

# KIC 008564695

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008564695-01	OBS	No	0.847817	131.700851	9.5	6.332	9.5	10.4	2.25	8050	0.73	41461.43
008564695-02	OBS	No	12.626151	137.658974	237.6	0.942	17.1	21.8	2.25	8050	3.62	1131.58
008564695-03	OBS	No	17.449512	143.247595	225.6	1.005	18.2	15.0	2.25	8050	3.45	735.08
008564695-04	OBS	No	7.664164	134.049843	14.7	11.850	12.6	4.8	2.25	8050	1.00	2201.71
008564695-05	OBS	No	8.043198	133.689095	207.0	1.095	14.8	14.6	2.25	8050	3.37	2064.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008564695-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_MEAS
008564695-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
008564695-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008564695-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008564695-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

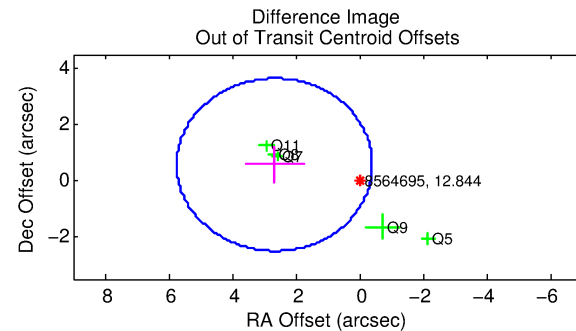
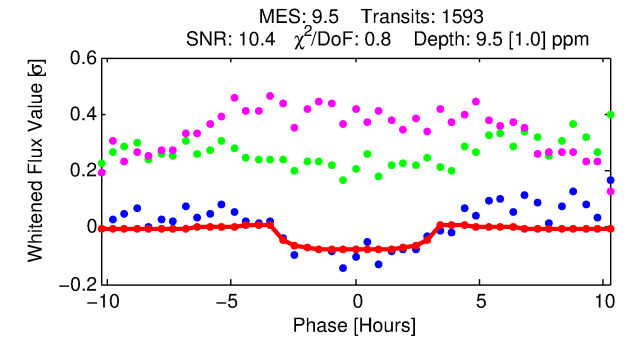
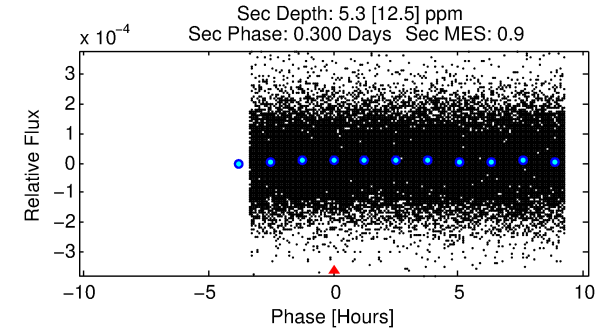
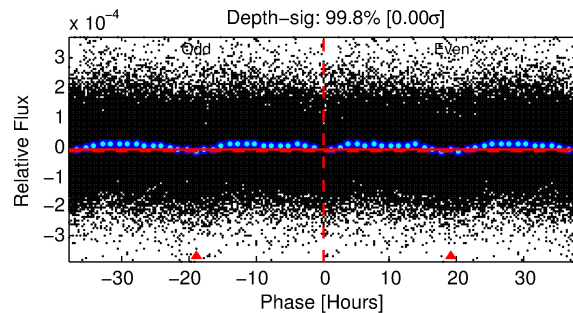
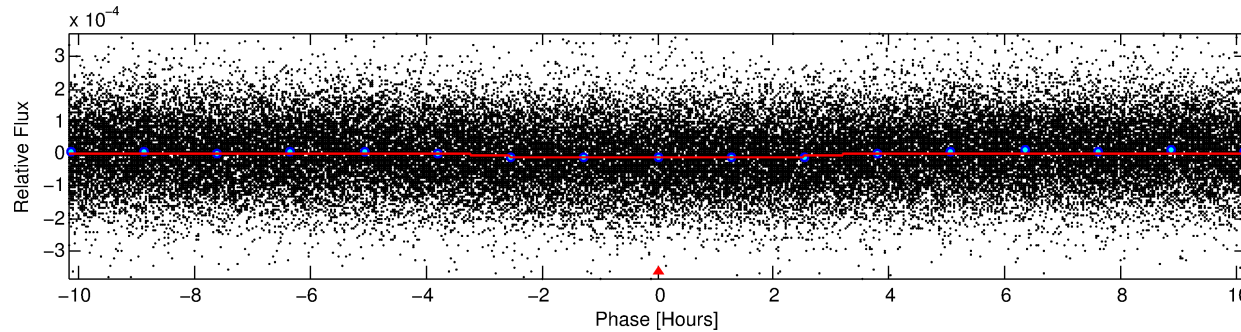
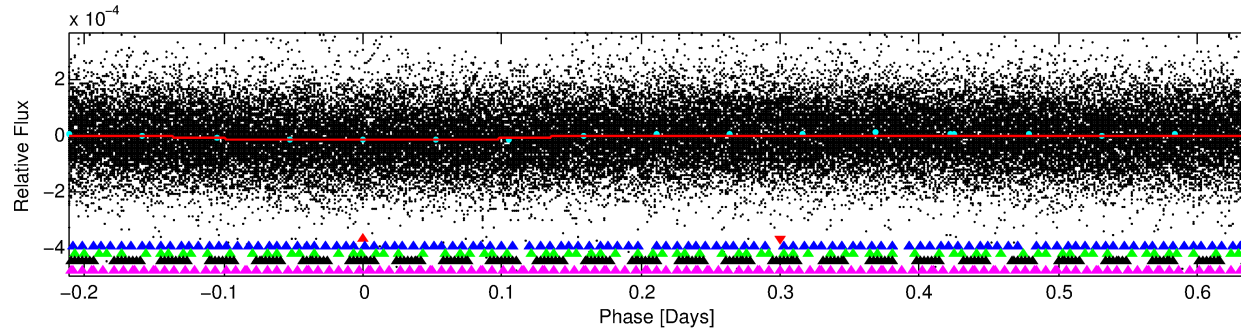
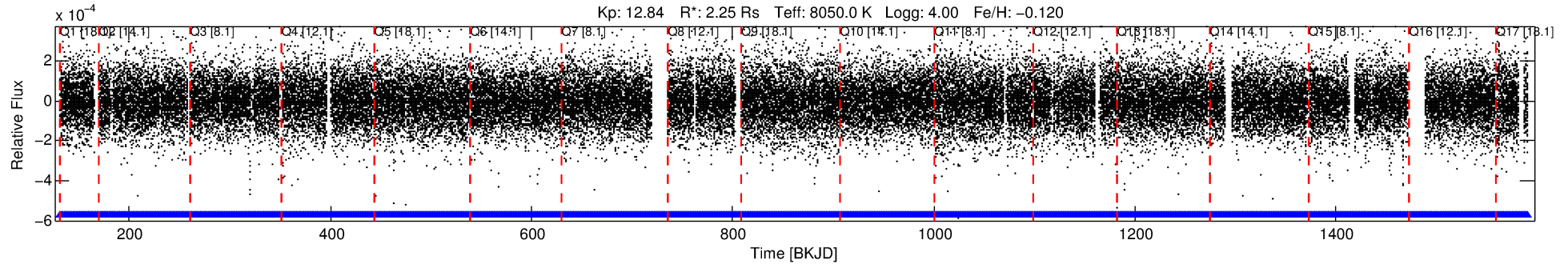
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008564695-01

No Significant Match Found

# DV One-Page Summary

KIC: 8564695 Candidate: 1 of 5 Period: 0.848 d



## DV Fit Results:

Period = 0.84782 [0.00001] d  
Epoch = 131.7009 [0.0057] BKJD  
Rp/R\* = 0.0030 [0.0017]  
a/R\* = 1.13 [0.81]  
b = 0.64 [3.11]  
Seff = 41461.43 [17675.89]  
Teq = 3639 [388] K  
Rp = 0.73 [0.47] Re  
a = 0.0215 [0.0056] AU  
Ag = 2.52 [6.63] [0.23σ]  
Teffp = 7086 [4627] K [0.74σ]

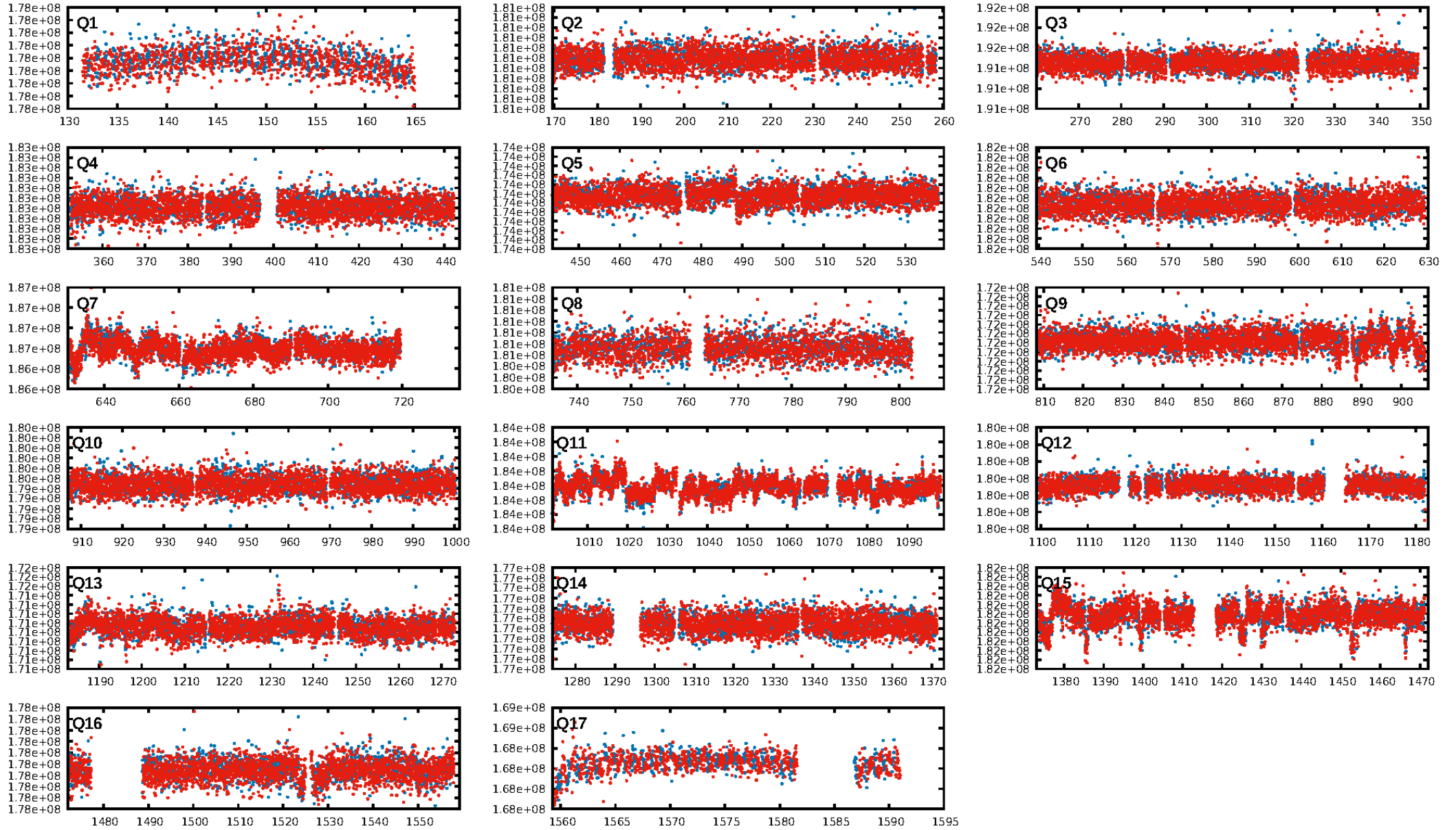
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [12.18σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.29e-18  
RollingBand-fgt: 1.00 [1521/1521]  
GhostDiagnostic-chr: 2.514  
Centroid-sig: 52.2%  
Centroid-so: 0.816 arcsec [0.78σ]  
OotOffset-rm: 2.728 arcsec [2.66σ]  
OotOffset-st: 0/2/1/2 [5]  
KicOffset-rm: 2.905 arcsec [3.11σ]  
KicOffset-st: 0/2/1/2 [5]  
DiffImageQuality-fgm: 0.60 [3/5]  
DiffImageOverlap-fno: 1.00 [17/17]

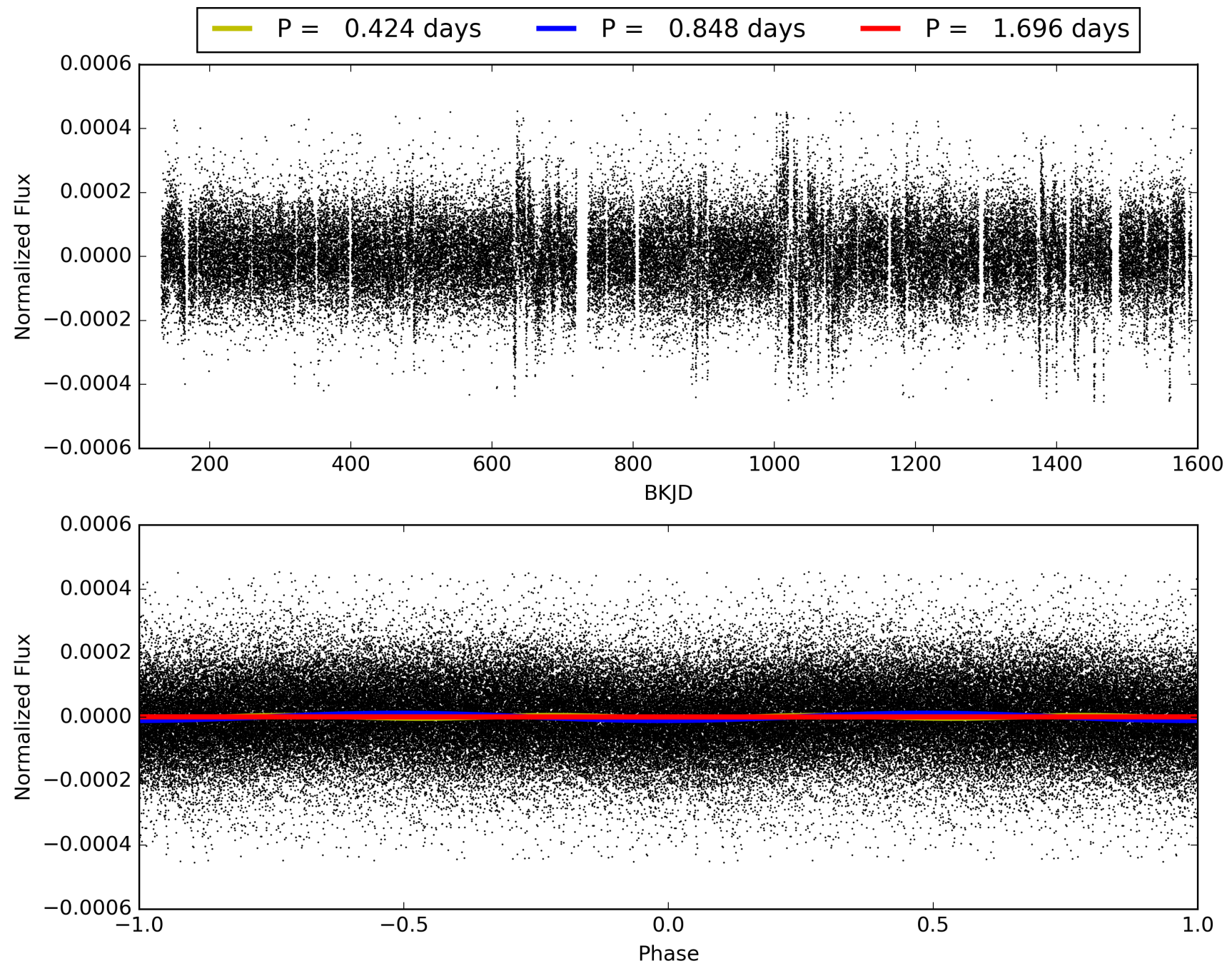
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:41:38 Z

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

# TCE 008564695-01, PDC Light Curves



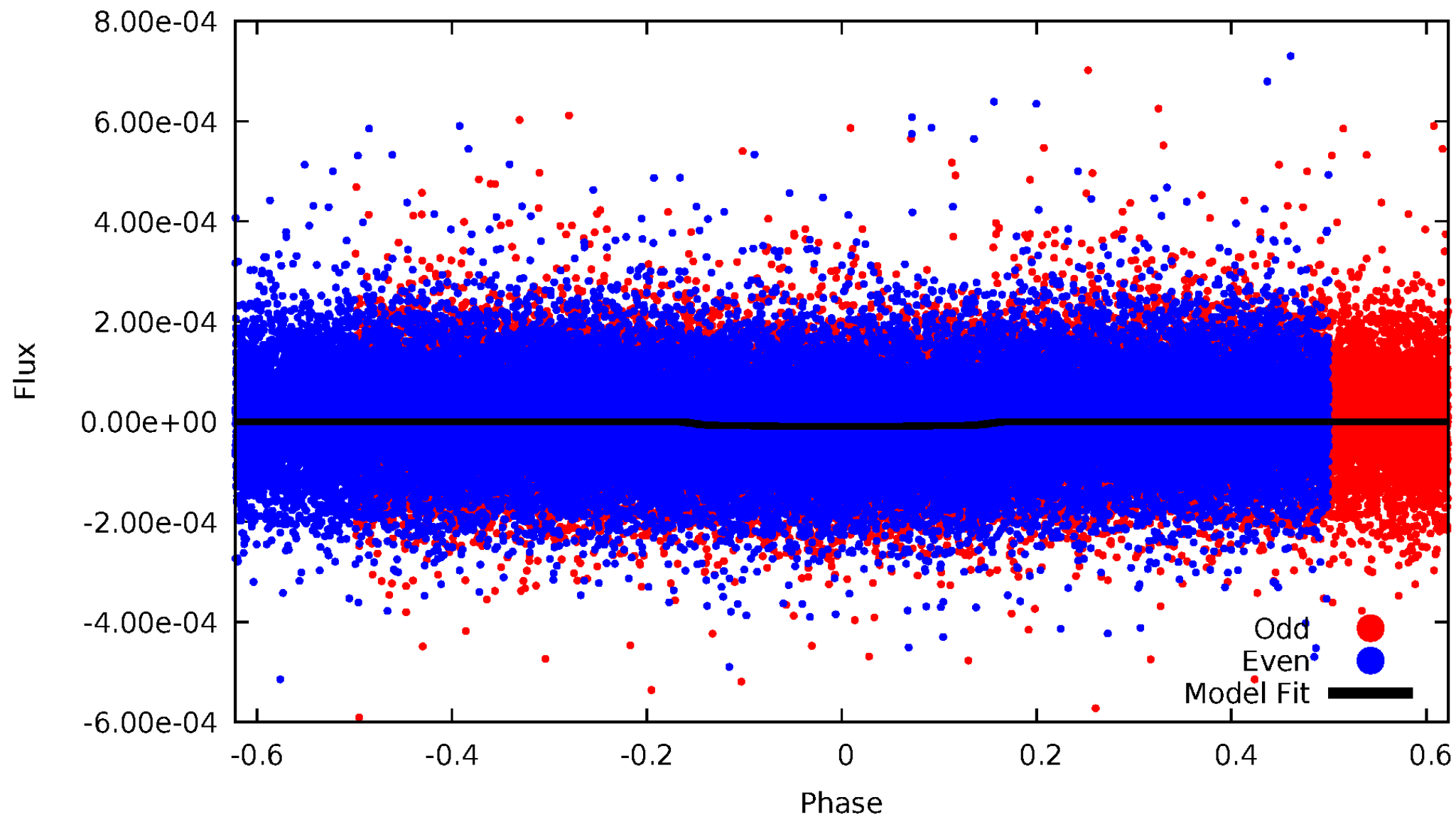
TCE 008564695-01





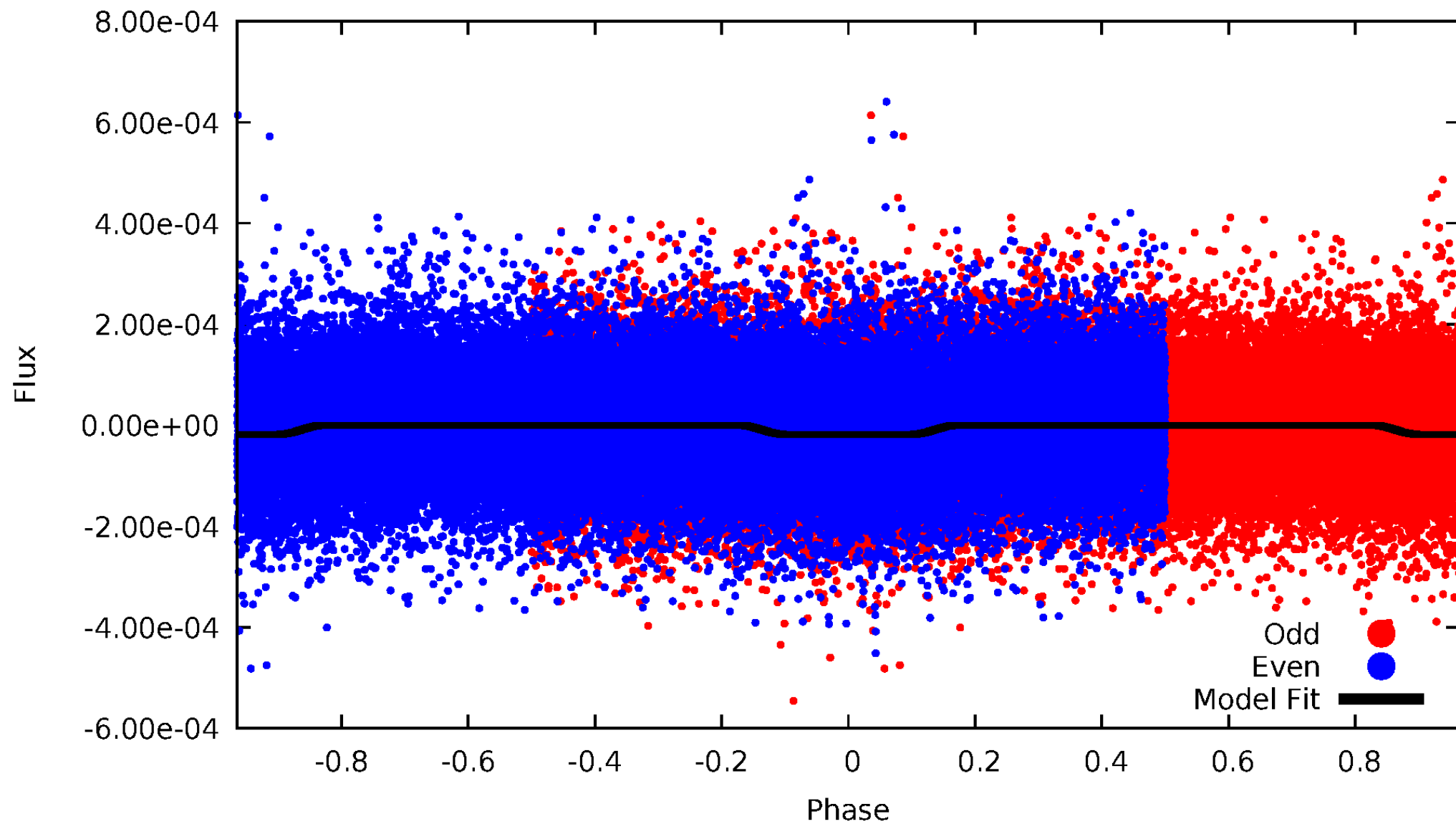
# DV Odd/Even

TCE 008564695-01



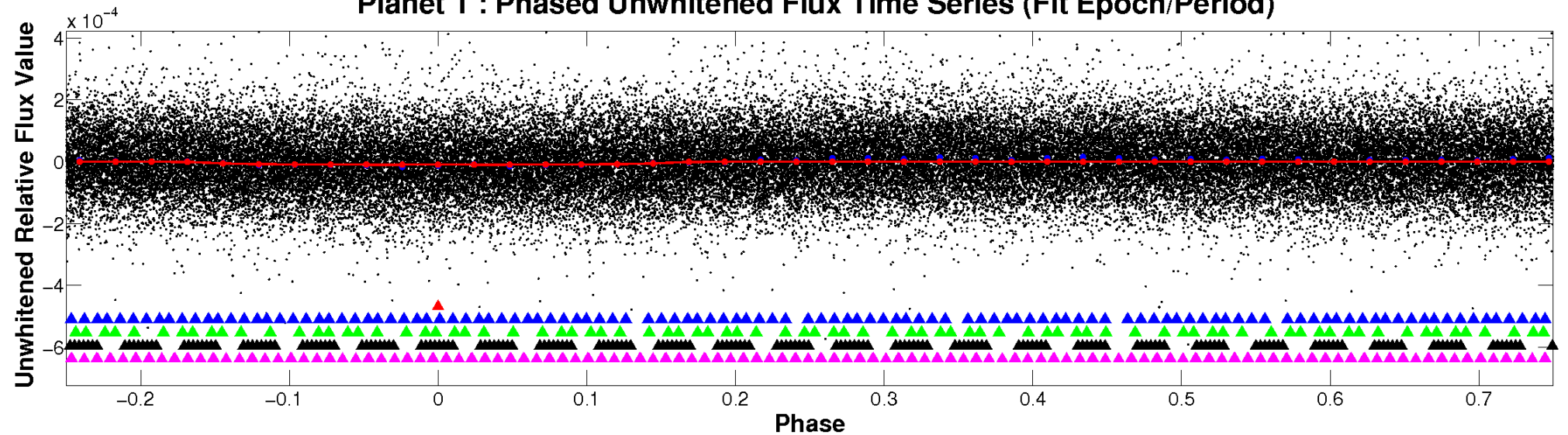
# ALT Odd/Even

TCE 008564695-01

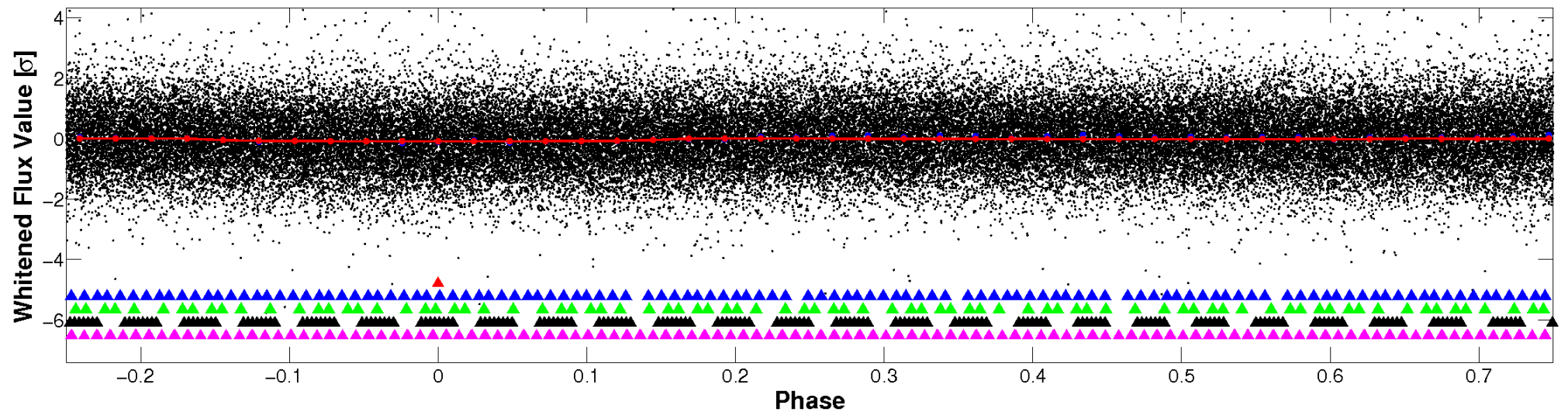


# Non-Whitened Vs. Whitened Light Curve

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

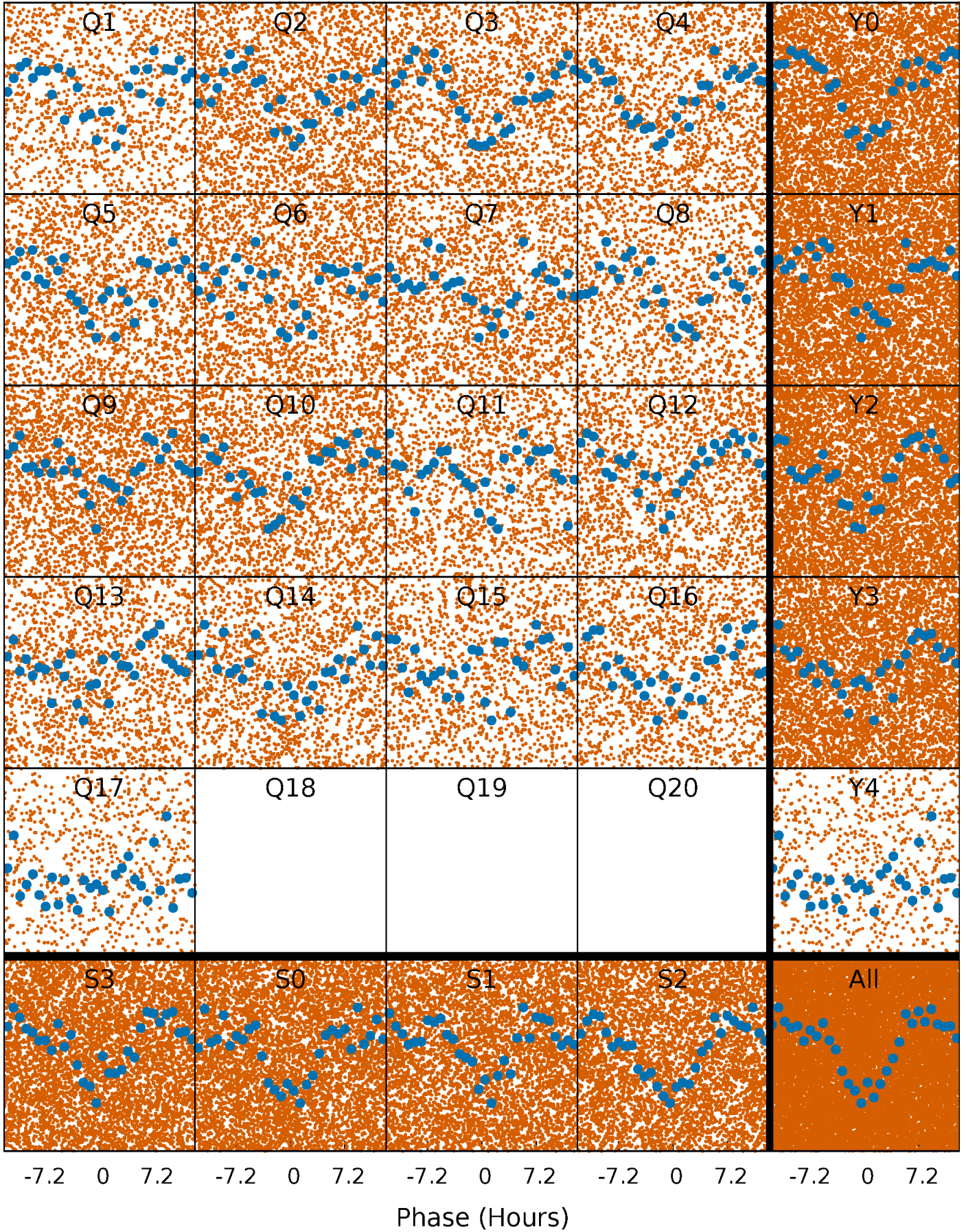


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

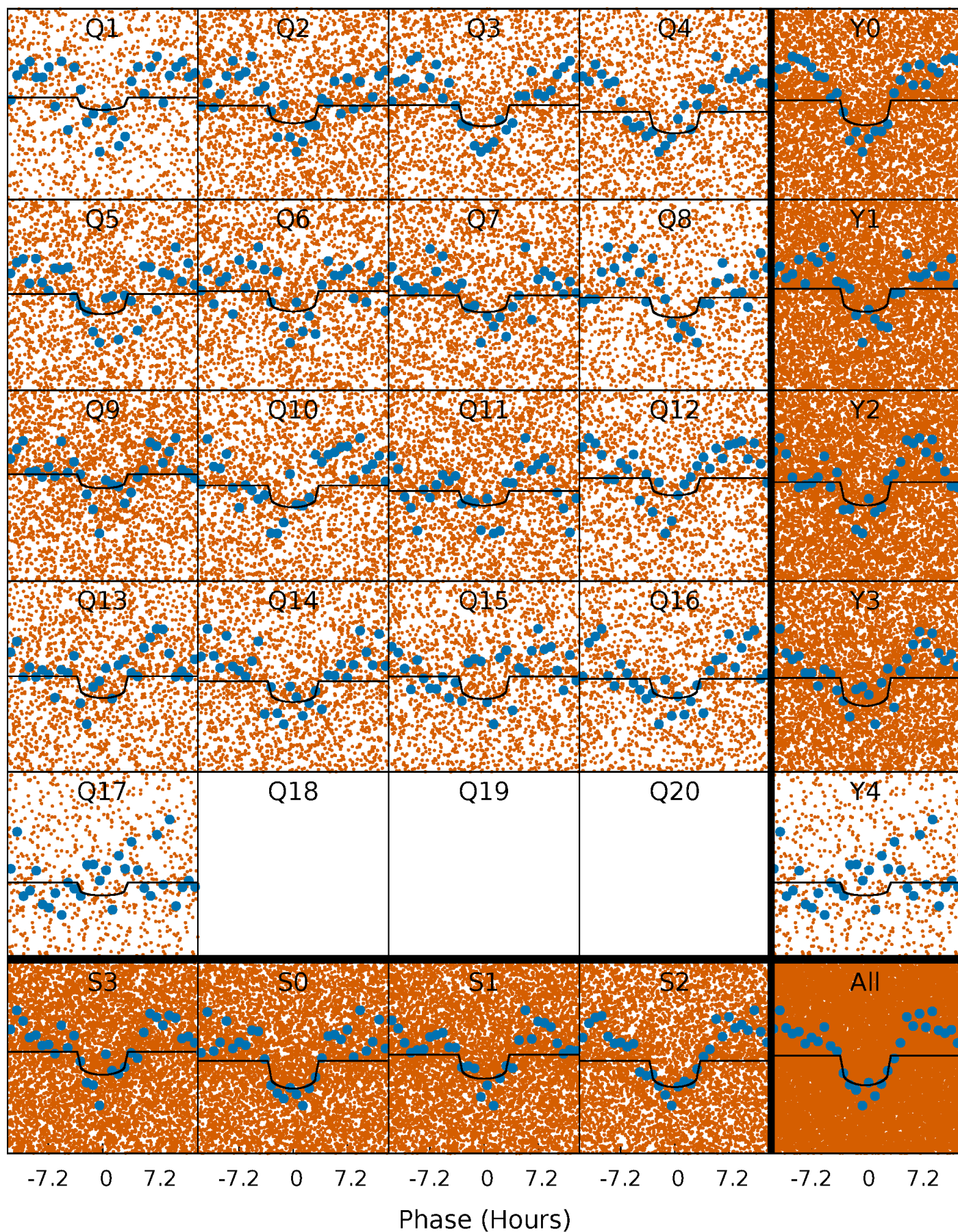
TCE 008564695-01   P= 0.847817 Days    $T_0=131.700851$  (BKJD)





# DV Quarter-Phased Transit Curves

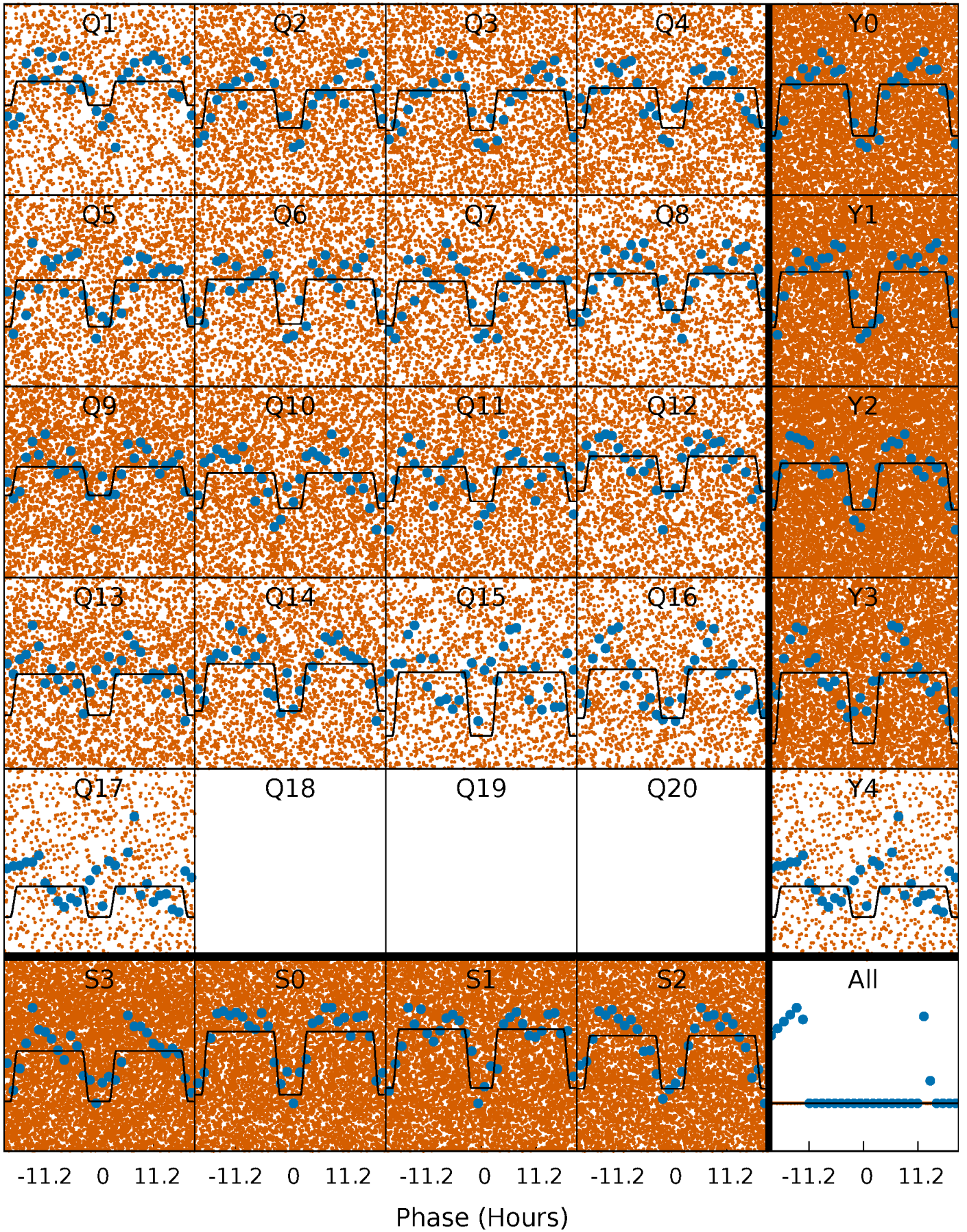
TCE 008564695-01   P= 0.847817 Days    $T_0=131.700851$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

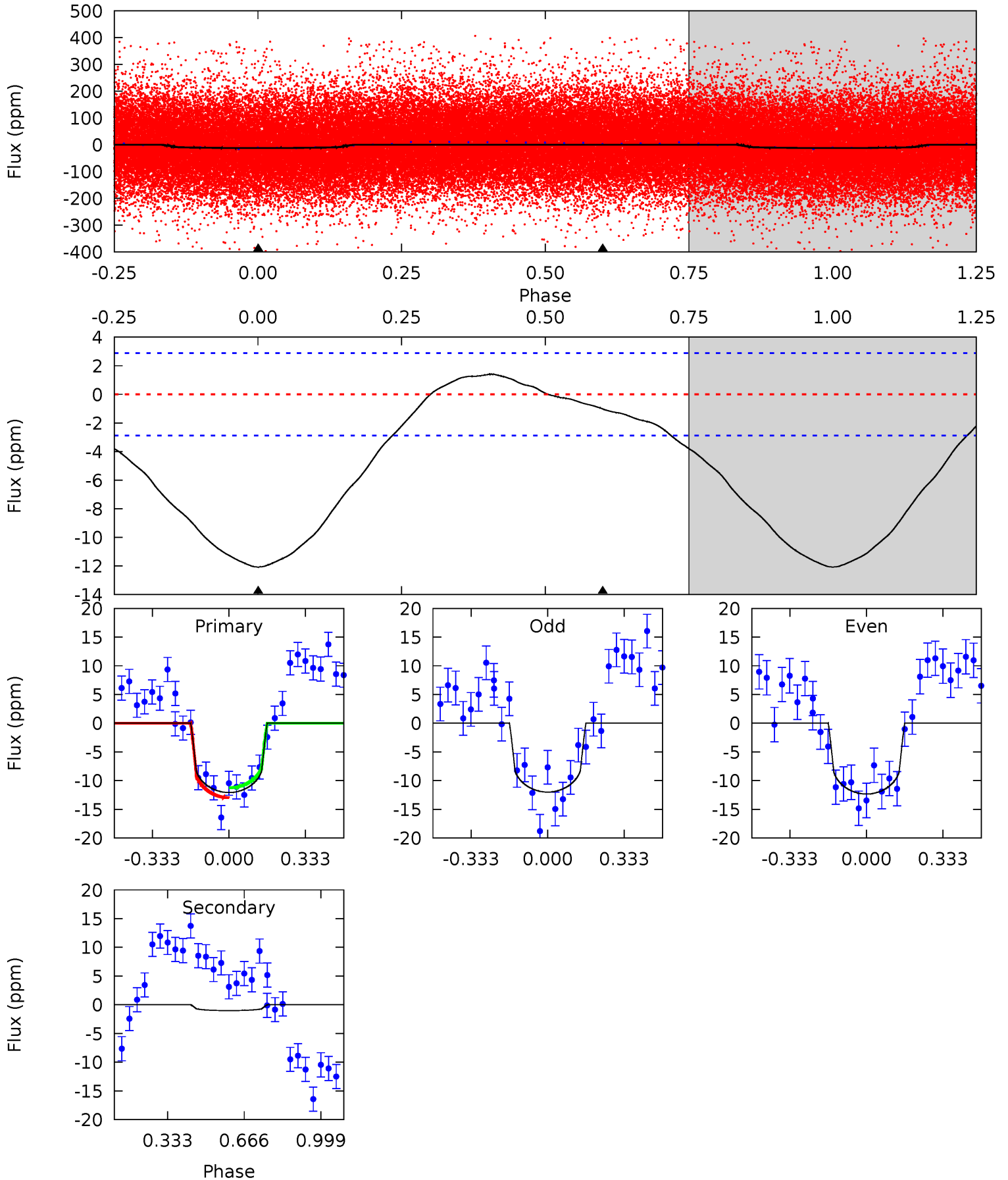
TCE 008564695-01   P= 0.847874 Days    $T_0=131.663658$  (BKJD)



# DV Model-Shift Uniqueness Test

008564695-01, P = 0.847817 Days, E = 130.853034 Days

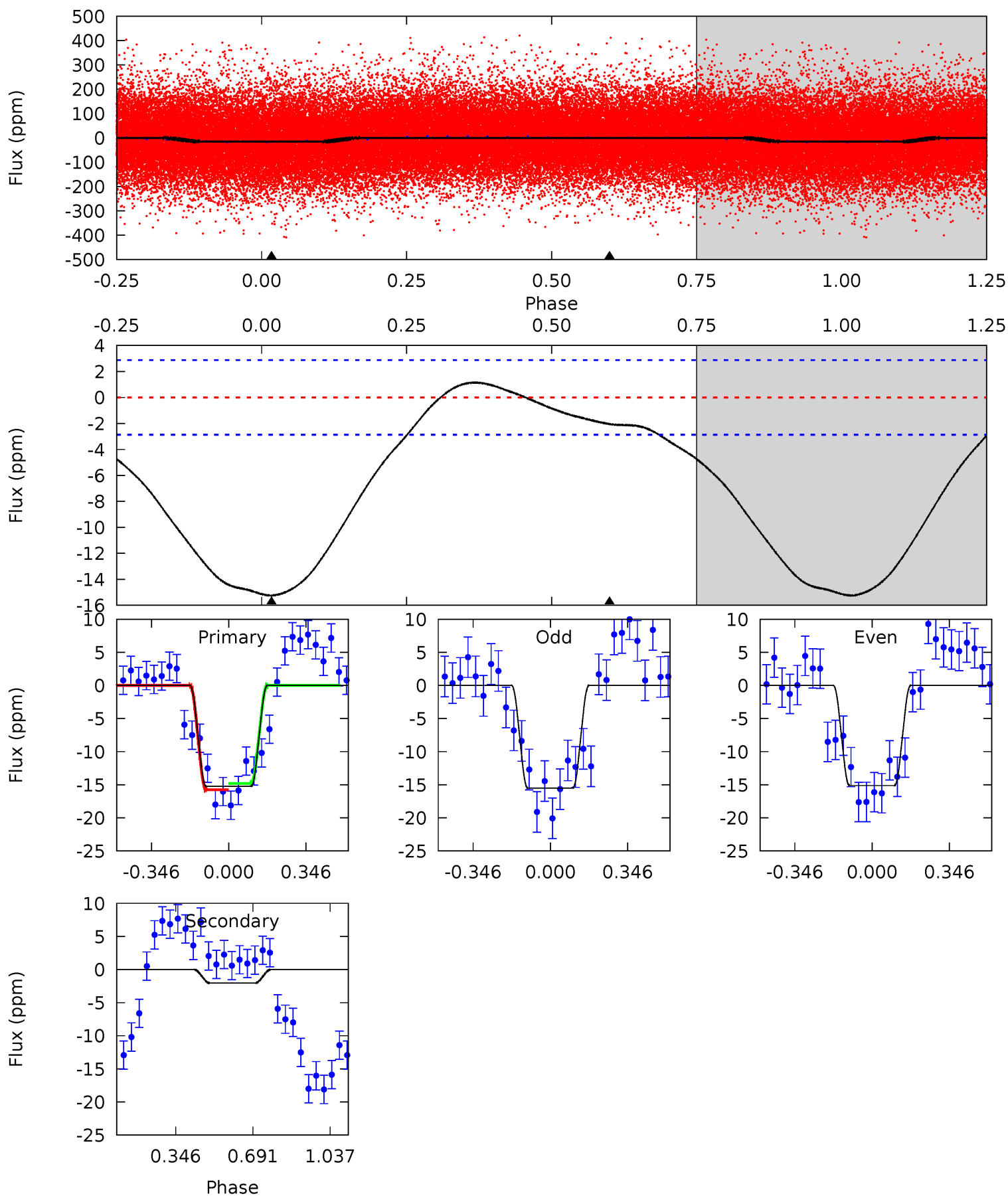
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	1.53	0	0	4.31	0.97	1.52	18.1	18.1	1.53	1.53	0.25	0.99	0.10	1.30



# Alt Model-Shift Uniqueness Test

008564695-01, P = 0.847874 Days, E = 130.815784 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
22.8	3.07	0	0	4.30	0.94	1.66	22.8	22.8	3.07	3.07	0.29	0.98	0.07	0.71





### Stellar Parameters For KIC 008564695

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8050^{+225}_{-338}$	$3.996^{+0.221}_{-0.136}$	$-0.120^{+0.200}_{-0.350}$	$2.254^{+0.442}_{-0.663}$	$1.835^{+0.119}_{-0.356}$	$0.226^{+0.277}_{-0.085}$
	+3%/-4%	+6%/-3%	+167%/-292%	+20%/-29%	+6%/-19%	+123%/-38%
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 008564695-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1 \pm 1$	$0.74^{+0.39}_{-0.37}$	$5044^{+340}_{-452}$	$3553^{+2501}_{-7557}$	$0.415^{+1.612}_{-0.318}$
Alt.	$-2 \pm 1$	$1.00^{+0.45}_{-0.39}$	$5042^{+335}_{-417}$	$3915^{+1690}_{-7365}$	$0.500^{+0.944}_{-0.286}$

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

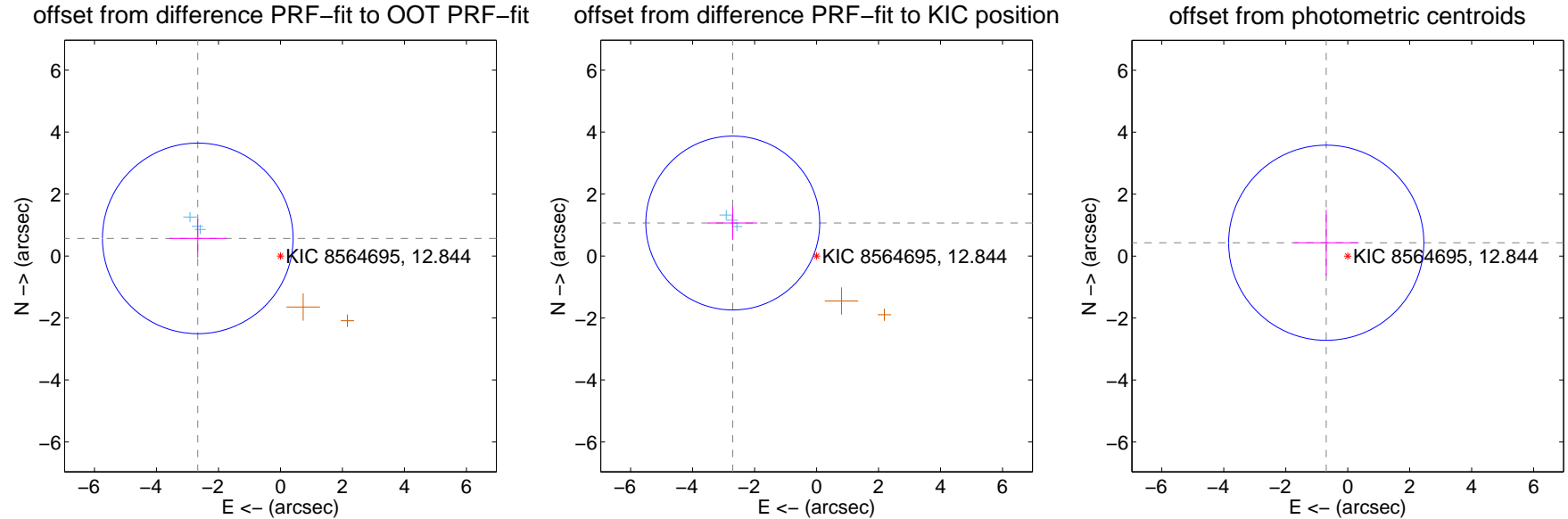
## DV Centroid Data

Supplemental centroid analysis for 008564695-01. Kepler magnitude: 12.84. Transit SNR 10.37

