

# KIC 010074067

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010074067-01	OBS	No	3.909875	132.574856	16.3	19.197	7.9	7.5	2.07	6007	1.02	1873.96
010074067-02	OBS	No	242.832123	234.093939	467.0	63.601	15.7	15.4	2.07	6007	5.81	7.62
010074067-03	OBS	No	3.909374	134.237587	17.8	41.805	11.0	10.4	2.07	6007	0.87	1874.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010074067-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
010074067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
010074067-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—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.

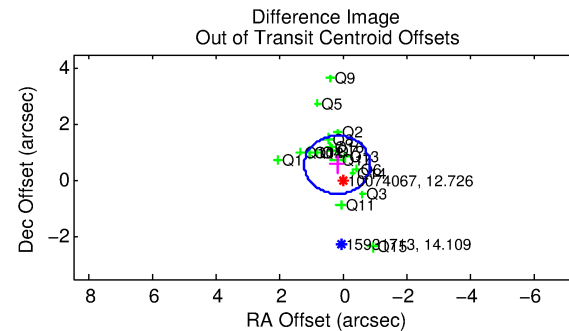
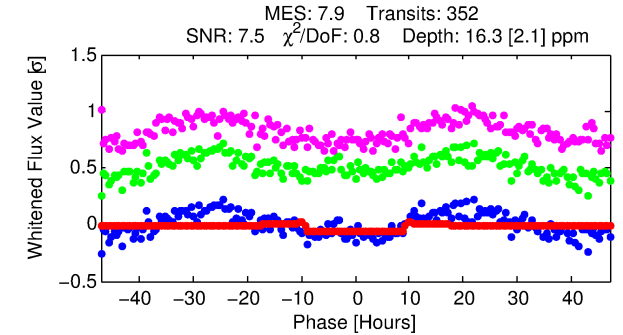
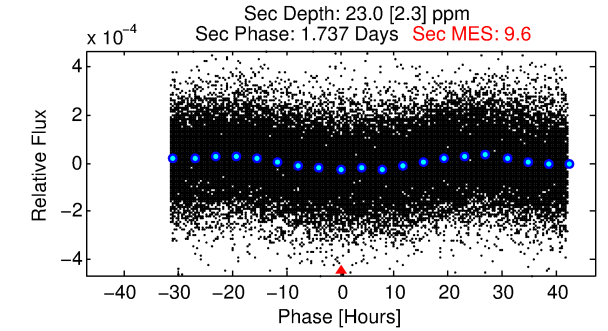
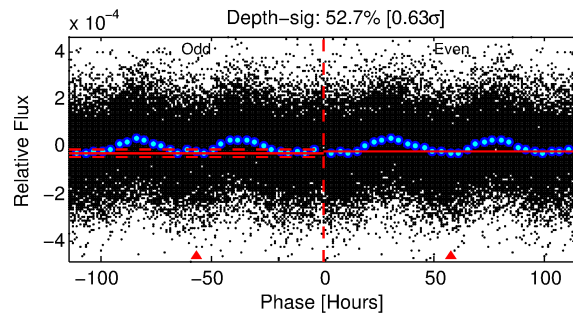
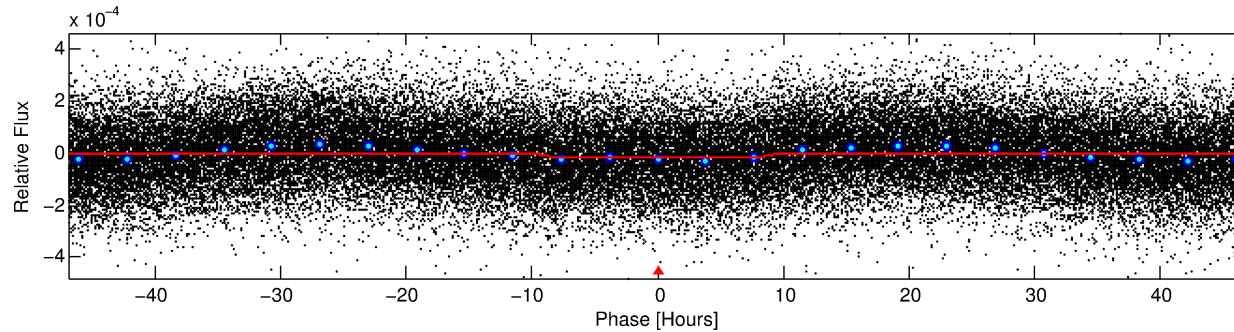
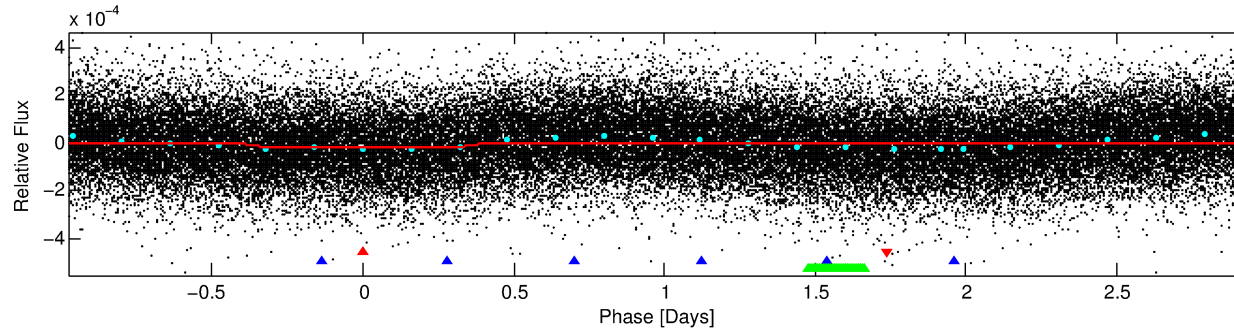
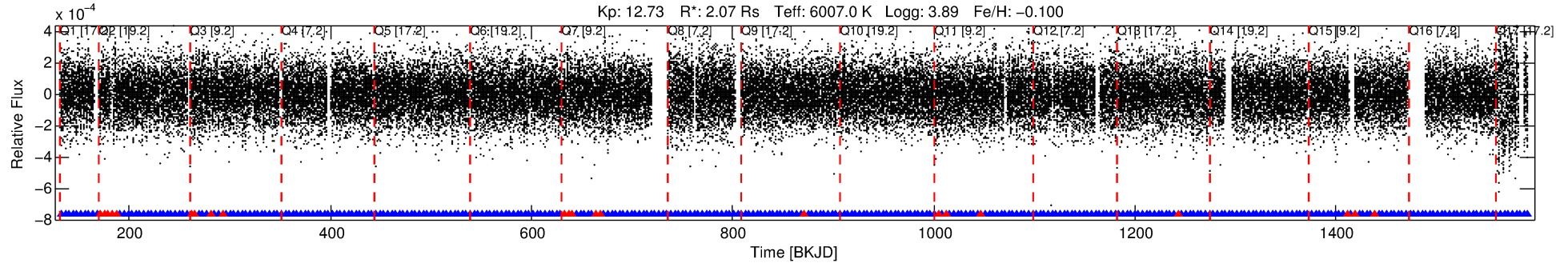
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 010074067-01

No Significant Match Found

# DV One-Page Summary

KIC: 10074067 Candidate: 1 of 3 Period: 3.910 d



## DV Fit Results:

Period = 3.90987 [0.00009] d  
Epoch = 132.5749 [0.0153] BKJD  
Rp/R\* = 0.0045 [0.0006]  
a/R\* = 1.12 [0.15]  
b = 0.93 [0.09]  
Seff = 1873.96 [981.86]  
Teq = 1678 [220] K  
Rp = 1.02 [0.37] Re  
a = 0.0517 [0.0166] AU  
Ag = 32.68 [18.86] [1.68 $\sigma$ ]  
Teffp = 6202 [492] K [8.39 $\sigma$ ]

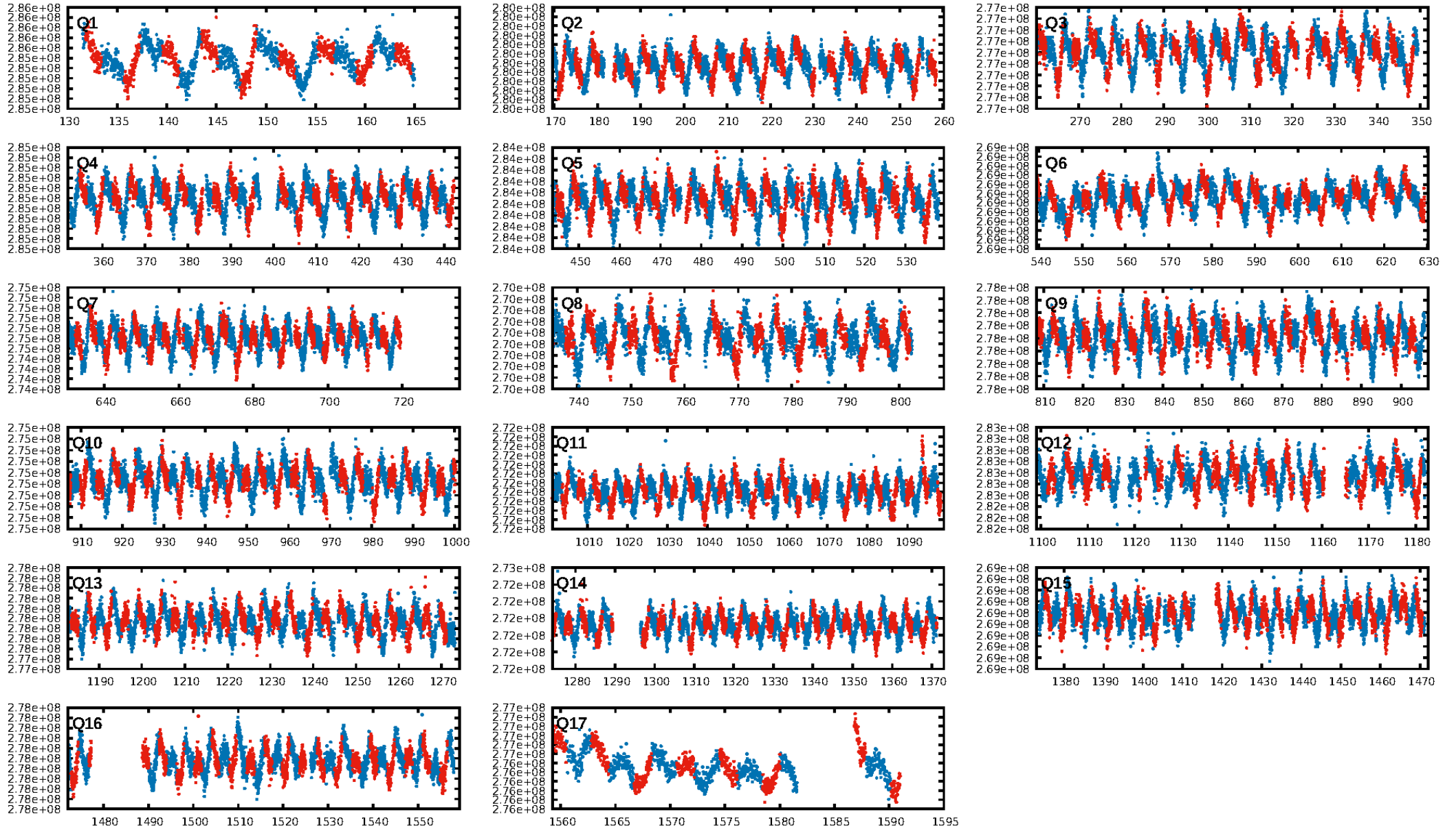
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: 100.0% [86.31 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.93 [313/335]  
GhostDiagnostic-chr: 3.498  
Centroid-sig: 0.0%  
Centroid-so: 2.438 arcsec [2.33 $\sigma$ ]  
OotOffset-rm: 0.601 arcsec [1.74 $\sigma$ ]  
KicOffset-rm: 0.247 arcsec [0.86 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:37:13 Z

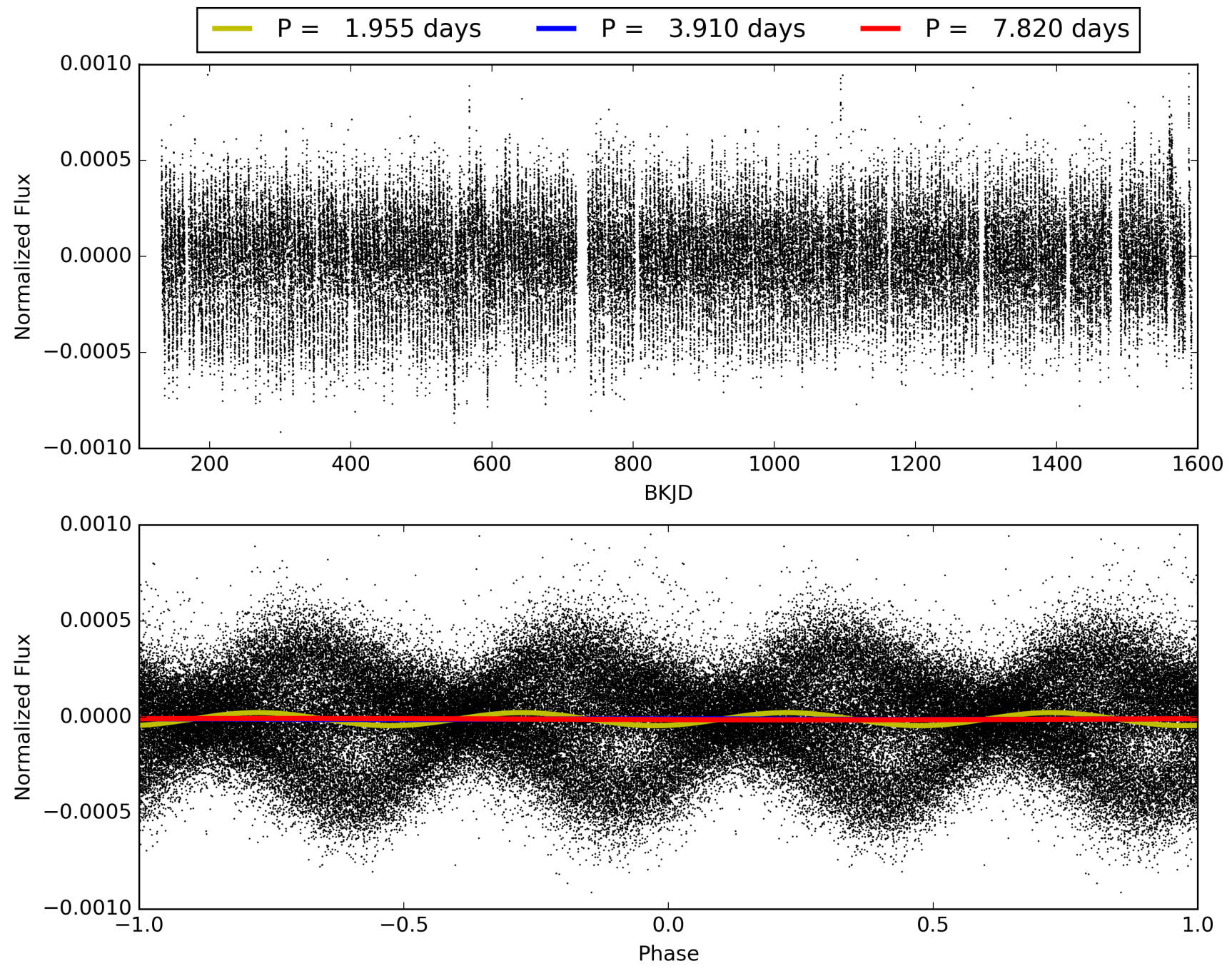
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 010074067-01, PDC Light Curves





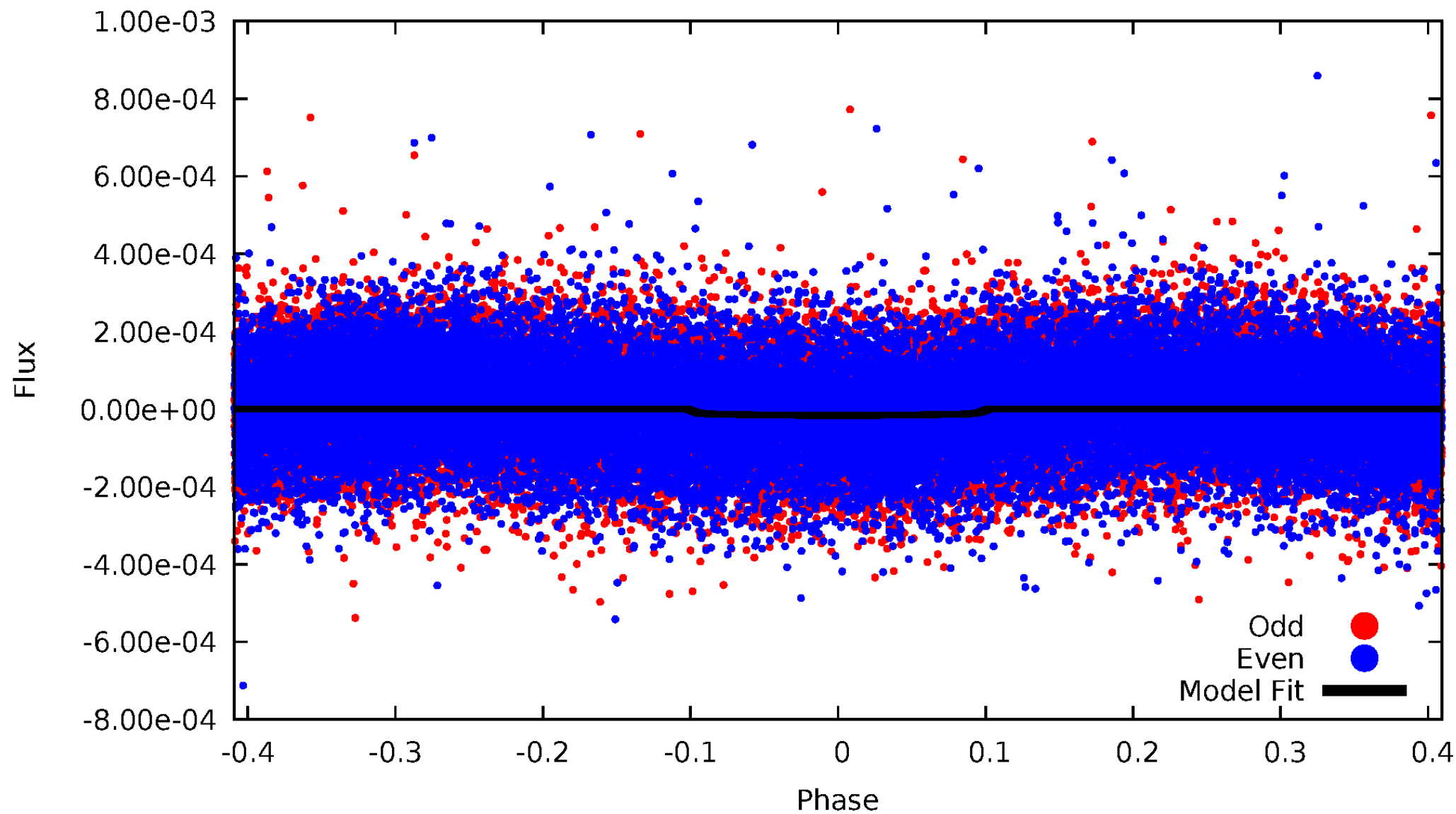
TCE 010074067-01





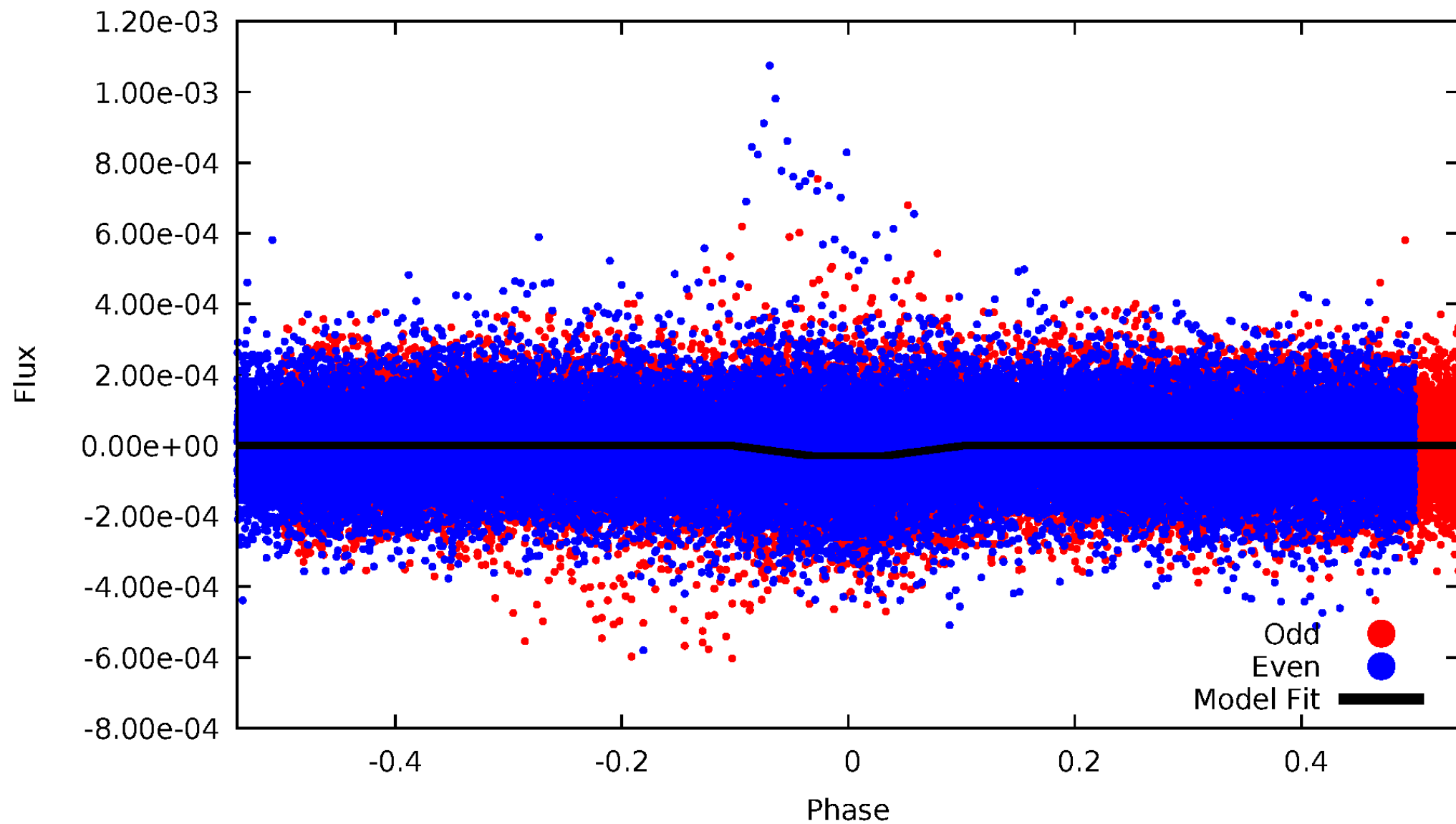
# DV Odd/Even

TCE 010074067-01



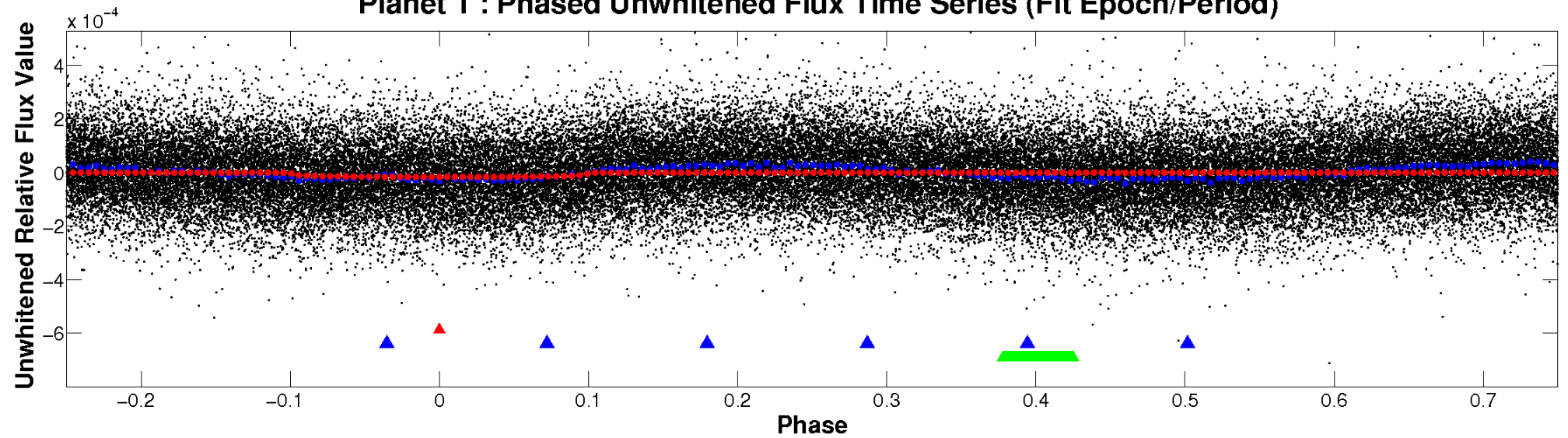
# ALT Odd/Even

TCE 010074067-01

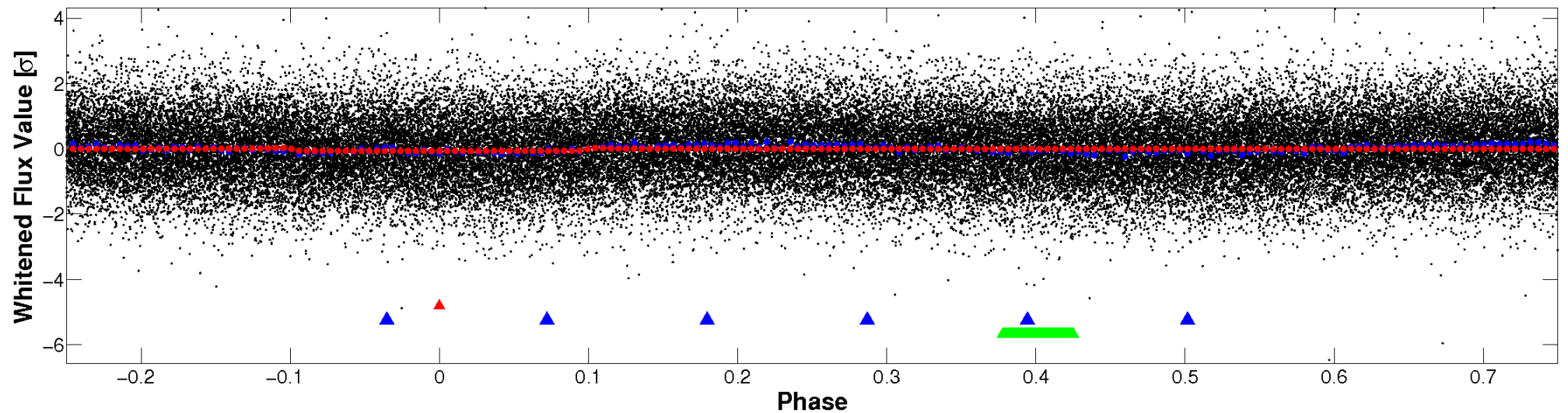


# Non-Whitened Vs. Whitened Light Curve

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



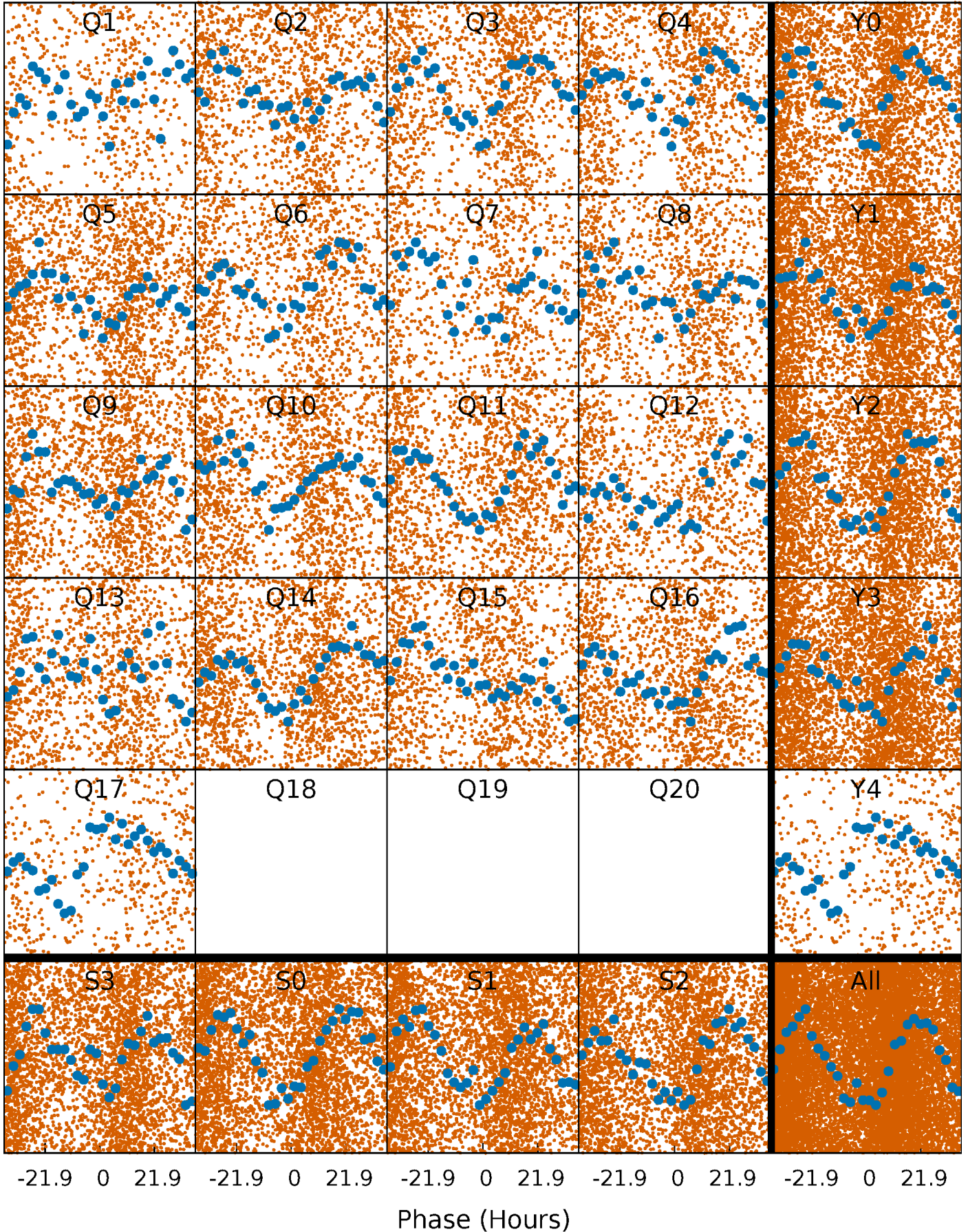
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

