

# KIC 011140501

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011140501-01	OBS	No	1.065108	131.882027	158.1	3.000	9.1	-1.0	2.01	7573	2.56	21093.45
011140501-02	OBS	No	1.065052	132.287991	36.1	4.719	9.3	8.7	2.01	7573	1.28	21094.93
011140501-03	OBS	No	465.426241	215.710475	774.2	6.344	8.9	8.4	2.01	7573	10.58	6.36
011140501-04	OBS	No	46.990956	148.789416	350.4	4.393	8.8	6.2	2.01	7573	4.37	135.31
011140501-05	OBS	No	82.134814	162.278263	579.5	6.339	7.5	8.2	2.01	7573	6.19	64.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011140501-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
011140501-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
011140501-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

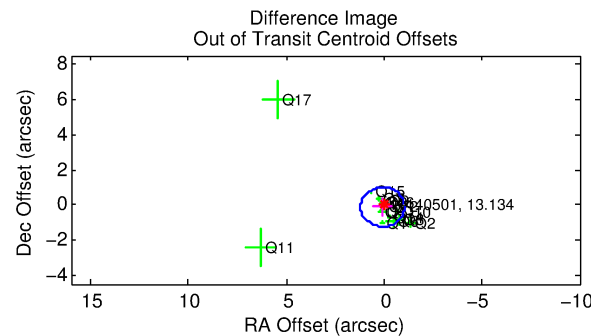
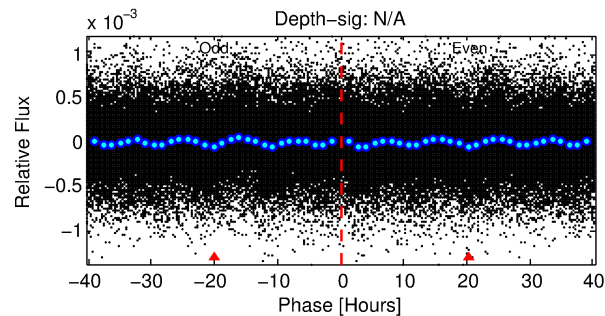
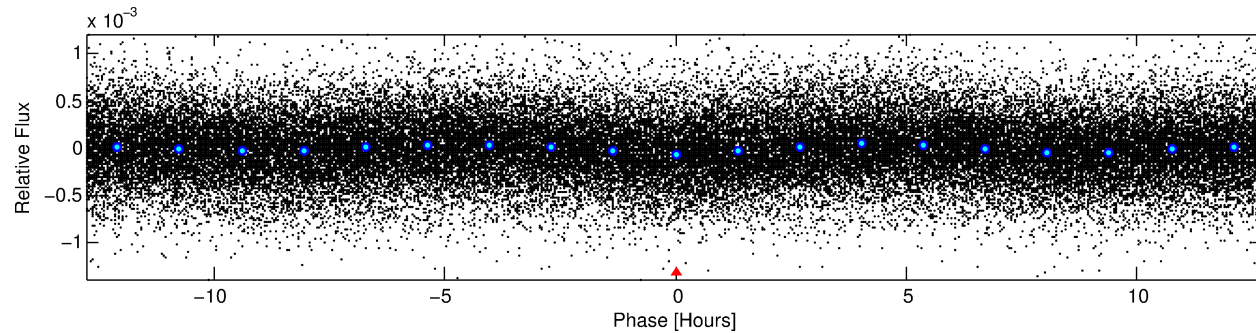
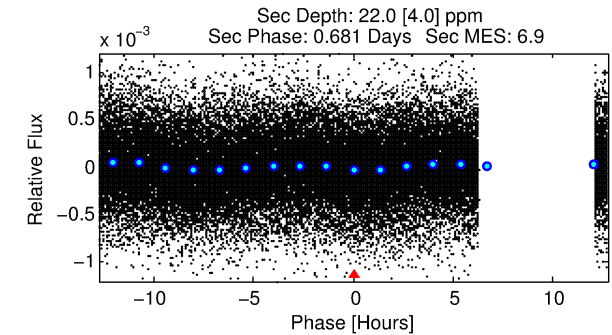
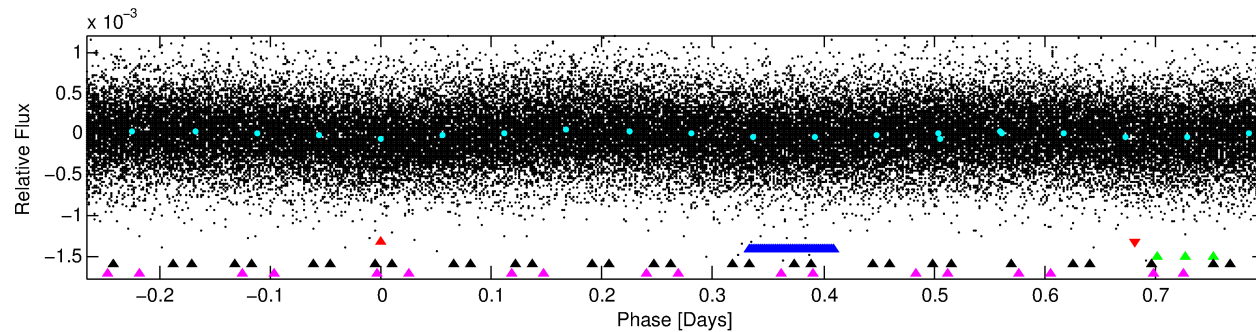
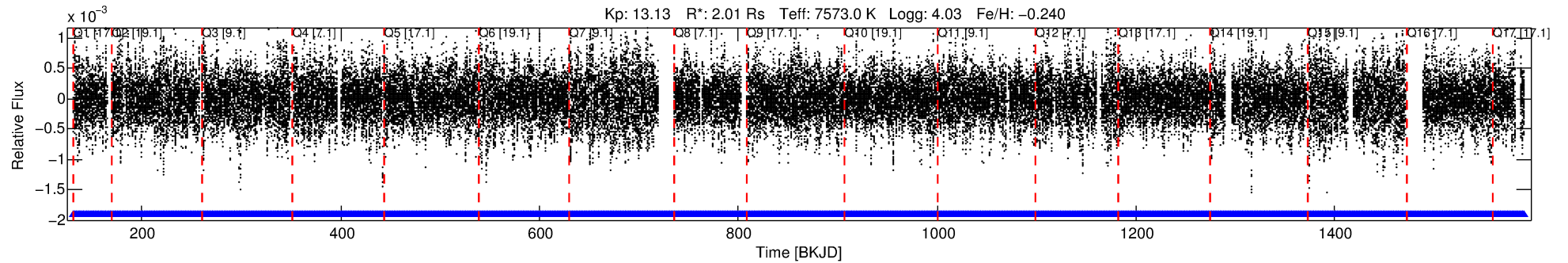
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011140501-01

No Significant Match Found

# DV One-Page Summary

KIC: 11140501 Candidate: 1 of 5 Period: 1.065 d



## TPS TCE Results:

Period = 1.06511 d  
Epoch = 131.8820 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

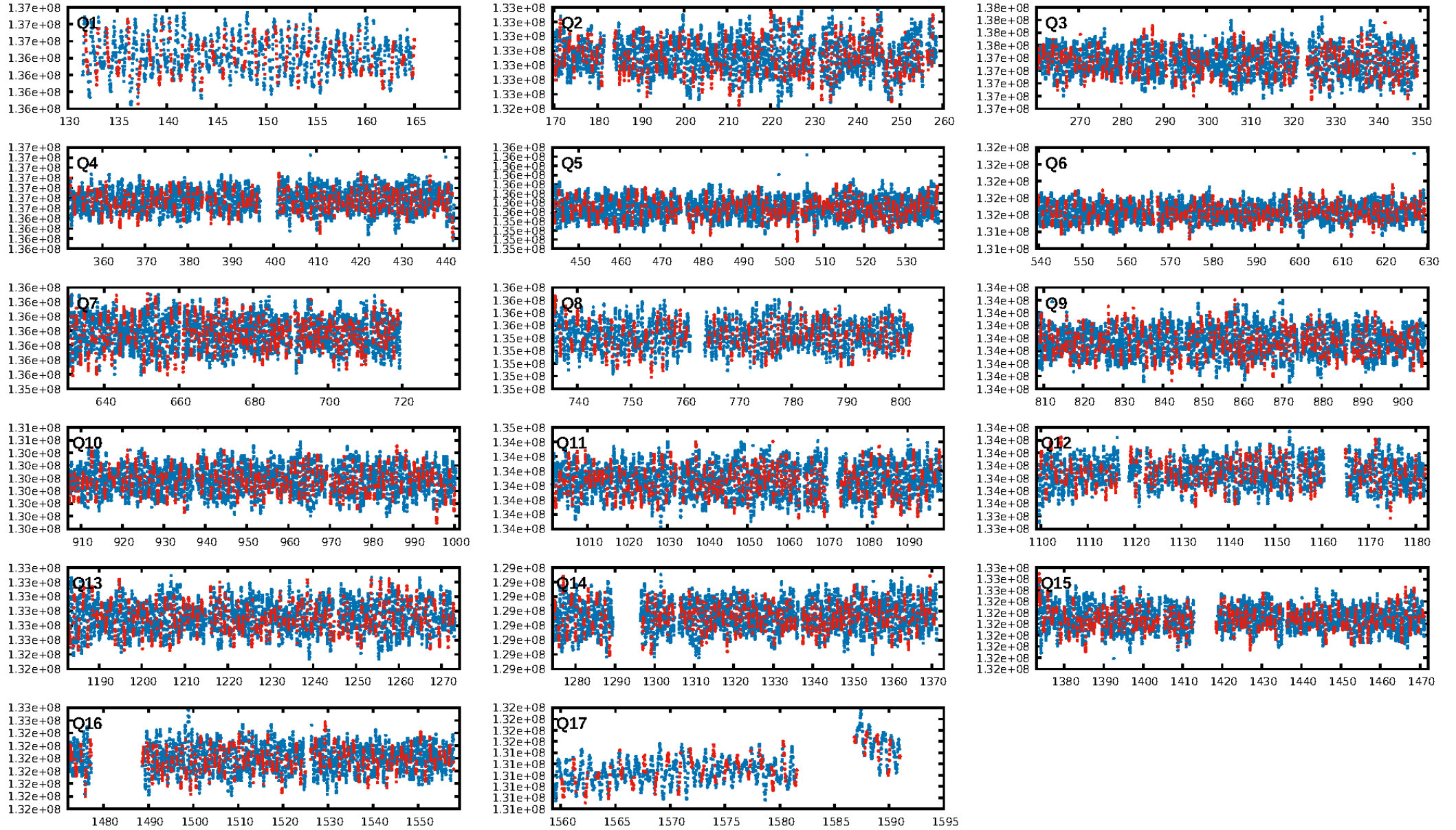
ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: 100.0% [207.20 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 1.72e-13  
RollingBand-fgt: 1.00 [1213/1213]  
GhostDiagnostic-chr: 0.5379

Centroid-sig: 2.4%  
Centroid-so: 0.189 arcsec [2.13 $\sigma$ ]  
OotOffset-rm: 0.144 arcsec [0.39 $\sigma$ ]  
KicOffset-rm: 0.174 arcsec [0.43 $\sigma$ ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.81 [13/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:02:51 Z

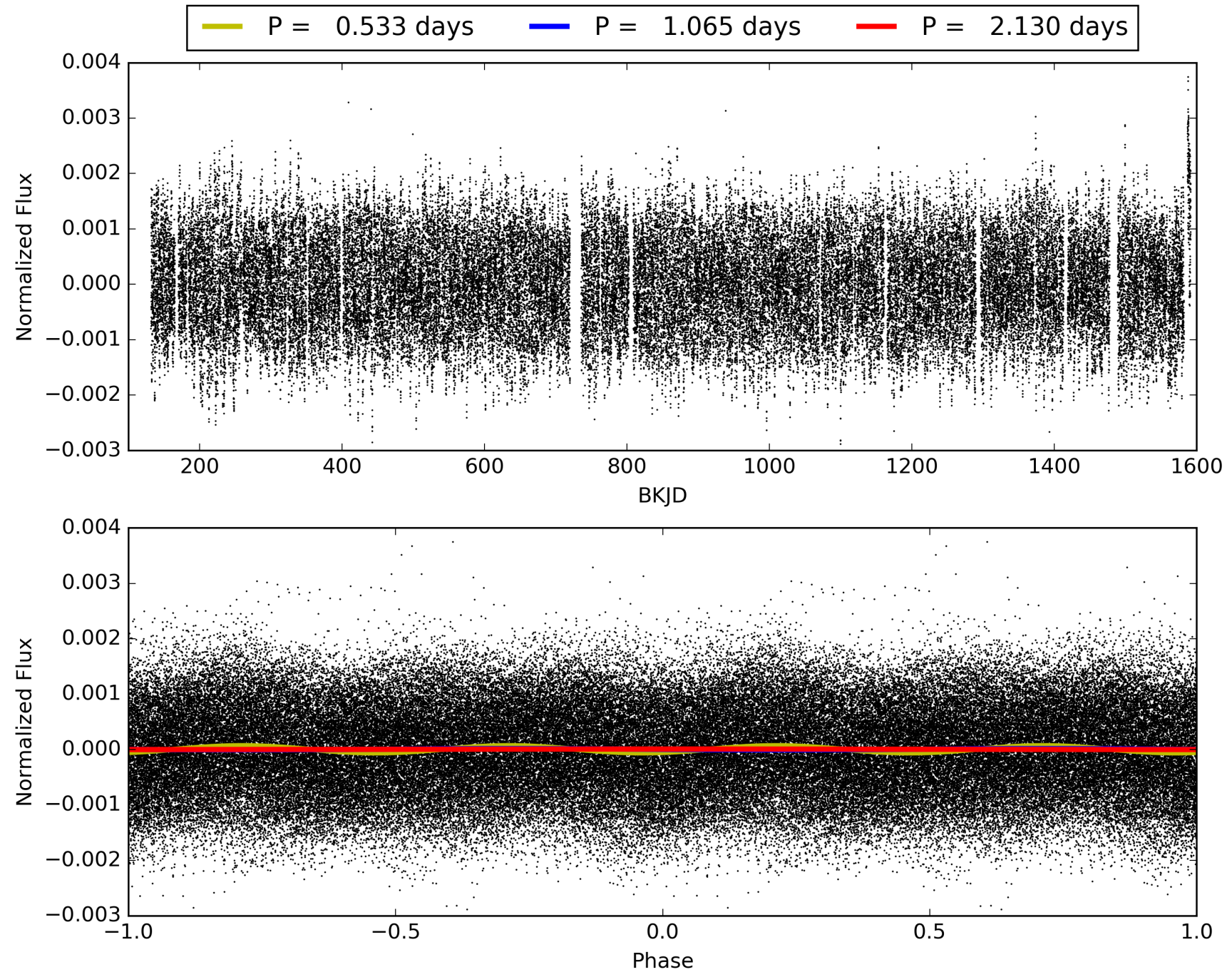
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011140501-01, PDC Light Curves





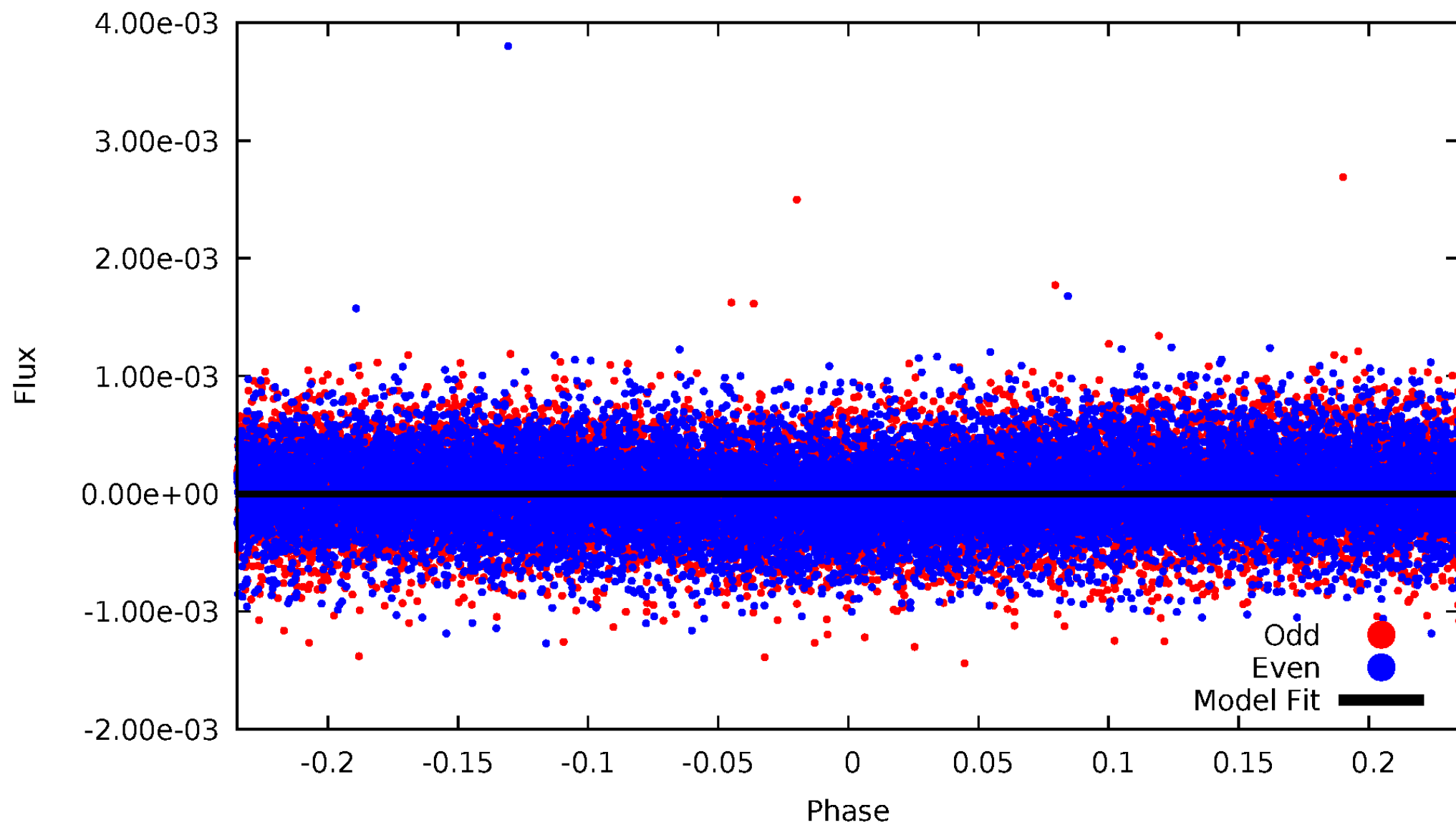
# TCE 011140501-01





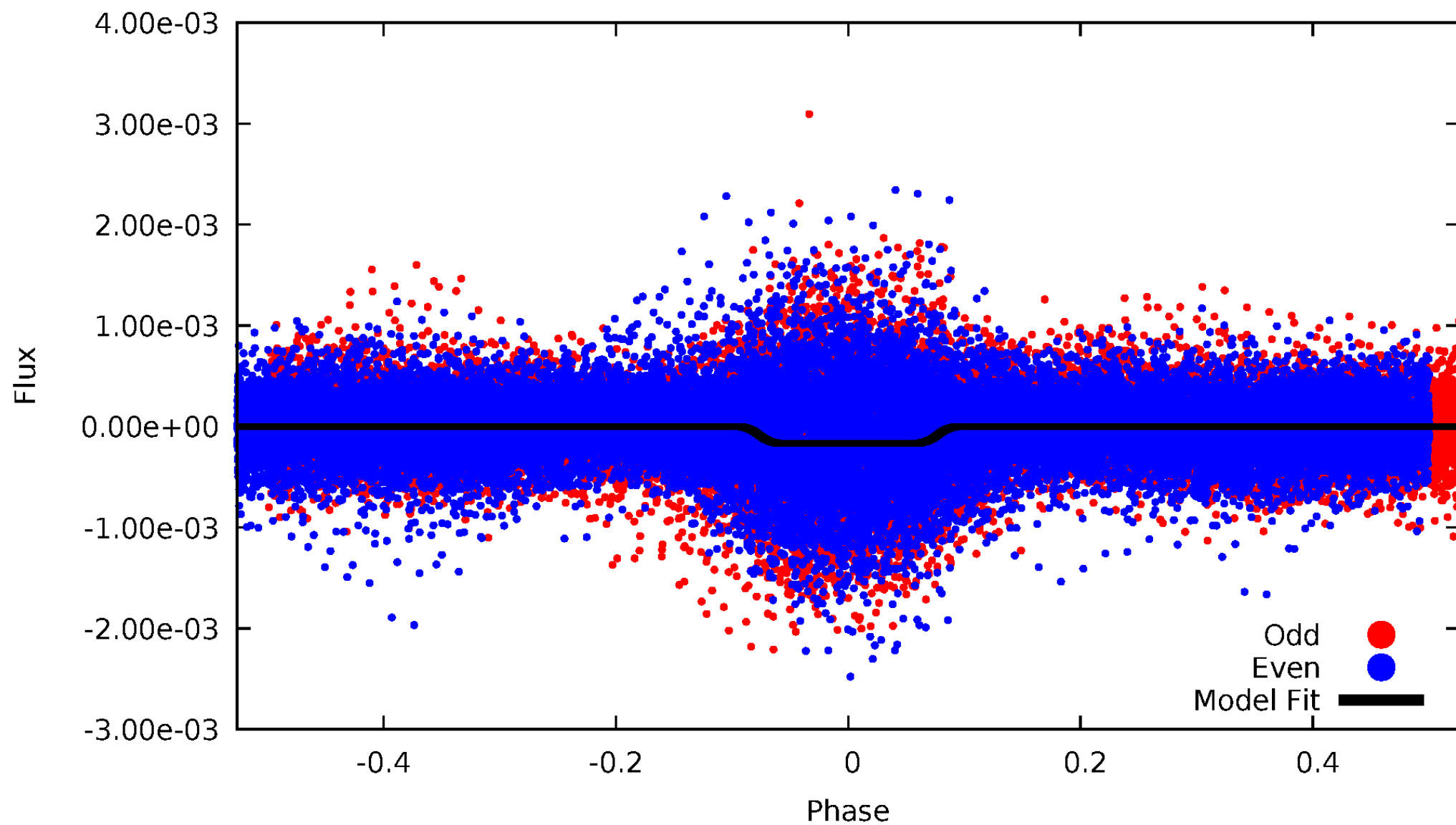
# DV Odd/Even

TCE 011140501-01

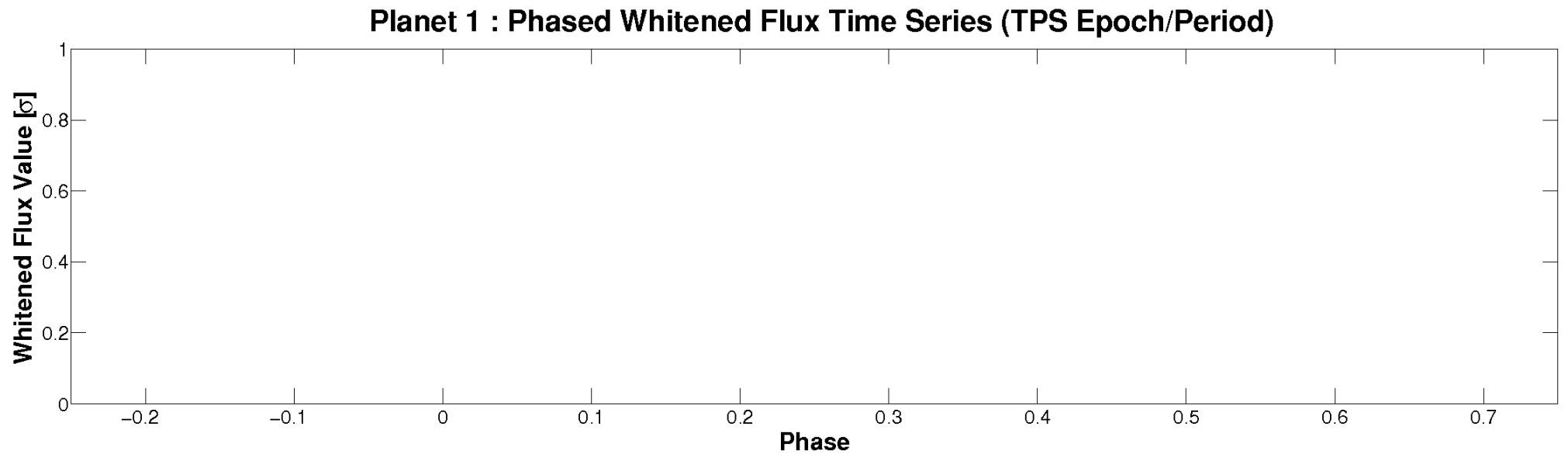
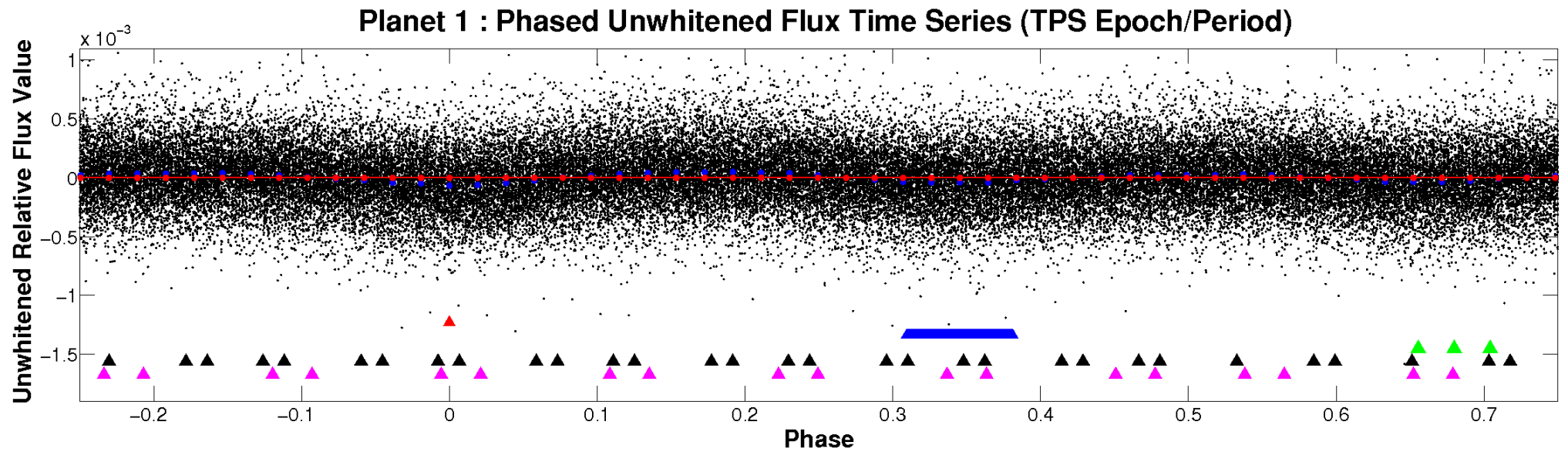


# ALT Odd/Even

TCE 011140501-01



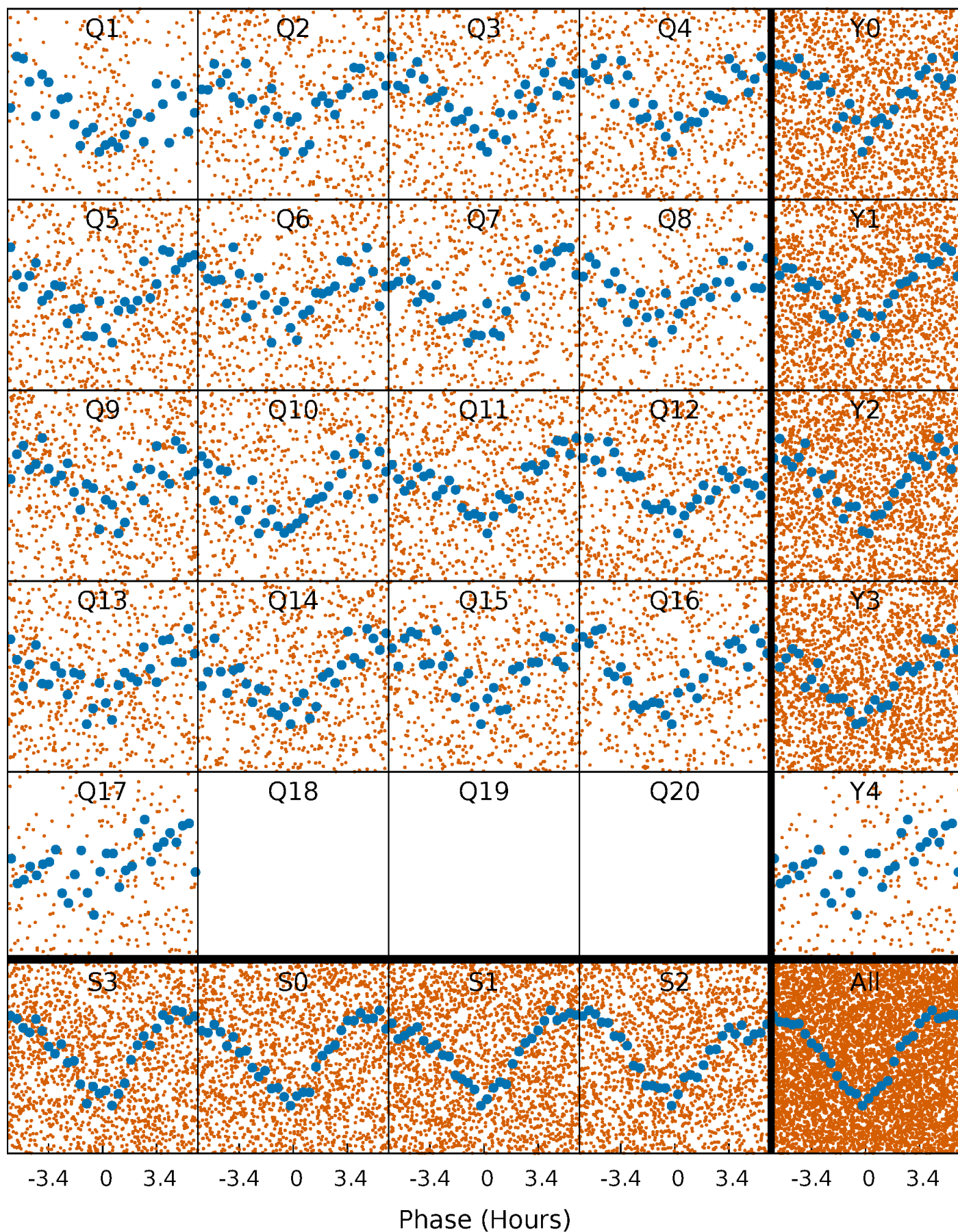
# Non-Whitened Vs. Whitened Light Curve





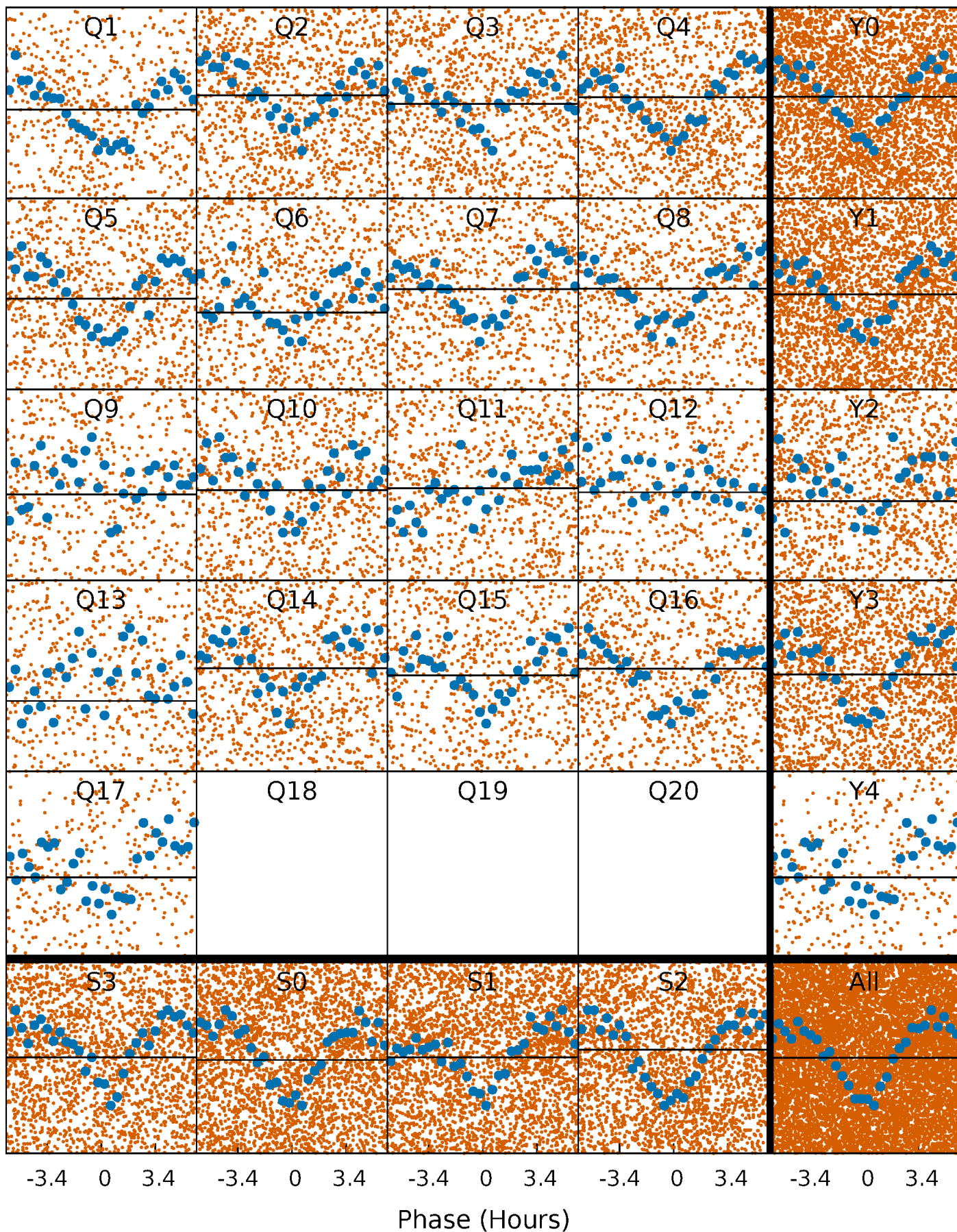
# PDC Quarter-Phased Transit Curves

TCE 011140501-01 P= 1.065108 Days  $T_0=131.882027$  (BKJD)



# DV Quarter-Phased Transit Curves

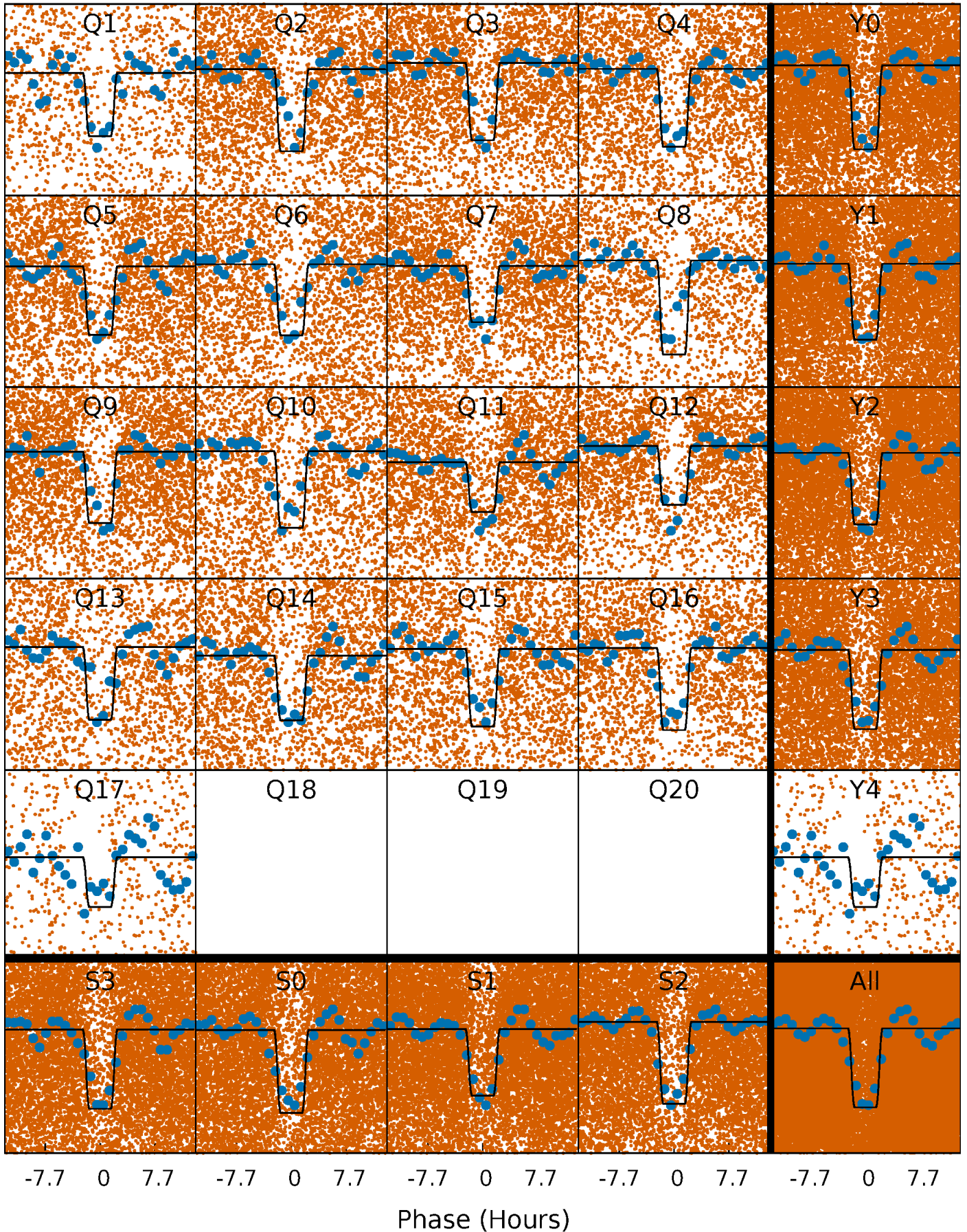
TCE 011140501-01 P= 1.065108 Days  $T_0=131.882027$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 011140501-01 P= 1.065108 Days  $T_0=131.879149$  (BKJD)

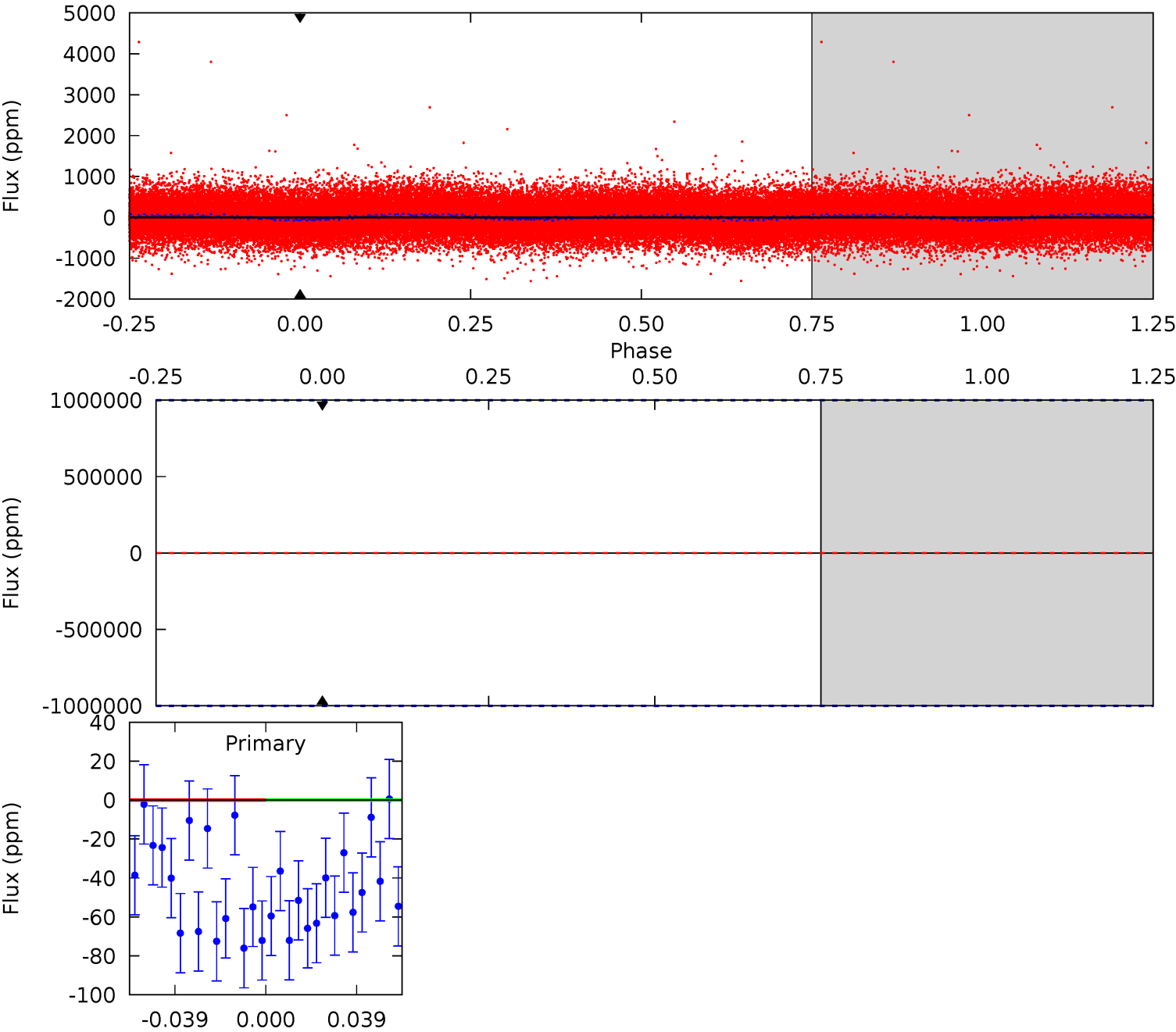




DV Model-Shift Uniqueness Test

011140501-01, P = 1.065108 Days, E = 130.816919 Days

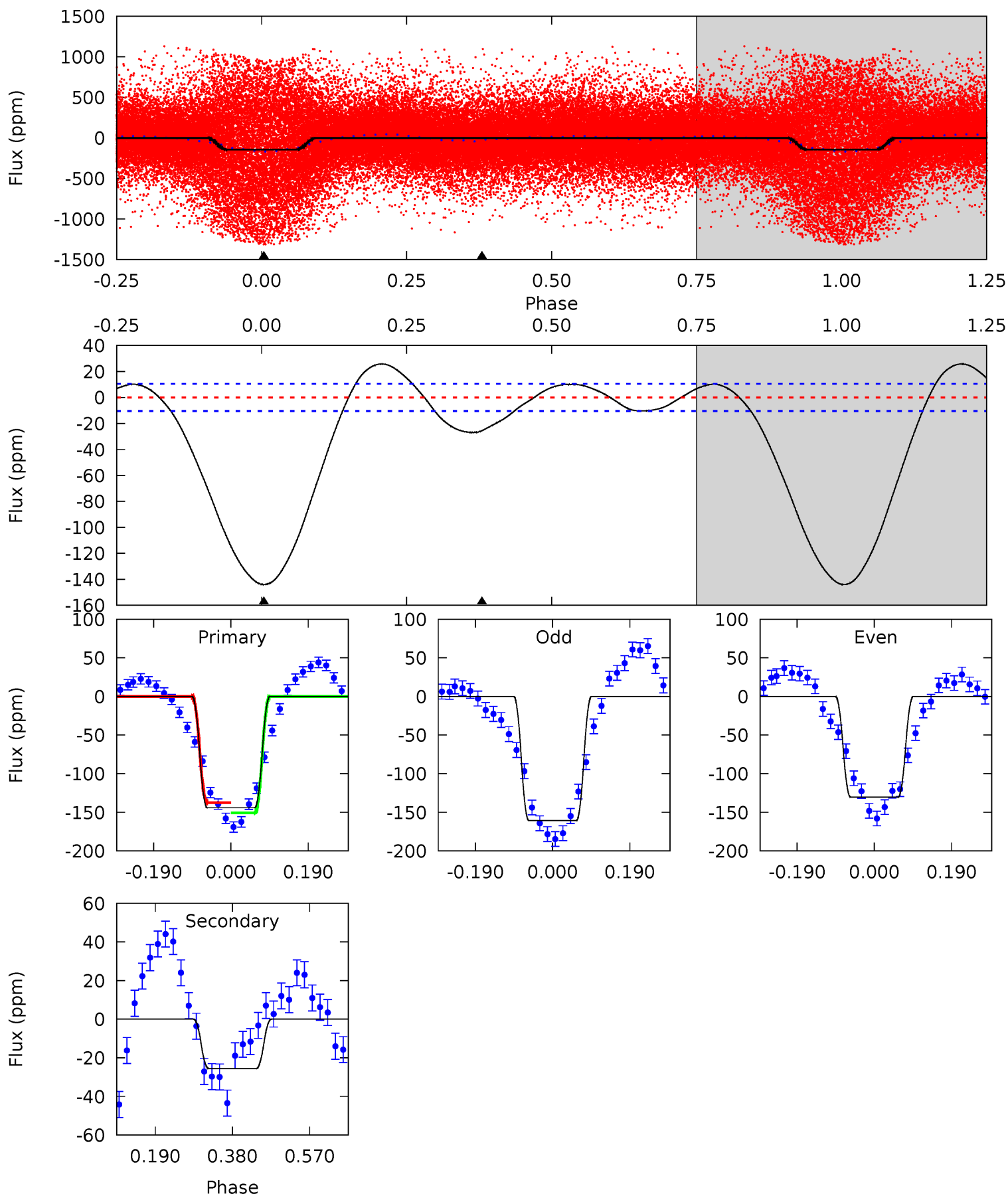
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

011140501-01, P = 1.065108 Days, E = 130.814041 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
60.8	10.8	0	0	4.43	1.31	3.05	60.8	60.8	10.8	10.8	6.42	0.94	0.15	2.84



### Stellar Parameters For KIC 011140501

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7573^{+237}_{-316}$	$4.030^{+0.222}_{-0.148}$	$-0.240^{+0.250}_{-0.300}$	$2.014^{+0.541}_{-0.541}$	$1.584^{+0.187}_{-0.280}$	$0.273^{+0.316}_{-0.129}$
	+3%/-4%	+6%/-4%	+104%/-125%	+27%/-27%	+12%/-18%	+116%/-47%
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 011140501-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$15.40^{+16.61}_{-11.11}$	$4241^{+327}_{-314}$	$4811^{+50869}_{-39229}$	$1.368^{+345.481}_{-199.769}$
Alt.	$-26 \pm 2$	$14.96^{+15.90}_{-9.90}$	$4238^{+333}_{-345}$	$-3635^{+5887}_{-274}$	$0.035^{+0.269}_{-0.027}$

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



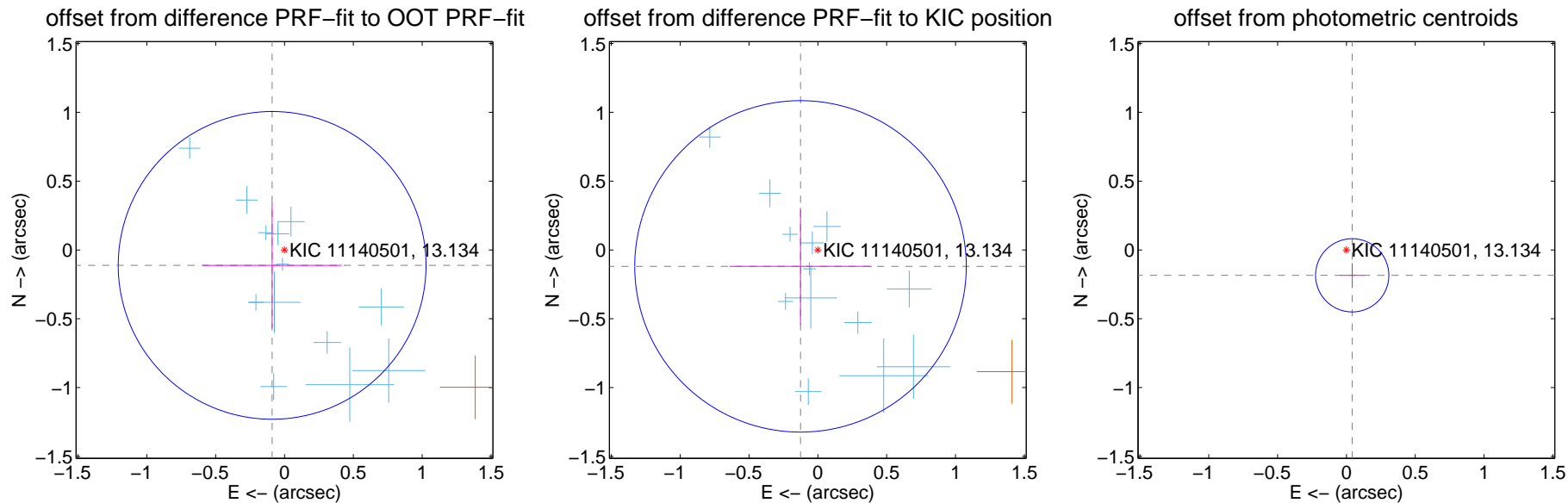
## DV Centroid Data

Supplemental centroid analysis for 011140501-01. Kepler magnitude: 13.13. Transit SNR -1.00

