

# KIC 008329014

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008329014-01	OBS	No	0.525206	132.012268	260.9	2.254	19.7	22.8	1.25	6734	2.34	16805.78
008329014-02	OBS	No	0.525208	131.670369	710.7	1.500	15.4	-1.0	1.25	6734	3.37	16805.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008329014-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008329014-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

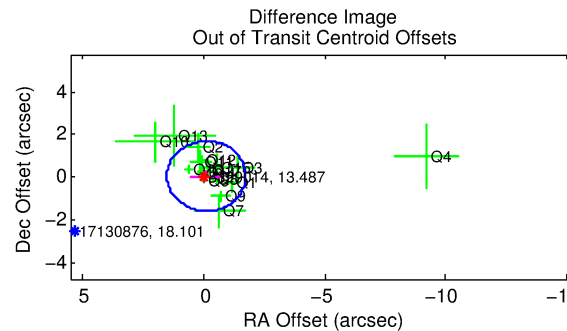
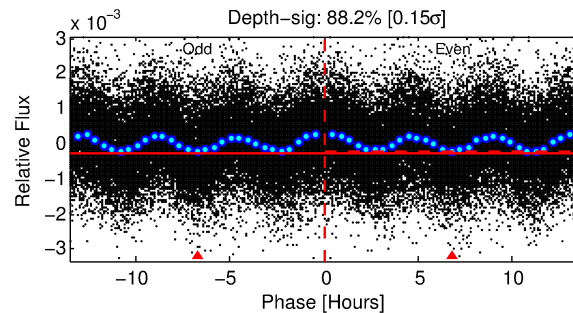
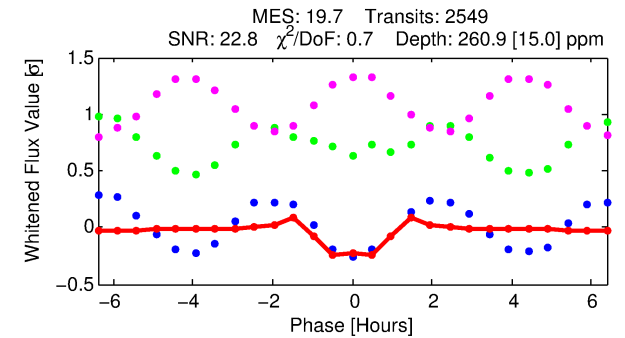
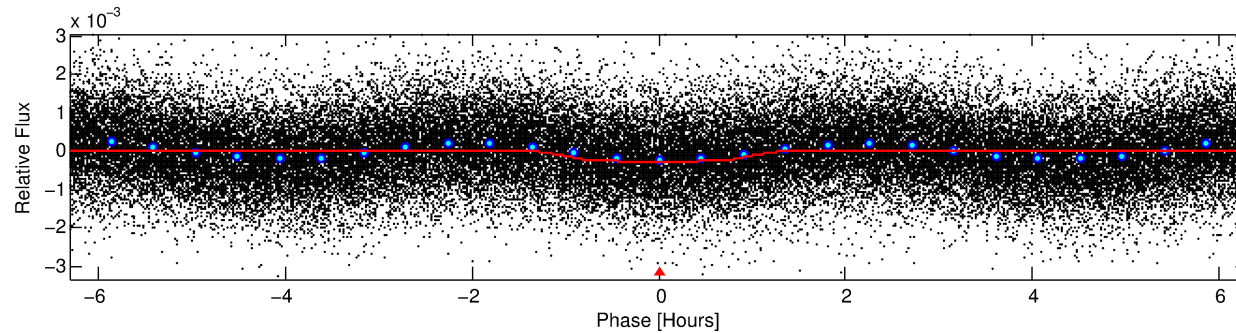
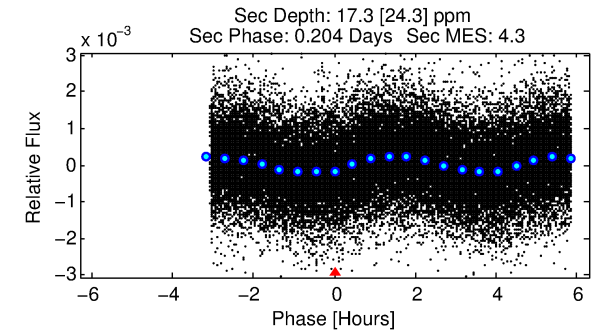
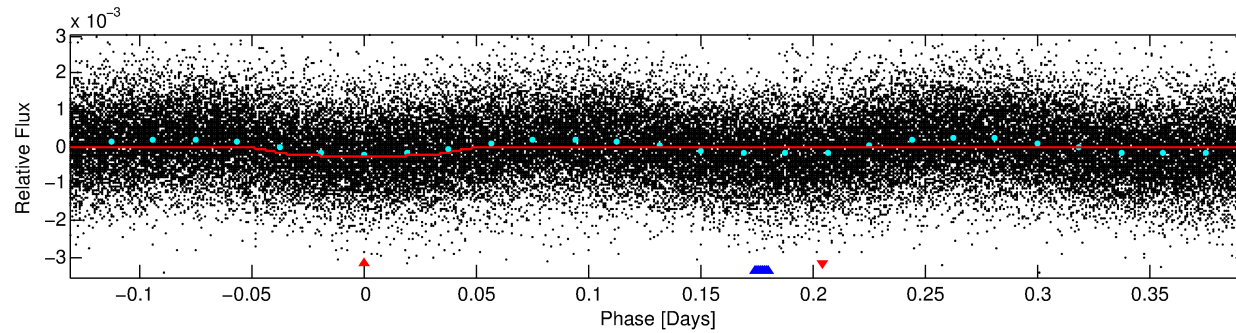
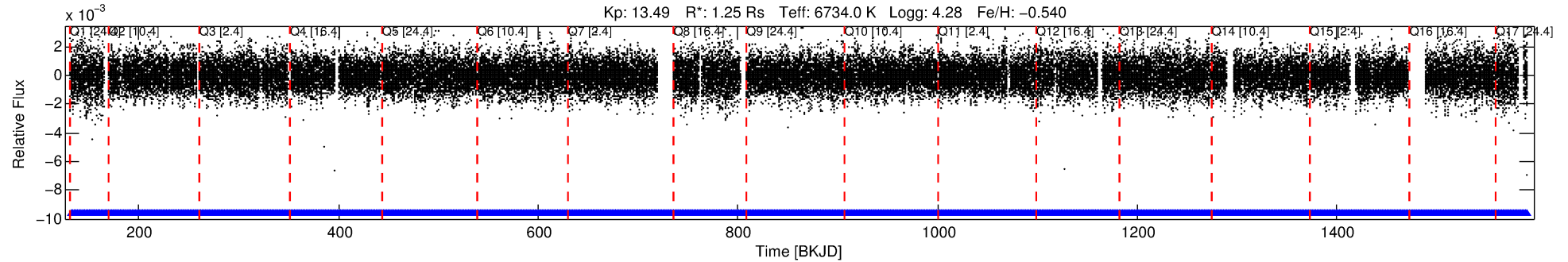
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008329014-01

No Significant Match Found

# DV One-Page Summary

KIC: 8329014 Candidate: 1 of 2 Period: 0.525 d



## DV Fit Results:

Period = 0.52521 [0.00000] d  
Epoch = 132.0123 [0.0008] BKJD  
Rp/R\* = 0.0172 [0.0020]  
a/R\* = 1.28 [0.32]  
b = 0.89 [0.15]  
Seff = 16805.78 [5940.24]  
Teff = 2903 [257] K  
Rp = 2.34 [0.69] Re  
a = 0.0131 [0.0029] AU  
Ag = 0.30 [0.43] [-1.62σ]  
Teffp = 3312 [1186] K [0.34σ]

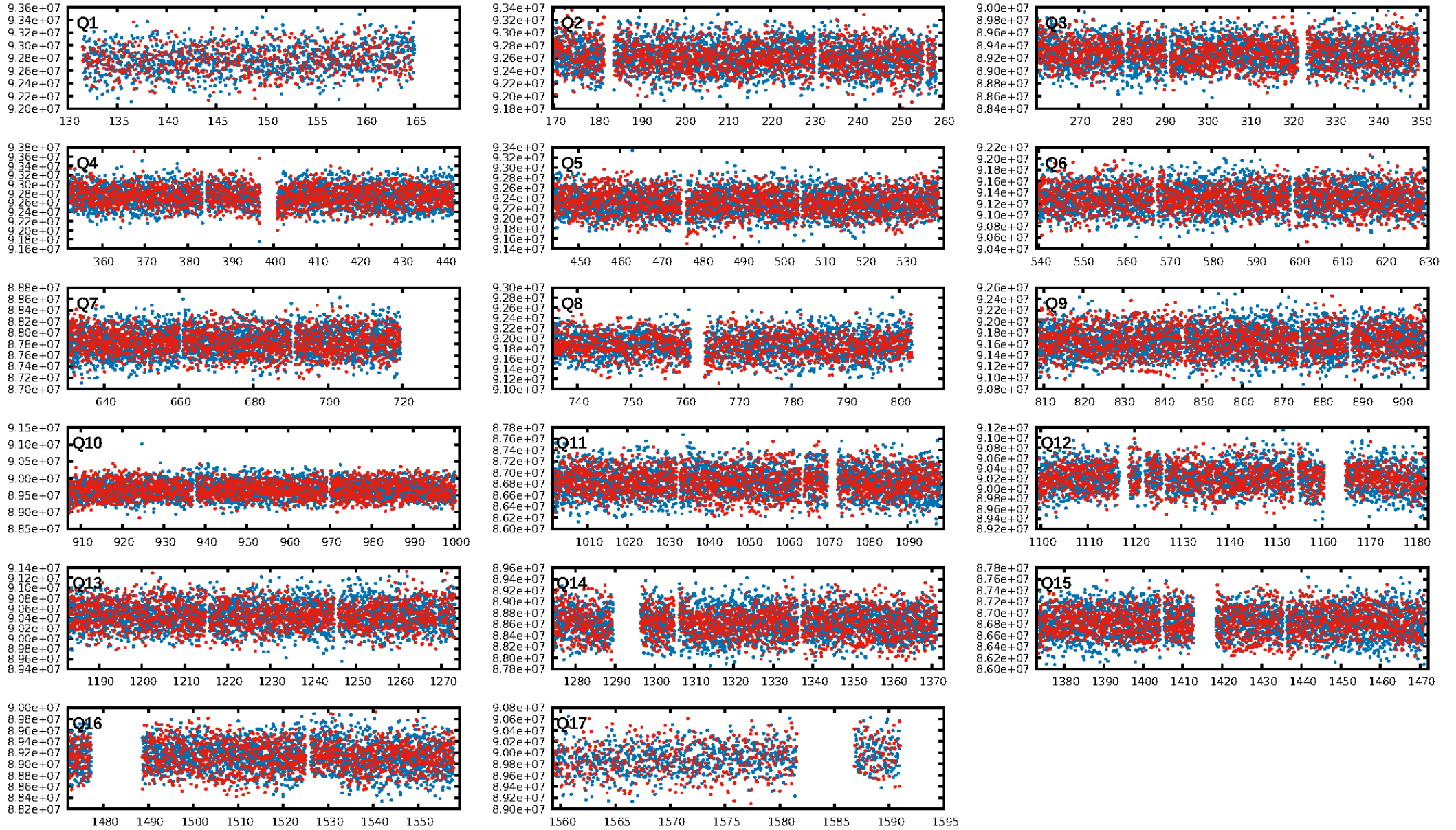
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2433/2433]  
GhostDiagnostic-chr: 1.617  
Centroid-sig: 0.0%  
Centroid-so: 0.189 arcsec [1.49σ]  
OotOffset-rm: 0.124 arcsec [0.23σ]  
KicOffset-rm: 0.103 arcsec [0.36σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.75 [12/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:41:09 Z

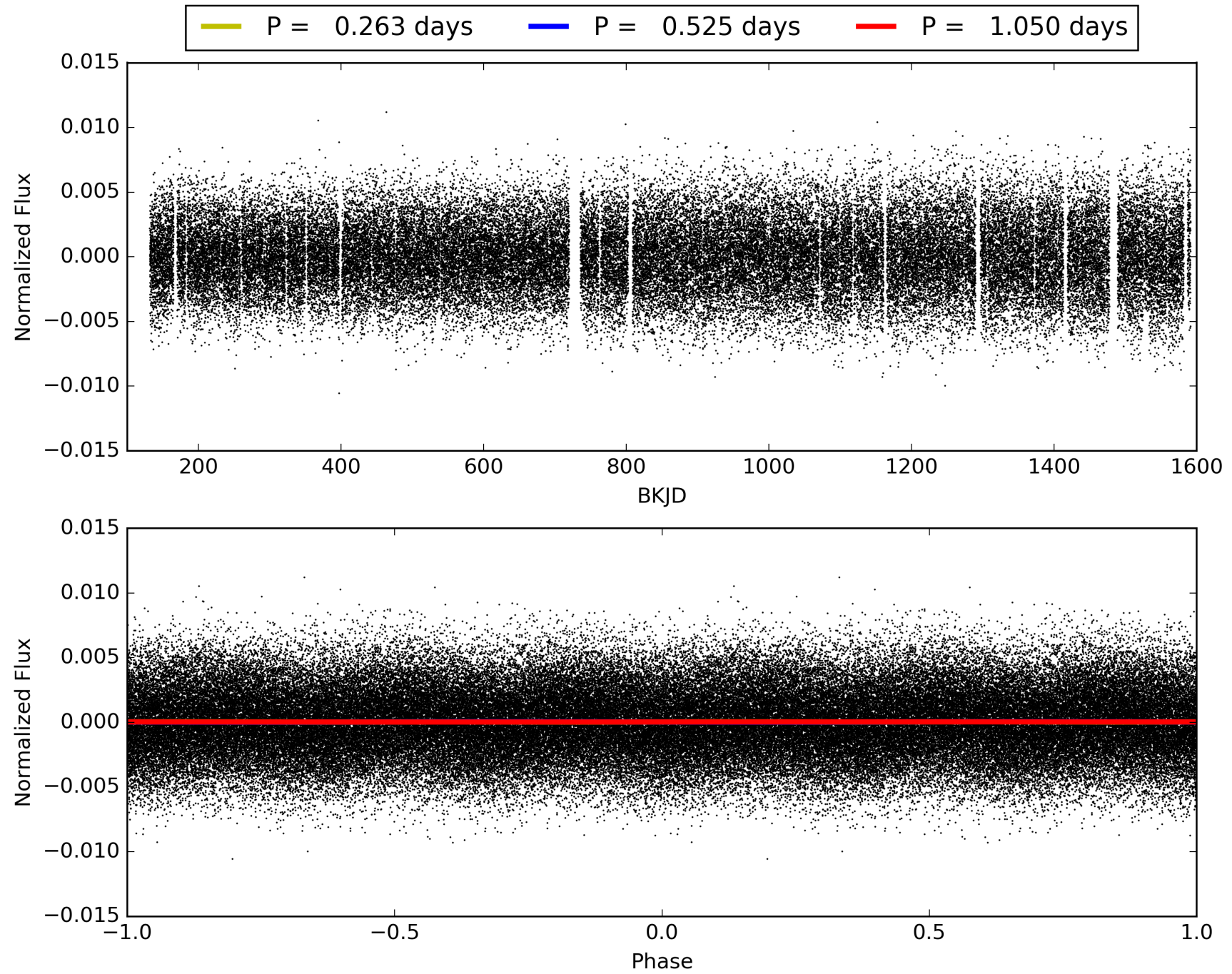
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008329014-01, PDC Light Curves



