

# KIC 004774208

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004774208-01	OBS	No	0.852319	132.018787	53.6	1.835	10.5	4.0	1.38	7033	1.17	11257.70
004774208-02	OBS	No	0.852328	131.799941	147.2	2.517	10.1	9.5	1.38	7033	1.95	11257.55
004774208-03	OBS	No	0.852280	132.228681	81.2	4.880	11.6	3.9	1.38	7033	1.27	11258.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004774208-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_KIC_POS
004774208-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS
004774208-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

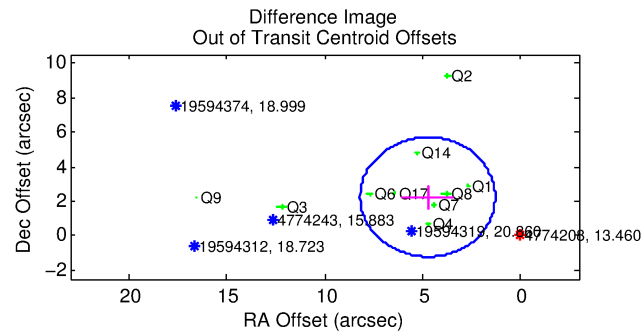
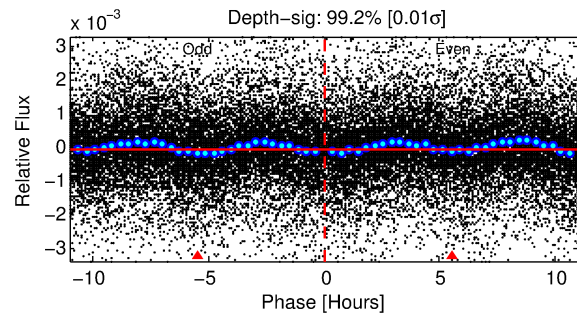
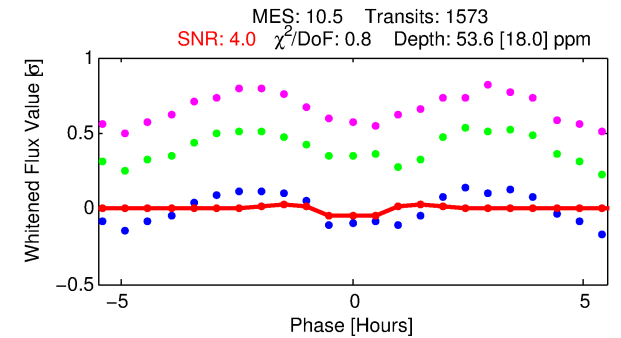
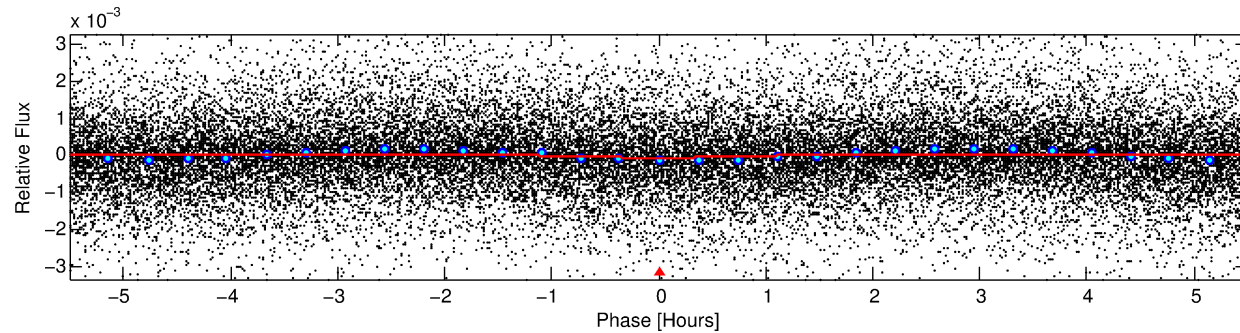
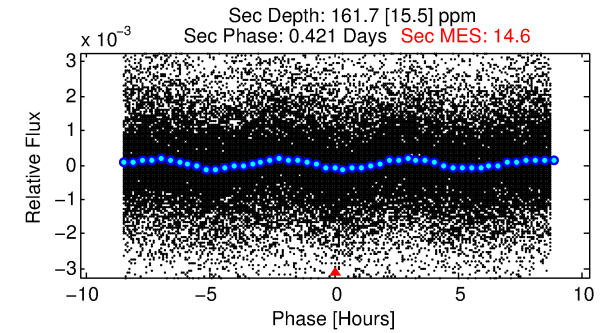
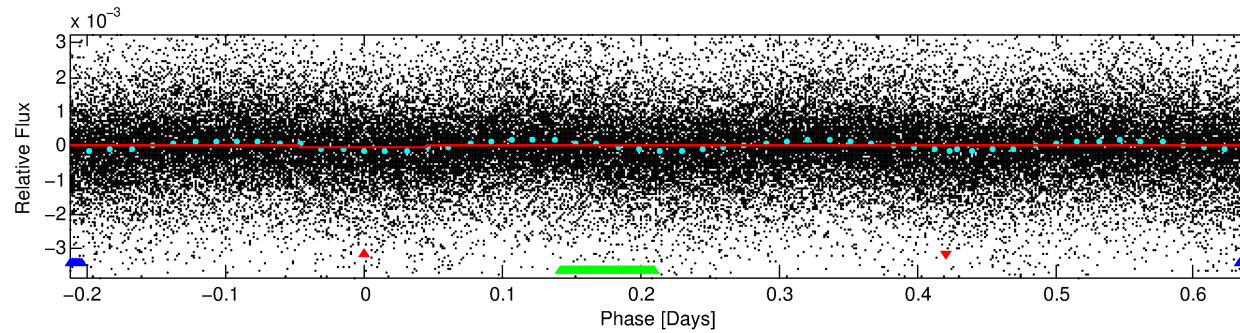
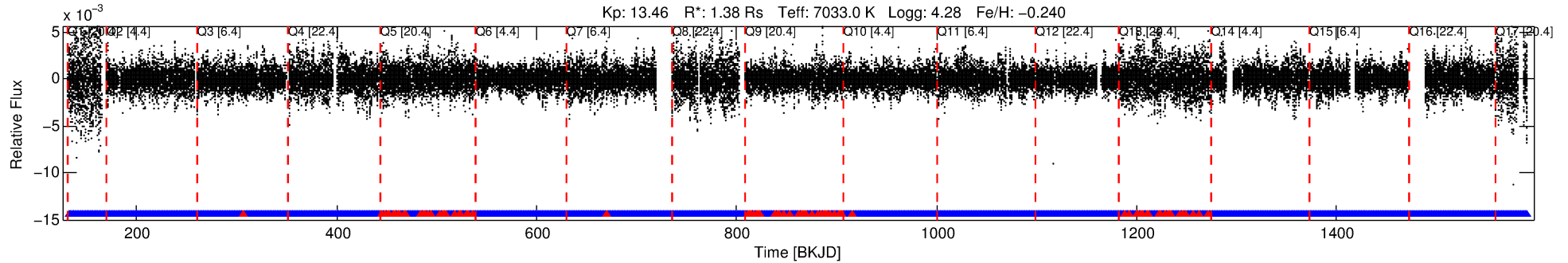
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 004774208-01

No Significant Match Found

# DV One-Page Summary

KIC: 4774208 Candidate: 1 of 3 Period: 0.852 d



## DV Fit Results:

Period = 0.85232 [0.00002] d  
Epoch = 132.0188 [0.0035] BKJD  
Rp/R\* = 0.0078 [0.0050]  
a/R\* = 1.90 [5.24]  
b = 0.89 [0.87]  
Seff = 11257.70 [4666.43]  
Teq = 2627 [272] K  
Rp = 1.17 [0.84] Re  
a = 0.0193 [0.0051] AU  
Ag = 24.09 [32.38] [0.71σ]  
Teffp = 8997 [2925] K [2.17σ]

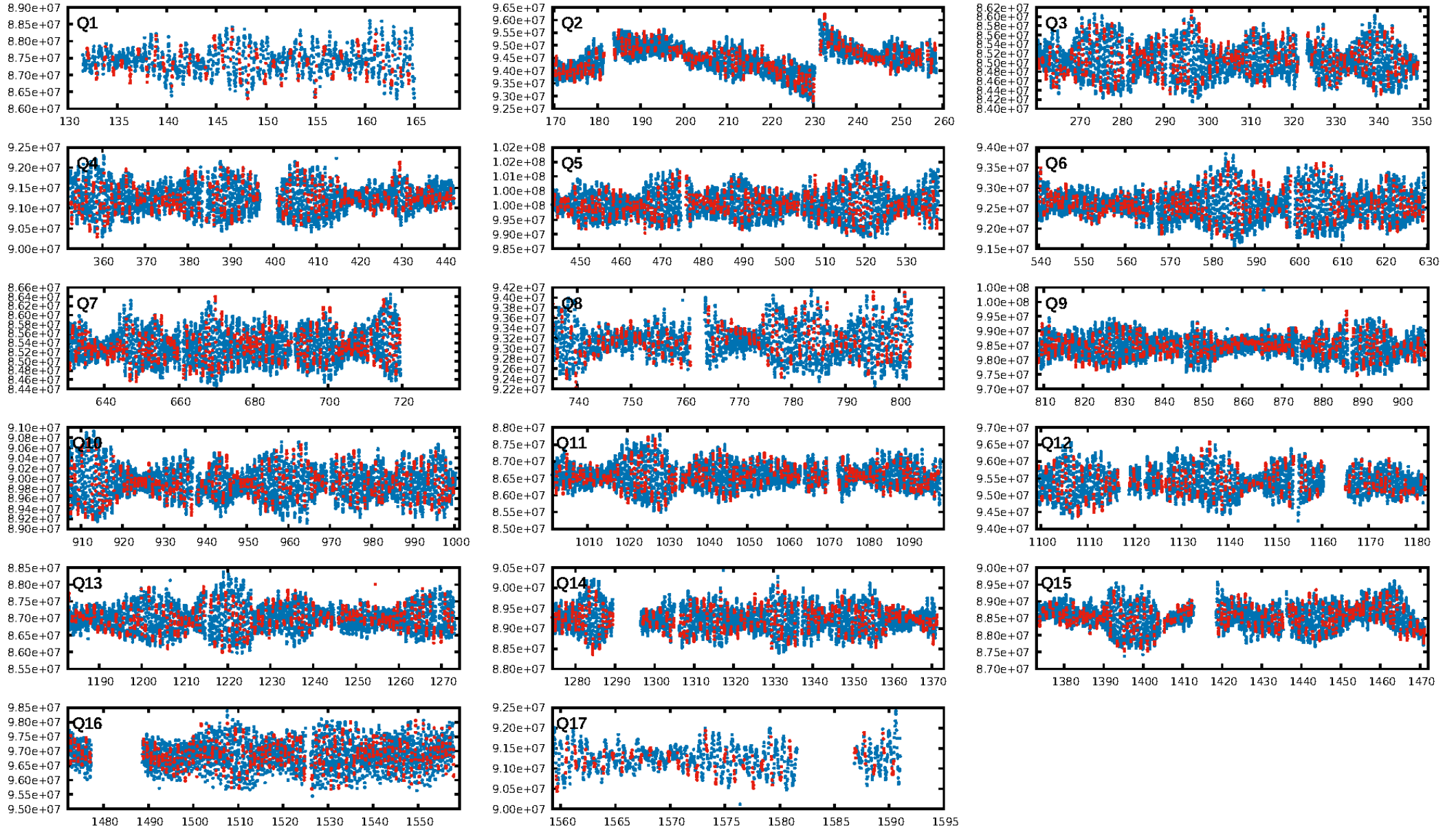
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.55e-285  
RollingBand-fgt: 0.95 [1422/1503]  
GhostDiagnostic-chr: 0.7971  
Centroid-sig: 0.0%  
Centroid-so: 0.868 arcsec [1.95σ]  
OotOffset-rm: 5.241 arcsec [4.55σ]  
OotOffset-st: 3/2/2/3 [10]  
KicOffset-rm: 1.050 arcsec [1.27σ]  
KicOffset-st: 3/2/2/3 [10]  
DiffImageQuality-fgm: 0.30 [3/10]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:36:02 Z

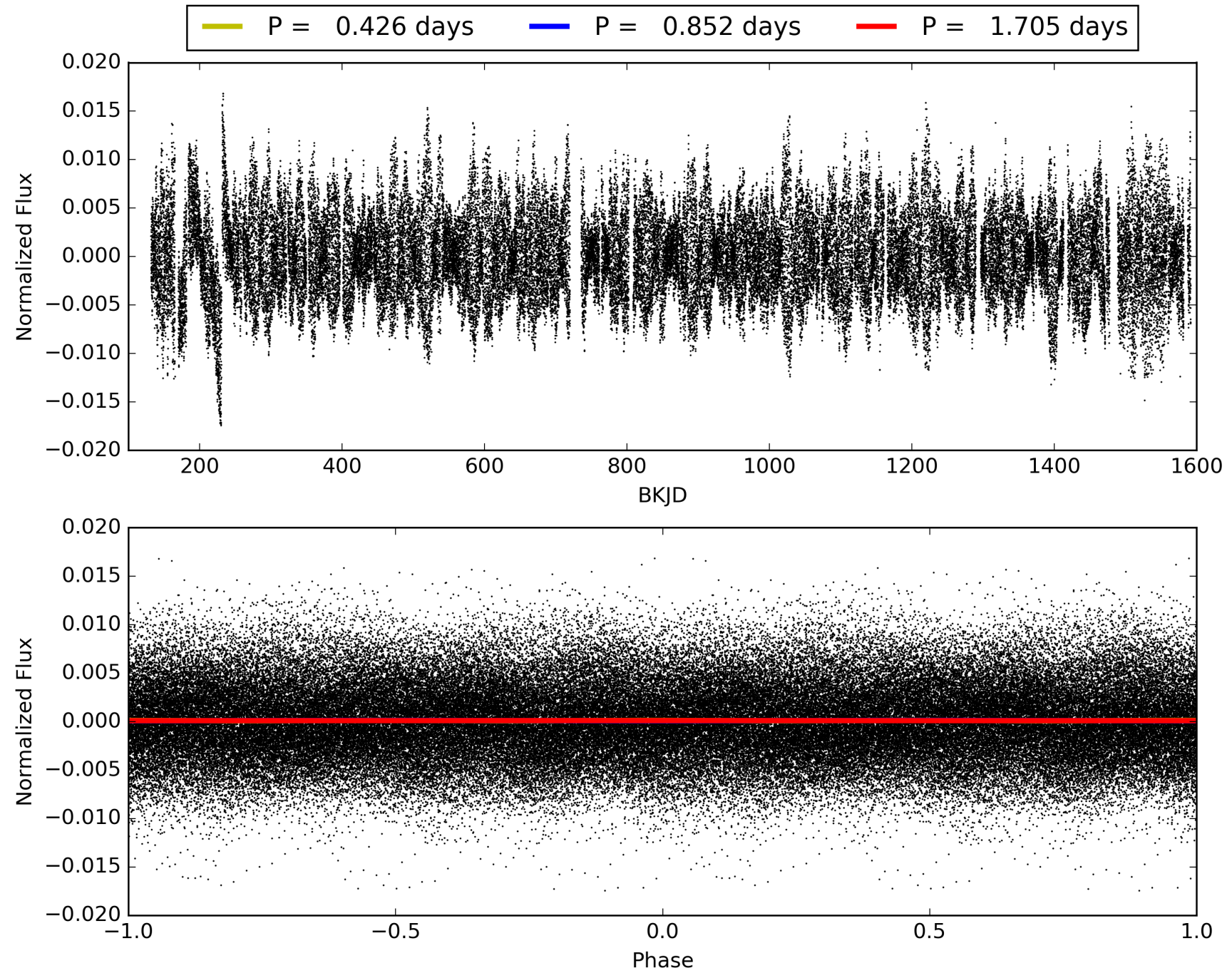
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 004774208-01, PDC Light Curves





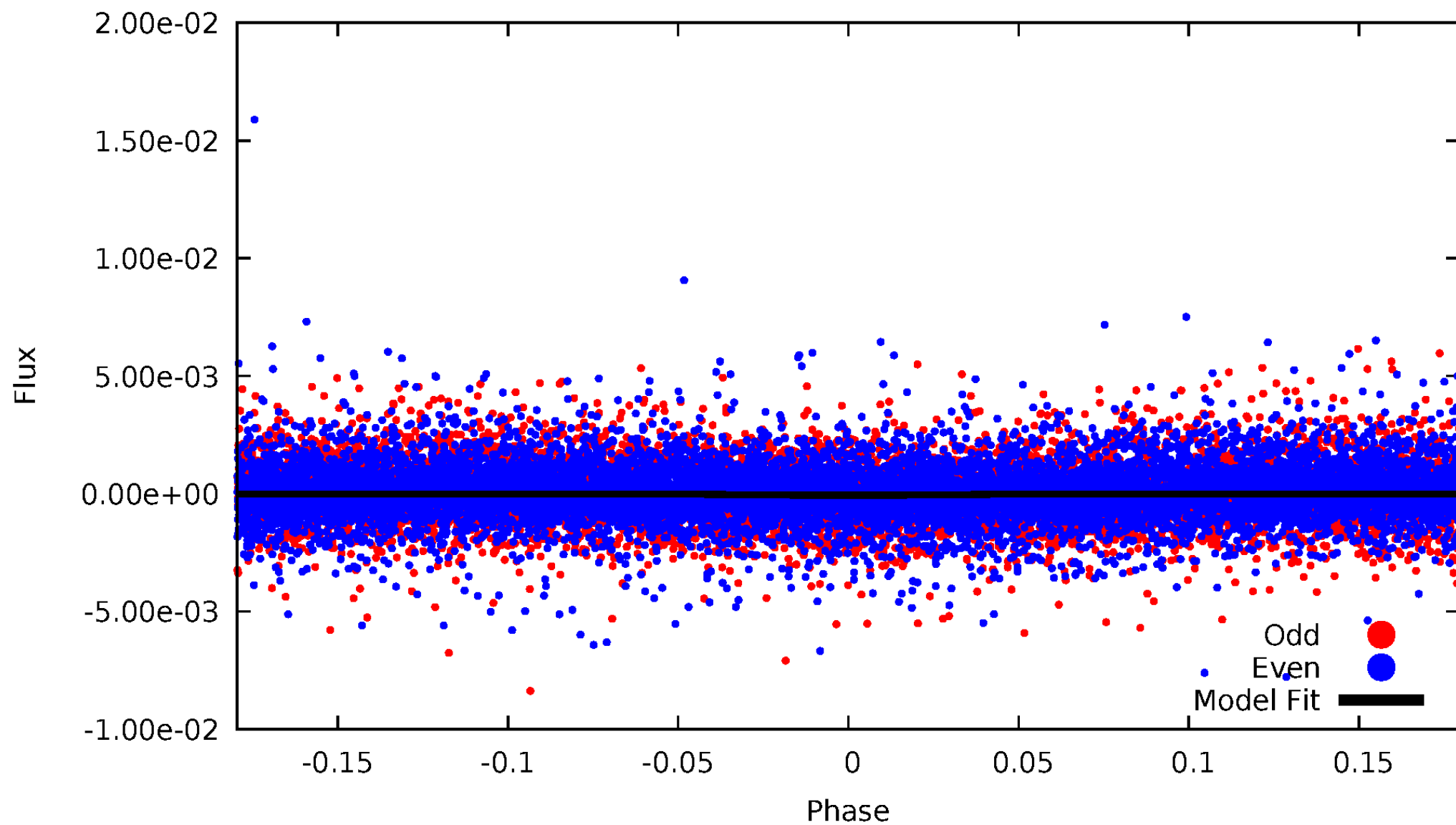
TCE 004774208-01





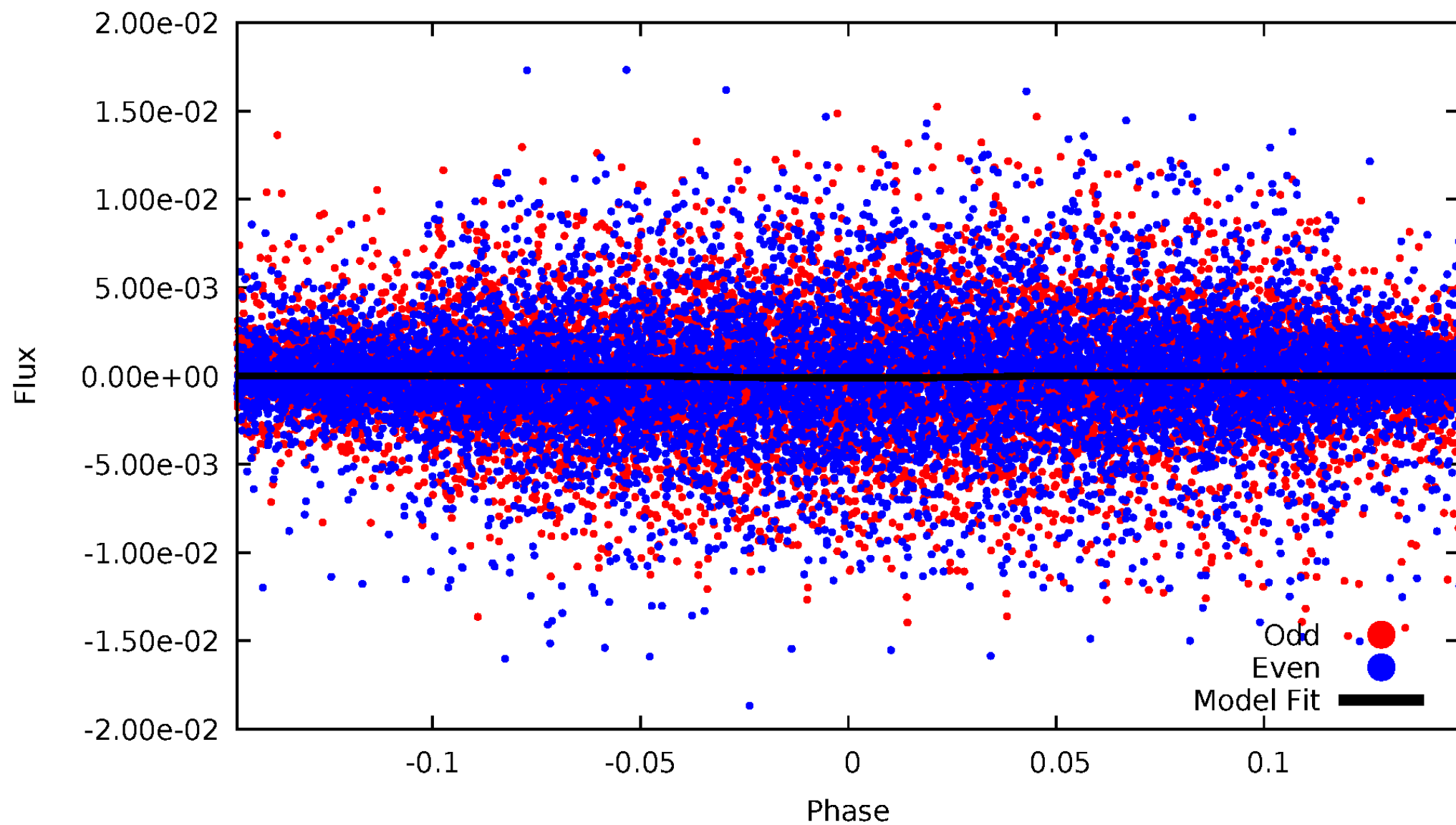
# DV Odd/Even

TCE 004774208-01



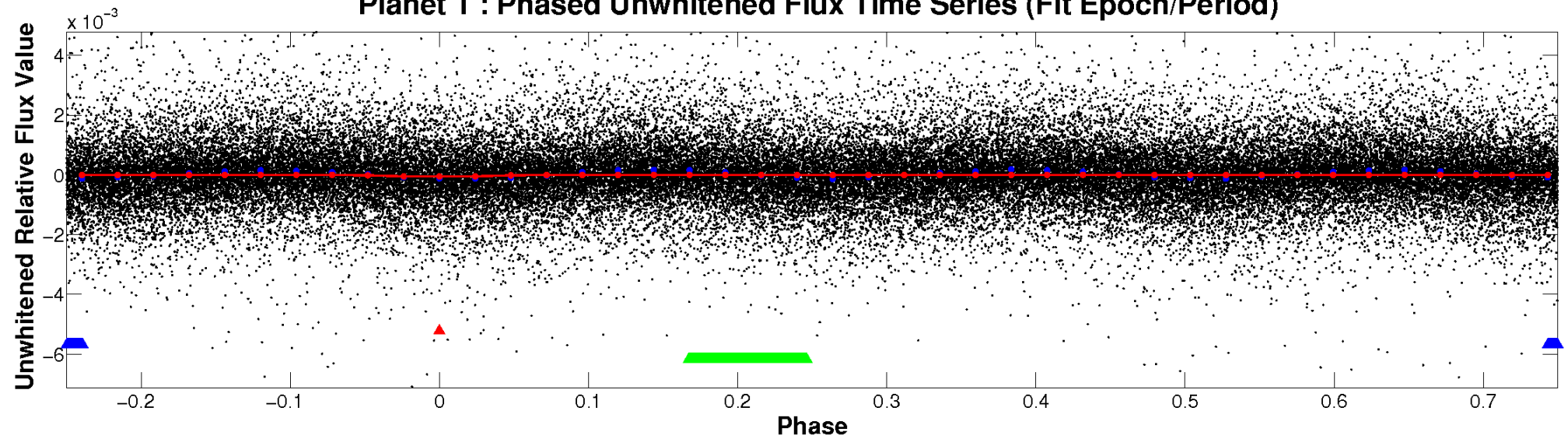
# ALT Odd/Even

TCE 004774208-01

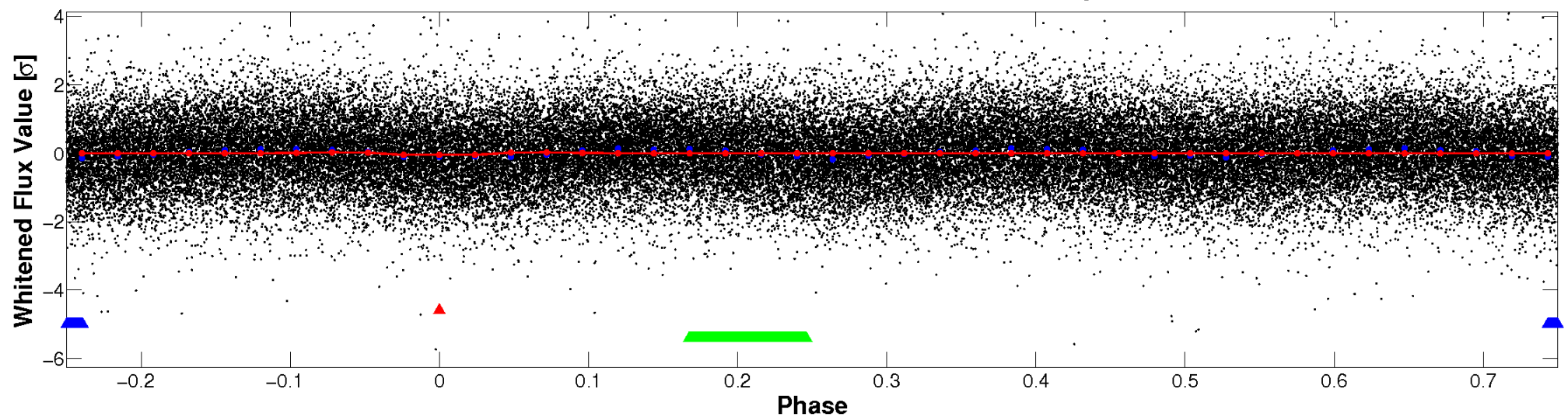


# Non-Whitened Vs. Whitened Light Curve

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



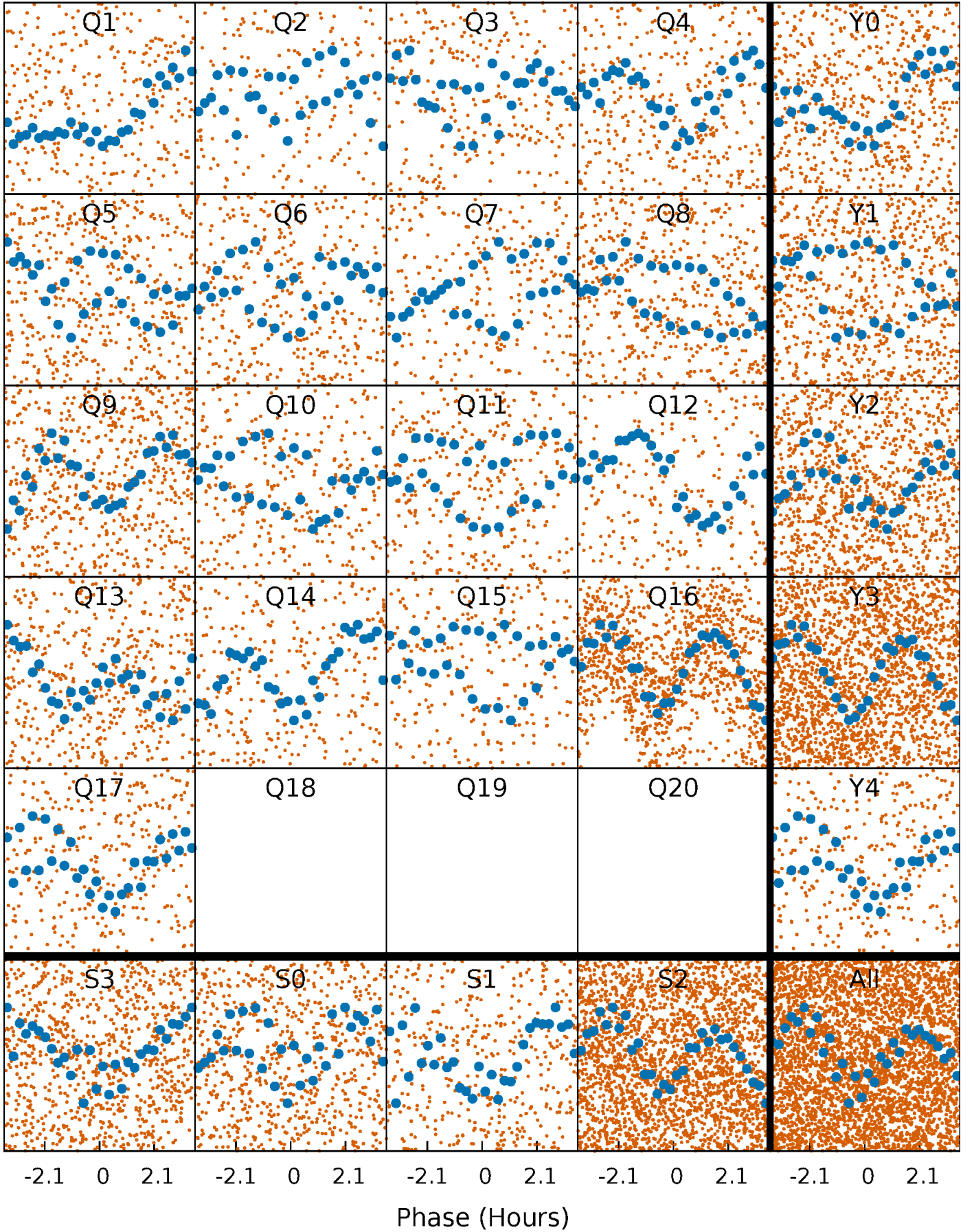
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