There are 3 quarters with good PRF difference image offsets

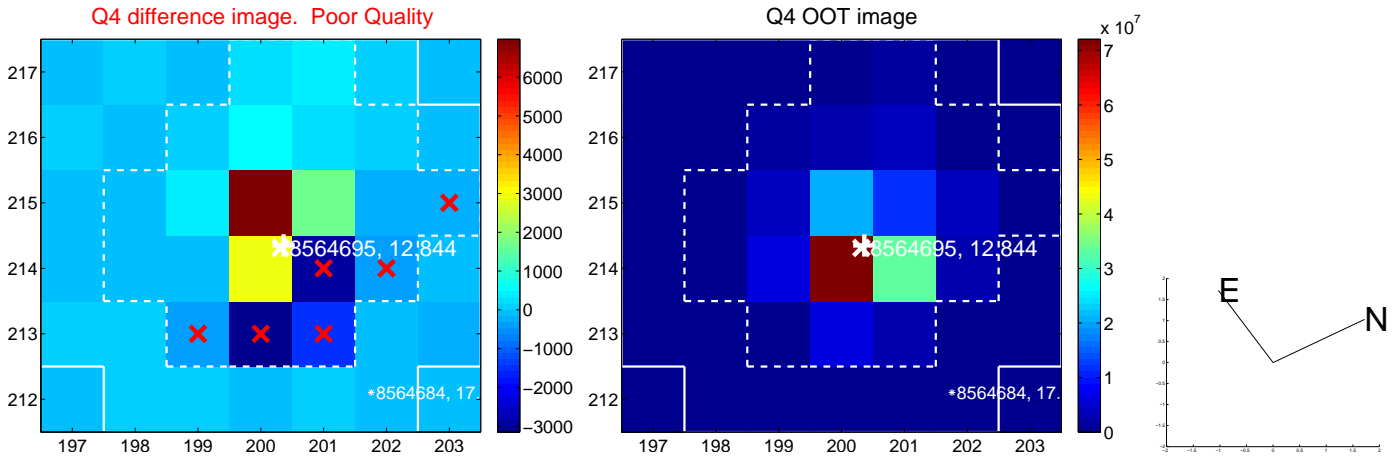
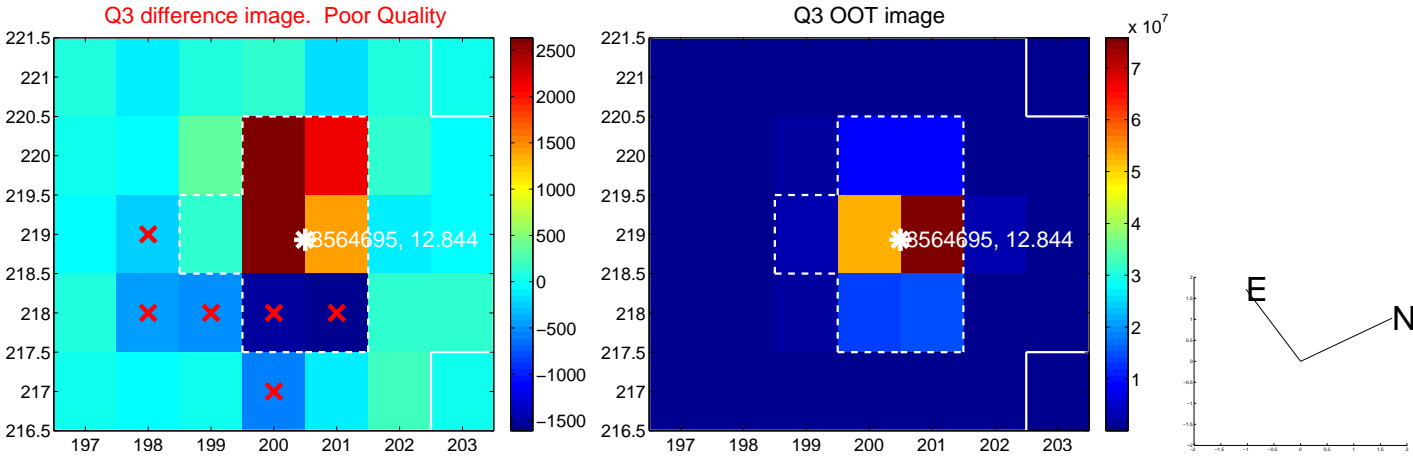
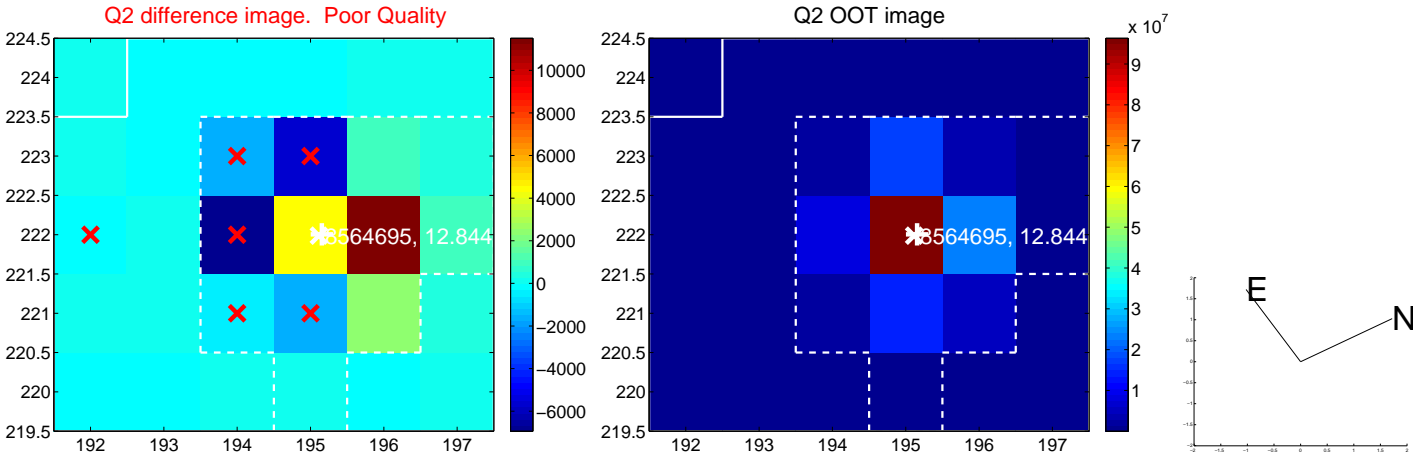
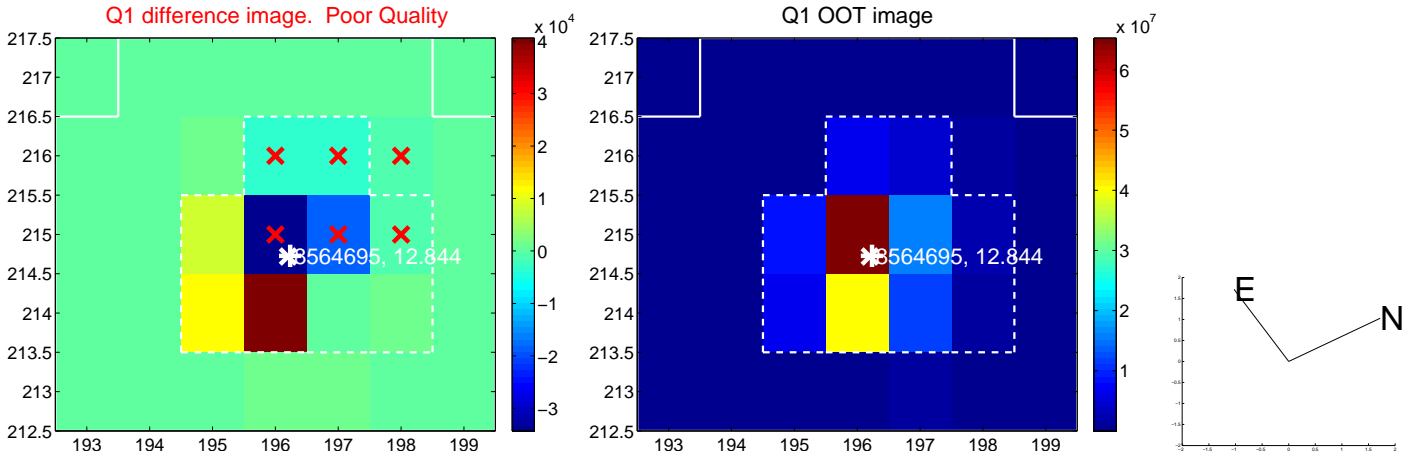
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.728 \pm 1.025$	2.66	$2.668 \pm 0.916$	$0.569 \pm 0.626$
PRF-fit source offset from KIC position	<b><math>2.905 \pm 0.935</math></b>	<b>3.11</b>	$2.703 \pm 0.795$	$1.065 \pm 0.540$
photometric centroid source offset	$0.82 \pm 1.05$	0.78	$0.69 \pm 1.05$	$0.43 \pm 1.06$

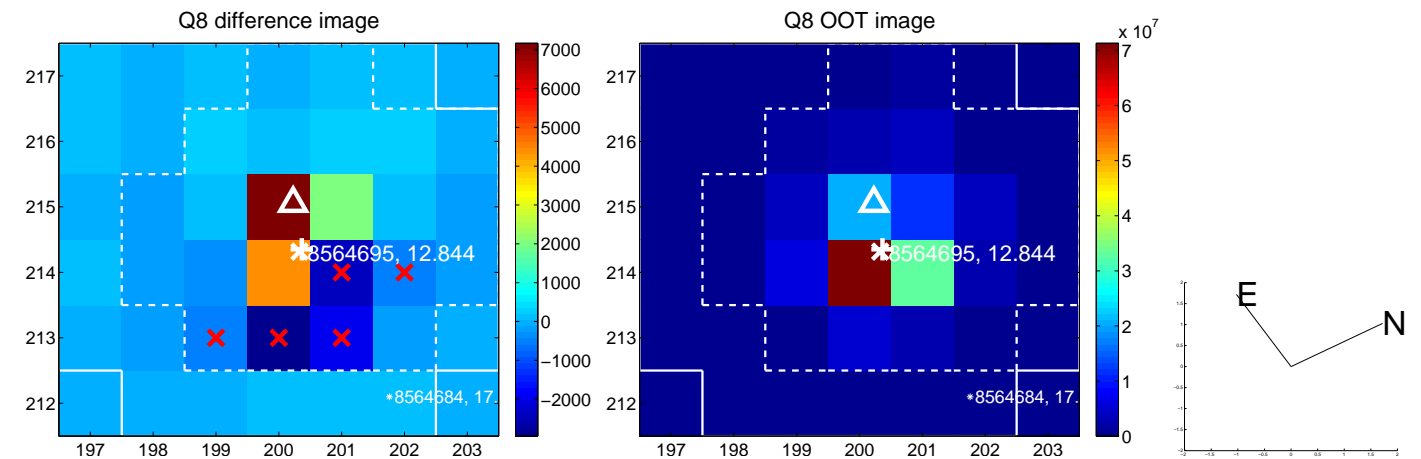
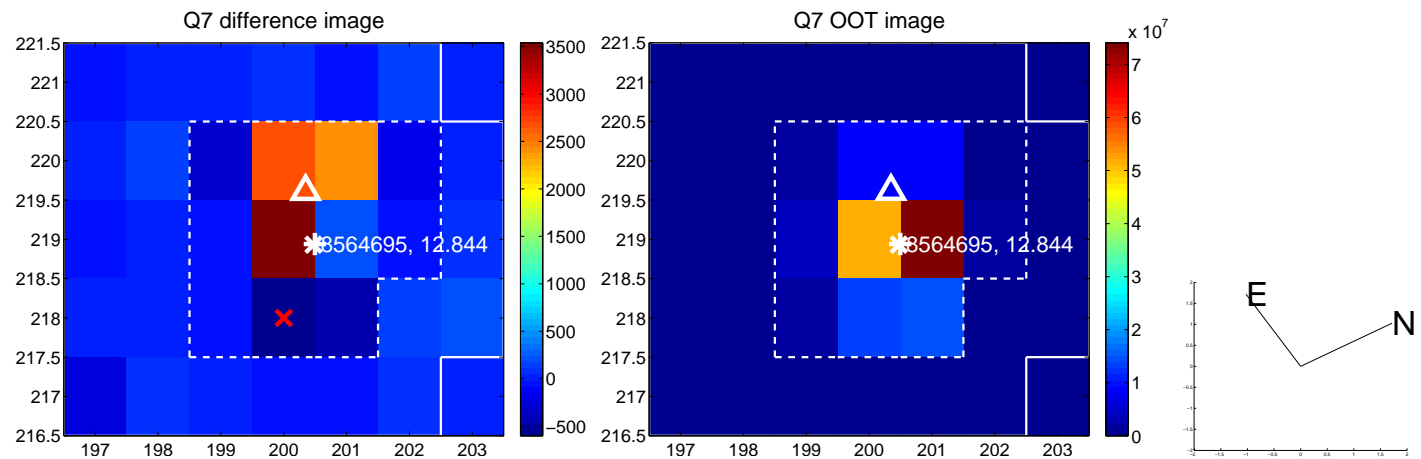
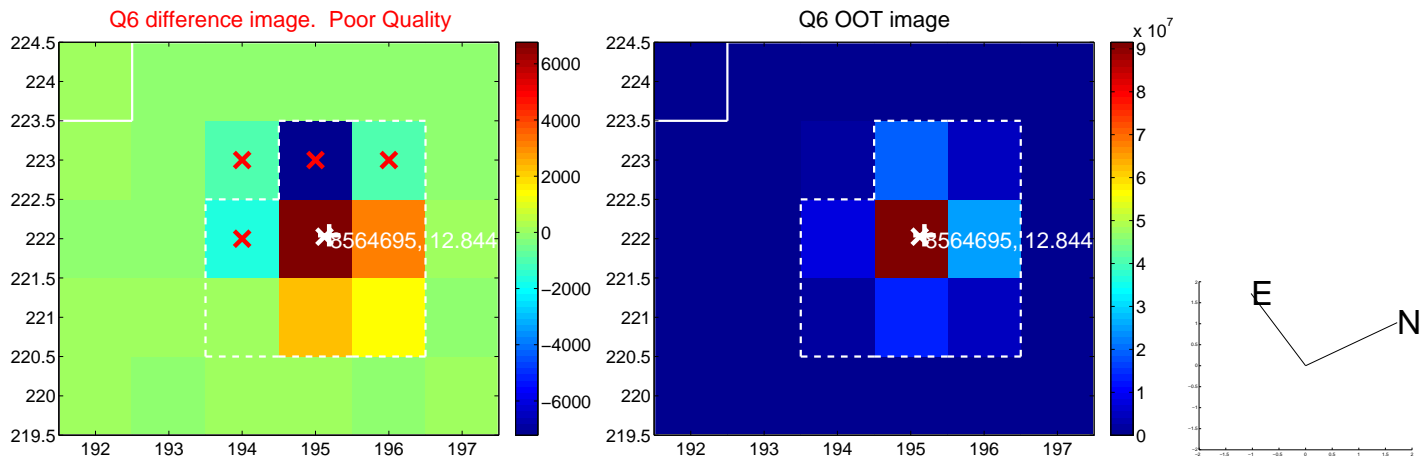
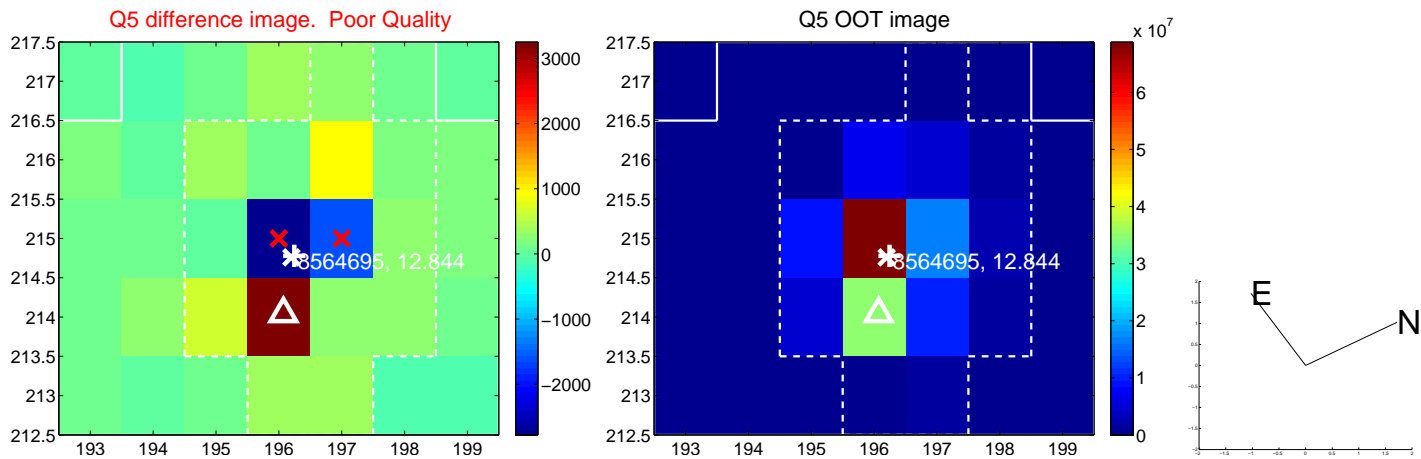


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

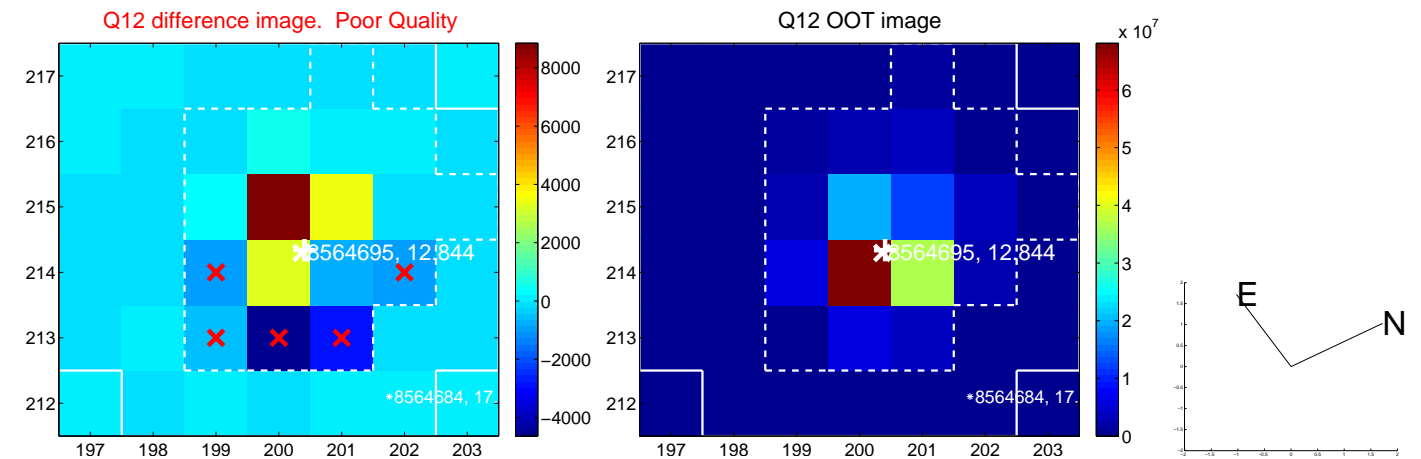
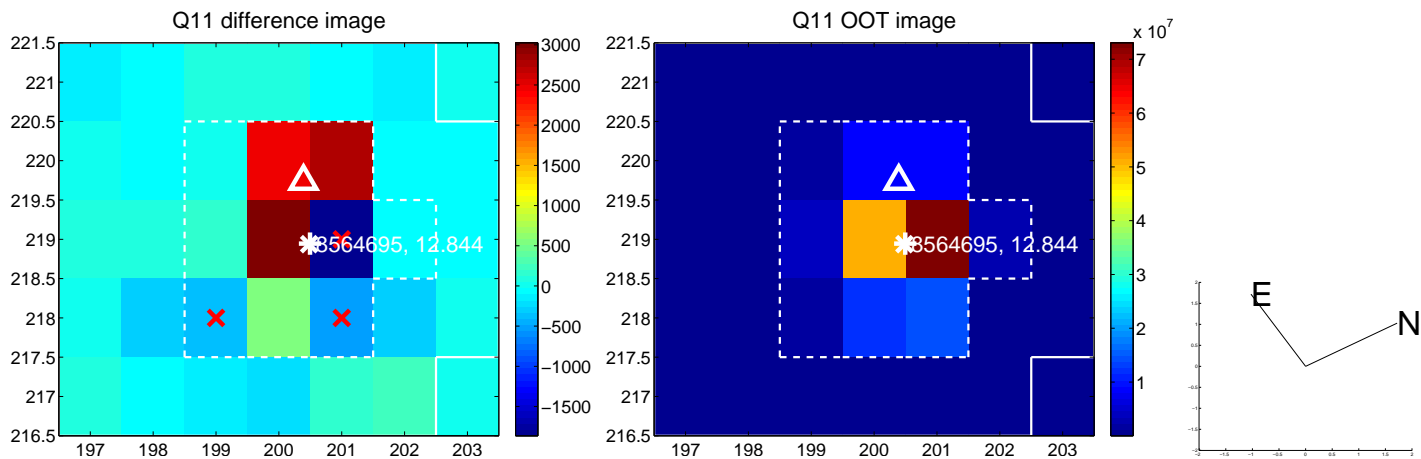
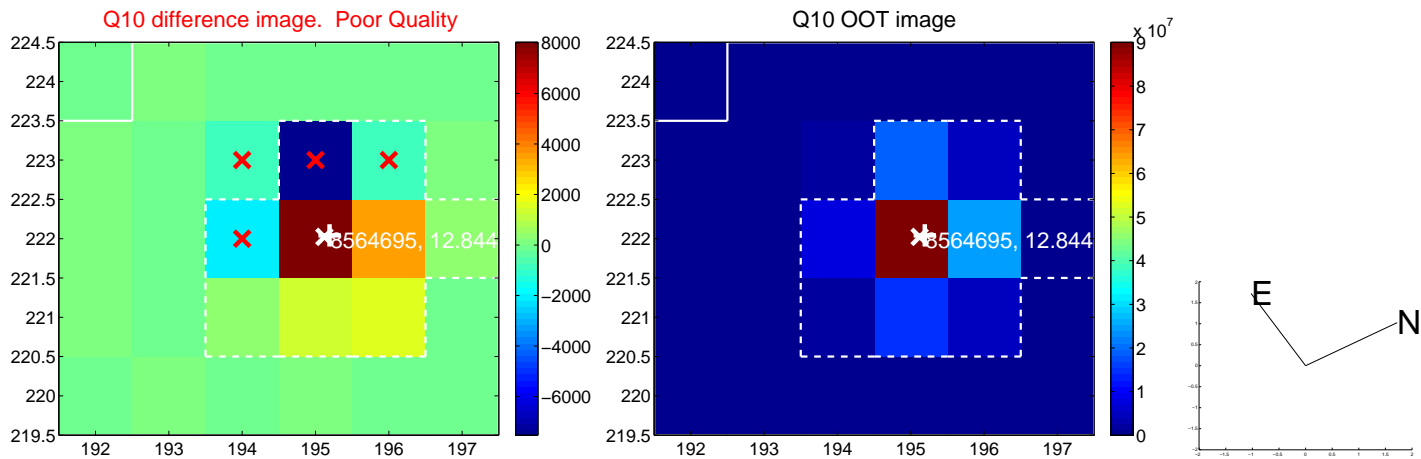
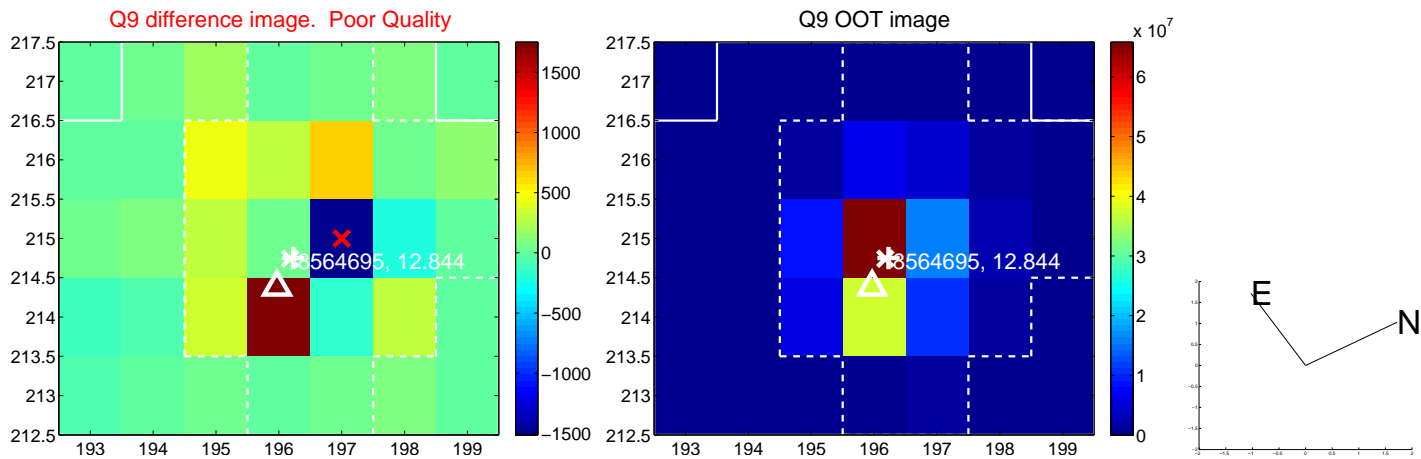


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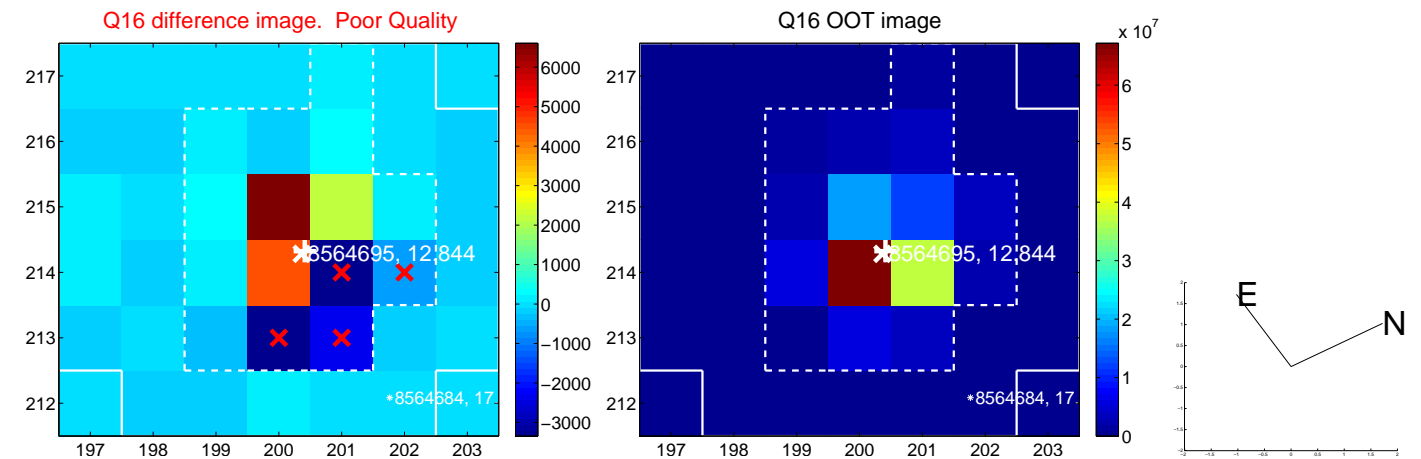
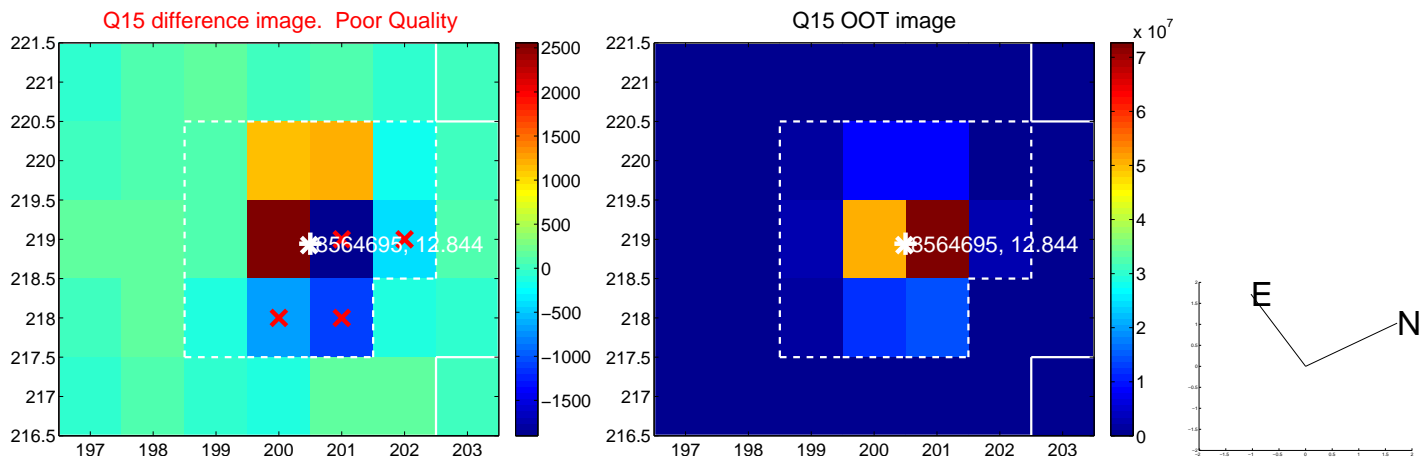
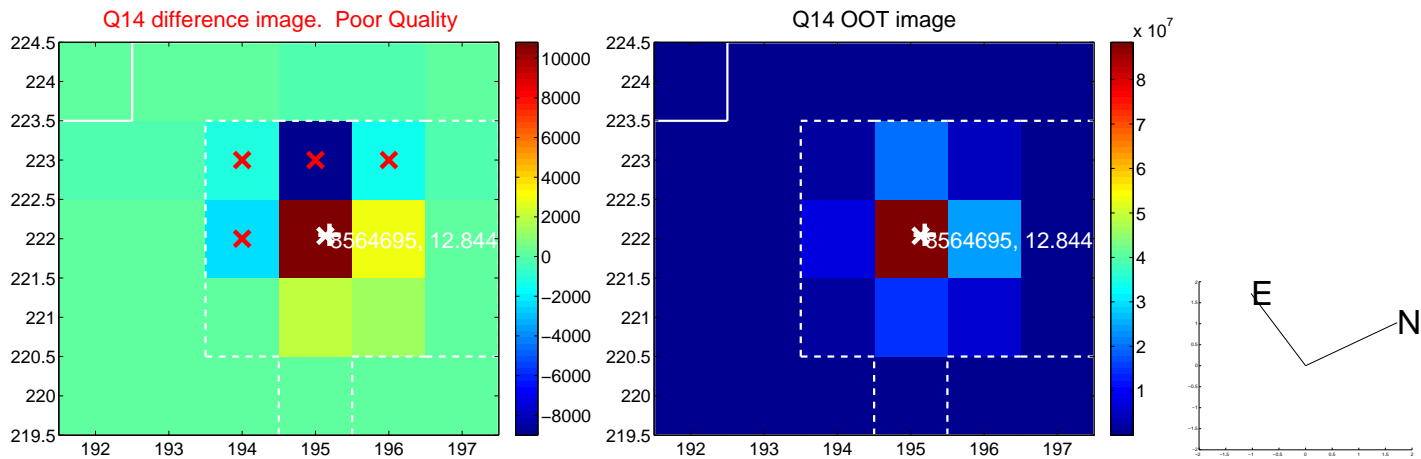
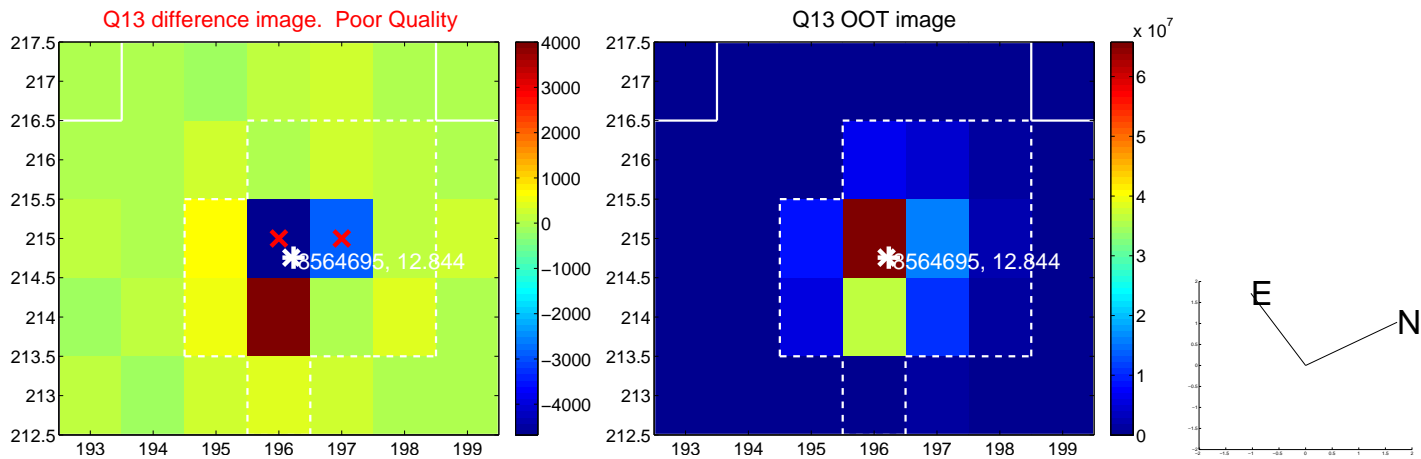




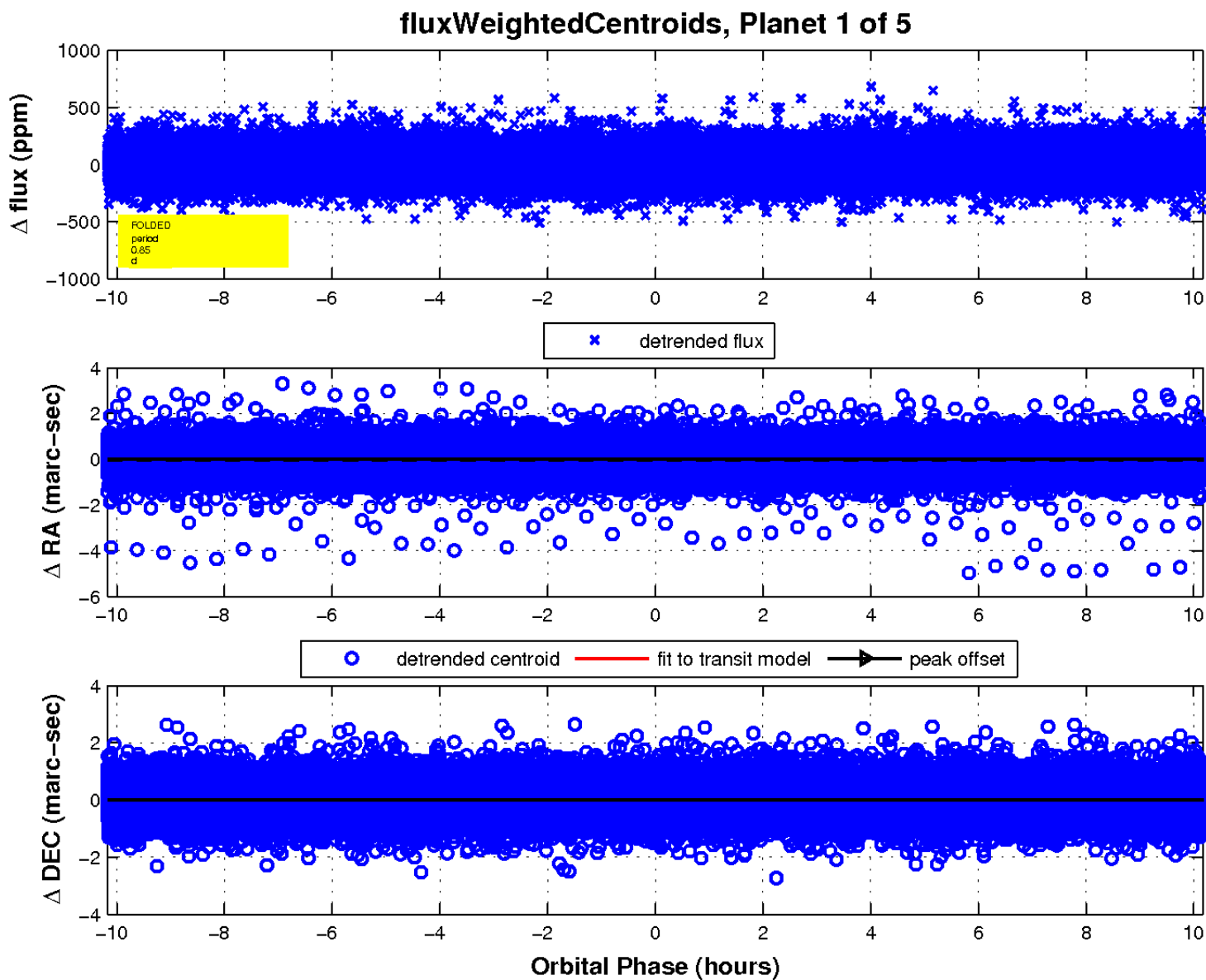
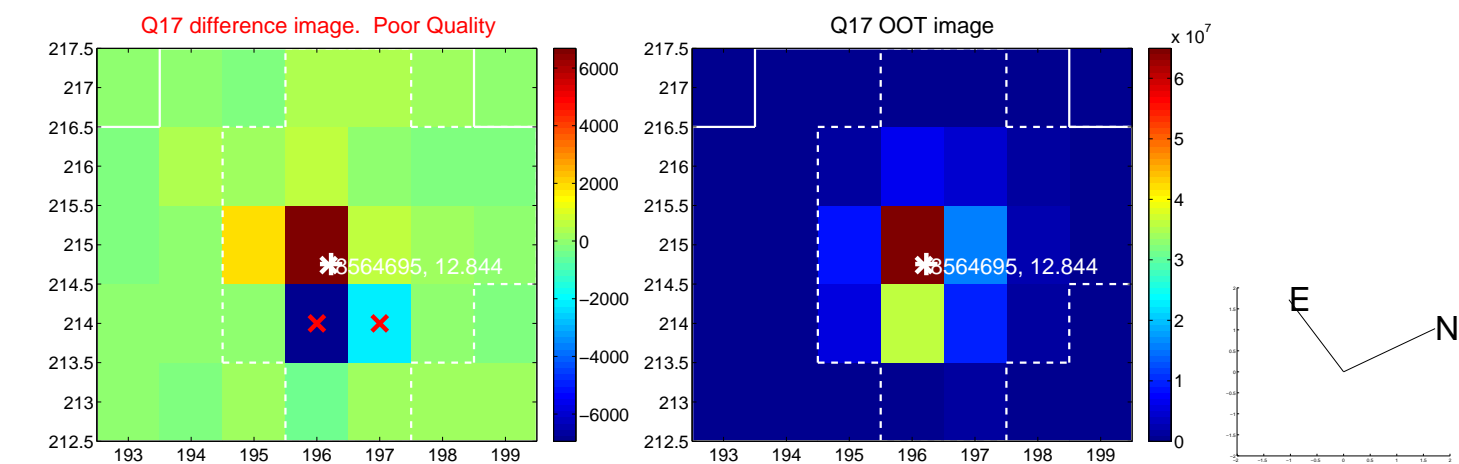
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

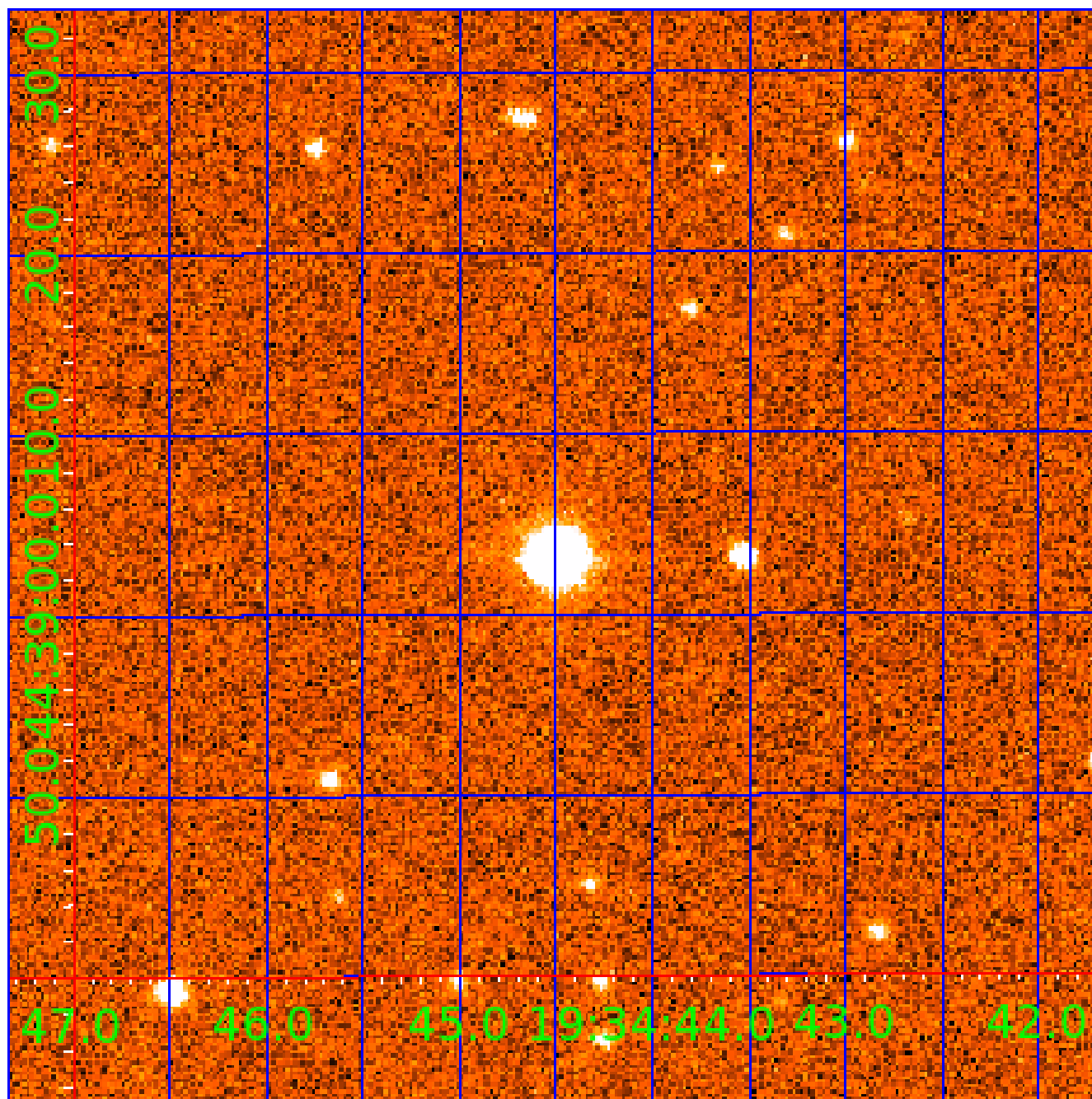


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008564695

## 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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008564695-05	OBS	No	8.043198	133.689095	207.0	1.095	14.8	14.6	2.25	8050	3.37	2064.47

## Robovetter Results

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008564695-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_MEAS
008564695-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
008564695-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008564695-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008564695-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

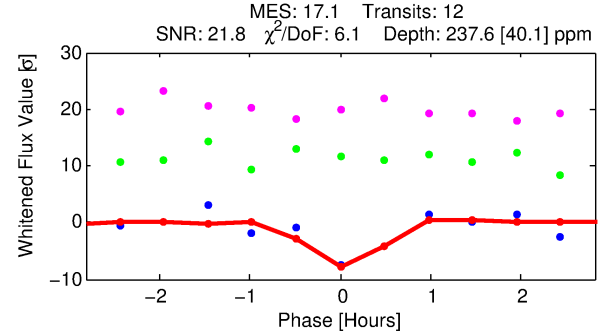
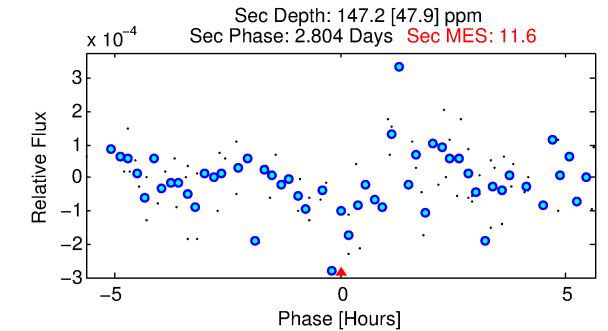
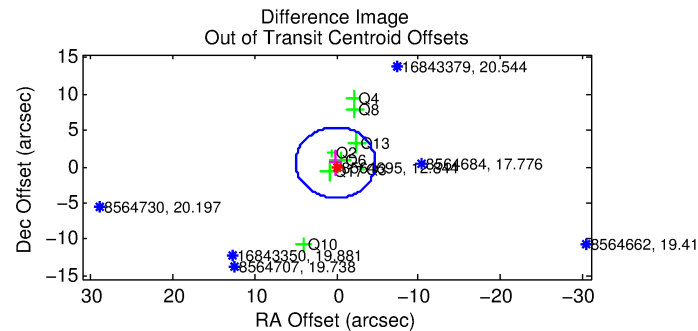
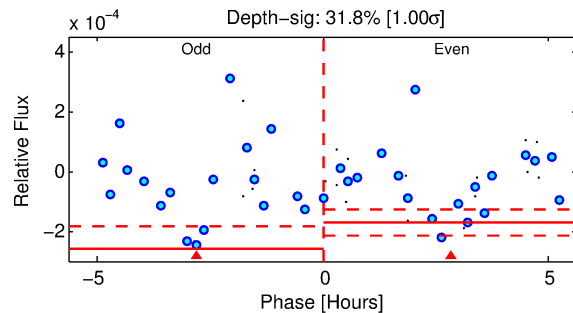
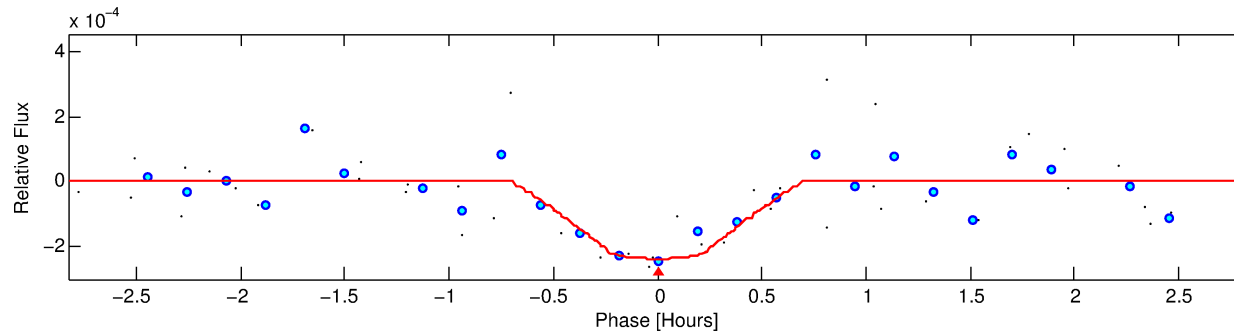
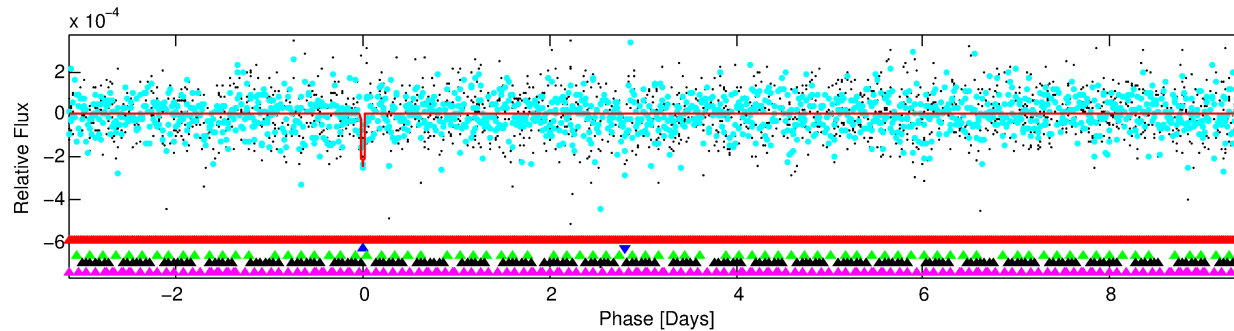
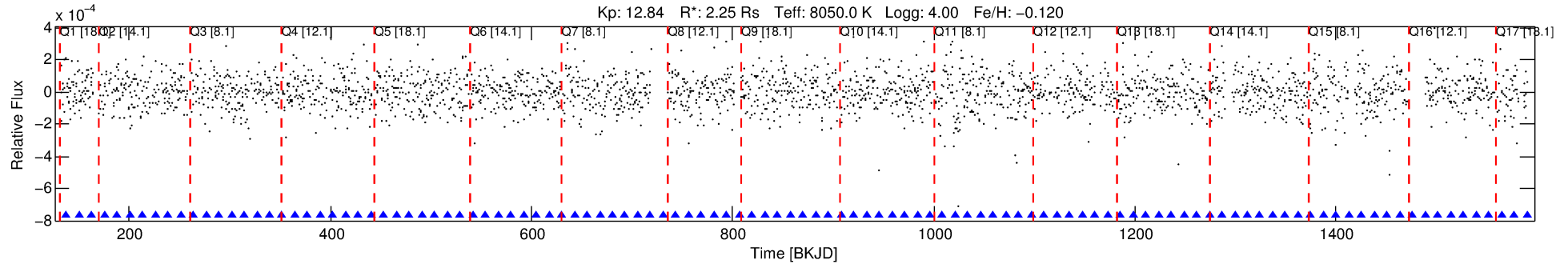
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008564695-02

No Significant Match Found

# DV One-Page Summary

KIC: 8564695 Candidate: 2 of 5 Period: 12.626 d



## DV Fit Results:

Period = 12.62615 [0.00009] d  
Epoch = 137.6590 [0.0046] BKJD  
Rp/R\* = 0.0147 [0.0079]  
a/R\* = 92.31 [274.72]  
b = 0.46 [5.06]  
Seff = 1131.58 [482.42]  
Teq = 1479 [158] K  
Rp = 3.62 [2.22] Re  
a = 0.1300 [0.0337] AU  
Ag = 104.55 [124.32] [0.83 $\sigma$ ]  
Teffp = 7312 [2075] K [2.80 $\sigma$ ]