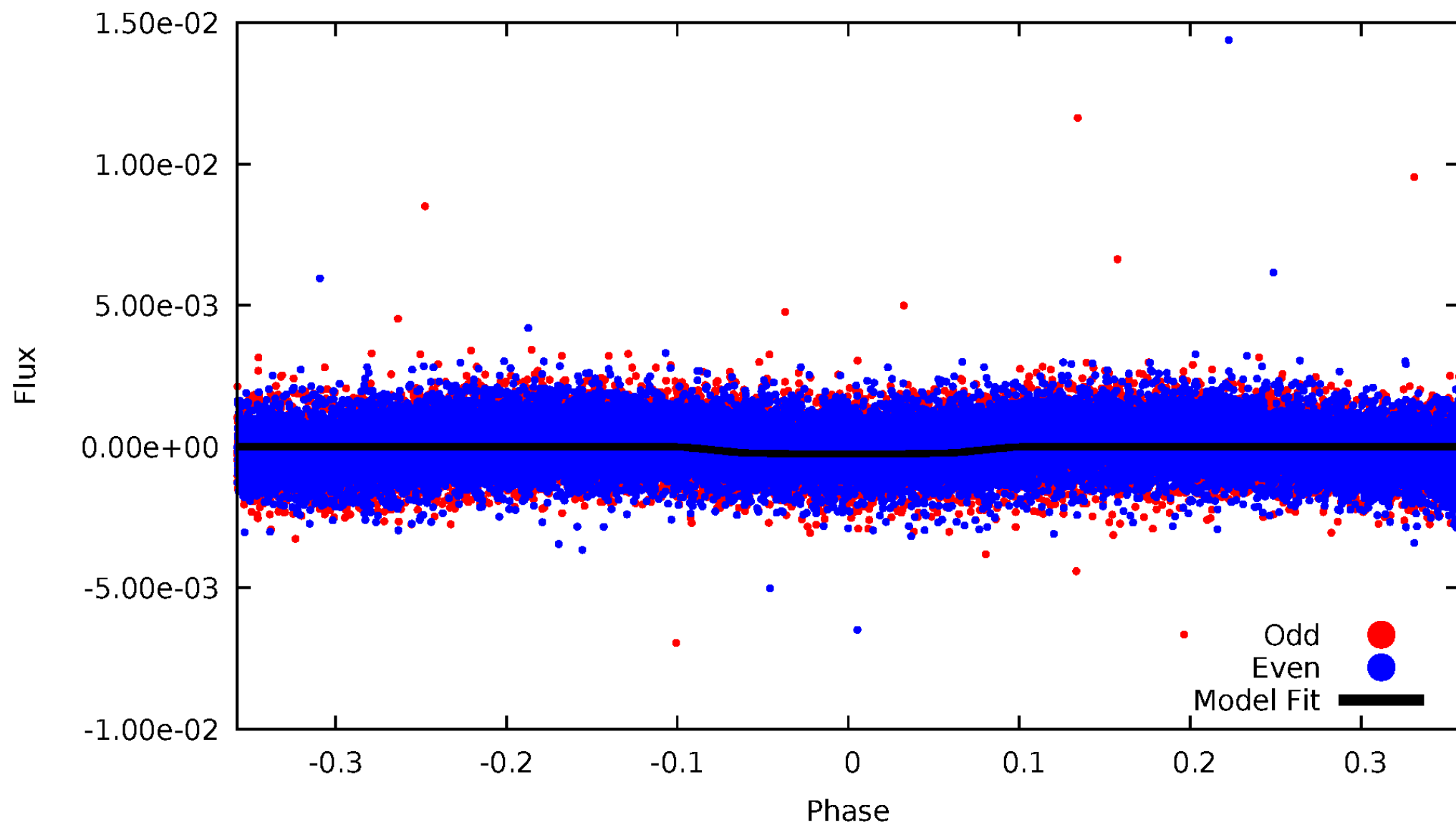


TCE 008329014-01



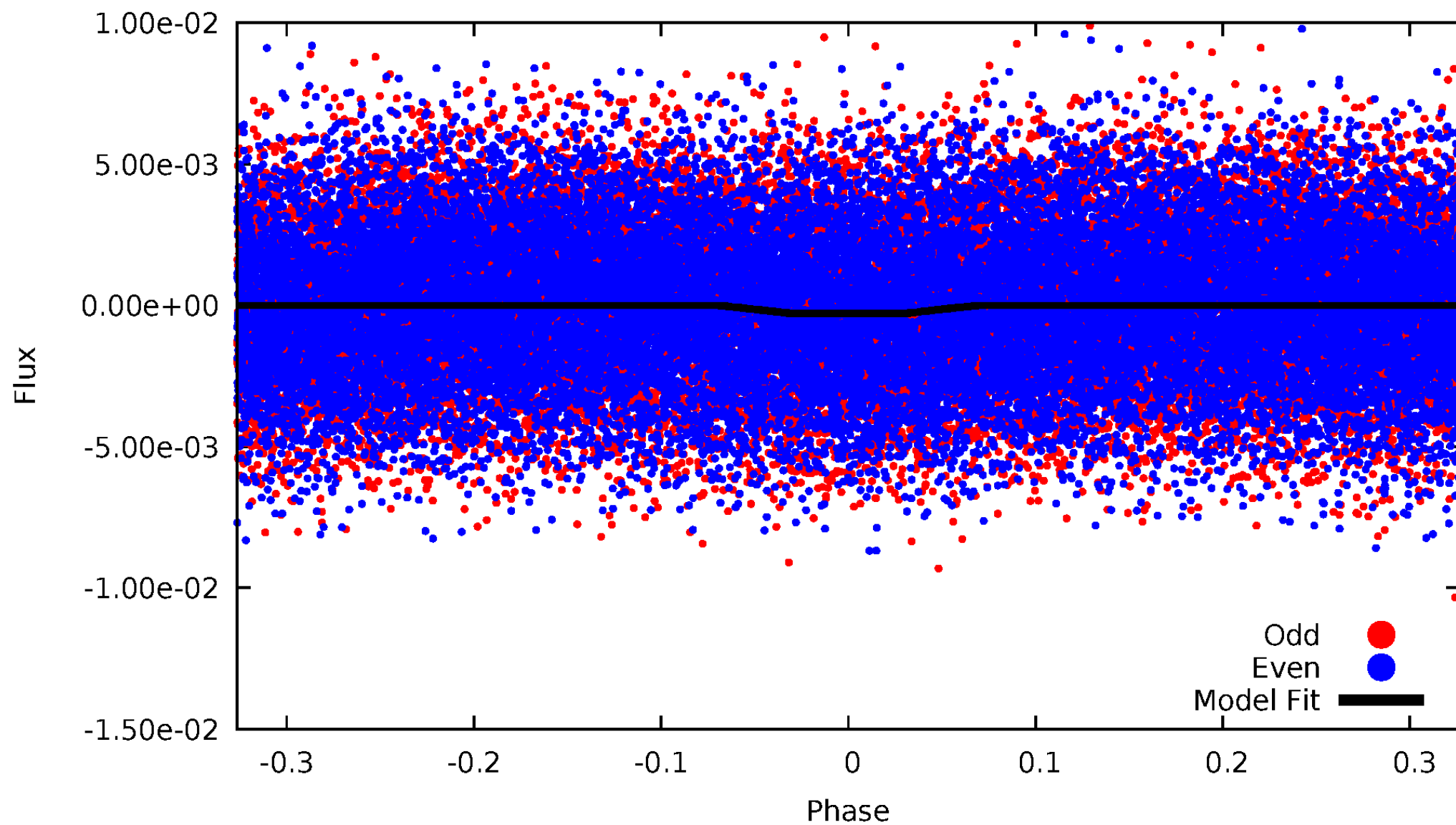
# DV Odd/Even

TCE 008329014-01

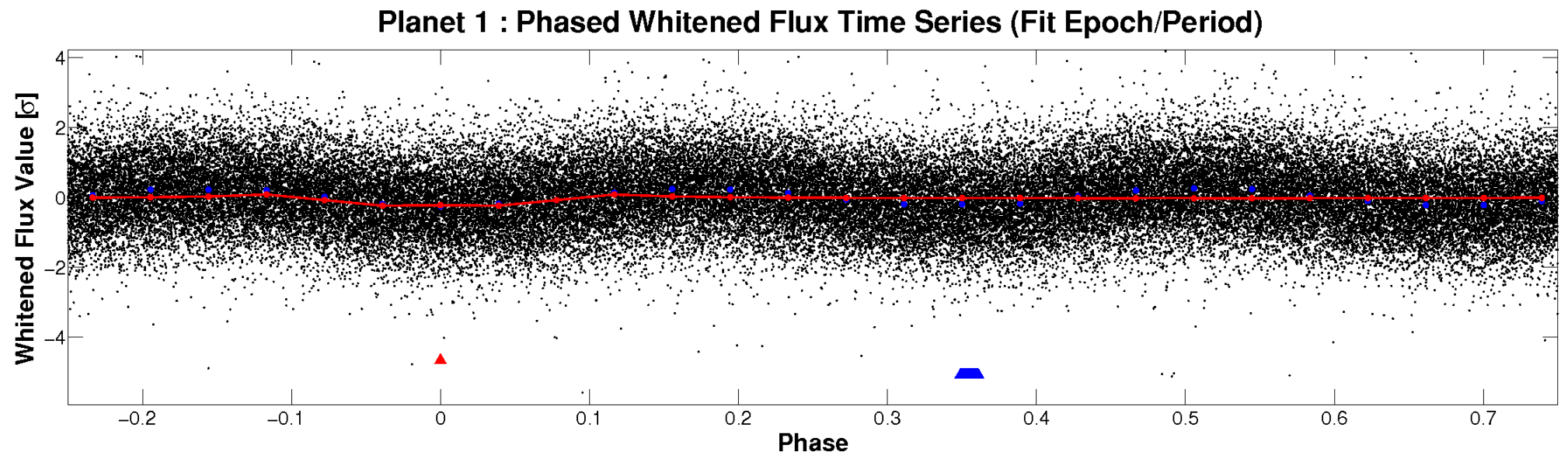
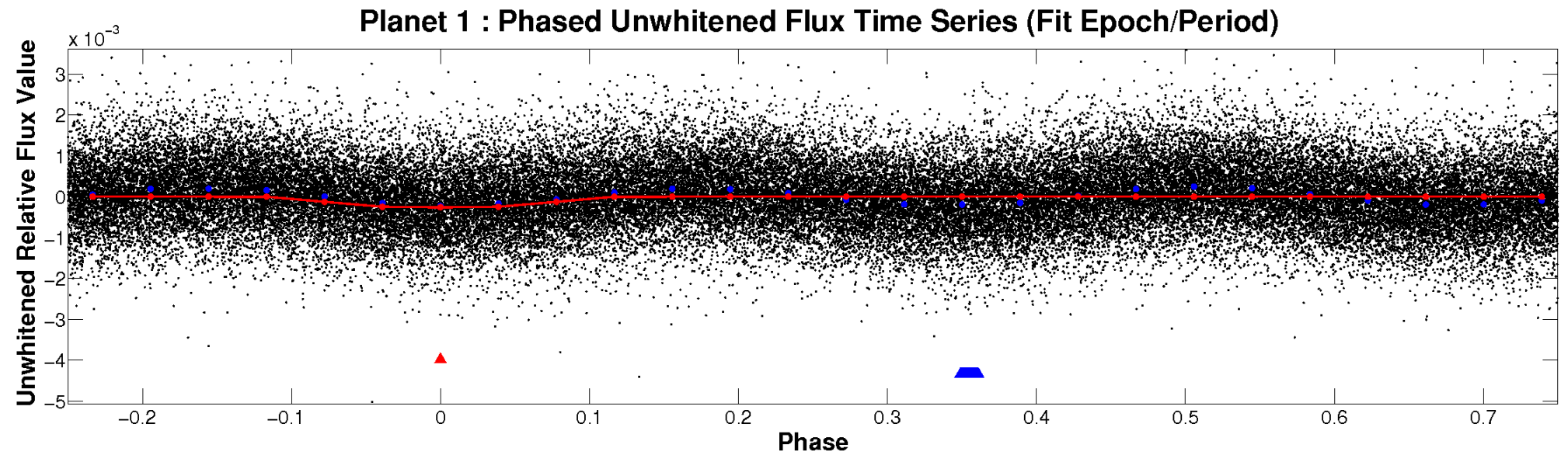


# ALT Odd/Even

TCE 008329014-01



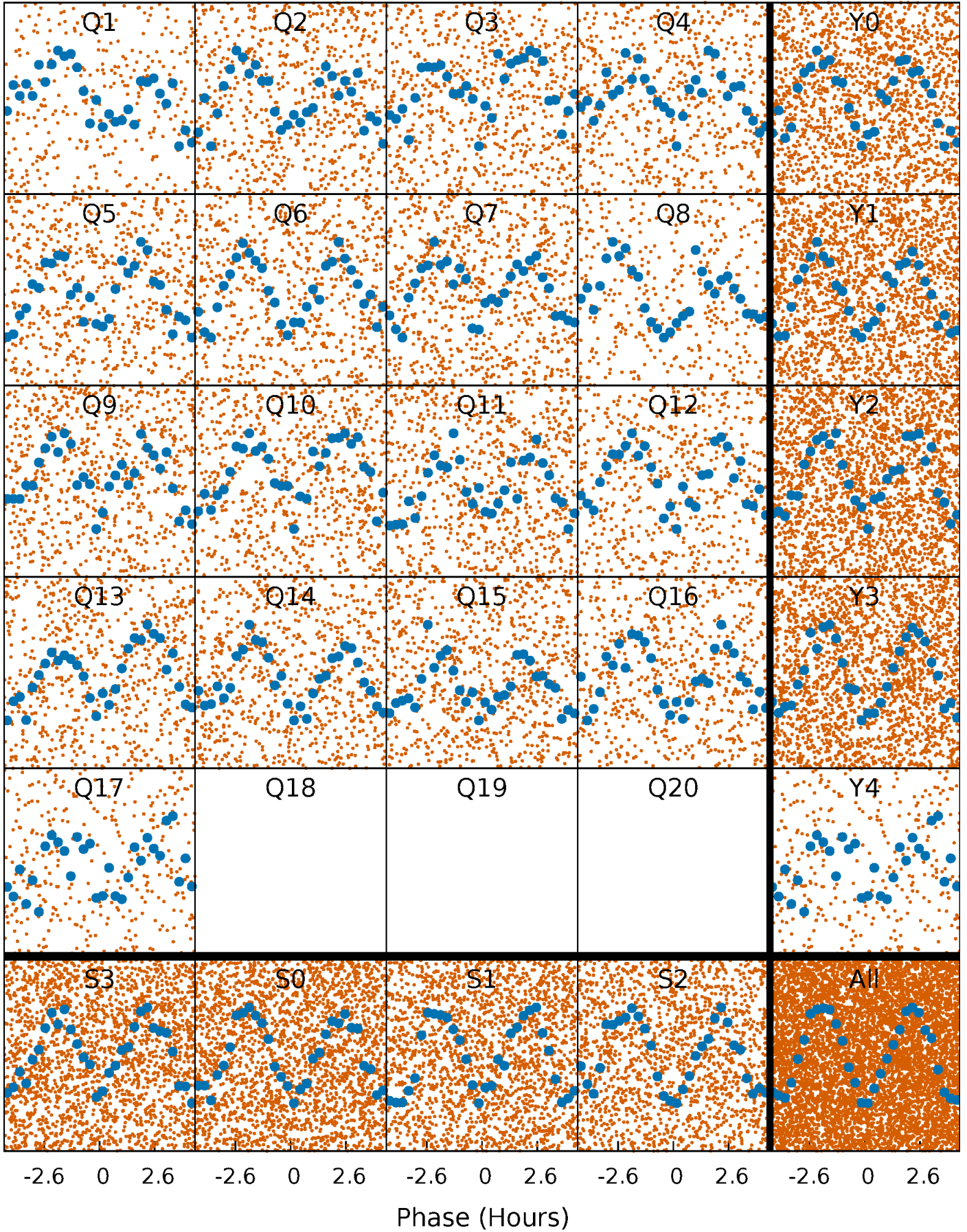
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

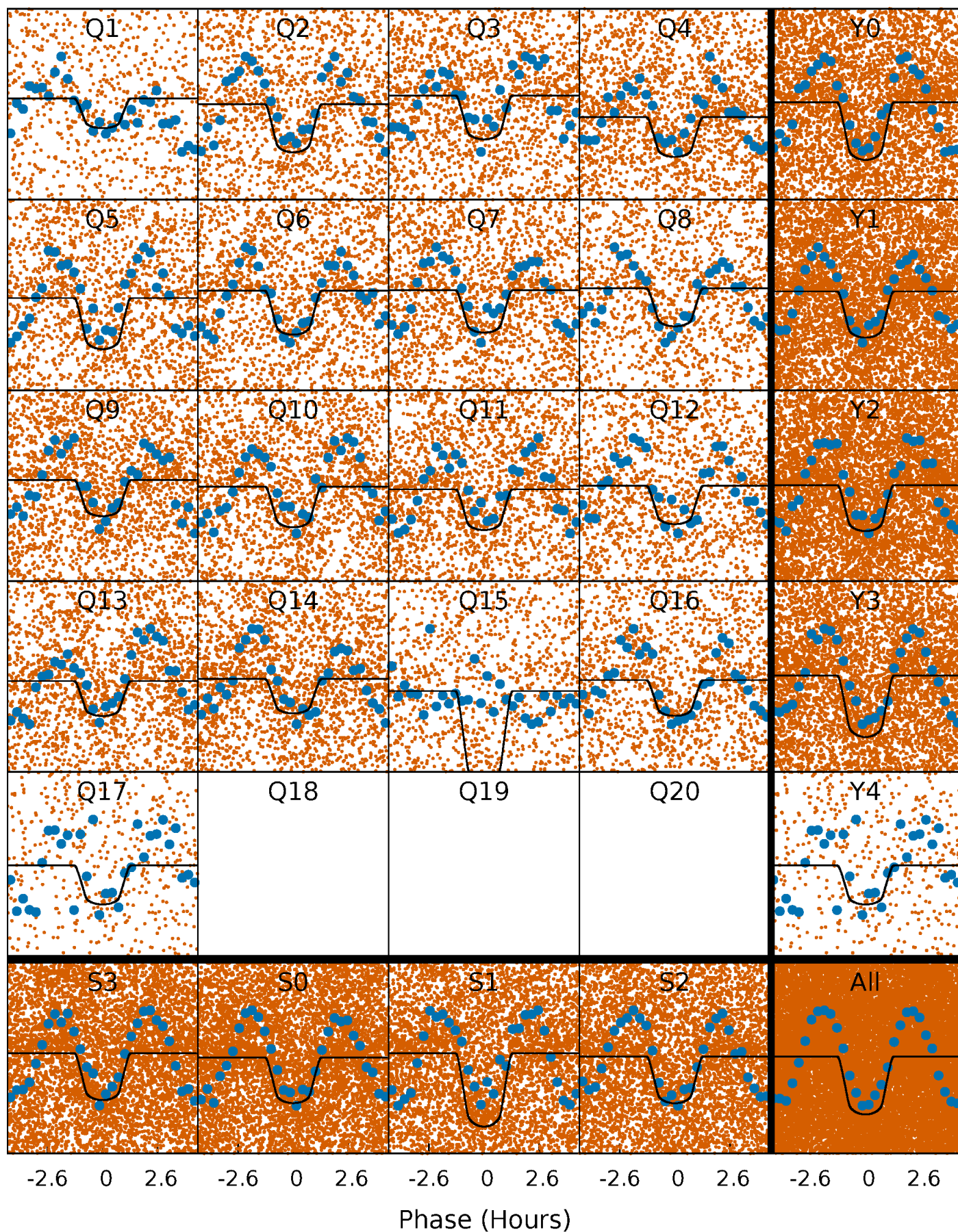
TCE 008329014-01 P= 0.525206 Days  $T_0=132.012268$  (BKJD)





