

# KIC 011413125

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011413125-01	OBS	No	1.719551	132.136653	74.2	4.452	10.5	7.4	2.69	7063	2.64	13688.25
011413125-02	OBS	No	1.719474	132.639492	94.0	2.529	9.5	9.0	2.69	7063	2.64	13689.06
011413125-03	OBS	No	2.212471	131.567280	79.8	8.726	7.7	7.0	2.69	7063	2.51	9781.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011413125-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011413125-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011413125-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED

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

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

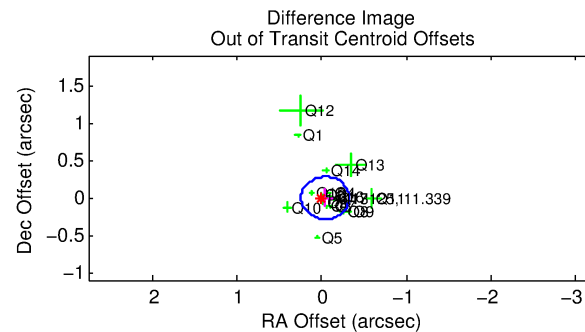
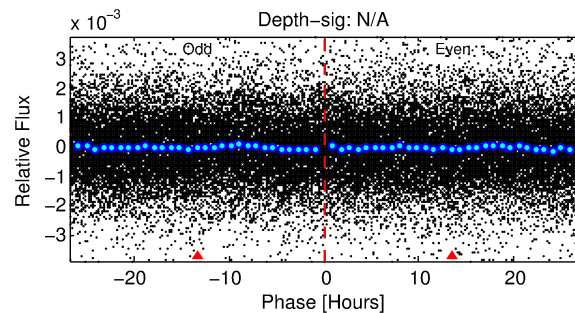
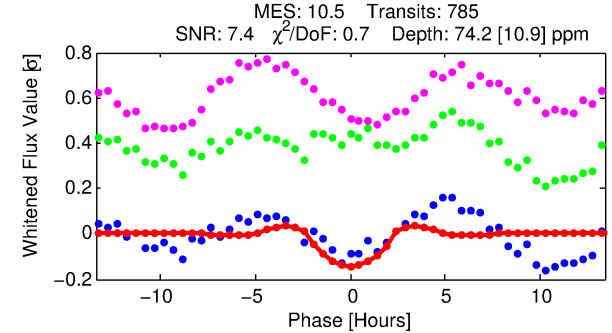
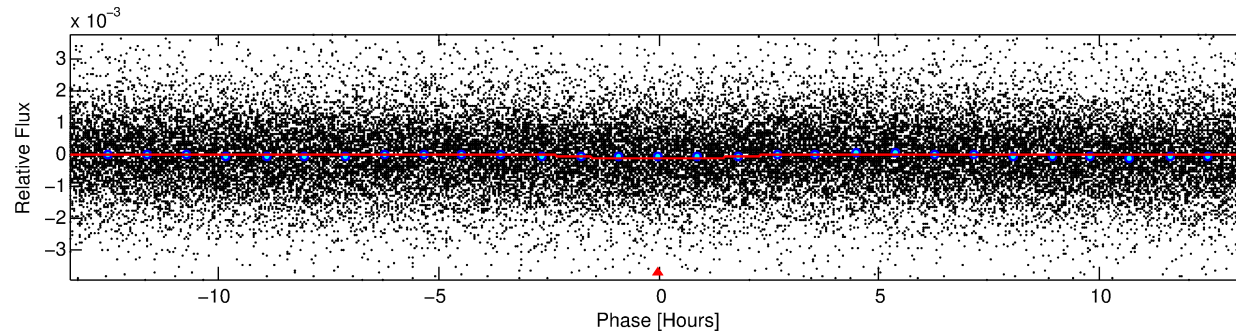
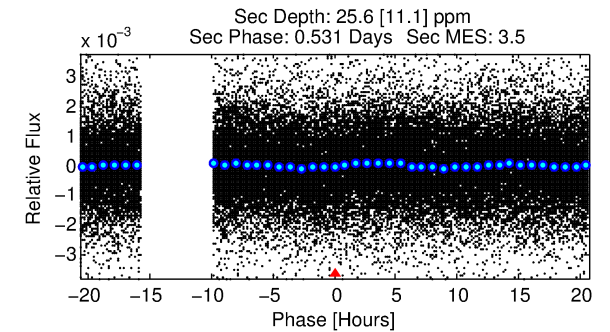
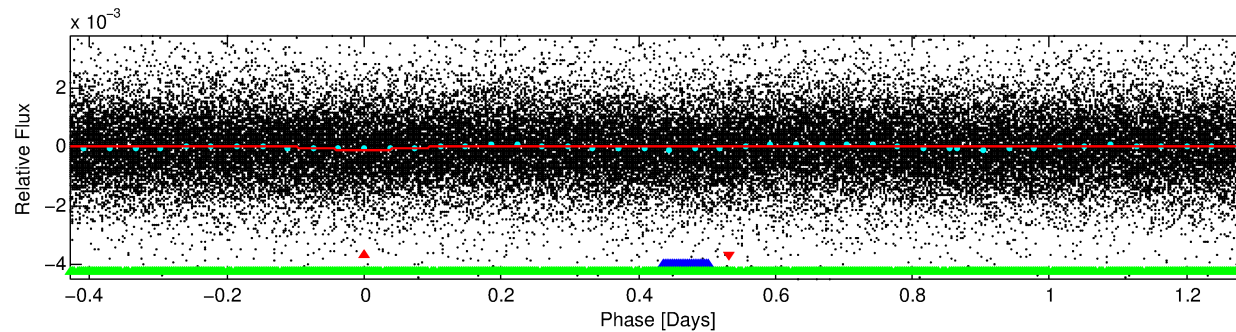
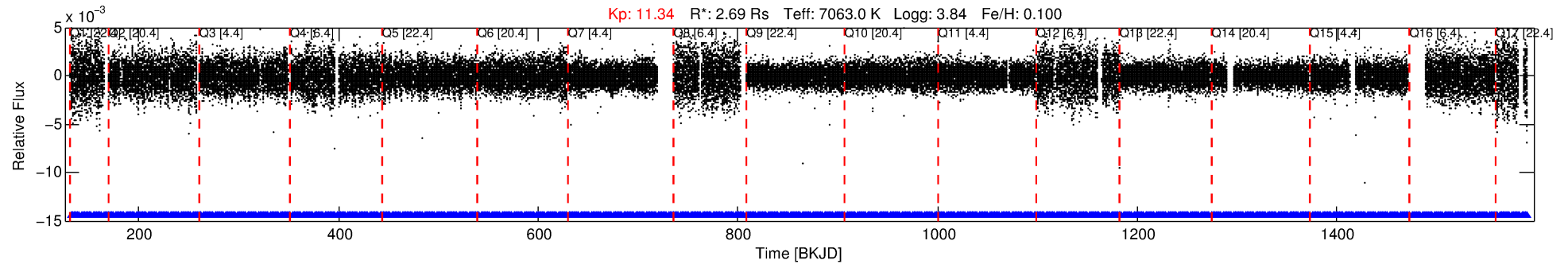
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011413125-01

No Significant Match Found

# DV One-Page Summary

KIC: 11413125 Candidate: 1 of 3 Period: 1.720 d



## DV Fit Results:

Period = 1.71955 [0.00003] d  
Epoch = 132.1367 [0.0097] BKJD  
 $R_p/R^* = 0.0090$  [0.0069]  
 $a/R^* = 1.77$  [5.68]  
 $b = 0.87$  [1.34]  
 $\text{Seff} = 13688.25$  [8735.18]  
 $T_{\text{eq}} = 2758$  [440] K  
 $R_p = 2.64$  [2.34]  $R_e$   
 $a = 0.0344$  [0.0136] AU  
 $A_g = 2.39$  [4.10] [0.34σ]  
 $T_{\text{eff}} = 5300$  [2136] K [1.17σ]

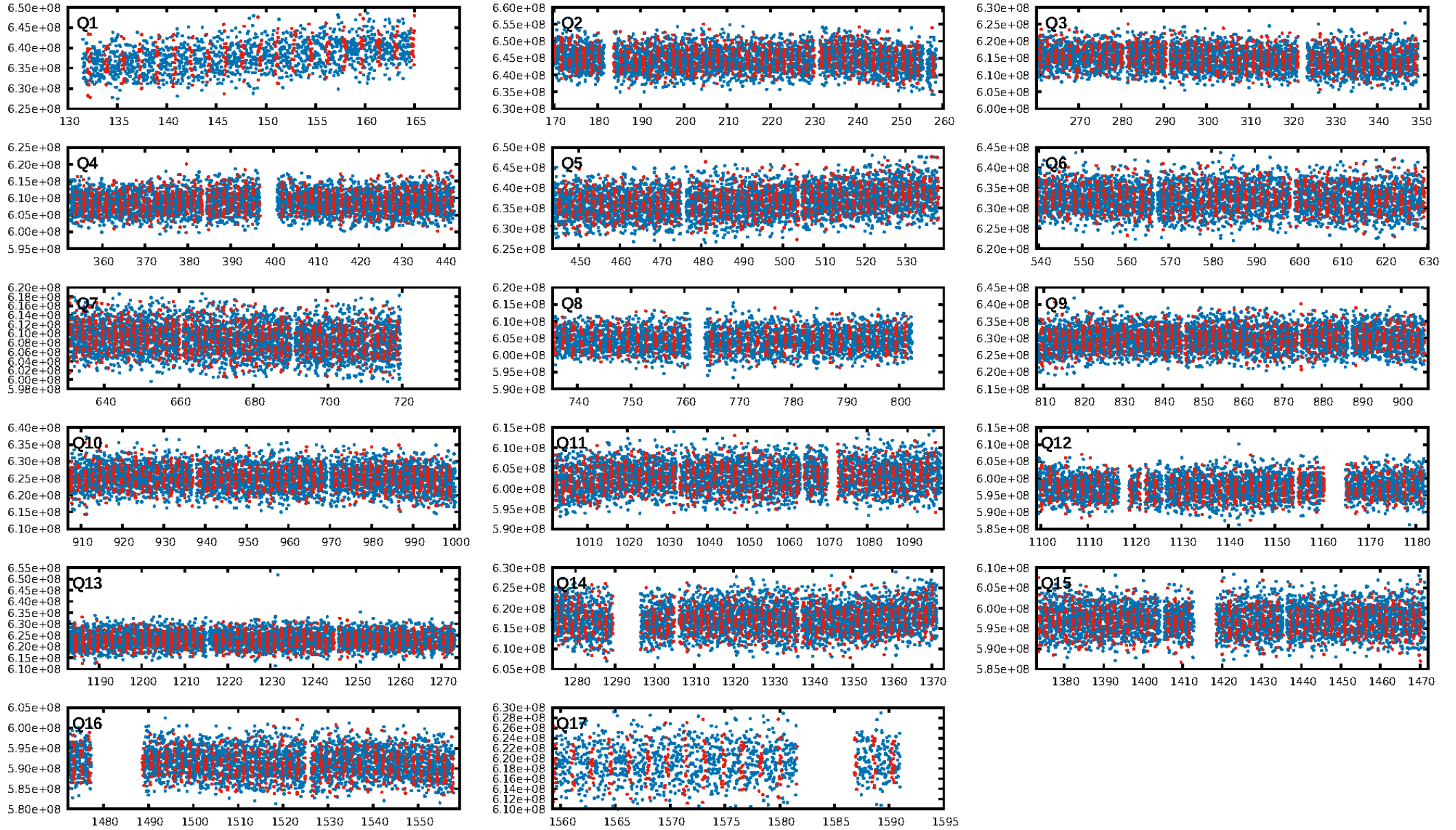
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 77.3% [1.21σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.62e-28  
RollingBand-fgt: 1.00 [749/749]  
GhostDiagnostic-chr: 2.004  
Centroid-sig: 81.6%  
Centroid-so: 0.179 arcsec [1.09σ]  
OotOffset-rm: 0.043 arcsec [0.45σ]  
KicOffset-rm: 0.083 arcsec [0.92σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.35 [6/17]  
DiffImageOverlap-fno: 0.71 [12/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:29:28 Z

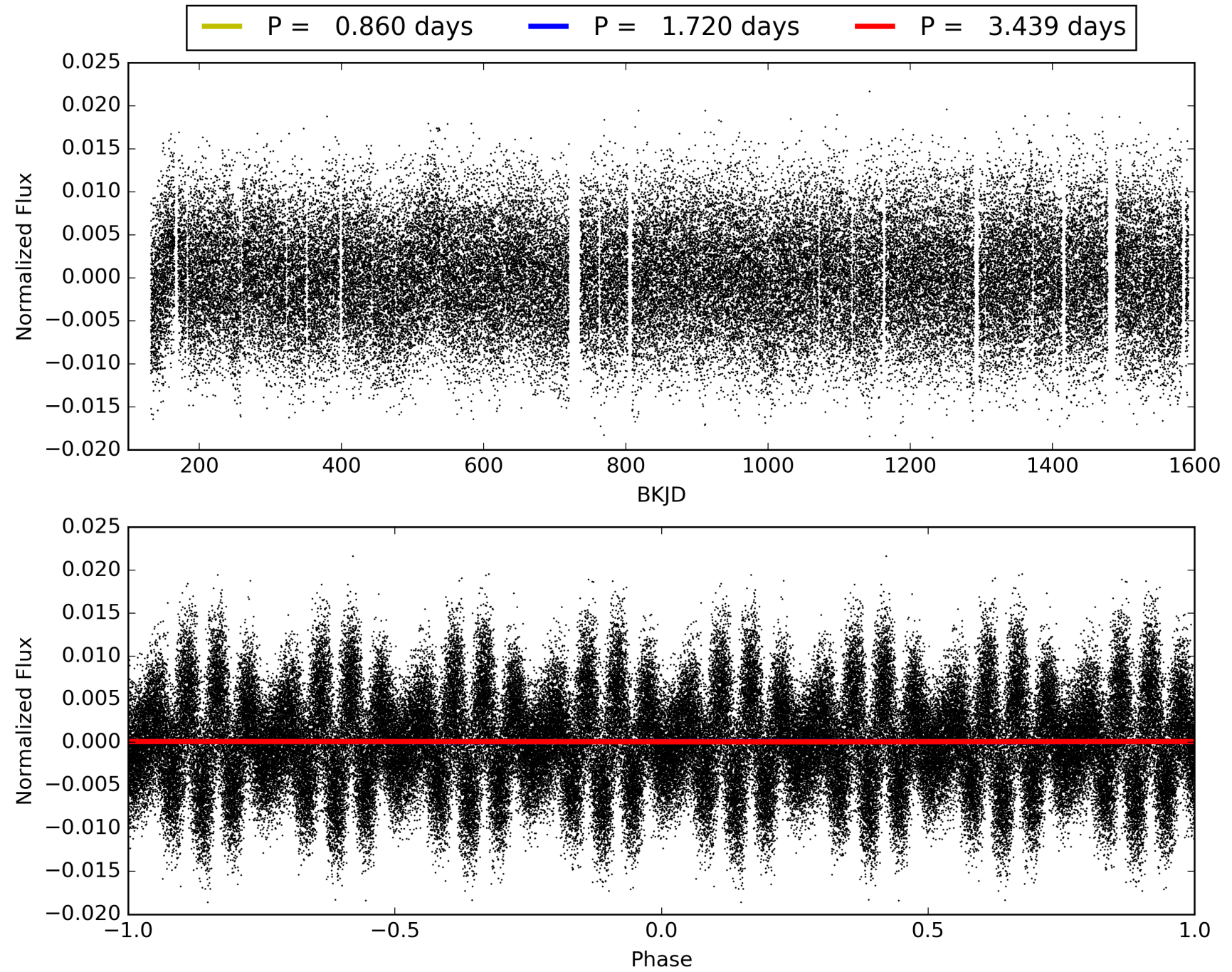
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011413125-01, PDC Light Curves





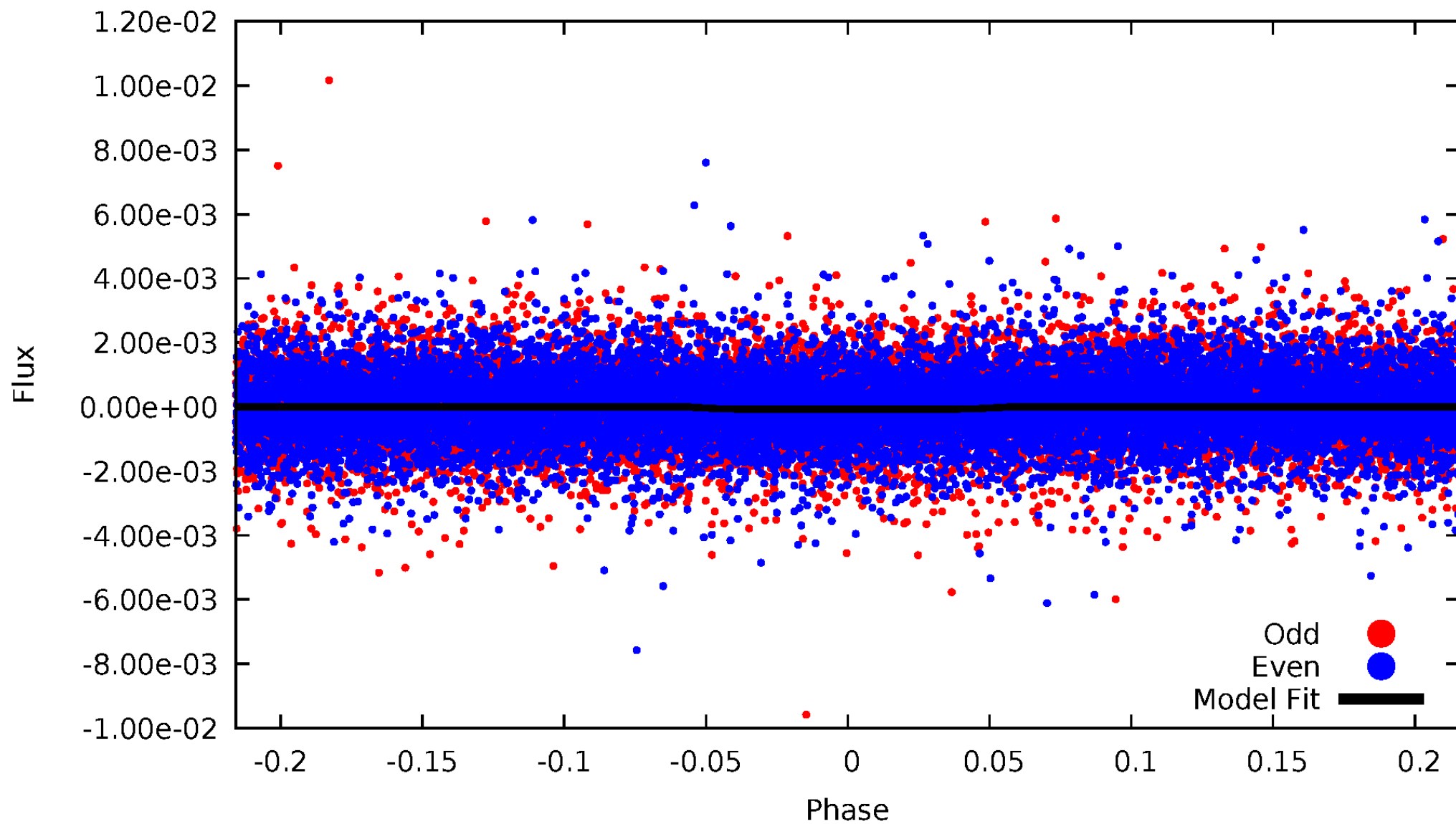
# TCE 011413125-01





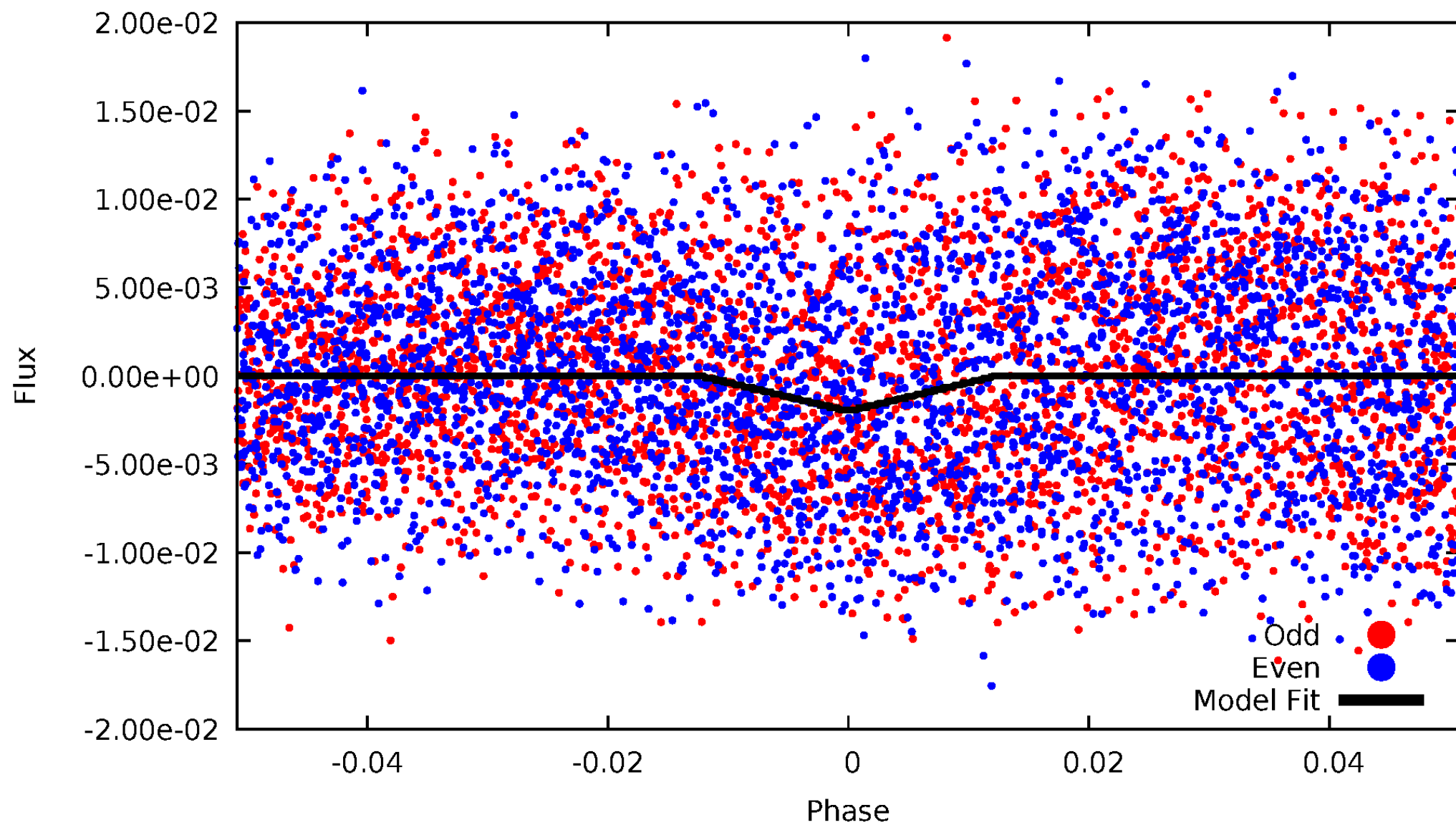
# DV Odd/Even

TCE 011413125-01



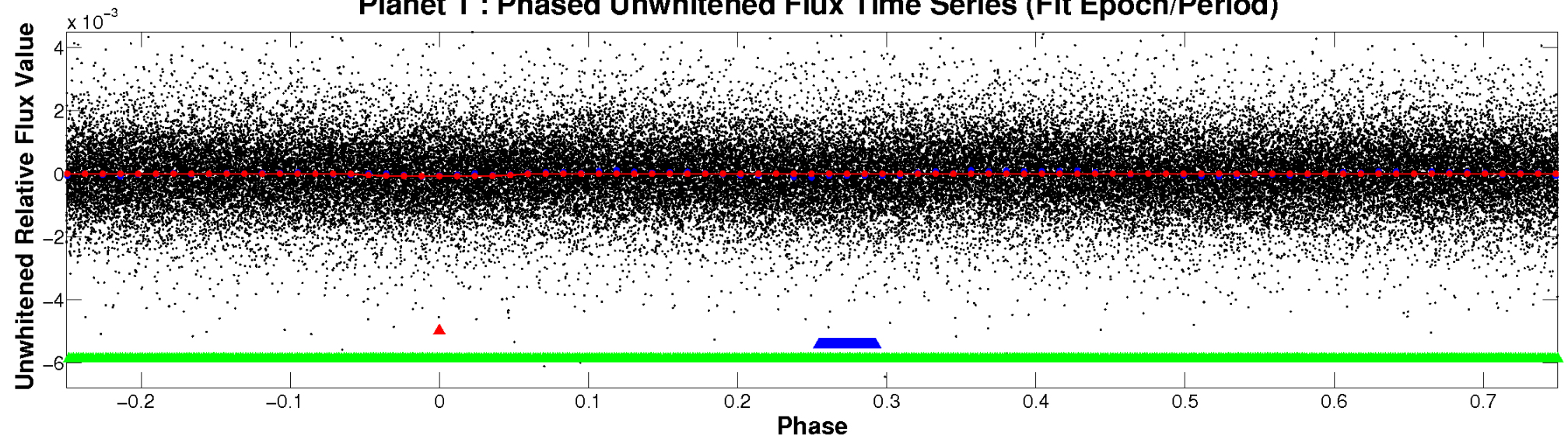
# ALT Odd/Even

TCE 011413125-01

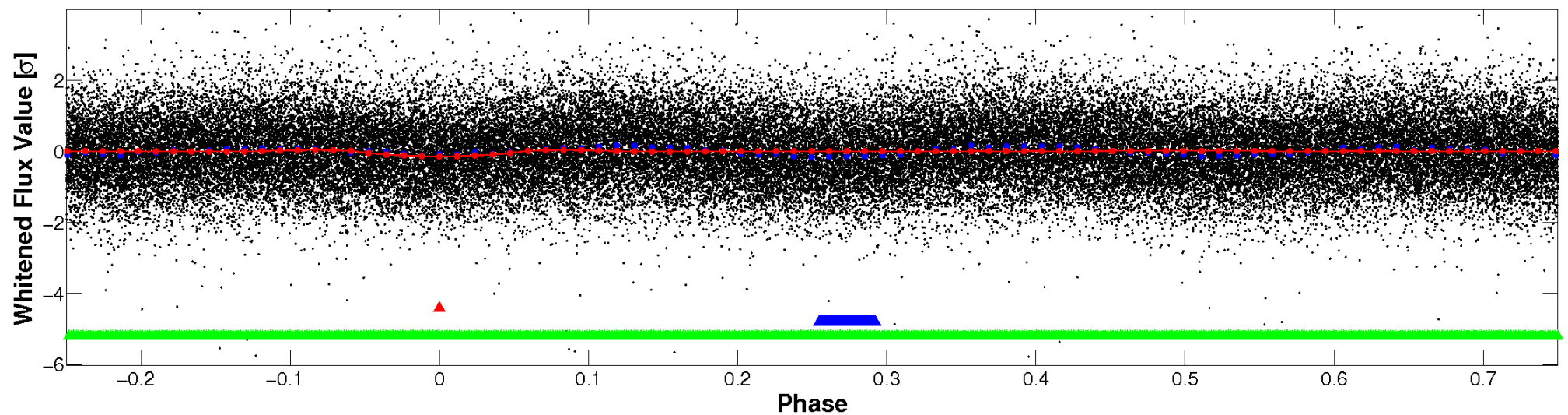


# Non-Whitened Vs. Whitened Light Curve

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



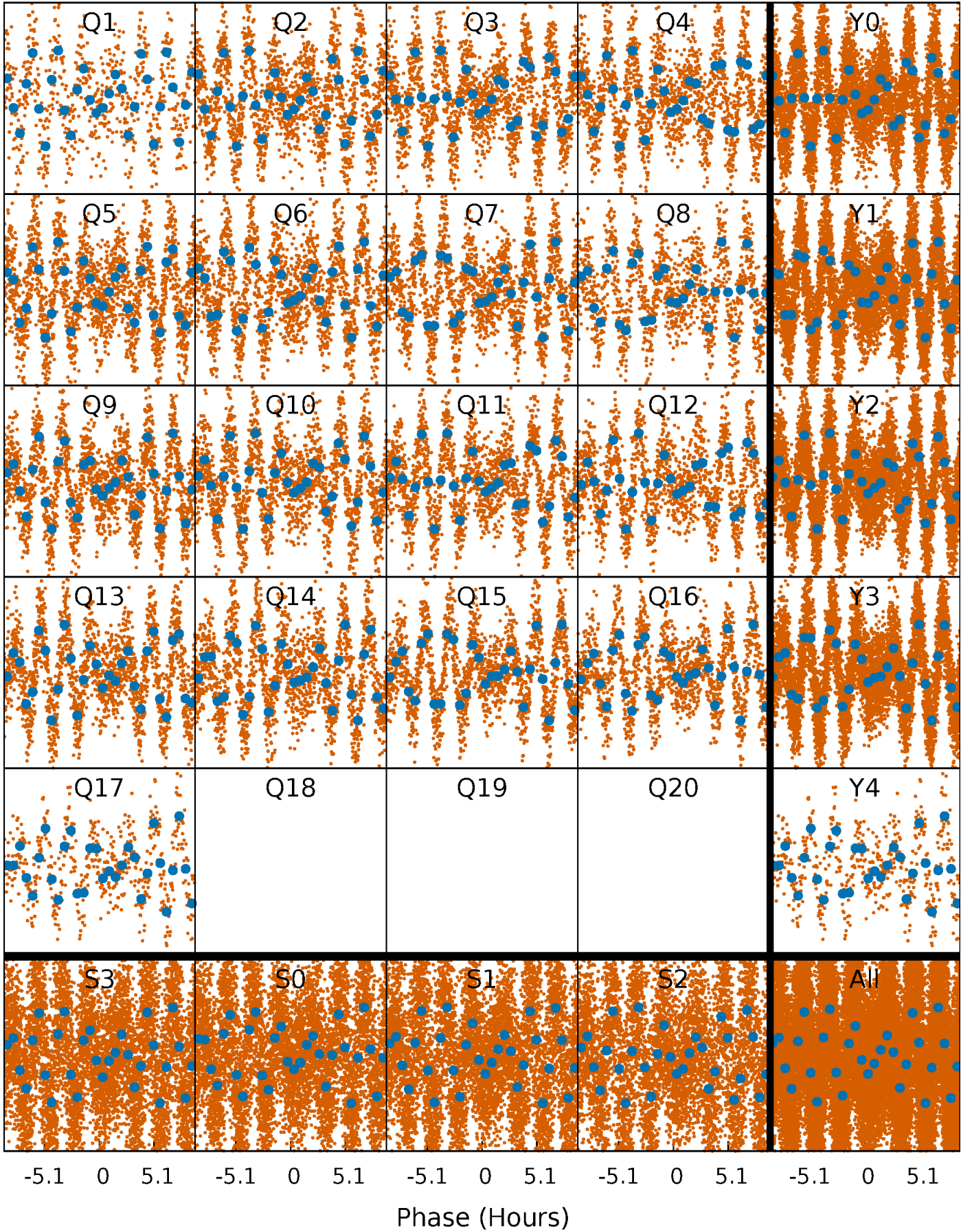
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





