

# KIC 006367365

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006367365-01	OBS	No	1.095506	131.759369	109.3	6.957	9.6	11.5	0.66	5052	0.68	725.68
006367365-02	OBS	No	57.475775	187.724171	1162.4	6.871	21.3	8.7	0.66	5052	2.31	3.69
006367365-03	OBS	No	85.883560	154.008168	1647.1	2.161	8.5	9.2	0.66	5052	2.85	2.16
006367365-04	OBS	No	41.003832	150.164414	2169.2	1.036	8.7	9.4	0.66	5052	3.22	5.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006367365-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
006367365-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006367365-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006367365-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

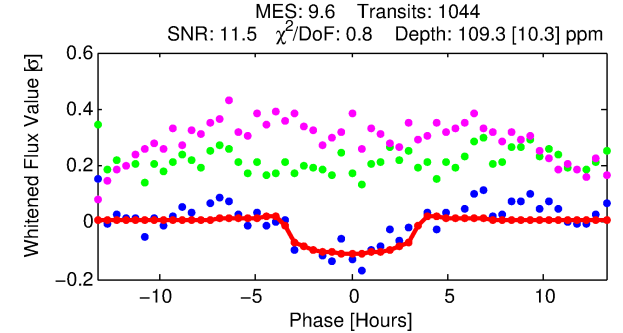
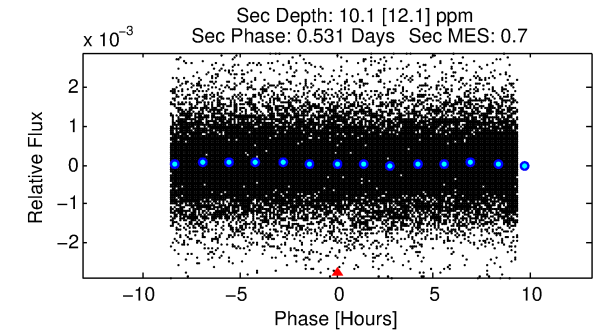
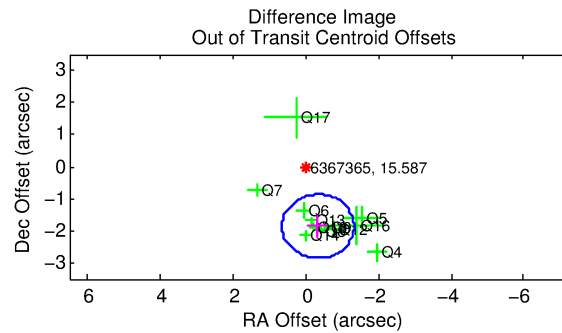
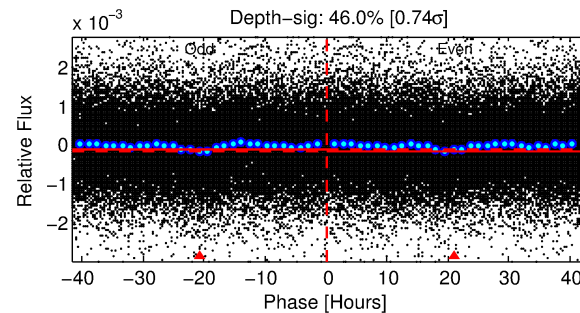
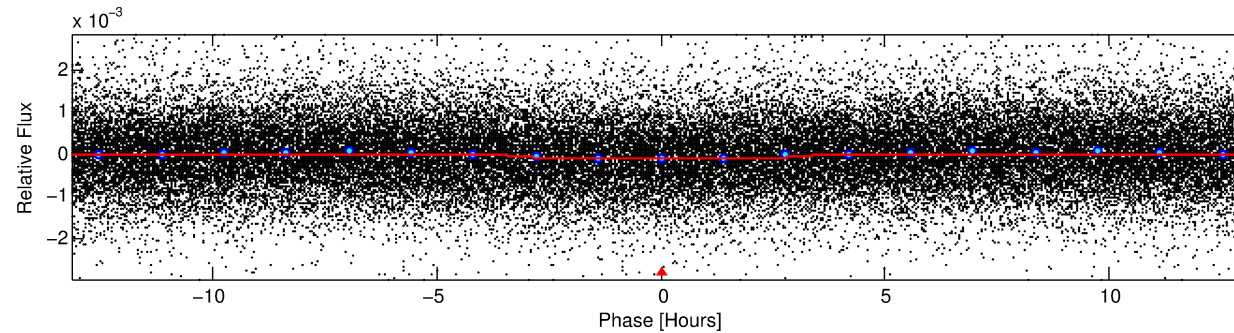
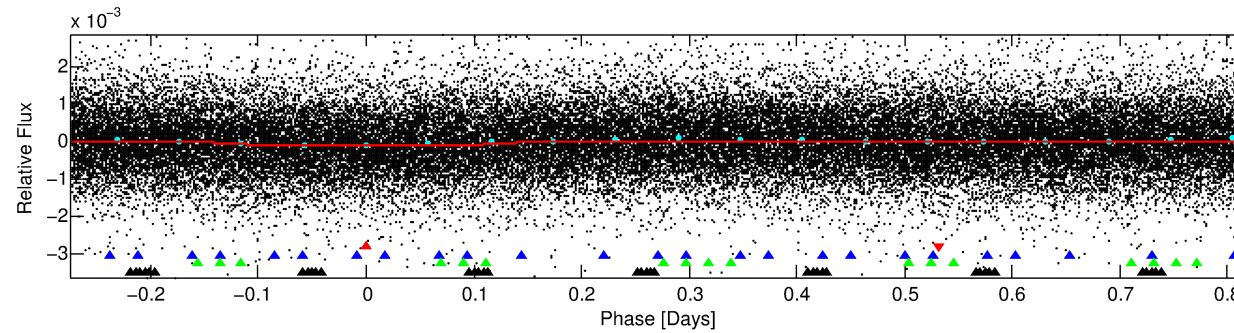
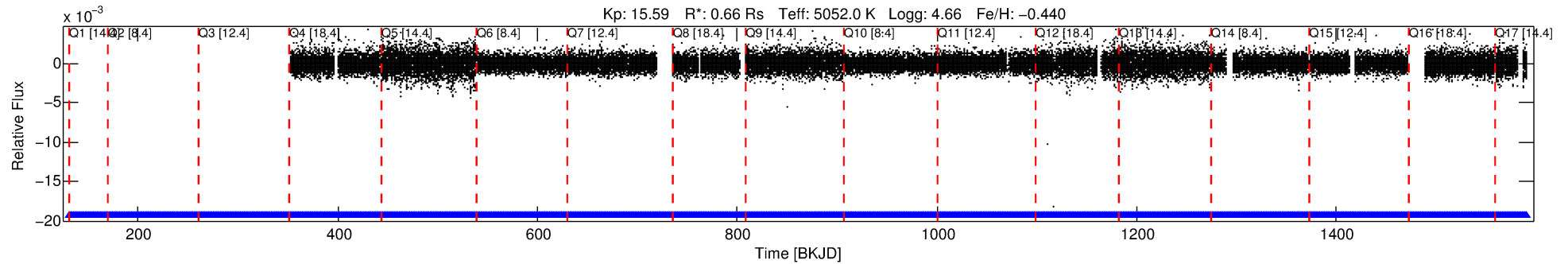
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006367365-01

No Significant Match Found

# DV One-Page Summary

KIC: 6367365 Candidate: 1 of 4 Period: 1.096 d



## DV Fit Results:

Period = 1.09551 [0.00001] d  
Epoch = 131.7594 [0.0057] BKJD  
Rp/R\* = 0.0095 [0.0105]  
a/R\* = 1.33 [2.35]  
b = 0.35 [10.52]  
Seff = 725.68 [150.50]  
Teq = 1323 [69] K  
Rp = 0.68 [0.76] Re  
a = 0.0187 [0.0020] AU  
Ag = 4.14 [10.48] [0.30 $\sigma$ ]  
Teffp = 2920 [1846] K [0.86 $\sigma$ ]

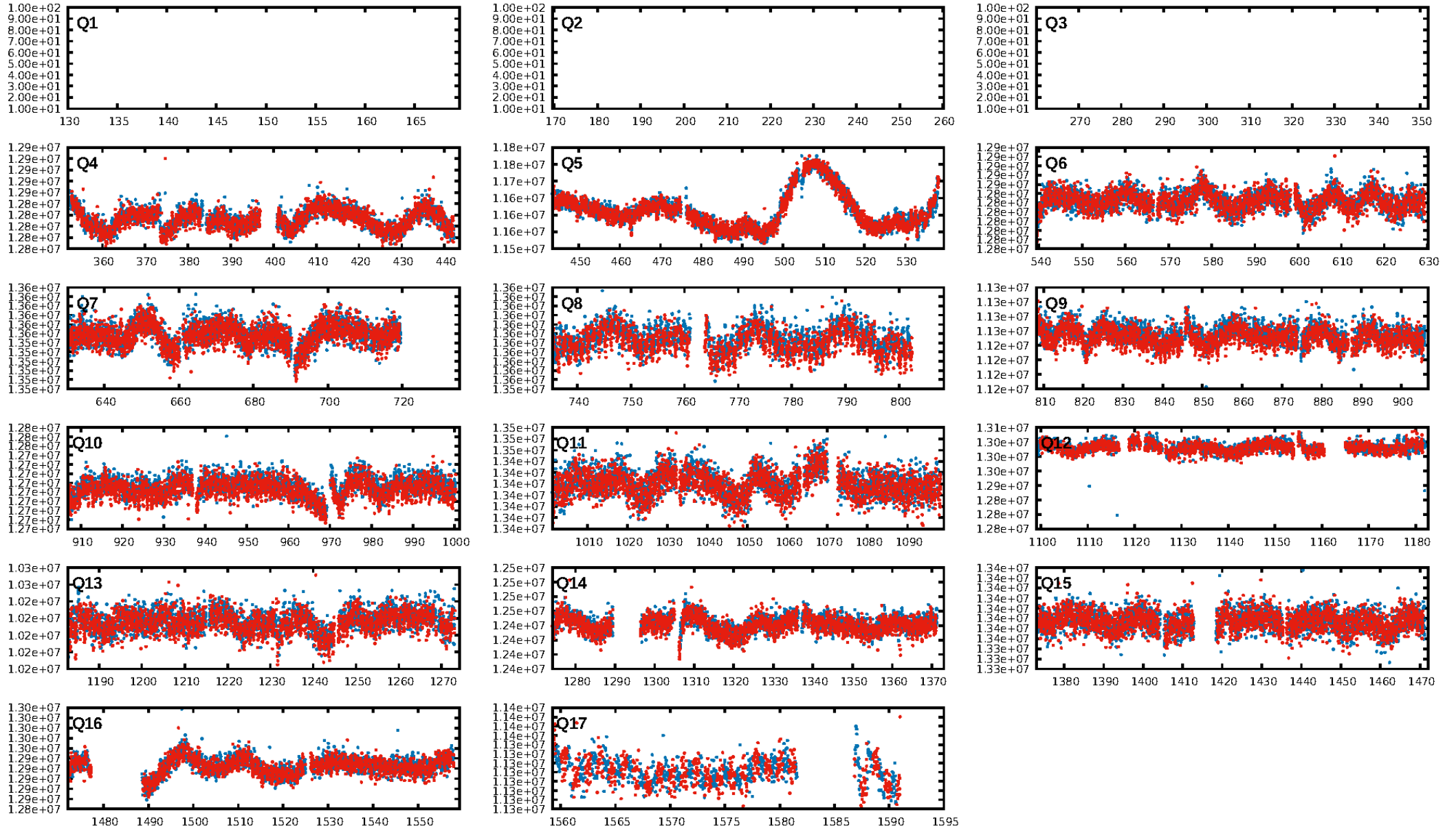
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [136.17 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.94e-13  
RollingBand-fgt: 1.00 [1019/1019]  
GhostDiagnostic-chr: 0.9414  
Centroid-sig: 0.0%  
Centroid-so: 2.404 arcsec [10.54 $\sigma$ ]  
OotOffset-rm: 1.891 arcsec [5.71 $\sigma$ ]  
KicOffset-rm: 2.975 arcsec [11.46 $\sigma$ ]  
OotOffset-st: 3/1/4/4 [12]  
KicOffset-st: 3/1/4/4 [12]  
DiffImageQuality-fgm: 0.92 [11/12]  
DiffImageOverlap-fno: 1.00 [14/14]

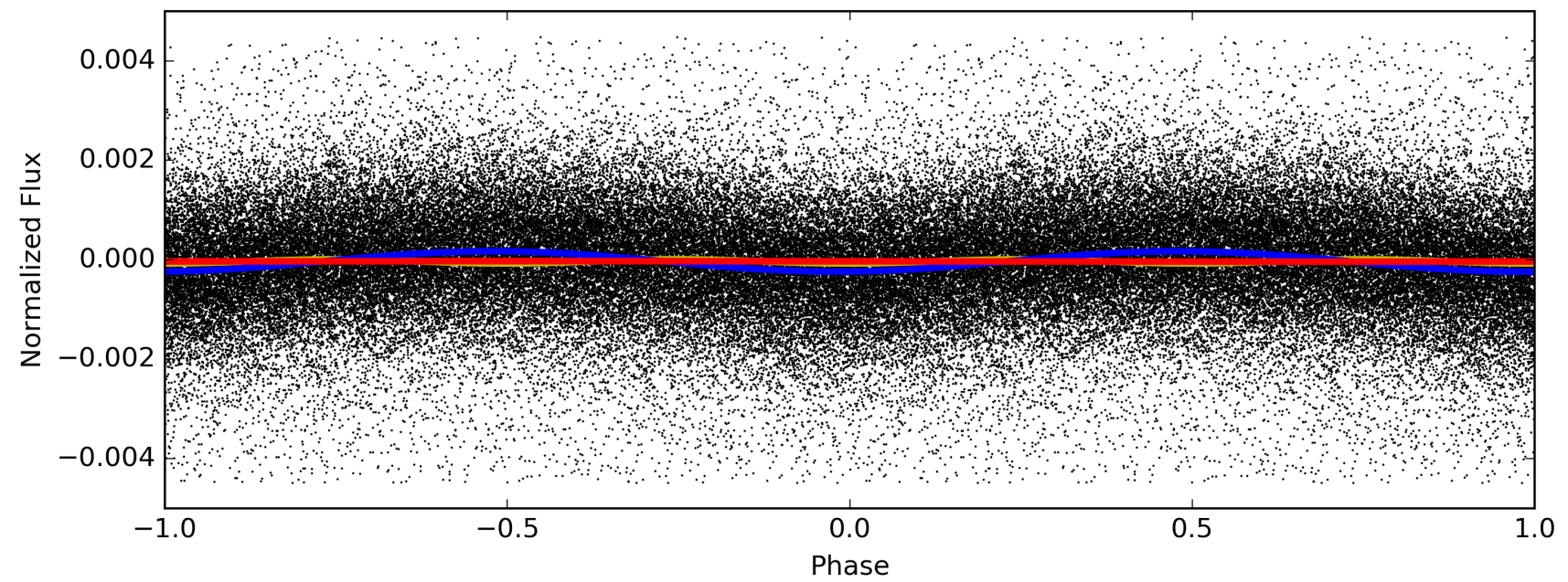
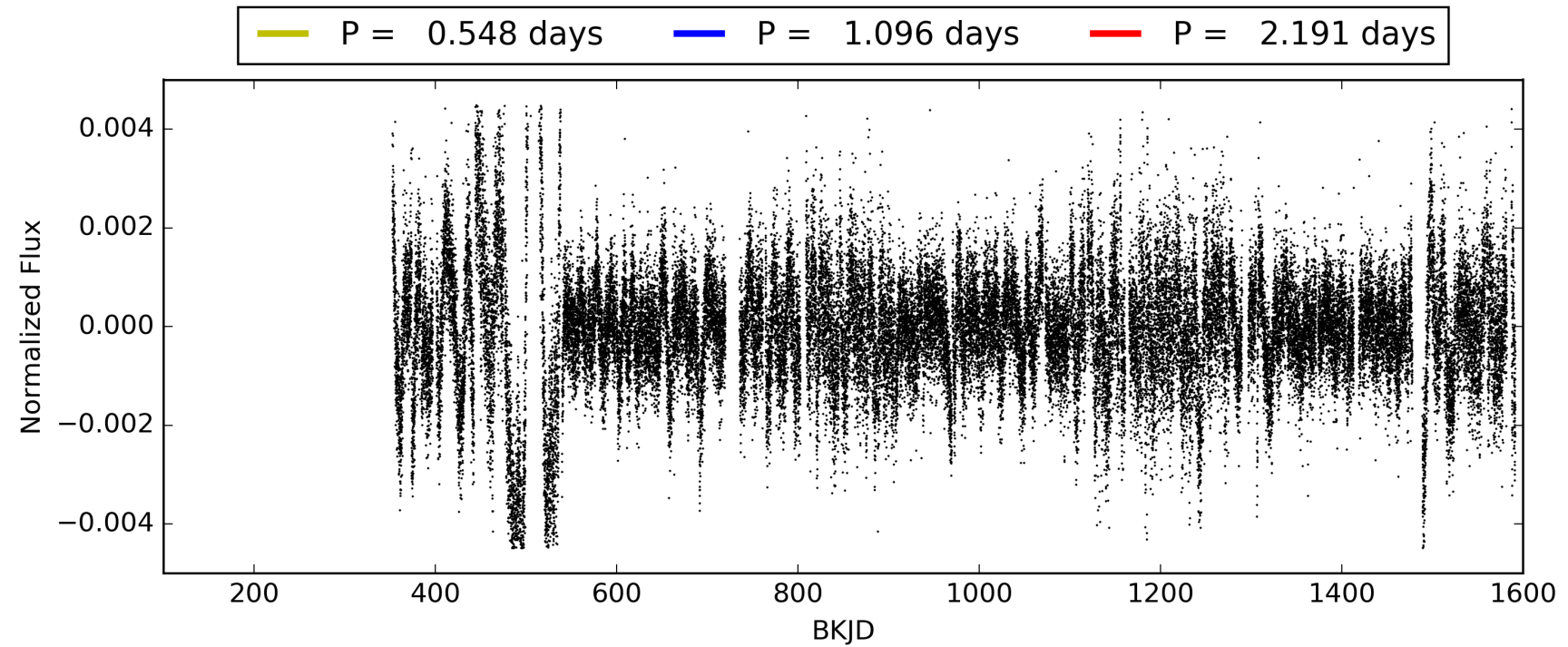
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:25:19 Z

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

# TCE 006367365-01, PDC Light Curves



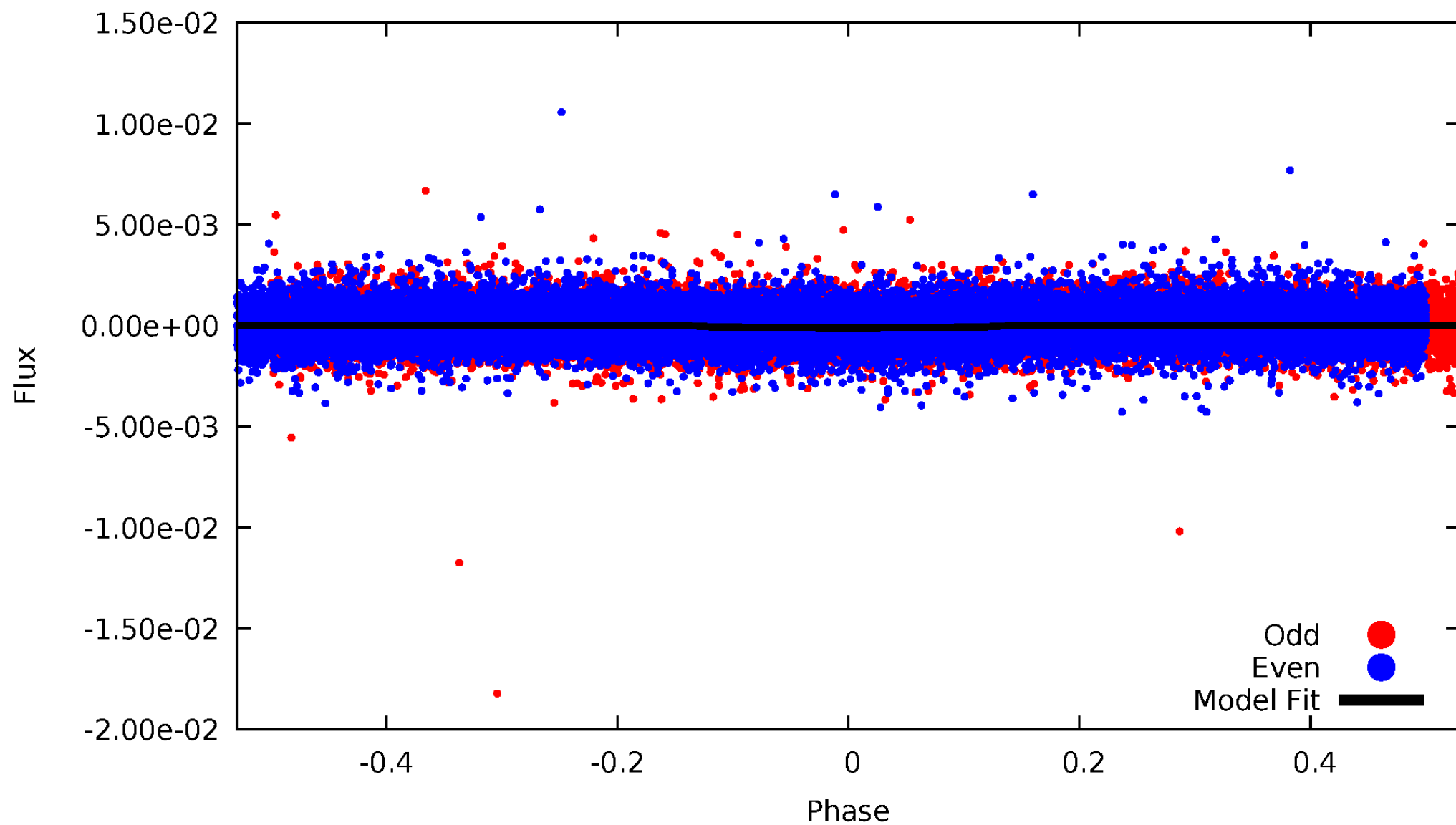
TCE 006367365-01





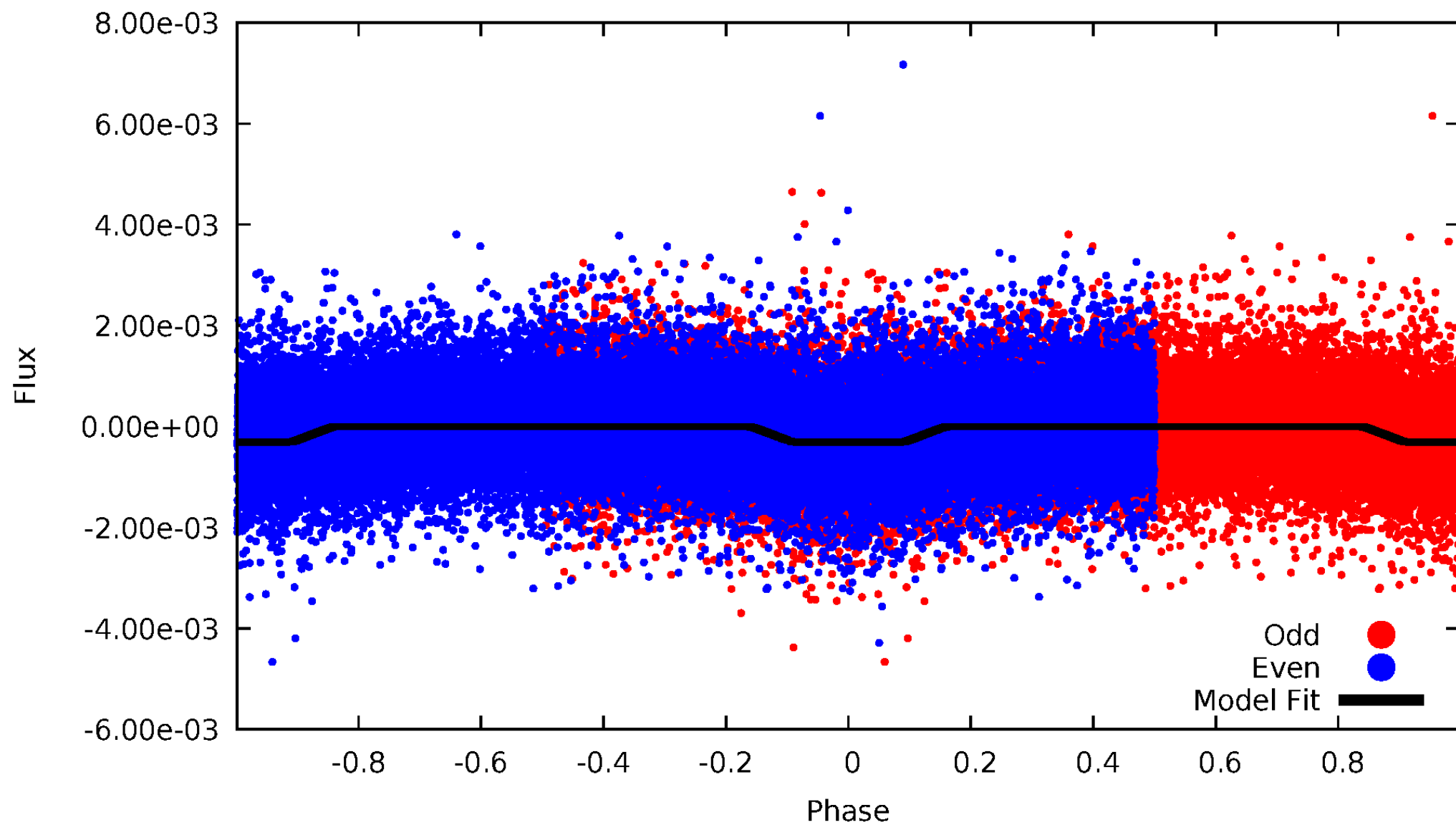
# DV Odd/Even

TCE 006367365-01

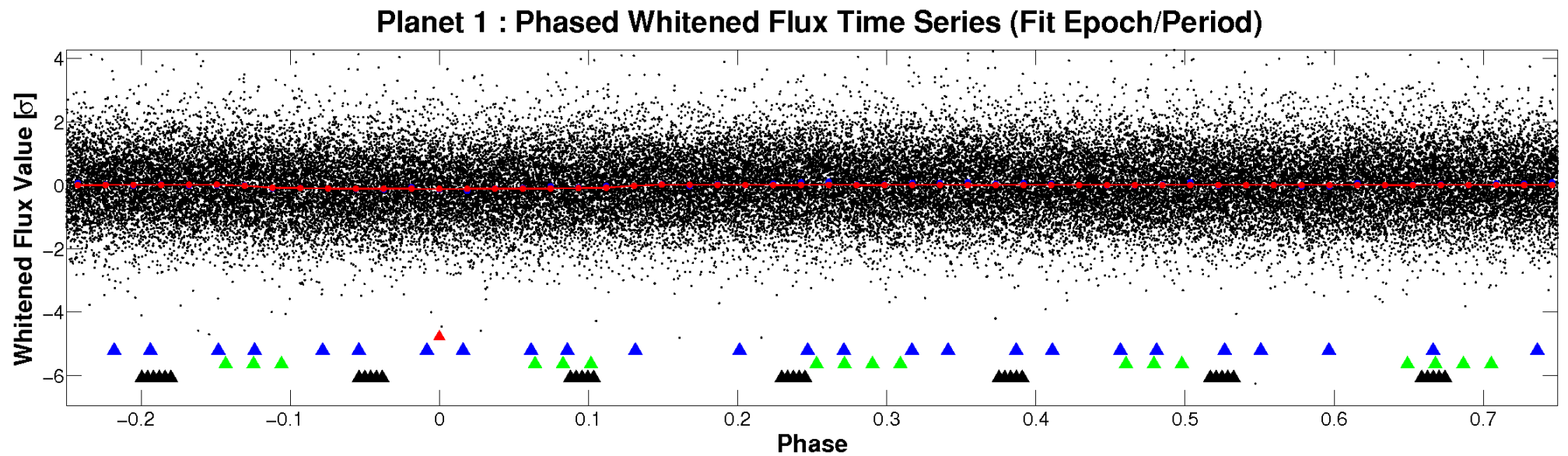
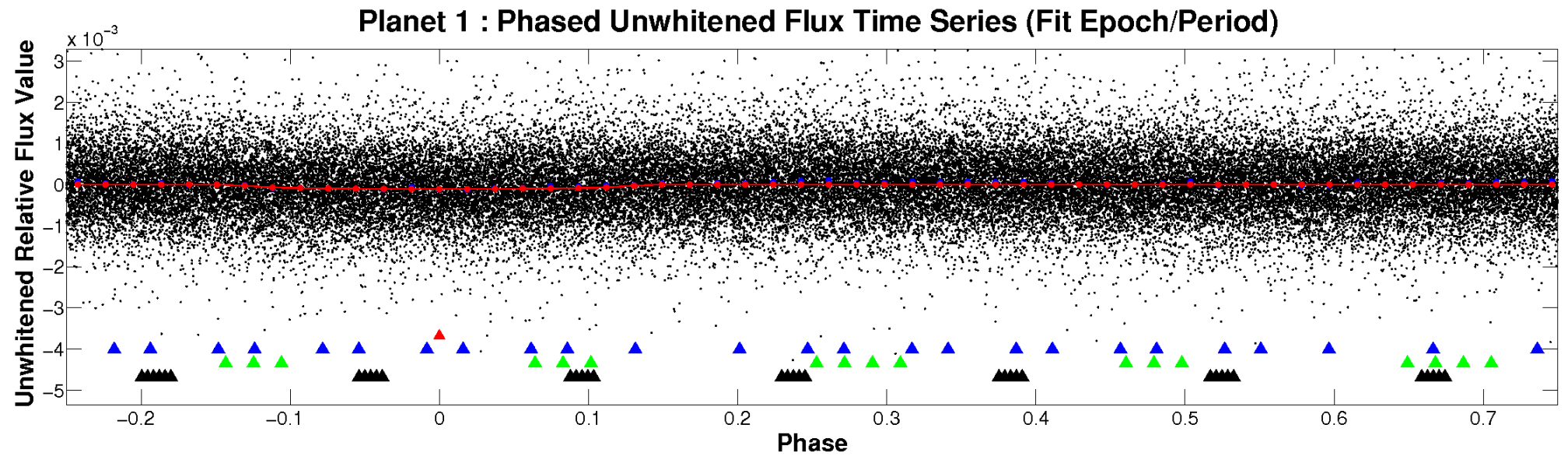


# ALT Odd/Even

TCE 006367365-01

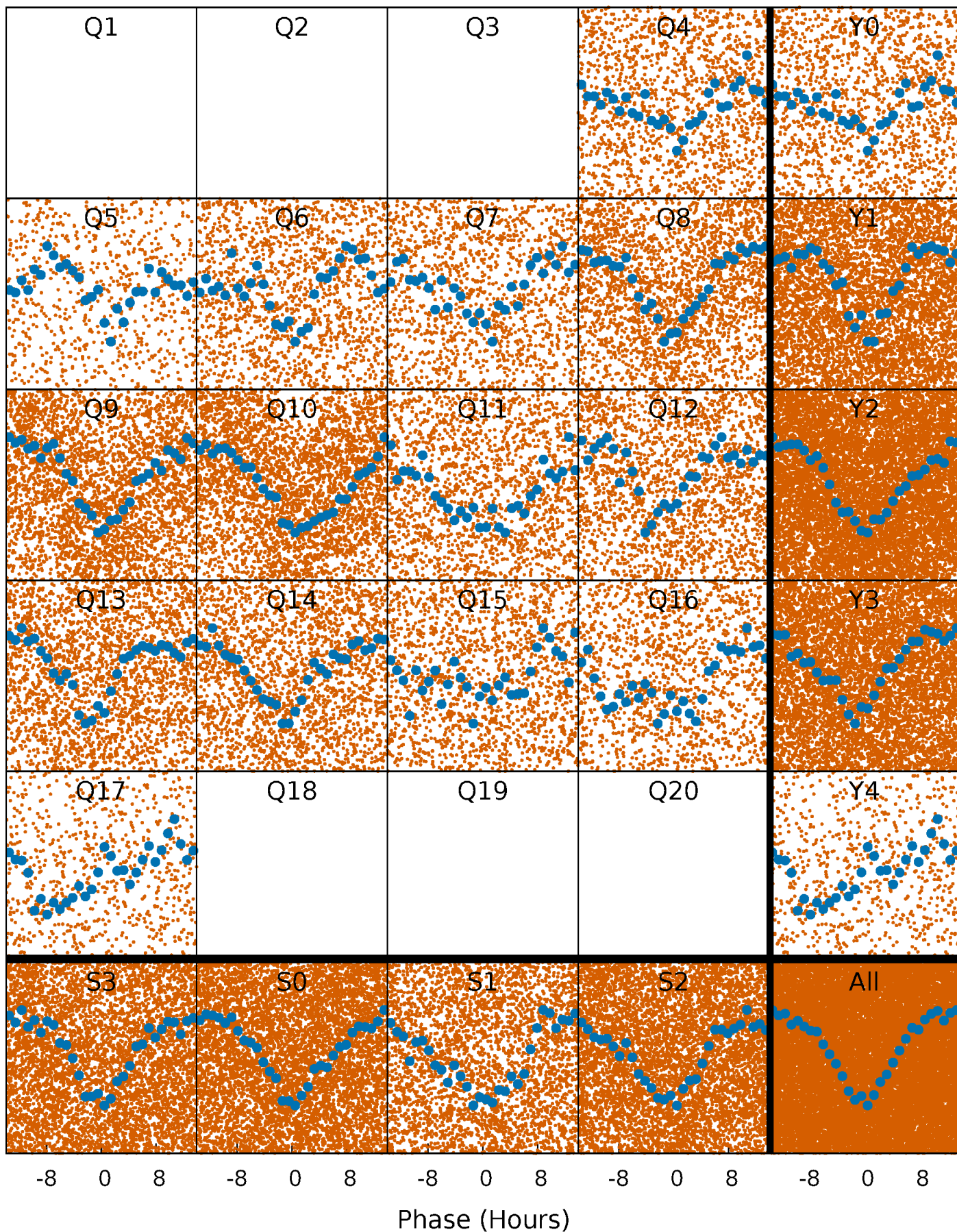


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

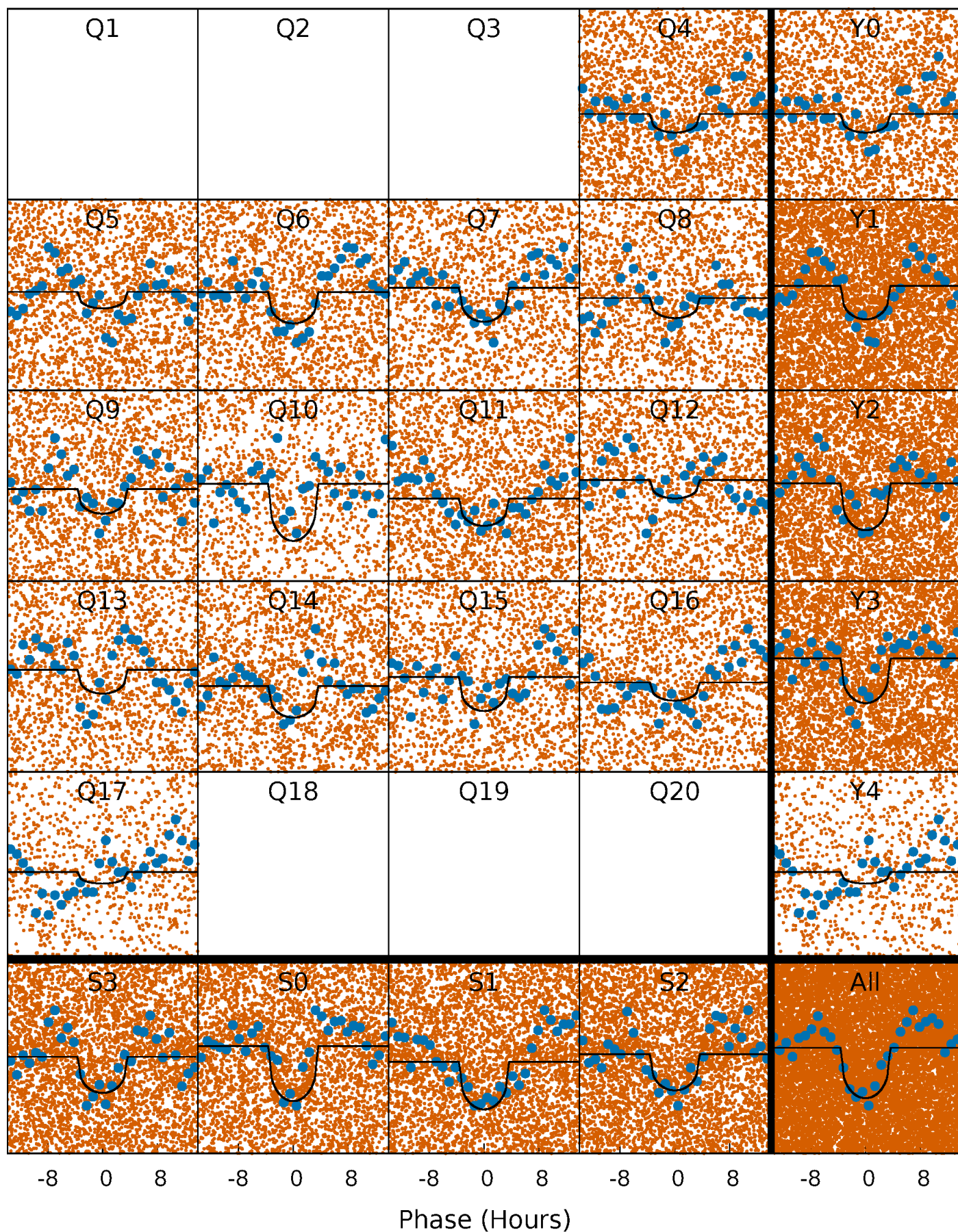
TCE 006367365-01 P= 1.095506 Days  $T_0=131.759369$  (BKJD)





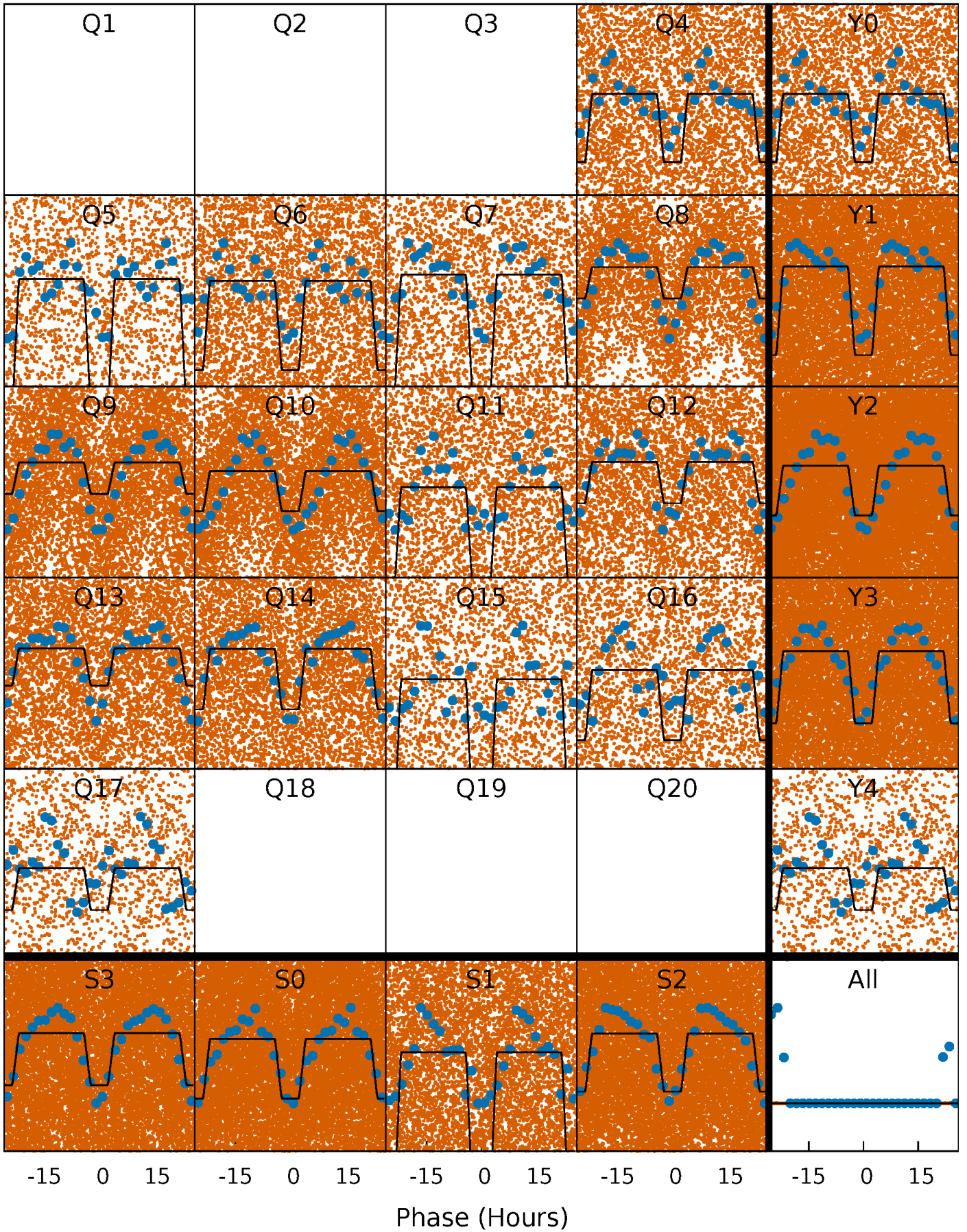
# DV Quarter-Phased Transit Curves

TCE 006367365-01 P= 1.095506 Days  $T_0=131.759369$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006367365-01 P= 1.095398 Days  $T_0=131.833193$  (BKJD)

