

# KIC 005301101

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005301101-01	OBS	No	2.910645	132.462461	49.2	6.581	9.5	8.4	3.32	8022	2.62	15787.22
005301101-02	OBS	No	0.565713	131.611469	60.4	2.194	8.1	10.1	3.32	8022	3.01	140226.49
005301101-03	OBS	No	0.565703	131.906177	67.9	2.351	8.9	12.1	3.32	8022	2.78	140229.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005301101-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005301101-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005301101-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD

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

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

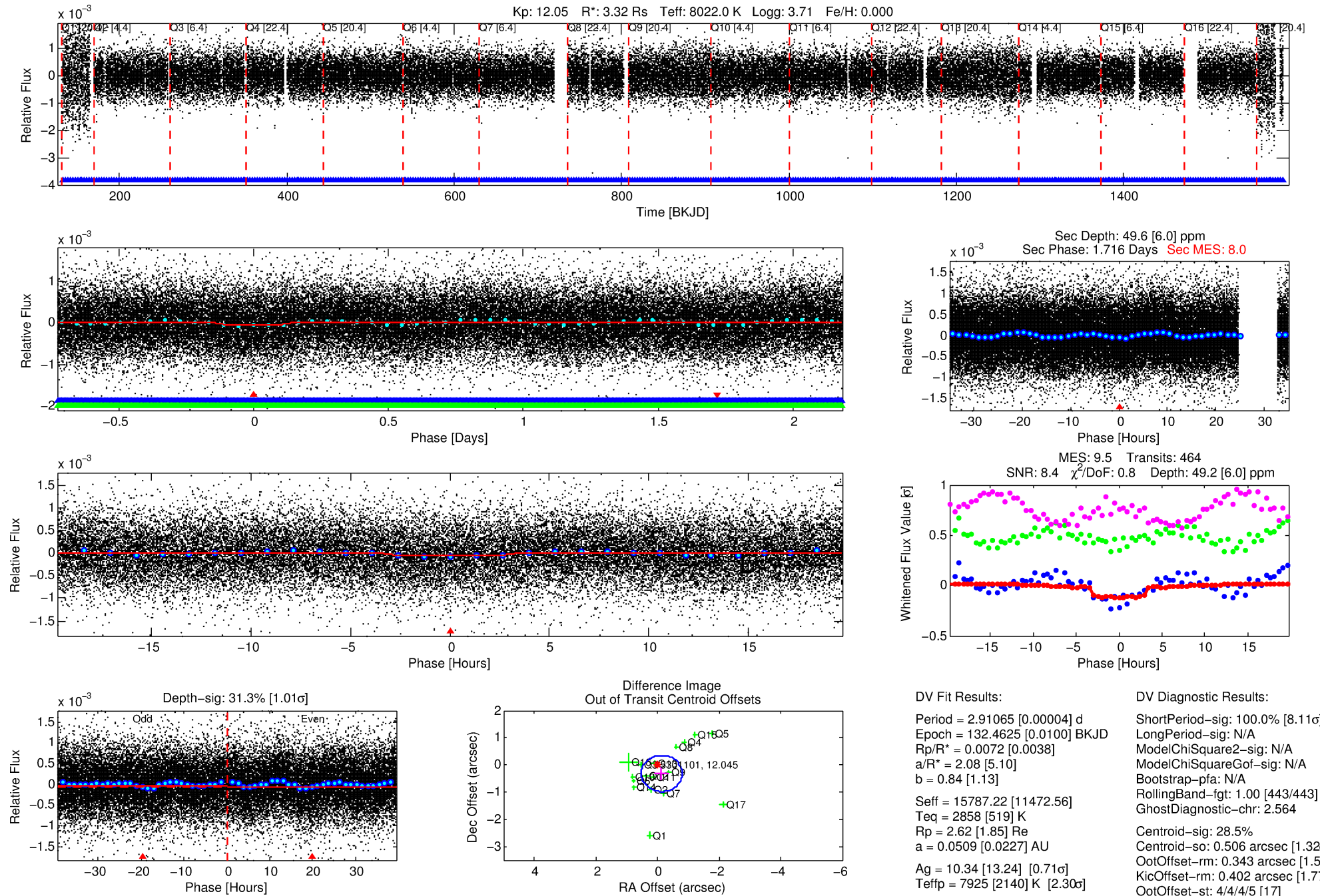
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005301101-01

No Significant Match Found

# DV One-Page Summary

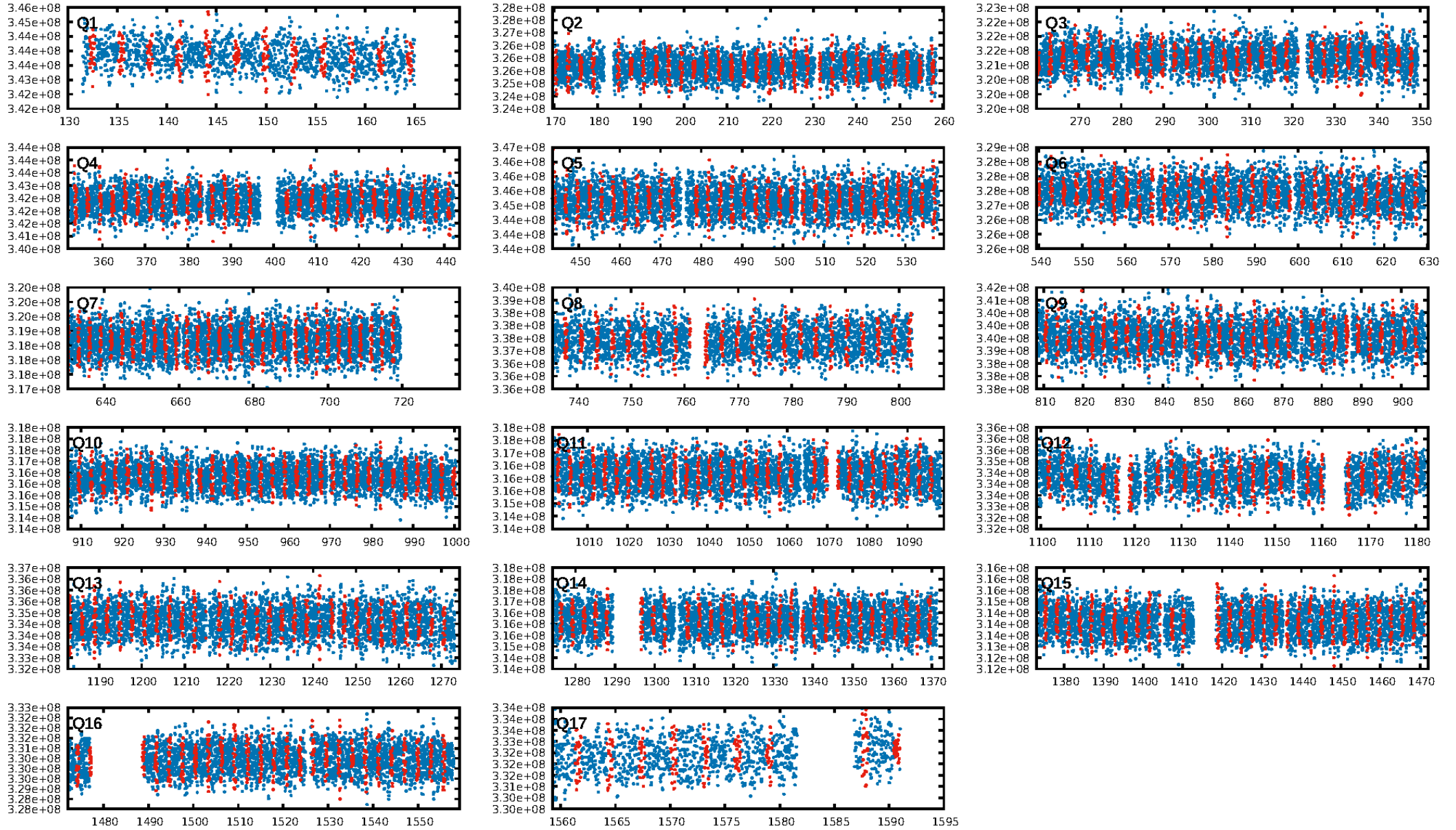
KIC: 5301101 Candidate: 1 of 3 Period: 2.911 d



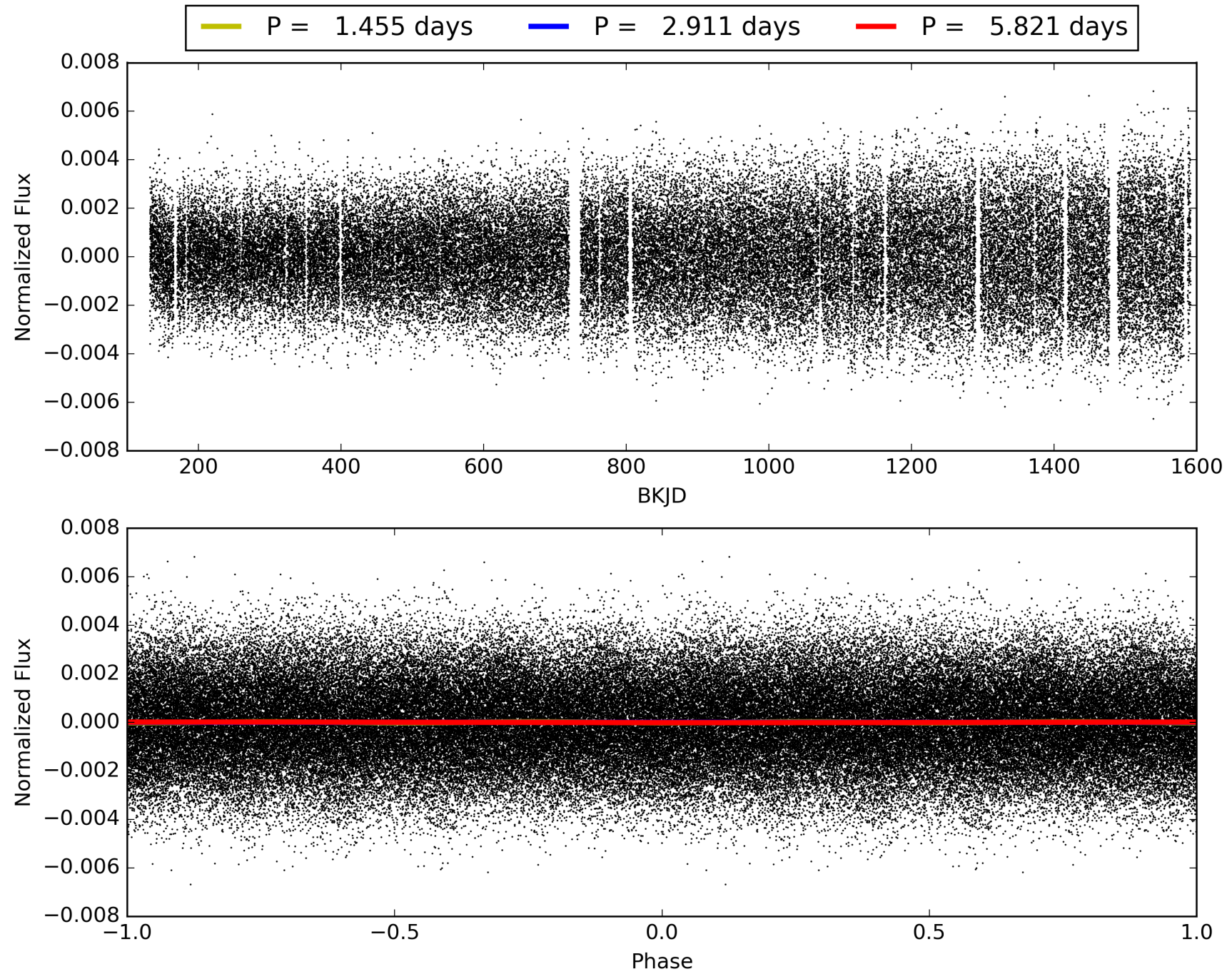
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:36:46 Z