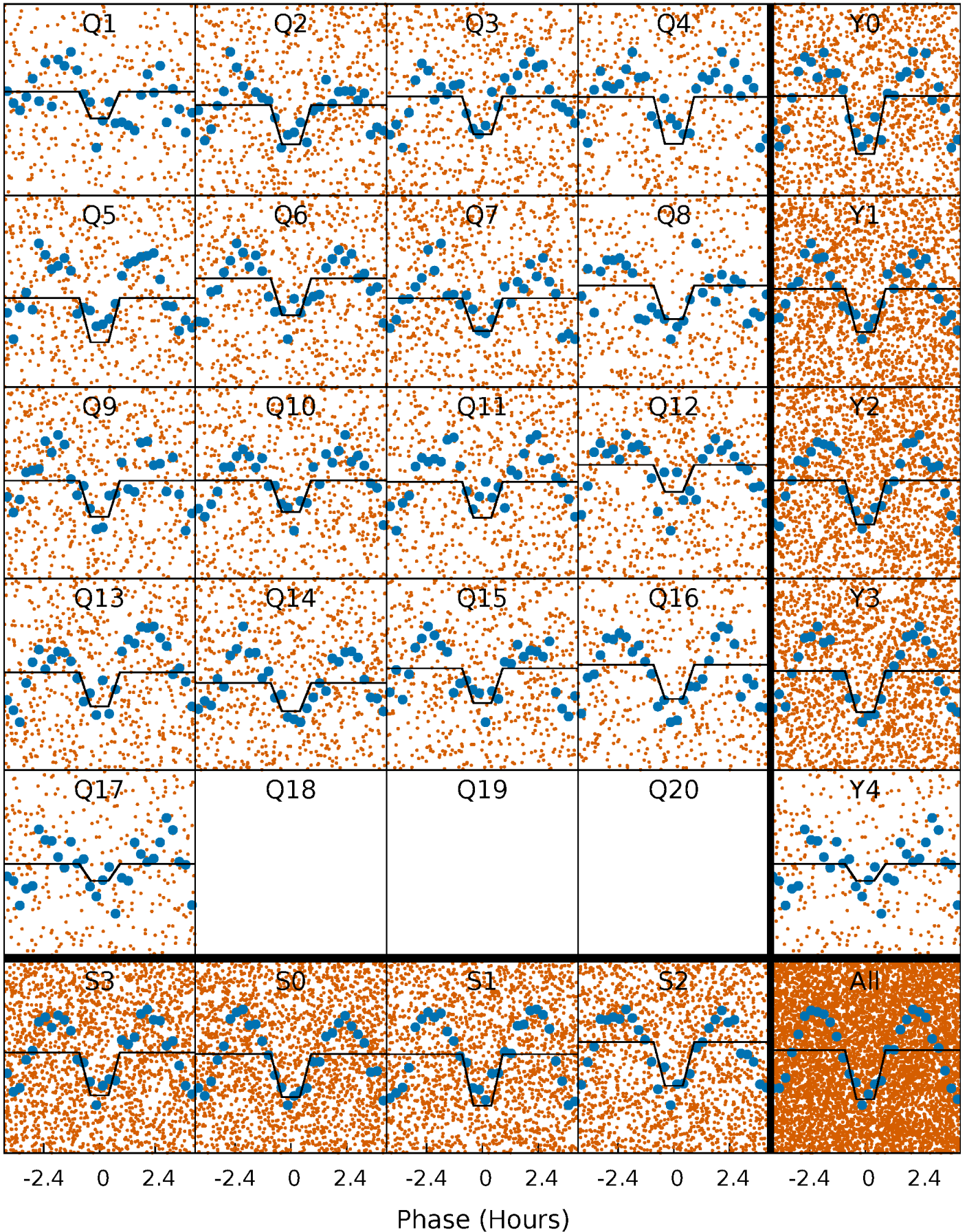
# DV Quarter-Phased Transit Curves

TCE 008329014-01 P= 0.525206 Days  $T_0=132.012268$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008329014-01 P= 0.525210 Days  $T_0=132.008624$  (BKJD)

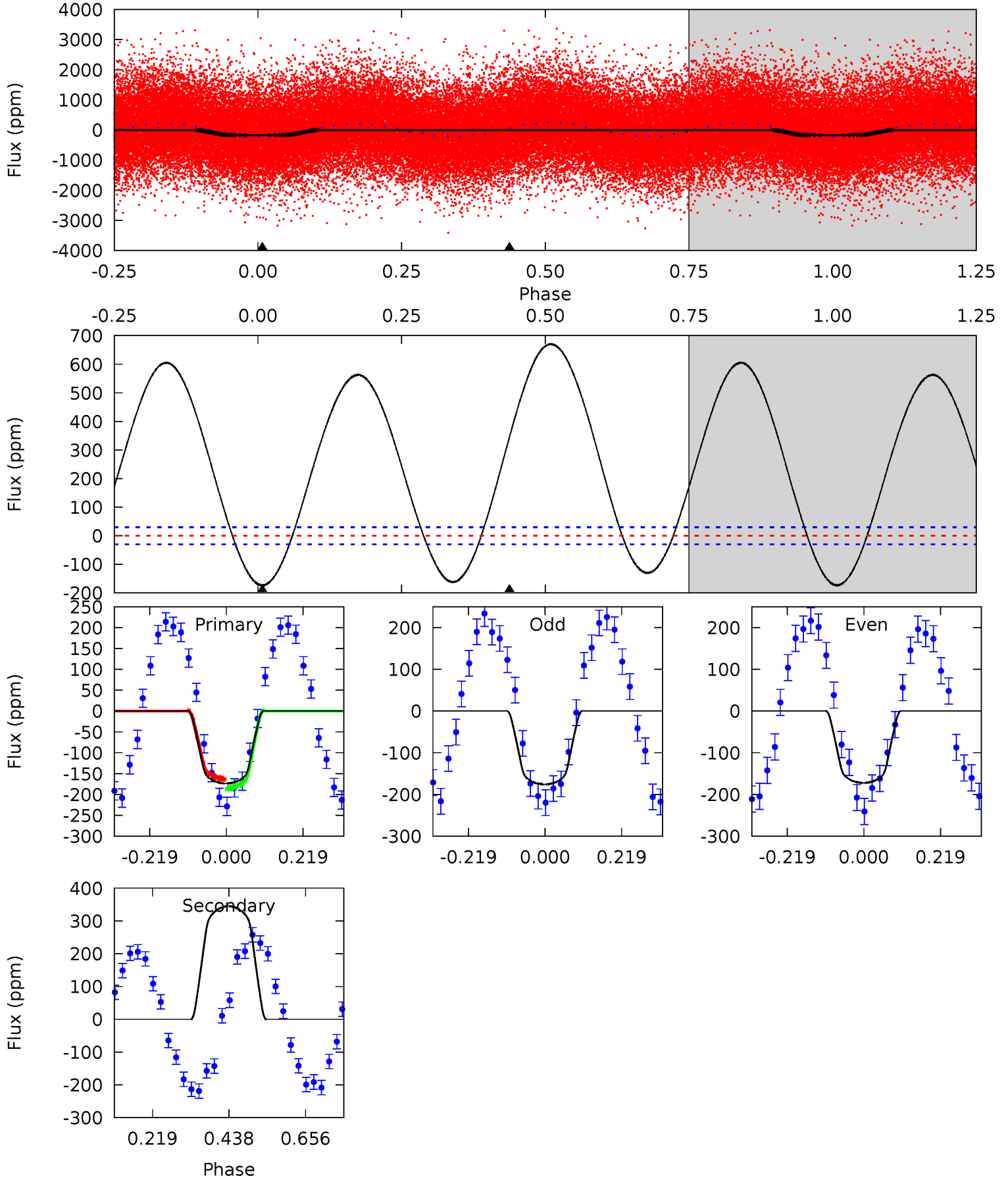




# DV Model-Shift Uniqueness Test

008329014-01, P = 0.525206 Days, E = 131.487062 Days

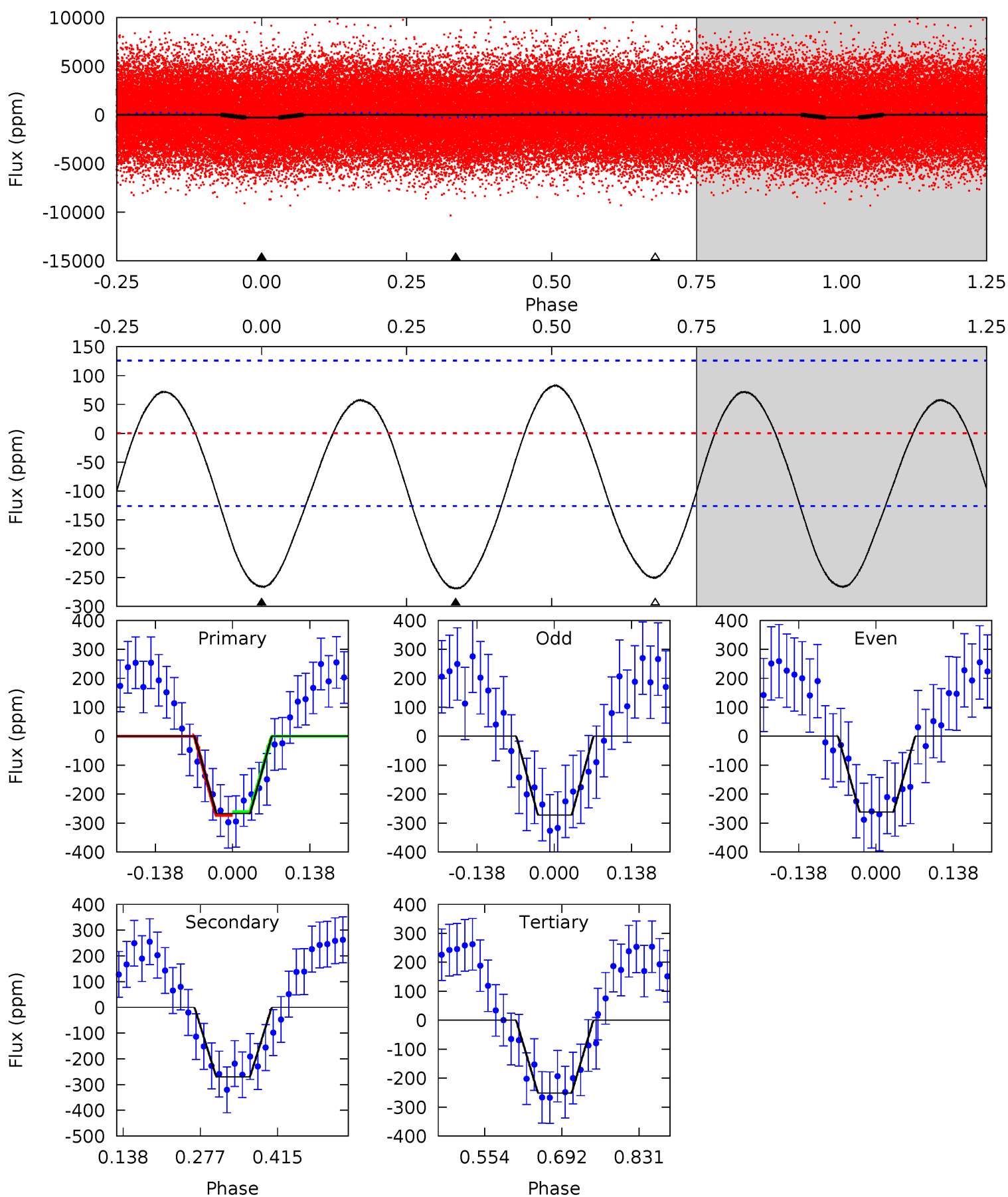
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.4	-50.4	0	0	4.40	1.23	26.3	25.4	25.4	-50.4	-50.4	0.26	0.86	0.79	1.74



# Alt Model-Shift Uniqueness Test

008329014-01, P = 0.525210 Days, E = 131.483414 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
9.53	9.63	8.96	0	4.50	1.48	4.23	0.57	9.53	0.67	9.63	0.18	1.01	0.24	0.23





### Stellar Parameters For KIC 008329014

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6734^{+188}_{-235}$	$4.278^{+0.128}_{-0.176}$	$-0.540^{+0.250}_{-0.300}$	$1.247^{+0.337}_{-0.225}$	$1.076^{+0.157}_{-0.128}$	$0.781^{+0.531}_{-0.367}$
	+3%/-3%	+3%/-4%	+46%/-56%	+27%/-18%	+15%/-12%	+68%/-47%
Source	PHO1	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 008329014-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$345 \pm 7$	$2.38^{+0.47}_{-0.39}$	$4088^{+286}_{-256}$	$-7126^{+445}_{-548}$	$-5.720^{+1.719}_{-2.329}$
Alt.	$-270 \pm 28$	$2.34^{+0.45}_{-0.35}$	$4071^{+305}_{-237}$	$6494^{+510}_{-472}$	$4.662^{+1.861}_{-1.414}$

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

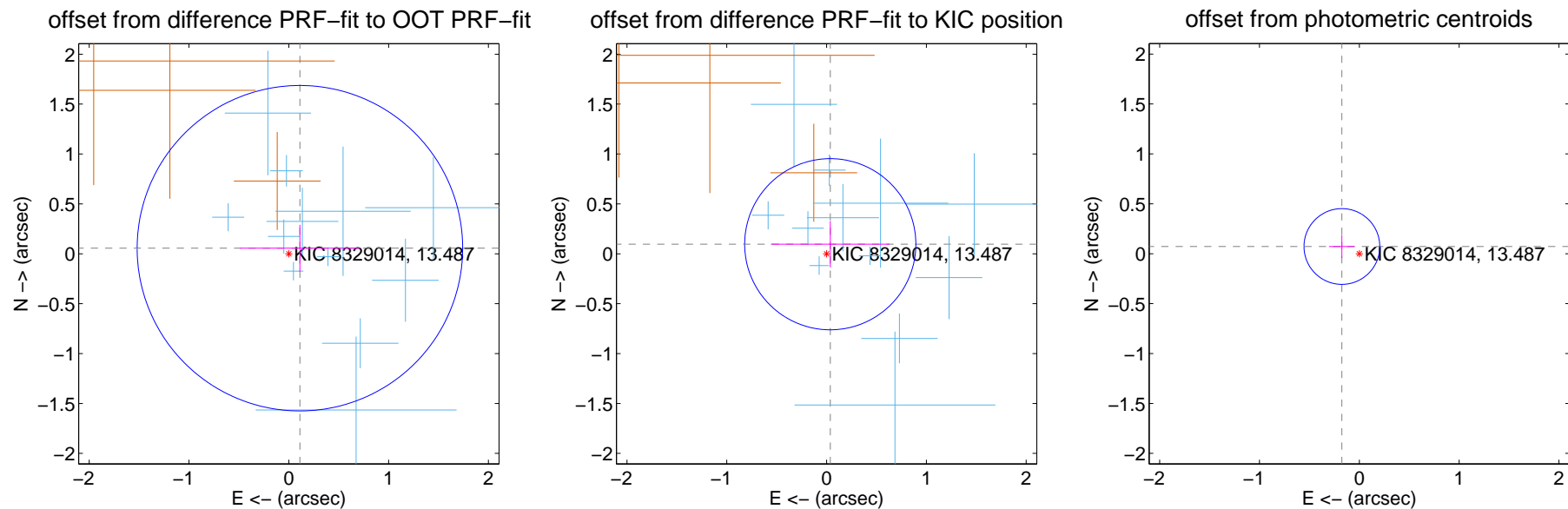
## DV Centroid Data

Supplemental centroid analysis for 008329014-01. Kepler magnitude: 13.49. Transit SNR 22.75