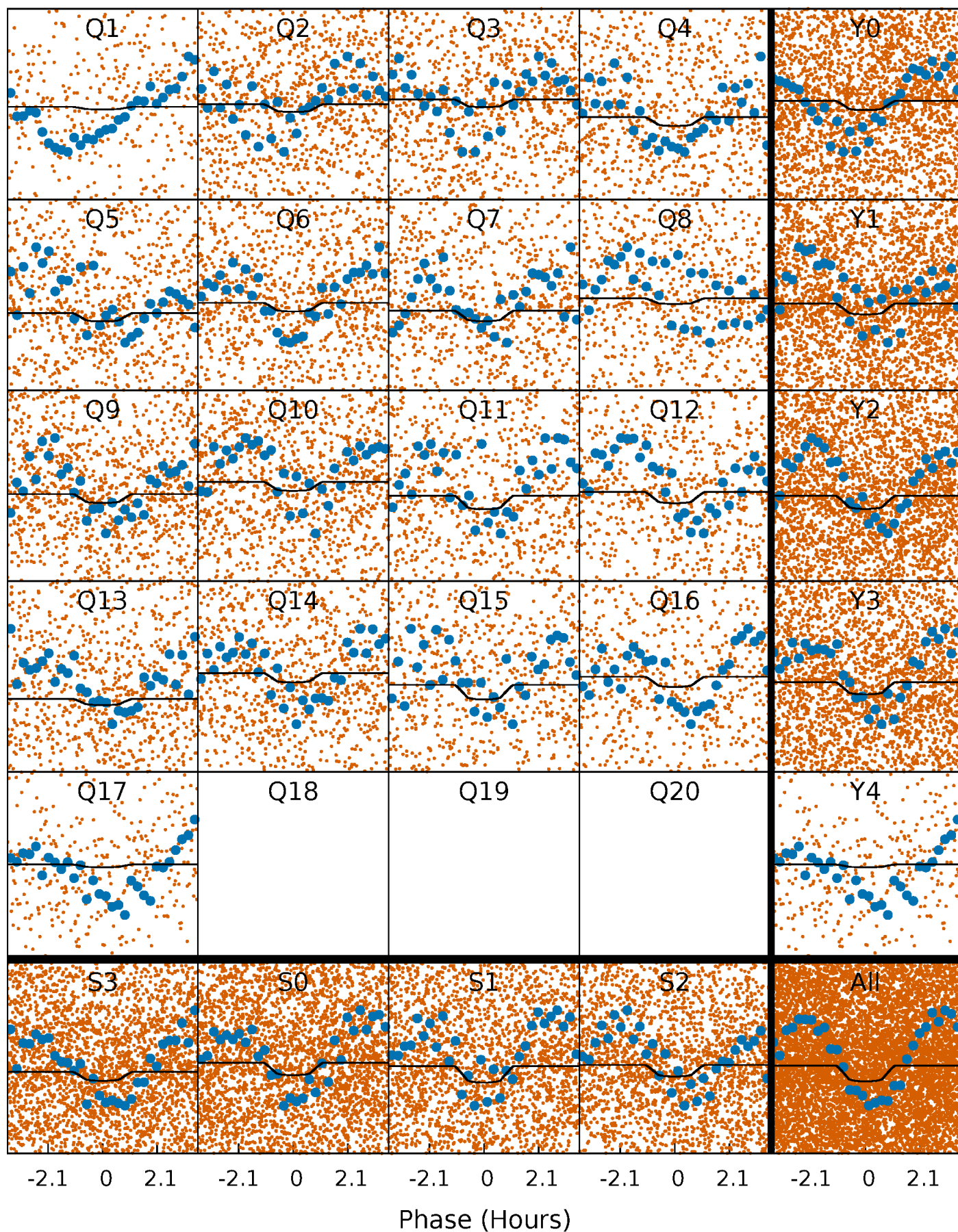
# PDC Quarter-Phased Transit Curves

TCE 004774208-01 P= 0.852319 Days  $T_0=132.018787$  (BKJD)



# DV Quarter-Phased Transit Curves

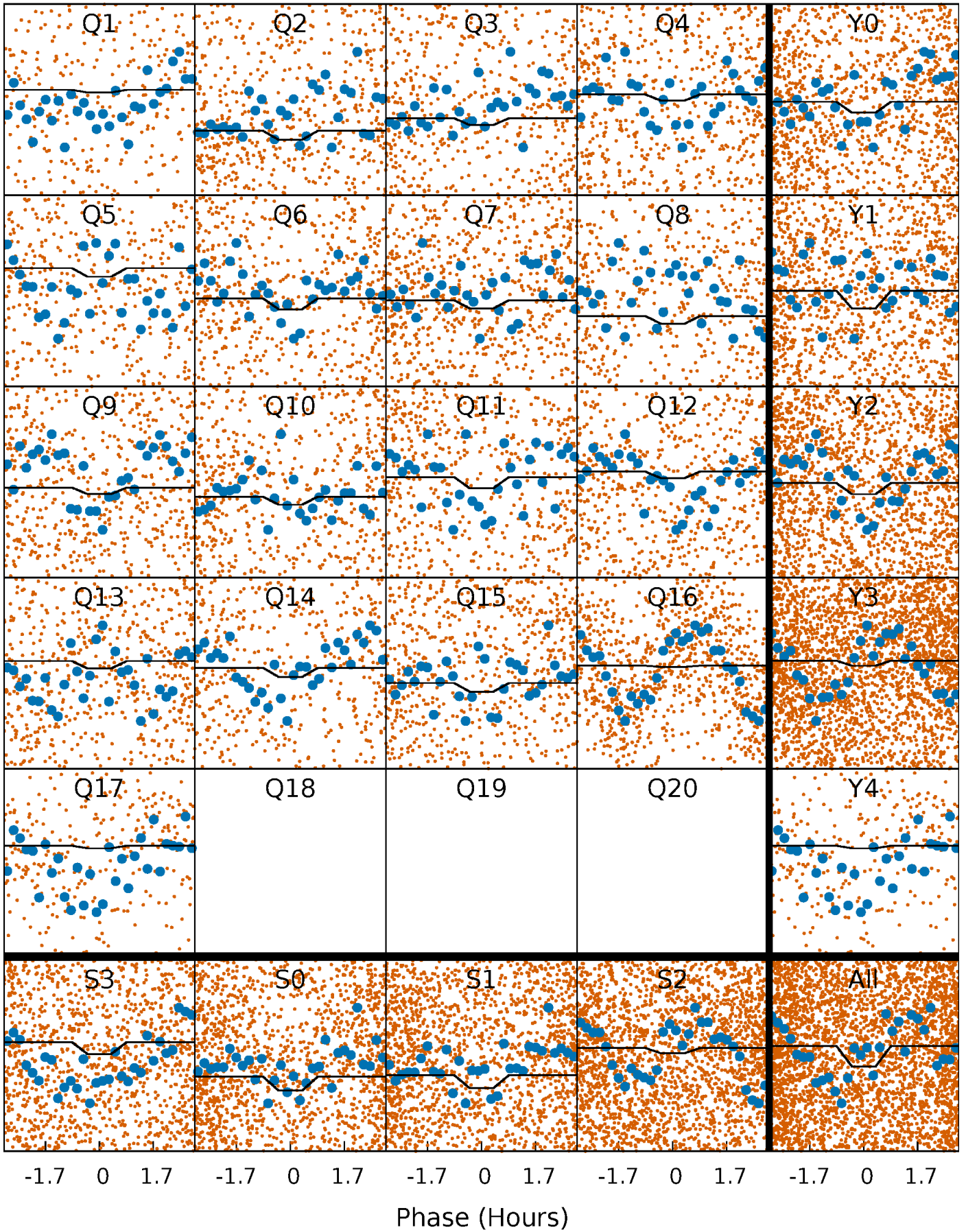
TCE 004774208-01 P= 0.852319 Days  $T_0=132.018787$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 004774208-01 P= 0.852343 Days  $T_0=132.016459$  (BKJD)

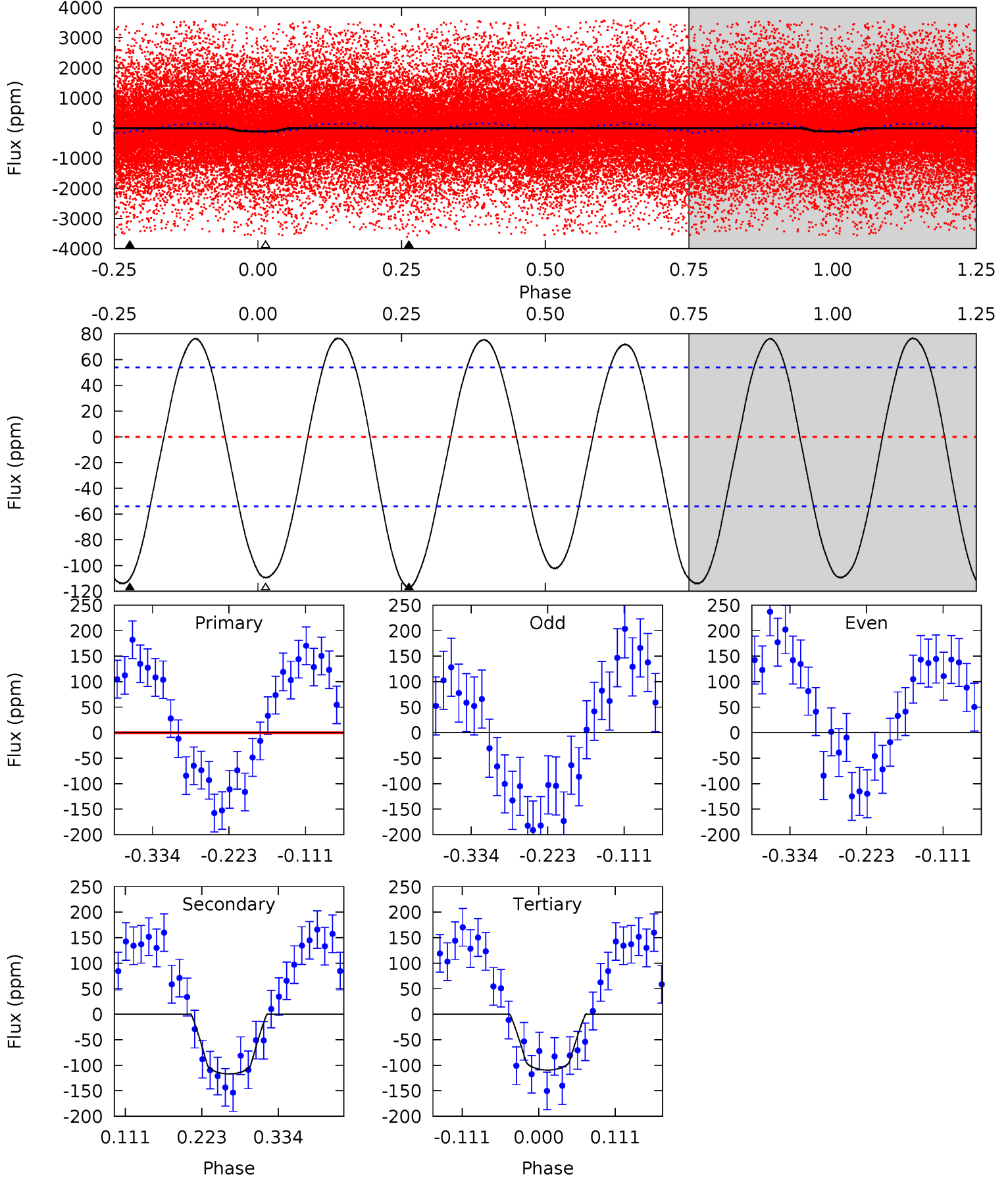




# DV Model-Shift Uniqueness Test

004774208-01, P = 0.852319 Days, E = 131.166468 Days

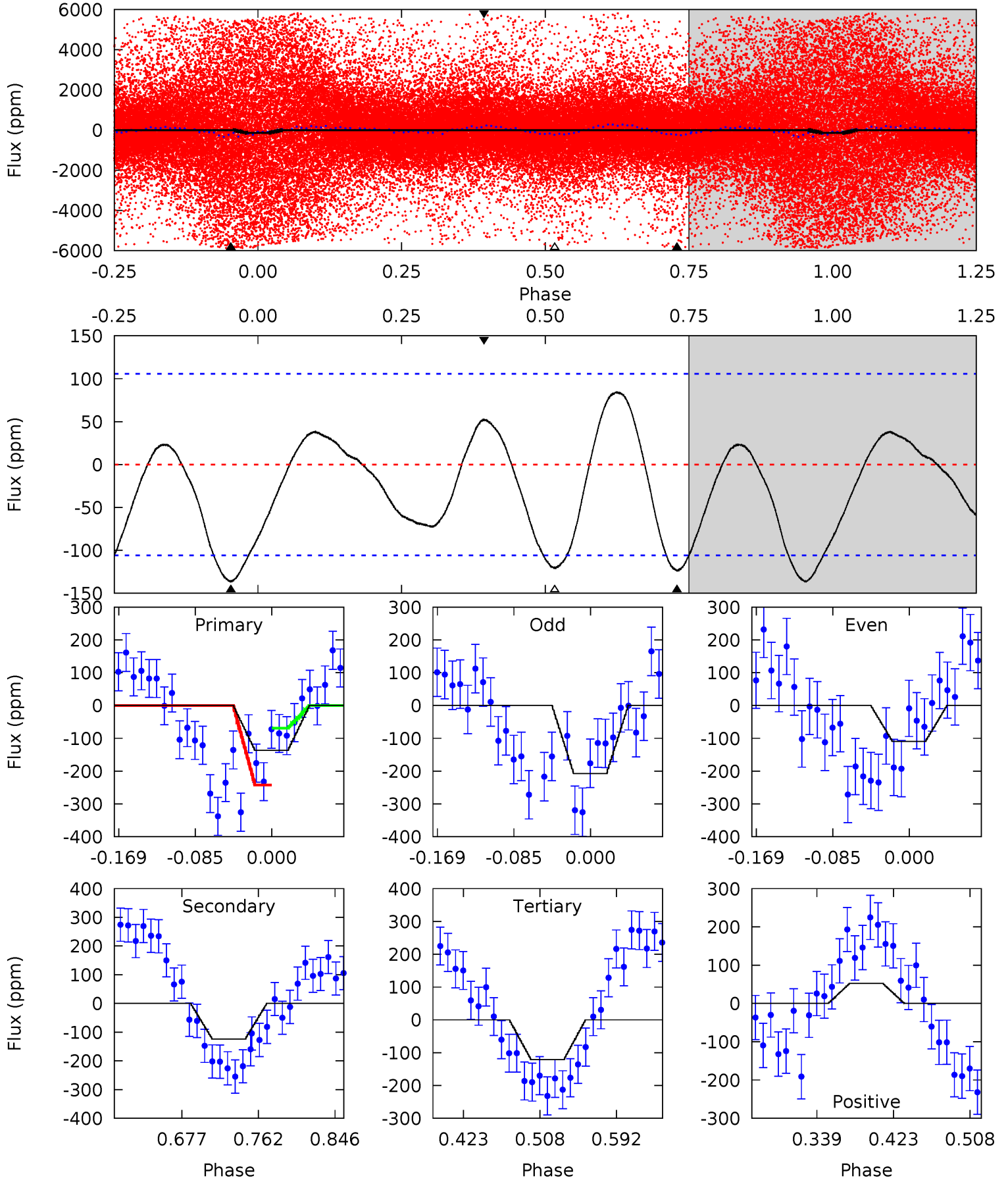
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.27	9.84	9.20	0	4.54	1.59	5.58	0.08	9.27	0.64	9.84	3.03	1.18	0.40	2.25



# Alt Model-Shift Uniqueness Test

004774208-01, P = 0.852343 Days, E = 131.164116 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
5.95	5.38	5.25	2.28	4.60	1.72	2.31	0.70	3.66	0.13	3.10	2.15	0.68	0.38	3.98



### Stellar Parameters For KIC 004774208

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7033^{+196}_{-295}$	$4.276^{+0.087}_{-0.203}$	$-0.240^{+0.250}_{-0.350}$	$1.381^{+0.447}_{-0.206}$	$1.320^{+0.200}_{-0.200}$	$0.706^{+0.343}_{-0.368}$
	+3%/-4%	+2%/-5%	+104%/-146%	+32%/-15%	+15%/-15%	+49%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 004774208-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-117 \pm 12$	$1.28^{+0.75}_{-0.69}$	$3709^{+276}_{-202}$	$8196^{+6978}_{-1917}$	$14^{+53}_{-8}$
Alt.	$-124 \pm 23$	$1.64^{+0.88}_{-0.68}$	$3722^{+278}_{-213}$	$7139^{+3108}_{-1421}$	$9.322^{+18.404}_{-5.438}$

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



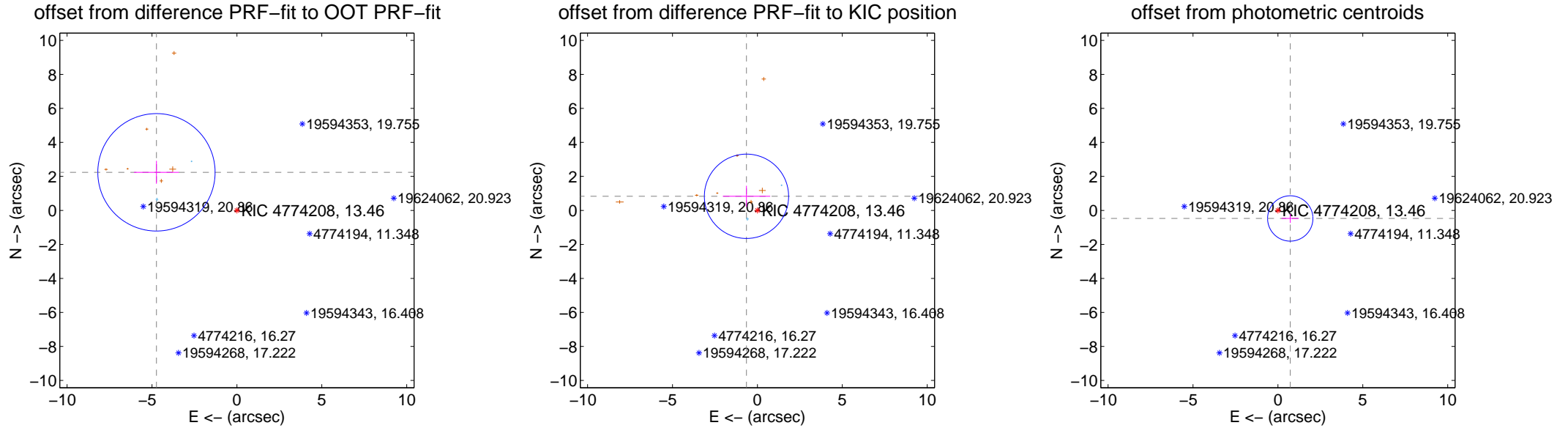
## DV Centroid Data

Supplemental centroid analysis for 004774208-01. Kepler magnitude: 13.46. Transit SNR 4.03

There are 3 quarters with good PRF difference image offsets

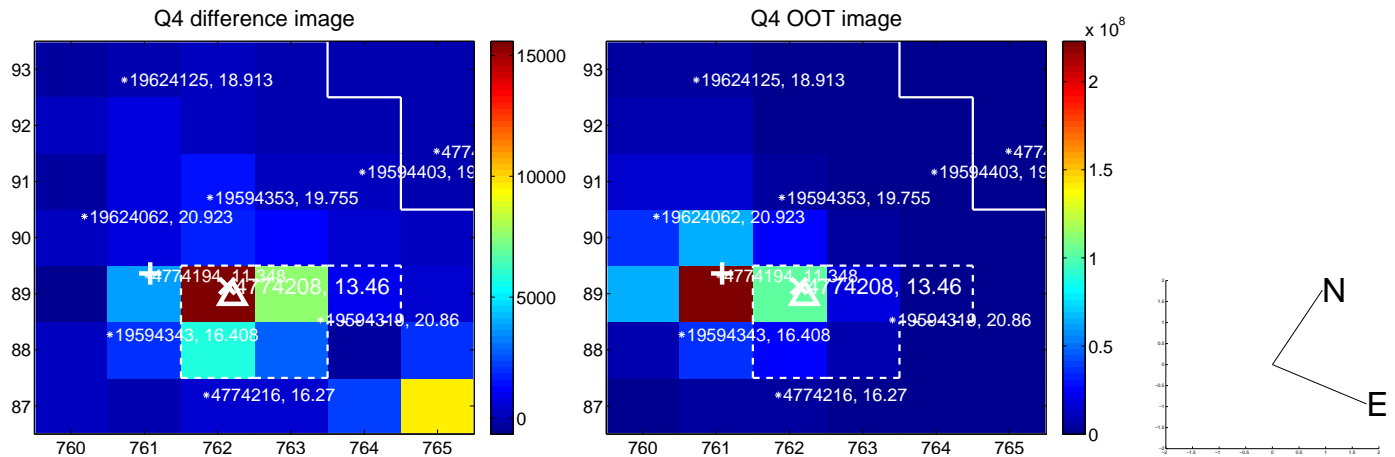
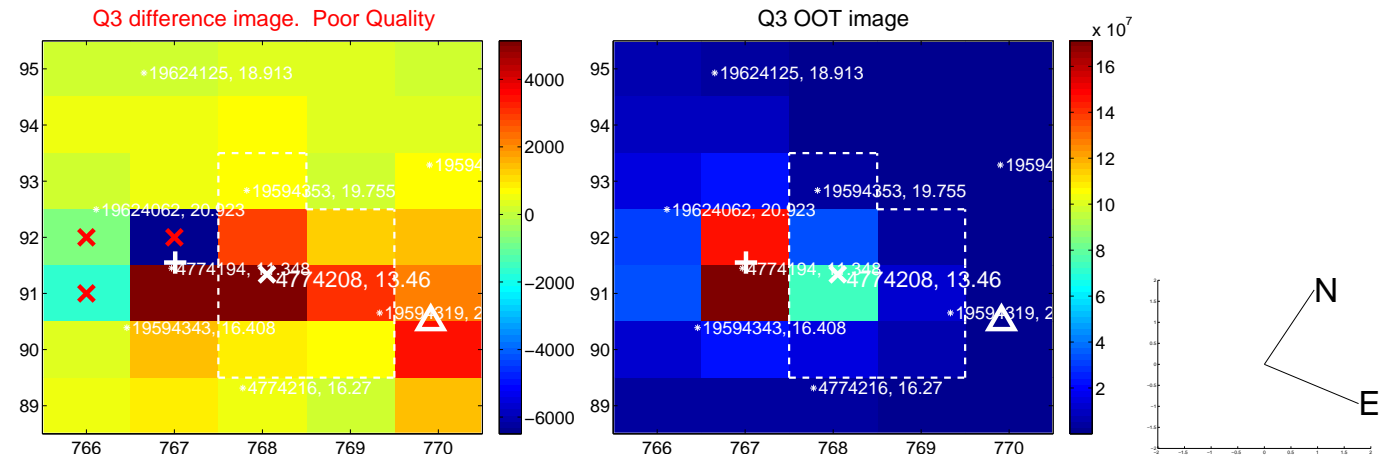
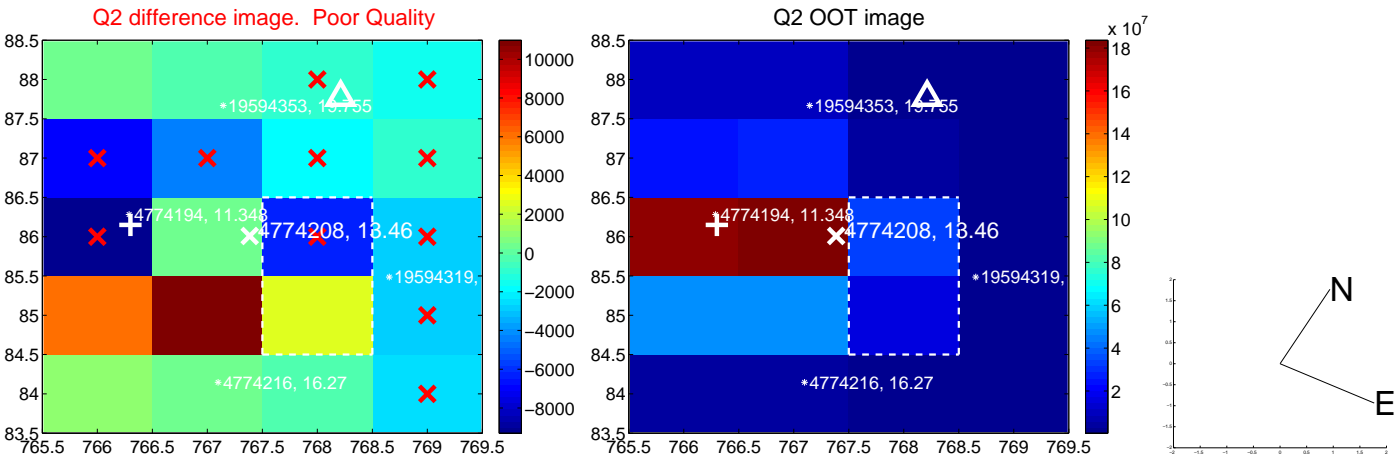
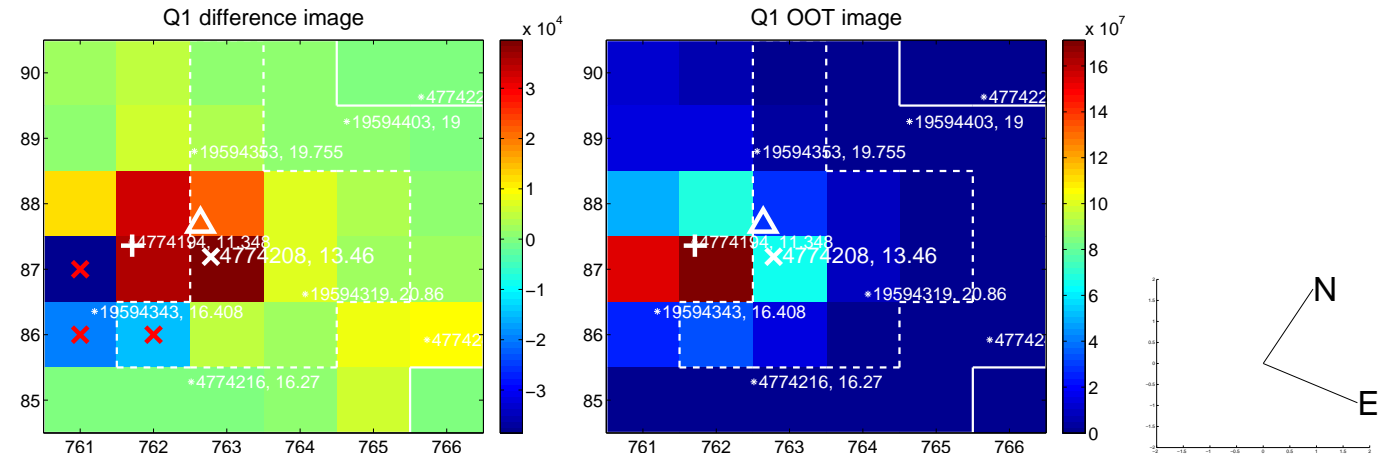
The OOT PRF centroid is offset from the target star catalog position by about 4.32 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>5.241 \pm 1.151</math></b>	<b>4.55</b>	$4.738 \pm 1.323$	$2.241 \pm 0.673$
PRF-fit source offset from KIC position	$1.050 \pm 0.827$	1.27	$0.643 \pm 1.394$	$0.831 \pm 0.617$
photometric centroid source offset	$0.87 \pm 0.44$	1.95	$-0.73 \pm 0.50$	$-0.47 \pm 0.26$

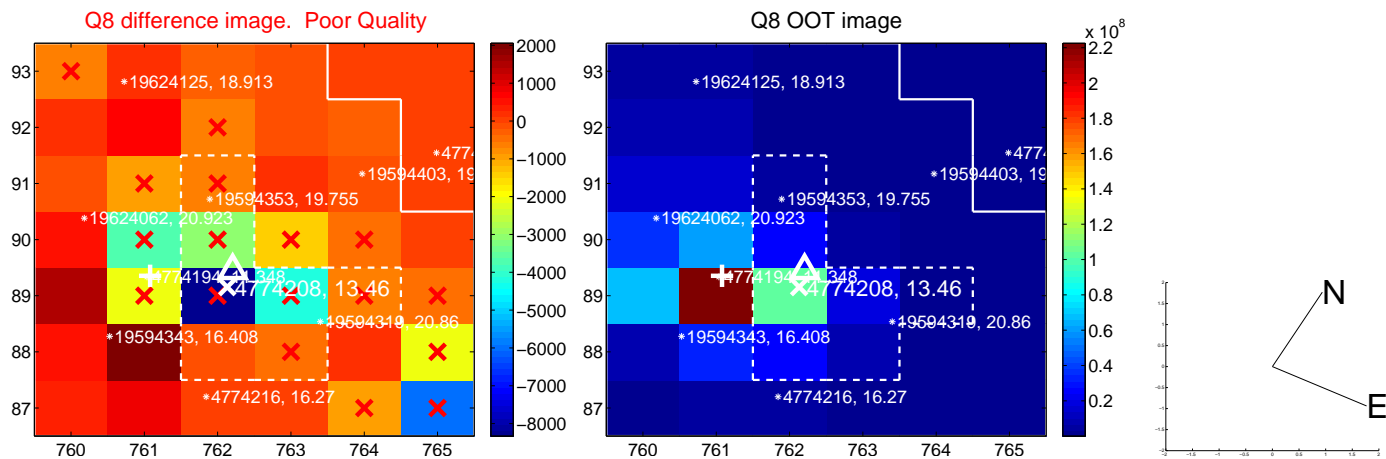
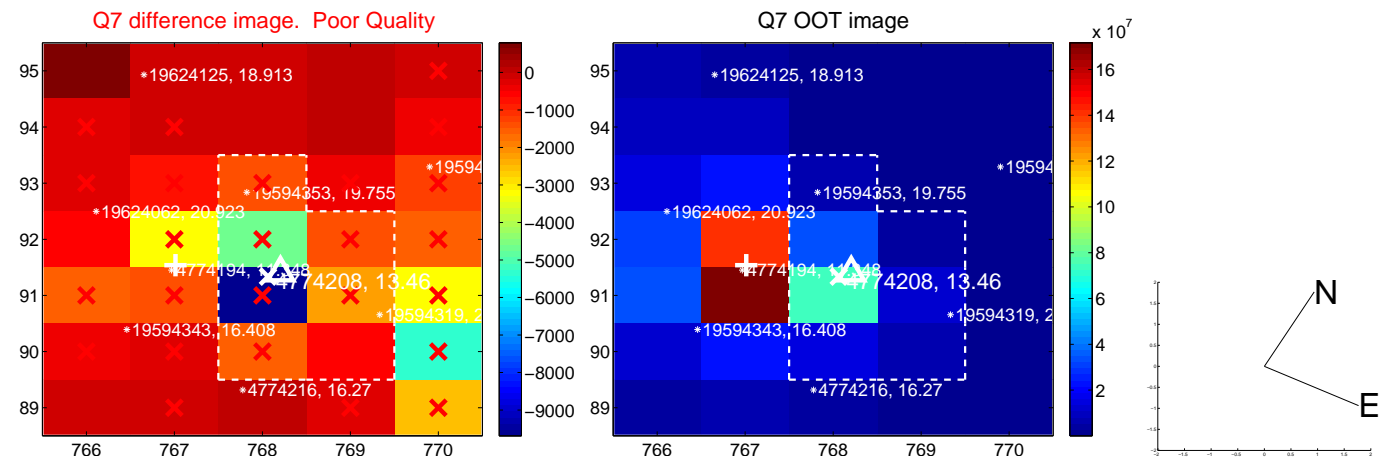
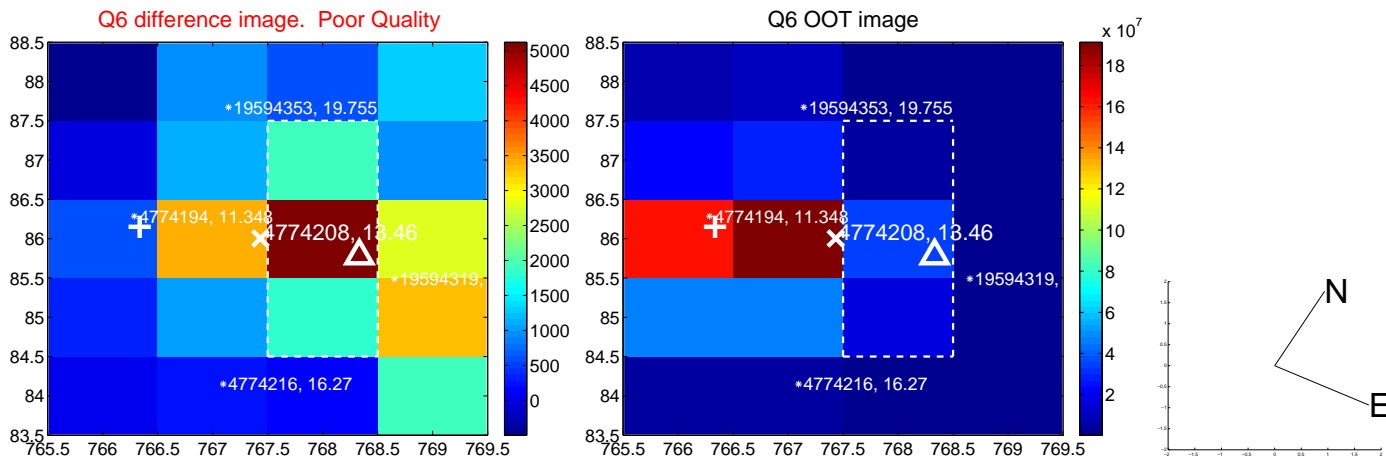
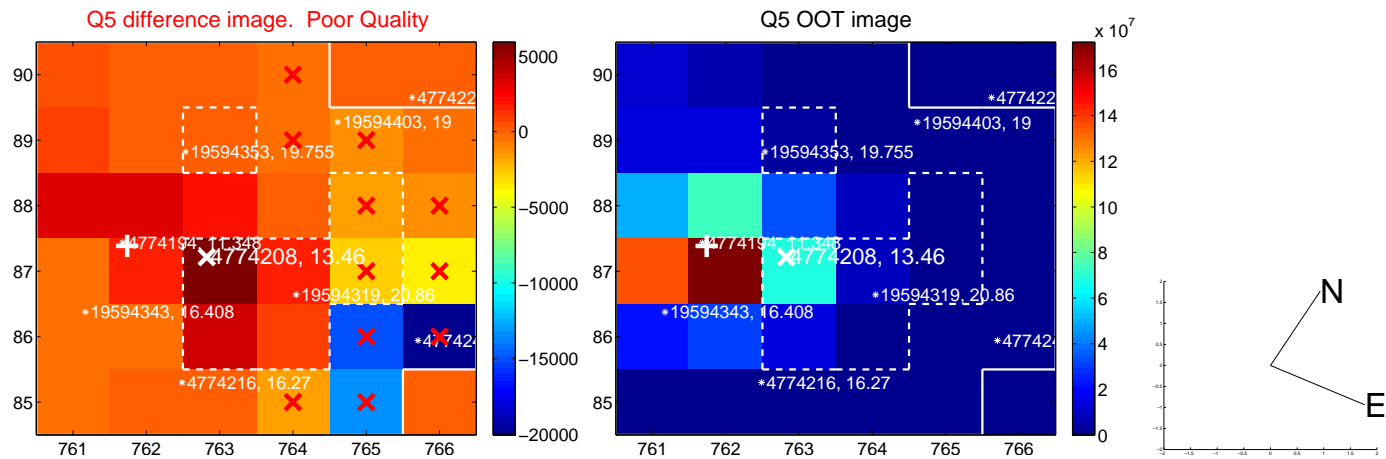


