

# KIC 010082844

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010082844-01	OBS	No	1.041759	132.311305	14.9	6.540	10.7	2.3	2.13	9643	0.88	49954.90
010082844-02	OBS	No	349.001219	292.149493	679.0	1.665	14.1	6.5	2.13	9643	5.73	21.47
010082844-03	OBS	No	106.221266	191.136131	1351.9	5.962	10.2	8.6	2.13	9643	14.03	104.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010082844-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010082844-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010082844-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

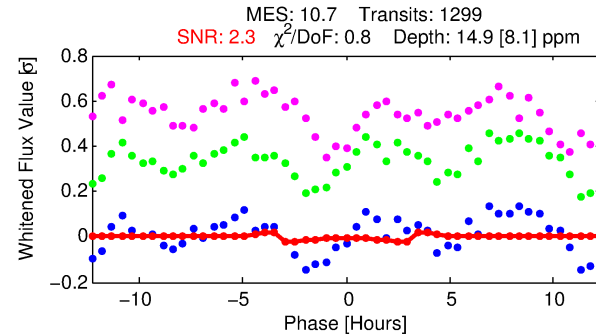
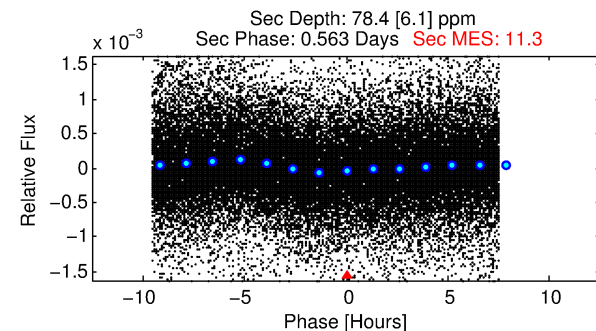
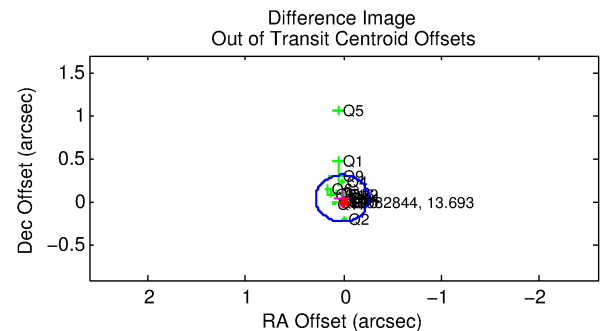
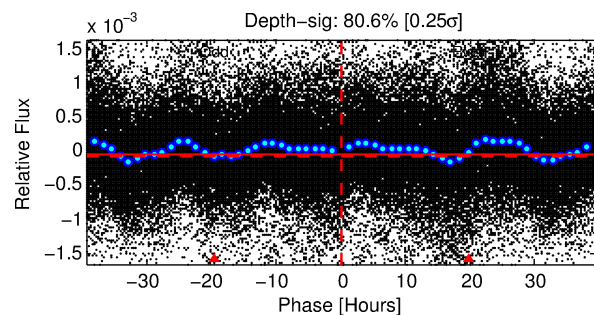
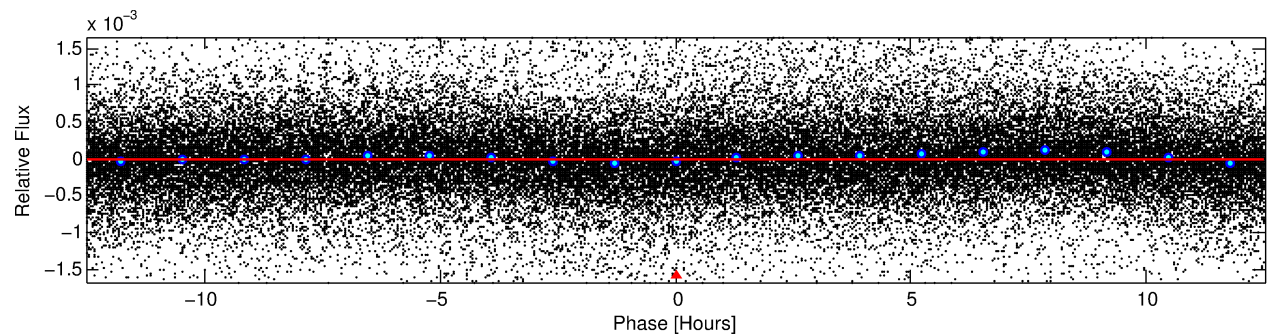
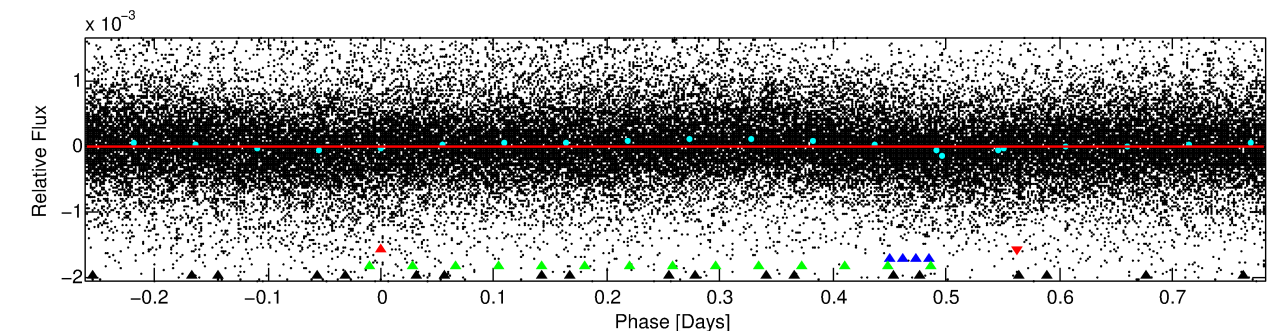
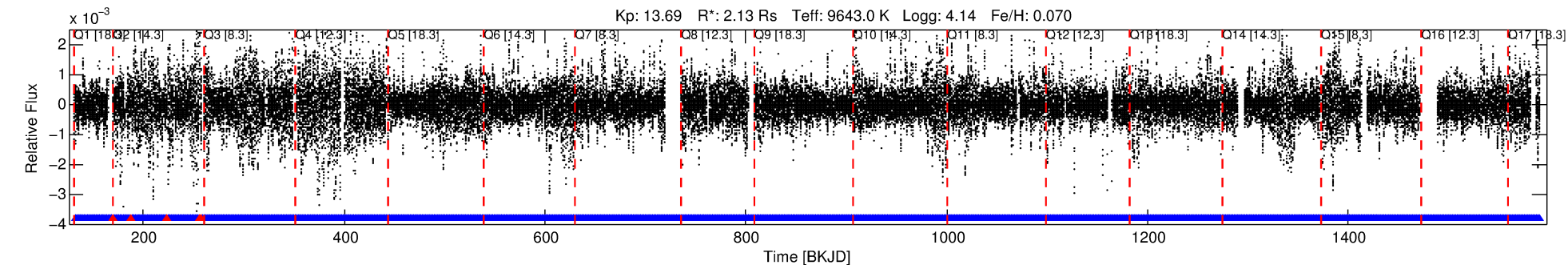
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010082844-01

No Significant Match Found

# DV One-Page Summary

KIC: 10082844 Candidate: 1 of 4 Period: 1.042 d



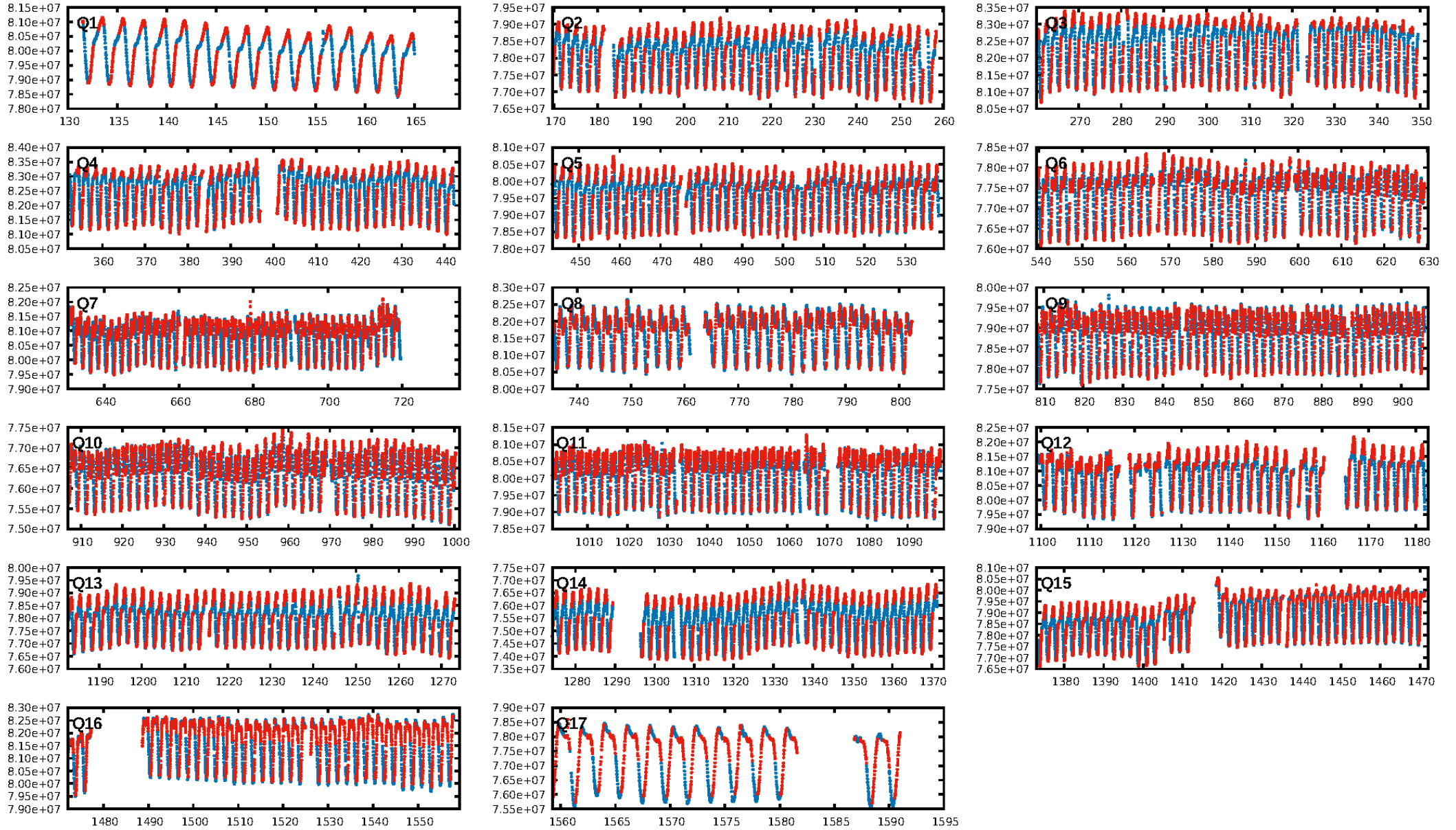
## DV Fit Results:

Period = 1.04176 [0.00004] d  
Epoch = 132.3113 [0.0072] BKJD  
Rp/R\* = 0.0038 [0.0021]  
a/R\* = 1.21 [1.39]  
b = 0.70 [2.70]  
Seff = 49954.90 [22568.53]  
Teff = 3812 [431] K  
Rp = 0.88 [0.61] Re  
a = 0.0266 [0.0084] AU  
Ag = 38.86 [45.97] [0.82 $\sigma$ ]  
Teffp = 14716 [4127] K [2.63 $\sigma$ ]

## DV Diagnostic Results:

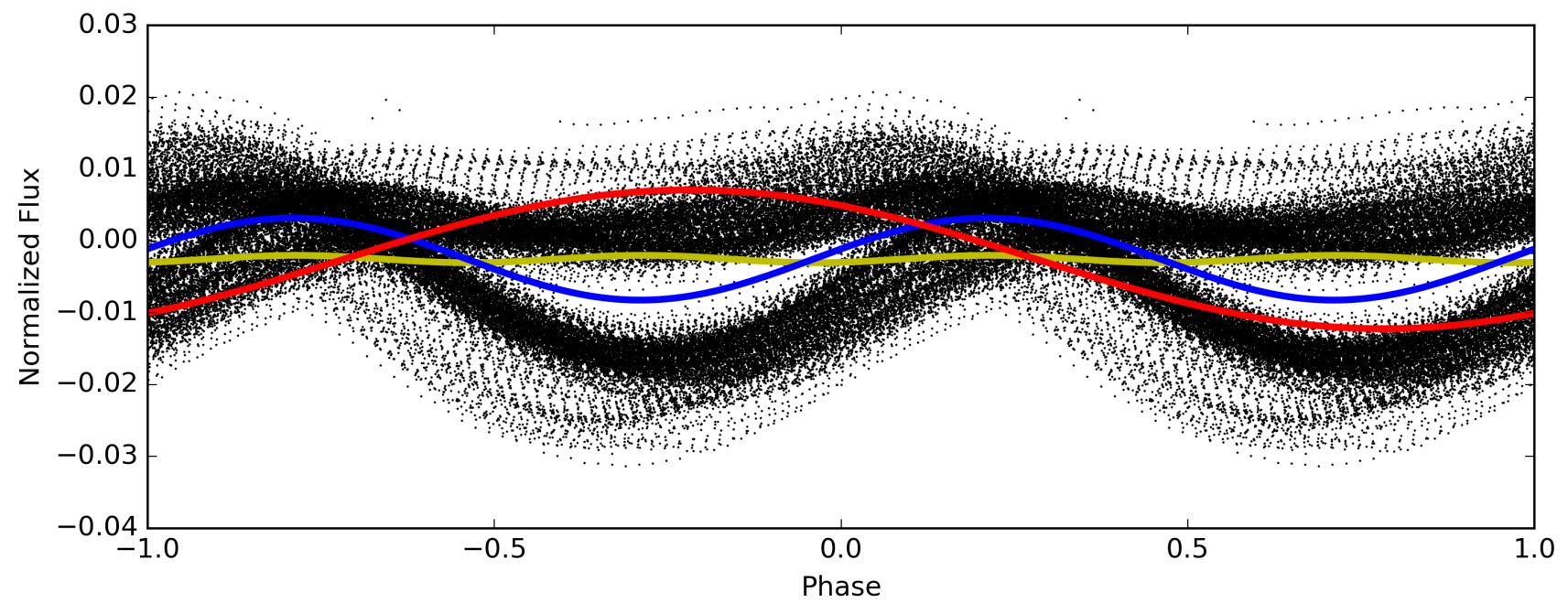
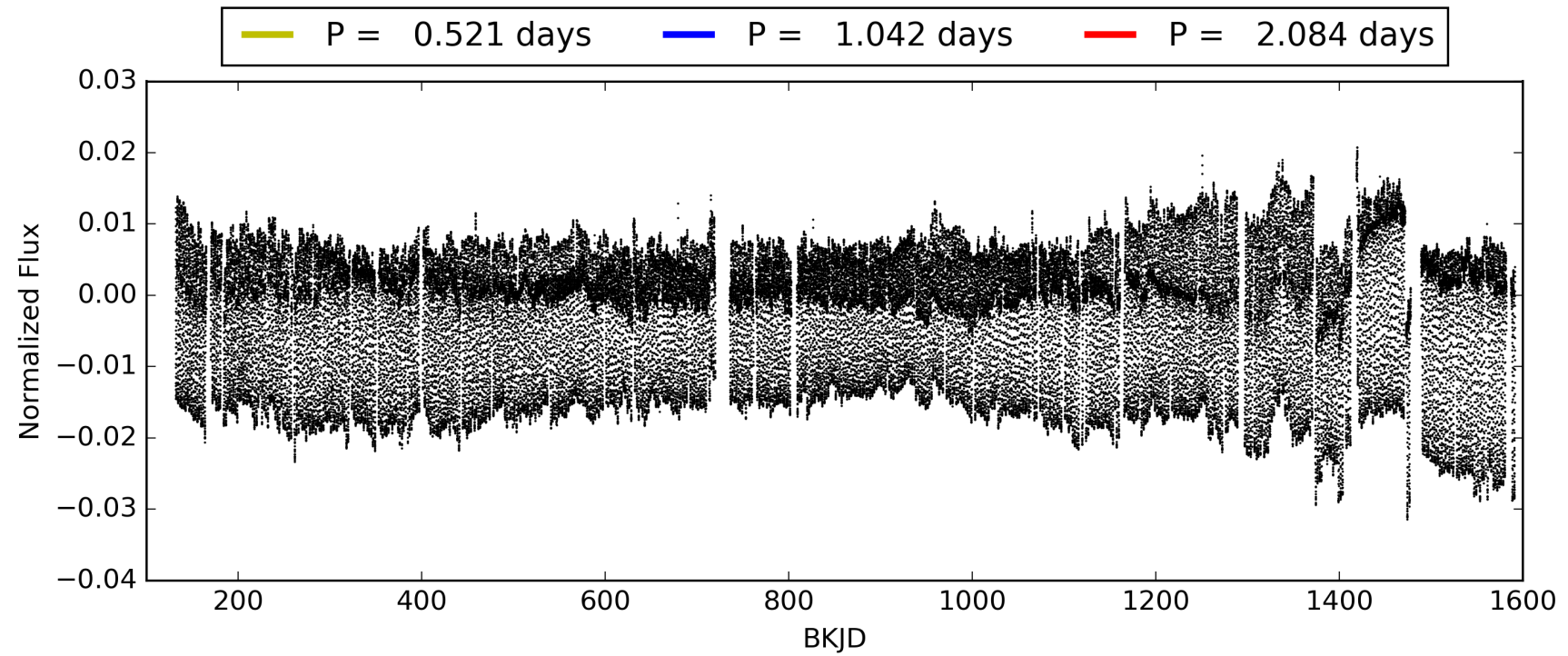
ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [193.70 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 3.27e-11**  
RollingBand-fgt: 1.00 [1236/1241]  
**GhostDiagnostic-chr: 0.283**  
**Centroid-sig: 0.0%**  
Centroid-so: 2.996 arcsec [2.31 $\sigma$ ]  
OotOffset-rm: 0.046 arcsec [0.51 $\sigma$ ]  
KicOffset-rm: 0.102 arcsec [1.33 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.12 [2/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 010082844-01, PDC Light Curves



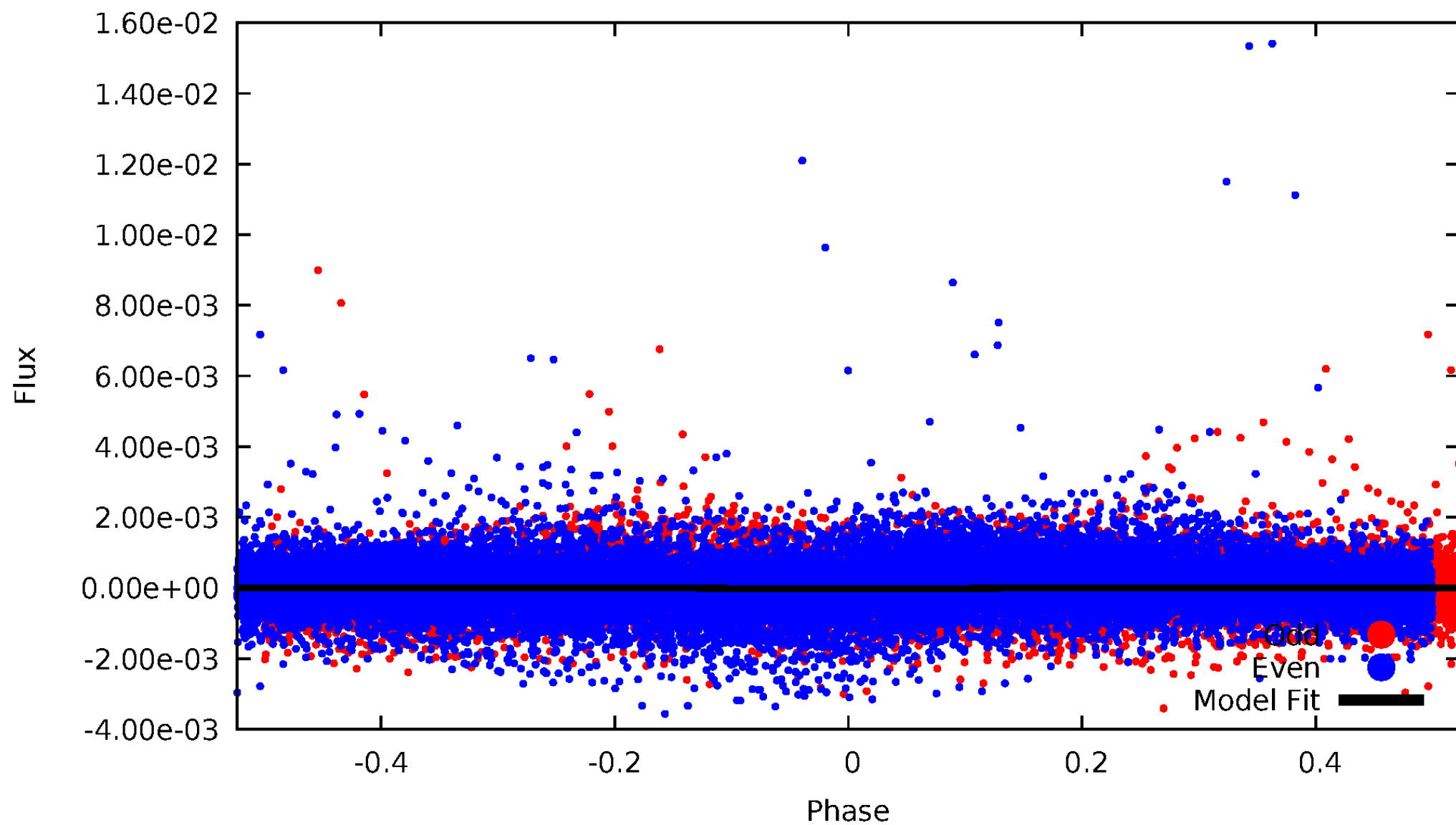


TCE 010082844-01



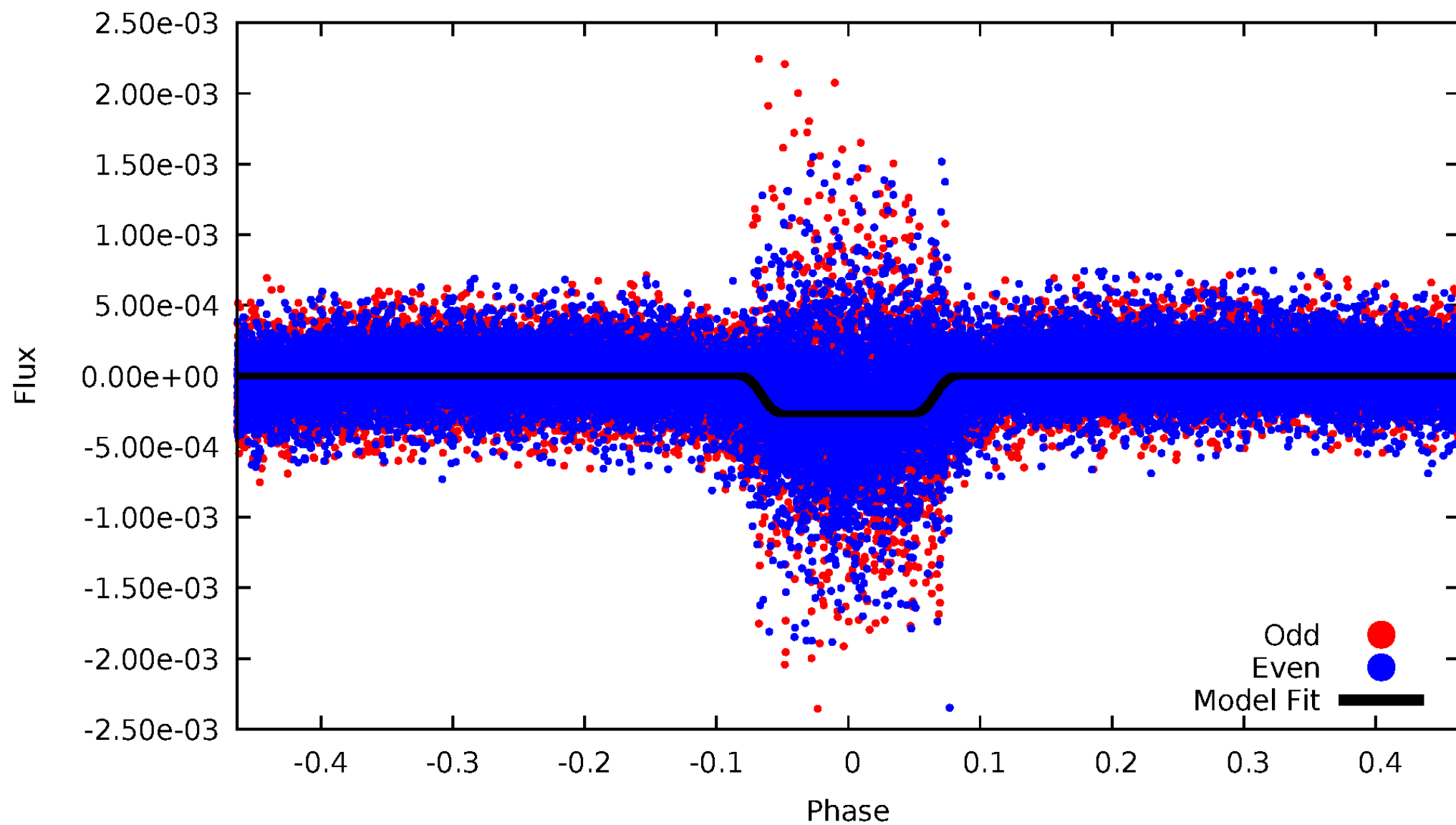
# DV Odd/Even

TCE 010082844-01

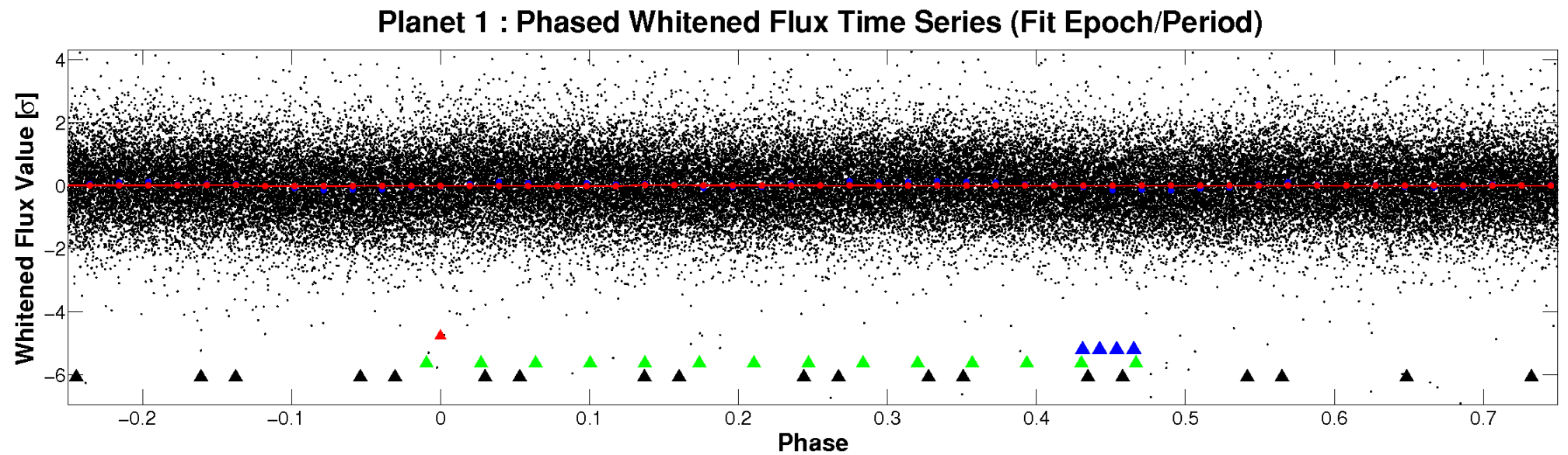
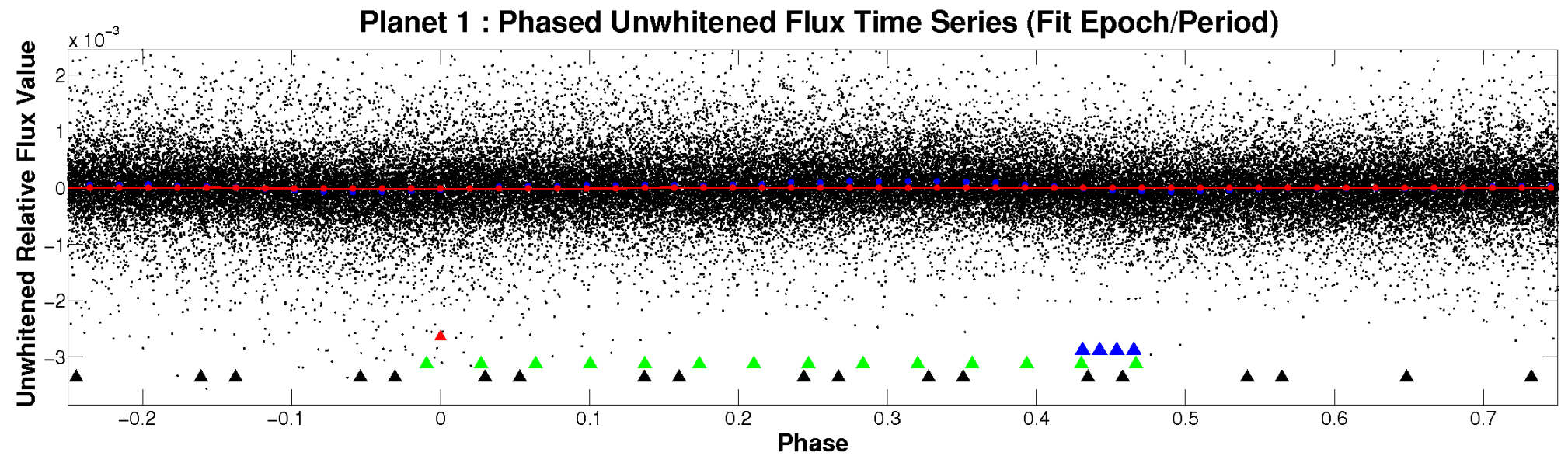


