

# KIC 009242127

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009242127-01	OBS	No	0.962437	132.075455	215.7	2.240	11.1	11.4	3.09	7502	5.34	49543.30
009242127-02	OBS	No	0.530233	131.513870	213.6	1.309	13.9	12.4	3.09	7502	4.85	109696.44
009242127-03	OBS	No	0.604375	131.667444	163.2	2.000	12.1	-1.0	3.09	7502	3.96	92130.99

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009242127-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009242127-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009242127-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_NOFITS

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

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

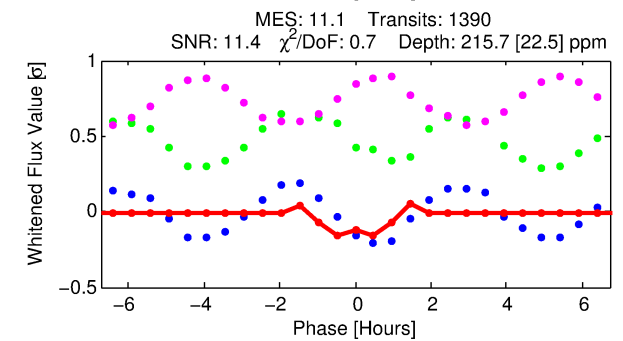
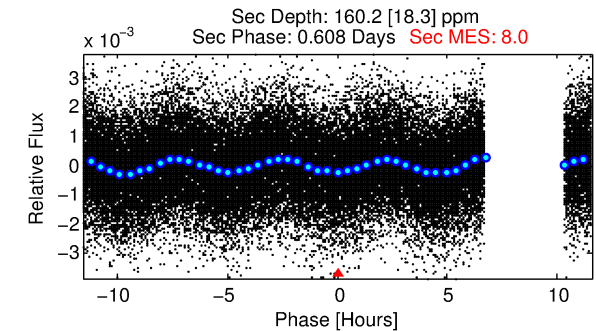
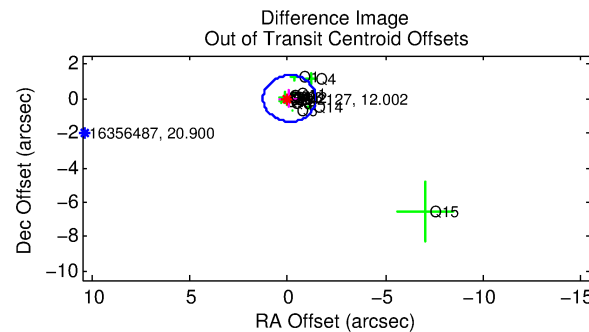
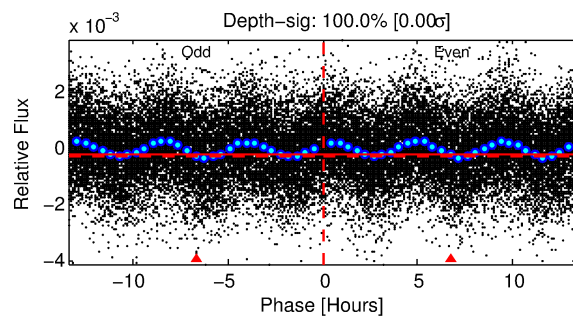
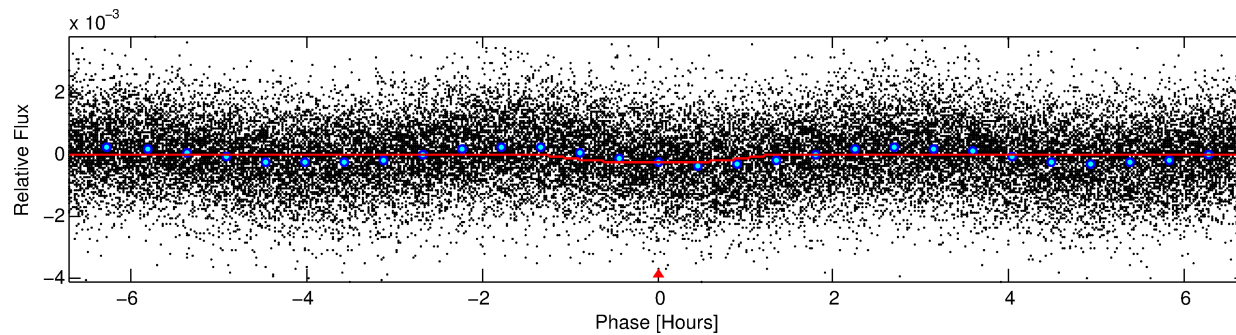
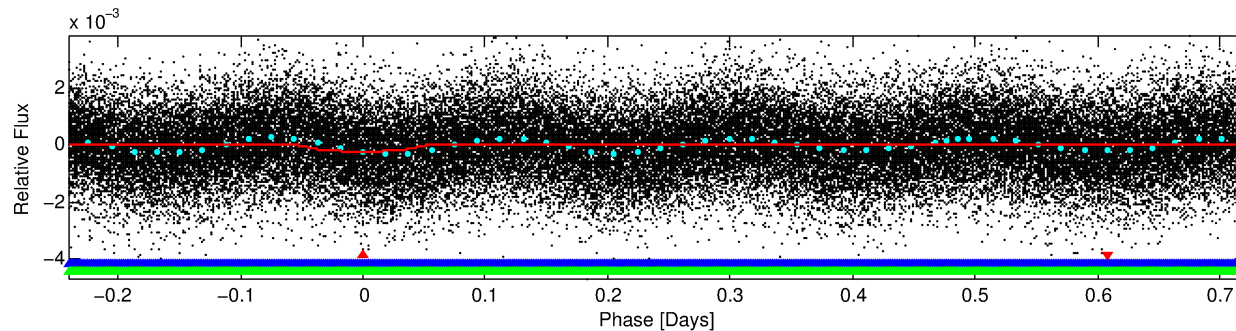
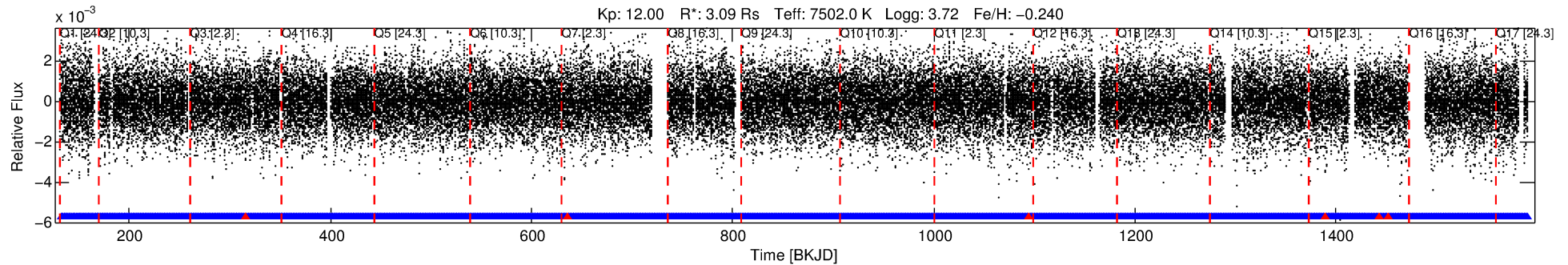
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 009242127-01

No Significant Match Found

# DV One-Page Summary

KIC: 9242127 Candidate: 1 of 3 Period: 0.962 d



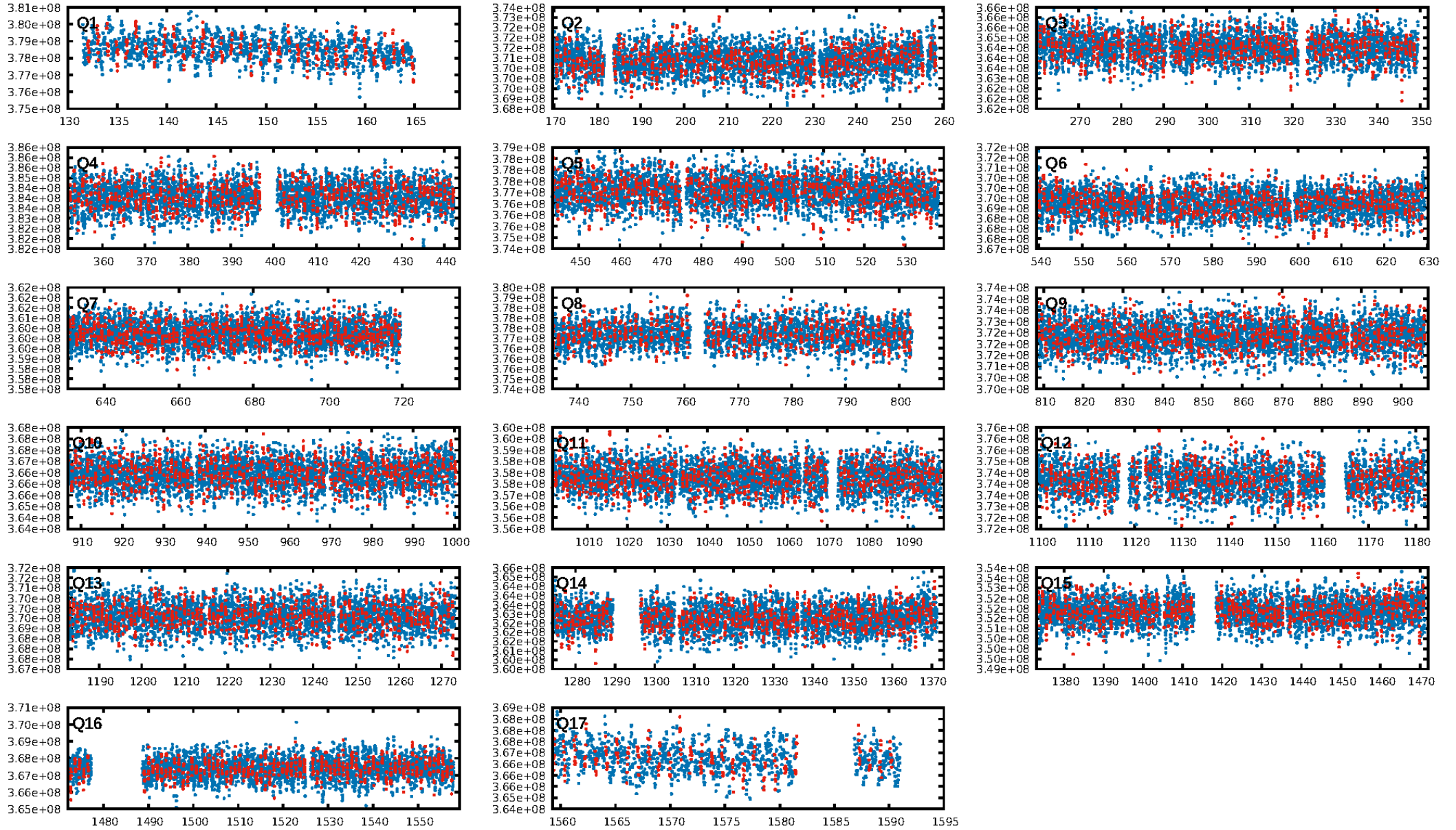
## DV Fit Results:

Period = 0.96244 [0.00001] d  
Epoch = 132.0755 [0.0013] BKJD  
Rp/R\* = 0.0158 [0.0032]  
a/R\* = 1.81 [1.31]  
b = 0.90 [0.22]  
Seff = 49543.30 [39761.55]  
Teq = 3804 [763] K  
Rp = 5.34 [2.75] Re  
a = 0.0234 [0.0112] AU  
Ag = 1.69 [1.50] [0.46σ]  
Teffp = 6704 [750] K [2.71σ]

## DV Diagnostic Results:

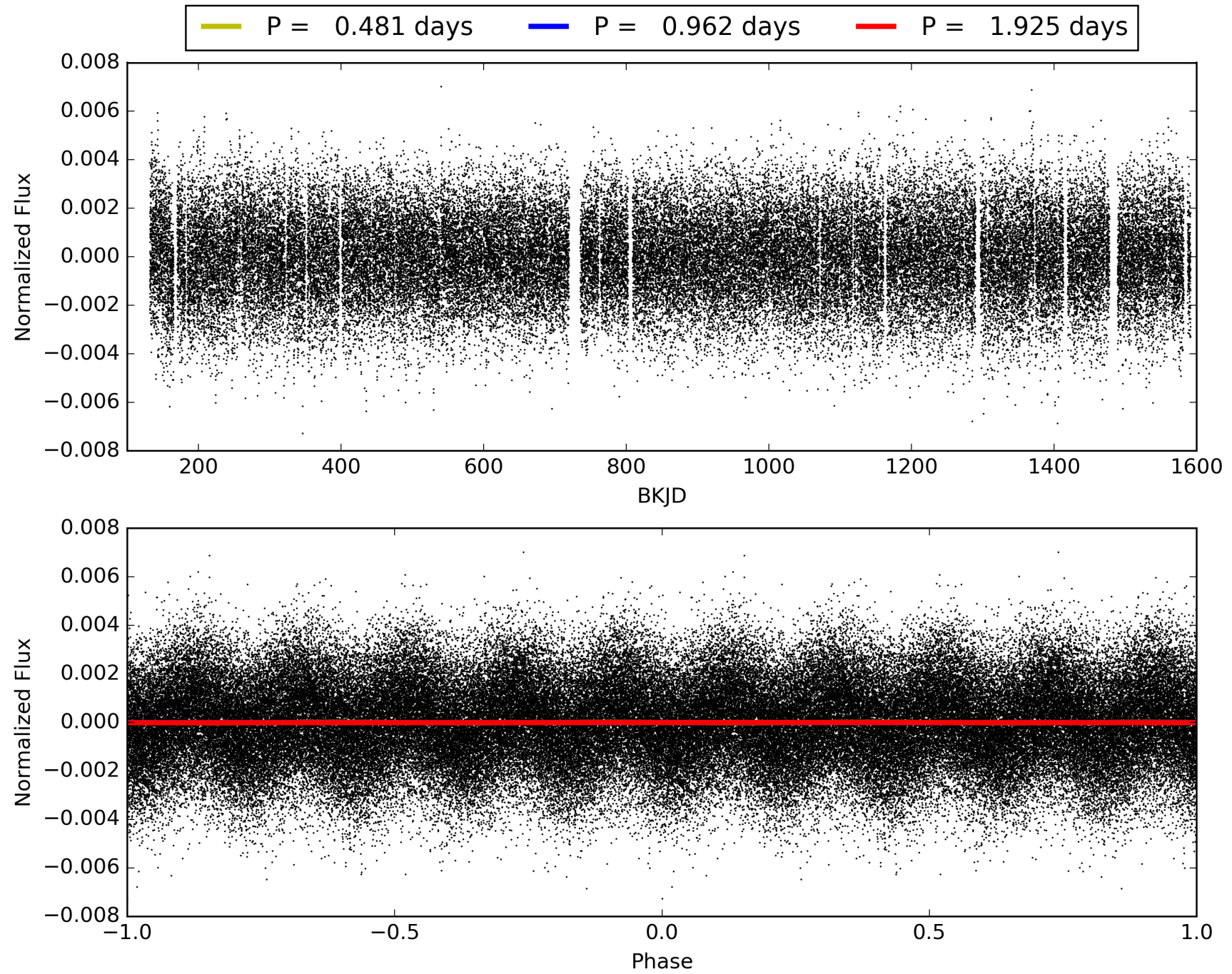
ShortPeriod-sig: 99.6% [2.86σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgm: 1.00 [1321/1327]  
GhostDiagnostic-chr: 3.048  
Centroid-sig: 0.0%  
Centroid-so: 0.323 arcsec [3.73σ]  
OotOffset-rm: 0.086 arcsec [0.19σ]  
KicOffset-rm: 0.126 arcsec [0.21σ]  
OotOffset-st: 3/4/3/5 [15]  
KicOffset-st: 3/4/3/5 [15]  
DiffImageQuality-fgm: 0.80 [12/15]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 009242127-01, PDC Light Curves





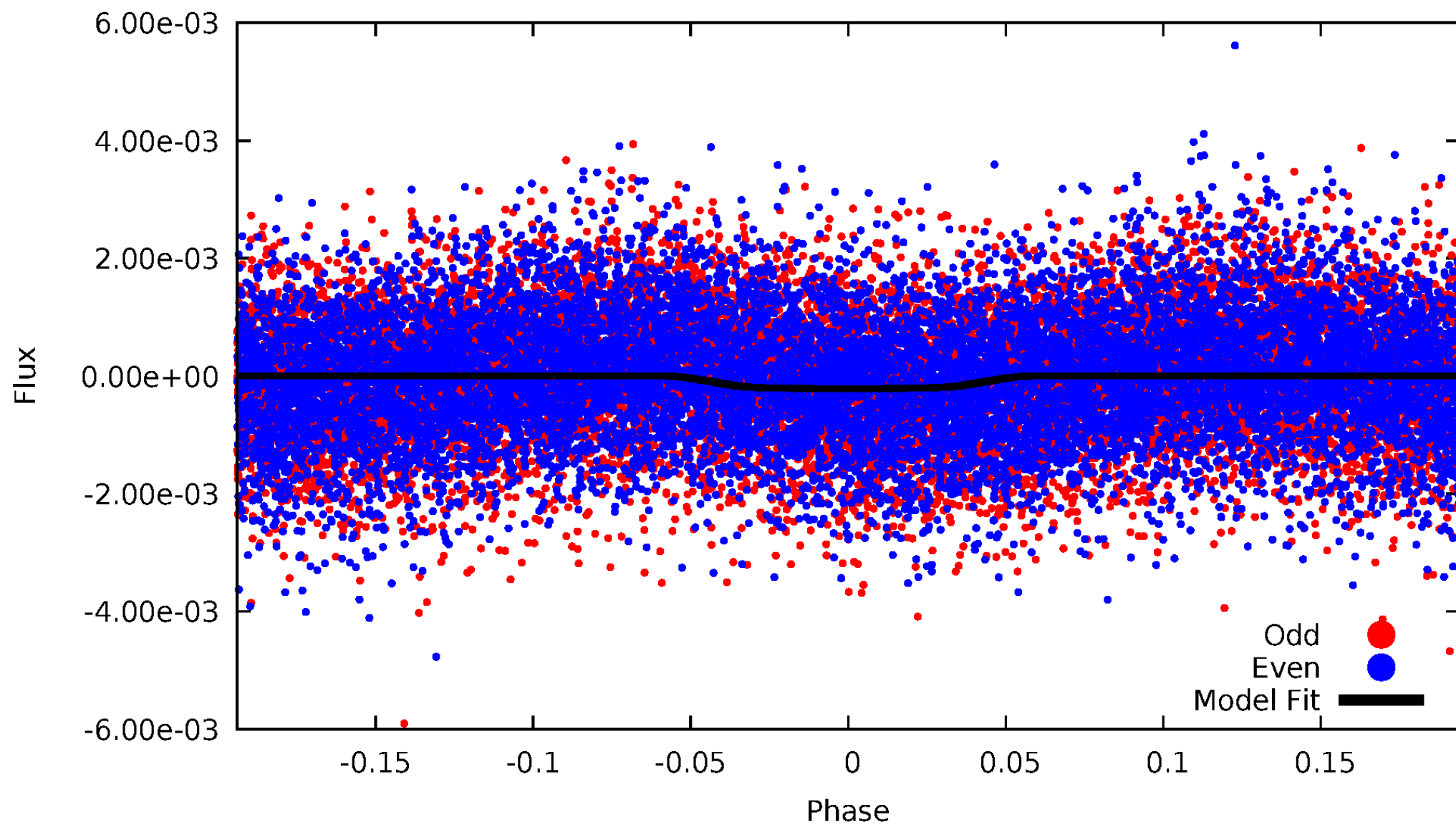
TCE 009242127-01





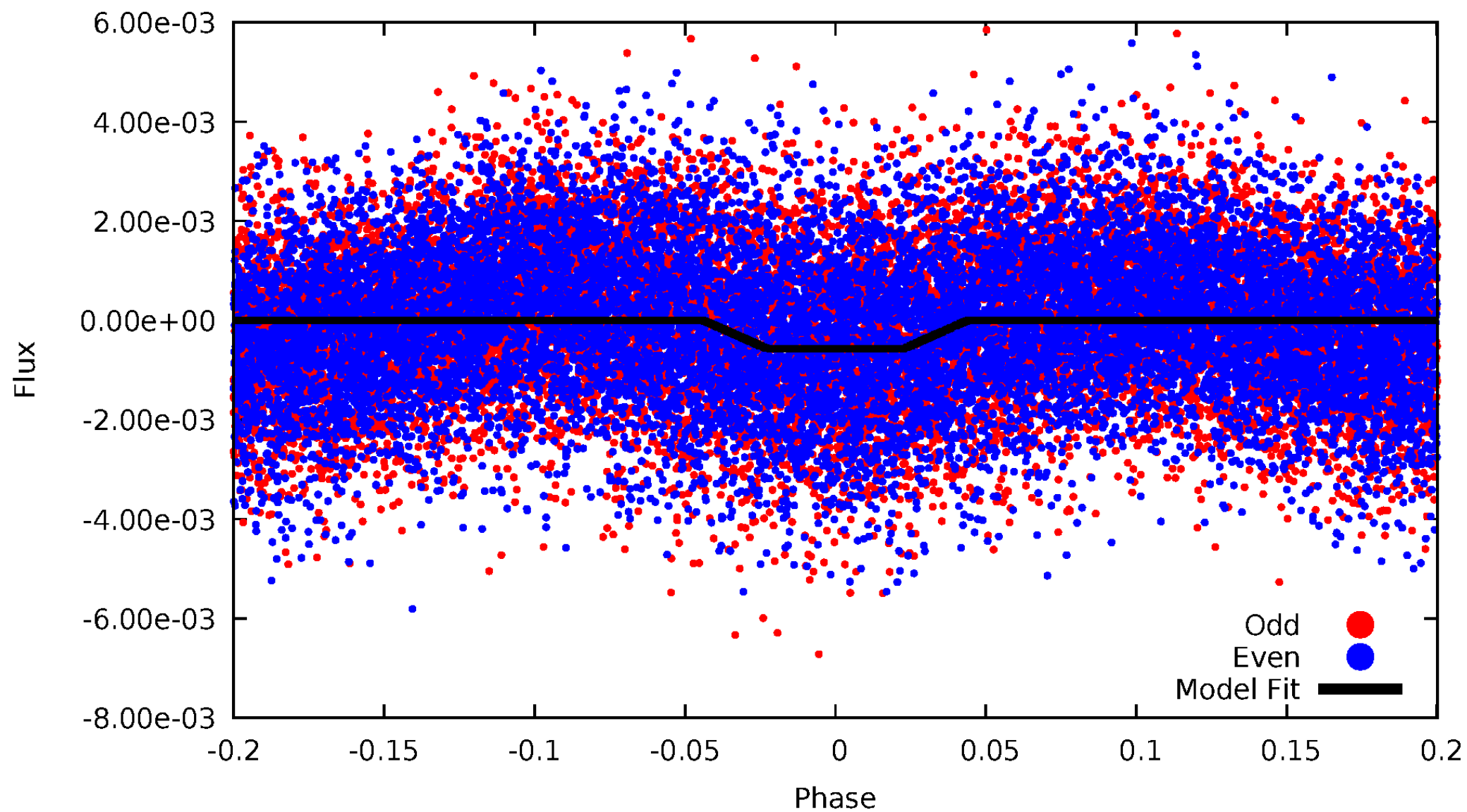
# DV Odd/Even

TCE 009242127-01



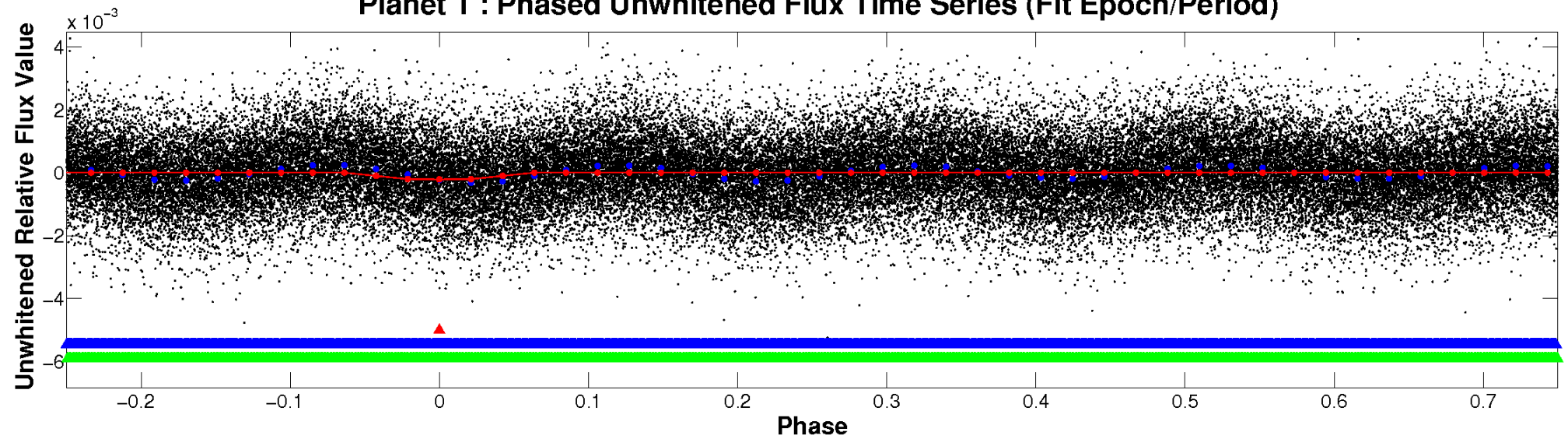
# ALT Odd/Even

TCE 009242127-01

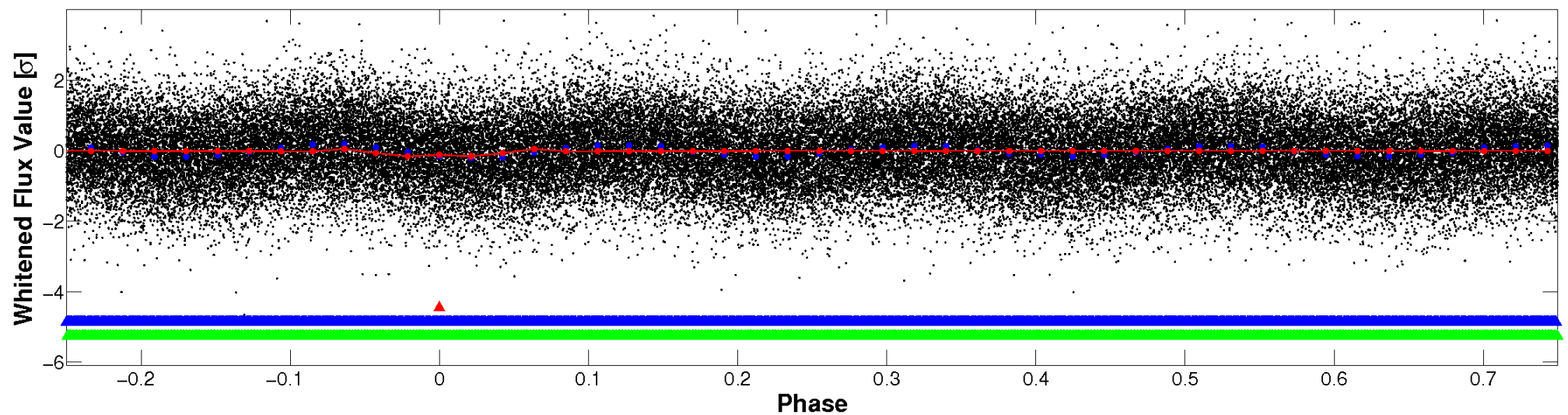


# Non-Whitened Vs. Whitened Light Curve

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



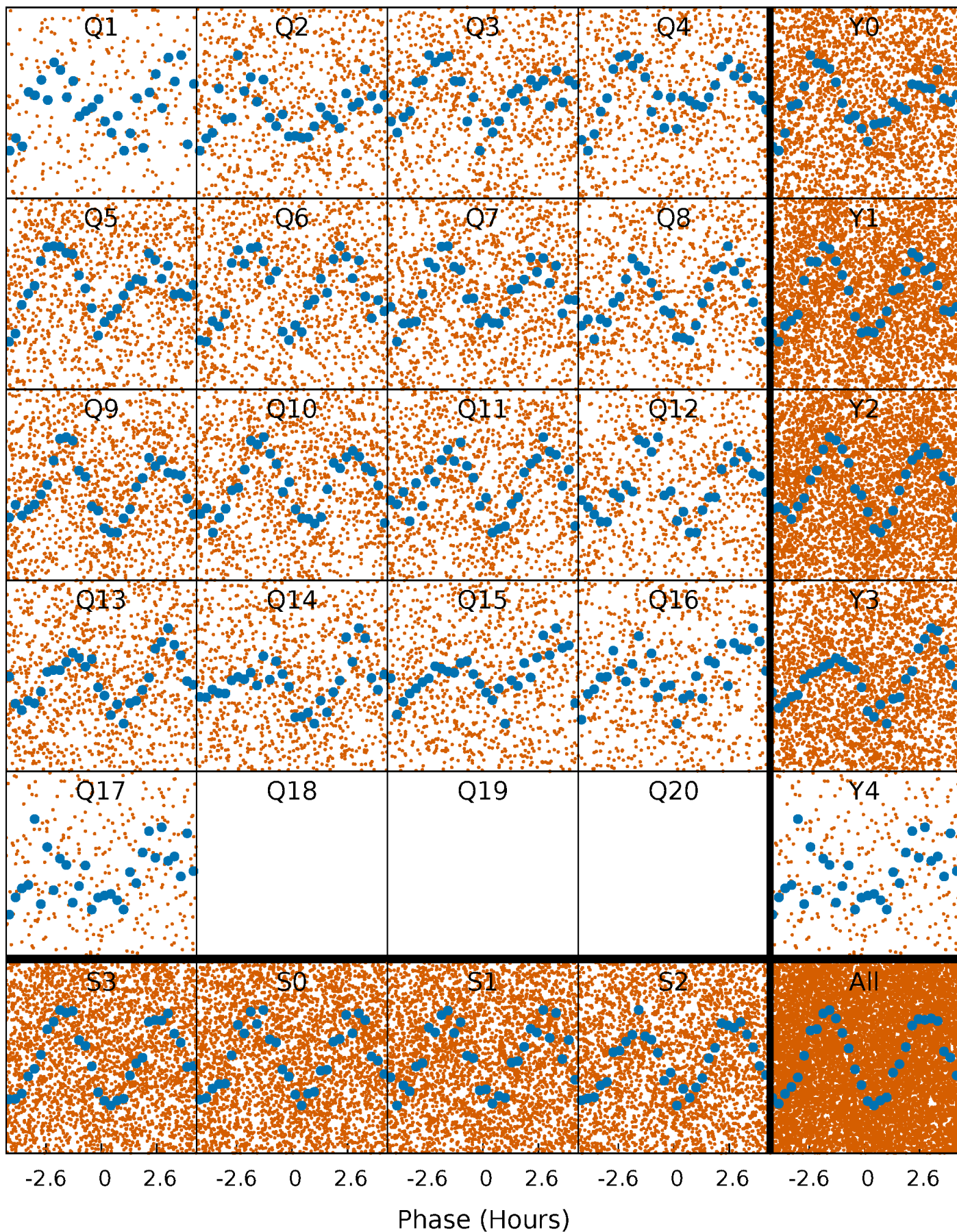
## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





