{-1096}$	$6939^{+1222}_{-955}$	$1.068^{+1.179}_{-0.401}$
Alt.	$-54 \pm 3$	$3.21^{+0.75}_{-0.97}$	$6926^{+520}_{-918}$	$7448^{+953}_{-837}$	$1.278^{+1.065}_{-0.421}$

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

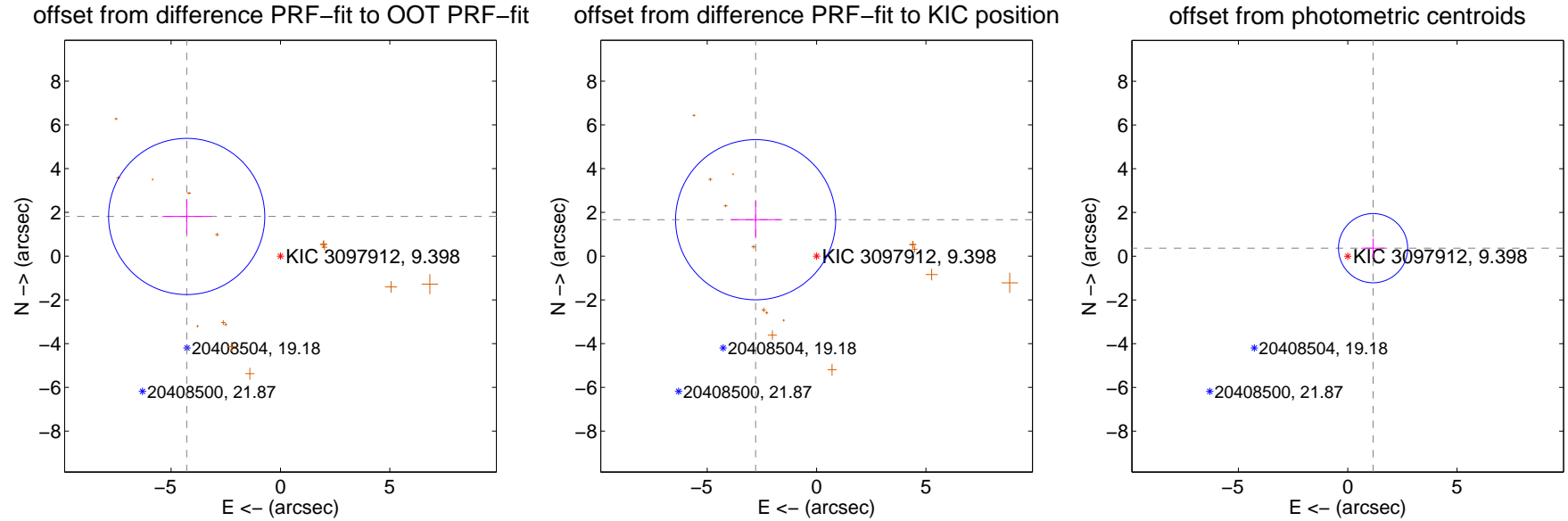
## DV Centroid Data

Supplemental centroid analysis for 003097912-02. **Kepler magnitude: 9.40.** Transit SNR 11.71

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.47 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>4.655 \pm 1.190</math></b>	<b>3.91</b>	$4.287 \pm 1.112$	$1.813 \pm 0.802$
PRF-fit source offset from KIC position	$3.245 \pm 1.220$	2.66	$2.785 \pm 1.144$	$1.665 \pm 0.846$
photometric centroid source offset	$1.22 \pm 0.53$	2.31	$-1.16 \pm 0.54$	$0.37 \pm 0.44$