# ALT Odd/Even

TCE 010082844-01

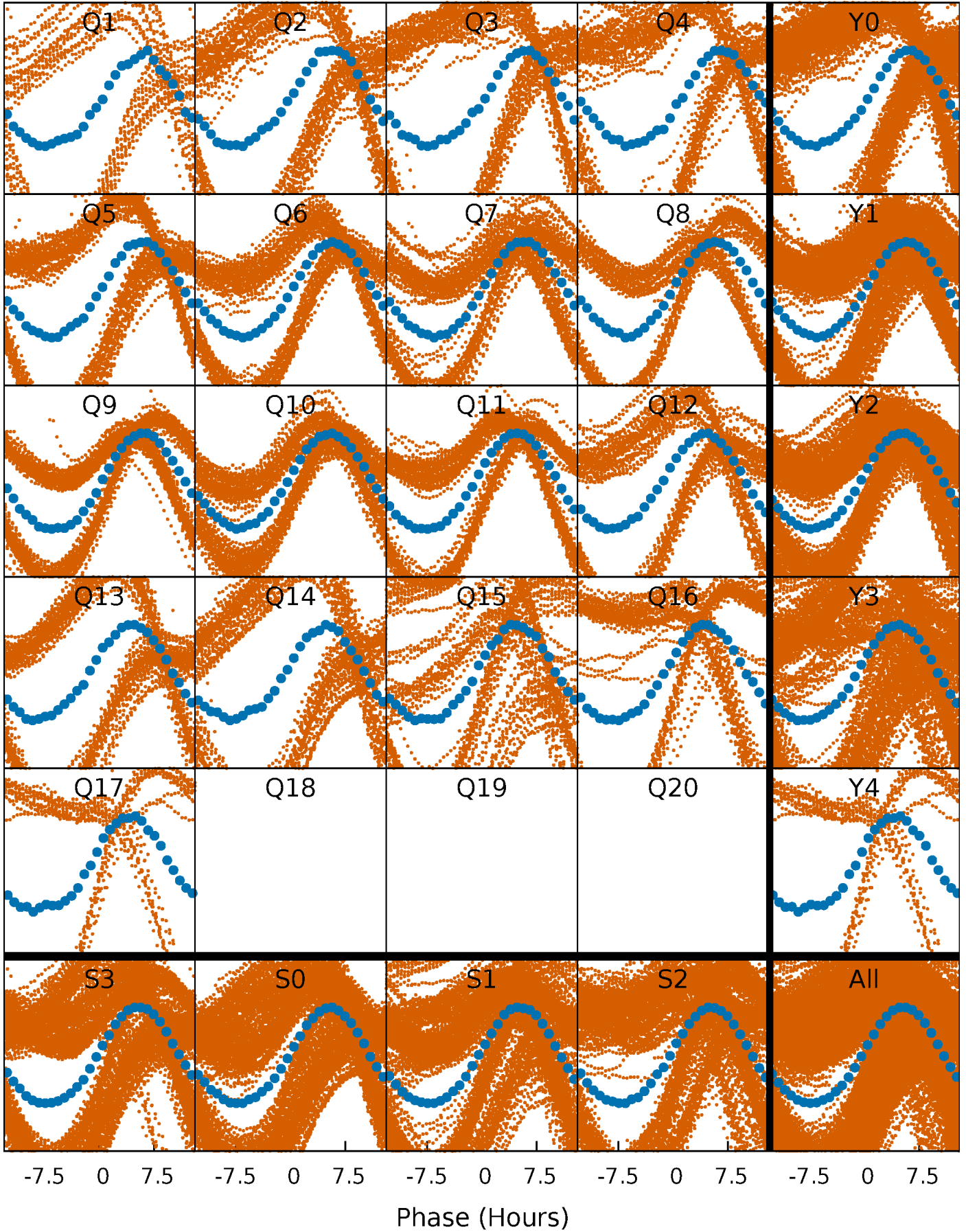


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

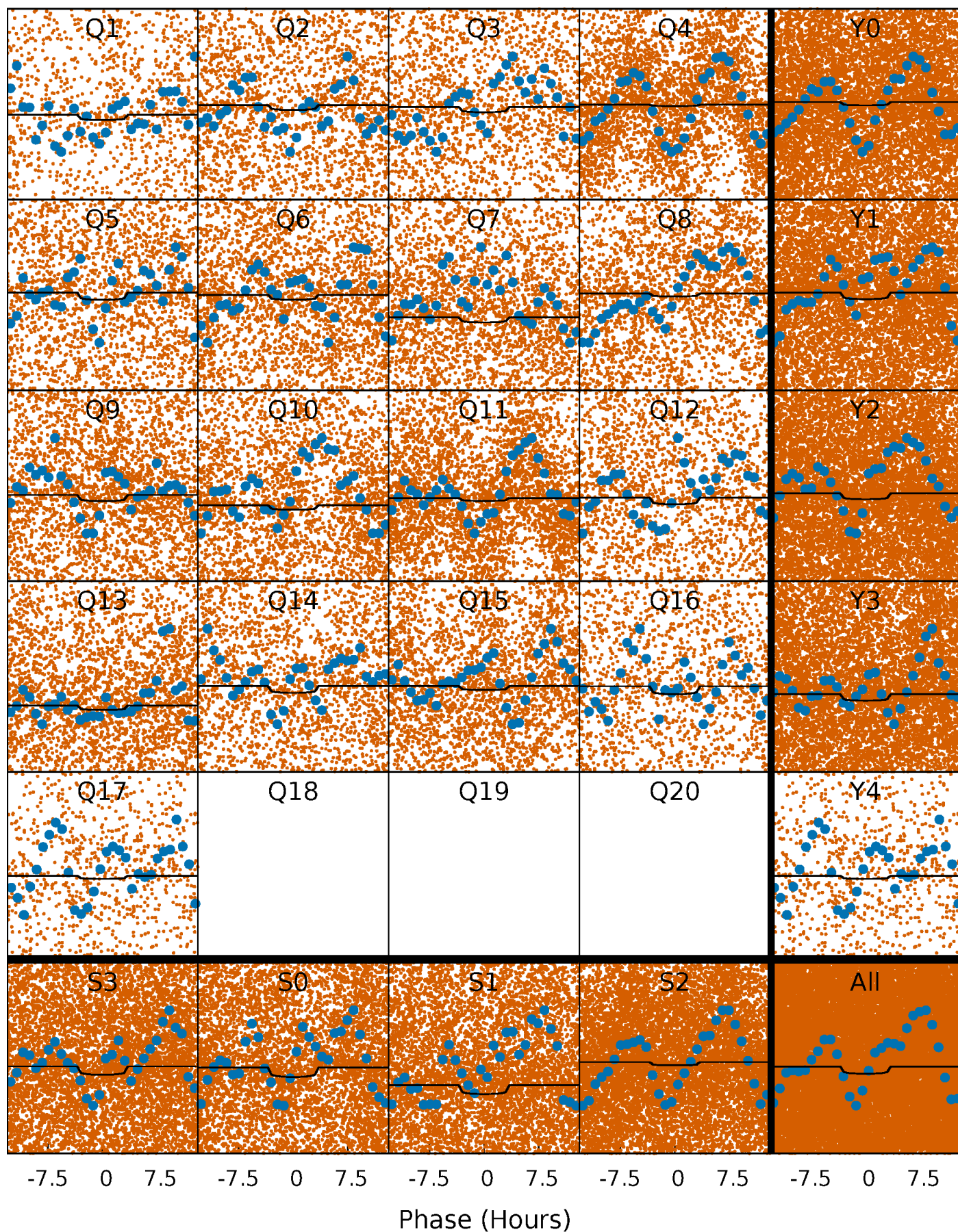
TCE 010082844-01   P= 1.041759 Days    $T_0=132.311305$  (BKJD)





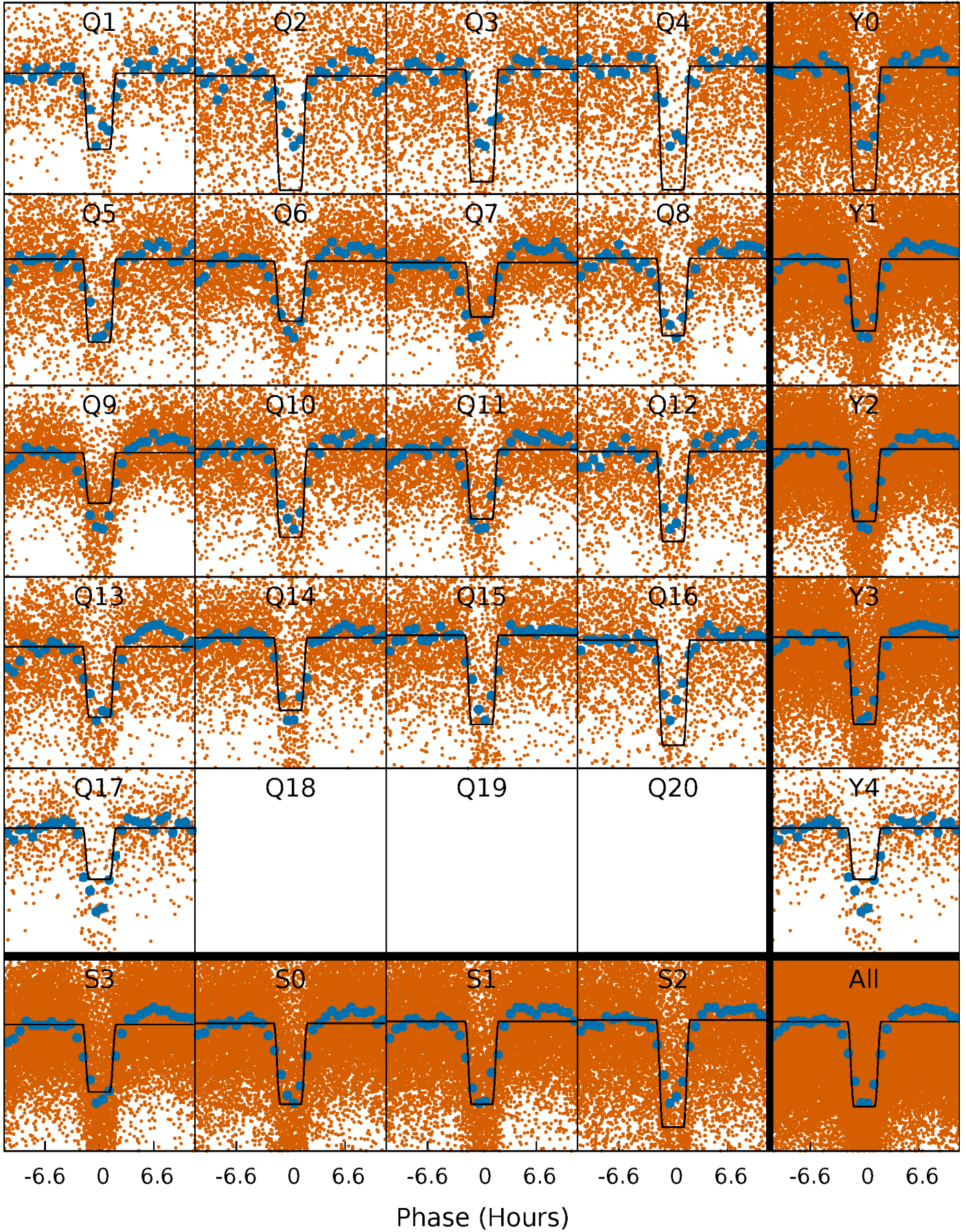
# DV Quarter-Phased Transit Curves

TCE 010082844-01 P= 1.041759 Days  $T_0=132.311305$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010082844-01 P= 1.041706 Days  $T_0=132.286100$  (BKJD)

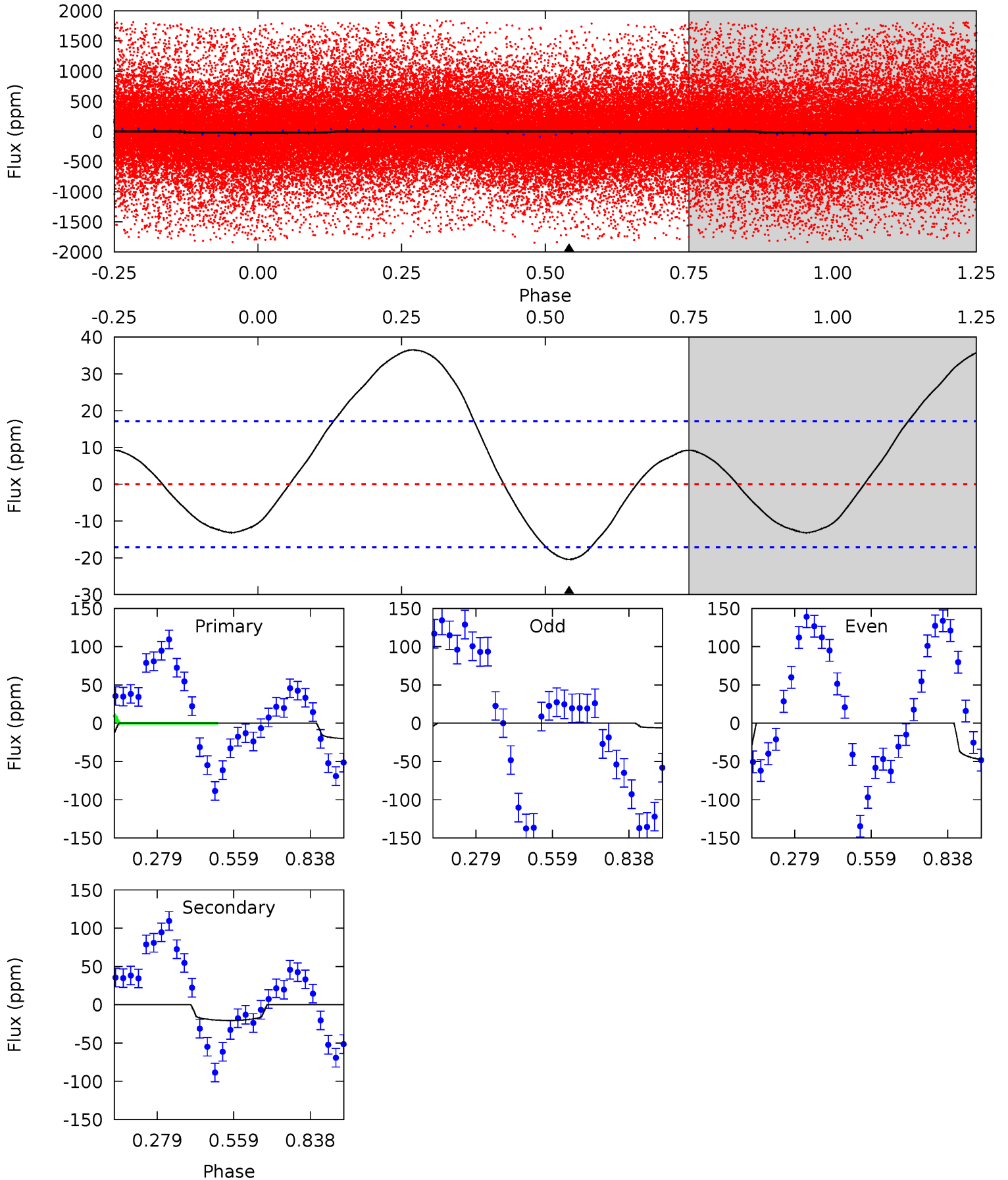




# DV Model-Shift Uniqueness Test

010082844-01, P = 1.041759 Days, E = 131.269546 Days

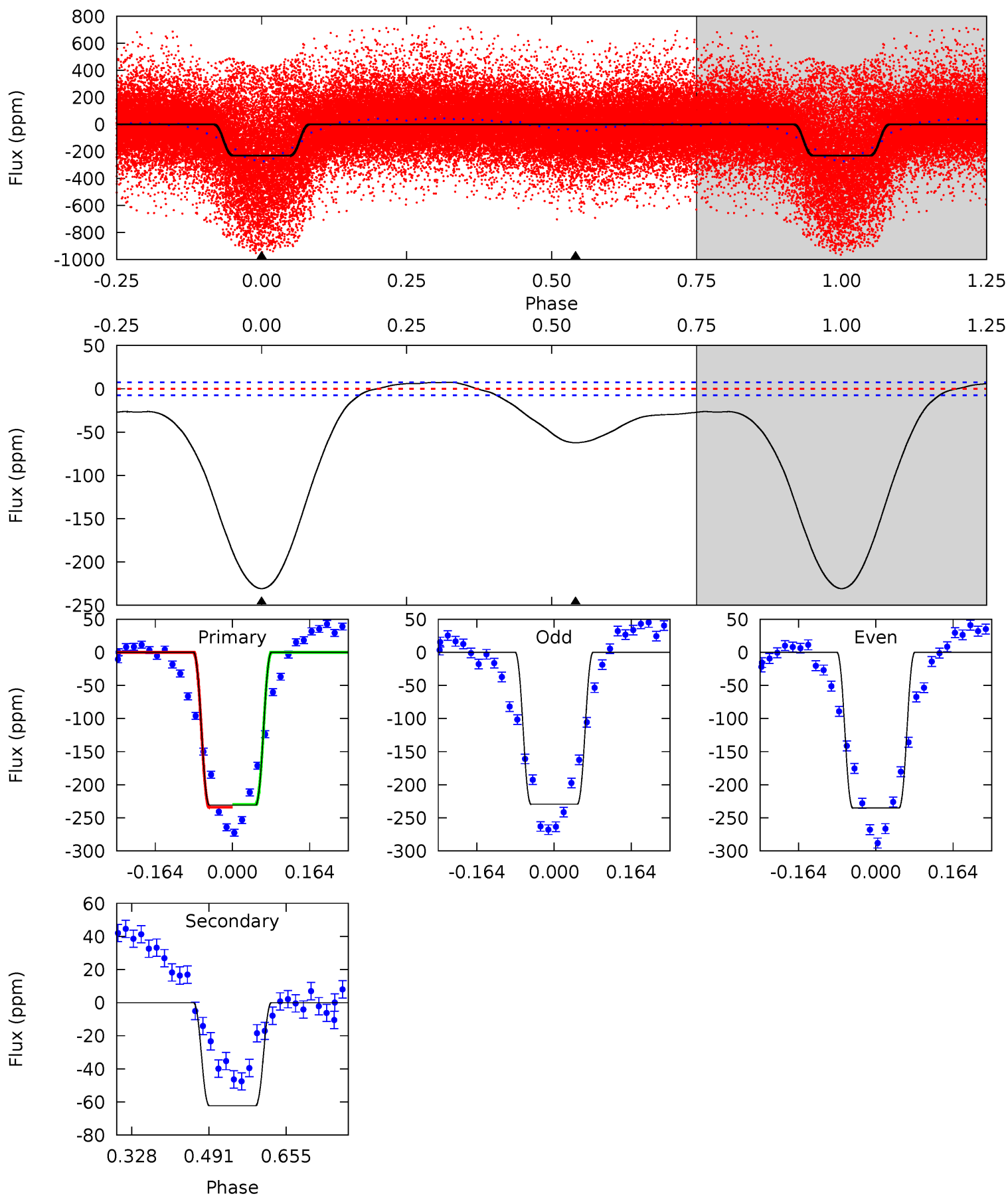
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.18	5.18	0	0	4.34	1.08	4.22	5.18	5.18	5.18	5.18	5.43	0.76	0.64	5.21



# Alt Model-Shift Uniqueness Test

010082844-01, P = 1.041706 Days, E = 131.244394 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
137.2	37.0	0	0	4.46	1.39	9.25	137.2	137.2	37.0	37.0	1.65	1.00	0.03	0





### Stellar Parameters For KIC 010082844

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$9643^{+272}_{-428}$	$4.142^{+0.167}_{-0.204}$	$0.070^{+0.200}_{-0.700}$	$2.132^{+0.873}_{-0.582}$	$2.302^{+0.415}_{-0.622}$	$0.335^{+0.315}_{-0.184}$
	+3%/-4%	+4%/-5%	+286%/-1000%	+41%/-27%	+18%/-27%	+94%/-55%
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 010082844-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-20 \pm 4$	$0.91^{+0.55}_{-0.49}$	$5342^{+431}_{-391}$	$10582^{+10185}_{-2785}$	$9.366^{+33.004}_{-5.612}$
Alt.	$-62 \pm 2$	$3.76^{+0.92}_{-0.68}$	$5351^{+464}_{-404}$	$5891^{+573}_{-449}$	$1.643^{+0.747}_{-0.546}$

$T_{\text{max}}$  = 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

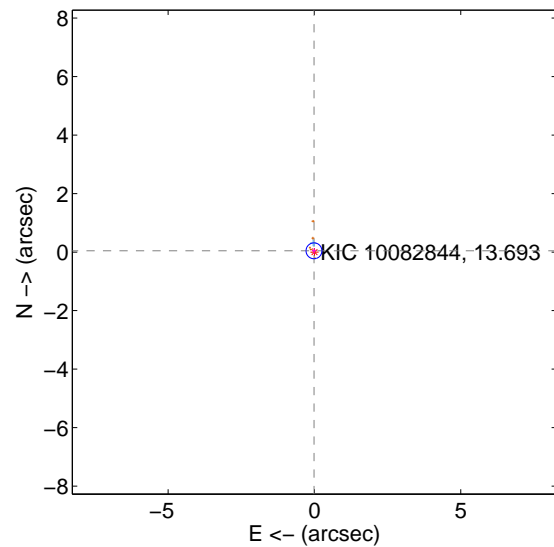
Supplemental centroid analysis for 010082844-01. Kepler magnitude: 13.69. Transit SNR 2.32

There are 2 quarters with good PRF difference image offsets

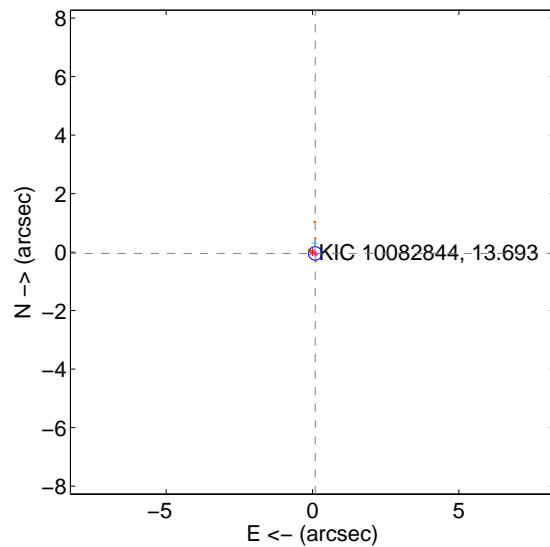
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.046 \pm 0.090$	0.51	$0.016 \pm 0.068$	$0.044 \pm 0.092$
PRF-fit source offset from KIC position	$0.102 \pm 0.076$	1.33	$-0.091 \pm 0.069$	$-0.046 \pm 0.098$
photometric centroid source offset	$3.00 \pm 1.30$	2.31	$-0.35 \pm 1.07$	$2.98 \pm 1.30$

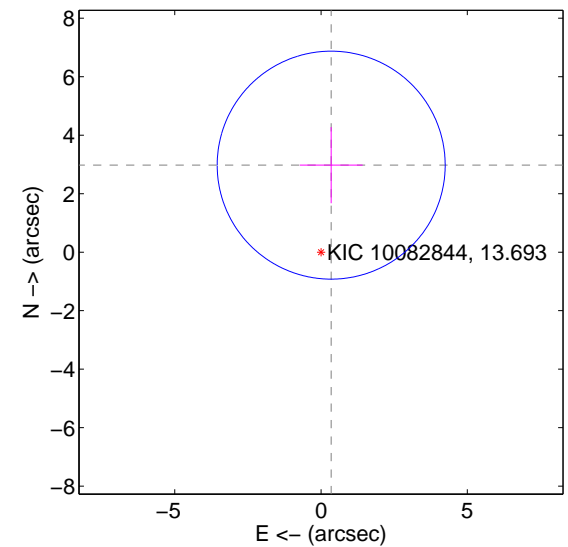
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

