

# KIC 008264588

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008264588-01	OBS	No	0.812030	132.033519	165.0	0.982	11.1	11.6	2.38	6980	3.19	30398.22
008264588-02	OBS	No	0.662869	131.986139	191.3	1.508	9.4	10.7	2.38	6980	3.84	39845.00
008264588-03	OBS	No	0.662875	131.653372	204.6	1.613	9.4	11.3	2.38	6980	3.97	39844.49
008264588-04	OBS	No	0.605307	132.054944	80.0	2.000	9.3	-1.0	2.38	6980	2.16	44975.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008264588-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
008264588-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008264588-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
008264588-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

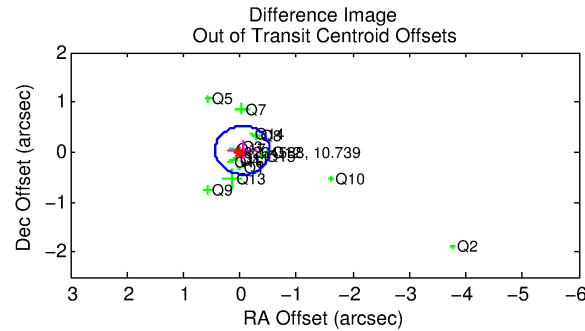
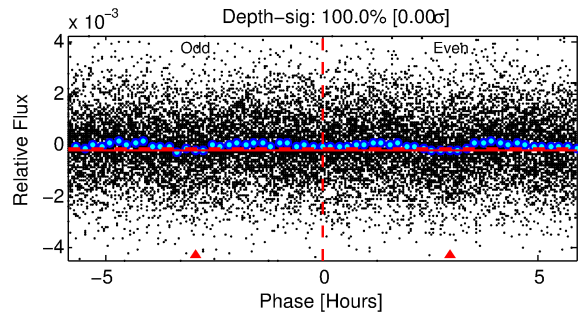
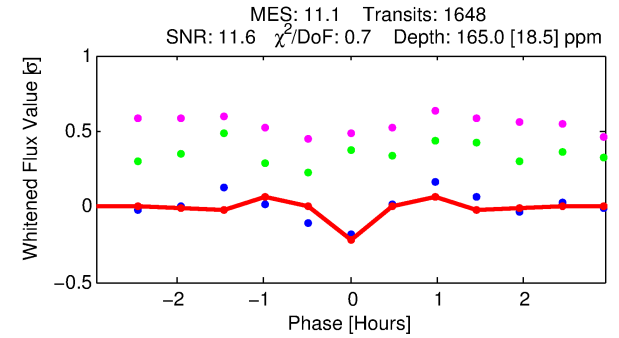
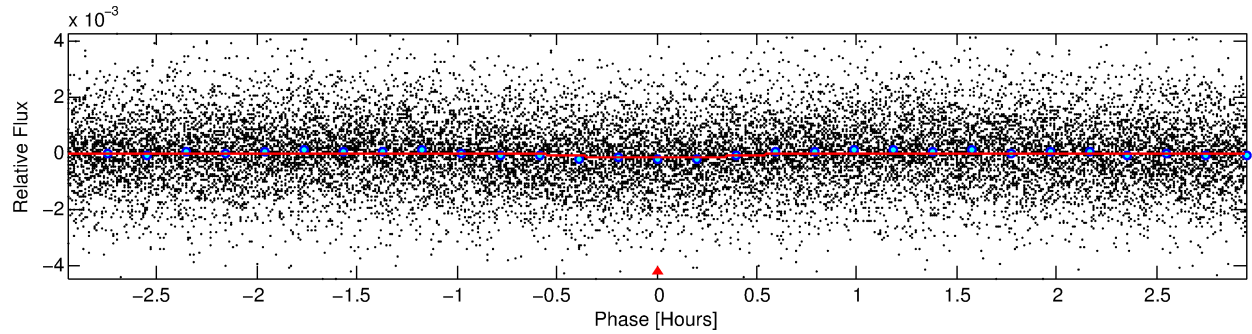
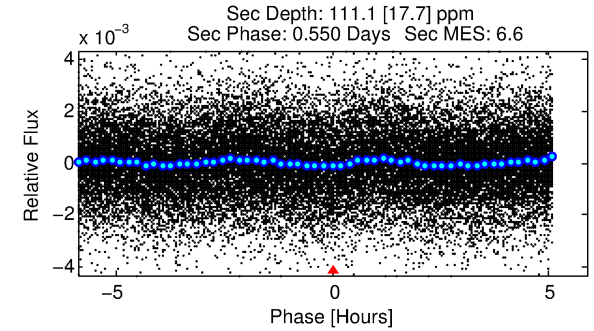
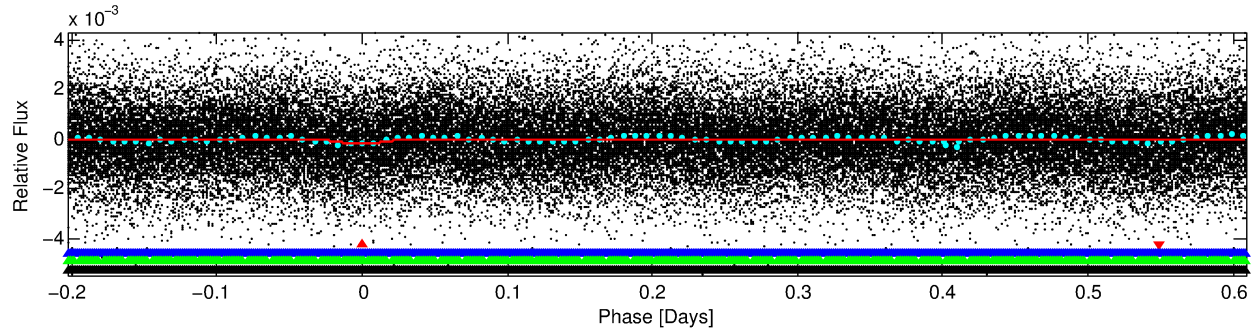
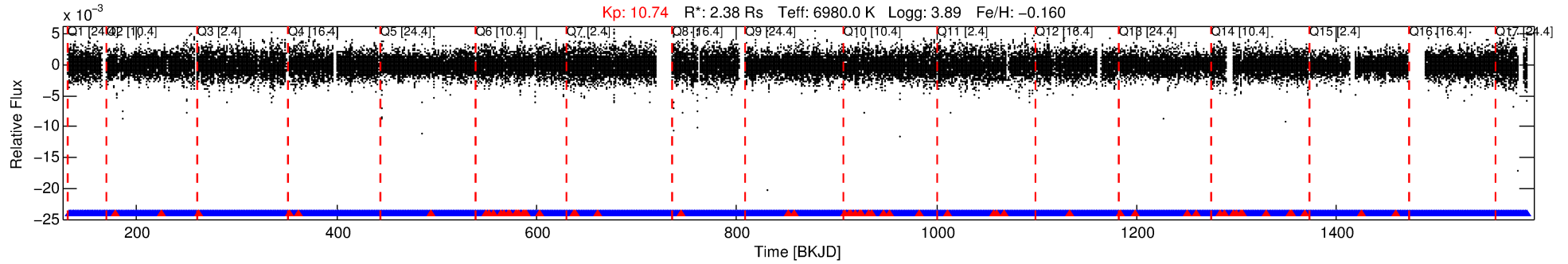
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008264588-01

No Significant Match Found

# DV One-Page Summary

KIC: 8264588 Candidate: 1 of 4 Period: 0.812 d



## DV Fit Results:

Period = 0.81203 [0.00001] d  
Epoch = 132.0335 [0.0009] BKJD  
 $R_p/R^*$  = 0.0123 [0.0034]  
 $a/R^*$  = 5.64 [8.53]  
 $b$  = 0.49 [2.43]  
 $S_{\text{eff}}$  = 30398.22 [18382.71]  
 $T_{\text{eq}}$  = 3367 [509] K  
 $R_p$  = 3.19 [1.52]  $R_e$   
 $a$  = 0.0199 [0.0073] AU  
 $A_g$  = 2.38 [1.94] [0.71σ]  
 $T_{\text{effp}}$  = 6467 [978] K [2.81σ]

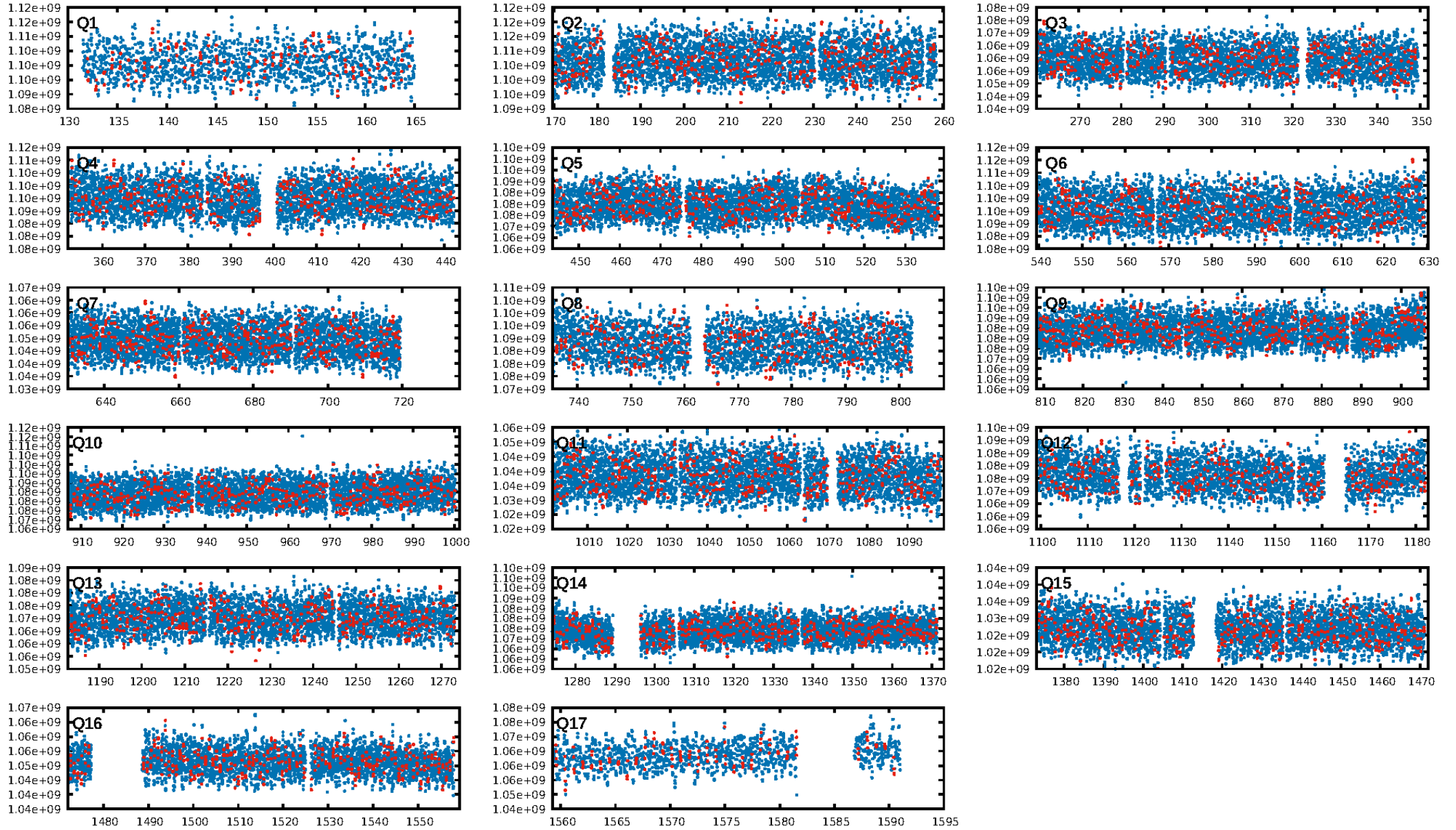
## DV Diagnostic Results:

ShortPeriod-sig: 94.2% [1.90σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.96 [1515/1574]  
GhostDiagnostic-chr: 1.116  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.060 arcsec [0.37σ]  
KicOffset-rm: 0.153 arcsec [0.87σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.50 [8/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:56:34 Z

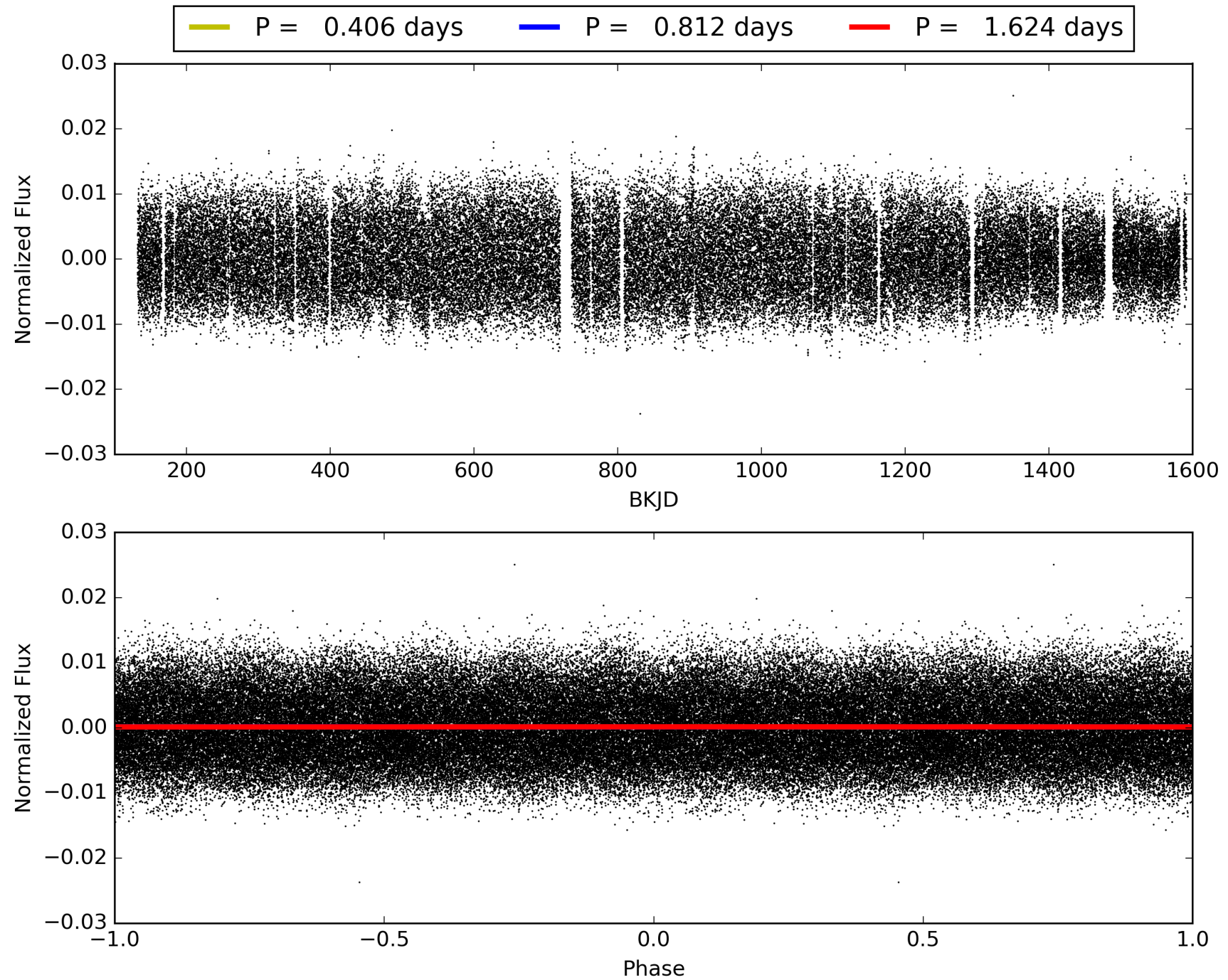
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008264588-01, PDC Light Curves





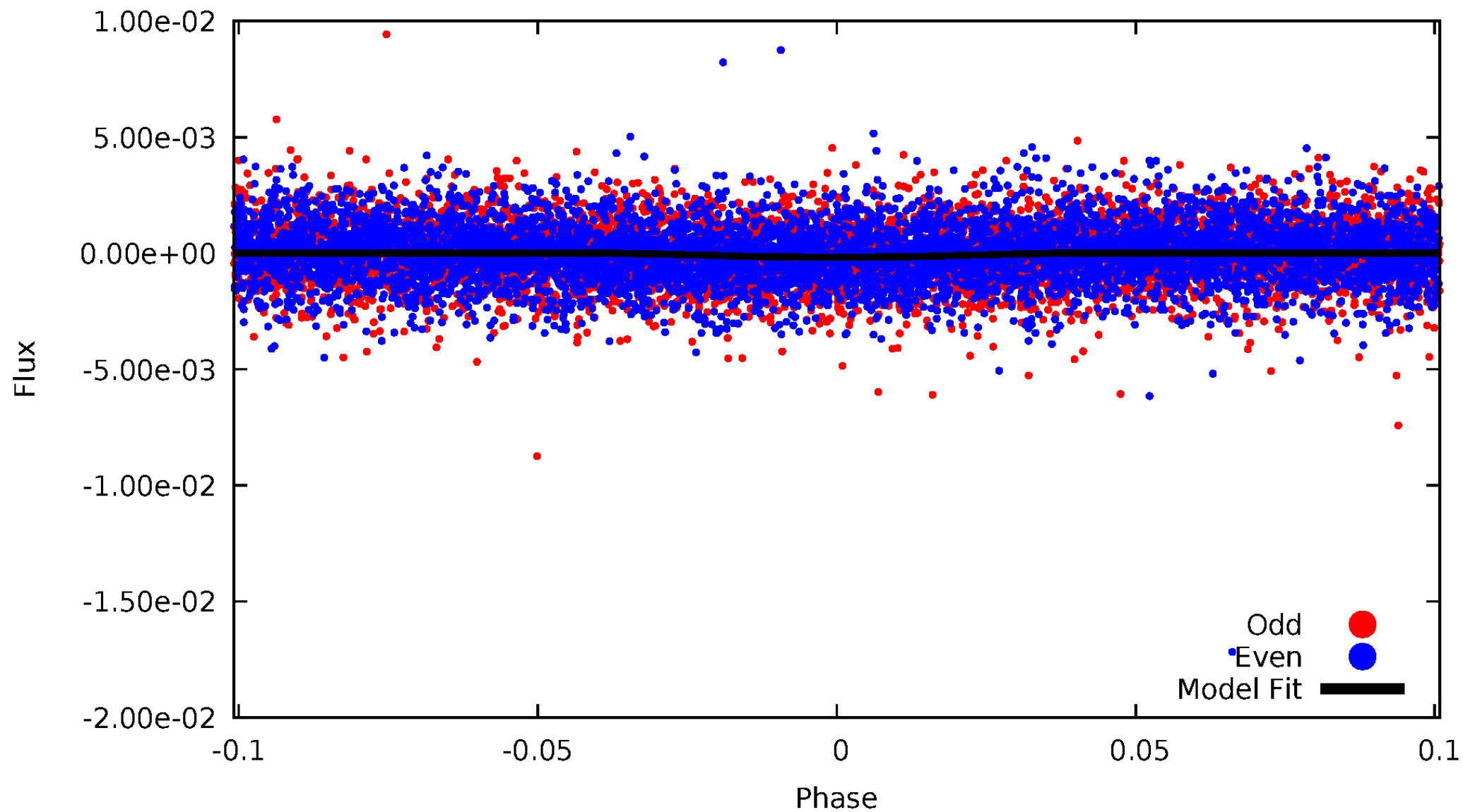
TCE 008264588-01





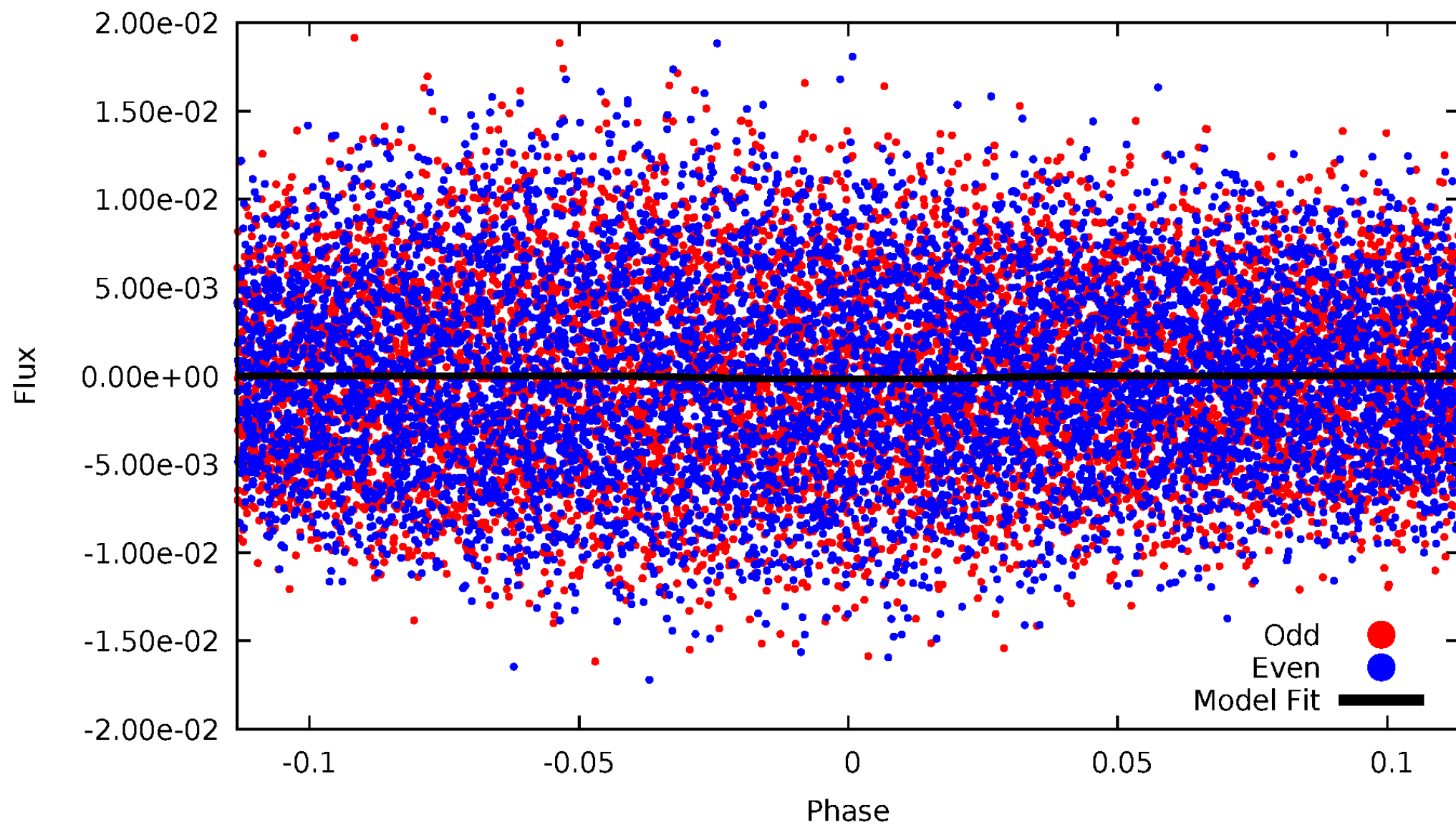
# DV Odd/Even

TCE 008264588-01



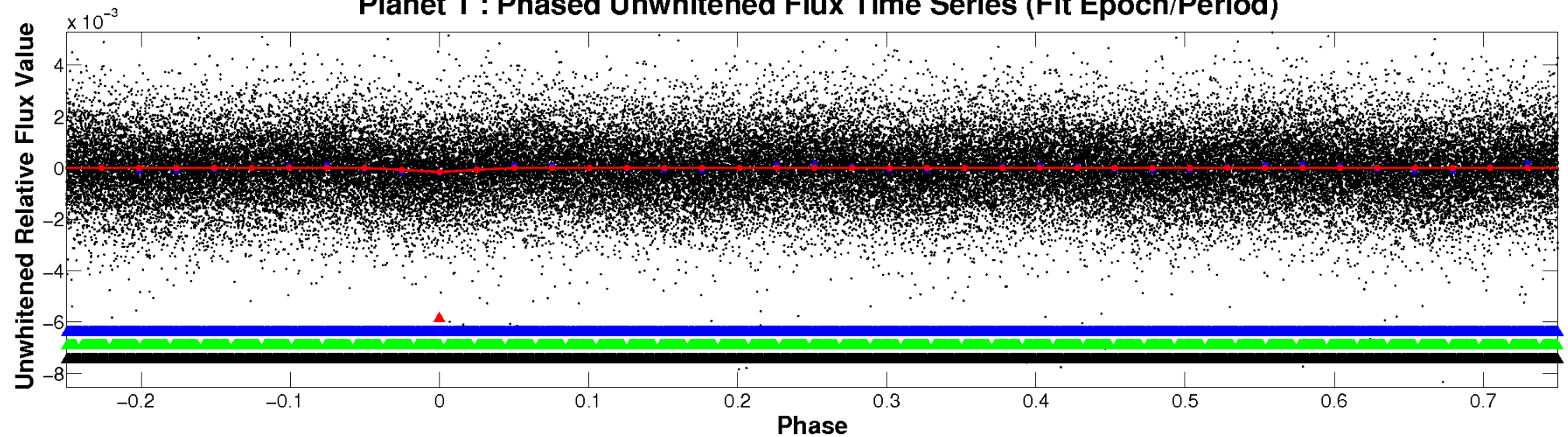
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TCE 008264588-01

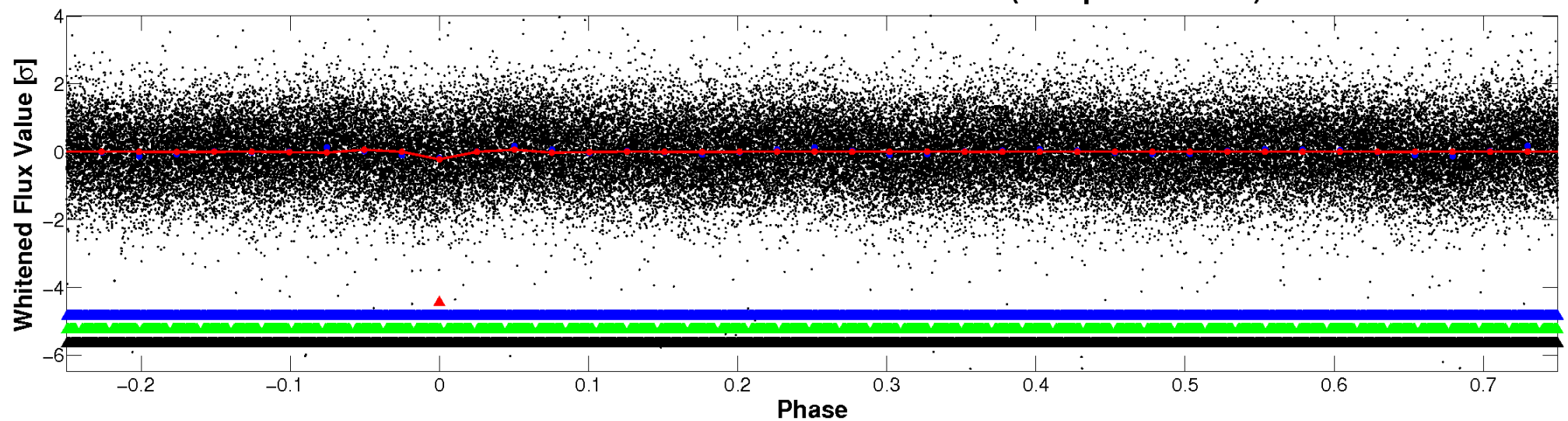


# Non-Whitened Vs. Whitened Light Curve

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



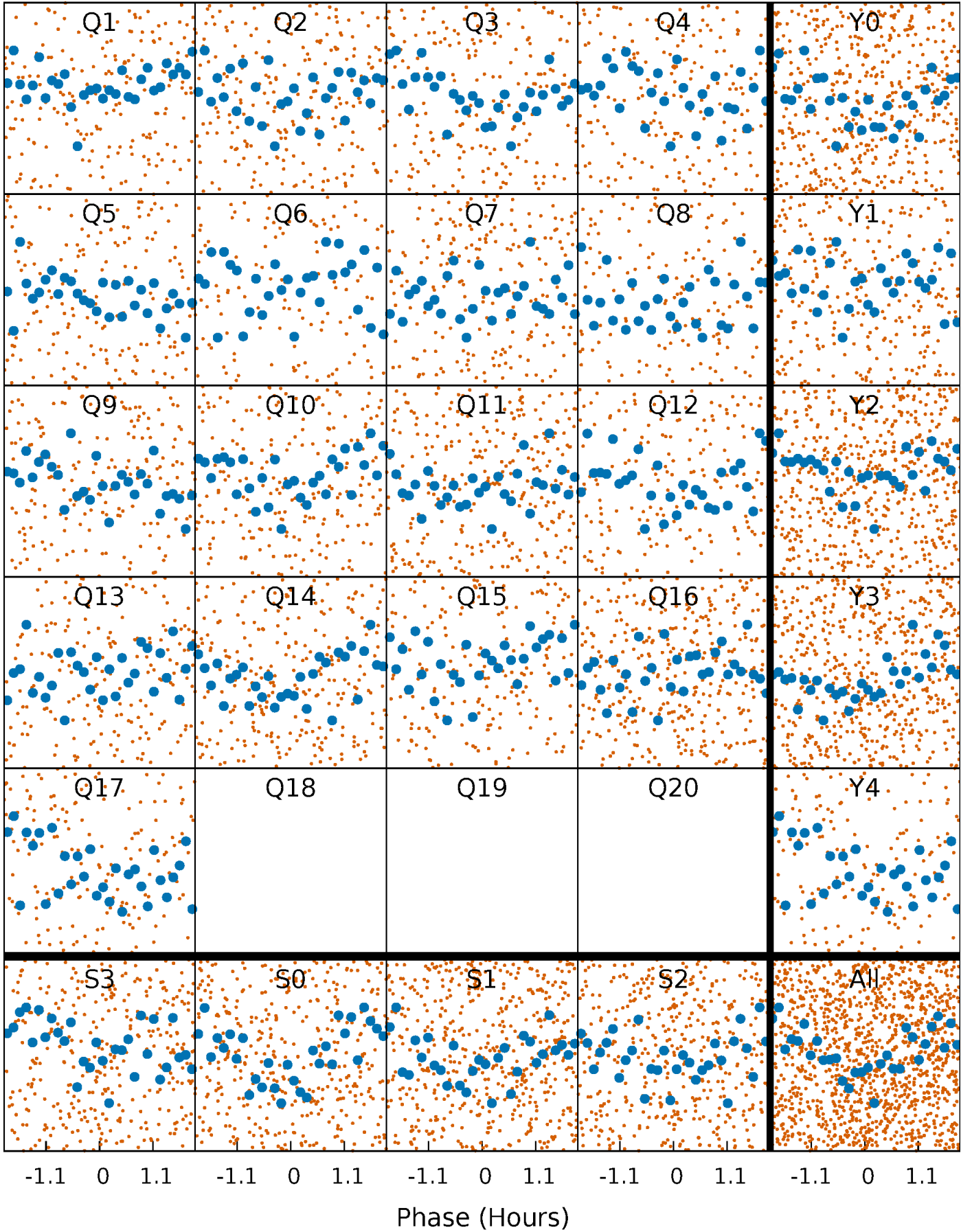
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





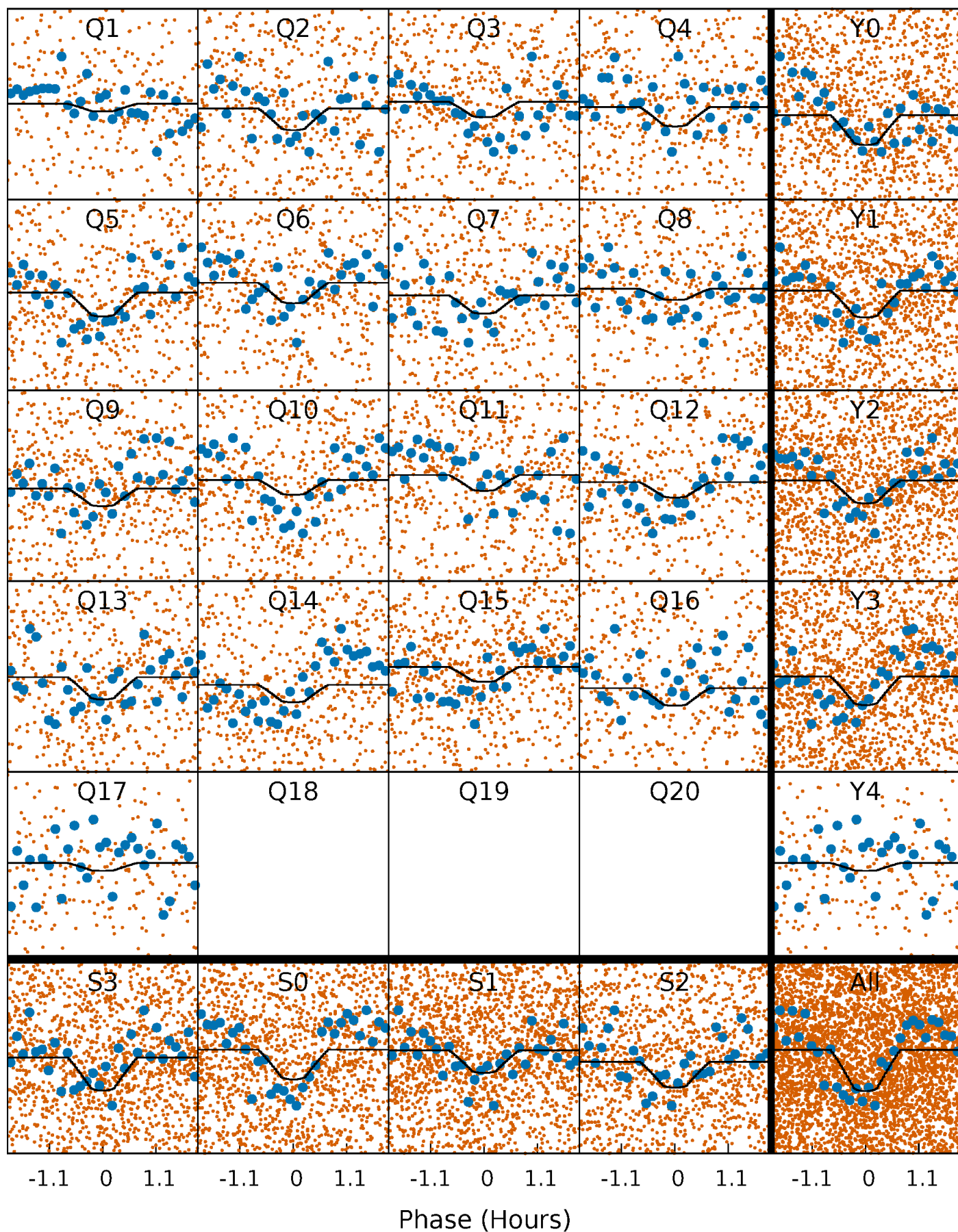
# PDC Quarter-Phased Transit Curves

TCE 008264588-01   P= 0.812030 Days    $T_0=132.033519$  (BKJD)