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

# TCE 005301101-01, PDC Light Curves

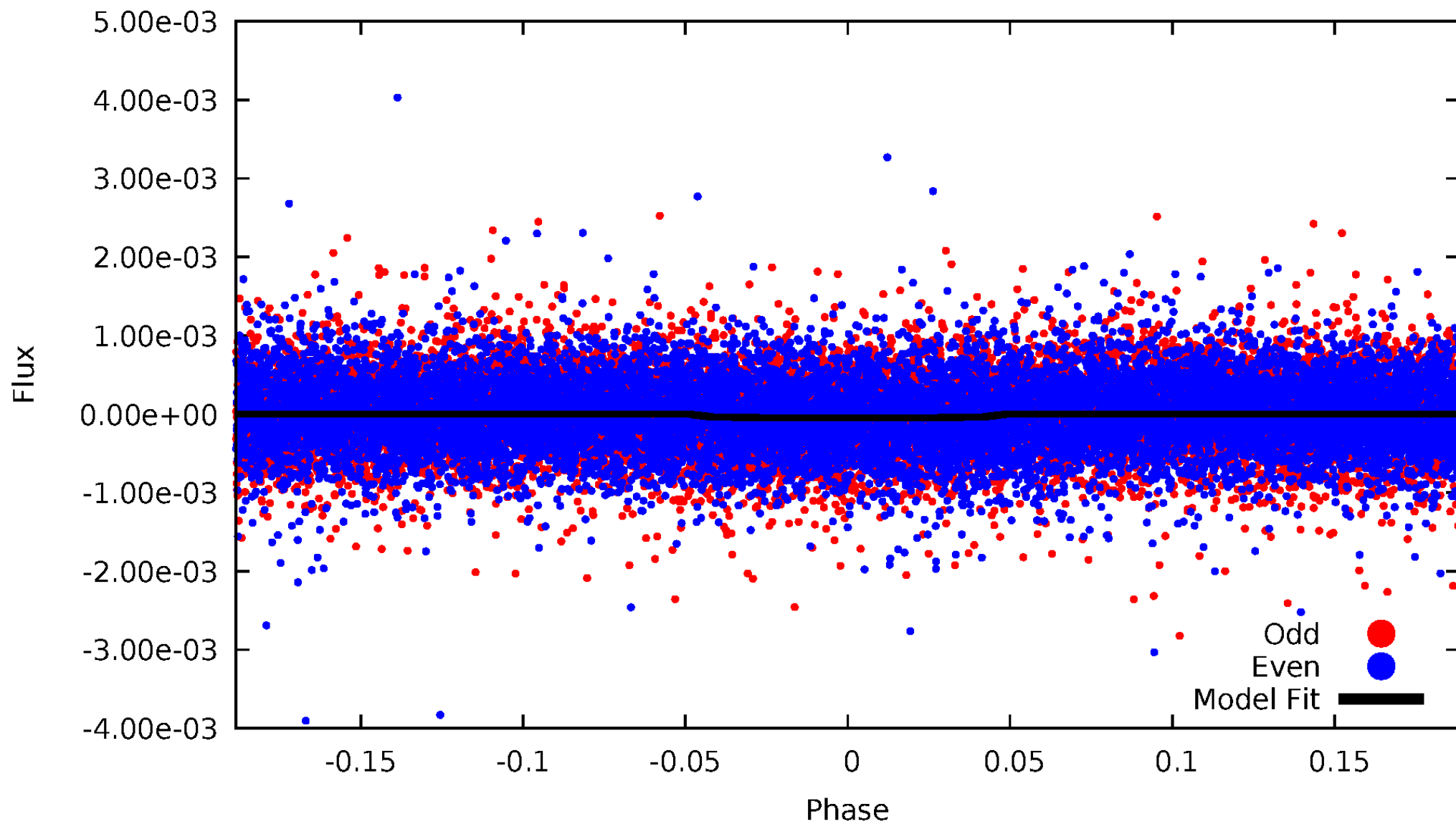


TCE 005301101-01



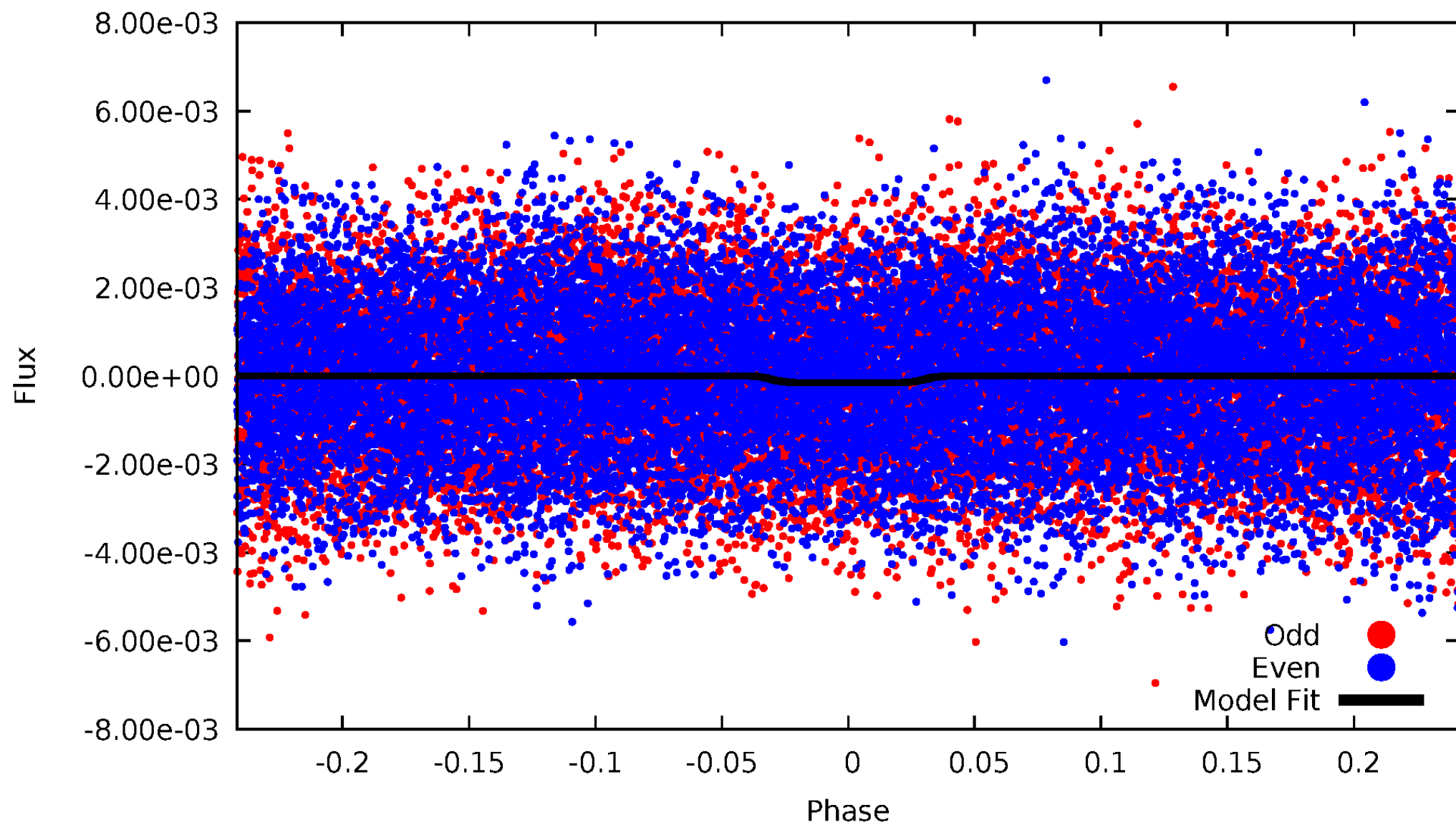
# DV Odd/Even

TCE 005301101-01



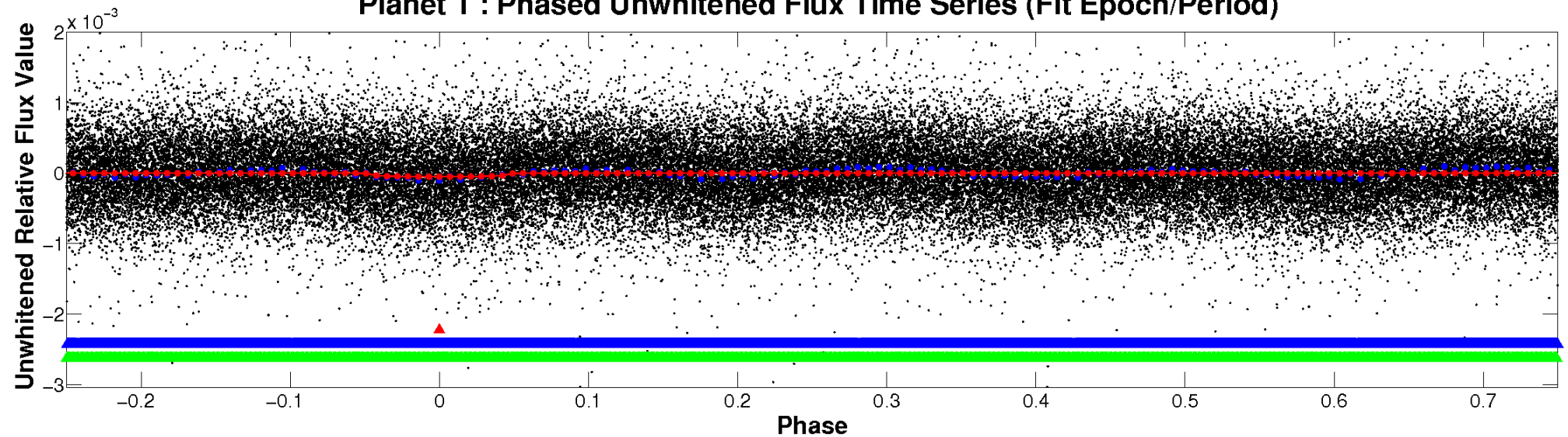
# ALT Odd/Even

TCE 005301101-01

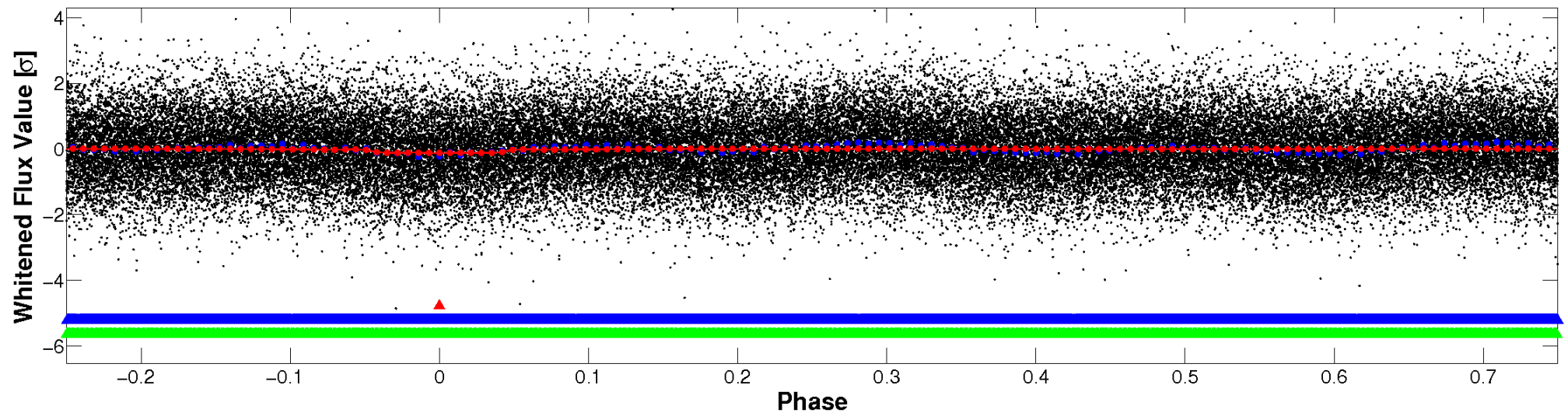


# Non-Whitened Vs. Whitened Light Curve

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

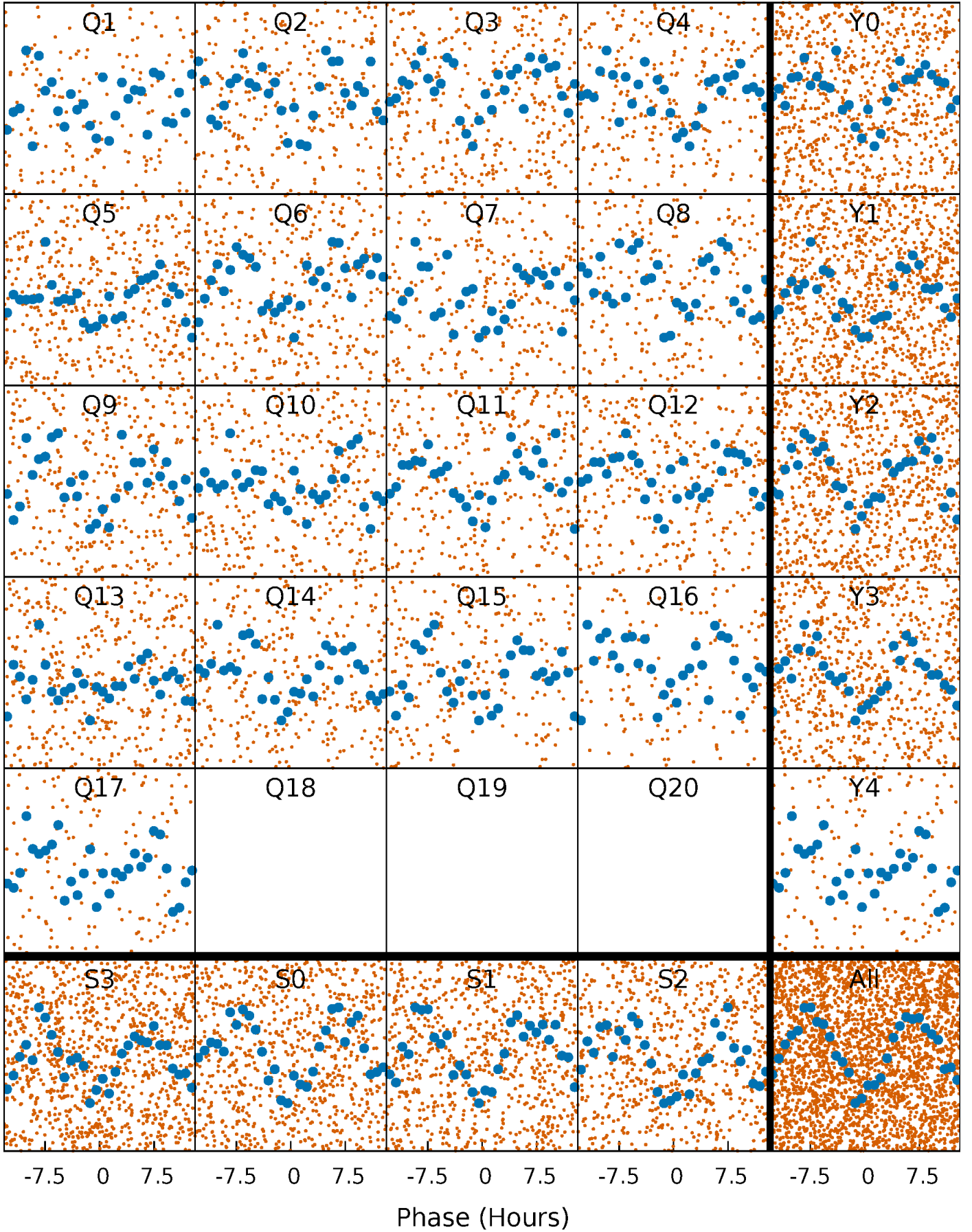


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



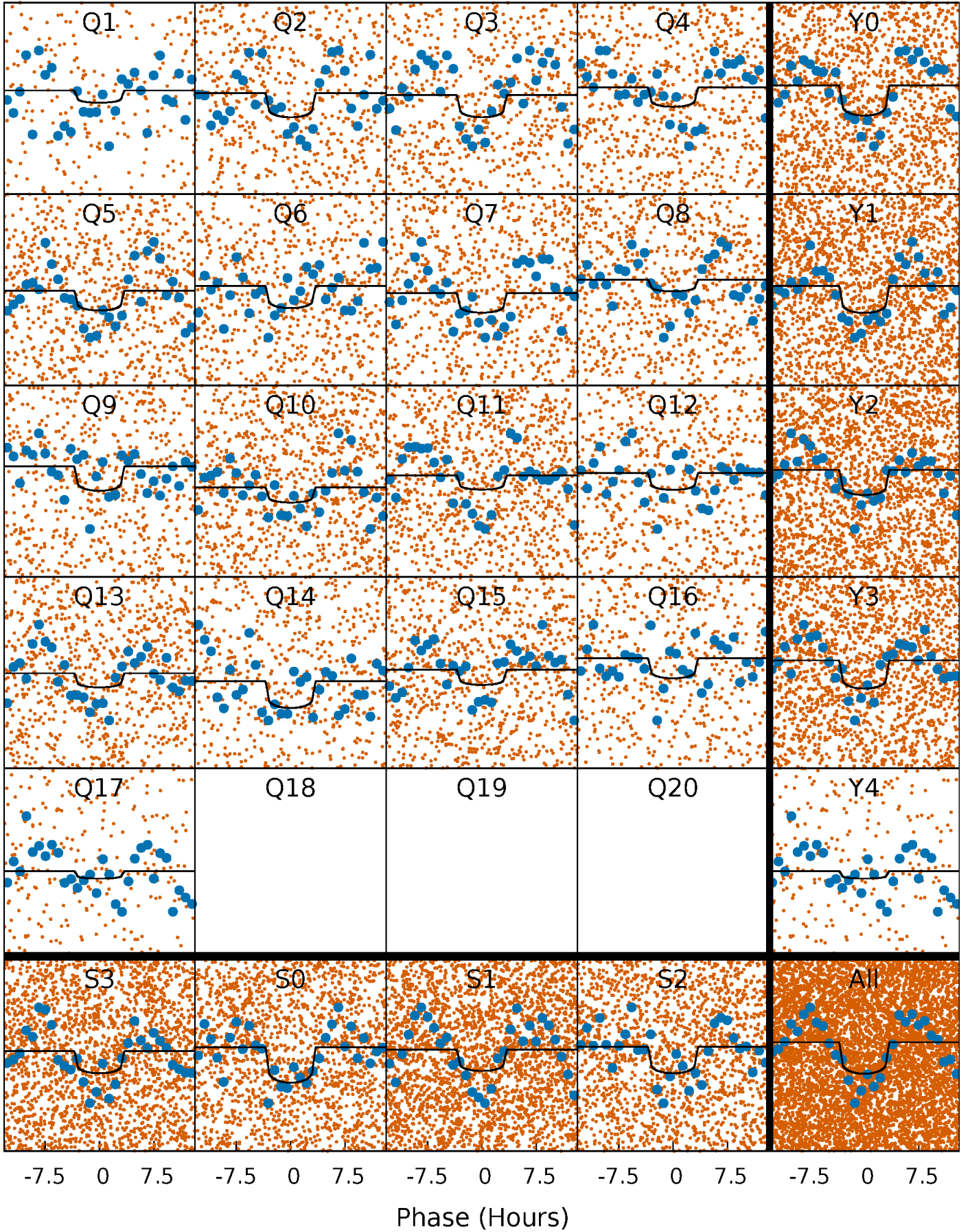
# PDC Quarter-Phased Transit Curves

TCE 005301101-01 P= 2.910645 Days  $T_0=132.462461$  (BKJD)



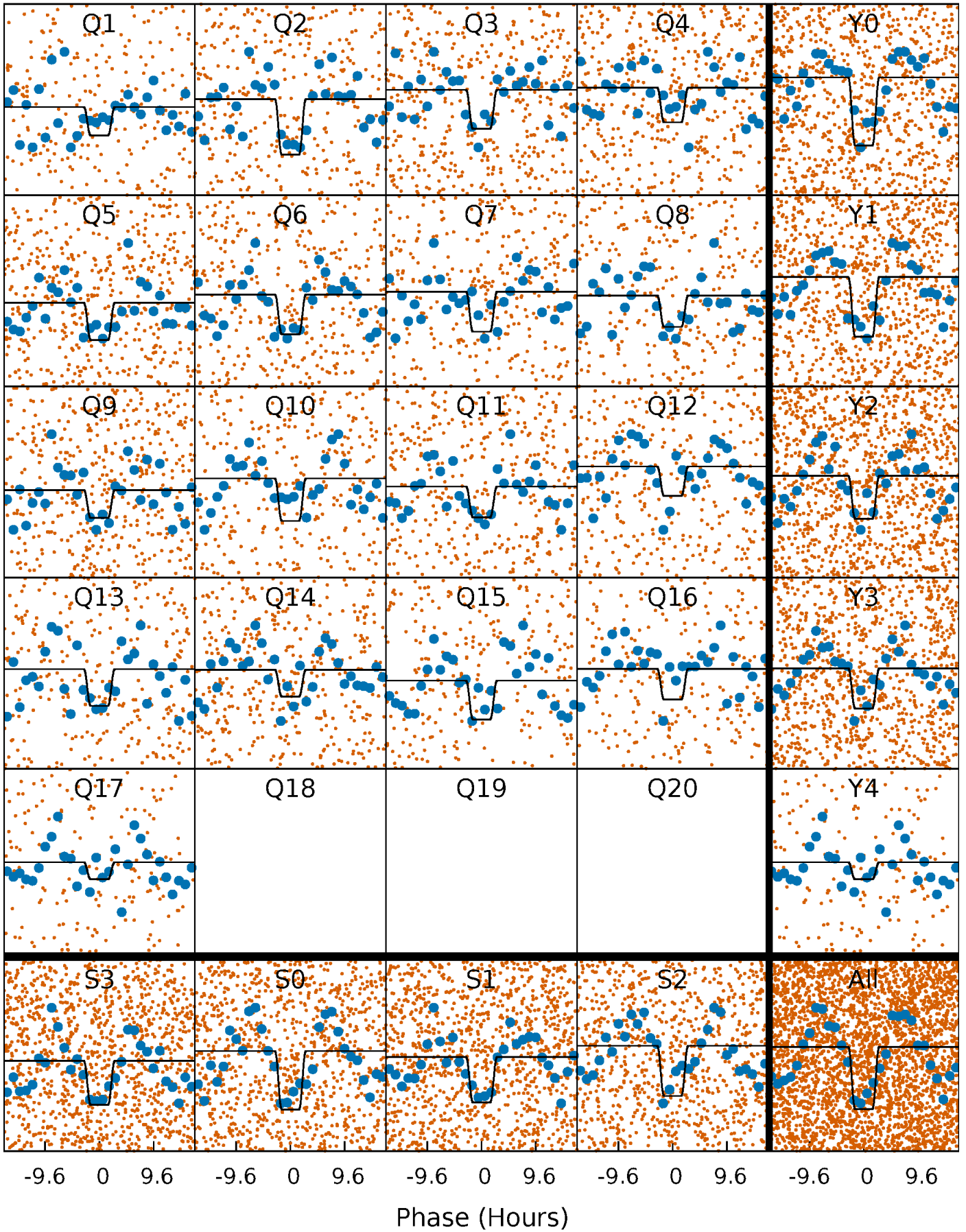
# DV Quarter-Phased Transit Curves

TCE 005301101-01   P= 2.910645 Days    $T_0=132.462461$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

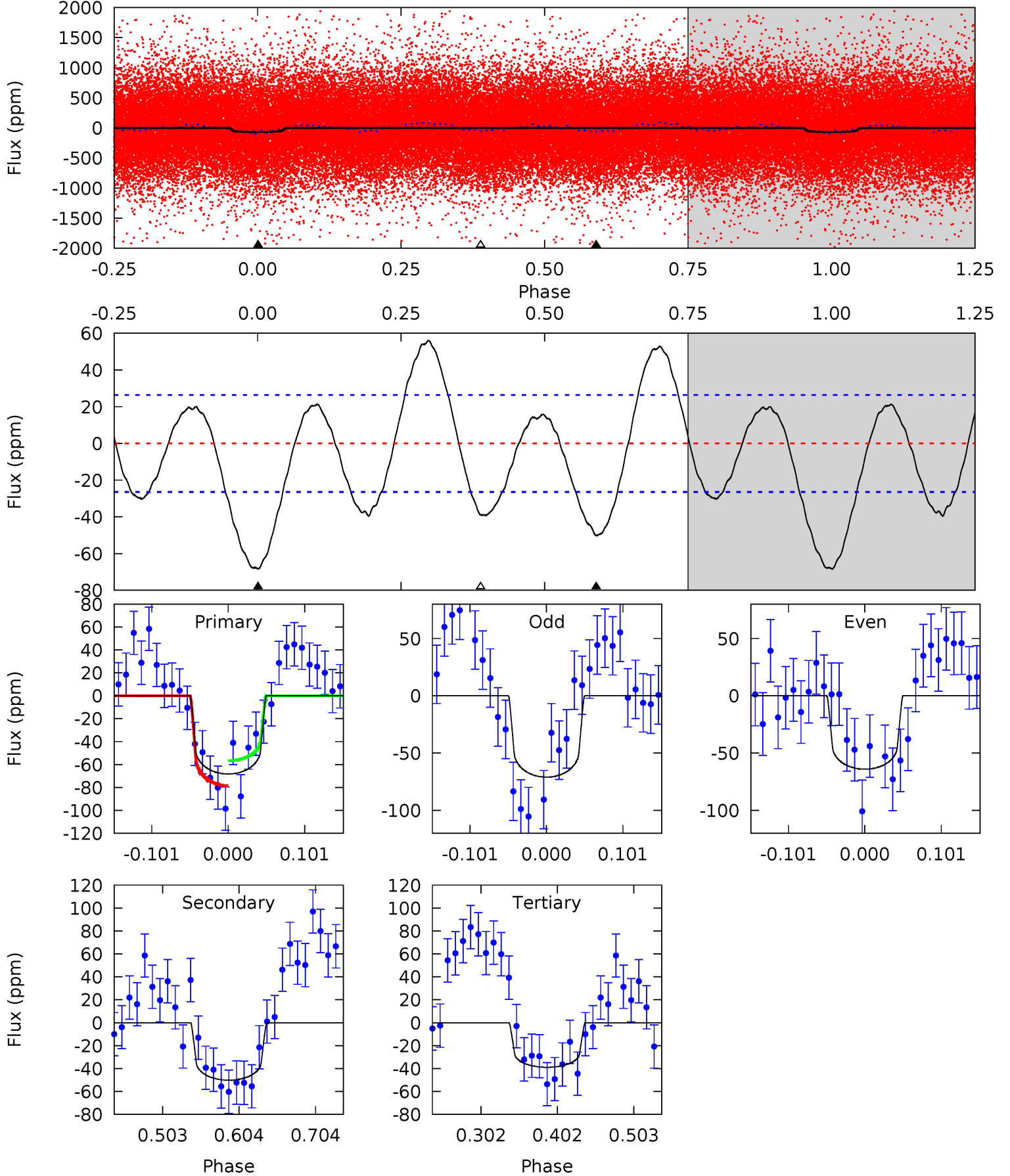
TCE 005301101-01 P= 2.910640 Days  $T_0=132.455901$  (BKJD)



# DV Model-Shift Uniqueness Test

005301101-01, P = 2.910645 Days, E = 129.551816 Days

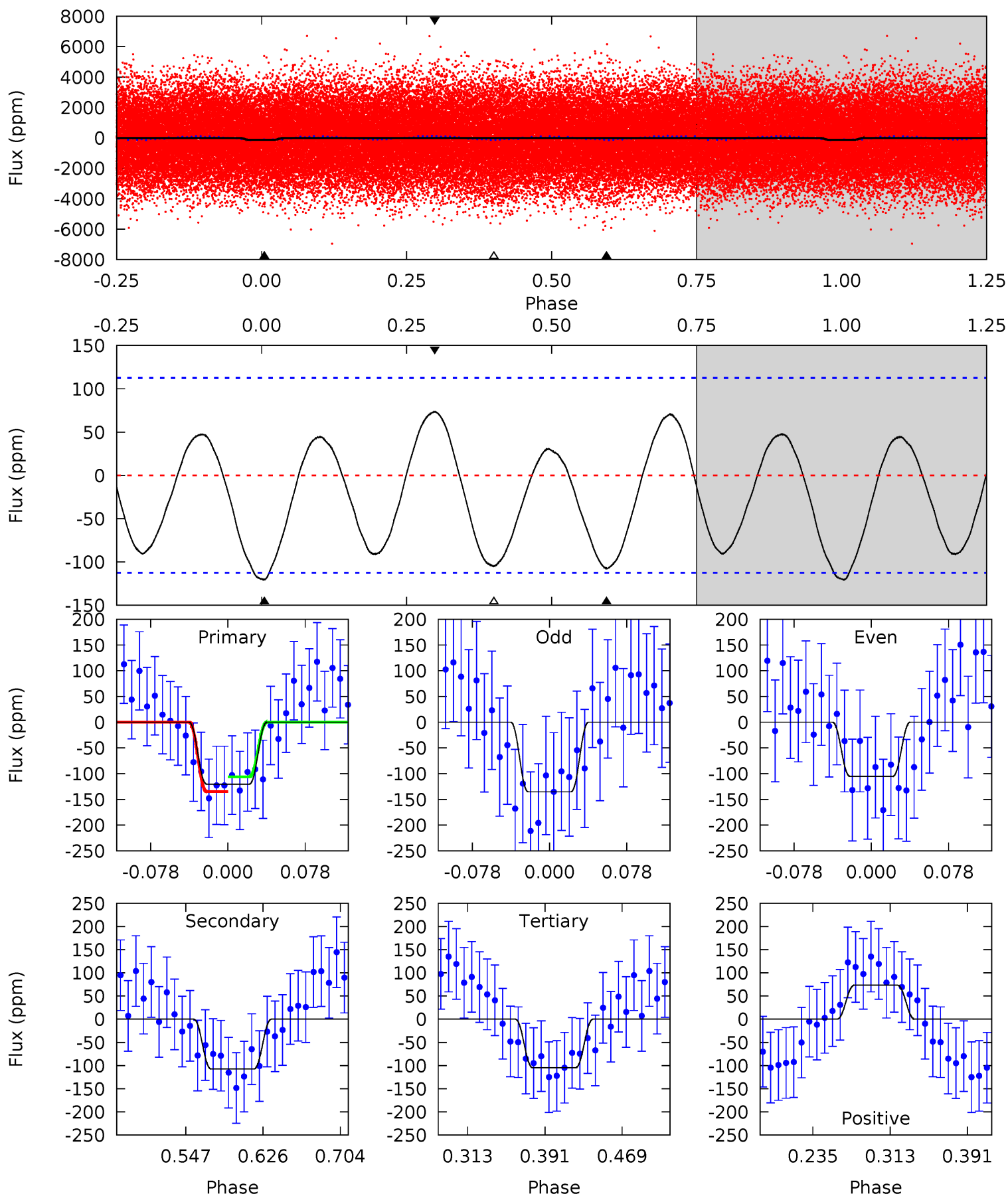
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	8.66	6.72	0	4.56	1.64	4.89	5.07	11.8	1.94	8.66	0.60	1.10	0.45	1.90



# Alt Model-Shift Uniqueness Test

005301101-01, P = 2.910640 Days, E = 129.545261 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
4.94	4.41	4.31	3.02	4.62	1.76	2.27	0.63	1.93	0.11	1.40	0.62	0.97	0.38	0.59



### Stellar Parameters For KIC 005301101

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8022^{+223}_{-335}$	$3.713^{+0.413}_{-0.110}$	$0.000^{+0.200}_{-0.400}$	$3.322^{+0.841}_{-1.562}$	$2.081^{+0.334}_{-0.543}$	$0.080^{+0.336}_{-0.032}$
	+3%/-4%	+11%/-3%	+inf%/-inf%	+25%/-47%	+16%/-26%	+420%/-39%
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 005301101-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-50 \pm 6$	$2.36^{+1.42}_{-1.14}$	$3847^{+306}_{-451}$	$7646^{+4540}_{-1594}$	$12^{+36}_{-7}$
Alt.	$-107 \pm 24$	$4.03^{+1.70}_{-1.57}$	$3860^{+289}_{-428}$	$7089^{+2210}_{-1126}$	$9.318^{+15.756}_{-4.916}$

$T_{\text{max}}$  = 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

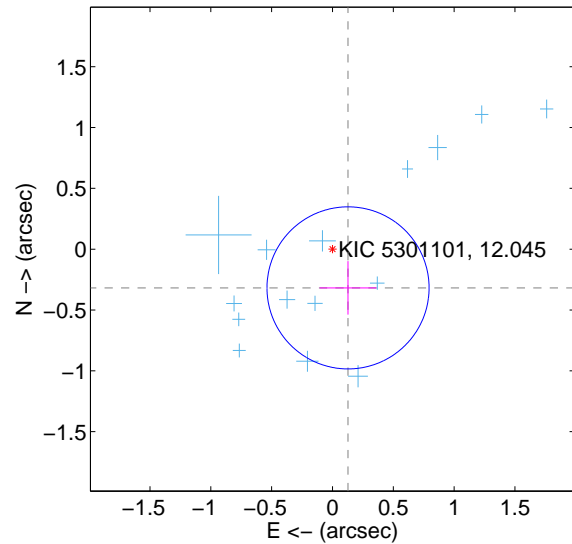
Supplemental centroid analysis for 005301101-01. Kepler magnitude: 12.04. Transit SNR 8.45

There are 17 quarters with good PRF difference image offsets

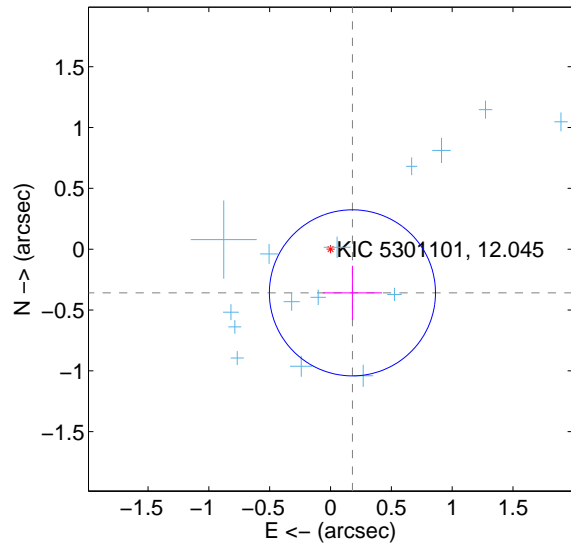
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.343 \pm 0.222$	1.54	$-0.128 \pm 0.234$	$-0.318 \pm 0.220$
PRF-fit source offset from KIC position	$0.402 \pm 0.228$	1.77	$-0.180 \pm 0.243$	$-0.359 \pm 0.223$
photometric centroid source offset	$0.51 \pm 0.38$	1.32	$-0.41 \pm 0.39$	$0.30 \pm 0.38$

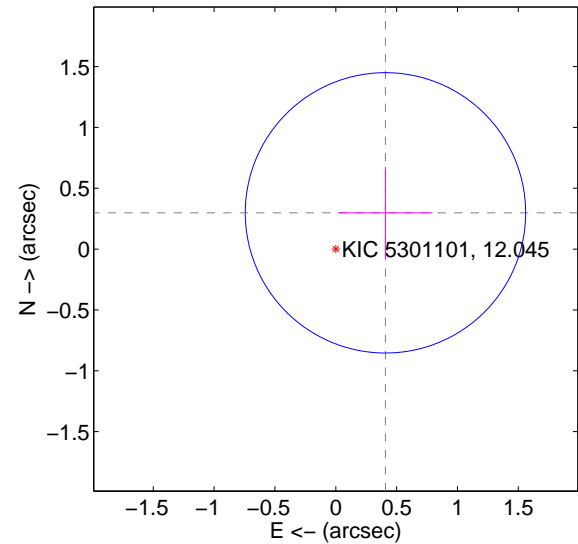
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