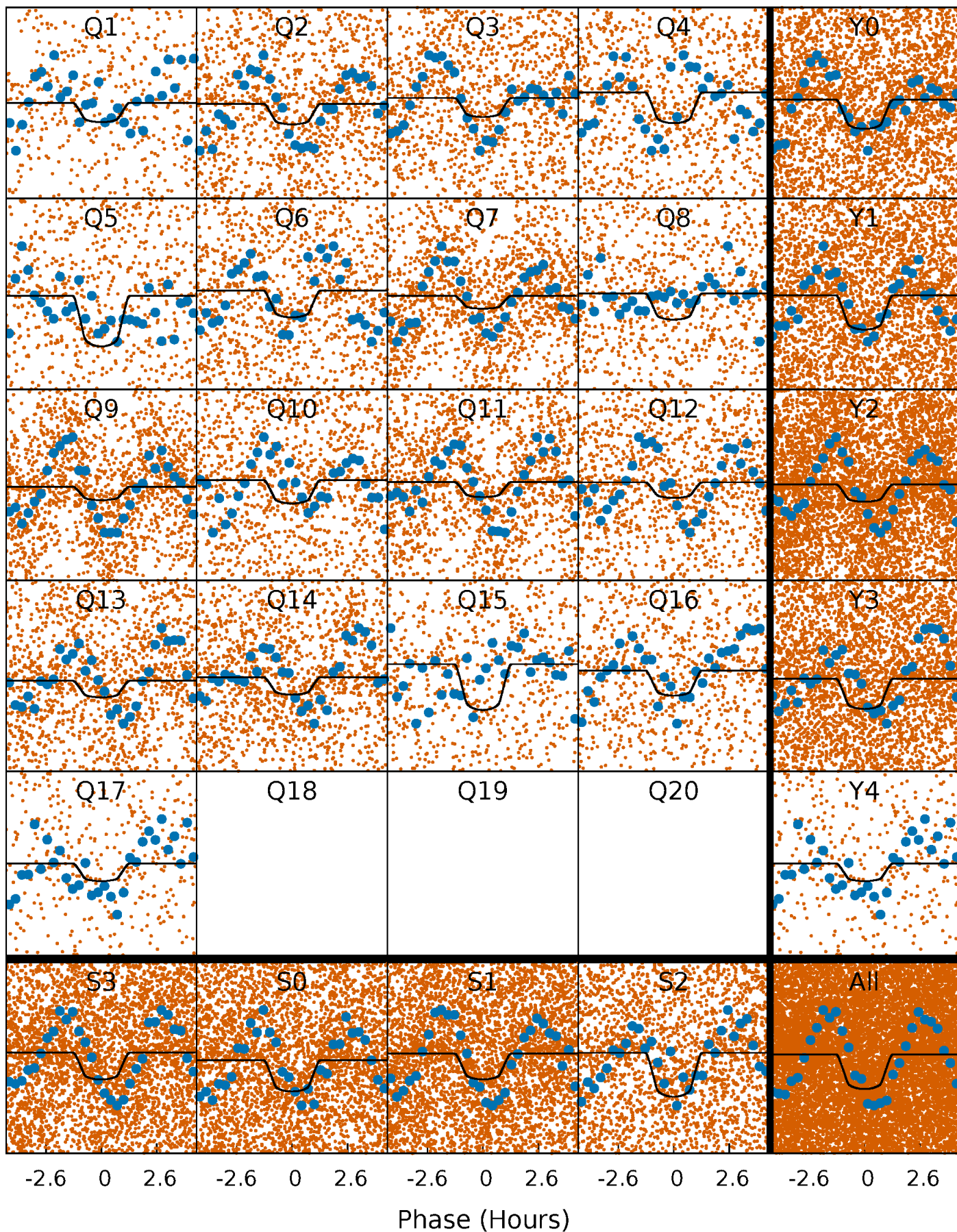
# PDC Quarter-Phased Transit Curves

TCE 009242127-01   P= 0.962437 Days    $T_0=132.075455$  (BKJD)



# DV Quarter-Phased Transit Curves

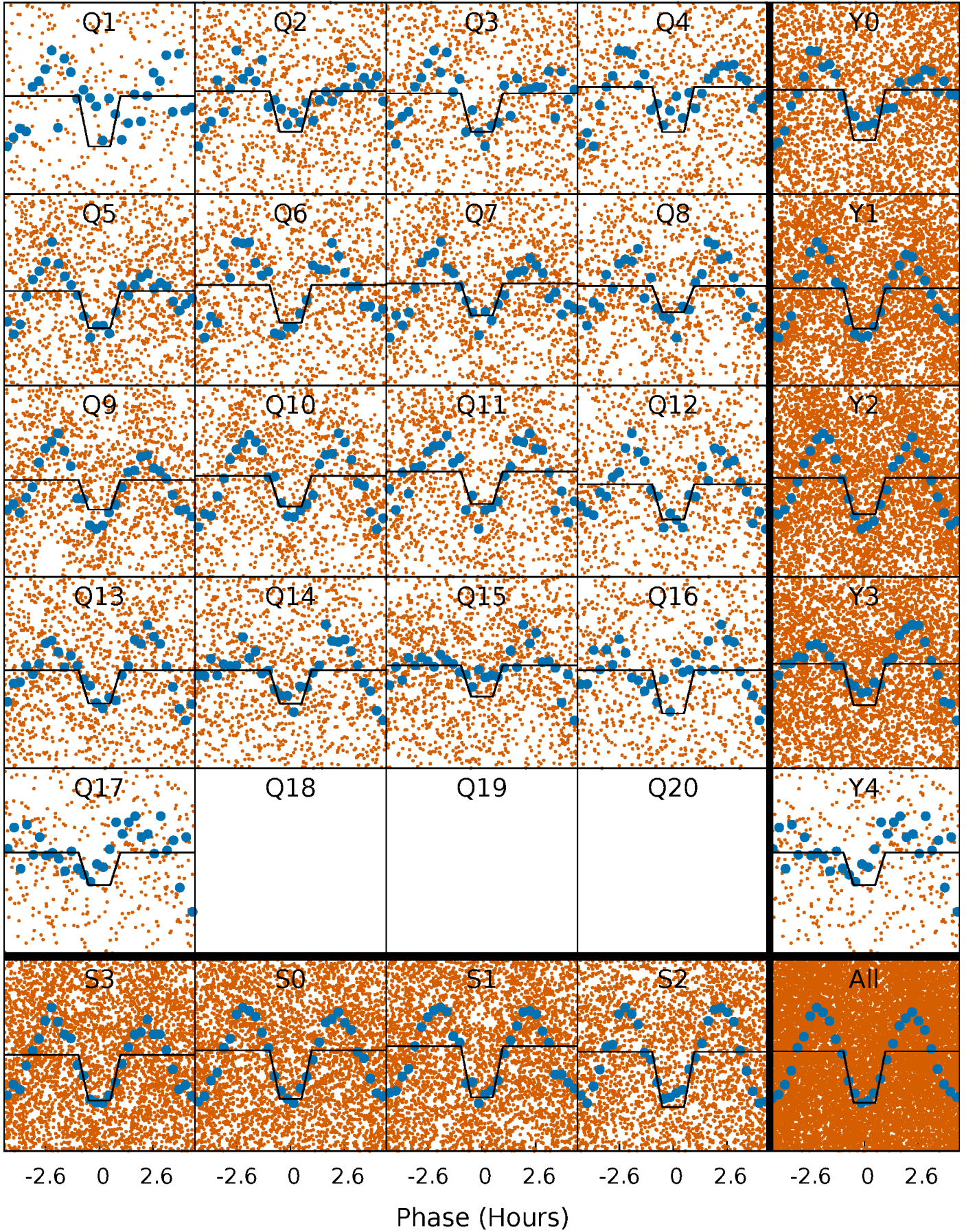
TCE 009242127-01 P= 0.962437 Days  $T_0=132.075455$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 009242127-01 P= 0.962468 Days  $T_0=132.073925$  (BKJD)

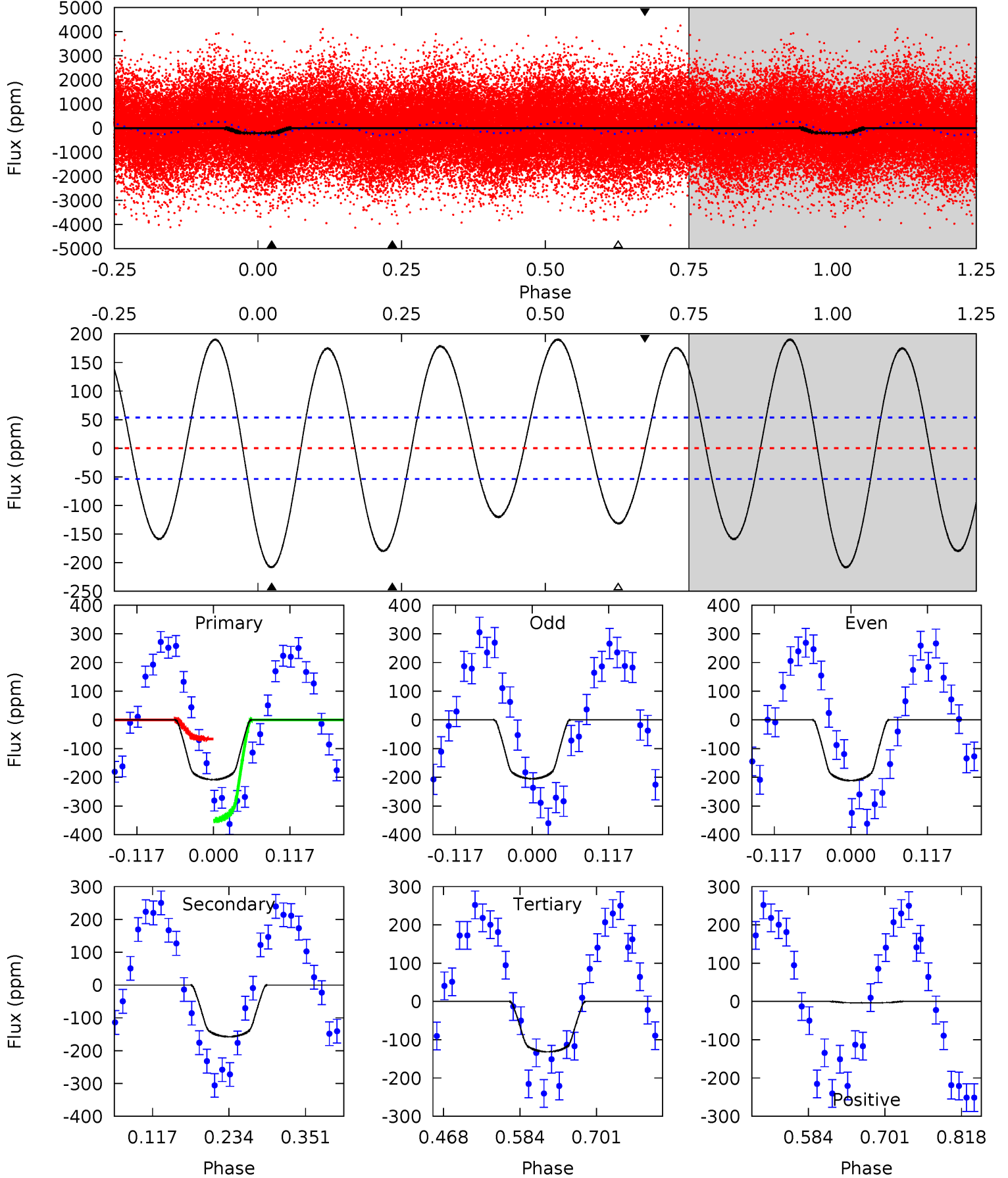




# DV Model-Shift Uniqueness Test

009242127-01, P = 0.962437 Days, E = 131.113018 Days

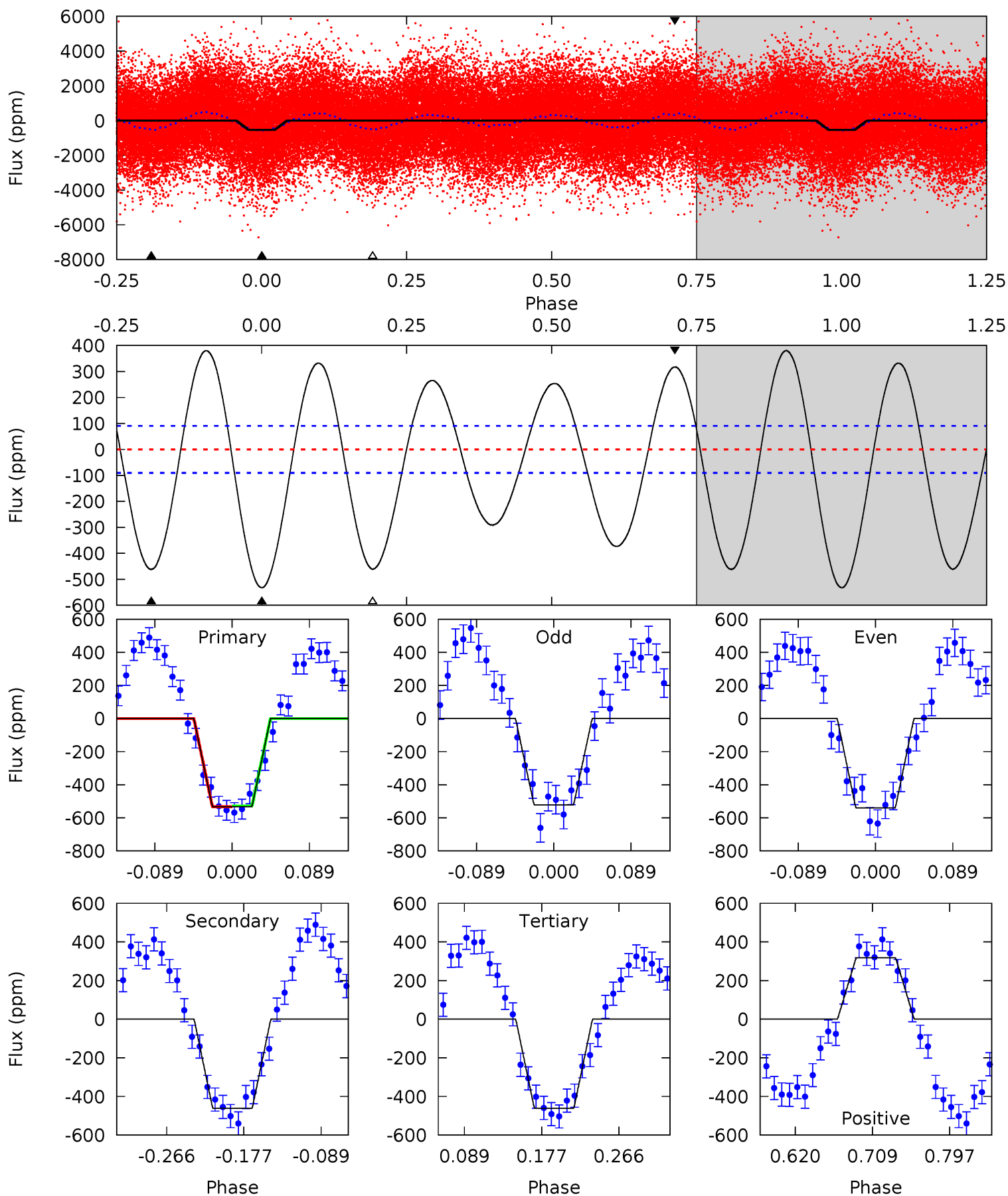
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	13.3	11.1	-0.30	4.53	1.57	9.24	6.45	17.8	2.17	13.6	0.27	1.06	0.48	11.9



# Alt Model-Shift Uniqueness Test

009242127-01, P = 0.962468 Days, E = 131.111457 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
27.1	23.5	23.4	16.1	4.59	1.70	12.4	3.63	10.9	0.03	7.32	0.46	1.01	0.42	0.10



### Stellar Parameters For KIC 009242127

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7502^{+235}_{-314}$	$3.723^{+0.468}_{-0.078}$	$-0.240^{+0.250}_{-0.350}$	$3.089^{+0.366}_{-1.465}$	$1.839^{+0.151}_{-0.454}$	$0.088^{+0.385}_{-0.023}$
	+3%/-4%	+13%/-2%	+104%/-146%	+12%/-47%	+8%/-25%	+438%/-26%
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 009242127-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-157 \pm 12$	$4.86^{+1.38}_{-1.31}$	$5160^{+319}_{-578}$	$6318^{+934}_{-808}$	$1.987^{+1.667}_{-0.787}$
Alt.	$-462 \pm 20$	$7.34^{+1.71}_{-1.93}$	$5098^{+349}_{-604}$	$6787^{+656}_{-569}$	$2.537^{+1.783}_{-0.828}$

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



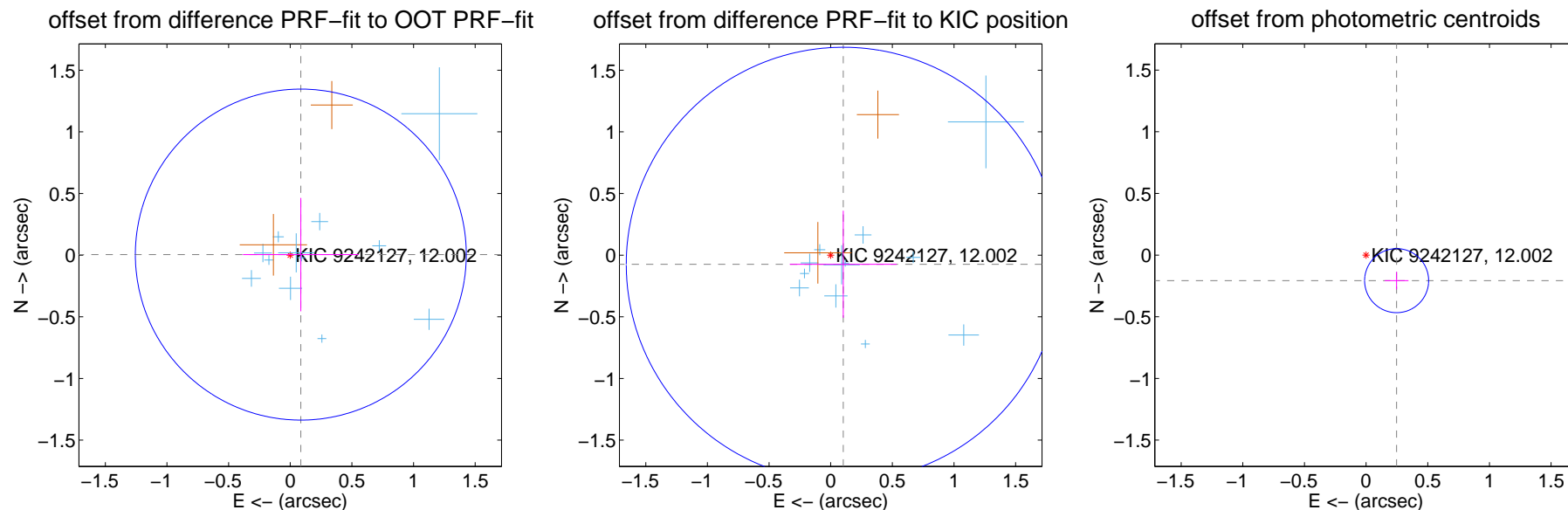
## DV Centroid Data

Supplemental centroid analysis for 009242127-01. Kepler magnitude: 12.00. Transit SNR 11.35

There are 12 quarters with good PRF difference image offsets

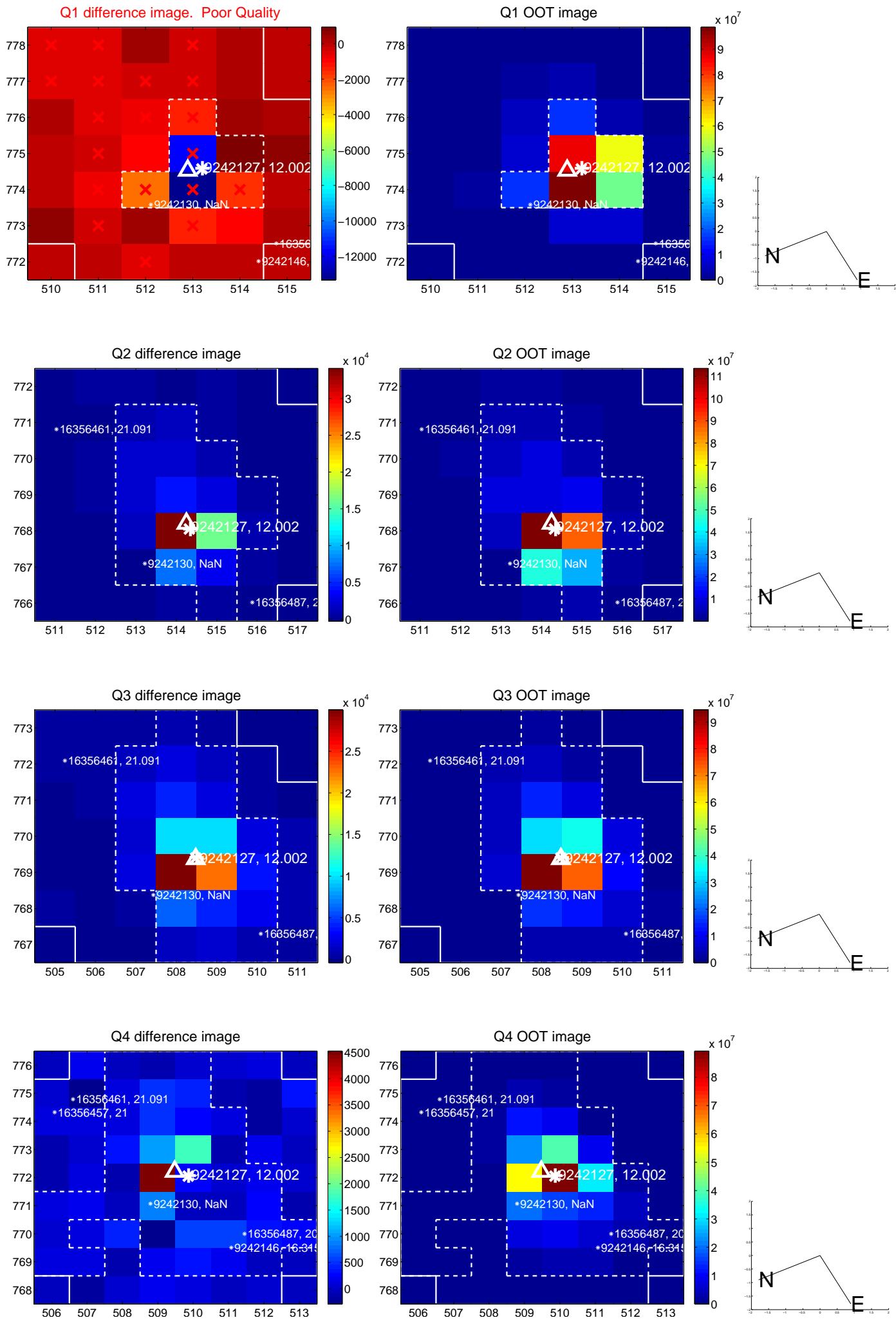
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.086 \pm 0.447$	0.19	$-0.086 \pm 0.469$	$0.005 \pm 0.460$
PRF-fit source offset from KIC position	$0.126 \pm 0.587$	0.21	$-0.102 \pm 0.434$	$-0.074 \pm 0.434$
photometric centroid source offset	$0.32 \pm 0.09$	3.73	$-0.25 \pm 0.10$	$-0.21 \pm 0.07$

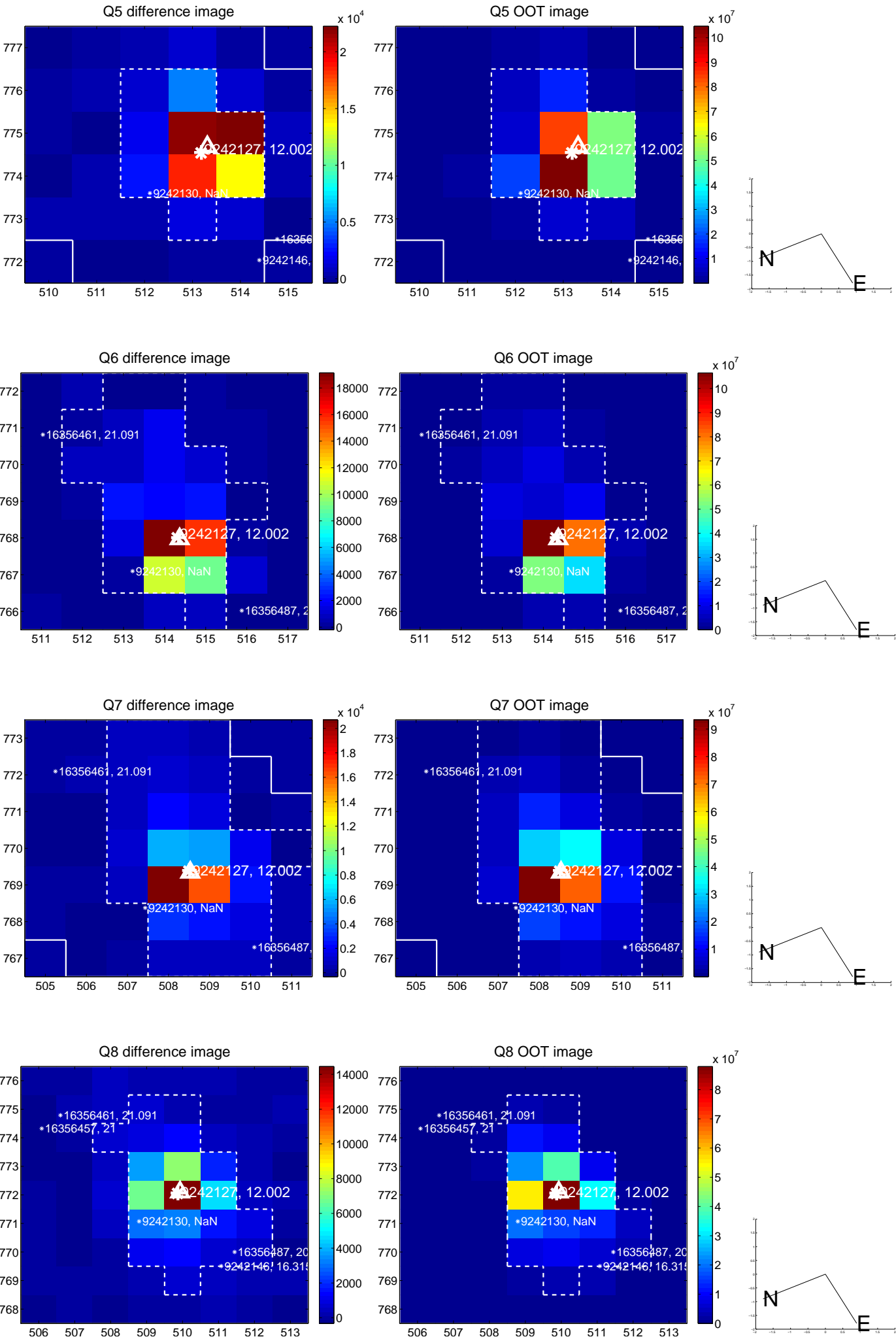


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

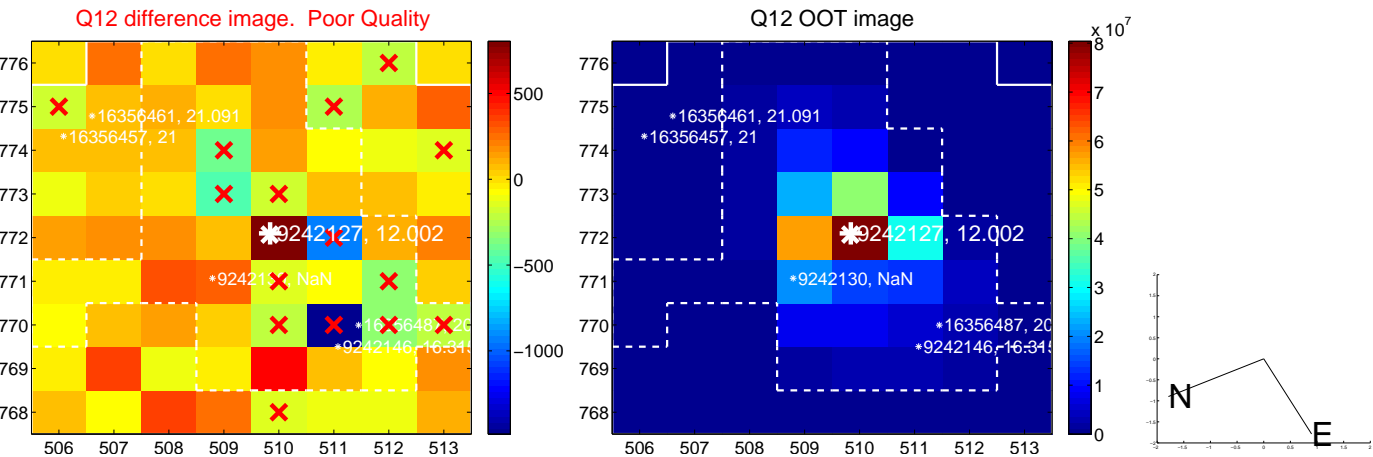
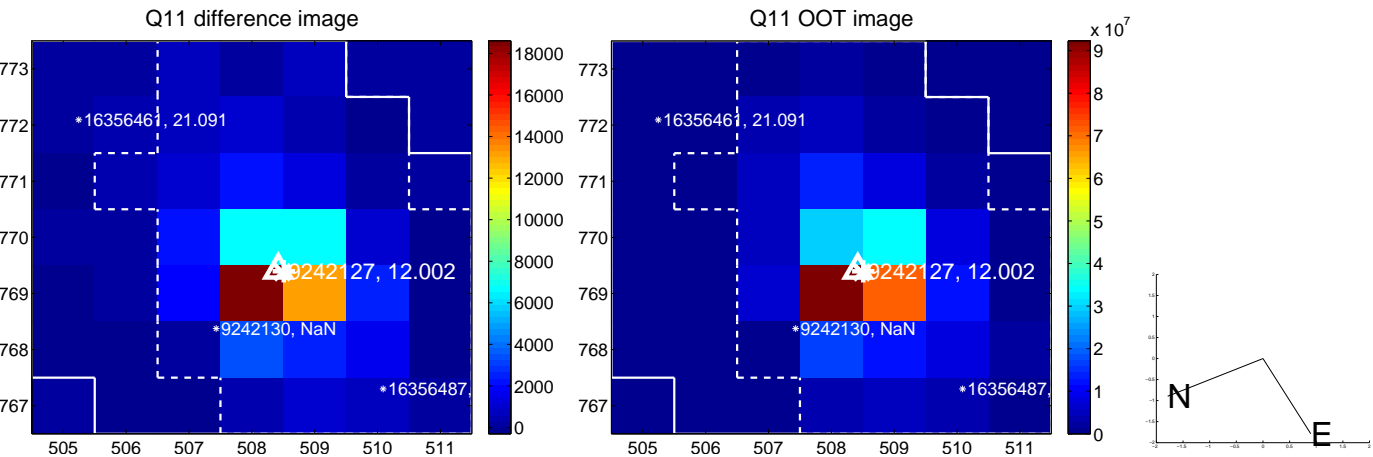
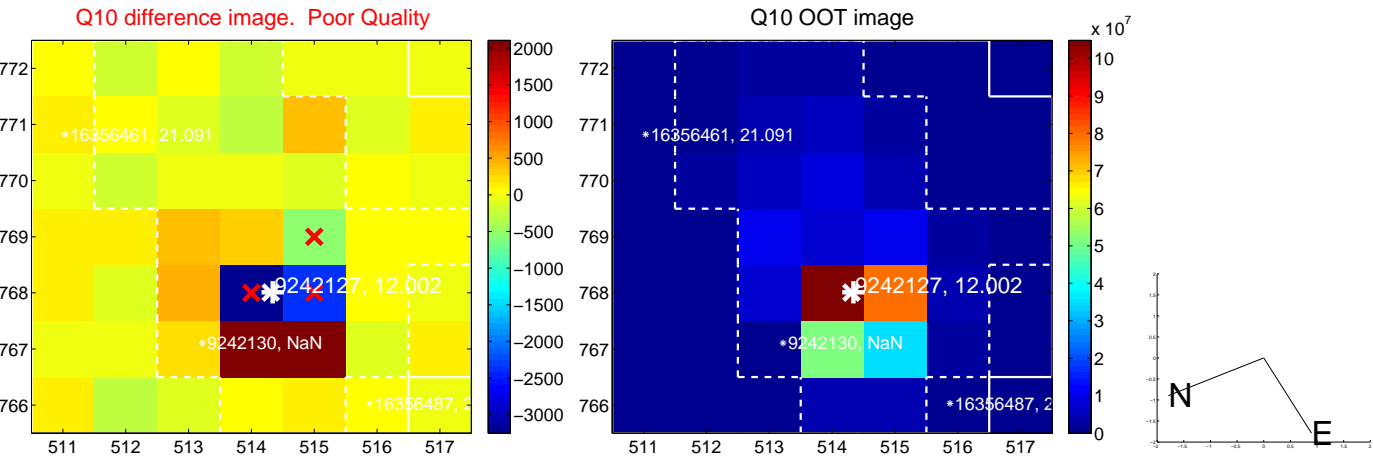
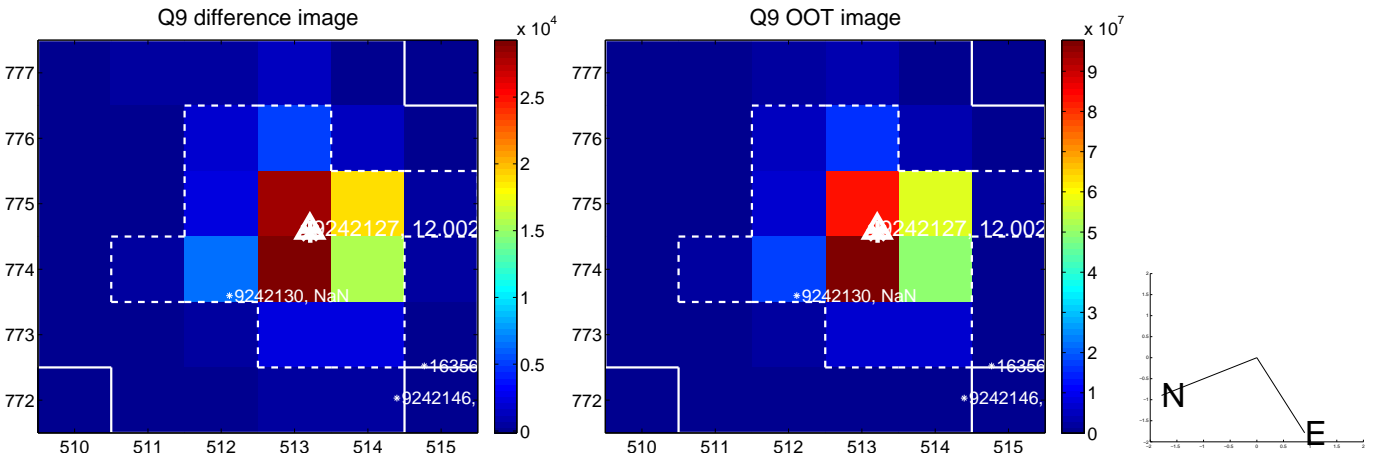