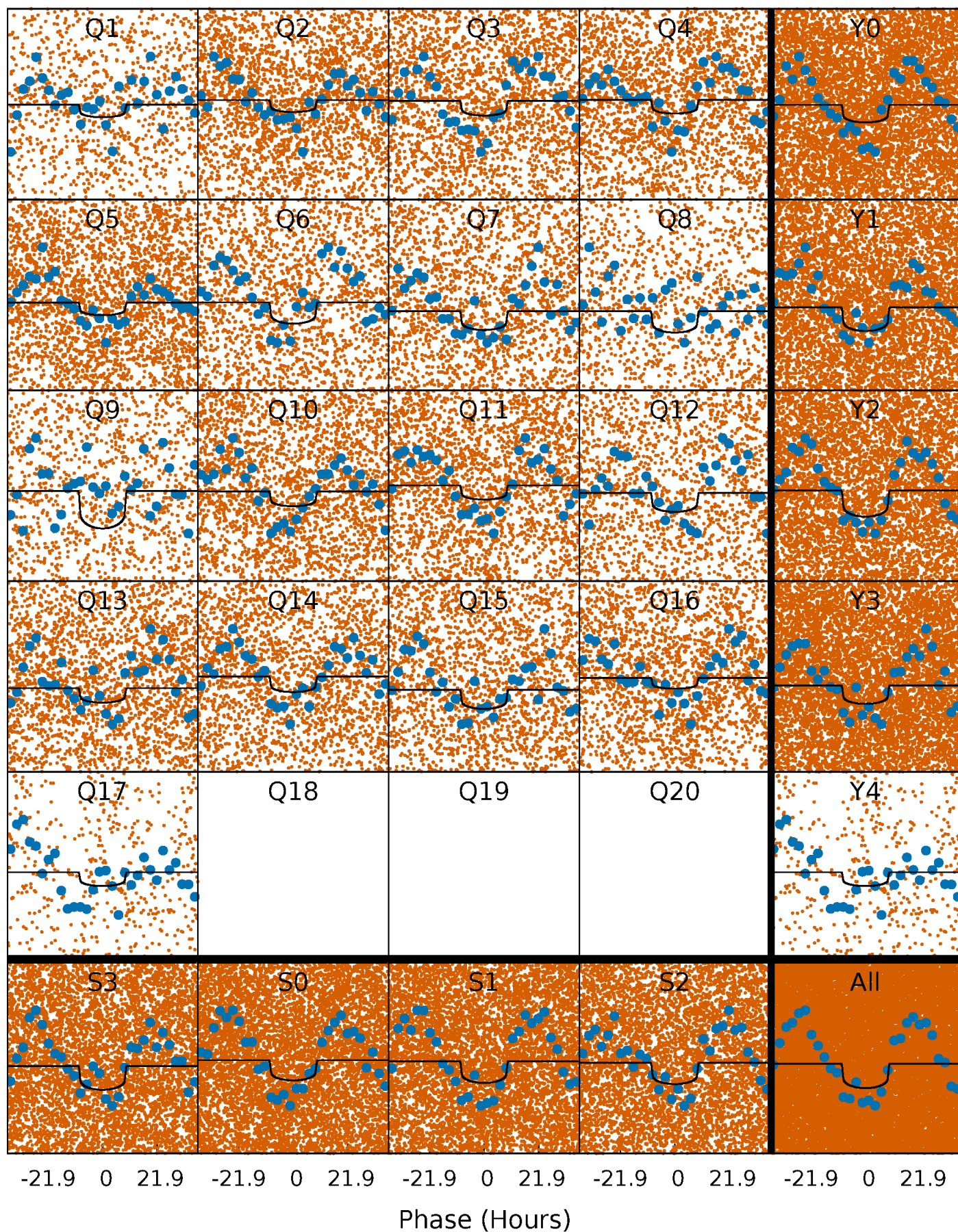
TCE 010074067-01 P= 3.909875 Days  $T_0=132.574856$  (BKJD)





# DV Quarter-Phased Transit Curves

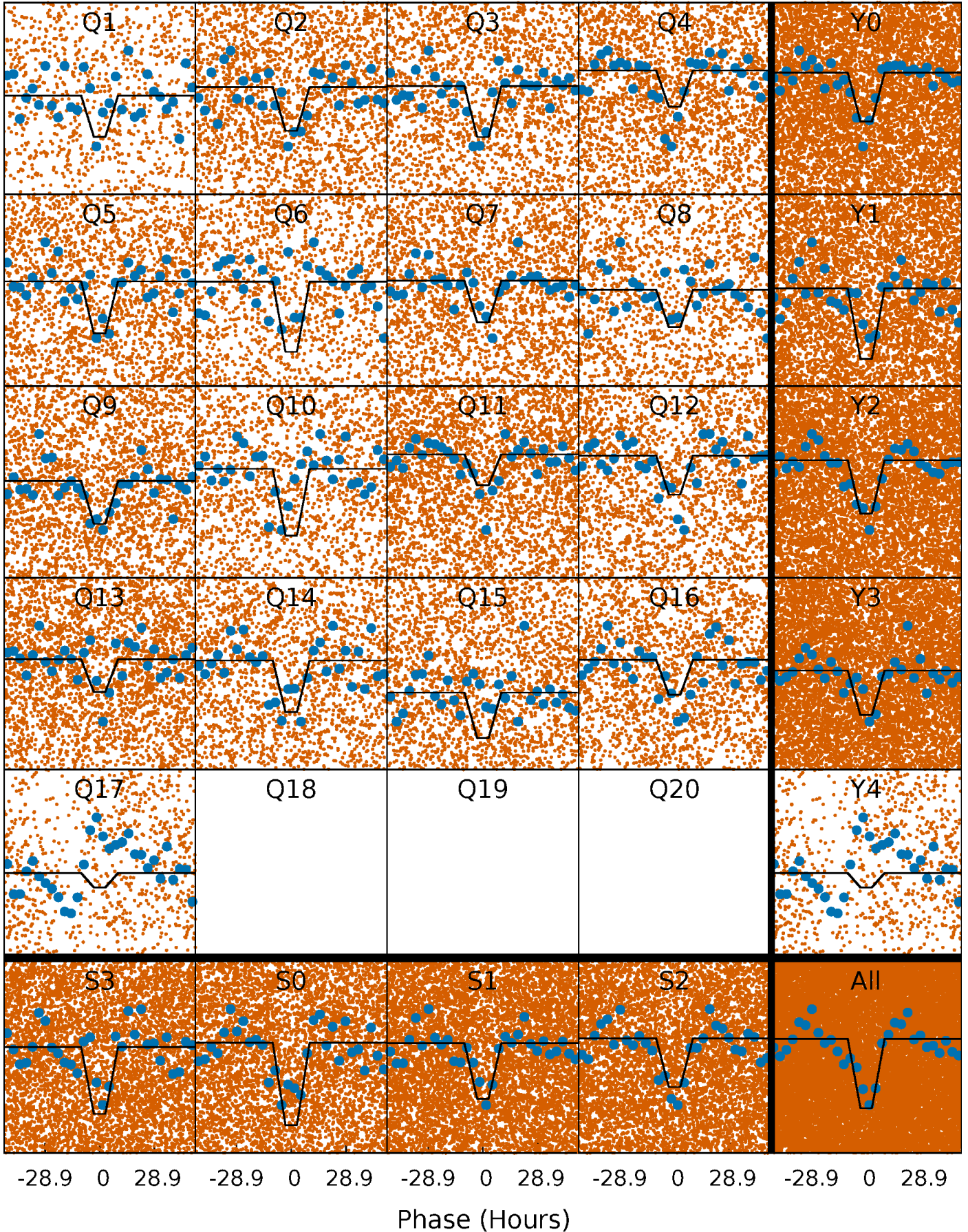
TCE 010074067-01 P= 3.909875 Days  $T_0=132.574856$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 010074067-01   P= 3.909777 Days    $T_0=132.728594$  (BKJD)

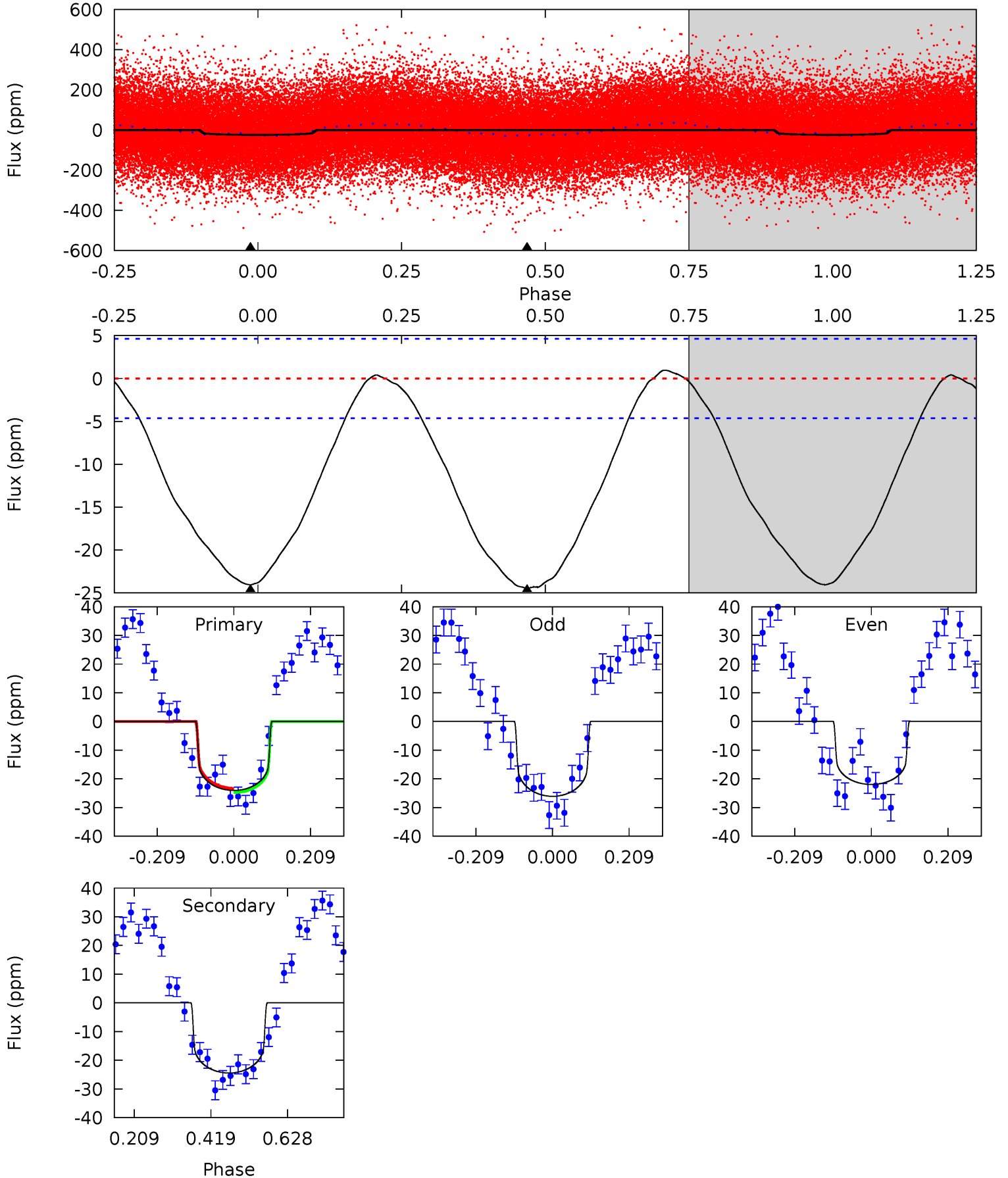




# DV Model-Shift Uniqueness Test

010074067-01, P = 3.909875 Days, E = 128.664981 Days

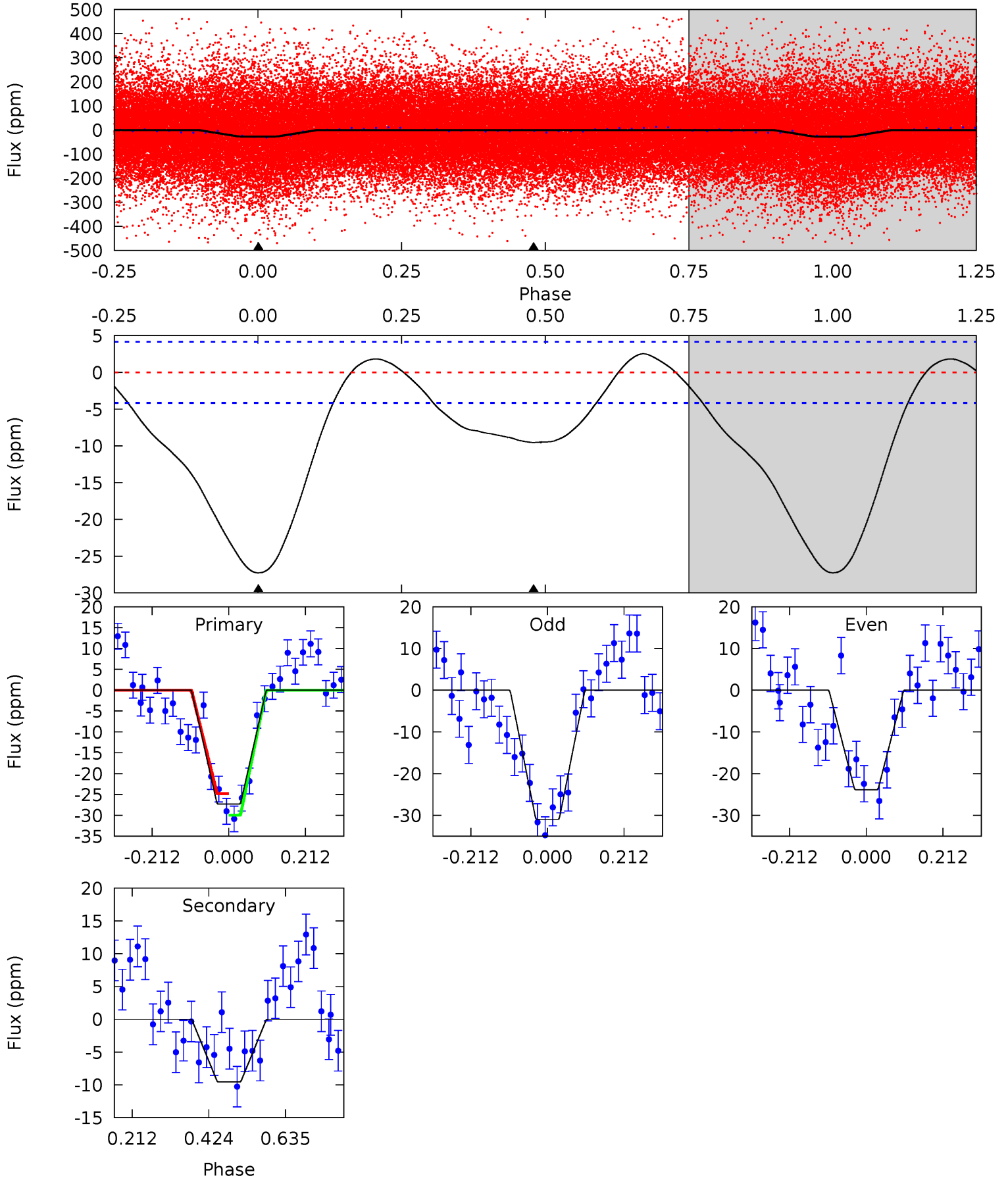
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	23.2	0	0	4.41	1.26	0.87	22.9	22.9	23.2	23.2	1.97	1.00	0.04	0.70



# Alt Model-Shift Uniqueness Test

010074067-01, P = 3.909777 Days, E = 128.818817 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
28.9	10.1	0	0	4.40	1.25	2.23	28.9	28.9	10.1	10.1	3.75	0.95	0.09	2.73



### Stellar Parameters For KIC 010074067

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6007^{+218}_{-200}$	$3.886^{+0.292}_{-0.097}$	$-0.100^{+0.300}_{-0.250}$	$2.071^{+0.383}_{-0.712}$	$1.203^{+0.214}_{-0.214}$	$0.191^{+0.388}_{-0.059}$
	+4%/-3%	+8%/-2%	+300%/-250%	+18%/-34%	+18%/-18%	+203%/-31%
Source	KIC0	FLK73	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 010074067-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-24 \pm 1$	$0.97^{+0.19}_{-0.19}$	$2302^{+163}_{-188}$	$6320^{+595}_{-441}$	$39^{+21}_{-12}$
Alt.	$-10 \pm 1$	$1.18^{+0.22}_{-0.23}$	$2300^{+160}_{-189}$	$4654^{+297}_{-258}$	$10^{+5}_{-3}$

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



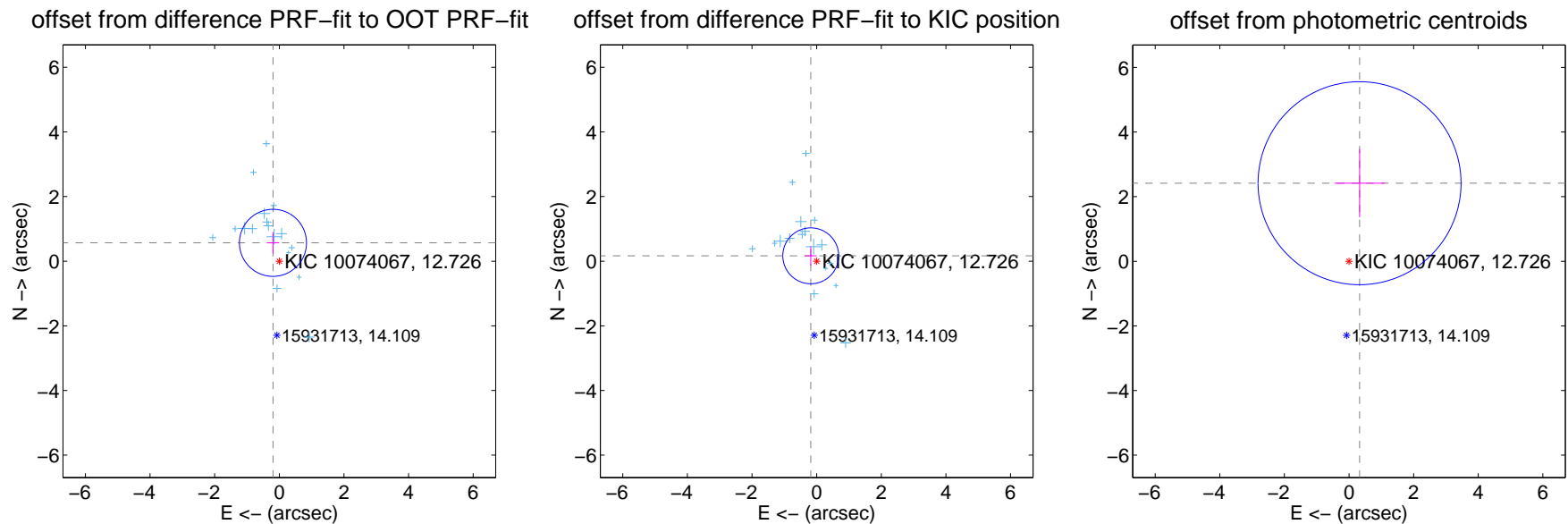
## DV Centroid Data

Supplemental centroid analysis for 010074067-01. Kepler magnitude: 12.73. Transit SNR 7.46

There are 17 quarters with good PRF difference image offsets

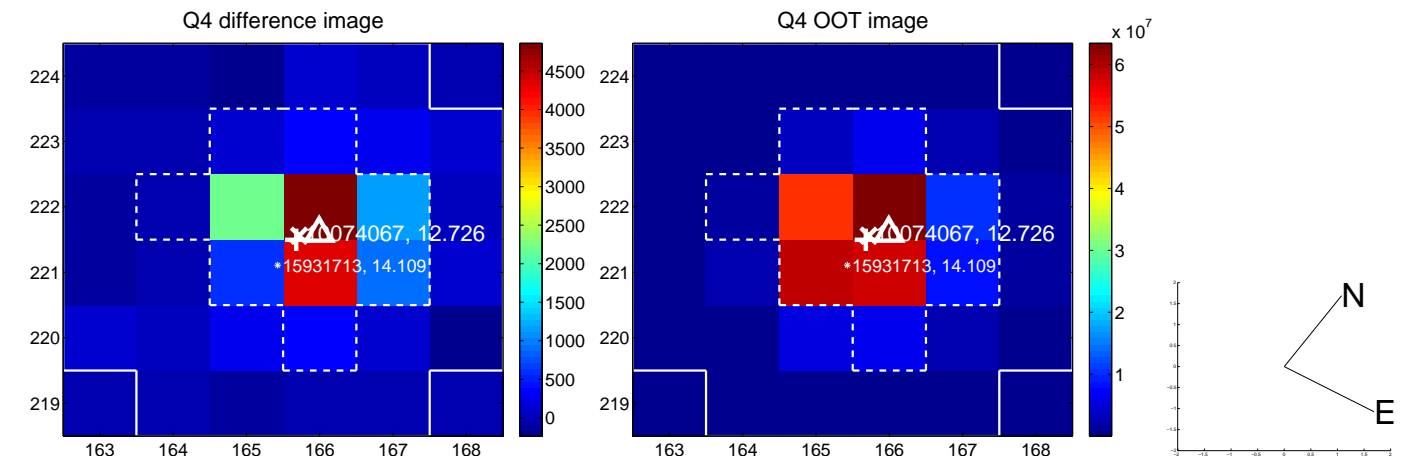
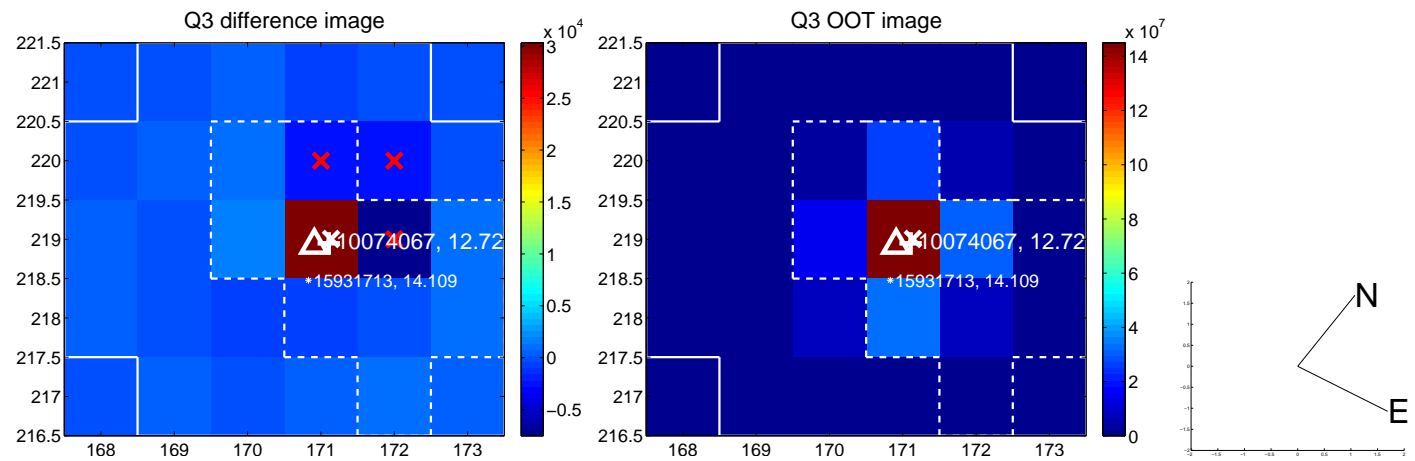
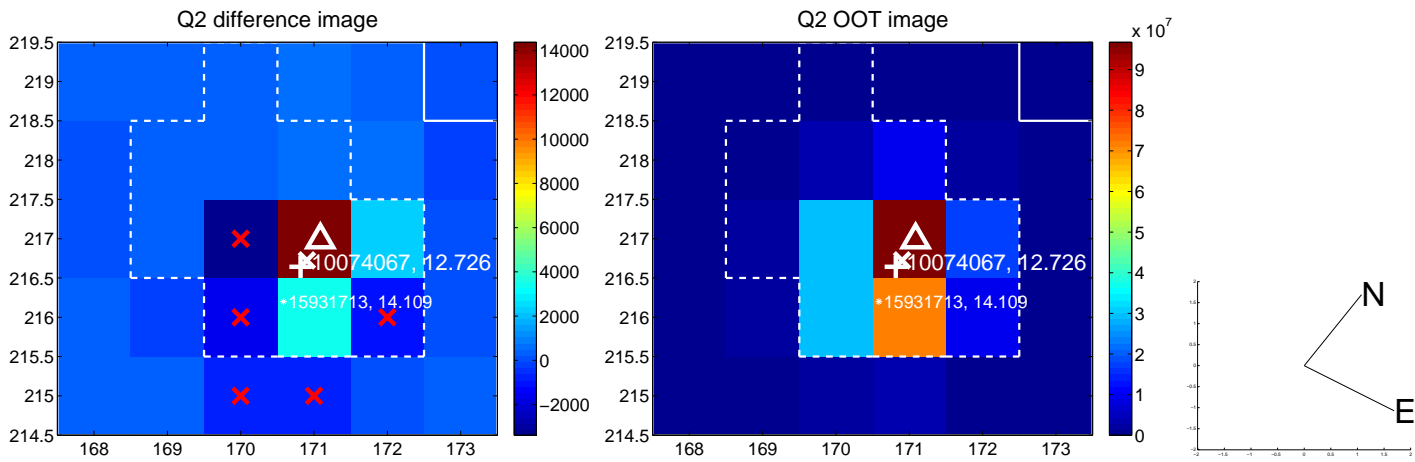
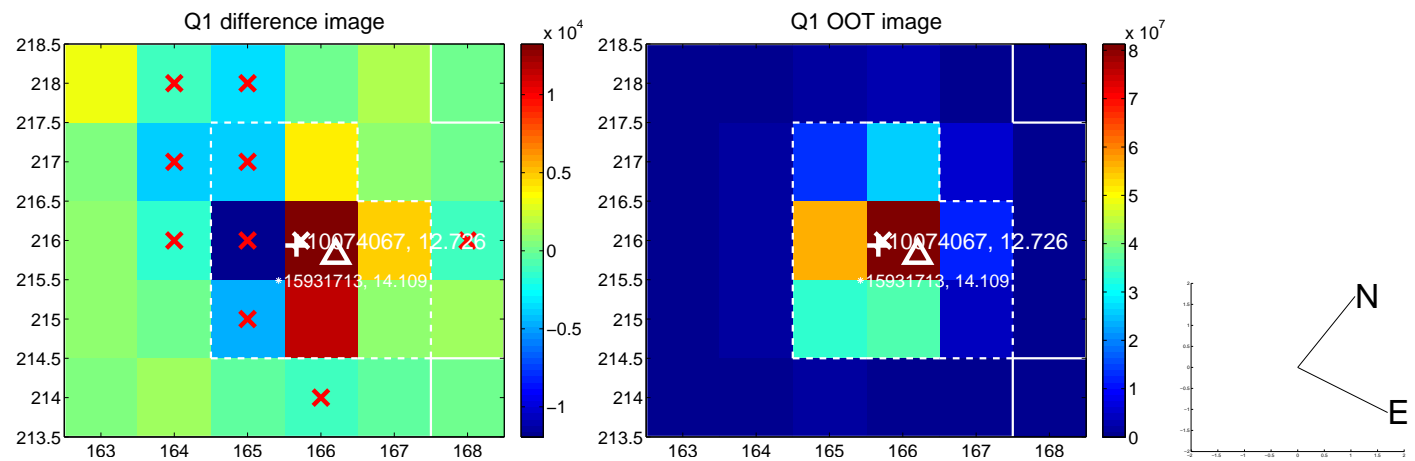
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.601 \pm 0.346$	1.74	$0.196 \pm 0.193$	$0.568 \pm 0.329$
PRF-fit source offset from KIC position	$0.247 \pm 0.288$	0.86	$0.183 \pm 0.186$	$0.167 \pm 0.297$
photometric centroid source offset	$2.44 \pm 1.05$	2.33	$-0.33 \pm 0.78$	$2.42 \pm 1.05$

