

# KIC 003440230

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003440230-01	OBS	6334.01	2.881103	134.238874	660429.3	5.000	14795.1	-1.0	3.37	8104	99.78	17835.33
003440230-02	OBS	No	2.881085	132.804842	48694.3	7.327	1475.4	1232.4	3.37	8104	126.37	17835.47
003440230-03	OBS	No	105.882424	198.596626	22165.1	2.000	327.7	-1.0	3.37	8104	50.80	145.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003440230-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
003440230-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003440230-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_NOFITS

**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.

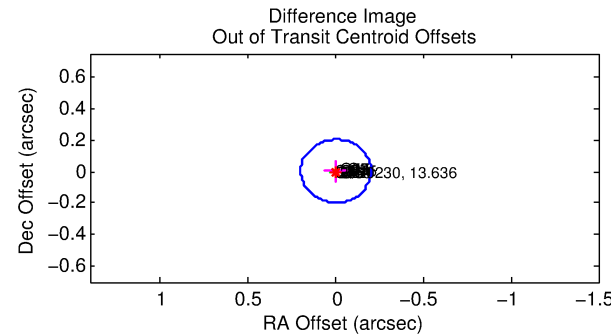
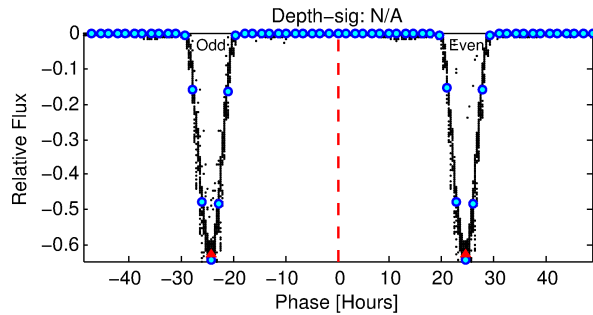
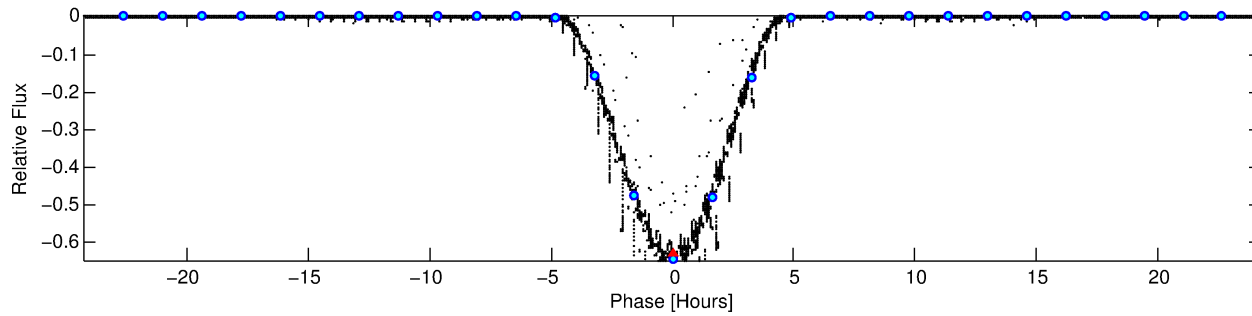
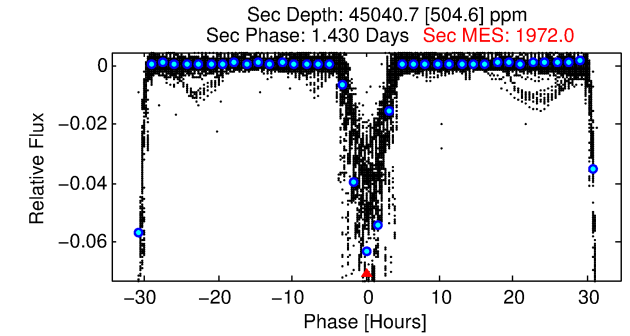
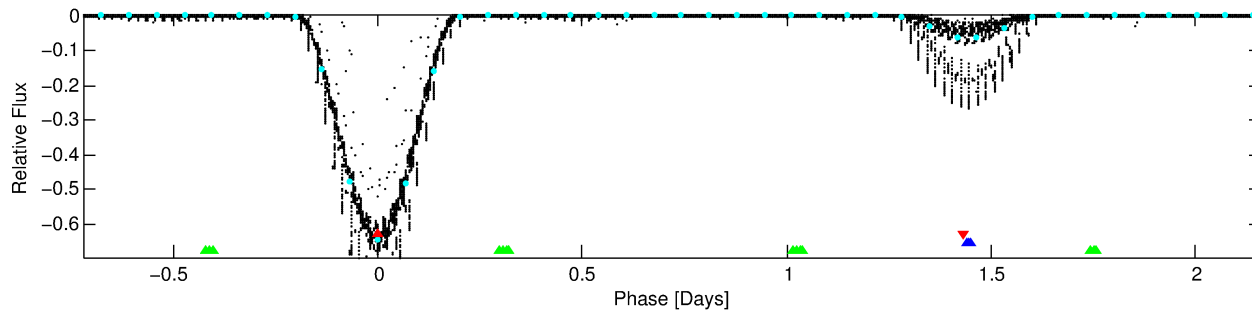
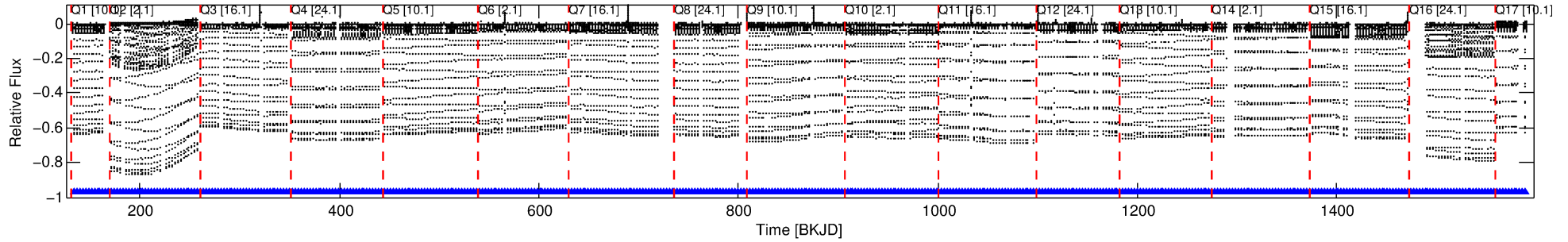
## Ephemeris Match Information For 003440230-01

No Significant Match Found

# DV One-Page Summary

KIC: 3440230 Candidate: 1 of 3 Period: 2.881 d  
KOI: K06334 Corr: No Ephemeris Match

Kp: 13.64 R\*: 3.37 Rs Teff: 8104.0 K Logg: 3.67 Fe/H: -0.340



## TPS TCE Results:

Period = 2.88110 d  
Epoch = 134.2389 BKJD

DV fit results are unavailable

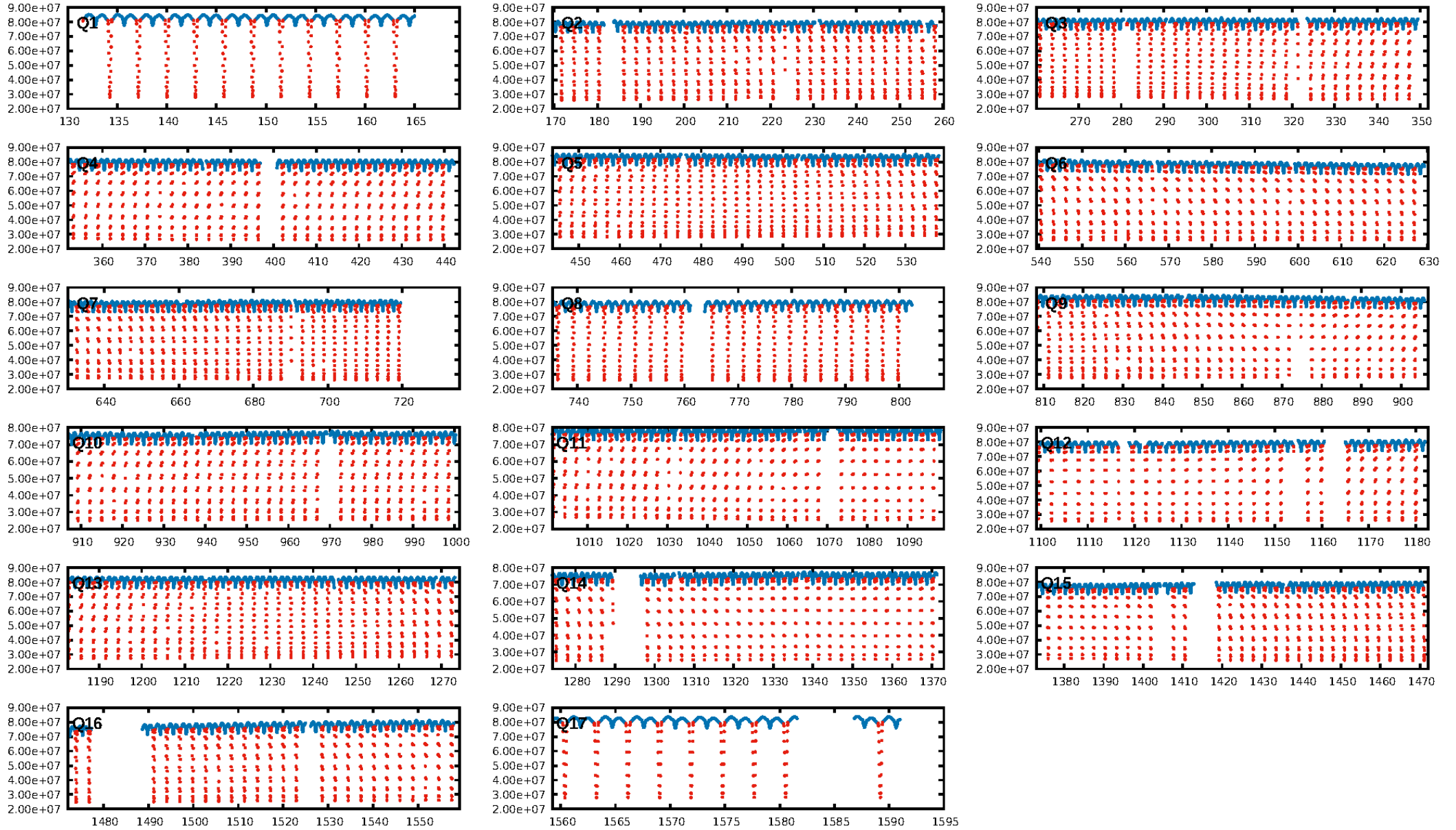
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: 100.0% [459.04 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [452/452]  
GhostDiagnostic-chr: 0.9552  
Centroid-sig: N/A  
Centroid-so: 0.039 arcsec [124.91 $\sigma$ ]  
OotOffset-rm: 0.005 arcsec [0.07 $\sigma$ ]  
KicOffset-rm: 0.030 arcsec [0.43 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

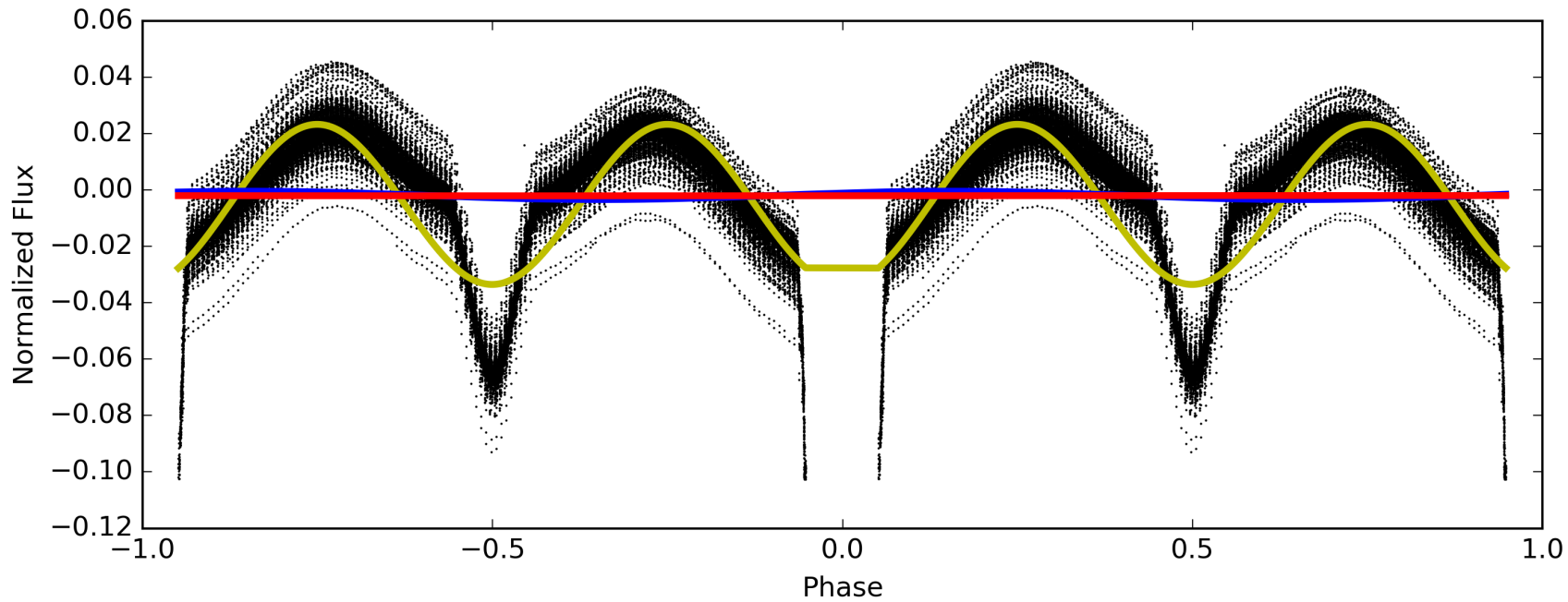
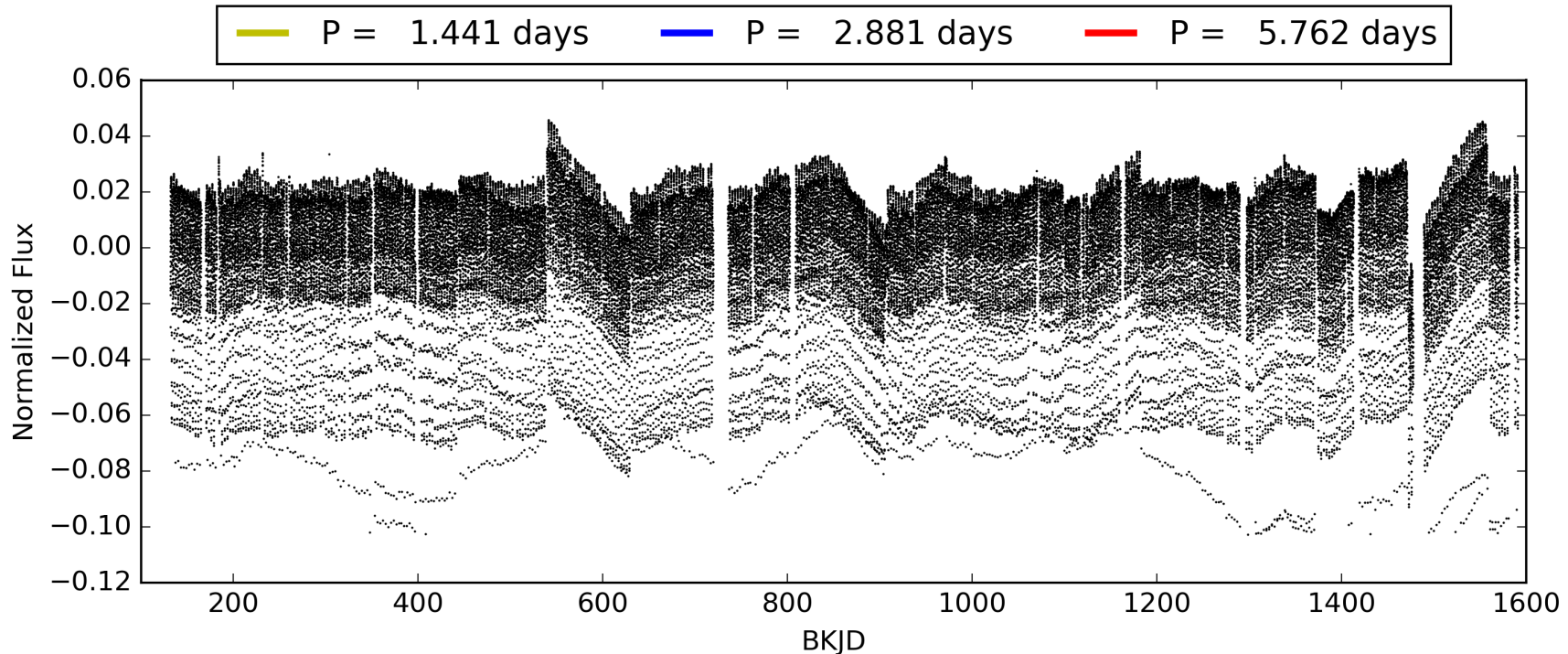
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:59:09 Z