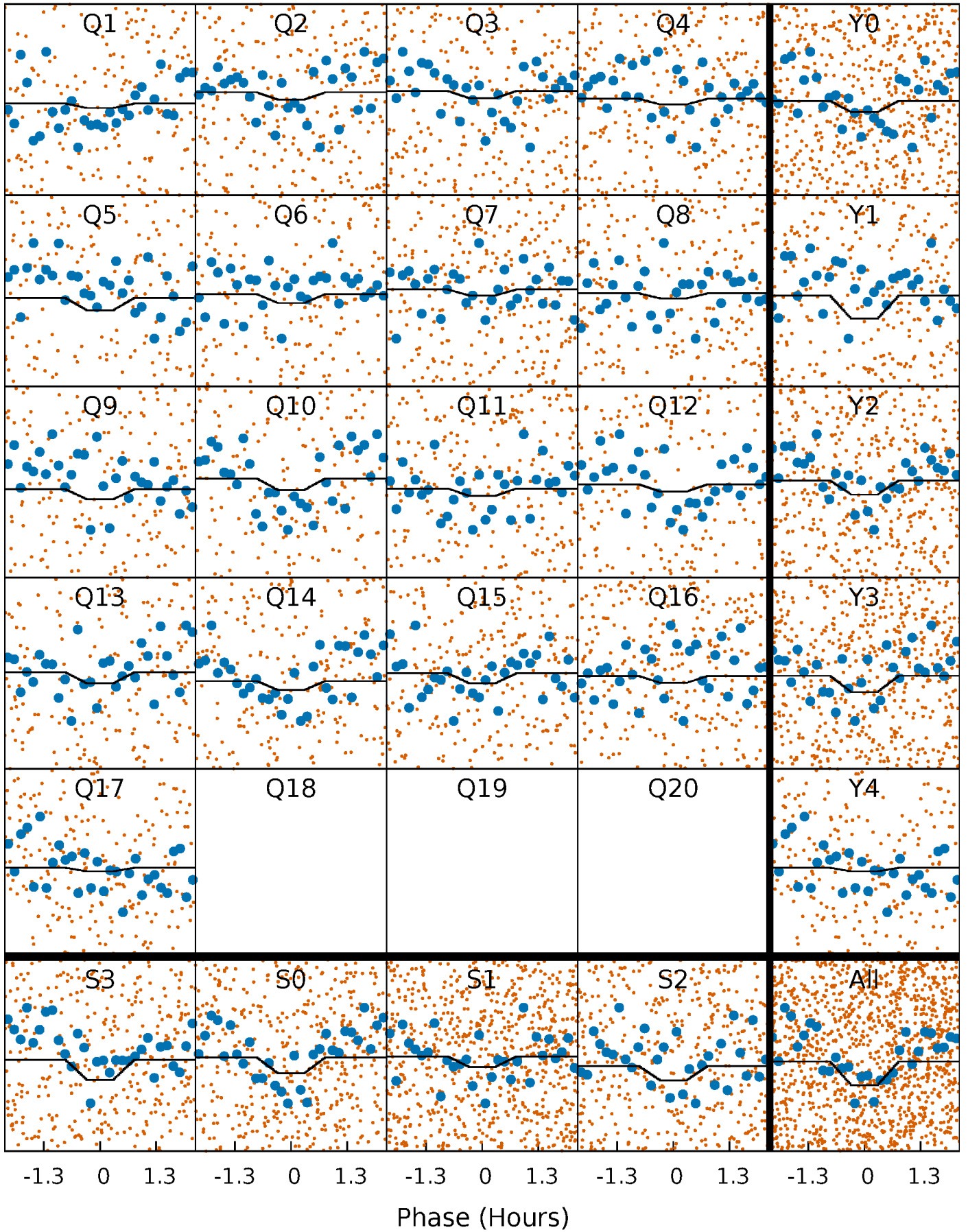
# DV Quarter-Phased Transit Curves

TCE 008264588-01 P= 0.812030 Days  $T_0=132.033519$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008264588-01   P= 0.812028 Days    $T_0=132.033540$  (BKJD)

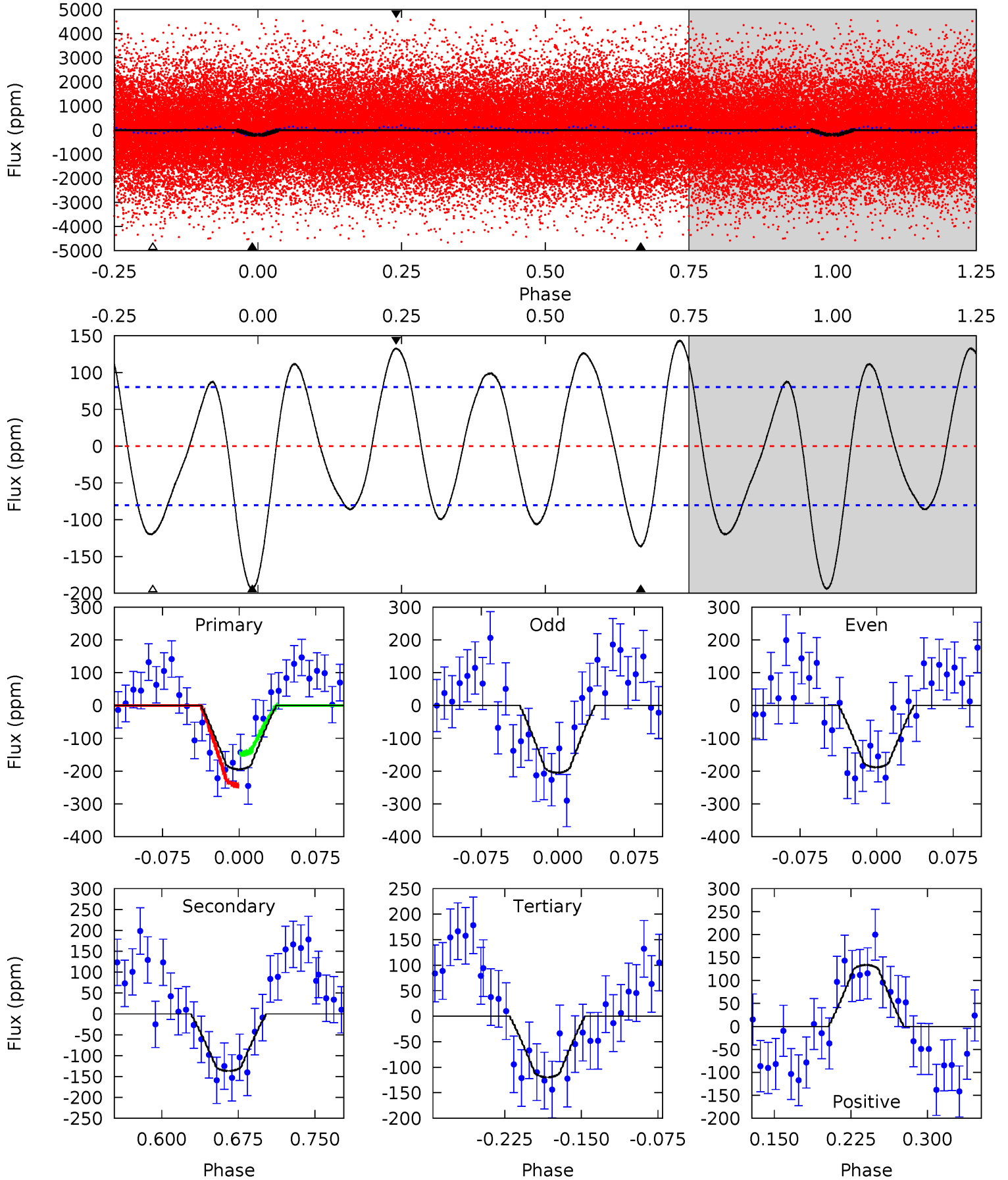




# DV Model-Shift Uniqueness Test

008264588-01, P = 0.812030 Days, E = 131.221489 Days

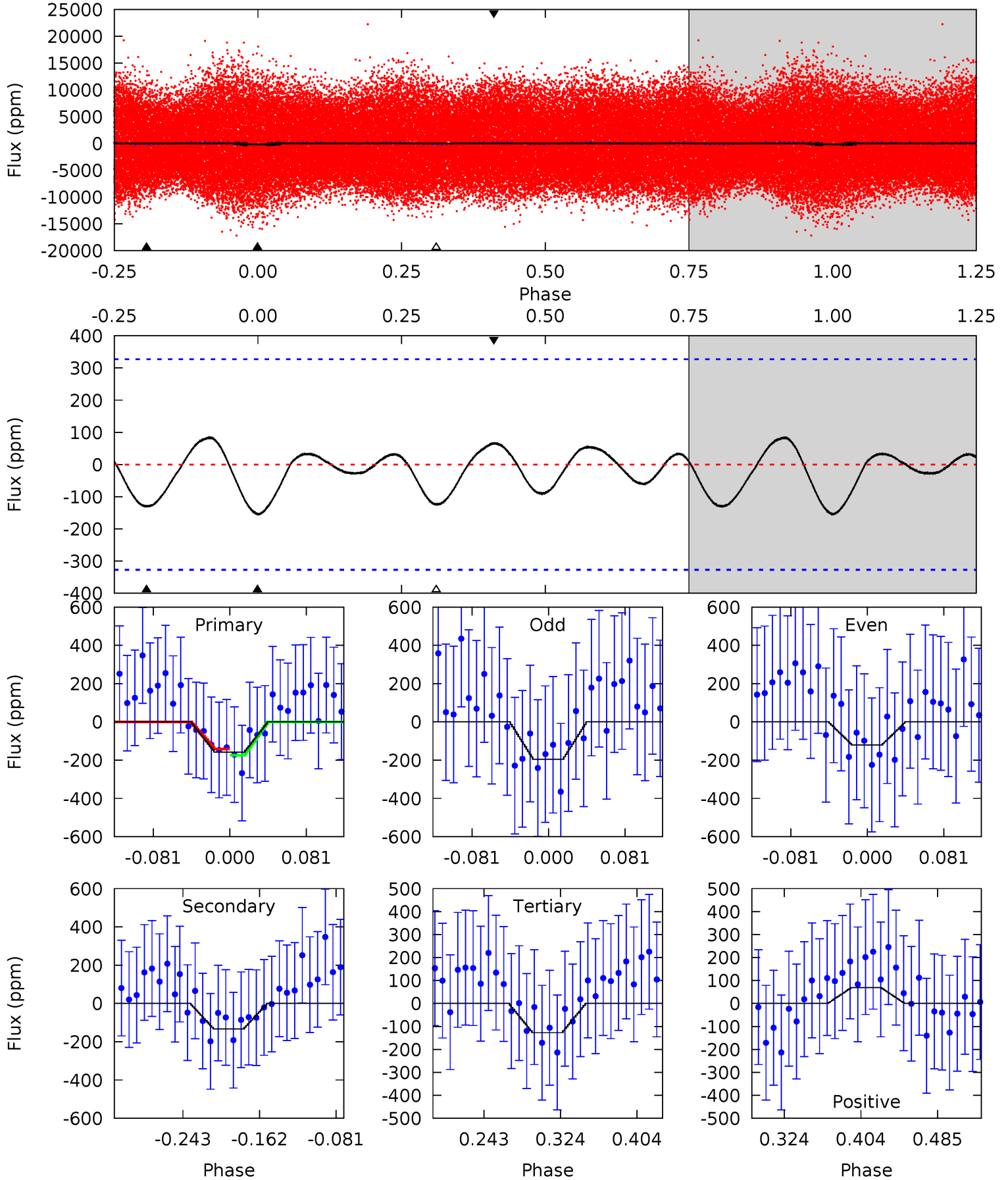
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	7.87	6.88	7.69	4.62	1.78	4.47	4.30	3.50	0.98	0.18	0.49	0.90	0.43	2.75



# Alt Model-Shift Uniqueness Test

008264588-01, P = 0.812028 Days, E = 131.221512 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.23	1.88	1.79	0.97	4.61	1.75	0.71	0.43	1.26	0.08	0.91	0.53	0.56	0.35	0.23



### Stellar Parameters For KIC 008264588

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6980^{+219}_{-316}$	$3.888^{+0.336}_{-0.144}$	$-0.160^{+0.250}_{-0.350}$	$2.382^{+0.539}_{-0.924}$	$1.596^{+0.195}_{-0.362}$	$0.166^{+0.427}_{-0.070}$
	+3%/-5%	+9%/-4%	+156%/-219%	+23%/-39%	+12%/-23%	+257%/-42%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008264588-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-137 \pm 17$	$3.04^{+1.07}_{-0.98}$	$4610^{+377}_{-469}$	$6537^{+1534}_{-917}$	$3.208^{+3.667}_{-1.462}$
Alt.	$-133 \pm 71$	$3.06^{+1.10}_{-0.97}$	$4630^{+366}_{-491}$	$6365^{+1753}_{-1416}$	$2.937^{+3.950}_{-1.821}$

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



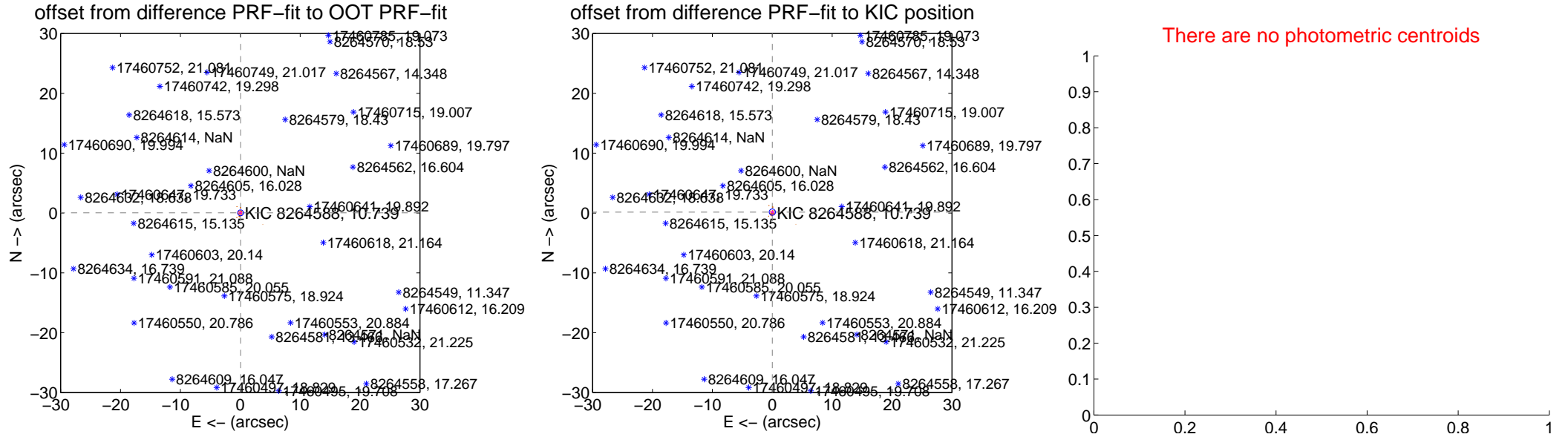
## DV Centroid Data

Supplemental centroid analysis for 008264588-01. **Kepler magnitude: 10.74.** Transit SNR 11.63

There are 8 quarters with good PRF difference image offsets

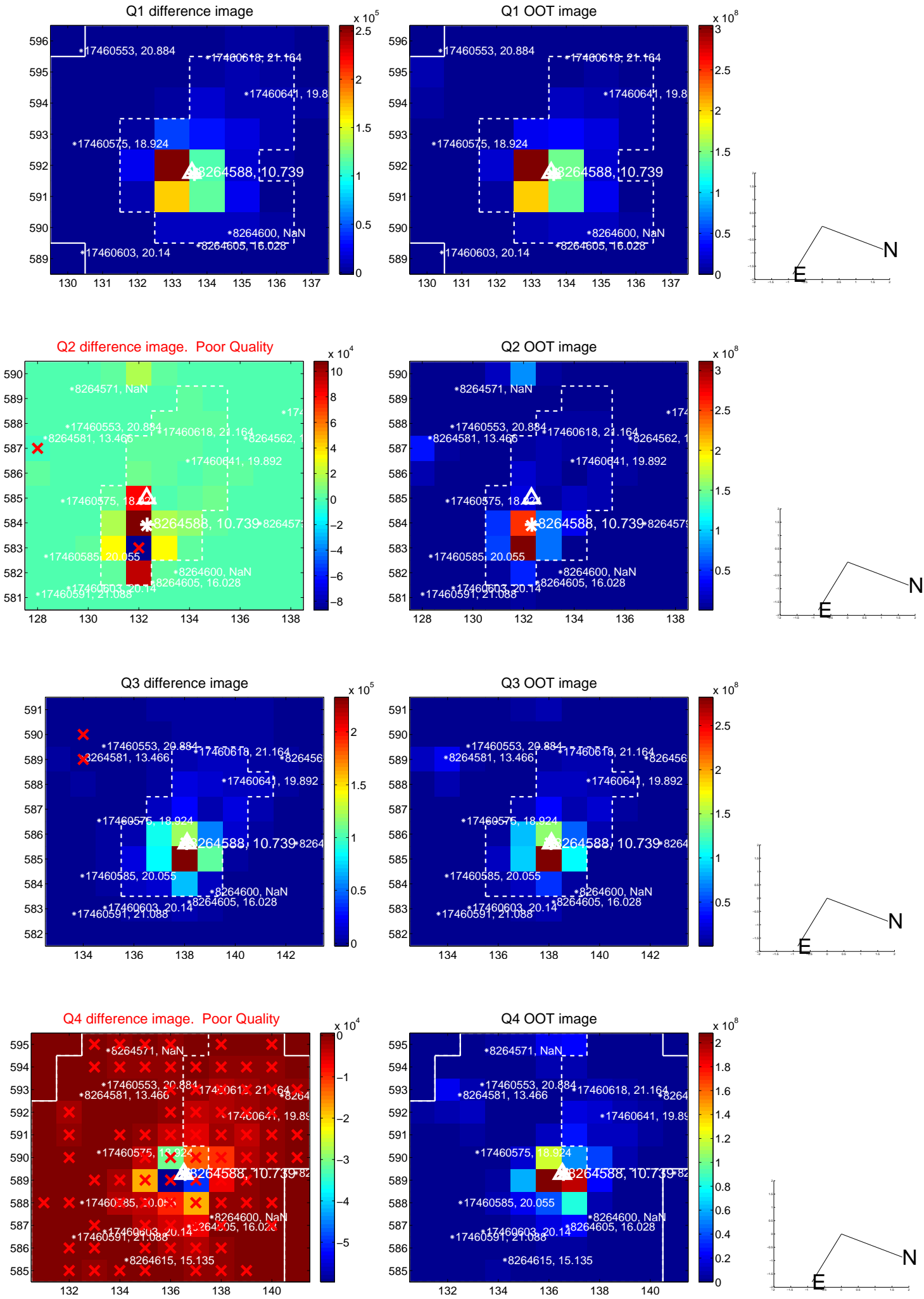
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.060 \pm 0.162$	0.37	$-0.047 \pm 0.257$	$0.038 \pm 0.173$
PRF-fit source offset from KIC position	$0.153 \pm 0.175$	0.87	$-0.012 \pm 0.273$	$0.152 \pm 0.190$
photometric centroid source offset	—	—	—	—

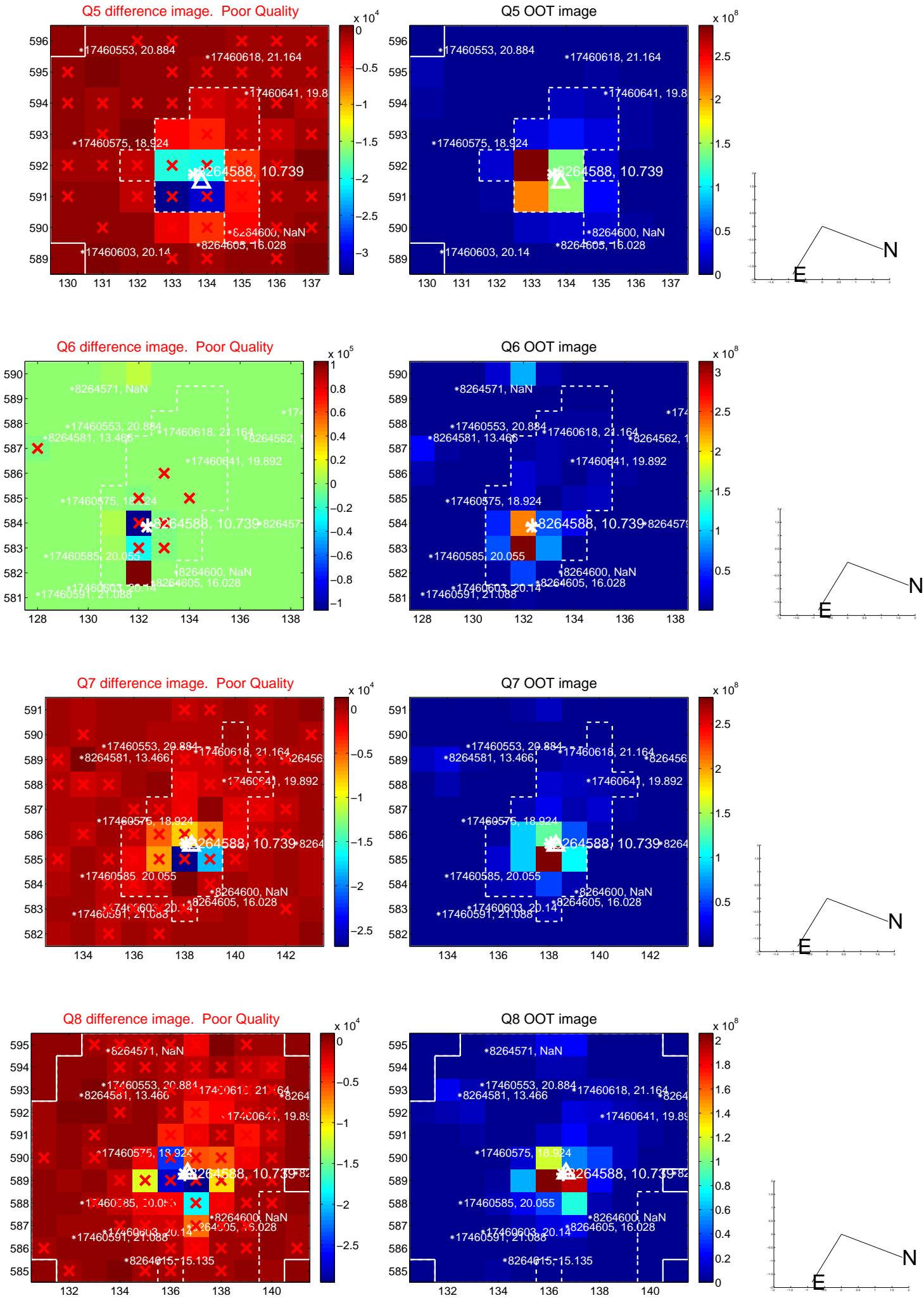


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

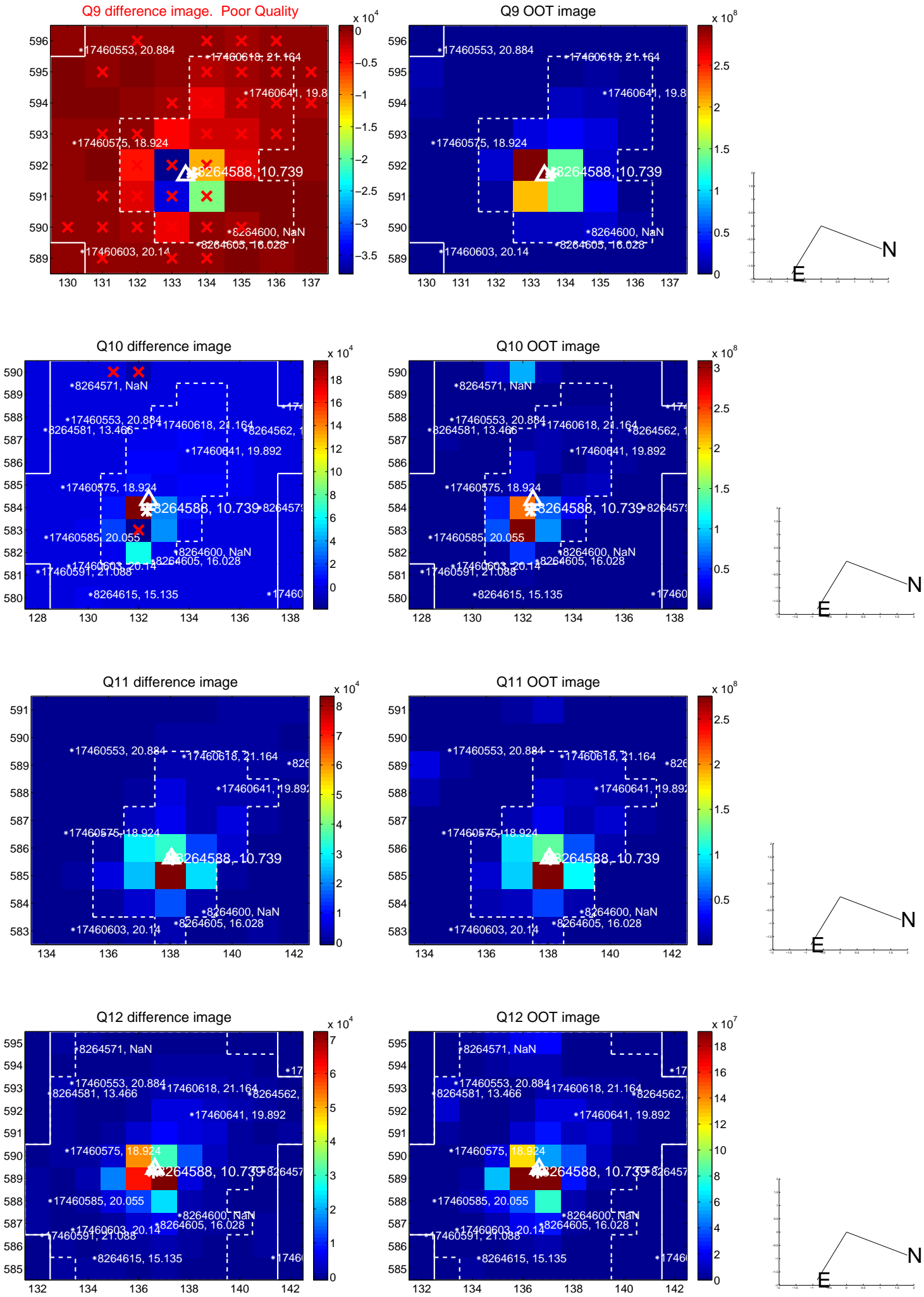


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

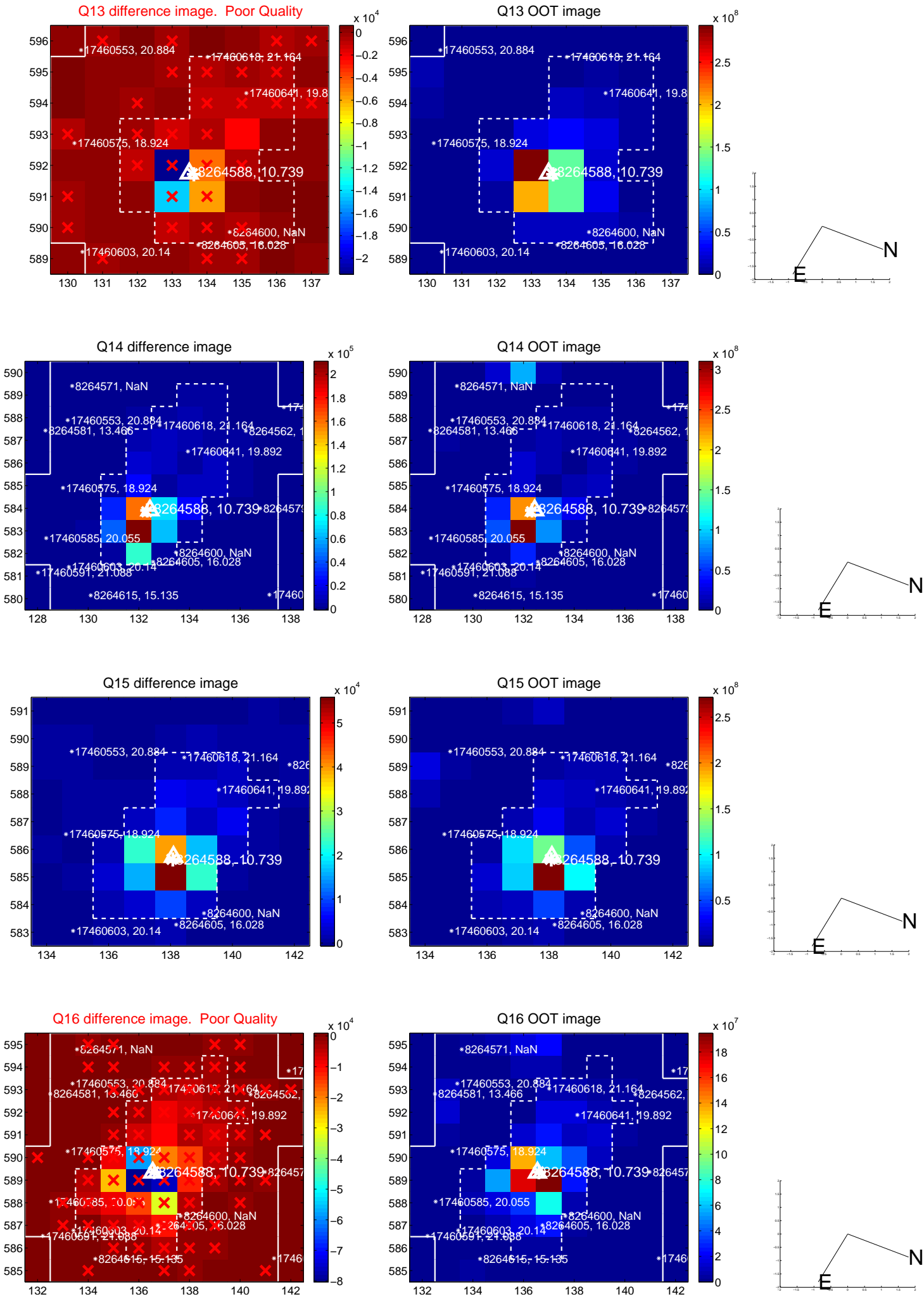




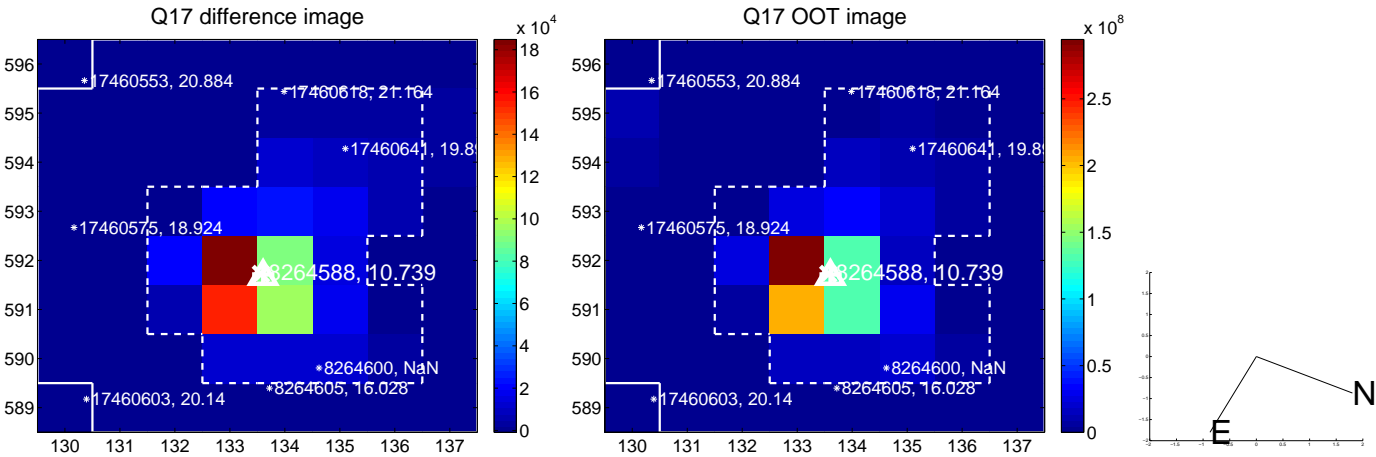
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



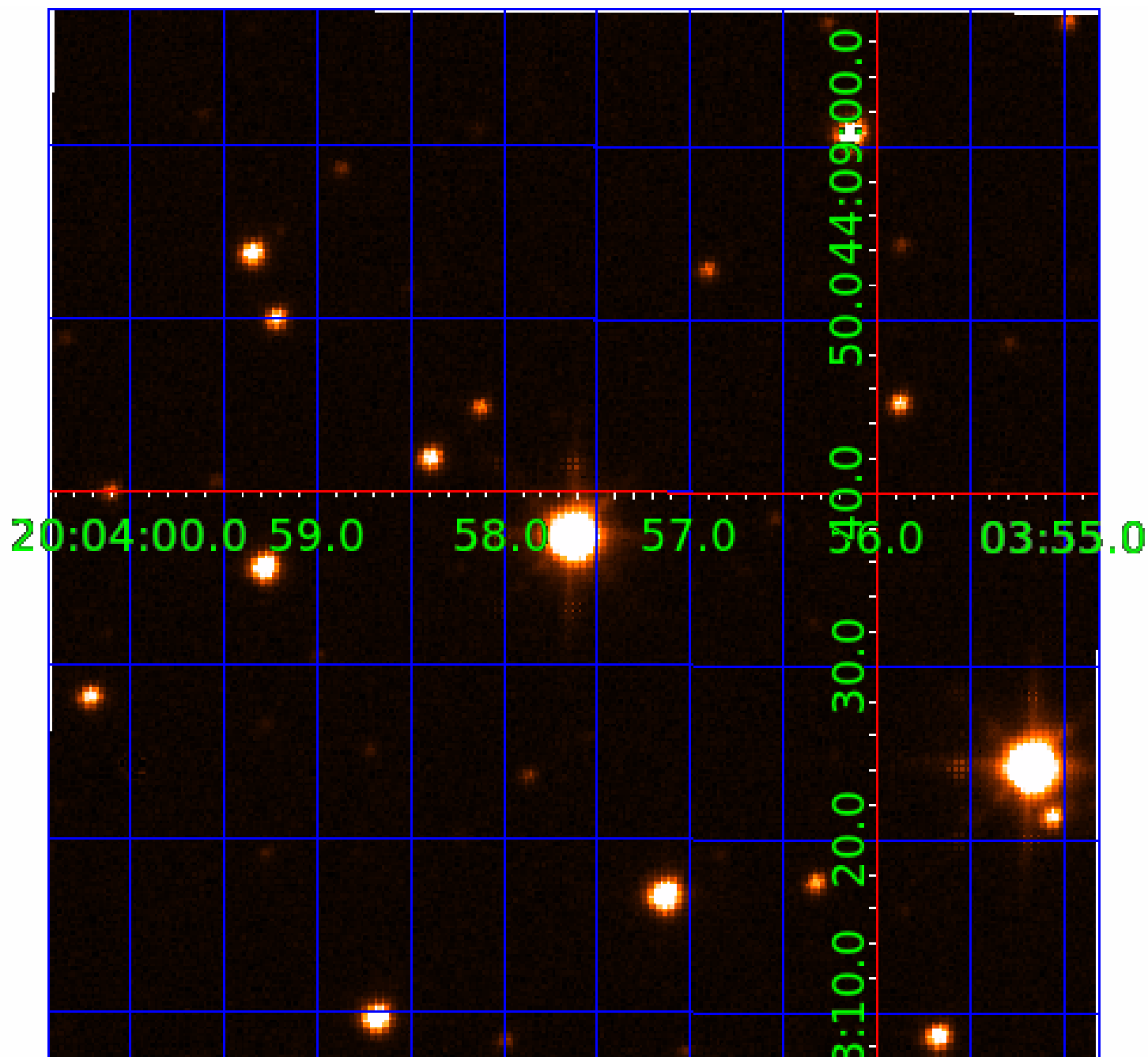
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

# UKIRT Image

Declination





# KIC 008264588

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008264588-01	OBS	No	0.812030	132.033519	165.0	0.982	11.1	11.6	2.38	6980	3.19	30398.22
008264588-02	OBS	No	0.662869	131.986139	191.3	1.508	9.4	10.7	2.38	6980	3.84	39845.00
008264588-03	OBS	No	0.662875	131.653372	204.6	1.613	9.4	11.3	2.38	6980	3.97	39844.49
008264588-04	OBS	No	0.605307	132.054944	80.0	2.000	9.3	-1.0	2.38	6980	2.16	44975.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008264588-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
008264588-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008264588-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
008264588-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