There are 12 quarters with good PRF difference image offsets

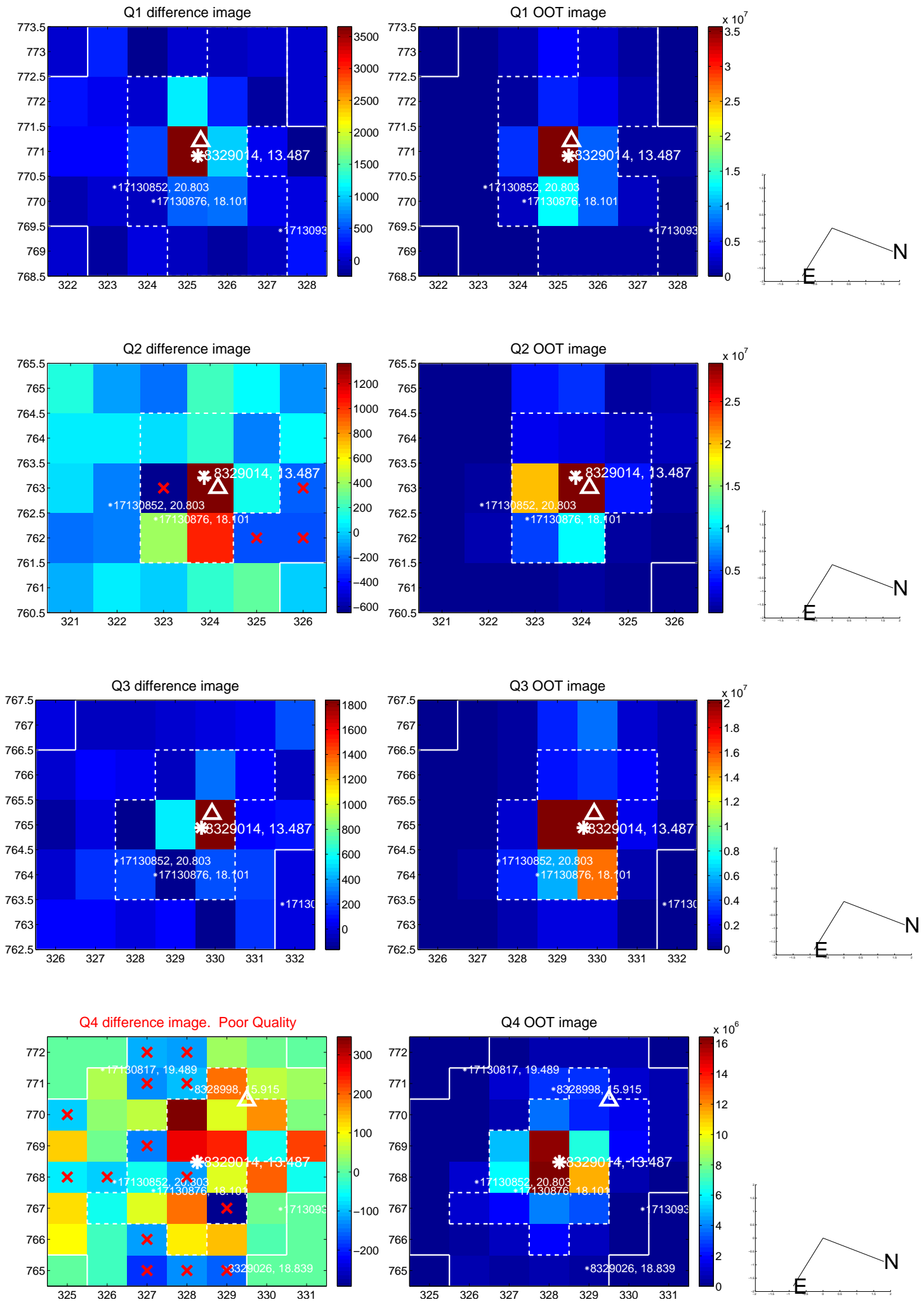
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.124 \pm 0.544$	0.23	$-0.111 \pm 0.601$	$0.056 \pm 0.235$
PRF-fit source offset from KIC position	$0.103 \pm 0.286$	0.36	$-0.037 \pm 0.593$	$0.096 \pm 0.232$
photometric centroid source offset	$0.19 \pm 0.13$	1.49	$0.17 \pm 0.13$	$0.07 \pm 0.11$

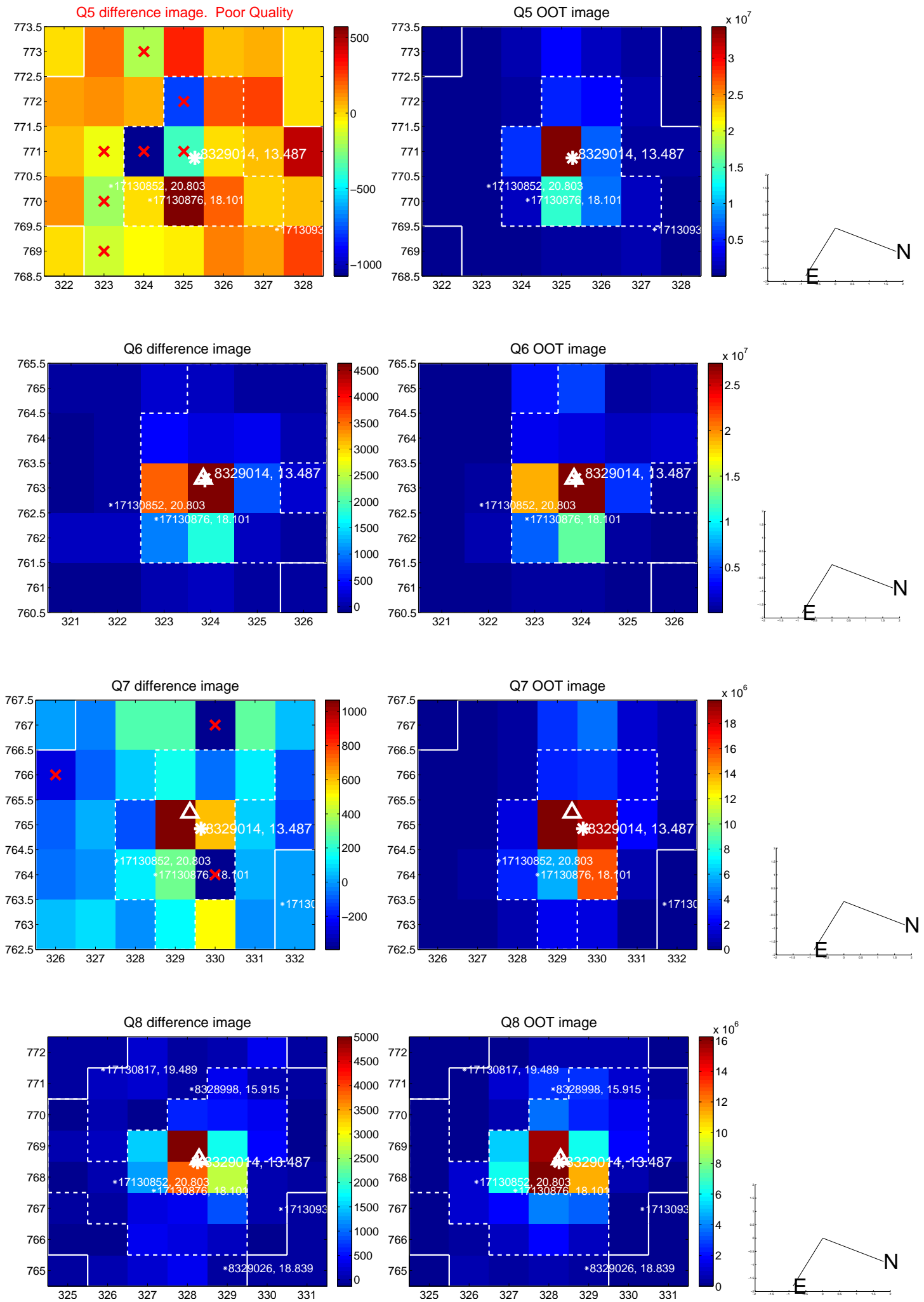


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

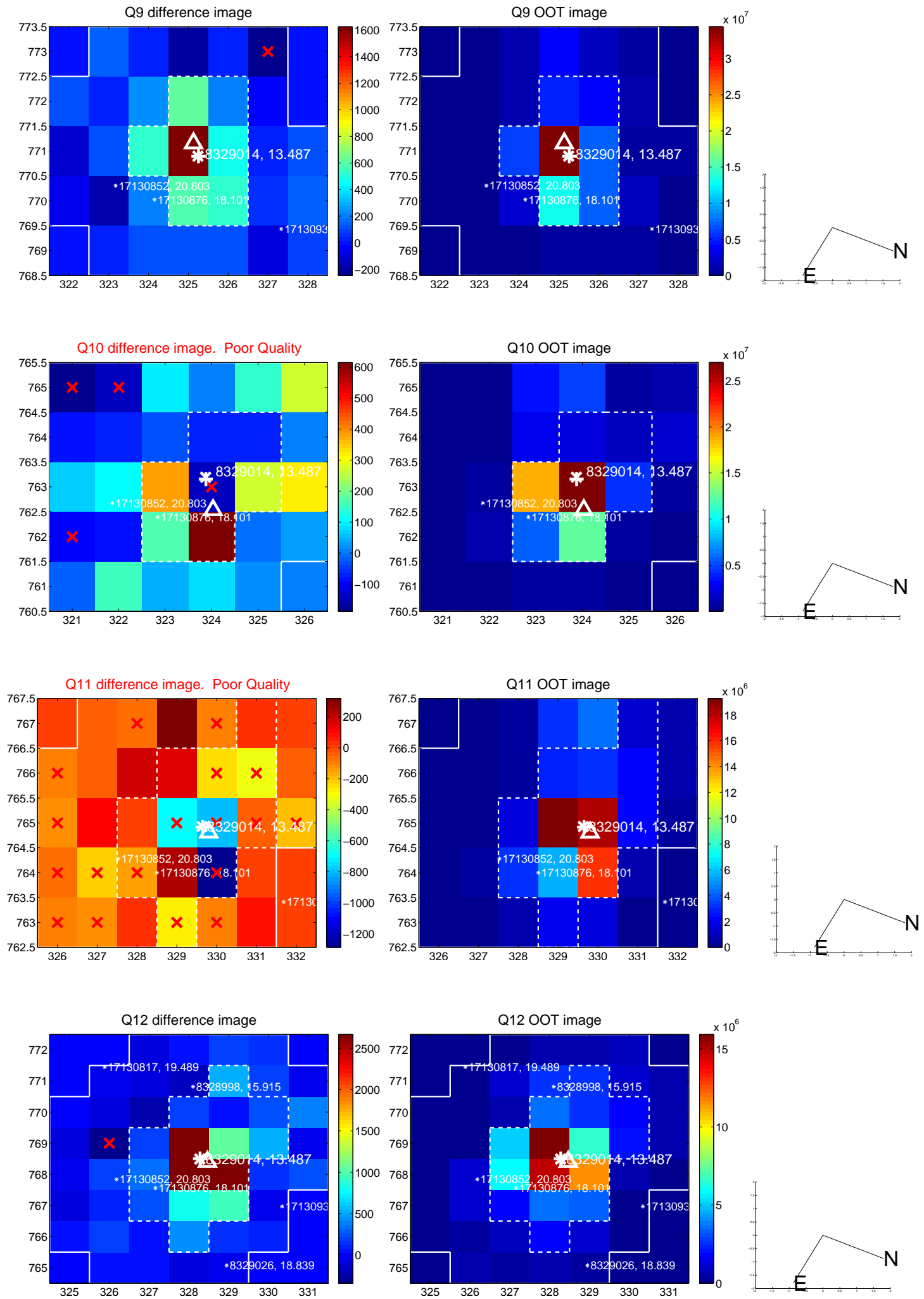


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

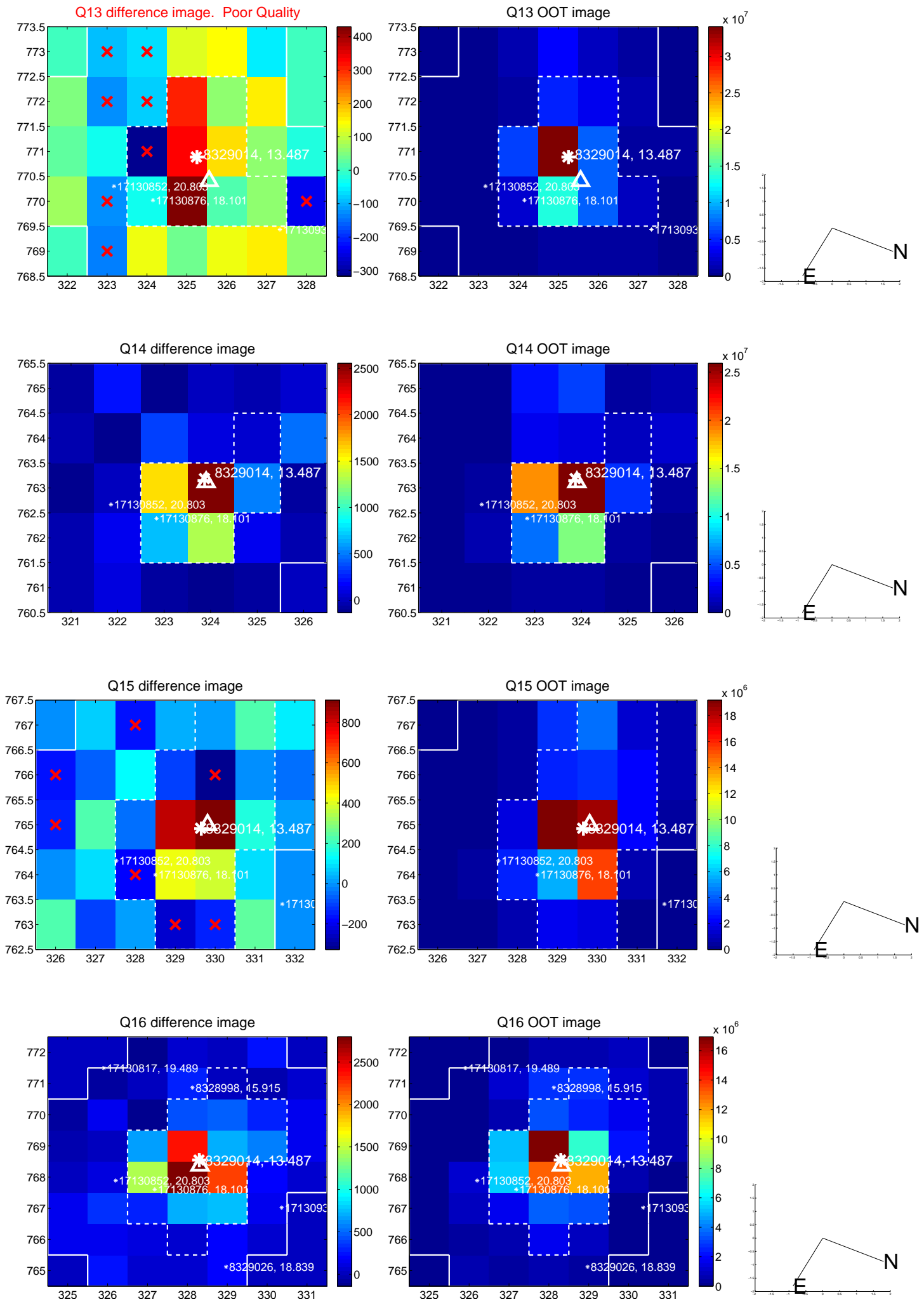




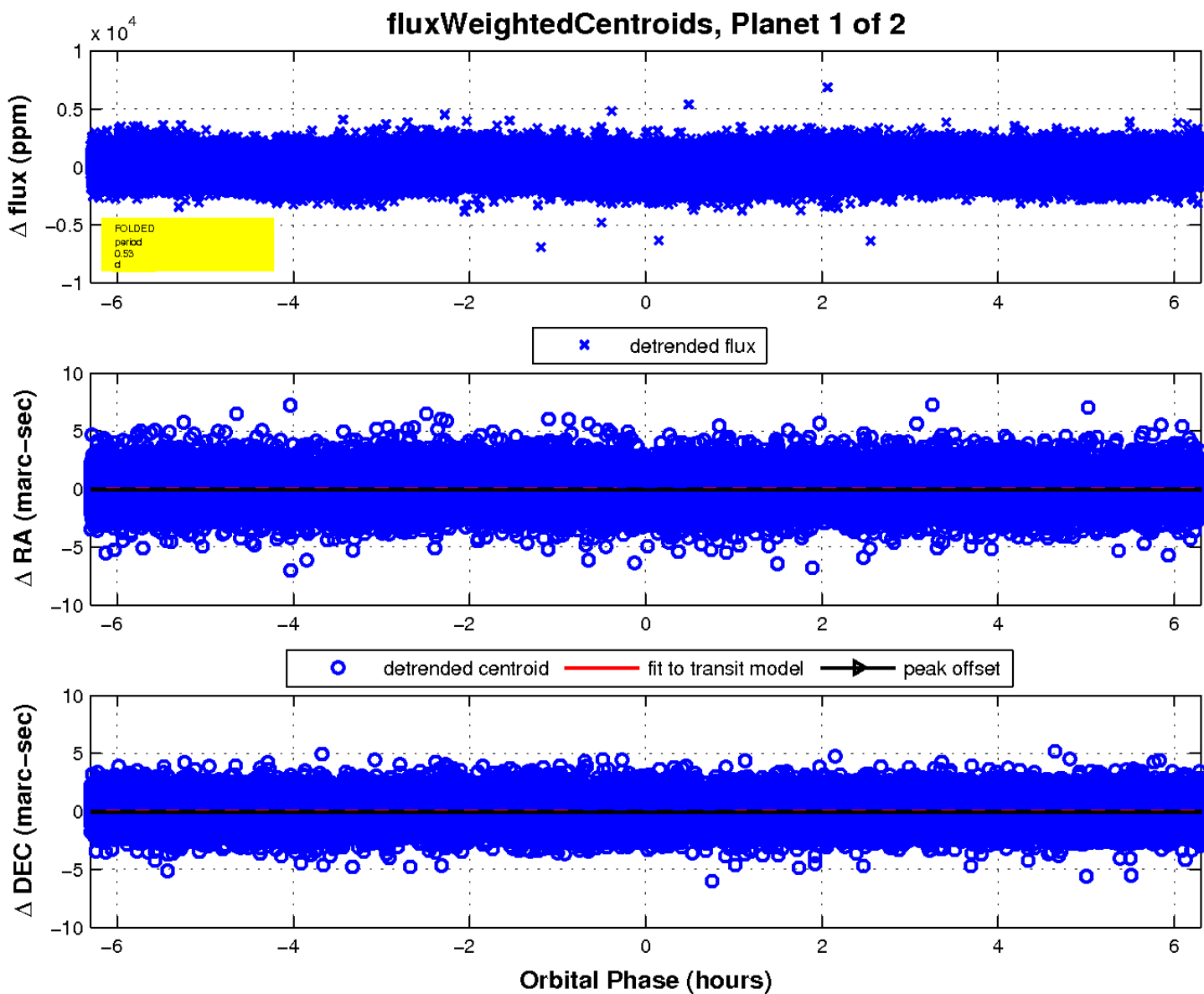
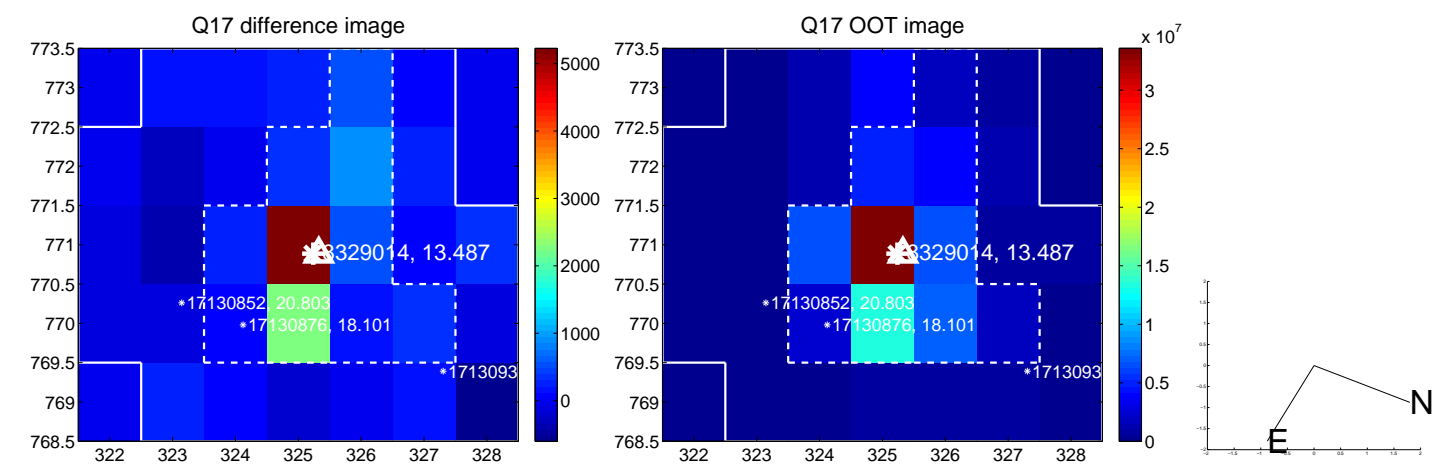
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