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

# TCE 003440230-01, PDC Light Curves

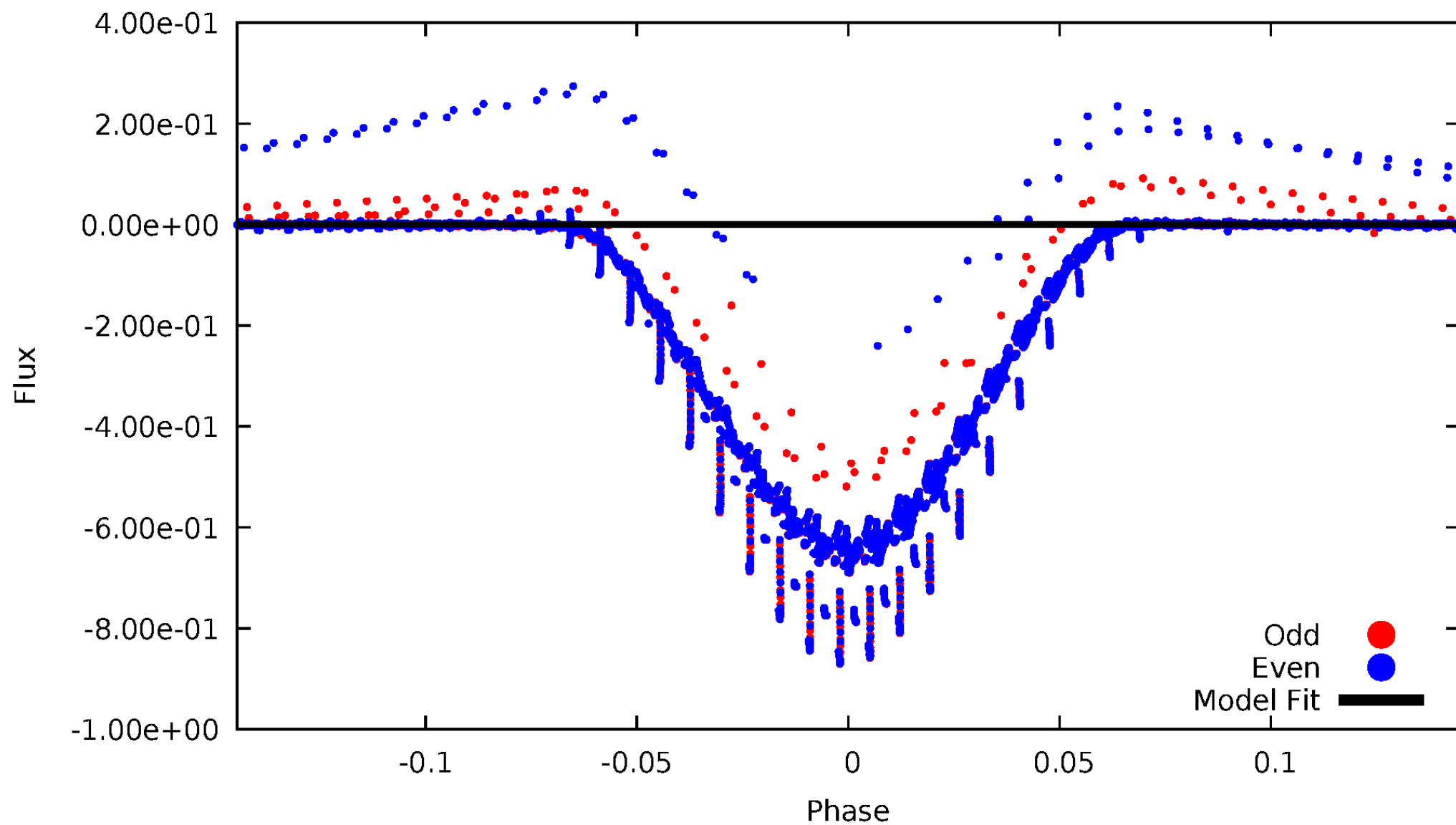


TCE 003440230-01



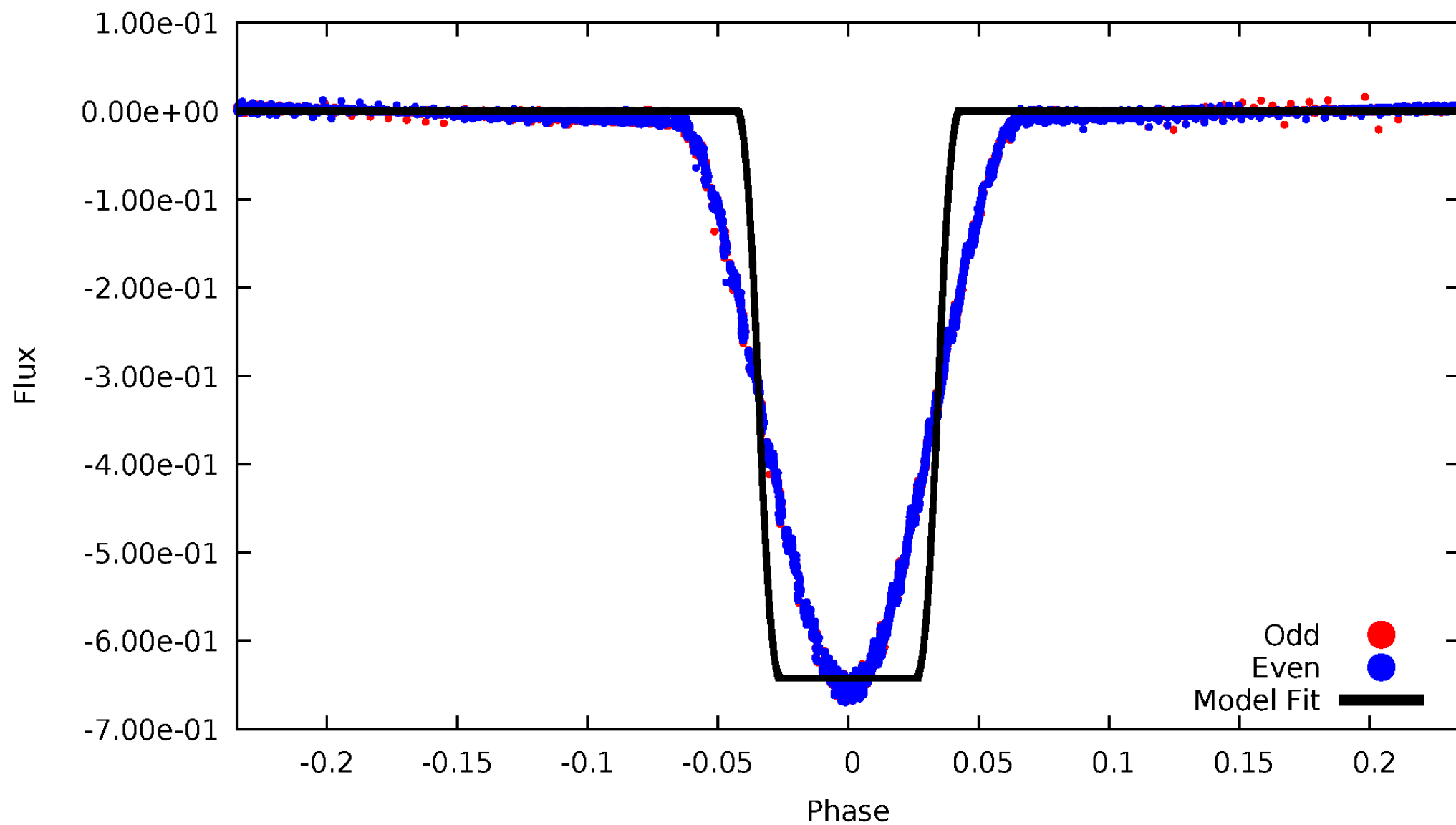
# DV Odd/Even

TCE 003440230-01



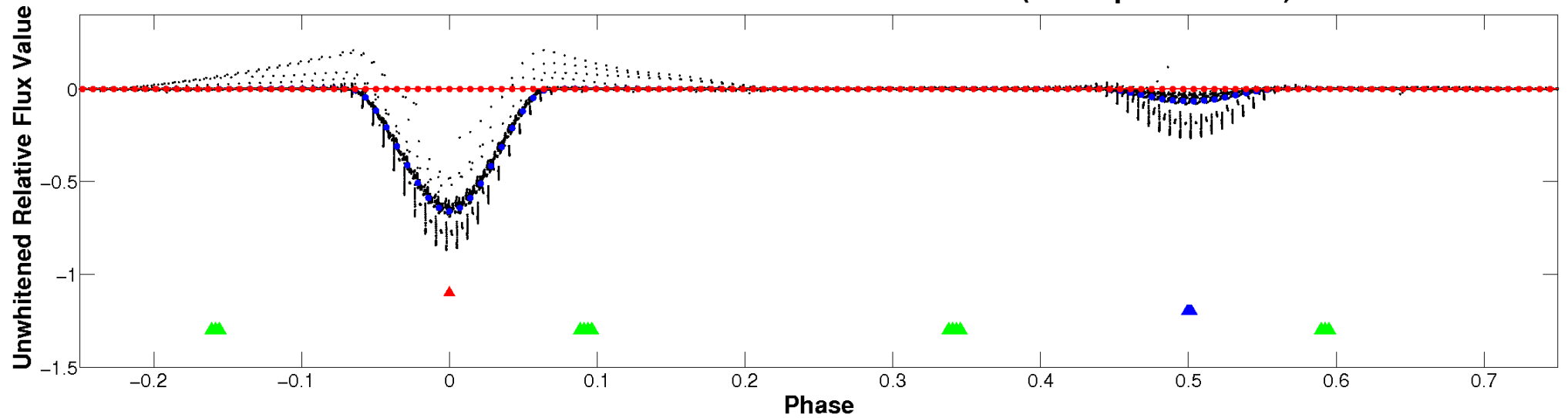
# ALT Odd/Even

TCE 003440230-01

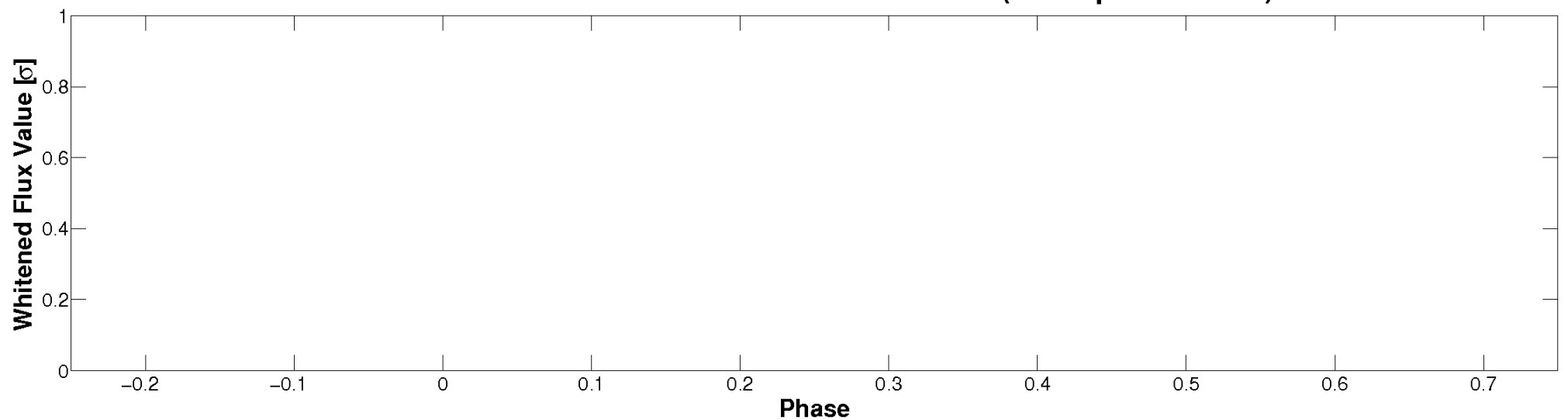


# Non-Whitened Vs. Whitened Light Curve

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

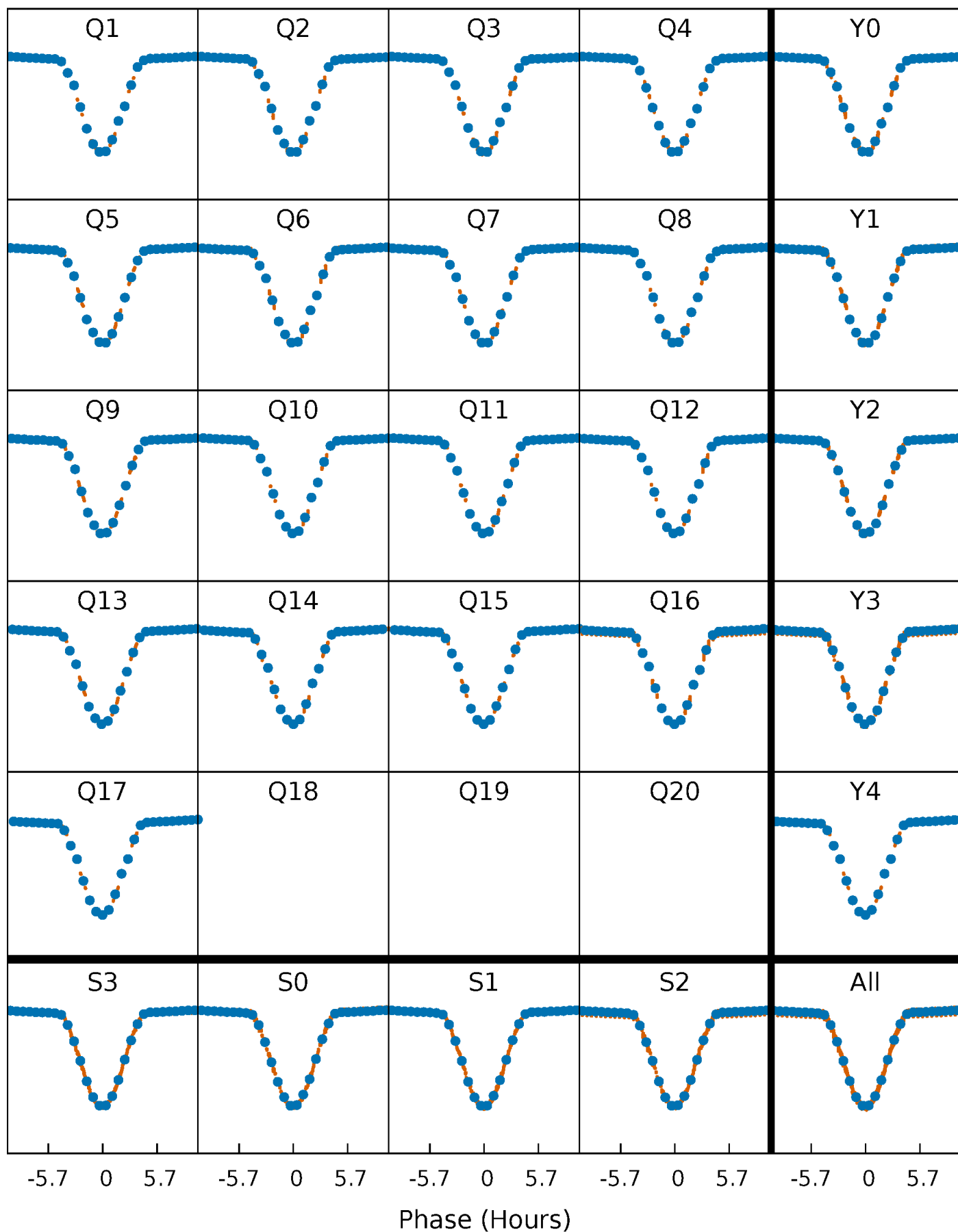


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

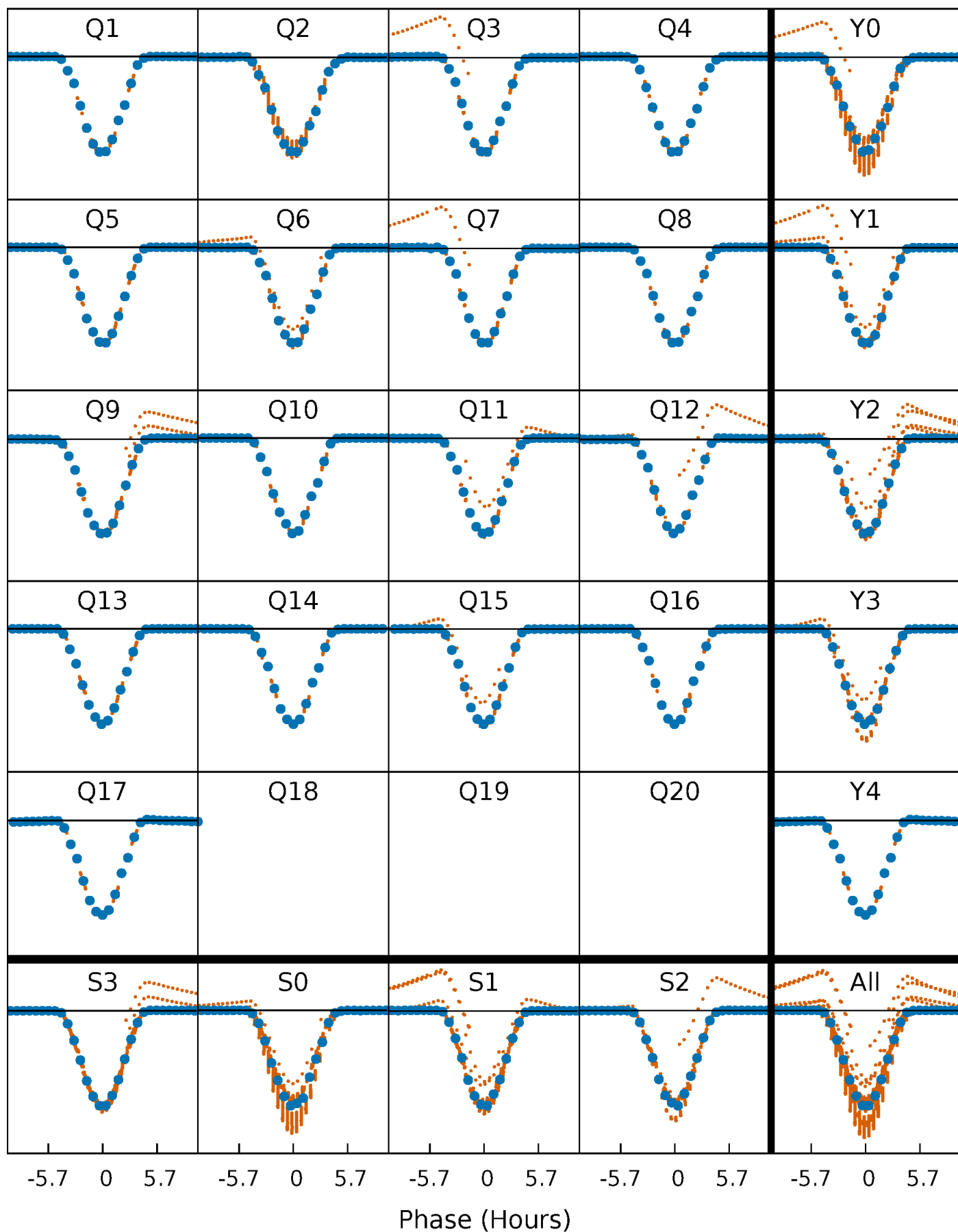
TCE 003440230-01 P= 2.881103 Days  $T_0=134.238874$  (BKJD)





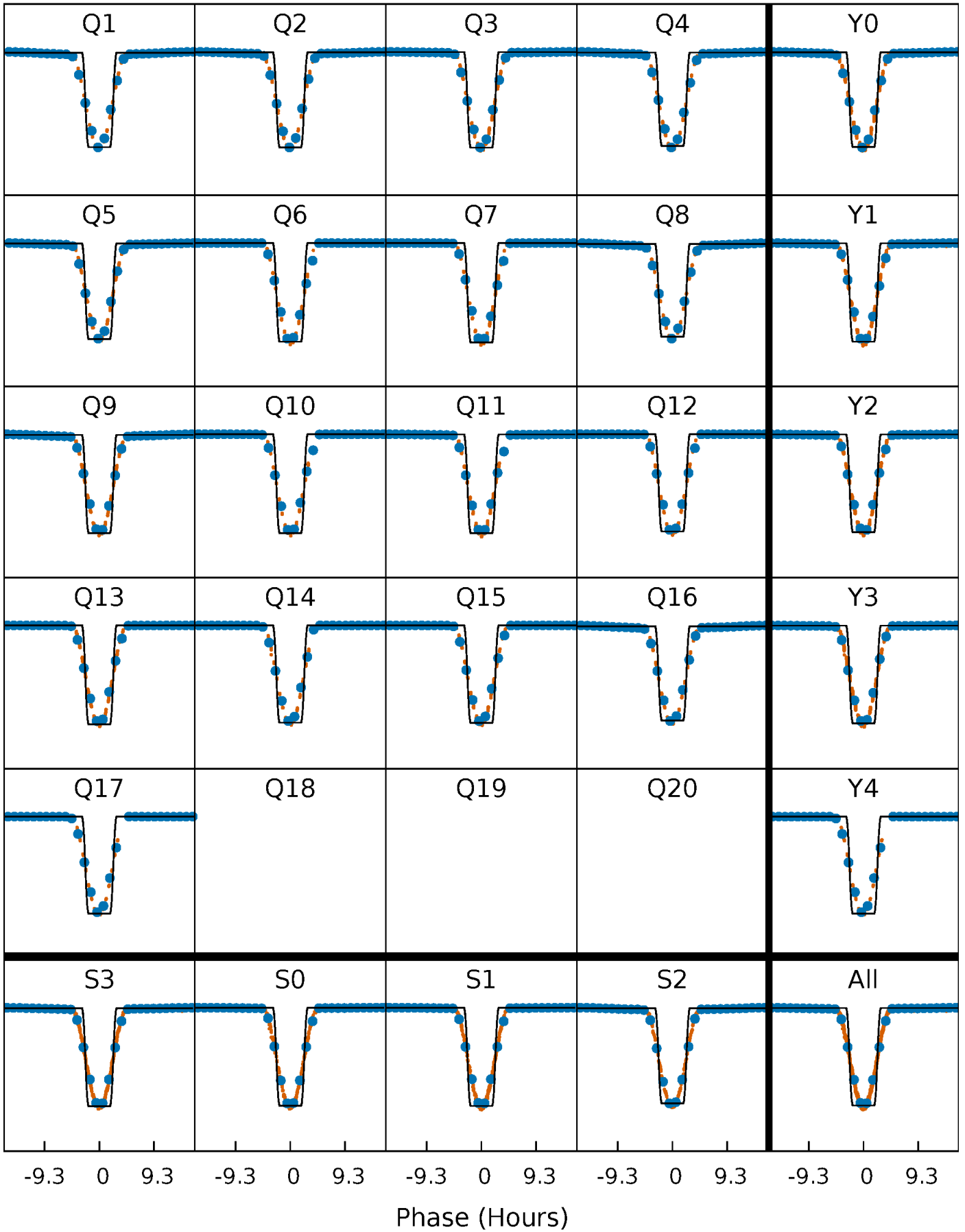
# DV Quarter-Phased Transit Curves

TCE 003440230-01 P= 2.881103 Days  $T_0=134.238874$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

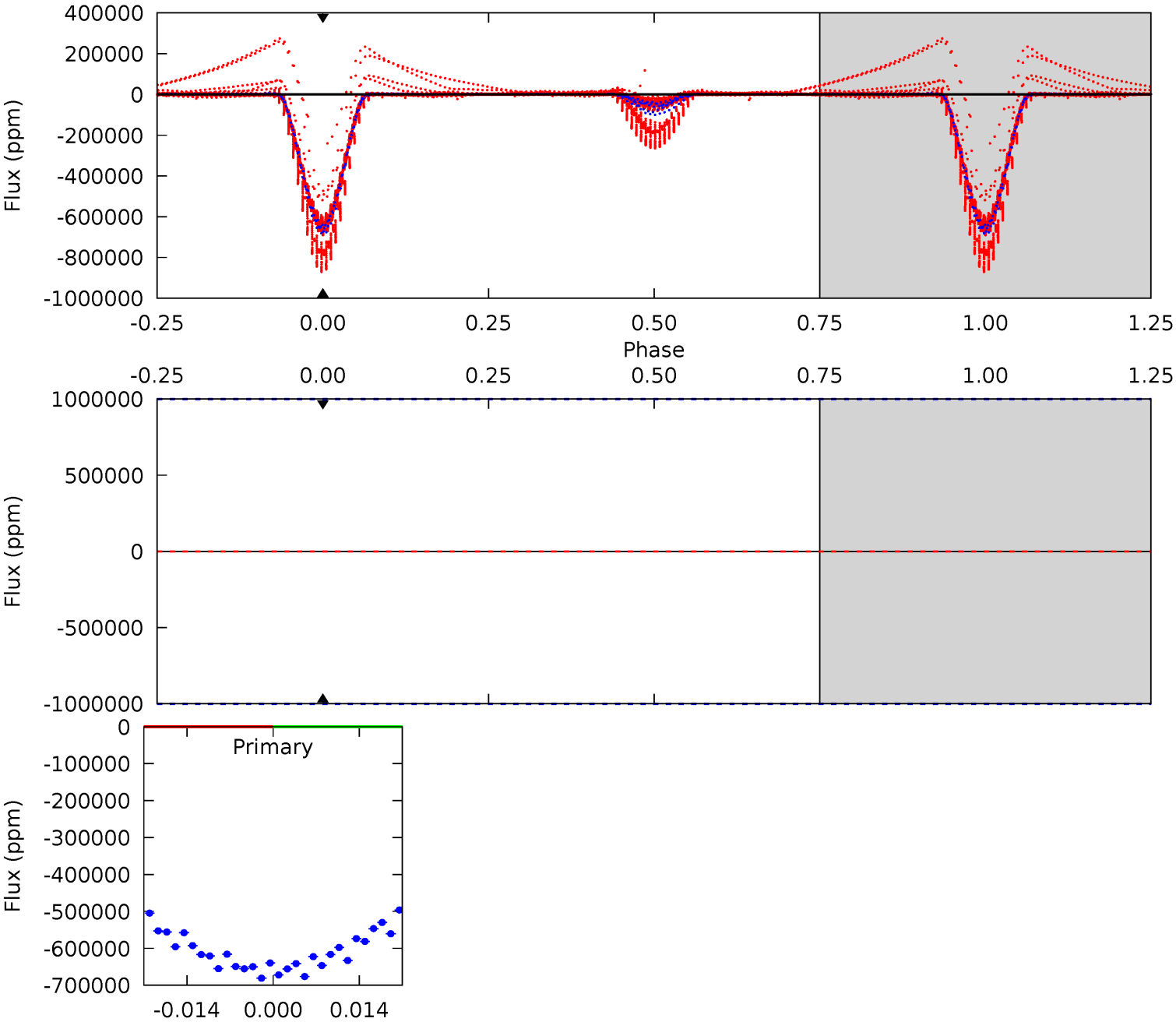
TCE 003440230-01 P= 2.881103 Days  $T_0=134.237972$  (BKJD)



# DV Model-Shift Uniqueness Test

003440230-01, P = 2.881103 Days, E = 131.357771 Days

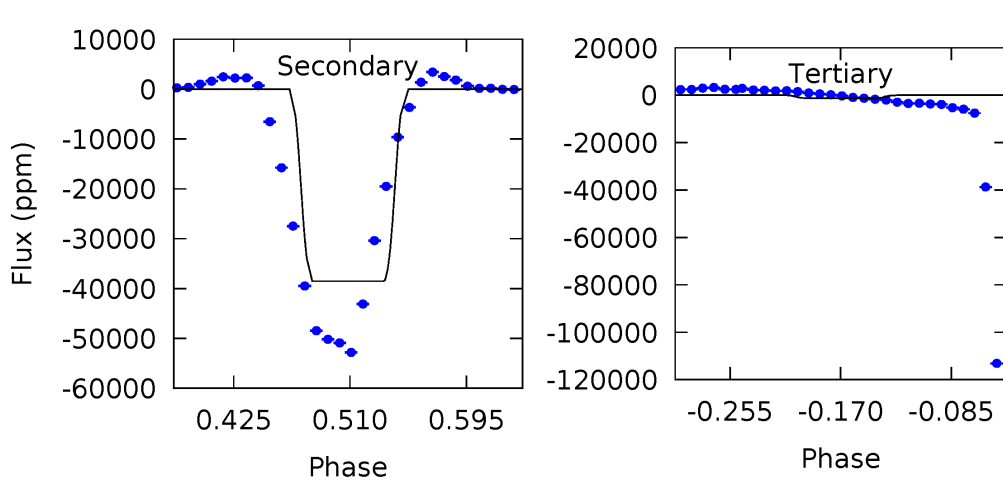
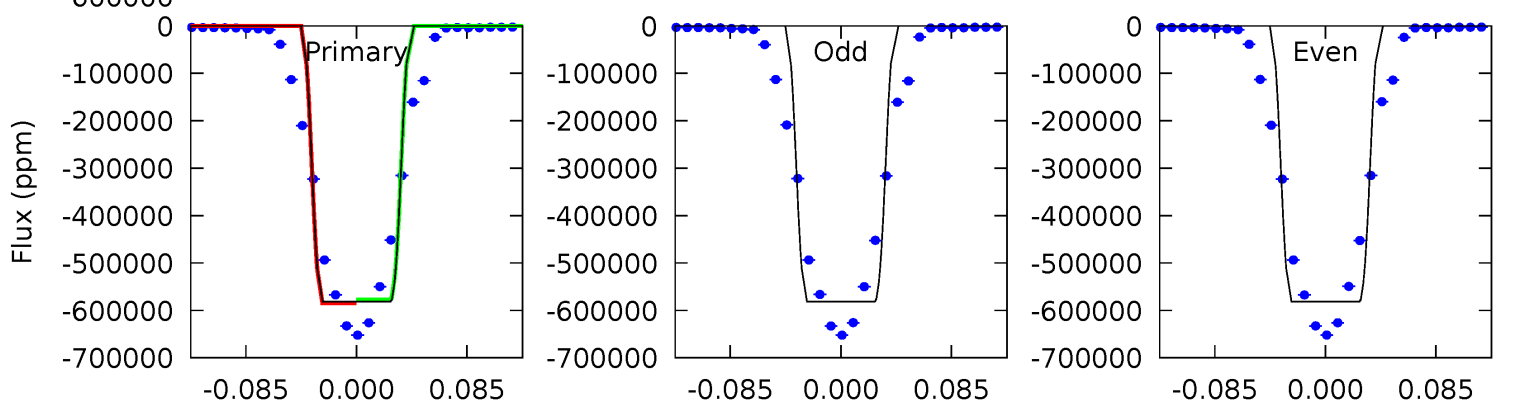
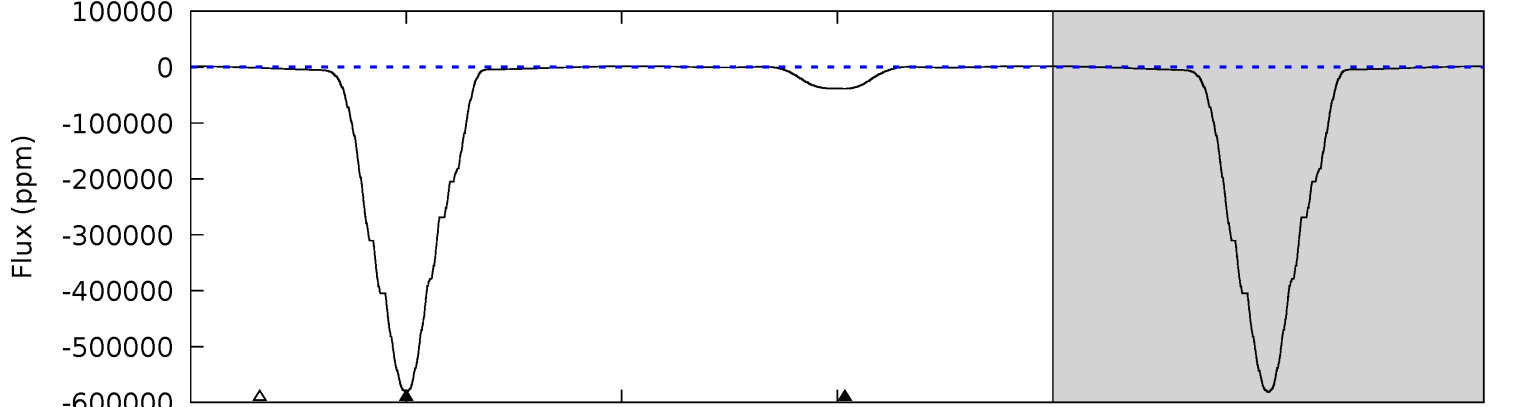
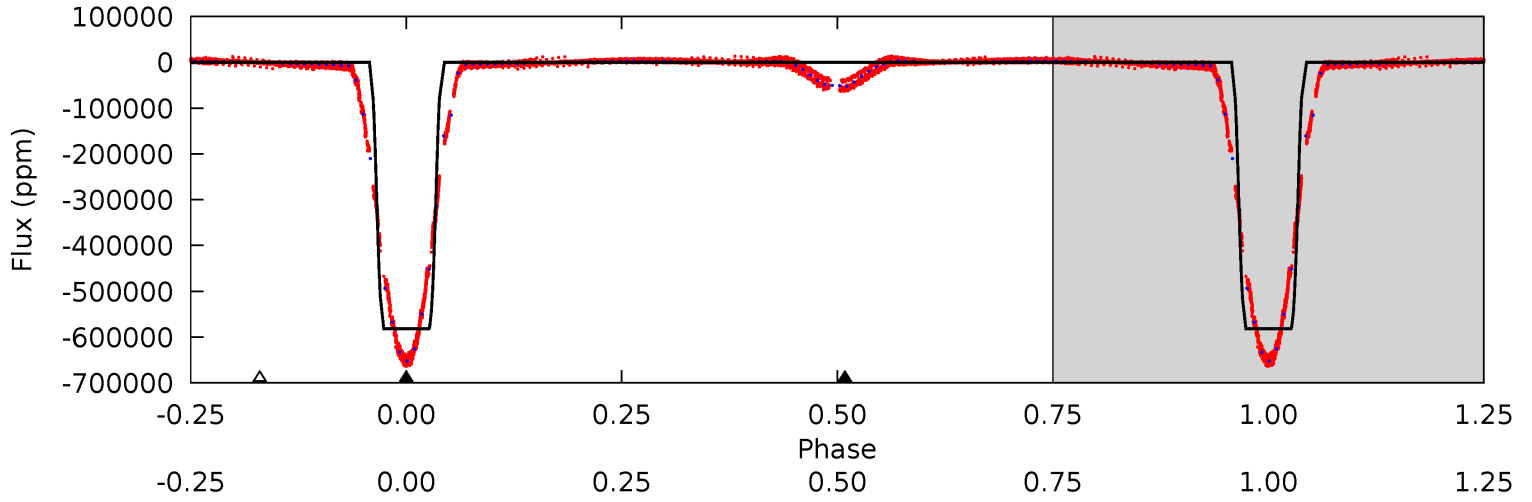
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003440230-01, P = 2.881103 Days, E = 131.356869 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
12152	805.4	27.6	0	4.60	1.72	45.4	12124	12152	777.7	805.4	5.06	1.00	0.00	79.2



### Stellar Parameters For KIC 003440230

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8104^{+223}_{-334}$	$3.675^{+0.493}_{-0.087}$	$-0.340^{+0.200}_{-0.300}$	$3.369^{+0.576}_{-1.727}$	$1.957^{+0.223}_{-0.483}$	$0.072^{+0.398}_{-0.020}$
	+3%/-4%	+13%/-2%	+59%/-88%	+17%/-51%	+11%/-25%	+552%/-28%
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 003440230-01 / KOI 6334.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$84.96^{+42.62}_{-35.73}$	$3938^{+306}_{-542}$	$3036^{+6469}_{-12454}$	$0.368^{+22.839}_{-21.361}$
Alt.	$-38542 \pm 48$	$270.32^{+57.09}_{-71.96}$	$3965^{+301}_{-521}$	$3819^{+318}_{-335}$	$0.751^{+0.568}_{-0.238}$

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

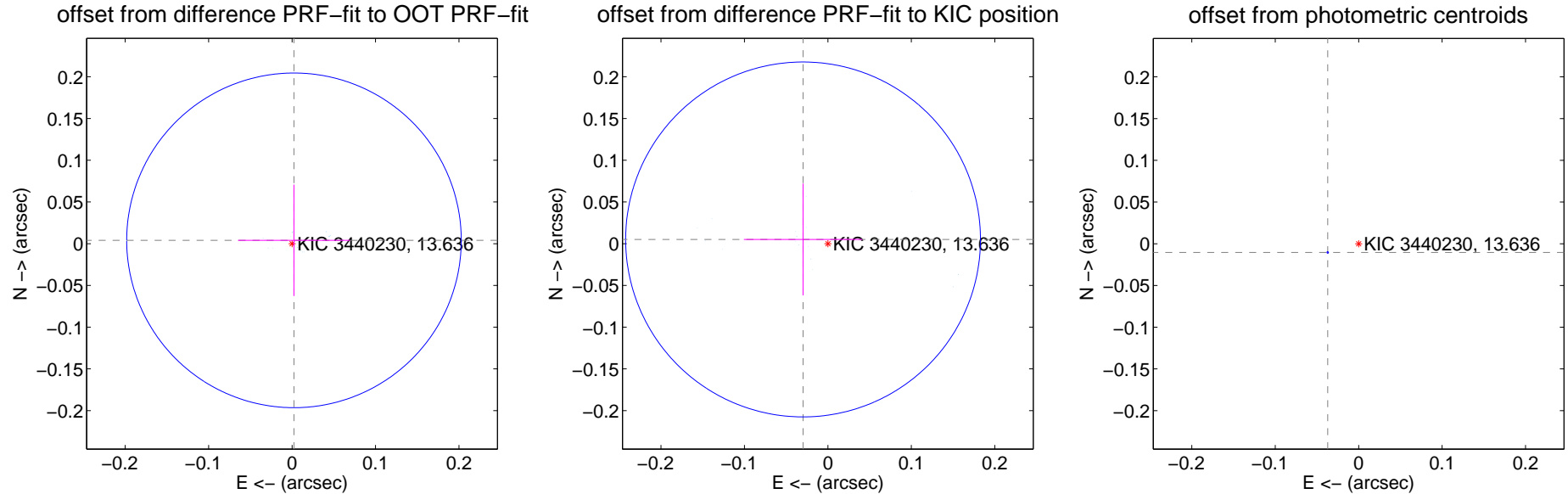
## DV Centroid Data

Supplemental centroid analysis for 003440230-01. Kepler magnitude: 13.64. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

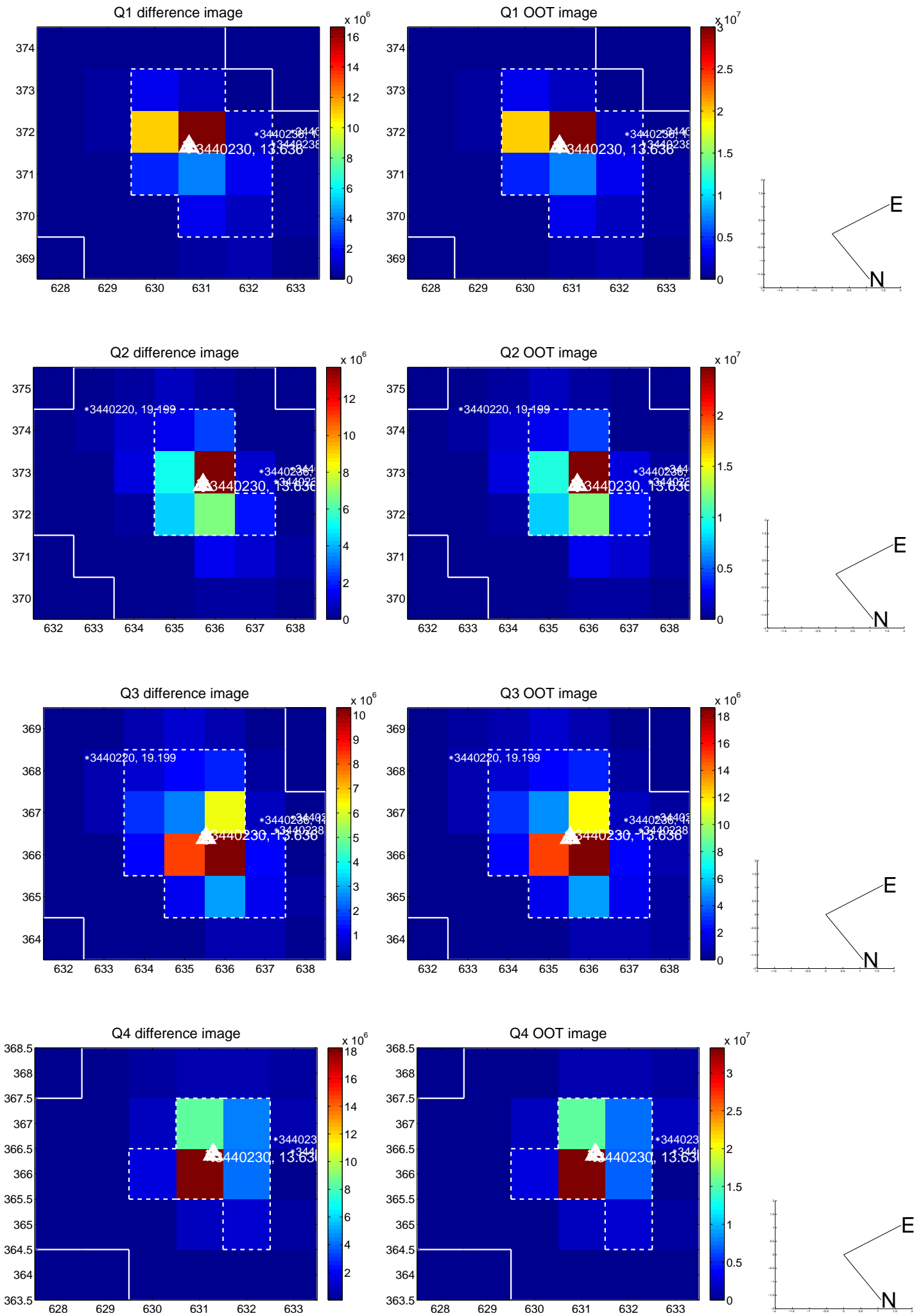
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.005 \pm 0.067$	0.07	$-0.002 \pm 0.067$	$0.004 \pm 0.067$
PRF-fit source offset from KIC position	$0.030 \pm 0.071$	0.43	$0.030 \pm 0.071$	$0.005 \pm 0.067$
photometric centroid source offset	$0.04 \pm 0.00$	124.91	$0.04 \pm 0.00$	$-0.01 \pm 0.00$