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

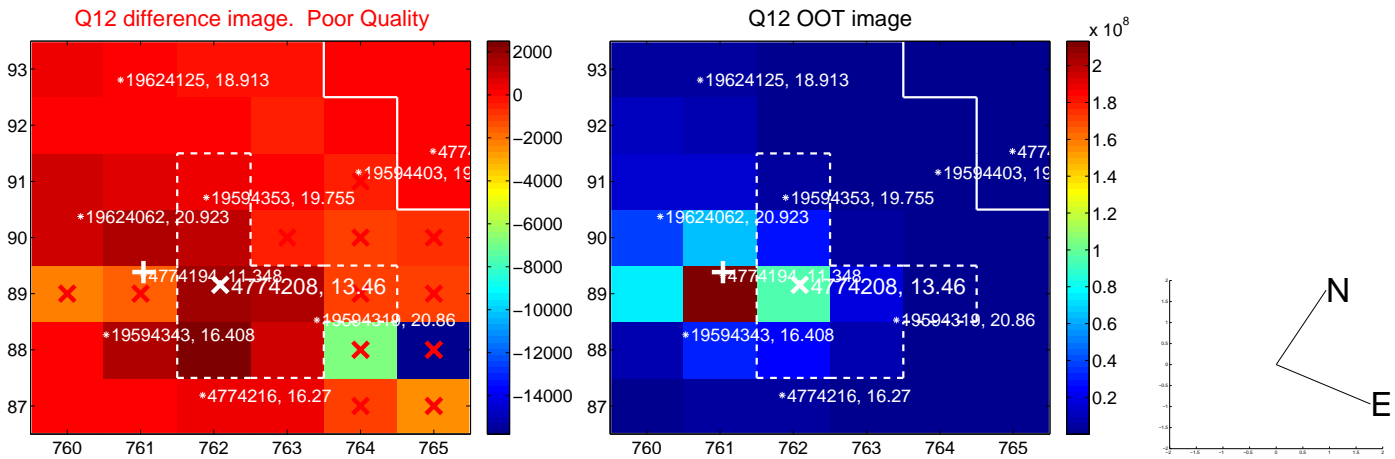
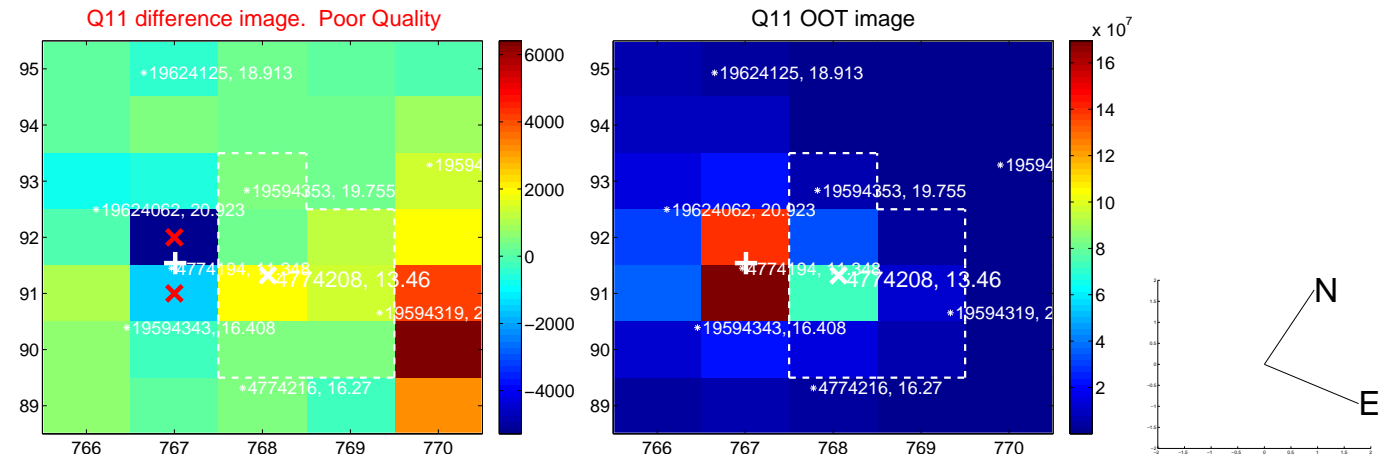
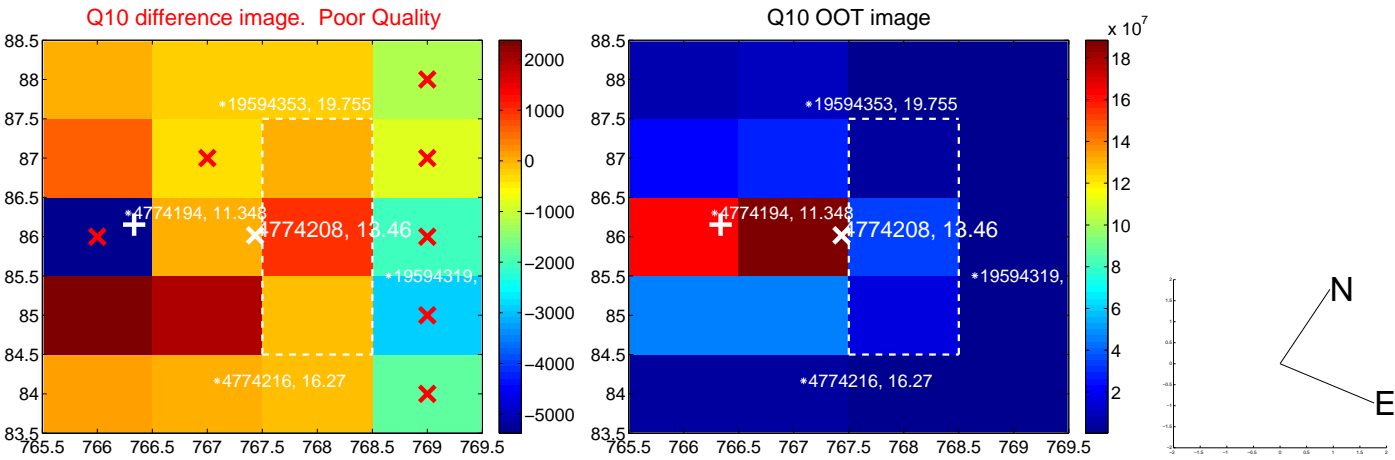
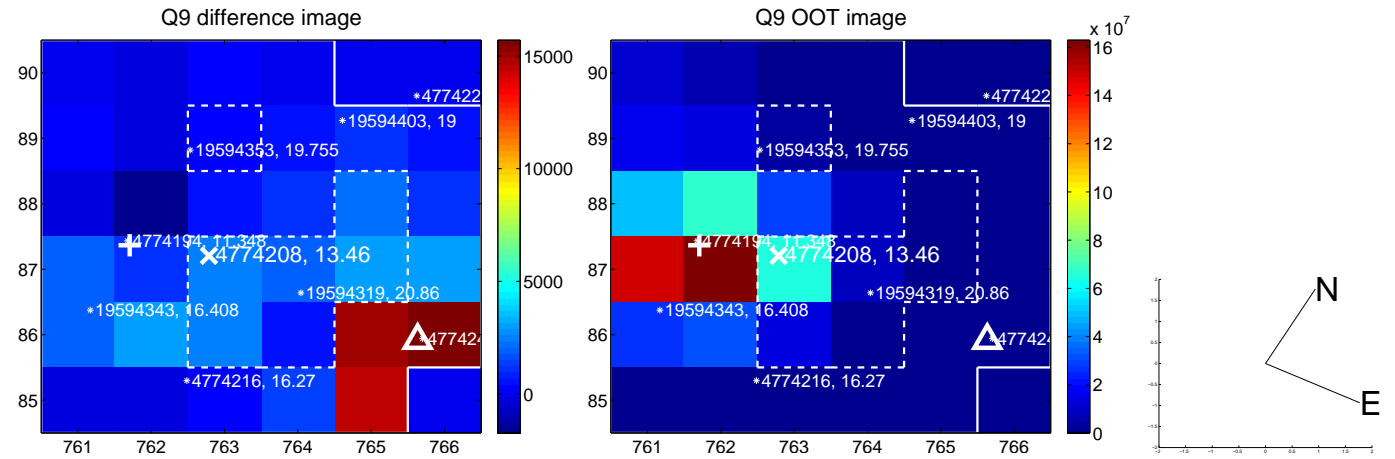


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

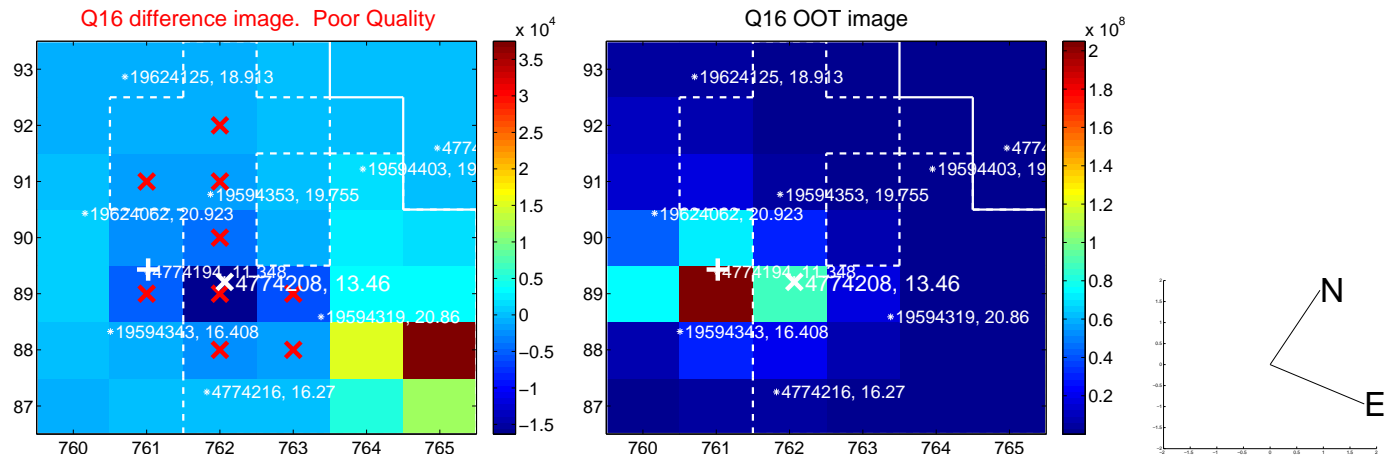
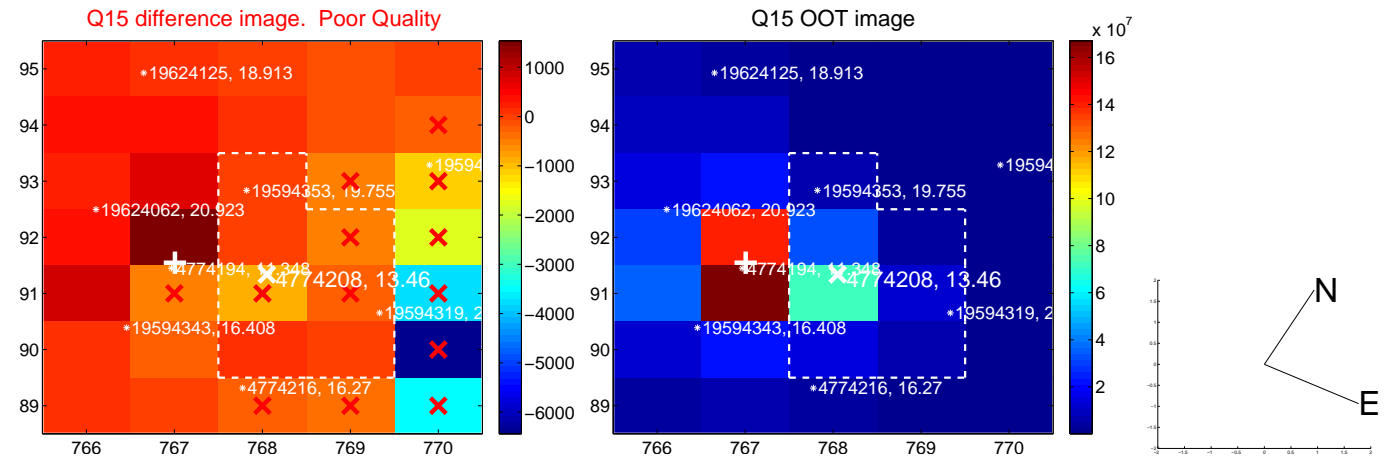
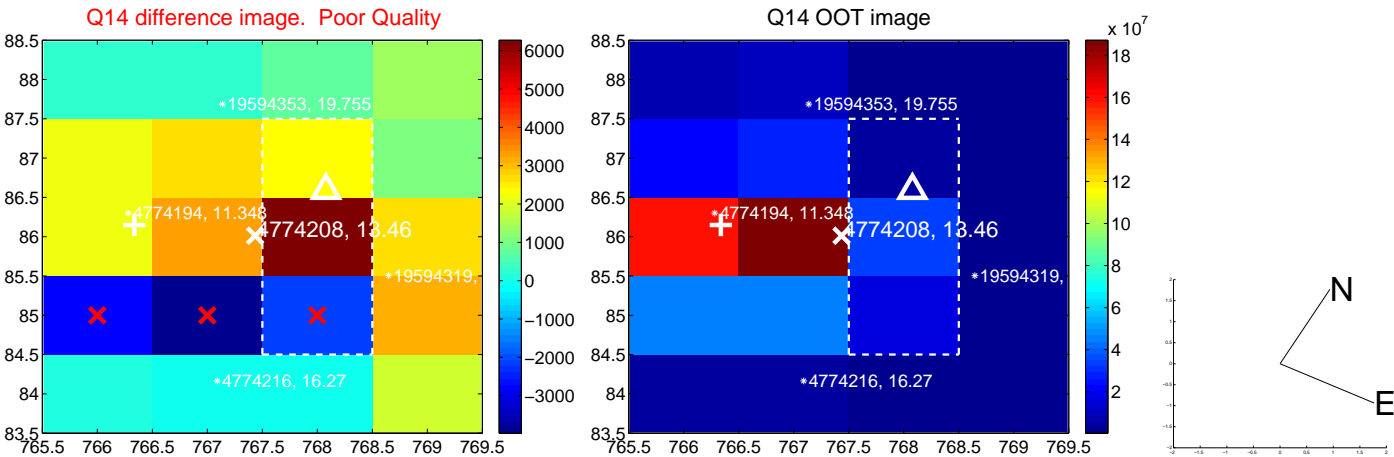
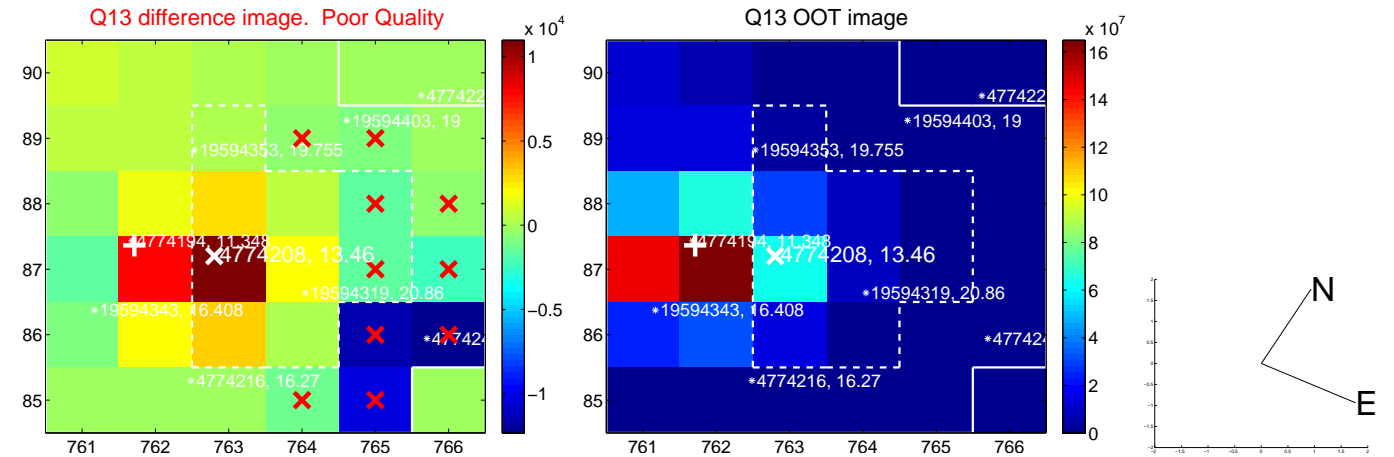




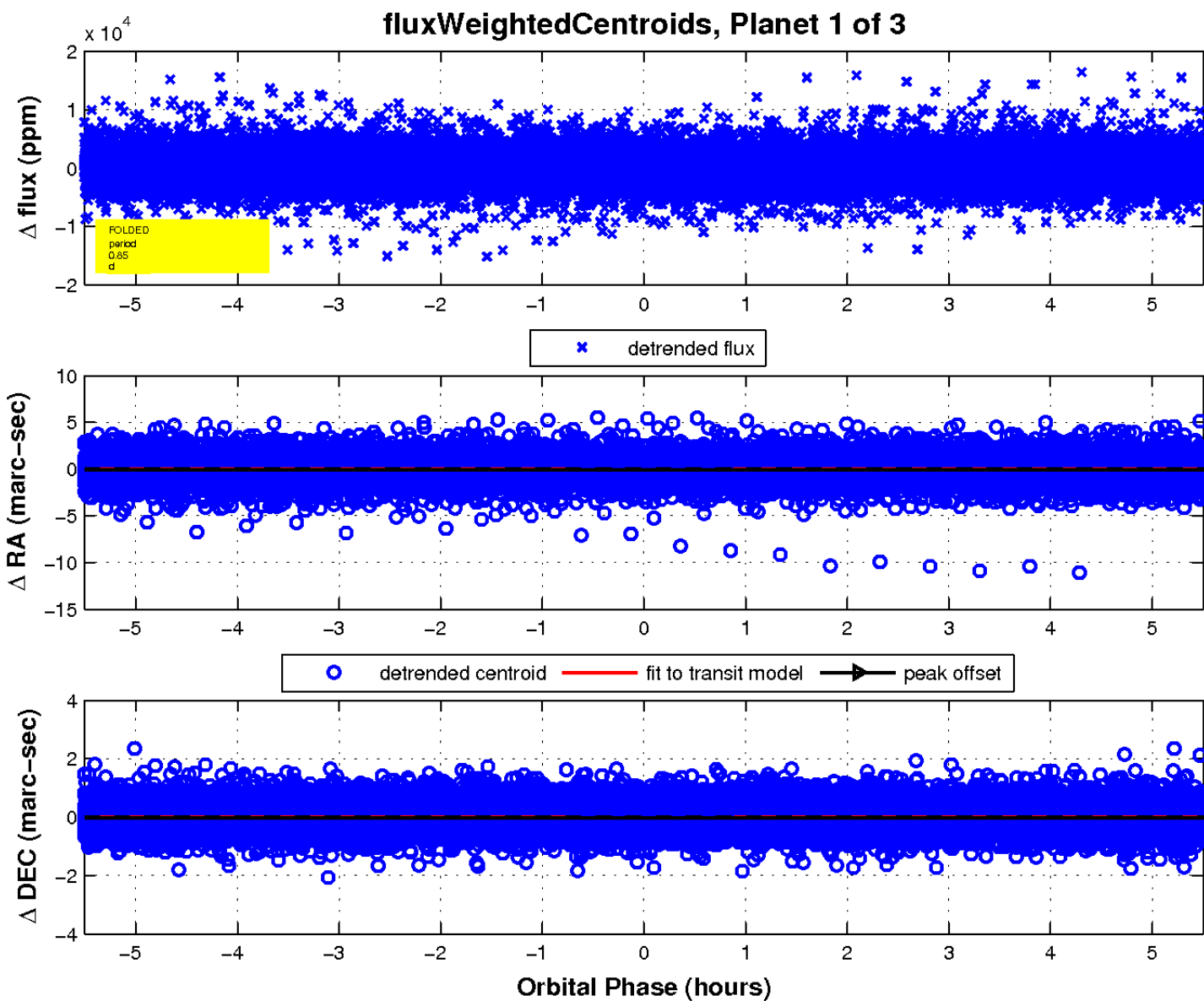
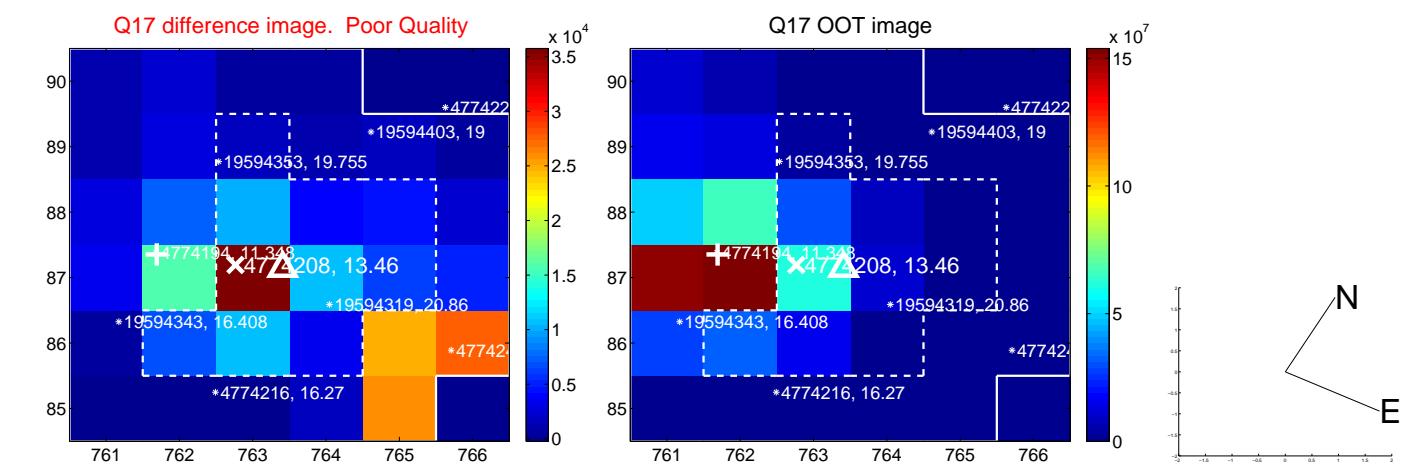
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

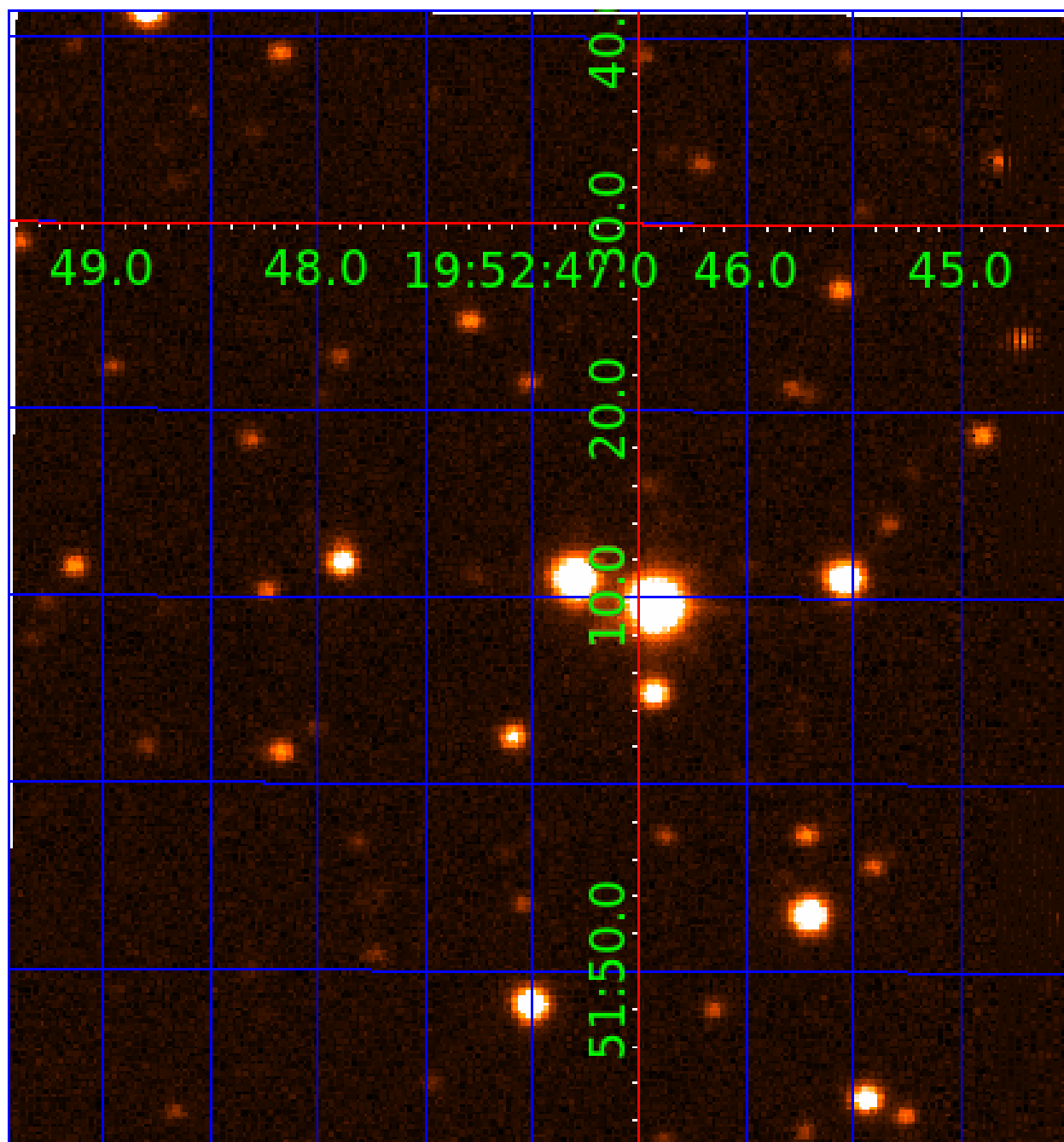


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 004774208

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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004774208-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS
004774208-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

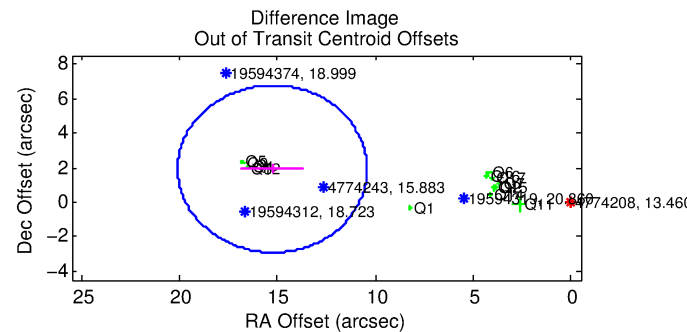
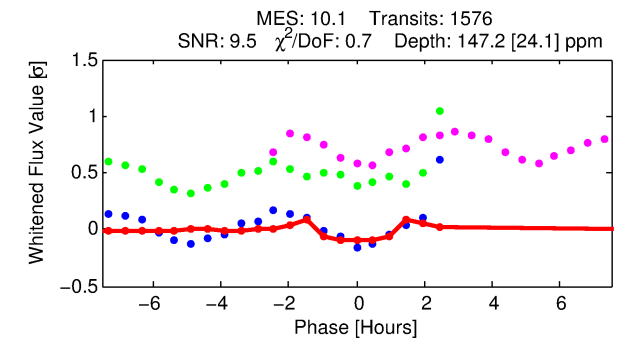
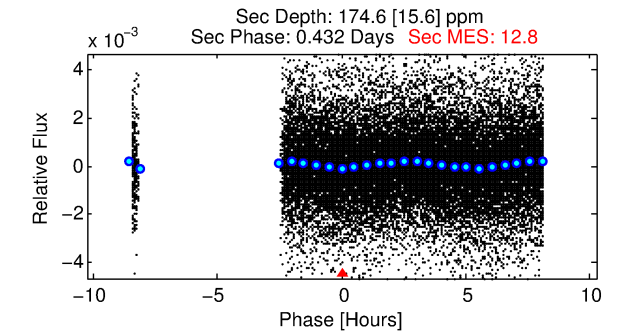
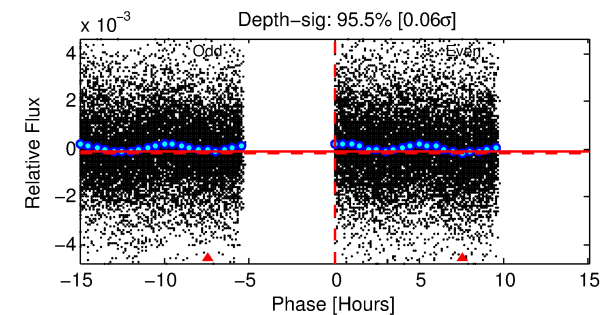
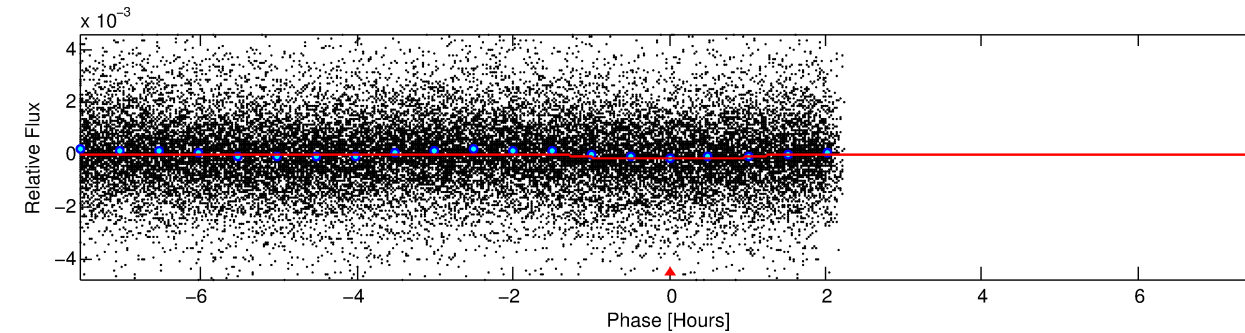
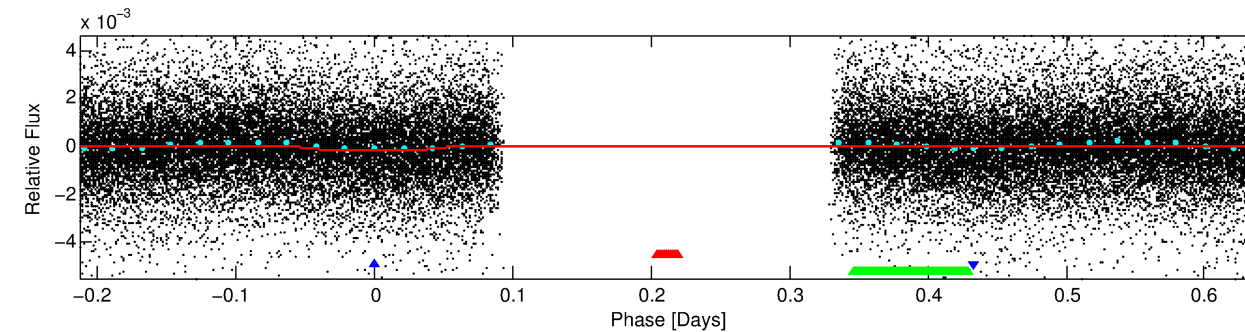
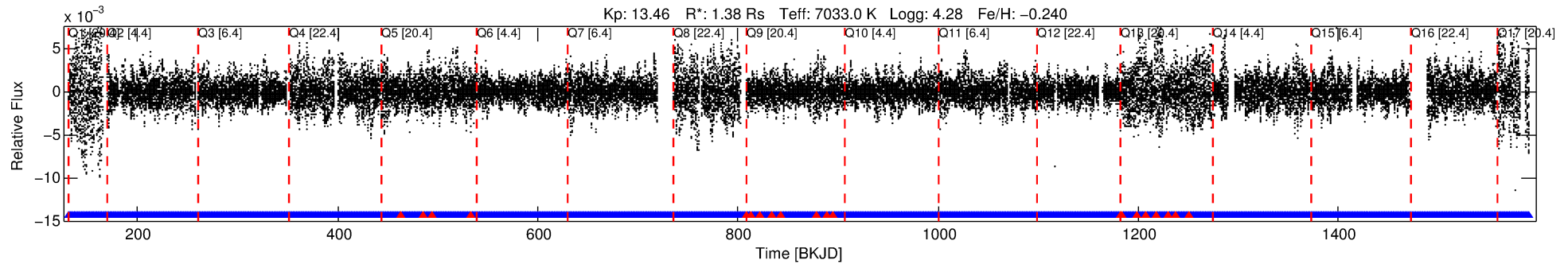
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 004774208-02

