

# KIC 008264037

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008264037-01	OBS	No	0.694009	131.848052	451.6	0.920	13.6	16.9	2.78	7682	6.99	65863.84
008264037-02	OBS	No	0.663828	131.940832	558.6	7.545	11.2	15.5	2.78	7682	11.78	69886.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008264037-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008264037-02	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

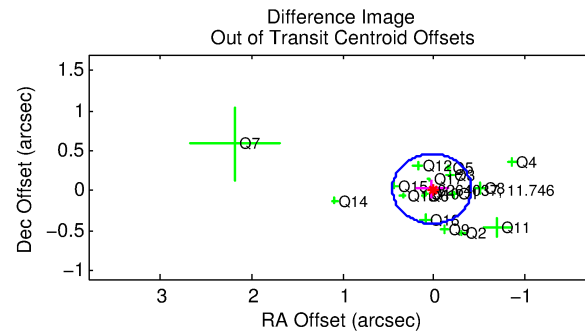
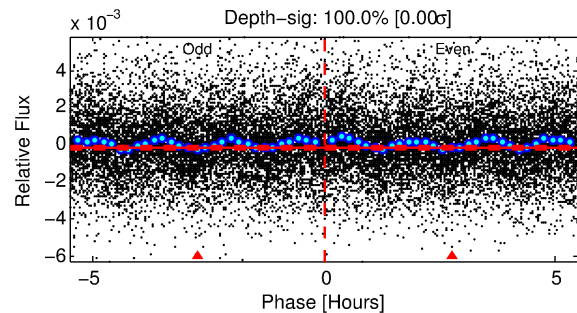
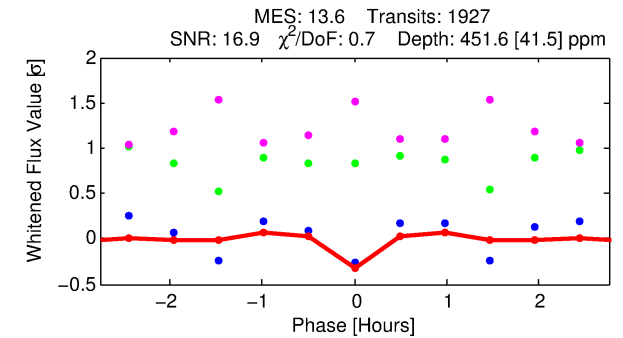
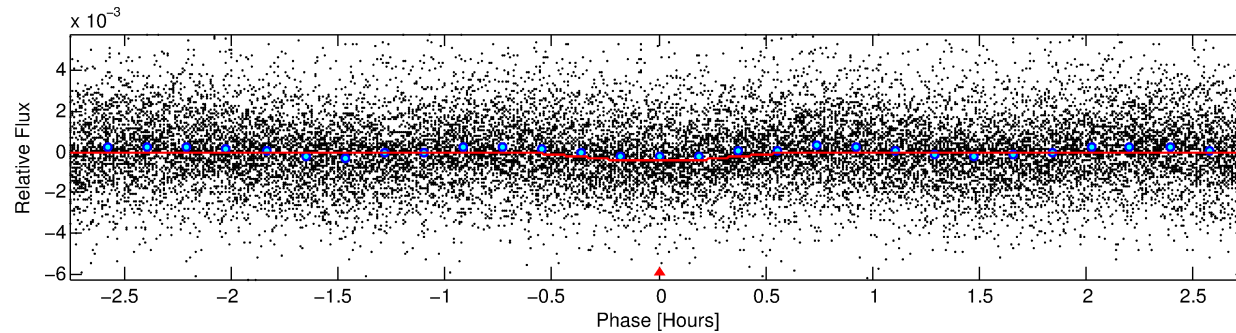
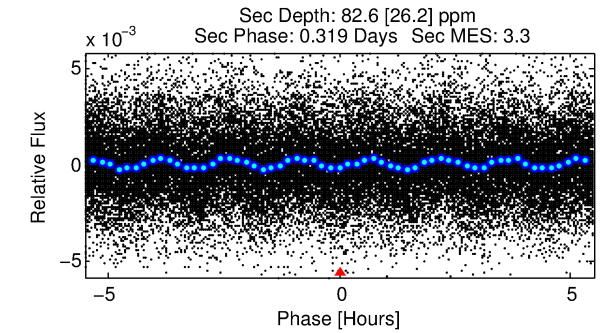
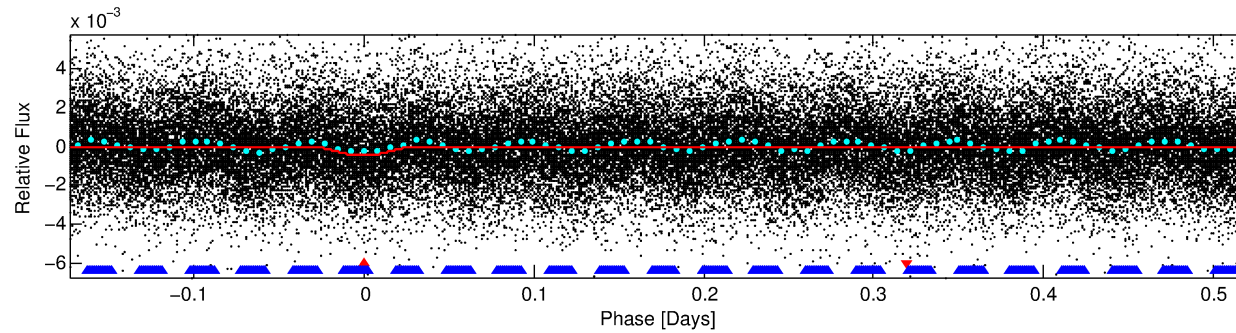
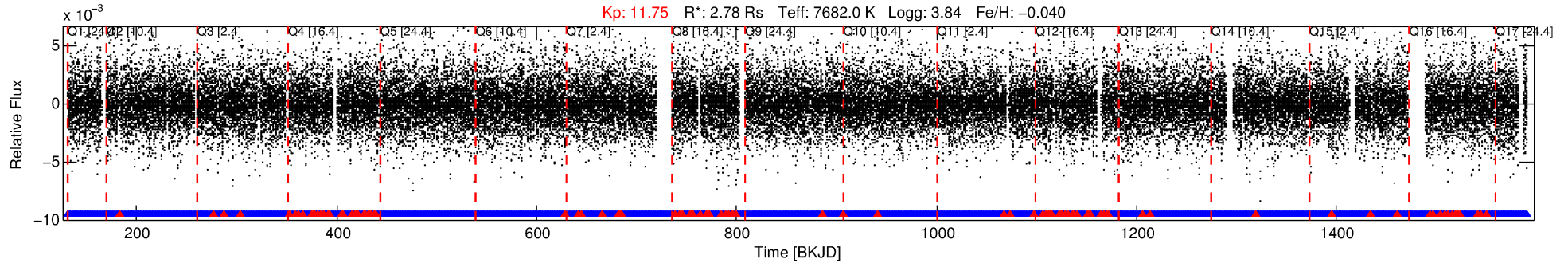
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008264037-01

No Significant Match Found

# DV One-Page Summary

KIC: 8264037 Candidate: 1 of 2 Period: 0.694 d



## DV Fit Results:

Period = 0.69401 [0.00001] d  
Epoch = 131.8481 [0.0006] BKJD  
 $R_p/R^* = 0.0230$  [0.0046]  
 $a/R^* = 2.85$  [2.90]  
 $b = 0.91$  [0.22]  
 $\text{Seff} = 65863.84$  [37496.78]  
 $T_{\text{eq}} = 4085$  [581] K  
 $R_p = 6.99$  [2.96]  $R_e$   
 $a = 0.0192$  [0.0067] AU  
 $A_g = 0.34$  [0.25]  $[-2.59\sigma]$   
 $T_{\text{eff}} = 4827$  [646] K  $[0.85\sigma]$

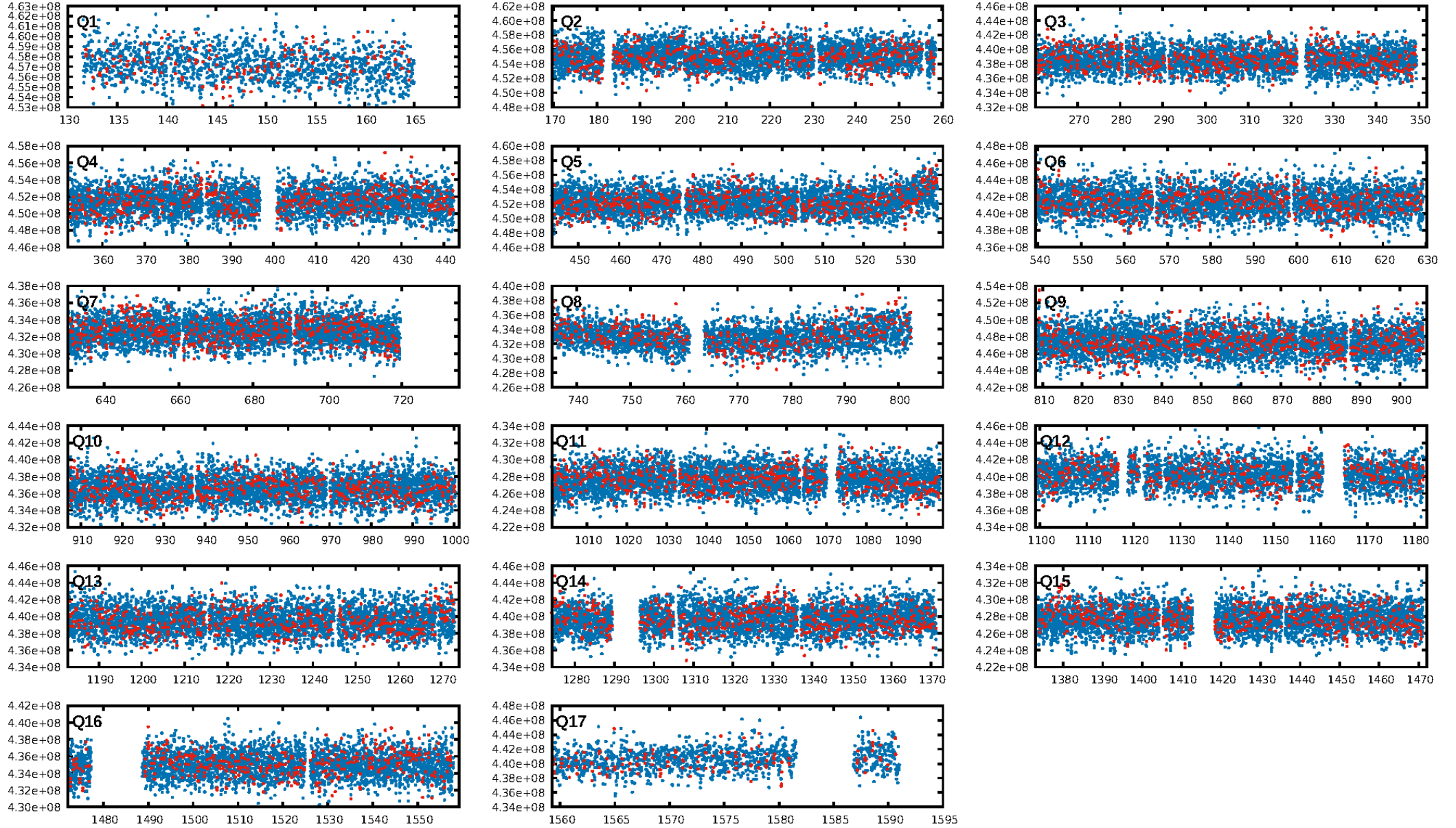
## DV Diagnostic Results:

ShortPeriod-sig: 7.6% [0.10σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.94 [1735/1841]  
GhostDiagnostic-chr: 1.551  
Centroid-sig: N/A  
Centroid-so: 0.148 arcsec [2.50σ]  
OotOffset-rm: 0.029 arcsec [0.20σ]  
KicOffset-rm: 0.137 arcsec [0.88σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.71 [12/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:51:06 Z

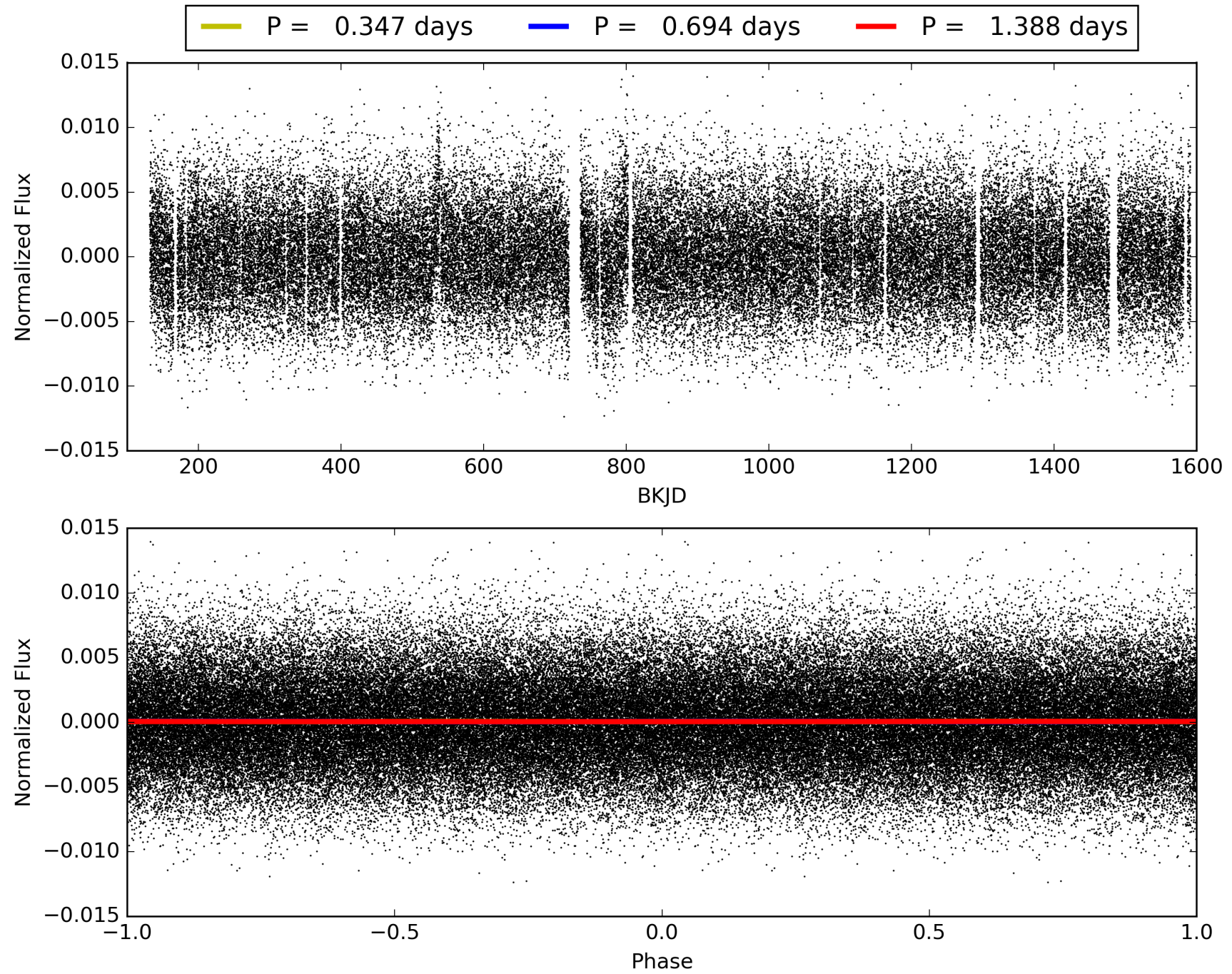
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008264037-01, PDC Light Curves