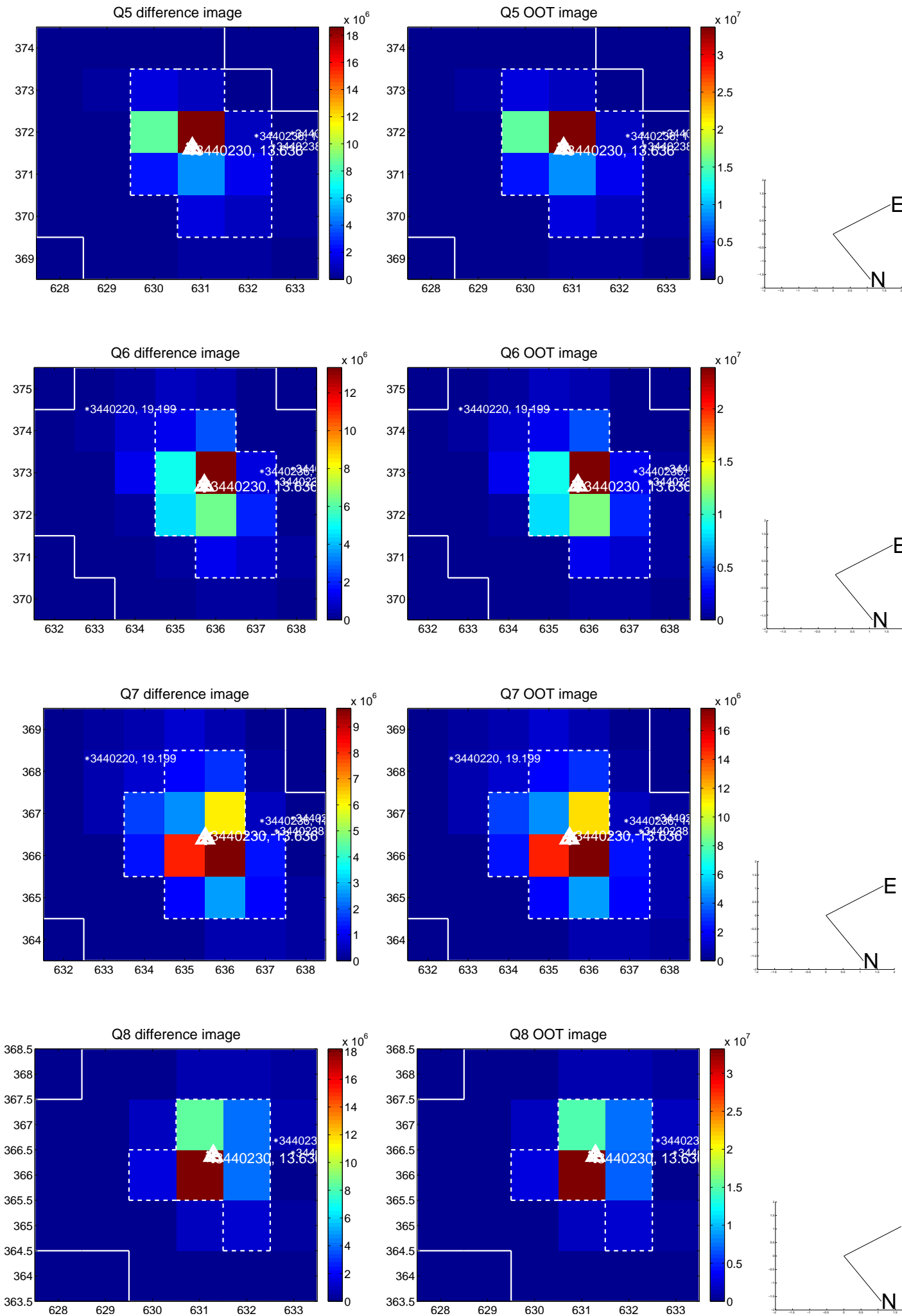


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

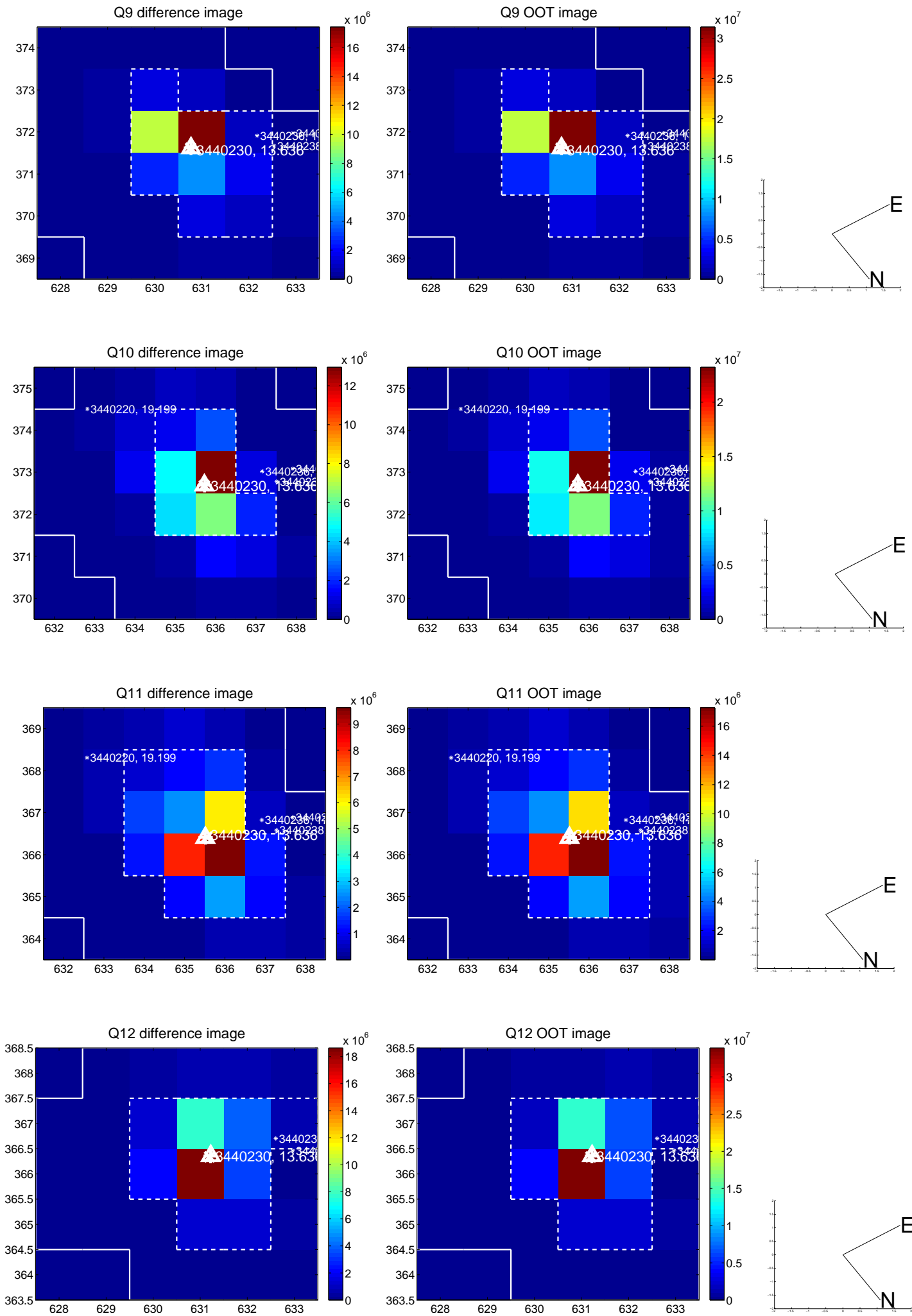


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

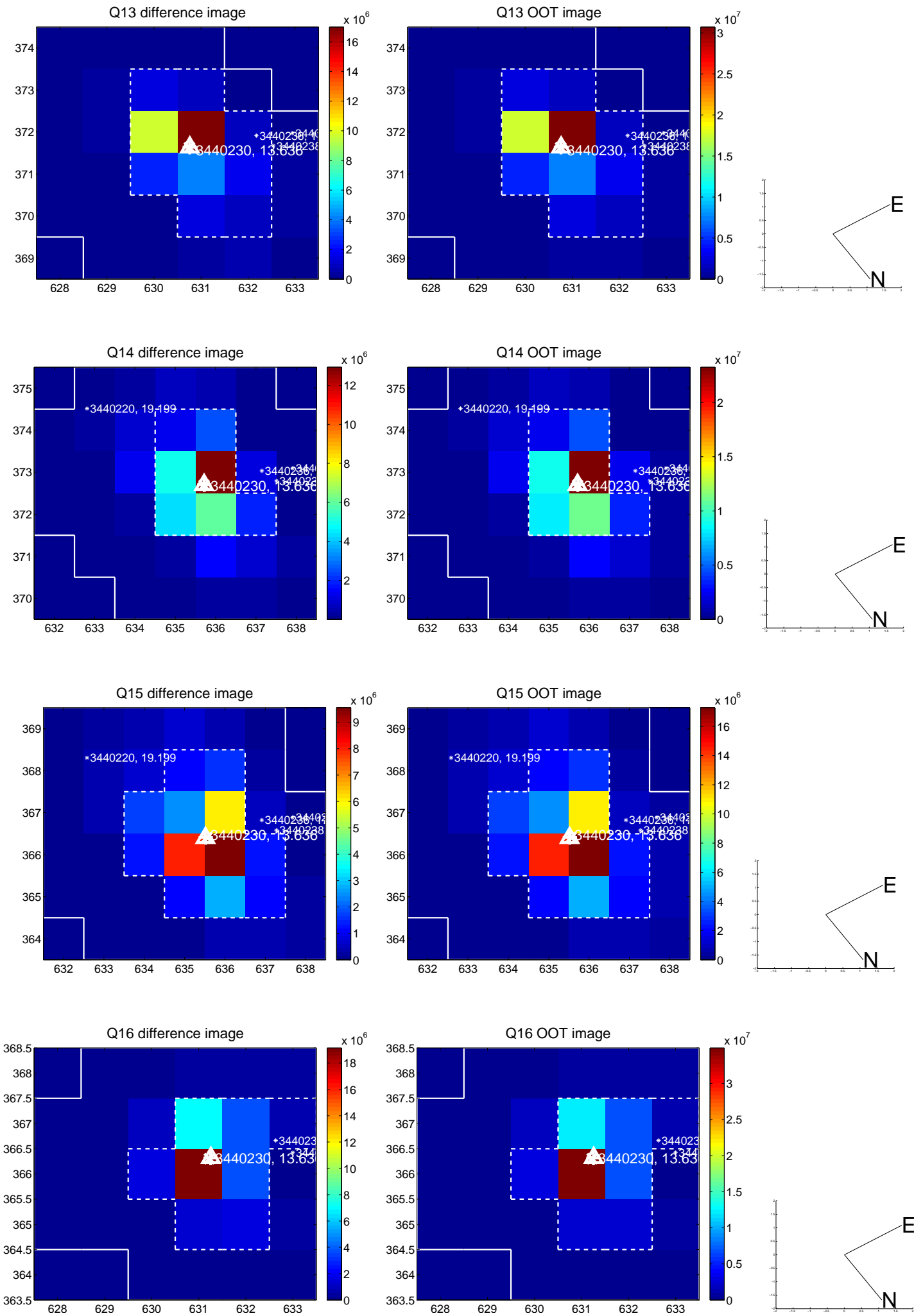




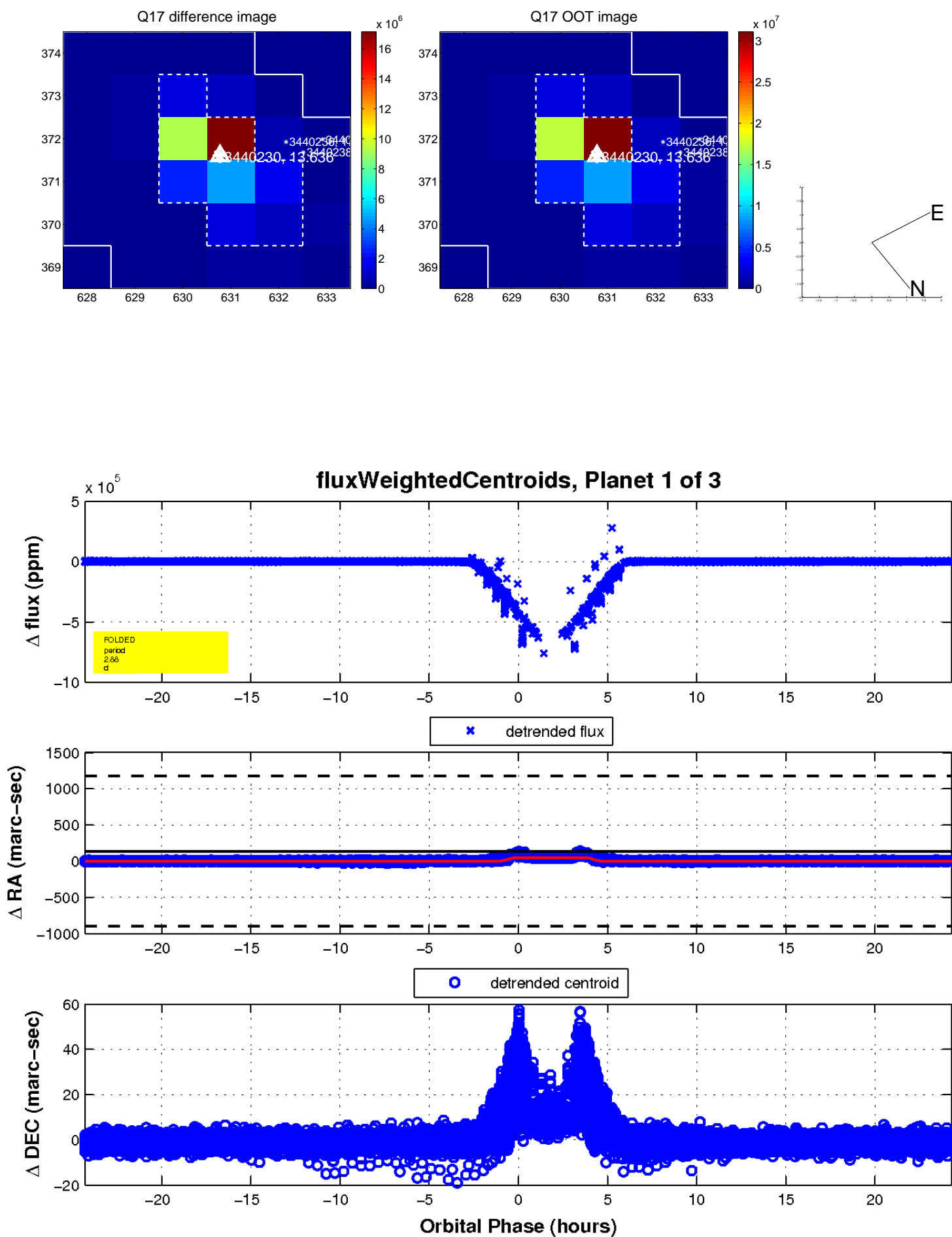
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

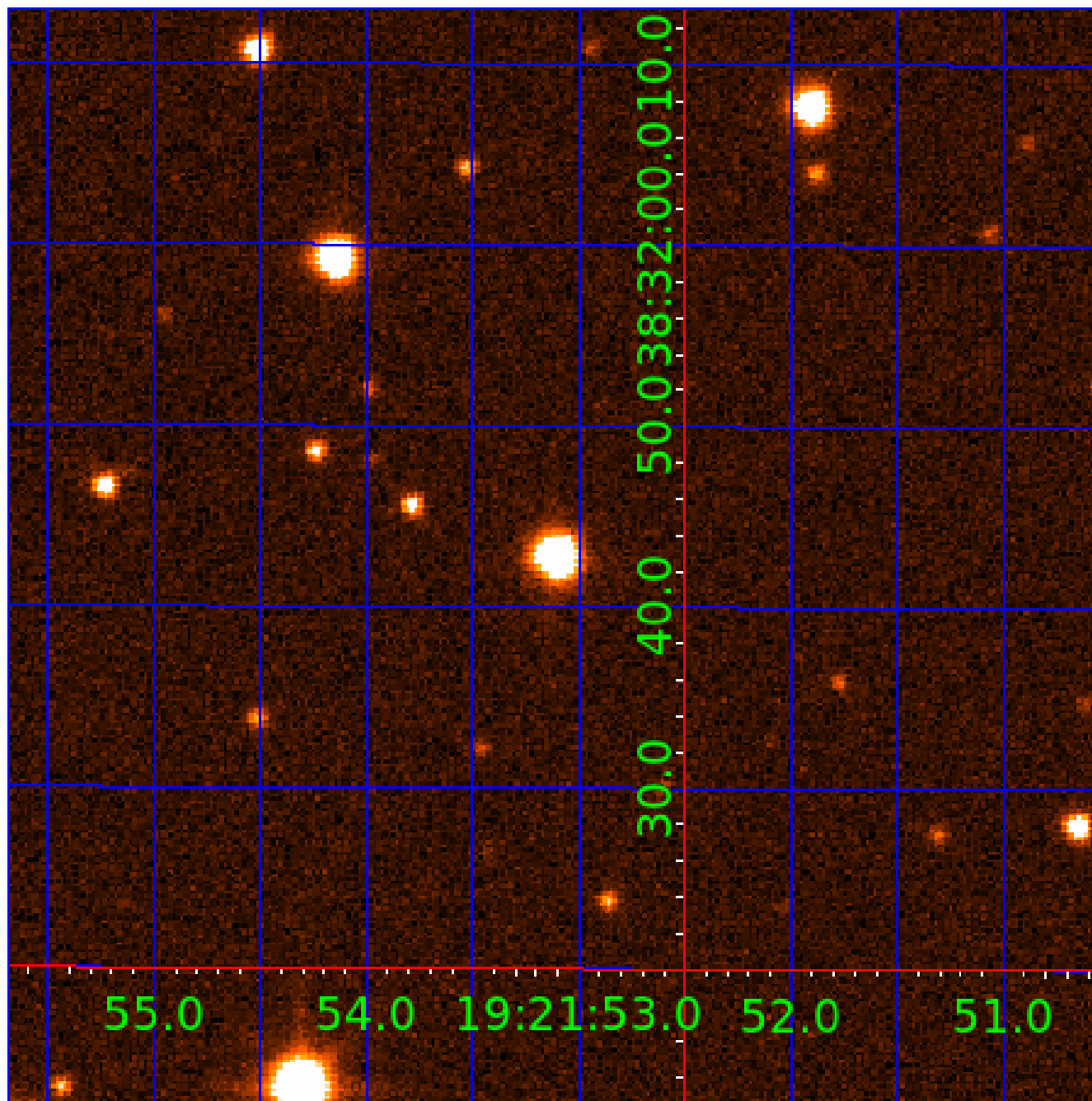


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 003440230

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003440230-01	OBS	6334.01	2.881103	134.238874	660429.3	5.000	14795.1	-1.0	3.37	8104	99.78	17835.33
003440230-02	OBS	No	2.881085	132.804842	48694.3	7.327	1475.4	1232.4	3.37	8104	126.37	17835.47
003440230-03	OBS	No	105.882424	198.596626	22165.1	2.000	327.7	-1.0	3.37	8104	50.80	145.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003440230-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
003440230-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003440230-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_NOFITS

**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.

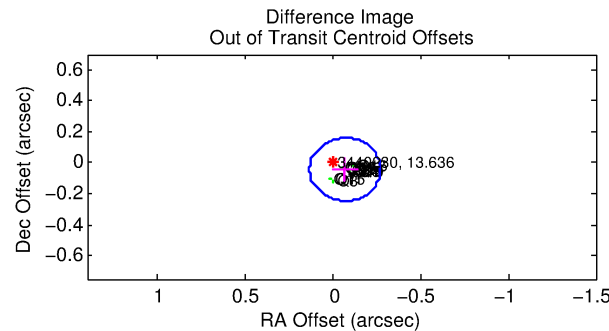
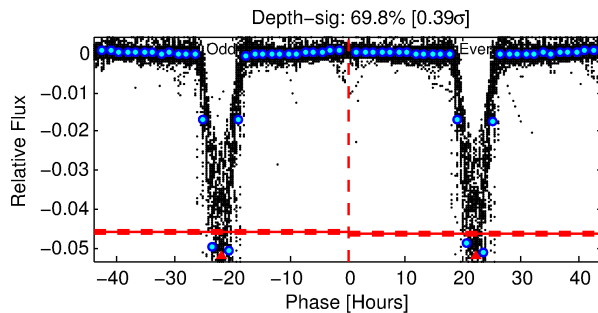
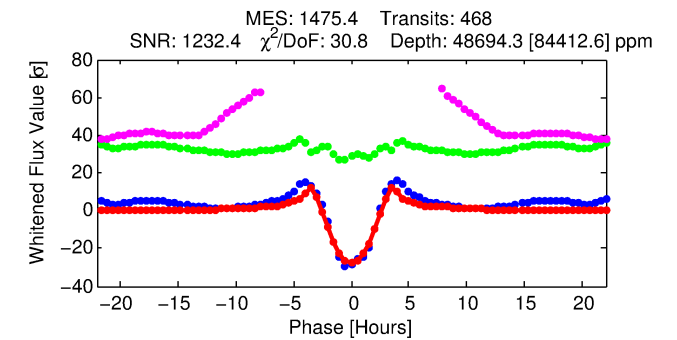
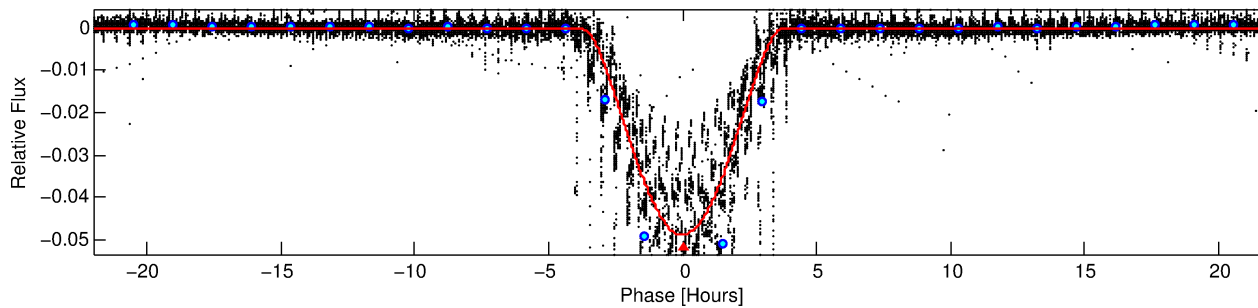
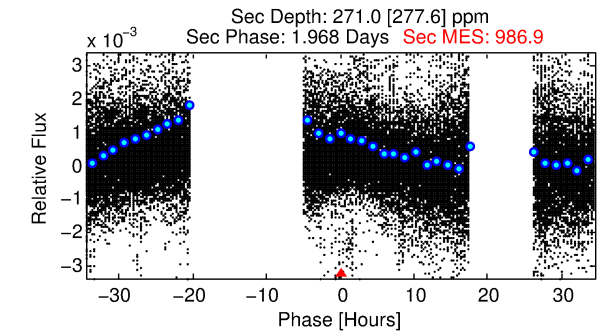
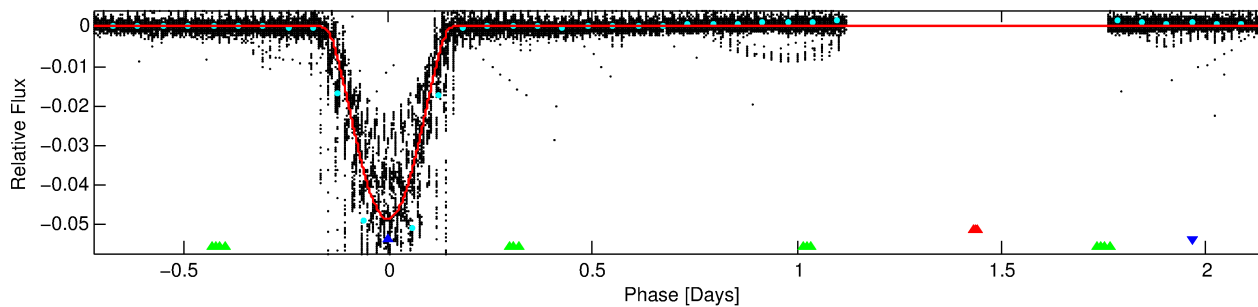
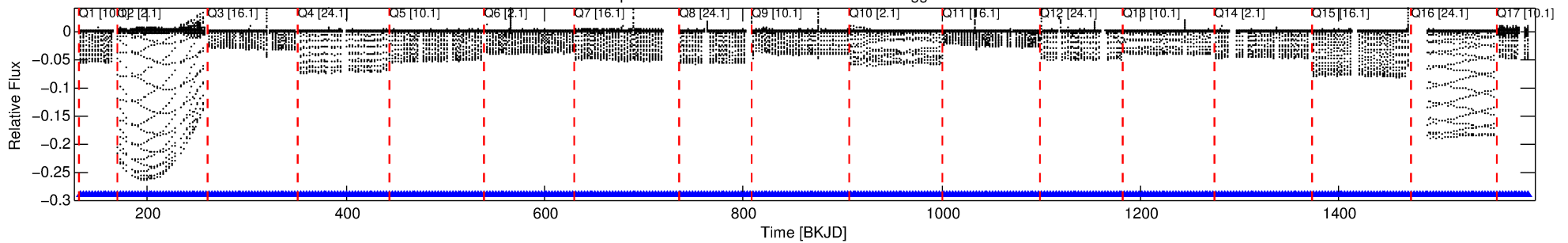
## Ephemeris Match Information For 003440230-02

No Significant Match Found

# DV One-Page Summary

KIC: 3440230 Candidate: 2 of 3 Period: 2.881 d  
KOI: K06334 Corr: No Ephemeris Match

Kp: 13.64 R\*: 3.37 Rs Teff: 8104.0 K Logg: 3.67 Fe/H: -0.340



## DV Fit Results:

Period = 2.88108 [0.00000] d  
Epoch = 132.8048 [0.0004] BKJD  
Rp/R\* = 0.3437 [0.0541]  
a/R\* = 2.92 [0.02]  
b = 1.00 [0.32]  
Seff = 17835.48 [15099.04]  
Teq = 2947 [624] K  
Rp = 126.37 [67.76] Re  
a = 0.0496 [0.0253] AU  
Ag = 0.02 [0.03] [-31.39σ]  
Teffp = 1773 [481] K [-1.49σ]

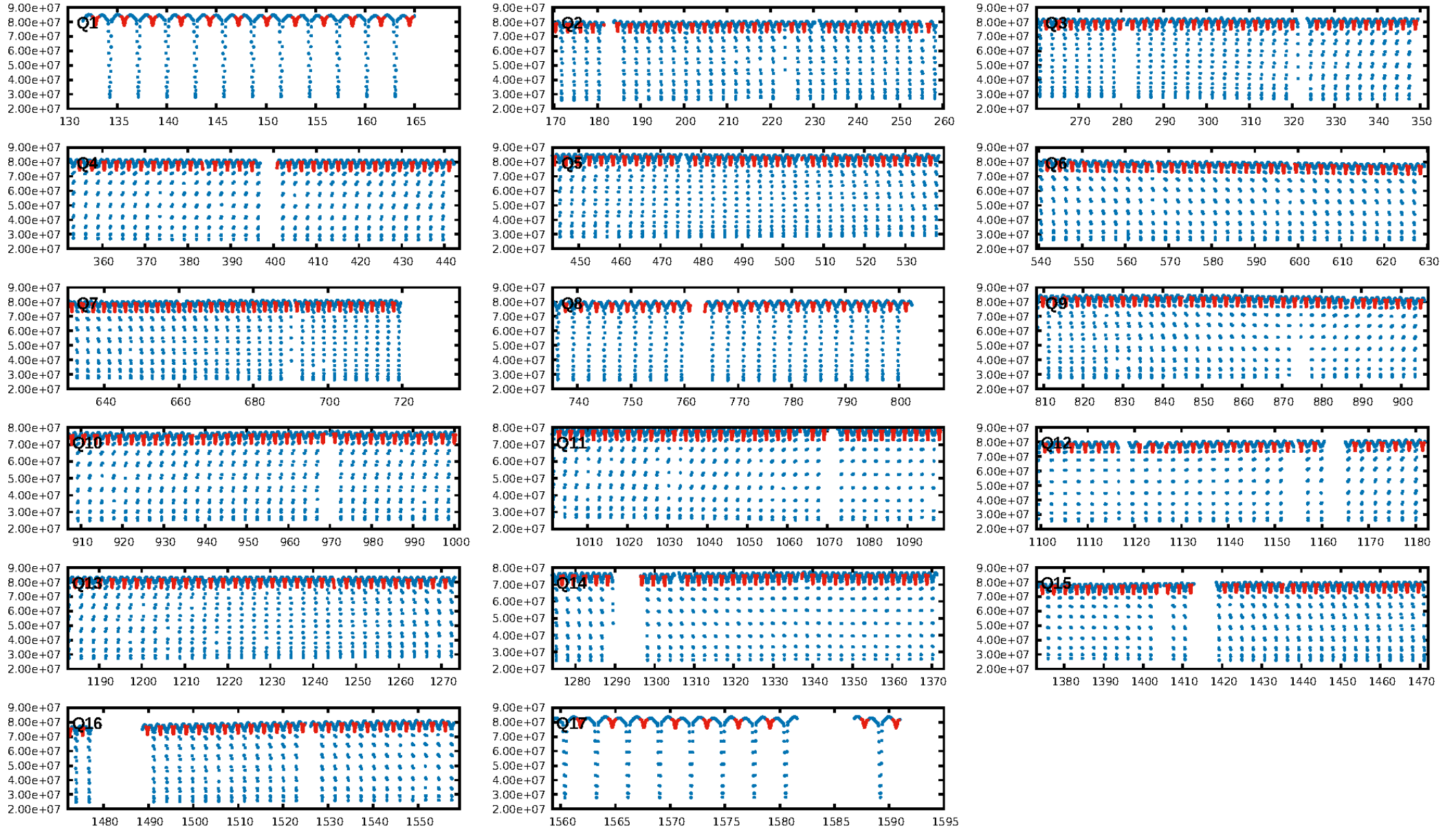
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [447/447]  
GhostDiagnostic-chr: 1.22  
Centroid-sig: N/A  
Centroid-so: 0.068 arcsec [32.33σ]  
OotOffset-rm: 0.082 arcsec [1.22σ]  
KicOffset-rm: 0.057 arcsec [0.84σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:59:17 Z