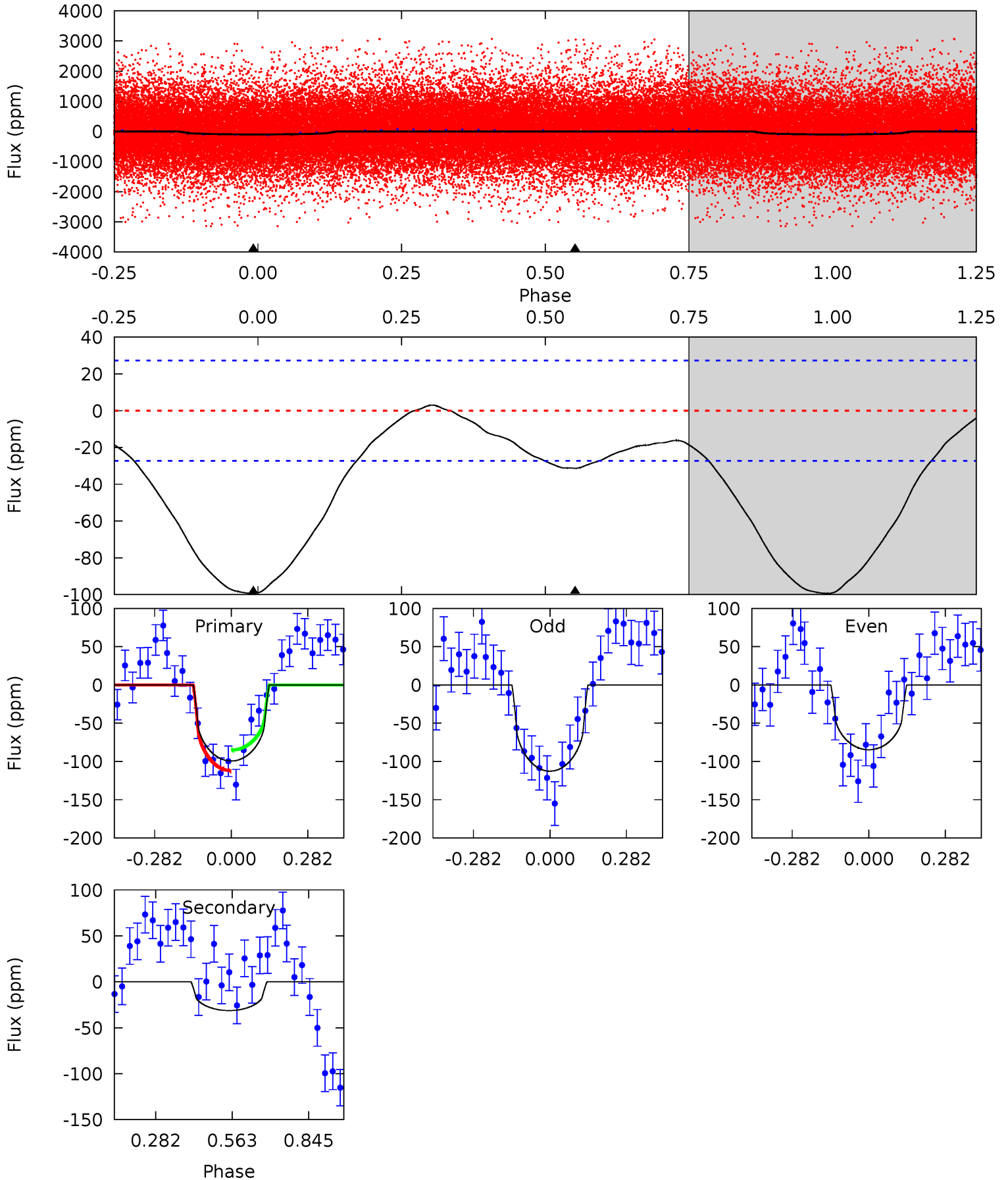




# DV Model-Shift Uniqueness Test

006367365-01, P = 1.095506 Days, E = 131.759369 Days

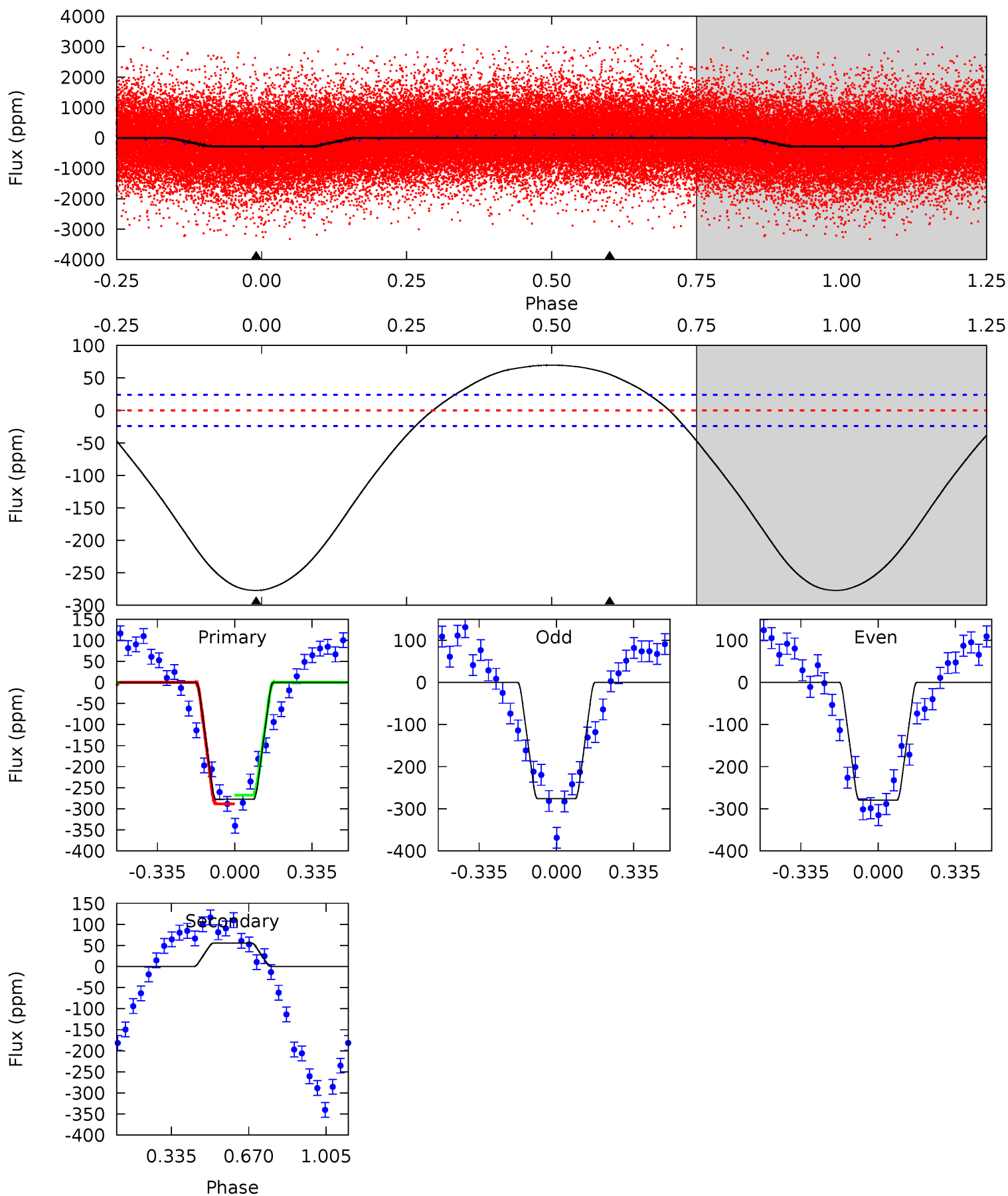
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	4.98	0	0	4.34	1.08	0.67	15.8	15.8	4.98	4.98	2.24	1.06	0.03	2.16



# Alt Model-Shift Uniqueness Test

006367365-01, P = 1.095398 Days, E = 131.833193 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
49.7	-9.97	0	0	4.30	0.96	3.79	49.7	49.7	-9.97	-9.97	0.32	1.10	0.20	1.78





### Stellar Parameters For KIC 006367365

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5052^{+181}_{-181}$	$4.660^{+0.028}_{-0.077}$	$-0.440^{+0.300}_{-0.300}$	$0.658^{+0.091}_{-0.045}$	$0.726^{+0.071}_{-0.071}$	$3.596^{+0.500}_{-0.940}$
	+4%/-4%	+1%/-2%	+68%/-68%	+14%/-7%	+10%/-10%	+14%/-26%
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 006367365-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-31 \pm 6$	$0.88^{+0.72}_{-0.57}$	$1870^{+82}_{-73}$	$3763^{+1949}_{-699}$	$7.779^{+55.759}_{-5.496}$
Alt.	$56 \pm 6$	$1.35^{+0.78}_{-0.67}$	$1874^{+85}_{-86}$	$-3654^{+453}_{-960}$	$-5.884^{+3.585}_{-16.351}$

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

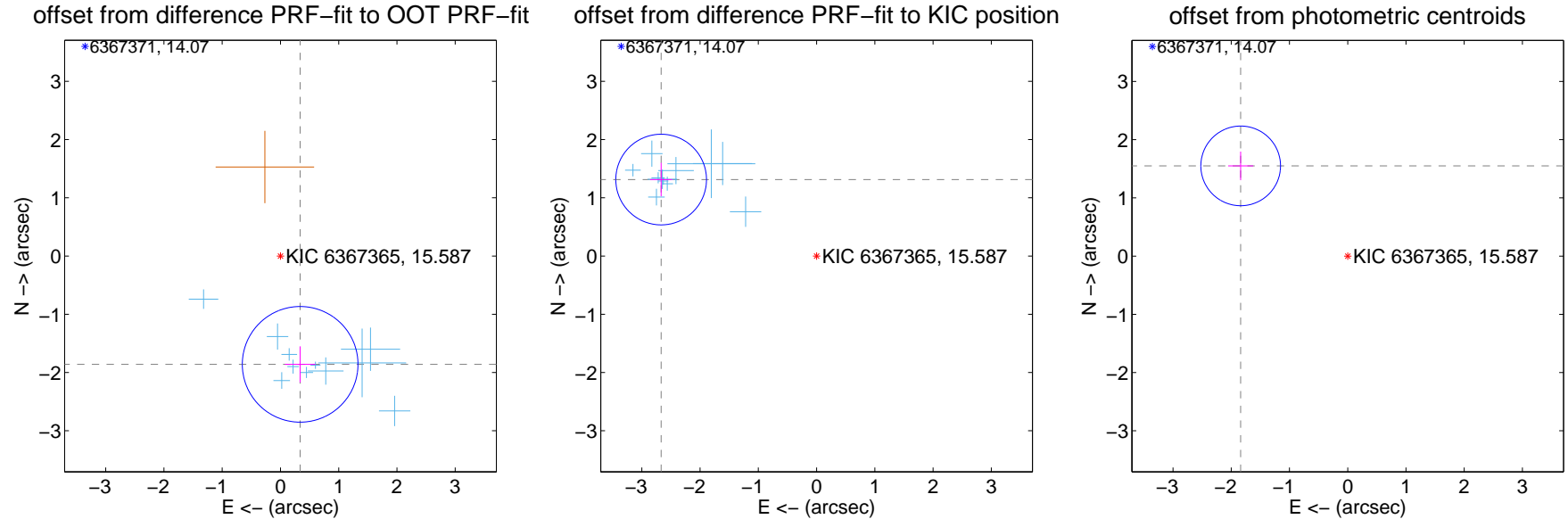
## DV Centroid Data

Supplemental centroid analysis for 006367365-01. Kepler magnitude: 15.59. Transit SNR 11.53

There are 11 quarters with good PRF difference image offsets

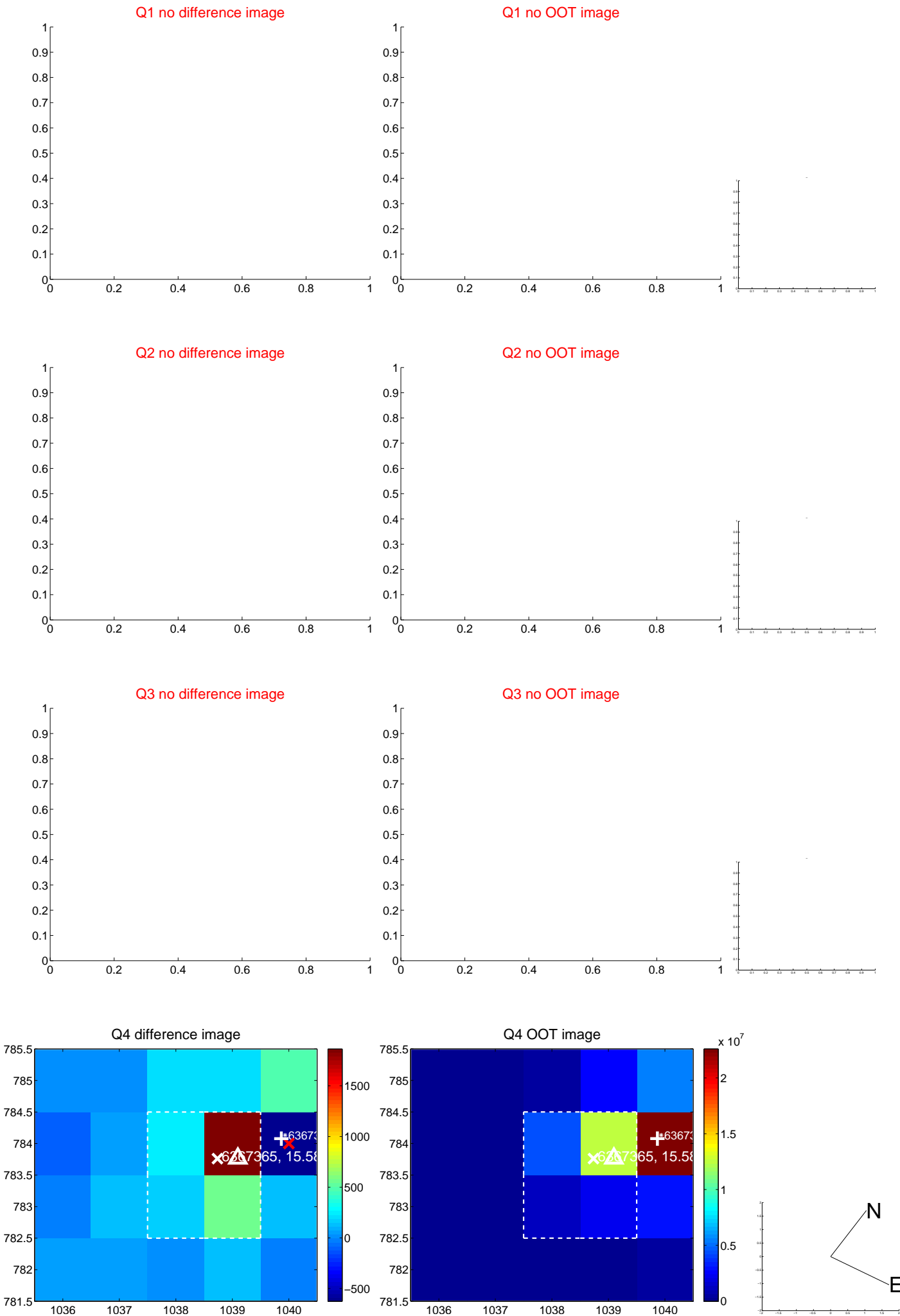
The OOT PRF centroid is offset from the target star catalog position by about 4.54 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.891 \pm 0.331$	5.71	$-0.338 \pm 0.262$	$-1.860 \pm 0.310$
PRF-fit source offset from KIC position	$2.975 \pm 0.259$	11.46	$2.669 \pm 0.190$	$1.313 \pm 0.288$
photometric centroid source offset	$2.40 \pm 0.23$	10.54	$1.84 \pm 0.22$	$1.55 \pm 0.24$

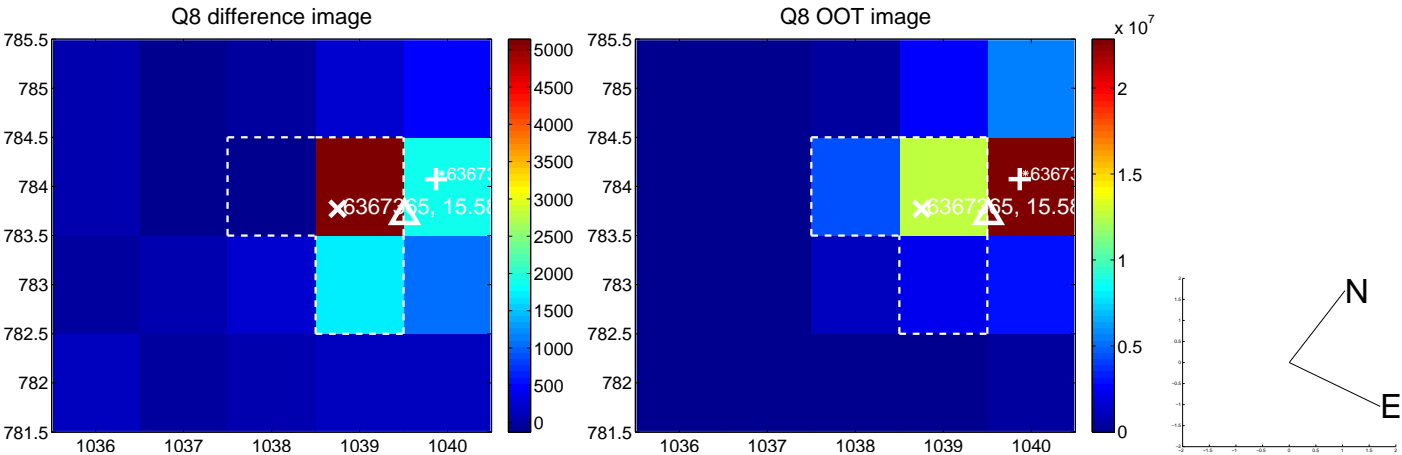
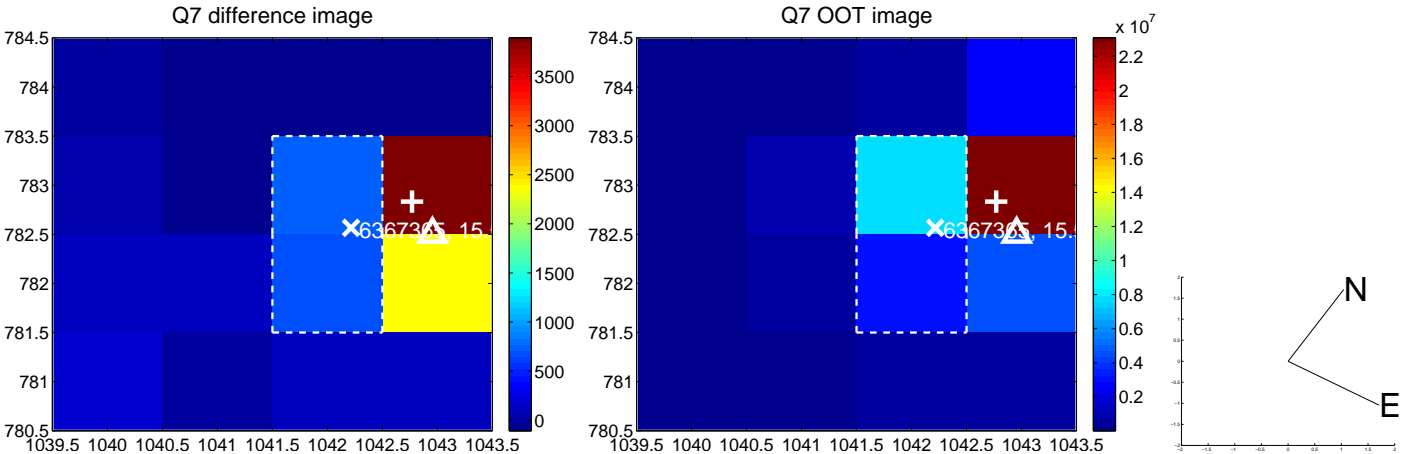
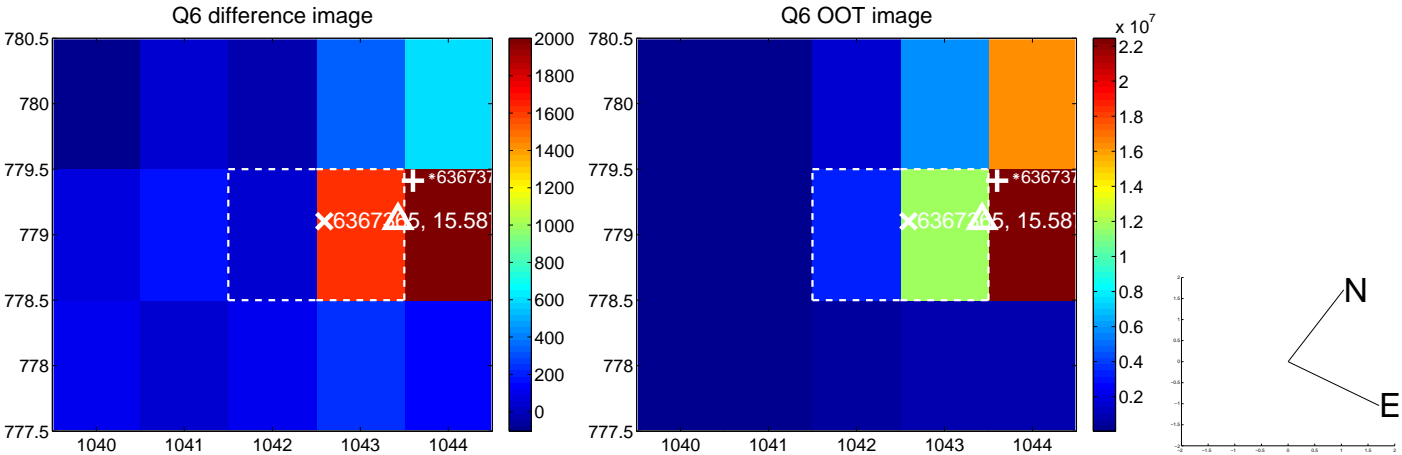
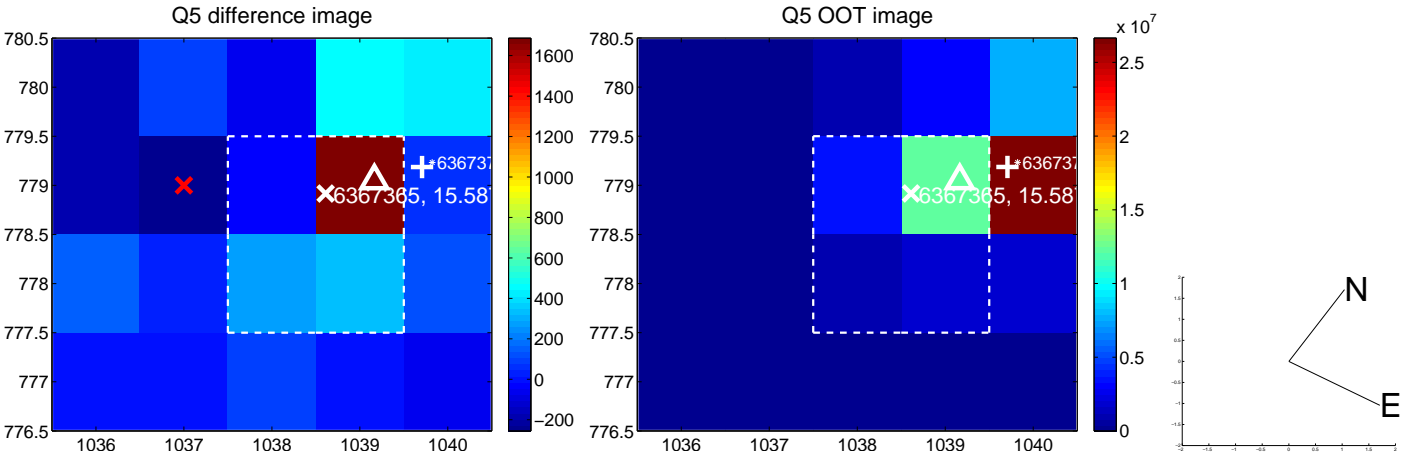


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

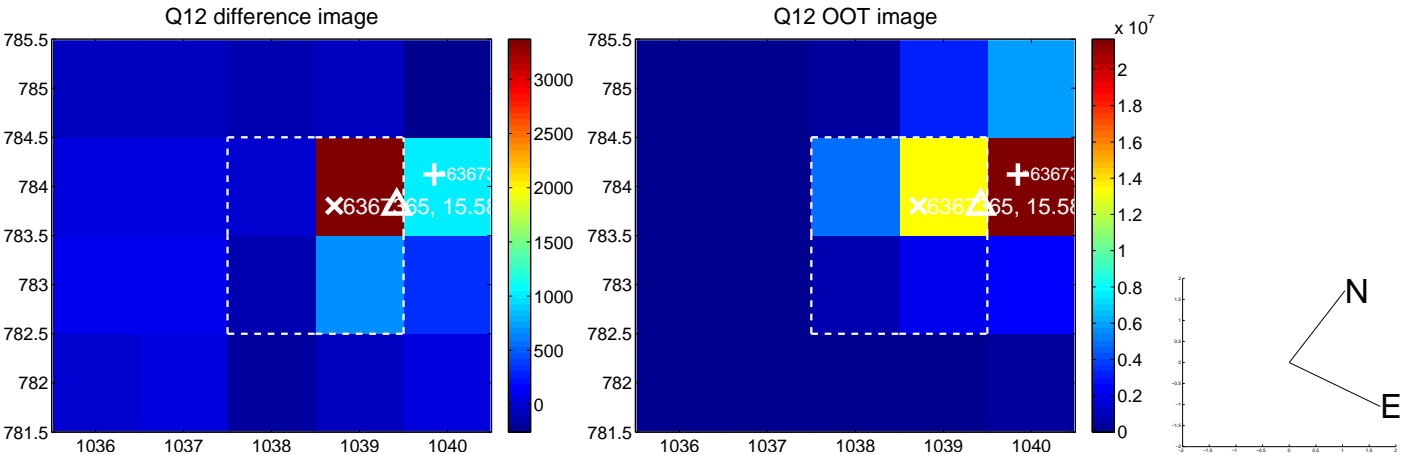
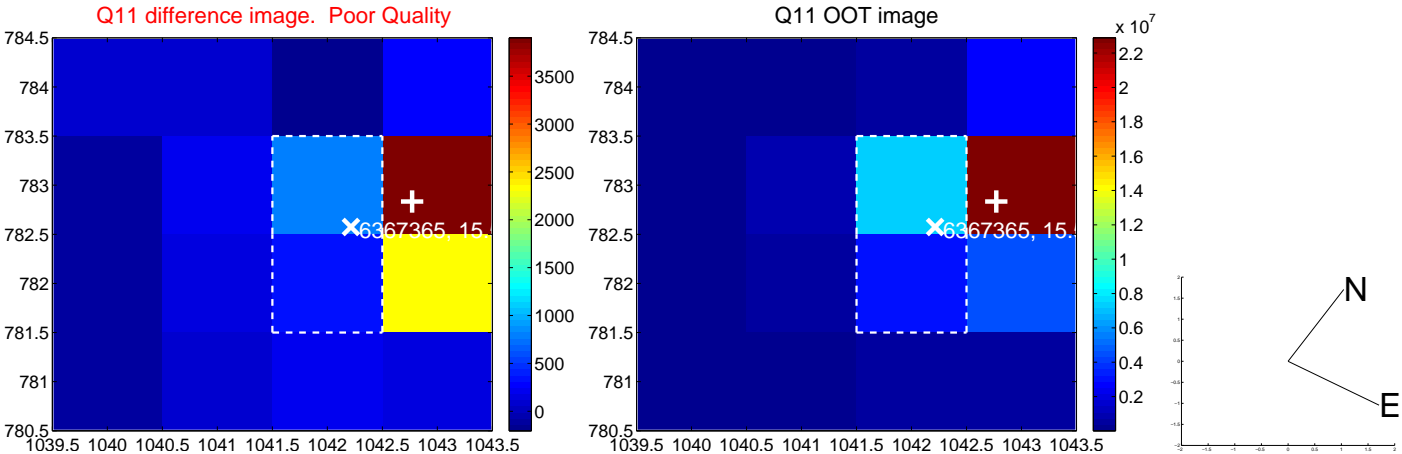
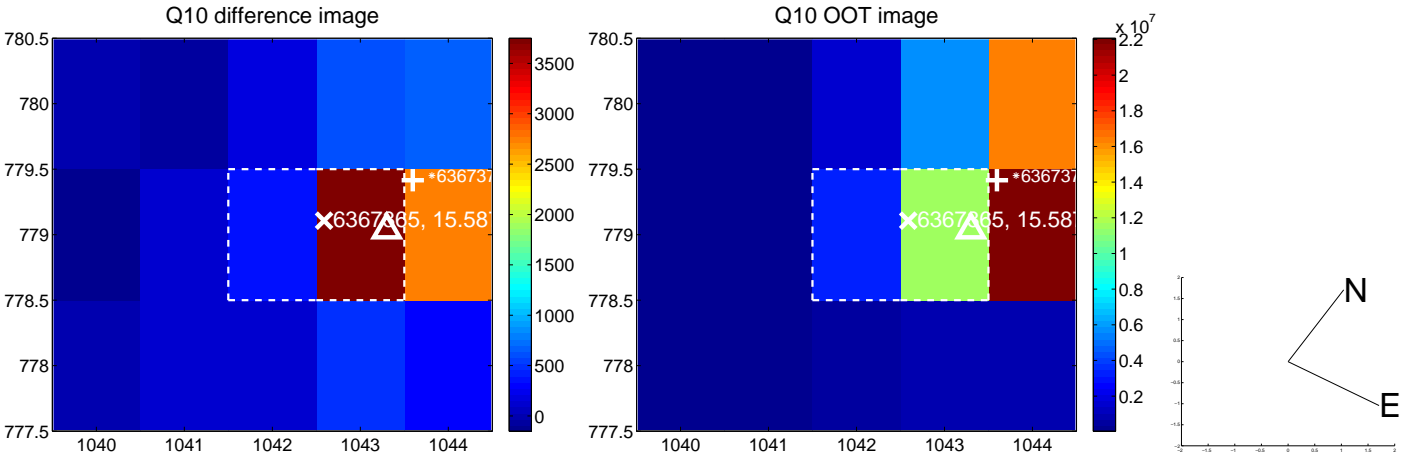
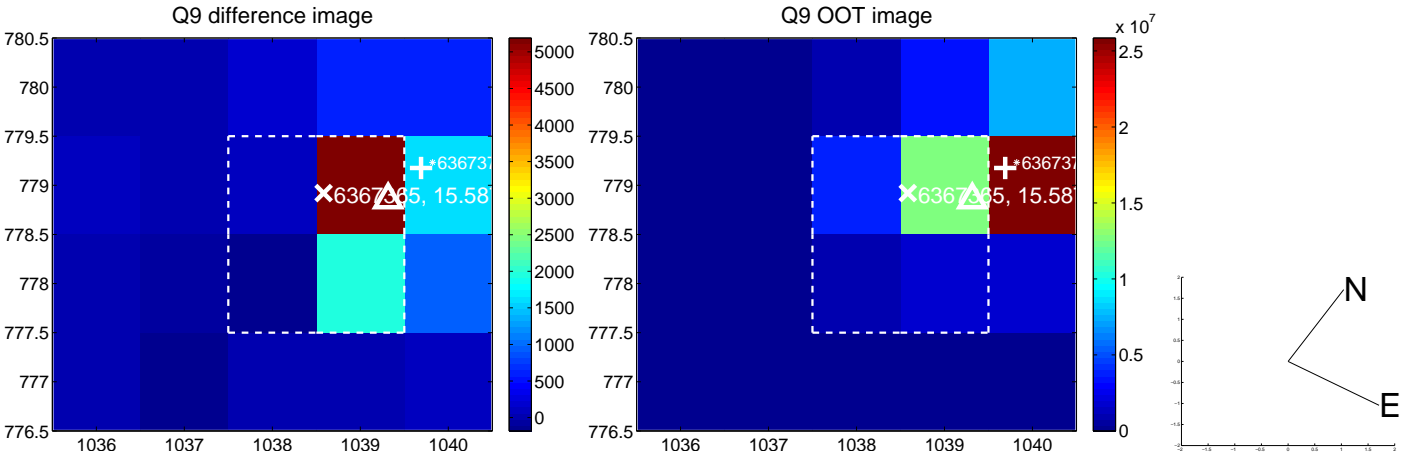


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

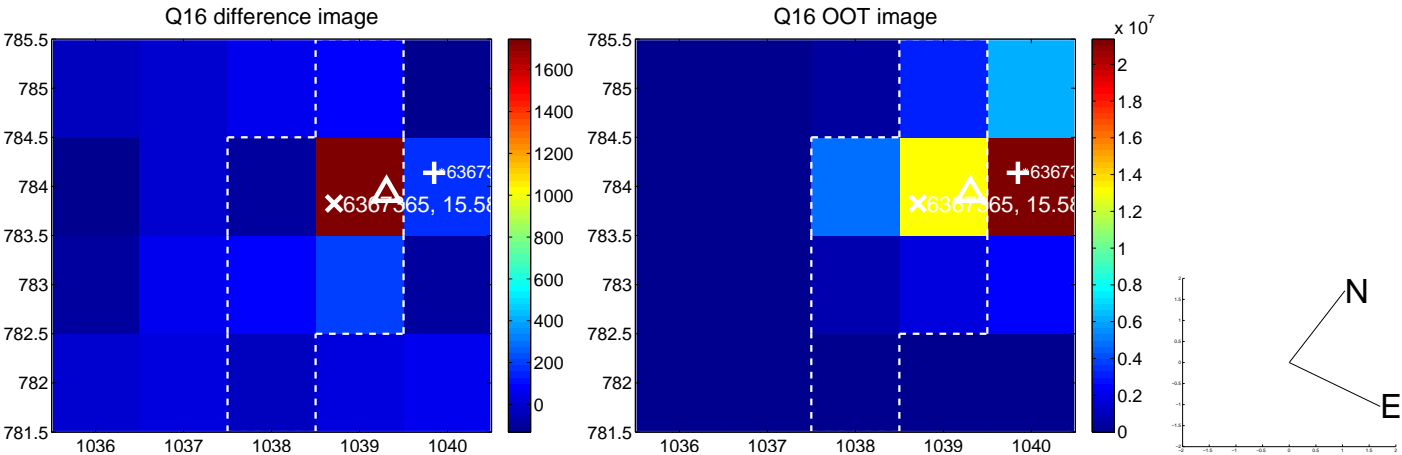
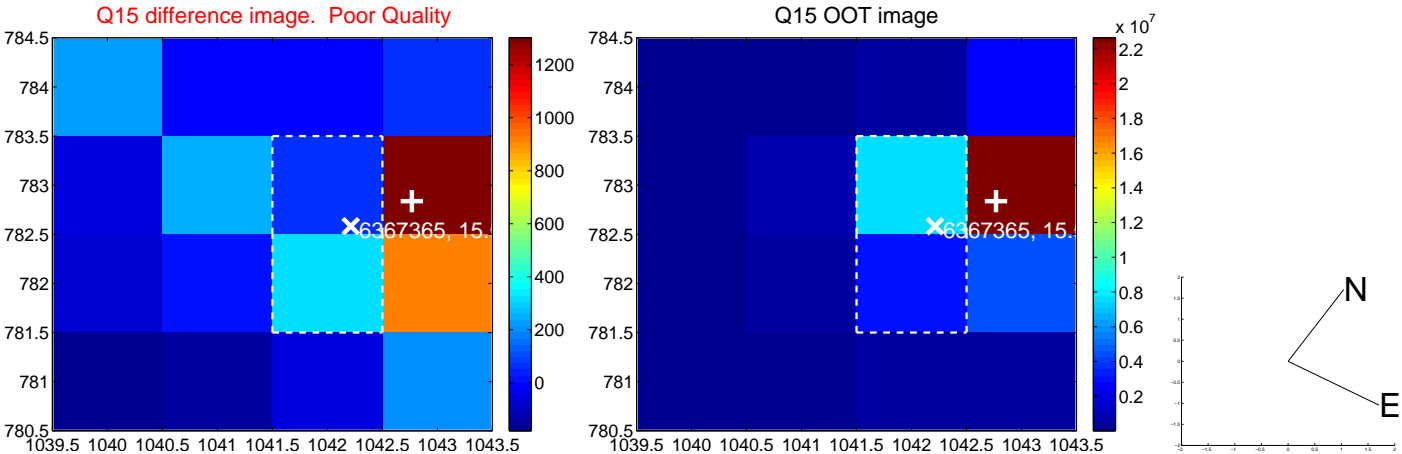
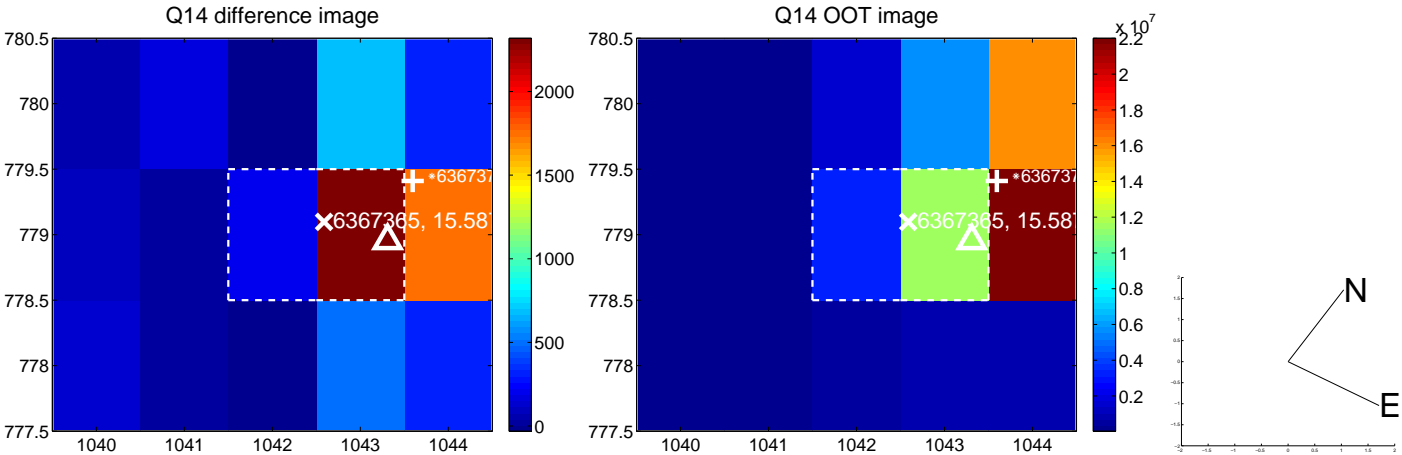
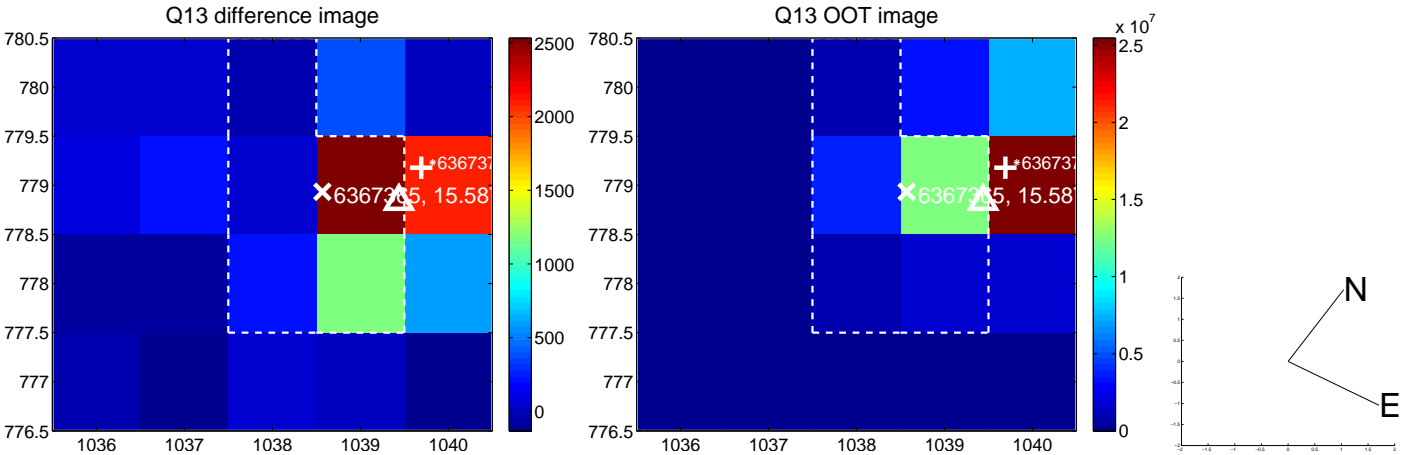