There are 13 quarters with good PRF difference image offsets

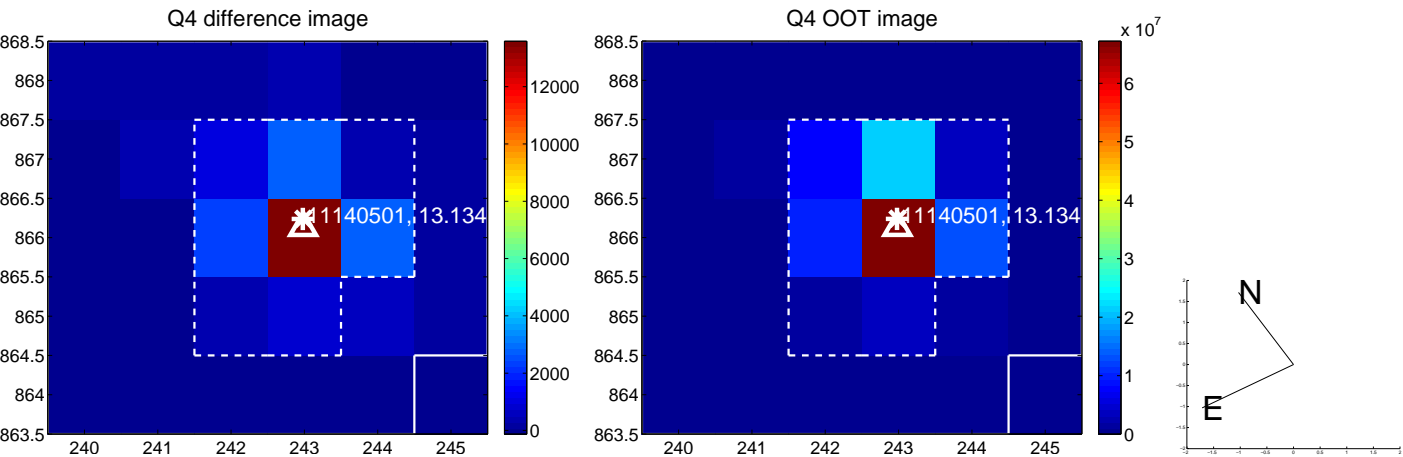
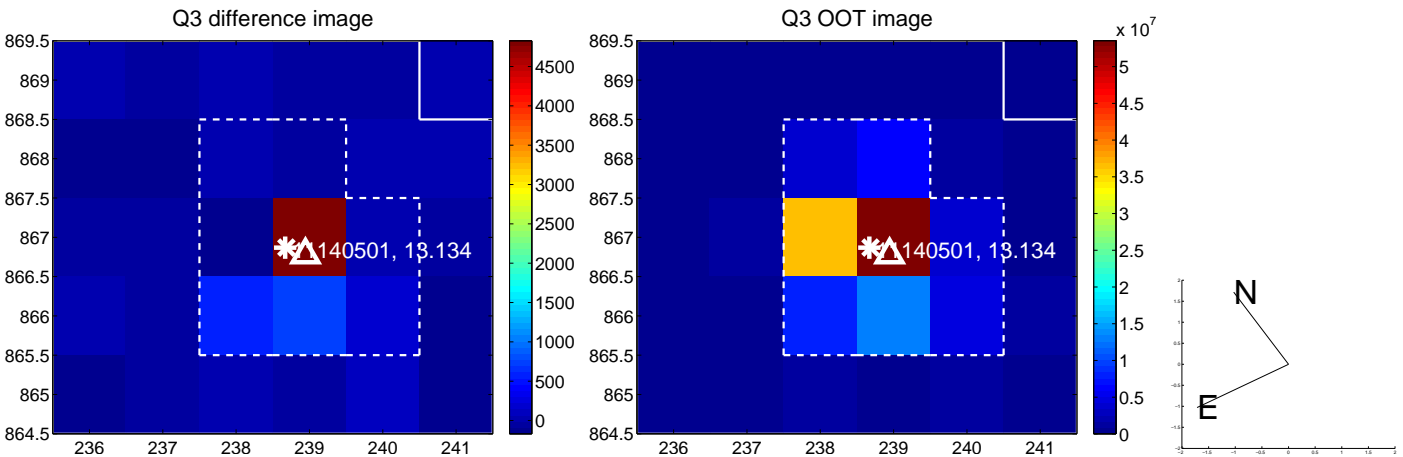
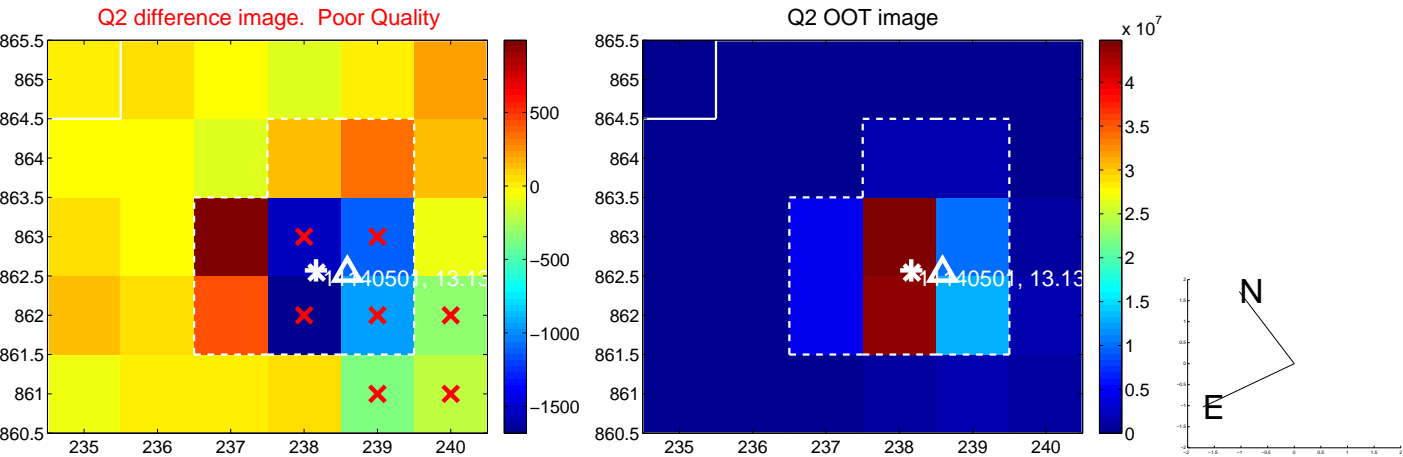
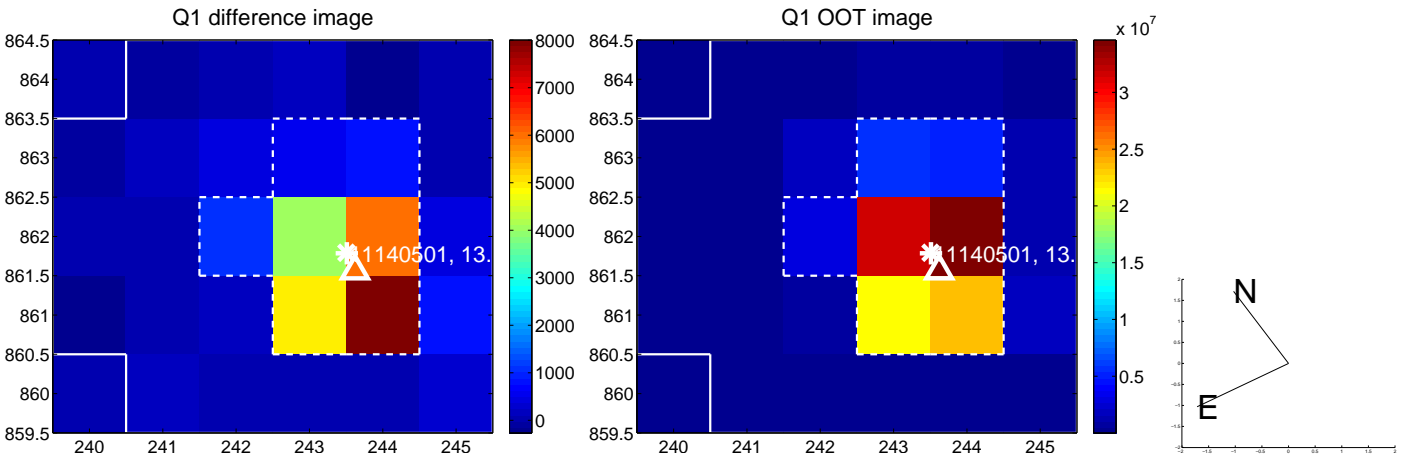
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.144 \pm 0.373$	0.39	$0.090 \pm 0.504$	$-0.112 \pm 0.458$
PRF-fit source offset from KIC position	$0.174 \pm 0.401$	0.43	$0.126 \pm 0.517$	$-0.120 \pm 0.425$
photometric centroid source offset	$0.19 \pm 0.09$	2.13	$-0.04 \pm 0.09$	$-0.18 \pm 0.09$

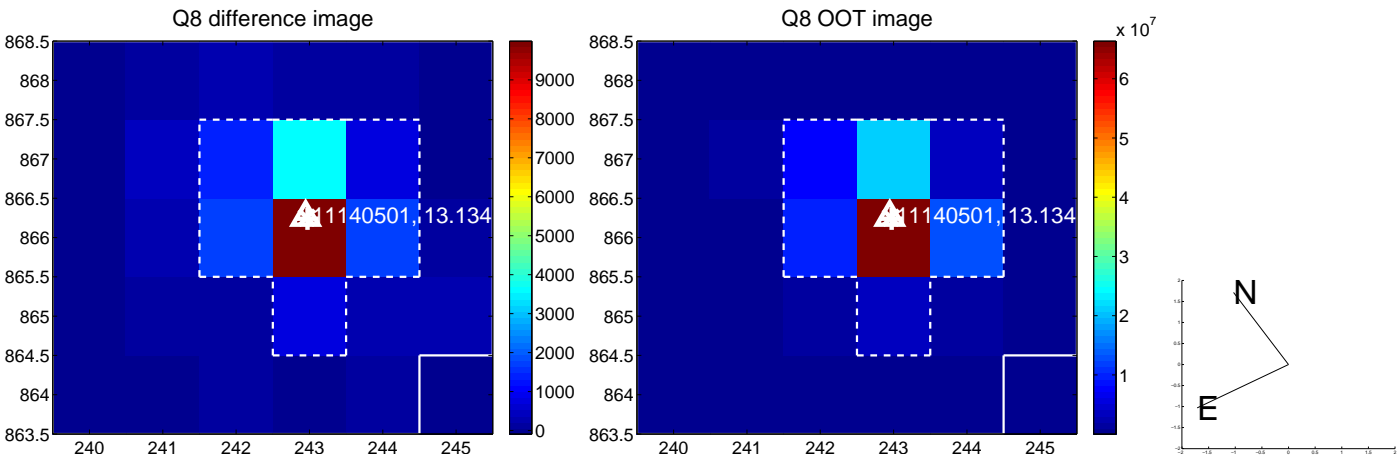
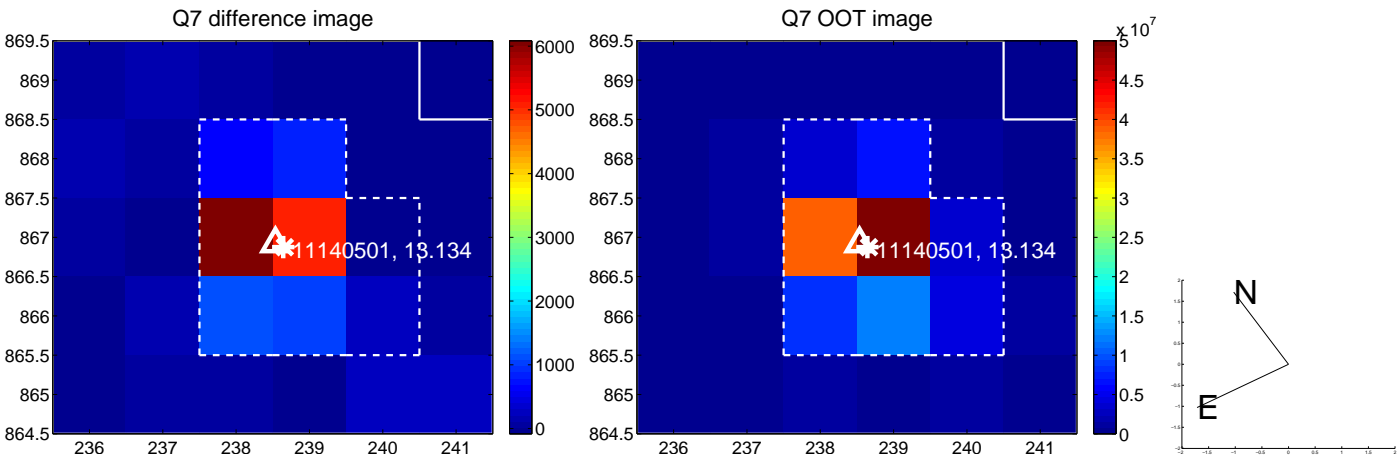
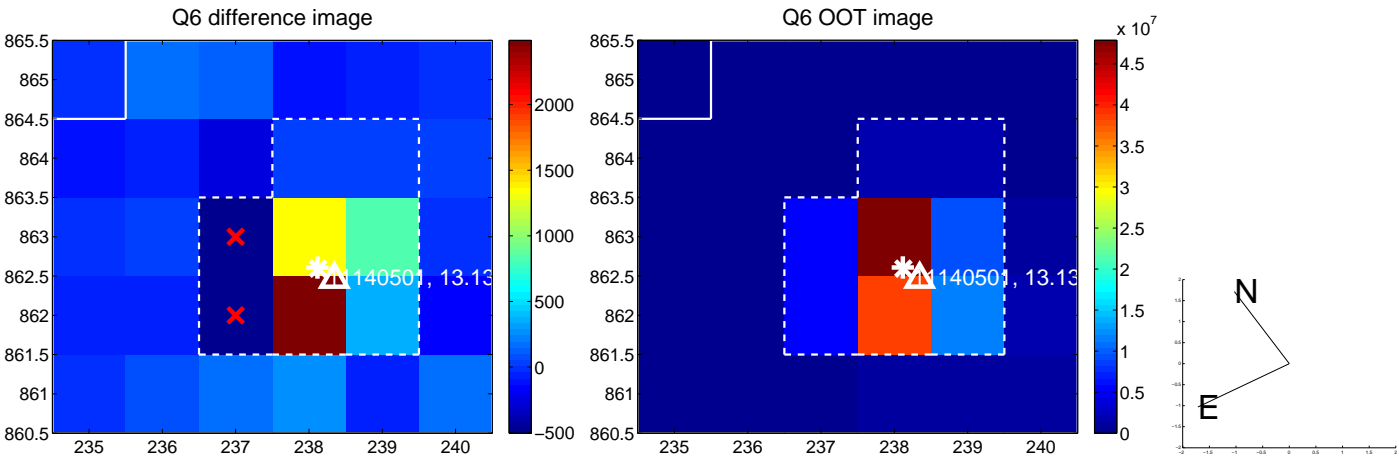
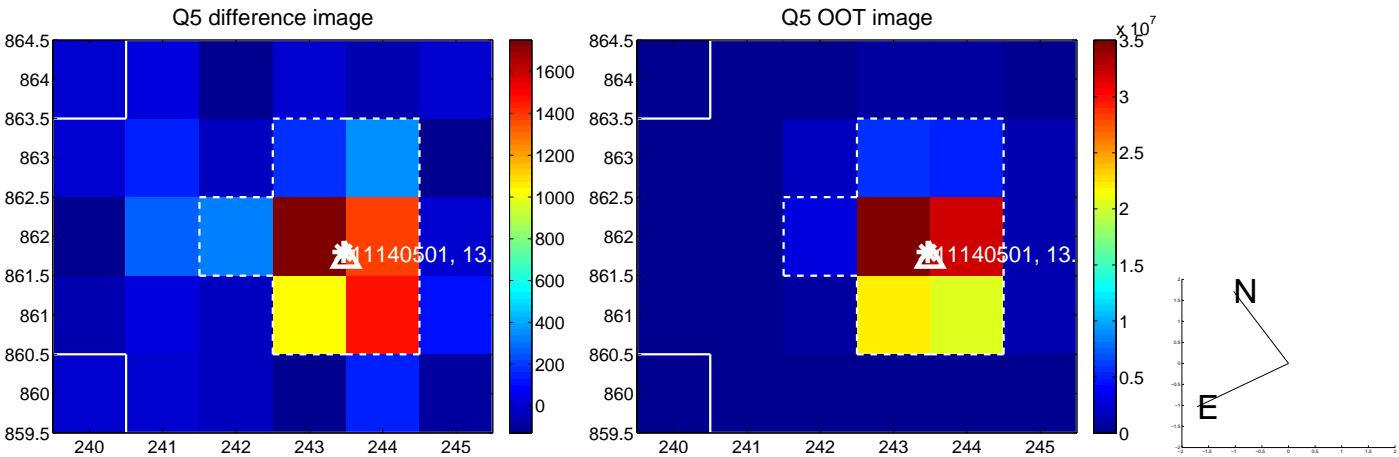


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

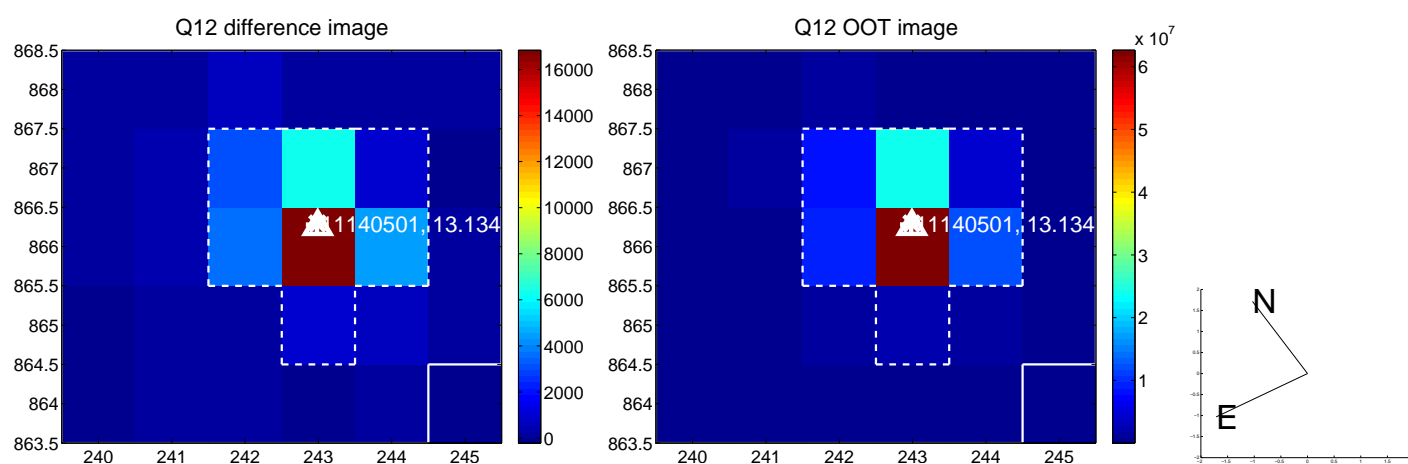
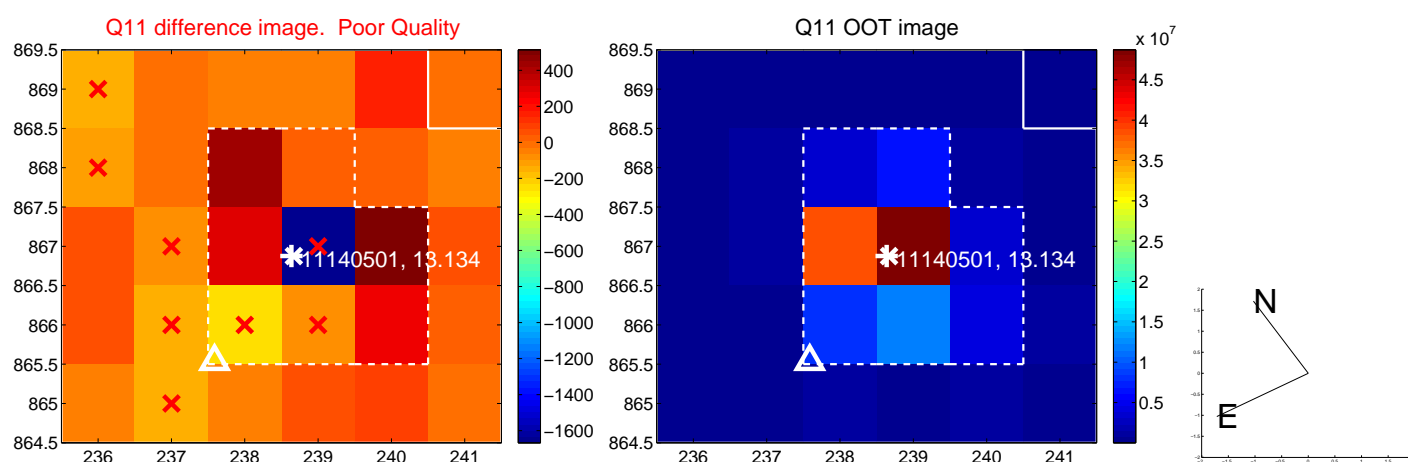
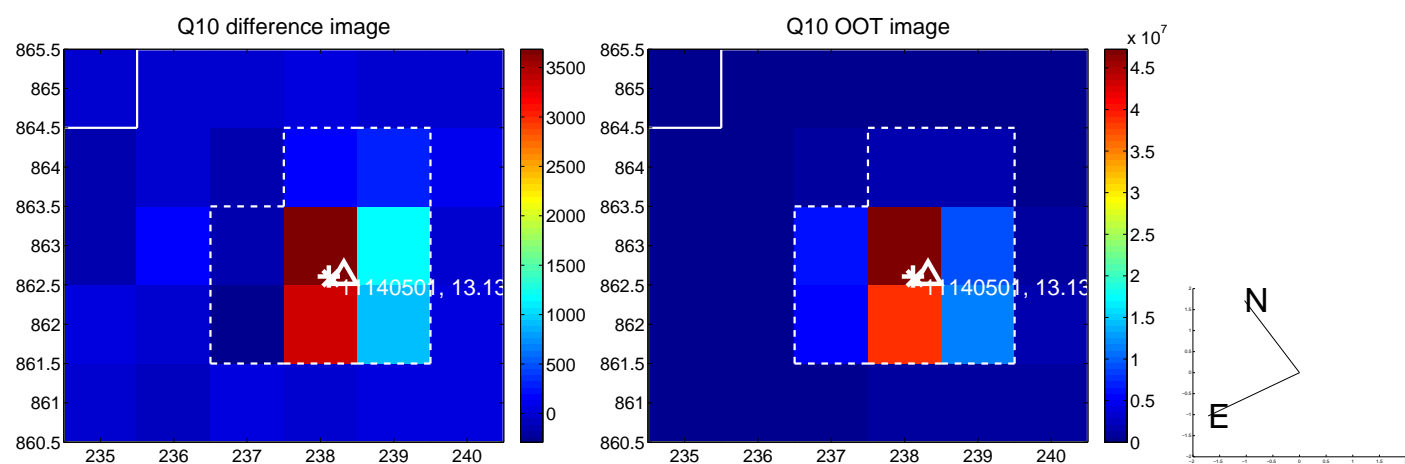
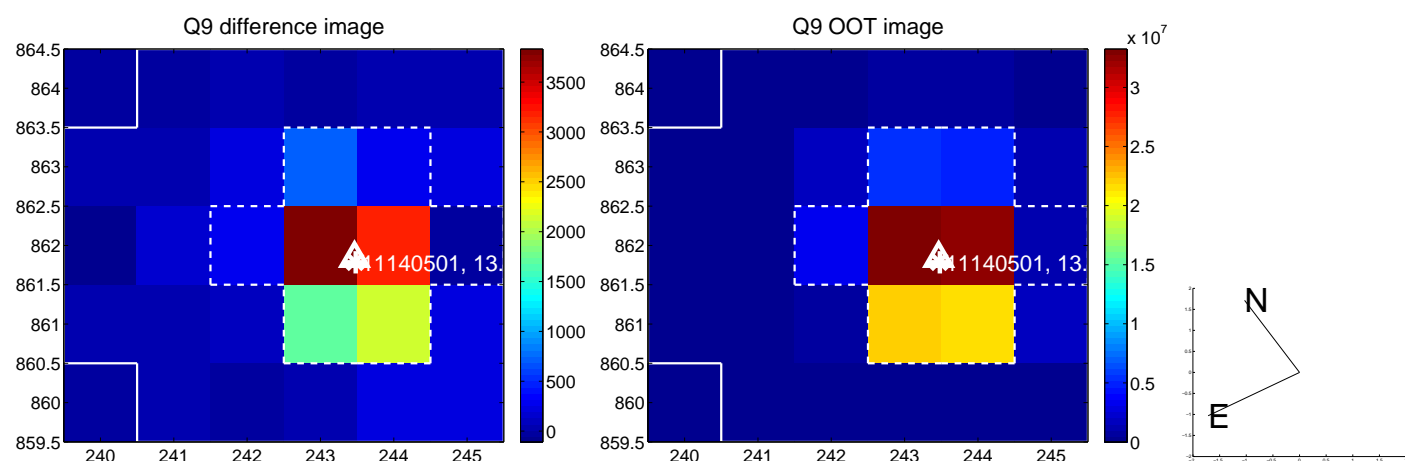


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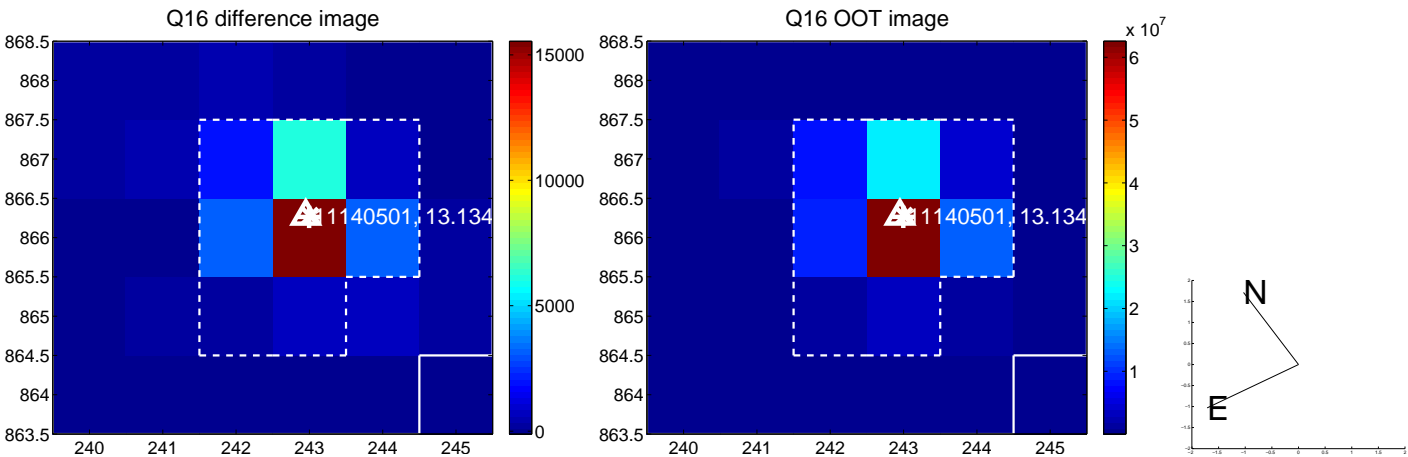
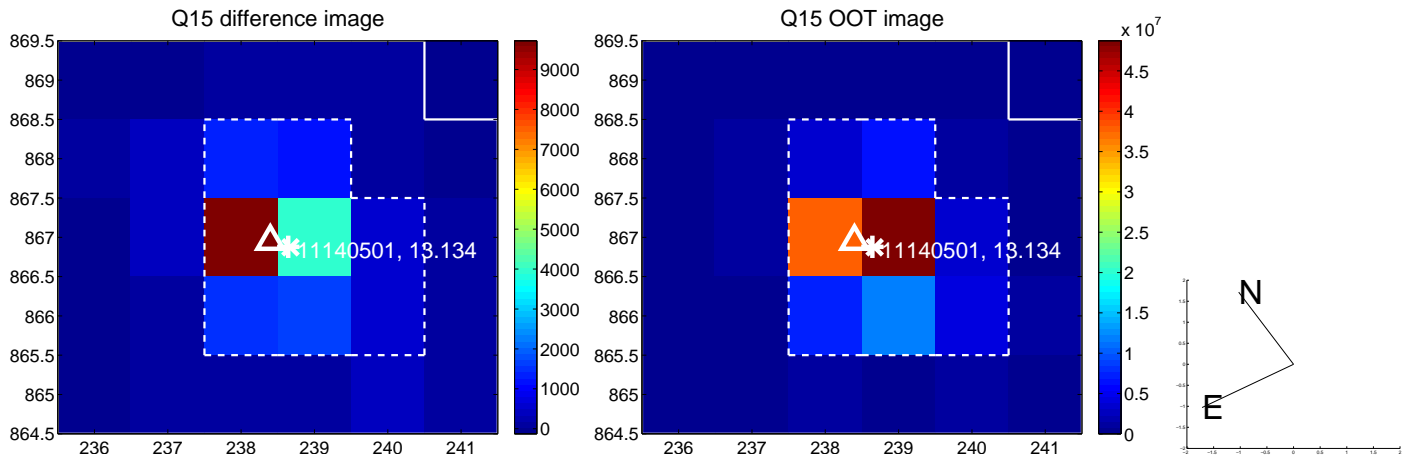
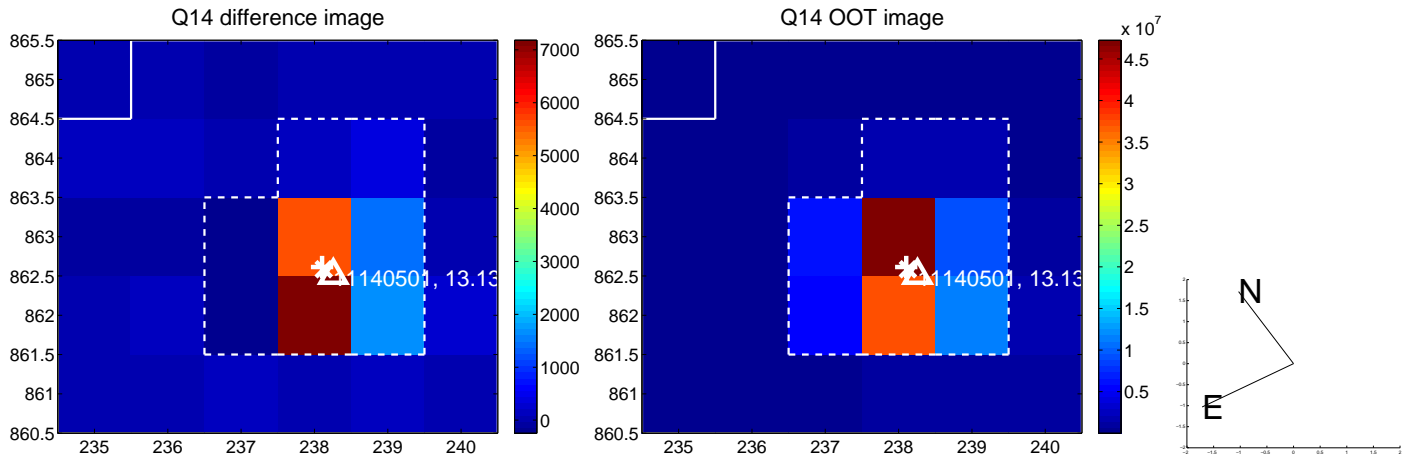
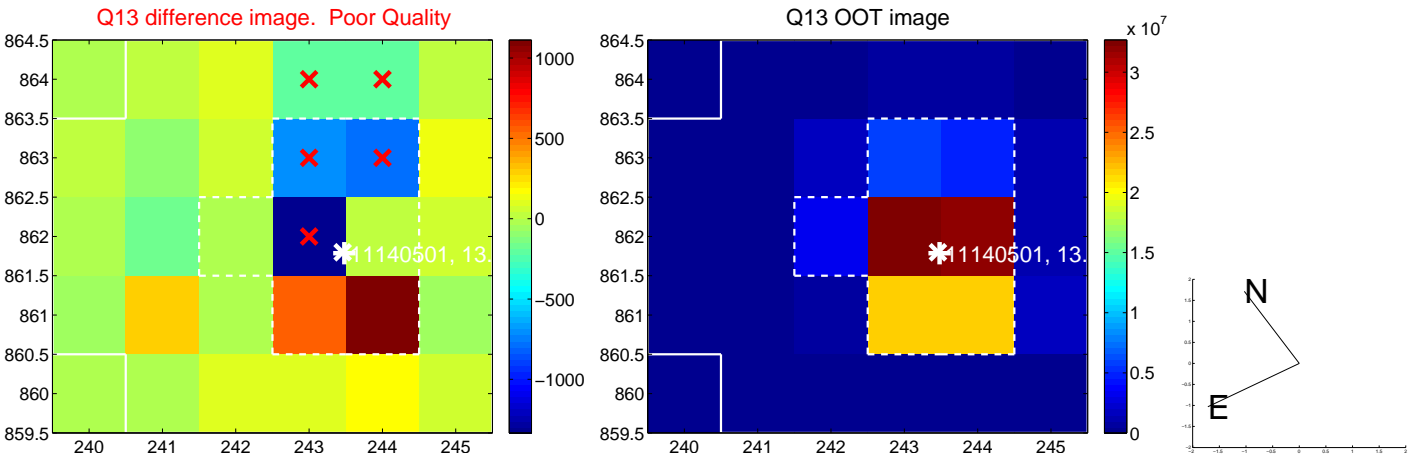




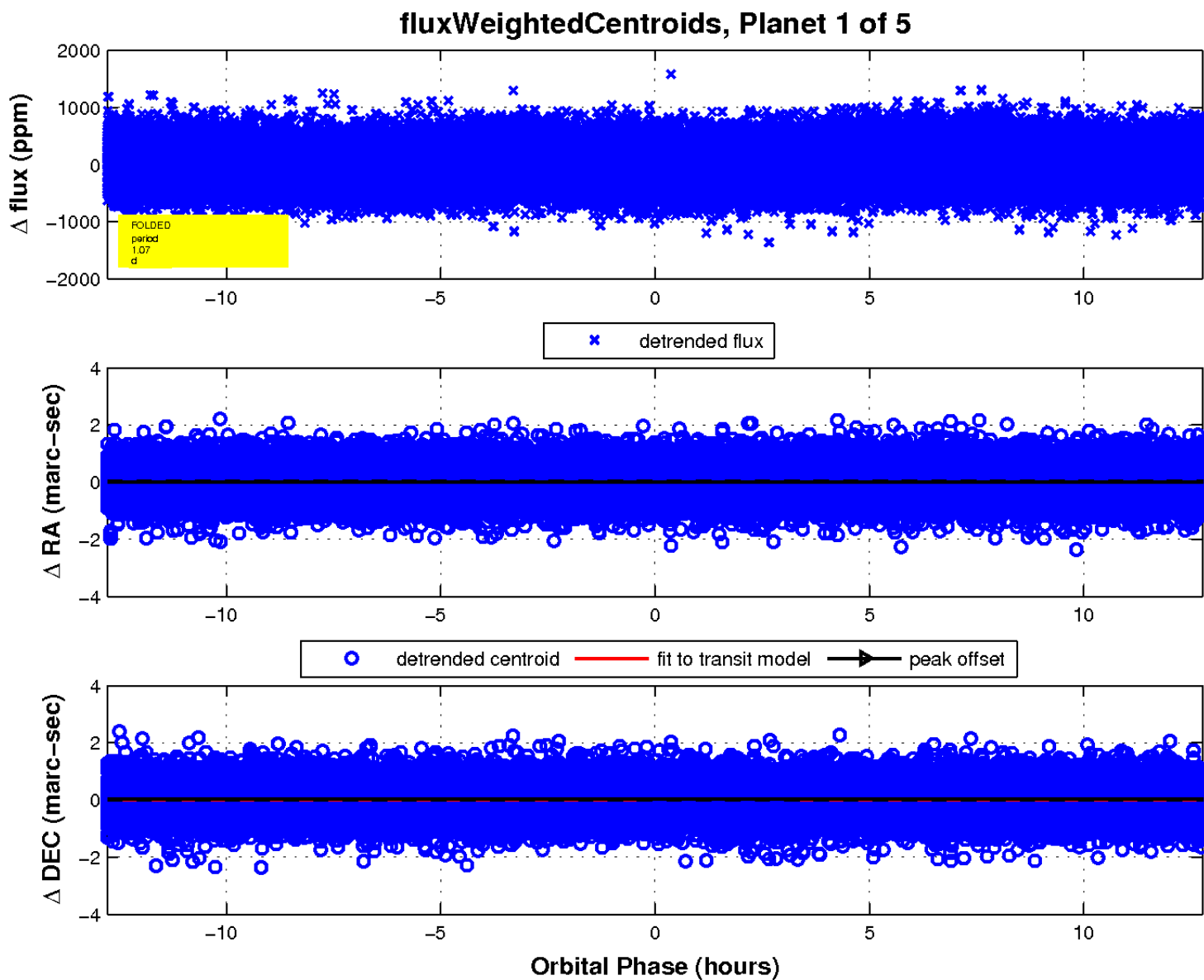
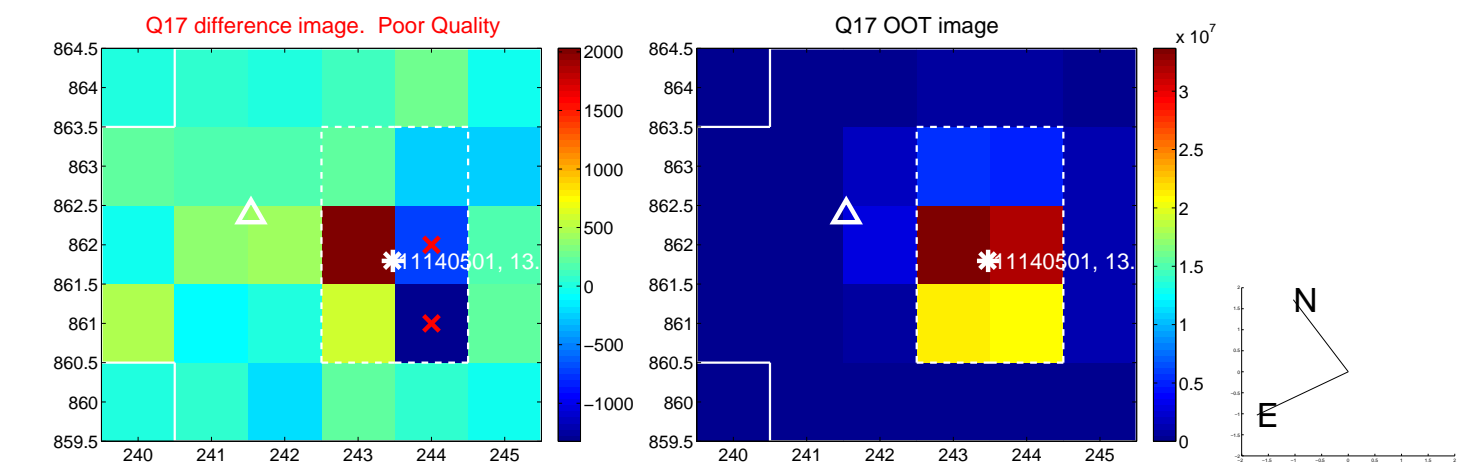
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

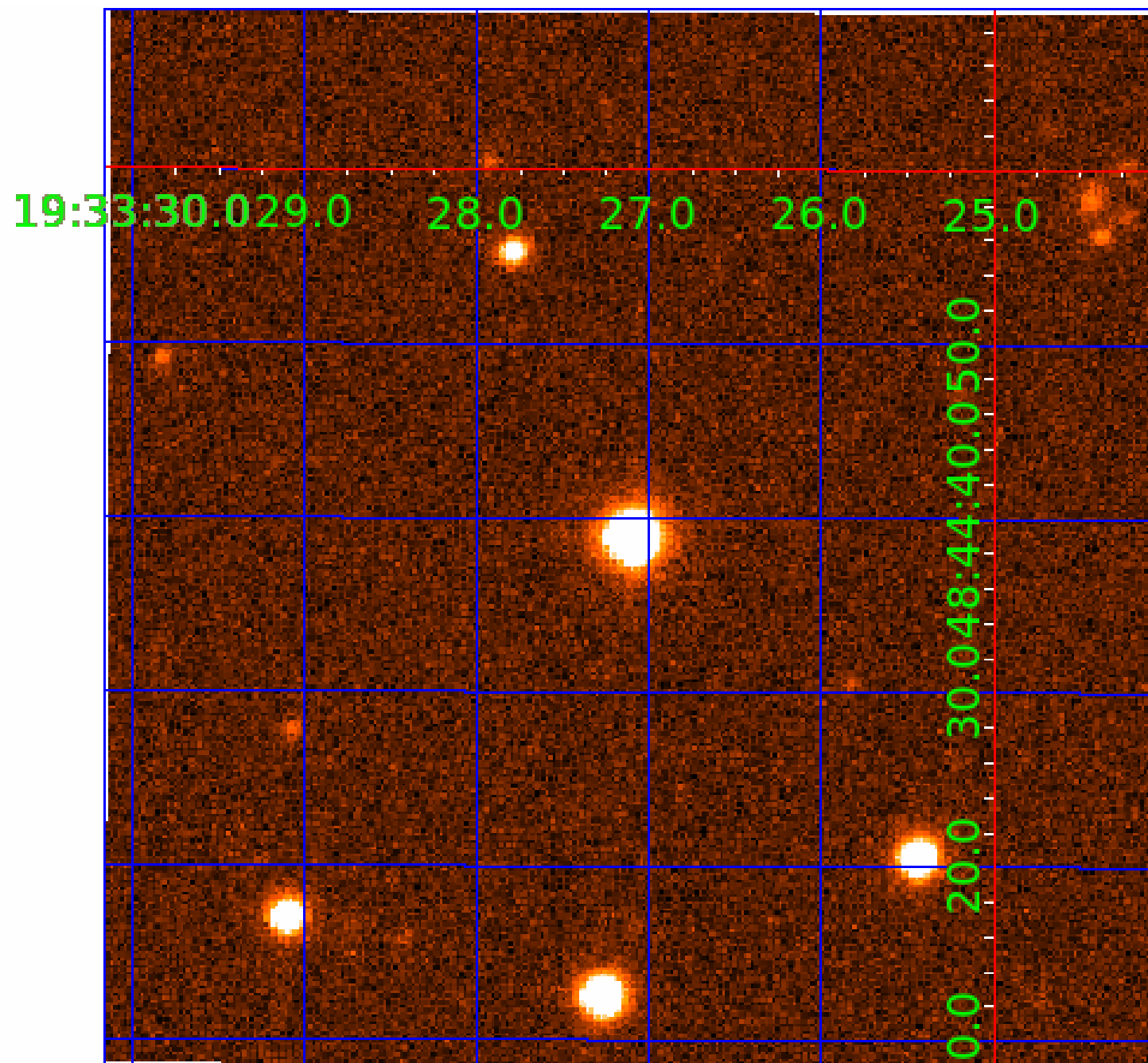


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011140501

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011140501-01	OBS	No	1.065108	131.882027	158.1	3.000	9.1	-1.0	2.01	7573	2.56	21093.45
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011140501-04	OBS	No	46.990956	148.789416	350.4	4.393	8.8	6.2	2.01	7573	4.37	135.31
011140501-05	OBS	No	82.134814	162.278263	579.5	6.339	7.5	8.2	2.01	7573	6.19	64.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011140501-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
011140501-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
011140501-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

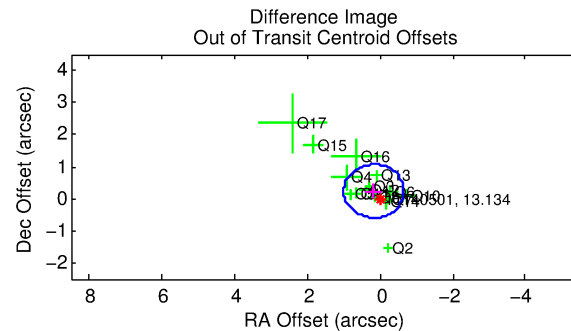
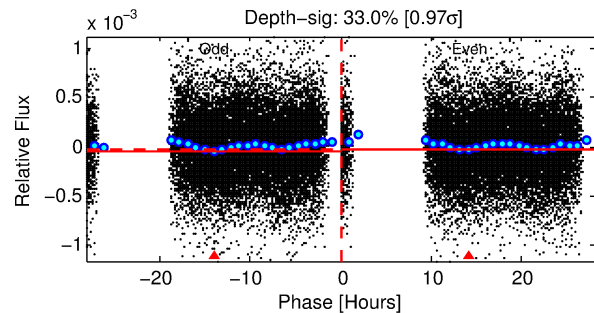
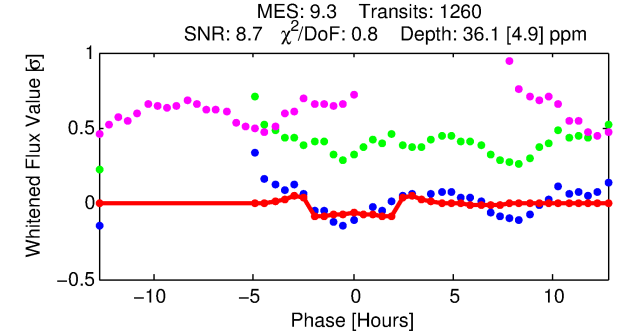
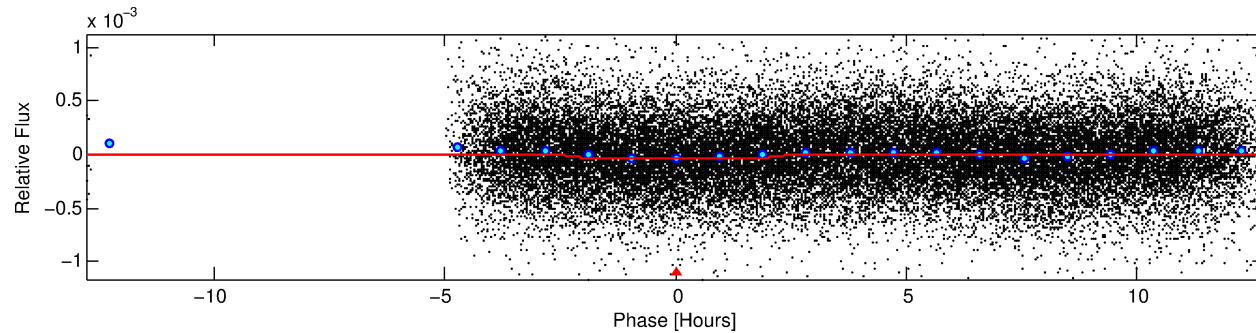
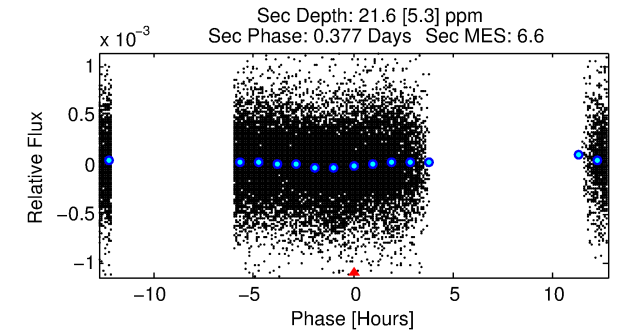
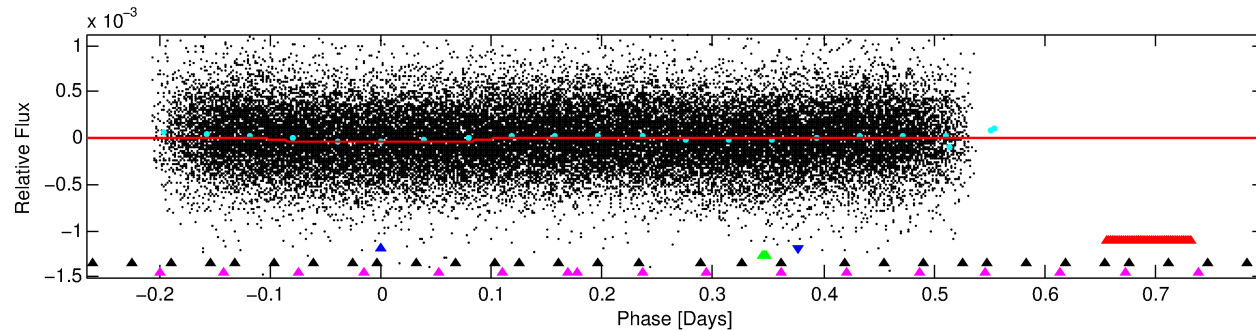
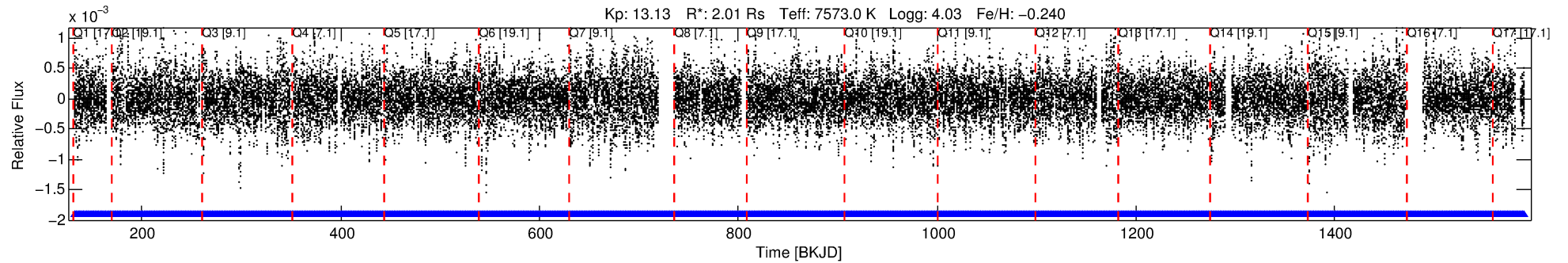
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011140501-02