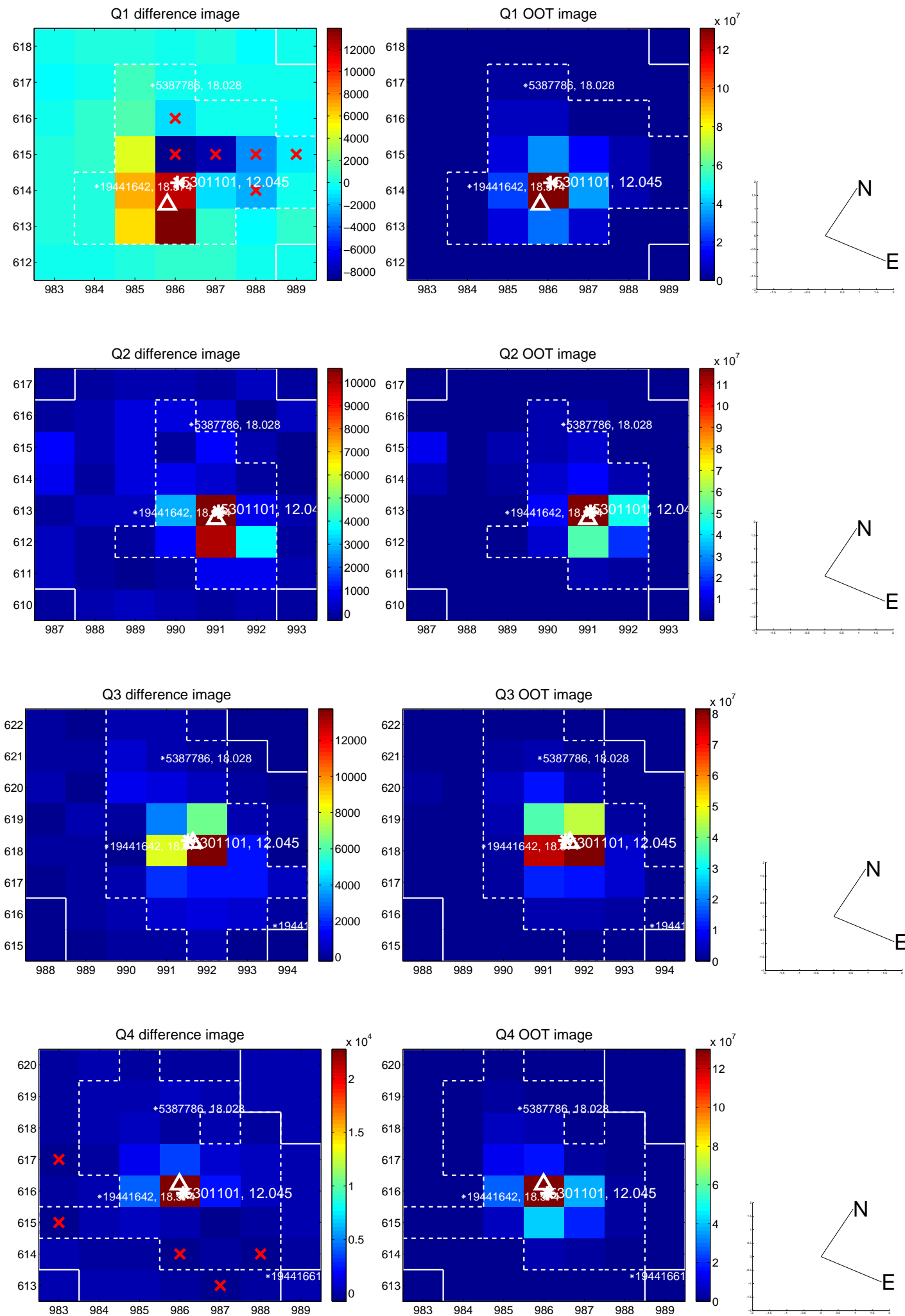


offset from photometric centroids

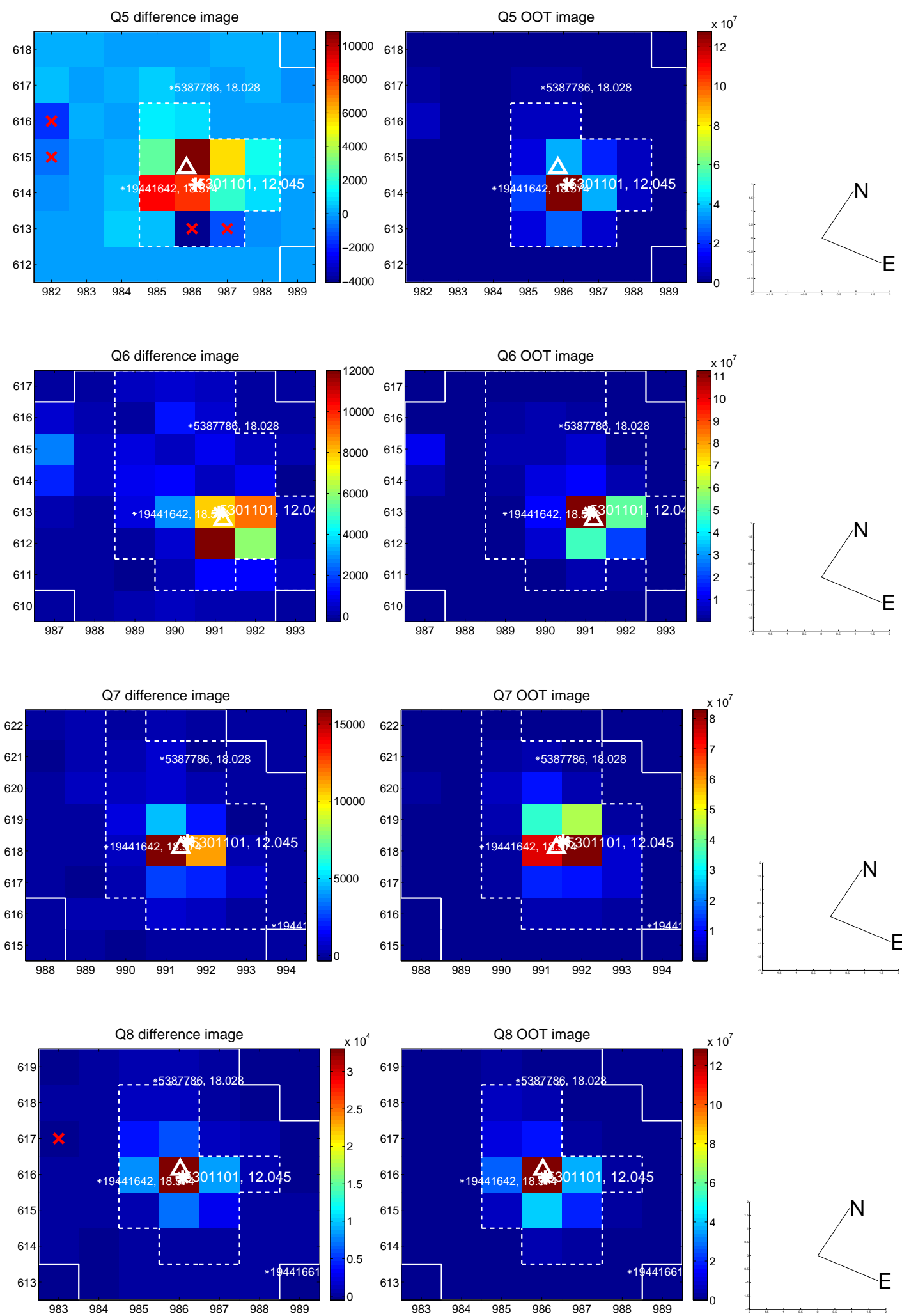


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

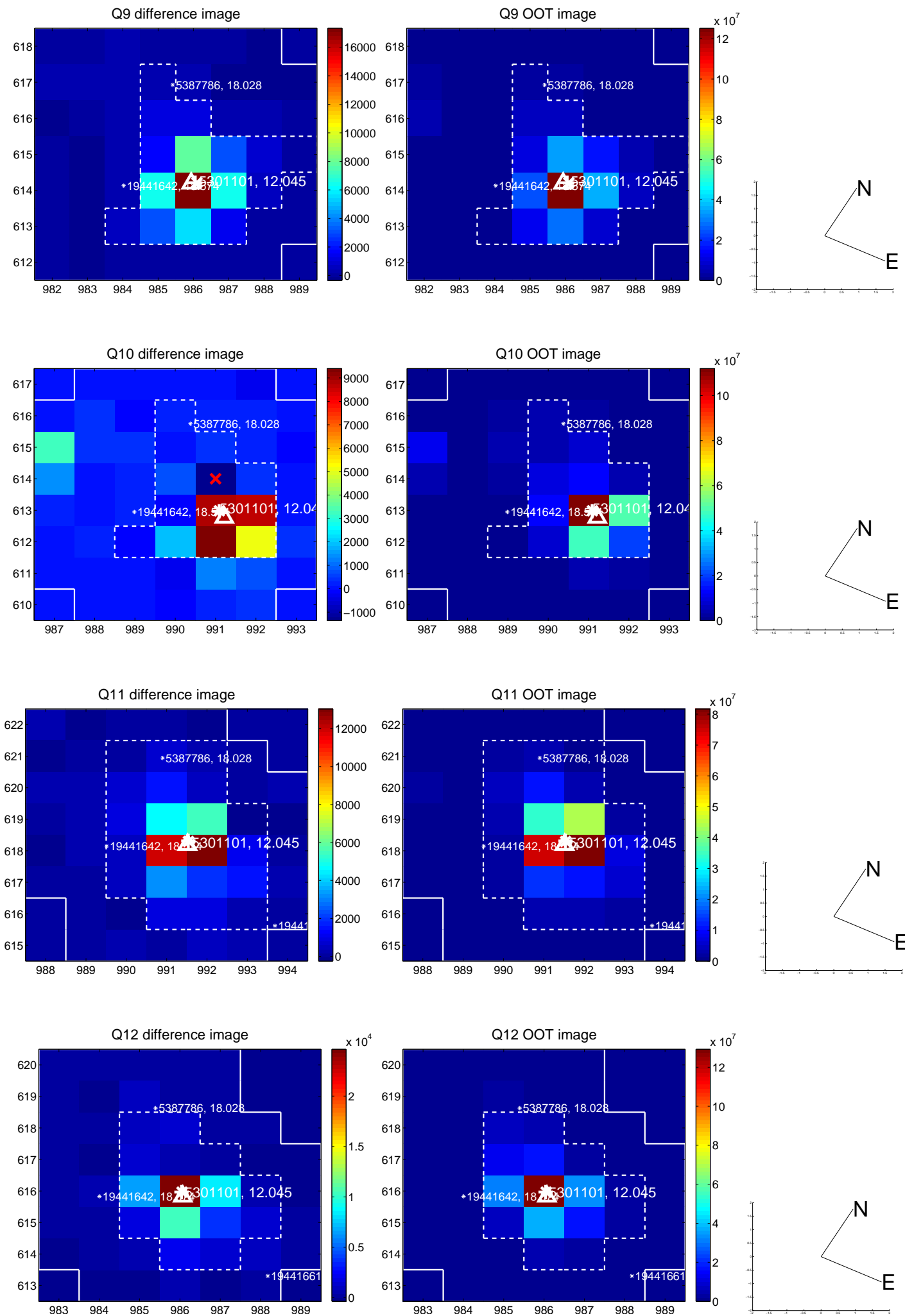
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



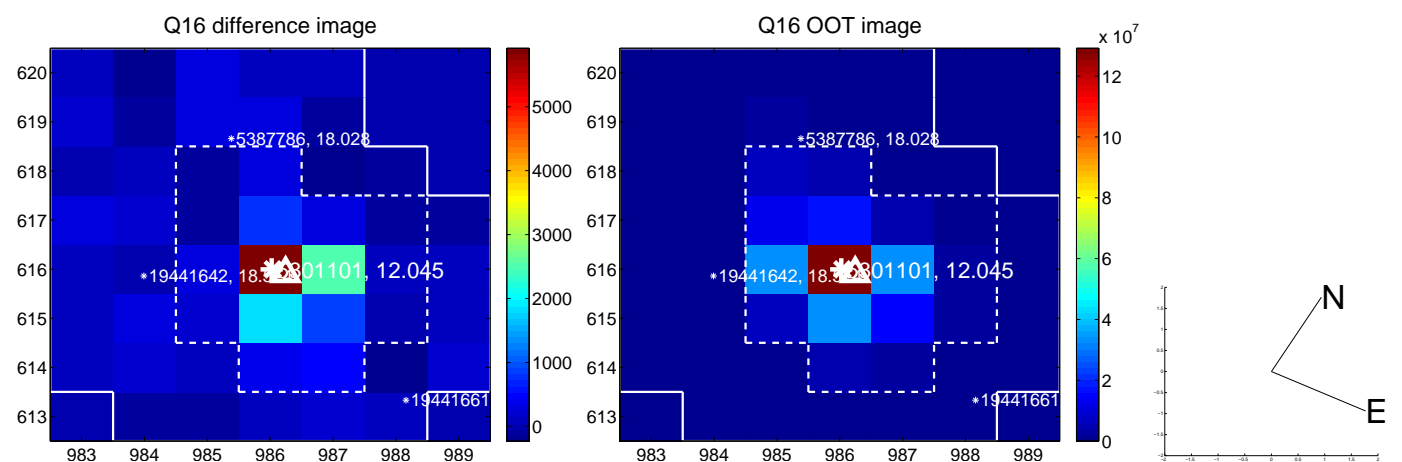
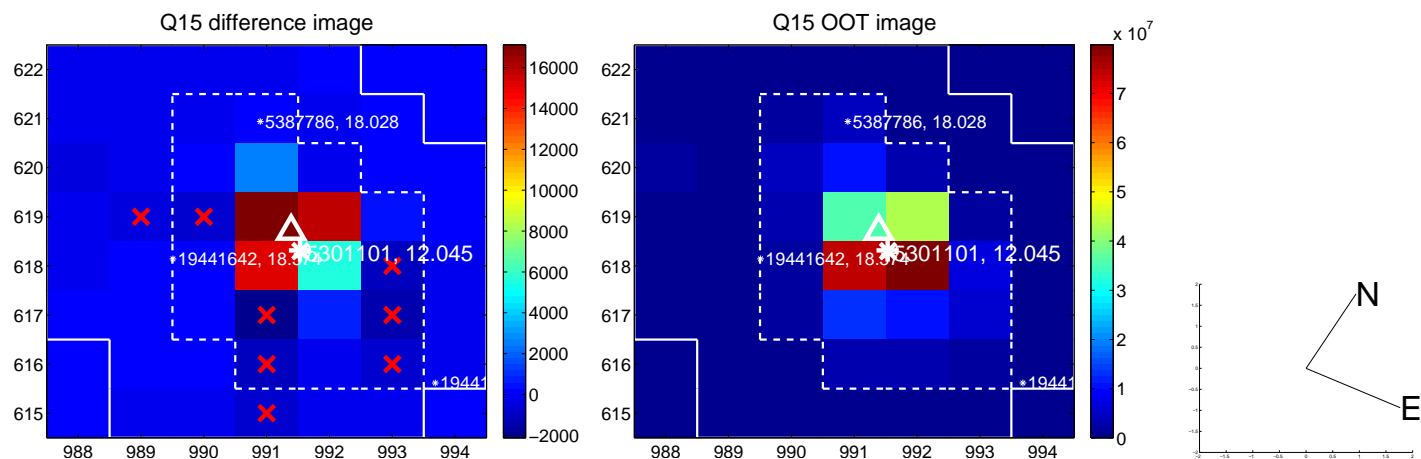
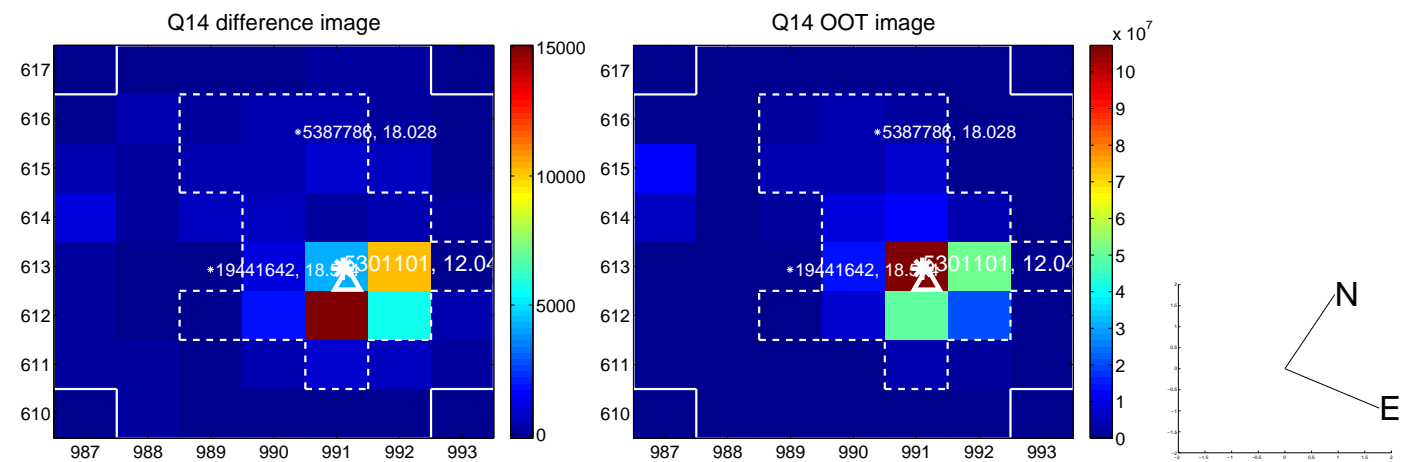
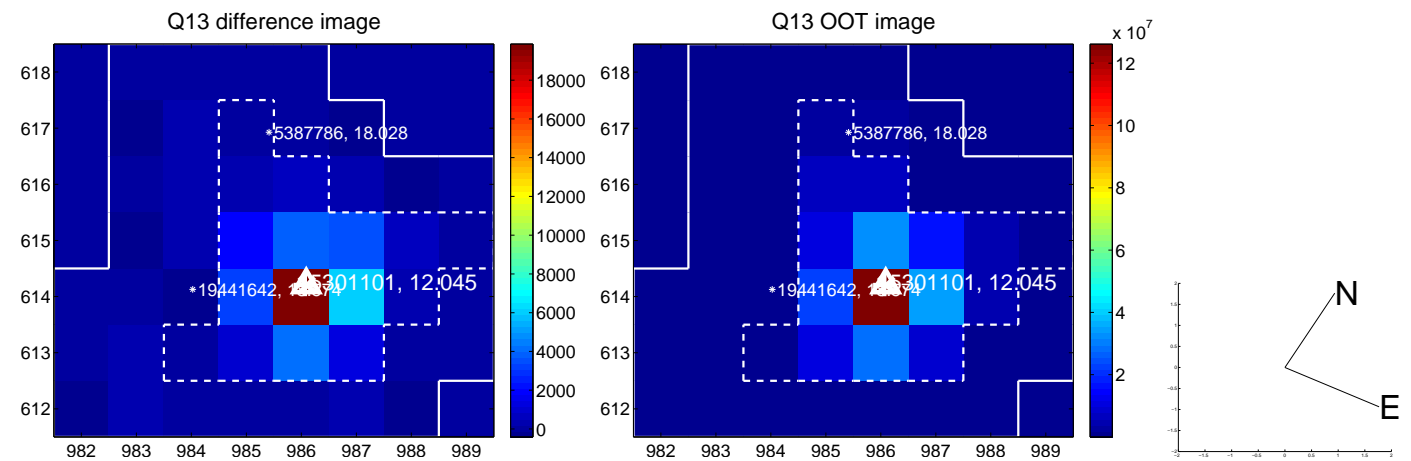
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



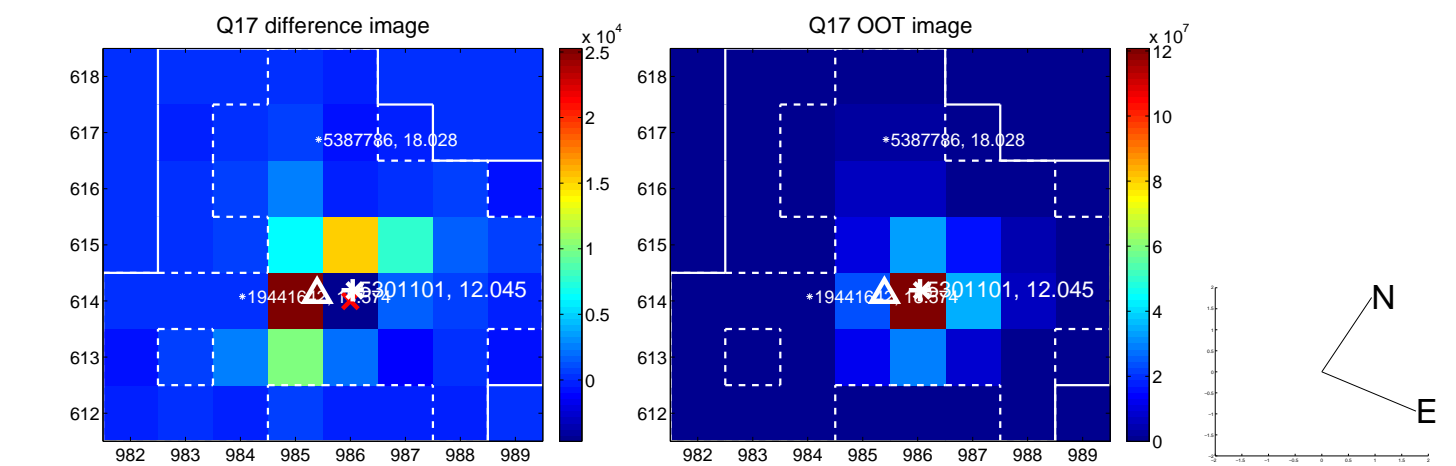
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



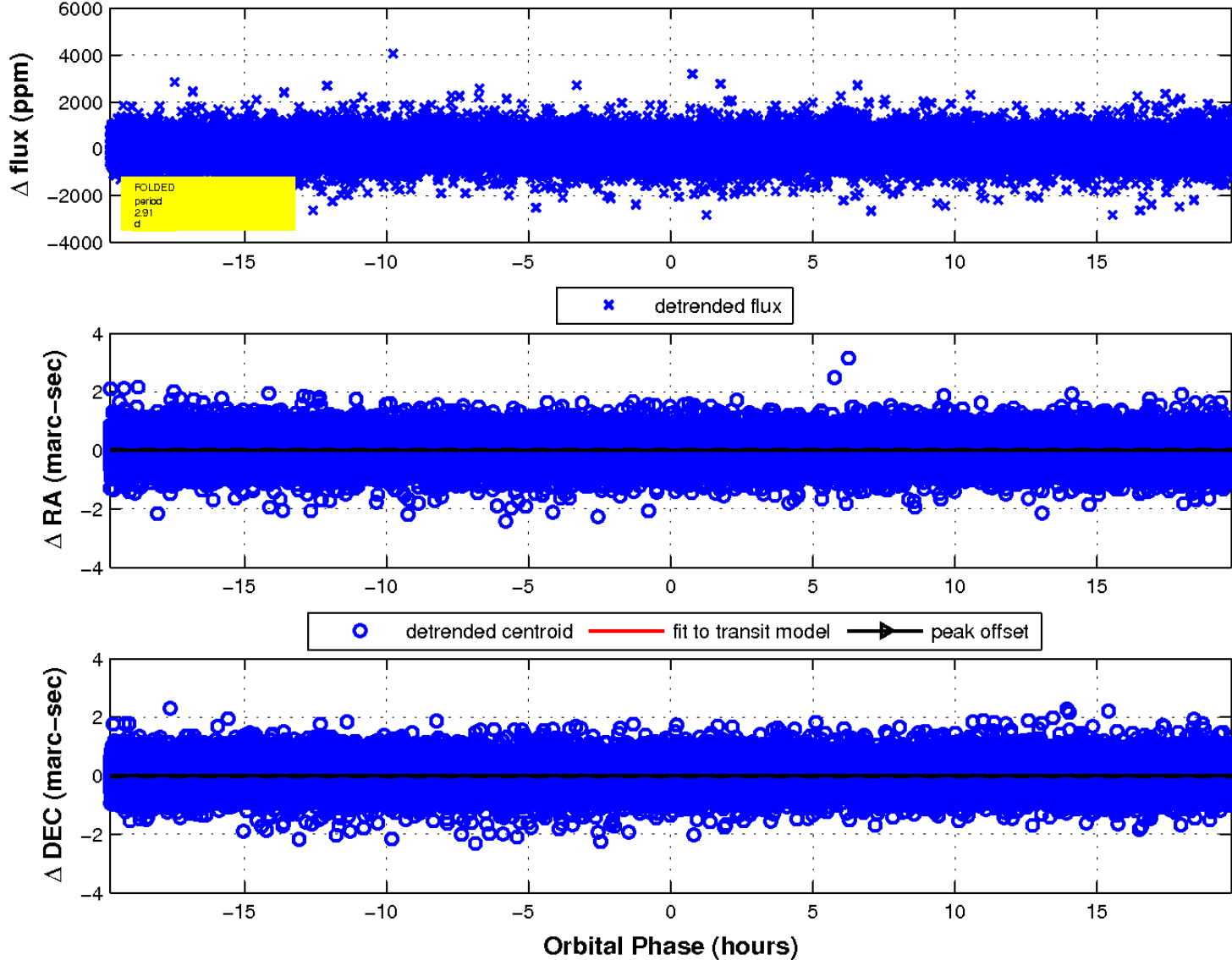
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

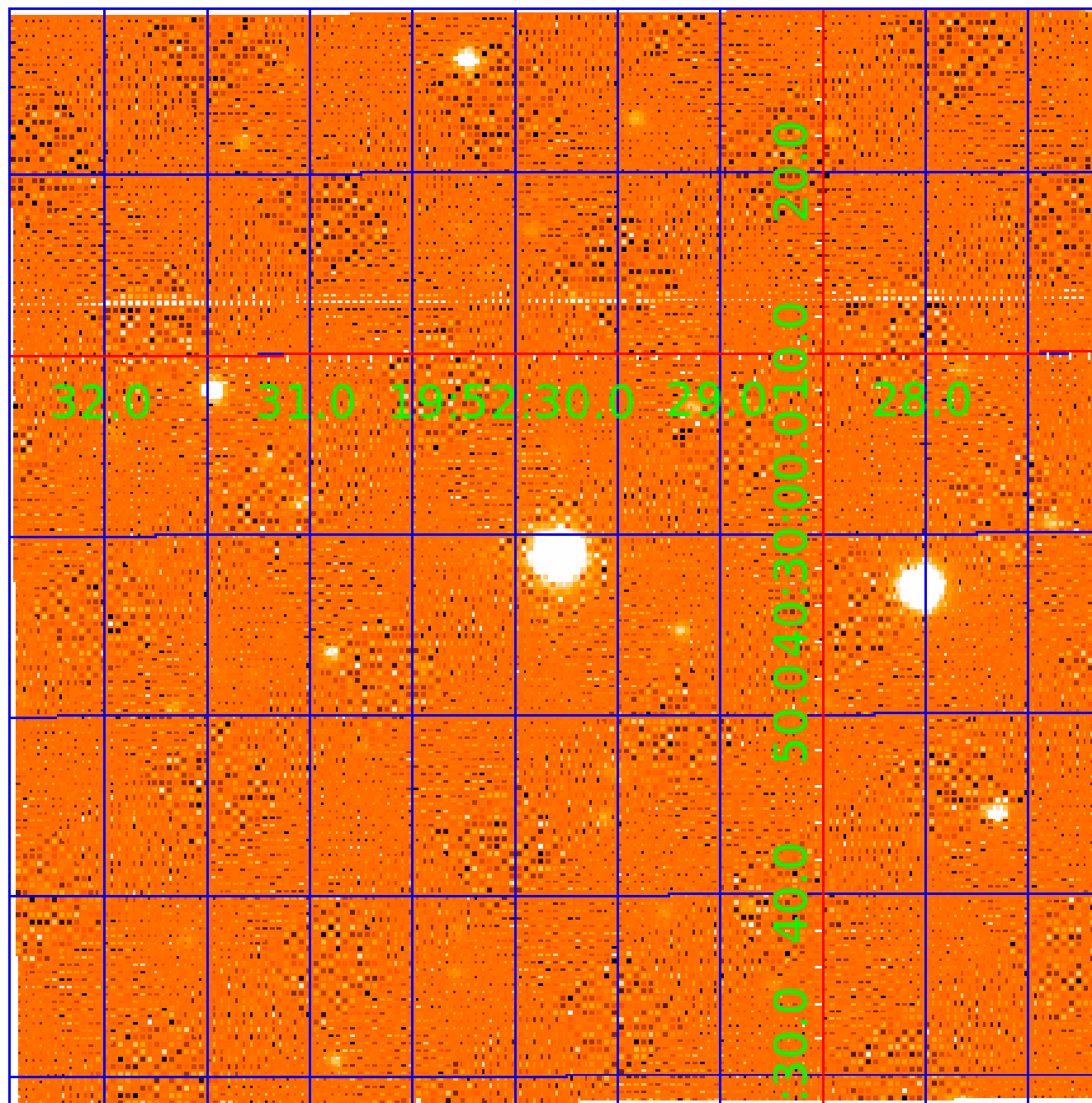


fluxWeightedCentroids, Planet 1 of 3



# UKIRT Image

Declination



# KIC 005301101

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005301101-01	OBS	No	2.910645	132.462461	49.2	6.581	9.5	8.4	3.32	8022	2.62	15787.22
005301101-02	OBS	No	0.565713	131.611469	60.4	2.194	8.1	10.1	3.32	8022	3.01	140226.49
005301101-03	OBS	No	0.565703	131.906177	67.9	2.351	8.9	12.1	3.32	8022	2.78	140229.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005301101-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005301101-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005301101-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD