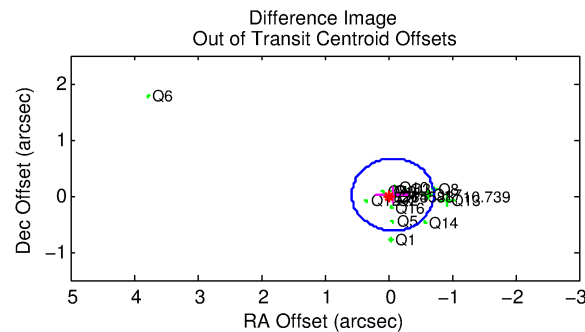
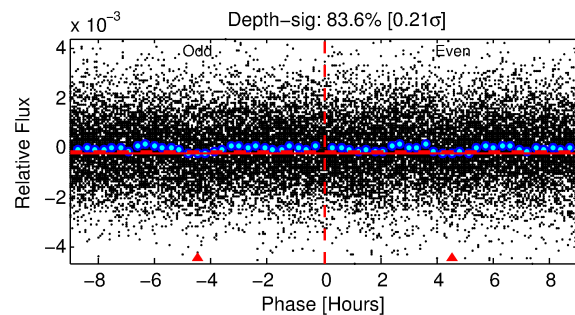
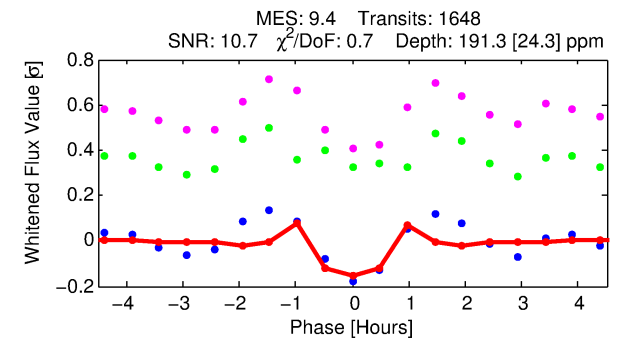
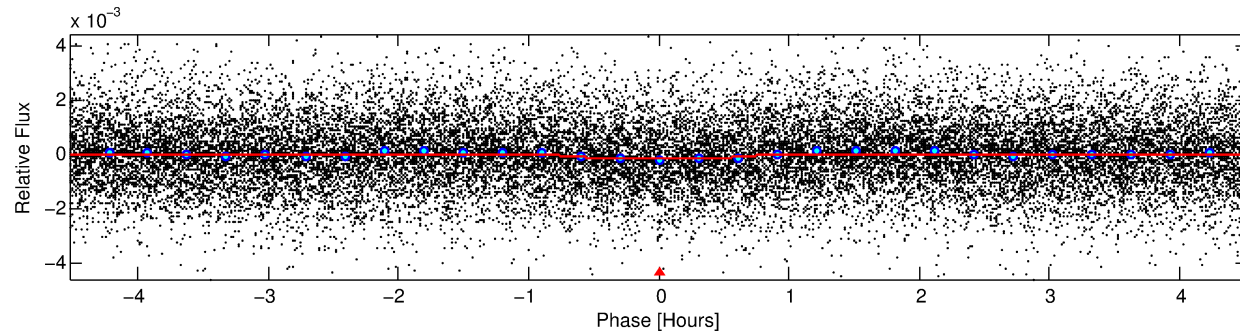
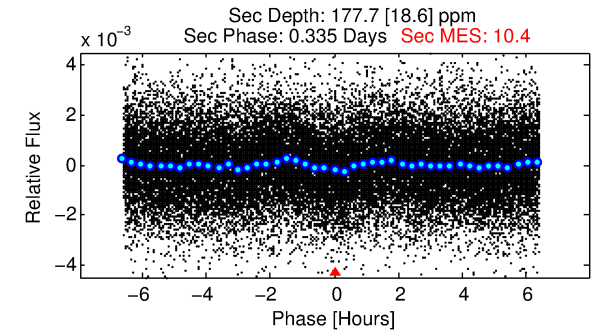
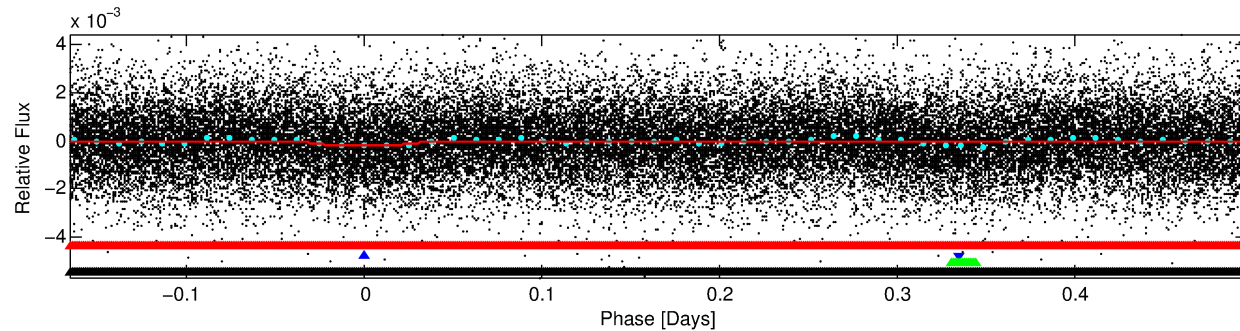
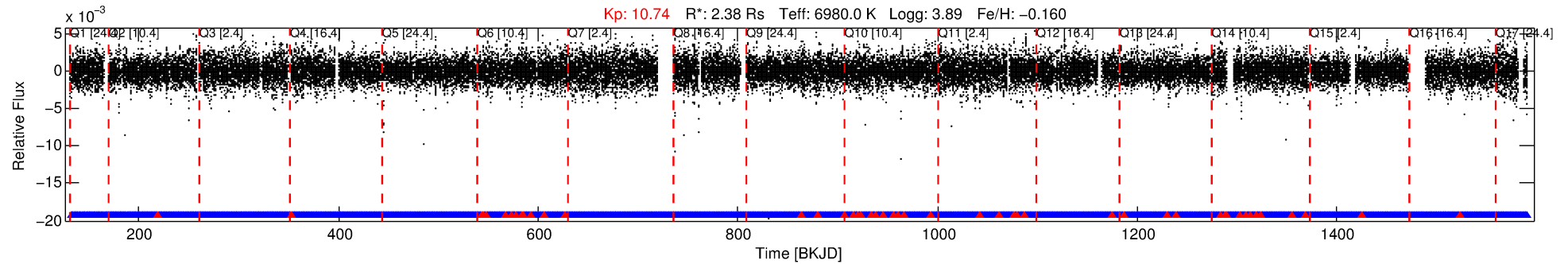
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008264588-02

No Significant Match Found

# DV One-Page Summary

KIC: 8264588 Candidate: 2 of 4 Period: 0.663 d



## DV Fit Results:

Period = 0.66287 [0.00001] d  
Epoch = 131.9861 [0.0011] BKJD  
 $R_p/R^*$  = 0.0148 [0.0036]  
 $a/R^*$  = 1.84 [1.82]  
 $b$  = 0.90 [0.30]  
 $S_{\text{eff}}$  = 39845.00 [24095.46]  
 $T_{\text{eq}}$  = 3603 [545] K  
 $R_p$  = 3.84 [1.76]  $R_e$   
 $a$  = 0.0174 [0.0064] AU  
 $A_g$  = 2.01 [1.54] [0.66σ]  
 $T_{\text{eff}}$  = 6634 [881] K [2.93σ]

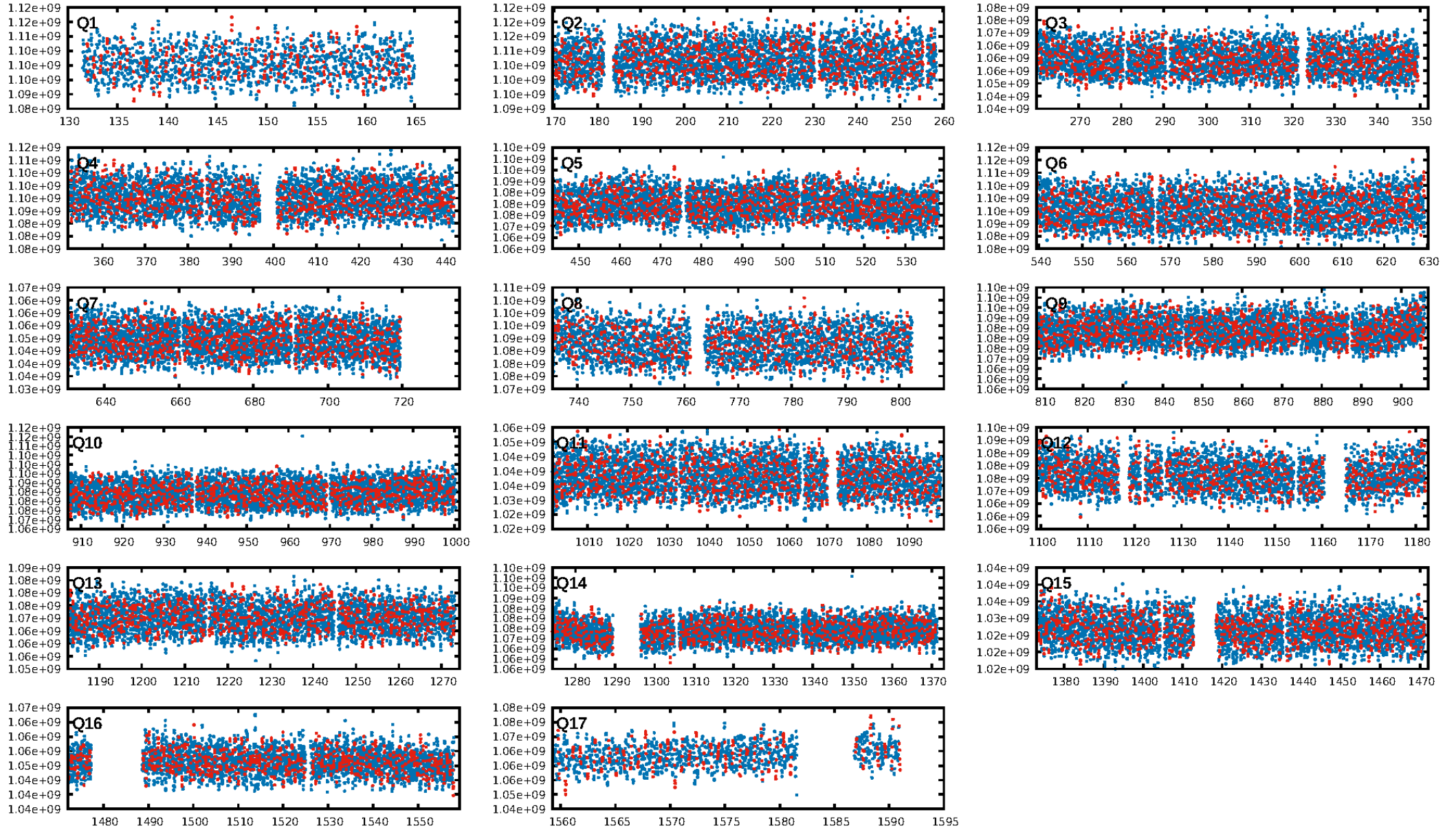
## DV Diagnostic Results:

ShortPeriod-sig: 41.9% [0.55σ]  
**LongPeriod-sig: 0.0% [0.00σ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.97 [1525/1576]  
**GhostDiagnostic-chr: 0.835**  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.073 arcsec [0.34σ]  
KicOffset-rm: 0.182 arcsec [1.70σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.47 [8/17]  
DiffImageOverlap-fno: 0.82 [14/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:56:43 Z

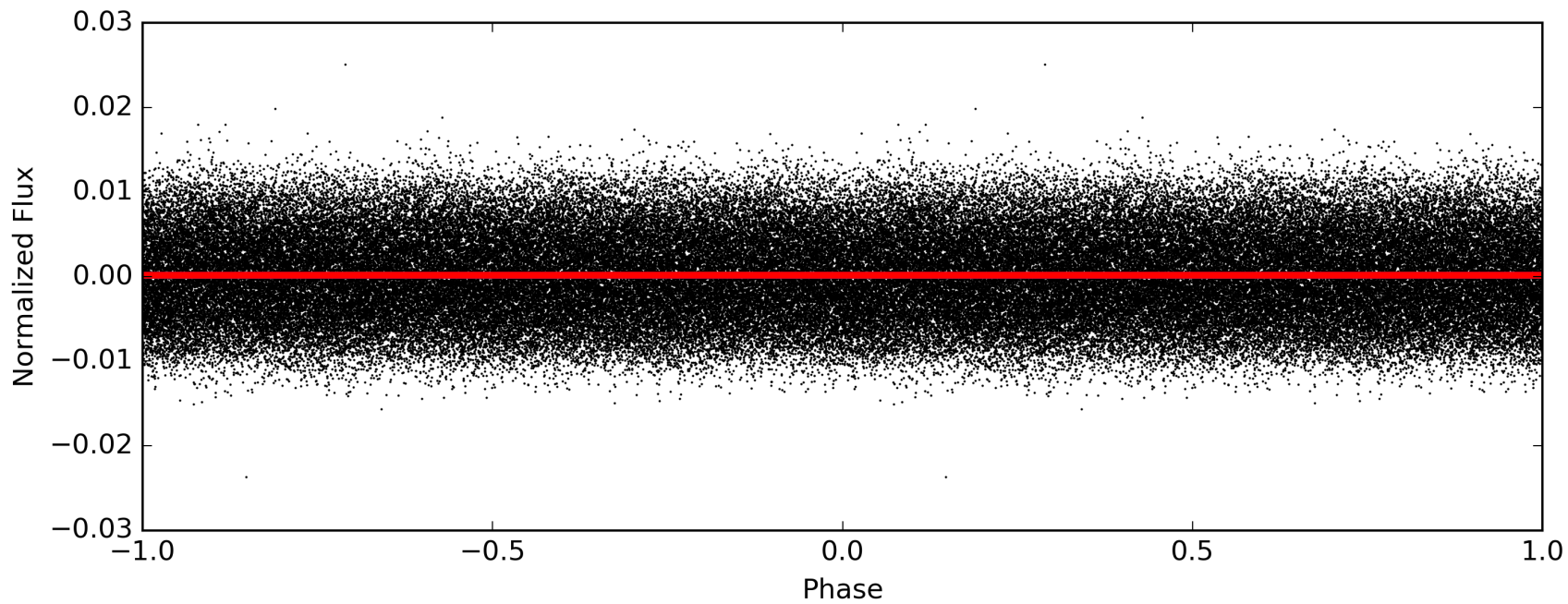
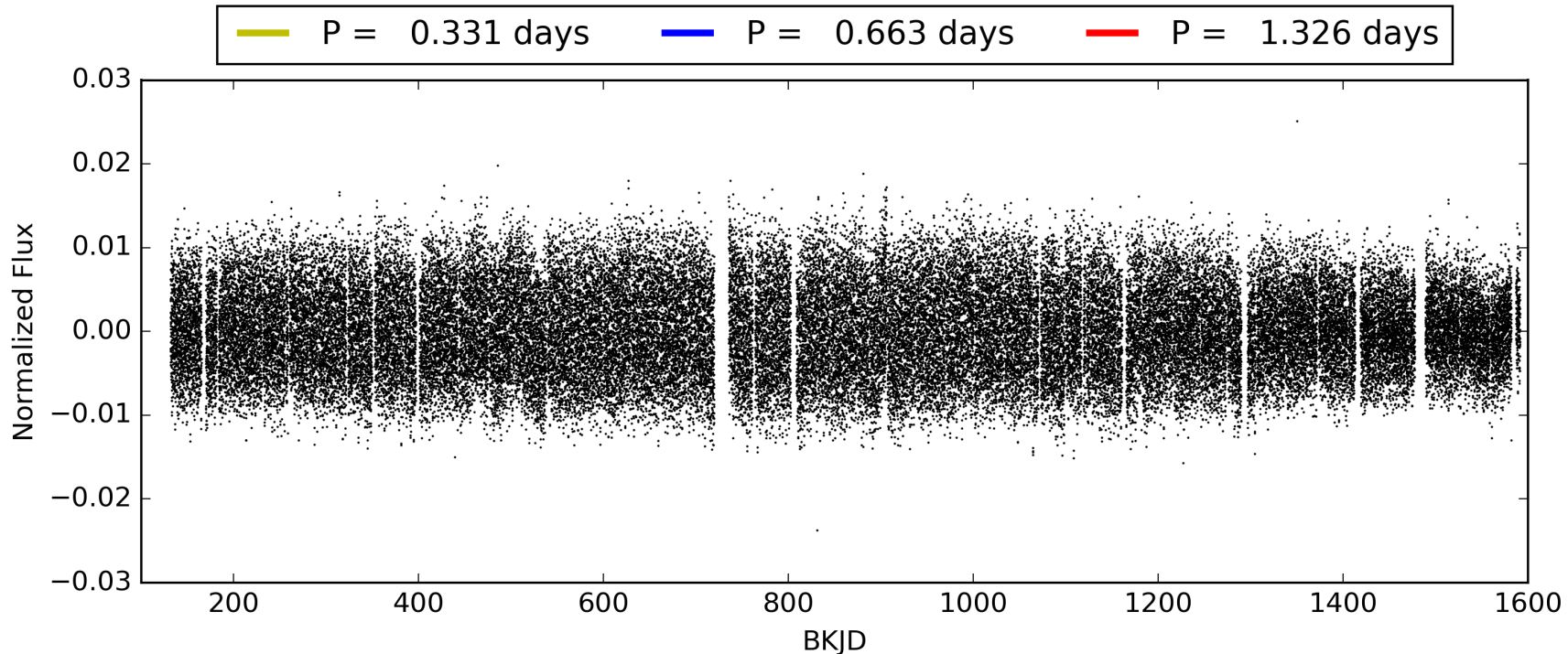
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008264588-02, PDC Light Curves



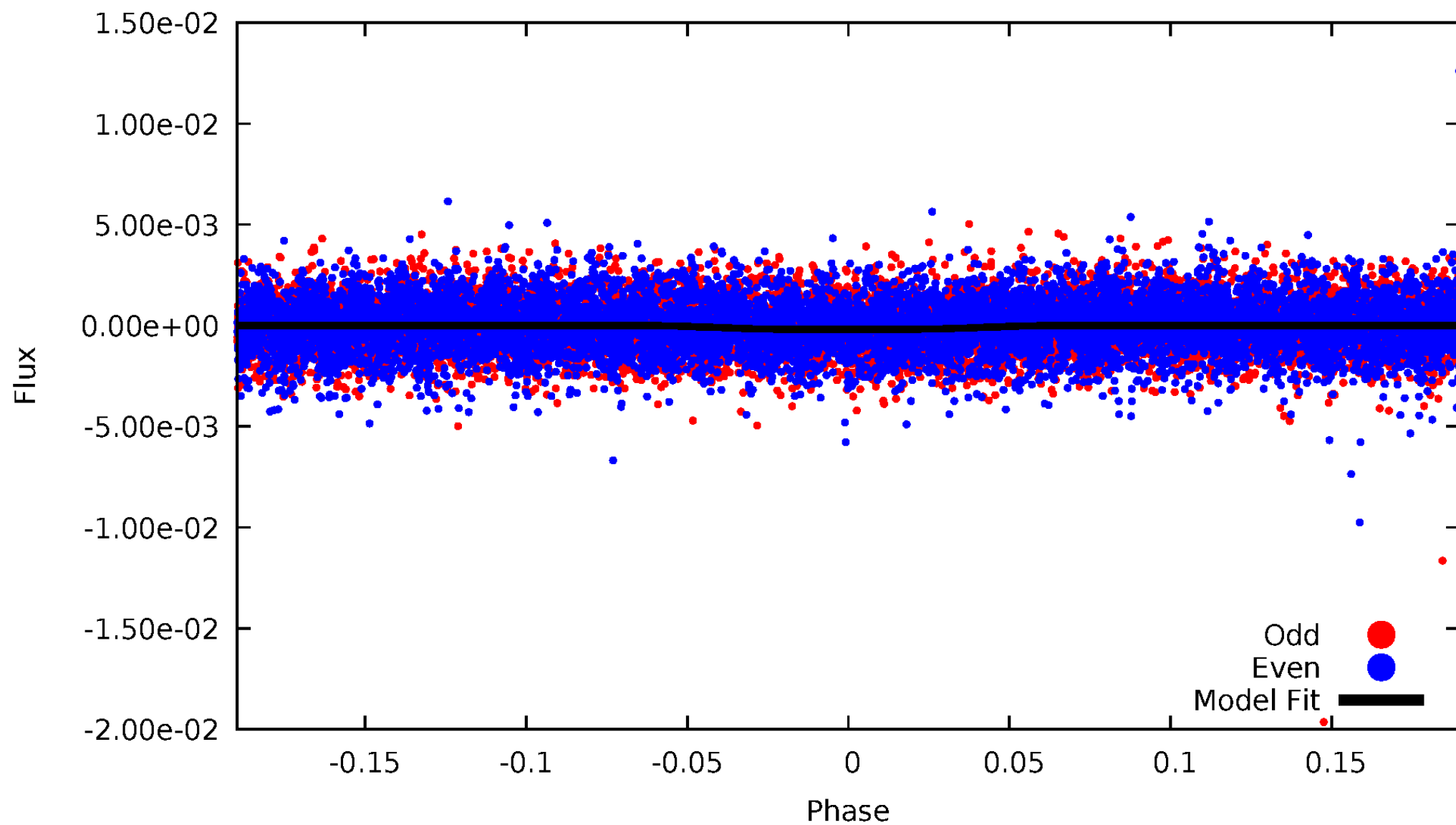


TCE 008264588-02



DV Odd/Even

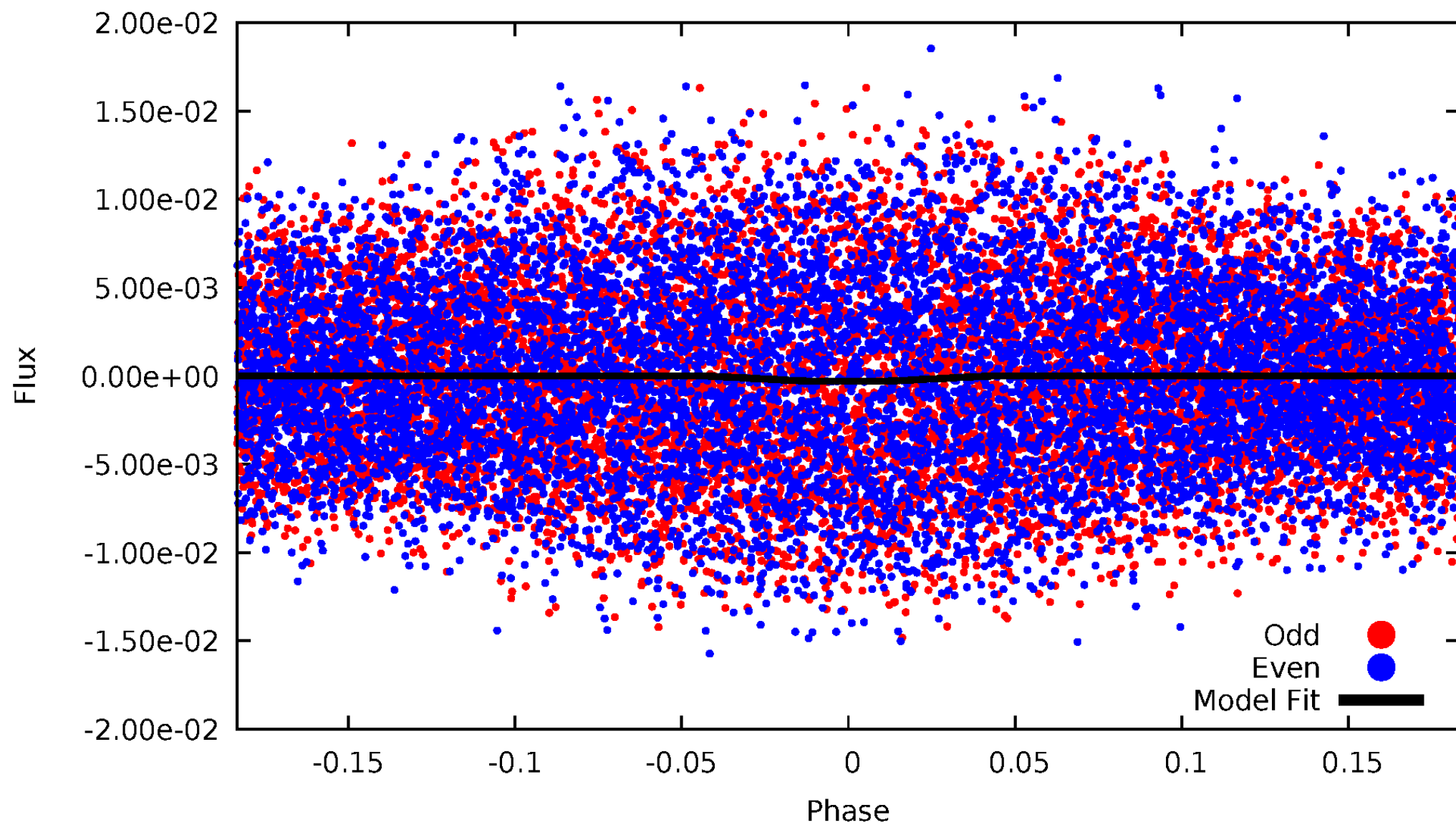
TCE 008264588-02





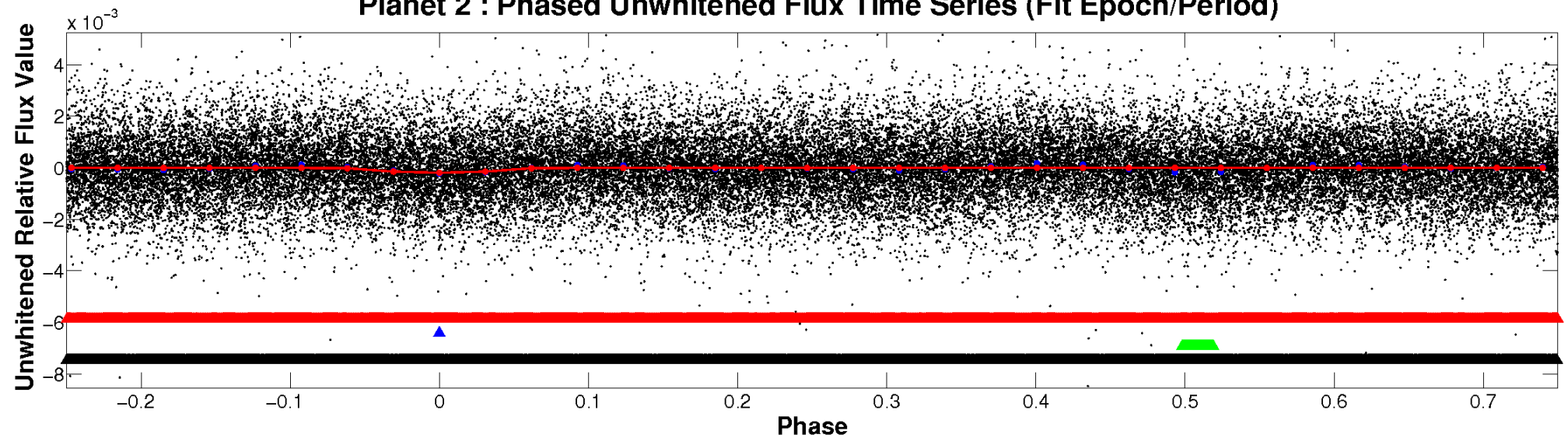
ALT Odd/Even

TCE 008264588-02

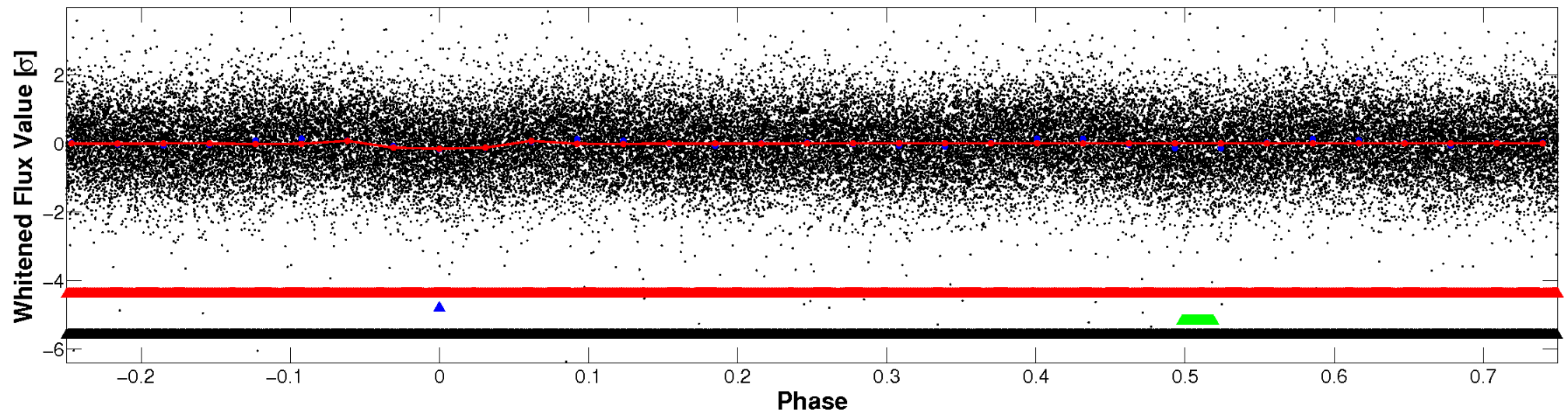


# Non-Whitened Vs. Whitened Light Curve

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

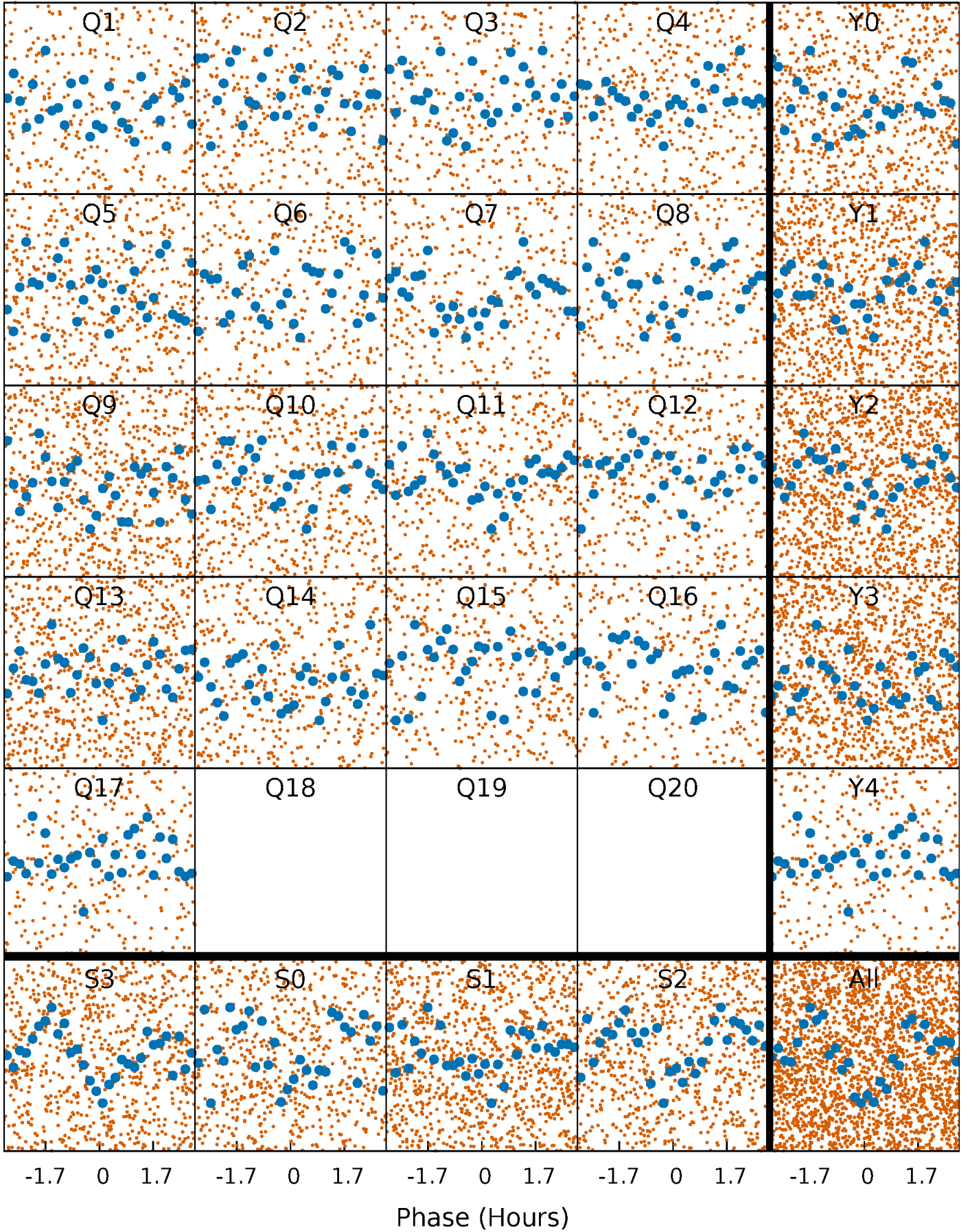


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

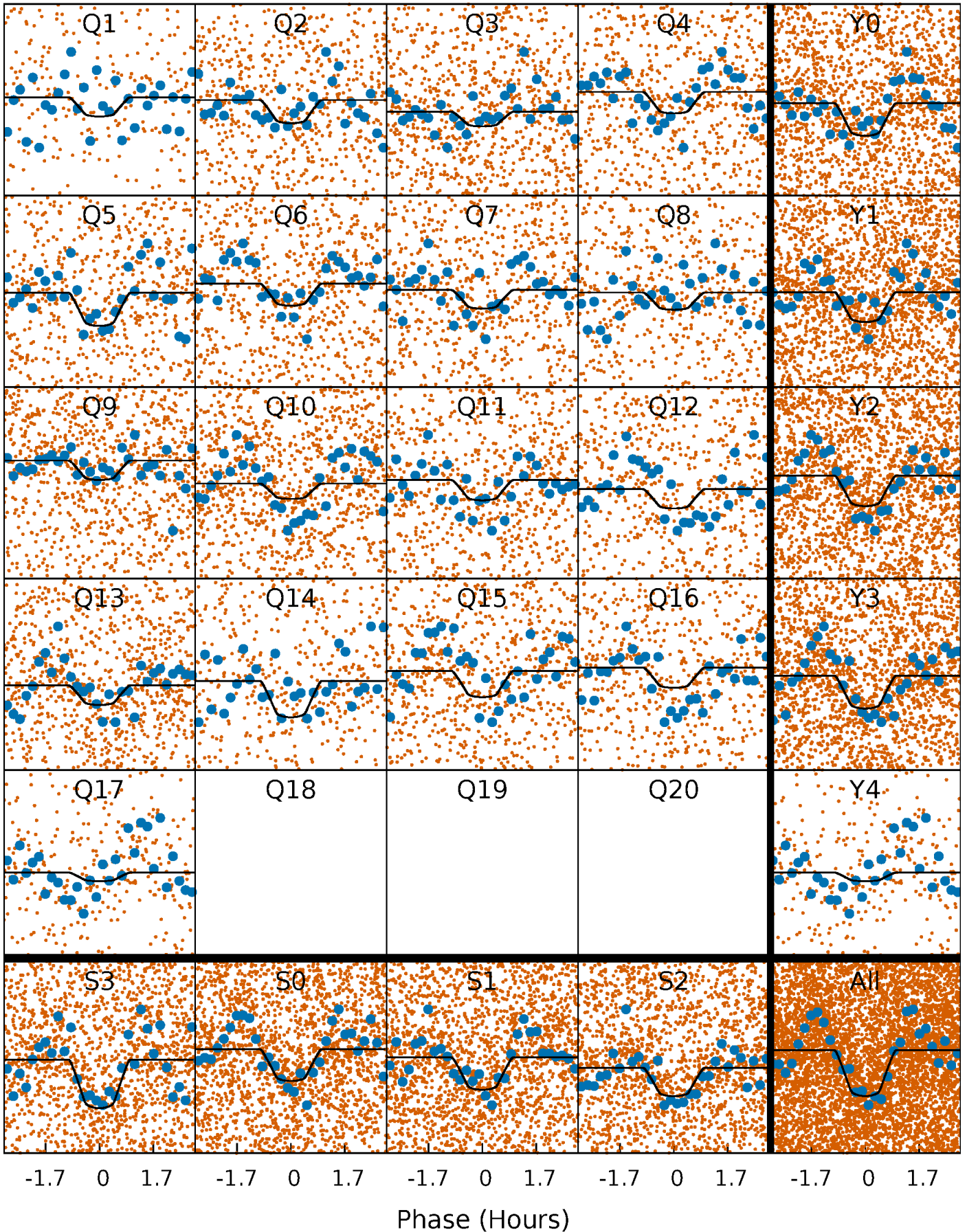
TCE 008264588-02   P= 0.662869 Days    $T_0=131.986139$  (BKJD)