No Significant Match Found

# DV One-Page Summary

KIC: 11140501 Candidate: 2 of 5 Period: 1.065 d



## DV Fit Results:

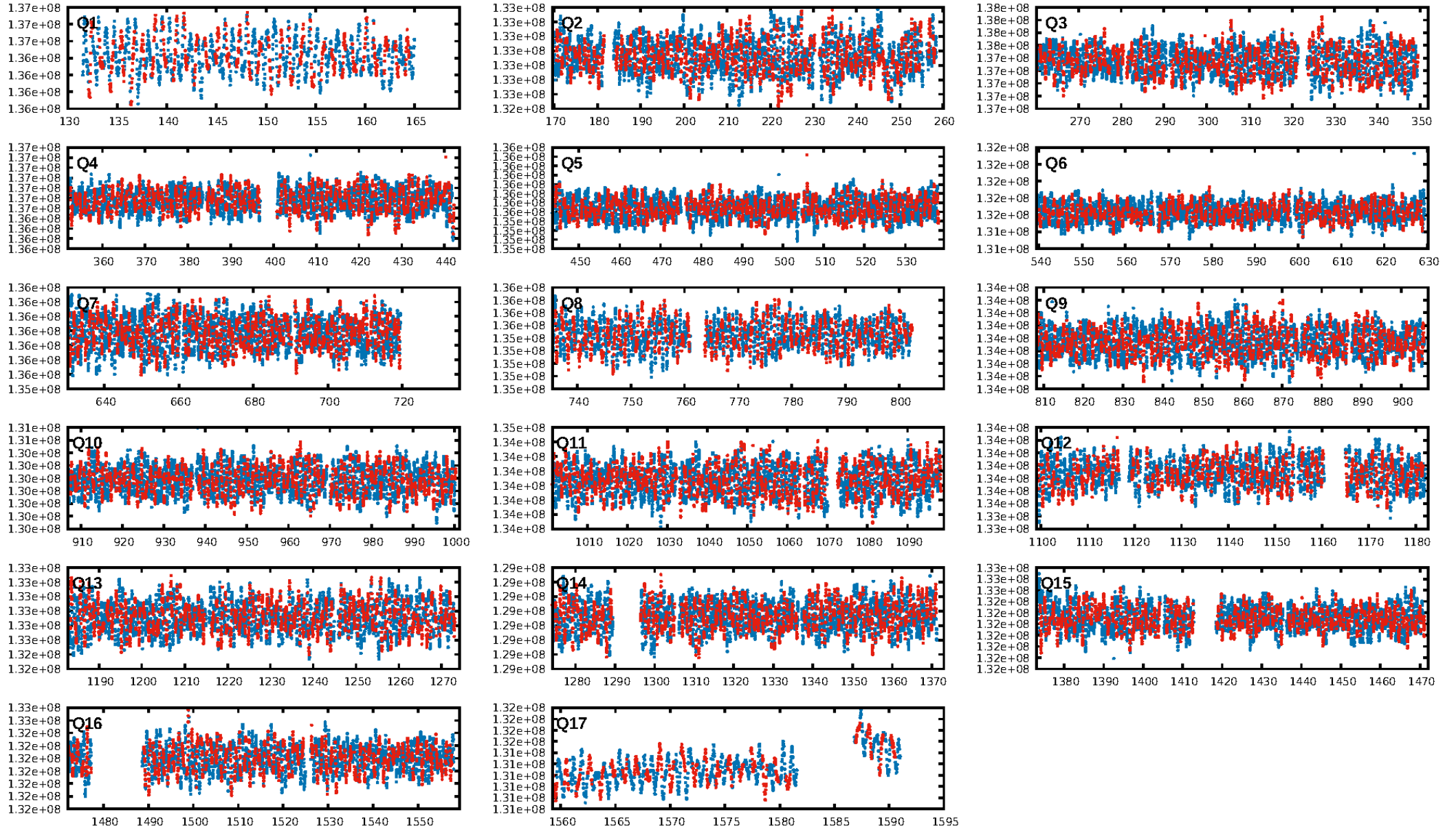
Period = 1.06505 [0.00001] d  
Epoch = 132.2880 [0.0024] BKJD  
Rp/R\* = 0.0058 [0.0015]  
a/R\* = 1.56 [1.31]  
b = 0.63 [1.36]  
Seff = 21094.93 [8851.35]  
Teq = 3073 [322] K  
Rp = 1.28 [0.48] Re  
a = 0.0238 [0.0059] AU  
Ag = 4.13 [2.88] [1.09σ]  
Teffp = 6772 [1024] K [3.45σ]

## DV Diagnostic Results:

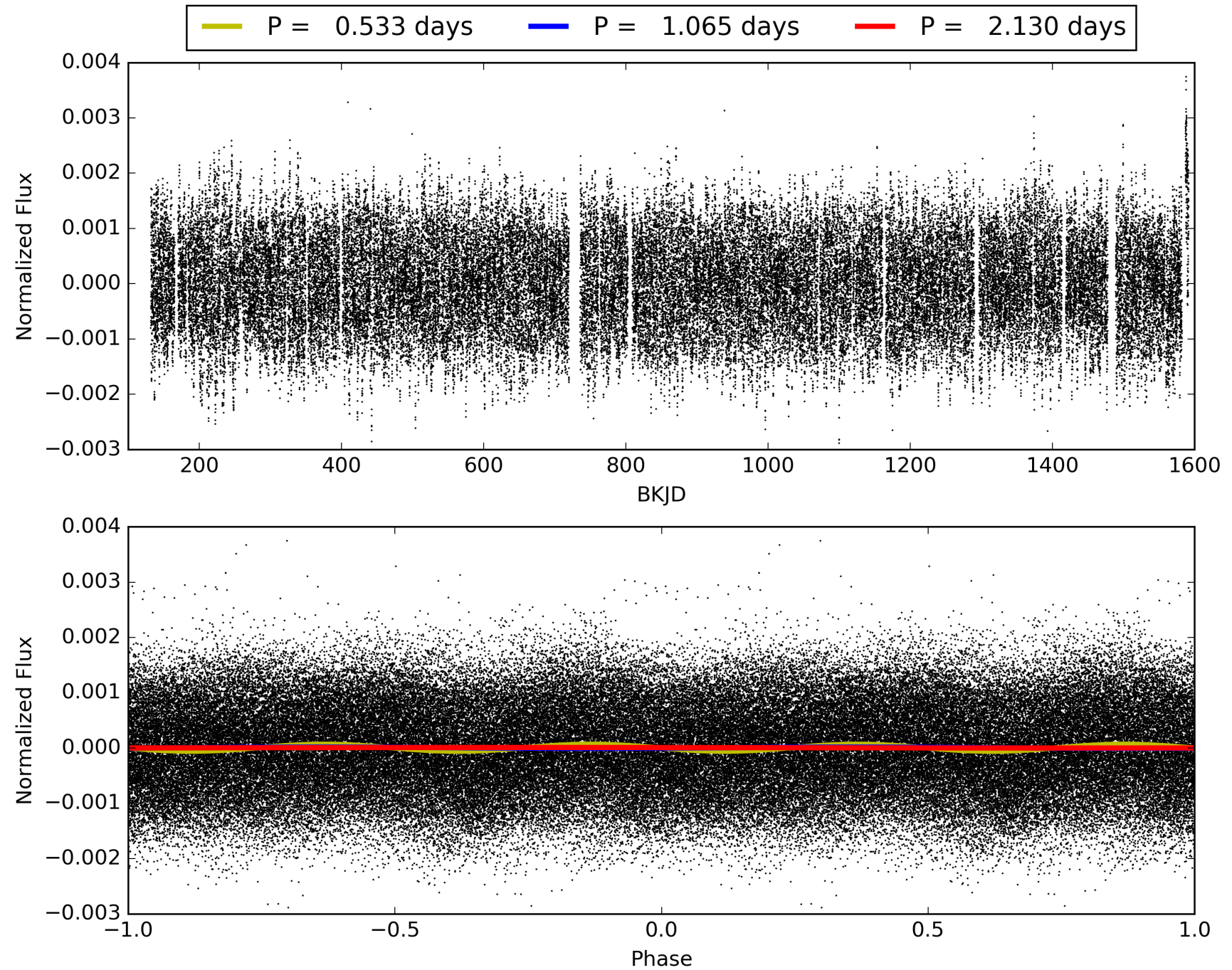
ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.19e-14  
RollingBand-fgt: 1.00 [1204/1204]  
GhostDiagnostic-chr: 1.186  
Centroid-sig: 24.2%  
Centroid-so: 0.424 arcsec [1.05σ]  
OotOffset-rm: 0.293 arcsec [1.06σ]  
KicOffset-rm: 0.329 arcsec [1.16σ]  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 0.80 [12/15]  
DiffImageOverlap-fno: 0.00 [0/17]



# TCE 011140501-02, PDC Light Curves

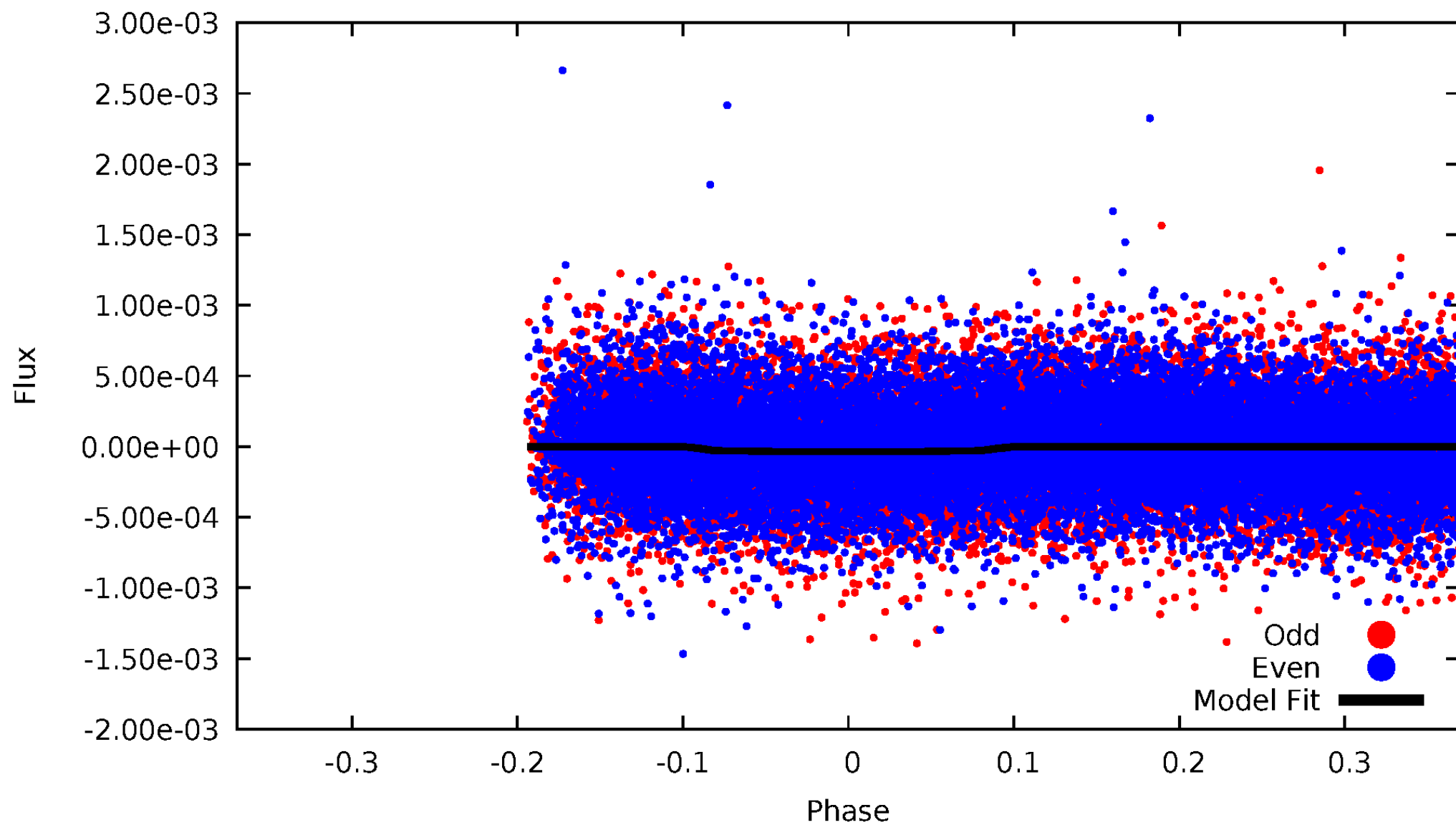


# TCE 011140501-02



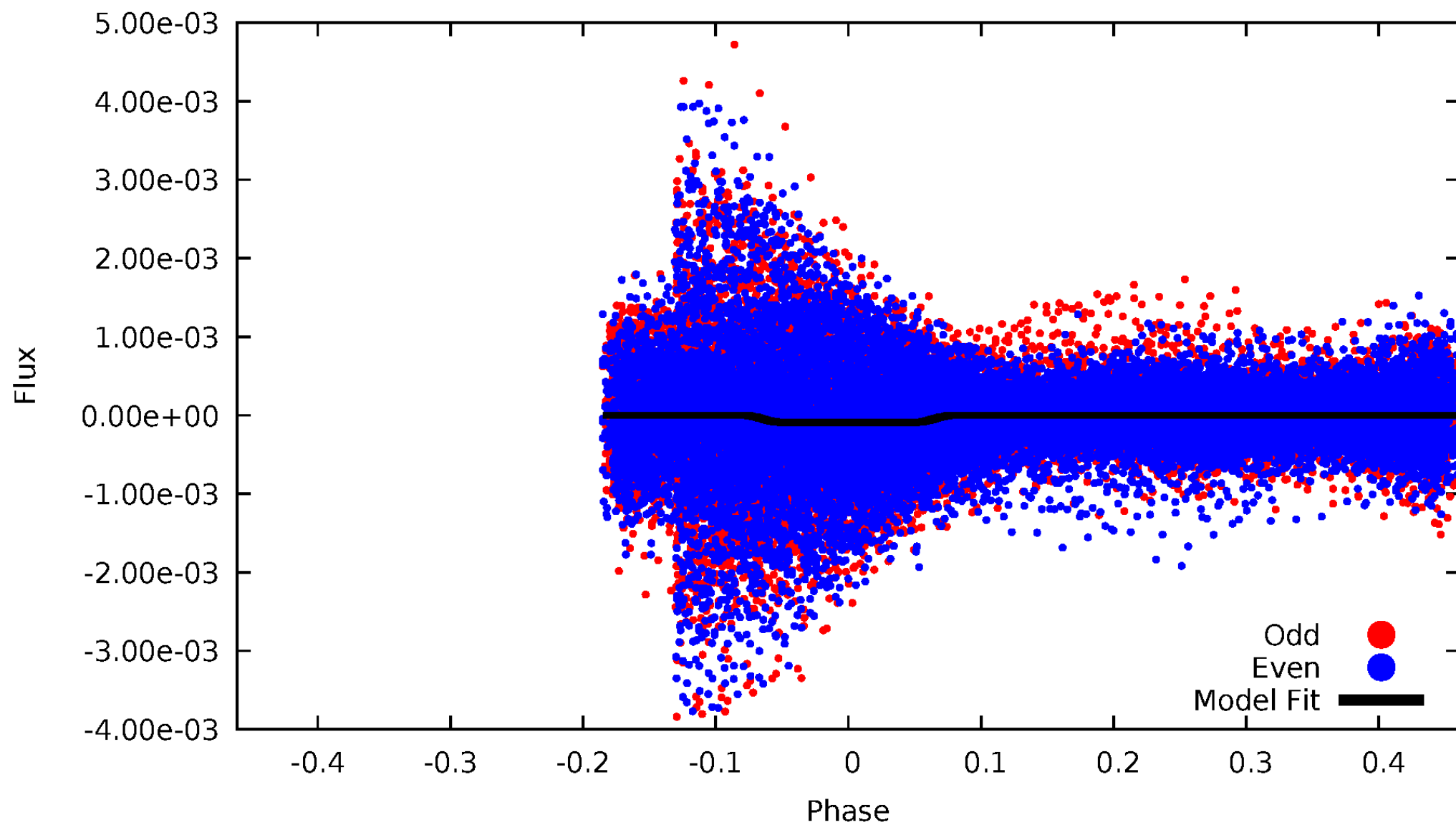
# DV Odd/Even

TCE 011140501-02



# ALT Odd/Even

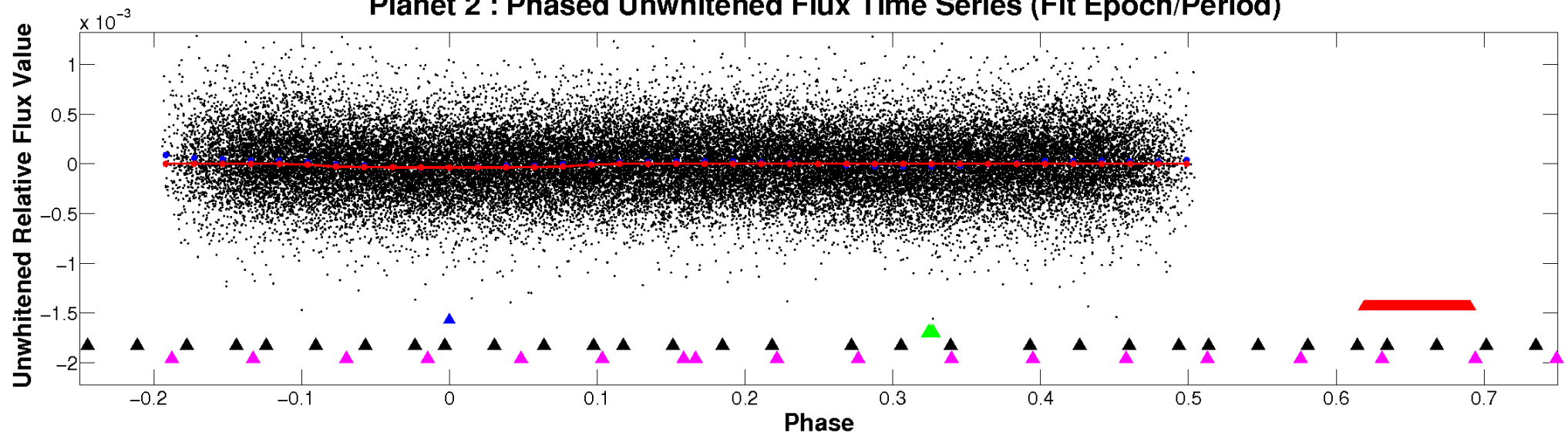
TCE 011140501-02



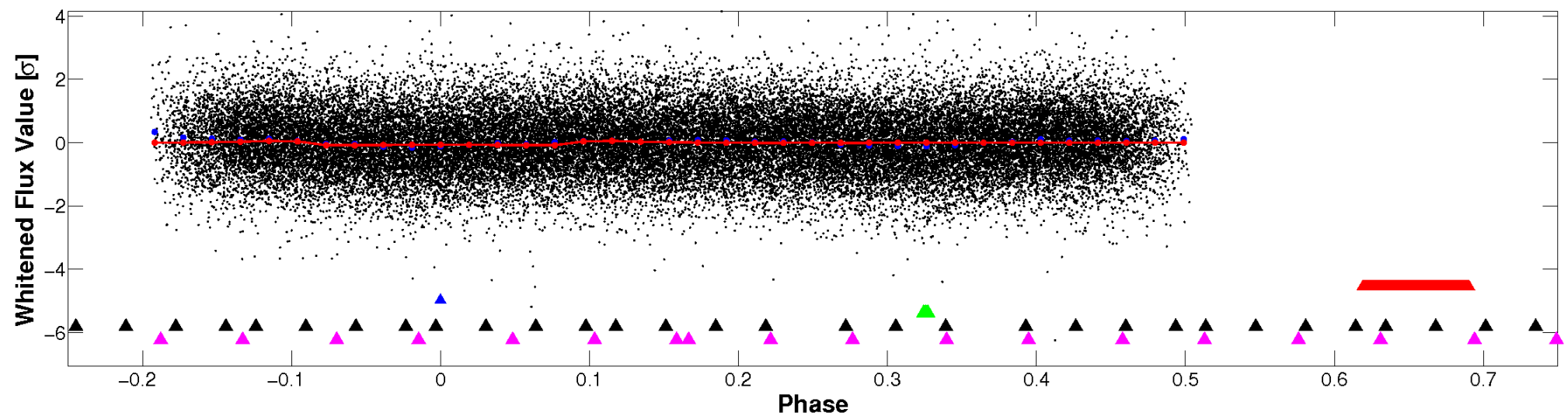


# Non-Whitened Vs. Whitened Light Curve

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

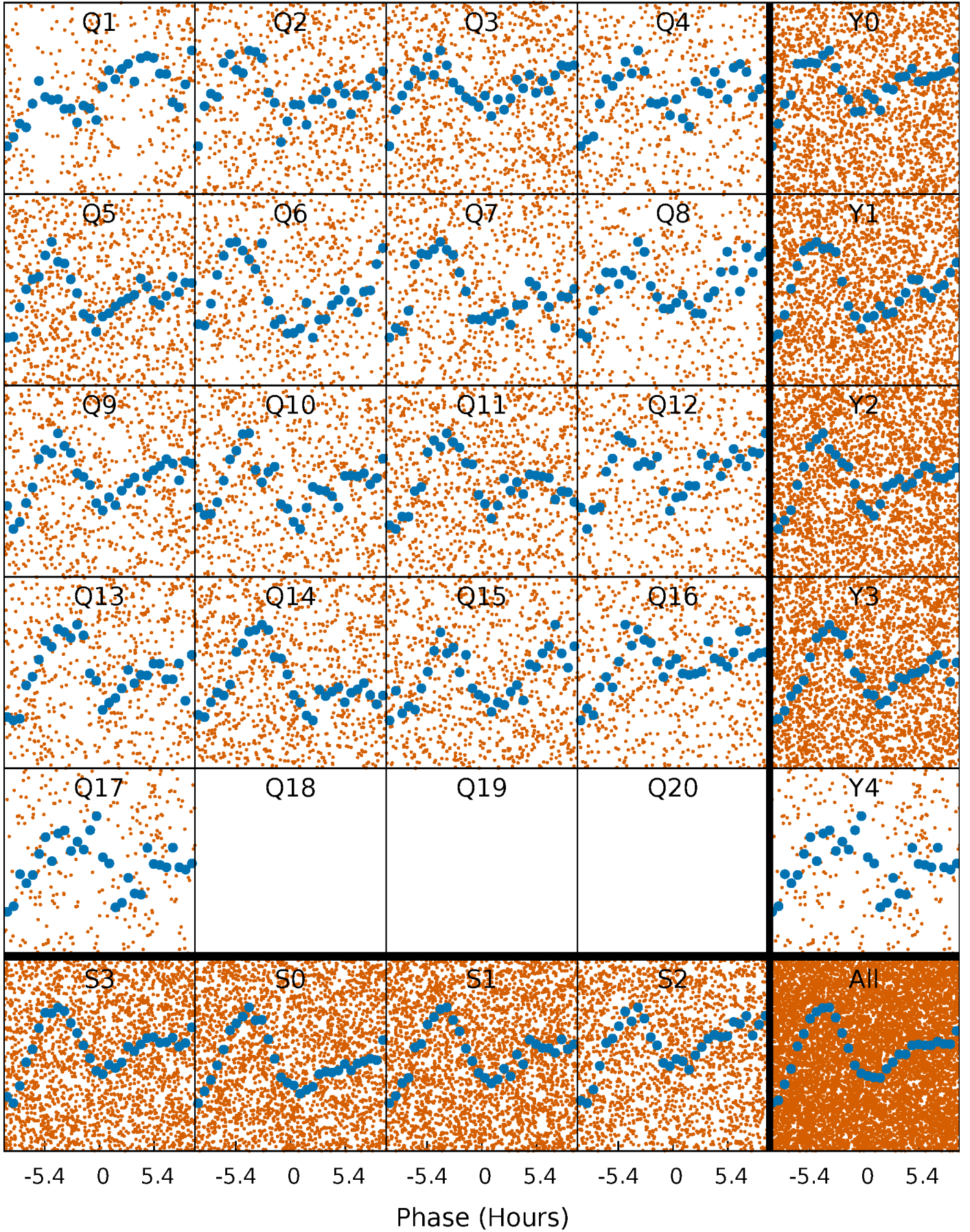


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

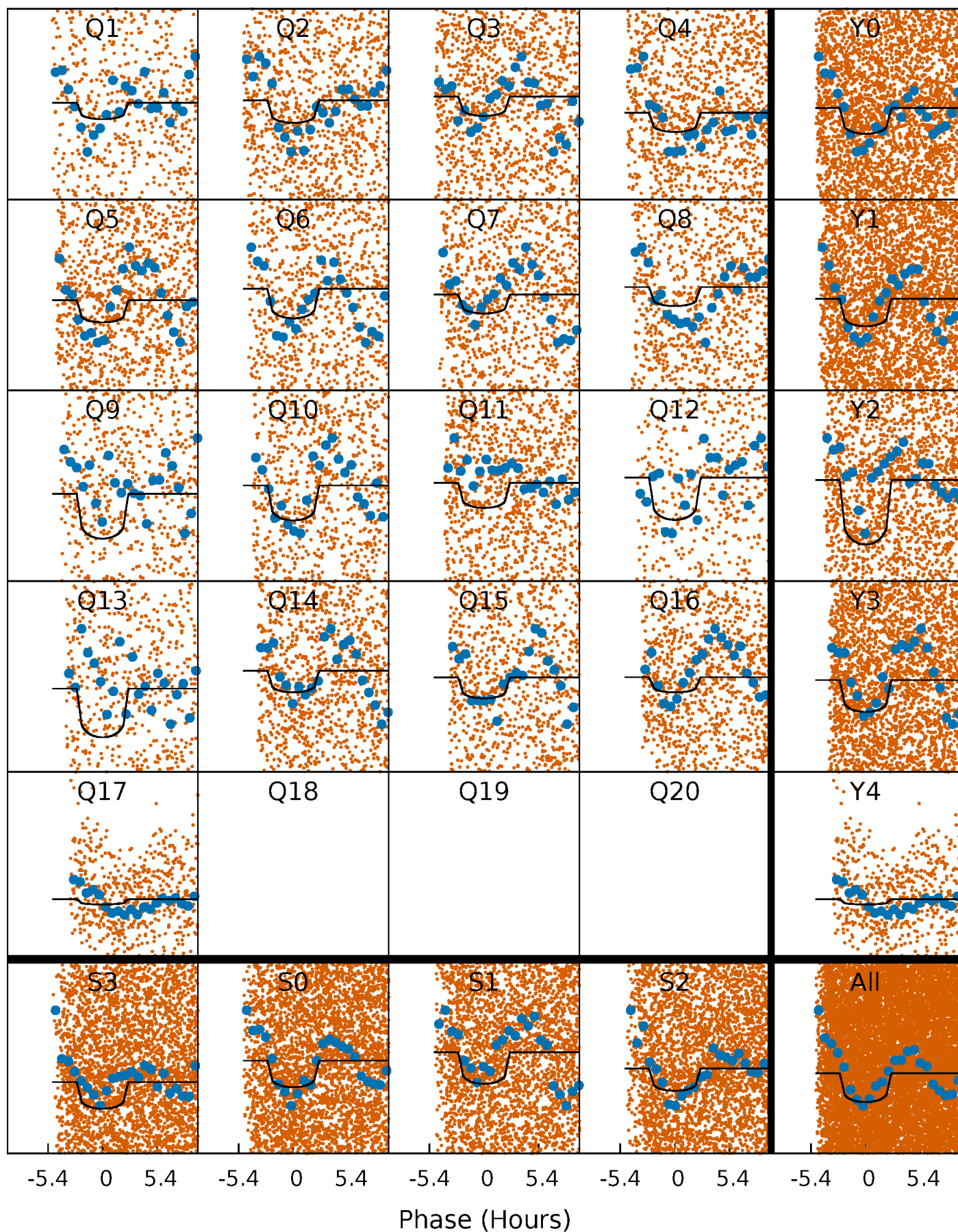
TCE 011140501-02   P= 1.065052 Days    $T_0=132.287991$  (BKJD)





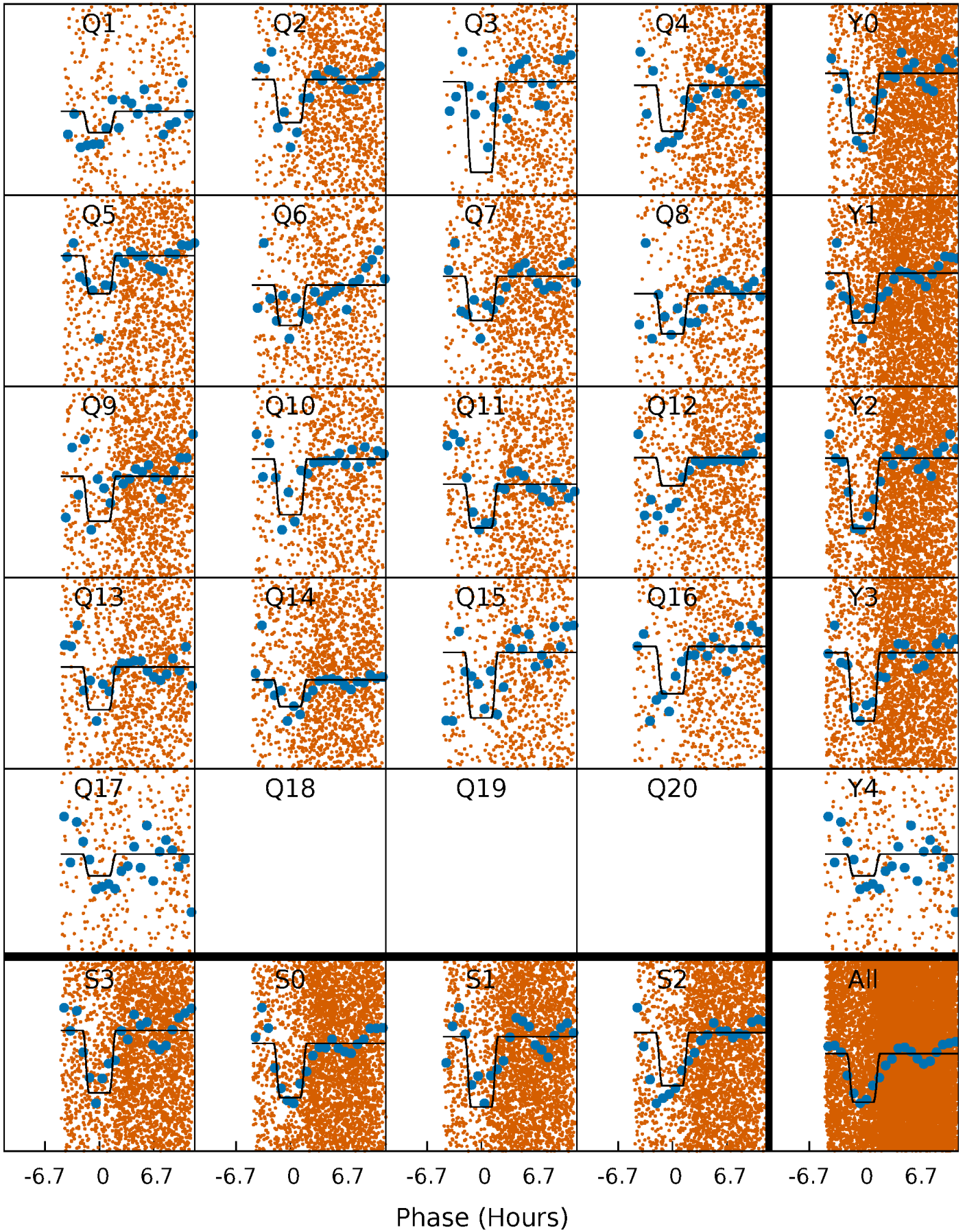
# DV Quarter-Phased Transit Curves

TCE 011140501-02   P= 1.065052 Days    $T_0=132.287991$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

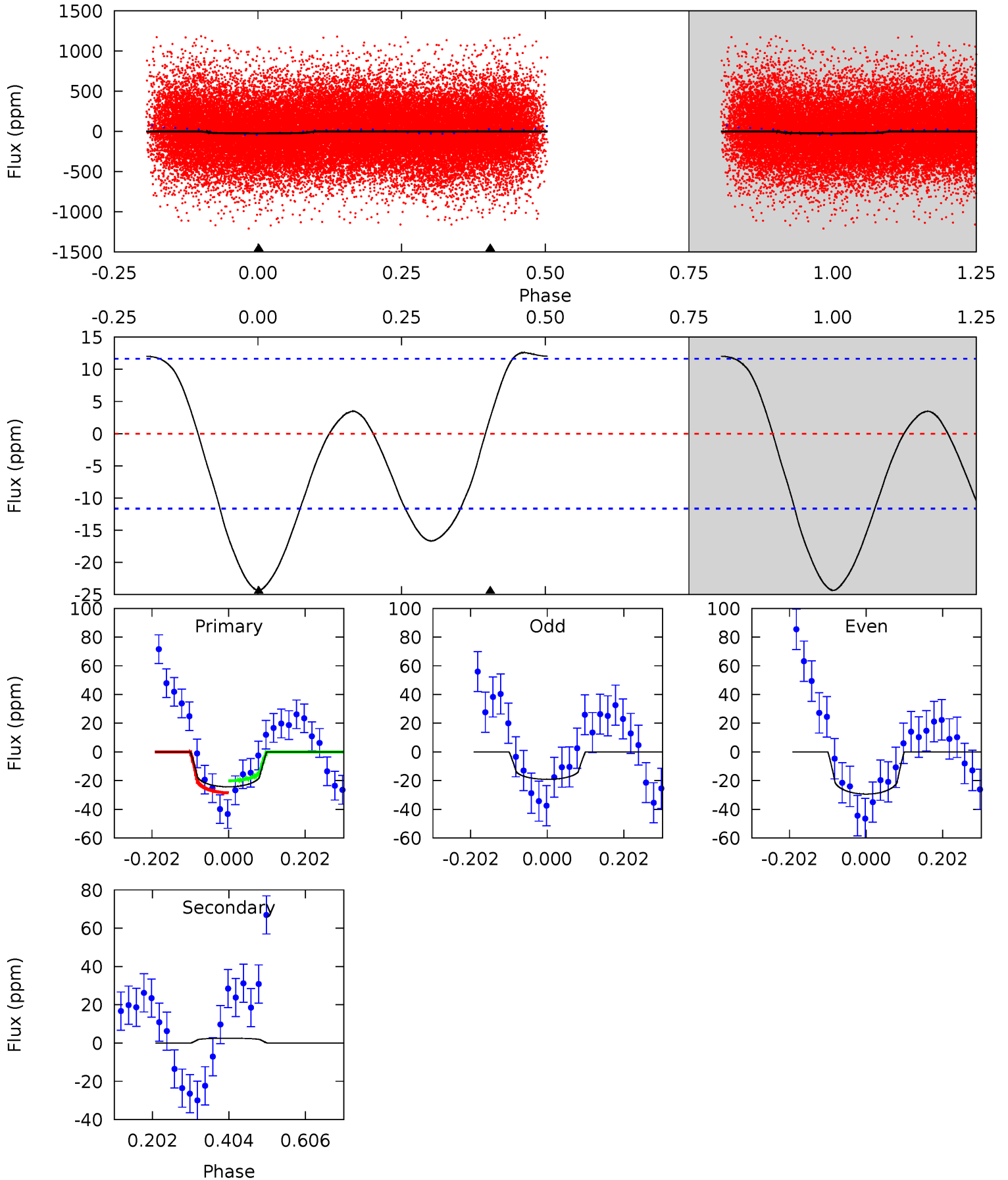
TCE 011140501-02     $P = 1.065124$  Days     $T_0 = 132.257163$  (BKJD)



# DV Model-Shift Uniqueness Test

011140501-02, P = 1.065052 Days, E = 131.222939 Days

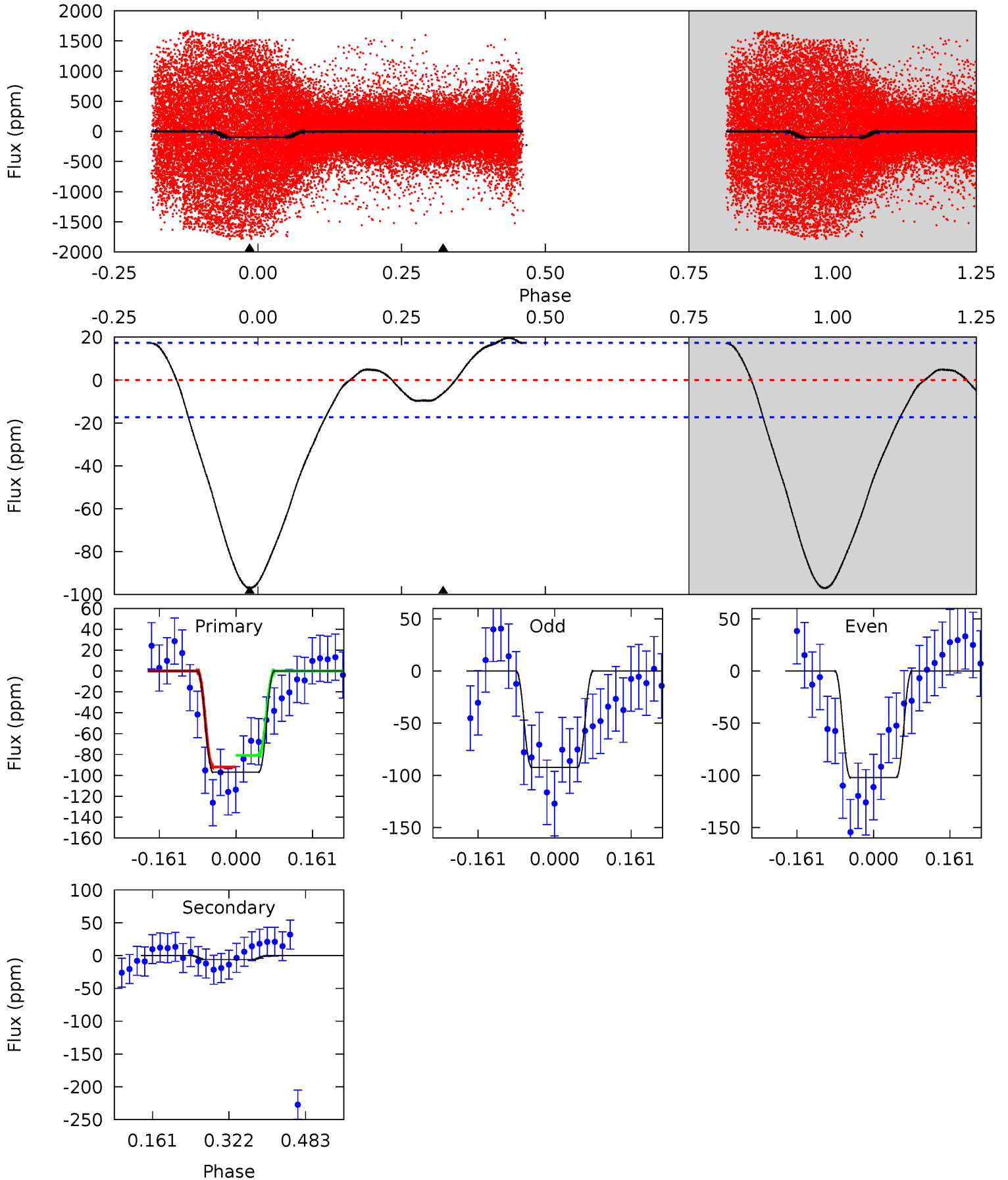
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.23	-0.95	0	0	4.41	1.28	1.64	9.23	9.23	-0.95	-0.95	1.95	1.12	0.34	1.51



# Alt Model-Shift Uniqueness Test

011140501-02, P = 1.065124 Days, E = 131.192039 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	1.58	0	0	4.46	1.40	1.96	25.0	25.0	1.58	1.58	1.22	0.72	0.17	1.12





### Stellar Parameters For KIC 011140501

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7573^{+237}_{-316}$	$4.030^{+0.222}_{-0.148}$	$-0.240^{+0.250}_{-0.300}$	$2.014^{+0.541}_{-0.541}$	$1.584^{+0.187}_{-0.280}$	$0.273^{+0.316}_{-0.129}$
	+3%/-4%	+6%/-4%	+104%/-125%	+27%/-27%	+12%/-18%	+116%/-47%
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 011140501-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$3 \pm 3$	$1.23^{+0.41}_{-0.35}$	$4234^{+326}_{-335}$	$-4530^{+756}_{-762}$	$-0.456^{+0.464}_{-0.886}$
Alt.	$-6 \pm 4$	$2.09^{+0.47}_{-0.48}$	$4249^{+308}_{-340}$	$3374^{+783}_{-6843}$	$0.447^{+0.427}_{-0.312}$

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



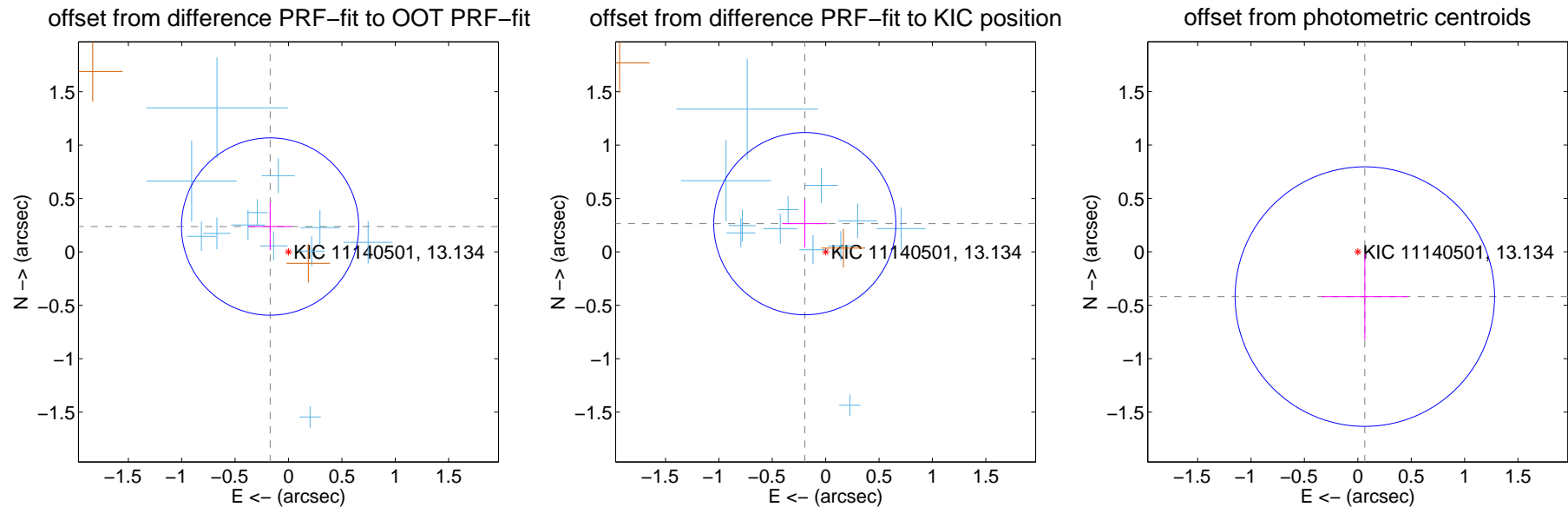
## DV Centroid Data

Supplemental centroid analysis for 011140501-02. Kepler magnitude: 13.13. Transit SNR 8.71

There are 12 quarters with good PRF difference image offsets

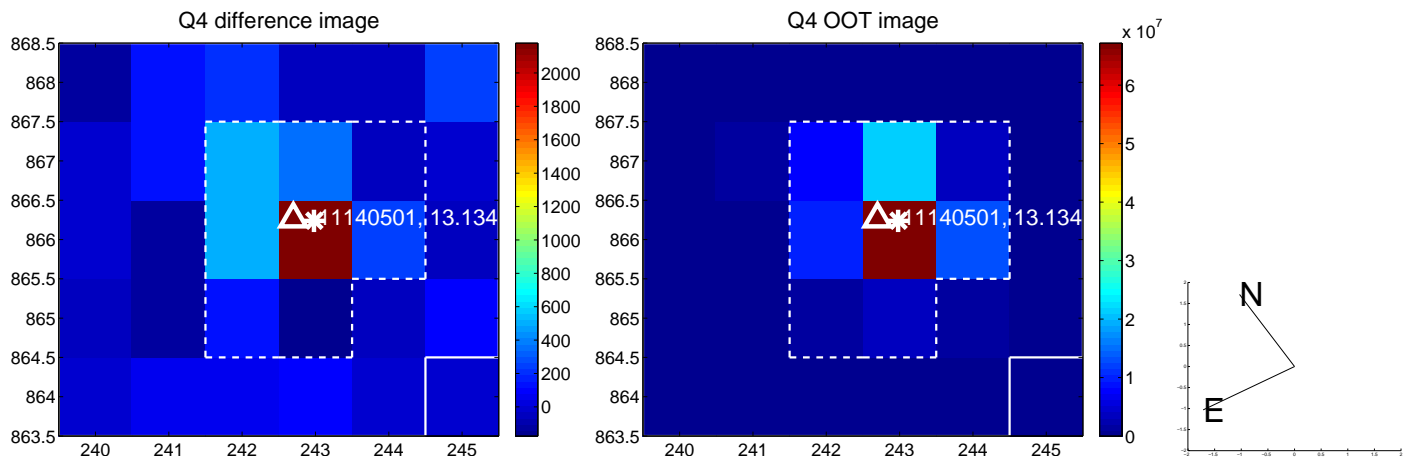
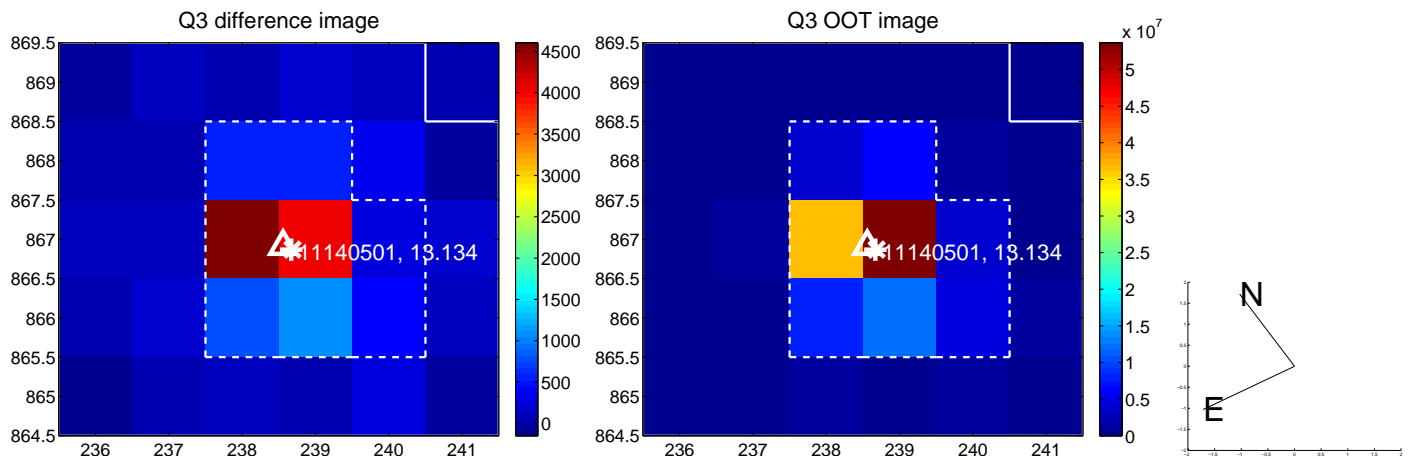
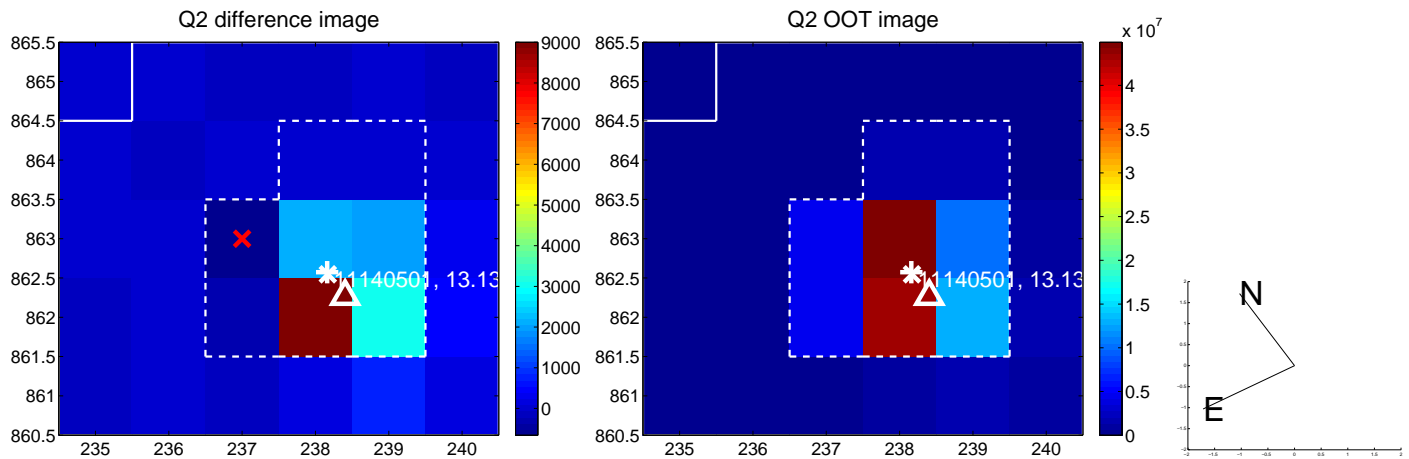
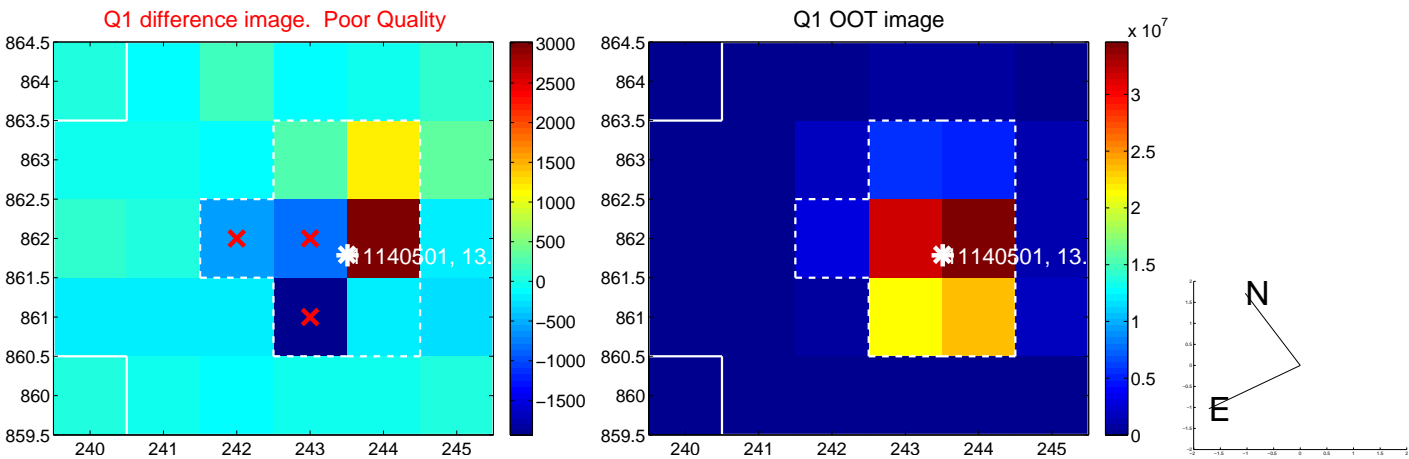
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.293 \pm 0.277$	1.06	$0.172 \pm 0.205$	$0.238 \pm 0.222$
PRF-fit source offset from KIC position	$0.329 \pm 0.284$	1.16	$0.195 \pm 0.213$	$0.265 \pm 0.223$
photometric centroid source offset	$0.42 \pm 0.41$	1.05	$-0.07 \pm 0.40$	$-0.42 \pm 0.41$