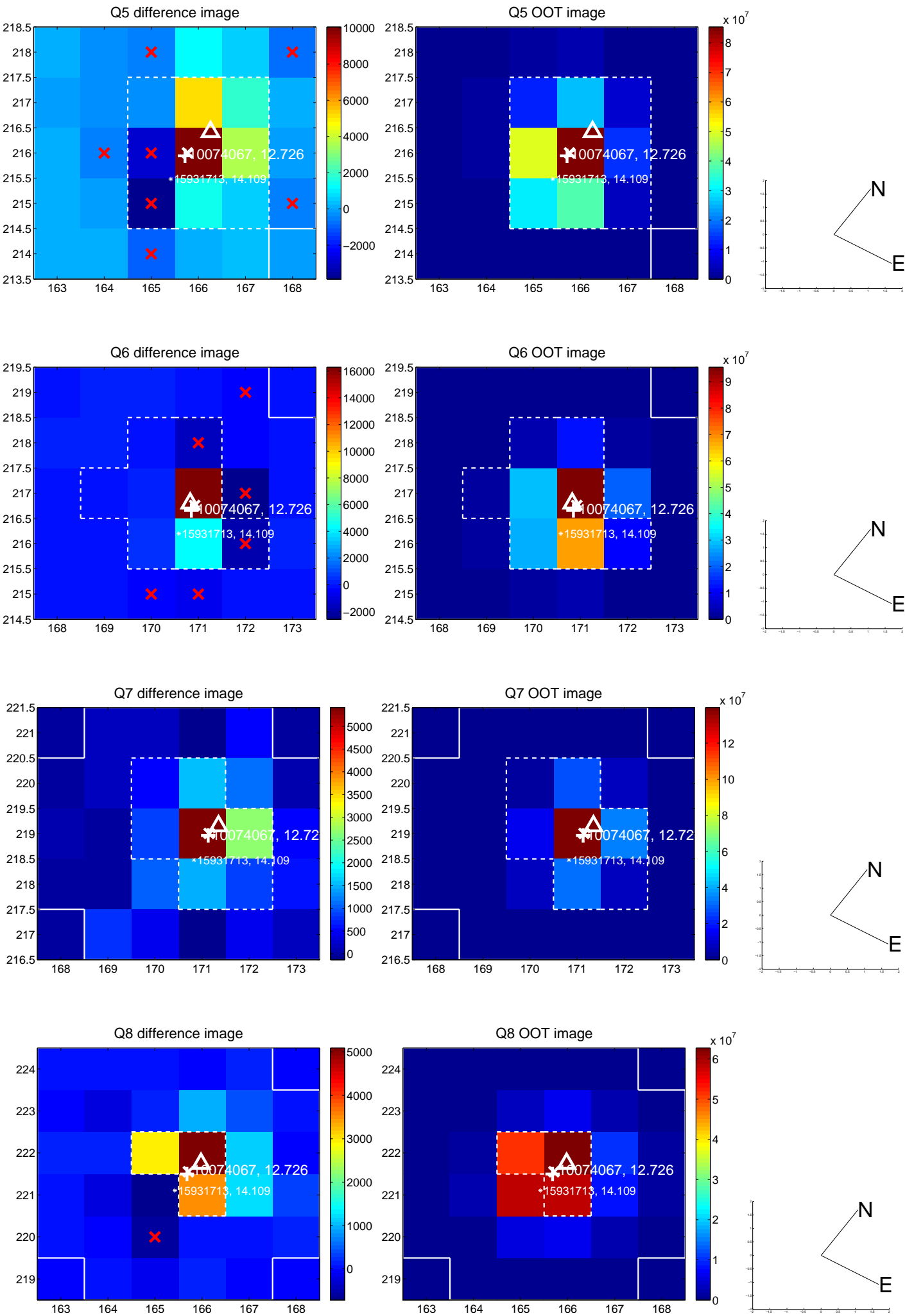


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

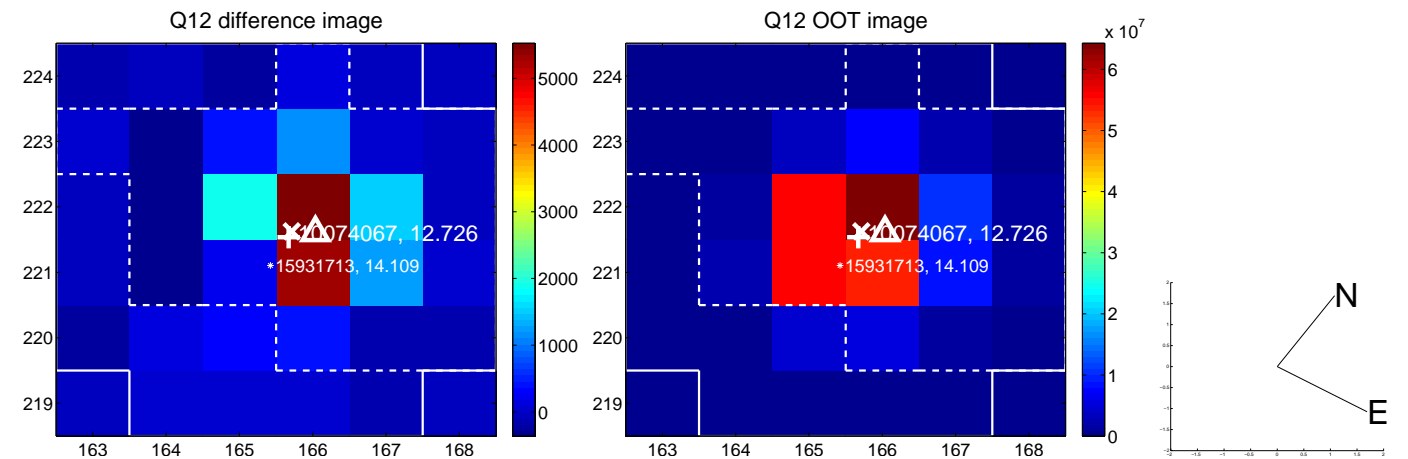
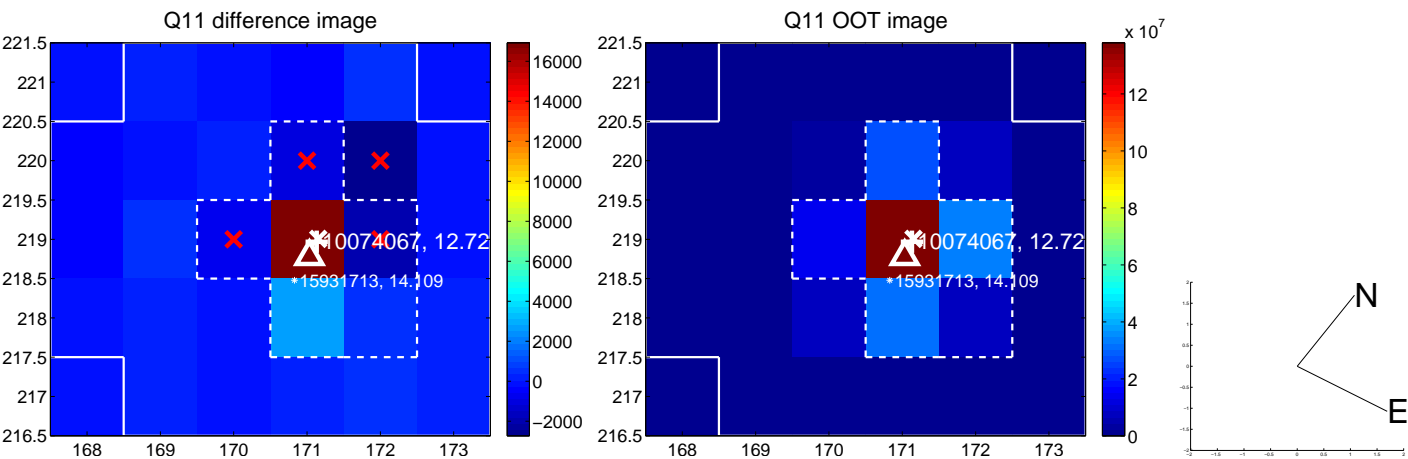
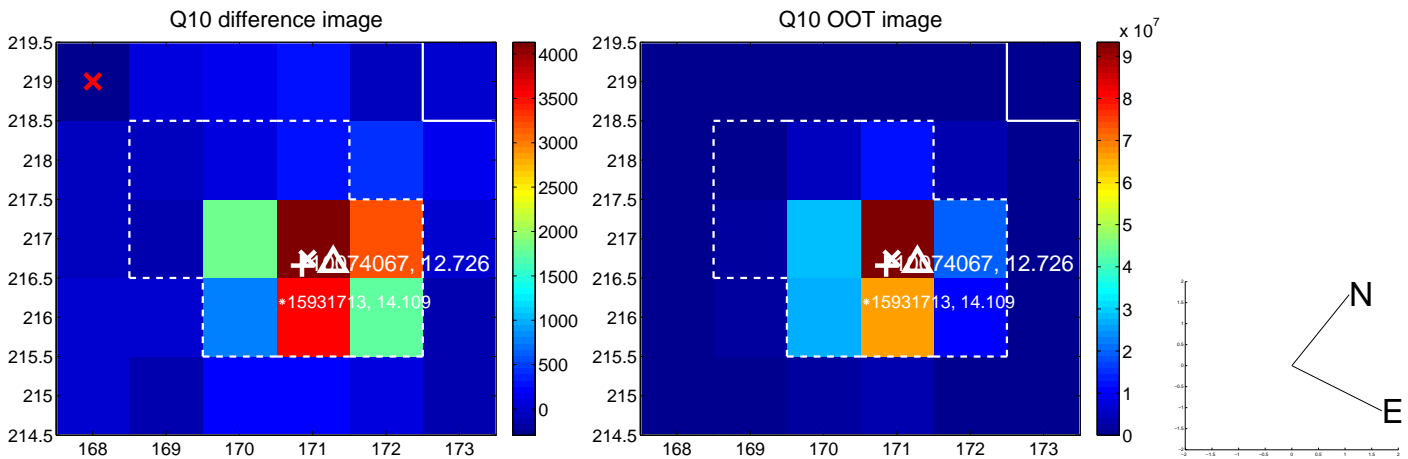
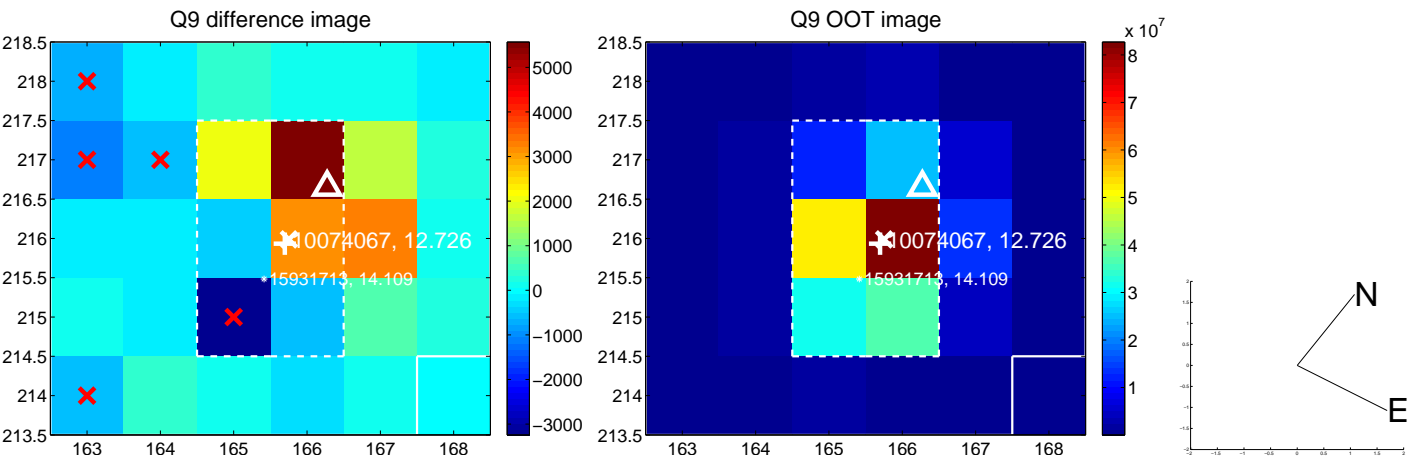


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

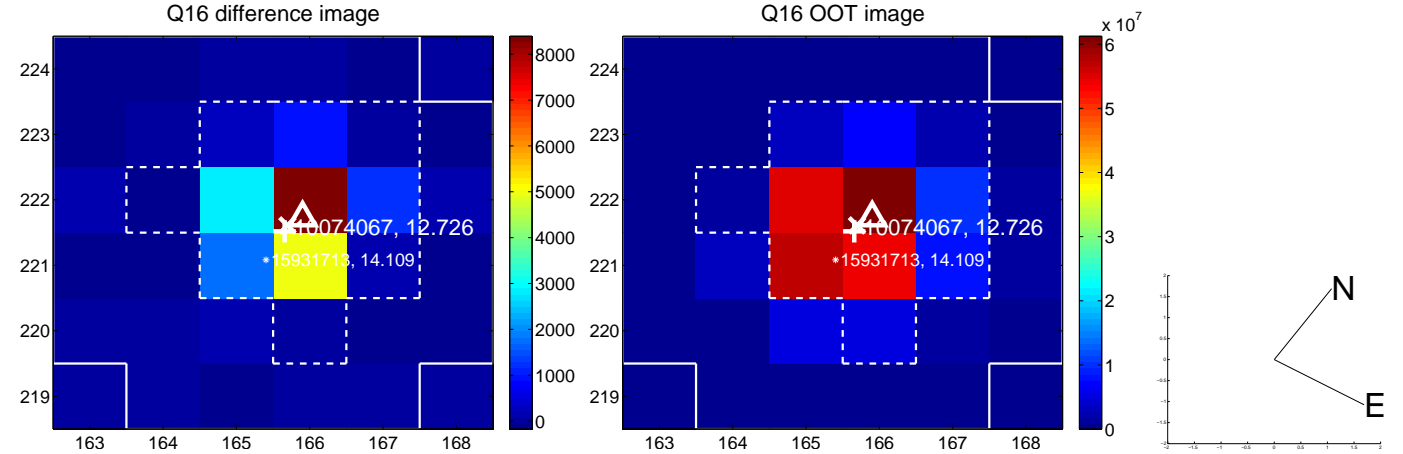
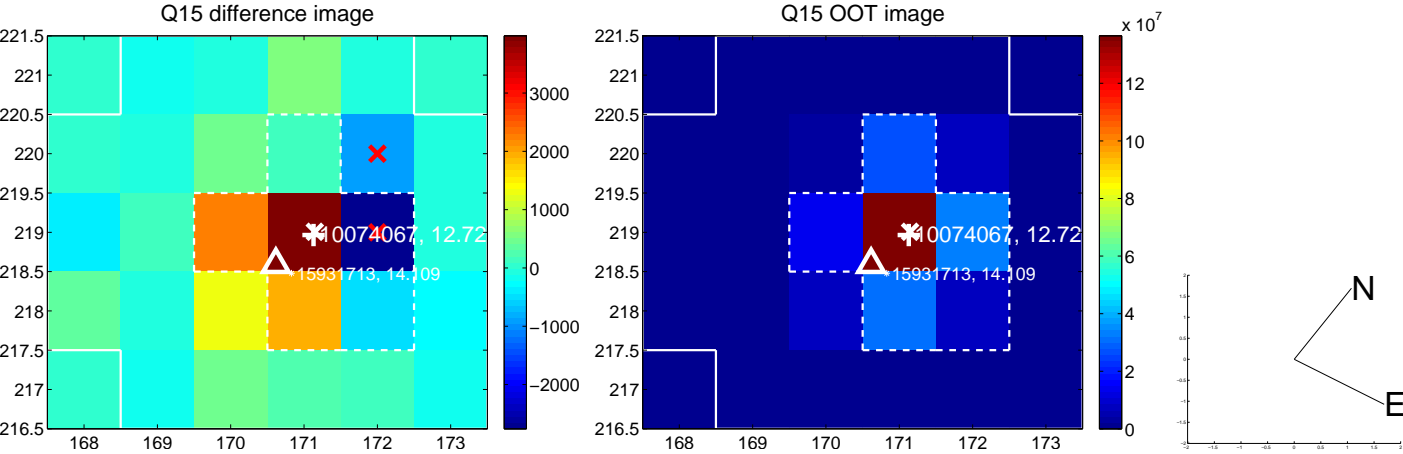
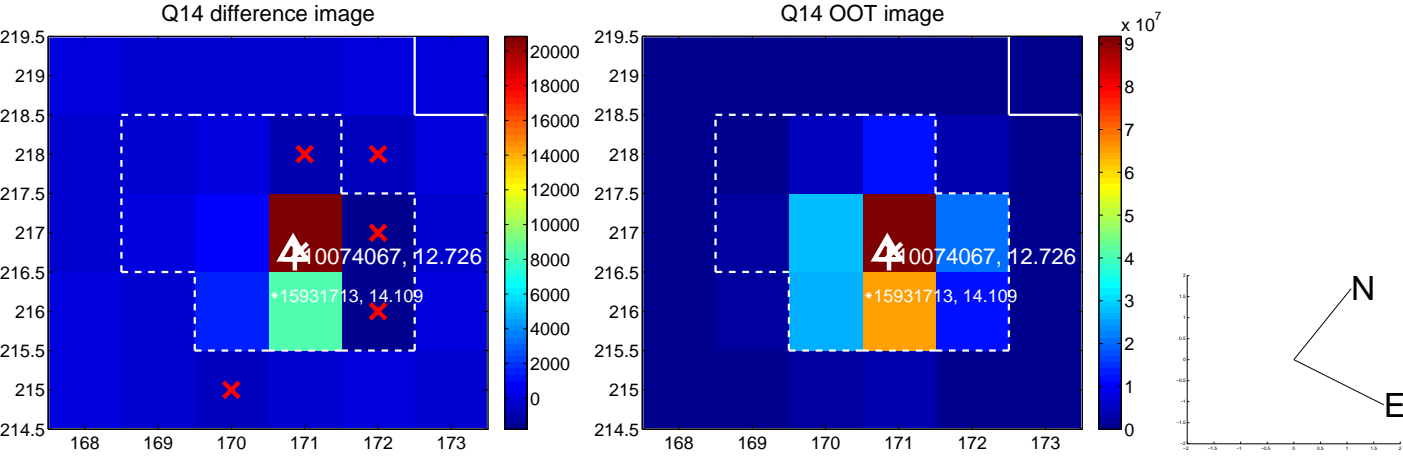
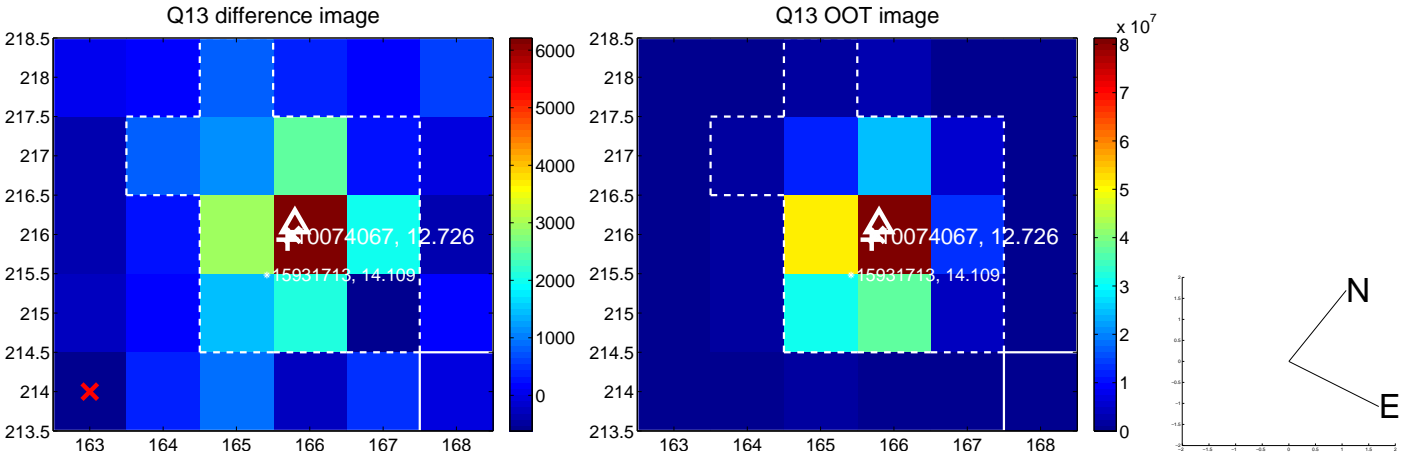




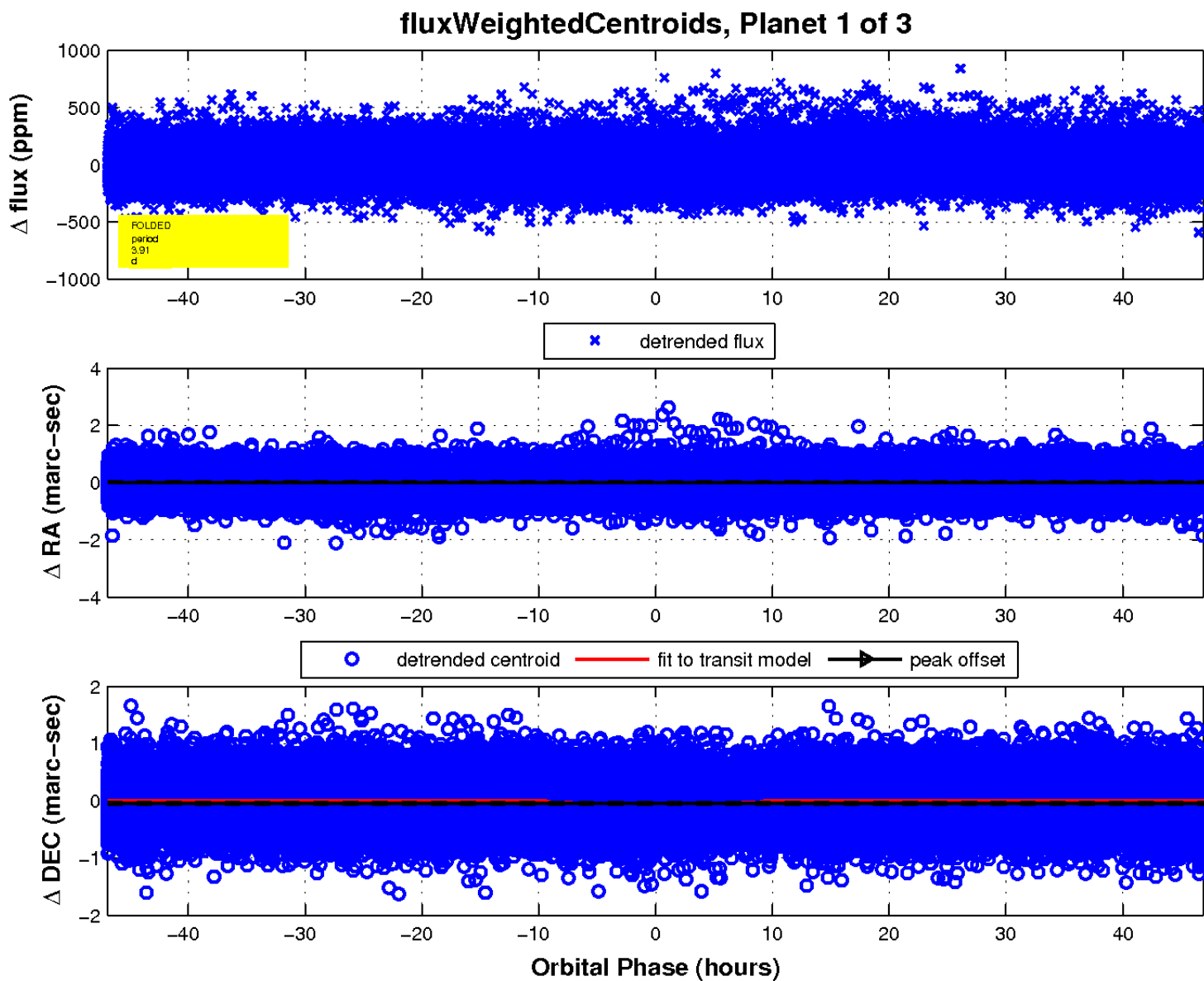
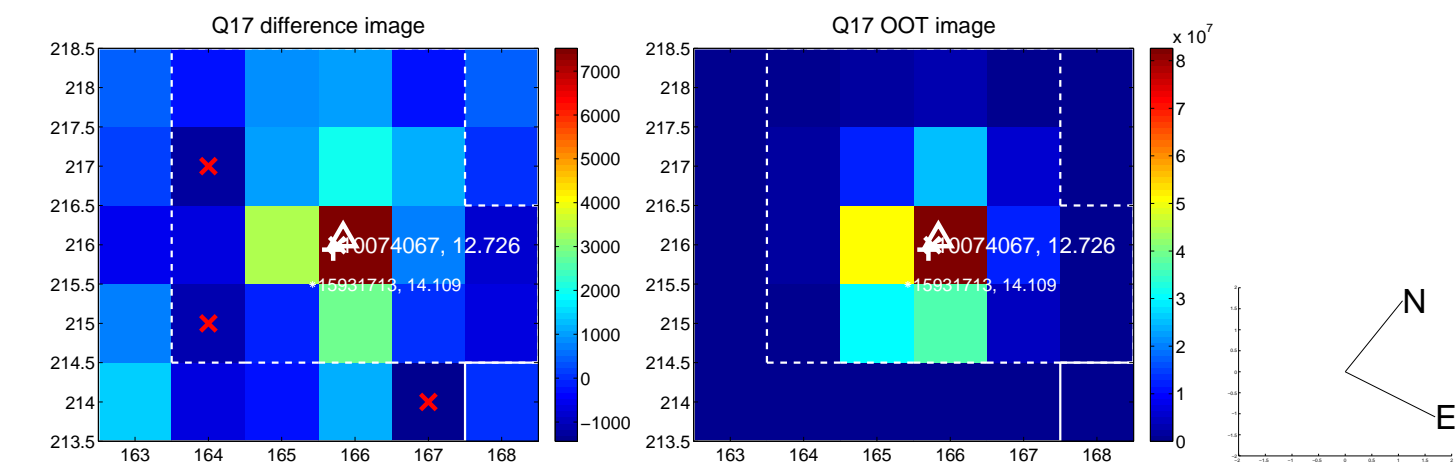
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

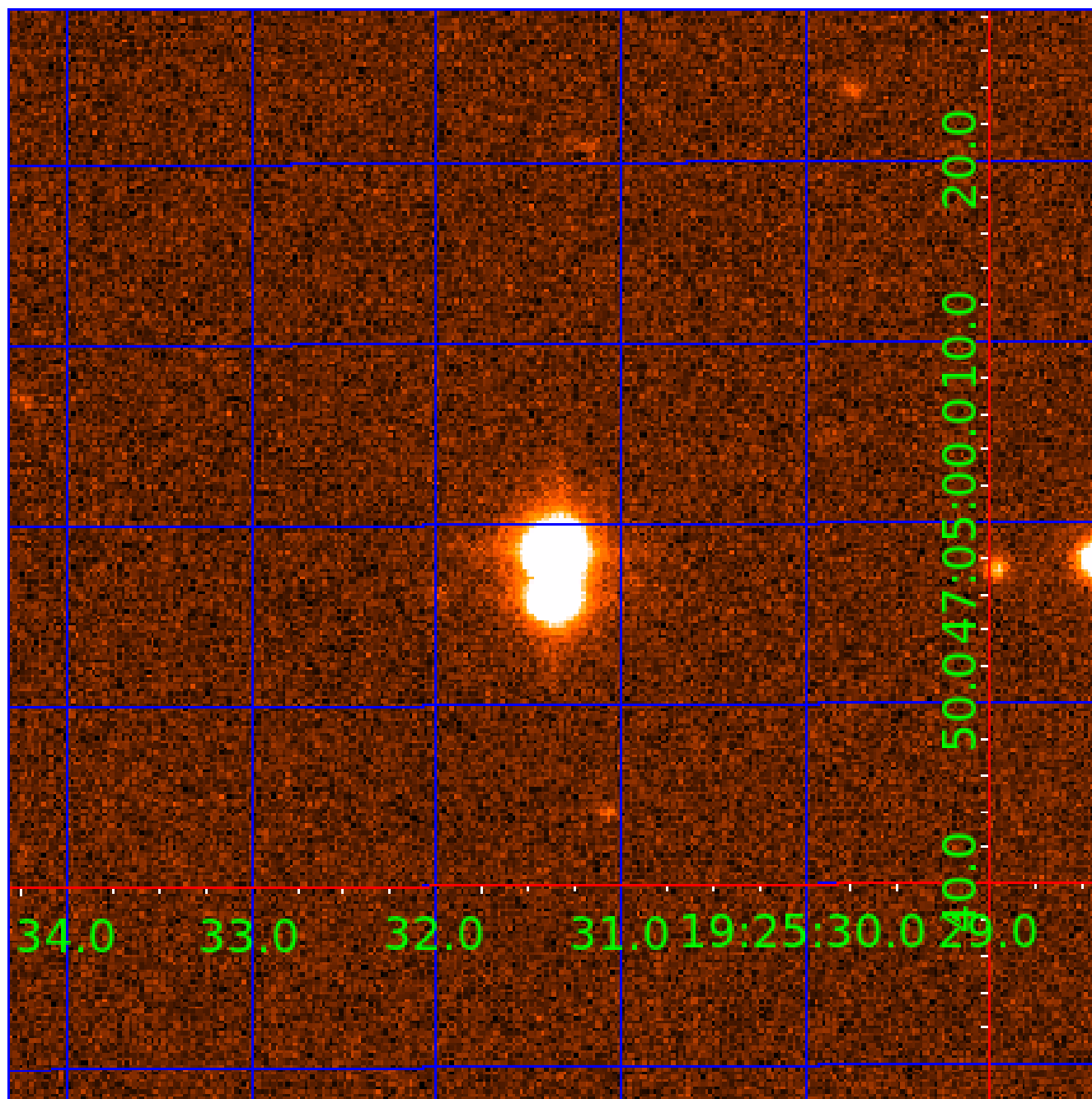


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 010074067

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010074067-01	OBS	No	3.909875	132.574856	16.3	19.197	7.9	7.5	2.07	6007	1.02	1873.96
010074067-02	OBS	No	242.832123	234.093939	467.0	63.601	15.7	15.4	2.07	6007	5.81	7.62
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010074067-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
010074067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
010074067-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—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.