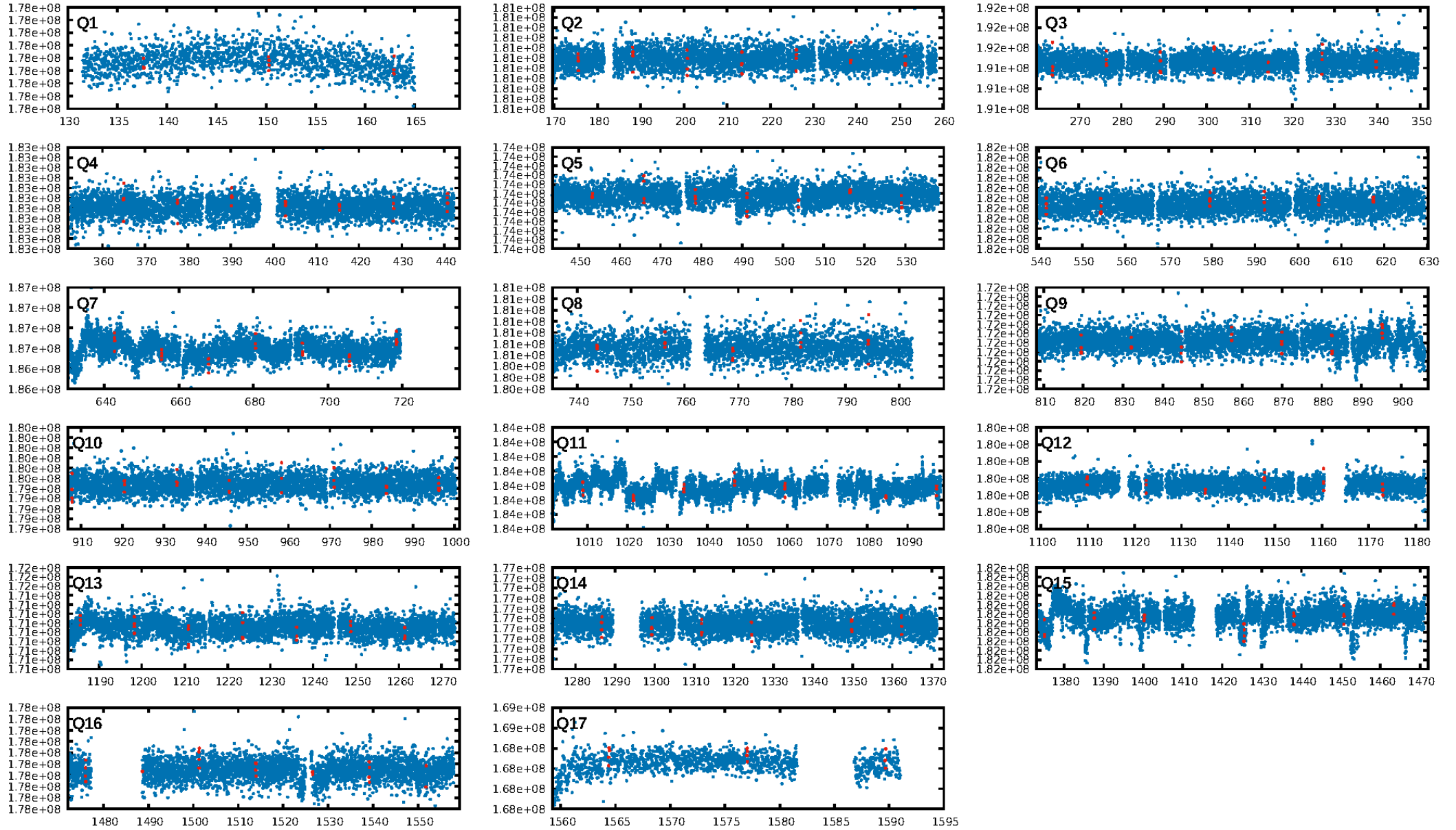
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [76.14 $\sigma$ ]  
LongPeriod-sig: 100.0% [84.00 $\sigma$ ]  
ModelChiSquare2-sig: 6.0%  
ModelChiSquareGof-sig: 87.8%  
Bootstrap-pfa: 1.82e-20  
RollingBand-fgt: 1.00 [12/12]  
GhostDiagnostic-chr: -0.8232  
Centroid-sig: 2.8%  
Centroid-so: 0.536 arcsec [1.29 $\sigma$ ]  
OotOffset-rm: 0.555 arcsec [0.34 $\sigma$ ]  
OotOffset-st: 3/1/2/2 [8]  
KicOffset-rm: 0.630 arcsec [0.27 $\sigma$ ]  
KicOffset-st: 3/1/2/2 [8]  
DiffImageQuality-fgm: 0.12 [1/8]  
DiffImageOverlap-fno: 0.53 [9/17]

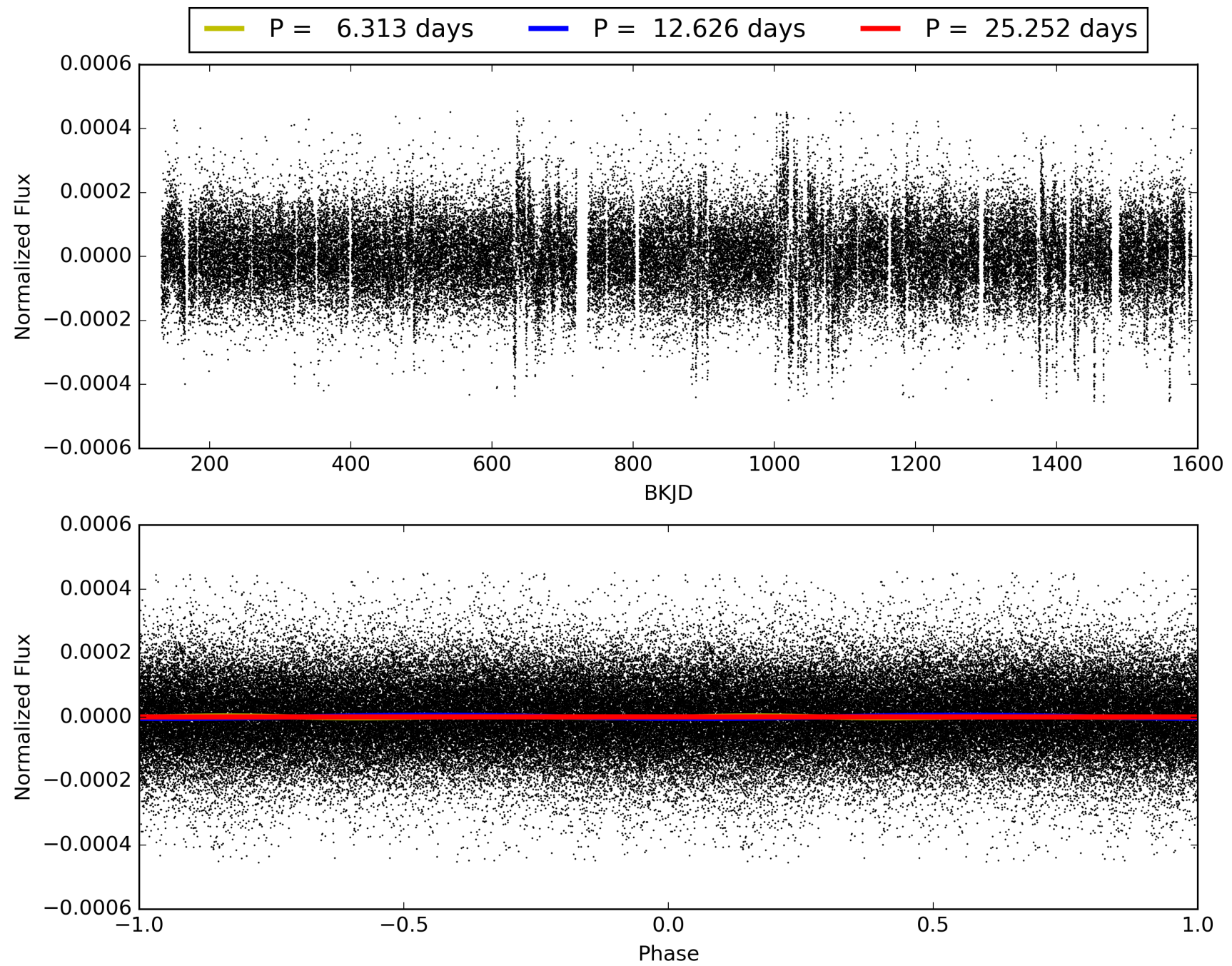
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:41:50 Z

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

# TCE 008564695-02, PDC Light Curves

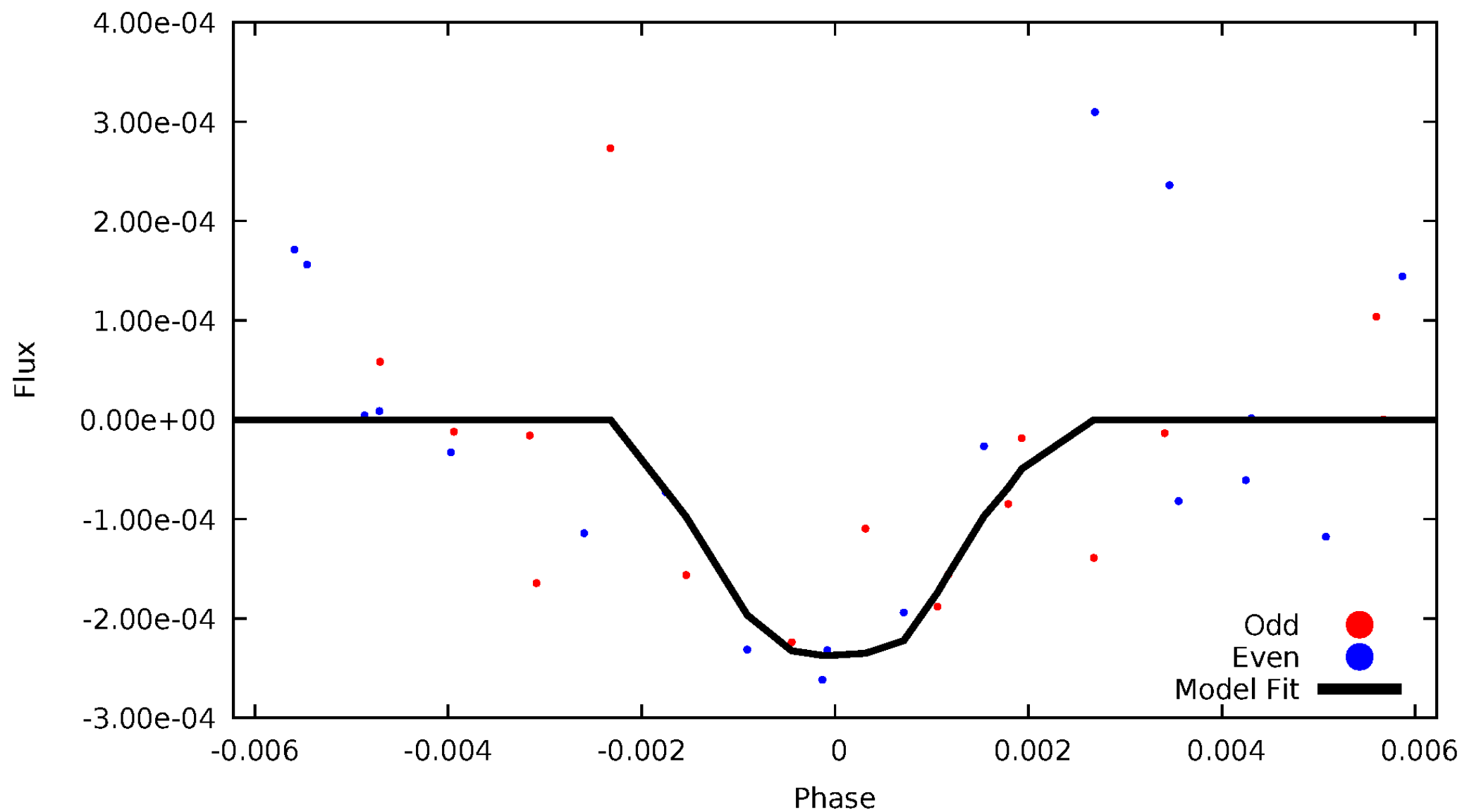


TCE 008564695-02



# DV Odd/Even

TCE 008564695-02





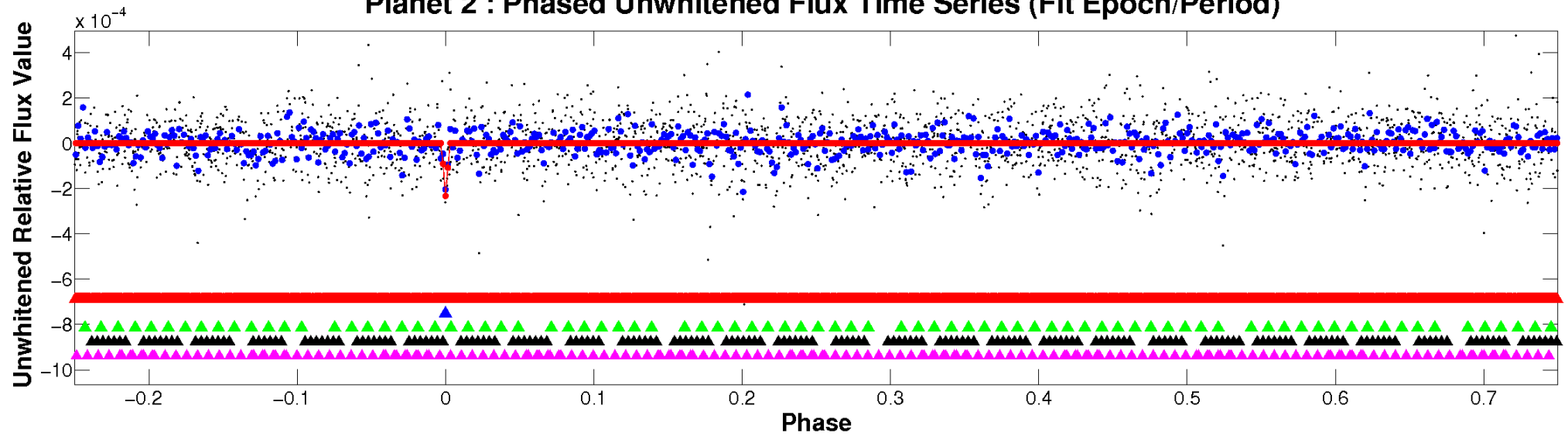


ALT Odd/Even

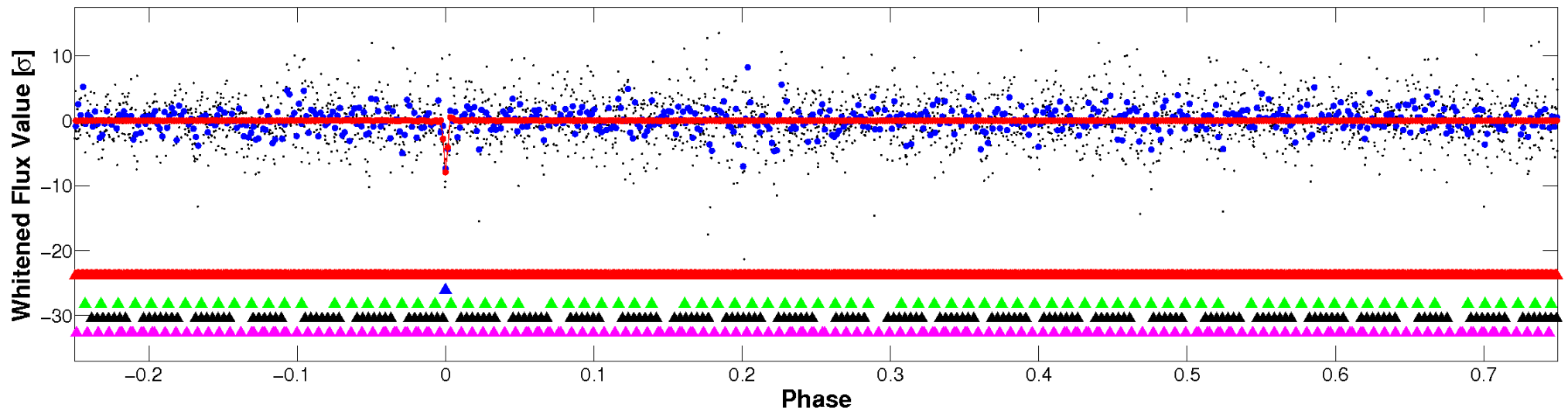
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

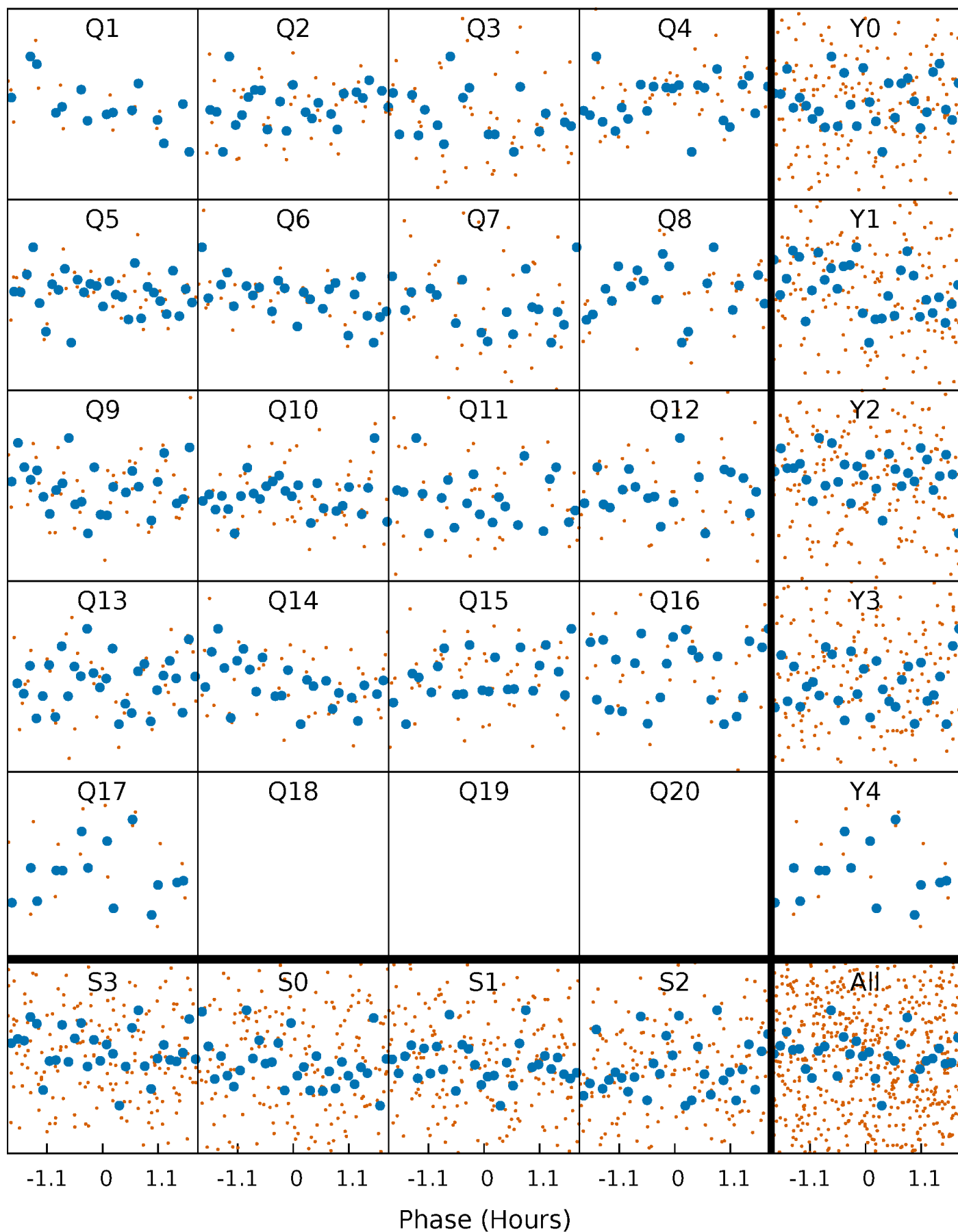


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



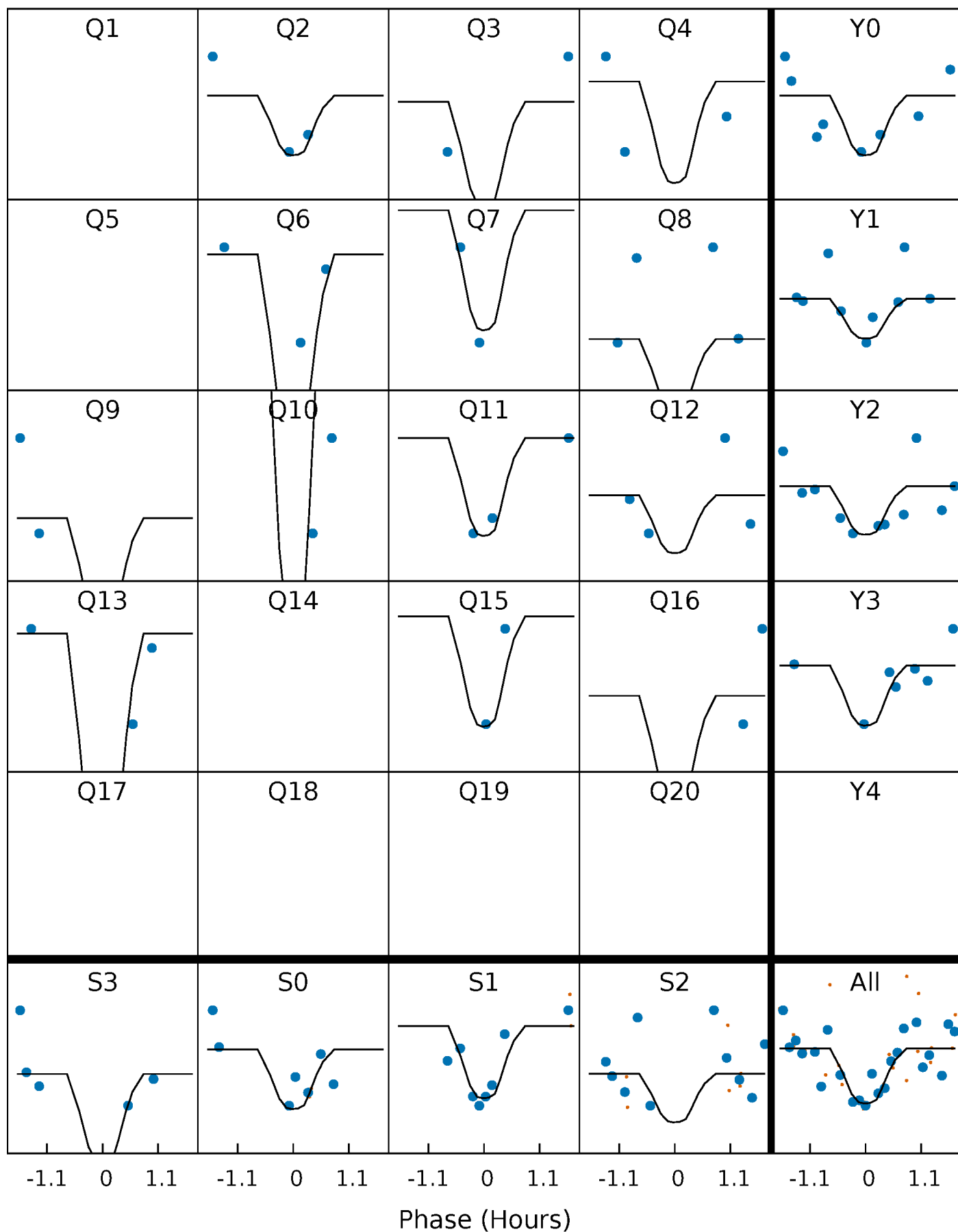
# PDC Quarter-Phased Transit Curves

TCE 008564695-02 P= 12.626151 Days  $T_0=137.658974$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008564695-02 P= 12.626151 Days  $T_0=137.658974$  (BKJD)

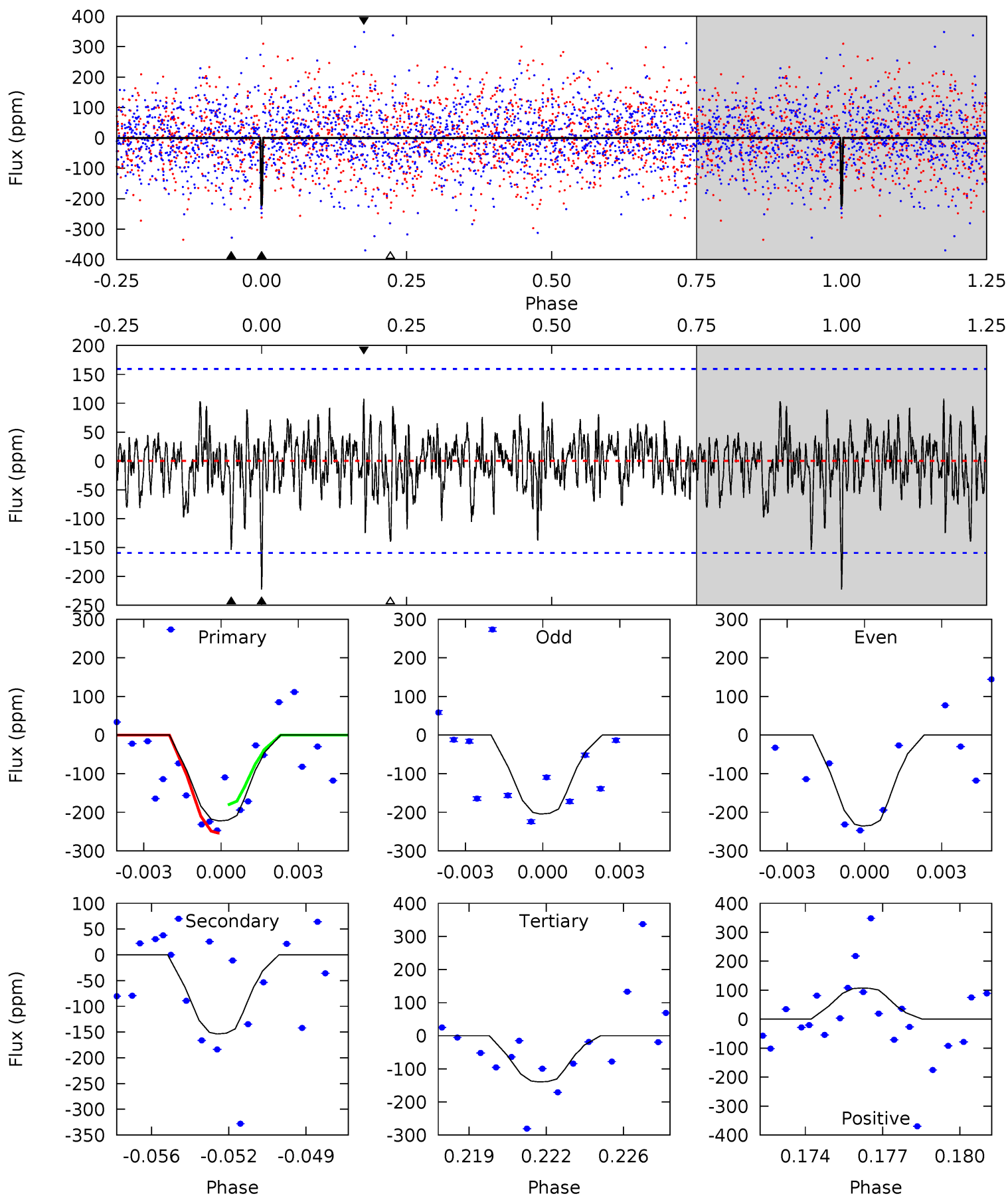


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008564695-02,  $P = 12.626151$  Days,  $E = 125.032823$  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
7.30	5.04	4.58	3.53	5.23	2.92	1.23	2.72	3.77	0.47	1.51	0.51	0.91	0.33	1.20





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008564695

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8050^{+225}_{-338}$	$3.996^{+0.221}_{-0.136}$	$-0.120^{+0.200}_{-0.350}$	$2.254^{+0.442}_{-0.663}$	$1.835^{+0.119}_{-0.356}$	$0.226^{+0.277}_{-0.085}$
	+3%/-4%	+6%/-3%	+167%/-292%	+20%/-29%	+6%/-19%	+123%/-38%
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 008564695-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-154 \pm 30$	$3.50^{+1.98}_{-1.79}$	$2052^{+130}_{-163}$	$7143^{+4823}_{-1443}$	$110^{+366}_{-66}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

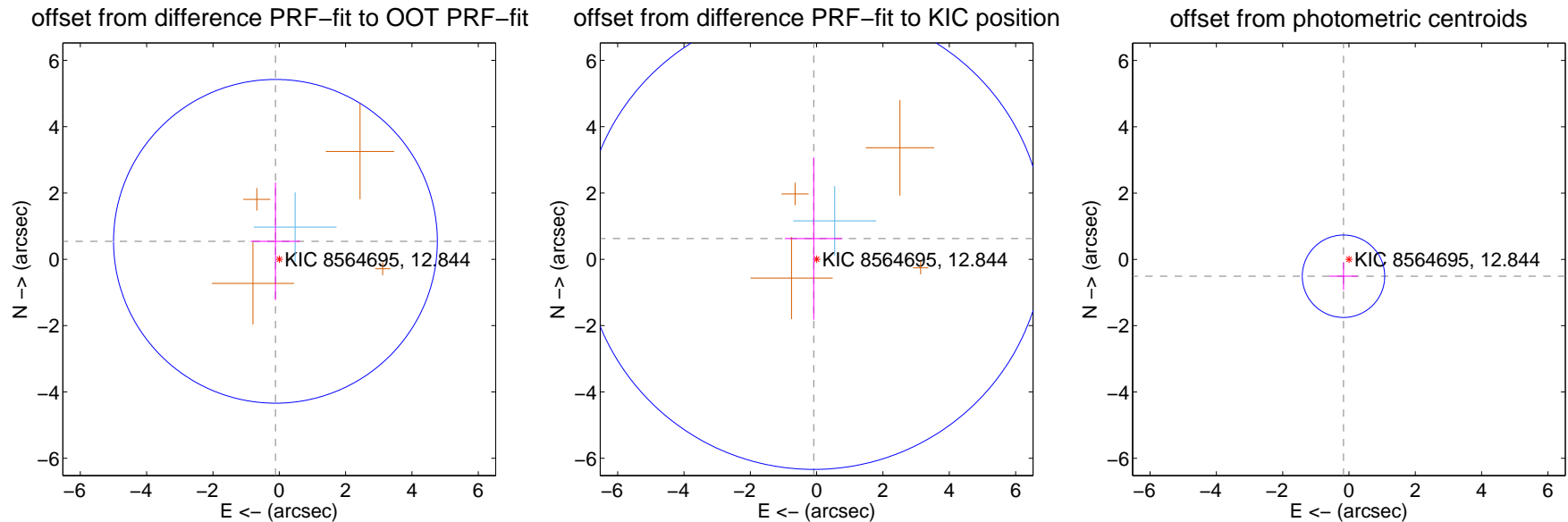
## DV Centroid Data

Supplemental centroid analysis for 008564695-02. Kepler magnitude: 12.84. Transit SNR 21.78

There are 1 quarters with good PRF difference image offsets

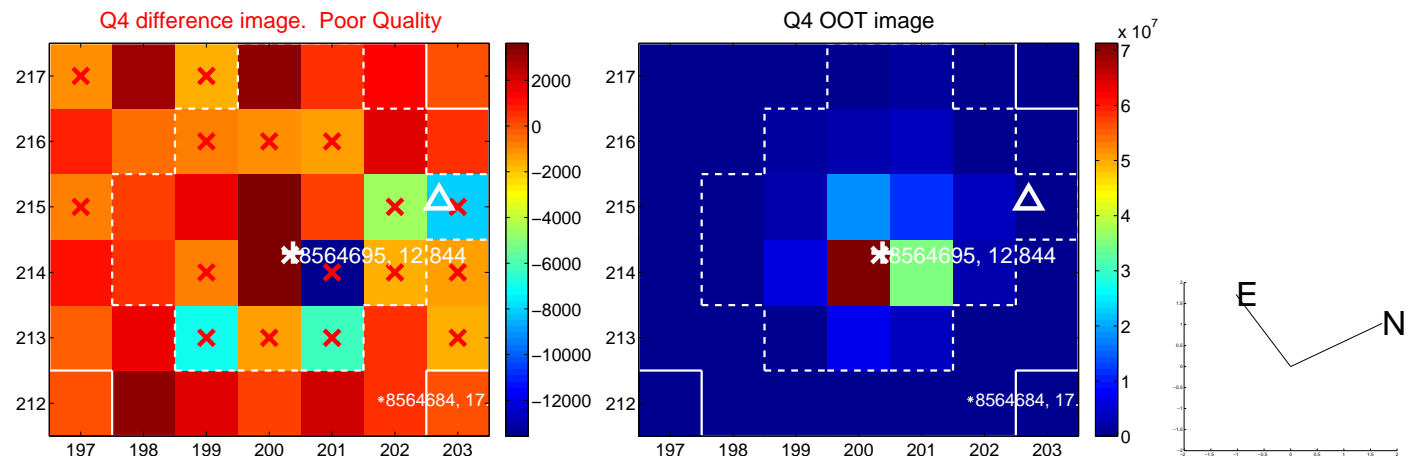
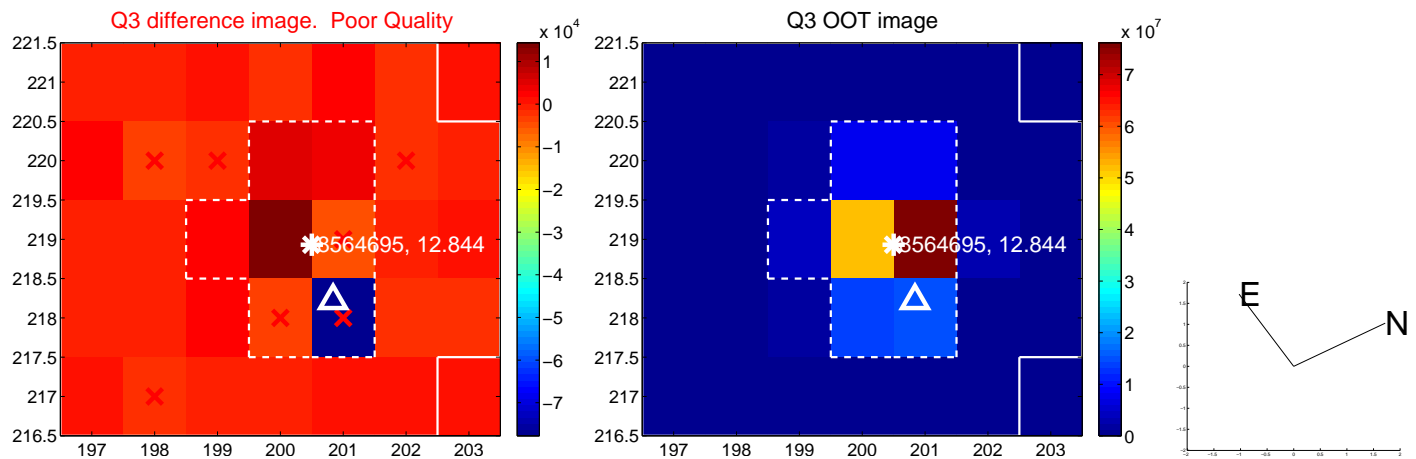
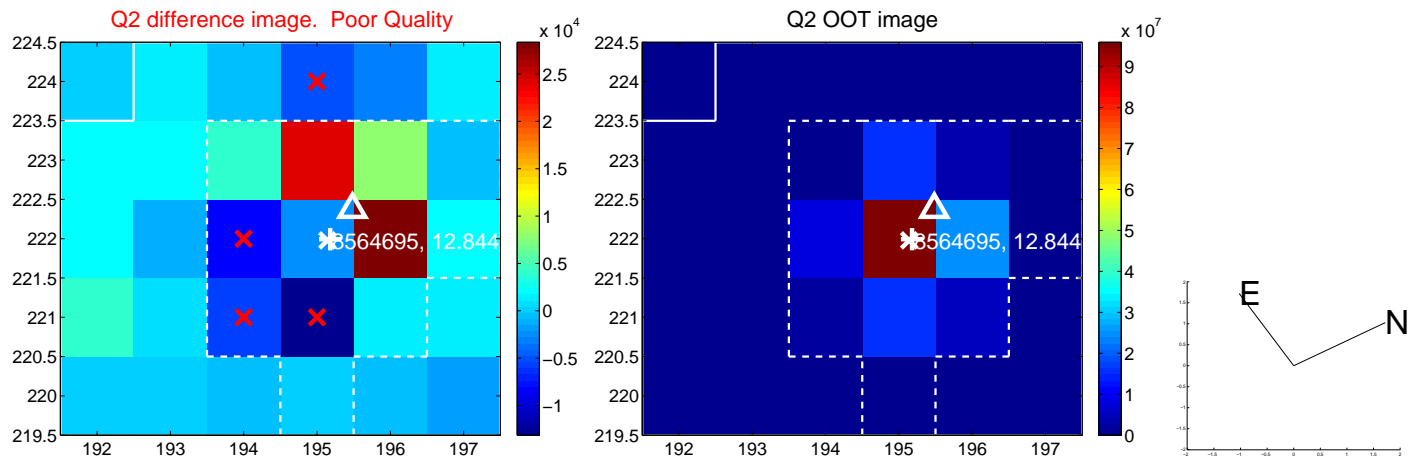
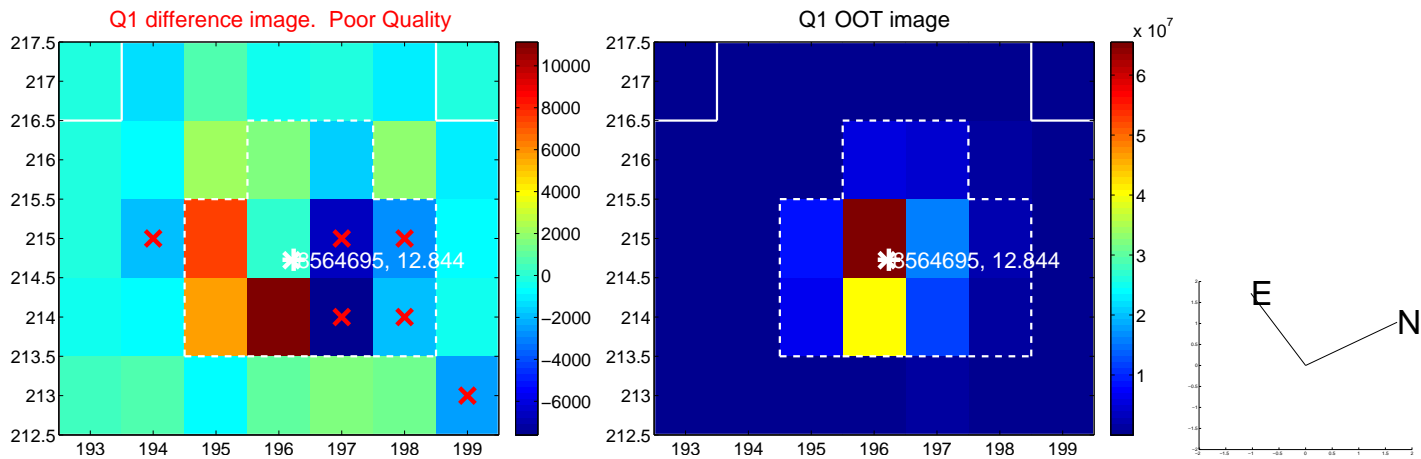
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.555 \pm 1.627$	0.34	$0.116 \pm 0.739$	$0.542 \pm 1.771$
PRF-fit source offset from KIC position	$0.630 \pm 2.320$	0.27	$0.089 \pm 0.869$	$0.624 \pm 2.445$
photometric centroid source offset	$0.54 \pm 0.41$	1.29	$0.17 \pm 0.42$	$-0.51 \pm 0.41$



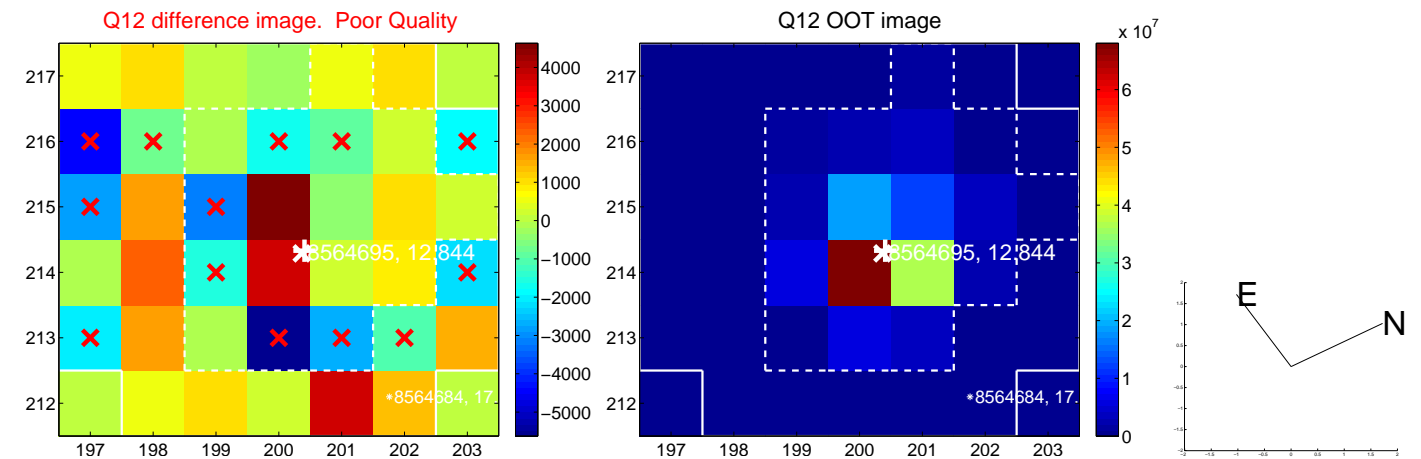
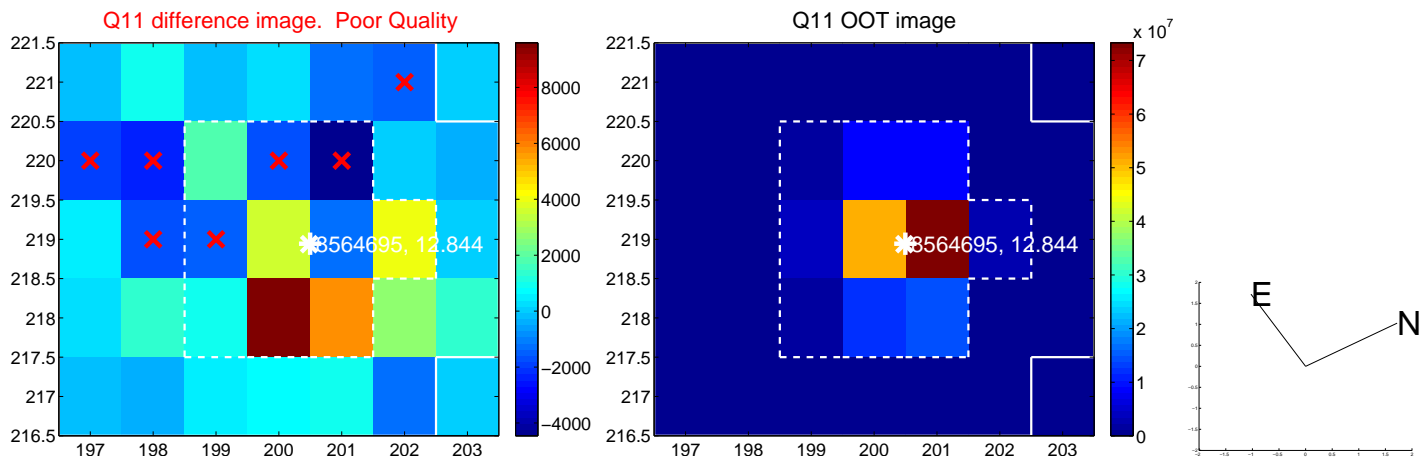
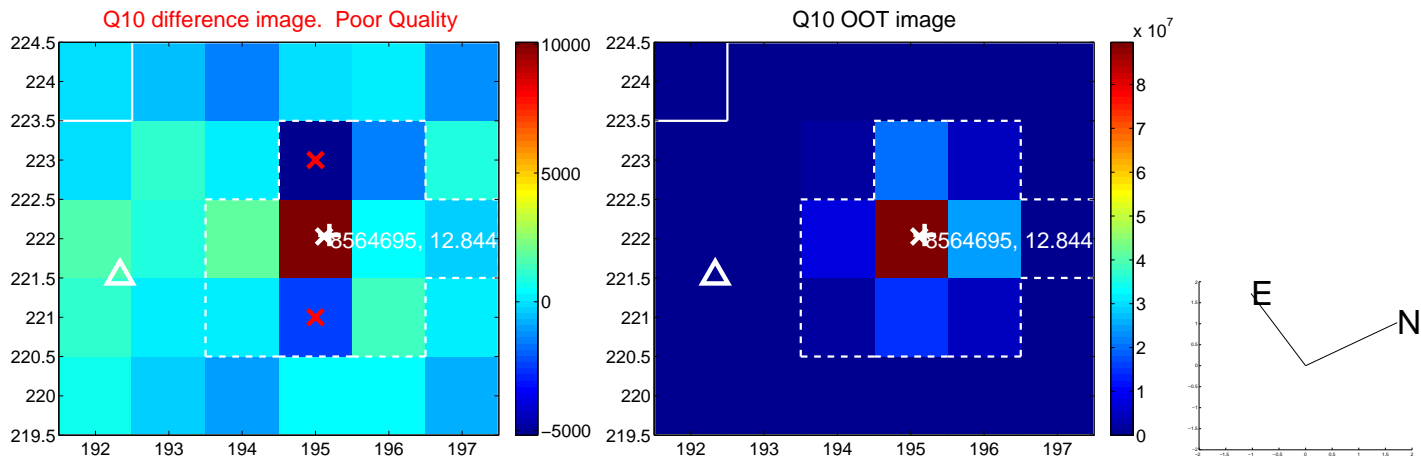
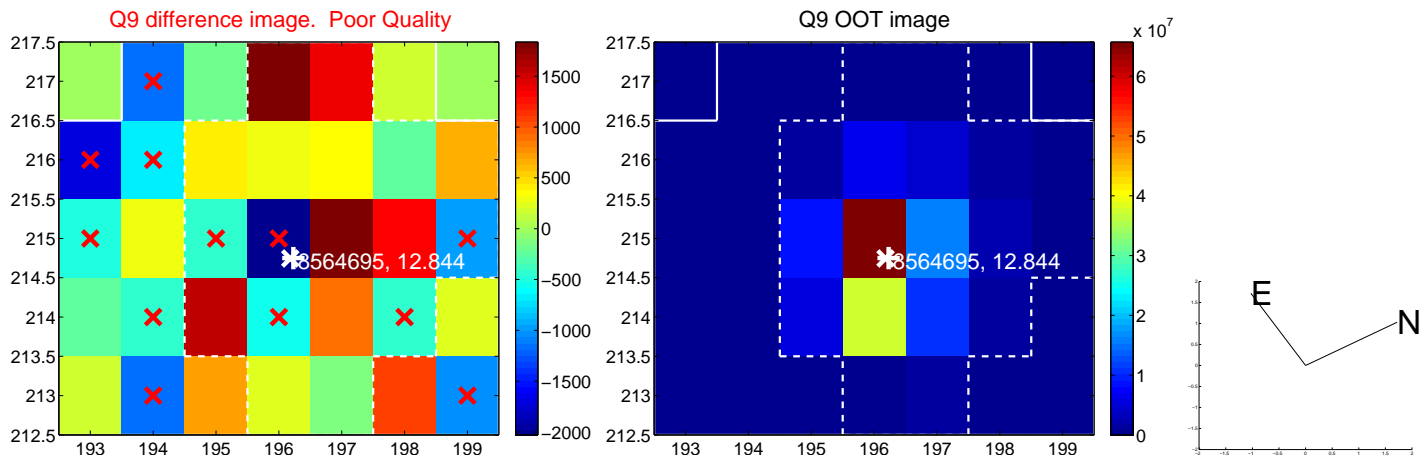
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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



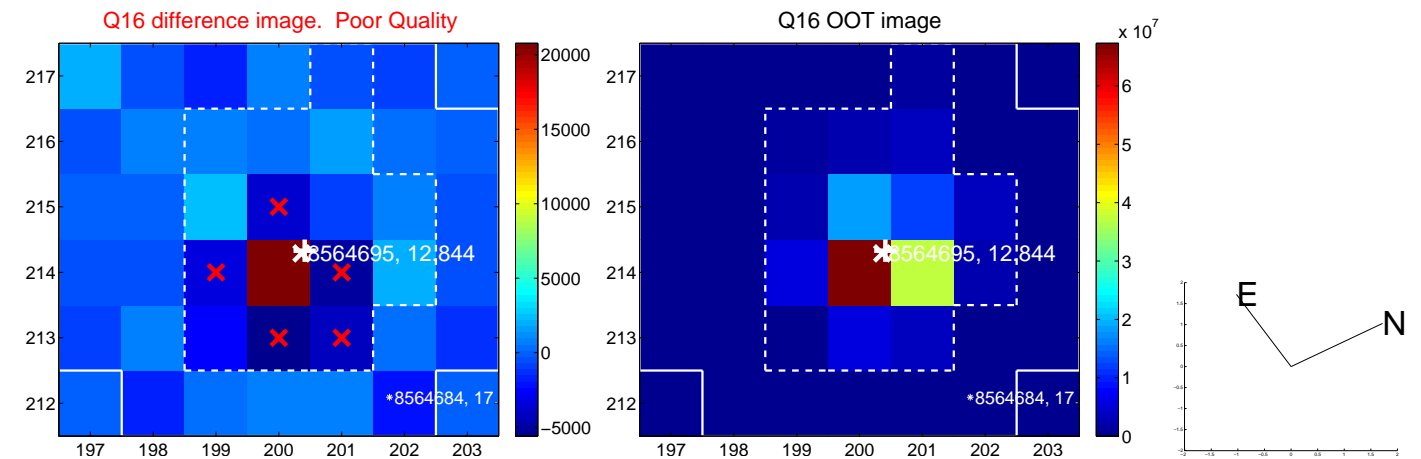
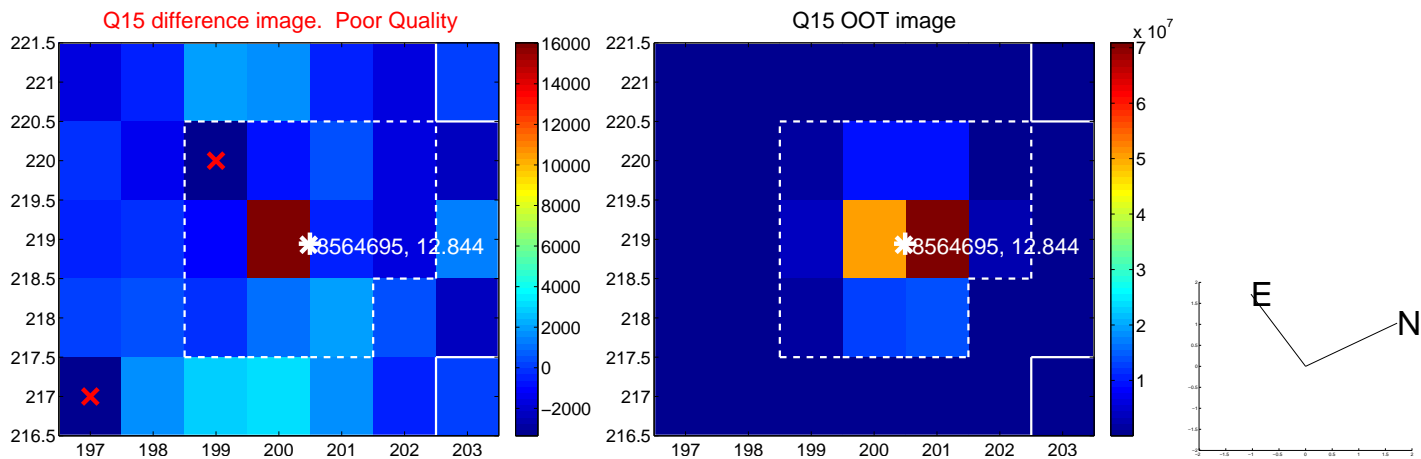
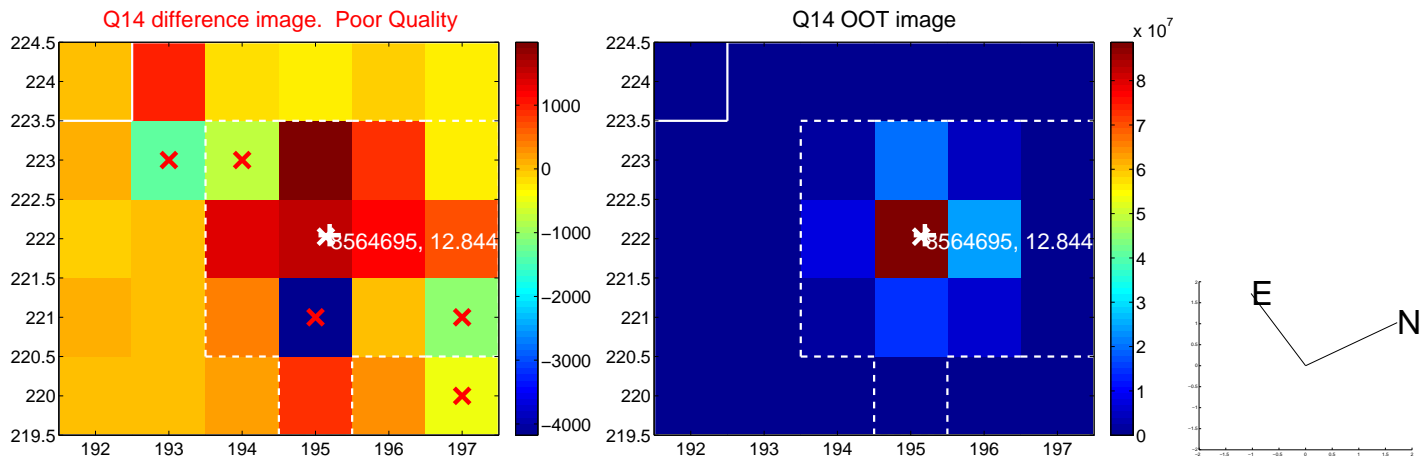
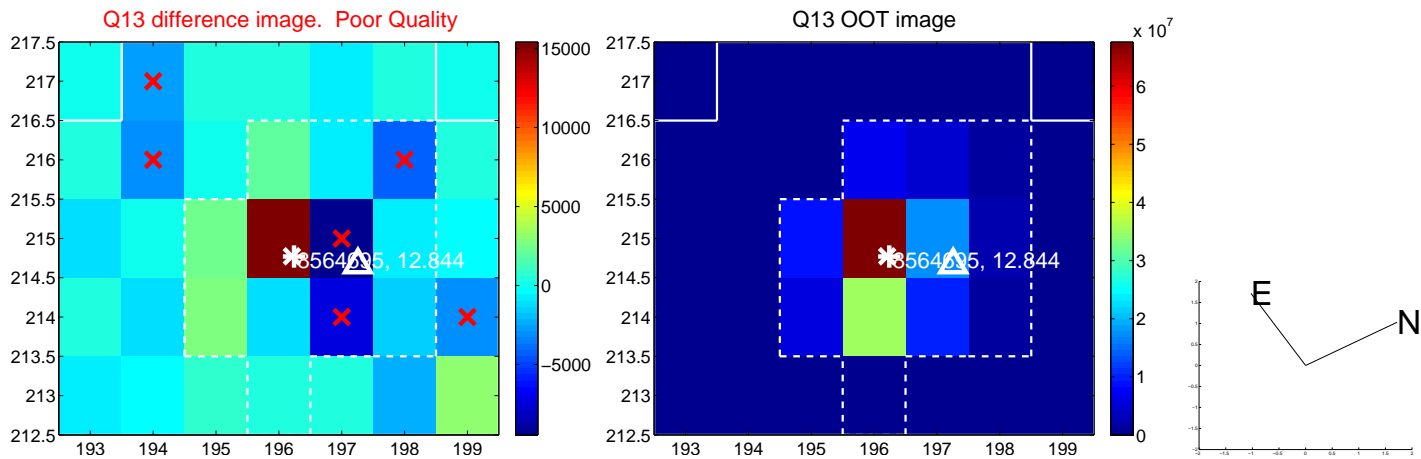