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

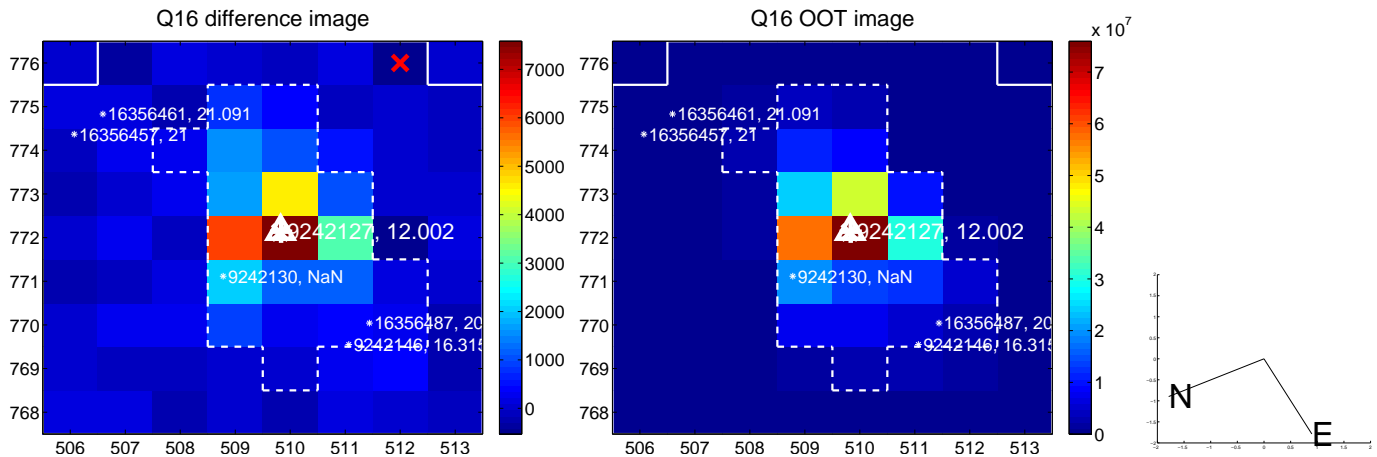
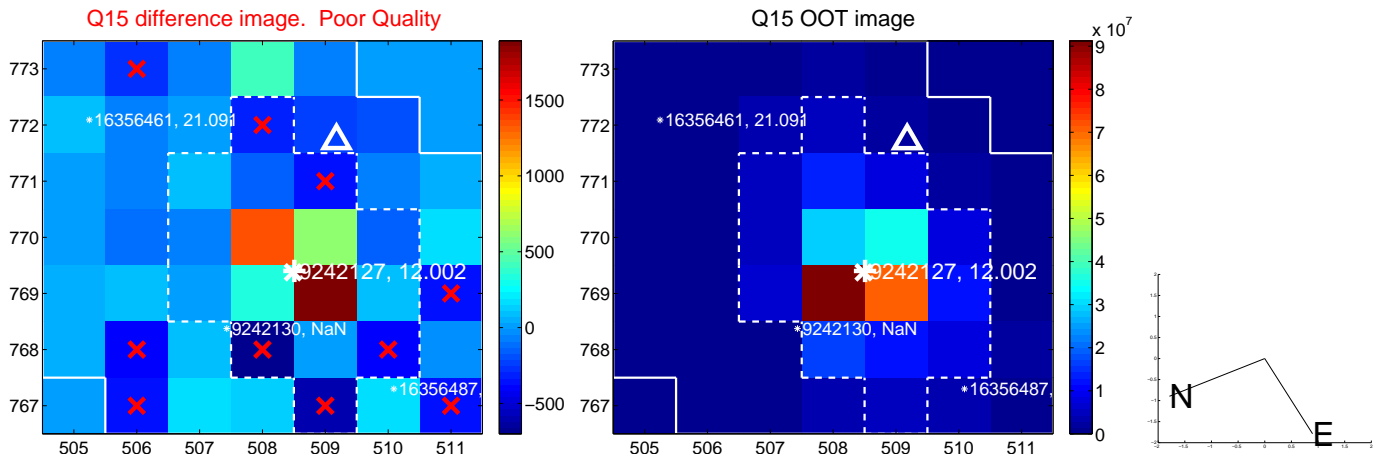
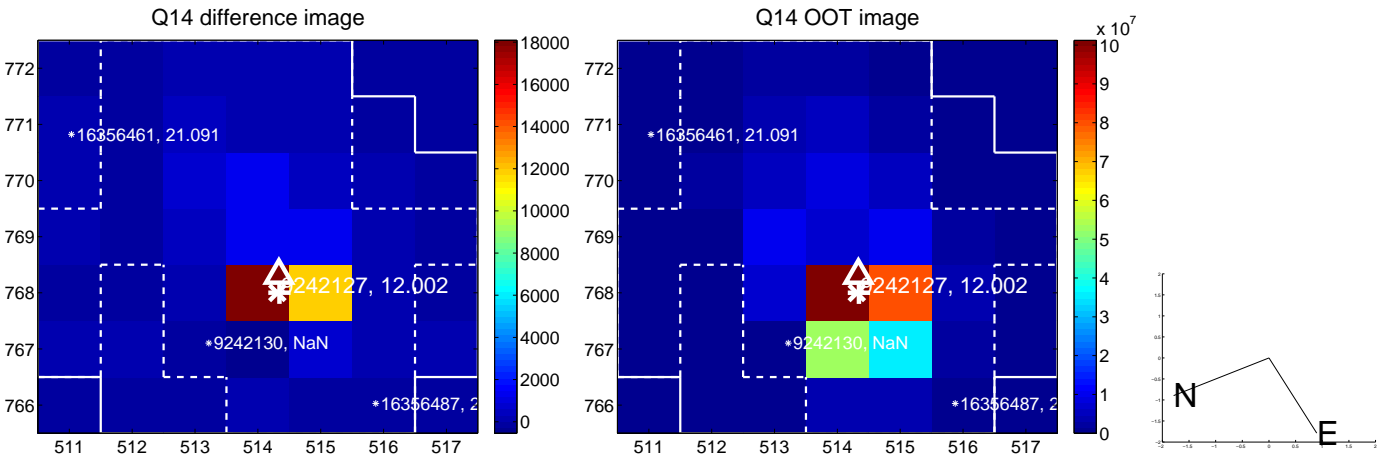
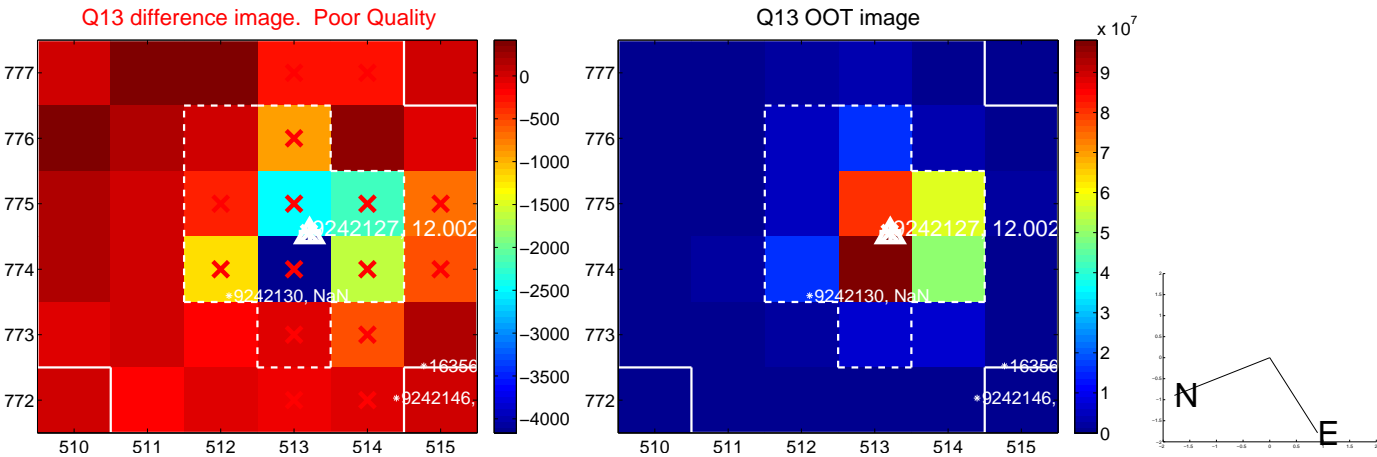




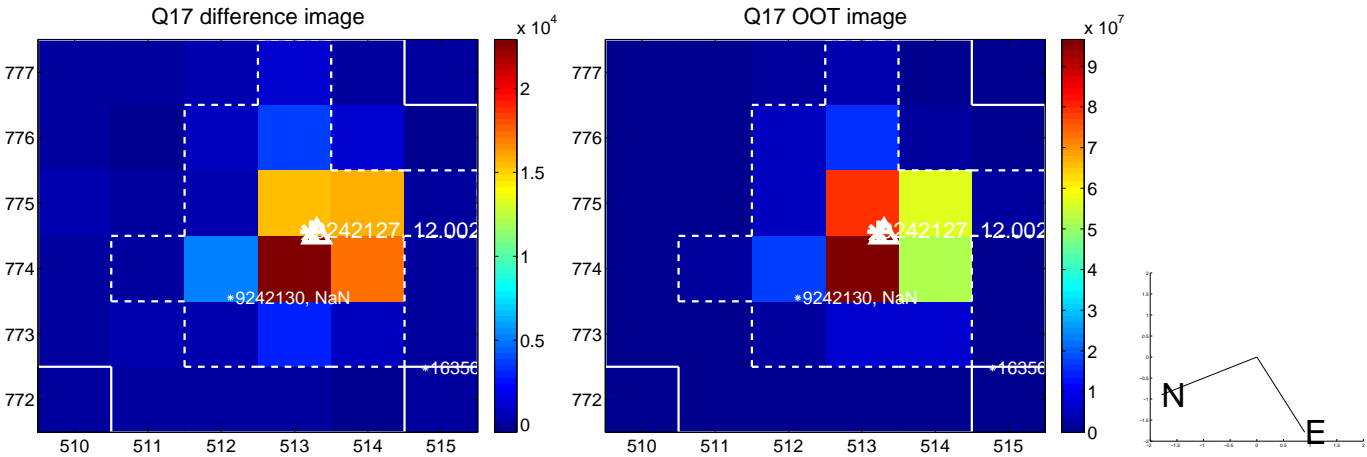
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



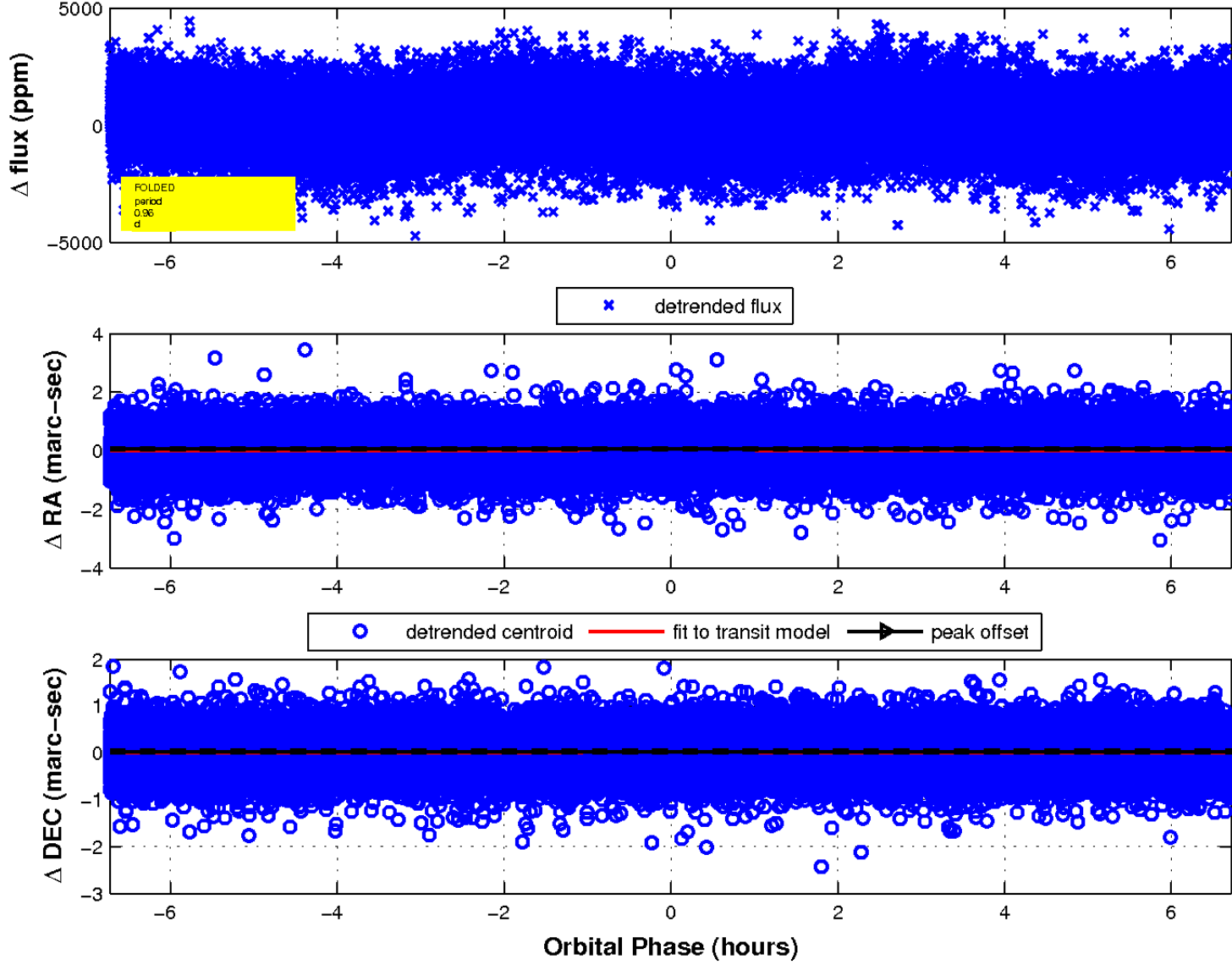
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



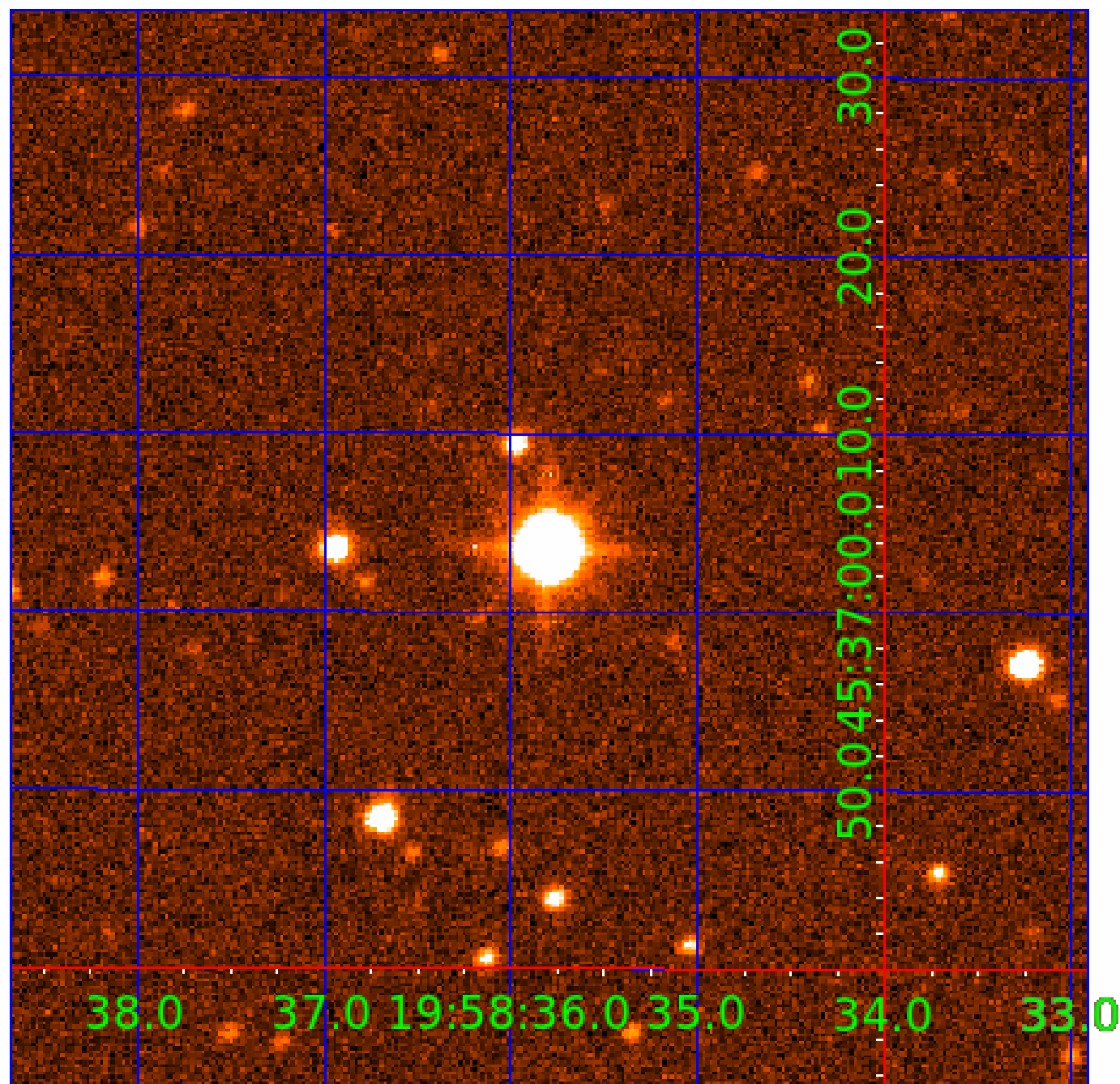
fluxWeightedCentroids, Planet 1 of 3





UKIRT Image

Declination



# KIC 009242127

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009242127-01	OBS	No	0.962437	132.075455	215.7	2.240	11.1	11.4	3.09	7502	5.34	49543.30
009242127-02	OBS	No	0.530233	131.513870	213.6	1.309	13.9	12.4	3.09	7502	4.85	109696.44
009242127-03	OBS	No	0.604375	131.667444	163.2	2.000	12.1	-1.0	3.09	7502	3.96	92130.99

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009242127-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009242127-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009242127-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_NOFITS

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

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

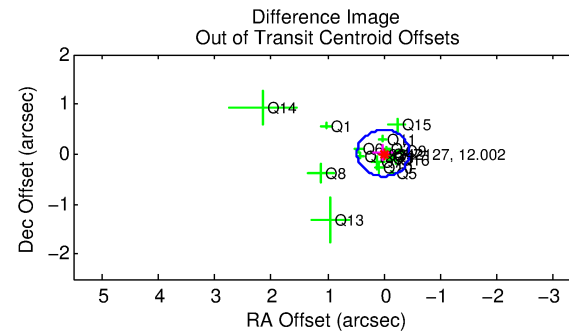
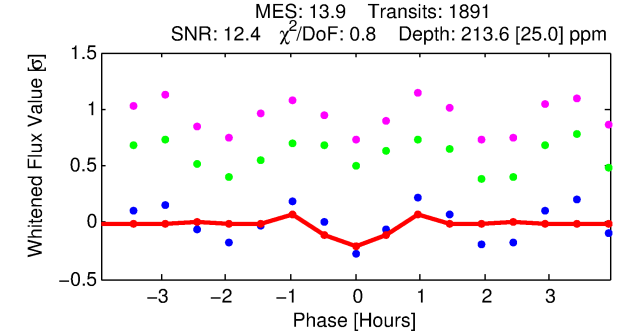
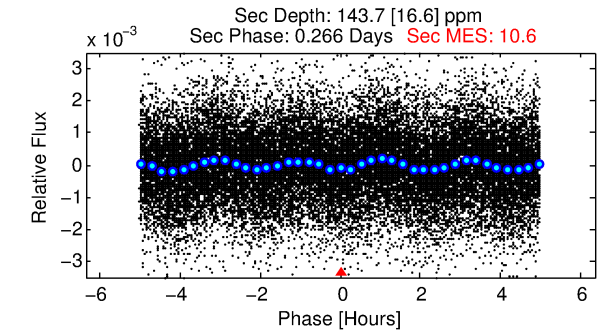
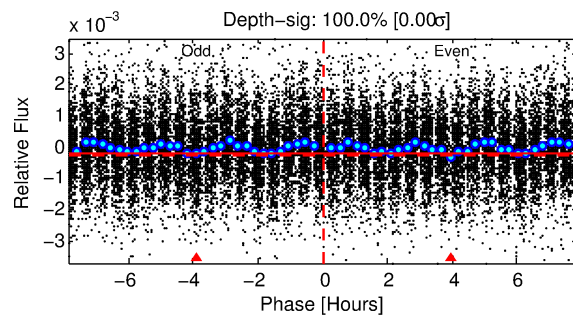
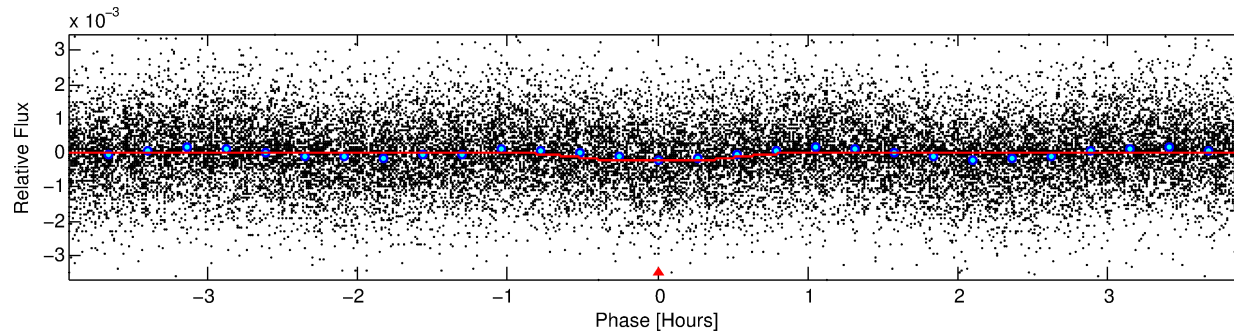
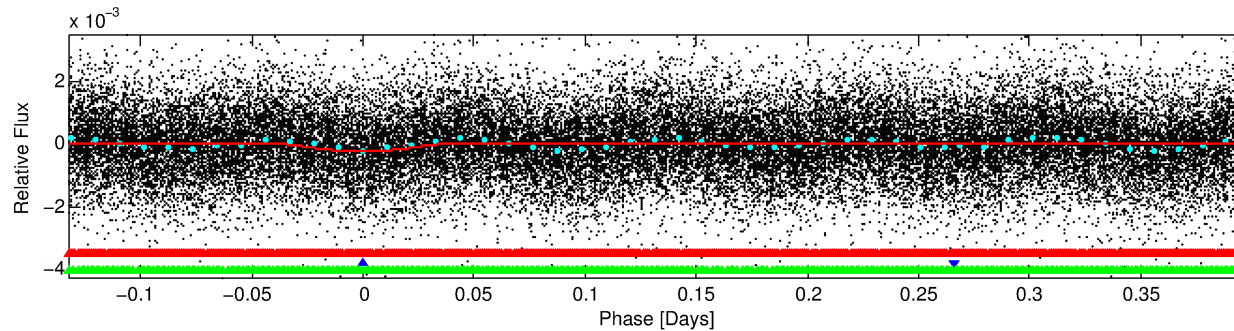
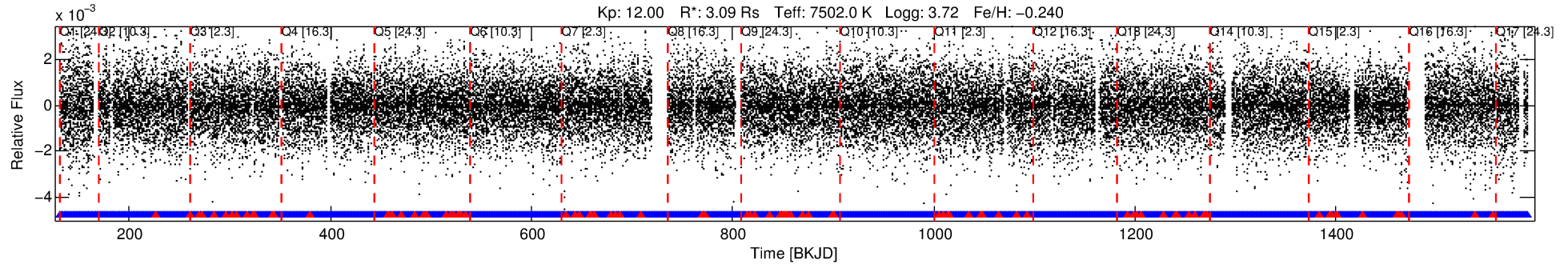
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009242127-02

No Significant Match Found

# DV One-Page Summary

KIC: 9242127 Candidate: 2 of 3 Period: 0.530 d



## DV Fit Results:

Period = 0.53023 [0.00001] d  
Epoch = 131.5139 [0.0011] BKJD  
Rp/R\* = 0.0144 [0.0034]  
a/R\* = 2.42 [2.27]  
b = 0.70 [0.84]  
Seff = 109696.44 [88038.15]  
Teff = 4641 [931] K  
Rp = 4.85 [2.56] Re  
a = 0.0157 [0.0075] AU  
Ag = 0.83 [0.76] [-0.22σ]  
Teffp = 6845 [871] K [1.73σ]

## DV Diagnostic Results:

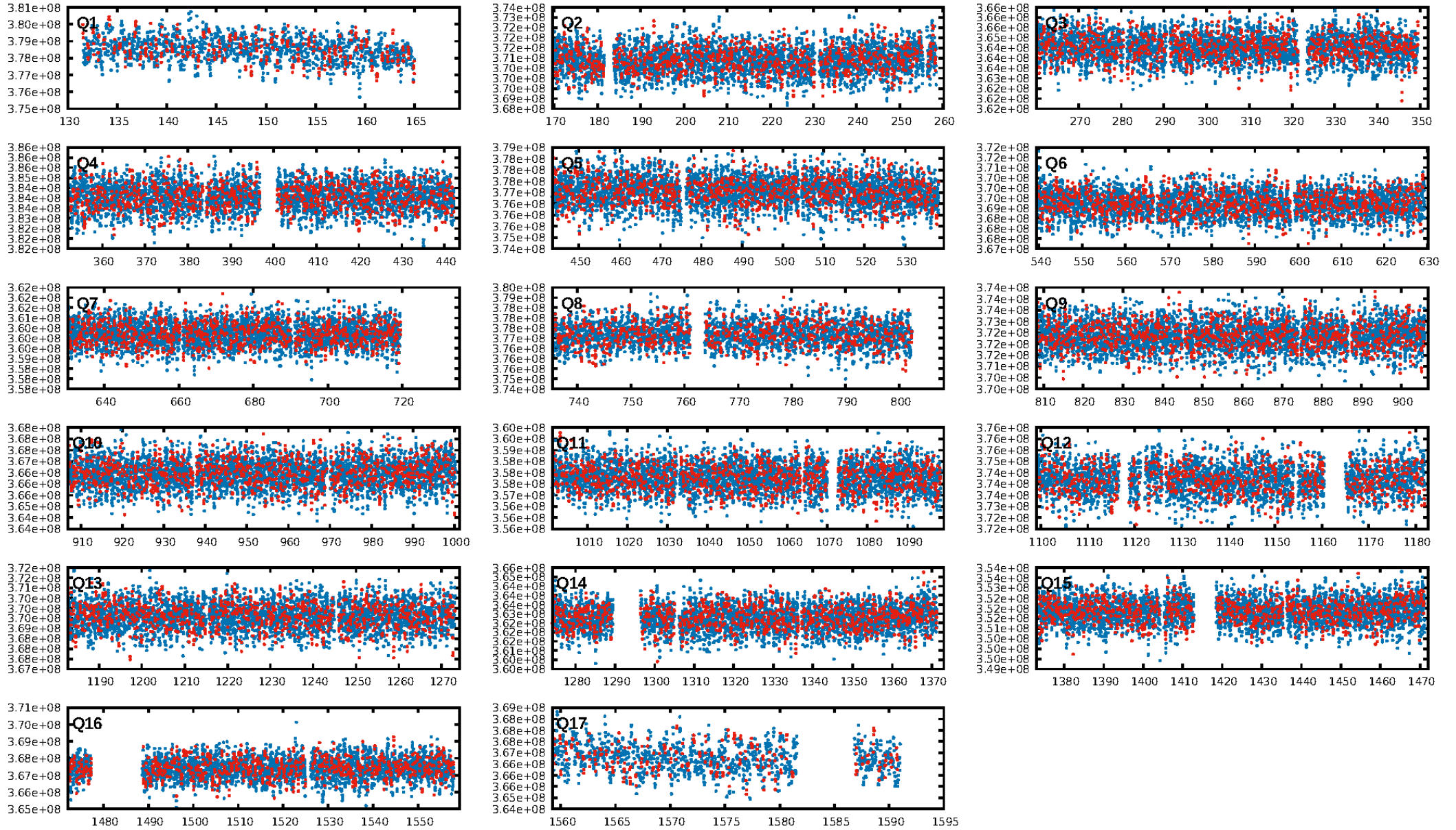
ShortPeriod-sig: N/A  
LongPeriod-sig: 54.3% [0.74σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.95 [1718/1807]  
GhostDiagnostic-chr: 2.914  
Centroid-sig: 20.0%  
Centroid-so: 0.184 arcsec [2.20σ]  
OotOffset-rm: 0.027 arcsec [0.17σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.073 arcsec [0.55σ]  
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: 01-Feb-2016 13:58:01 Z