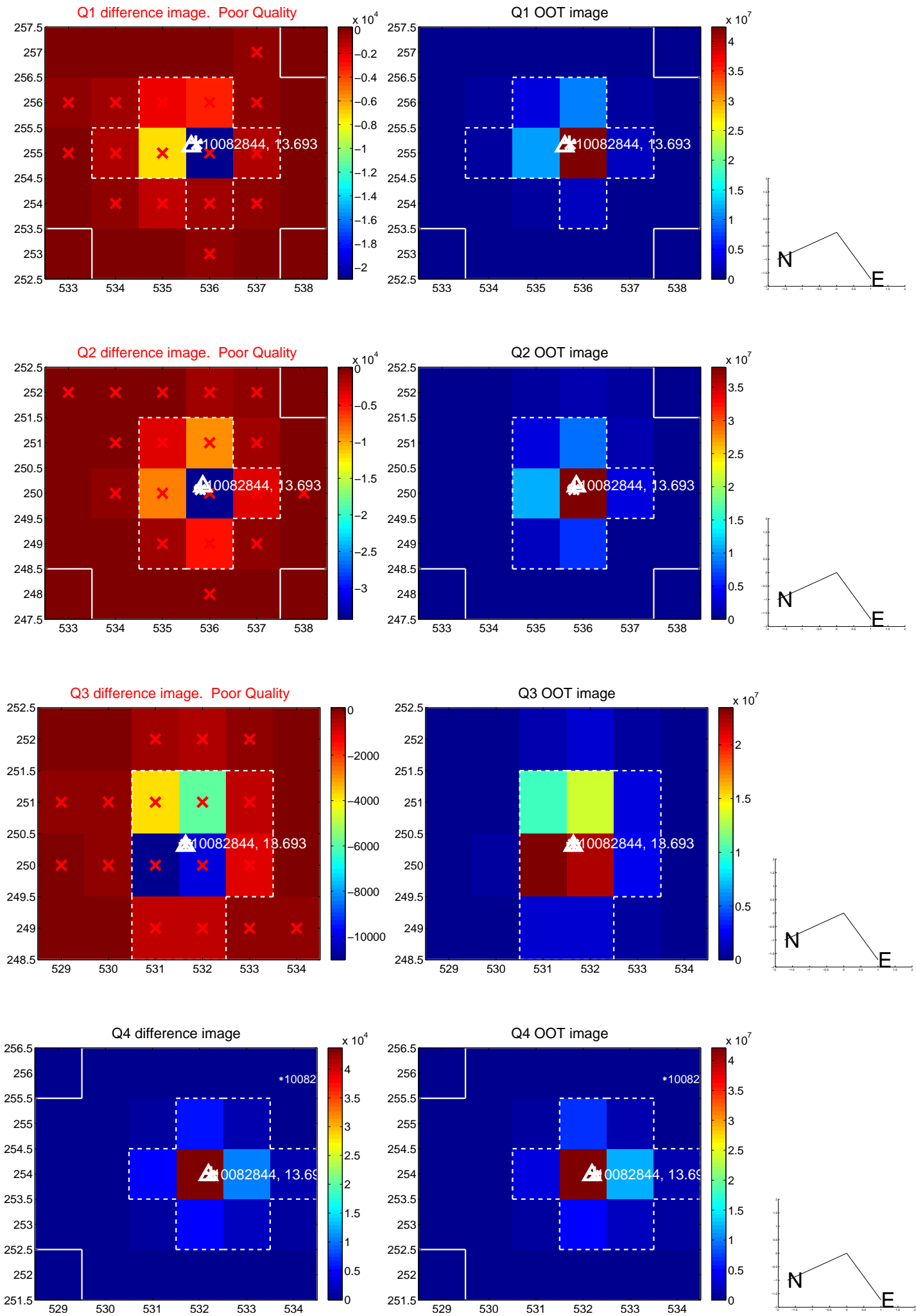


offset from photometric centroids

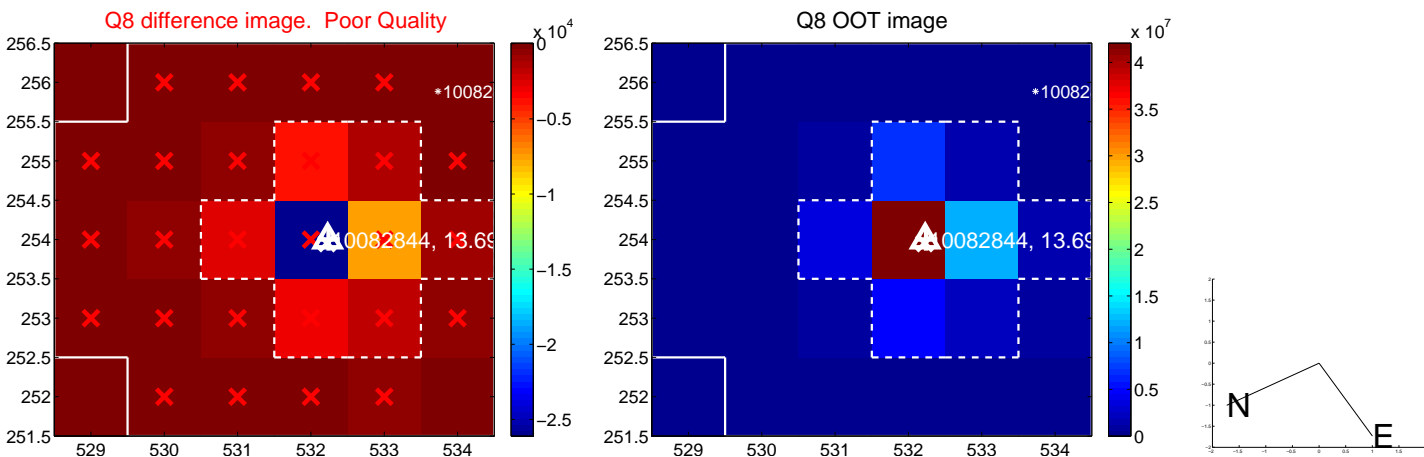
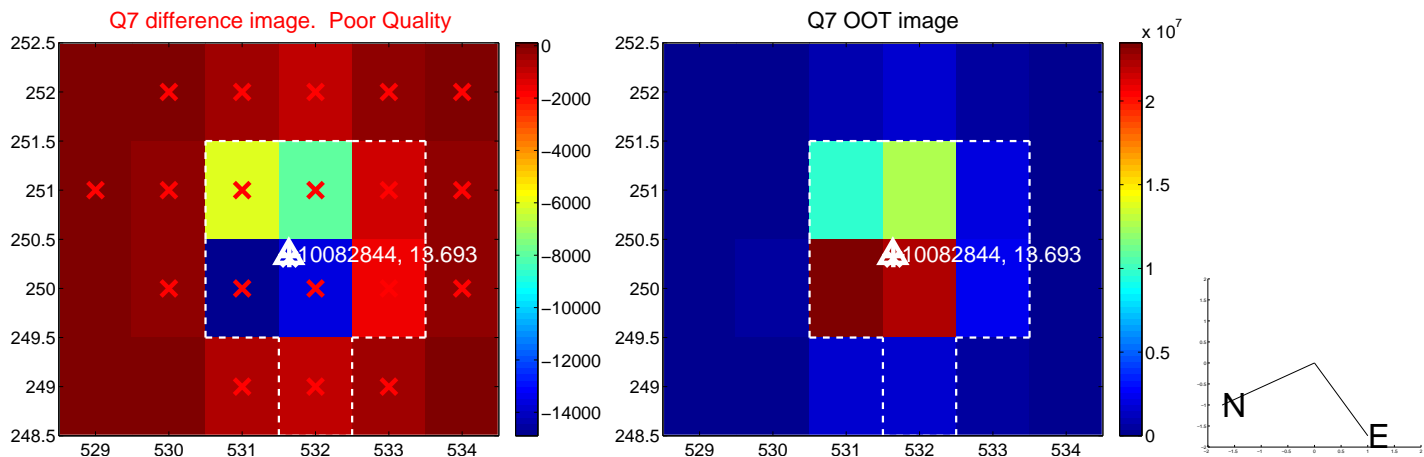
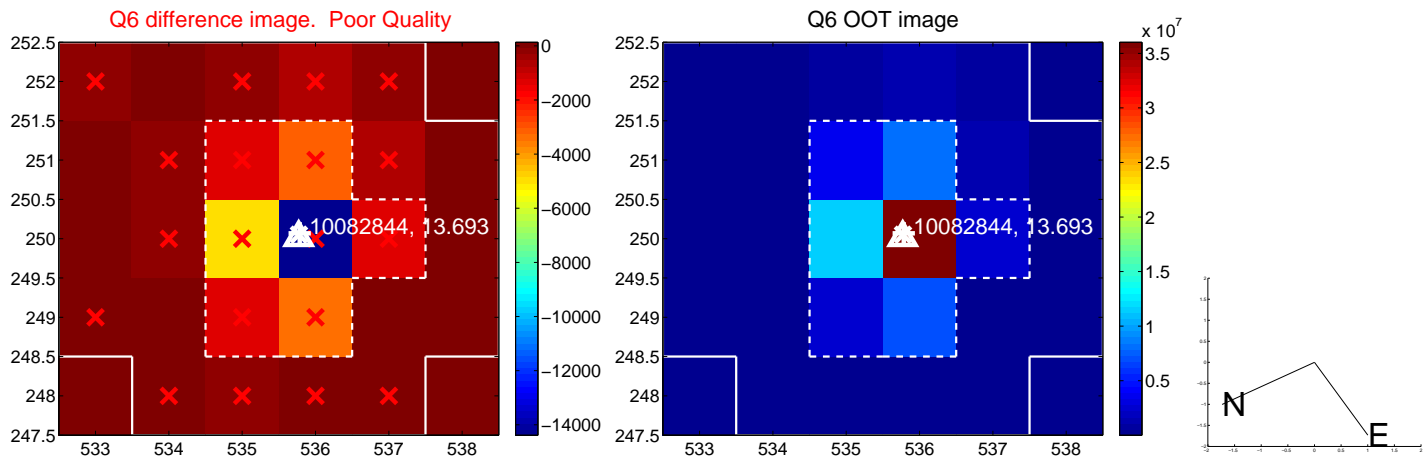
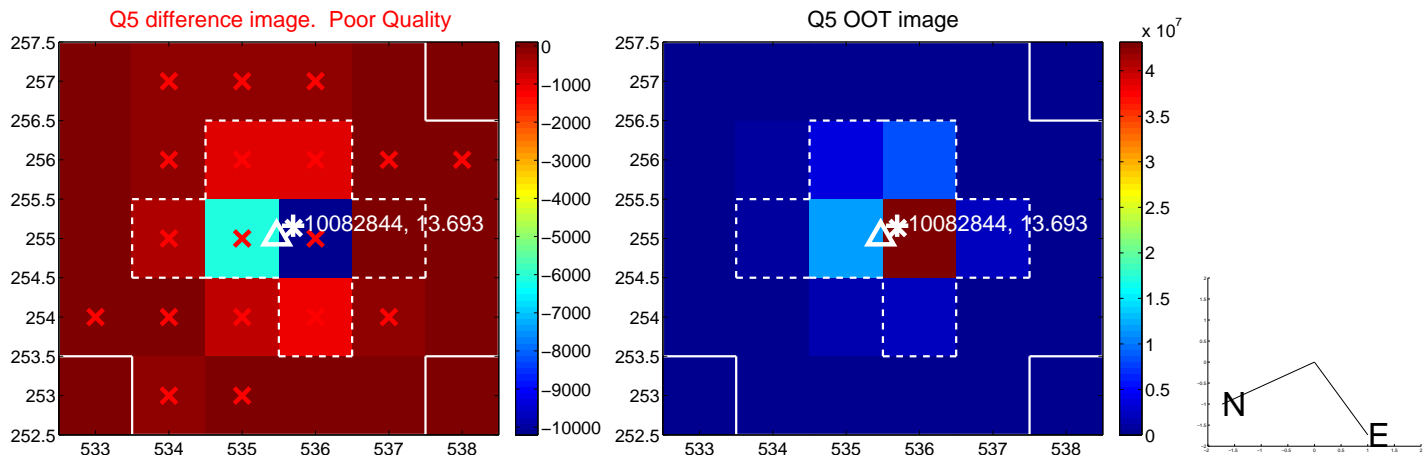


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

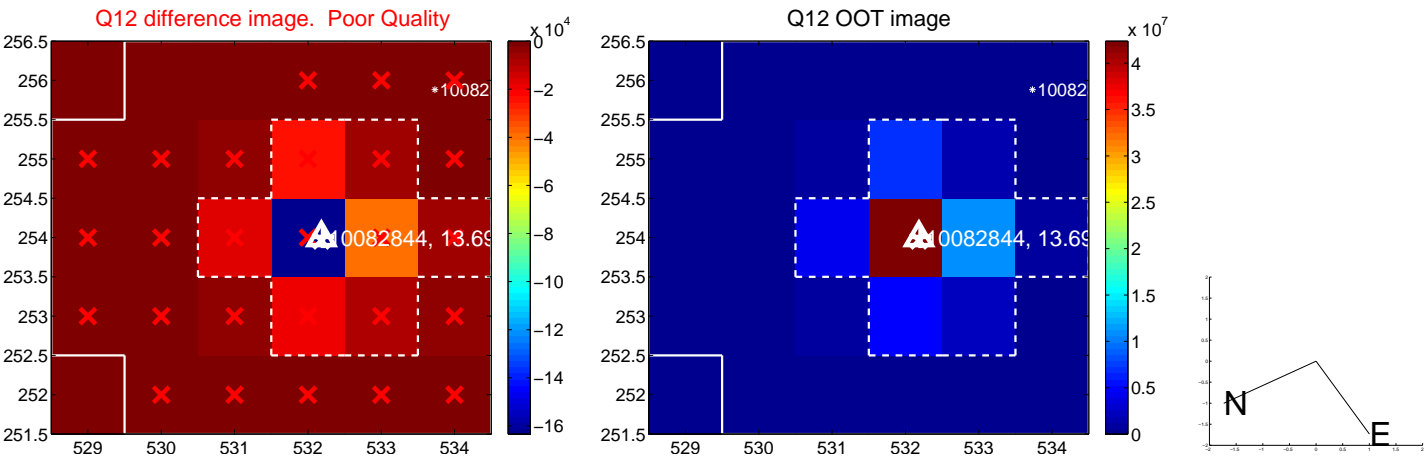
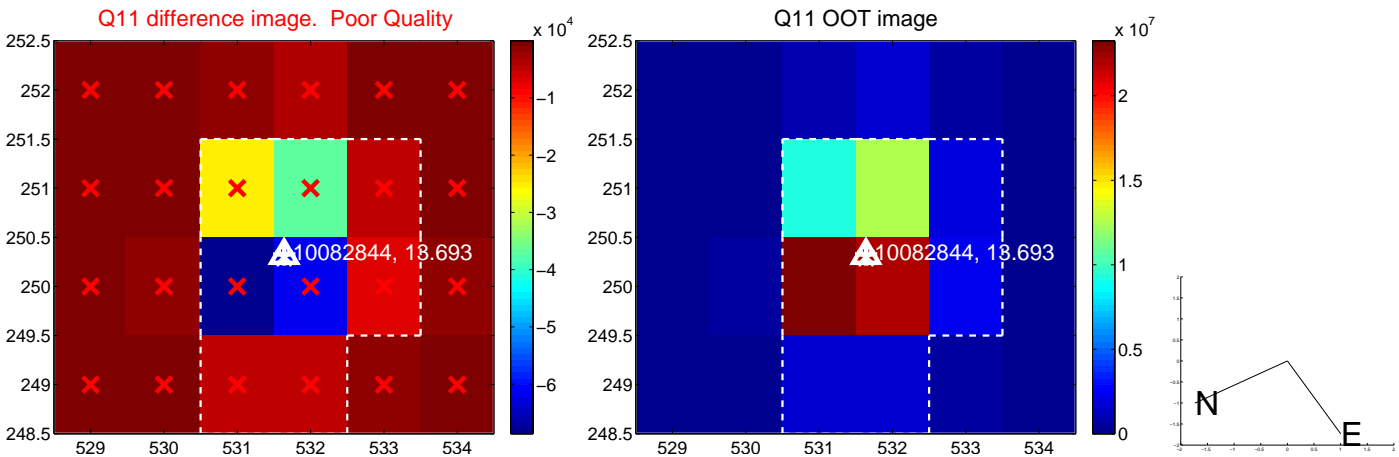
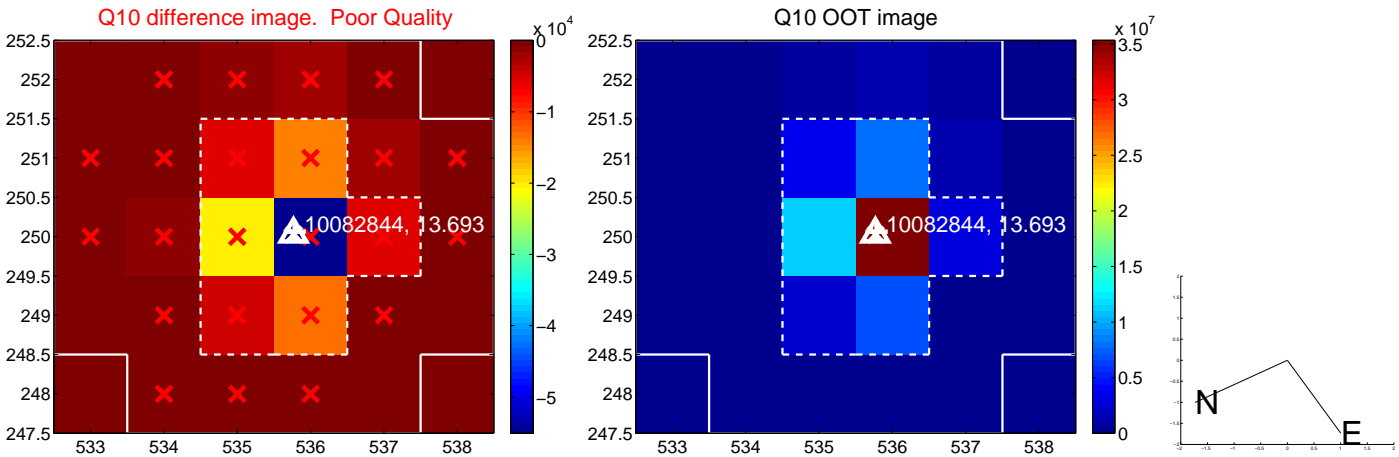
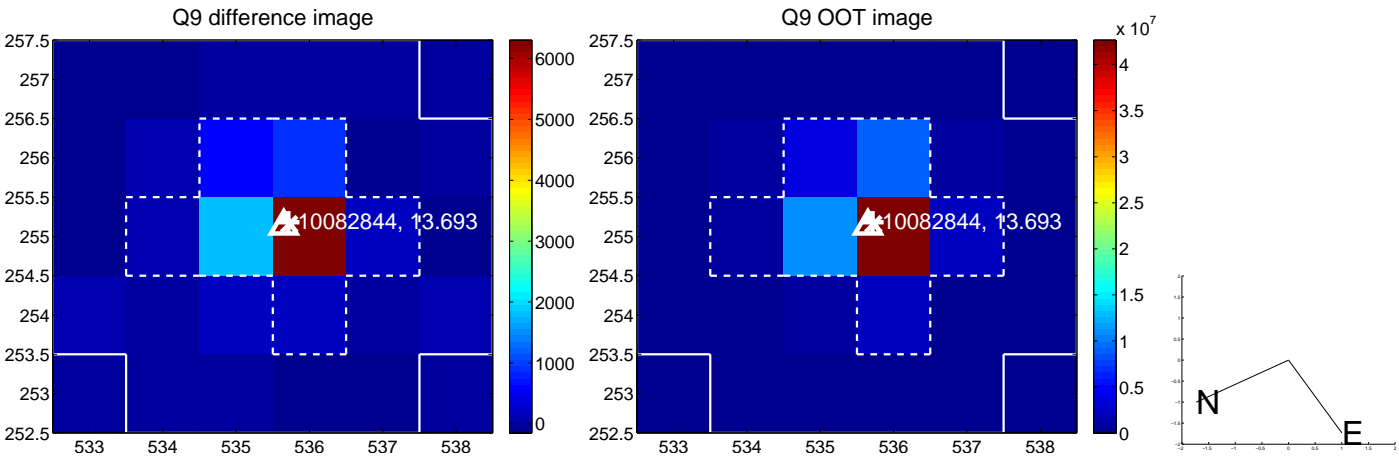


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

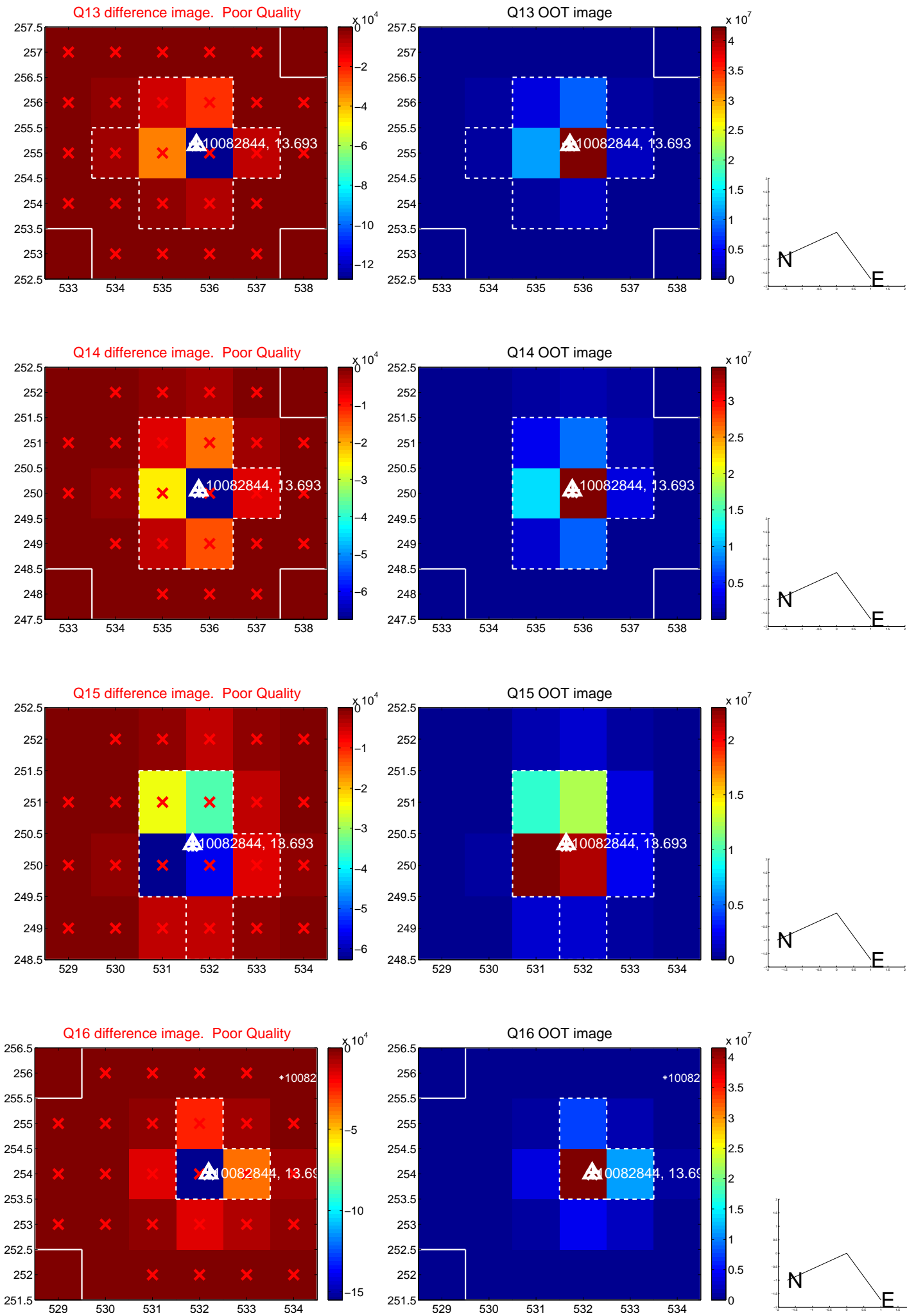




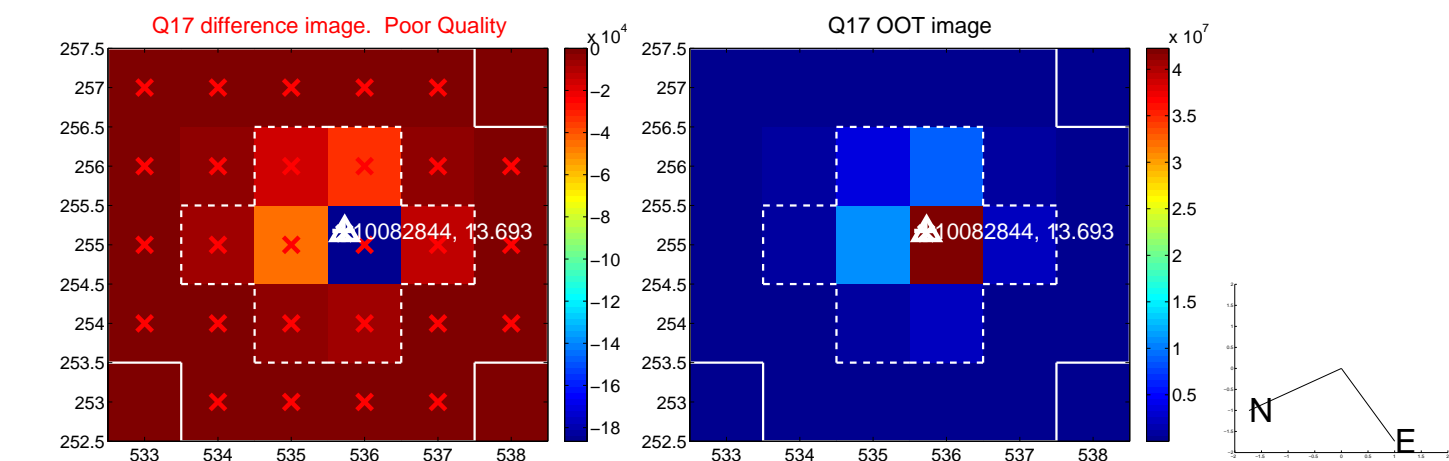
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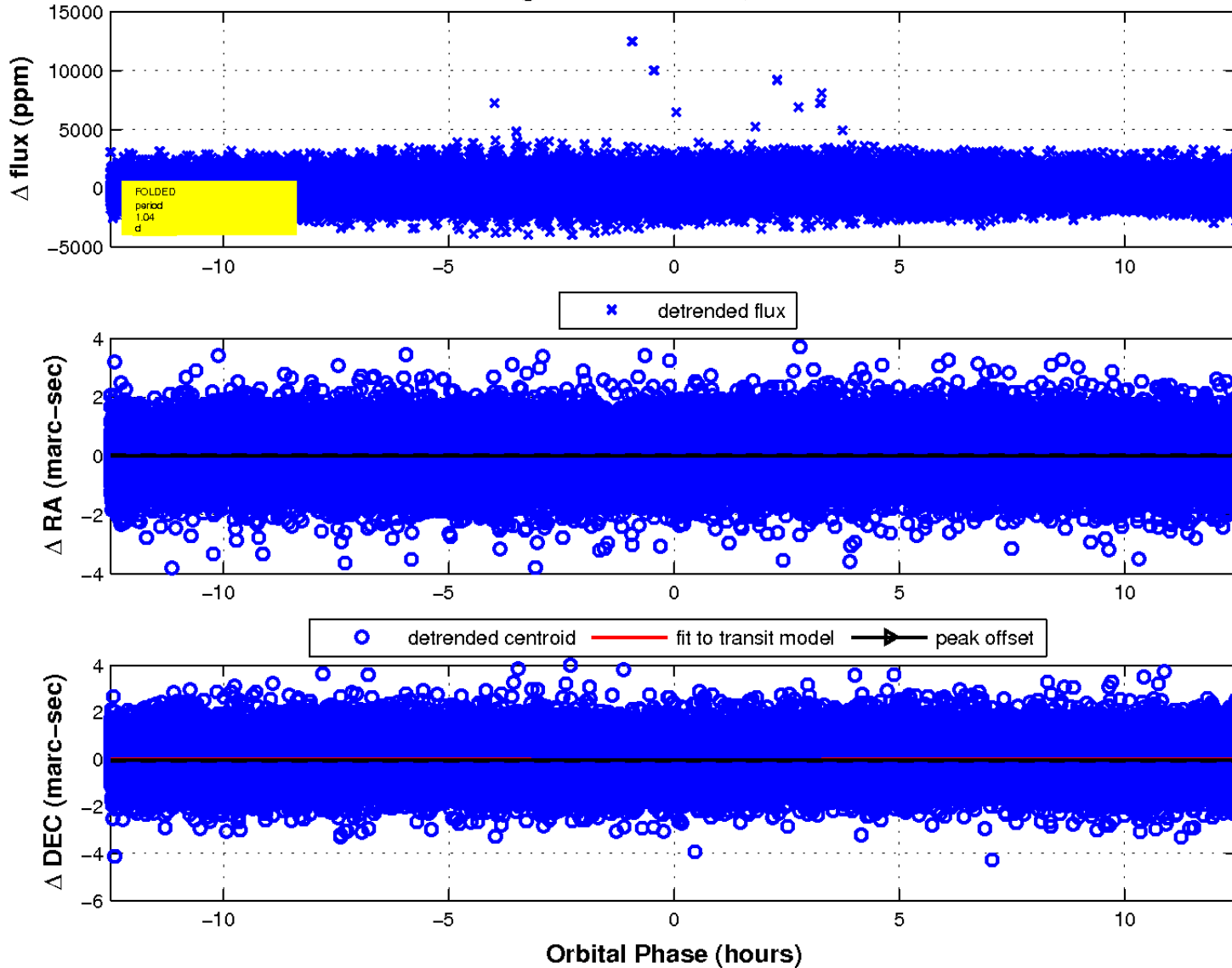
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