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

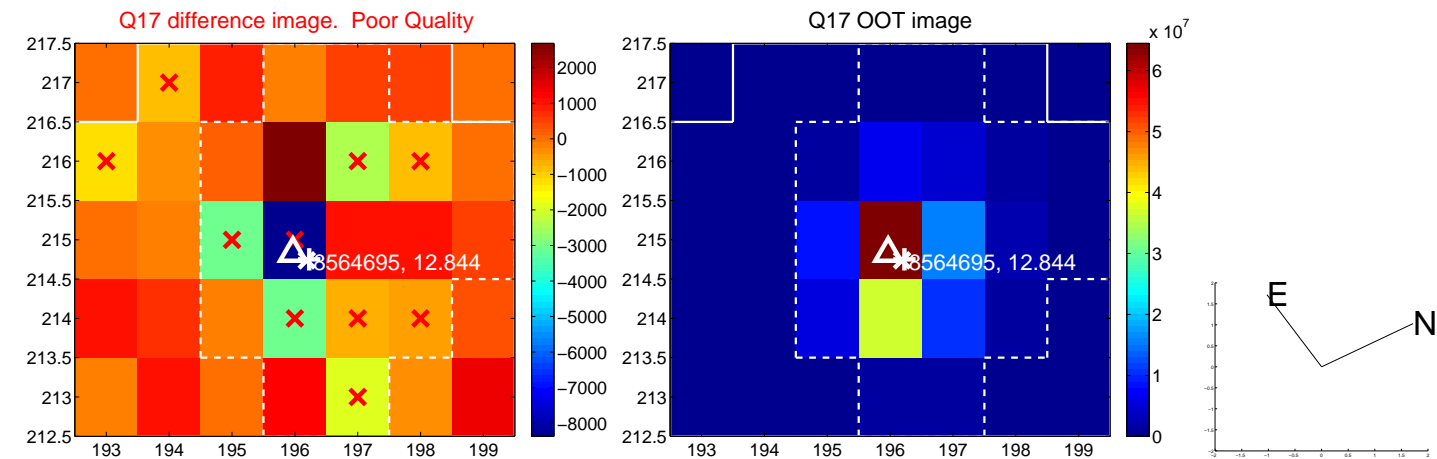




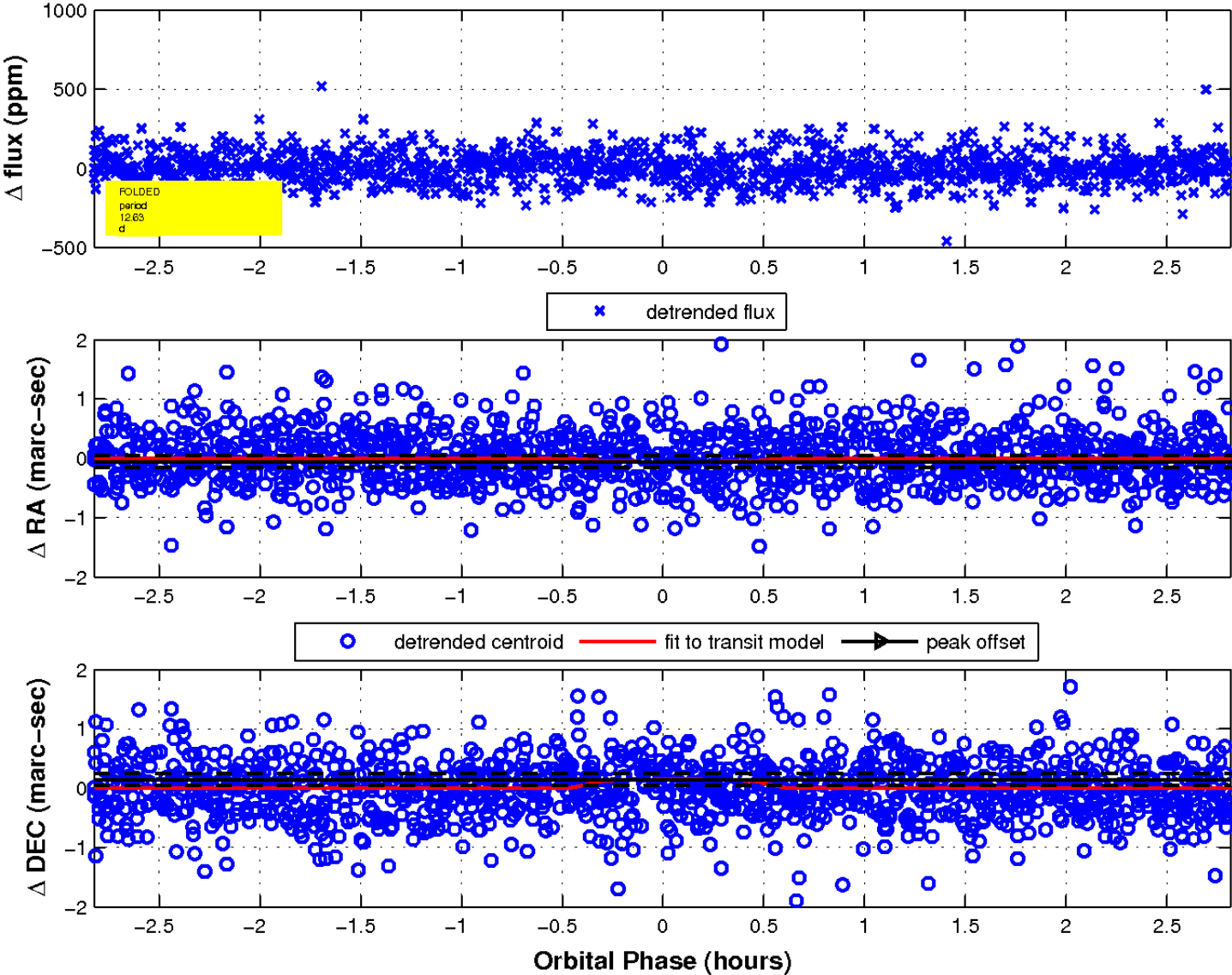
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

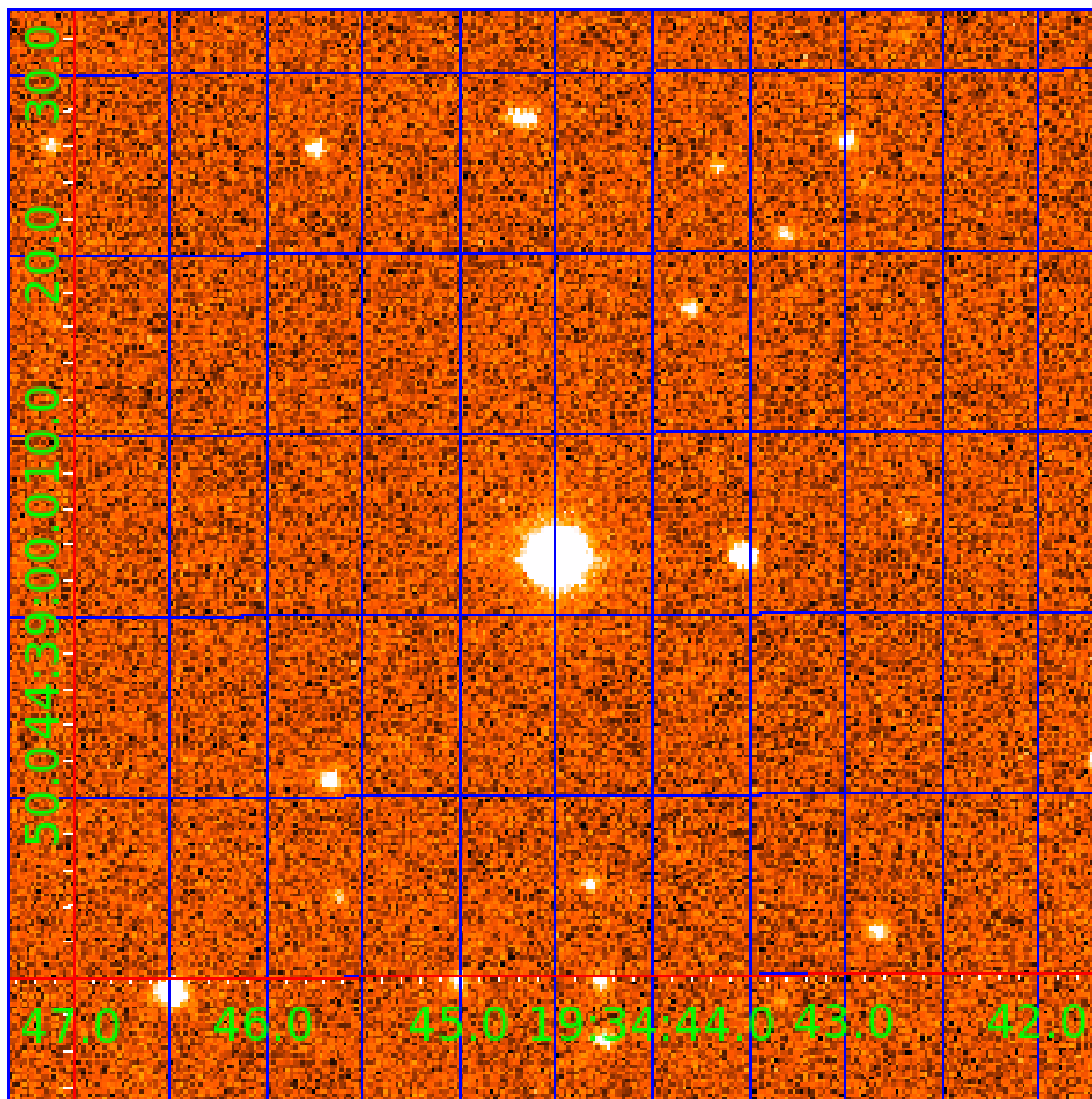


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



# KIC 008564695

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008564695-01	OBS	No	0.847817	131.700851	9.5	6.332	9.5	10.4	2.25	8050	0.73	41461.43
008564695-02	OBS	No	12.626151	137.658974	237.6	0.942	17.1	21.8	2.25	8050	3.62	1131.58
008564695-03	OBS	No	17.449512	143.247595	225.6	1.005	18.2	15.0	2.25	8050	3.45	735.08
008564695-04	OBS	No	7.664164	134.049843	14.7	11.850	12.6	4.8	2.25	8050	1.00	2201.71
008564695-05	OBS	No	8.043198	133.689095	207.0	1.095	14.8	14.6	2.25	8050	3.37	2064.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008564695-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_MEAS
008564695-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
008564695-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008564695-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008564695-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

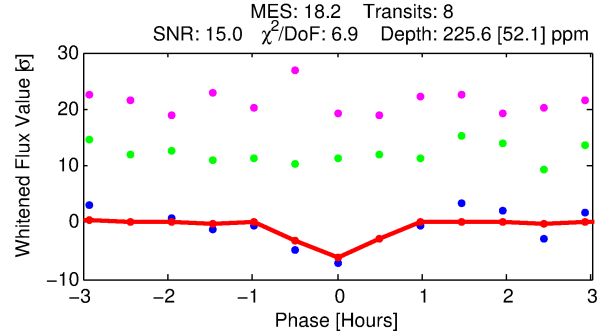
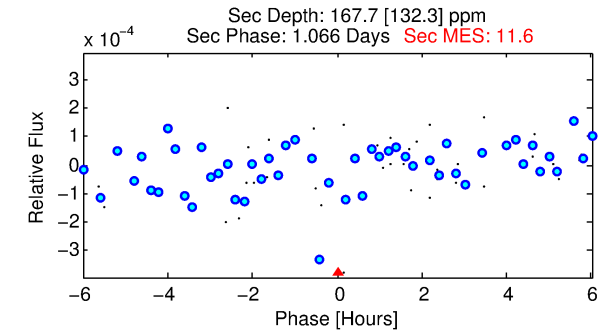
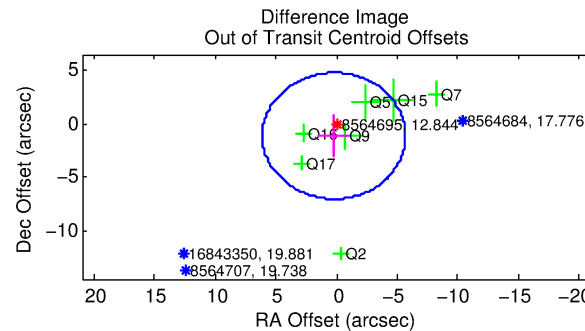
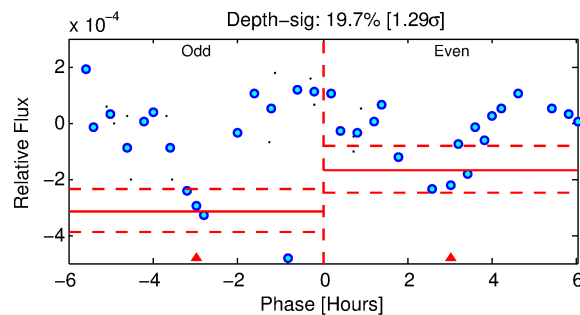
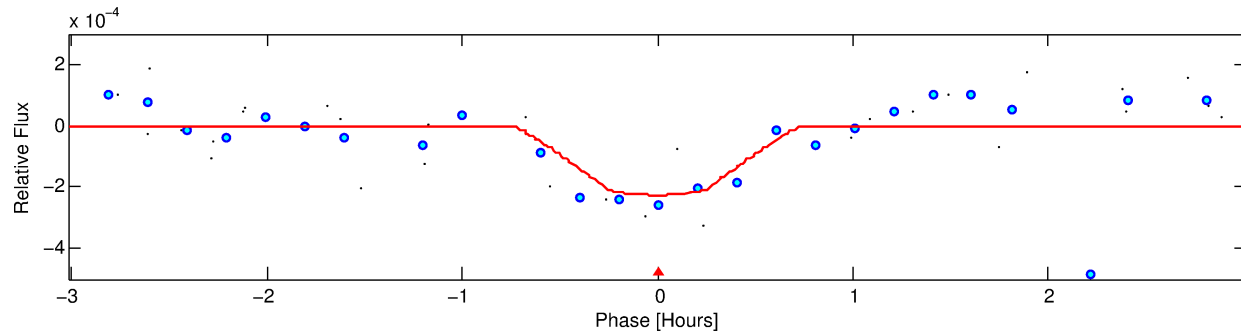
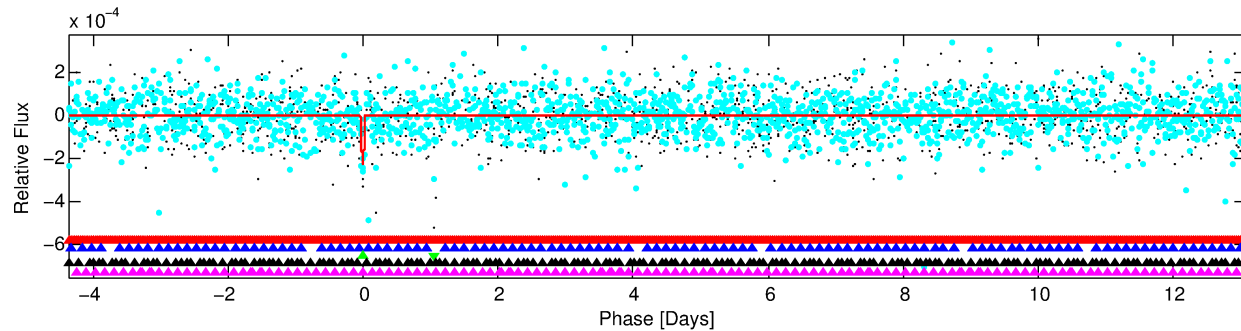
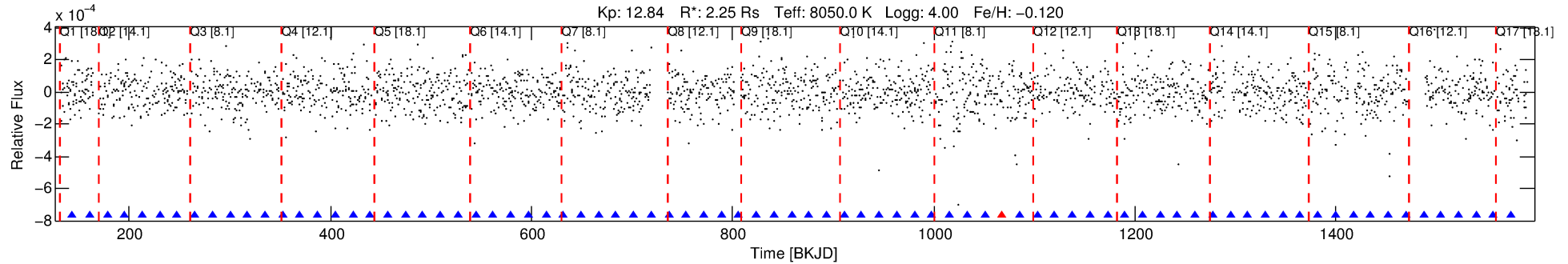
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008564695-03

No Significant Match Found

# DV One-Page Summary

KIC: 8564695 Candidate: 3 of 5 Period: 17.450 d



## DV Fit Results:

Period = 17.44951 [0.00028] d  
Epoch = 143.2476 [0.0143] BKJD  
Rp/R\* = 0.0140 [0.1422]  
a/R\* = 134.45 [7710.23]  
b = 0.00 [35185.93]  
Seff = 735.08 [313.38]  
Teq = 1328 [142] K  
Rp = 3.45 [35.00] Re  
a = 0.1613 [0.0418] AU  
Ag = 202.02 [4104.62] [0.05 $\sigma$ ]  
Teffp = 7739 [39306] K [0.16 $\sigma$ ]

## DV Diagnostic Results:

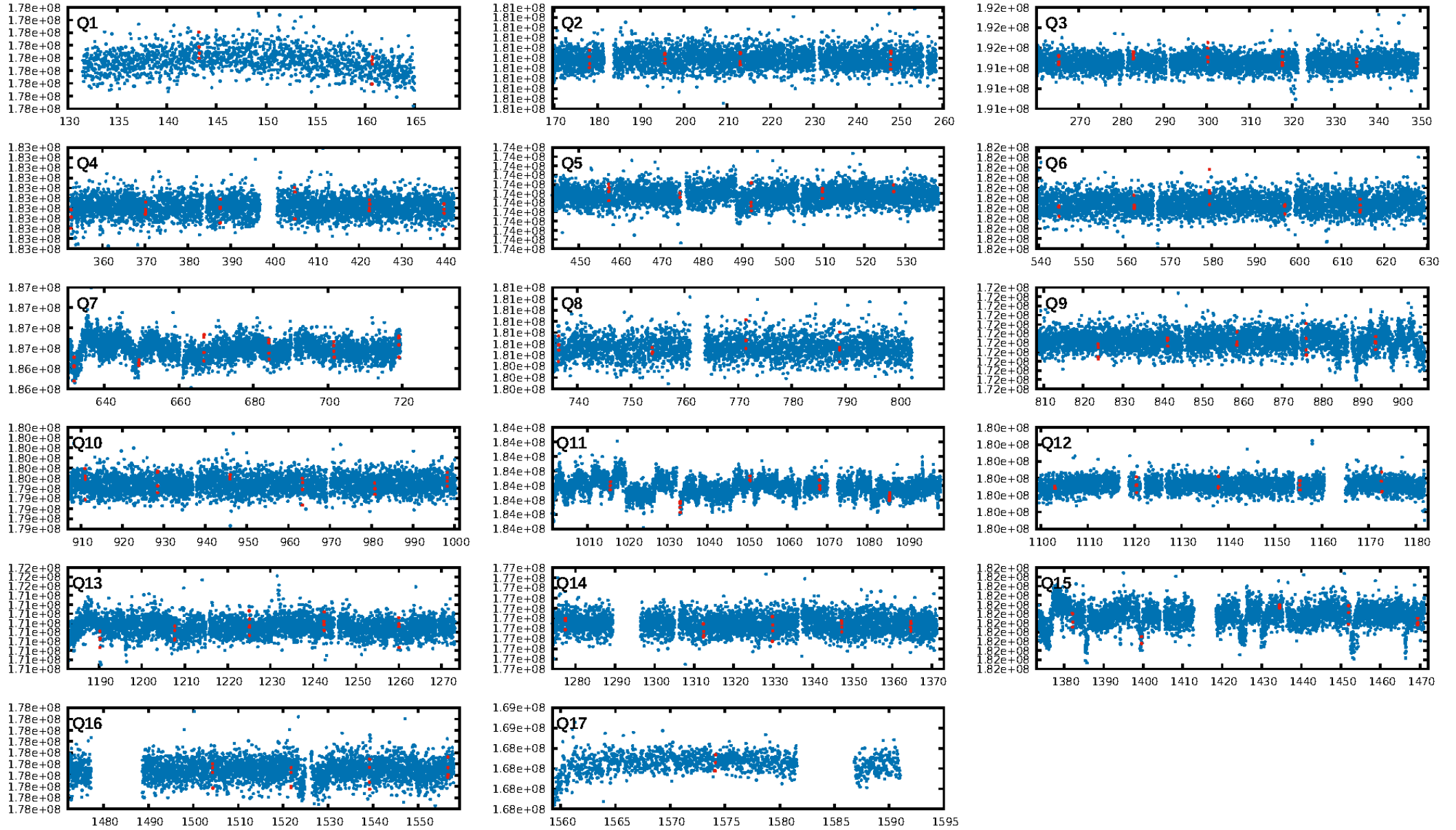
ShortPeriod-sig: 100.0% [84.00 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 0.5%  
Bootstrap-pfa: 3.18e-16  
RollingBand-fgt: 0.88 [7/8]  
GhostDiagnostic-chr: 1.228  
Centroid-sig: 7.5%  
Centroid-so: 0.821 arcsec [1.65 $\sigma$ ]  
OotOffset-rm: 1.144 arcsec [0.58 $\sigma$ ]  
OotOffset-st: 1/2/1/3 [7]  
KicOffset-rm: 0.954 arcsec [0.47 $\sigma$ ]  
KicOffset-st: 1/2/1/3 [7]  
DiffImageQuality-fgm: 0.00 [0/7]  
DiffImageOverlap-fno: 0.59 [10/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:41:53 Z

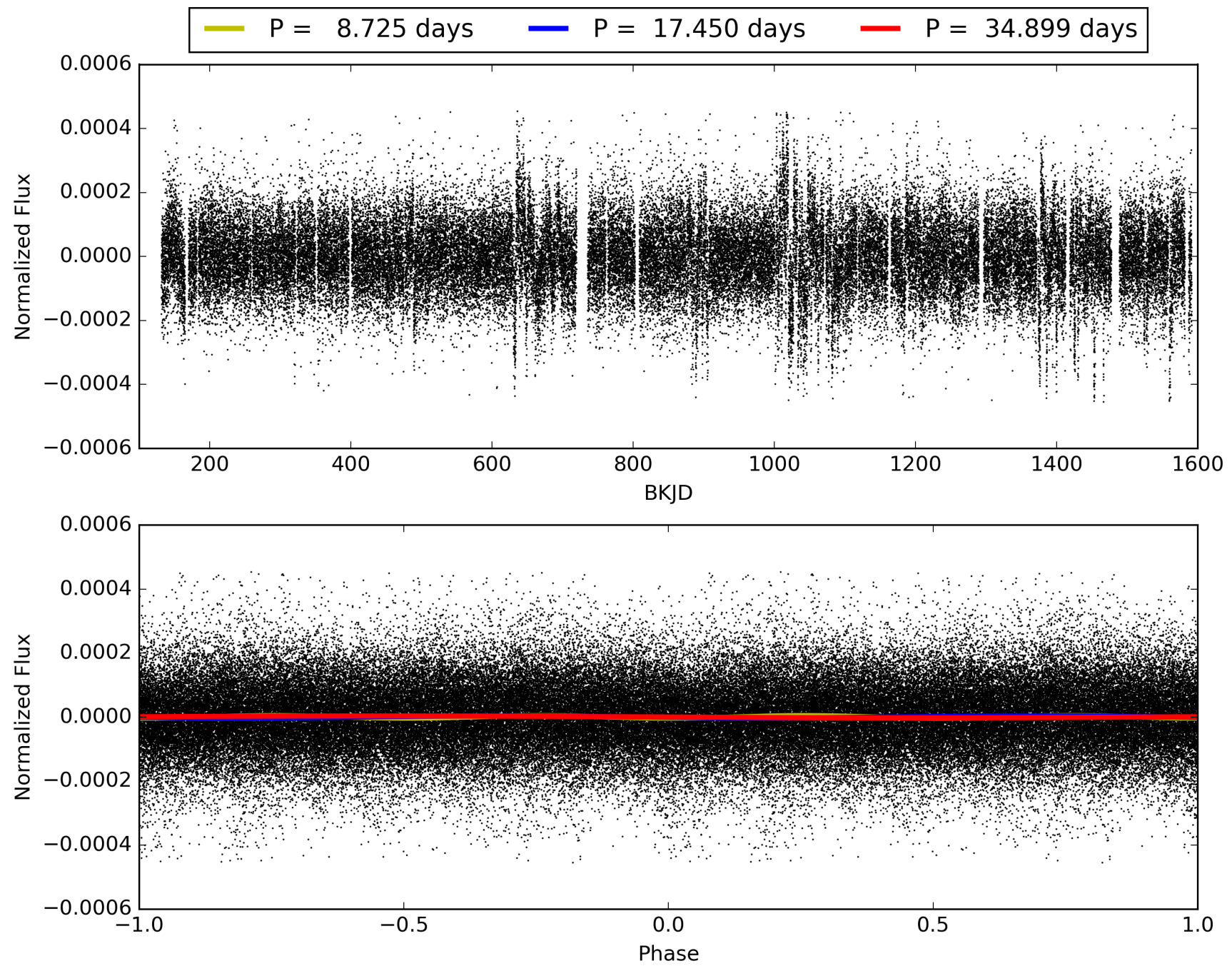
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 008564695-03, PDC Light Curves

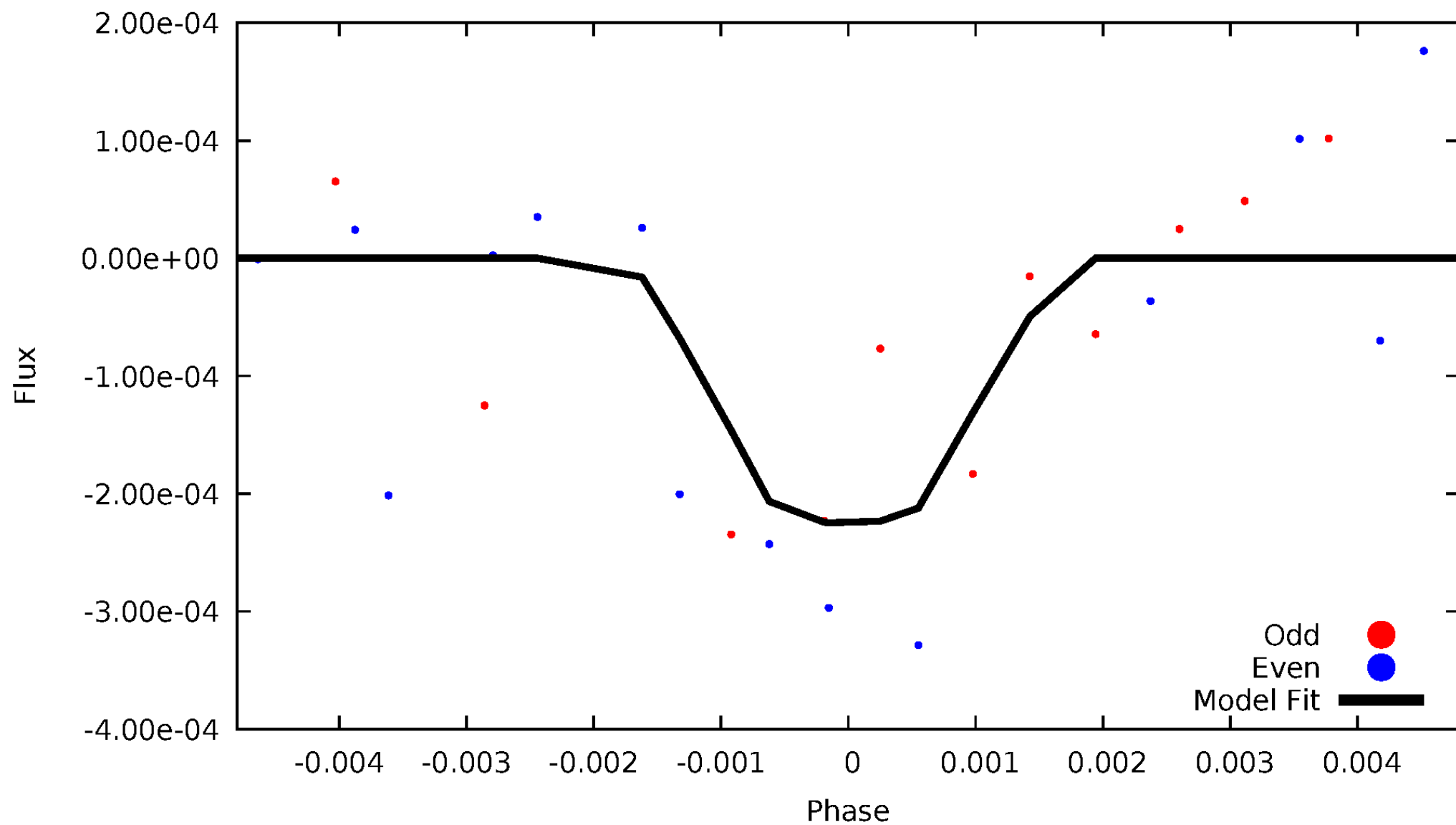


TCE 008564695-03



# DV Odd/Even

TCE 008564695-03



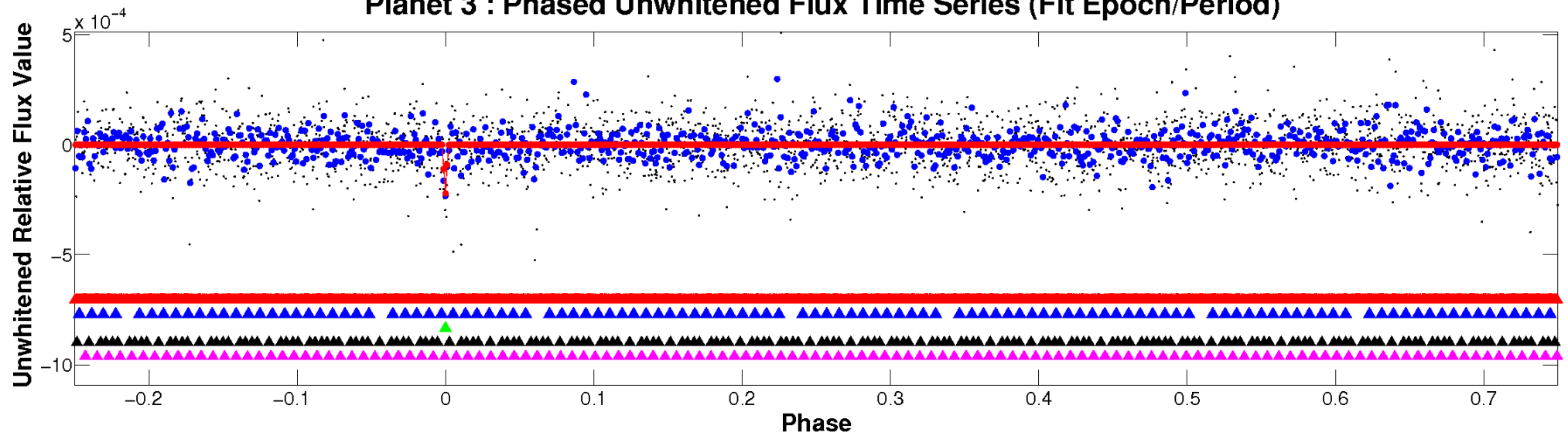


ALT Odd/Even

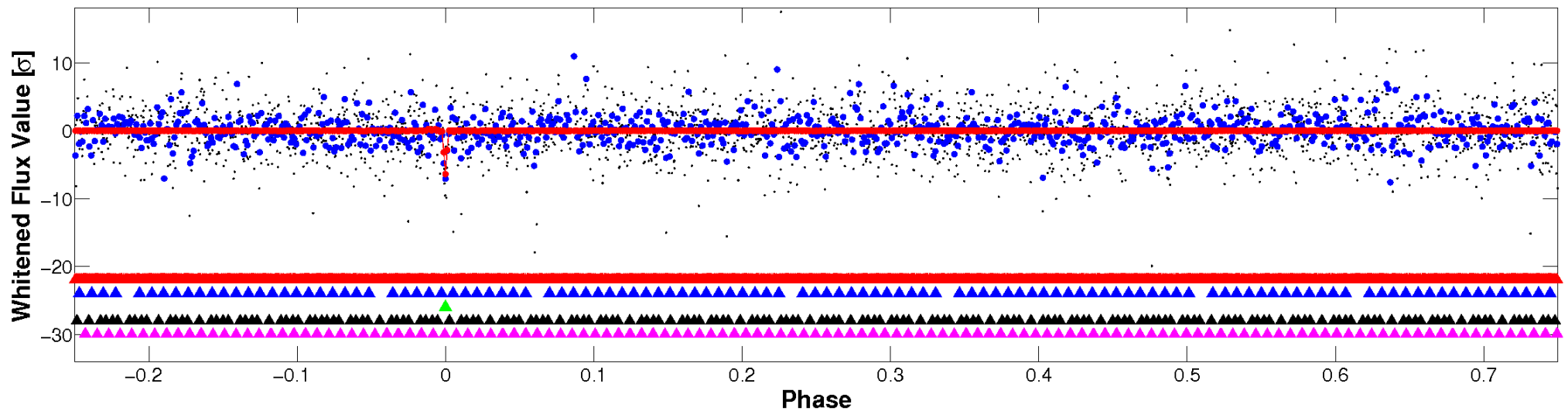
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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



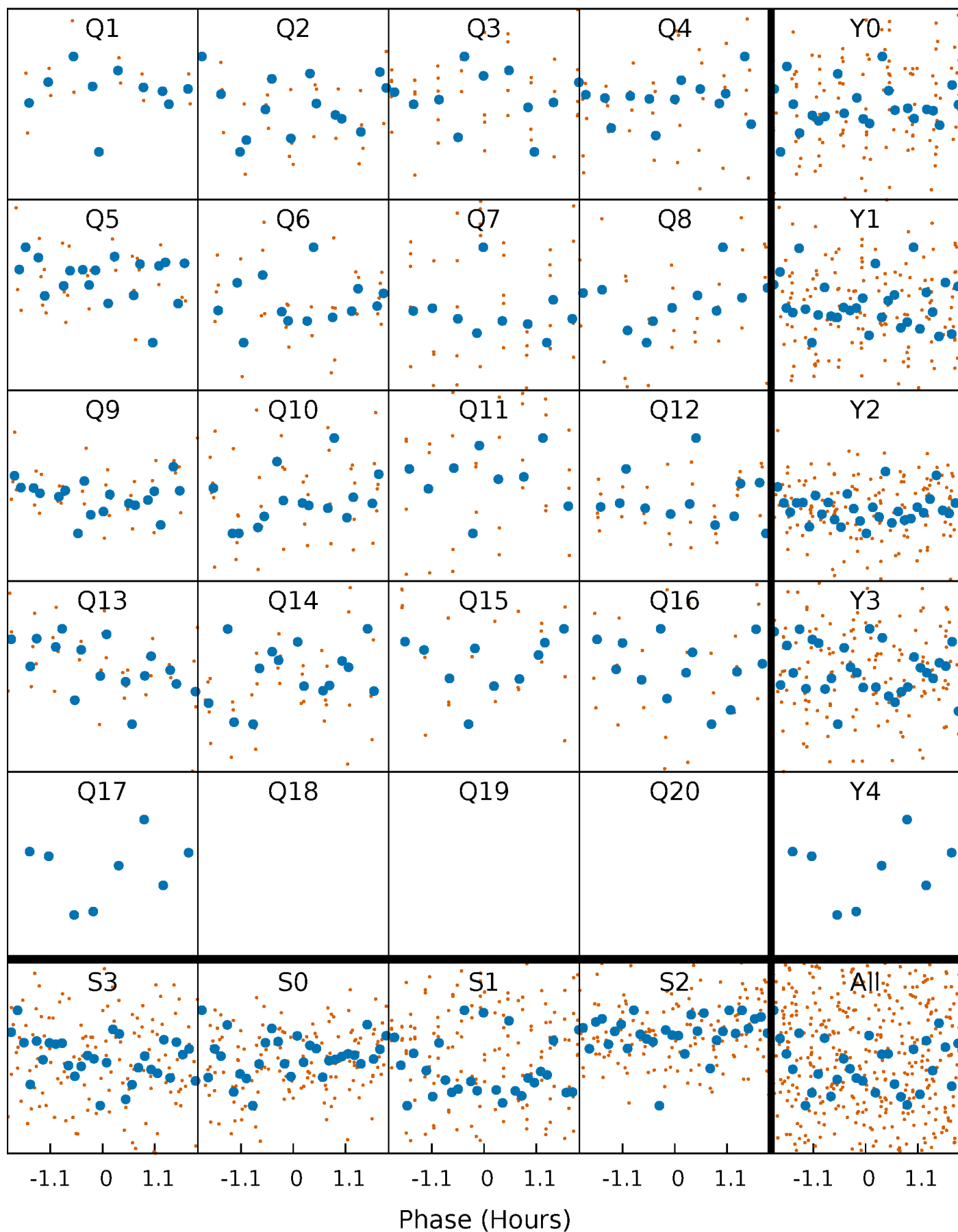
Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





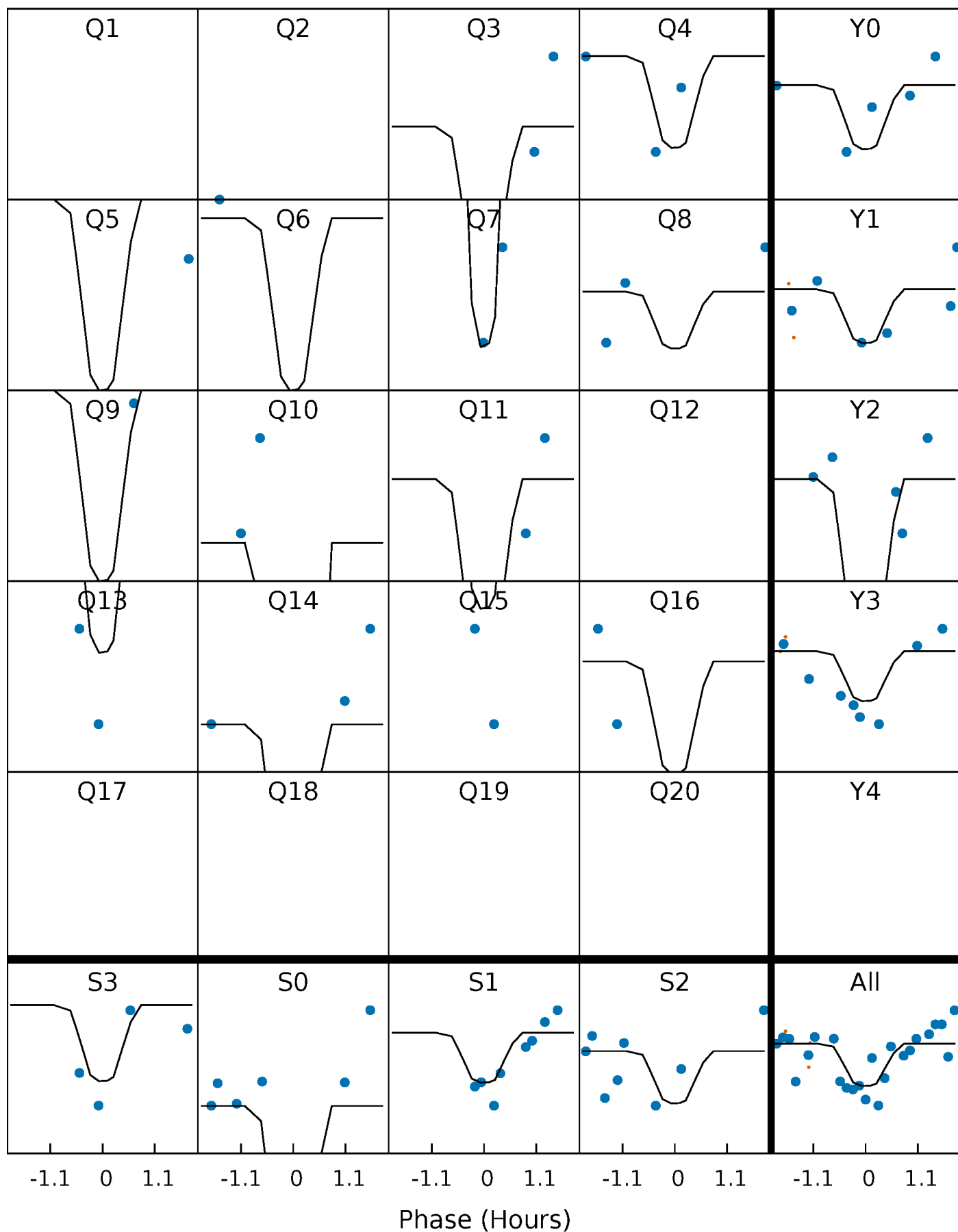
# PDC Quarter-Phased Transit Curves

TCE 008564695-03   P= 17.449512 Days    $T_0=143.247595$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008564695-03 P= 17.449512 Days  $T_0=143.247595$  (BKJD)

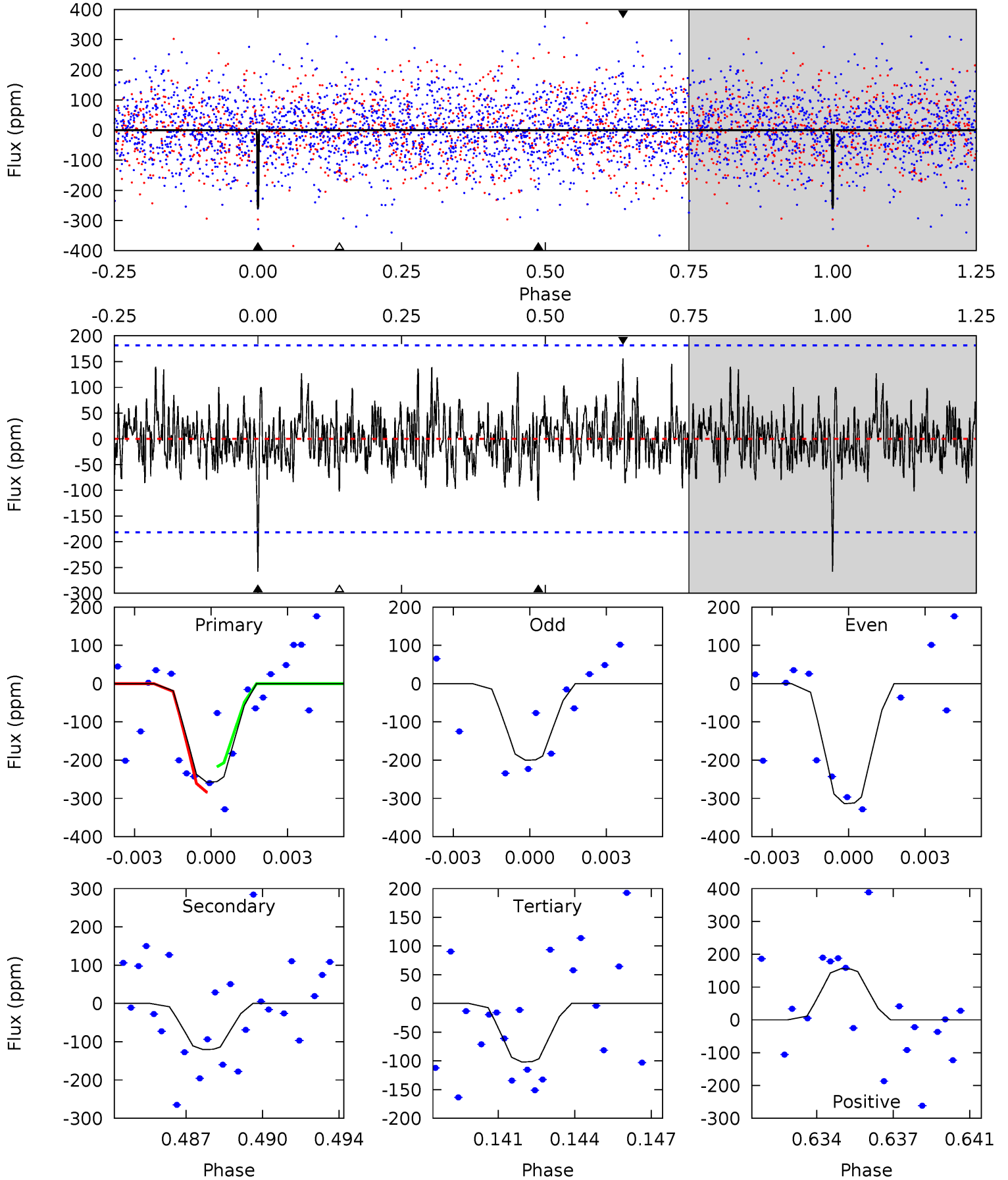


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008564695-03, P = 17.449512 Days, E = 125.798083 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
7.44	3.48	2.94	4.49	5.24	2.94	1.19	4.49	2.95	0.54	-1.01	1.57	0.94	0.38	0.96



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008564695

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8050^{+225}_{-338}$	$3.996^{+0.221}_{-0.136}$	$-0.120^{+0.200}_{-0.350}$	$2.254^{+0.442}_{-0.663}$	$1.835^{+0.119}_{-0.356}$	$0.226^{+0.277}_{-0.085}$
	+3%/-4%	+6%/-3%	+167%/-292%	+20%/-29%	+6%/-19%	+123%/-38%
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 008564695-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-121 \pm 35$	$24.88^{+26.82}_{-18.31}$	$1838^{+122}_{-142}$	$3060^{+1797}_{-732}$	$2.545^{+33.148}_{-1.978}$
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

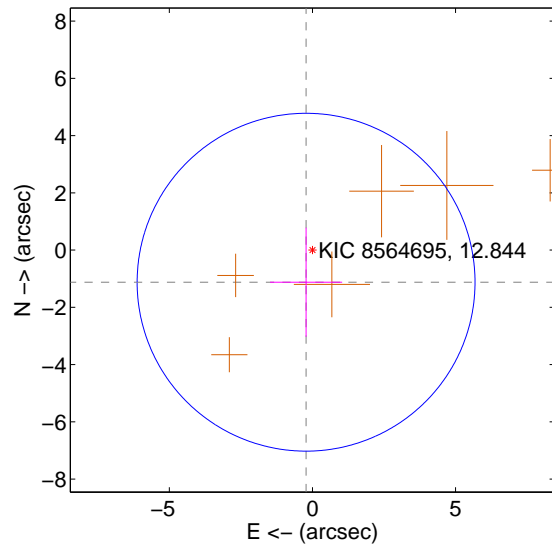
Supplemental centroid analysis for 008564695-03. Kepler magnitude: 12.84. Transit SNR 15.03

There are 0 quarters with good PRF difference image offsets

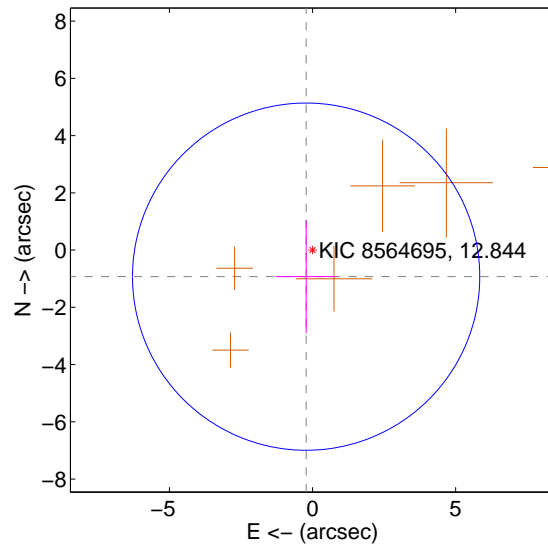
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.144 \pm 1.967$	0.58	$0.222 \pm 1.259$	$-1.122 \pm 1.905$
PRF-fit source offset from KIC position	$0.954 \pm 2.021$	0.47	$0.223 \pm 1.073$	$-0.927 \pm 1.977$
photometric centroid source offset	$0.82 \pm 0.50$	1.65	$0.73 \pm 0.50$	$0.38 \pm 0.49$