No Significant Match Found

# DV One-Page Summary

KIC: 4774208 Candidate: 2 of 3 Period: 0.852 d



## DV Fit Results:

Period = 0.85233 [0.00001] d  
Epoch = 131.7999 [0.0015] BKJD  
Rp/R\* = 0.0129 [0.0030]  
a/R\* = 1.52 [1.10]  
b = 0.90 [0.27]  
Seff = 11257.55 [4666.37]  
Teff = 2627 [272] K  
Rp = 1.95 [0.77] Re  
a = 0.0193 [0.0051] AU  
Ag = 9.39 [5.67] [1.48 $\sigma$ ]  
**Teffp = 7109 [886] K [4.84 $\sigma$ ]**

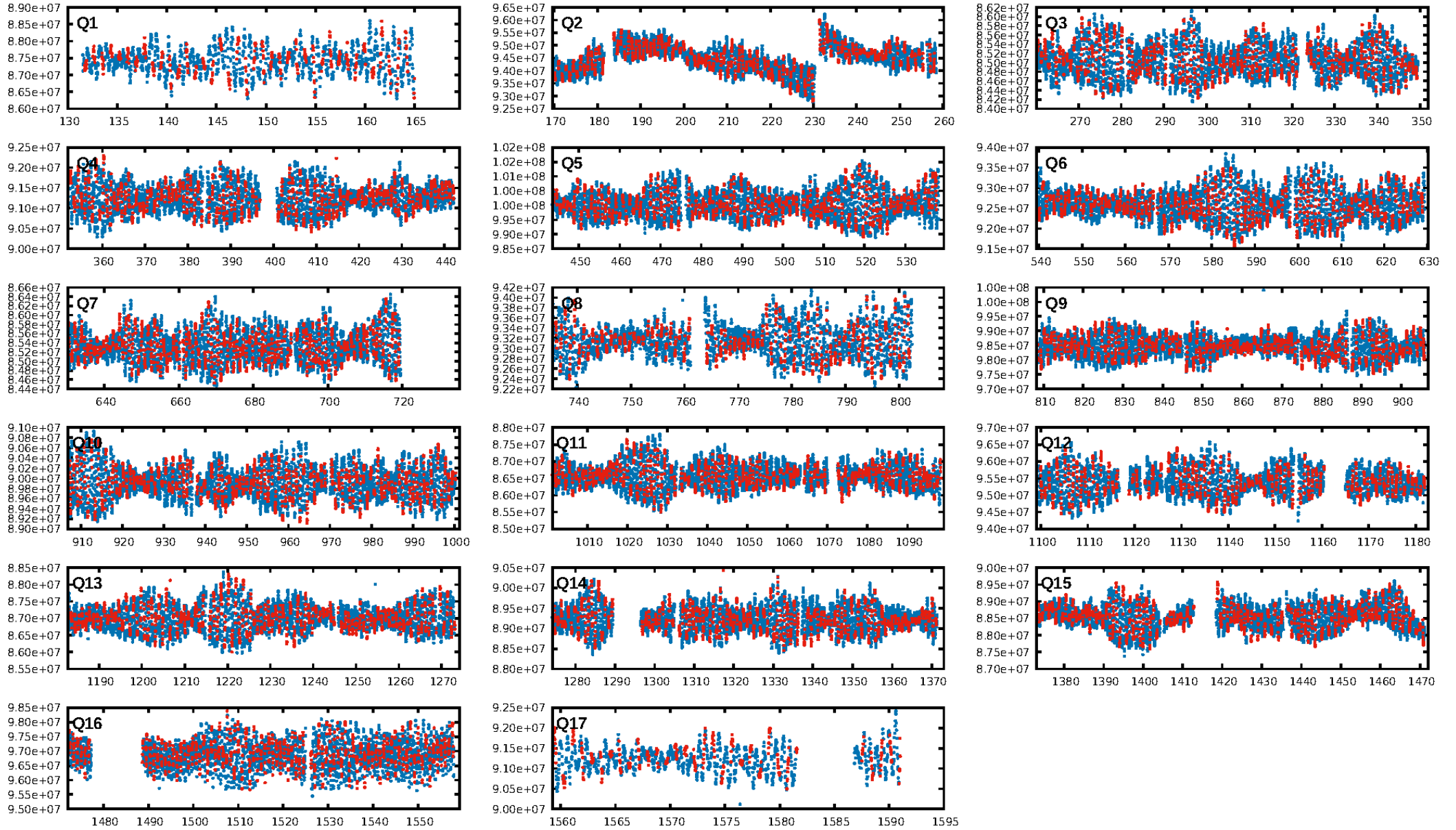
## DV Diagnostic Results:

**ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]**  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.33e-78  
RollingBand-fgt: 0.99 [1484/1504]  
**GhostDiagnostic-chr: -0.5451**  
Centroid-sig: 0.0%  
Centroid-so: 1.545 arcsec [9.41 $\sigma$ ]  
OotOffset-rm: 15.377 arcsec [9.54 $\sigma$ ]  
KicOffset-rm: 11.176 arcsec [7.01 $\sigma$ ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.50 [7/14]  
DiffImageOverlap-fno: 0.00 [0/17]

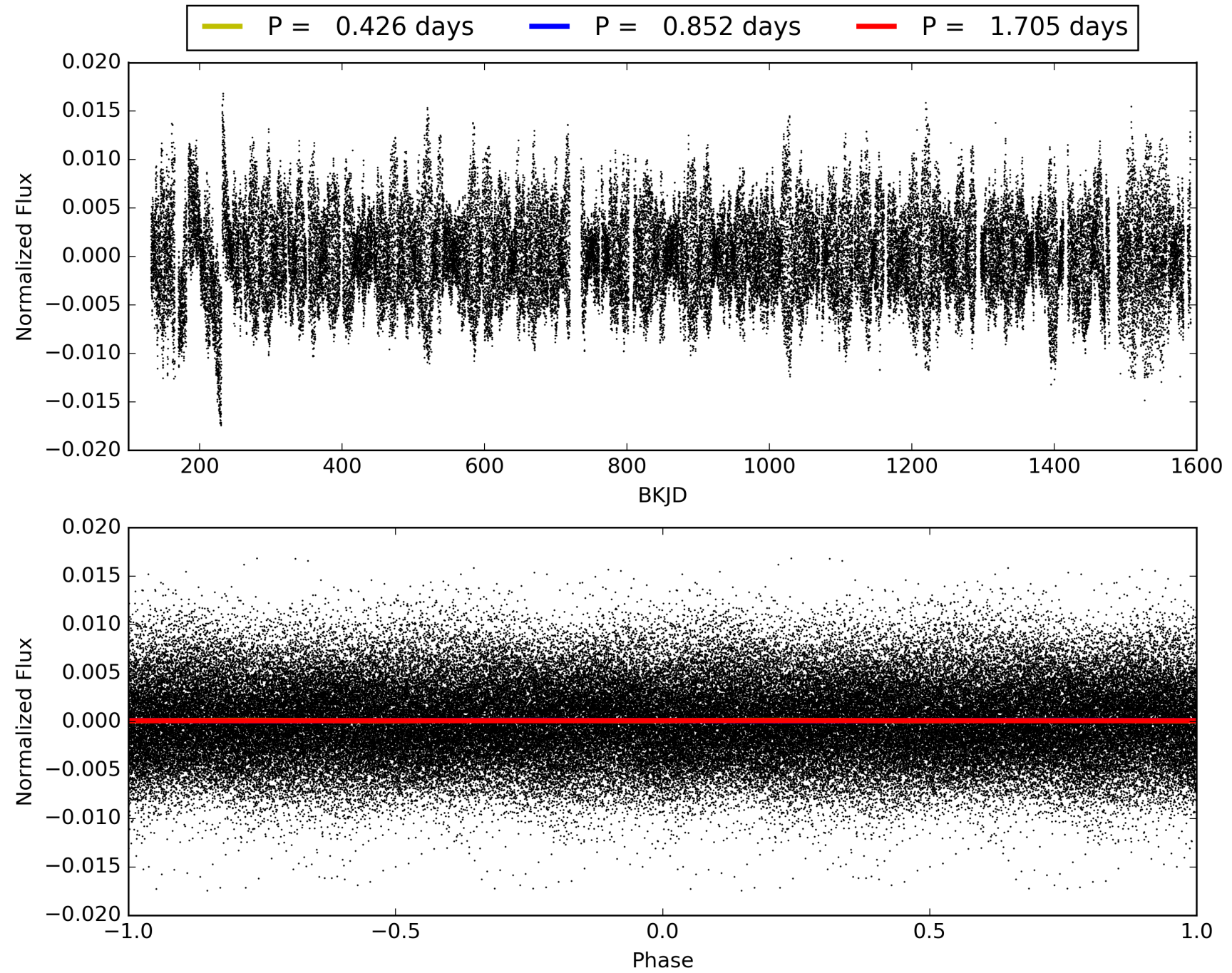
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 004774208-02, PDC Light Curves



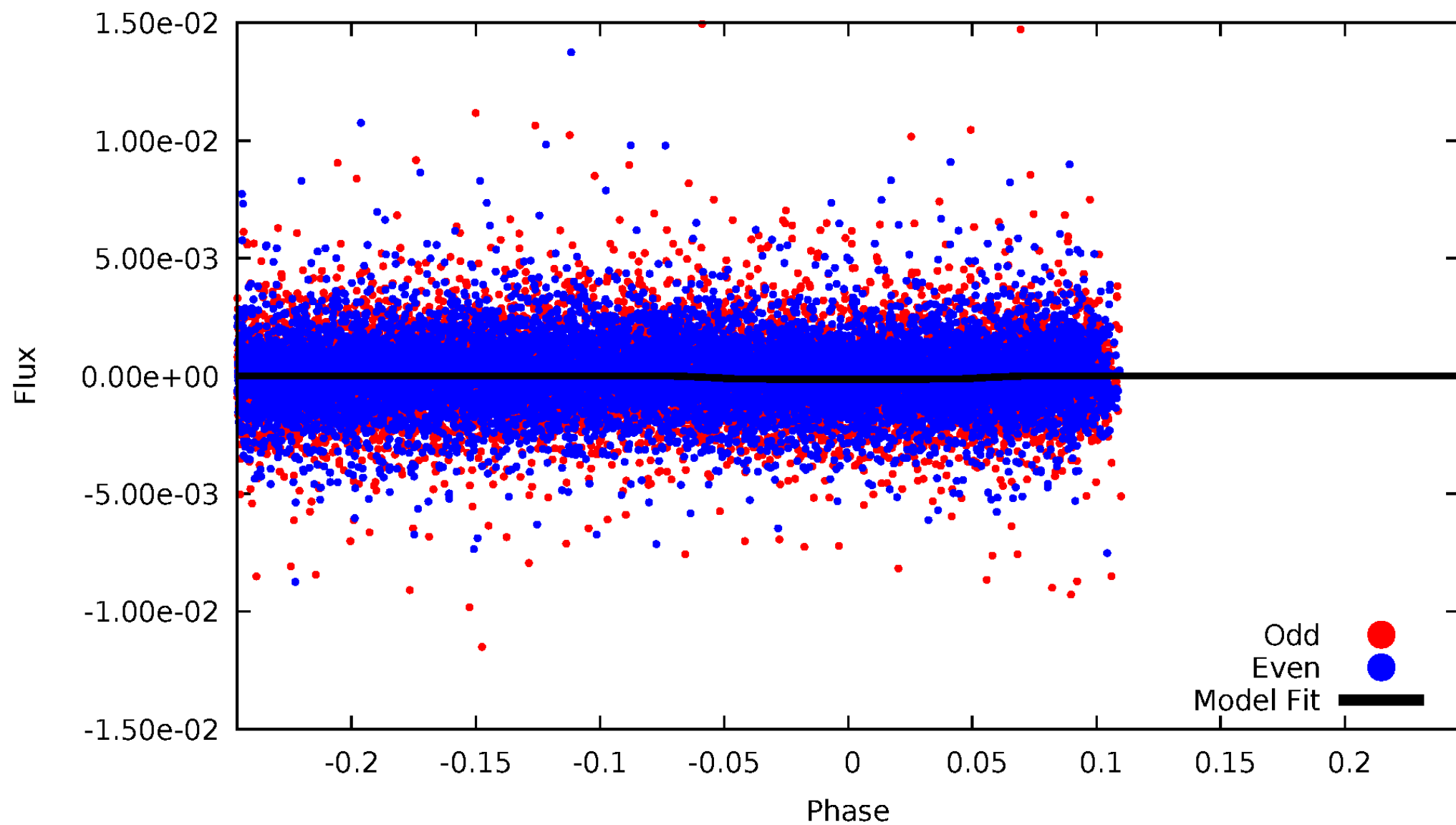
TCE 004774208-02





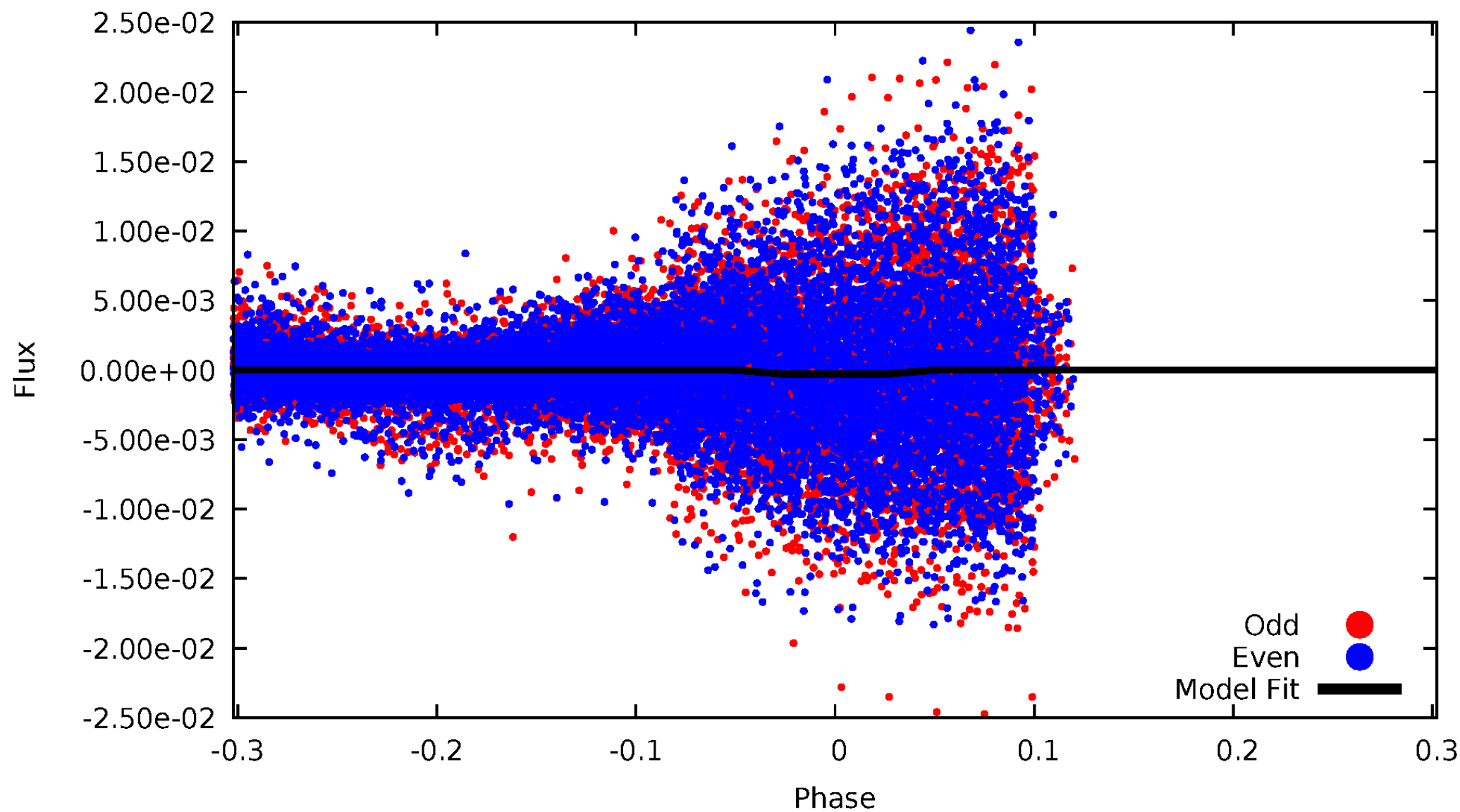
# DV Odd/Even

TCE 004774208-02



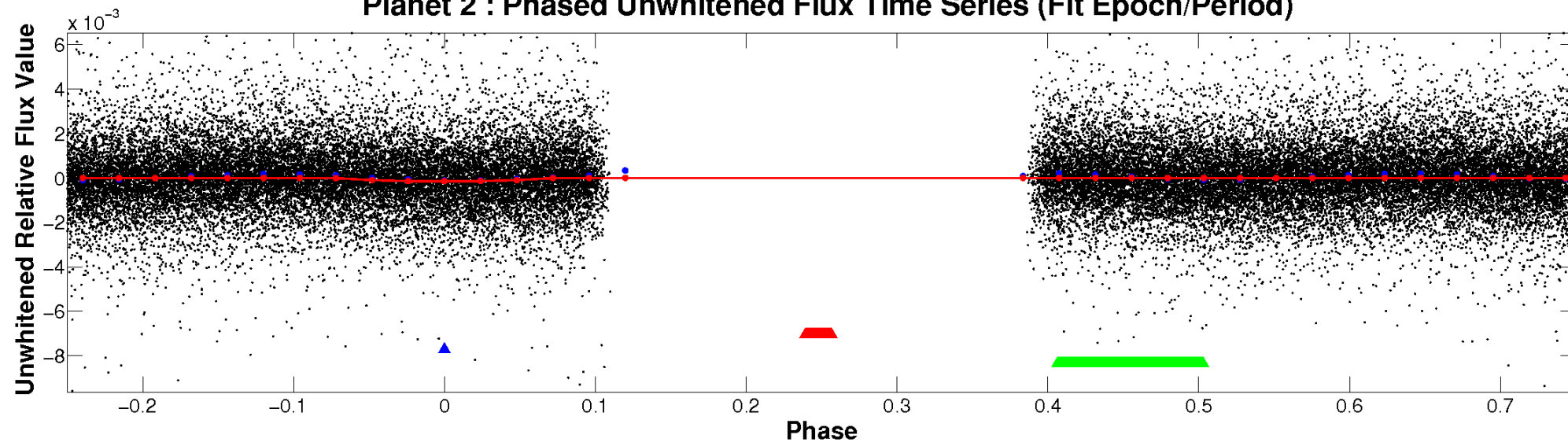
# ALT Odd/Even

TCE 004774208-02

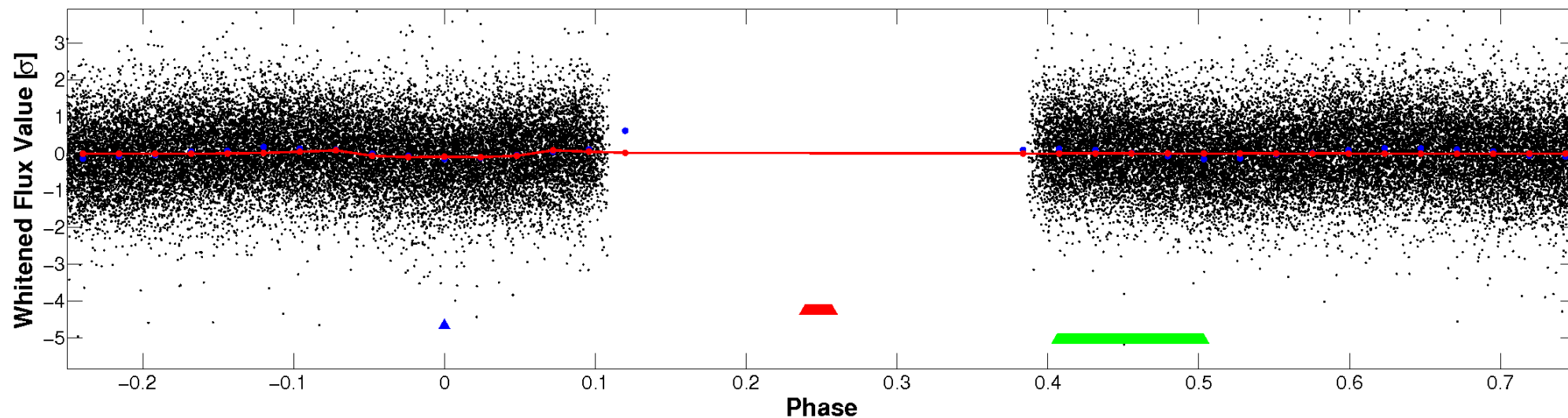


# Non-Whitened Vs. Whitened Light Curve

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

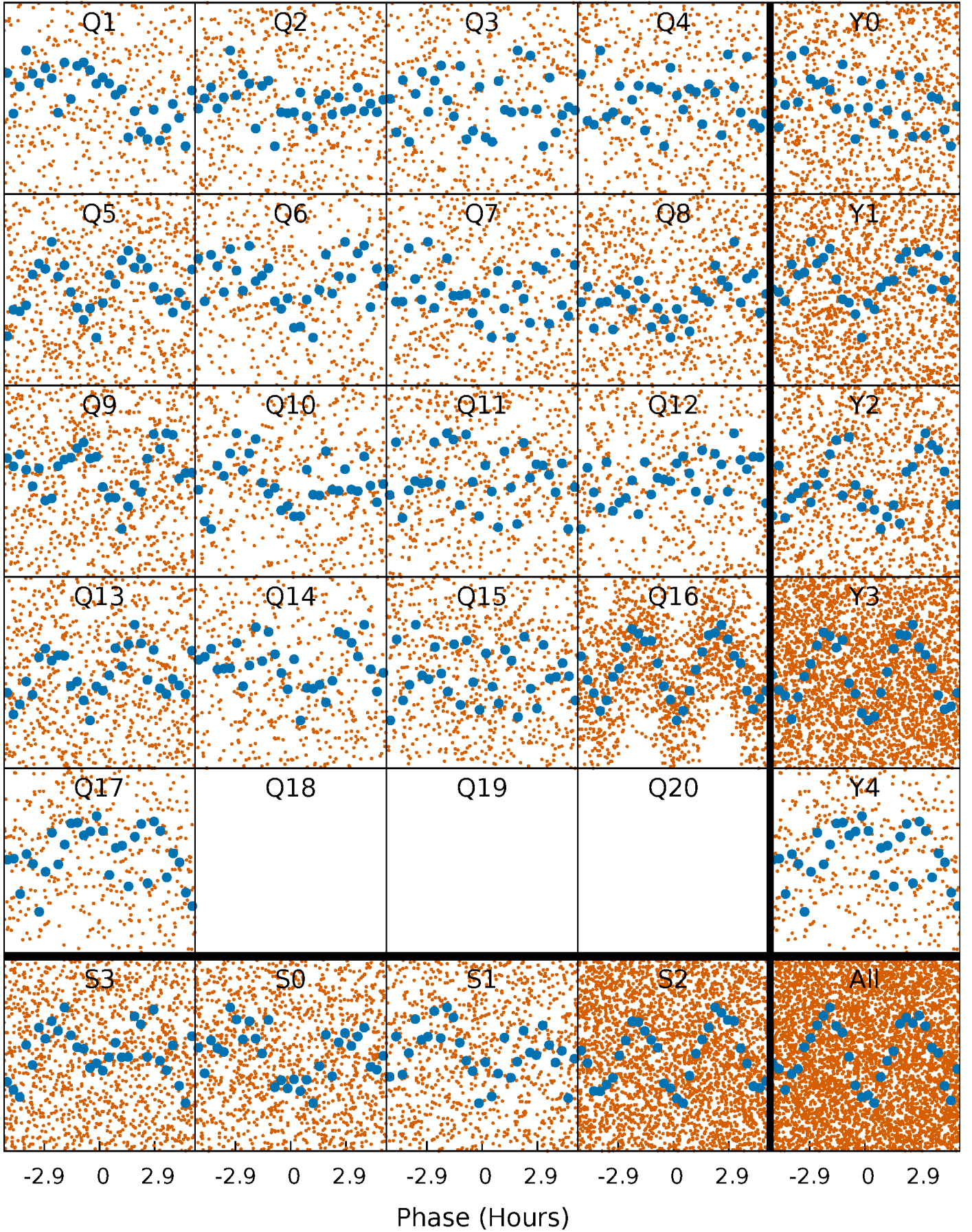


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

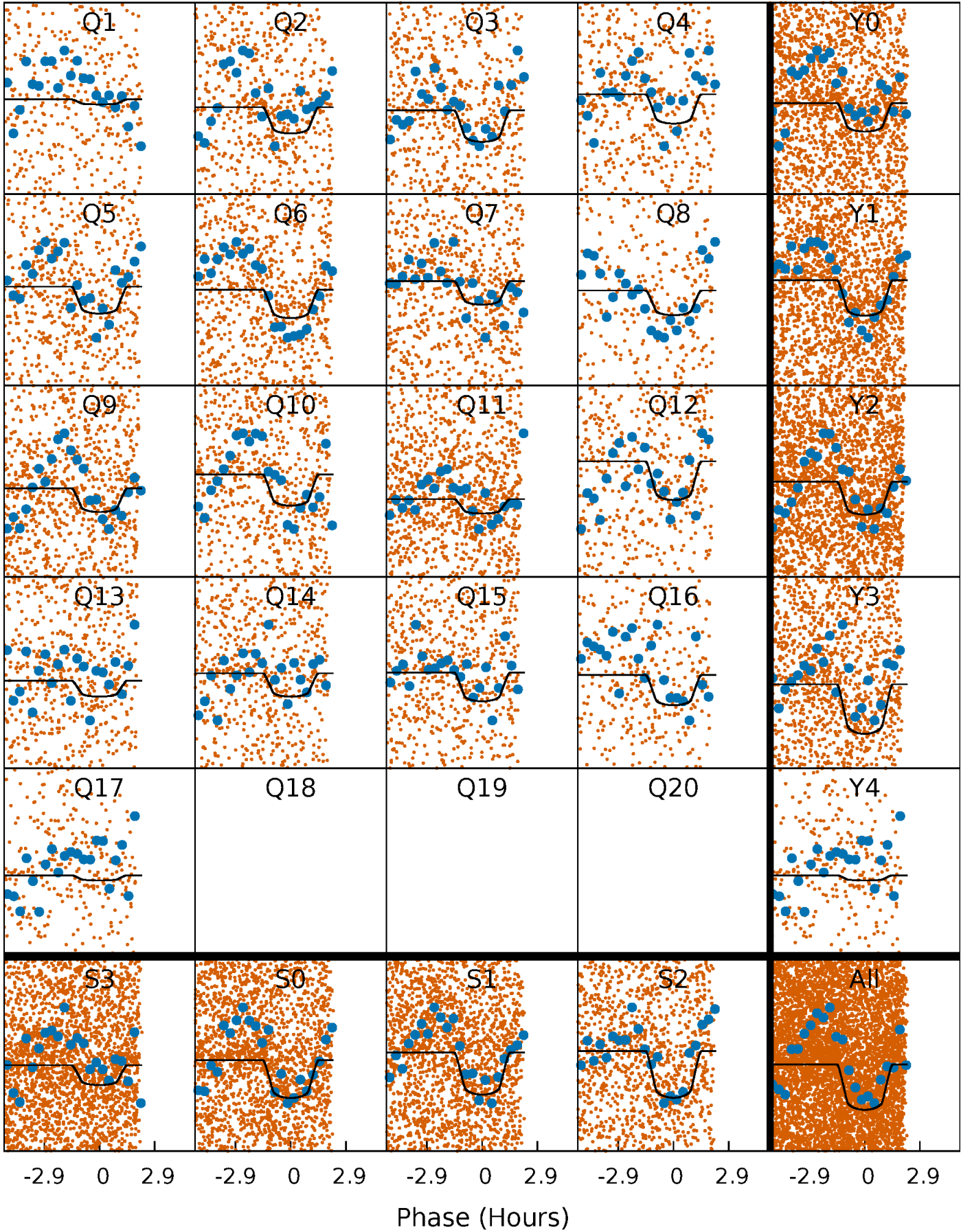
TCE 004774208-02    P= 0.852328 Days     $T_0=131.799941$  (BKJD)





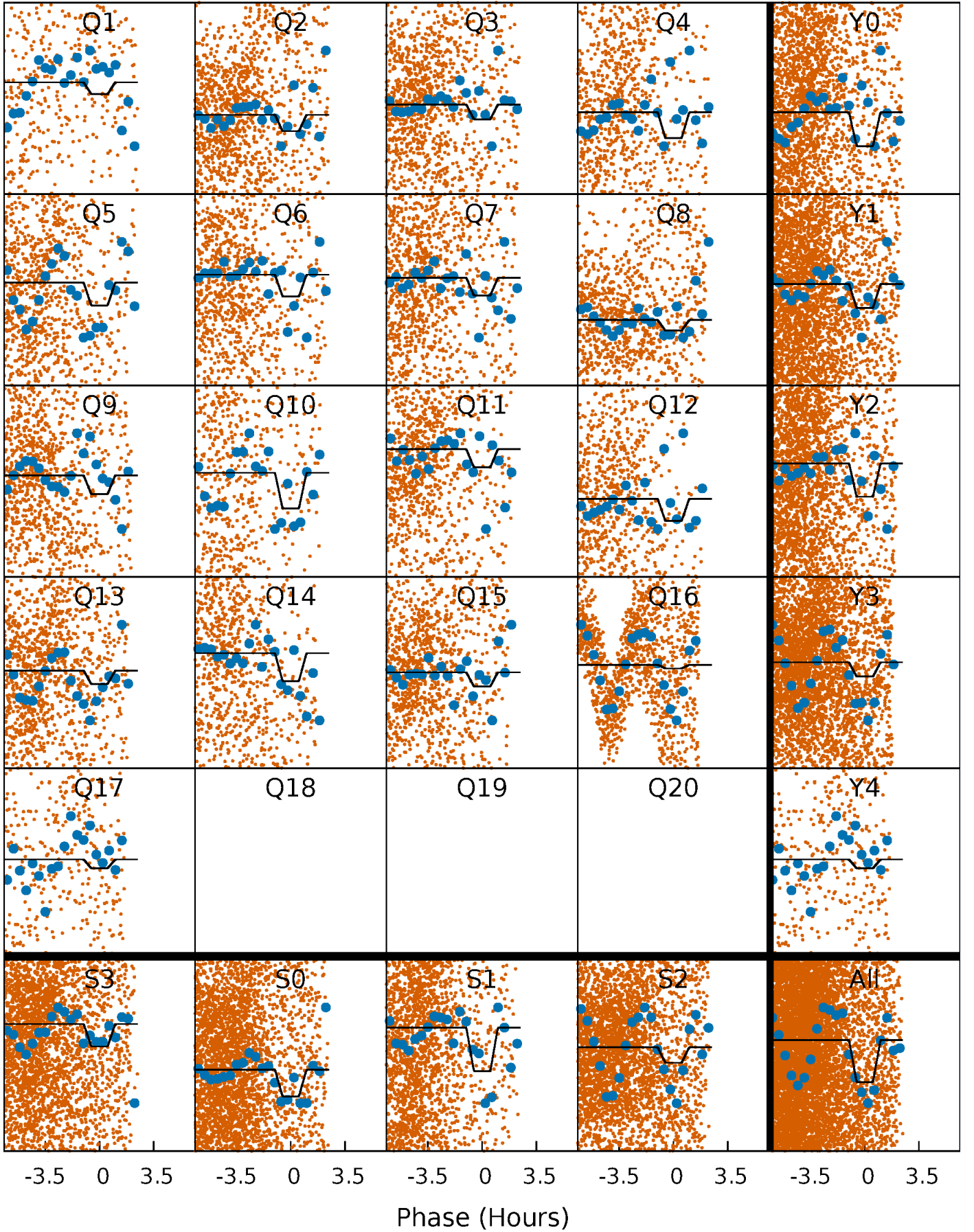
# DV Quarter-Phased Transit Curves

TCE 004774208-02   P= 0.852328 Days    $T_0=131.799941$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