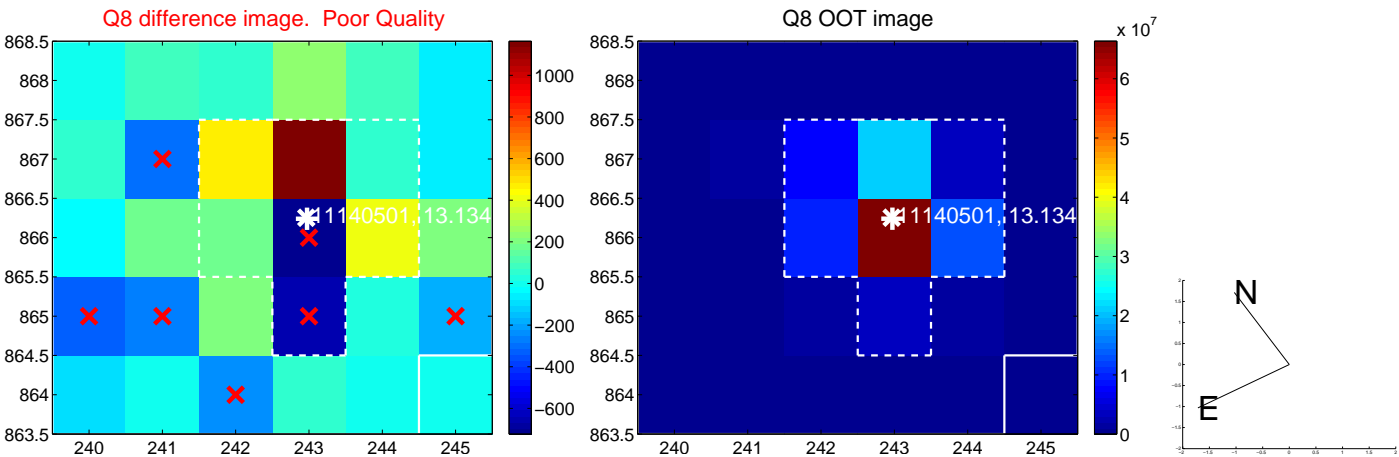
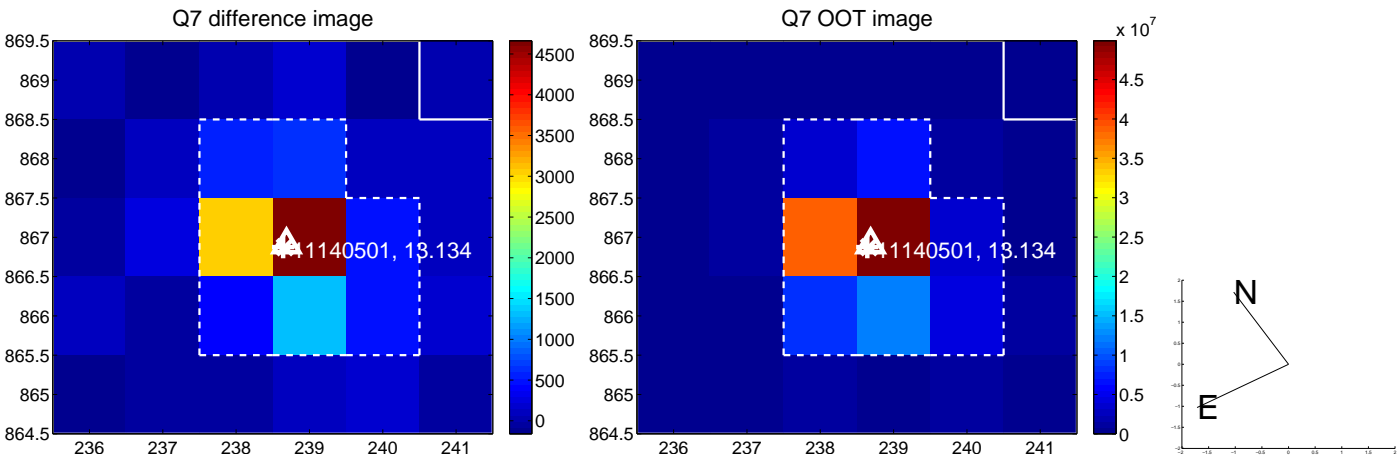
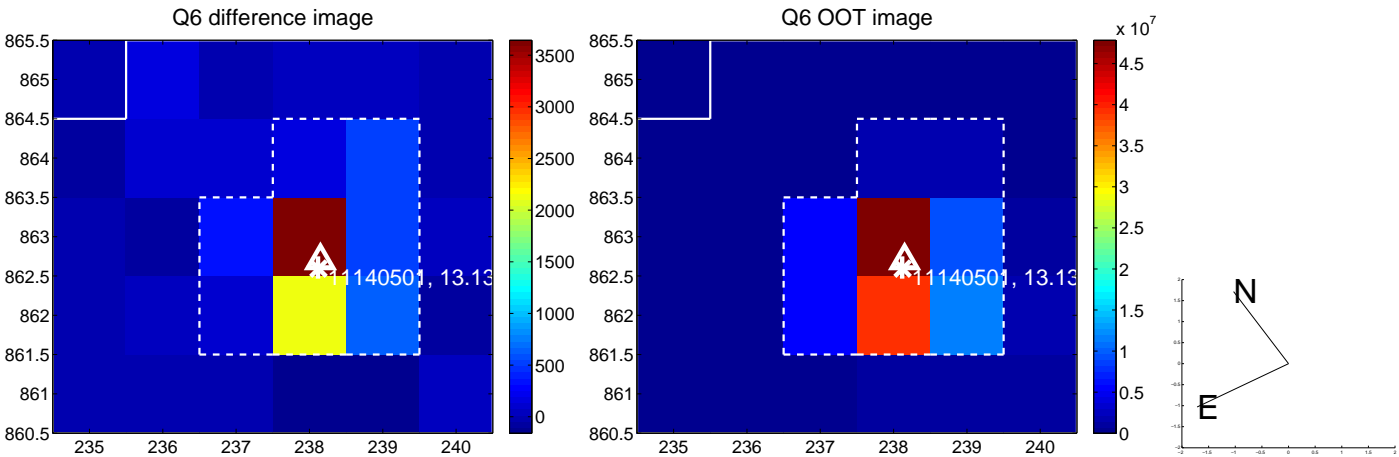
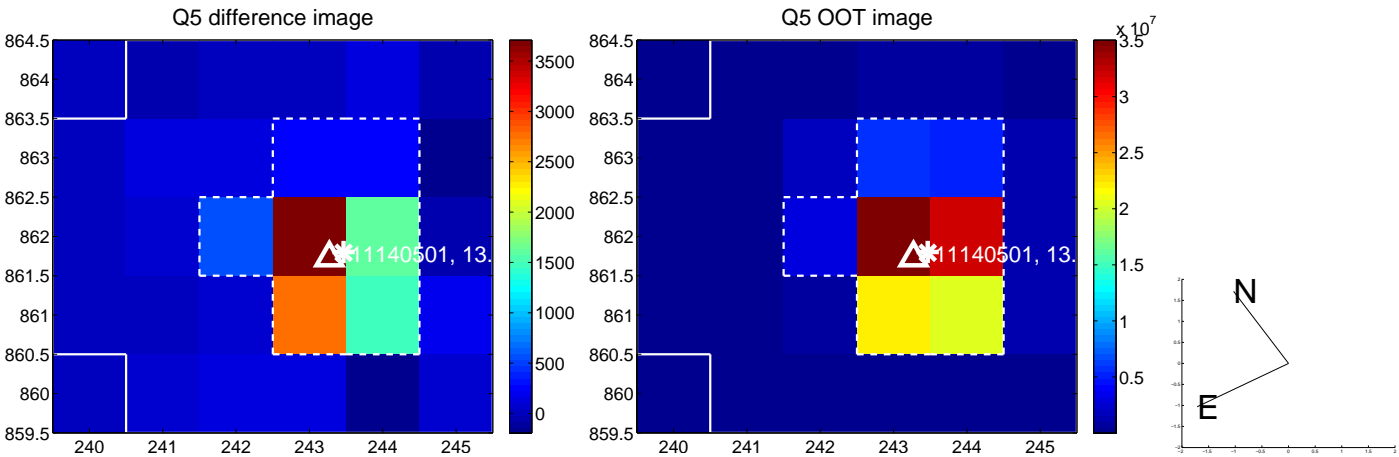


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

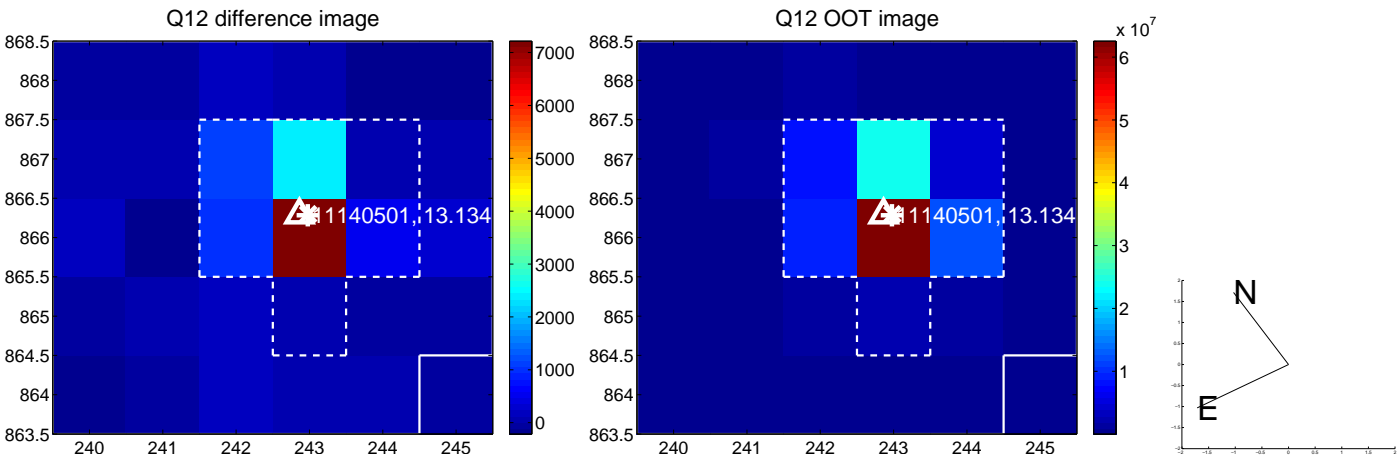
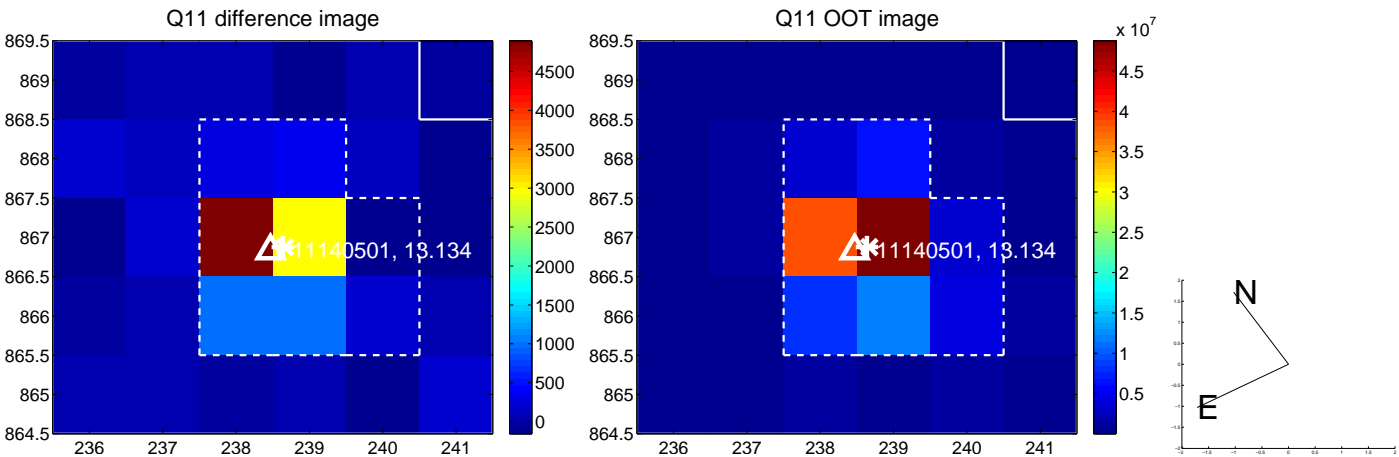
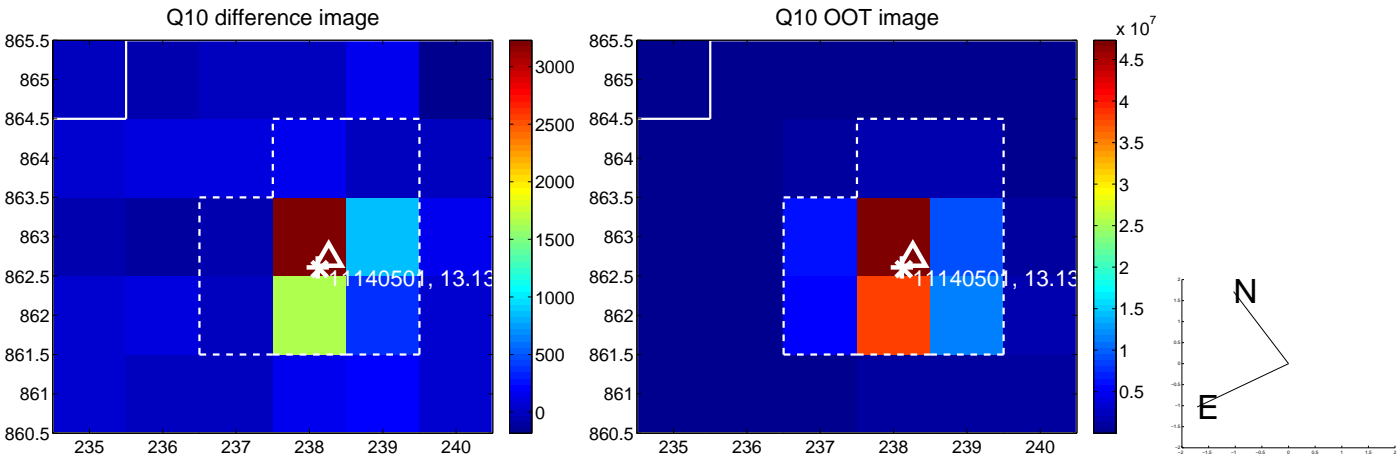
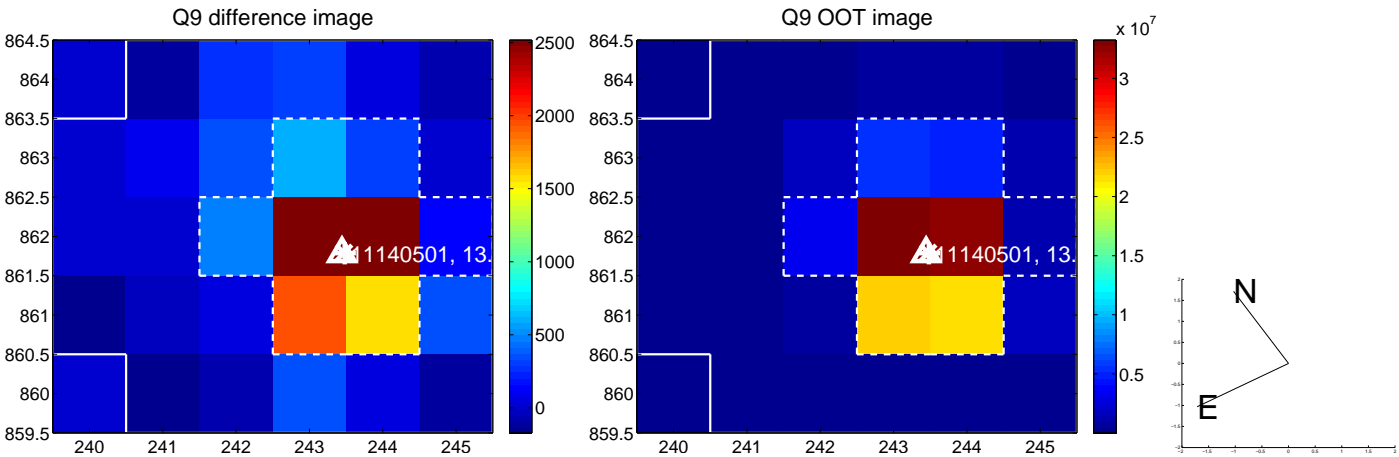
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



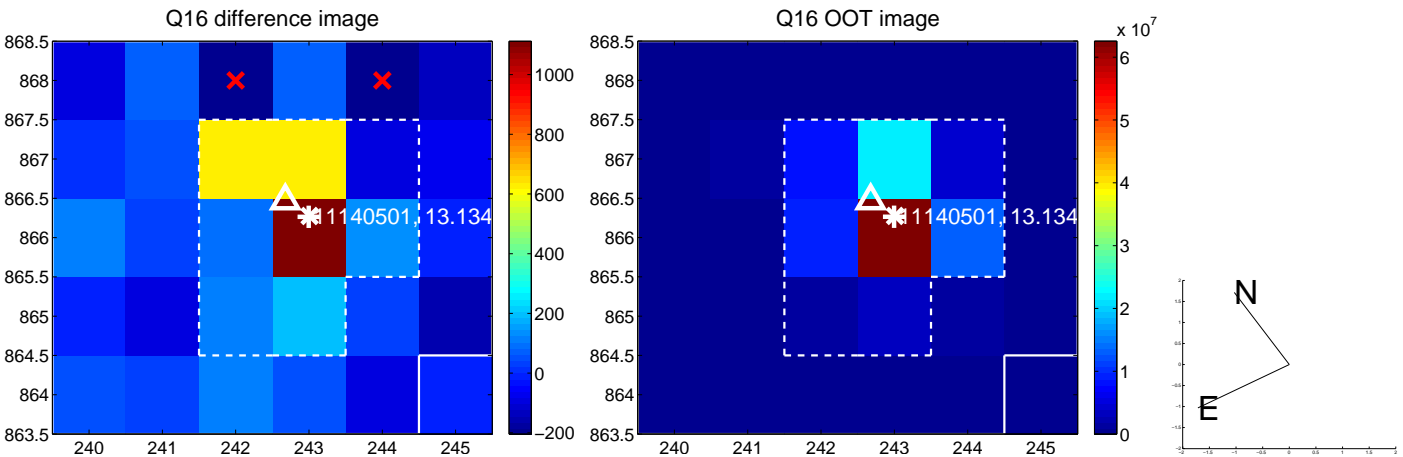
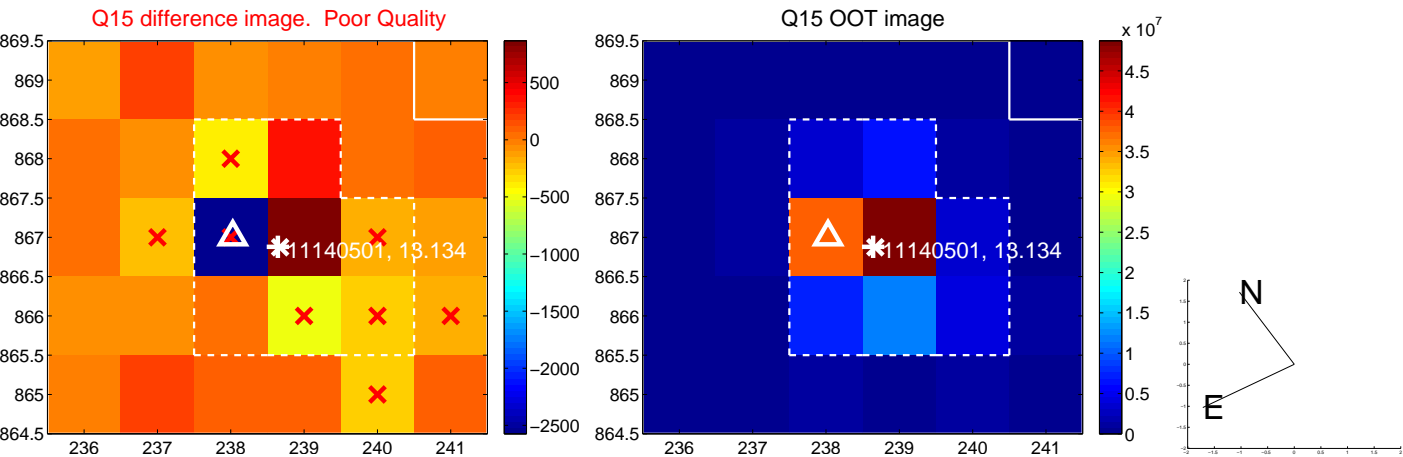
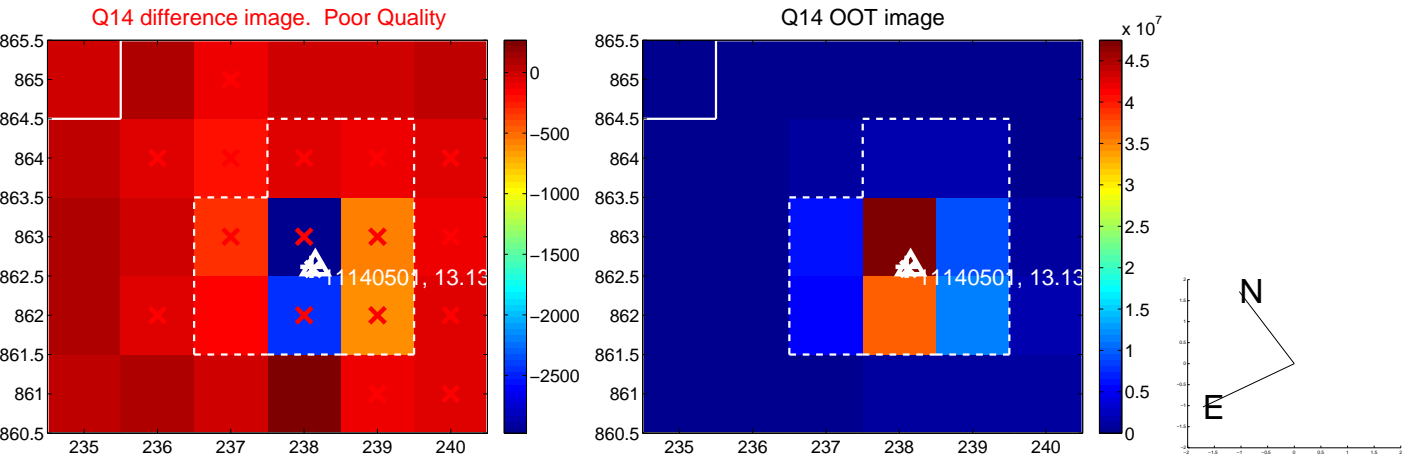
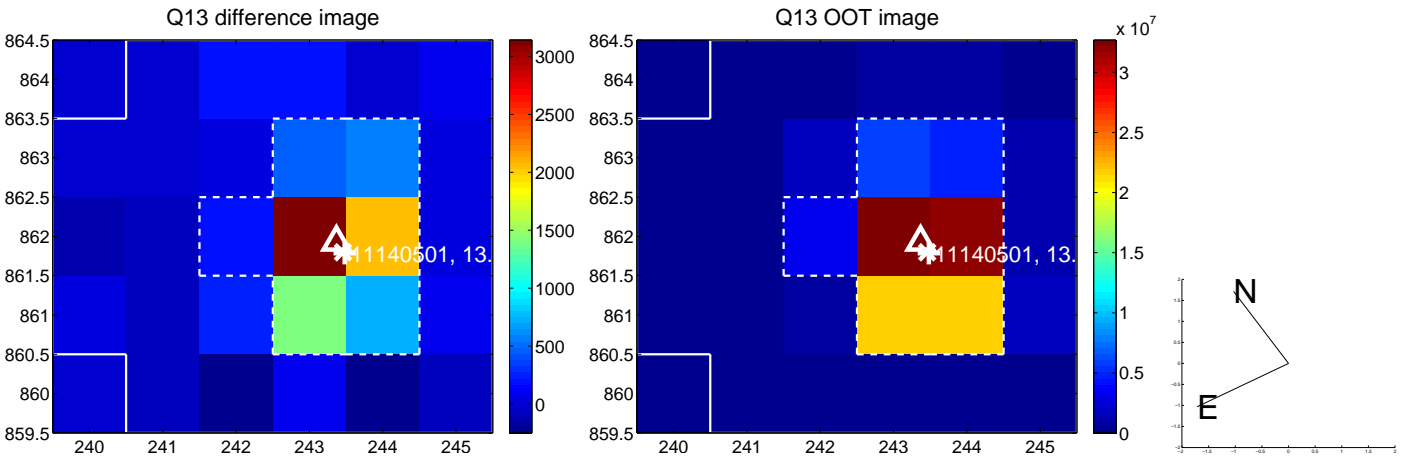
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

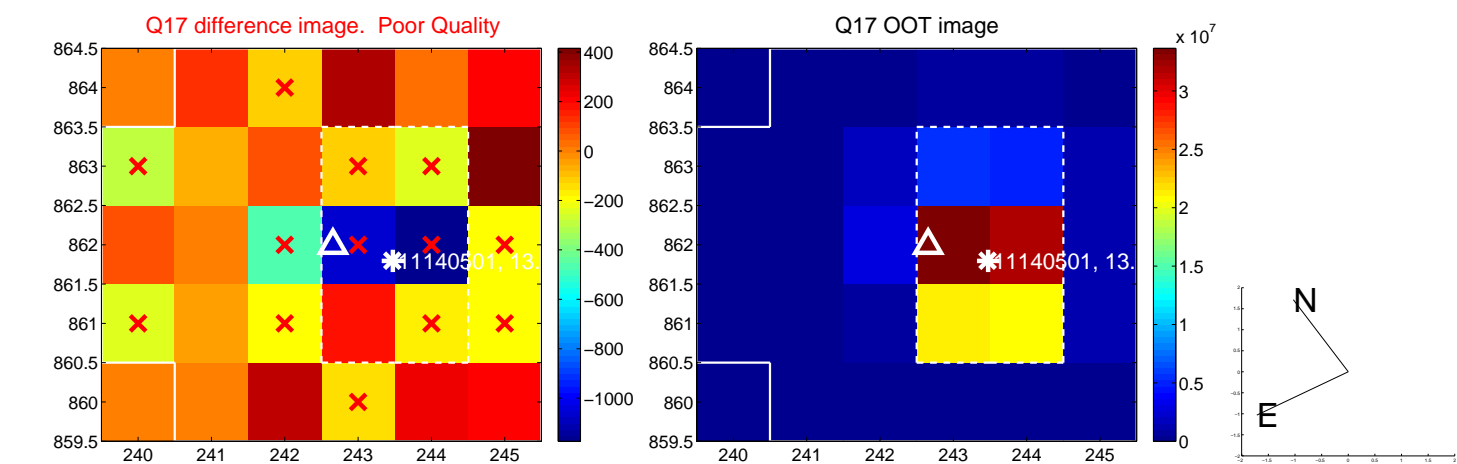


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

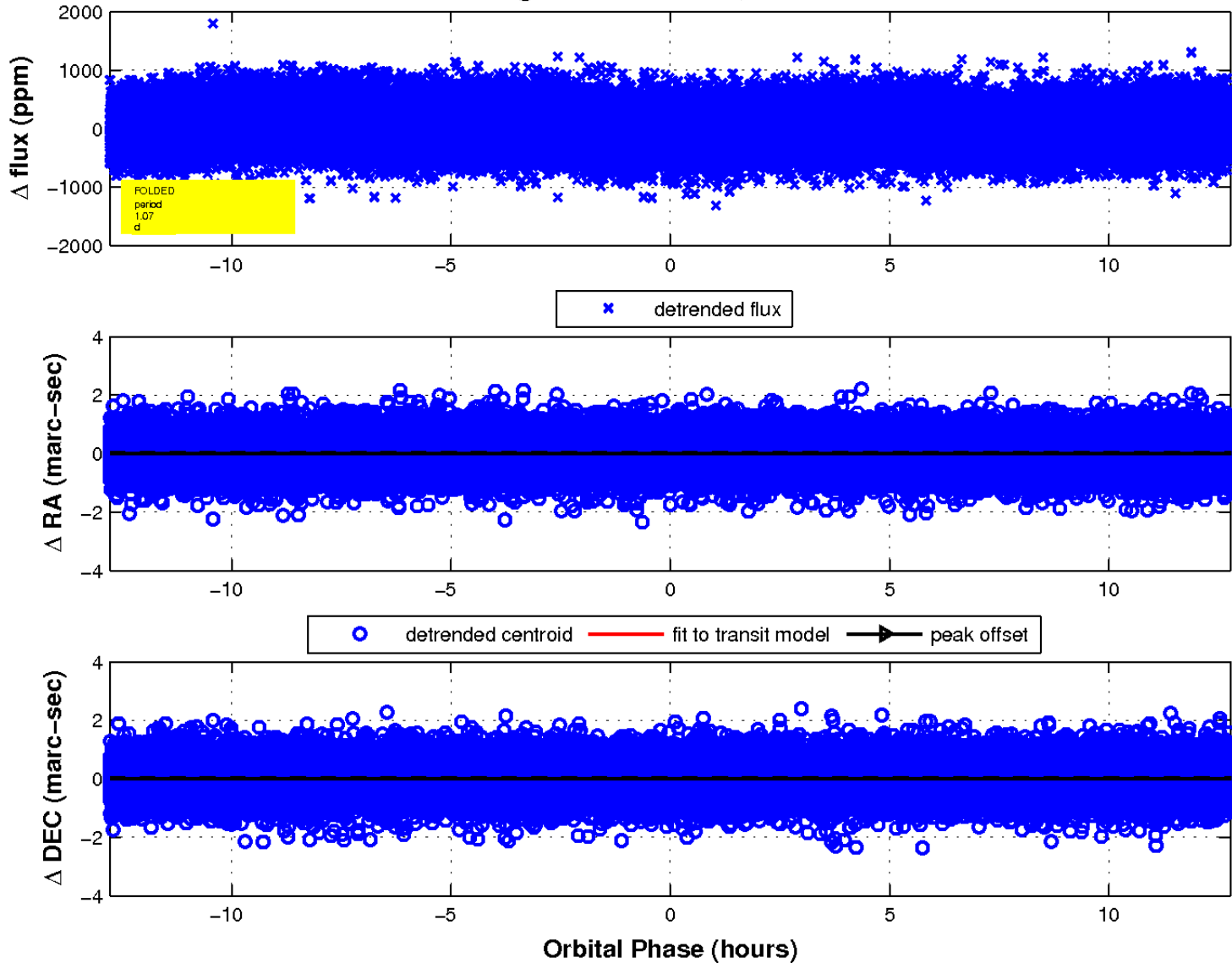




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

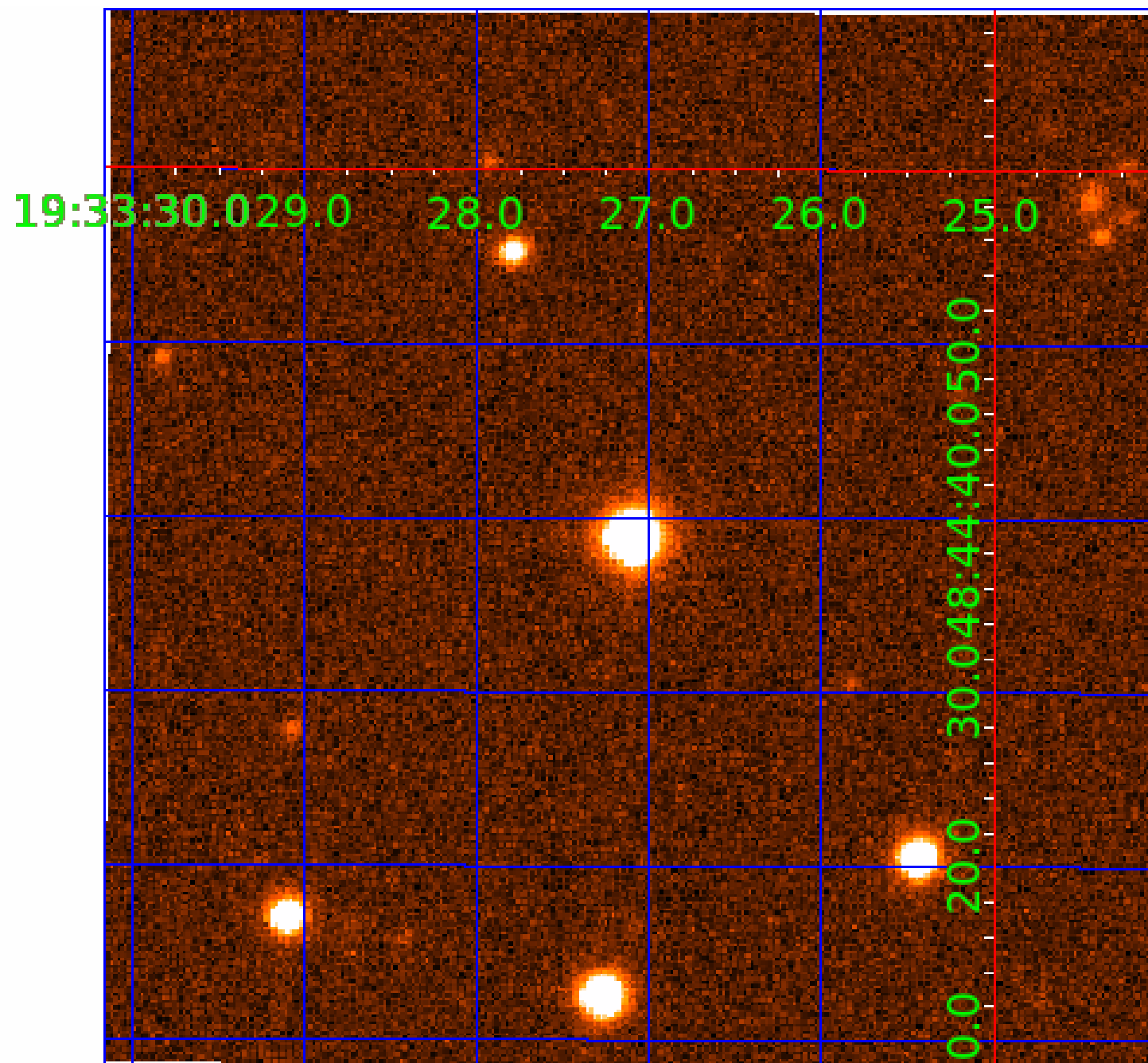


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



# KIC 011140501

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011140501-01	OBS	No	1.065108	131.882027	158.1	3.000	9.1	-1.0	2.01	7573	2.56	21093.45
011140501-02	OBS	No	1.065052	132.287991	36.1	4.719	9.3	8.7	2.01	7573	1.28	21094.93
011140501-03	OBS	No	465.426241	215.710475	774.2	6.344	8.9	8.4	2.01	7573	10.58	6.36
011140501-04	OBS	No	46.990956	148.789416	350.4	4.393	8.8	6.2	2.01	7573	4.37	135.31
011140501-05	OBS	No	82.134814	162.278263	579.5	6.339	7.5	8.2	2.01	7573	6.19	64.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011140501-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
011140501-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
011140501-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

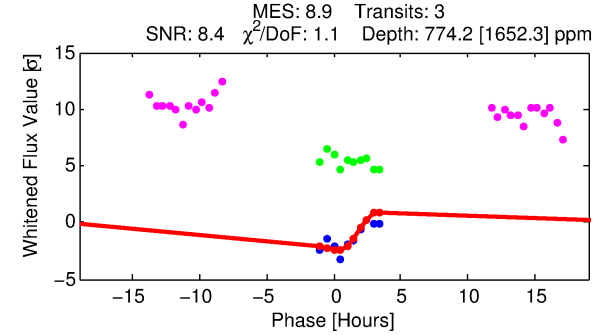
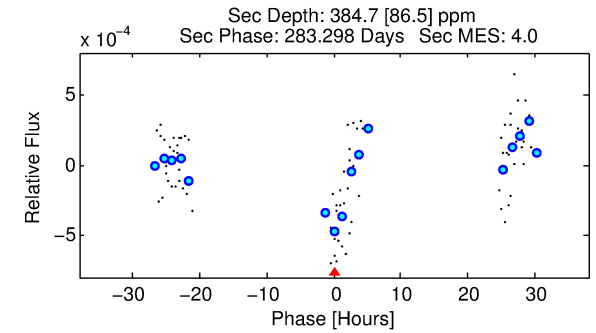
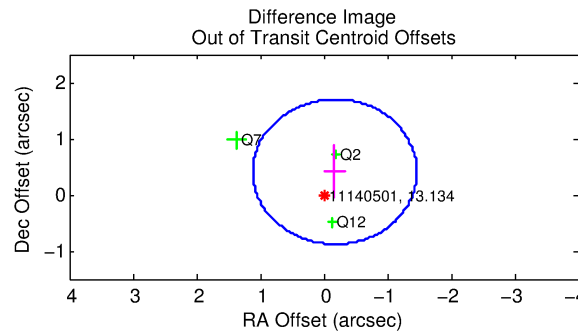
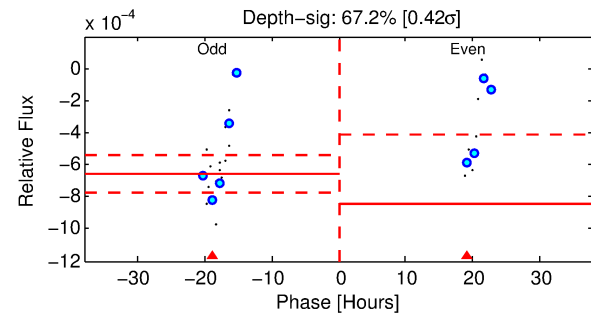
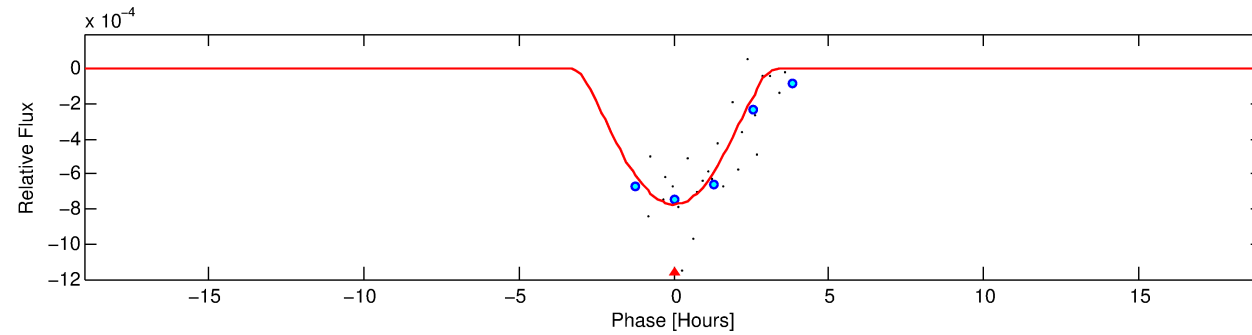
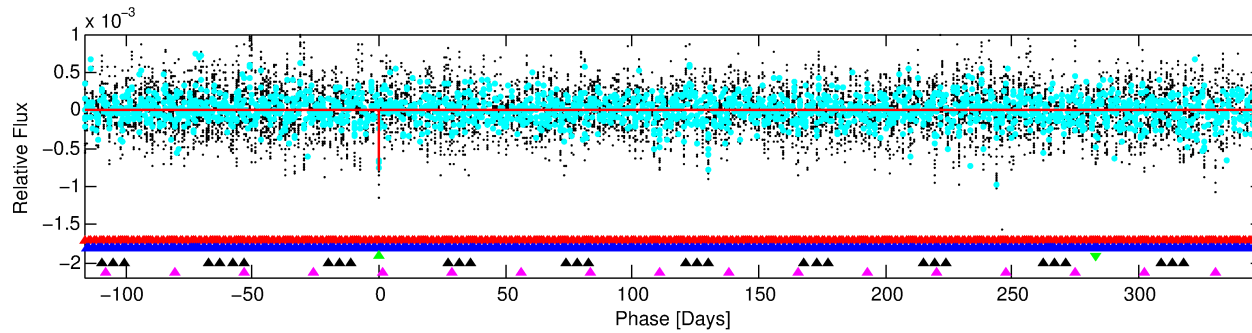
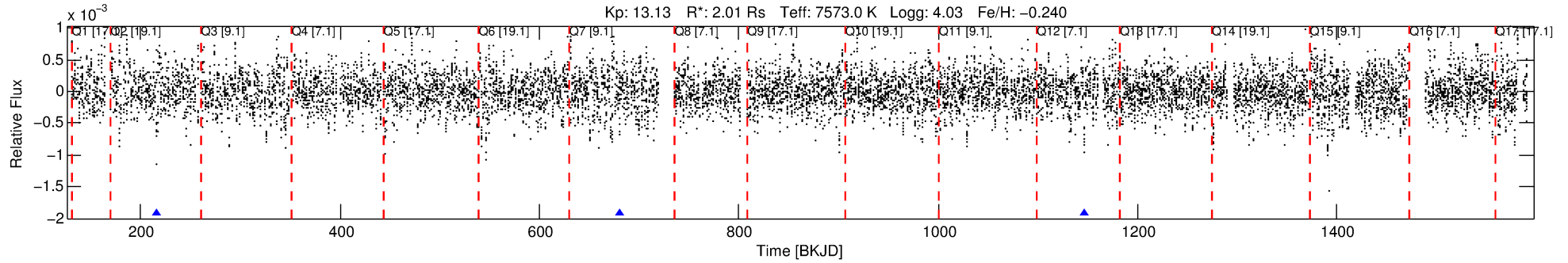
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011140501-03

No Significant Match Found

# DV One-Page Summary

KIC: 11140501 Candidate: 3 of 5 Period: 465.426 d



## DV Fit Results:

Period = 465.42624 [0.01179] d  
Epoch = 215.7105 [0.0246] BKJD  
Rp/R\* = 0.0481 [0.1483]  
a/R\* = 175.98 [133.82]  
b = 1.00 [0.14]  
Seff = 6.36 [2.67]  
Teq = 405 [42] K  
Rp = 10.58 [32.72] Re  
a = 1.3708 [0.3388] AU  
Ag = 3553.34 [21955.20] [0.16σ]  
Teffp = 4834 [7455] K [0.59σ]

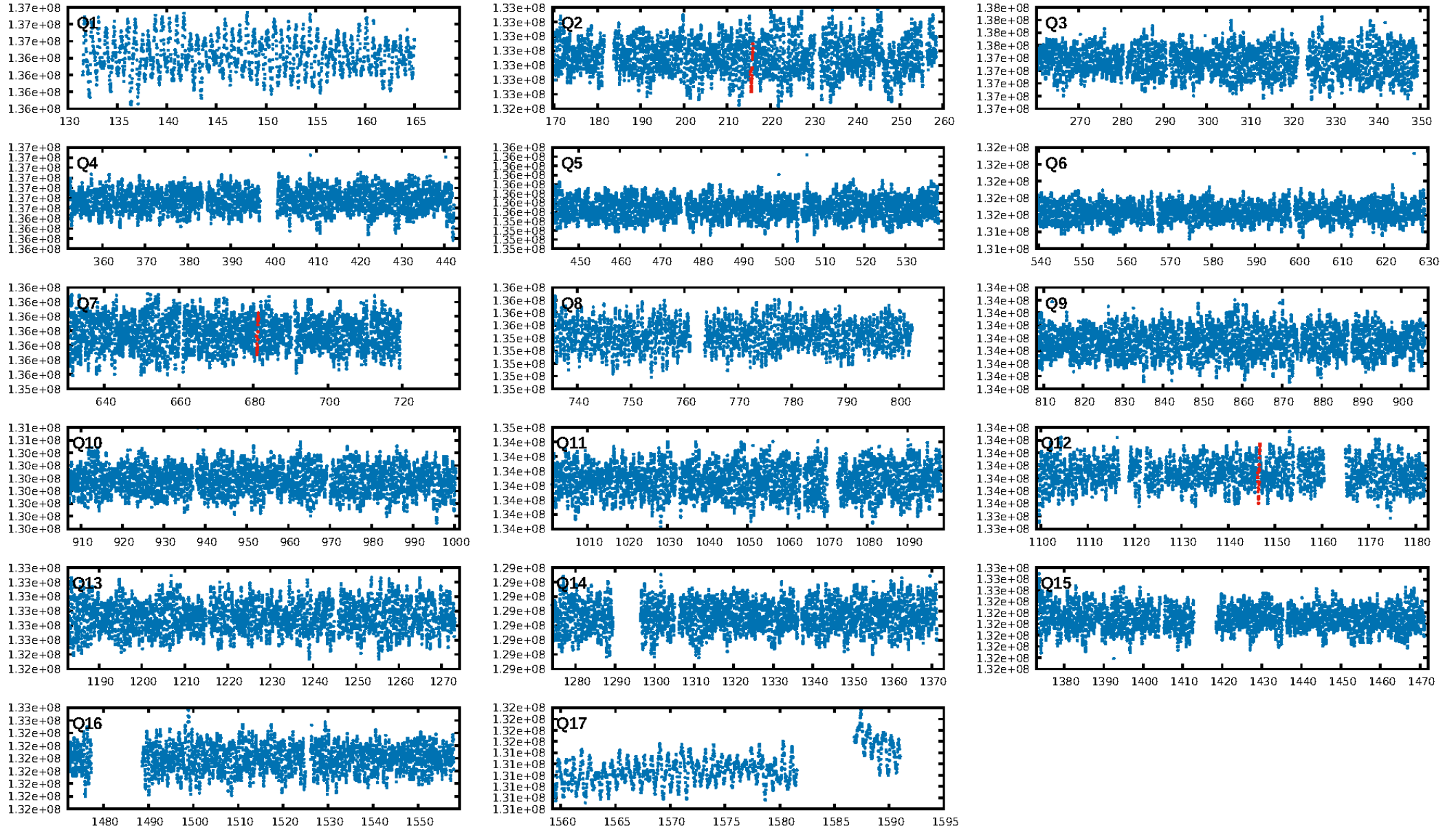
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1025.75σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 83.9%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.92e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.881  
Centroid-sig: 45.2%  
Centroid-so: 0.300 arcsec [0.62σ]  
OotOffset-rm: 0.443 arcsec [1.03σ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-rm: 0.474 arcsec [0.93σ]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 0.00 [0/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:03:14 Z