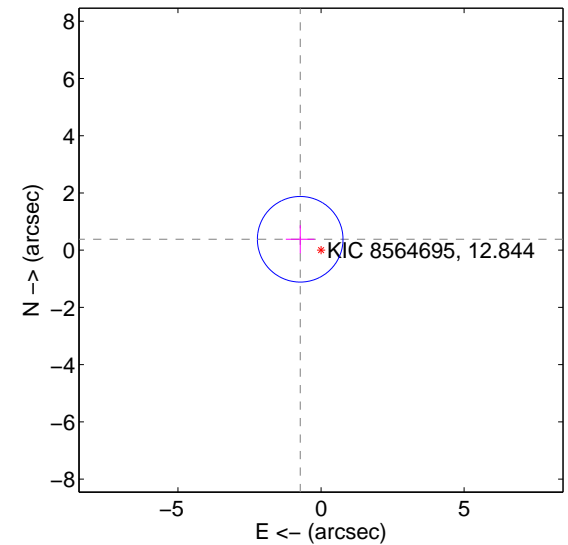
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

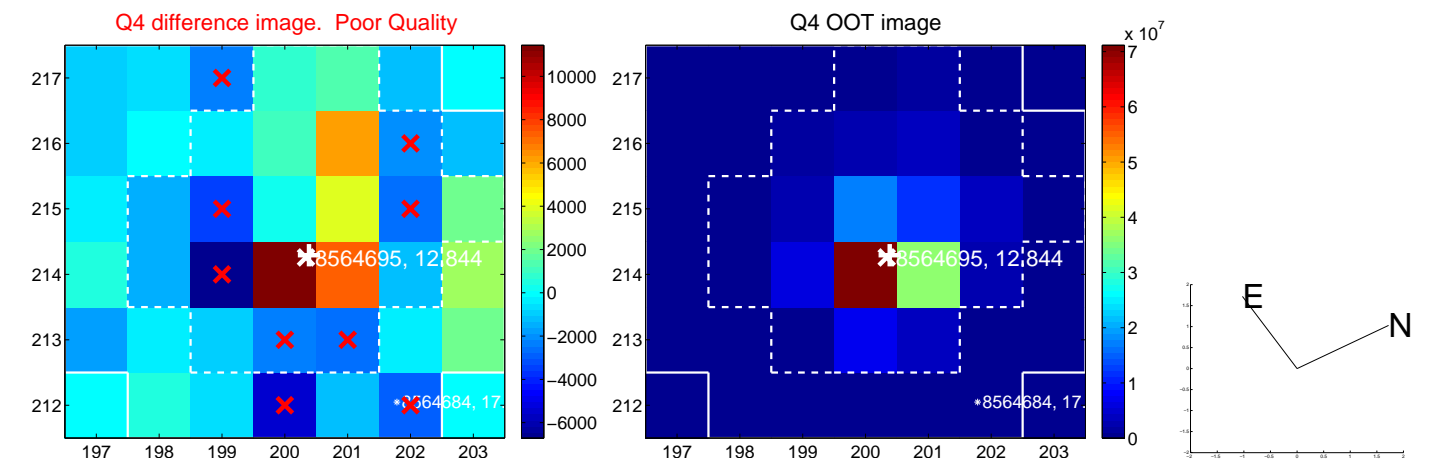
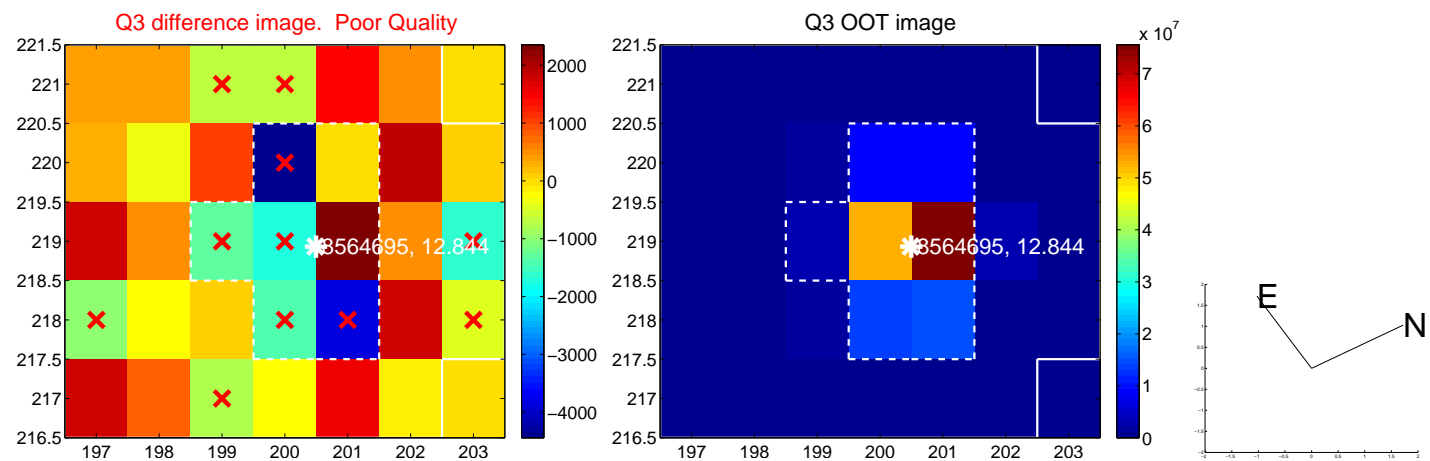
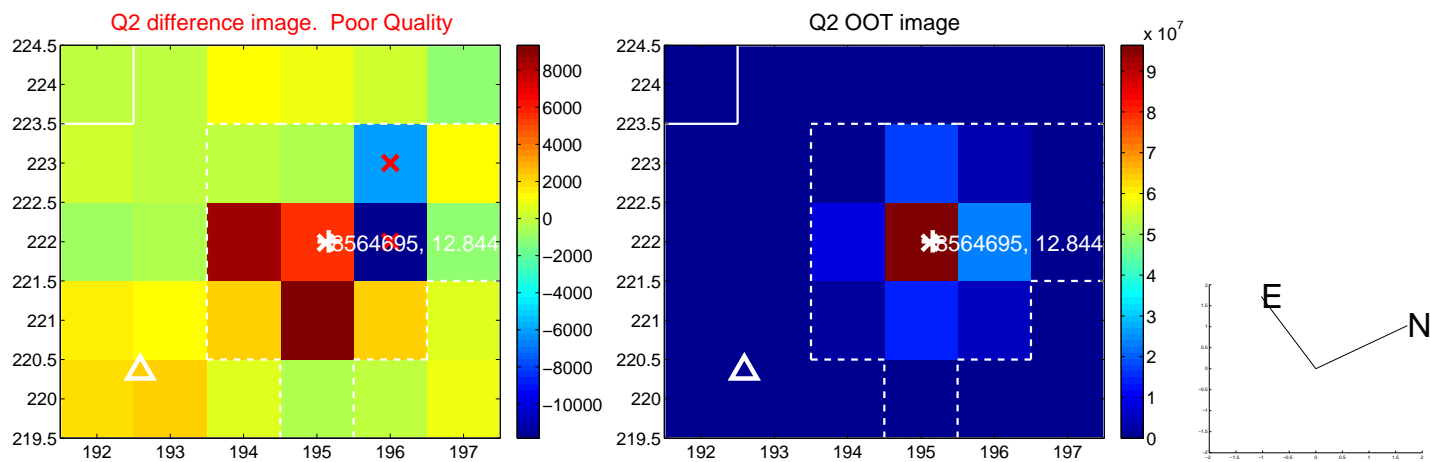
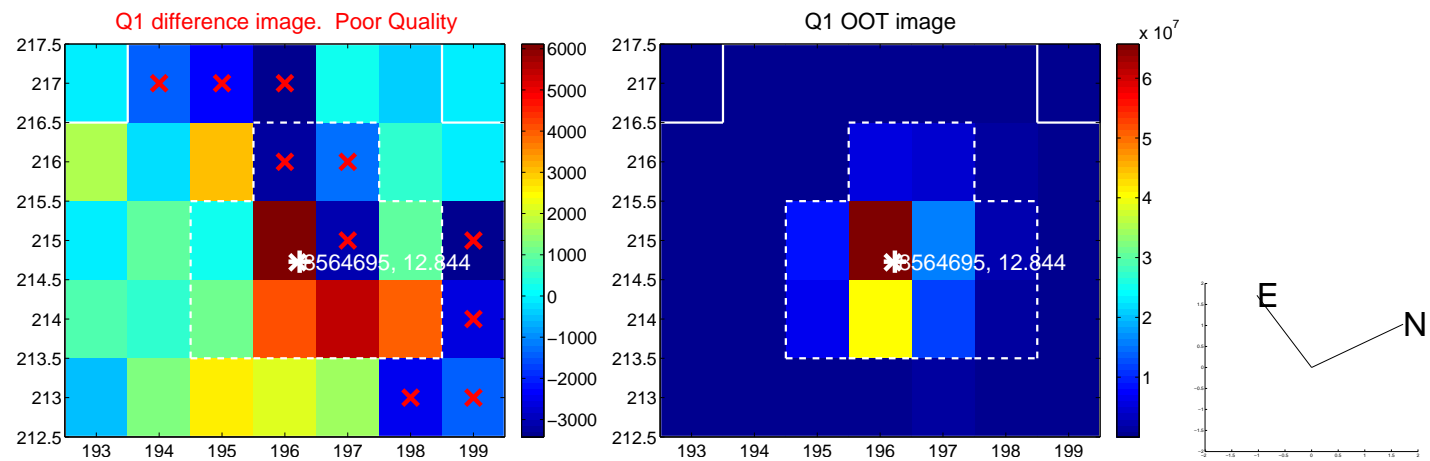


offset from photometric centroids

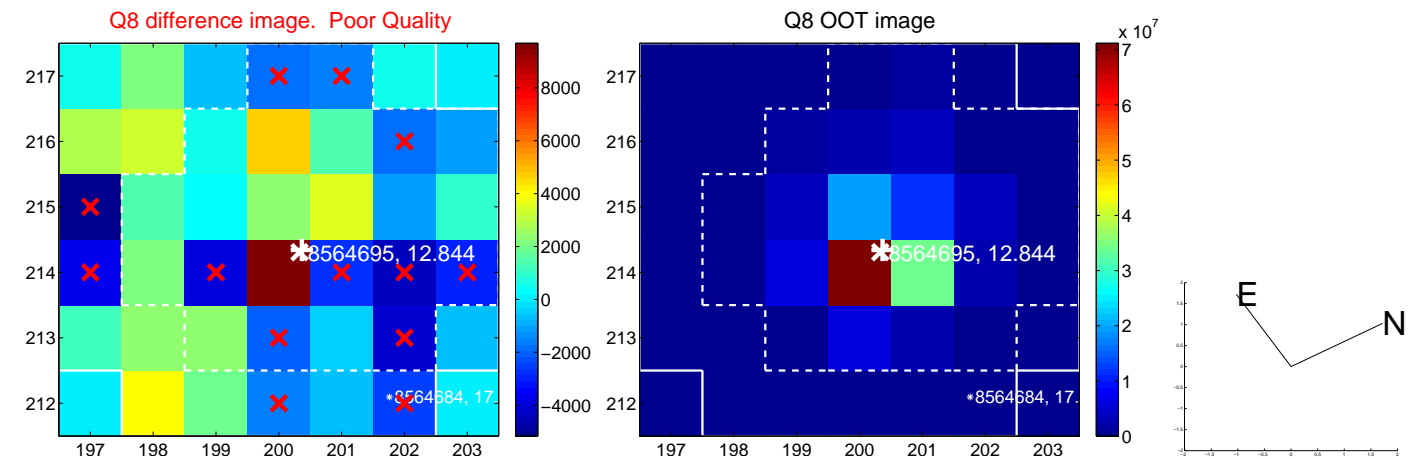
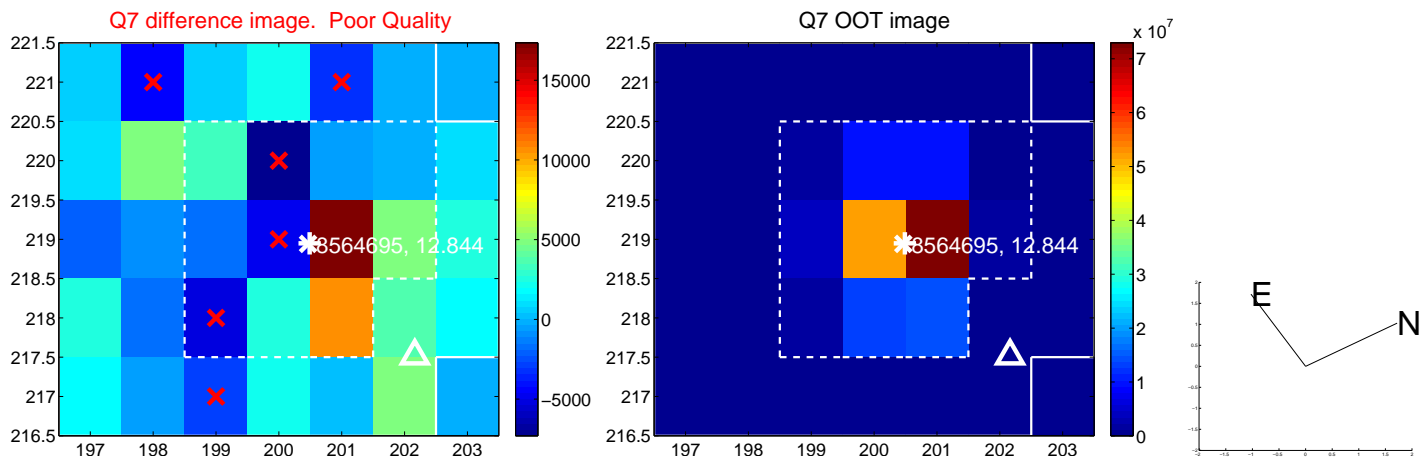
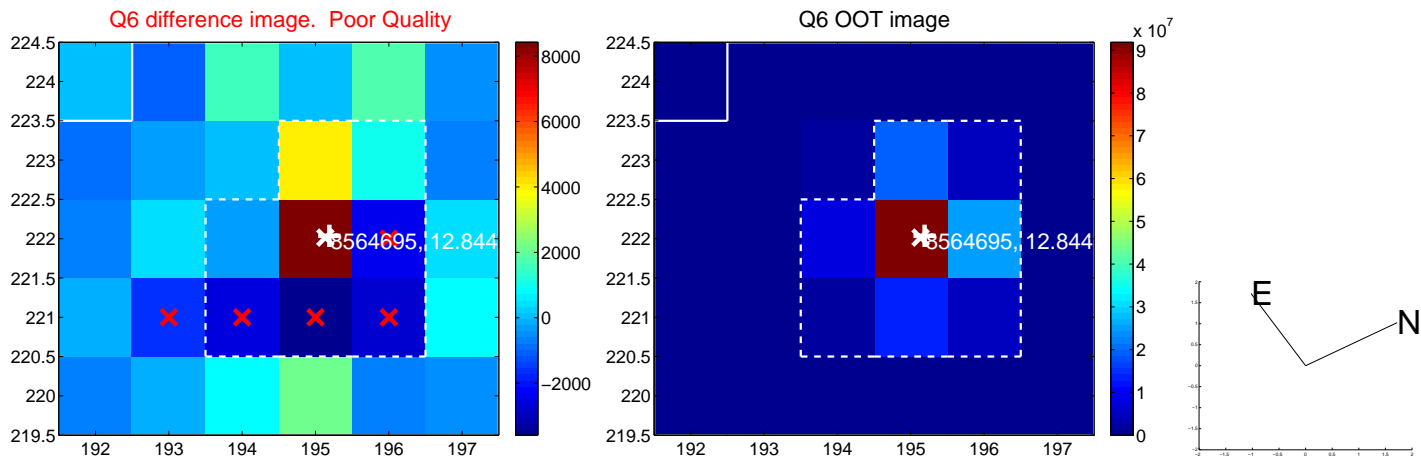
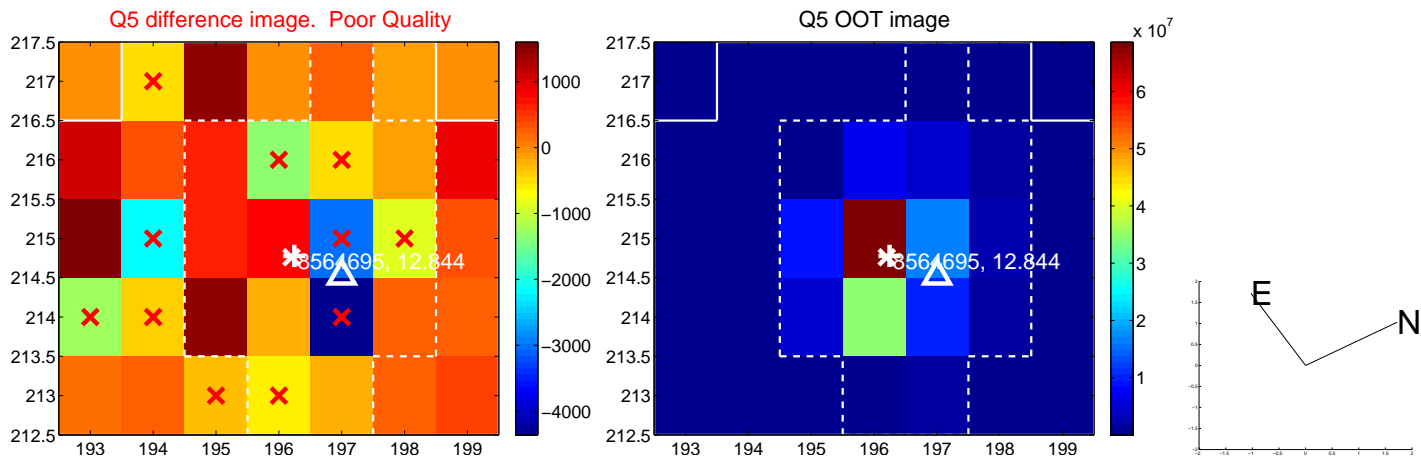


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

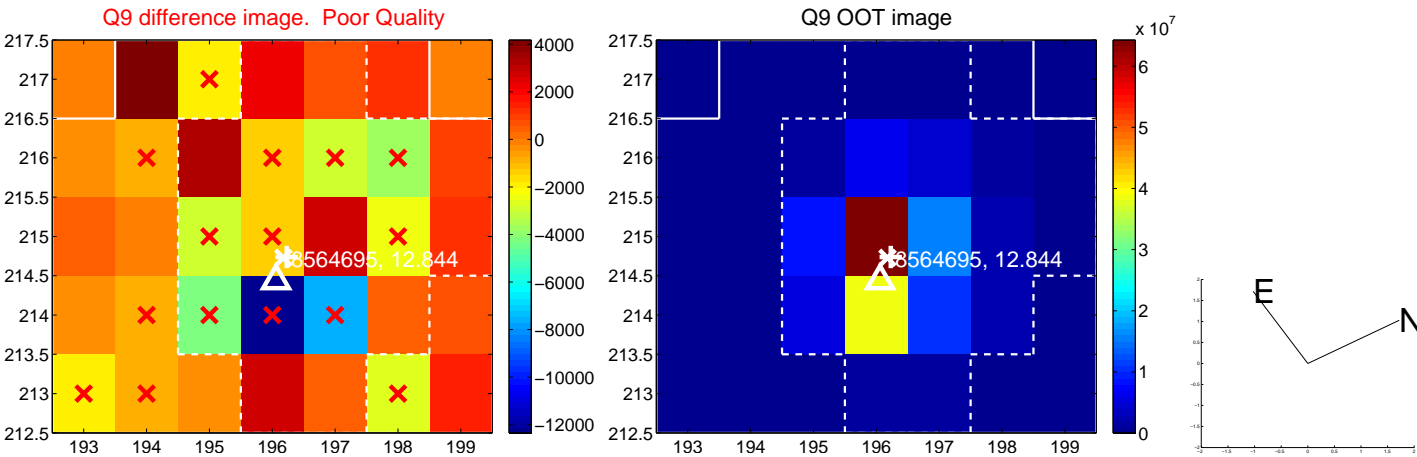
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



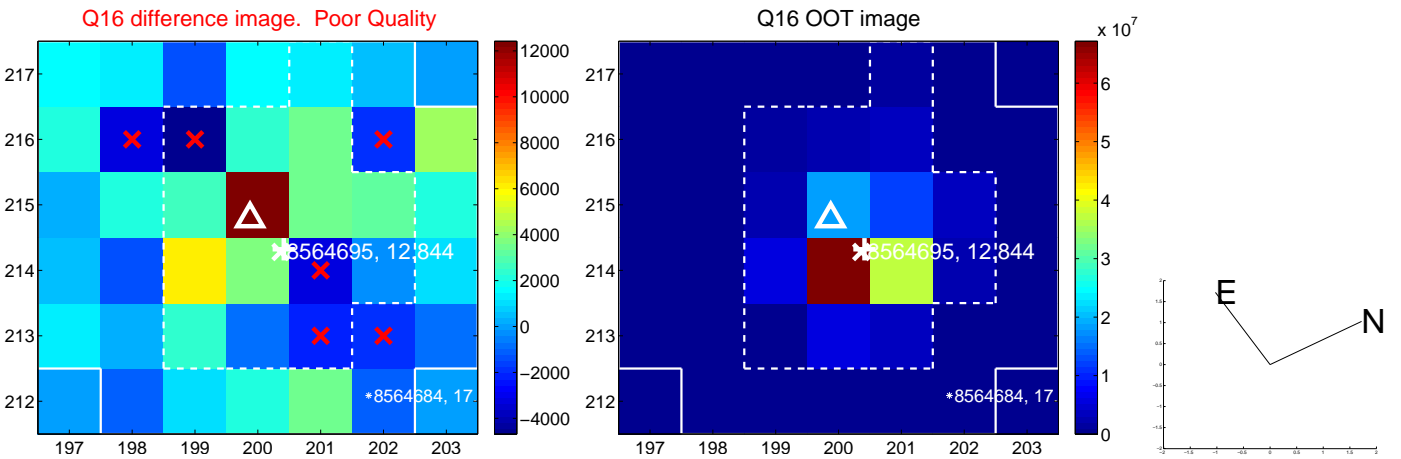
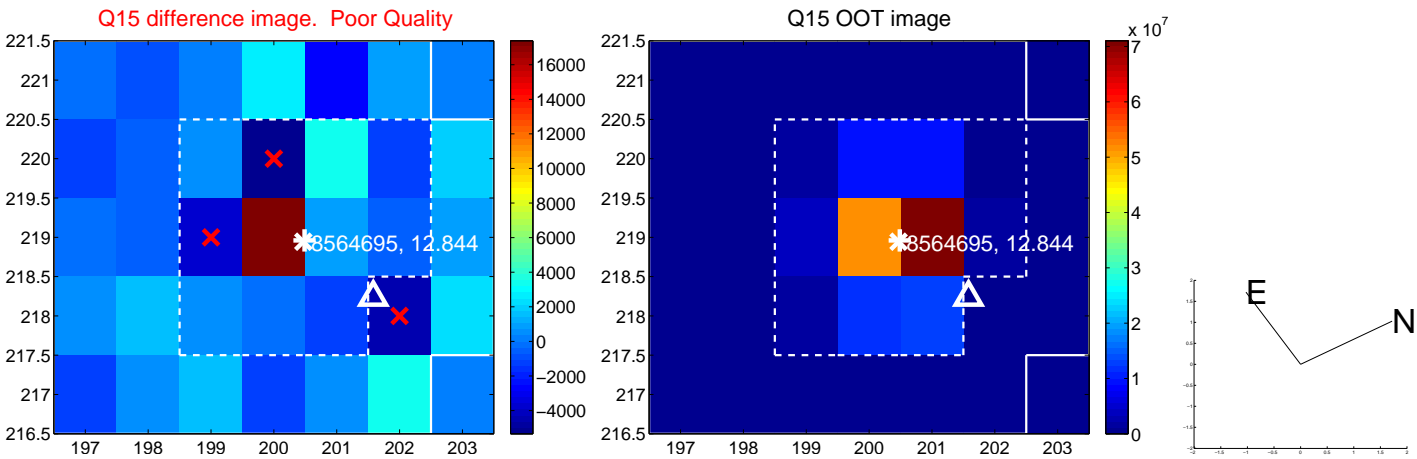
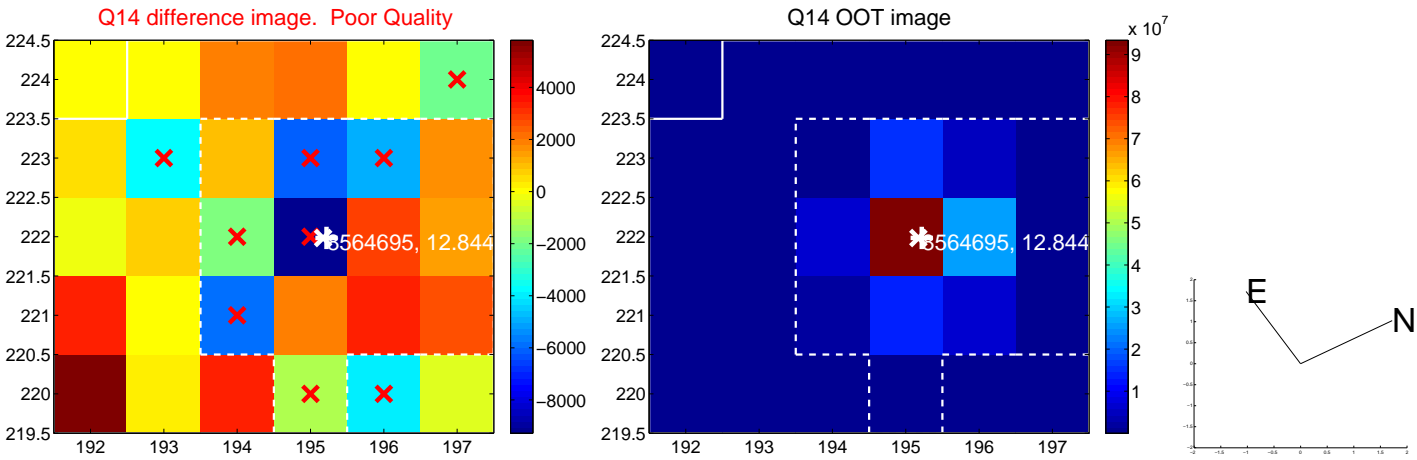
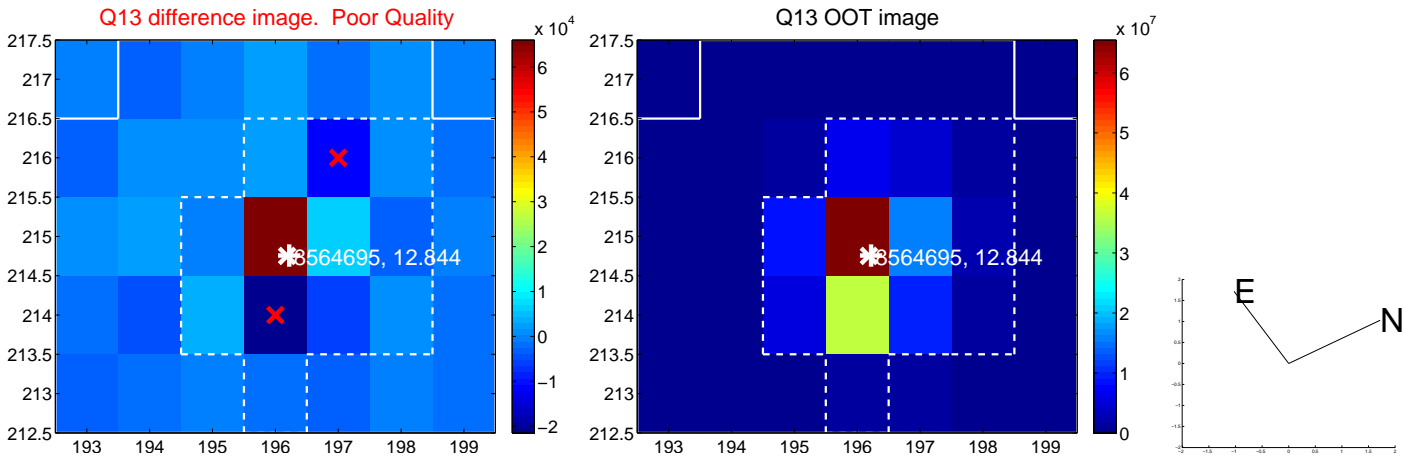
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



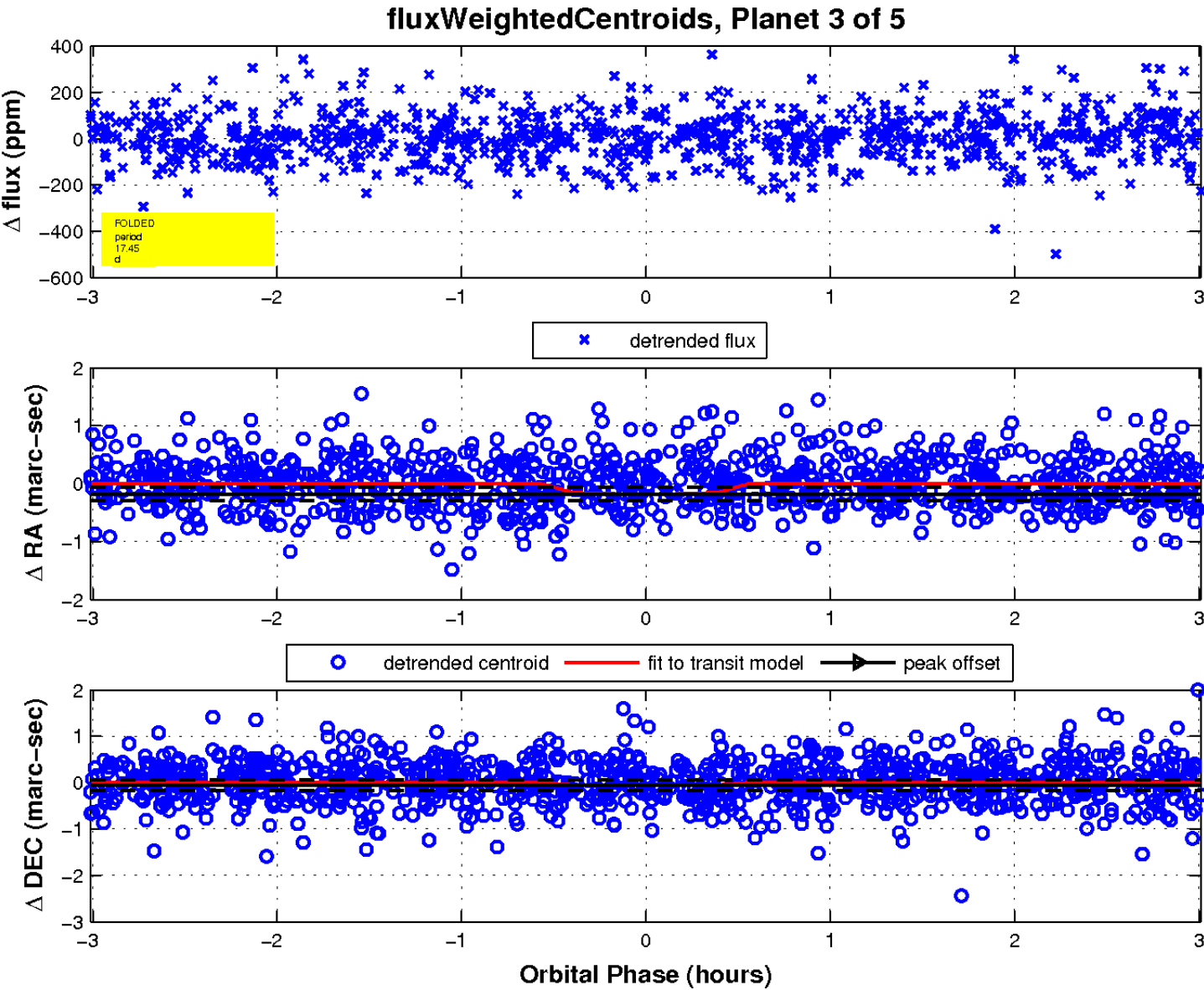
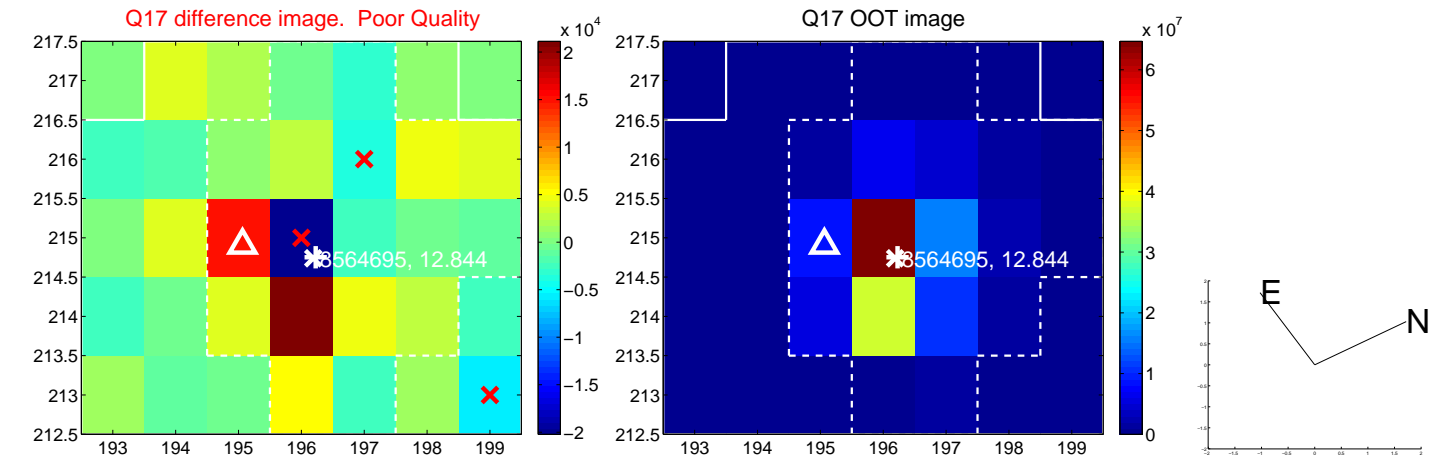
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

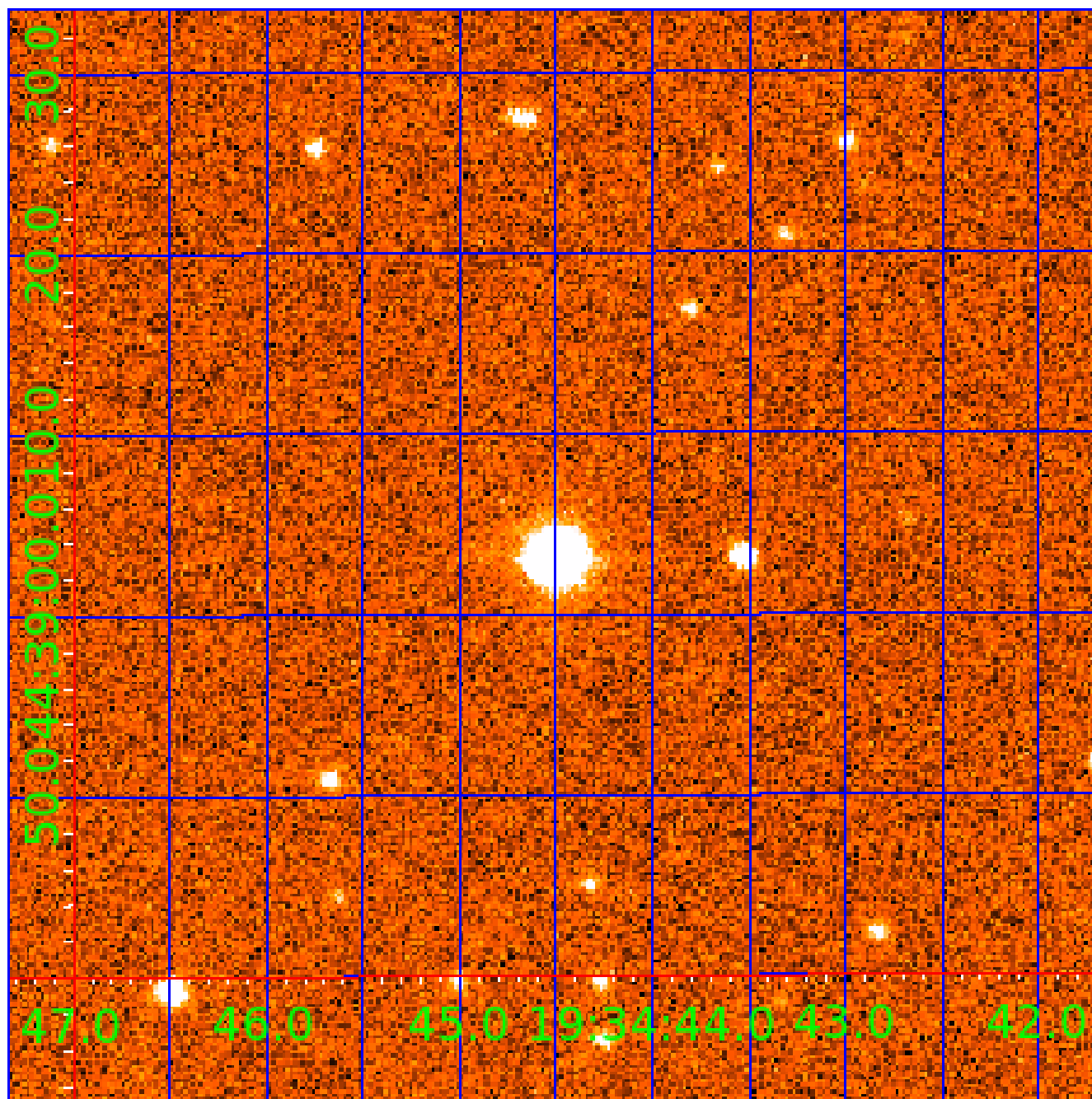


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008564695

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008564695-01	OBS	No	0.847817	131.700851	9.5	6.332	9.5	10.4	2.25	8050	0.73	41461.43
008564695-02	OBS	No	12.626151	137.658974	237.6	0.942	17.1	21.8	2.25	8050	3.62	1131.58
008564695-03	OBS	No	17.449512	143.247595	225.6	1.005	18.2	15.0	2.25	8050	3.45	735.08
008564695-04	OBS	No	7.664164	134.049843	14.7	11.850	12.6	4.8	2.25	8050	1.00	2201.71
008564695-05	OBS	No	8.043198	133.689095	207.0	1.095	14.8	14.6	2.25	8050	3.37	2064.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008564695-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_MEAS
008564695-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
008564695-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008564695-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008564695-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

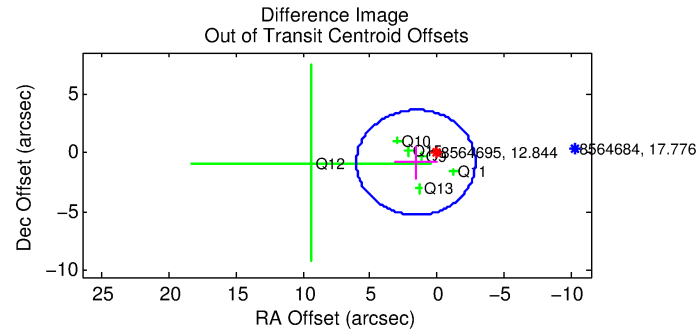
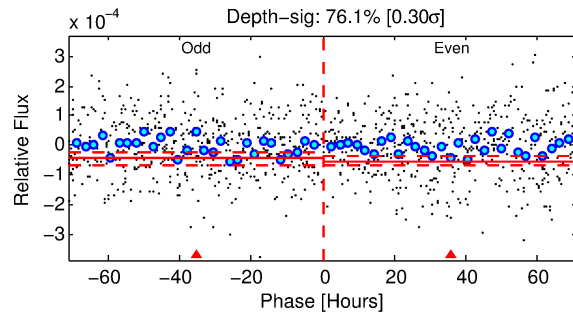
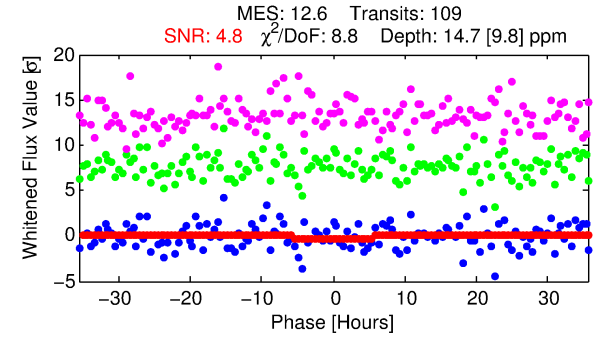
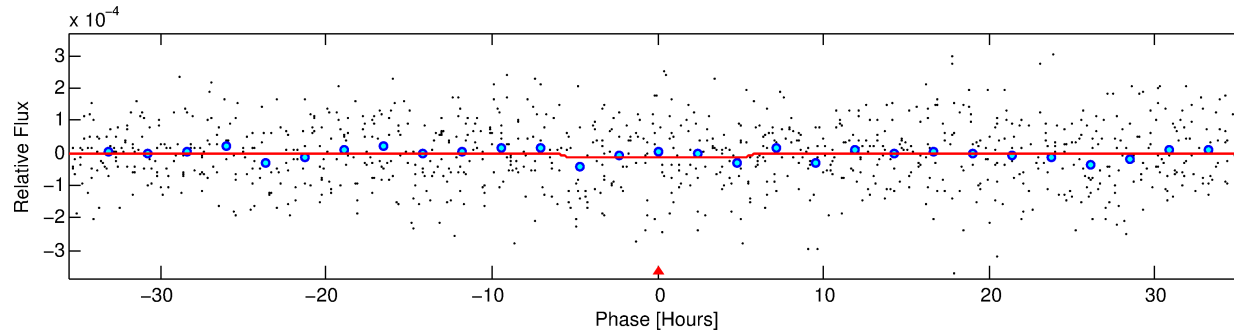
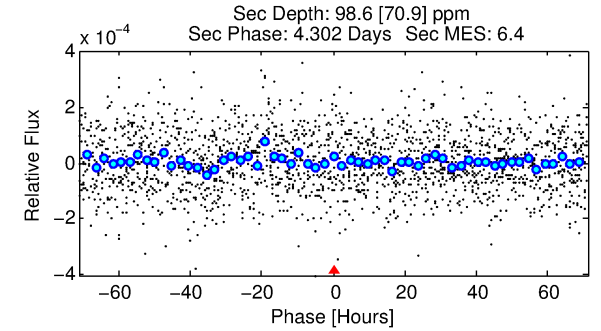
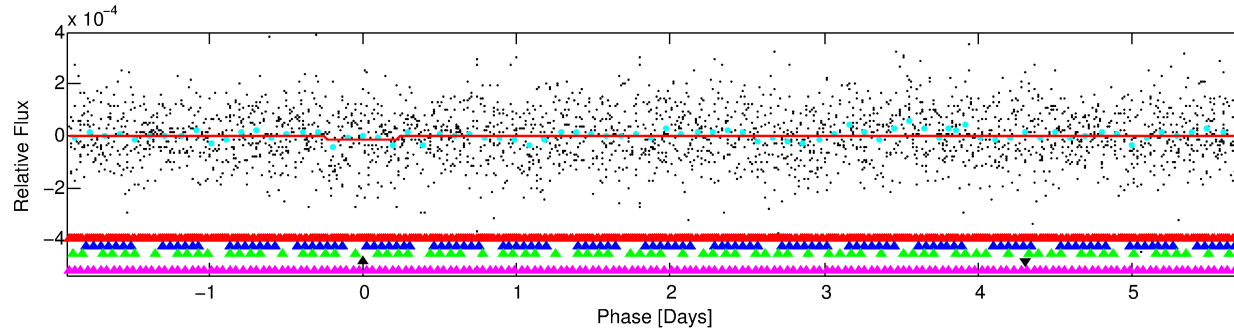
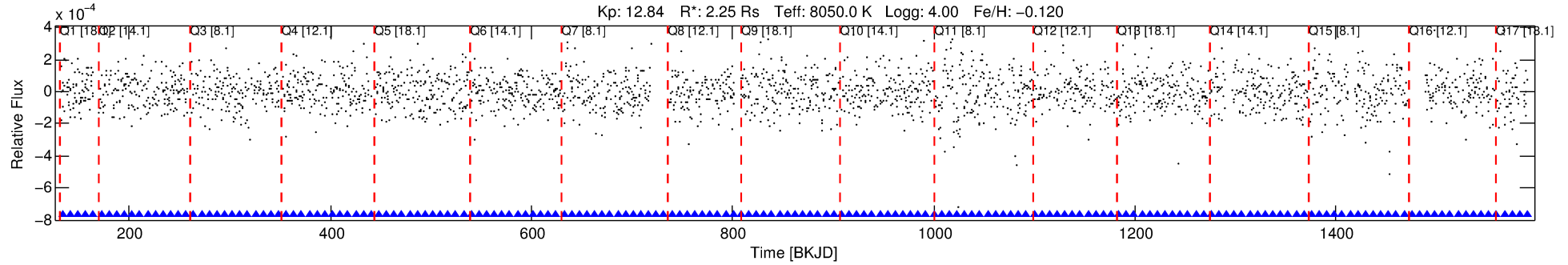
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008564695-04

No Significant Match Found

# DV One-Page Summary

KIC: 8564695 Candidate: 4 of 5 Period: 7.664 d



## DV Fit Results:

Period = 7.66416 [0.00098] d  
Epoch = 134.0498 [0.0865] BKJD  
Rp/R\* = 0.0041 [0.0039]  
a/R\* = 2.39 [10.83]  
b = 0.90 [1.18]  
Seff = 2201.71 [938.64]  
Teq = 1747 [186] K  
Rp = 1.00 [1.00] Re  
a = 0.0932 [0.0242] AU  
Ag = 466.77 [967.51] [0.48σ]  
Teff = 12553 [6409] K [1.69σ]

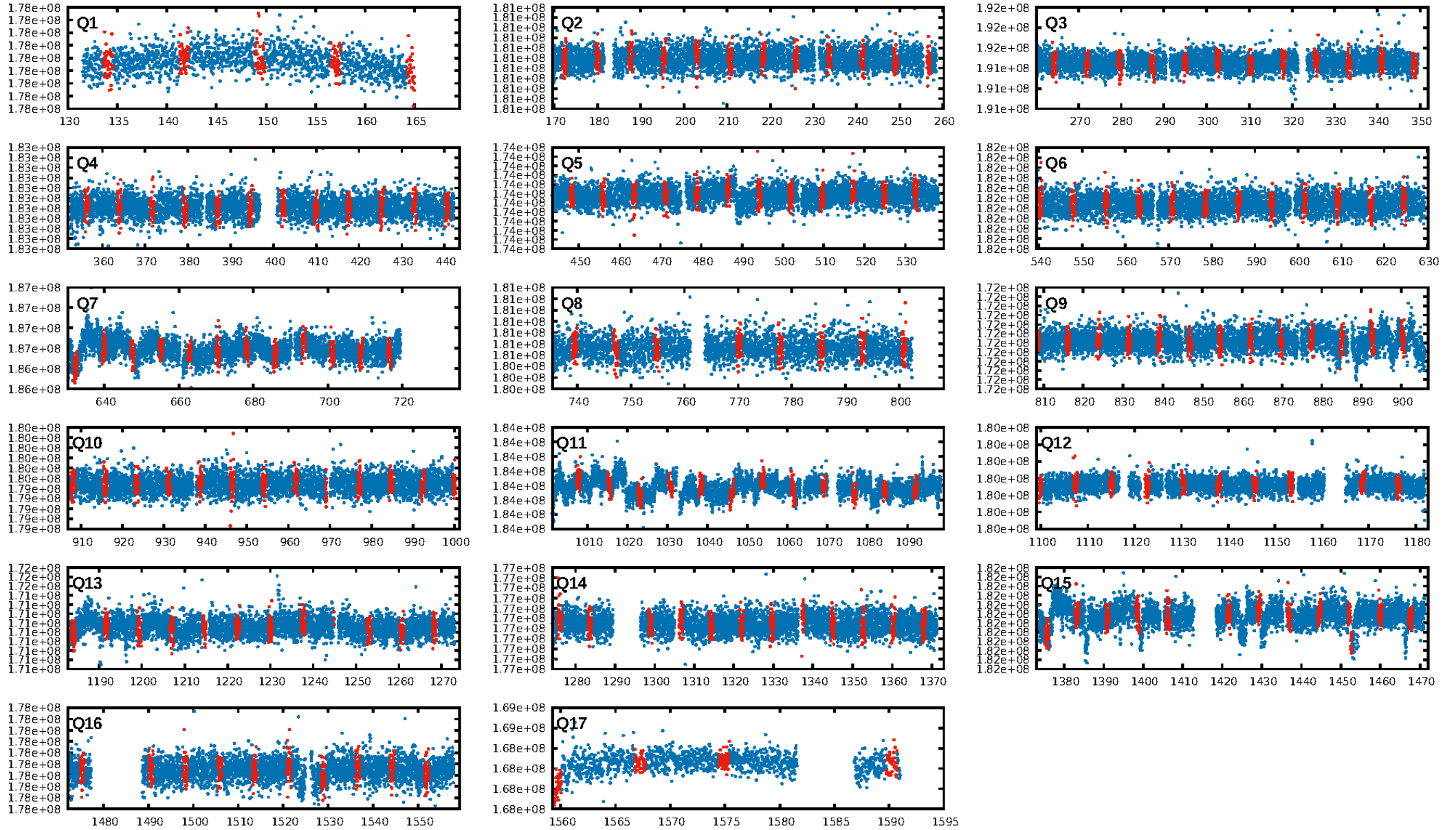
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.18σ]  
LongPeriod-sig: 55.5% [0.76σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.06e-12  
RollingBand-fgt: 1.00 [103/103]  
GhostDiagnostic-chr: 0.823  
Centroid-sig: 73.7%  
Centroid-so: 0.887 arcsec [0.54σ]  
OotOffset-rm: 1.774 arcsec [1.20σ]  
OotOffset-st: 1/2/1/2 [6]  
KicOffset-rm: 1.638 arcsec [1.10σ]  
KicOffset-st: 1/2/1/2 [6]  
DiffImageQuality-fgm: 0.17 [1/6]  
DiffImageOverlap-fno: 0.00 [0/17]