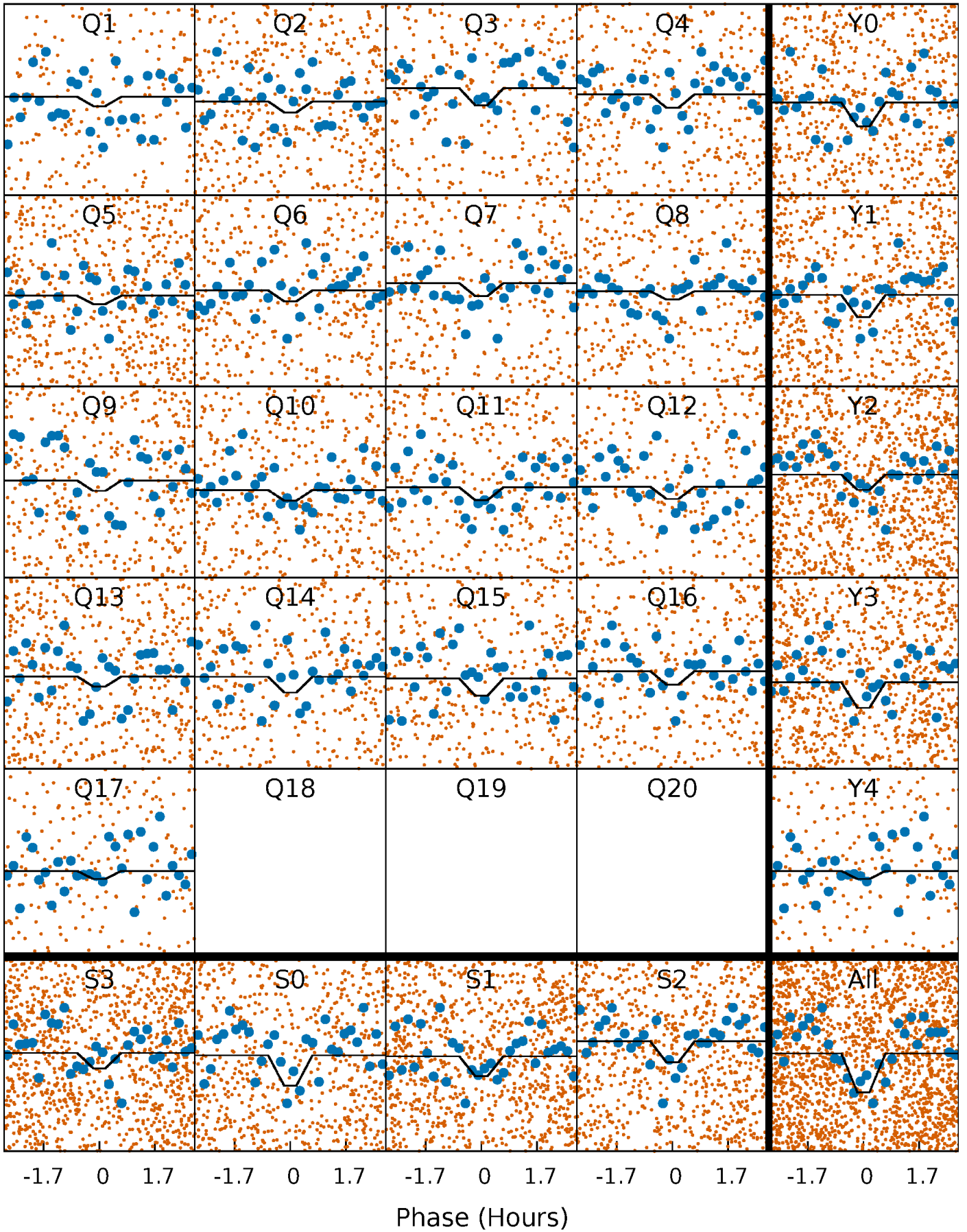
# DV Quarter-Phased Transit Curves

TCE 008264588-02   P= 0.662869 Days    $T_0=131.986139$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008264588-02 P= 0.662872 Days  $T_0=131.984899$  (BKJD)

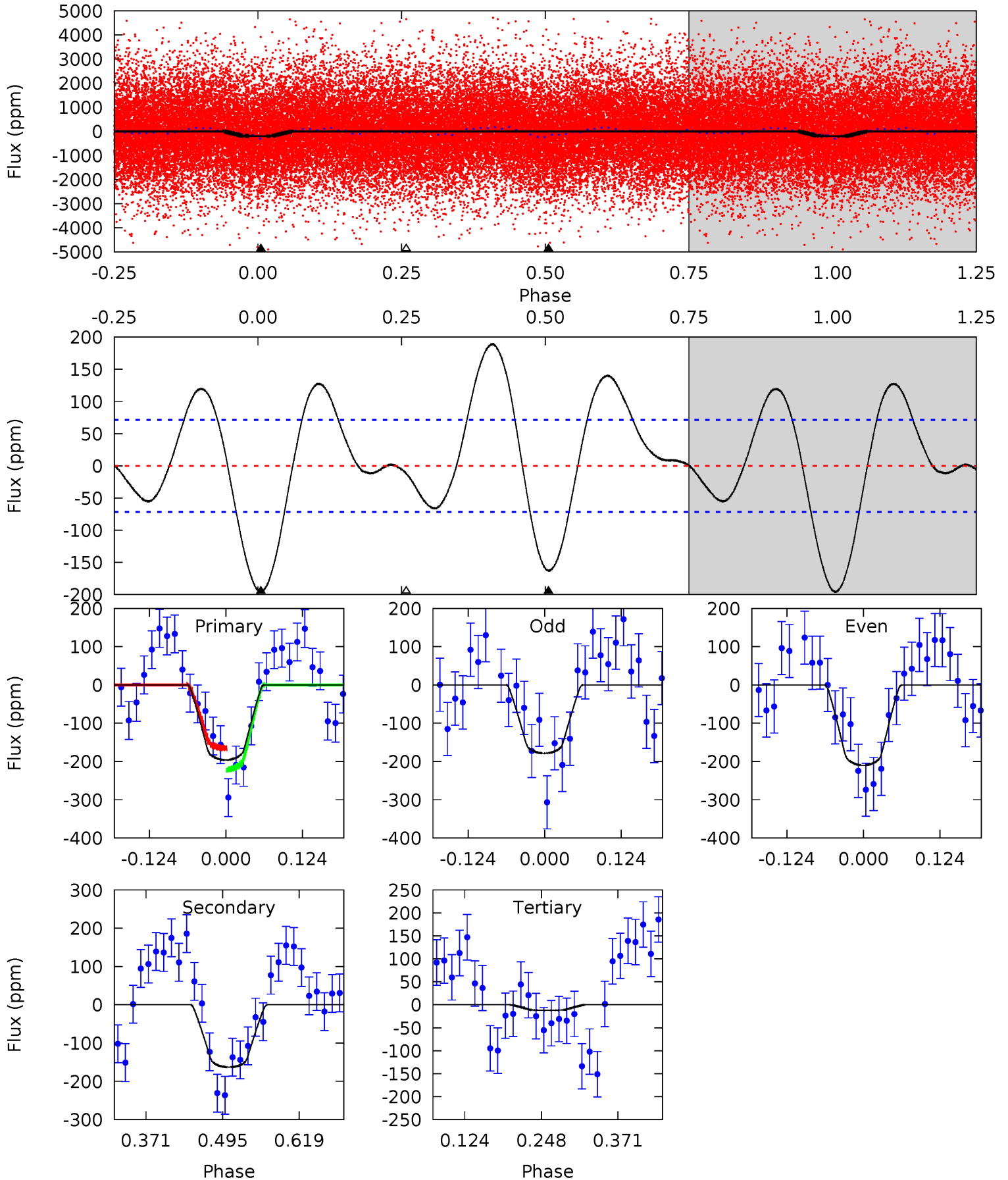




# DV Model-Shift Uniqueness Test

008264588-02, P = 0.662869 Days, E = 131.323270 Days

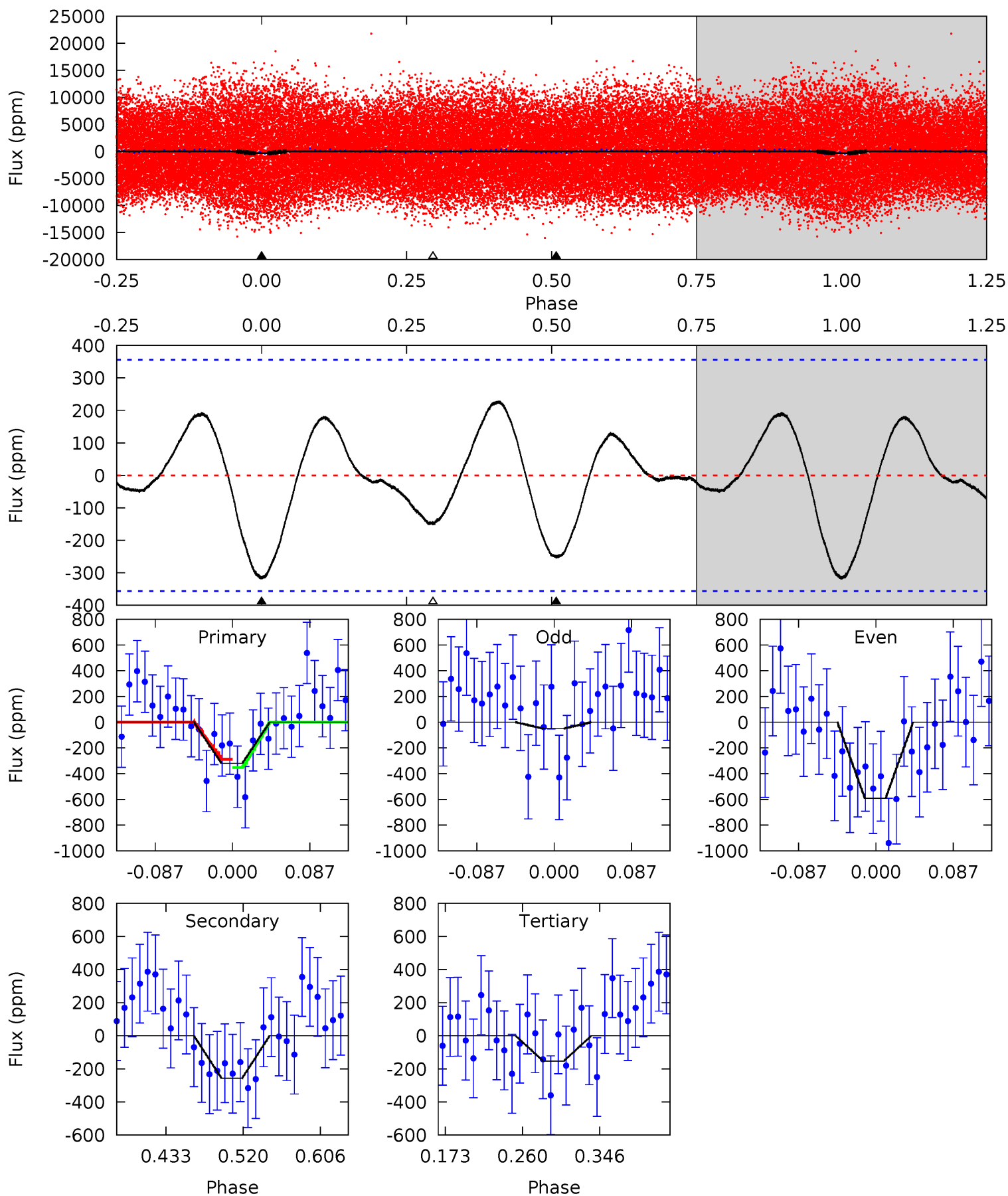
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	10.3	0.77	0	4.52	1.54	2.94	11.6	12.4	9.55	10.3	0.99	0.89	0.49	1.77



# Alt Model-Shift Uniqueness Test

008264588-02, P = 0.662872 Days, E = 131.322027 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.12	3.30	1.97	0	4.59	1.71	1.26	2.15	4.12	1.33	3.30	3.50	1.26	0.42	0.41



### Stellar Parameters For KIC 008264588

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6980^{+219}_{-316}$	$3.888^{+0.336}_{-0.144}$	$-0.160^{+0.250}_{-0.350}$	$2.382^{+0.539}_{-0.924}$	$1.596^{+0.195}_{-0.362}$	$0.166^{+0.427}_{-0.070}$
	+3%/-5%	+9%/-4%	+156%/-219%	+23%/-39%	+12%/-23%	+257%/-42%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008264588-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-163 \pm 16$	$3.58^{+1.19}_{-1.05}$	$4924^{+404}_{-531}$	$6111^{+1273}_{-757}$	$2.068^{+2.016}_{-0.881}$
Alt.	$-256 \pm 77$	$4.24^{+1.20}_{-1.17}$	$4929^{+405}_{-458}$	$6407^{+1289}_{-986}$	$2.345^{+2.312}_{-1.109}$

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

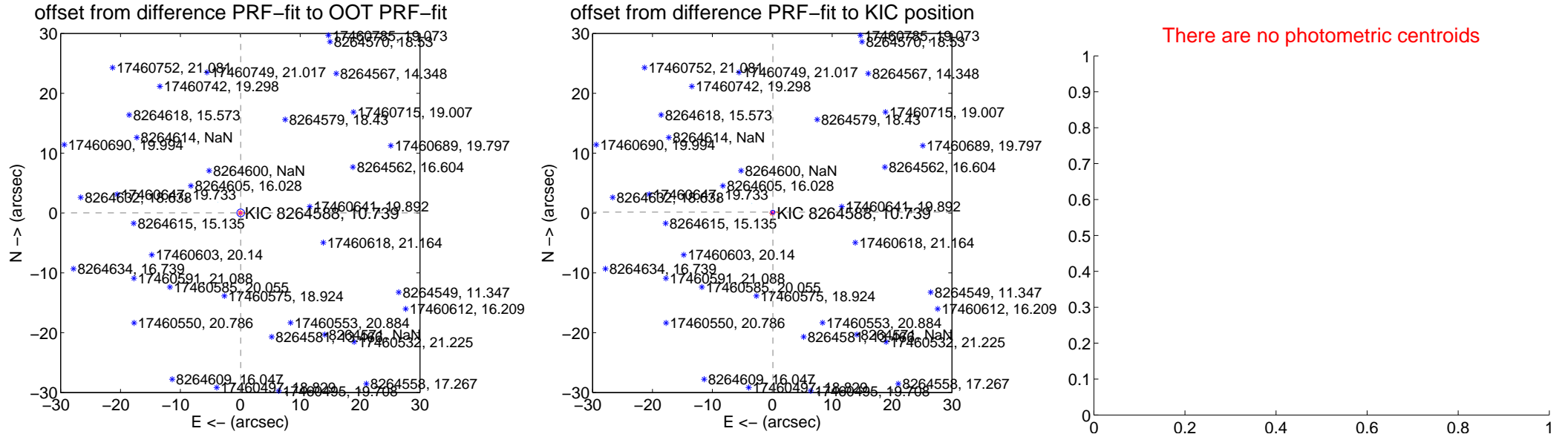
## DV Centroid Data

Supplemental centroid analysis for 008264588-02. **Kepler magnitude: 10.74.** Transit SNR 10.73

There are 8 quarters with good PRF difference image offsets

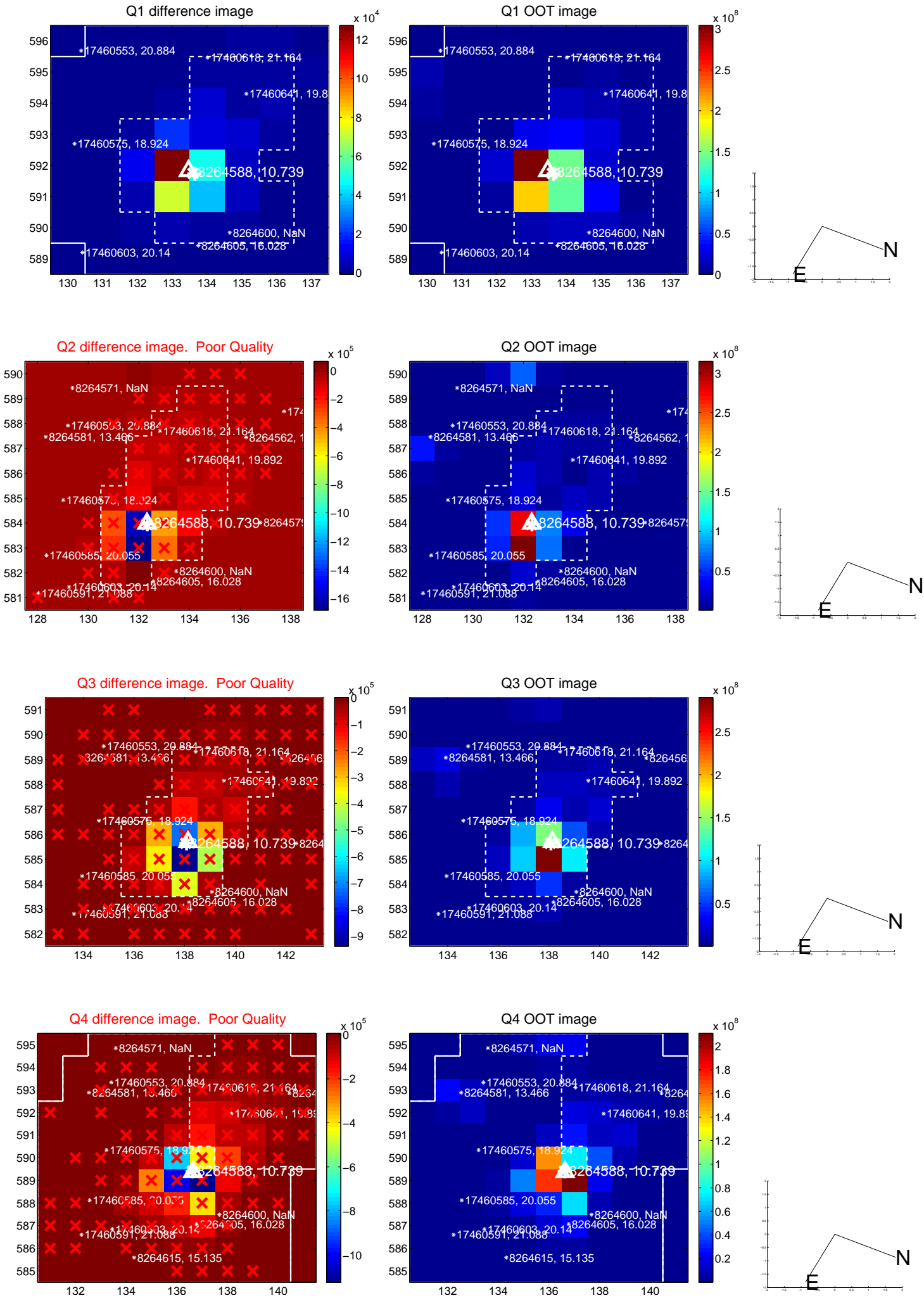
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.073 \pm 0.214$	0.34	$-0.070 \pm 0.249$	$0.020 \pm 0.143$
PRF-fit source offset from KIC position	$0.182 \pm 0.107$	1.70	$-0.104 \pm 0.228$	$0.150 \pm 0.125$
photometric centroid source offset	—	—	—	—



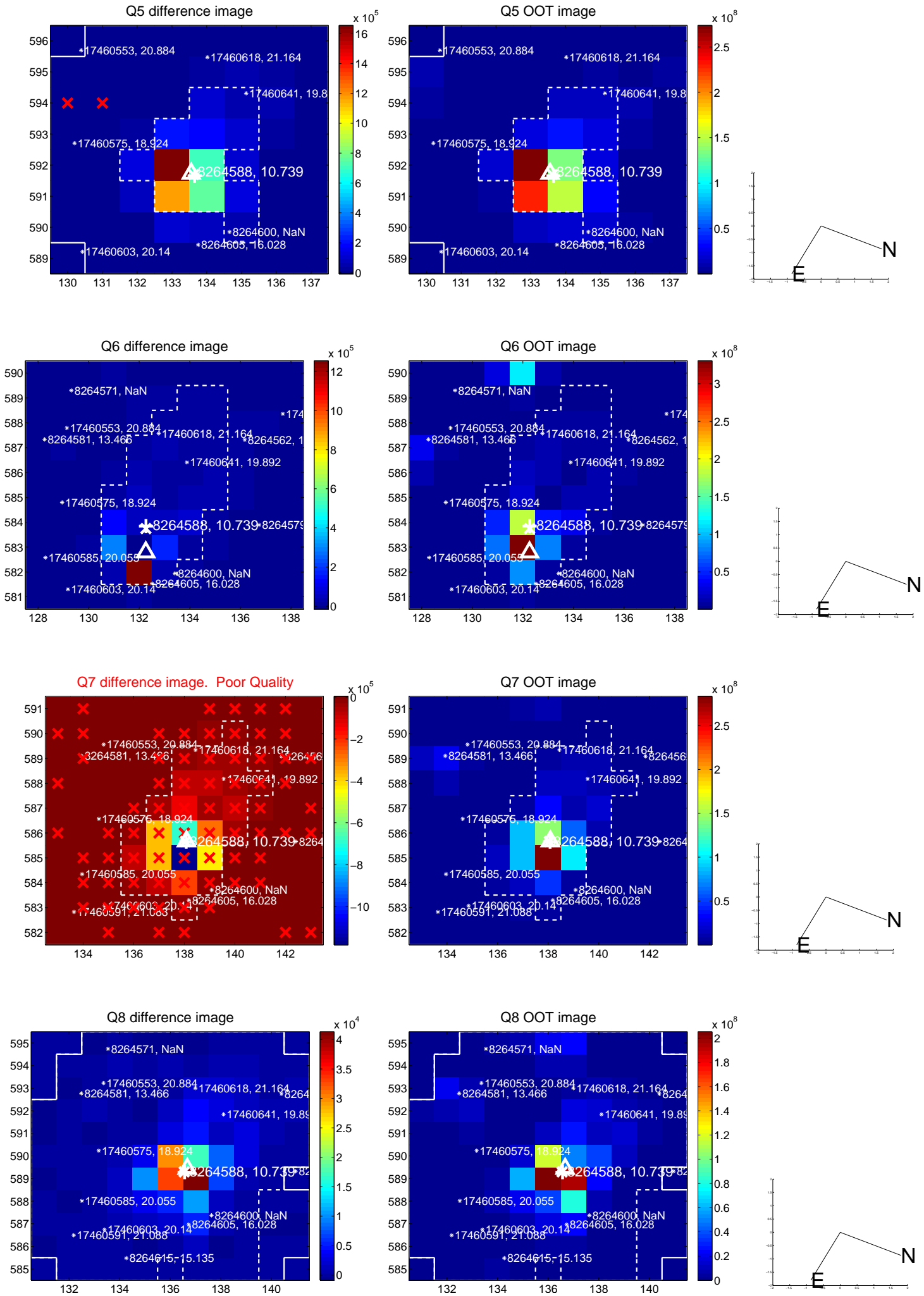
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

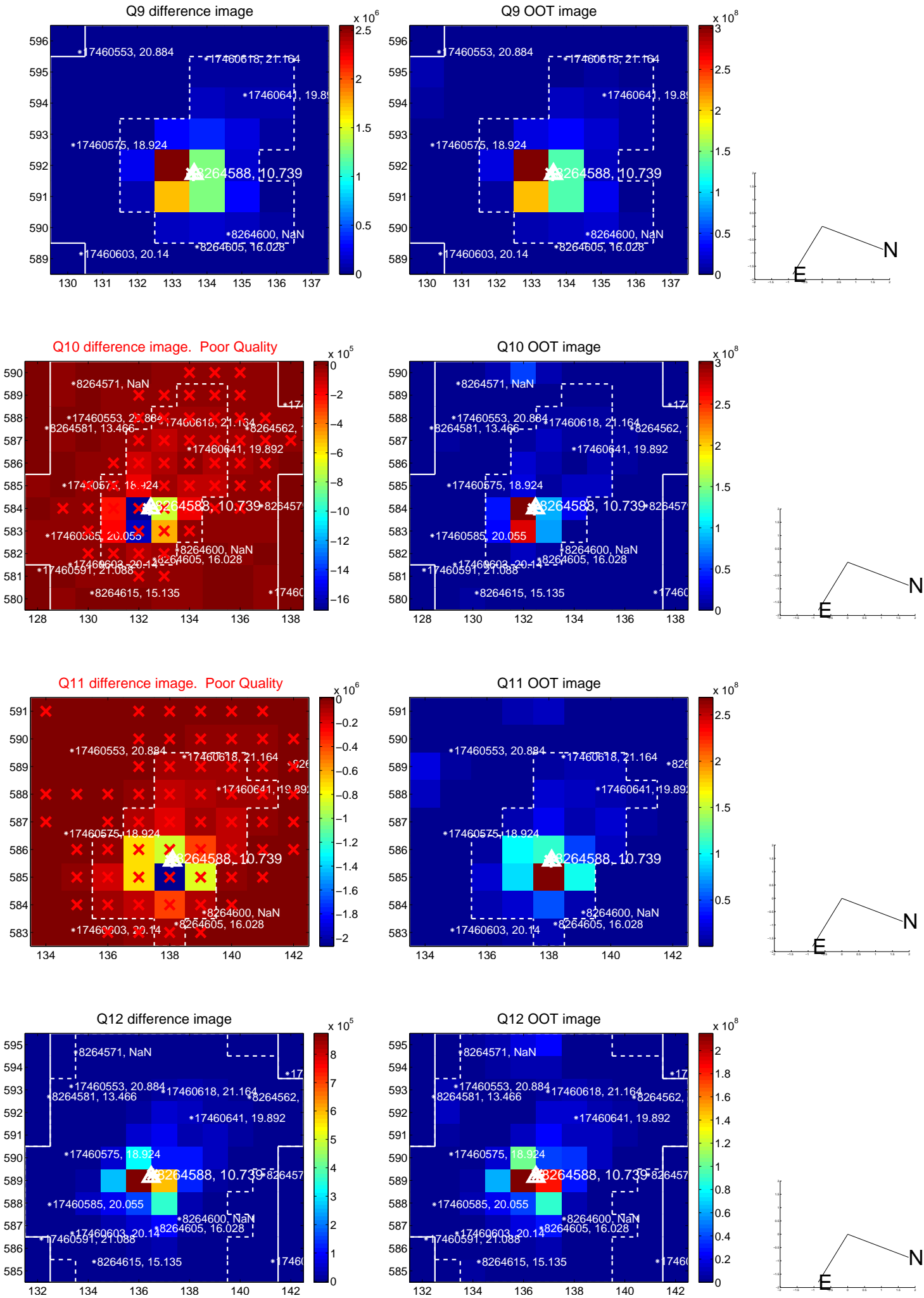




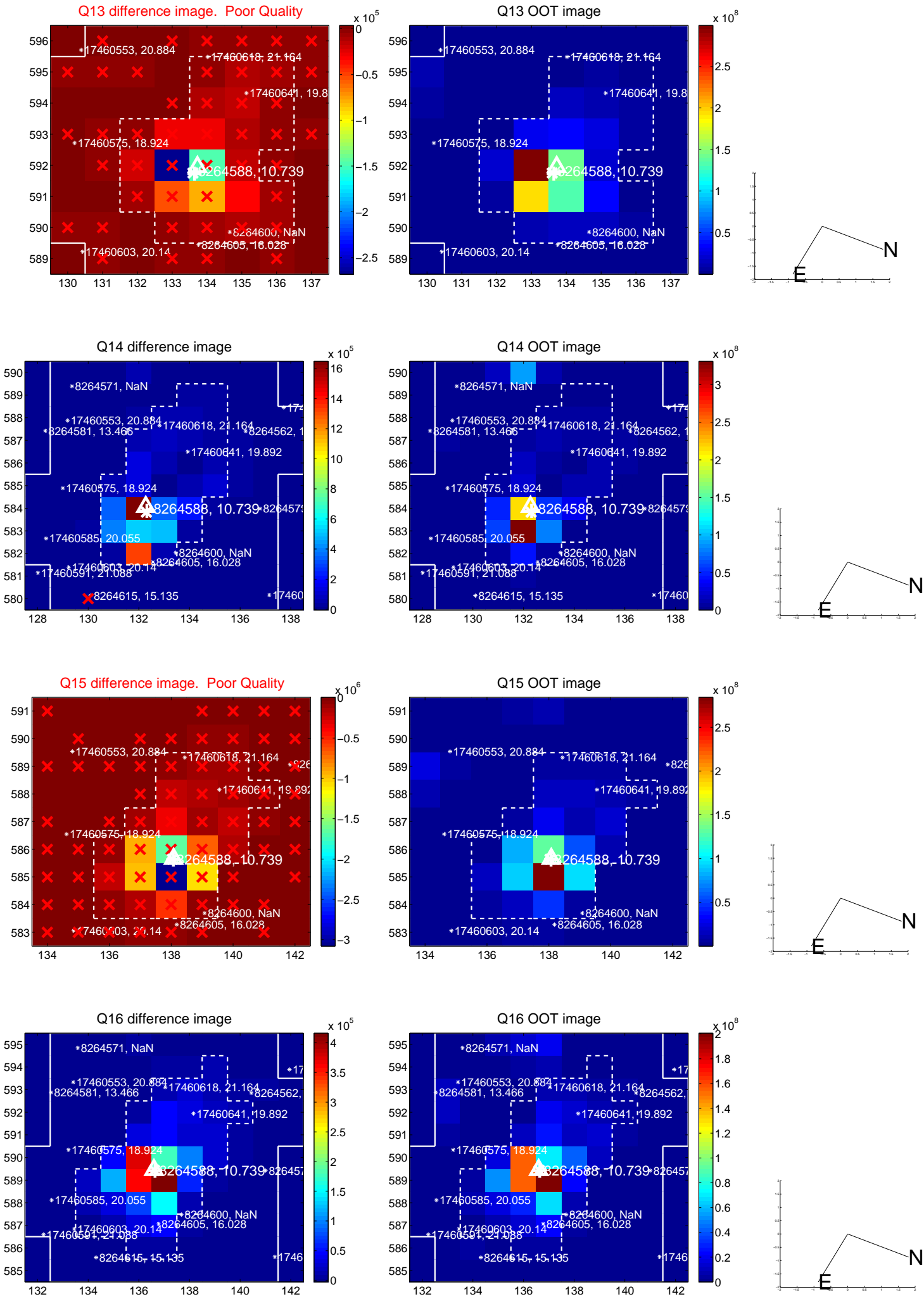
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



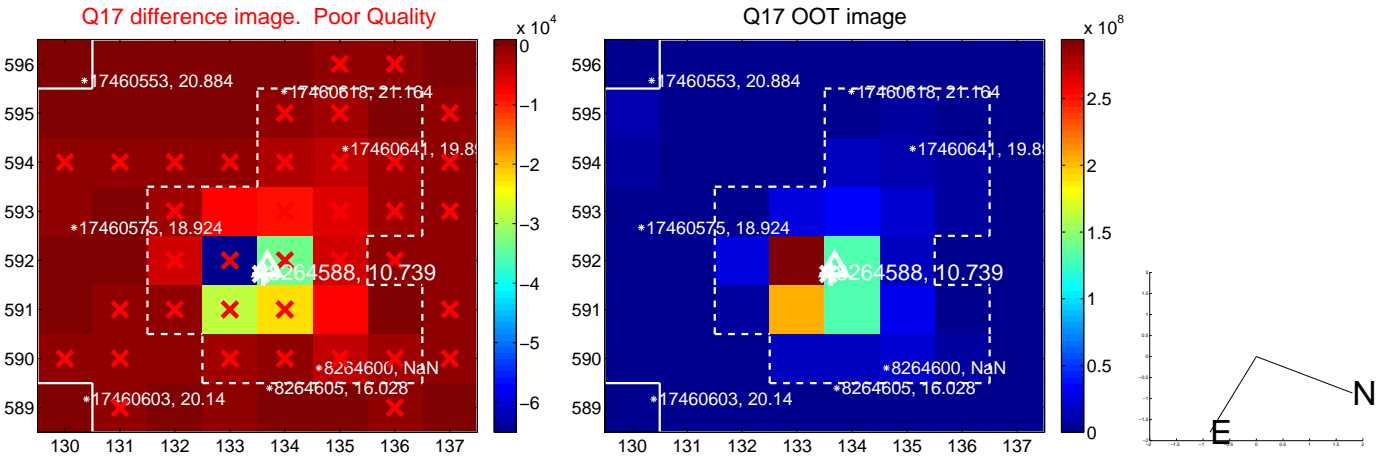
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



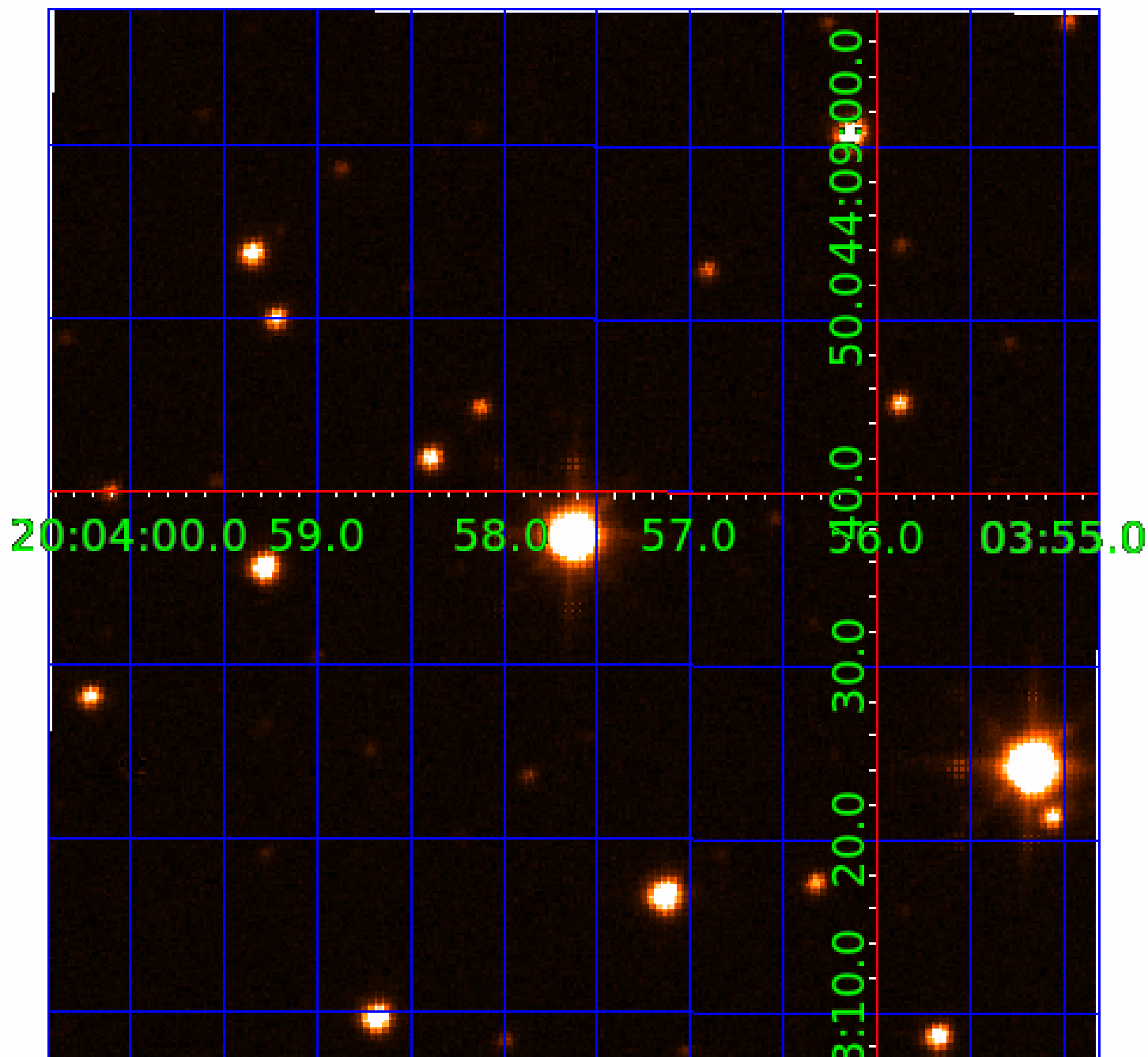
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