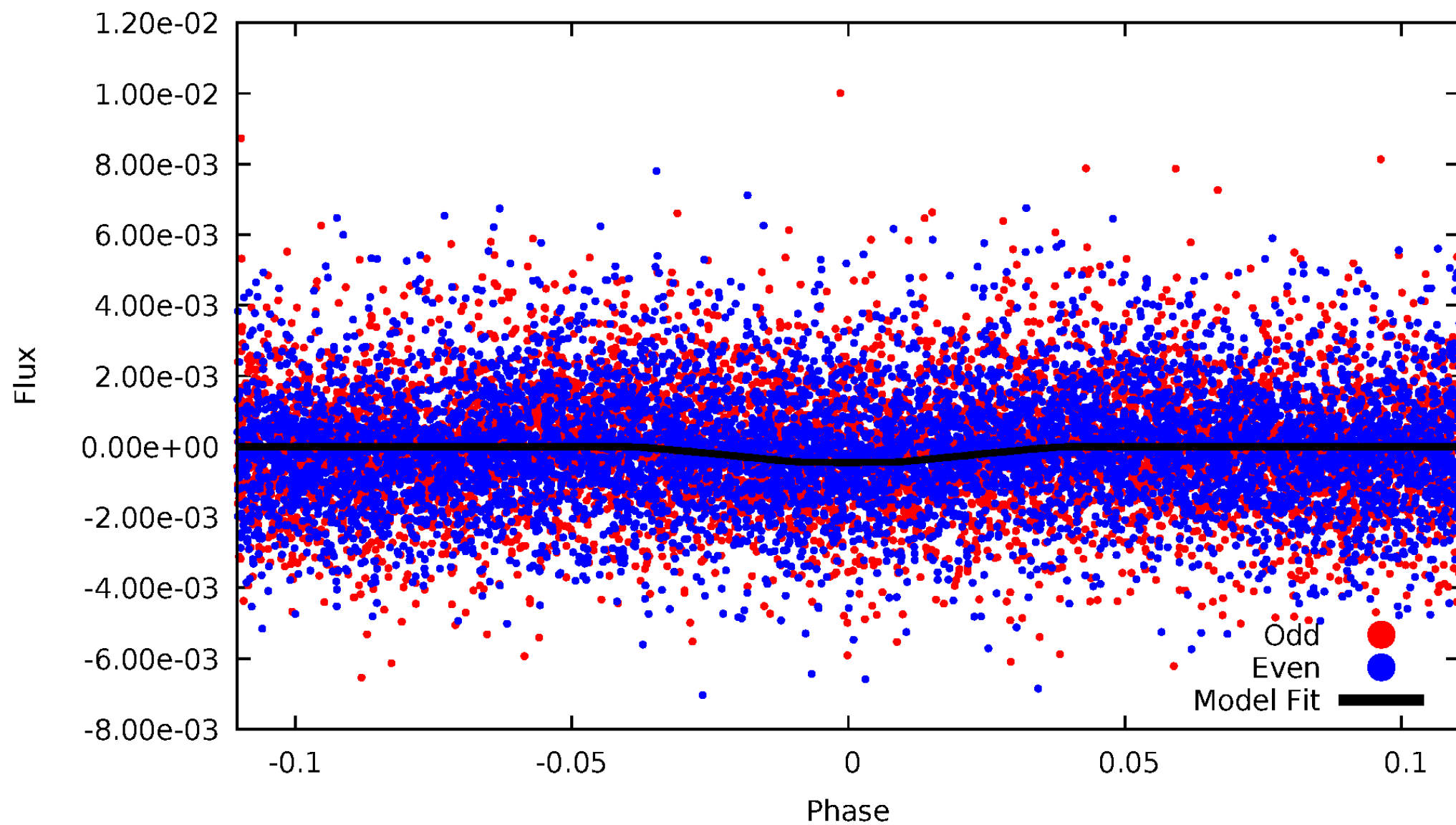


TCE 008264037-01



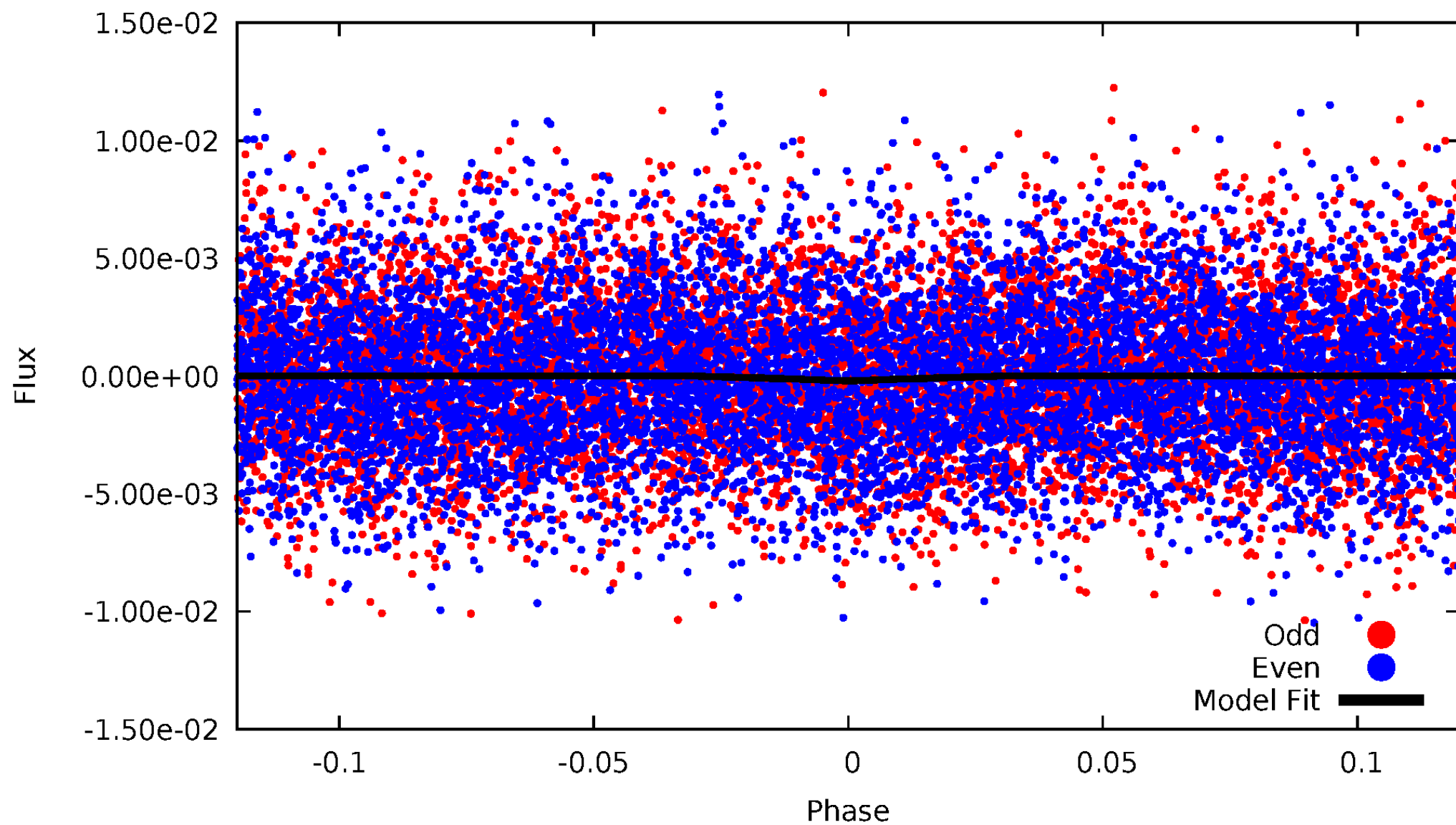
# DV Odd/Even

TCE 008264037-01

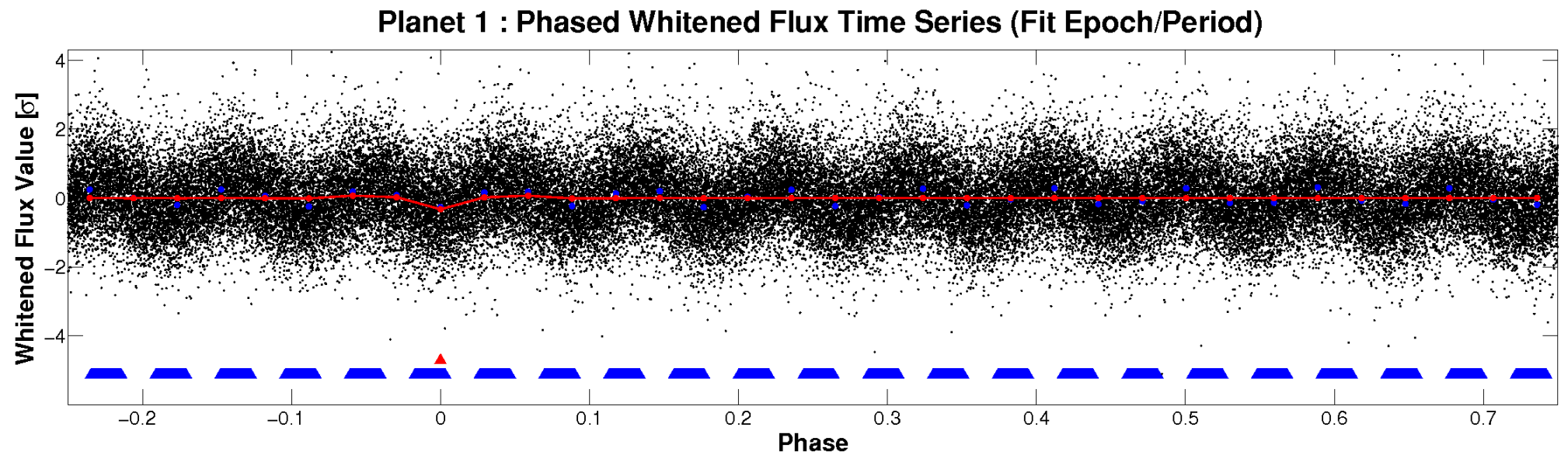
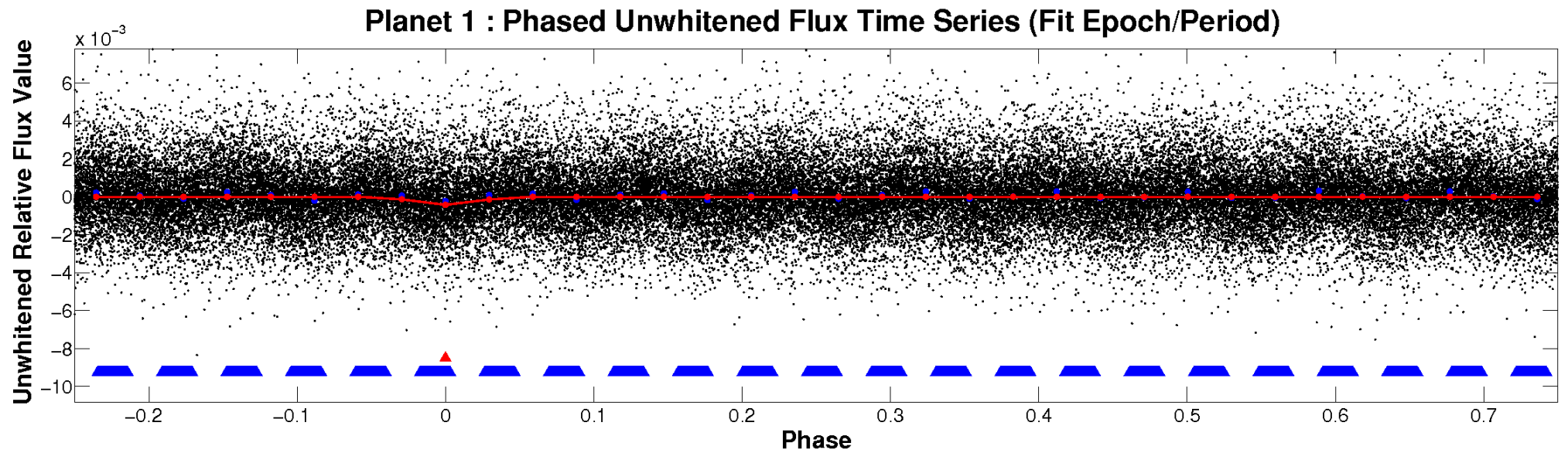


# ALT Odd/Even

TCE 008264037-01



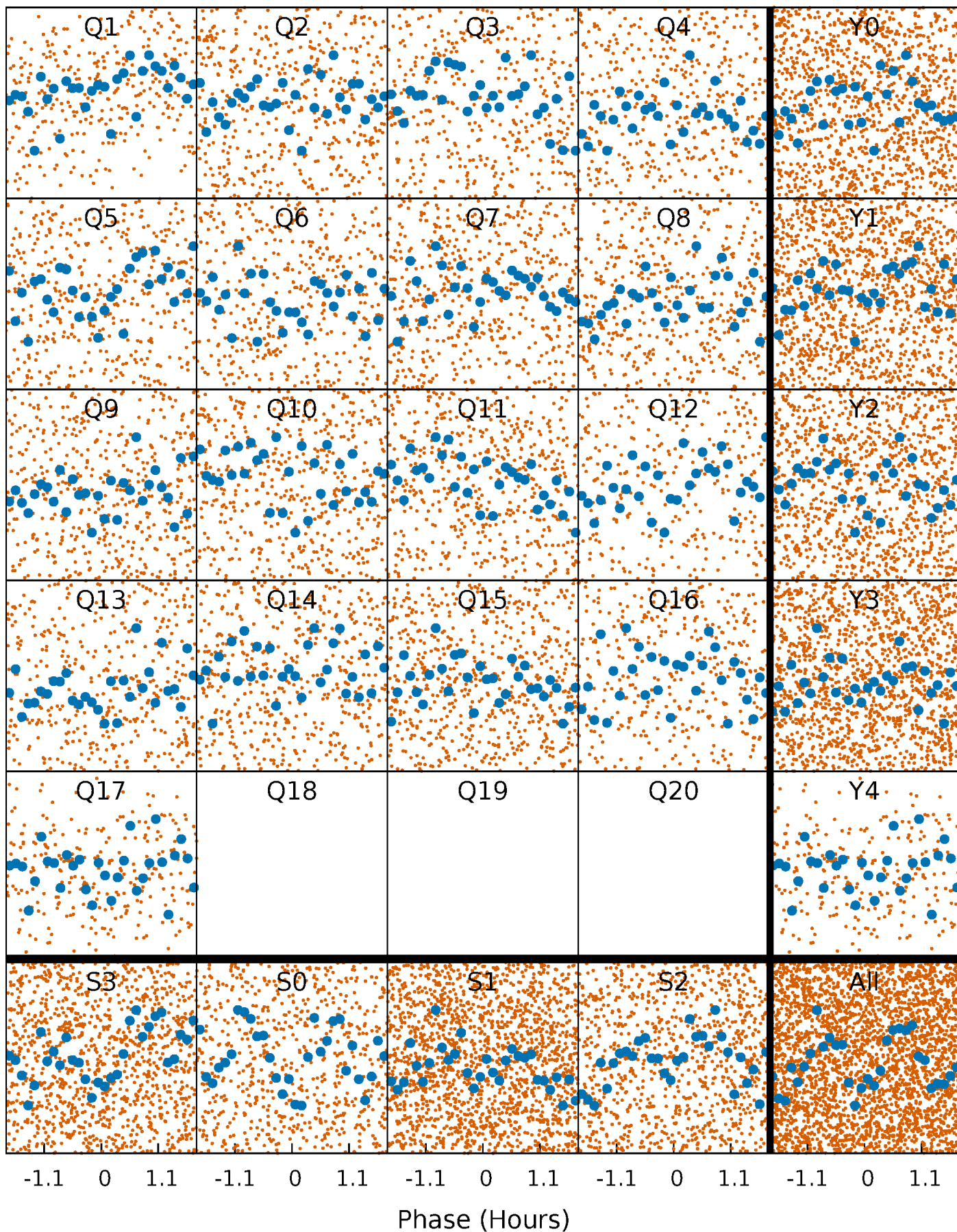
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

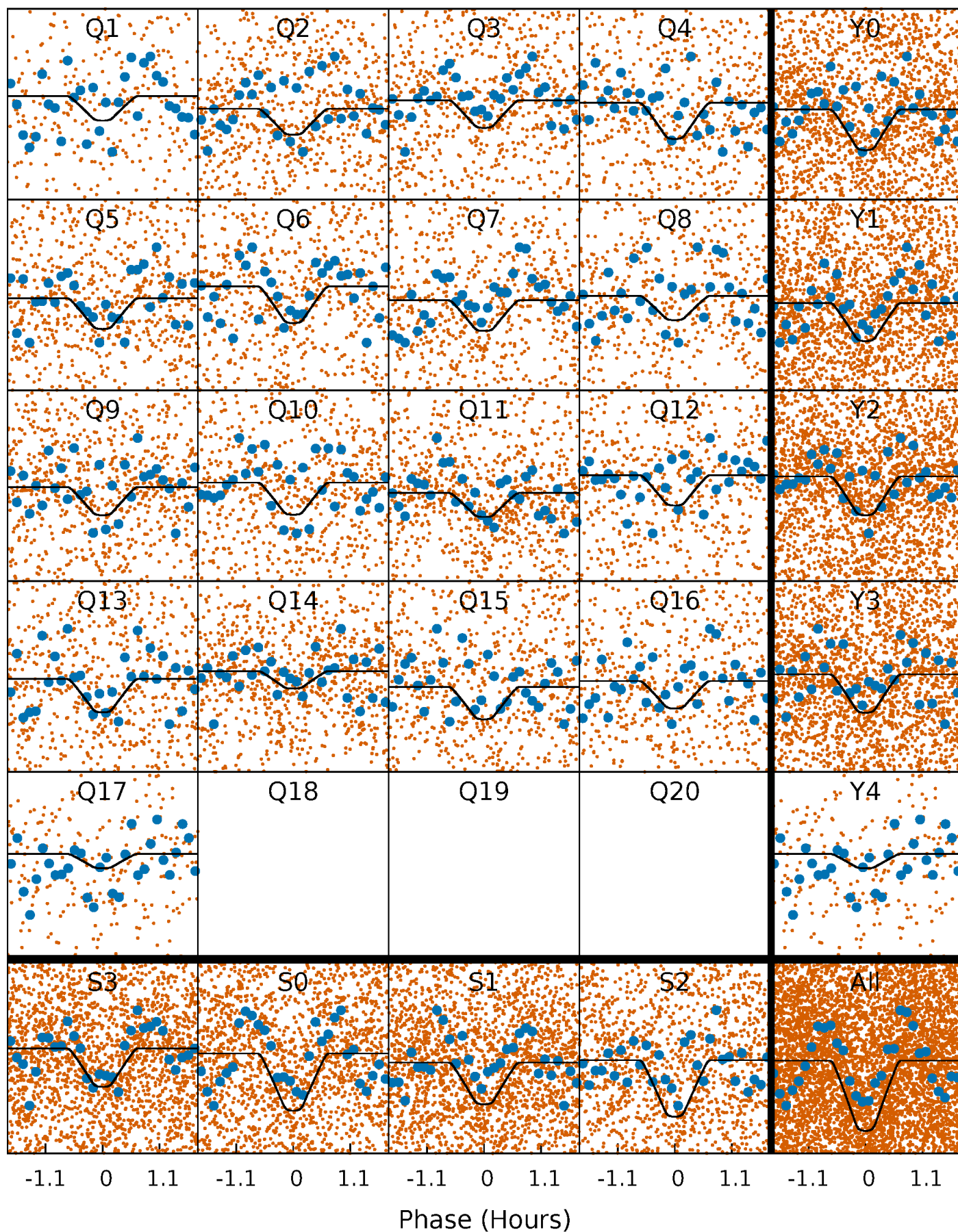
TCE 008264037-01 P= 0.694009 Days  $T_0=131.848052$  (BKJD)