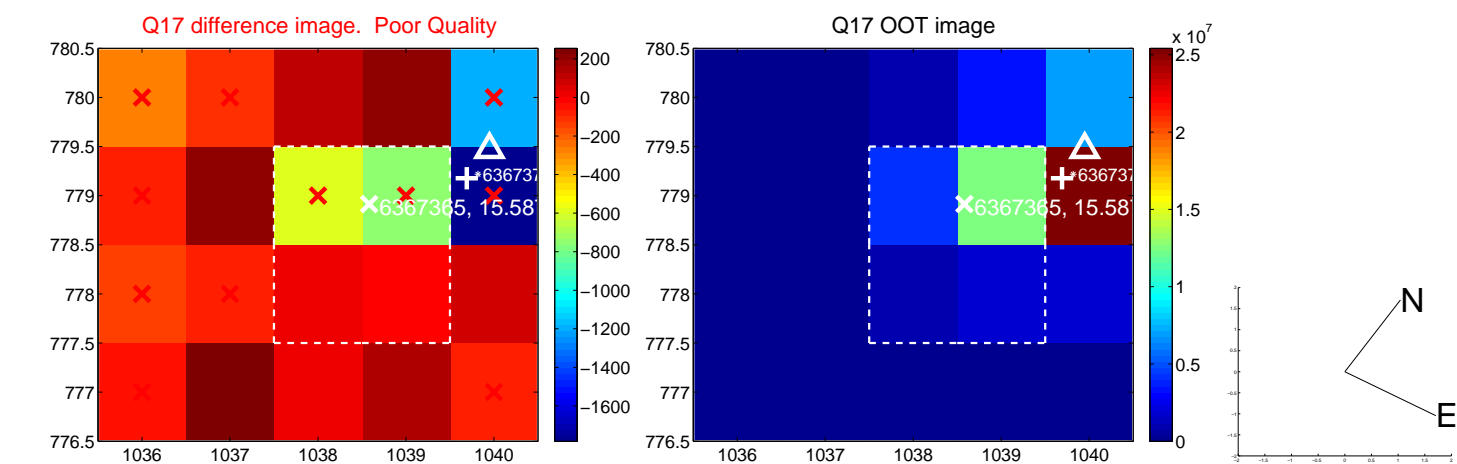
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



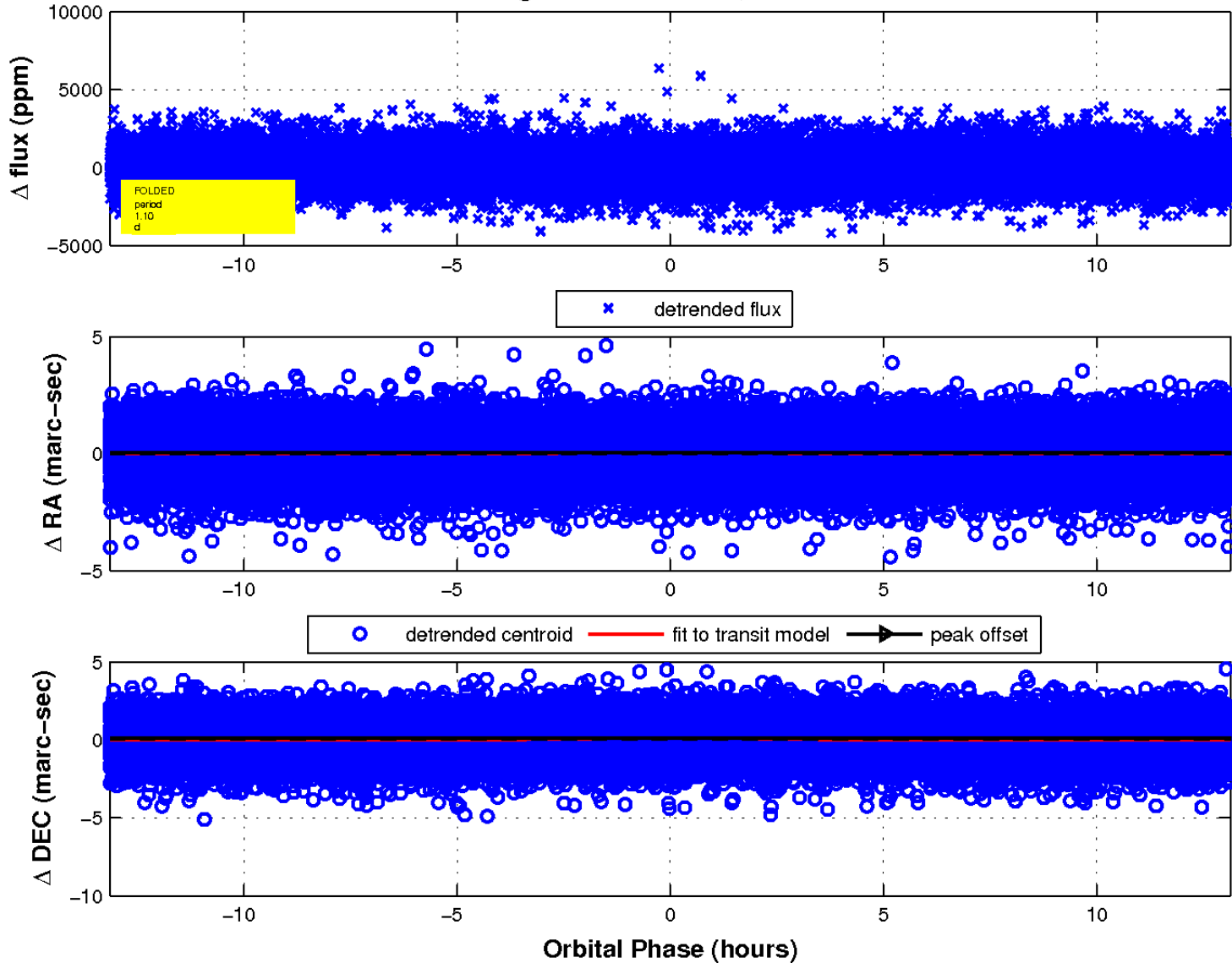
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

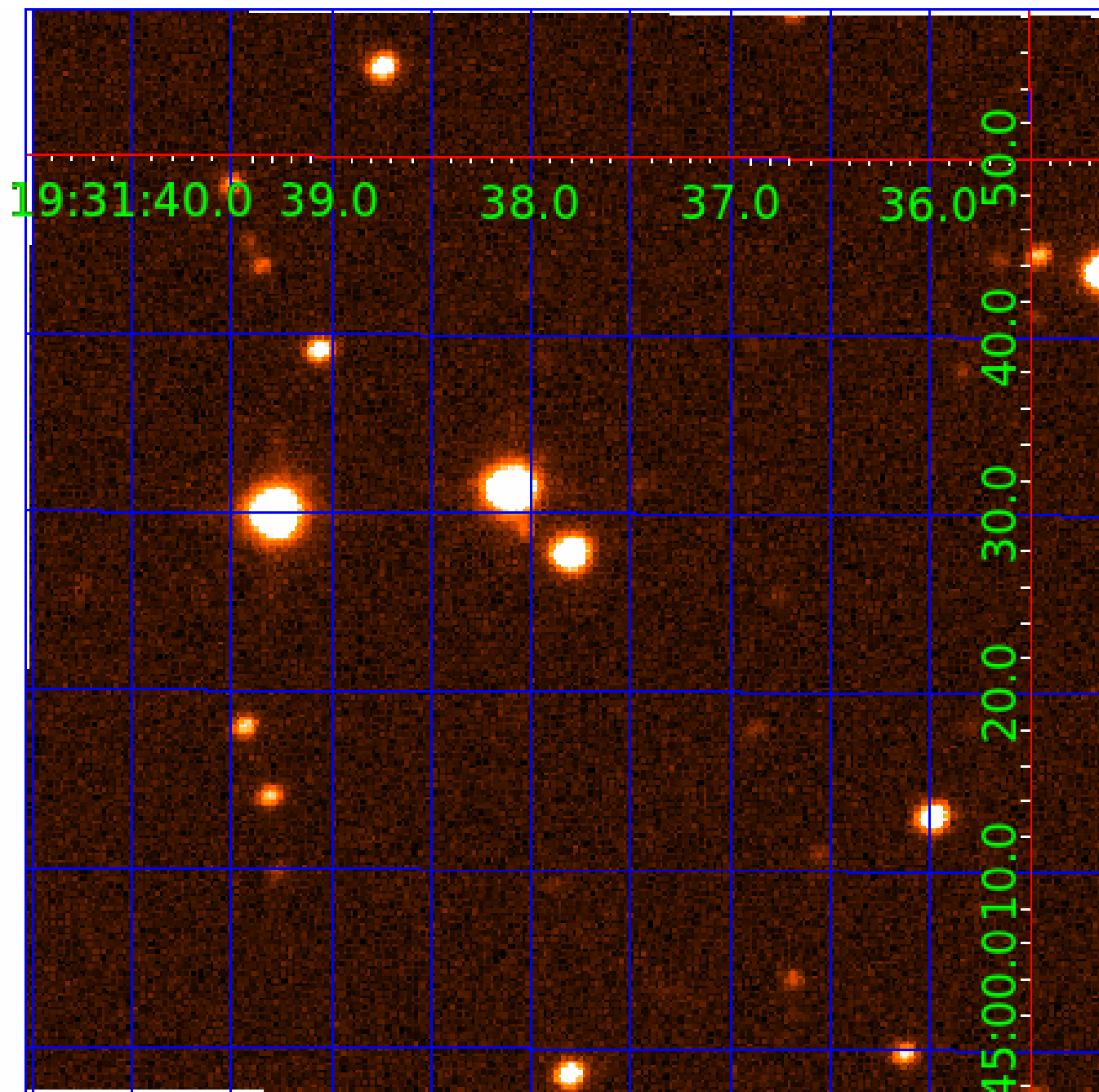


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination





# KIC 006367365

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006367365-01	OBS	No	1.095506	131.759369	109.3	6.957	9.6	11.5	0.66	5052	0.68	725.68
006367365-02	OBS	No	57.475775	187.724171	1162.4	6.871	21.3	8.7	0.66	5052	2.31	3.69
006367365-03	OBS	No	85.883560	154.008168	1647.1	2.161	8.5	9.2	0.66	5052	2.85	2.16
006367365-04	OBS	No	41.003832	150.164414	2169.2	1.036	8.7	9.4	0.66	5052	3.22	5.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006367365-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
006367365-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006367365-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006367365-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

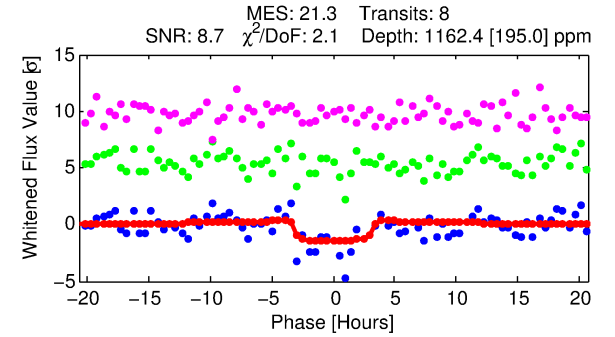
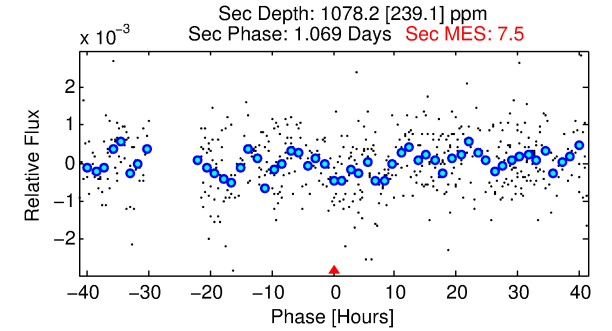
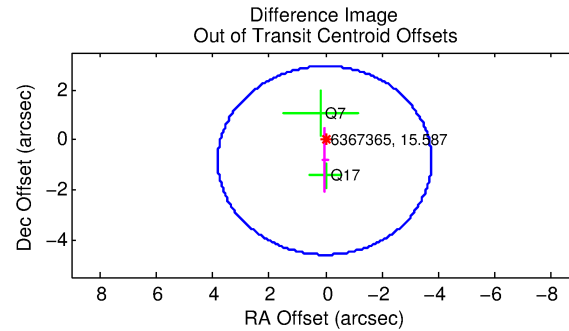
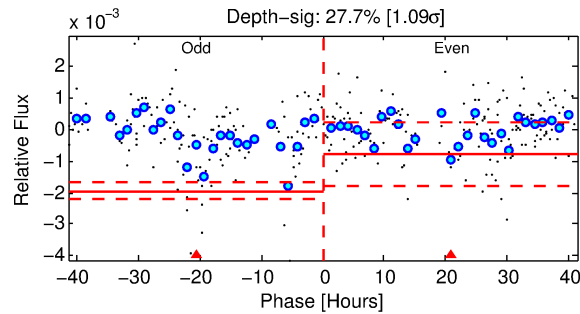
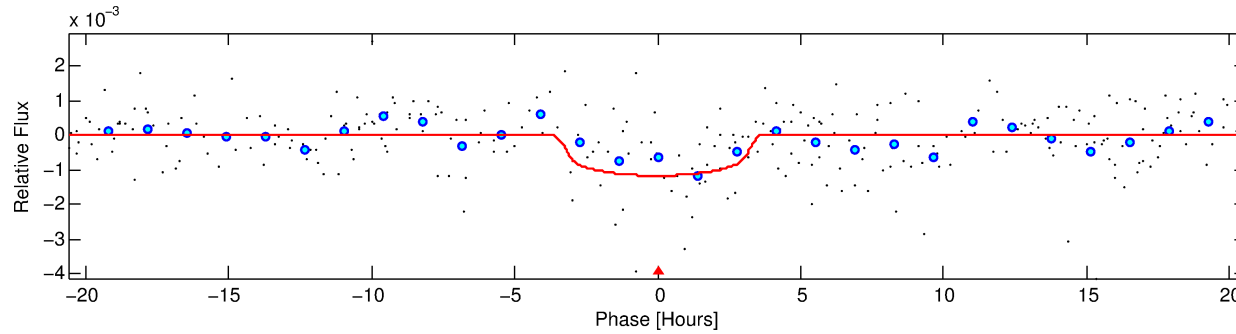
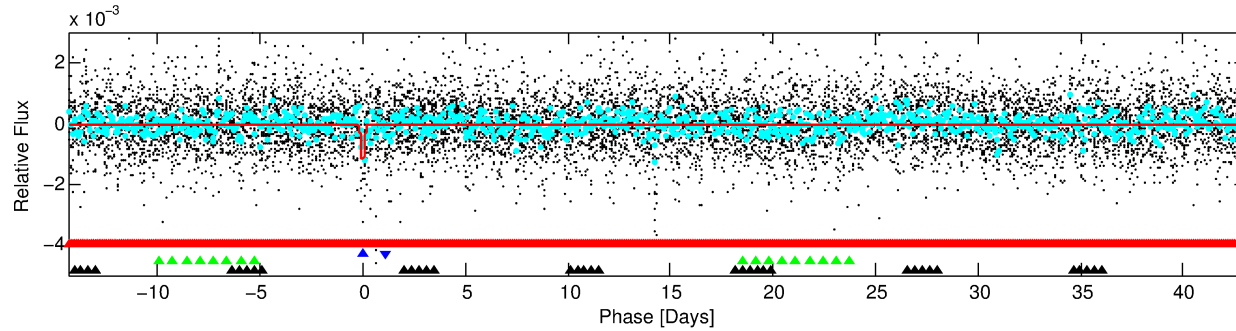
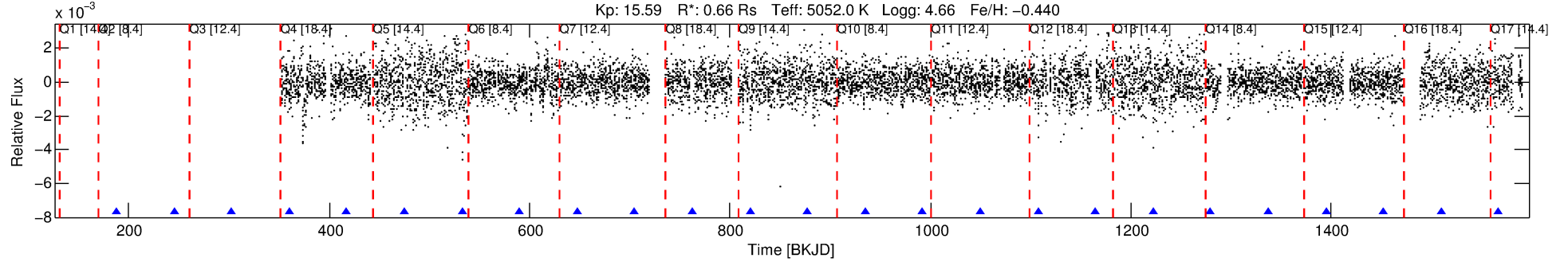
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006367365-02

No Significant Match Found

# DV One-Page Summary

KIC: 6367365 Candidate: 2 of 4 Period: 57.476 d



## DV Fit Results:

Period = 57.47577 [0.00189] d  
Epoch = 187.7242 [0.0295] BKJD  
Rp/R\* = 0.0322 [0.0362]  
a/R\* = 54.28 [222.95]  
b = 0.59 [4.66]  
Seff = 3.69 [0.77]  
Teq = 354 [18] K  
Rp = 2.31 [2.62] Re  
a = 0.2615 [0.0286] AU  
Ag = 7587.68 [17185.10] [0.44 $\sigma$ ]  
Teffp = 5101 [2888] K [1.64 $\sigma$ ]

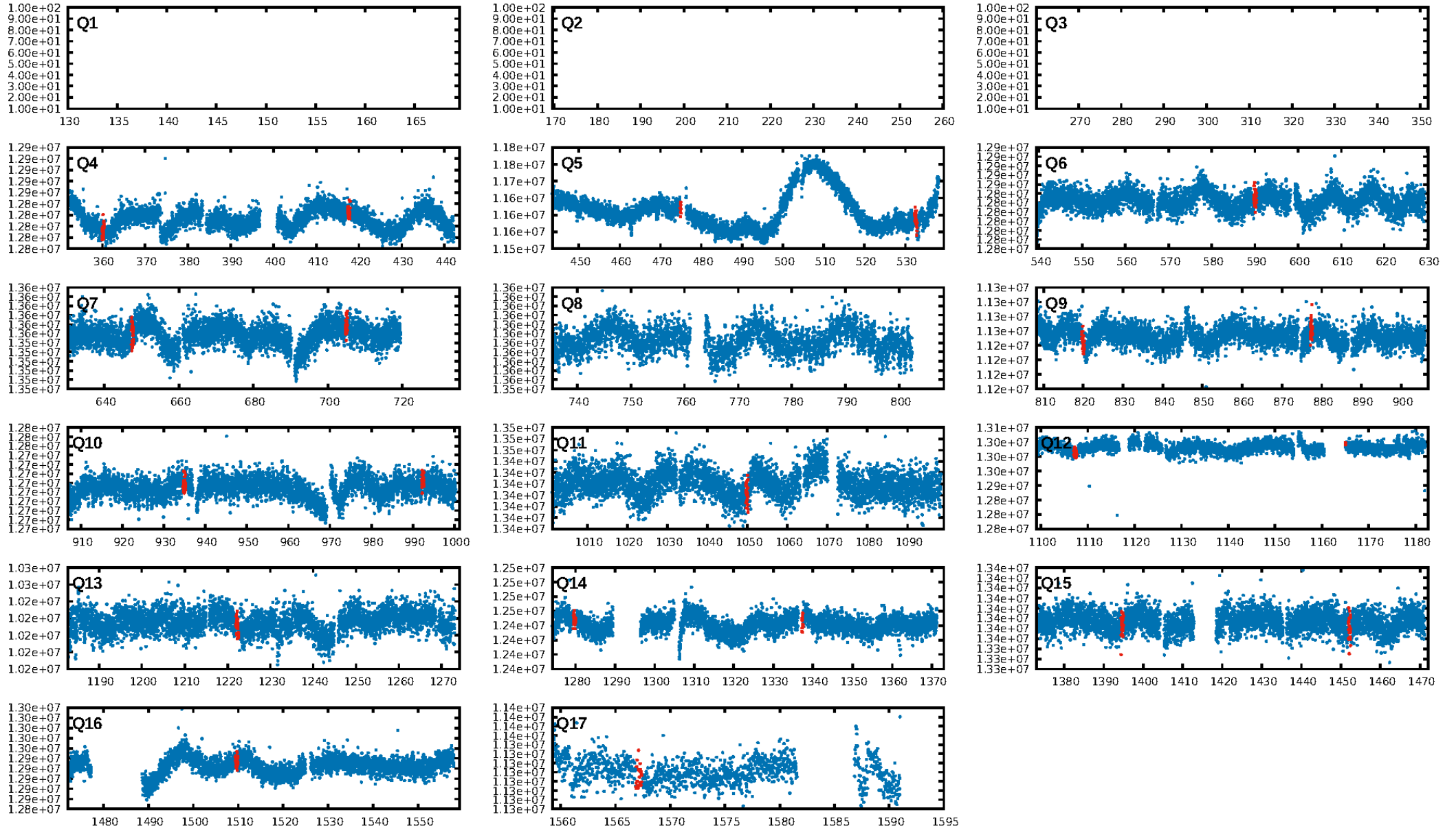
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [56.89 $\sigma$ ]  
LongPeriod-sig: 100.0% [94.65 $\sigma$ ]  
**ModelChiSquare2-sig: 0.0%**  
ModelChiSquareGof-sig: 97.5%  
Bootstrap-pfa: 1.52e-52  
RollingBand-fgt: 1.00 [8/8]  
GhostDiagnostic-chr: 0.4774  
Centroid-sig: 12.2%  
**Centroid-so: 3.324 arcsec [19.08 $\sigma$ ]**  
OotOffset-rm: 0.831 arcsec [0.66 $\sigma$ ]  
**KicOffset-rm: 3.607 arcsec [4.92 $\sigma$ ]**  
OotOffset-st: 0/1/0/1 [2]  
KicOffset-st: 0/1/0/1 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 0.00 [0/11]

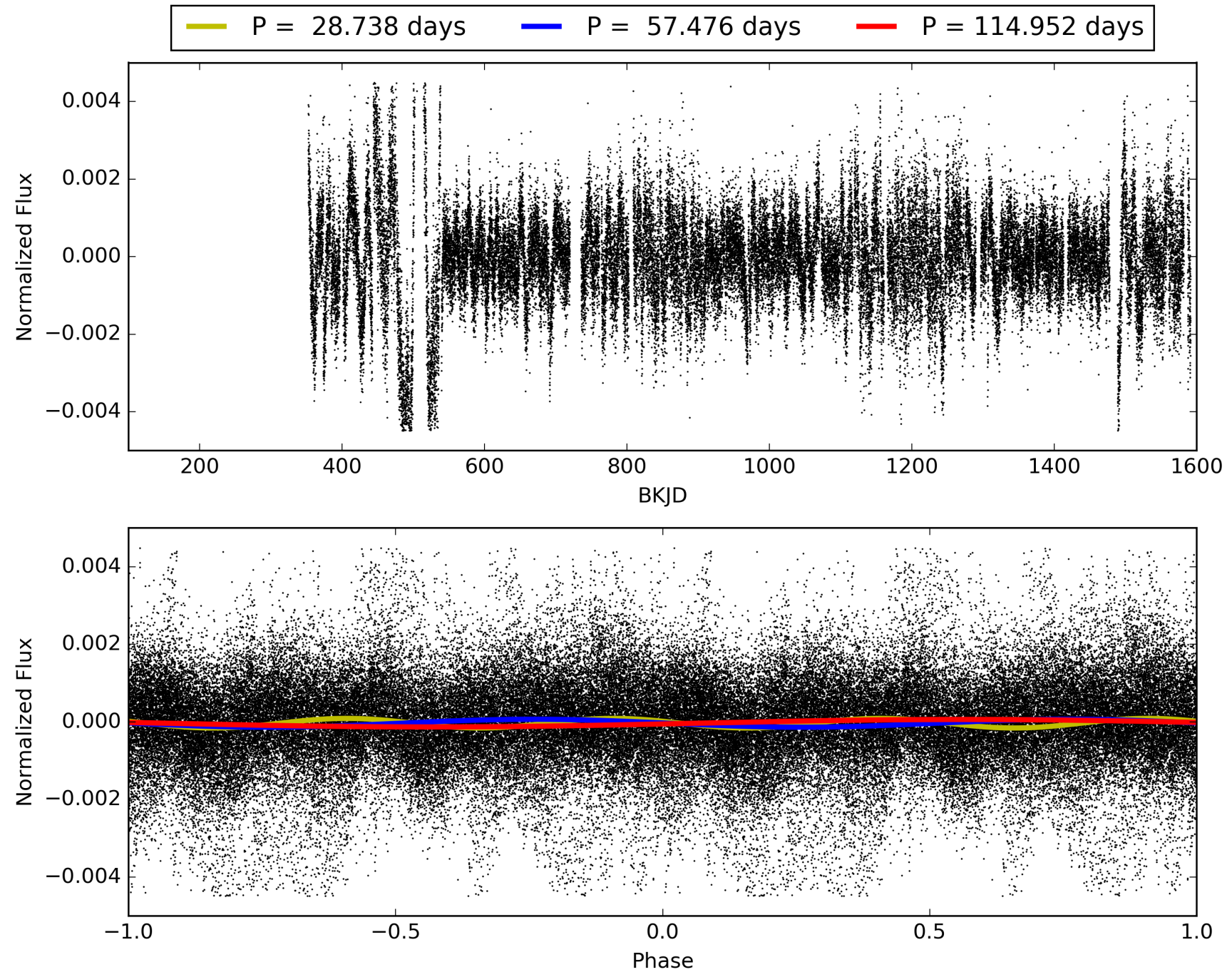
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:25:28 Z

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

# TCE 006367365-02, PDC Light Curves

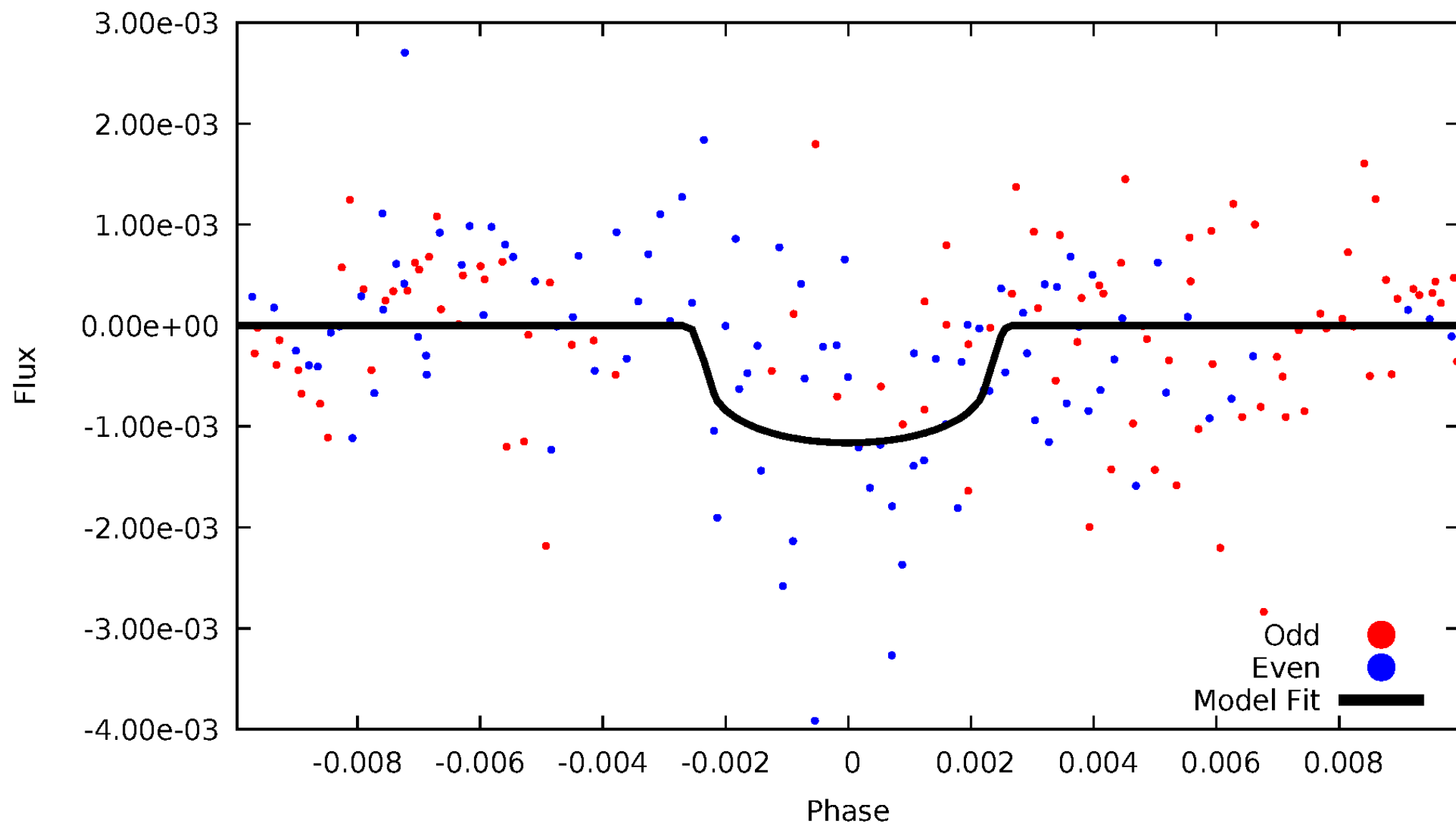


TCE 006367365-02



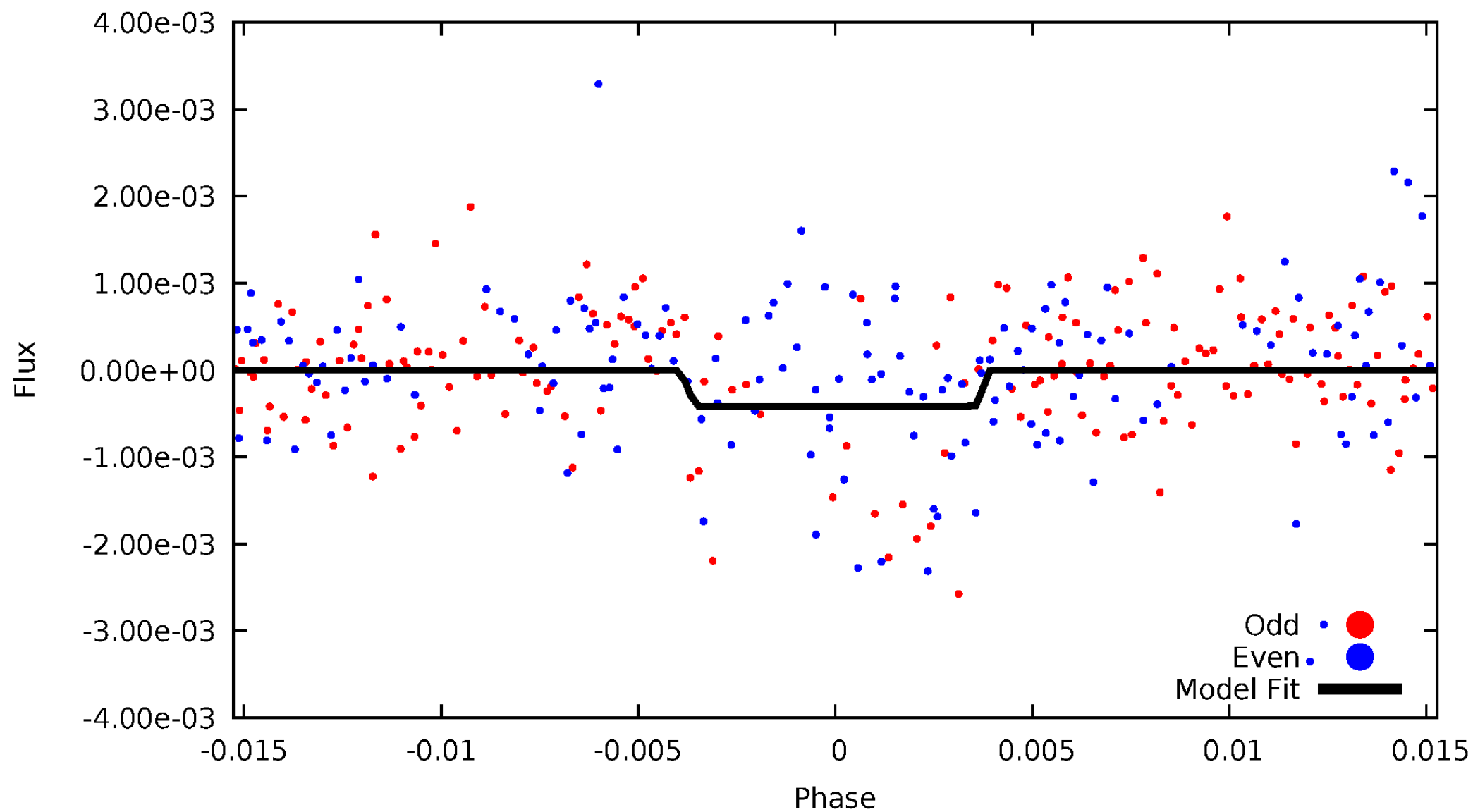
# DV Odd/Even

TCE 006367365-02



# ALT Odd/Even

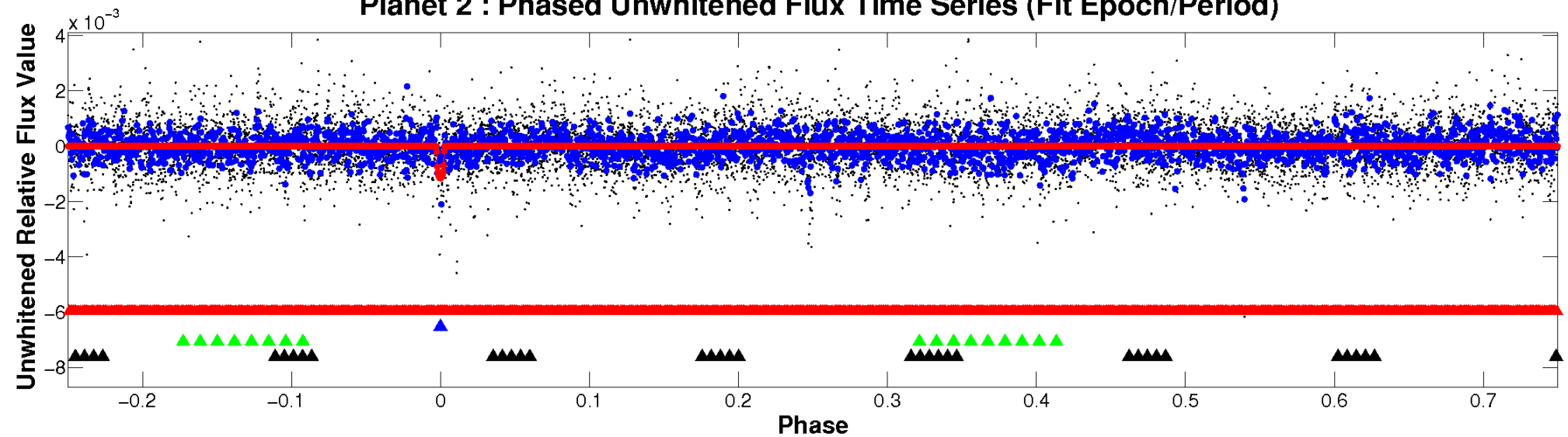
TCE 006367365-02



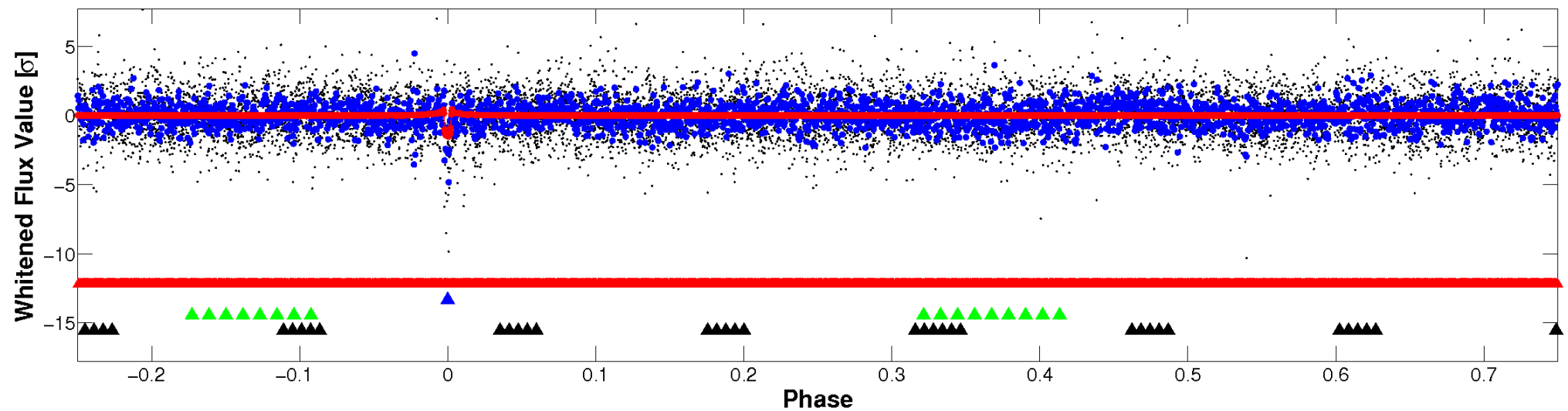


# Non-Whitened Vs. Whitened Light Curve

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

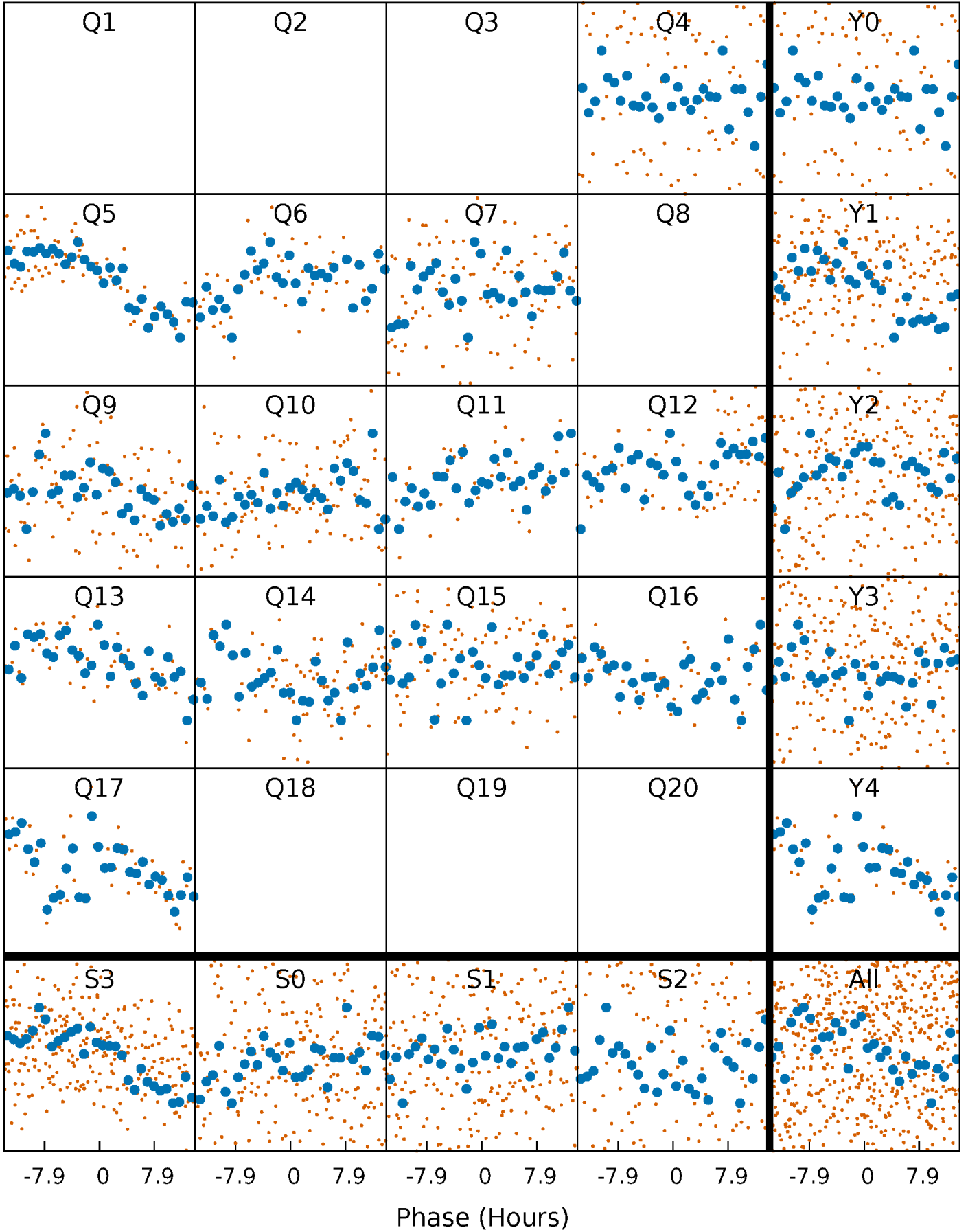


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



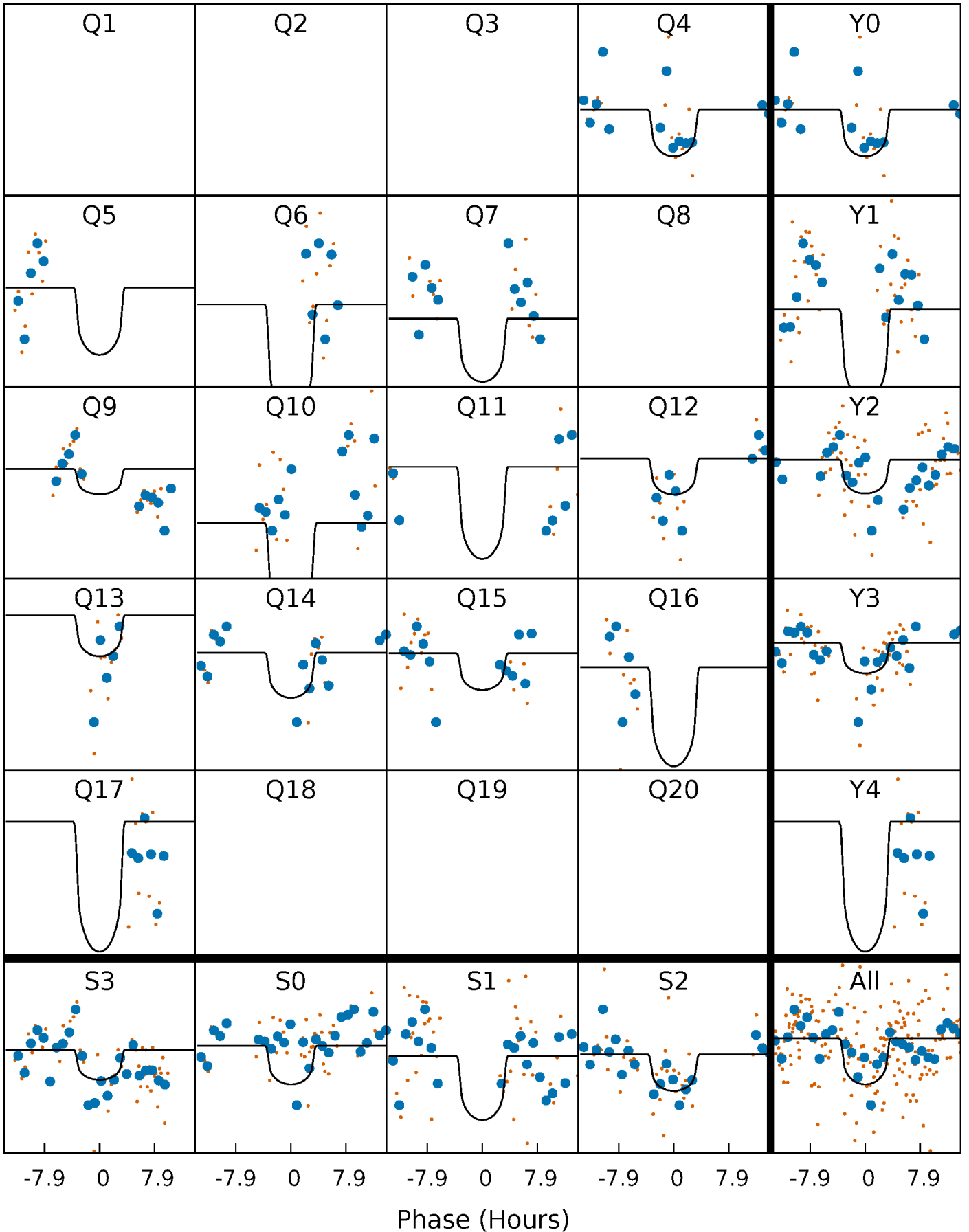
# PDC Quarter-Phased Transit Curves

TCE 006367365-02   P= 57.475775 Days    $T_0=187.724171$  (BKJD)