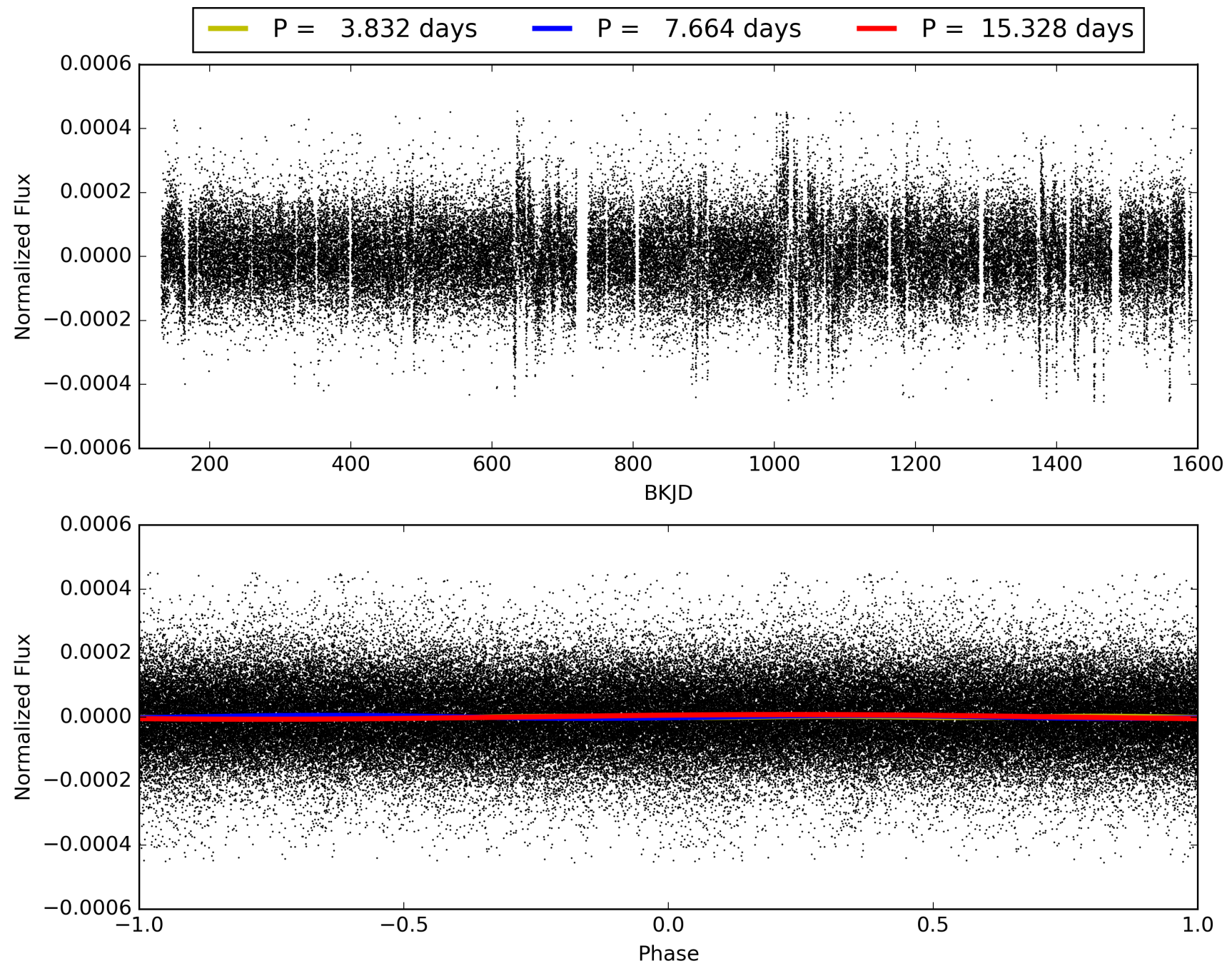
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:41:57 Z

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

# TCE 008564695-04, PDC Light Curves

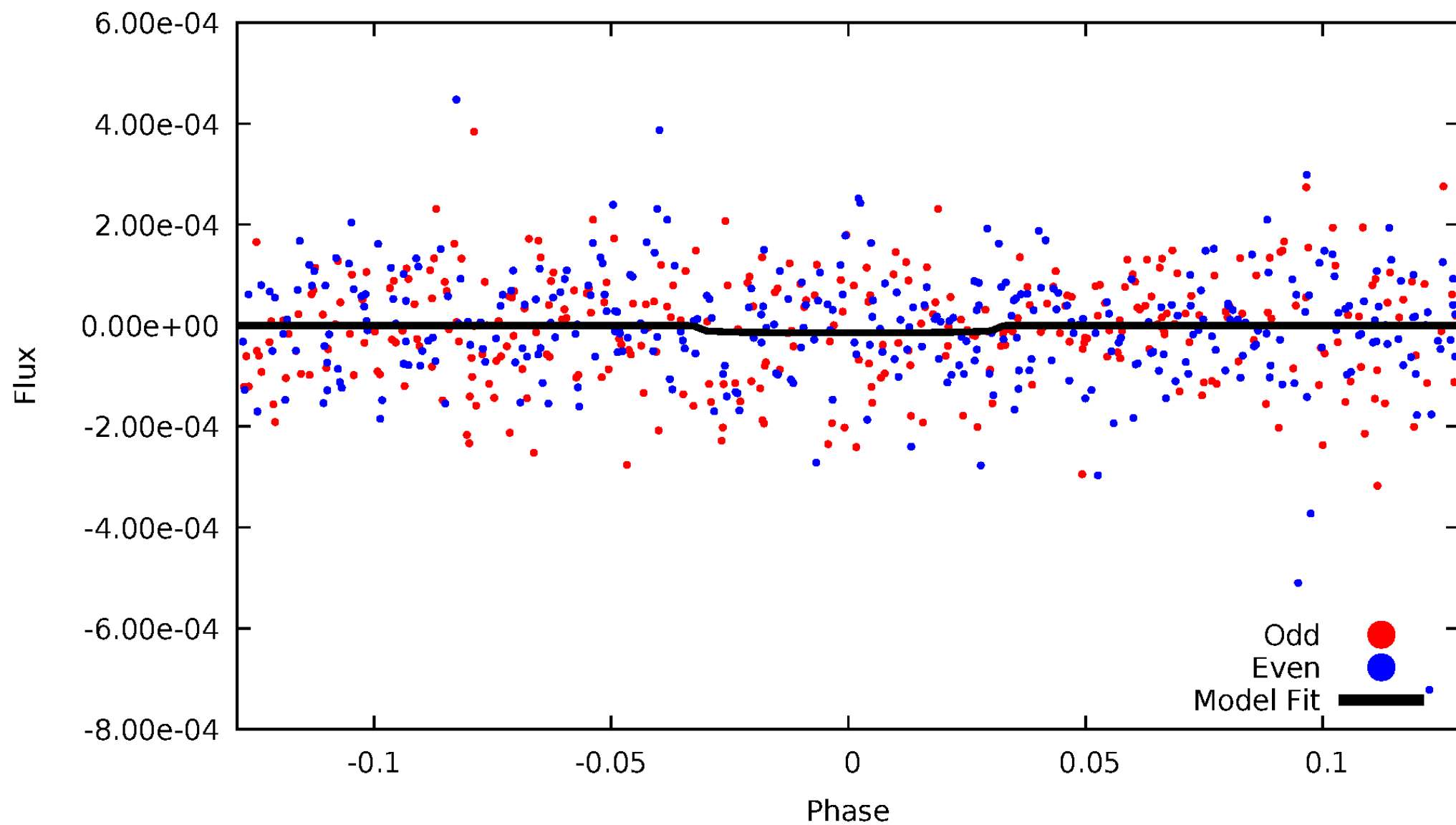


TCE 008564695-04



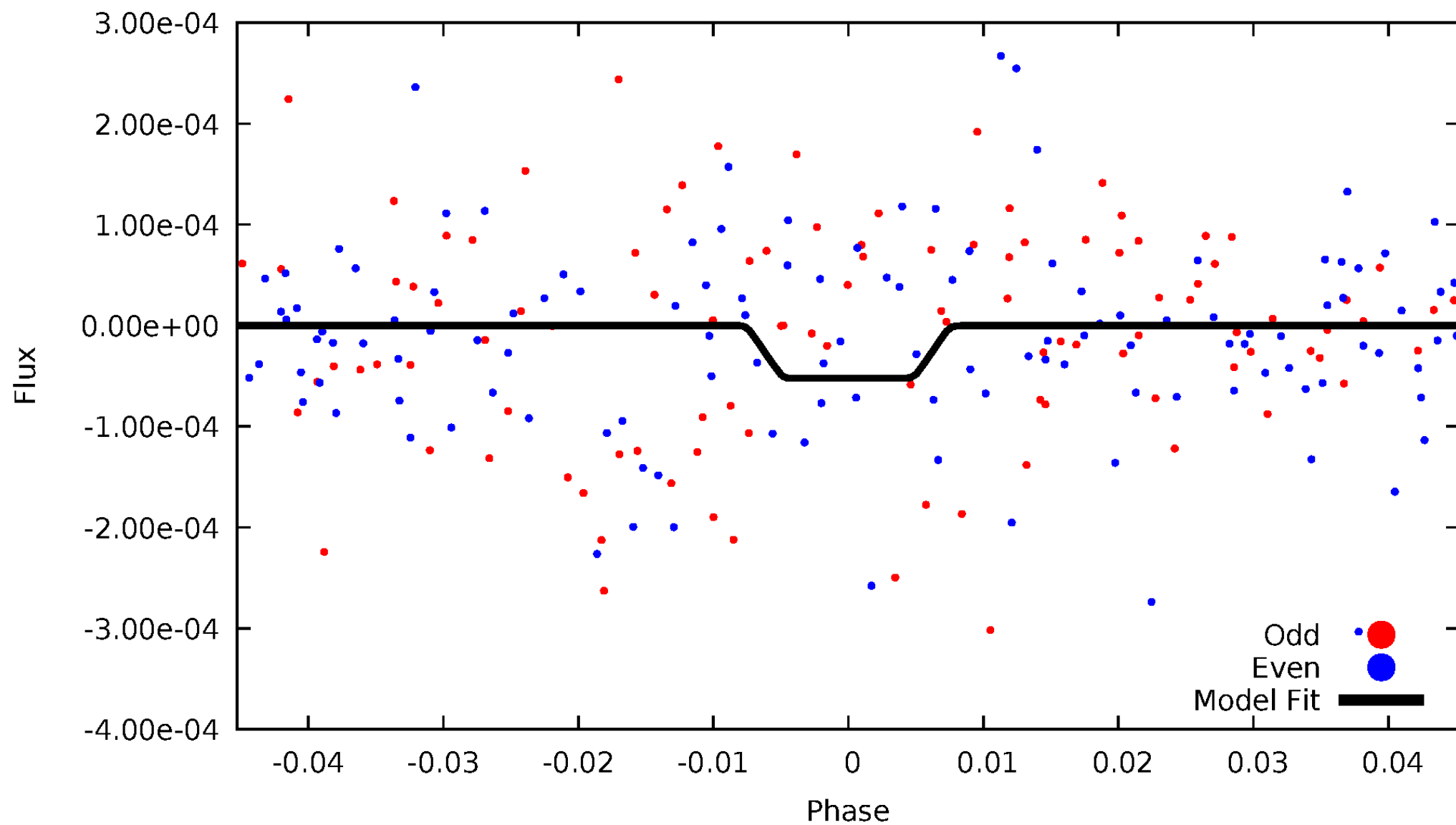
# DV Odd/Even

TCE 008564695-04



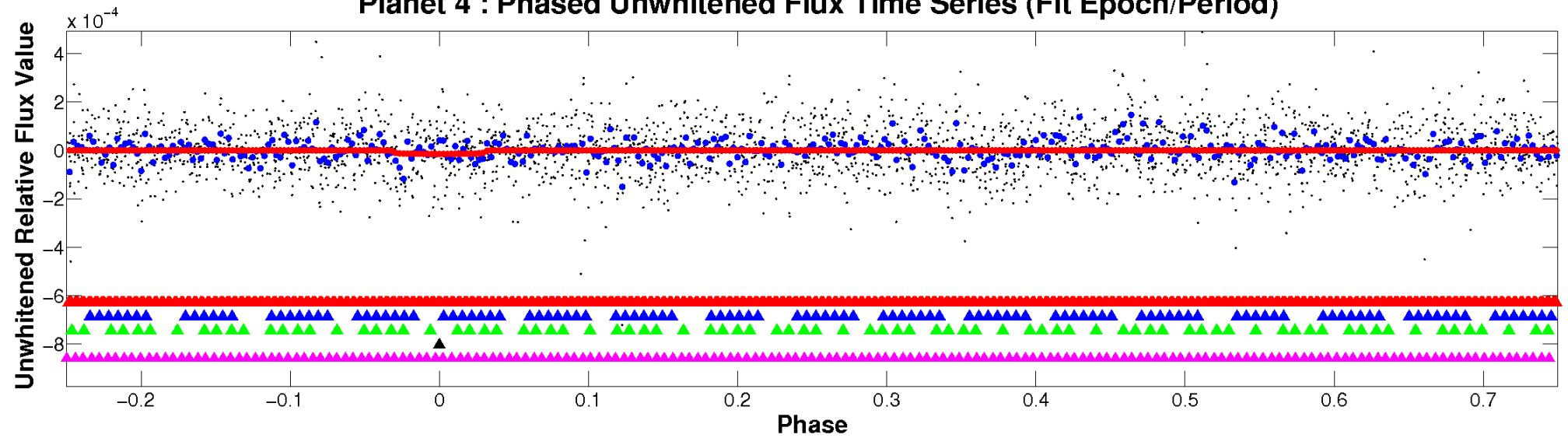
# ALT Odd/Even

TCE 008564695-04

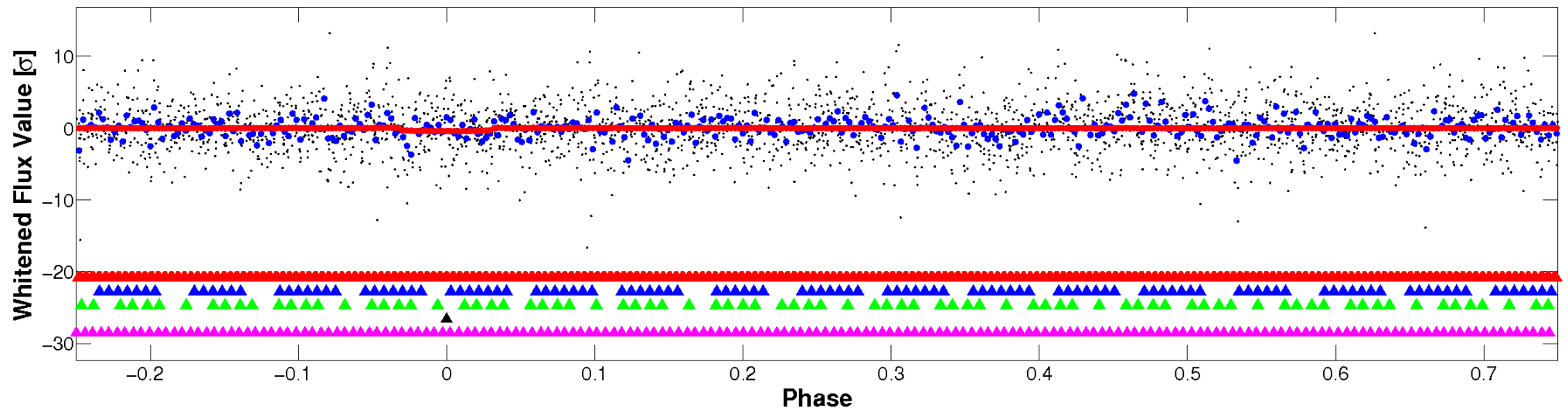


# Non-Whitened Vs. Whitened Light Curve

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



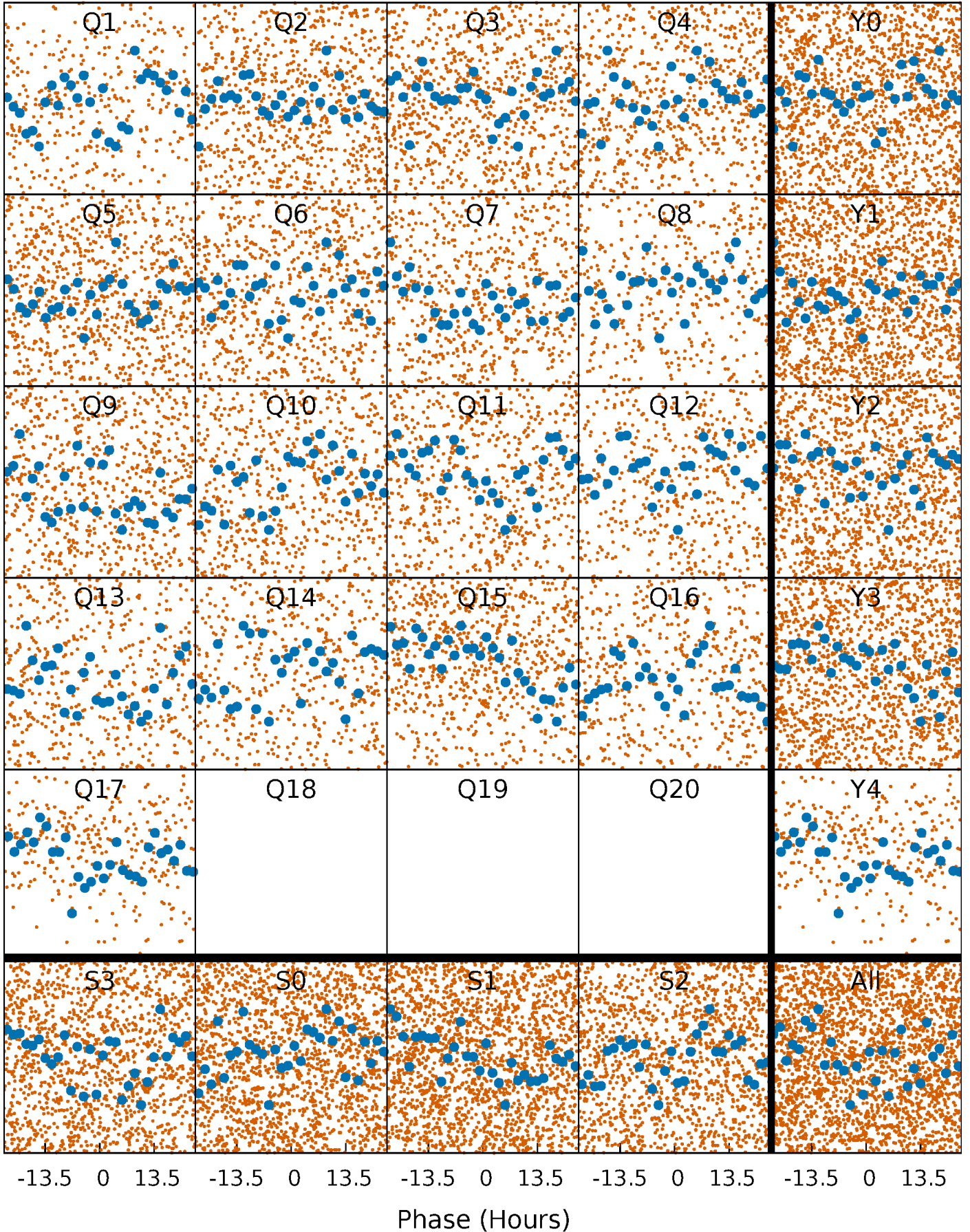
## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)





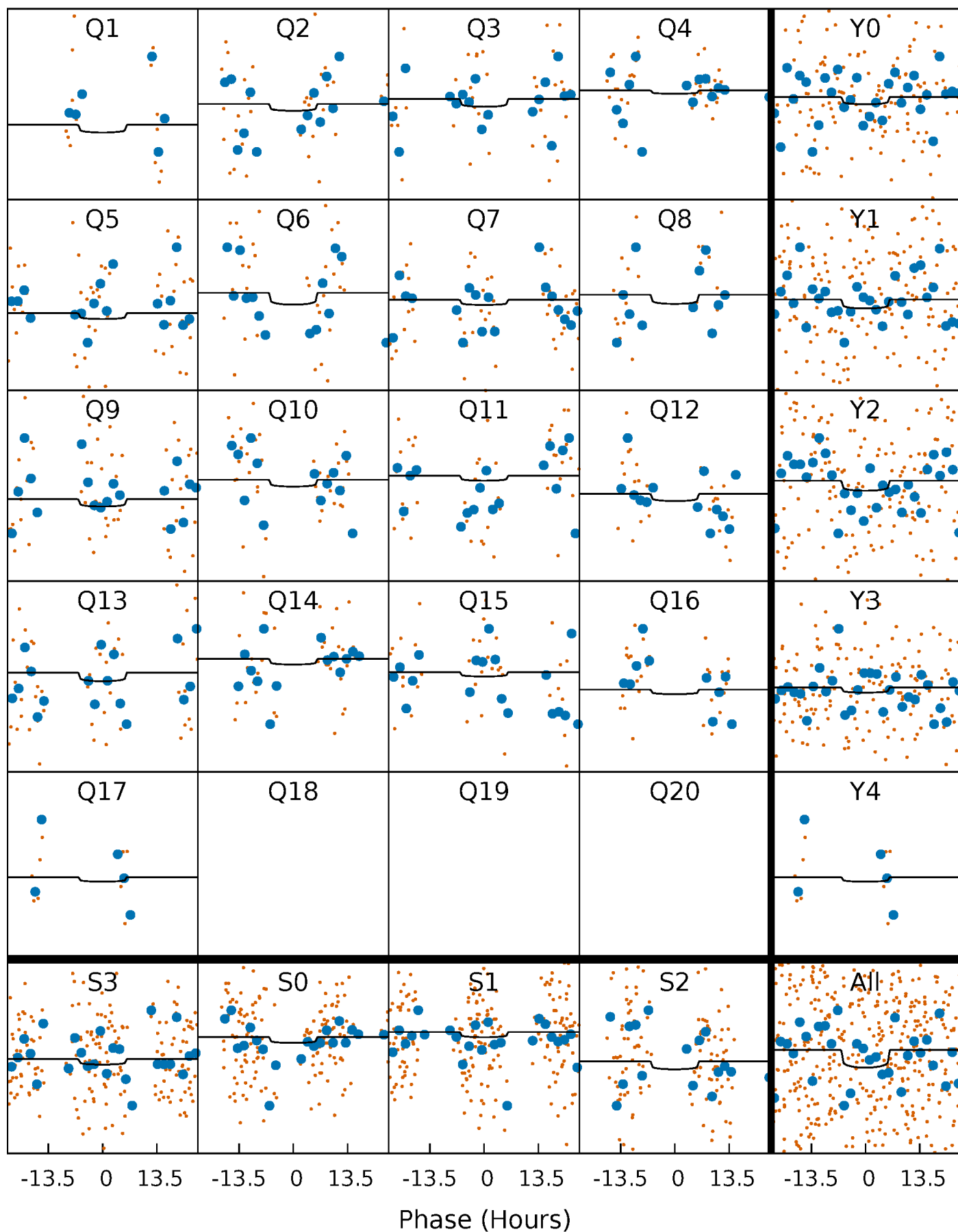
# PDC Quarter-Phased Transit Curves

TCE 008564695-04    P= 7.664164 Days     $T_0=134.049843$  (BKJD)



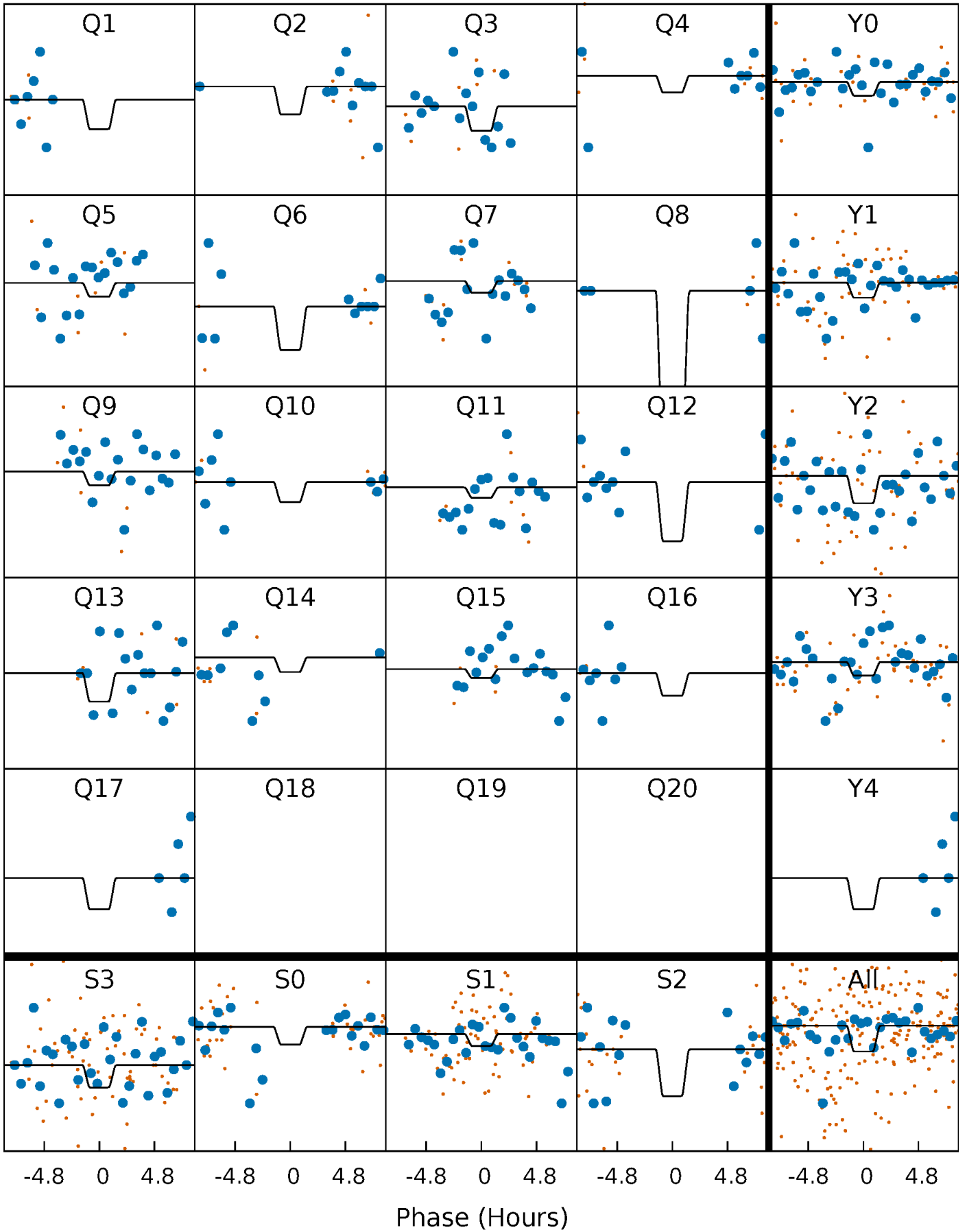
# DV Quarter-Phased Transit Curves

TCE 008564695-04   P= 7.664164 Days    $T_0=134.049843$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

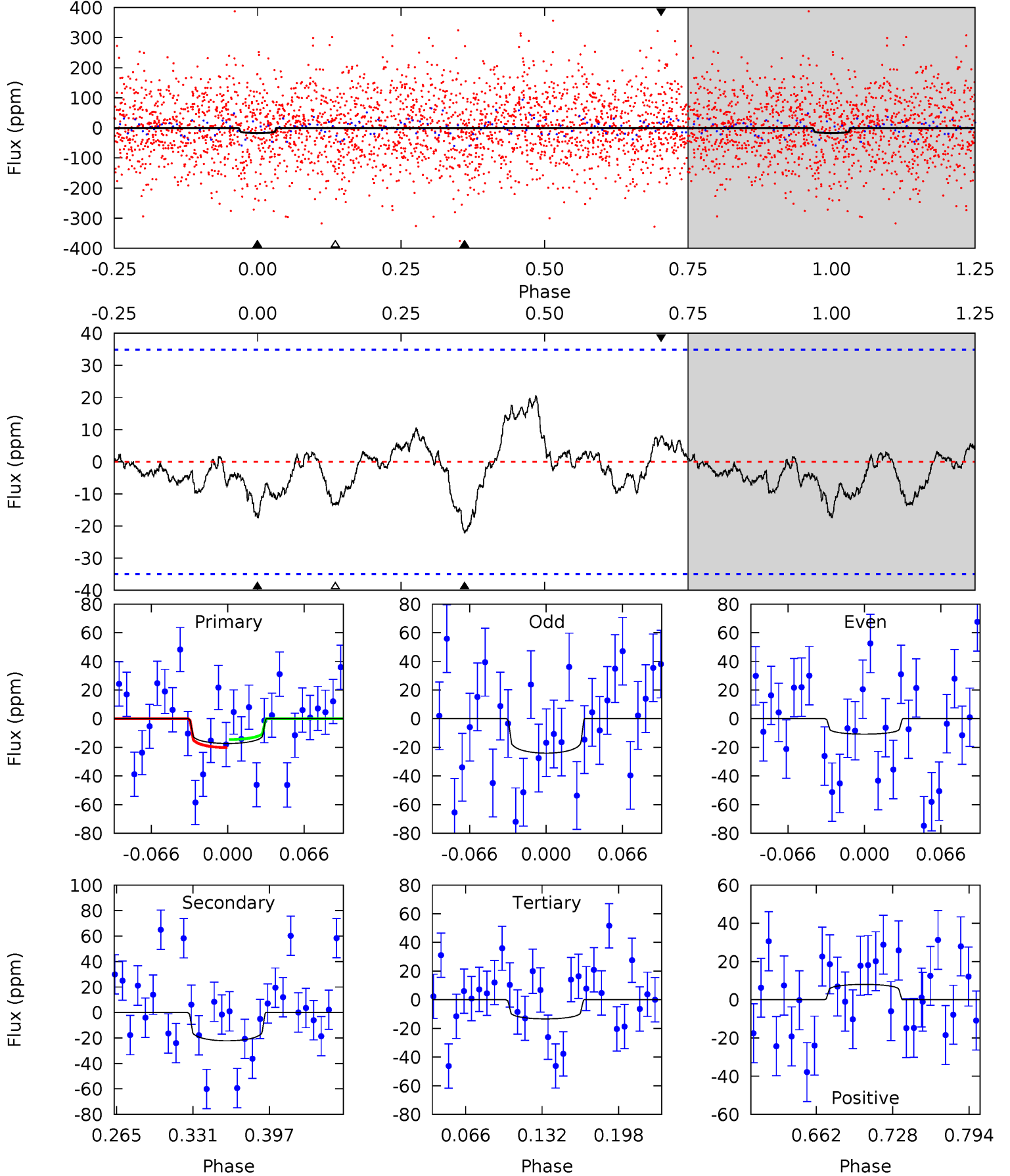
TCE 008564695-04   P= 7.664051 Days    $T_0=133.992604$  (BKJD)



# DV Model-Shift Uniqueness Test

008564695-04, P = 7.664164 Days, E = 126.385679 Days

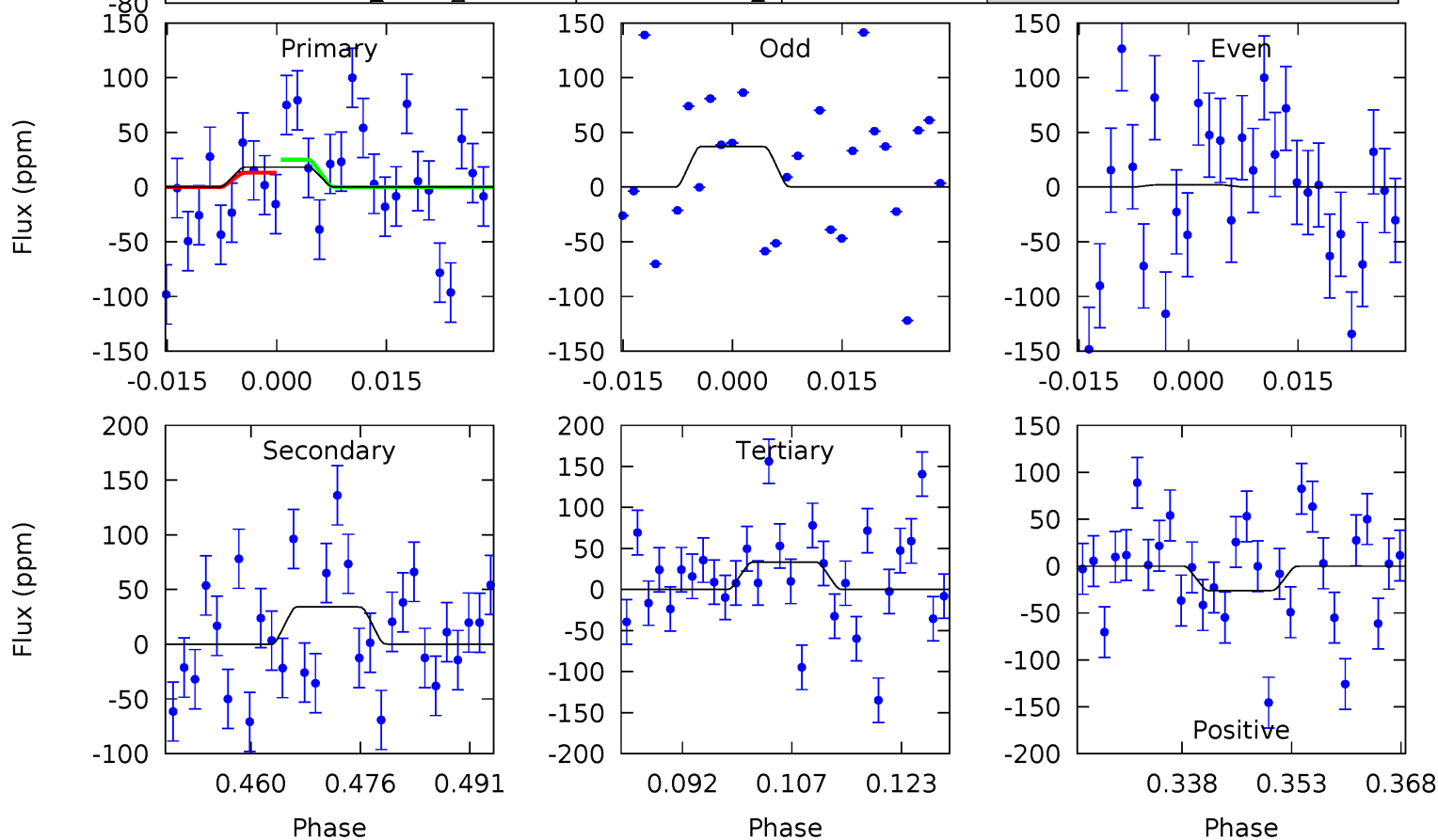
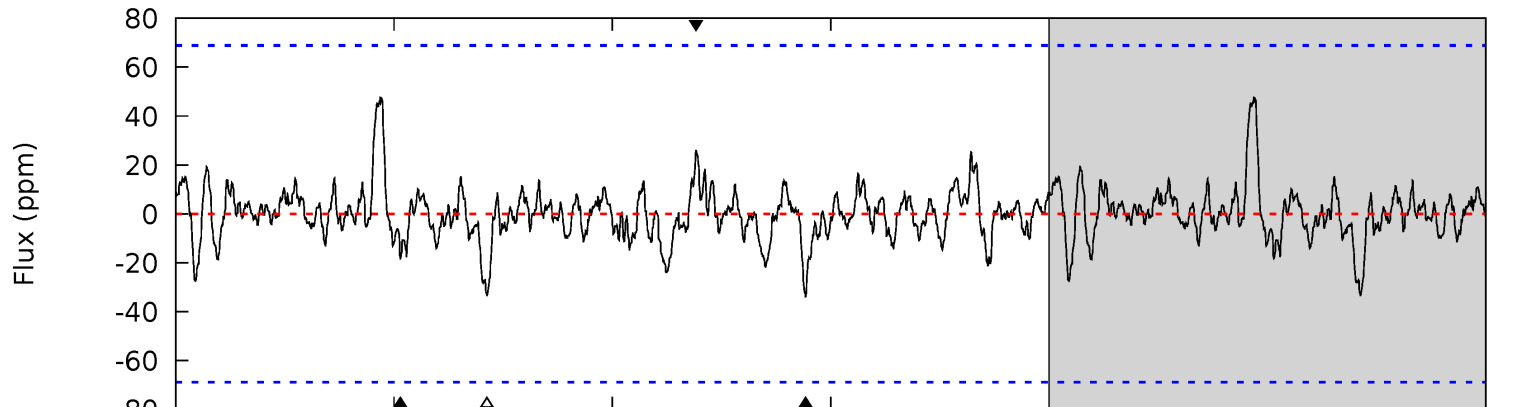
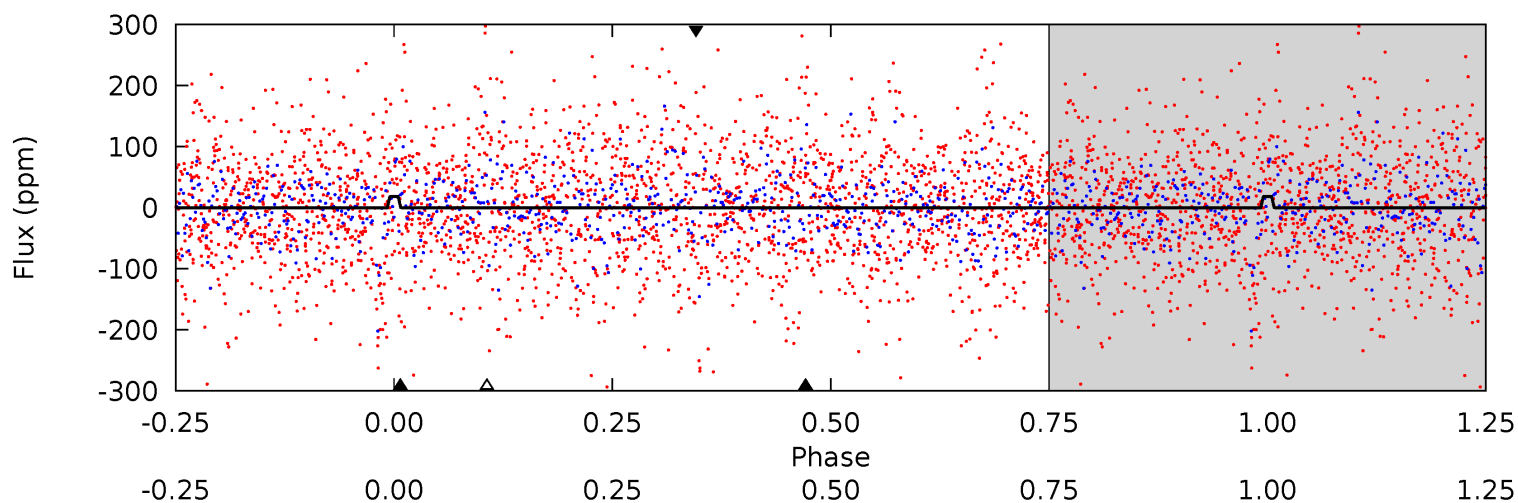
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.31	2.96	1.78	1.07	4.65	1.84	0.90	0.53	1.24	1.18	1.89	0.87	1.39	0.48	0.38



# Alt Model-Shift Uniqueness Test

008564695-04, P = 7.664051 Days, E = 126.328553 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.31	2.45	2.41	1.88	4.94	2.42	0.68	-1.10	-0.57	0.05	0.57	1.28	-1.35	0.58	0.43



### Stellar Parameters For KIC 008564695

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8050^{+225}_{-338}$	$3.996^{+0.221}_{-0.136}$	$-0.120^{+0.200}_{-0.350}$	$2.254^{+0.442}_{-0.663}$	$1.835^{+0.119}_{-0.356}$	$0.226^{+0.277}_{-0.085}$
	+3%/-4%	+6%/-3%	+167%/-292%	+20%/-29%	+6%/-19%	+123%/-38%
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 008564695-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-22 \pm 8$	$1.12^{+0.89}_{-0.65}$	$2416^{+160}_{-184}$	$8011^{+7265}_{-2296}$	$82^{+355}_{-60}$
Alt.	$-34 \pm 14$	$1.73^{+0.97}_{-0.86}$	$2420^{+161}_{-188}$	$7002^{+3776}_{-1670}$	$52^{+157}_{-35}$

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

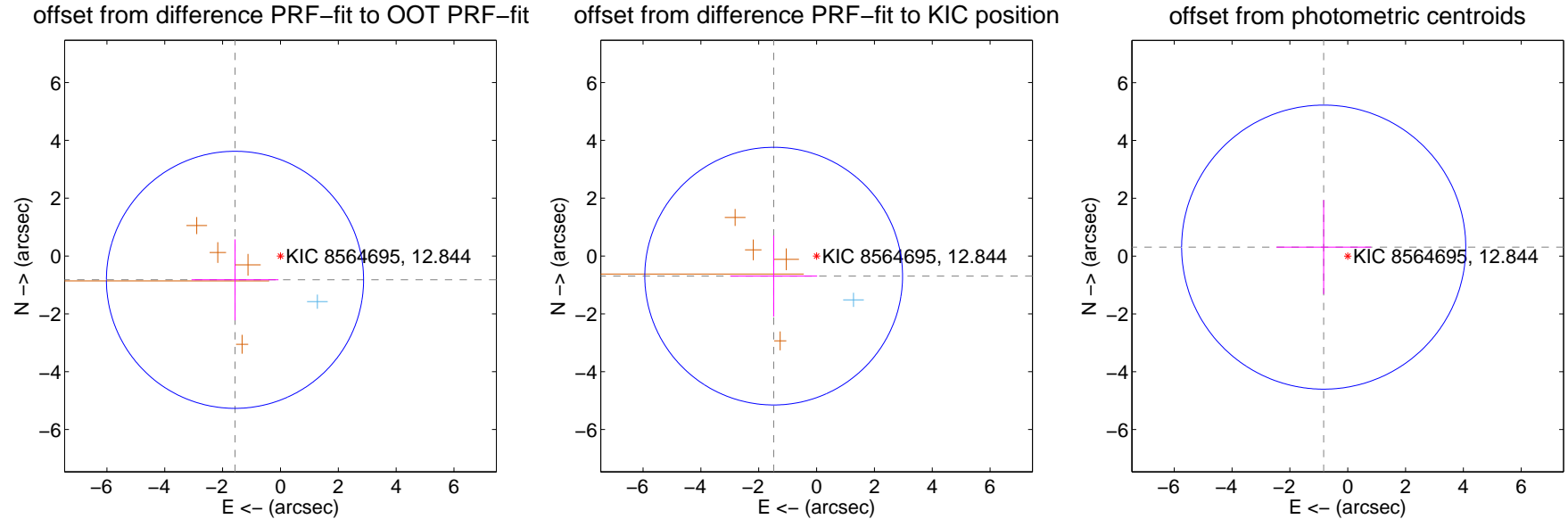
## DV Centroid Data

Supplemental centroid analysis for 008564695-04. Kepler magnitude: 12.84. Transit SNR 4.85

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

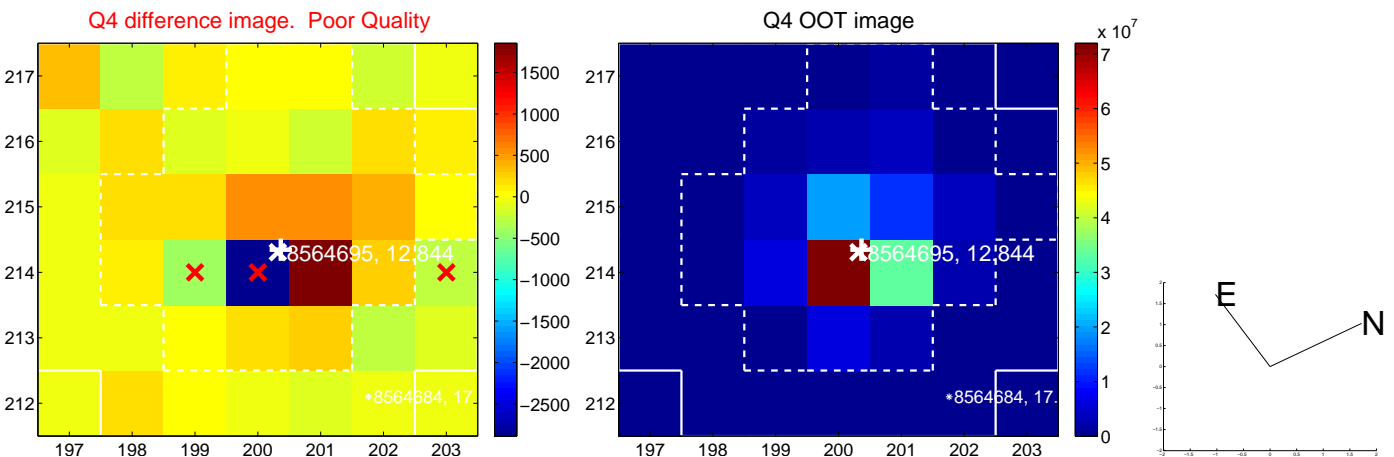
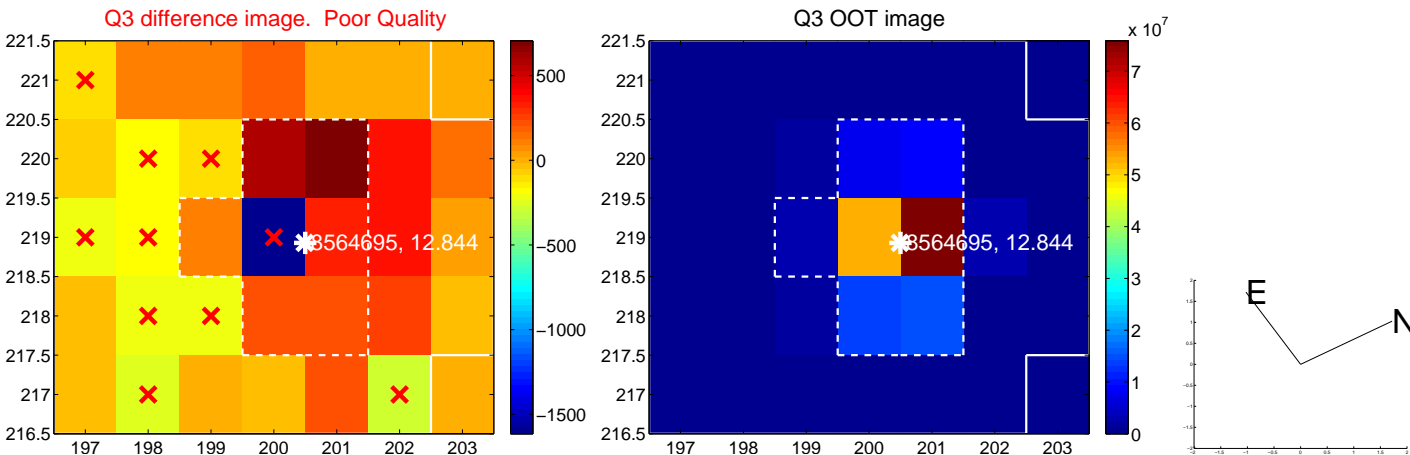
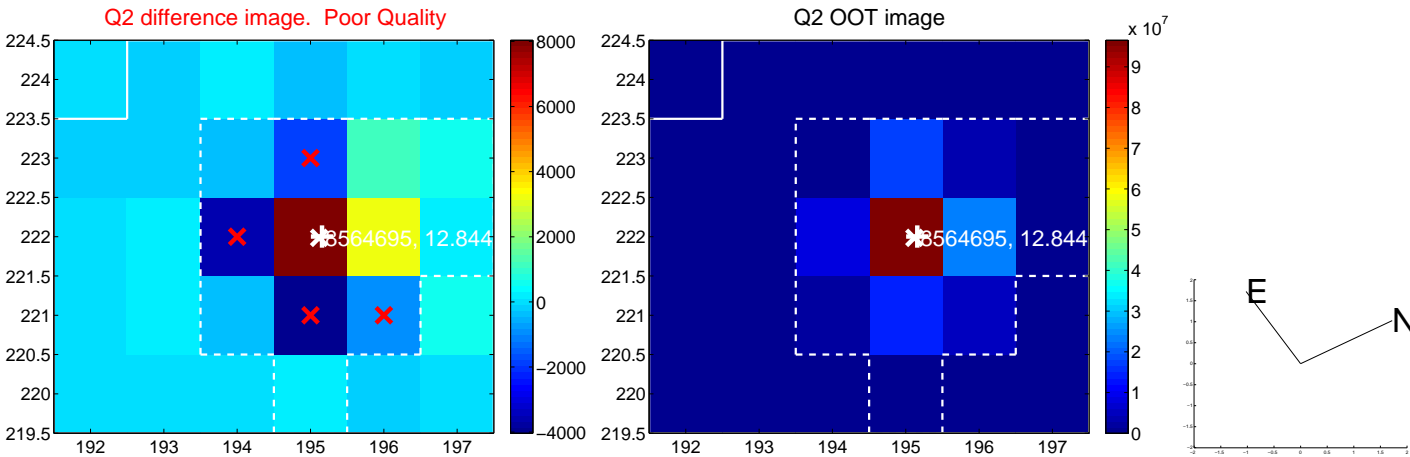
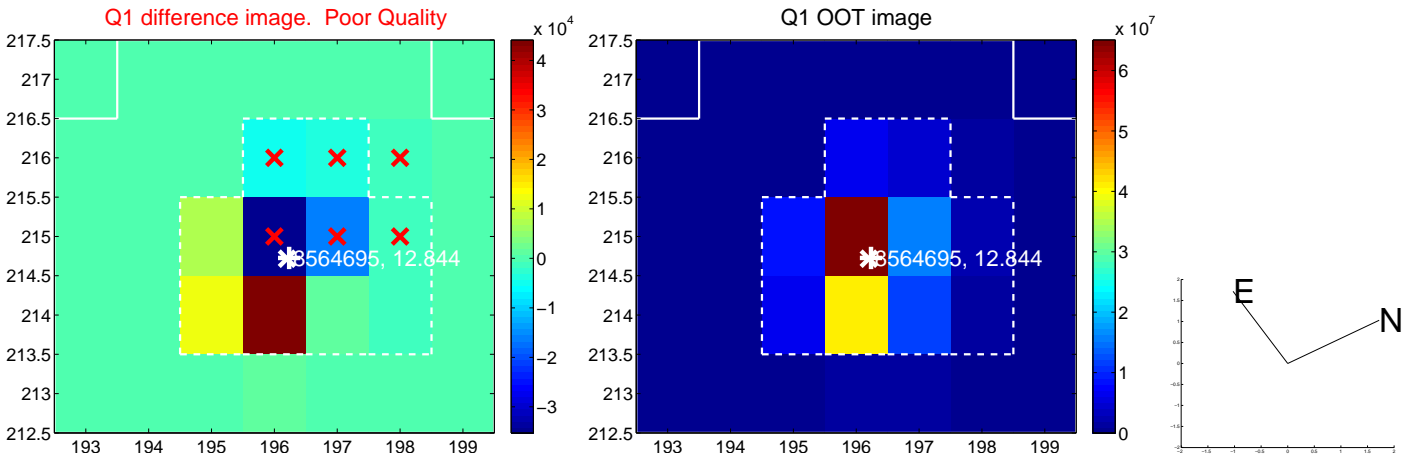
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.774 \pm 1.482$	1.20	$1.572 \pm 1.503$	$-0.823 \pm 1.401$
PRF-fit source offset from KIC position	$1.638 \pm 1.485$	1.10	$1.483 \pm 1.503$	$-0.696 \pm 1.401$
photometric centroid source offset	$0.89 \pm 1.64$	0.54	$0.83 \pm 1.64$	$0.31 \pm 1.63$



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.