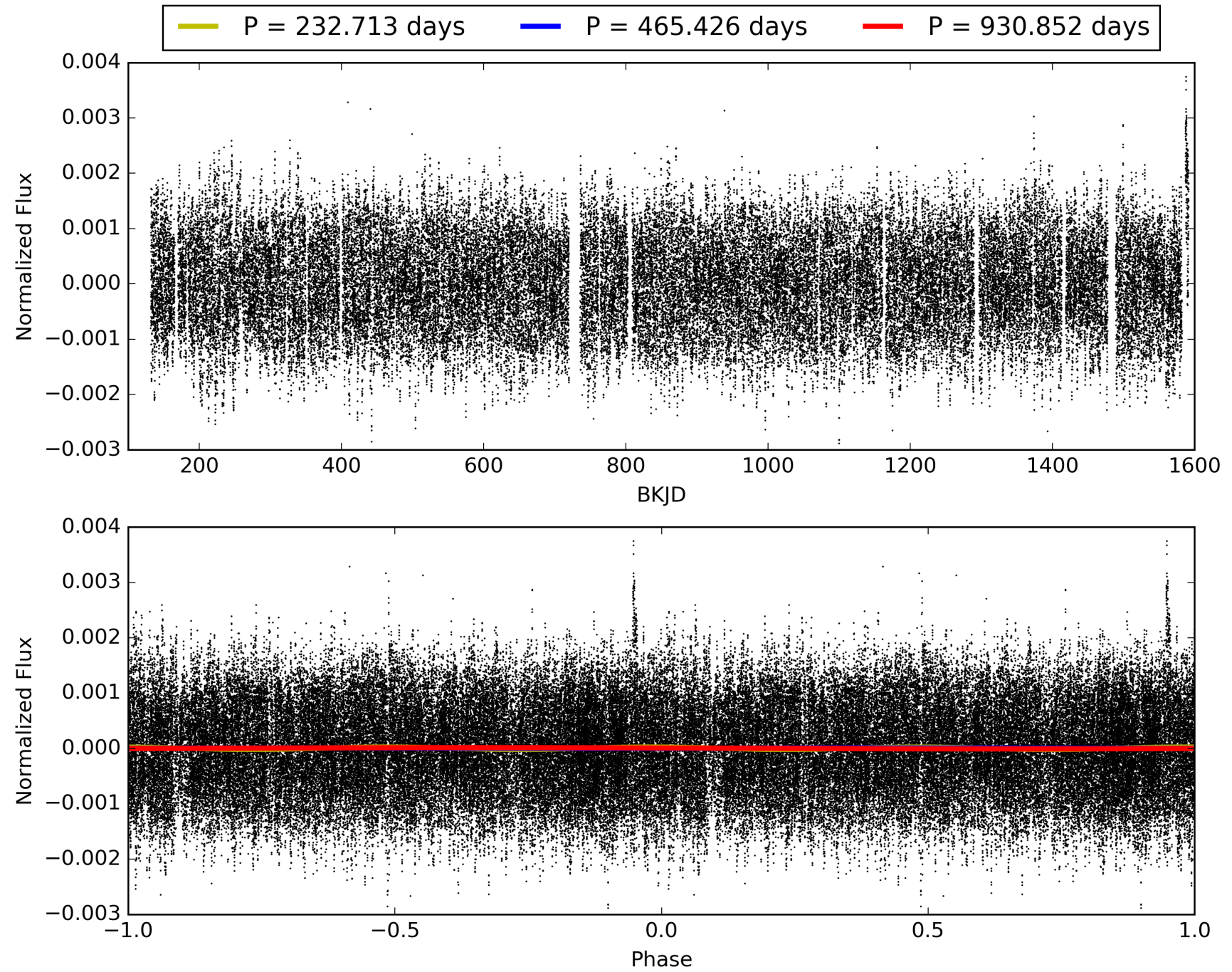
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011140501-03, PDC Light Curves



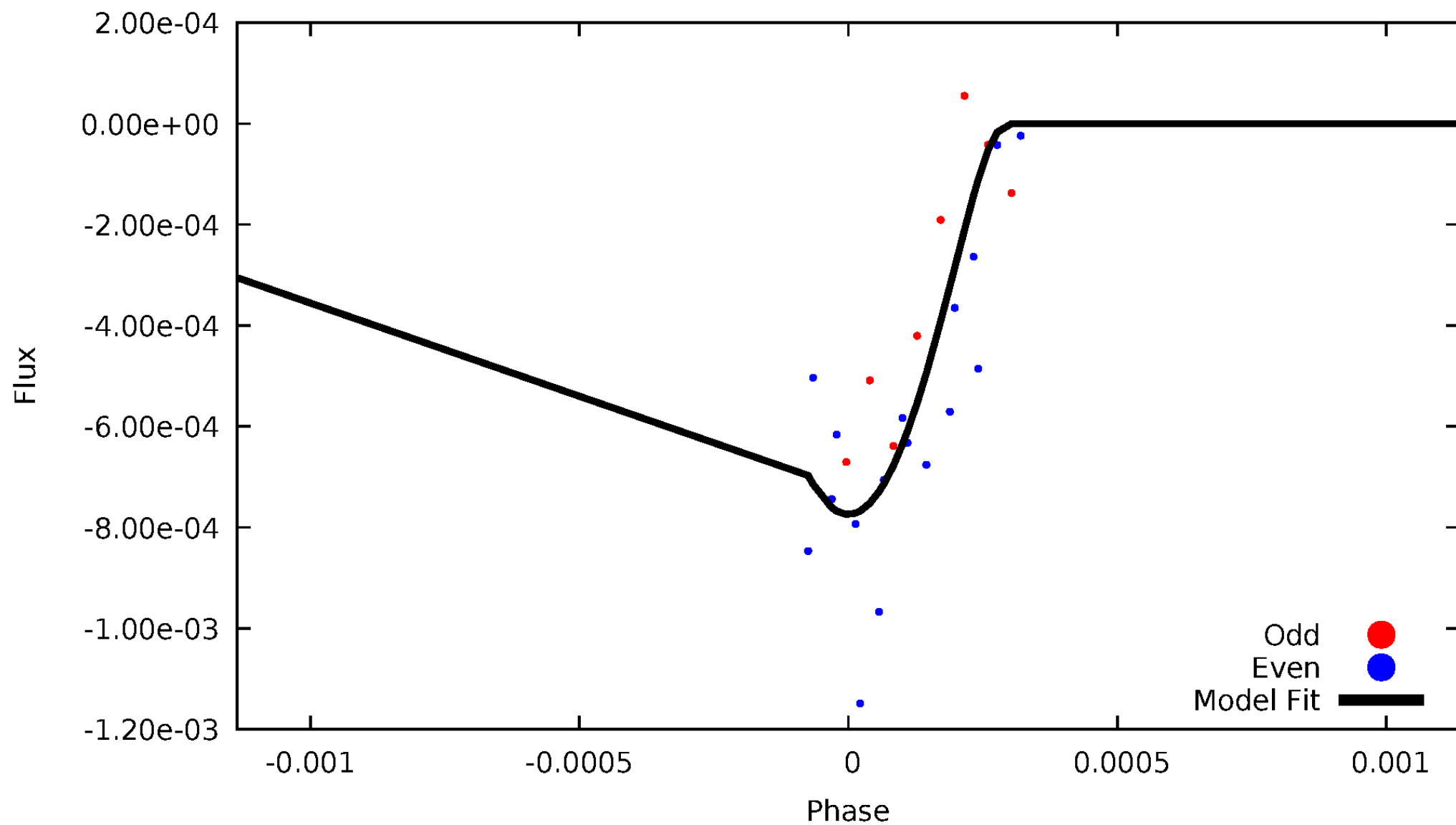


# TCE 011140501-03



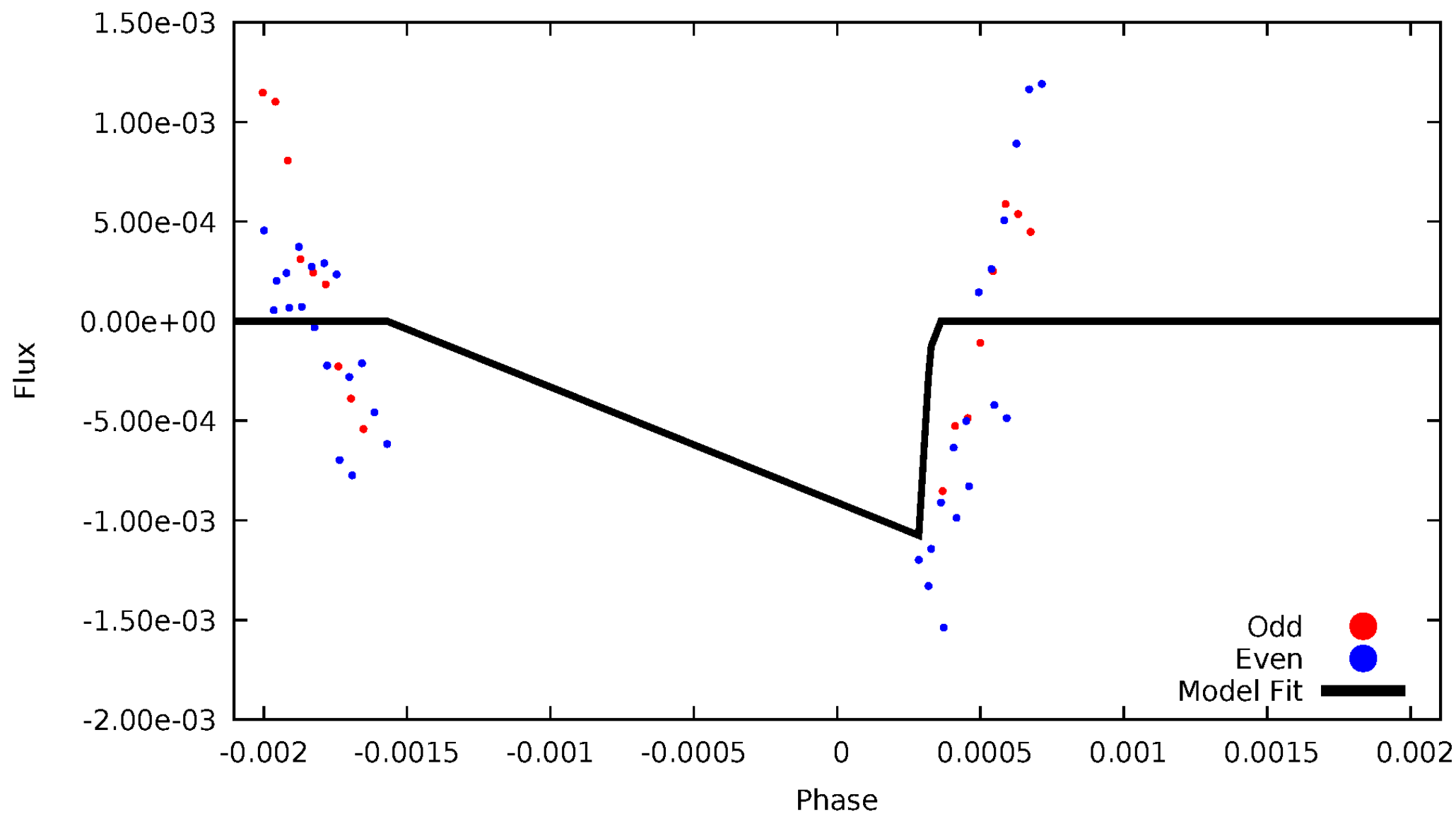
# DV Odd/Even

TCE 011140501-03



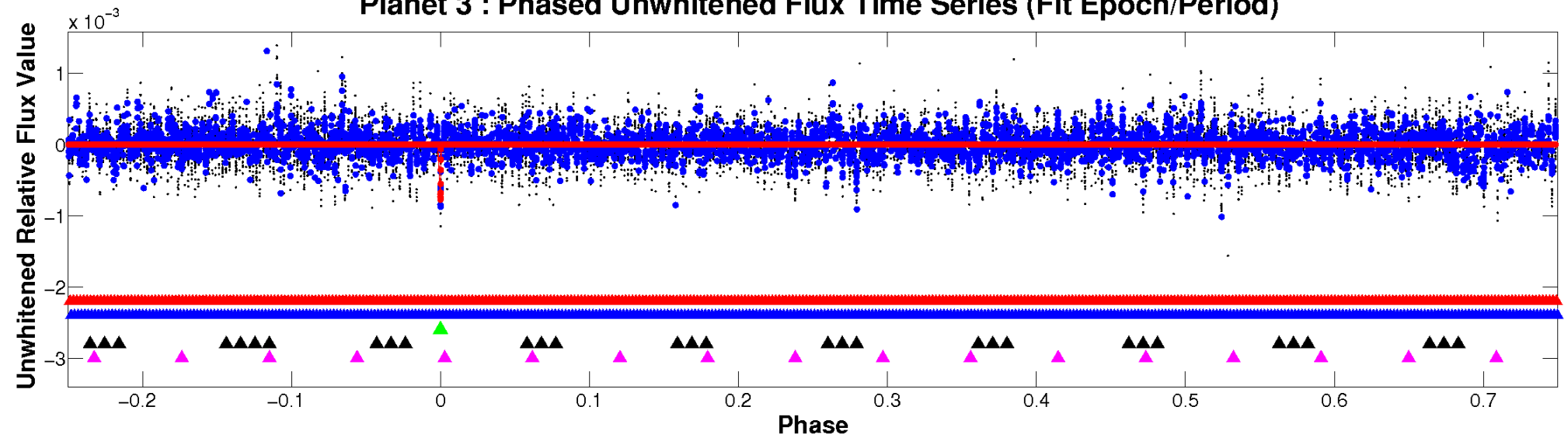
# ALT Odd/Even

TCE 011140501-03

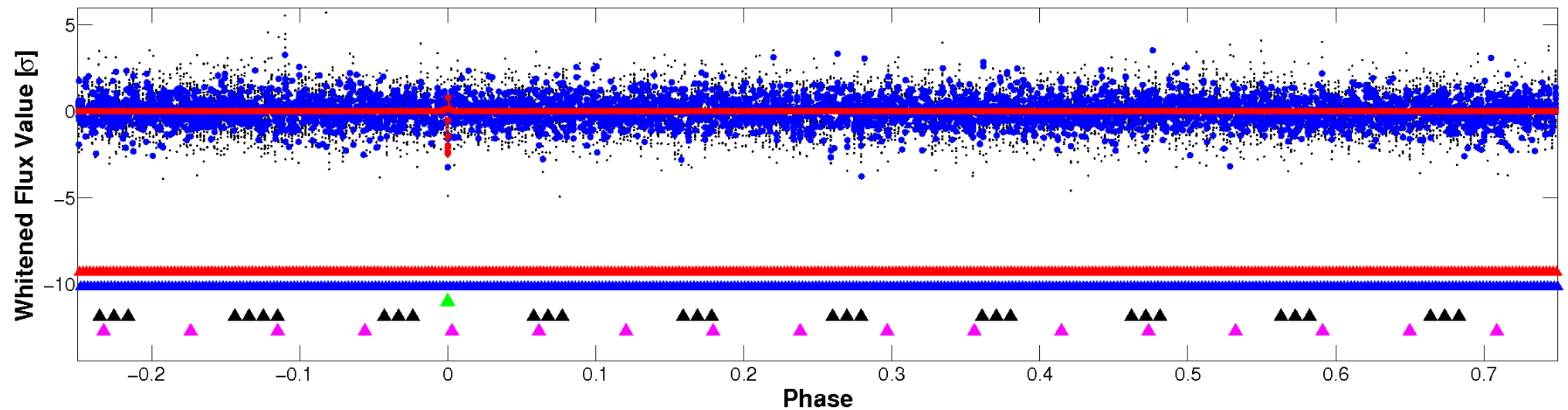


# Non-Whitened Vs. Whitened Light Curve

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

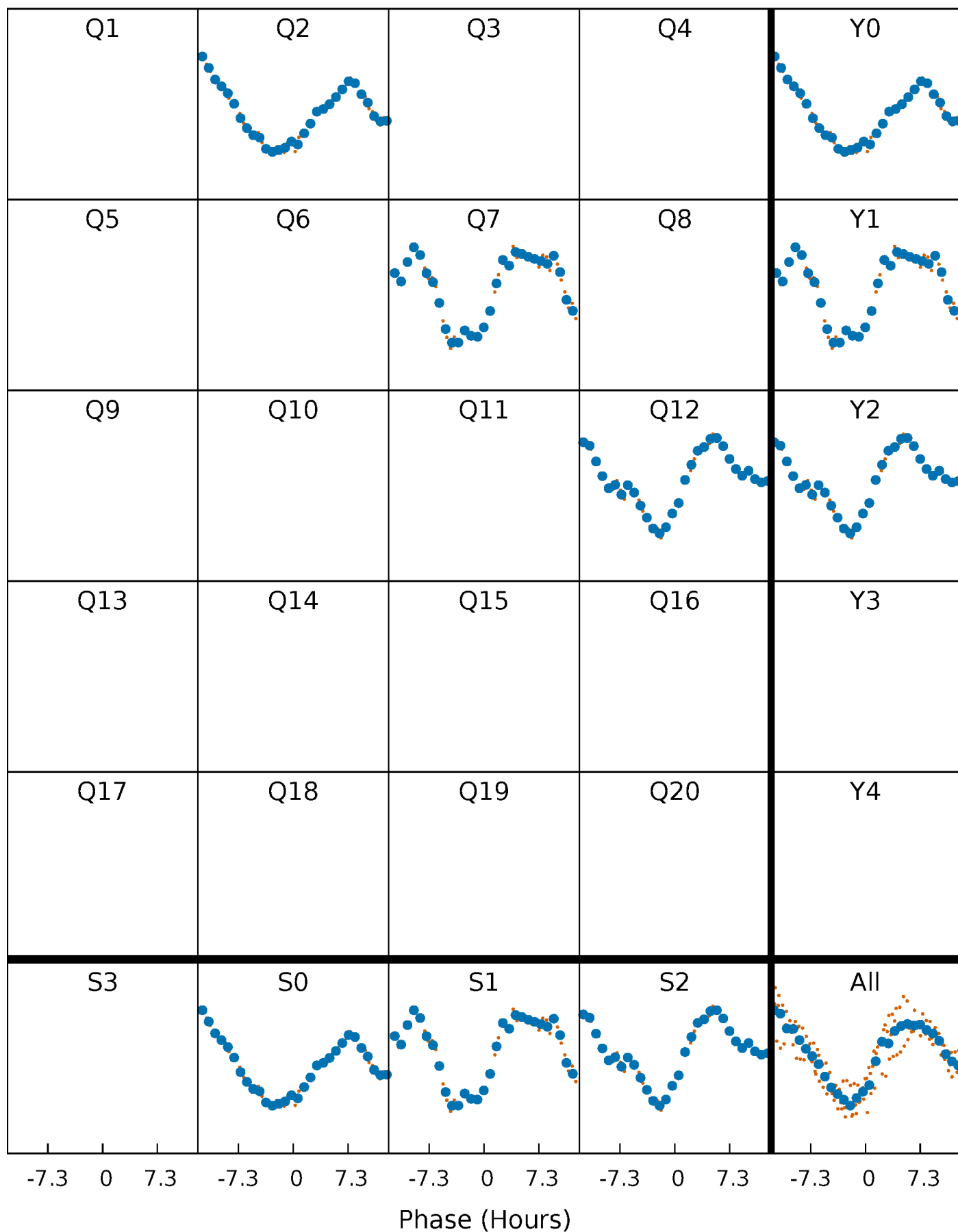


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

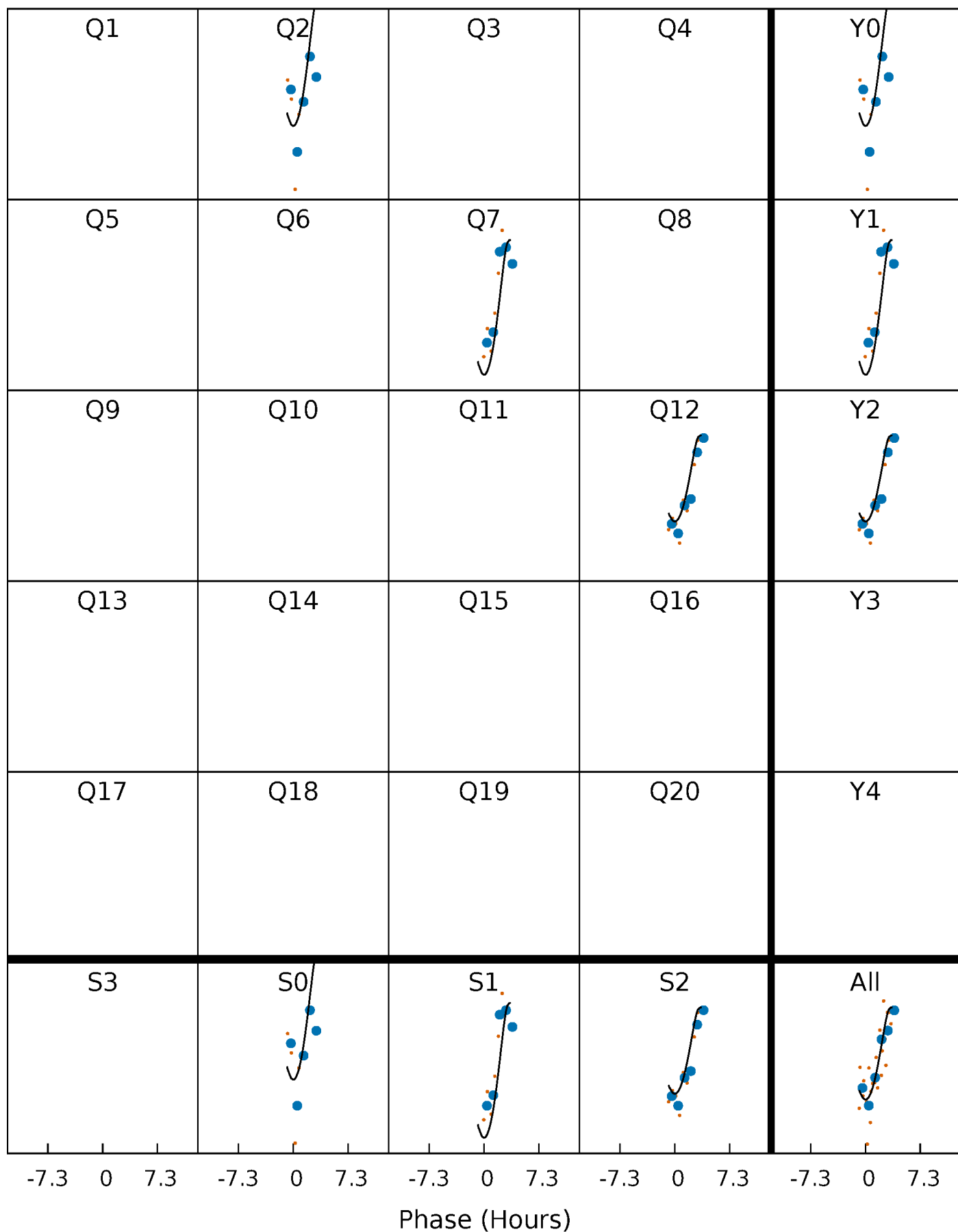
TCE 011140501-03     $P=465.426241$  Days     $T_0=215.710475$  (BKJD)





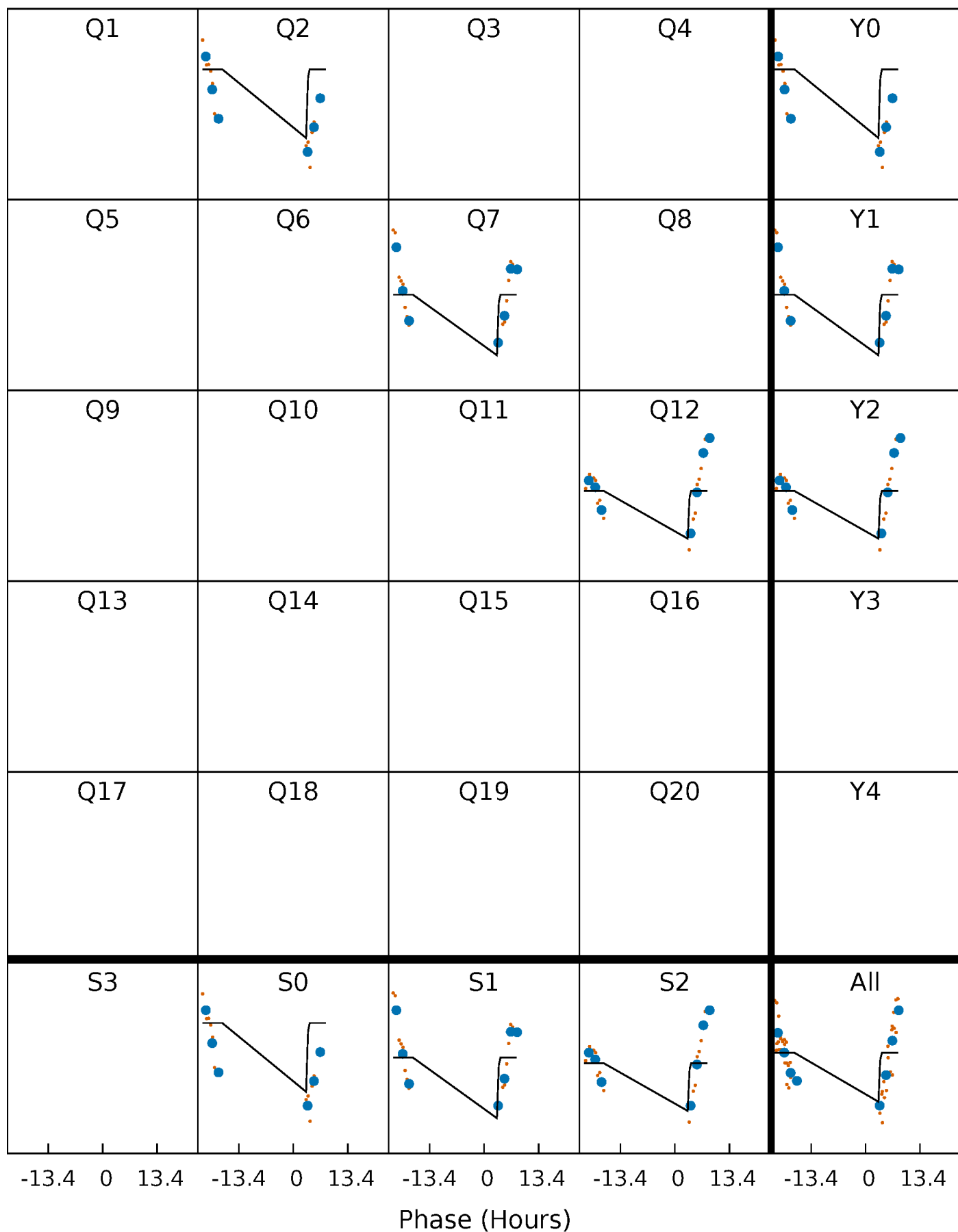
# DV Quarter-Phased Transit Curves

TCE 011140501-03 P=465.426241 Days  $T_0=215.710475$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

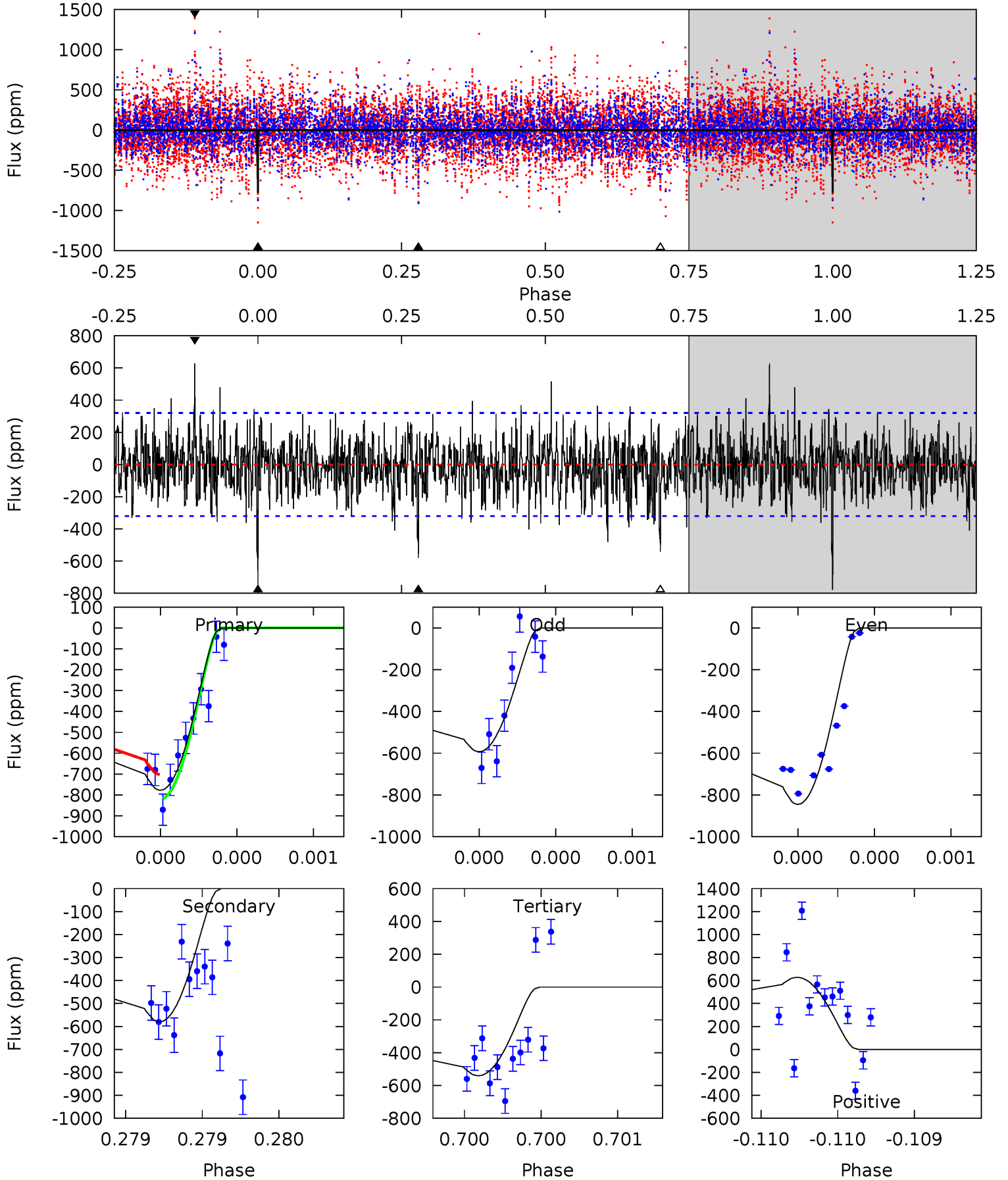
TCE 011140501-03 P=465.416283 Days  $T_0=215.547569$  (BKJD)



# DV Model-Shift Uniqueness Test

011140501-03, P = 465.426241 Days, E = 215.710475 Days

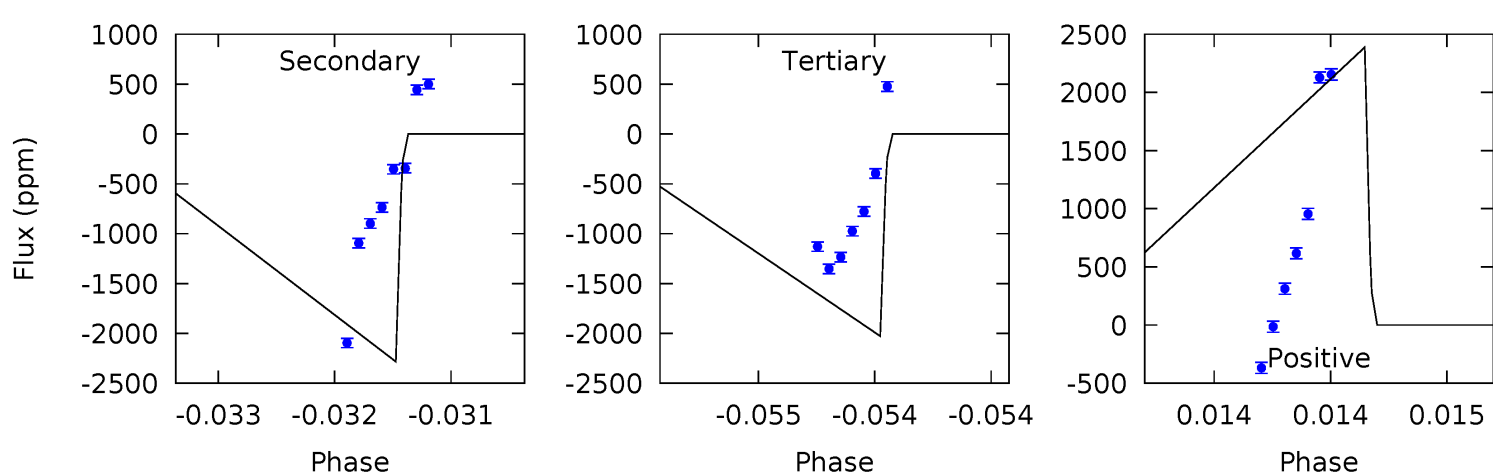
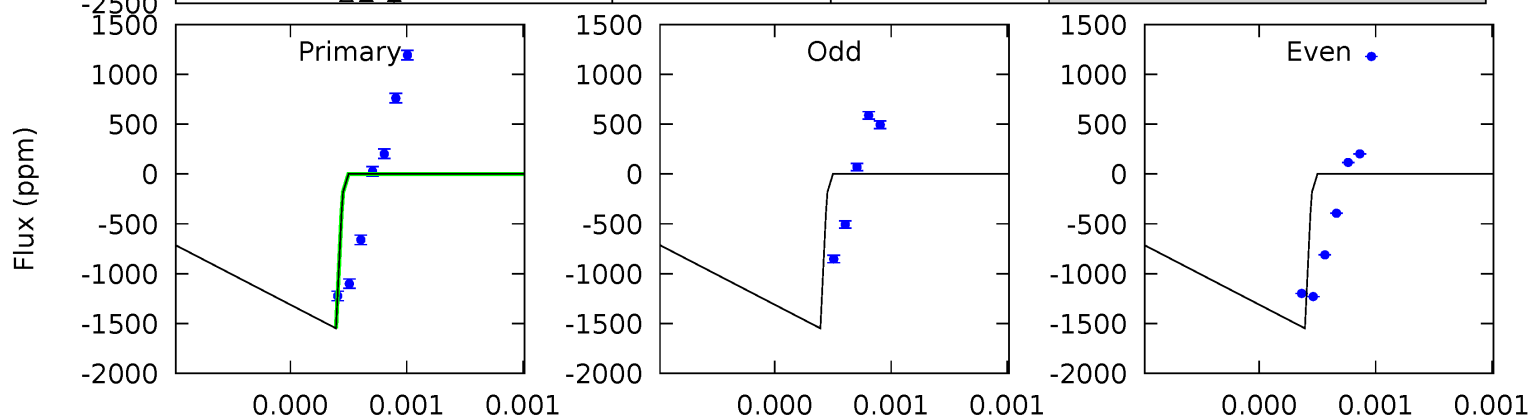
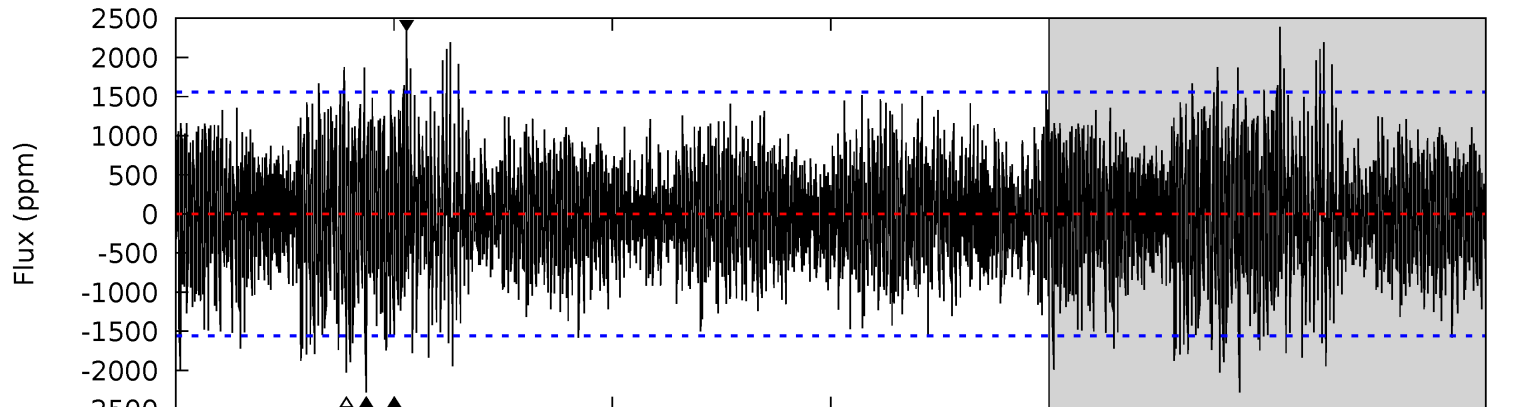
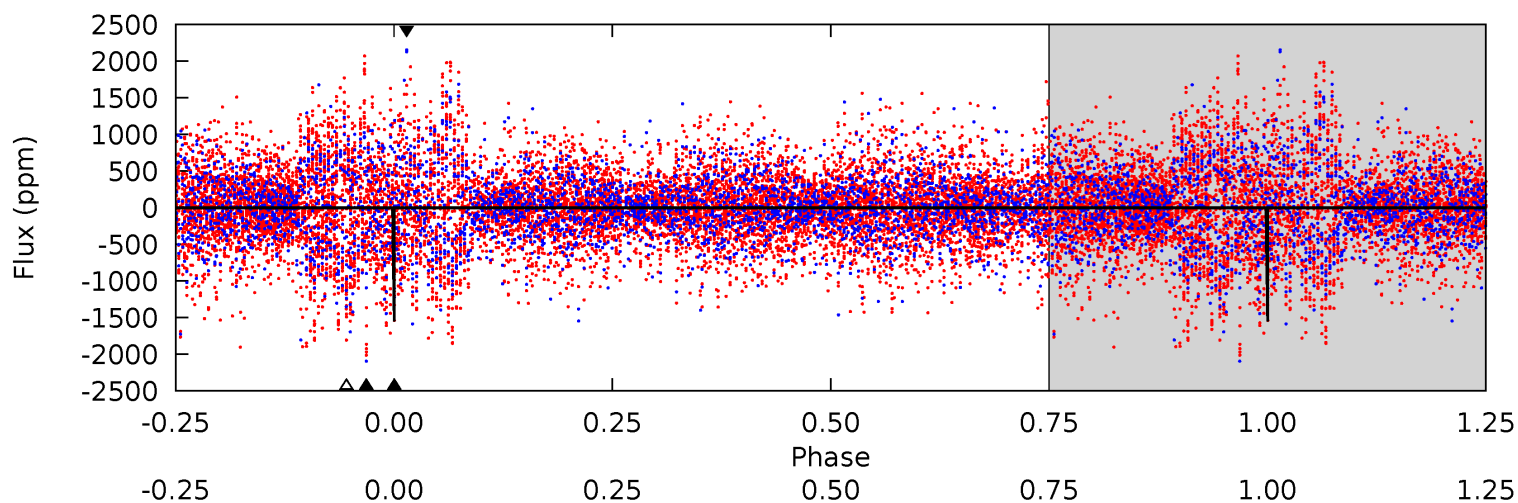
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	10.2	9.50	11.0	5.62	3.55	2.40	4.16	2.65	0.69	-0.83	2.04	0.95	0.45	0.76



# Alt Model-Shift Uniqueness Test

011140501-03, P = 465.416283 Days, E = 215.547569 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
5.48	8.08	7.17	8.44	5.51	3.38	1.81	-1.69	-2.97	0.91	-0.37	0	1.00	0.51	0



### Stellar Parameters For KIC 011140501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7573^{+237}_{-316}$	$4.030^{+0.222}_{-0.148}$	$-0.240^{+0.250}_{-0.300}$	$2.014^{+0.541}_{-0.541}$	$1.584^{+0.187}_{-0.280}$	$0.273^{+0.316}_{-0.129}$
	+3%/-4%	+6%/-4%	+104%/-125%	+27%/-27%	+12%/-18%	+116%/-47%
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 011140501-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-580 \pm 57$	$25.48^{+24.64}_{-17.70}$	$557^{+44}_{-46}$	$3708^{+2269}_{-675}$	$920^{+8526}_{-685}$
Alt.	$-2284 \pm 283$	$26.74^{+23.11}_{-17.59}$	$559^{+39}_{-38}$	$4709^{+3507}_{-930}$	$3213^{+24565}_{-2276}$

$T_{max}$  = 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

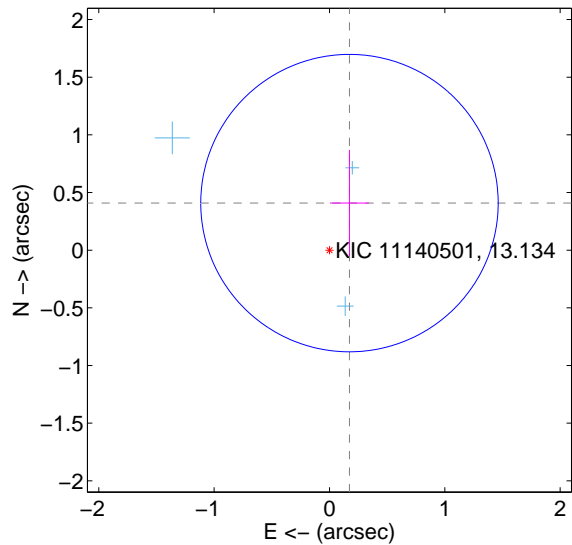
Supplemental centroid analysis for 011140501-03. Kepler magnitude: 13.13. Transit SNR 8.39

There are 3 quarters with good PRF difference image offsets

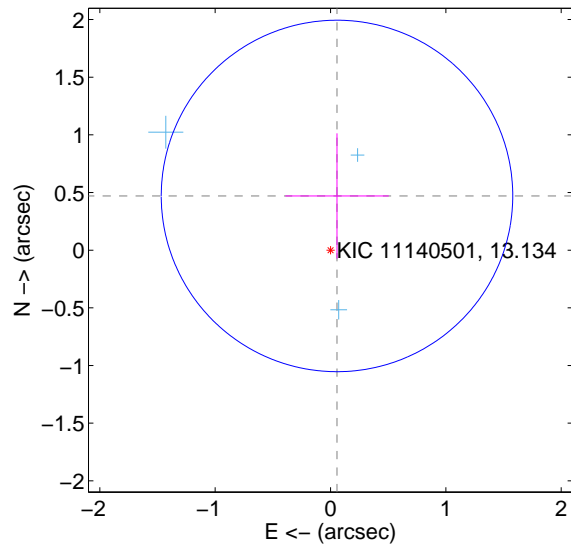
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.443 \pm 0.430$	1.03	$-0.173 \pm 0.169$	$0.408 \pm 0.461$
PRF-fit source offset from KIC position	$0.474 \pm 0.508$	0.93	$-0.056 \pm 0.448$	$0.470 \pm 0.543$
photometric centroid source offset	$0.30 \pm 0.48$	0.62	$-0.26 \pm 0.48$	$0.15 \pm 0.48$

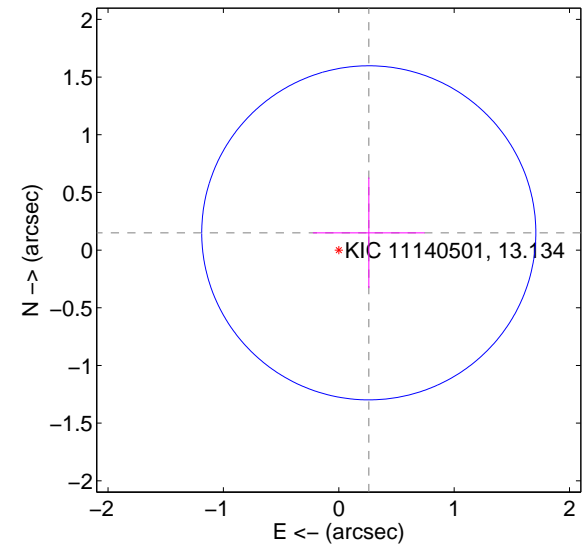
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