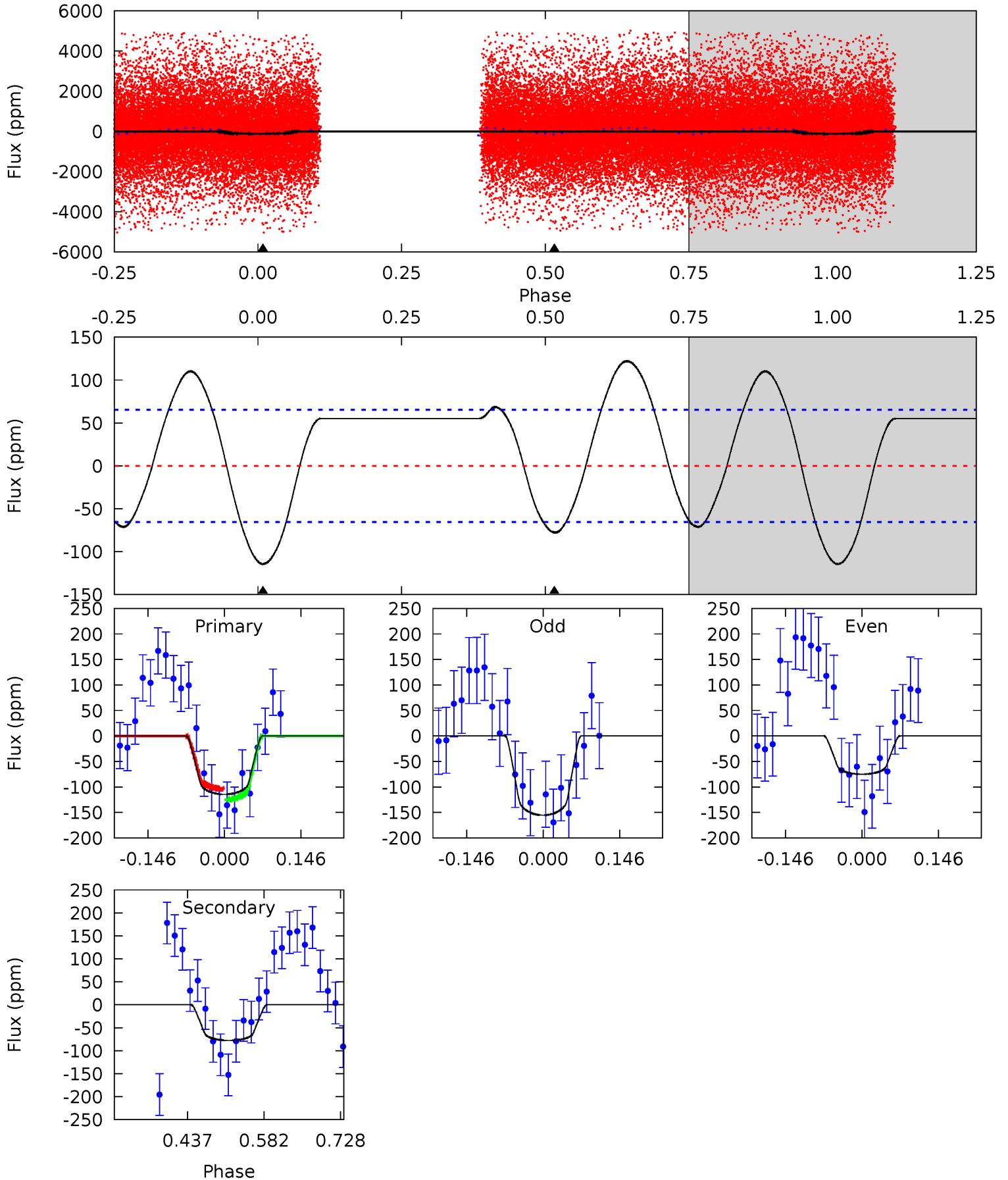
TCE 004774208-02 P= 0.852340 Days  $T_0=131.790745$  (BKJD)



# DV Model-Shift Uniqueness Test

004774208-02, P = 0.852328 Days, E = 130.947613 Days

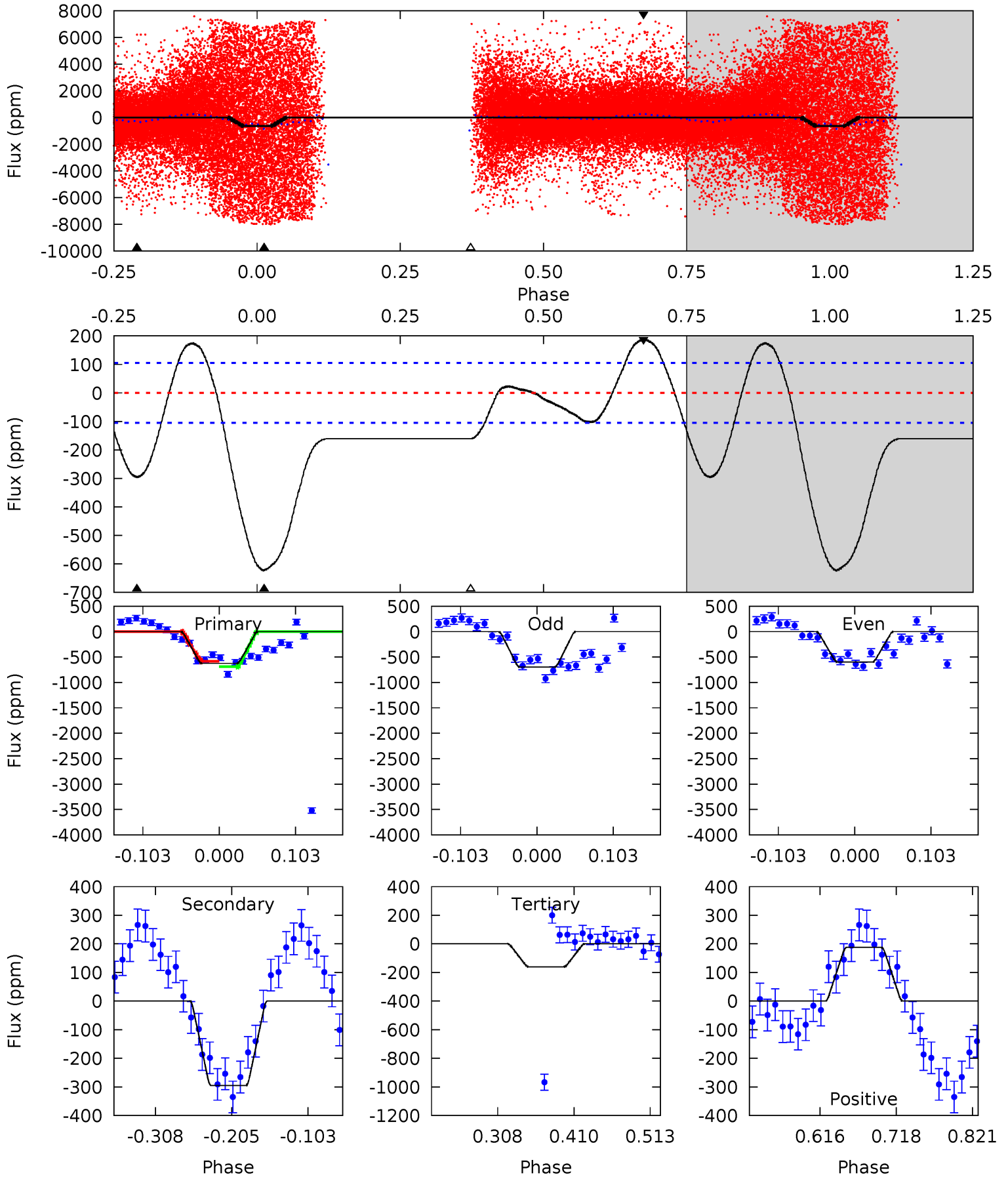
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.85	5.33	0	0	4.49	1.46	4.01	7.85	7.85	5.33	5.33	2.81	0.85	0.52	0.77



# Alt Model-Shift Uniqueness Test

004774208-02, P = 0.852340 Days, E = 130.938405 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
27.1	12.8	6.98	8.13	4.56	1.63	4.01	20.1	18.9	5.81	4.65	2.09	0.71	0.23	1.48





### Stellar Parameters For KIC 004774208

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7033^{+196}_{-295}$	$4.276^{+0.087}_{-0.203}$	$-0.240^{+0.250}_{-0.350}$	$1.381^{+0.447}_{-0.206}$	$1.320^{+0.200}_{-0.200}$	$0.706^{+0.343}_{-0.368}$
	+3%/-4%	+2%/-5%	+104%/-146%	+32%/-15%	+15%/-15%	+49%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 004774208-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-78 \pm 15$	$2.05^{+0.61}_{-0.53}$	$3725^{+284}_{-219}$	$5587^{+920}_{-614}$	$3.706^{+3.017}_{-1.551}$
Alt.	$-295 \pm 23$	$2.70^{+0.56}_{-0.57}$	$3703^{+306}_{-211}$	$6901^{+881}_{-628}$	$8.231^{+4.590}_{-2.542}$

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

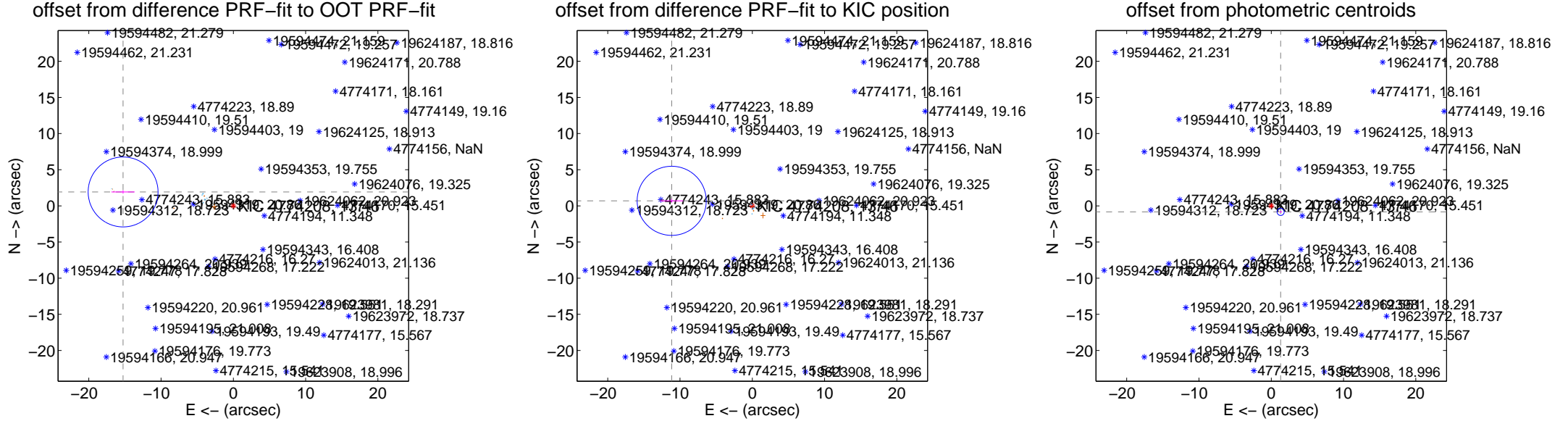
## DV Centroid Data

Supplemental centroid analysis for 004774208-02. Kepler magnitude: 13.46. Transit SNR 9.54

There are 7 quarters with good PRF difference image offsets

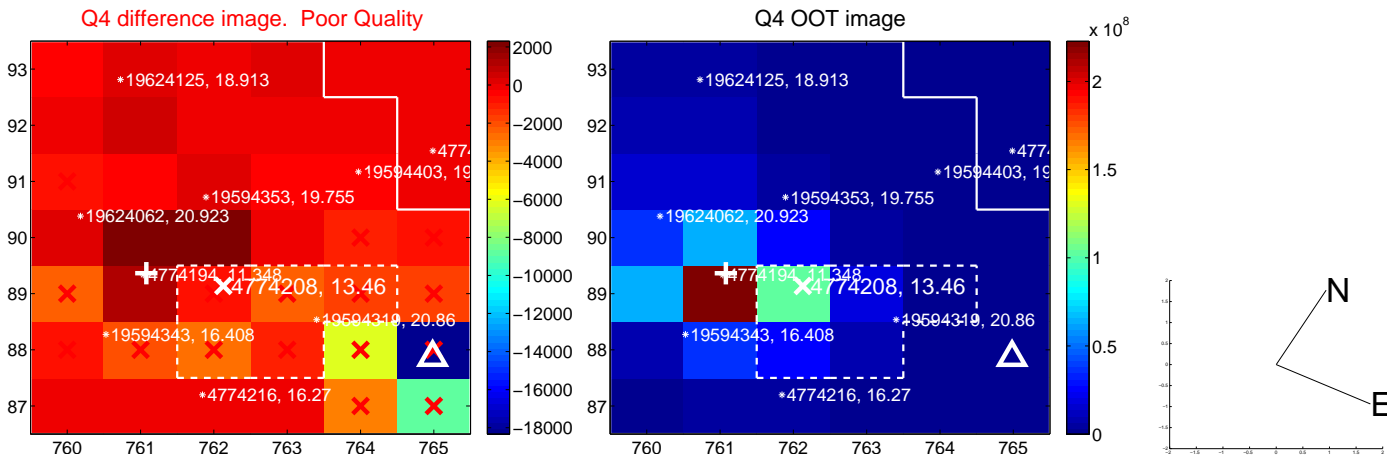
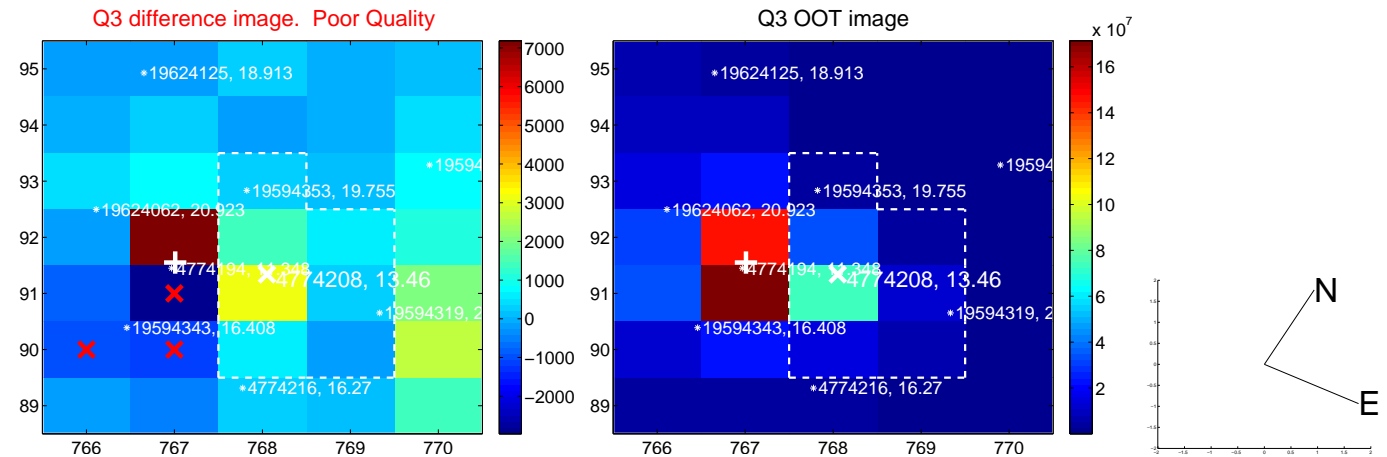
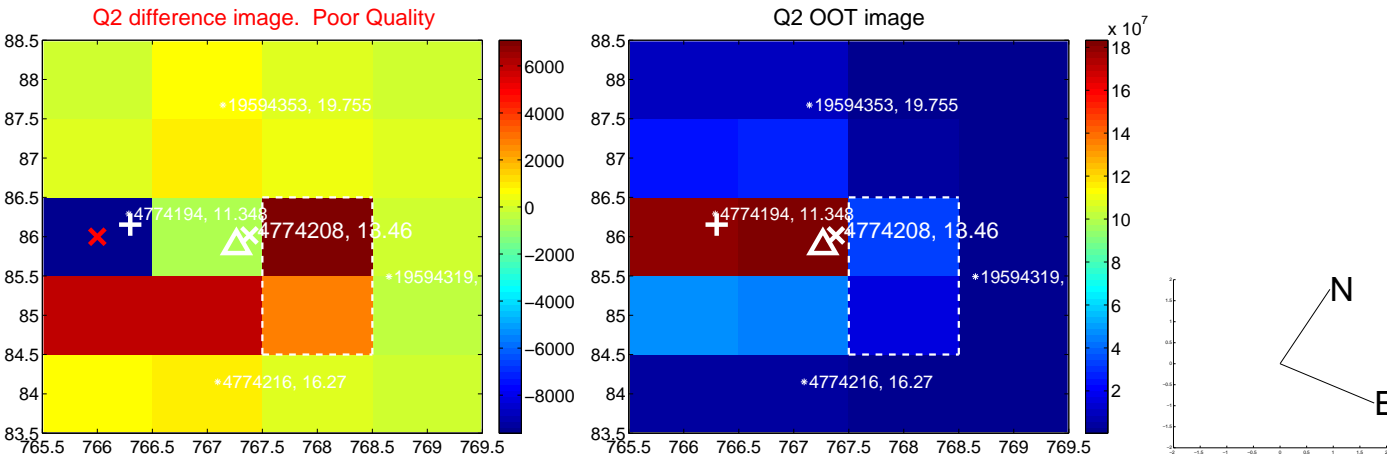
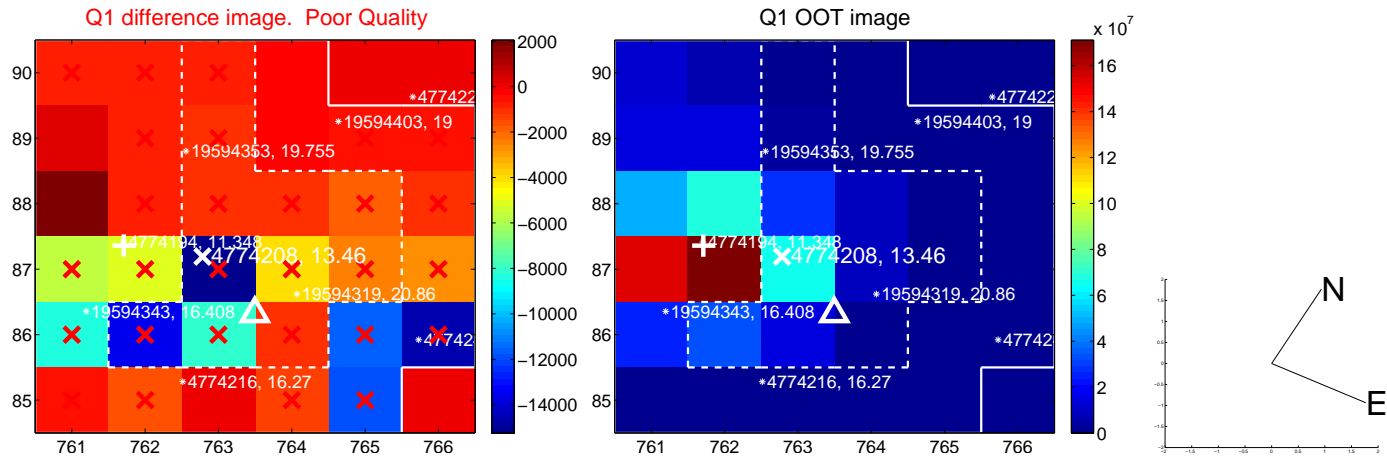
The OOT PRF centroid is offset from the target star catalog position by about 4.32 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$15.377 \pm 1.612$	9.54	$15.256 \pm 1.607$	$1.925 \pm 0.222$
PRF-fit source offset from KIC position	$11.176 \pm 1.593$	7.01	$11.155 \pm 1.585$	$0.697 \pm 0.248$
photometric centroid source offset	$1.55 \pm 0.16$	9.41	$-1.30 \pm 0.19$	$-0.83 \pm 0.09$

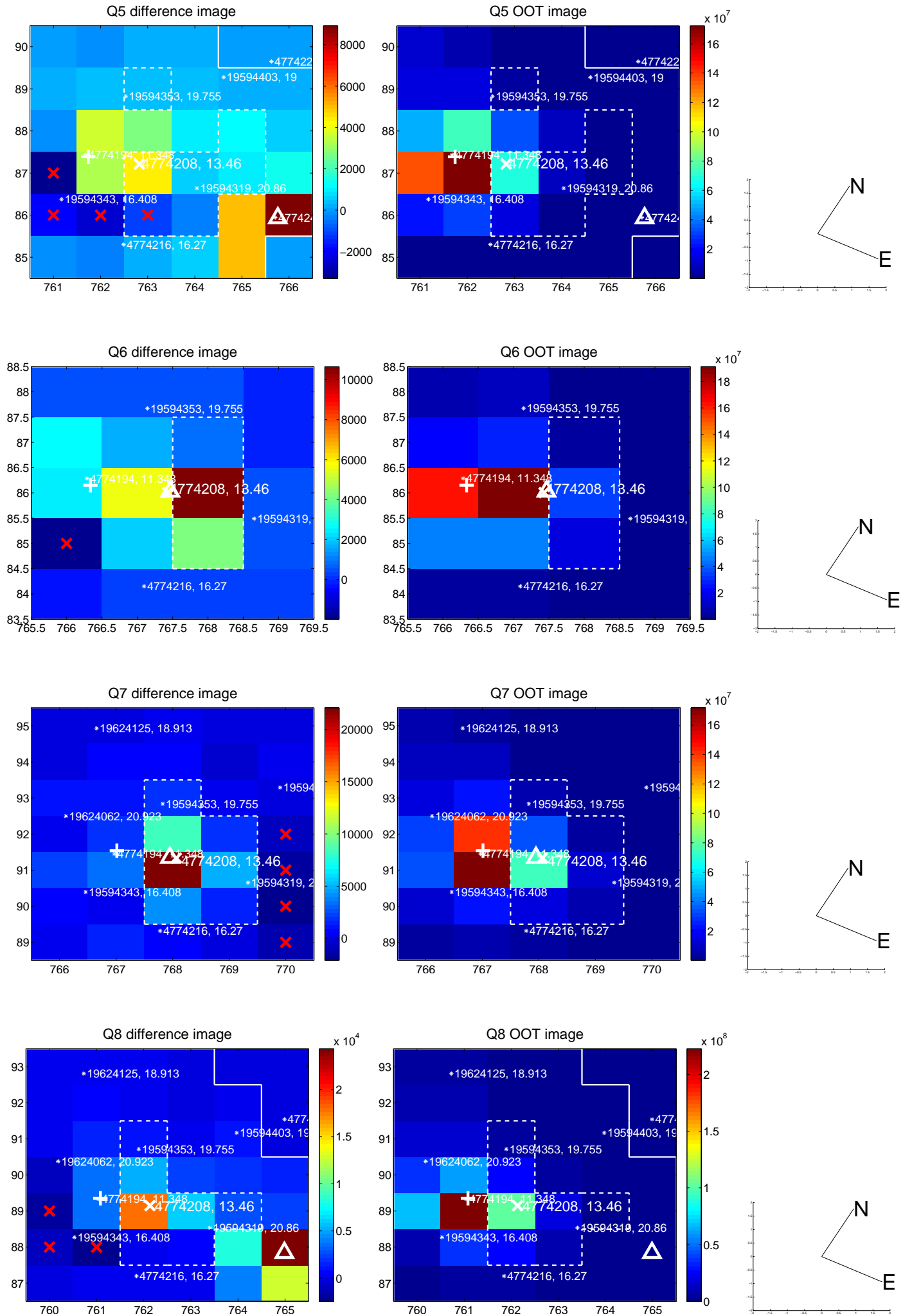


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

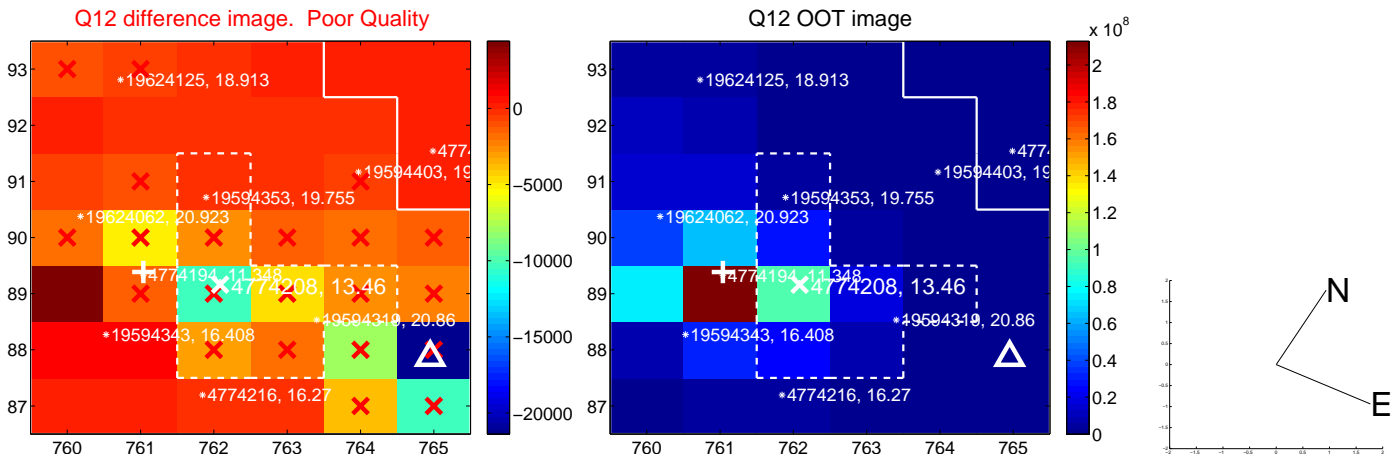
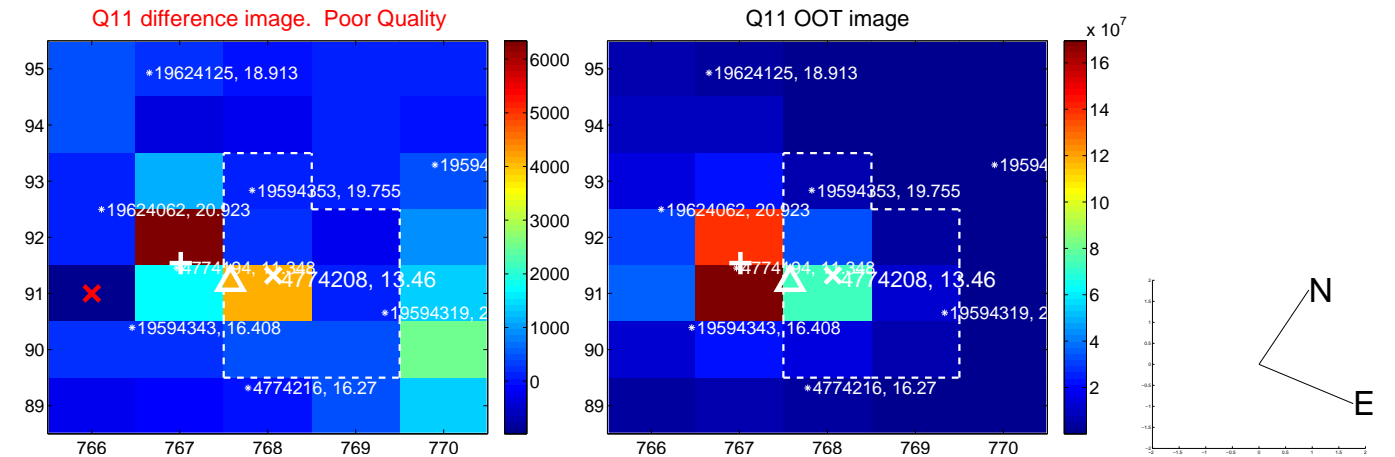
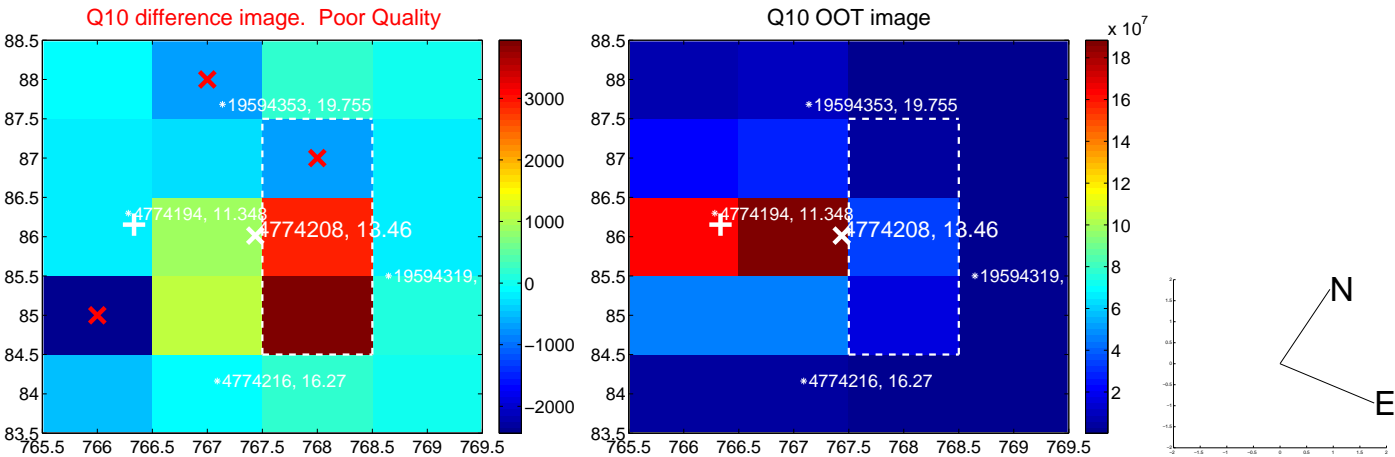
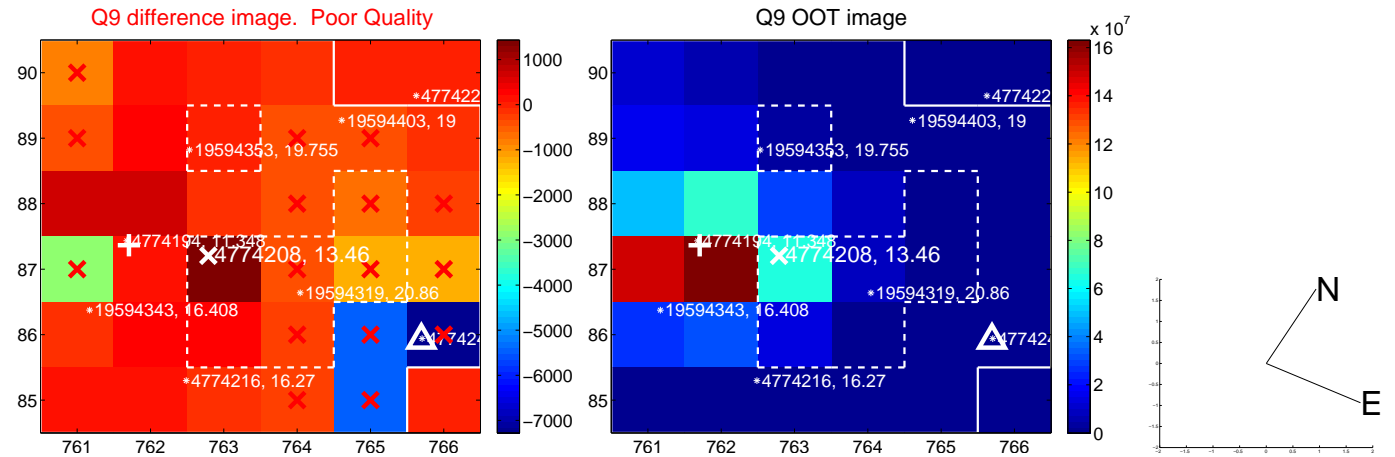
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