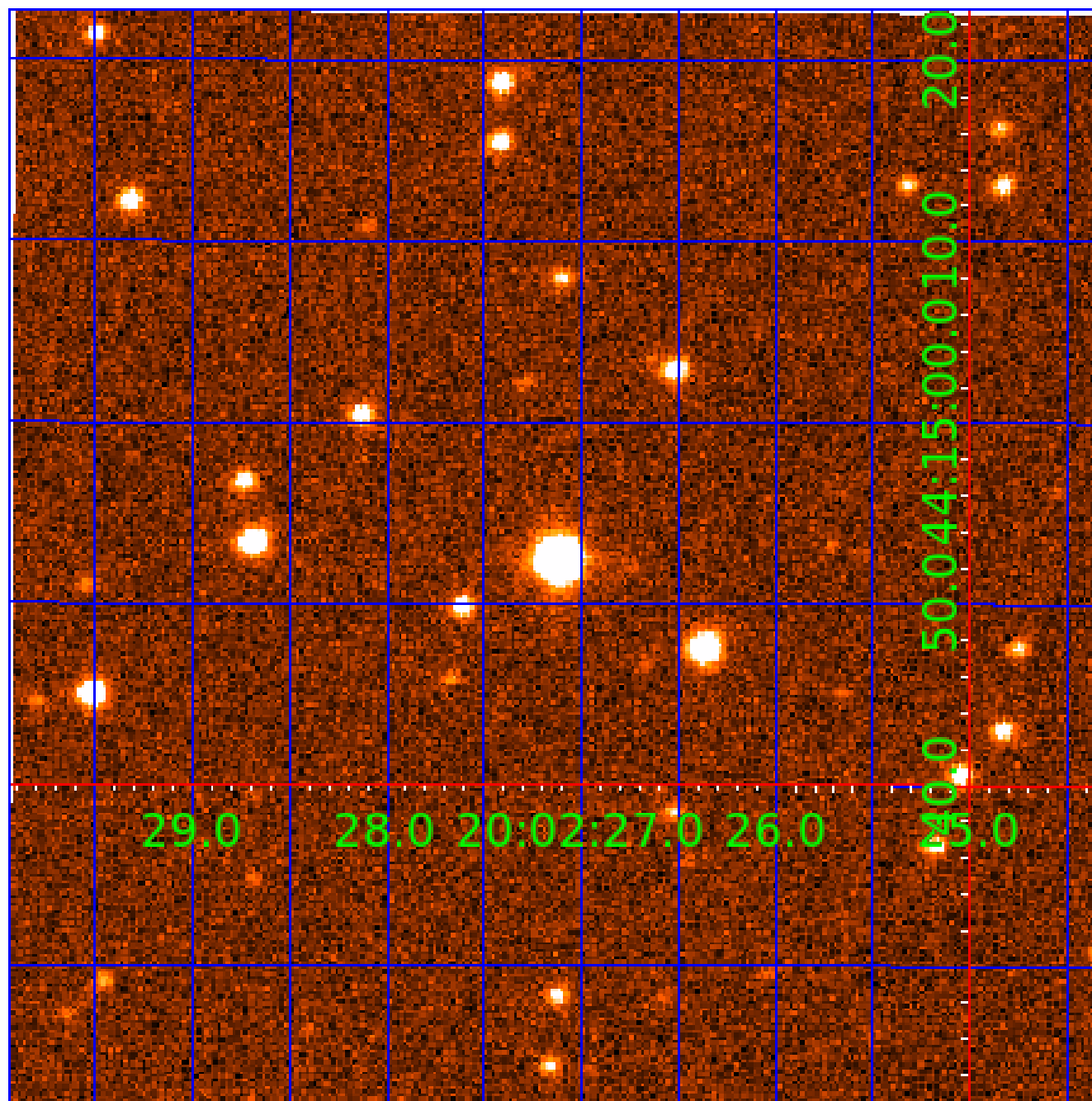


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008329014

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008329014-01	OBS	No	0.525206	132.012268	260.9	2.254	19.7	22.8	1.25	6734	2.34	16805.78
008329014-02	OBS	No	0.525208	131.670369	710.7	1.500	15.4	-1.0	1.25	6734	3.37	16805.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008329014-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008329014-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

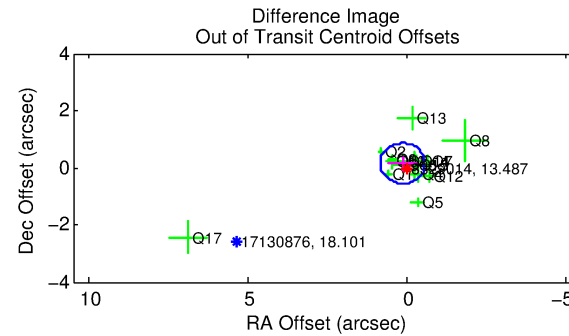
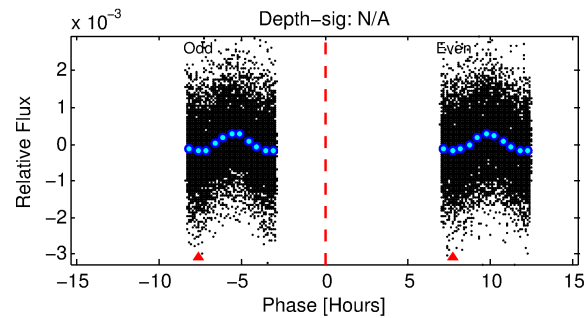
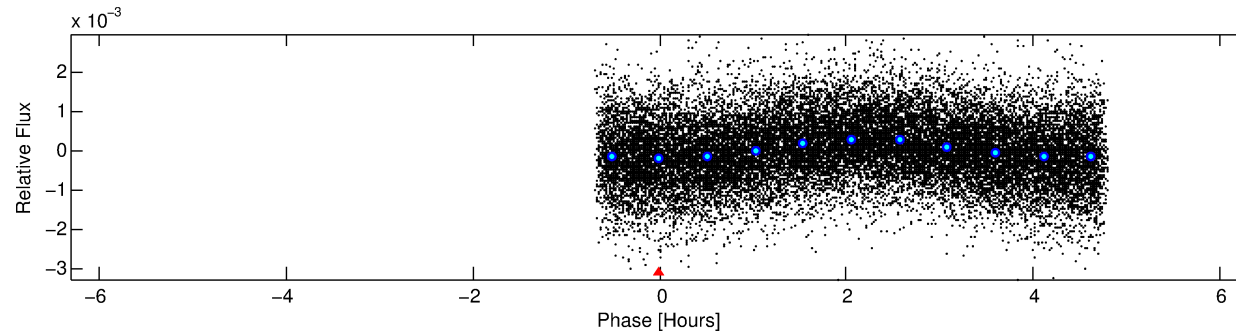
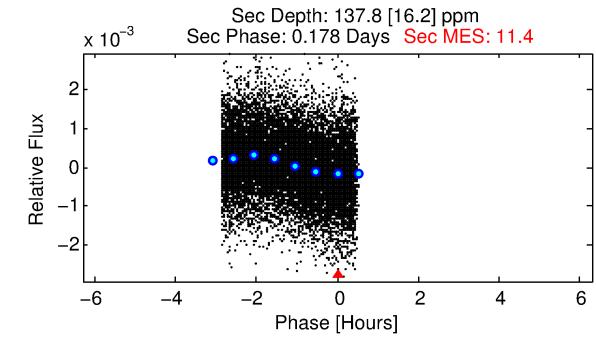
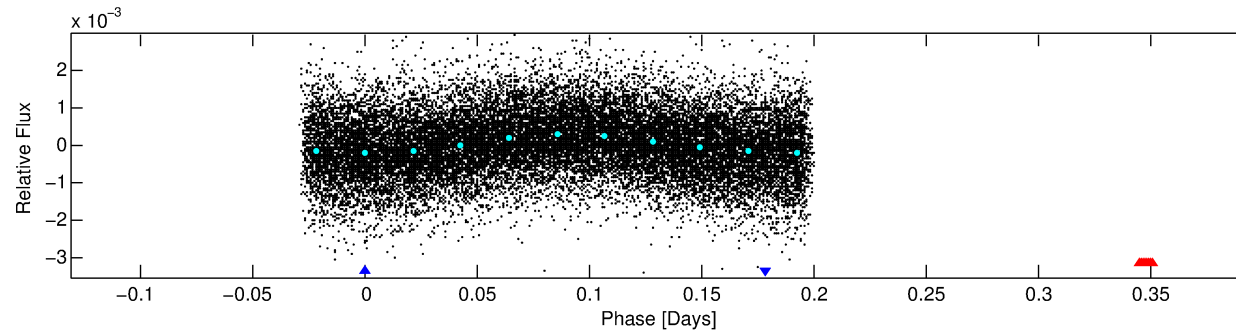
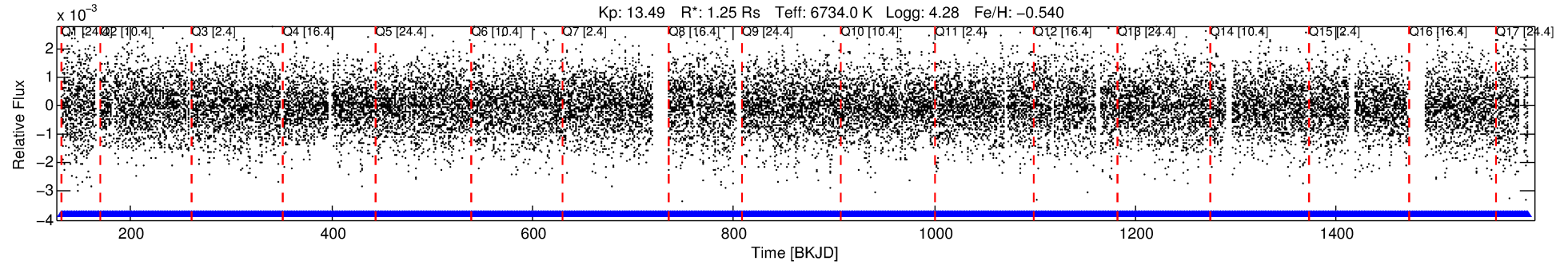
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008329014-02

No Significant Match Found

# DV One-Page Summary

KIC: 8329014 Candidate: 2 of 2 Period: 0.525 d



## TPS TCE Results:

Period = 0.52521 d  
Epoch = 131.6704 BKJD

**DV fit results are unavailable**

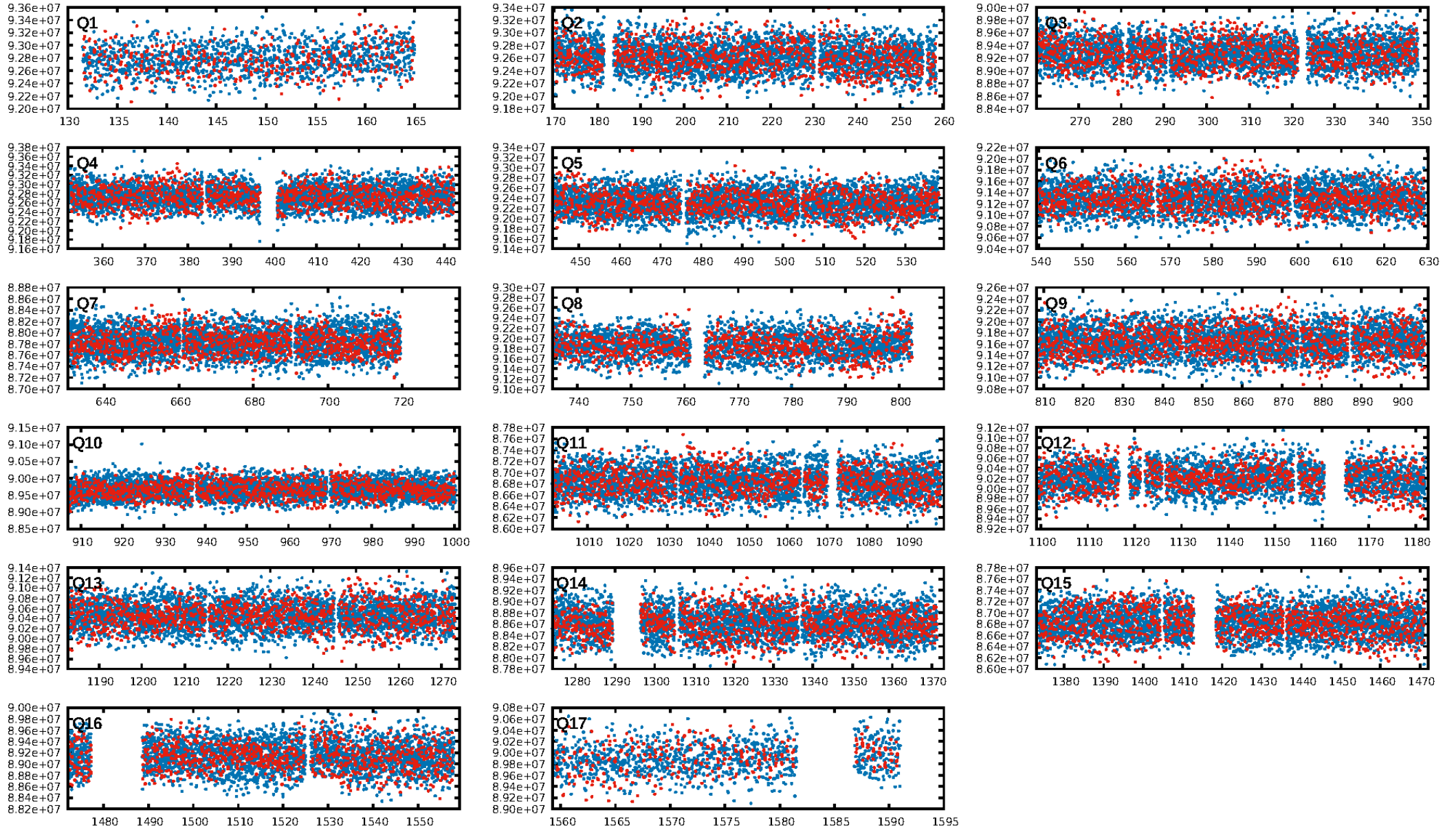
## DV Diagnostic Results:

**ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]**  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2431/2431]  
GhostDiagnostic-chr: 1.281  
**Centroid-sig: 0.0%**  
Centroid-so: 0.368 arcsec [2.93 $\sigma$ ]  
OotOffset-rm: 0.212 arcsec [0.90 $\sigma$ ]  
KicOffset-rm: 0.260 arcsec [1.30 $\sigma$ ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.88 [14/16]  
DiffImageOverlap-fno: 0.00 [0/17]