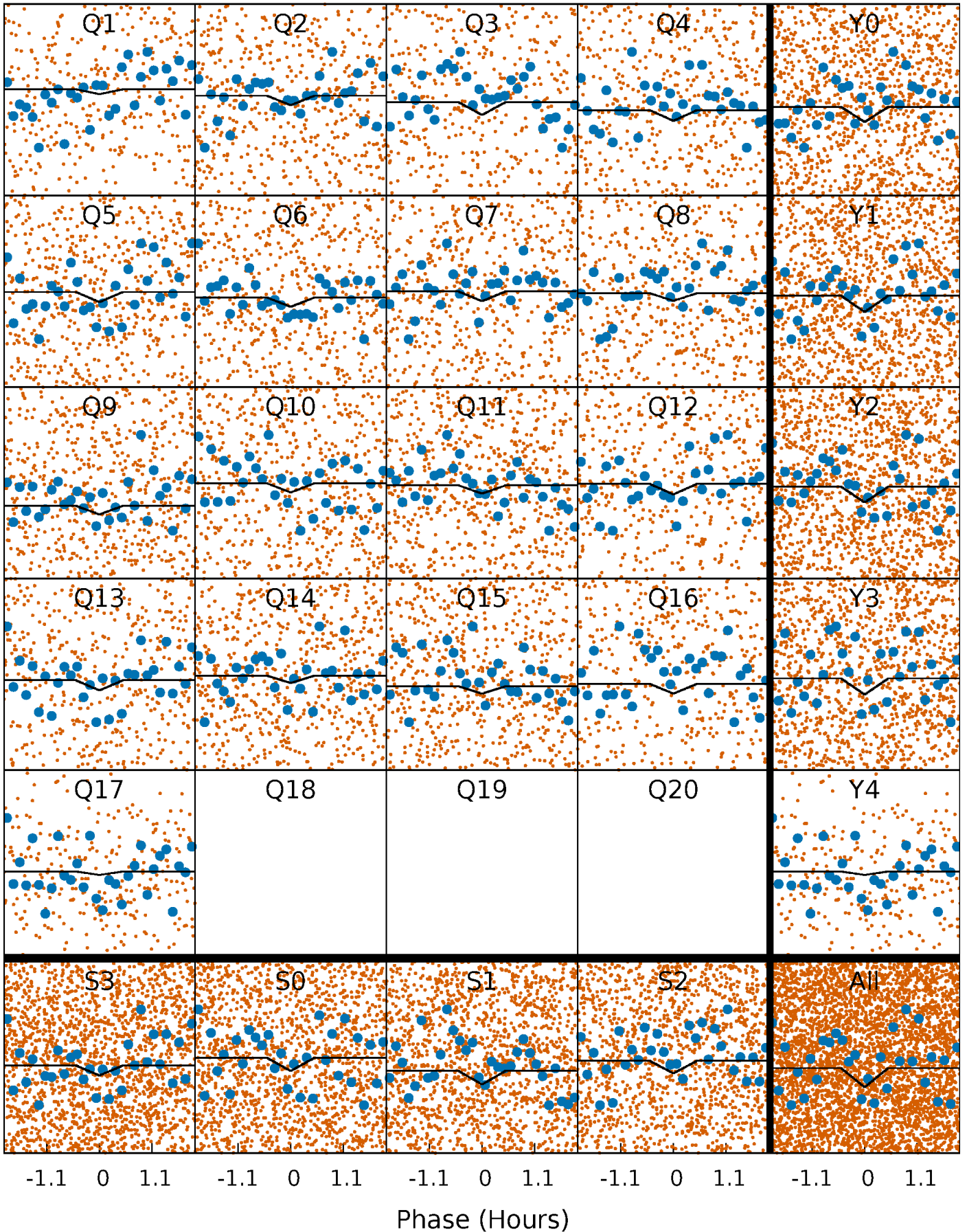
# DV Quarter-Phased Transit Curves

TCE 008264037-01   P= 0.694009 Days    $T_0=131.848052$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

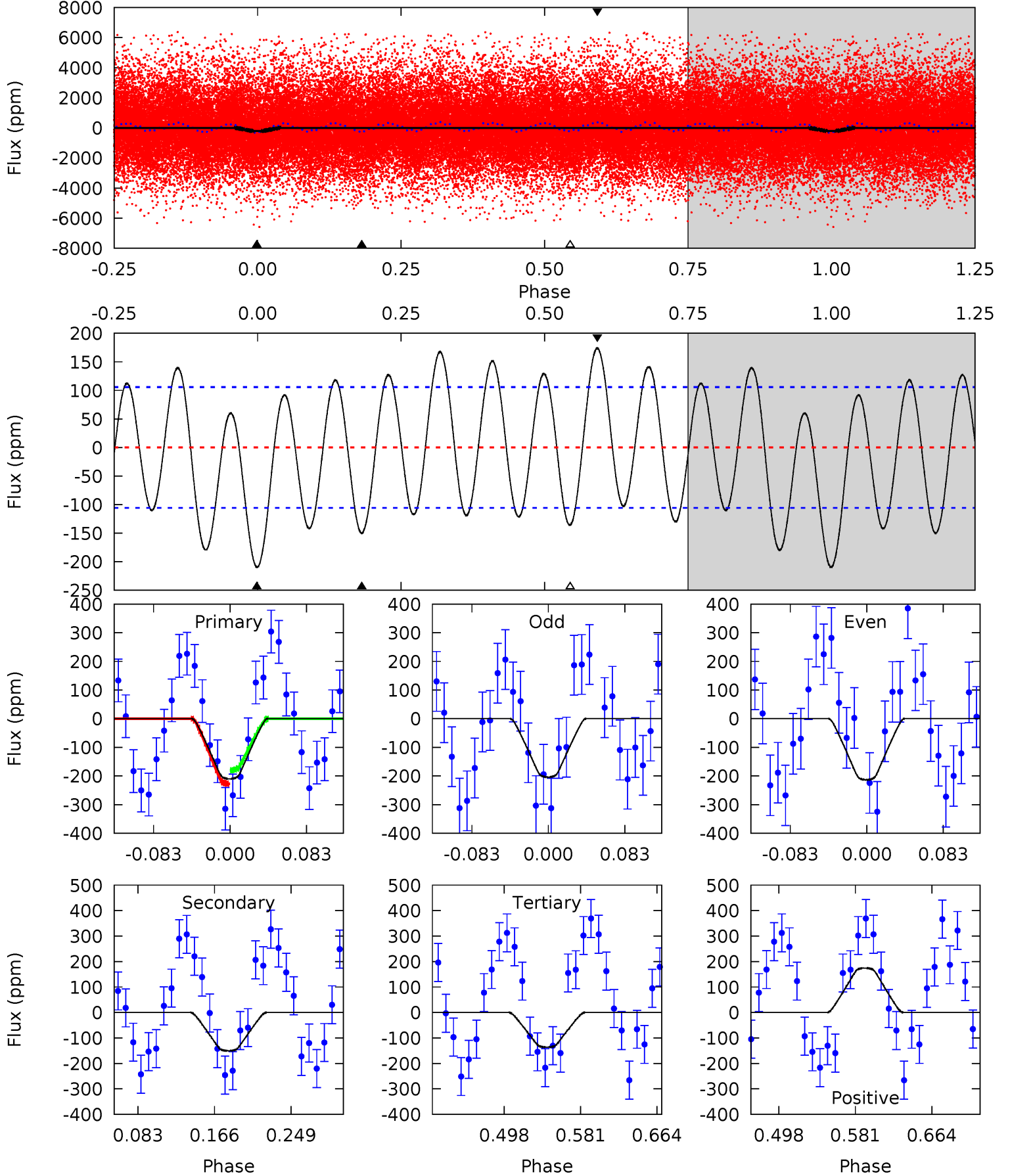
TCE 008264037-01 P= 0.694005 Days  $T_0=131.845858$  (BKJD)



# DV Model-Shift Uniqueness Test

008264037-01, P = 0.694009 Days, E = 131.154043 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
9.13	6.54	5.93	7.59	4.60	1.73	4.33	3.20	1.54	0.61	-1.05	0.21	0.61	0.45	1.04

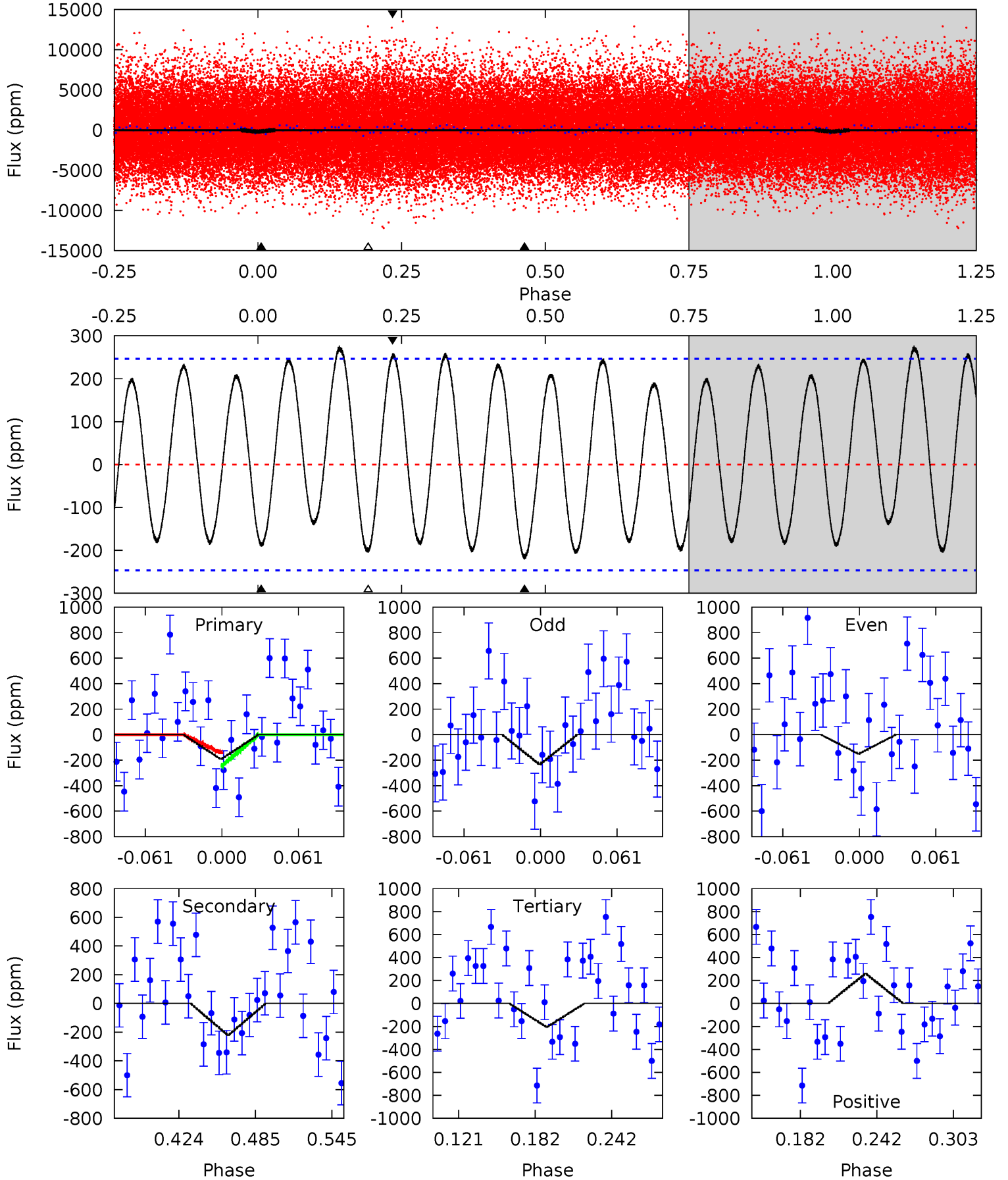




# Alt Model-Shift Uniqueness Test

008264037-01, P = 0.694005 Days, E = 131.151853 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
3.63	4.18	3.88	4.90	4.67	1.88	2.76	-0.25	-1.28	0.30	-0.72	0.79	0.60	0.56	1.06





### Stellar Parameters For KIC 008264037

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7682^{+214}_{-322}$	$3.838^{+0.315}_{-0.105}$	$-0.040^{+0.200}_{-0.300}$	$2.783^{+0.446}_{-1.041}$	$1.949^{+0.110}_{-0.439}$	$0.127^{+0.300}_{-0.043}$
	+3%/-4%	+8%/-3%	+500%/-750%	+16%/-37%	+6%/-23%	+236%/-34%
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 008264037-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-150 \pm 23$	$6.62^{+1.69}_{-1.65}$	$5592^{+375}_{-510}$	$4794^{+870}_{-768}$	$0.677^{+0.512}_{-0.249}$
Alt.	$-221 \pm 53$	$4.02^{+1.56}_{-1.46}$	$5595^{+351}_{-547}$	$7544^{+2529}_{-1391}$	$2.679^{+3.756}_{-1.371}$

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

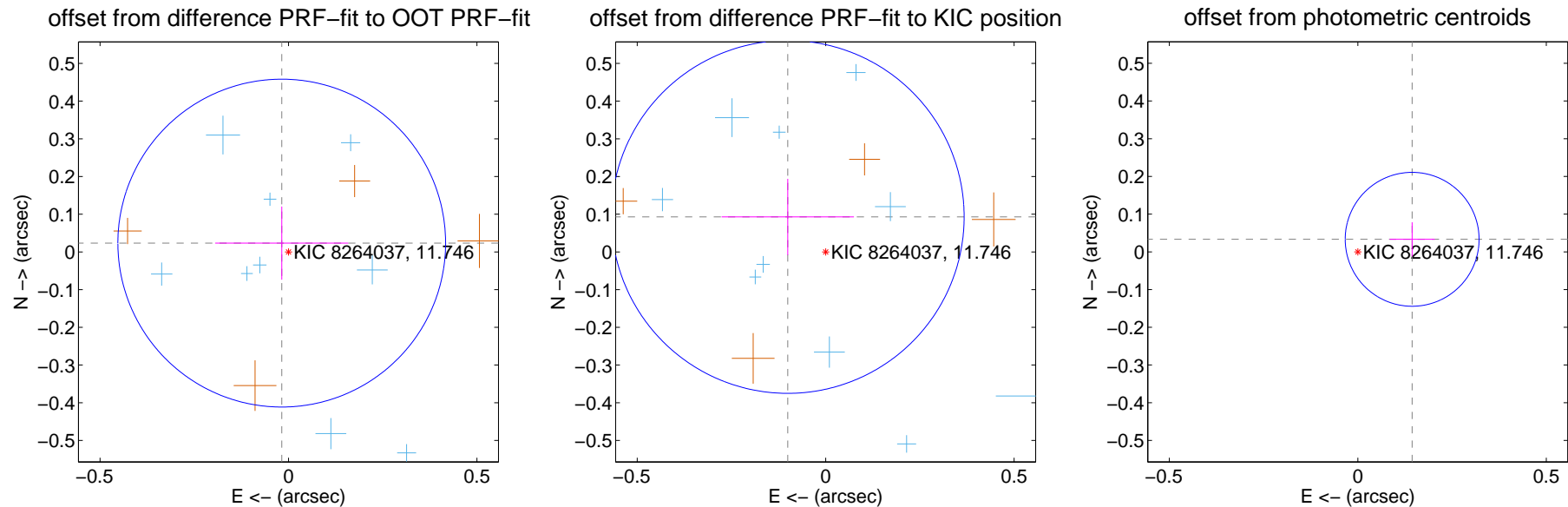
## DV Centroid Data

Supplemental centroid analysis for 008264037-01. **Kepler magnitude: 11.75.** Transit SNR 16.92

There are 12 quarters with good PRF difference image offsets

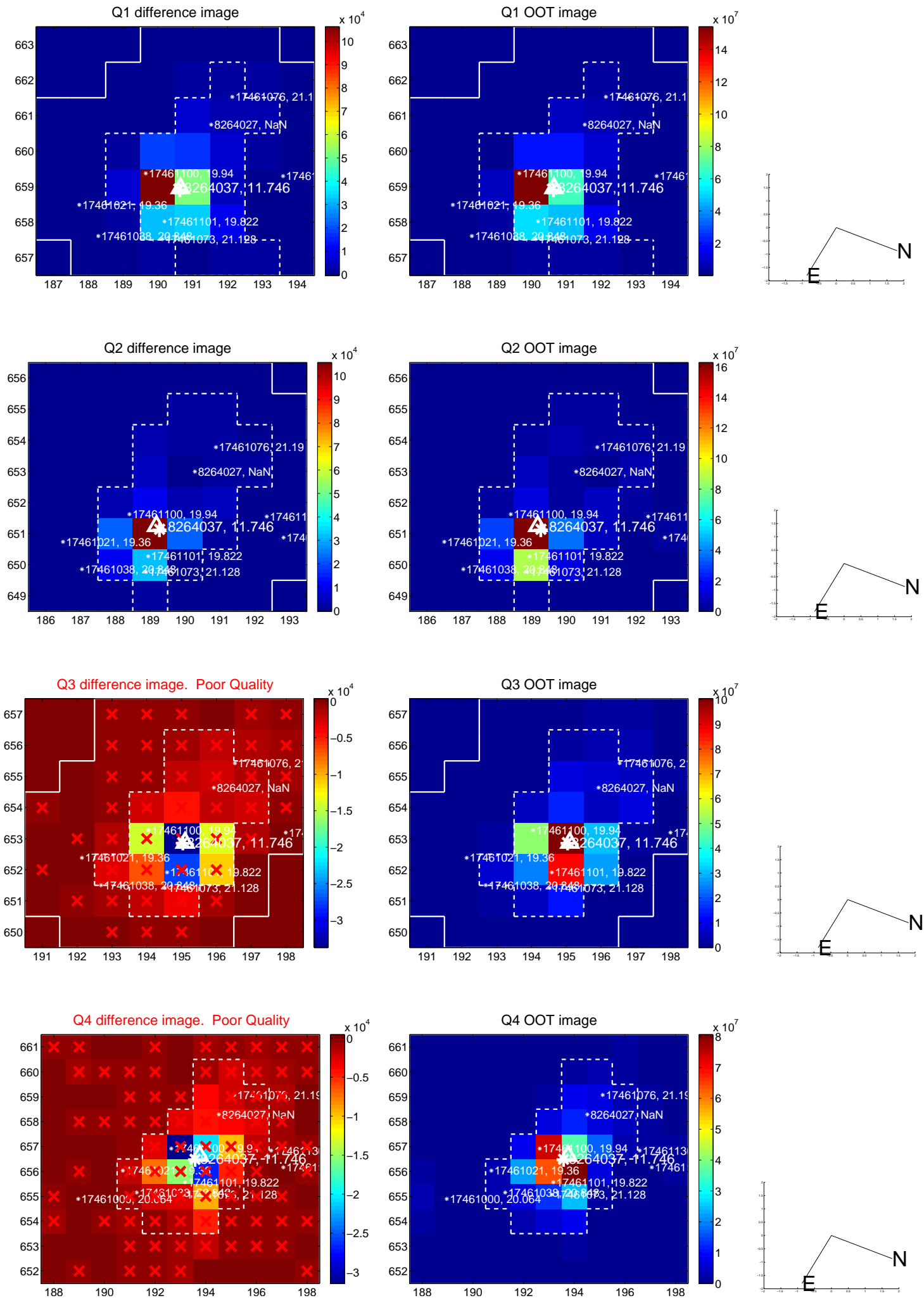
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.029 \pm 0.145$	0.20	$0.018 \pm 0.176$	$0.023 \pm 0.097$
PRF-fit source offset from KIC position	$0.137 \pm 0.156$	0.88	$0.101 \pm 0.176$	$0.093 \pm 0.101$
photometric centroid source offset	$0.15 \pm 0.06$	2.50	$-0.14 \pm 0.06$	$0.03 \pm 0.05$