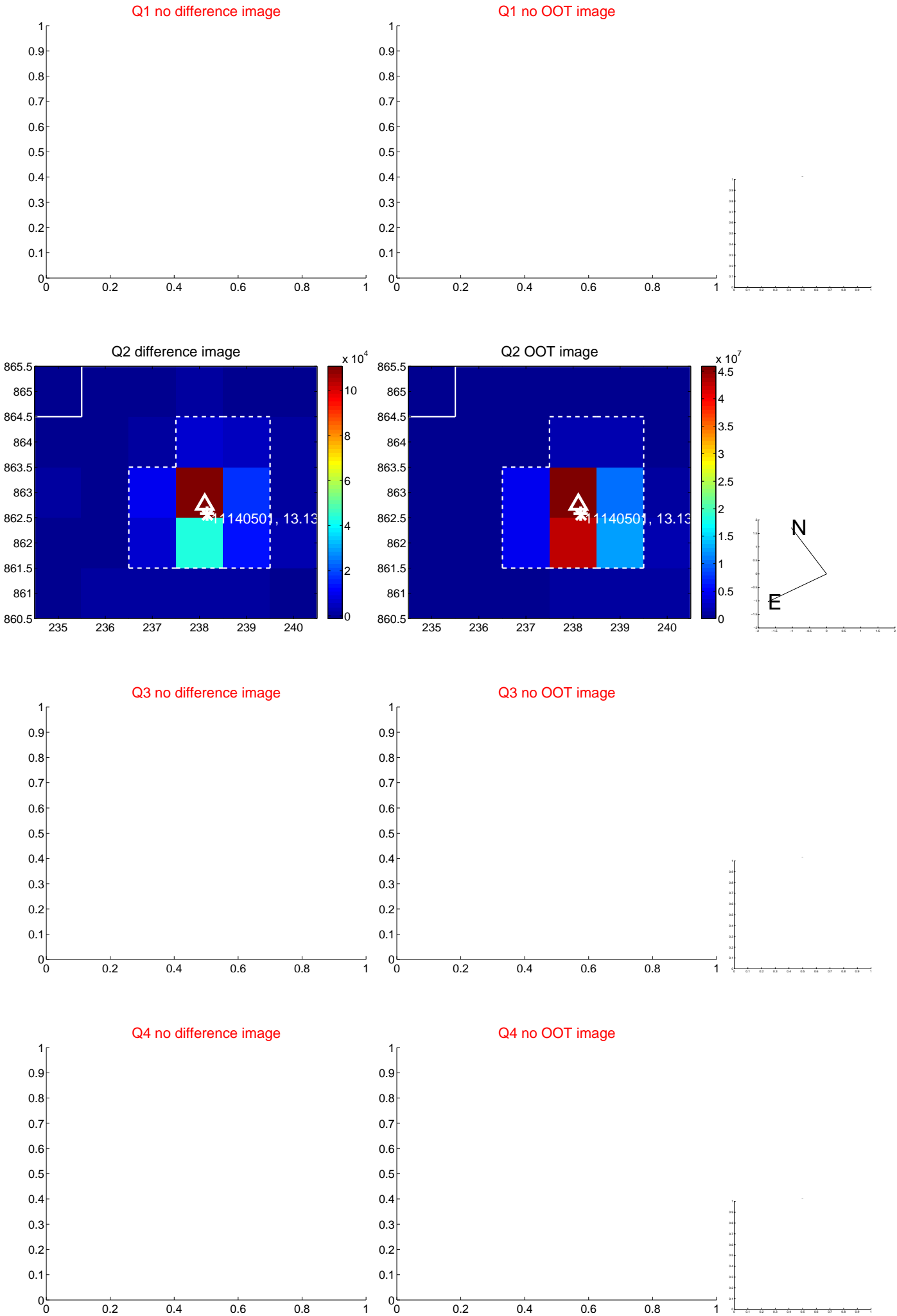


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



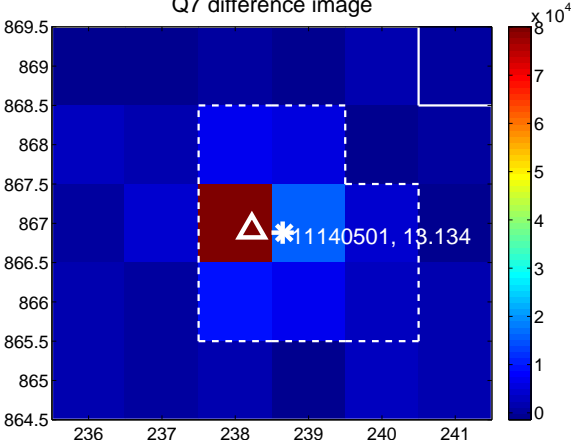
Q6 no difference image



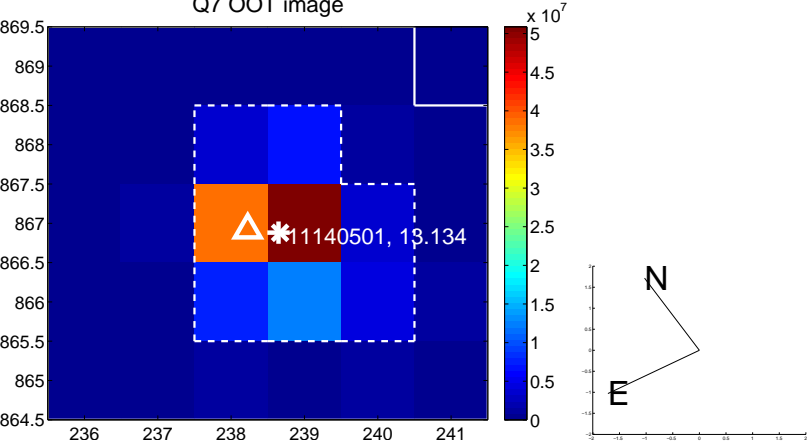
Q6 no OOT image



Q7 difference image



Q7 OOT image



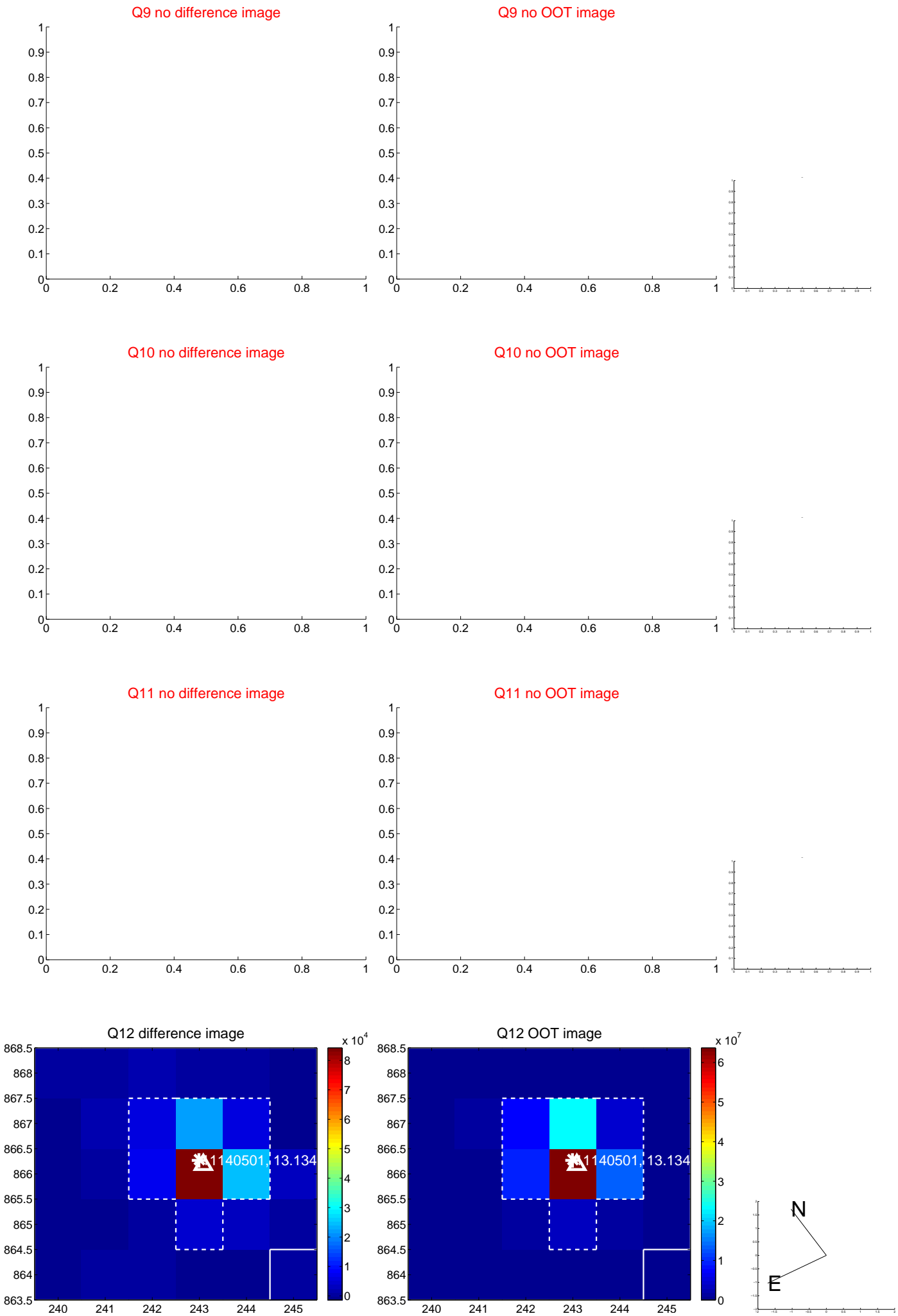
Q8 no difference image



Q8 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

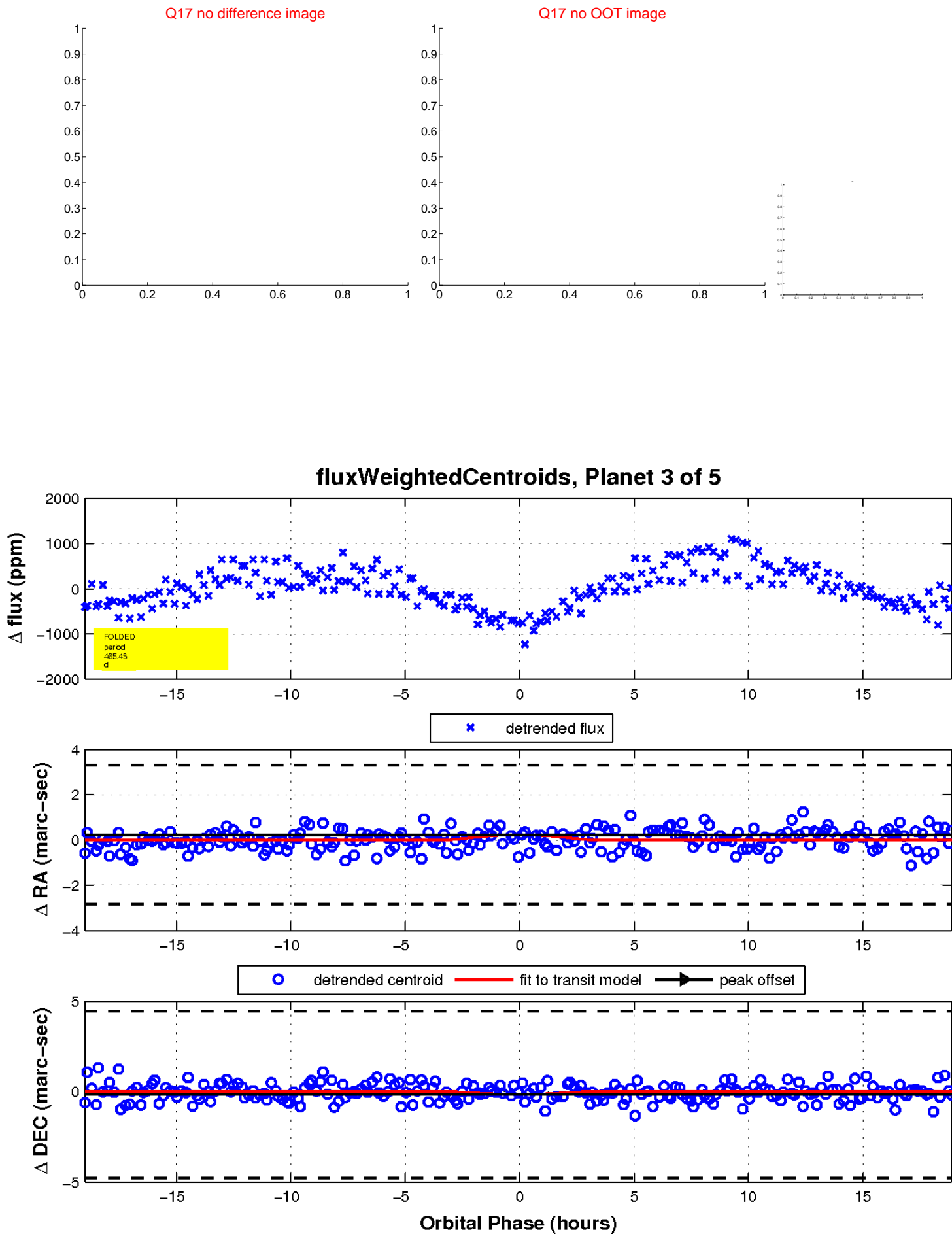


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



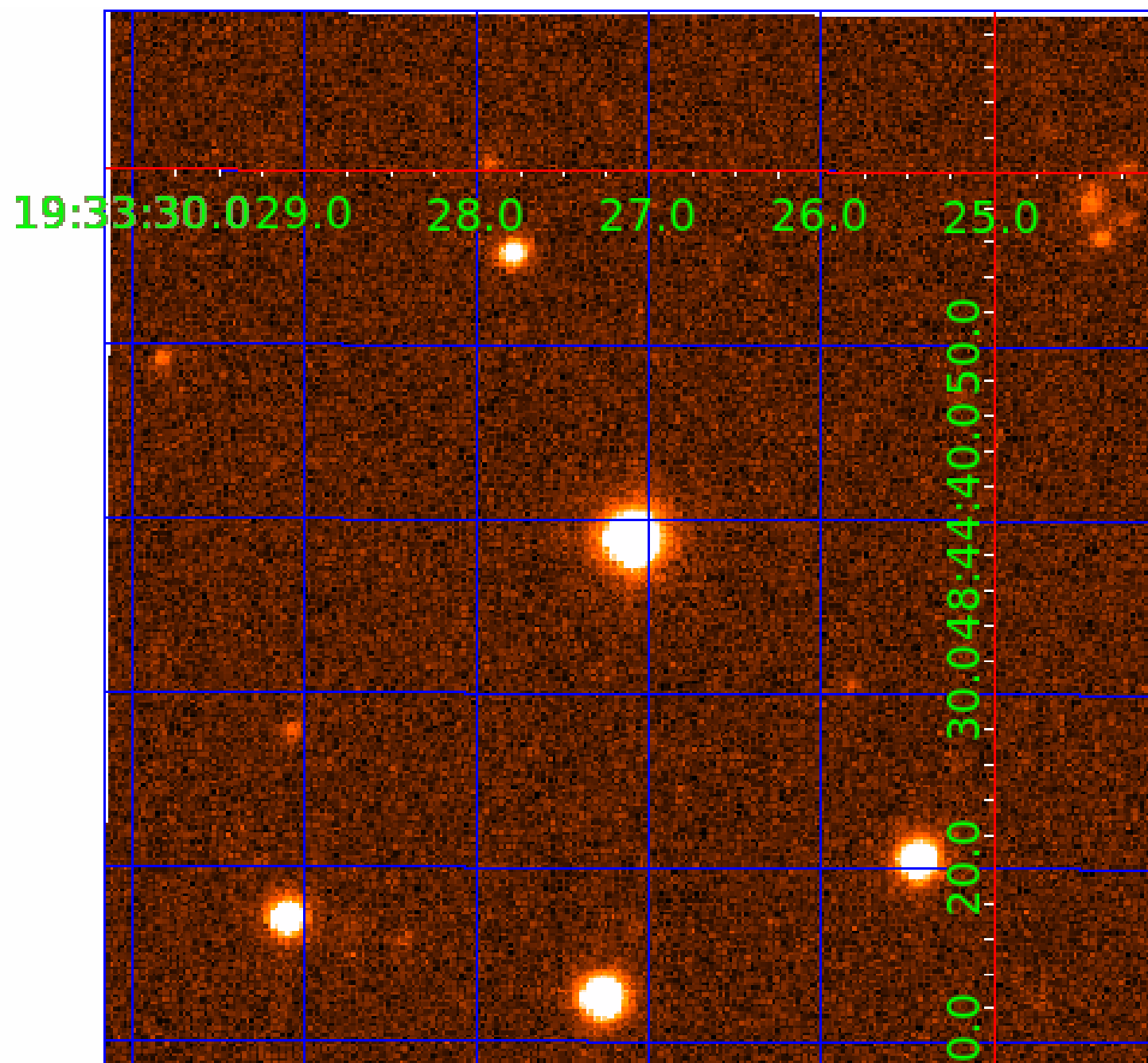


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011140501

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011140501-01	OBS	No	1.065108	131.882027	158.1	3.000	9.1	-1.0	2.01	7573	2.56	21093.45
011140501-02	OBS	No	1.065052	132.287991	36.1	4.719	9.3	8.7	2.01	7573	1.28	21094.93
011140501-03	OBS	No	465.426241	215.710475	774.2	6.344	8.9	8.4	2.01	7573	10.58	6.36
011140501-04	OBS	No	46.990956	148.789416	350.4	4.393	8.8	6.2	2.01	7573	4.37	135.31
011140501-05	OBS	No	82.134814	162.278263	579.5	6.339	7.5	8.2	2.01	7573	6.19	64.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011140501-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
011140501-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
011140501-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

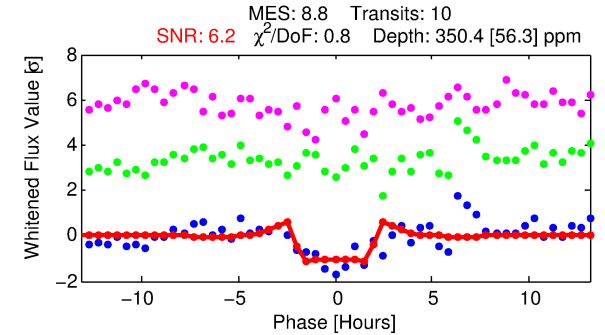
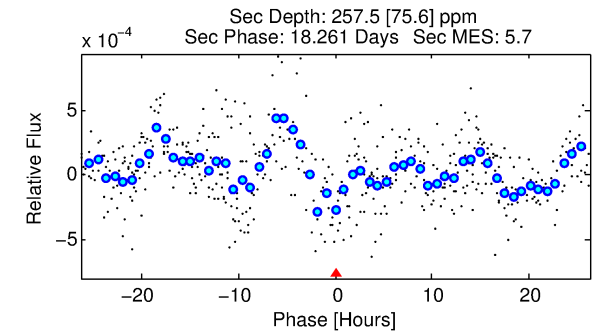
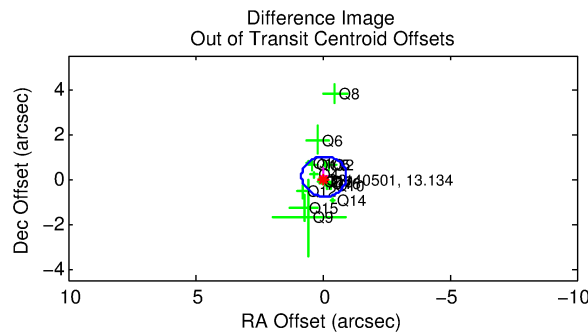
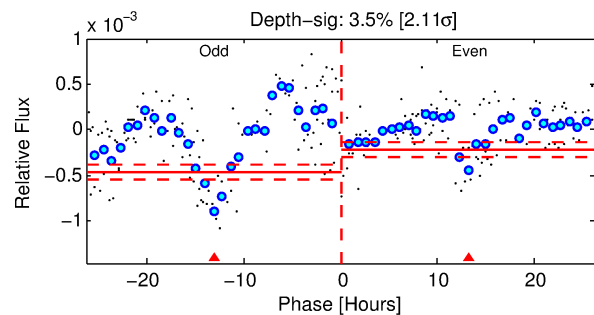
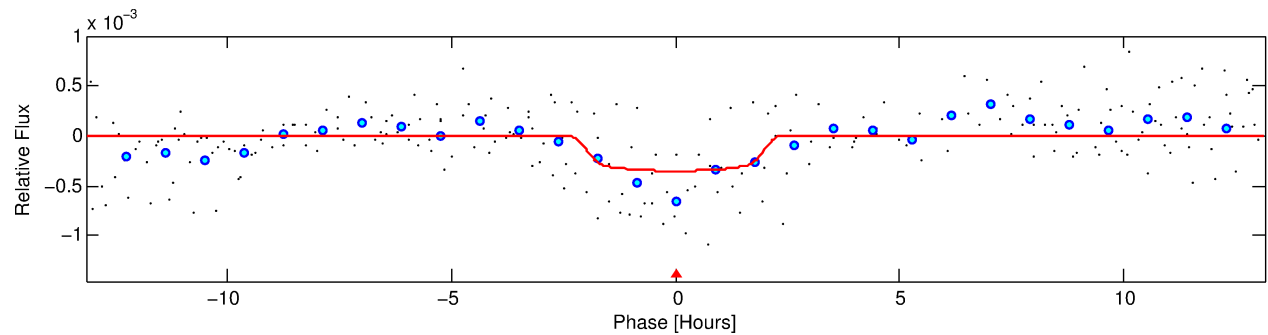
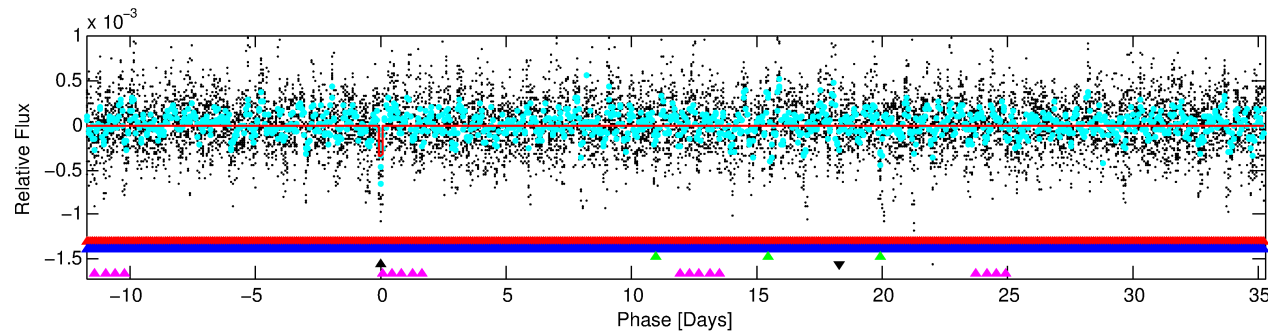
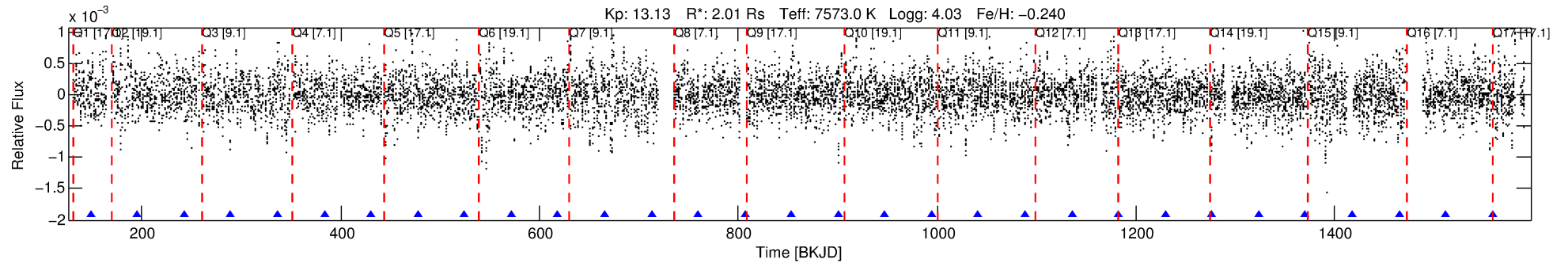
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011140501-04

No Significant Match Found

# DV One-Page Summary

KIC: 11140501 Candidate: 4 of 5 Period: 46.991 d



## DV Fit Results:

Period = 46.99096 [0.00049] d  
Epoch = 148.7894 [0.0086] BKJD  
Rp/R\* = 0.0199 [0.0043]  
a/R\* = 40.75 [43.29]  
b = 0.89 [0.25]  
Seff = 135.31 [56.77]  
Teff = 870 [91] K  
Rp = 4.37 [1.50] Re  
a = 0.2972 [0.0735] AU  
Ag = 656.33 [424.16] [1.54 $\sigma$ ]  
Teffp = 6806 [928] K [6.37 $\sigma$ ]

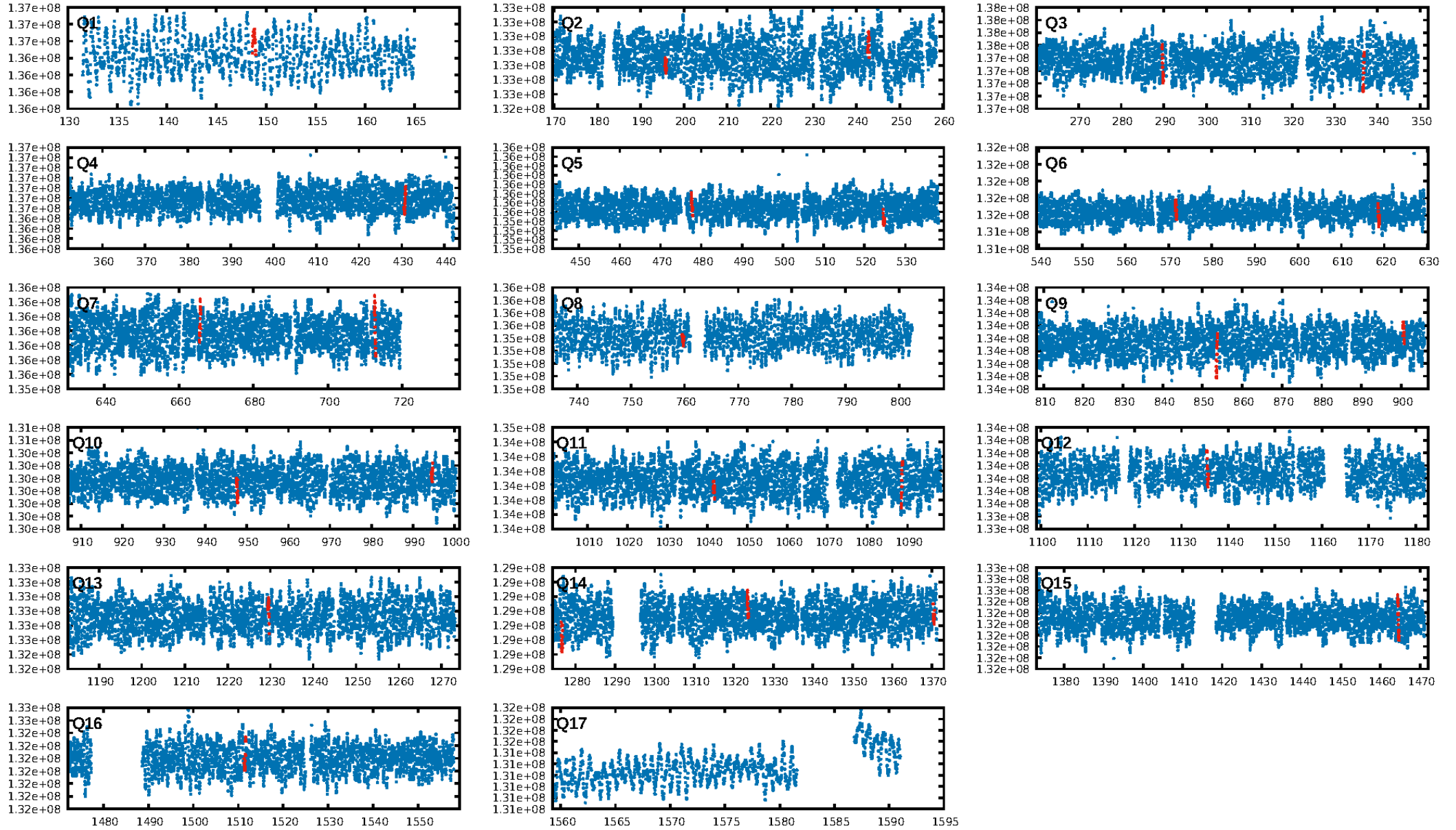
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [207.20 $\sigma$ ]  
LongPeriod-sig: 100.0% [109.37 $\sigma$ ]  
ModelChiSquare2-sig: 6.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.97e-13  
RollingBand-fgt: 1.00 [9/9]  
GhostDiagnostic-chr: 1.269  
Centroid-sig: 52.2%  
Centroid-so: 0.160 arcsec [0.51 $\sigma$ ]  
OotOffset-rm: 0.124 arcsec [0.42 $\sigma$ ]  
KicOffset-rm: 0.135 arcsec [0.44 $\sigma$ ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.62 [10/16]  
DiffImageOverlap-fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:03:17 Z

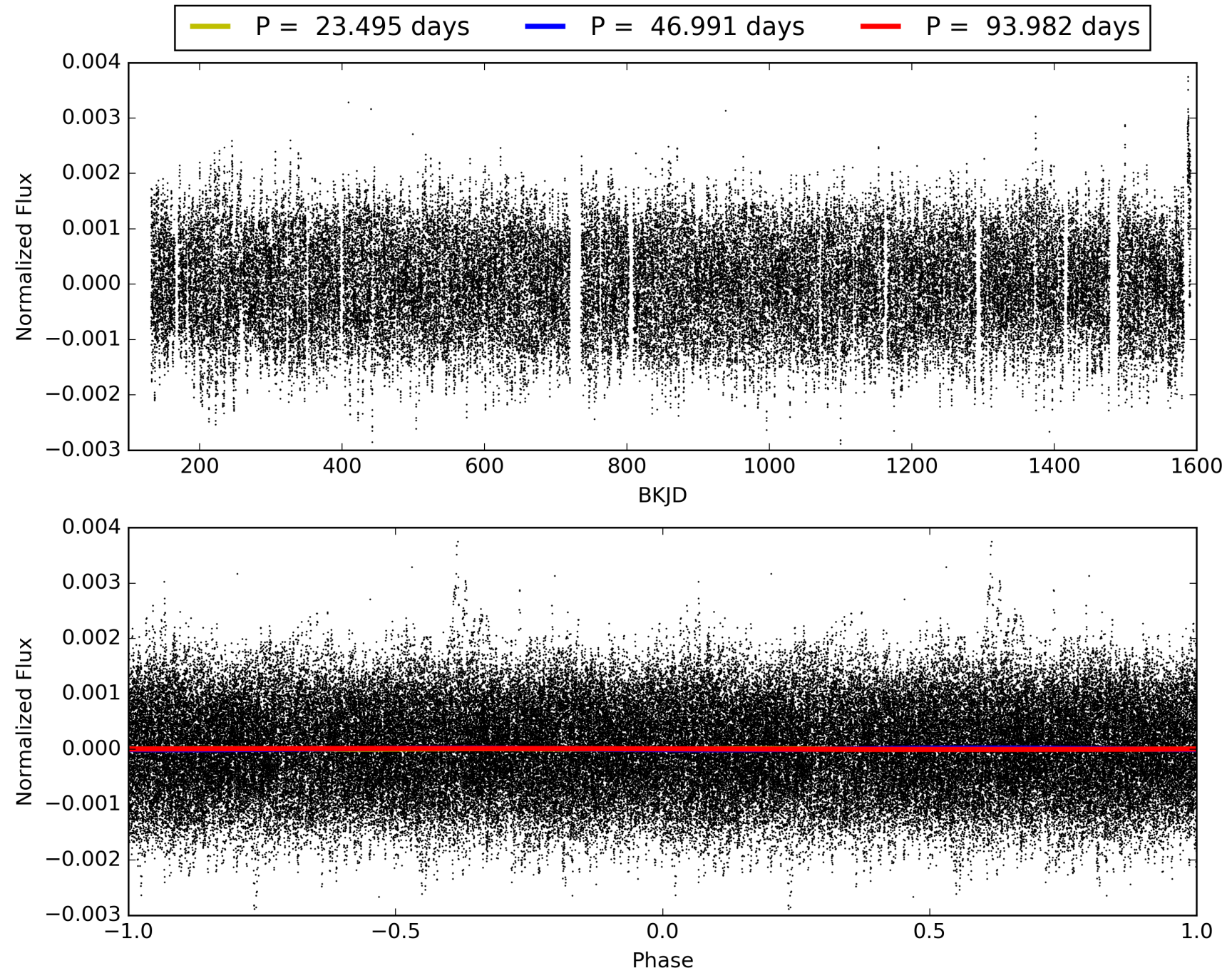
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011140501-04, PDC Light Curves





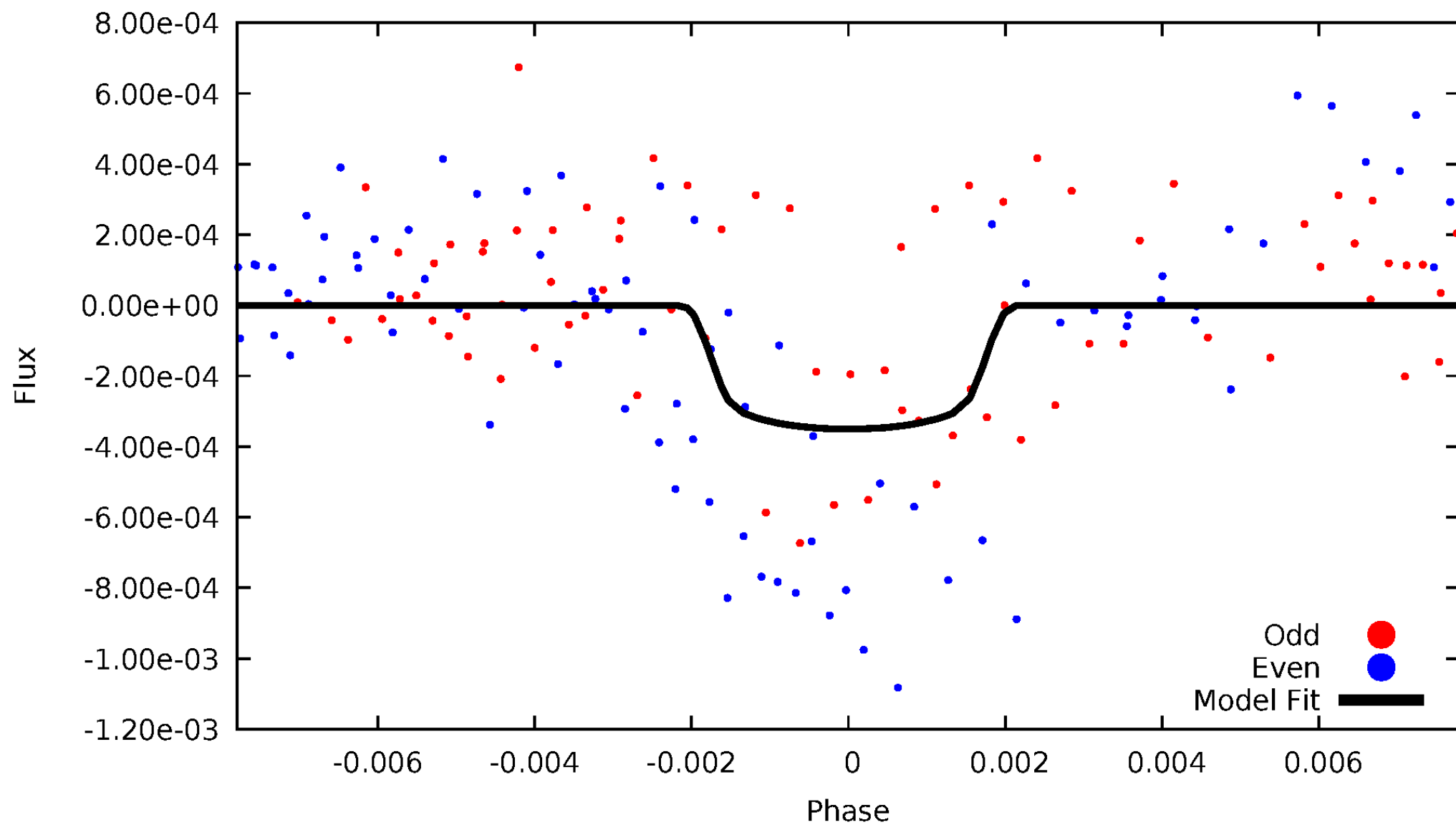
TCE 011140501-04





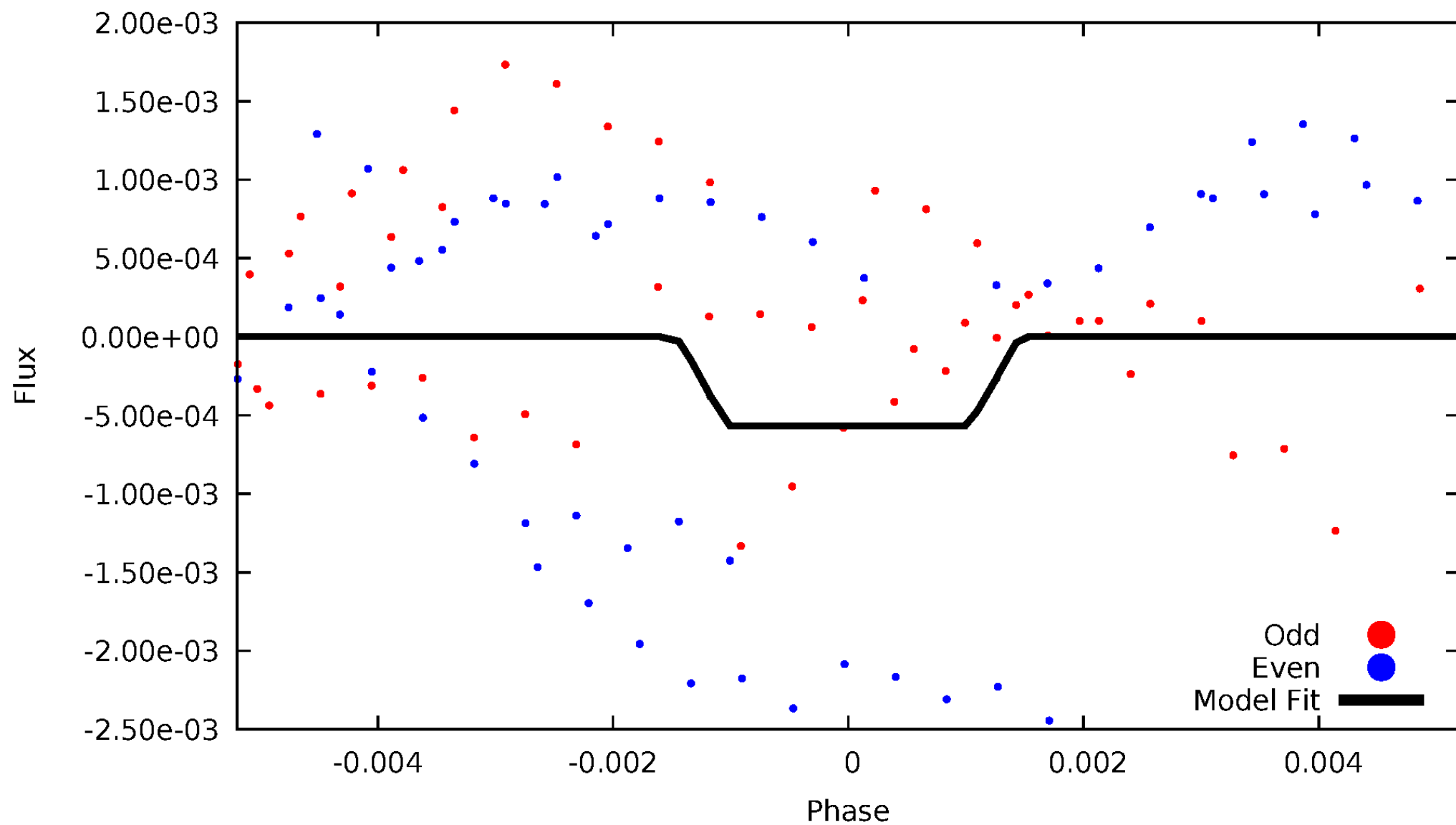
# DV Odd/Even

TCE 011140501-04



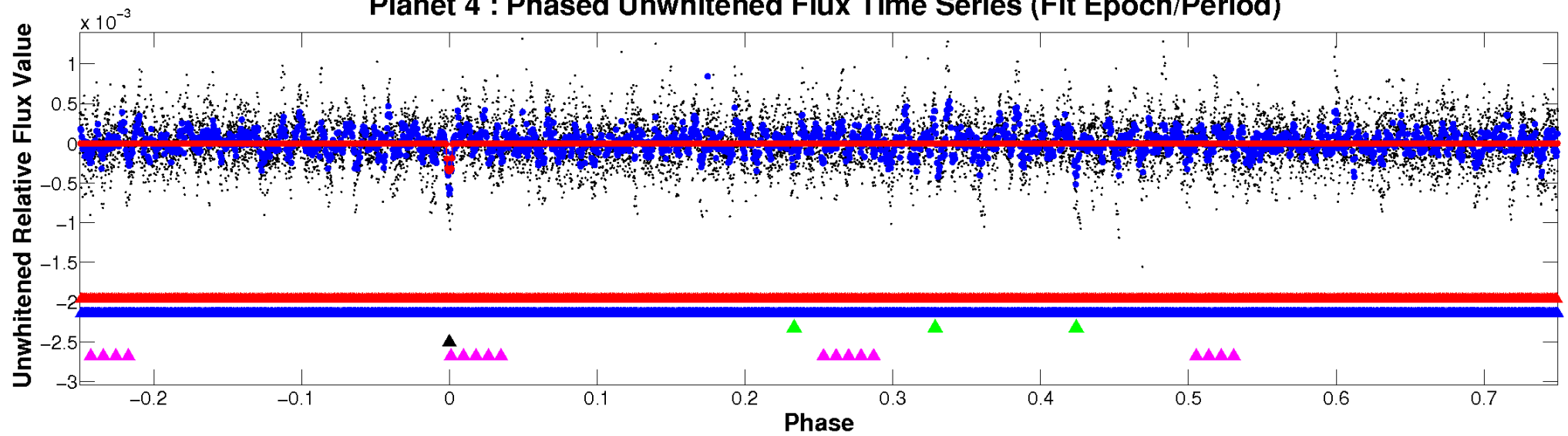
# ALT Odd/Even

TCE 011140501-04

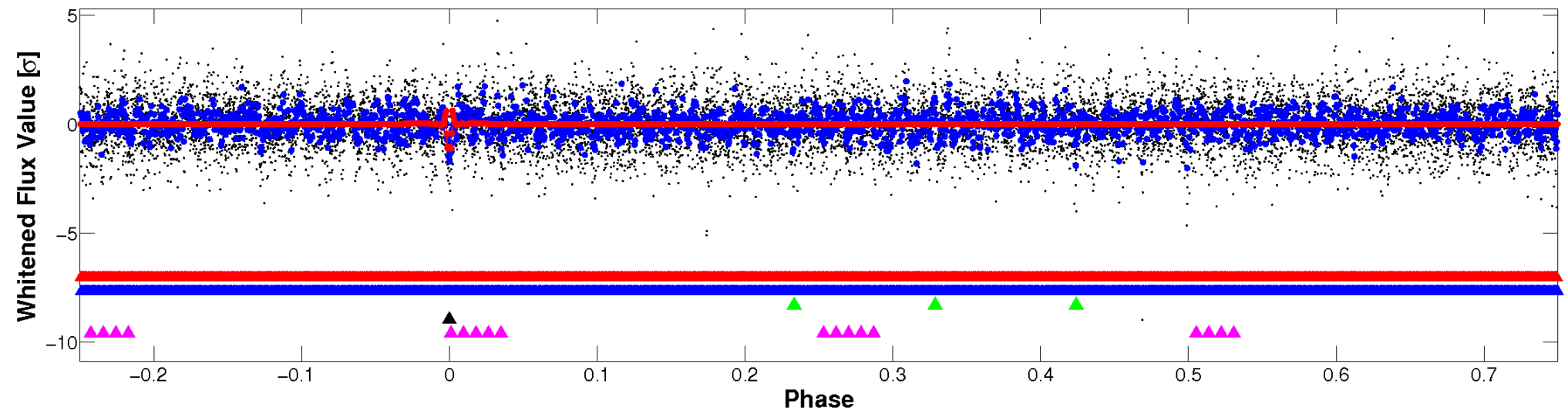


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

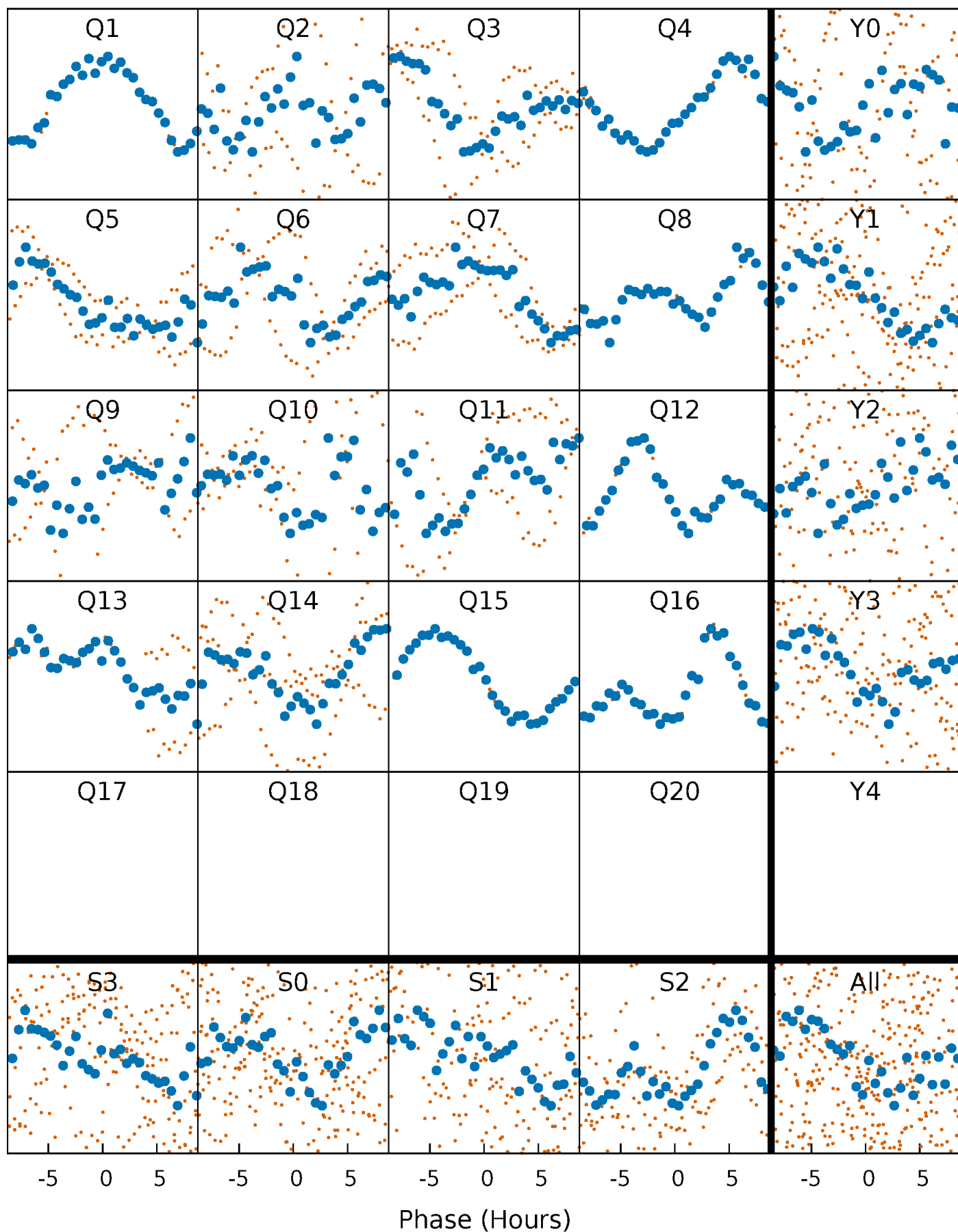


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



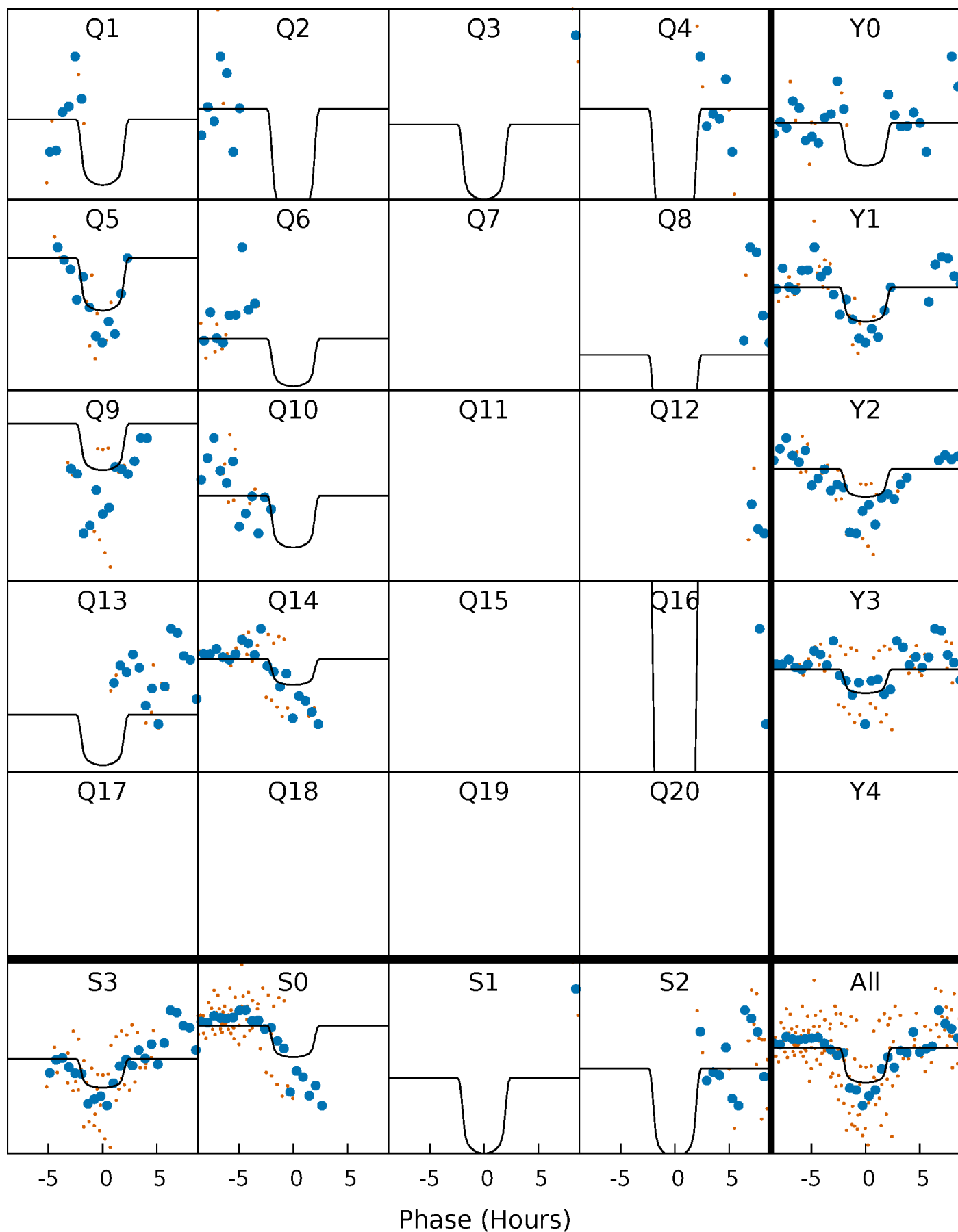
# PDC Quarter-Phased Transit Curves

TCE 011140501-04     $P = 46.990956$  Days     $T_0 = 148.789416$  (BKJD)



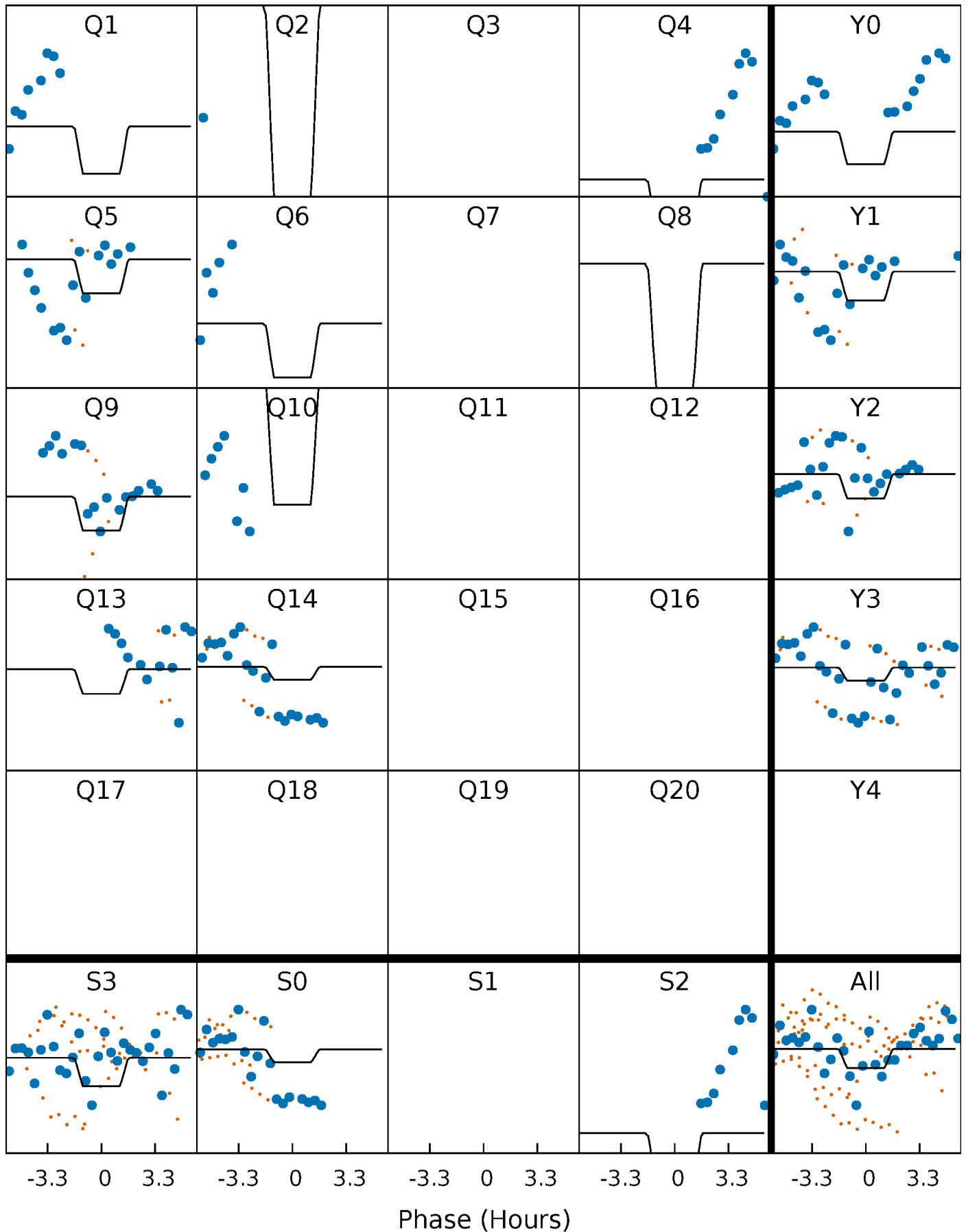
# DV Quarter-Phased Transit Curves

TCE 011140501-04 P= 46.990956 Days  $T_0=148.789416$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 011140501-04 P= 46.990600 Days  $T_0=148.818505$  (BKJD)