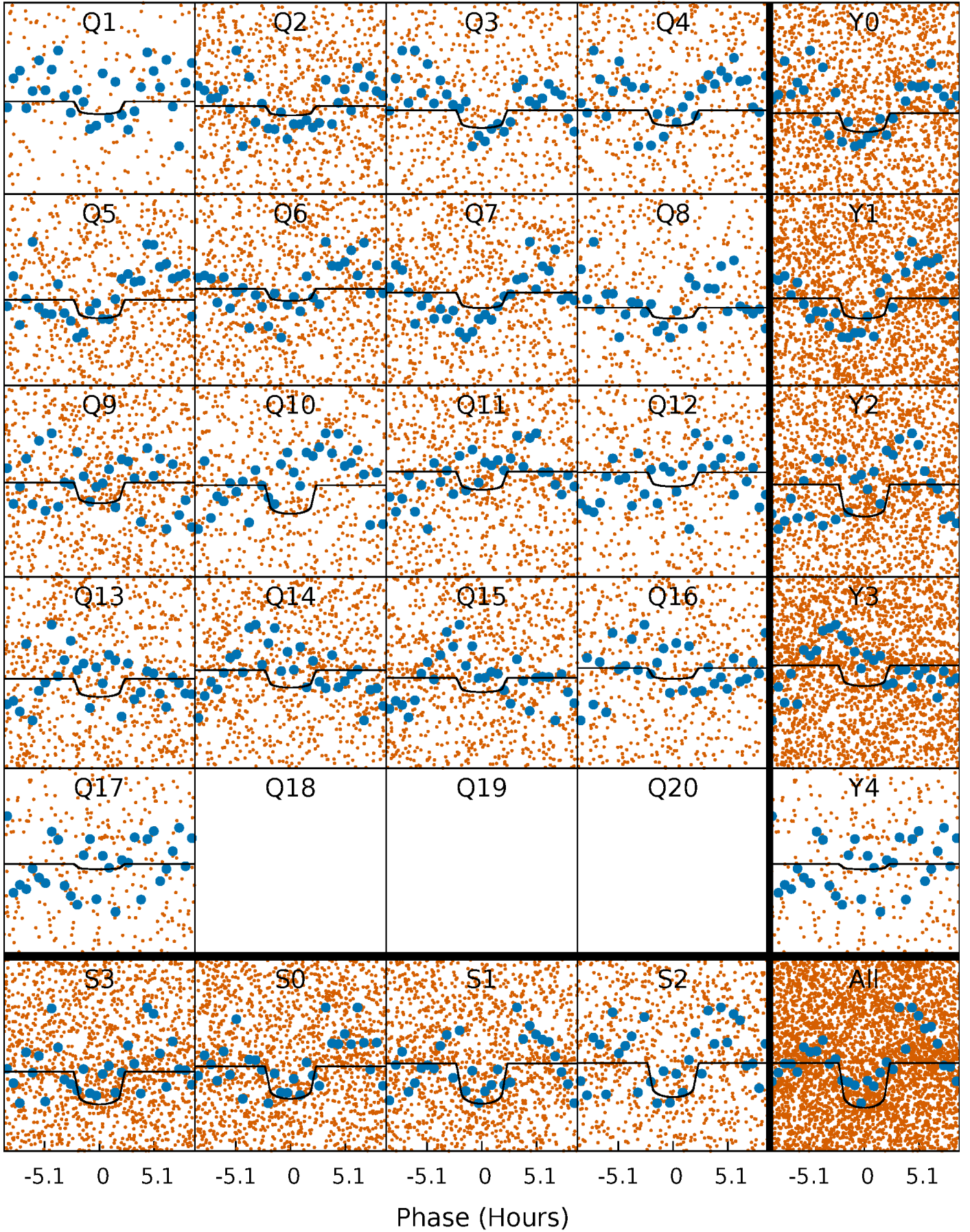
# PDC Quarter-Phased Transit Curves

TCE 011413125-01 P= 1.719551 Days  $T_0=132.136653$  (BKJD)



# DV Quarter-Phased Transit Curves

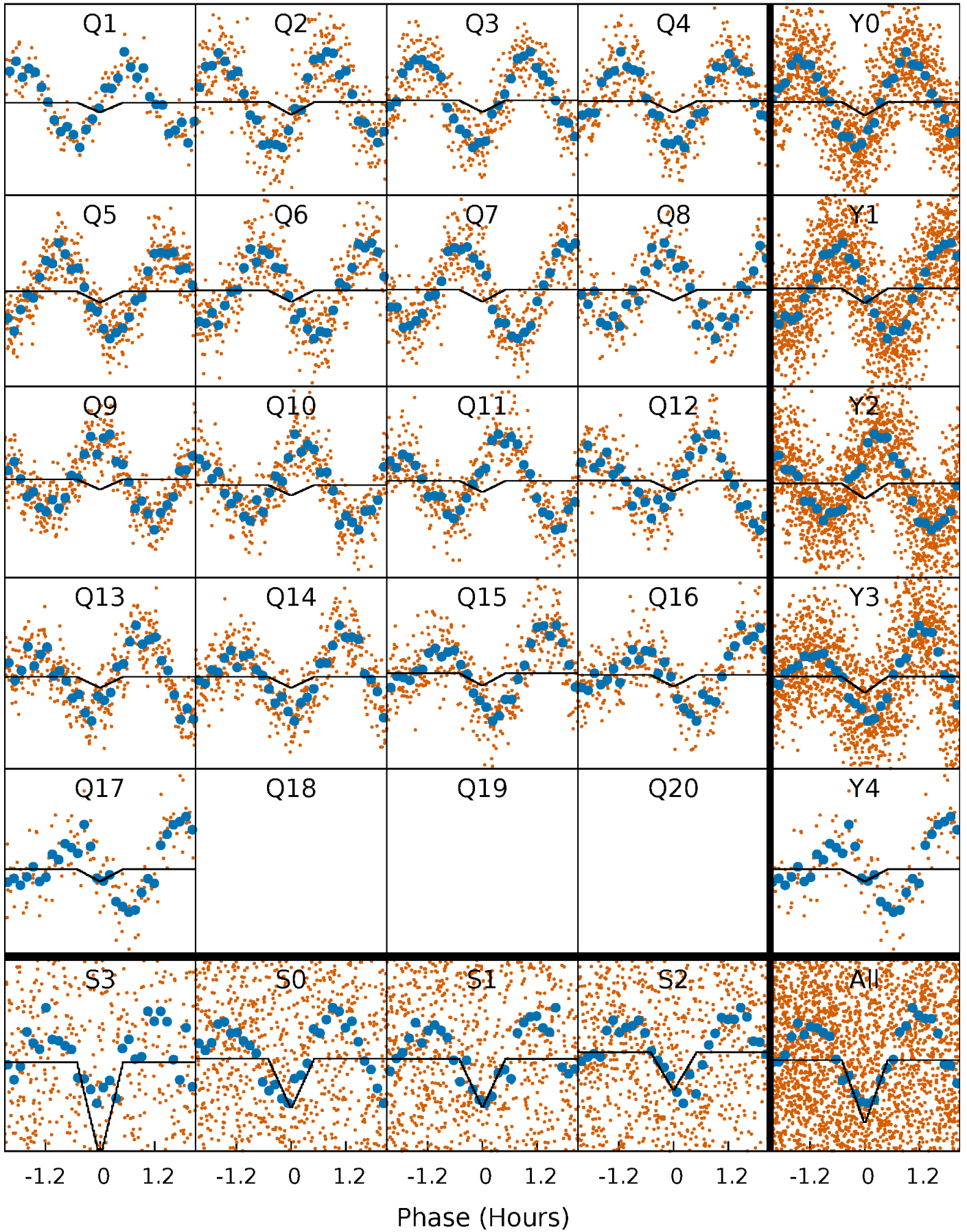
TCE 011413125-01 P= 1.719551 Days  $T_0=132.136653$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 011413125-01 P= 1.719433 Days  $T_0=132.376314$  (BKJD)

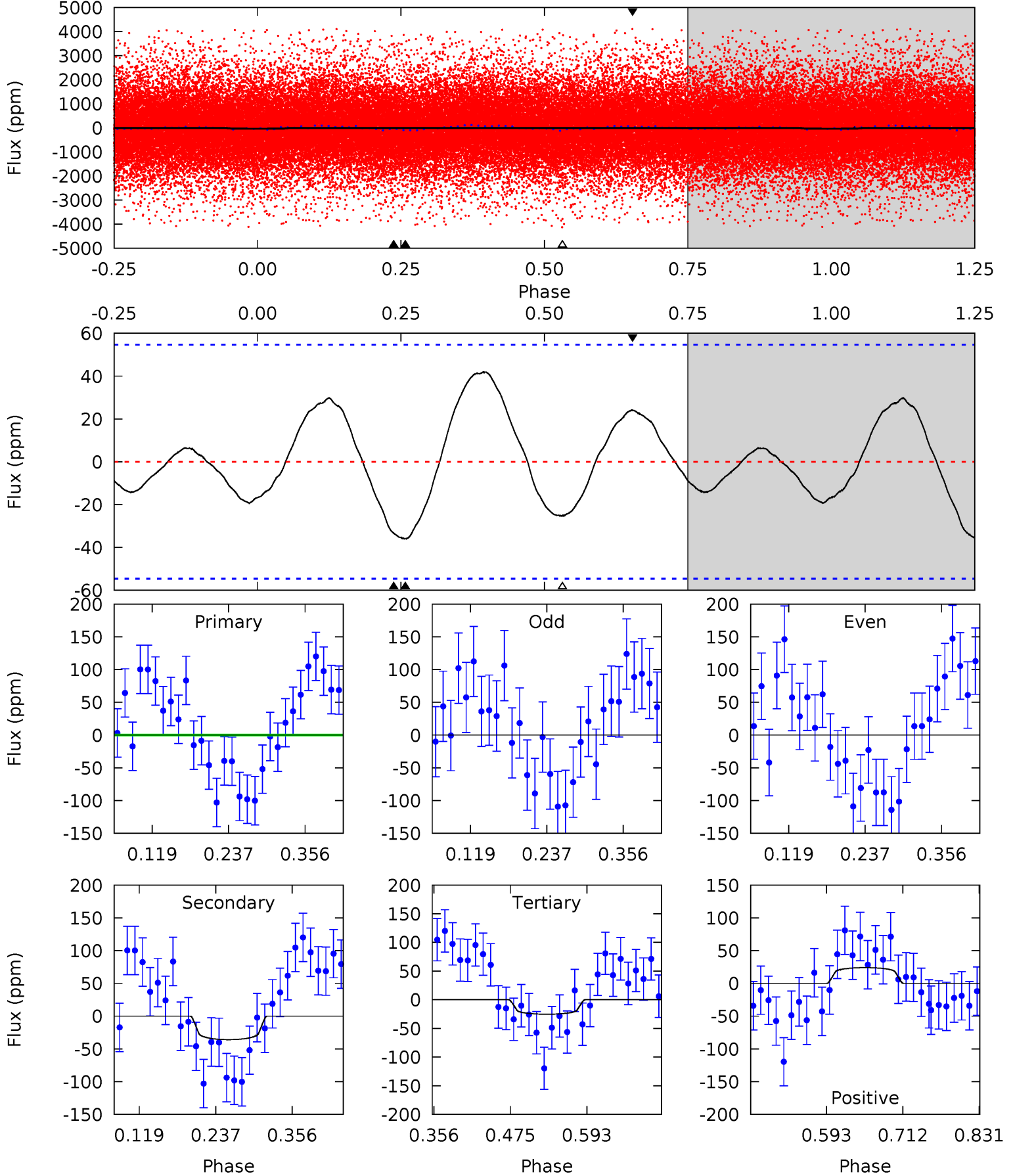




# DV Model-Shift Uniqueness Test

011413125-01, P = 1.719551 Days, E = 130.417102 Days

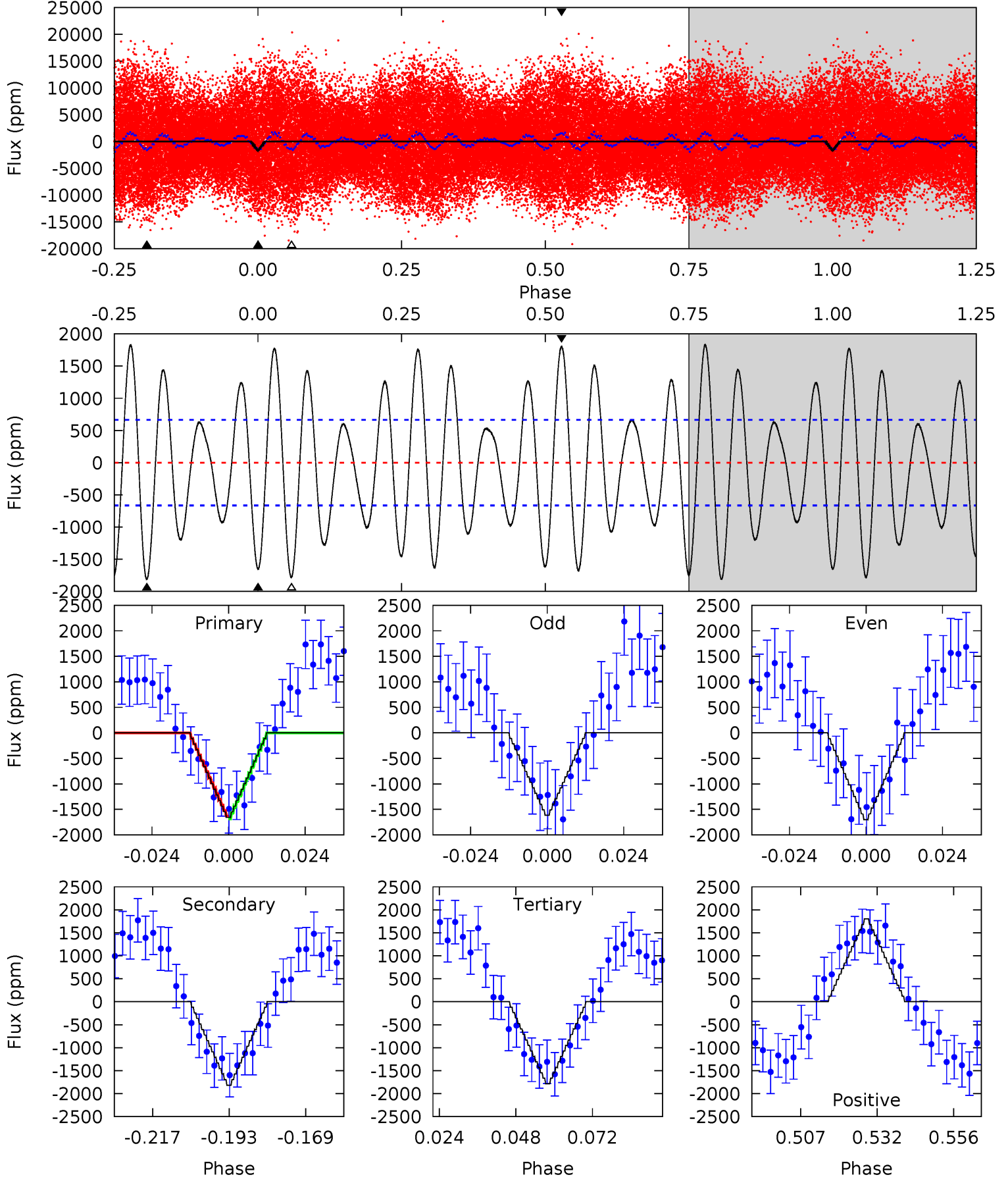
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.76	2.98	2.09	1.99	4.53	1.56	1.44	0.67	0.77	0.89	0.99	0.12	0.84	0.54	0.56



# Alt Model-Shift Uniqueness Test

011413125-01, P = 1.719433 Days, E = 130.656881 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	13.3	13.0	13.2	4.85	2.25	6.83	-0.92	-1.06	0.24	0.09	0.32	0.71	0.50	0.21



### Stellar Parameters For KIC 011413125

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7063^{+195}_{-307}$	$3.840^{+0.353}_{-0.118}$	$0.100^{+0.200}_{-0.350}$	$2.692^{+0.500}_{-1.166}$	$1.828^{+0.188}_{-0.439}$	$0.132^{+0.358}_{-0.046}$
	+3%/-4%	+9%/-3%	+200%/-350%	+19%/-43%	+10%/-24%	+271%/-35%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 011413125-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-36 \pm 12$	$2.78^{+1.91}_{-1.72}$	$3771^{+274}_{-414}$	$5227^{+3740}_{-1243}$	$3.057^{+17.164}_{-2.132}$
Alt.	$-1816 \pm 137$	$12.30^{+2.88}_{-3.12}$	$3764^{+264}_{-409}$	$6802^{+729}_{-589}$	$7.714^{+5.511}_{-2.479}$

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



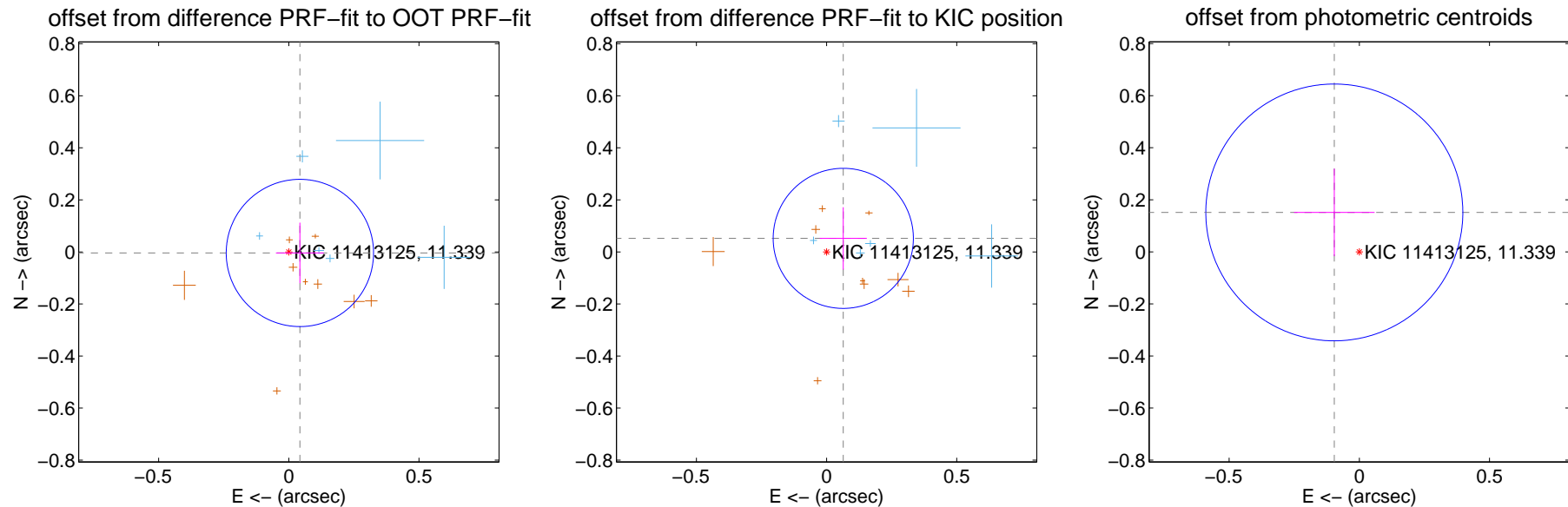
## DV Centroid Data

Supplemental centroid analysis for 011413125-01. **Kepler magnitude: 11.34.** Transit SNR 7.44

There are 6 quarters with good PRF difference image offsets

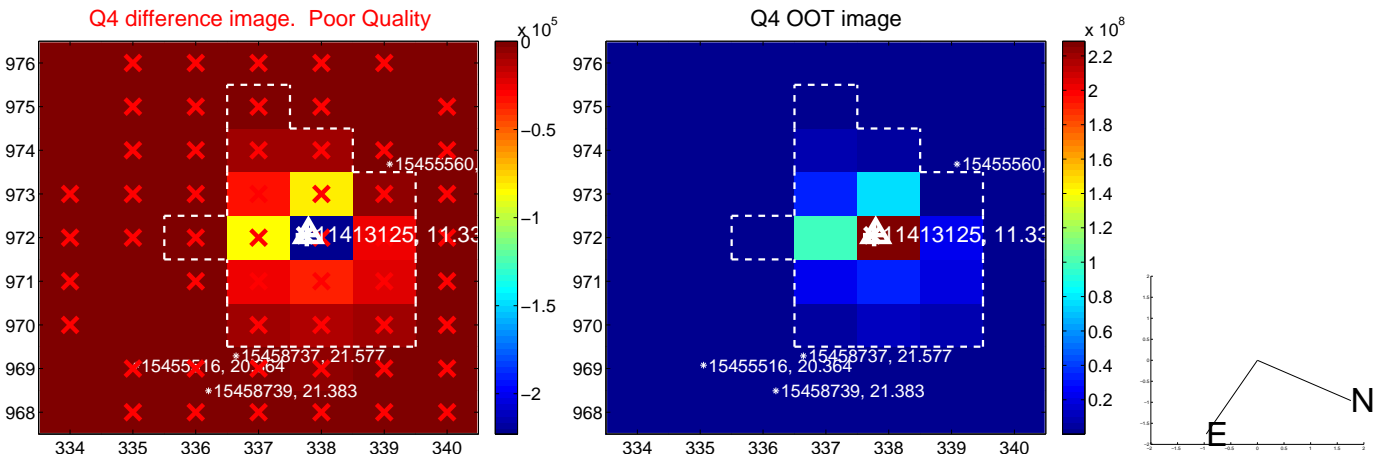
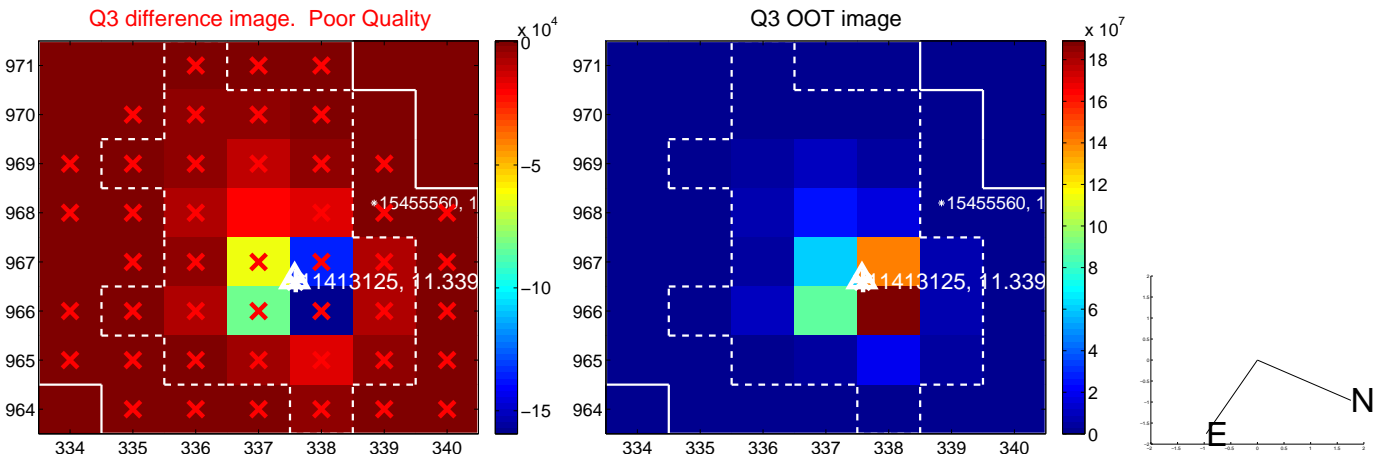
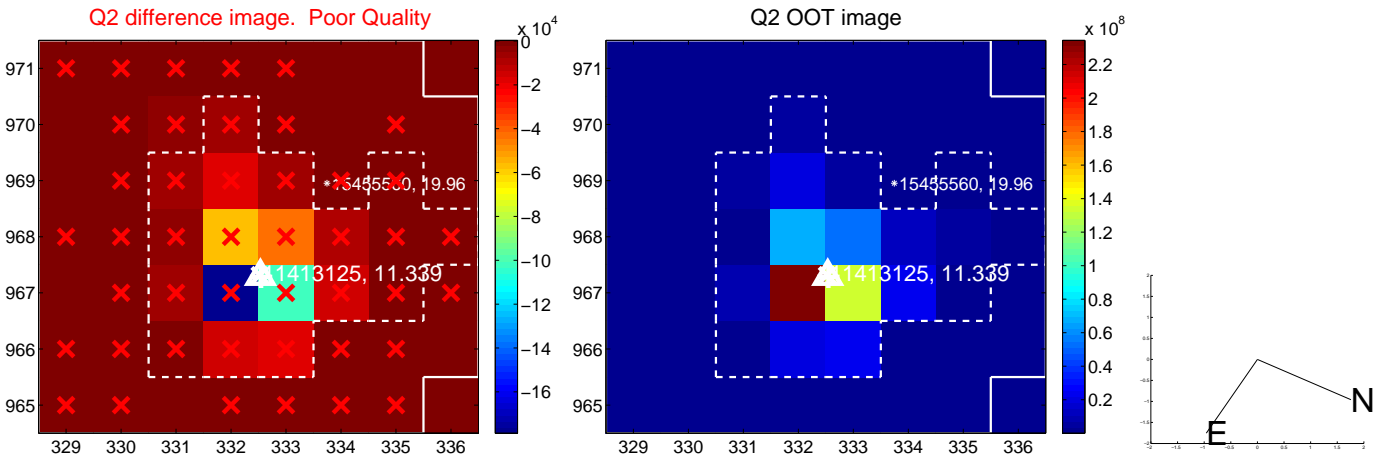
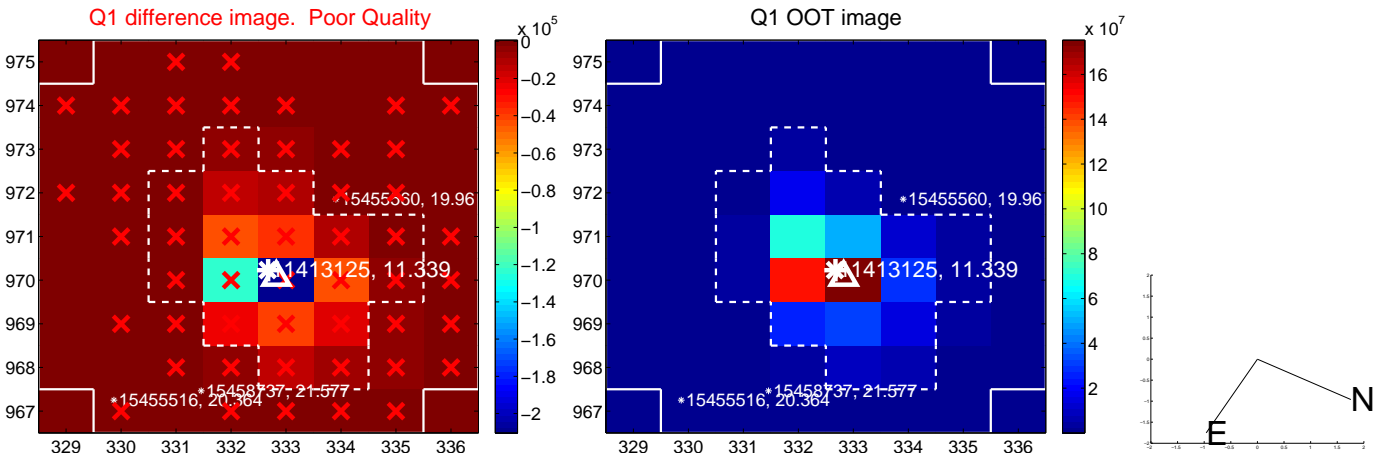
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.043 \pm 0.094$	0.45	$-0.043 \pm 0.092$	$-0.004 \pm 0.116$
PRF-fit source offset from KIC position	$0.083 \pm 0.090$	0.92	$-0.064 \pm 0.090$	$0.052 \pm 0.120$
photometric centroid source offset	$0.18 \pm 0.16$	1.09	$0.10 \pm 0.15$	$0.15 \pm 0.17$