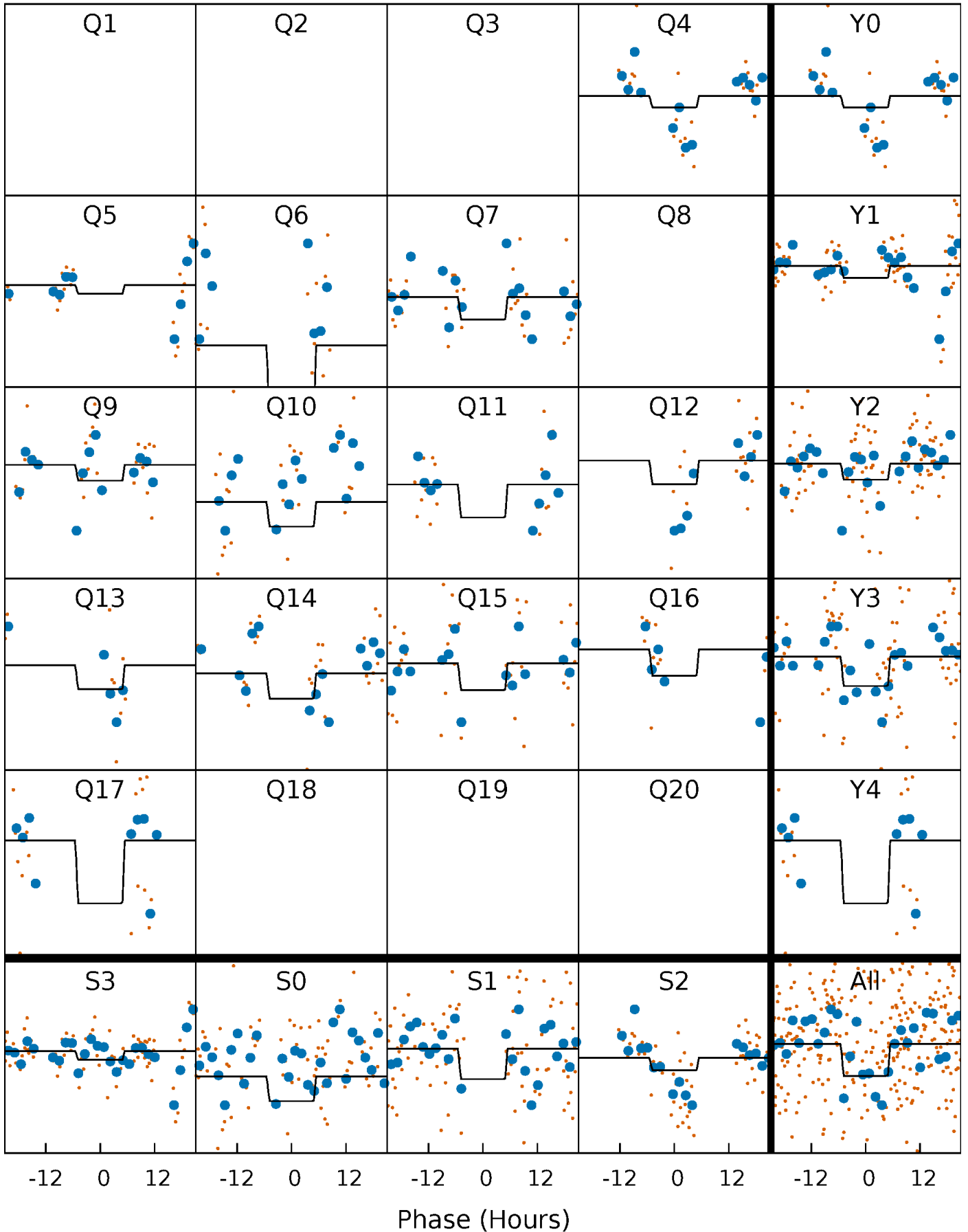
# DV Quarter-Phased Transit Curves

TCE 006367365-02   P= 57.475775 Days    $T_0=187.724171$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

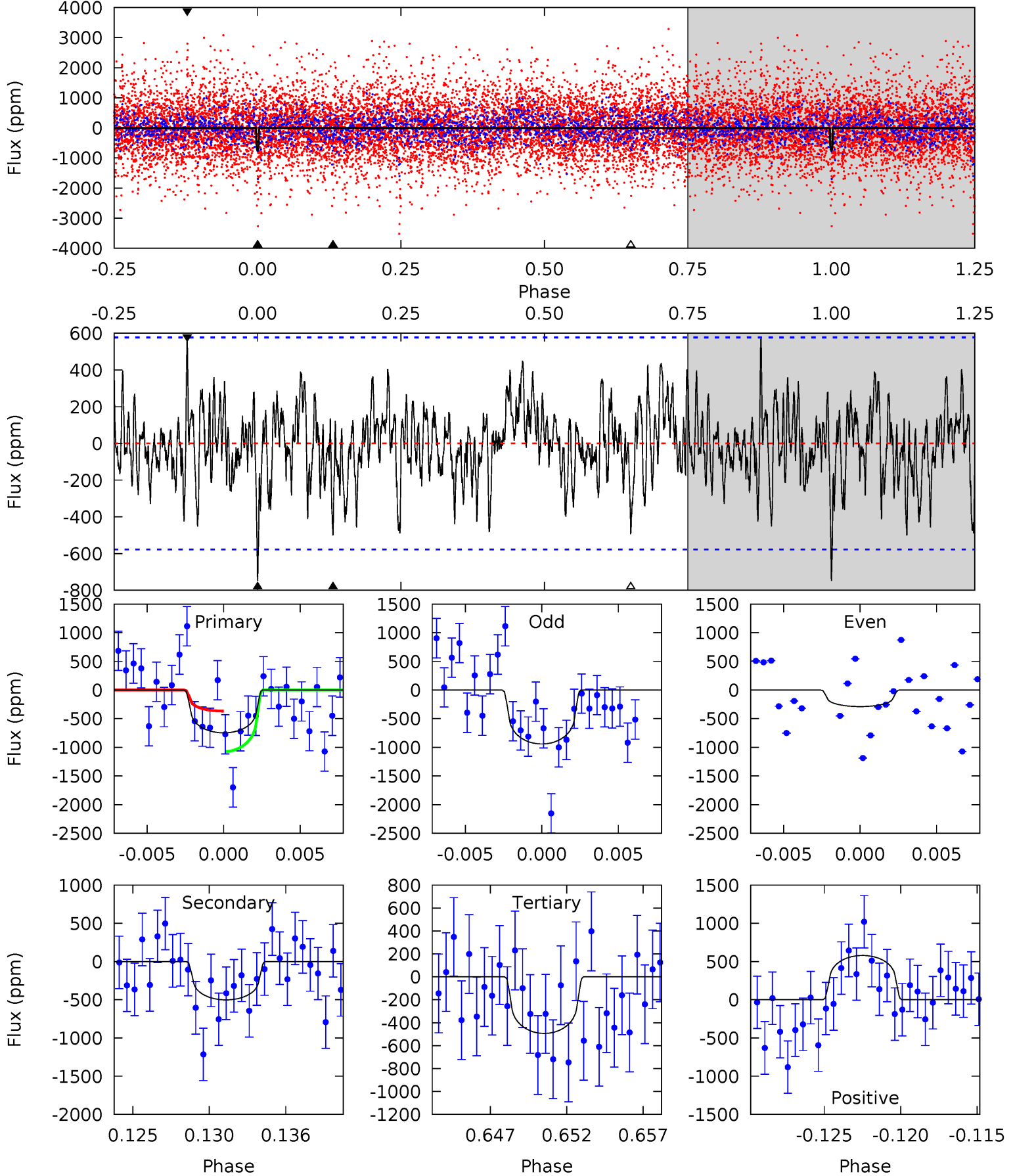
TCE 006367365-02     $P = 57.473724$  Days     $T_0 = 187.662404$  (BKJD)



# DV Model-Shift Uniqueness Test

006367365-02,  $P = 57.475775$  Days,  $E = 187.724171$  Days

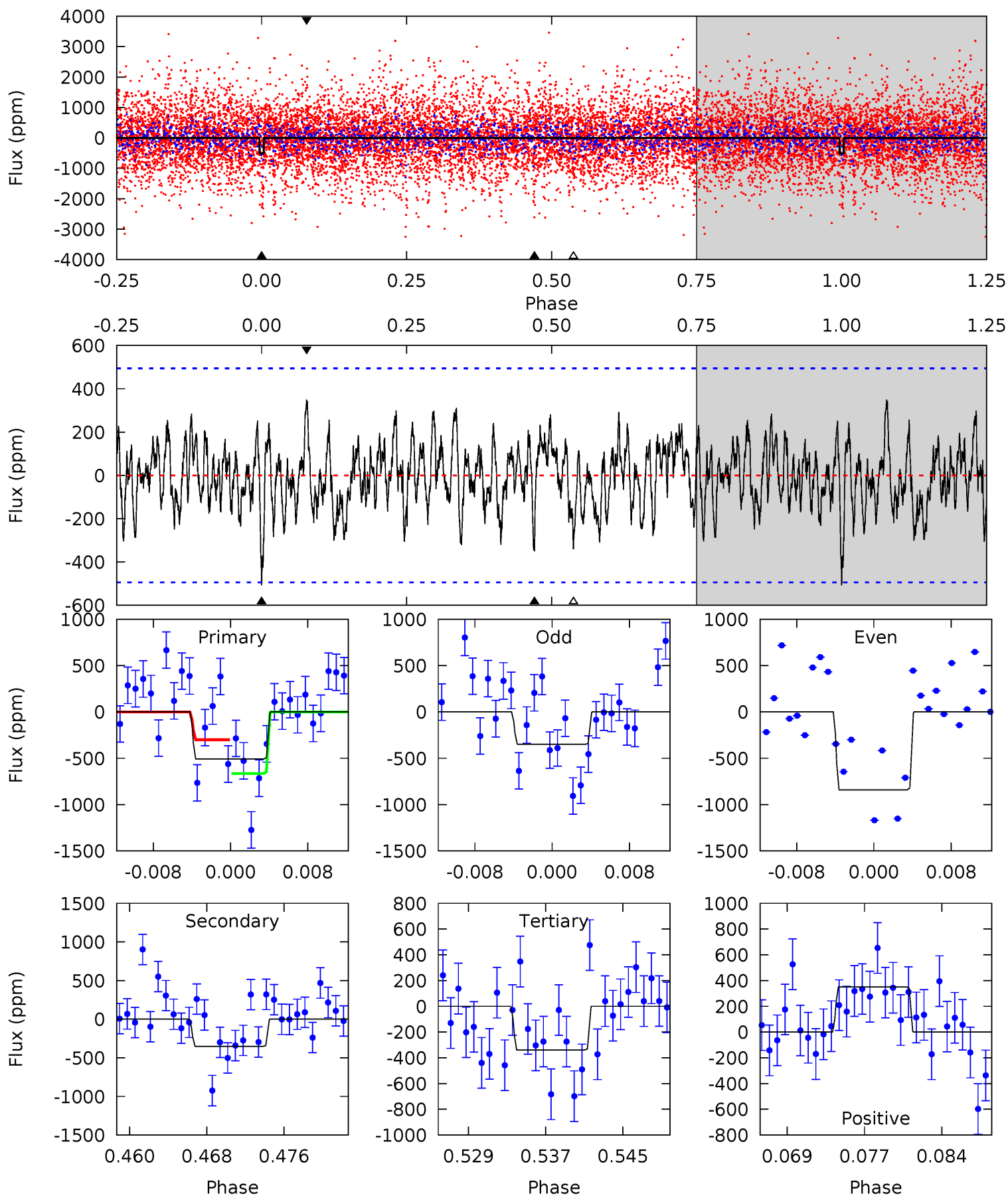
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.67	4.47	4.40	5.17	5.15	2.79	1.53	2.27	1.50	0.07	-0.69	2.57	1.03	0.44	3.15



# Alt Model-Shift Uniqueness Test

006367365-02,  $P = 57.473724$  Days,  $E = 187.662404$  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
5.21	3.61	3.49	3.60	5.08	2.67	1.32	1.72	1.61	0.12	0.01	2.34	1.26	0.41	1.87



### Stellar Parameters For KIC 006367365

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5052^{+181}_{-181}$	$4.660^{+0.028}_{-0.077}$	$-0.440^{+0.300}_{-0.300}$	$0.658^{+0.091}_{-0.045}$	$0.726^{+0.071}_{-0.071}$	$3.596^{+0.500}_{-0.940}$
	+4%/-4%	+1%/-2%	+68%/-68%	+14%/-7%	+10%/-10%	+14%/-26%
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 006367365-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-502±112	$3.18^{+2.16}_{-2.06}$	$499^{+21}_{-20}$	$3939^{+1999}_{-640}$	$2013^{+12203}_{-1378}$
Alt.	-351±97	$2.53^{+2.39}_{-1.73}$	$499^{+22}_{-21}$	$4023^{+2459}_{-852}$	$2101^{+19386}_{-1582}$

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



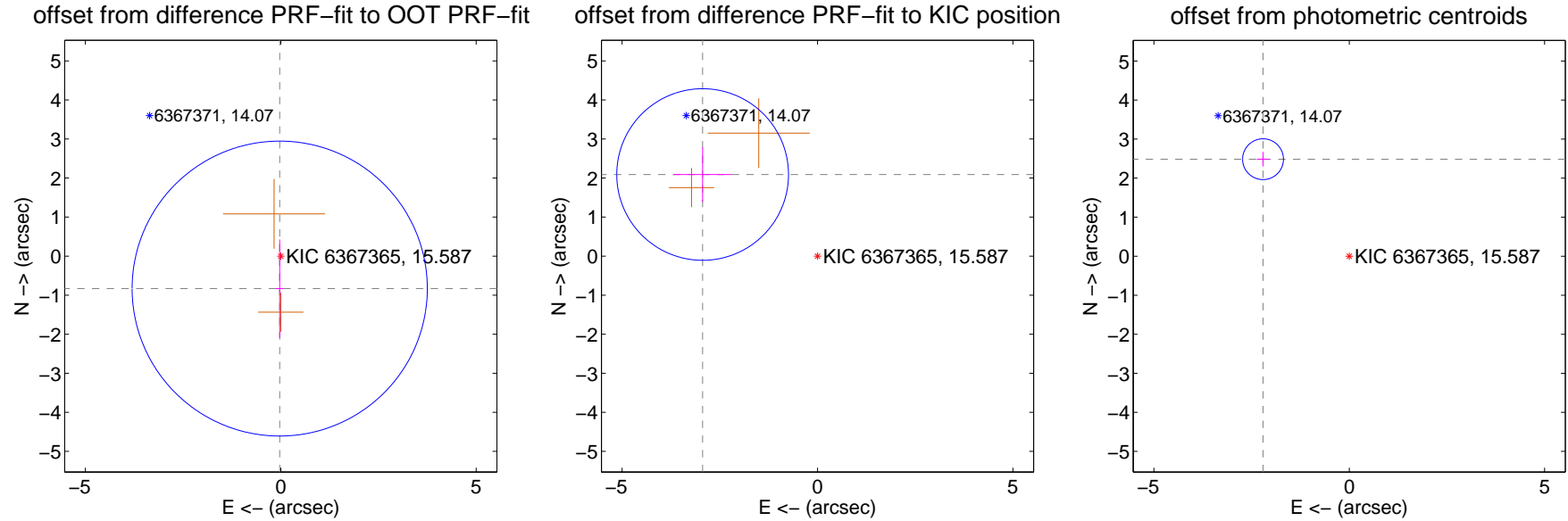
## DV Centroid Data

Supplemental centroid analysis for 006367365-02. Kepler magnitude: 15.59. Transit SNR 8.74

There are 0 quarters with good PRF difference image offsets

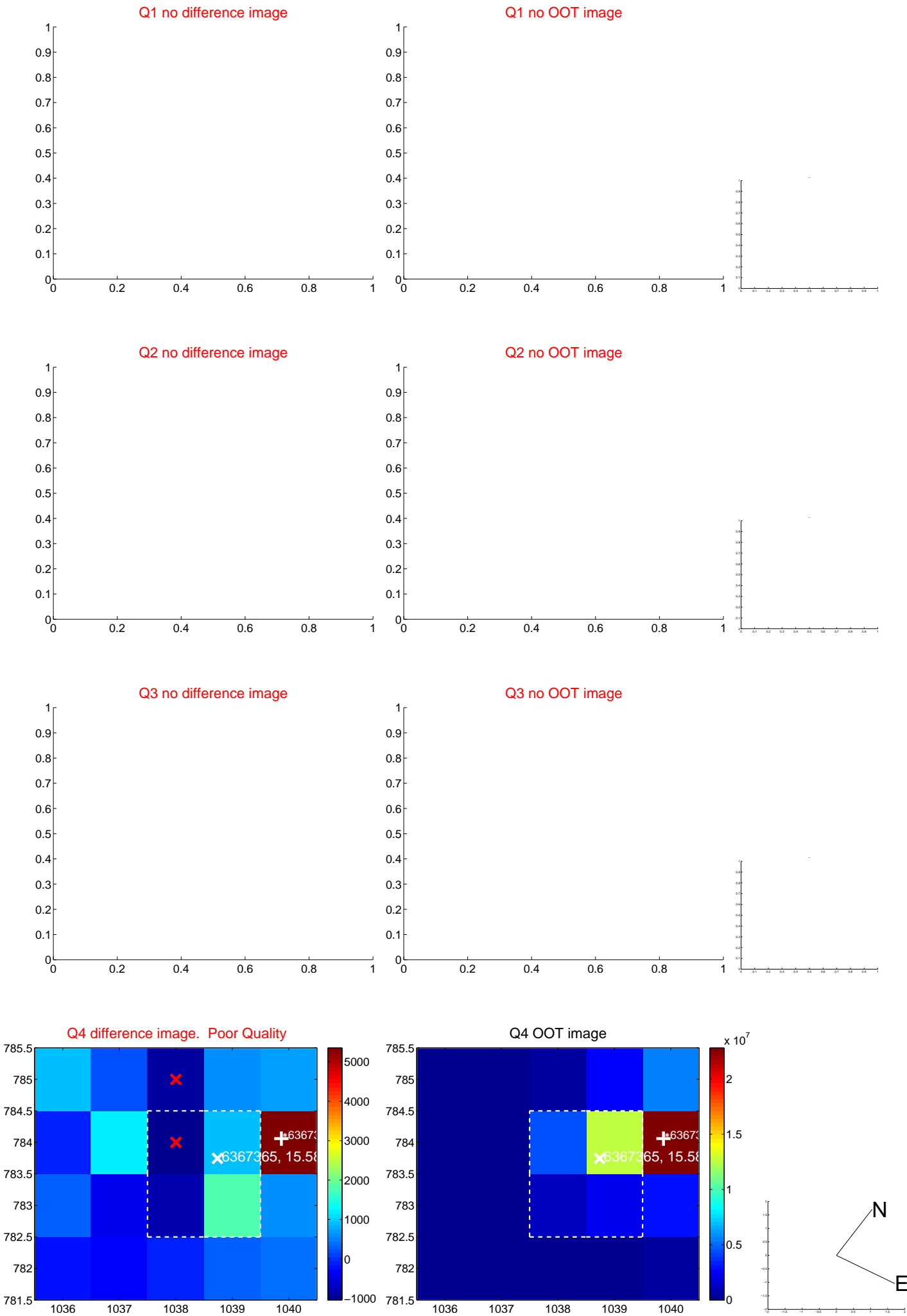
The OOT PRF centroid is offset from the target star catalog position by about 4.54 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.831 \pm 1.259$	0.66	$0.027 \pm 0.101$	$-0.831 \pm 1.260$
PRF-fit source offset from KIC position	$3.607 \pm 0.732$	4.92	$2.940 \pm 0.749$	$2.090 \pm 0.699$
photometric centroid source offset	$3.32 \pm 0.17$	19.08	$2.21 \pm 0.16$	$2.49 \pm 0.19$

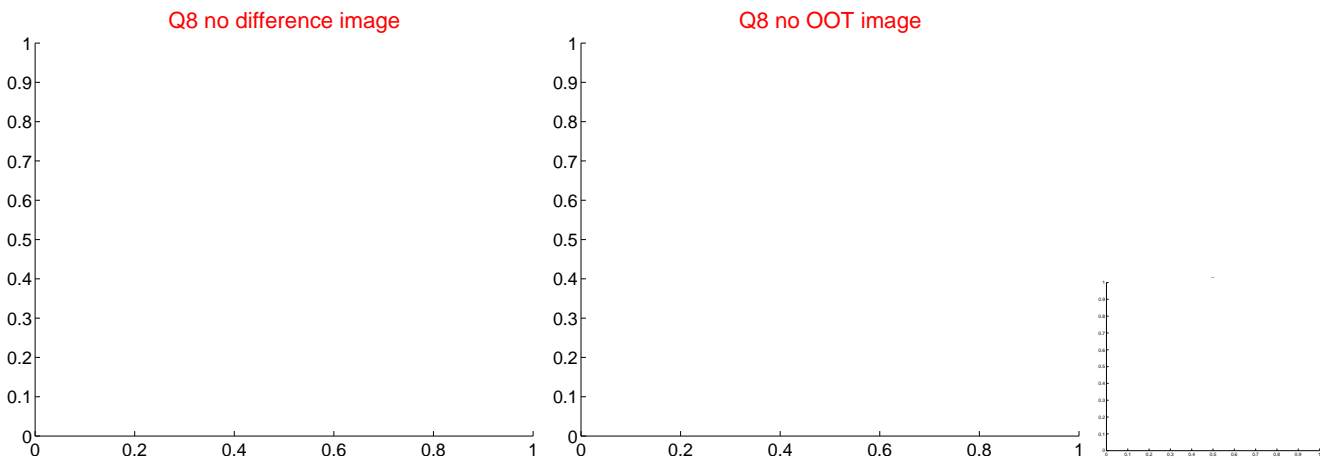
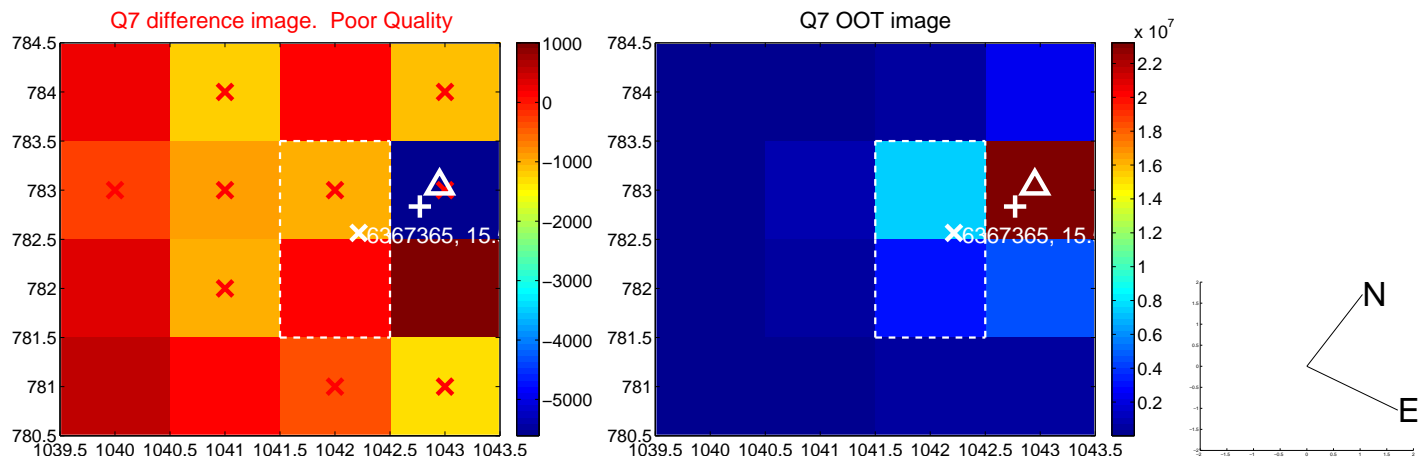
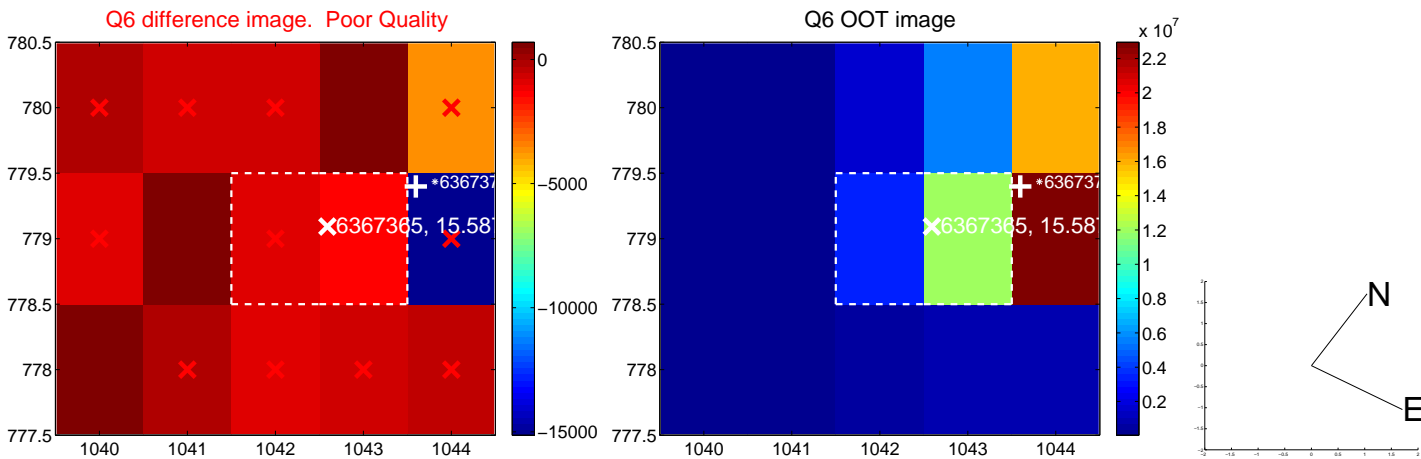
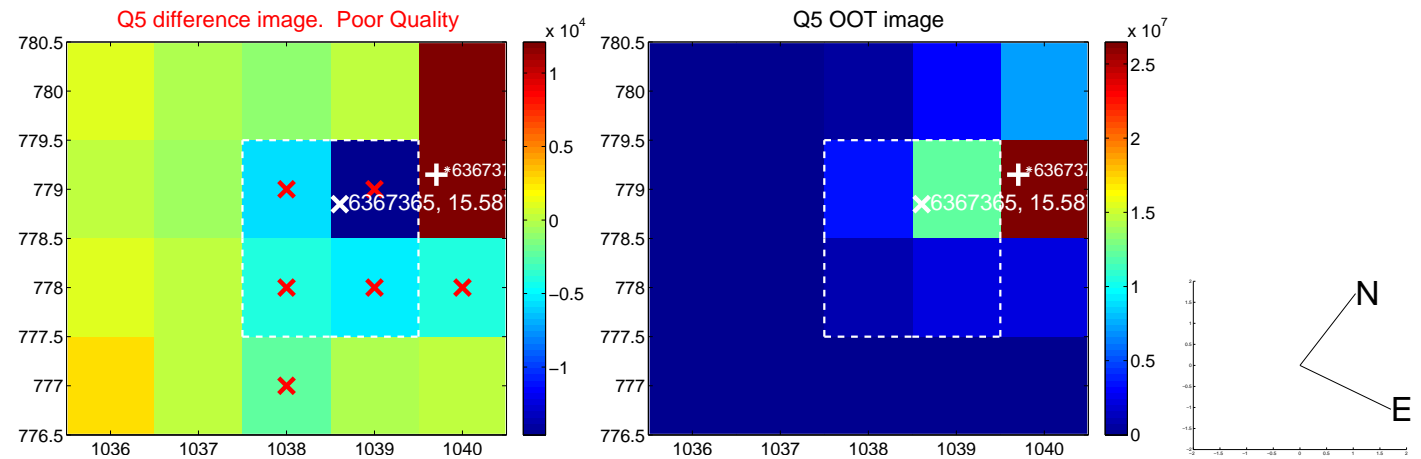


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

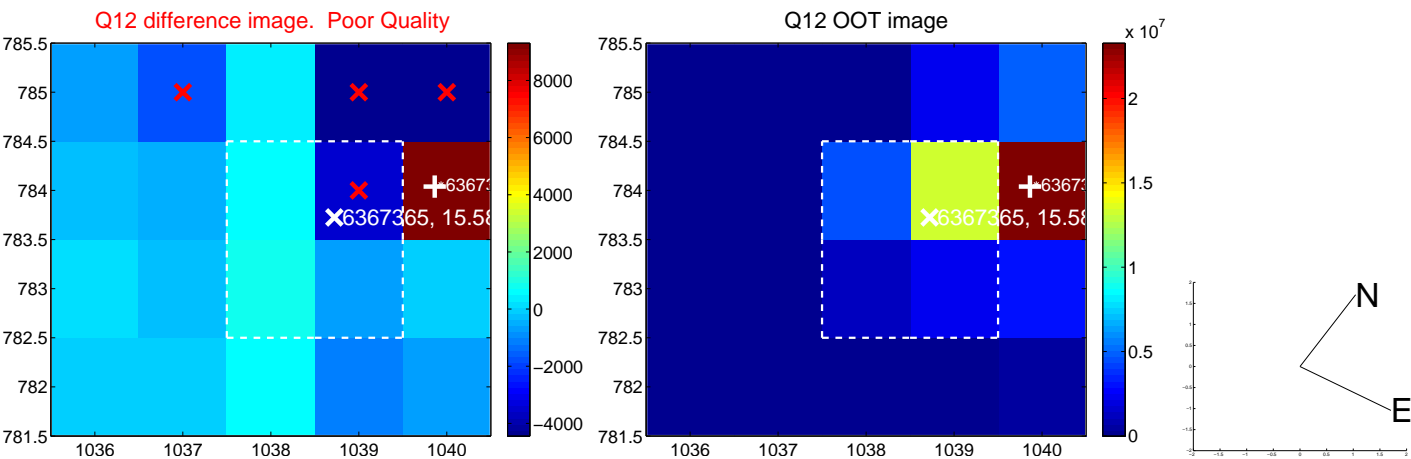
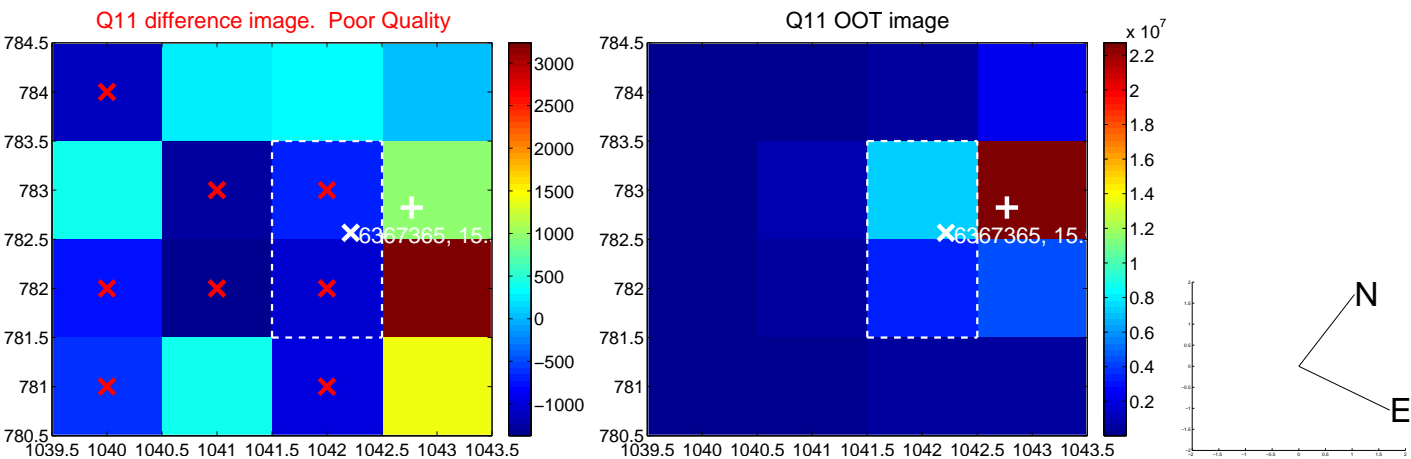
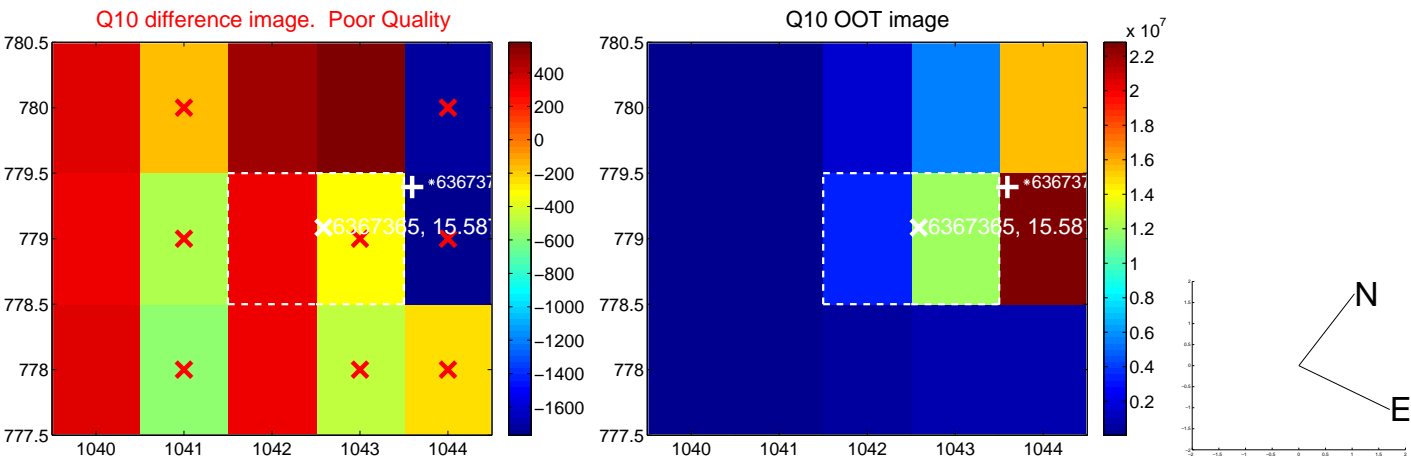
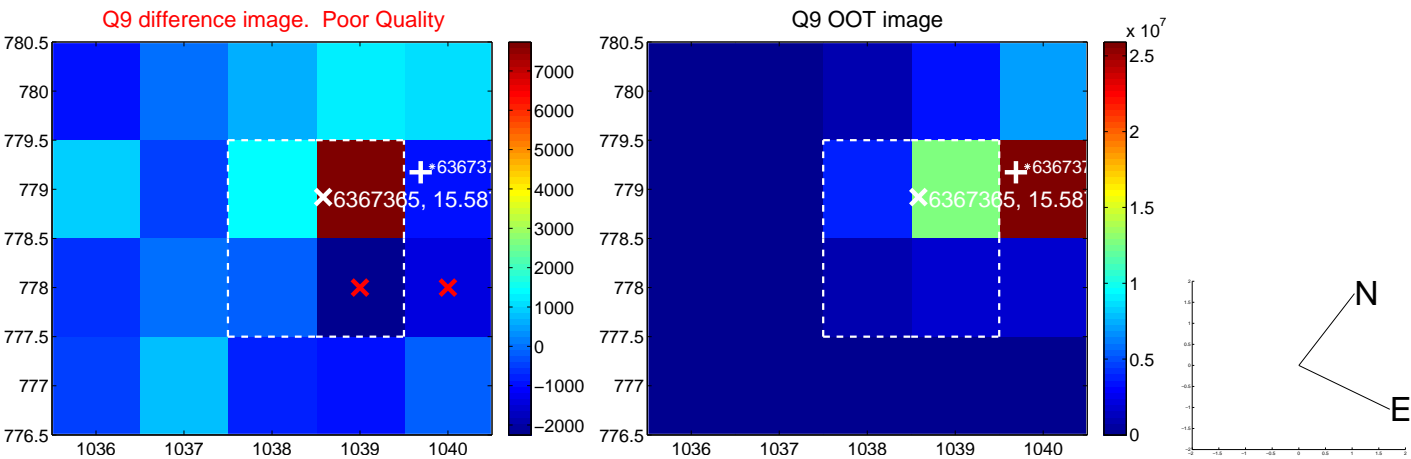
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



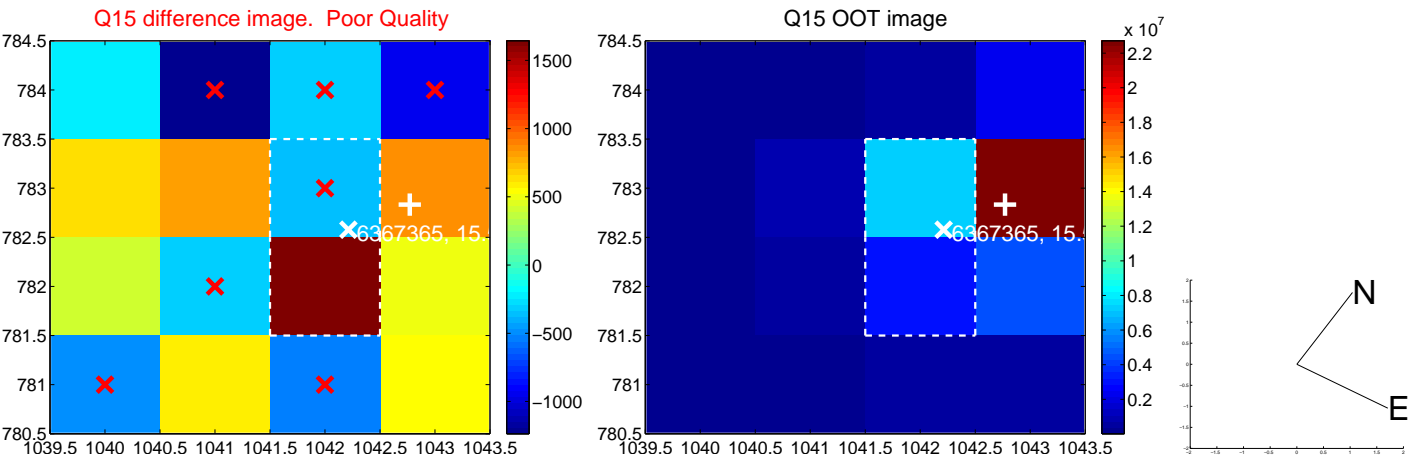
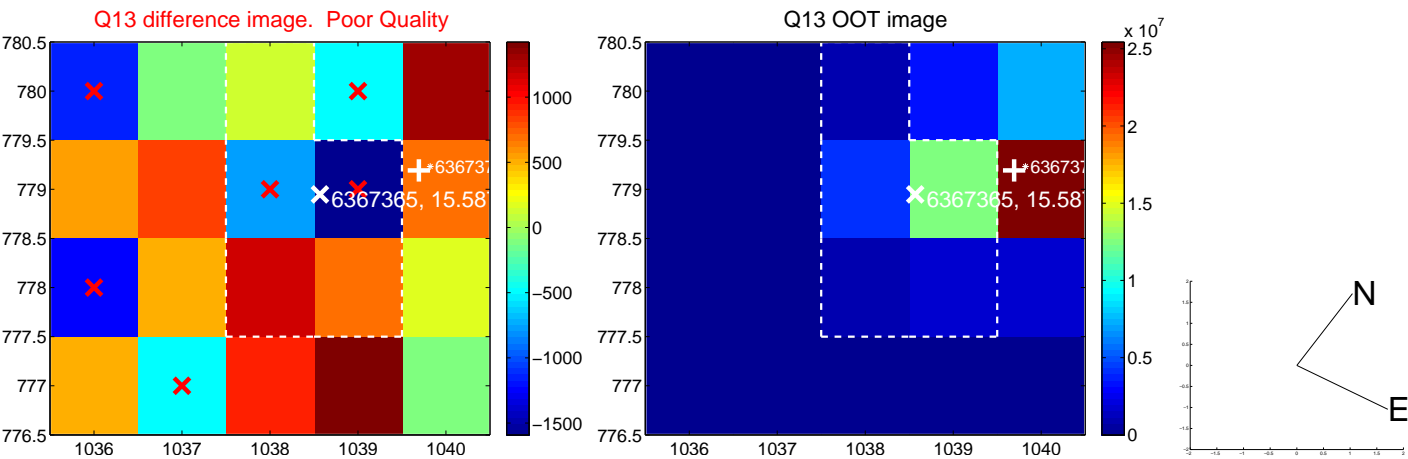
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