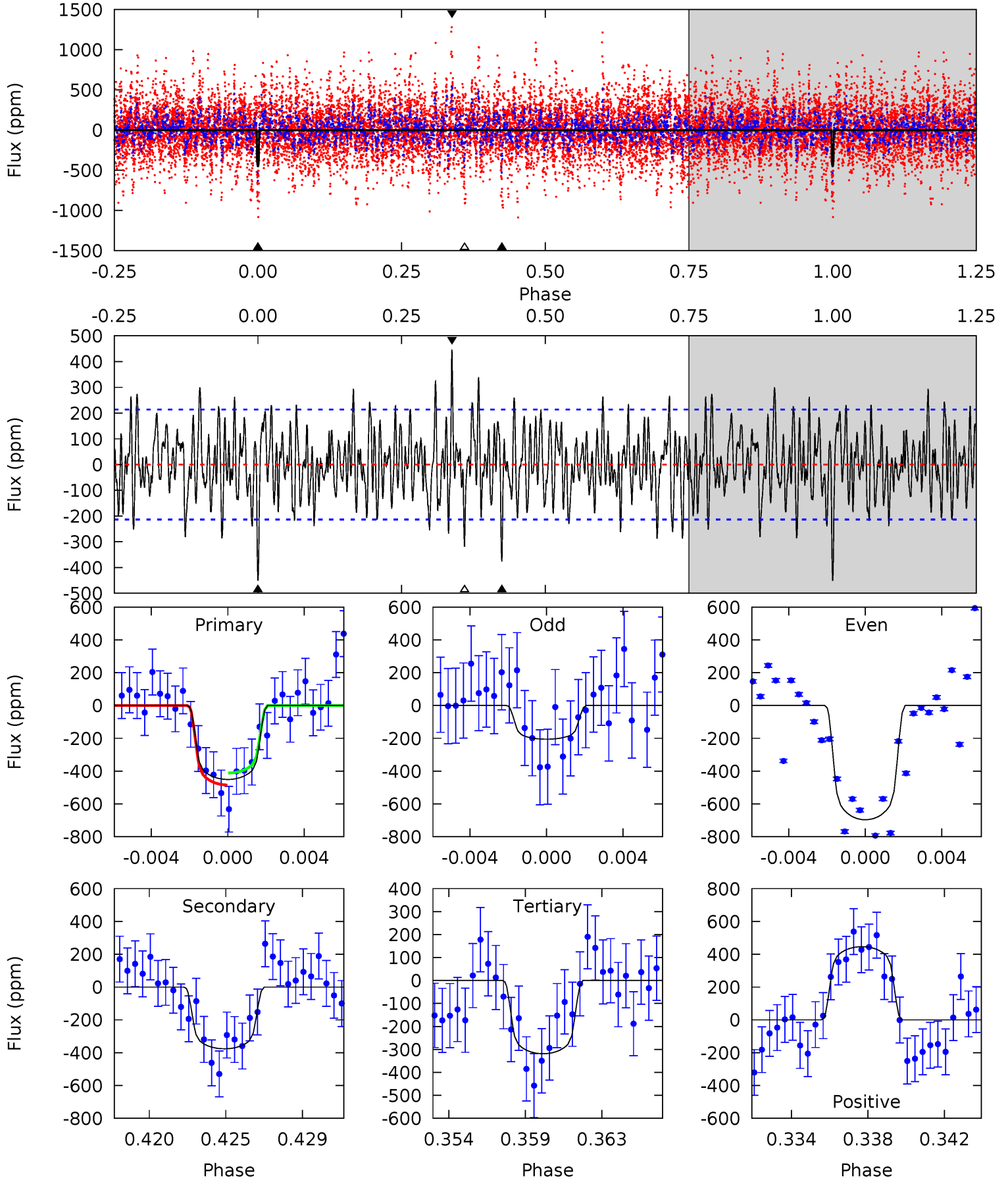




# DV Model-Shift Uniqueness Test

011140501-04, P = 46.990956 Days, E = 101.798460 Days

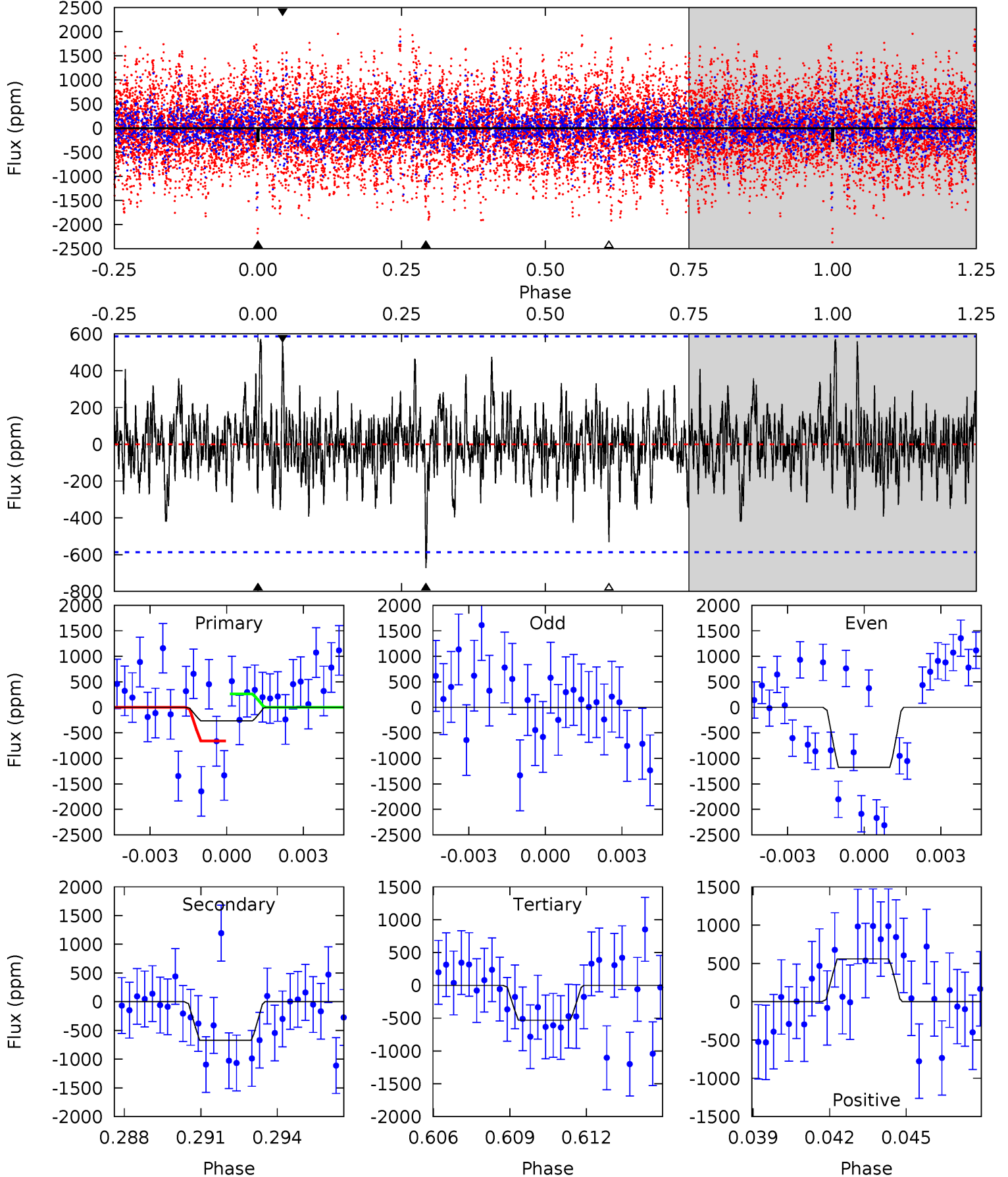
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	9.15	7.75	10.8	5.19	2.87	2.74	3.21	0.12	1.40	-1.70	5.96	0.98	0.50	0.89



# Alt Model-Shift Uniqueness Test

011140501-04, P = 46.990600 Days, E = 101.827905 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
2.39	6.02	4.77	5.01	5.25	2.97	1.20	-2.38	-2.62	1.26	1.02	5.51	1.73	0.46	1.78



### Stellar Parameters For KIC 011140501

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7573^{+237}_{-316}$	$4.030^{+0.222}_{-0.148}$	$-0.240^{+0.250}_{-0.300}$	$2.014^{+0.541}_{-0.541}$	$1.584^{+0.187}_{-0.280}$	$0.273^{+0.316}_{-0.129}$
	+3%/-4%	+6%/-4%	+104%/-125%	+27%/-27%	+12%/-18%	+116%/-47%
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 011140501-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-376 \pm 41$	$4.28^{+1.17}_{-1.08}$	$1208^{+89}_{-100}$	$7414^{+1233}_{-772}$	$1017^{+727}_{-412}$
Alt.	$-672 \pm 112$	$5.16^{+1.27}_{-1.17}$	$1195^{+91}_{-93}$	$7890^{+1110}_{-905}$	$1243^{+741}_{-483}$

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

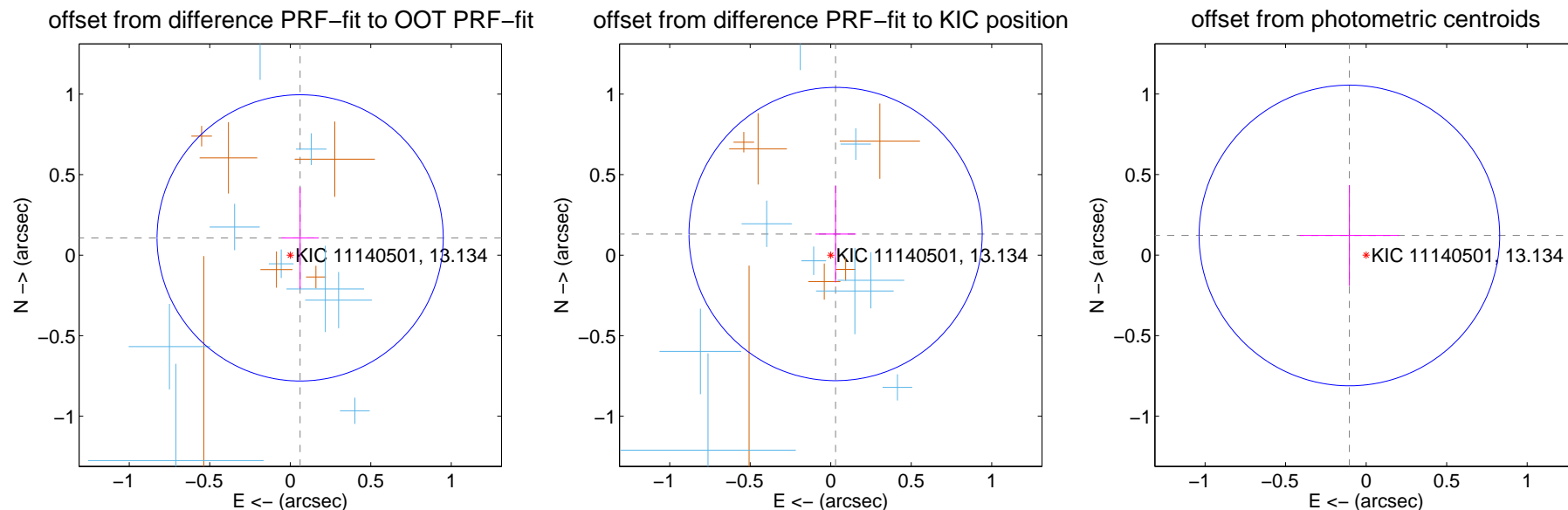
## DV Centroid Data

Supplemental centroid analysis for 011140501-04. Kepler magnitude: 13.13. Transit SNR 6.24

There are 10 quarters with good PRF difference image offsets

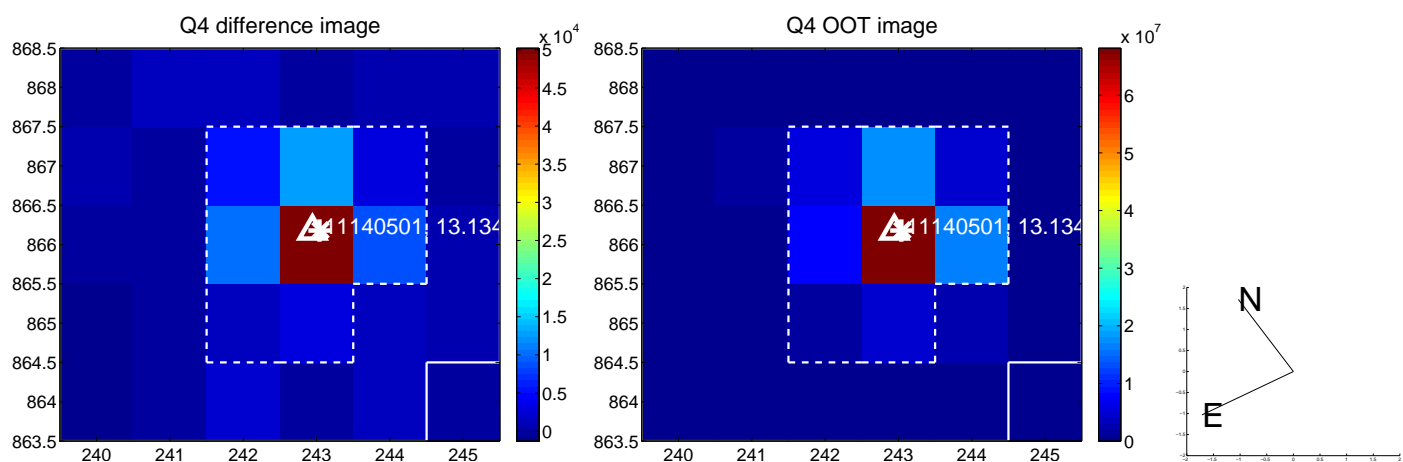
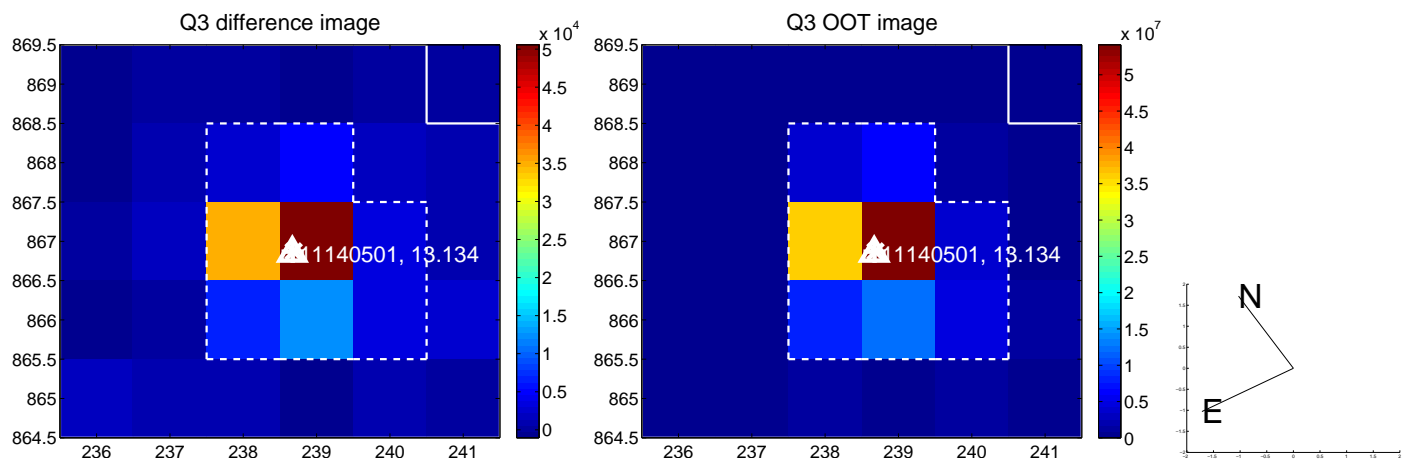
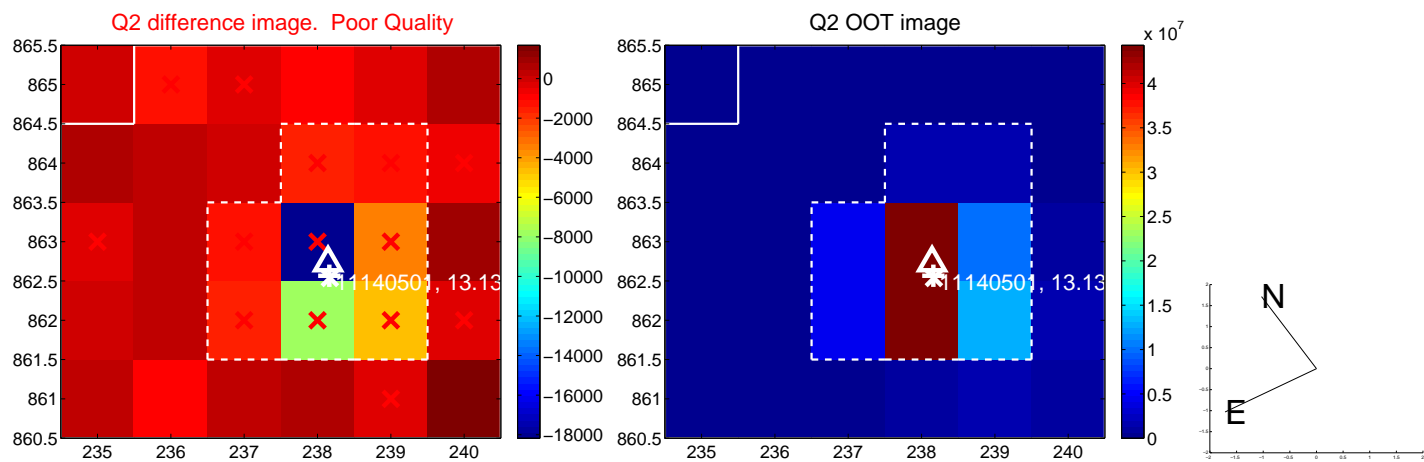
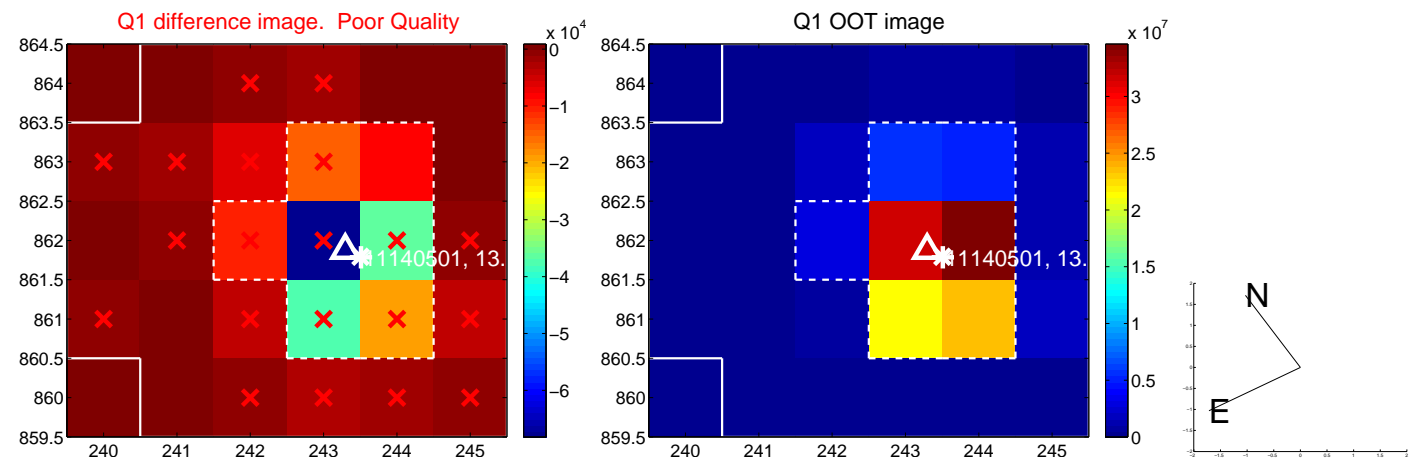
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.124 \pm 0.296$	0.42	$-0.061 \pm 0.116$	$0.107 \pm 0.315$
PRF-fit source offset from KIC position	$0.135 \pm 0.304$	0.44	$-0.030 \pm 0.126$	$0.131 \pm 0.301$
photometric centroid source offset	$0.16 \pm 0.31$	0.51	$0.10 \pm 0.31$	$0.12 \pm 0.31$

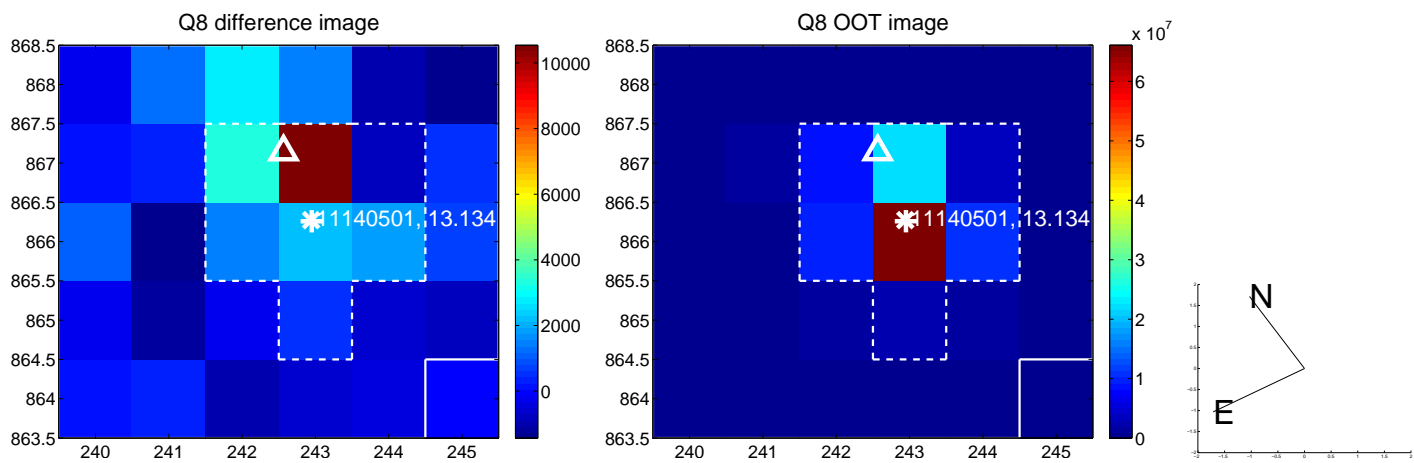
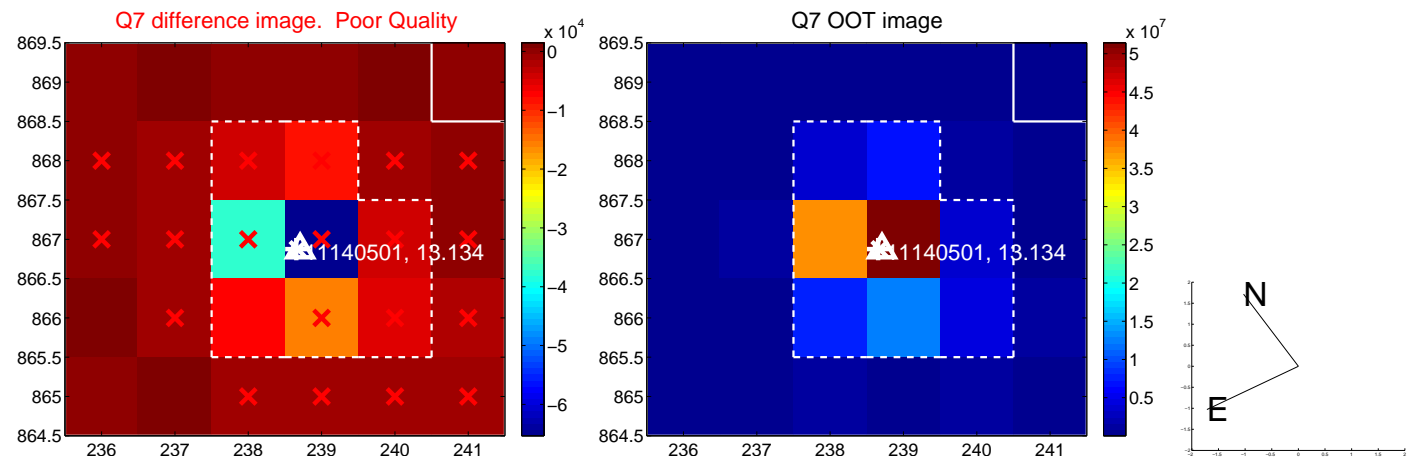
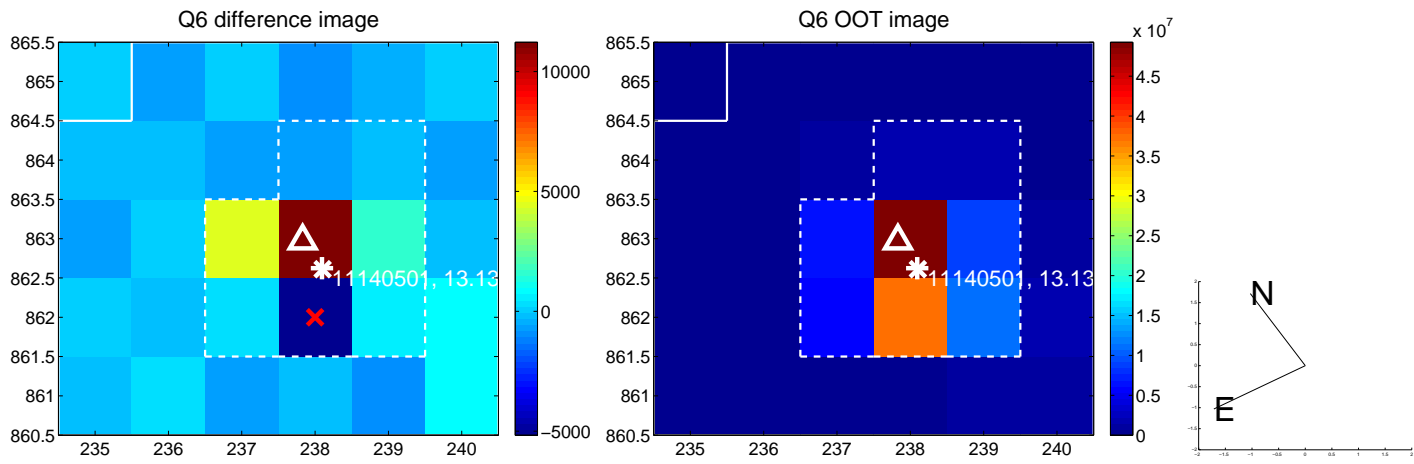
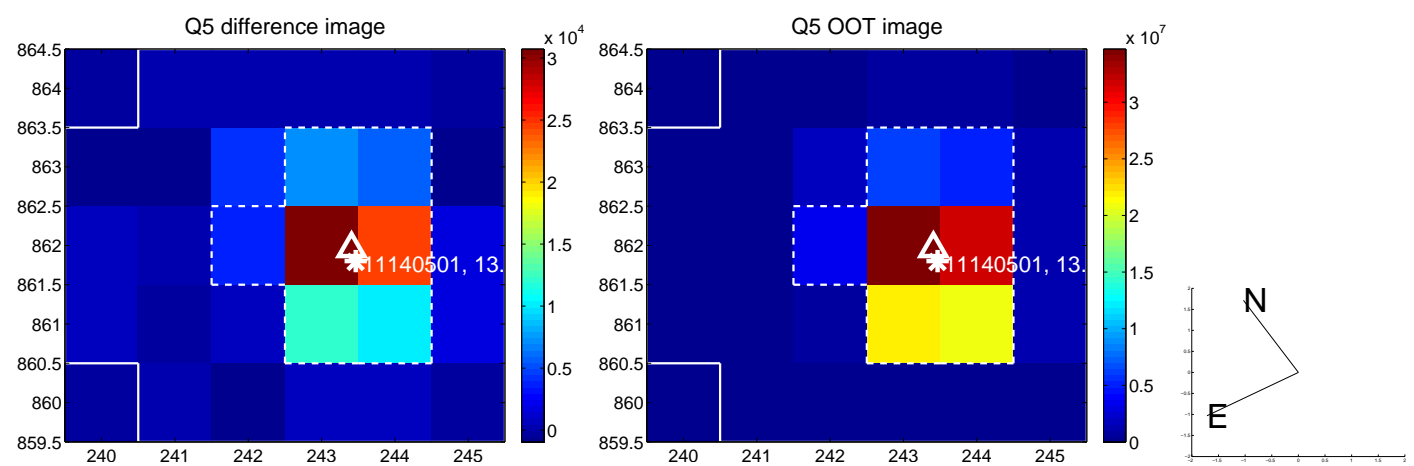


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

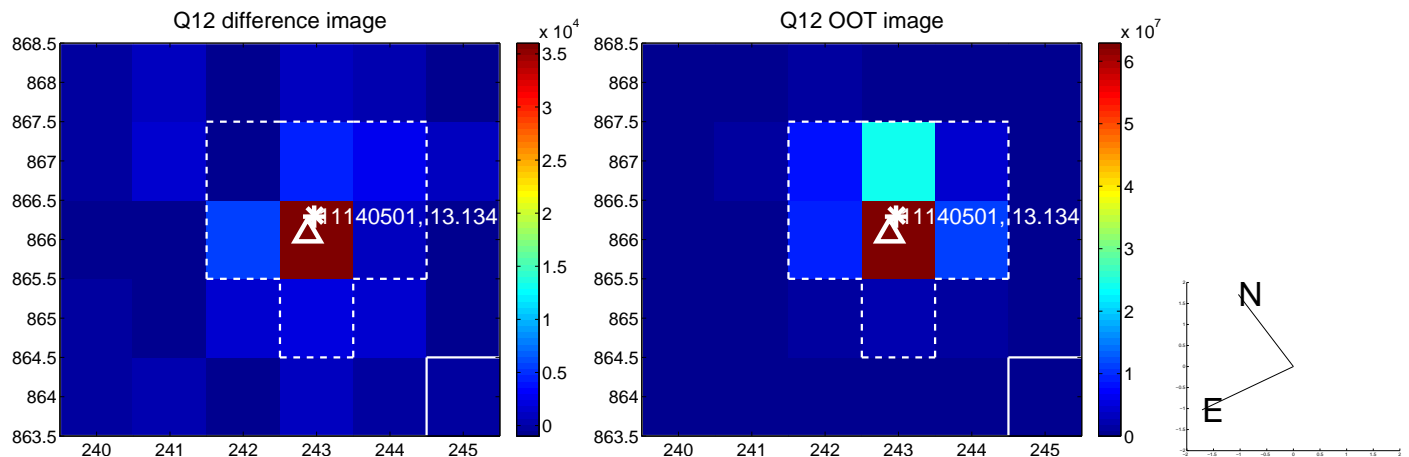
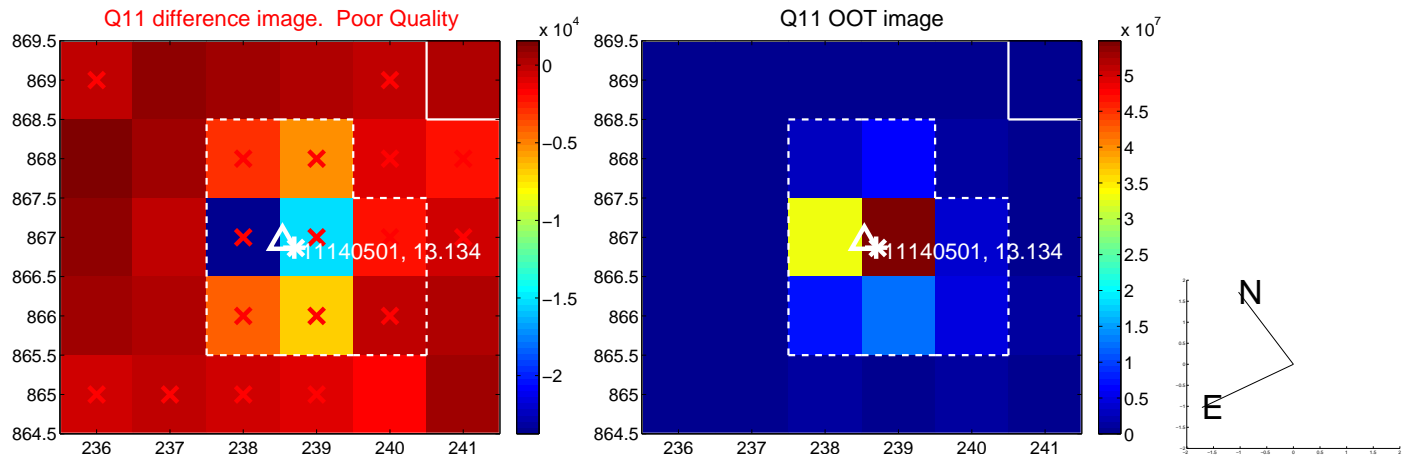
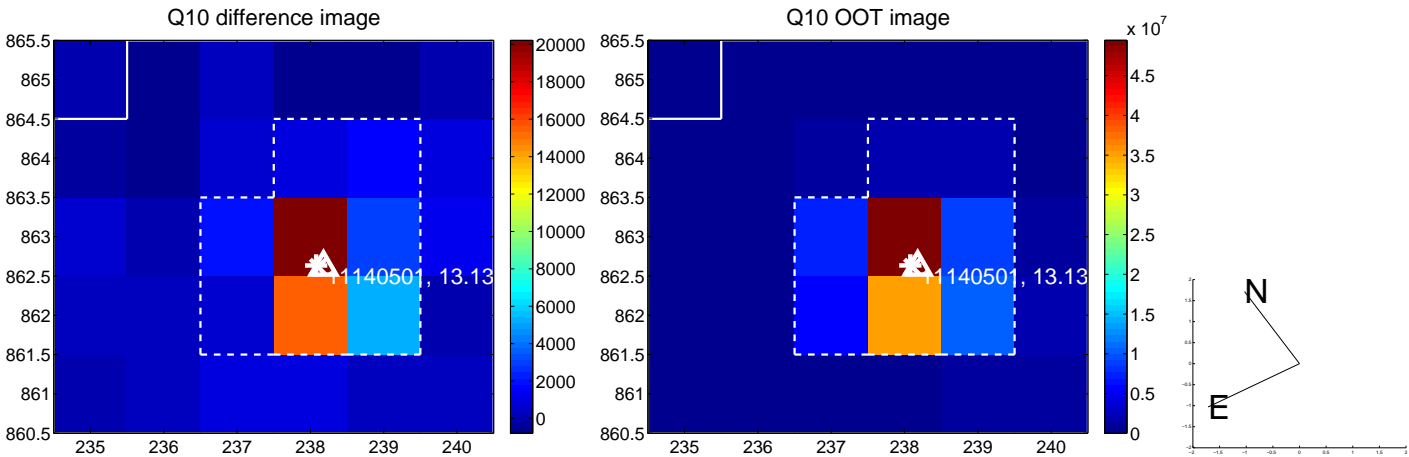
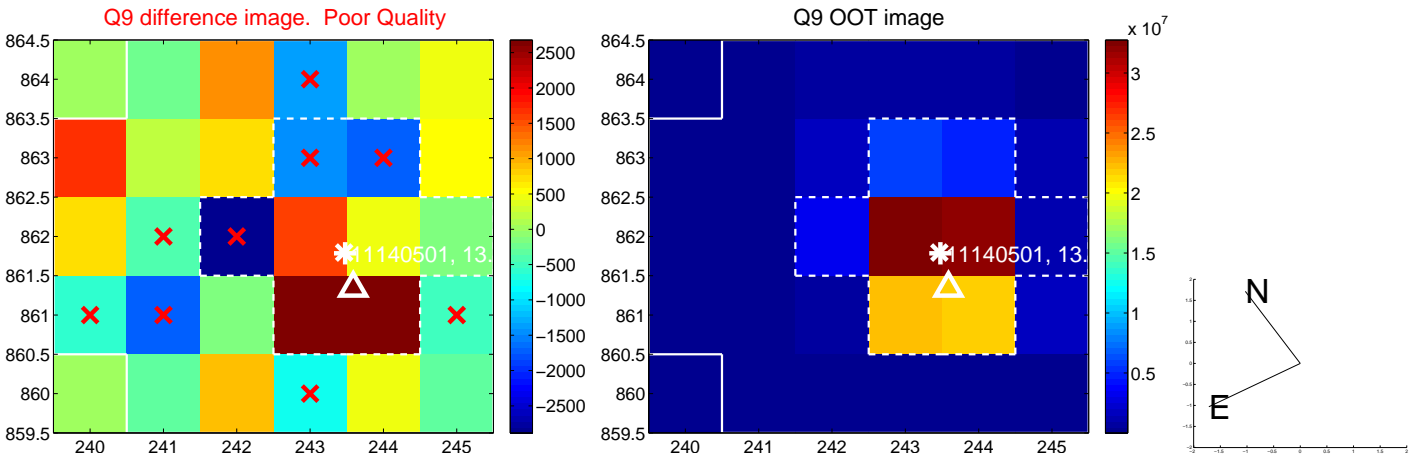


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

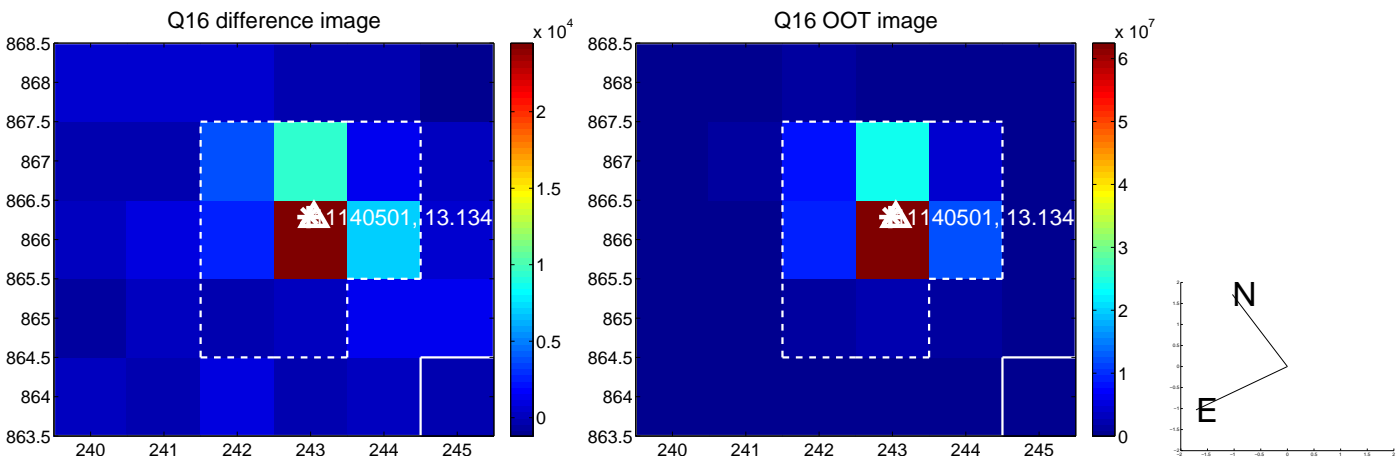
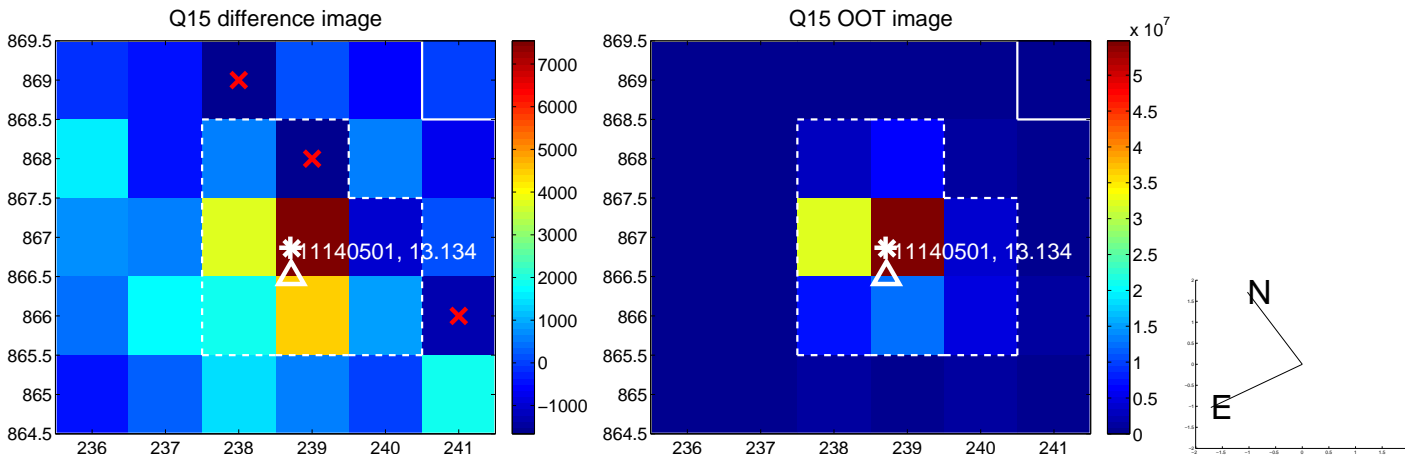
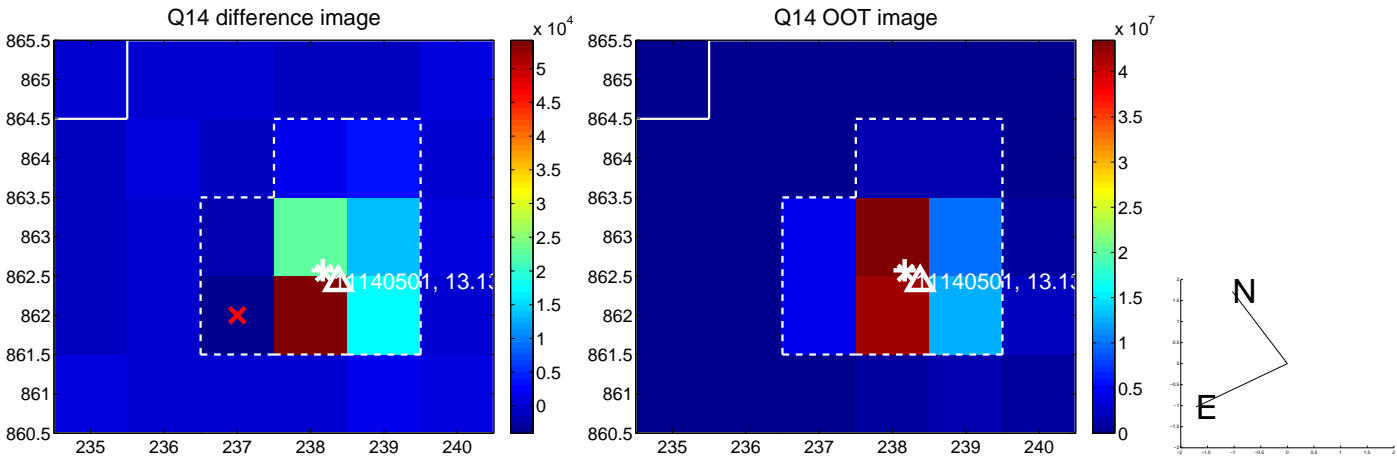
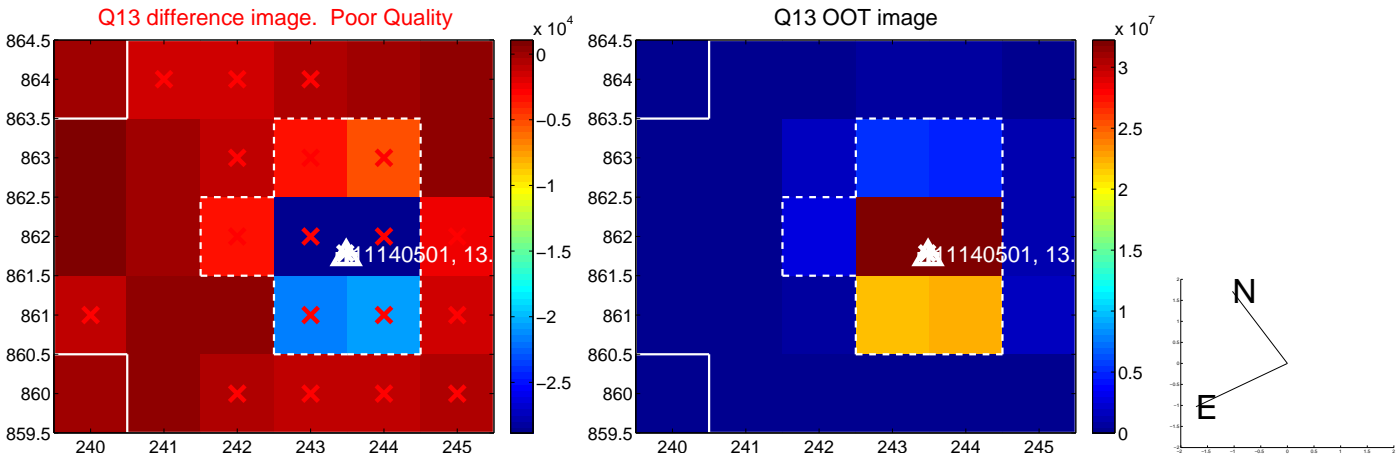




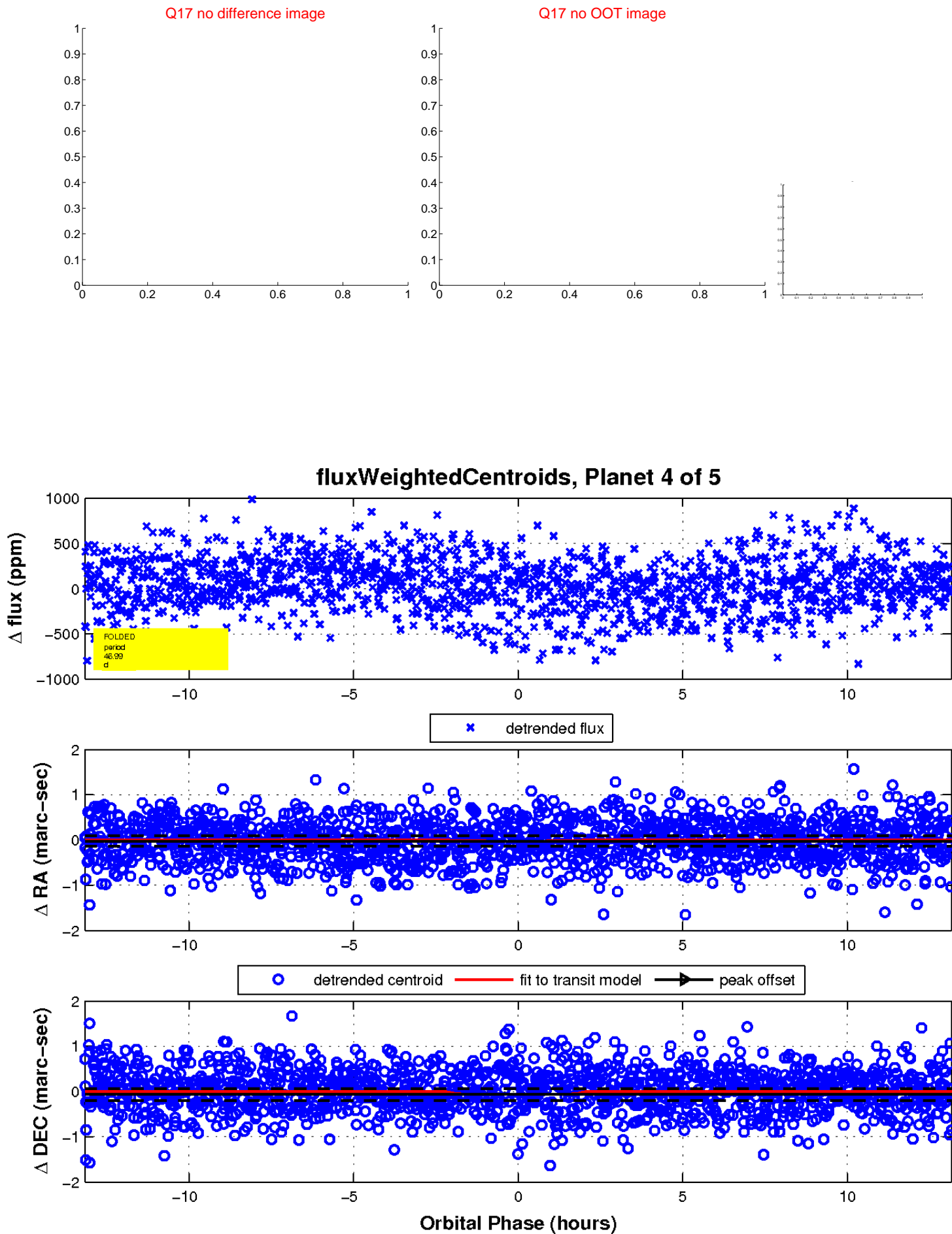
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

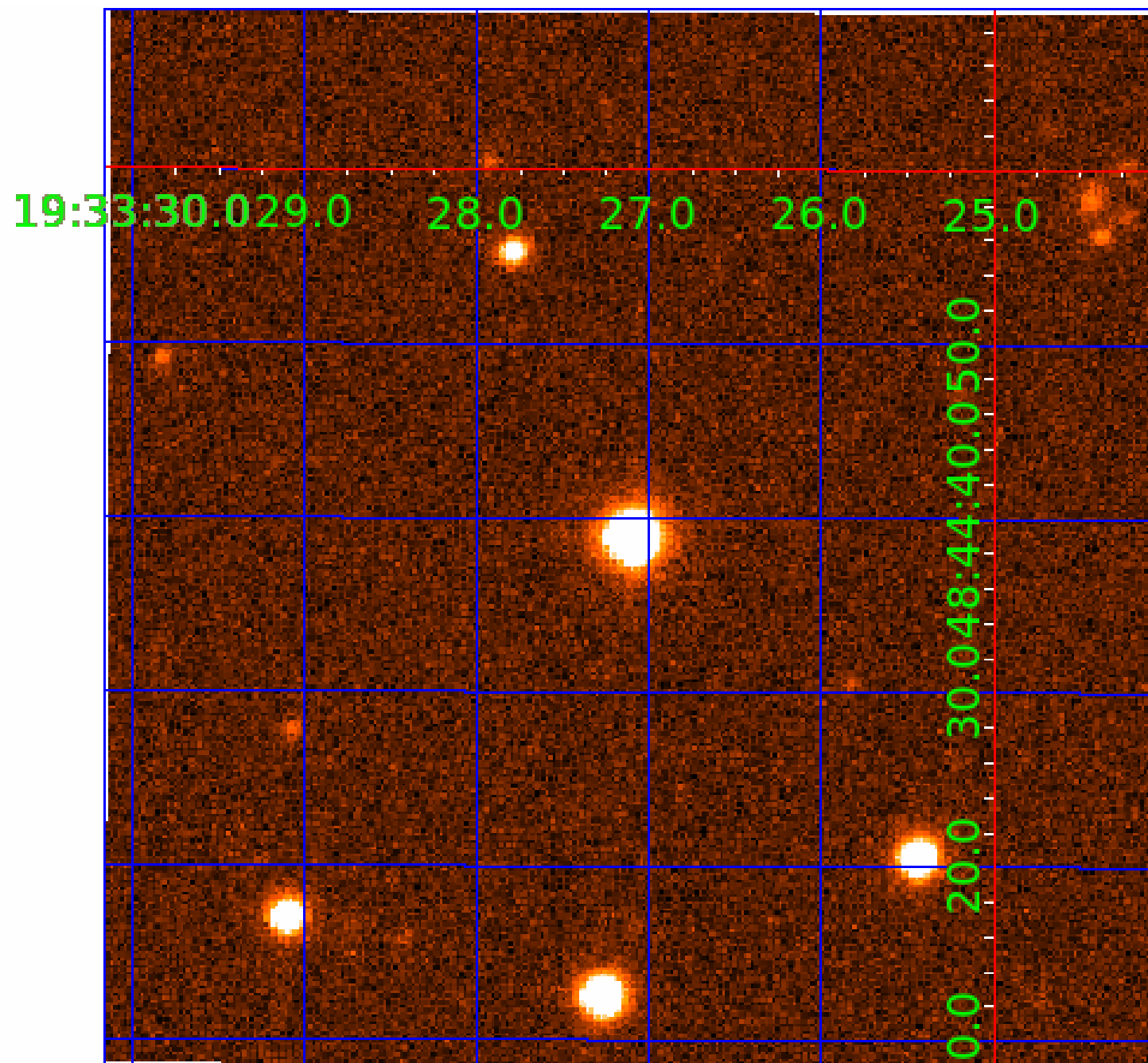


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011140501

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011140501-01	OBS	No	1.065108	131.882027	158.1	3.000	9.1	-1.0	2.01	7573	2.56	21093.45
011140501-02	OBS	No	1.065052	132.287991	36.1	4.719	9.3	8.7	2.01	7573	1.28	21094.93
011140501-03	OBS	No	465.426241	215.710475	774.2	6.344	8.9	8.4	2.01	7573	10.58	6.36
011140501-04	OBS	No	46.990956	148.789416	350.4	4.393	8.8	6.2	2.01	7573	4.37	135.31
011140501-05	OBS	No	82.134814	162.278263	579.5	6.339	7.5	8.2	2.01	7573	6.19	64.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011140501-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
011140501-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
011140501-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011140501-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