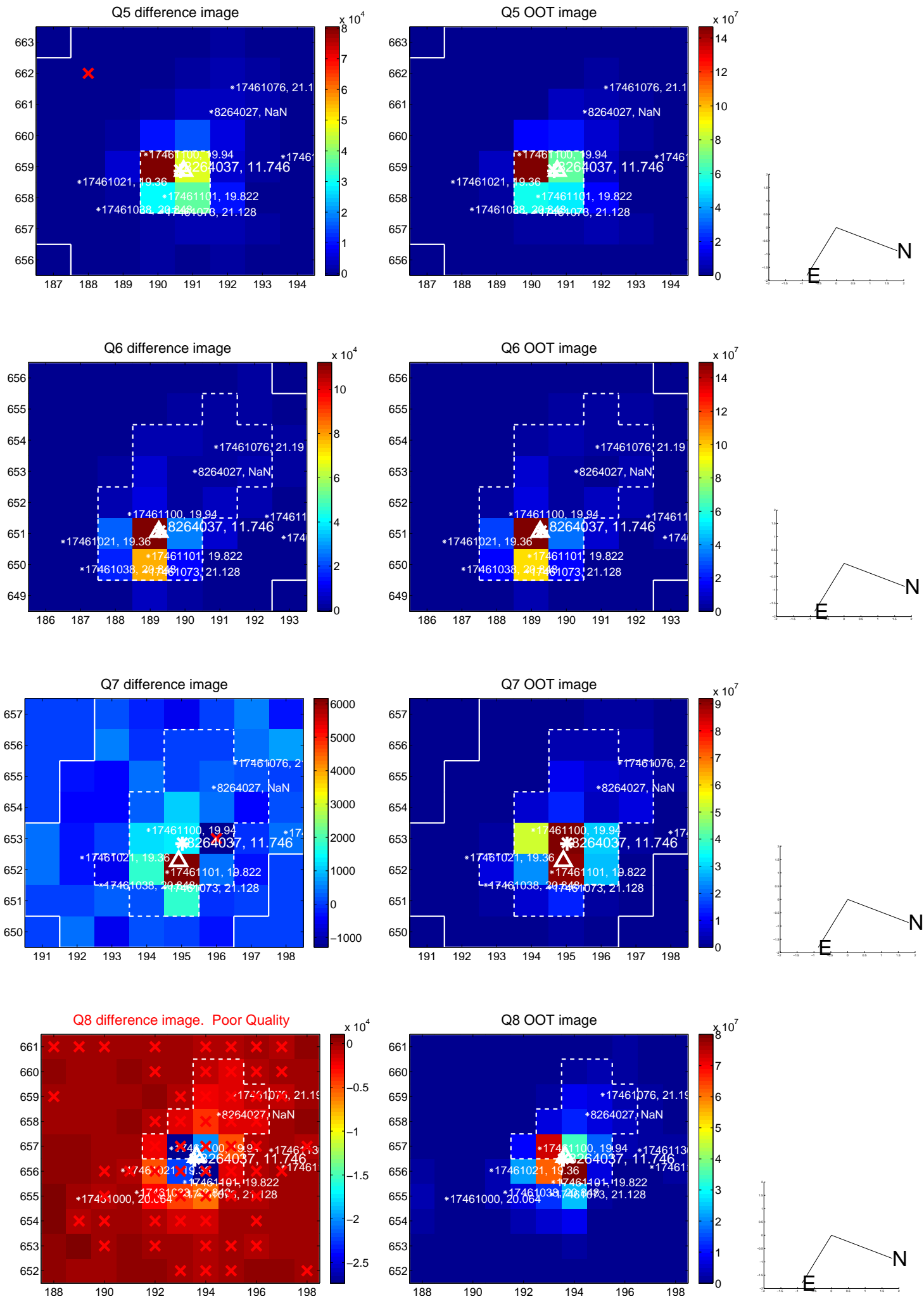


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

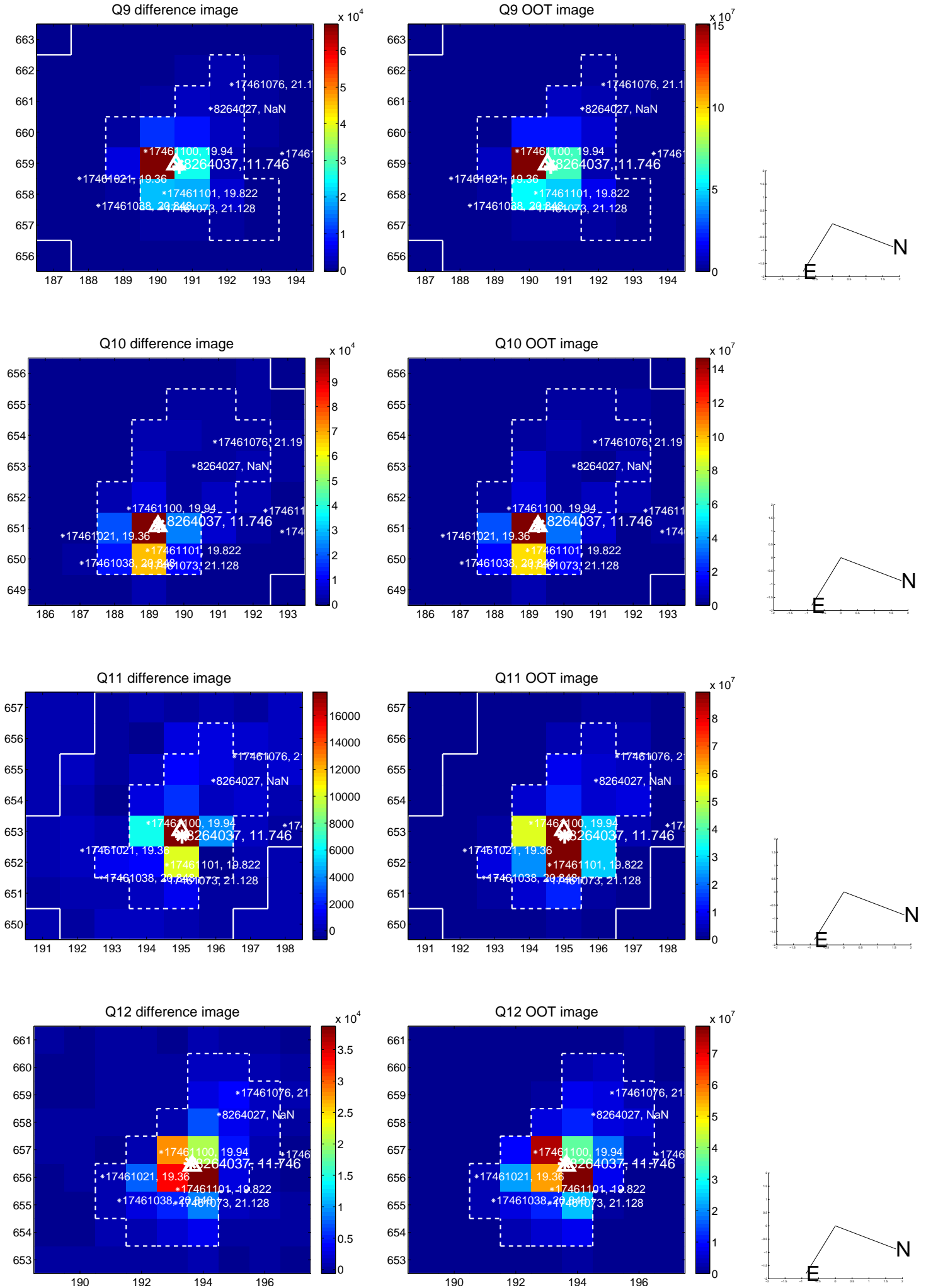


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

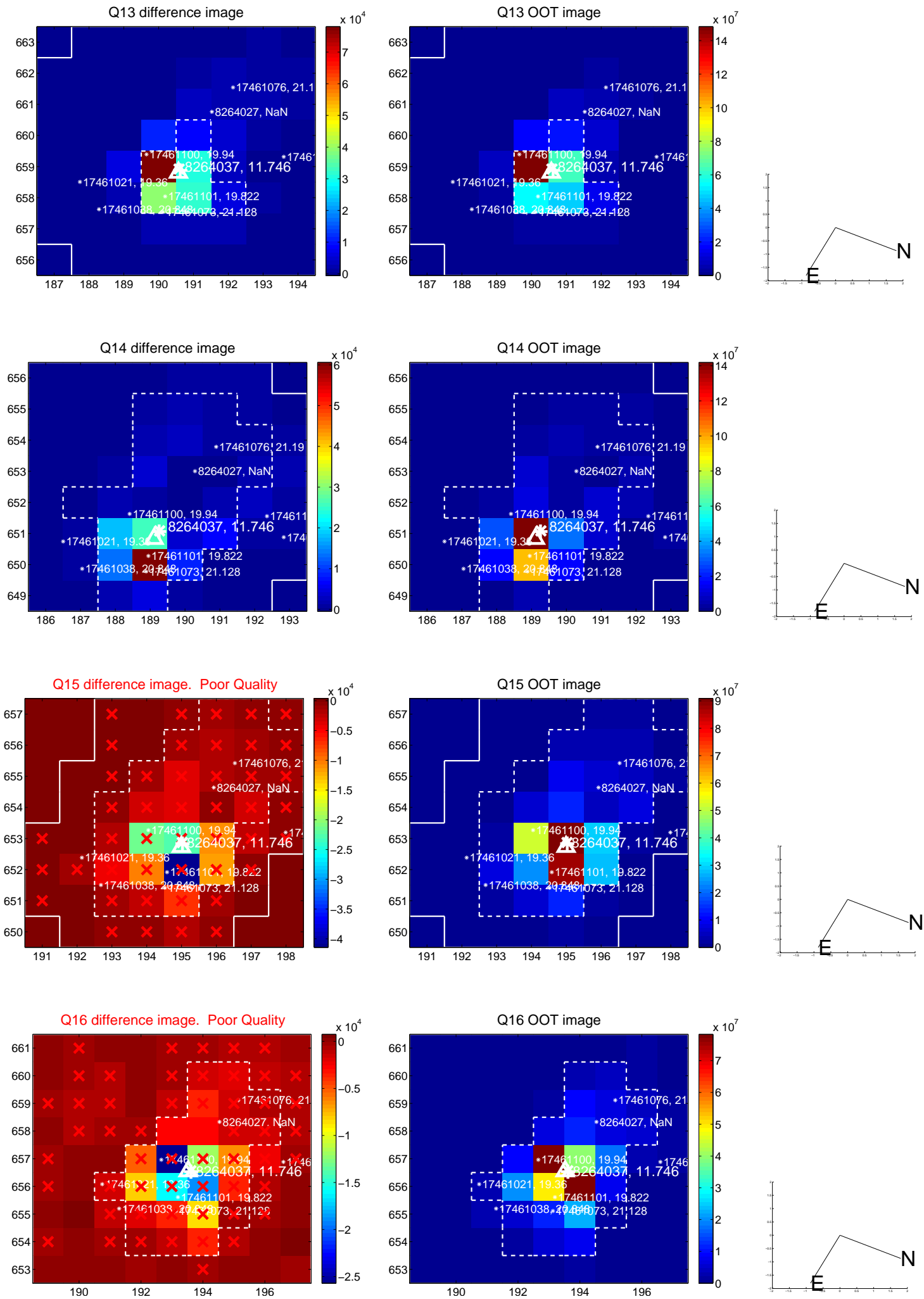




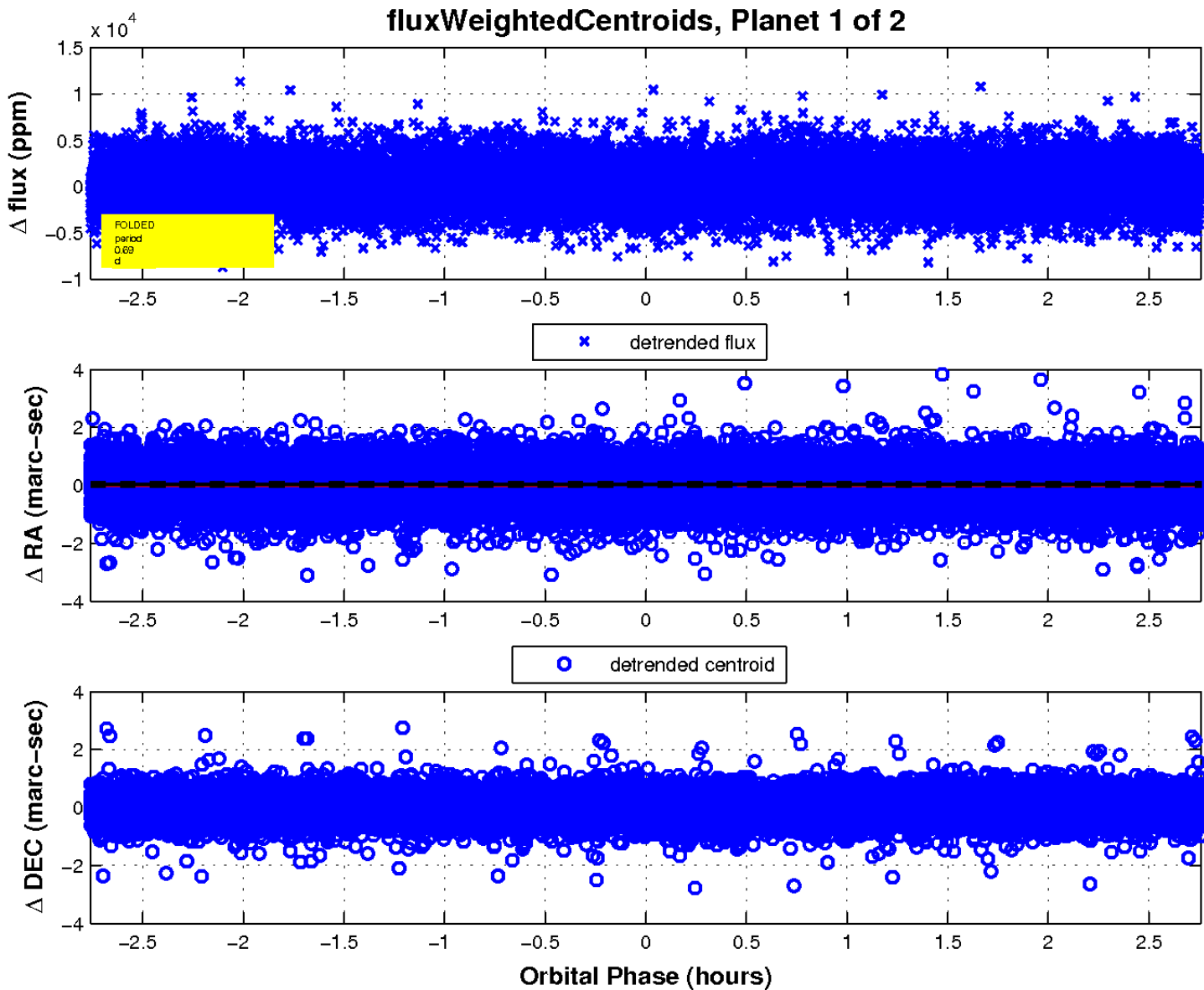
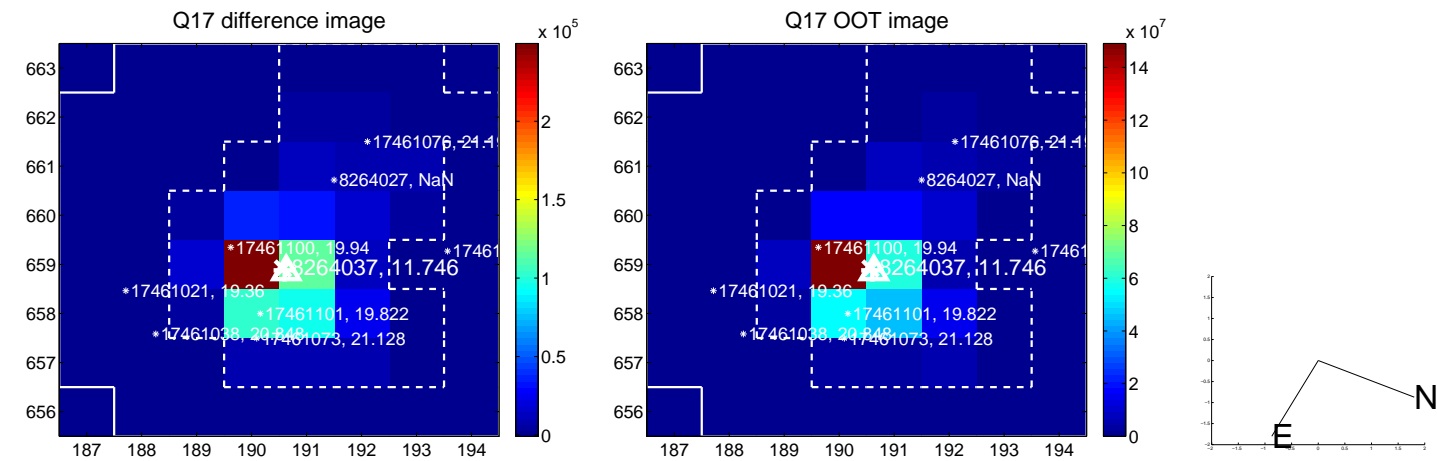
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