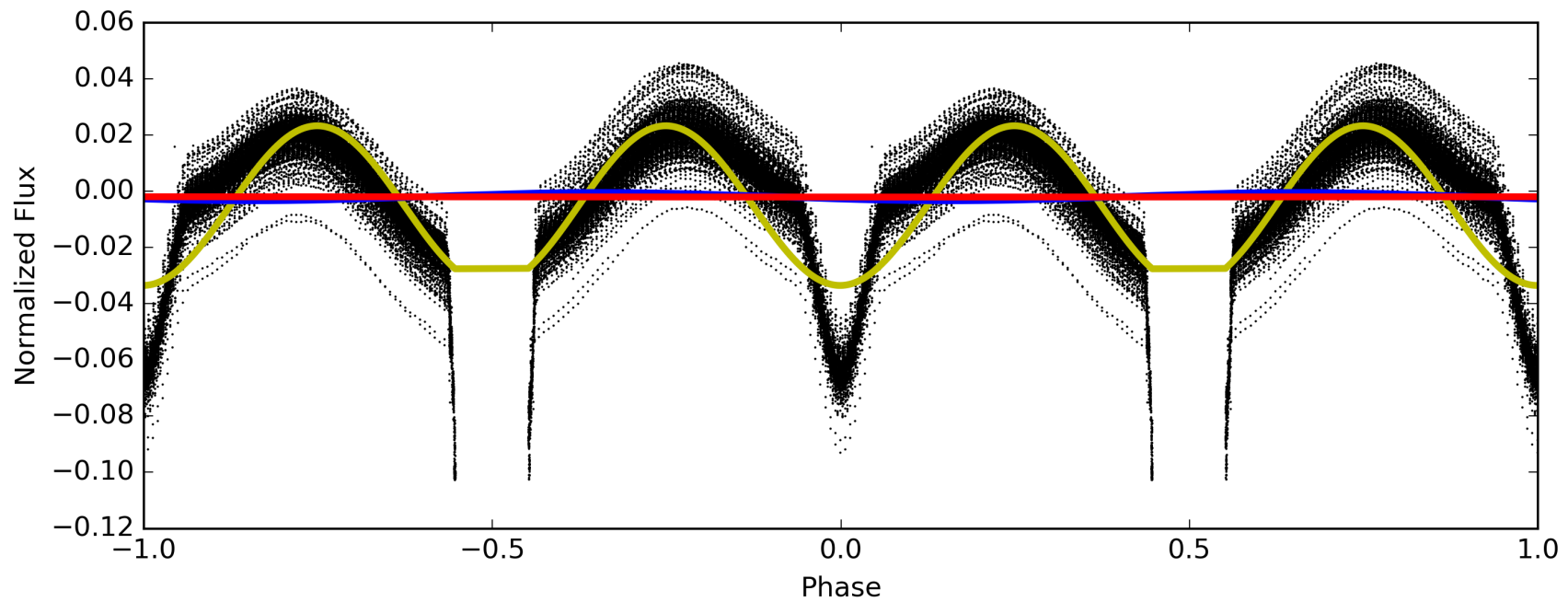
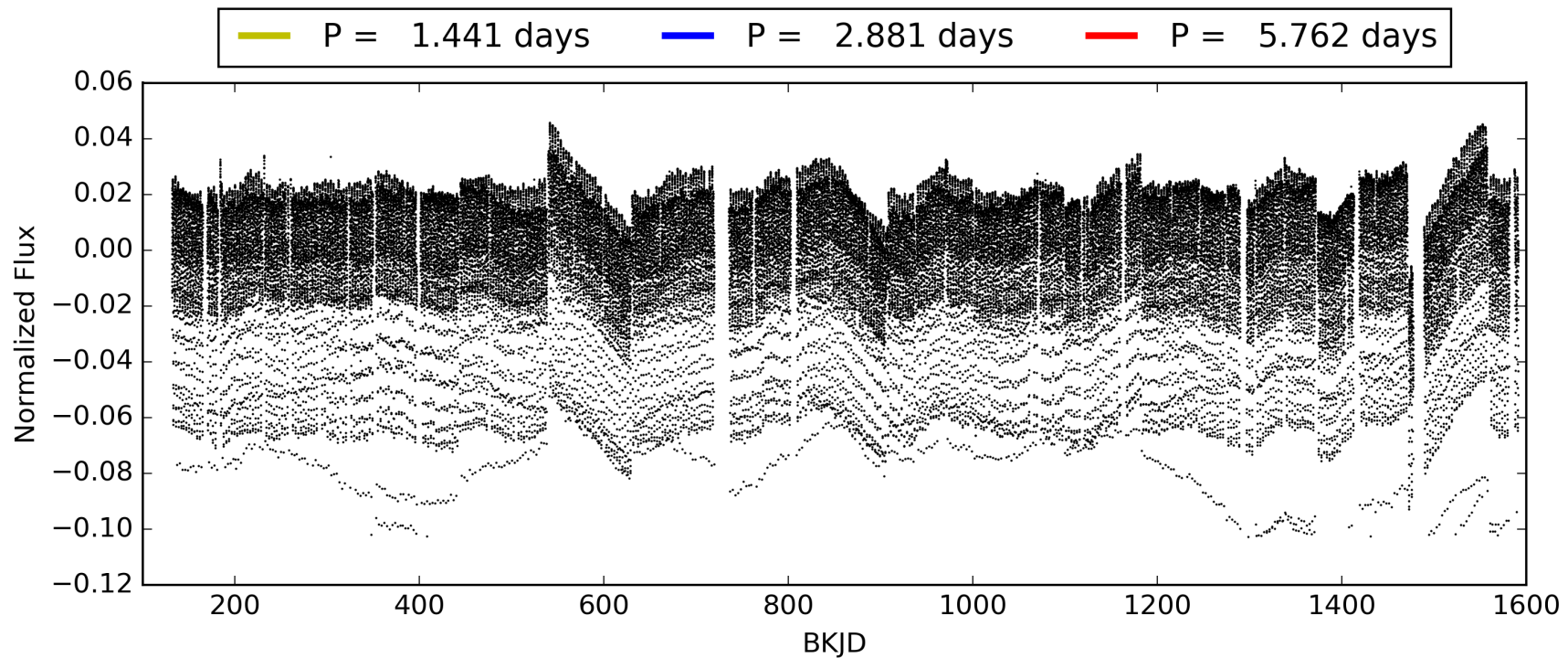
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003440230-02, PDC Light Curves





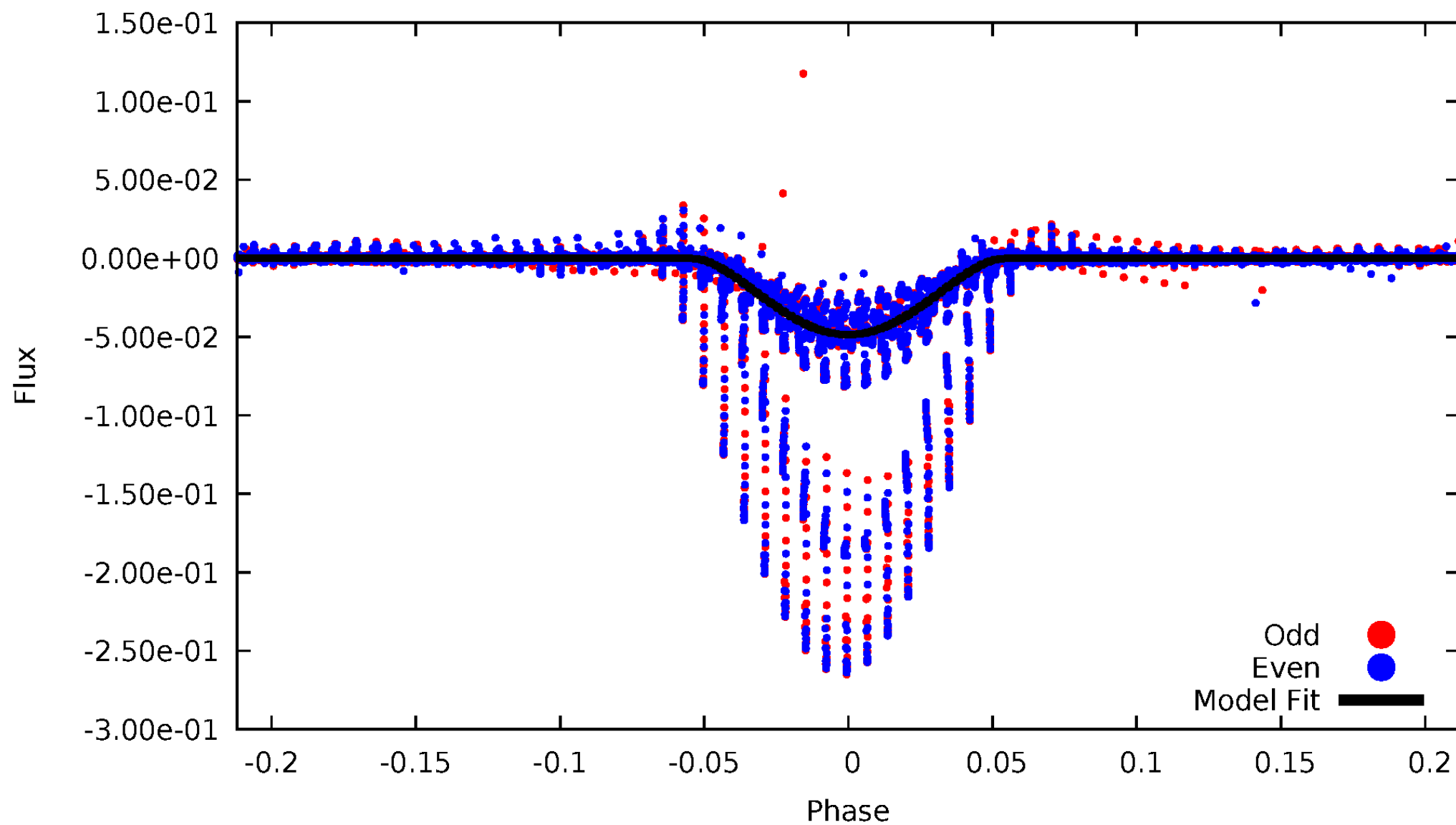
TCE 003440230-02





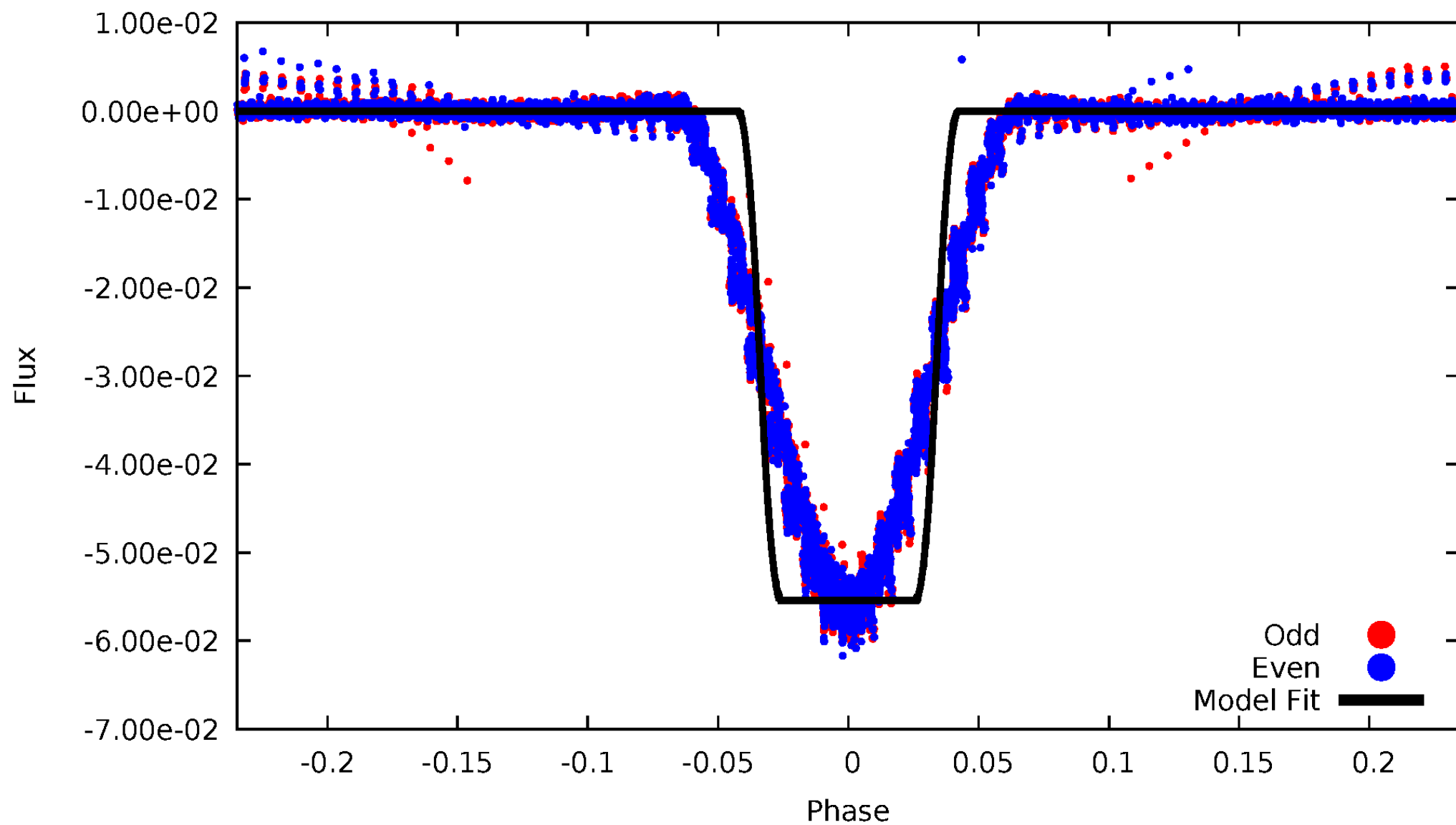
# DV Odd/Even

TCE 003440230-02



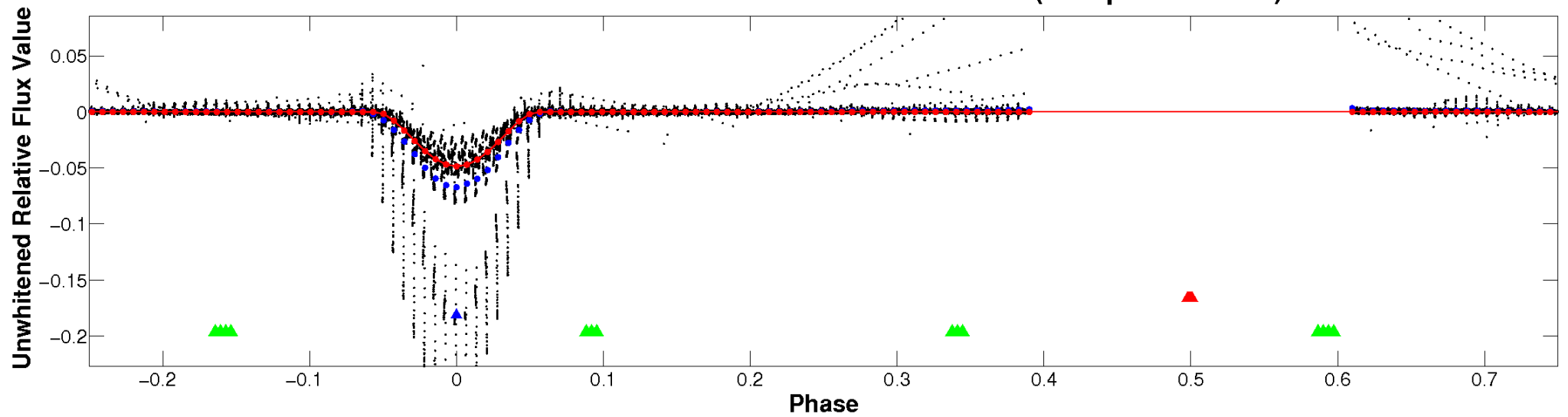
# ALT Odd/Even

TCE 003440230-02

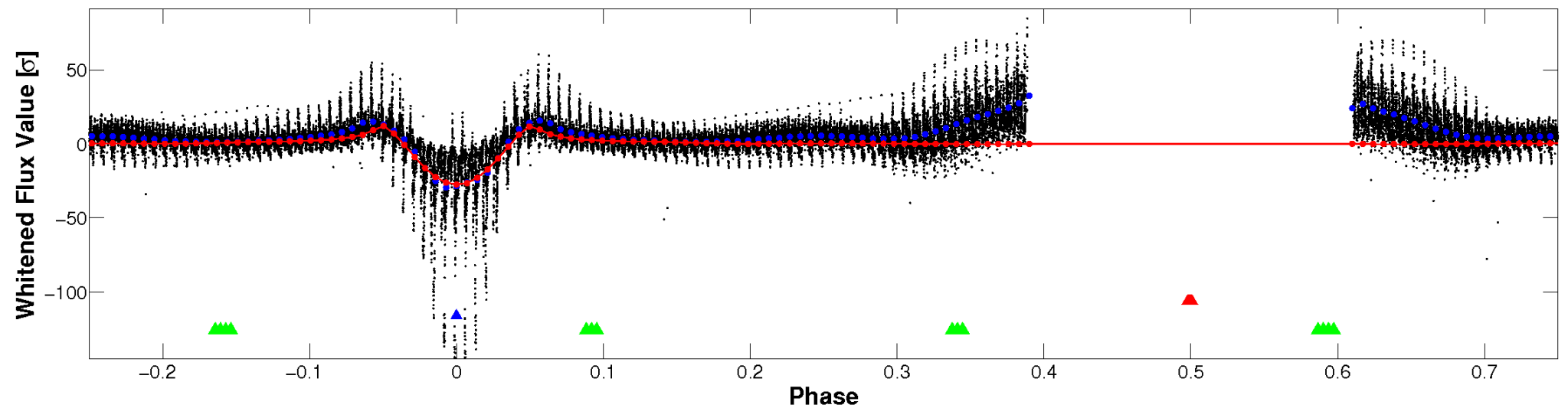


# Non-Whitened Vs. Whitened Light Curve

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

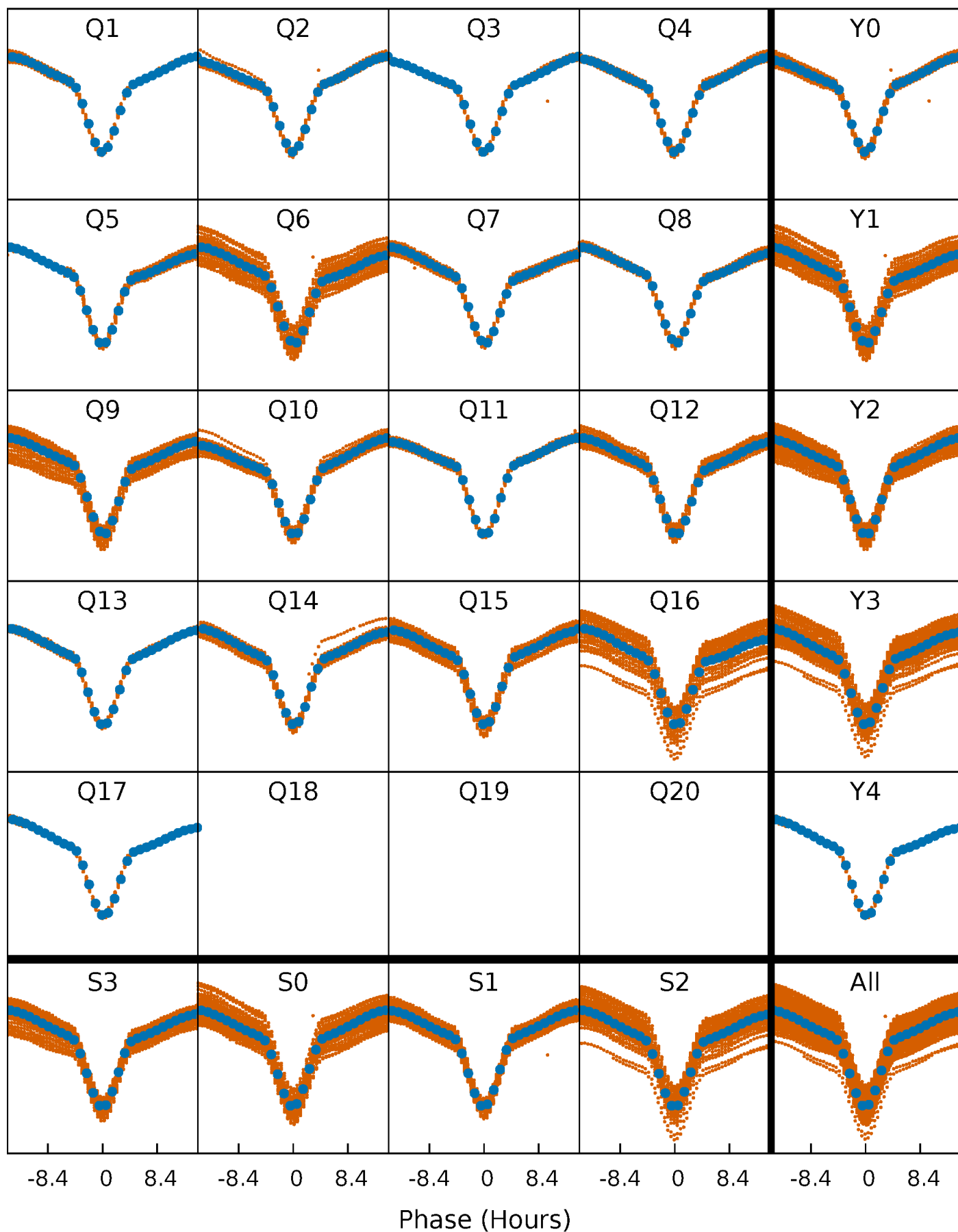


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



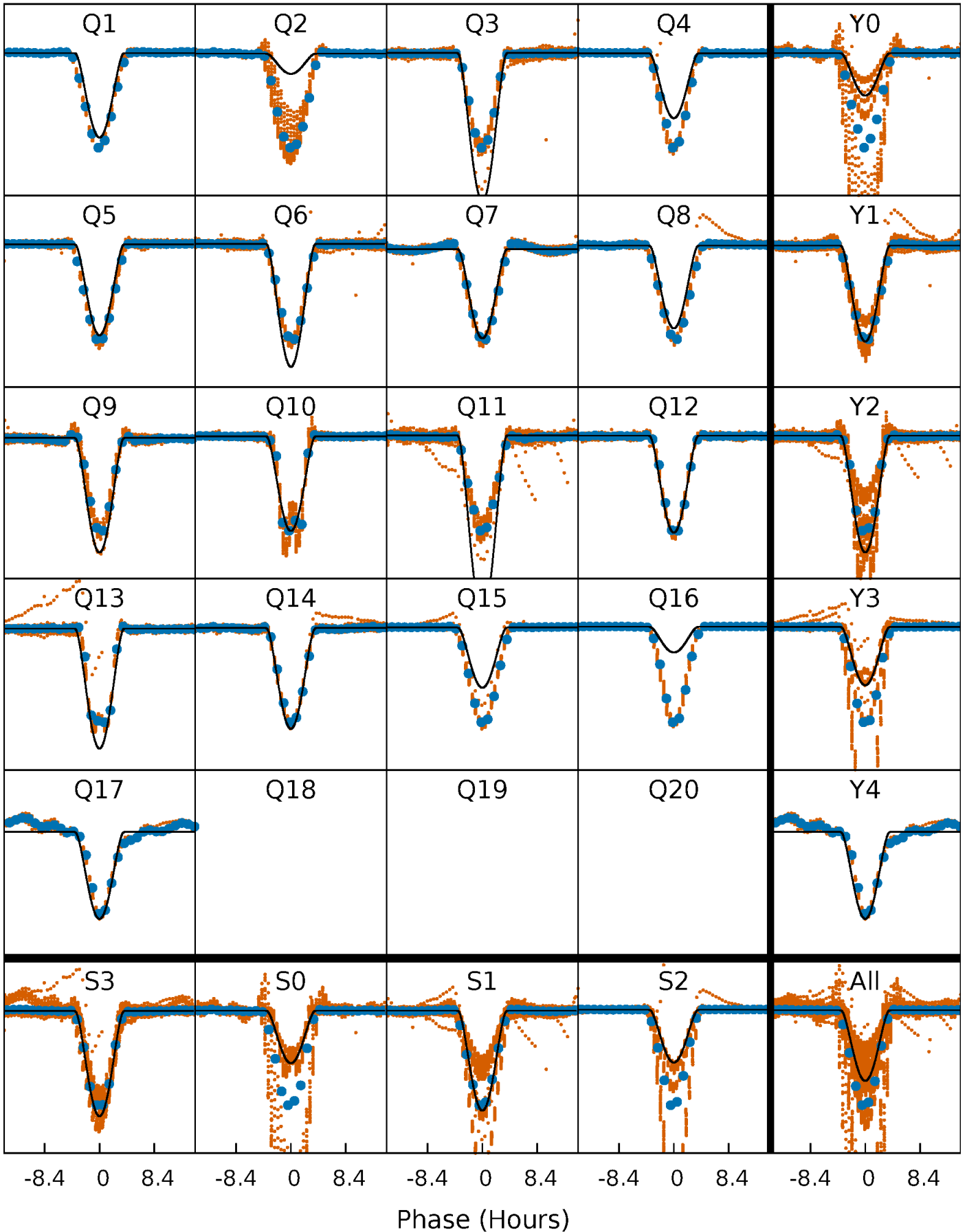
# PDC Quarter-Phased Transit Curves

TCE 003440230-02 P= 2.881085 Days  $T_0=132.804842$  (BKJD)



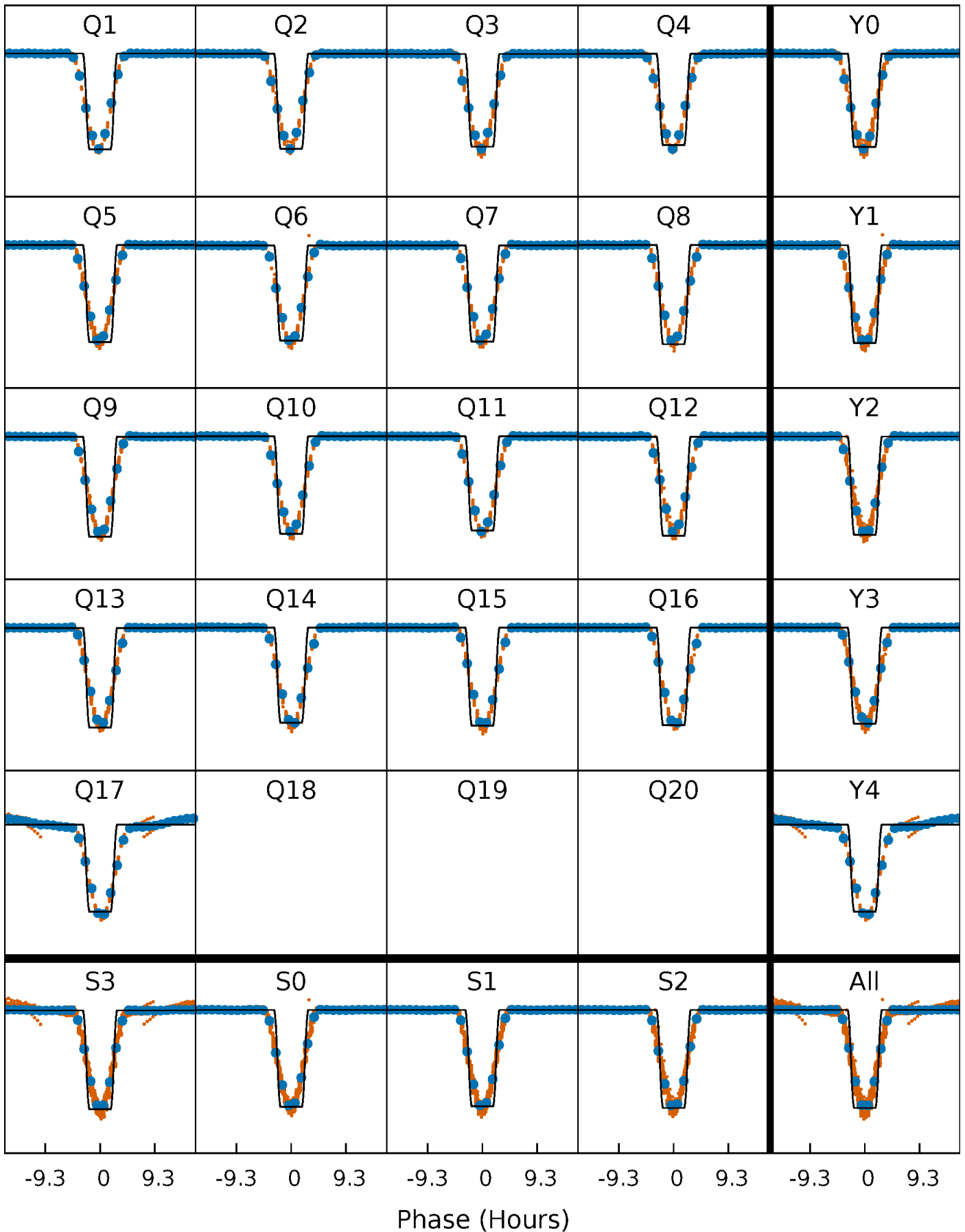
# DV Quarter-Phased Transit Curves

TCE 003440230-02 P= 2.881085 Days  $T_0=132.804842$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