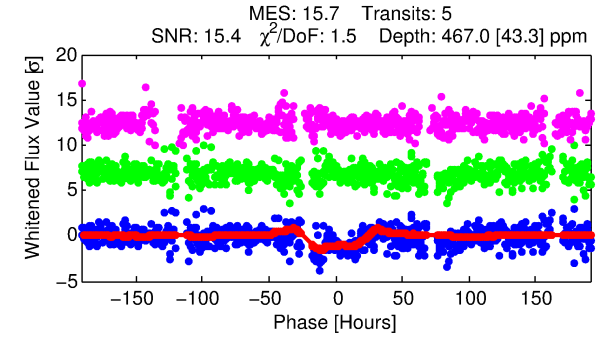
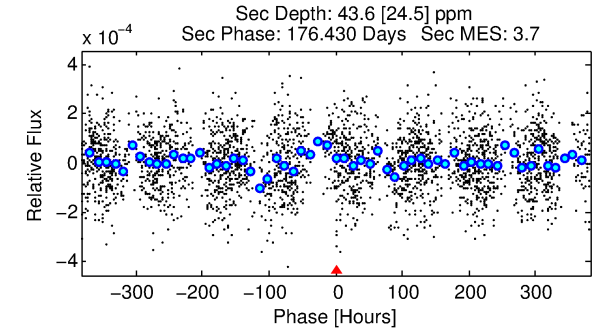
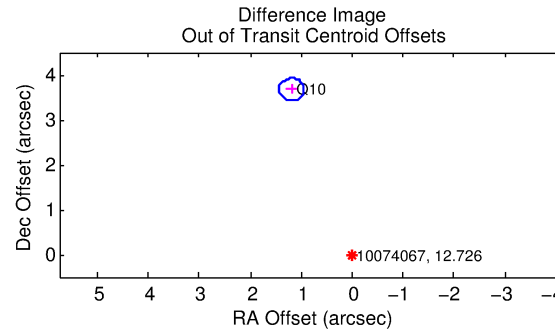
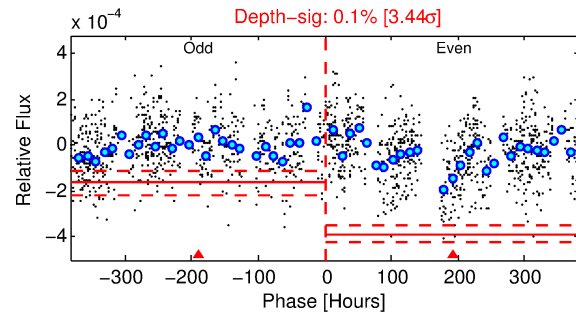
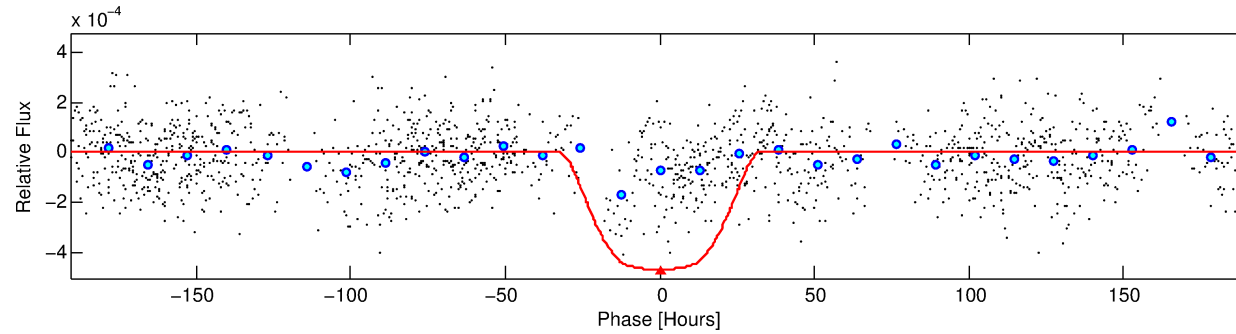
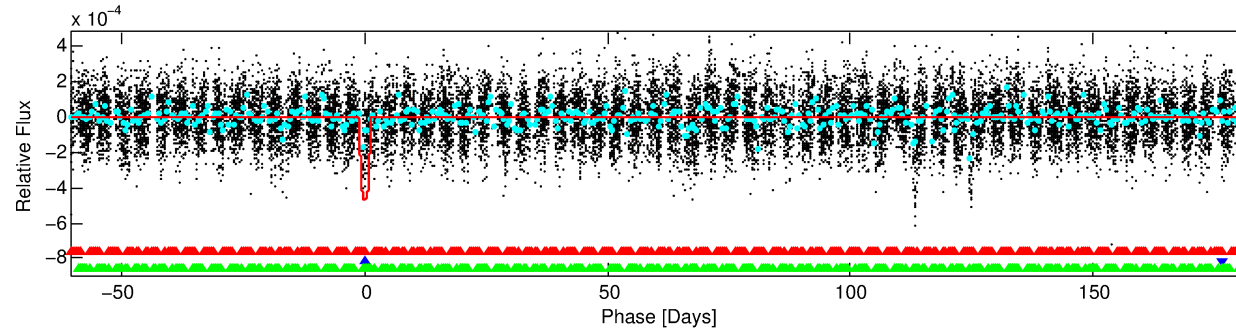
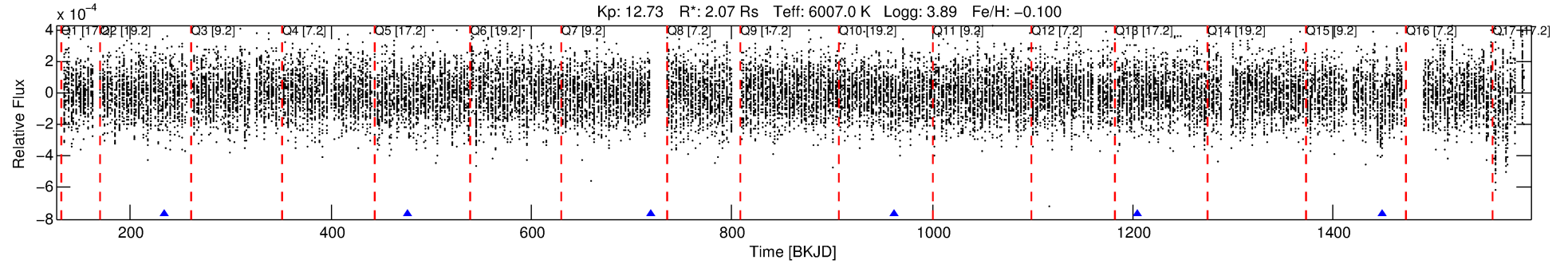
## Ephemeris Match Information For 010074067-02

No Significant Match Found



# DV One-Page Summary

KIC: 10074067 Candidate: 2 of 3 Period: 242.832 d



## DV Fit Results:

Period = 242.83212 [0.02925] d  
Epoch = 234.0939 [0.0853] BKJD  
Rp/R\* = 0.0257 [0.0013]  
a/R\* = 10.10 [0.85]  
b = 0.97 [0.01]  
Seff = 7.62 [3.99]  
Teq = 424 [55] K  
Rp = 5.81 [2.02] Re  
a = 0.8104 [0.2598] AU  
Ag = 466.99 [354.97] [1.31σ]  
Teff = 3045 [447] K [5.81σ]

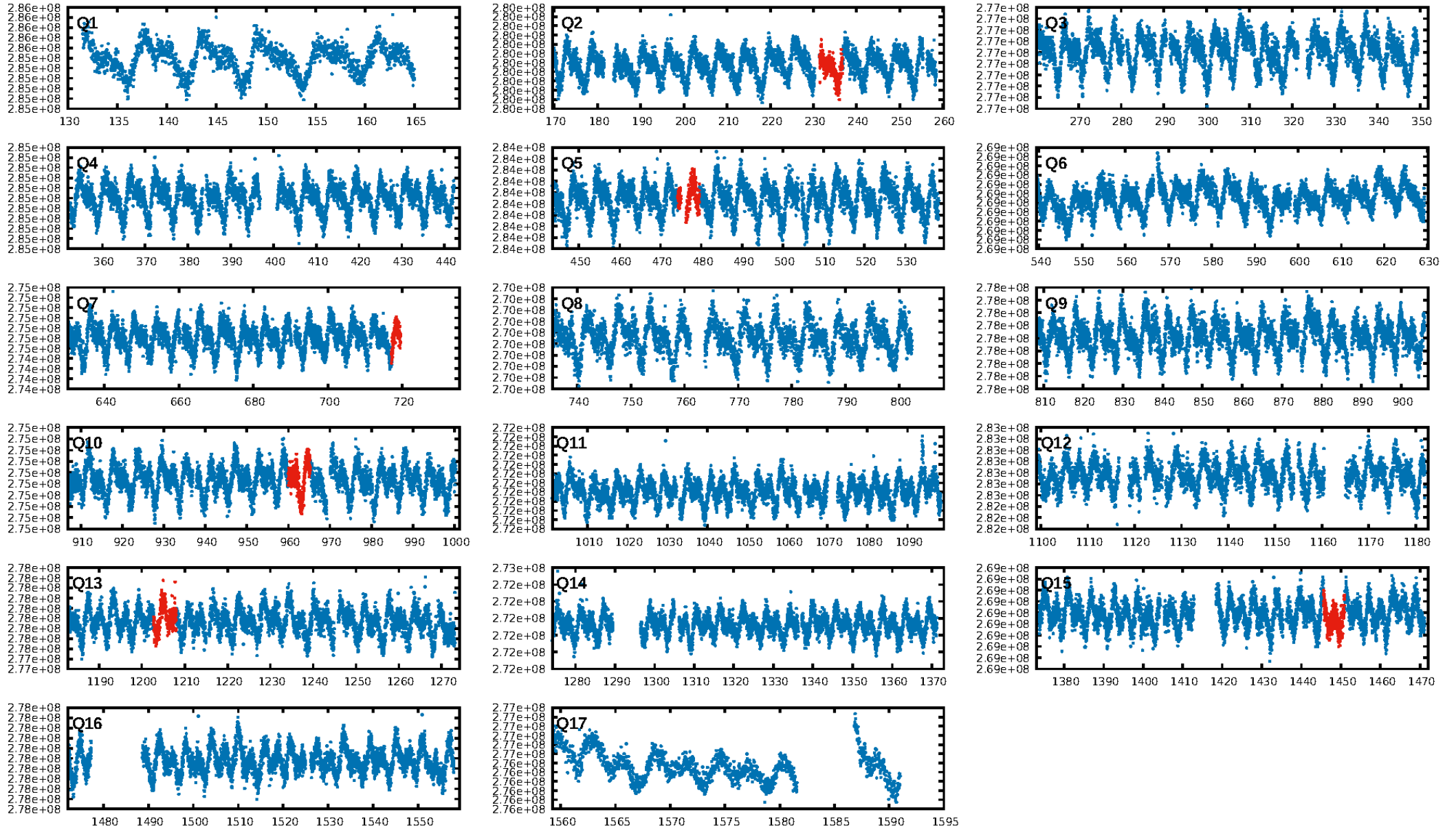
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [86.31σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 8.363  
Centroid-sig: 1.9%  
Centroid-so: 0.116 arcsec [0.59σ]  
OotOffset-rm: 3.862 arcsec [46.63σ]  
KicOffset-rm: 3.420 arcsec [41.23σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 0.00 [0/1]

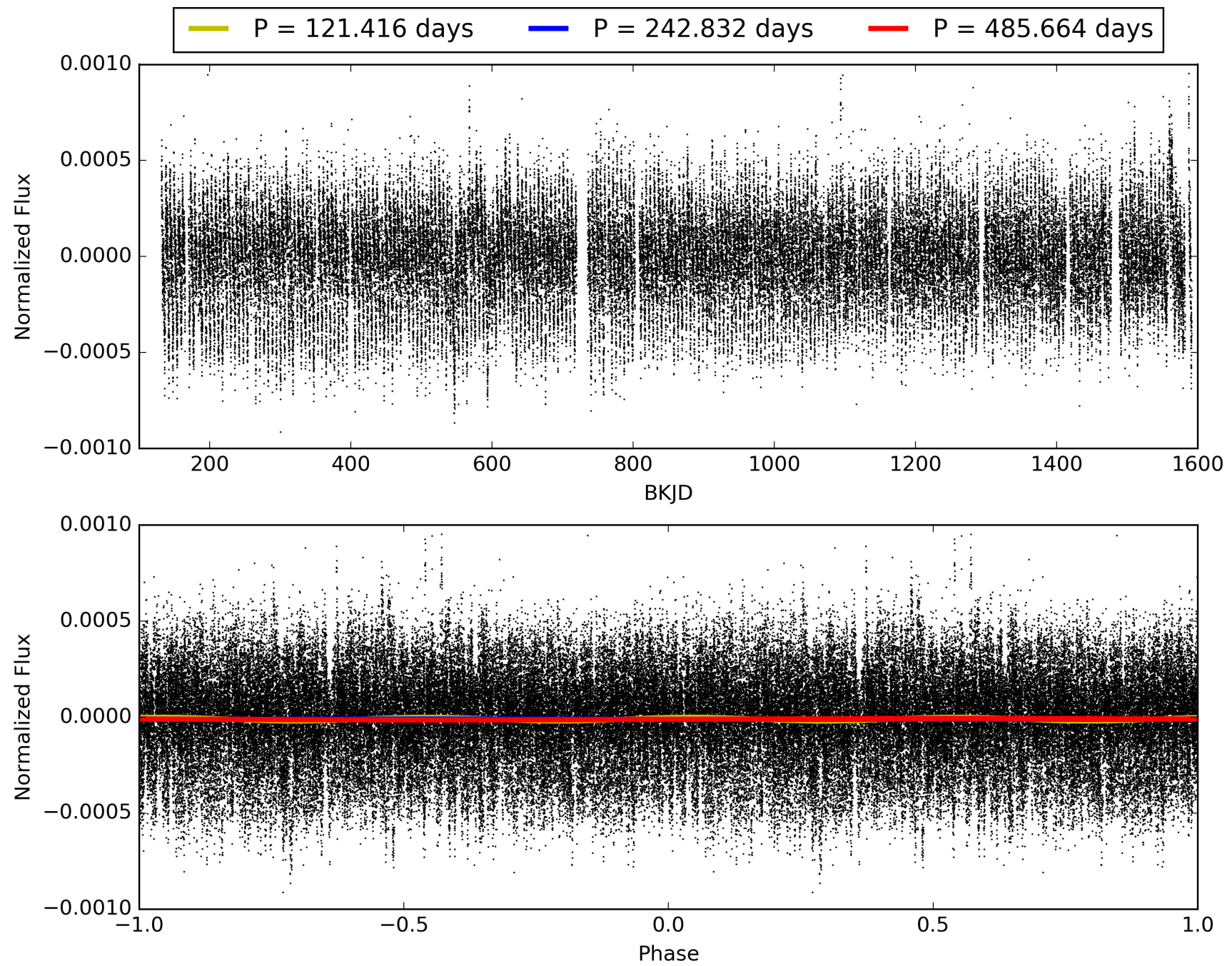
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:37:26 Z

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

# TCE 010074067-02, PDC Light Curves

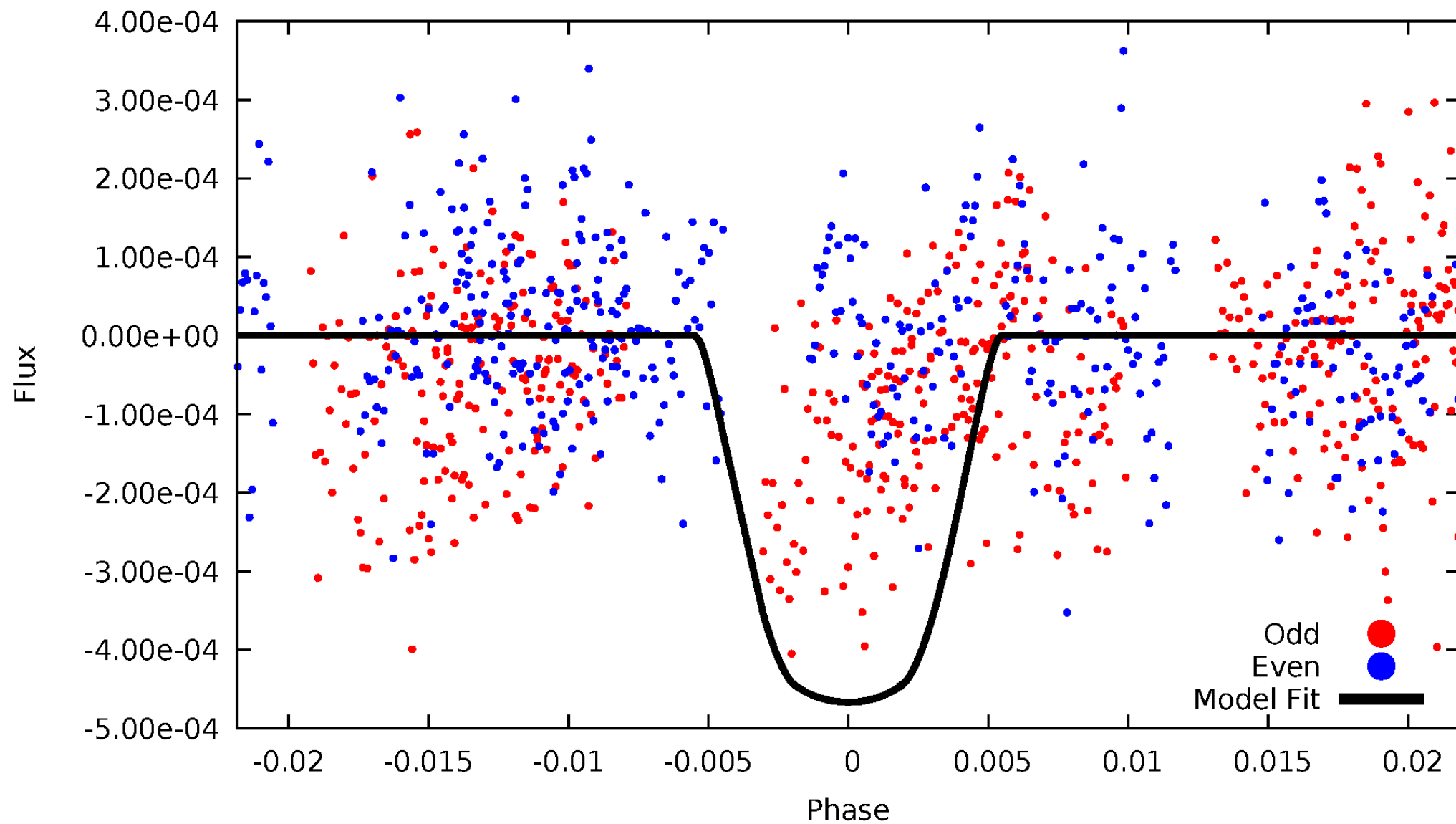


TCE 010074067-02



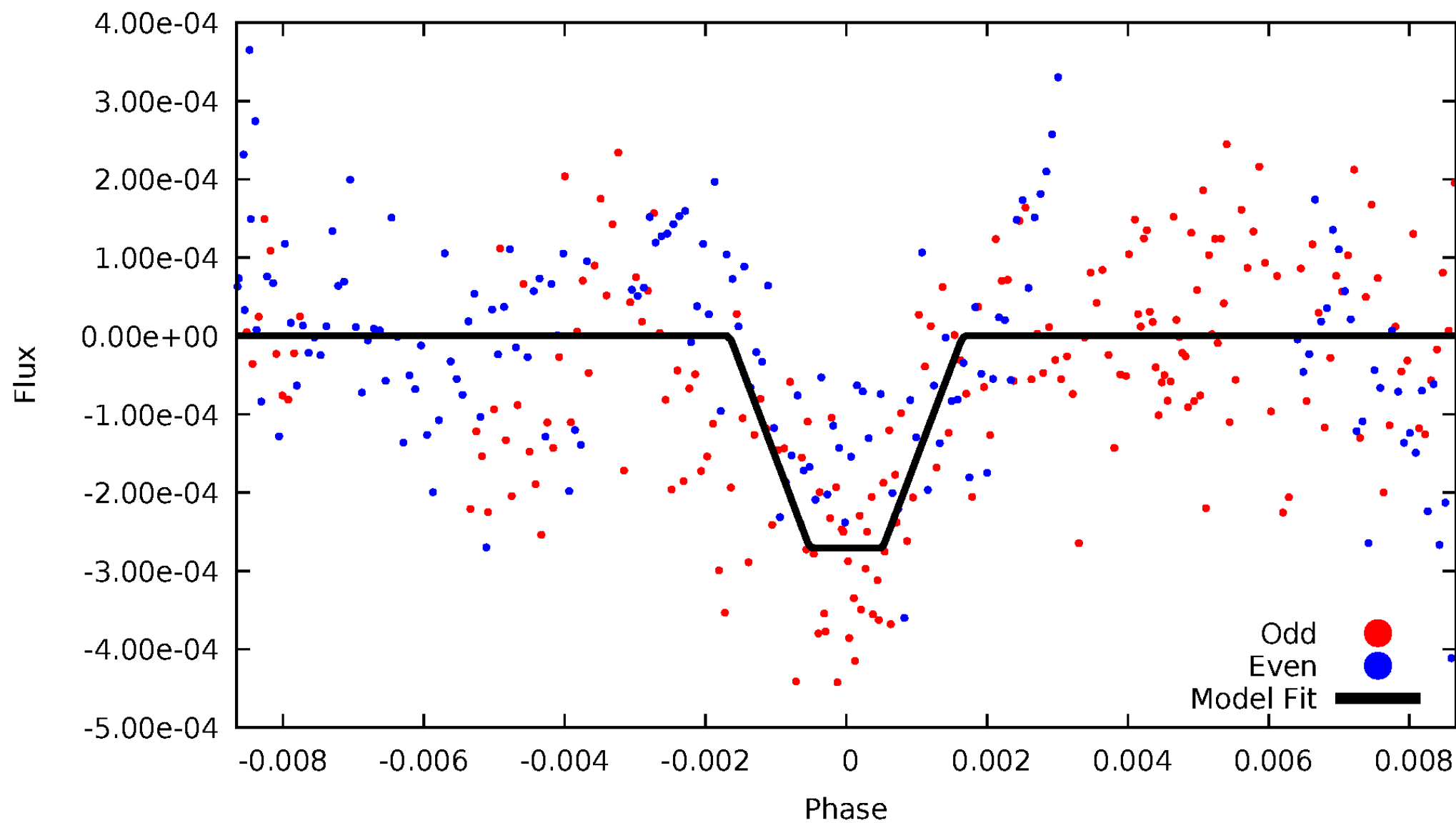
# DV Odd/Even

TCE 010074067-02



# ALT Odd/Even

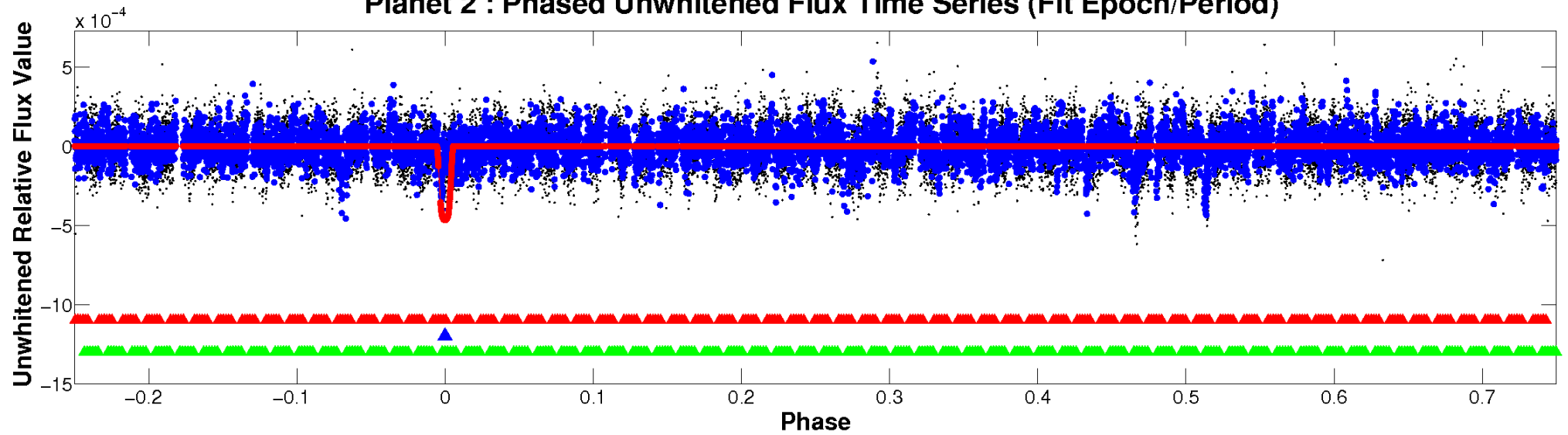
TCE 010074067-02



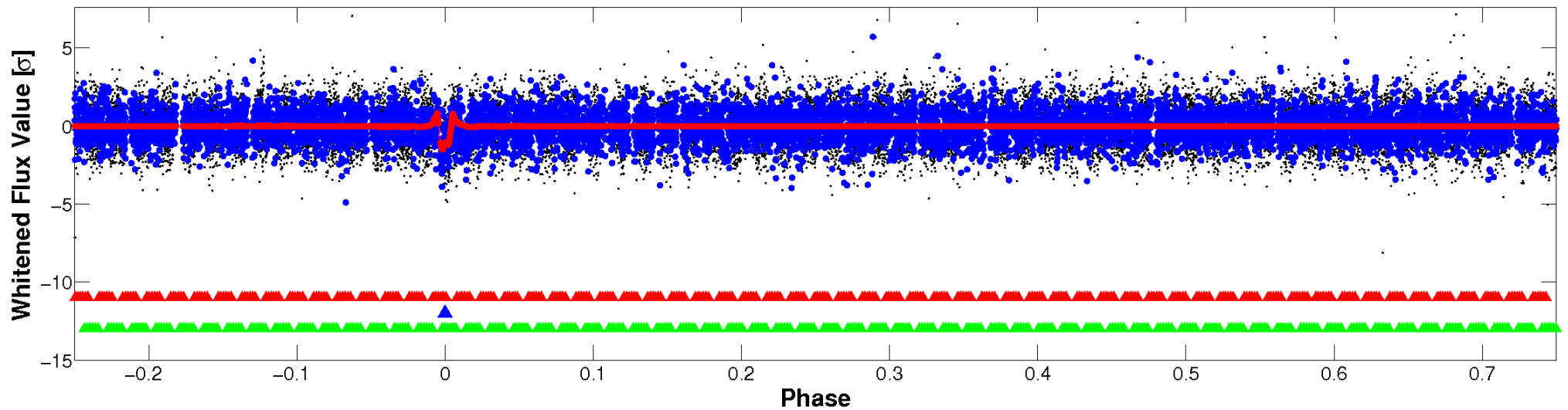


# Non-Whitened Vs. Whitened Light Curve

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



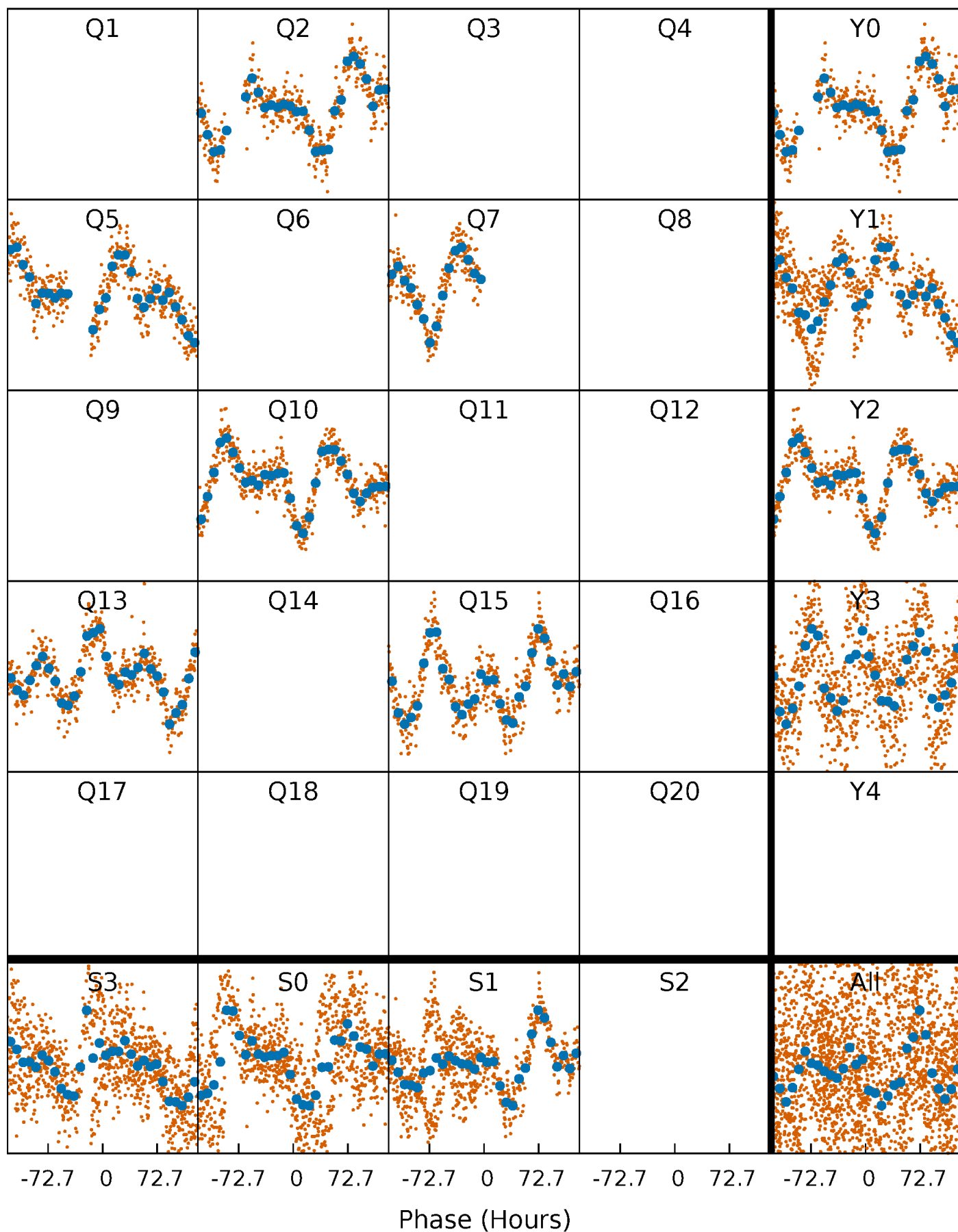
Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