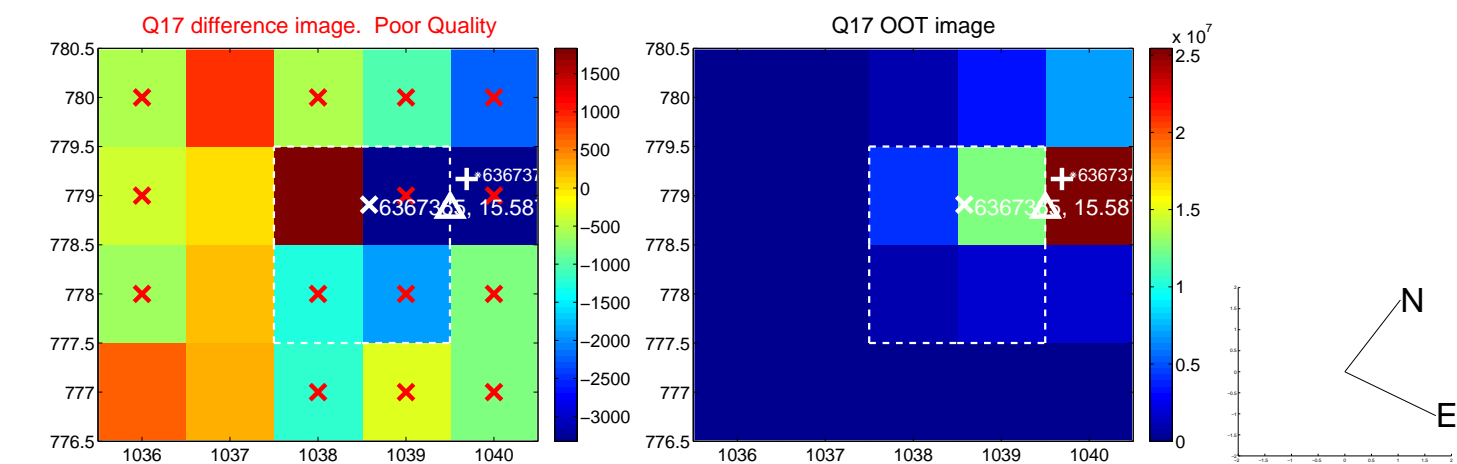
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



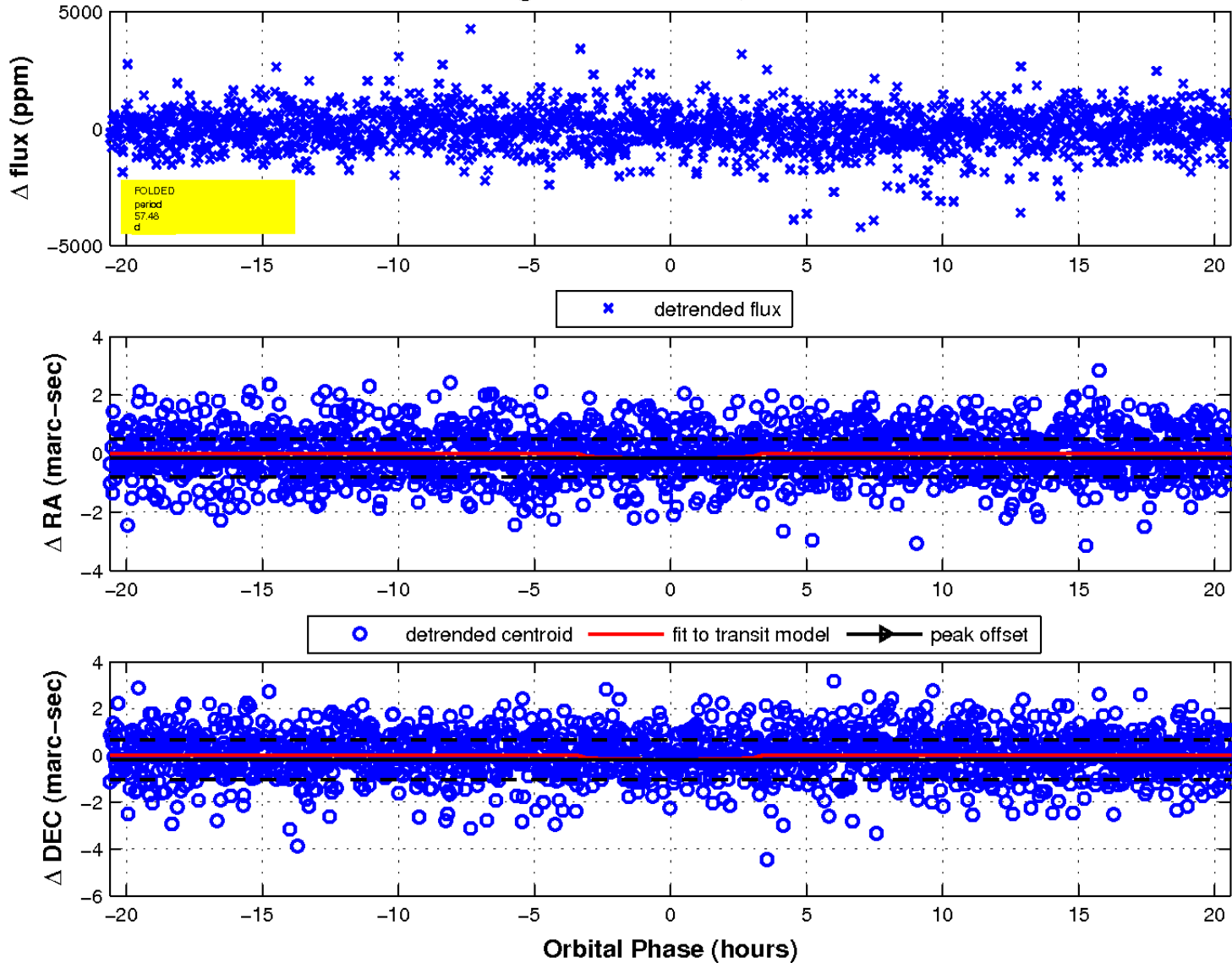
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

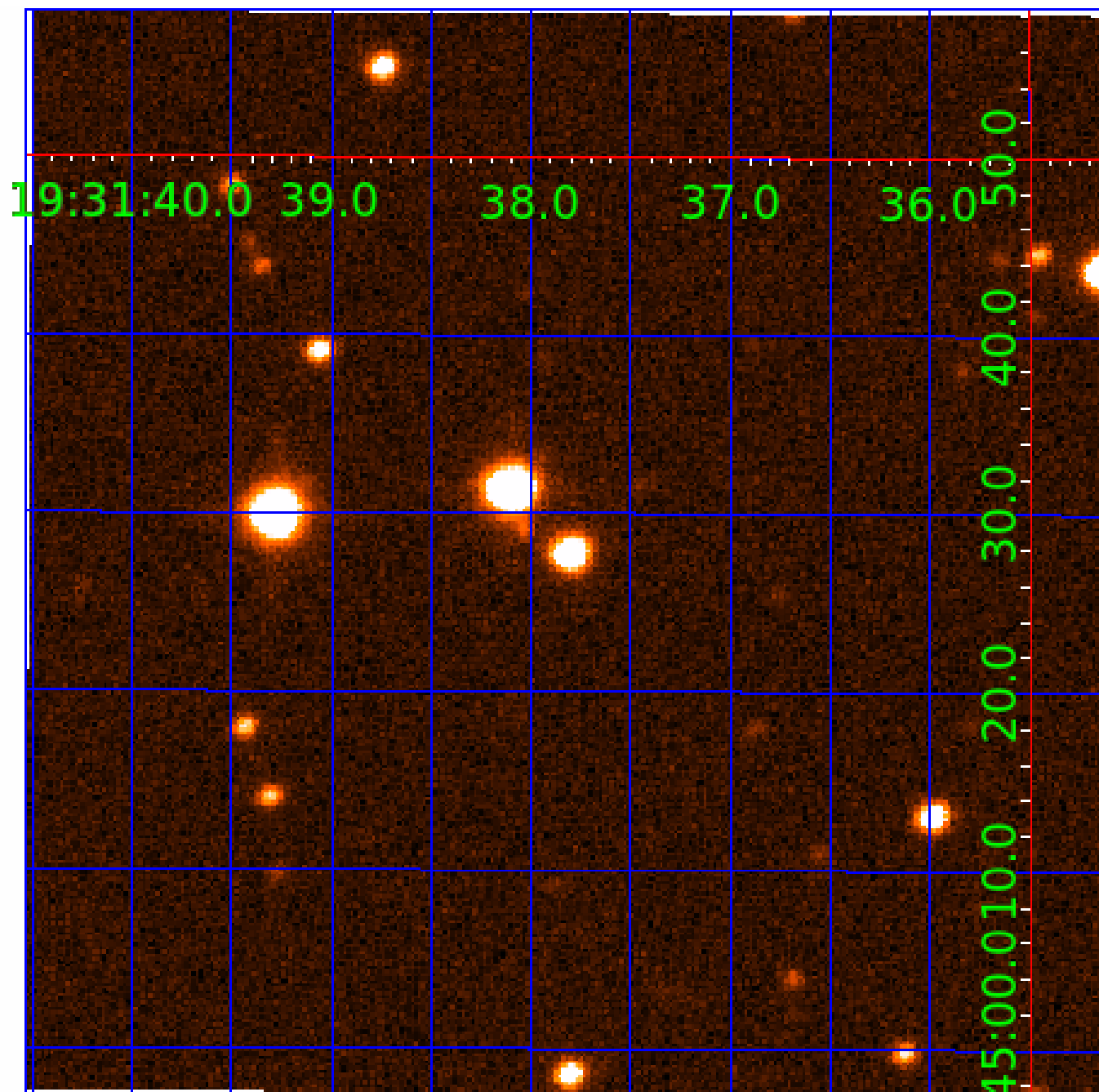


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination





# KIC 006367365

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006367365-01	OBS	No	1.095506	131.759369	109.3	6.957	9.6	11.5	0.66	5052	0.68	725.68
006367365-02	OBS	No	57.475775	187.724171	1162.4	6.871	21.3	8.7	0.66	5052	2.31	3.69
006367365-03	OBS	No	85.883560	154.008168	1647.1	2.161	8.5	9.2	0.66	5052	2.85	2.16
006367365-04	OBS	No	41.003832	150.164414	2169.2	1.036	8.7	9.4	0.66	5052	3.22	5.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006367365-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
006367365-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006367365-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006367365-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

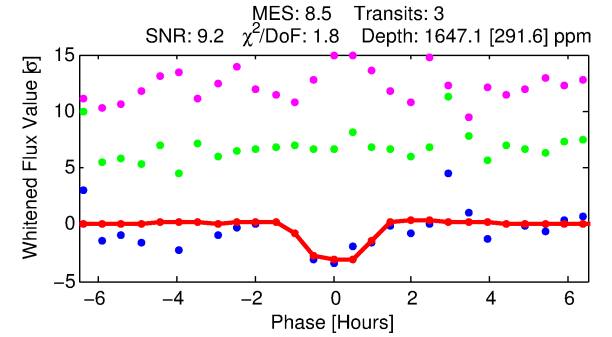
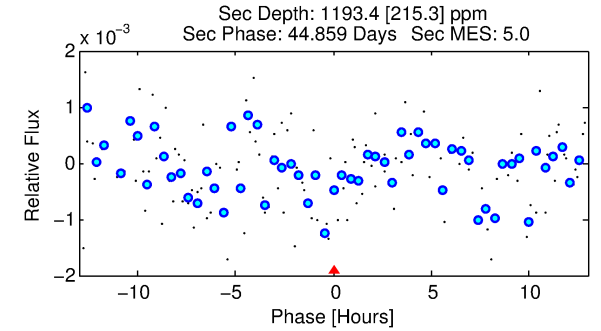
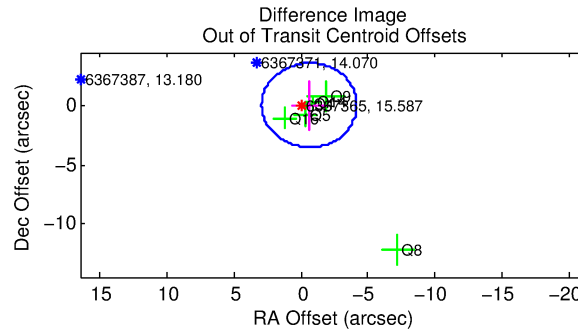
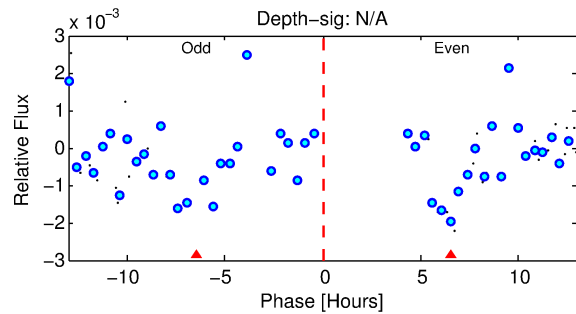
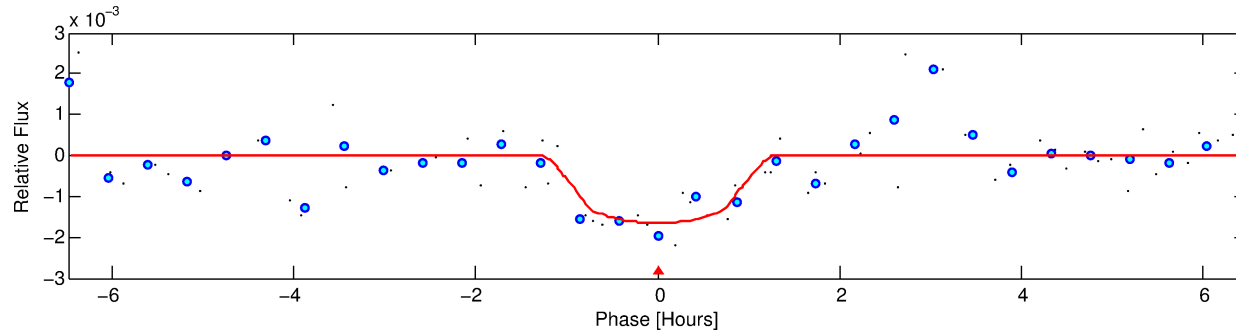
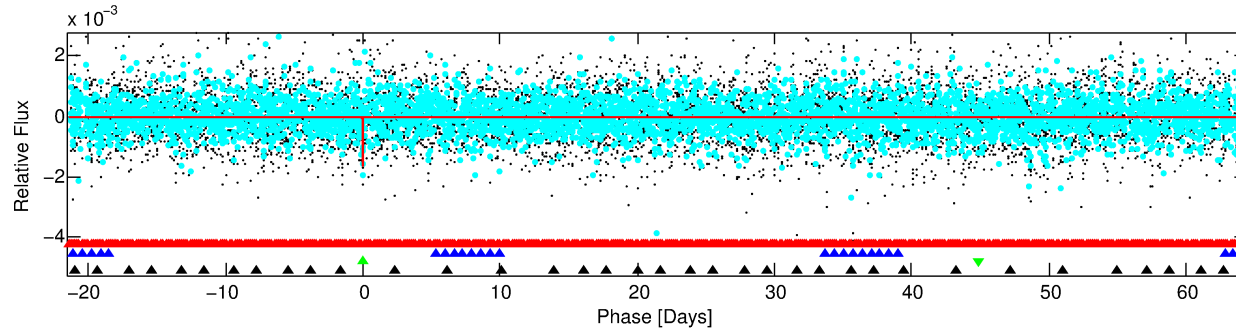
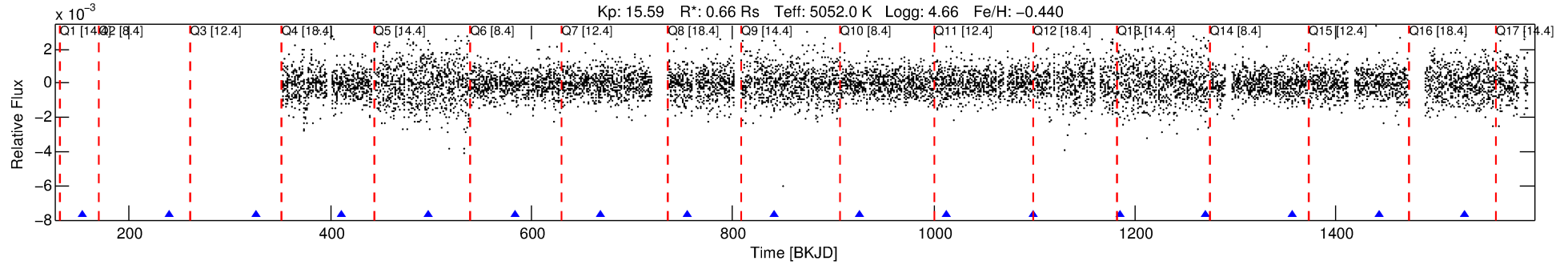
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006367365-03

No Significant Match Found

# DV One-Page Summary

KIC: 6367365 Candidate: 3 of 4 Period: 85.884 d



## DV Fit Results:

Period = 85.88356 [0.00117] d  
Epoch = 154.0082 [0.0094] BKJD  
Rp/R\* = 0.0397 [0.0694]  
a/R\* = 233.73 [1487.83]  
b = 0.70 [4.75]  
Seff = 2.16 [0.45]  
Teq = 309 [16] K  
Rp = 2.85 [5.00] Re  
a = 0.3418 [0.0374] AU  
Ag = 9422.17 [32968.12] [0.29σ]  
Teffp = 4710 [4120] K [1.07σ]

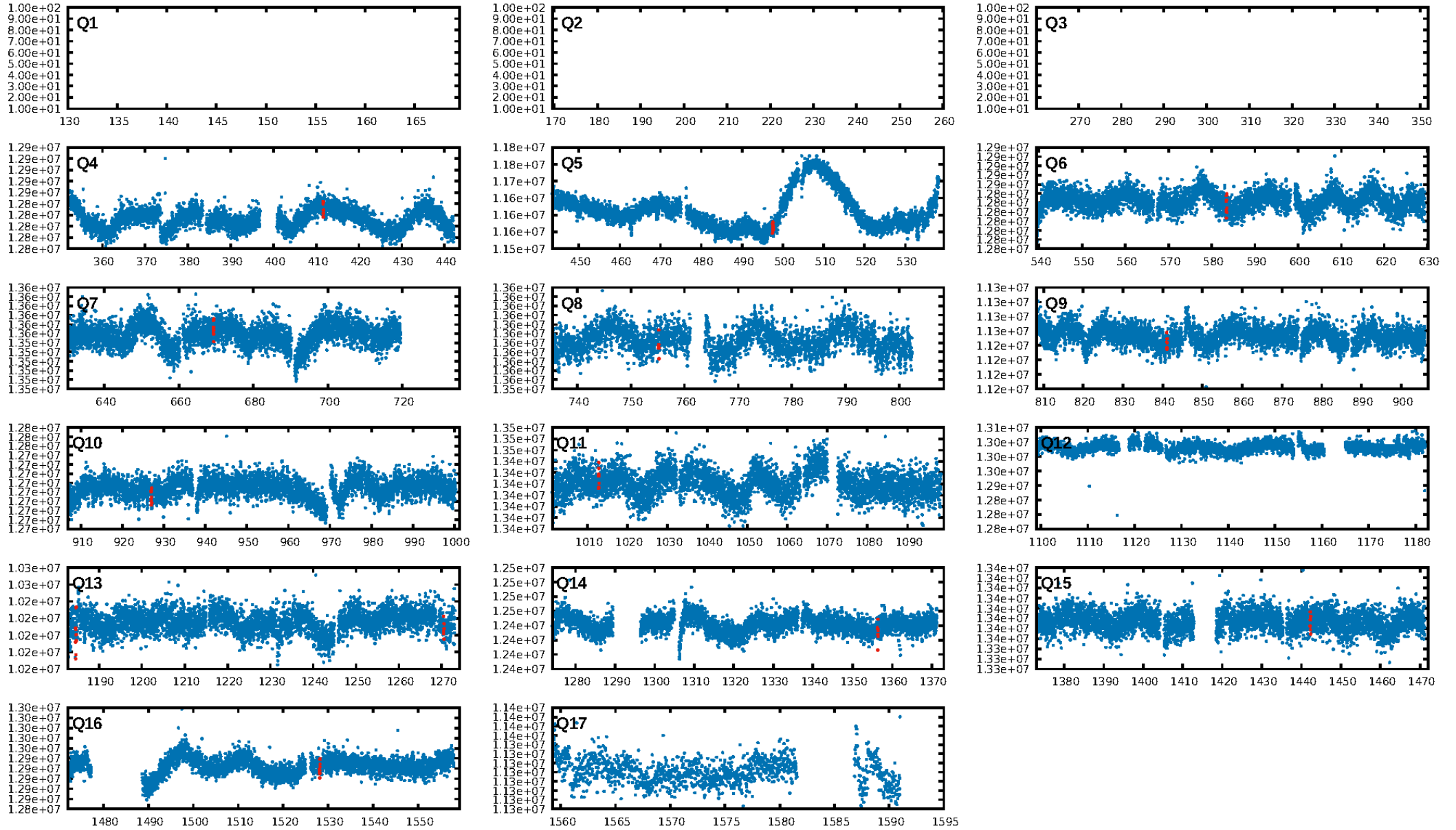
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [94.65σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 51.0%  
ModelChiSquareGof-sig: 90.3%  
**Bootstrap-pfa: 3.18e-09**  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 1.506**  
Centroid-sig: 75.9%  
**Centroid-so: 3.231 arcsec [12.88σ]**  
OotOffset-rm: 0.609 arcsec [0.51σ]  
KicOffset-rm: 4.154 arcsec [2.11σ]  
OotOffset-st: 1/0/3/2 [6]  
KicOffset-st: 1/0/3/2 [6]  
DiffImageQuality-fgm: 0.33 [2/6]  
DiffImageOverlap-fno: 0.25 [3/12]

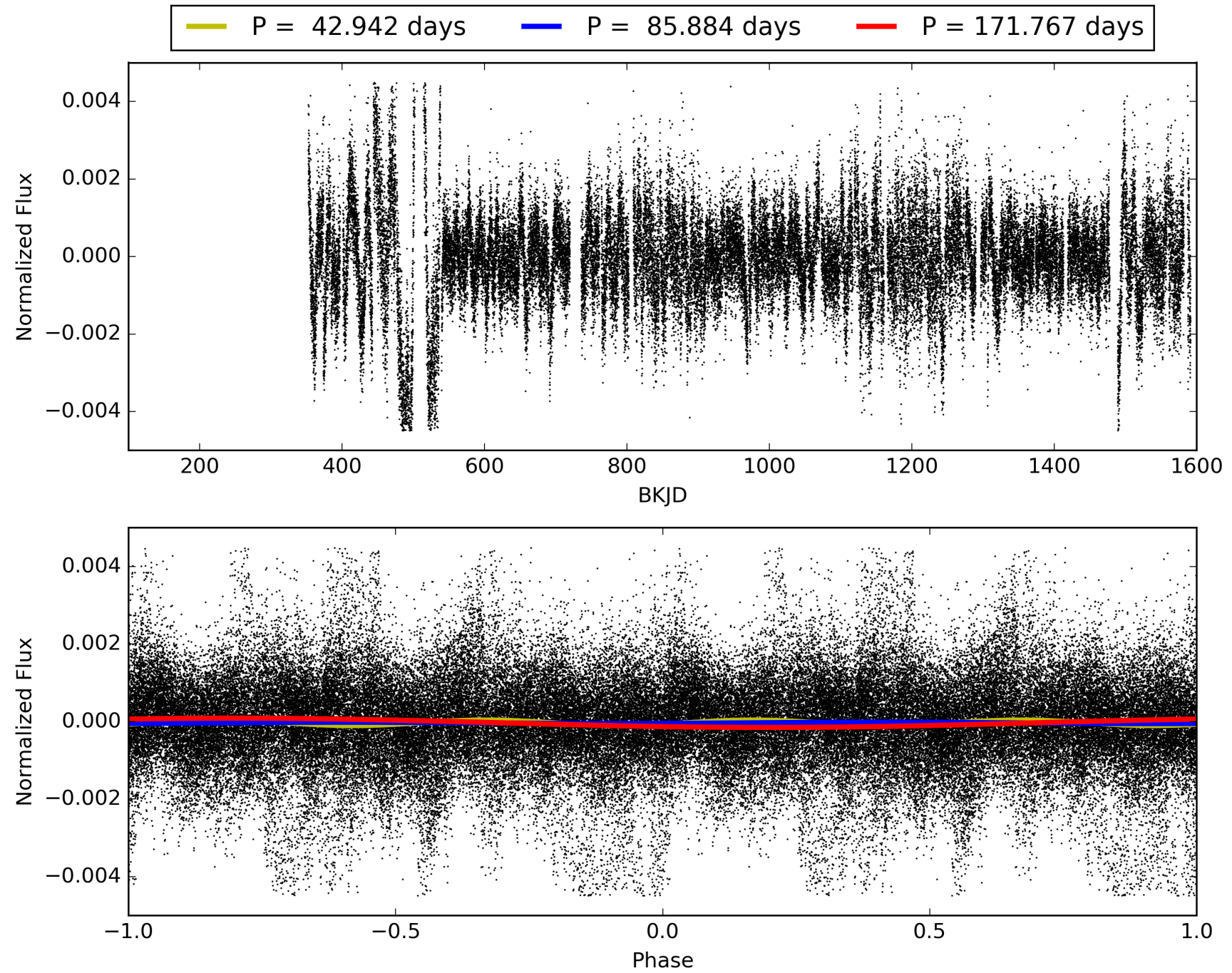
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:25:32 Z

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

# TCE 006367365-03, PDC Light Curves

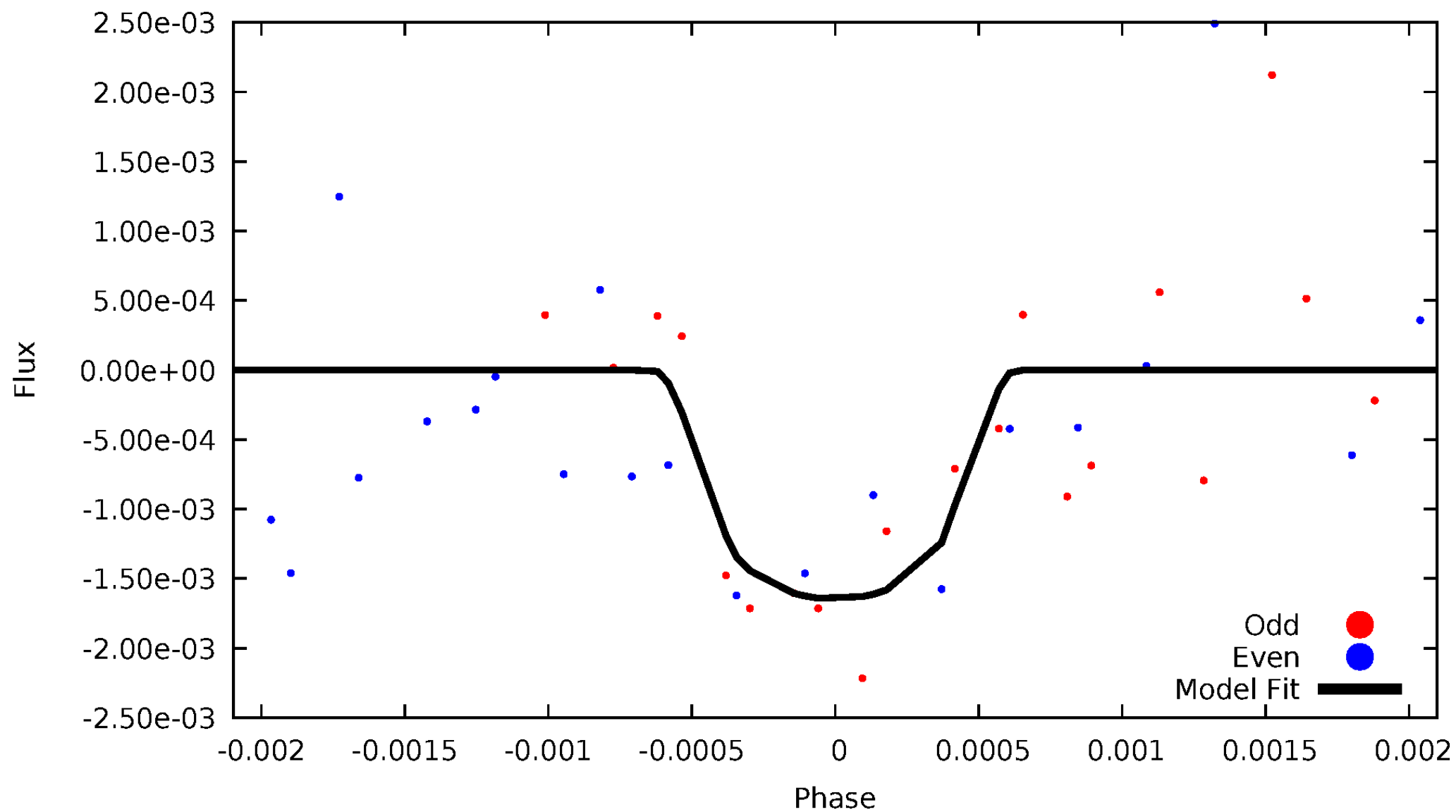


TCE 006367365-03



# DV Odd/Even

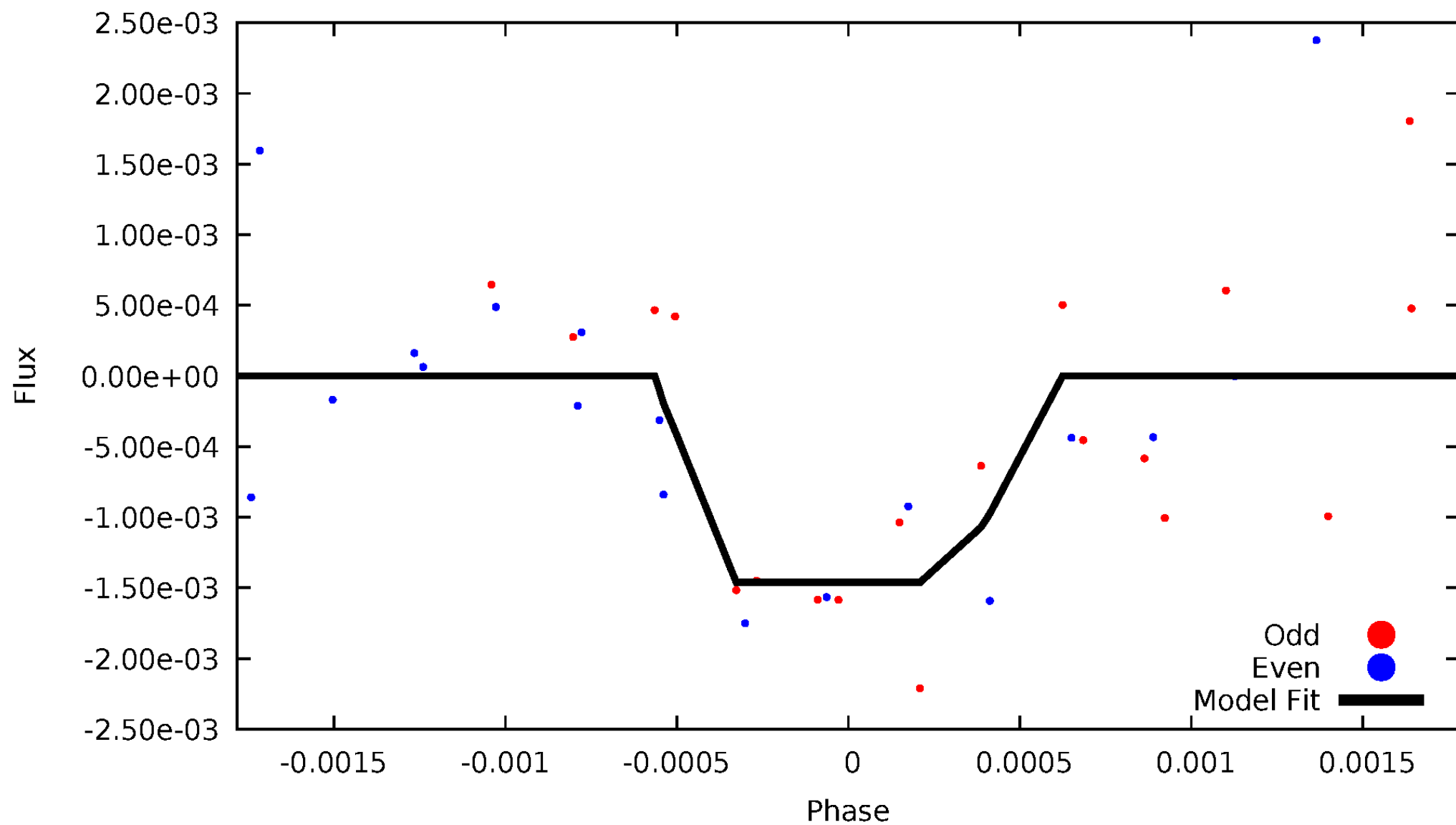
TCE 006367365-03





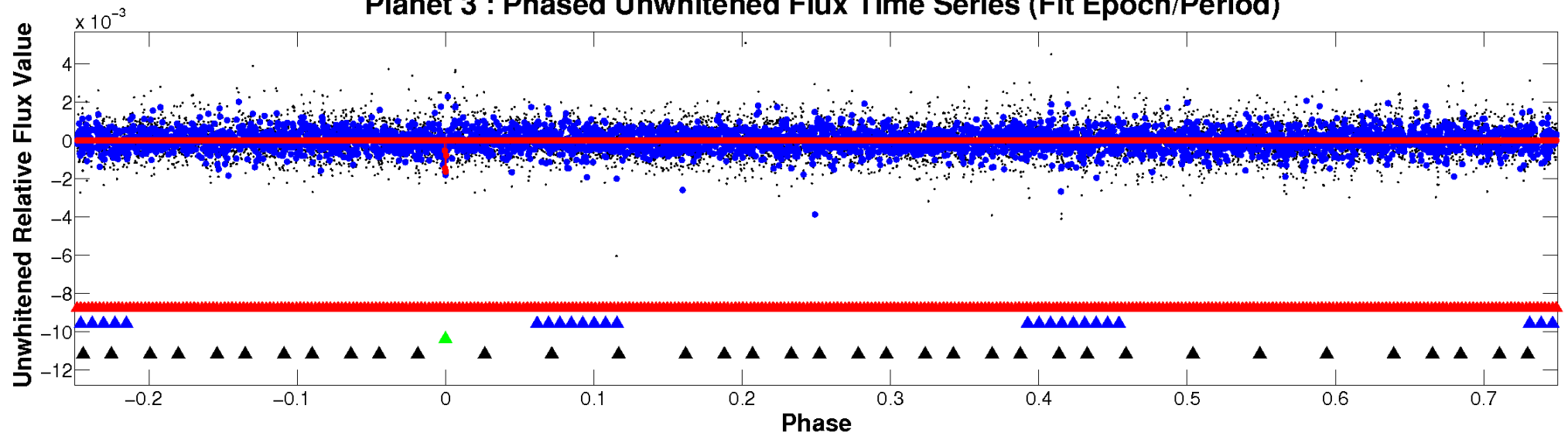
# ALT Odd/Even

TCE 006367365-03

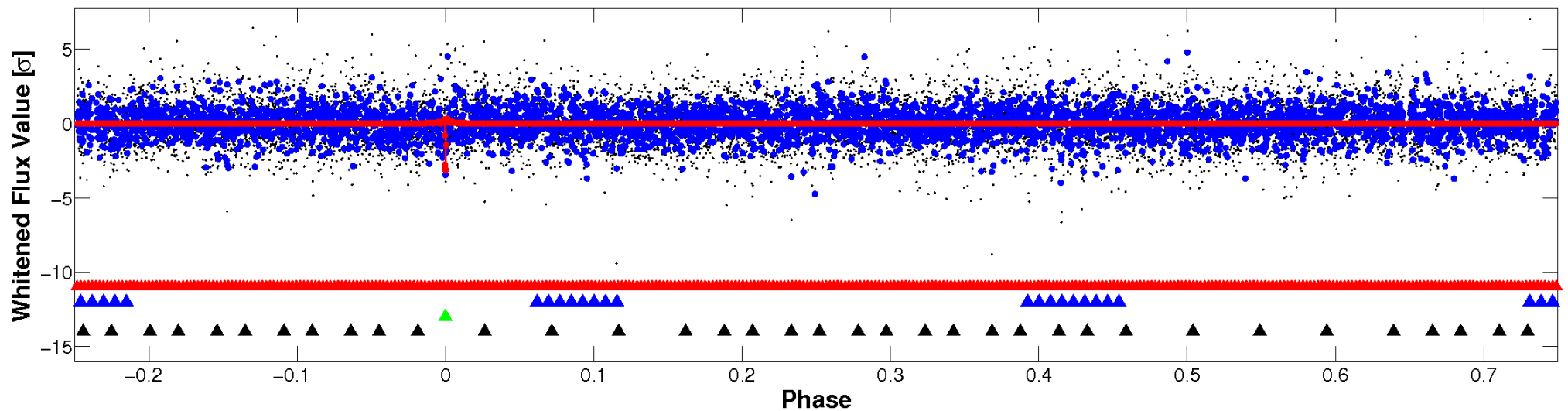


# Non-Whitened Vs. Whitened Light Curve

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

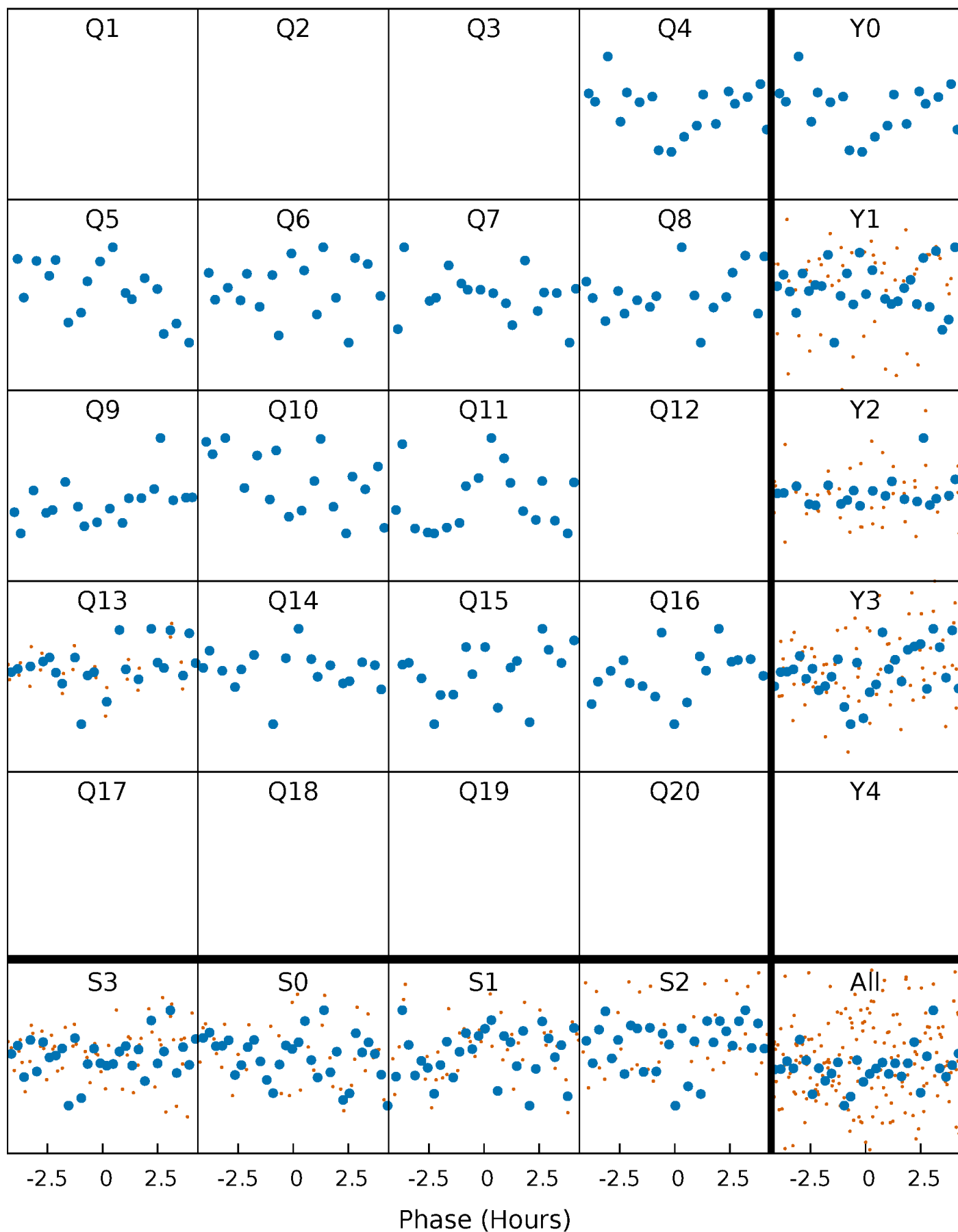


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



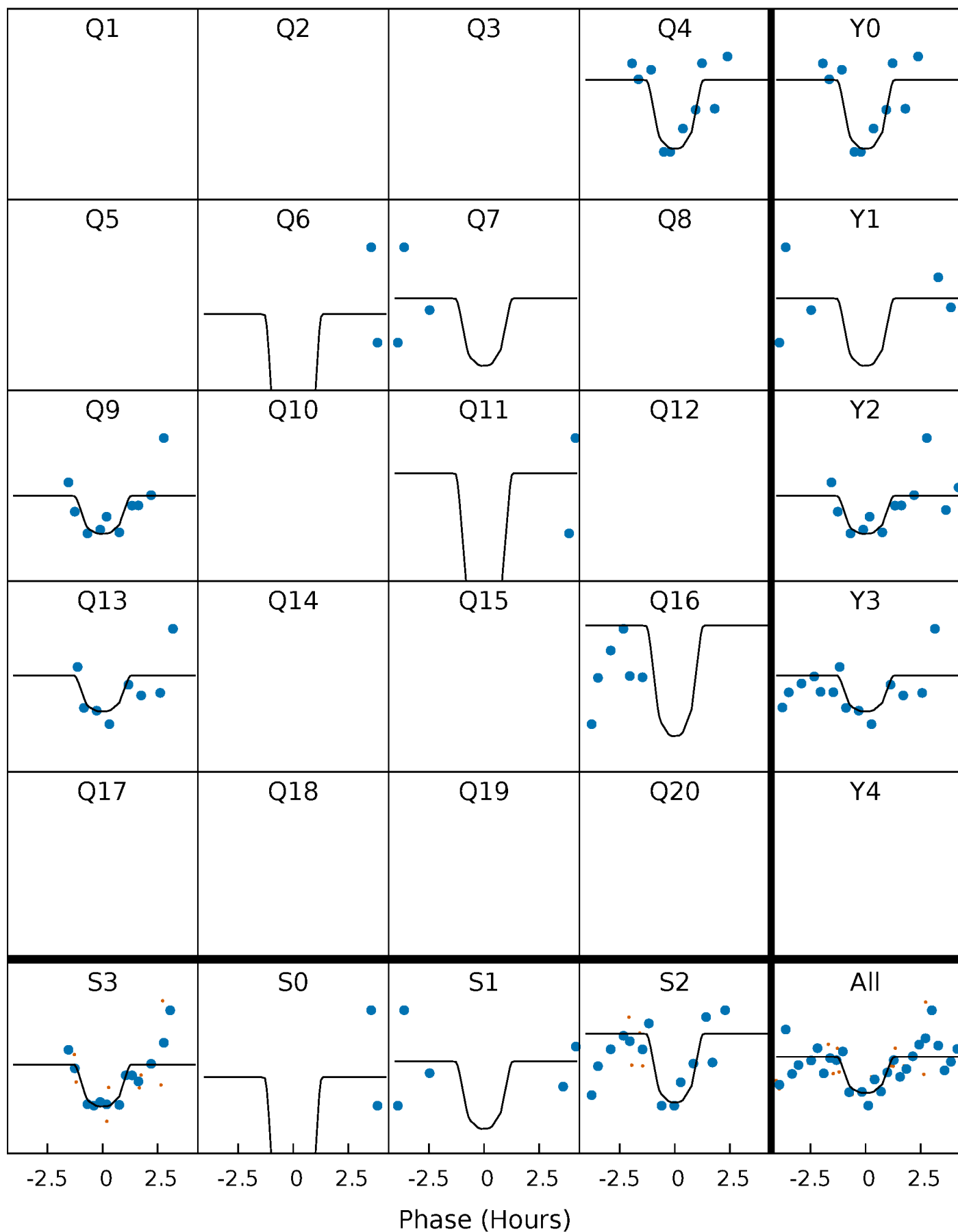
# PDC Quarter-Phased Transit Curves

TCE 006367365-03   P= 85.883560 Days    $T_0=154.008168$  (BKJD)