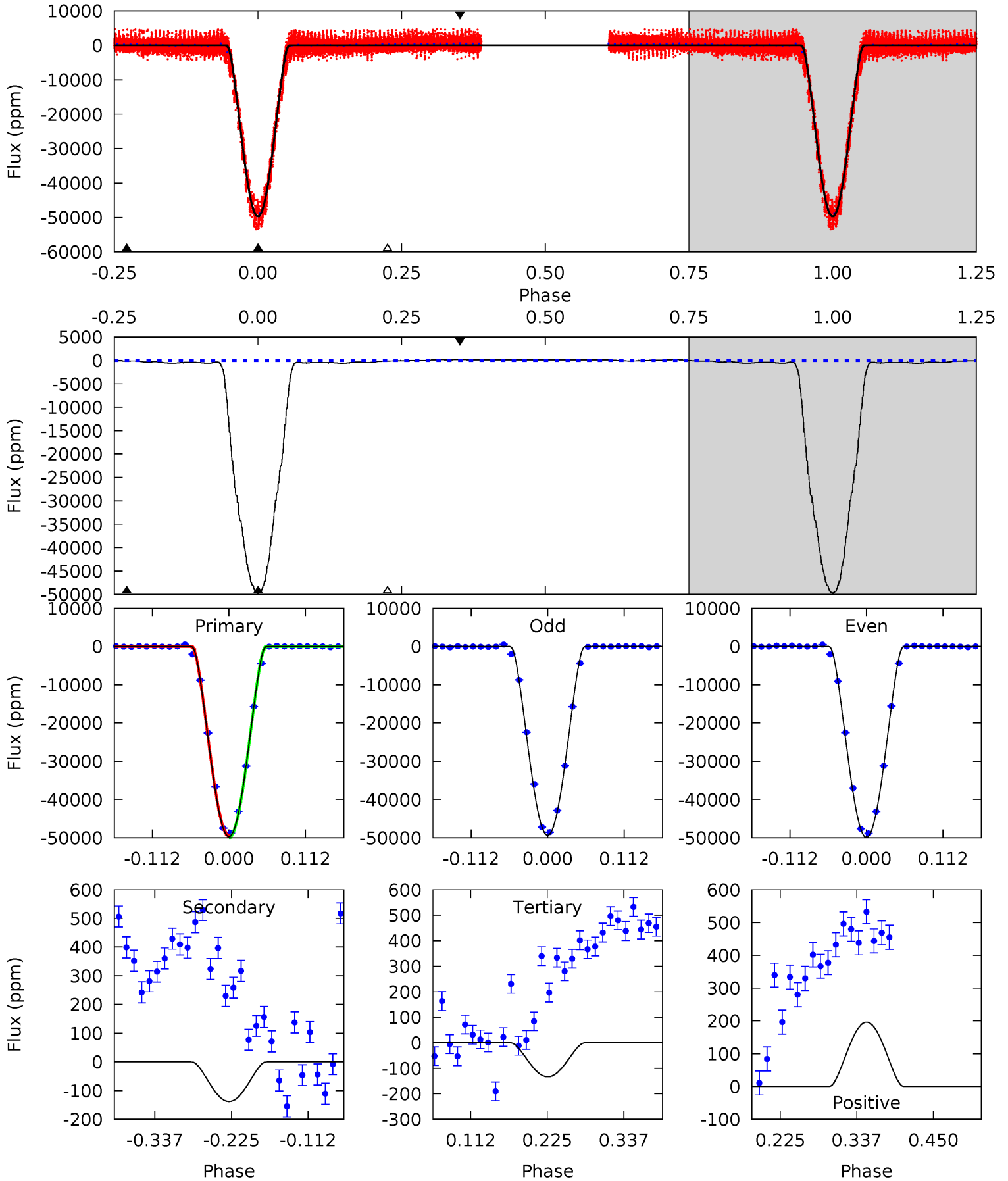
TCE 003440230-02   P= 2.881059 Days    $T_0=132.809621$  (BKJD)



# DV Model-Shift Uniqueness Test

003440230-02, P = 2.881085 Days, E = 129.923757 Days

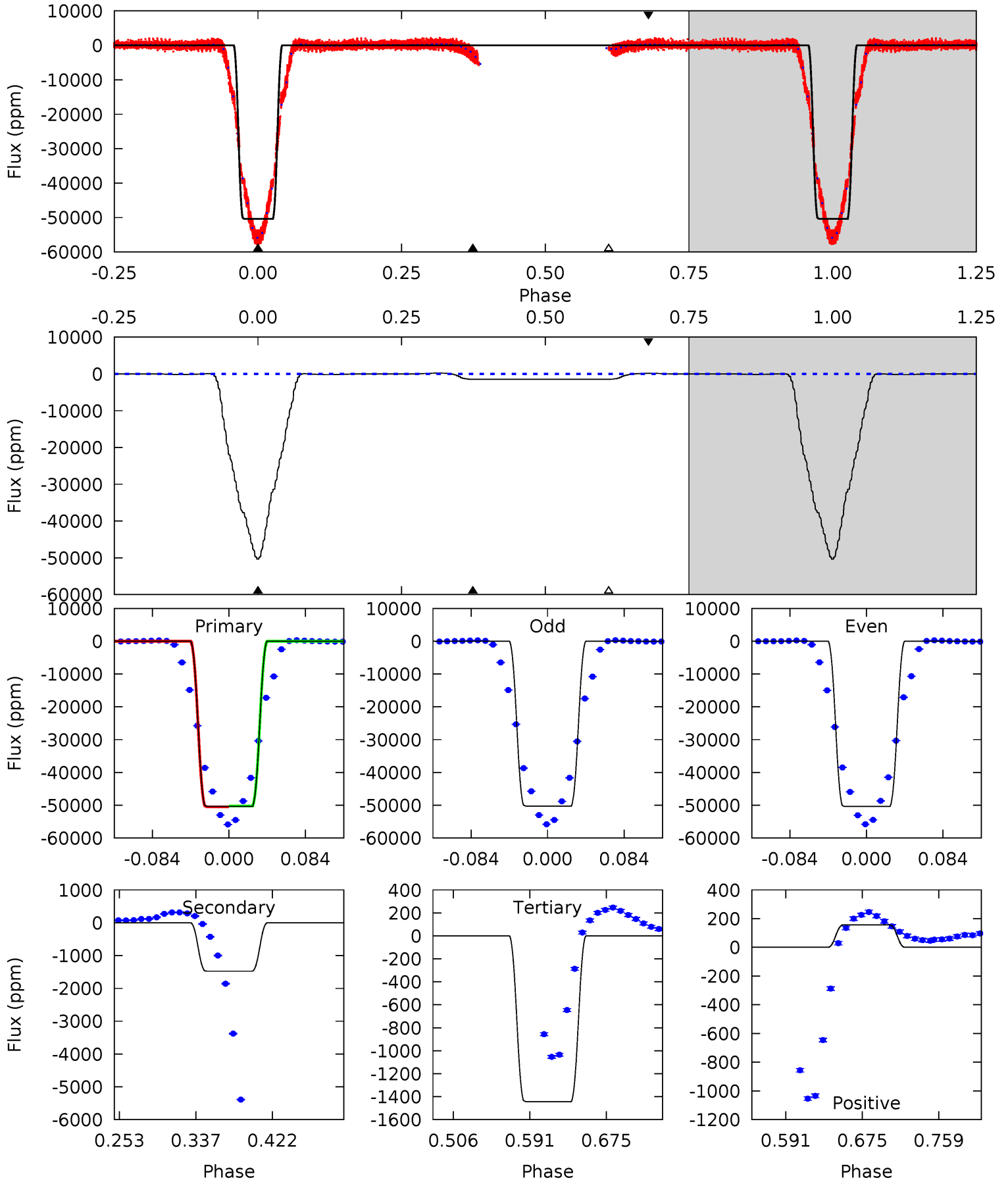
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2535	7.05	6.81	10.00	4.54	1.59	11.6	2528	2525	0.24	-2.94	13.6	1.37	0.00	0



# Alt Model-Shift Uniqueness Test

003440230-02, P = 2.881059 Days, E = 129.928562 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
6041	177.0	173.2	18.8	4.60	1.73	26.2	5868	6022	3.80	158.2	6.94	1.00	0.00	0





### Stellar Parameters For KIC 003440230

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8104^{+223}_{-334}$	$3.675^{+0.493}_{-0.087}$	$-0.340^{+0.200}_{-0.300}$	$3.369^{+0.576}_{-1.727}$	$1.957^{+0.223}_{-0.483}$	$0.072^{+0.398}_{-0.020}$
	+3%/-4%	+13%/-2%	+59%/-88%	+17%/-51%	+11%/-25%	+552%/-28%
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 003440230-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-138 \pm 20$	$117.24^{+28.06}_{-32.80}$	$3986^{+280}_{-521}$	$-3595^{+321}_{-157}$	$0.013^{+0.012}_{-0.005}$
Alt.	$-1476 \pm 8$	$77.26^{+25.46}_{-23.58}$	$3978^{+292}_{-557}$	$2604^{+878}_{-5777}$	$0.335^{+0.343}_{-0.148}$

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

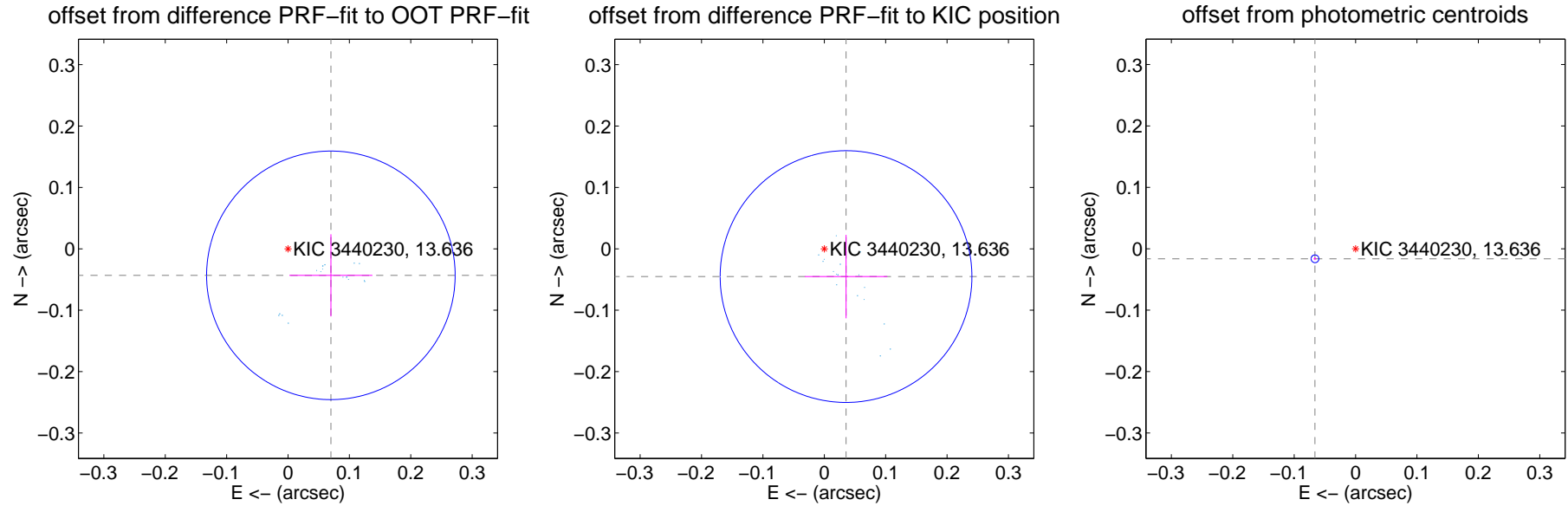
## DV Centroid Data

Supplemental centroid analysis for 003440230-02. Kepler magnitude: 13.64. Transit SNR 1232.38

There are 17 quarters with good PRF difference image offsets

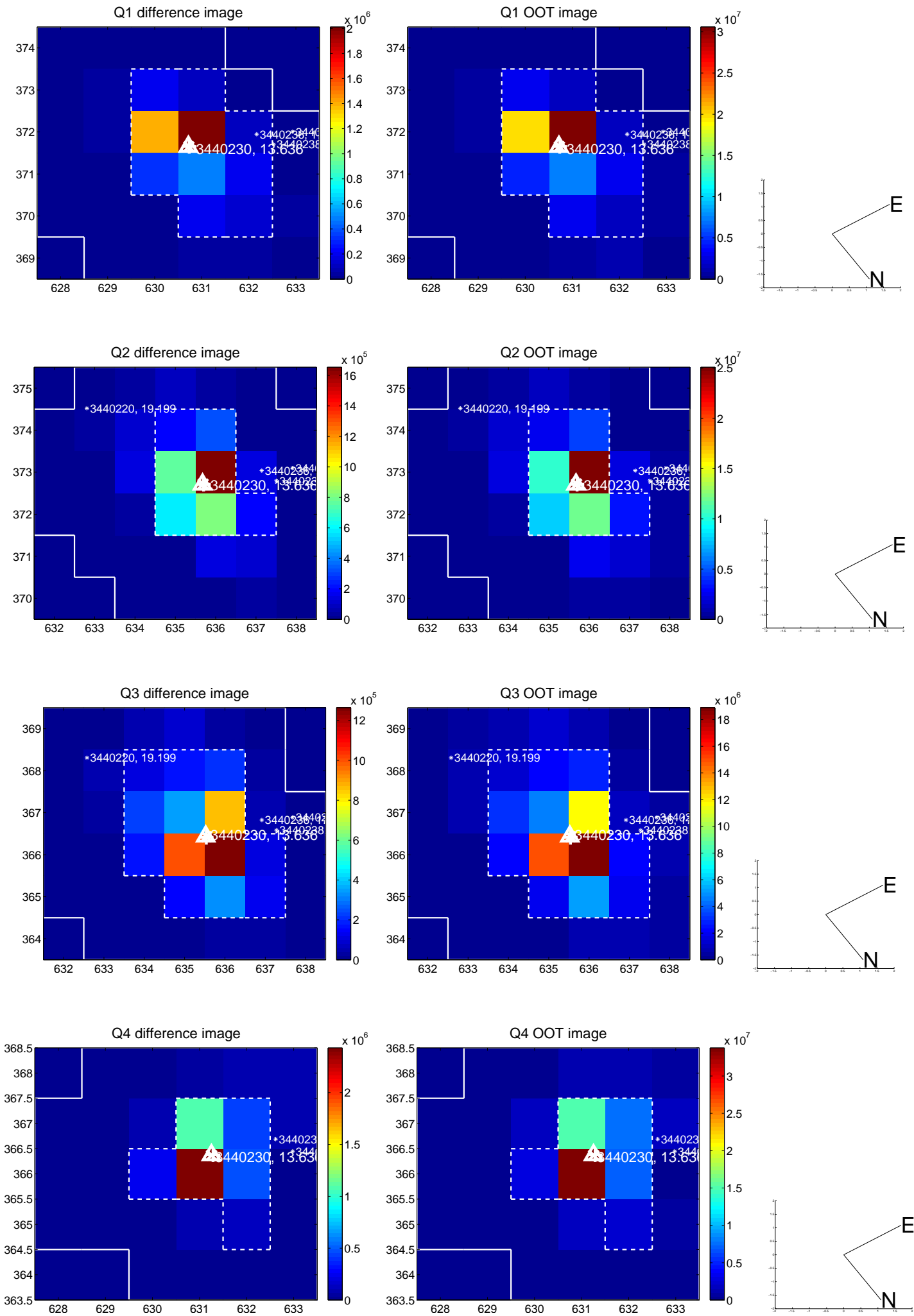
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.082 \pm 0.067$	1.22	$-0.070 \pm 0.068$	$-0.043 \pm 0.067$
PRF-fit source offset from KIC position	$0.057 \pm 0.068$	0.84	$-0.035 \pm 0.067$	$-0.045 \pm 0.068$
photometric centroid source offset	$0.07 \pm 0.00$	<b>32.33</b>	$0.07 \pm 0.00$	$-0.02 \pm 0.00$

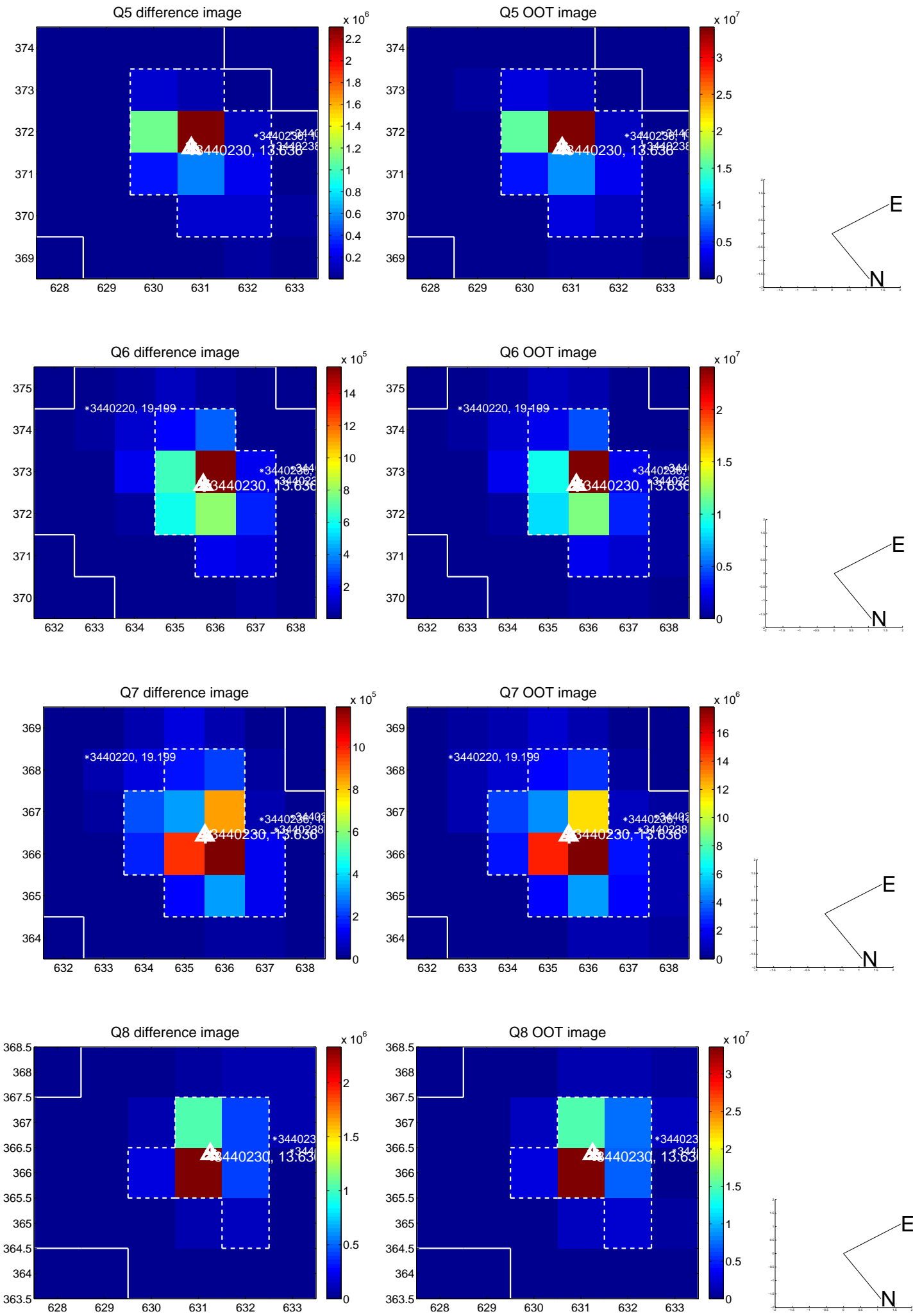


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

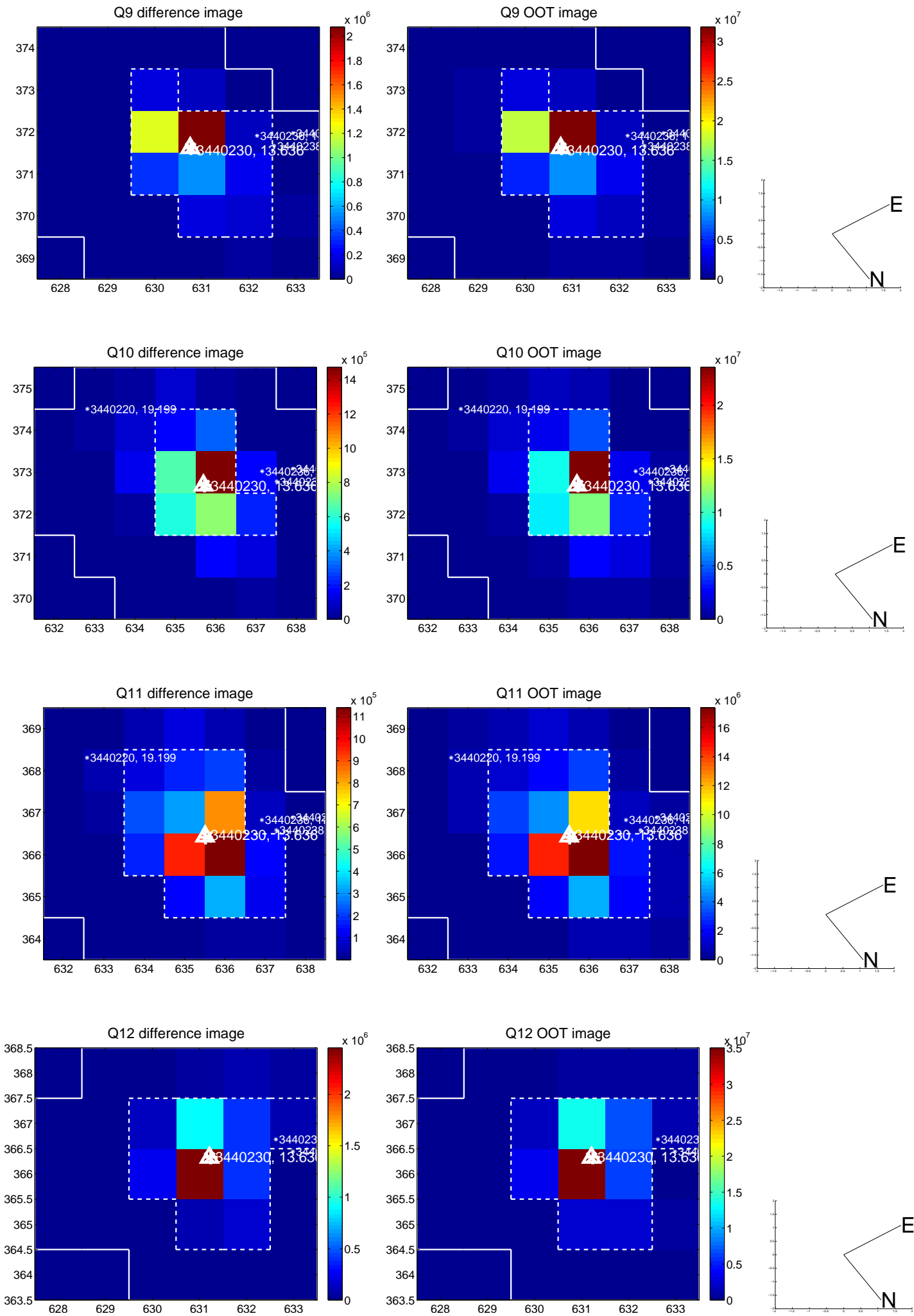
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



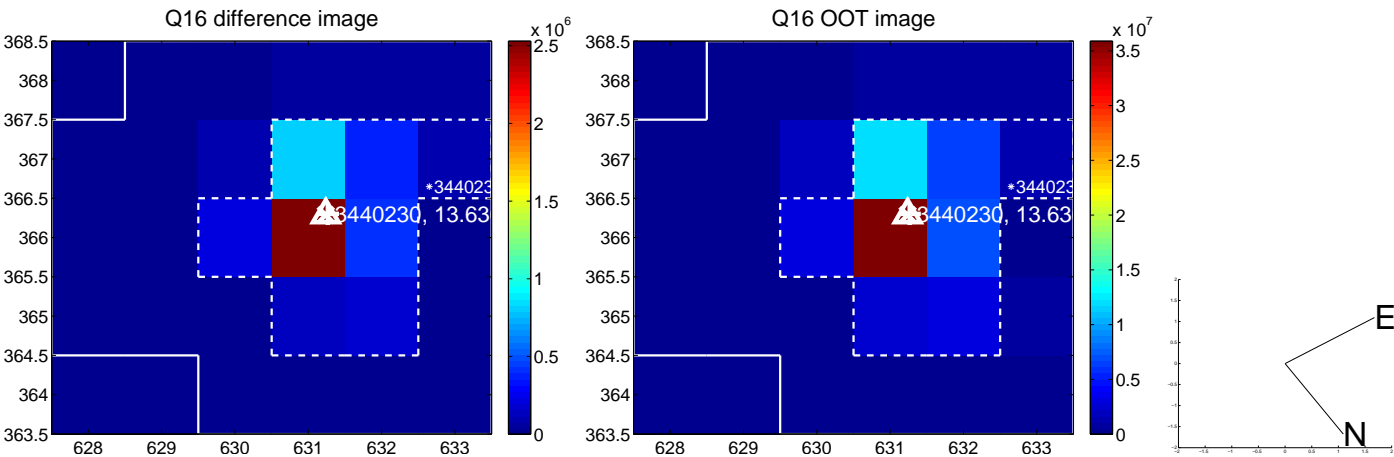
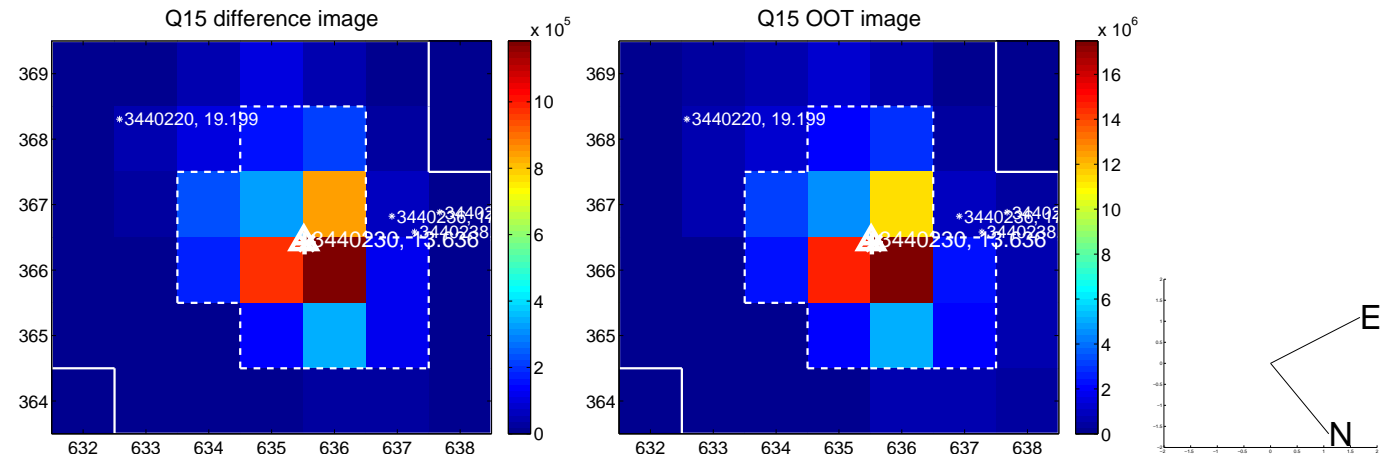
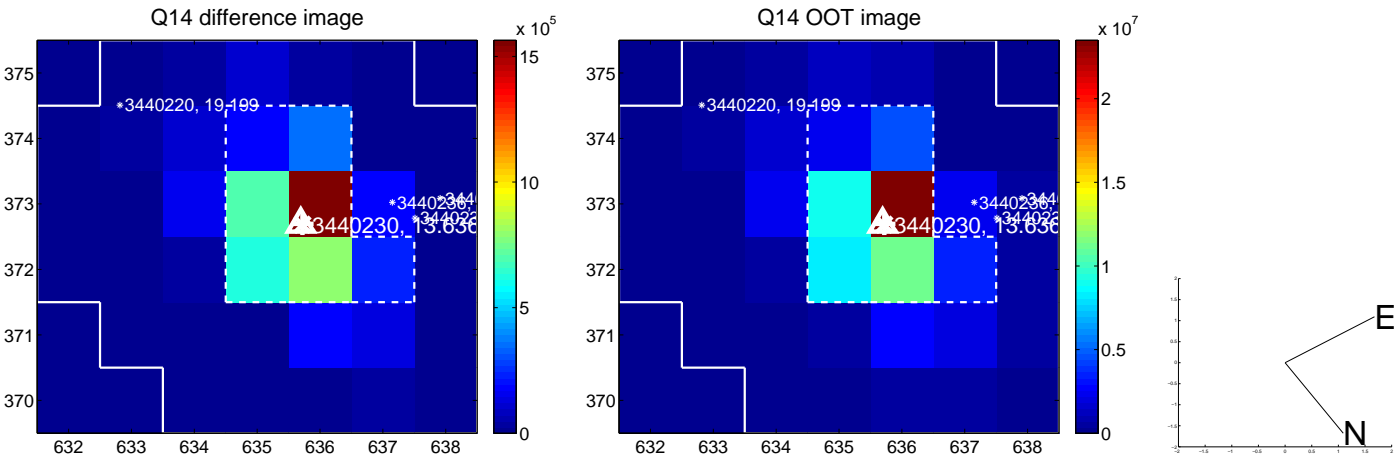
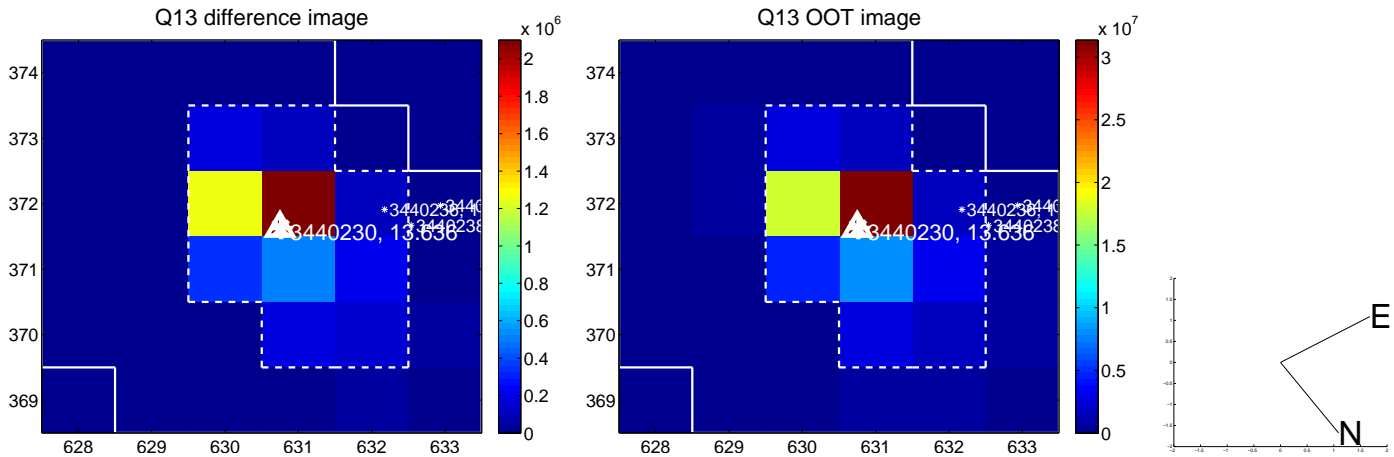
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