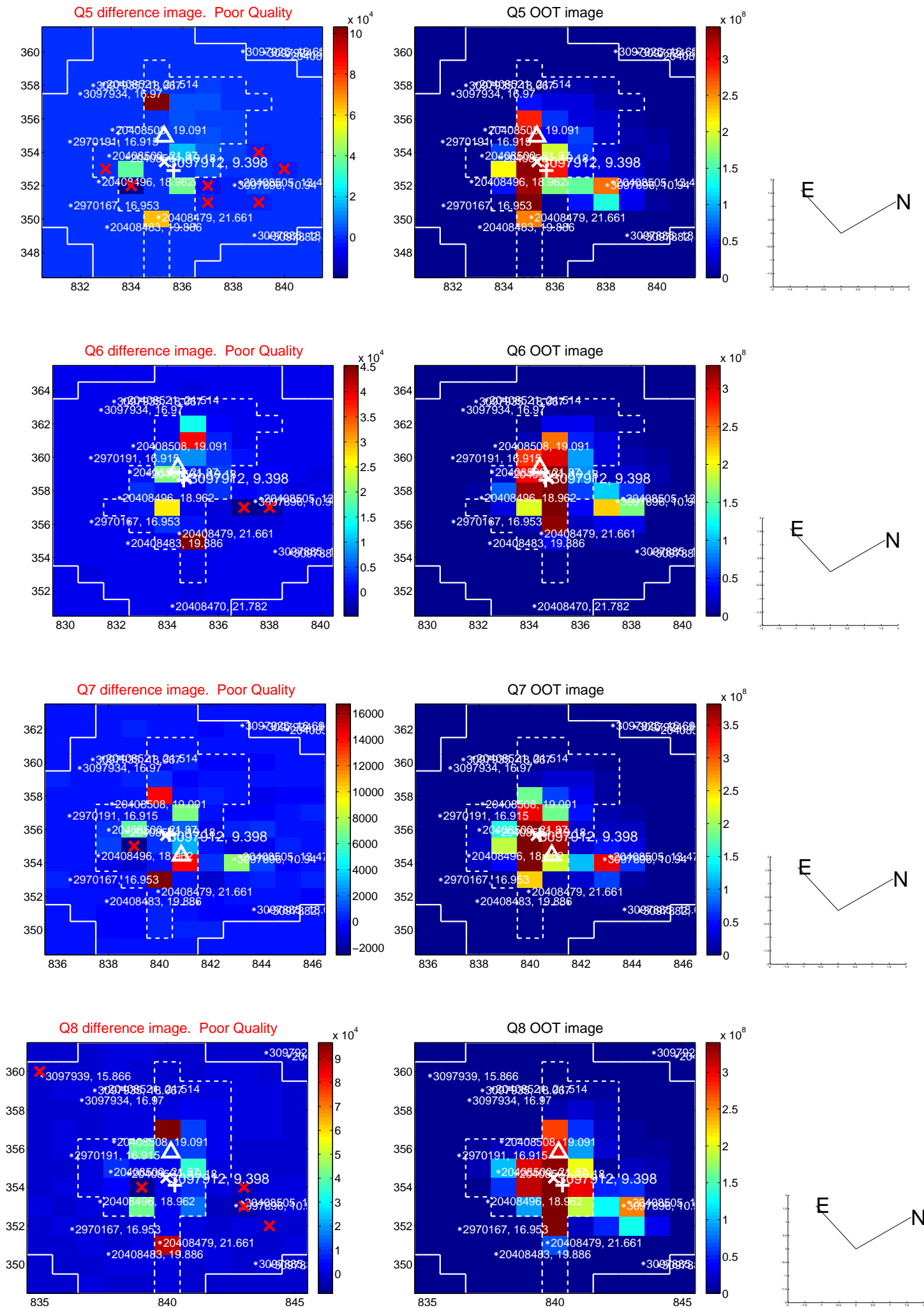


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

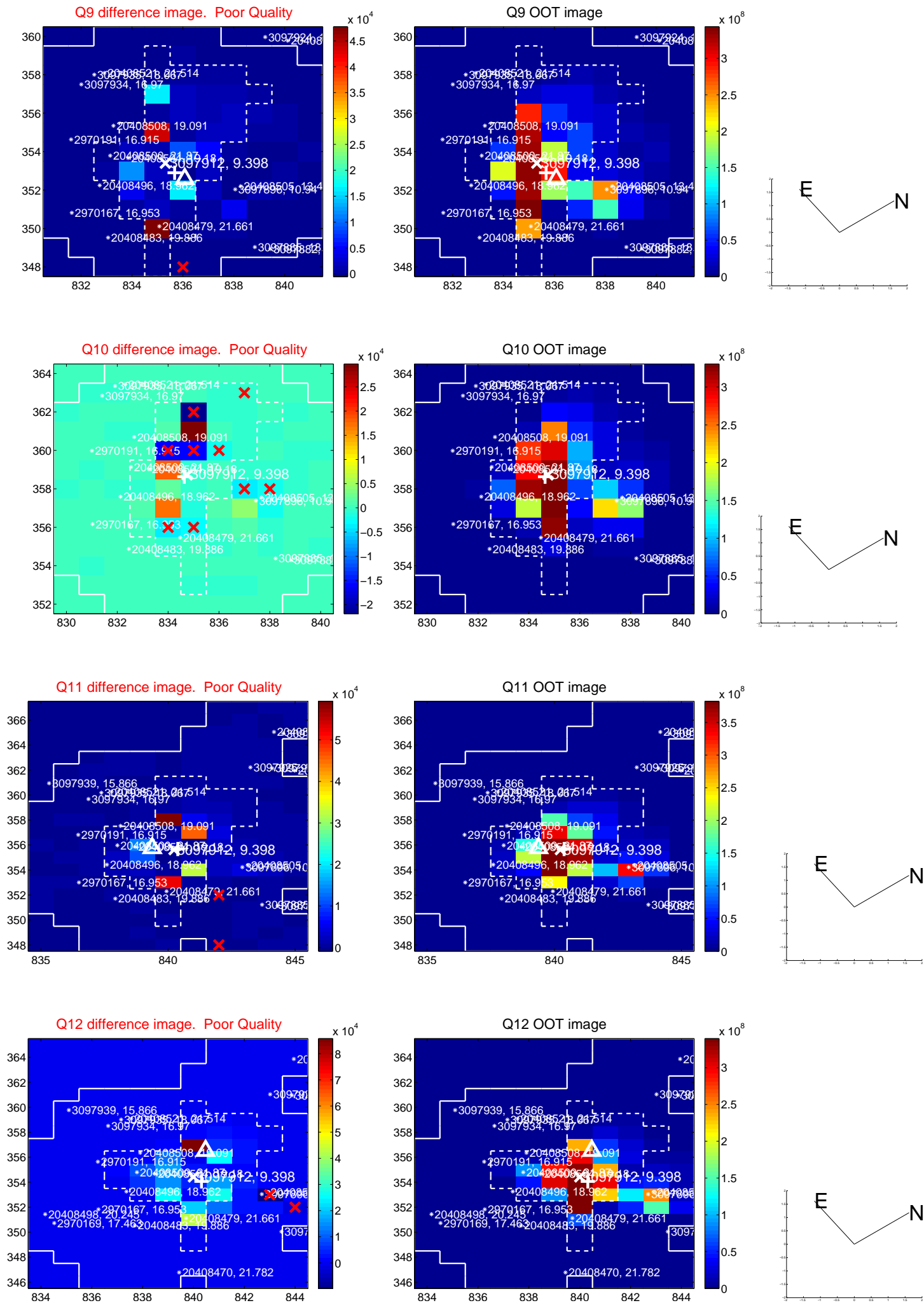




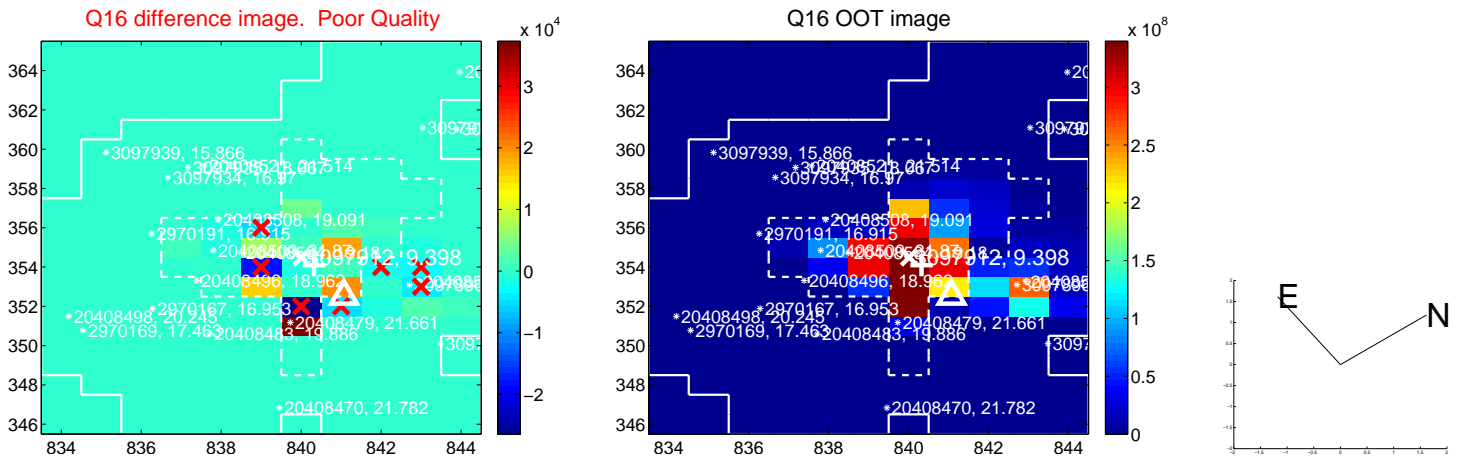
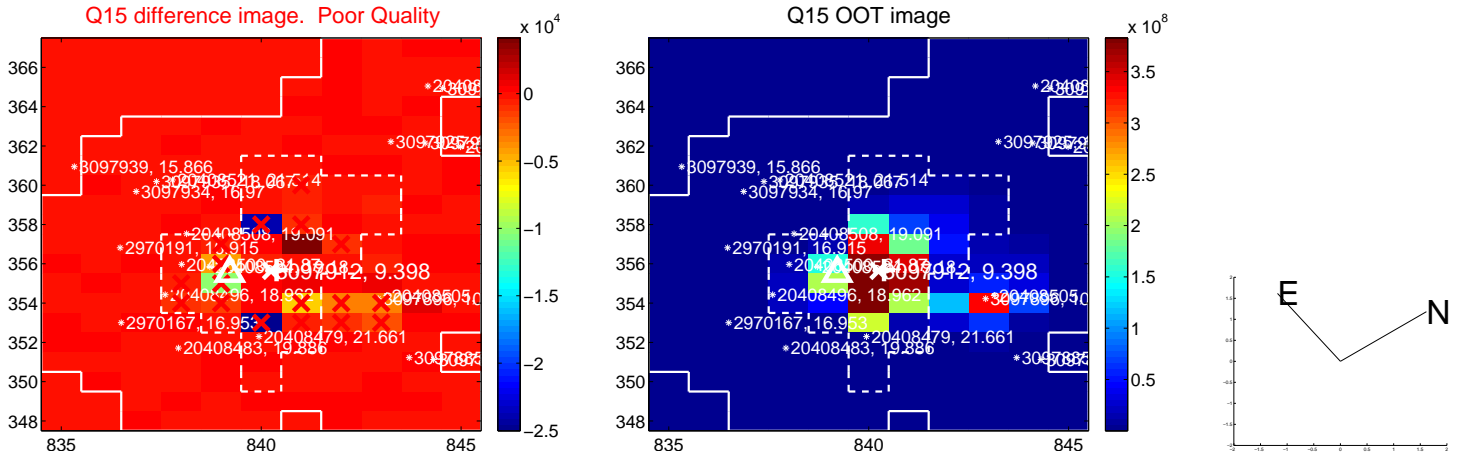
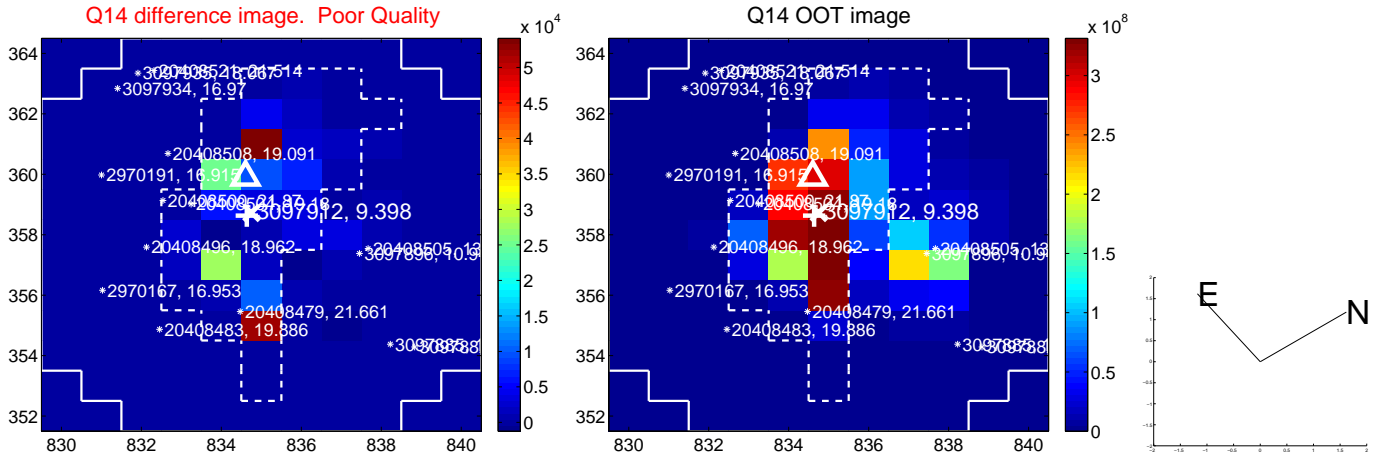
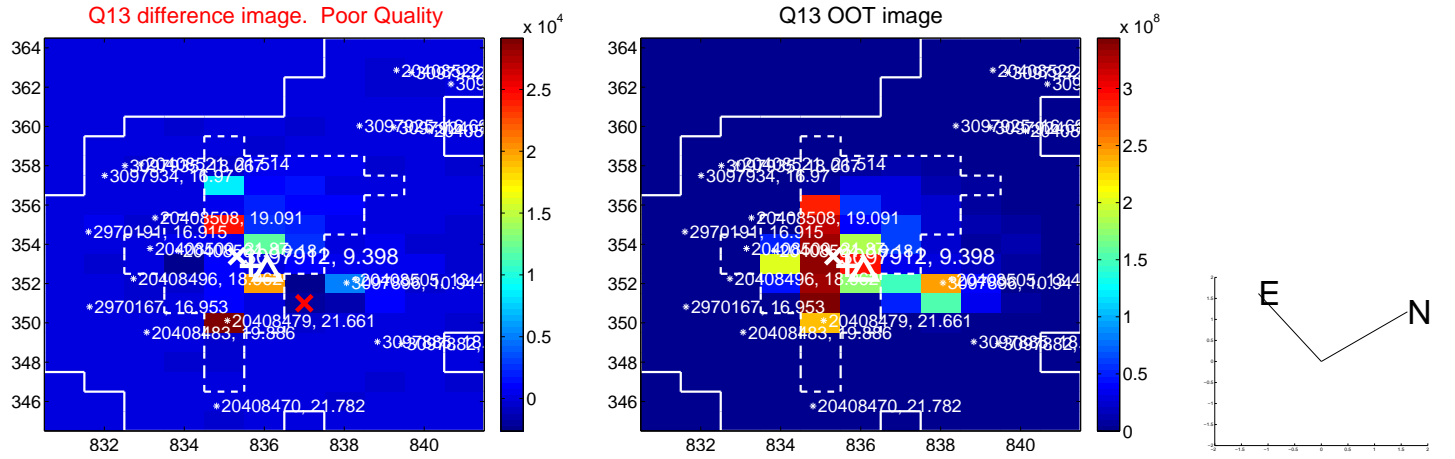
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

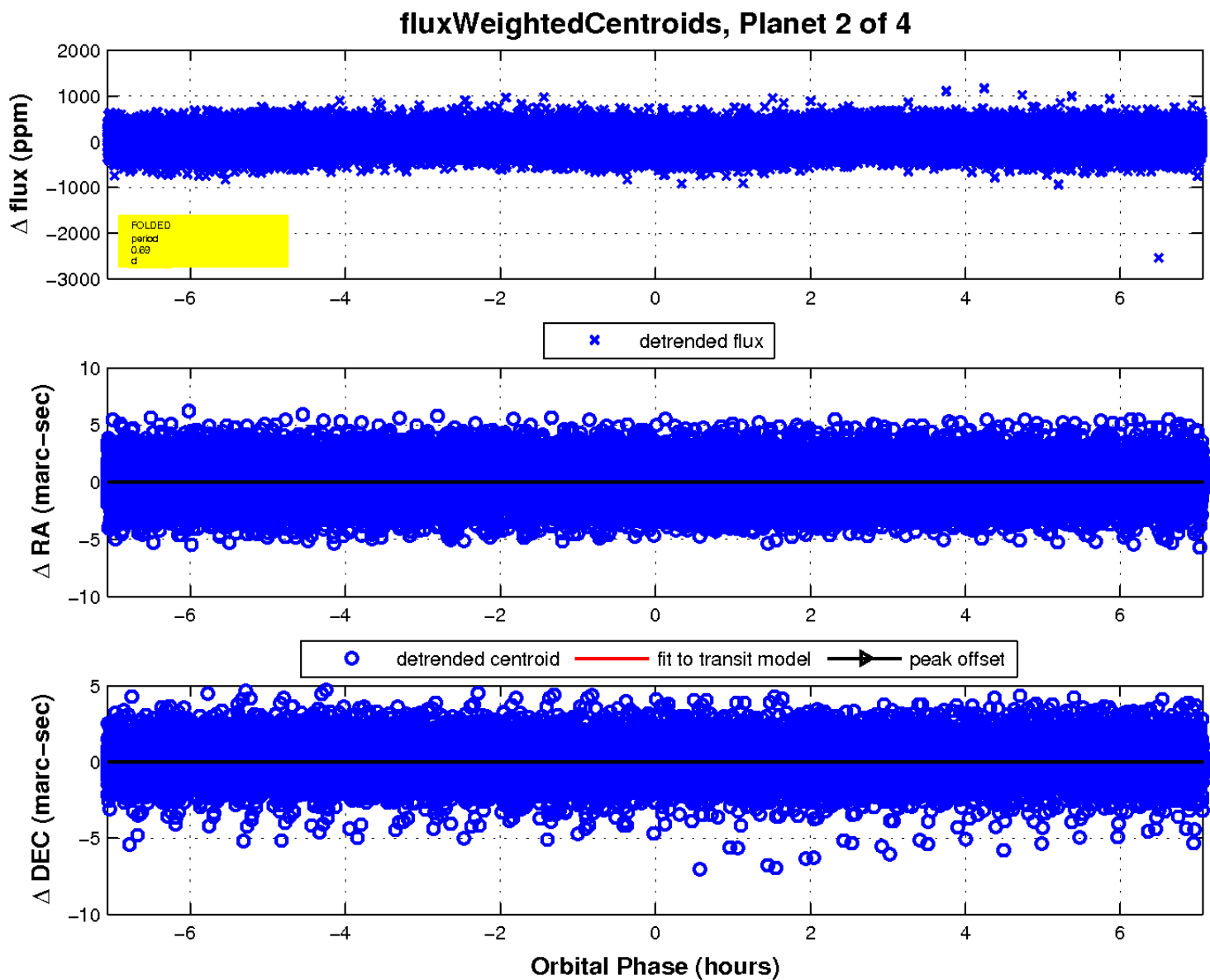
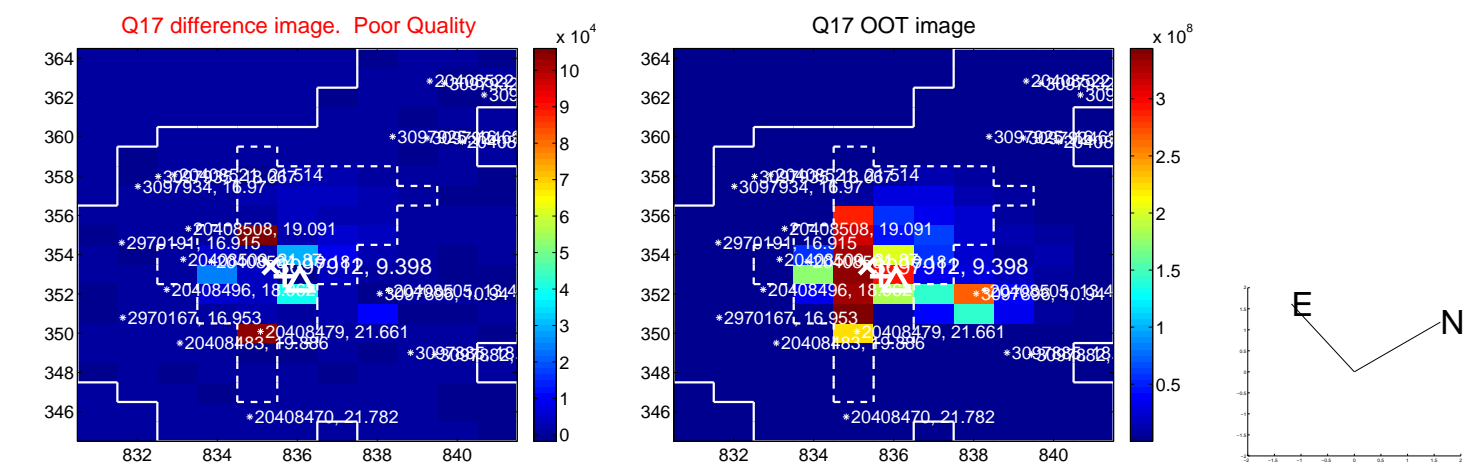