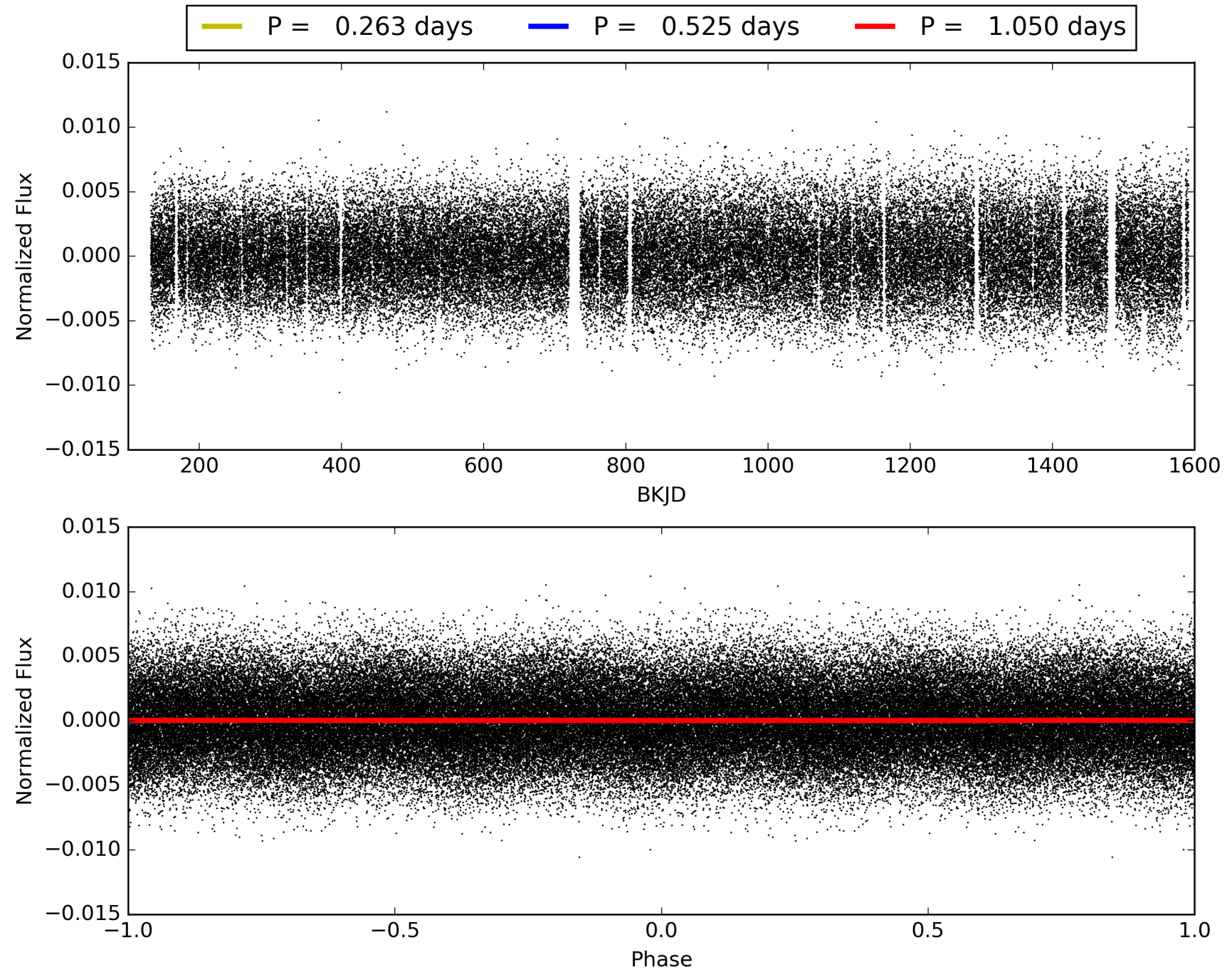
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:41:21 Z

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

# TCE 008329014-02, PDC Light Curves



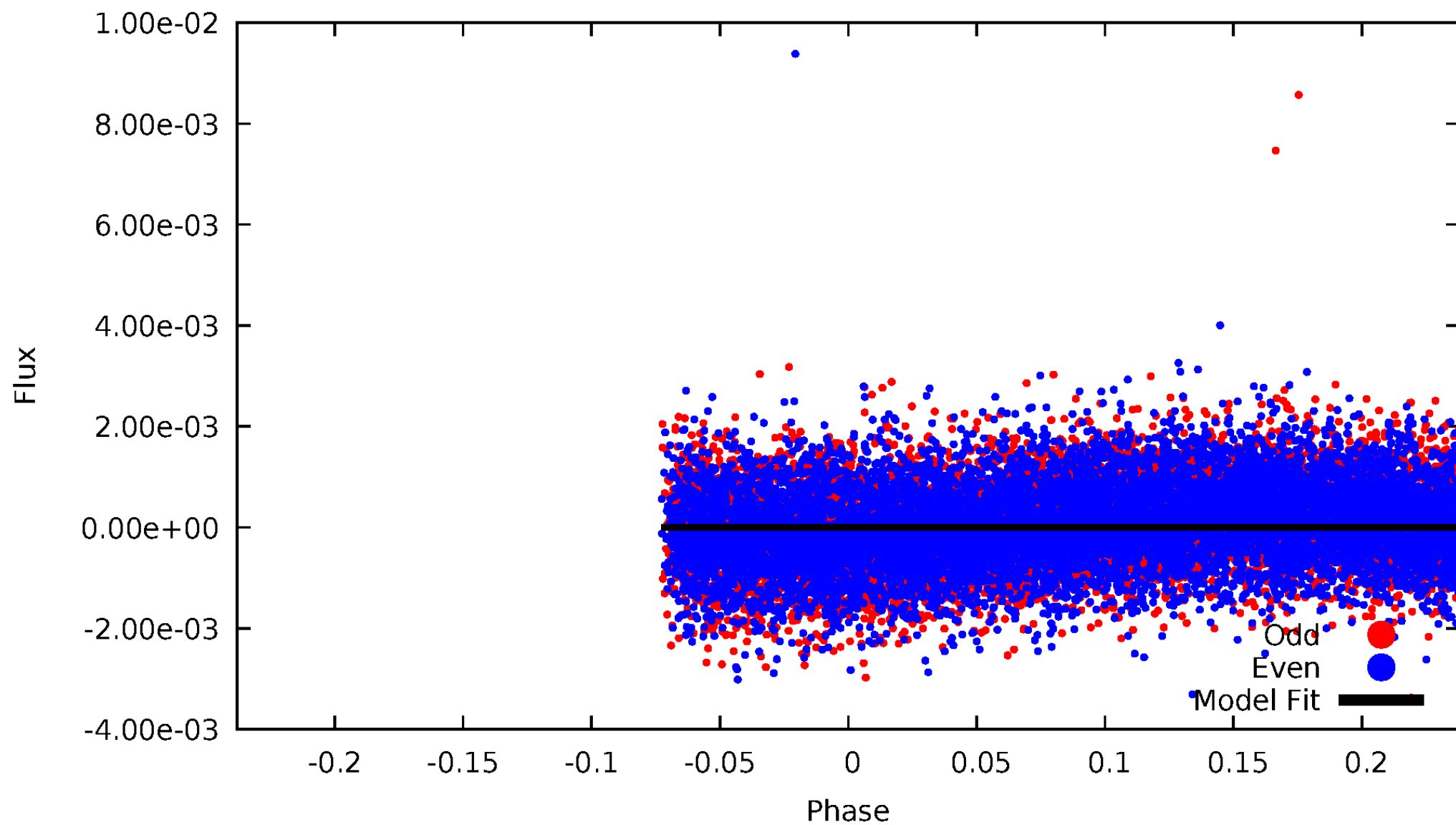
# TCE 008329014-02





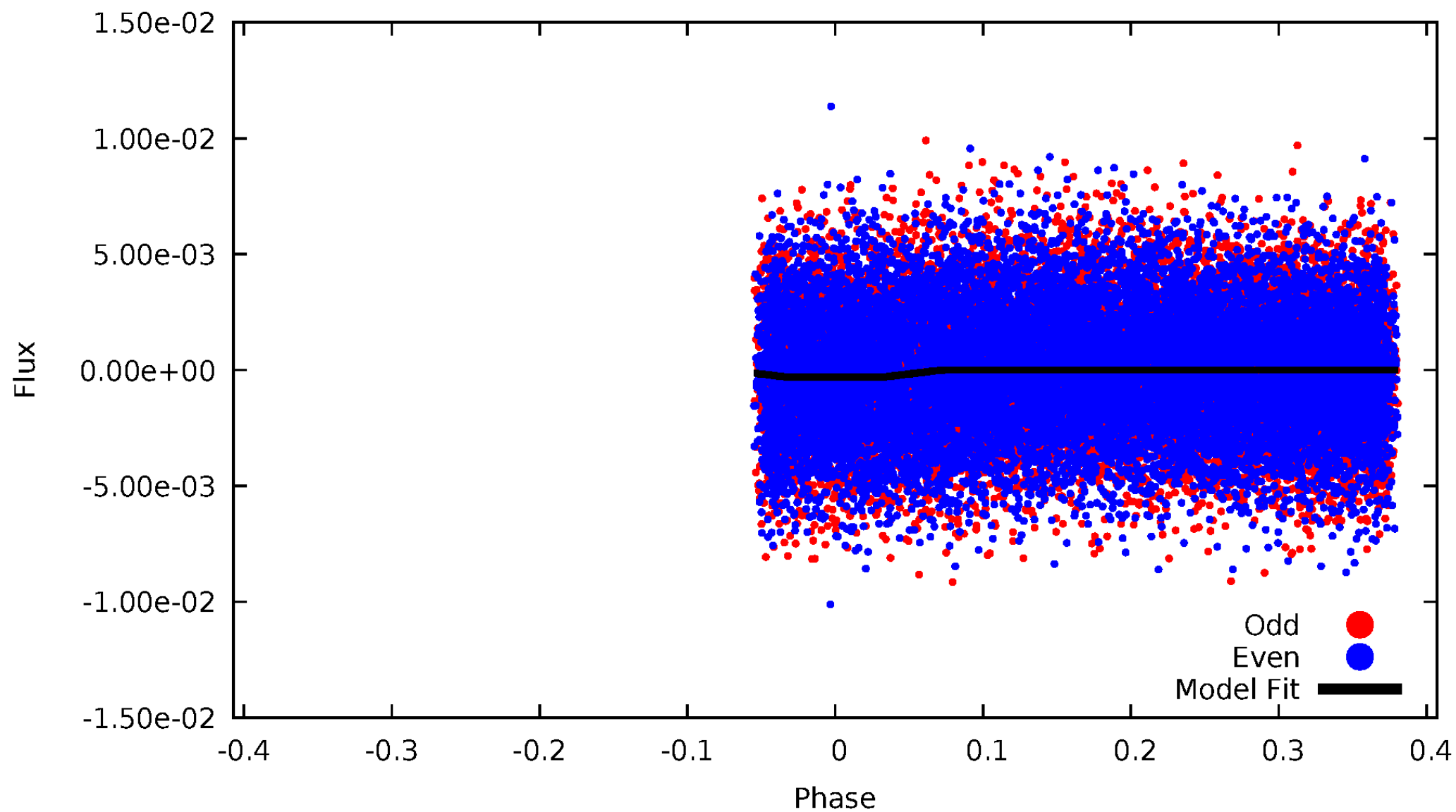
# DV Odd/Even

TCE 008329014-02



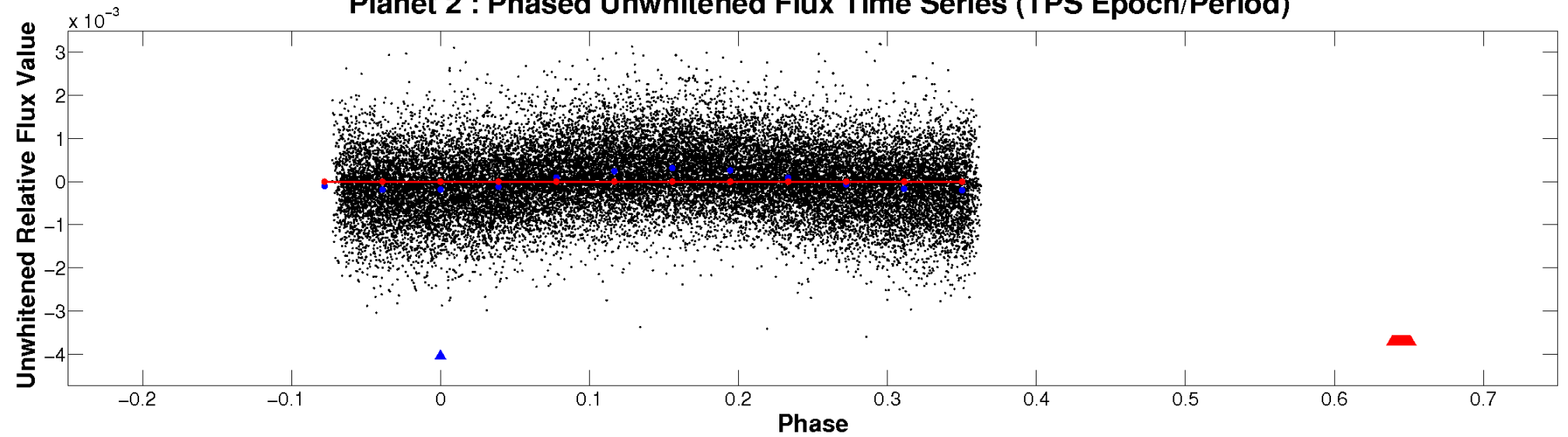
# ALT Odd/Even

TCE 008329014-02



# Non-Whitened Vs. Whitened Light Curve

**Planet 2 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

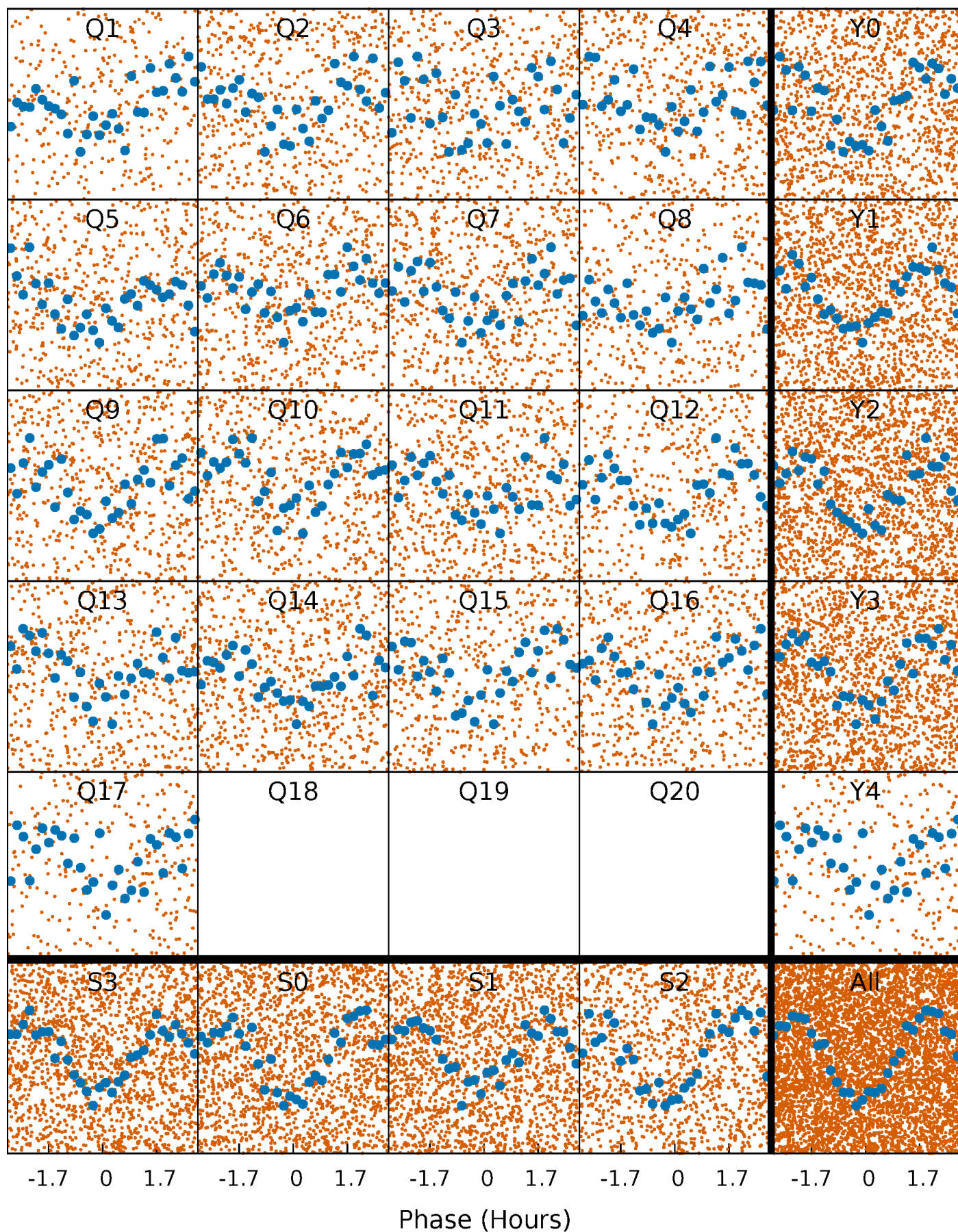


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



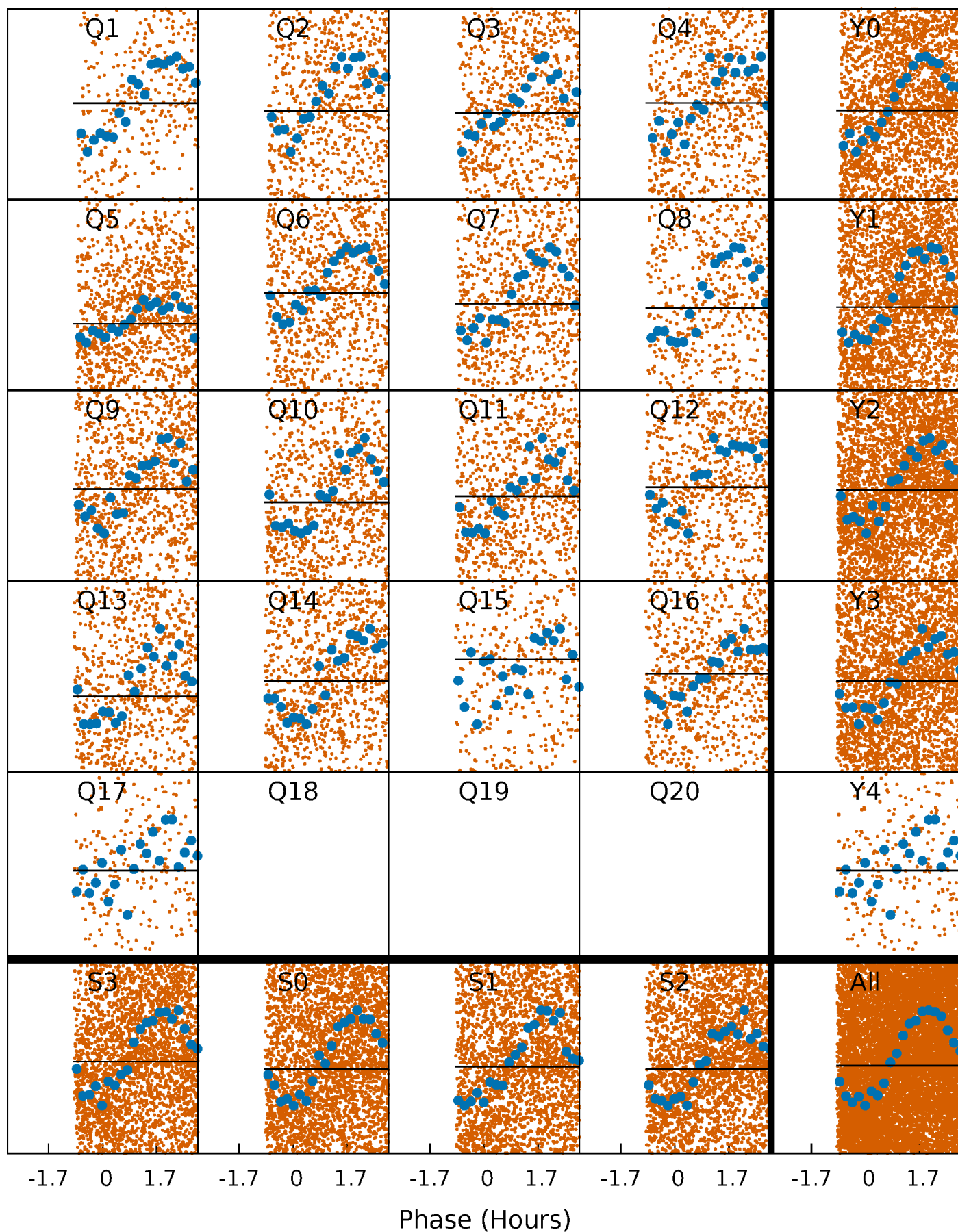
# PDC Quarter-Phased Transit Curves

TCE 008329014-02 P= 0.525208 Days  $T_0=131.670369$  (BKJD)