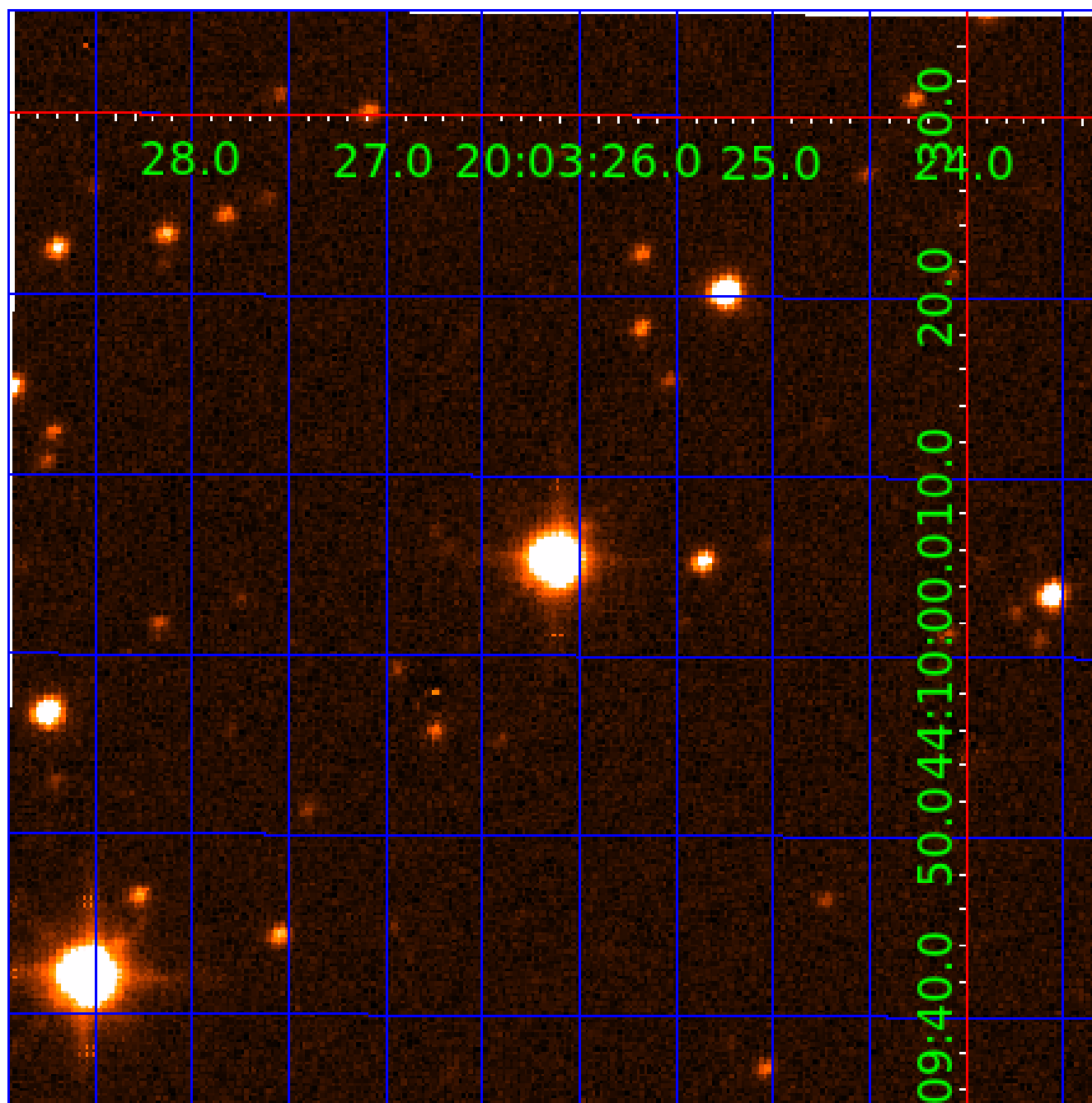


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008264037

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008264037-01	OBS	No	0.694009	131.848052	451.6	0.920	13.6	16.9	2.78	7682	6.99	65863.84
008264037-02	OBS	No	0.663828	131.940832	558.6	7.545	11.2	15.5	2.78	7682	11.78	69886.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008264037-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008264037-02	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

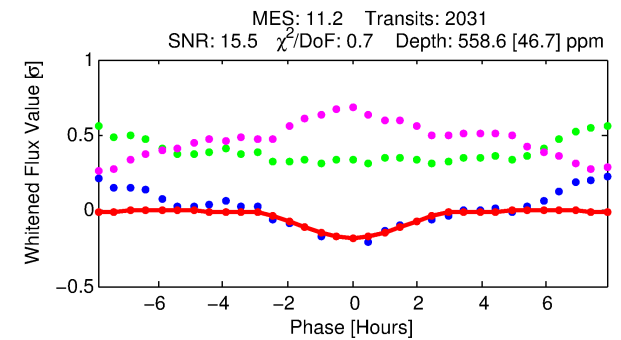
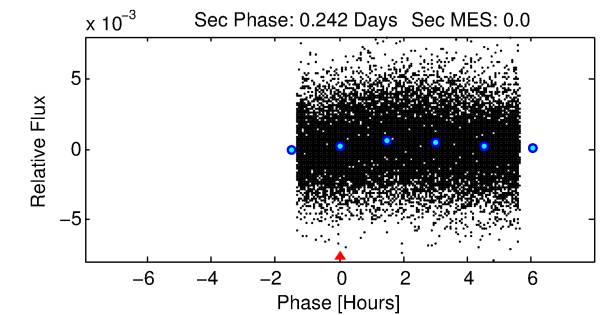
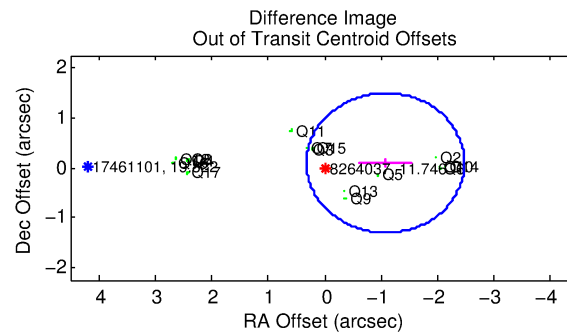
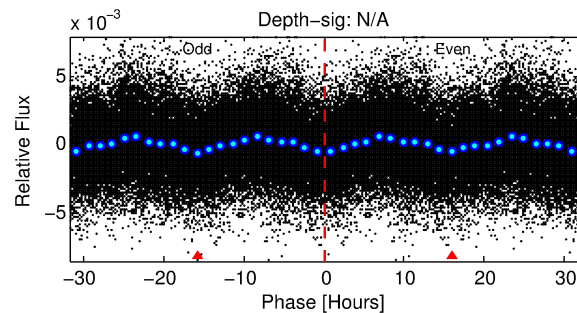
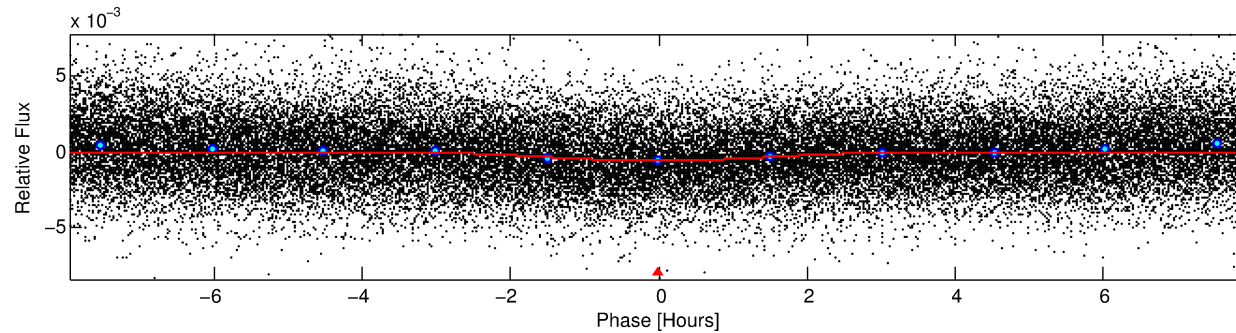
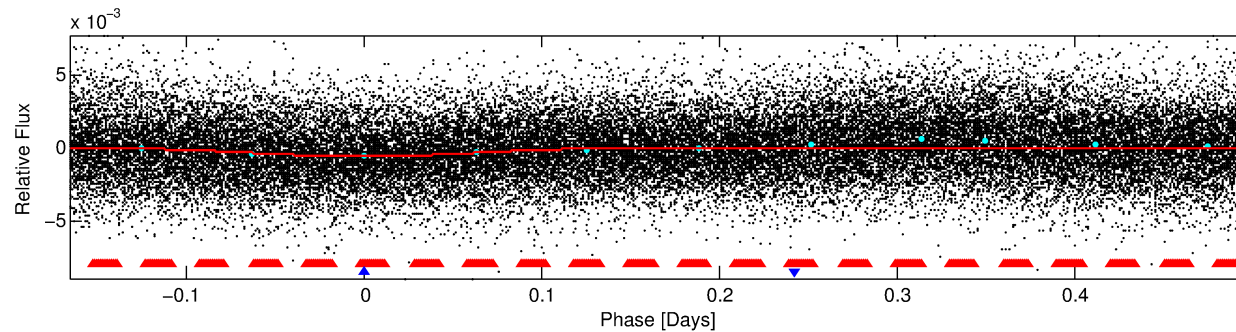
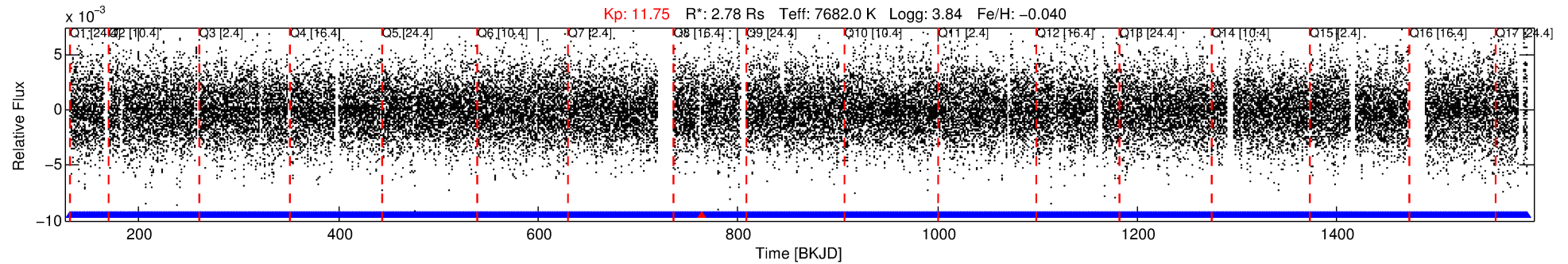
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008264037-02

No Significant Match Found

# DV One-Page Summary

KIC: 8264037 Candidate: 2 of 2 Period: 0.664 d



## DV Fit Results:

Period = 0.66383 [0.00001] d  
Epoch = 131.9408 [0.0053] BKJD  
Rp/R\* = 0.0388 [0.0352]  
a/R\* = 1.04 [0.03]  
b = 1.00 [0.05]  
Seff = 69886.44 [39786.88]  
Teq = 4146 [590] K  
Rp = 11.78 [11.57] Re  
a = 0.0186 [0.0065] AU  
Ag = N/A  
Teffp = N/A

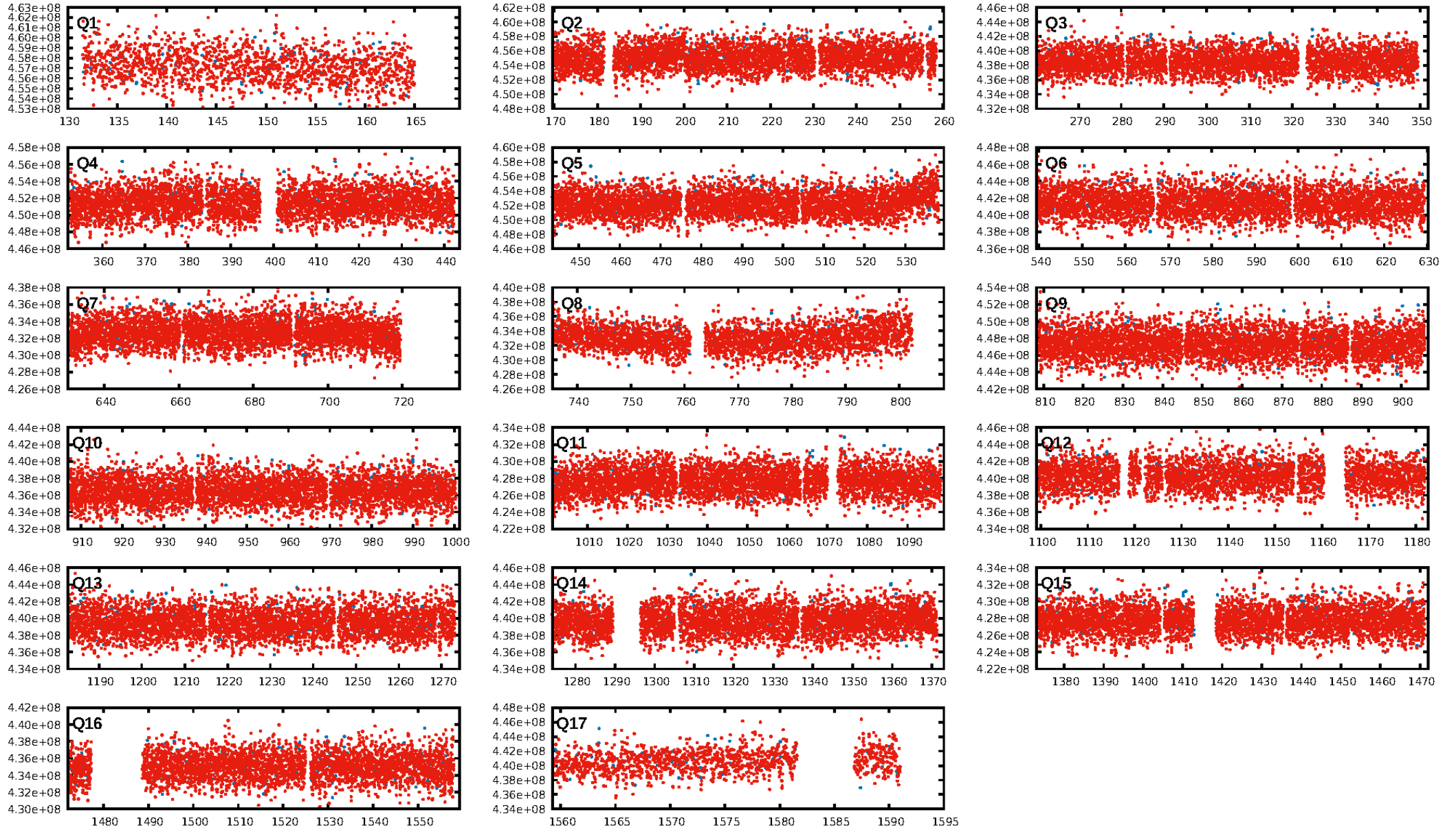
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 7.6% [0.10σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1938/1939]  
GhostDiagnostic-chr: 1.362  
Centroid-sig: N/A  
Centroid-so: 0.205 arcsec [7.99σ]  
OotOffset-rm: 1.080 arcsec [2.32σ]  
KicOffset-rm: 1.001 arcsec [2.15σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:51:21 Z

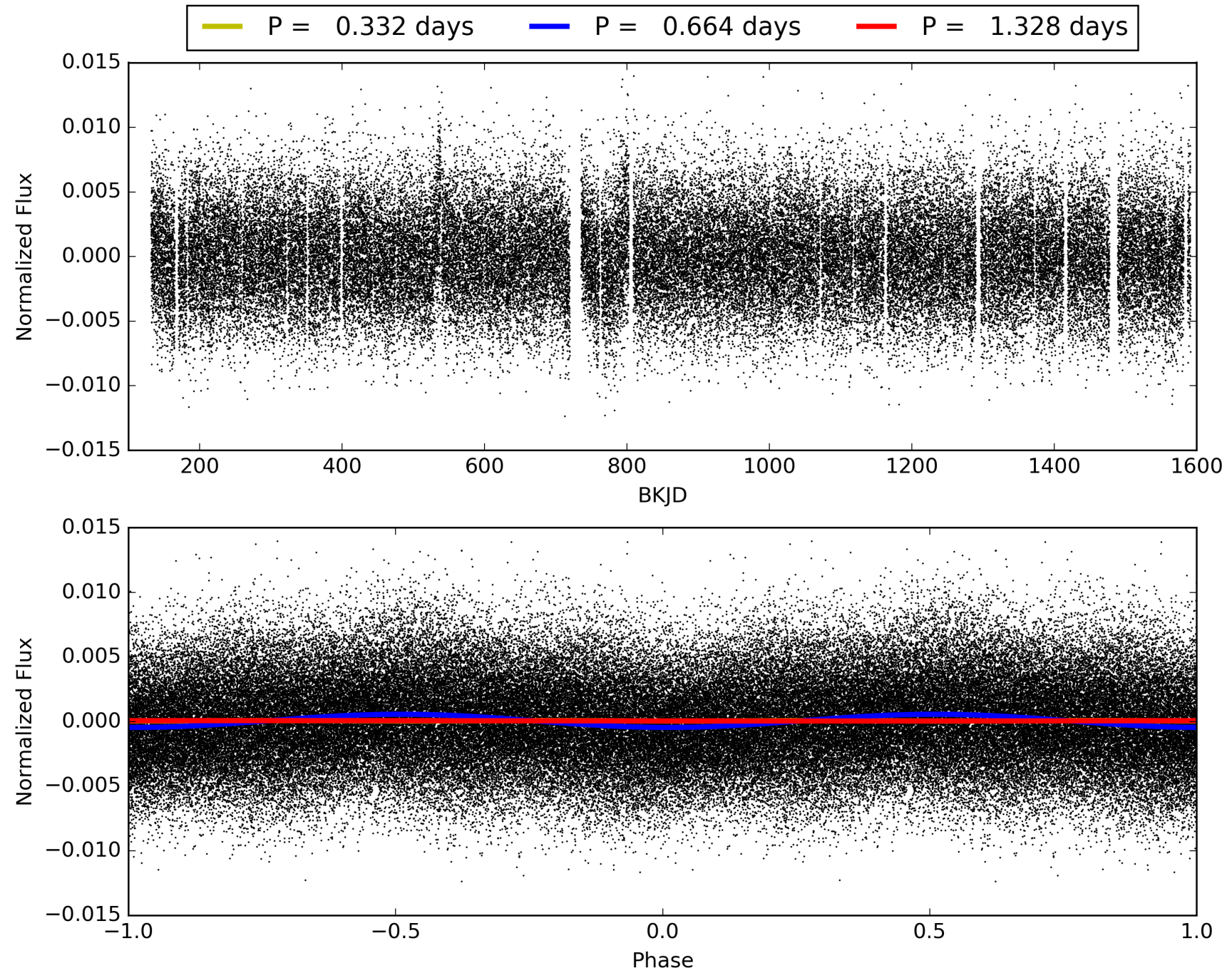
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008264037-02, PDC Light Curves