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



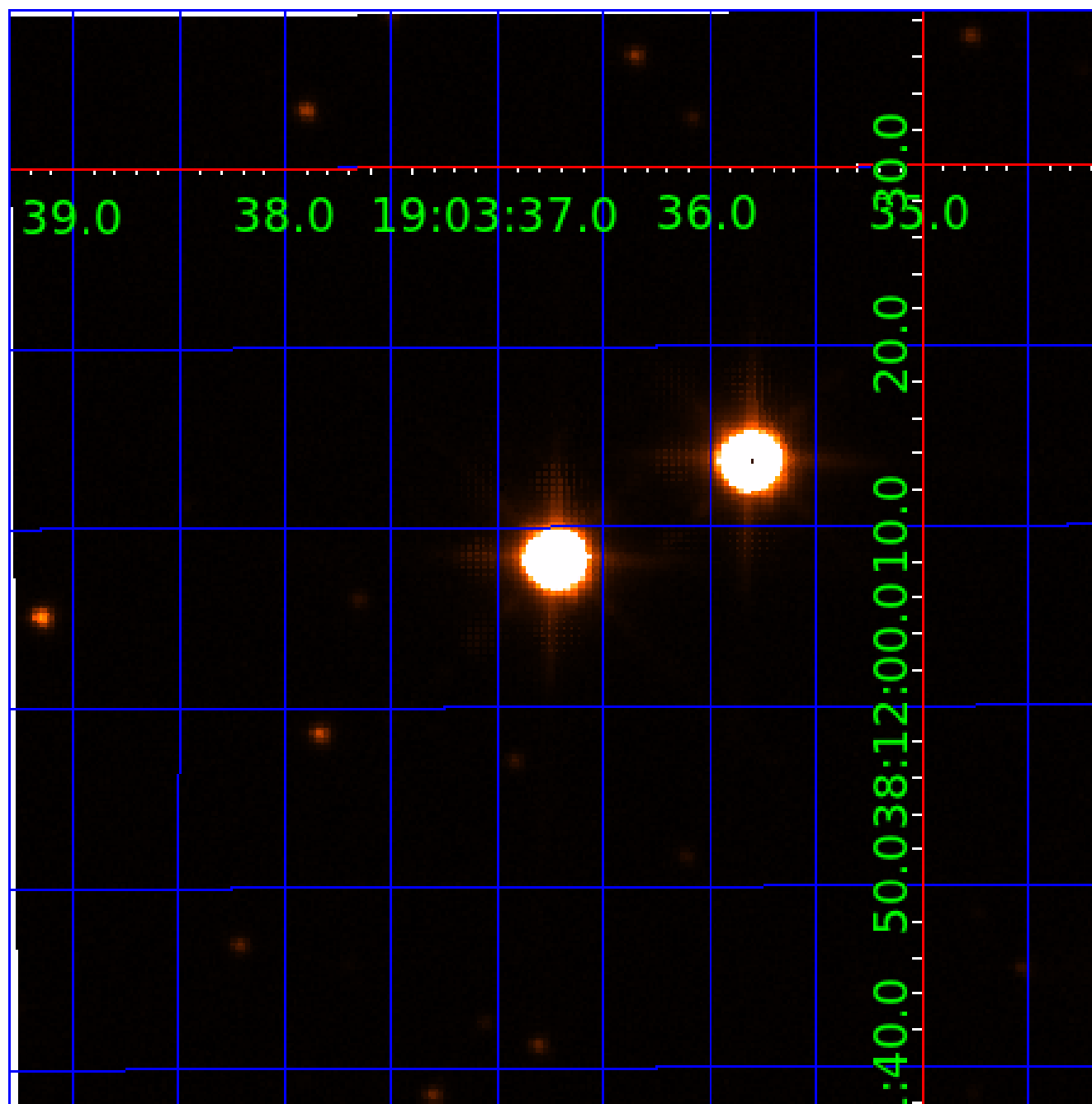


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 003097912

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003097912-01	OBS	No	0.690503	131.792115	21.0	2.797	10.1	9.3	4.41	8107	2.36	171660.12
003097912-02	OBS	No	0.690500	131.557591	27.8	2.356	11.1	11.7	4.41	8107	2.71	171660.88
003097912-03	OBS	No	0.837037	132.243527	84.9	4.064	12.9	15.3	4.41	8107	4.74	132809.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003097912-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003097912-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003097912-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

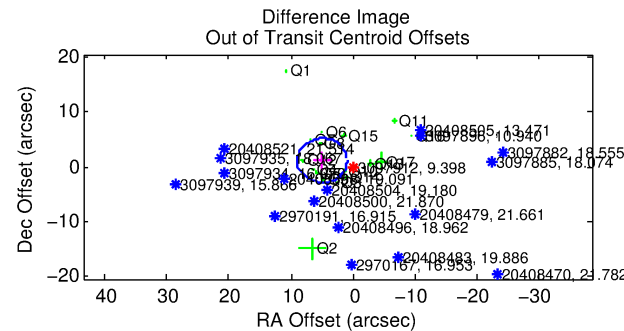
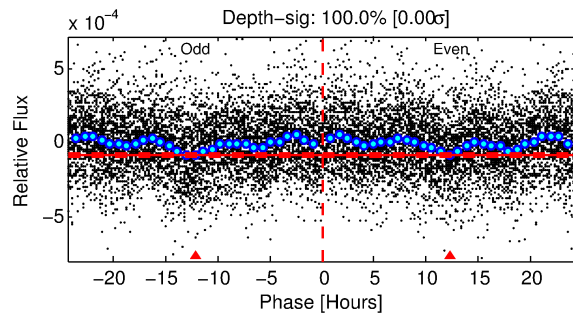
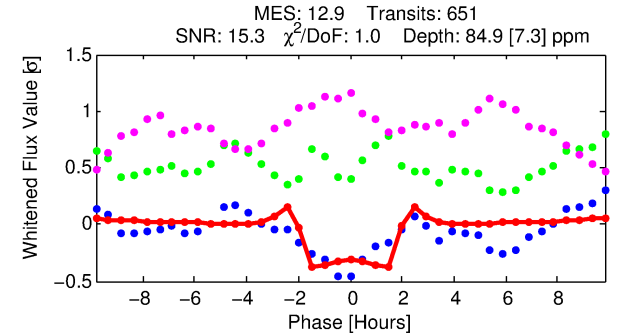
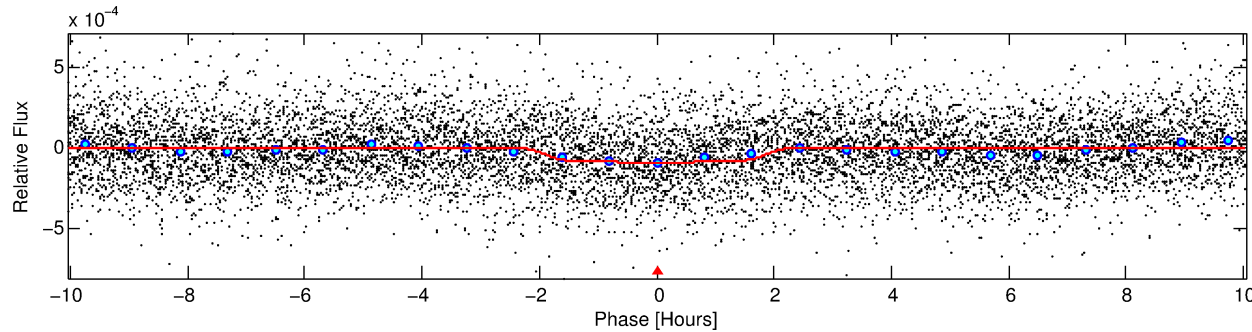
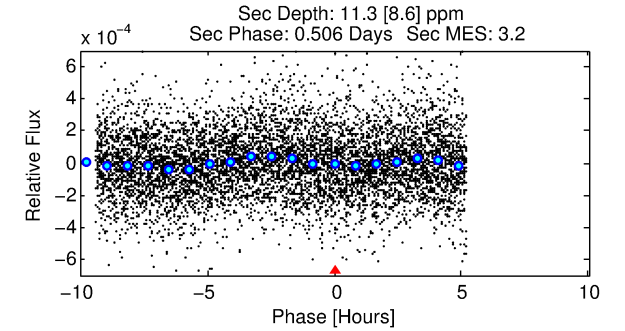
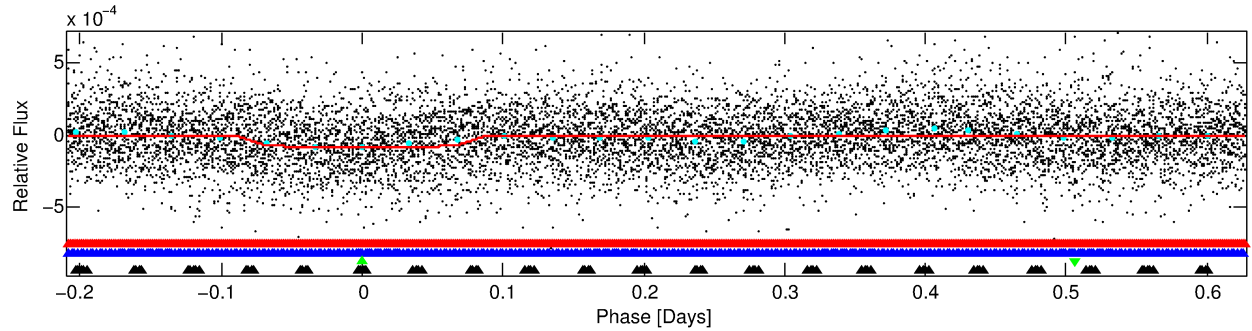
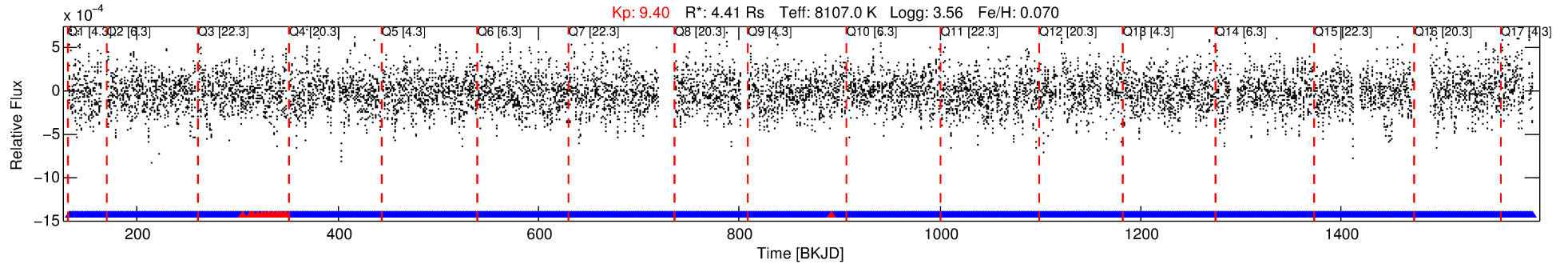
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003097912-03

No Significant Match Found

# DV One-Page Summary

KIC: 3097912 Candidate: 3 of 4 Period: 0.837 d



## DV Fit Results:

Period = 0.83704 [0.00001] d  
Epoch = 132.2435 [0.0018] BKJD  
Rp/R\* = 0.0098 [0.0016]  
a/R\* = 1.19 [0.34]  
b = 0.90 [0.21]  
Seff = 132809.80 [125165.60]  
Teq = 4868 [1147] K  
Rp = 4.74 [2.83] Re  
a = 0.0238 [0.0136] AU  
Ag = 0.16 [0.20] [-4.31σ]  
Teffp = 4740 [1003] K [-0.08σ]