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

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

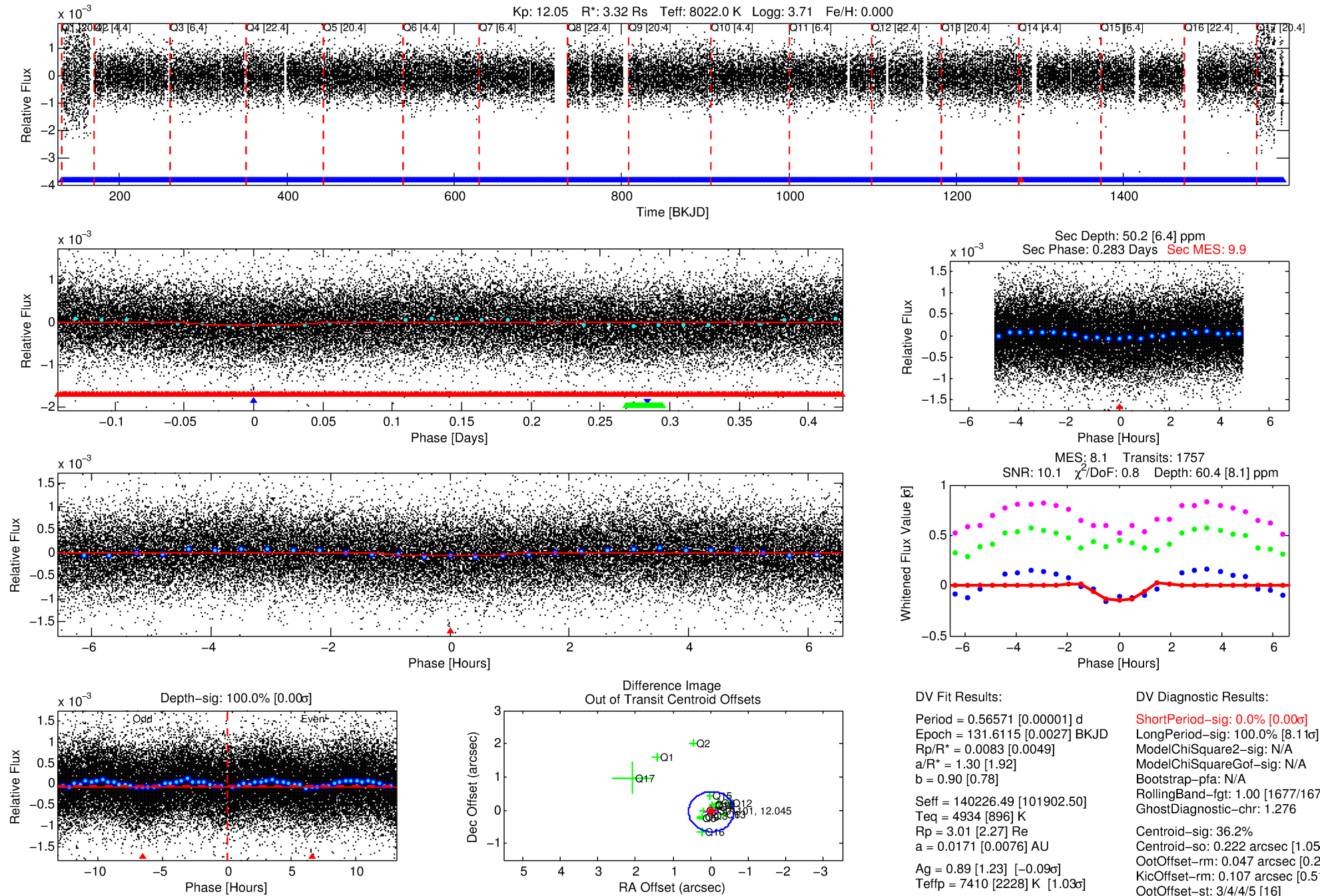
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005301101-02

No Significant Match Found

# DV One-Page Summary

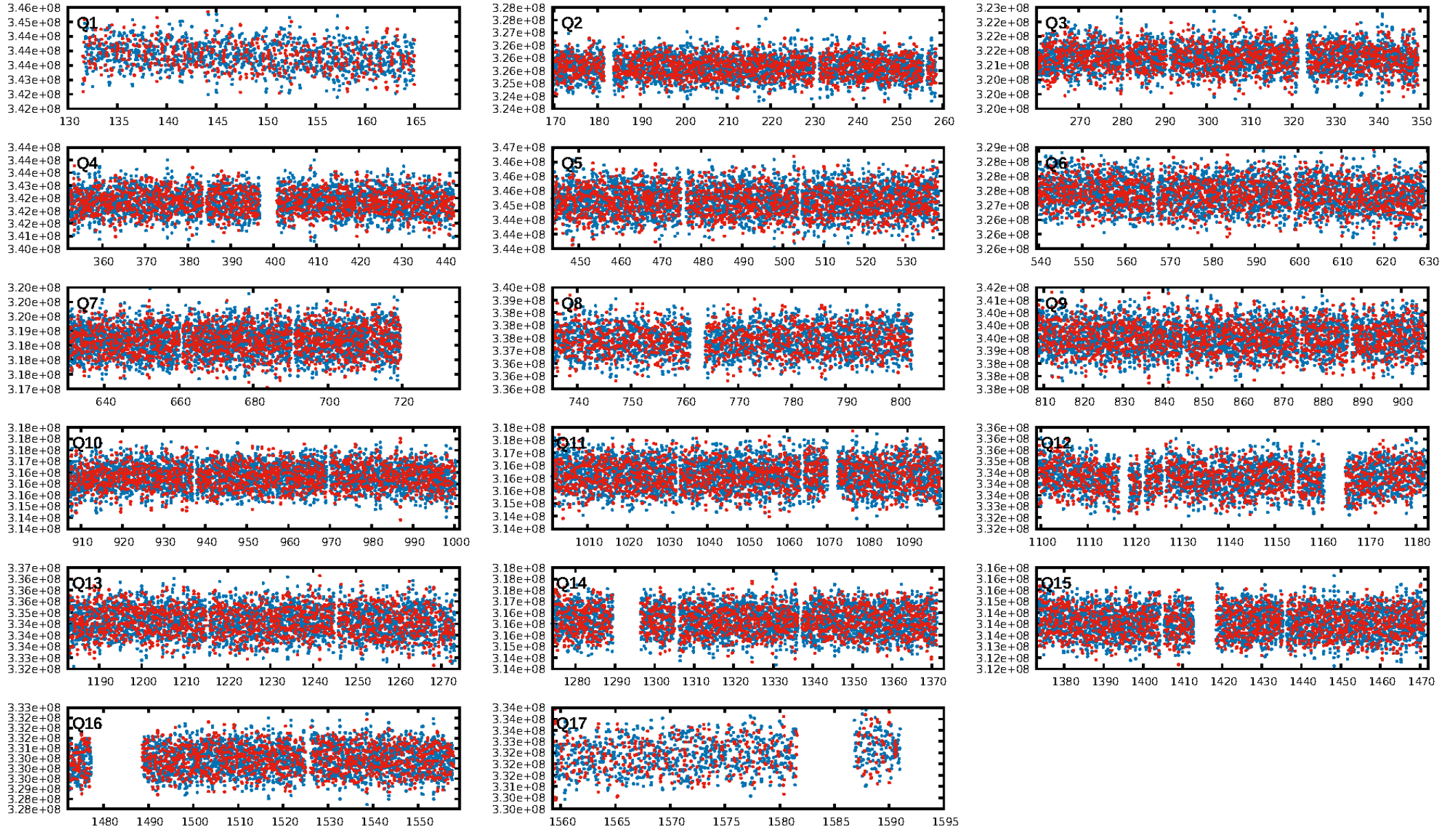
KIC: 5301101 Candidate: 2 of 3 Period: 0.566 d



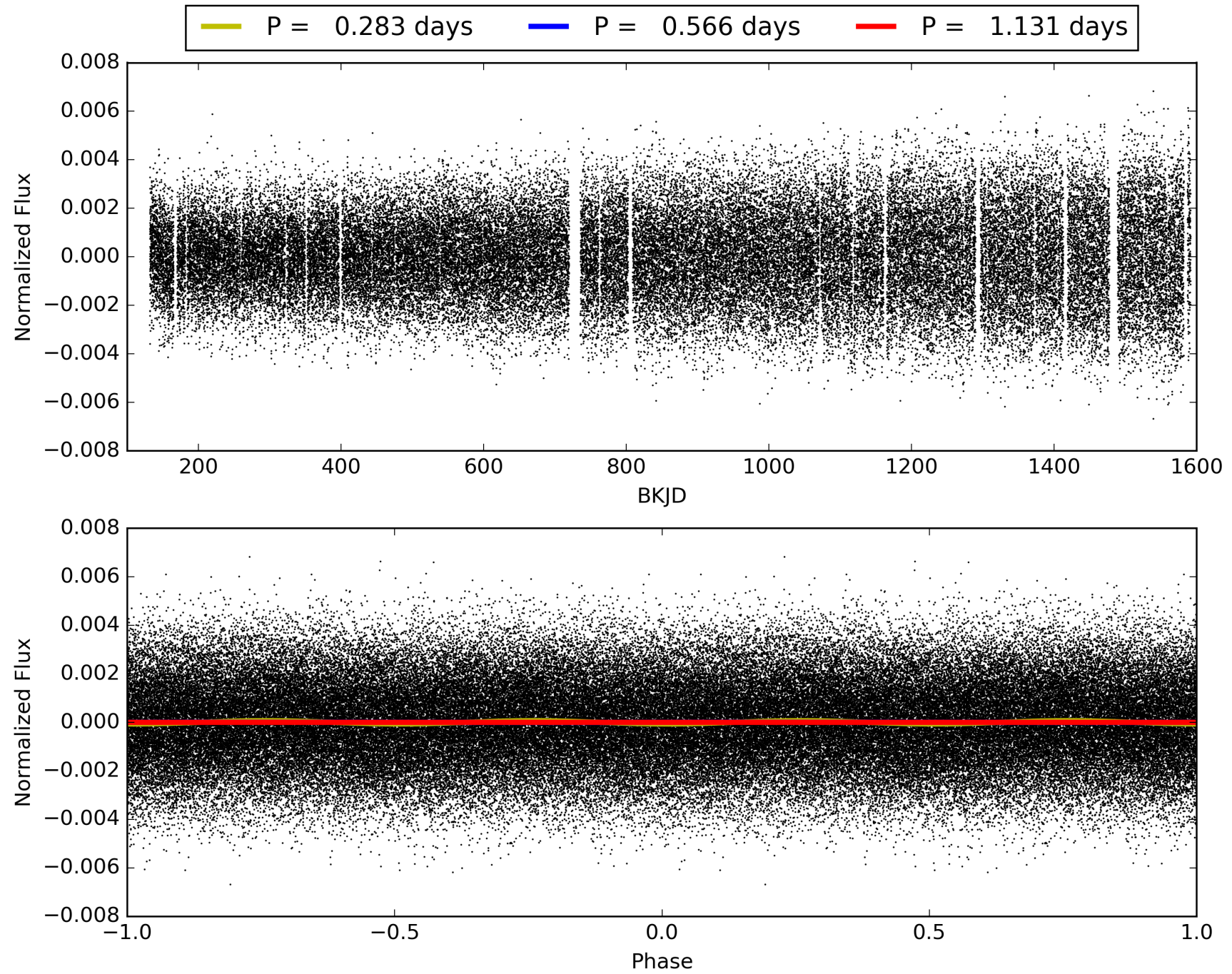
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:36:58 Z

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

# TCE 005301101-02, PDC Light Curves

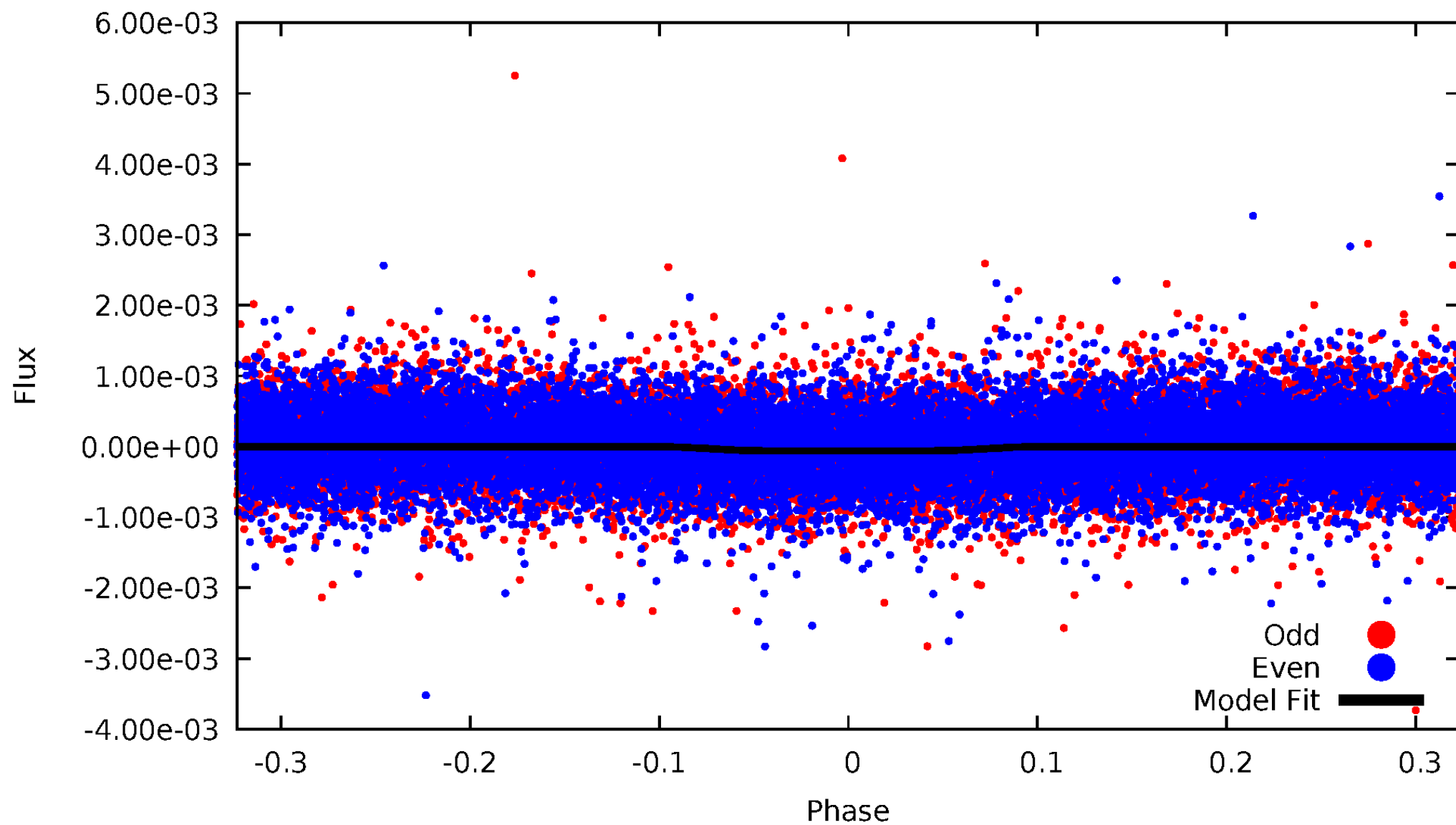


TCE 005301101-02



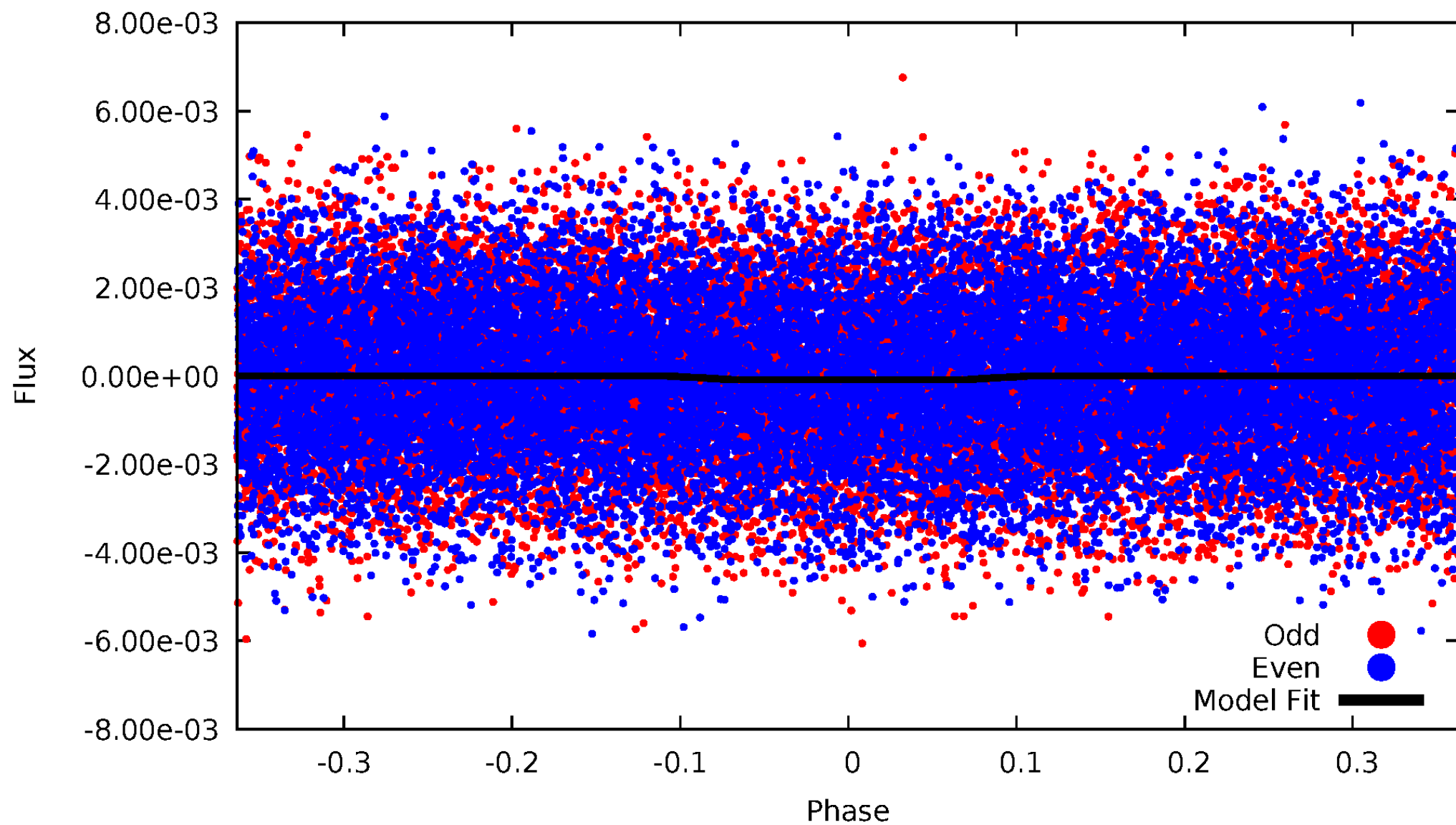
# DV Odd/Even

TCE 005301101-02



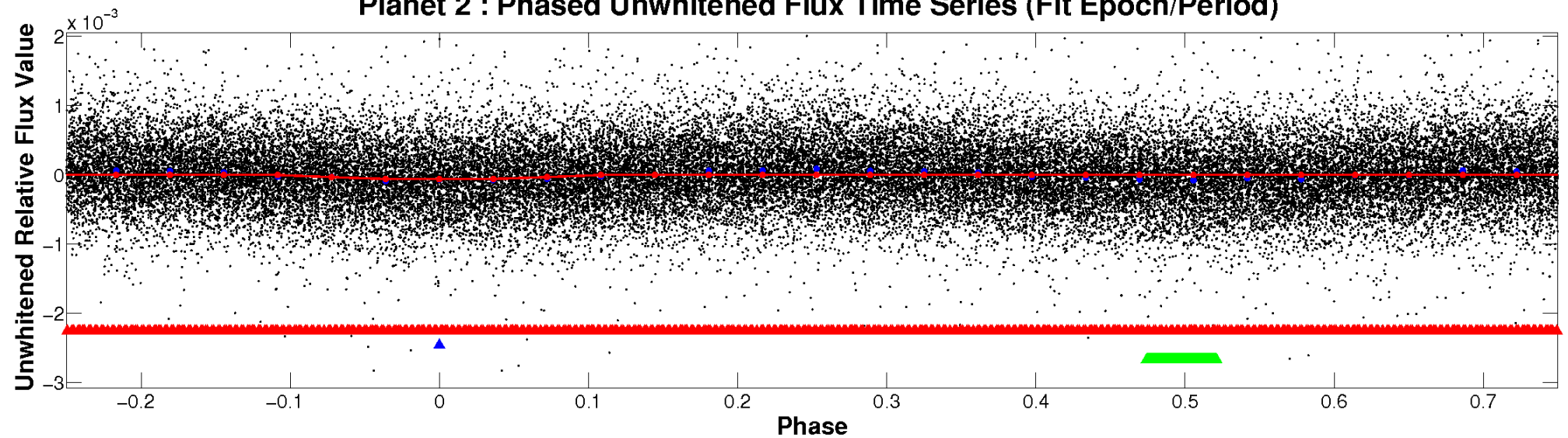
# ALT Odd/Even

TCE 005301101-02

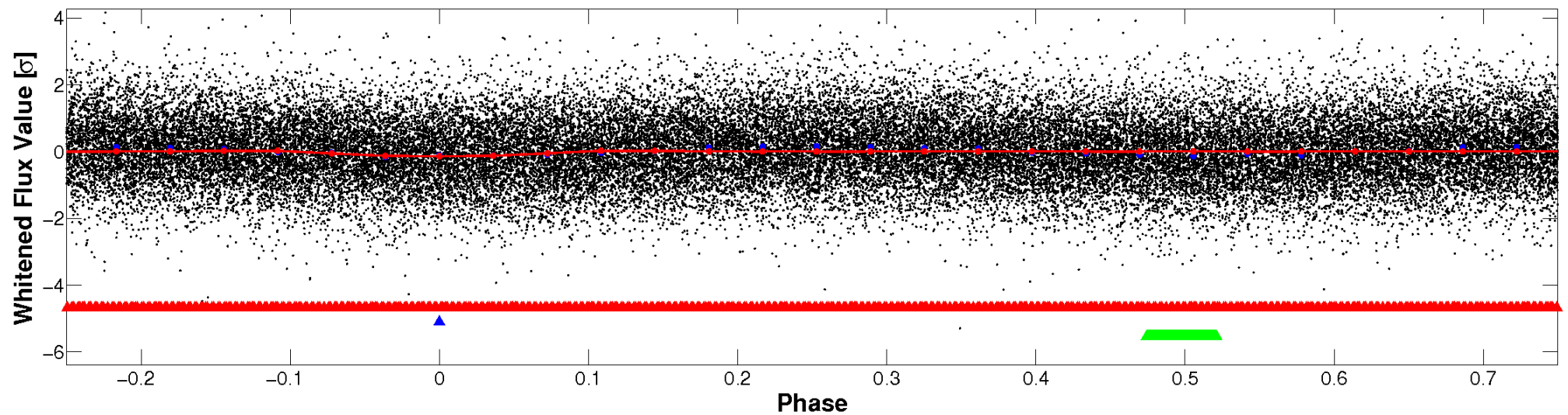


# Non-Whitened Vs. Whitened Light Curve

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

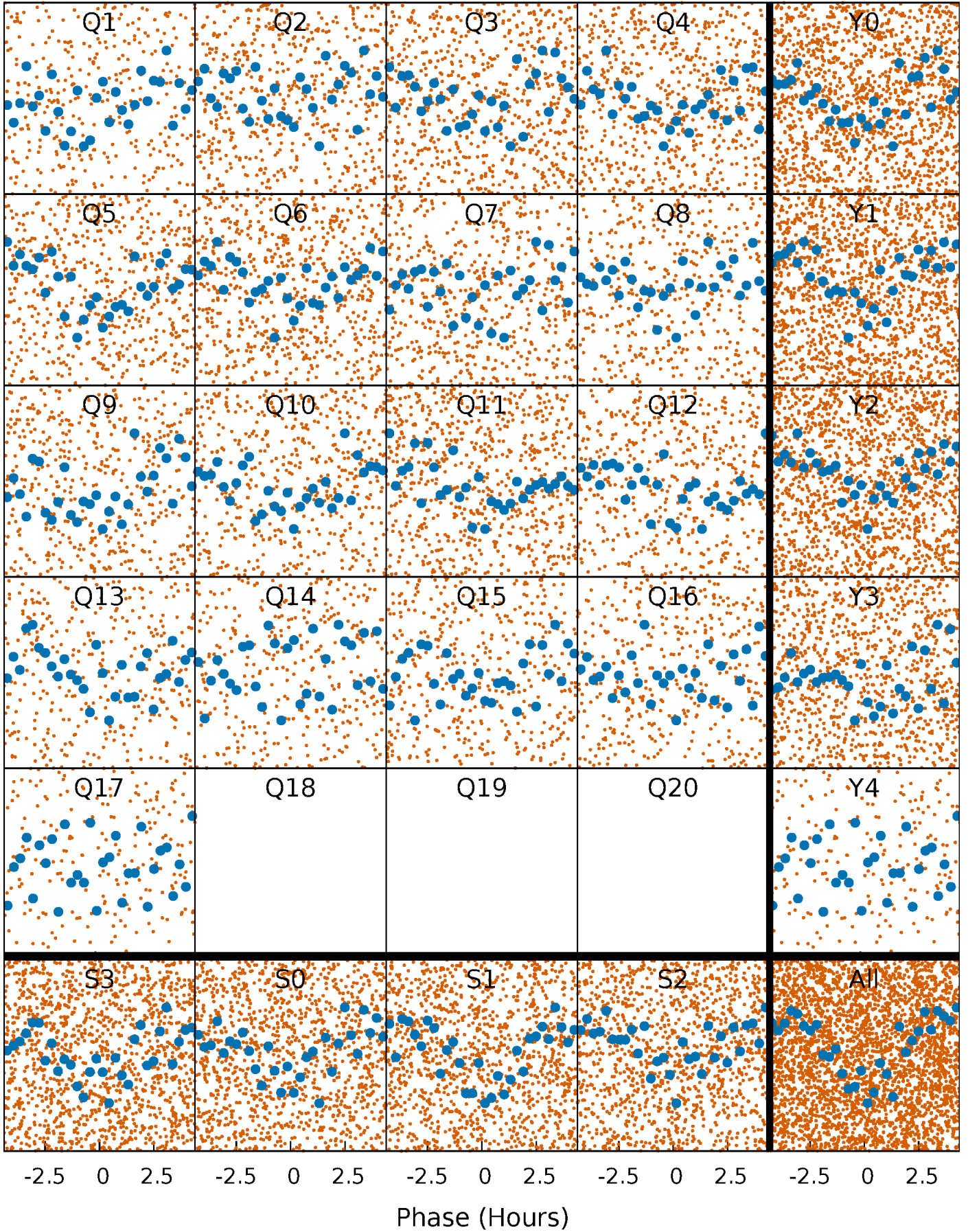


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



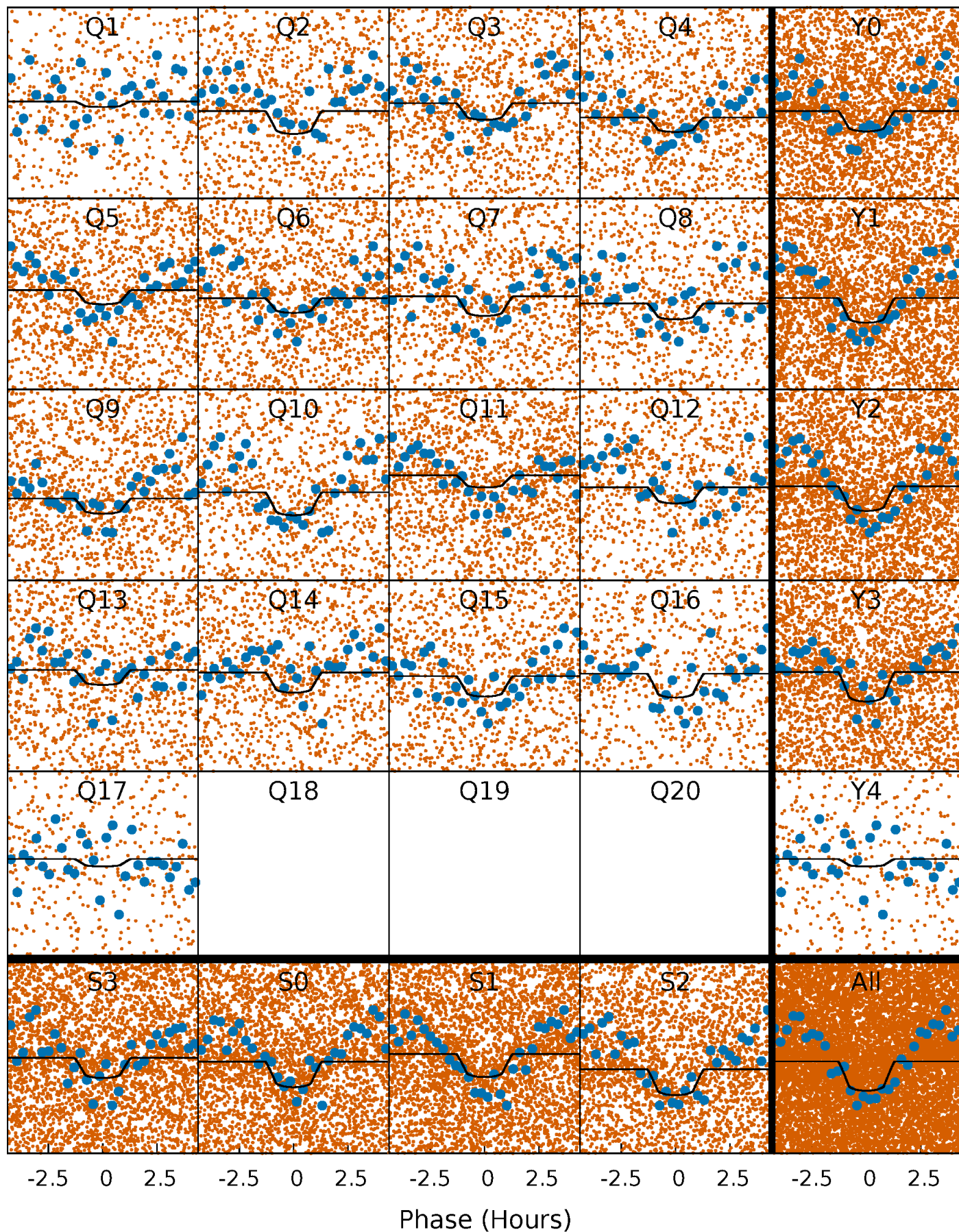
# PDC Quarter-Phased Transit Curves

TCE 005301101-02   P= 0.565713 Days    $T_0=131.611469$  (BKJD)