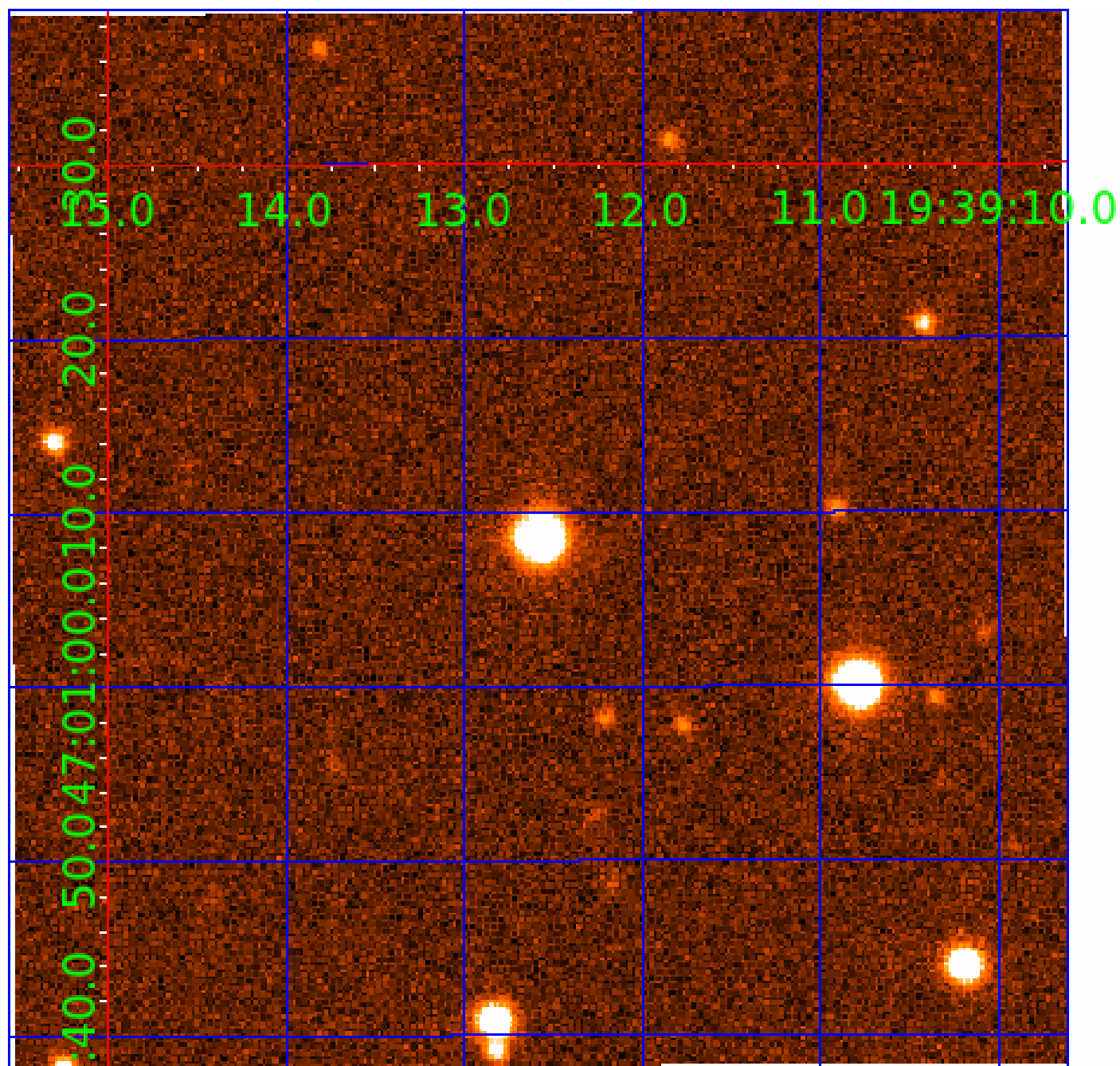


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination





# KIC 010082844

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010082844-01	OBS	No	1.041759	132.311305	14.9	6.540	10.7	2.3	2.13	9643	0.88	49954.90
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010082844-03	OBS	No	106.221266	191.136131	1351.9	5.962	10.2	8.6	2.13	9643	14.03	104.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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010082844-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010082844-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

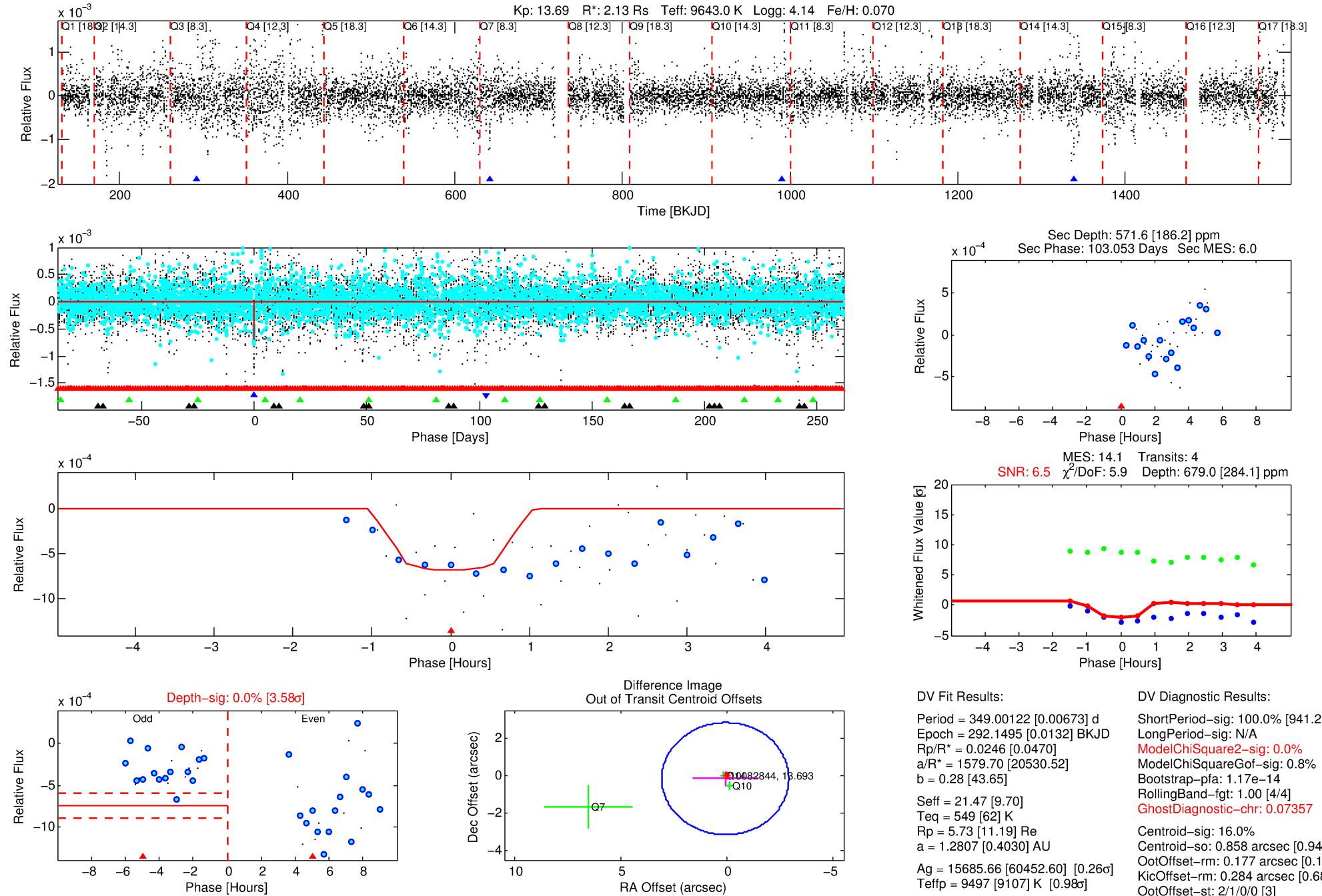
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010082844-02

No Significant Match Found

# DV One-Page Summary

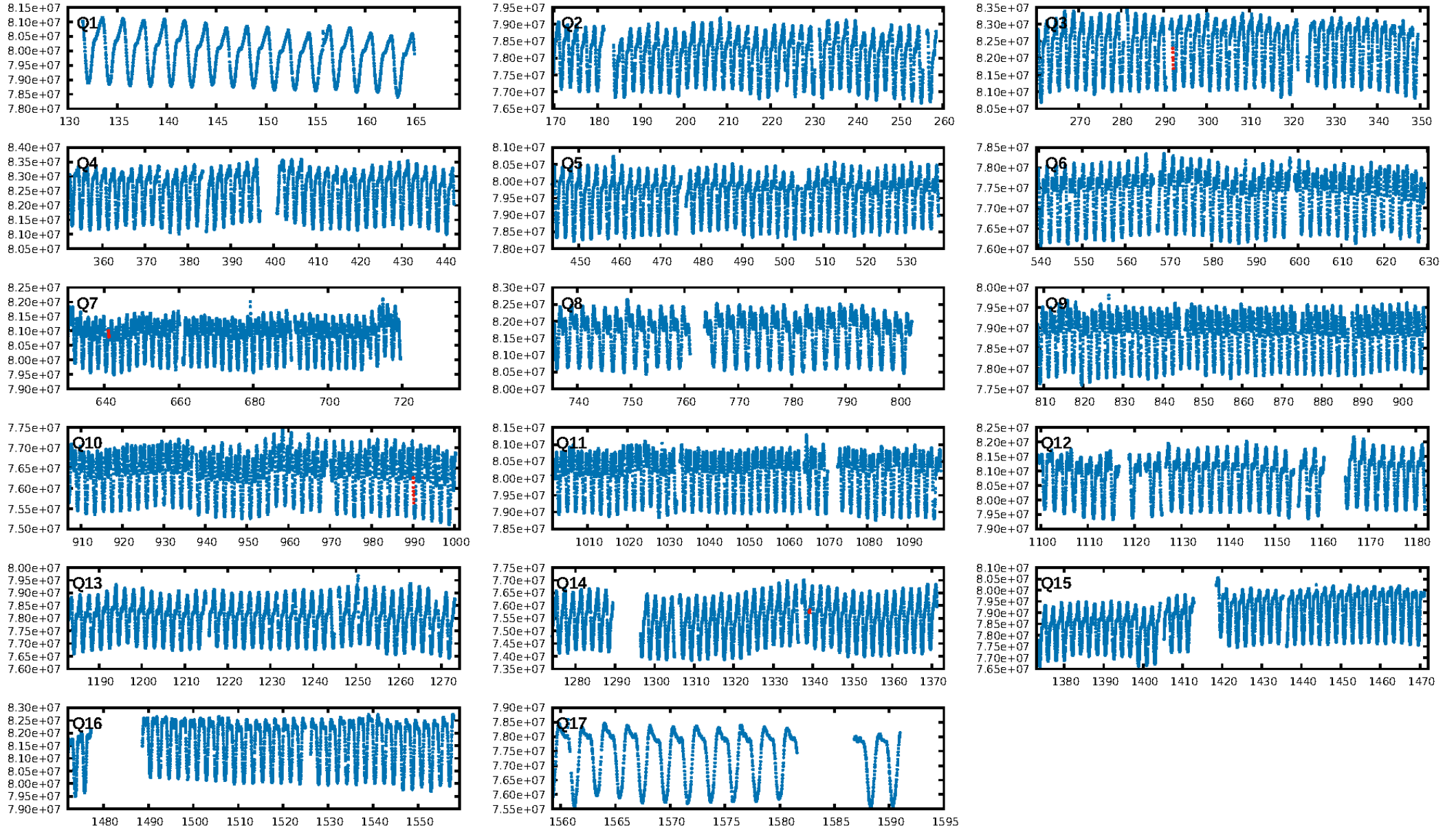
KIC: 10082844 Candidate: 2 of 4 Period: 349.001 d



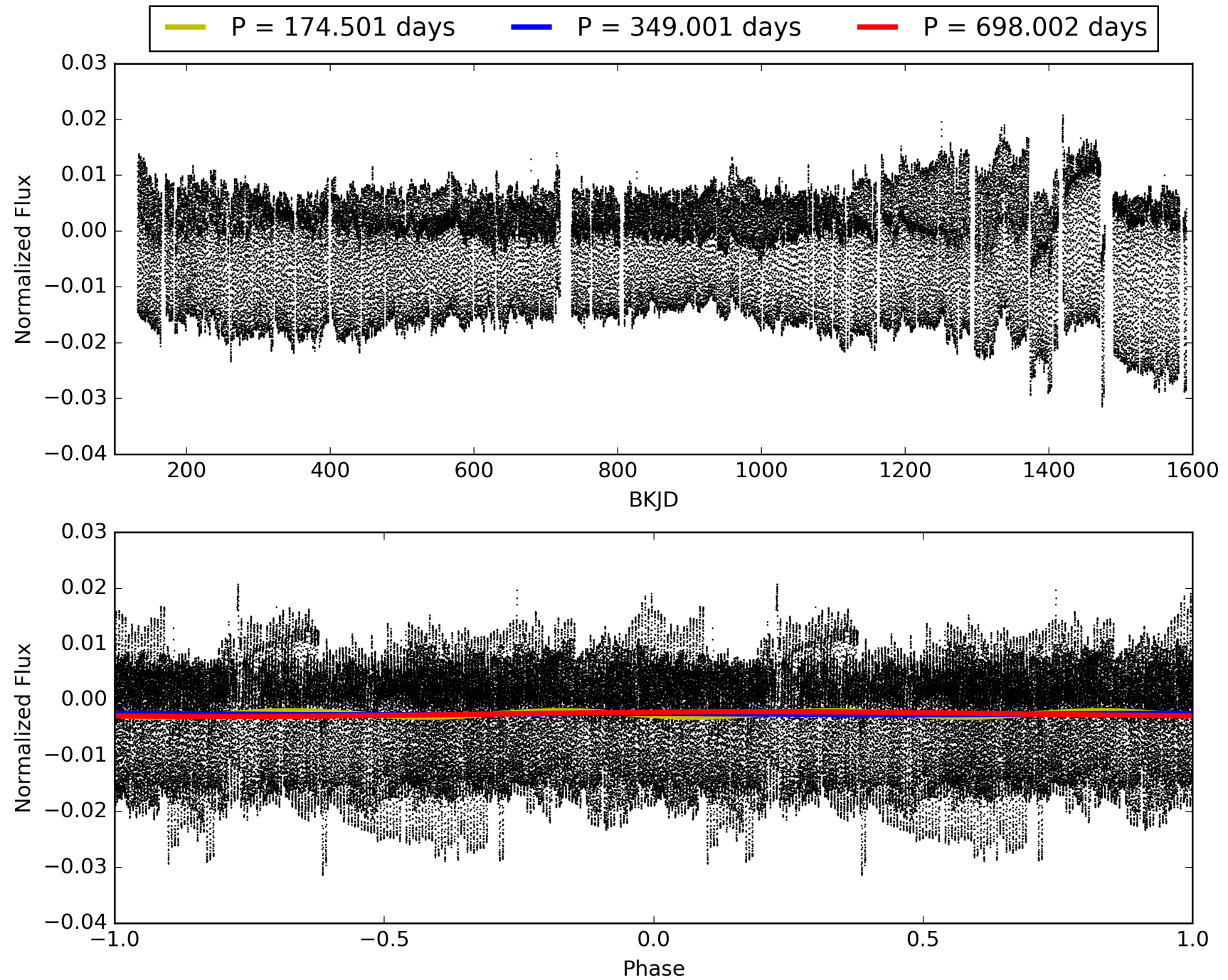
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:23:03 Z