## DV Diagnostic Results:

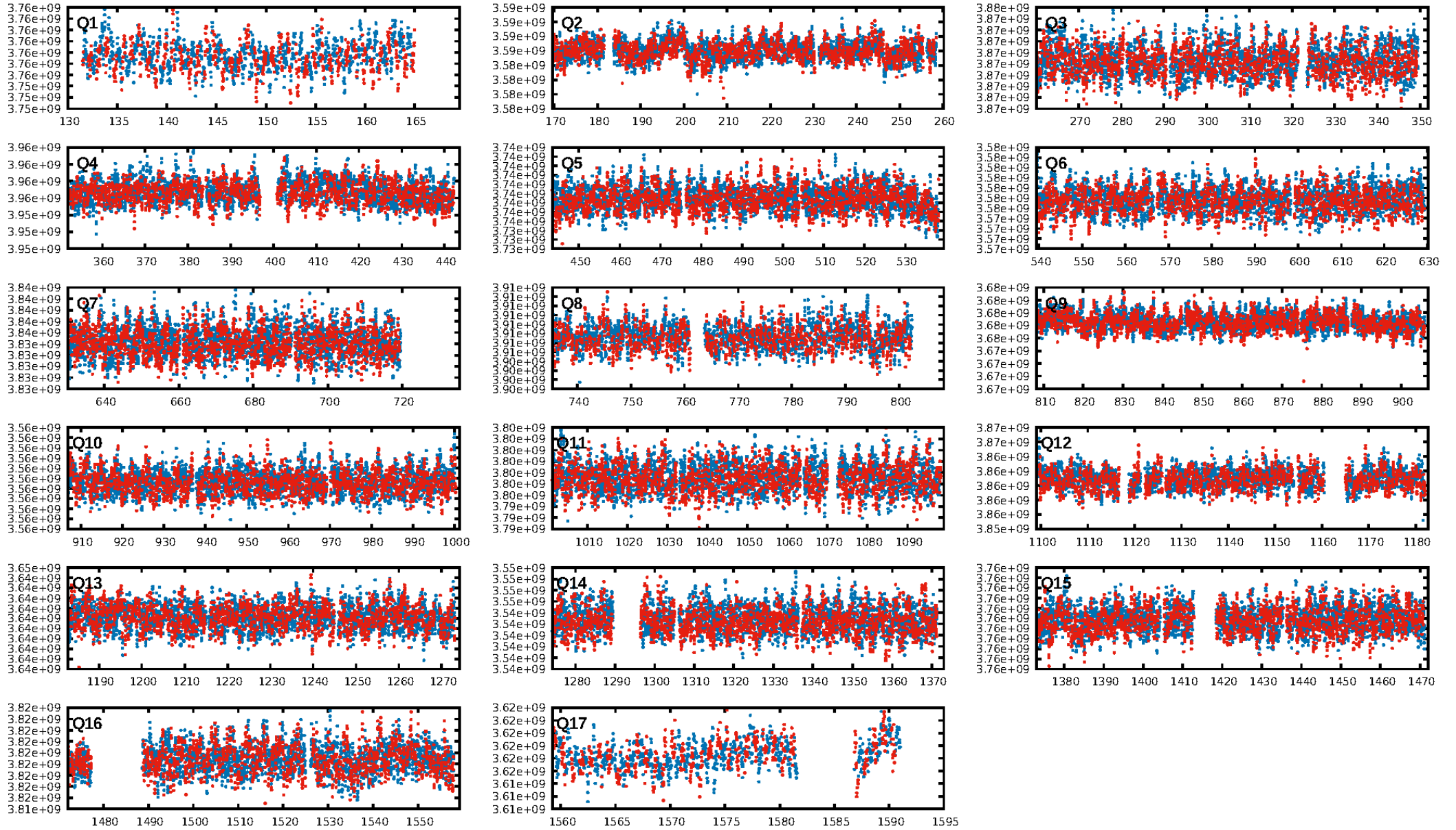
ShortPeriod-sig: 52.4% [0.71σ]  
LongPeriod-sig: 100.0% [76.92σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.65e-13  
RollingBand-fgt: 0.97 [605/623]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 14.8%  
Centroid-so: 1.165 arcsec [5.96σ]  
OotOffset-rm: 5.121 arcsec [3.82σ]  
KicOffset-rm: 5.536 arcsec [4.04σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:42:23 Z

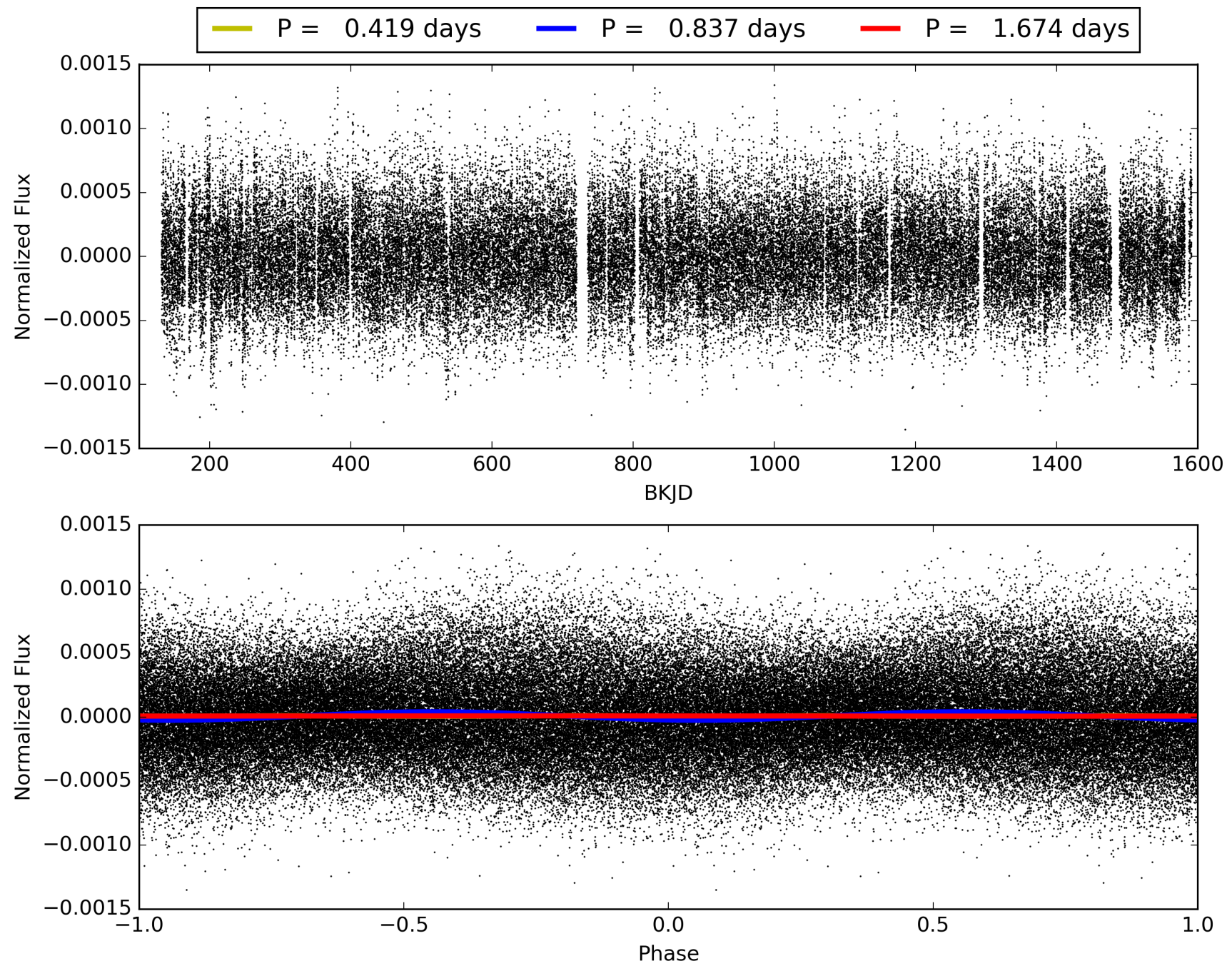
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 003097912-03, PDC Light Curves