TCE 010074067-02 P=242.832123 Days  $T_0=234.093939$  (BKJD)



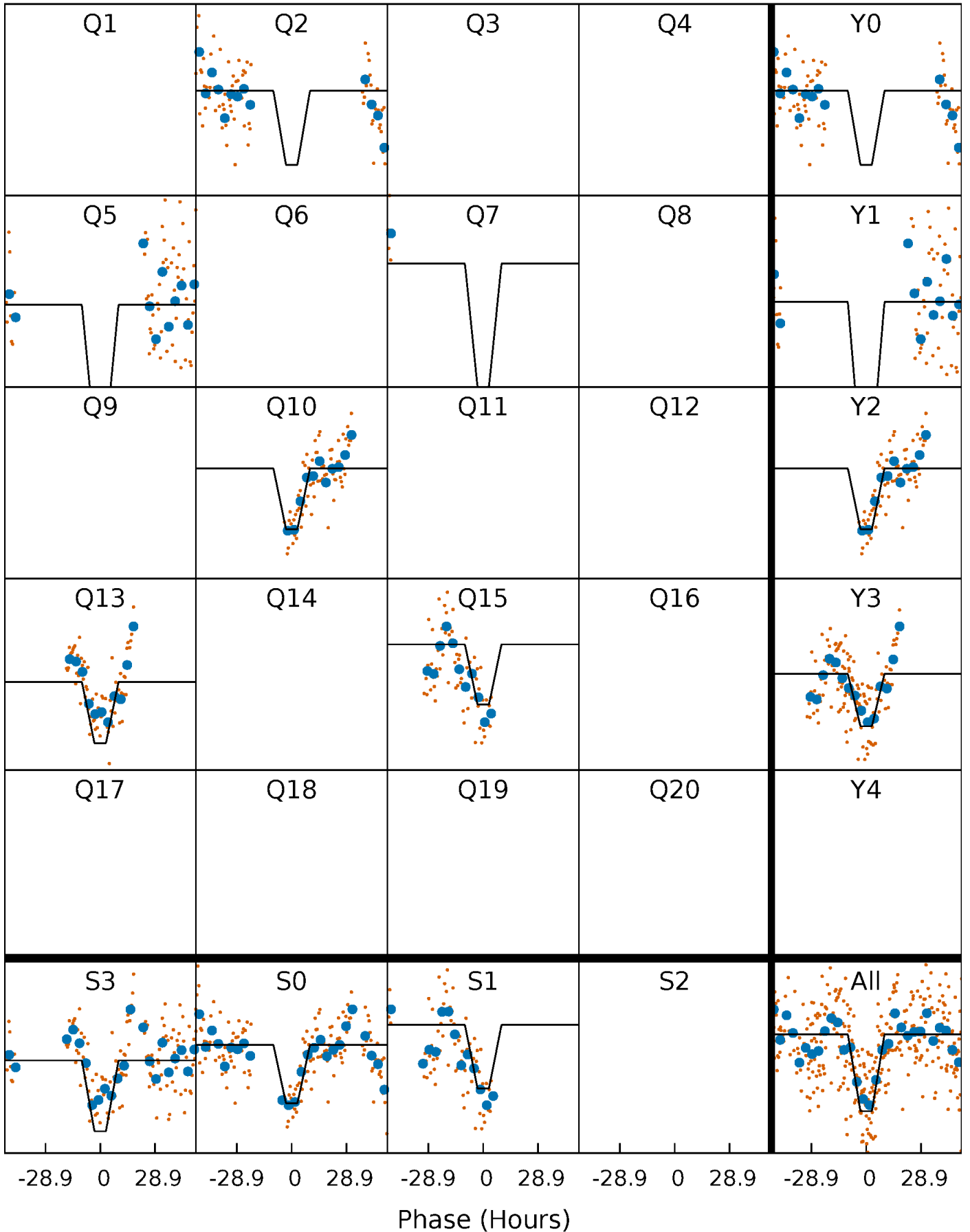
# DV Quarter-Phased Transit Curves

TCE 010074067-02 P=242.832123 Days  $T_0=234.093939$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

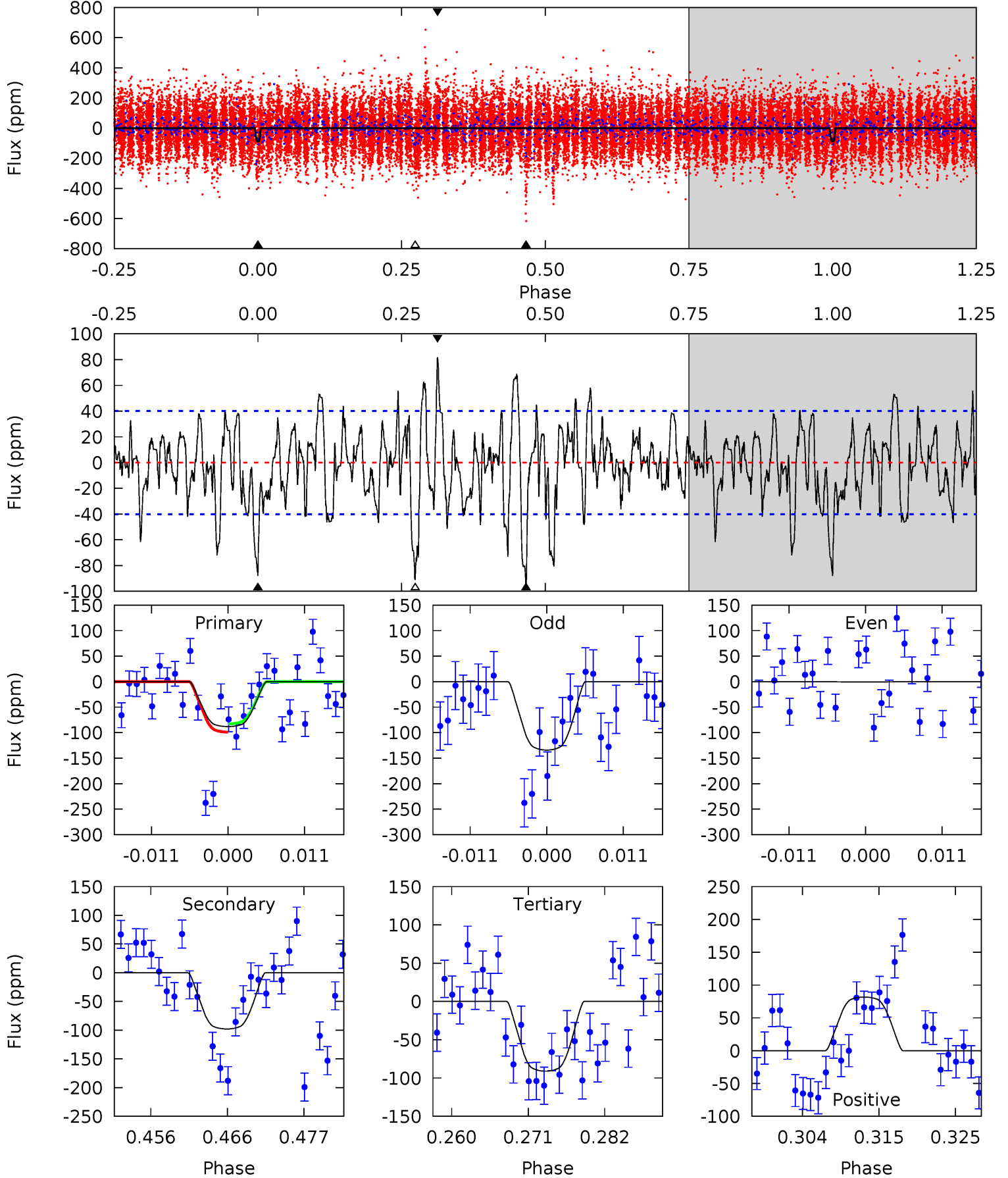
TCE 010074067-02 P=242.982273 Days  $T_0=233.902601$  (BKJD)



# DV Model-Shift Uniqueness Test

010074067-02, P = 242.832123 Days, E = 234.093939 Days

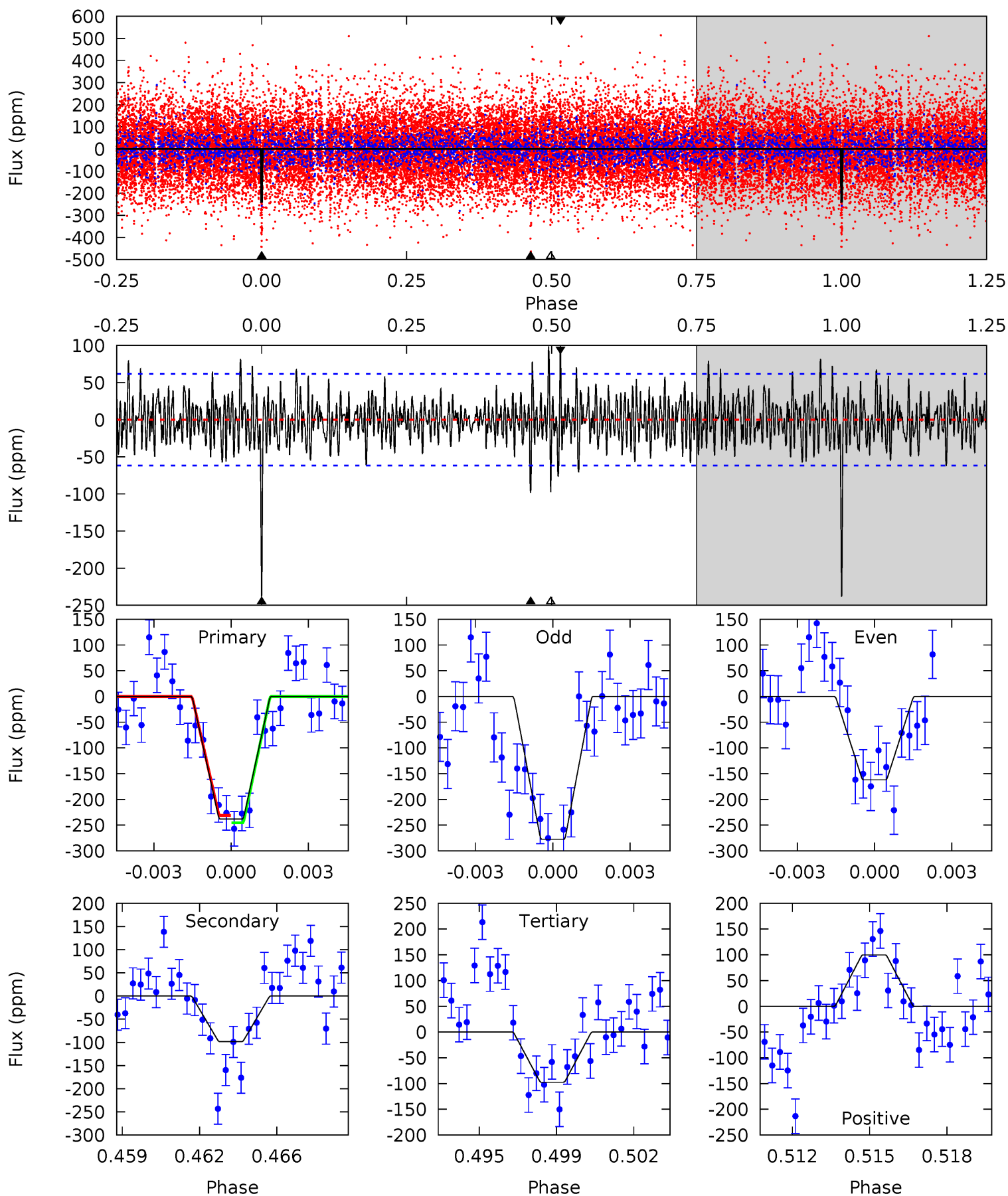
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	12.2	11.4	10.2	5.01	2.55	3.16	-0.37	0.80	0.86	2.02	7.96	1.20	0.45	0.92



# Alt Model-Shift Uniqueness Test

010074067-02, P = 242.982273 Days, E = 233.902601 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	8.35	8.28	8.48	5.24	2.94	2.04	12.0	11.8	0.07	-0.13	4.81	0.94	0.30	0.61



### Stellar Parameters For KIC 010074067

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6007^{+218}_{-200}$	$3.886^{+0.292}_{-0.097}$	$-0.100^{+0.300}_{-0.250}$	$2.071^{+0.383}_{-0.712}$	$1.203^{+0.214}_{-0.214}$	$0.191^{+0.388}_{-0.059}$
	+4%/-3%	+8%/-2%	+300%/-250%	+18%/-34%	+18%/-18%	+203%/-31%
Source	KIC0	FLK73	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 010074067-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-98 \pm 8$	$5.67^{+0.77}_{-0.97}$	$581^{+35}_{-52}$	$4032^{+139}_{-138}$	$1116^{+479}_{-225}$
Alt.	$-98 \pm 12$	$3.60^{+0.59}_{-0.64}$	$582^{+37}_{-50}$	$4801^{+248}_{-253}$	$2799^{+1249}_{-740}$

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



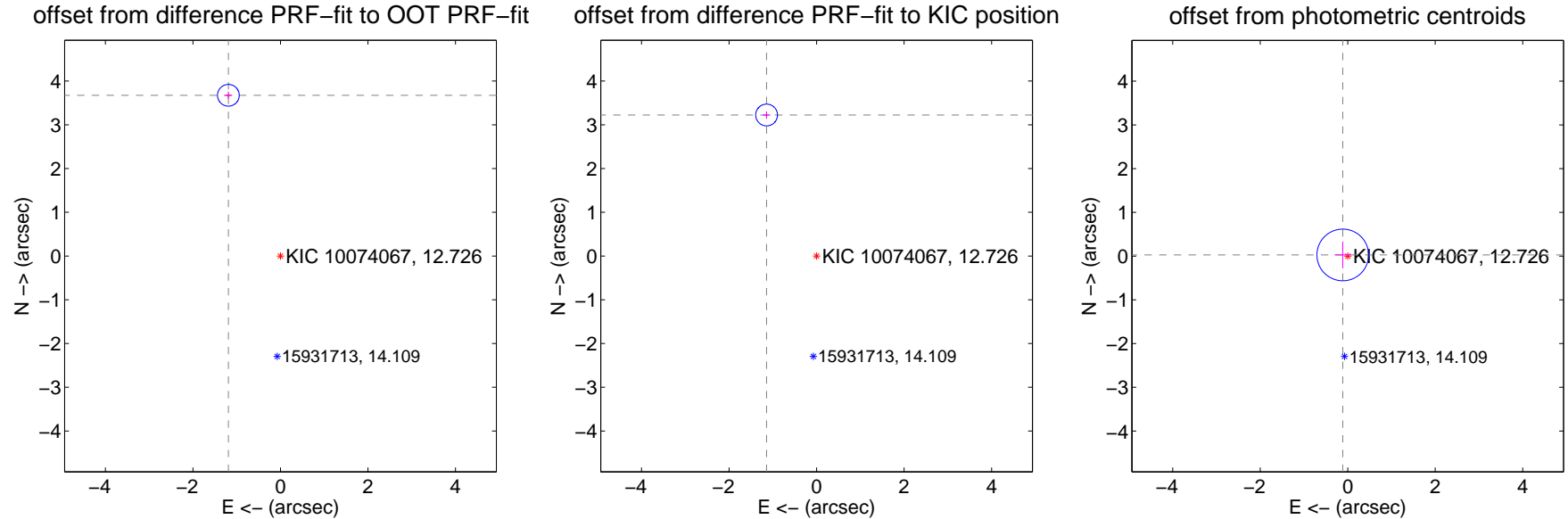
## DV Centroid Data

Supplemental centroid analysis for 010074067-02. Kepler magnitude: 12.73. Transit SNR 15.35

There are 0 quarters with good PRF difference image offsets

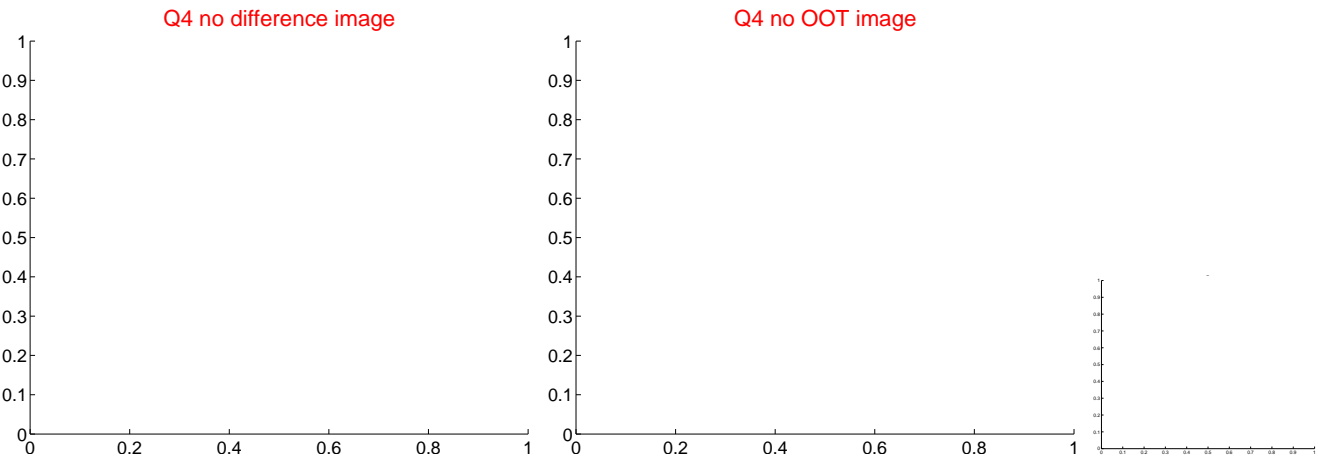
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.862 \pm 0.083$	46.63	$1.190 \pm 0.089$	$3.674 \pm 0.082$
PRF-fit source offset from KIC position	$3.420 \pm 0.083$	41.23	$1.142 \pm 0.089$	$3.223 \pm 0.082$
photometric centroid source offset	$0.12 \pm 0.20$	0.59	$0.11 \pm 0.19$	$0.03 \pm 0.31$



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.

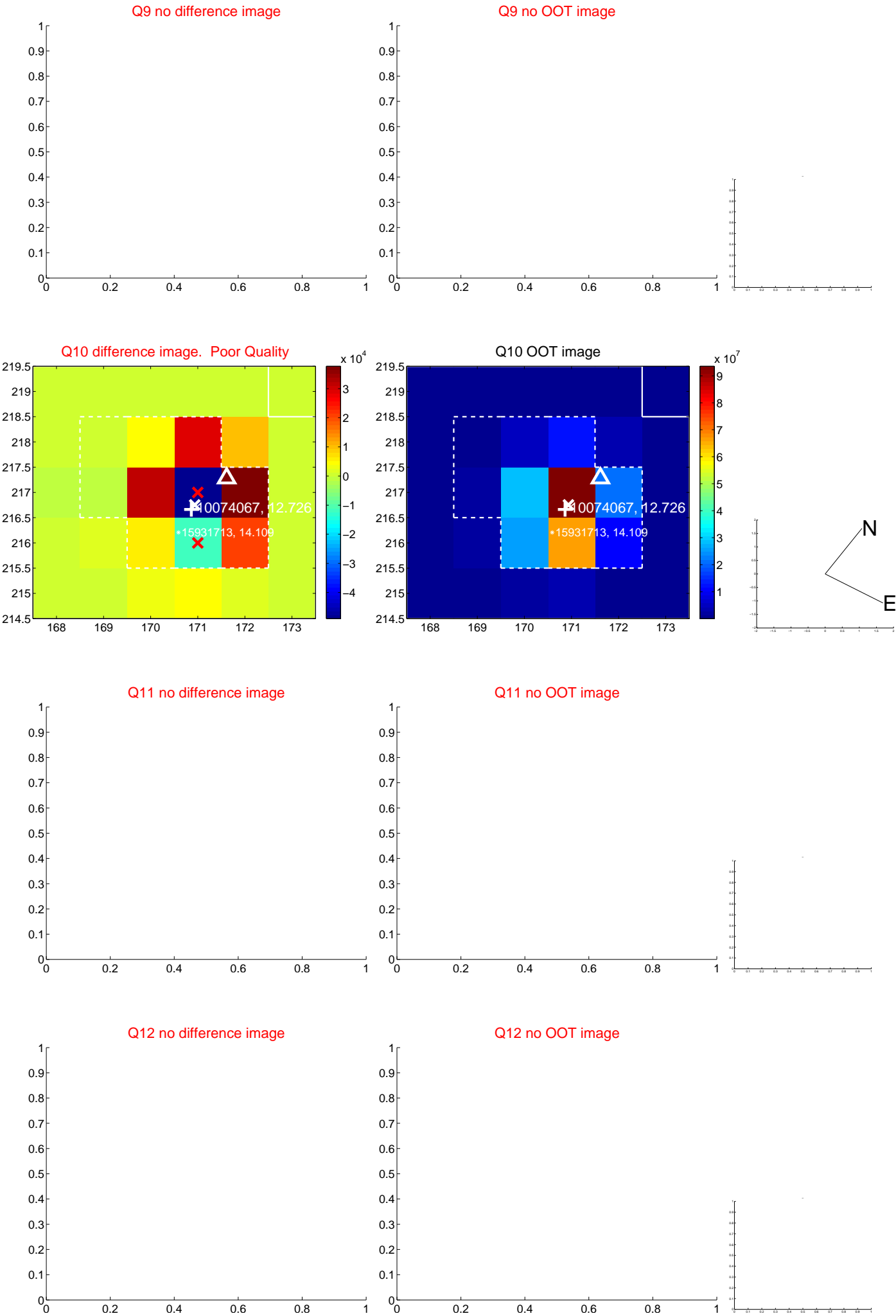
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

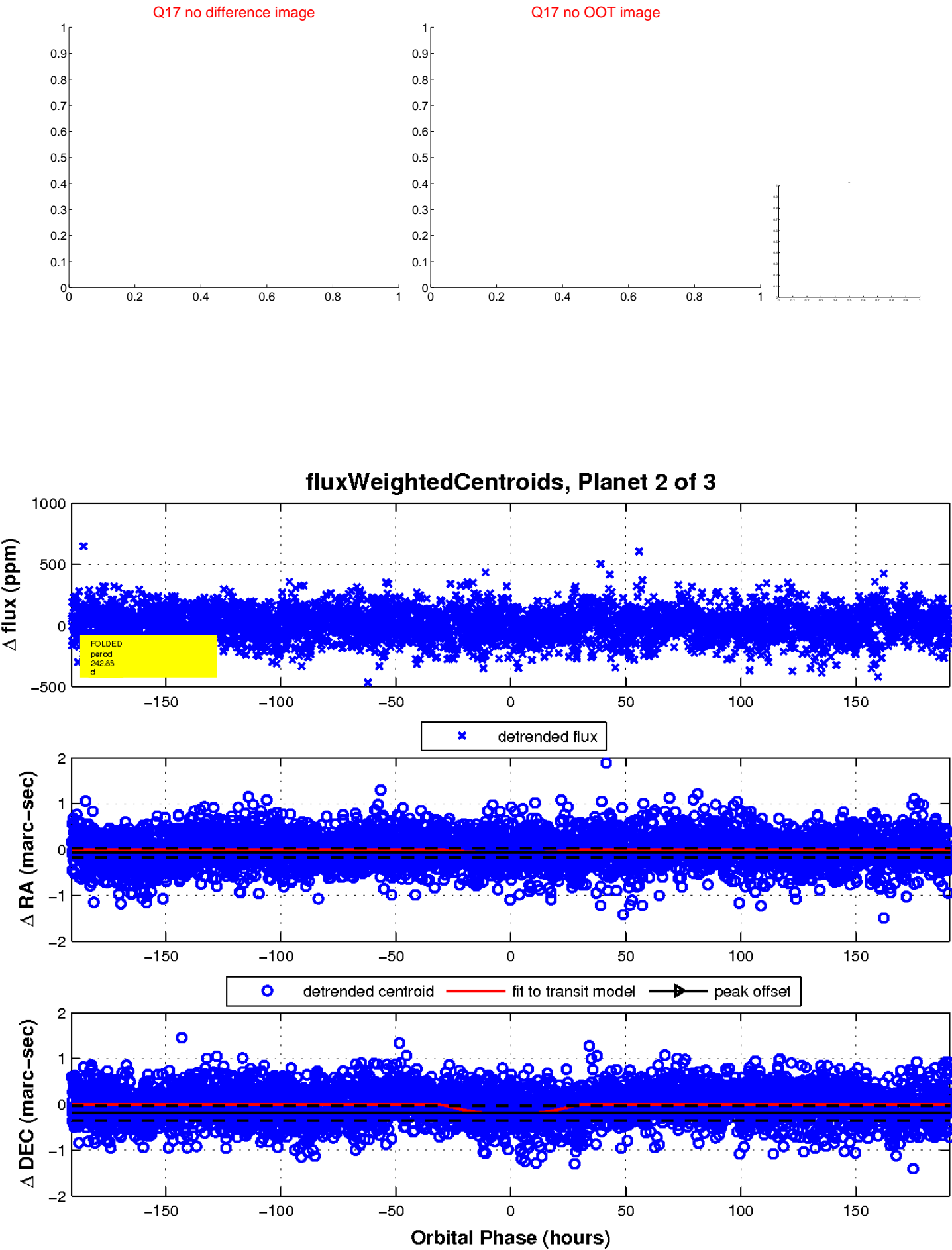




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

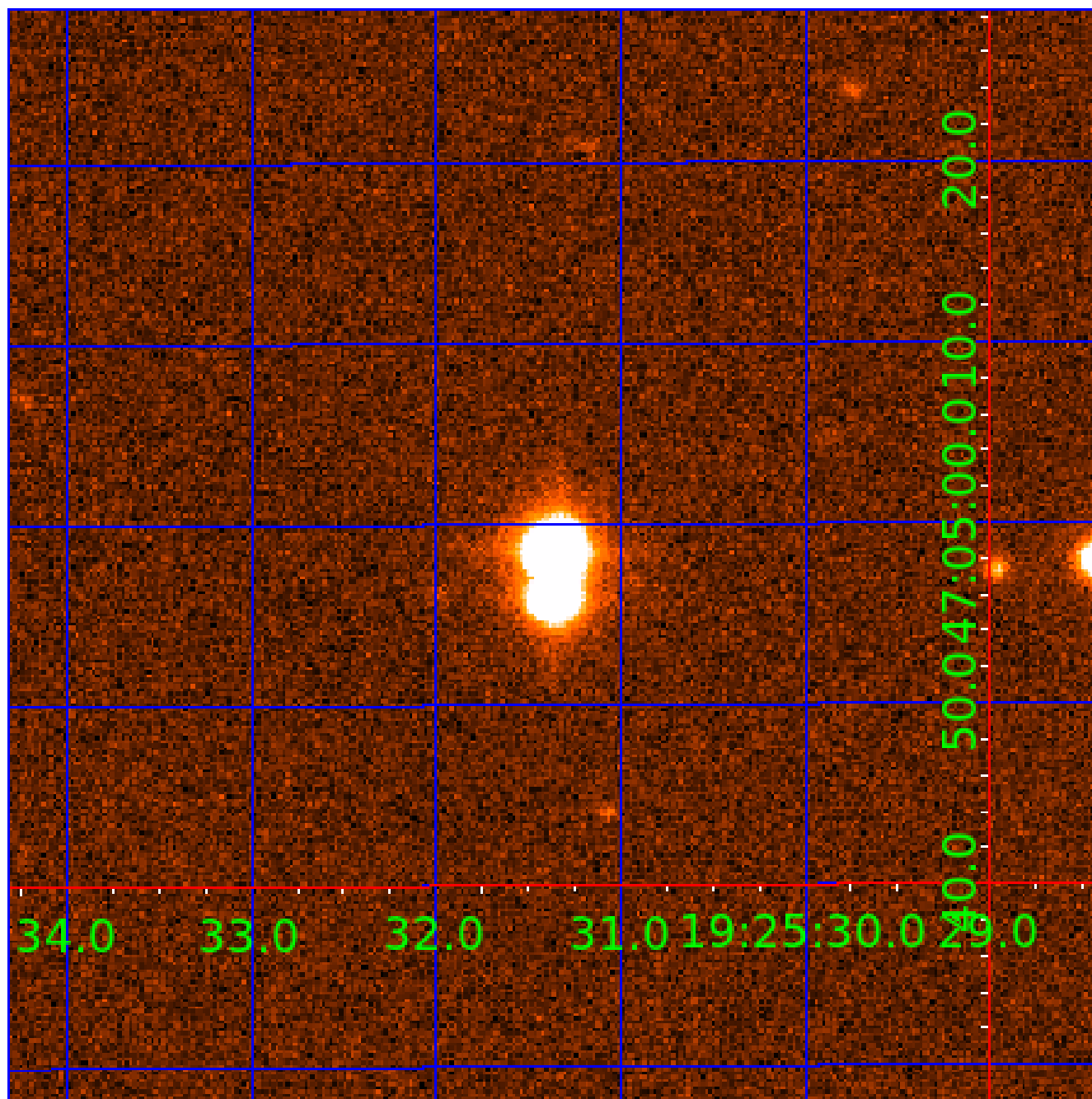


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 010074067

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010074067-01	OBS	No	3.909875	132.574856	16.3	19.197	7.9	7.5	2.07	6007	1.02	1873.96
010074067-02	OBS	No	242.832123	234.093939	467.0	63.601	15.7	15.4	2.07	6007	5.81	7.62
010074067-03	OBS	No	3.909374	134.237587	17.8	41.805	11.0	10.4	2.07	6007	0.87	1874.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010074067-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
010074067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010074067-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—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.