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

# TCE 010082844-02, PDC Light Curves

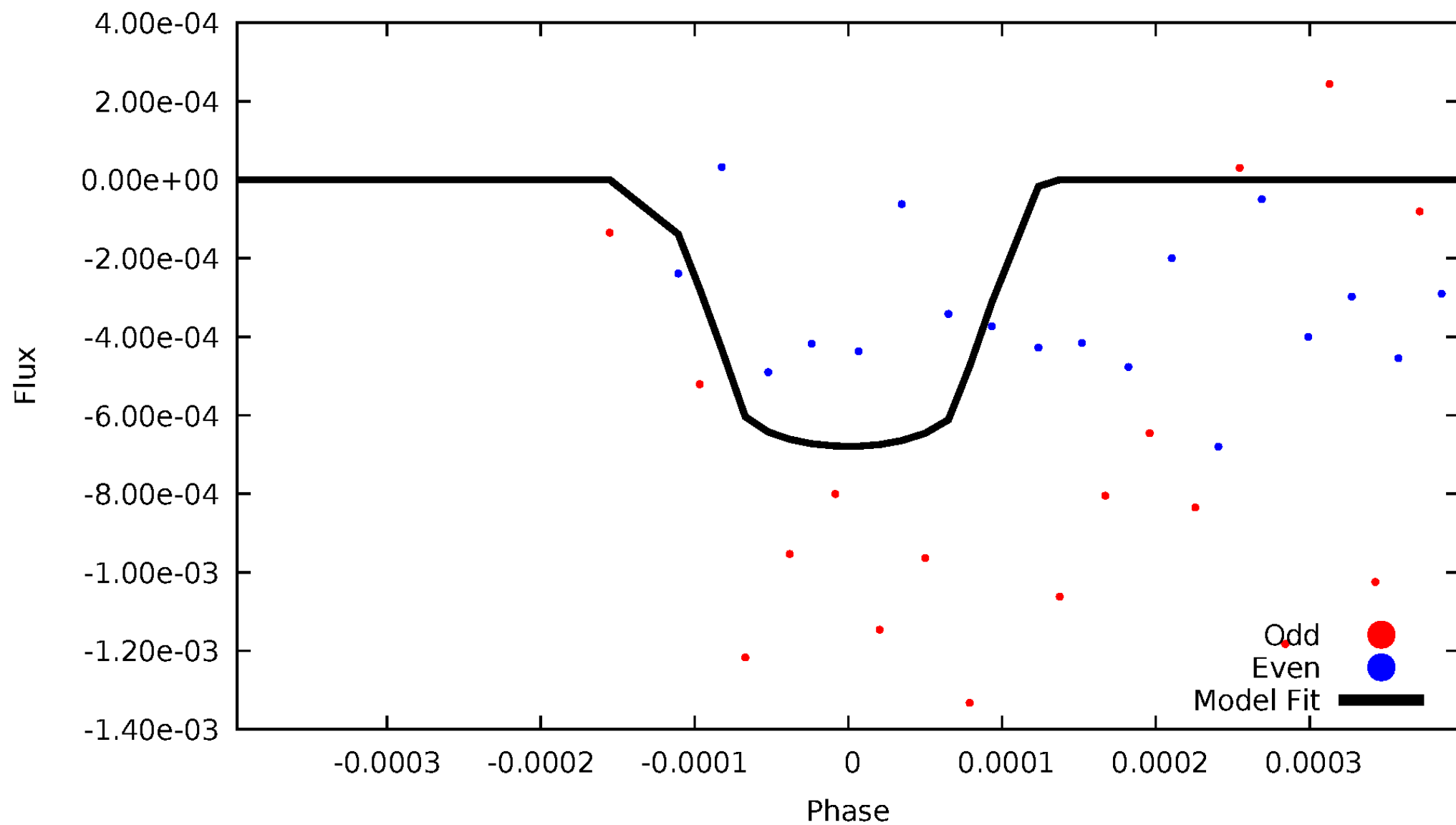


TCE 010082844-02



# DV Odd/Even

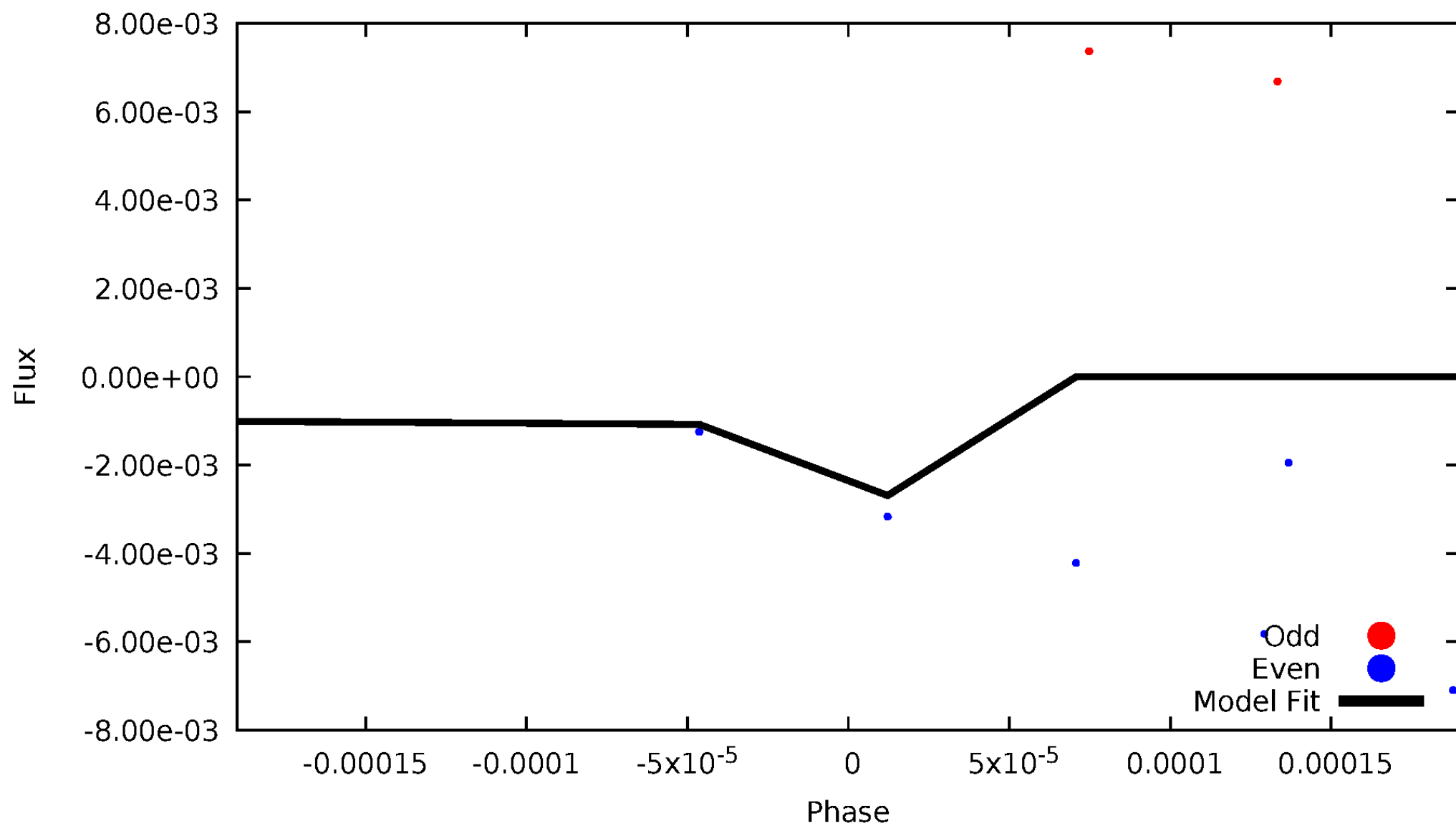
TCE 010082844-02





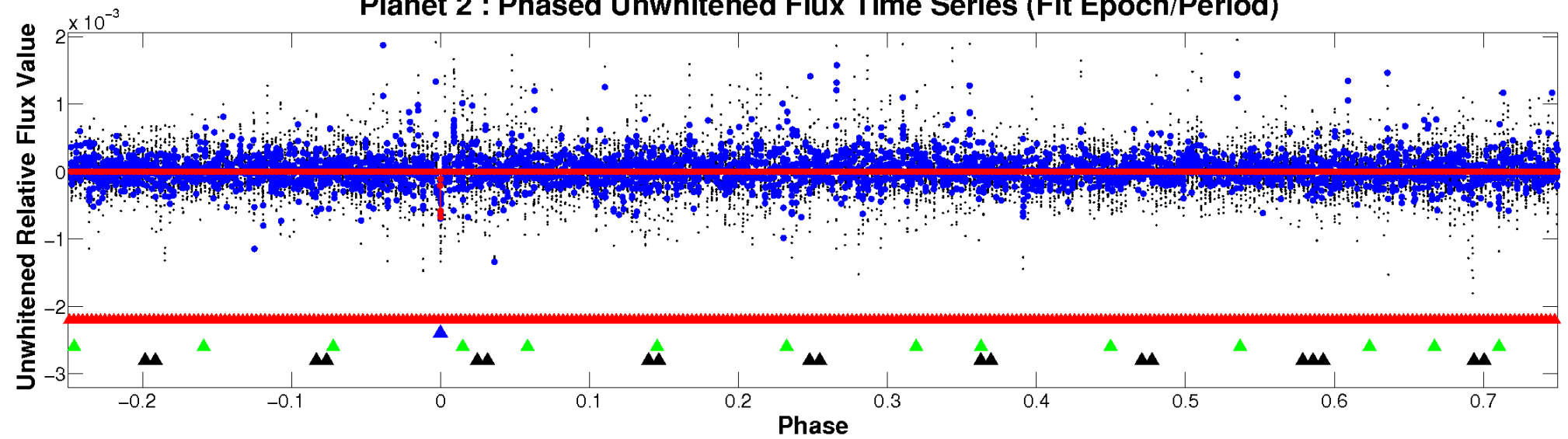
# ALT Odd/Even

TCE 010082844-02

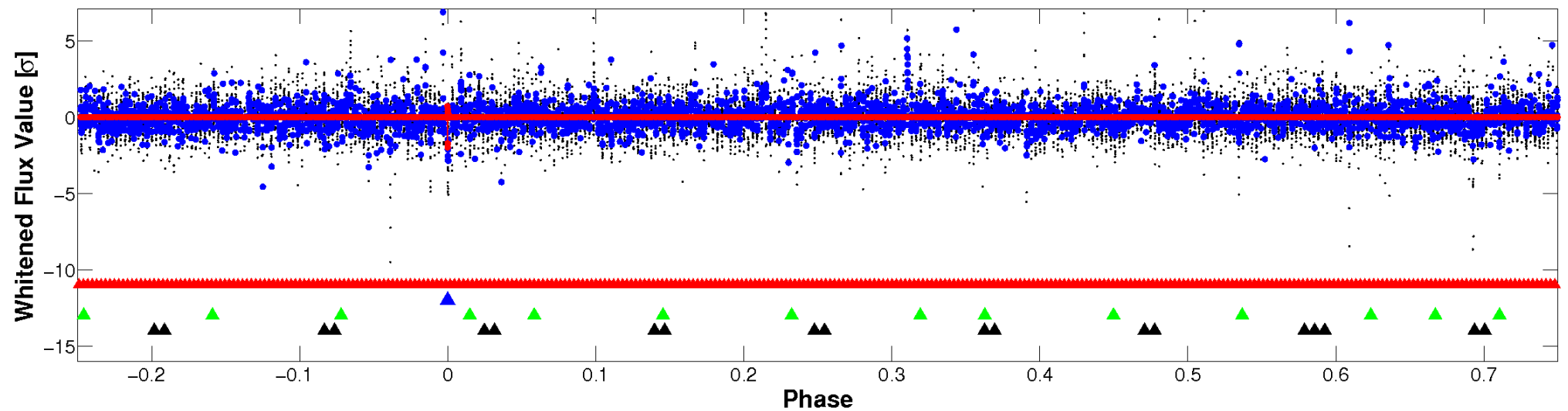


# Non-Whitened Vs. Whitened Light Curve

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

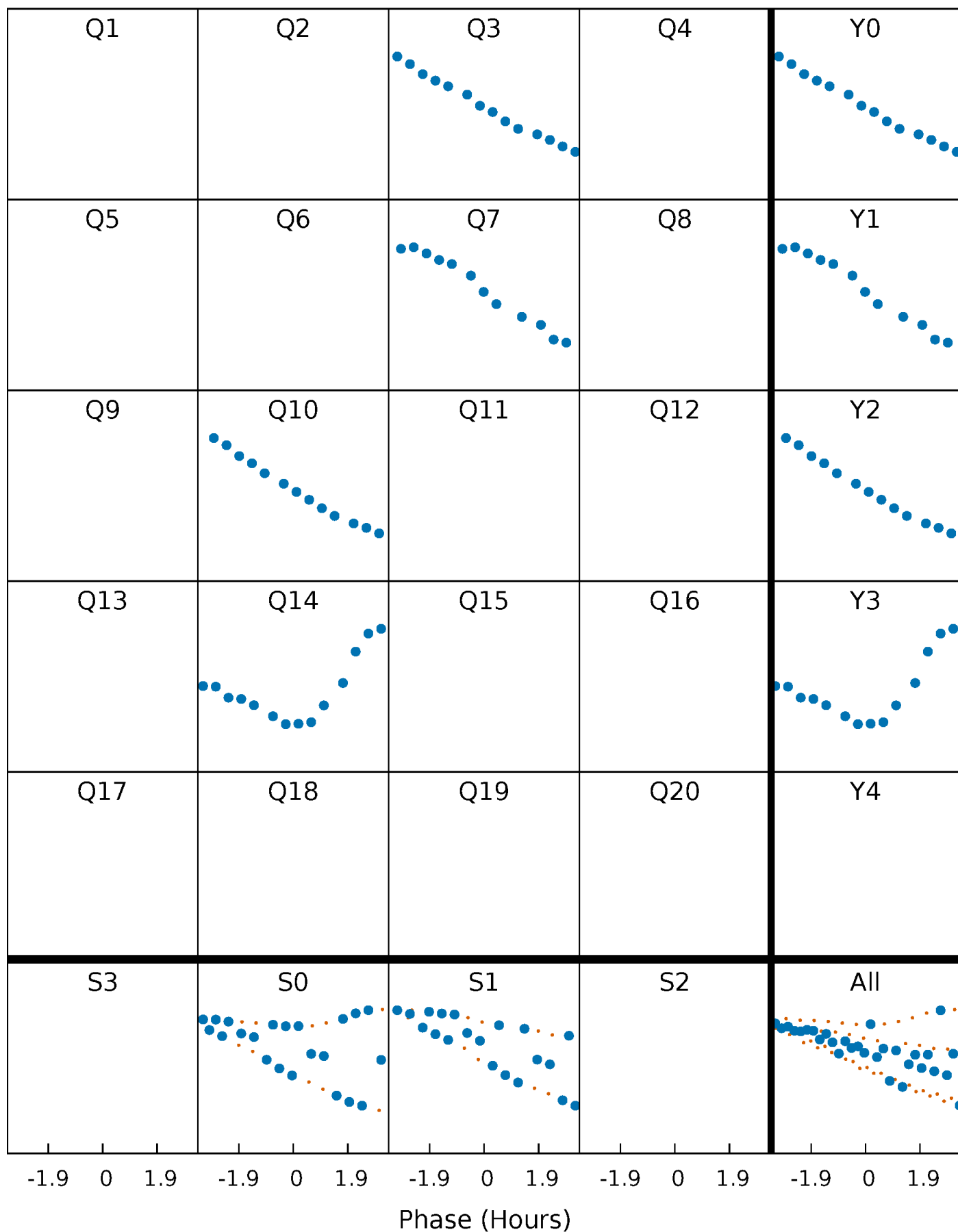


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



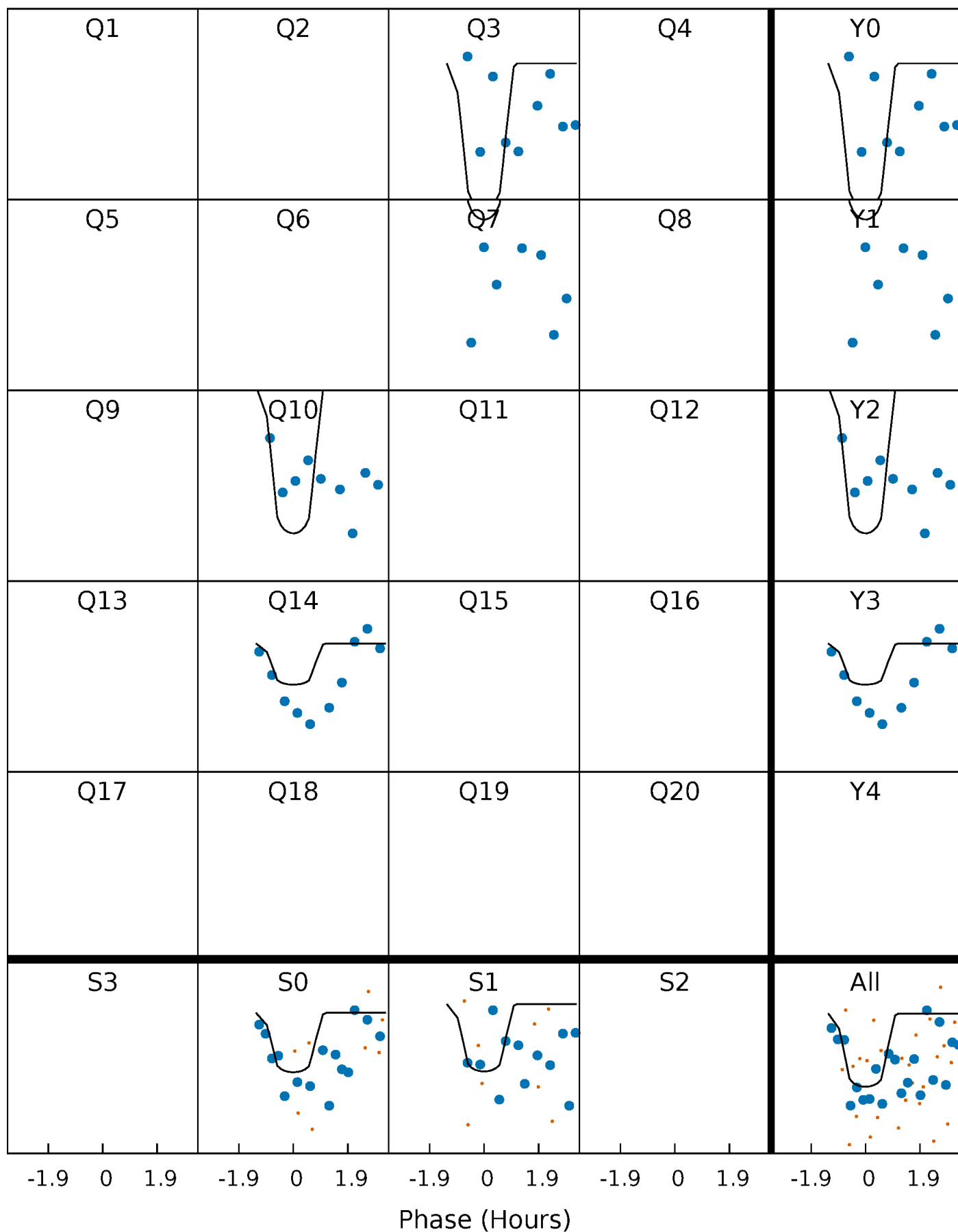
# PDC Quarter-Phased Transit Curves

TCE 010082844-02 P=349.001219 Days  $T_0=292.149493$  (BKJD)



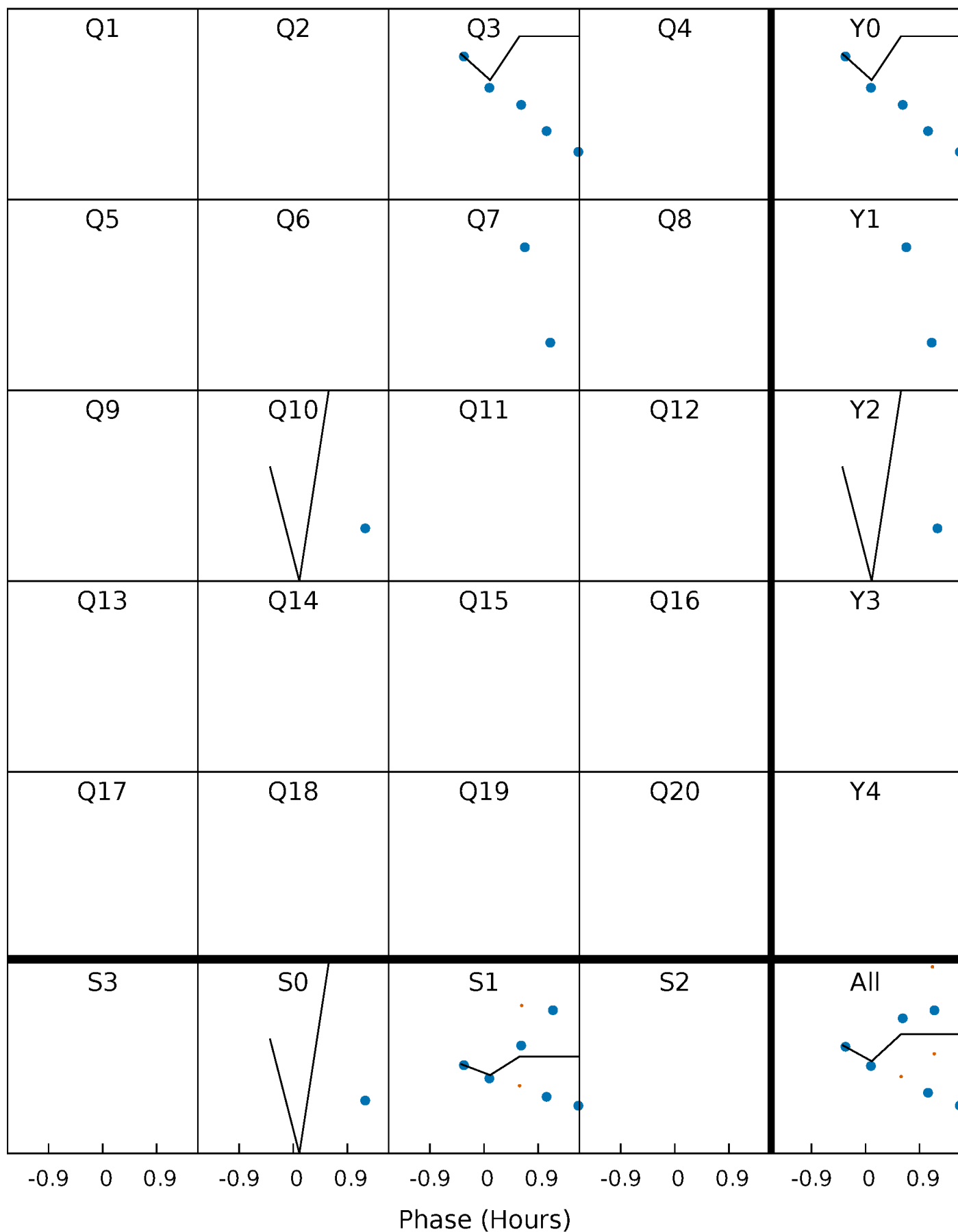
# DV Quarter-Phased Transit Curves

TCE 010082844-02 P=349.001219 Days  $T_0=292.149493$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010082844-02 P=348.964338 Days  $T_0=292.136906$  (BKJD)

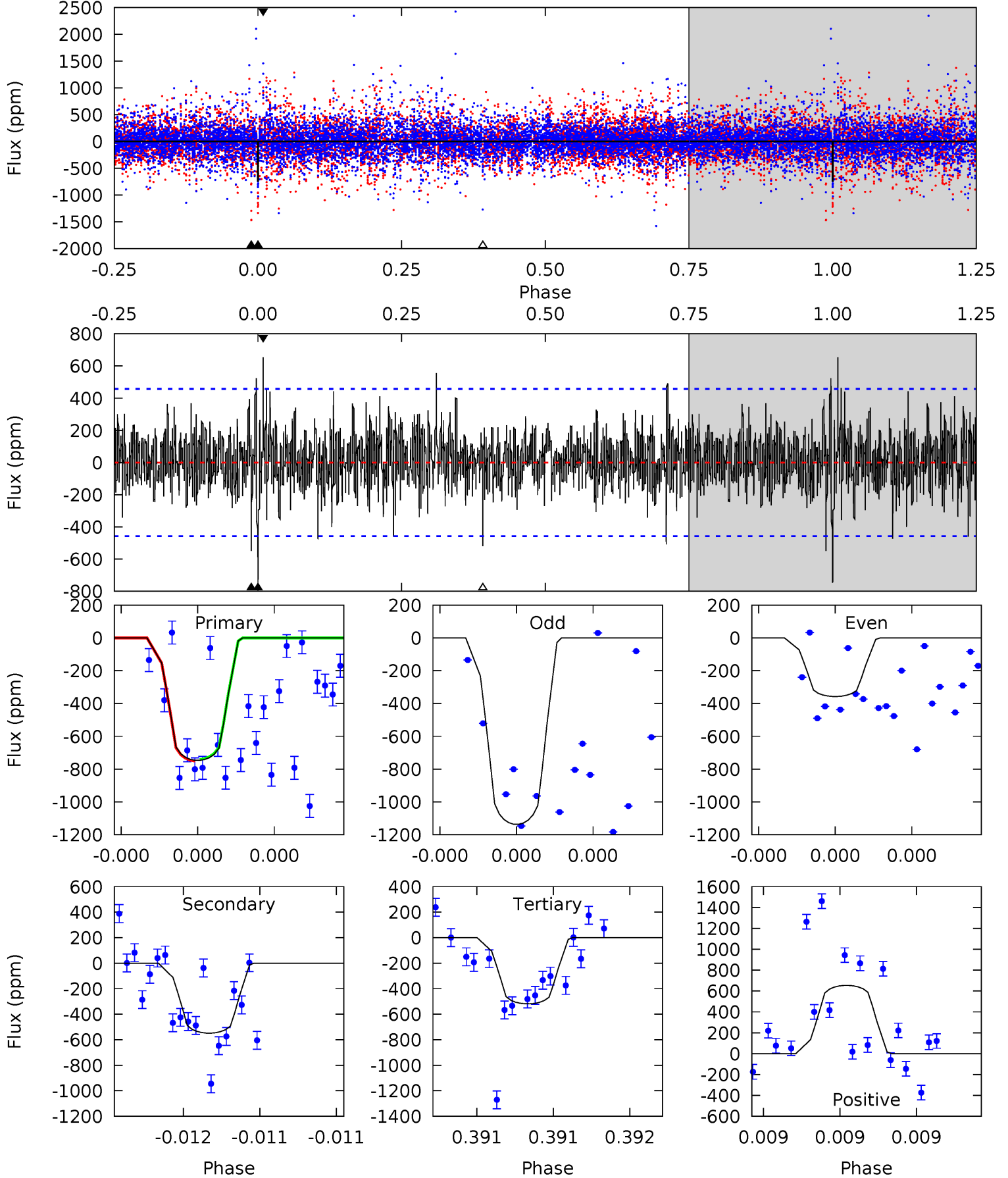




# DV Model-Shift Uniqueness Test

010082844-02, P = 349.001219 Days, E = 292.149493 Days

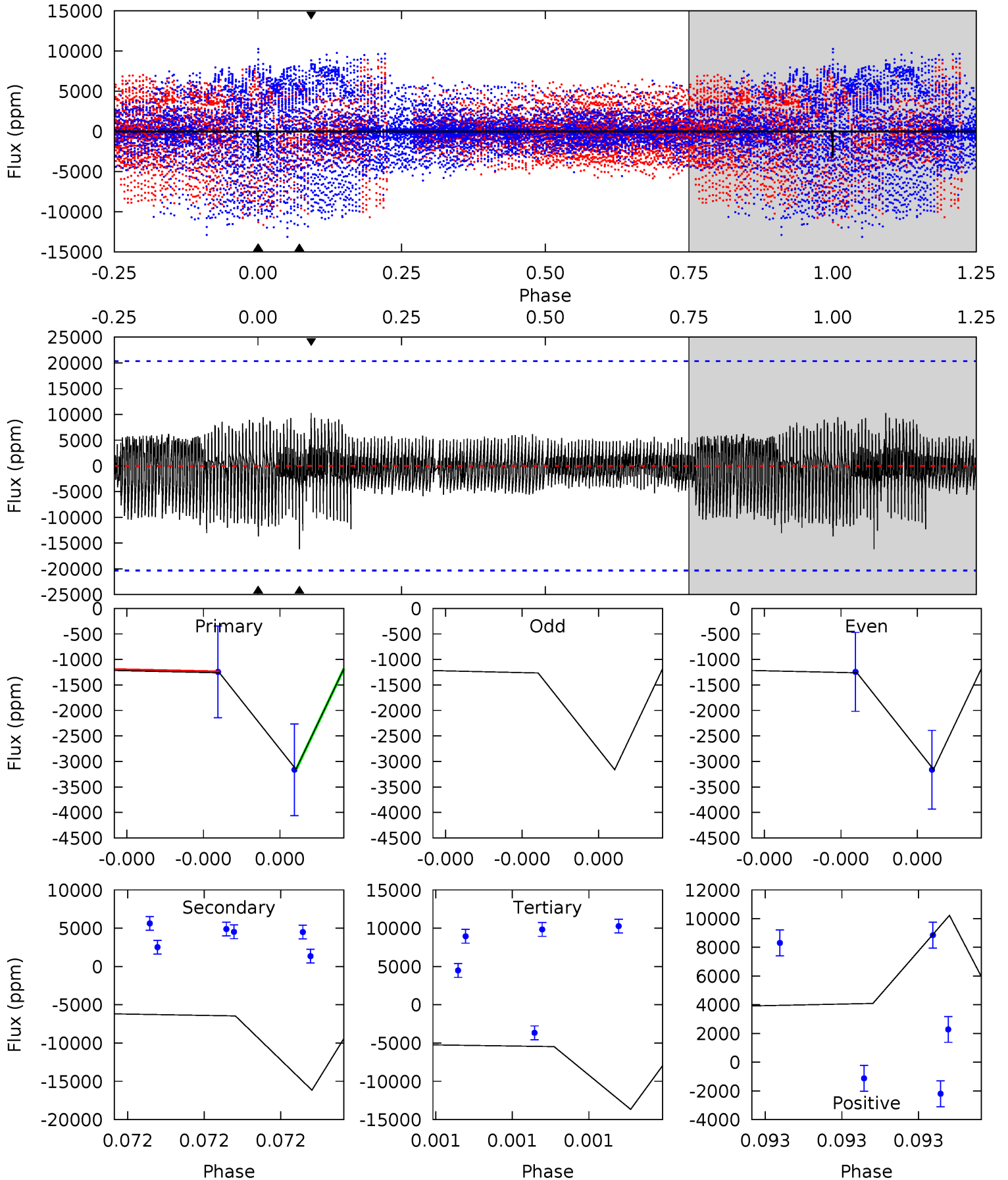
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.31	6.84	6.47	8.15	5.70	3.68	1.63	2.84	1.16	0.37	-1.32	4.51	0.99	0.47	0.06



# Alt Model-Shift Uniqueness Test

010082844-02, P = 348.964338 Days, E = 292.136906 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
0.92	4.71	3.99	2.99	5.94	4.02	1.05	-3.07	-2.06	0.73	1.73	0.00	0	0.39	0.00



### Stellar Parameters For KIC 010082844

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$9643^{+272}_{-428}$	$4.142^{+0.167}_{-0.204}$	$0.070^{+0.200}_{-0.700}$	$2.132^{+0.873}_{-0.582}$	$2.302^{+0.415}_{-0.622}$	$0.335^{+0.315}_{-0.184}$
	+3%/-4%	+4%/-5%	+286%/-1000%	+41%/-27%	+18%/-27%	+94%/-55%
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 010082844-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-548 \pm 80$	$9.84^{+10.00}_{-6.68}$	$769^{+68}_{-60}$	$6626^{+8124}_{-1717}$	$5000^{+42900}_{-3764}$
Alt.	$-16153 \pm 3426$	$13.96^{+10.78}_{-8.67}$	$768^{+66}_{-60}$	$18629^{+55330}_{-7747}$	$74962^{+456596}_{-52605}$

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

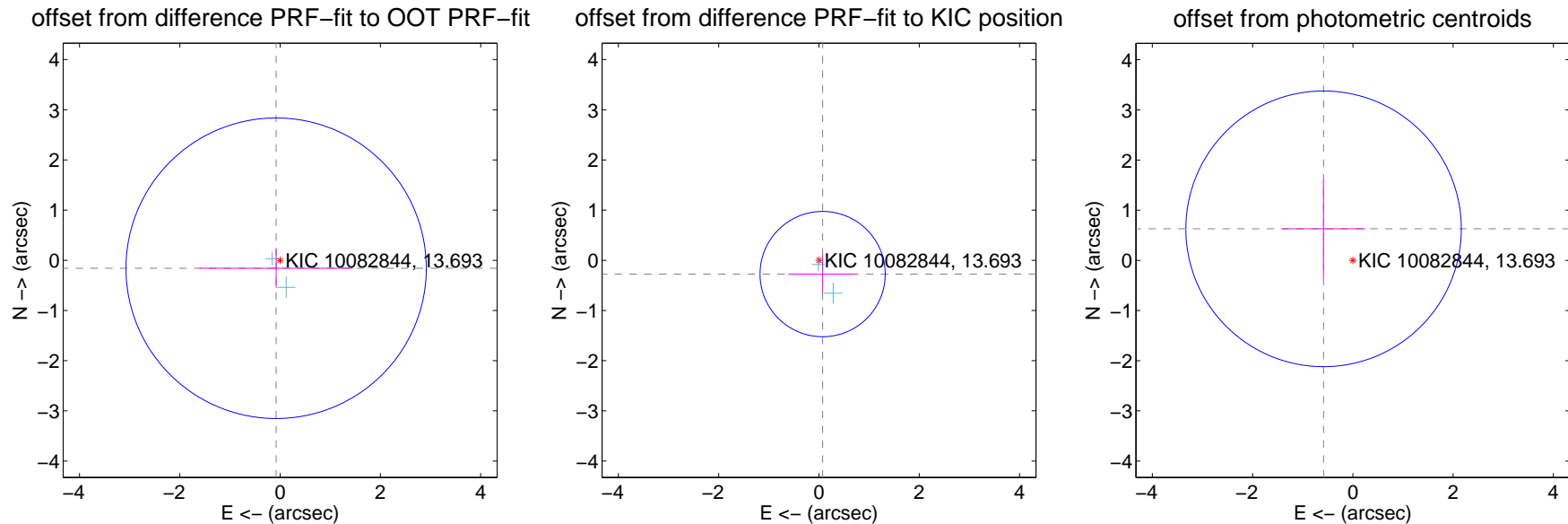
## DV Centroid Data

Supplemental centroid analysis for 010082844-02. Kepler magnitude: 13.69. Transit SNR 6.52

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.177 \pm 0.998$	0.18	$0.079 \pm 1.533$	$-0.158 \pm 0.388$
PRF-fit source offset from KIC position	$0.284 \pm 0.416$	0.68	$-0.073 \pm 0.687$	$-0.275 \pm 0.390$
photometric centroid source offset	$0.86 \pm 0.92$	0.94	$0.58 \pm 0.83$	$0.63 \pm 0.98$



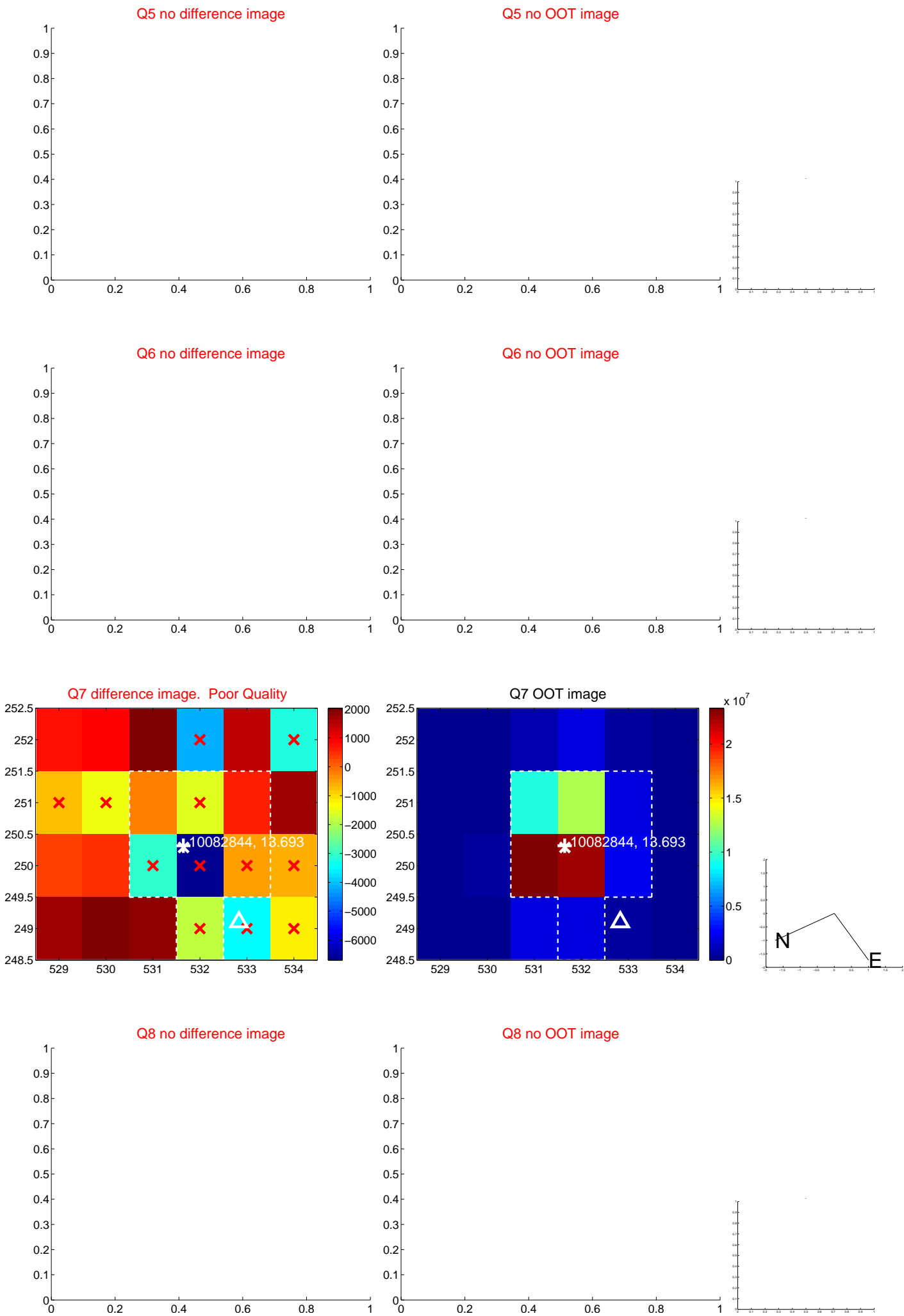
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