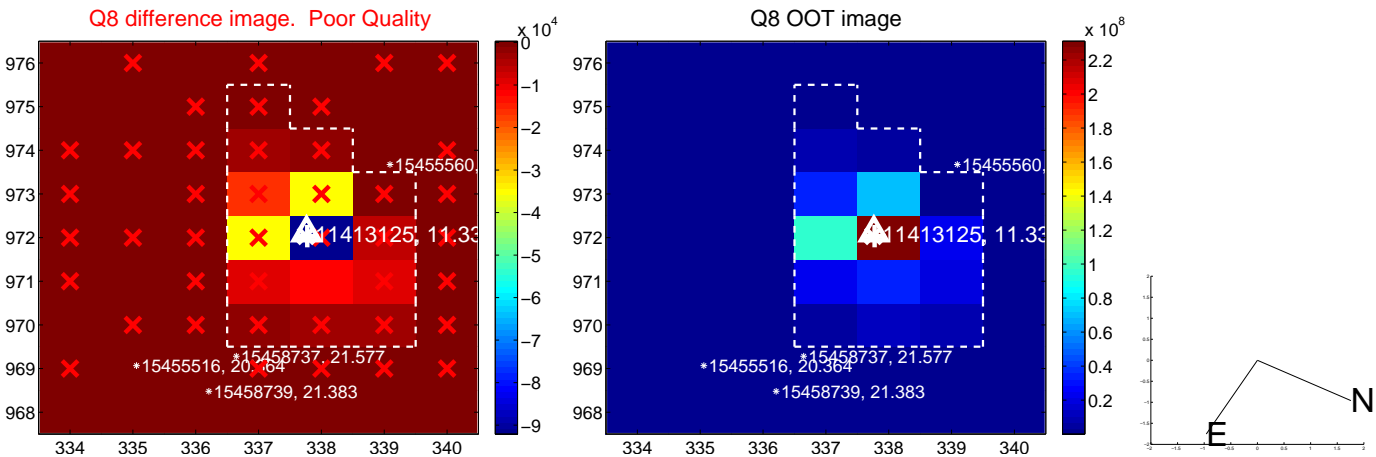
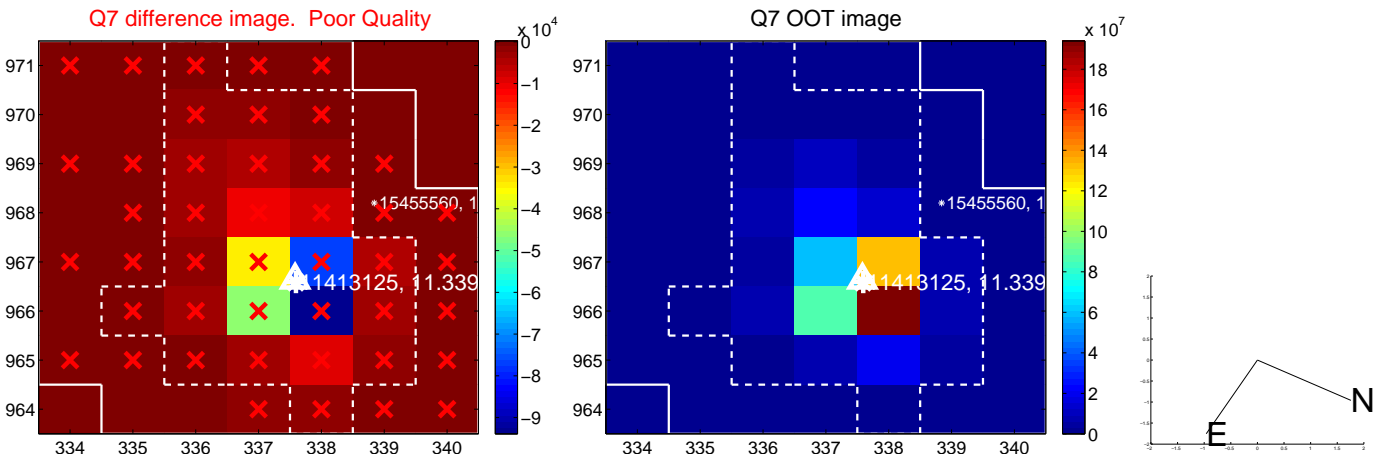
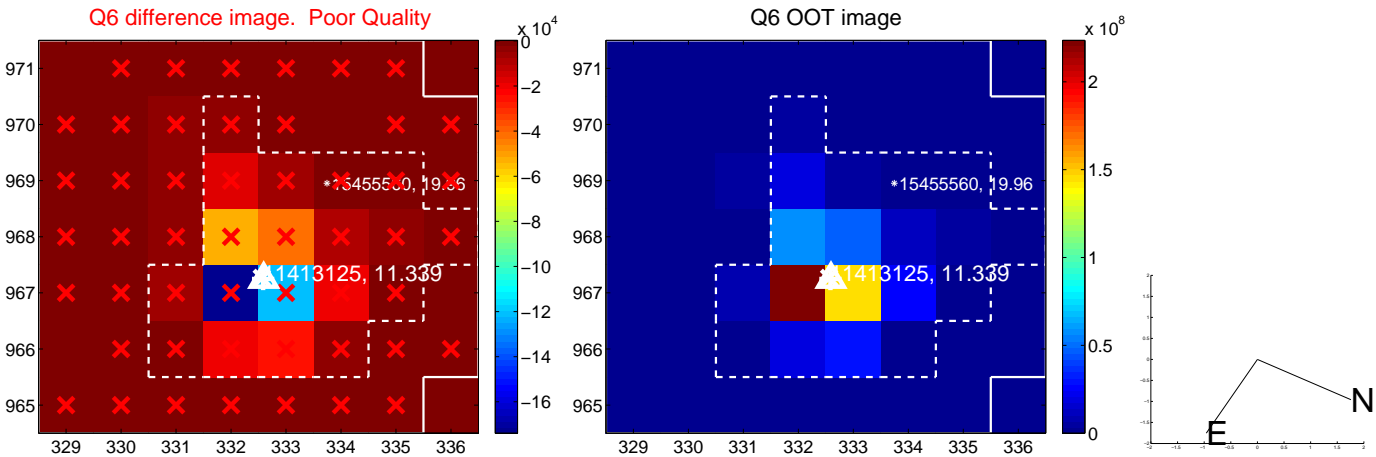
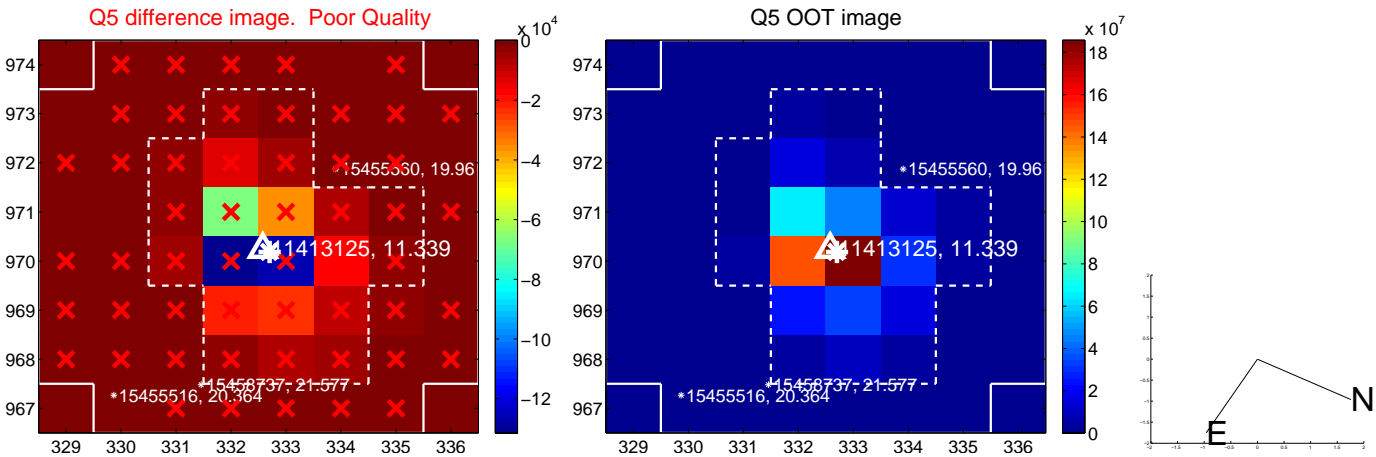


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

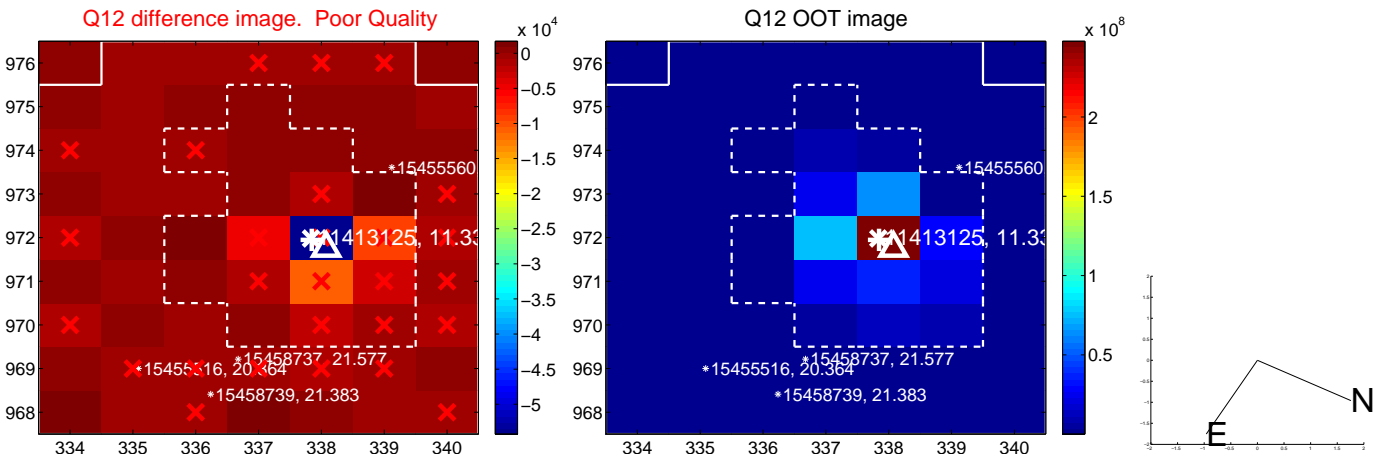
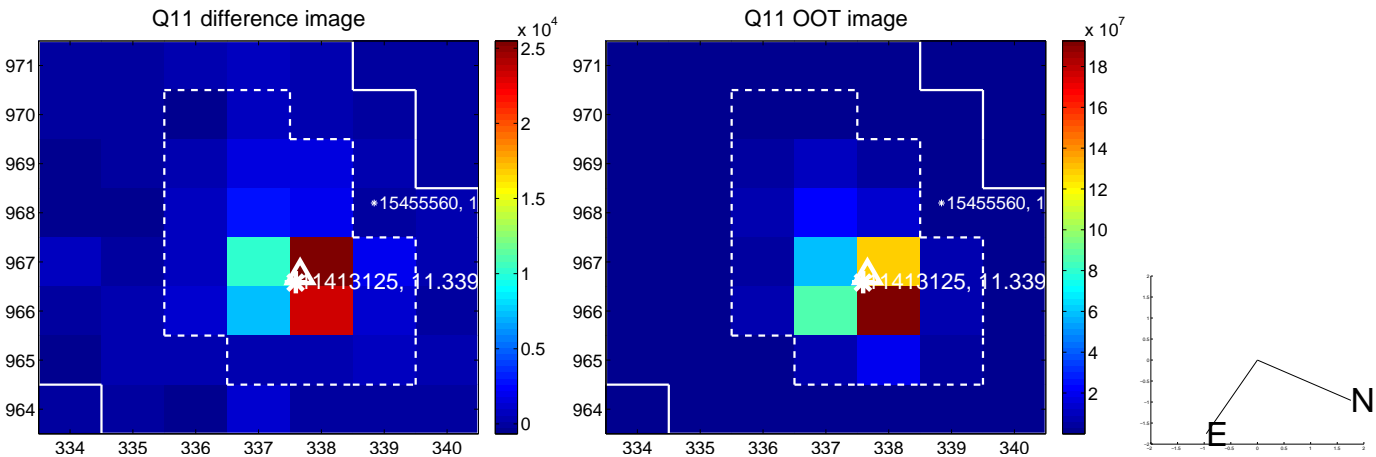
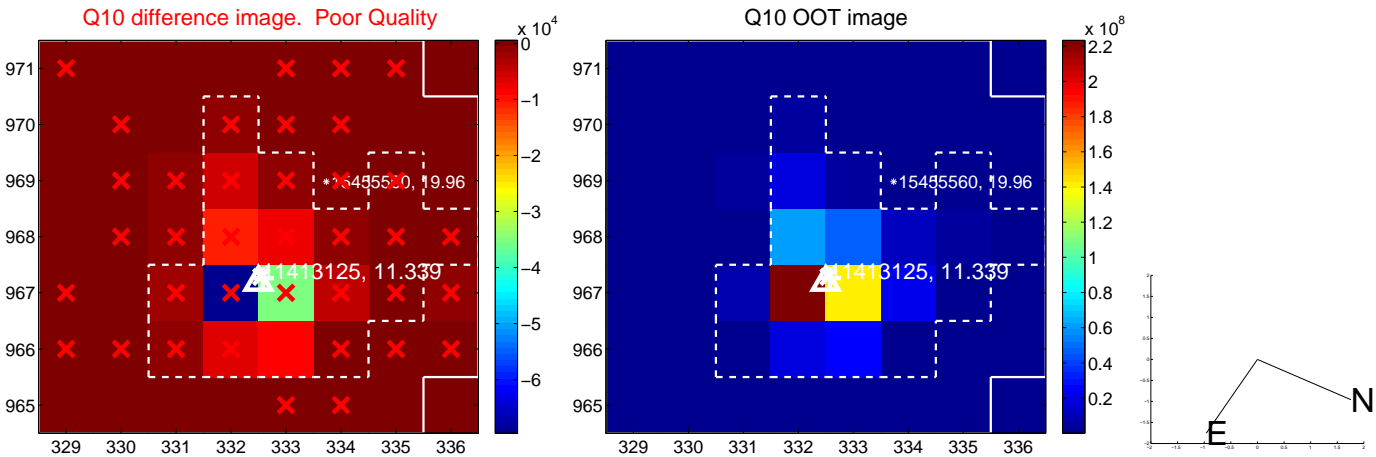
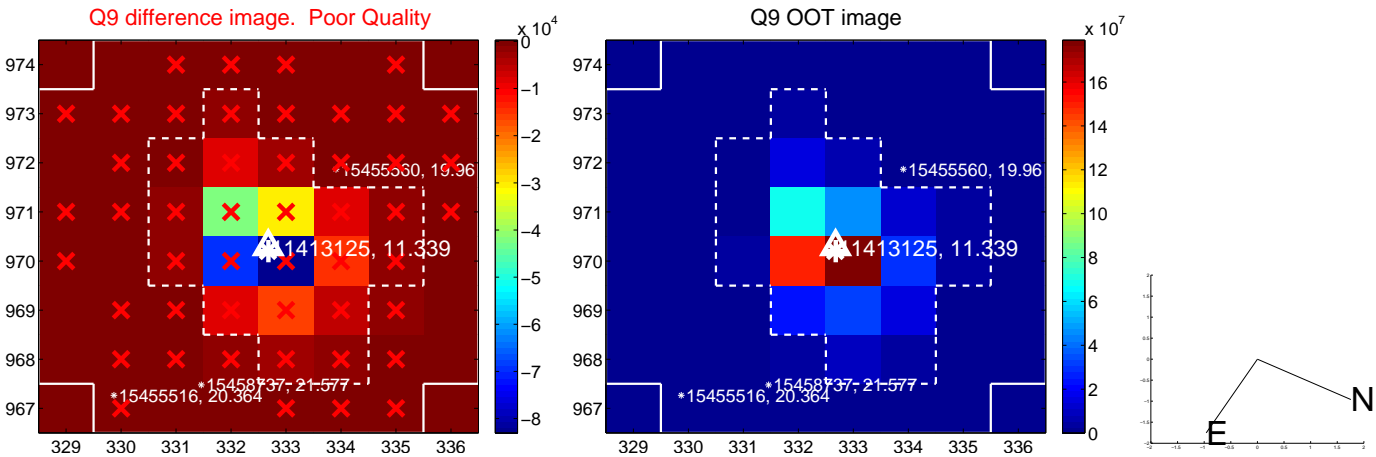


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

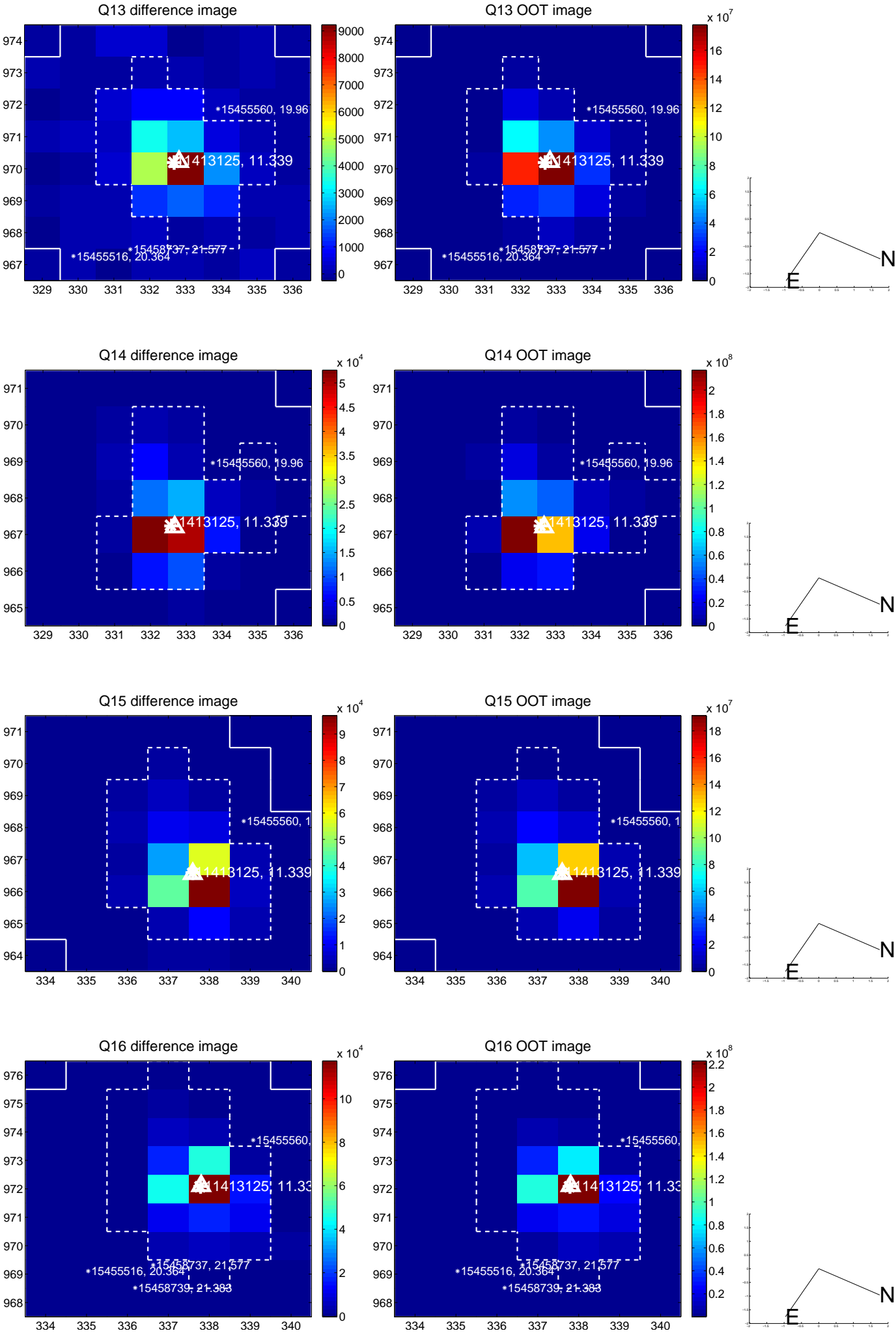




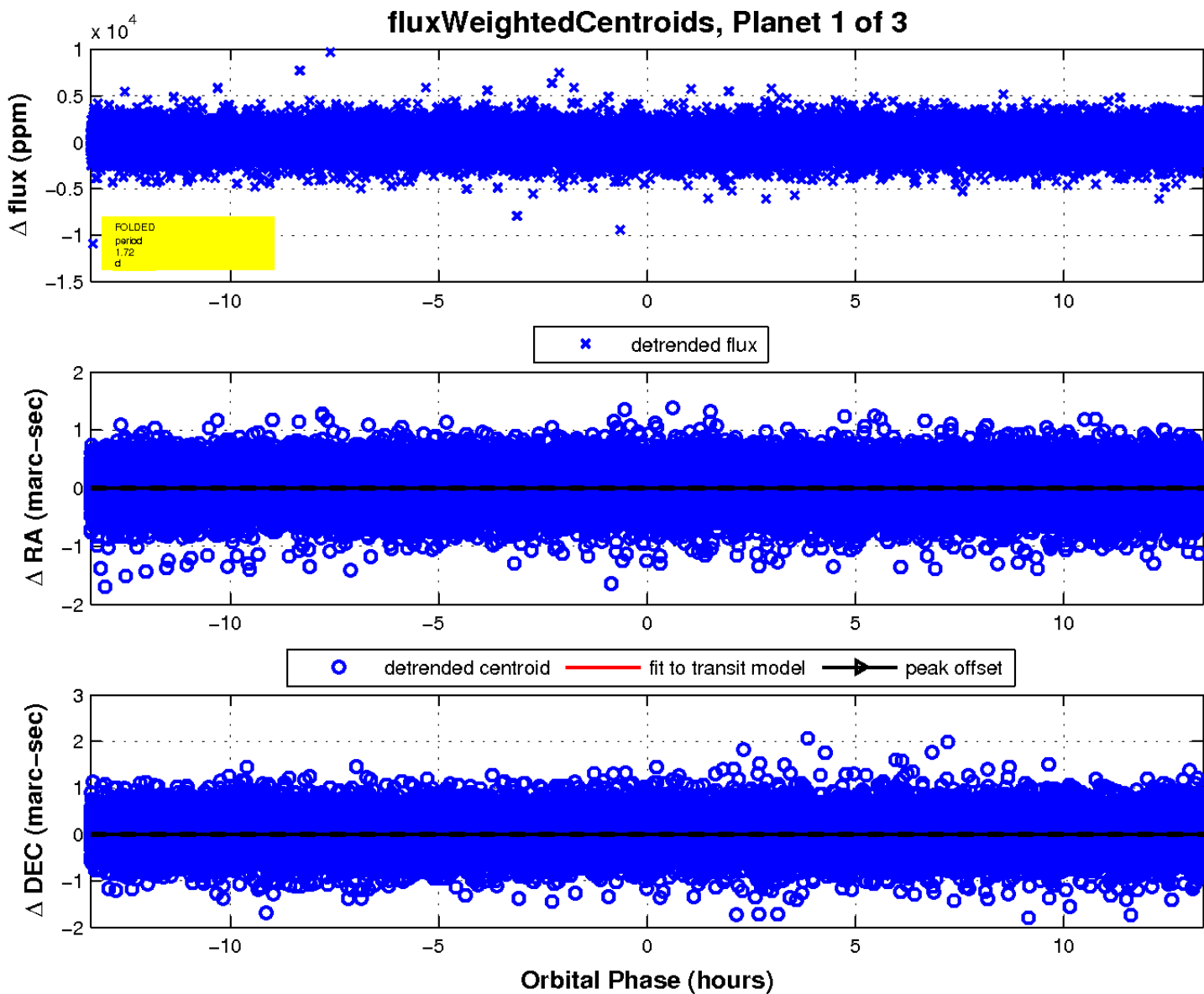
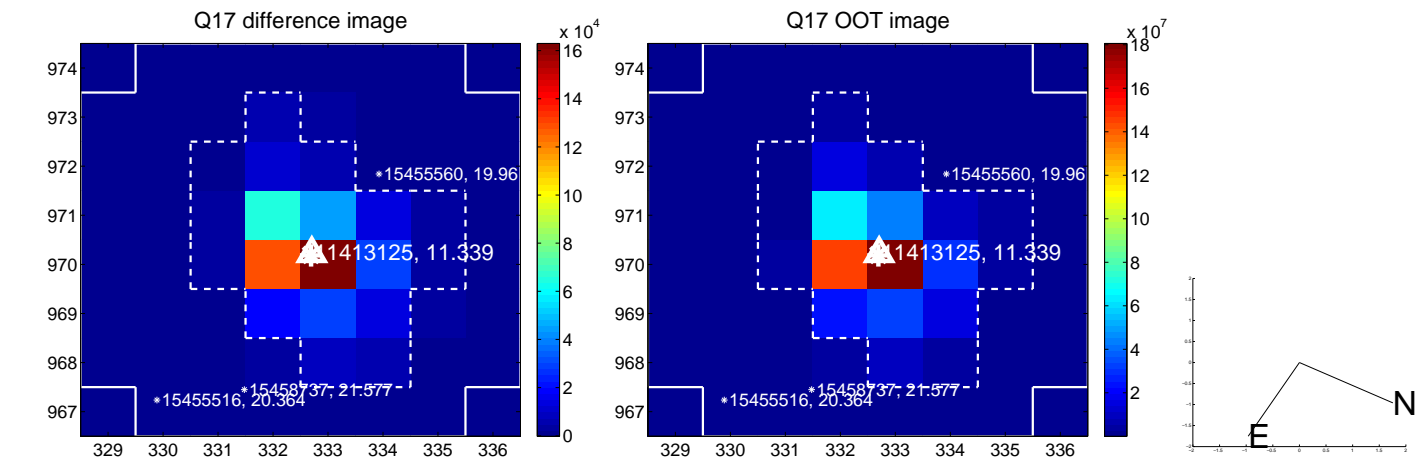
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



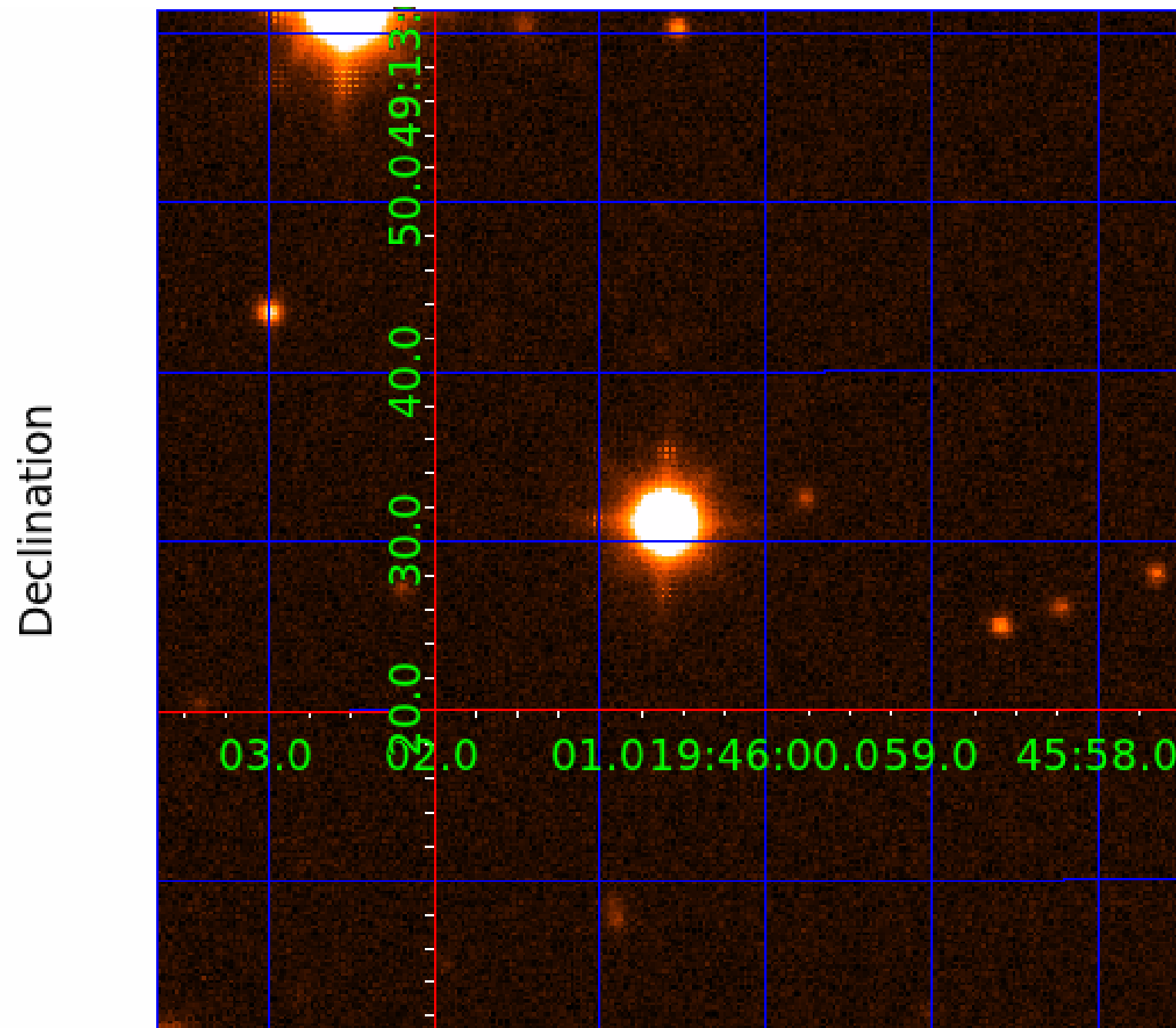
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image





# KIC 011413125

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011413125-01	OBS	No	1.719551	132.136653	74.2	4.452	10.5	7.4	2.69	7063	2.64	13688.25
011413125-02	OBS	No	1.719474	132.639492	94.0	2.529	9.5	9.0	2.69	7063	2.64	13689.06
011413125-03	OBS	No	2.212471	131.567280	79.8	8.726	7.7	7.0	2.69	7063	2.51	9781.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011413125-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011413125-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011413125-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED