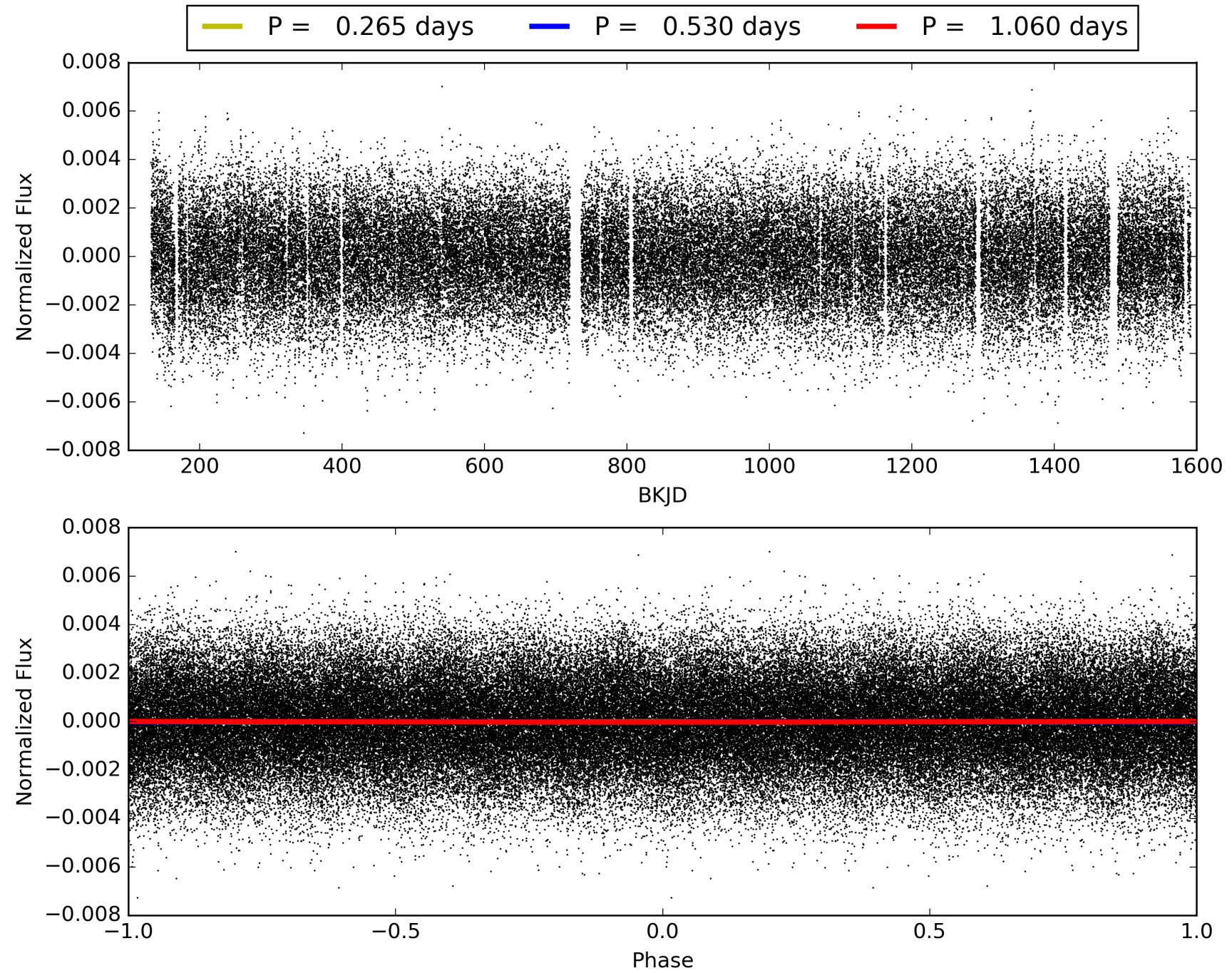
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 009242127-02, PDC Light Curves

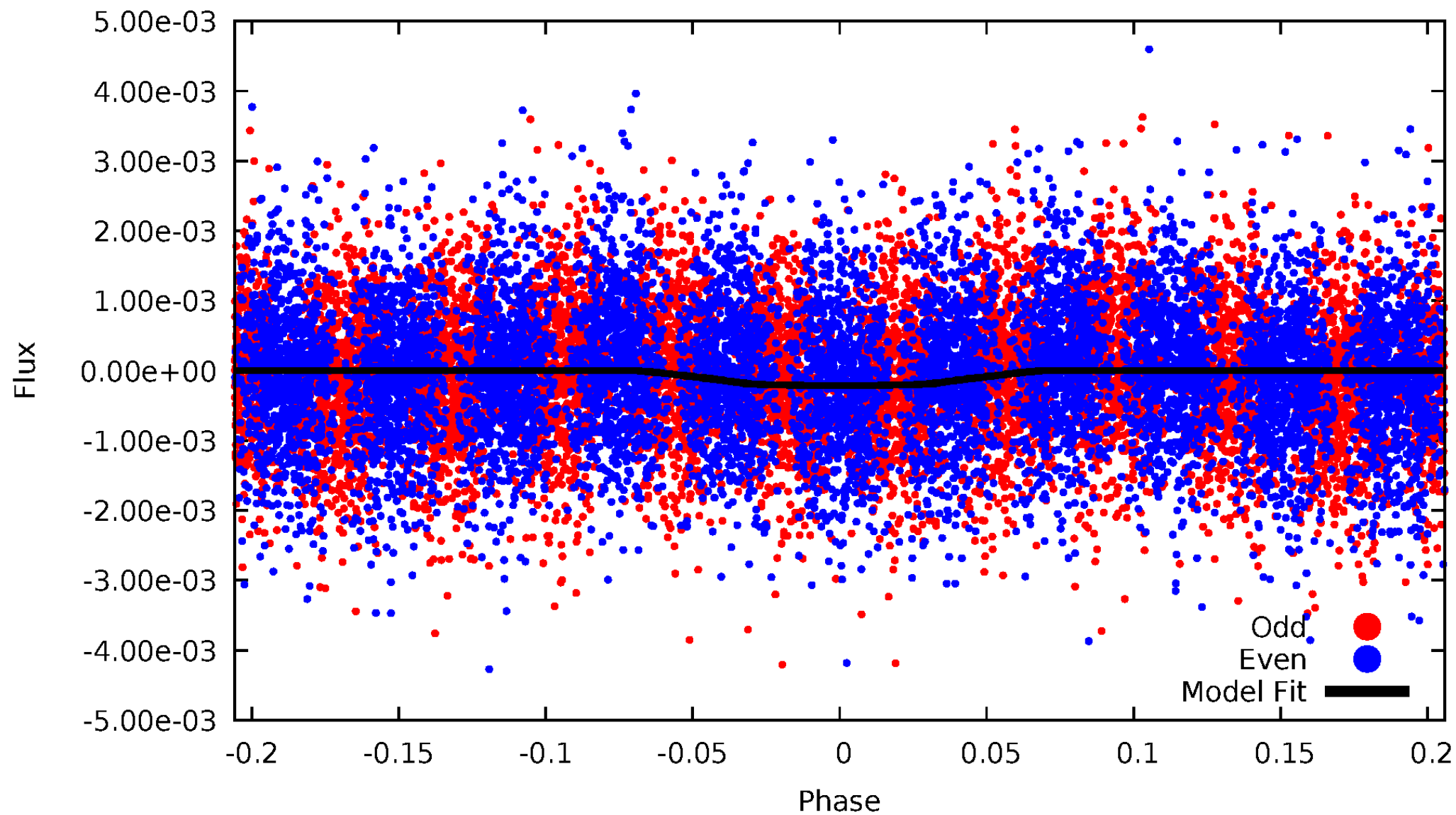


TCE 009242127-02



DV Odd/Even

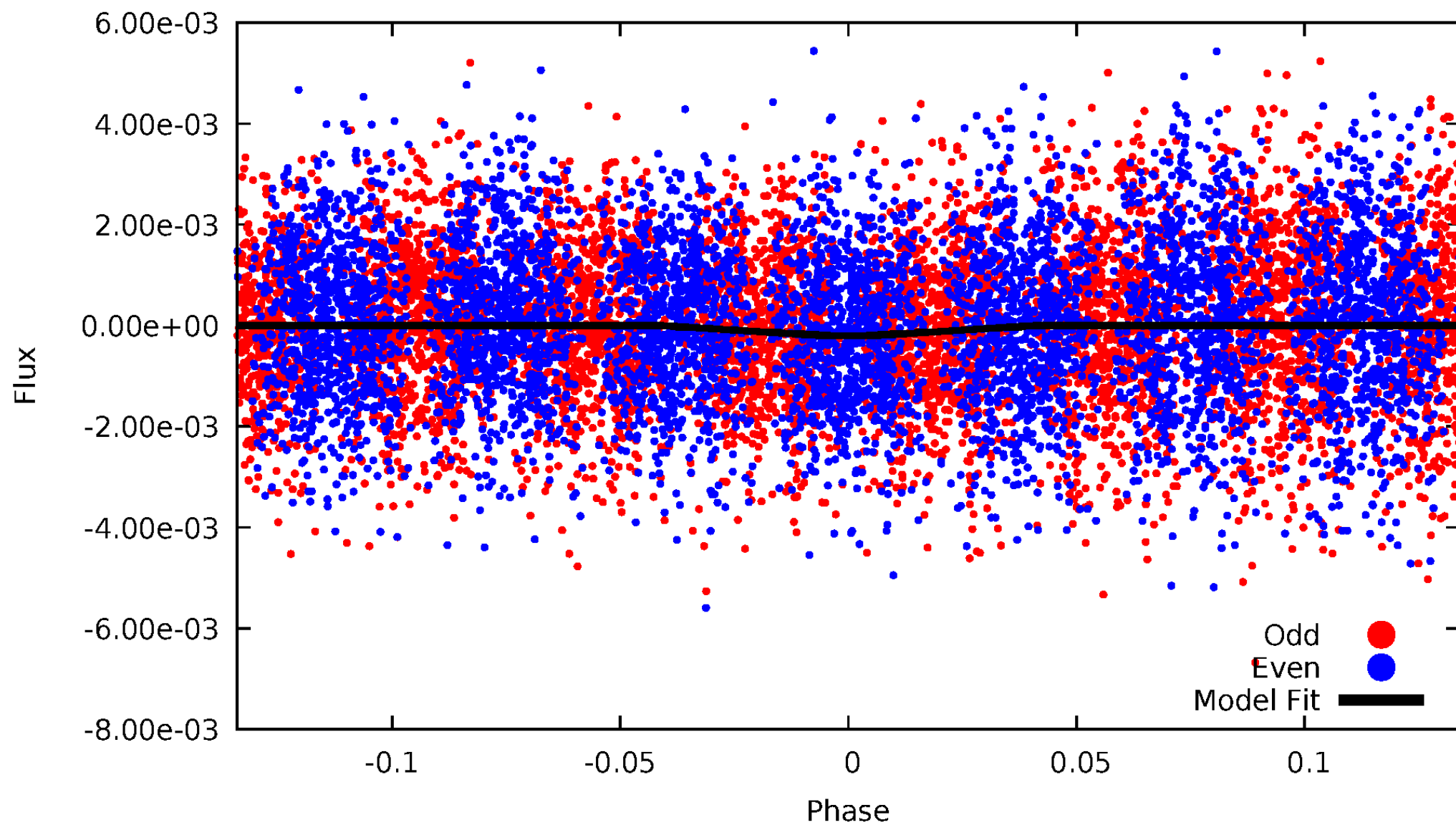
TCE 009242127-02





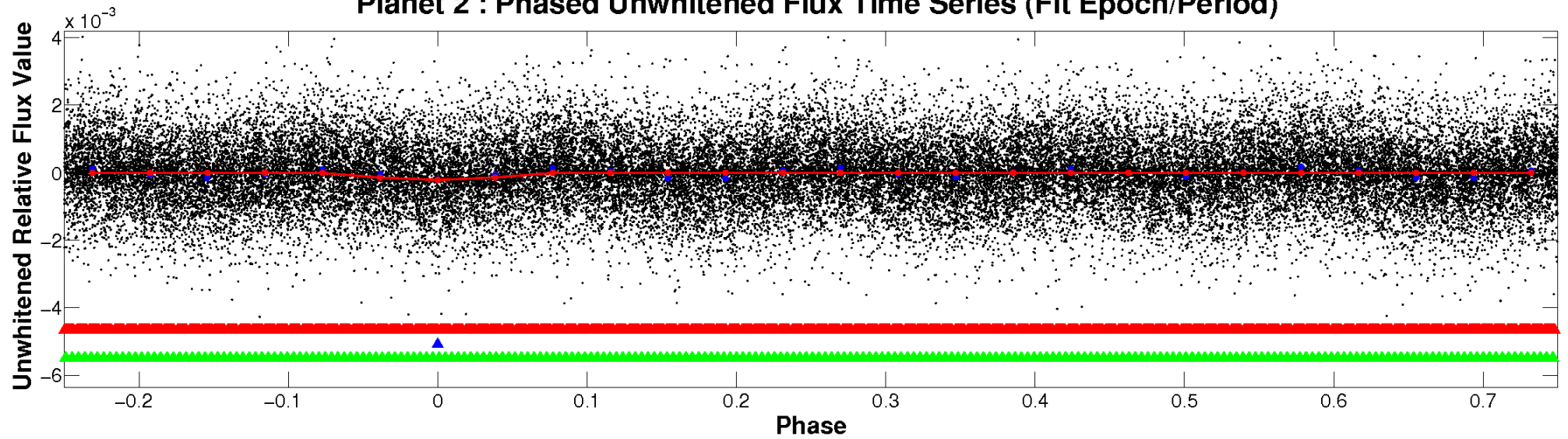
# ALT Odd/Even

TCE 009242127-02

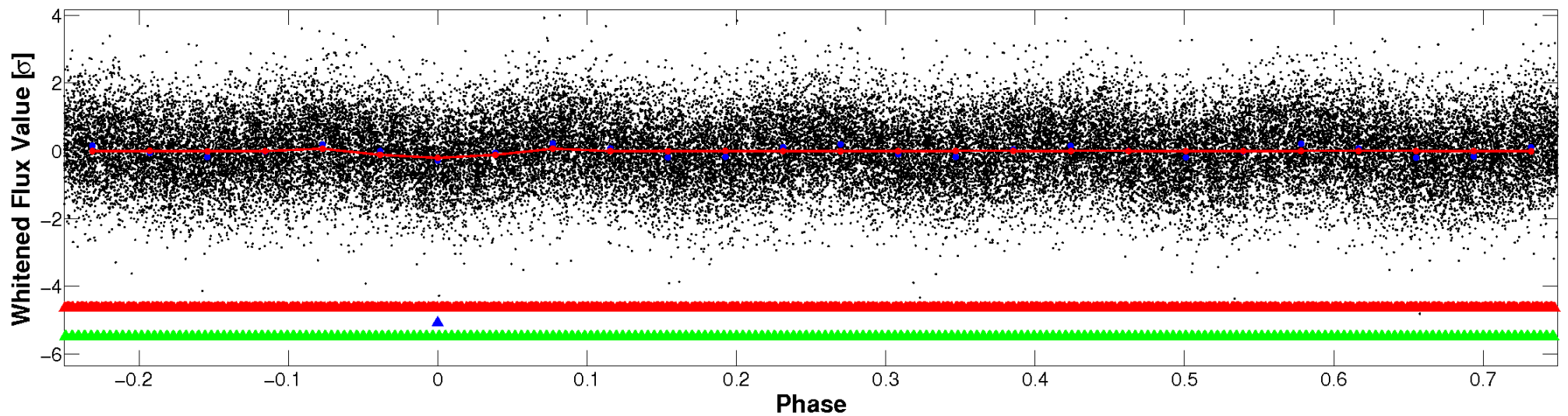


# Non-Whitened Vs. Whitened Light Curve

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

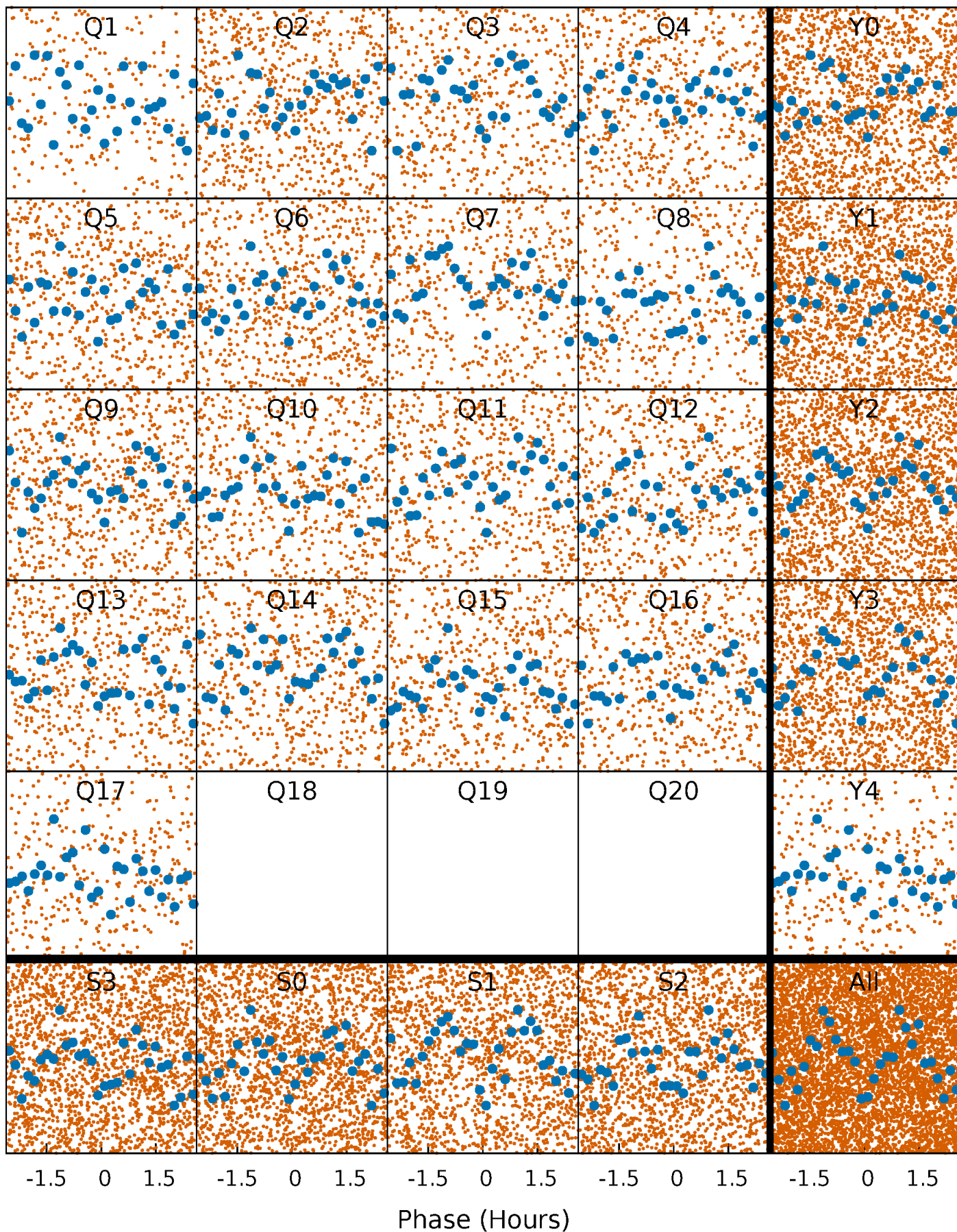


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

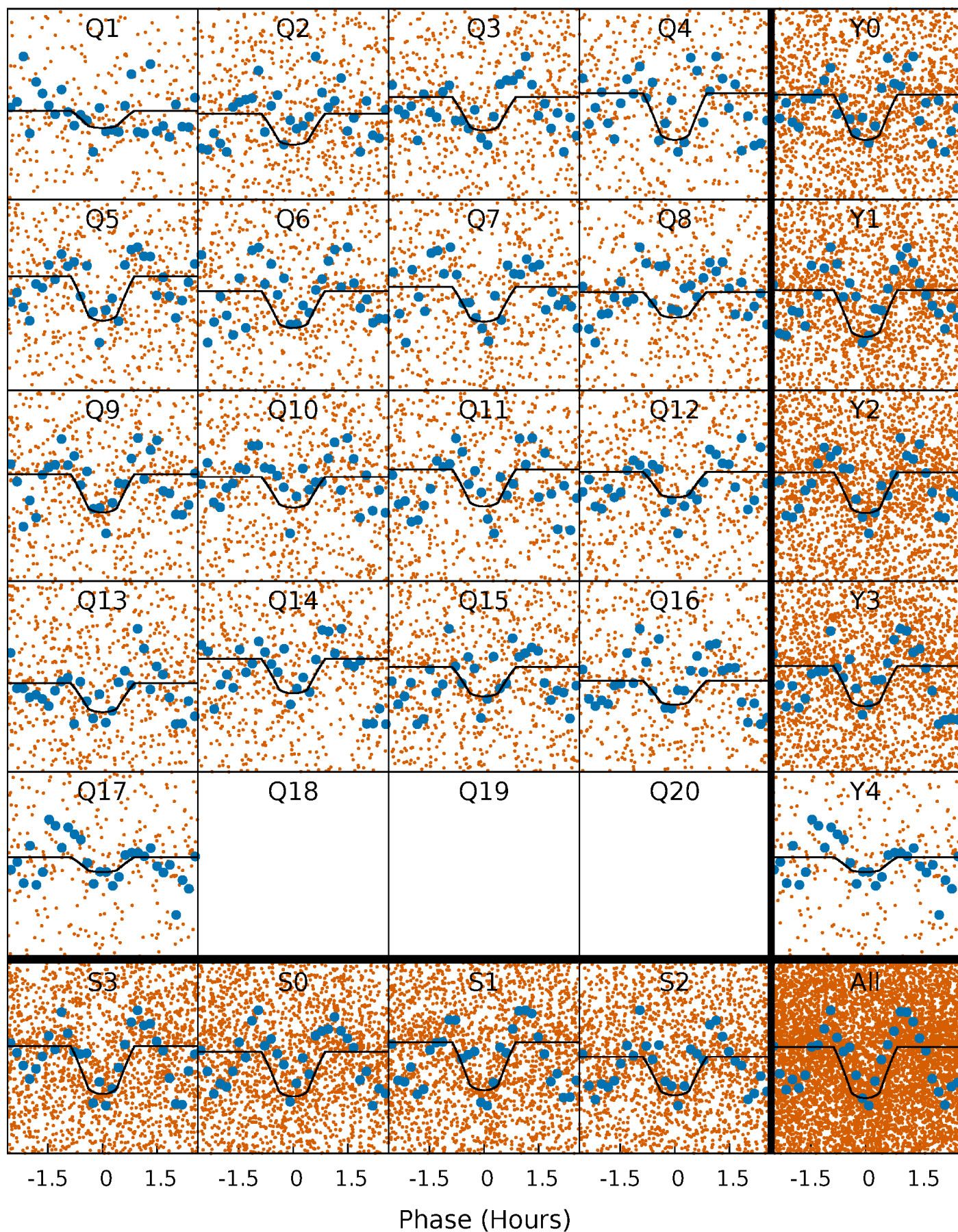
TCE 009242127-02 P= 0.530233 Days  $T_0=131.513870$  (BKJD)





# DV Quarter-Phased Transit Curves

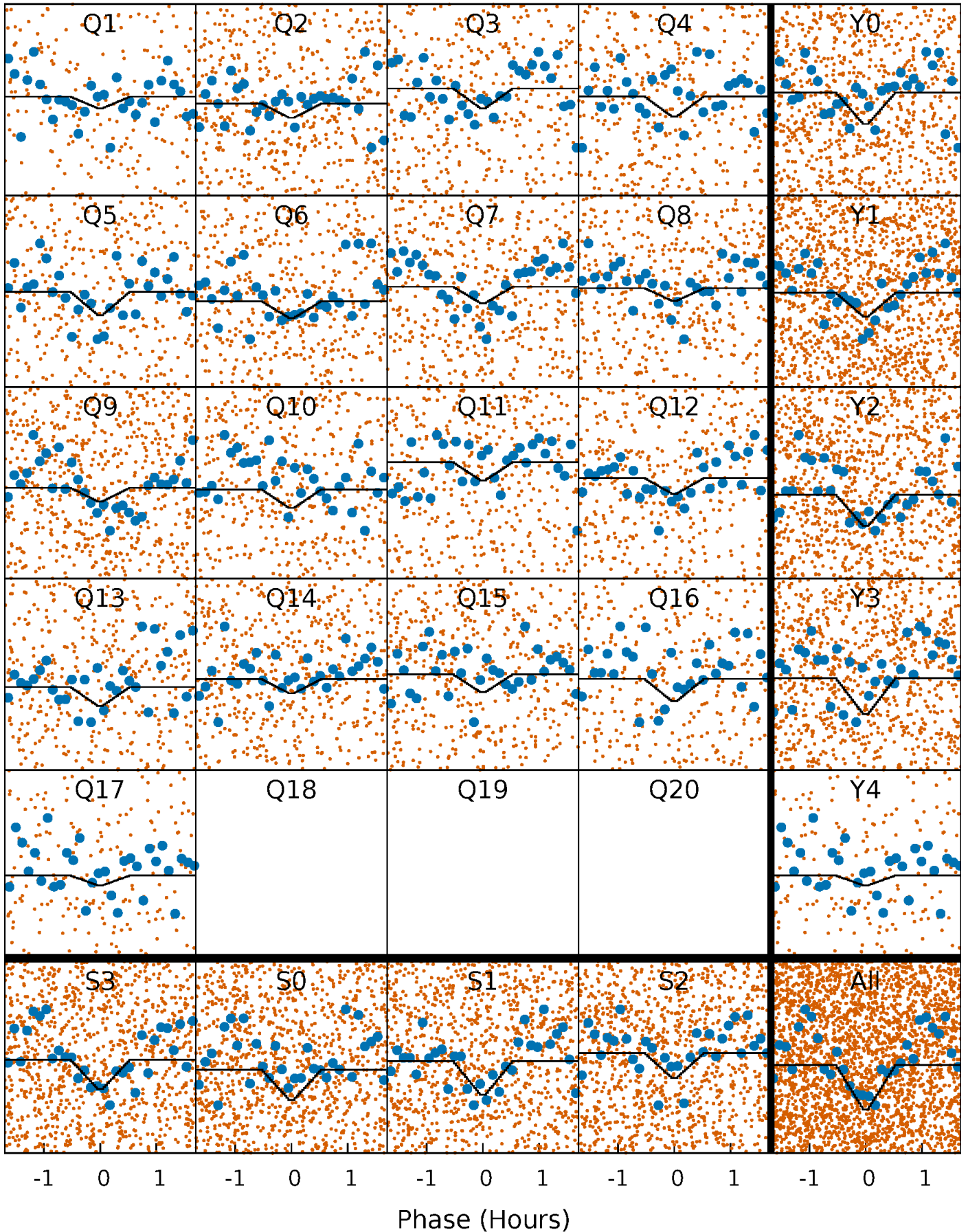
TCE 009242127-02   P= 0.530233 Days    $T_0=131.513870$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

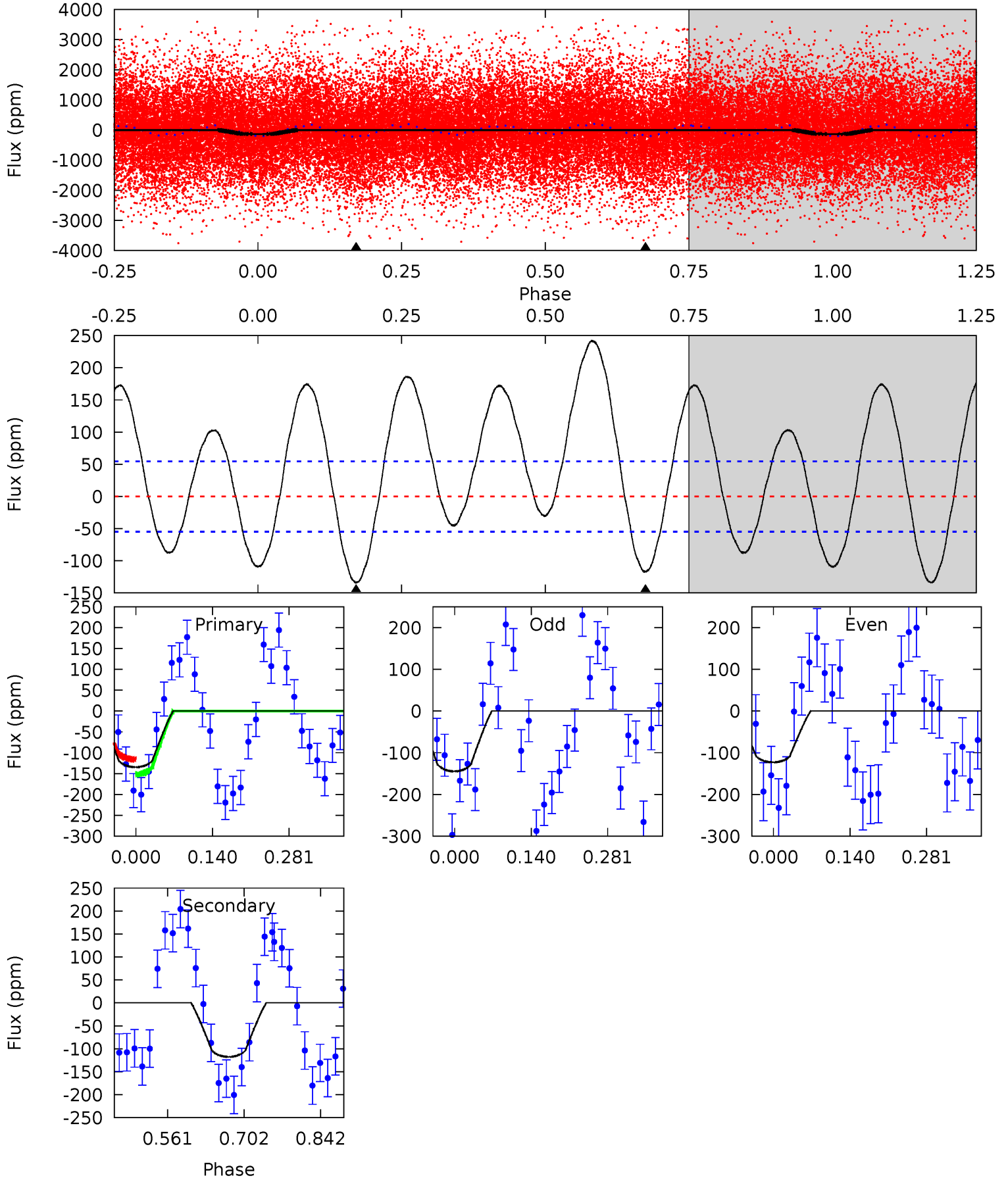
TCE 009242127-02   P= 0.530233 Days    $T_0=131.513870$  (BKJD)