# DV Quarter-Phased Transit Curves

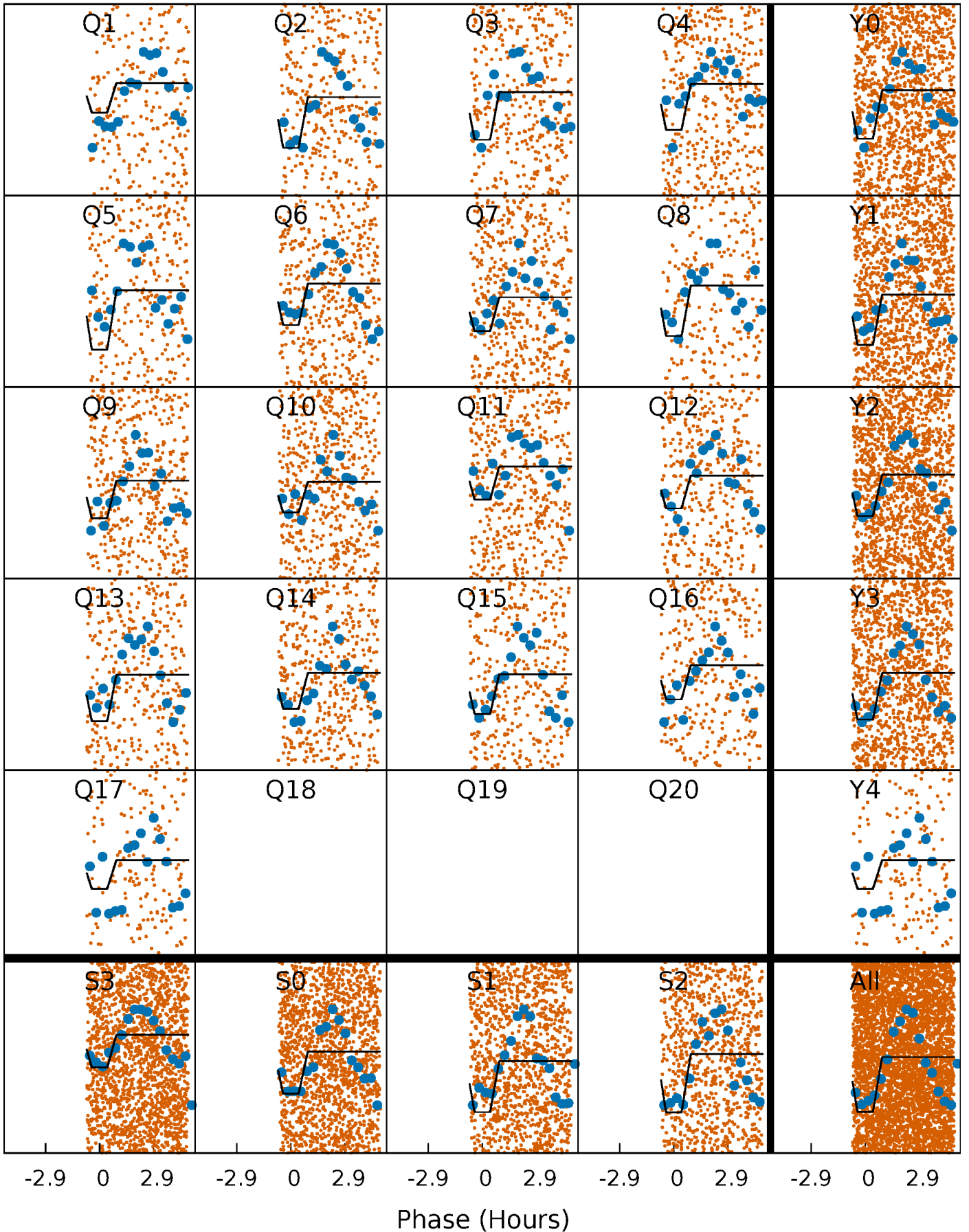
TCE 008329014-02   P= 0.525208 Days    $T_0=131.670369$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 008329014-02   P= 0.525208 Days    $T_0=131.660982$  (BKJD)

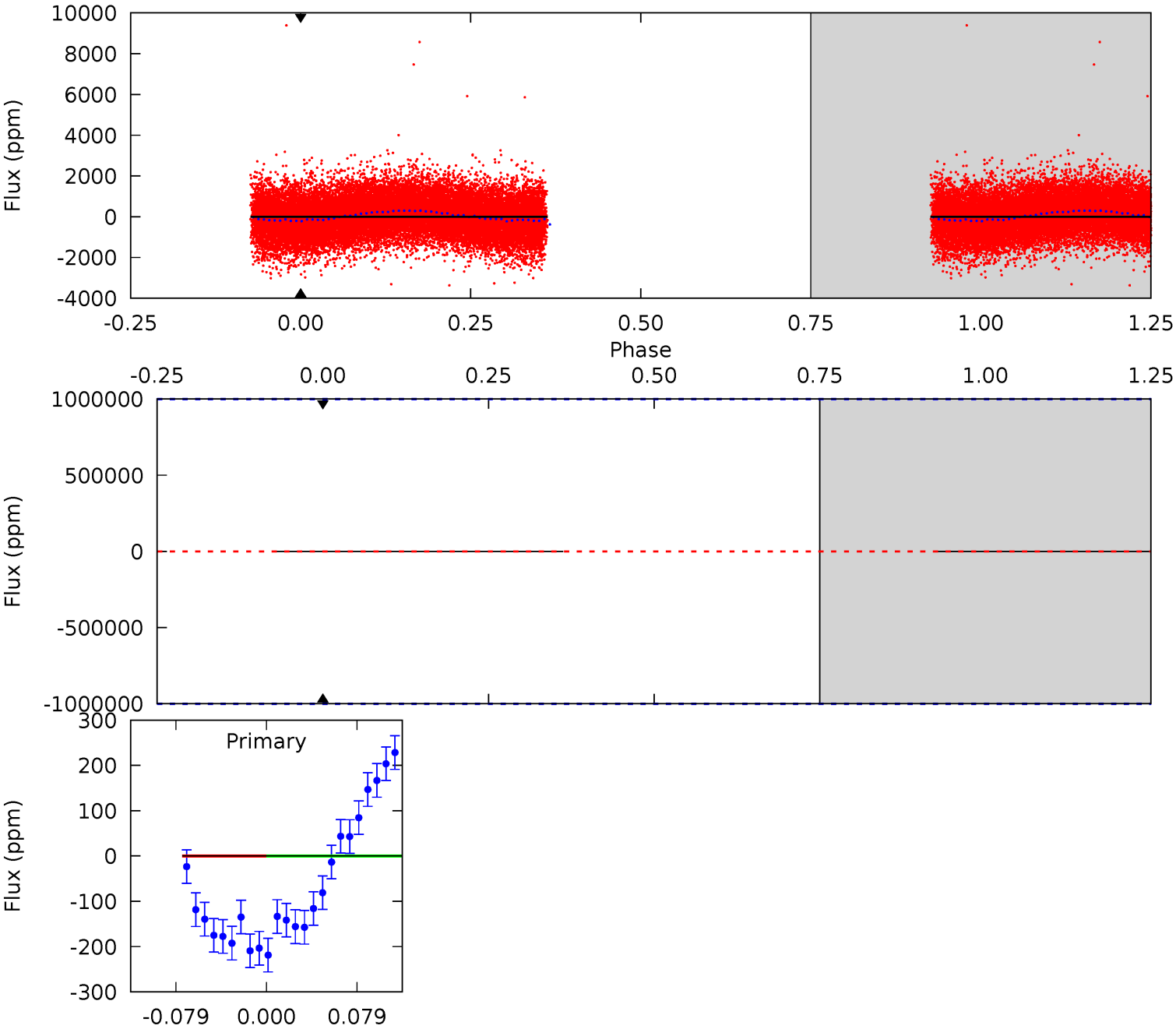




# DV Model-Shift Uniqueness Test

008329014-02, P = 0.525208 Days, E = 131.145161 Days

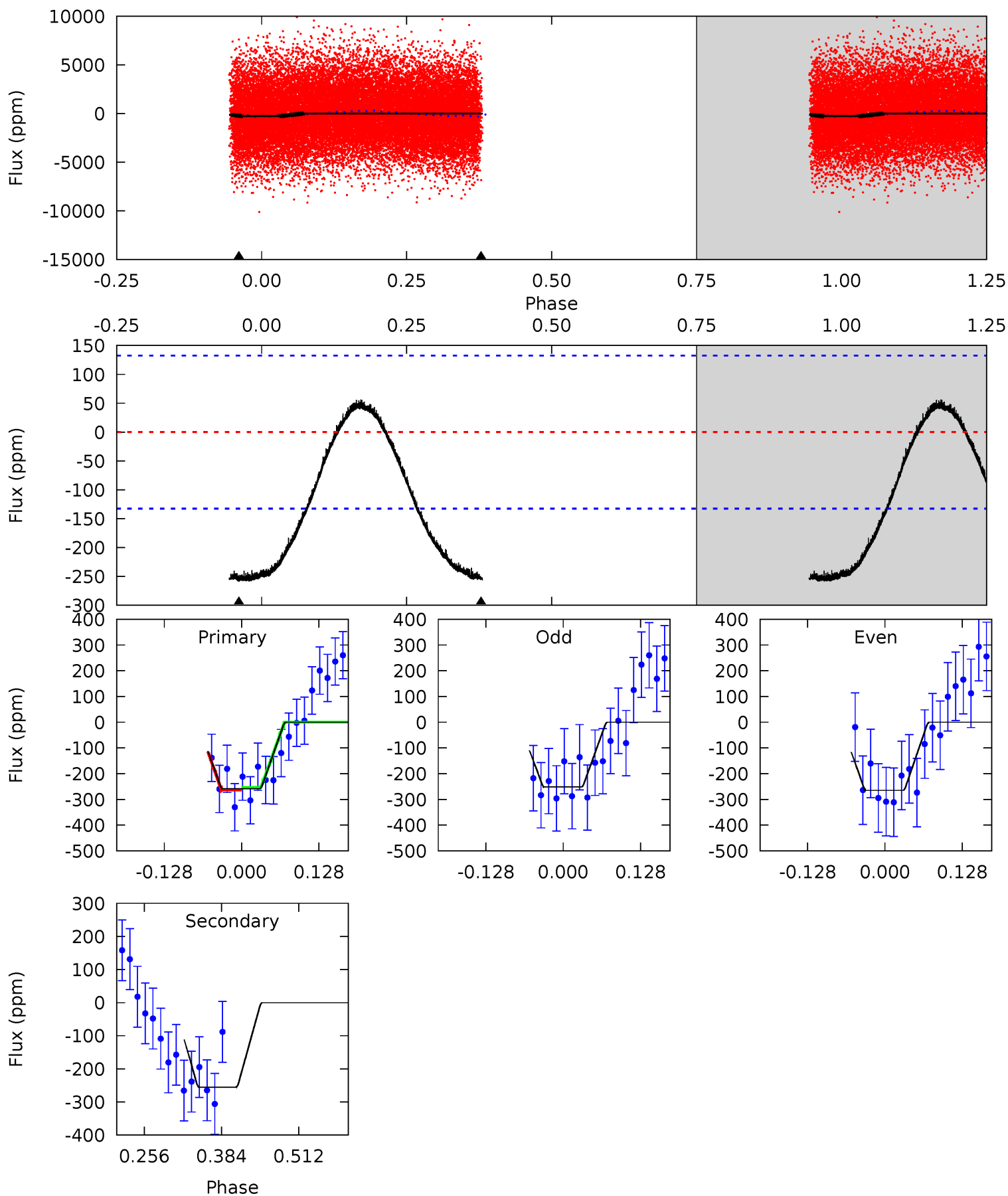
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008329014-02, P = 0.525208 Days, E = 131.135774 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
8.80	8.70	0	0	4.51	1.52	1.64	8.80	8.80	8.70	8.70	0.22	1.00	0.18	0.15



### Stellar Parameters For KIC 008329014

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6734^{+188}_{-235}$	$4.278^{+0.128}_{-0.176}$	$-0.540^{+0.250}_{-0.300}$	$1.247^{+0.337}_{-0.225}$	$1.076^{+0.157}_{-0.128}$	$0.781^{+0.531}_{-0.367}$
	+3%/-3%	+3%/-4%	+46%/-56%	+27%/-18%	+15%/-12%	+68%/-47%
Source	PHO1	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 008329014-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$10.62^{+10.37}_{-7.64}$	$4071^{+292}_{-243}$	$6151^{+32267}_{-30819}$	$3.811^{+216.925}_{-118.241}$
Alt.	$-255 \pm 29$	$10.09^{+11.01}_{-6.98}$	$4076^{+290}_{-248}$	$-2990^{+8396}_{-652}$	$0.229^{+2.355}_{-0.176}$

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

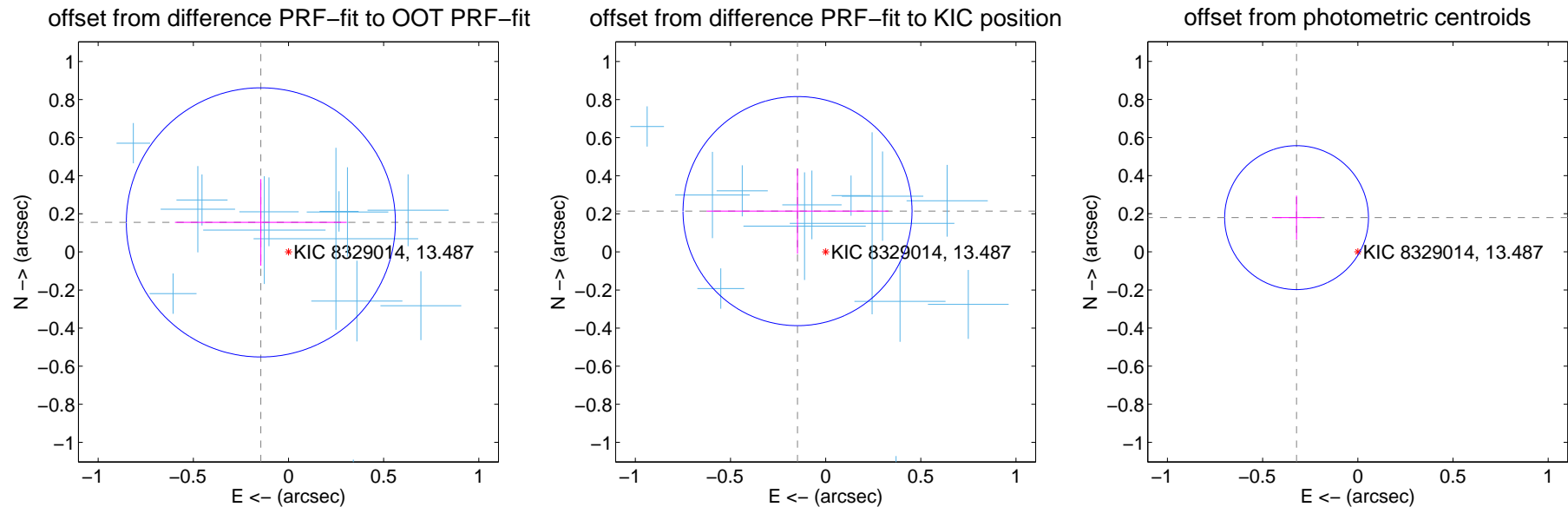
## DV Centroid Data

Supplemental centroid analysis for 008329014-02. Kepler magnitude: 13.49. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