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

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

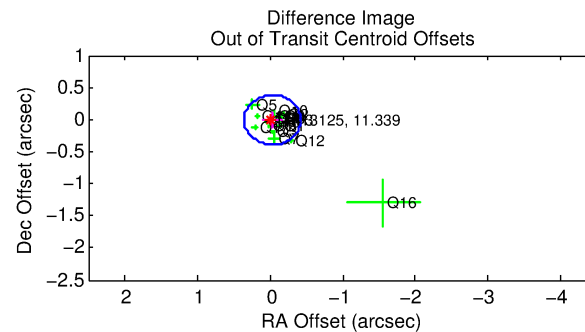
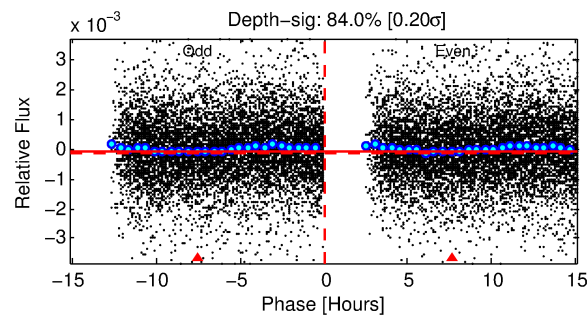
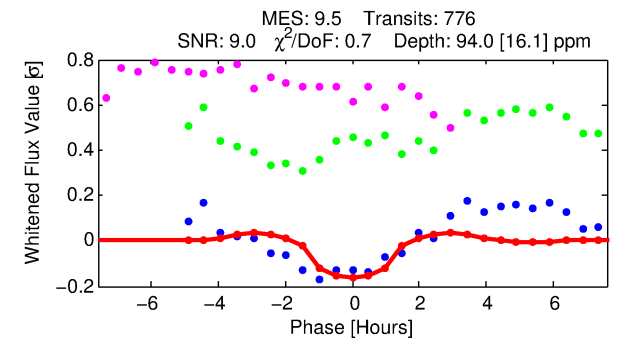
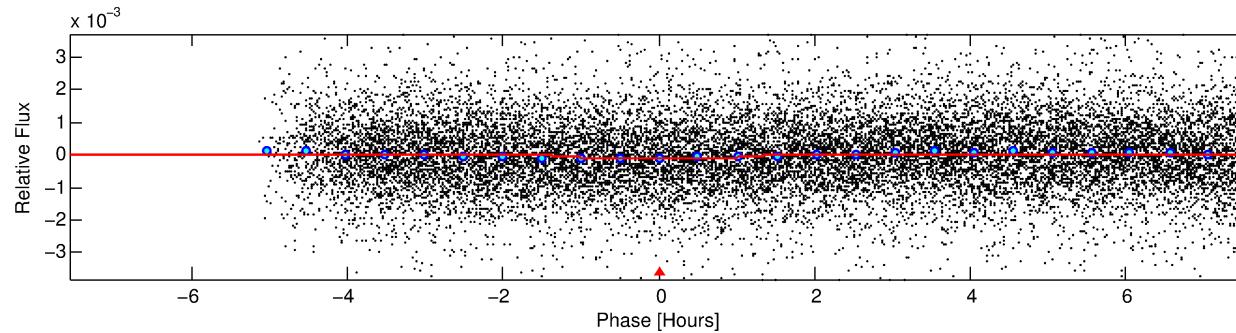
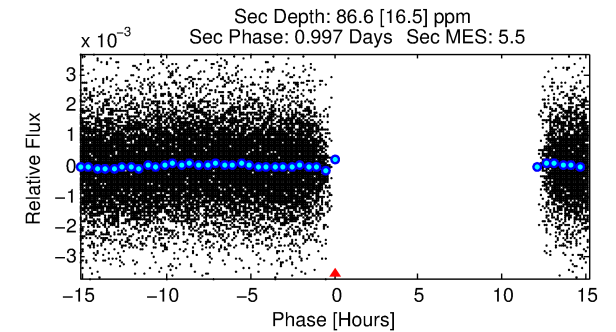
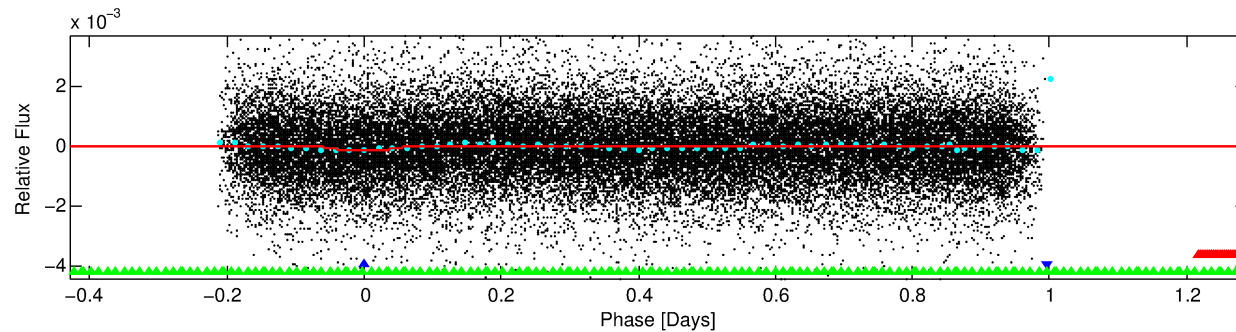
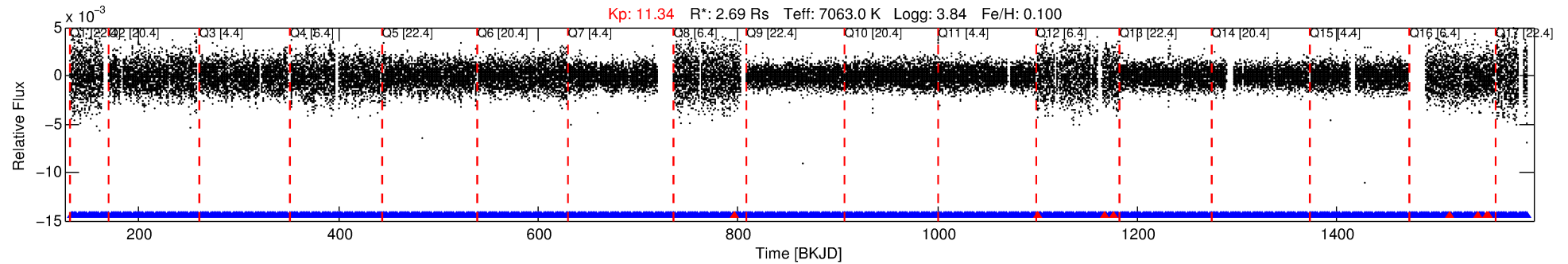
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011413125-02

No Significant Match Found

# DV One-Page Summary

KIC: 11413125 Candidate: 2 of 3 Period: 1.719 d



## DV Fit Results:

Period = 1.71947 [0.00002] d  
Epoch = 132.6395 [0.0050] BKJD  
 $R_p/R^*$  = 0.0090 [0.0168]  
 $a/R^*$  = 5.27 [53.98]  
 $b$  = 0.01 [965.79]  
 $S_{\text{eff}}$  = 13689.06 [8735.70]  
 $T_{\text{eq}}$  = 2758 [440] K  
 $R_p$  = 2.64 [5.08]  $R_e$   
 $a$  = 0.0344 [0.0136] AU  
 $A_g$  = 8.08 [30.72] [0.23σ]  
 $T_{\text{eff}}$  = 7189 [6753] K [0.65σ]

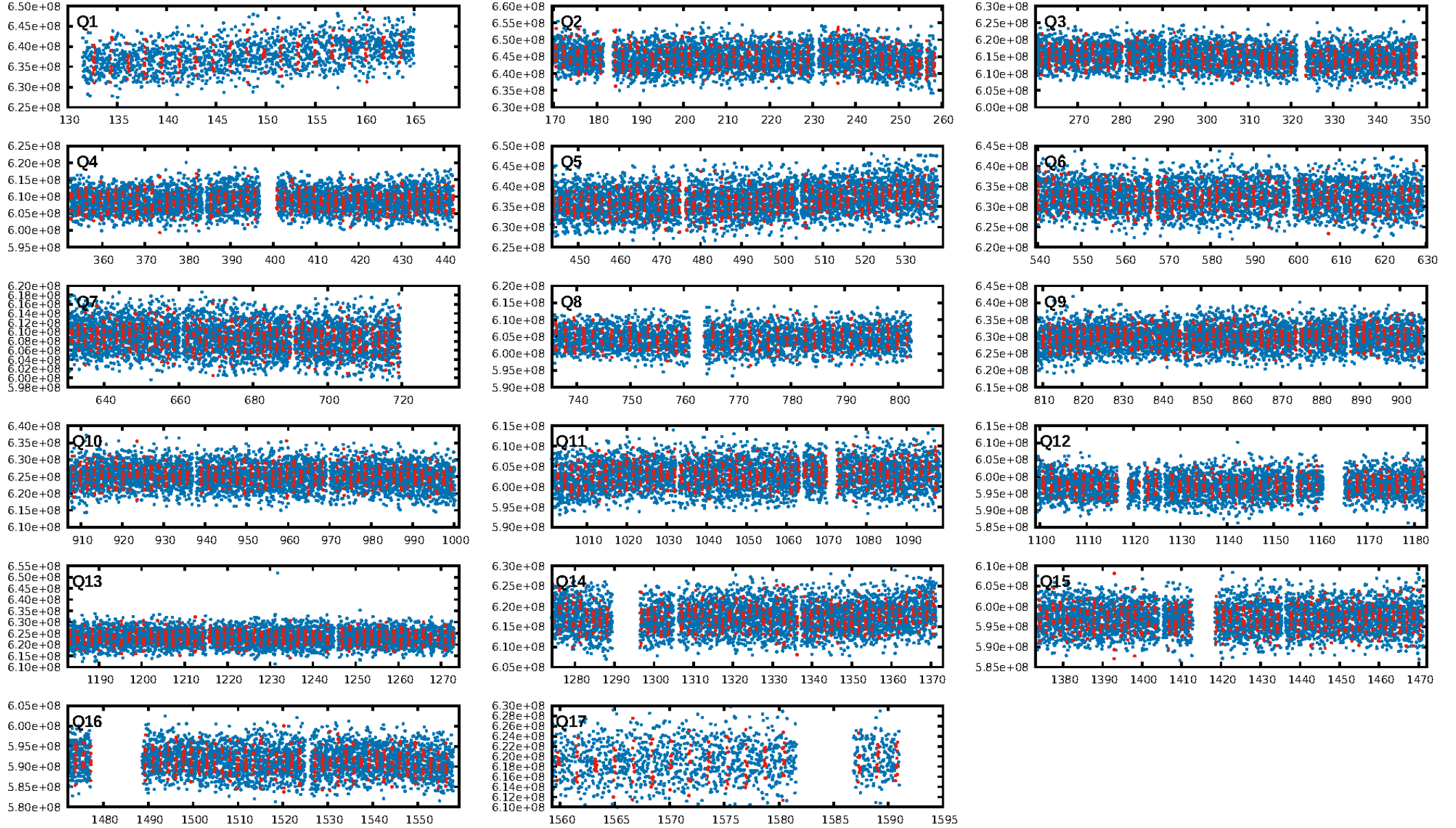
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.42e-24  
RollingBand-fgt: 0.99 [733/741]  
GhostDiagnostic-chr: 4.083  
Centroid-sig: 1.6%  
Centroid-so: 0.141 arcsec [0.86σ]  
OotOffset-rm: 0.035 arcsec [0.27σ]  
KicOffset-rm: 0.074 arcsec [0.89σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.65 [11/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:29:42 Z

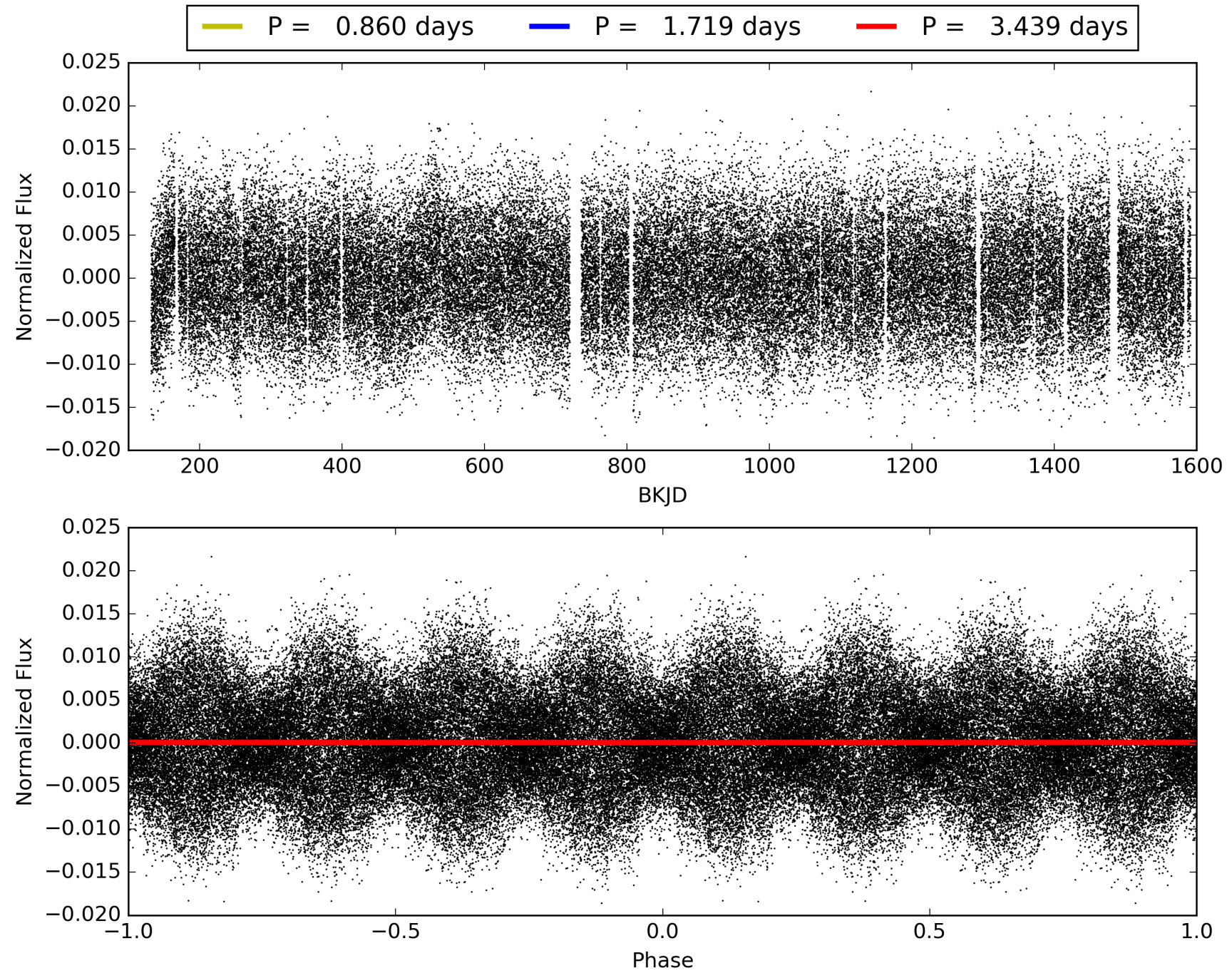
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011413125-02, PDC Light Curves





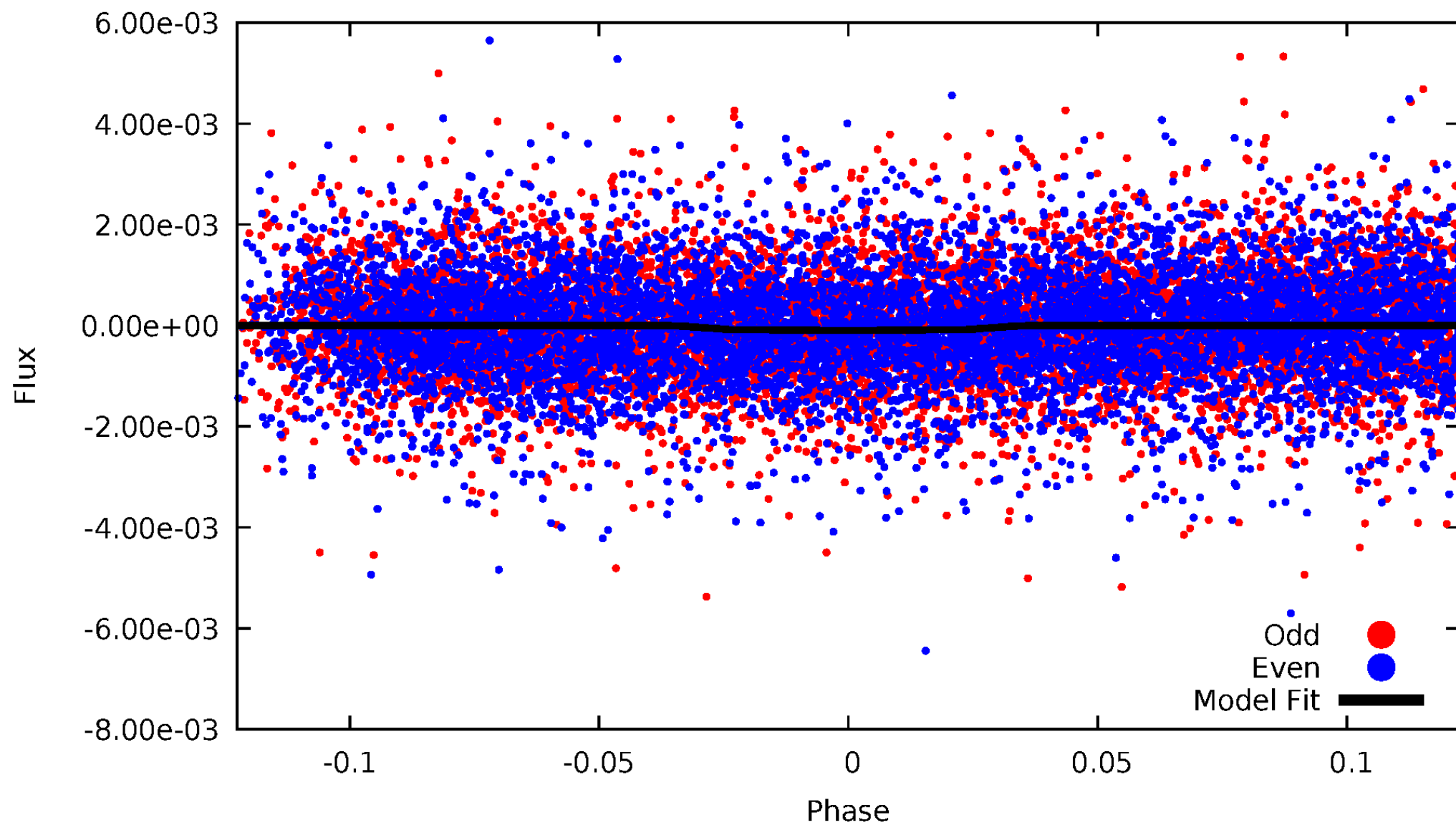
TCE 011413125-02





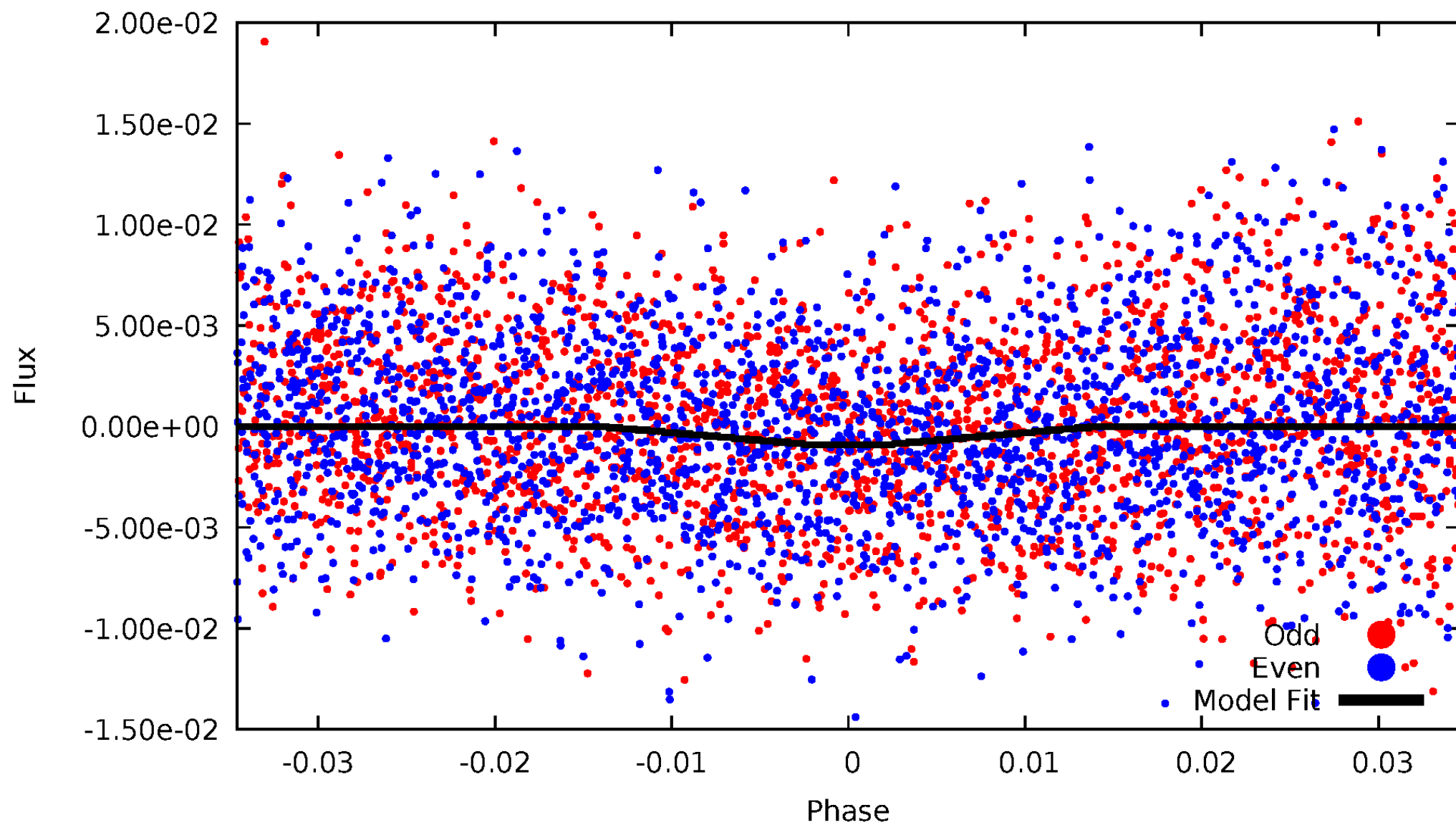
DV Odd/Even

TCE 011413125-02



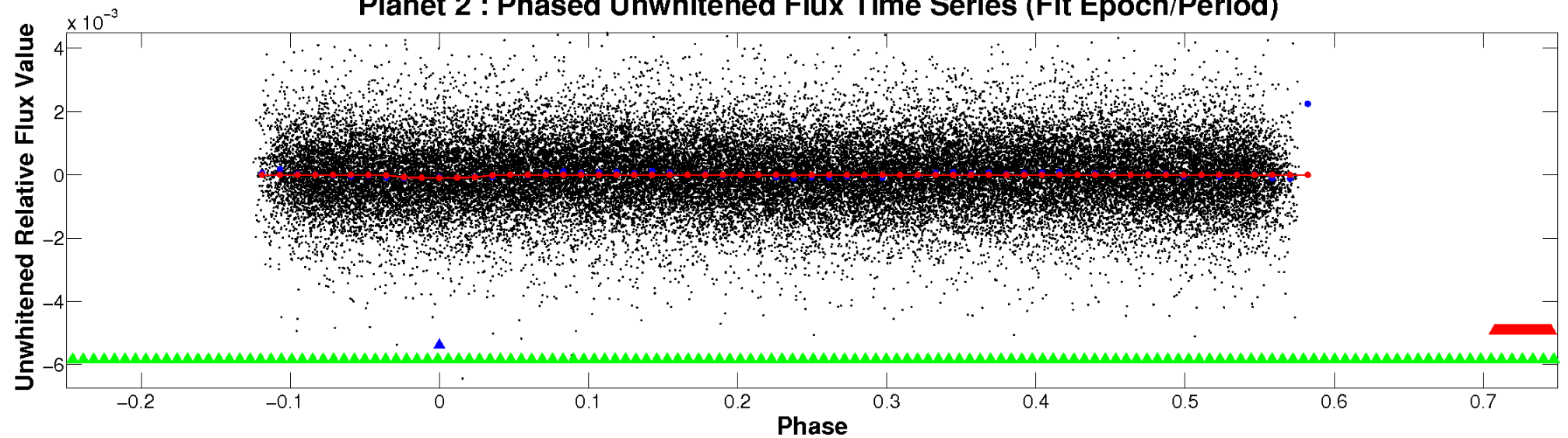
# ALT Odd/Even

TCE 011413125-02

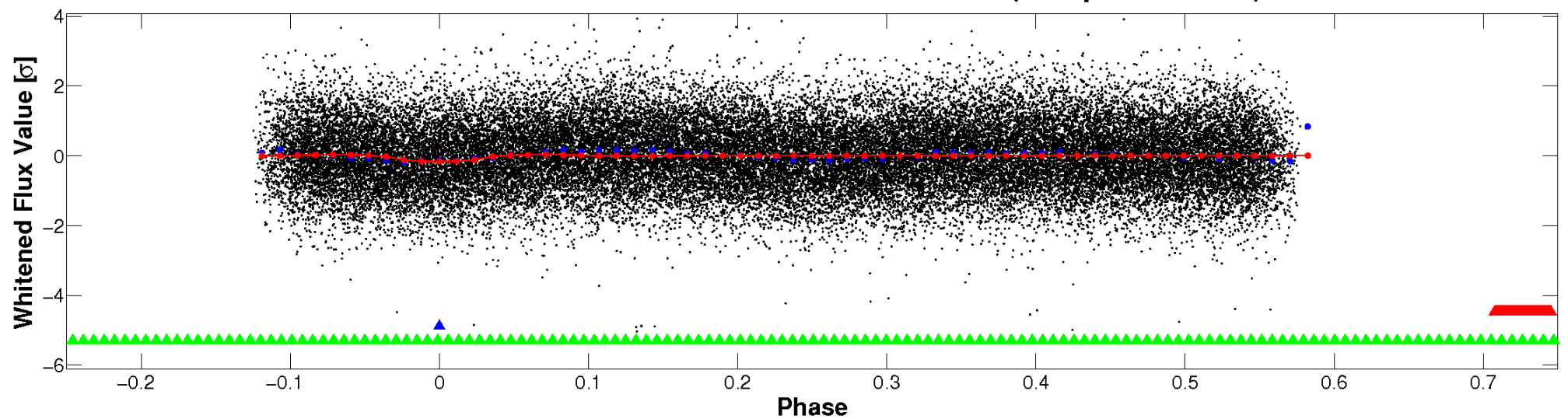


# Non-Whitened Vs. Whitened Light Curve

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

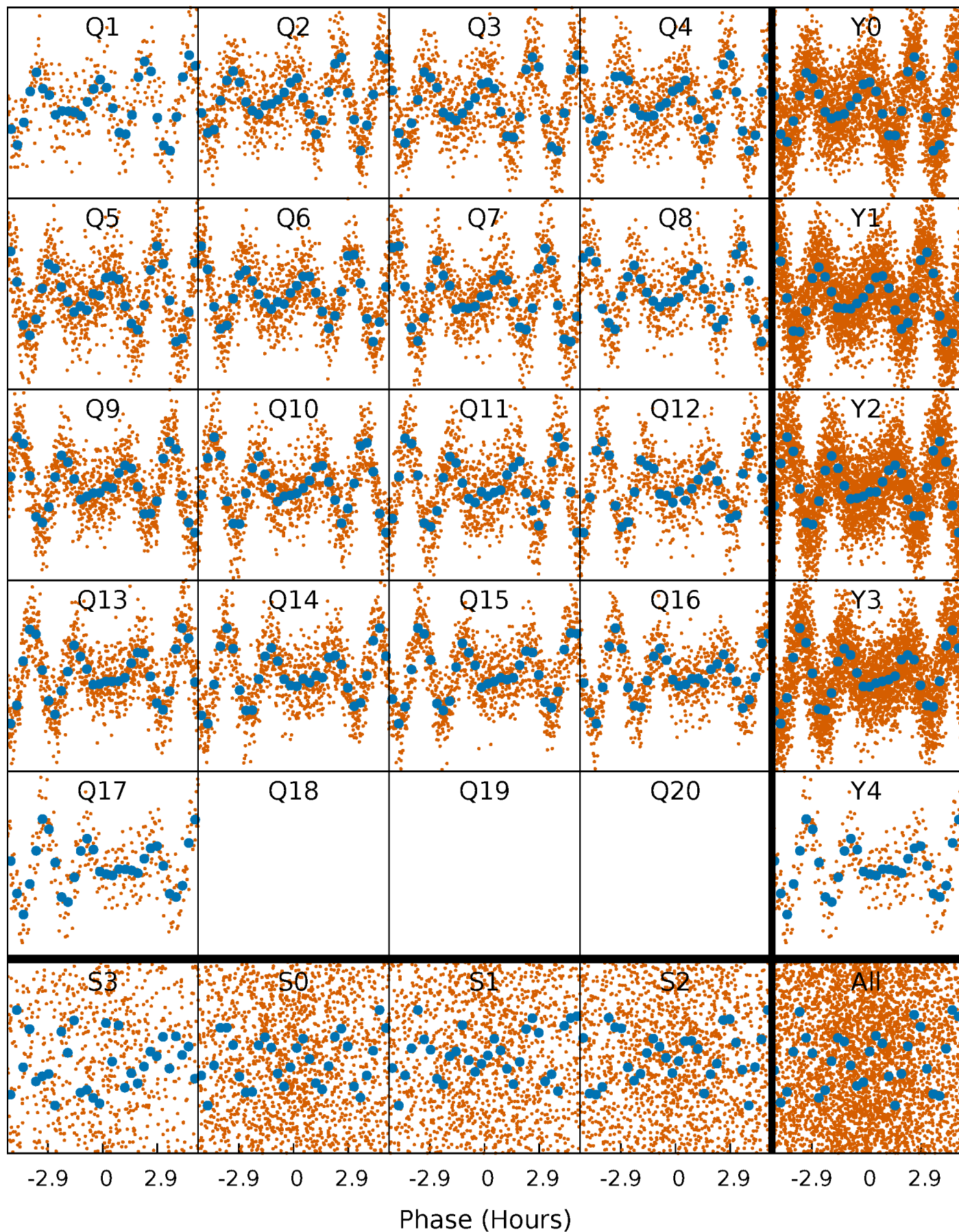


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

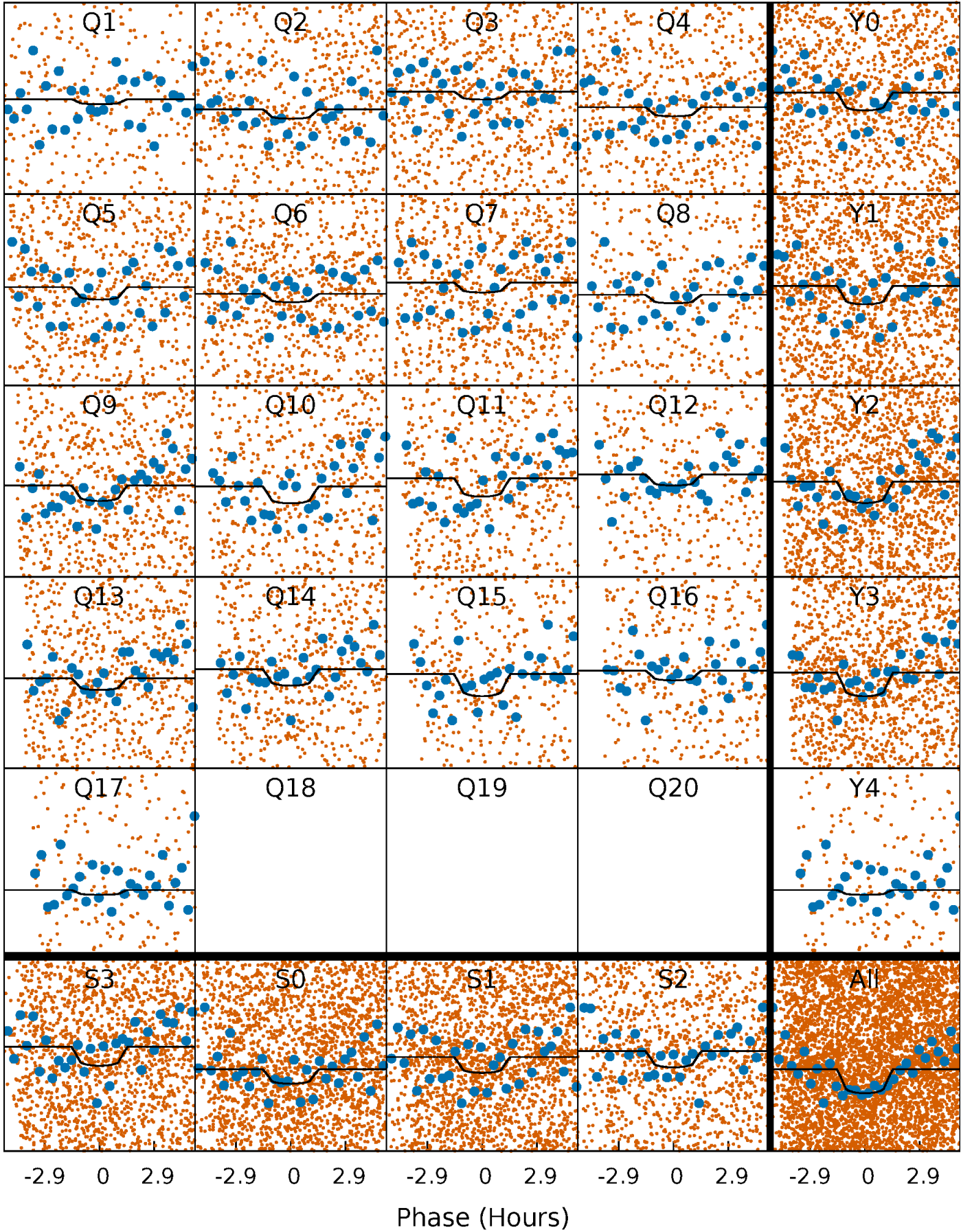
TCE 011413125-02 P= 1.719474 Days  $T_0=132.639492$  (BKJD)