# DV Model-Shift Uniqueness Test

009242127-02, P = 0.530233 Days, E = 130.983637 Days

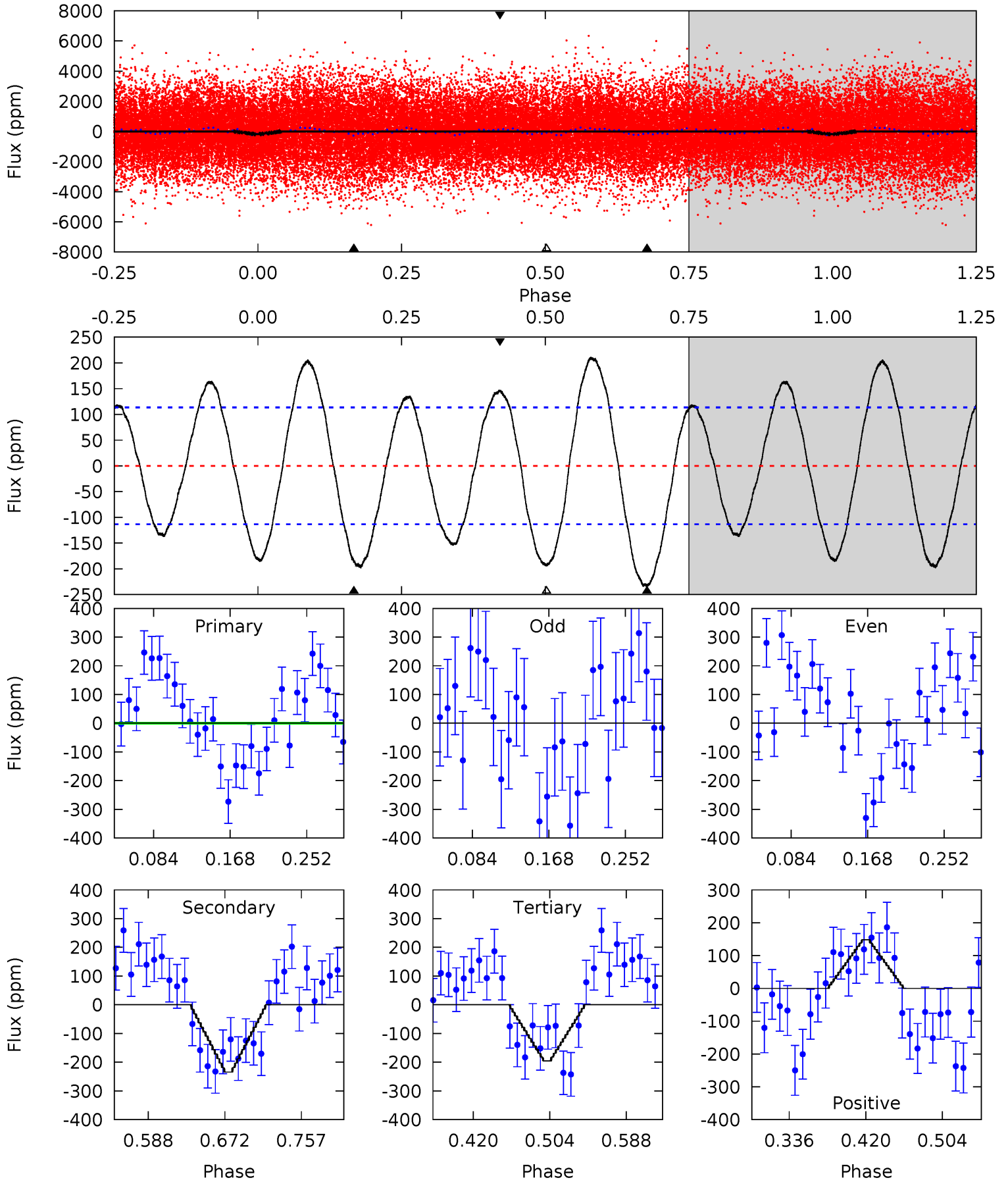
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	9.67	0	0	4.49	1.47	6.48	11.1	11.1	9.67	9.67	0.89	0.96	0.64	1.47



# Alt Model-Shift Uniqueness Test

009242127-02, P = 0.530233 Days, E = 130.983637 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
7.63	9.51	7.91	5.99	4.60	1.73	4.79	-0.28	1.64	1.60	3.51	1.13	1.14	0.47	0.58



### Stellar Parameters For KIC 009242127

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7502^{+235}_{-314}$	$3.723^{+0.468}_{-0.078}$	$-0.240^{+0.250}_{-0.350}$	$3.089^{+0.366}_{-1.465}$	$1.839^{+0.151}_{-0.454}$	$0.088^{+0.385}_{-0.023}$
	+3%/-4%	+13%/-2%	+104%/-146%	+12%/-47%	+8%/-25%	+438%/-26%
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 009242127-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-118 \pm 12$	$4.48^{+1.44}_{-1.48}$	$6278^{+419}_{-731}$	$5583^{+1281}_{-974}$	$0.786^{+0.850}_{-0.318}$
Alt.	$-235 \pm 25$	$4.26^{+1.45}_{-1.17}$	$6215^{+446}_{-692}$	$7284^{+1542}_{-1029}$	$1.722^{+1.538}_{-0.719}$

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



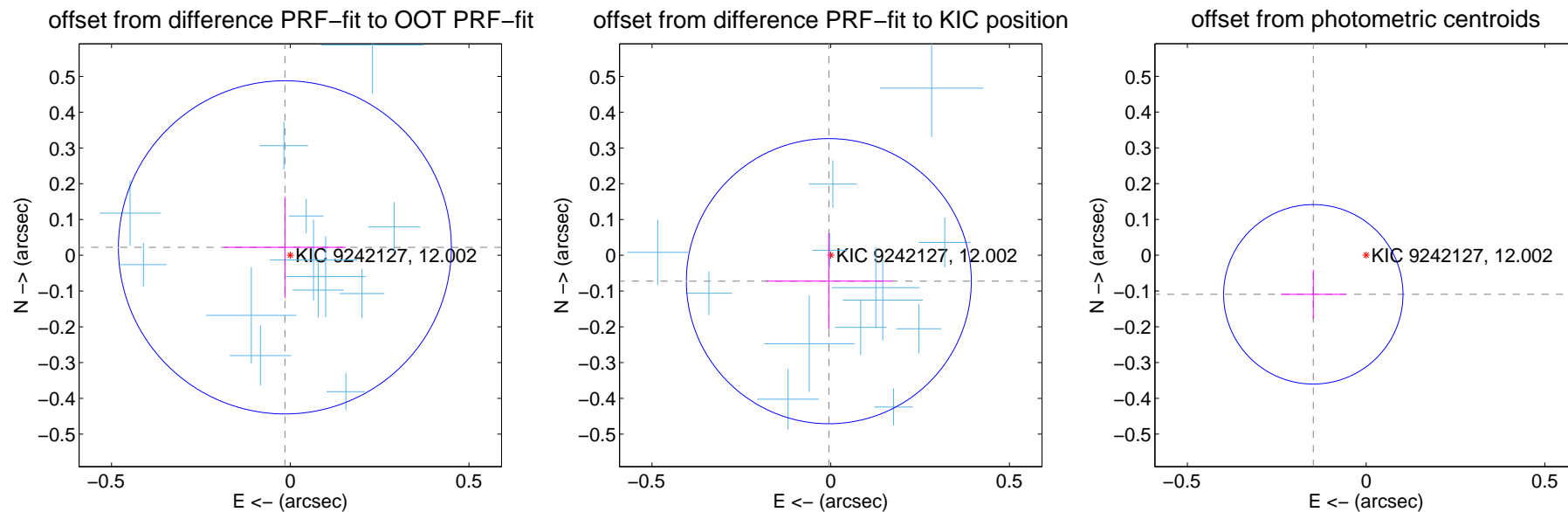
## DV Centroid Data

Supplemental centroid analysis for 009242127-02. Kepler magnitude: 12.00. Transit SNR 12.40

There are 17 quarters with good PRF difference image offsets

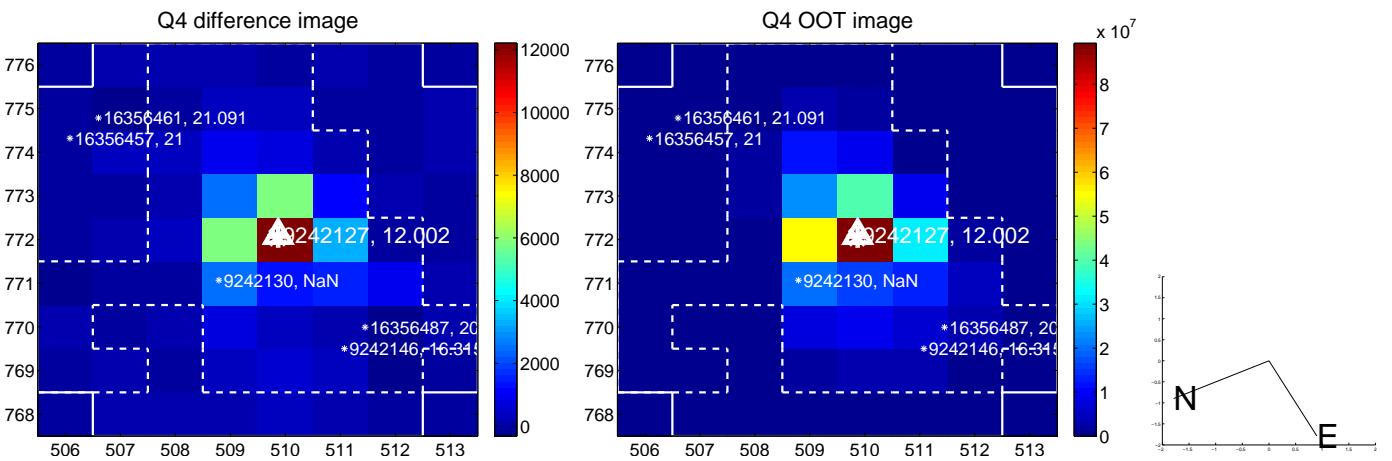
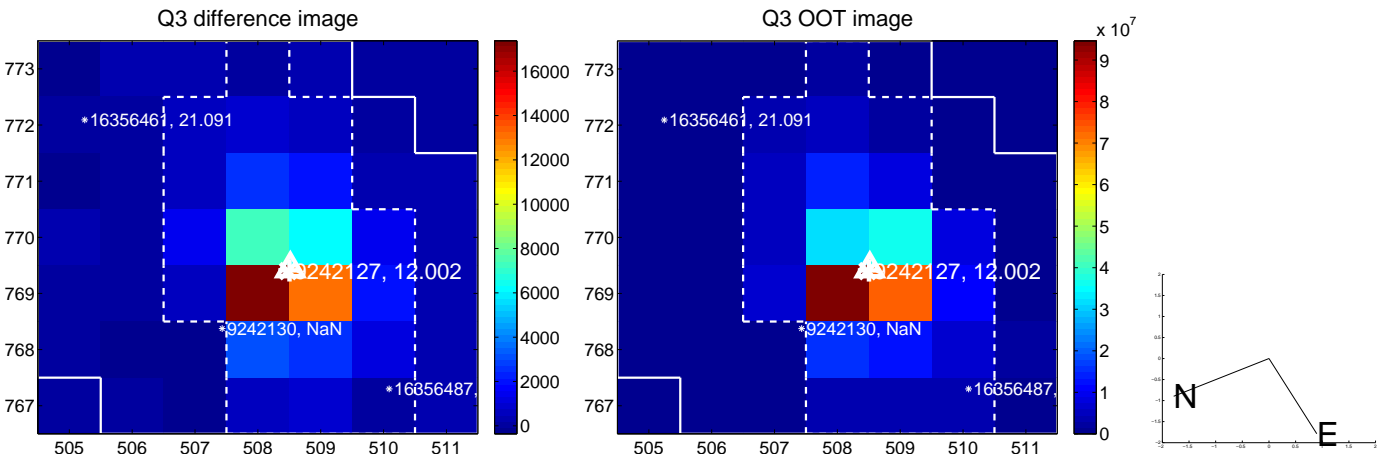
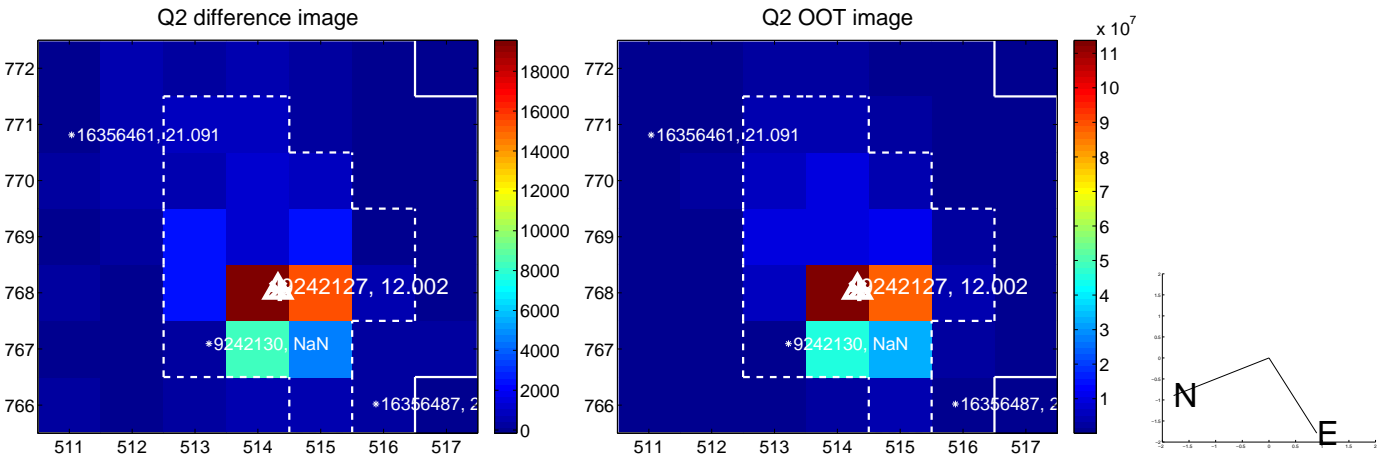
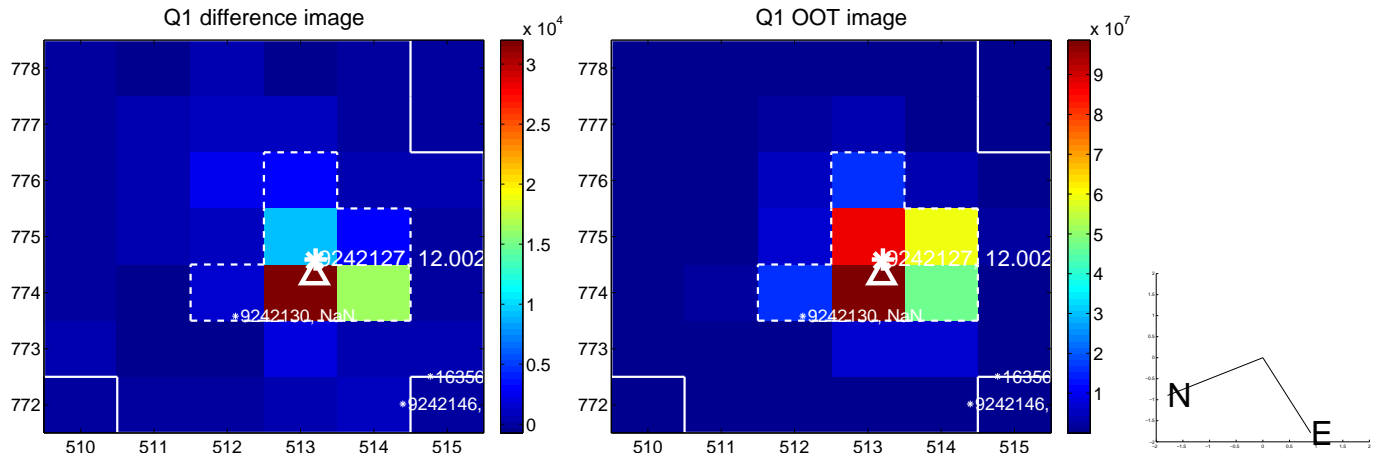
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.027 \pm 0.155$	0.17	$0.015 \pm 0.171$	$0.022 \pm 0.141$
PRF-fit source offset from KIC position	$0.073 \pm 0.133$	0.55	$0.005 \pm 0.176$	$-0.072 \pm 0.134$
photometric centroid source offset	$0.18 \pm 0.08$	2.20	$0.15 \pm 0.09$	$-0.11 \pm 0.07$

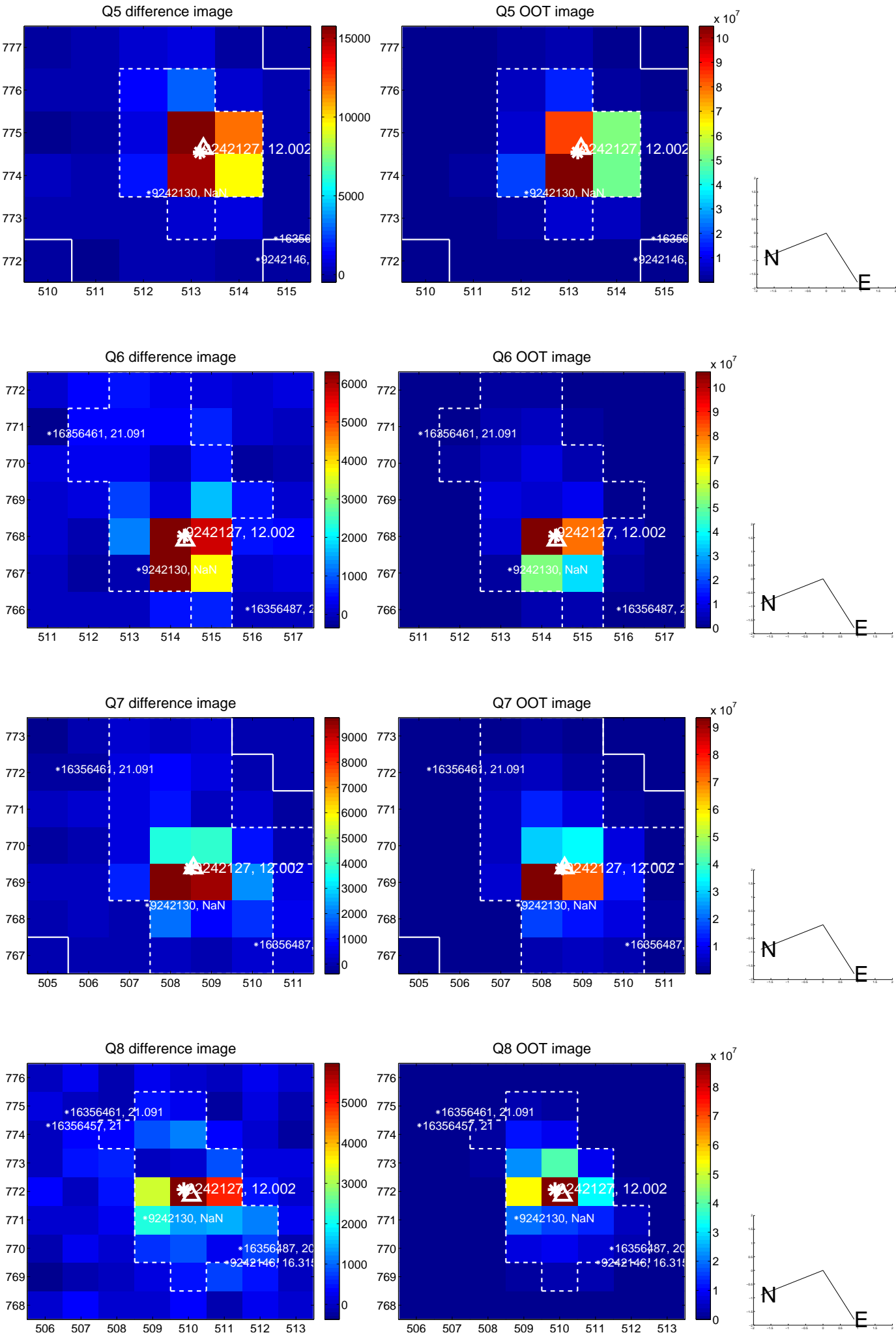


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

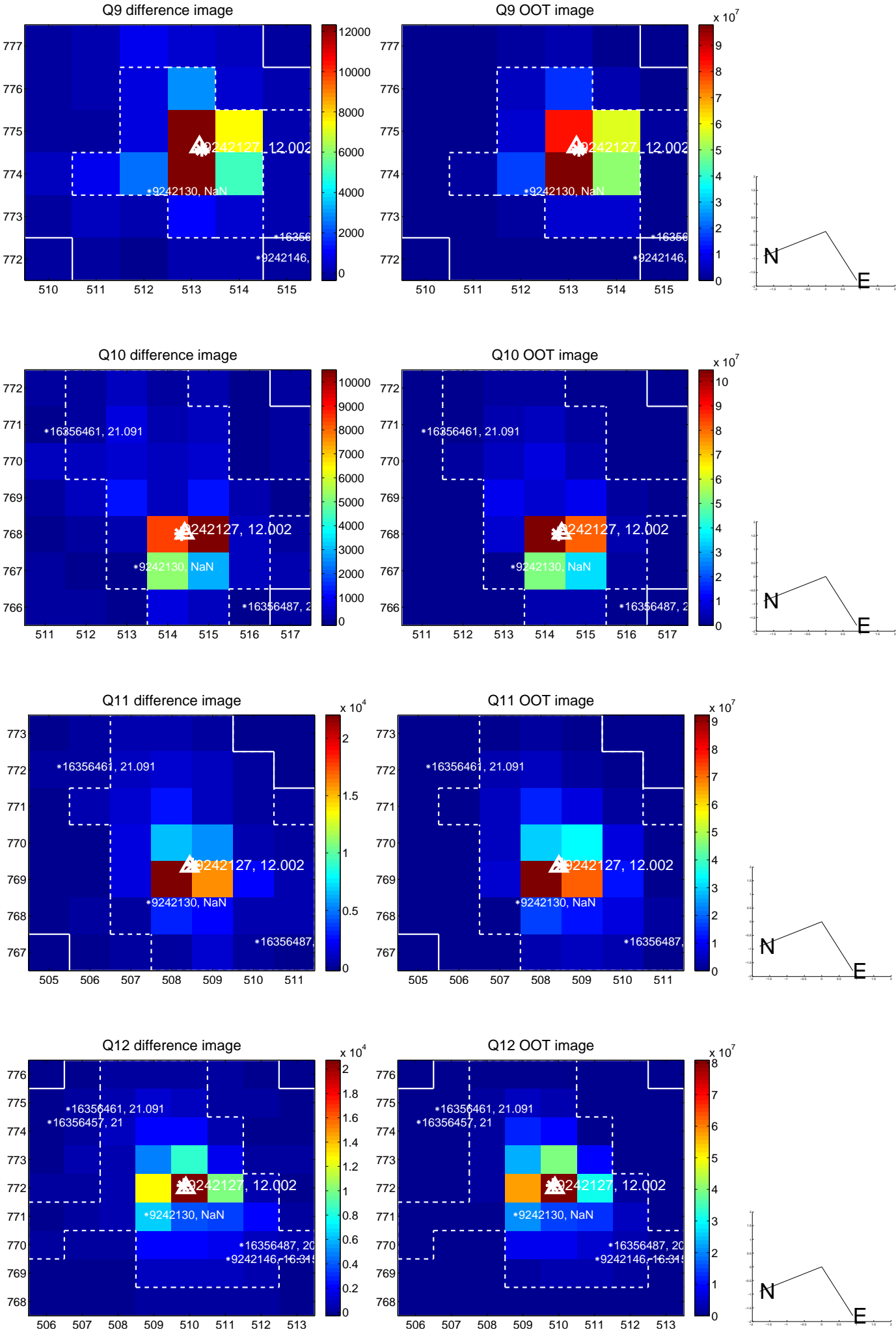
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

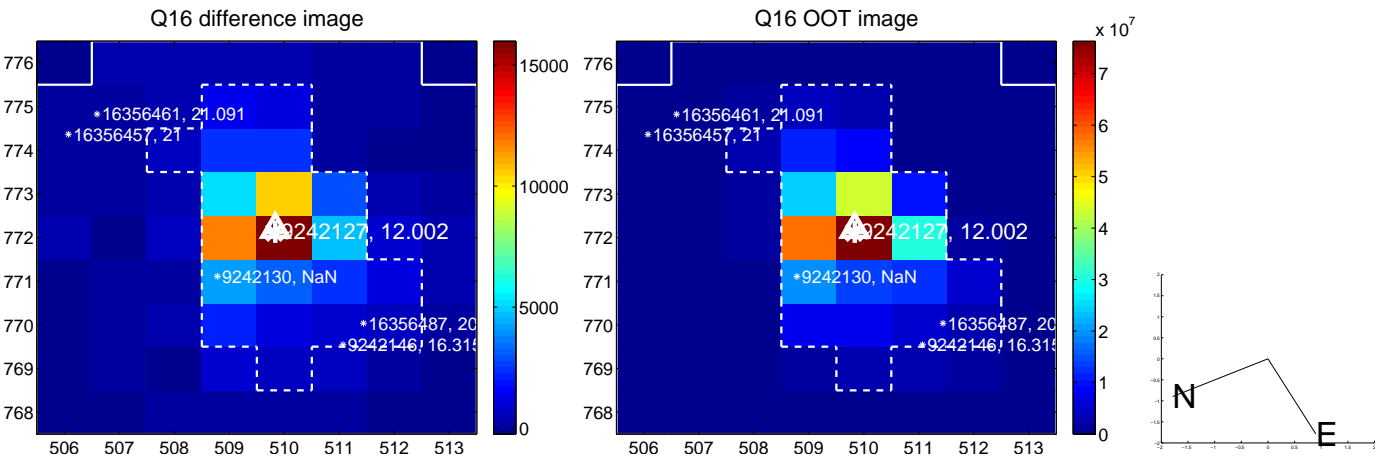
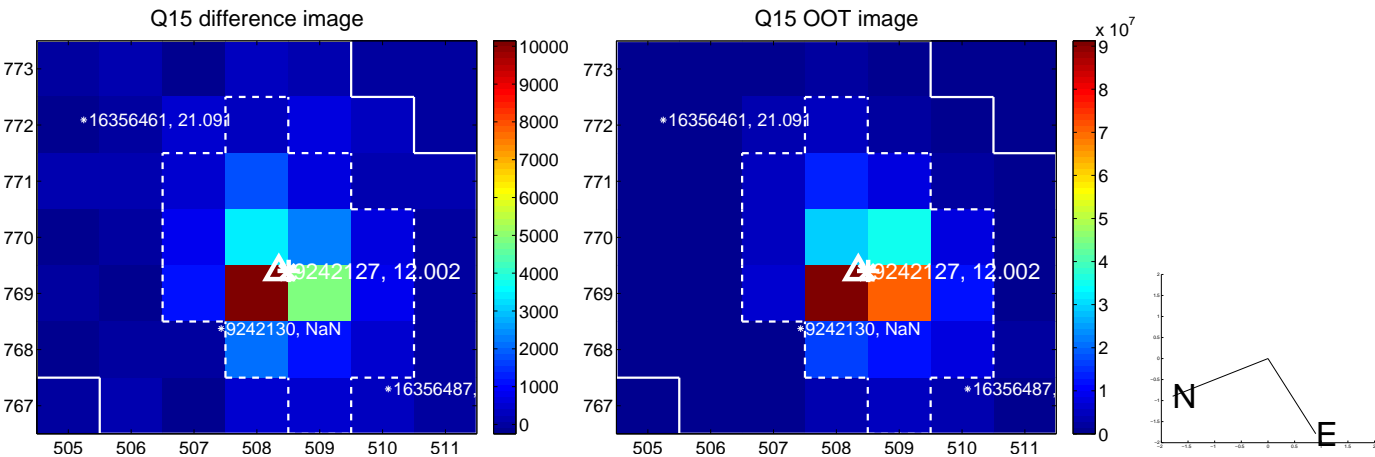
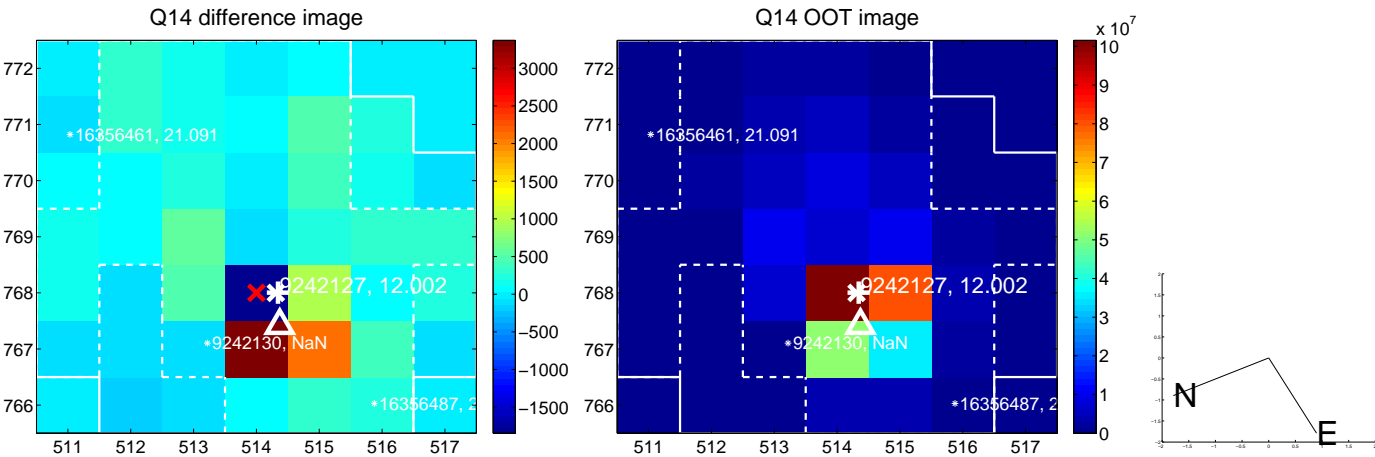
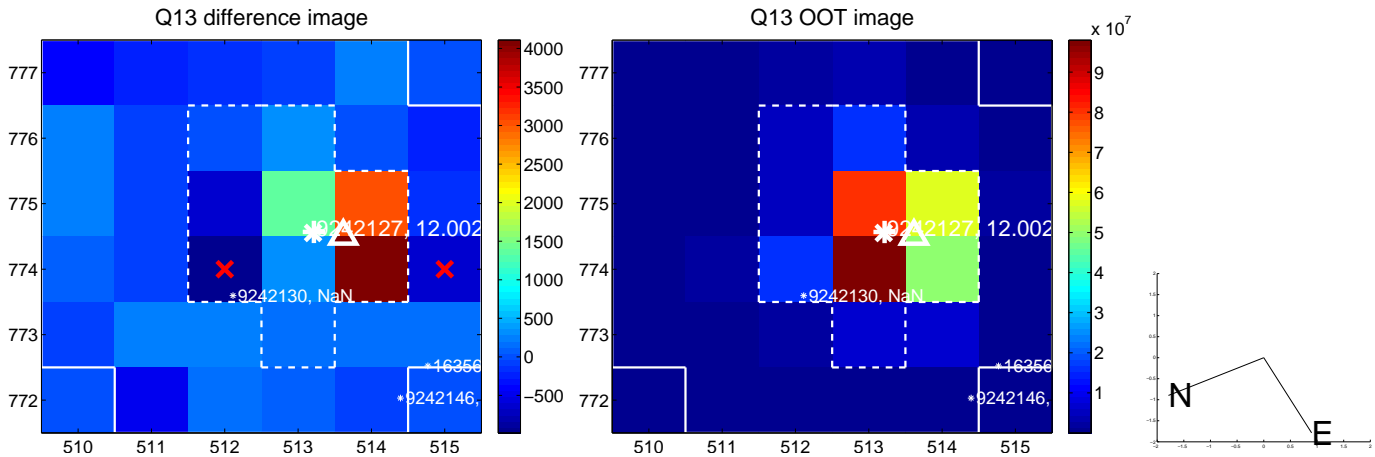