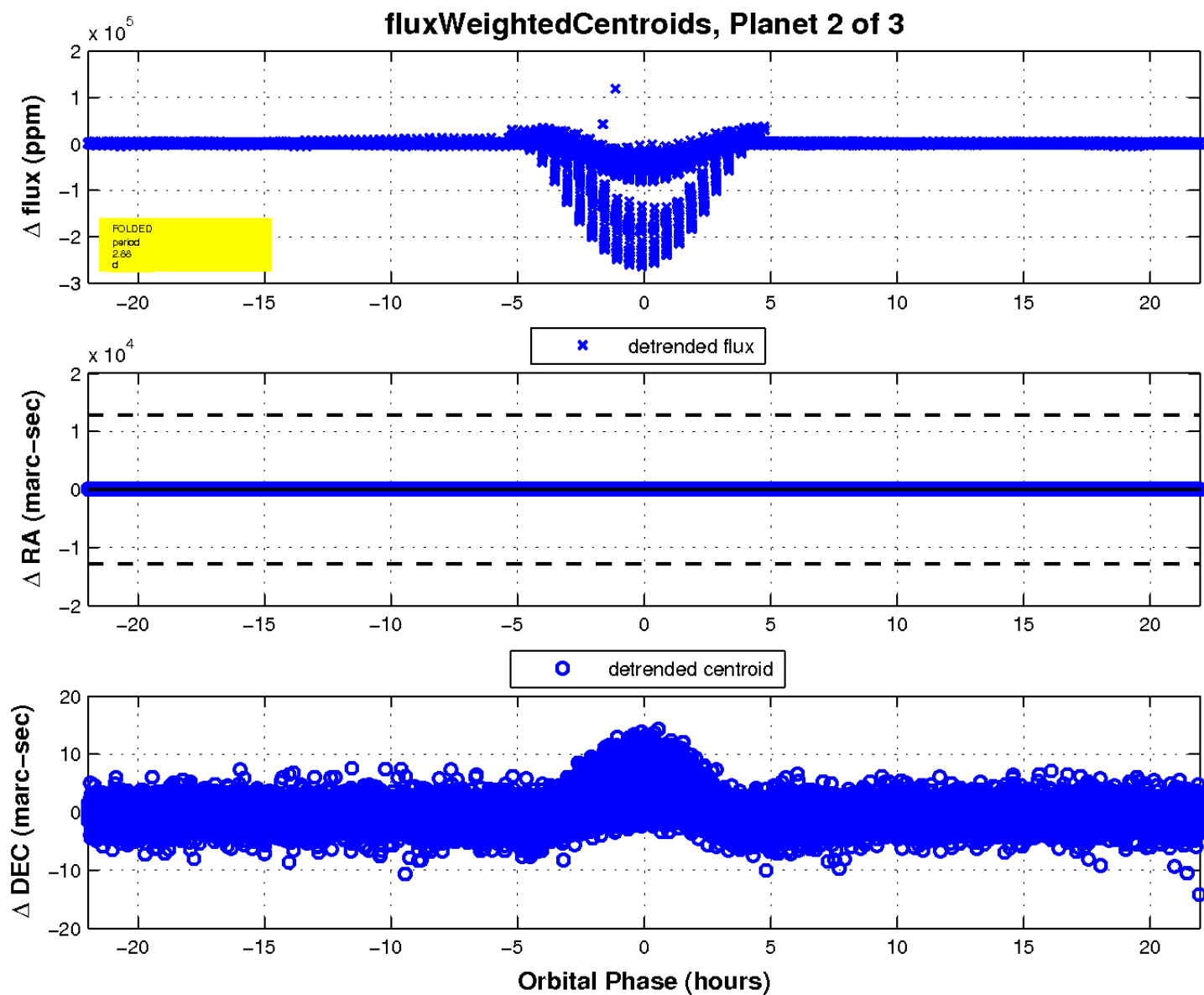
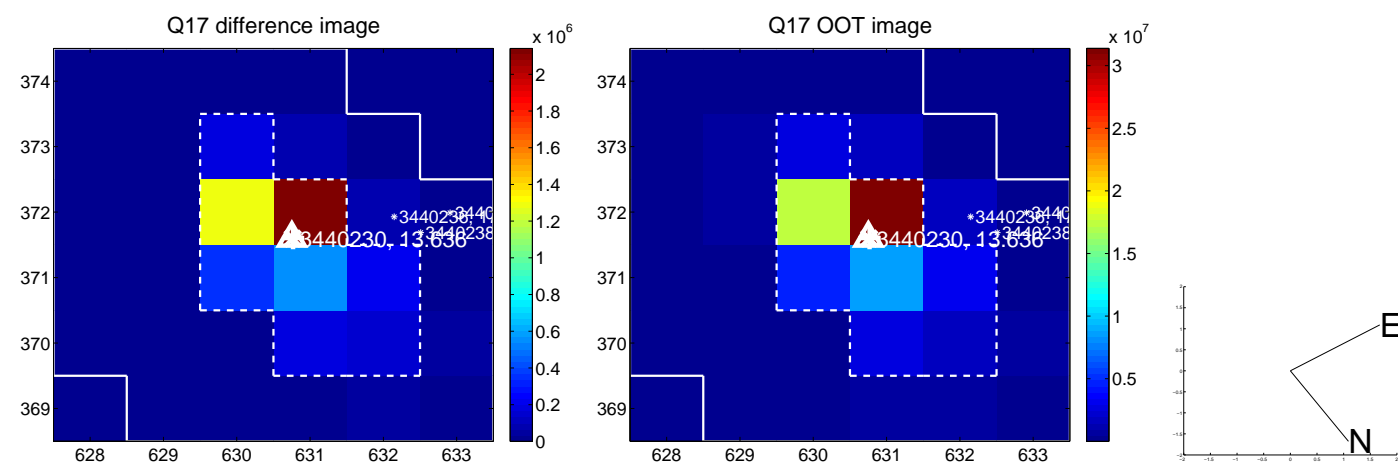
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

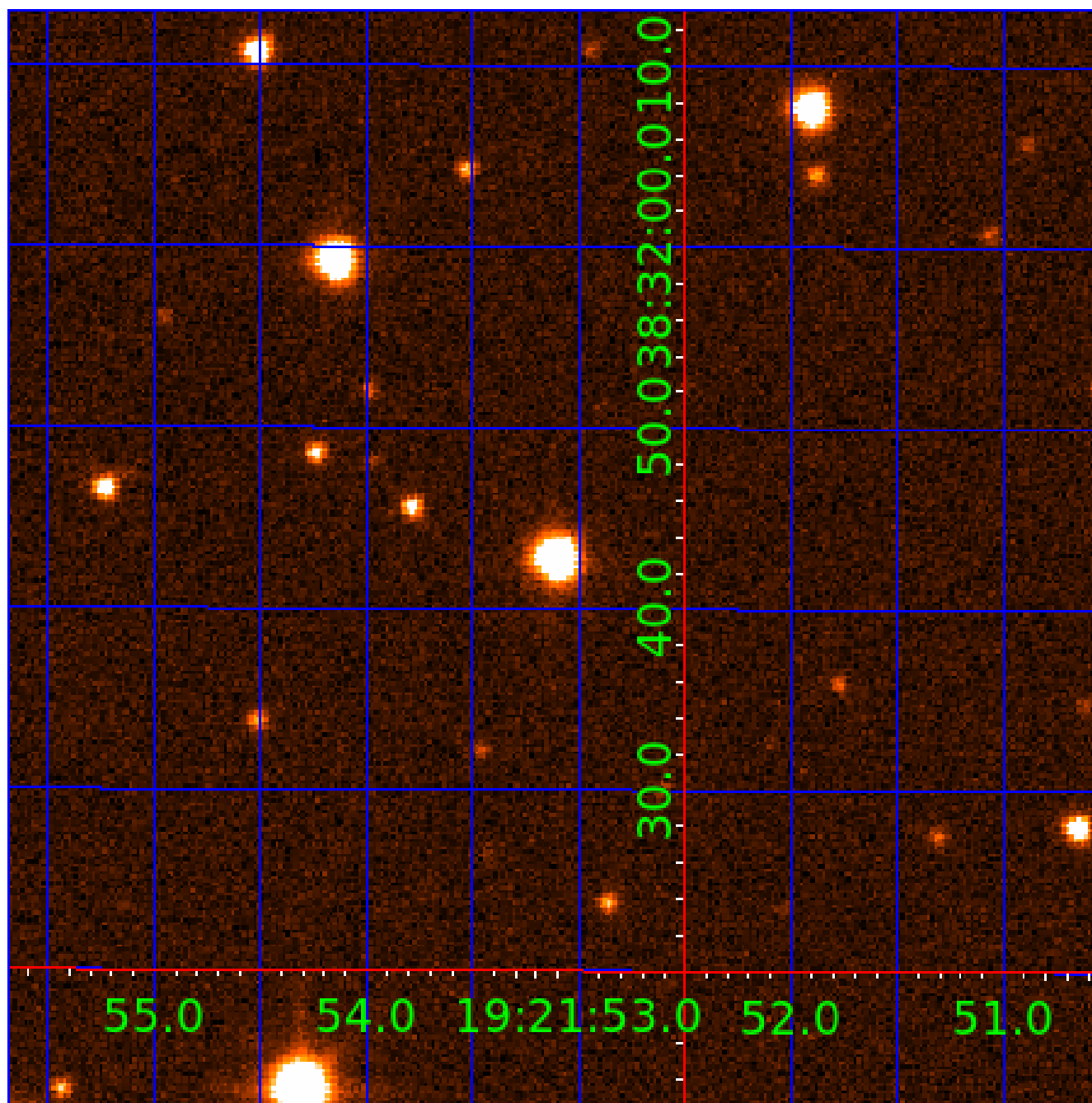


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 003440230

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003440230-01	OBS	6334.01	2.881103	134.238874	660429.3	5.000	14795.1	-1.0	3.37	8104	99.78	17835.33
003440230-02	OBS	No	2.881085	132.804842	48694.3	7.327	1475.4	1232.4	3.37	8104	126.37	17835.47
003440230-03	OBS	No	105.882424	198.596626	22165.1	2.000	327.7	-1.0	3.37	8104	50.80	145.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003440230-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
003440230-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003440230-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_NOFITS

**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 003440230-03

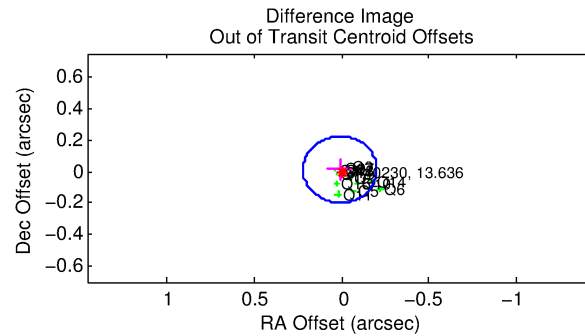
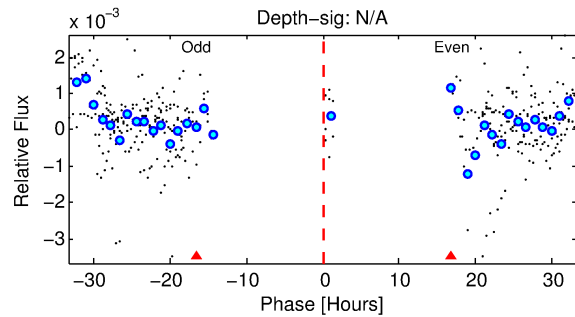
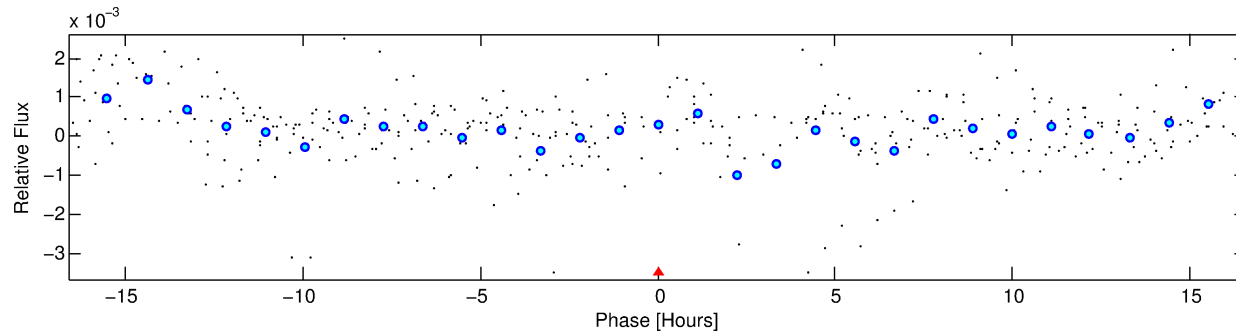
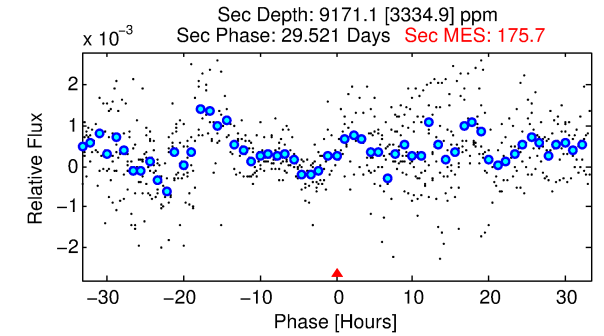
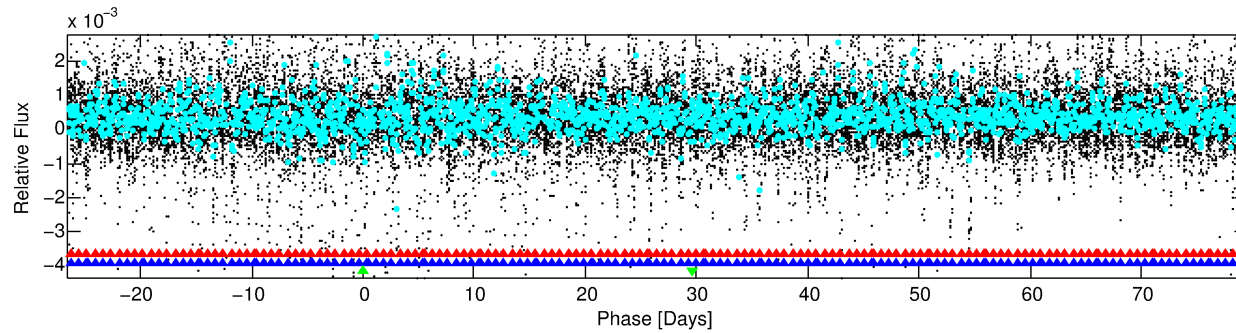
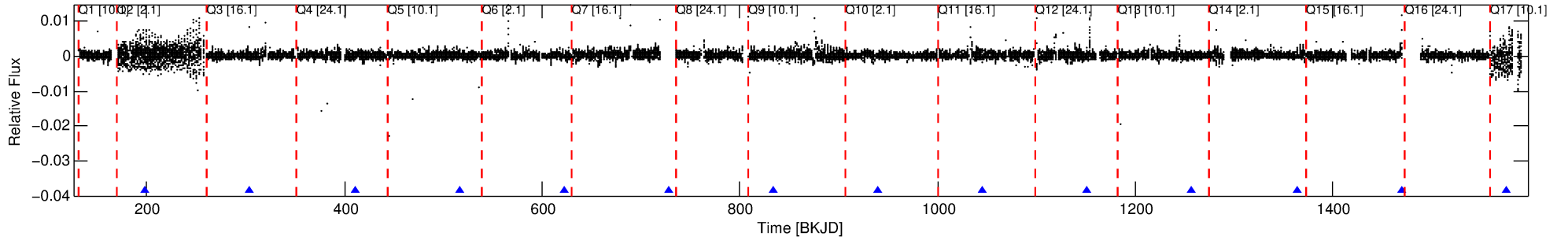
No Significant Match Found

# DV One-Page Summary

KIC: 3440230 Candidate: 3 of 3 Period: 105.882 d

KOI: K06334 Corr: No Ephemeris Match

Kp: 13.64 R\*: 3.37 Rs Teff: 8104.0 K Logg: 3.67 Fe/H: -0.340



## TPS TCE Results:

Period = 105.88242 d  
Epoch = 198.5966 BKJD

DV fit results are unavailable

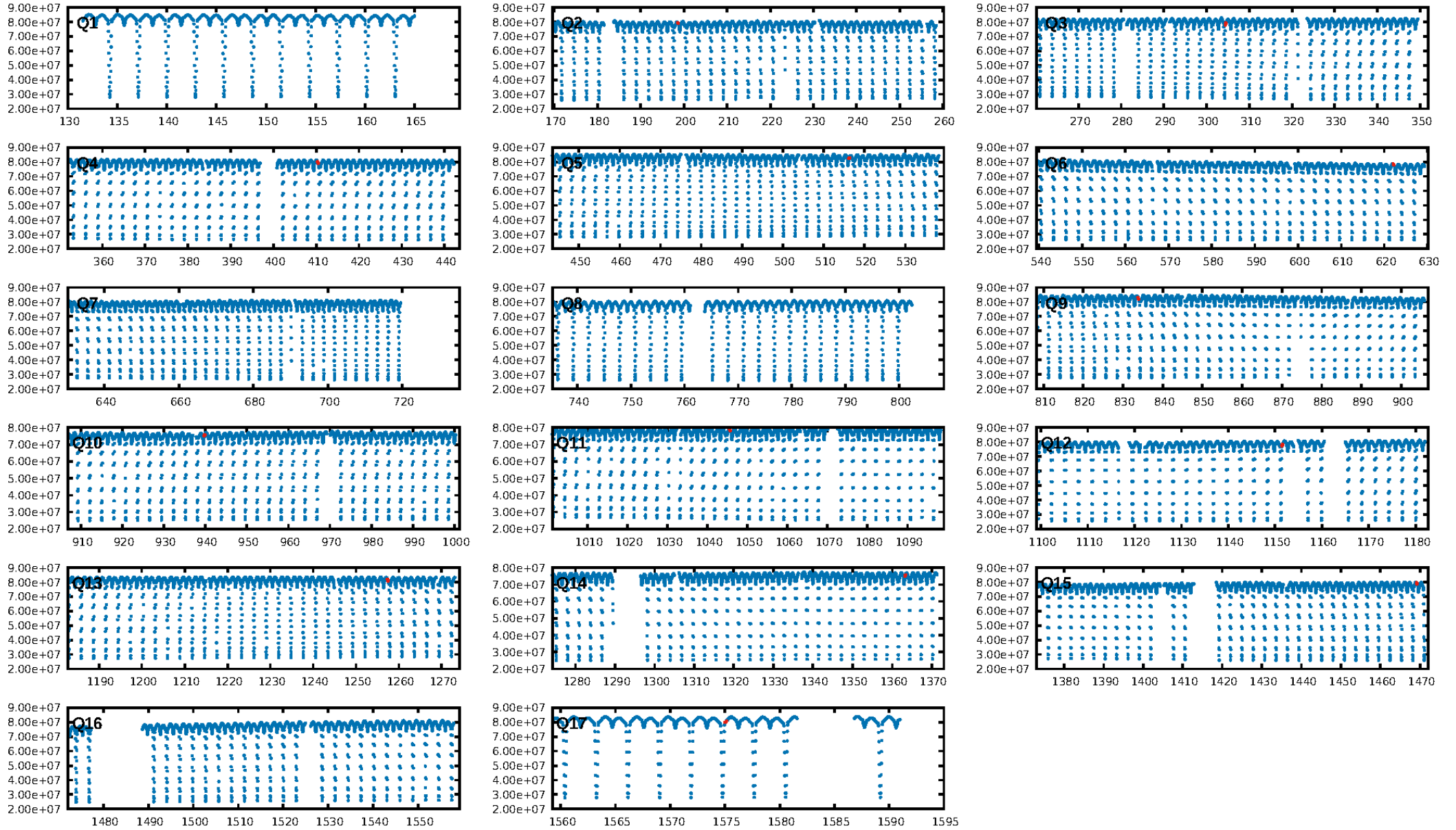
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [459.04σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [9/9]  
GhostDiagnostic-chr: 13.04  
Centroid-sig: N/A  
Centroid-so: 0.894 arcsec [1.82σ]  
OotOffset-rm: 0.017 arcsec [0.24σ]  
KicOffset-rm: 0.042 arcsec [0.60σ]  
OotOffset-st: 4/3/2/4 [13]  
KicOffset-st: 4/3/2/4 [13]  
DiffImageQuality-fgm: 0.00 [0/13]  
DiffImageOverlap-fno: 0.00 [0/13]

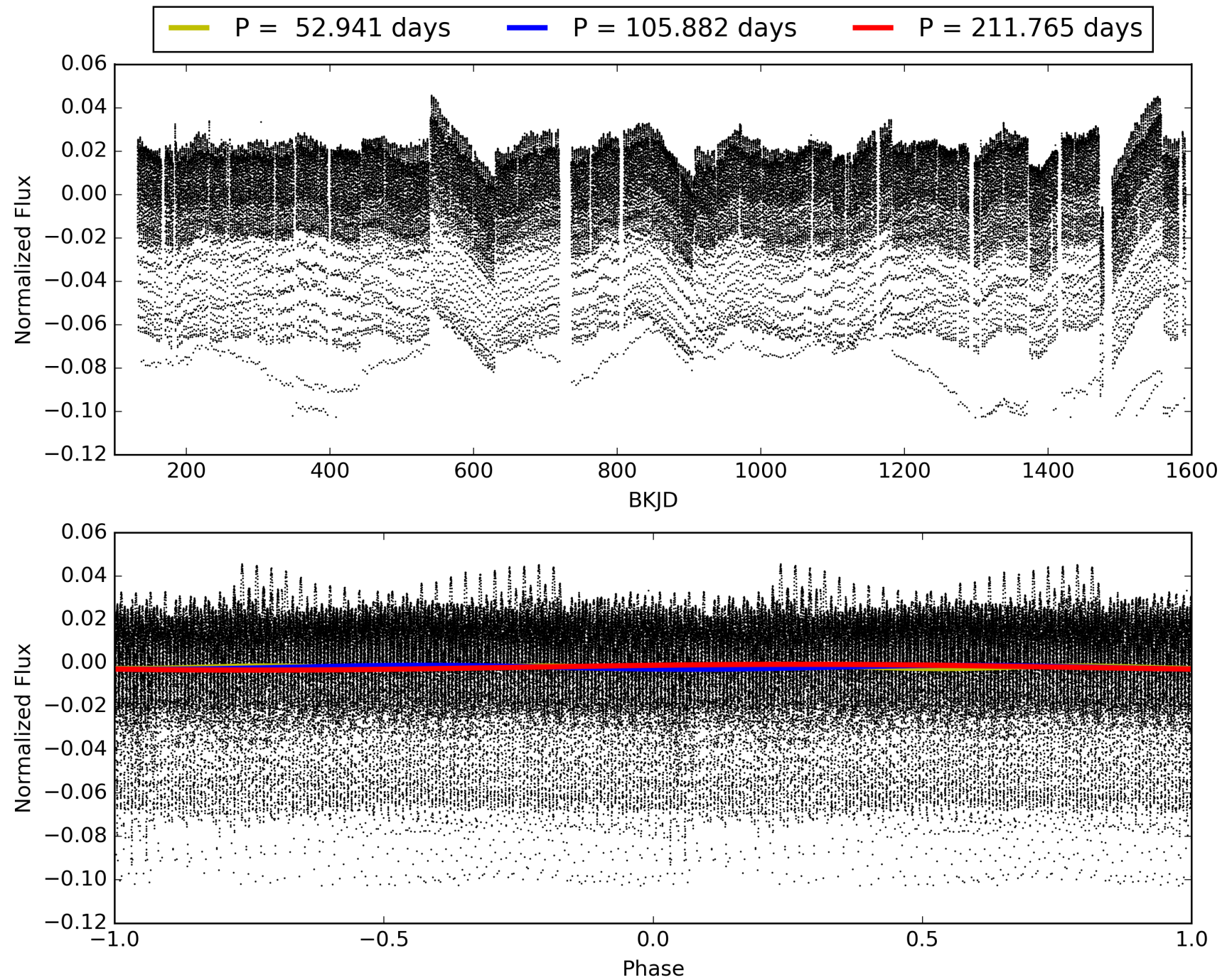
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:59:24 Z