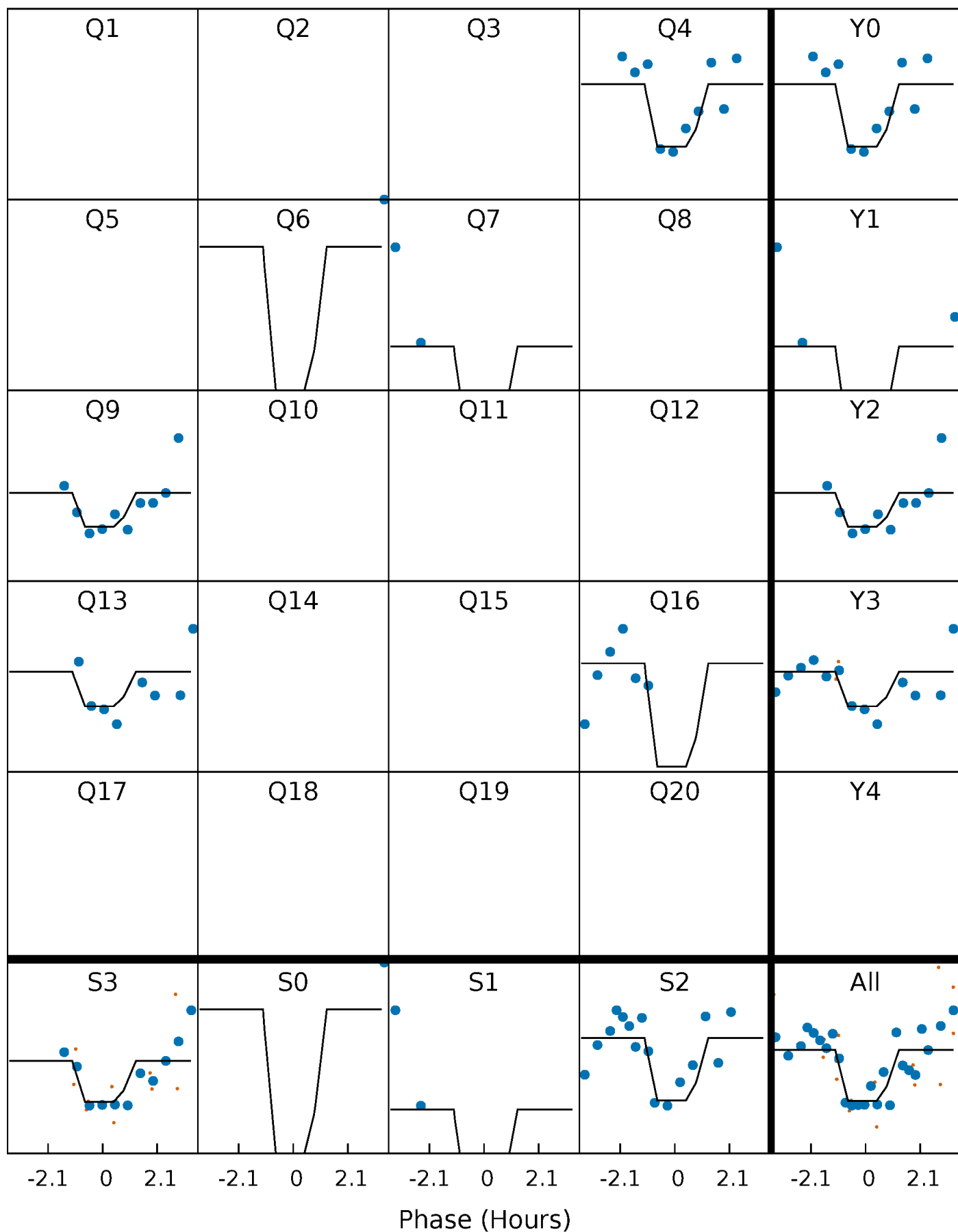
# DV Quarter-Phased Transit Curves

TCE 006367365-03   P= 85.883560 Days    $T_0=154.008168$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

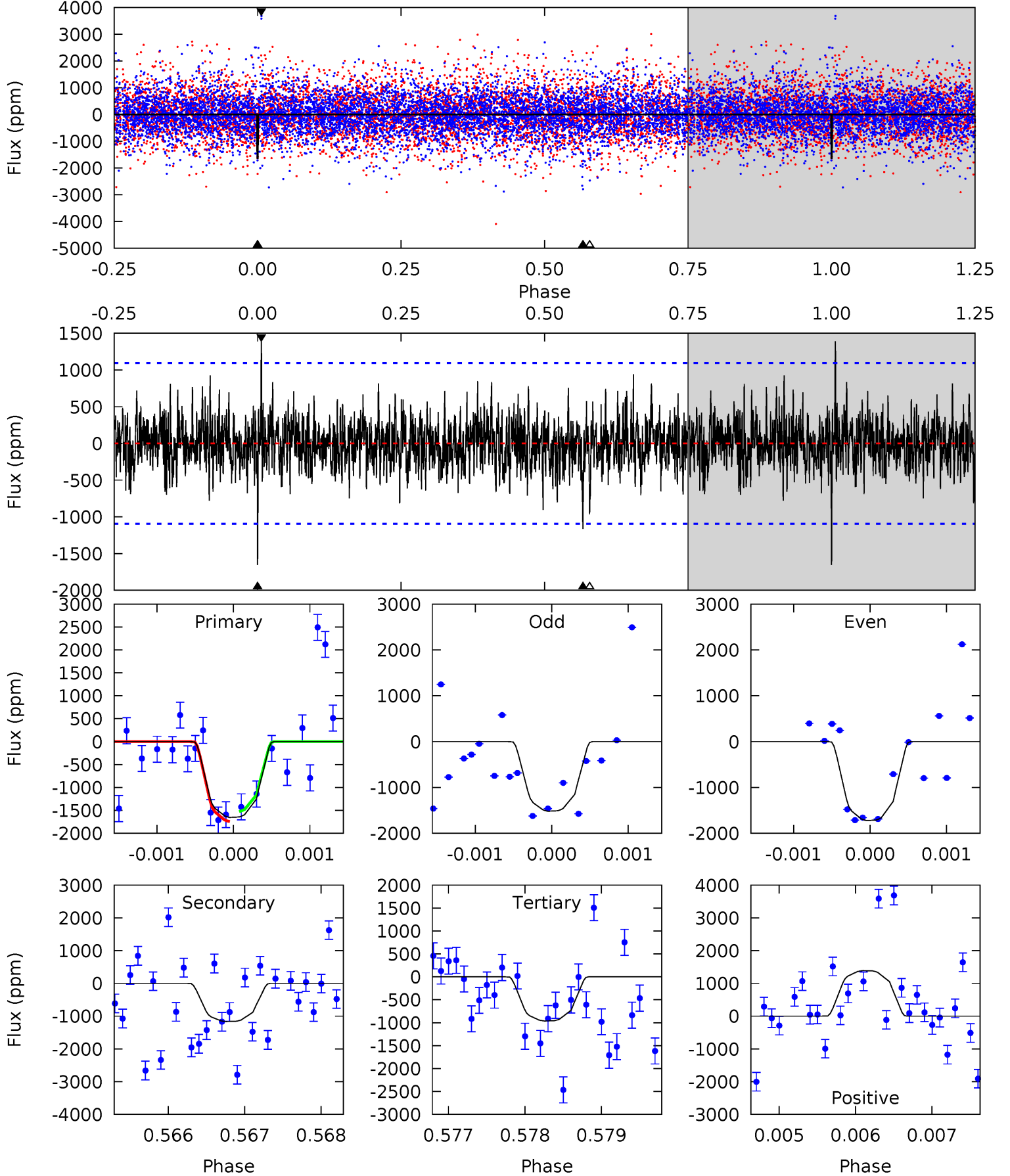
TCE 006367365-03 P= 85.882326 Days  $T_0=154.014426$  (BKJD)



# DV Model-Shift Uniqueness Test

006367365-03, P = 85.883560 Days, E = 154.008168 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
8.18	5.77	4.77	6.88	5.41	3.23	1.31	3.42	1.30	1.00	-1.11	0.48	1.09	0.46	0.54

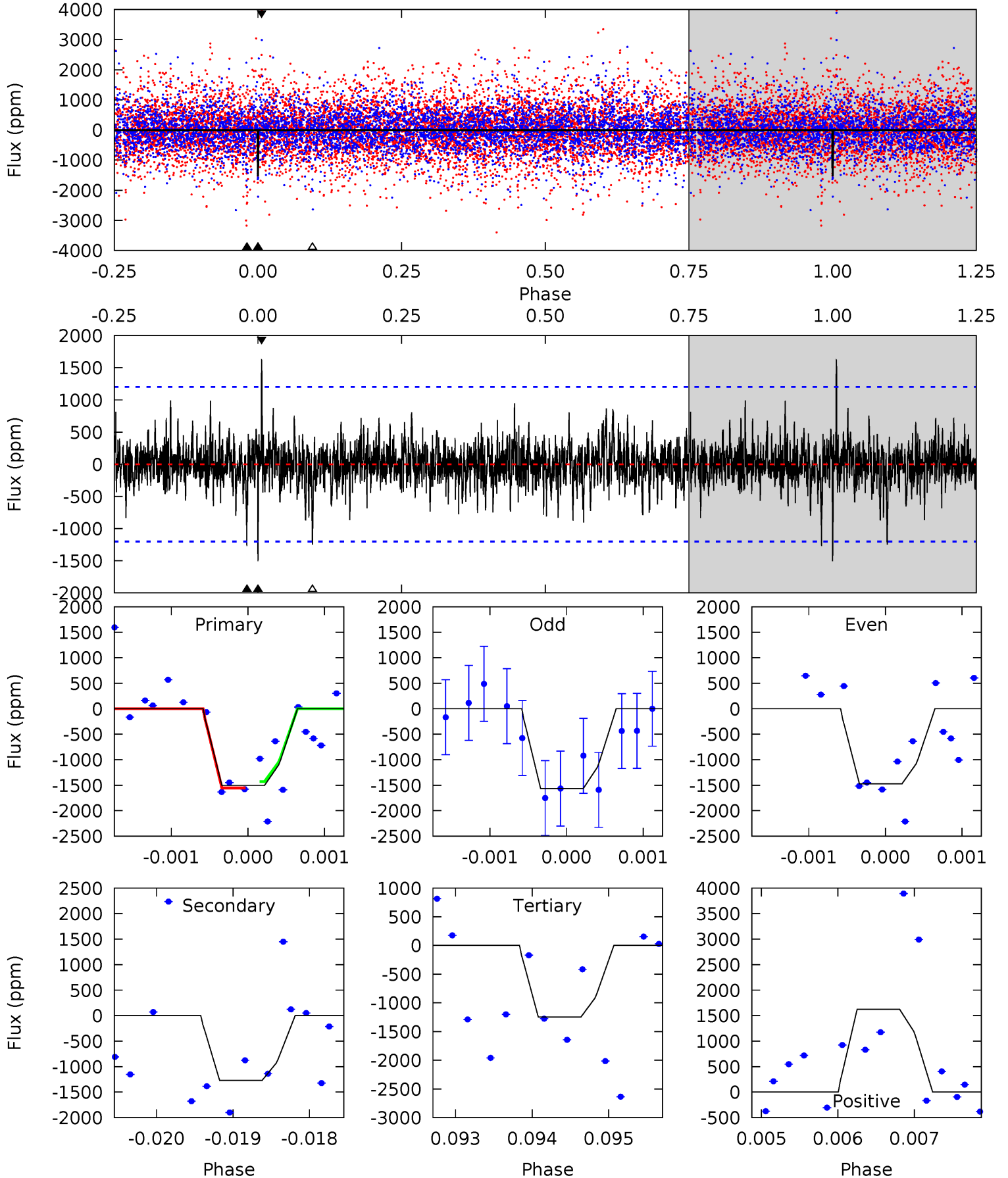




# Alt Model-Shift Uniqueness Test

006367365-03, P = 85.882326 Days, E = 154.014426 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.84	5.76	5.67	7.36	5.46	3.30	1.18	1.17	-0.53	0.09	-1.60	0.20	0.97	0.52	0.26



### Stellar Parameters For KIC 006367365

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5052^{+181}_{-181}$	$4.660^{+0.028}_{-0.077}$	$-0.440^{+0.300}_{-0.300}$	$0.658^{+0.091}_{-0.045}$	$0.726^{+0.071}_{-0.071}$	$3.596^{+0.500}_{-0.940}$
	+4%/-4%	+1%/-2%	+68%/-68%	+14%/-7%	+10%/-10%	+14%/-26%
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 006367365-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1165 \pm 202$	$4.64^{+4.48}_{-3.21}$	$437^{+19}_{-19}$	$3980^{+2740}_{-803}$	$3416^{+34220}_{-2513}$
Alt.	$-1268 \pm 220$	$4.92^{+4.96}_{-3.15}$	$436^{+21}_{-17}$	$3948^{+2072}_{-782}$	$3301^{+22383}_{-2478}$

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

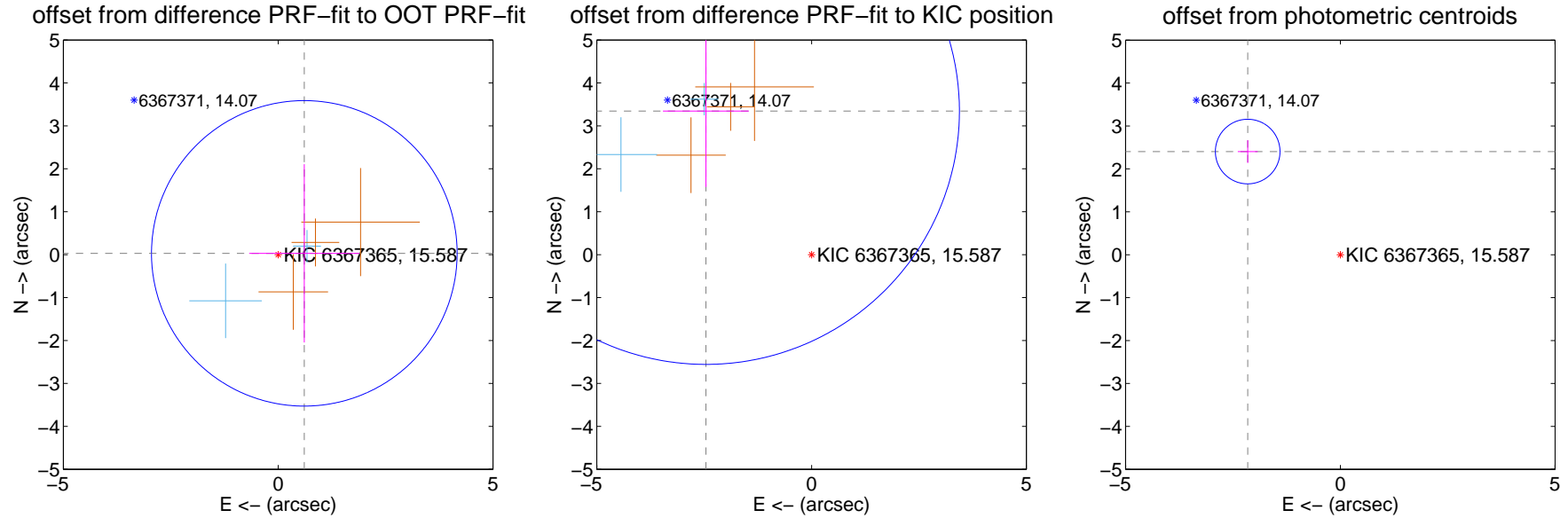
## DV Centroid Data

Supplemental centroid analysis for 006367365-03. Kepler magnitude: 15.59. Transit SNR 9.16

There are 2 quarters with good PRF difference image offsets

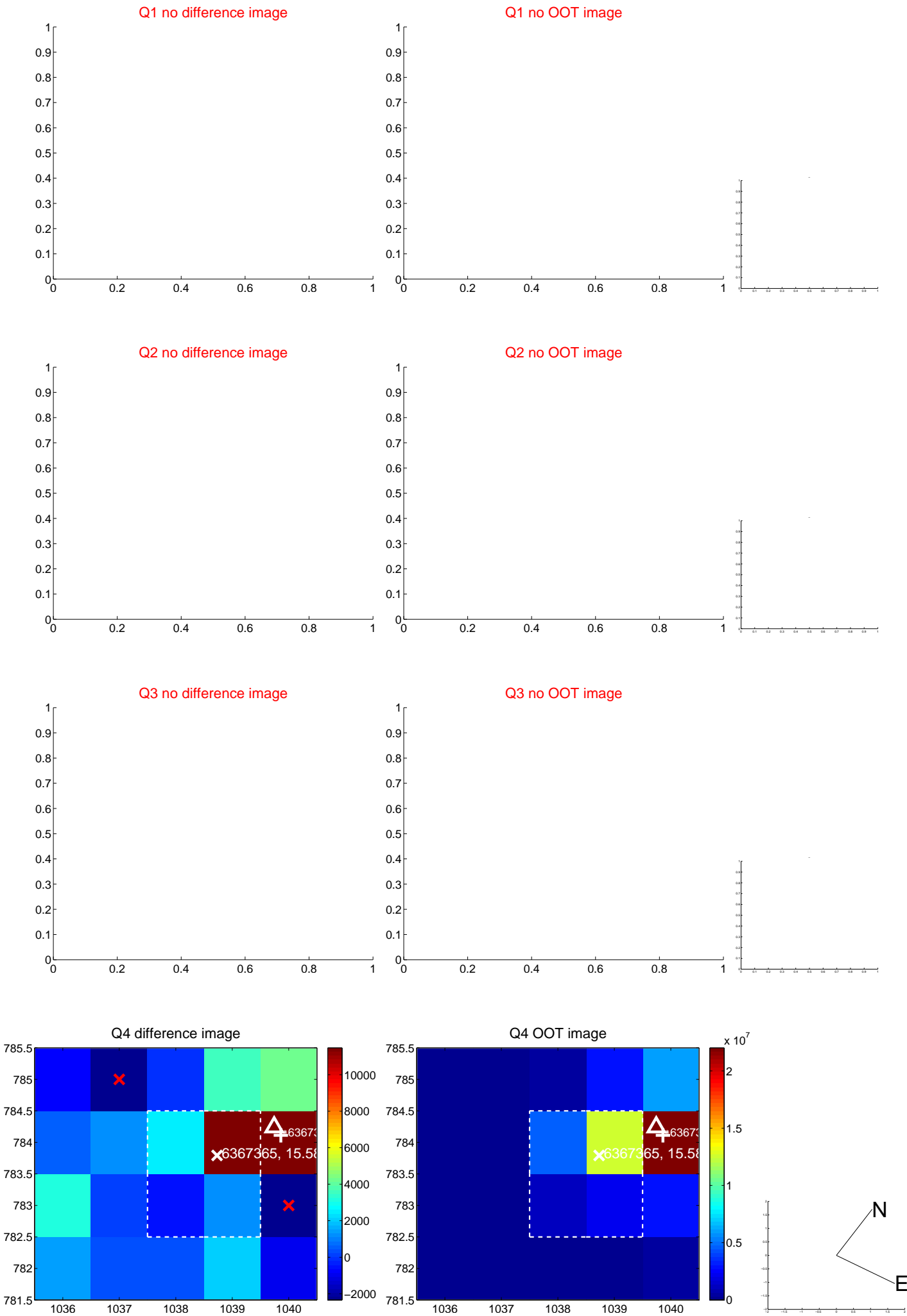
The OOT PRF centroid is offset from the target star catalog position by about 4.68 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.609 \pm 1.186$	0.51	$-0.608 \pm 1.283$	$0.030 \pm 2.077$
PRF-fit source offset from KIC position	$4.154 \pm 1.968$	2.11	$2.461 \pm 1.000$	$3.346 \pm 1.769$
photometric centroid source offset	$3.23 \pm 0.25$	12.88	$2.16 \pm 0.23$	$2.40 \pm 0.27$

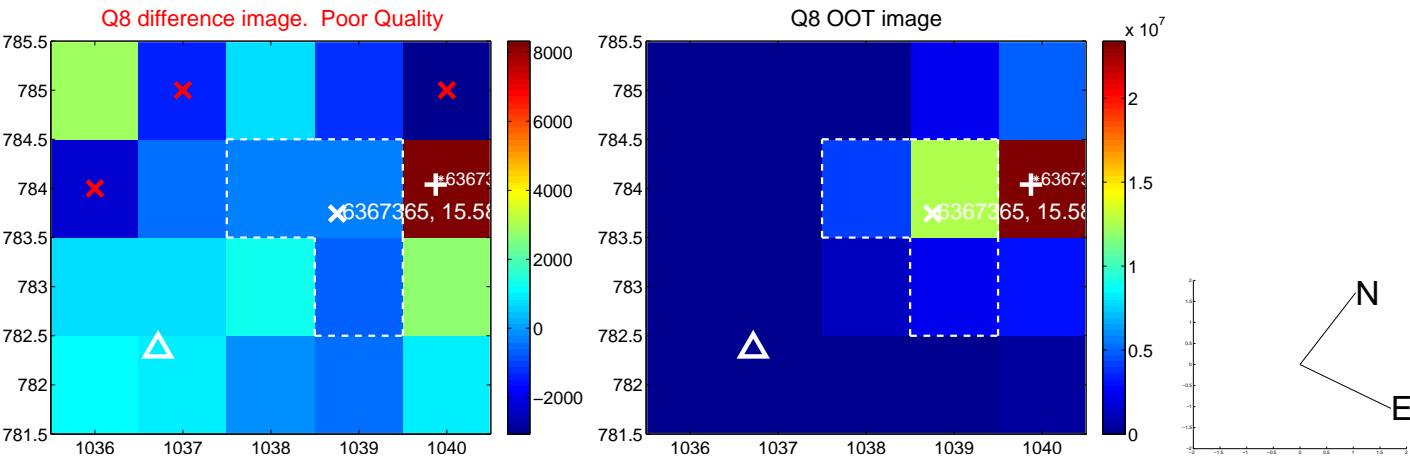
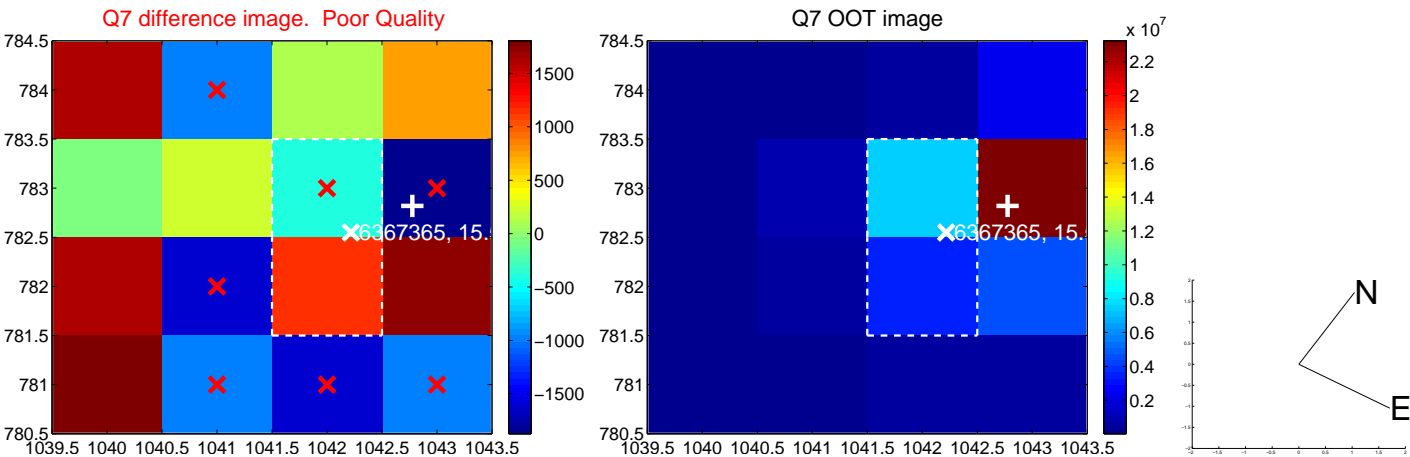
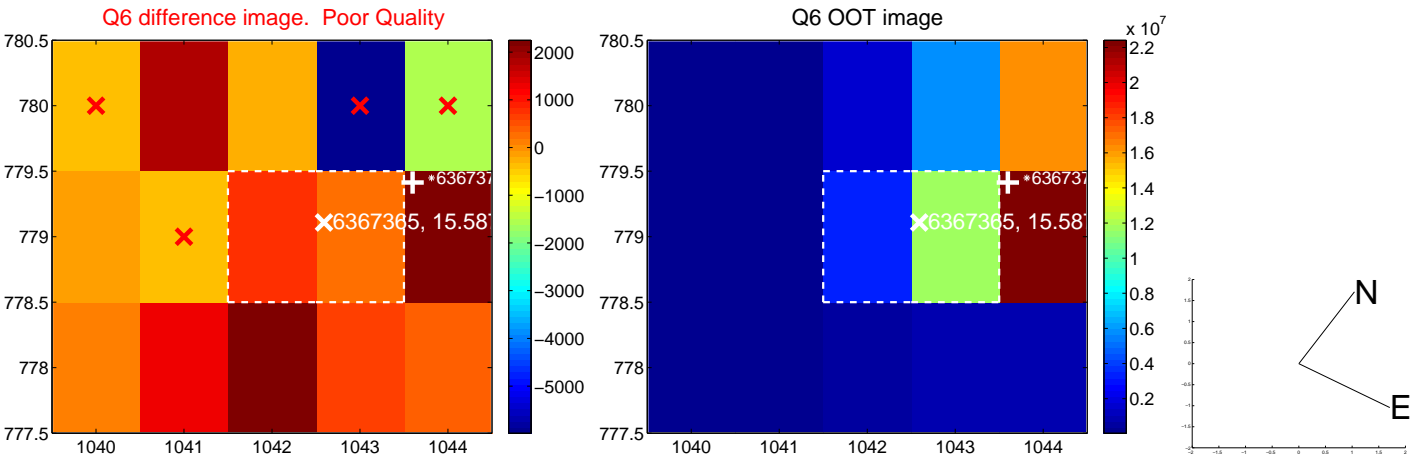
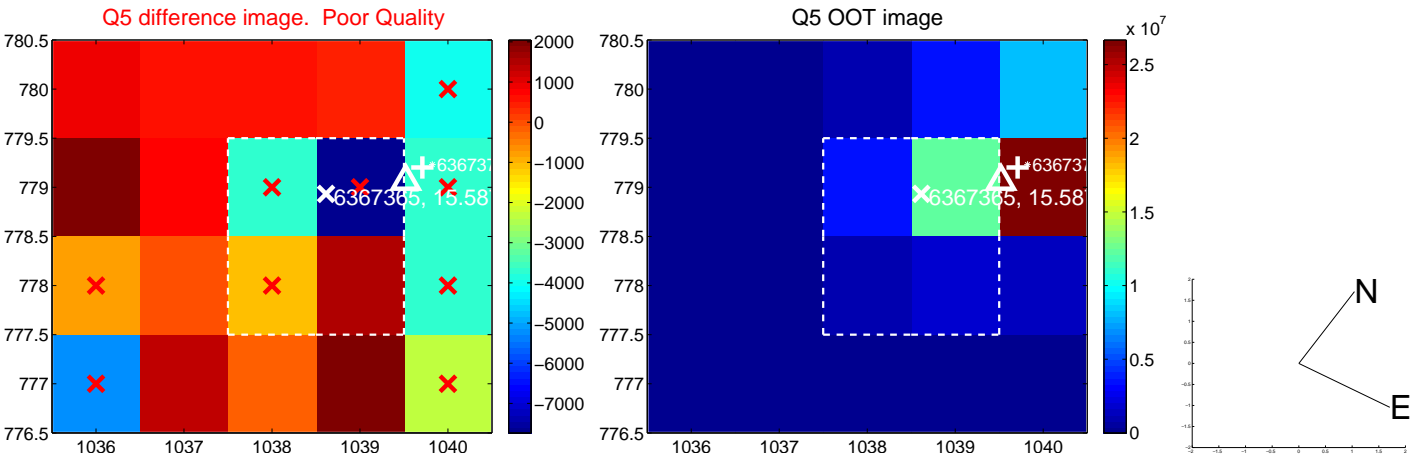


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

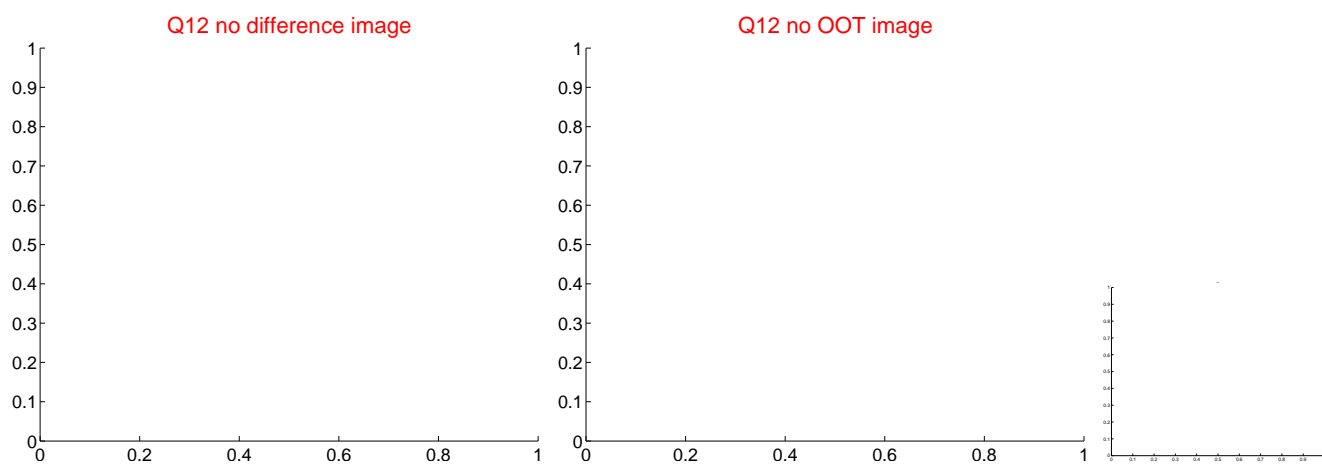
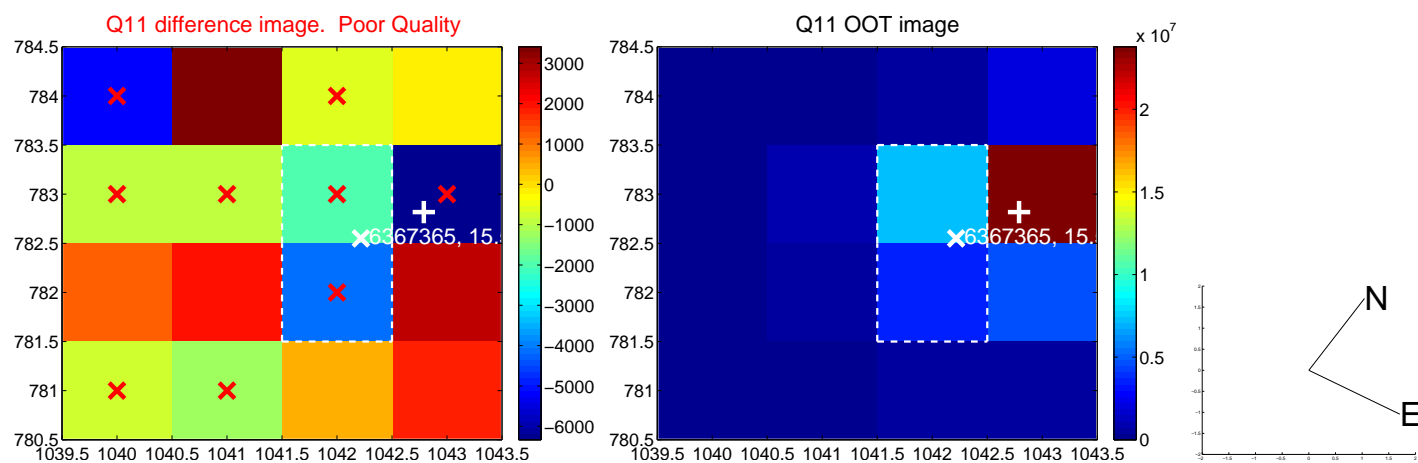
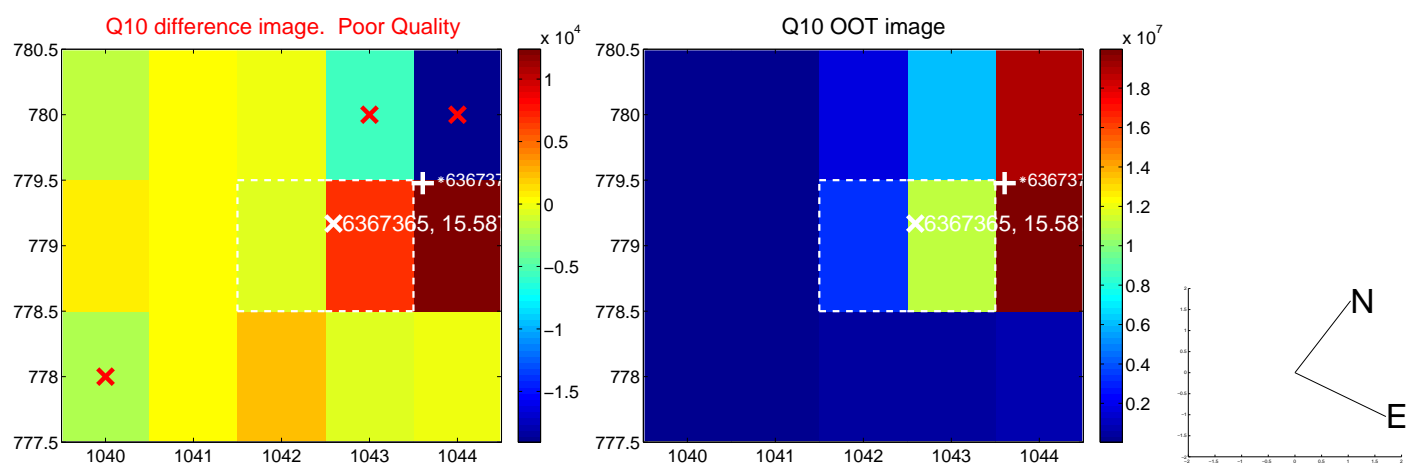
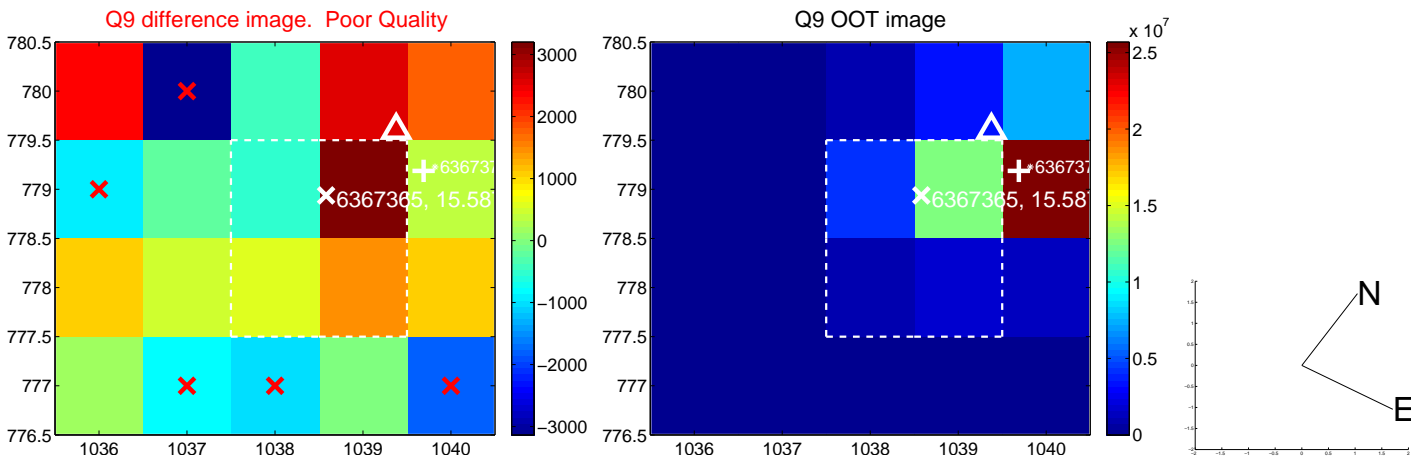
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