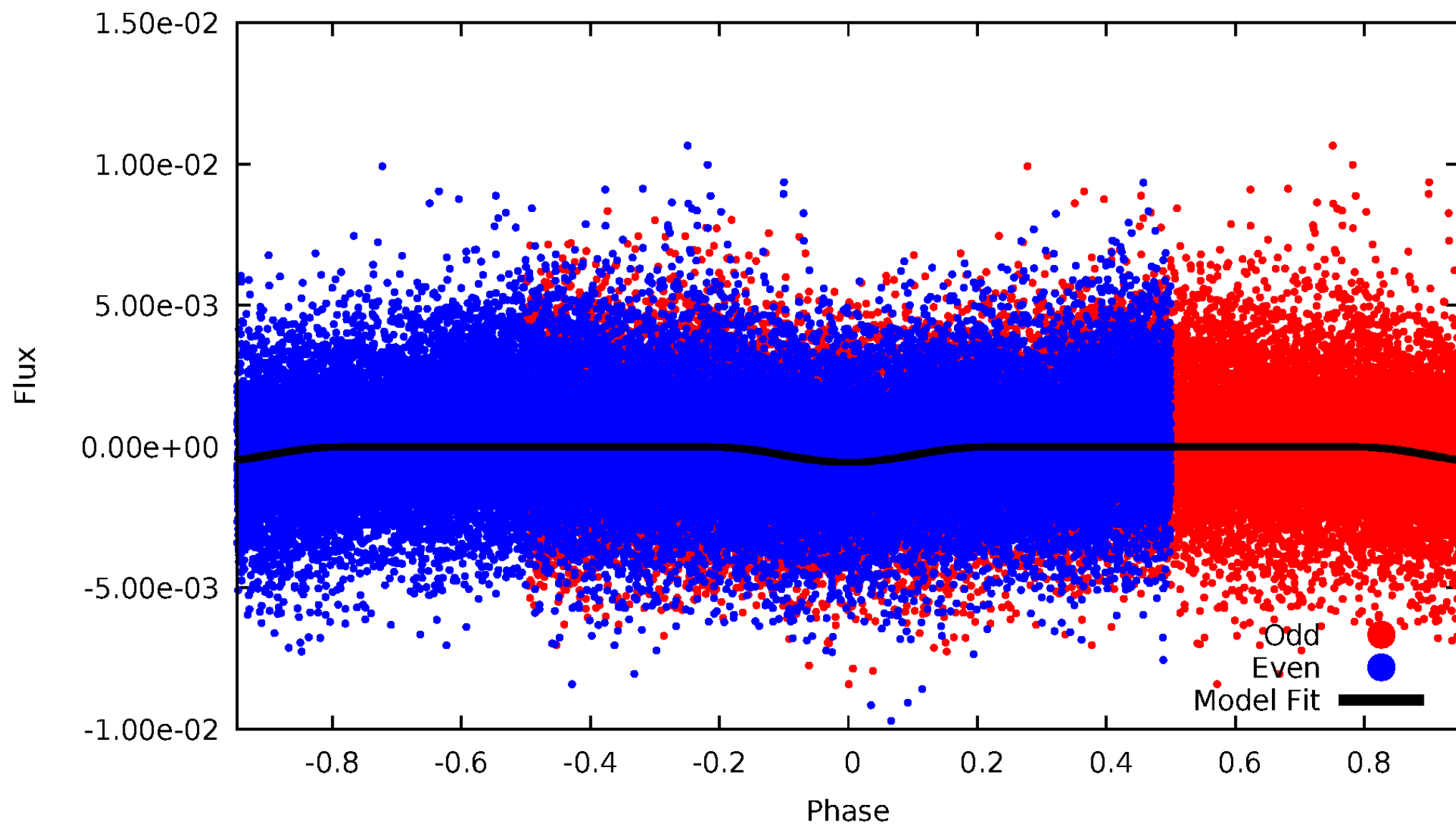


TCE 008264037-02



# DV Odd/Even

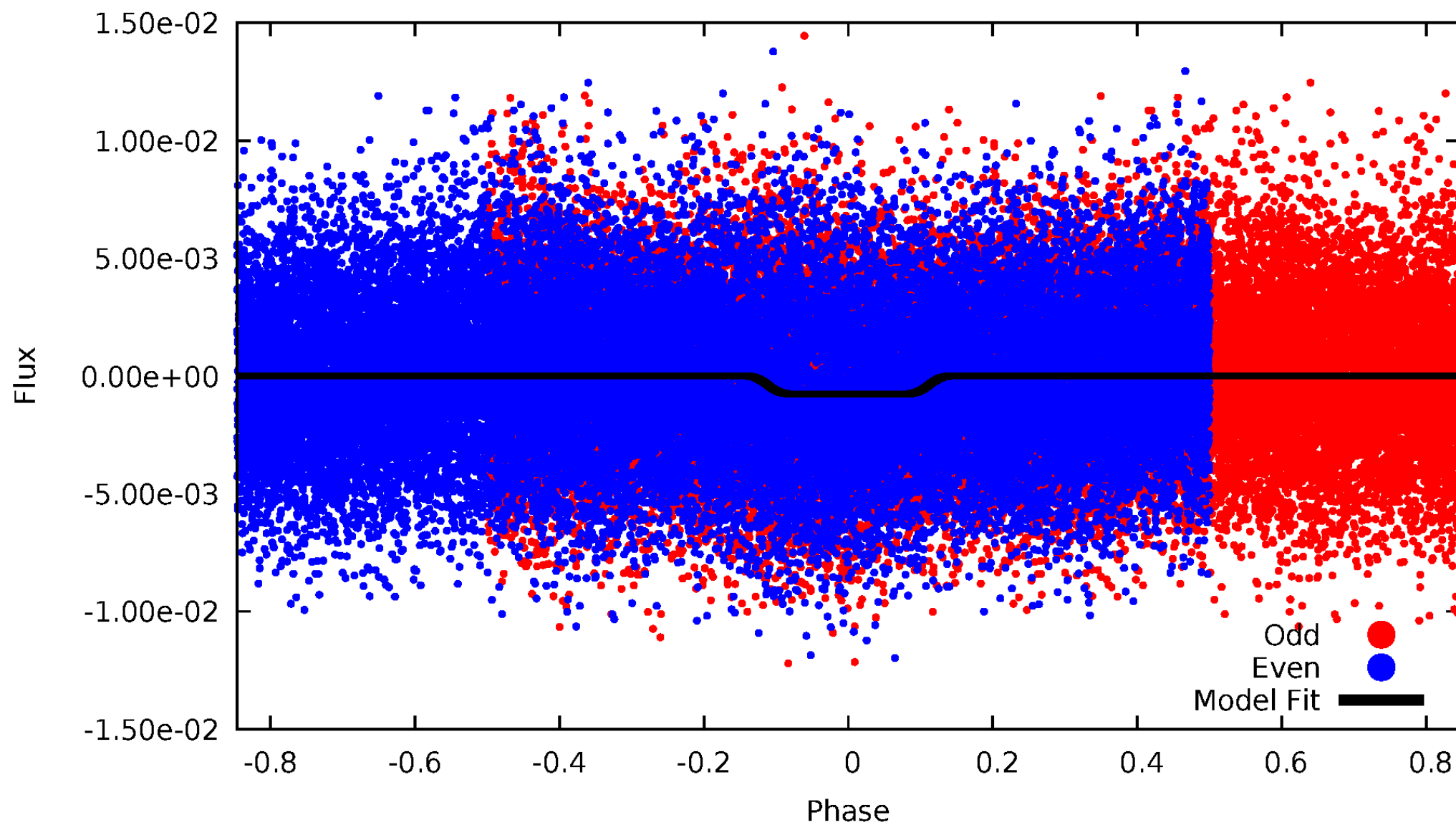
TCE 008264037-02





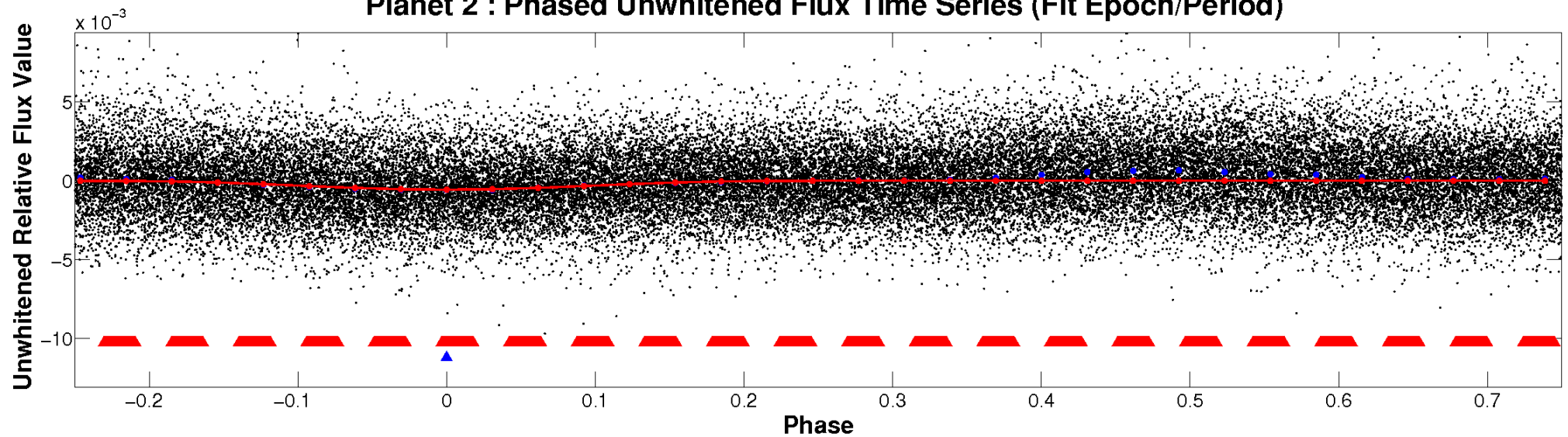
# ALT Odd/Even

TCE 008264037-02

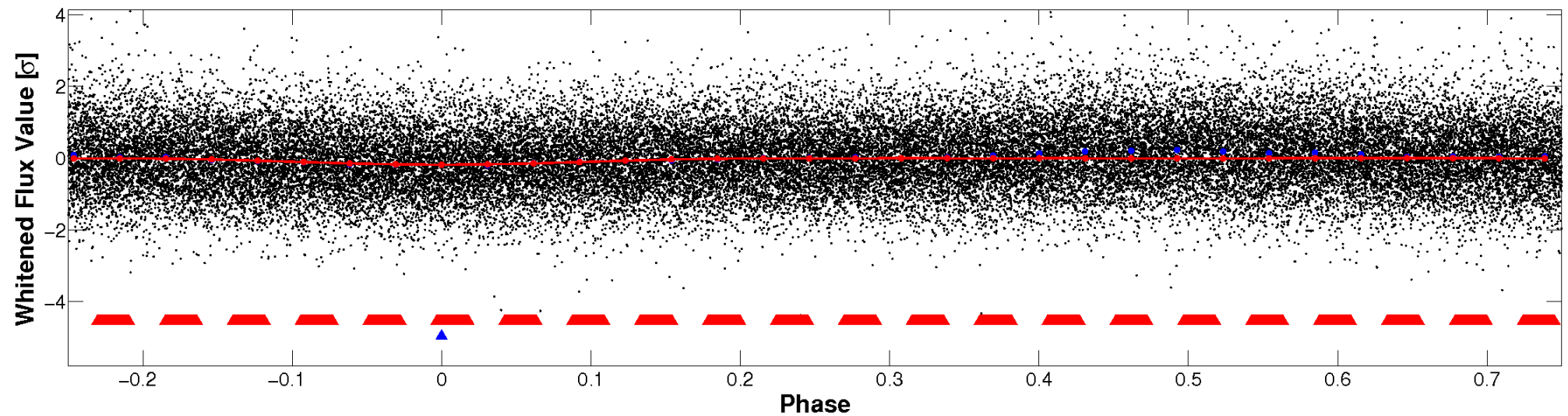


# Non-Whitened Vs. Whitened Light Curve

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

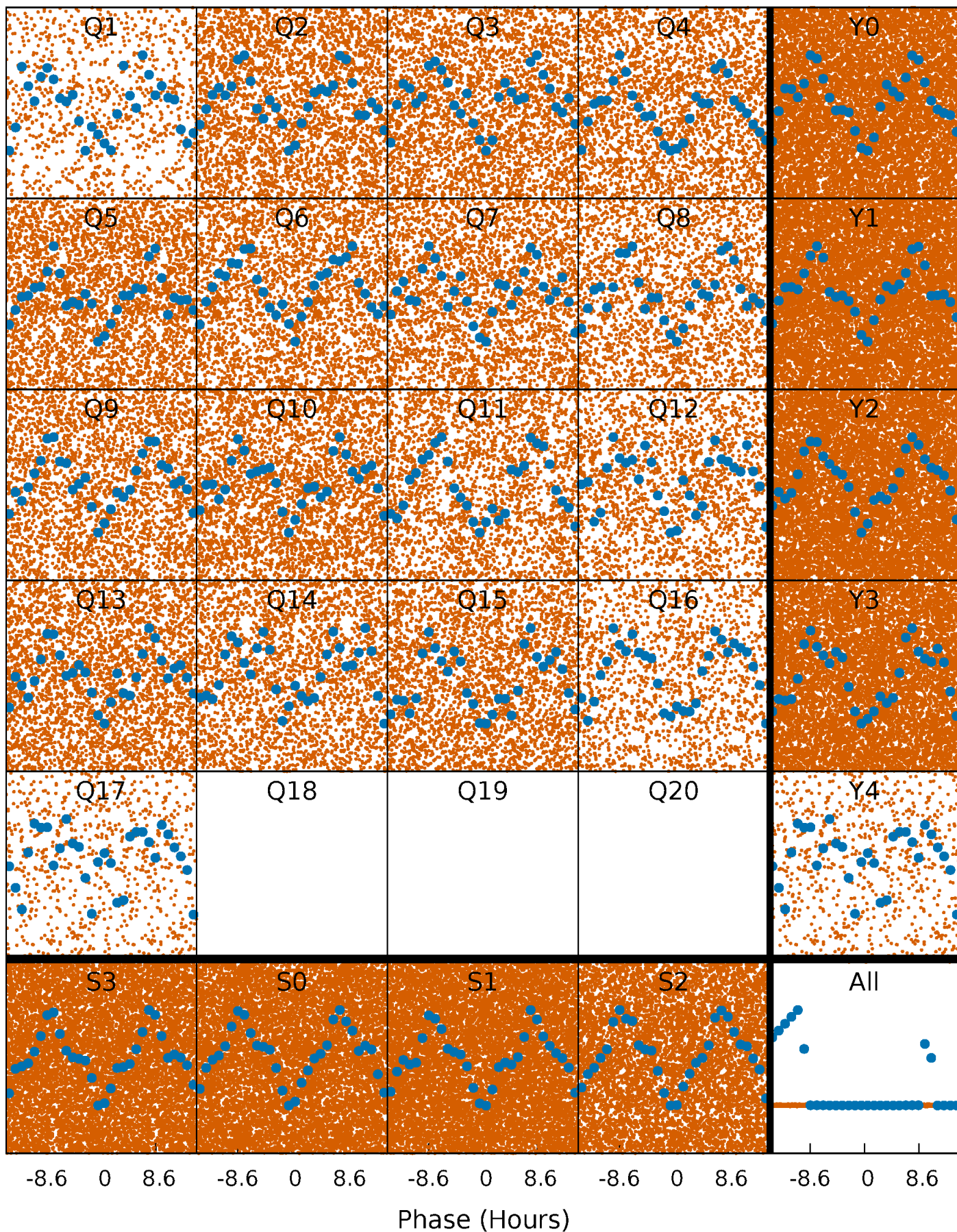


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

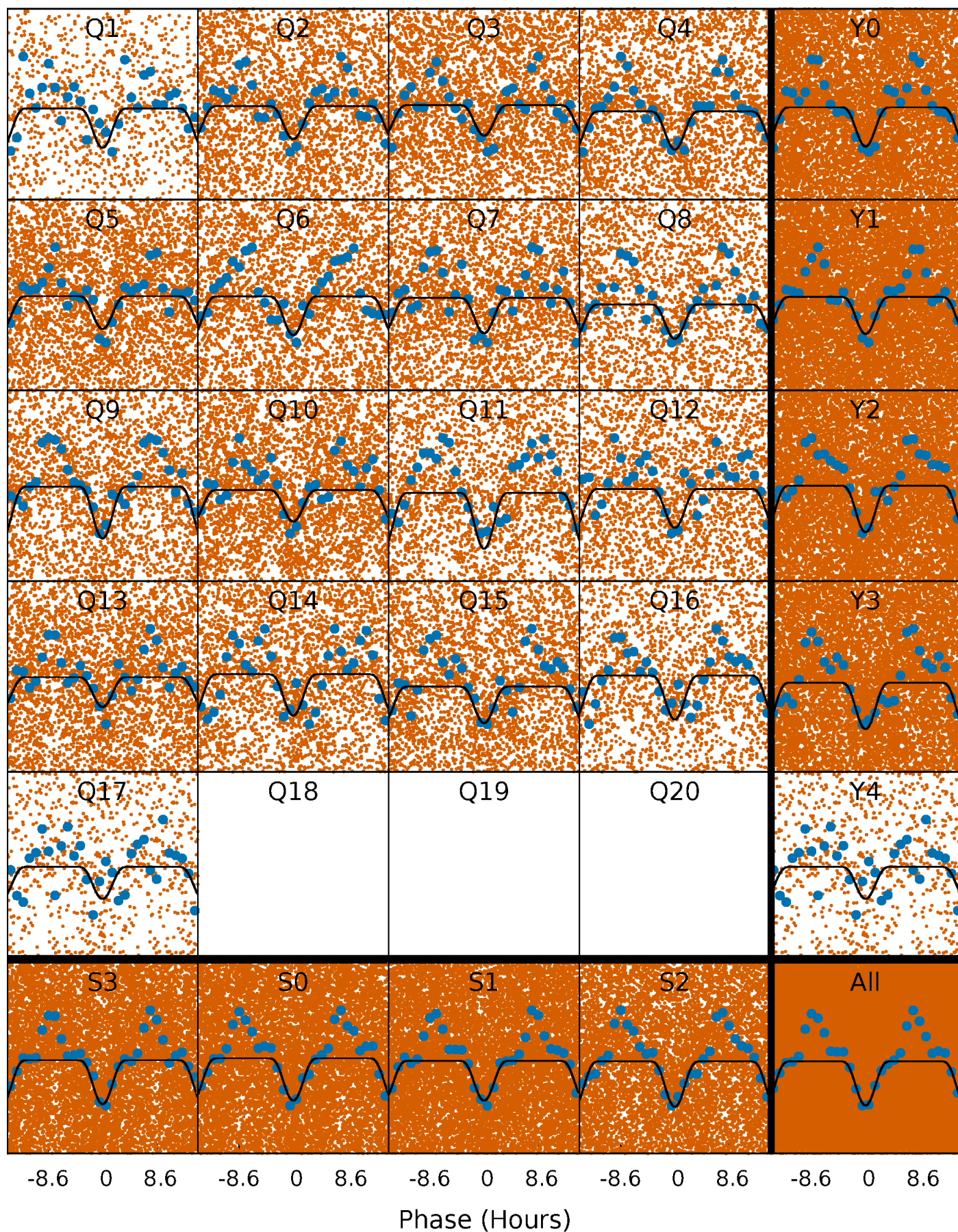
TCE 008264037-02   P= 0.663828 Days    $T_0=131.940832$  (BKJD)