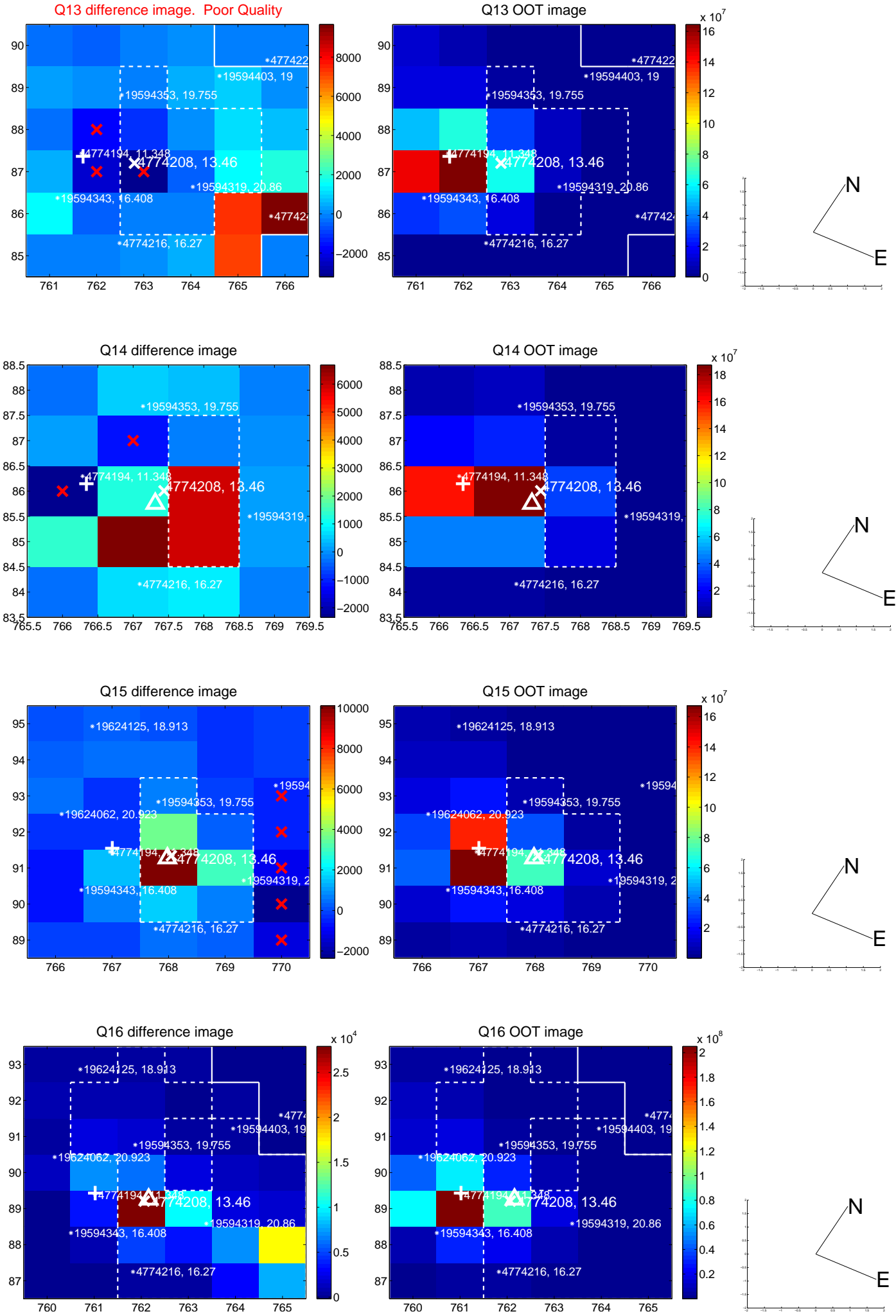


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

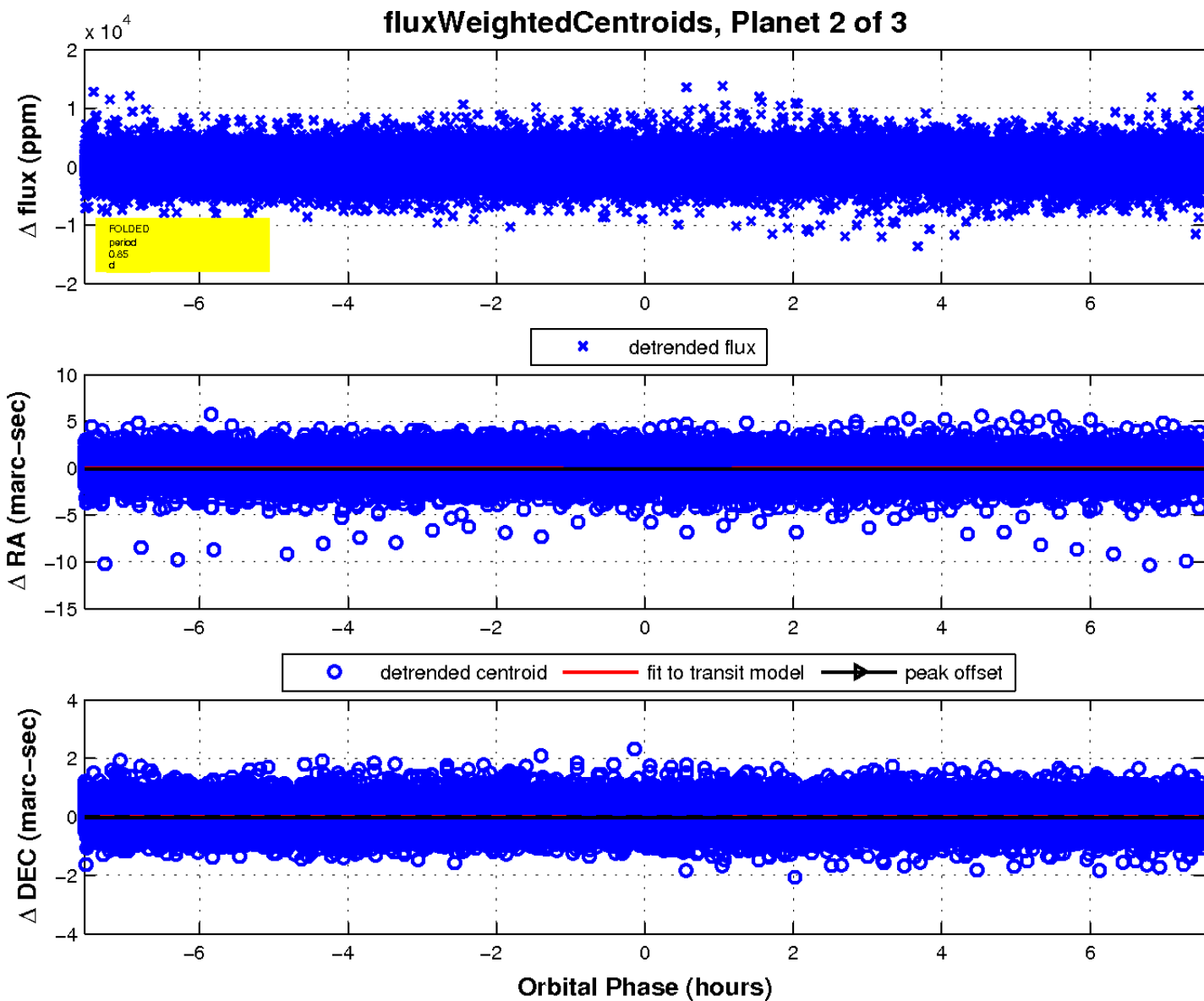
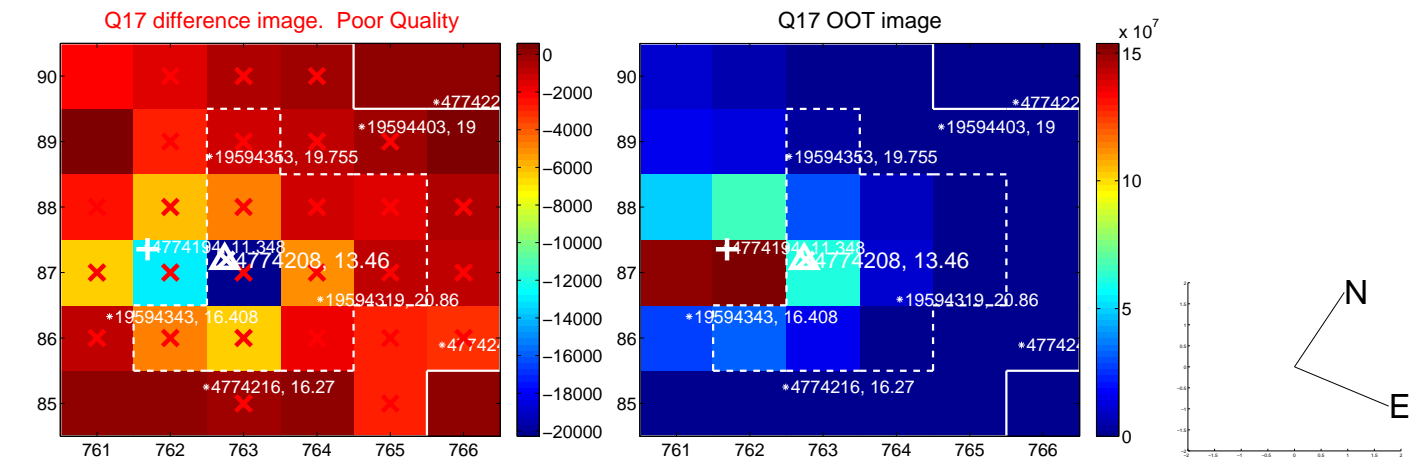




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

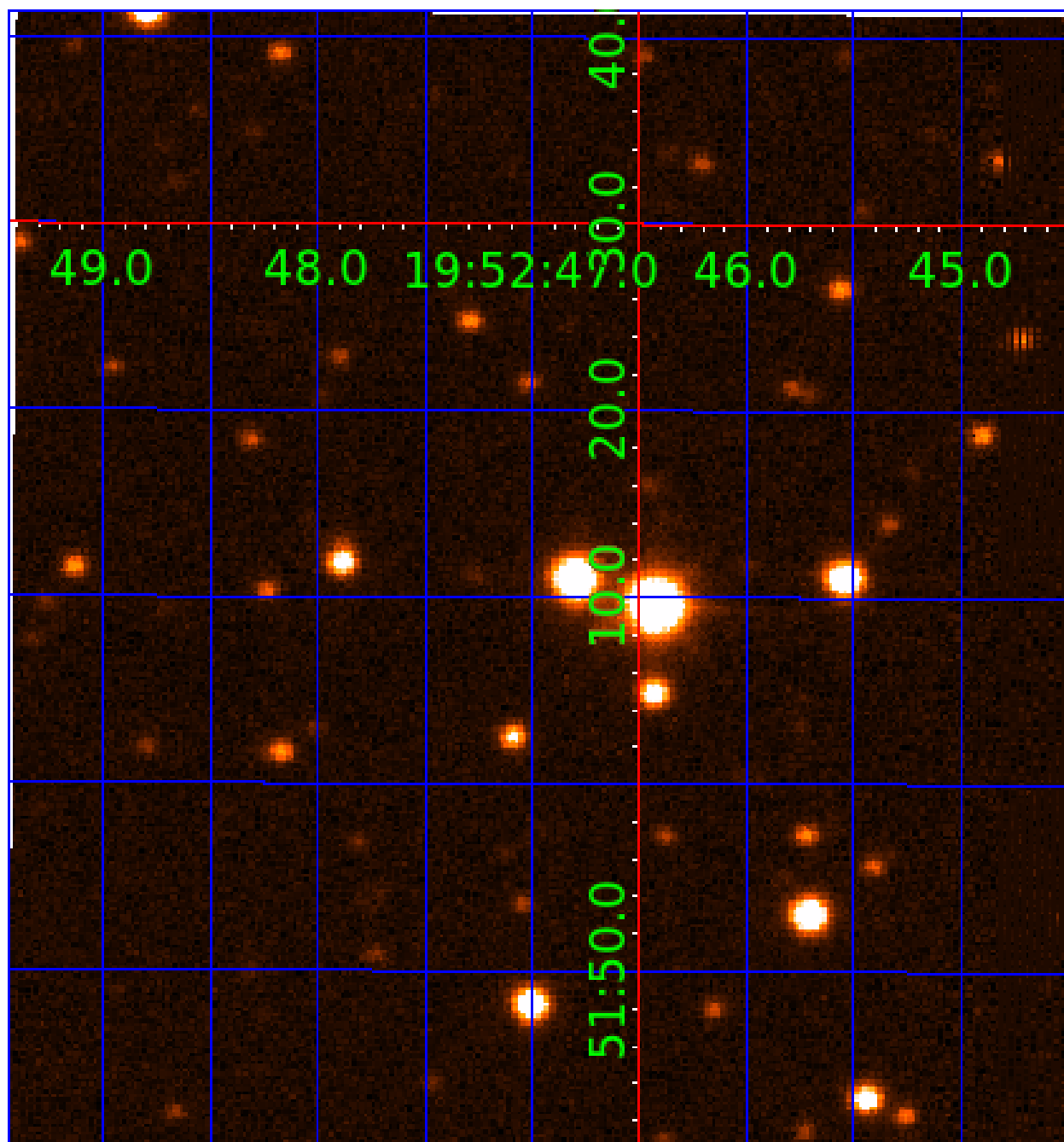


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 004774208

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004774208-01	OBS	No	0.852319	132.018787	53.6	1.835	10.5	4.0	1.38	7033	1.17	11257.70
004774208-02	OBS	No	0.852328	131.799941	147.2	2.517	10.1	9.5	1.38	7033	1.95	11257.55
004774208-03	OBS	No	0.852280	132.228681	81.2	4.880	11.6	3.9	1.38	7033	1.27	11258.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004774208-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_KIC_POS
004774208-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS
004774208-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

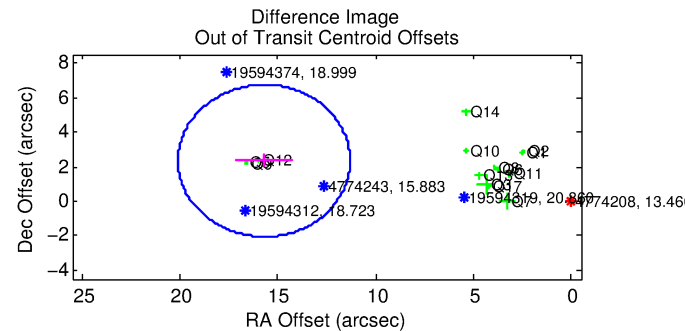
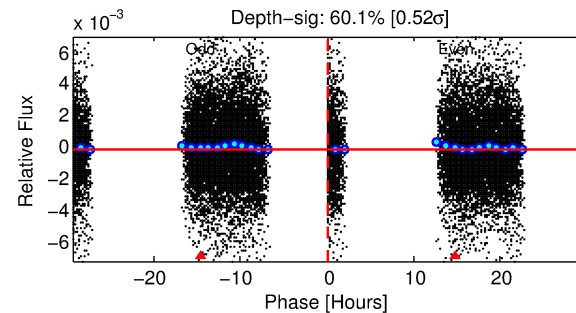
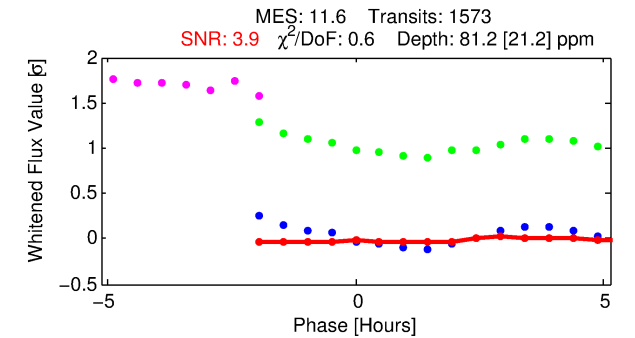
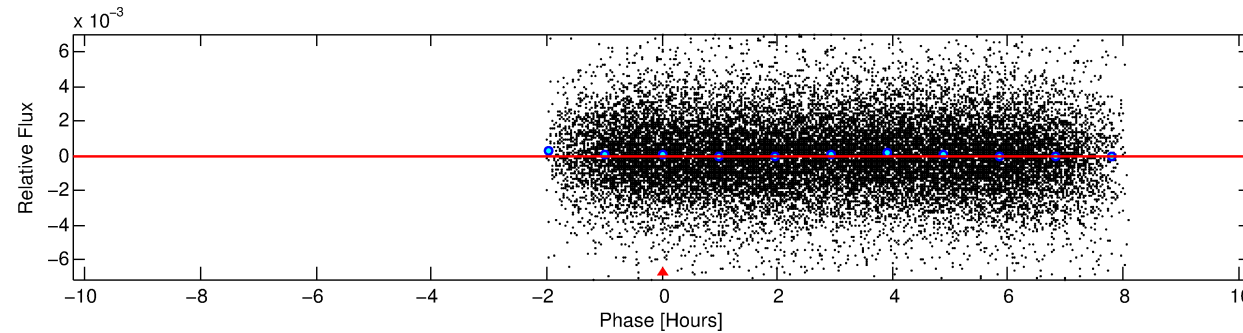
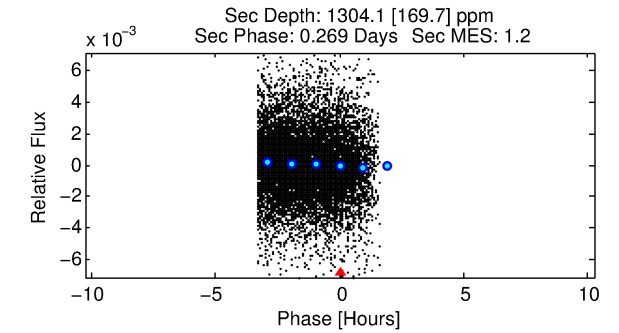
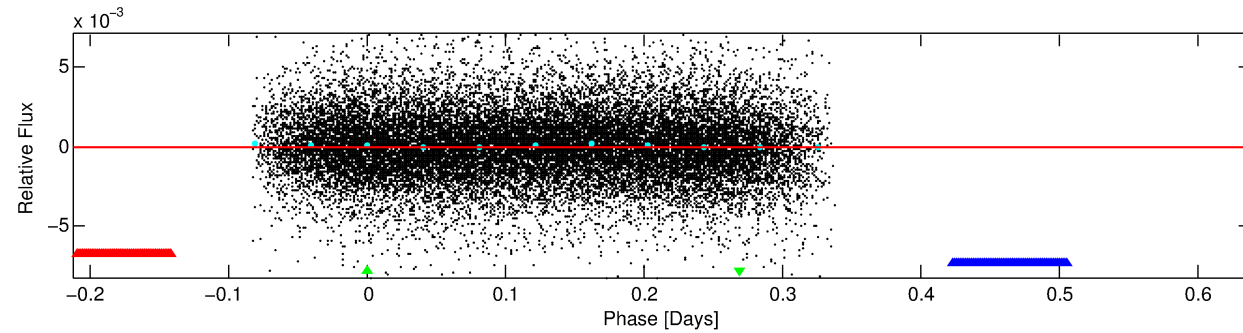
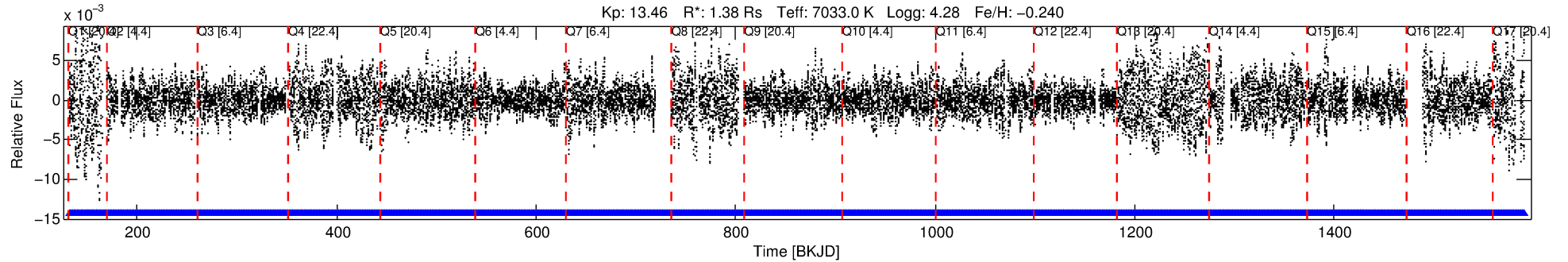
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 004774208-03

No Significant Match Found

# DV One-Page Summary

KIC: 4774208 Candidate: 3 of 3 Period: 0.852 d



## DV Fit Results:

Period = 0.85228 [0.00002] d  
Epoch = 132.2287 [0.0124] BKJD  
Rp/R\* = 0.0085 [0.0085]  
a/R\* = 1.42 [4.22]  
b = 0.37 [13.54]  
Seff = 11258.39 [4666.72]  
Teq = 2627 [272] K  
Rp = 1.27 [1.34] Re  
a = 0.0193 [0.0051] AU  
Ag = 163.92 [334.07] [0.49σ]  
Teff = 14531 [7300] K [1.63σ]

## DV Diagnostic Results:

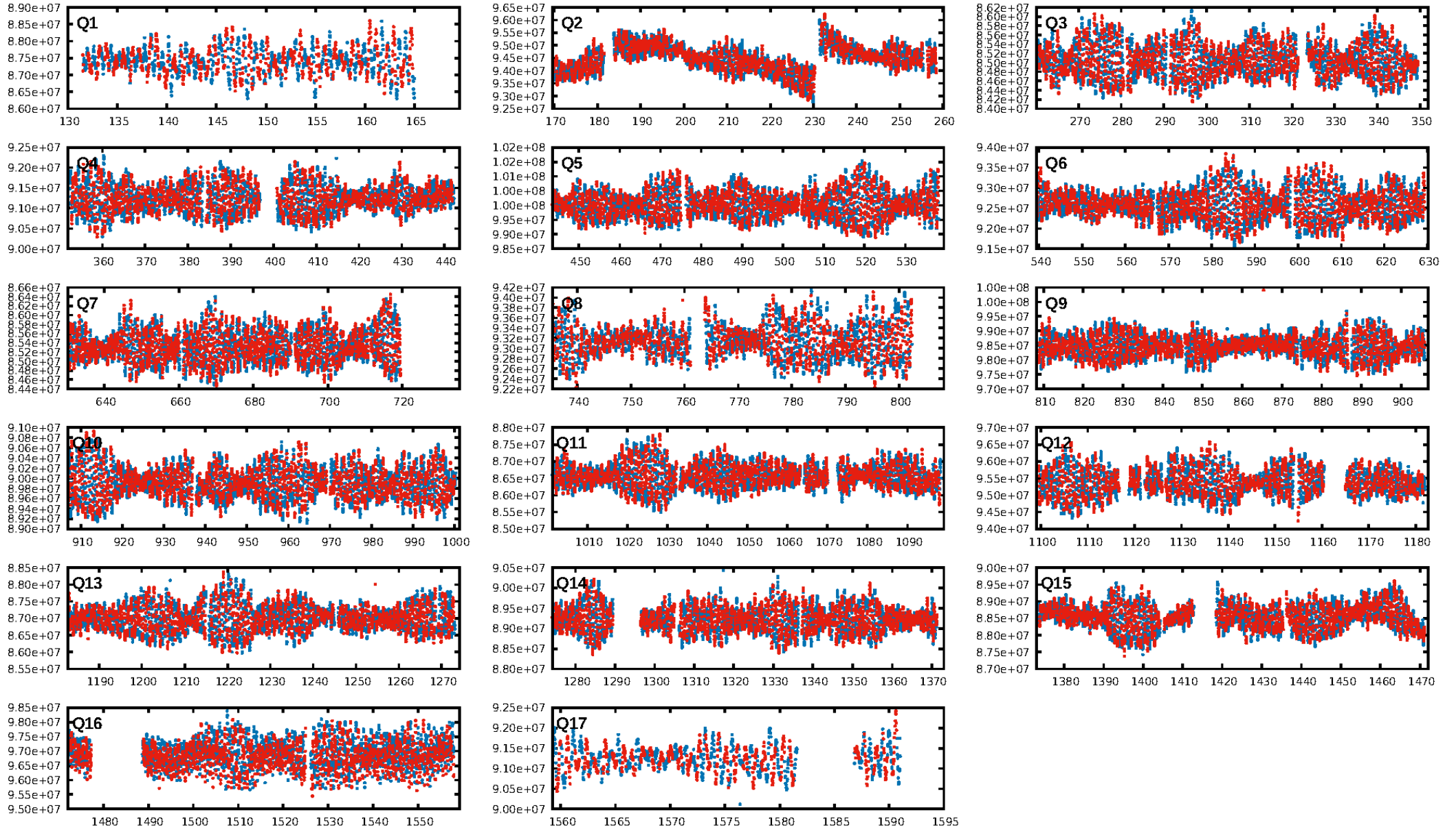
ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.14e-82  
RollingBand-fgt: 1.00 [1503/1503]  
GhostDiagnostic-chr: -10.51  
Centroid-sig: 0.1%  
Centroid-so: 2.293 arcsec [8.44σ]  
OotOffset-rm: 15.880 arcsec [10.83σ]  
KicOffset-rm: 11.537 arcsec [8.40σ]  
OotOffset-st: 4/3/2/5 [14]  
KicOffset-st: 4/3/2/5 [14]  
DiffImageQuality-fgm: 0.43 [6/14]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:36:23 Z

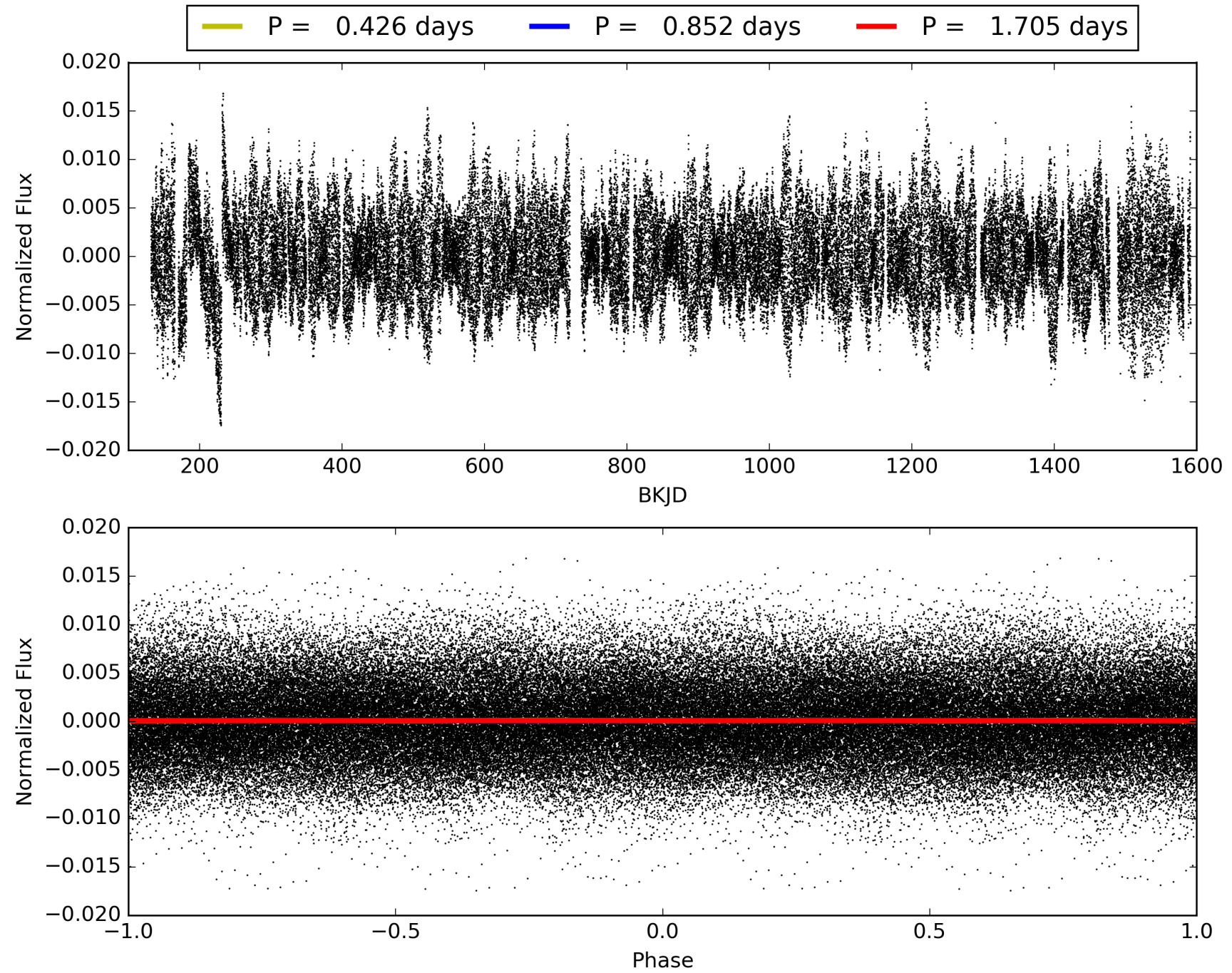
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 004774208-03, PDC Light Curves