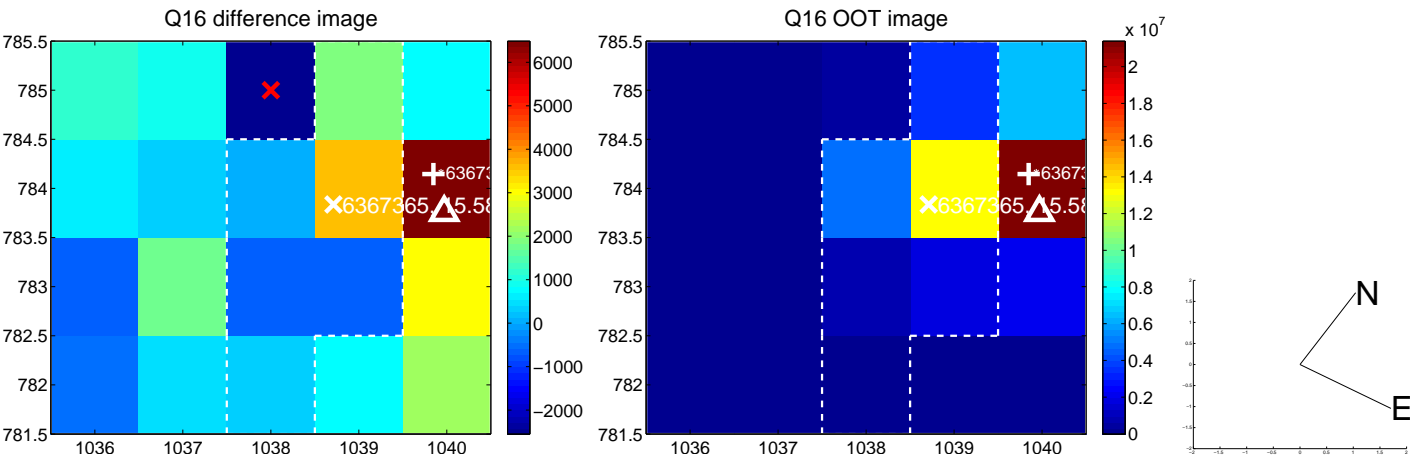
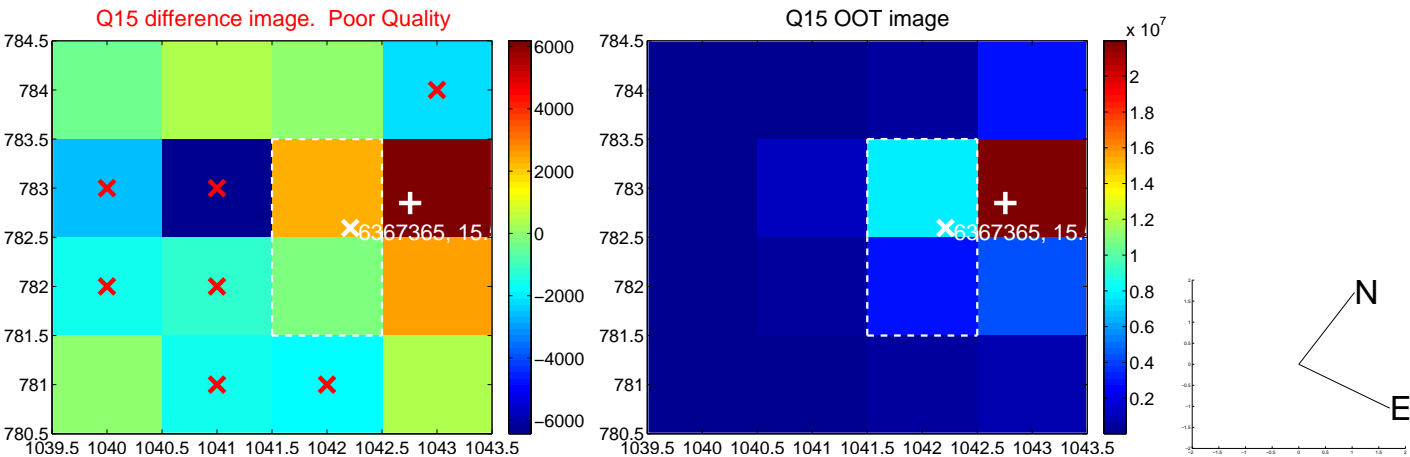
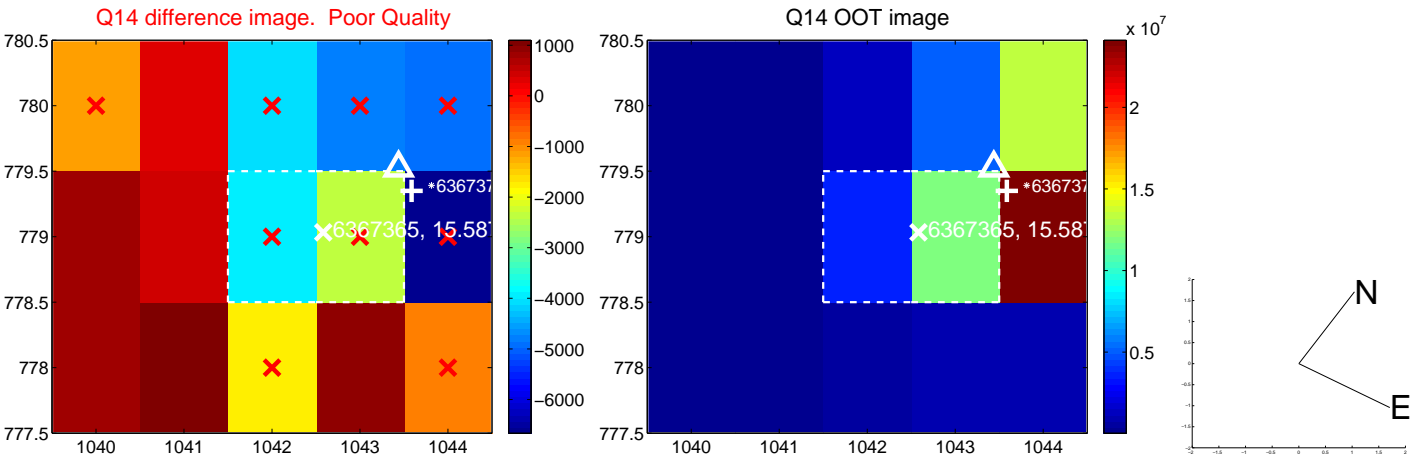
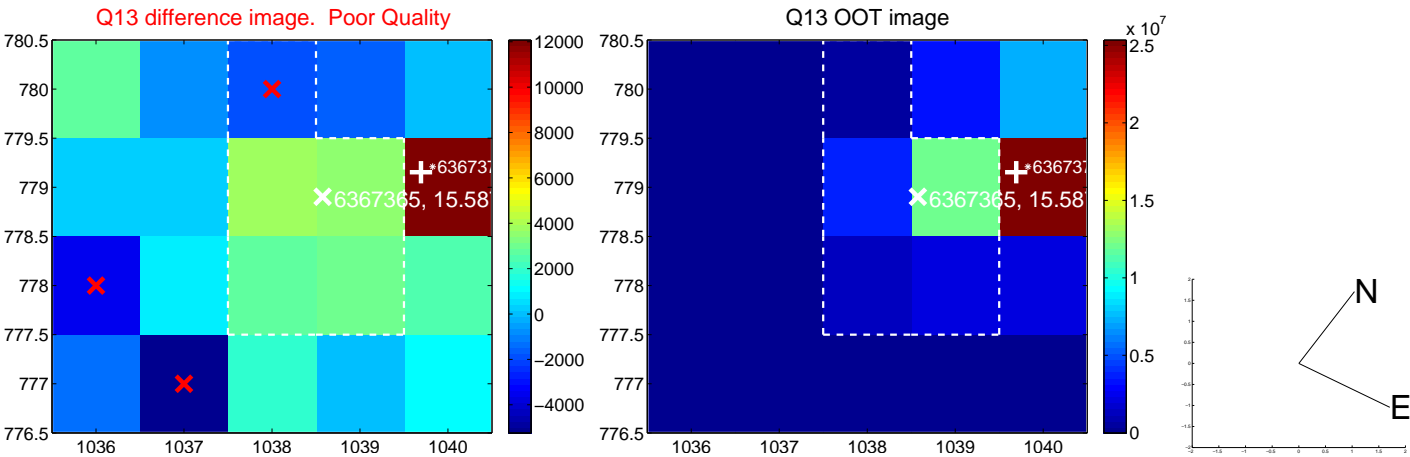


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

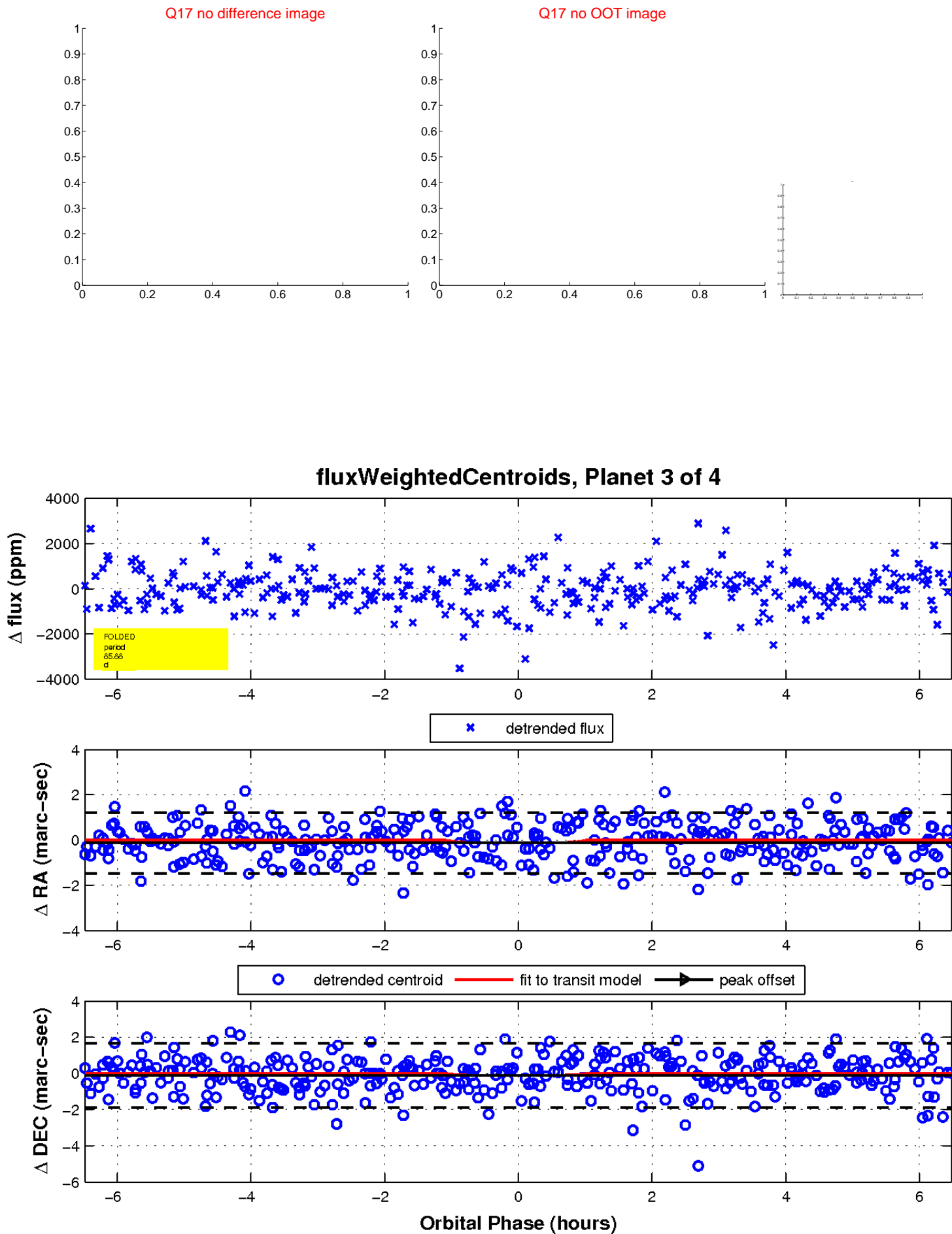




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

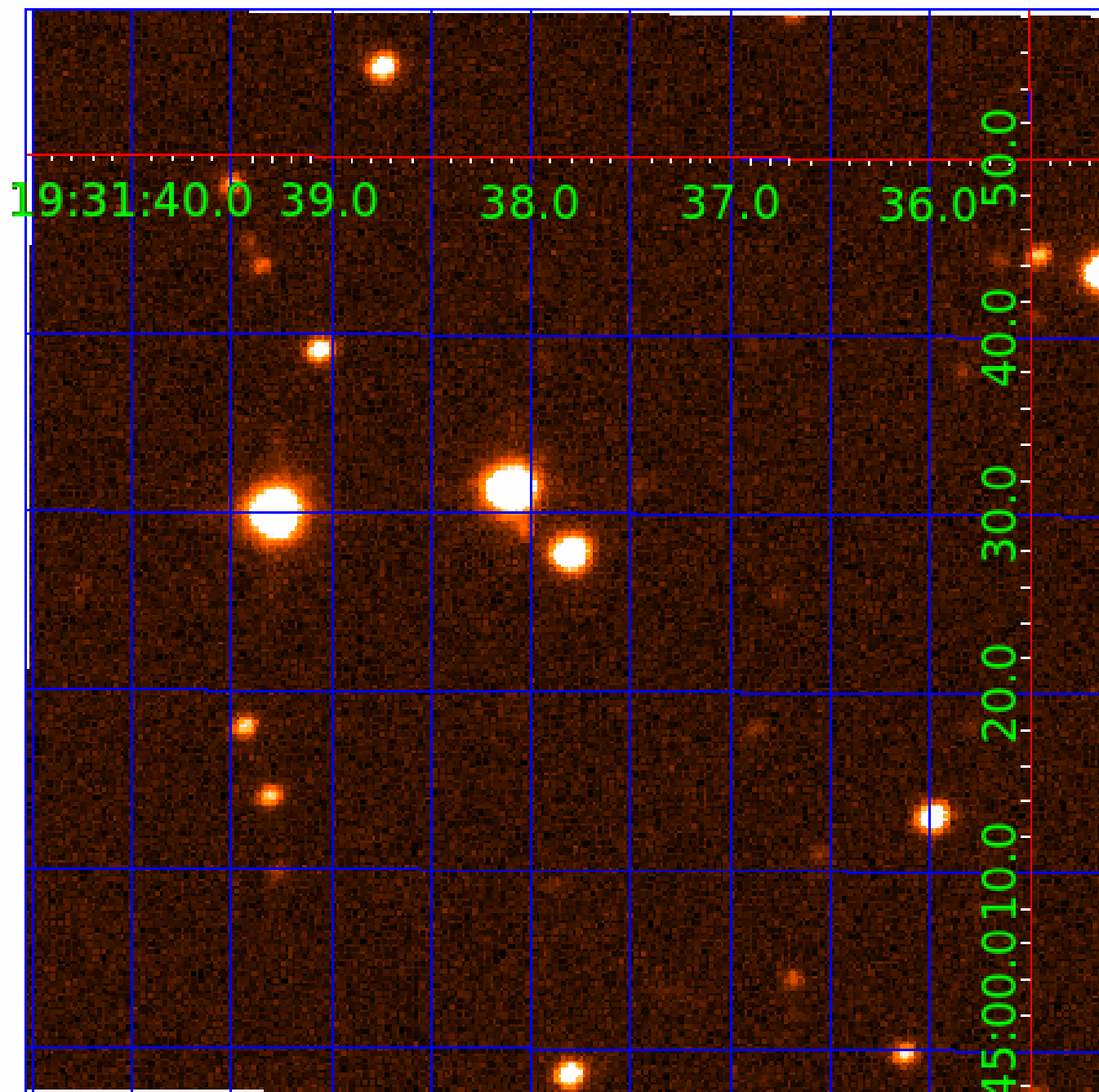


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006367365

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006367365-01	OBS	No	1.095506	131.759369	109.3	6.957	9.6	11.5	0.66	5052	0.68	725.68
006367365-02	OBS	No	57.475775	187.724171	1162.4	6.871	21.3	8.7	0.66	5052	2.31	3.69
006367365-03	OBS	No	85.883560	154.008168	1647.1	2.161	8.5	9.2	0.66	5052	2.85	2.16
006367365-04	OBS	No	41.003832	150.164414	2169.2	1.036	8.7	9.4	0.66	5052	3.22	5.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006367365-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
006367365-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006367365-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006367365-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

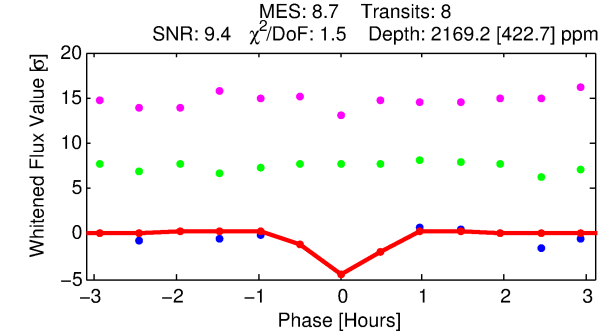
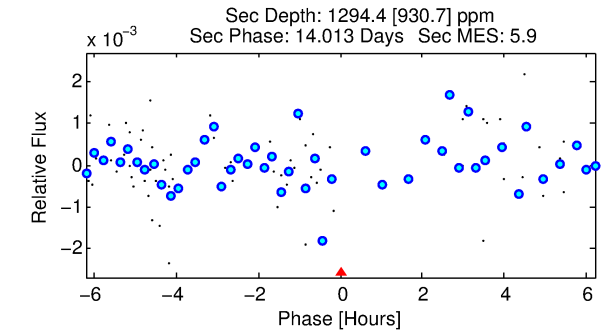
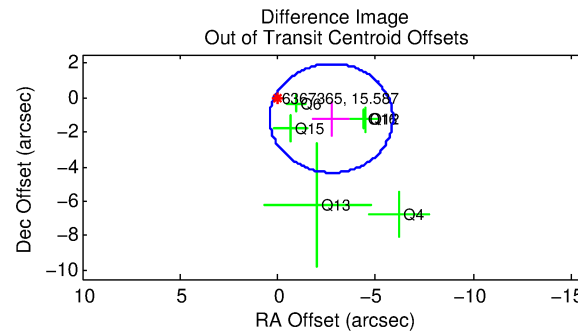
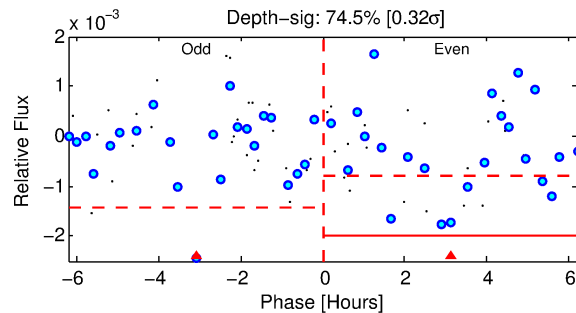
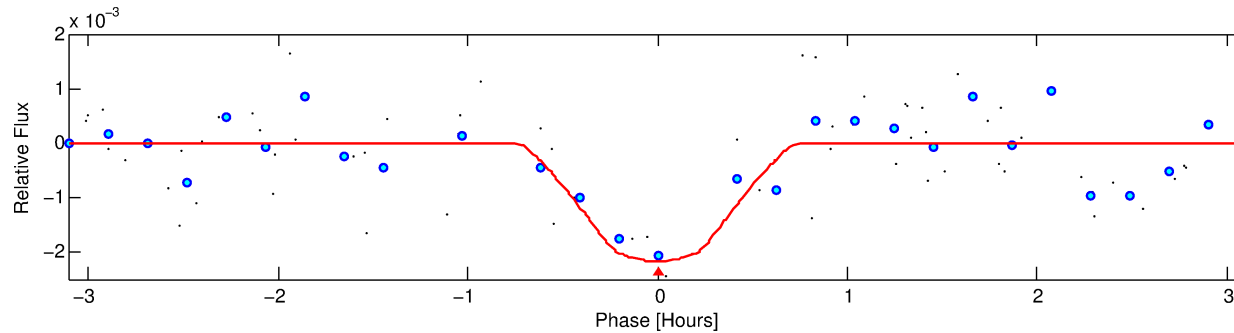
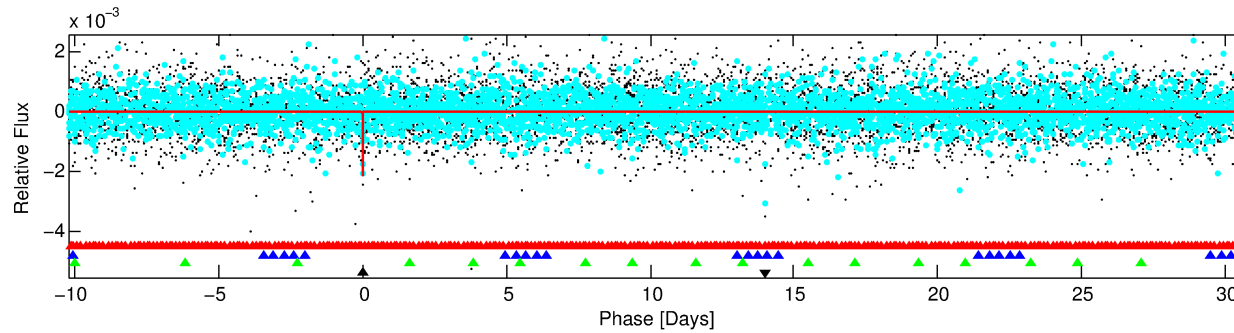
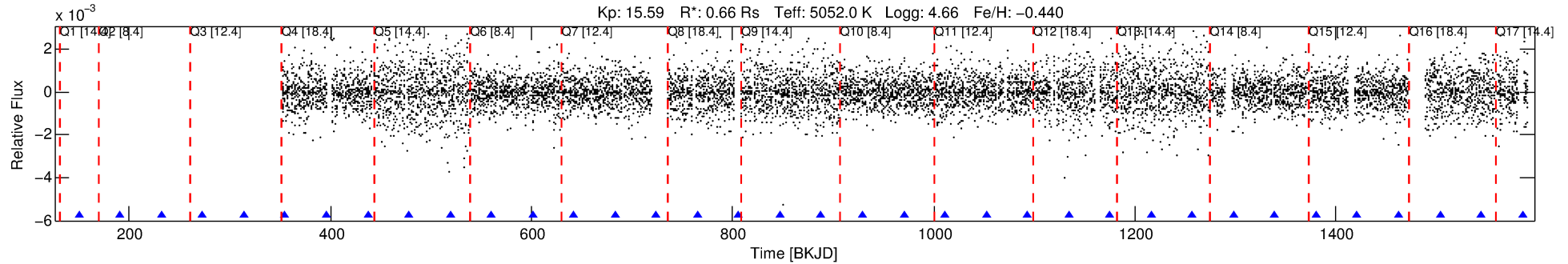
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006367365-04

No Significant Match Found

# DV One-Page Summary

KIC: 6367365 Candidate: 4 of 4 Period: 41.004 d



## DV Fit Results:

Period = 41.00383 [0.00027] d  
Epoch = 150.1644 [0.0061] BKJD  
Rp/R\* = 0.0449 [0.3193]  
a/R\* = 254.90 [6542.98]  
b = 0.62 [26.43]  
Seff = 5.80 [1.20]  
Teq = 396 [21] K  
Rp = 3.22 [22.93] Re  
a = 0.2088 [0.0229] AU  
Ag = 2989.56 [42598.54] [0.07σ]  
Teffp = 4523 [16113] K [0.2σ]

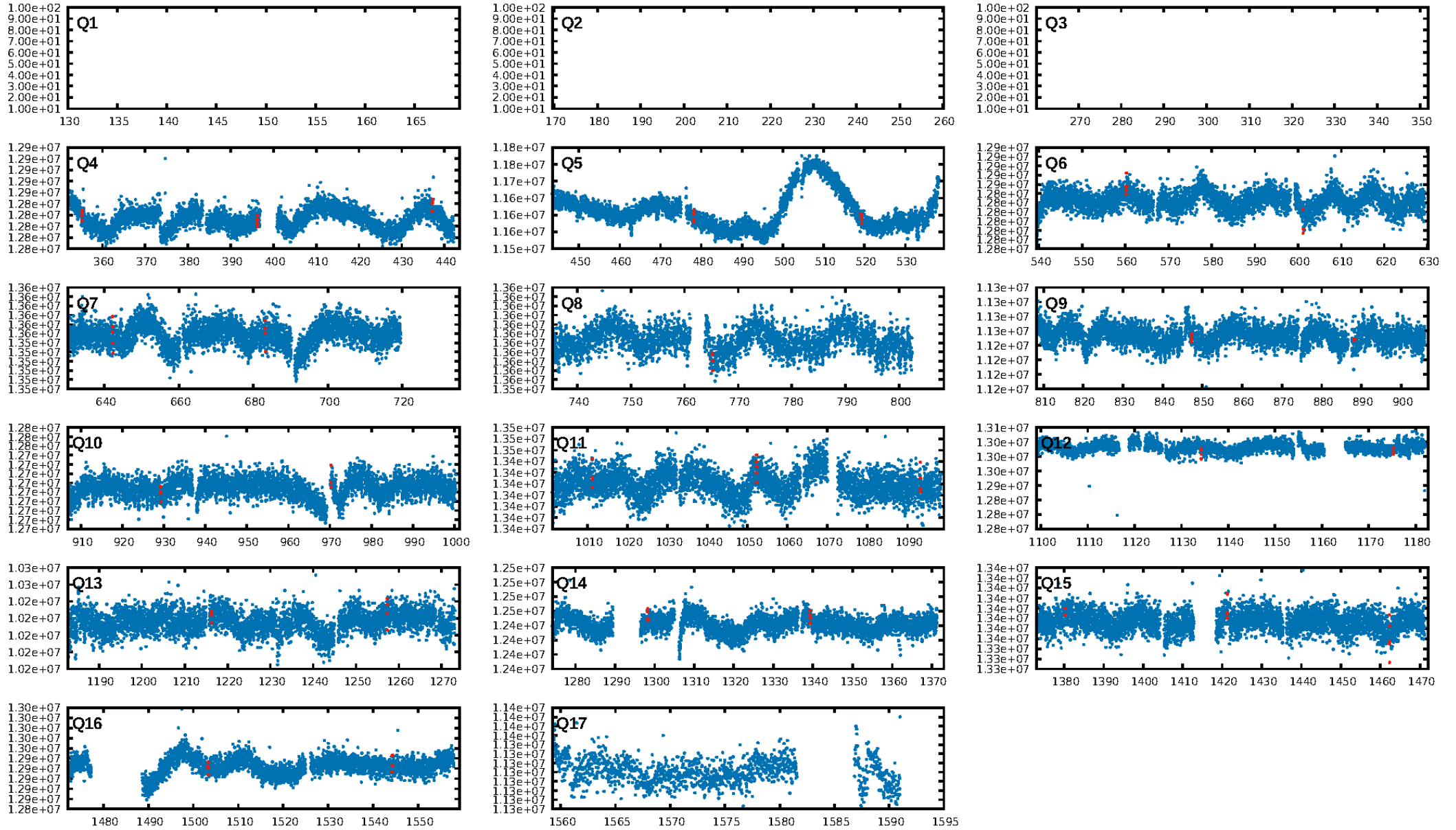
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [136.17σ]  
LongPeriod-sig: 100.0% [56.89σ]  
ModelChiSquare2-sig: 33.5%  
ModelChiSquareGof-sig: 90.0%  
Bootstrap-pfa: 1.50e-09  
RollingBand-fgt: 1.00 [8/8]  
GhostDiagnostic-chr: 22.59  
Centroid-sig: 1.8%  
Centroid-so: 3.443 arcsec [18.10σ]  
OotOffset-rm: 2.984 arcsec [2.84σ]  
KicOffset-rm: 1.864 arcsec [2.47σ]  
OotOffset-st: 1/1/3/1 [6]  
KicOffset-st: 1/1/3/1 [6]  
DiffImageQuality-fgm: 0.33 [2/6]  
DiffImageOverlap-fno: 0.58 [7/12]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:25:36 Z

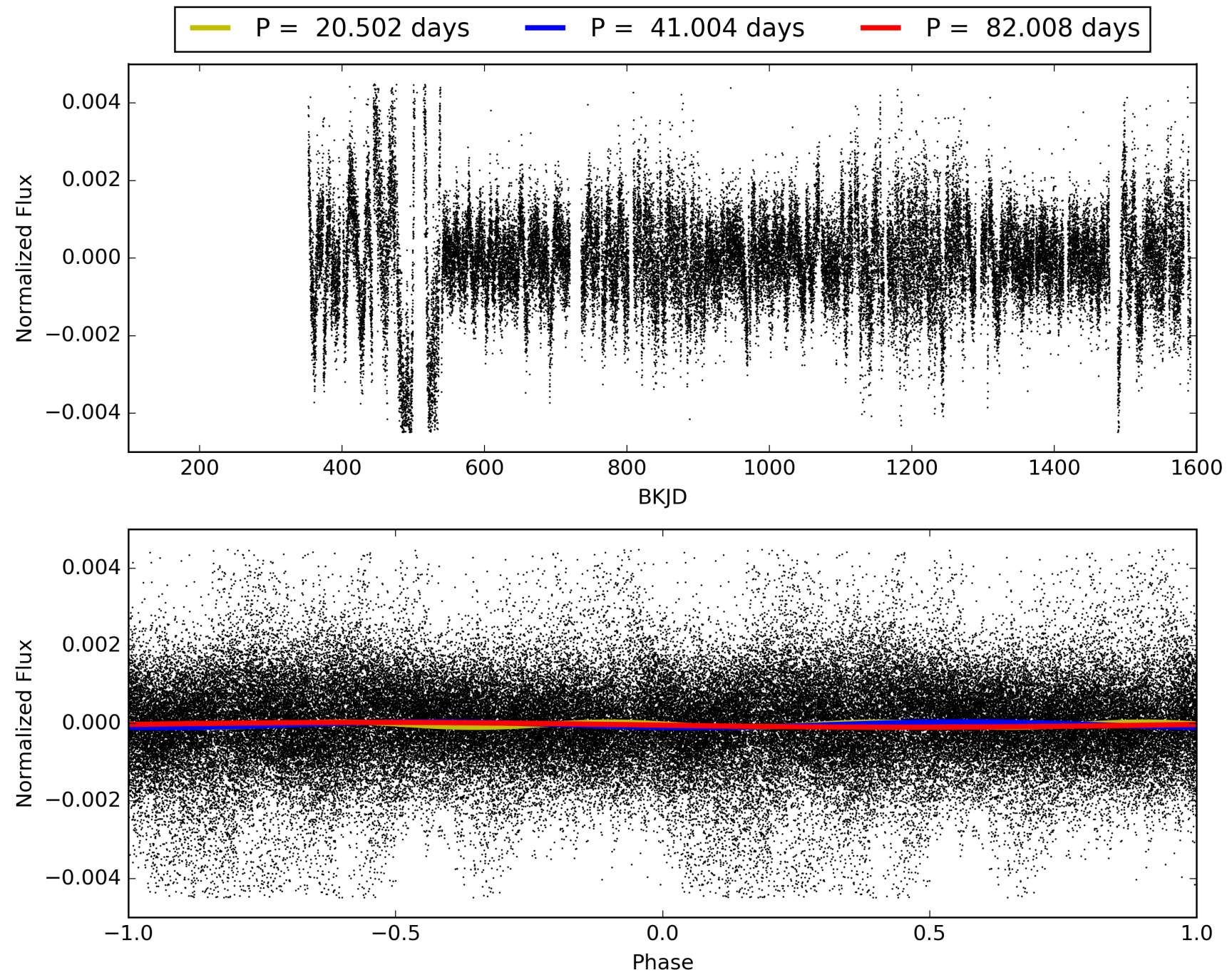
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006367365-04, PDC Light Curves





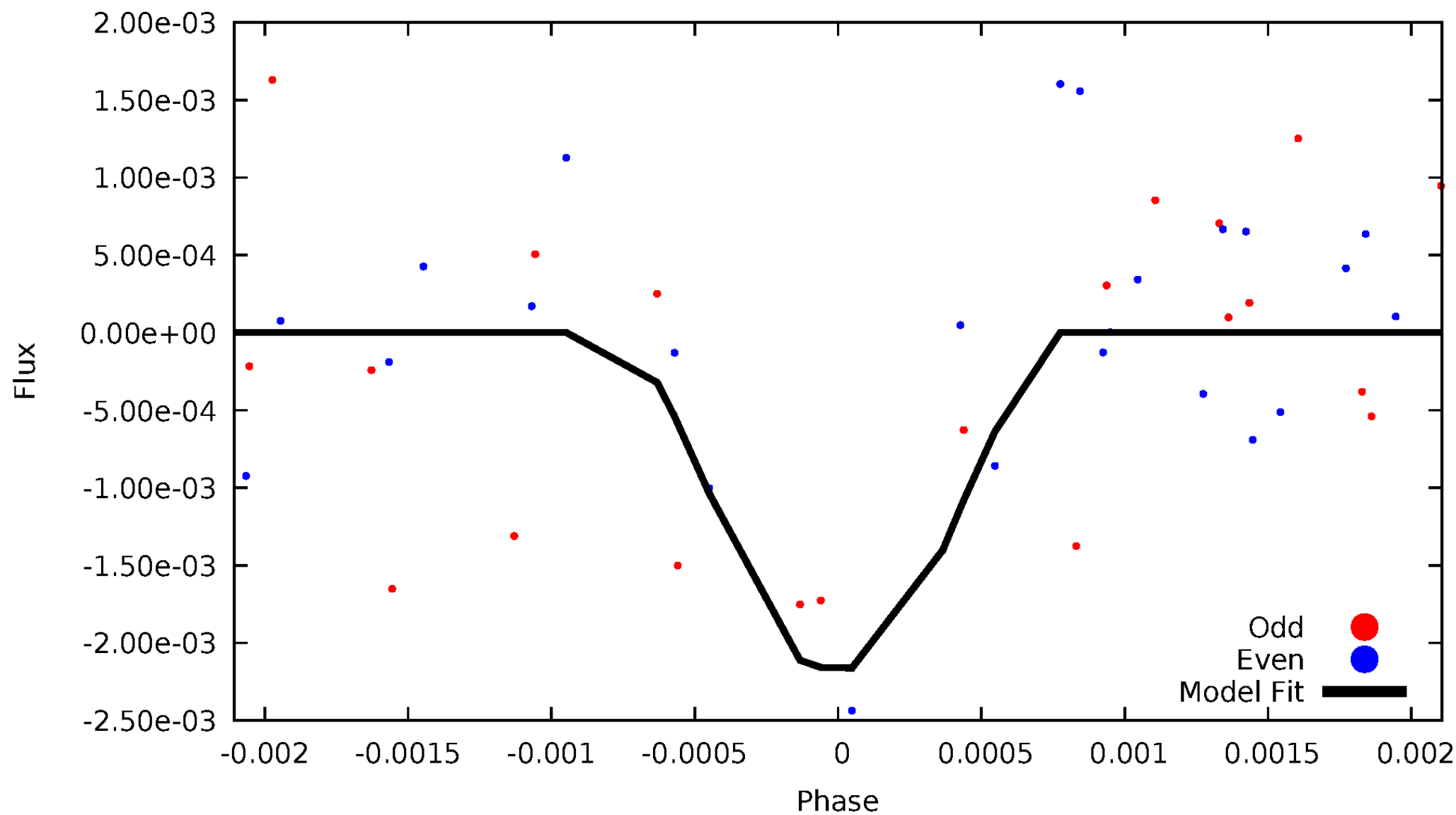
TCE 006367365-04





# DV Odd/Even

TCE 006367365-04



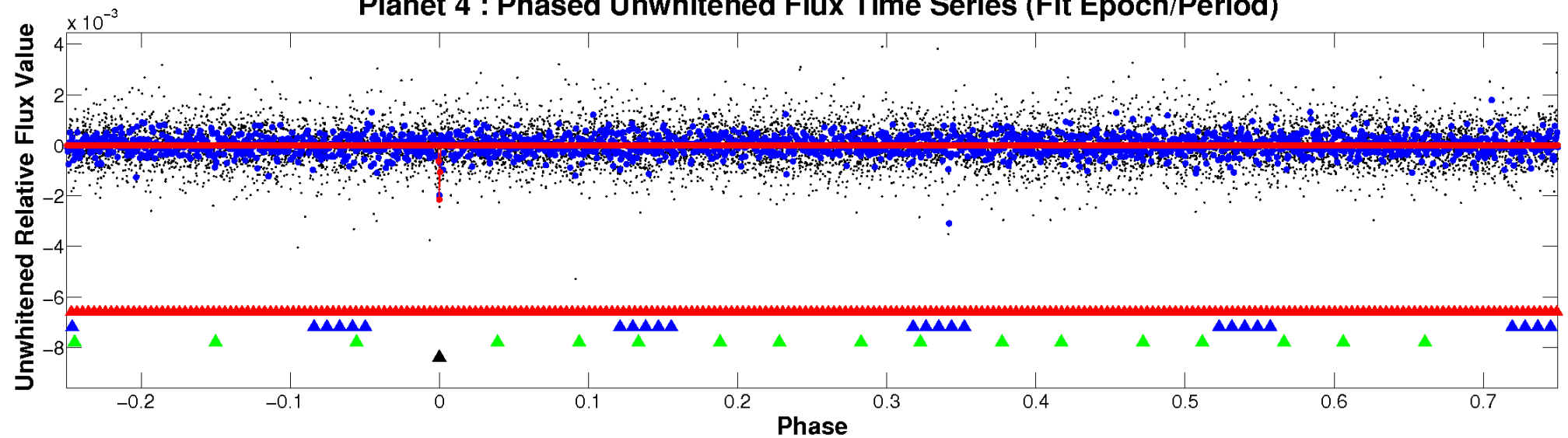


ALT Odd/Even

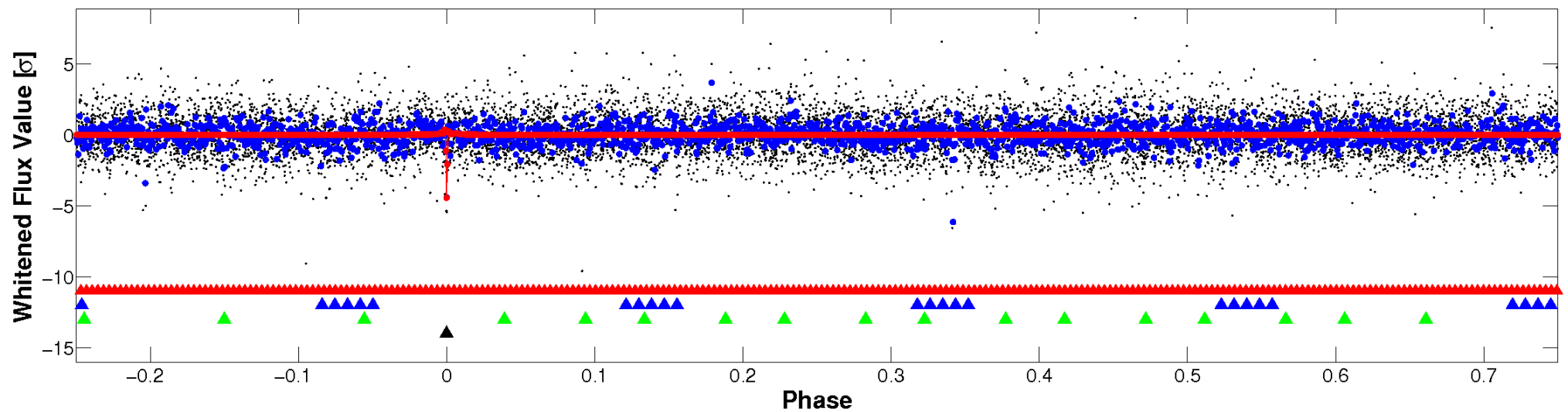
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