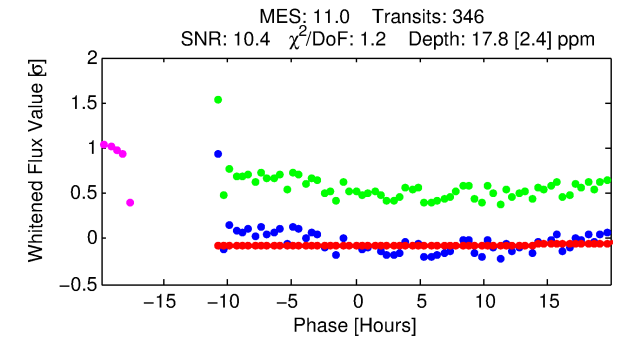
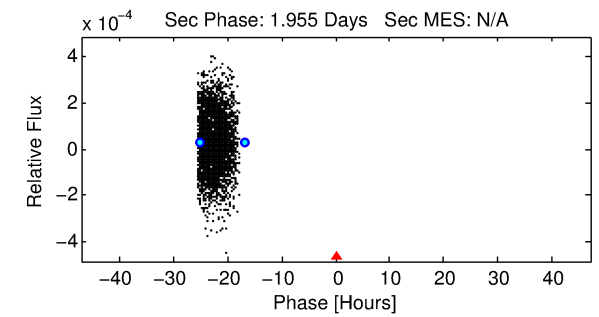
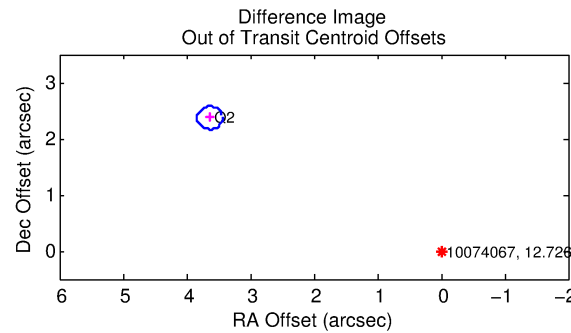
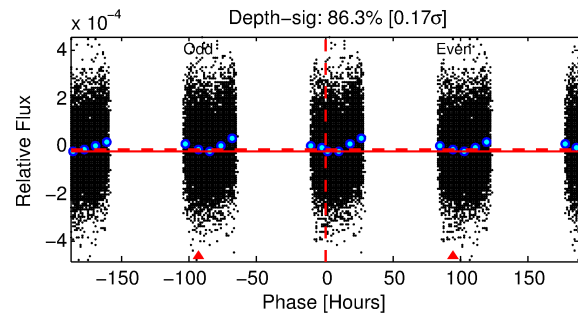
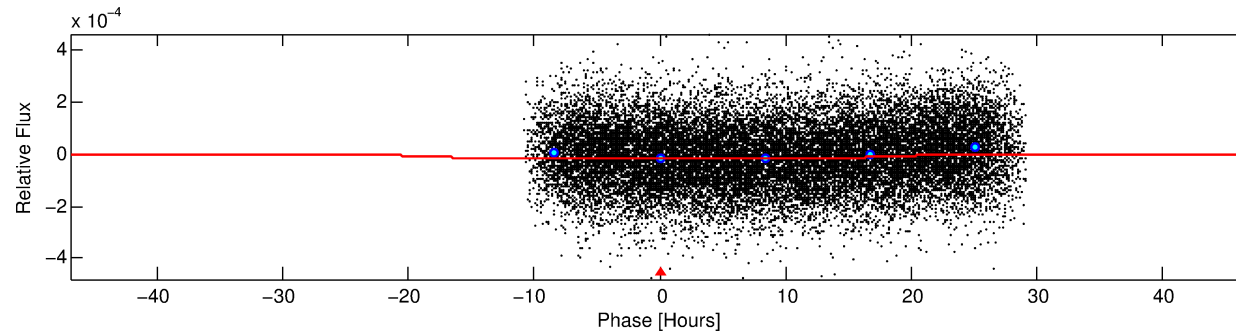
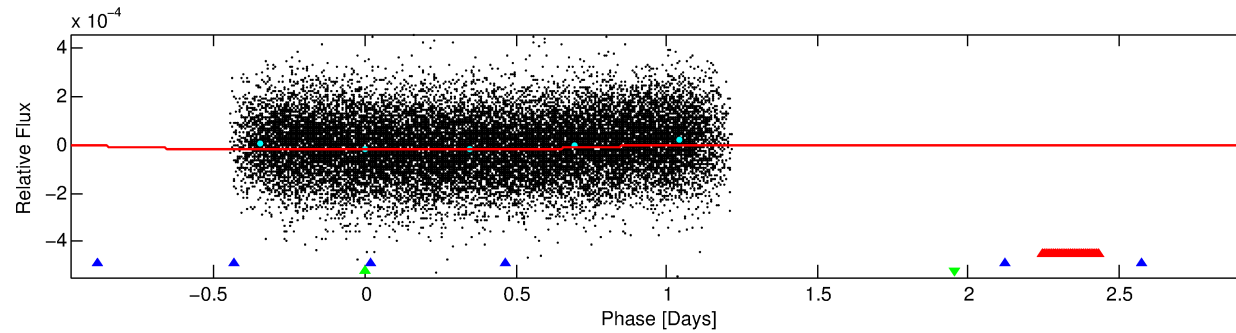
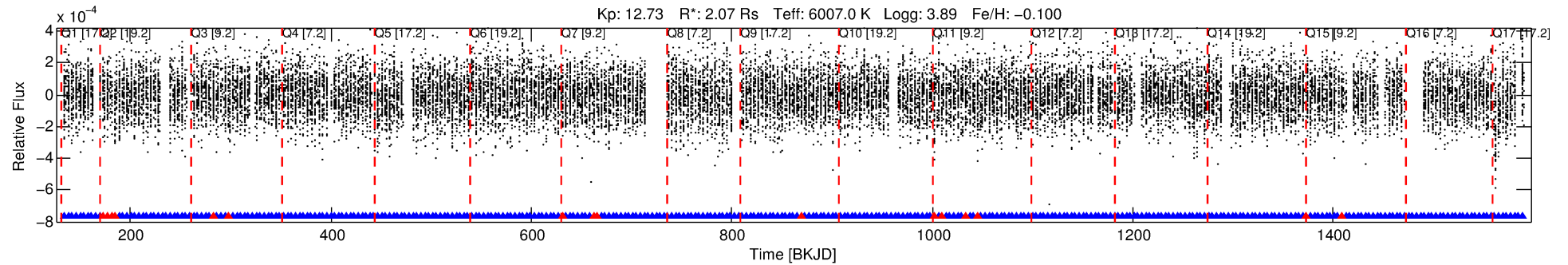
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010074067-03

No Significant Match Found

# DV One-Page Summary

KIC: 10074067 Candidate: 3 of 3 Period: 3.909 d



## DV Fit Results:

Period = 3.90937 [0.00017] d  
Epoch = 134.2376 [0.2182] BKJD  
Rp/R\* = 0.0039 [0.0032]  
a/R\* = 1.02 [0.19]  
b = 0.16 [23.17]  
Seff = 1874.28 [982.02]  
Teq = 1678 [220] K  
Rp = 0.87 [0.79] Re  
a = 0.0517 [0.0166] AU

## DV Diagnostic Results:

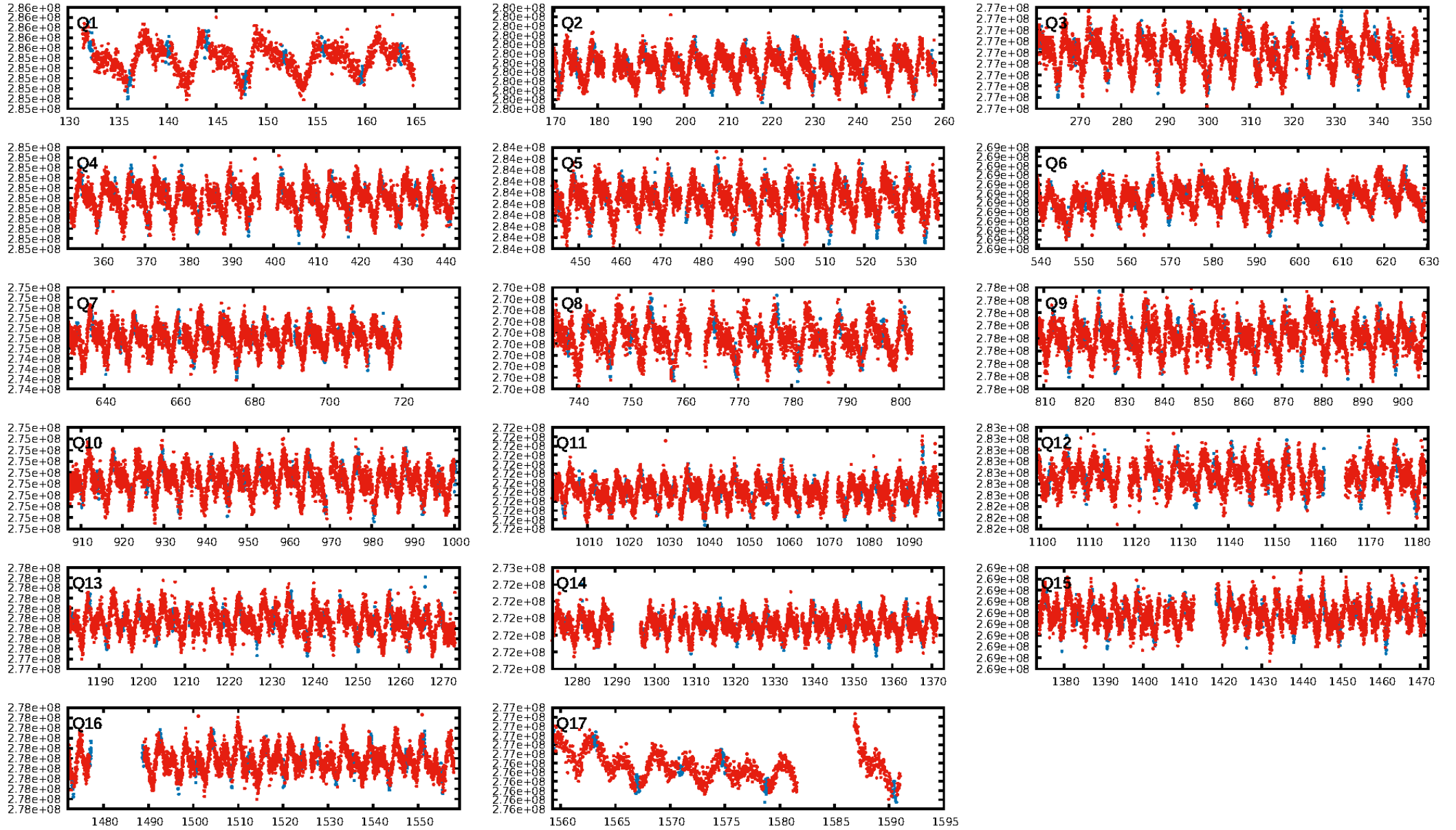
ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.95 [315/331]  
GhostDiagnostic-chr: 3.18  
Centroid-sig: 5.5%  
Centroid-so: 0.355 arcsec [0.59 $\sigma$ ]  
OotOffset-rm: 4.339 arcsec [64.02 $\sigma$ ]  
KicOffset-rm: 4.008 arcsec [59.12 $\sigma$ ]  
OotOffset-st: 1/0/0 [1]  
KicOffset-st: 1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:37:37 Z

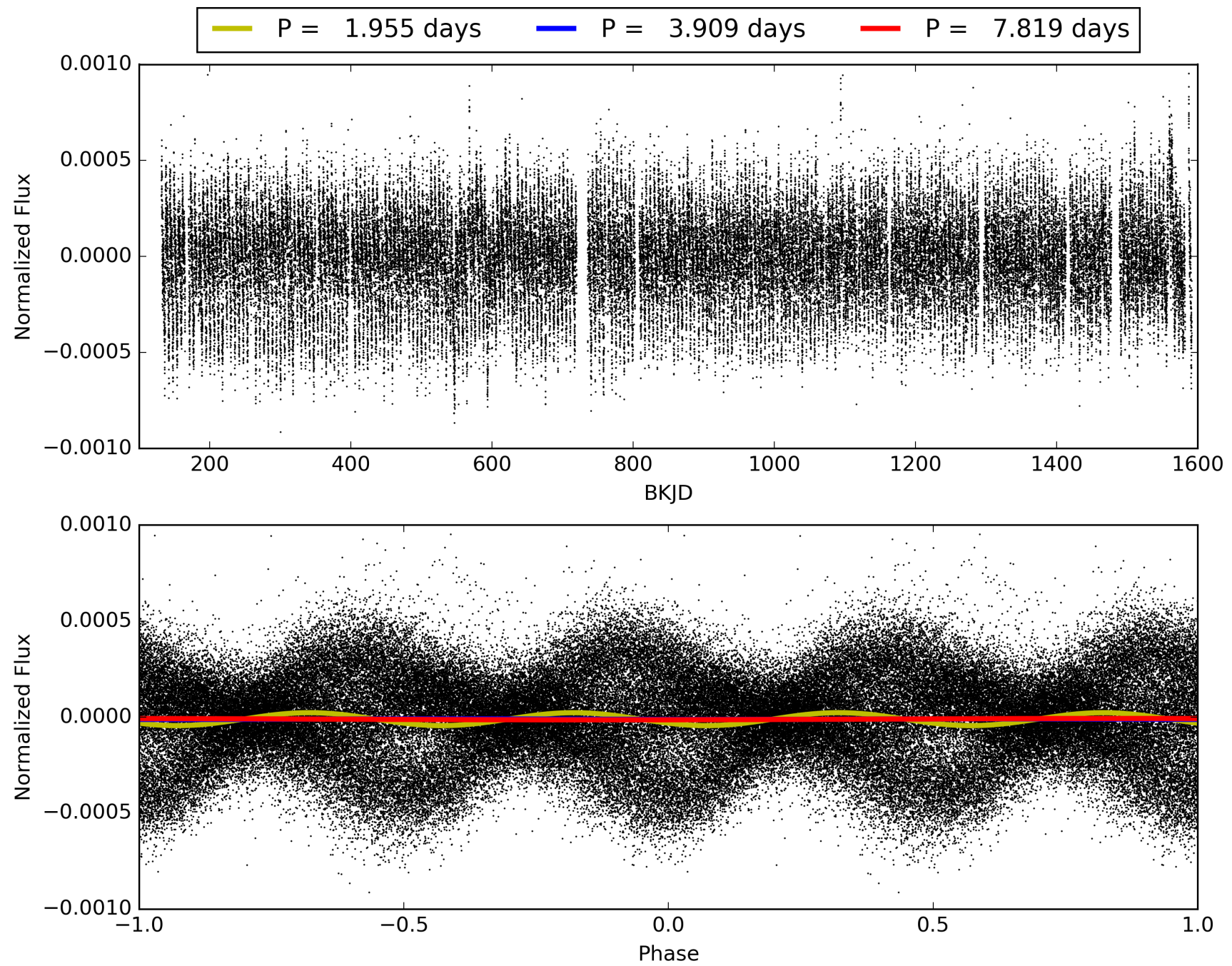
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 010074067-03, PDC Light Curves

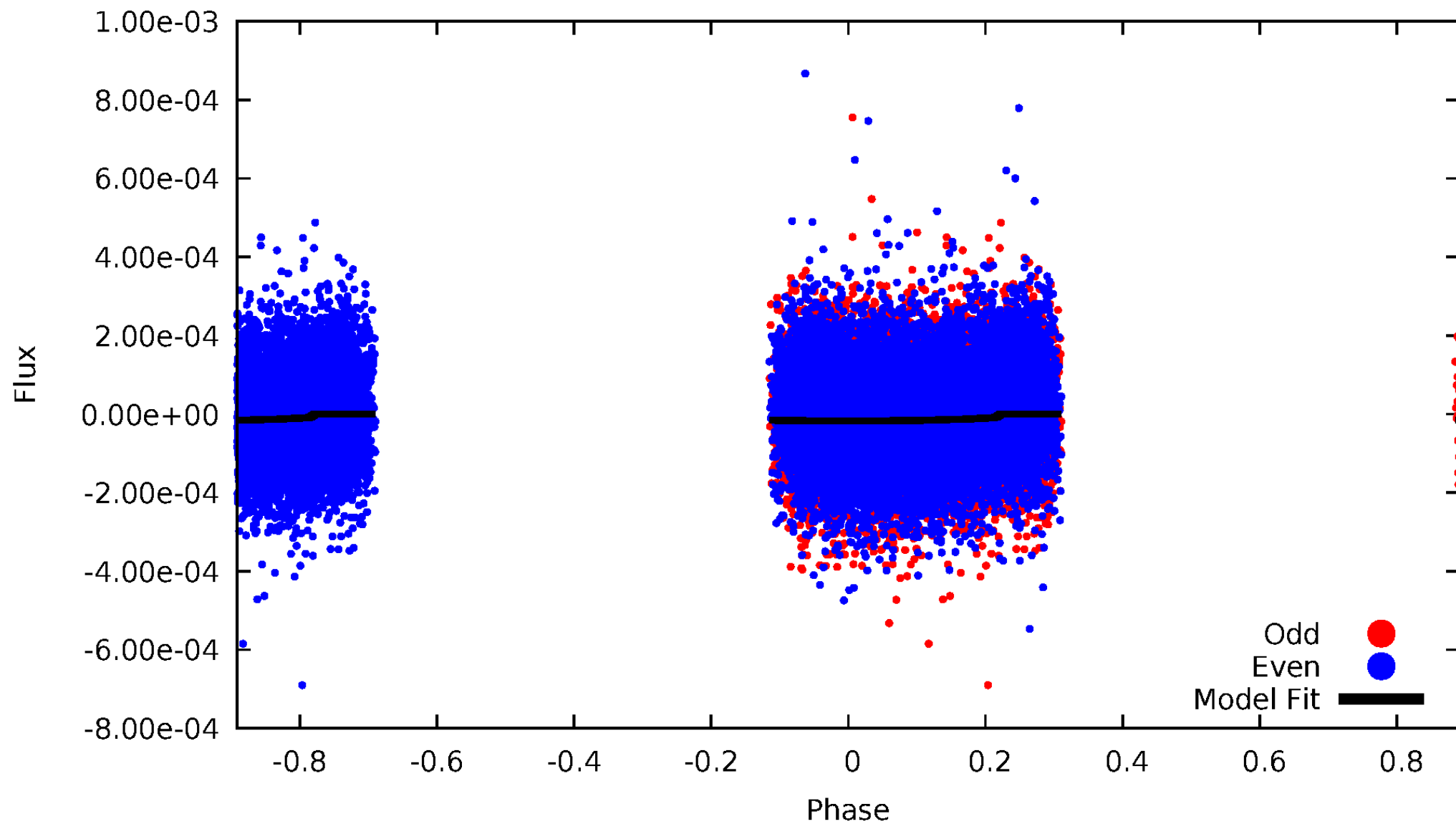


TCE 010074067-03



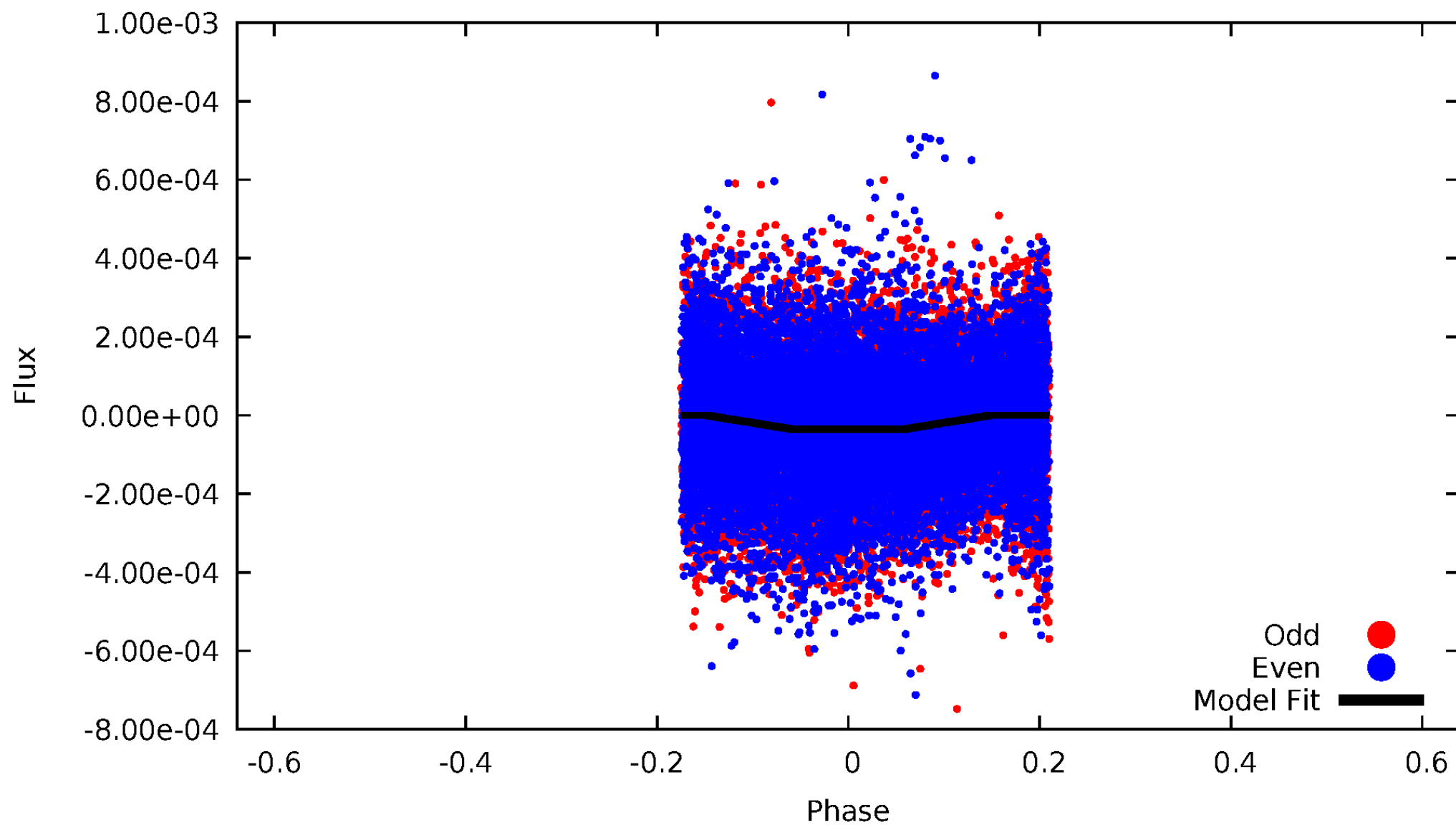
# DV Odd/Even

TCE 010074067-03



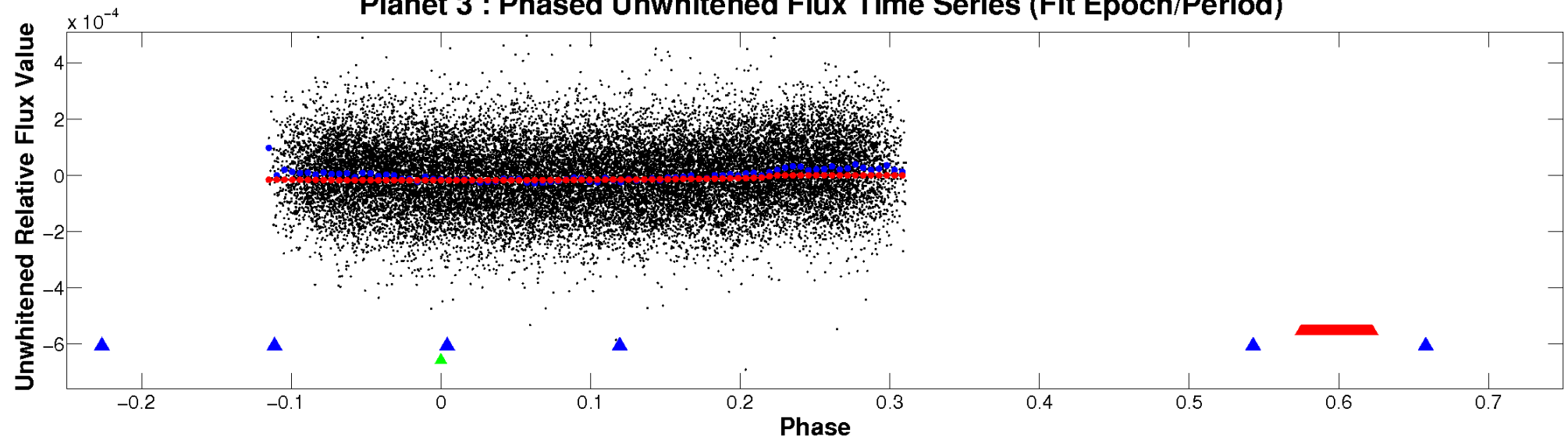
# ALT Odd/Even

TCE 010074067-03

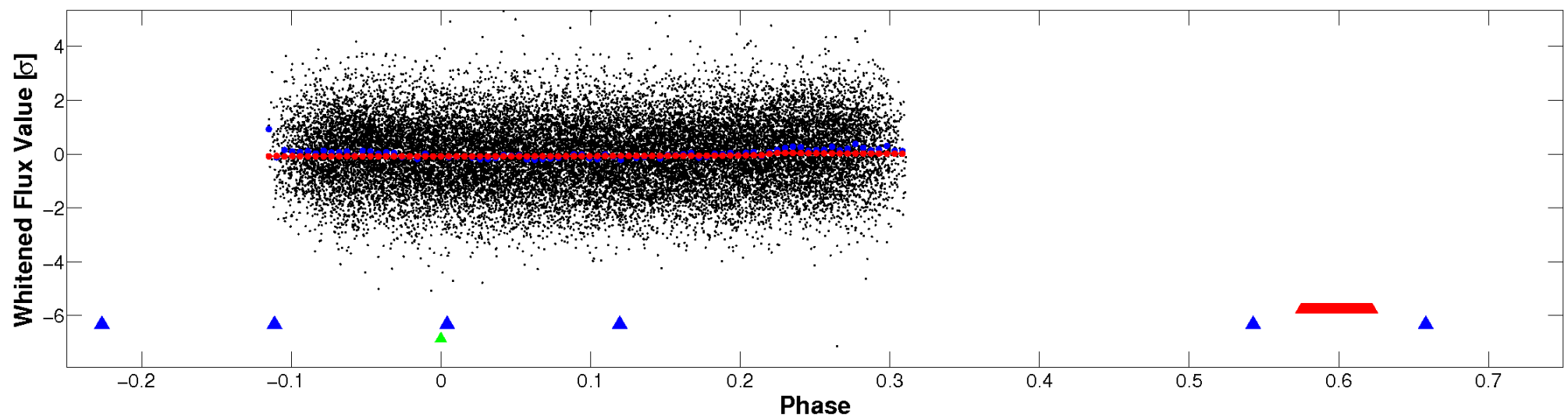


# Non-Whitened Vs. Whitened Light Curve

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



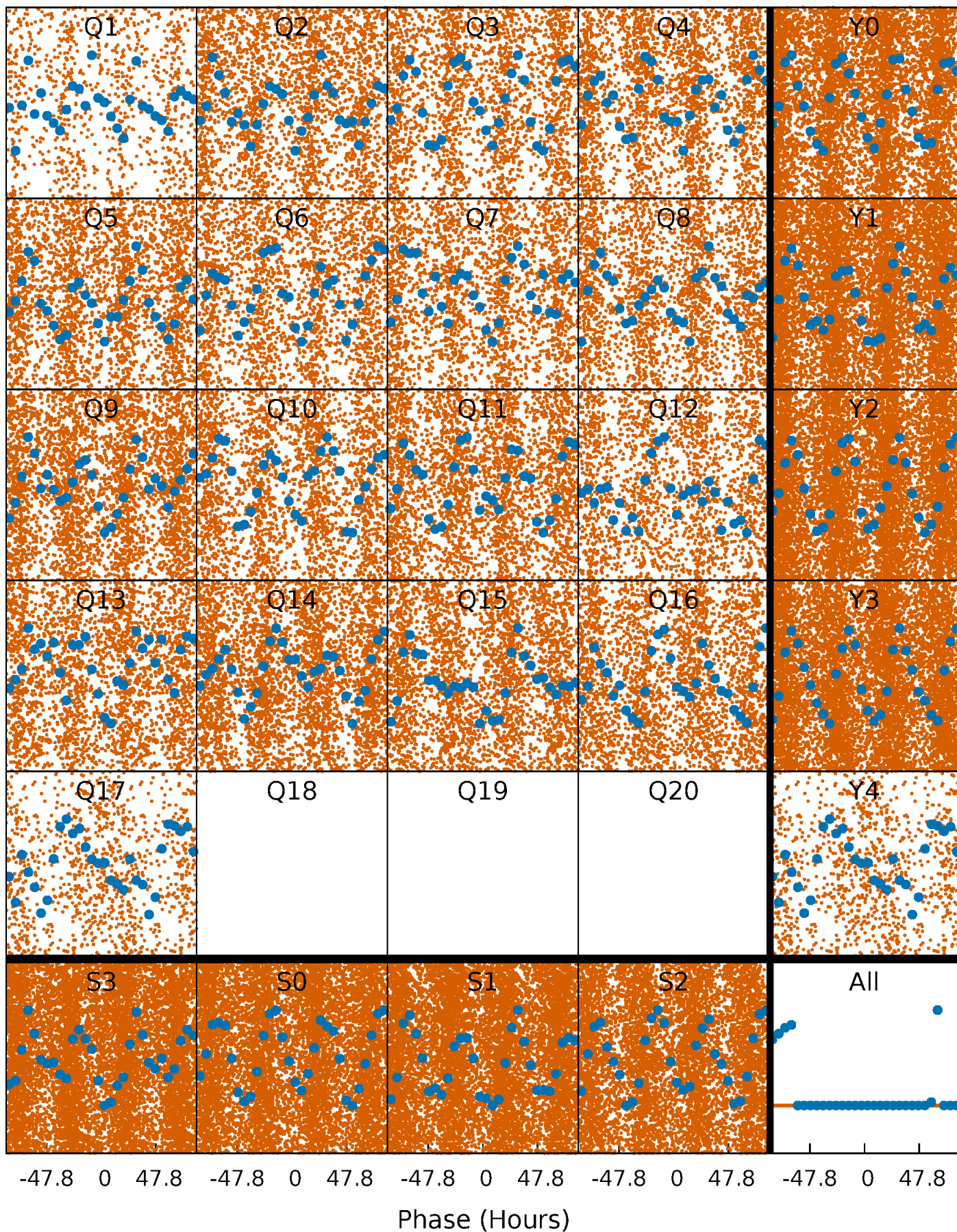
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