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

# TCE 003440230-03, PDC Light Curves

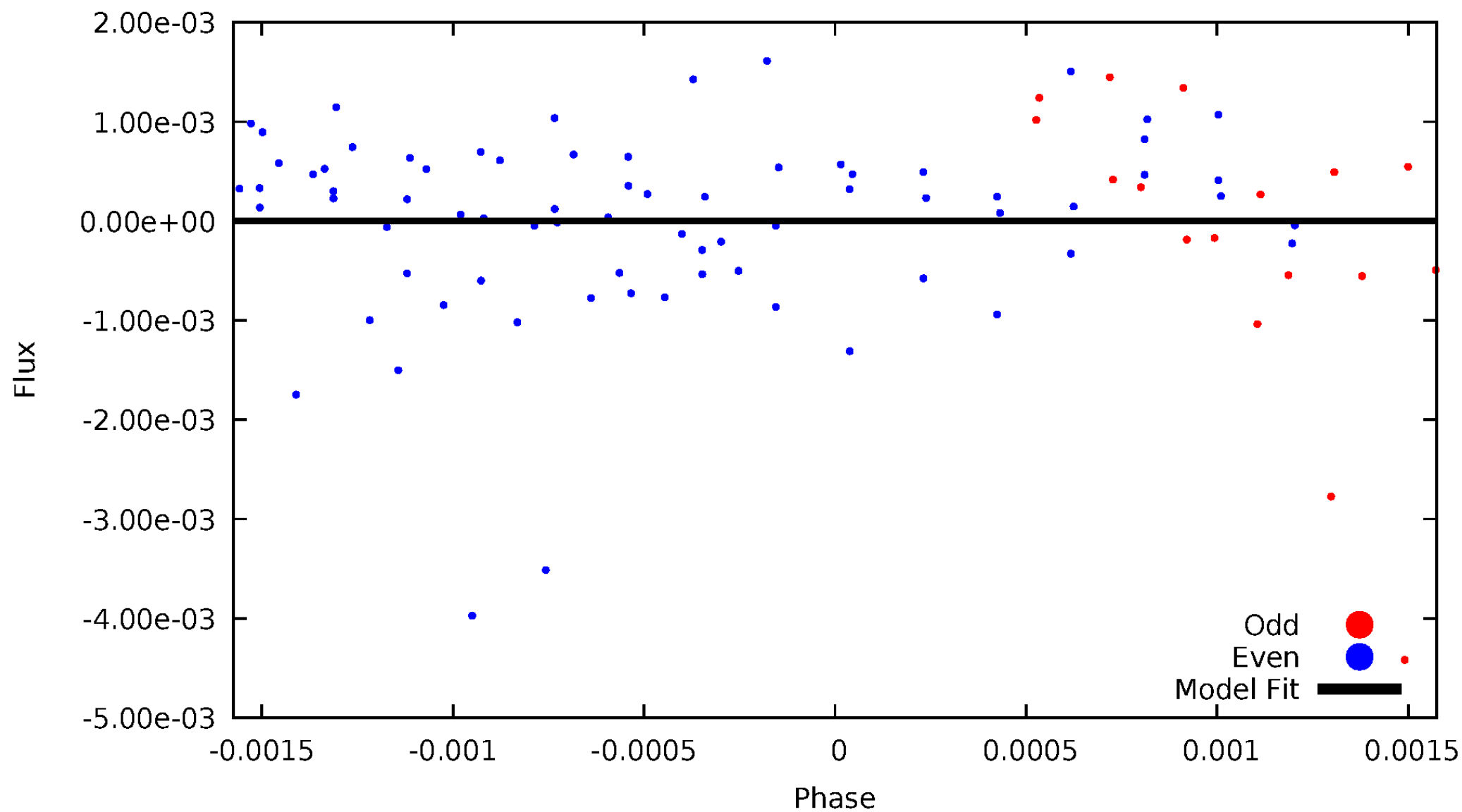


TCE 003440230-03



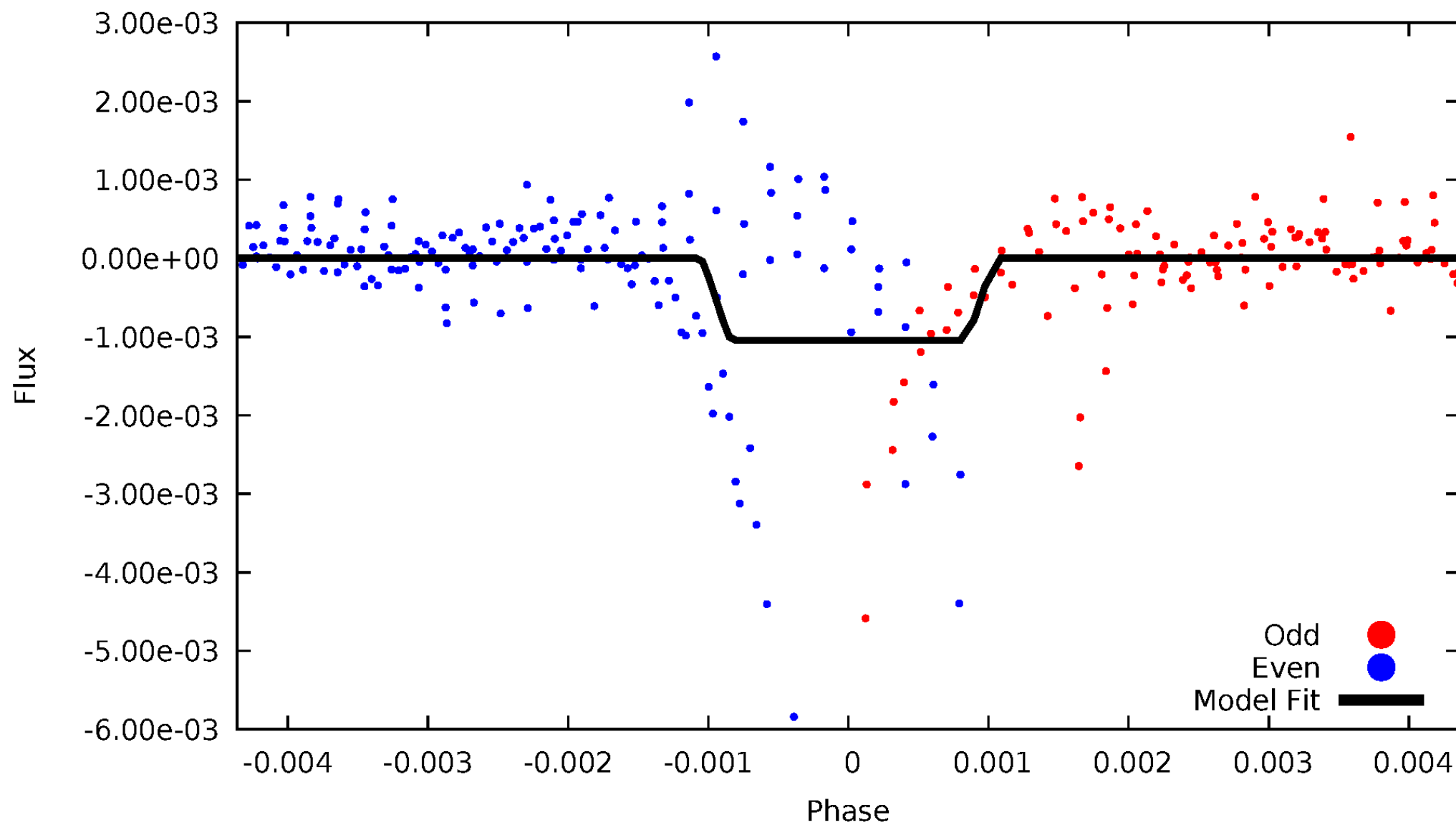
# DV Odd/Even

TCE 003440230-03

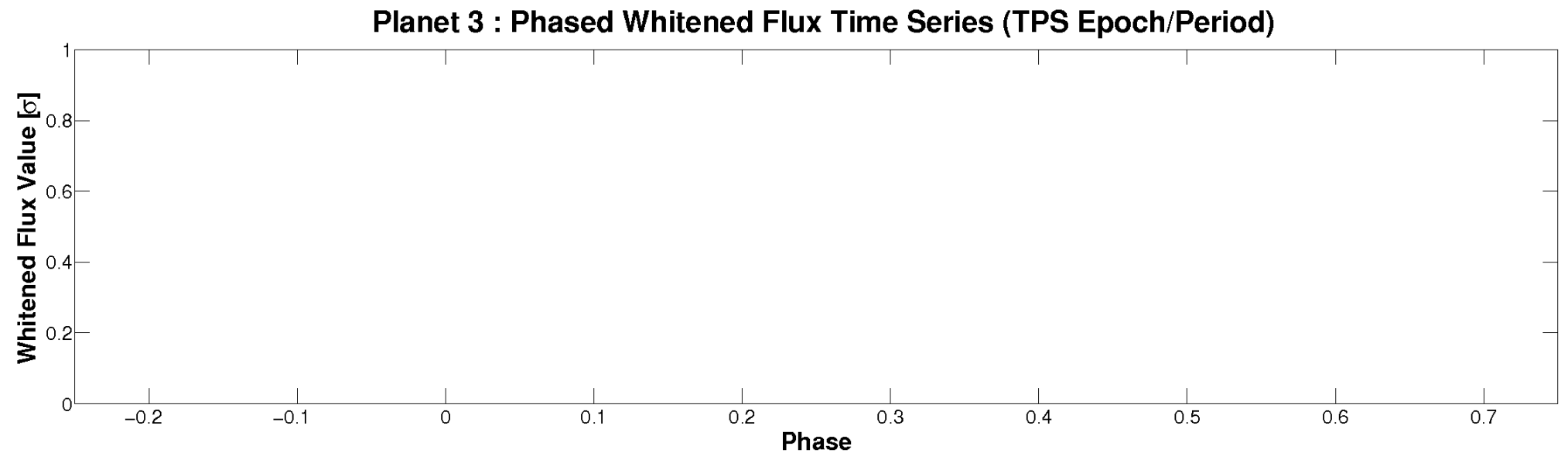
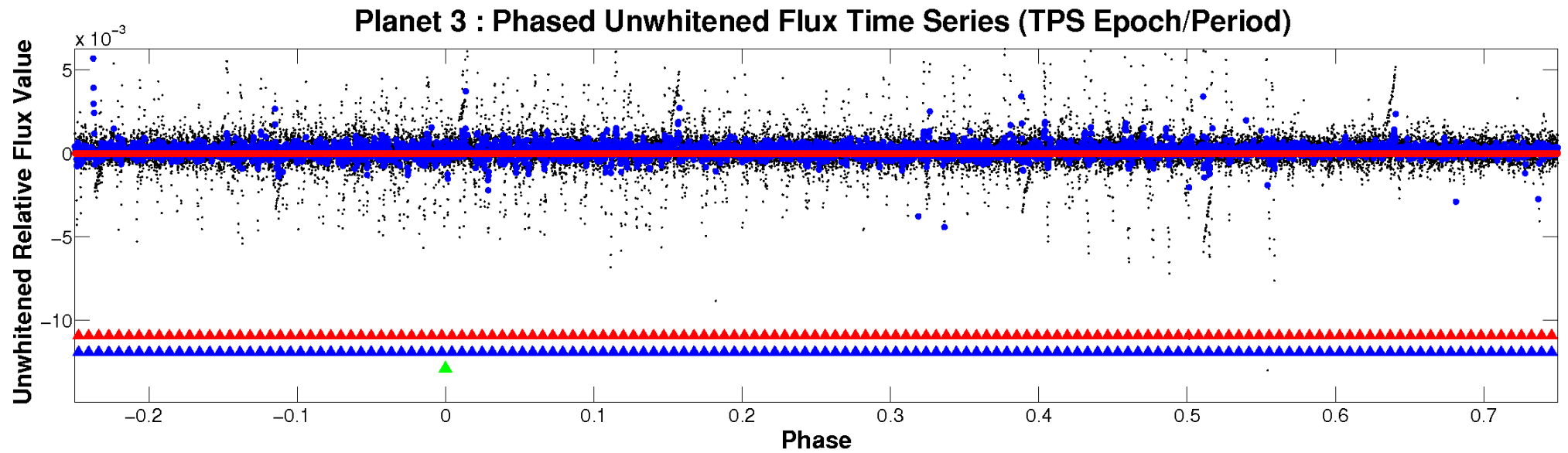


# ALT Odd/Even

TCE 003440230-03



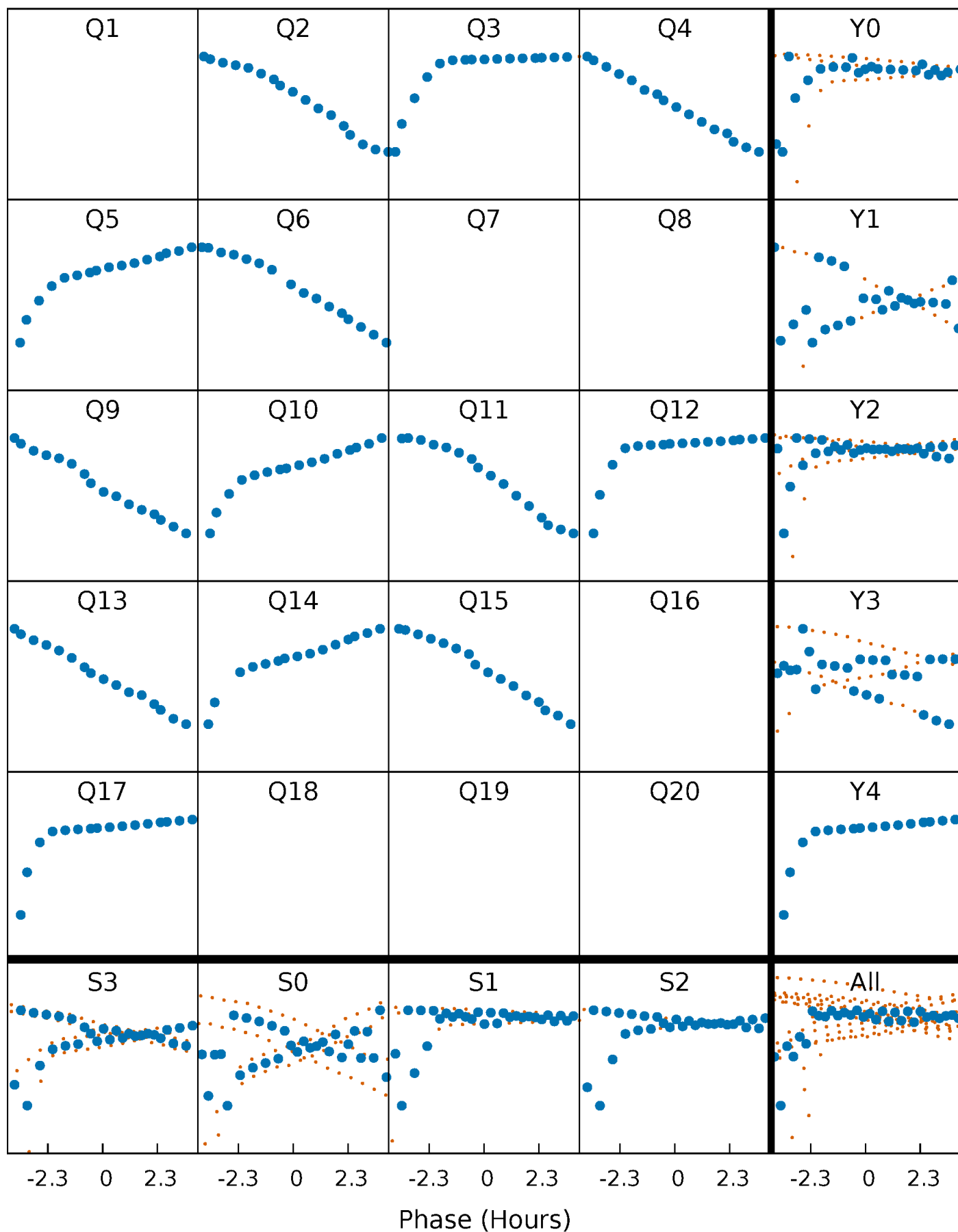
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

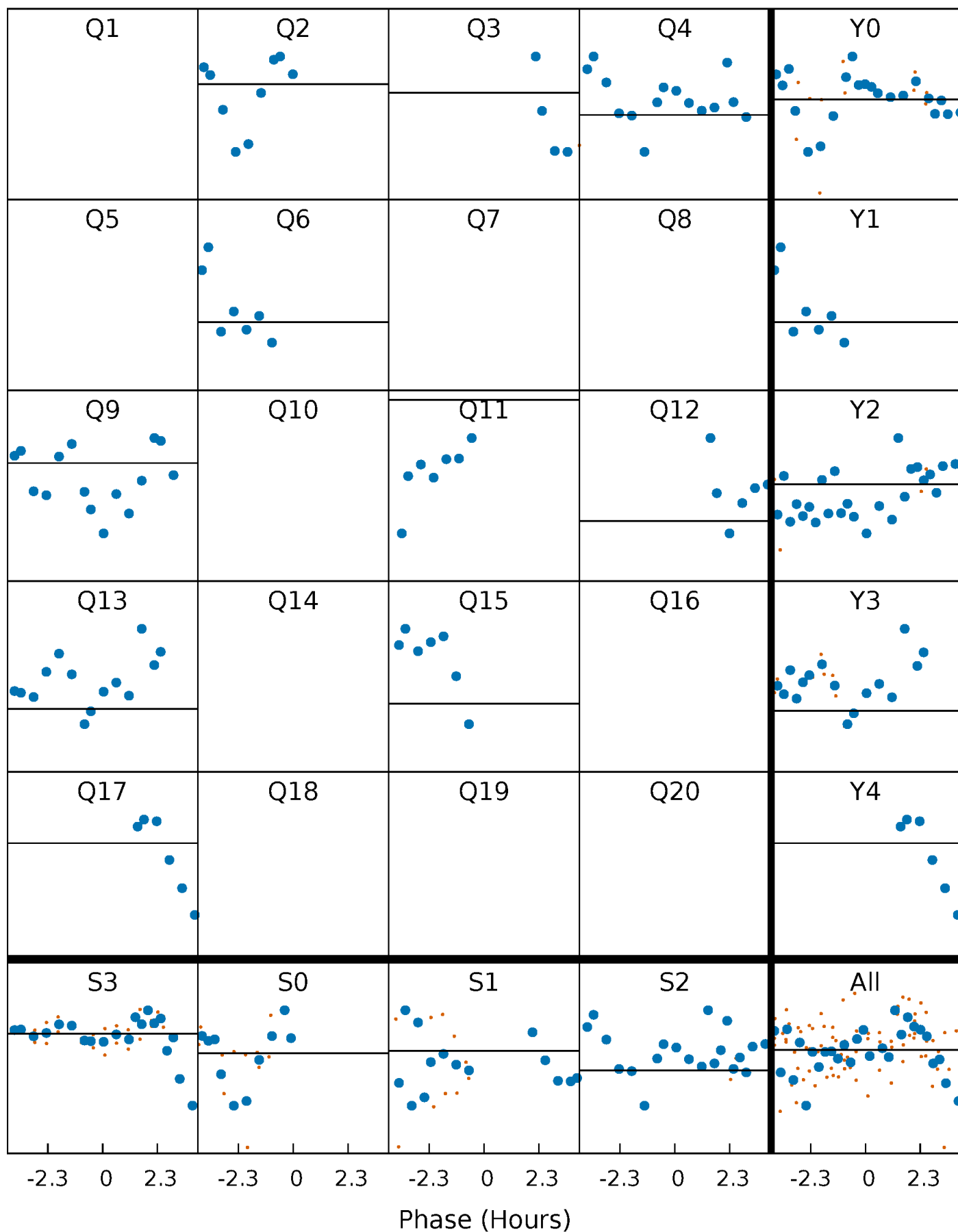
TCE 003440230-03     $P=105.882424$  Days     $T_0=198.596626$  (BKJD)





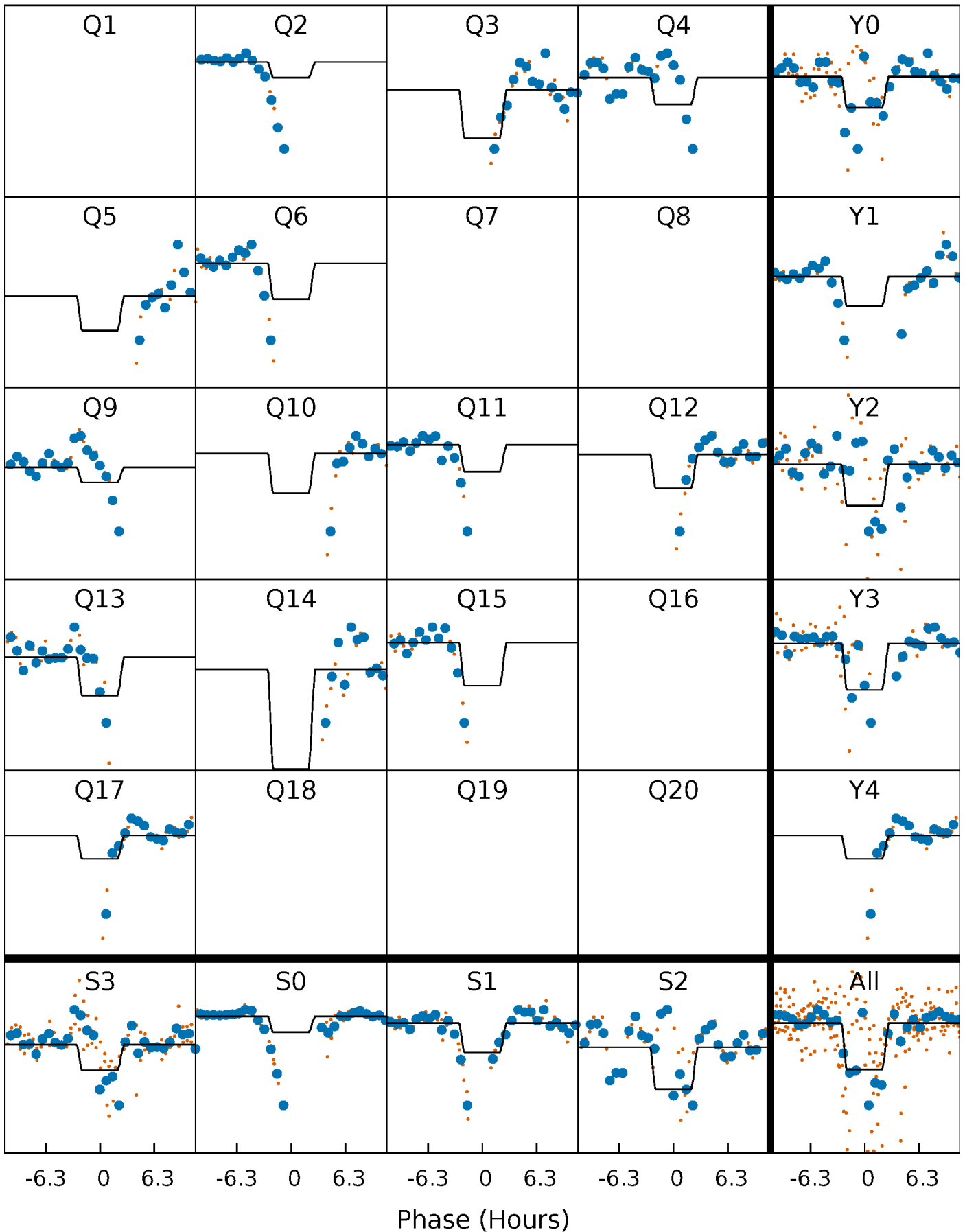
# DV Quarter-Phased Transit Curves

TCE 003440230-03 P=105.882424 Days  $T_0=198.596626$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

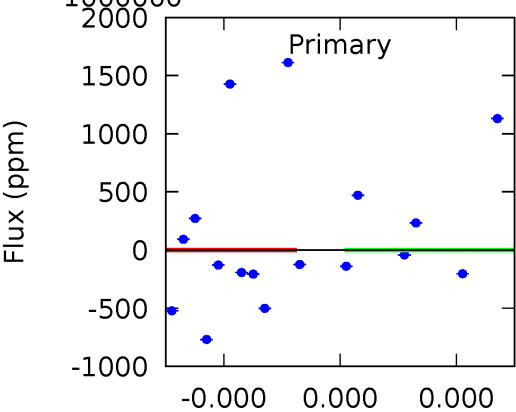
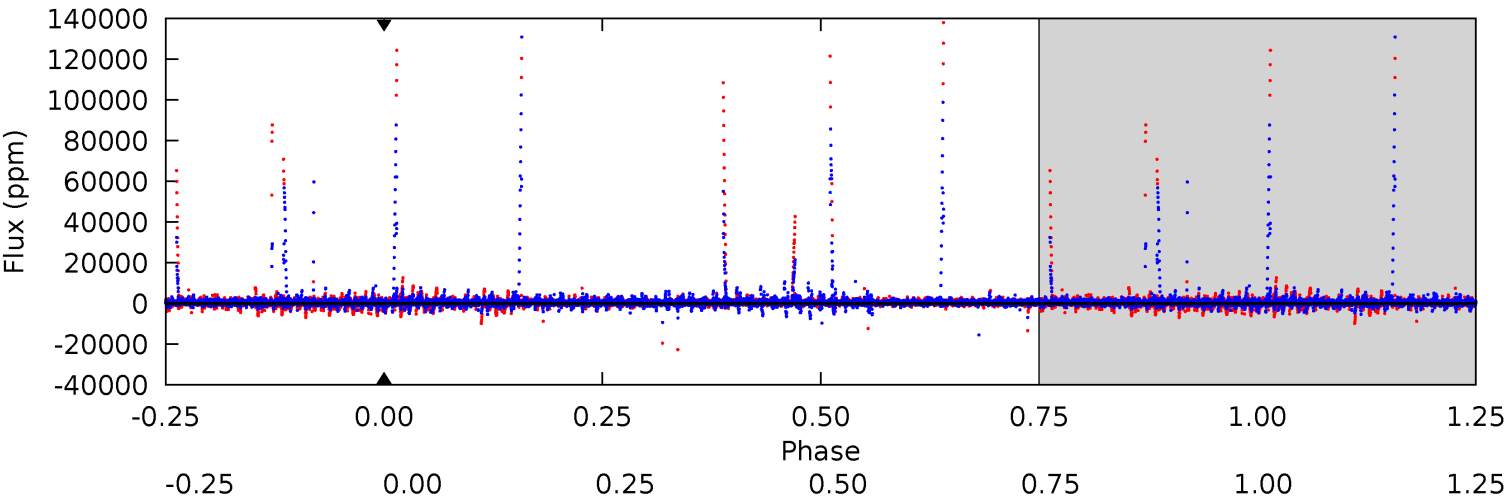
TCE 003440230-03 P=105.882424 Days  $T_0=198.639338$  (BKJD)



# DV Model-Shift Uniqueness Test

003440230-03, P = 105.882424 Days, E = 92.714202 Days

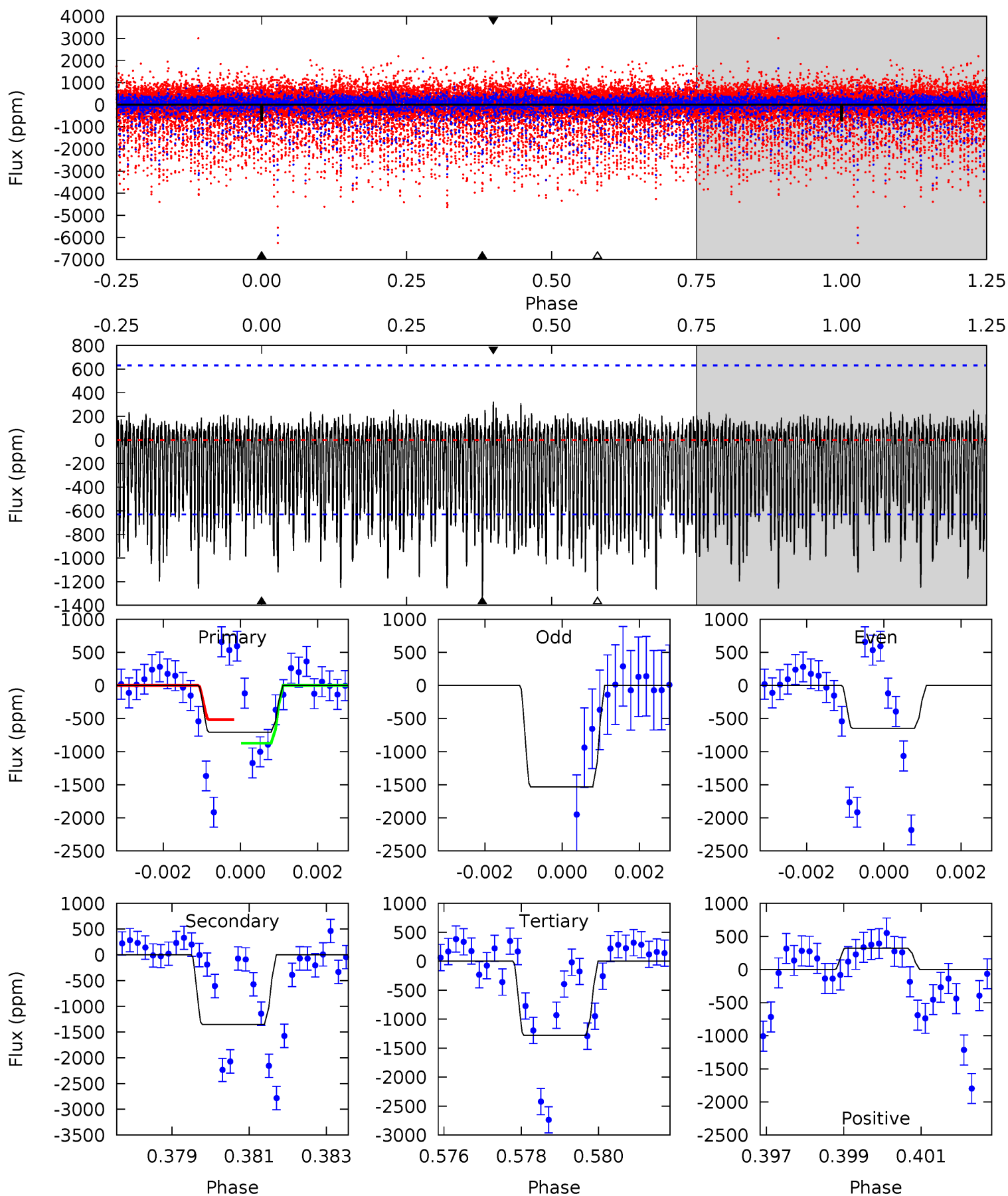
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003440230-03, P = 105.882424 Days, E = 92.756914 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
5.97	11.4	10.8	2.73	5.33	3.09	2.65	-4.83	3.24	0.61	8.68	3.00	1.07	0.19	1.50



### Stellar Parameters For KIC 003440230

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8104^{+223}_{-334}$	$3.675^{+0.493}_{-0.087}$	$-0.340^{+0.200}_{-0.300}$	$3.369^{+0.576}_{-1.727}$	$1.957^{+0.223}_{-0.483}$	$0.072^{+0.398}_{-0.020}$
	+3%/-4%	+13%/-2%	+59%/-88%	+17%/-51%	+11%/-25%	+552%/-28%
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 003440230-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$46.55^{+38.06}_{-28.04}$	$1185^{+93}_{-156}$	$-4513^{+21683}_{-12978}$	$-156.046^{+9846.256}_{-10803.931}$
Alt.	$-1350 \pm 118$	$26.87^{+27.14}_{-18.18}$	$1191^{+86}_{-155}$	$5214^{+4999}_{-1196}$	$318^{+2591}_{-243}$

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

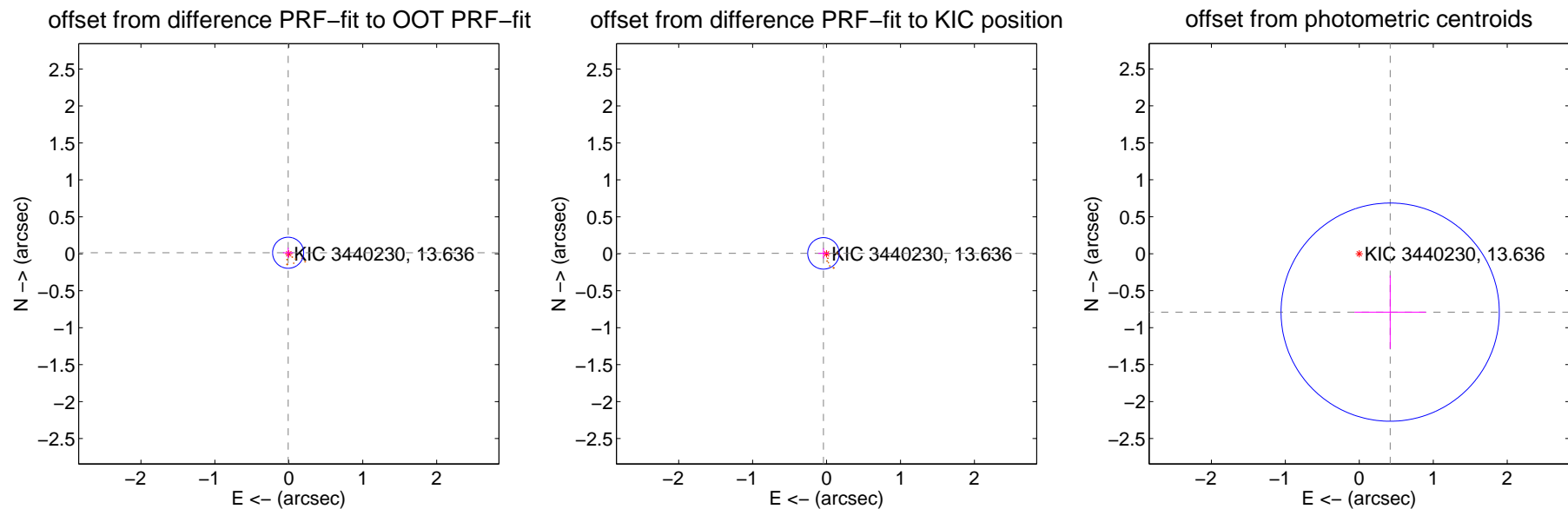
## DV Centroid Data

Supplemental centroid analysis for 003440230-03. Kepler magnitude: 13.64. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