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

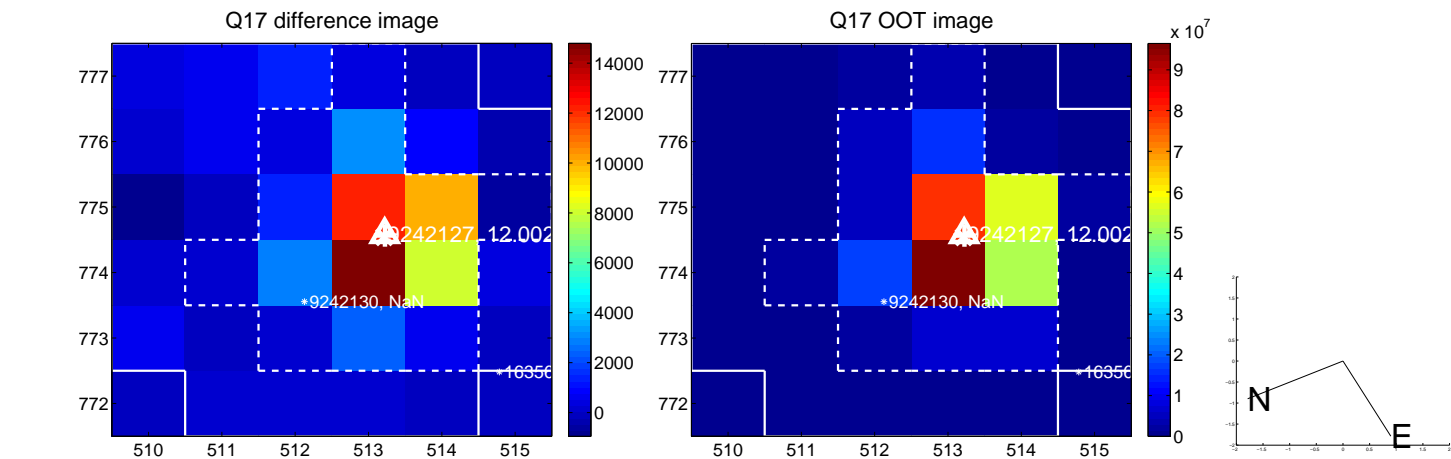




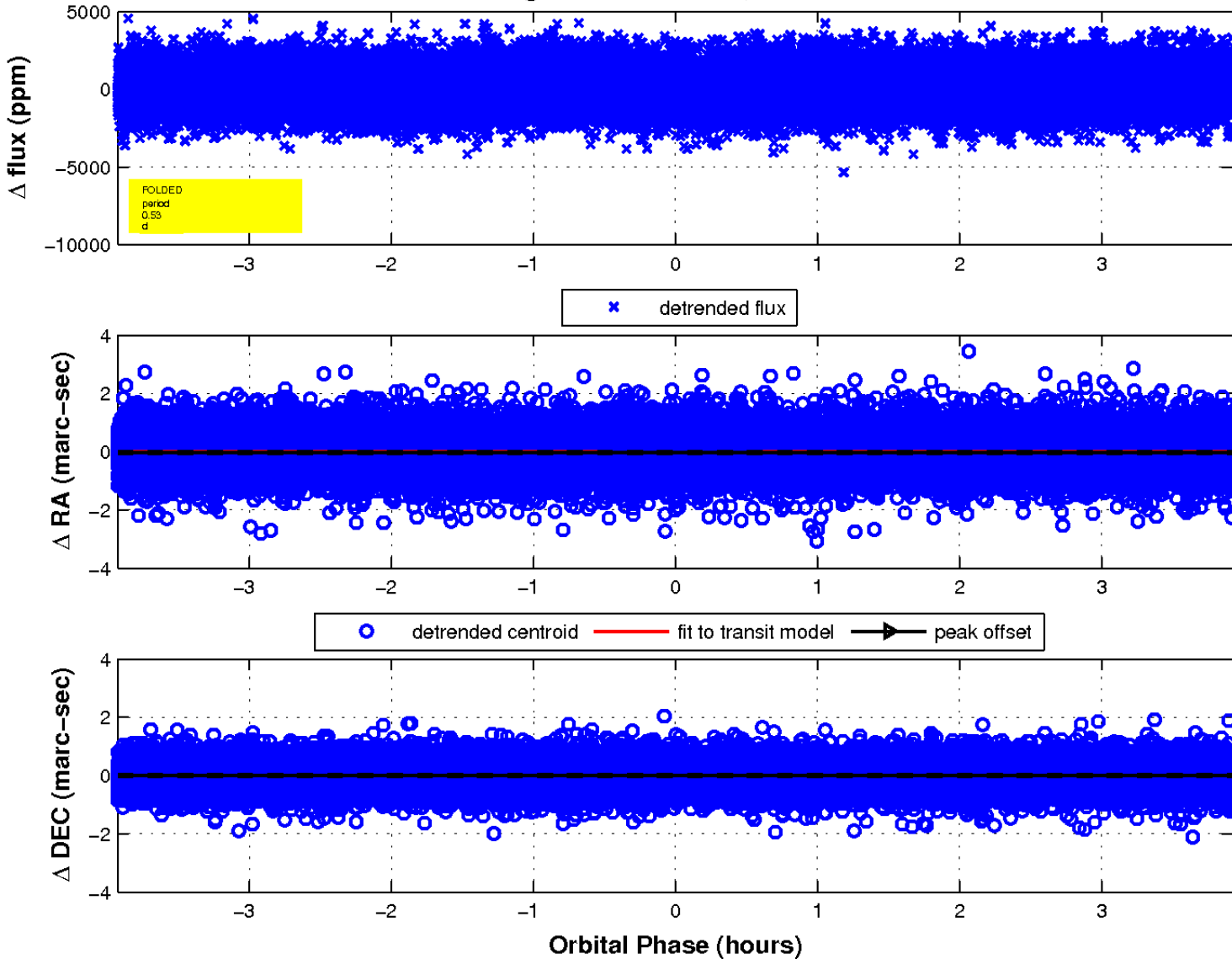
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

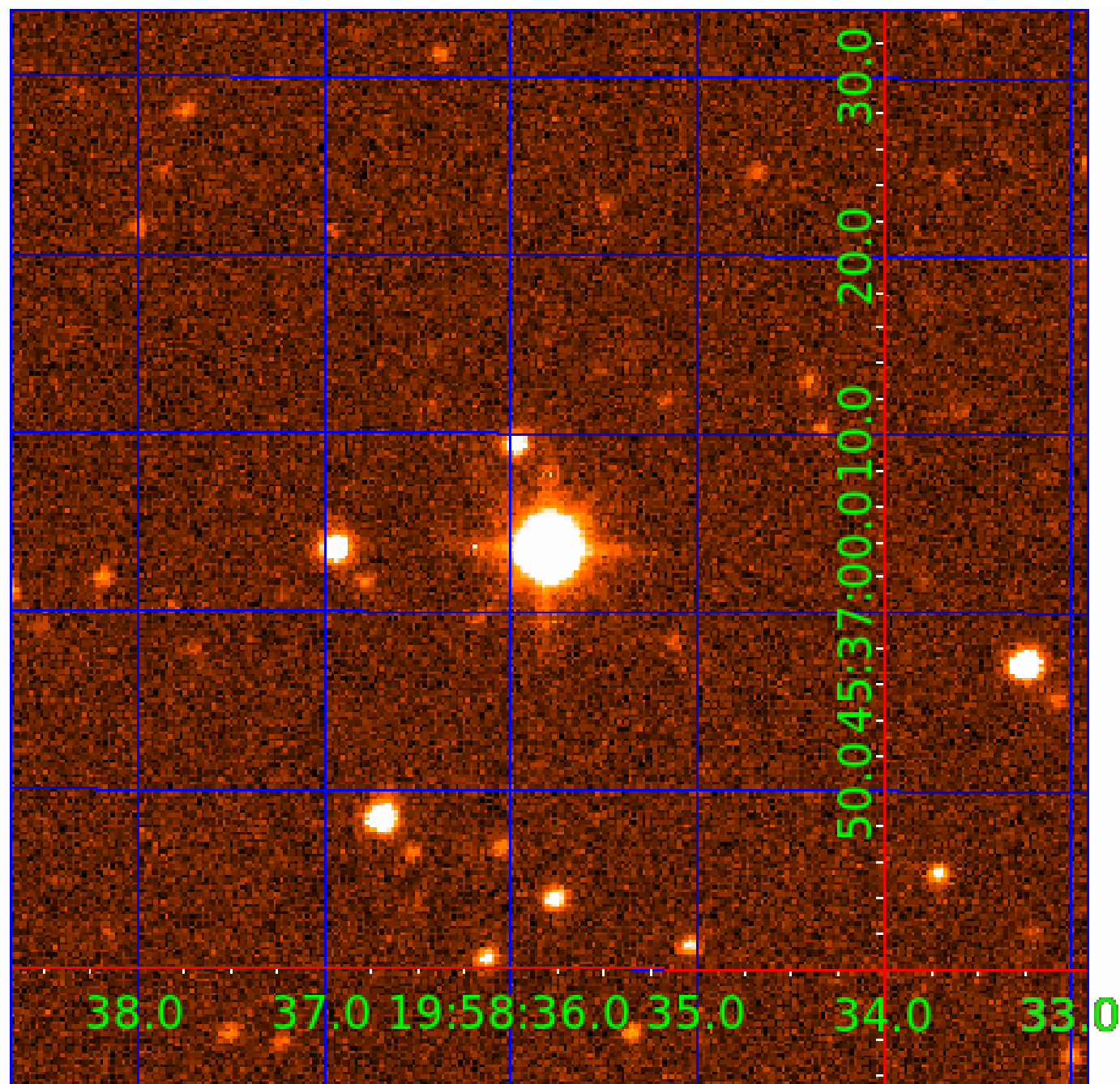


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



# KIC 009242127

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009242127-01	OBS	No	0.962437	132.075455	215.7	2.240	11.1	11.4	3.09	7502	5.34	49543.30
009242127-02	OBS	No	0.530233	131.513870	213.6	1.309	13.9	12.4	3.09	7502	4.85	109696.44
009242127-03	OBS	No	0.604375	131.667444	163.2	2.000	12.1	-1.0	3.09	7502	3.96	92130.99

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009242127-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009242127-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009242127-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—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.

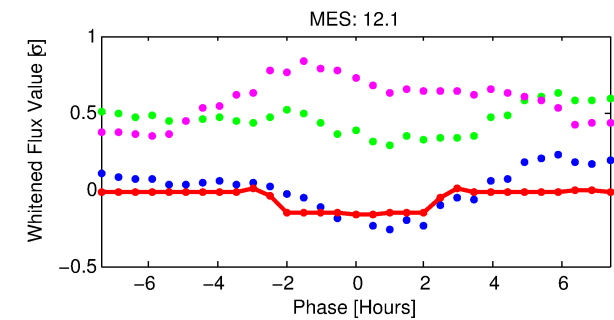
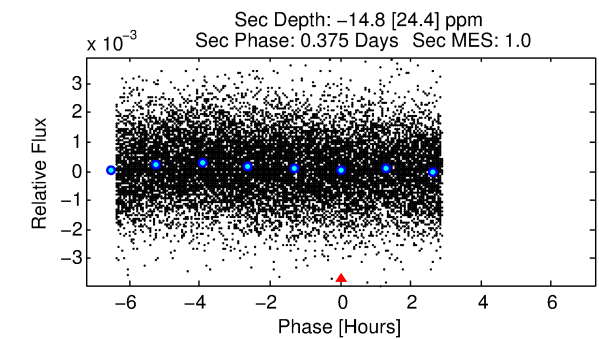
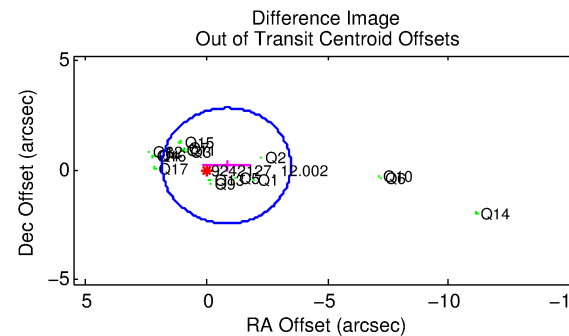
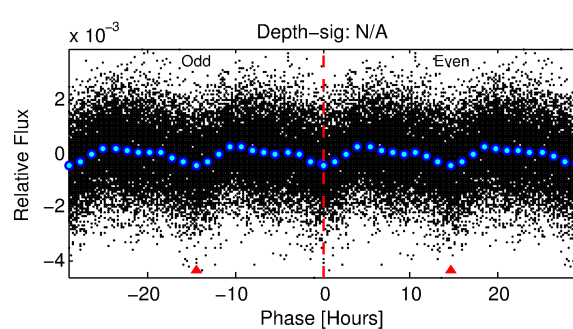
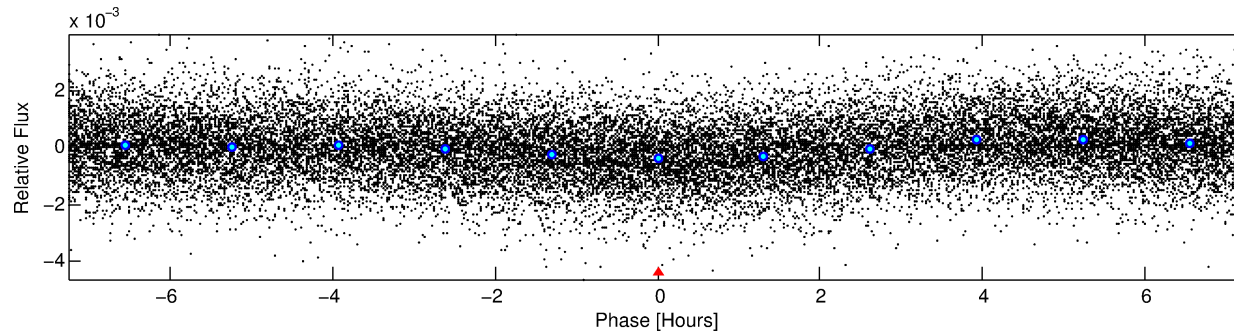
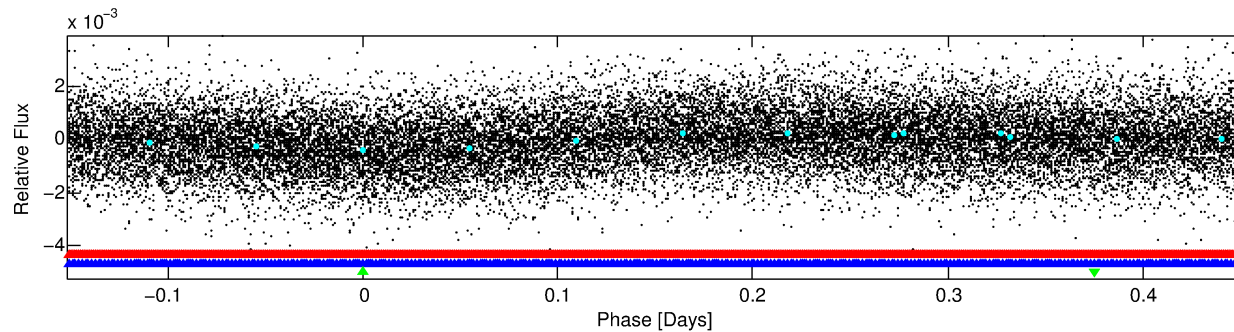
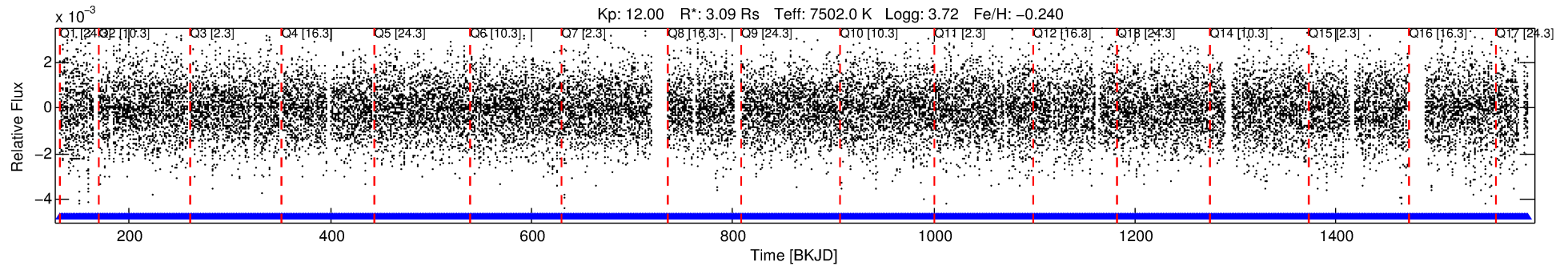
## Ephemeris Match Information For 009242127-03

No Significant Match Found



# DV One-Page Summary

KIC: 9242127 Candidate: 3 of 3 Period: 0.604 d



## TPS TCE Results:

Period = 0.60438 d  
Epoch = 131.6674 BKJD

DV fit results are unavailable

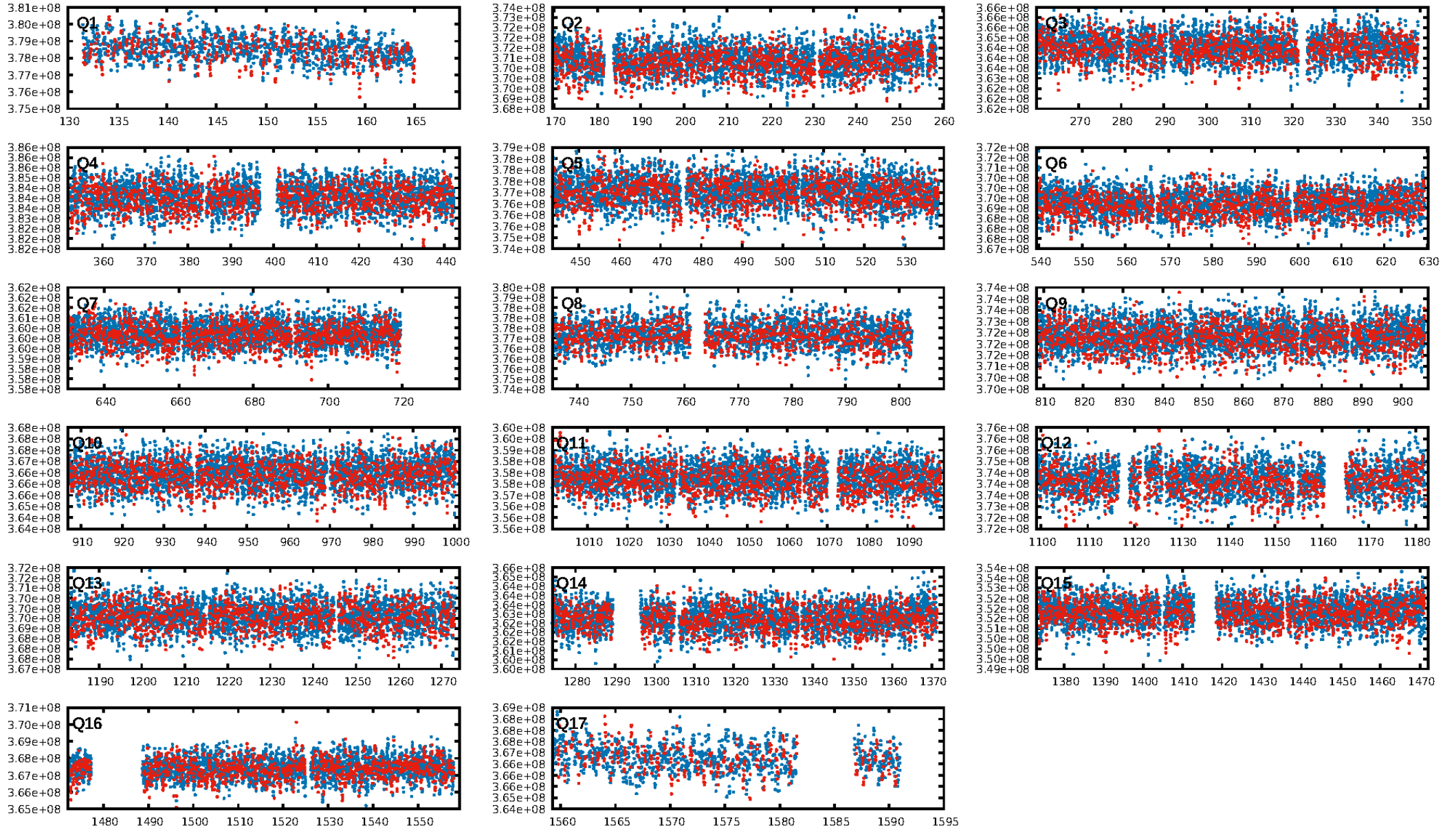
## DV Diagnostic Results:

ShortPeriod-sig: 54.3% [0.74σ]  
LongPeriod-sig: 99.6% [2.86σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1761/1761]  
GhostDiagnostic-chr: 1.464  
Centroid-sig: 0.9%  
Centroid-so: 0.067 arcsec [4.66σ]  
OotOffset-rm: 0.852 arcsec [0.96σ]  
KicOffset-rm: 0.840 arcsec [0.97σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.65 [11/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:58:13 Z

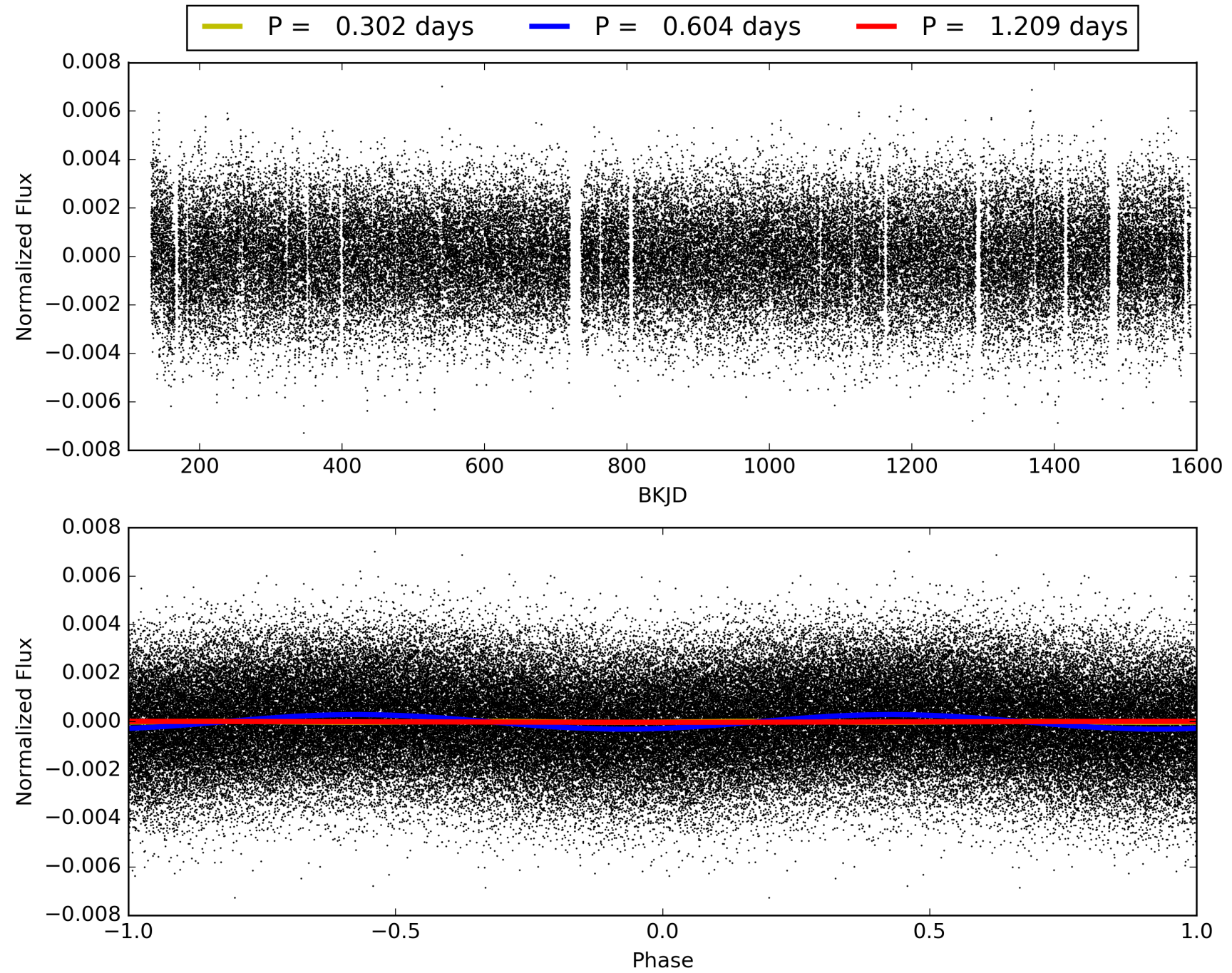
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009242127-03, PDC Light Curves