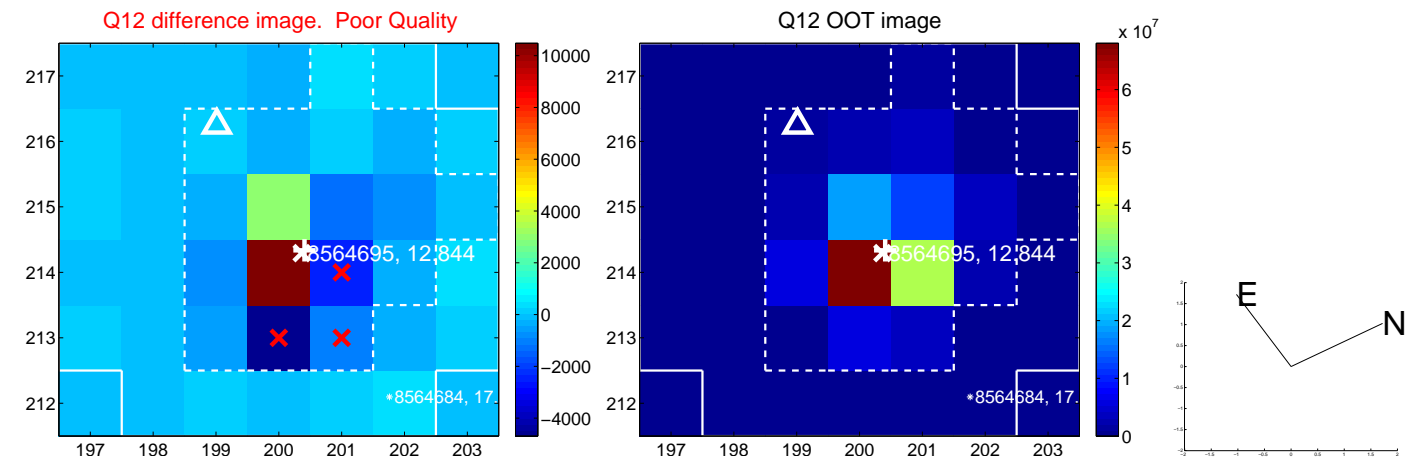
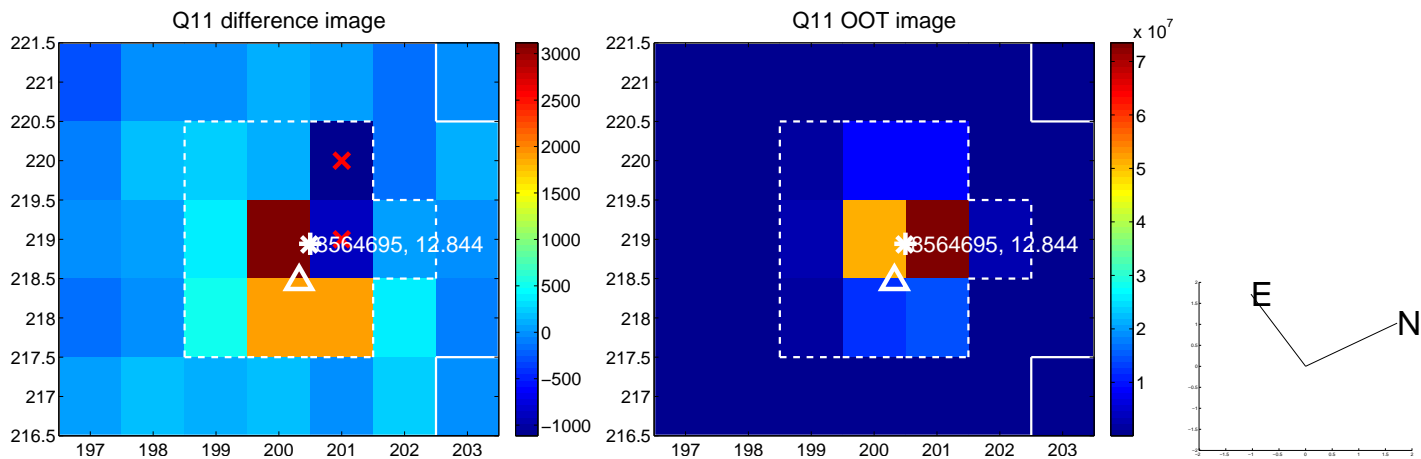
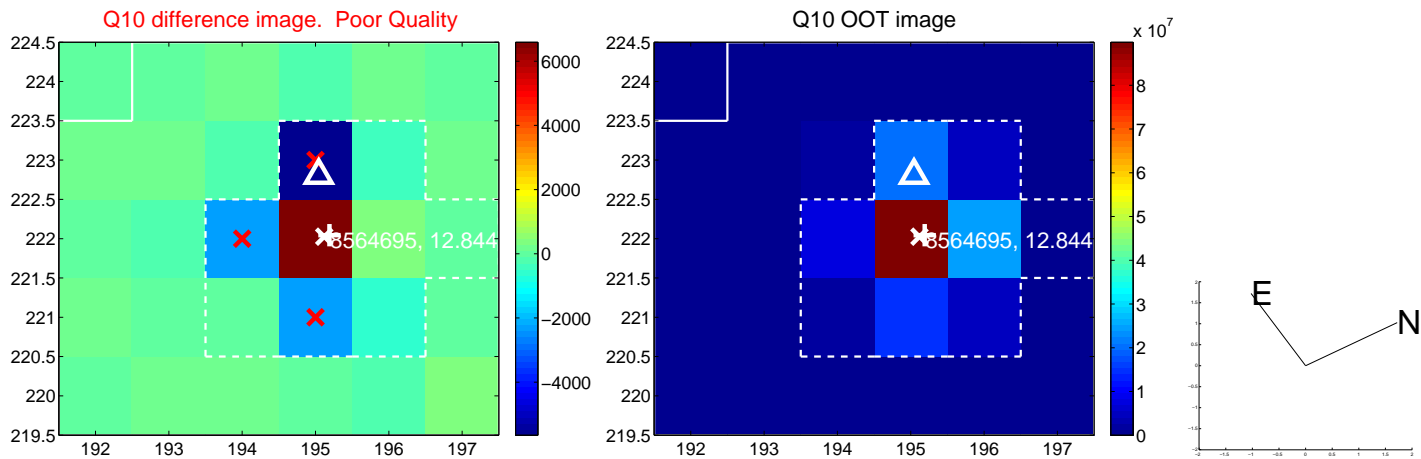
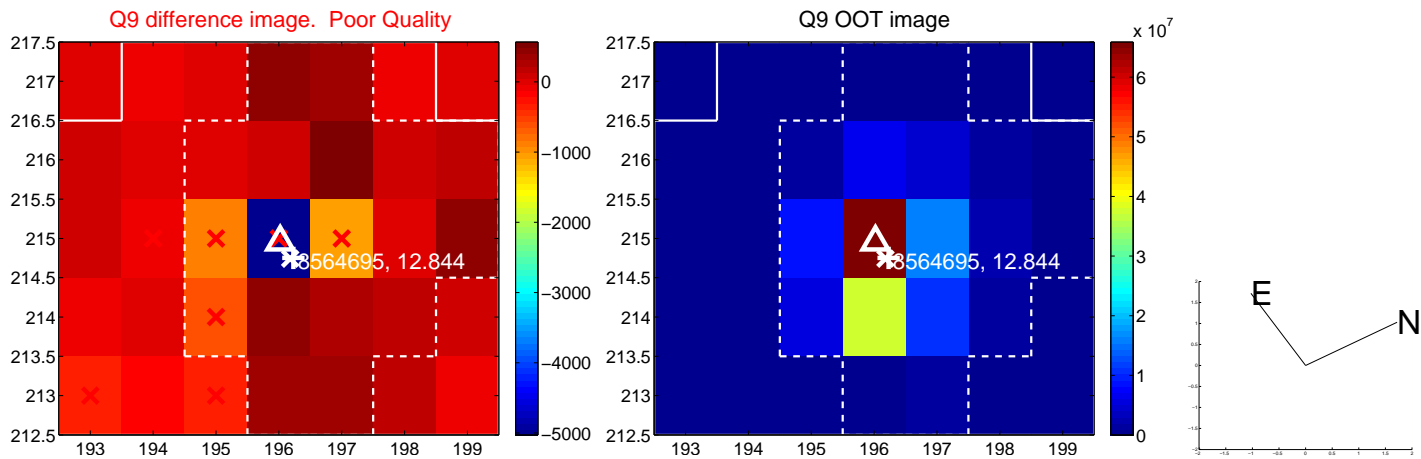


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

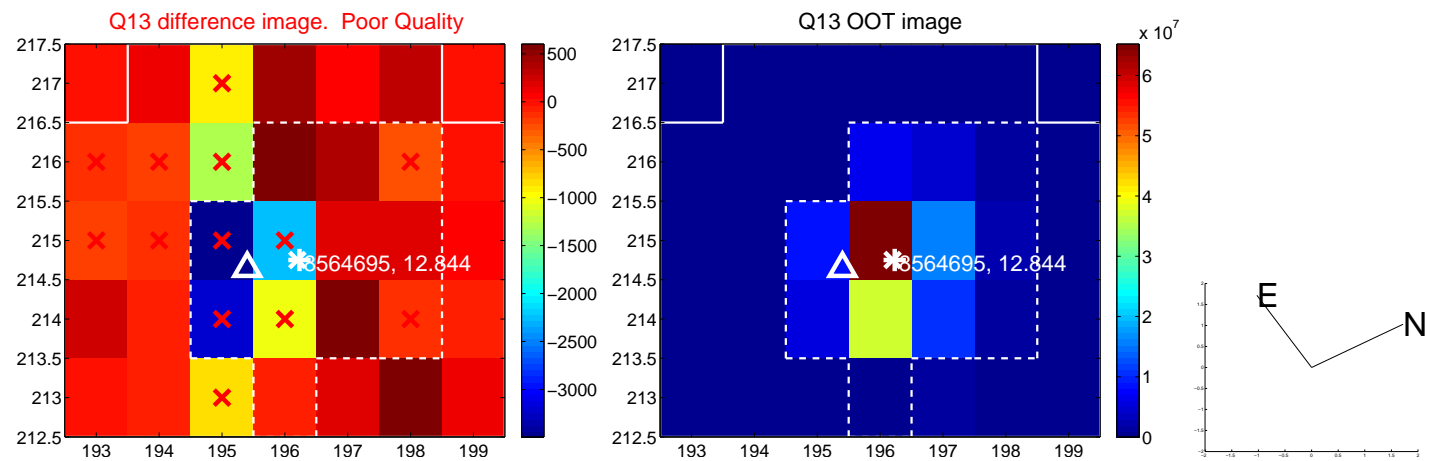




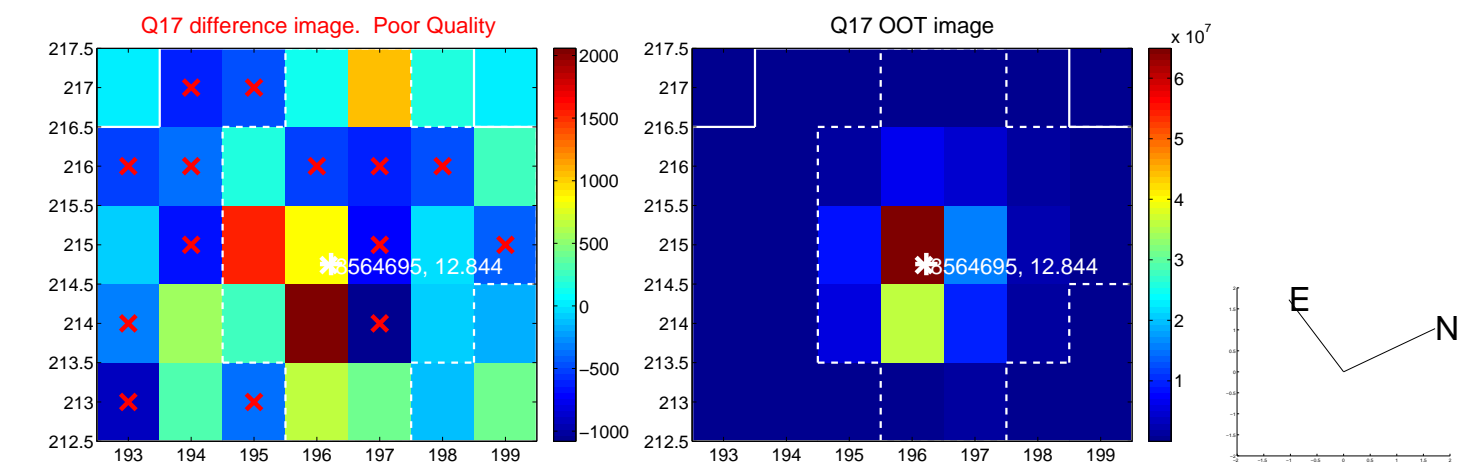
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



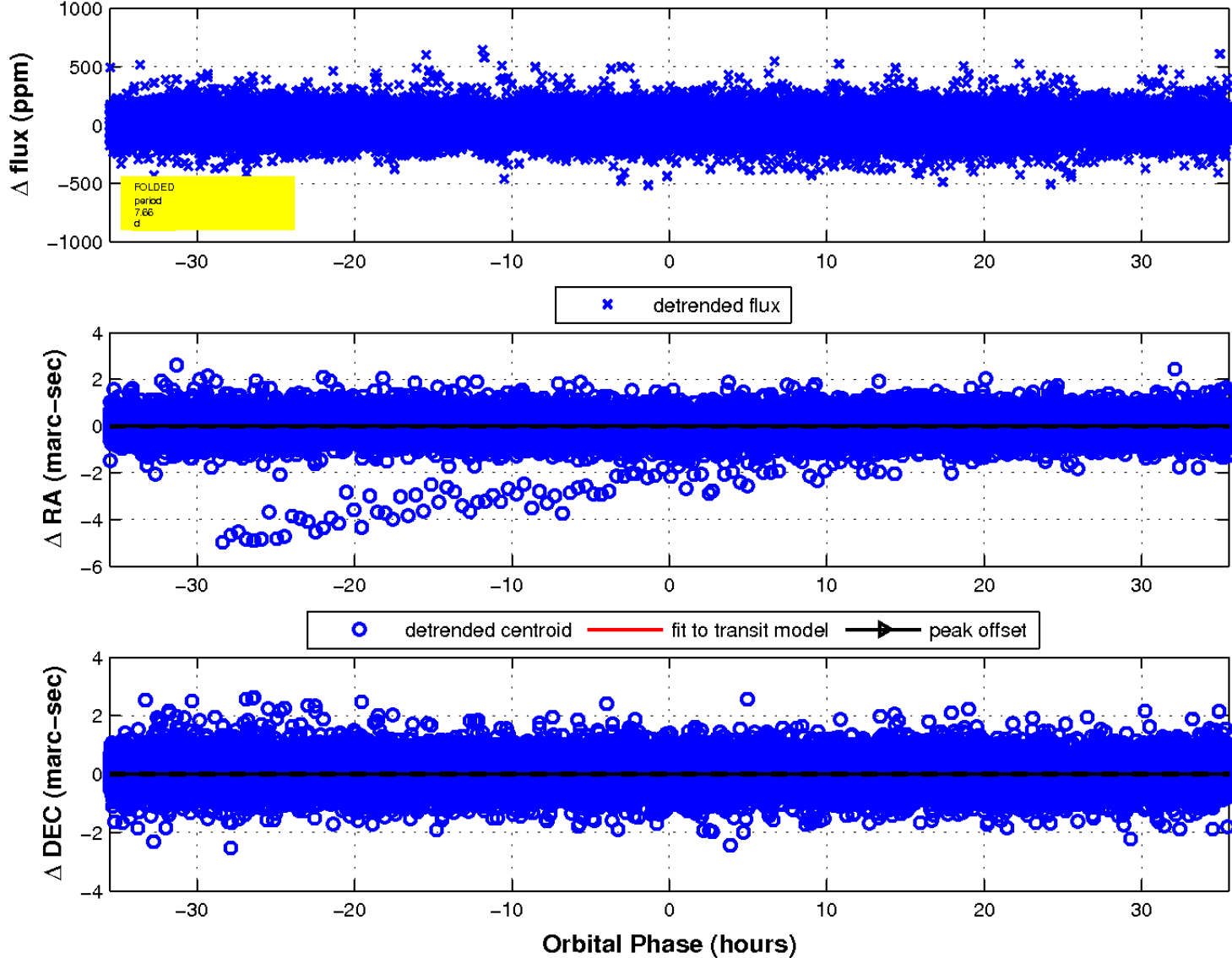
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



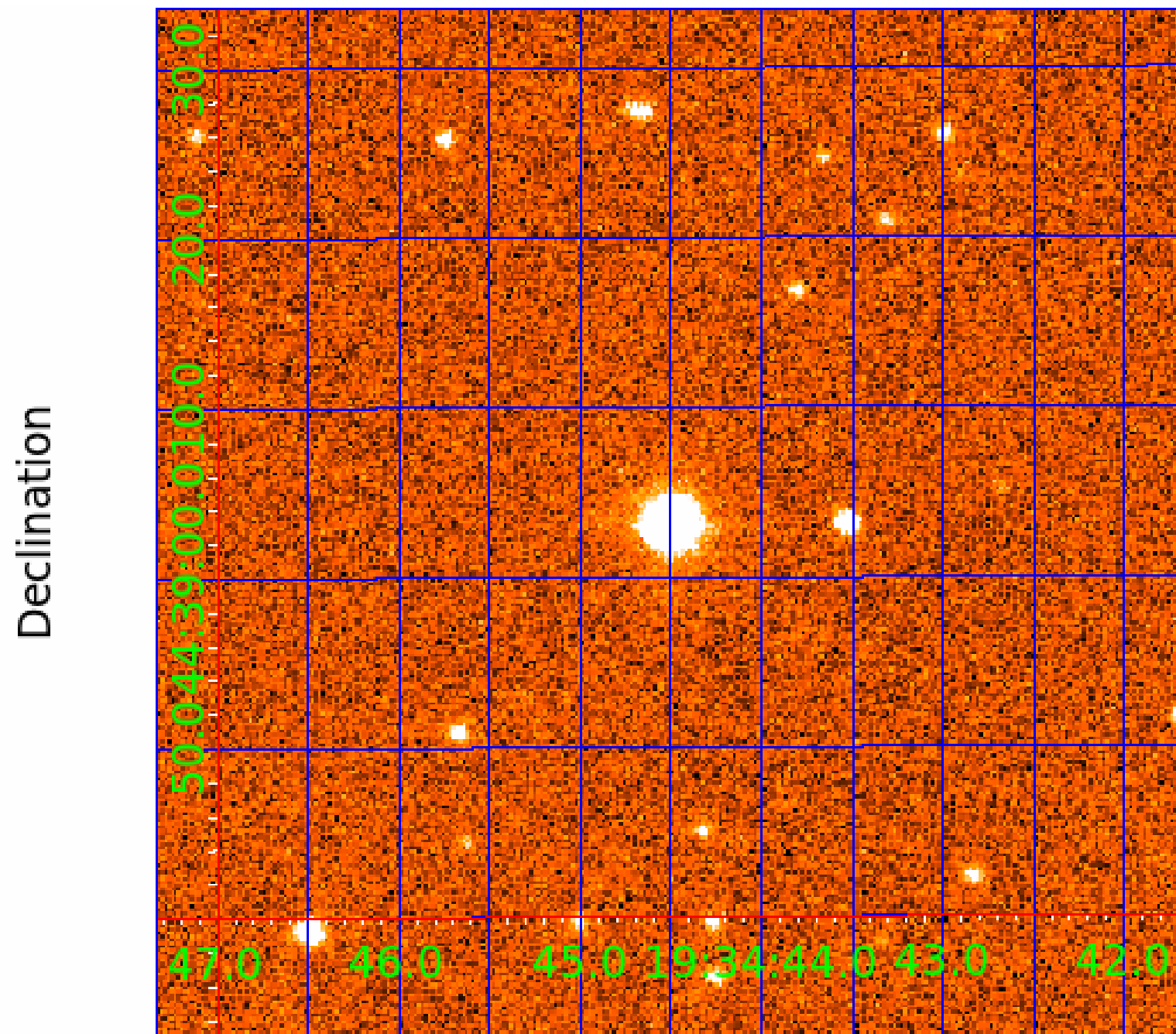
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 4 of 5



UKIRT Image



# KIC 008564695

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008564695-01	OBS	No	0.847817	131.700851	9.5	6.332	9.5	10.4	2.25	8050	0.73	41461.43
008564695-02	OBS	No	12.626151	137.658974	237.6	0.942	17.1	21.8	2.25	8050	3.62	1131.58
008564695-03	OBS	No	17.449512	143.247595	225.6	1.005	18.2	15.0	2.25	8050	3.45	735.08
008564695-04	OBS	No	7.664164	134.049843	14.7	11.850	12.6	4.8	2.25	8050	1.00	2201.71
008564695-05	OBS	No	8.043198	133.689095	207.0	1.095	14.8	14.6	2.25	8050	3.37	2064.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008564695-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_MEAS
008564695-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
008564695-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008564695-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008564695-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

**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.

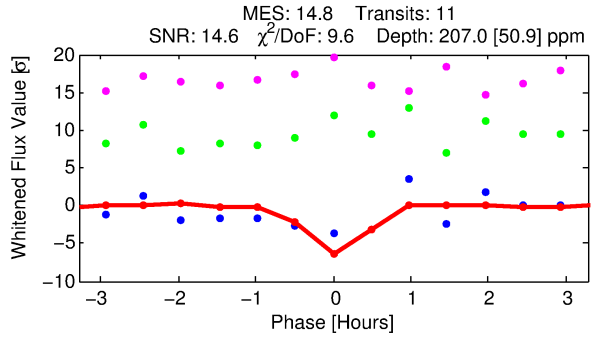
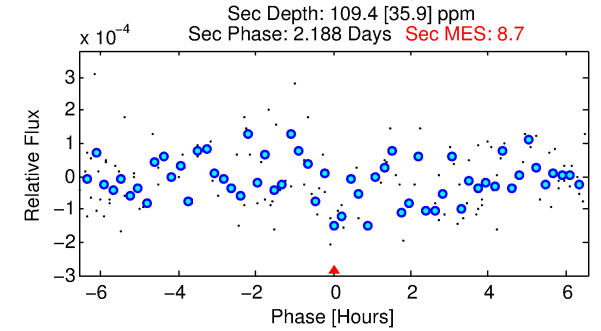
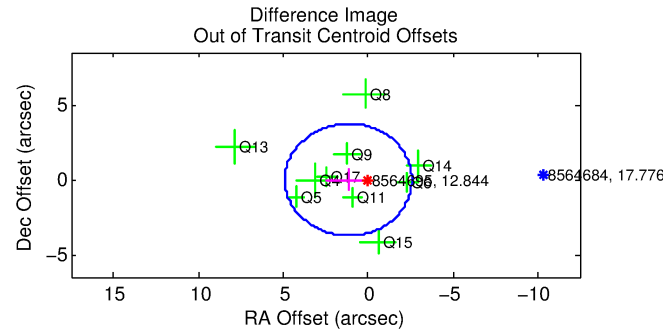
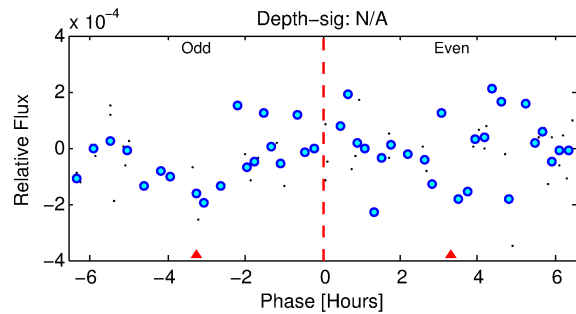
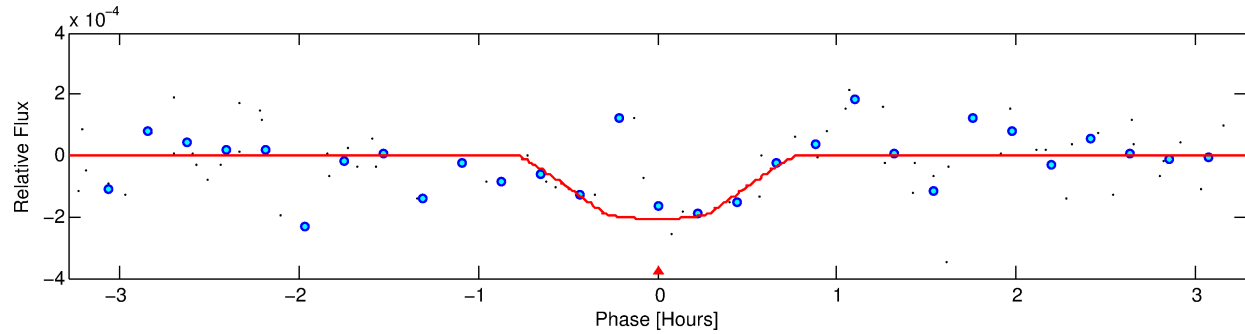
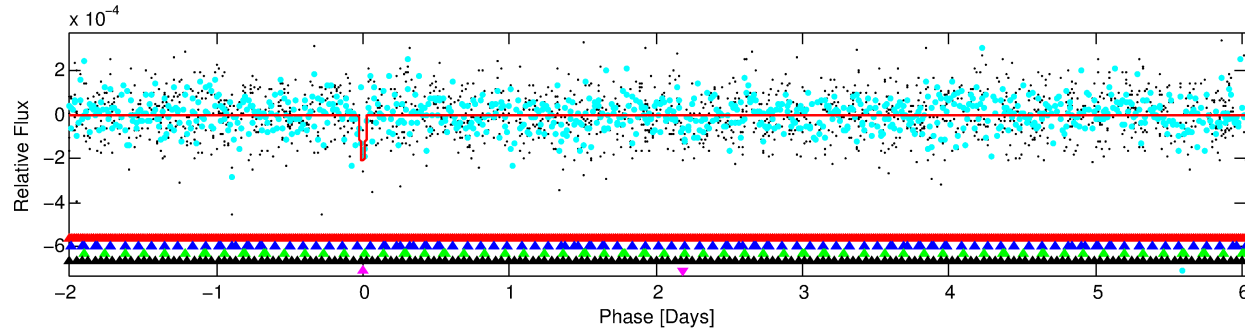
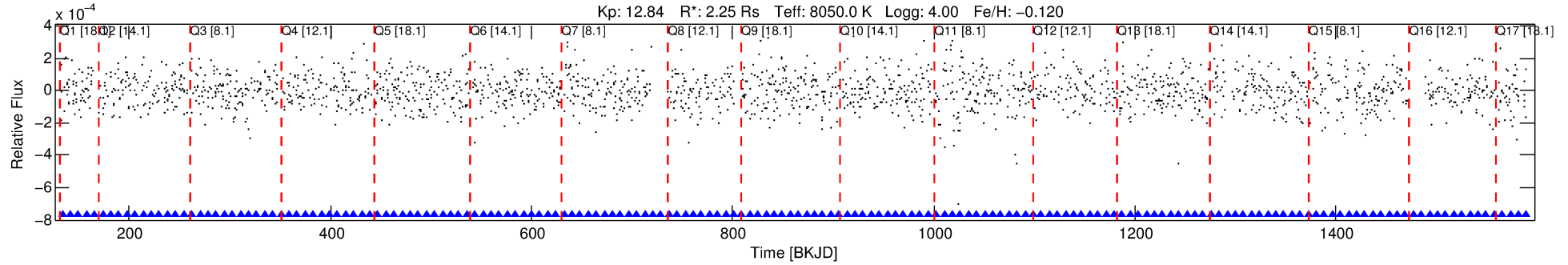
Ephemeris Match Information For 008564695-05

No Significant Match Found



# DV One-Page Summary

KIC: 8564695 Candidate: 5 of 5 Period: 8.043 d



## DV Fit Results:

Period = 8.04320 [0.00009] d  
Epoch = 133.6891 [0.0076] BKJD  
Rp/R\* = 0.0137 [0.0164]  
a/R\* = 50.45 [340.71]  
b = 0.47 [11.26]  
Seff = 2064.47 [880.13]  
Teq = 1719 [183] K  
Rp = 3.37 [4.15] Re  
a = 0.0962 [0.0249] AU  
Ag = 49.08 [120.10] [0.40σ]  
Teffp = 7034 [4258] K [1.25σ]

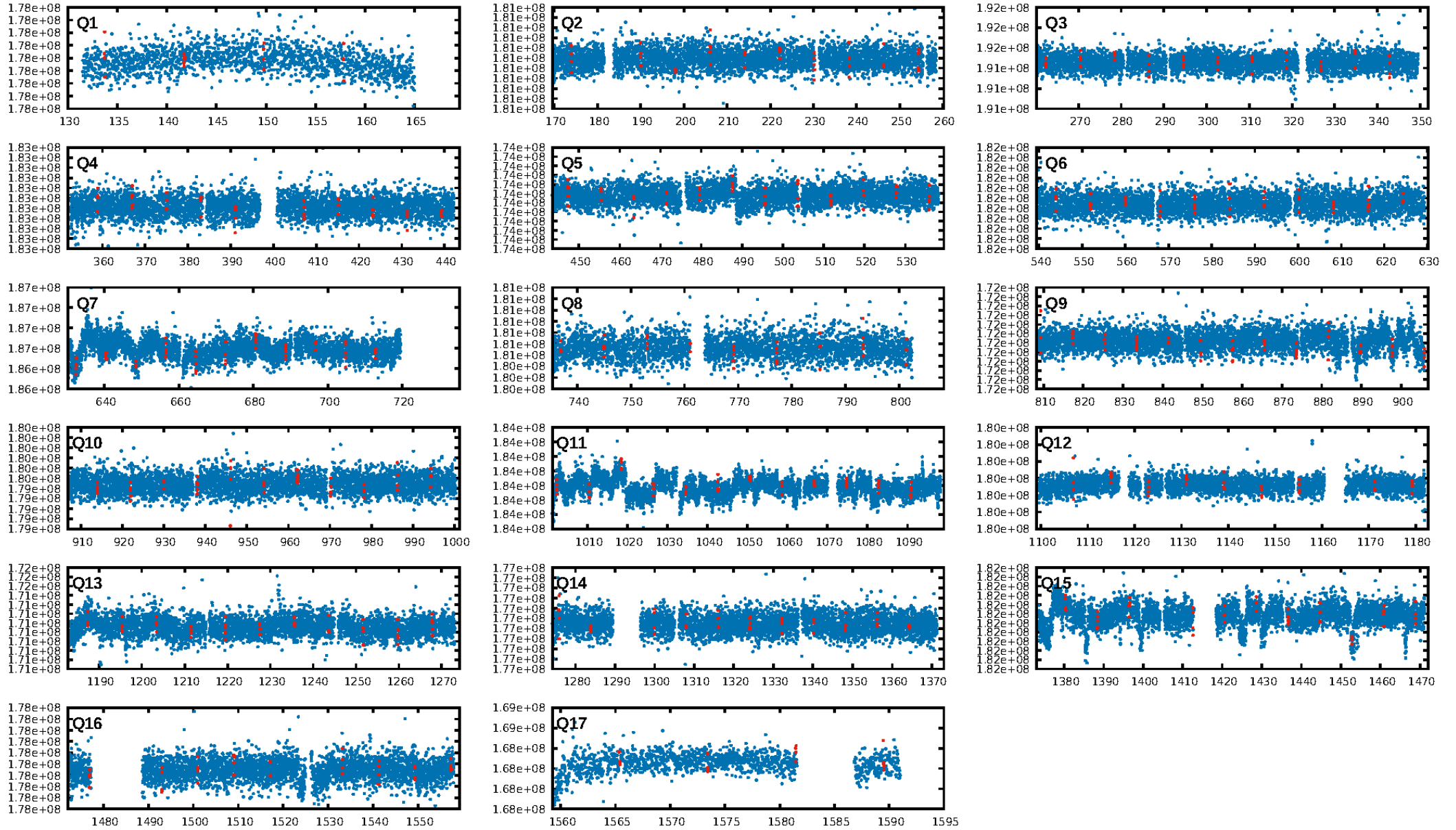
## DV Diagnostic Results:

ShortPeriod-sig: 55.5% [0.76σ]  
LongPeriod-sig: 100.0% [76.14σ]  
ModelChiSquare2-sig: 2.8%  
ModelChiSquareGof-sig: 79.0%  
Bootstrap-pfa: 8.10e-13  
RollingBand-fgt: 1.00 [10/10]  
GhostDiagnostic-chr: 6.039  
Centroid-sig: 32.9%  
Centroid-so: 0.491 arcsec [1.38σ]  
OotOffset-rm: 1.154 arcsec [0.93σ]  
KicOffset-rm: 1.166 arcsec [0.93σ]  
OotOffset-st: 2/2/2/4 [10]  
KicOffset-st: 2/2/2/4 [10]  
DiffImageQuality-fgm: 0.20 [2/10]  
DiffImageOverlap-fno: 0.53 [9/17]

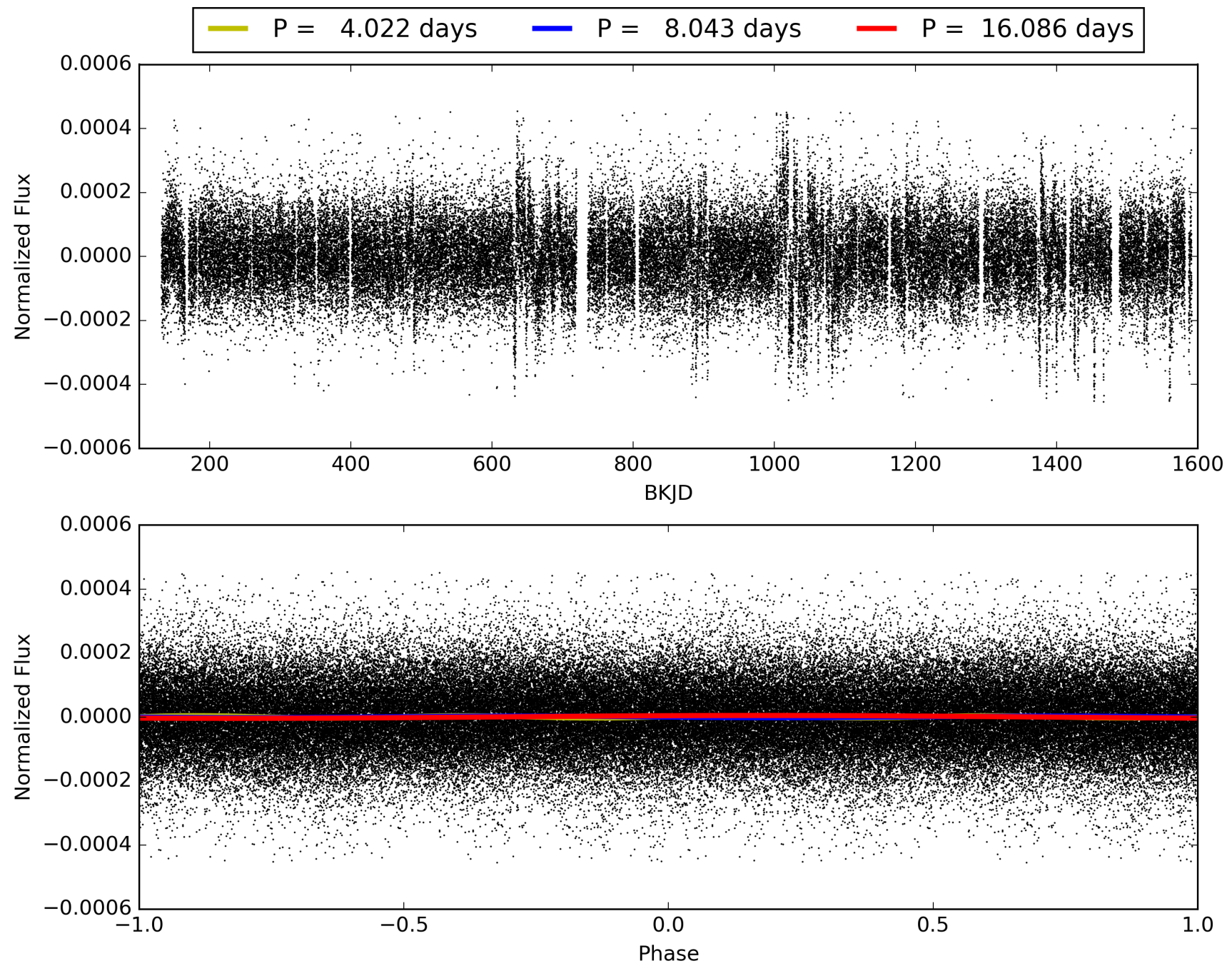
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:42:00 Z

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

# TCE 008564695-05, PDC Light Curves

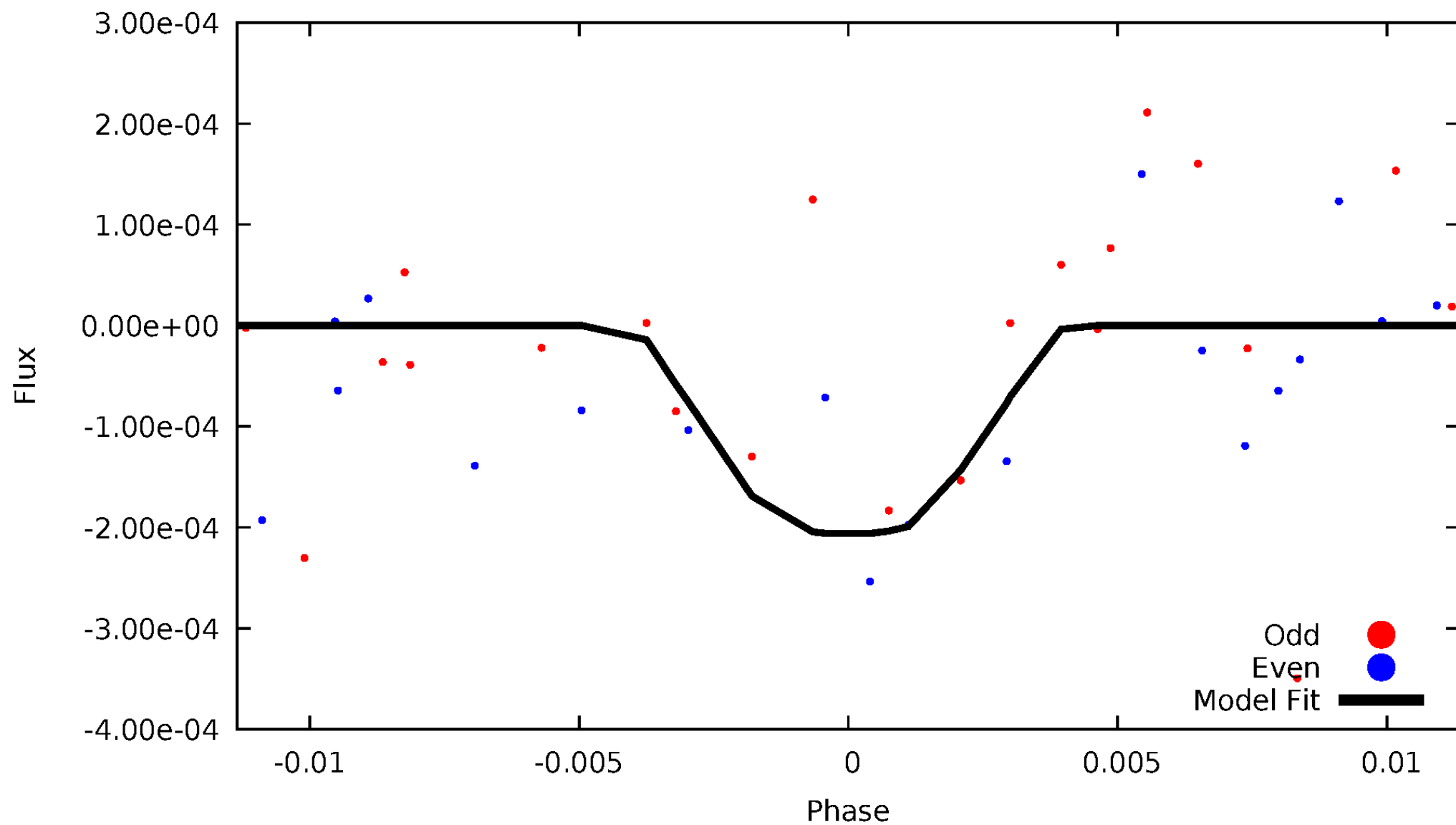


TCE 008564695-05



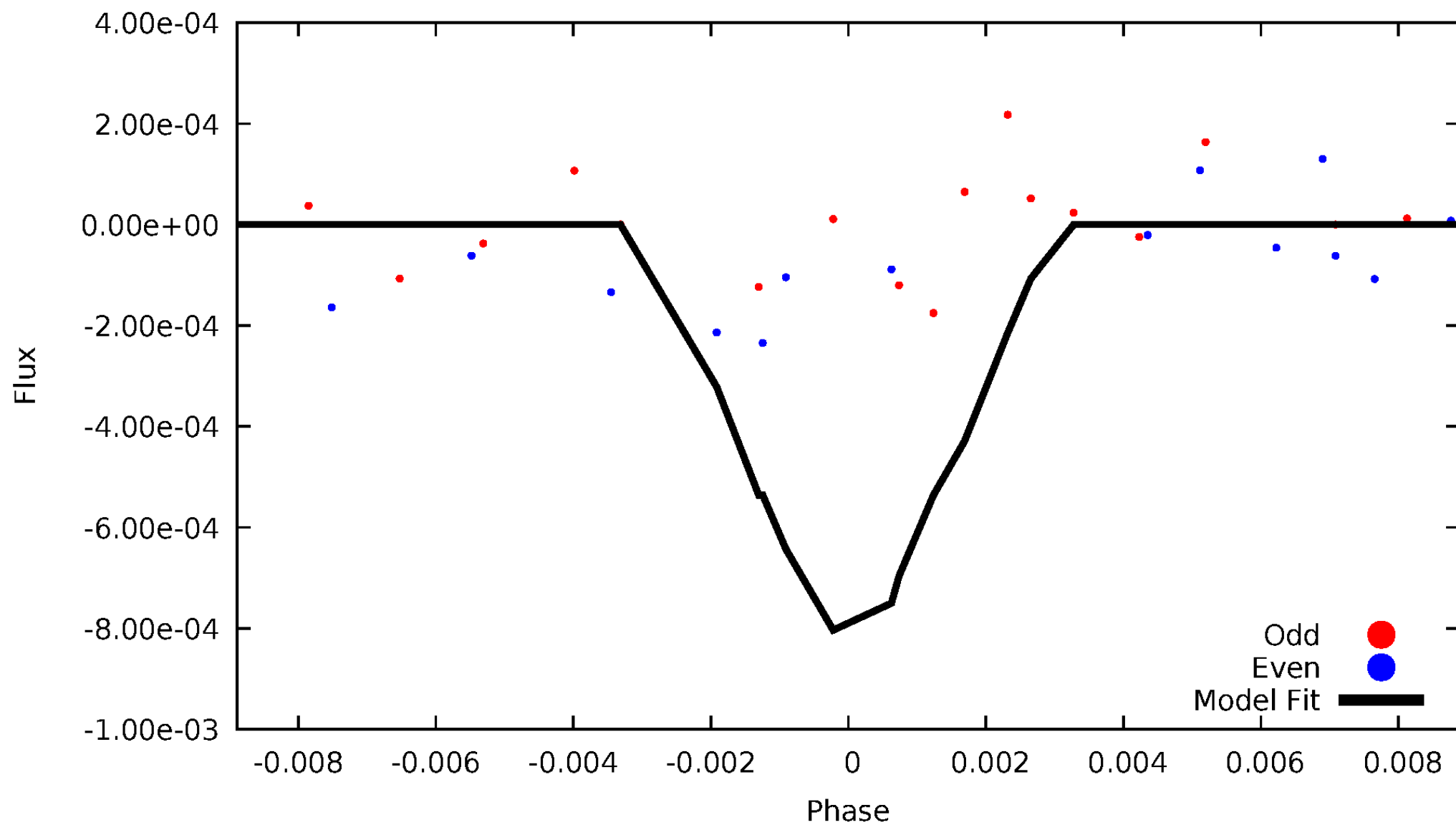
# DV Odd/Even

TCE 008564695-05



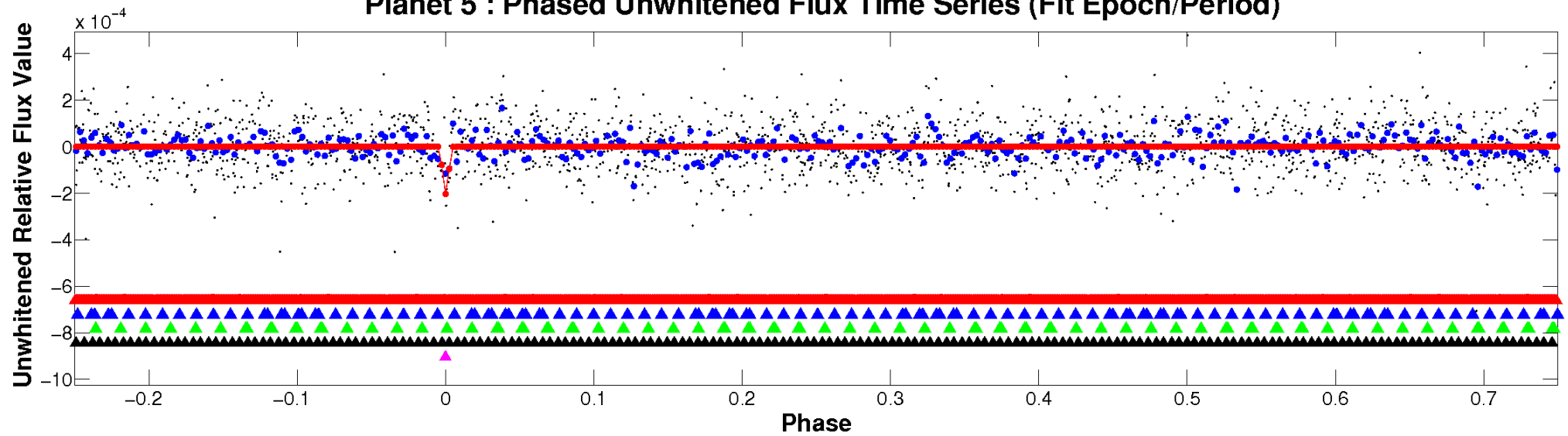
# ALT Odd/Even

TCE 008564695-05

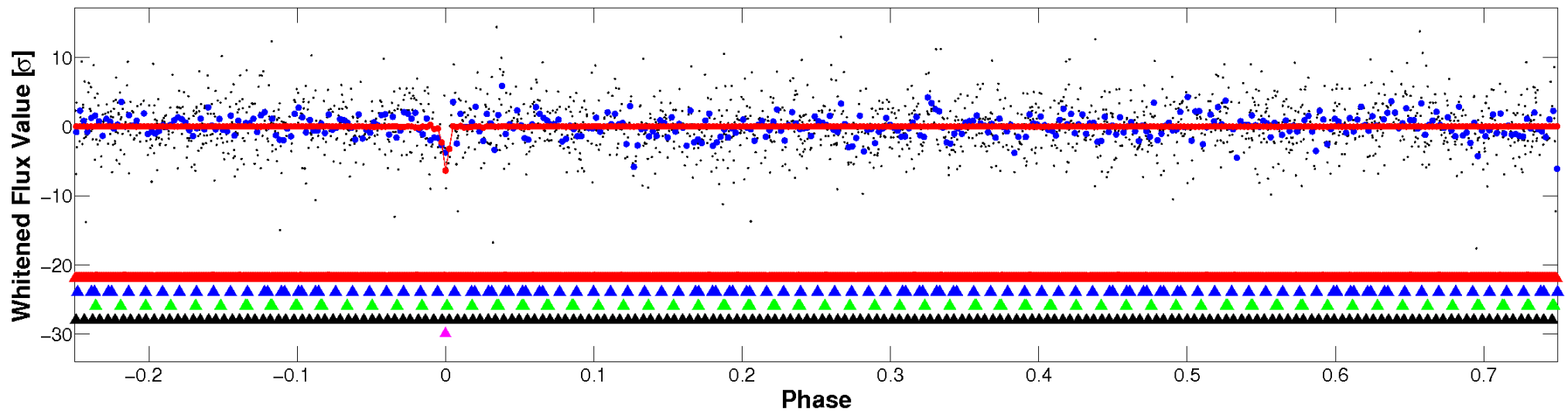


# Non-Whitened Vs. Whitened Light Curve

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

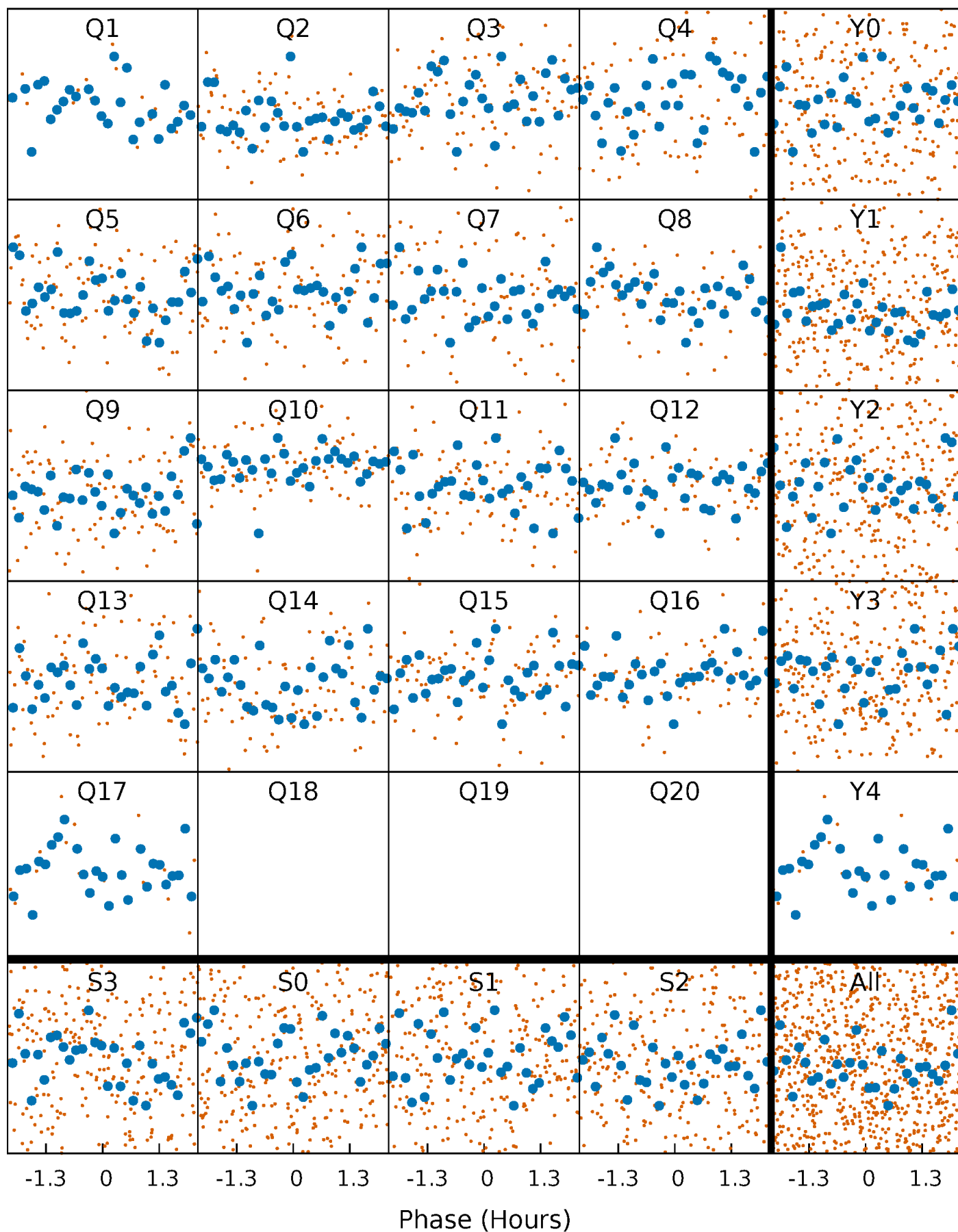


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

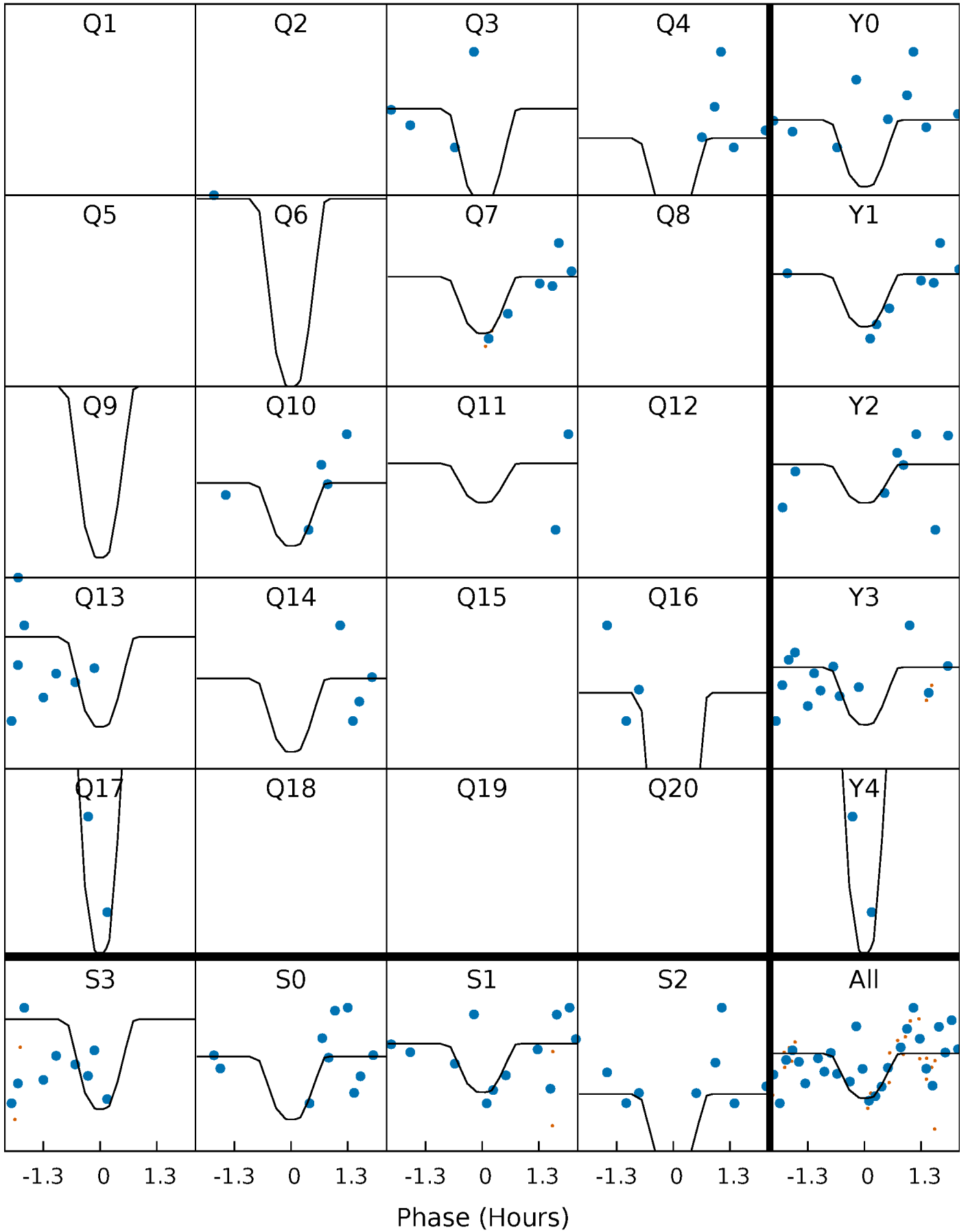
TCE 008564695-05     $P = 8.043198$  Days     $T_0 = 133.689095$  (BKJD)