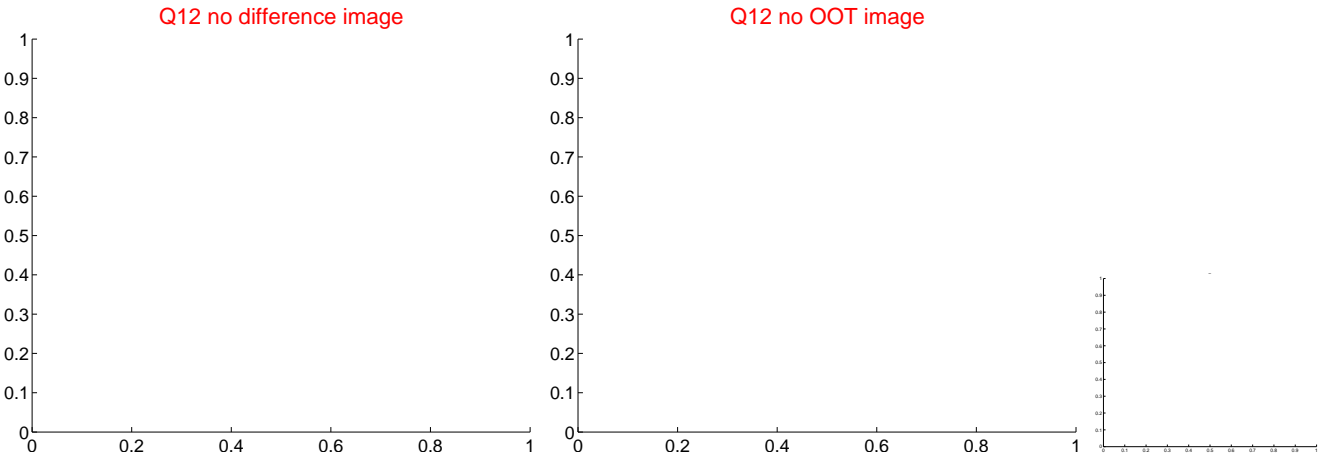
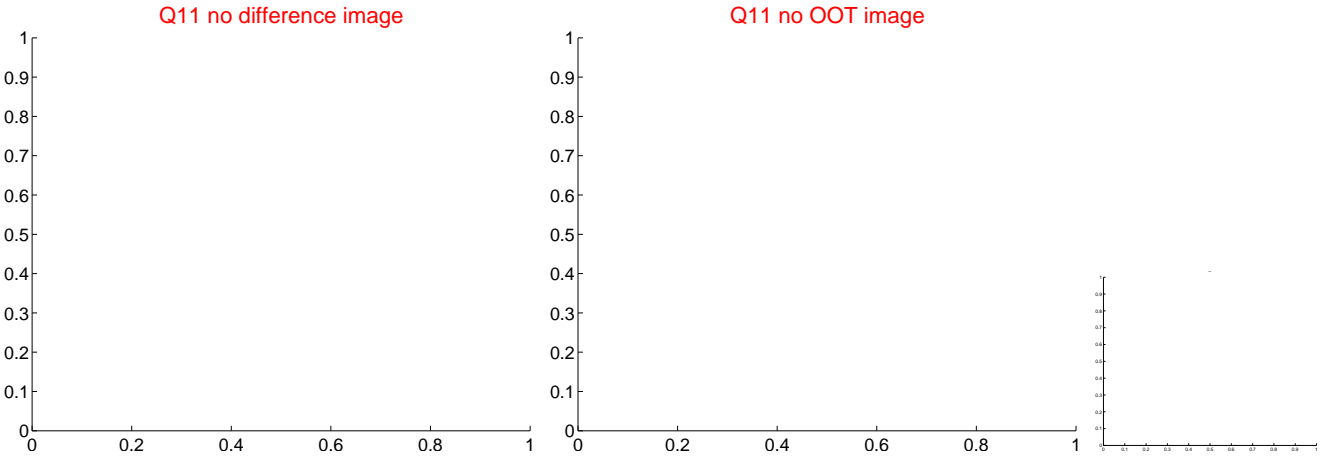
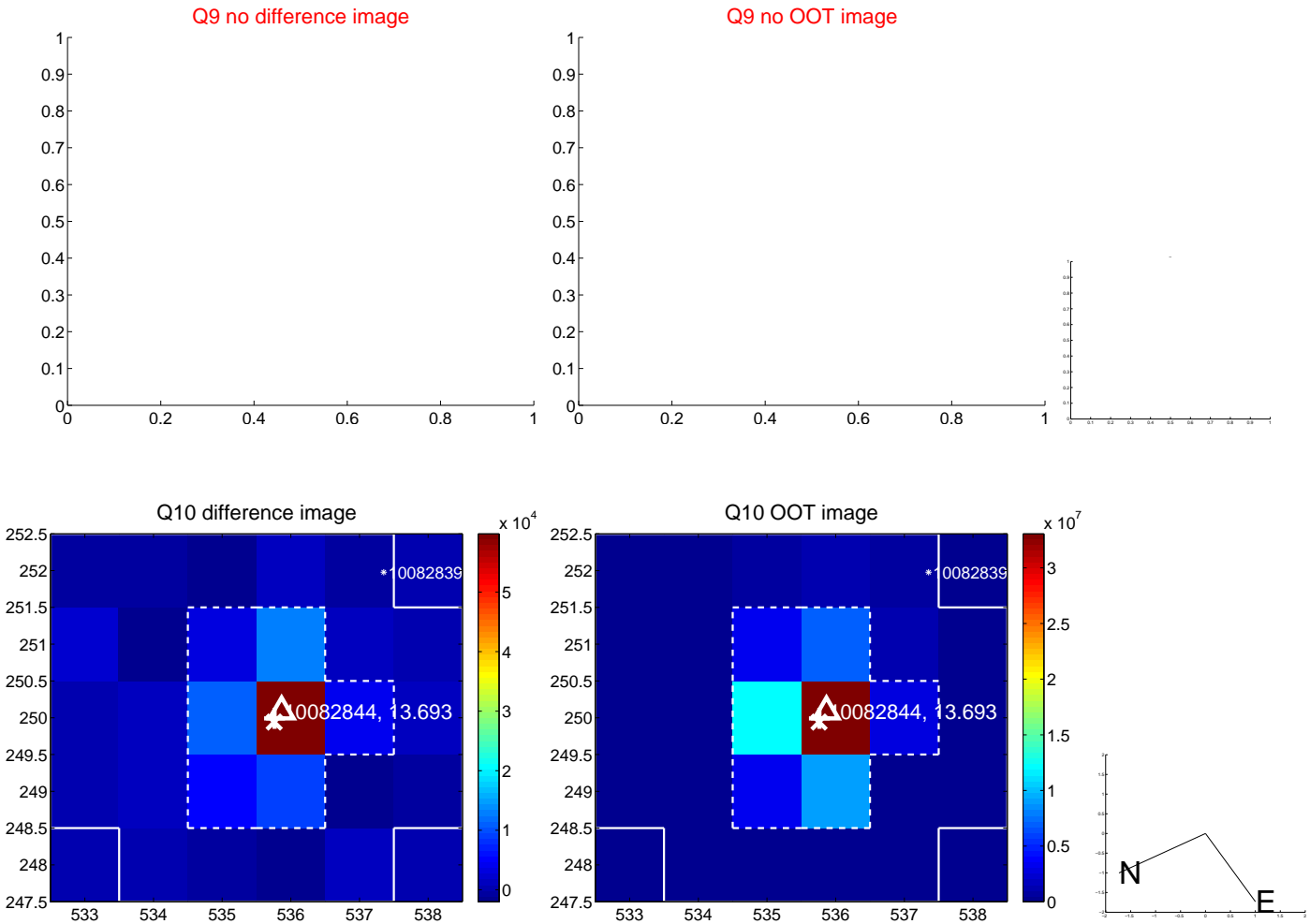




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

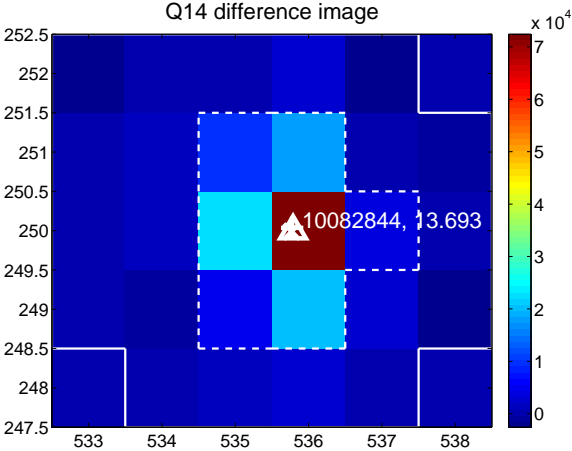
Q13 no difference image



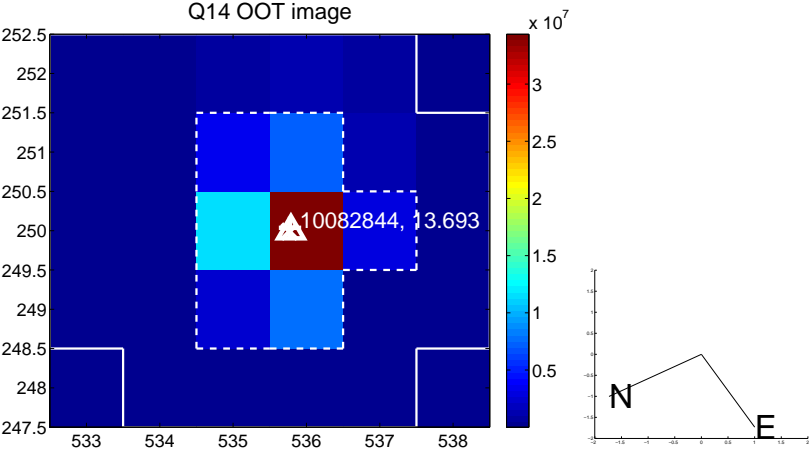
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



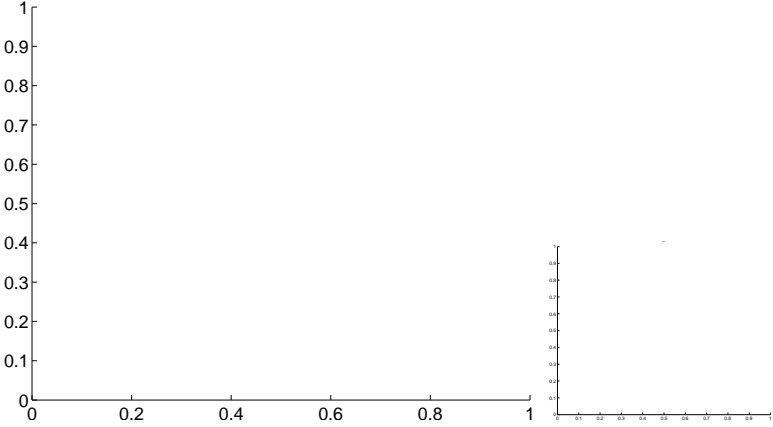
Q15 no OOT image



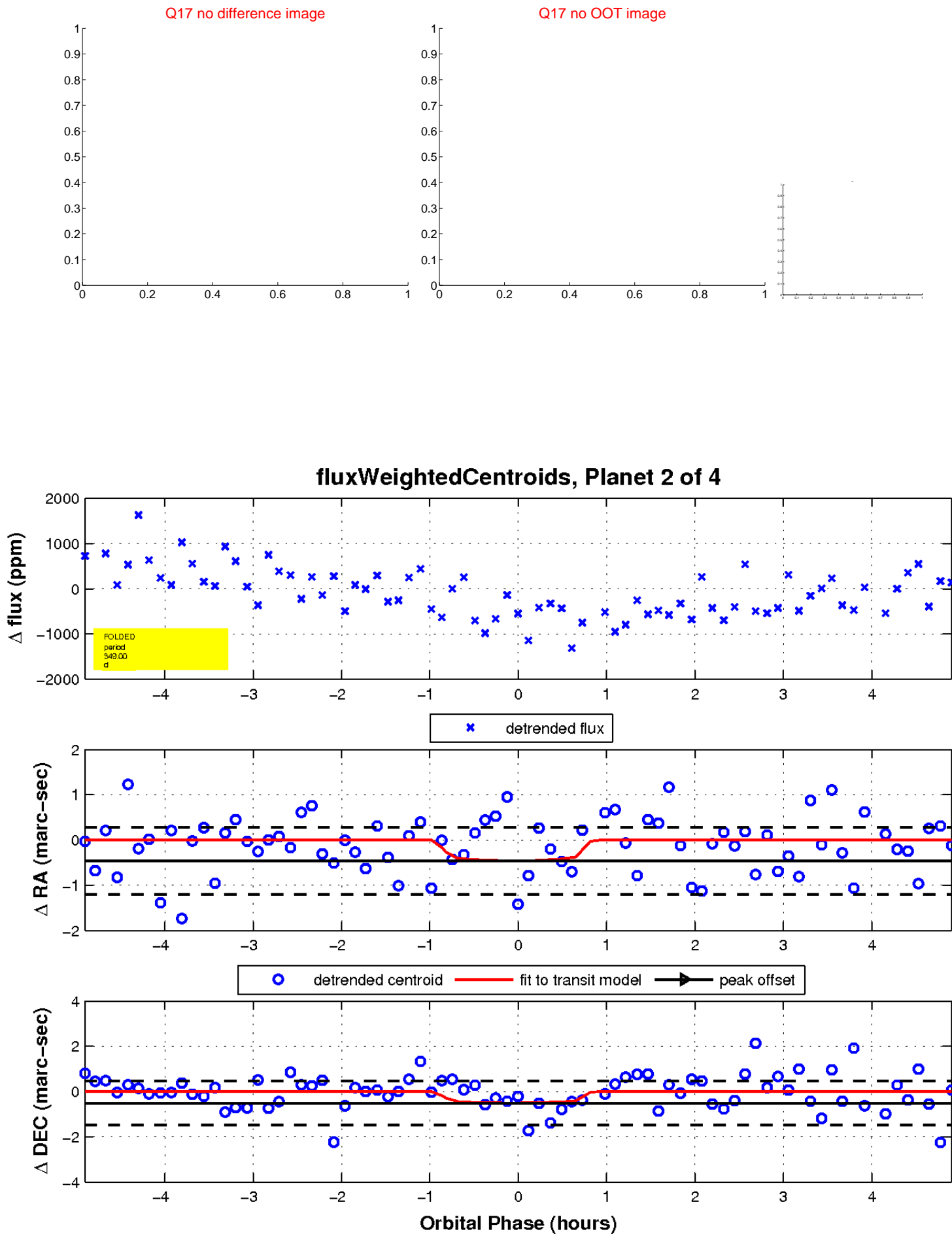
Q16 no difference image



Q16 no OOT image

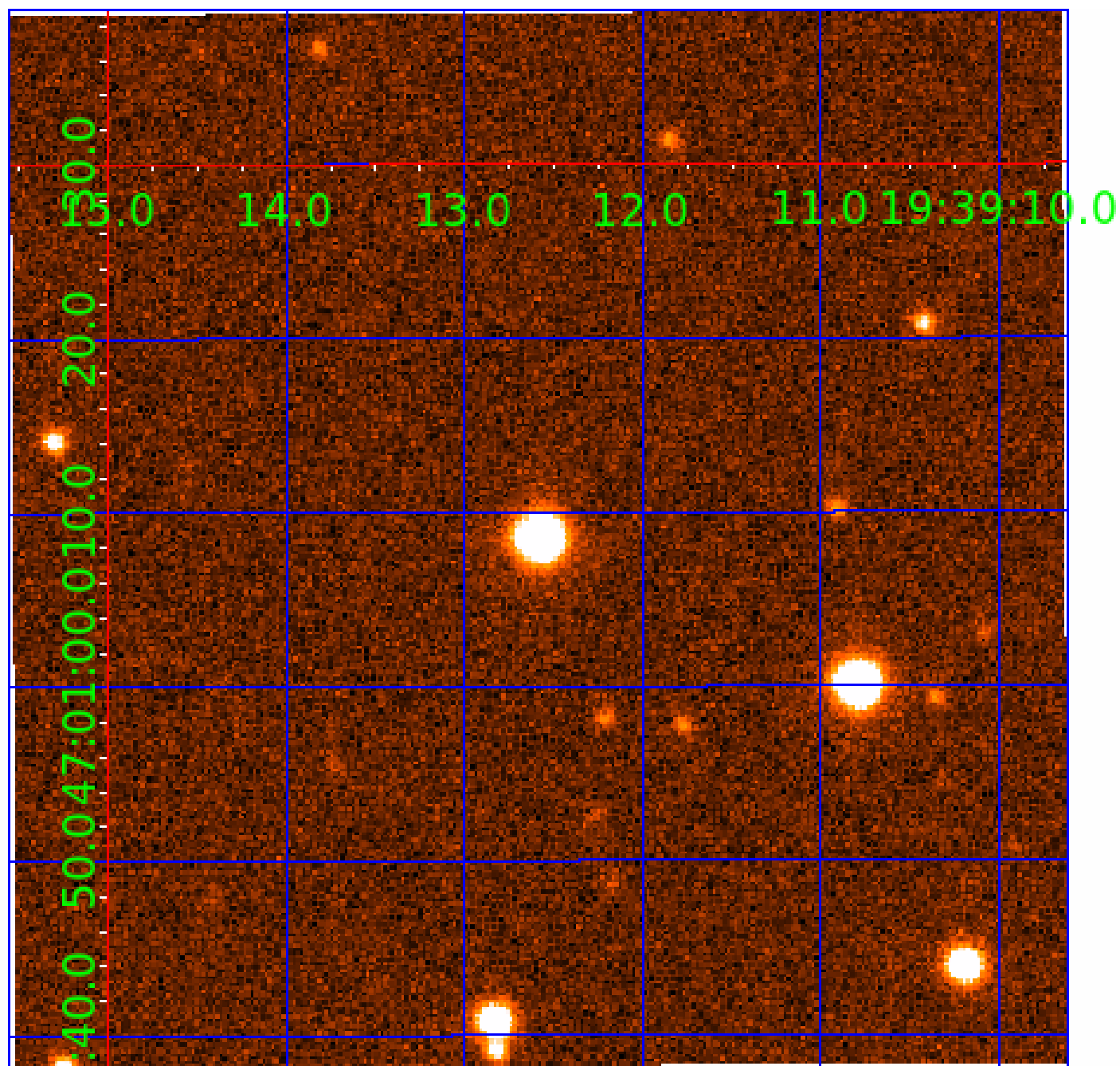


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 010082844

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010082844-01	OBS	No	1.041759	132.311305	14.9	6.540	10.7	2.3	2.13	9643	0.88	49954.90
010082844-02	OBS	No	349.001219	292.149493	679.0	1.665	14.1	6.5	2.13	9643	5.73	21.47
010082844-03	OBS	No	106.221266	191.136131	1351.9	5.962	10.2	8.6	2.13	9643	14.03	104.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010082844-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010082844-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010082844-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

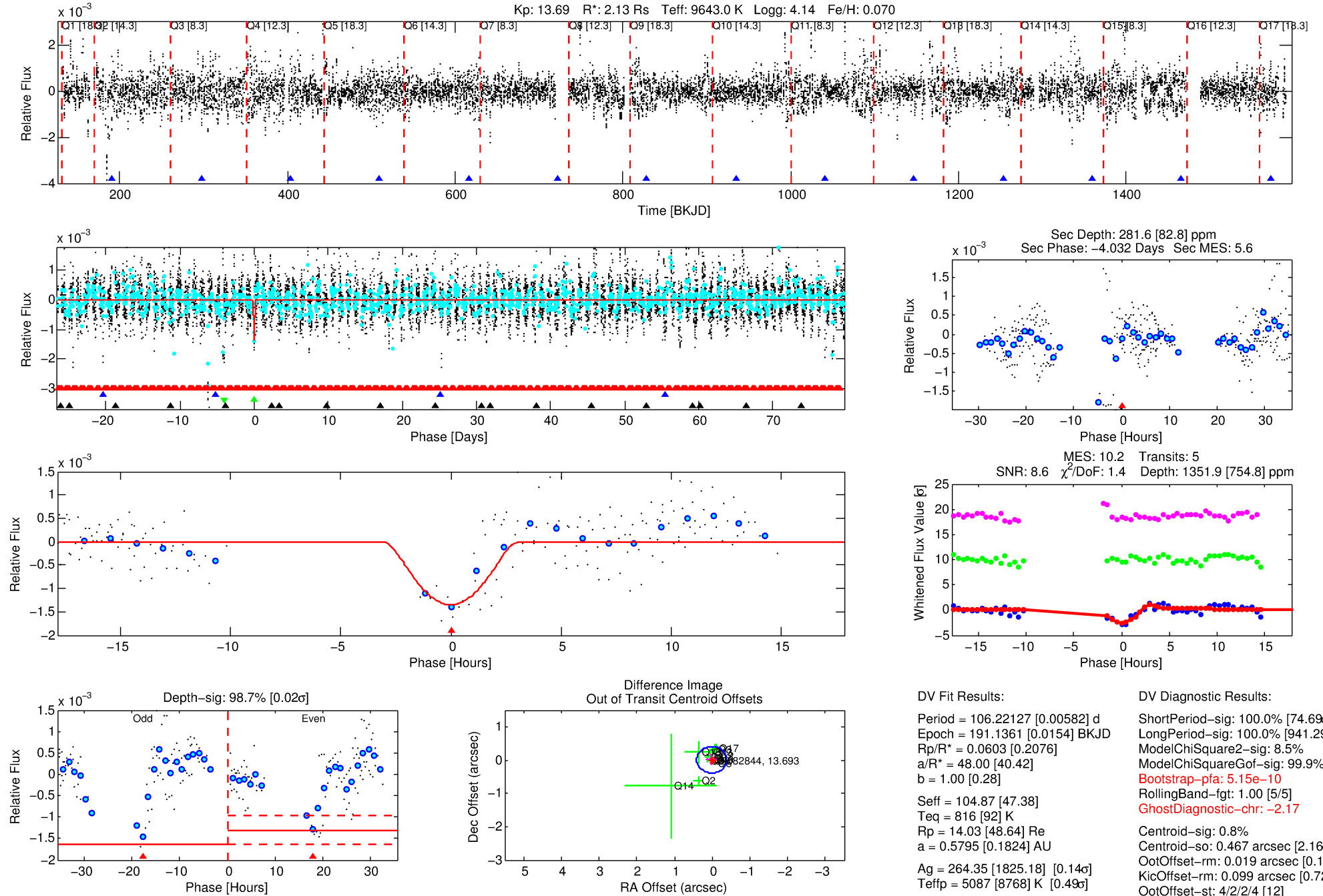
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010082844-03

No Significant Match Found

# DV One-Page Summary

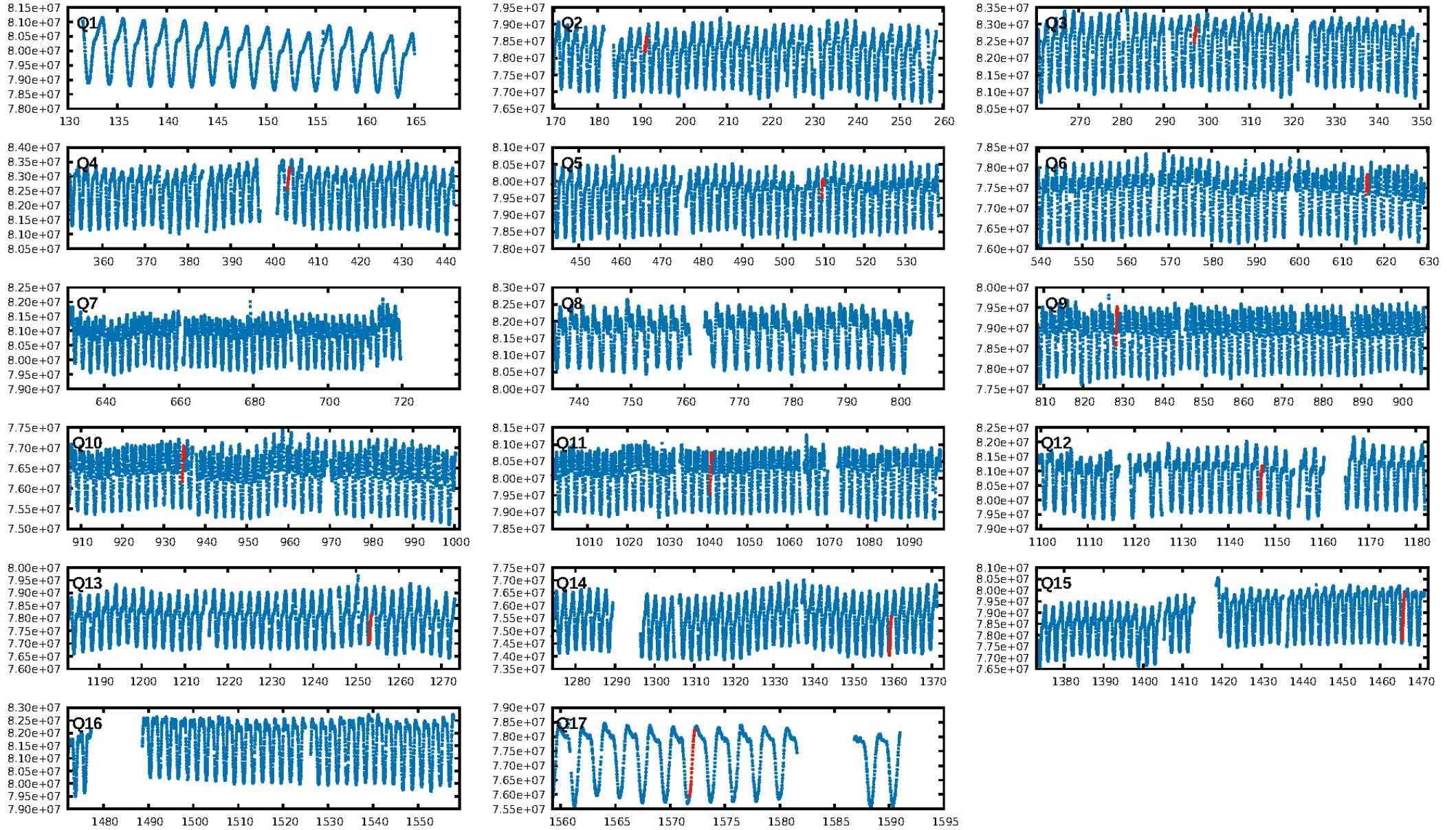
KIC: 10082844 Candidate: 3 of 4 Period: 106.221 d



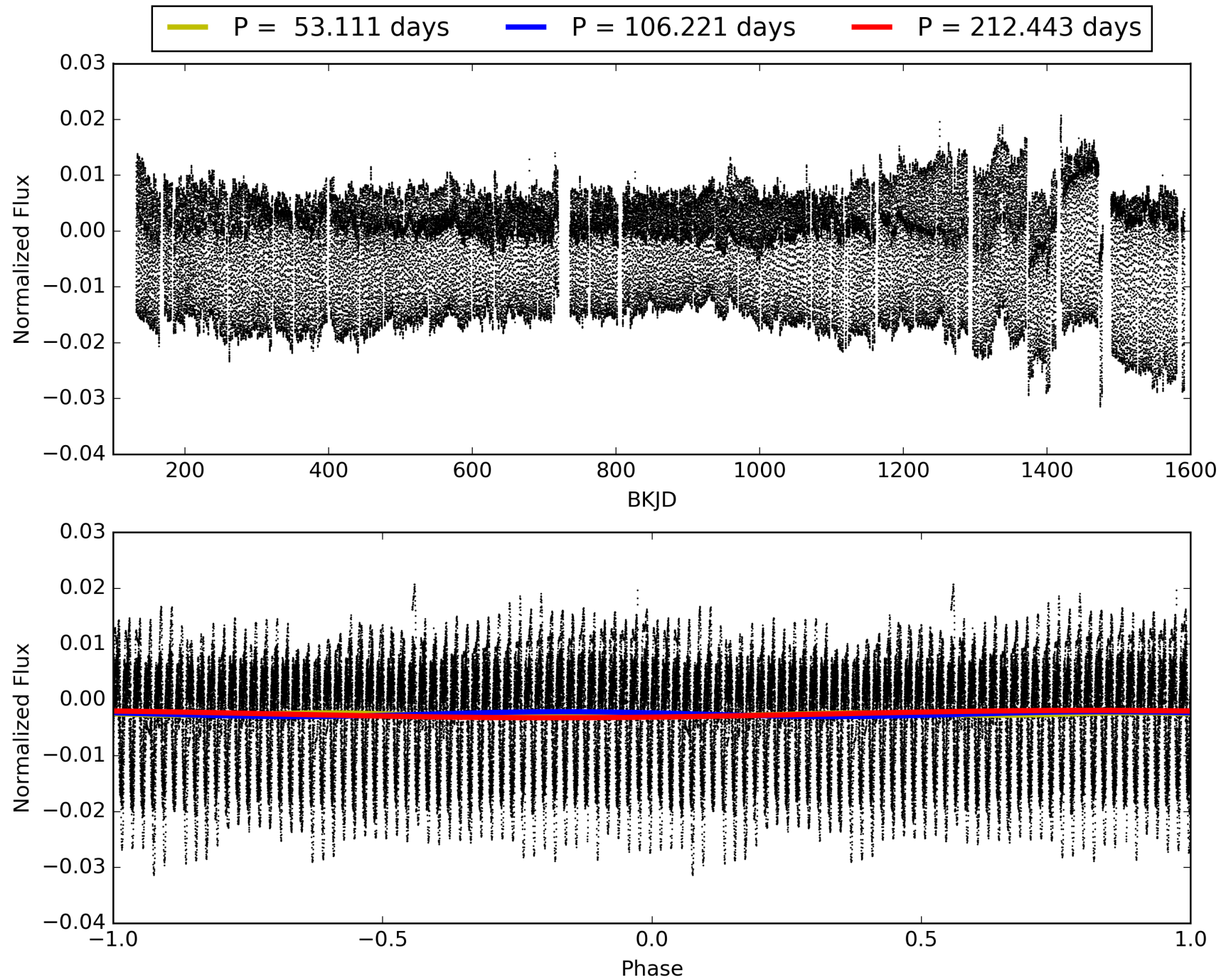
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:23:07 Z