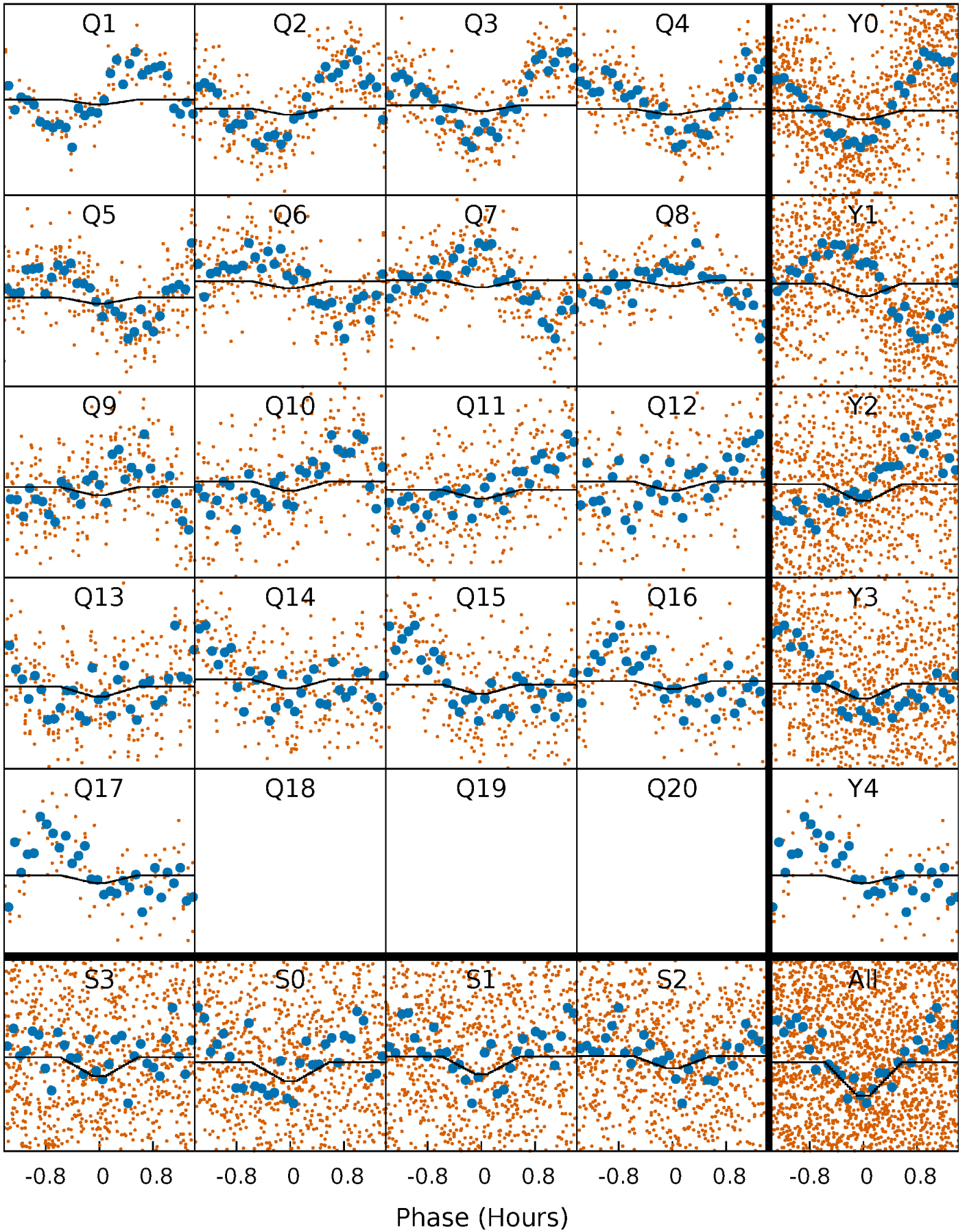
# DV Quarter-Phased Transit Curves

TCE 011413125-02 P= 1.719474 Days  $T_0=132.639492$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

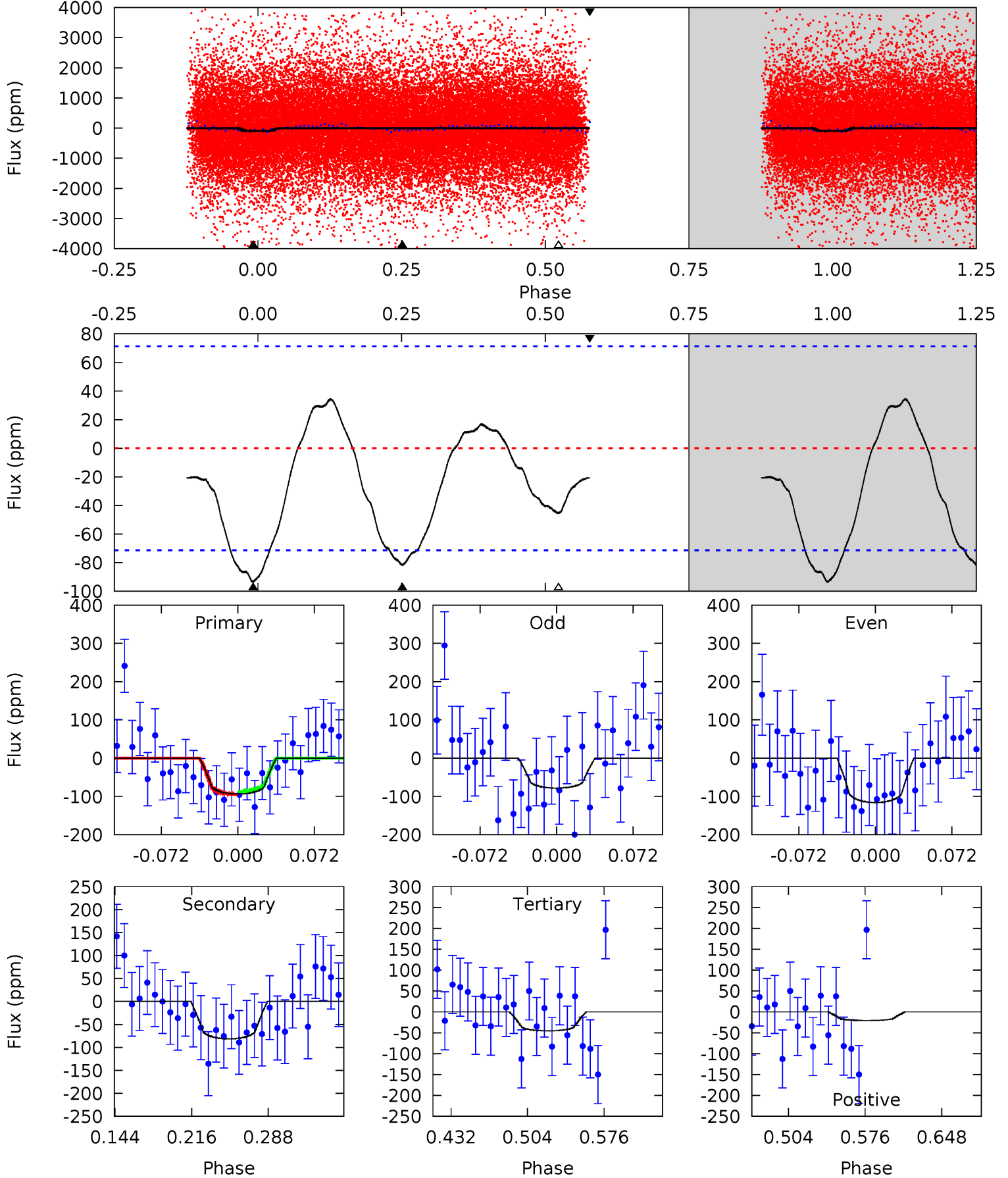
TCE 011413125-02 P= 1.719385 Days  $T_0=132.708799$  (BKJD)



# DV Model-Shift Uniqueness Test

011413125-02, P = 1.719474 Days, E = 130.920018 Days

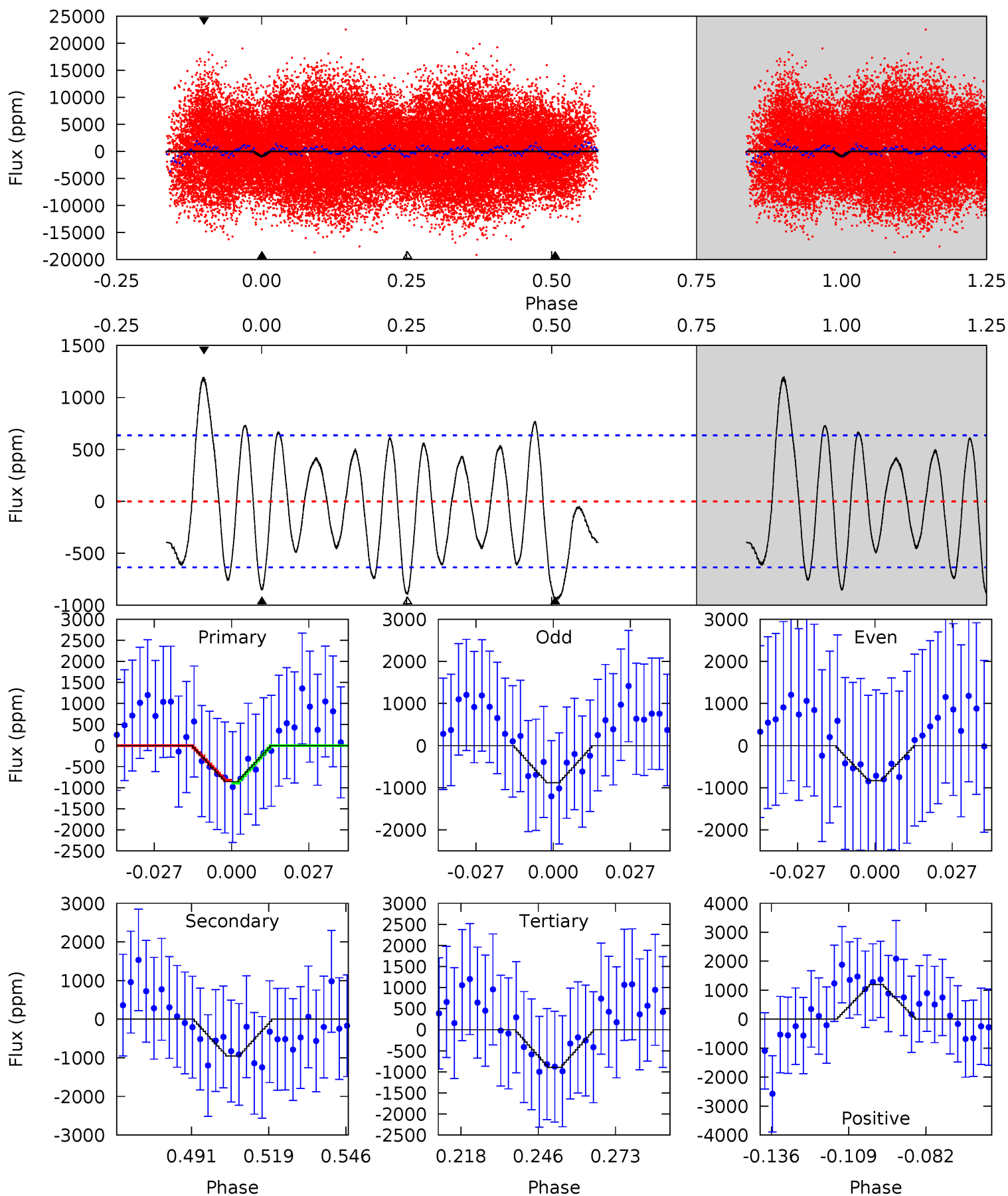
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.07	5.30	2.95	-1.34	4.63	1.80	1.50	3.12	7.42	2.35	6.64	1.23	1.20	0.27	0.25



# Alt Model-Shift Uniqueness Test

011413125-02, P = 1.719385 Days, E = 130.989414 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
6.50	7.24	6.79	9.10	4.83	2.21	3.48	-0.28	-2.60	0.45	-1.86	0.18	0.95	0.56	0.26





### Stellar Parameters For KIC 011413125

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7063^{+195}_{-307}$	$3.840^{+0.353}_{-0.118}$	$0.100^{+0.200}_{-0.350}$	$2.692^{+0.500}_{-1.166}$	$1.828^{+0.188}_{-0.439}$	$0.132^{+0.358}_{-0.046}$
	+3%/-4%	+9%/-3%	+200%/-350%	+19%/-43%	+10%/-24%	+271%/-35%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 011413125-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-82 \pm 15$	$4.14^{+4.42}_{-2.67}$	$3783^{+246}_{-391}$	$5335^{+4463}_{-1707}$	$3.082^{+20.676}_{-2.420}$
Alt.	$-952 \pm 132$	$8.08^{+5.31}_{-4.21}$	$3796^{+254}_{-424}$	$7096^{+4094}_{-1630}$	$8.828^{+30.911}_{-5.383}$

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

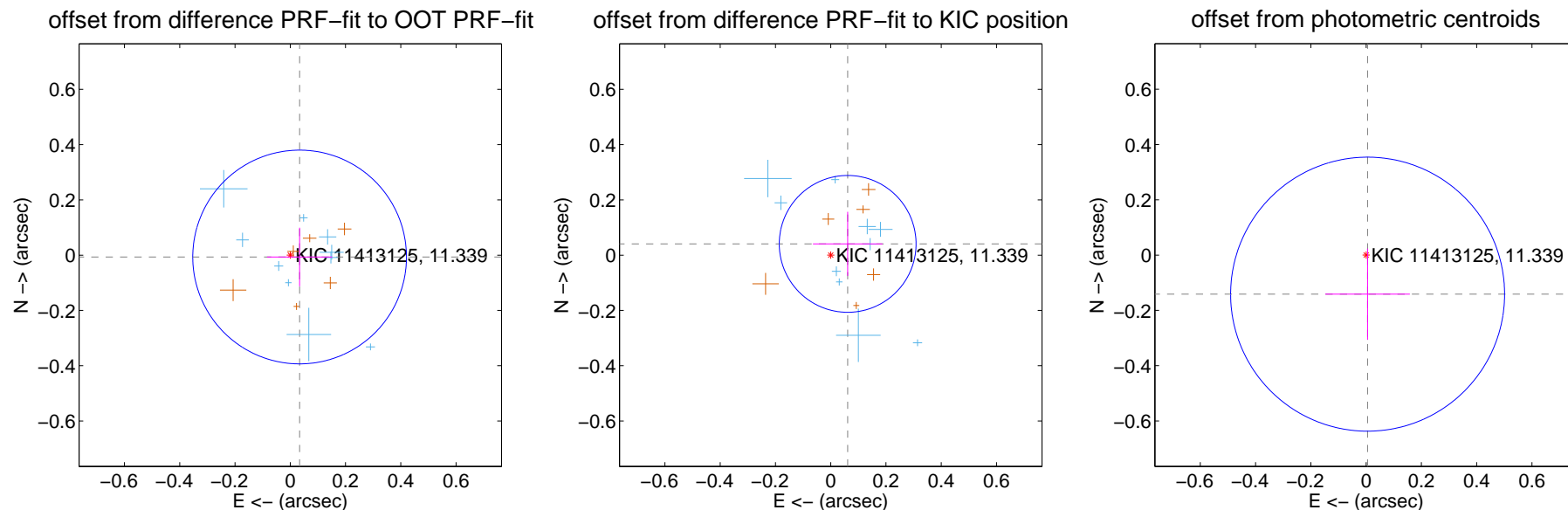
## DV Centroid Data

Supplemental centroid analysis for 011413125-02. **Kepler magnitude: 11.34.** Transit SNR 9.00

There are 11 quarters with good PRF difference image offsets

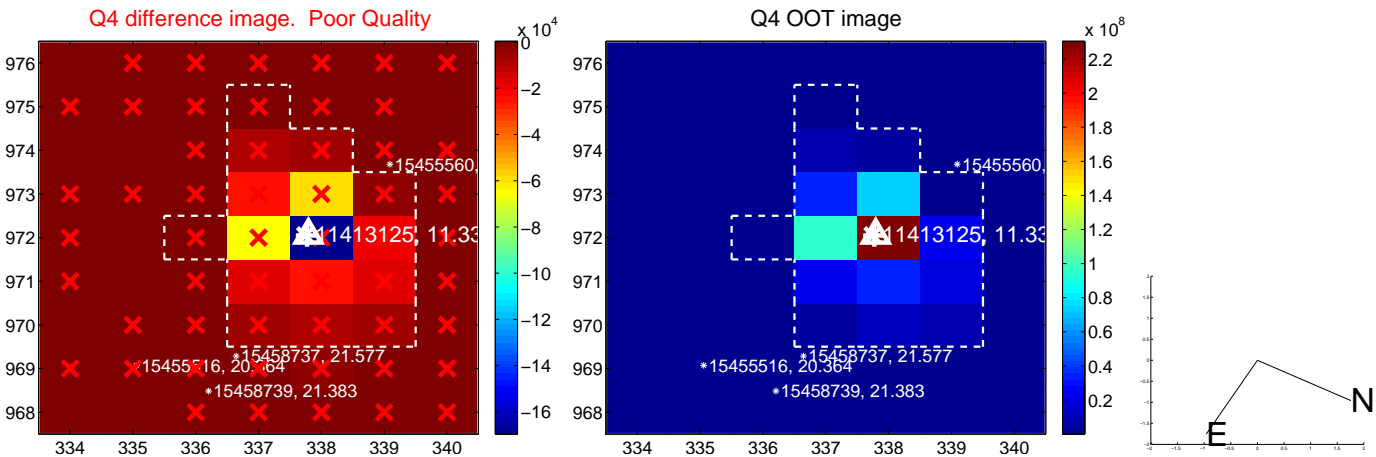
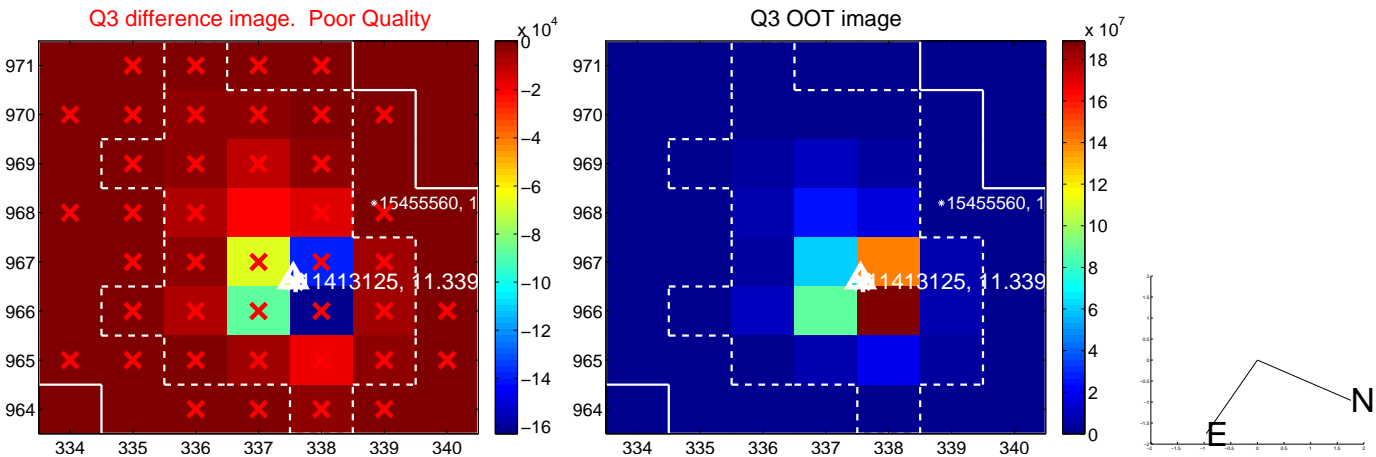
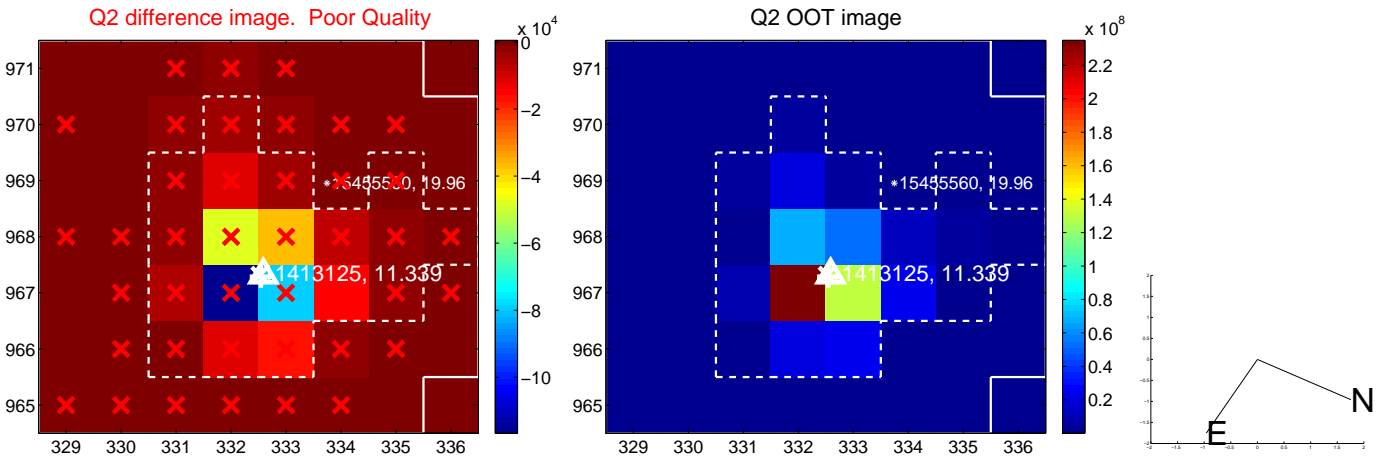
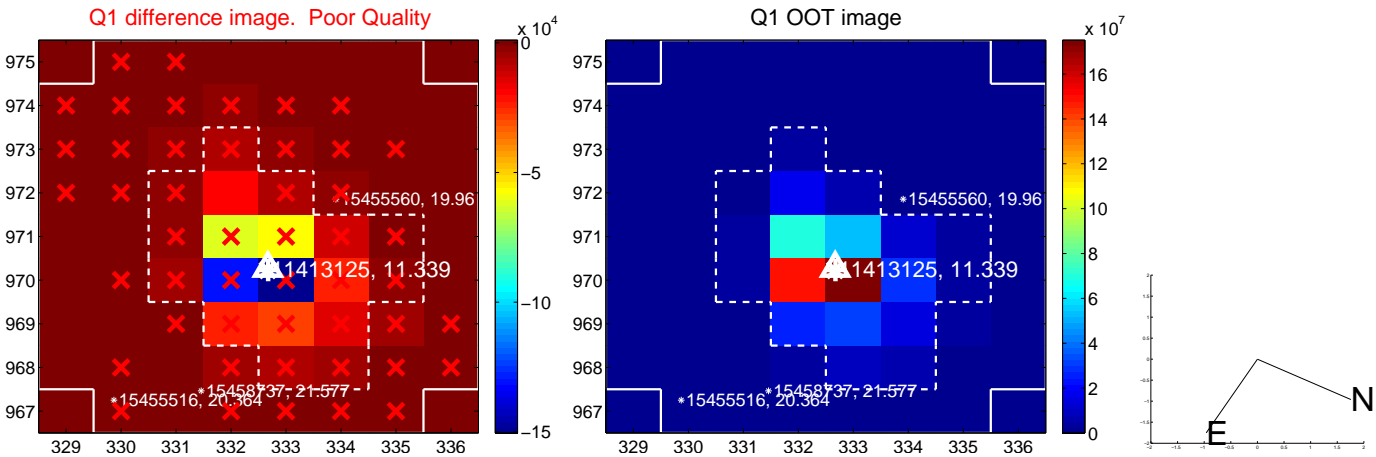
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.035 \pm 0.129$	0.27	$-0.034 \pm 0.118$	$-0.007 \pm 0.106$
PRF-fit source offset from KIC position	$0.074 \pm 0.083$	0.89	$-0.061 \pm 0.126$	$0.041 \pm 0.116$
photometric centroid source offset	$0.14 \pm 0.17$	0.86	$-0.01 \pm 0.15$	$-0.14 \pm 0.17$

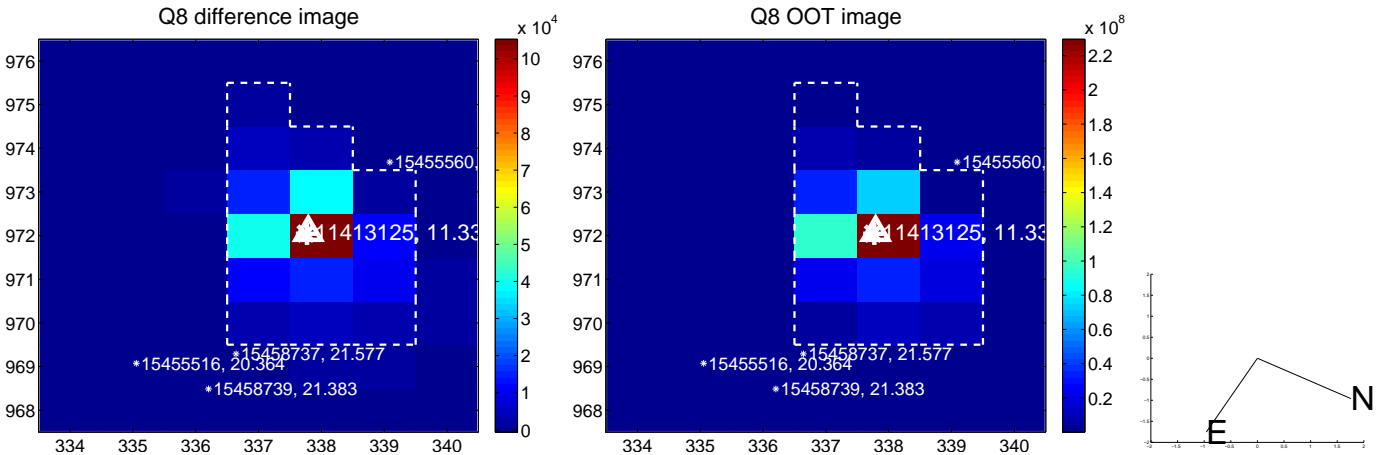
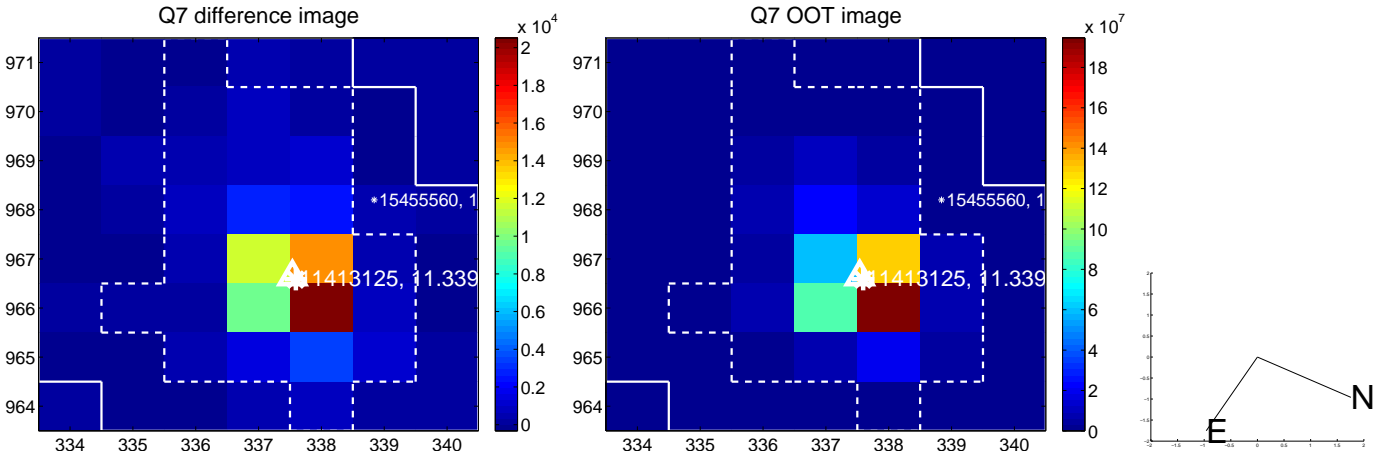
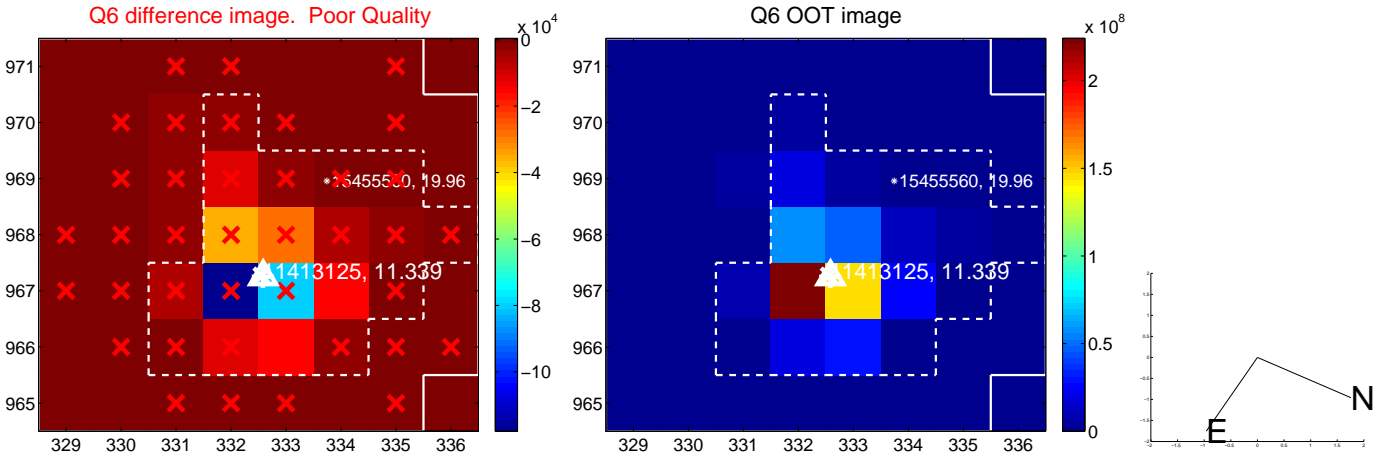
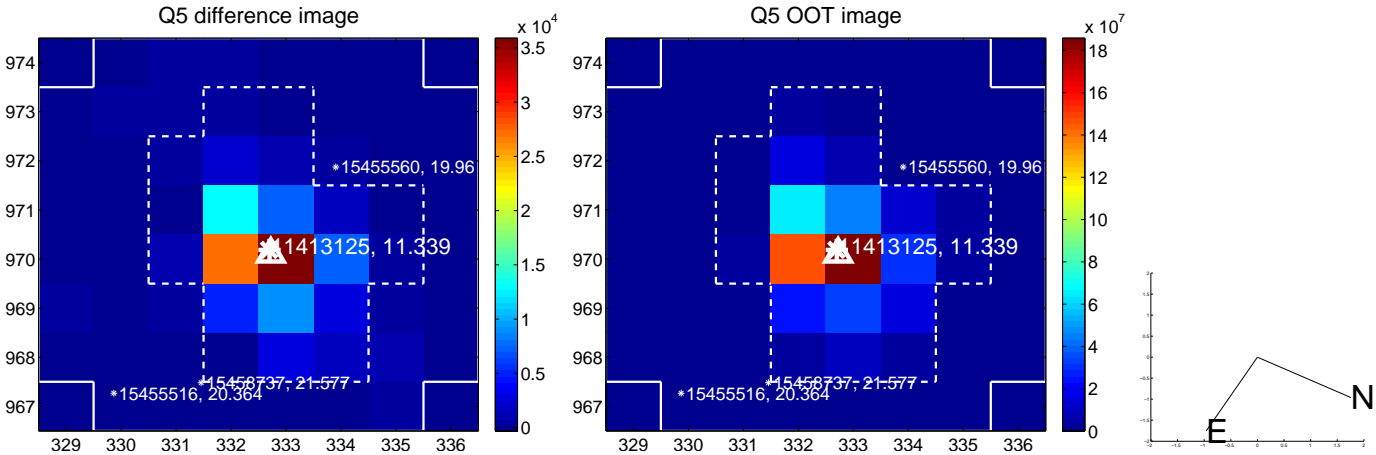