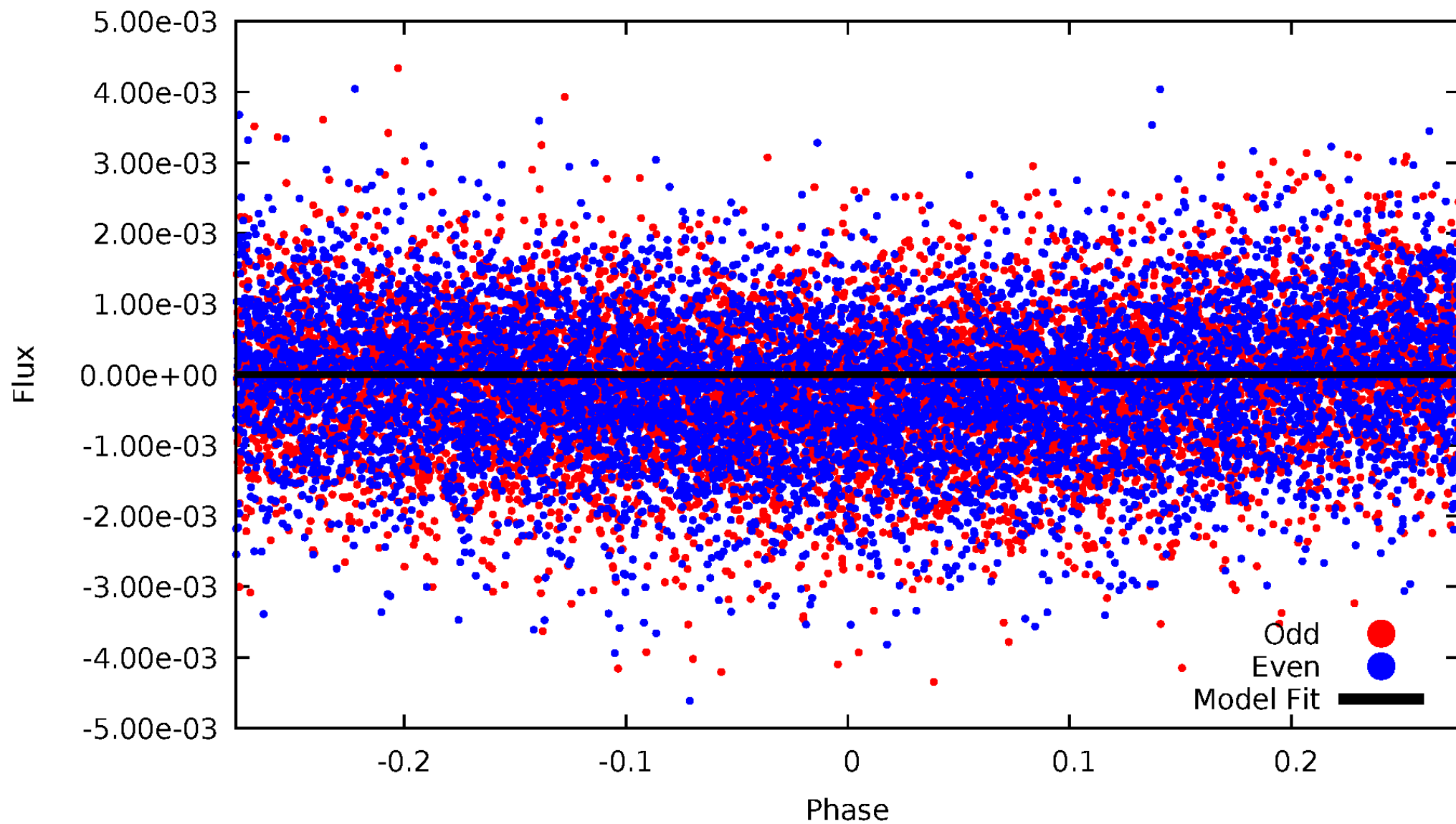


TCE 009242127-03



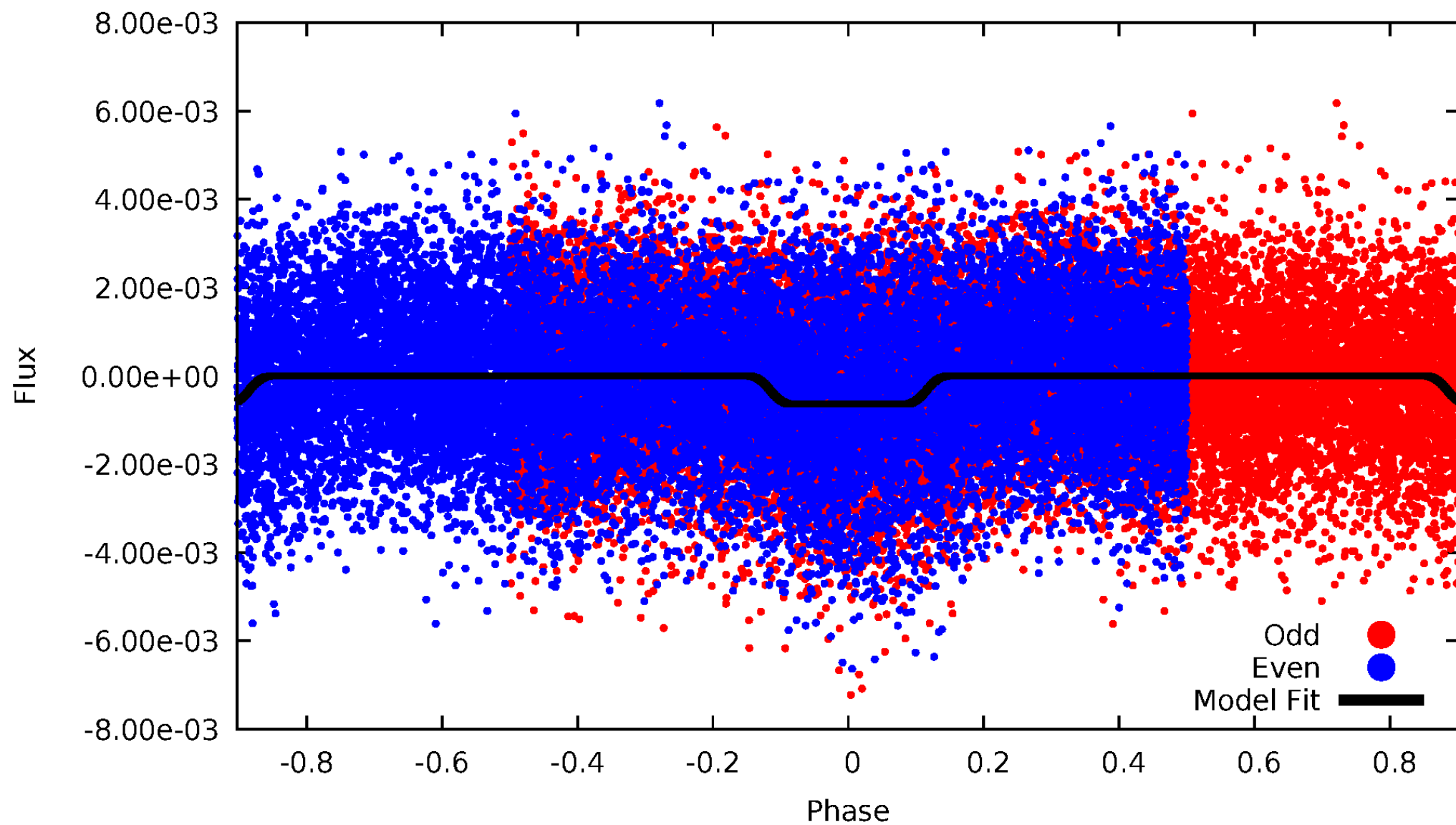
# DV Odd/Even

TCE 009242127-03



# ALT Odd/Even

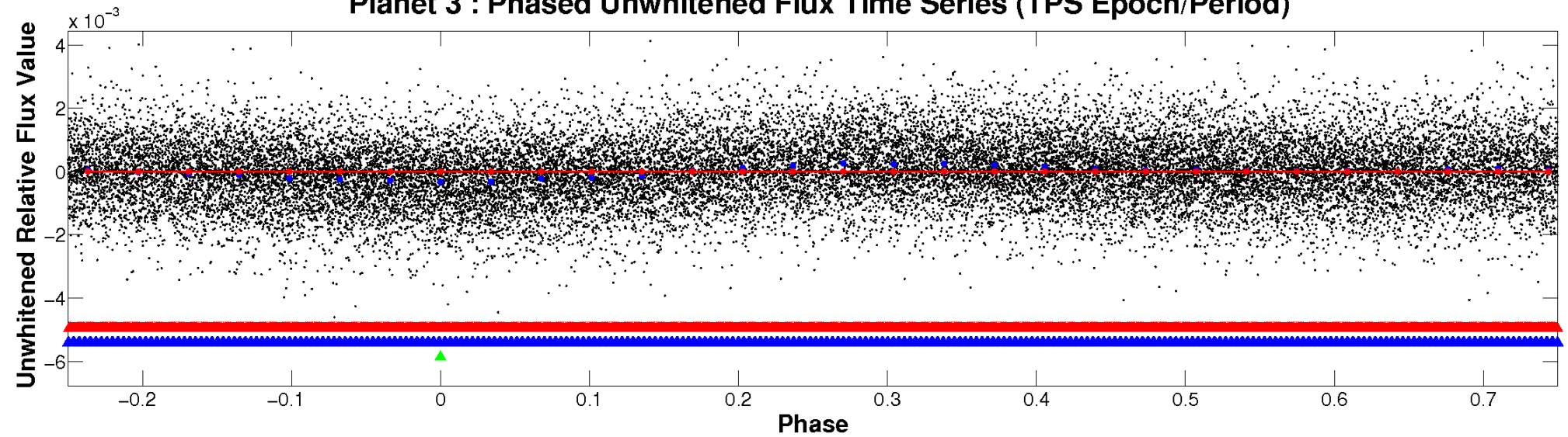
TCE 009242127-03



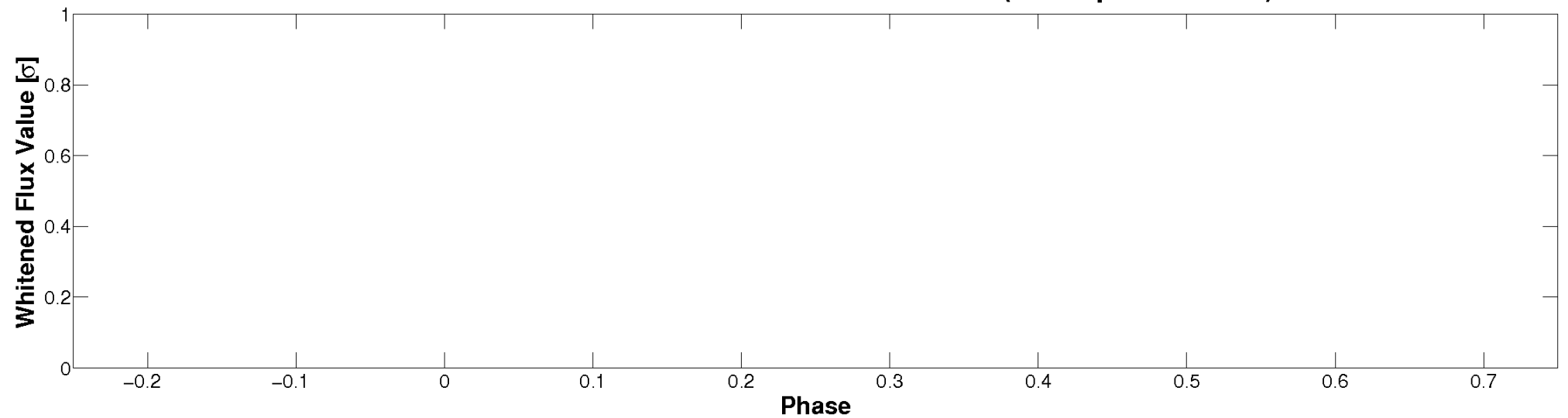


# Non-Whitened Vs. Whitened Light Curve

**Planet 3 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

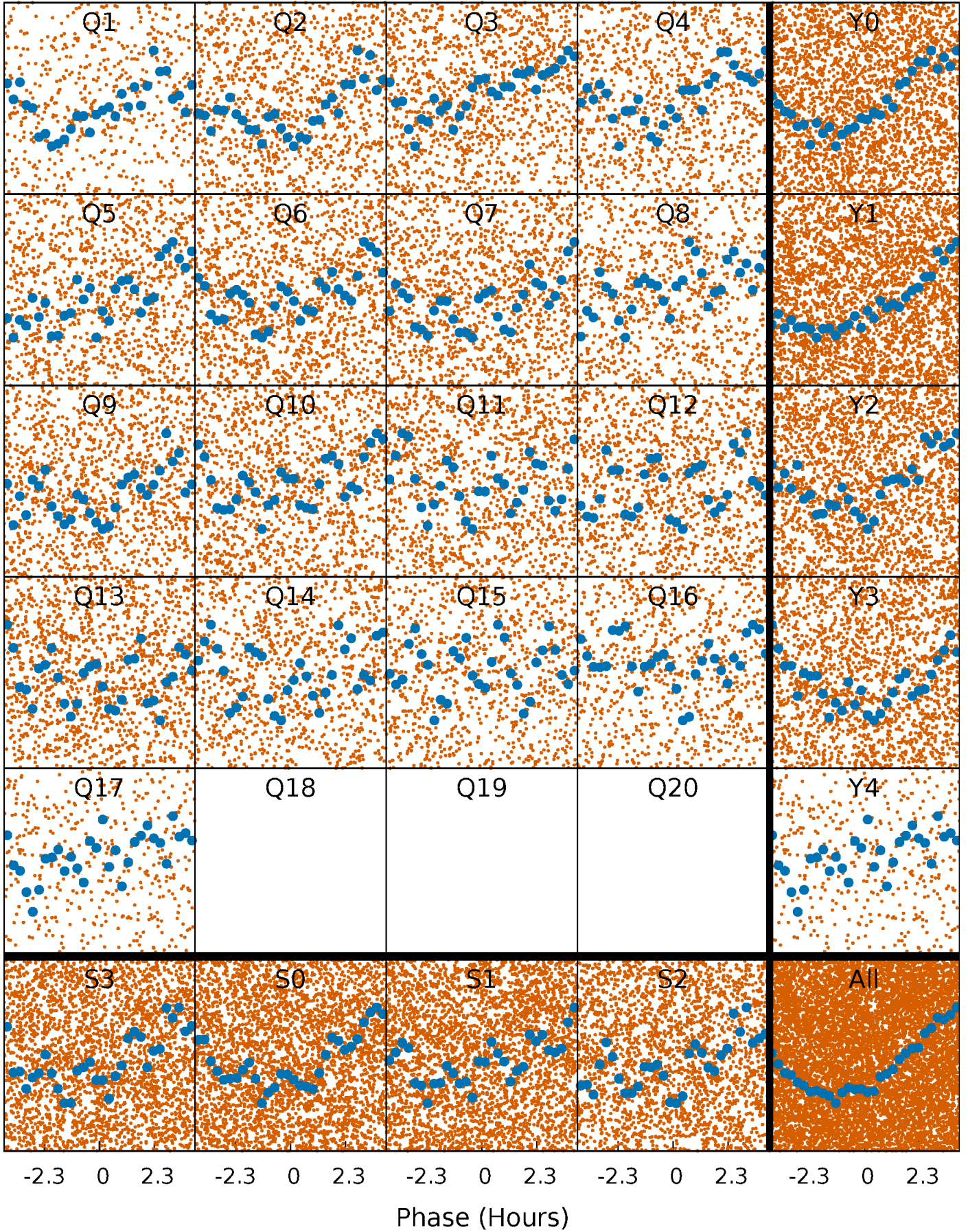


**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

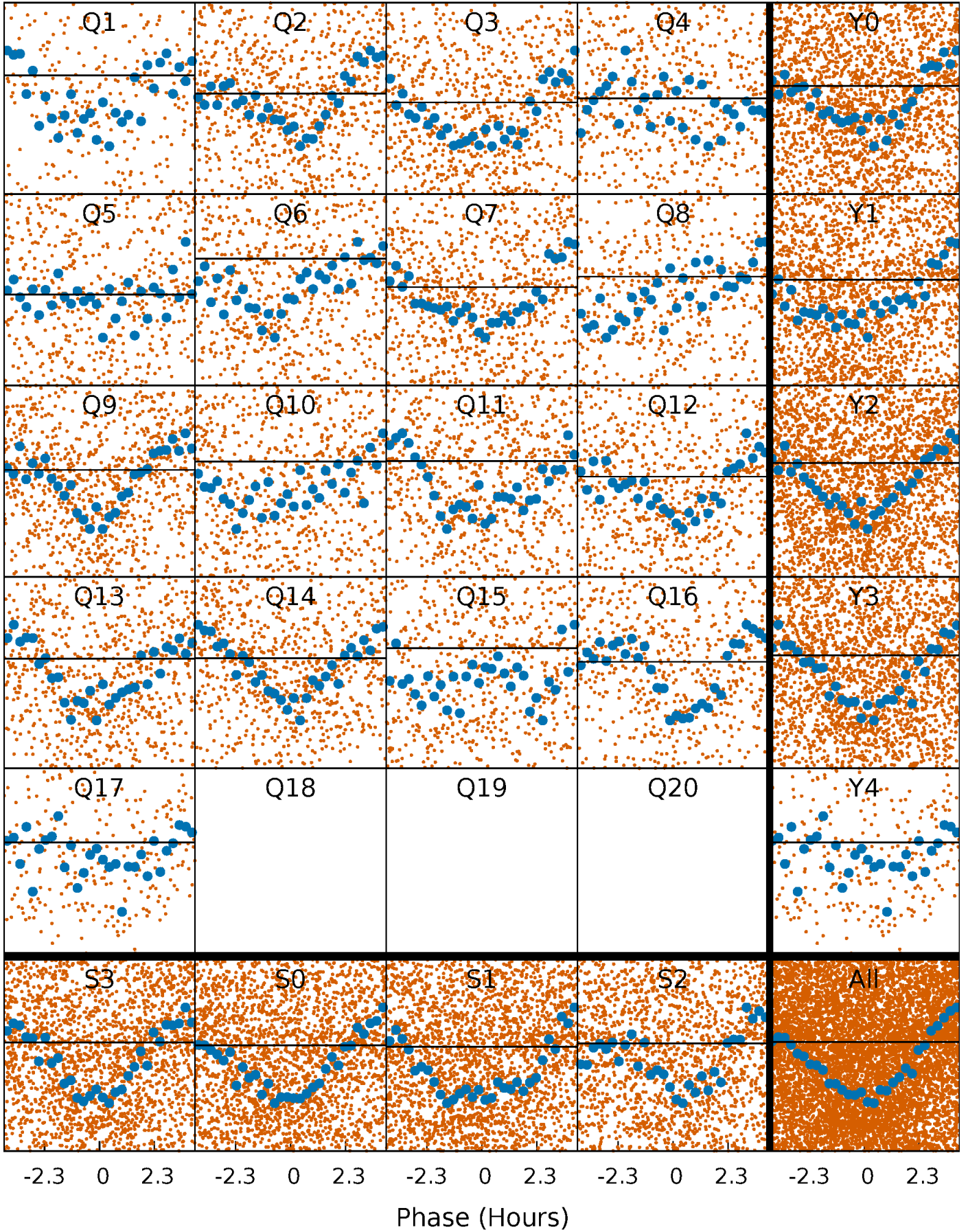
TCE 009242127-03 P= 0.604375 Days  $T_0=131.667444$  (BKJD)





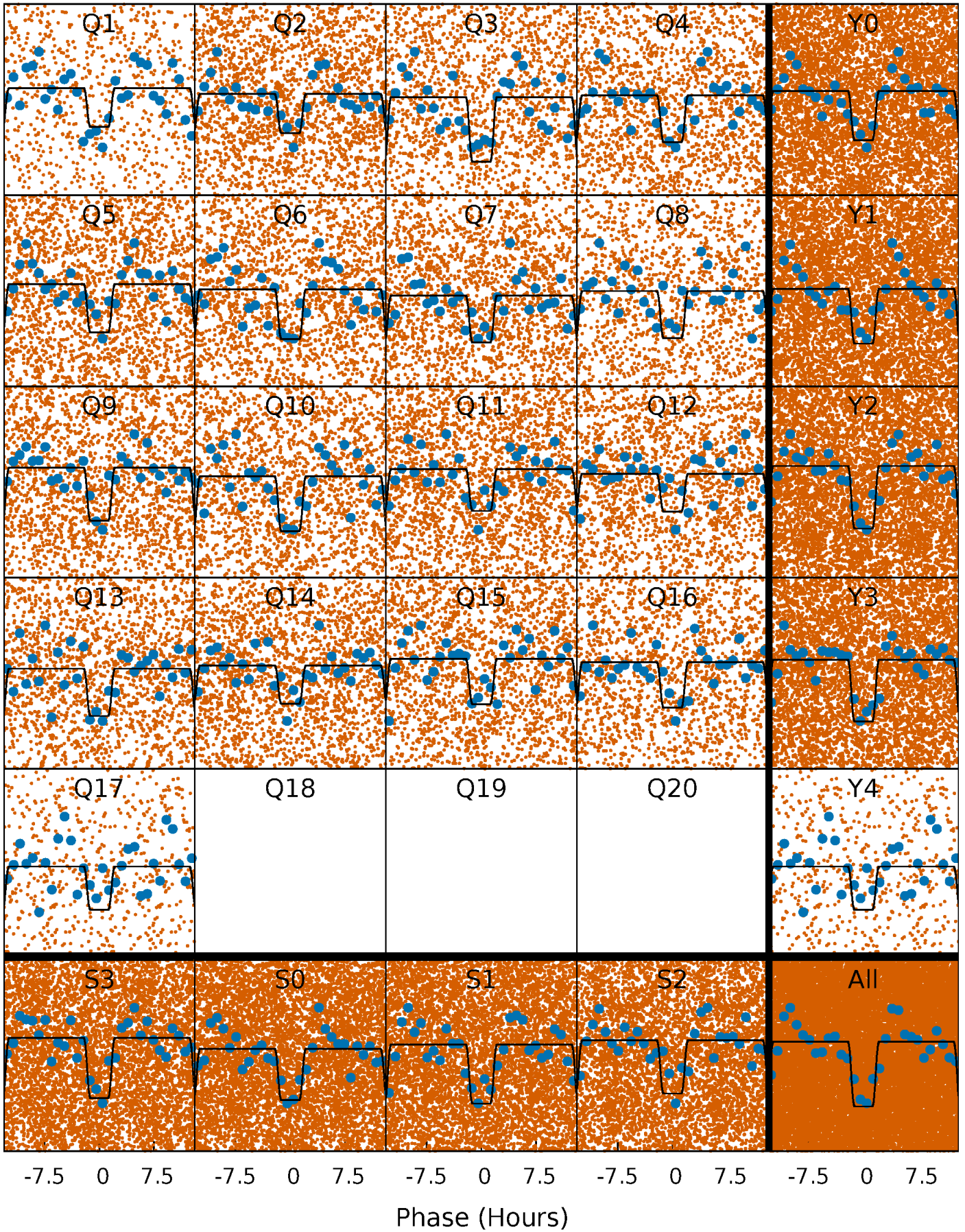
# DV Quarter-Phased Transit Curves

TCE 009242127-03    P= 0.604375 Days     $T_0=131.667444$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 009242127-03   P= 0.604375 Days    $T_0=131.662413$  (BKJD)

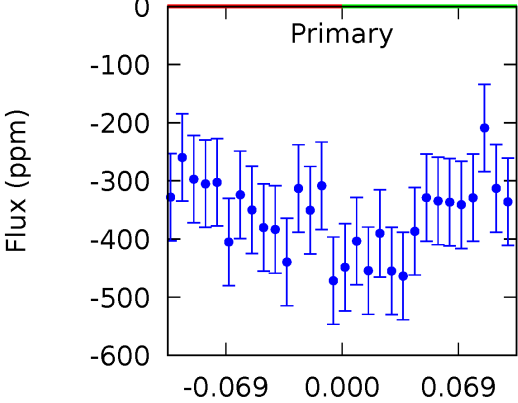
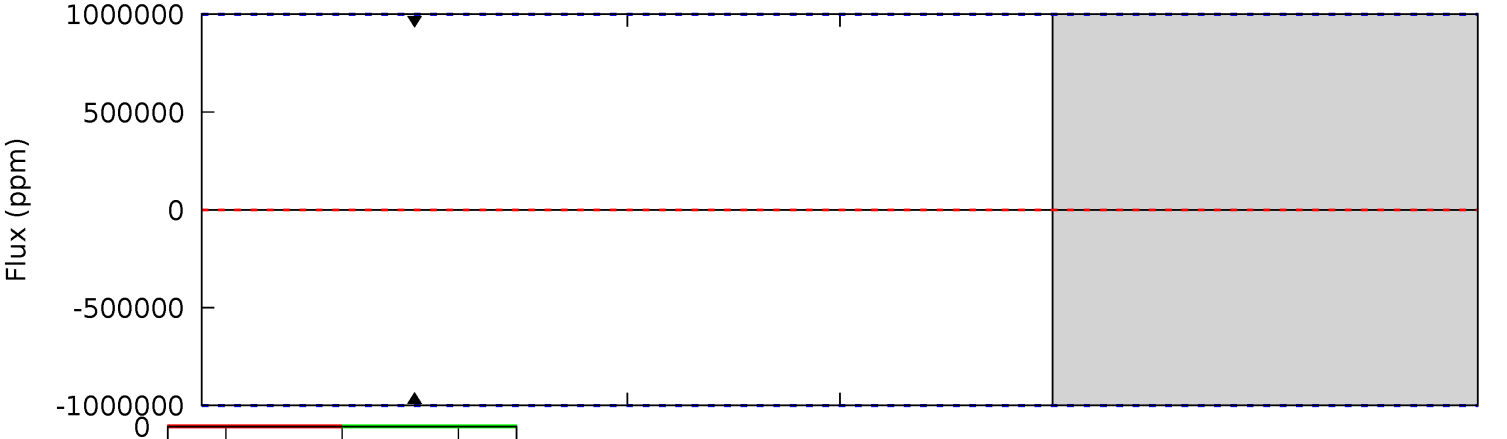
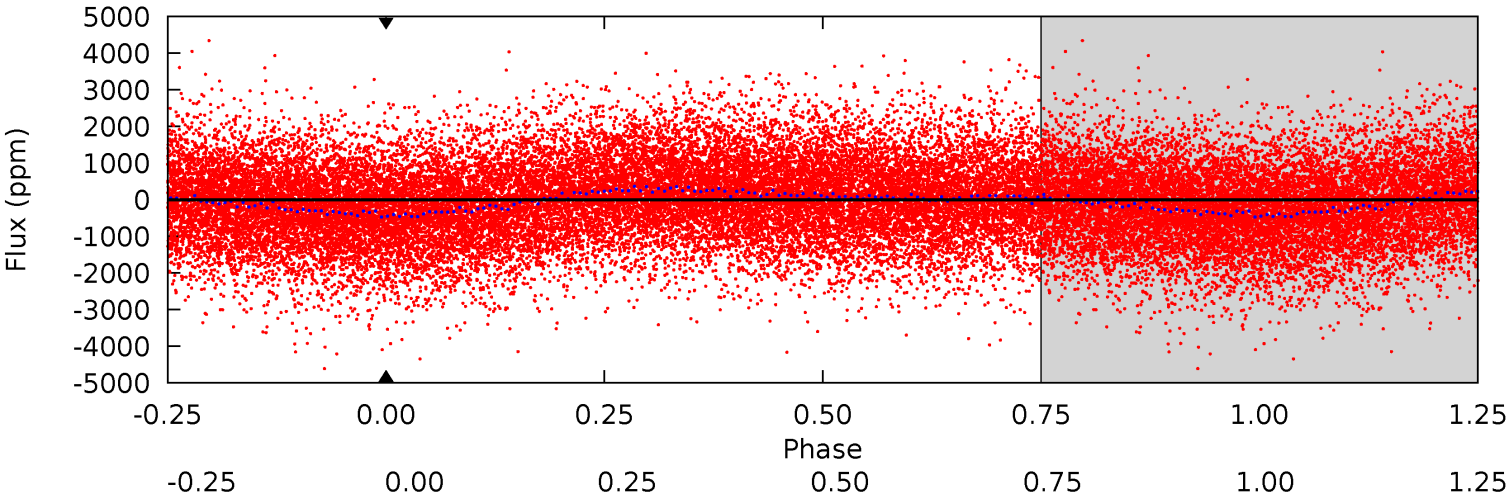




# DV Model-Shift Uniqueness Test

009242127-03, P = 0.604375 Days, E = 131.063069 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

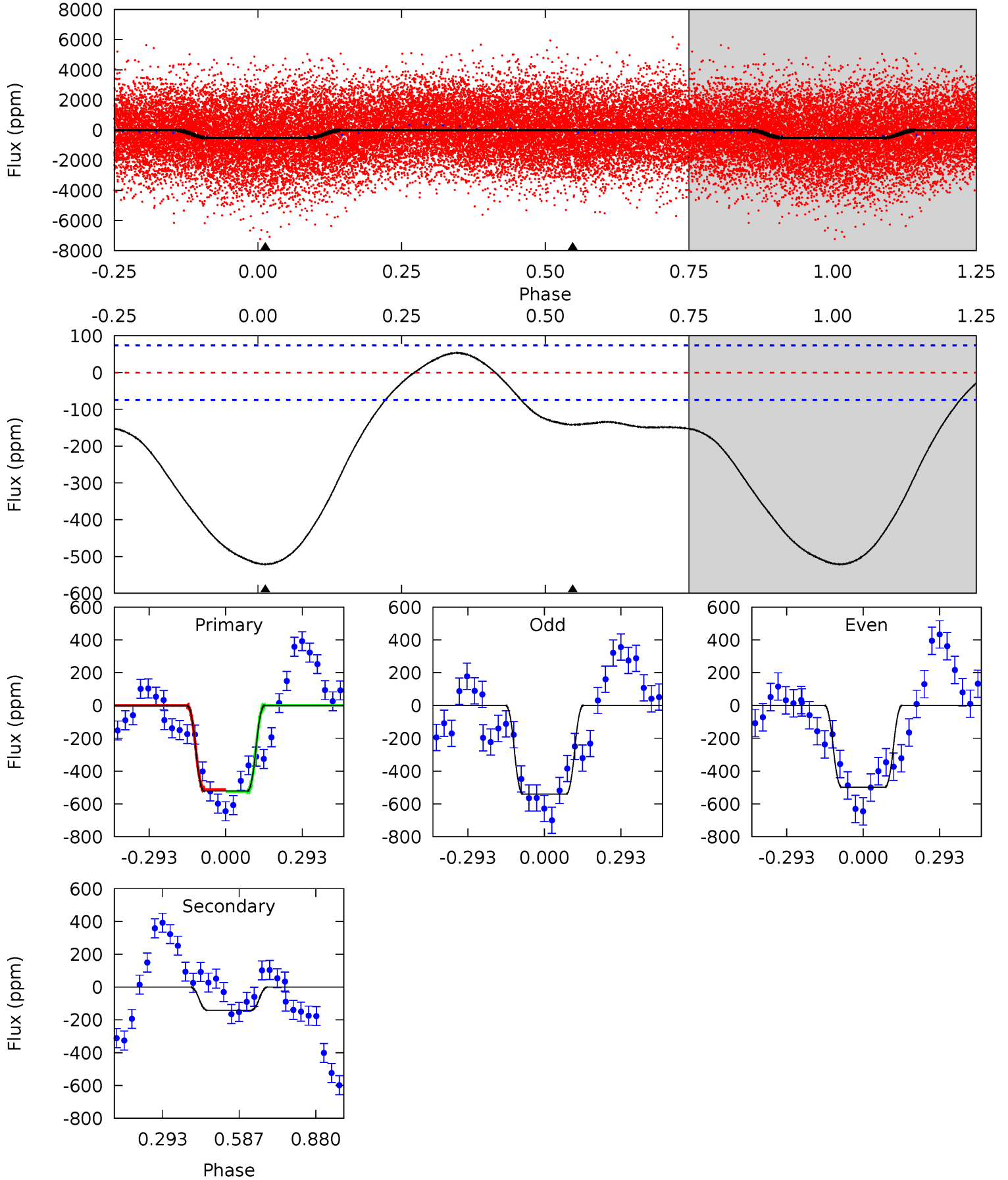




# Alt Model-Shift Uniqueness Test

009242127-03, P = 0.604375 Days, E = 131.058038 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
30.5	8.29	0	0	4.33	1.05	4.20	30.5	30.5	8.29	8.29	1.23	1.01	0.09	0.35



### Stellar Parameters For KIC 009242127

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7502^{+235}_{-314}$	$3.723^{+0.468}_{-0.078}$	$-0.240^{+0.250}_{-0.350}$	$3.089^{+0.366}_{-1.465}$	$1.839^{+0.151}_{-0.454}$	$0.088^{+0.385}_{-0.023}$
	+3%/-4%	+13%/-2%	+104%/-146%	+12%/-47%	+8%/-25%	+438%/-26%
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 009242127-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$20.70^{+23.21}_{-14.32}$	$6024^{+396}_{-682}$	$-5728^{+54411}_{-34533}$	$-0.483^{+85.572}_{-55.446}$
Alt.	$-142 \pm 17$	$24.80^{+24.93}_{-17.36}$	$5997^{+423}_{-753}$	$-4637^{+8414}_{-461}$	$0.037^{+0.360}_{-0.028}$

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

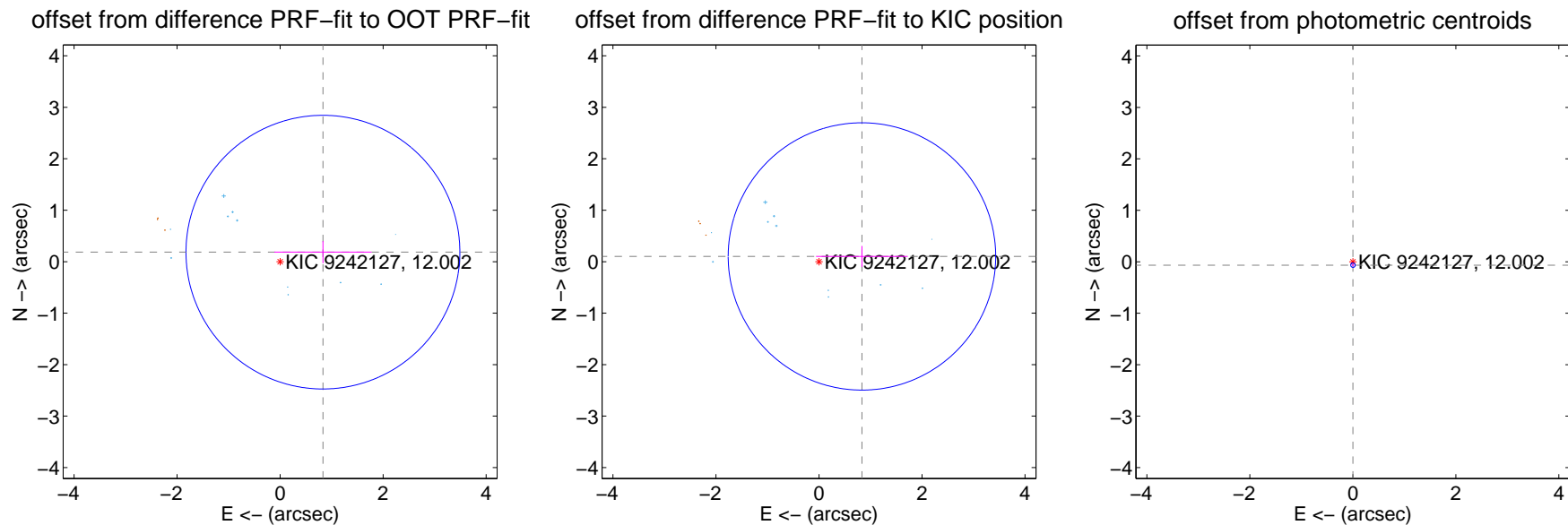
## DV Centroid Data

Supplemental centroid analysis for 009242127-03. Kepler magnitude: 12.00. Transit SNR -1.00

There are 11 quarters with good PRF difference image offsets

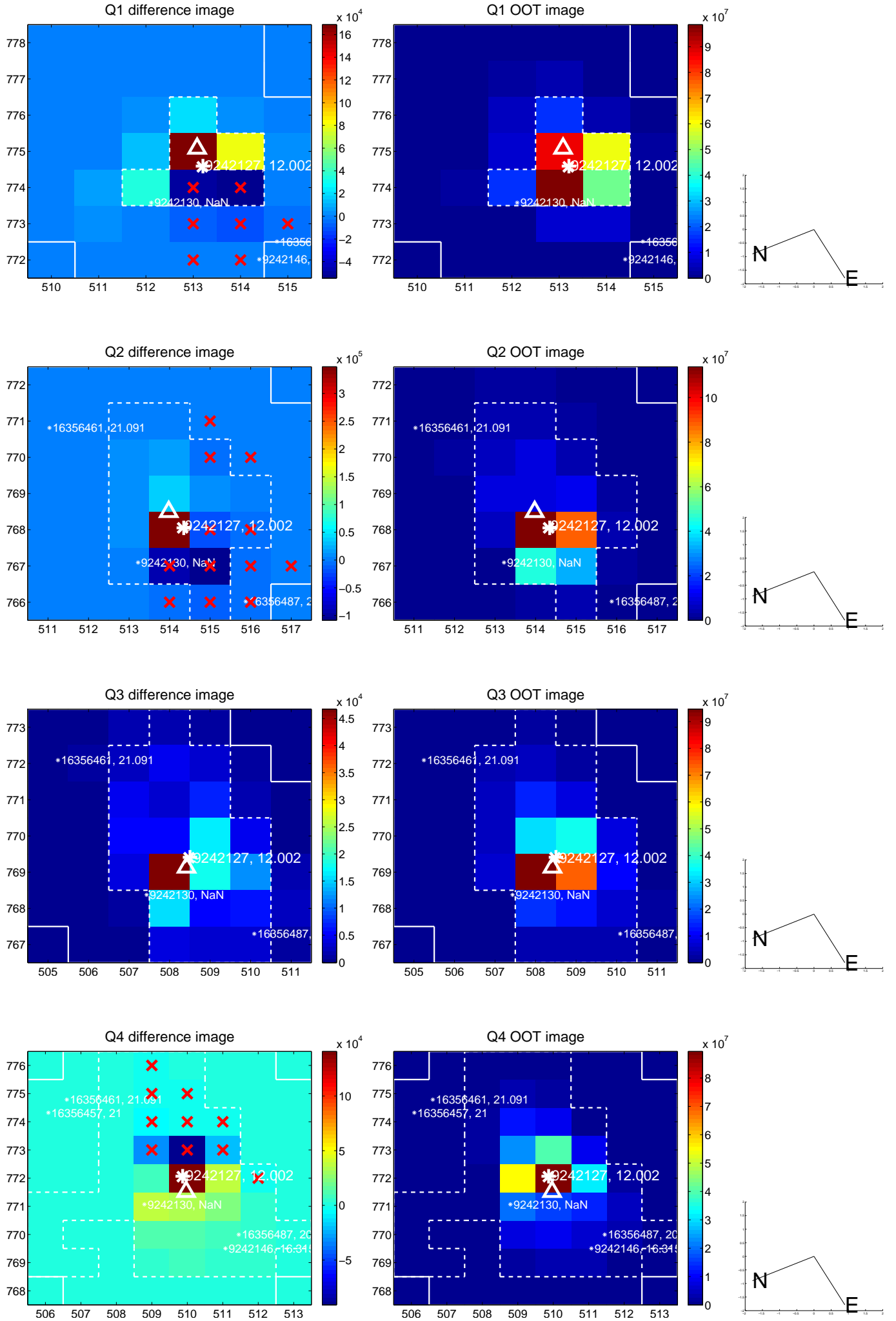
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.852 \pm 0.886$	0.96	$-0.831 \pm 0.943$	$0.185 \pm 0.214$
PRF-fit source offset from KIC position	$0.840 \pm 0.865$	0.97	$-0.834 \pm 0.890$	$0.102 \pm 0.203$
photometric centroid source offset	$0.07 \pm 0.01$	4.66	$-0.00 \pm 0.02$	$-0.07 \pm 0.01$