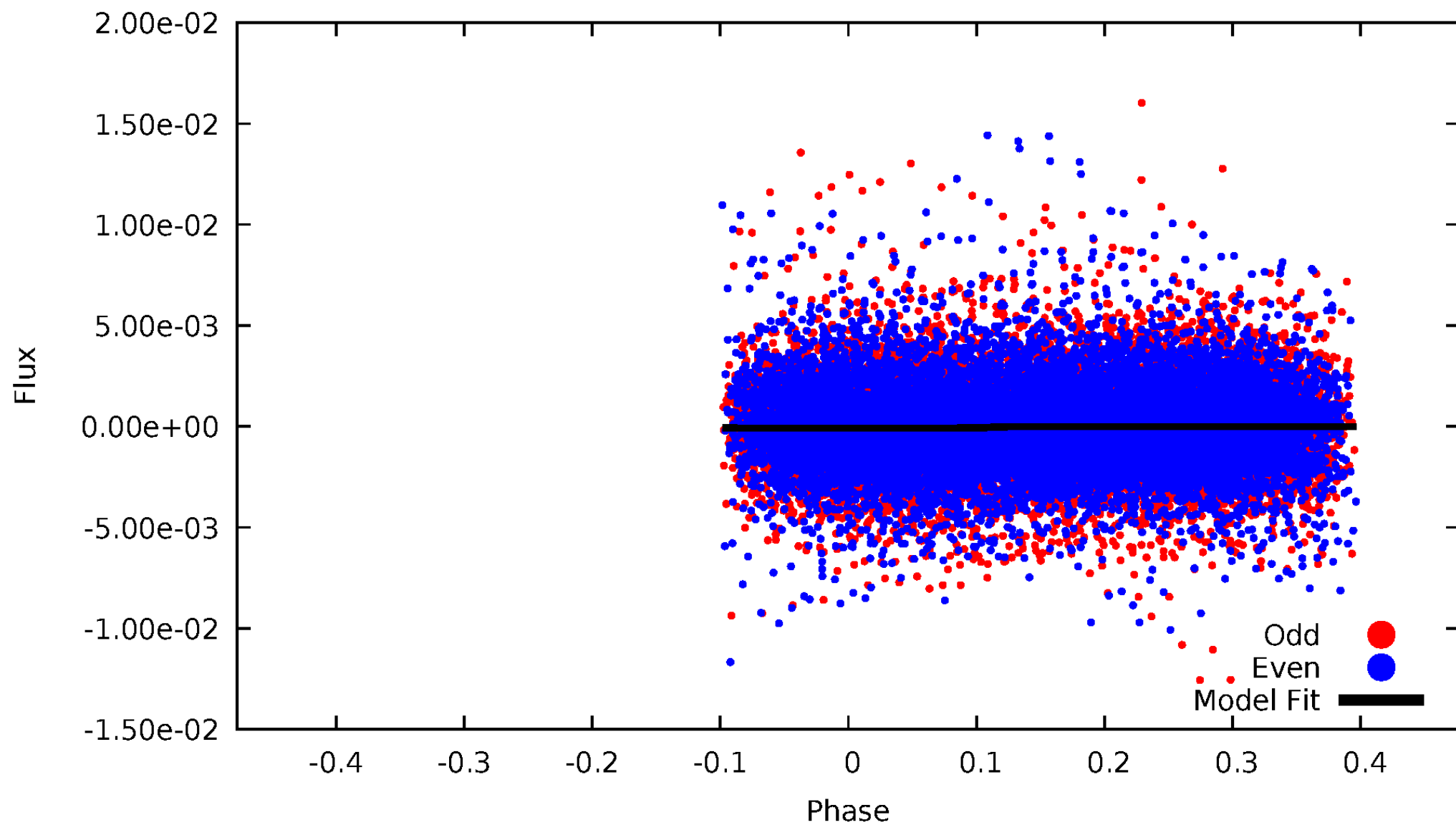


TCE 004774208-03



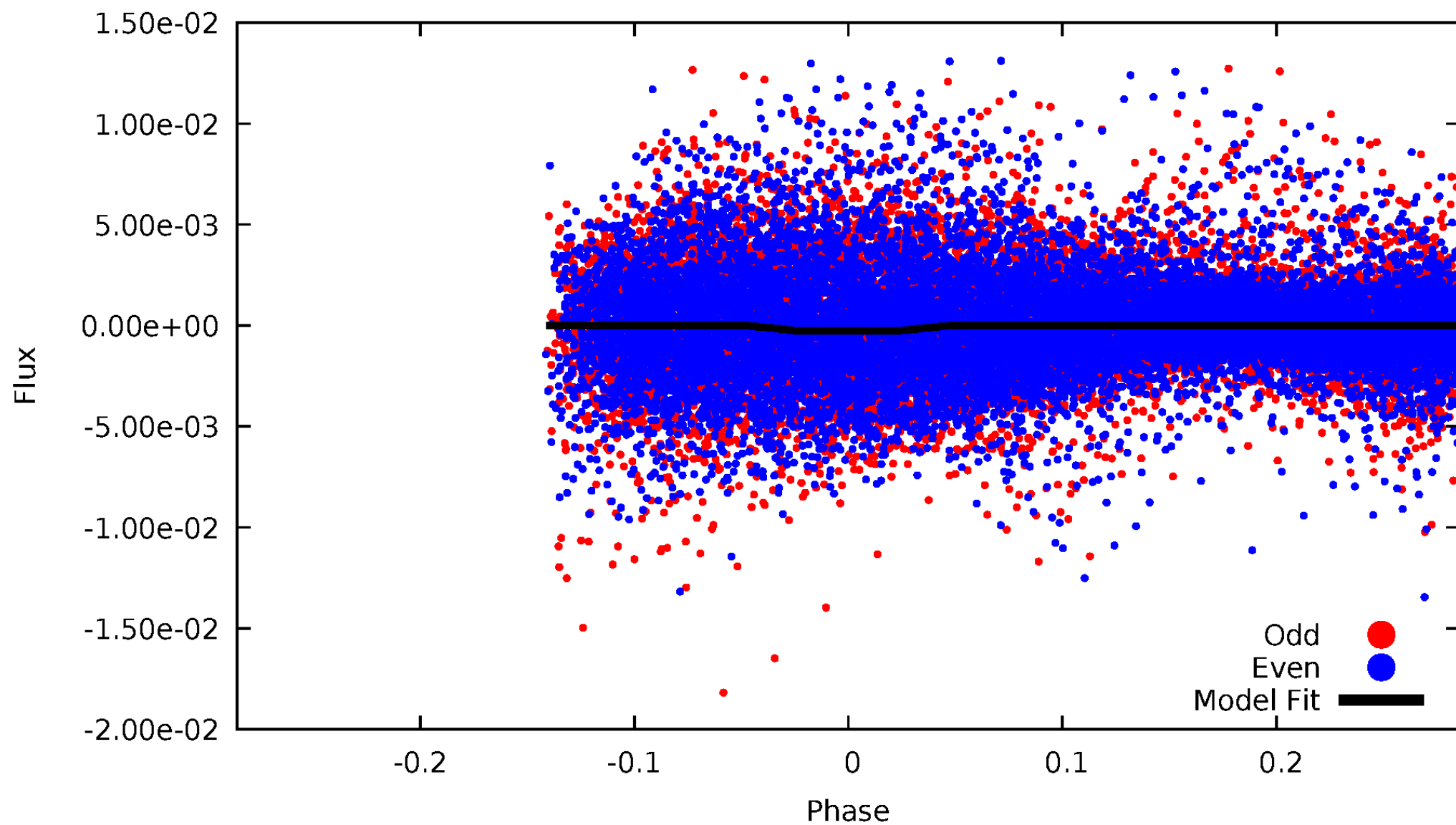
# DV Odd/Even

TCE 004774208-03

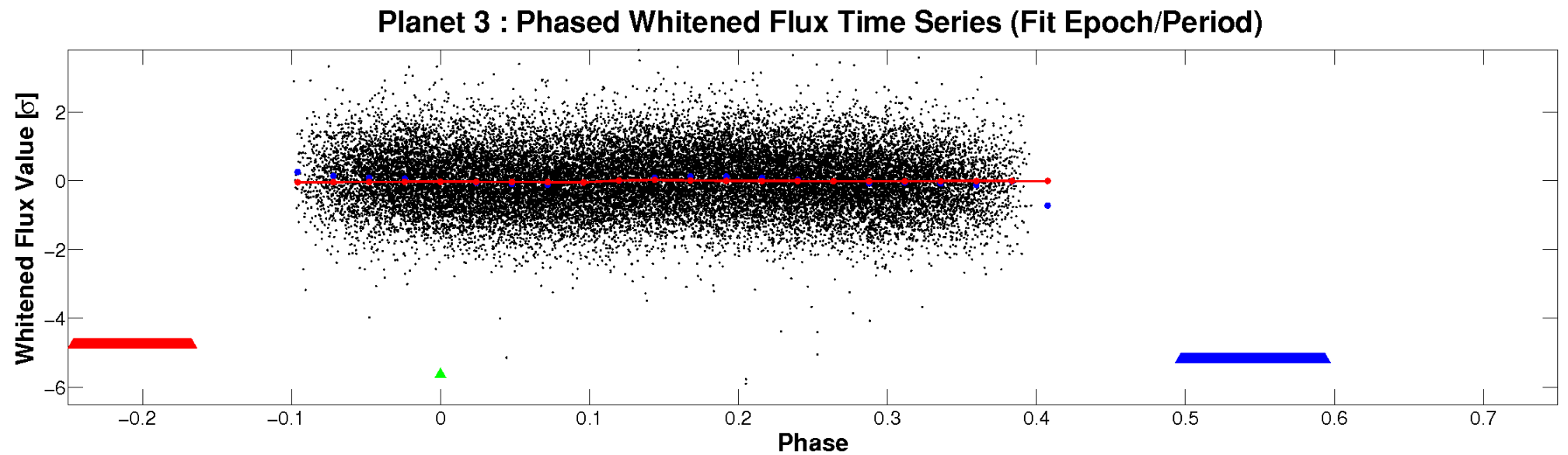
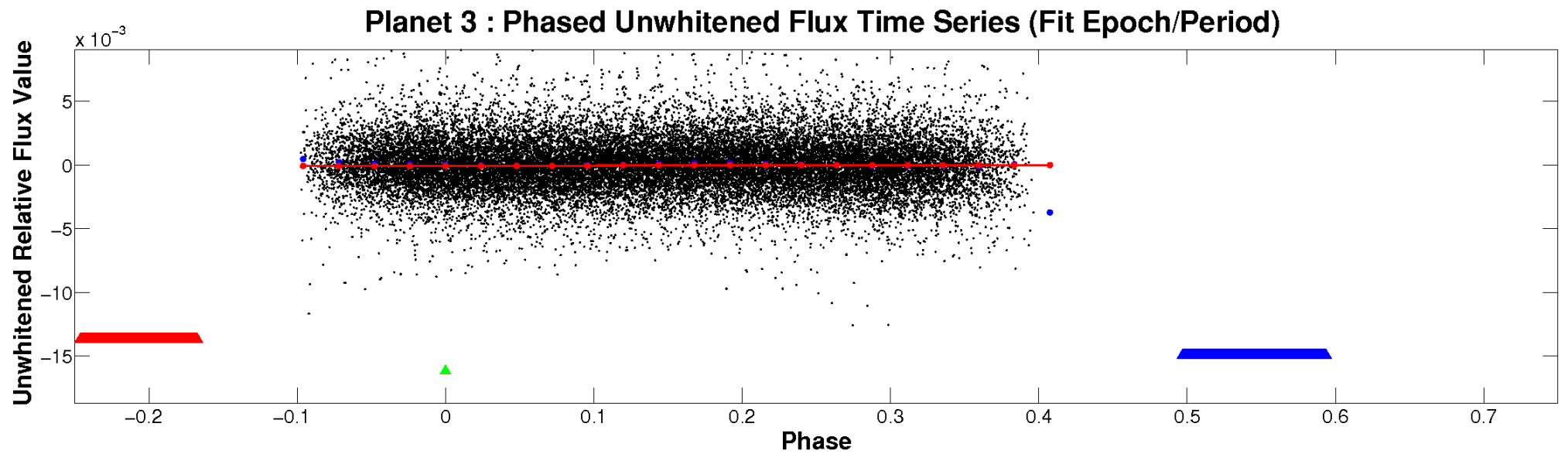


# ALT Odd/Even

TCE 004774208-03



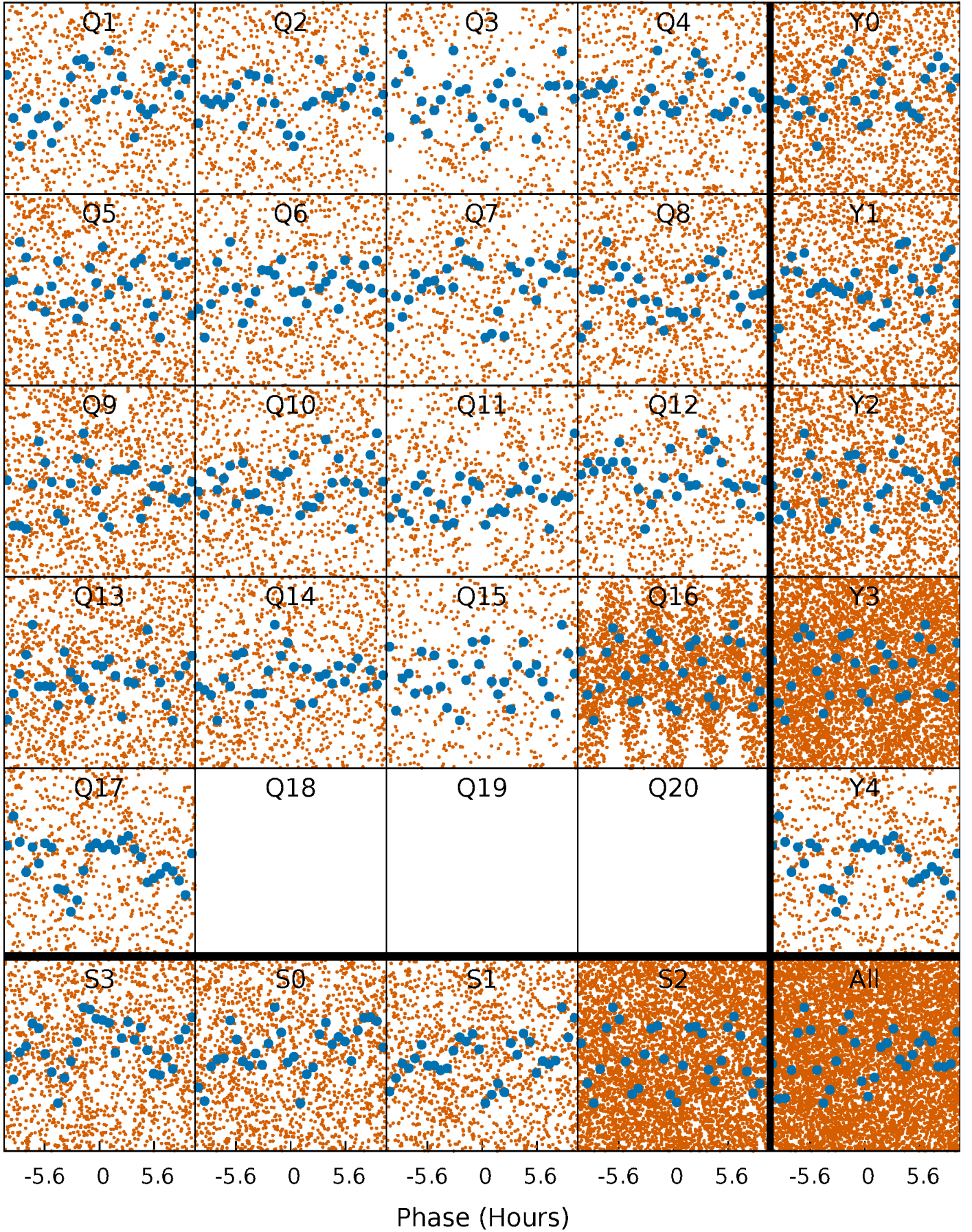
# Non-Whitened Vs. Whitened Light Curve





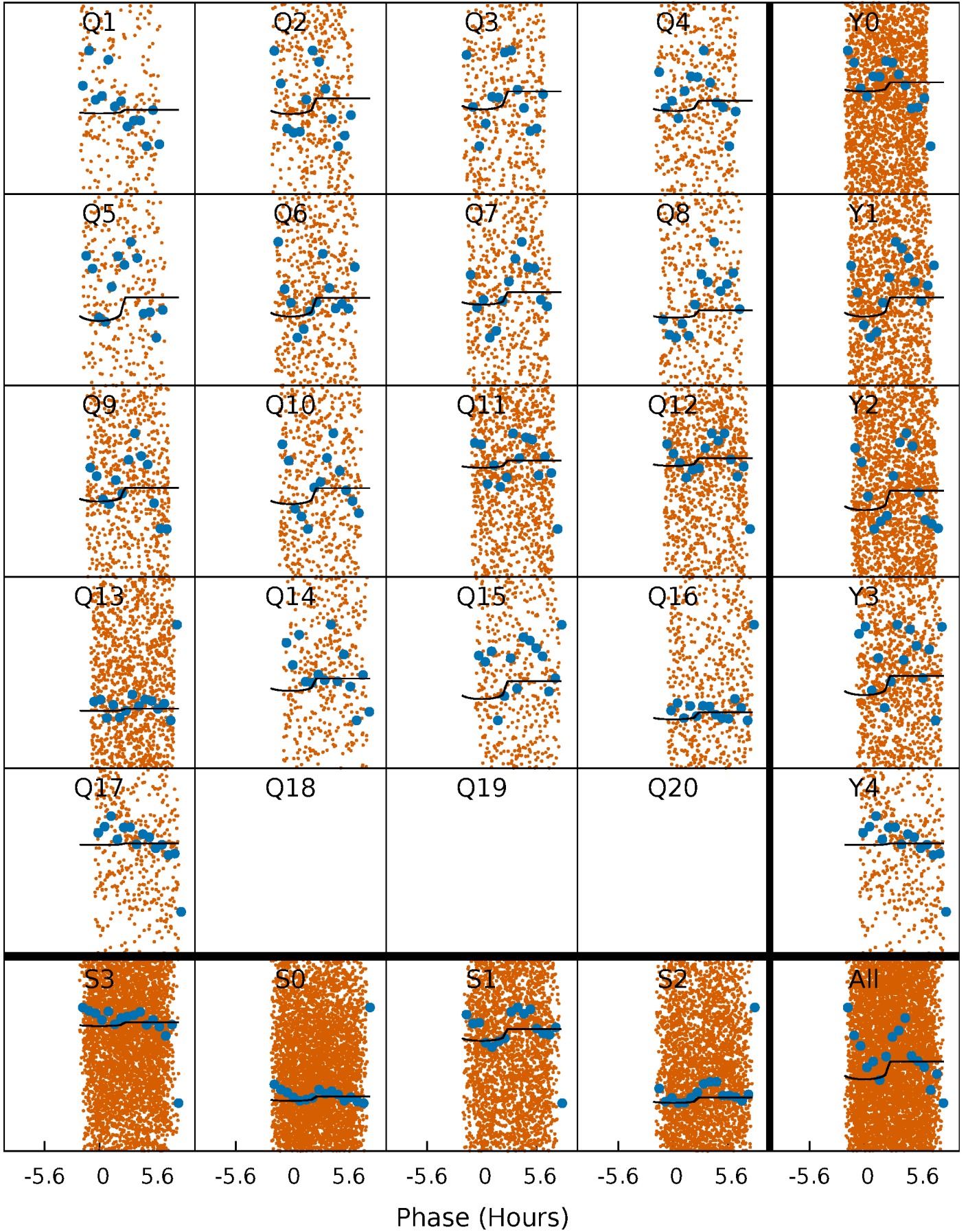
# PDC Quarter-Phased Transit Curves

TCE 004774208-03     $P = 0.852280$  Days     $T_0 = 132.228681$  (BKJD)



# DV Quarter-Phased Transit Curves

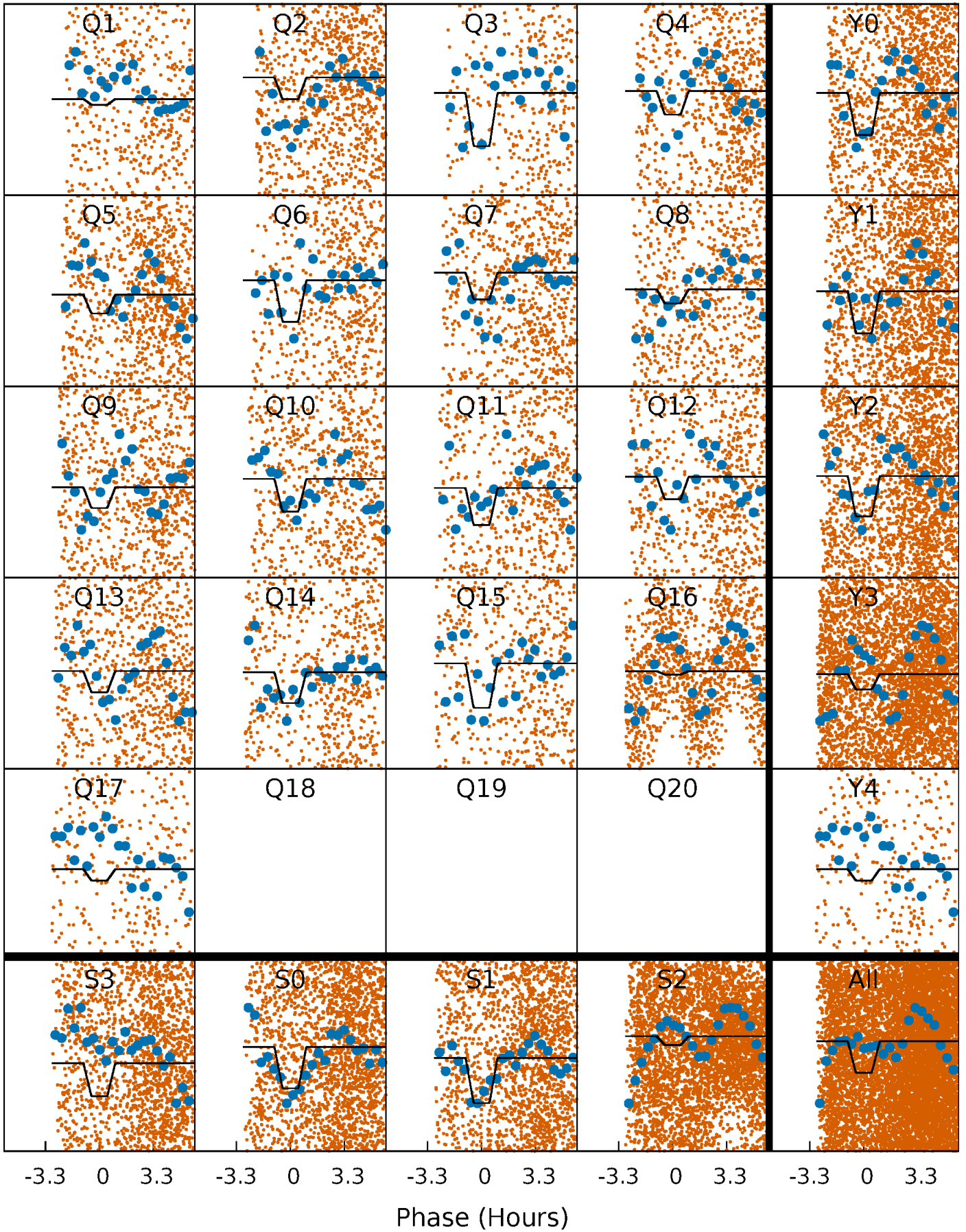
TCE 004774208-03   P= 0.852280 Days    $T_0=132.228681$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

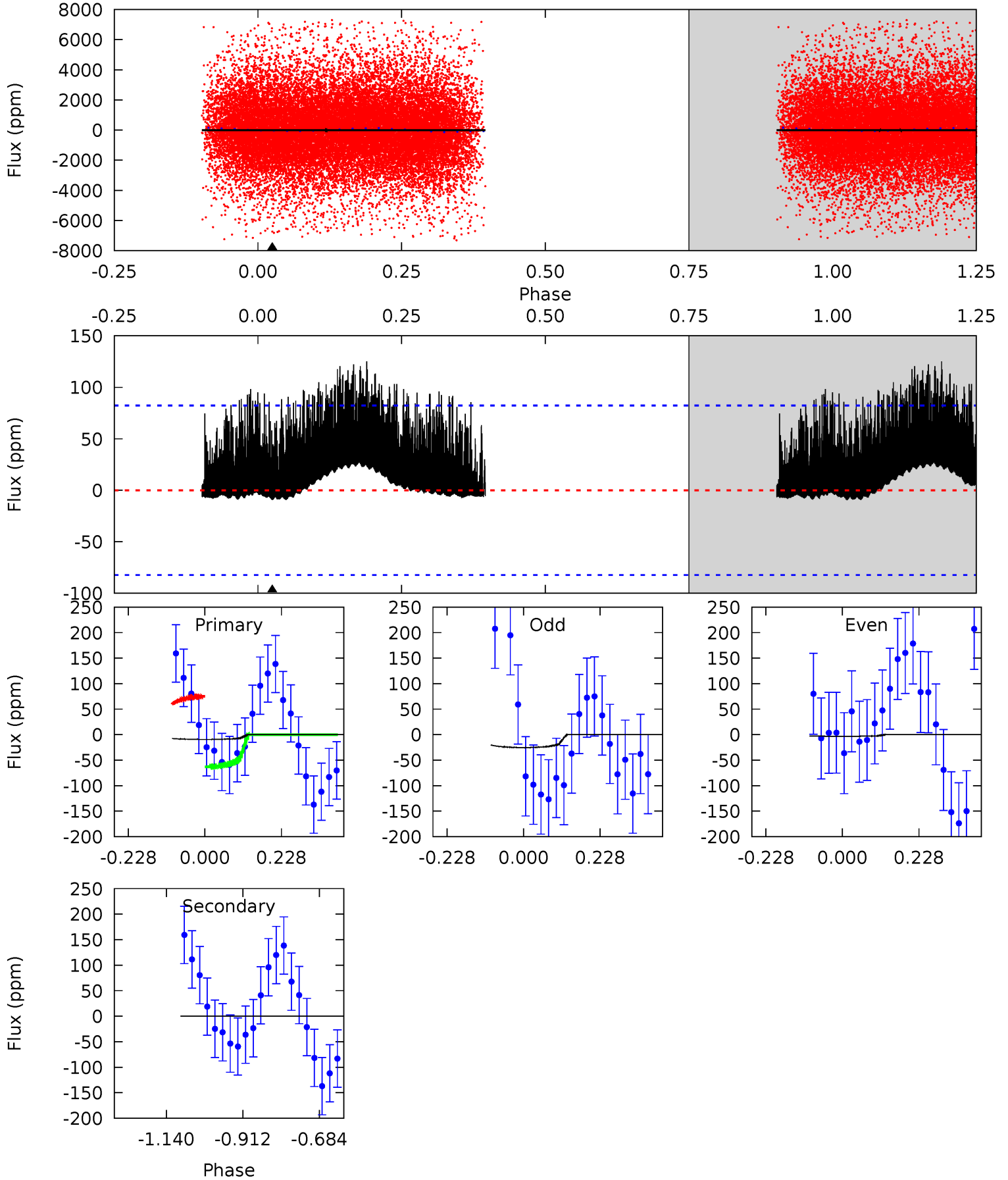
TCE 004774208-03   P= 0.852340 Days    $T_0=132.228235$  (BKJD)



# DV Model-Shift Uniqueness Test

004774208-03, P = 0.852280 Days, E = 131.376401 Days

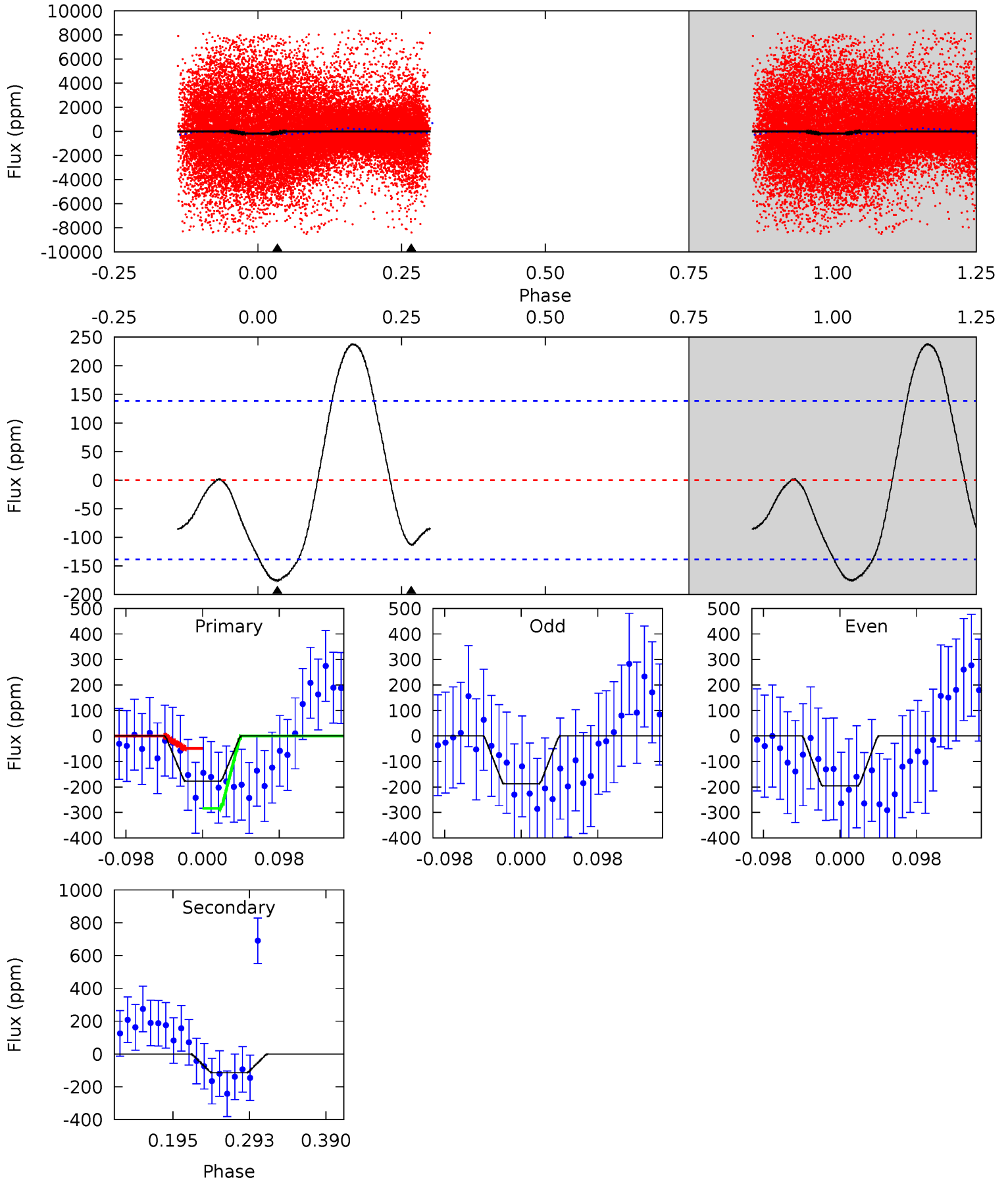
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.50	0	0	0	4.39	1.21	0.67	0.50	0.50	0	0	0.63	-0.36	0.93	0.32



# Alt Model-Shift Uniqueness Test

004774208-03, P = 0.852340 Days, E = 131.375895 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.83	3.75	0	0	4.57	1.66	3.98	5.83	5.83	3.75	3.75	0.14	0.10	0.57	3.61





### Stellar Parameters For KIC 004774208

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7033^{+196}_{-295}$	$4.276^{+0.087}_{-0.203}$	$-0.240^{+0.250}_{-0.350}$	$1.381^{+0.447}_{-0.206}$	$1.320^{+0.200}_{-0.200}$	$0.706^{+0.343}_{-0.368}$
	+3%/-4%	+2%/-5%	+104%/-146%	+32%/-15%	+15%/-15%	+49%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 004774208-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 19$	$1.68^{+1.16}_{-1.02}$	$3712^{+259}_{-211}$	$-3520^{+8041}_{-1582}$	$0.012^{+1.702}_{-2.128}$
Alt.	$-114 \pm 30$	$2.51^{+1.33}_{-1.25}$	$3717^{+265}_{-219}$	$5580^{+2487}_{-1177}$	$3.663^{+9.559}_{-2.288}$

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

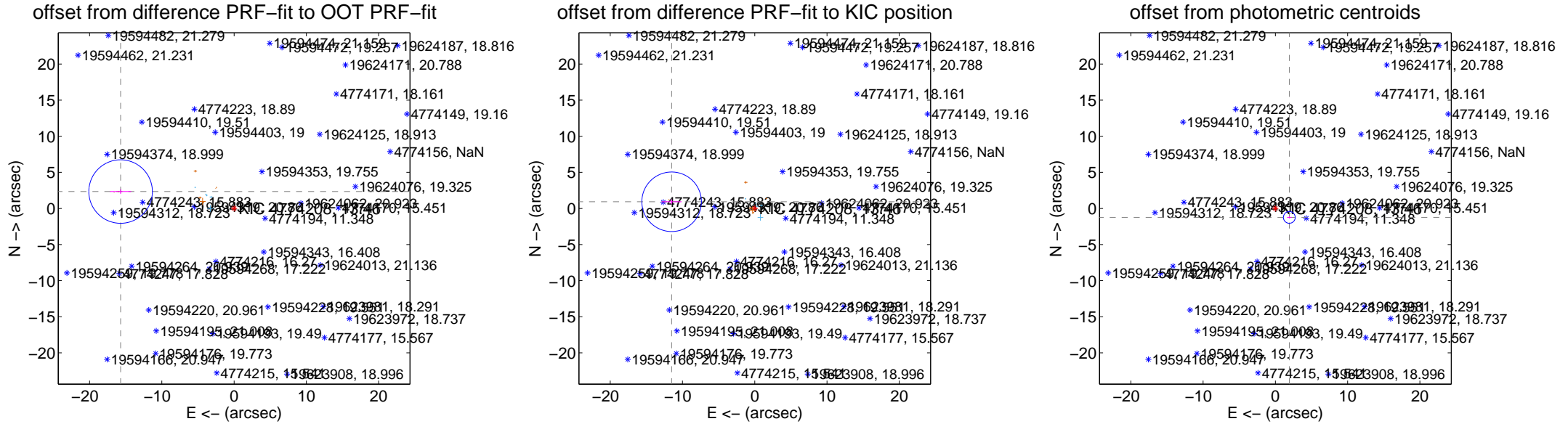
## DV Centroid Data

Supplemental centroid analysis for 004774208-03. Kepler magnitude: 13.46. Transit SNR 3.86