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

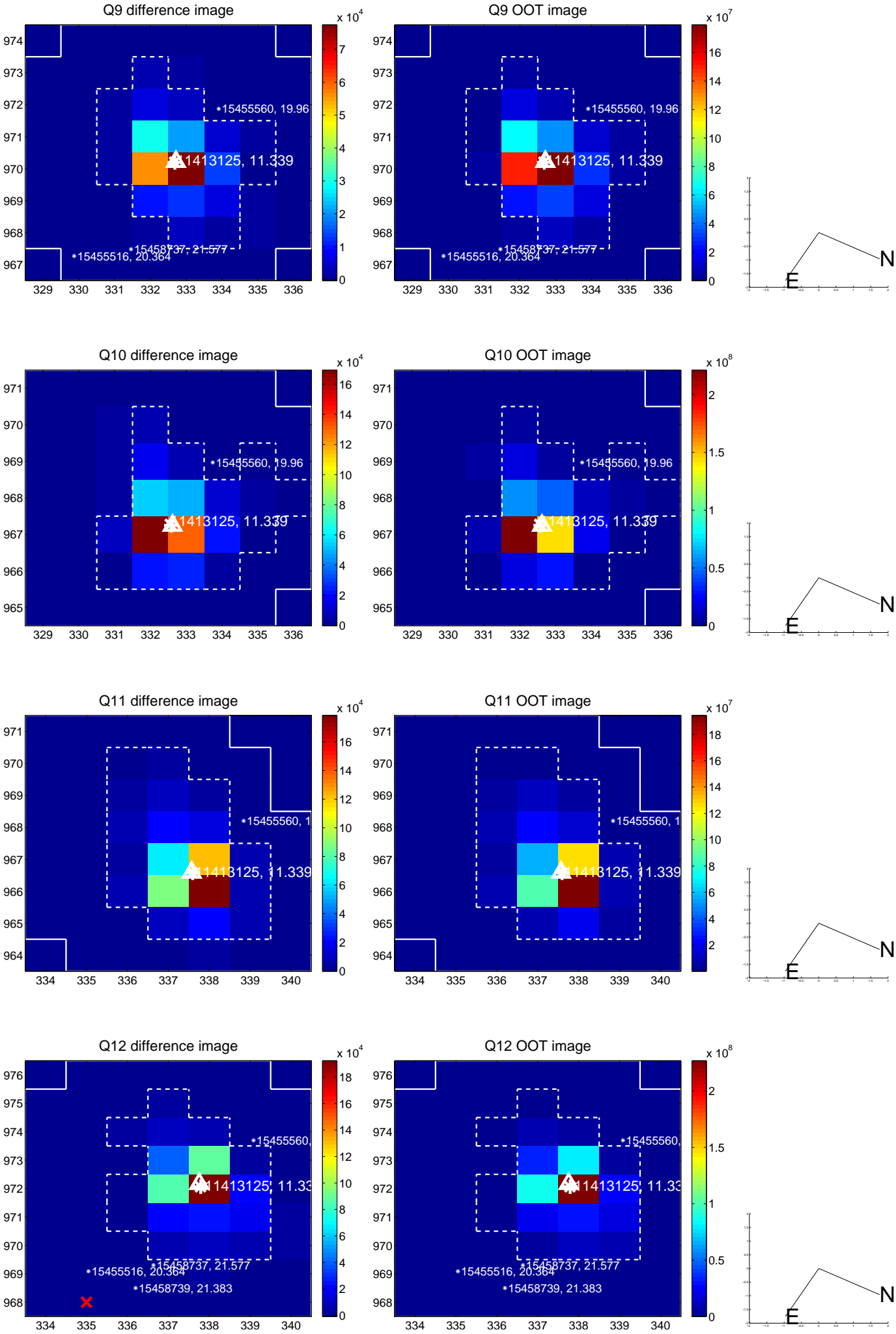
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

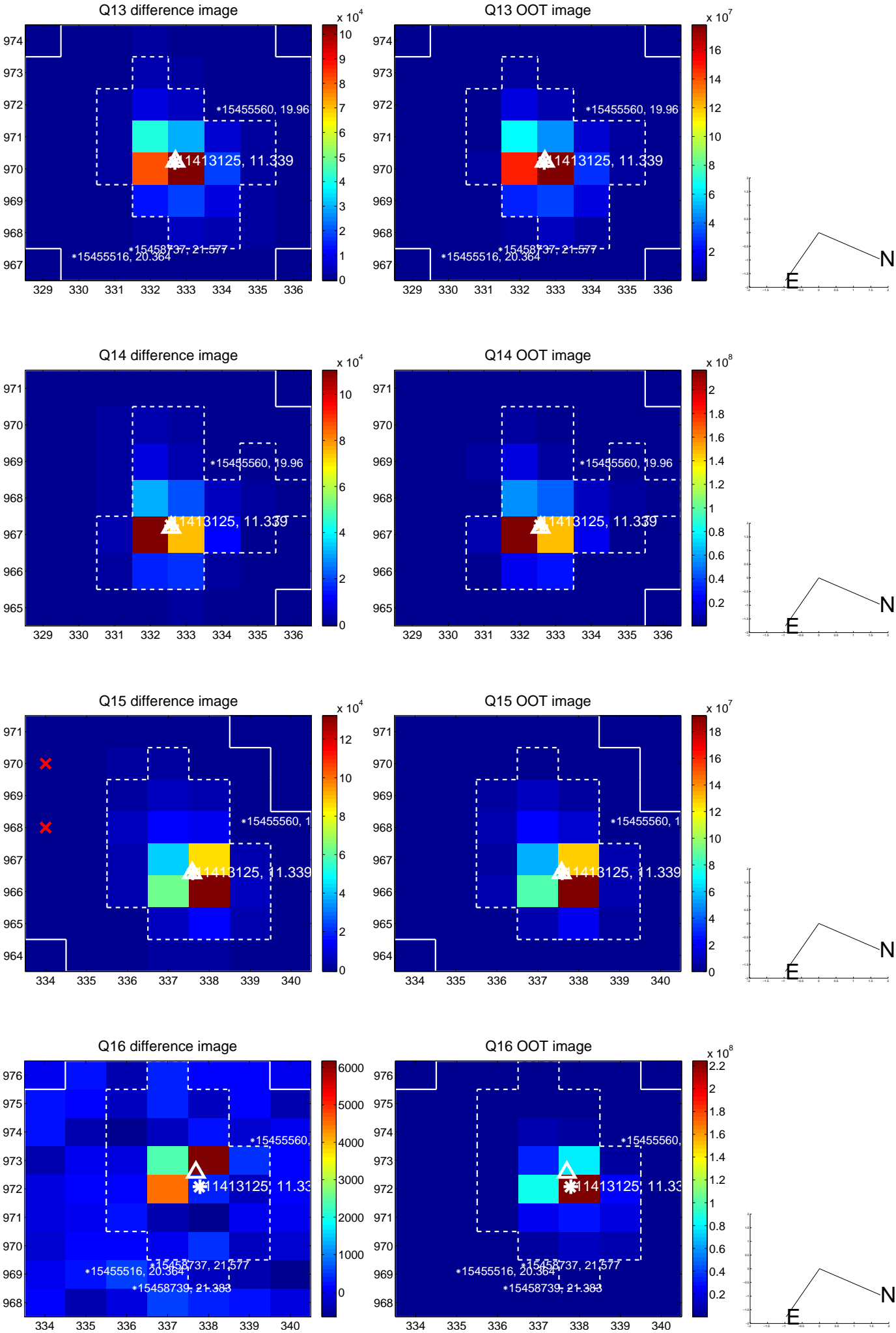


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

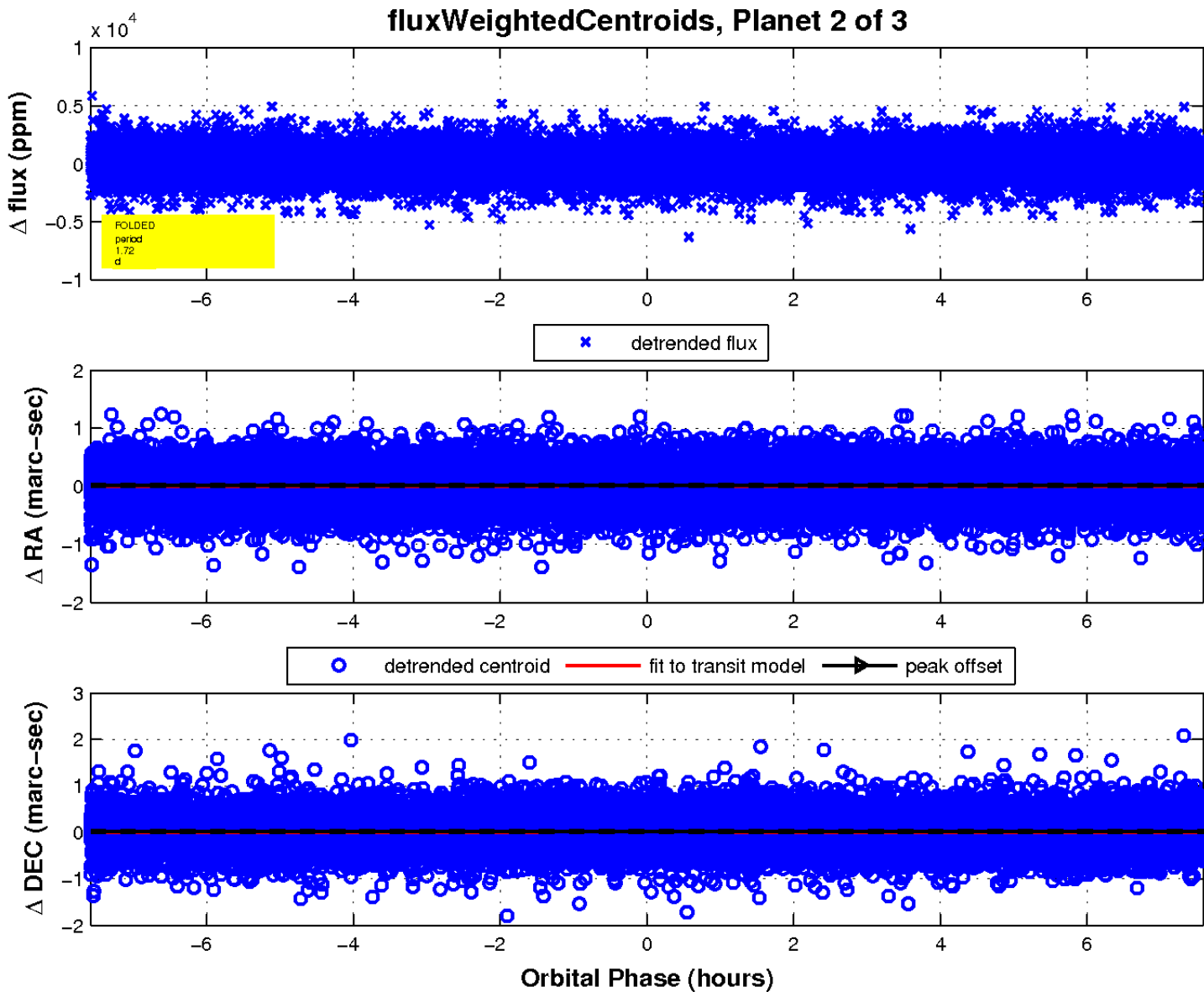
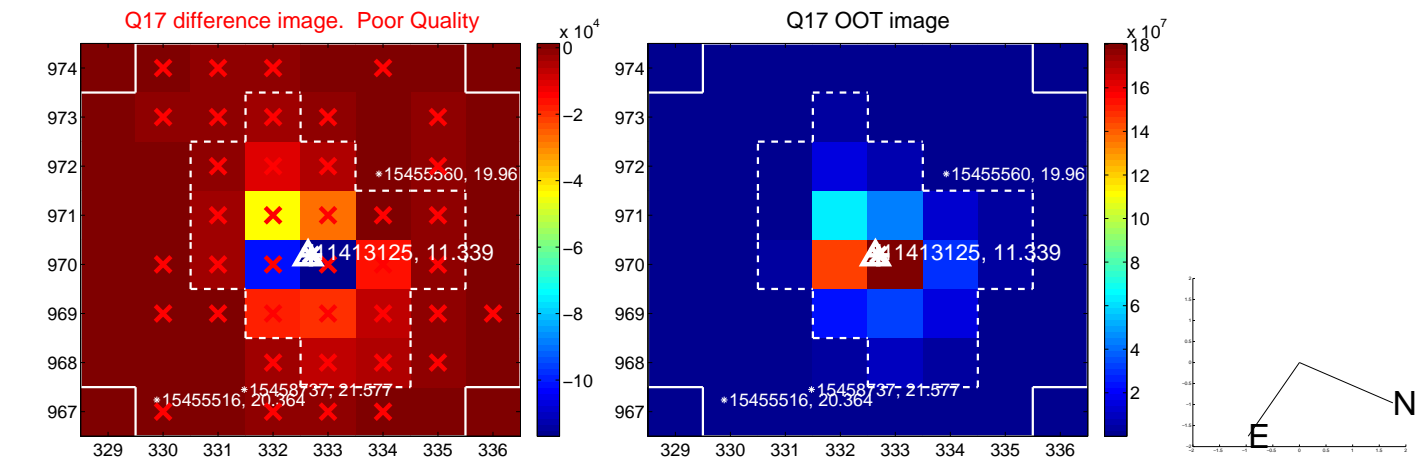




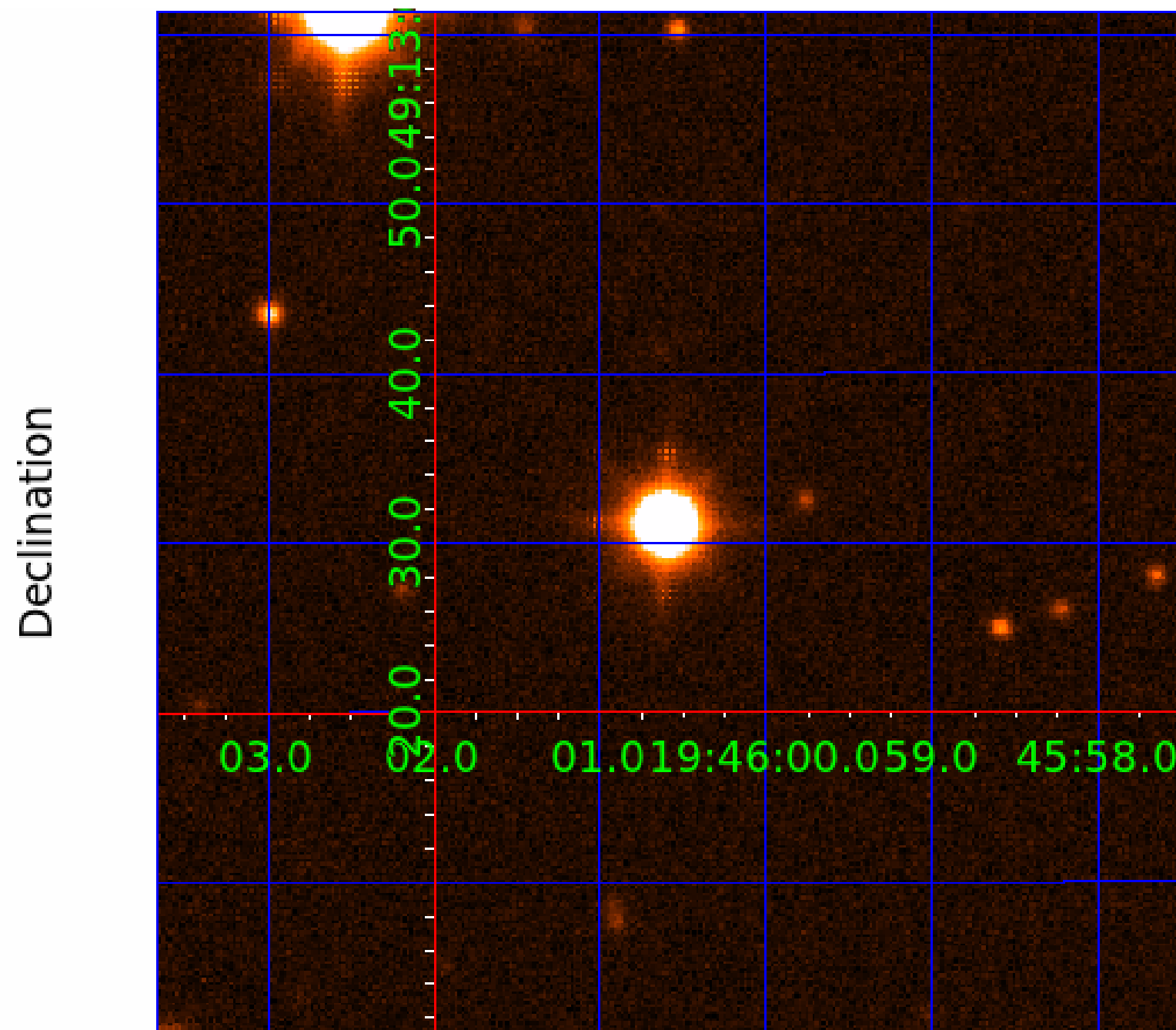
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 011413125

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011413125-01	OBS	No	1.719551	132.136653	74.2	4.452	10.5	7.4	2.69	7063	2.64	13688.25
011413125-02	OBS	No	1.719474	132.639492	94.0	2.529	9.5	9.0	2.69	7063	2.64	13689.06
011413125-03	OBS	No	2.212471	131.567280	79.8	8.726	7.7	7.0	2.69	7063	2.51	9781.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011413125-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011413125-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011413125-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED

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

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

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

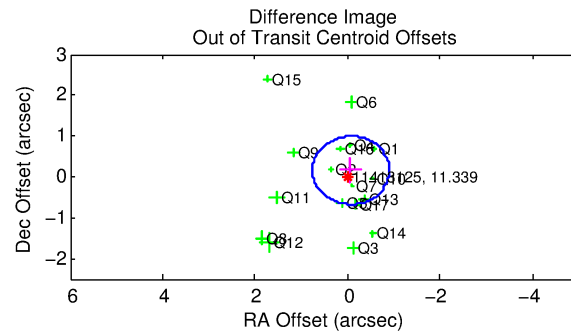
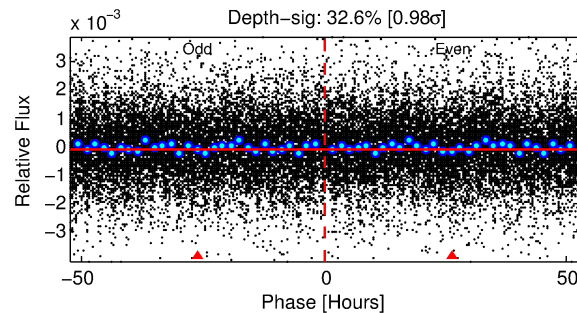
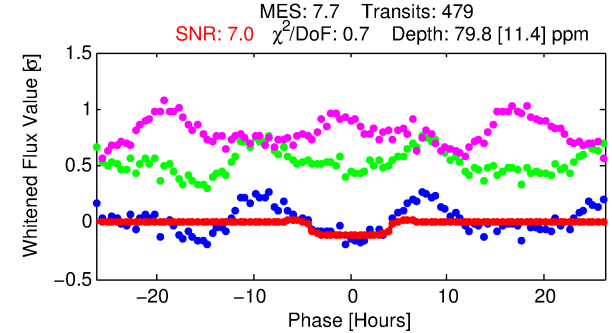
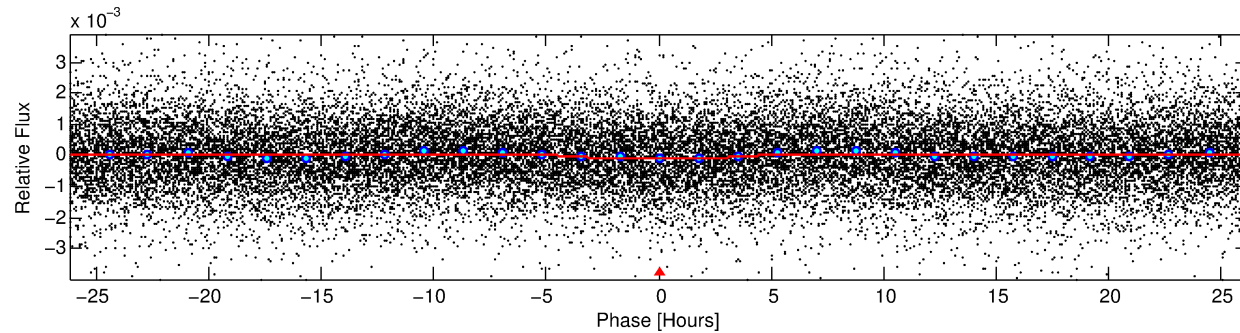
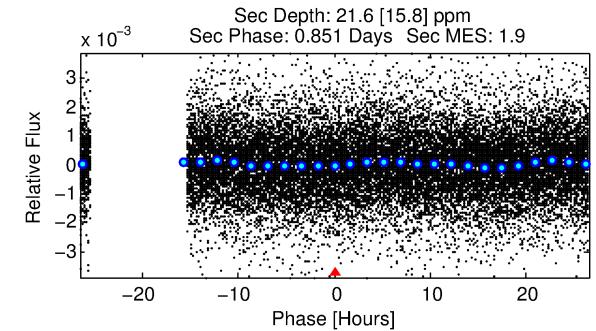
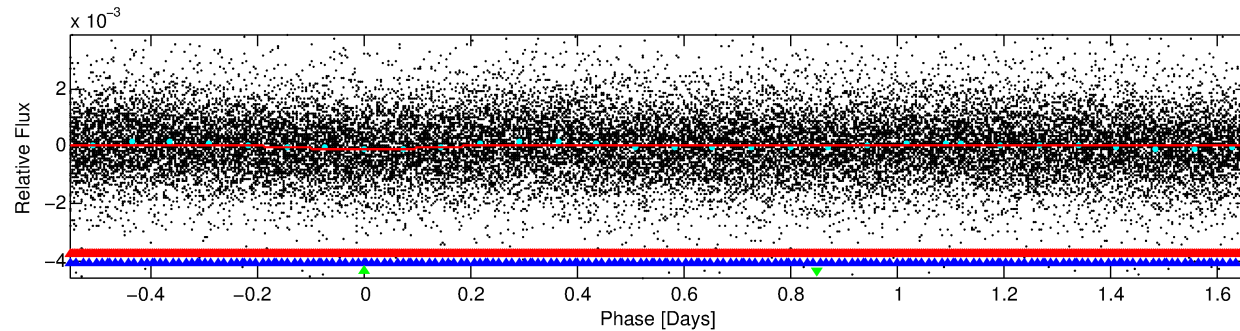
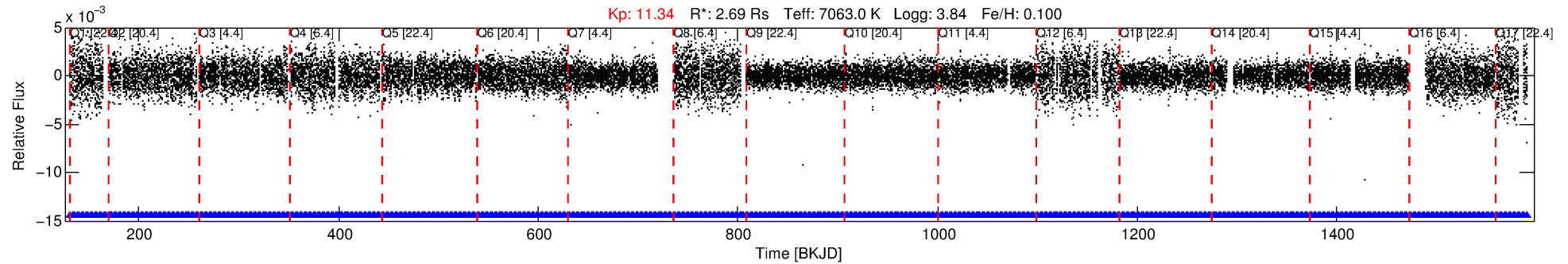
## Ephemeris Match Information For 011413125-03

No Significant Match Found



# DV One-Page Summary

KIC: 11413125 Candidate: 3 of 3 Period: 2.212 d



## DV Fit Results:

Period = 2.21247 [0.00005] d  
Epoch = 131.5673 [0.0144] BKJD  
Rp/R\* = 0.0085 [0.0101]  
a/R\* = 1.80 [8.58]  
b = 0.55 [8.91]  
Seff = 9781.32 [6241.97]  
Teq = 2536 [405] K  
Rp = 2.51 [3.15] Re  
a = 0.0406 [0.0161] AU  
Ag = 3.13 [7.96] [0.27σ]  
Teffp = 5216 [3226] K [0.82σ]

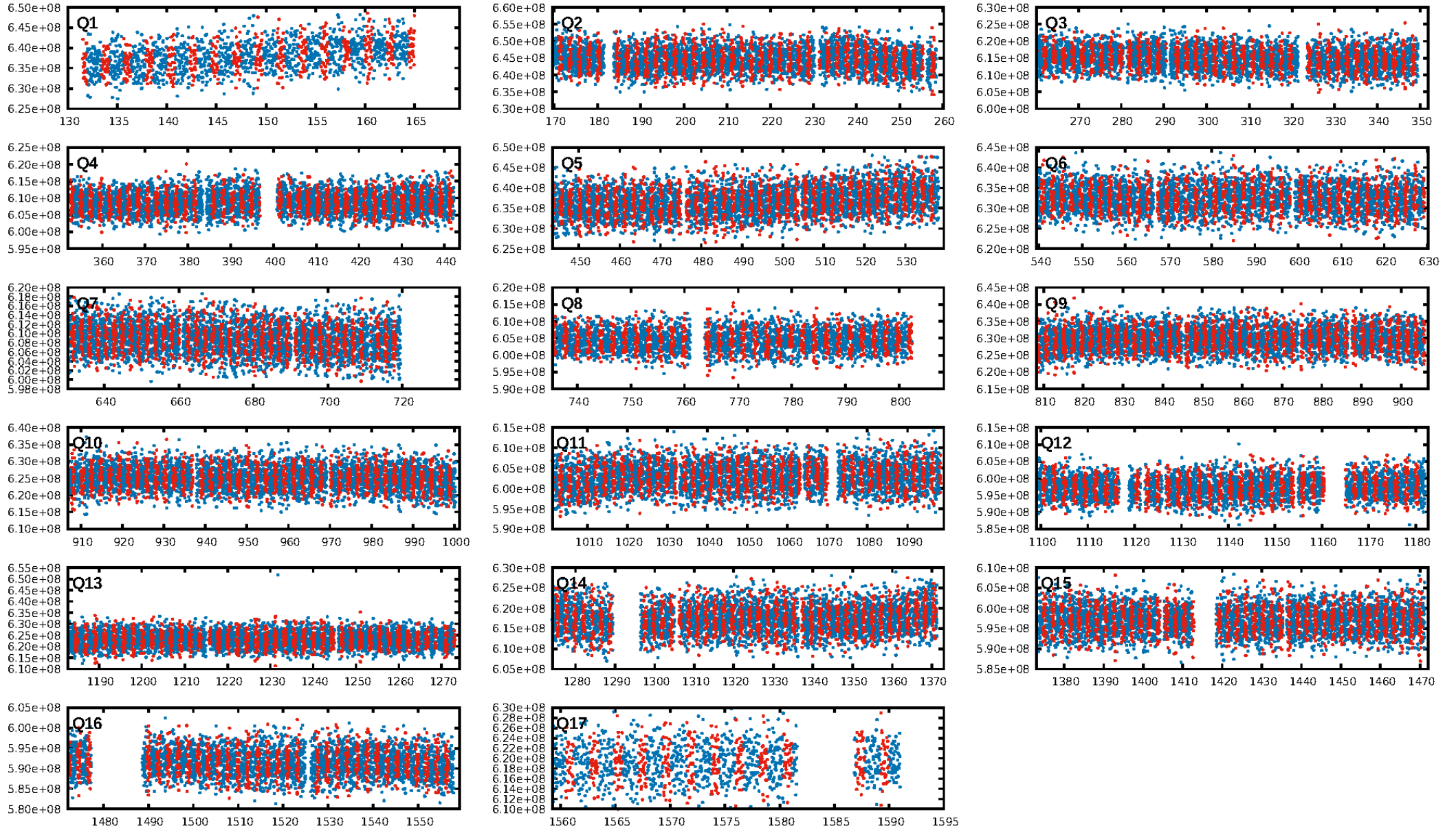
## DV Diagnostic Results:

ShortPeriod-sig: 77.3% [1.21σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.92e-16  
RollingBand-fgt: 1.00 [457/457]  
GhostDiagnostic-chr: -7.692  
Centroid-sig: 52.7%  
Centroid-so: 0.041 arcsec [0.30σ]  
OotOffset-rm: 0.174 arcsec [0.63σ]  
KicOffset-rm: 0.257 arcsec [0.91σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.88 [15/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:29:50 Z

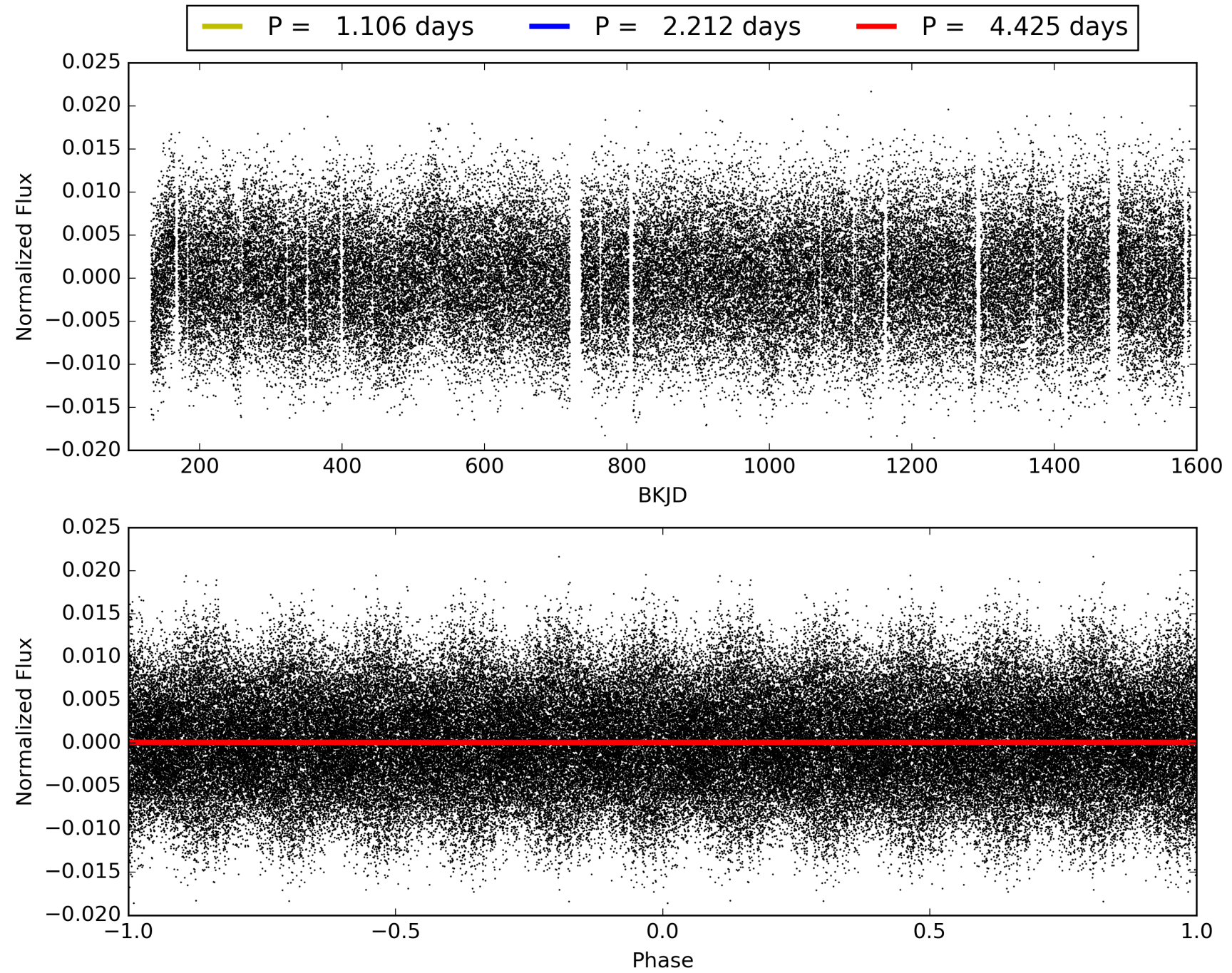
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011413125-03, PDC Light Curves



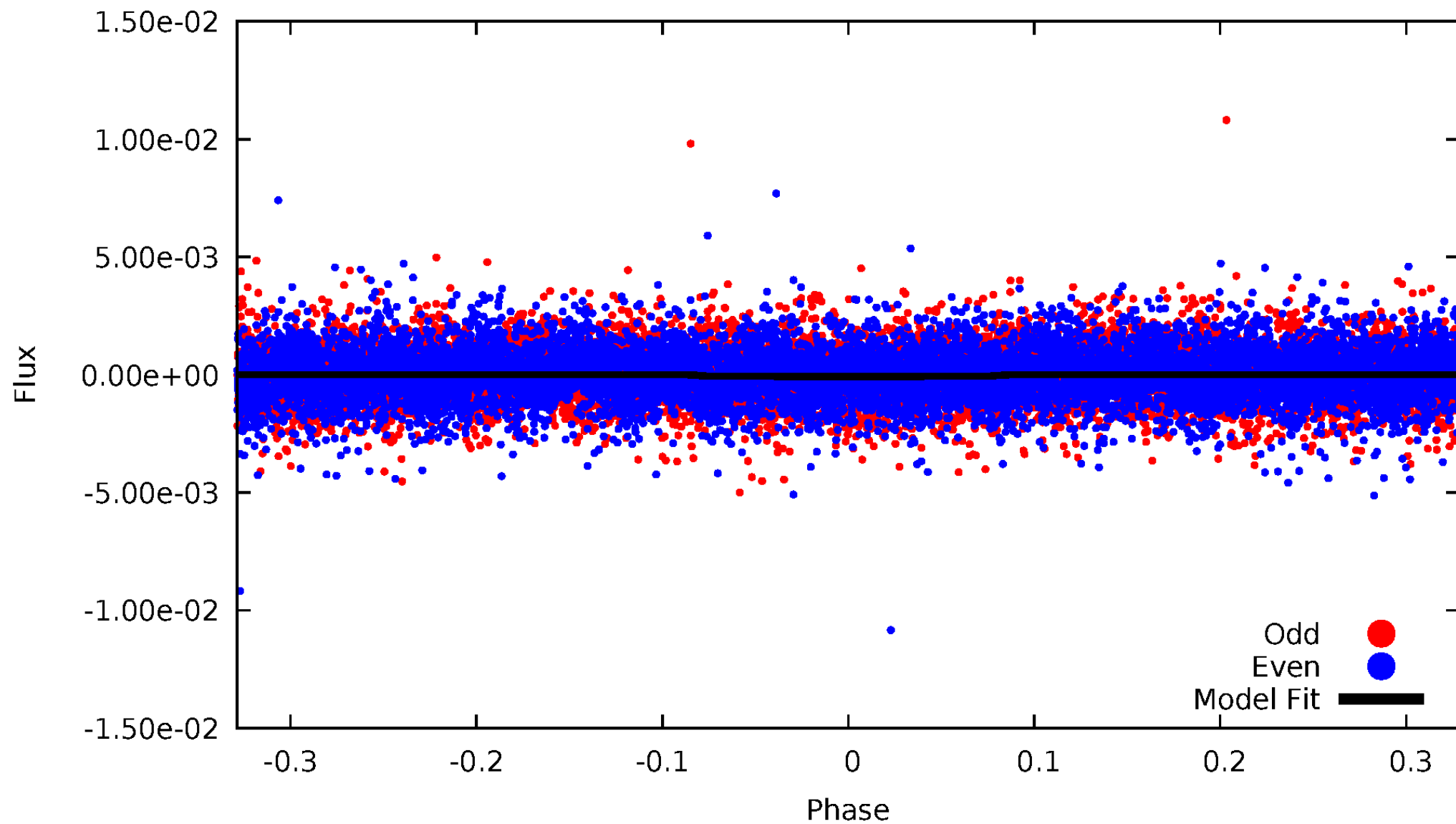


TCE 011413125-03



# DV Odd/Even

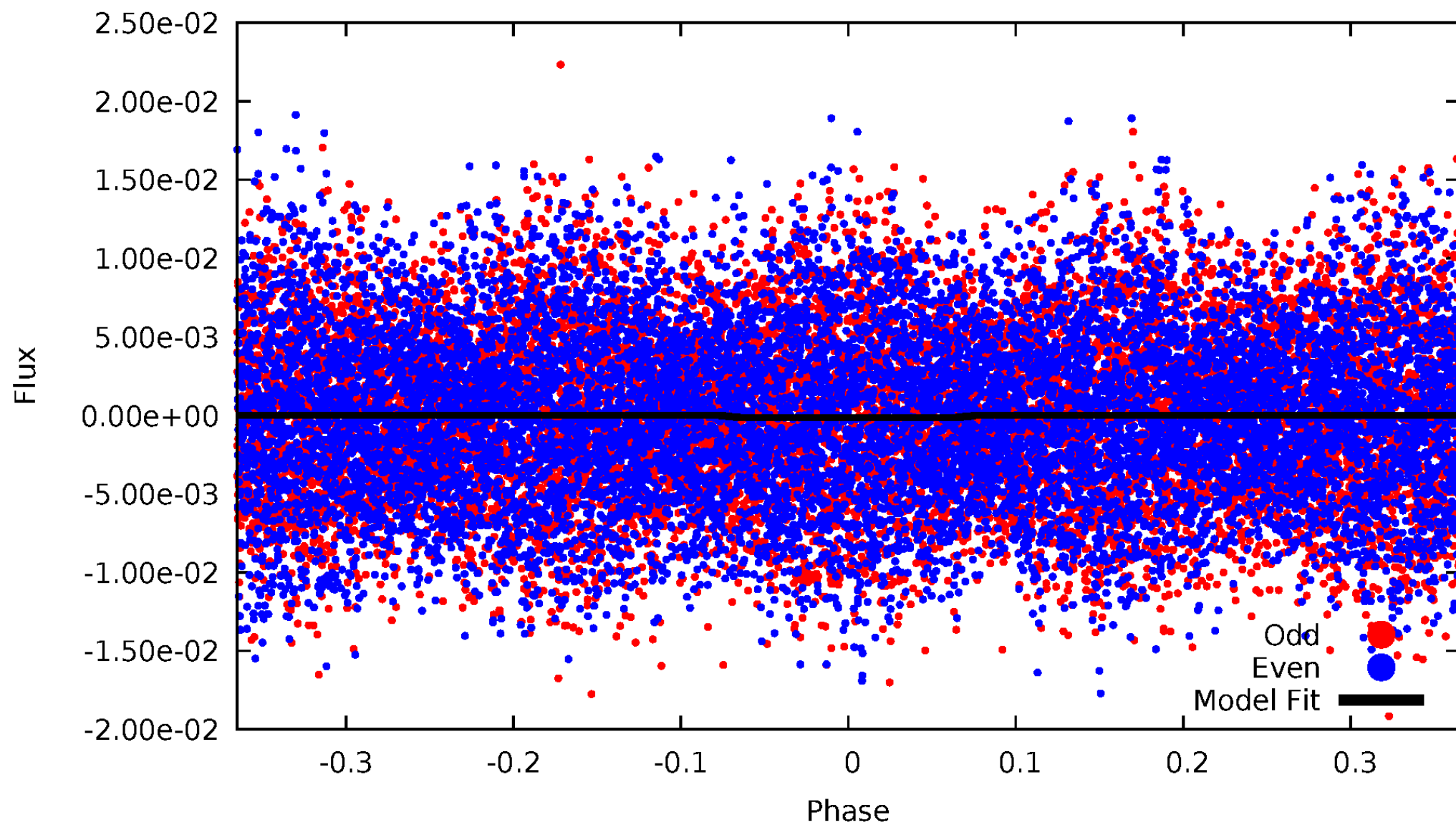
TCE 011413125-03





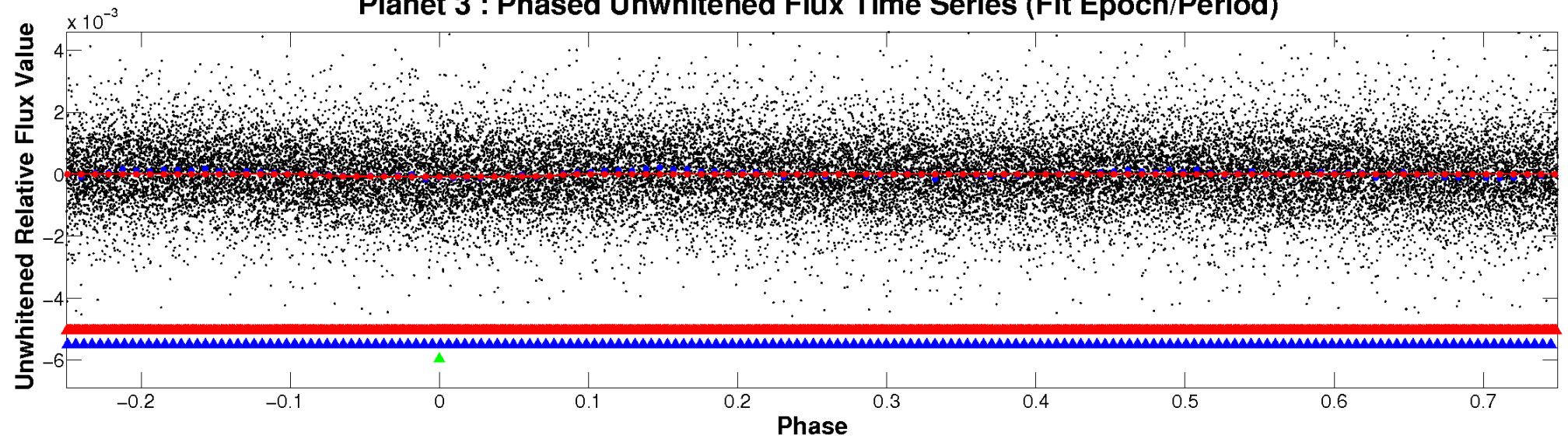
# ALT Odd/Even

TCE 011413125-03

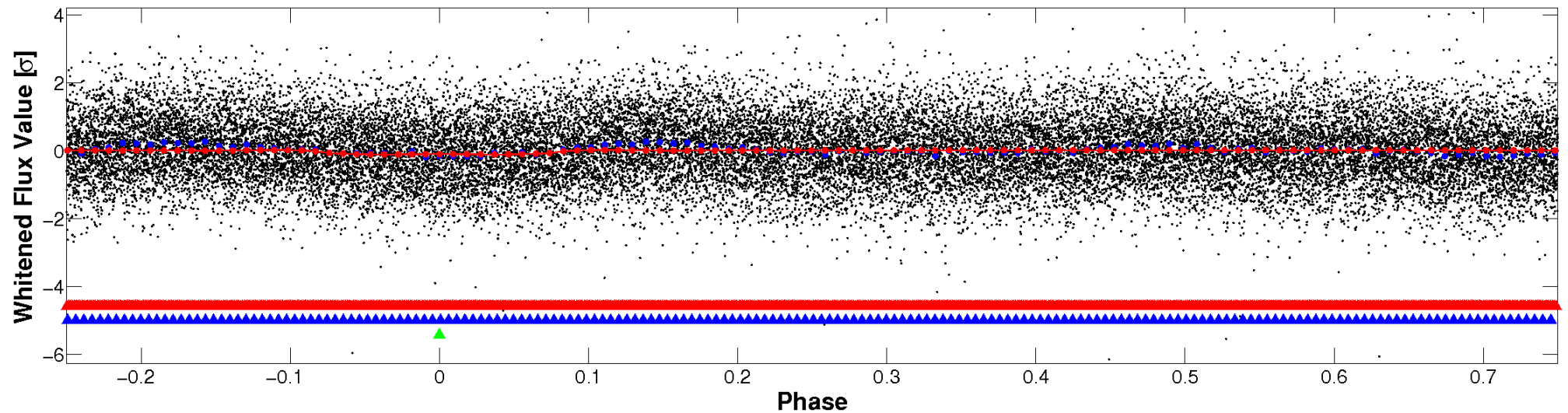


# Non-Whitened Vs. Whitened Light Curve

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

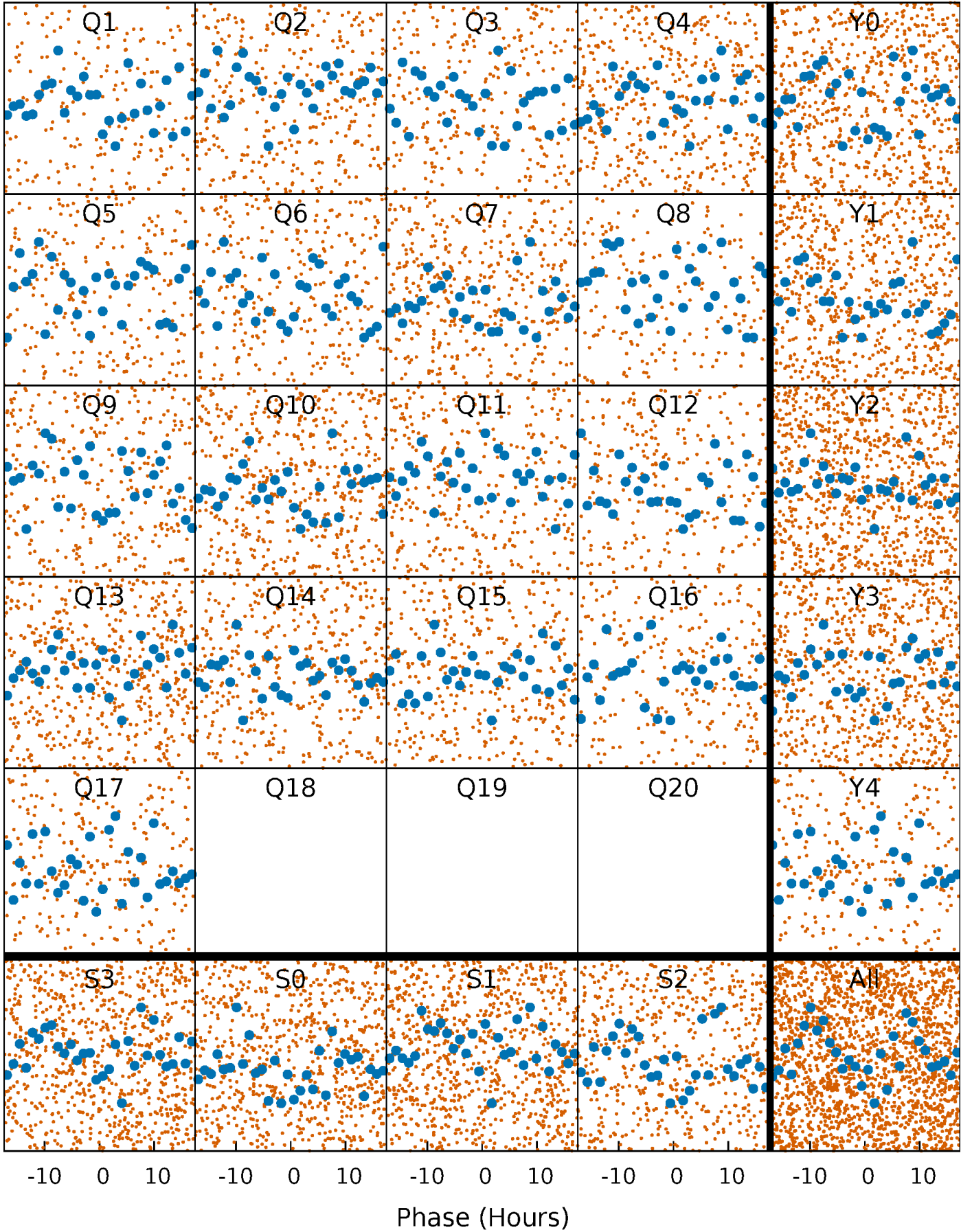


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

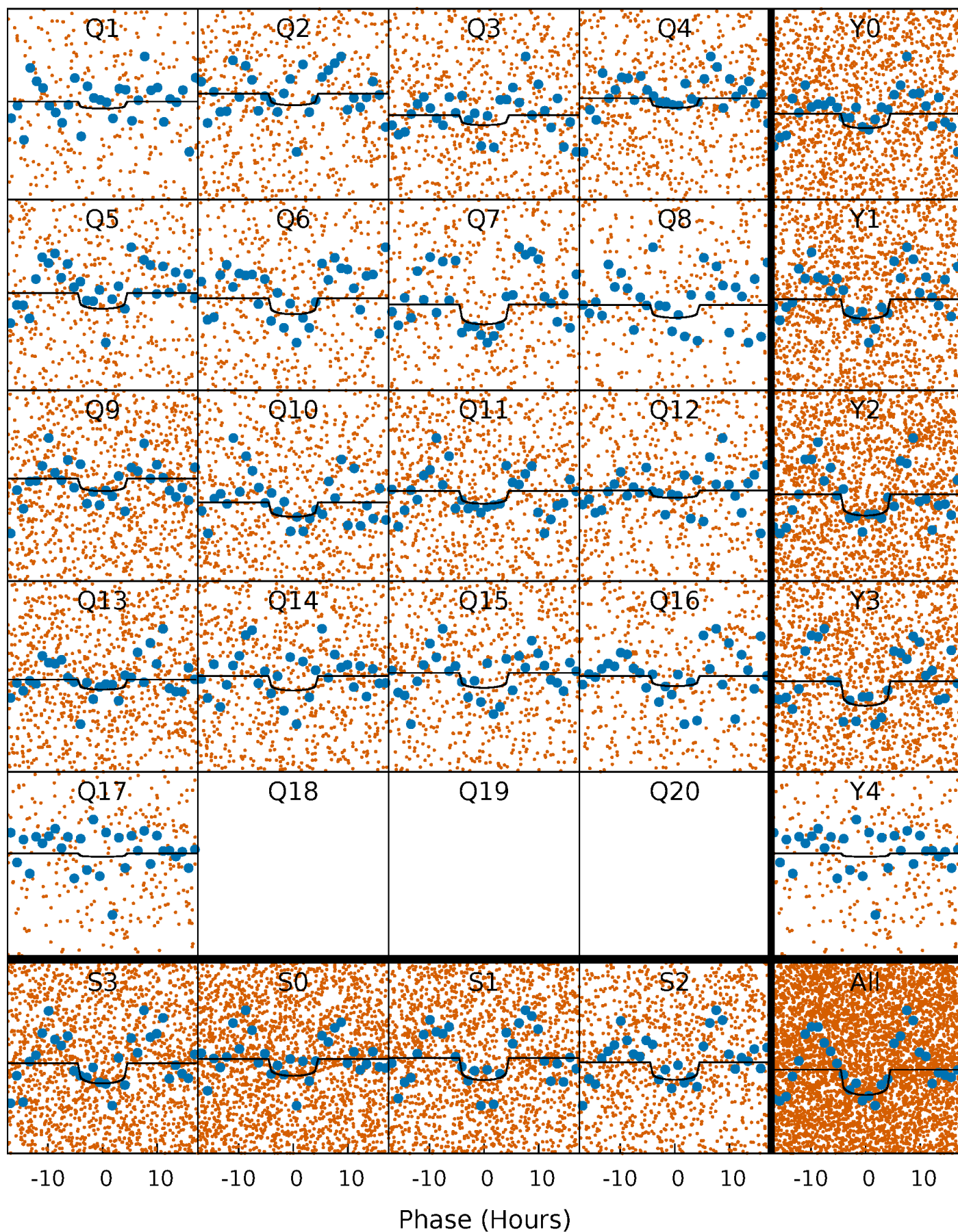
TCE 011413125-03 P= 2.212471 Days  $T_0=131.567280$  (BKJD)





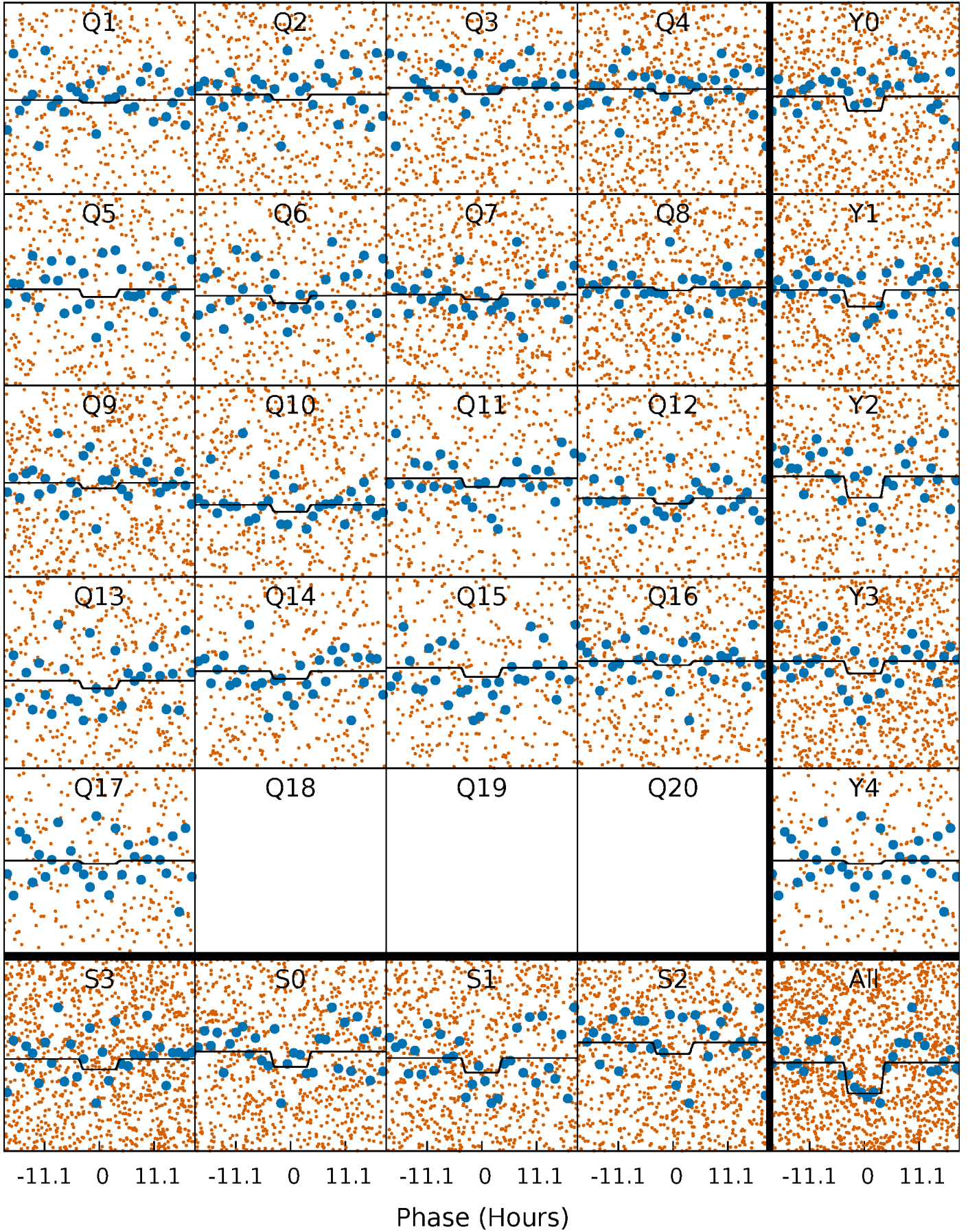
# DV Quarter-Phased Transit Curves

TCE 011413125-03 P= 2.212471 Days  $T_0=131.567280$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 011413125-03 P= 2.212503 Days  $T_0=131.503549$  (BKJD)