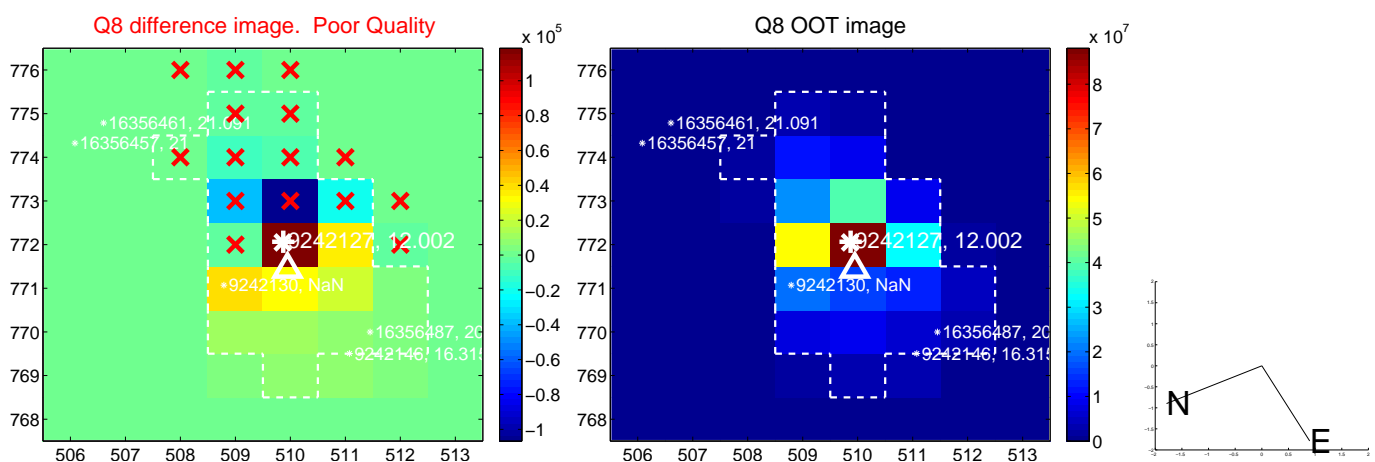
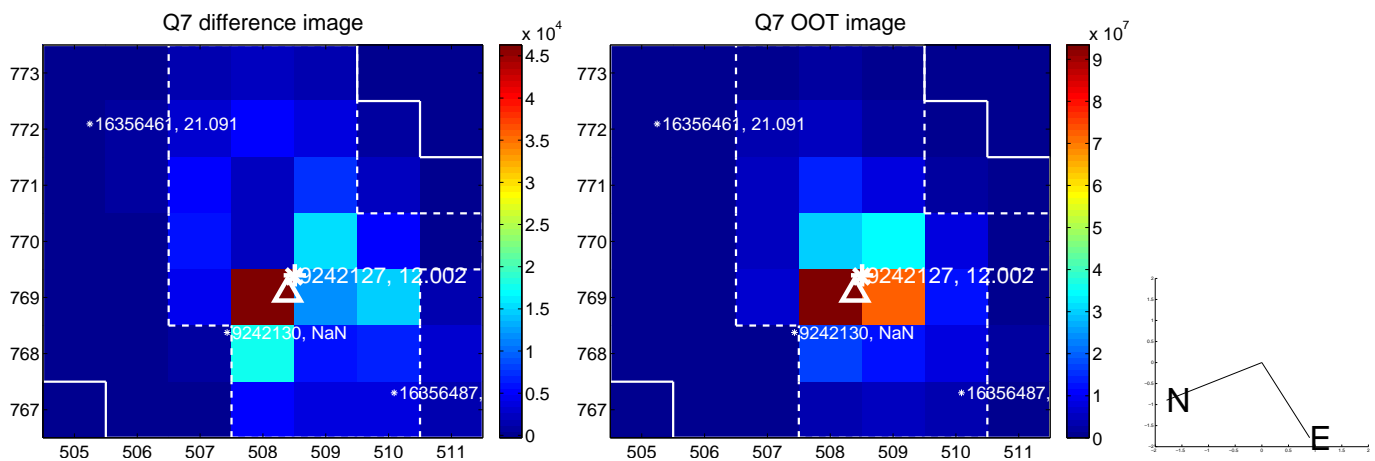
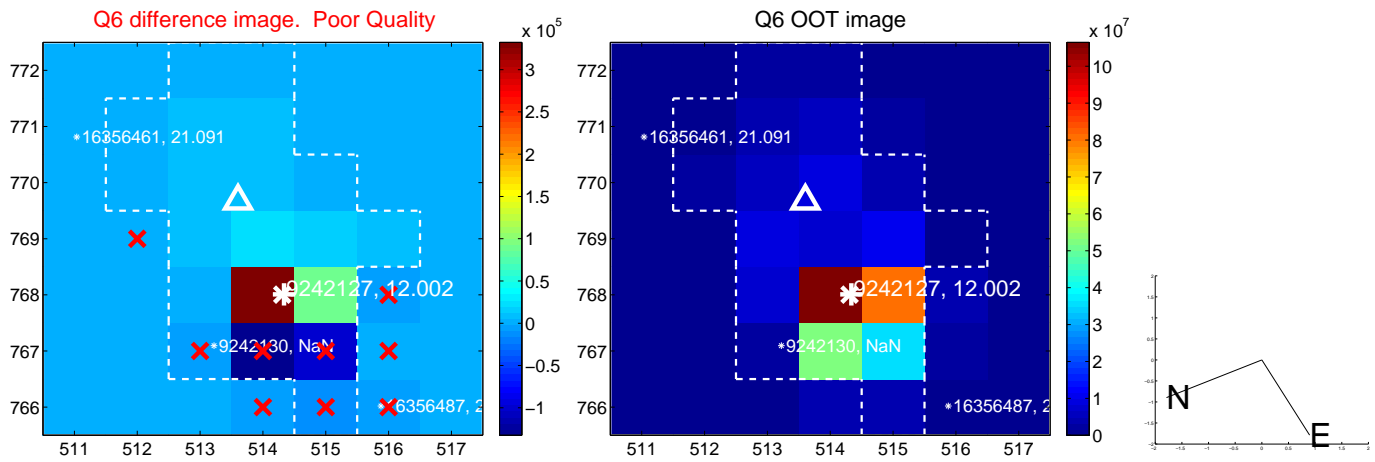
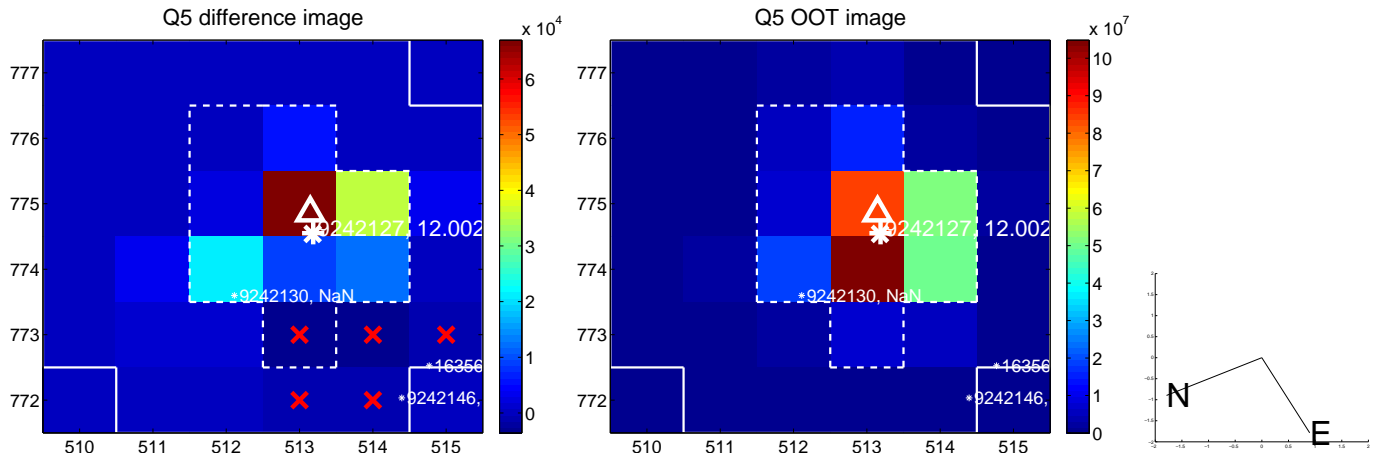


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

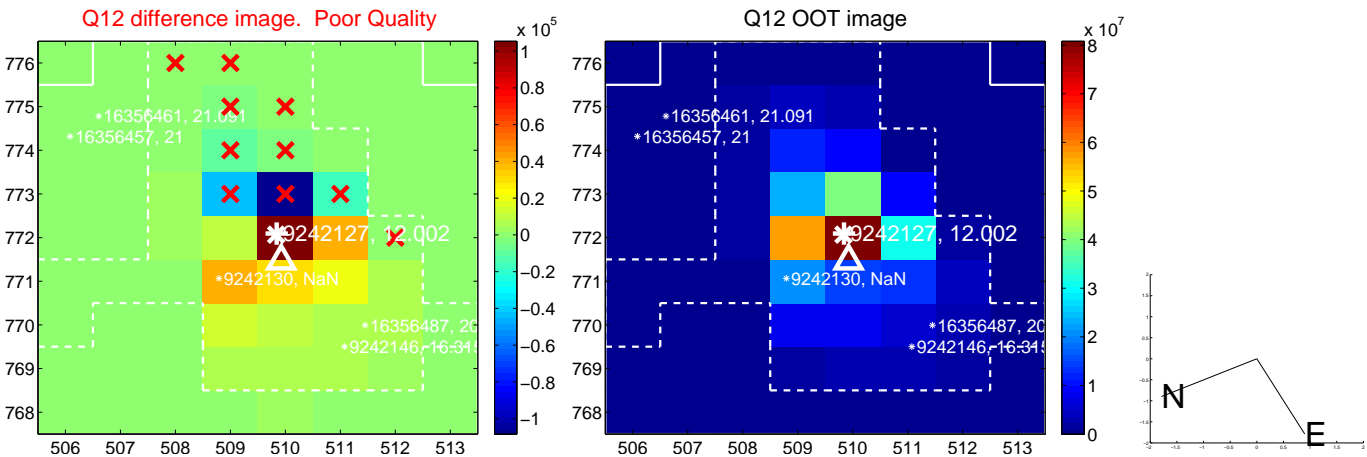
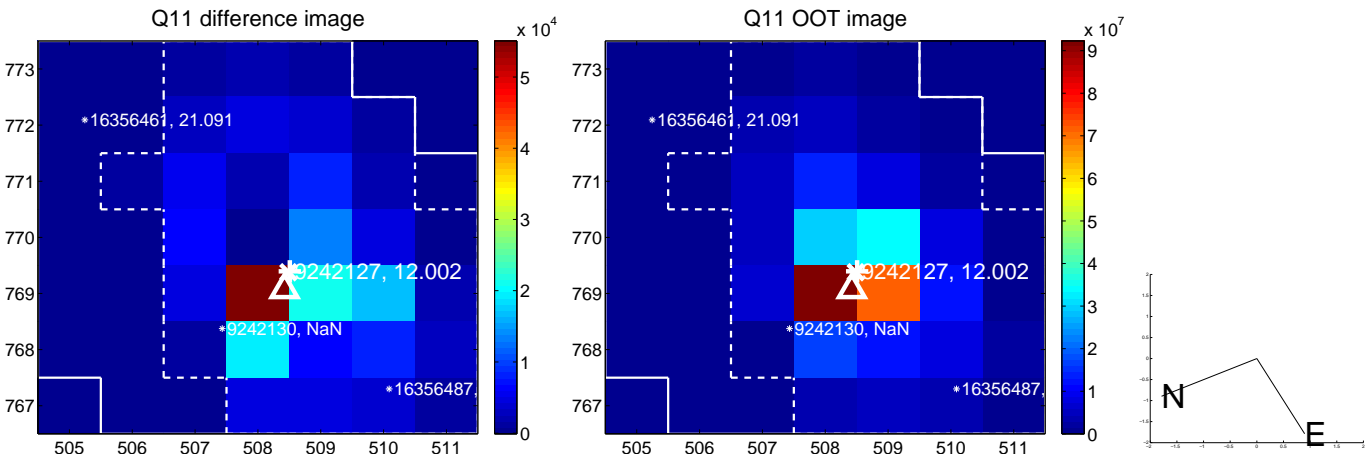
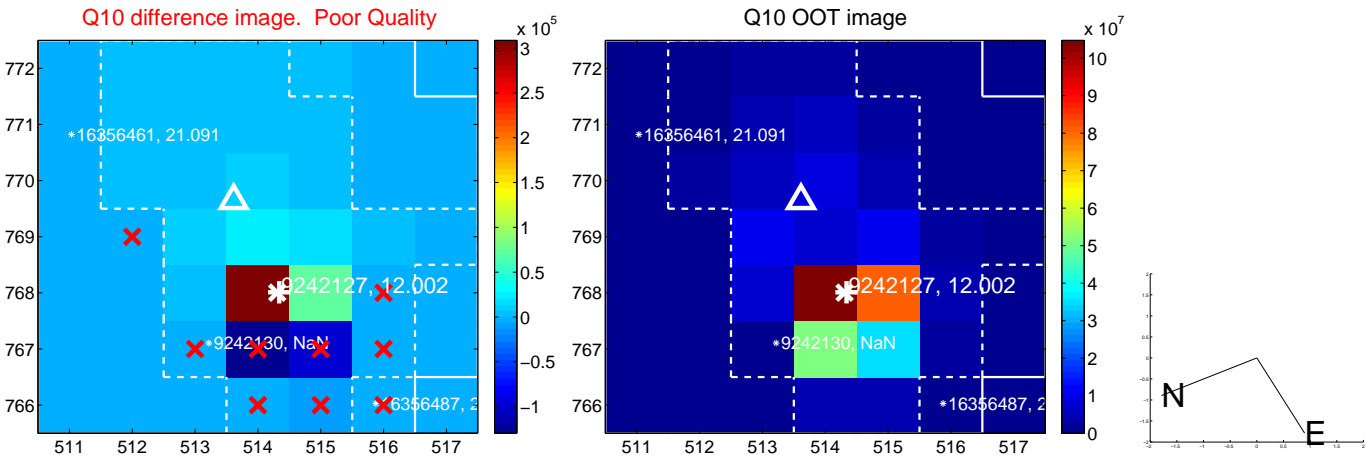
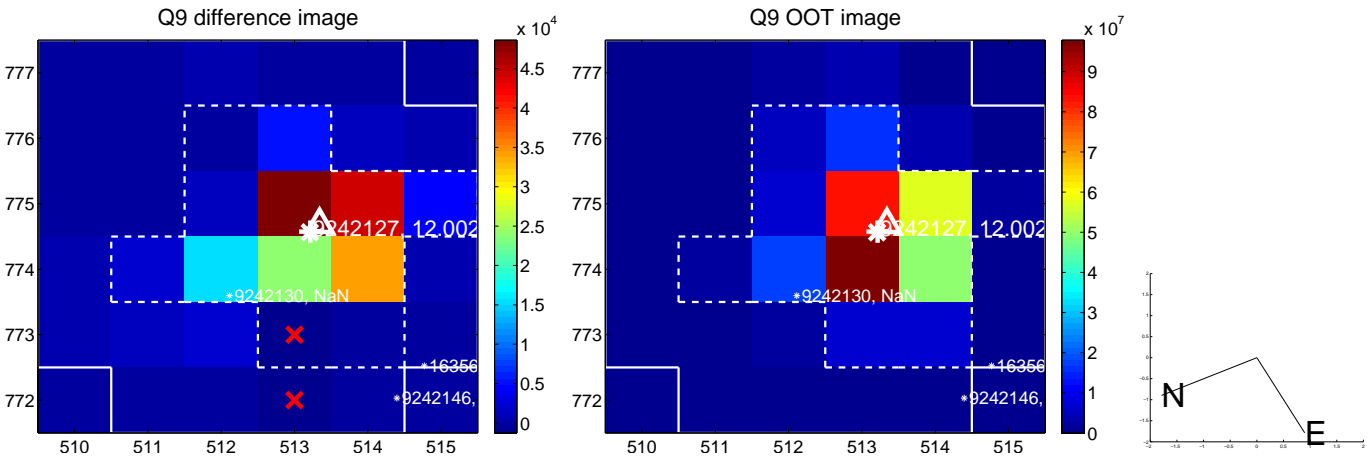


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

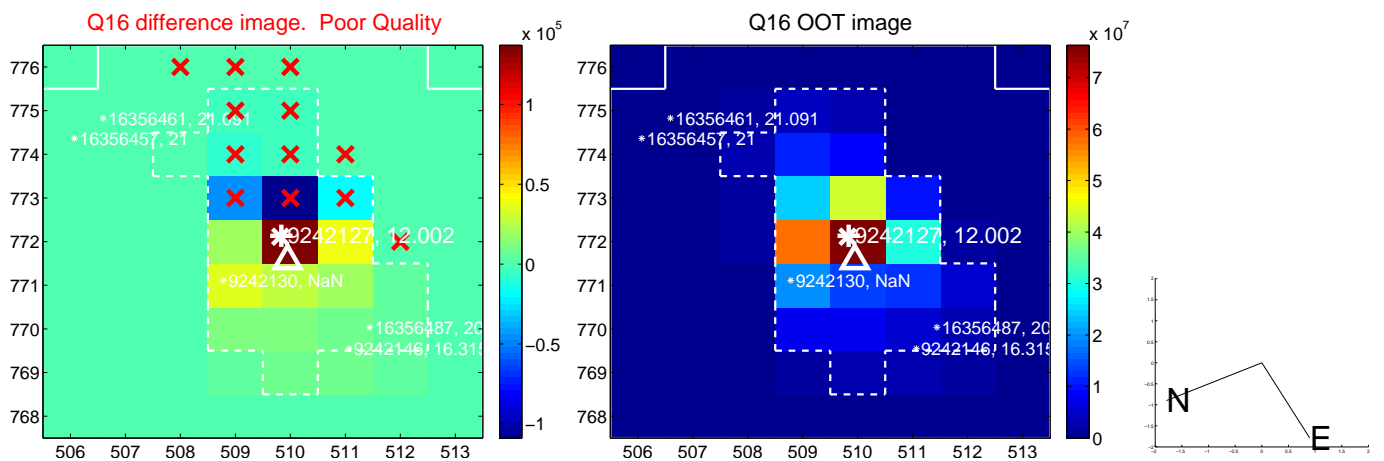
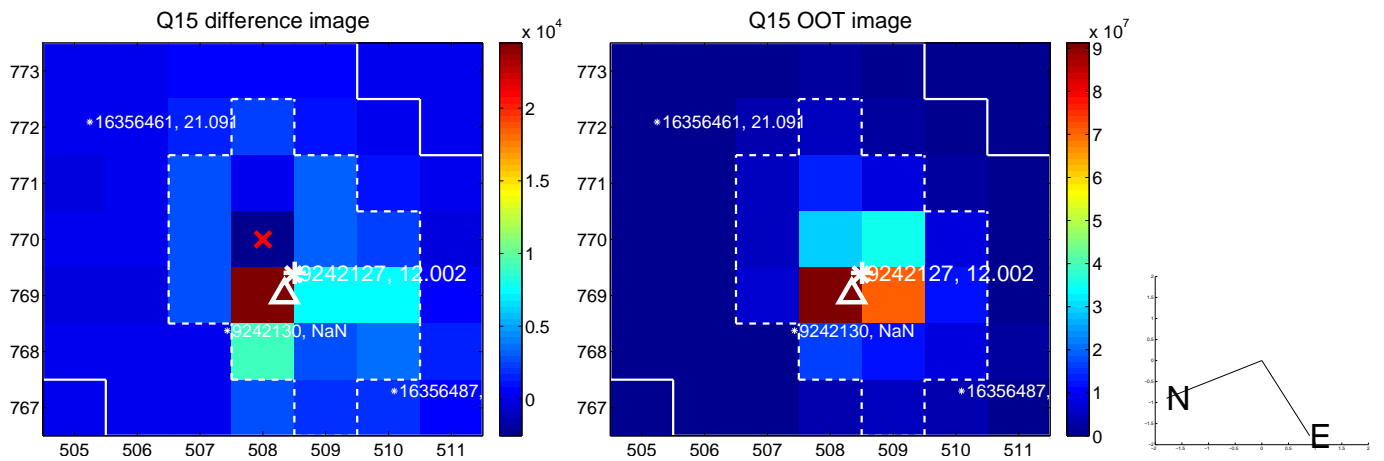
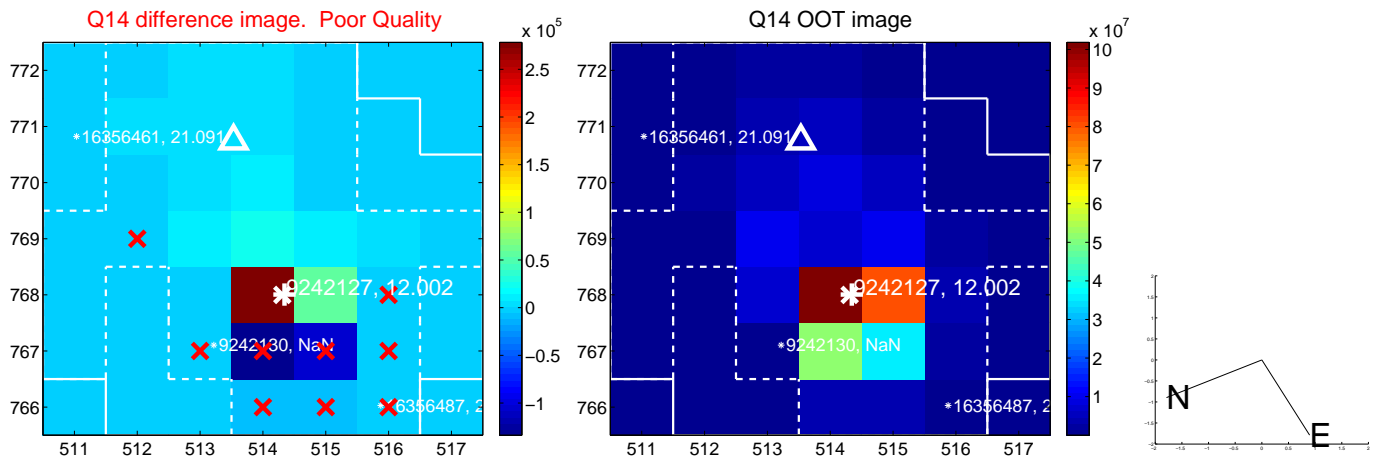
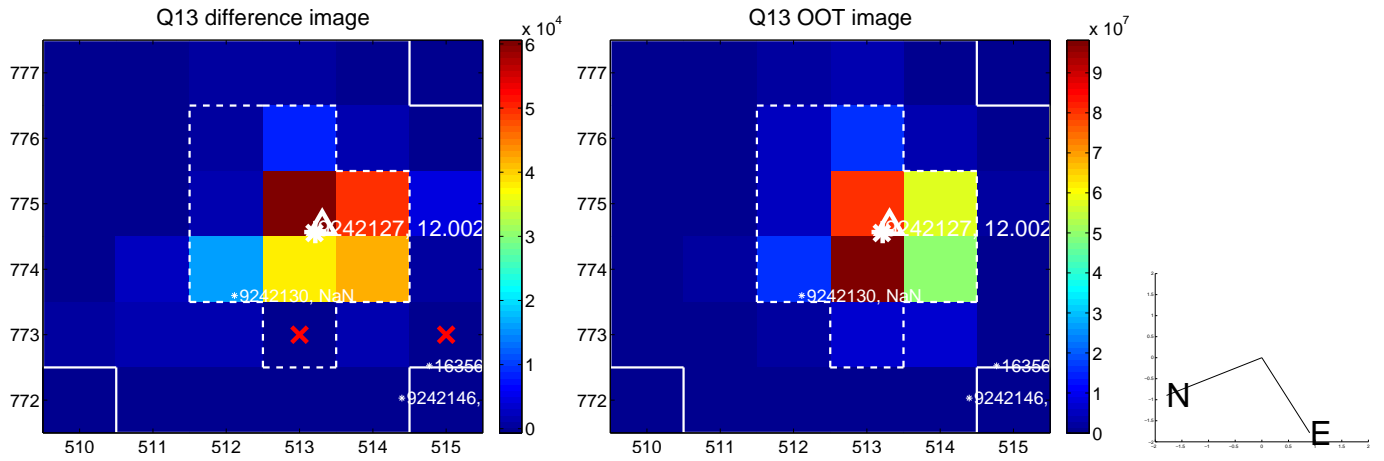




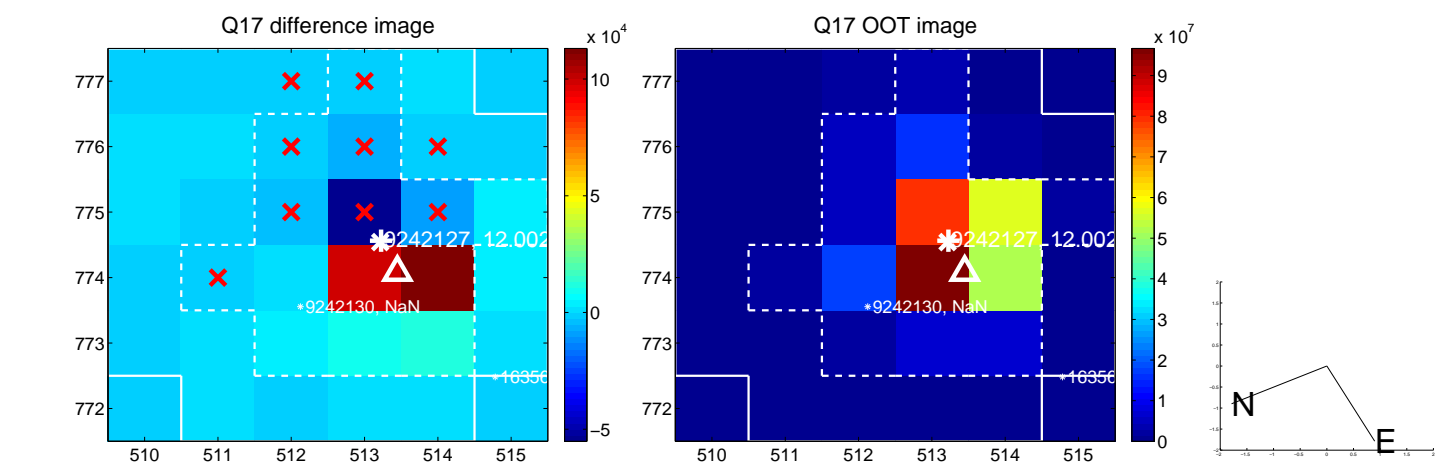
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



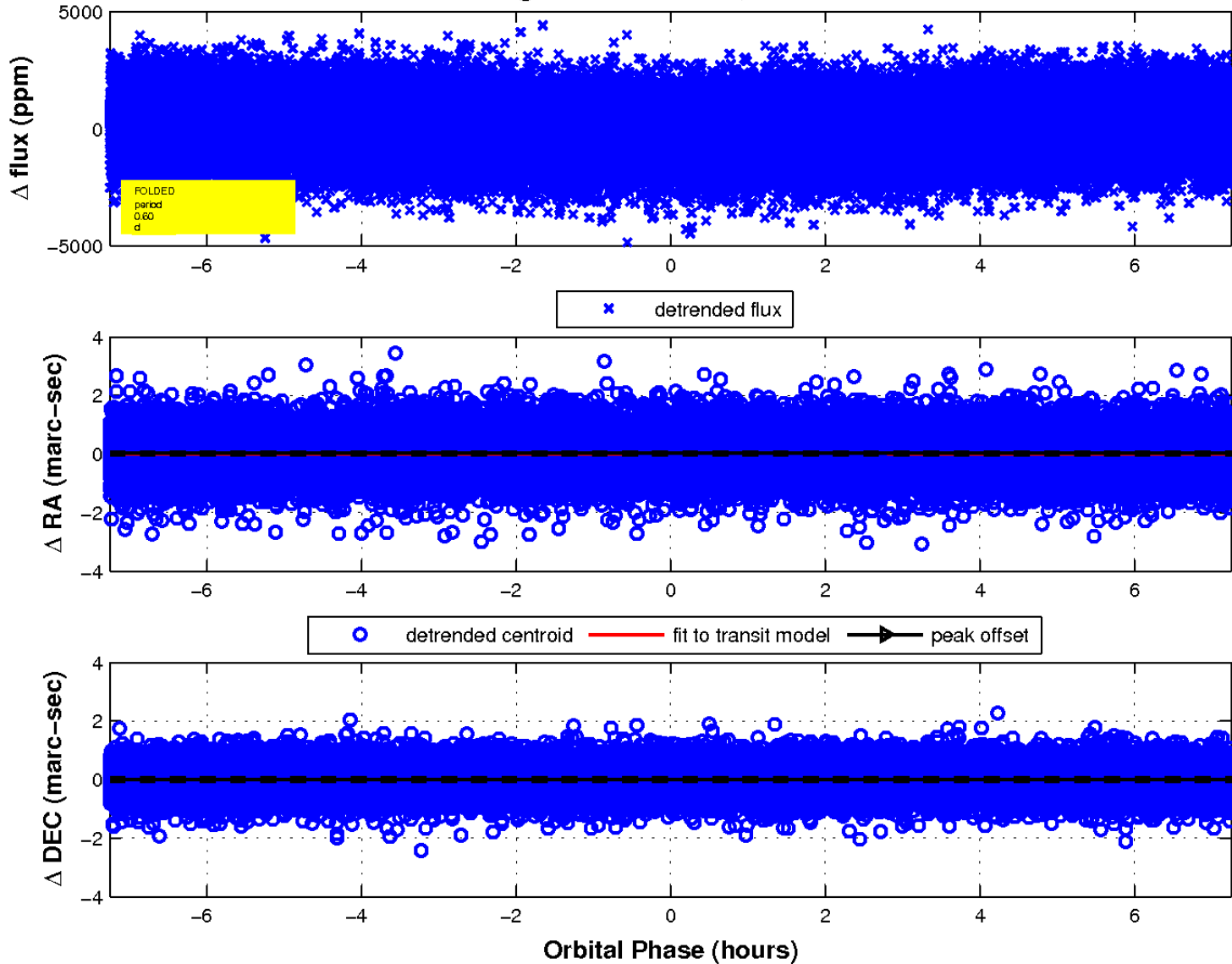
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