# DV Quarter-Phased Transit Curves

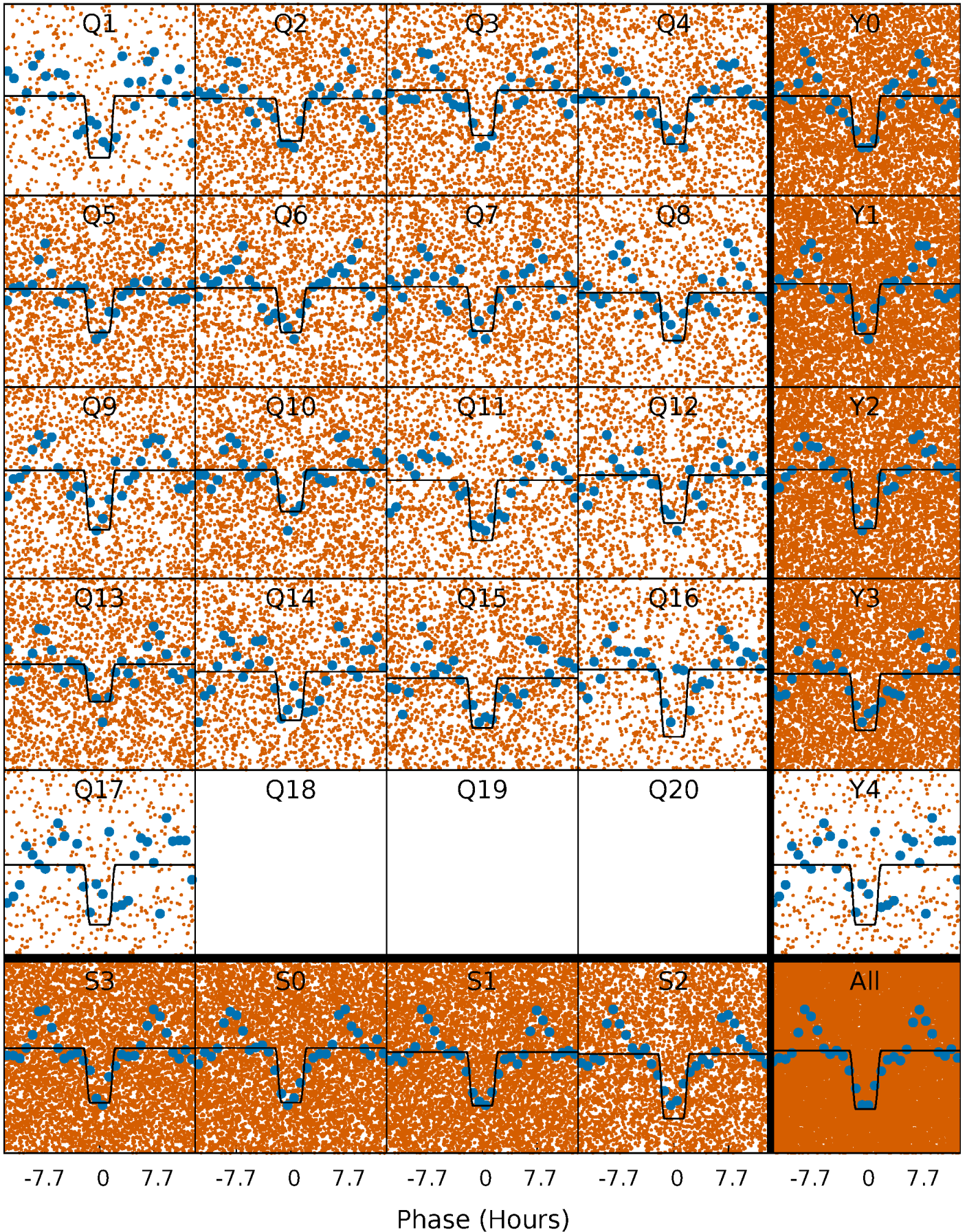
TCE 008264037-02   P= 0.663828 Days    $T_0=131.940832$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 008264037-02   P= 0.663820 Days    $T_0=131.947927$  (BKJD)

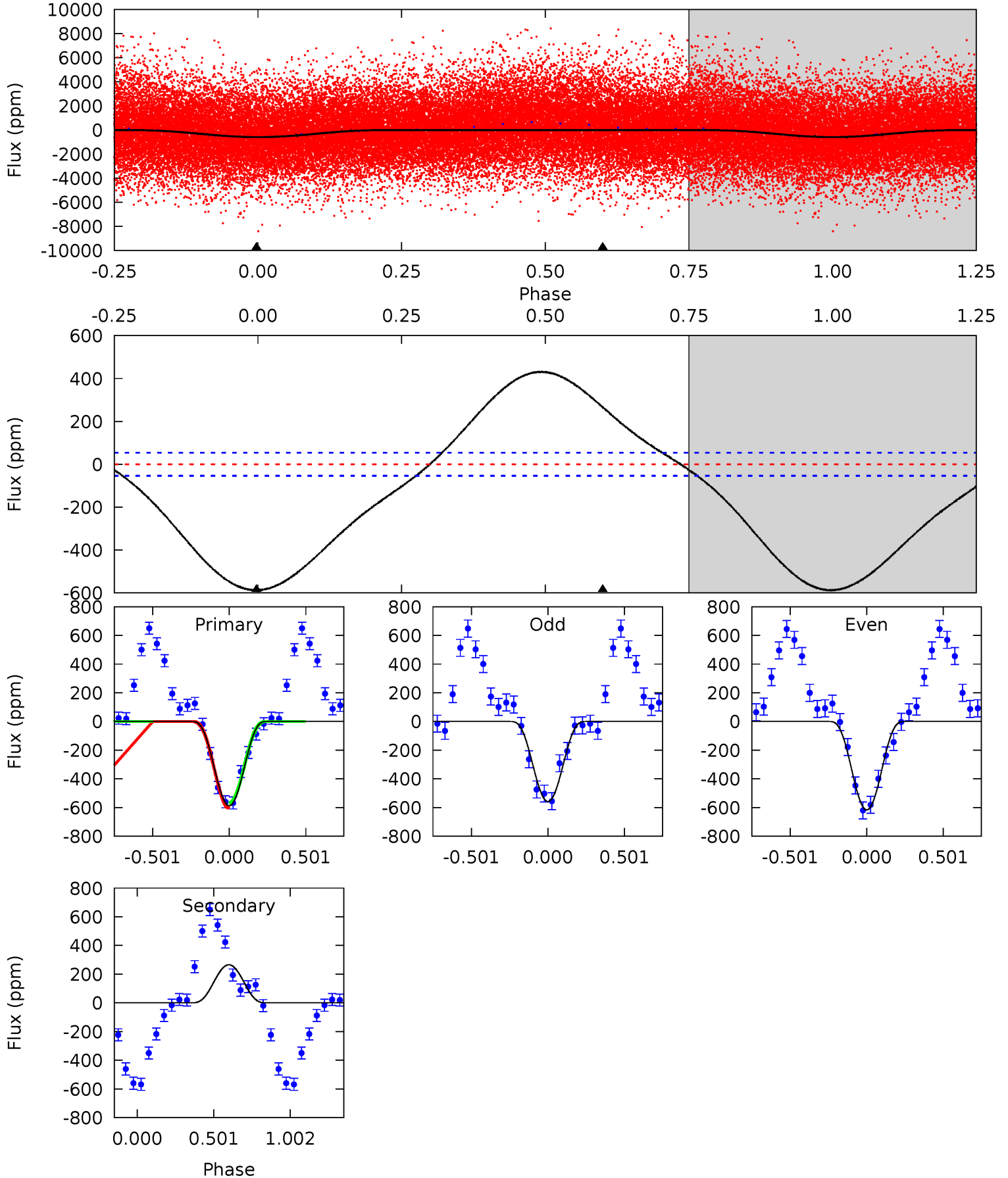




# DV Model-Shift Uniqueness Test

008264037-02, P = 0.663828 Days, E = 131.277004 Days

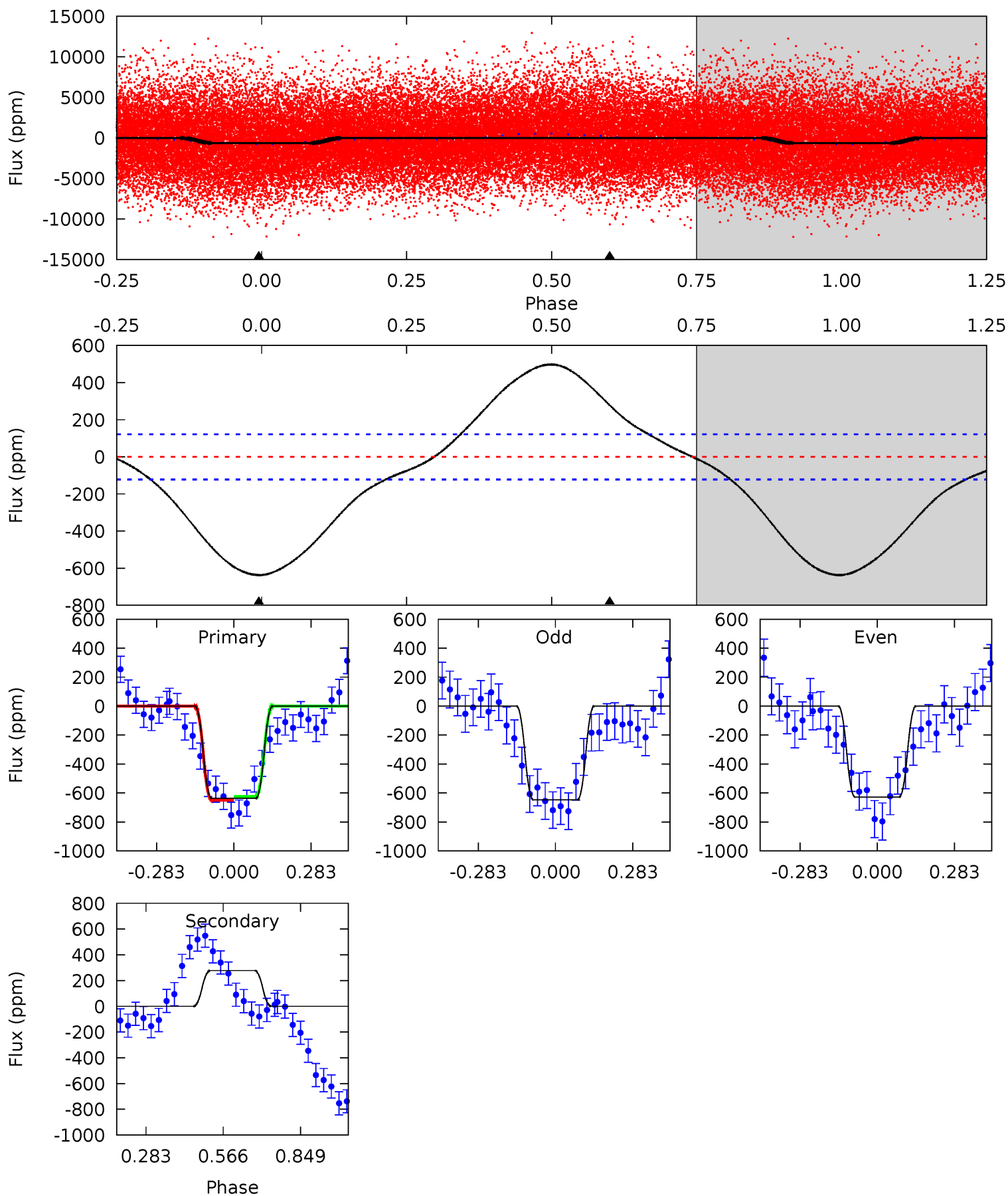
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.9	-20.8	0	0	4.21	0.67	5.52	45.9	45.9	-20.8	-20.8	2.15	1.34	0.43	1.31



# Alt Model-Shift Uniqueness Test

008264037-02, P = 0.663820 Days, E = 131.284107 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
22.7	-9.91	0	0	4.34	1.07	2.25	22.7	22.7	-9.91	-9.91	0.34	1.02	0.44	0.44



### Stellar Parameters For KIC 008264037

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7682^{+214}_{-322}$	$3.838^{+0.315}_{-0.105}$	$-0.040^{+0.200}_{-0.300}$	$2.783^{+0.446}_{-1.041}$	$1.949^{+0.110}_{-0.439}$	$0.127^{+0.300}_{-0.043}$
	+3%/-4%	+8%/-3%	+500%/-750%	+16%/-37%	+6%/-23%	+236%/-34%
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 008264037-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$266 \pm 13$	$12.41^{+9.71}_{-7.48}$	$5685^{+371}_{-479}$	$-5470^{+527}_{-2181}$	$-0.320^{+0.220}_{-1.691}$
Alt.	$278 \pm 28$	$10.75^{+9.75}_{-6.86}$	$5658^{+358}_{-541}$	$-5682^{+698}_{-3230}$	$-0.454^{+0.330}_{-2.871}$

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

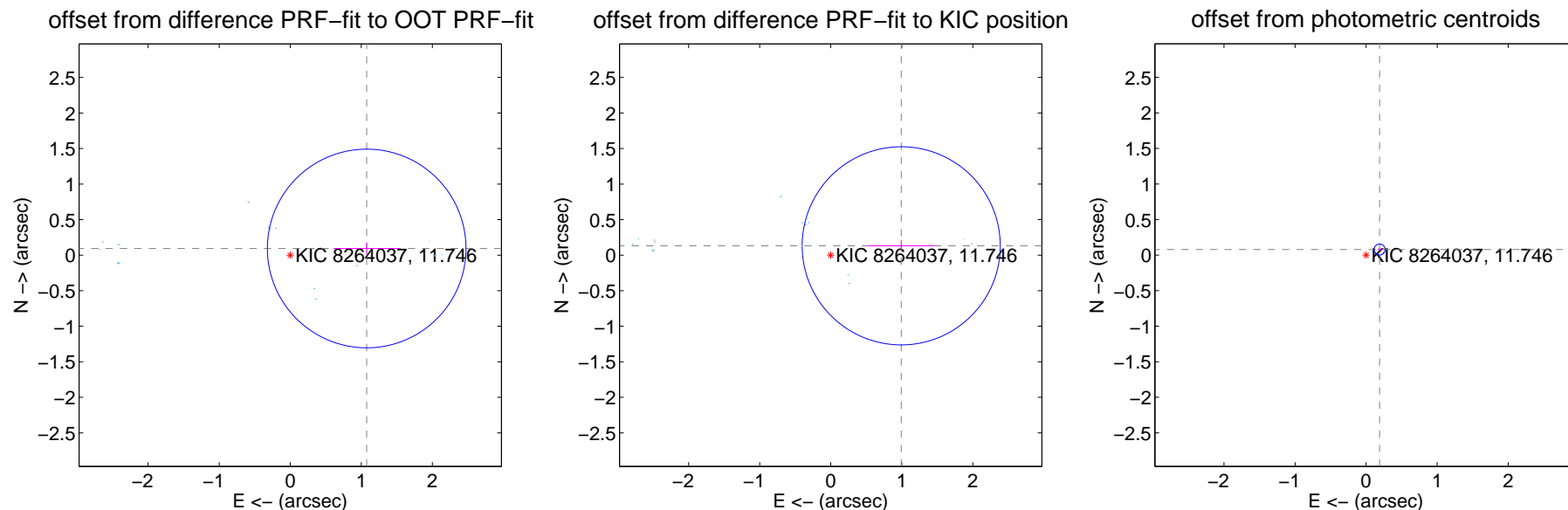
## DV Centroid Data

Supplemental centroid analysis for 008264037-02. **Kepler magnitude: 11.75.** Transit SNR 15.54

There are 17 quarters with good PRF difference image offsets

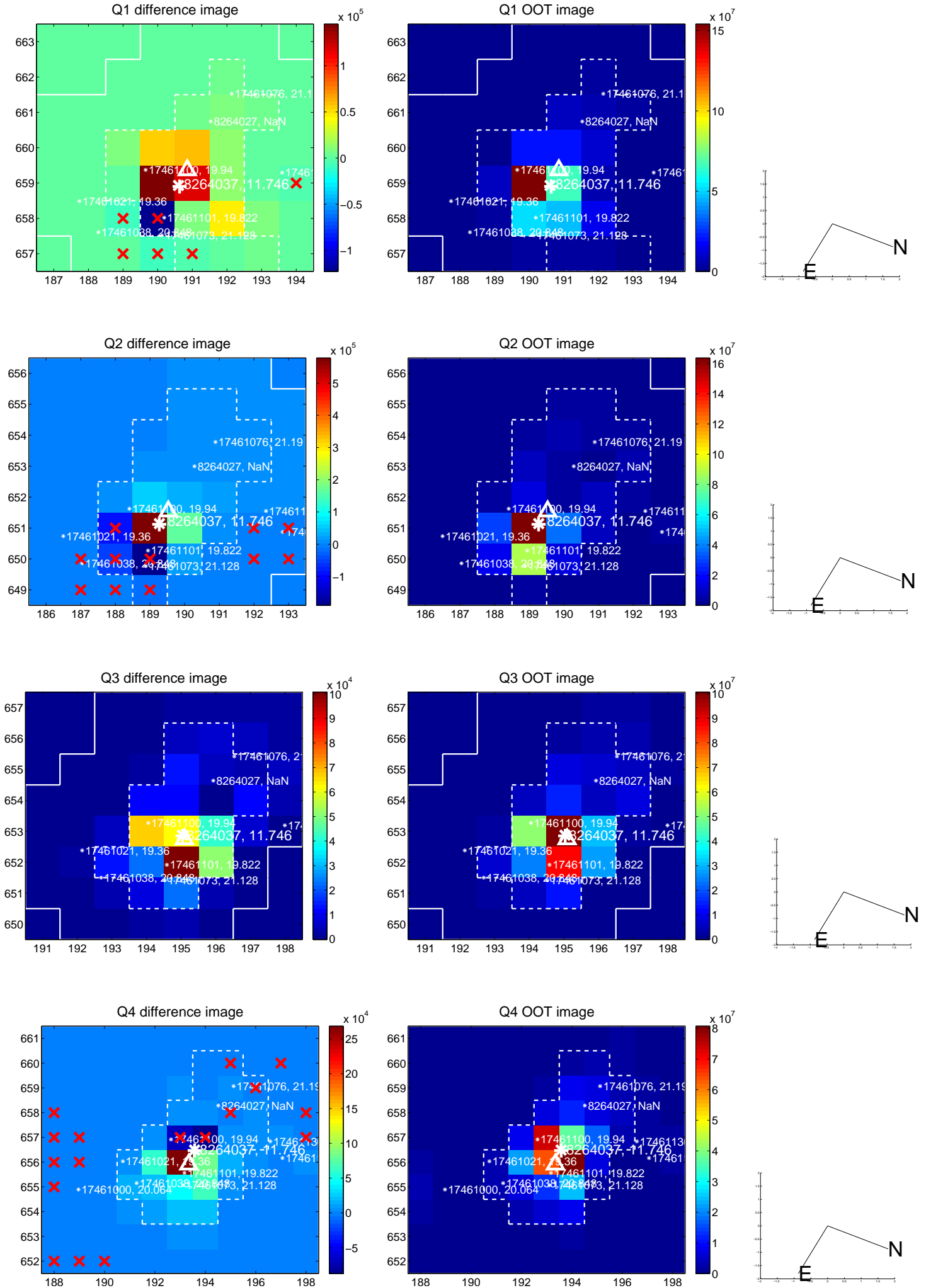
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.080 \pm 0.466$	2.32	$-1.075 \pm 0.468$	$0.094 \pm 0.086$
PRF-fit source offset from KIC position	$1.001 \pm 0.465$	2.15	$-0.992 \pm 0.468$	$0.131 \pm 0.085$
photometric centroid source offset	<b><math>0.21 \pm 0.03</math></b>	<b>7.99</b>	$-0.19 \pm 0.03$	$0.08 \pm 0.02$