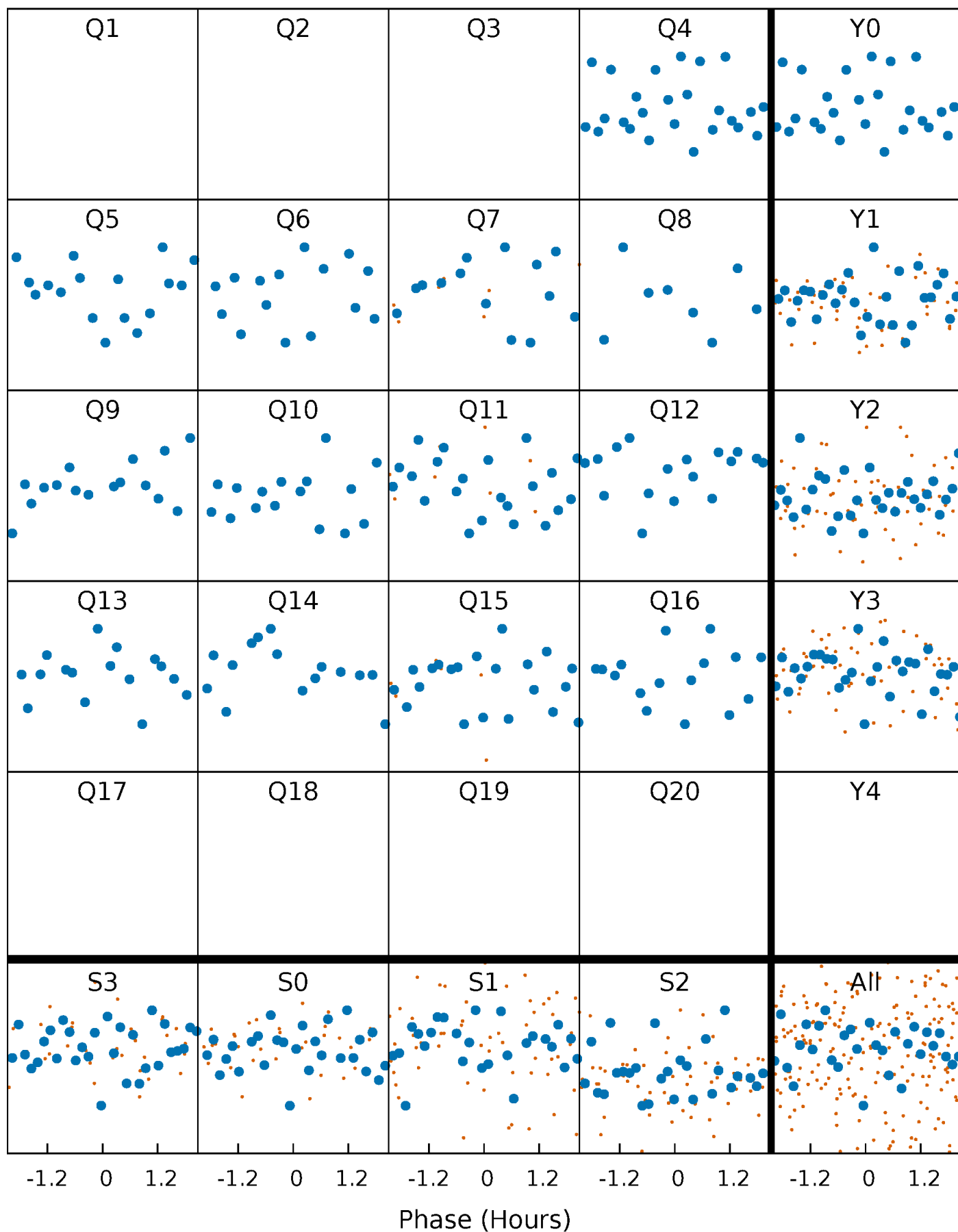


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



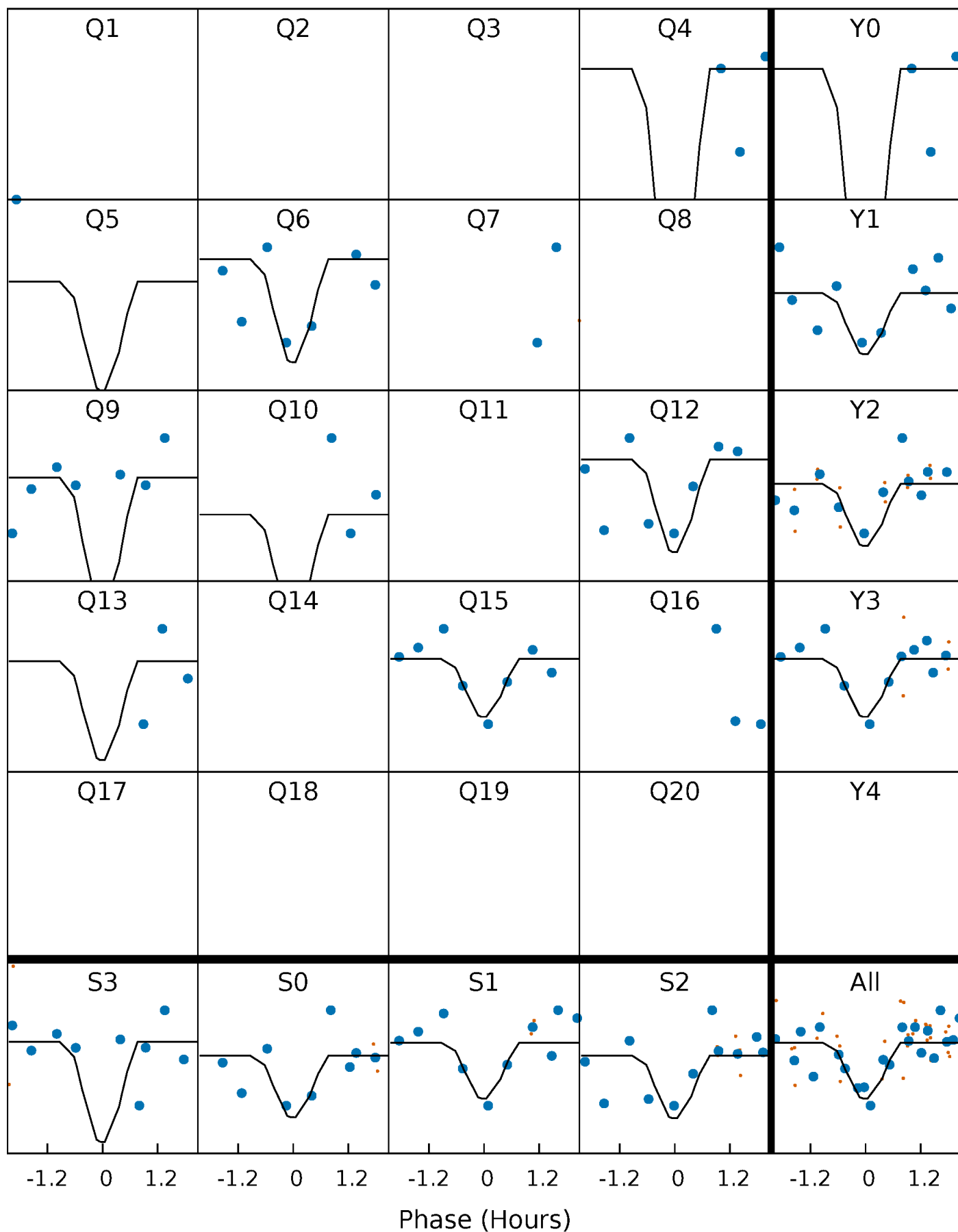
# PDC Quarter-Phased Transit Curves

TCE 006367365-04   P= 41.003832 Days    $T_0=150.164414$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 006367365-04 P= 41.003832 Days  $T_0=150.164414$  (BKJD)



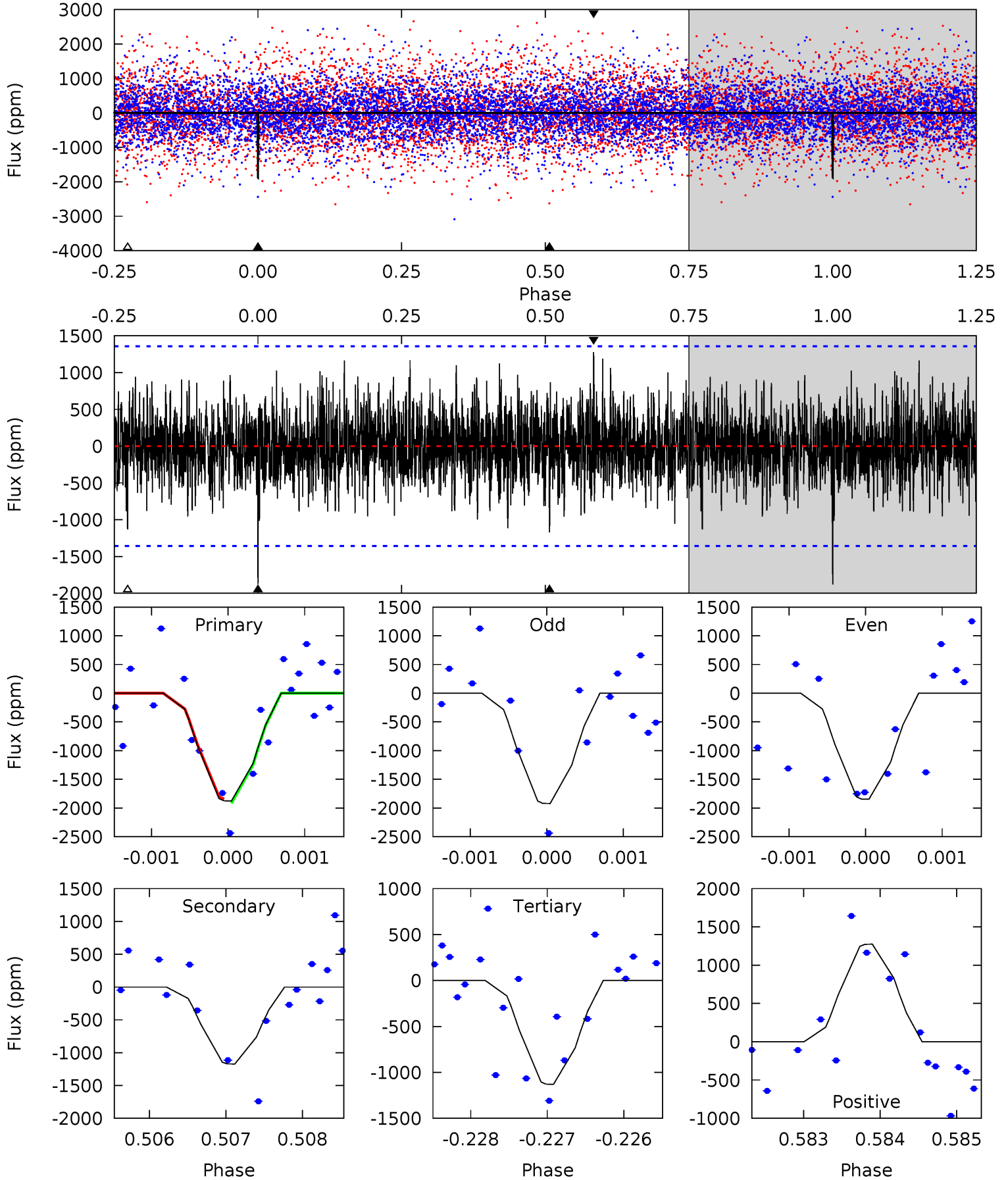
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

006367365-04, P = 41.003832 Days, E = 150.164414 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
7.51	4.69	4.52	5.10	5.43	3.26	1.35	2.99	2.41	0.17	-0.41	0.15	0.83	0.40	0.14



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 006367365

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5052^{+181}_{-181}$	$4.660^{+0.028}_{-0.077}$	$-0.440^{+0.300}_{-0.300}$	$0.658^{+0.091}_{-0.045}$	$0.726^{+0.071}_{-0.071}$	$3.596^{+0.500}_{-0.940}$
	+4%/-4%	+1%/-2%	+68%/-68%	+14%/-7%	+10%/-10%	+14%/-26%
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 006367365-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1173 \pm 250$	$15.78^{+18.88}_{-11.25}$	$560^{+23}_{-22}$	$2742^{+1266}_{-499}$	$109^{+1204}_{-88}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{max}$  = 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

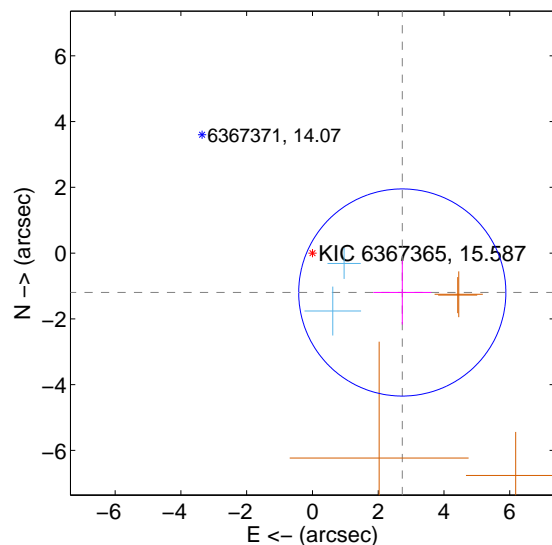
Supplemental centroid analysis for 006367365-04. Kepler magnitude: 15.59. Transit SNR 9.40

There are 2 quarters with good PRF difference image offsets

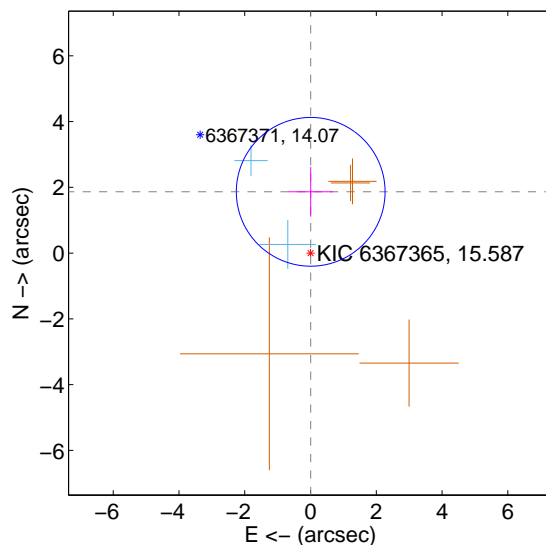
The OOT PRF centroid is offset from the target star catalog position by about 4.68 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.984 \pm 1.050$	2.84	$-2.733 \pm 0.881$	$-1.198 \pm 0.973$
PRF-fit source offset from KIC position	$1.864 \pm 0.754$	2.47	$-0.006 \pm 0.675$	$1.864 \pm 0.755$
photometric centroid source offset	$3.44 \pm 0.19$	18.10	$2.43 \pm 0.18$	$2.44 \pm 0.20$

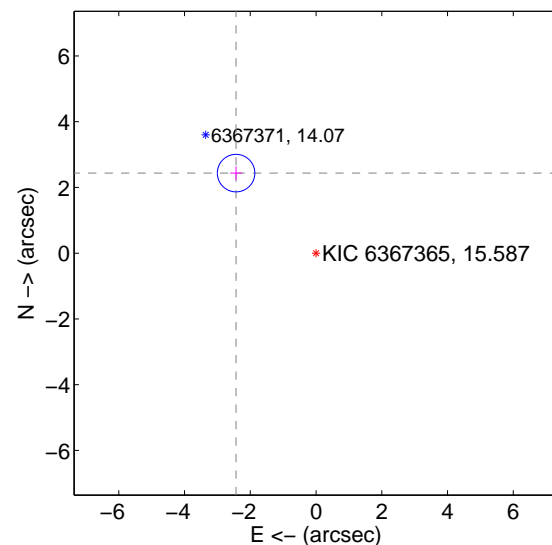
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

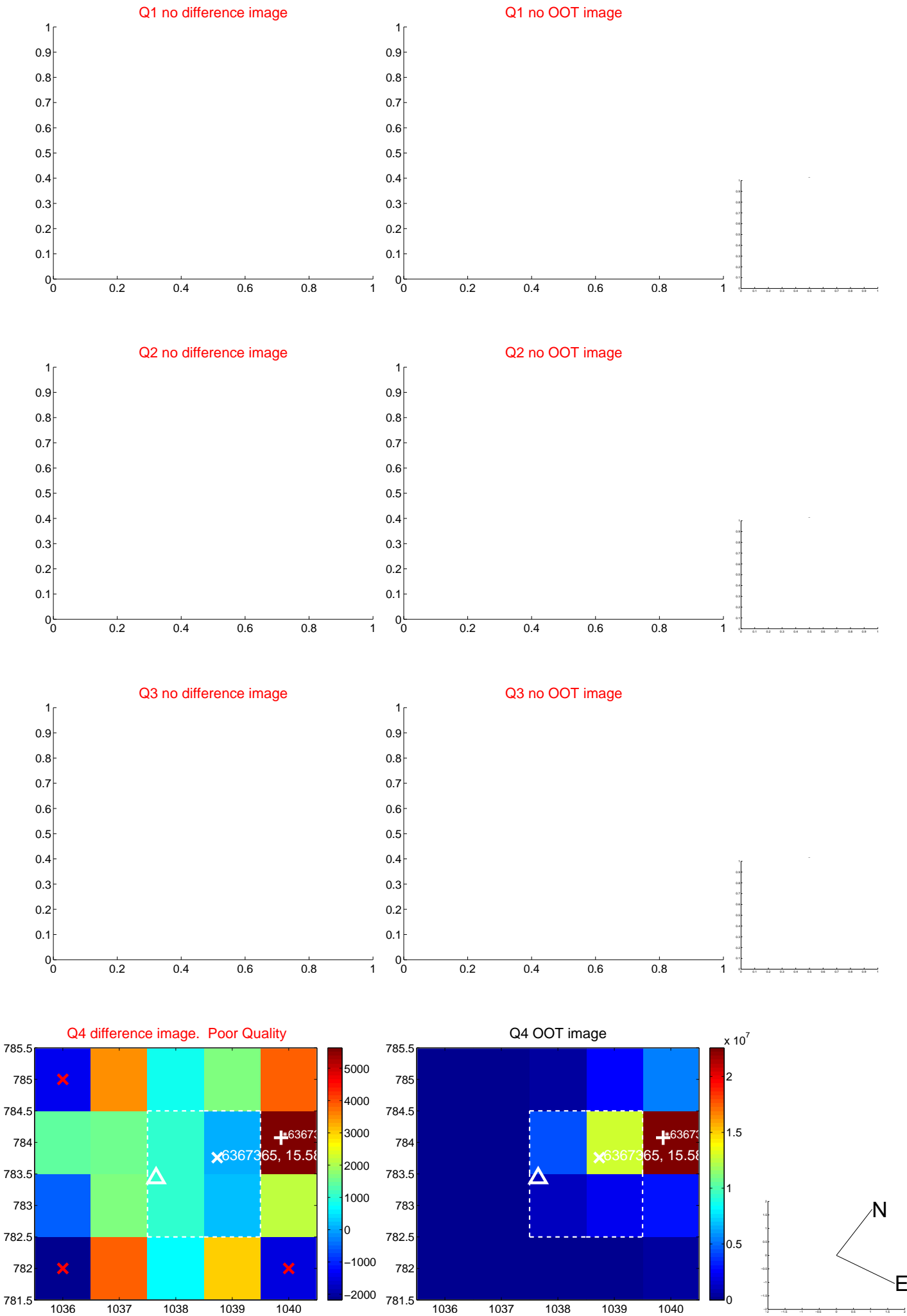


offset from photometric centroids

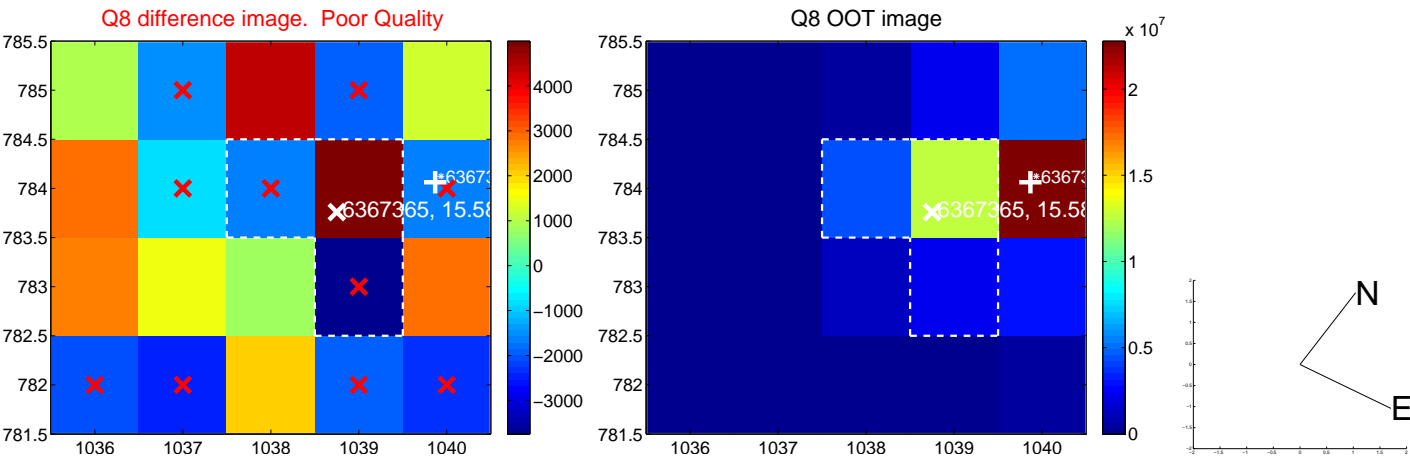
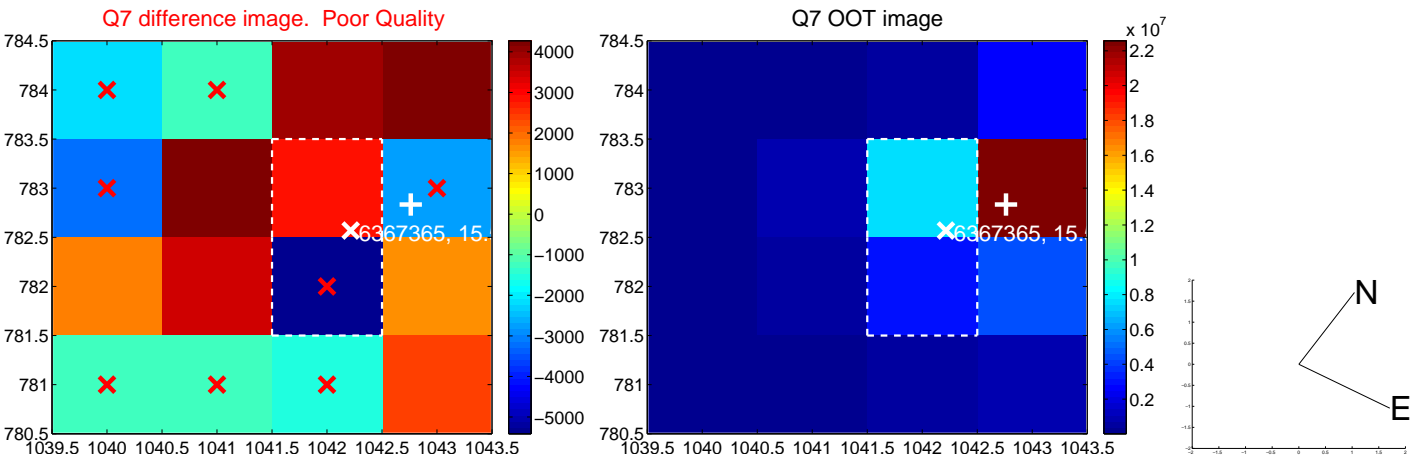
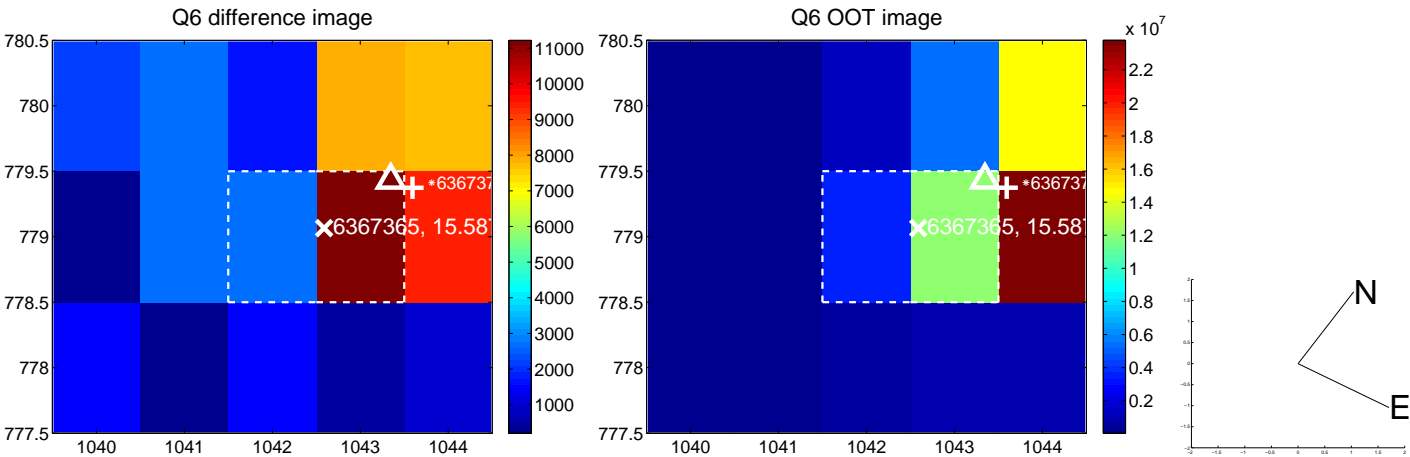
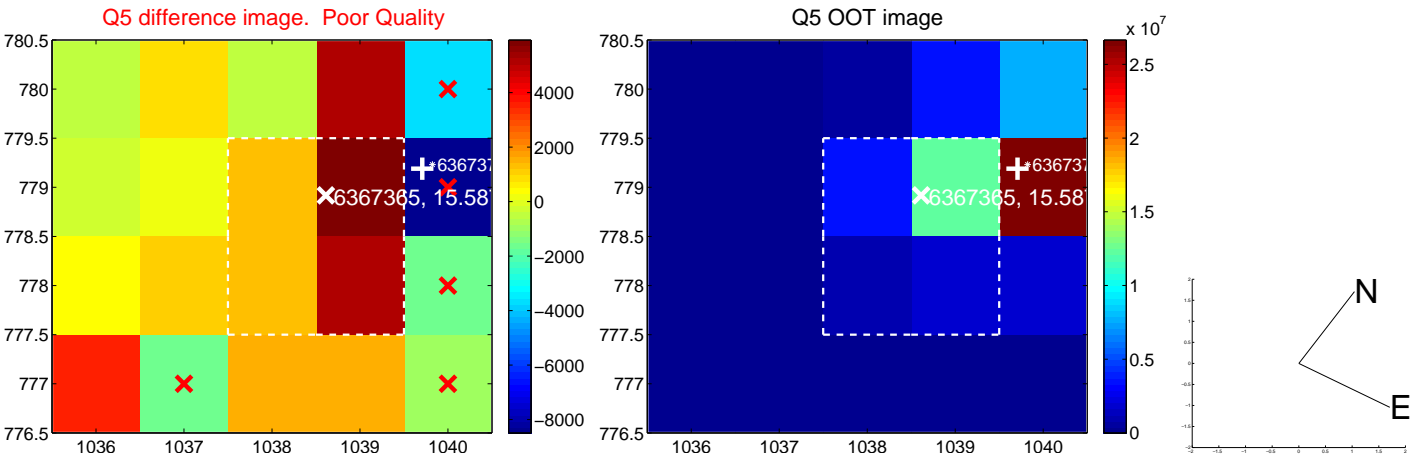


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

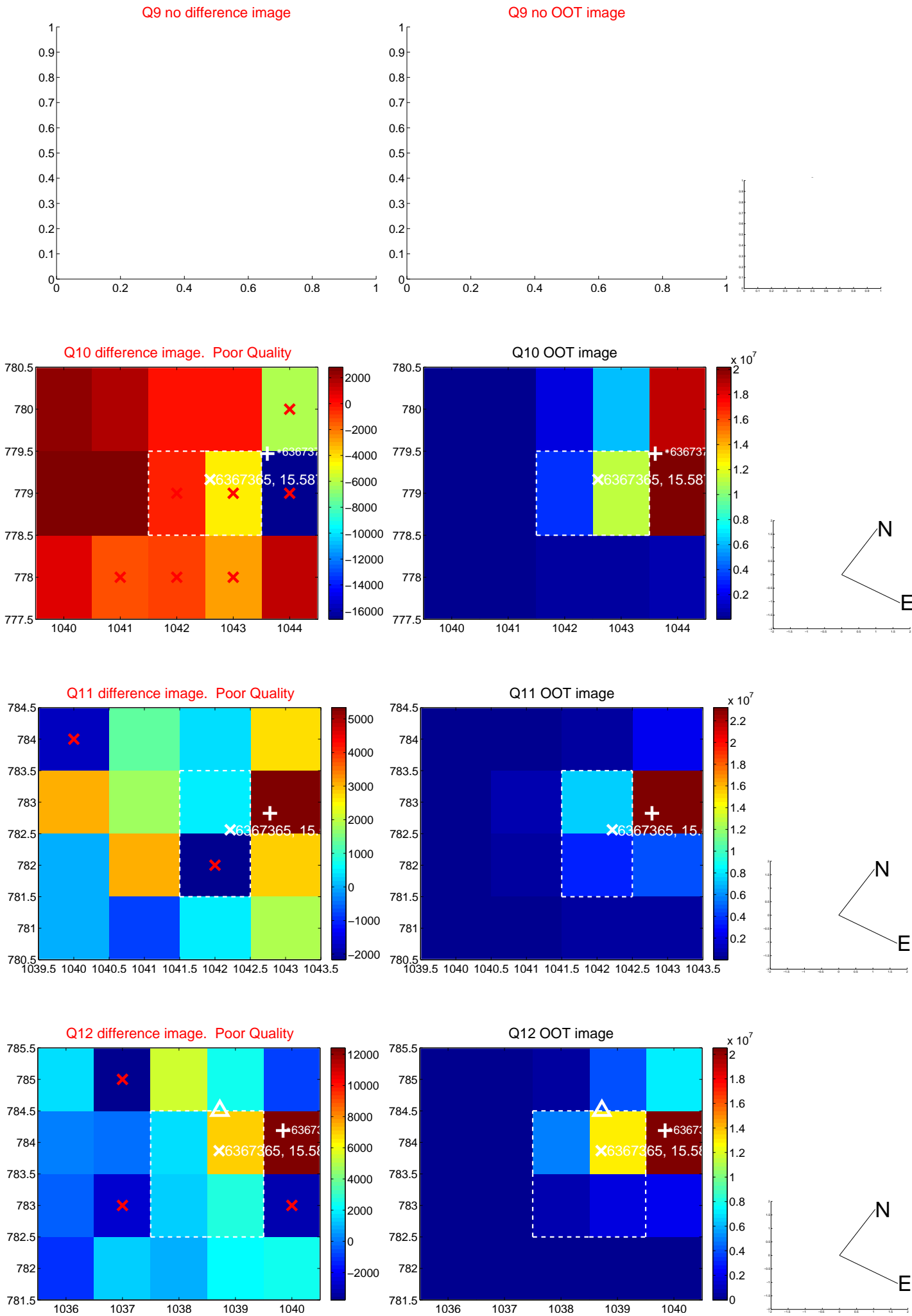
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

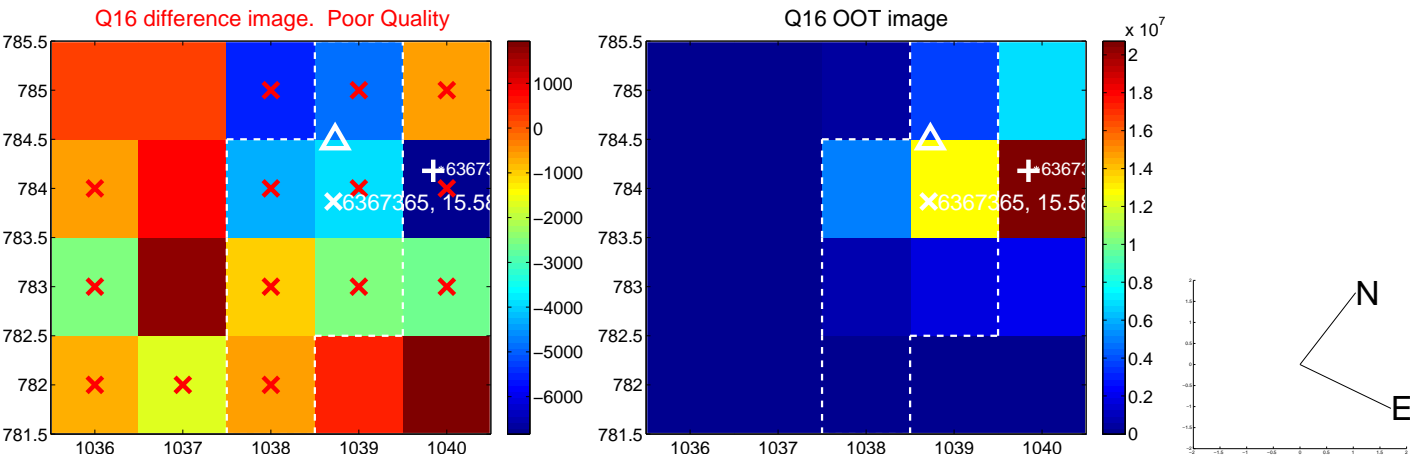
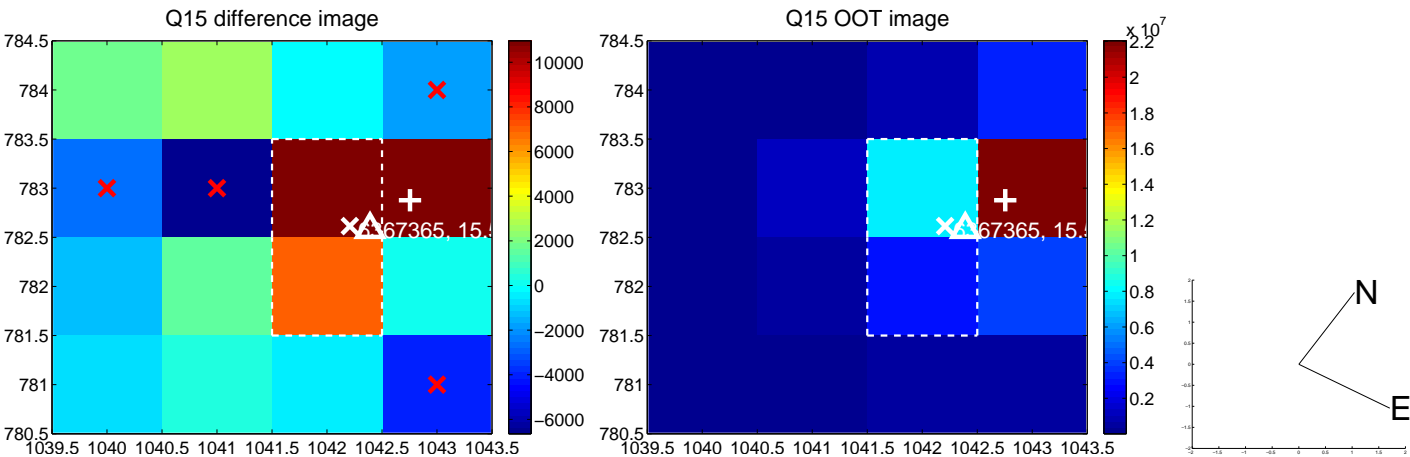
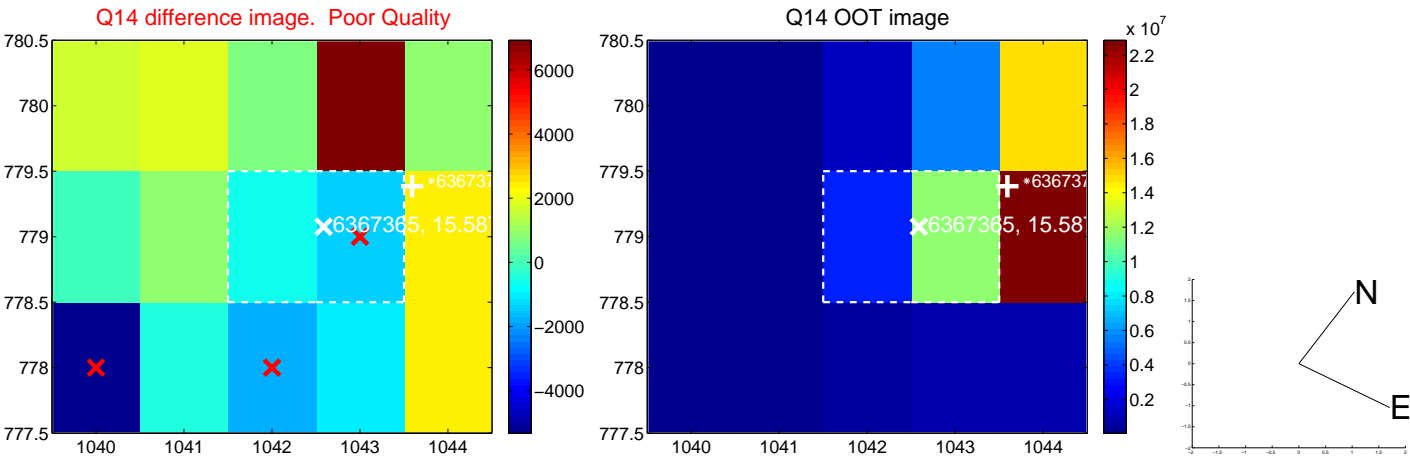
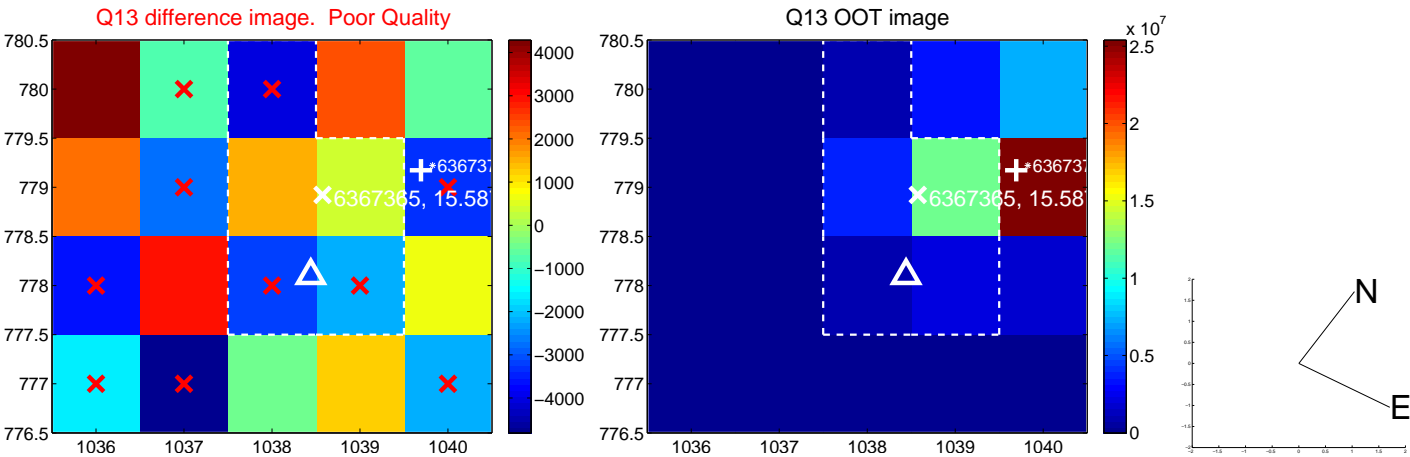


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

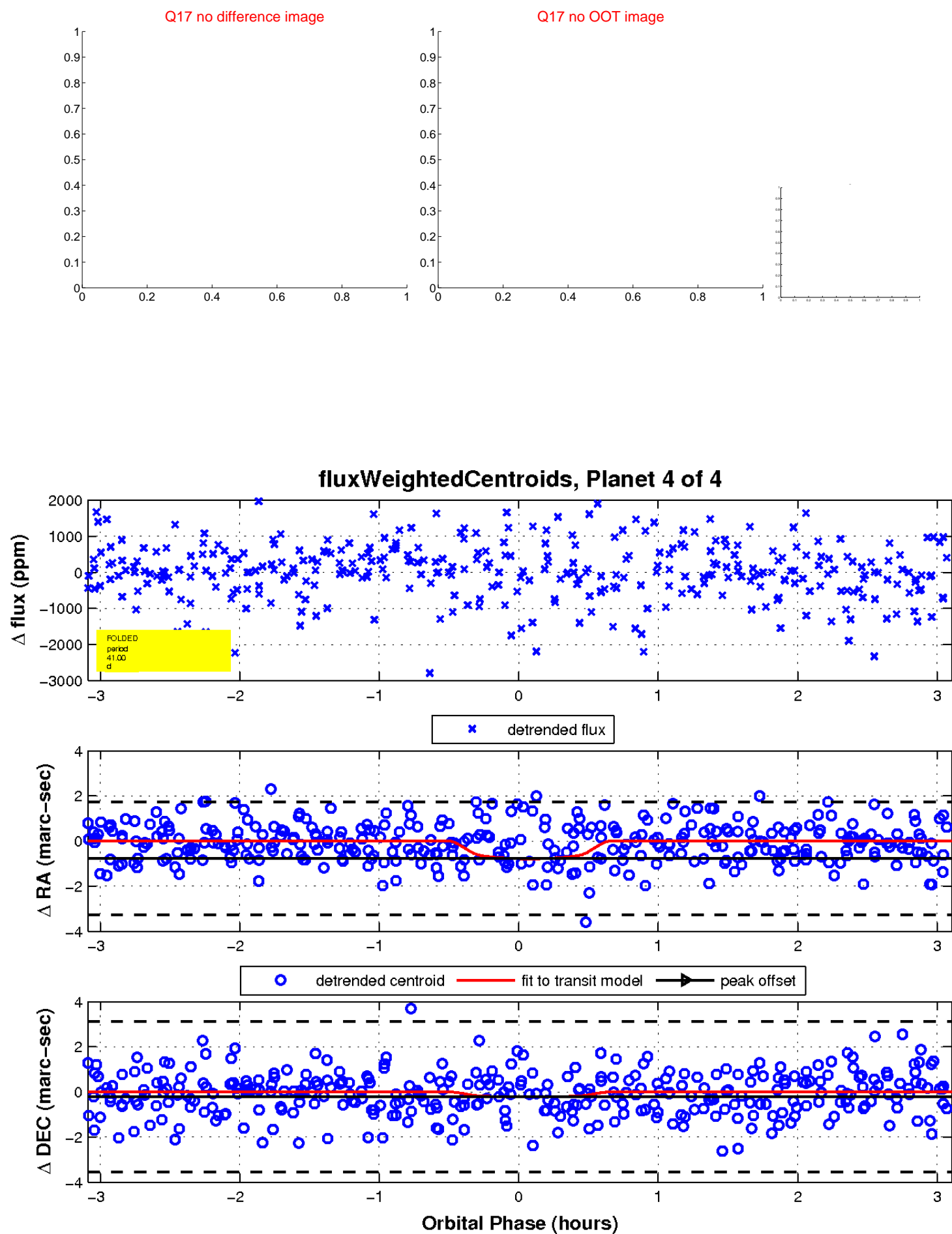




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