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

# TCE 010082844-03, PDC Light Curves

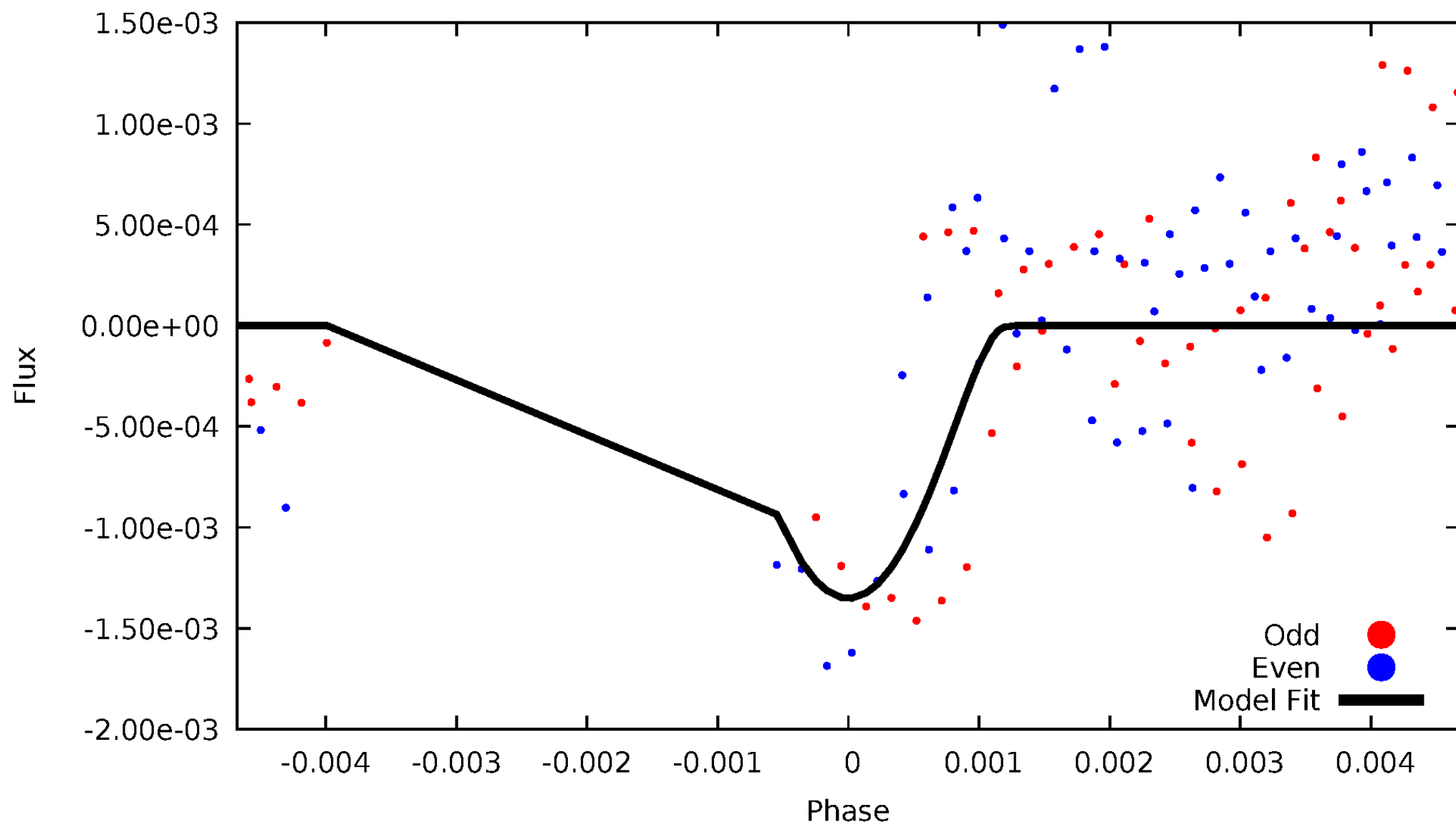


# TCE 010082844-03



# DV Odd/Even

TCE 010082844-03





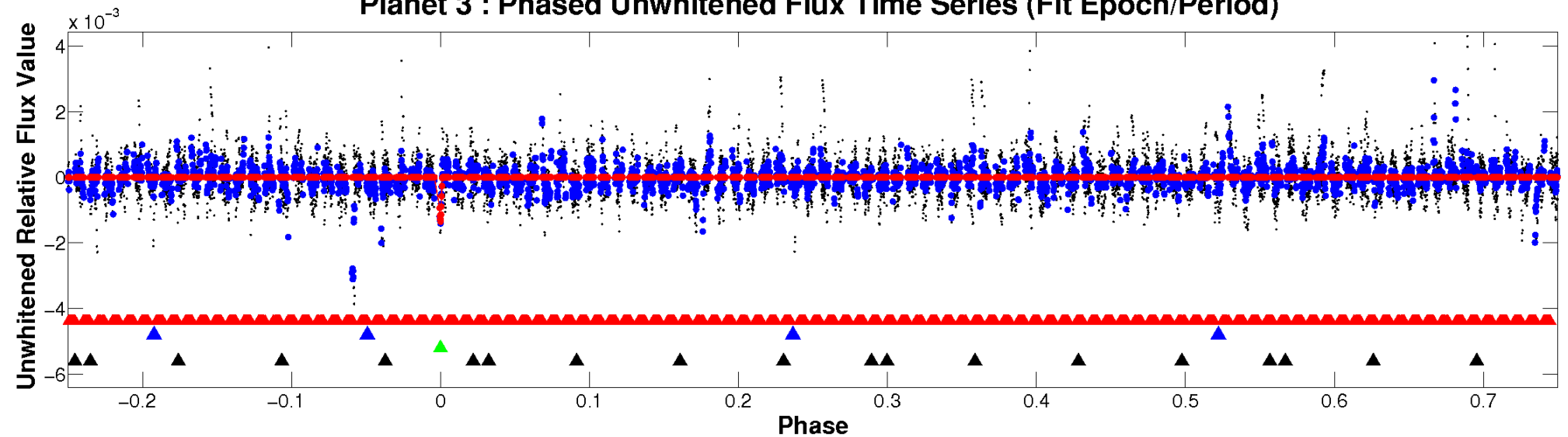
ALT Odd/Even

This plot does not exist for this TCE.

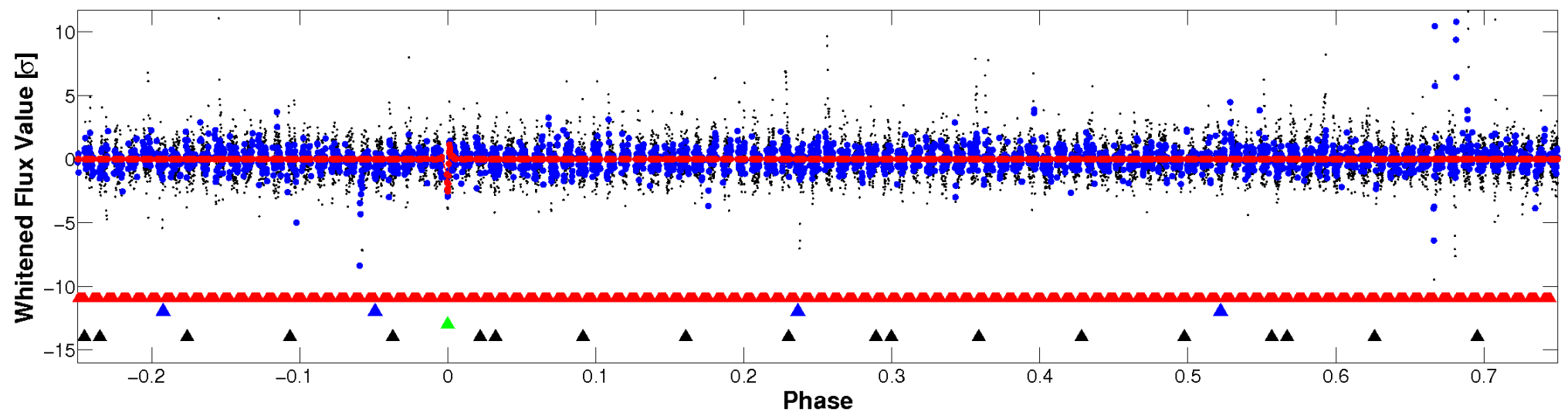


# Non-Whitened Vs. Whitened Light Curve

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

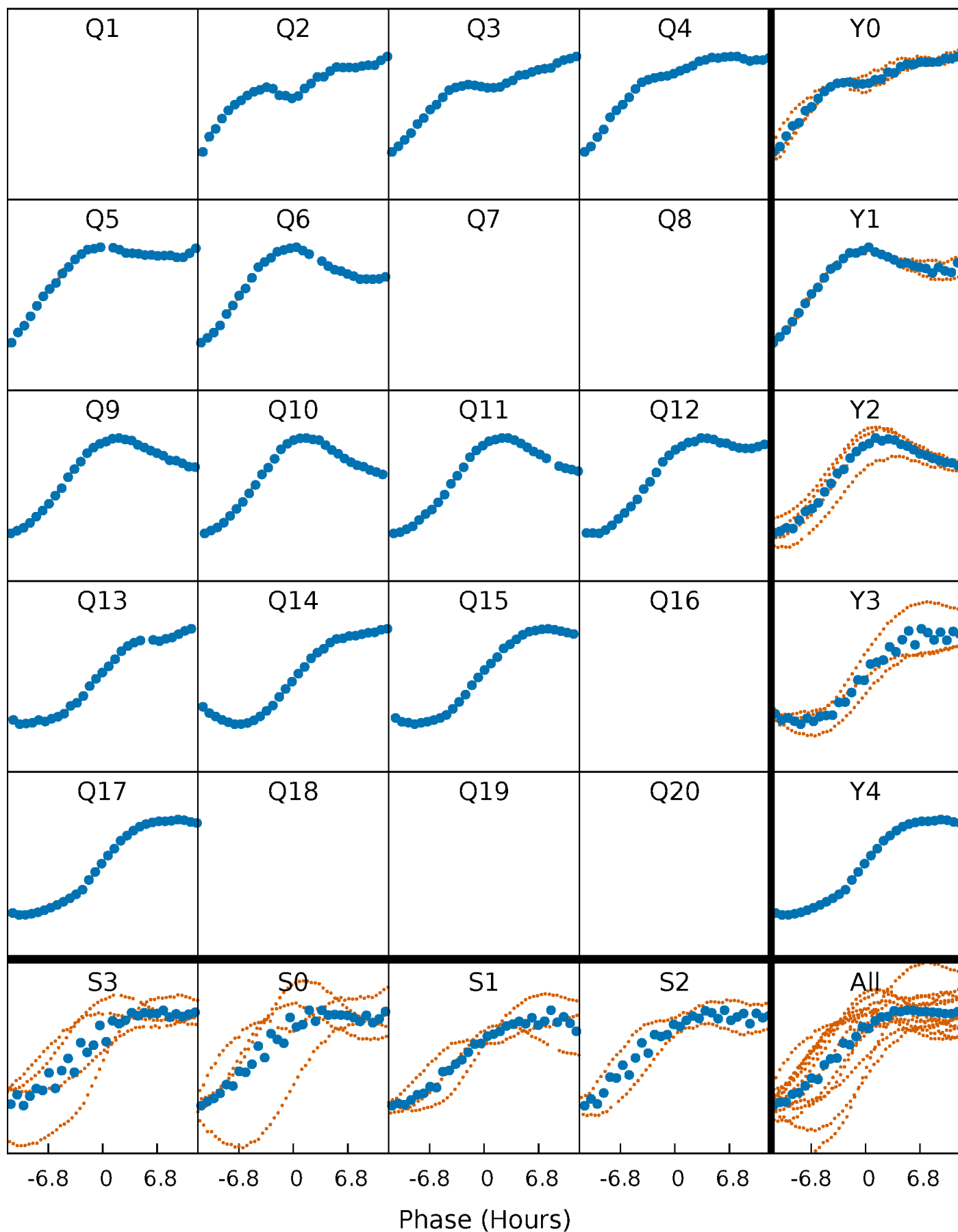


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



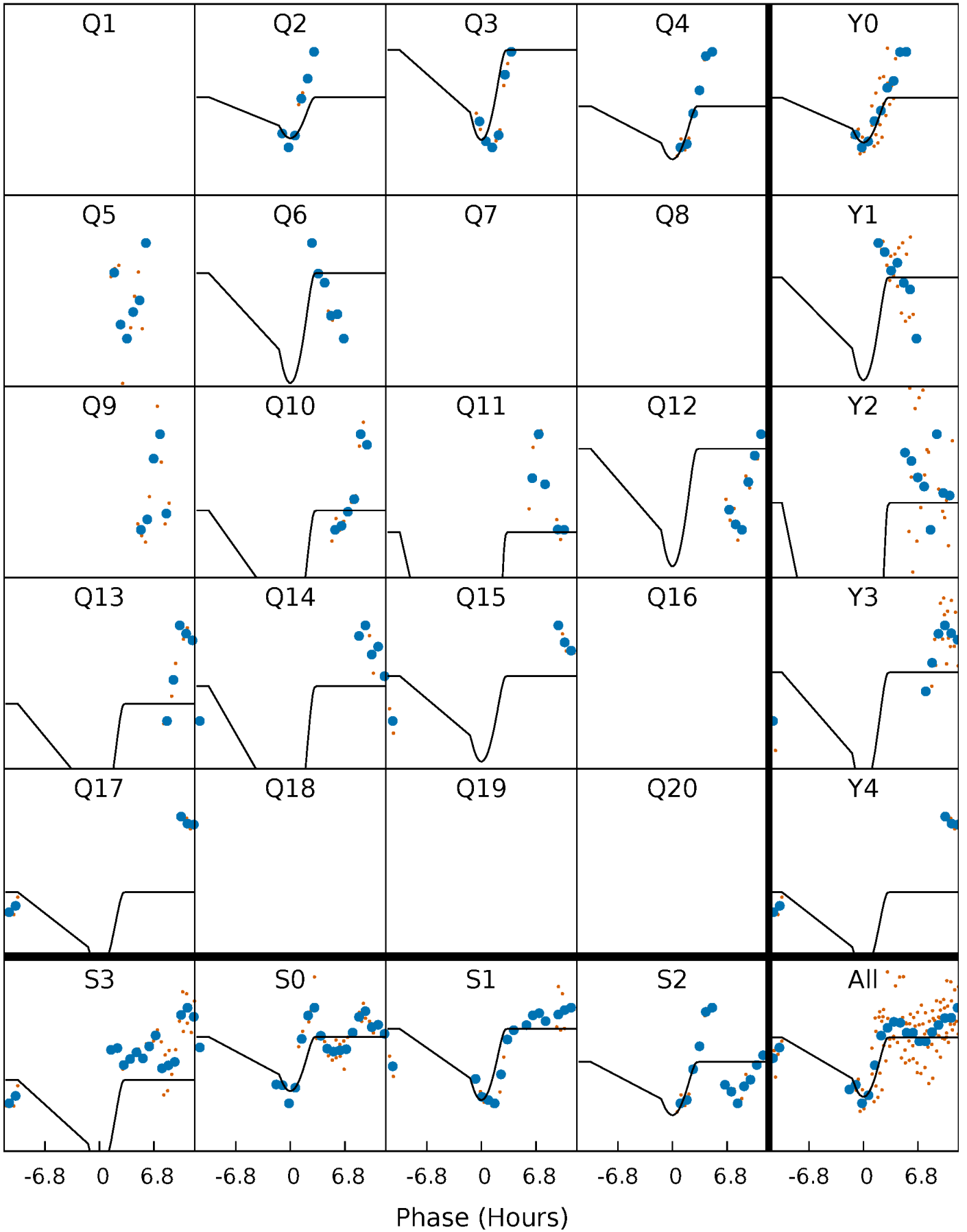
# PDC Quarter-Phased Transit Curves

TCE 010082844-03 P=106.221266 Days  $T_0=191.136131$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 010082844-03 P=106.221266 Days  $T_0=191.136131$  (BKJD)

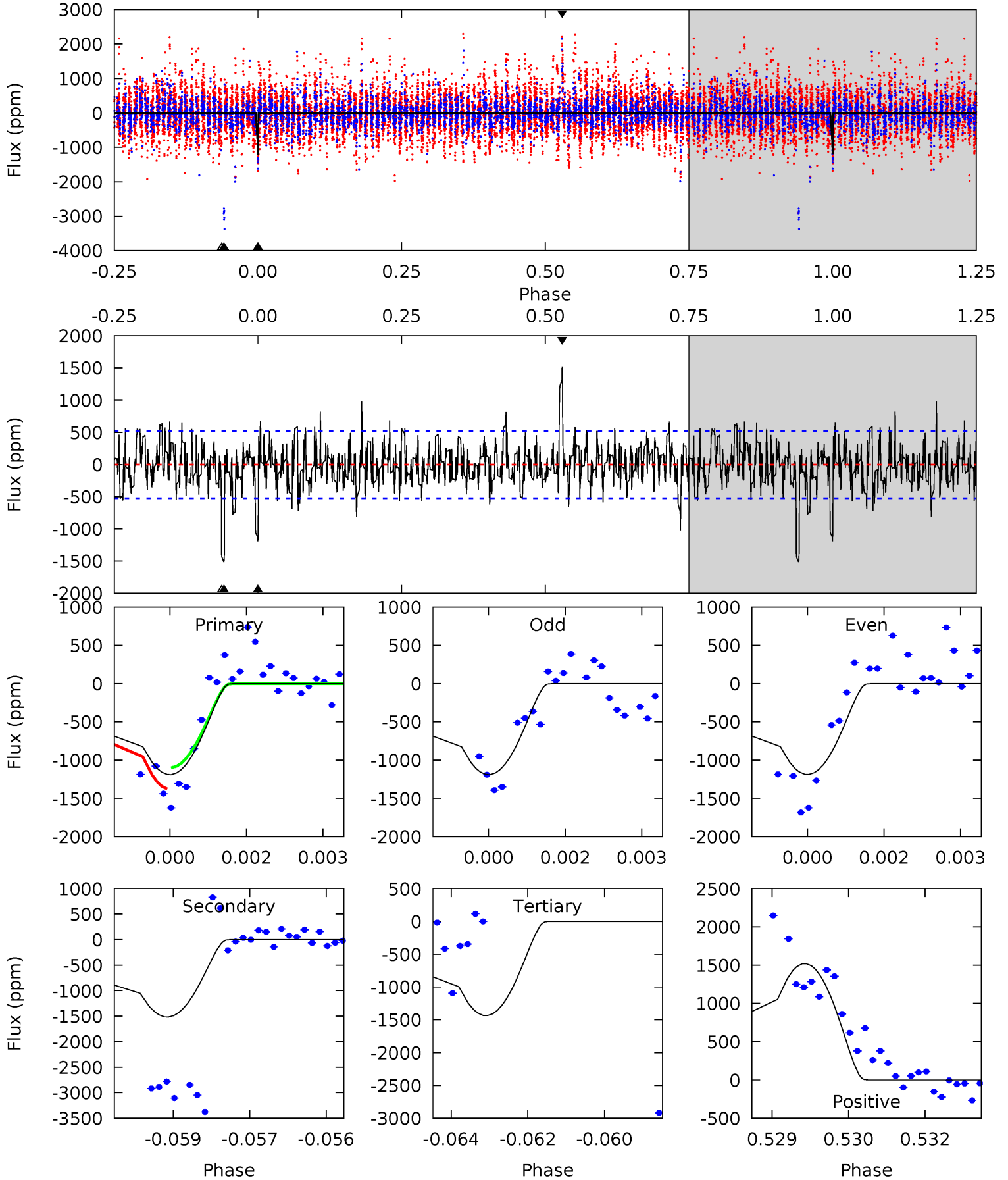


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

010082844-03, P = 106.221266 Days, E = 84.914865 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
12.2	15.6	14.8	15.6	5.37	3.17	2.51	-2.53	-3.40	0.82	-0.05	0.01	0.62	0.50	0.89



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 010082844

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$9643^{+272}_{-428}$	$4.142^{+0.167}_{-0.204}$	$0.070^{+0.200}_{-0.700}$	$2.132^{+0.873}_{-0.582}$	$2.302^{+0.415}_{-0.622}$	$0.335^{+0.315}_{-0.184}$
	+3%/-4%	+4%/-5%	+286%/-1000%	+41%/-27%	+18%/-27%	+94%/-55%
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 010082844-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1515 \pm 97$	$36.48^{+43.39}_{-24.52}$	$1144^{+95}_{-91}$	$4576^{+3700}_{-1020}$	$202^{+1805}_{-156}$
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  $A_{\text{obs}} \gg 1.0$



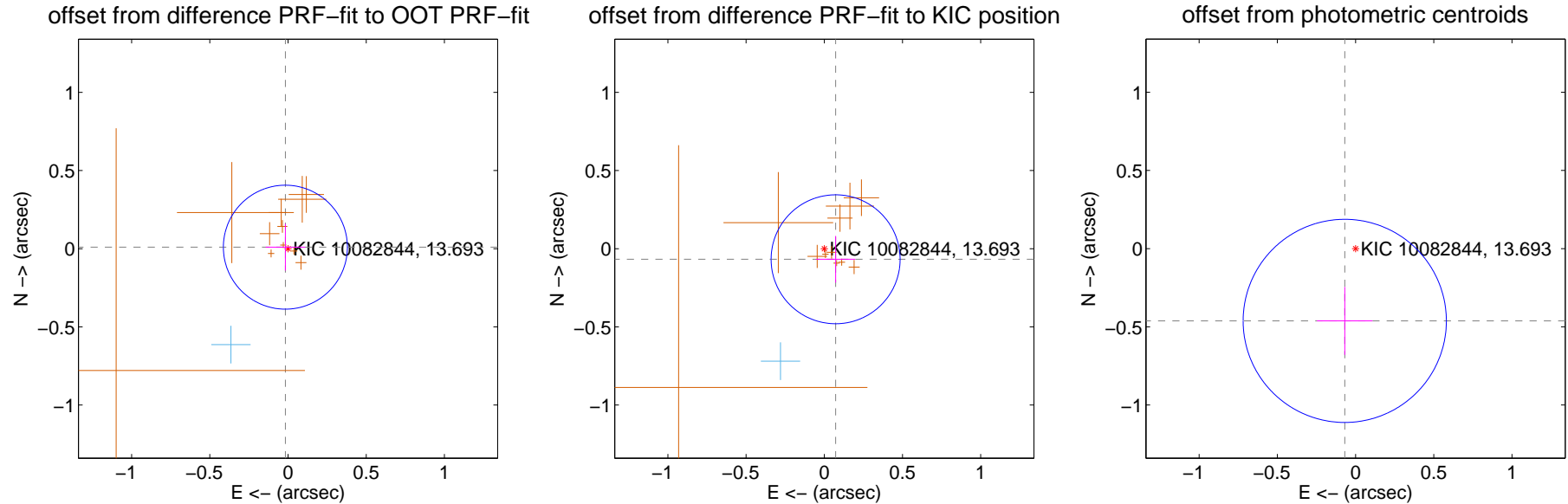
## DV Centroid Data

Supplemental centroid analysis for 010082844-03. Kepler magnitude: 13.69. Transit SNR 8.64

There are 1 quarters with good PRF difference image offsets

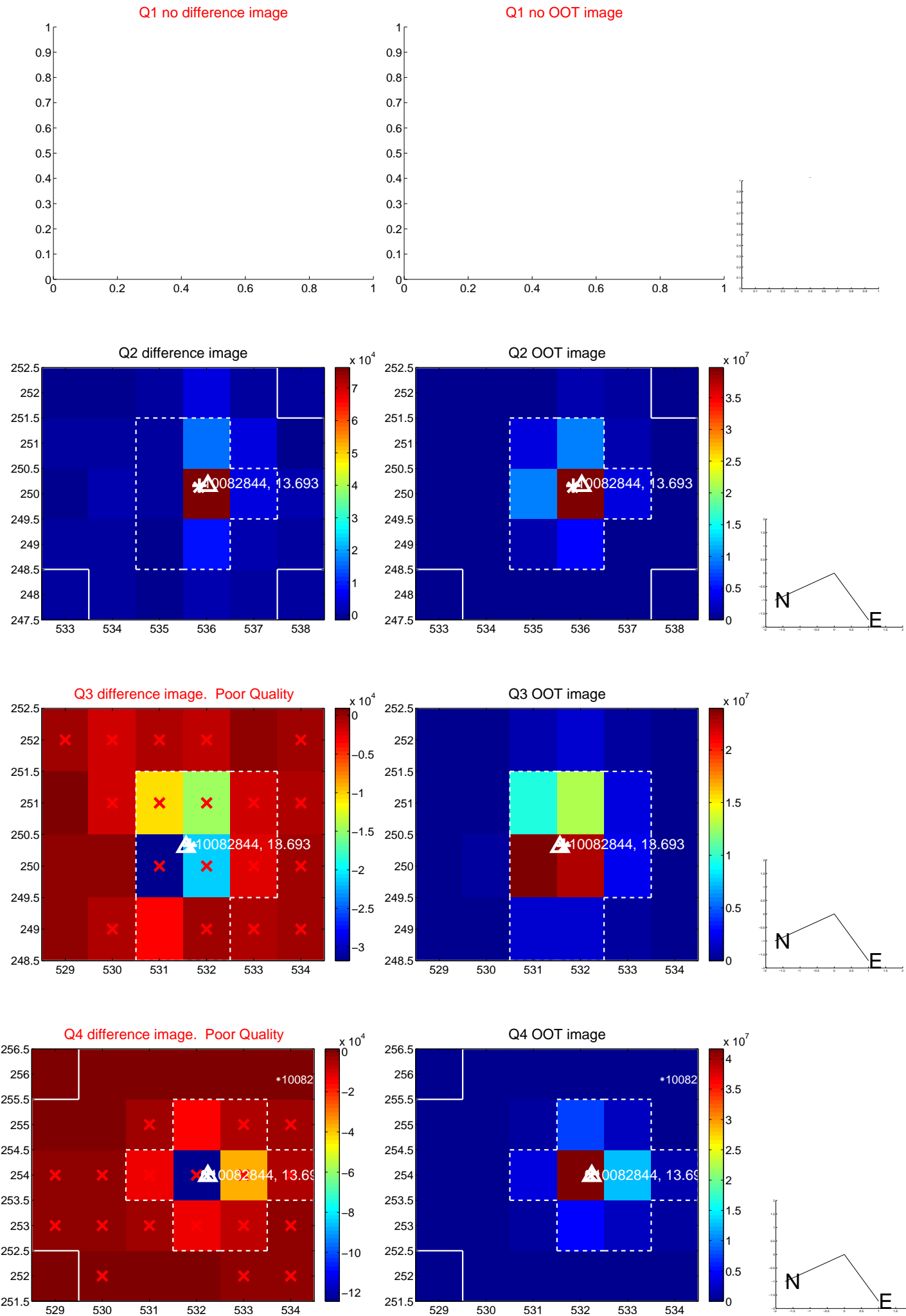
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.019 \pm 0.132$	0.15	$0.017 \pm 0.126$	$0.010 \pm 0.149$
PRF-fit source offset from KIC position	$0.099 \pm 0.137$	0.72	$-0.072 \pm 0.126$	$-0.068 \pm 0.149$
photometric centroid source offset	$0.47 \pm 0.22$	2.16	$0.07 \pm 0.18$	$-0.46 \pm 0.22$