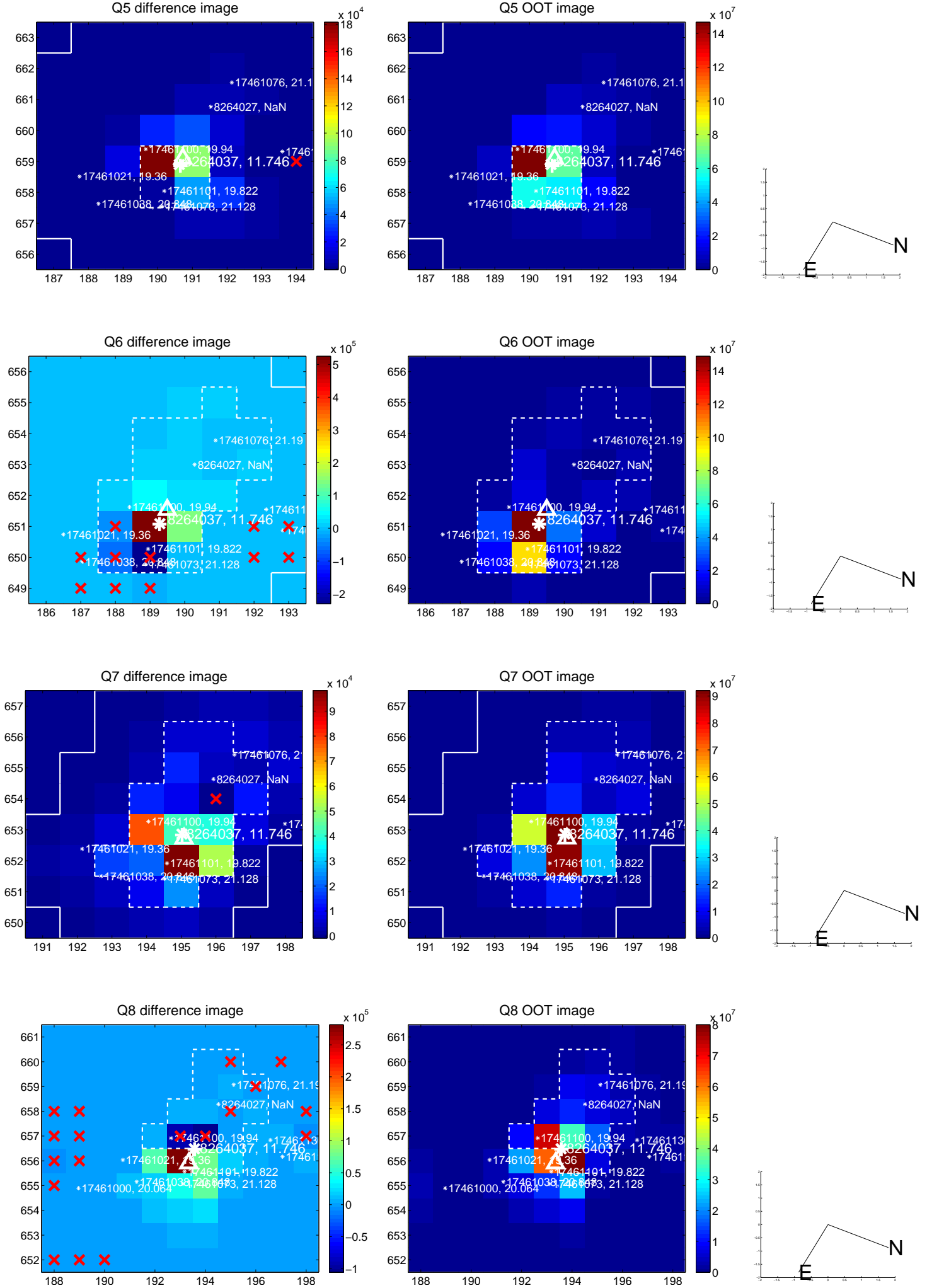
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

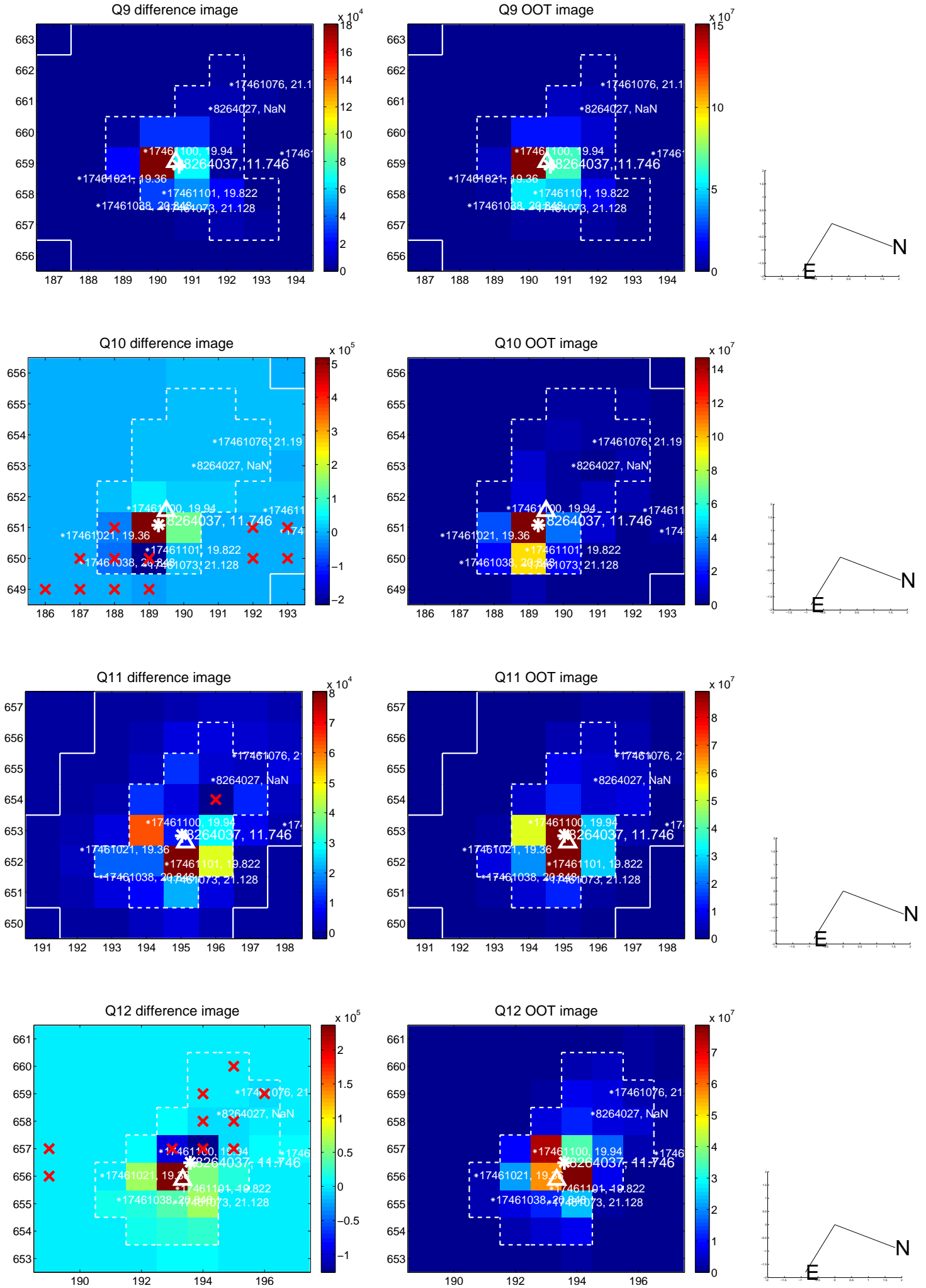




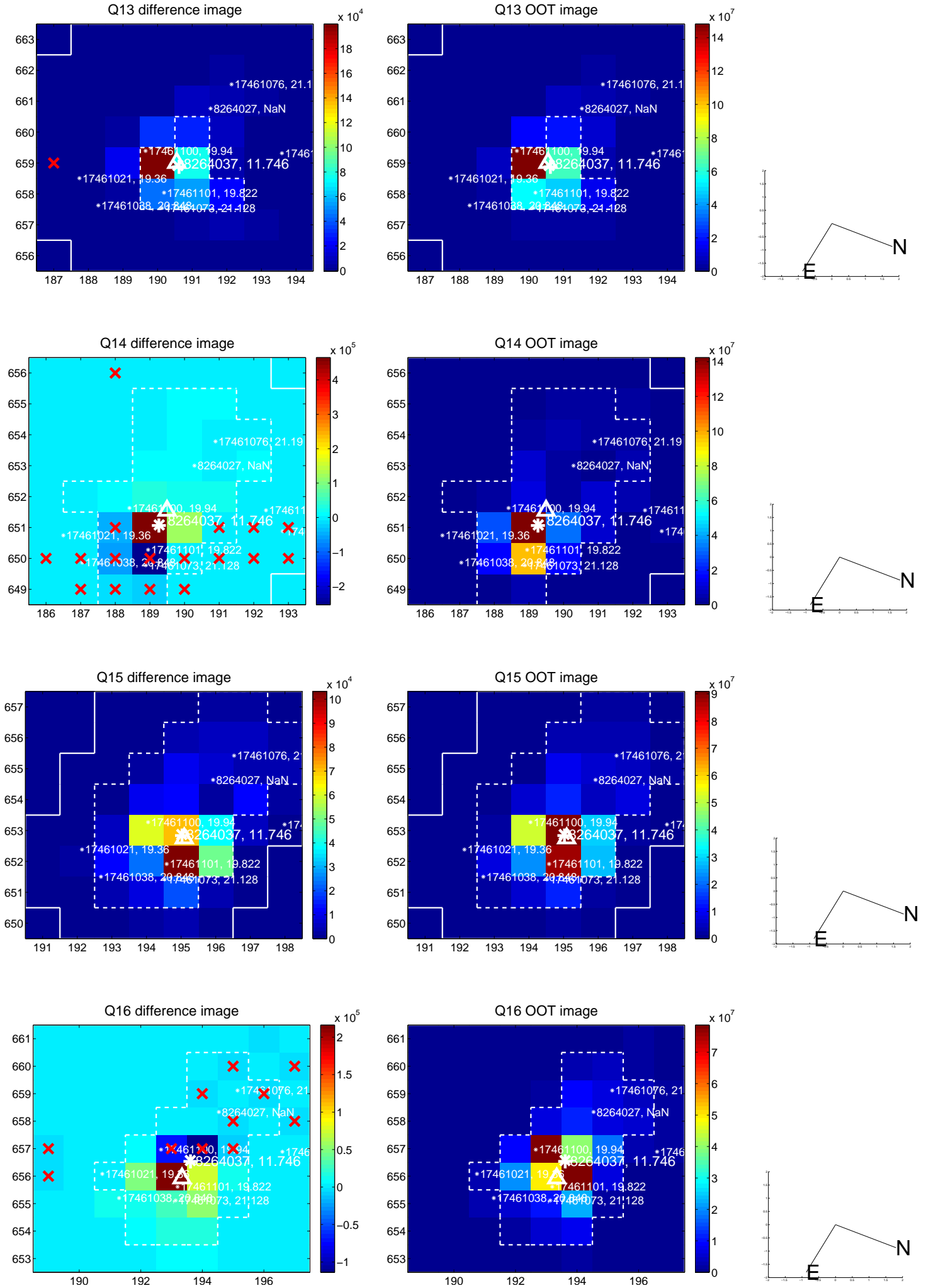
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



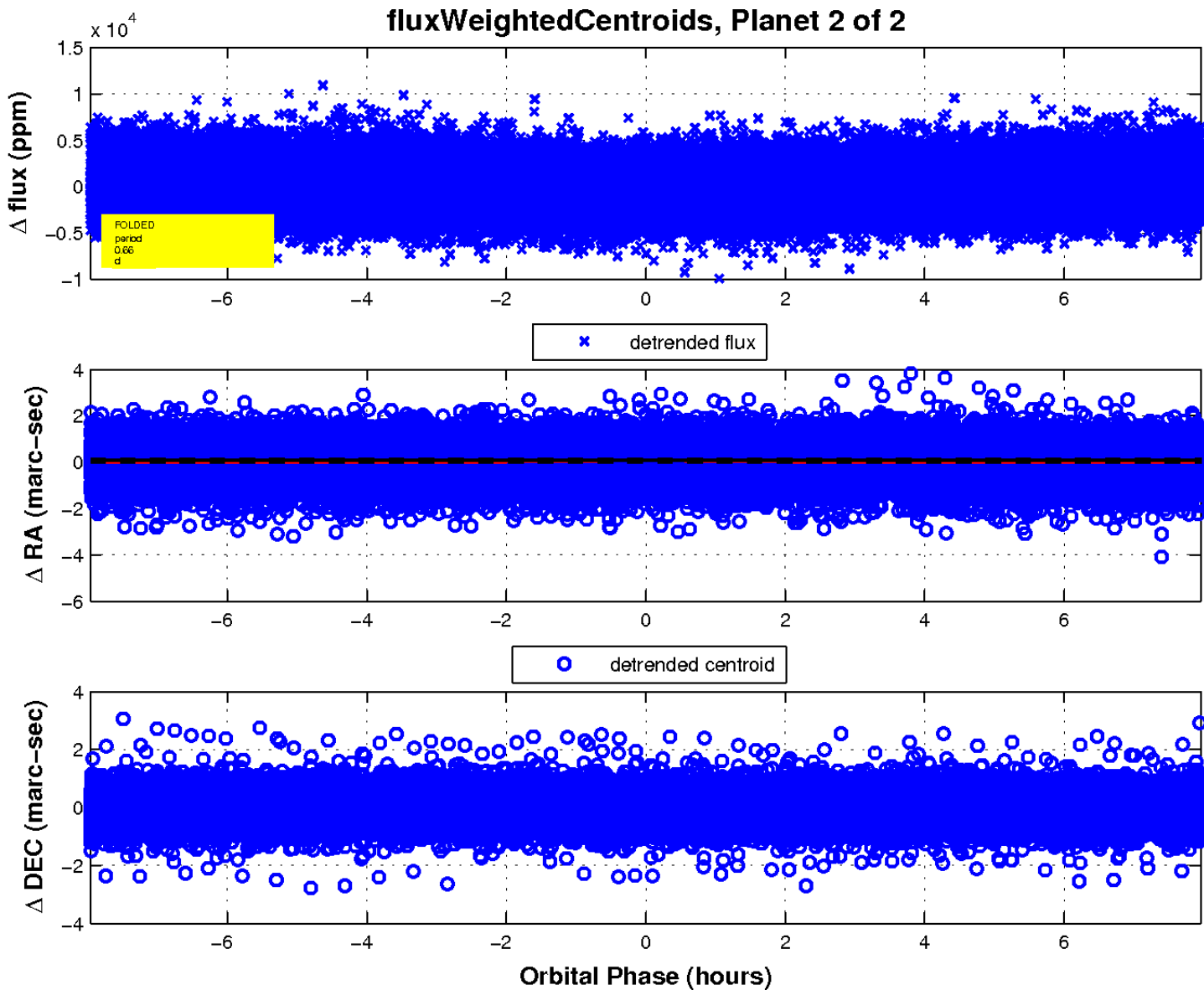
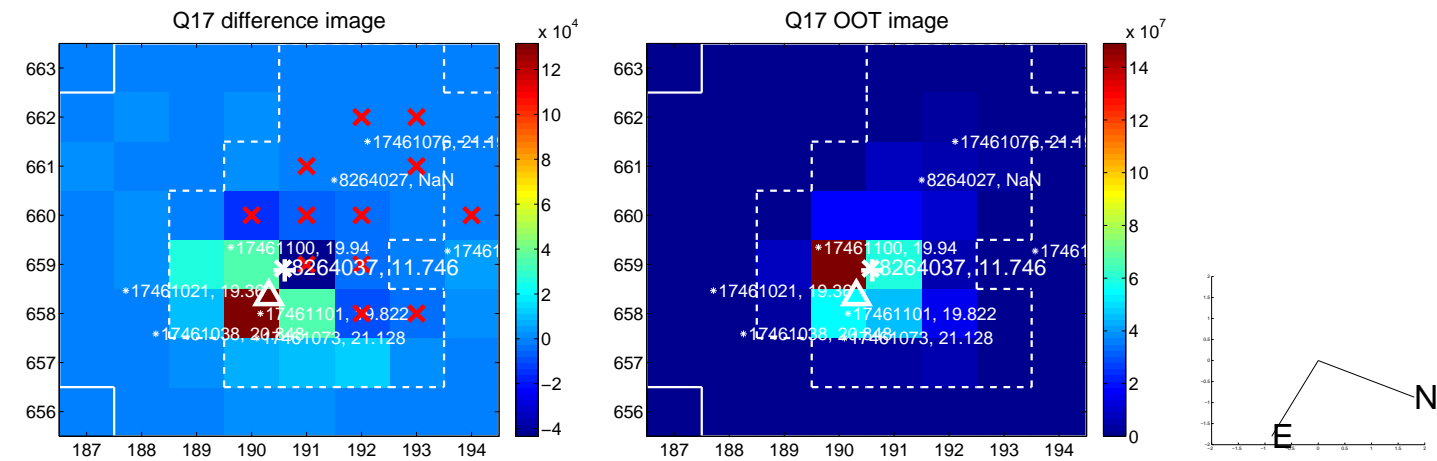
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