# UKIRT Image

Declination





# KIC 008264588

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008264588-01	OBS	No	0.812030	132.033519	165.0	0.982	11.1	11.6	2.38	6980	3.19	30398.22
008264588-02	OBS	No	0.662869	131.986139	191.3	1.508	9.4	10.7	2.38	6980	3.84	39845.00
008264588-03	OBS	No	0.662875	131.653372	204.6	1.613	9.4	11.3	2.38	6980	3.97	39844.49
008264588-04	OBS	No	0.605307	132.054944	80.0	2.000	9.3	-1.0	2.38	6980	2.16	44975.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008264588-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
008264588-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008264588-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
008264588-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

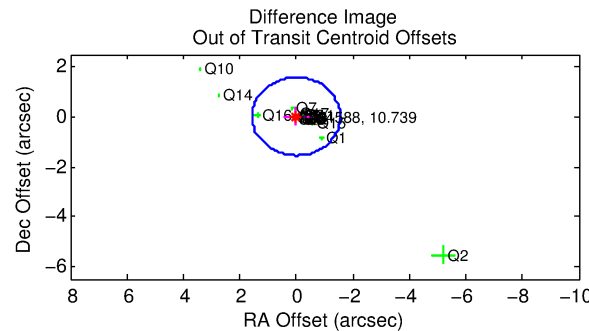
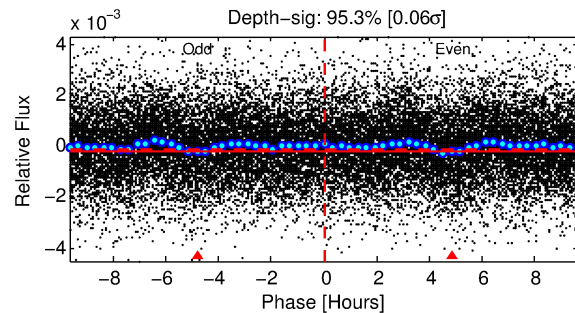
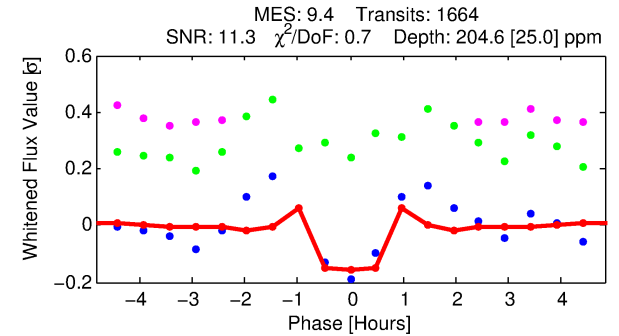
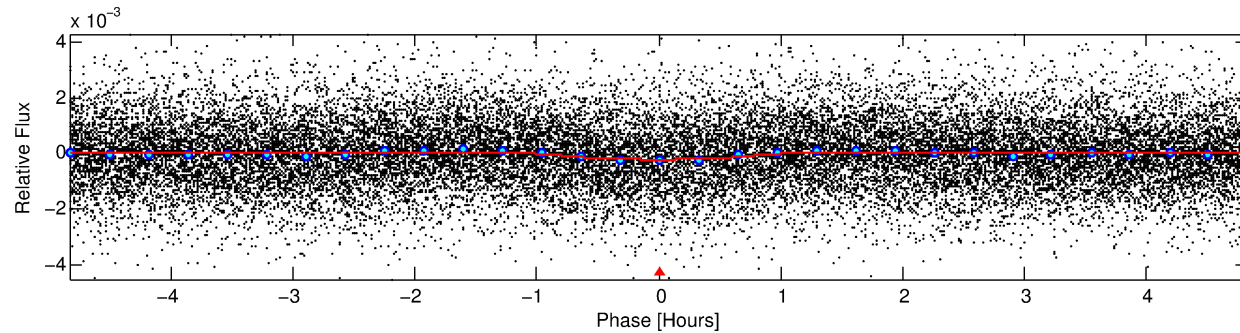
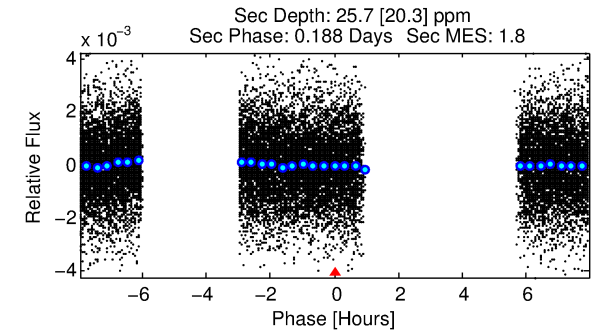
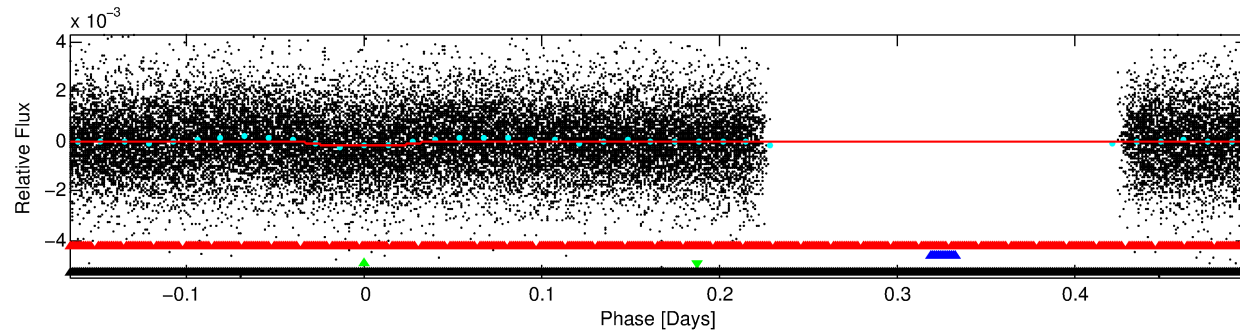
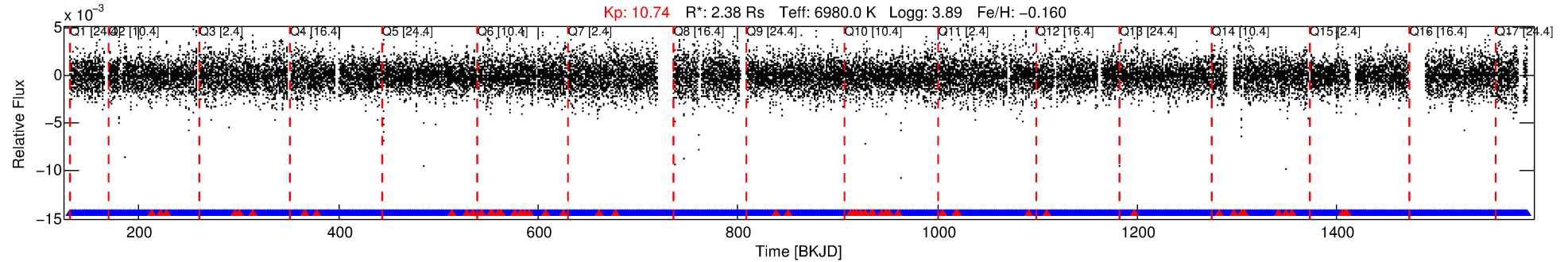
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008264588-03

No Significant Match Found

# DV One-Page Summary

KIC: 8264588 Candidate: 3 of 4 Period: 0.663 d



## DV Fit Results:

Period = 0.66288 [0.00001] d  
Epoch = 131.6534 [0.0011] BKJD  
 $R_p/R^*$  = 0.0153 [0.0035]  
 $a/R^*$  = 1.75 [1.58]  
 $b$  = 0.90 [0.29]  
 $S_{\text{eff}}$  = 39844.49 [24095.16]  
 $T_{\text{eq}}$  = 3603 [545] K  
 $R_p$  = 3.97 [1.79]  $R_e$   
 $a$  = 0.0174 [0.0064] AU  
 $A_g$  = 0.27 [0.29] [-2.48σ]  
 $T_{\text{eff}}$  = 4021 [940] K [0.39σ]

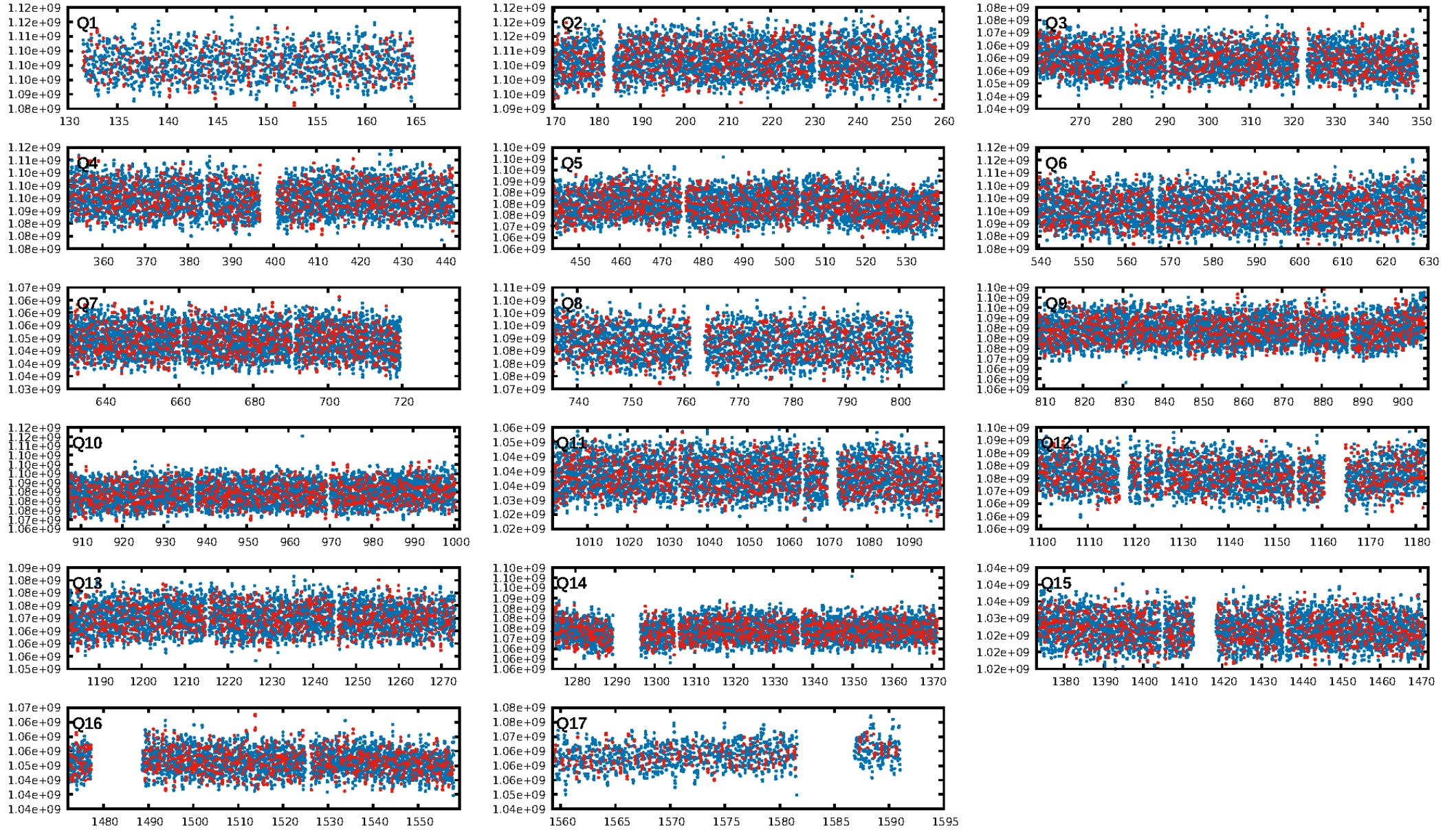
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 94.2% [1.90σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.96 [1532/1588]  
GhostDiagnostic-chr: 0.7278  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.015 arcsec [0.03σ]  
KicOffset-rm: 0.146 arcsec [0.41σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.65 [11/17]  
DiffImageOverlap-fno: 0.47 [8/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:56:53 Z

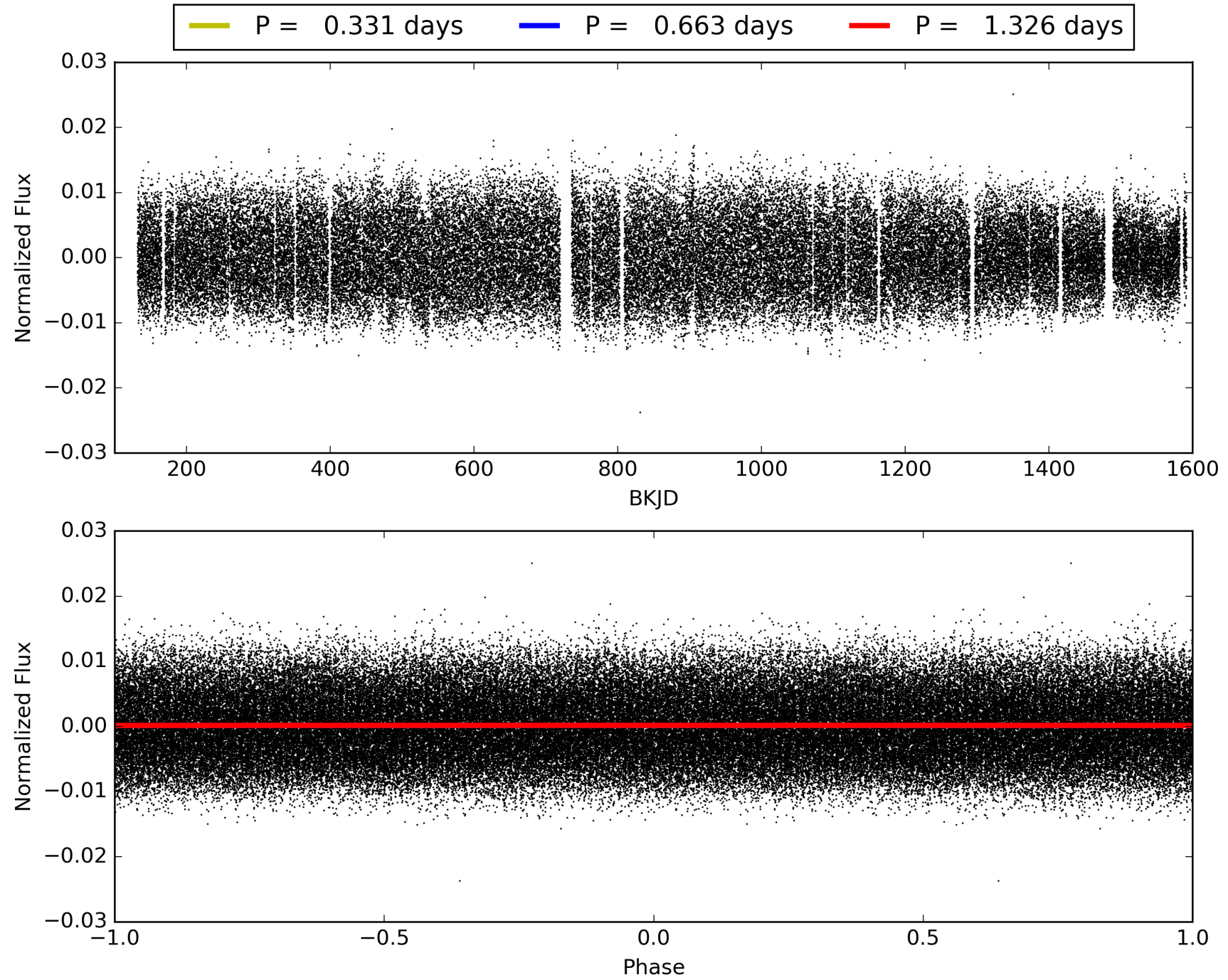
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008264588-03, PDC Light Curves



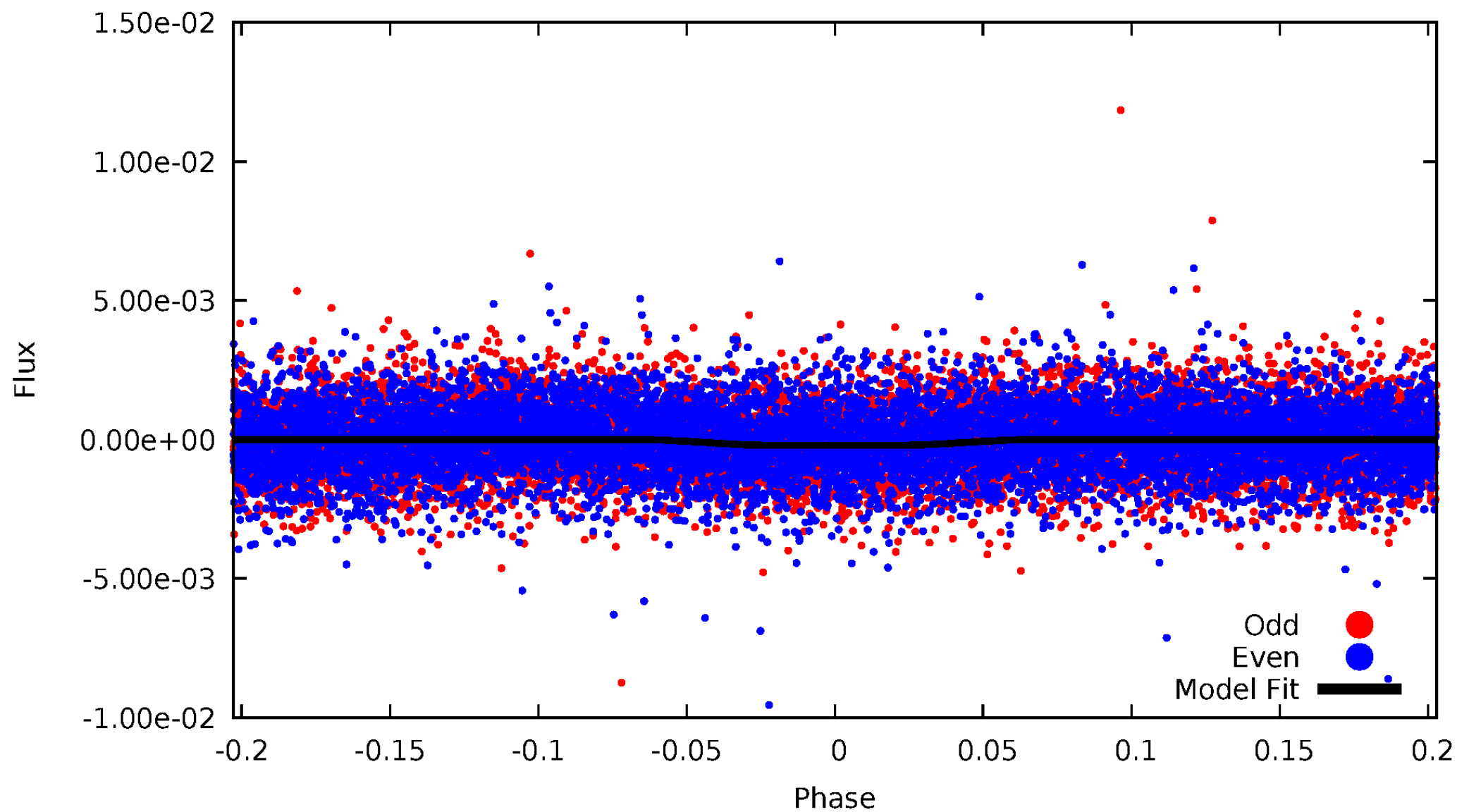


TCE 008264588-03



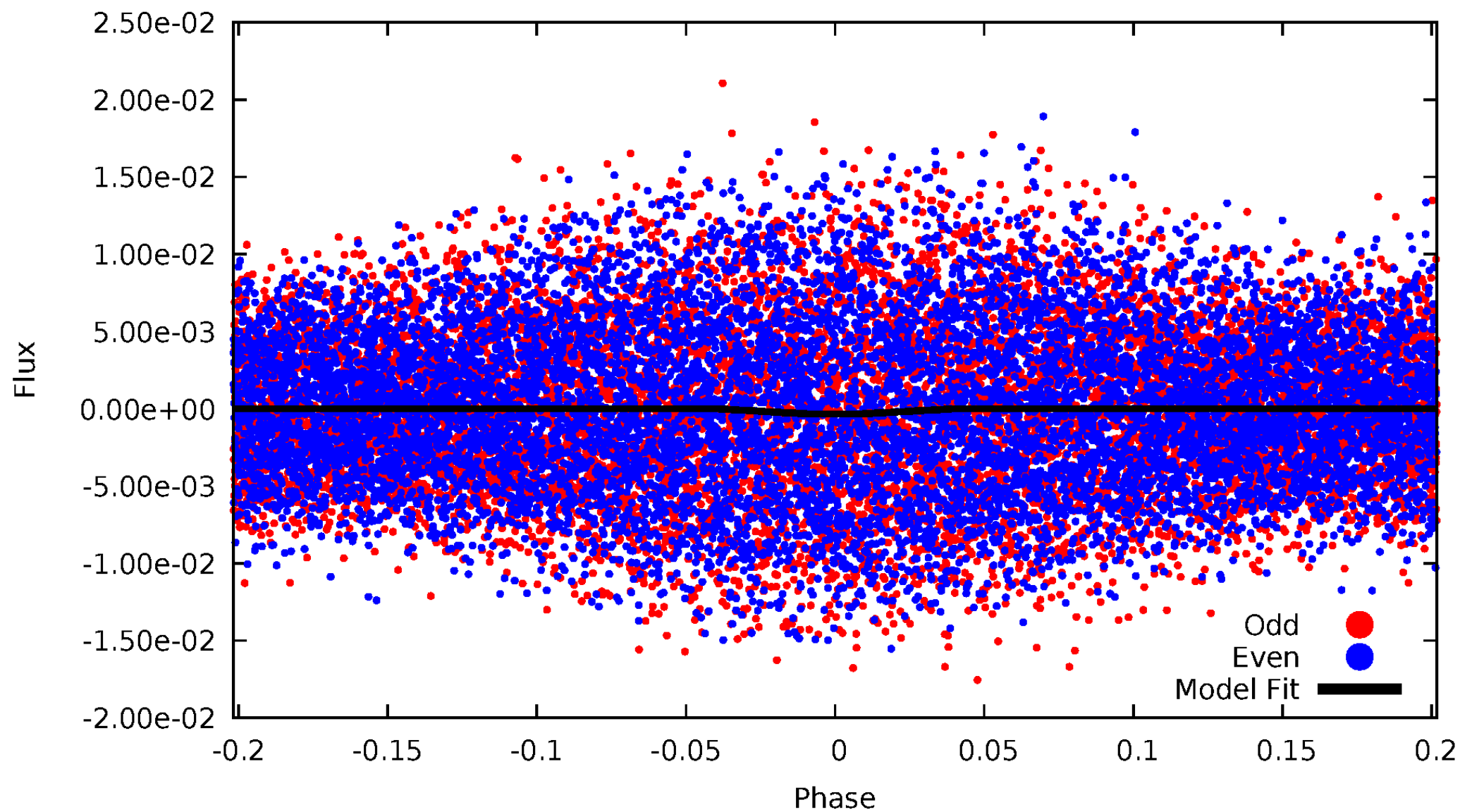
# DV Odd/Even

TCE 008264588-03



# ALT Odd/Even

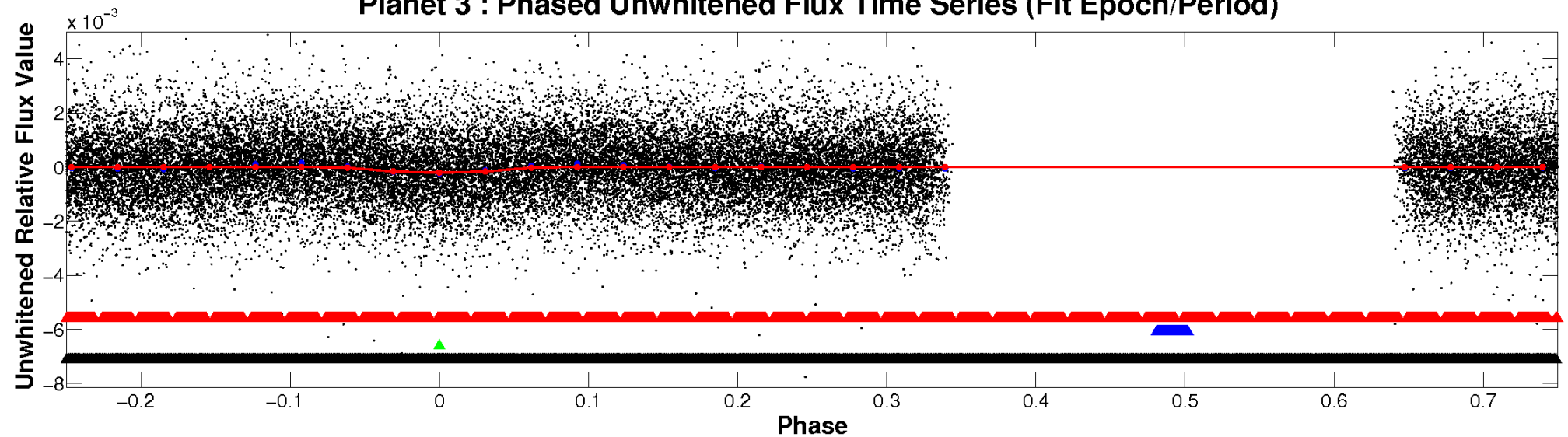
TCE 008264588-03



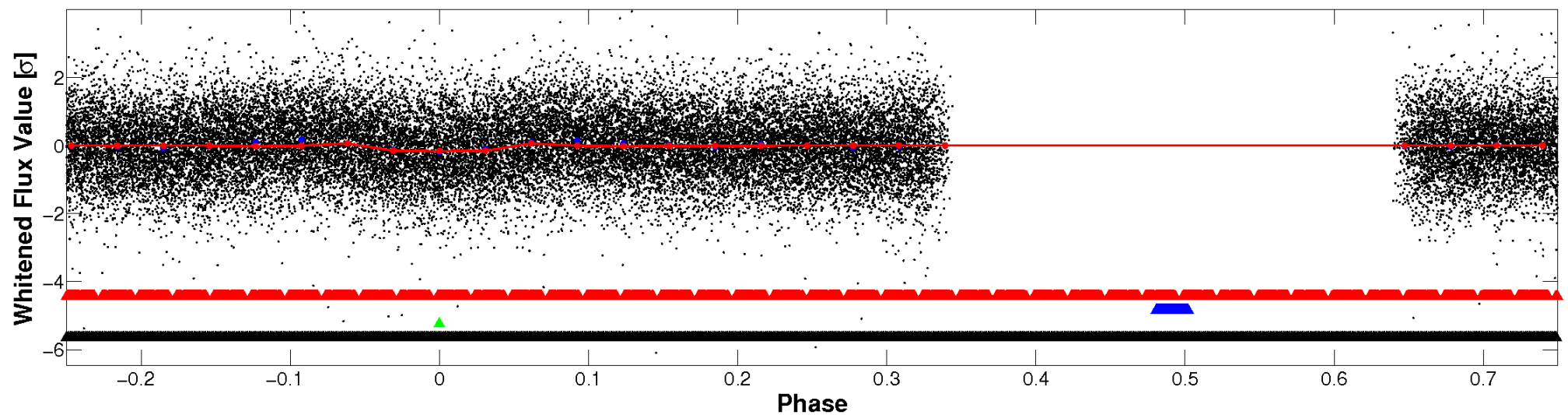


# Non-Whitened Vs. Whitened Light Curve

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

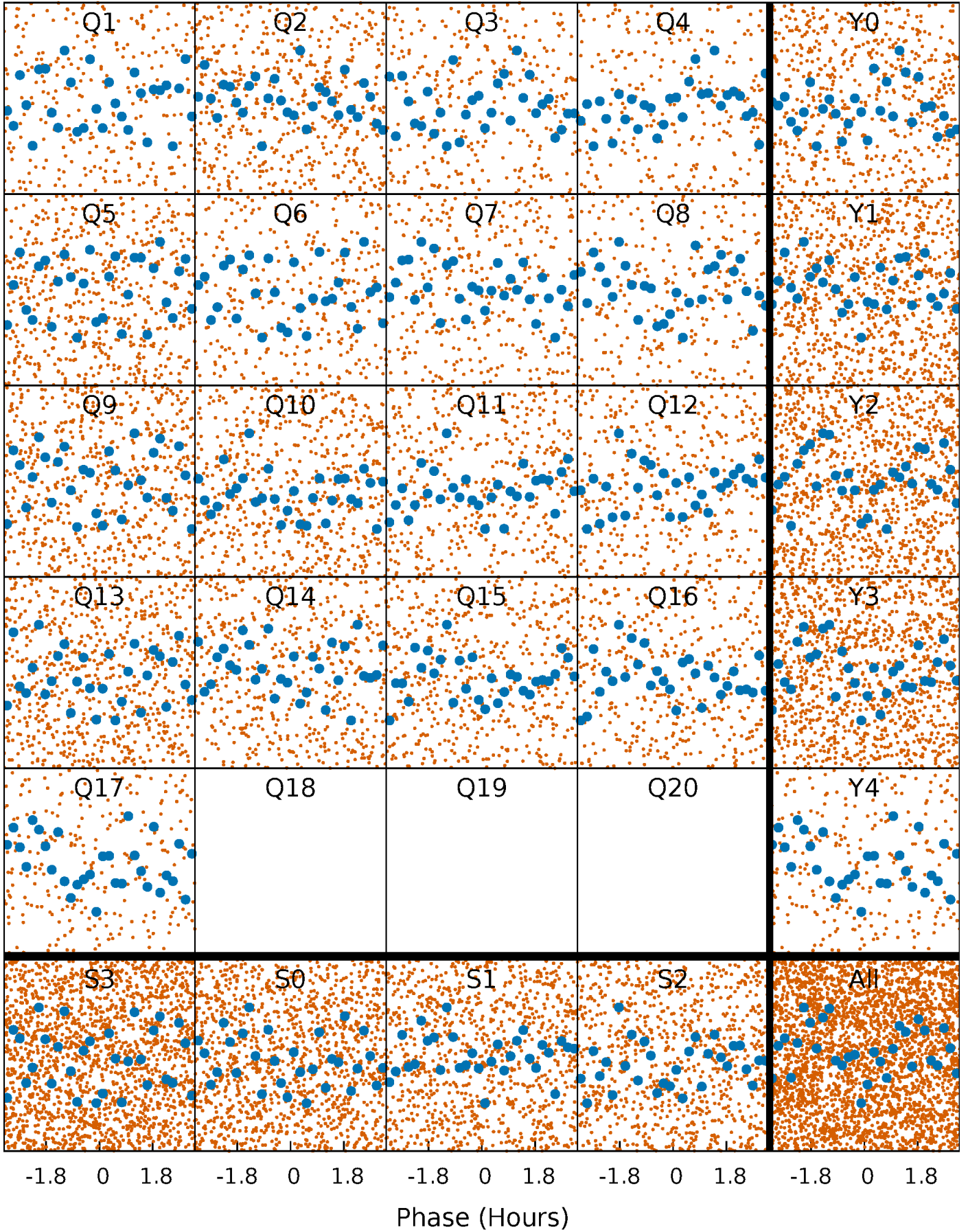


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



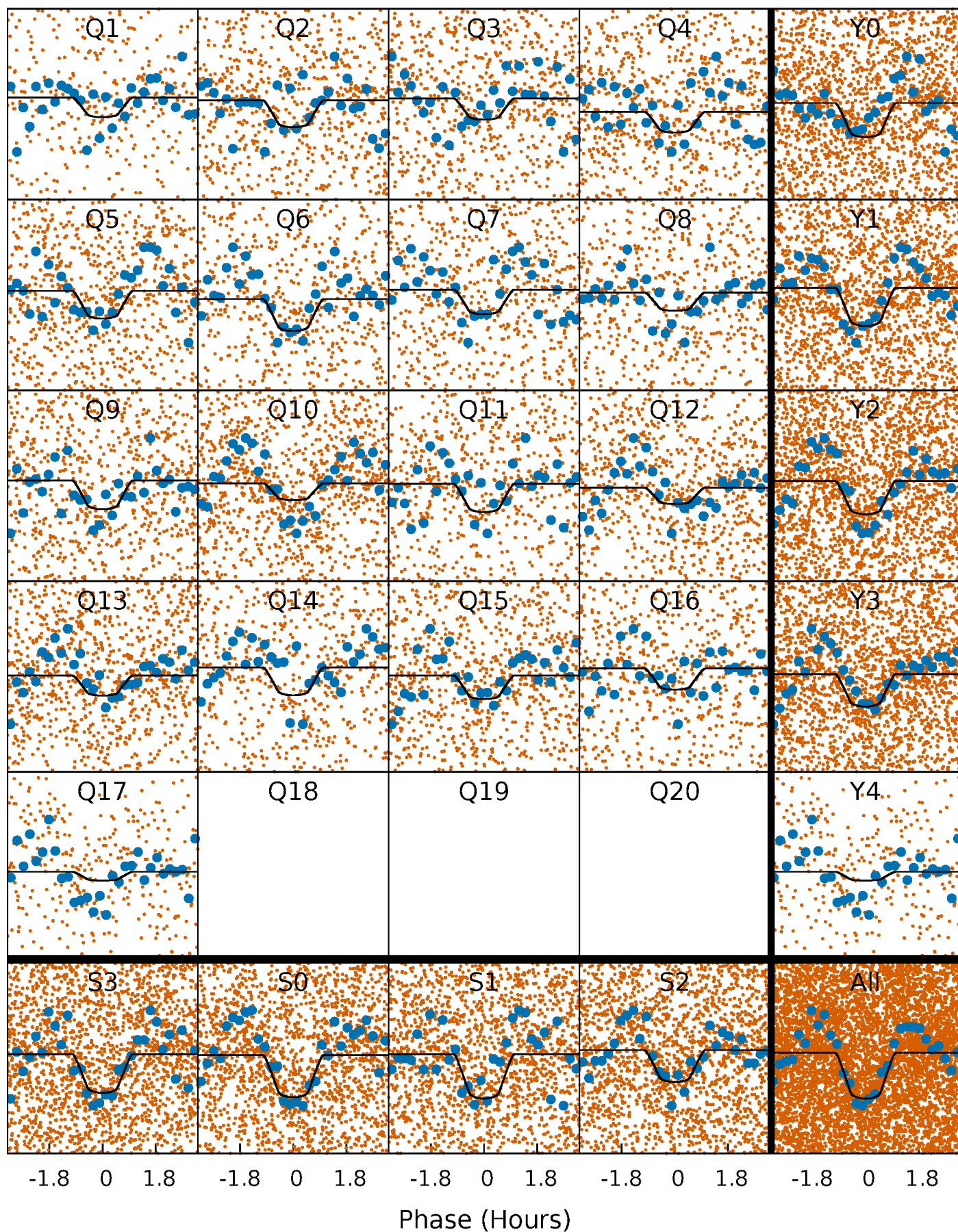
# PDC Quarter-Phased Transit Curves

TCE 008264588-03 P= 0.662875 Days  $T_0=131.653372$  (BKJD)