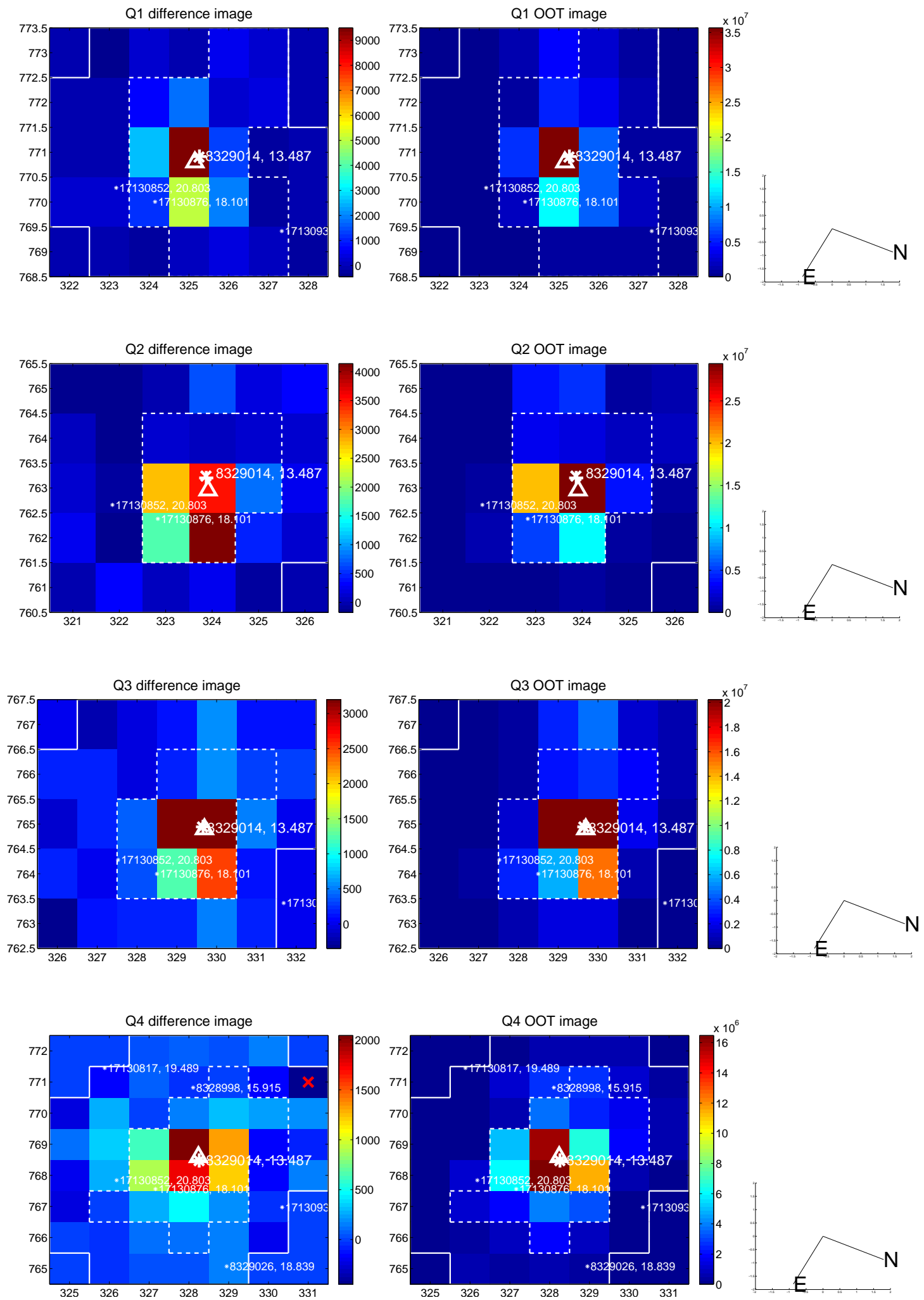
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.212 \pm 0.236$	0.90	$0.145 \pm 0.451$	$0.155 \pm 0.227$
PRF-fit source offset from KIC position	$0.260 \pm 0.201$	1.30	$0.148 \pm 0.478$	$0.214 \pm 0.224$
photometric centroid source offset	$0.37 \pm 0.13$	2.93	$0.32 \pm 0.13$	$0.18 \pm 0.12$



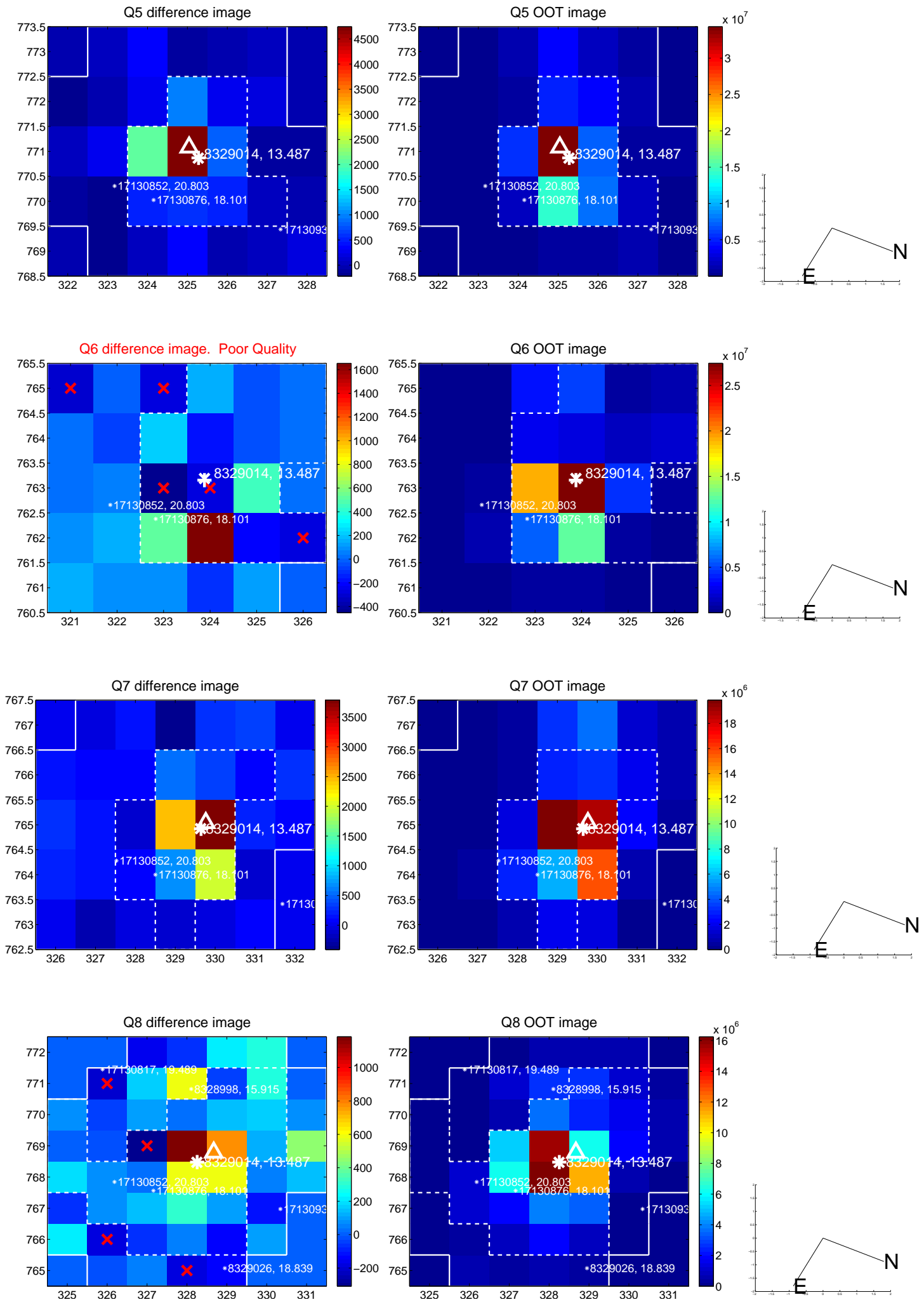
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



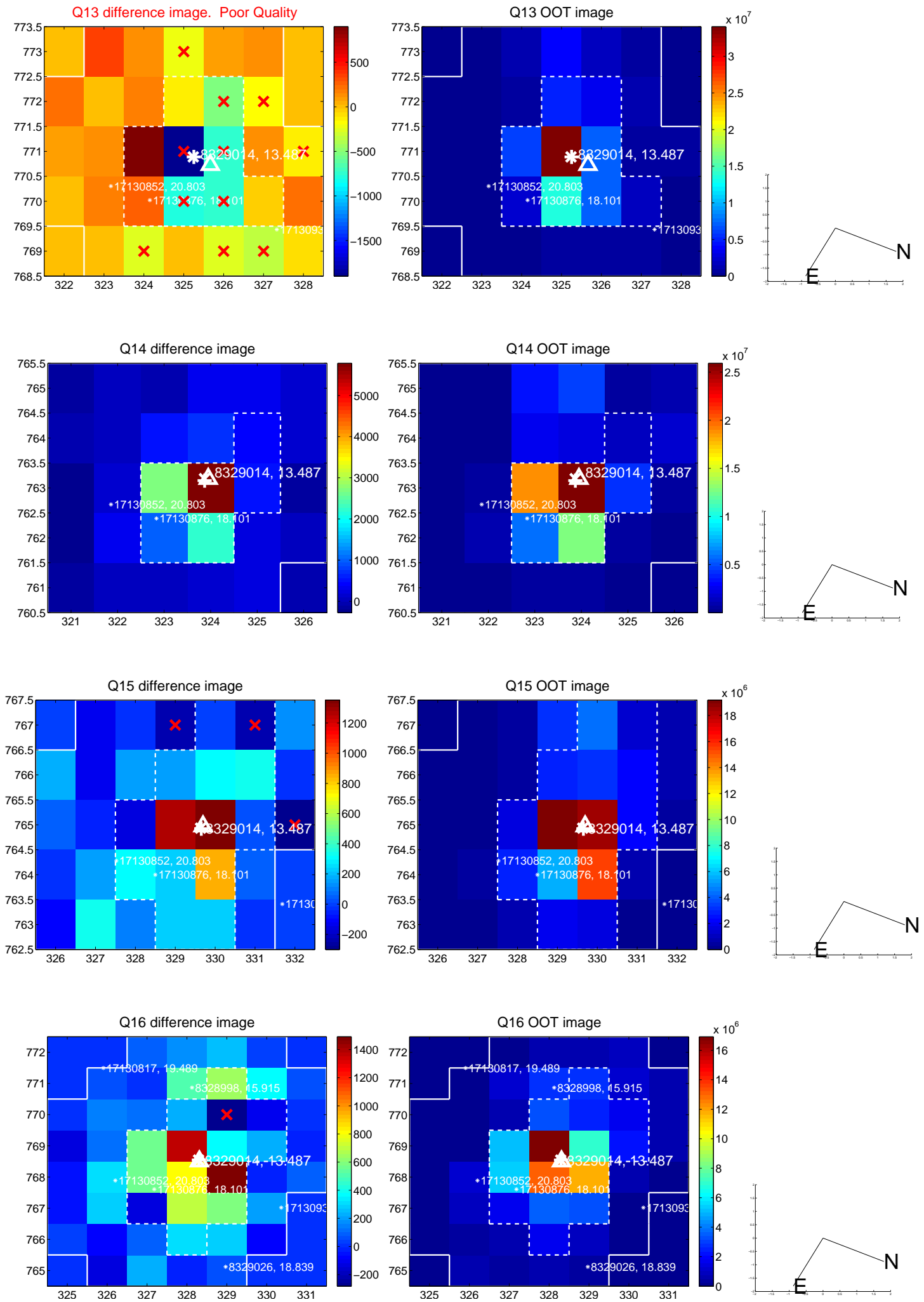


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

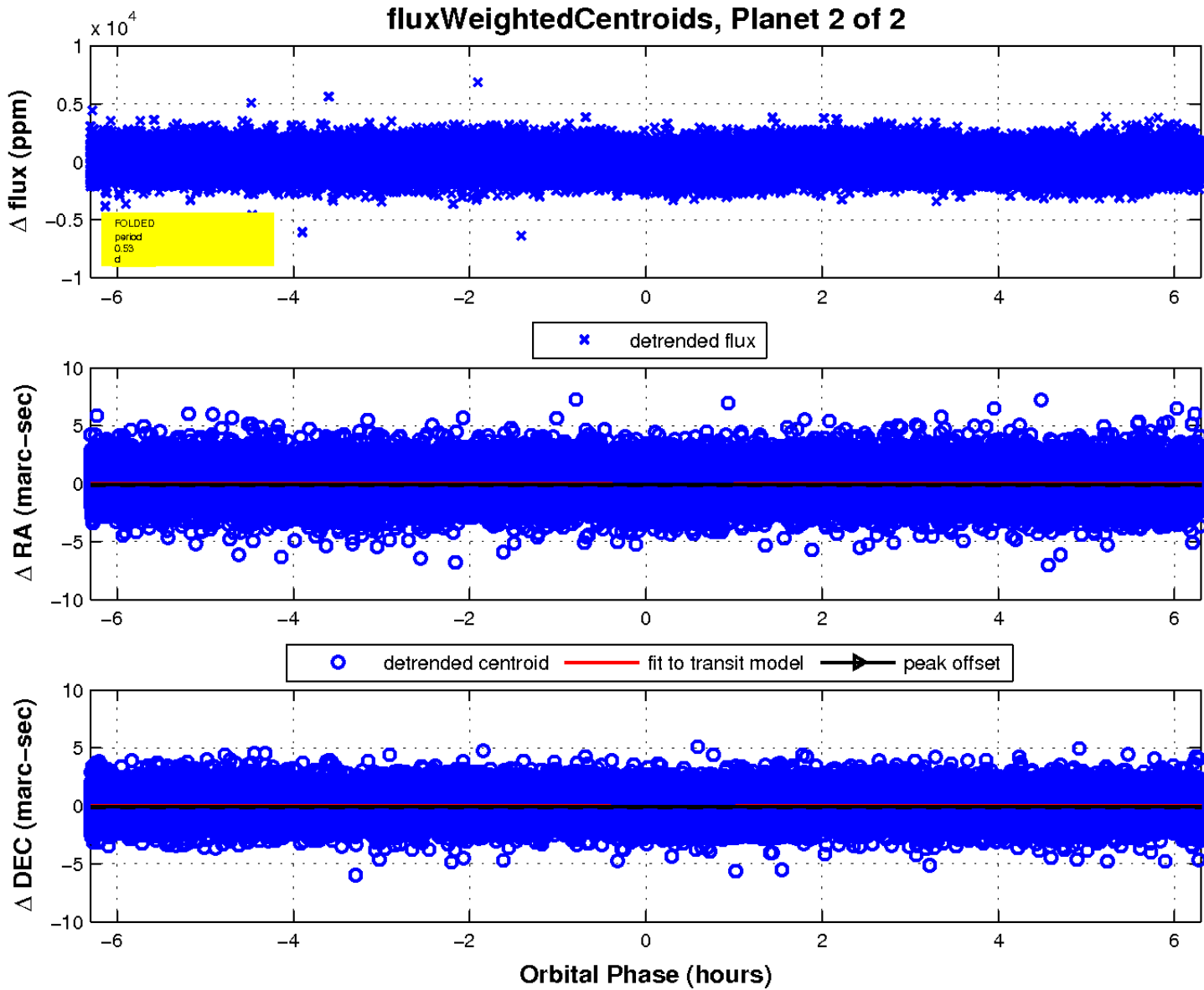
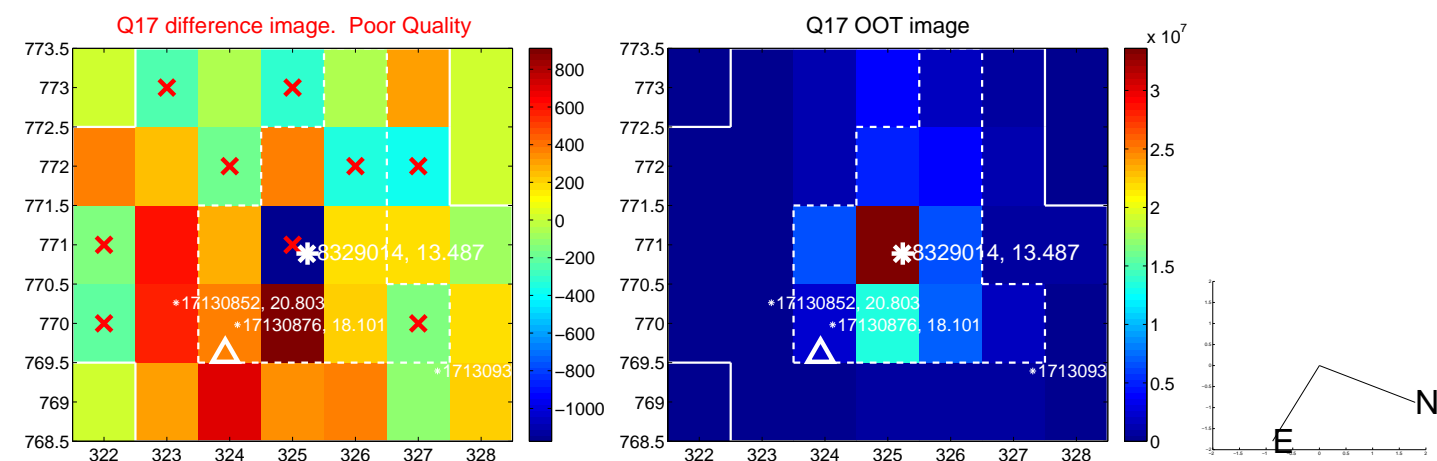




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