# DV Quarter-Phased Transit Curves

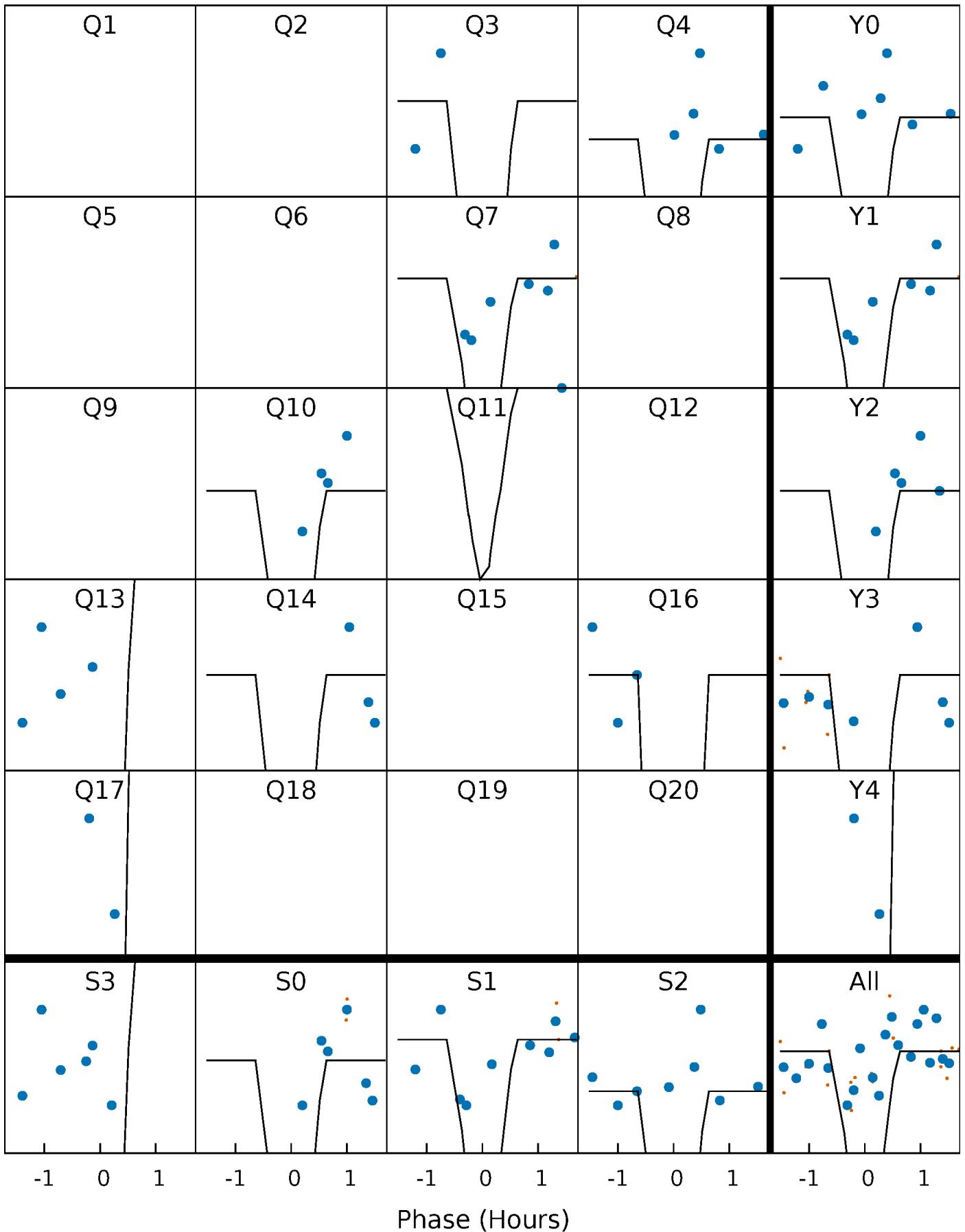
TCE 008564695-05     $P = 8.043198$  Days     $T_0 = 133.689095$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

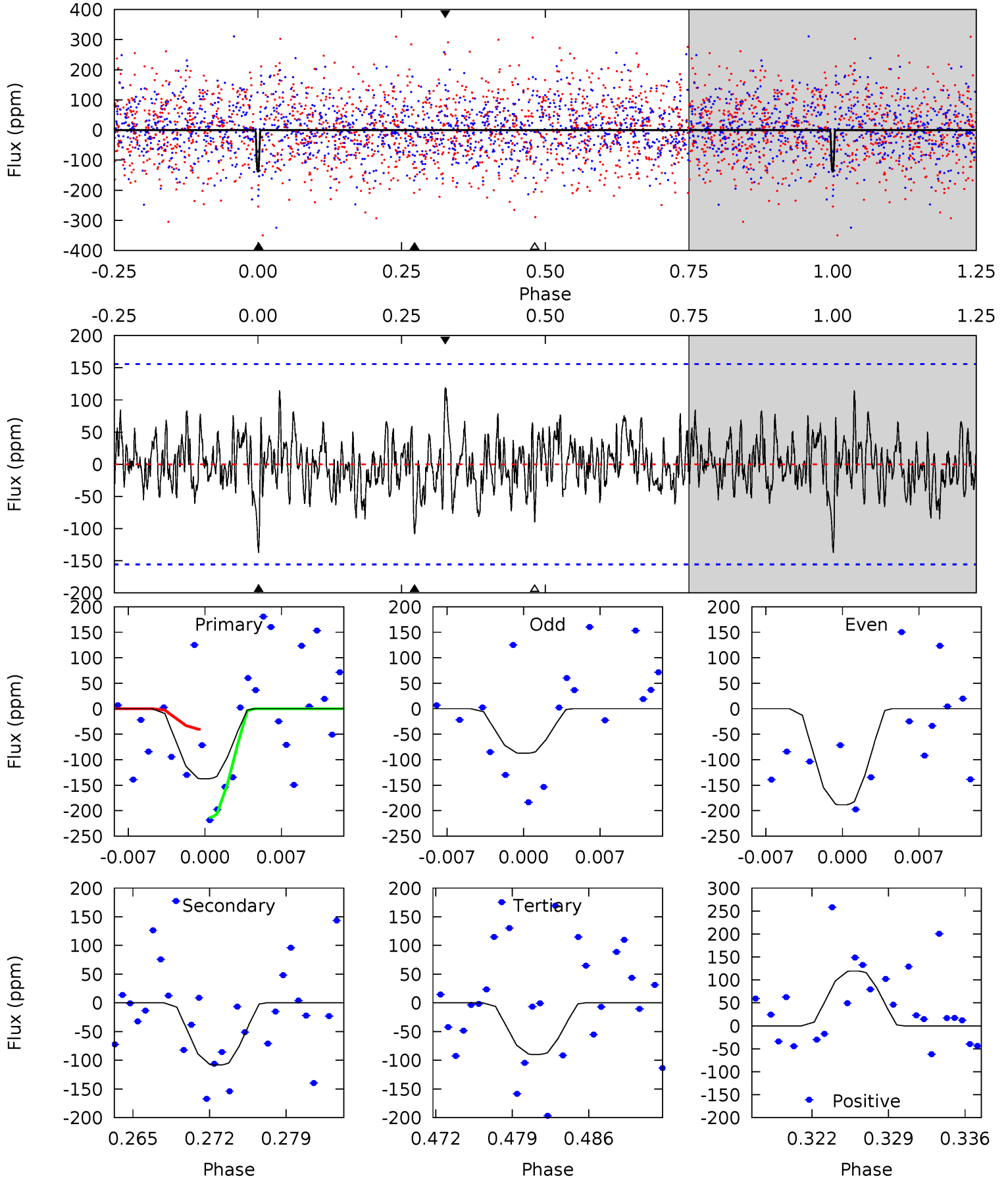
TCE 008564695-05     $P = 8.042999$  Days     $T_0 = 133.720826$  (BKJD)



# DV Model-Shift Uniqueness Test

008564695-05, P = 8.043198 Days, E = 125.645897 Days

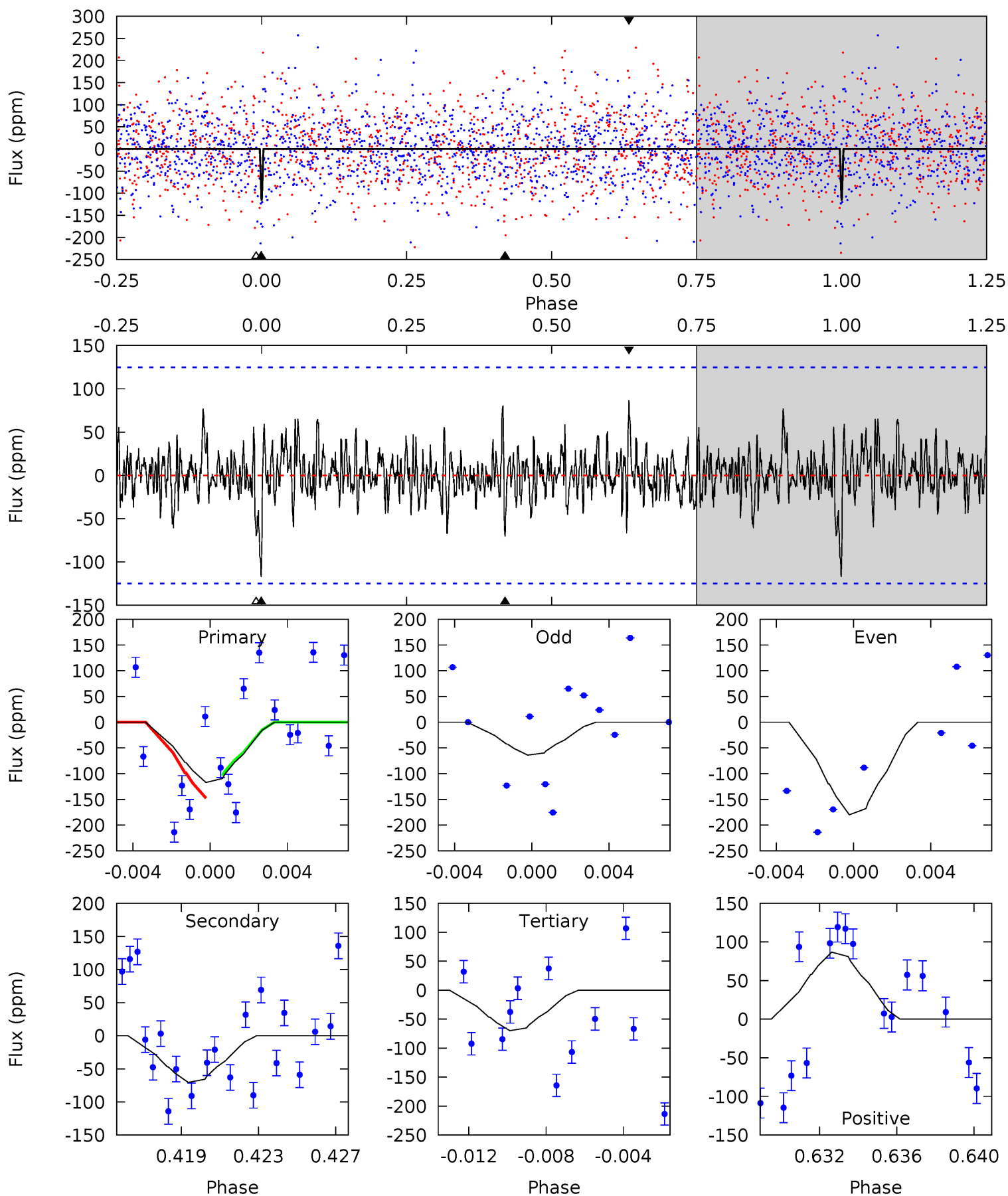
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.49	3.54	2.94	3.90	5.09	2.69	1.10	1.55	0.59	0.60	-0.36	1.66	0.82	0.46	2.80



# Alt Model-Shift Uniqueness Test

008564695-05, P = 8.042999 Days, E = 125.677827 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
4.88	2.94	2.91	3.62	5.20	2.88	0.93	1.97	1.26	0.02	-0.68	2.38	0.66	0.43	0.86



### Stellar Parameters For KIC 008564695

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8050^{+225}_{-338}$	$3.996^{+0.221}_{-0.136}$	$-0.120^{+0.200}_{-0.350}$	$2.254^{+0.442}_{-0.663}$	$1.835^{+0.119}_{-0.356}$	$0.226^{+0.277}_{-0.085}$
	+3%/-4%	+6%/-3%	+167%/-292%	+20%/-29%	+6%/-19%	+123%/-38%
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 008564695-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-108 \pm 31$	$4.16^{+3.71}_{-2.57}$	$2380^{+156}_{-197}$	$5854^{+4501}_{-1385}$	$30^{+170}_{-22}$
Alt.	$-70 \pm 24$	$7.07^{+3.75}_{-3.82}$	$2388^{+170}_{-197}$	$4331^{+1846}_{-728}$	$6.868^{+26.627}_{-4.320}$

$T_{max}$  = 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

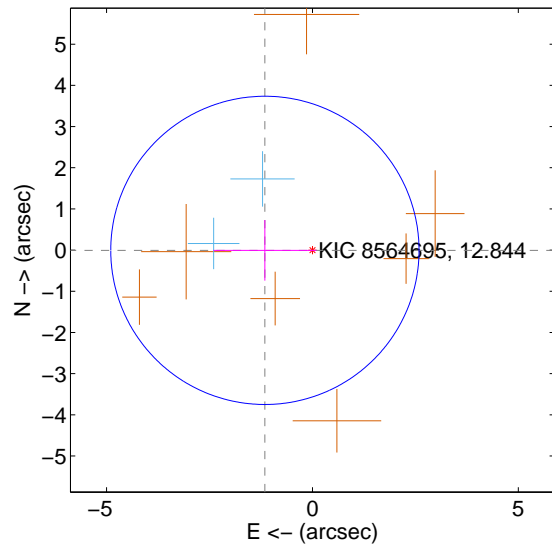
Supplemental centroid analysis for 008564695-05. Kepler magnitude: 12.84. Transit SNR 14.57

There are 2 quarters with good PRF difference image offsets

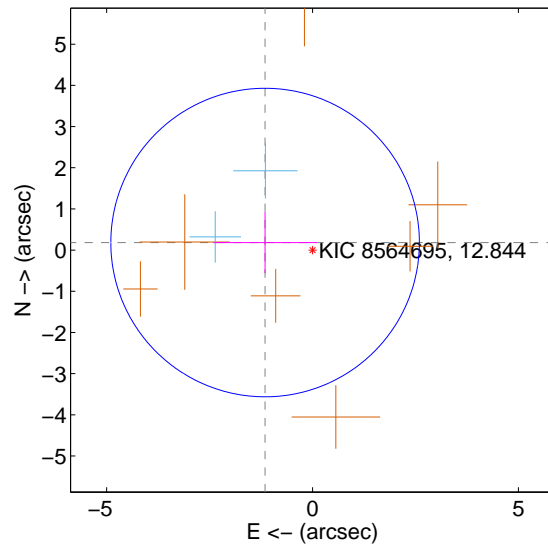
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.154 \pm 1.247$	0.93	$1.154 \pm 1.247$	$-0.007 \pm 0.736$
PRF-fit source offset from KIC position	$1.166 \pm 1.249$	0.93	$1.151 \pm 1.259$	$0.183 \pm 0.745$
photometric centroid source offset	$0.49 \pm 0.36$	1.38	$-0.48 \pm 0.36$	$0.10 \pm 0.35$

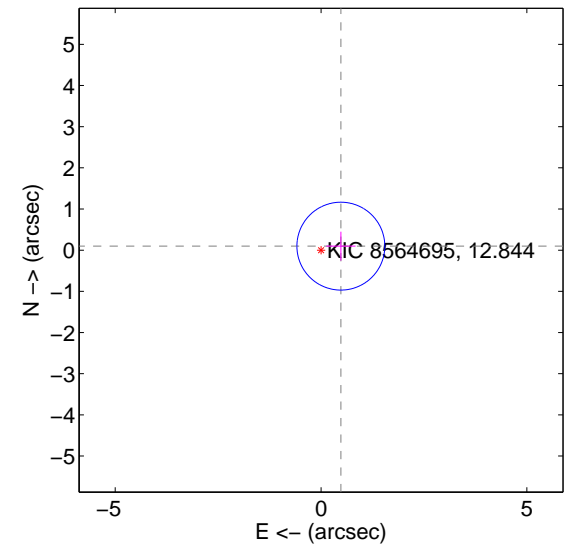
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

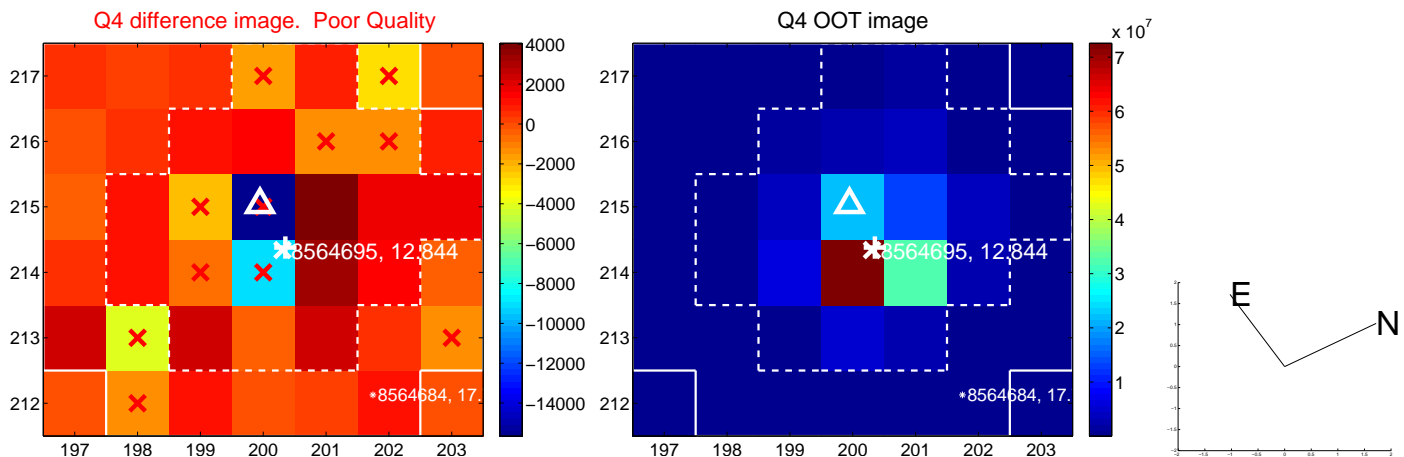
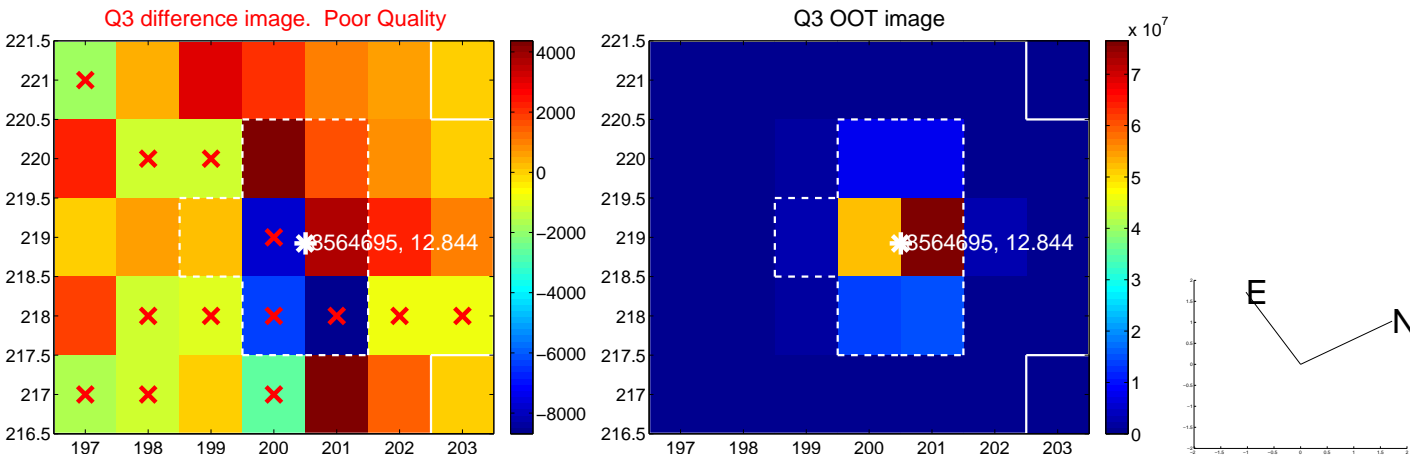
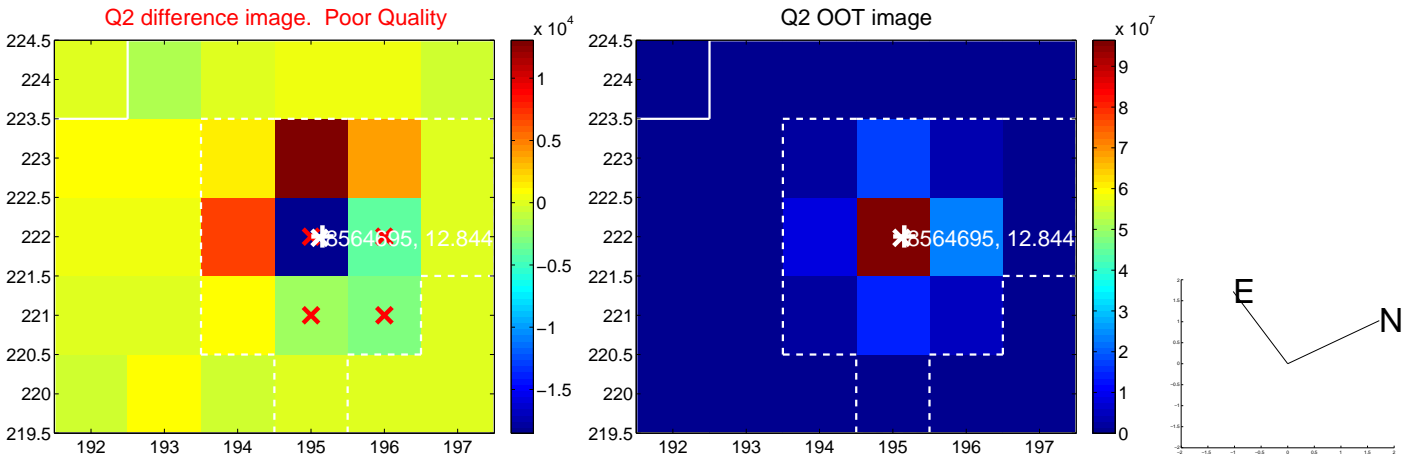
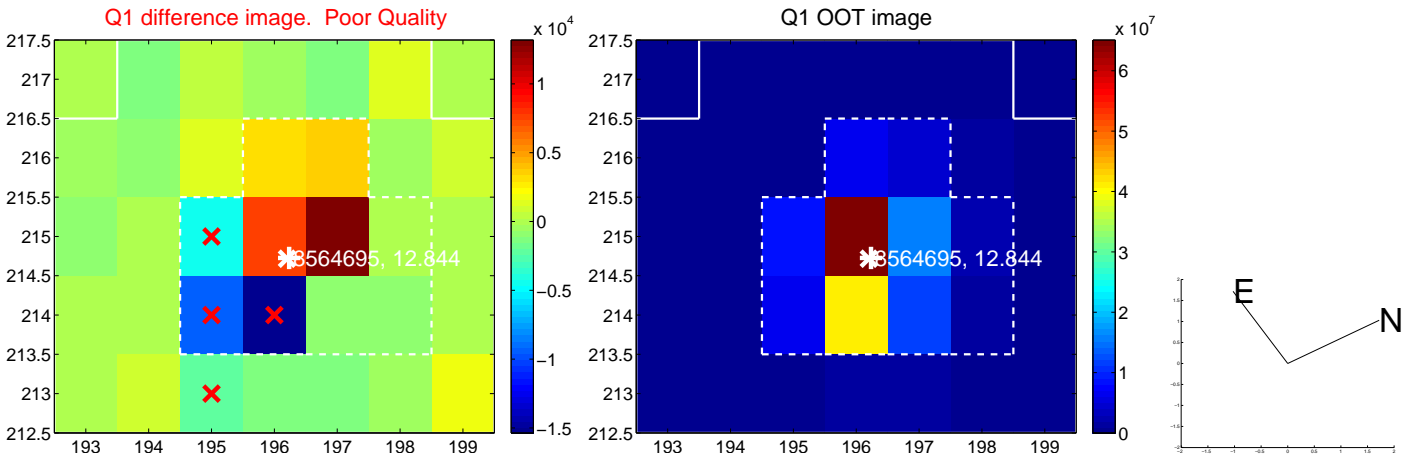


offset from photometric centroids

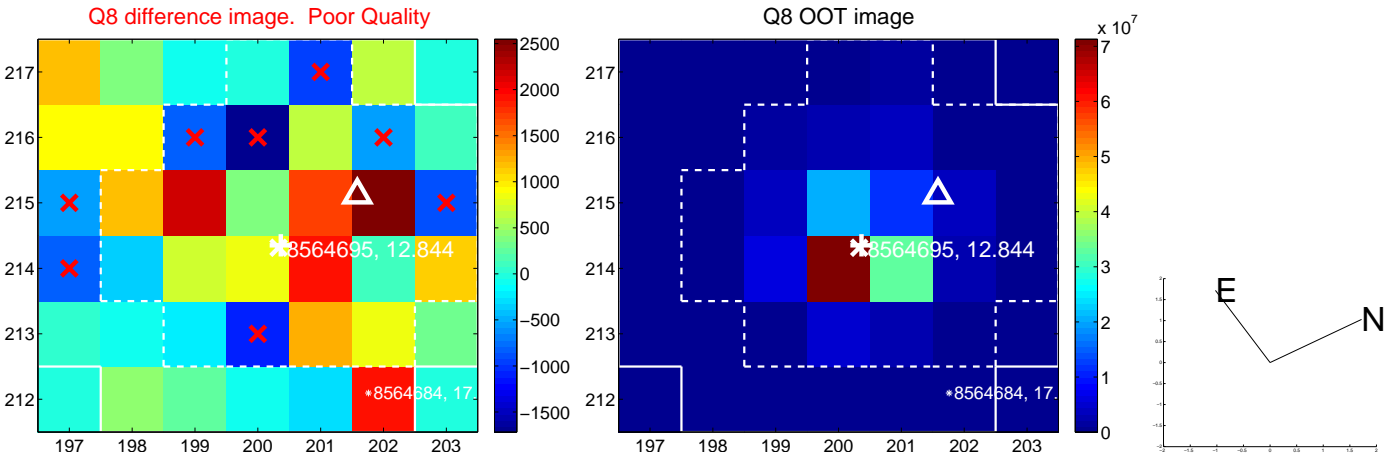
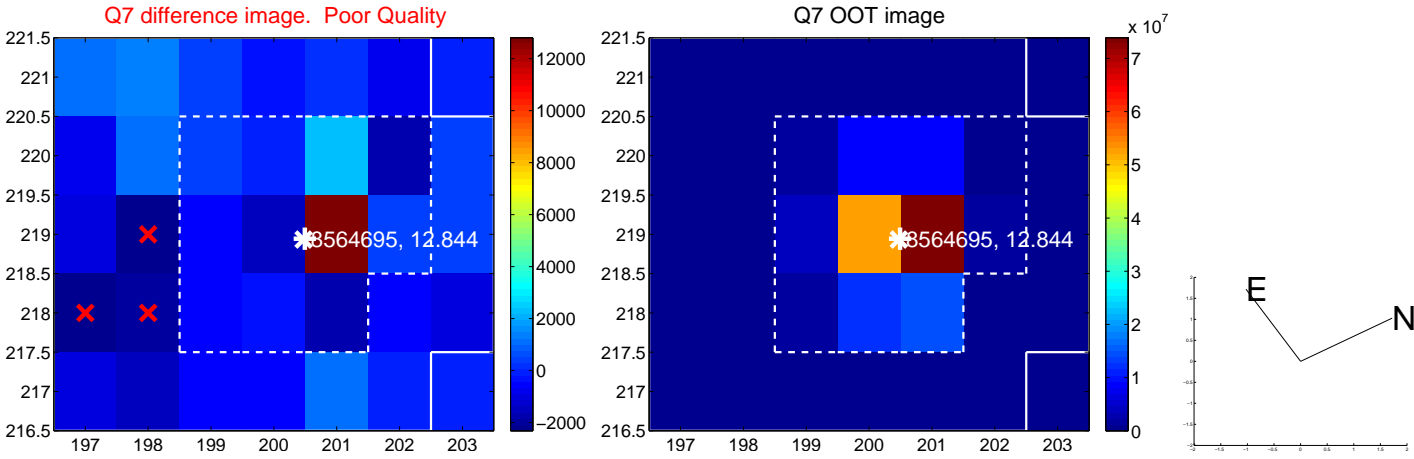
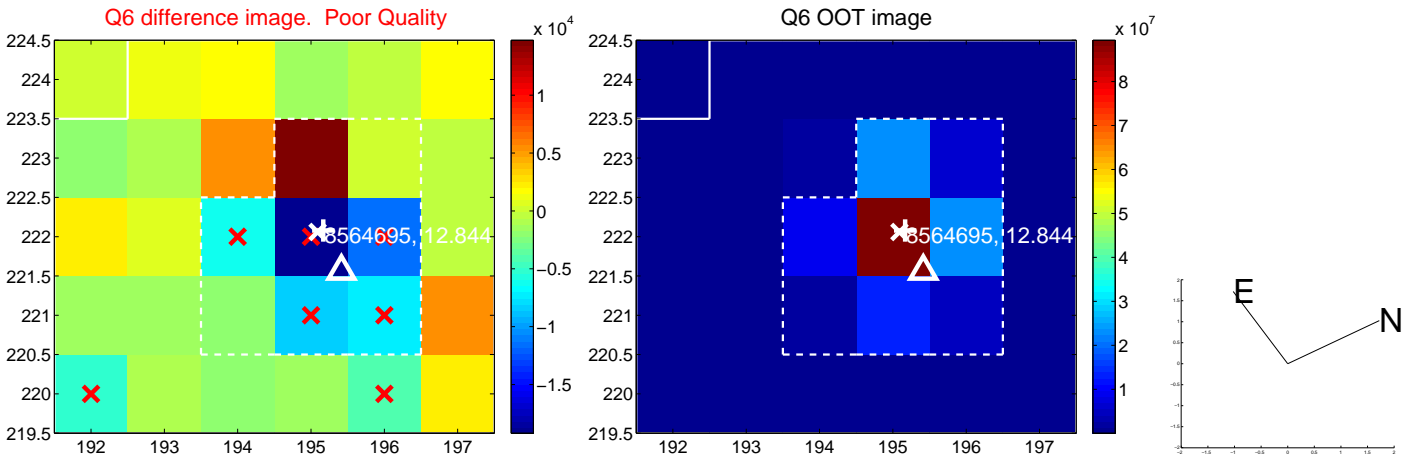
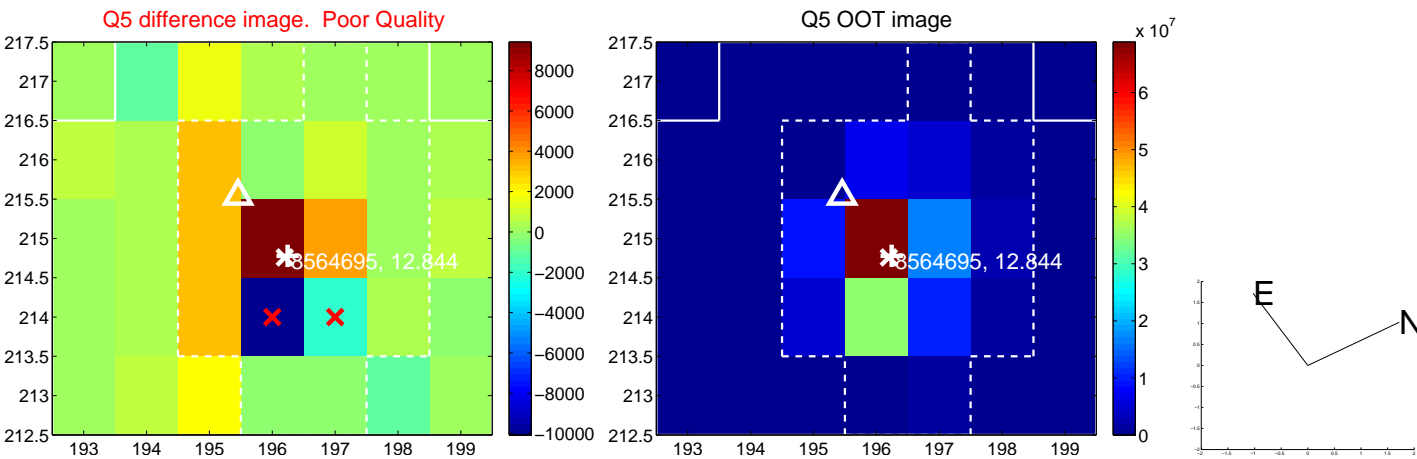


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

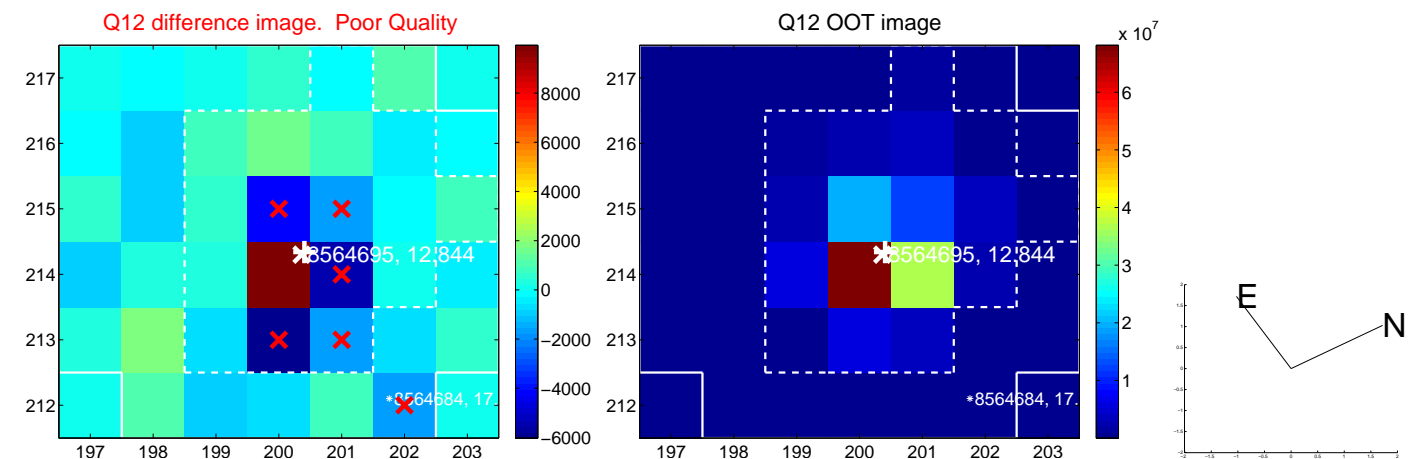
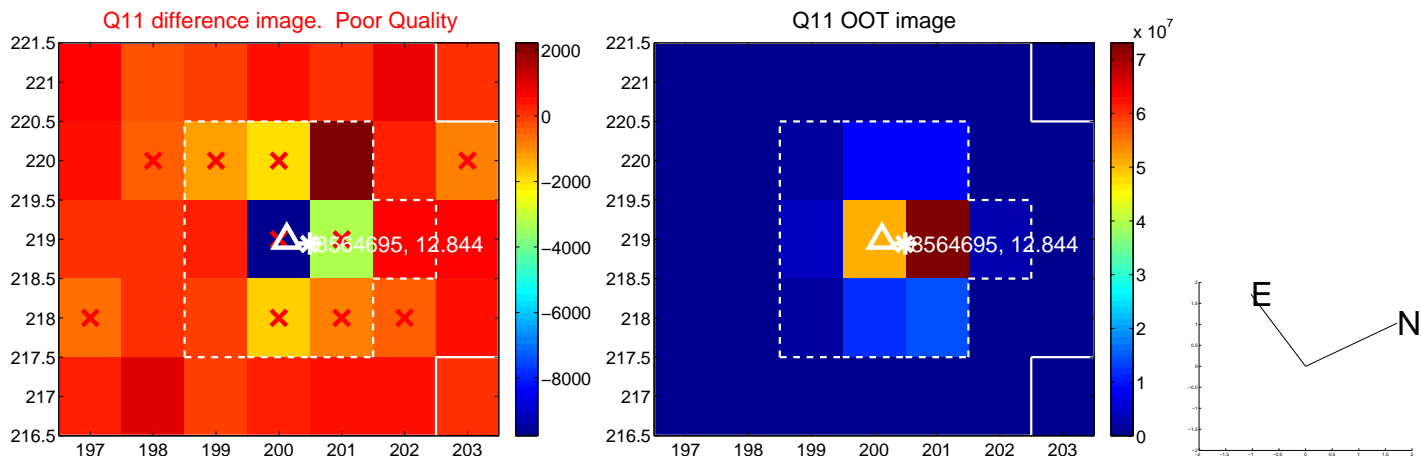
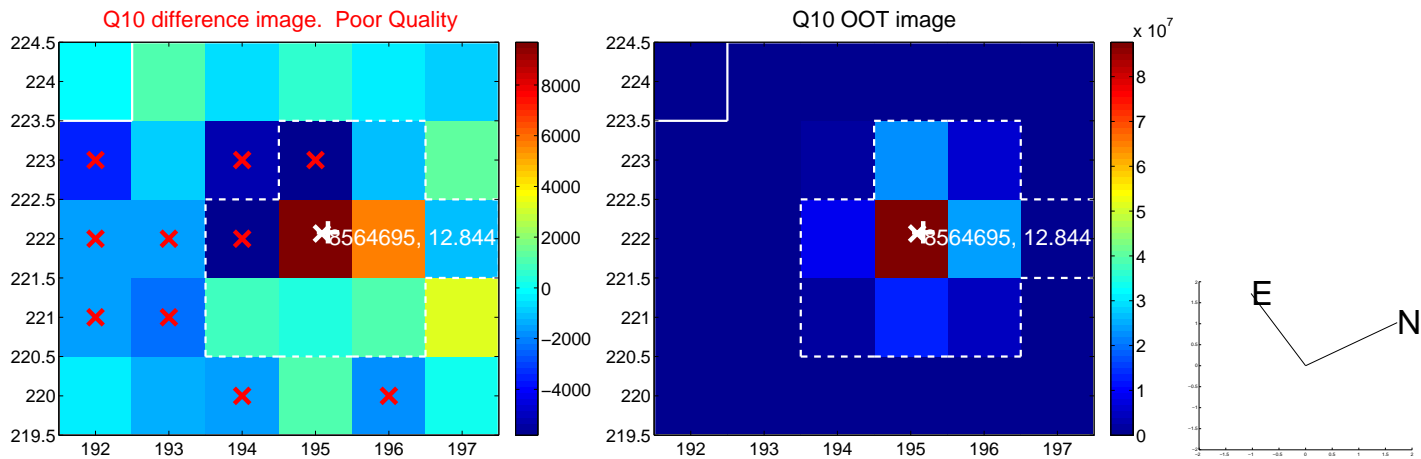
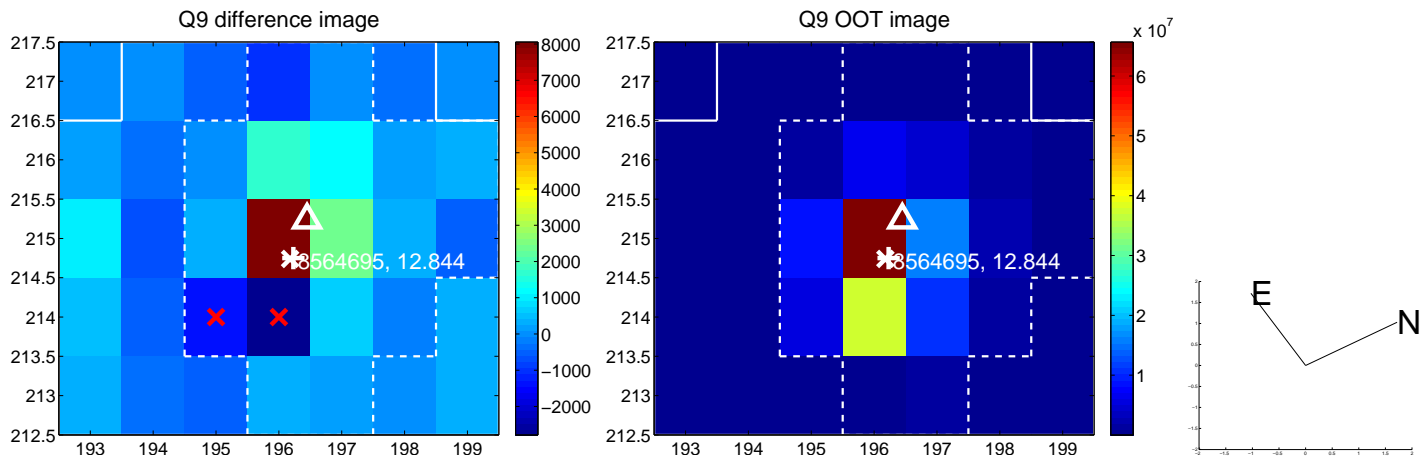
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

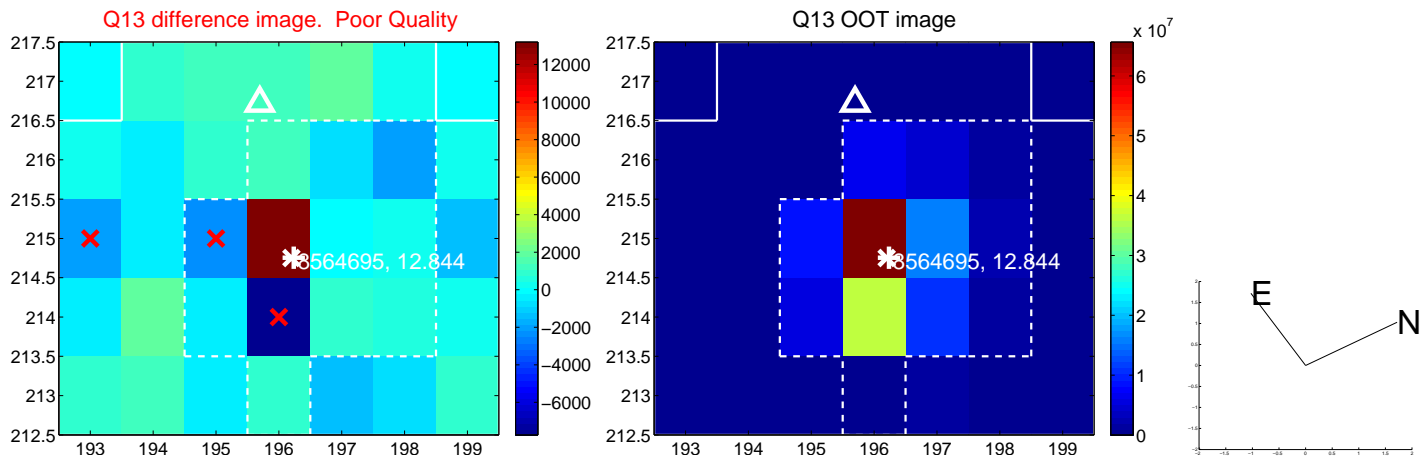


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

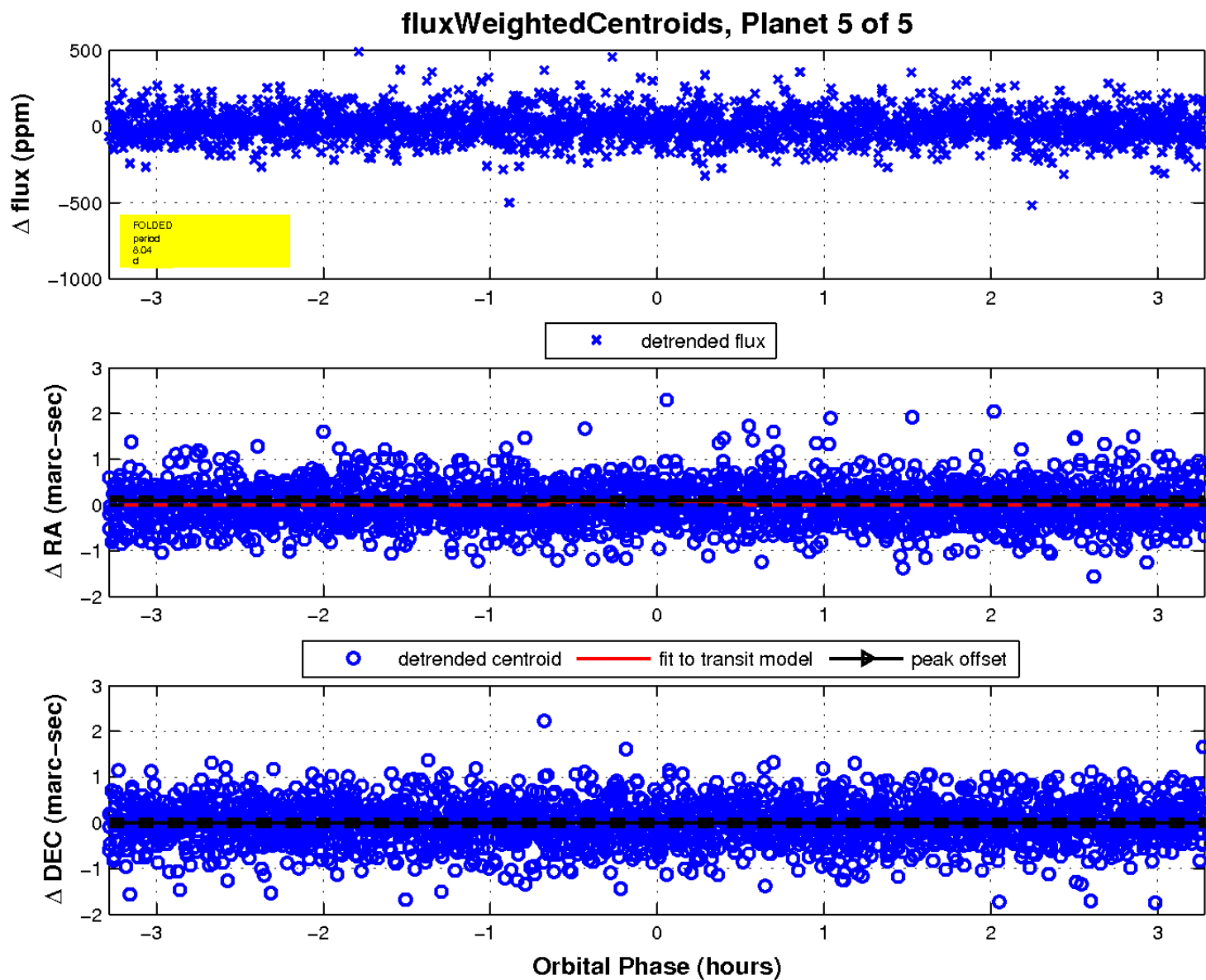
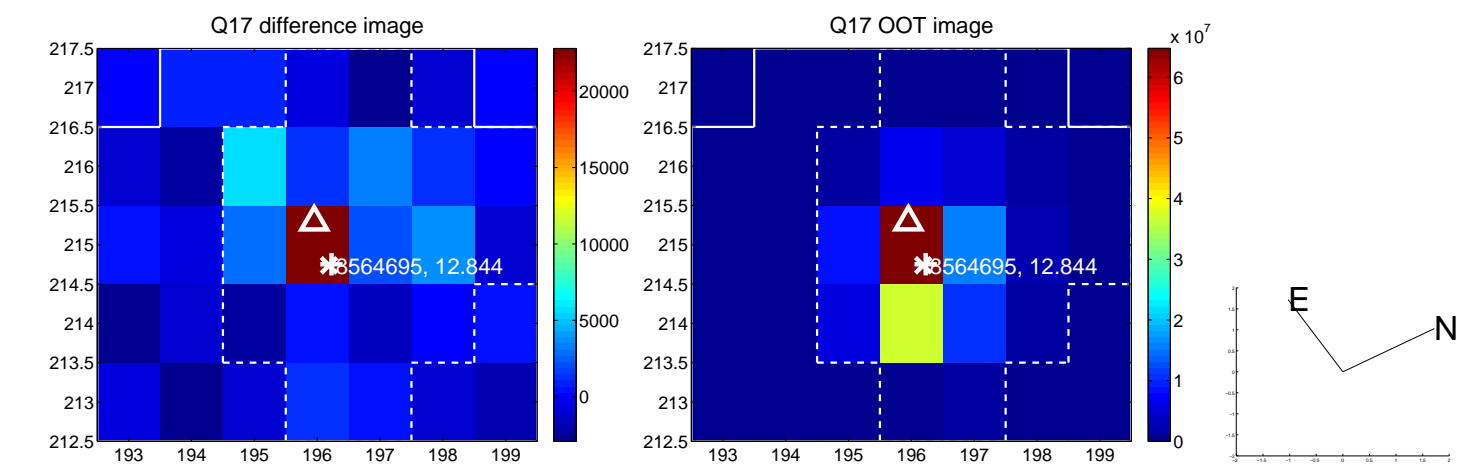




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