# DV Quarter-Phased Transit Curves

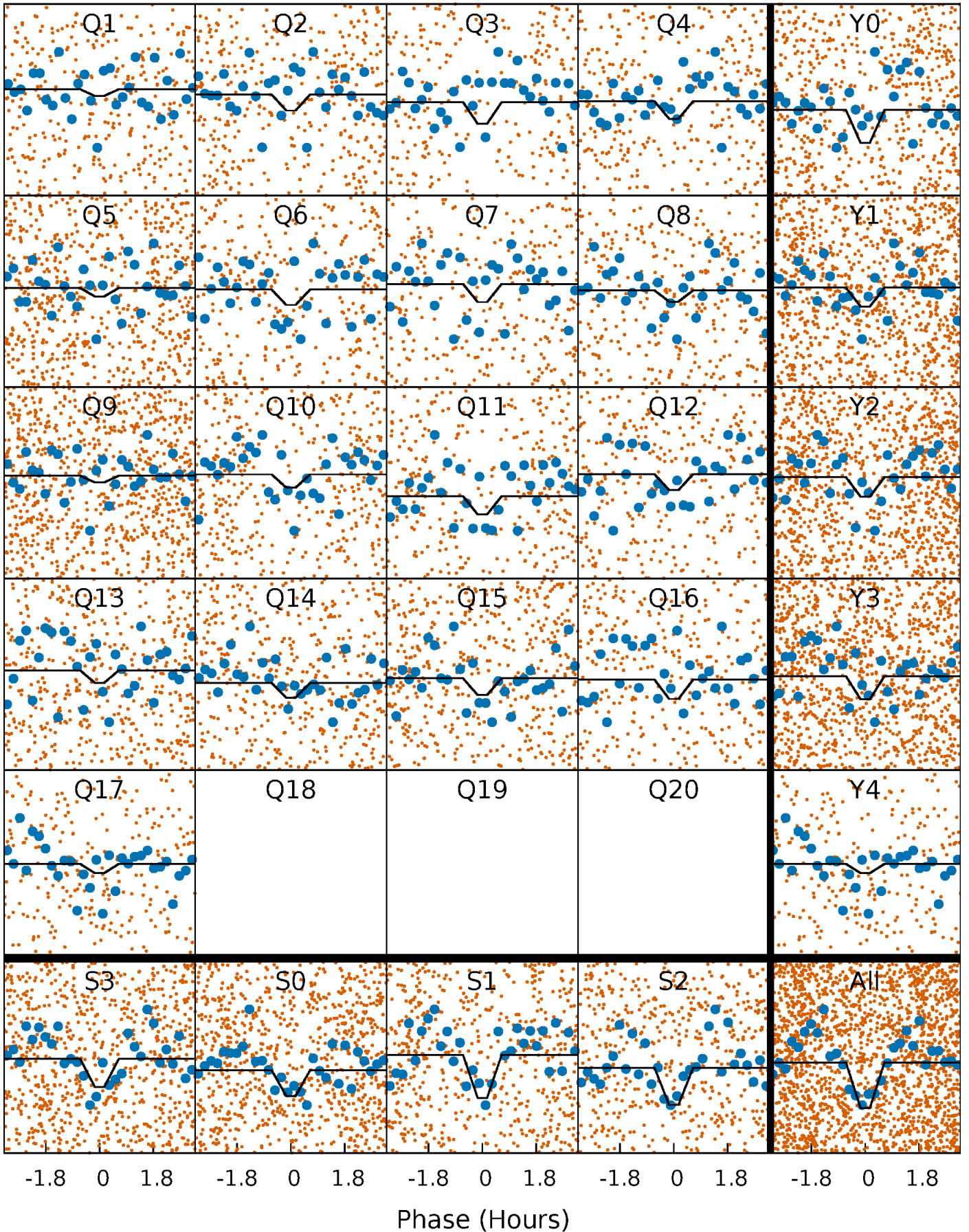
TCE 008264588-03 P= 0.662875 Days  $T_0=131.653372$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

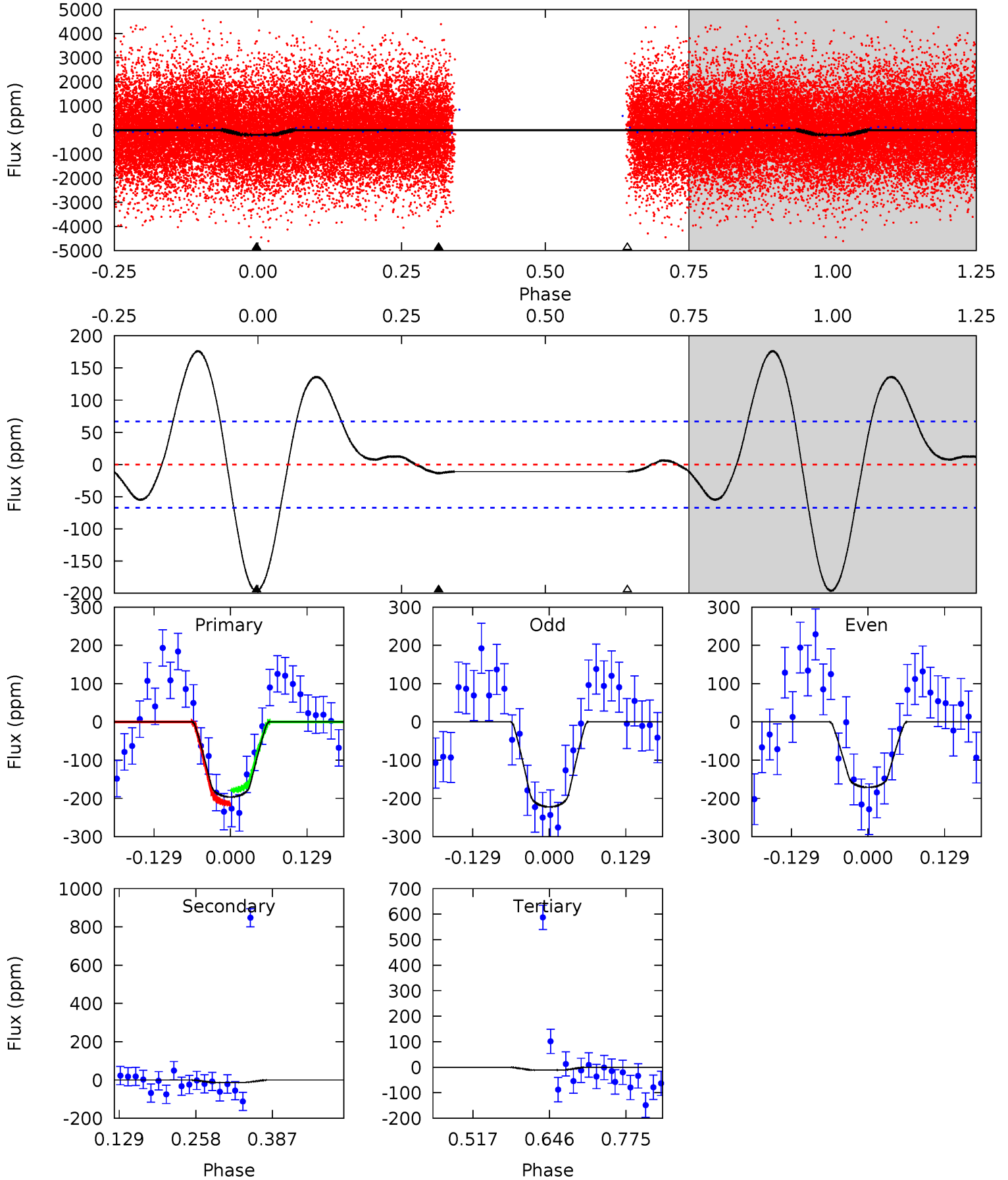
TCE 008264588-03 P= 0.662877 Days  $T_0=131.653920$  (BKJD)



# DV Model-Shift Uniqueness Test

008264588-03, P = 0.662875 Days, E = 130.990497 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
13.2	0.91	0.75	0	4.51	1.52	2.85	12.5	13.2	0.15	0.91	1.76	0.96	0.47	1.15

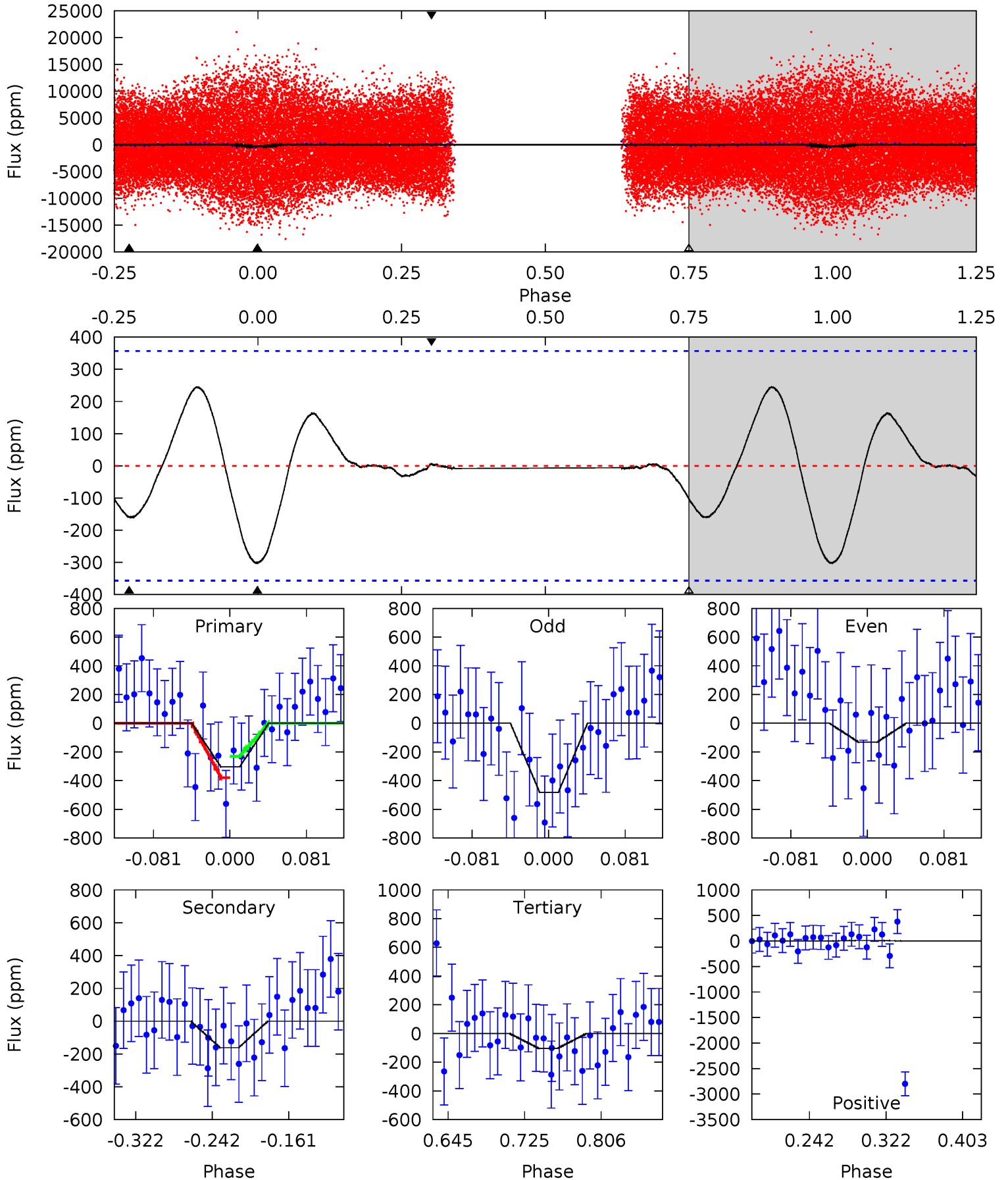




# Alt Model-Shift Uniqueness Test

008264588-03, P = 0.662877 Days, E = 130.991043 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
3.93	2.08	1.35	0.11	4.61	1.75	1.11	2.59	3.82	0.74	1.97	2.26	0.62	0.45	1.02



### Stellar Parameters For KIC 008264588

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6980^{+219}_{-316}$	$3.888^{+0.336}_{-0.144}$	$-0.160^{+0.250}_{-0.350}$	$2.382^{+0.539}_{-0.924}$	$1.596^{+0.195}_{-0.362}$	$0.166^{+0.427}_{-0.070}$
	+3%/-5%	+9%/-4%	+156%/-219%	+23%/-39%	+12%/-23%	+257%/-42%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008264588-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-13 \pm 15$	$3.80^{+1.10}_{-1.18}$	$4935^{+373}_{-469}$	$-3830^{+7359}_{-554}$	$0.139^{+0.274}_{-0.176}$
Alt.	$-161 \pm 77$	$4.46^{+1.24}_{-1.16}$	$4908^{+423}_{-461}$	$5461^{+1017}_{-1190}$	$1.331^{+1.268}_{-0.751}$

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

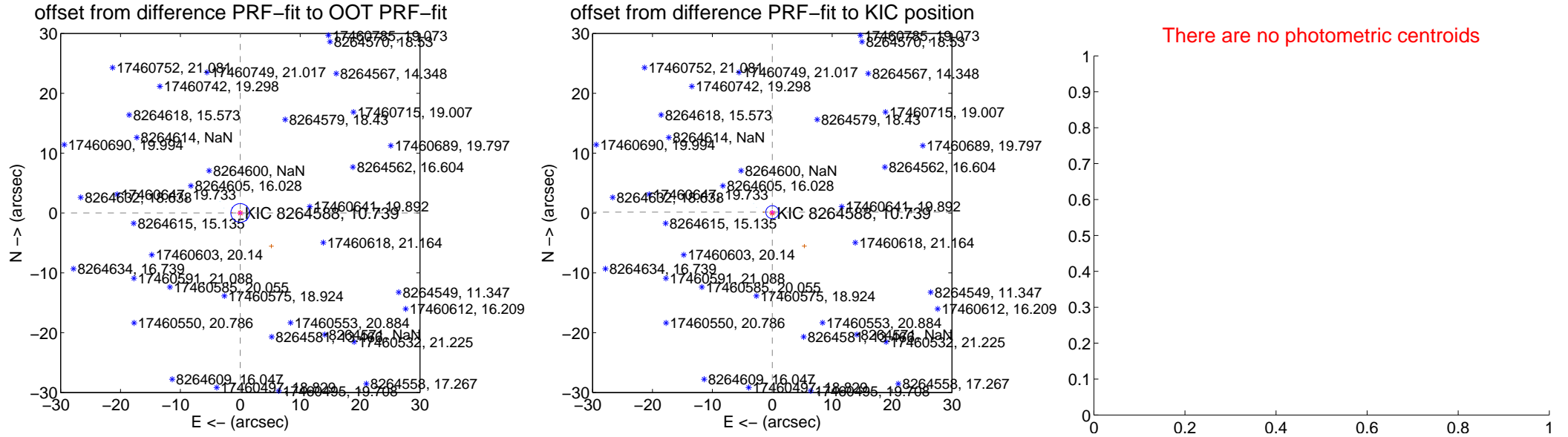
## DV Centroid Data

Supplemental centroid analysis for 008264588-03. **Kepler magnitude: 10.74.** Transit SNR 11.30

There are 11 quarters with good PRF difference image offsets

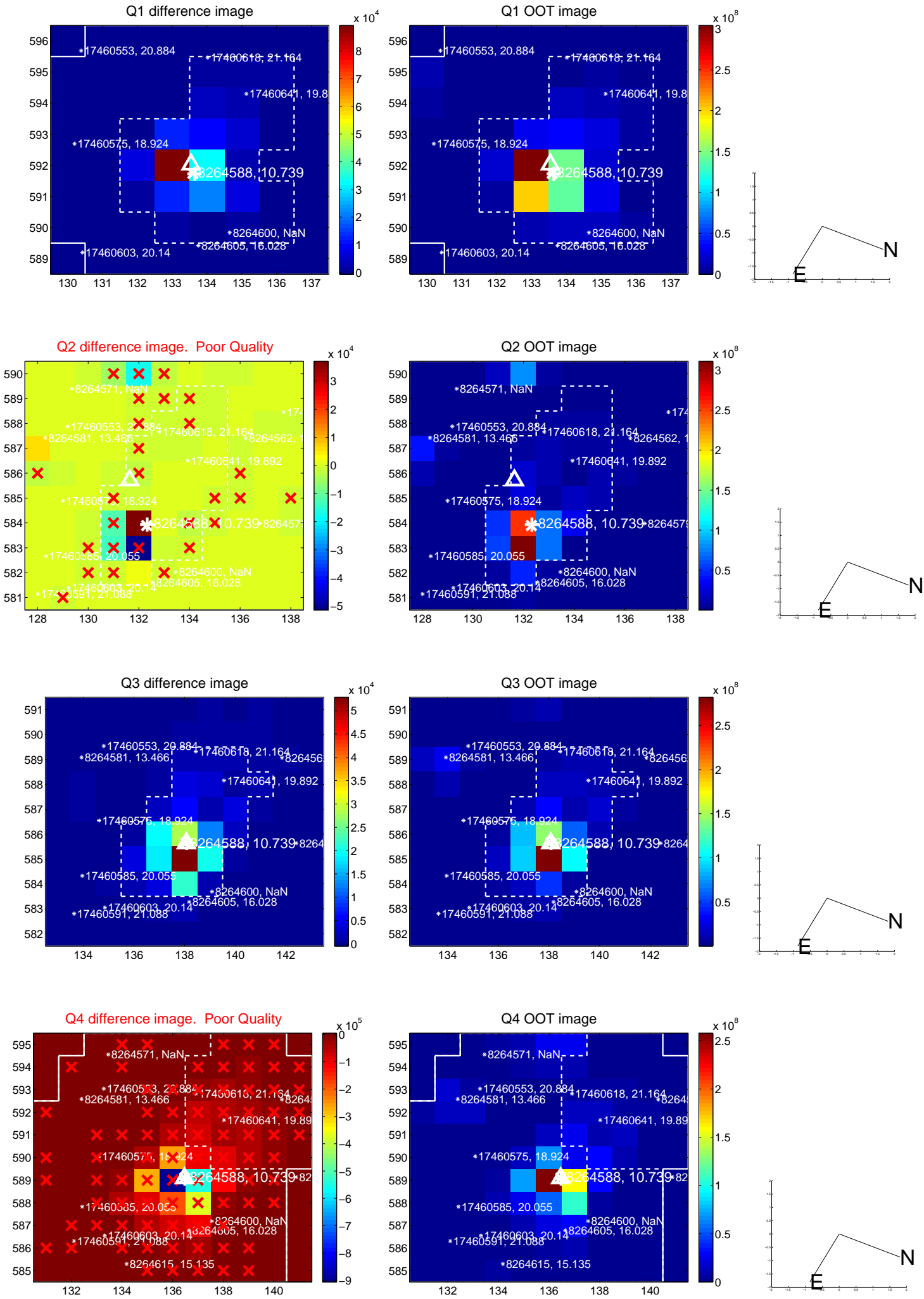
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.015 \pm 0.521$	0.03	$0.010 \pm 0.422$	$0.011 \pm 0.342$
PRF-fit source offset from KIC position	$0.146 \pm 0.360$	0.41	$-0.002 \pm 0.436$	$0.146 \pm 0.366$
photometric centroid source offset	—	—	—	—

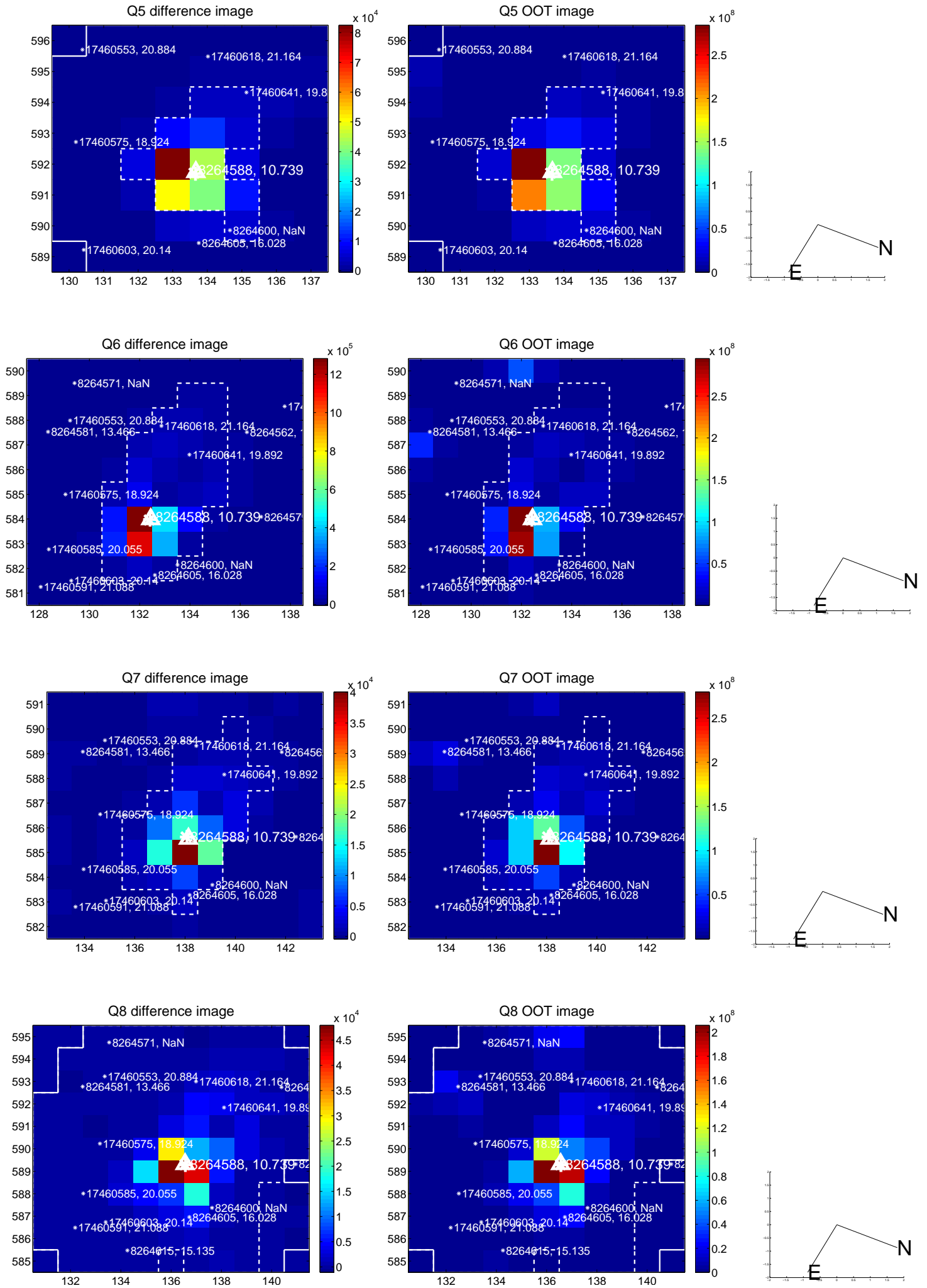


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

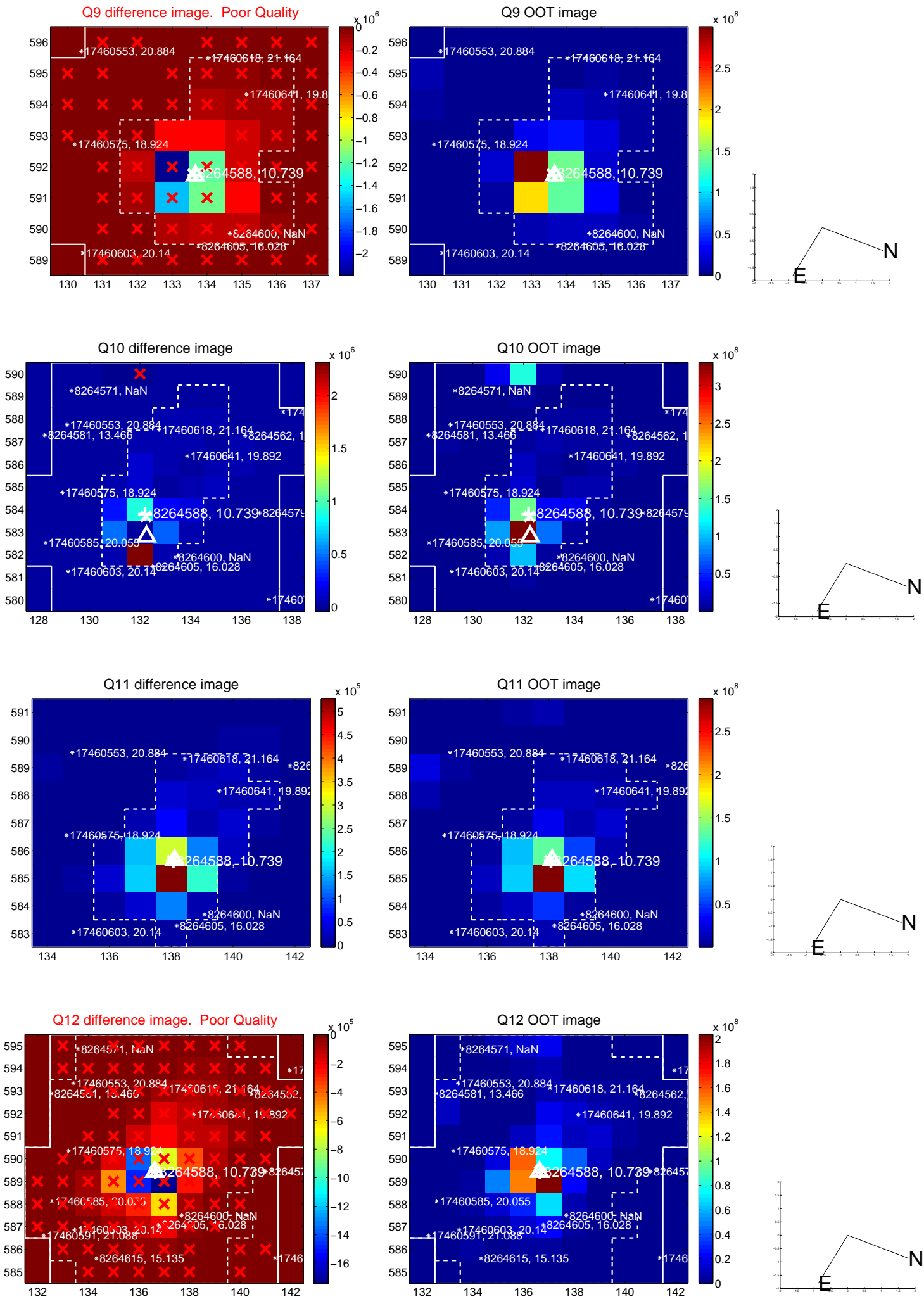


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

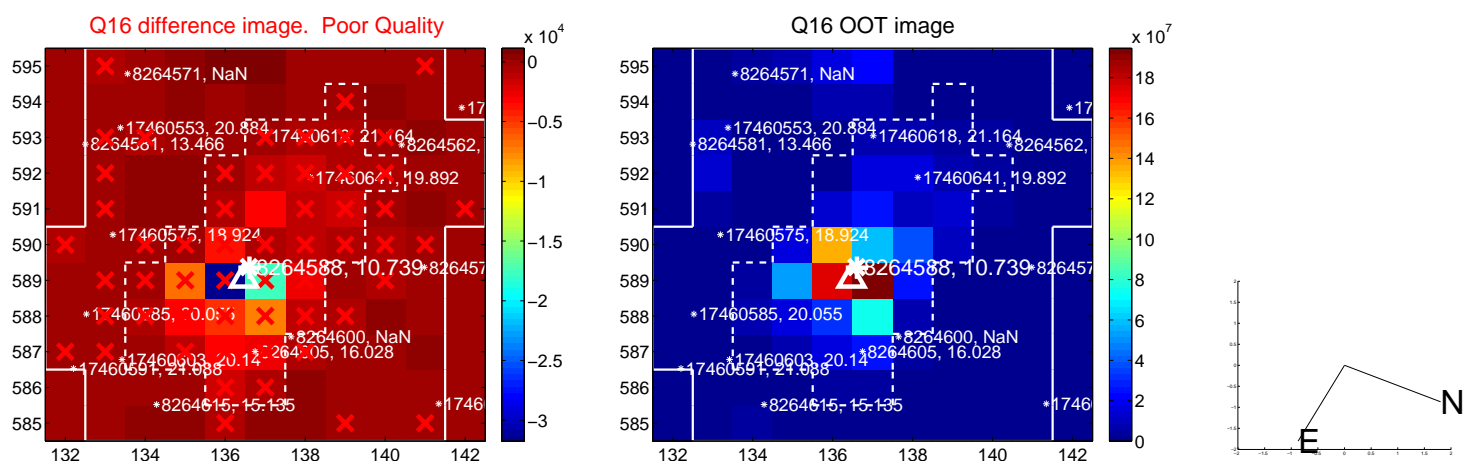
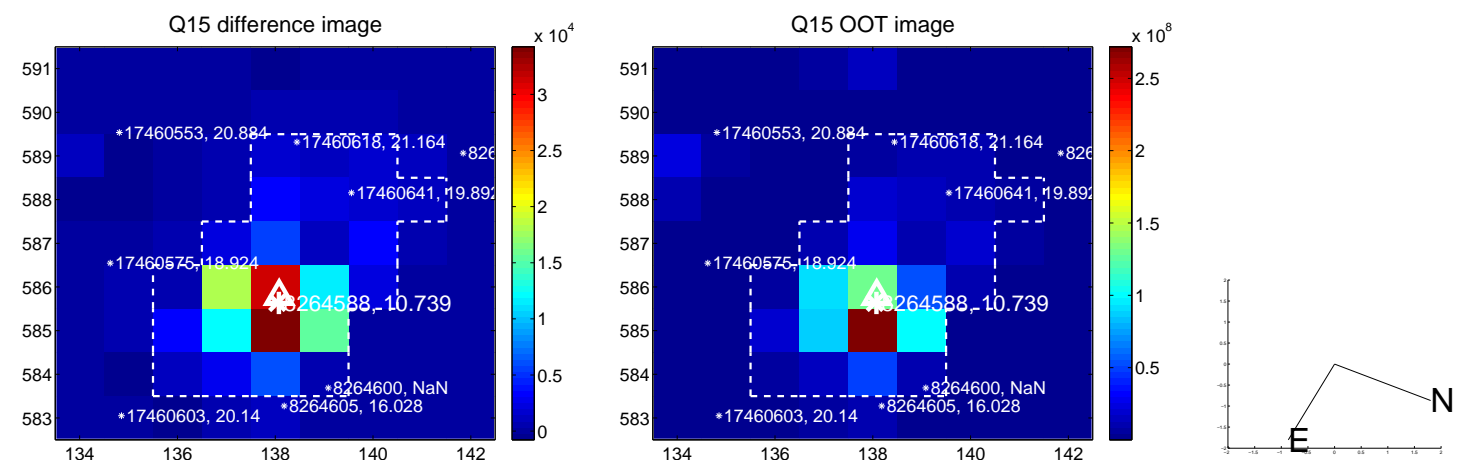
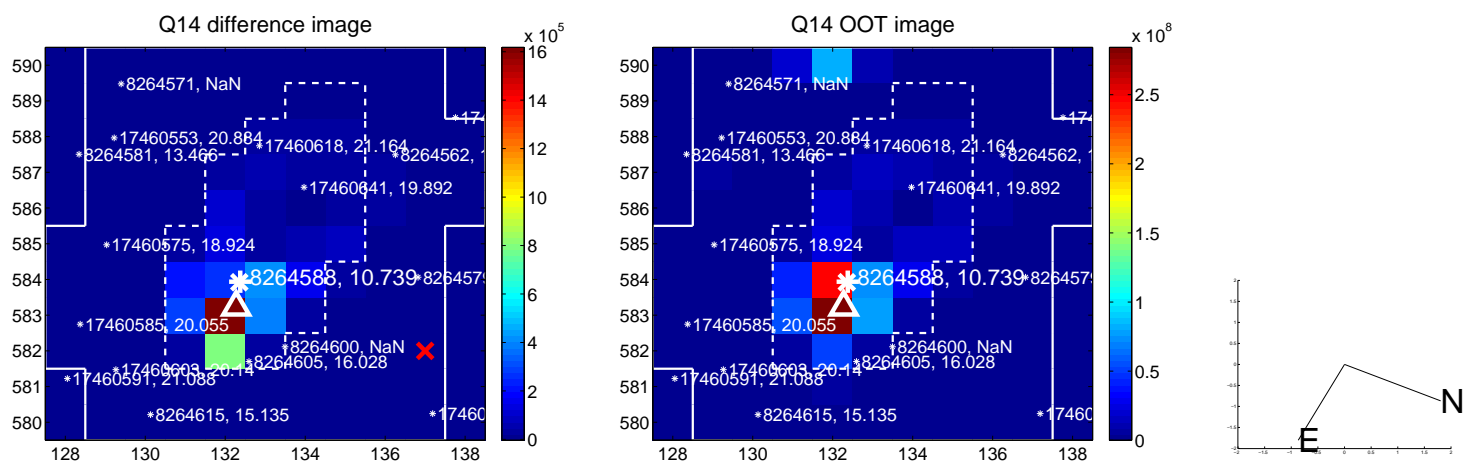
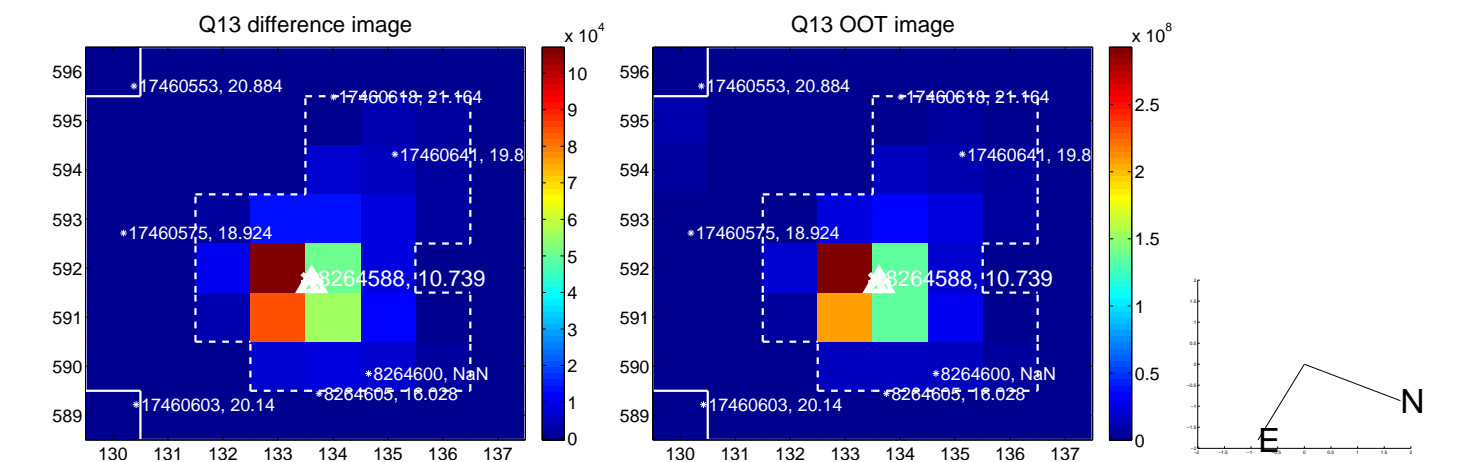