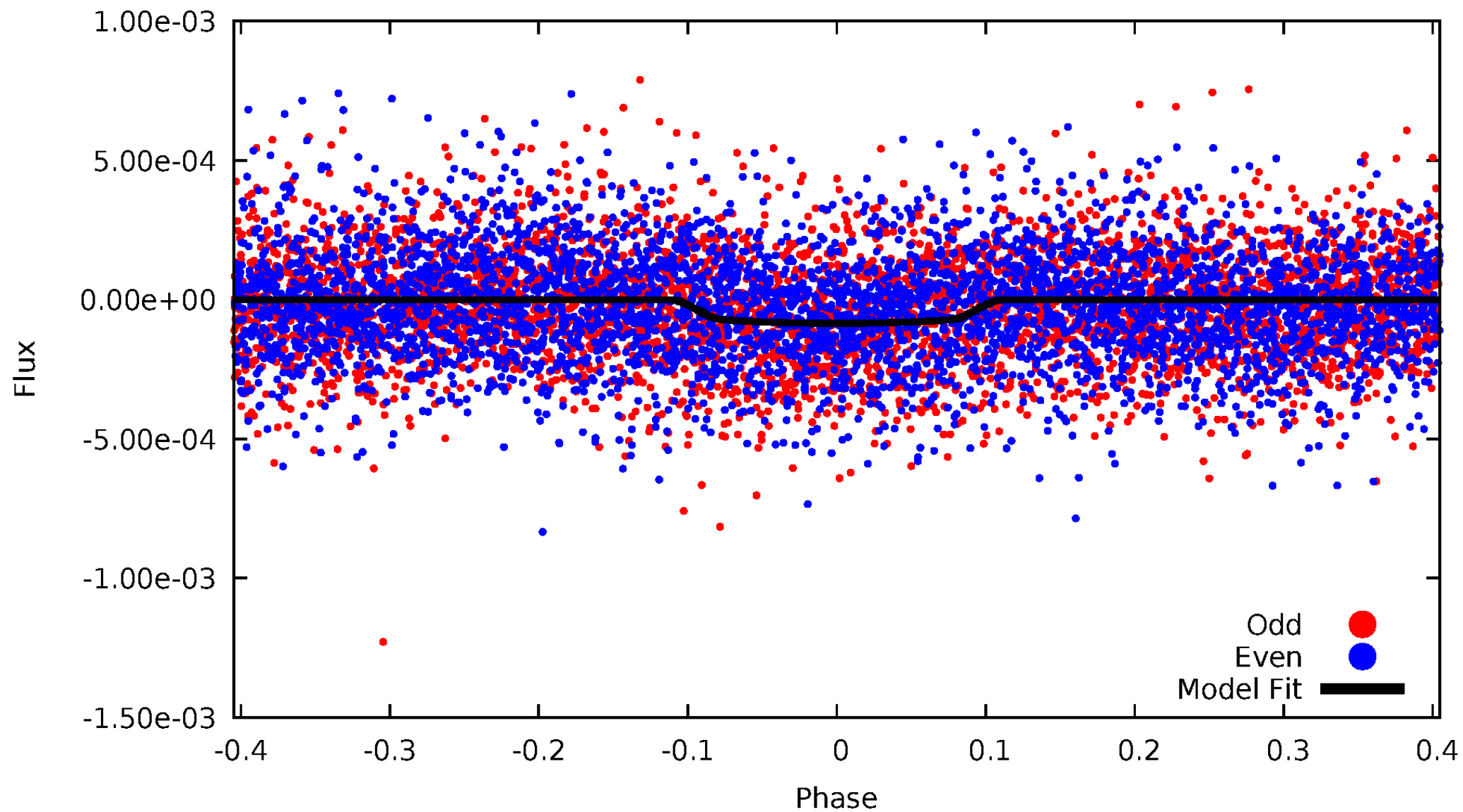


TCE 003097912-03



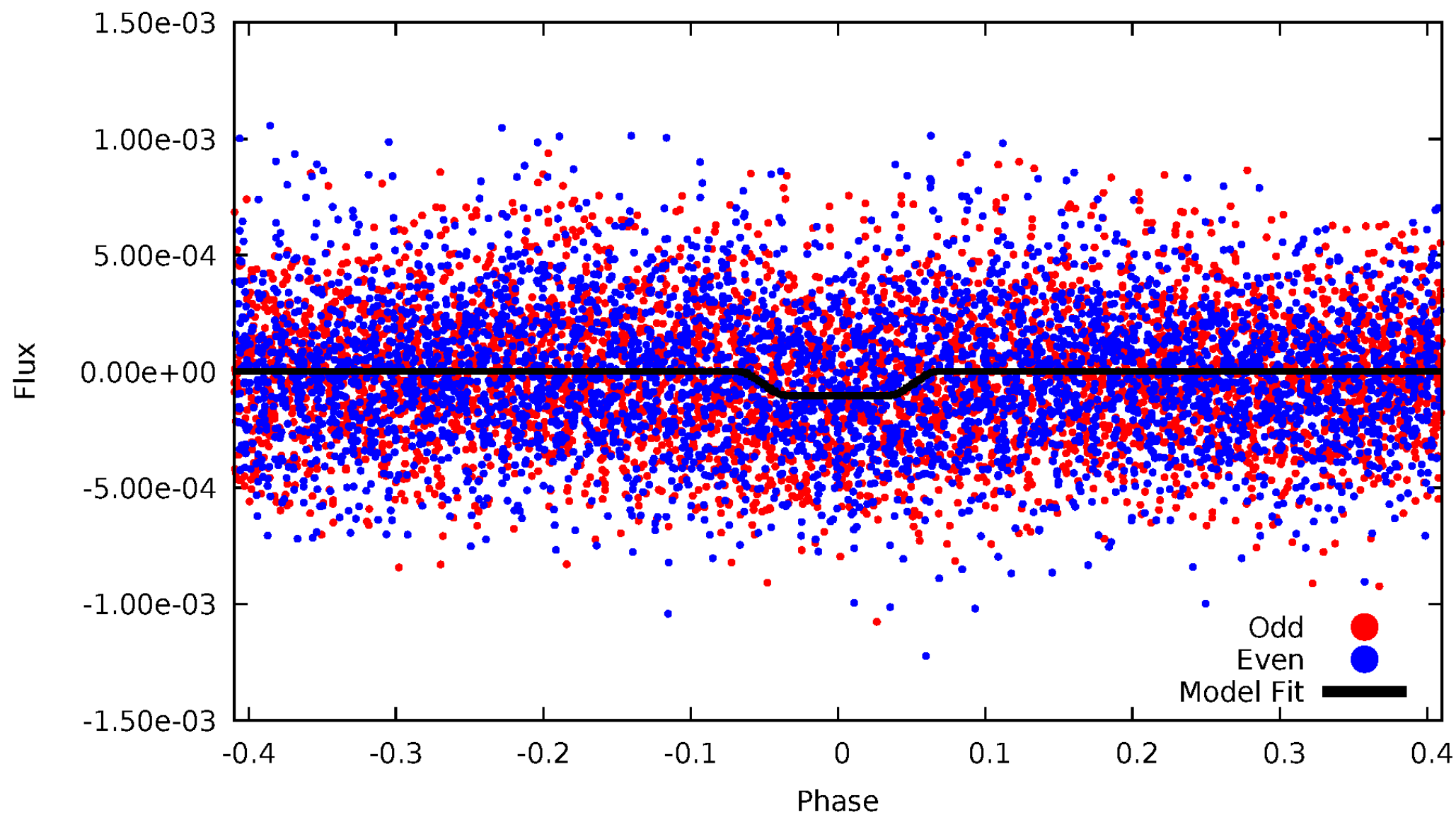
# DV Odd/Even

TCE 003097912-03



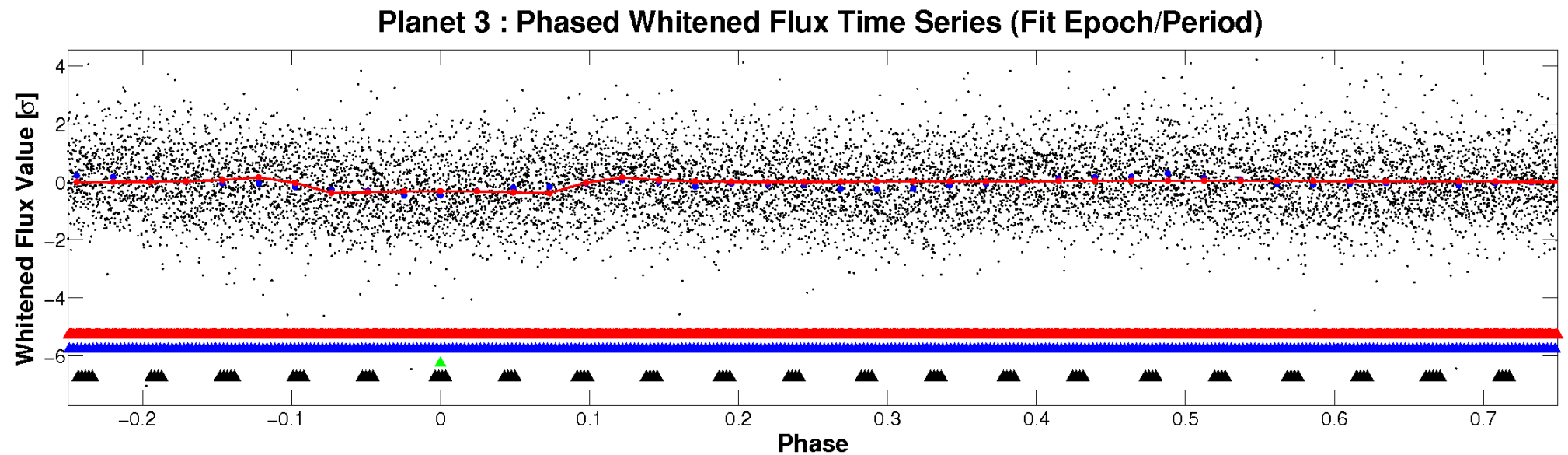
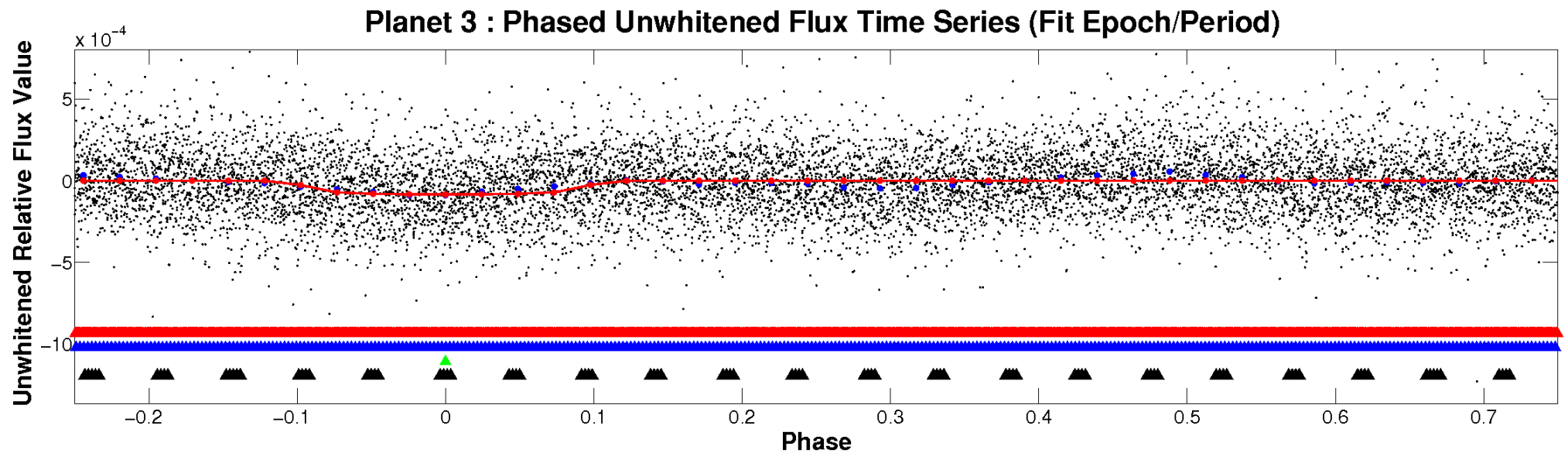
# ALT Odd/Even

TCE 003097912-03



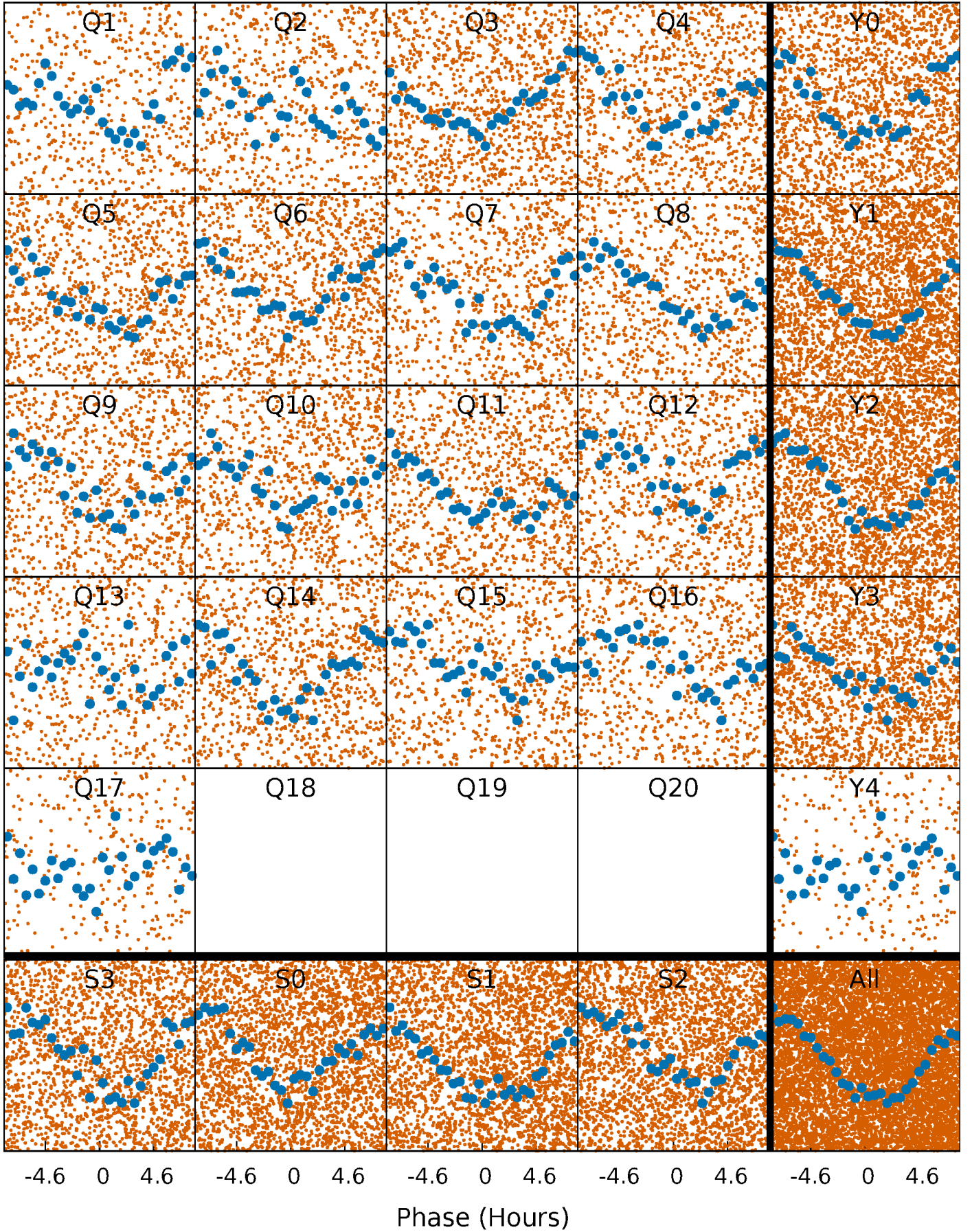


# Non-Whitened Vs. Whitened Light Curve



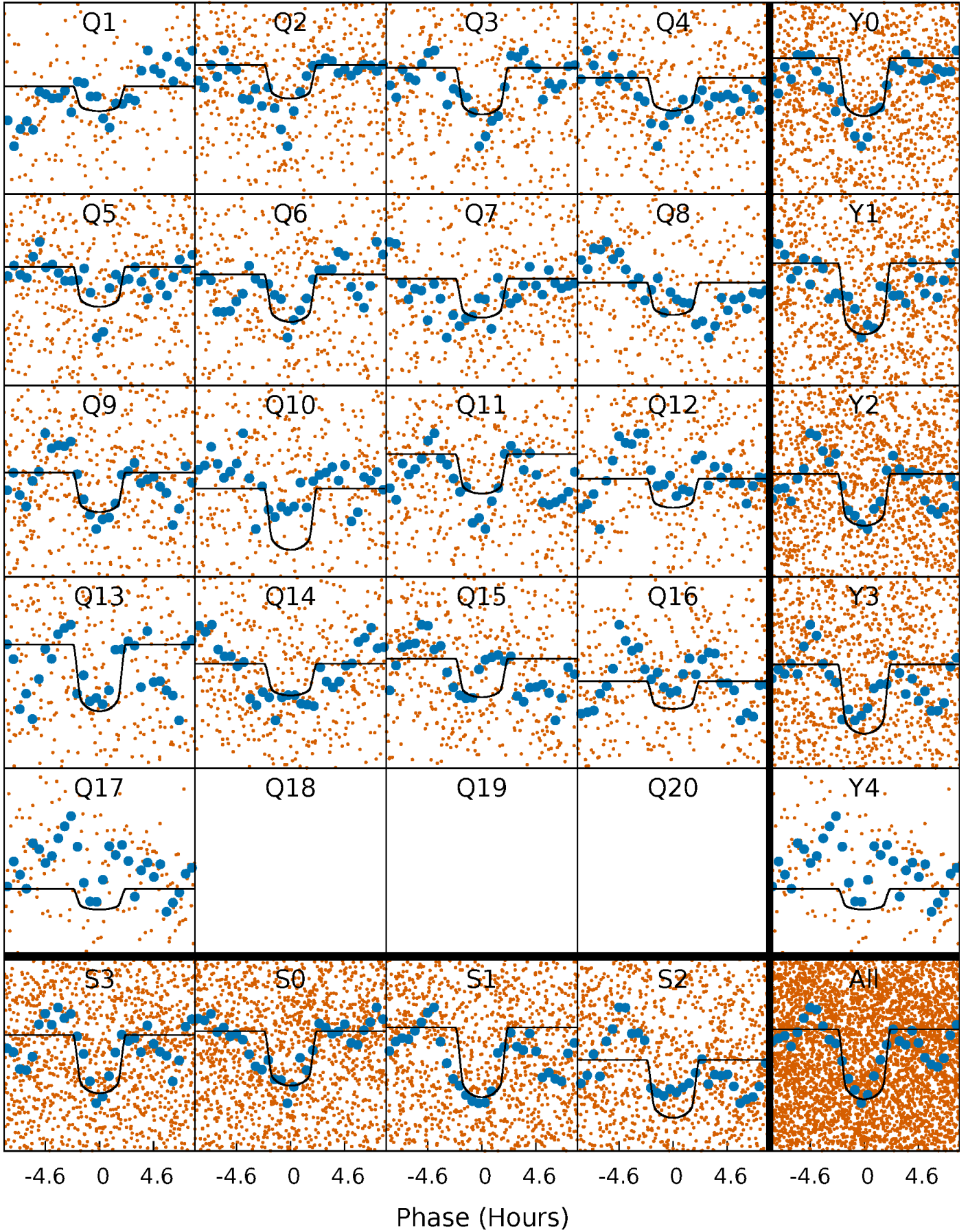
# PDC Quarter-Phased Transit Curves

TCE 003097912-03     $P = 0.837037$  Days     $T_0 = 132.243527$  (BKJD)