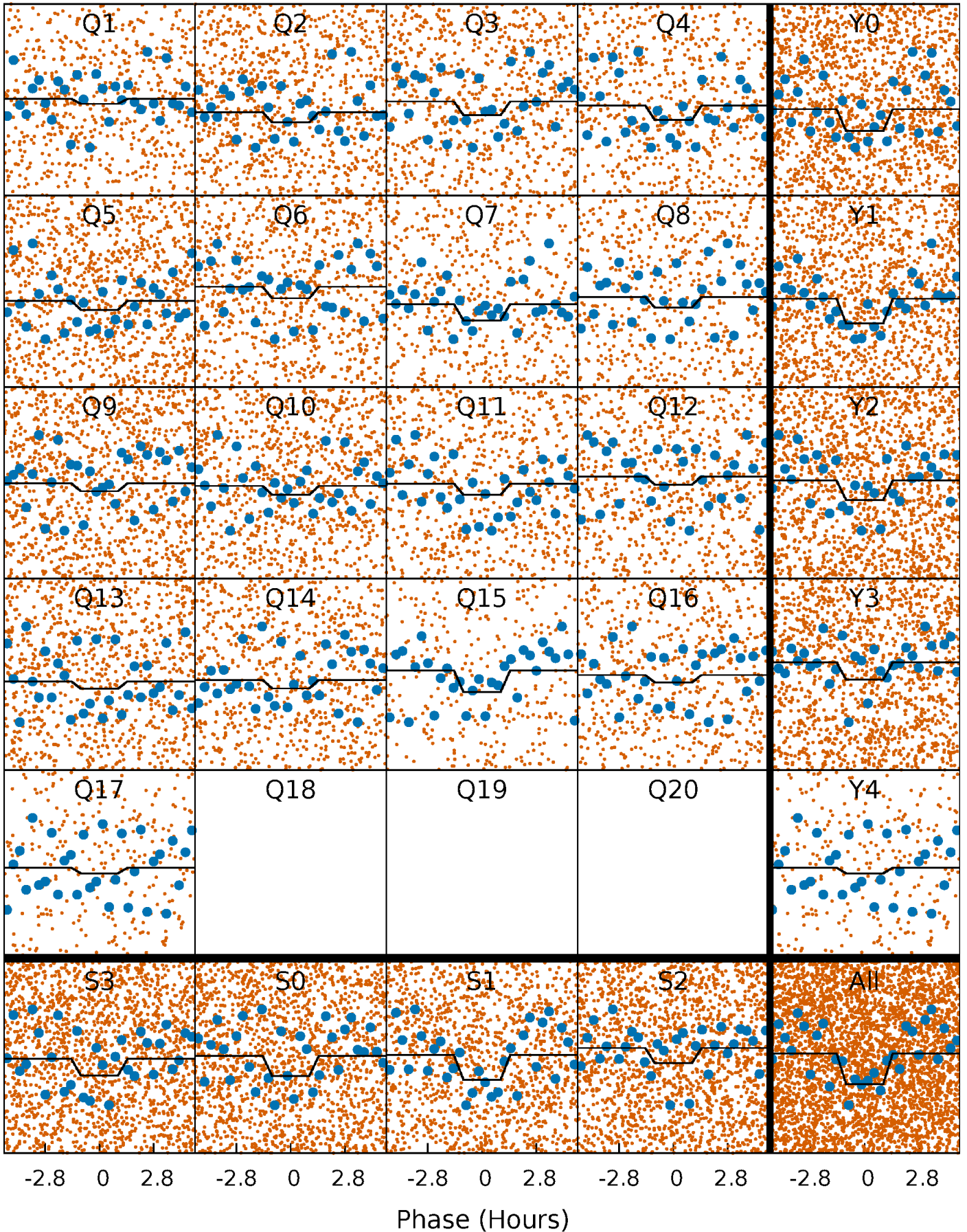
# DV Quarter-Phased Transit Curves

TCE 005301101-02 P= 0.565713 Days  $T_0=131.611469$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

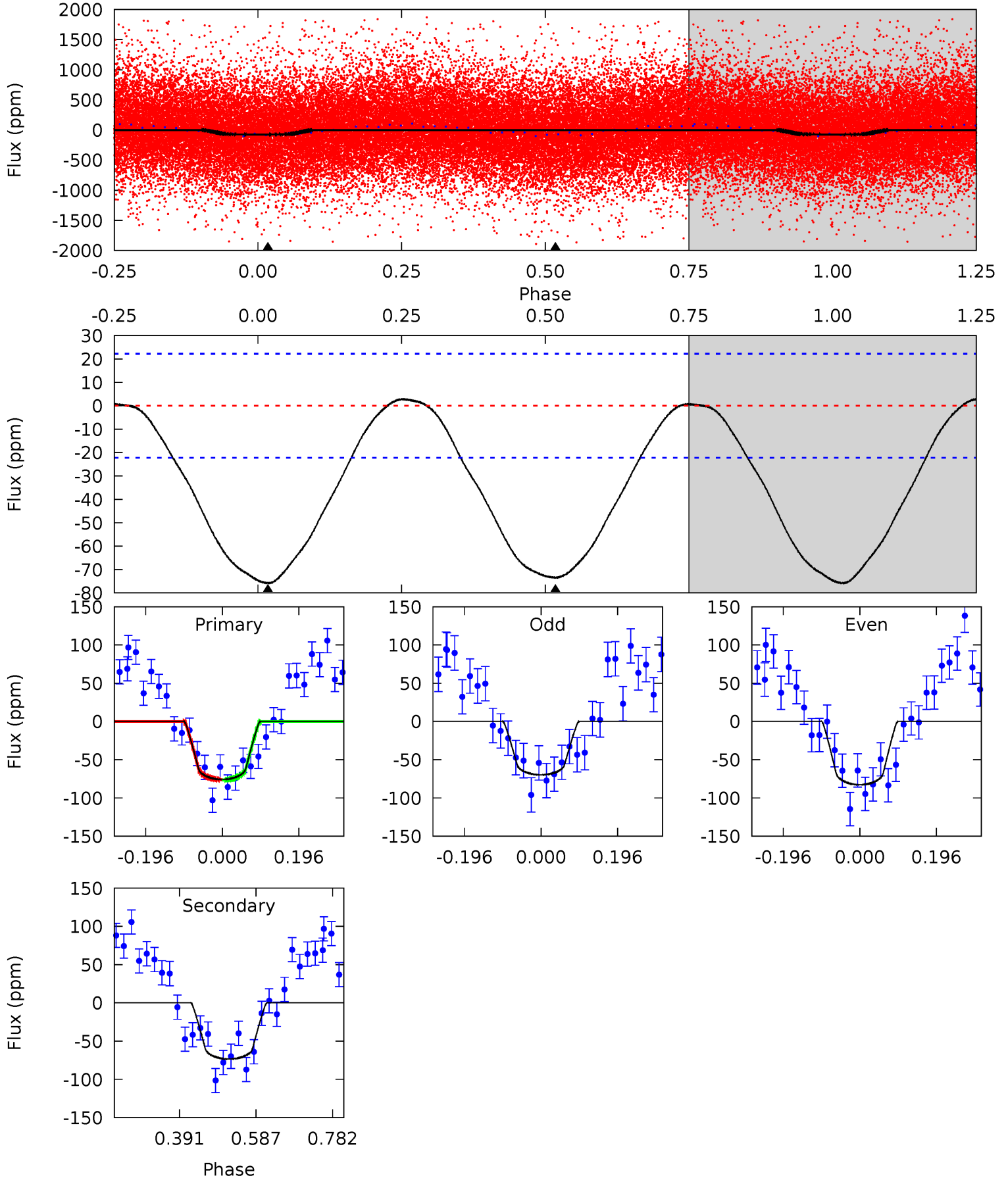
TCE 005301101-02   P= 0.565722 Days    $T_0=131.611990$  (BKJD)



# DV Model-Shift Uniqueness Test

005301101-02, P = 0.565713 Days, E = 131.045756 Days

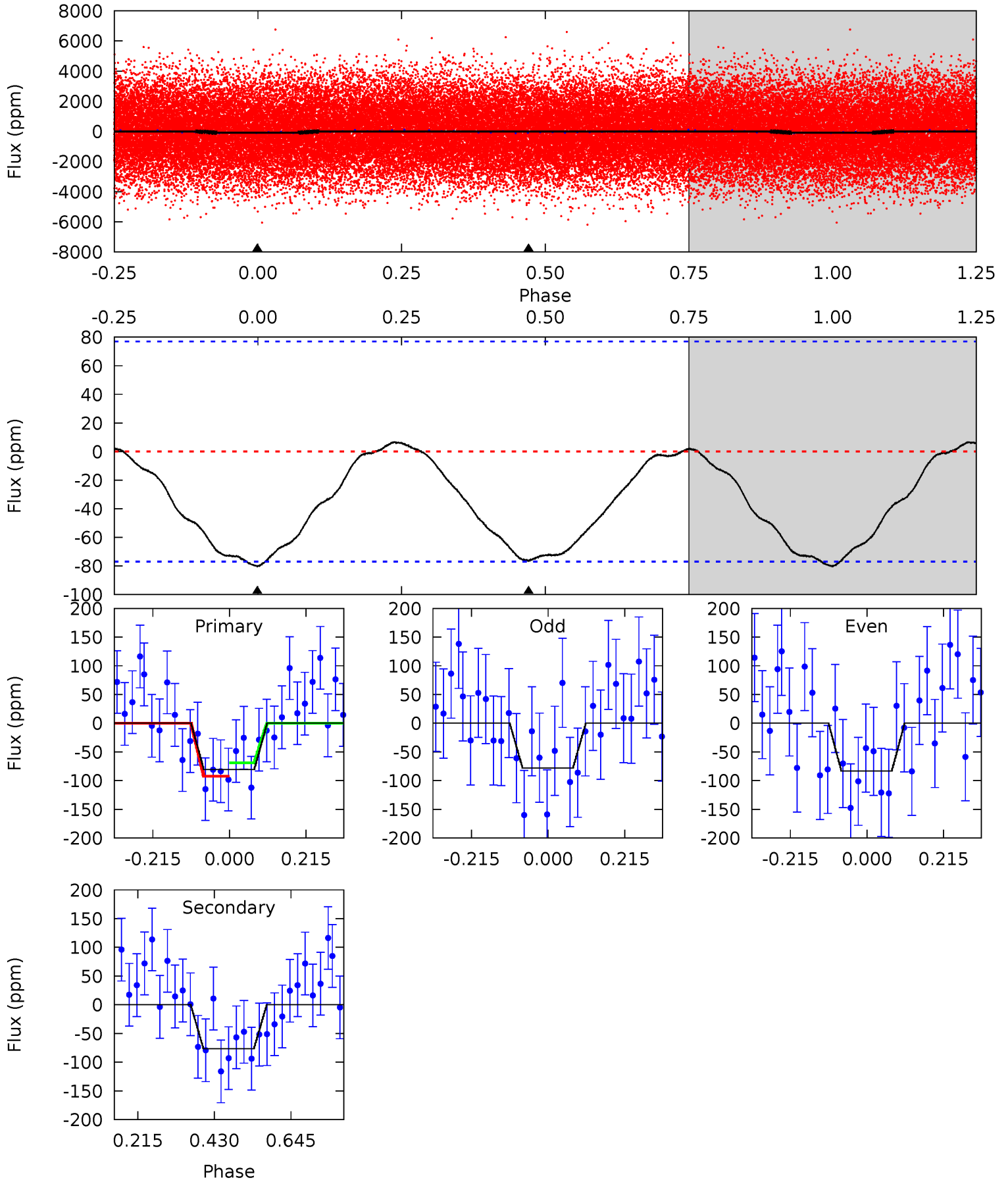
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	14.6	0	0	4.42	1.29	0.56	15.1	15.1	14.6	14.6	1.30	1.01	0.04	0.04



# Alt Model-Shift Uniqueness Test

005301101-02, P = 0.565722 Days, E = 131.046268 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
4.62	4.38	0	0	4.40	1.24	0.21	4.62	4.62	4.38	4.38	0.15	0.95	0.08	0.67



### Stellar Parameters For KIC 005301101

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8022^{+223}_{-335}$	$3.713^{+0.413}_{-0.110}$	$0.000^{+0.200}_{-0.400}$	$3.322^{+0.841}_{-1.562}$	$2.081^{+0.334}_{-0.543}$	$0.080^{+0.336}_{-0.032}$
	+3%/-4%	+11%/-3%	+inf%/-inf%	+25%/-47%	+16%/-26%	+420%/-39%
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 005301101-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-73 \pm 5$	$2.79^{+1.96}_{-1.48}$	$6635^{+550}_{-743}$	$7311^{+6037}_{-2229}$	$1.514^{+5.241}_{-0.980}$
Alt.	$-77 \pm 17$	$3.01^{+1.84}_{-1.63}$	$6670^{+508}_{-722}$	$7096^{+5425}_{-2127}$	$1.329^{+4.570}_{-0.811}$

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

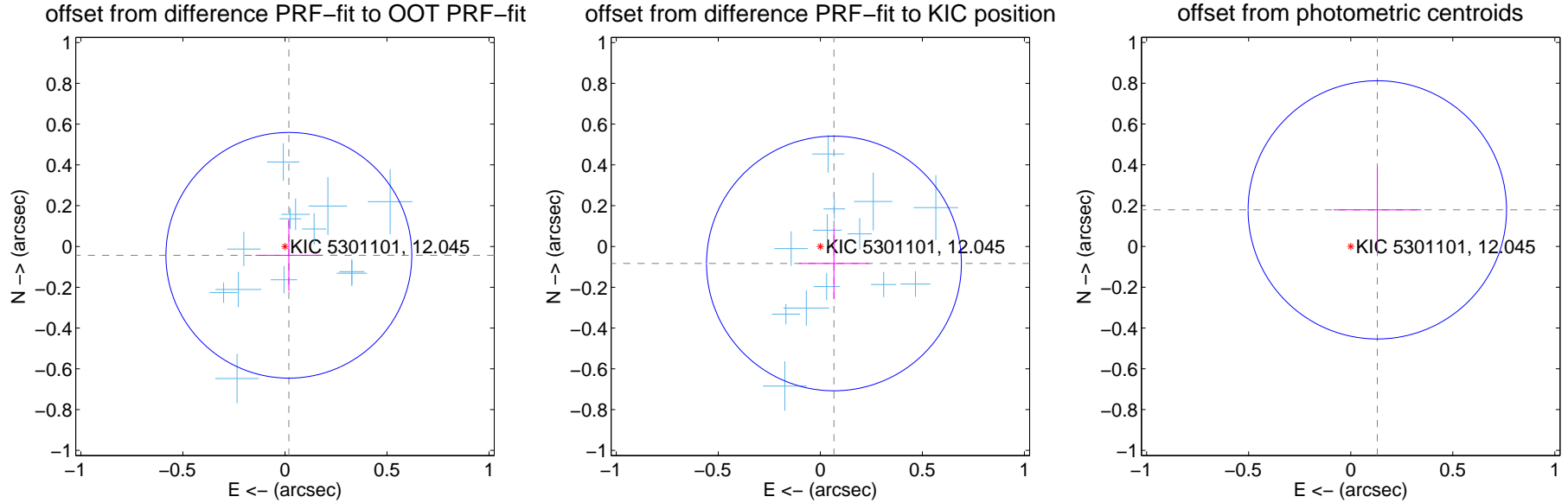
## DV Centroid Data

Supplemental centroid analysis for 005301101-02. Kepler magnitude: 12.04. Transit SNR 10.11

There are 15 quarters with good PRF difference image offsets

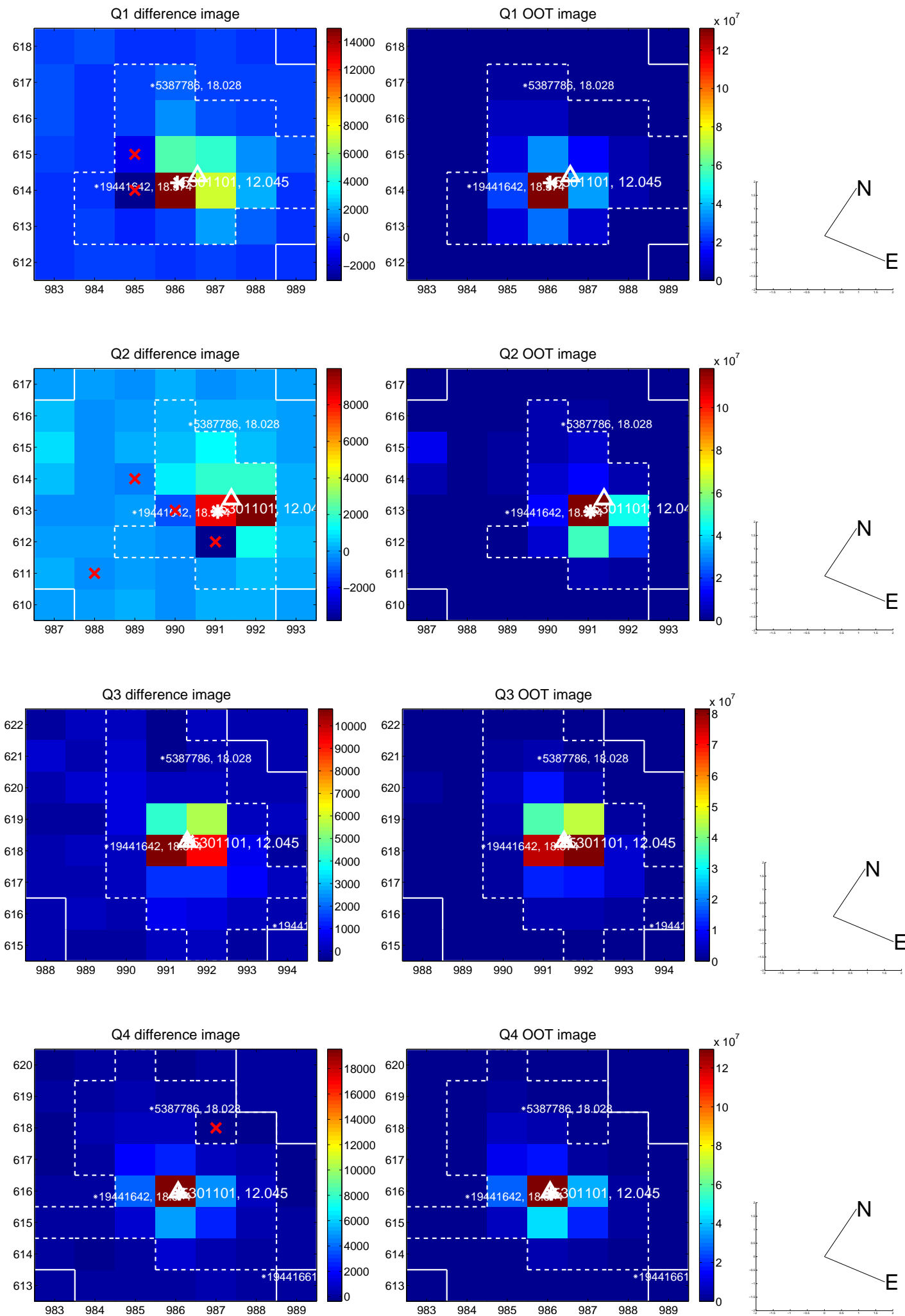
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.047 \pm 0.201$	0.24	$-0.019 \pm 0.164$	$-0.043 \pm 0.175$
PRF-fit source offset from KIC position	$0.107 \pm 0.208$	0.51	$-0.067 \pm 0.171$	$-0.083 \pm 0.175$
photometric centroid source offset	$0.22 \pm 0.21$	1.05	$-0.13 \pm 0.22$	$0.18 \pm 0.21$