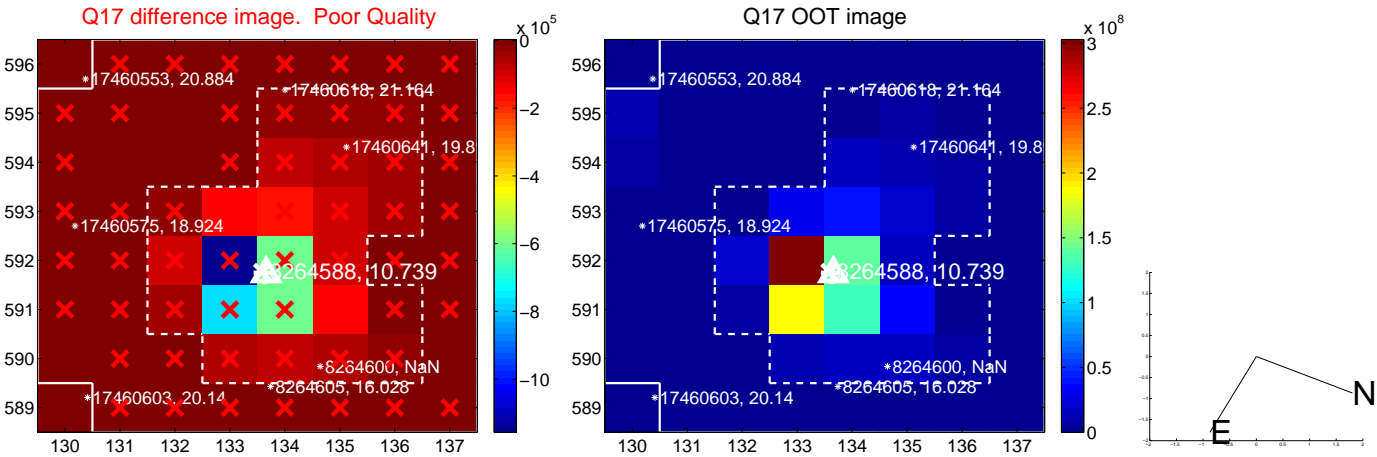
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



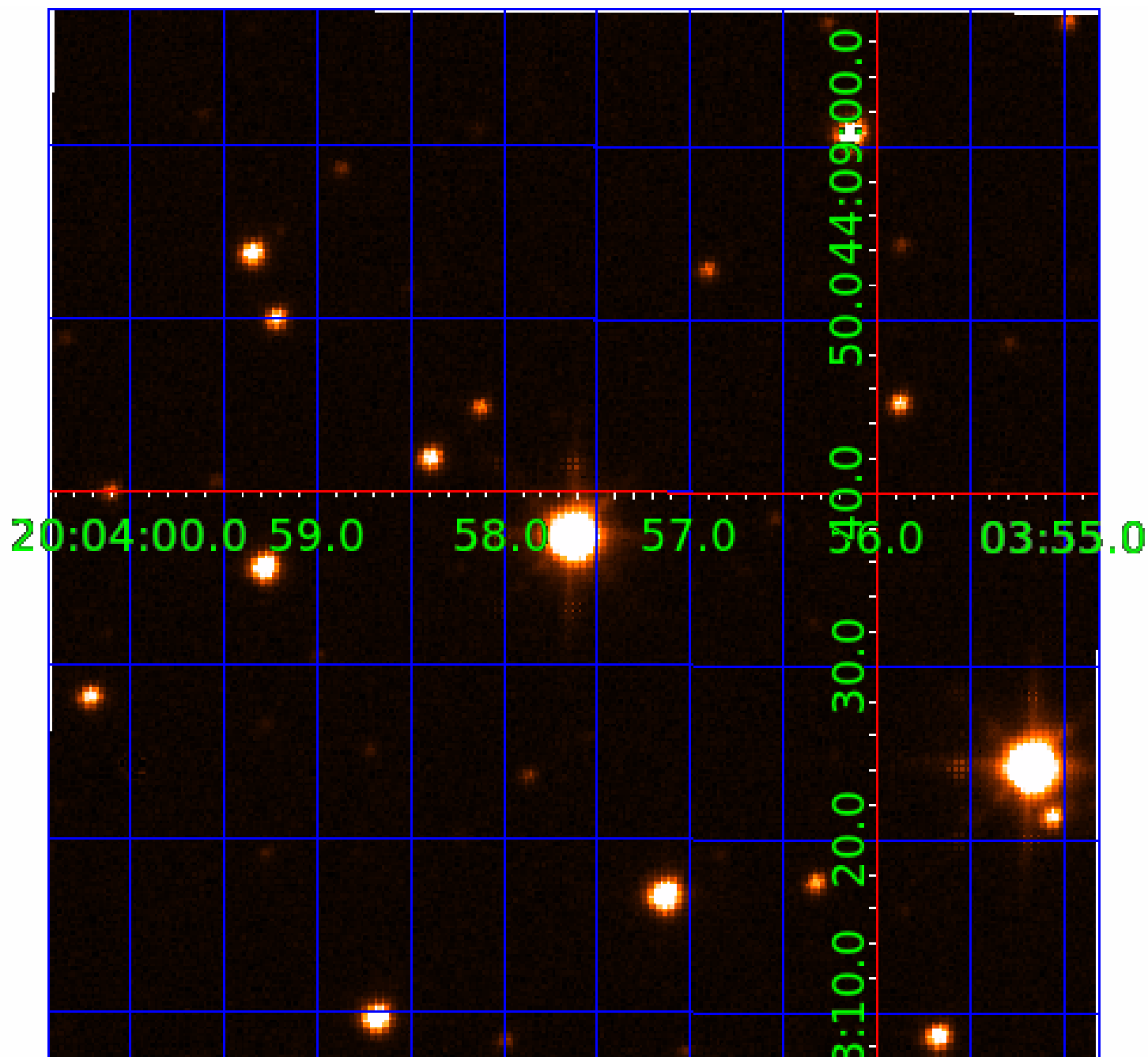
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

# UKIRT Image

Declination



# KIC 008264588

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008264588-01	OBS	No	0.812030	132.033519	165.0	0.982	11.1	11.6	2.38	6980	3.19	30398.22
008264588-02	OBS	No	0.662869	131.986139	191.3	1.508	9.4	10.7	2.38	6980	3.84	39845.00
008264588-03	OBS	No	0.662875	131.653372	204.6	1.613	9.4	11.3	2.38	6980	3.97	39844.49
008264588-04	OBS	No	0.605307	132.054944	80.0	2.000	9.3	-1.0	2.38	6980	2.16	44975.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008264588-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
008264588-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008264588-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
008264588-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

**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.

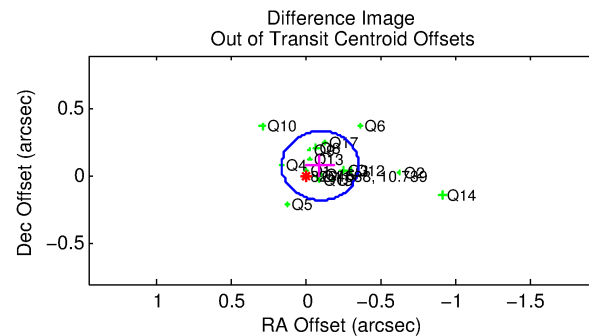
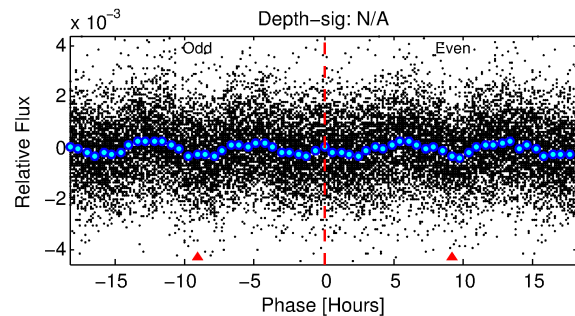
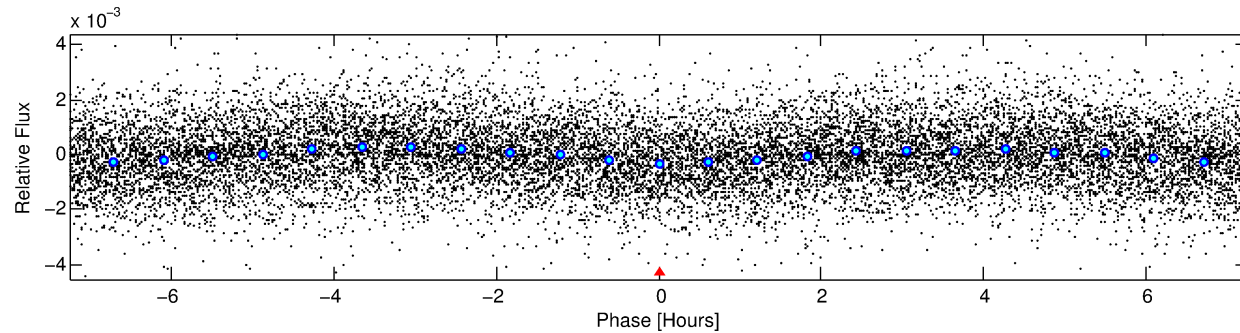
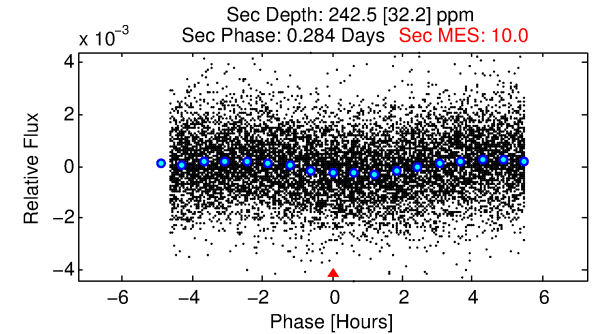
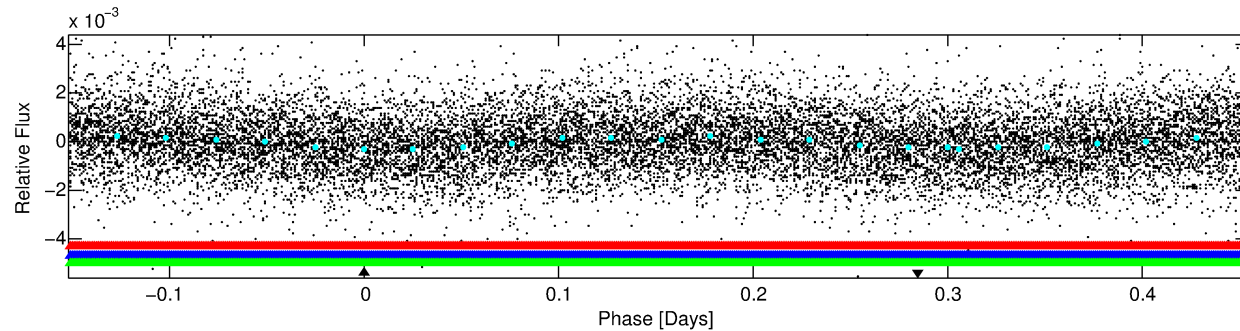
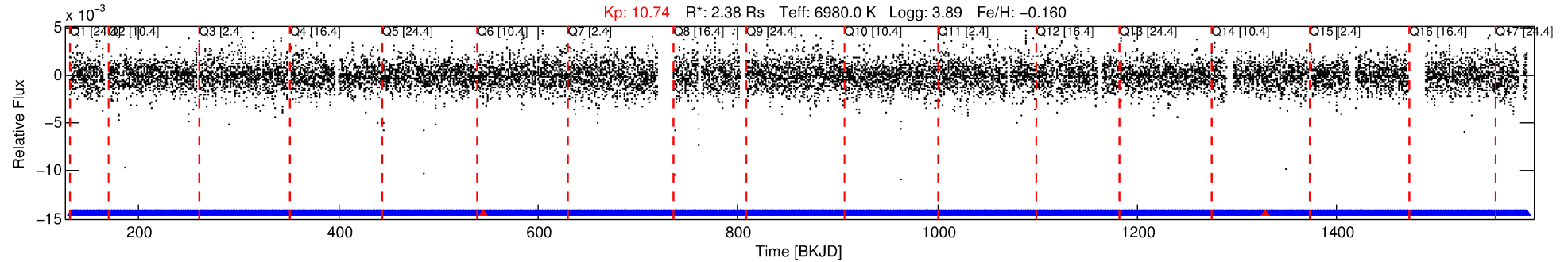
Ephemeris Match Information For 008264588-04

No Significant Match Found



# DV One-Page Summary

KIC: 8264588 Candidate: 4 of 4 Period: 0.605 d



## TPS TCE Results:

Period = 0.60531 d  
Epoch = 132.0549 BKJD

DV fit results are unavailable

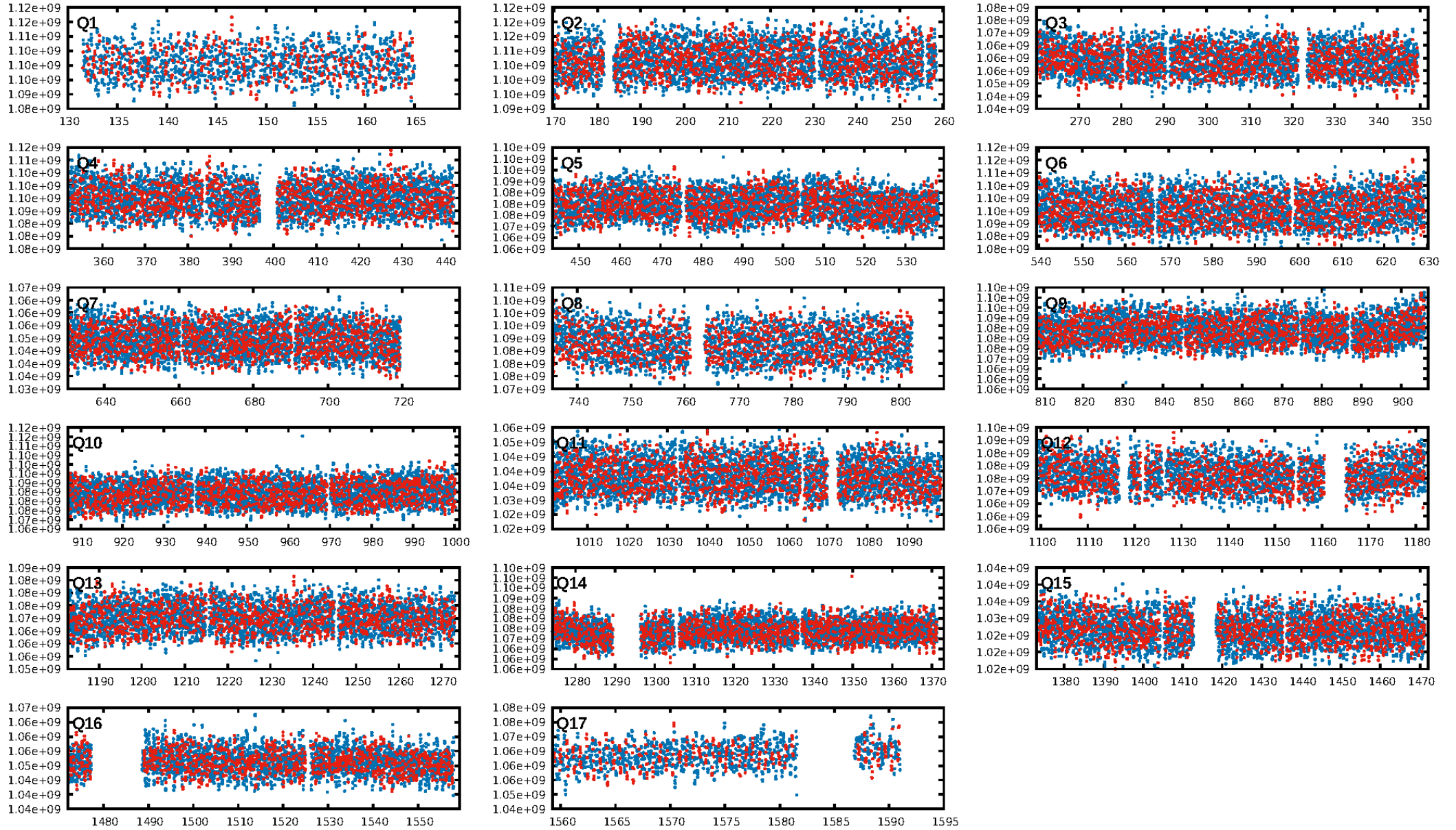
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 41.9% [0.55 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1247/1249]  
GhostDiagnostic-chr: 10.41  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.128 arcsec [1.50 $\sigma$ ]  
KicOffset-rm: 0.224 arcsec [2.80 $\sigma$ ]  
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]

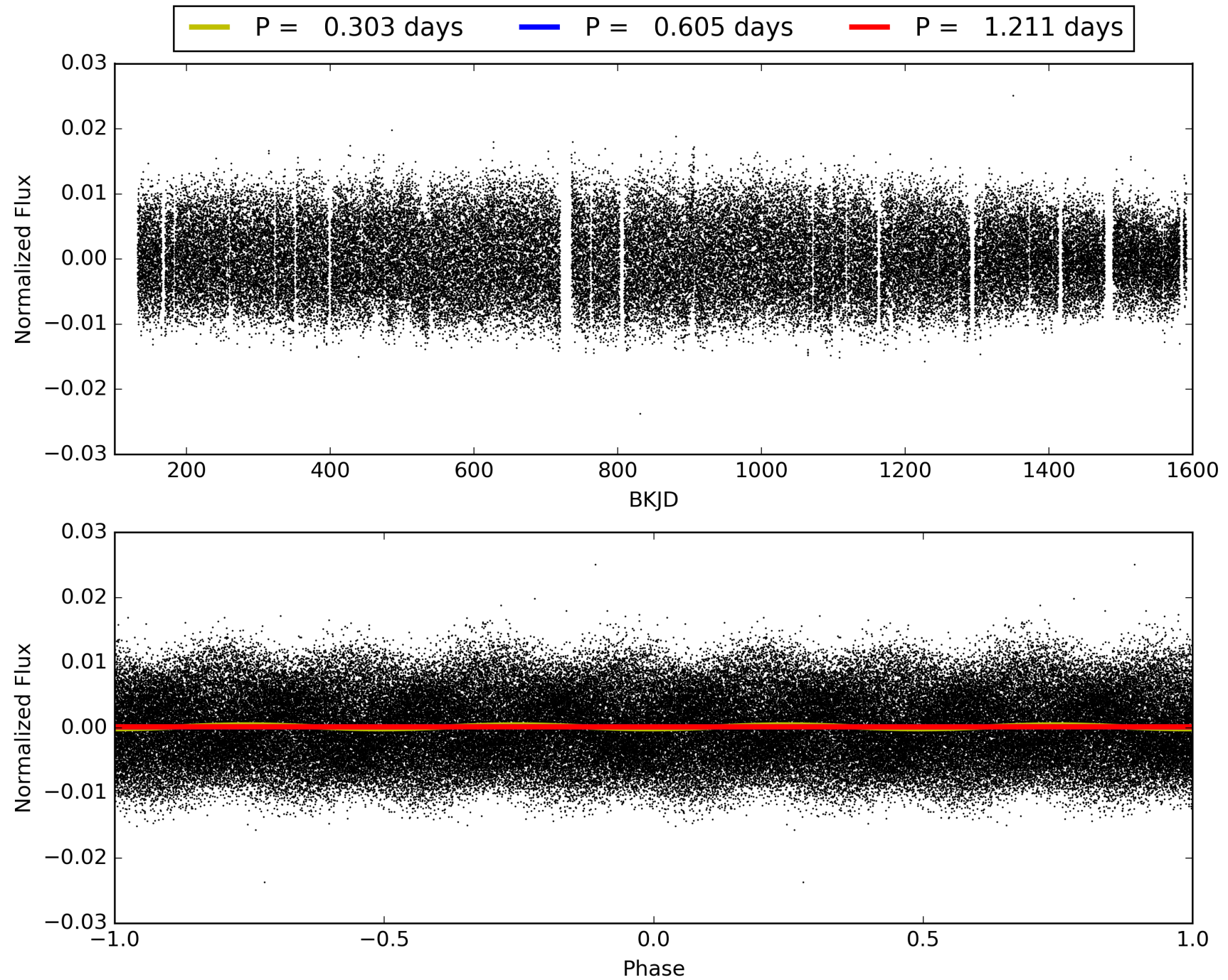
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:57:03 Z

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

# TCE 008264588-04, PDC Light Curves

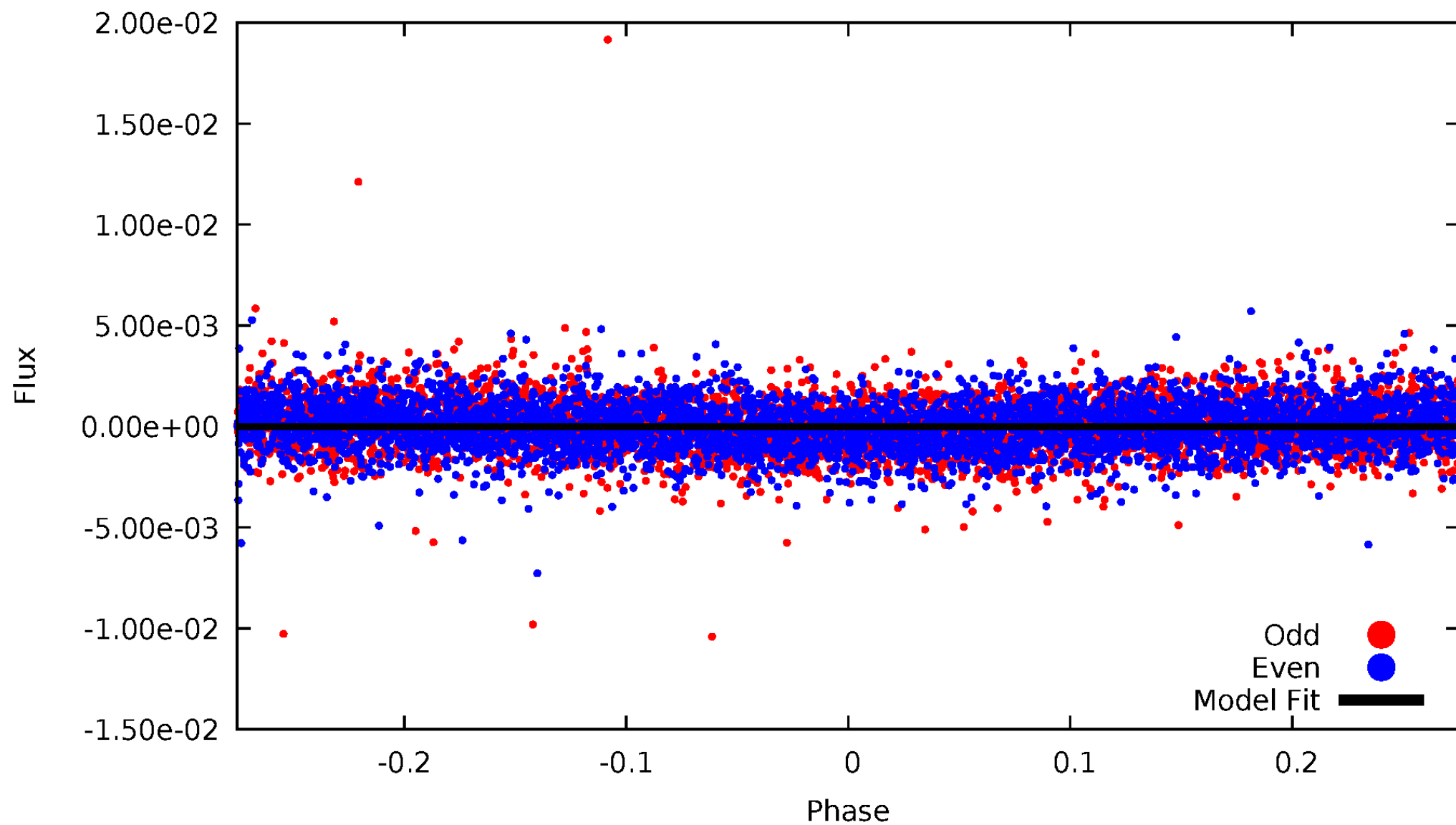


TCE 008264588-04



# DV Odd/Even

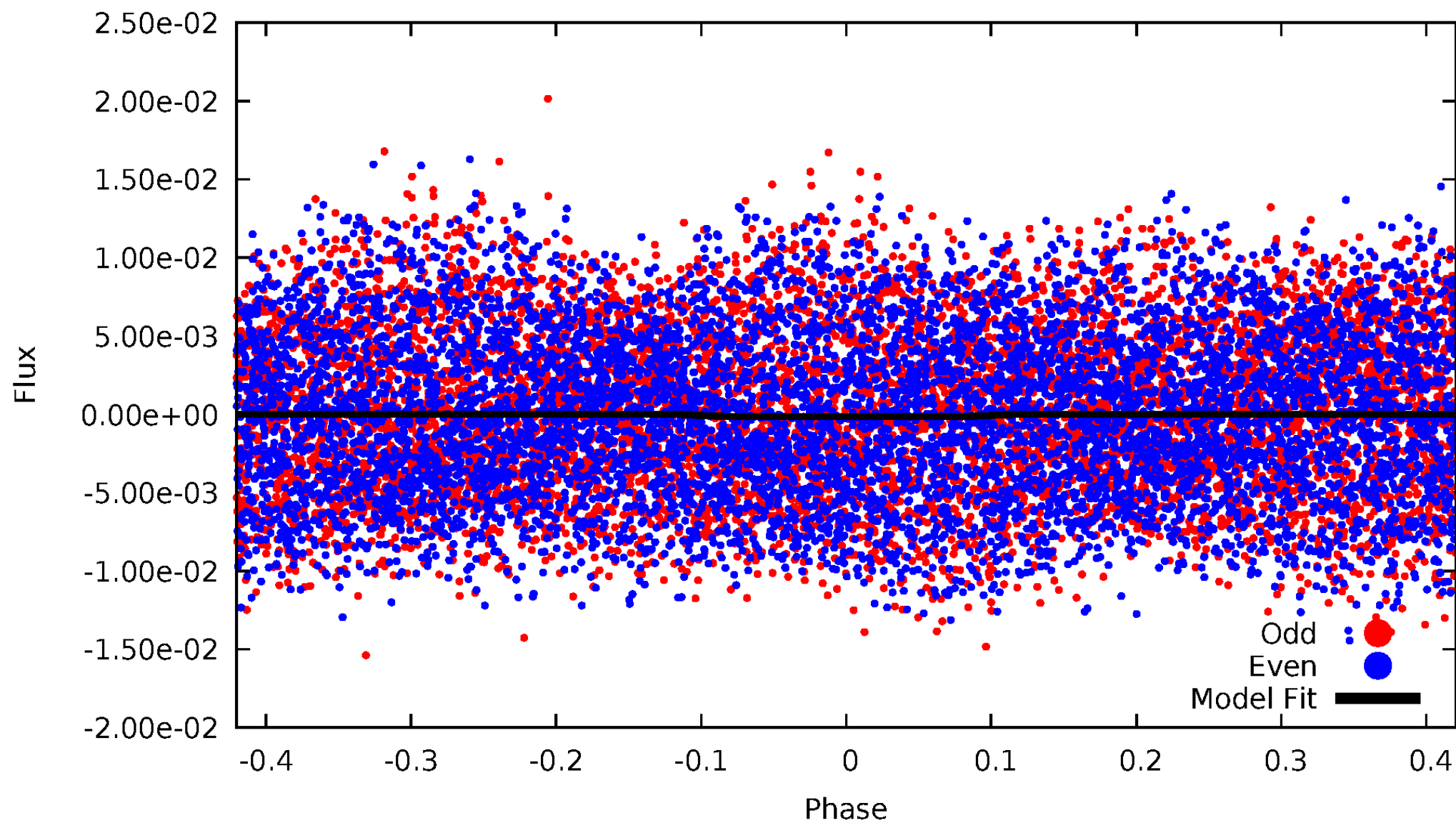
TCE 008264588-04





# ALT Odd/Even

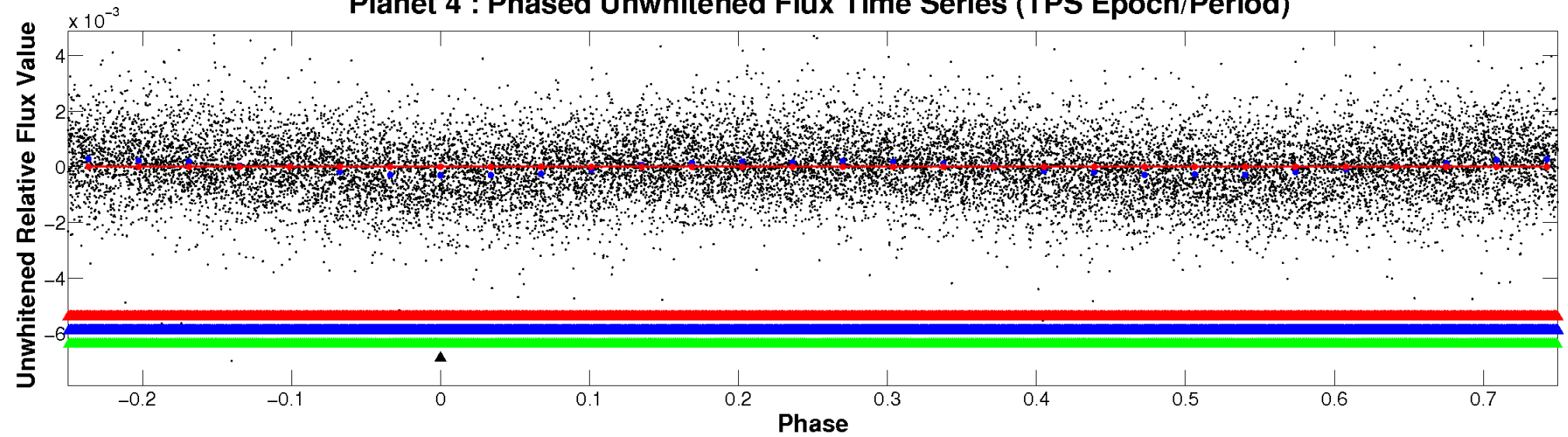
TCE 008264588-04



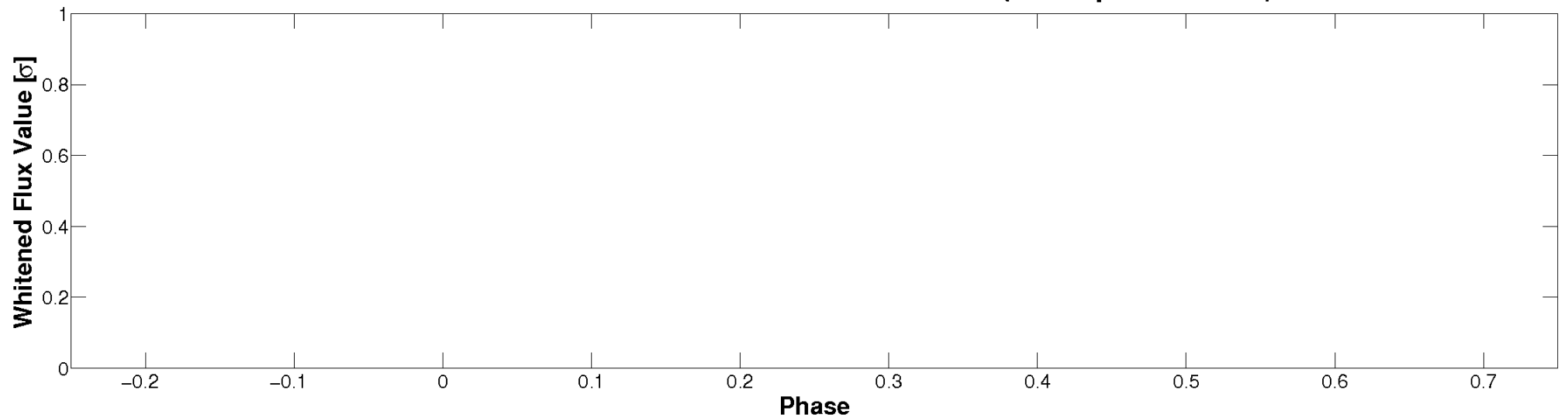


# Non-Whitened Vs. Whitened Light Curve

**Planet 4 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

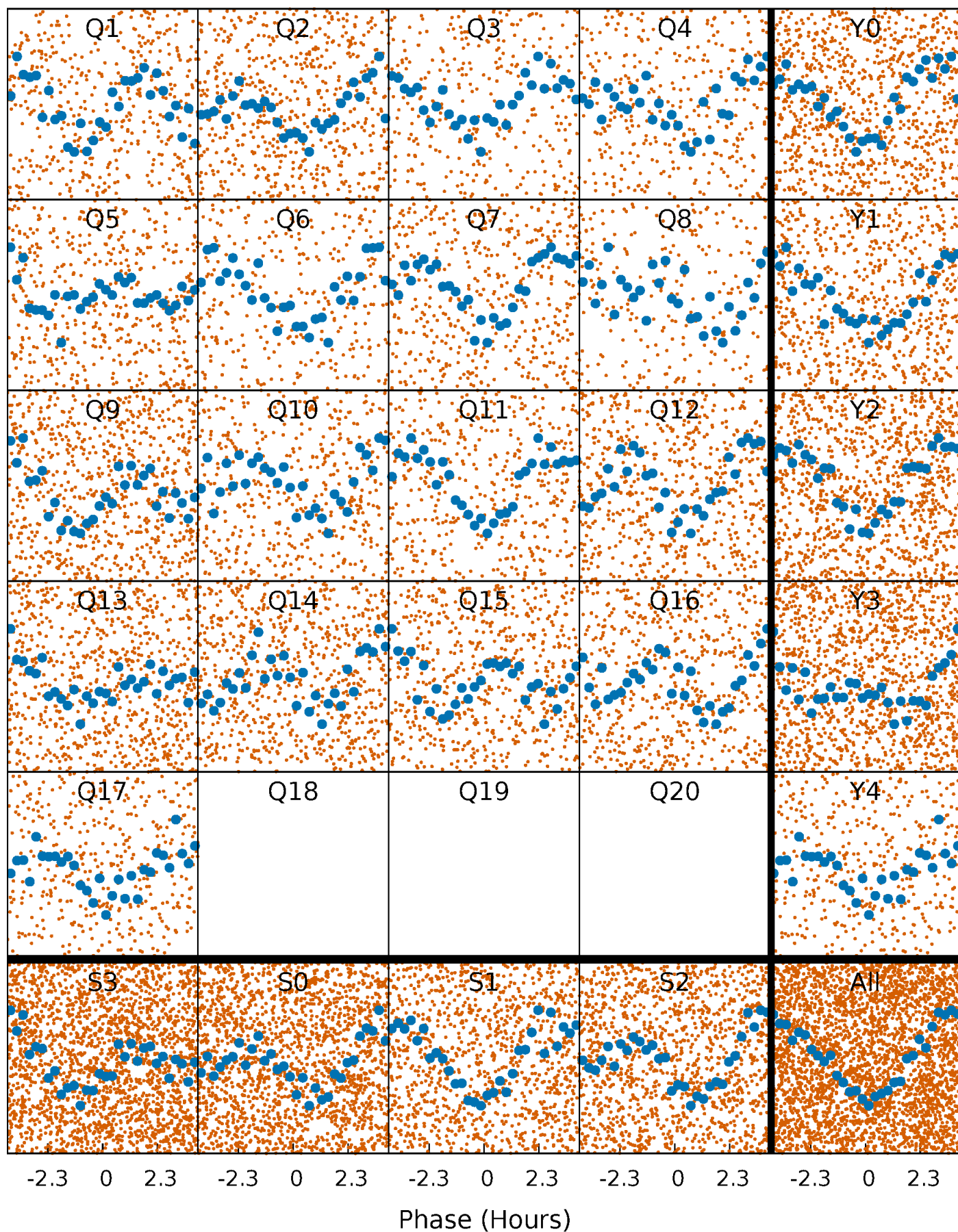


**Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



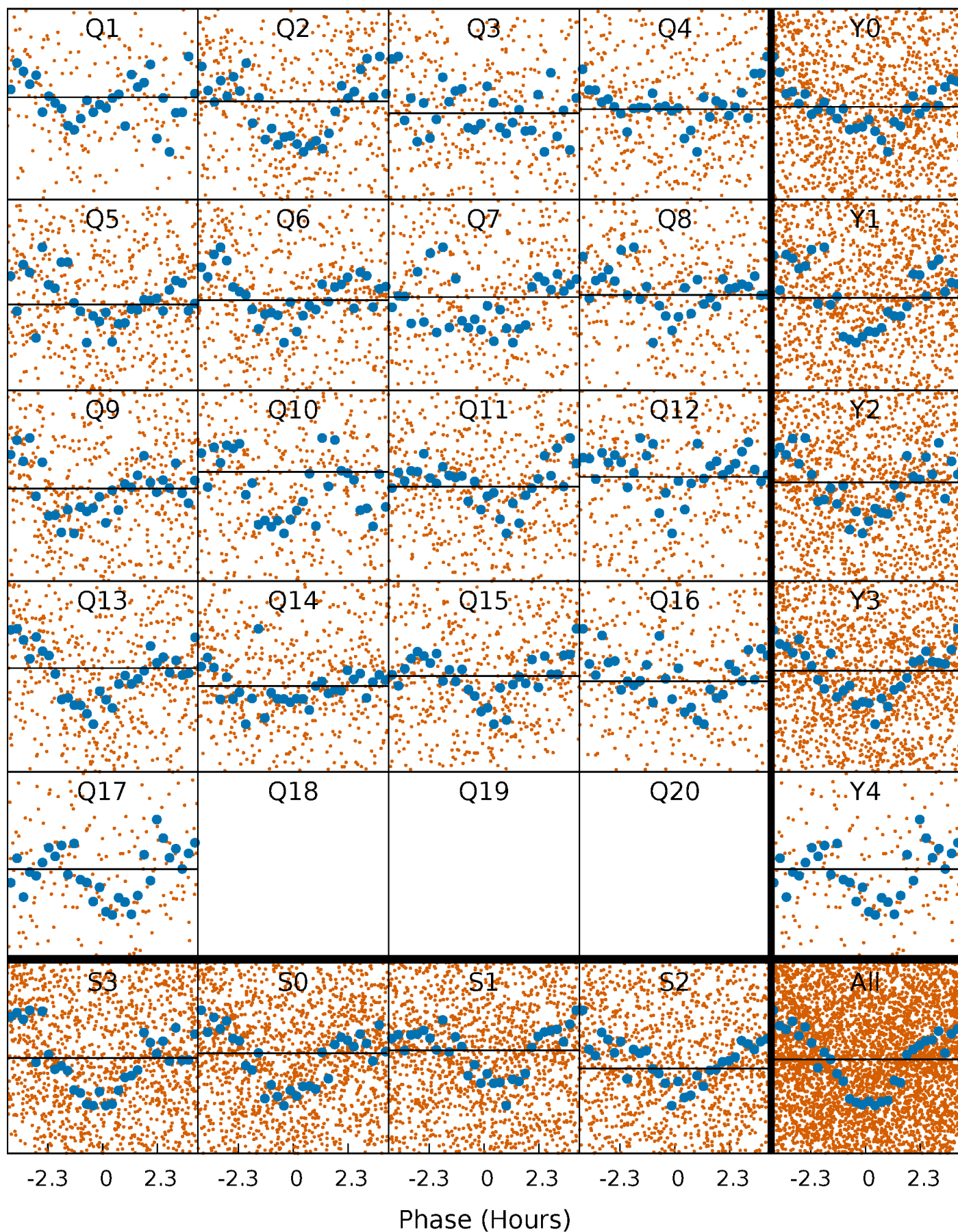
# PDC Quarter-Phased Transit Curves

TCE 008264588-04 P= 0.605307 Days  $T_0=132.054944$  (BKJD)