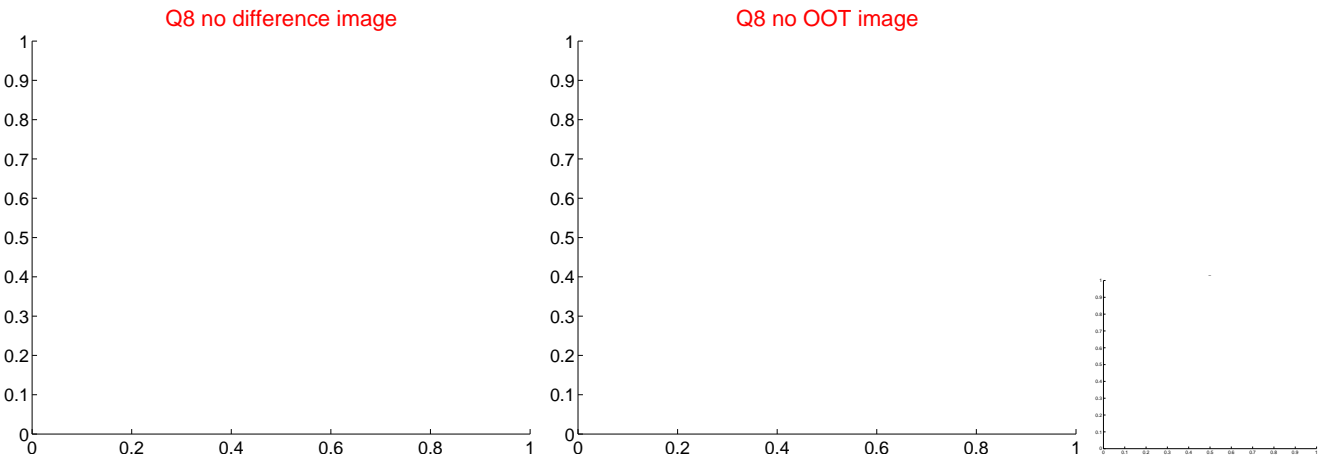
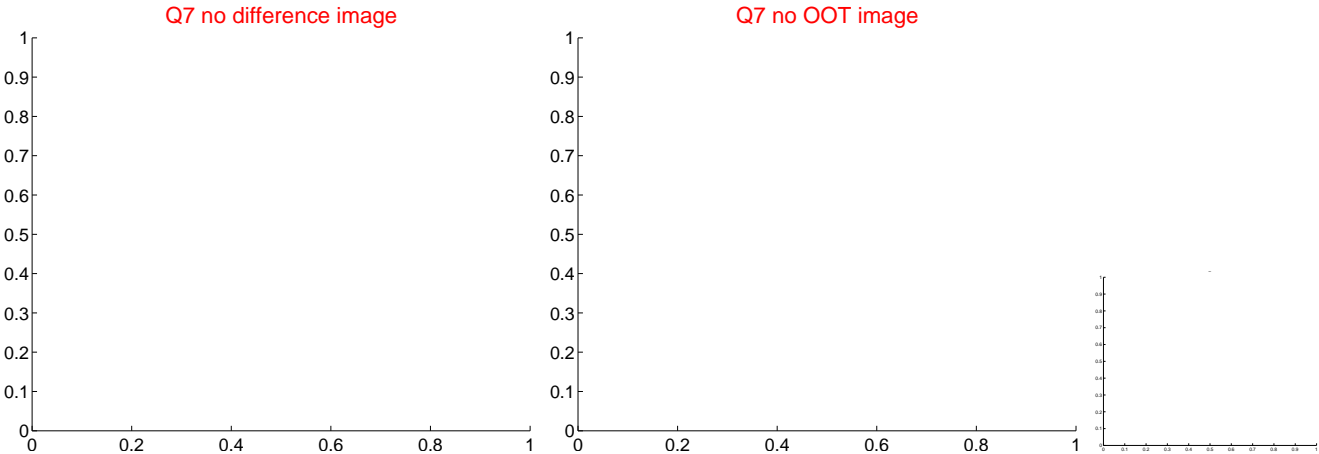
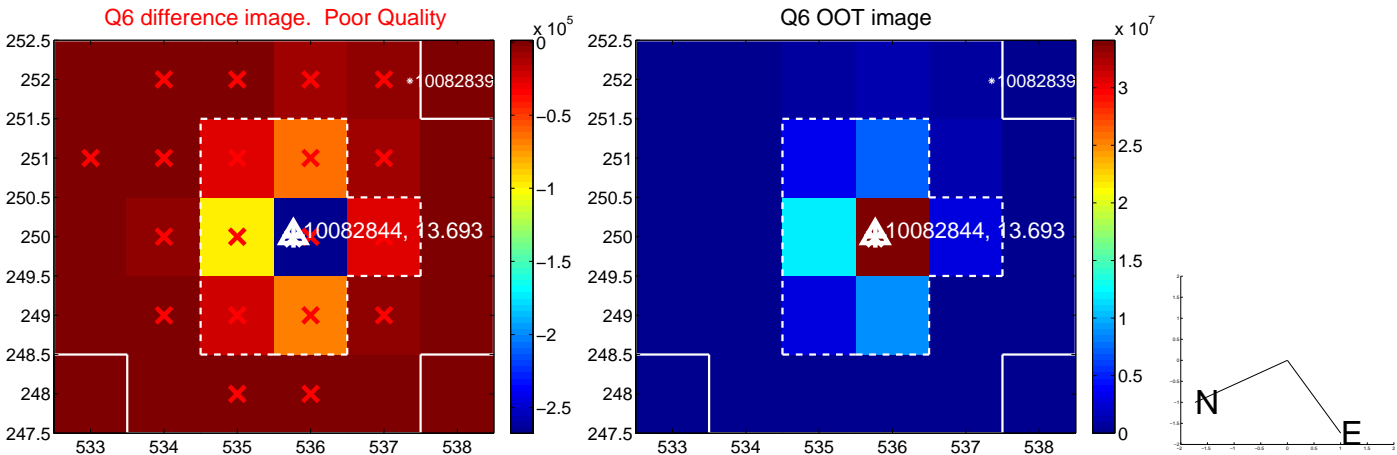
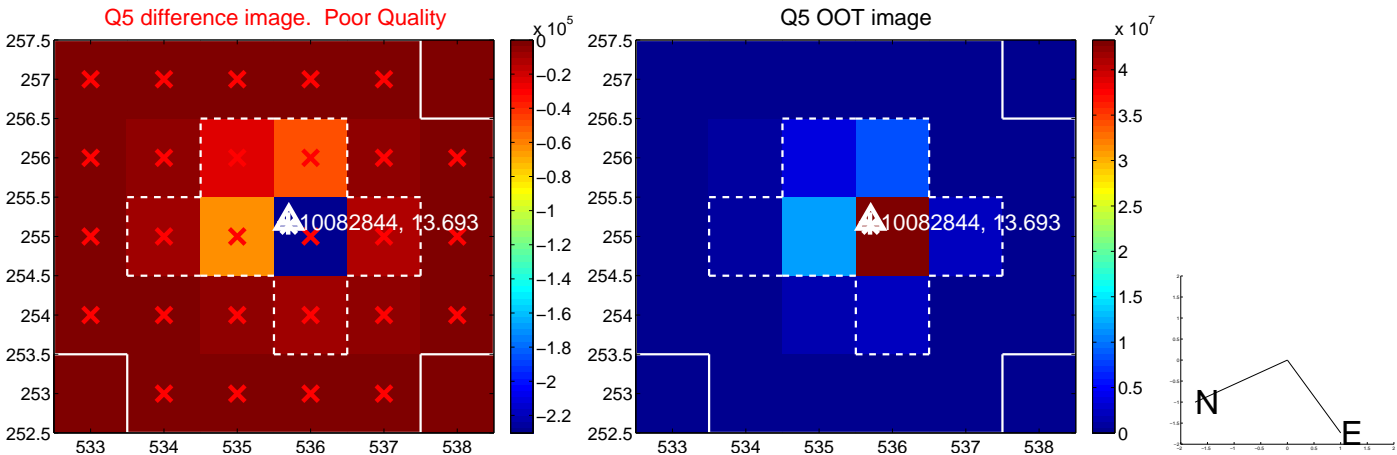


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

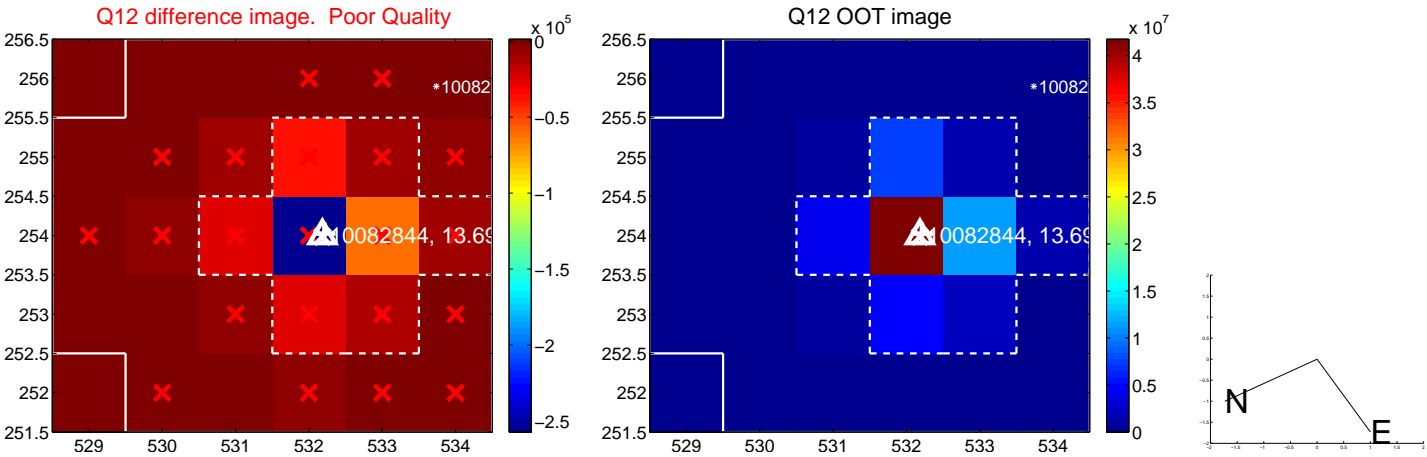
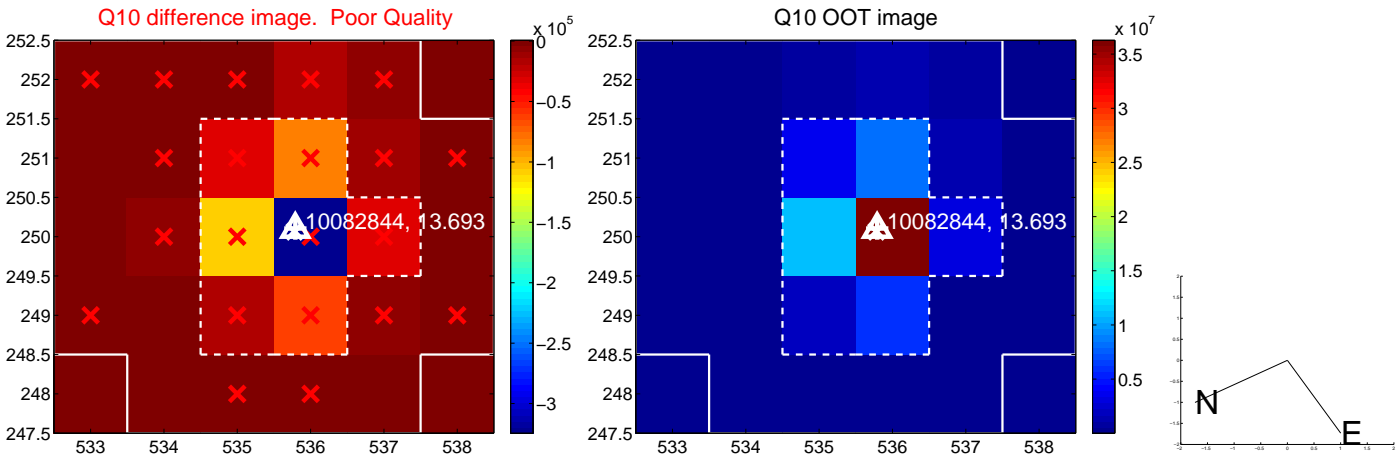
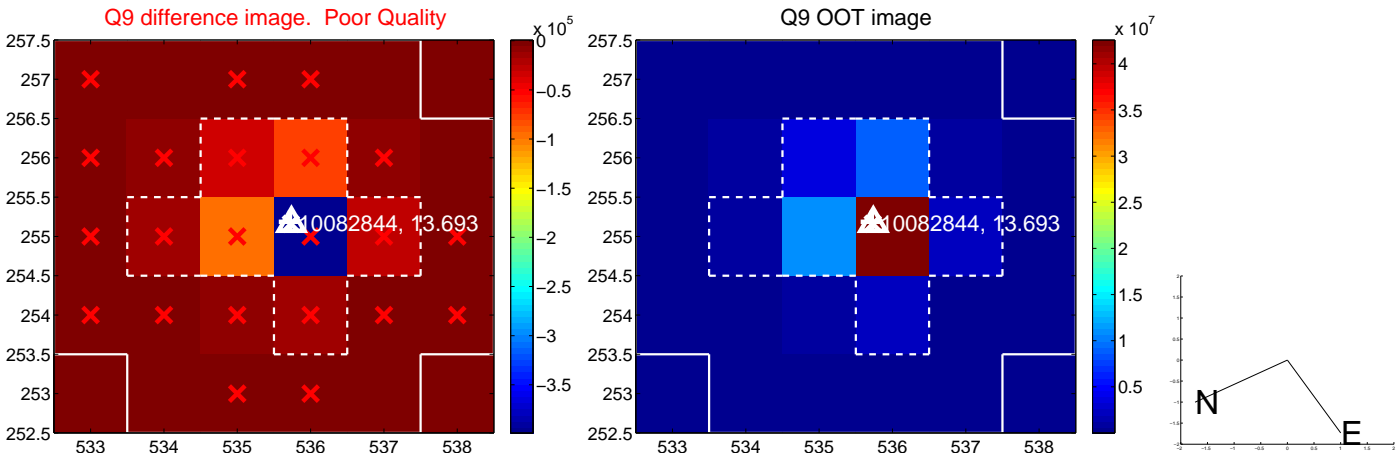
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



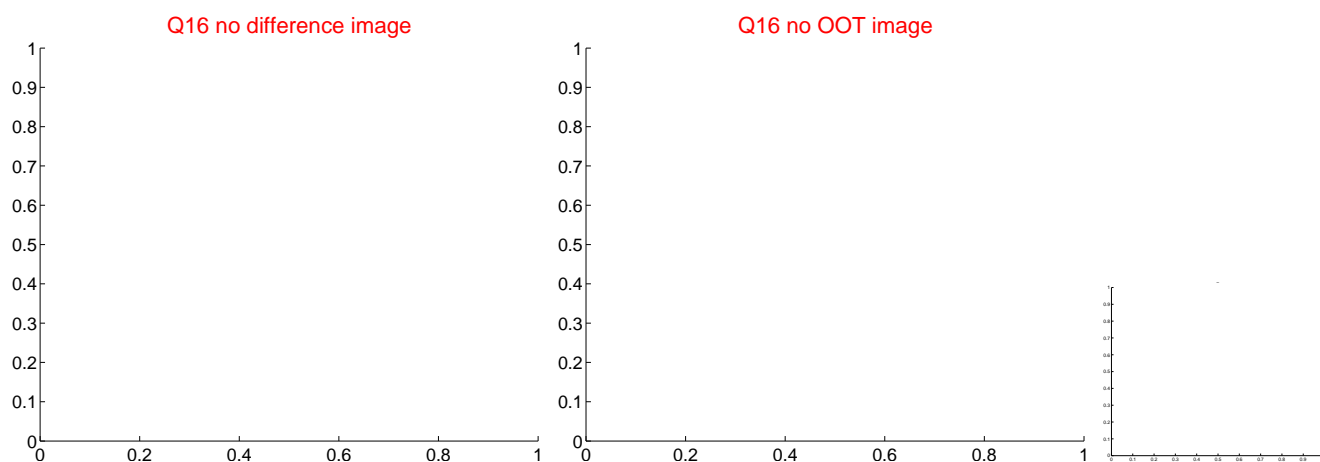
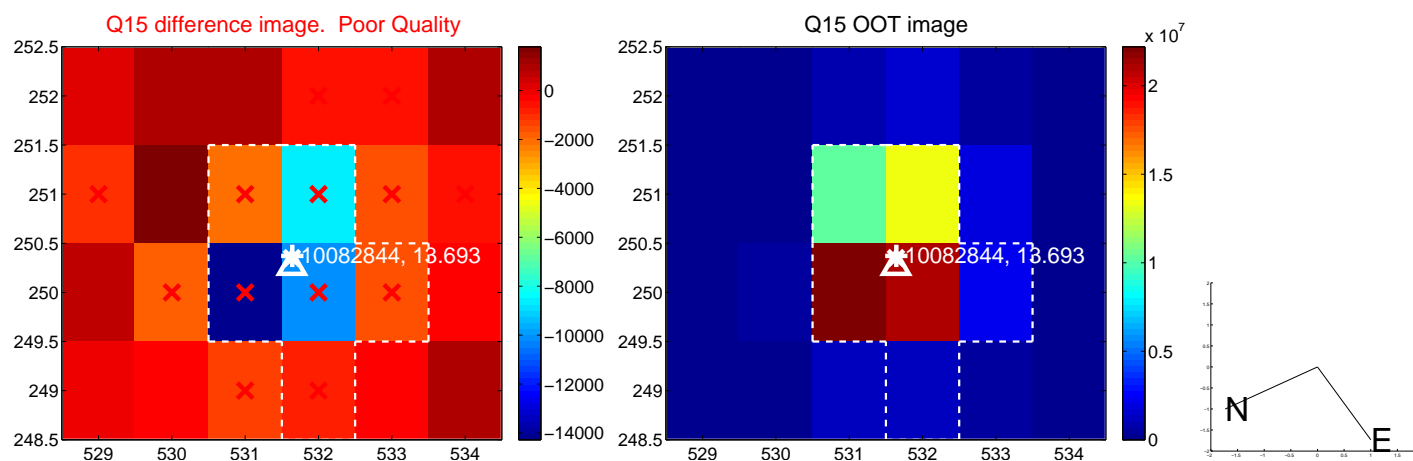
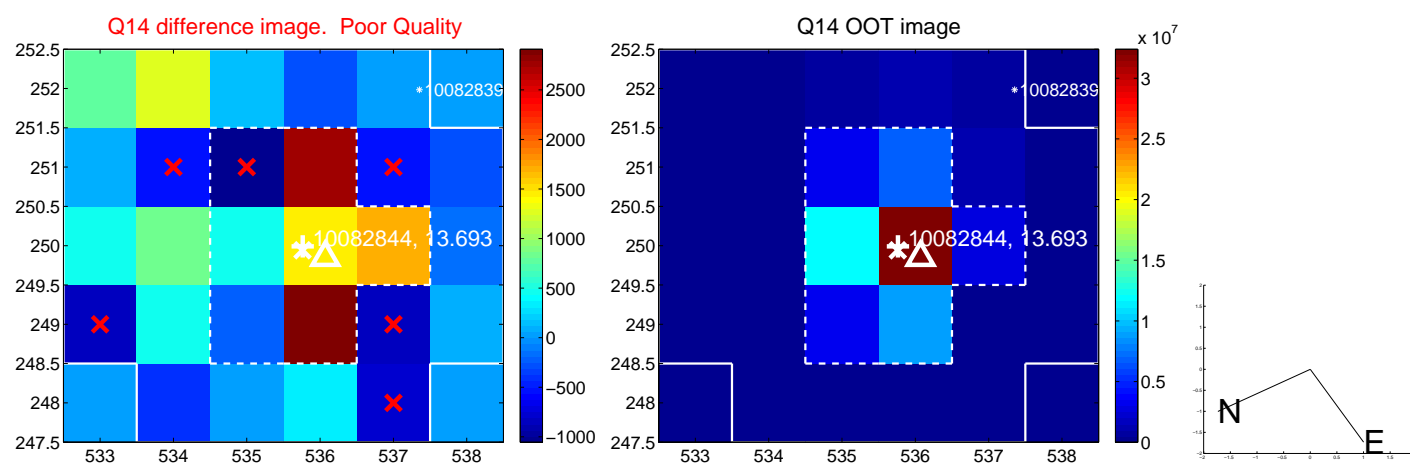
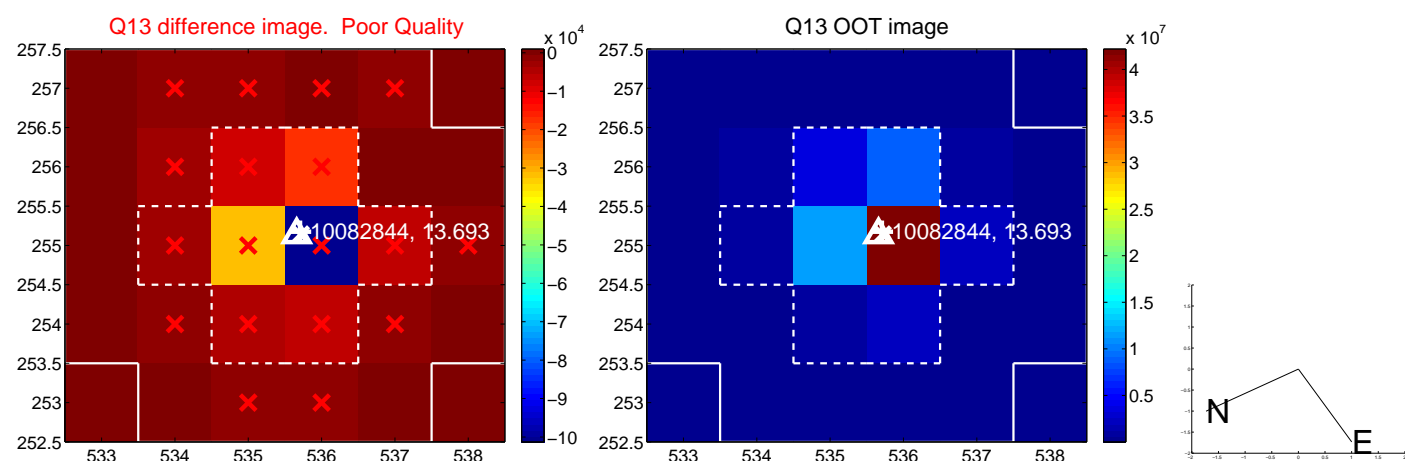
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



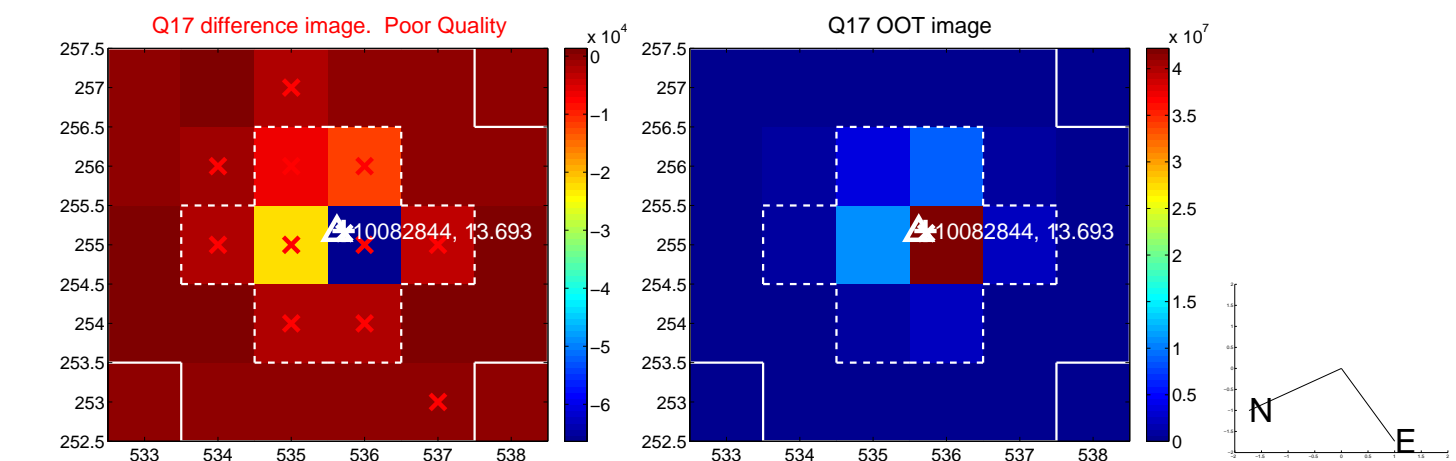
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



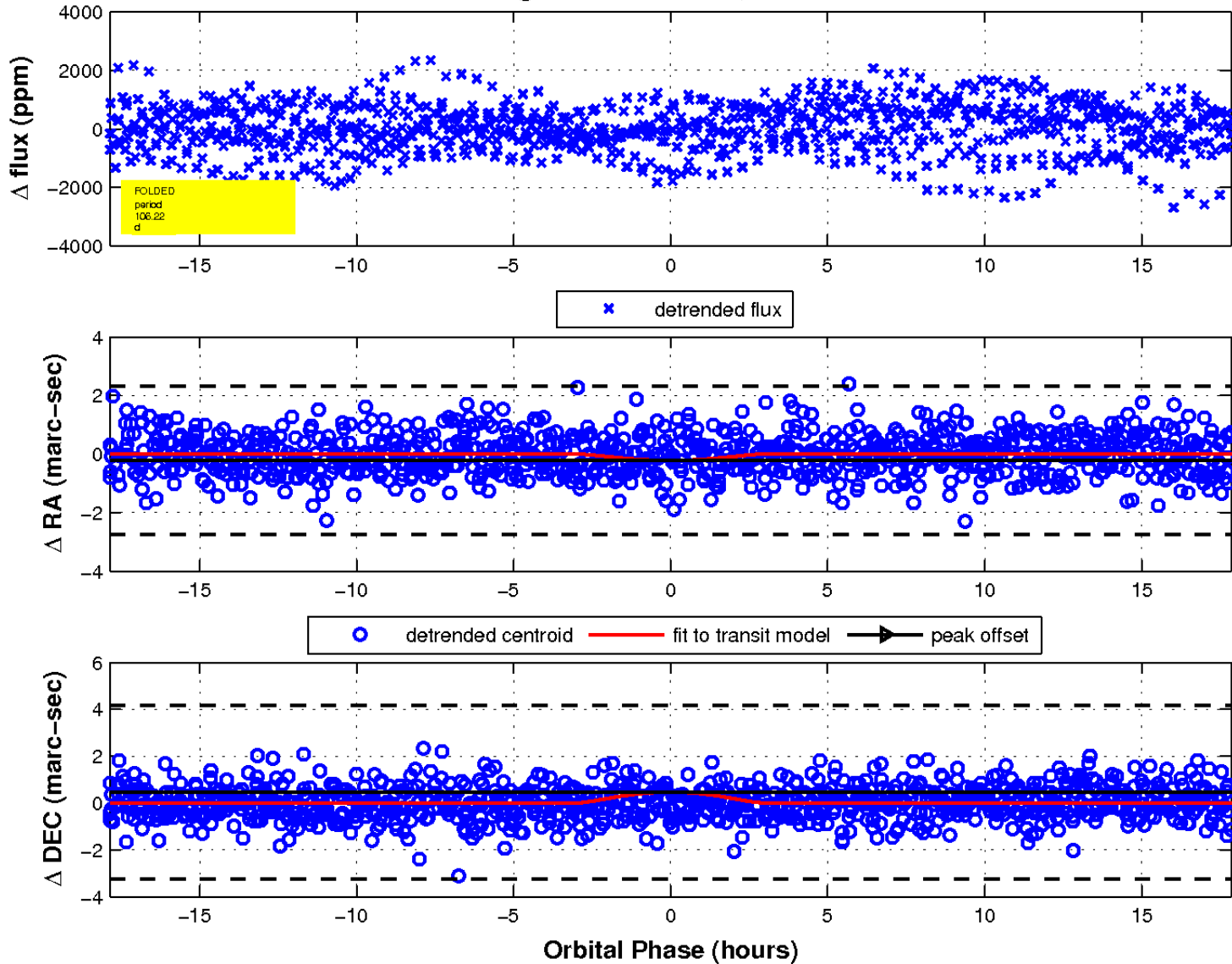
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination