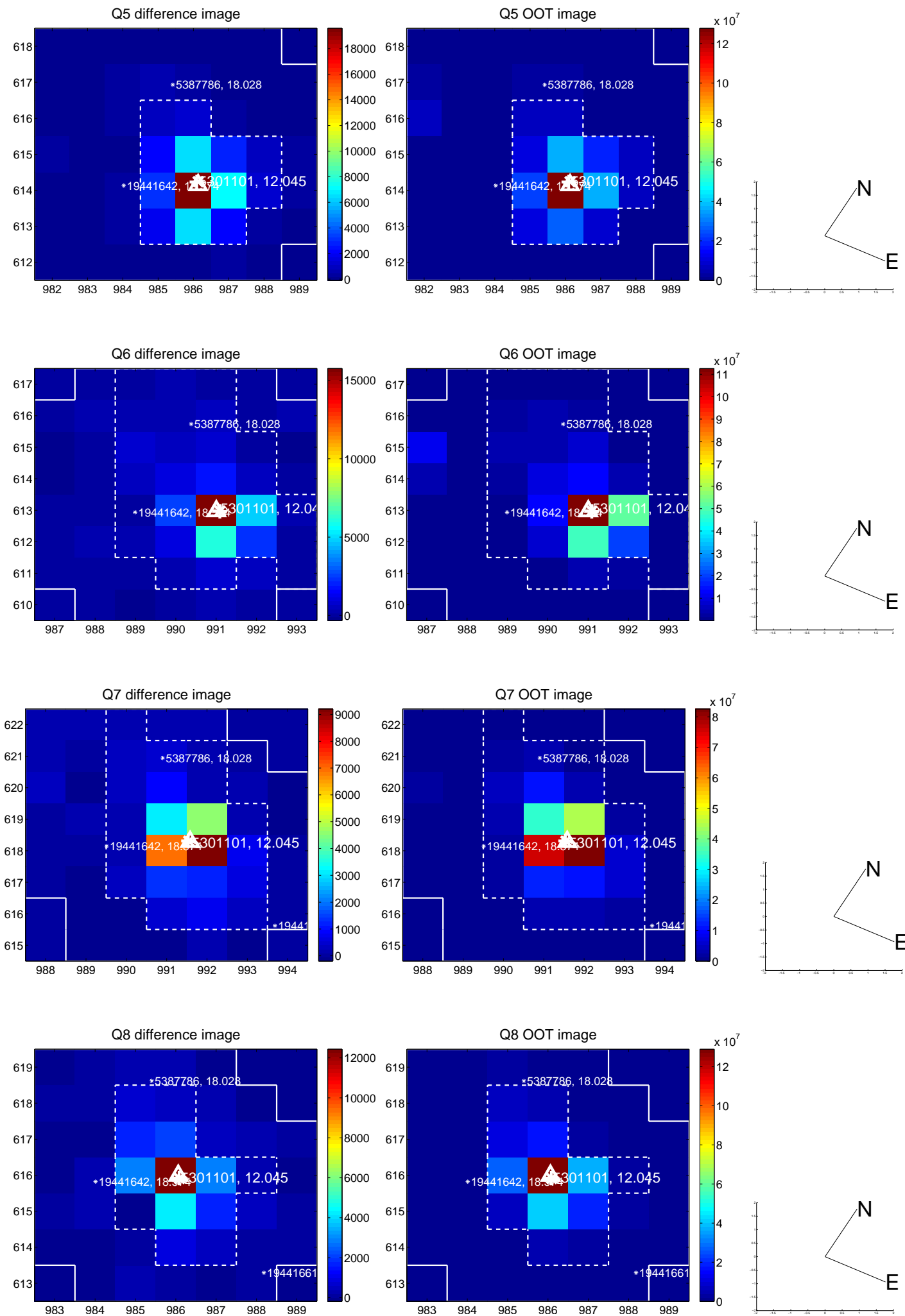


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

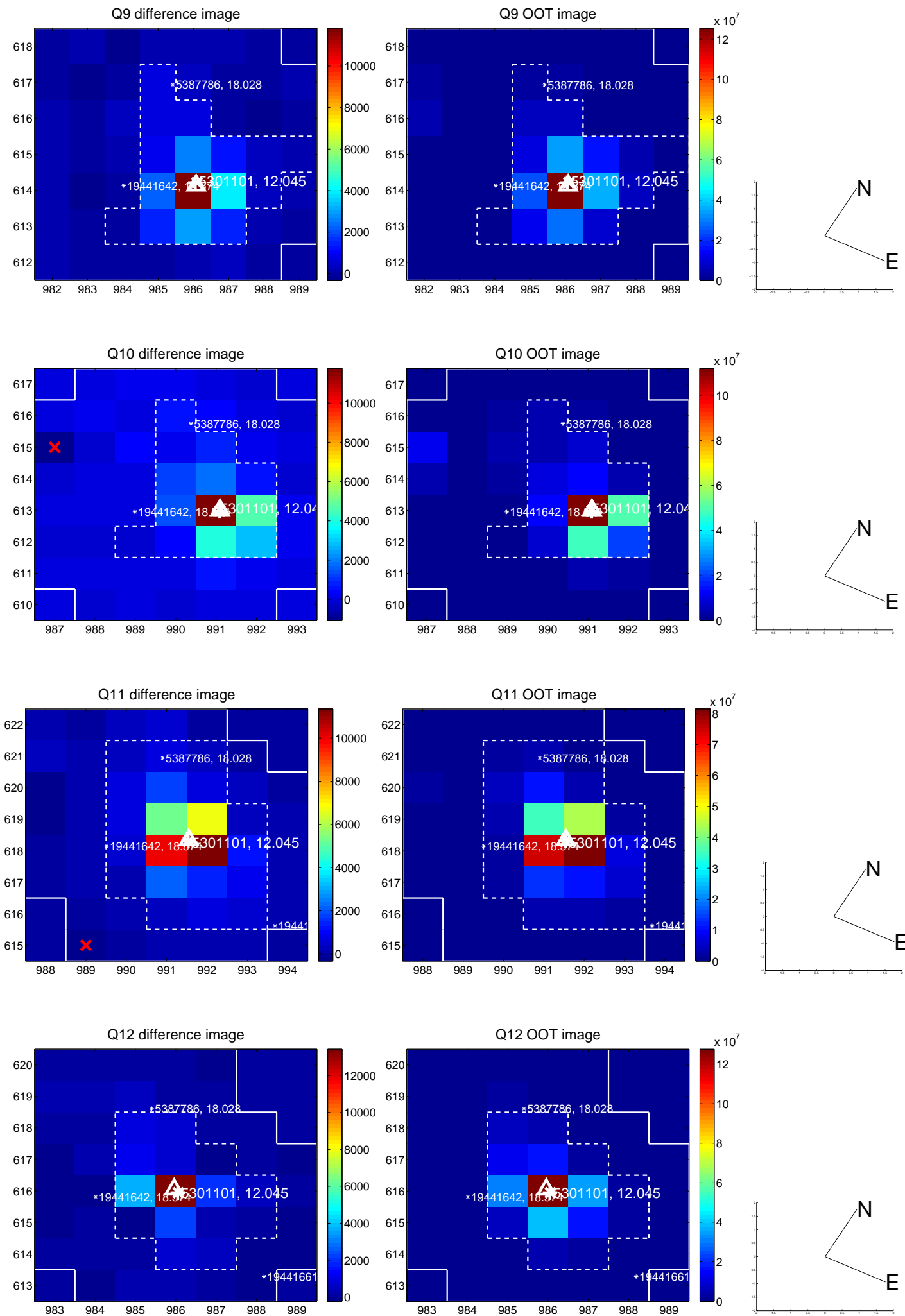
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



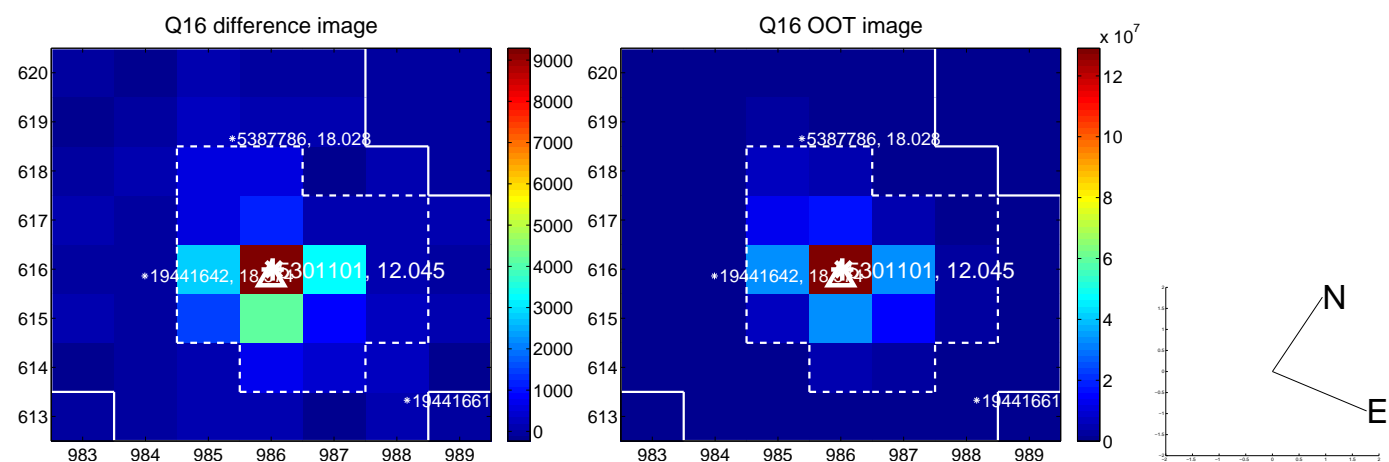
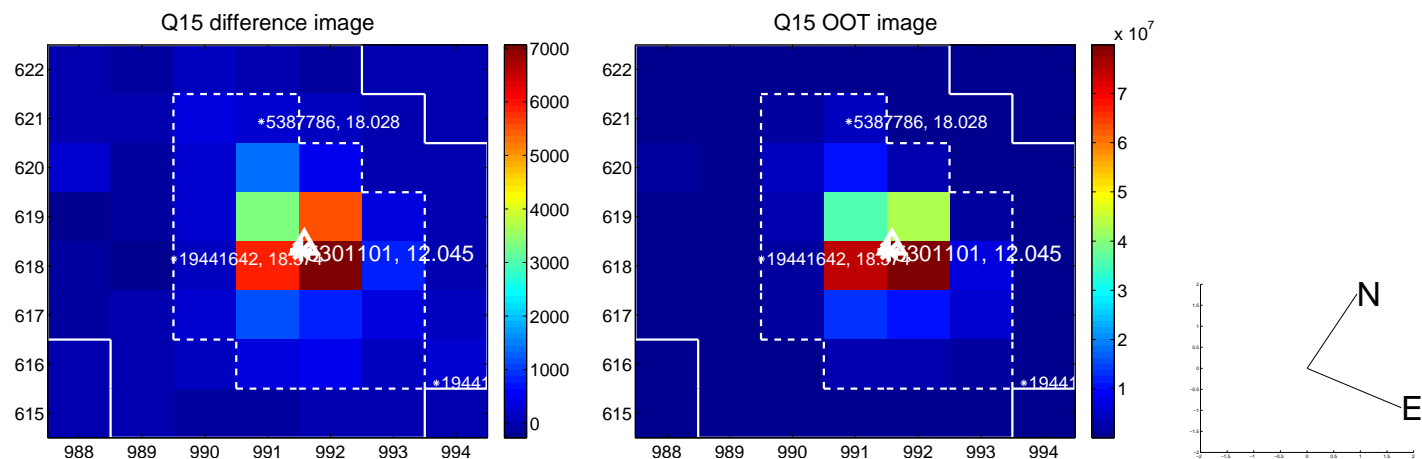
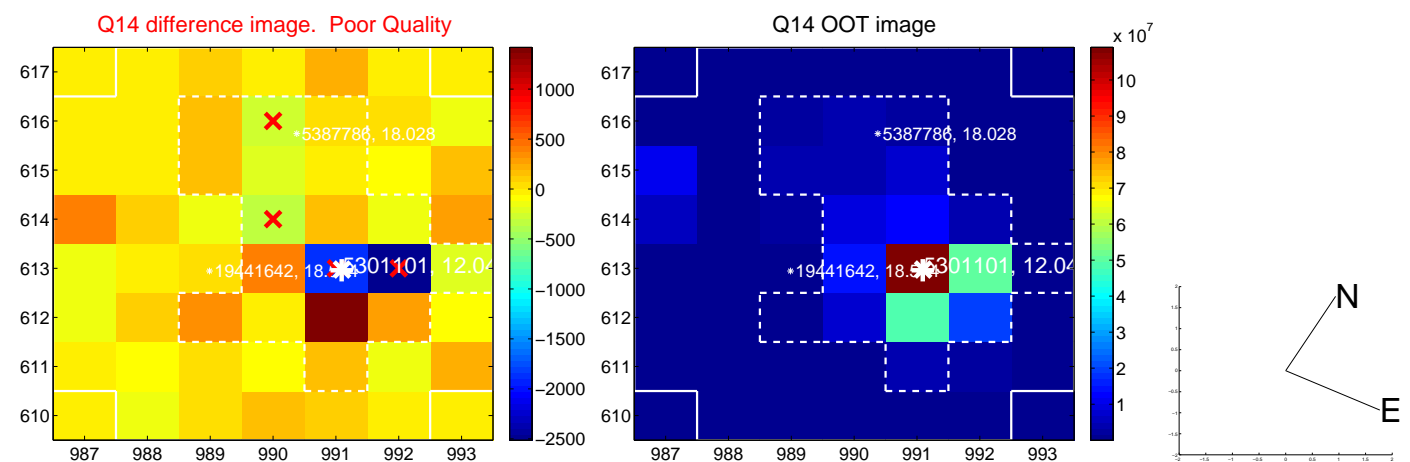
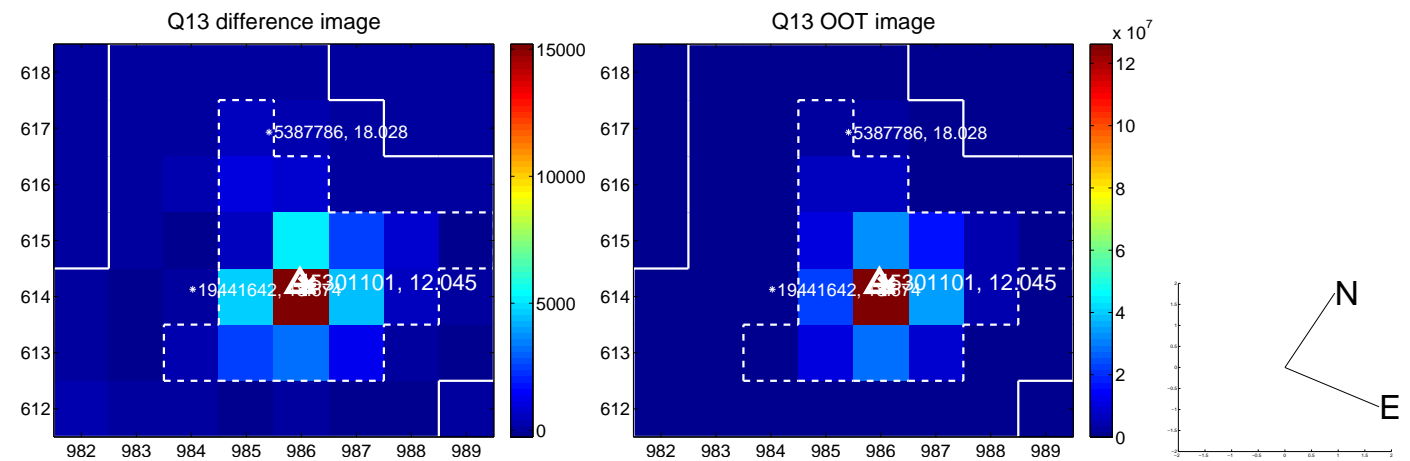
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



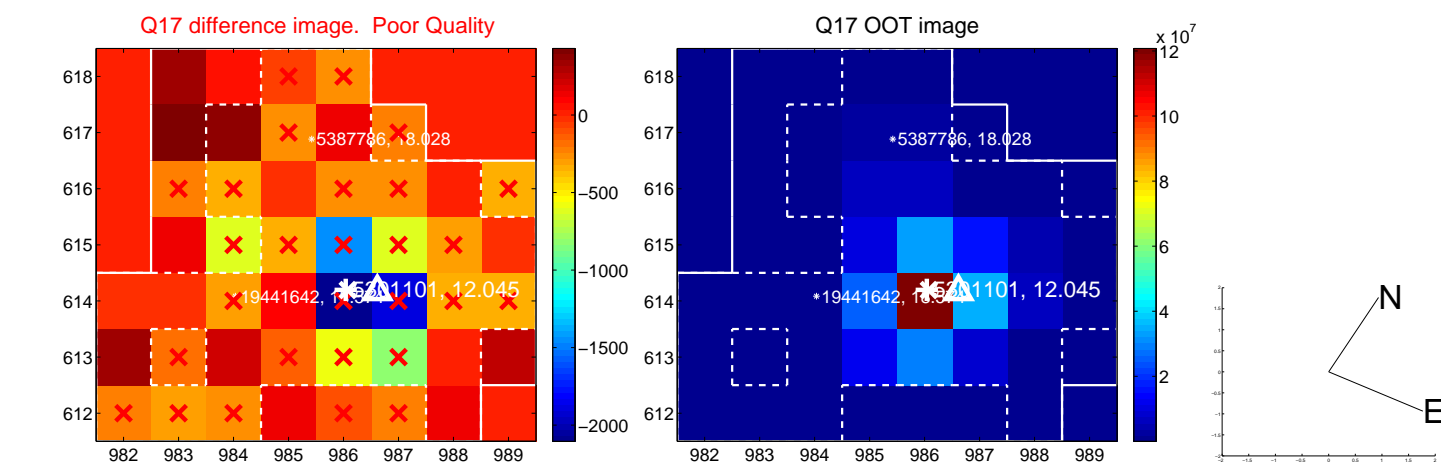
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



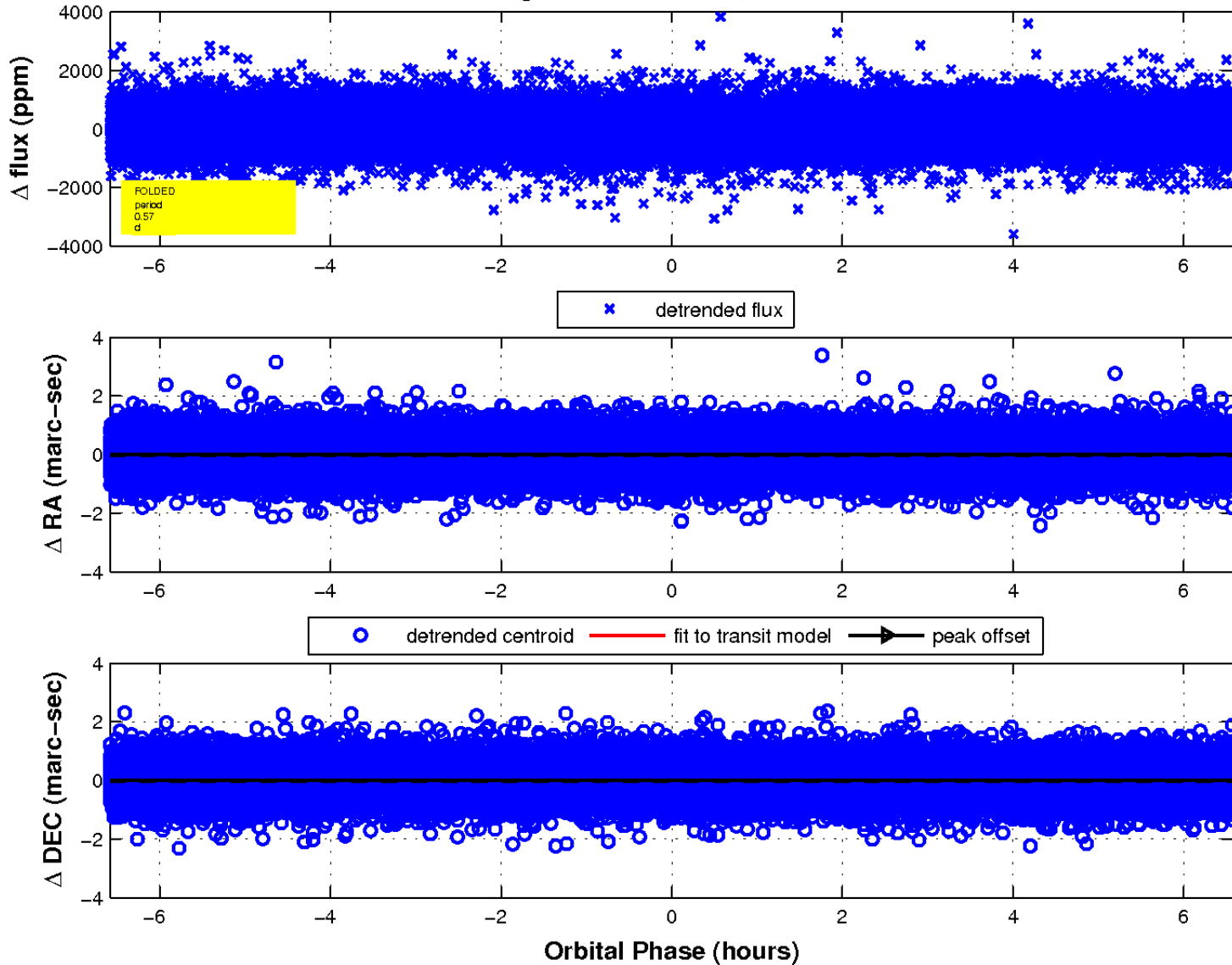
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

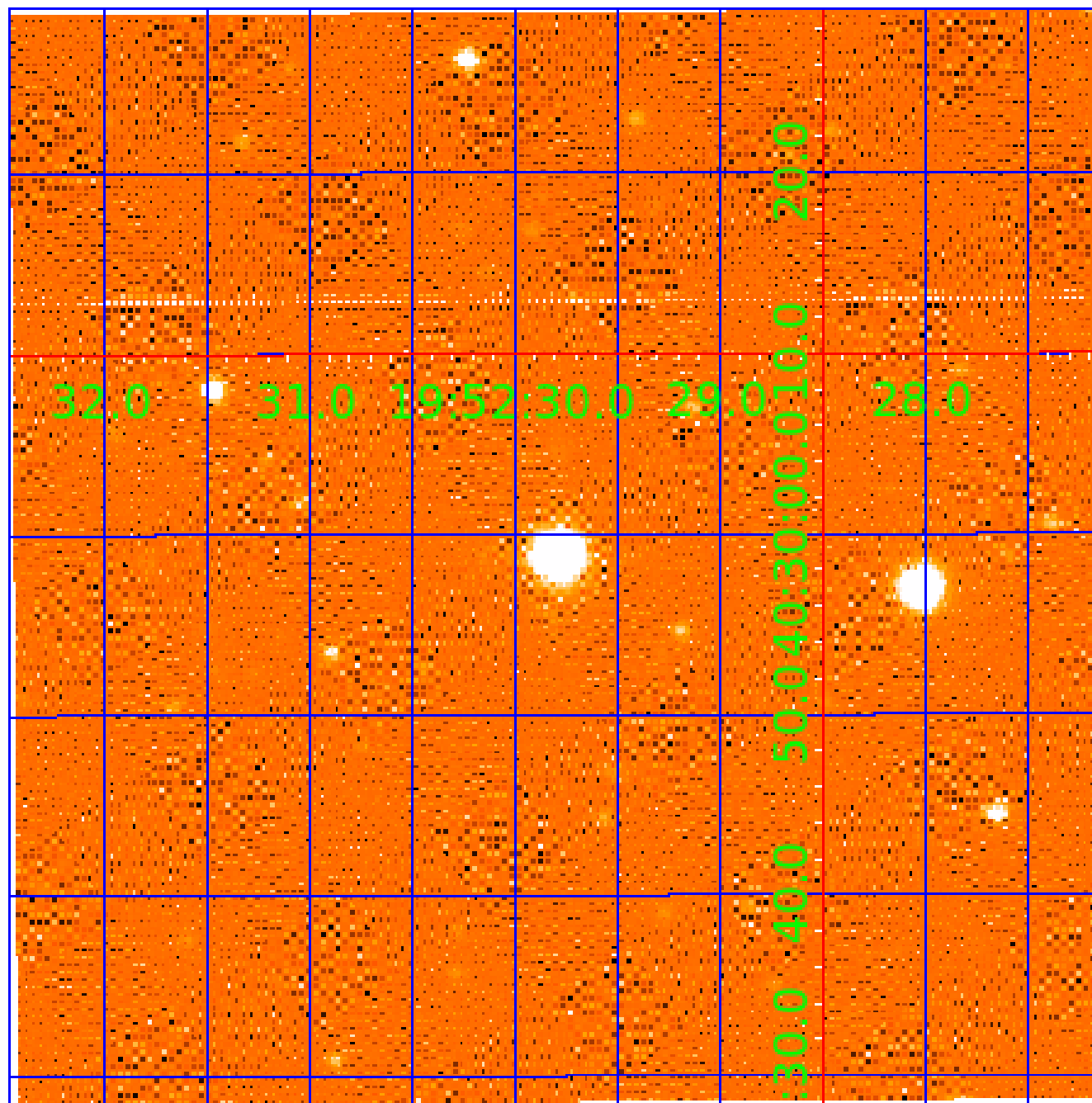


fluxWeightedCentroids, Planet 2 of 3



# UKIRT Image

Declination



# KIC 005301101

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005301101-01	OBS	No	2.910645	132.462461	49.2	6.581	9.5	8.4	3.32	8022	2.62	15787.22
005301101-02	OBS	No	0.565713	131.611469	60.4	2.194	8.1	10.1	3.32	8022	3.01	140226.49
005301101-03	OBS	No	0.565703	131.906177	67.9	2.351	8.9	12.1	3.32	8022	2.78	140229.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005301101-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005301101-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005301101-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD

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

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

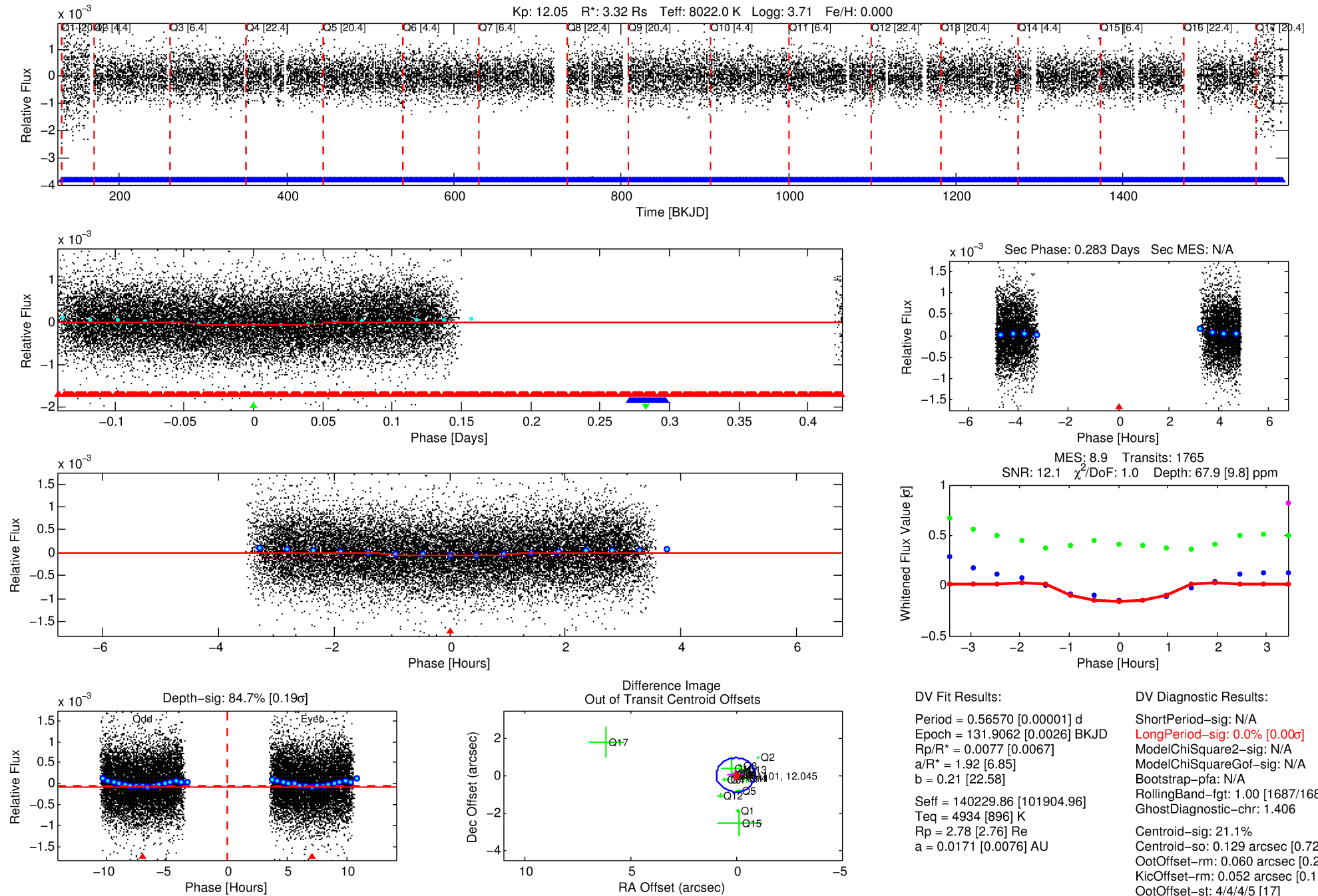
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005301101-03