# DV Quarter-Phased Transit Curves

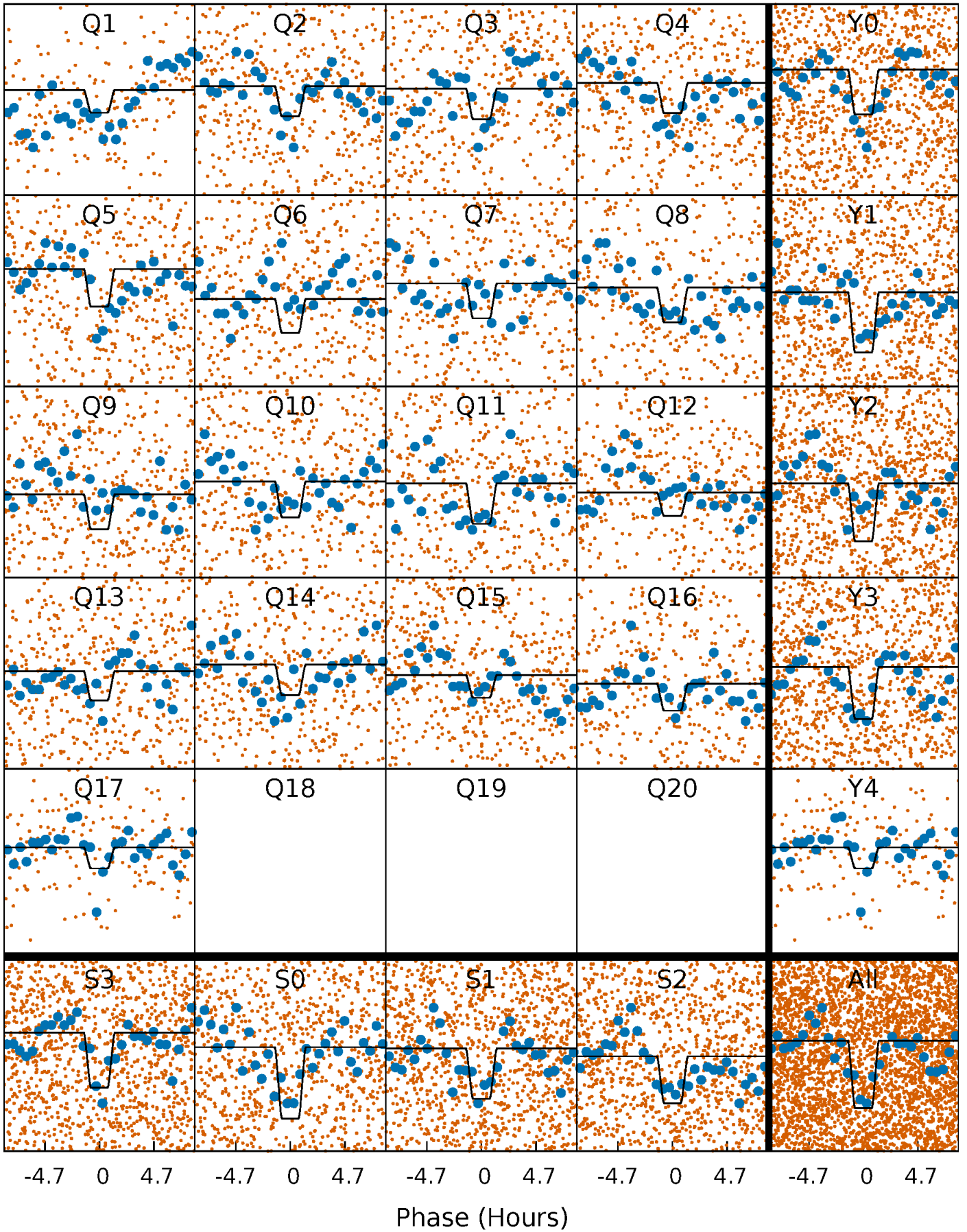
TCE 003097912-03 P= 0.837037 Days  $T_0=132.243527$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 003097912-03   P= 0.837025 Days    $T_0=132.242445$  (BKJD)

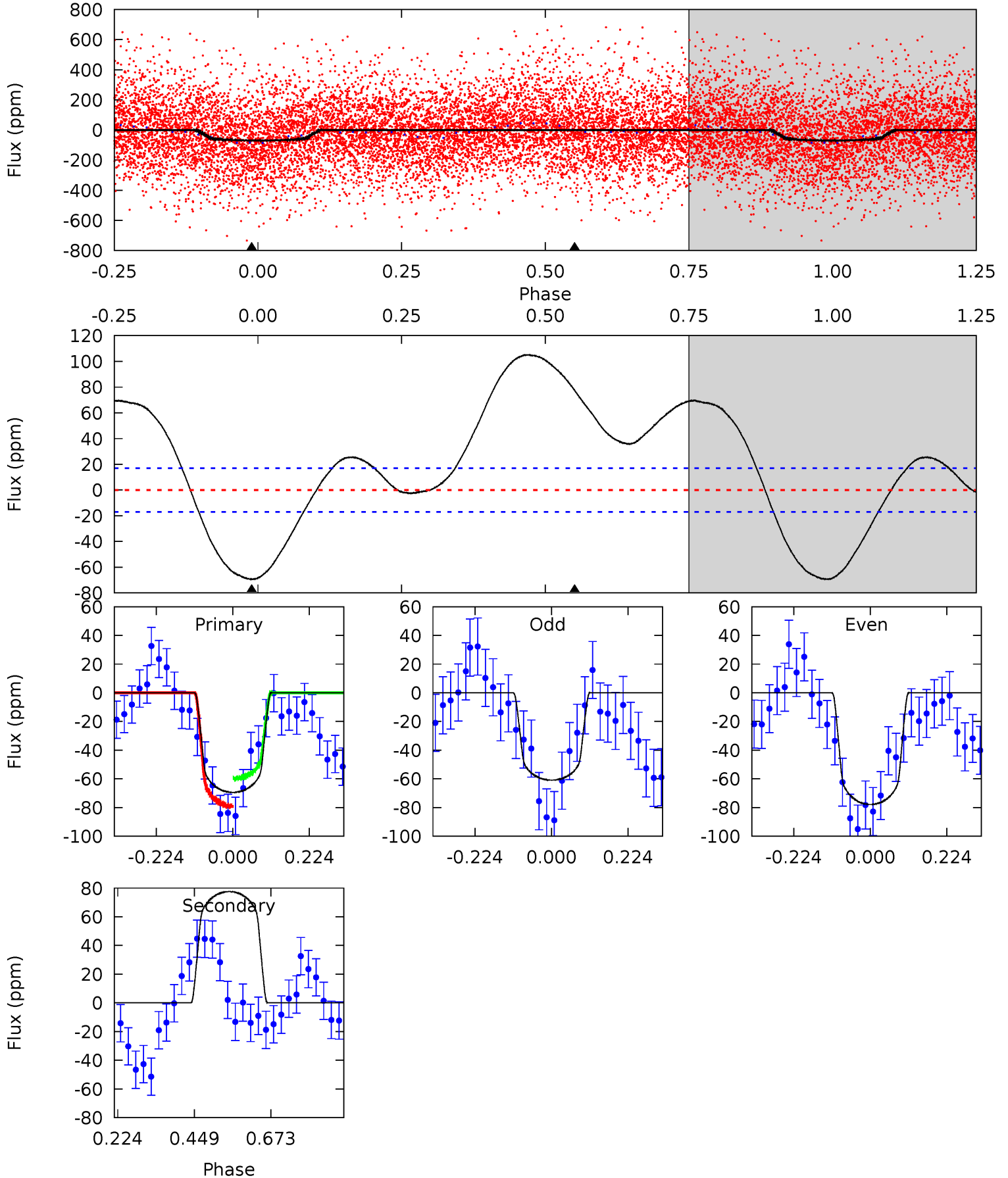




# DV Model-Shift Uniqueness Test

003097912-03, P = 0.837037 Days, E = 131.406490 Days

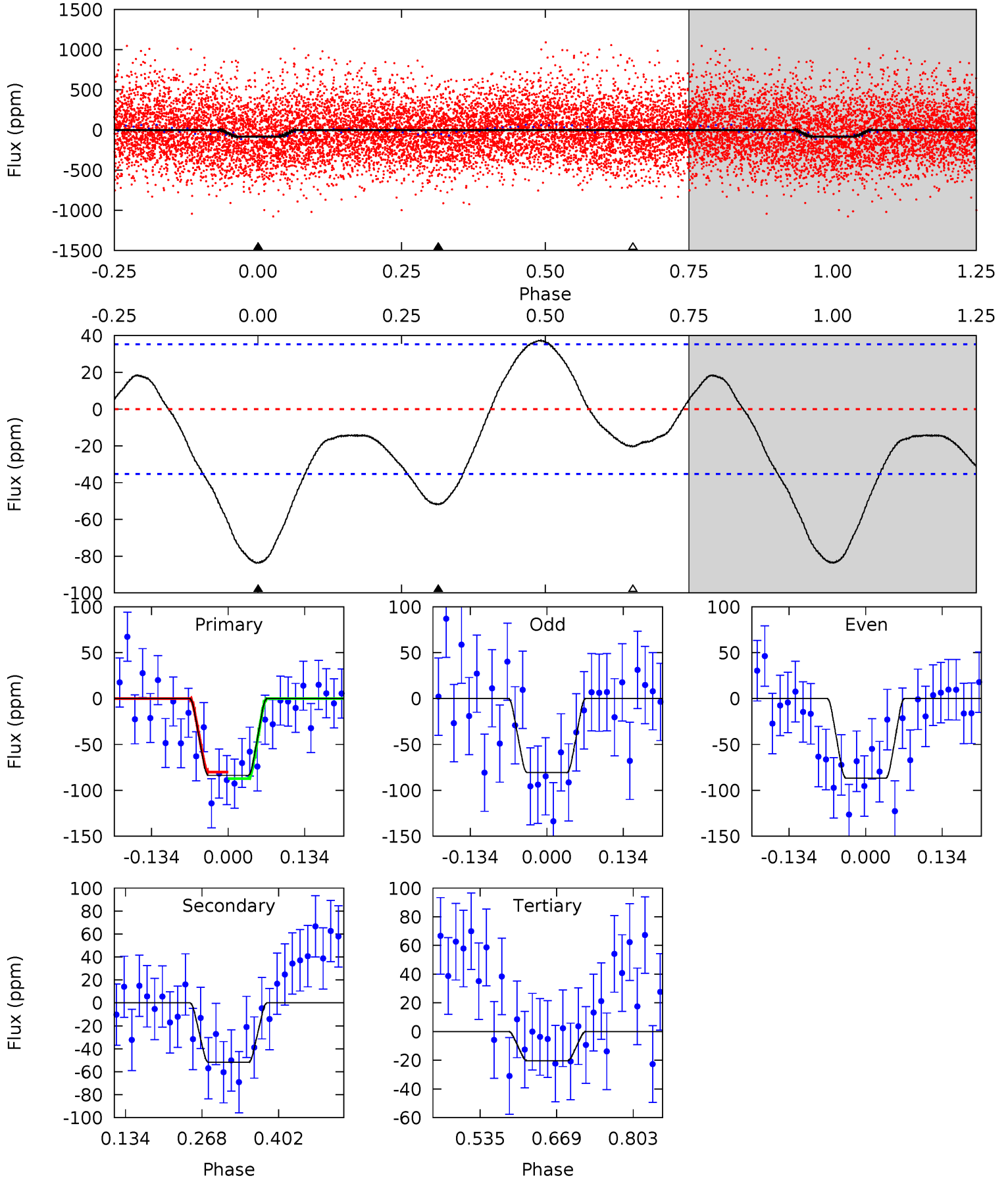
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	-20.1	0	0	4.39	1.21	1.01	18.0	18.0	-20.1	-20.1	2.20	1.01	0.60	2.55