There are 6 quarters with good PRF difference image offsets

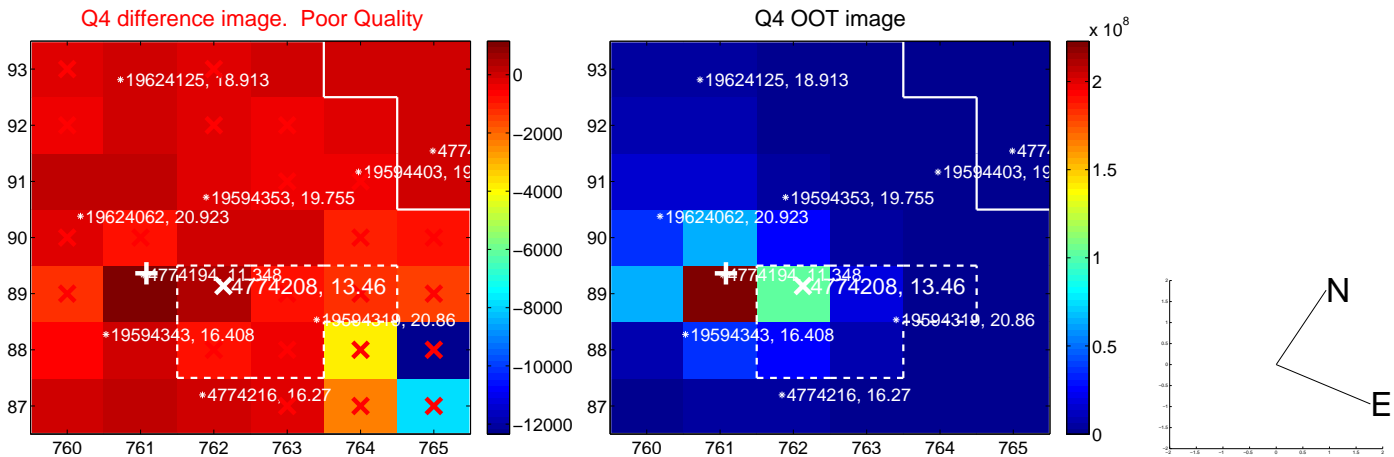
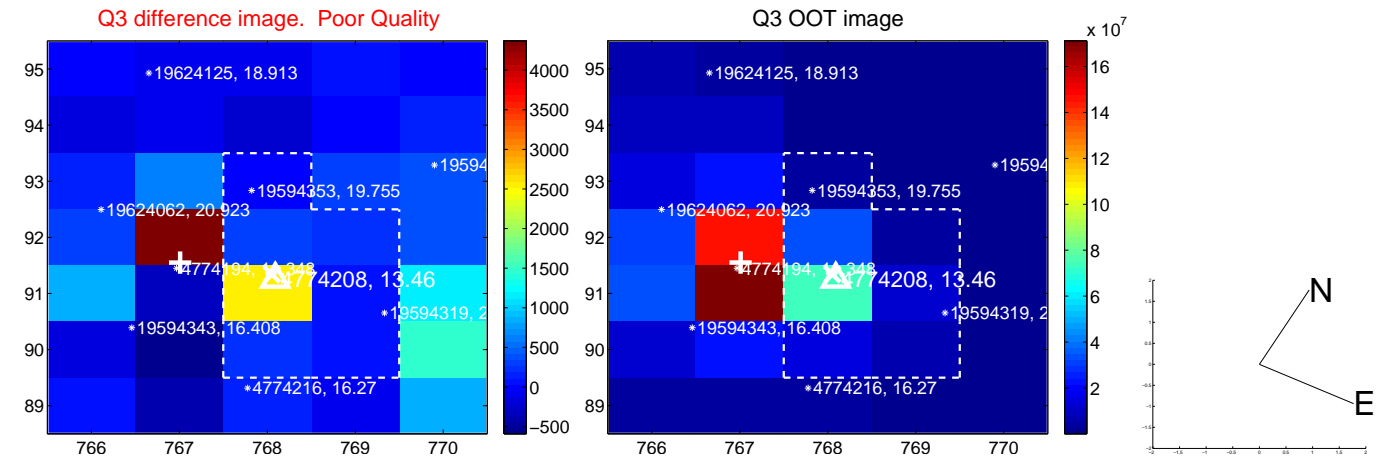
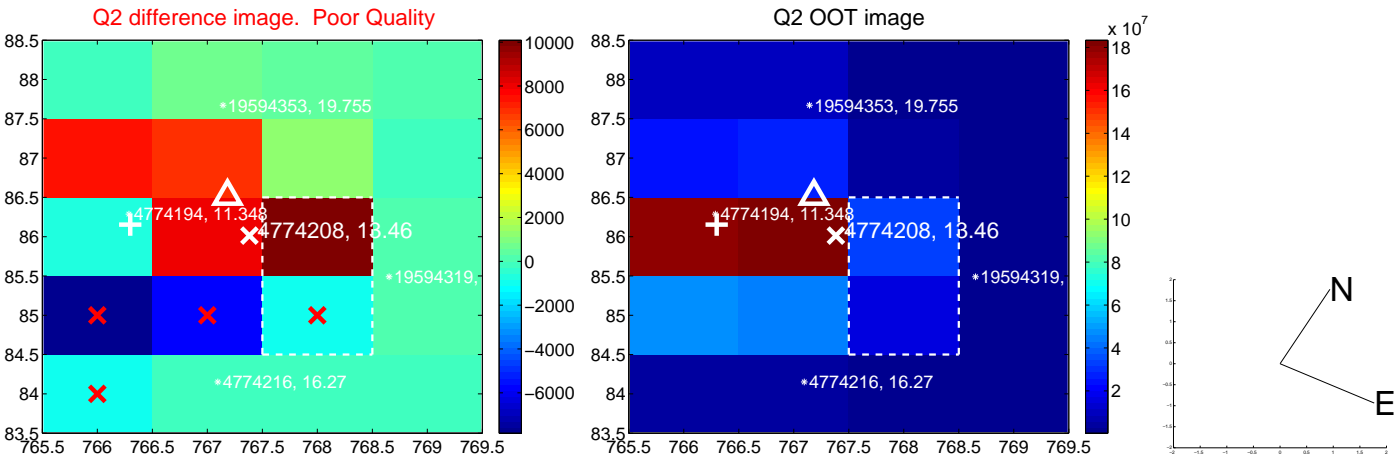
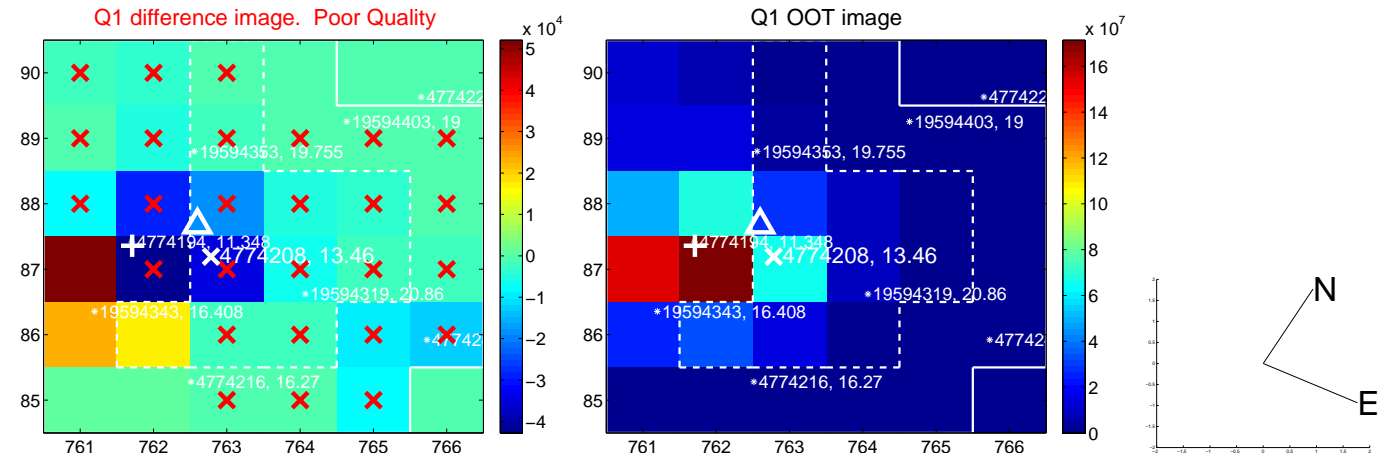
The OOT PRF centroid is offset from the target star catalog position by about 4.32 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$15.880 \pm 1.466$	10.83	$15.707 \pm 1.472$	$2.341 \pm 0.331$
PRF-fit source offset from KIC position	$11.537 \pm 1.374$	8.40	$11.500 \pm 1.374$	$0.924 \pm 0.314$
photometric centroid source offset	$2.29 \pm 0.27$	8.44	$-1.93 \pm 0.31$	$-1.24 \pm 0.13$

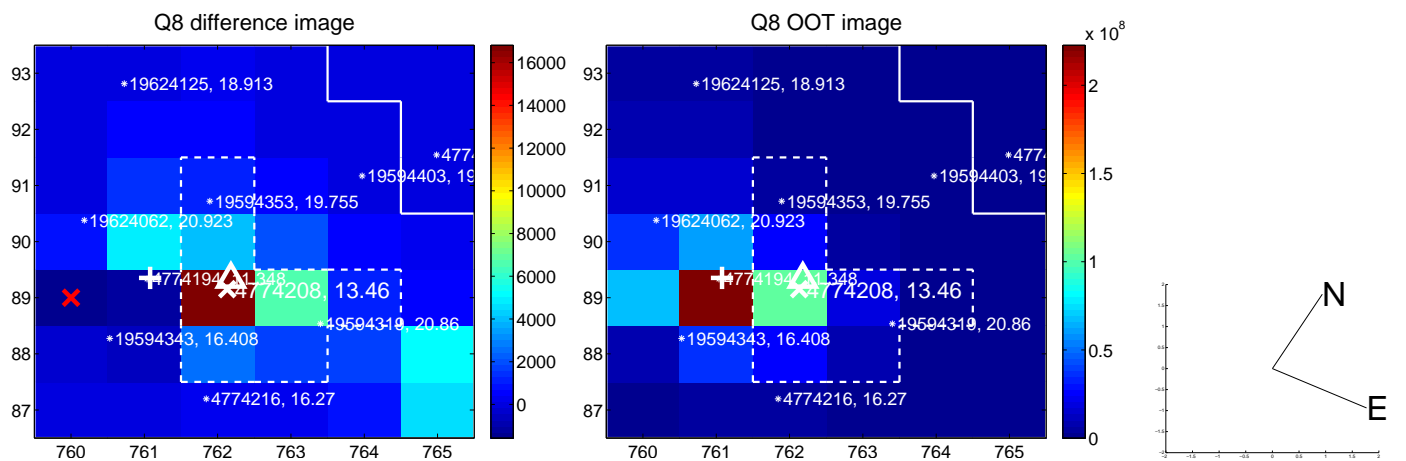
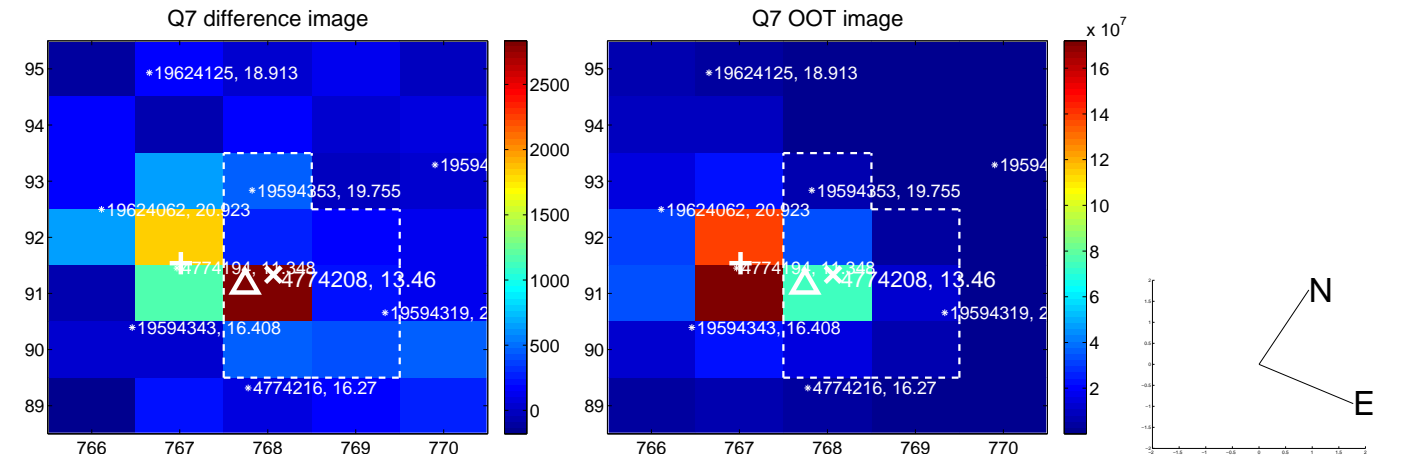
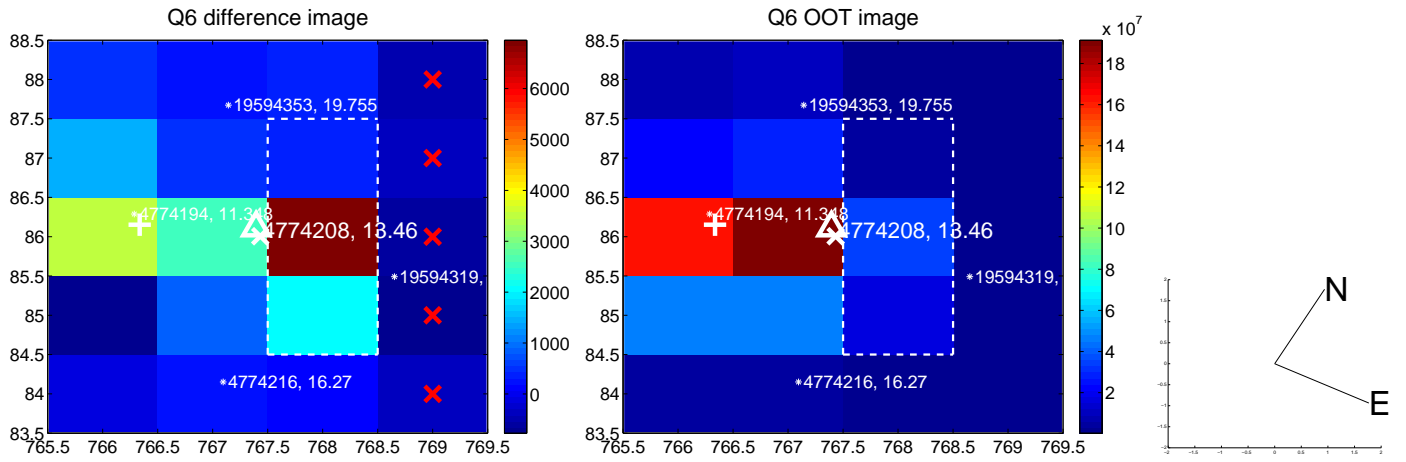
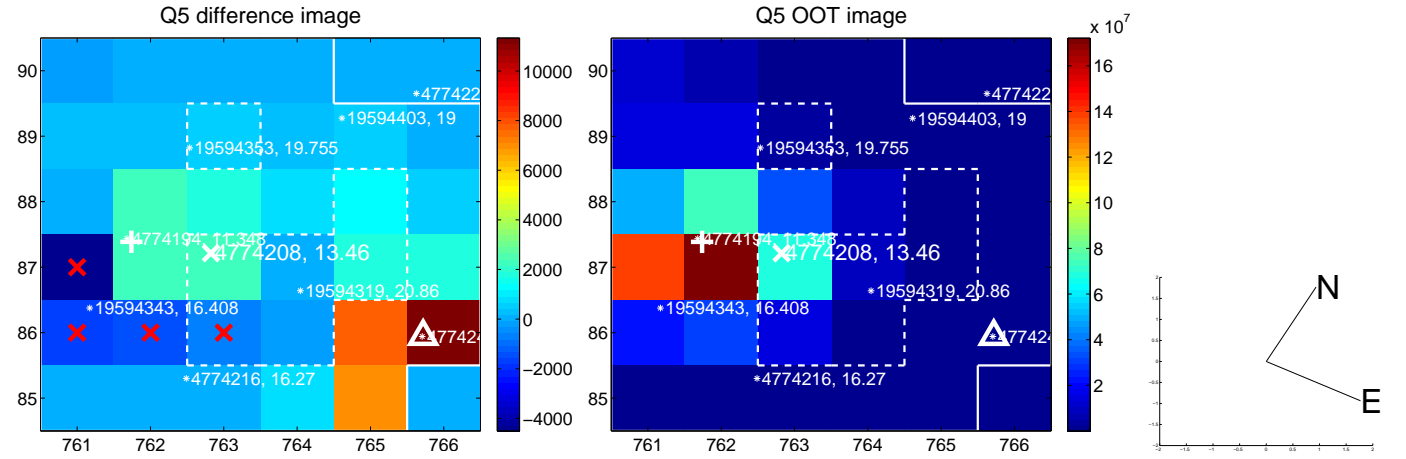


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

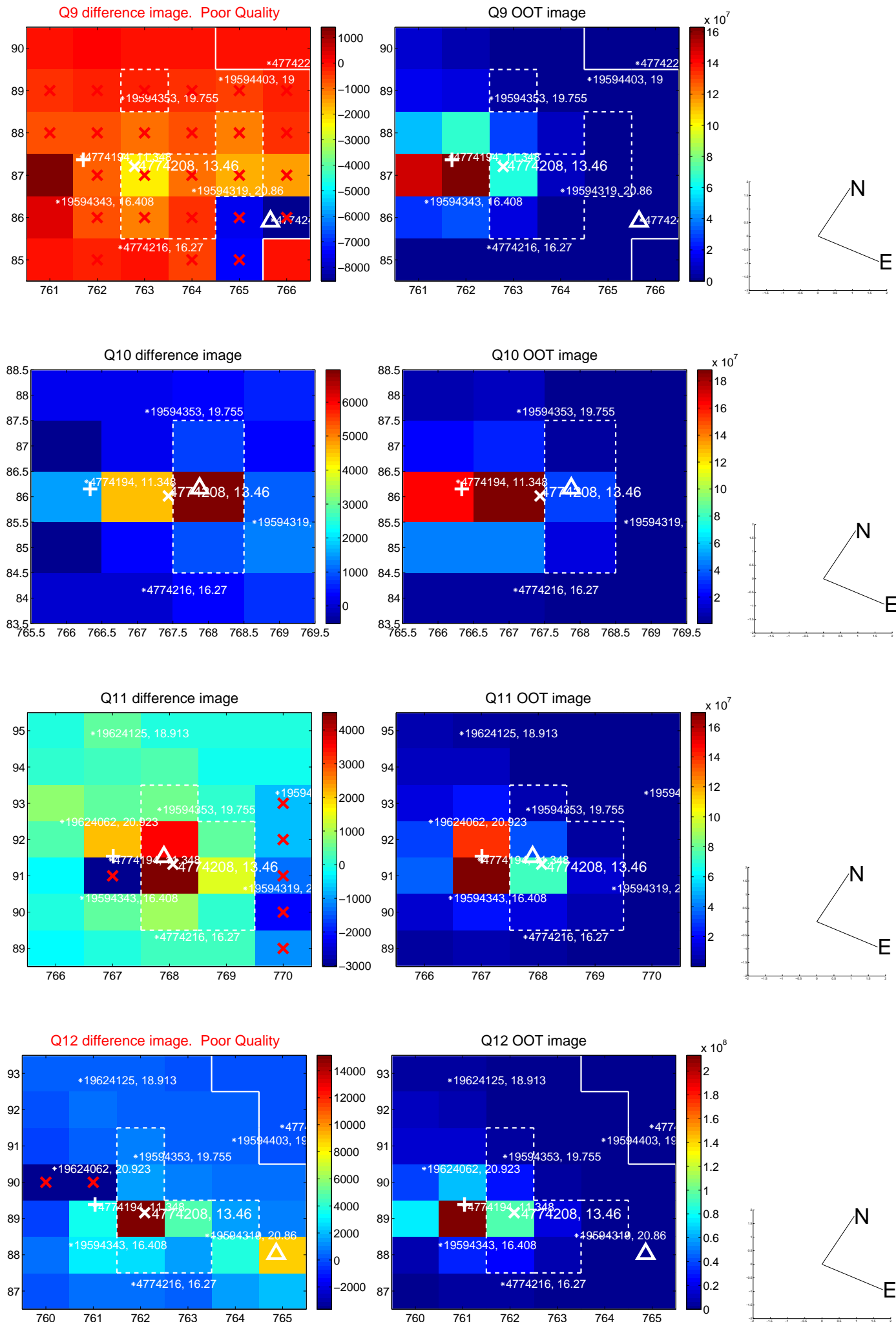
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

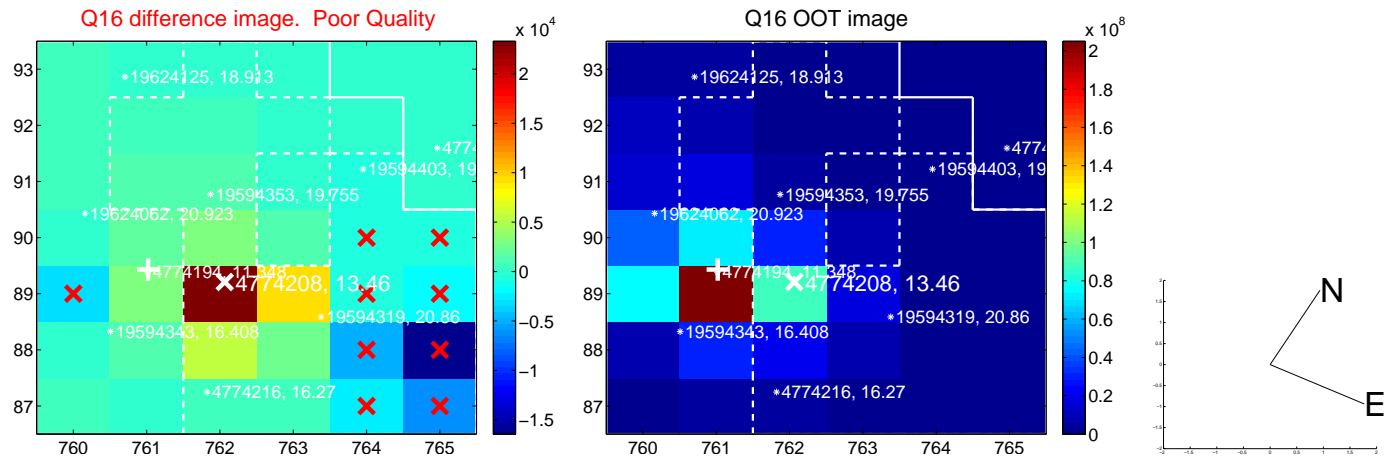
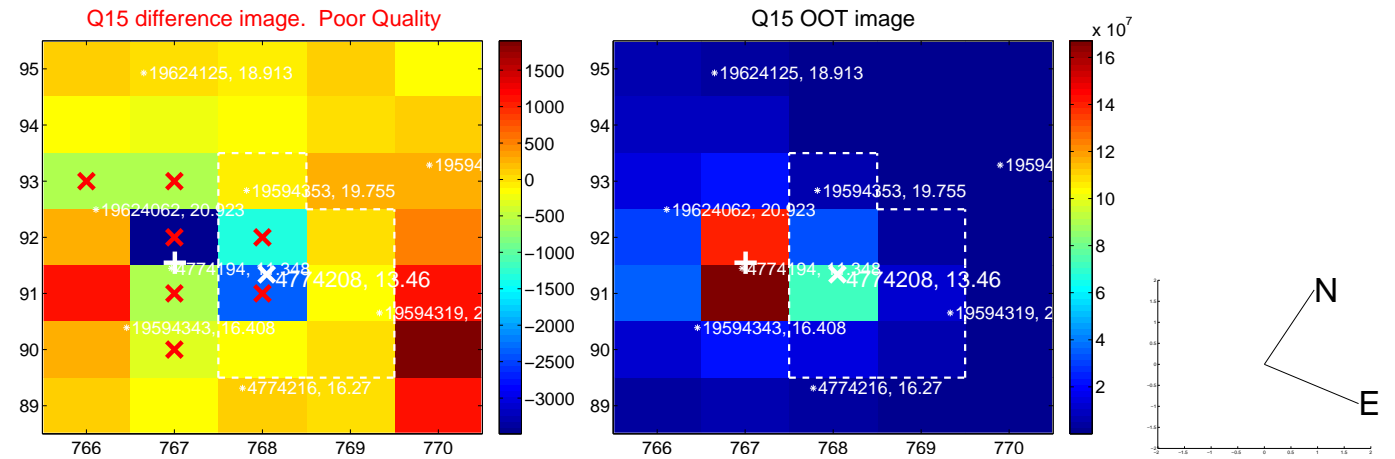
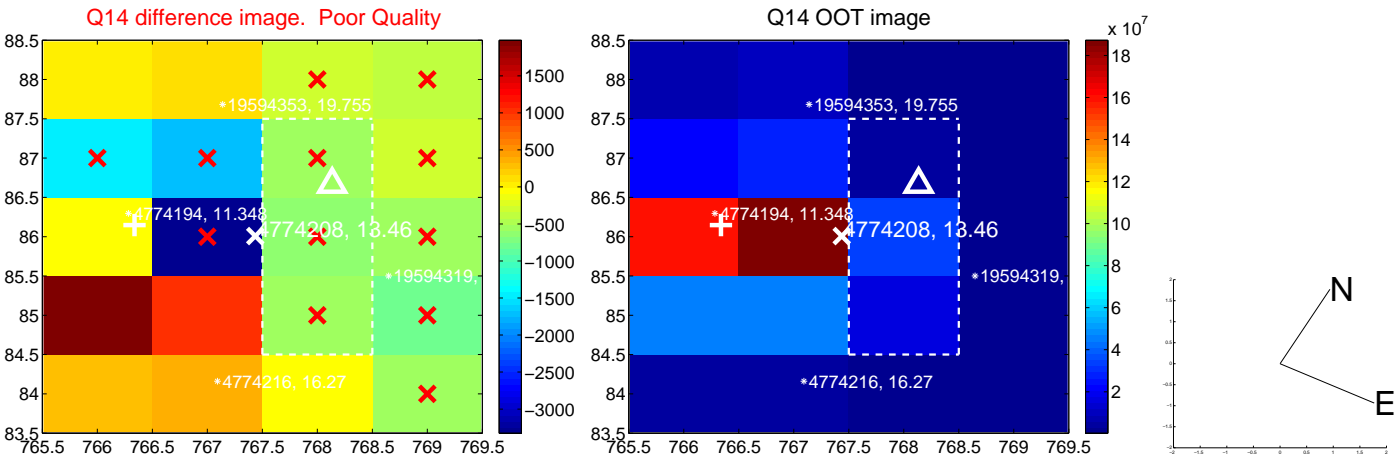
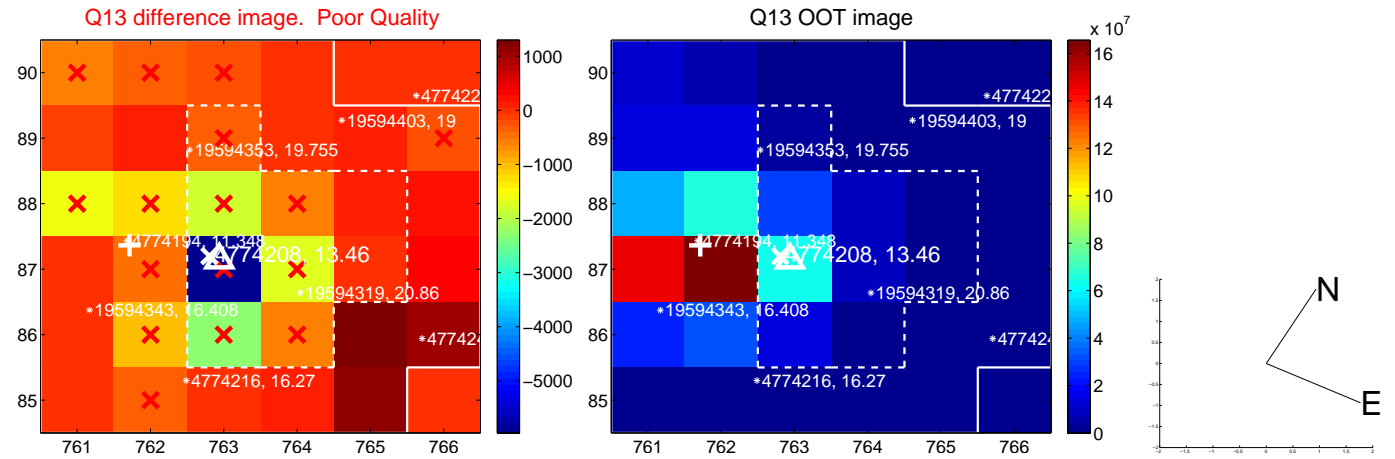


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

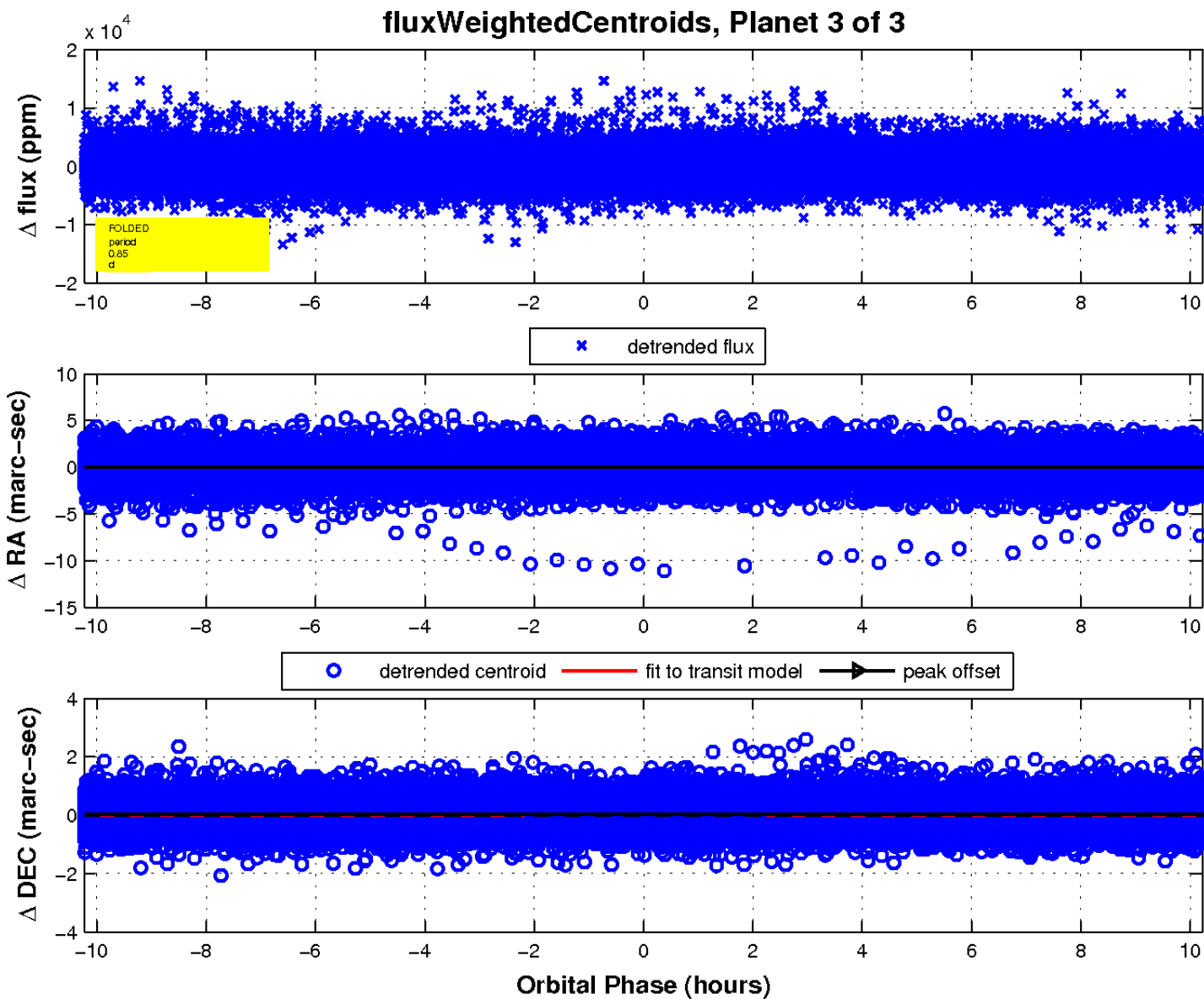
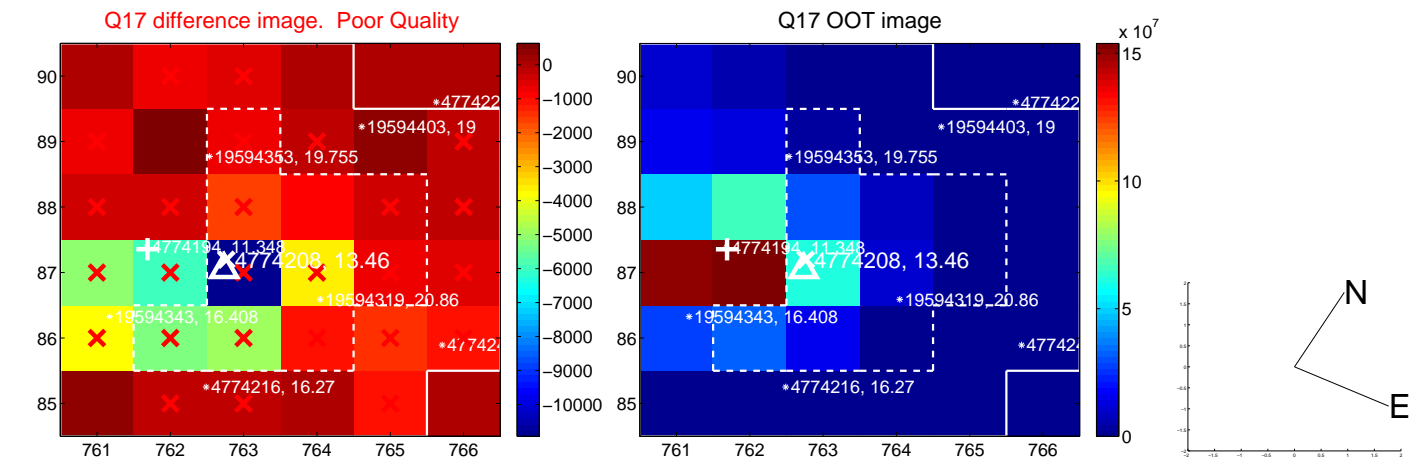




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