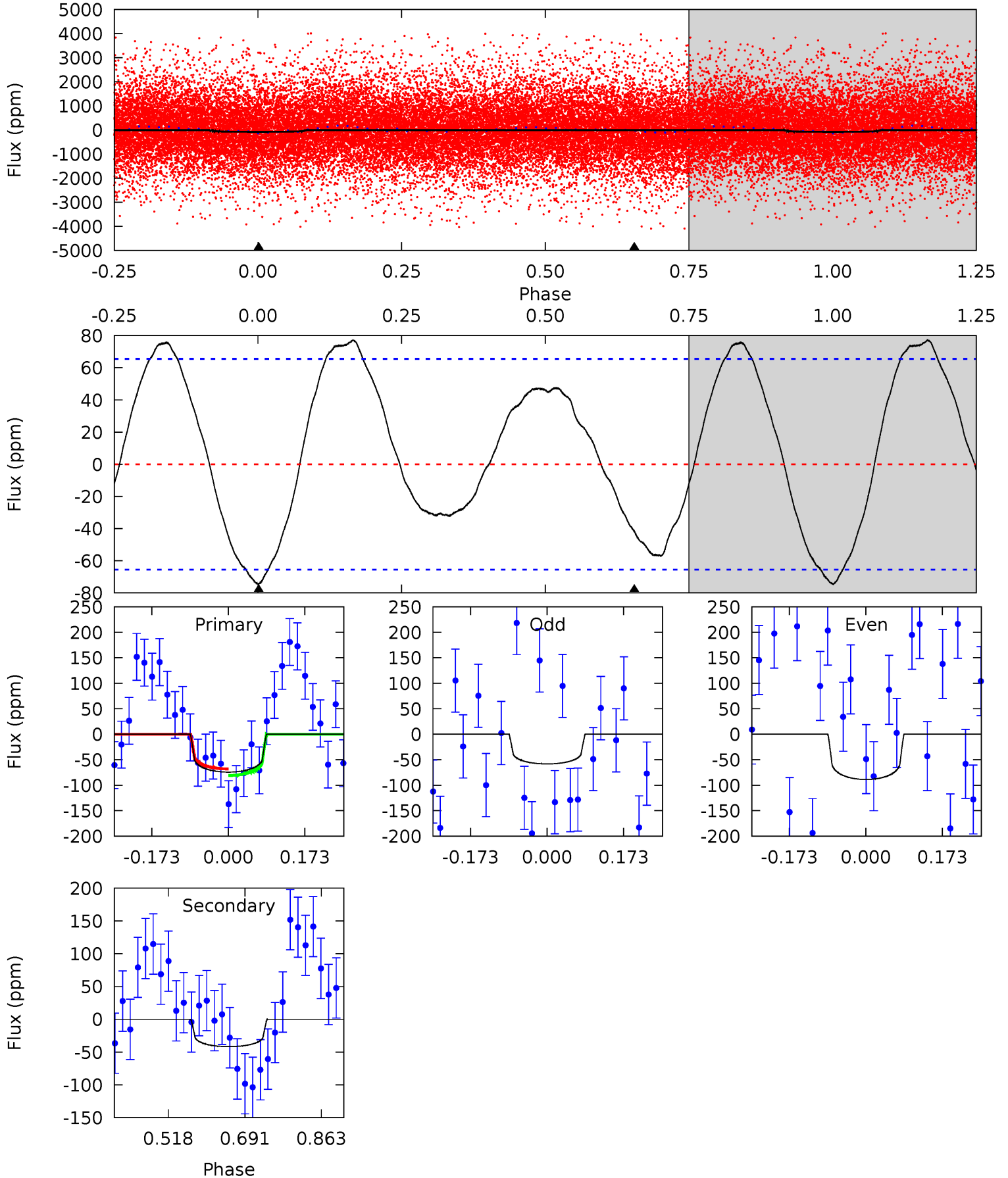




# DV Model-Shift Uniqueness Test

011413125-03, P = 2.212471 Days, E = 129.354809 Days

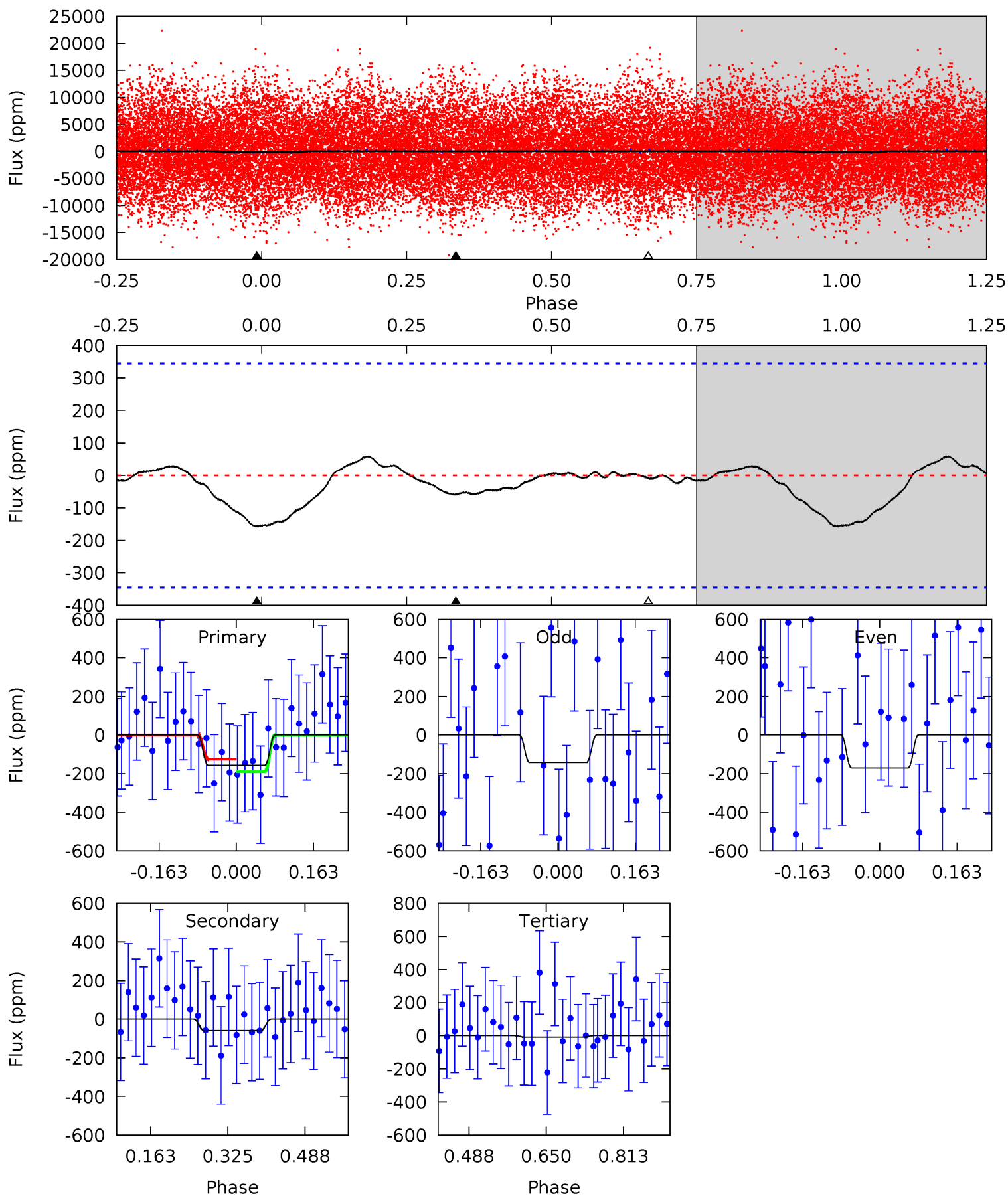
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.05	2.83	0	0	4.45	1.36	2.18	5.05	5.05	2.83	2.83	1.04	0.60	0.51	0.44



# Alt Model-Shift Uniqueness Test

011413125-03, P = 2.212503 Days, E = 131.503549 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.02	0.76	0.11	0	4.46	1.40	0.18	1.91	2.02	0.65	0.76	0.17	1.68	0.27	0.43



### Stellar Parameters For KIC 011413125

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7063^{+195}_{-307}$	$3.840^{+0.353}_{-0.118}$	$0.100^{+0.200}_{-0.350}$	$2.692^{+0.500}_{-1.166}$	$1.828^{+0.188}_{-0.439}$	$0.132^{+0.358}_{-0.046}$
	+3%/-4%	+9%/-3%	+200%/-350%	+19%/-43%	+10%/-24%	+271%/-35%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 011413125-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-42 \pm 15$	$2.99^{+2.54}_{-1.91}$	$3458^{+248}_{-359}$	$5162^{+4021}_{-1334}$	$4.051^{+28.207}_{-3.092}$
Alt.	$-59 \pm 77$	$3.81^{+2.90}_{-2.30}$	$3460^{+271}_{-359}$	$4758^{+3542}_{-8952}$	$2.635^{+21.560}_{-3.507}$

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

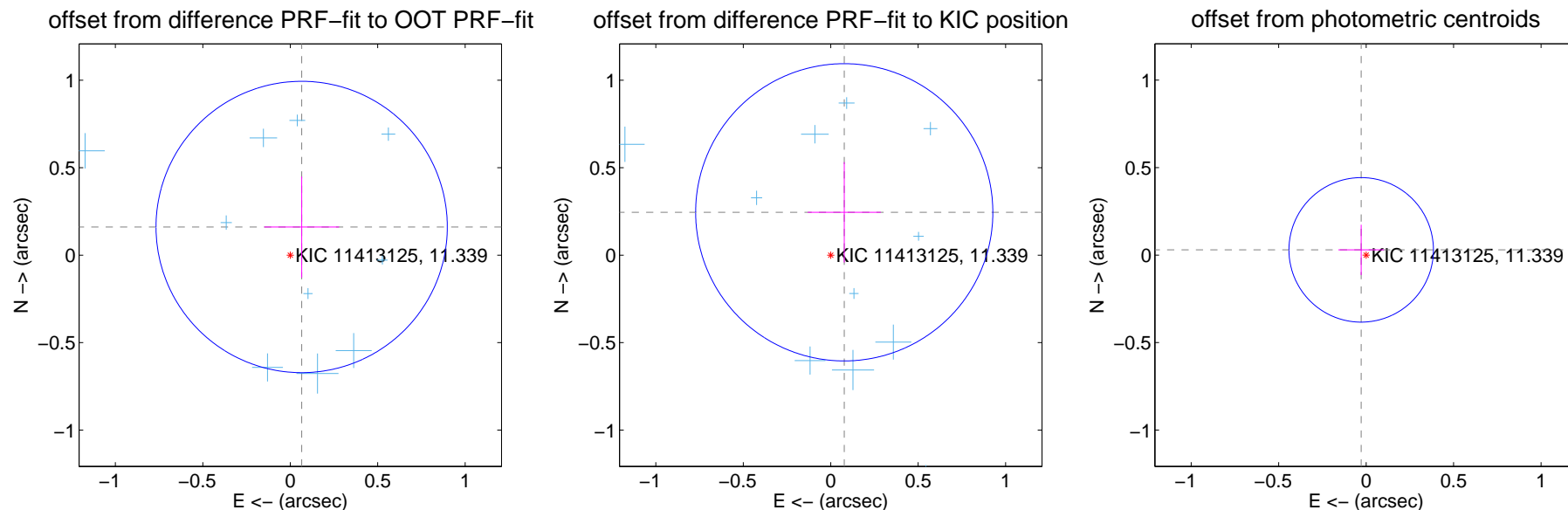
## DV Centroid Data

Supplemental centroid analysis for 011413125-03. **Kepler magnitude: 11.34.** Transit SNR 7.02

There are 15 quarters with good PRF difference image offsets

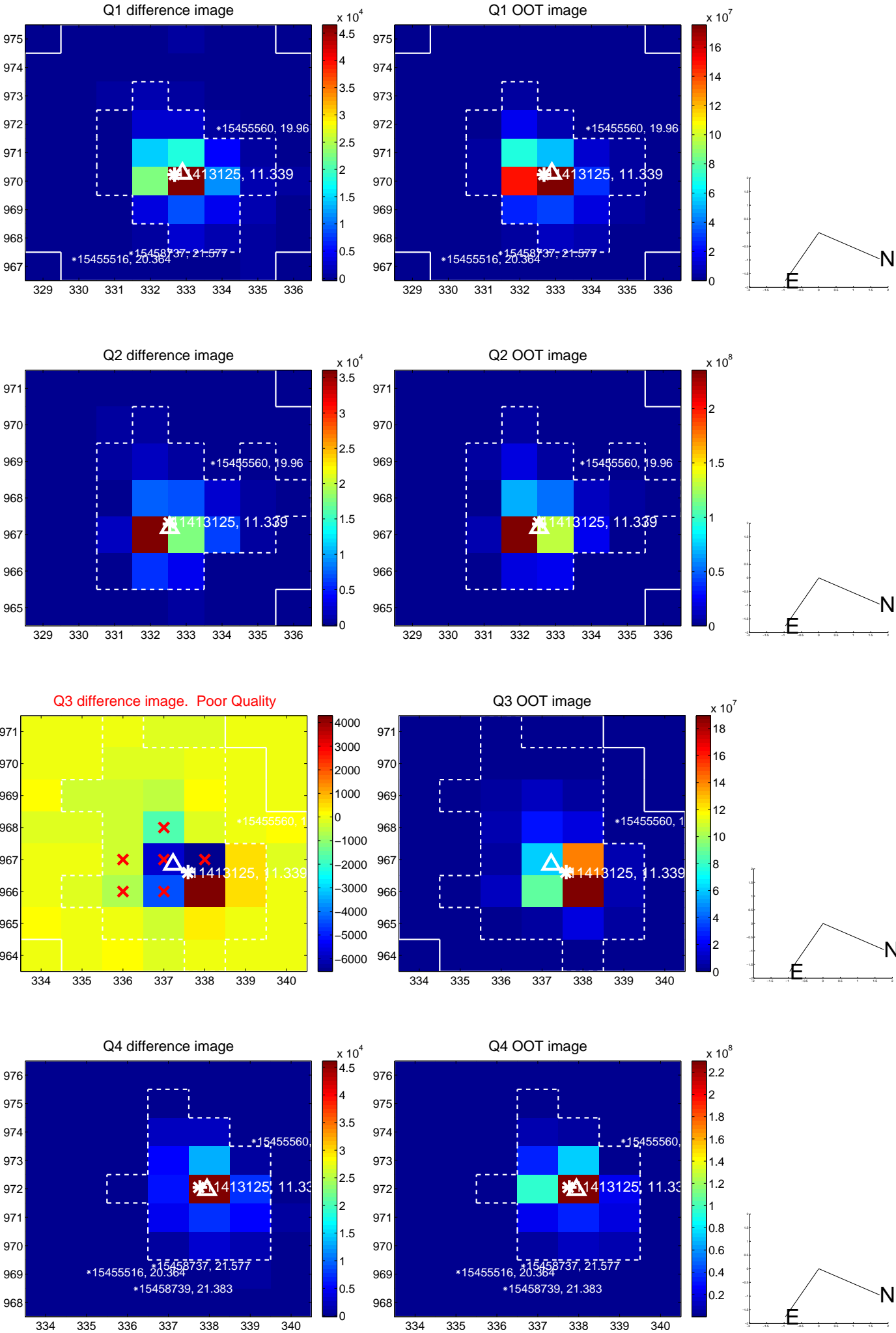
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.174 \pm 0.278$	0.63	$-0.065 \pm 0.214$	$0.161 \pm 0.289$
PRF-fit source offset from KIC position	$0.257 \pm 0.283$	0.91	$-0.077 \pm 0.209$	$0.245 \pm 0.287$
photometric centroid source offset	$0.04 \pm 0.14$	0.30	$0.03 \pm 0.13$	$0.03 \pm 0.14$



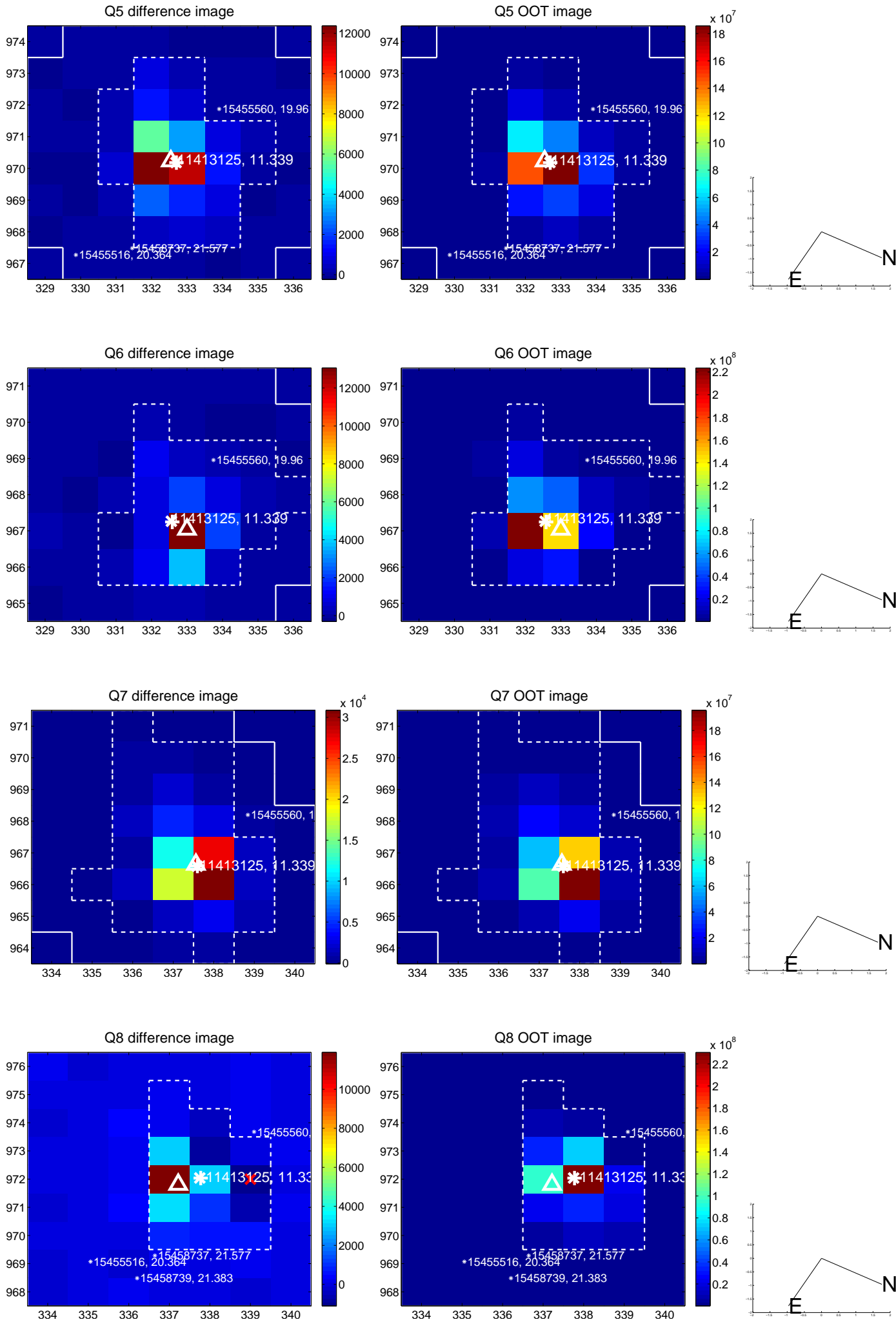
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

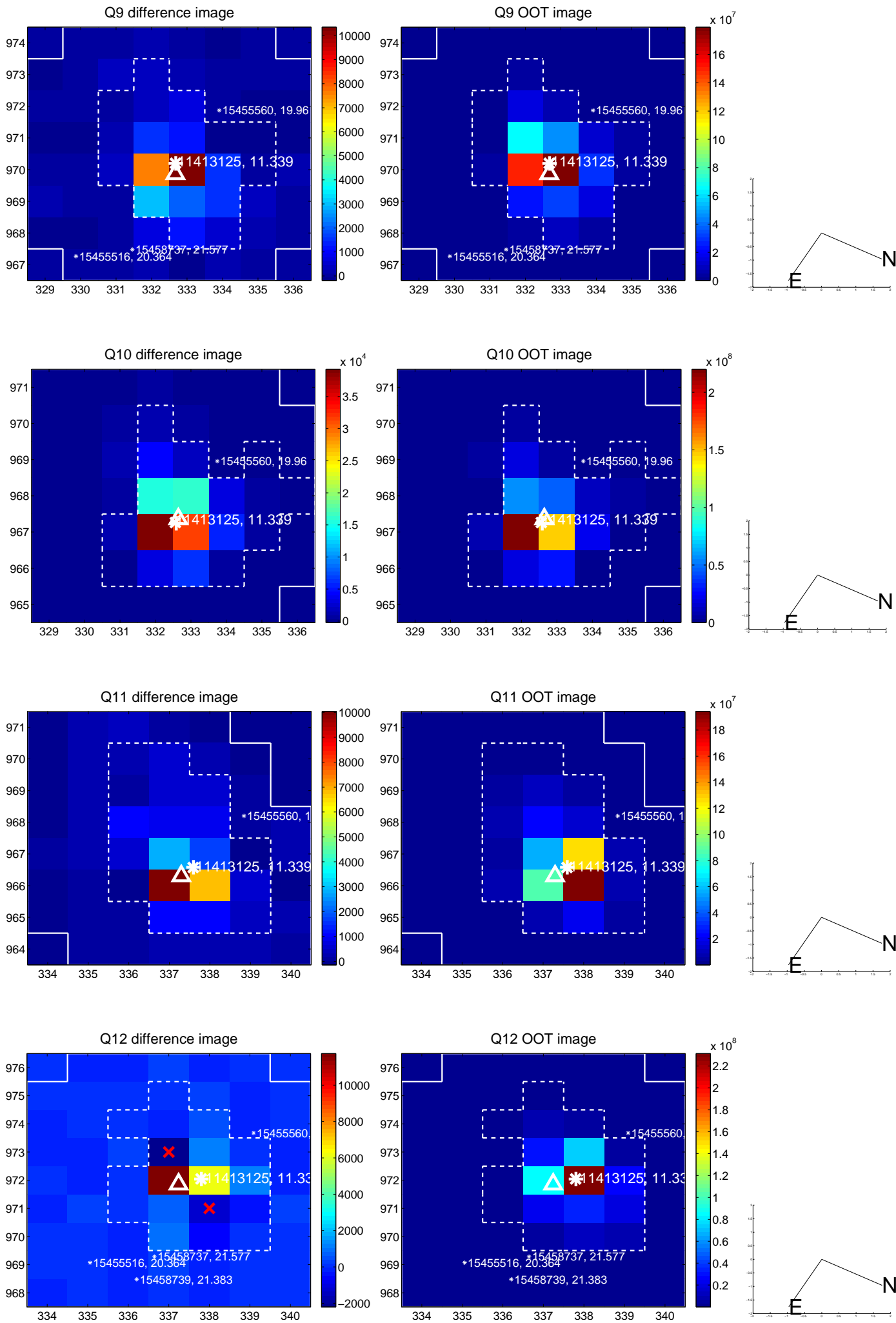




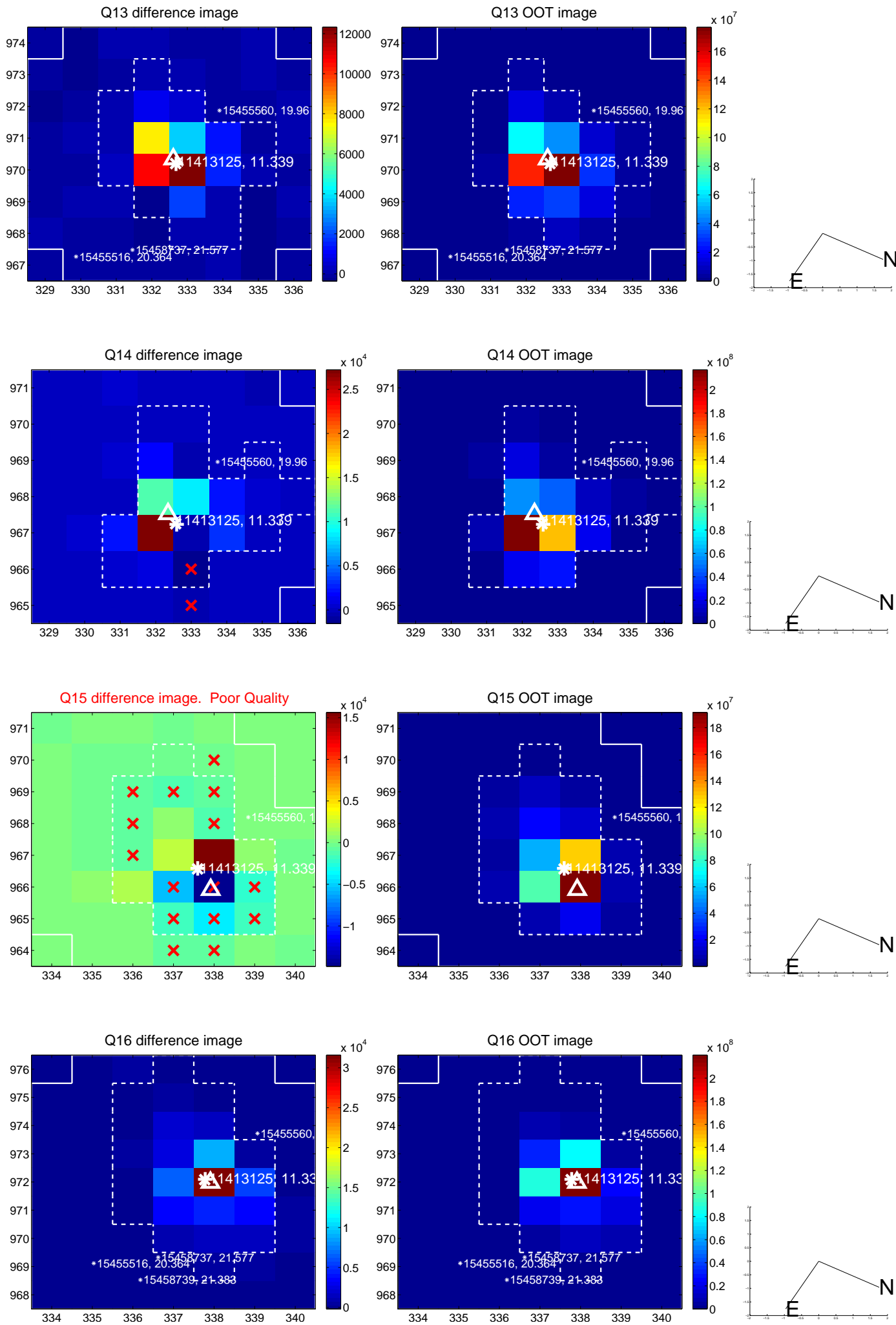
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



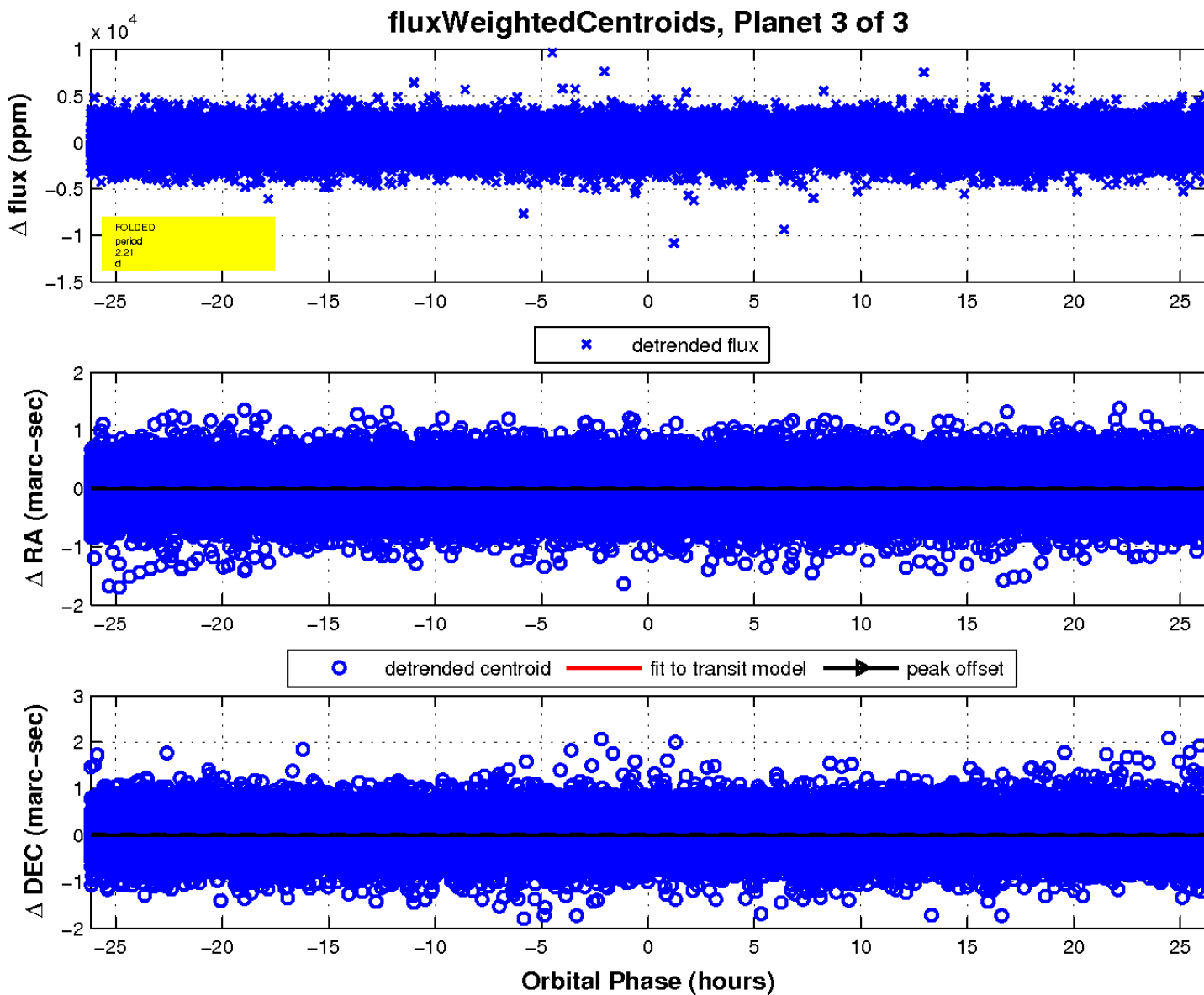
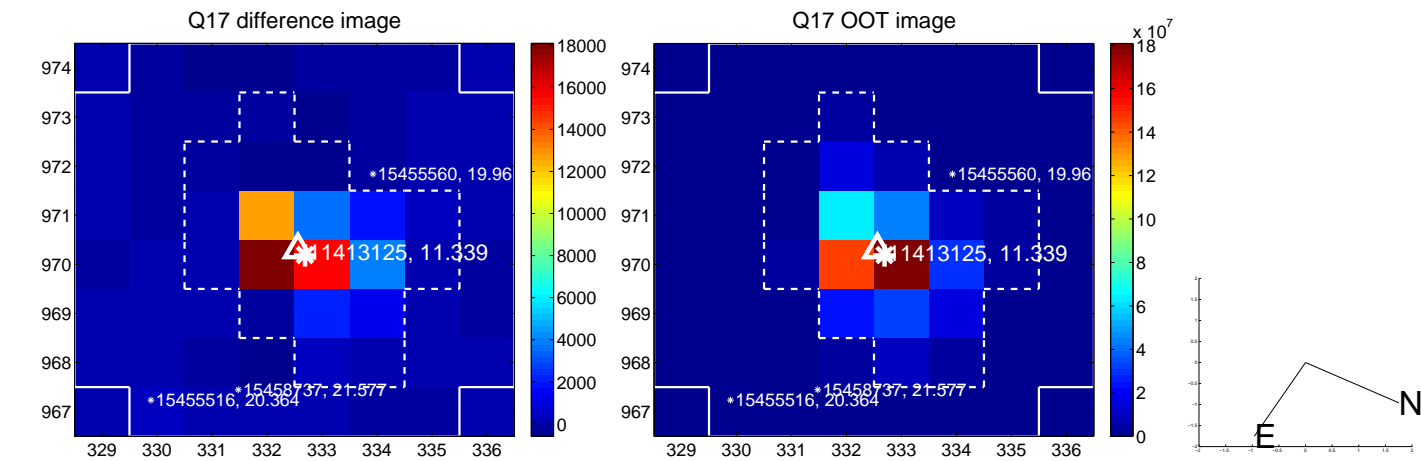
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