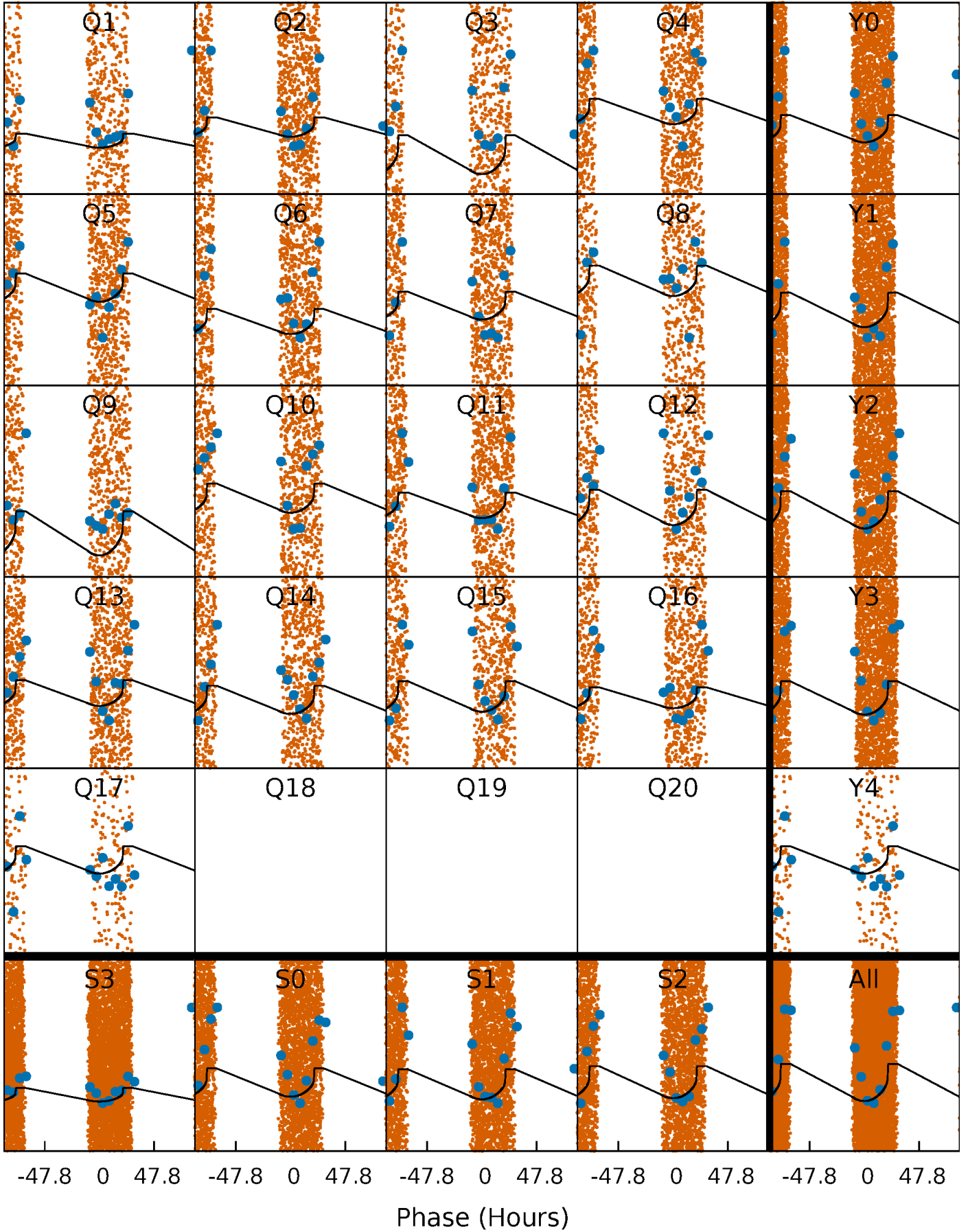
TCE 010074067-03 P= 3.909374 Days  $T_0=134.237587$  (BKJD)





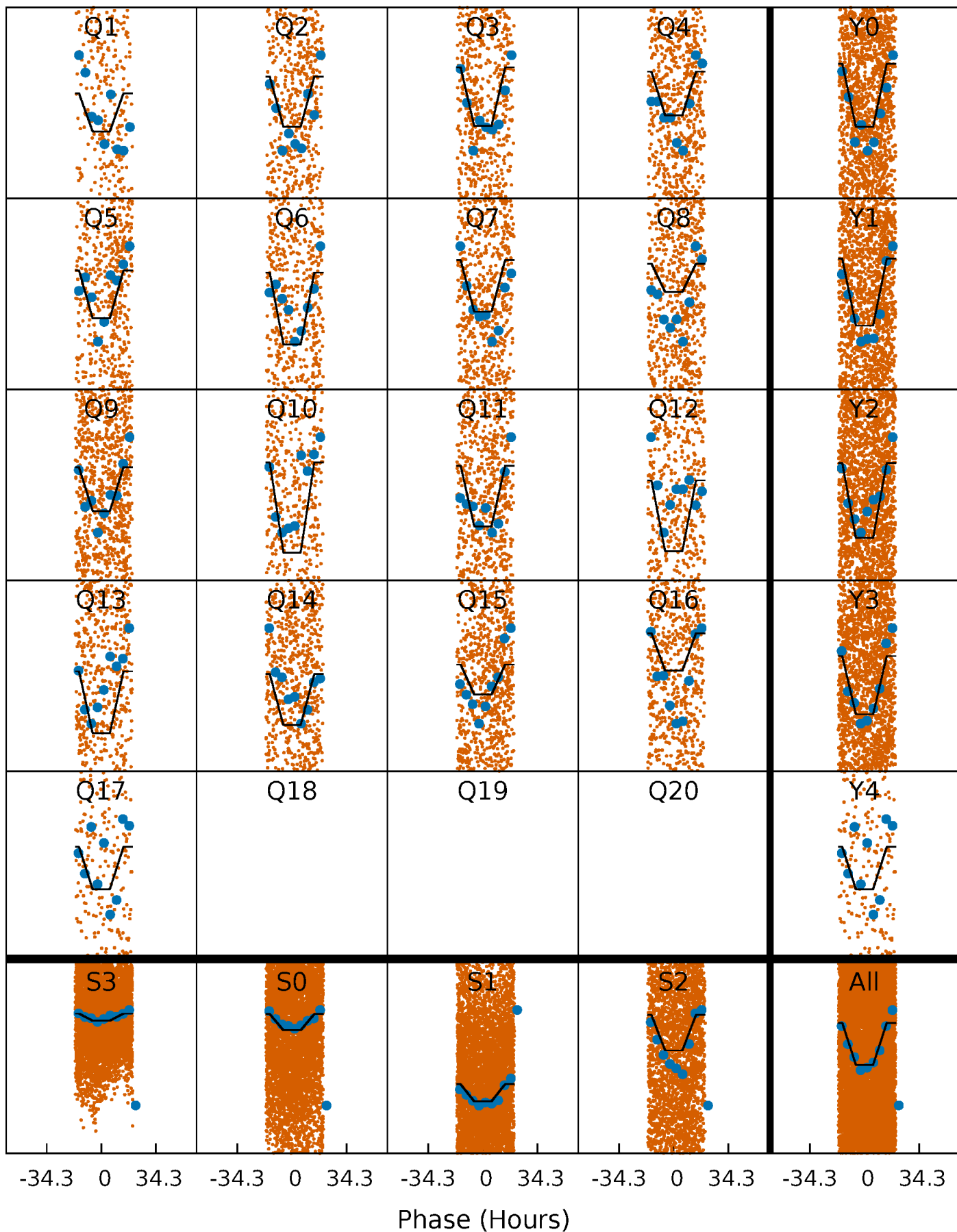
# DV Quarter-Phased Transit Curves

TCE 010074067-03   P= 3.909374 Days    $T_0=134.237587$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

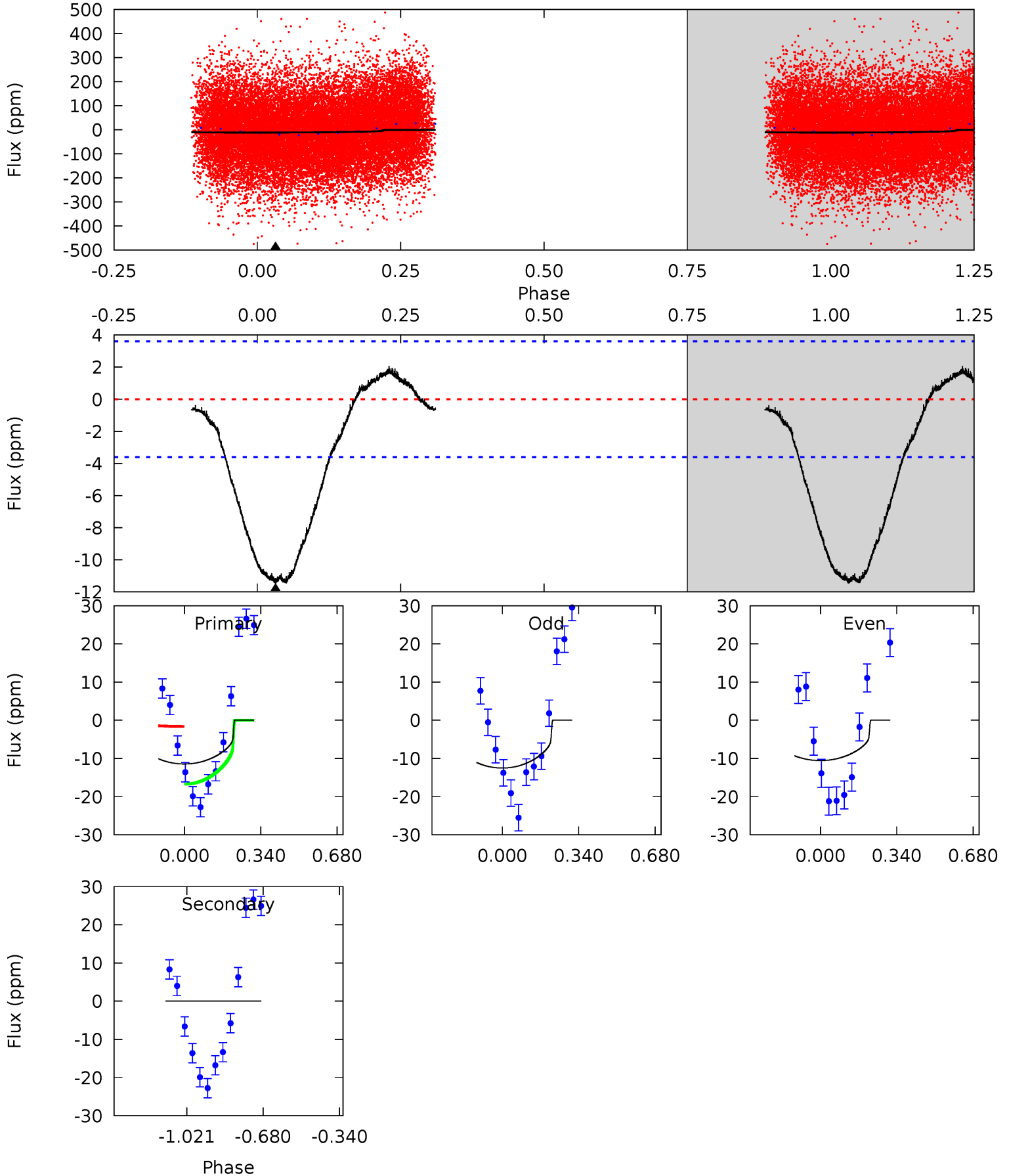
TCE 010074067-03     $P = 3.909927$  Days     $T_0 = 134.450313$  (BKJD)



# DV Model-Shift Uniqueness Test

010074067-03, P = 3.909374 Days, E = 130.328213 Days

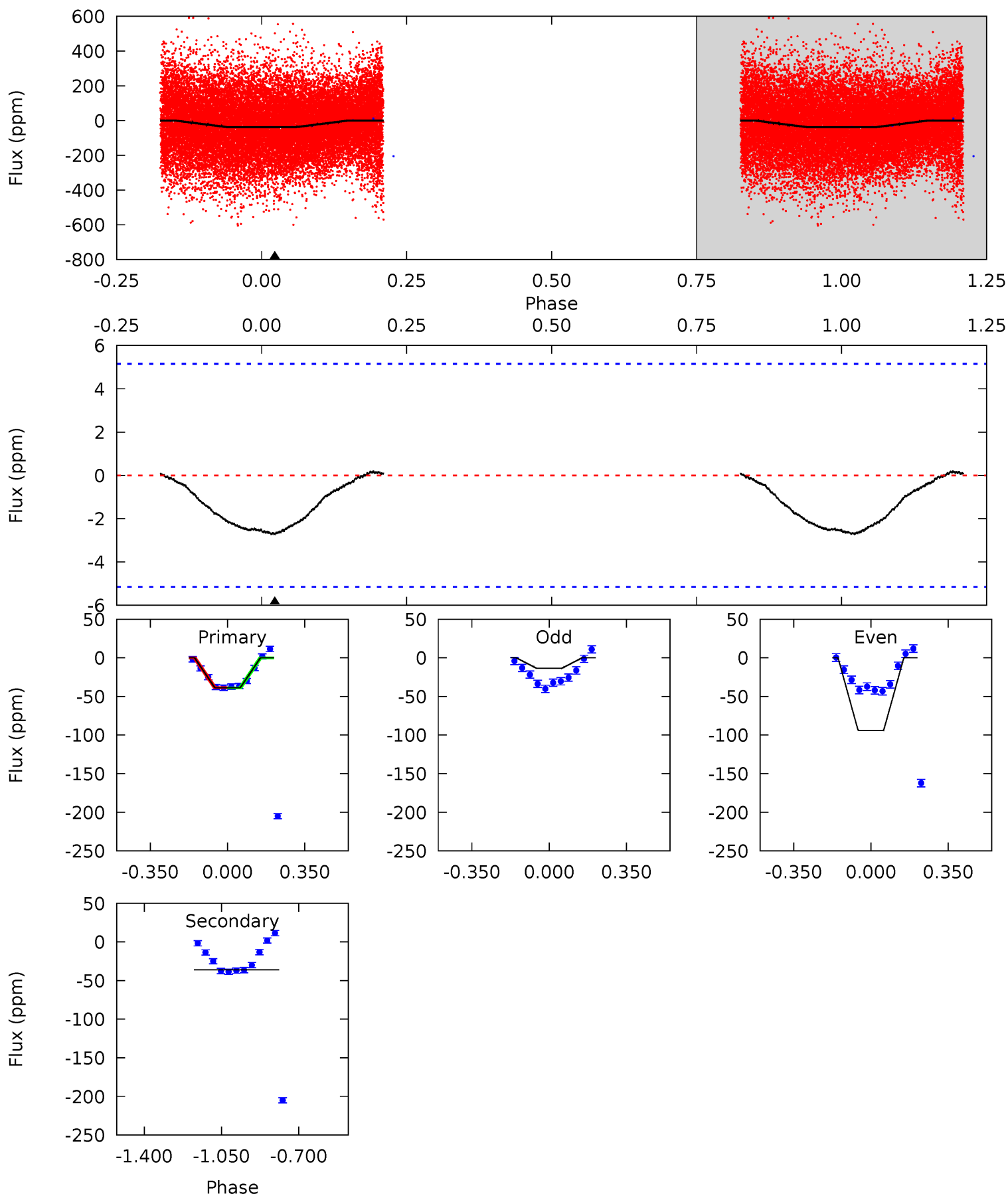
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	0	0	0	4.30	0.95	0.84	13.7	13.7	0	0	1.19	1.56	0.15	8.72



# Alt Model-Shift Uniqueness Test

010074067-03, P = 3.909927 Days, E = 130.540386 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
2.27	0	0	0	4.29	0.93	0.11	2.27	2.27	0	0	2.42	0	0.07	0.16



### Stellar Parameters For KIC 010074067

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6007^{+218}_{-200}$	$3.886^{+0.292}_{-0.097}$	$-0.100^{+0.300}_{-0.250}$	$2.071^{+0.383}_{-0.712}$	$1.203^{+0.214}_{-0.214}$	$0.191^{+0.388}_{-0.059}$
	+4%/-3%	+8%/-2%	+300%/-250%	+18%/-34%	+18%/-18%	+203%/-31%
Source	KIC0	FLK73	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 010074067-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1$	$0.88^{+0.73}_{-0.56}$	$2304^{+151}_{-199}$	$-2675^{+6070}_{-1057}$	$-0.012^{+1.967}_{-2.639}$
Alt.	$0 \pm 1$	$1.30^{+0.79}_{-0.65}$	$2304^{+147}_{-213}$	$-2713^{+5812}_{-721}$	$-0.039^{+1.339}_{-1.563}$

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

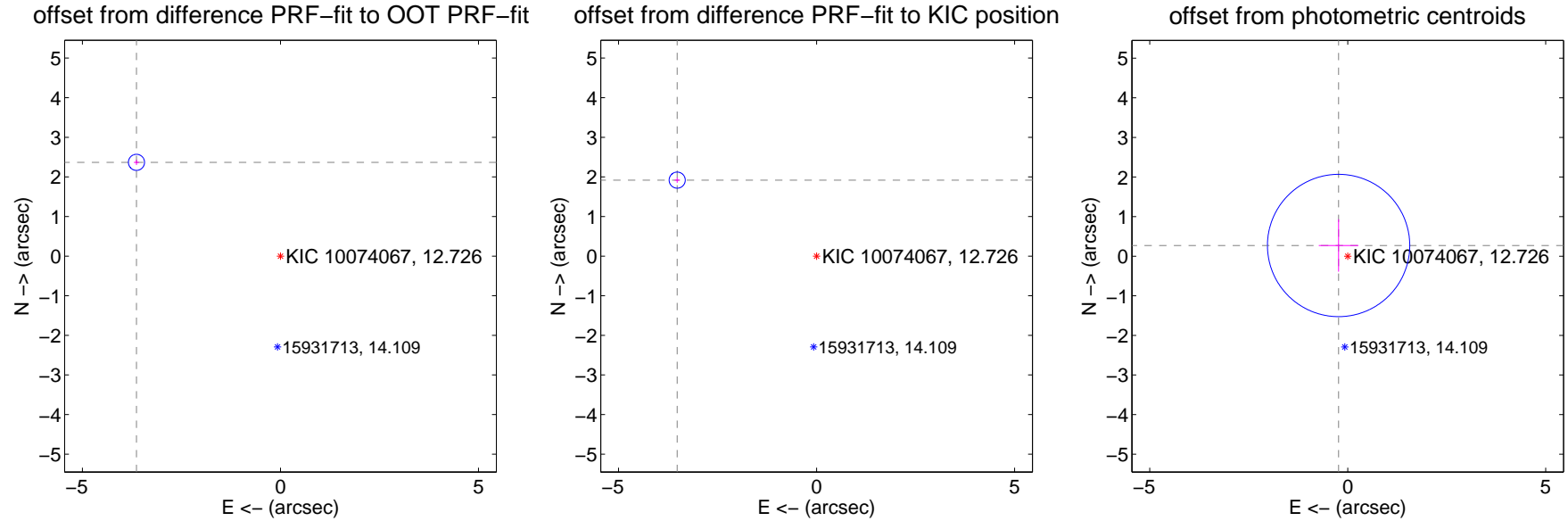
## DV Centroid Data

Supplemental centroid analysis for 010074067-03. Kepler magnitude: 12.73. Transit SNR 10.43

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

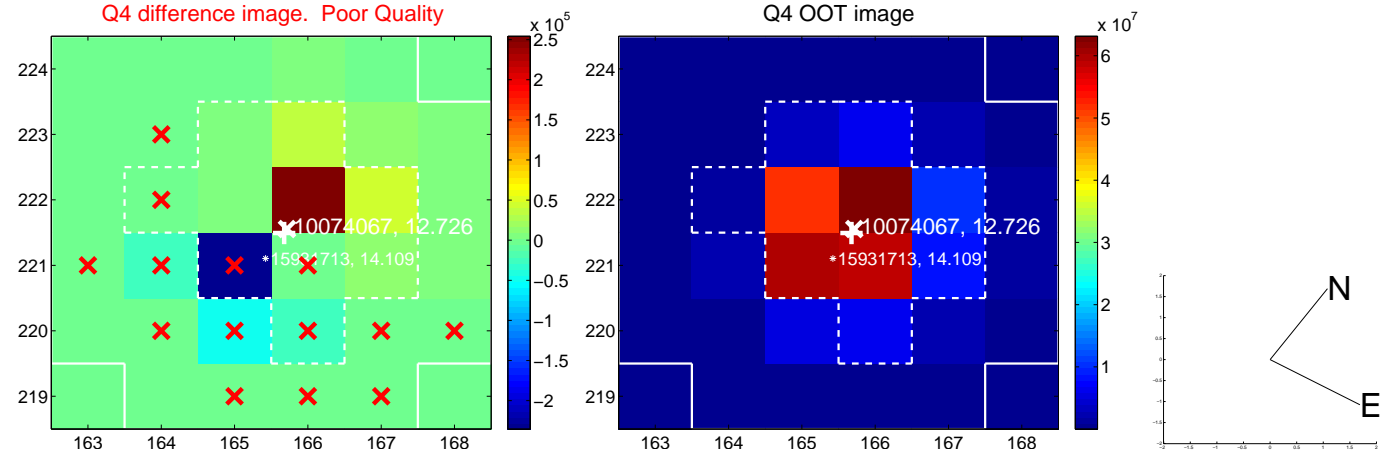
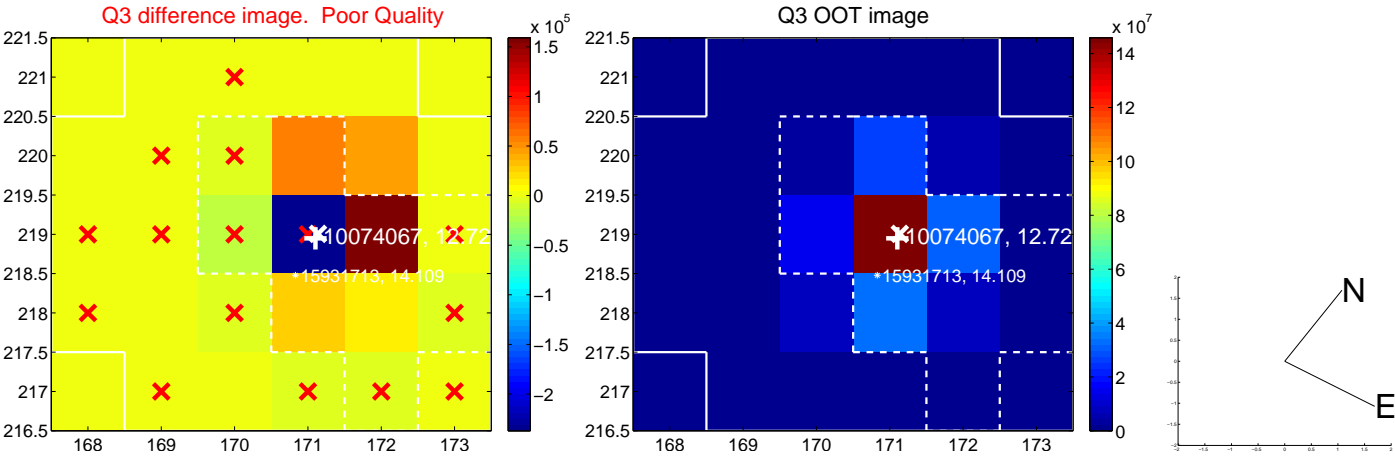
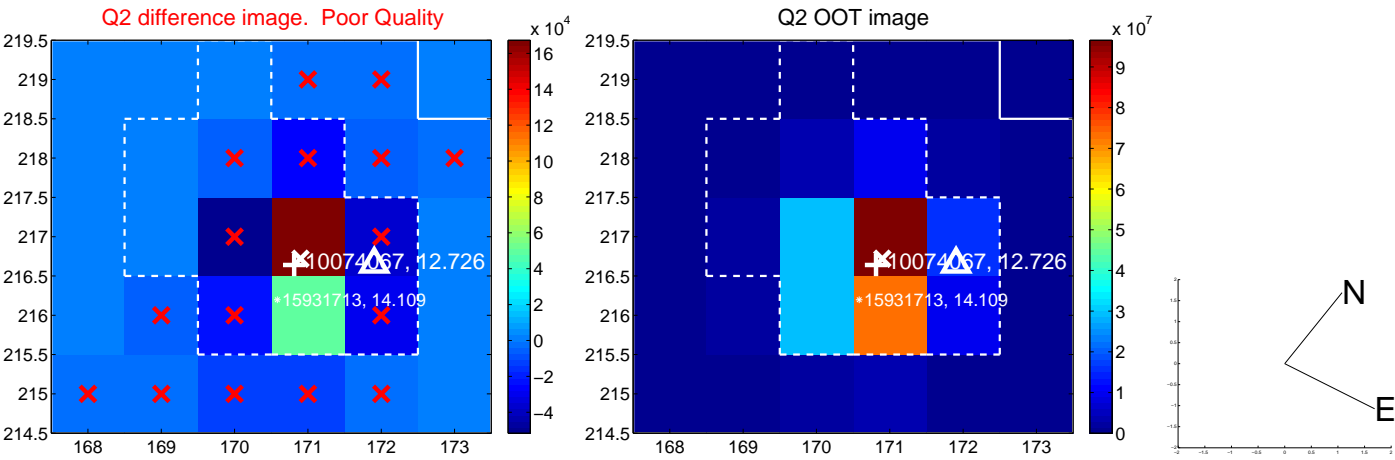
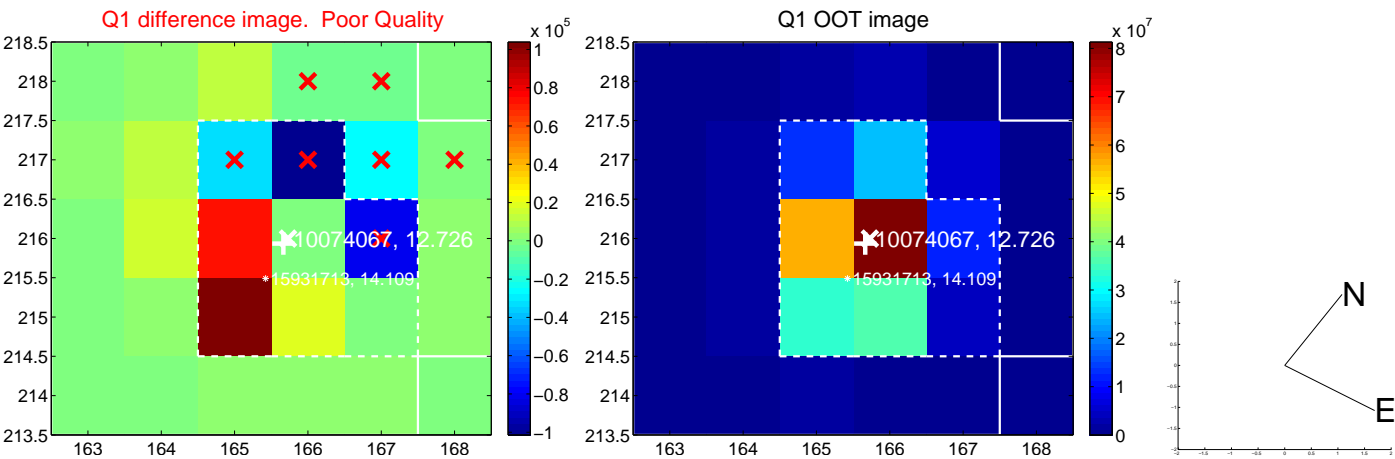
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.339 \pm 0.068$	64.02	$3.636 \pm 0.068$	$2.368 \pm 0.067$
PRF-fit source offset from KIC position	$4.008 \pm 0.068$	59.12	$3.519 \pm 0.068$	$1.919 \pm 0.067$
photometric centroid source offset	$0.36 \pm 0.60$	0.59	$0.23 \pm 0.50$	$0.27 \pm 0.66$