No Significant Match Found

# DV One-Page Summary

KIC: 5301101 Candidate: 3 of 3 Period: 0.566 d



## DV Fit Results:

Period = 0.56570 [0.00001] d  
Epoch = 131.9062 [0.0026] BKJD  
Rp/R\* = 0.0077 [0.0067]  
a/R\* = 1.92 [6.85]  
b = 0.21 [22.58]  
Seff = 140229.86 [101904.96]  
Teff = 4934 [896] K  
Rp = 2.78 [2.76] Re  
a = 0.0171 [0.0076] AU

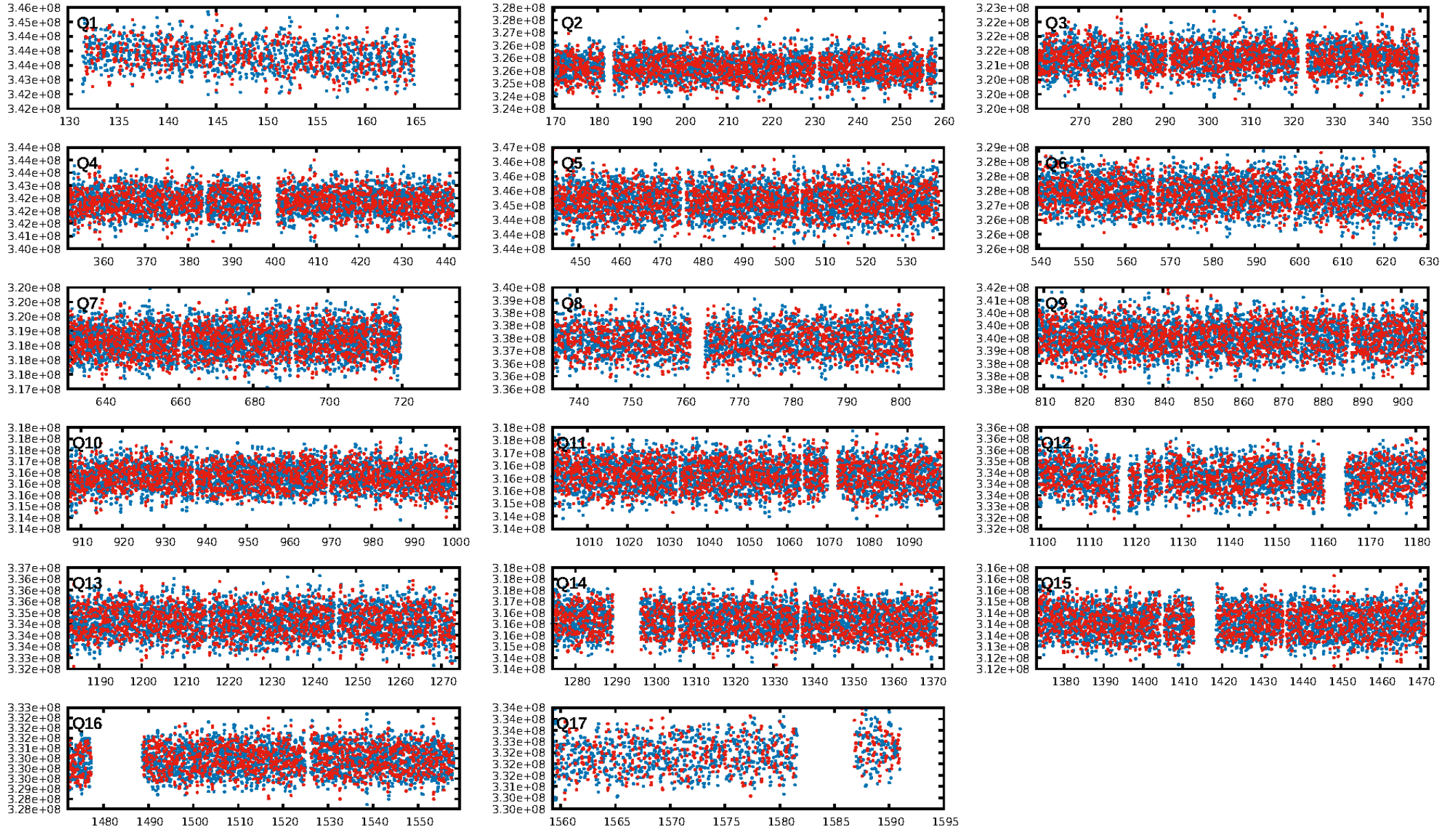
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1687/1687]  
GhostDiagnostic-chr: 1.406  
Centroid-sig: 21.1%  
Centroid-so: 0.129 arcsec [0.72 $\sigma$ ]  
OotOffset-rm: 0.060 arcsec [0.20 $\sigma$ ]  
KicOffset-rm: 0.052 arcsec [0.17 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.82 [14/17]  
DiffImageOverlap-fno: 0.00 [0/17]

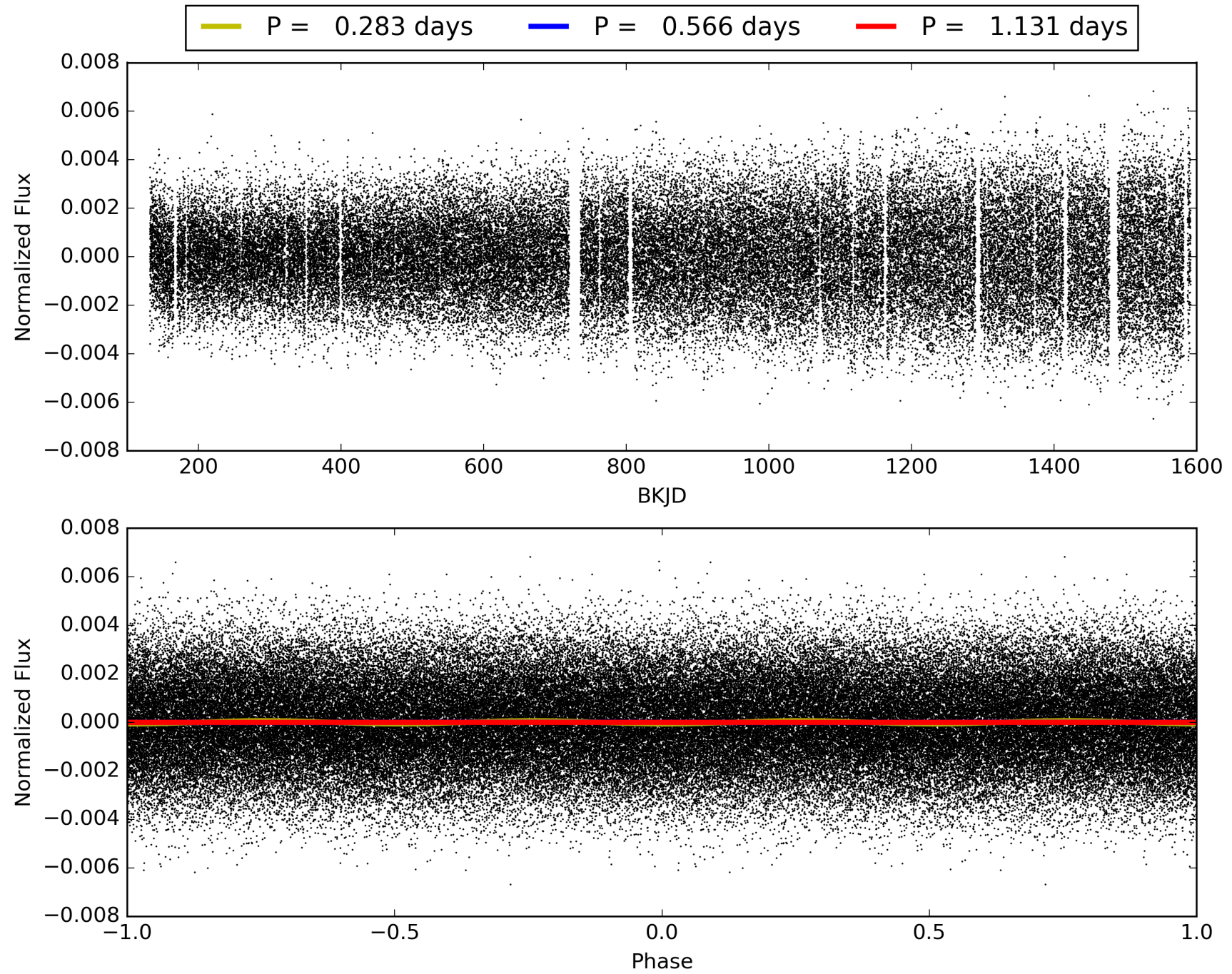
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:37:09 Z

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

# TCE 005301101-03, PDC Light Curves

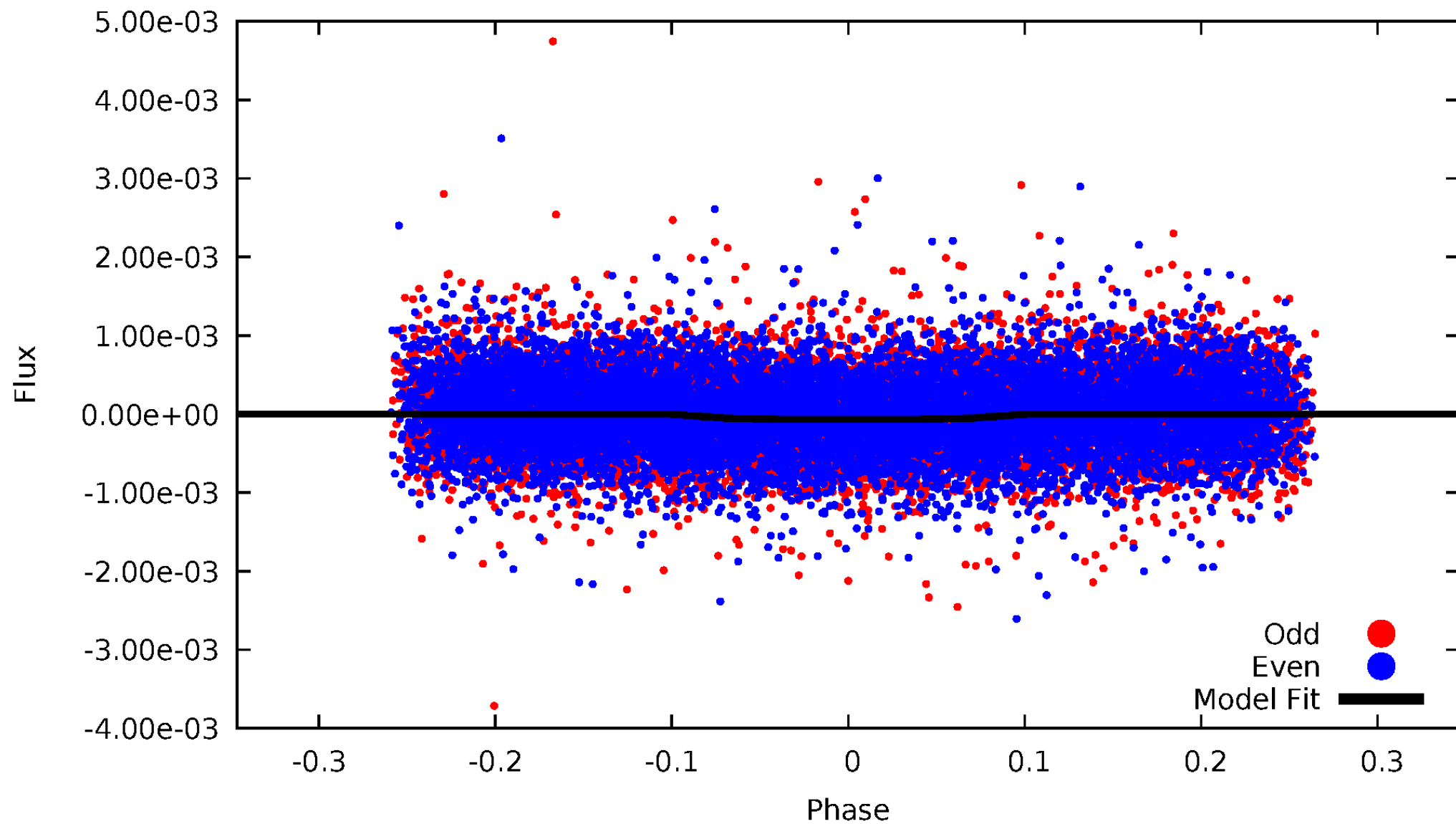


TCE 005301101-03



# DV Odd/Even

TCE 005301101-03



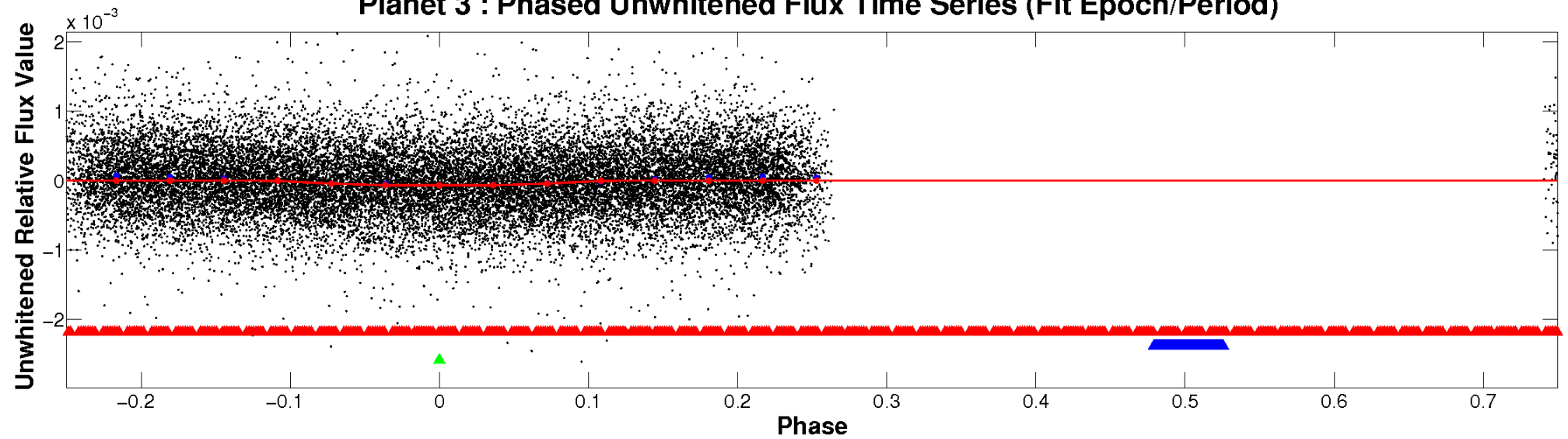


ALT Odd/Even

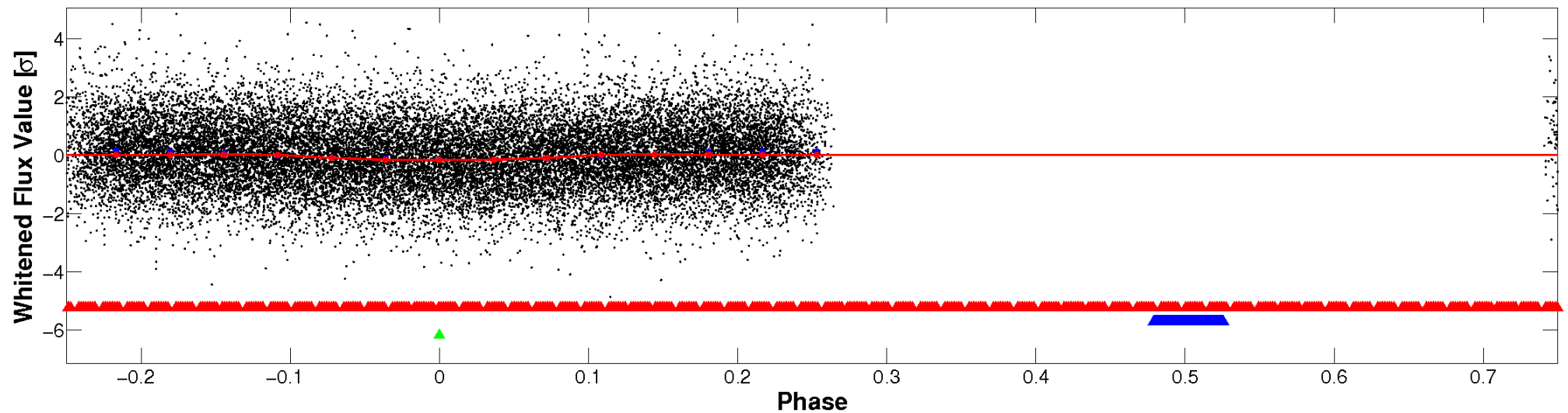
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

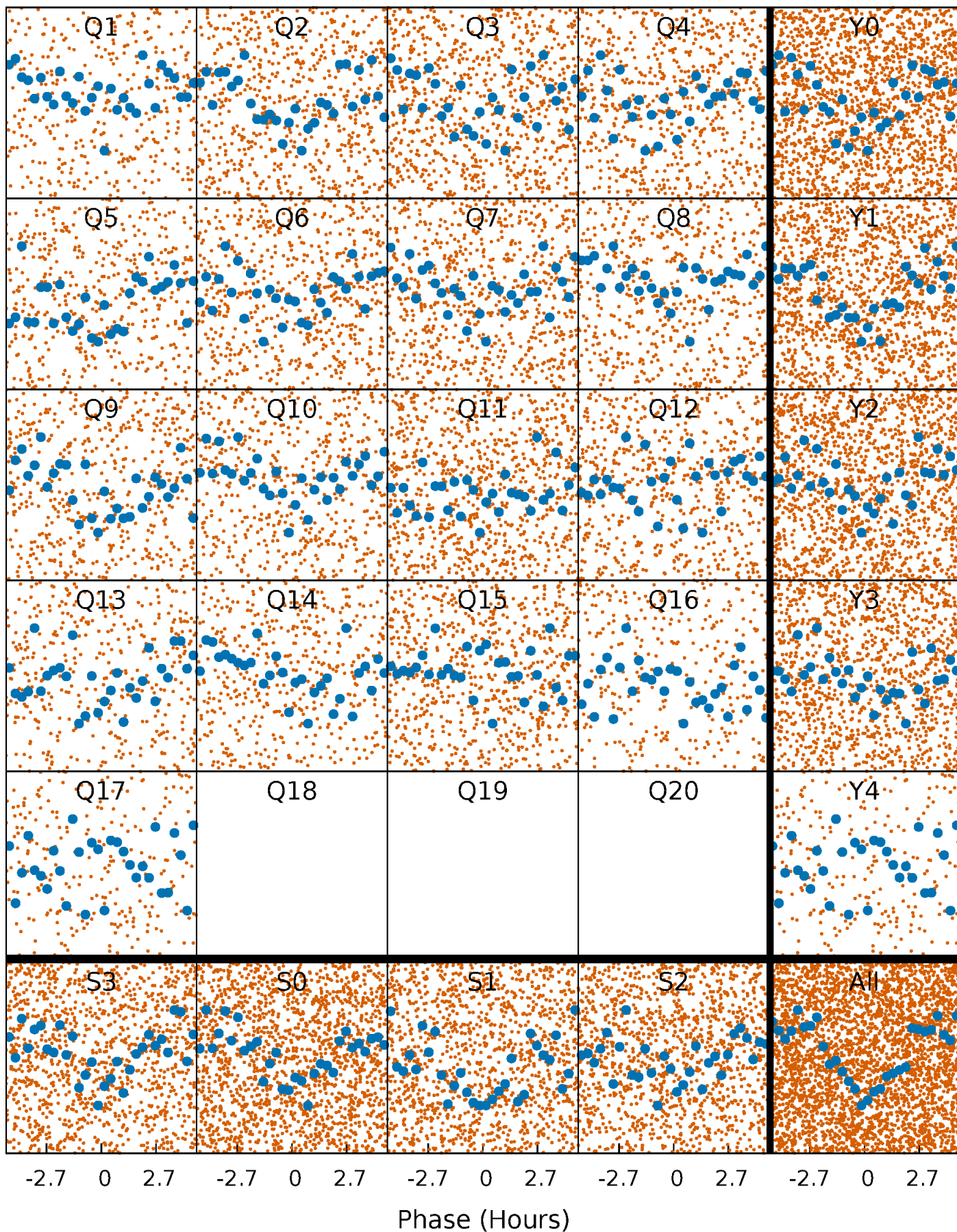


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



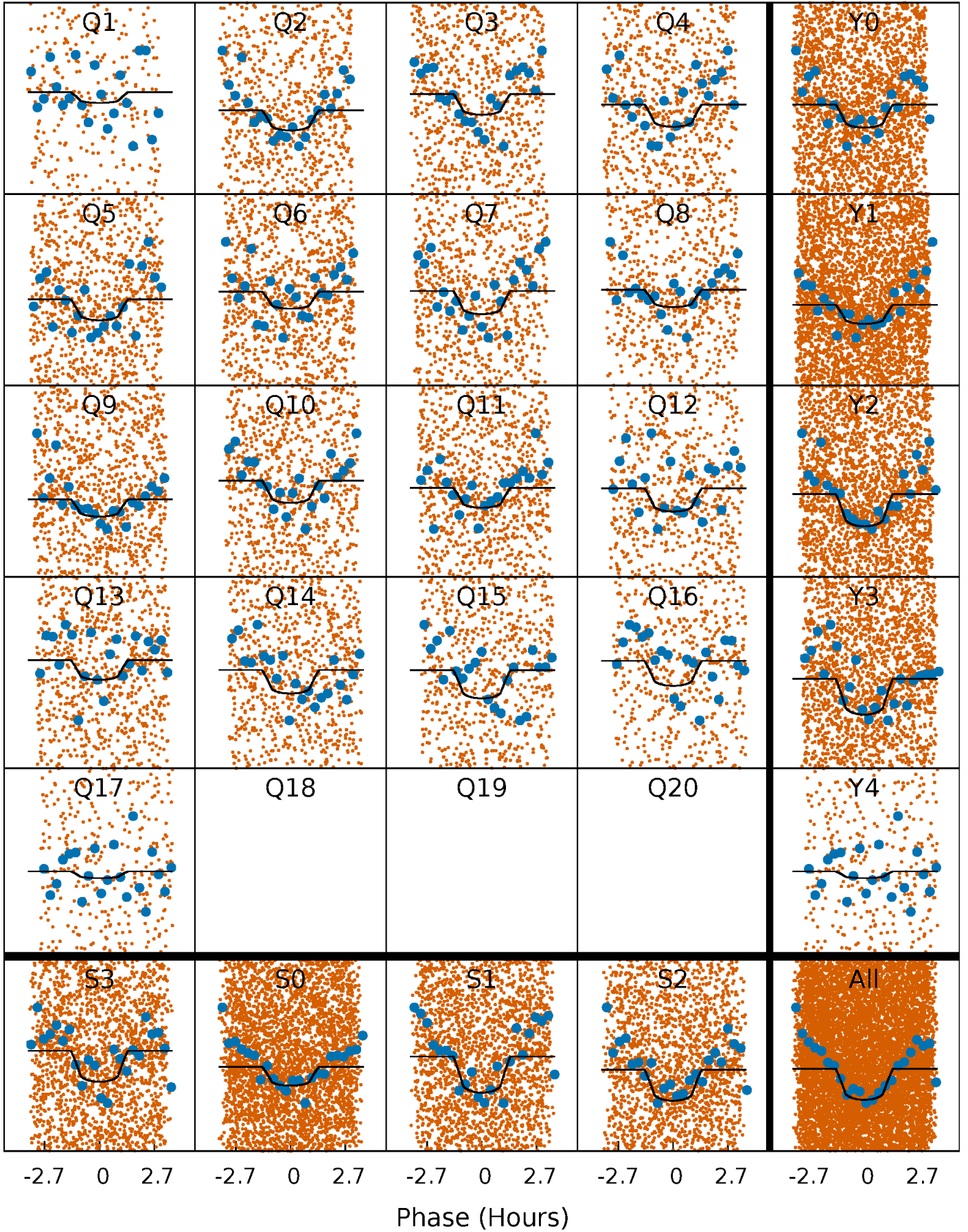
# PDC Quarter-Phased Transit Curves

TCE 005301101-03 P= 0.565703 Days  $T_0=131.906177$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 005301101-03     $P = 0.565703$  Days     $T_0 = 131.906177$  (BKJD)

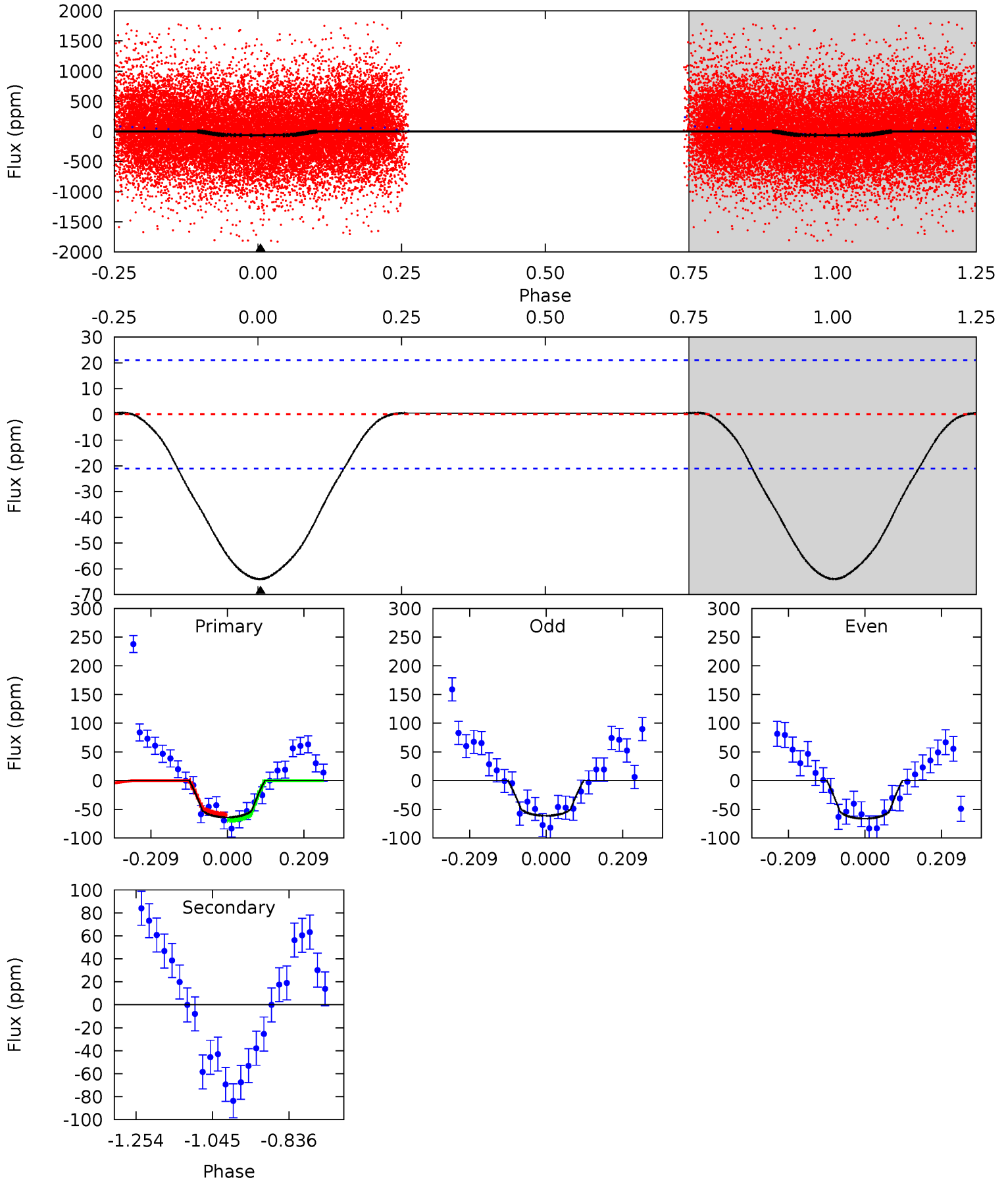


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

005301101-03, P = 0.565703 Days, E = 131.340474 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
13.4	0	0	0	4.41	1.26	0.14	13.4	13.4	0	0	0.53	1.04	0.01	0.90