# DV Quarter-Phased Transit Curves

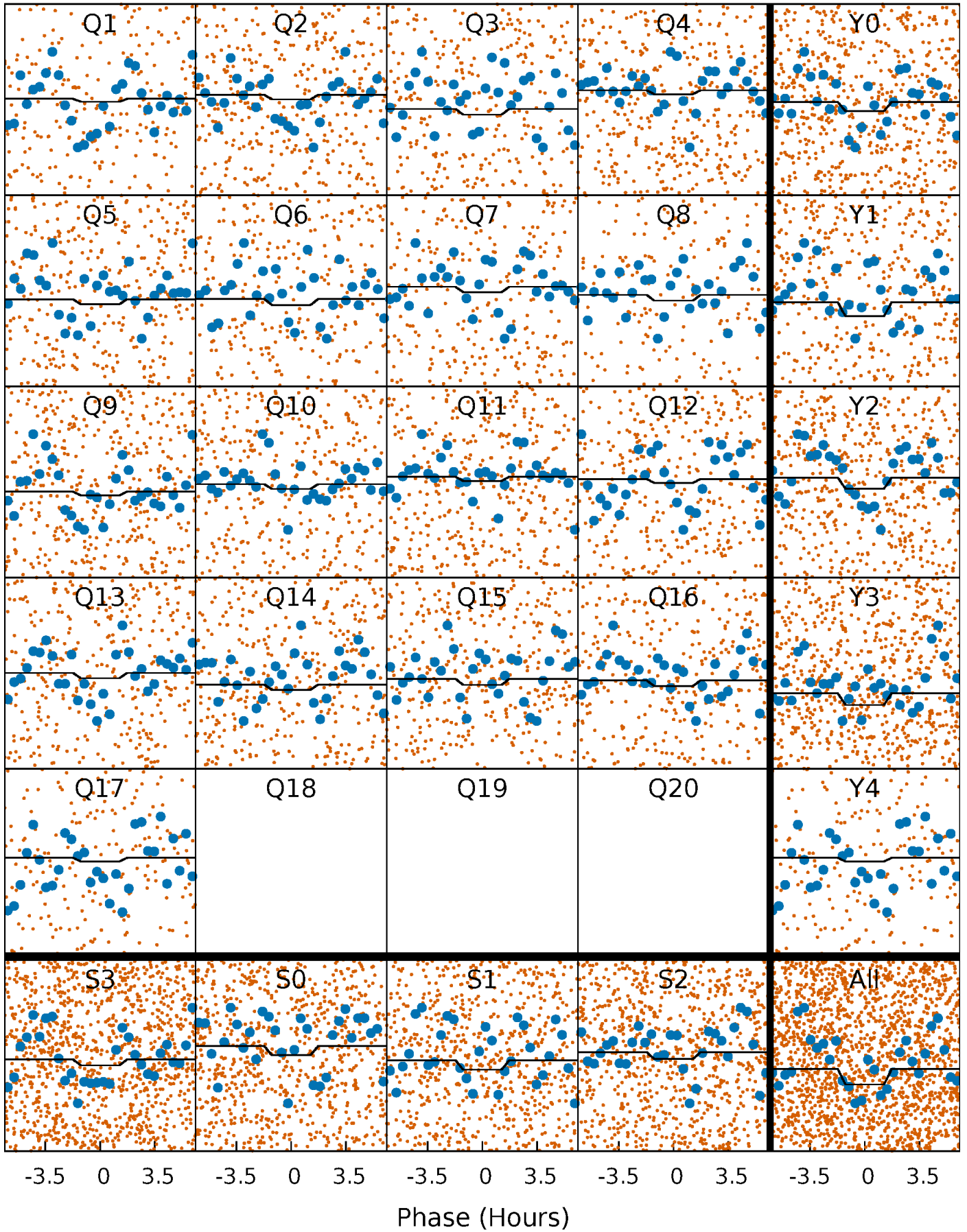
TCE 008264588-04   P= 0.605307 Days    $T_0=132.054944$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

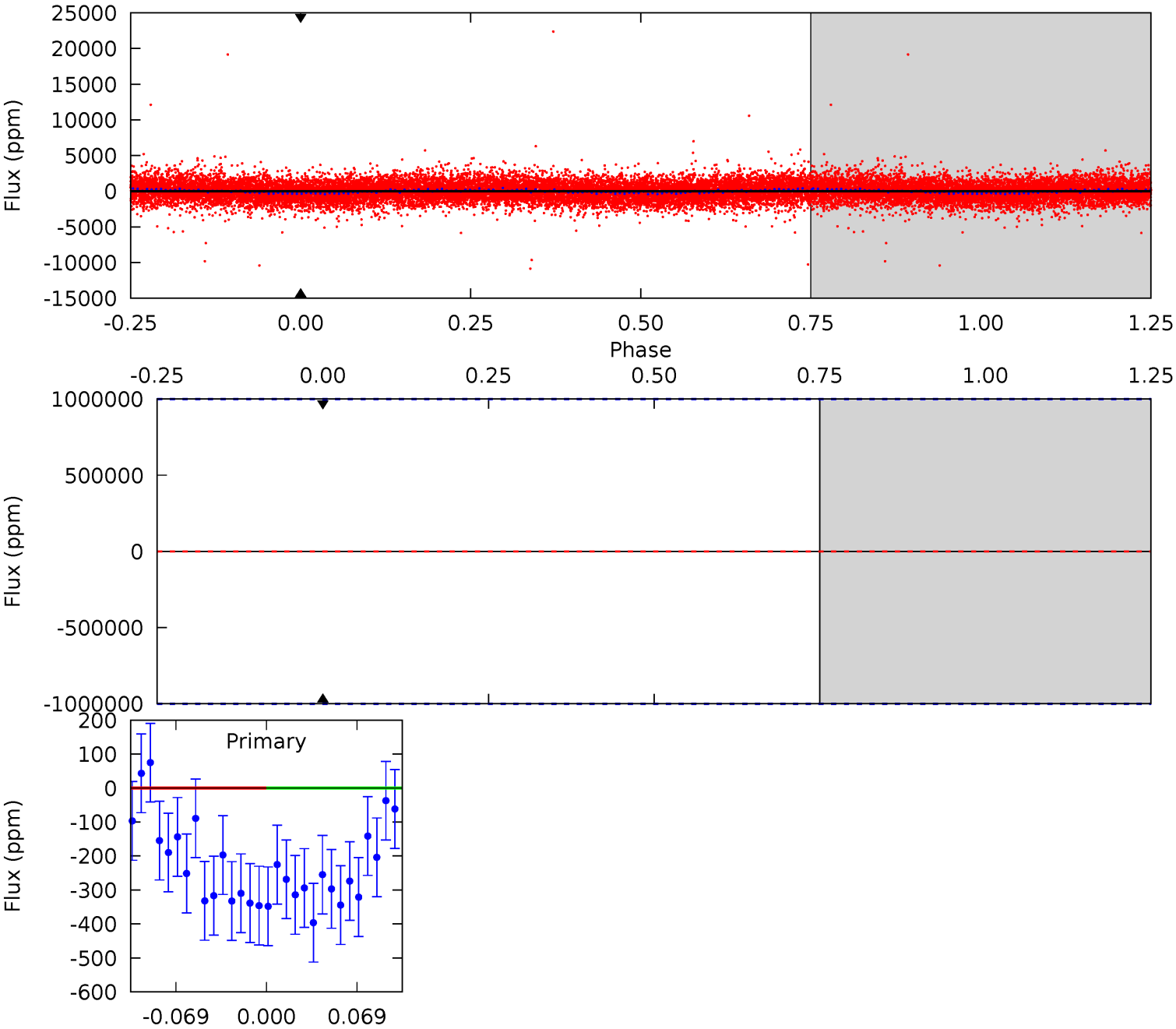
TCE 008264588-04   P= 0.605307 Days    $T_0=132.045872$  (BKJD)



# DV Model-Shift Uniqueness Test

008264588-04, P = 0.605307 Days, E = 131.449637 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

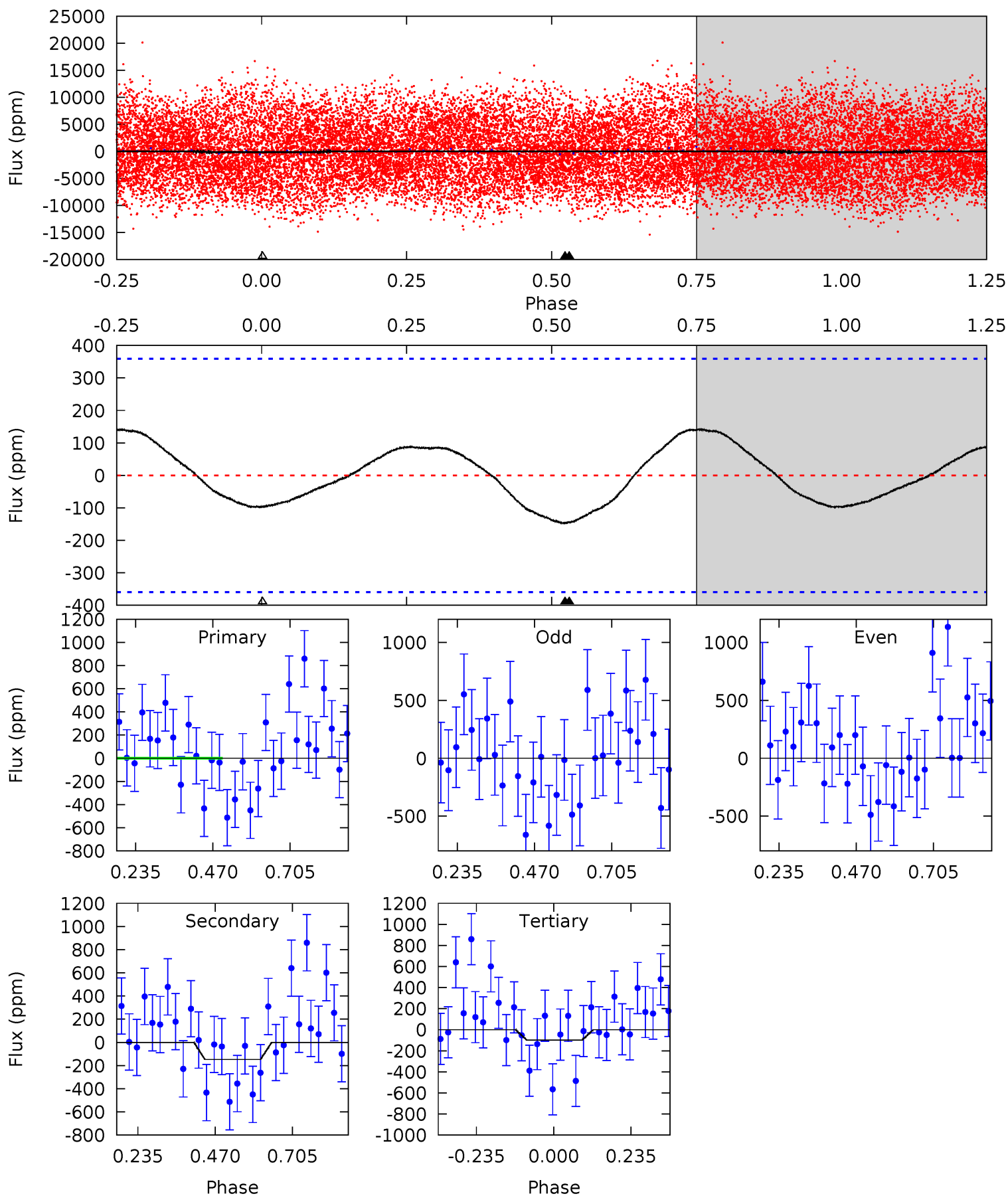




# Alt Model-Shift Uniqueness Test

008264588-04, P = 0.605307 Days, E = 131.440565 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.77	1.80	1.19	0	4.38	1.19	0.89	0.58	1.77	0.61	1.80	0.90	0.37	0.49	0.65



### Stellar Parameters For KIC 008264588

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6980^{+219}_{-316}$	$3.888^{+0.336}_{-0.144}$	$-0.160^{+0.250}_{-0.350}$	$2.382^{+0.539}_{-0.924}$	$1.596^{+0.195}_{-0.362}$	$0.166^{+0.427}_{-0.070}$
	+3%/-5%	+9%/-4%	+156%/-219%	+23%/-39%	+12%/-23%	+257%/-42%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008264588-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$17.58^{+18.46}_{-12.65}$	$5120^{+381}_{-563}$	$-5144^{+42595}_{-32371}$	$-0.534^{+99.917}_{-95.756}$
Alt.	$-148 \pm 82$	$17.16^{+21.04}_{-12.14}$	$5074^{+418}_{-498}$	$-4021^{+8693}_{-456}$	$0.062^{+0.763}_{-0.051}$

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

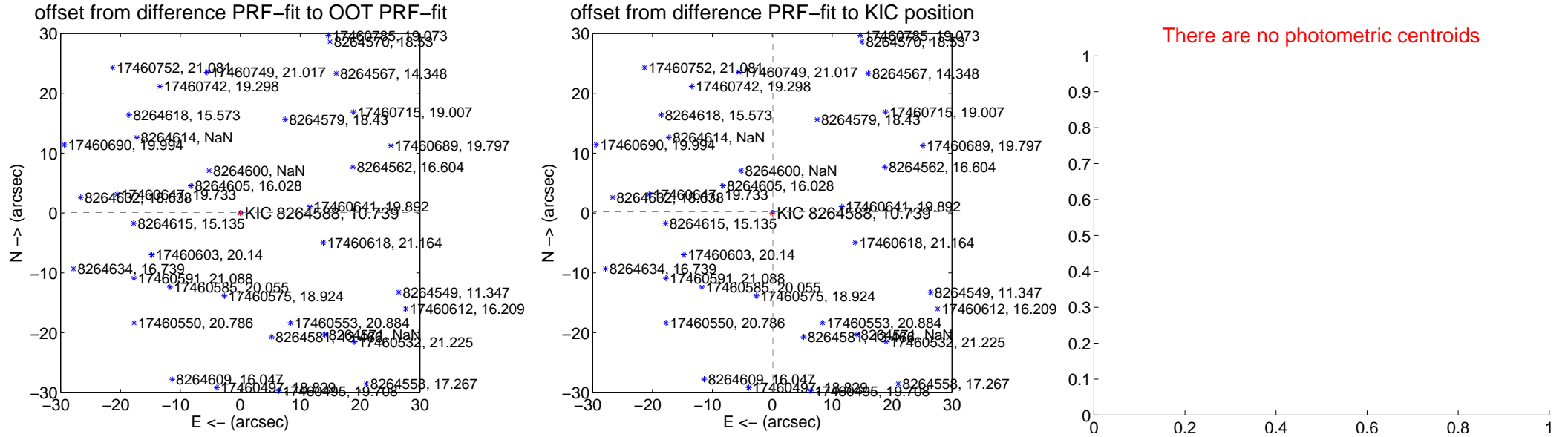
## DV Centroid Data

Supplemental centroid analysis for 008264588-04. **Kepler magnitude: 10.74.** Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

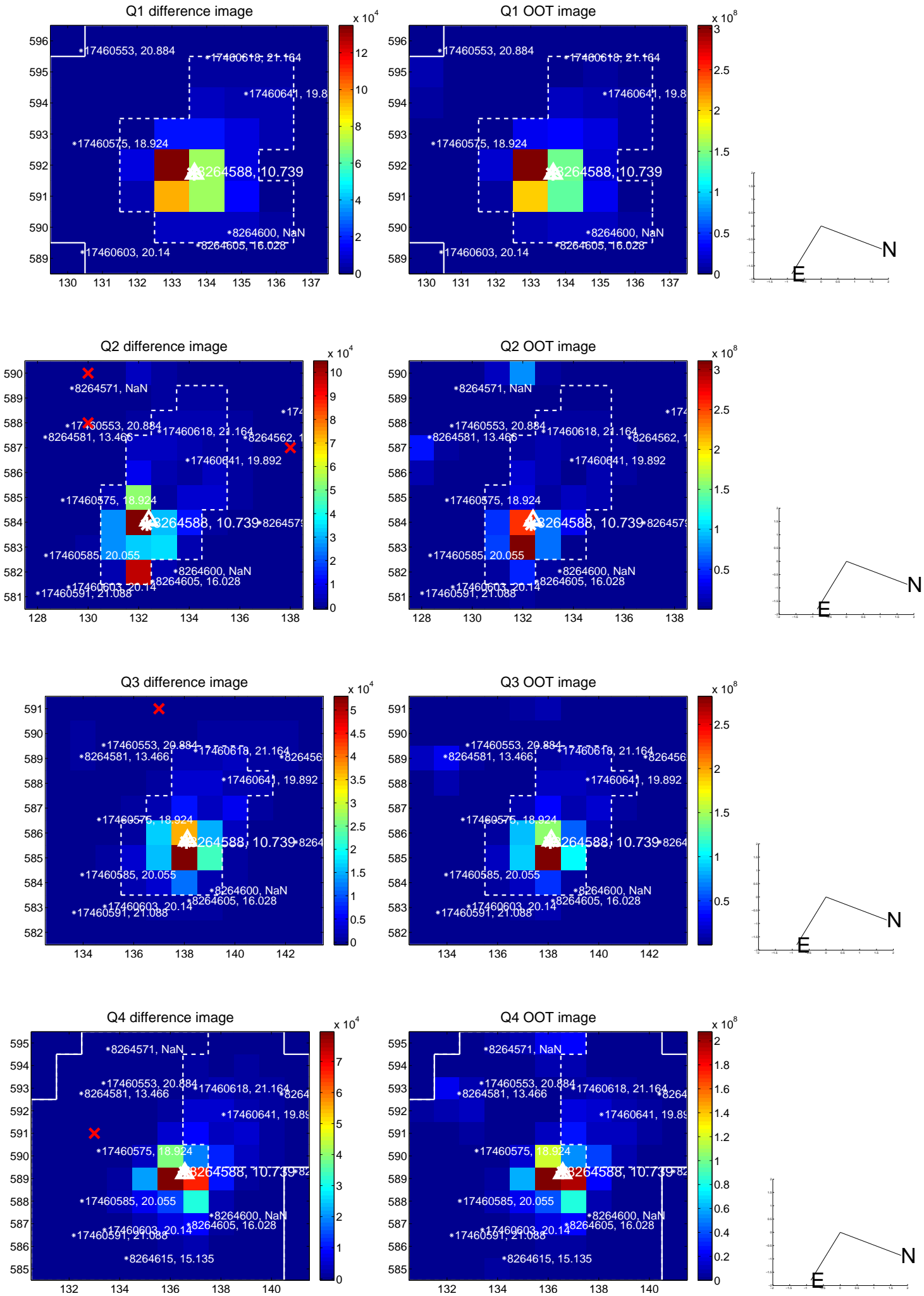
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.128 \pm 0.086$	1.50	$-0.100 \pm 0.096$	$0.081 \pm 0.078$
PRF-fit source offset from KIC position	$0.224 \pm 0.080$	2.80	$-0.105 \pm 0.087$	$0.198 \pm 0.078$
photometric centroid source offset	—	—	—	—

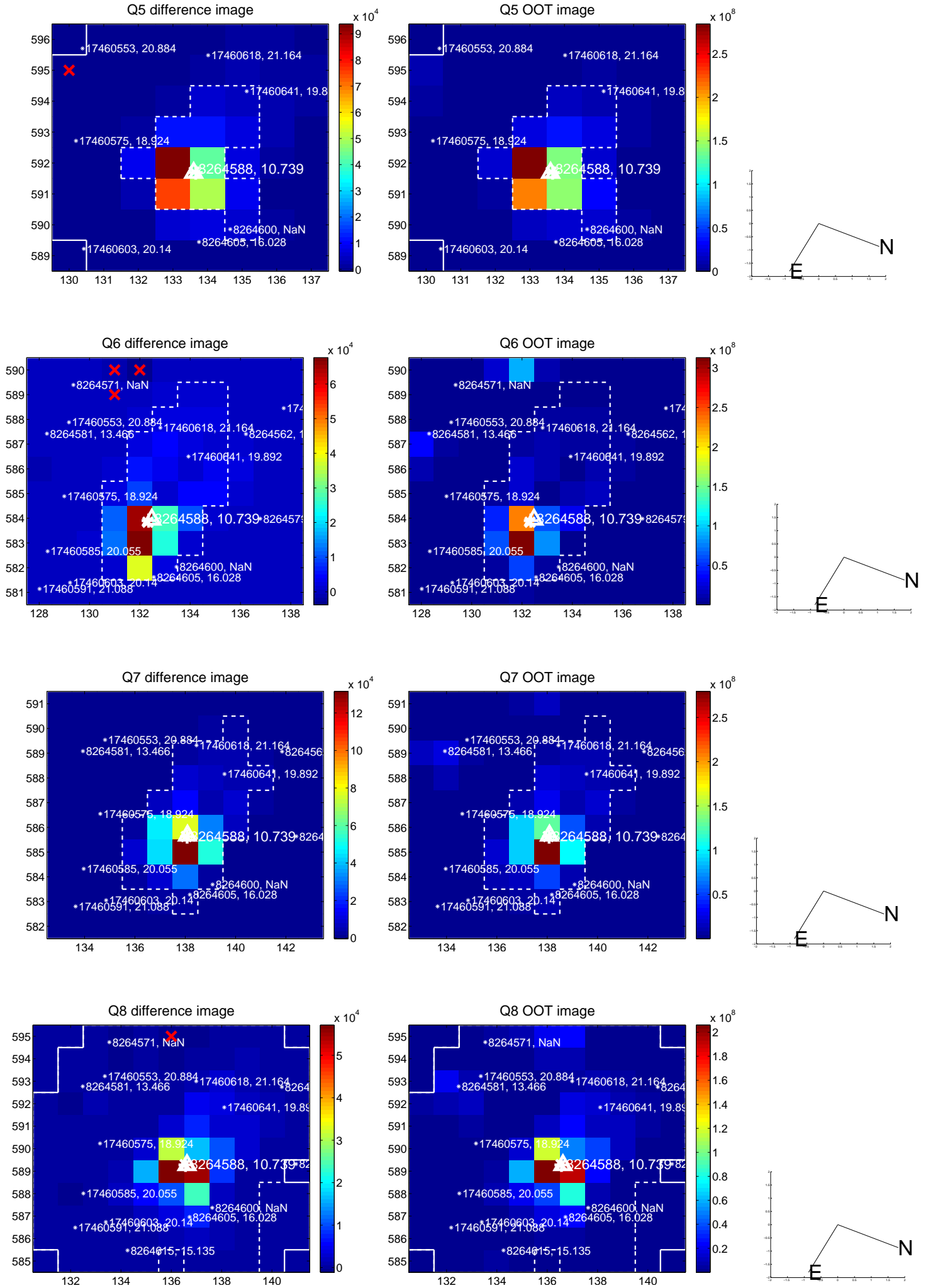


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

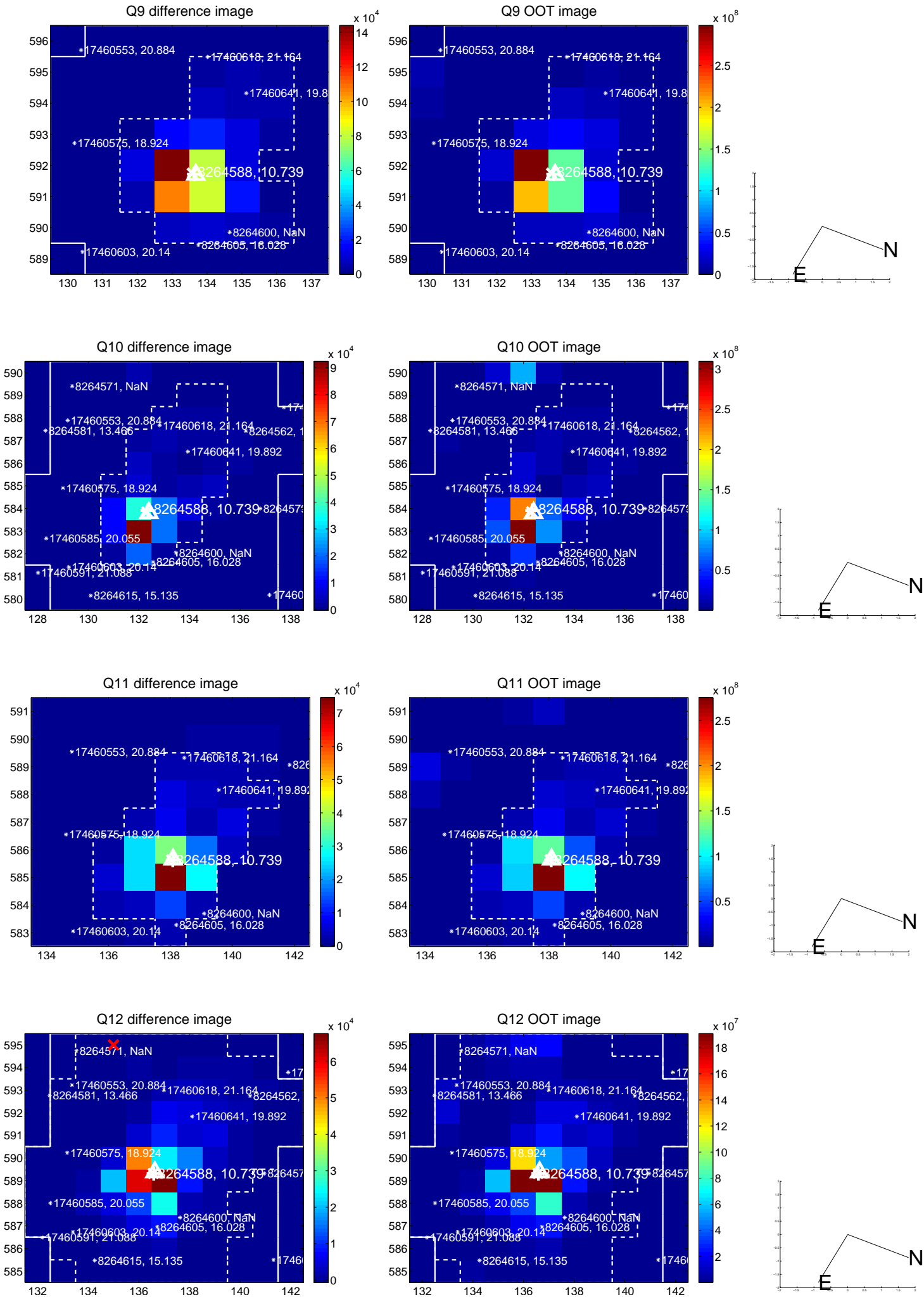


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

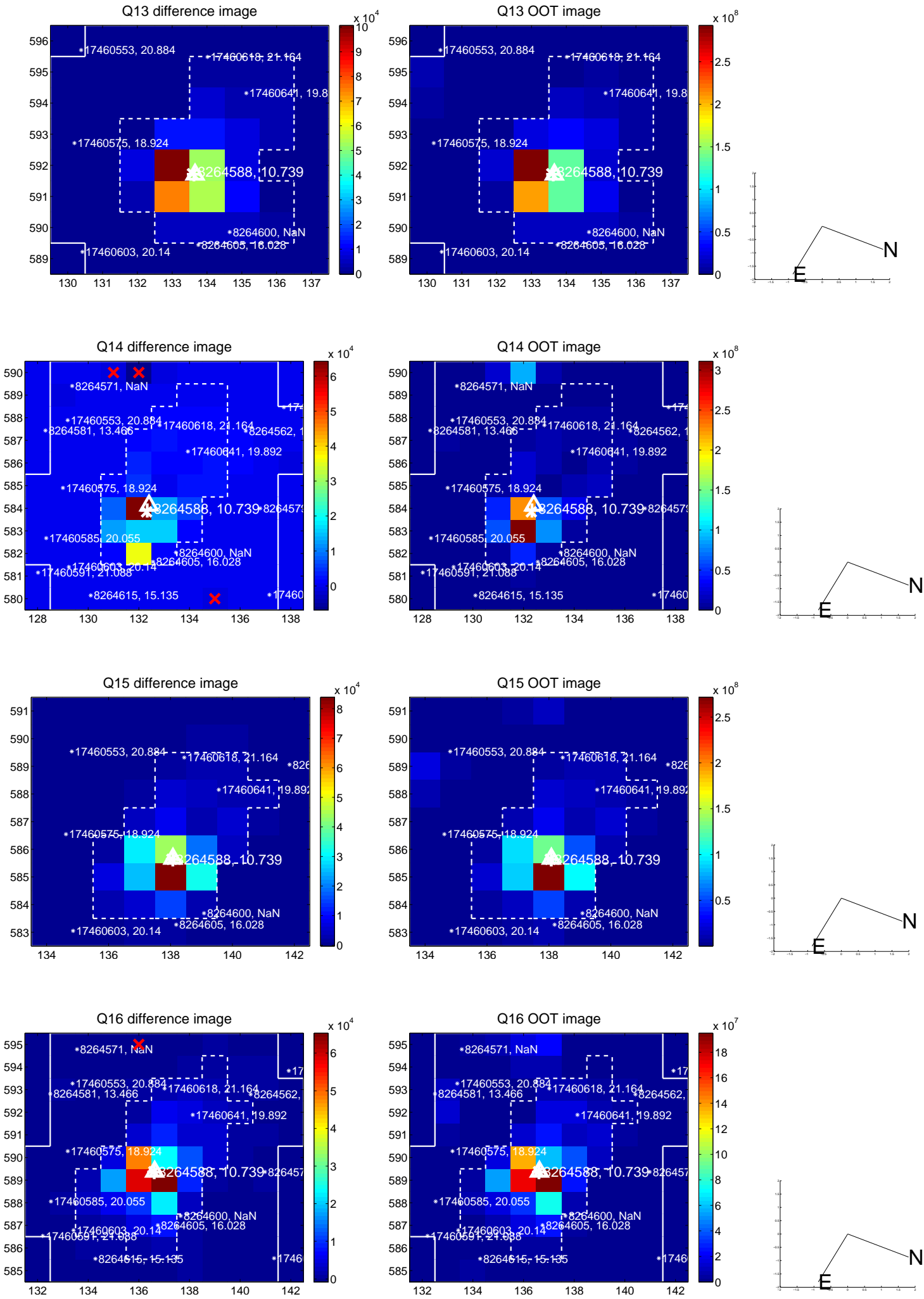




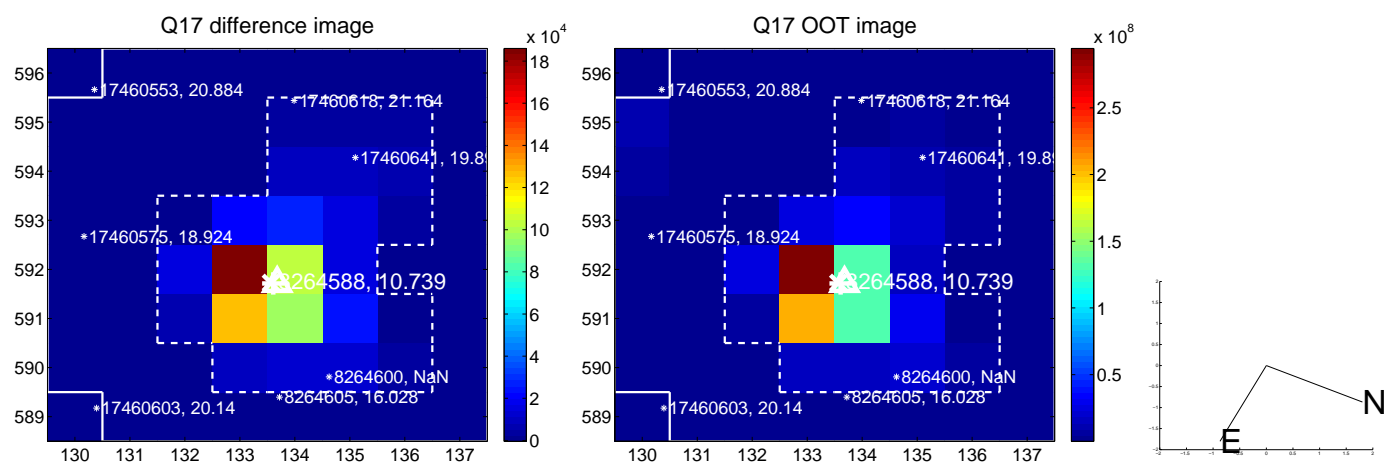
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



folded centroid time series figure for this object.



# UKIRT Image

Declination