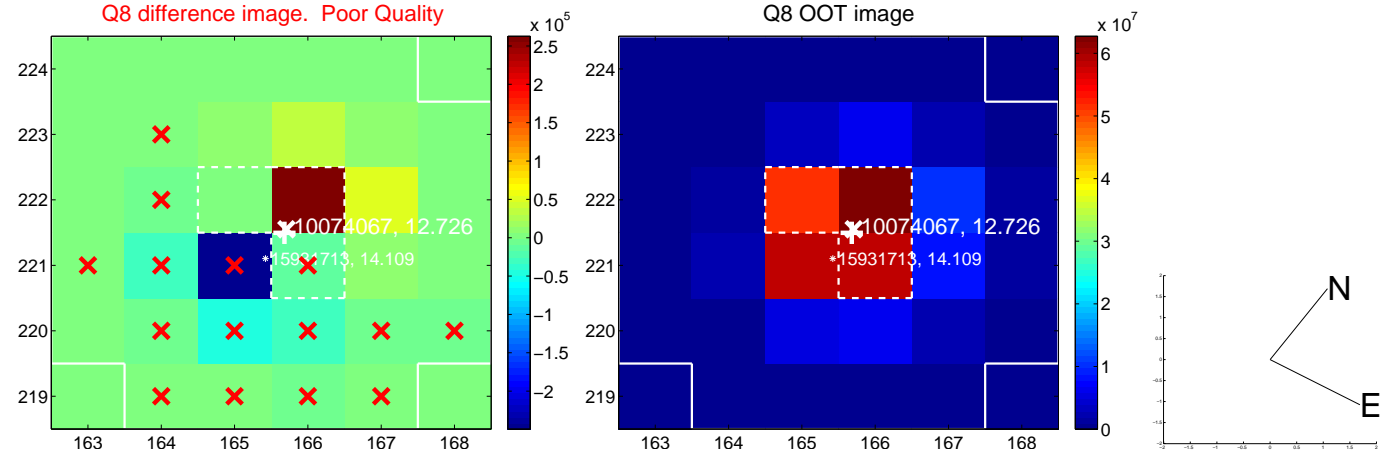
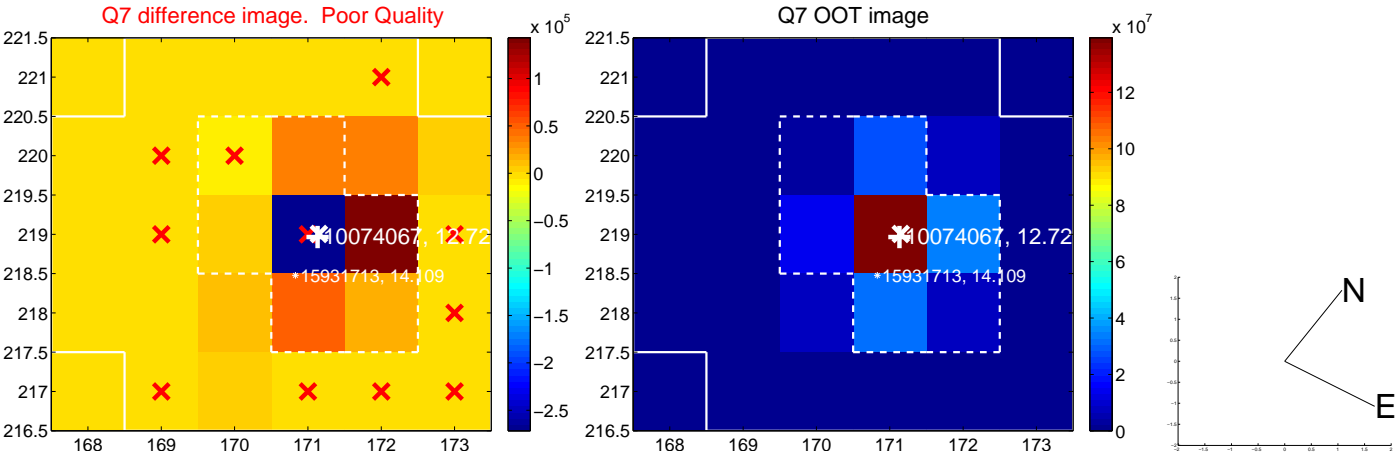
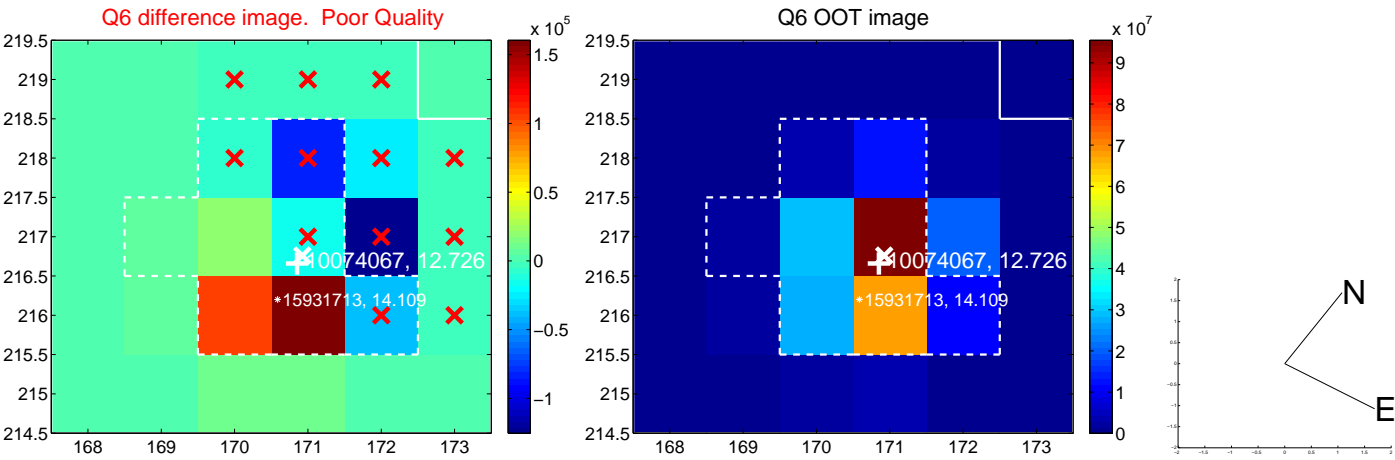
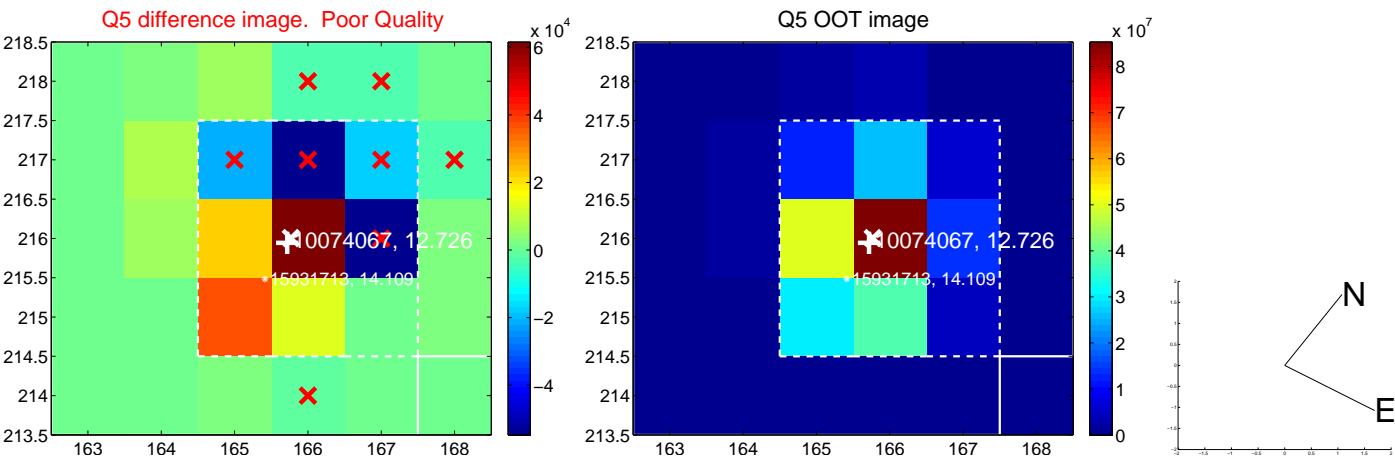
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



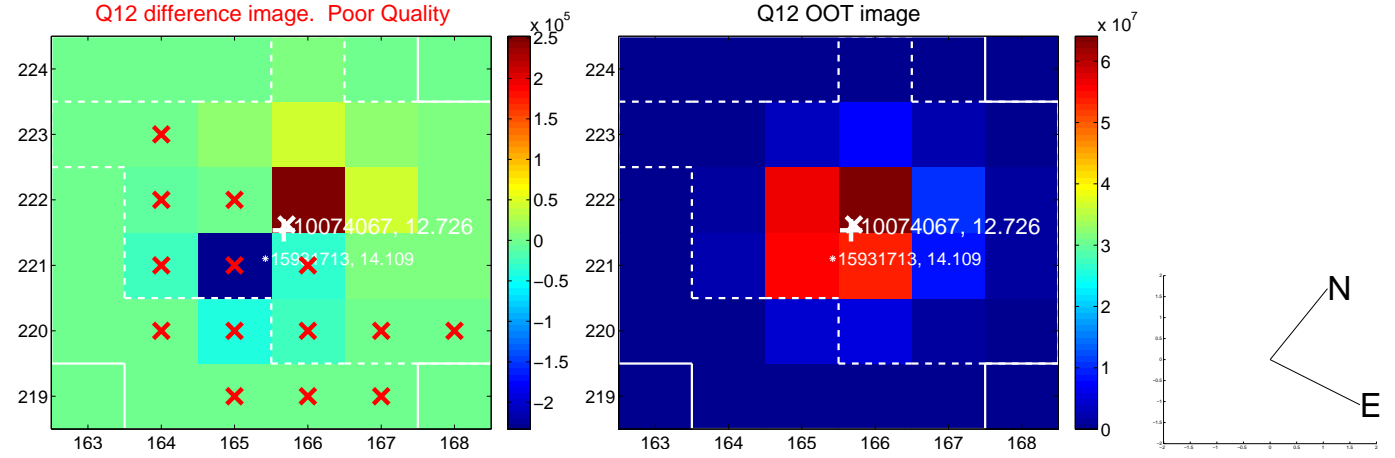
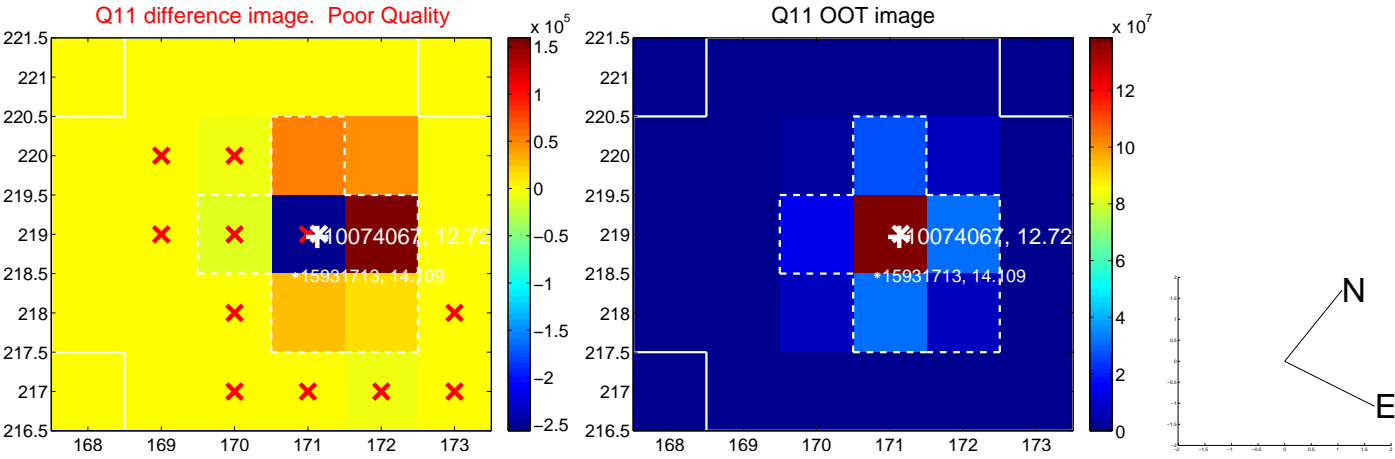
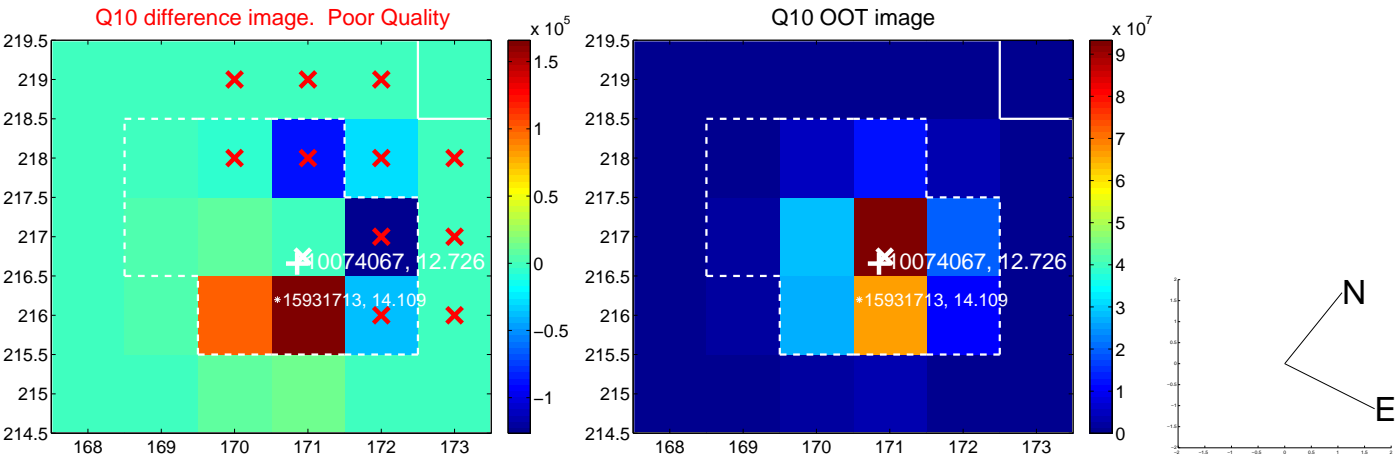
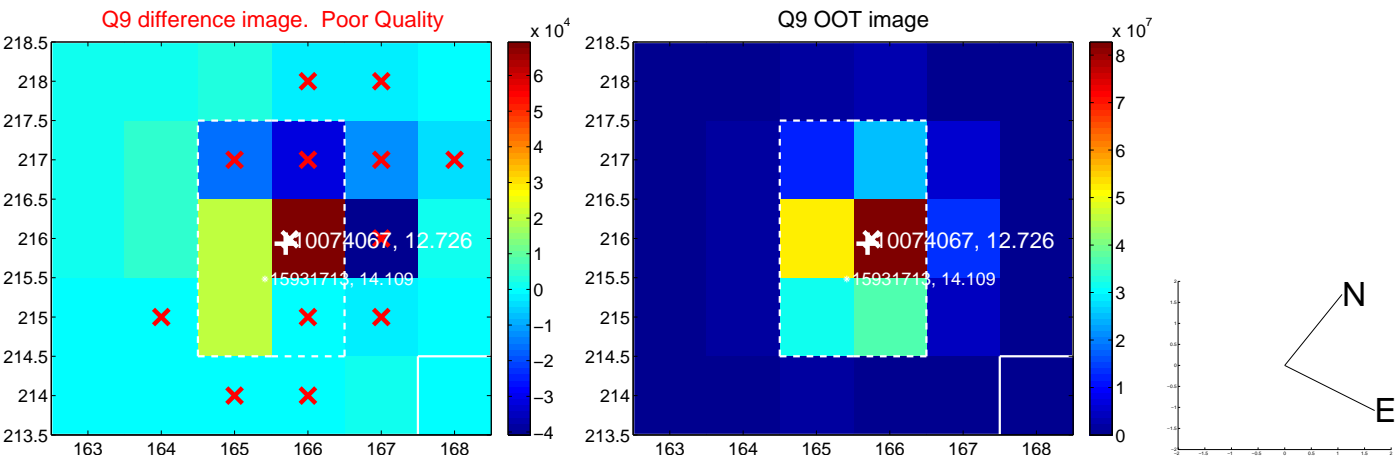
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



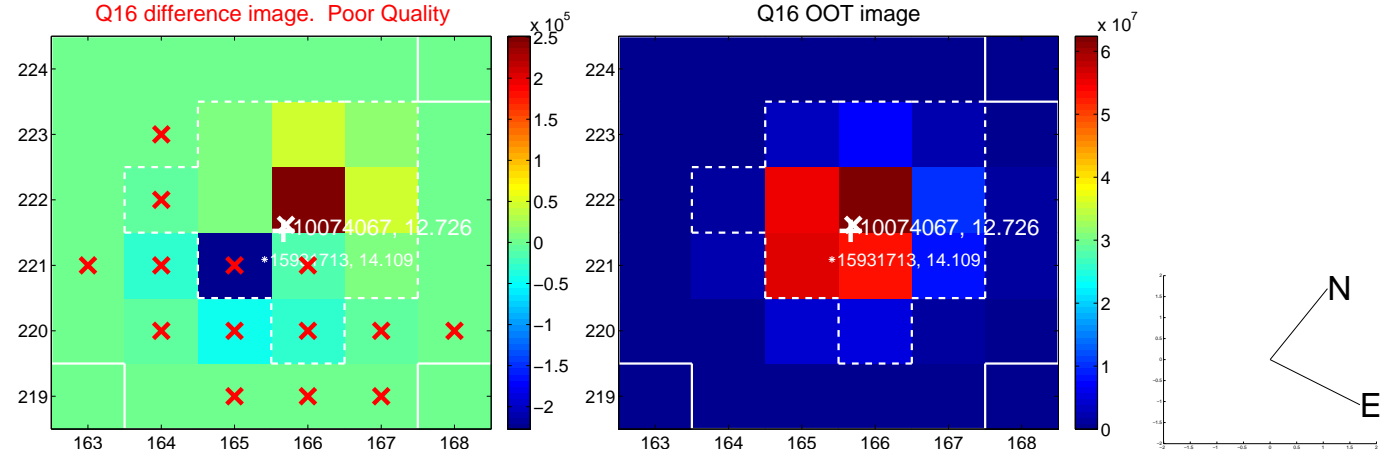
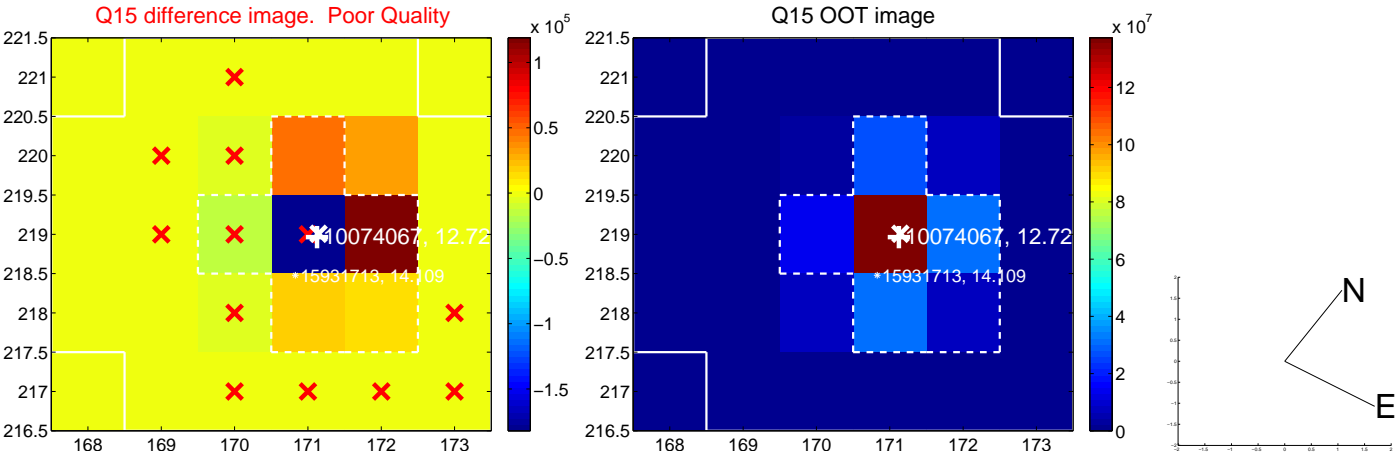
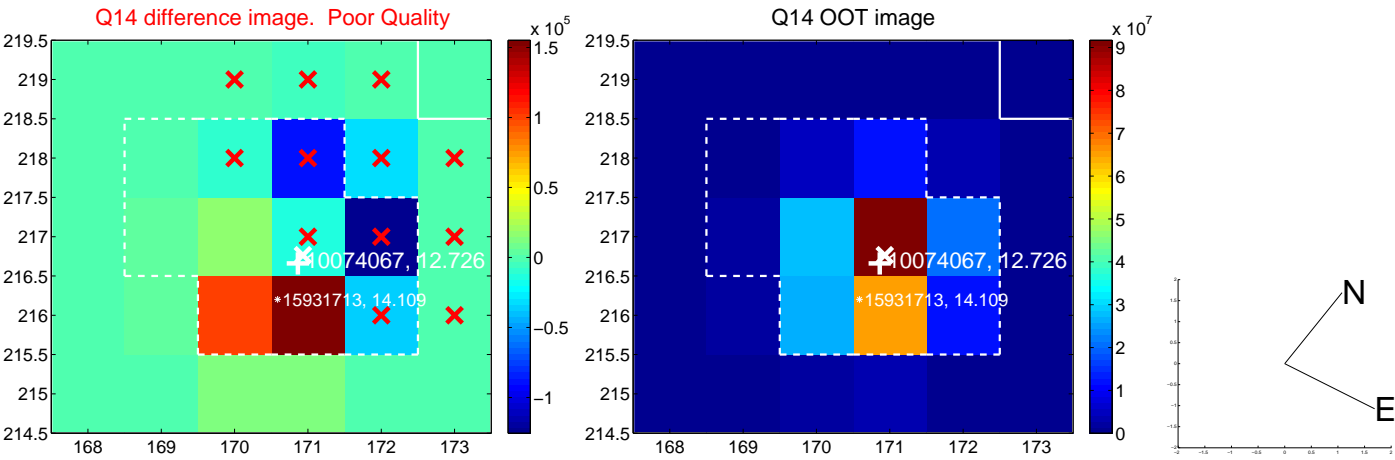
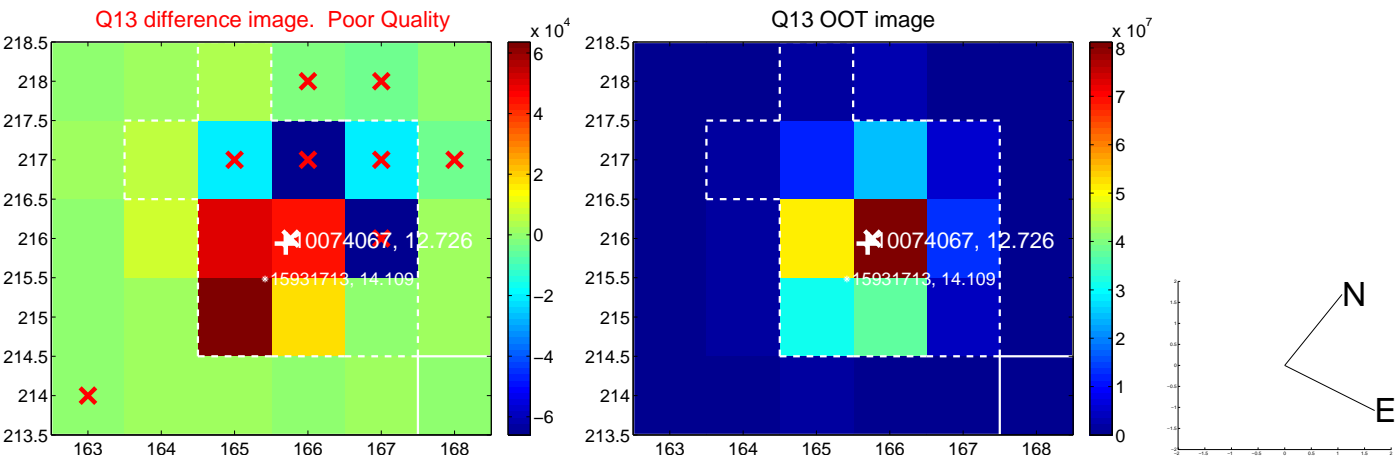
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



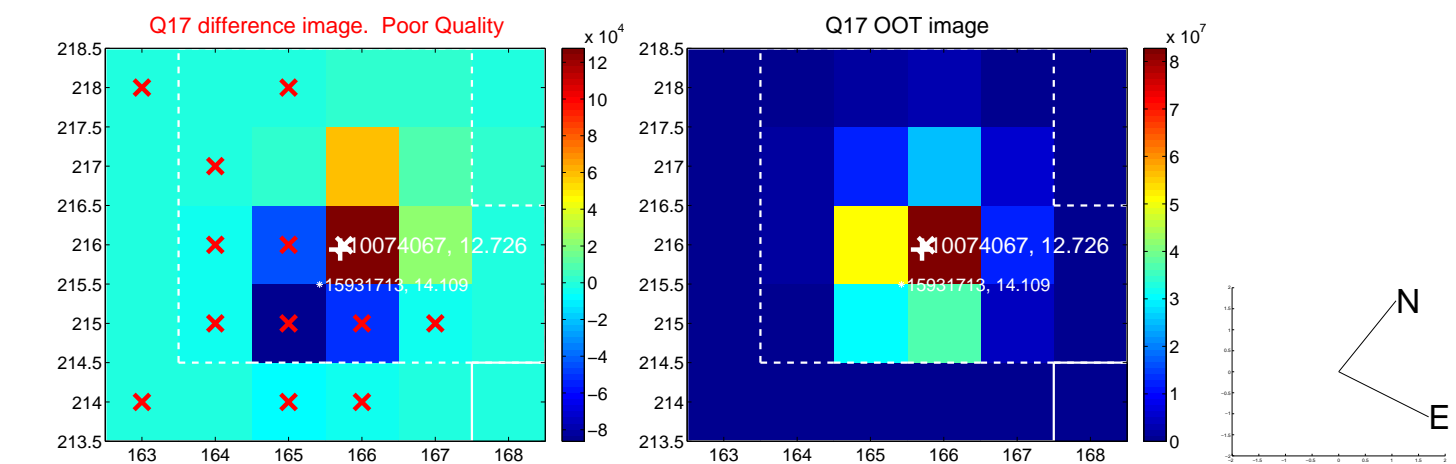
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



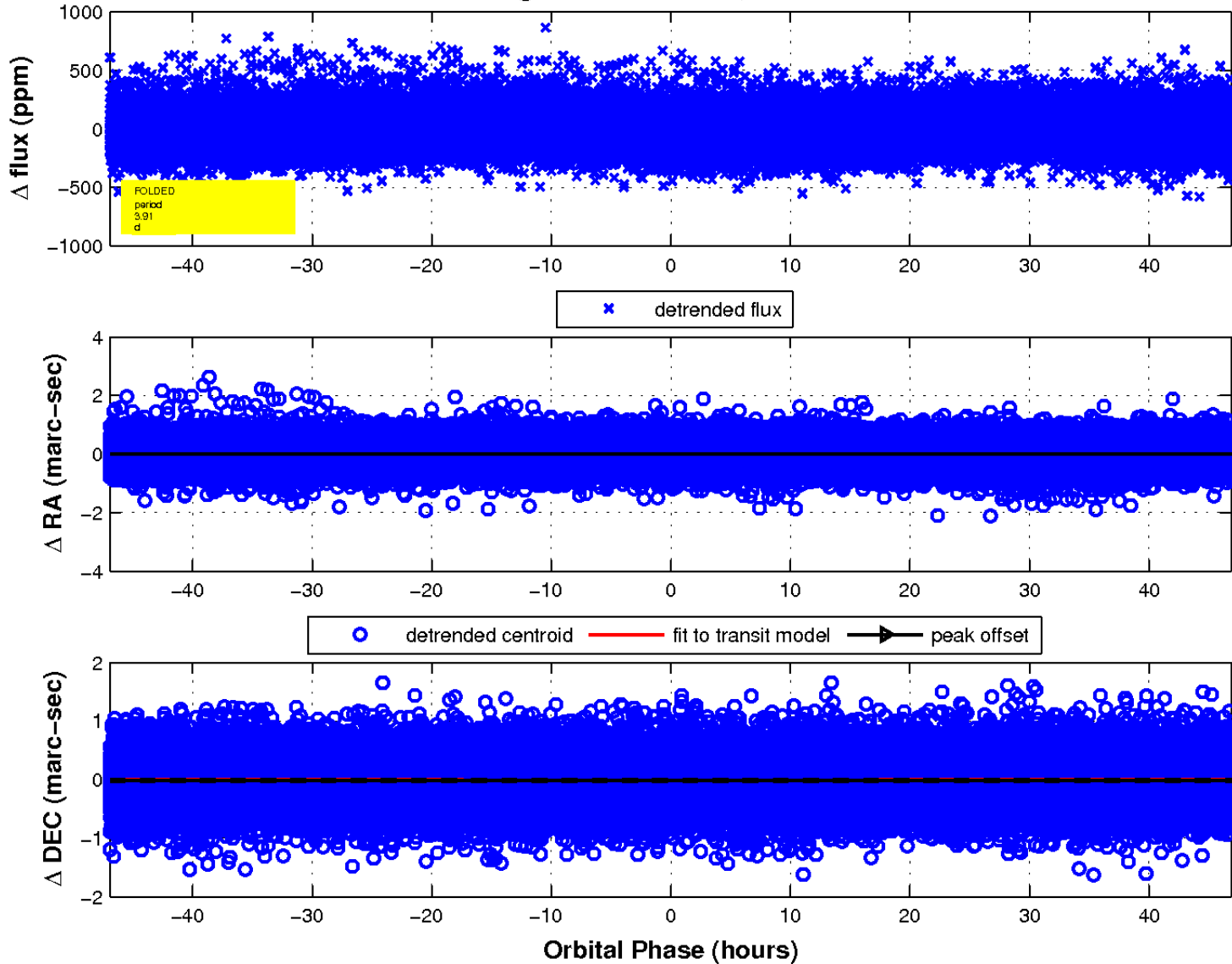
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