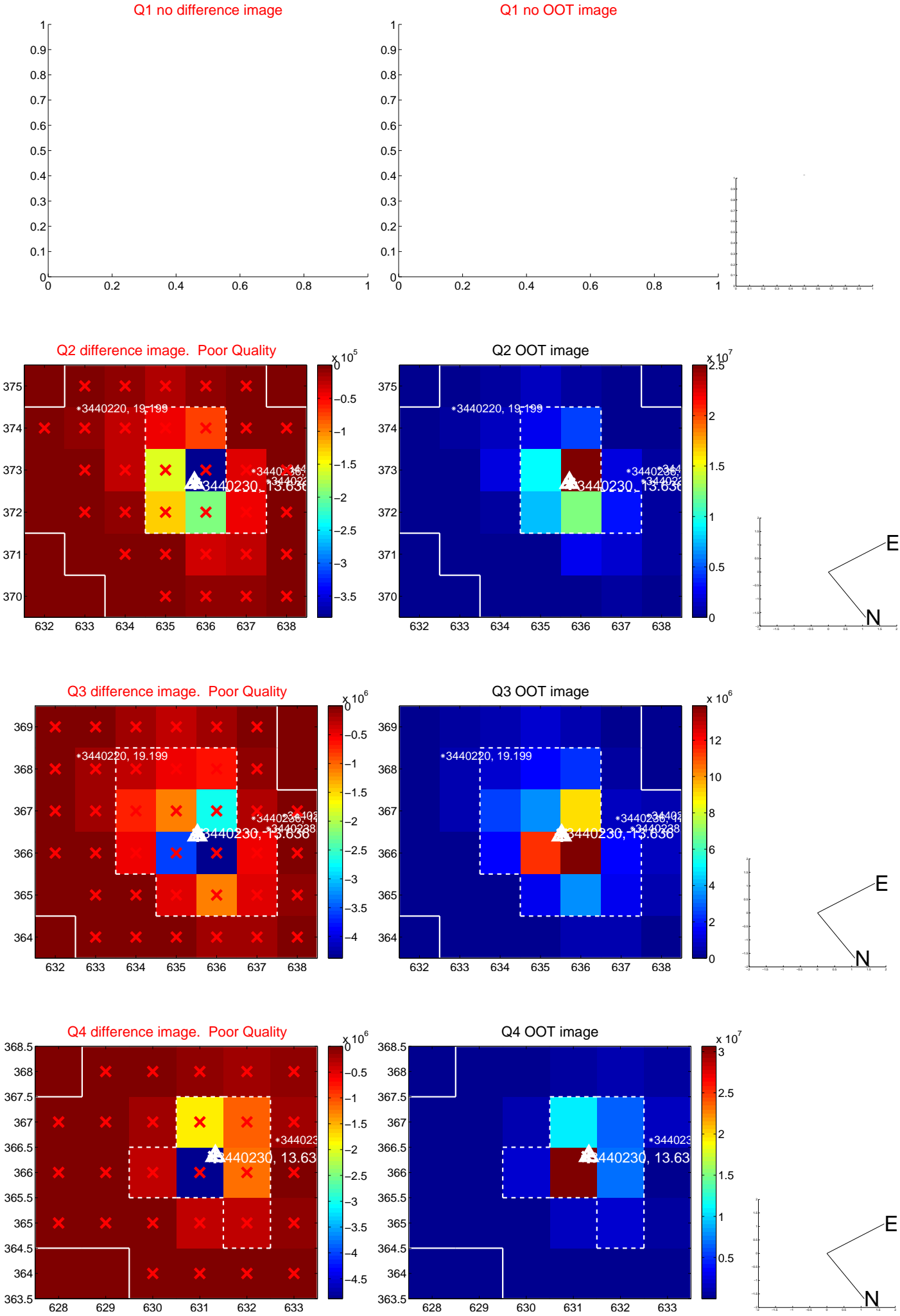
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.017 \pm 0.070$	0.24	$0.009 \pm 0.070$	$0.014 \pm 0.069$
PRF-fit source offset from KIC position	$0.042 \pm 0.071$	0.60	$0.042 \pm 0.071$	$0.006 \pm 0.070$
photometric centroid source offset	$0.89 \pm 0.49$	1.82	$-0.42 \pm 0.48$	$-0.79 \pm 0.49$

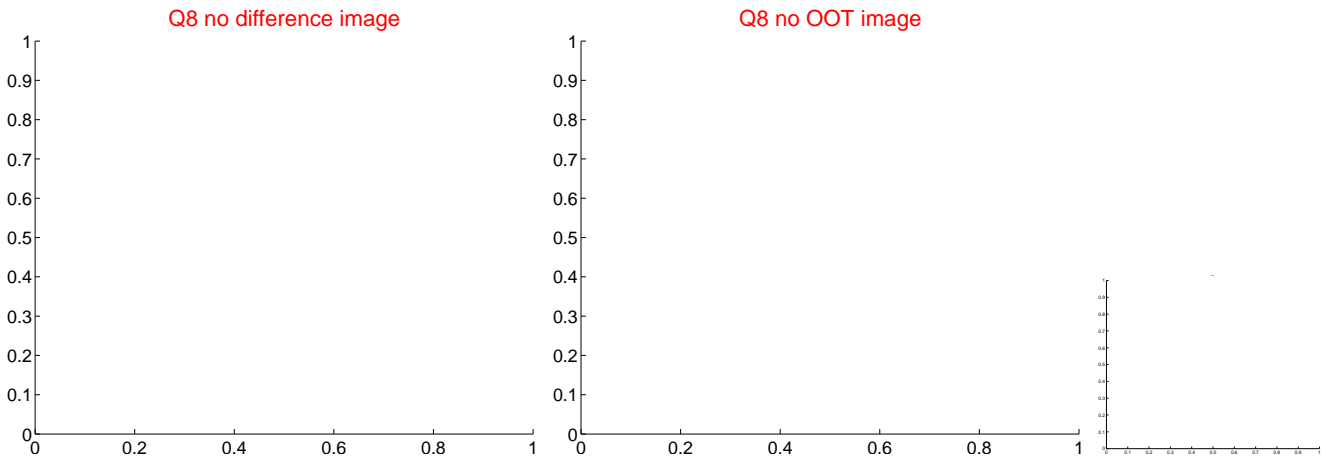
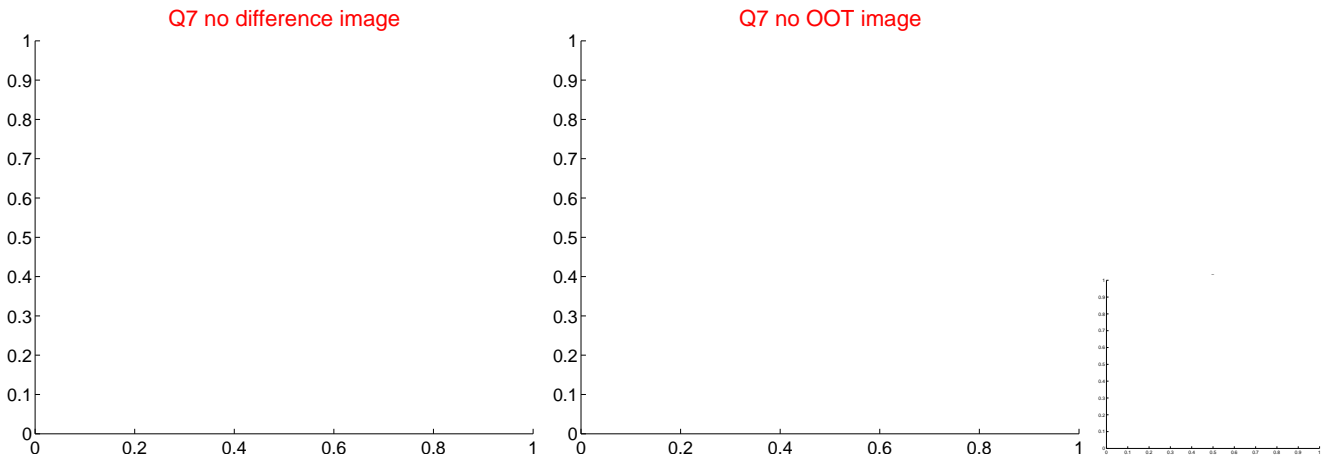
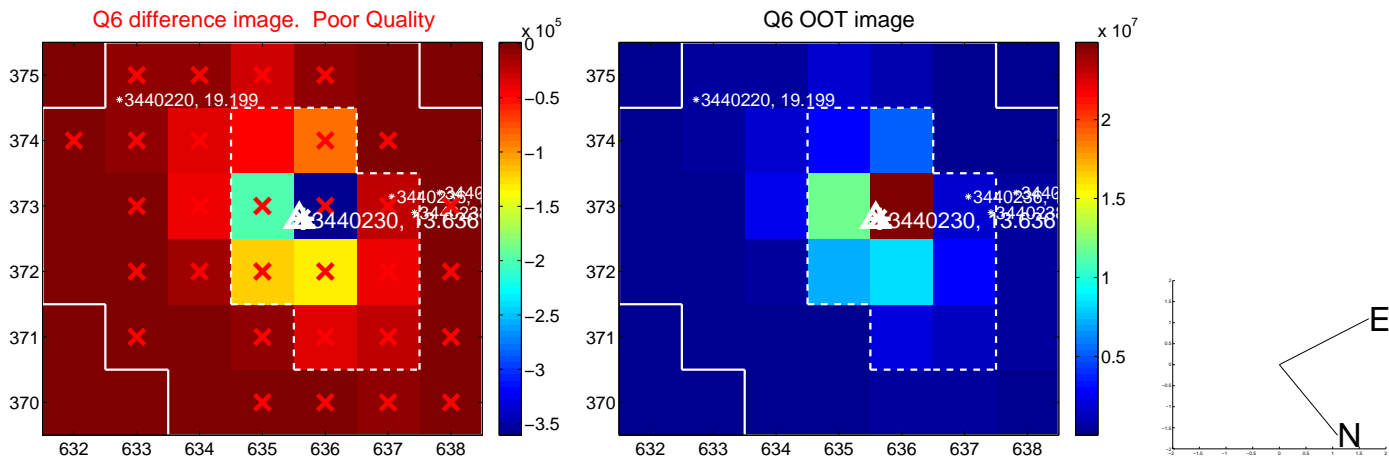
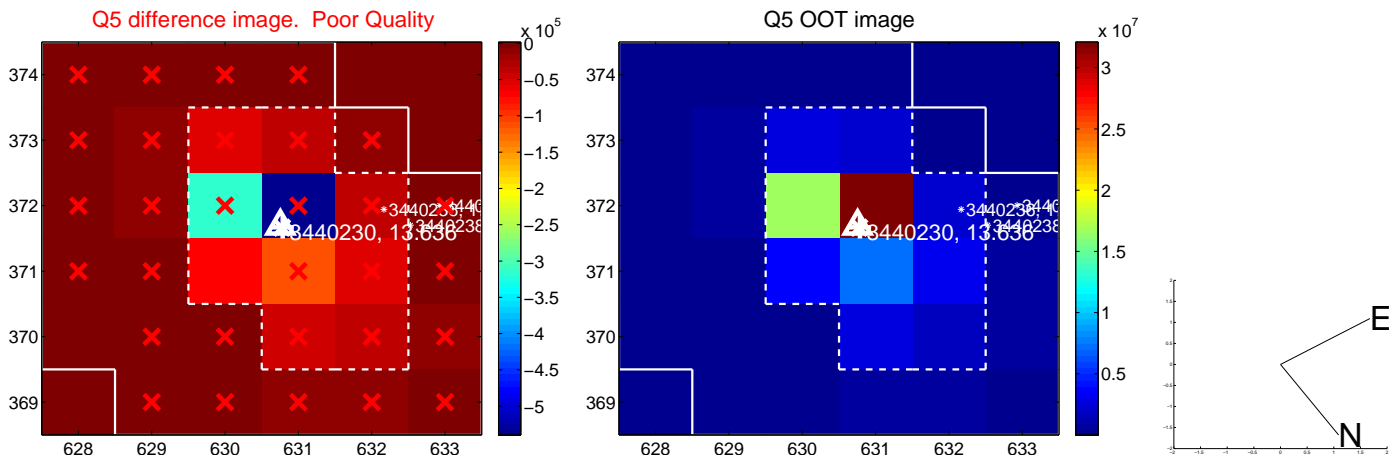


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

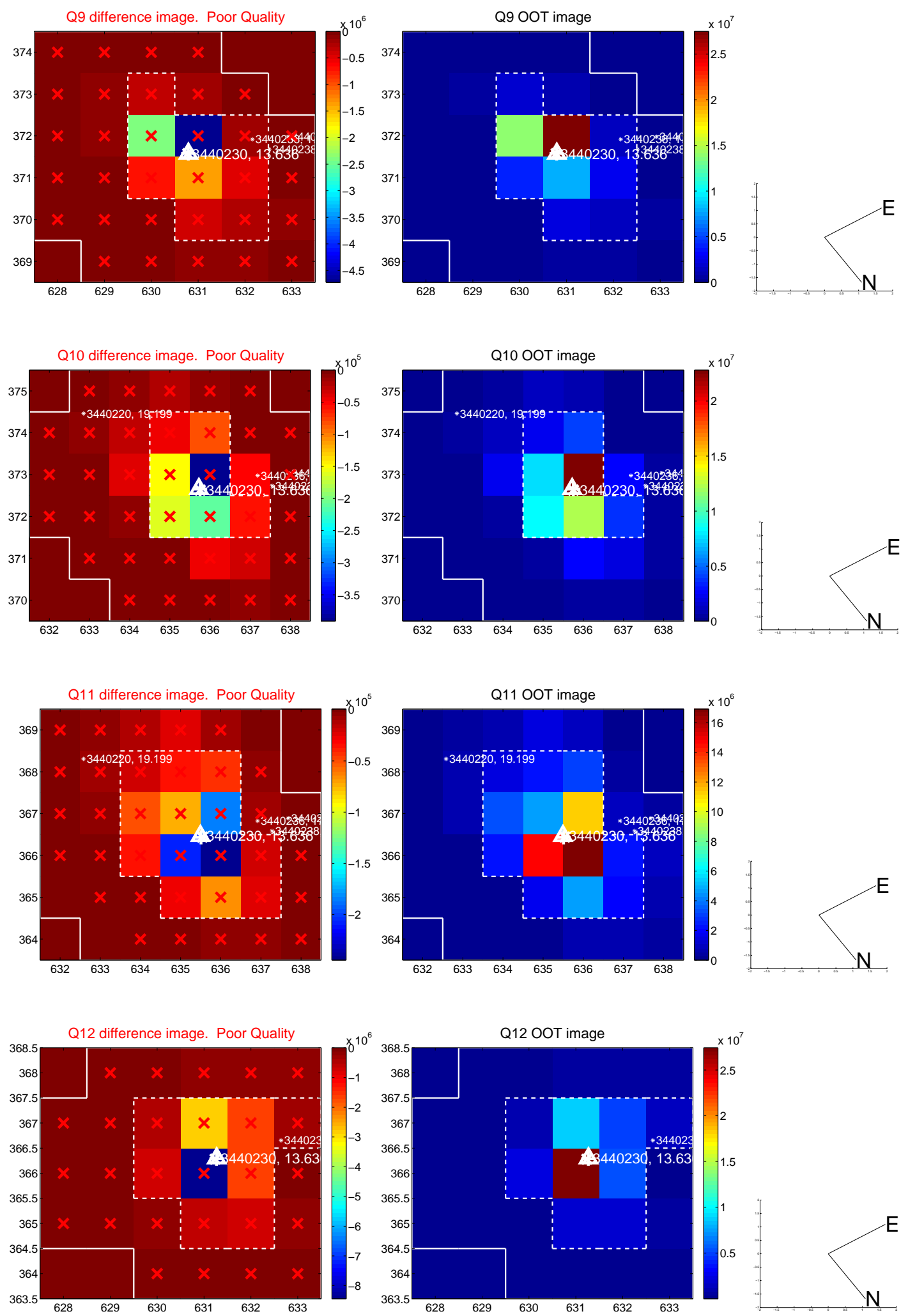


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

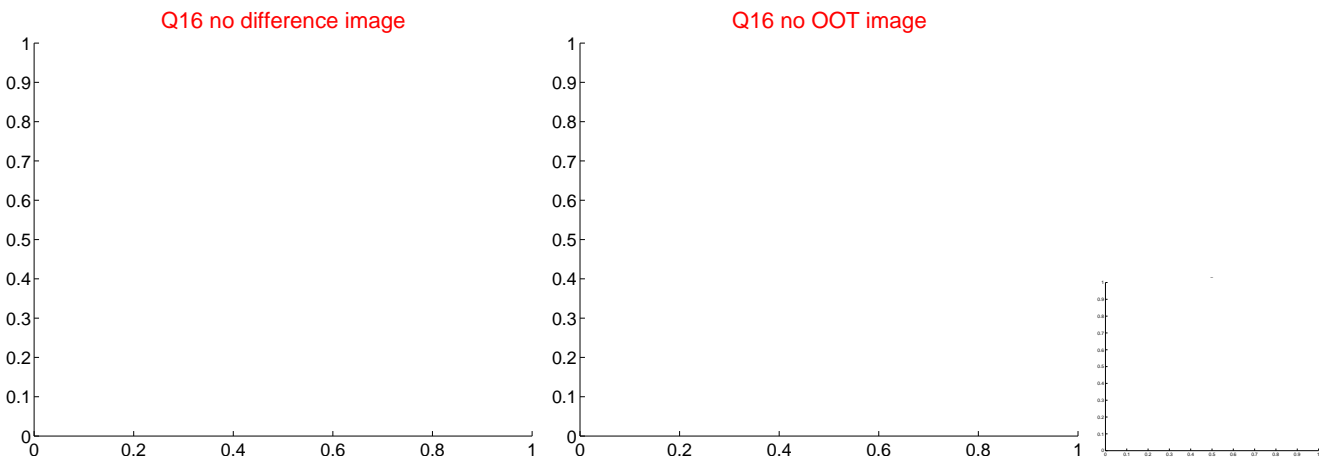
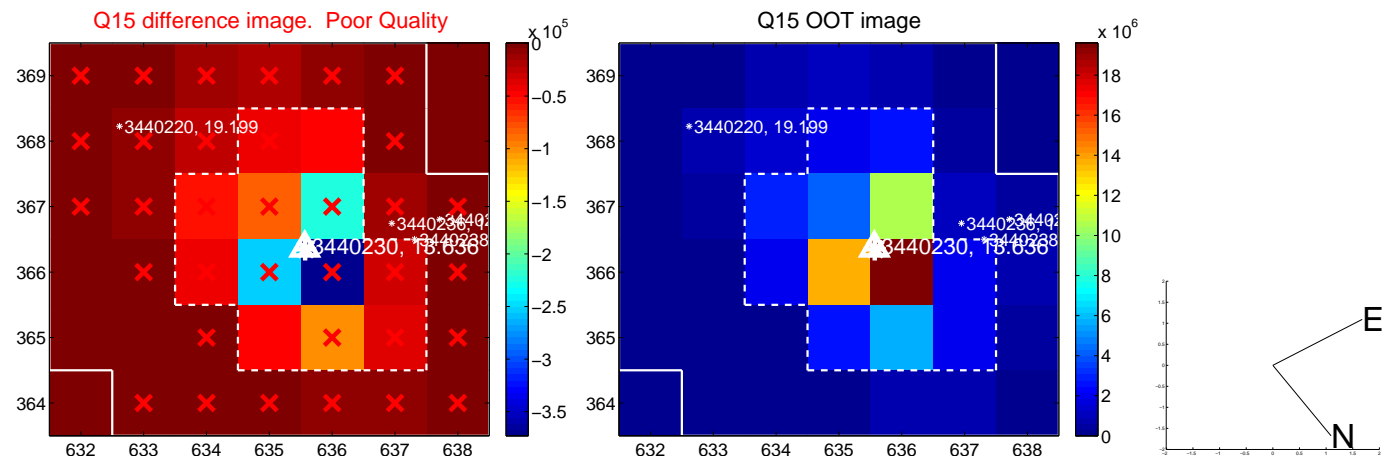
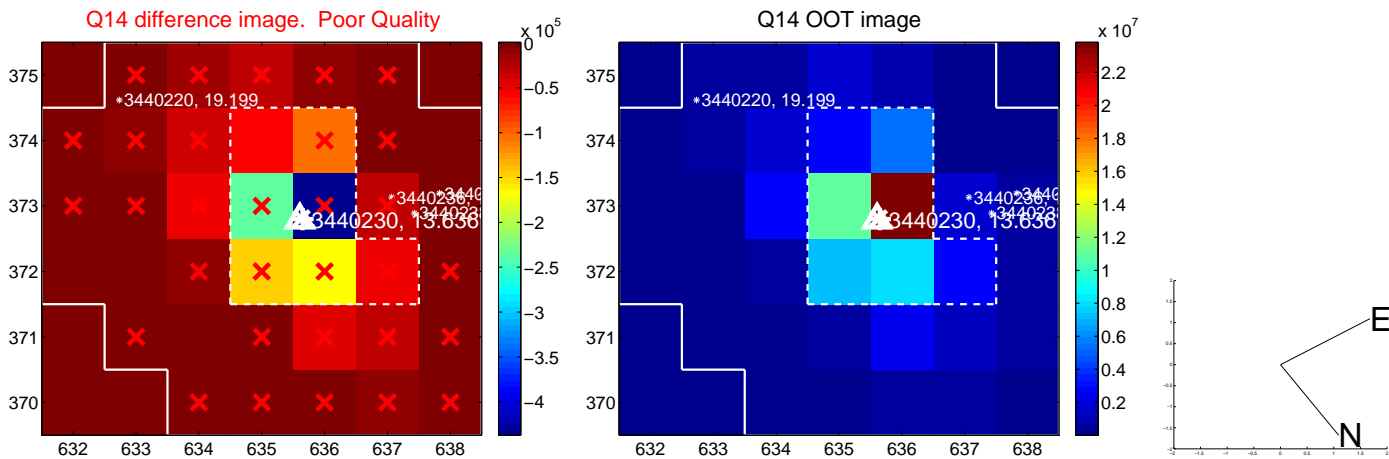
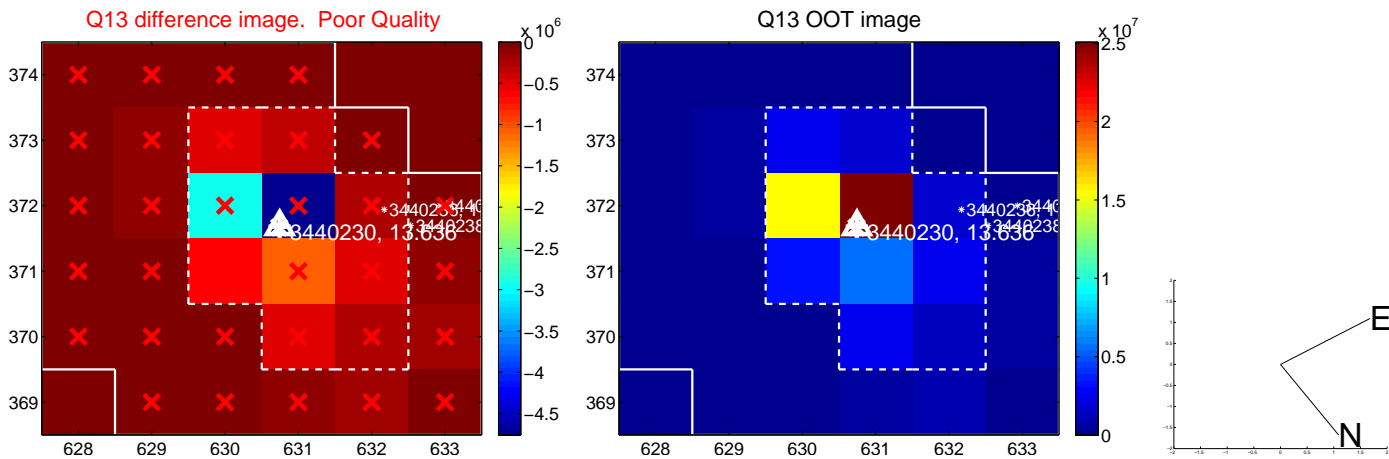




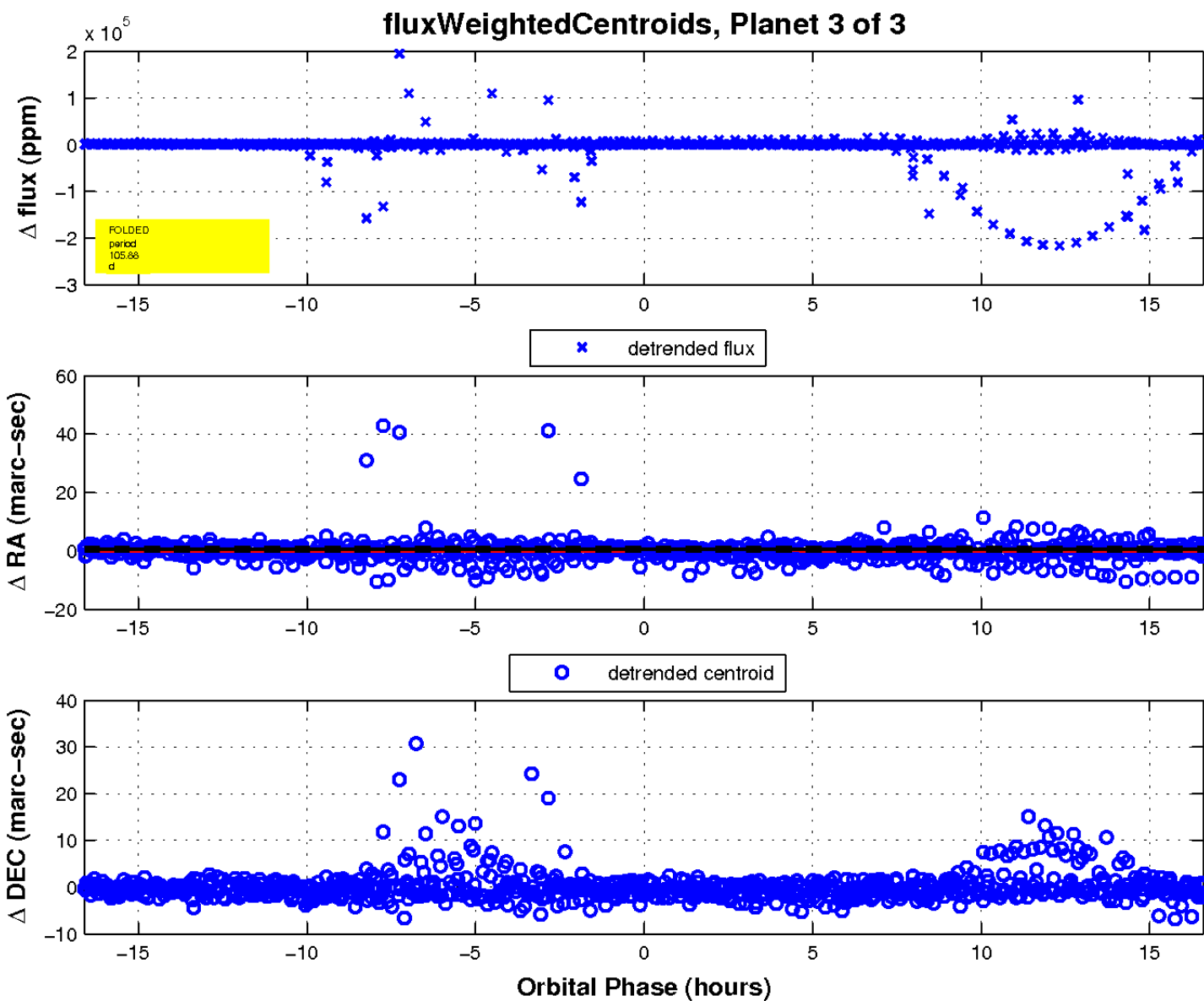
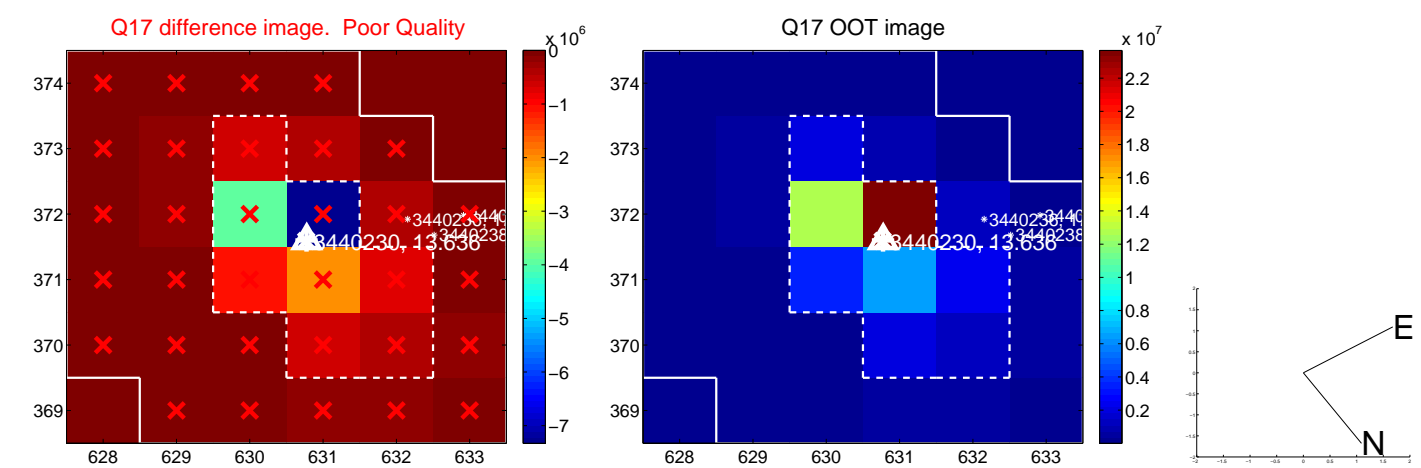
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