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 005301101

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8022^{+223}_{-335}$	$3.713^{+0.413}_{-0.110}$	$0.000^{+0.200}_{-0.400}$	$3.322^{+0.841}_{-1.562}$	$2.081^{+0.334}_{-0.543}$	$0.080^{+0.336}_{-0.032}$
	+3%/-4%	+11%/-3%	+inf%/-inf%	+25%/-47%	+16%/-26%	+420%/-39%
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 005301101-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 5$	$2.78^{+2.49}_{-1.76}$	$6649^{+550}_{-849}$	$-5302^{+1132}_{-770}$	$0.001^{+0.160}_{-0.154}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

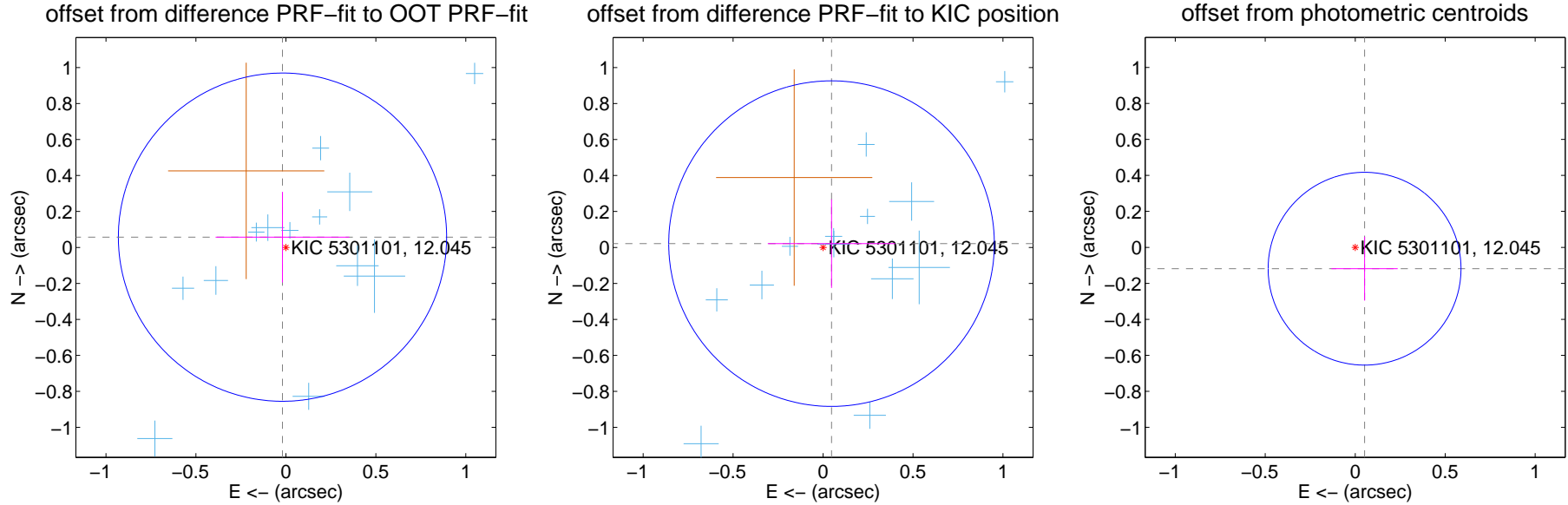
## DV Centroid Data

Supplemental centroid analysis for 005301101-03. Kepler magnitude: 12.04. Transit SNR 12.12

There are 14 quarters with good PRF difference image offsets

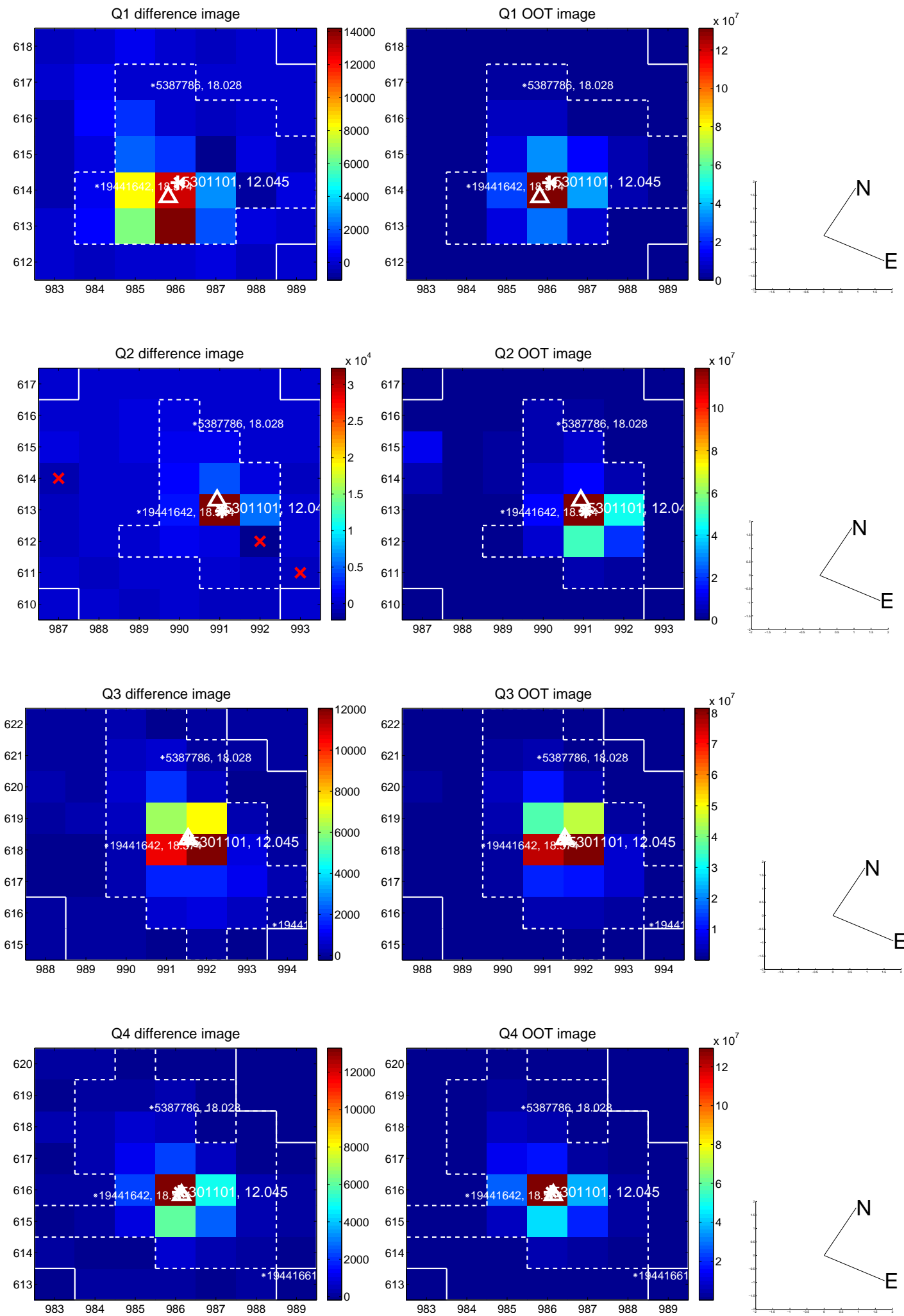
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.060 \pm 0.304$	0.20	$0.019 \pm 0.372$	$0.057 \pm 0.252$
PRF-fit source offset from KIC position	$0.052 \pm 0.302$	0.17	$-0.047 \pm 0.354$	$0.021 \pm 0.246$
photometric centroid source offset	$0.13 \pm 0.18$	0.72	$-0.05 \pm 0.18$	$-0.12 \pm 0.18$

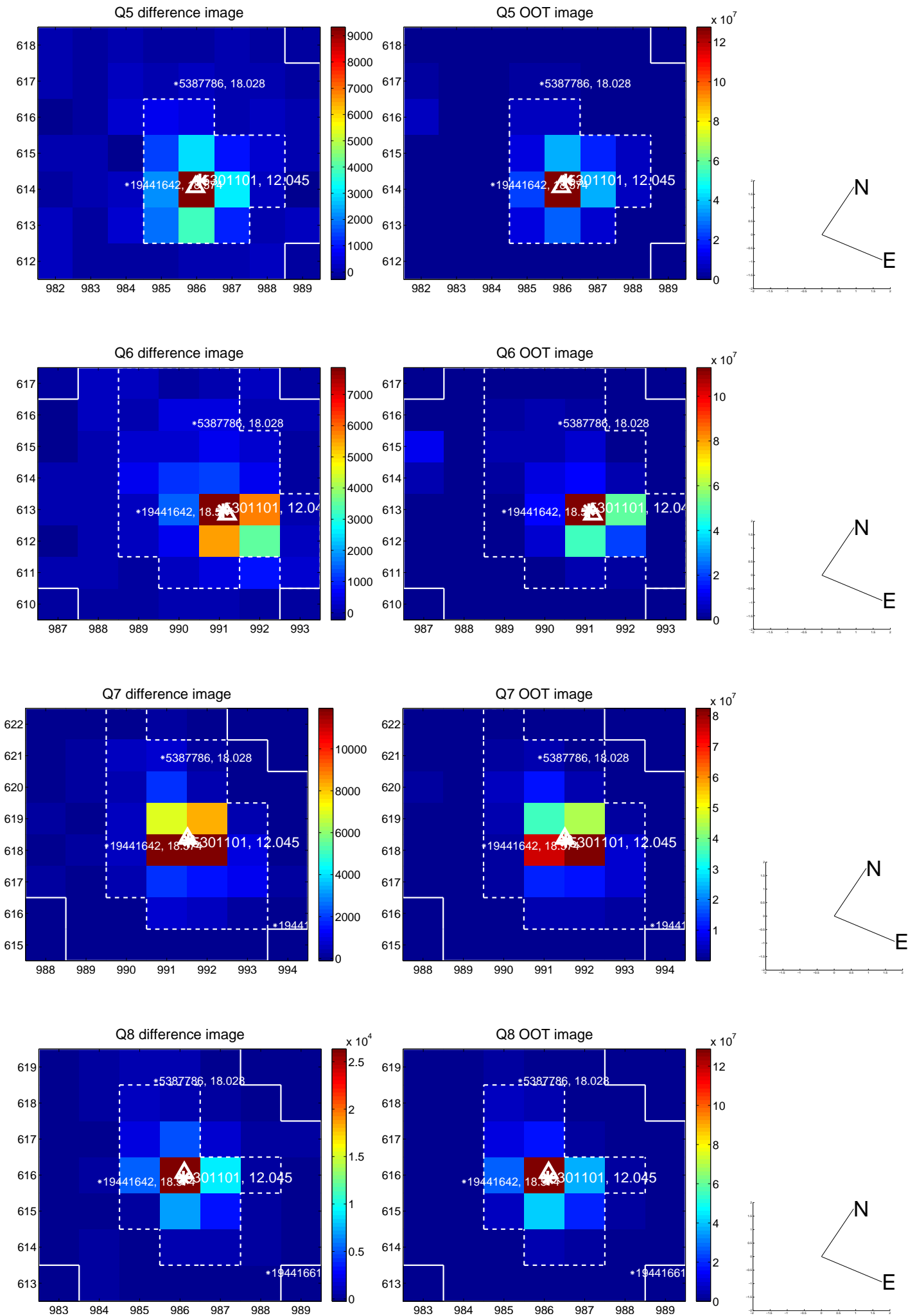


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

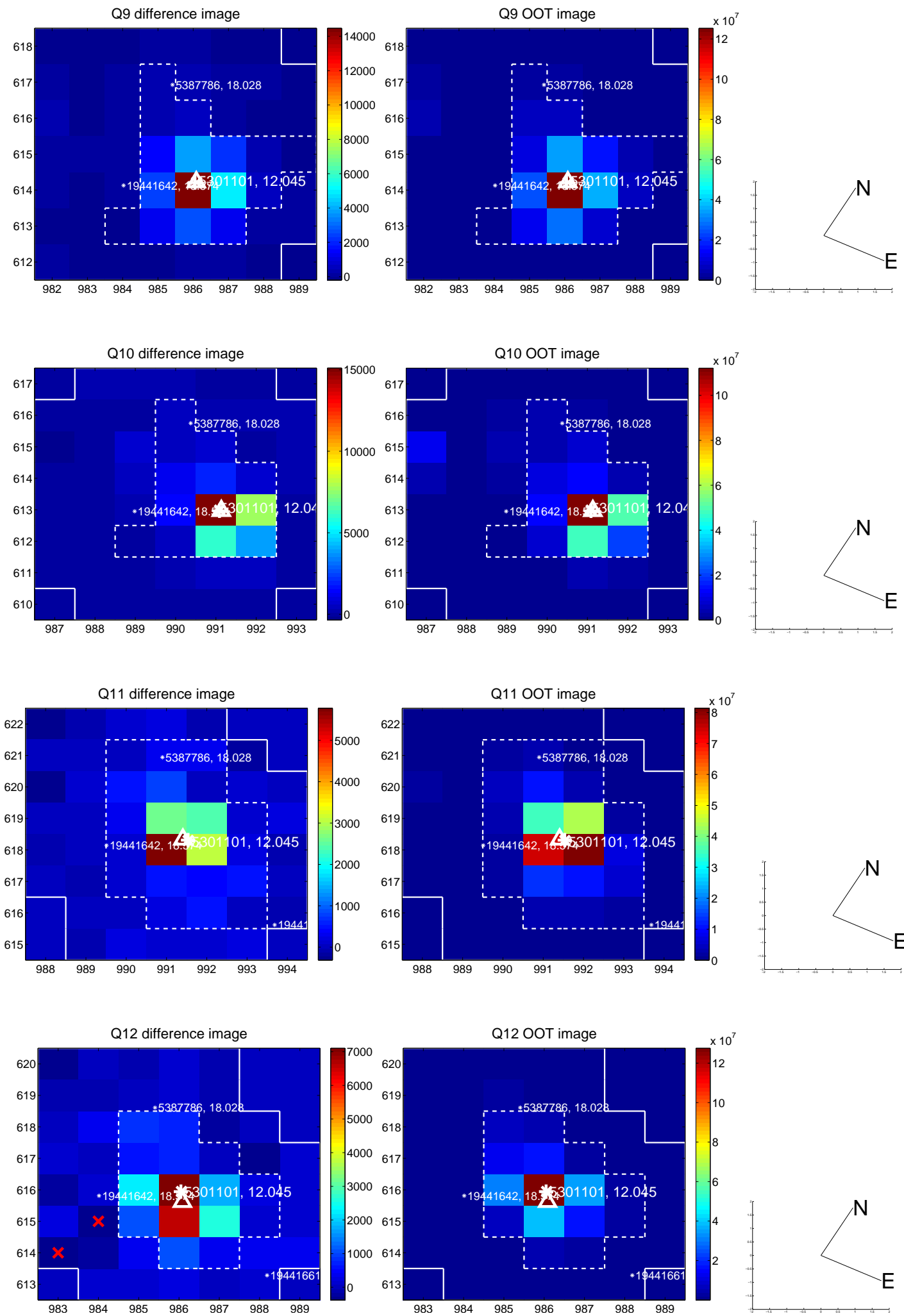
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



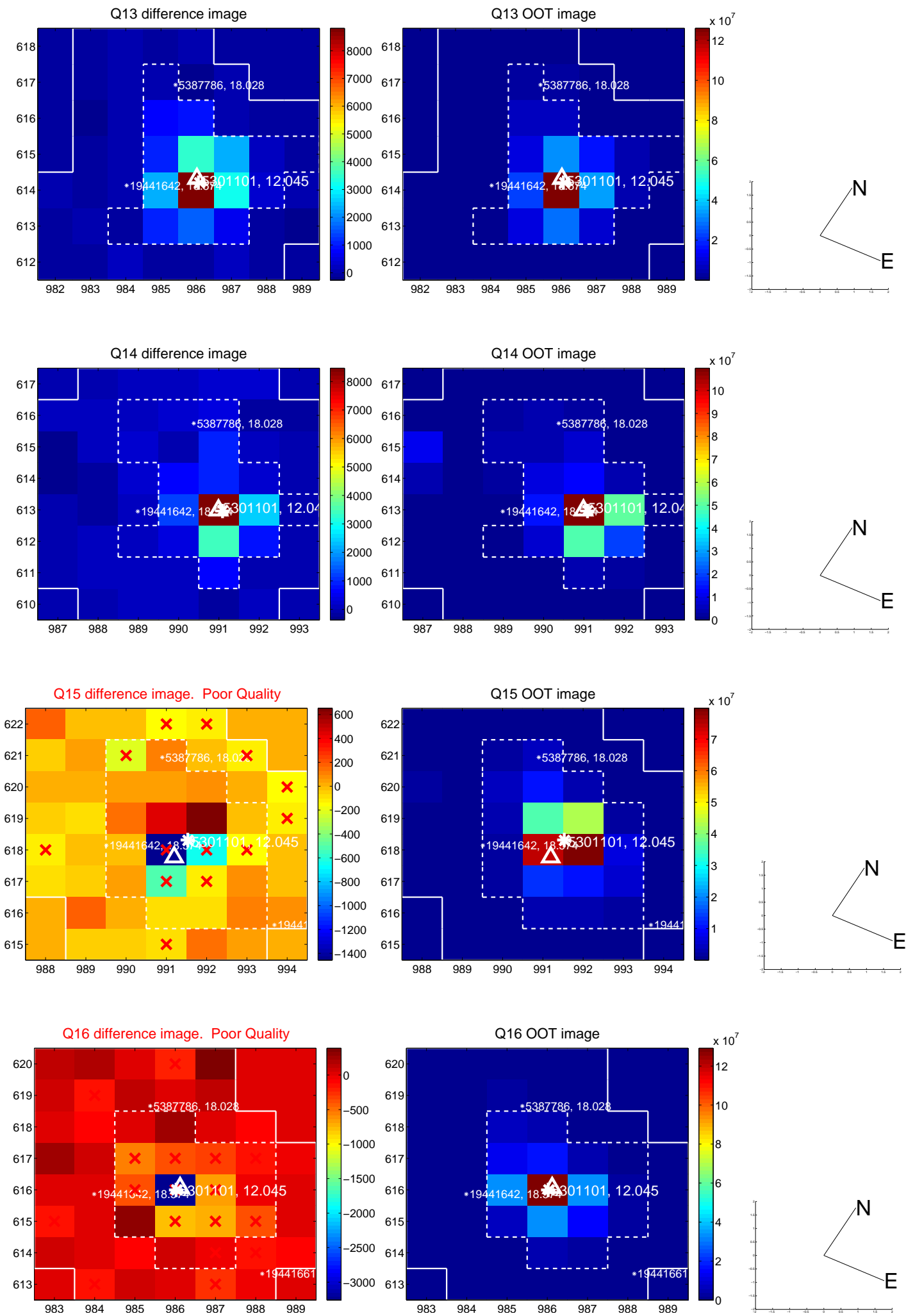
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



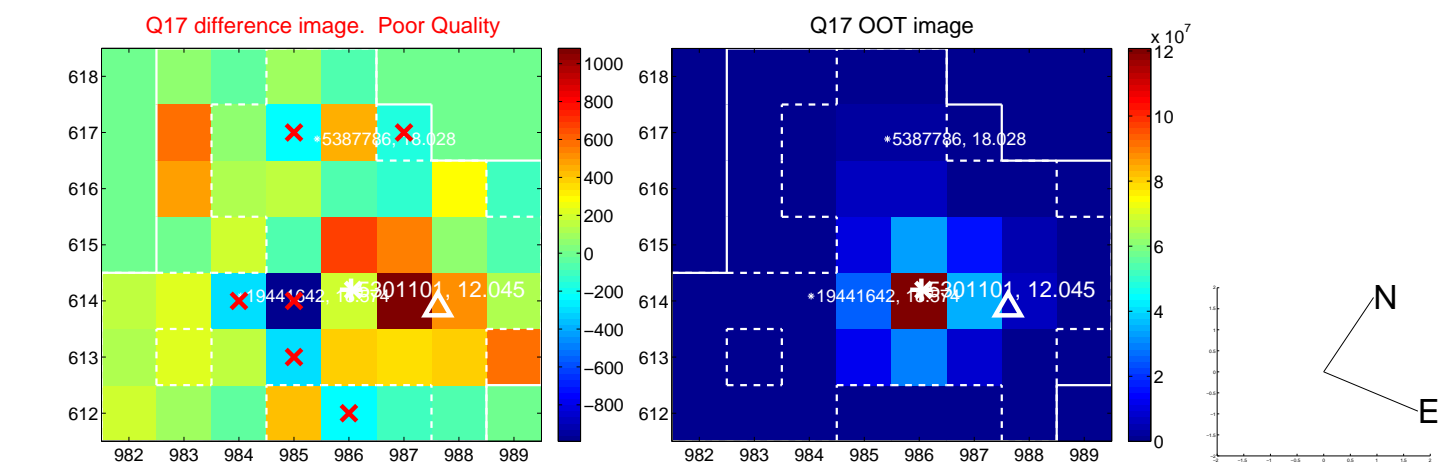
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



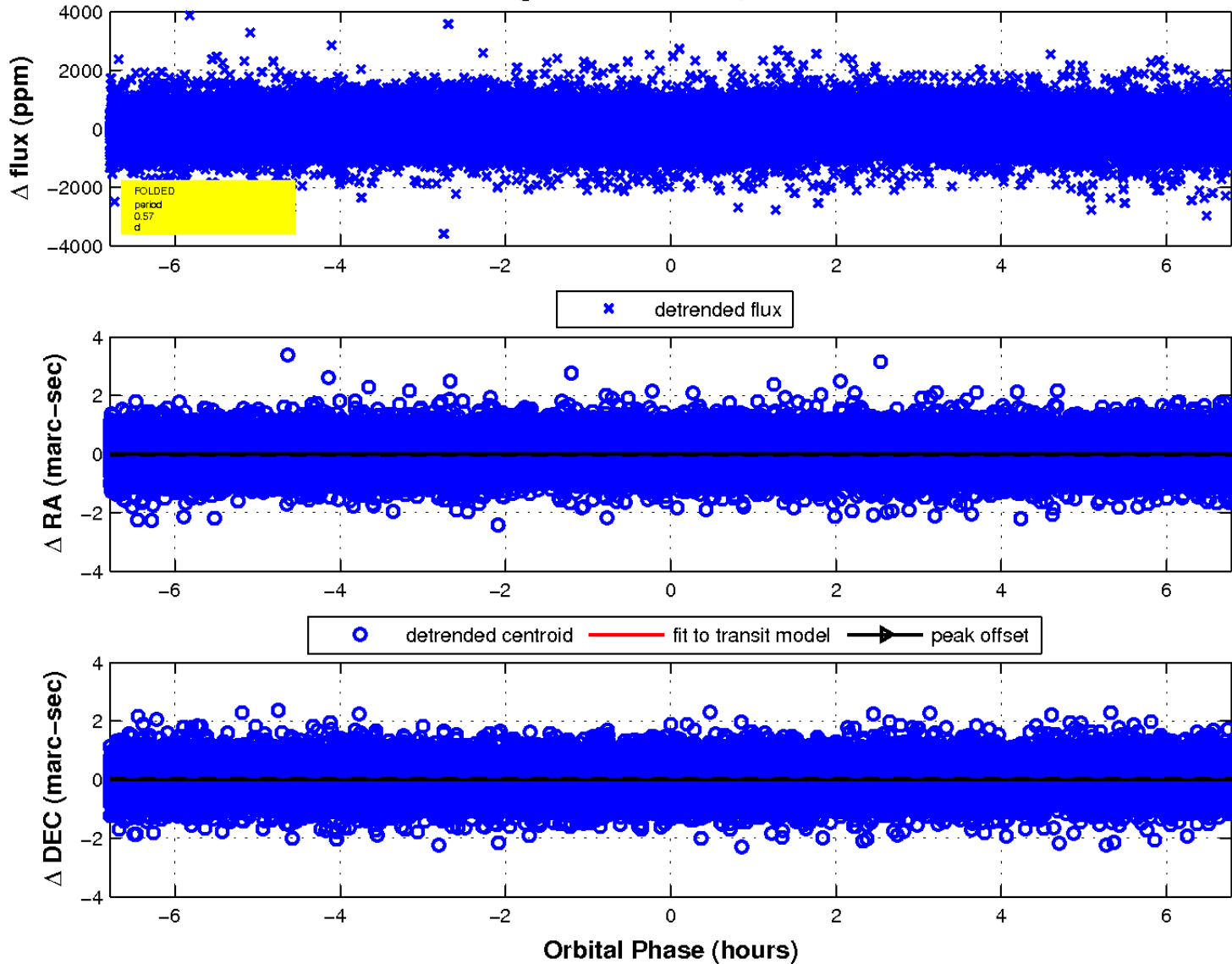
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



# UKIRT Image

Declination