# Alt Model-Shift Uniqueness Test

003097912-03, P = 0.837025 Days, E = 131.405420 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
10.7	6.62	2.60	0	4.50	1.50	2.37	8.08	10.7	4.02	6.62	0.39	0.77	0.31	0.47



### Stellar Parameters For KIC 003097912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8107^{+223}_{-363}$	$3.559^{+0.549}_{-0.061}$	$0.070^{+0.250}_{-0.400}$	$4.414^{+0.446}_{-2.529}$	$2.576^{+0.227}_{-0.963}$	$0.042^{+0.290}_{-0.008}$
	+3%/-4%	+15%/-2%	+357%/-571%	+10%/-57%	+9%/-37%	+687%/-20%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003097912-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$78 \pm 4$	$4.28^{+1.12}_{-1.27}$	$6539^{+451}_{-961}$	$-8036^{+670}_{-842}$	$-1.336^{+0.491}_{-1.181}$
Alt.	$-52 \pm 8$	$4.42^{+1.12}_{-1.37}$	$6548^{+442}_{-924}$	$5897^{+925}_{-883}$	$0.813^{+0.731}_{-0.293}$

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

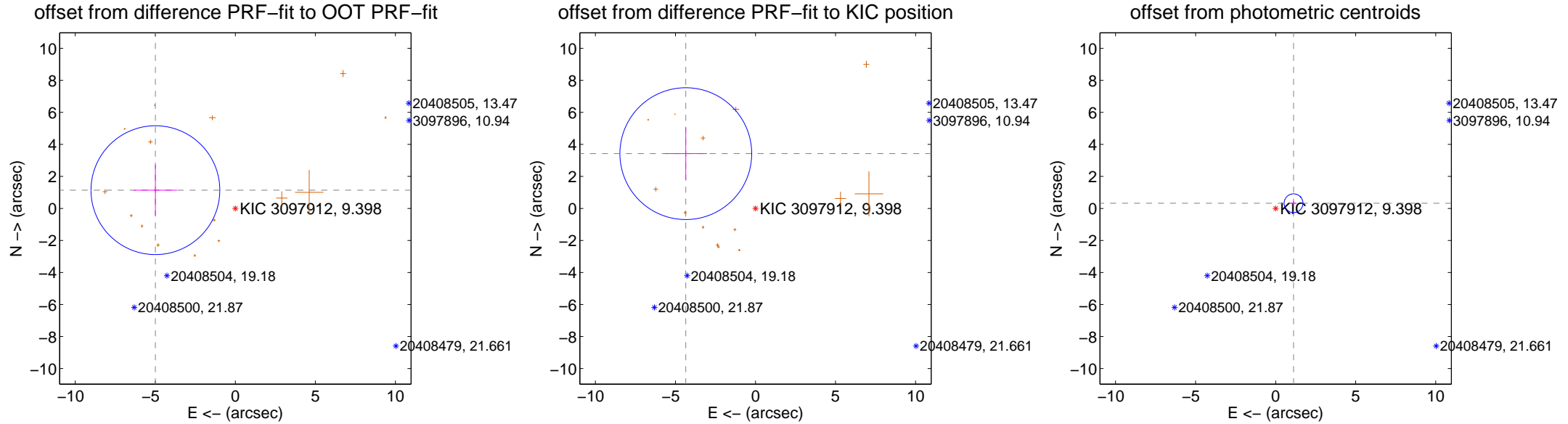
## DV Centroid Data

Supplemental centroid analysis for 003097912-03. **Kepler magnitude: 9.40.** Transit SNR 15.31

There are 0 quarters with good PRF difference image offsets

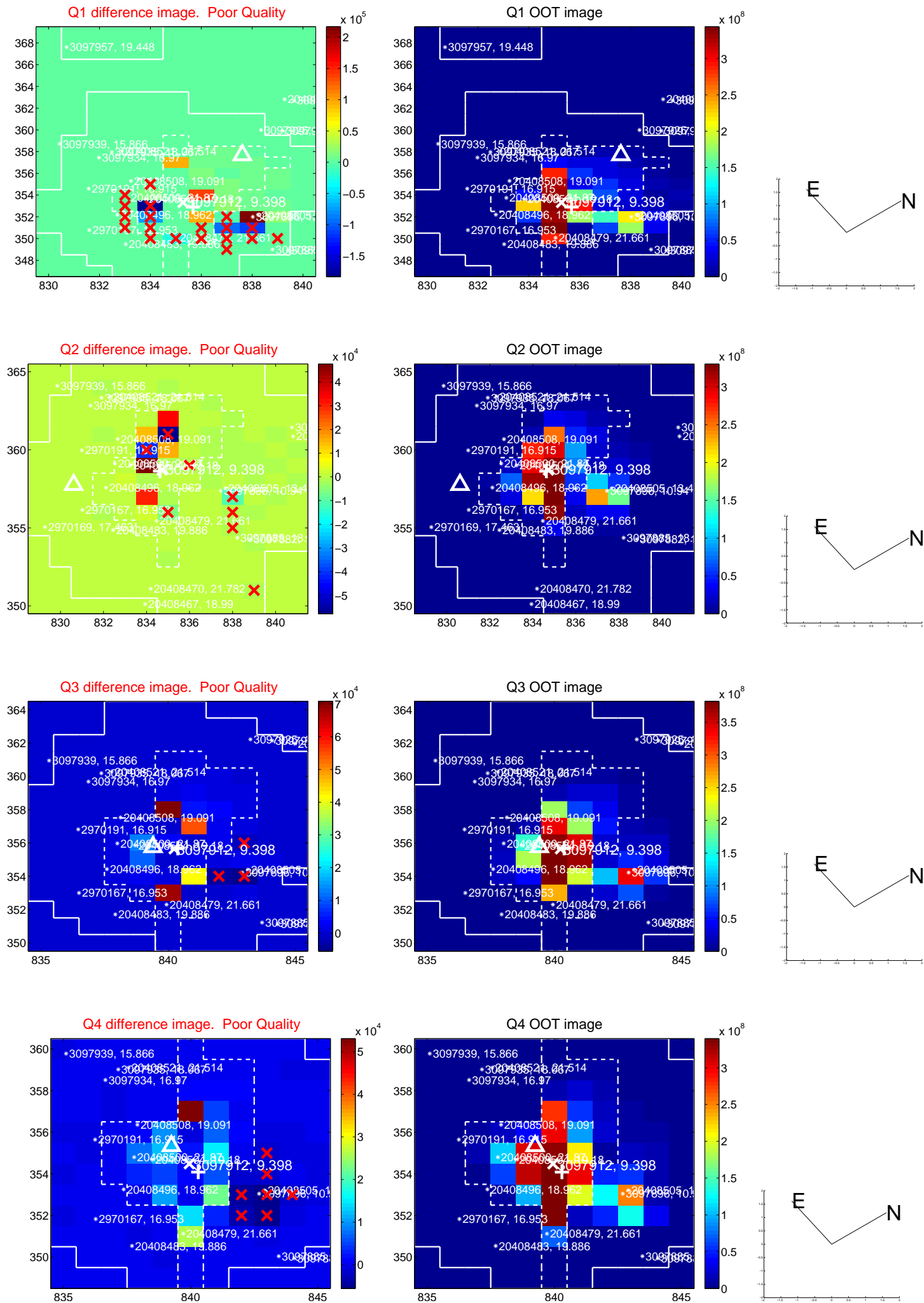
The OOT PRF centroid is offset from the target star catalog position by about 2.47 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>5.121 \pm 1.341</math></b>	<b>3.82</b>	$4.992 \pm 1.356$	$1.141 \pm 1.583$
PRF-fit source offset from KIC position	<b><math>5.536 \pm 1.372</math></b>	<b>4.04</b>	$4.352 \pm 1.318$	$3.422 \pm 1.636$
photometric centroid source offset	<b><math>1.16 \pm 0.20</math></b>	<b>5.96</b>	$-1.12 \pm 0.20$	$0.33 \pm 0.15$

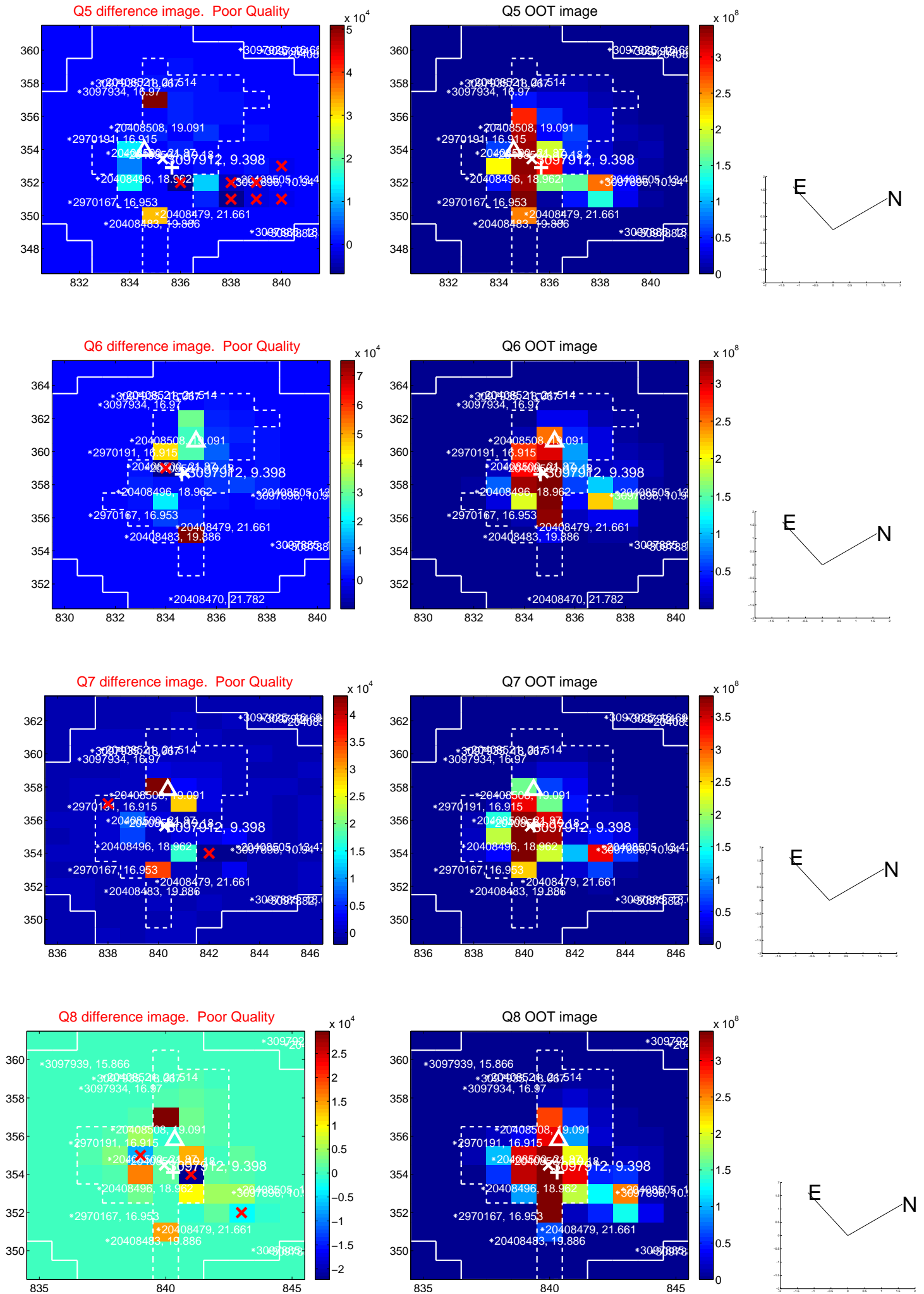




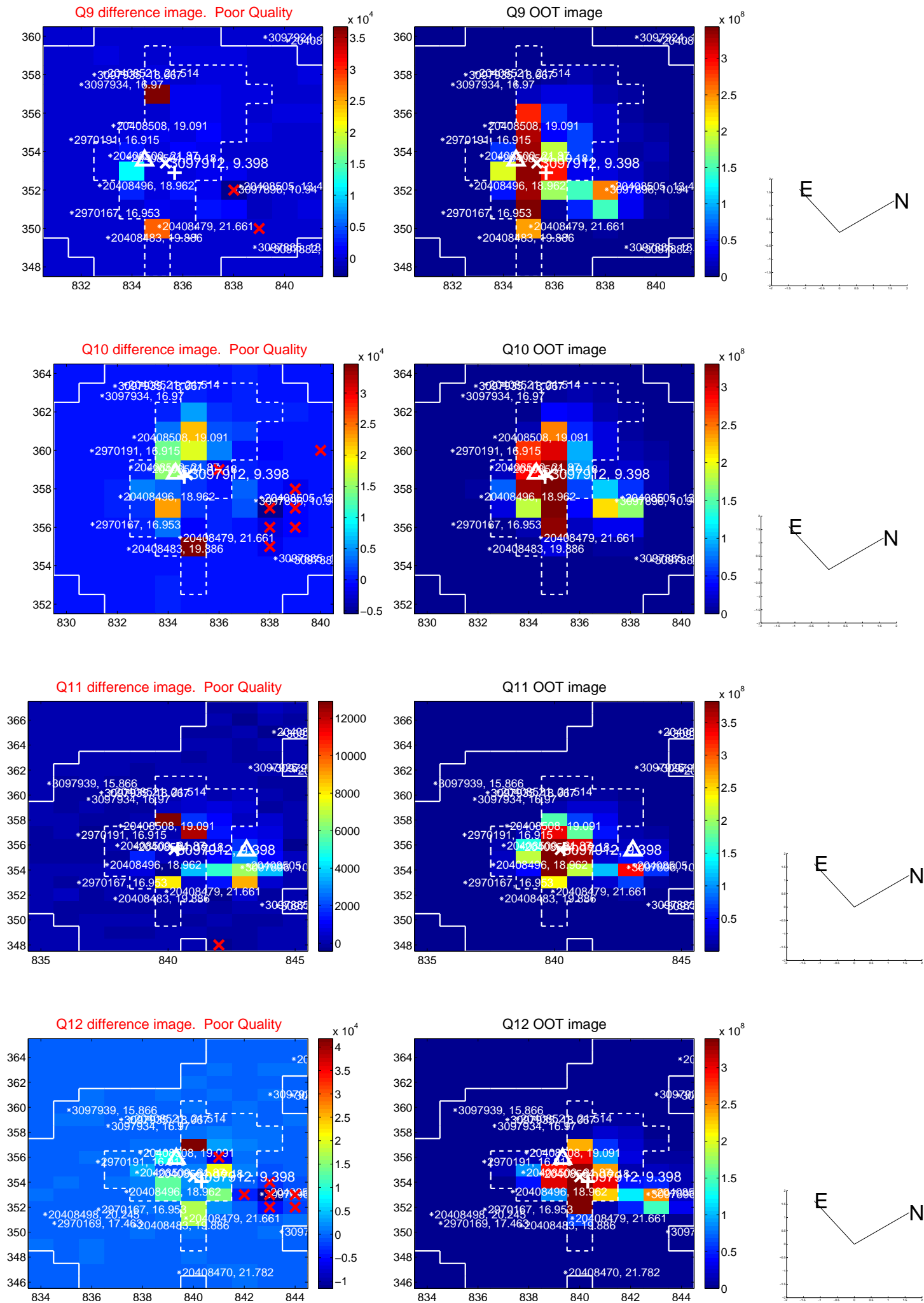
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



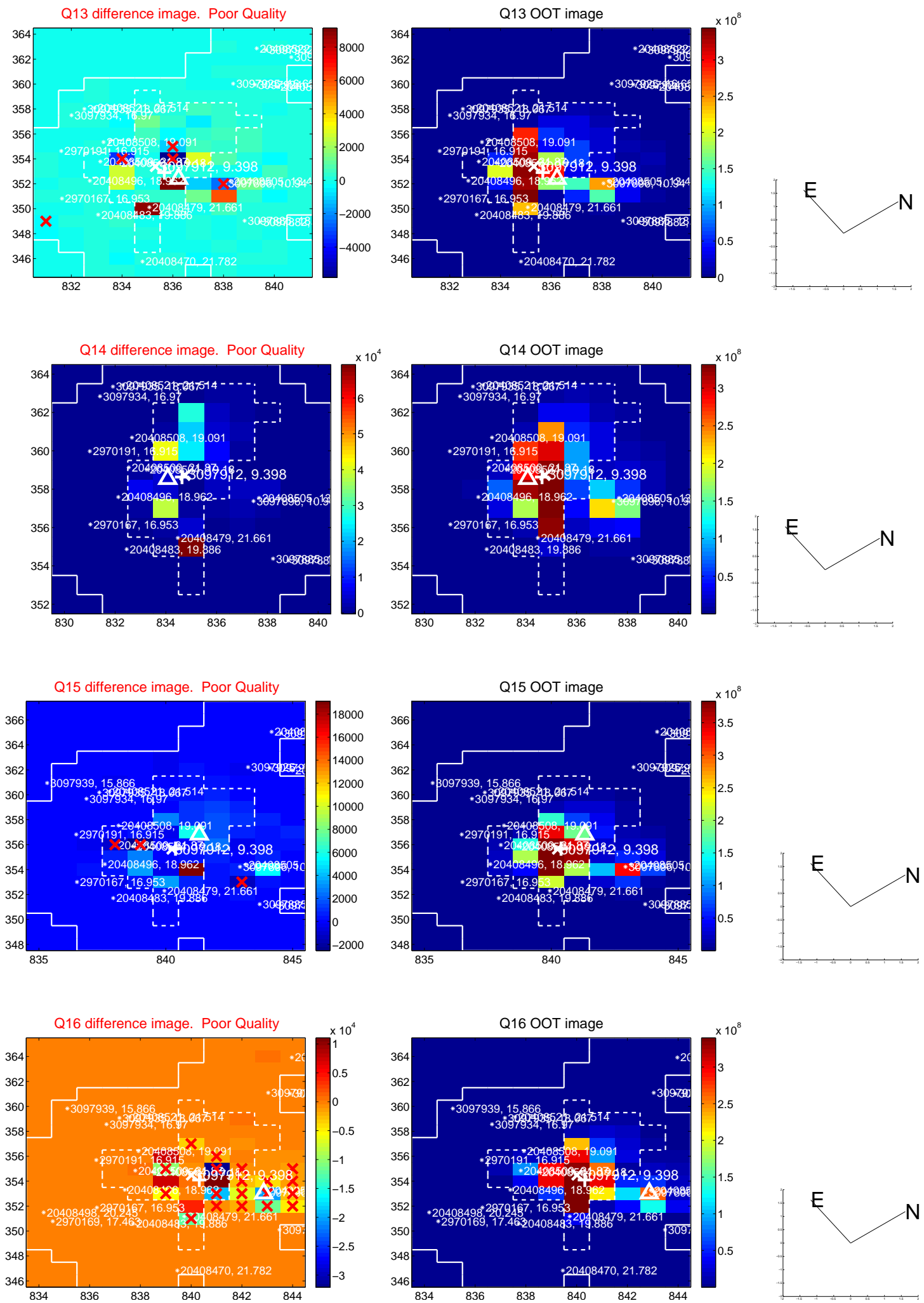
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



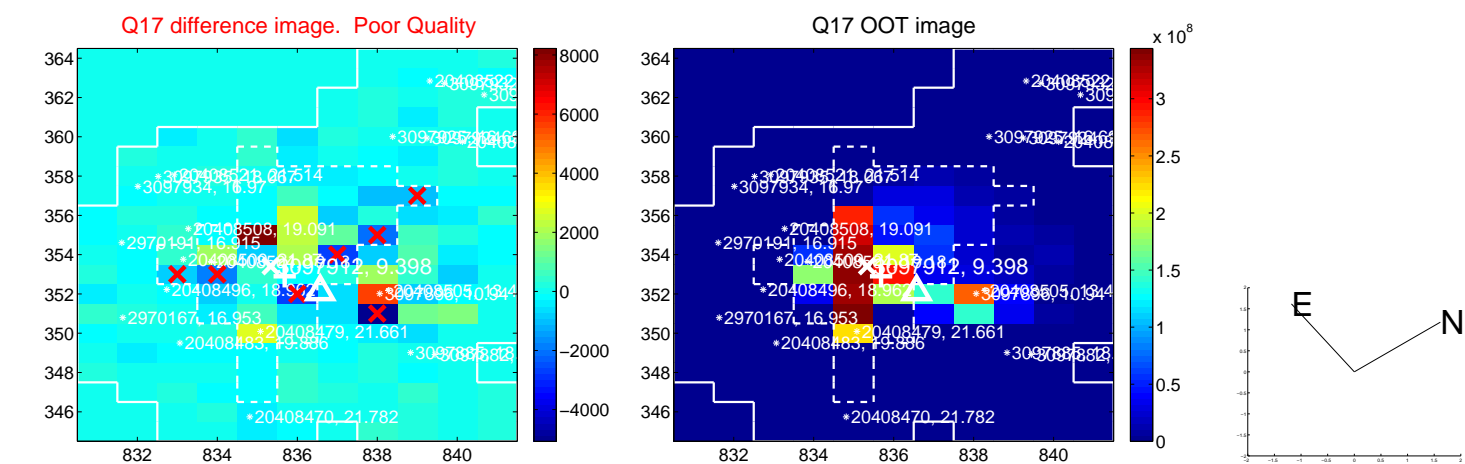
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



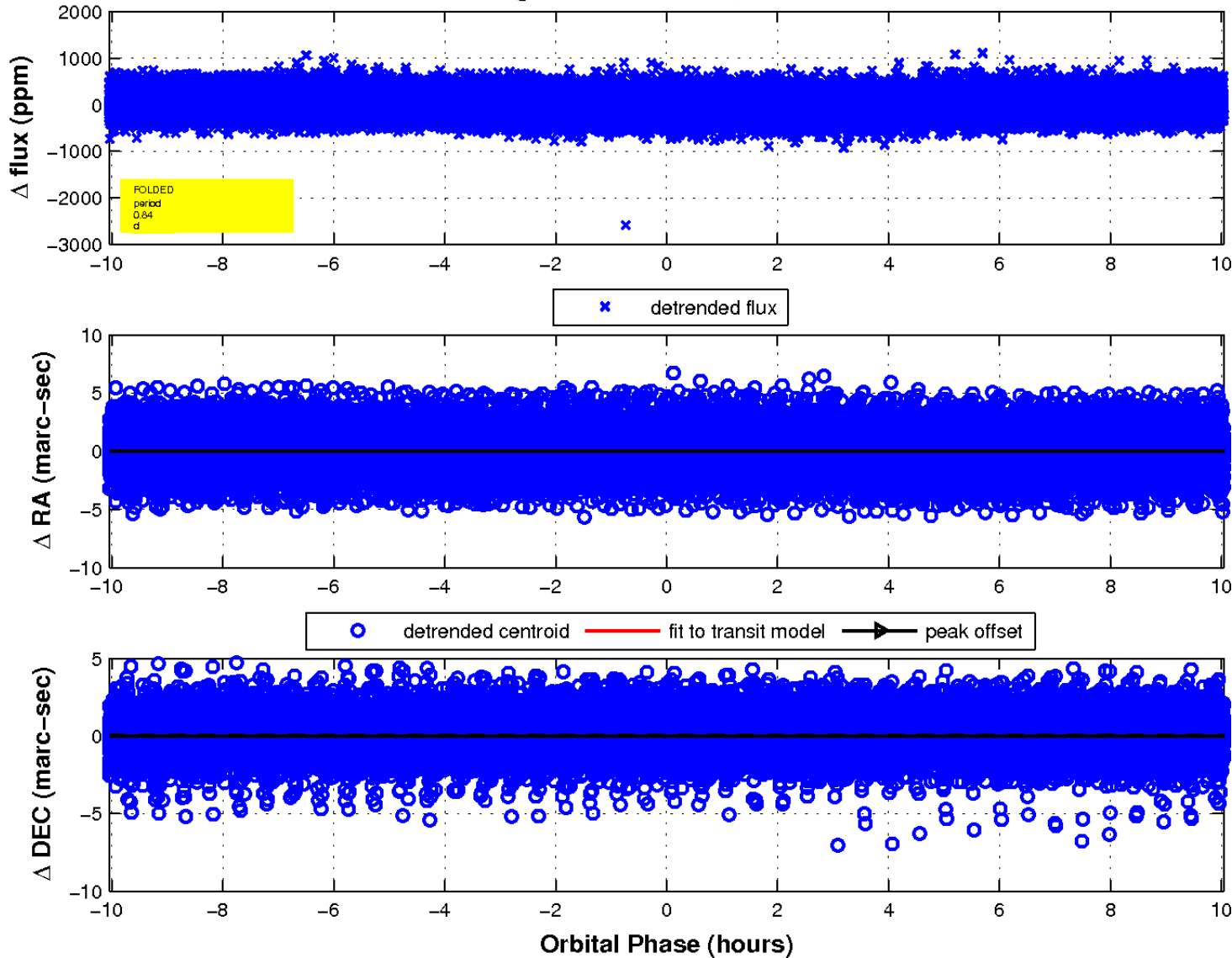
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 4





# UKIRT Image

Declination