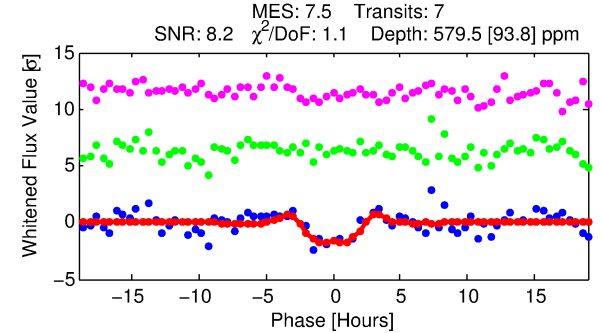
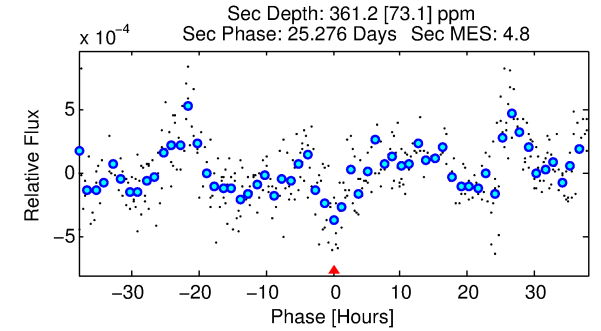
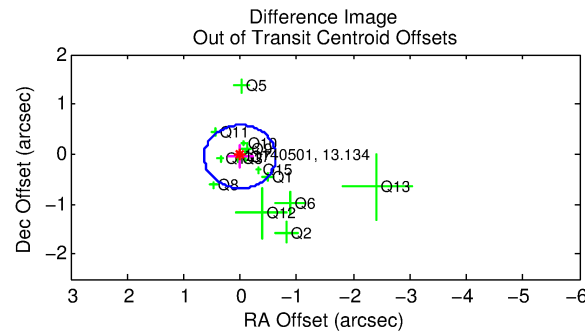
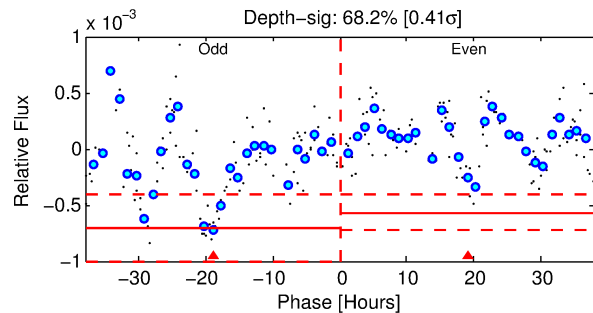
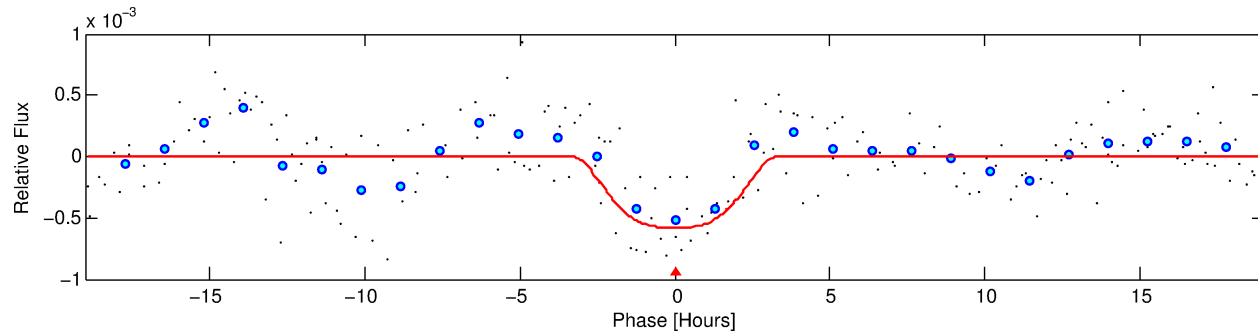
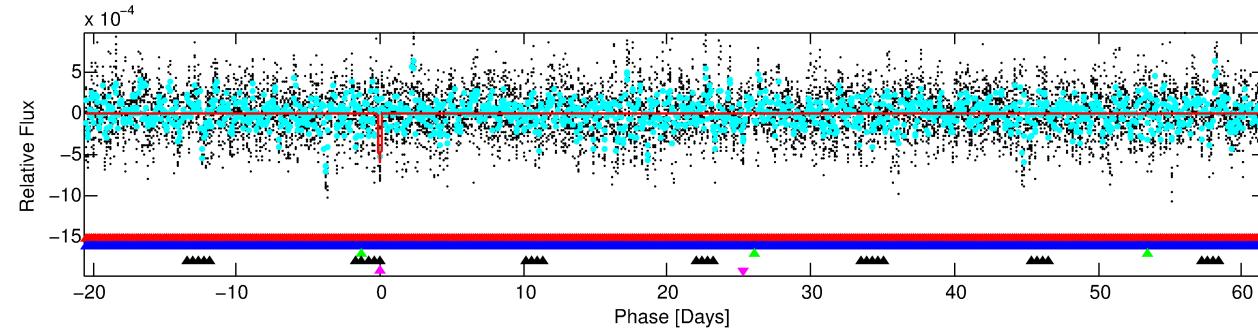
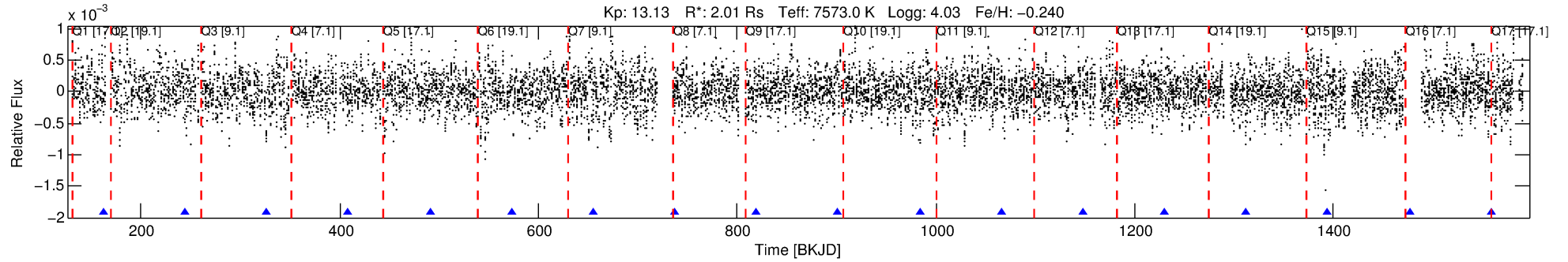
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011140501-05

No Significant Match Found

# DV One-Page Summary

KIC: 11140501 Candidate: 5 of 5 Period: 82.135 d



## DV Fit Results:

Period = 82.13481 [0.00166] d  
Epoch = 162.2783 [0.0131] BKJD  
Rp/R\* = 0.0282 [0.0026]  
a/R\* = 34.40 [5.29]  
b = 0.97 [0.01]  
Seff = 64.26 [26.97]  
Teq = 722 [76] K  
Rp = 6.19 [1.76] Re  
a = 0.4313 [0.1066] AU  
Ag = 963.31 [456.42] [2.11σ]  
Teffp = 6219 [502] K [10.83σ]

## DV Diagnostic Results:

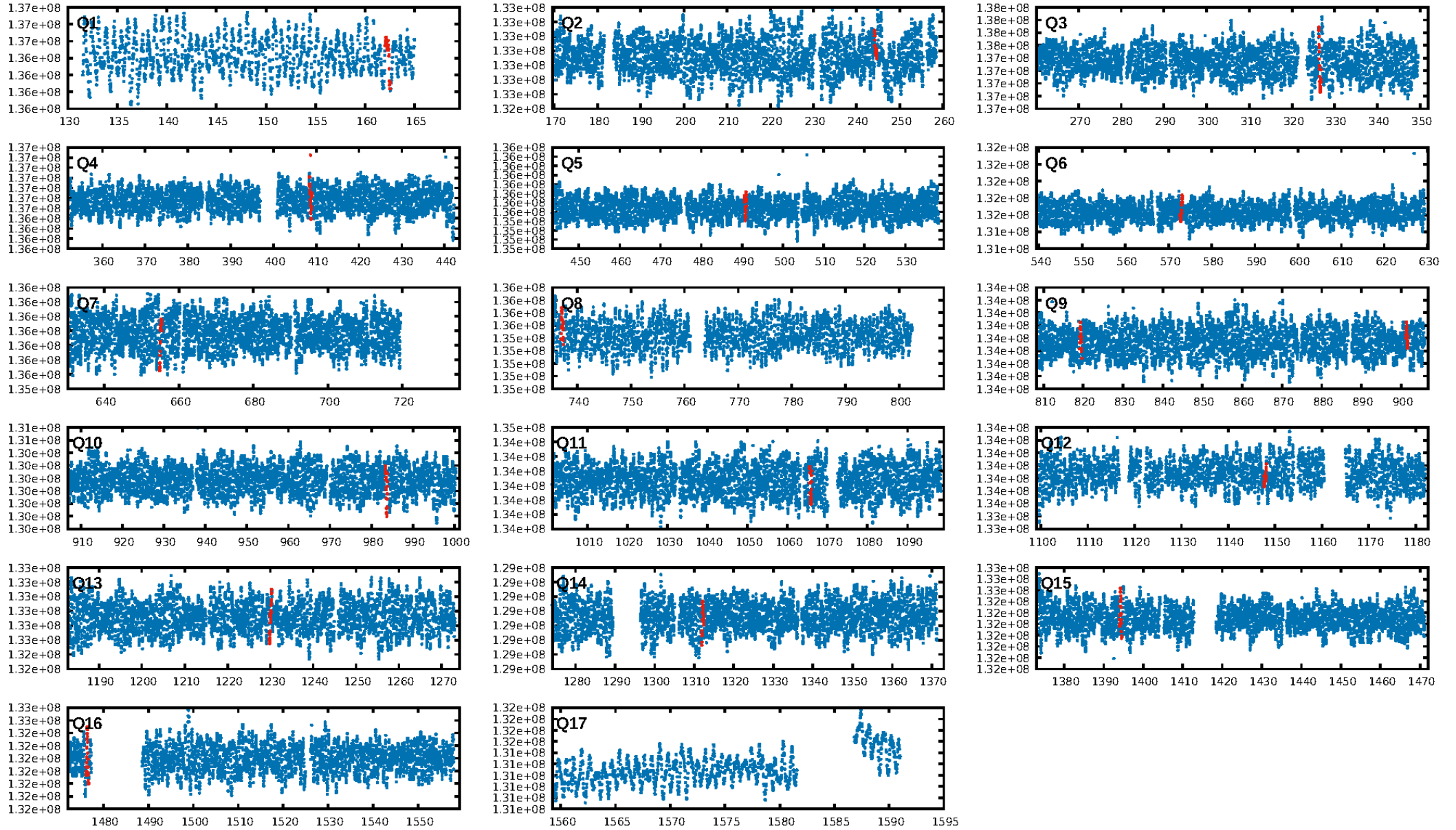
ShortPeriod-sig: 100.0% [109.37σ]  
LongPeriod-sig: 100.0% [1025.75σ]  
ModelChiSquare2-sig: 61.5%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.72e-08**  
RollingBand-fgt: 1.00 [7/7]  
**GhostDiagnostic-chr: 0.9296**  
Centroid-sig: 0.3%  
Centroid-so: 0.516 arcsec [2.11σ]  
OotOffset-rm: 0.051 arcsec [0.24σ]  
KicOffset-rm: 0.042 arcsec [0.19σ]  
OotOffset-st: 4/4/2/4 [14]  
KicOffset-st: 4/4/2/4 [14]  
DiffImageQuality-fgm: 0.57 [8/14]  
DiffImageOverlap-fno: 0.00 [0/15]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:03:21 Z

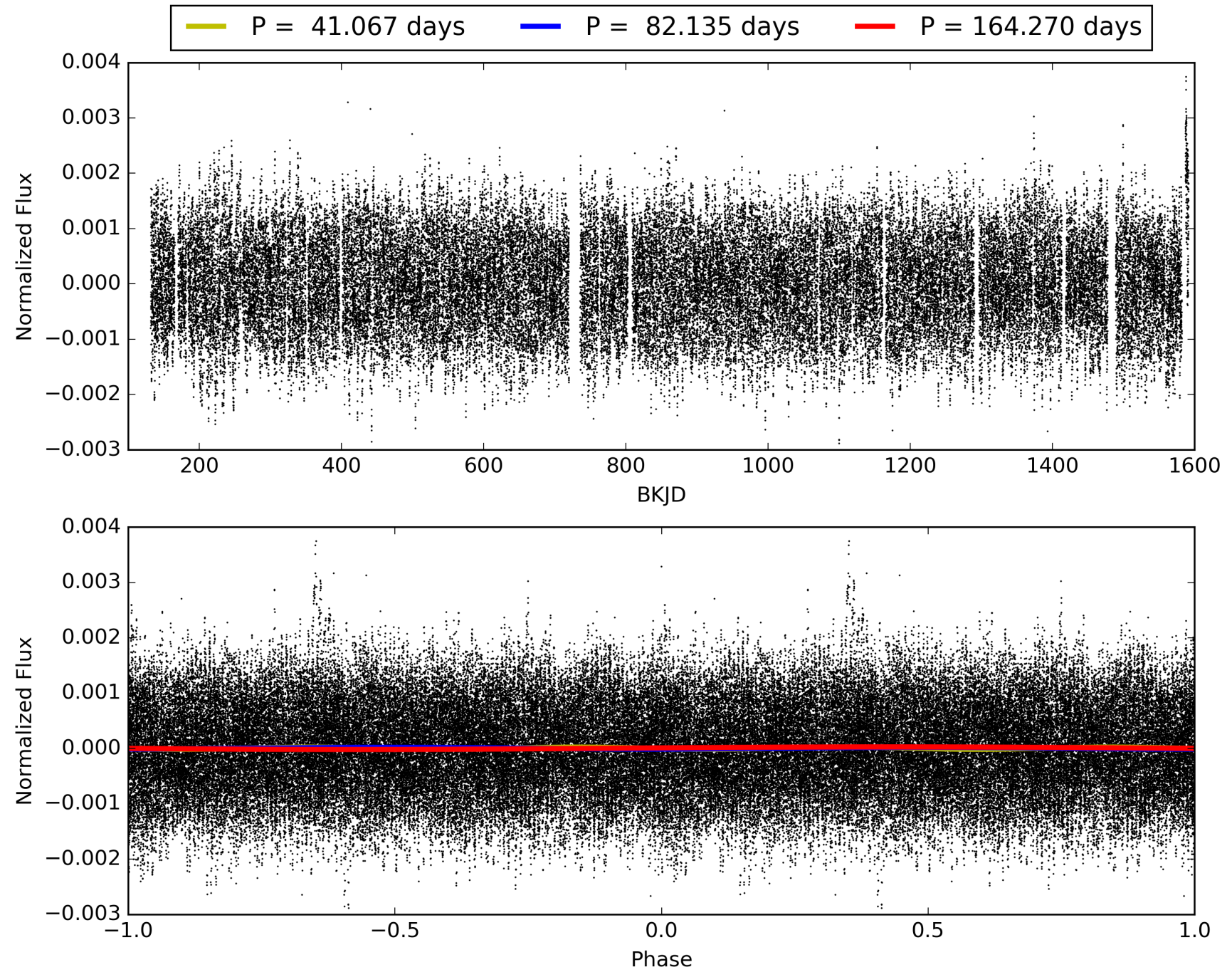
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 011140501-05, PDC Light Curves

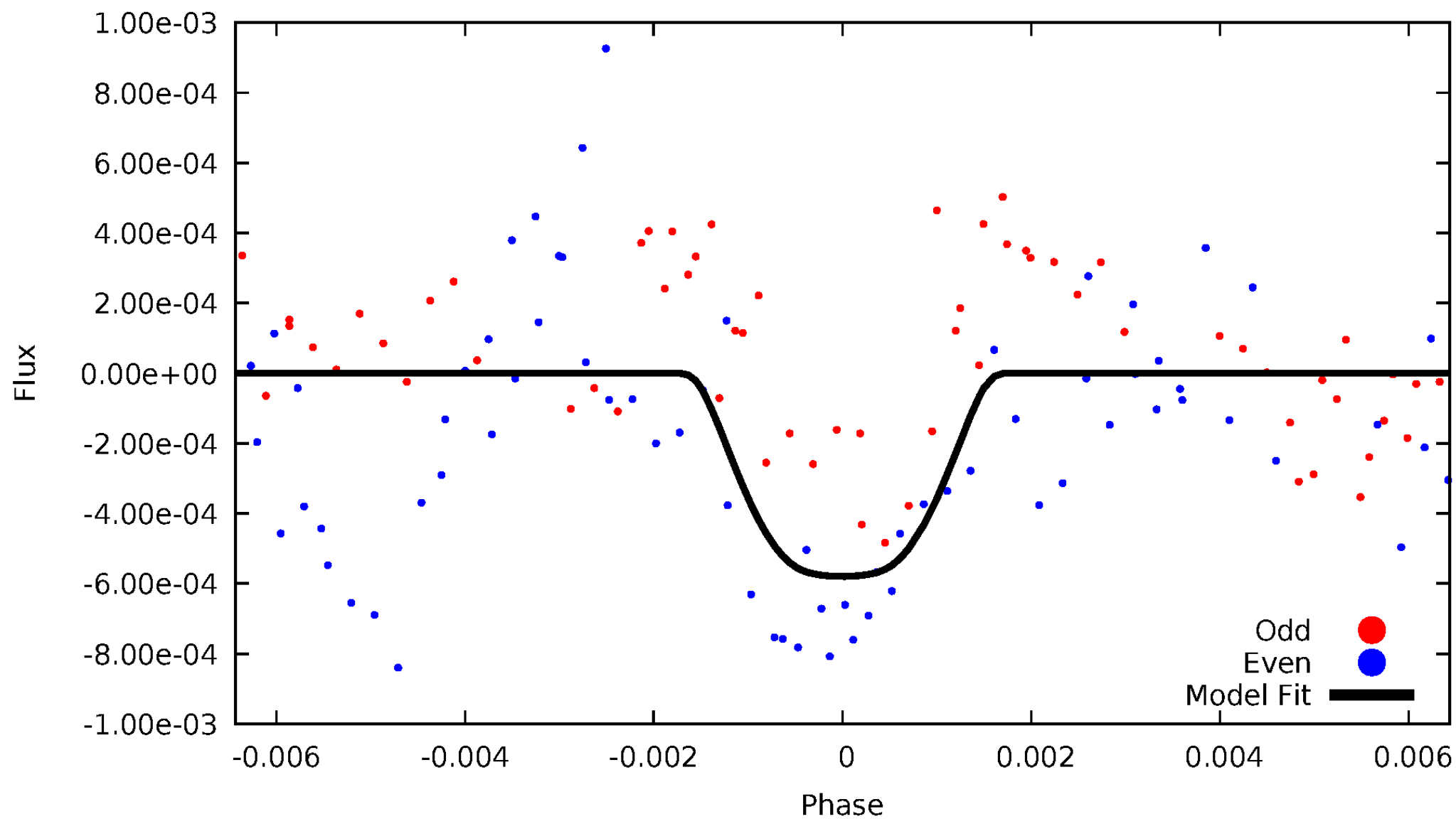


# TCE 011140501-05



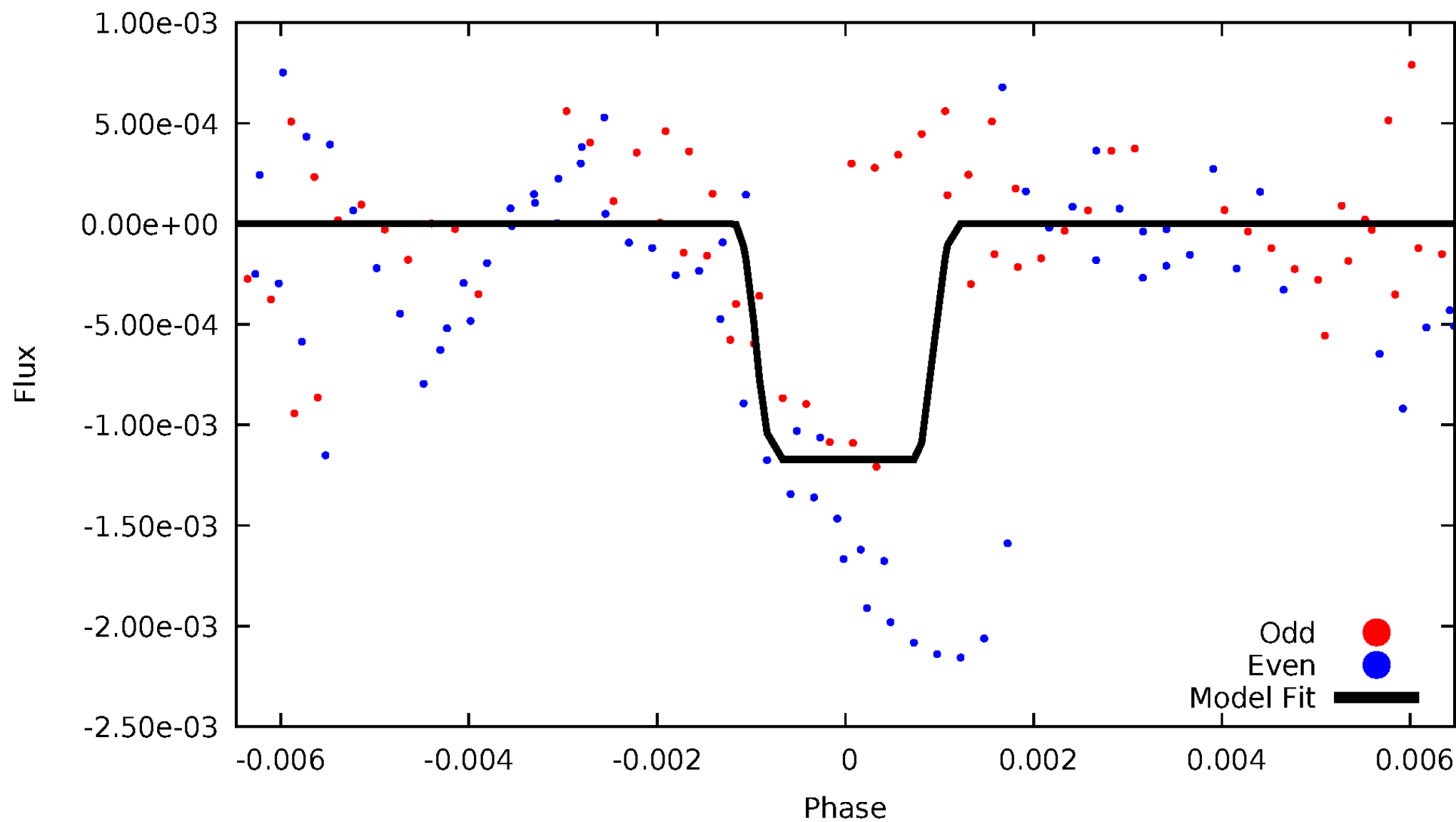
# DV Odd/Even

TCE 011140501-05

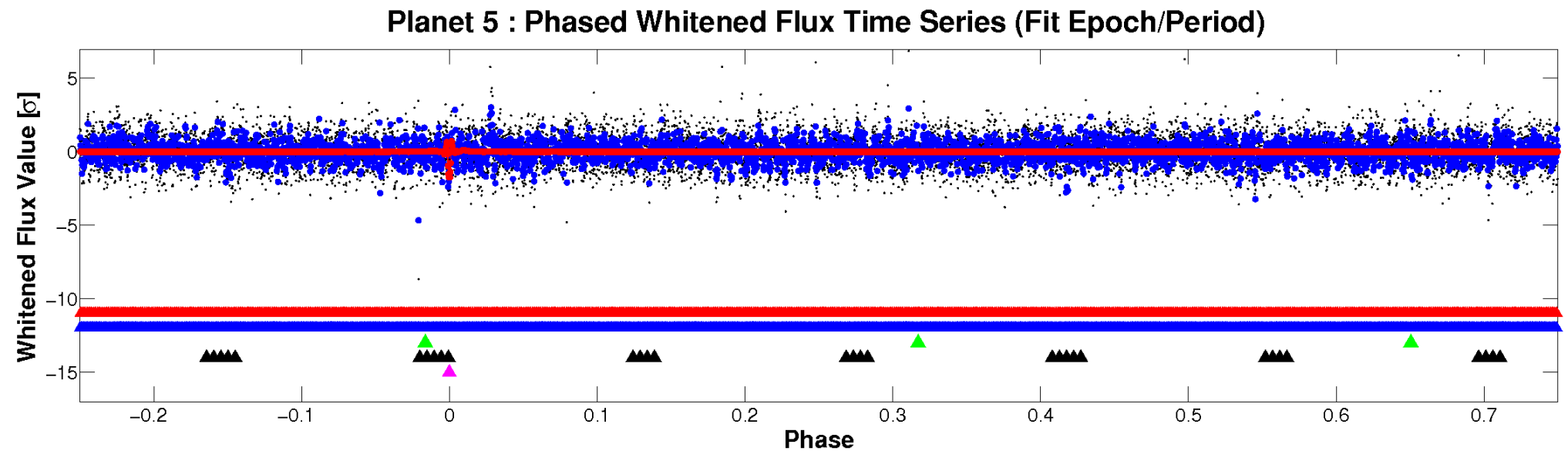
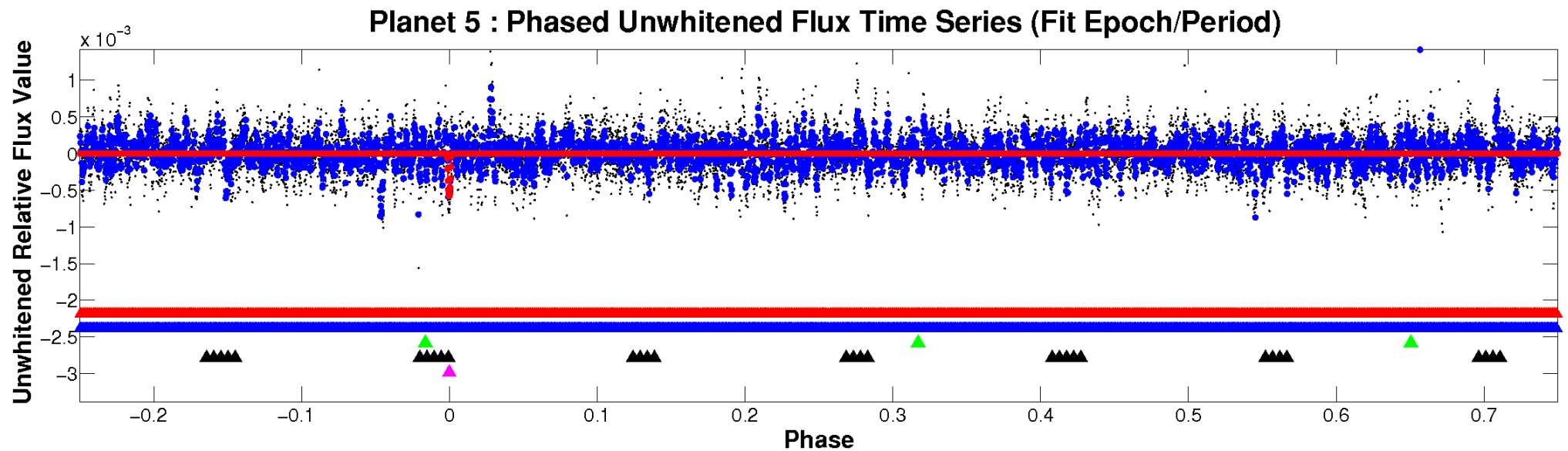


# ALT Odd/Even

TCE 011140501-05

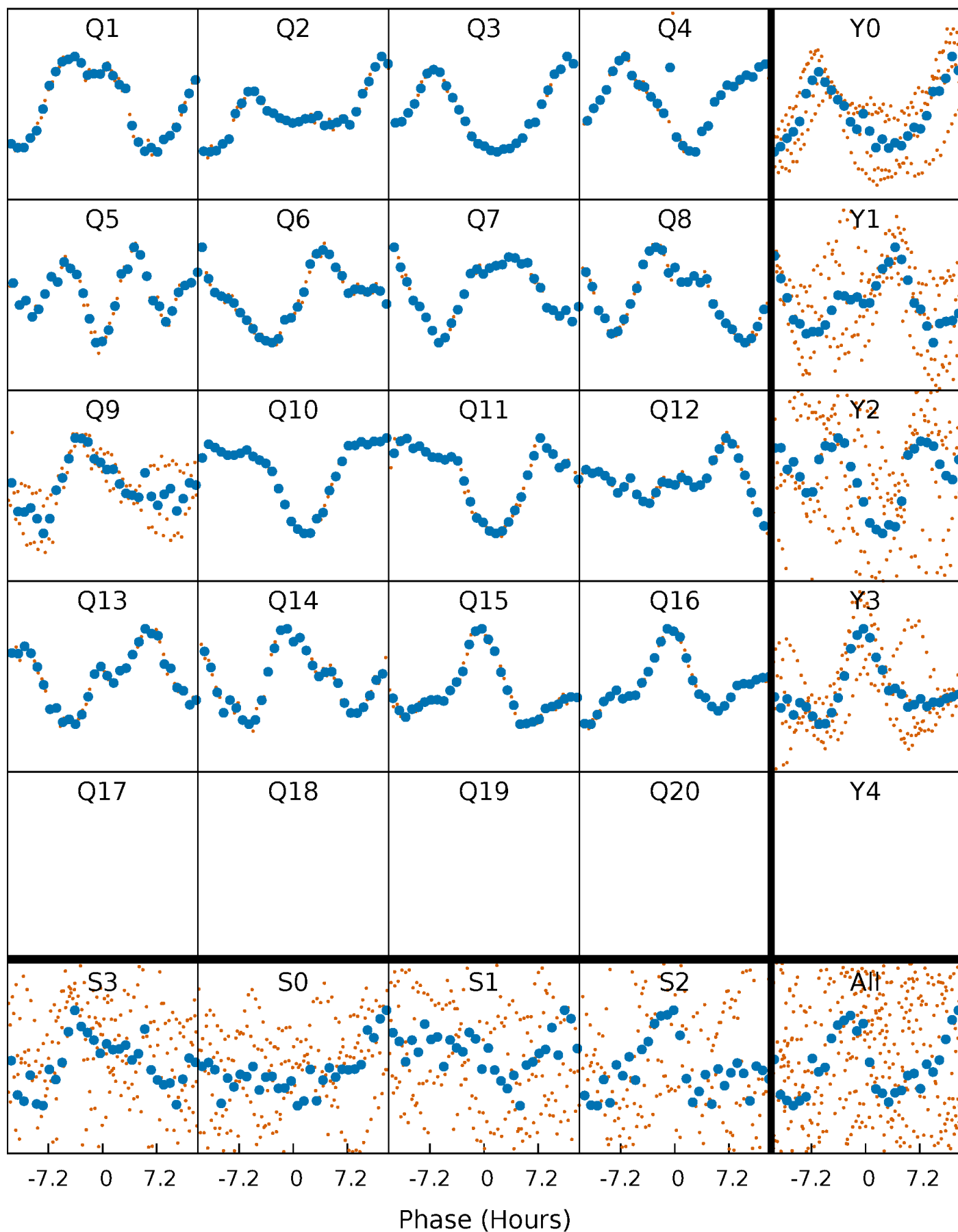


# Non-Whitened Vs. Whitened Light Curve



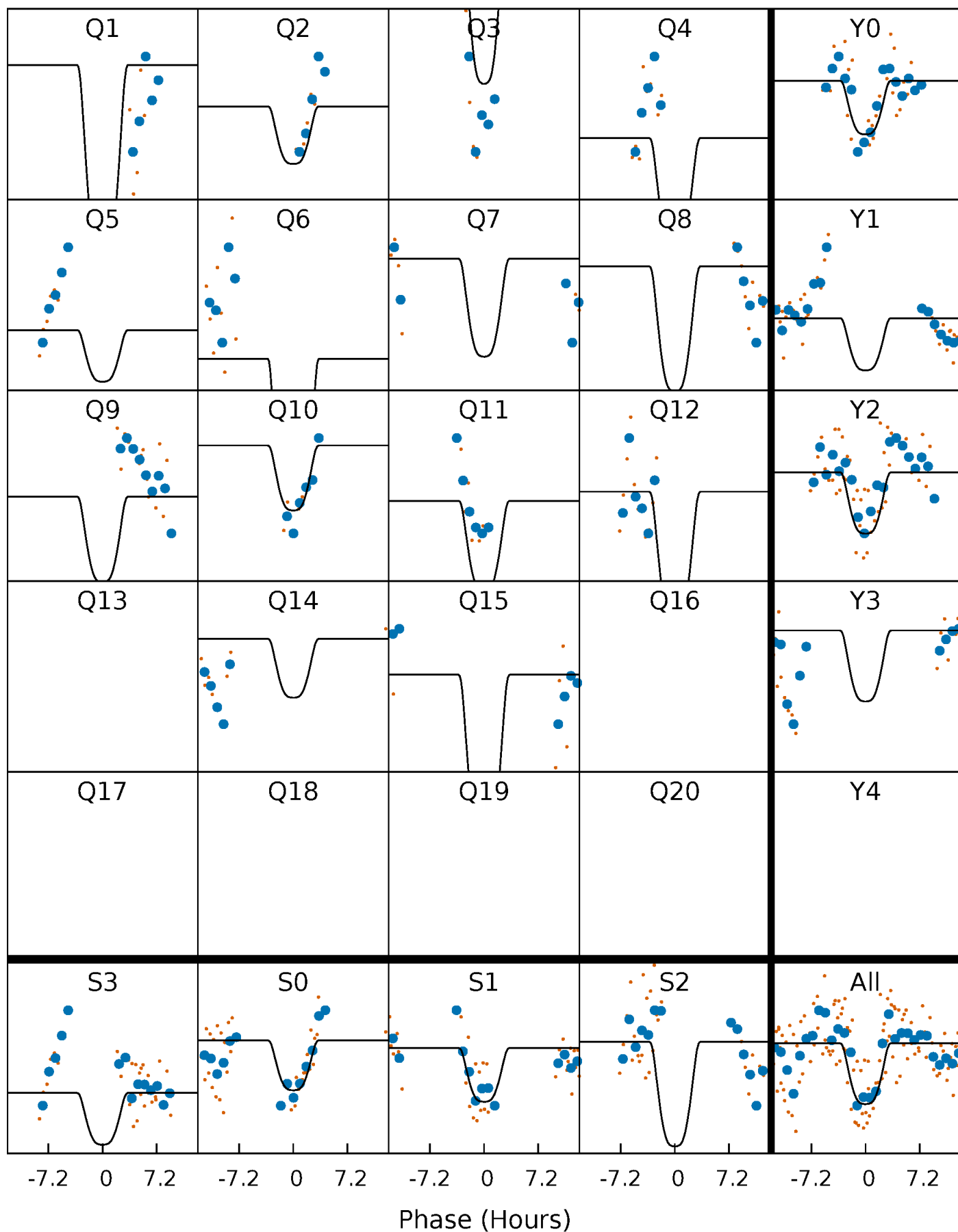
# PDC Quarter-Phased Transit Curves

TCE 011140501-05     $P = 82.134814$  Days     $T_0 = 162.278263$  (BKJD)



# DV Quarter-Phased Transit Curves

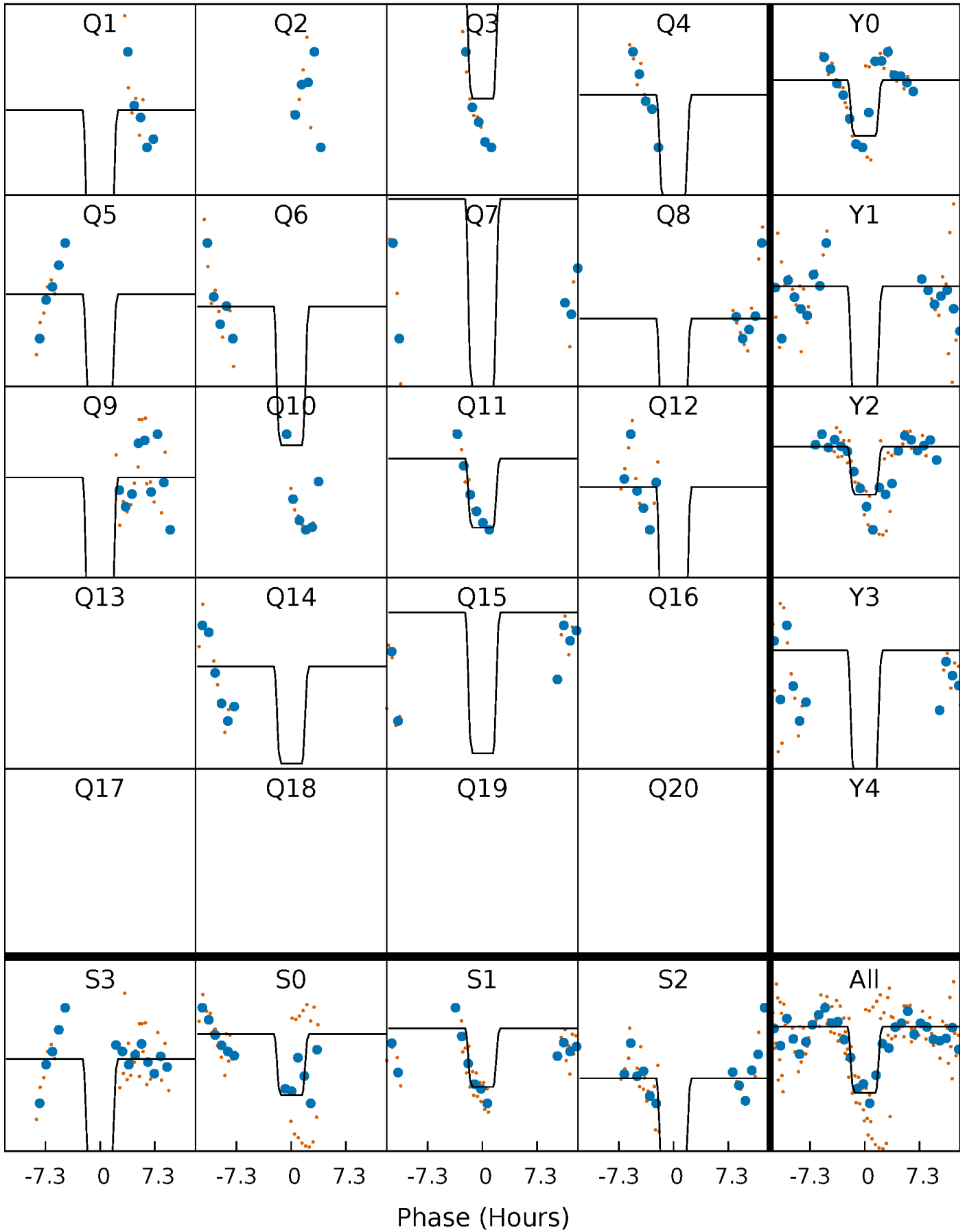
TCE 011140501-05   P= 82.134814 Days    $T_0=162.278263$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

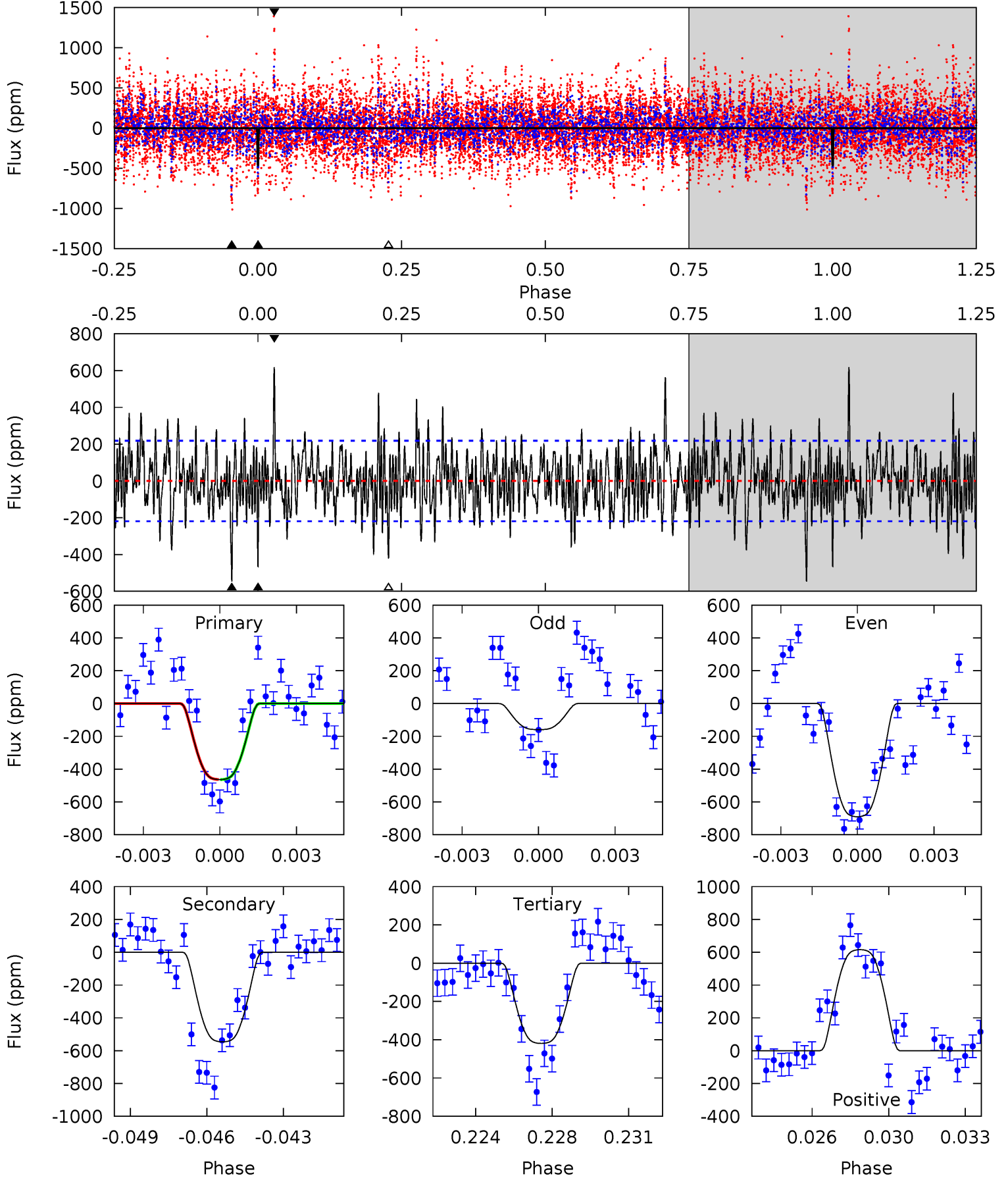
TCE 011140501-05   P= 82.132482 Days    $T_0=162.292092$  (BKJD)



# DV Model-Shift Uniqueness Test

011140501-05, P = 82.134814 Days, E = 80.143449 Days

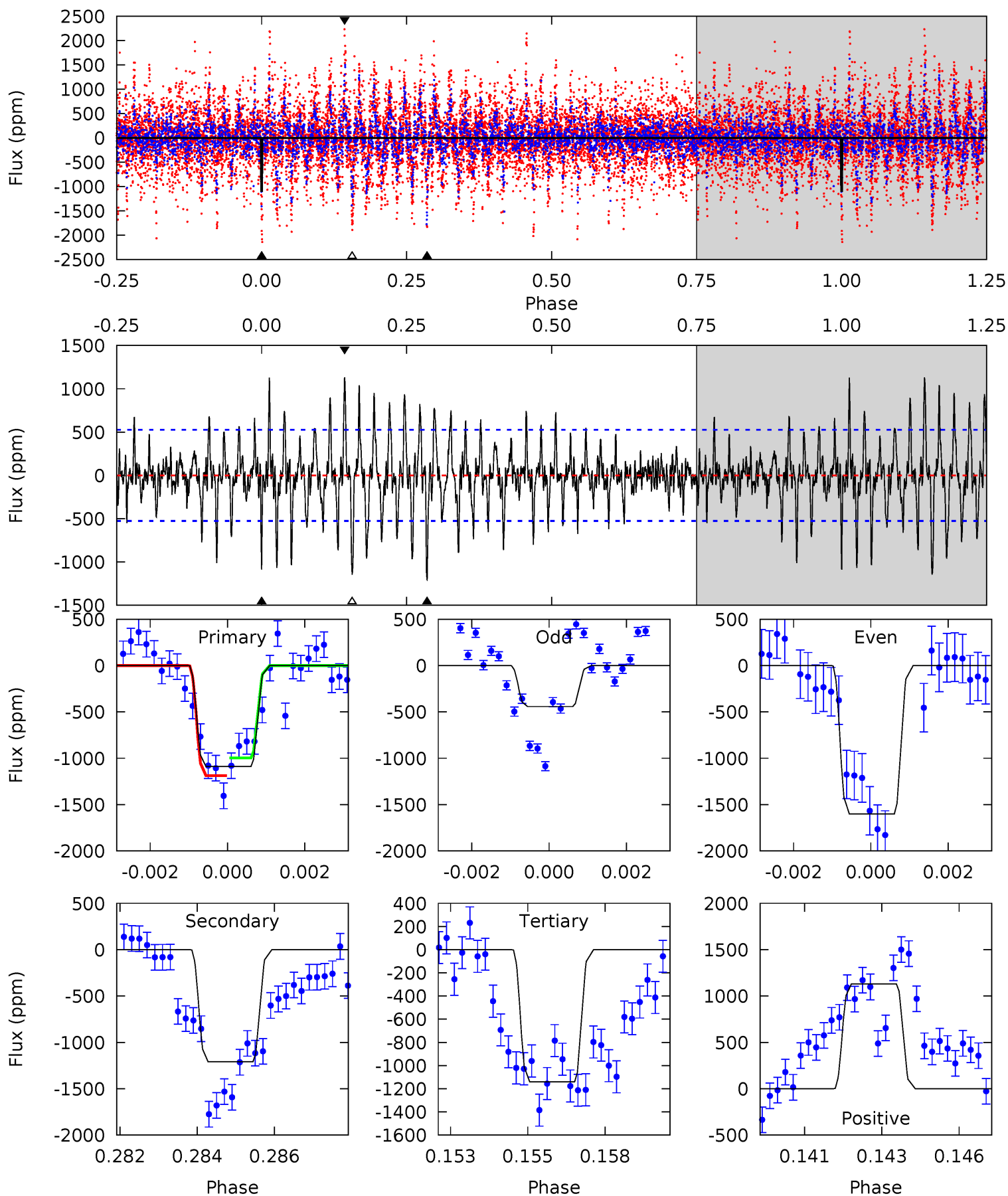
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	13.1	10.0	14.7	5.24	2.94	3.26	1.07	-3.64	3.04	-1.66	6.34	0.37	0.53	0.00



# Alt Model-Shift Uniqueness Test

011140501-05, P = 82.132482 Days, E = 80.159610 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
11.0	12.2	11.5	11.4	5.29	3.04	2.93	-0.52	-0.42	0.68	0.78	5.81	0.77	0.48	0.97



### Stellar Parameters For KIC 011140501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7573^{+237}_{-316}$	$4.030^{+0.222}_{-0.148}$	$-0.240^{+0.250}_{-0.300}$	$2.014^{+0.541}_{-0.541}$	$1.584^{+0.187}_{-0.280}$	$0.273^{+0.316}_{-0.129}$
	+3%/-4%	+6%/-4%	+104%/-125%	+27%/-27%	+12%/-18%	+116%/-47%
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 011140501-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-546 \pm 42$	$5.99^{+1.13}_{-0.94}$	$993^{+79}_{-71}$	$6797^{+446}_{-372}$	$1541^{+605}_{-436}$
Alt.	$-1208 \pm 99$	$7.38^{+1.28}_{-1.16}$	$998^{+74}_{-76}$	$7601^{+531}_{-466}$	$2233^{+889}_{-585}$

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

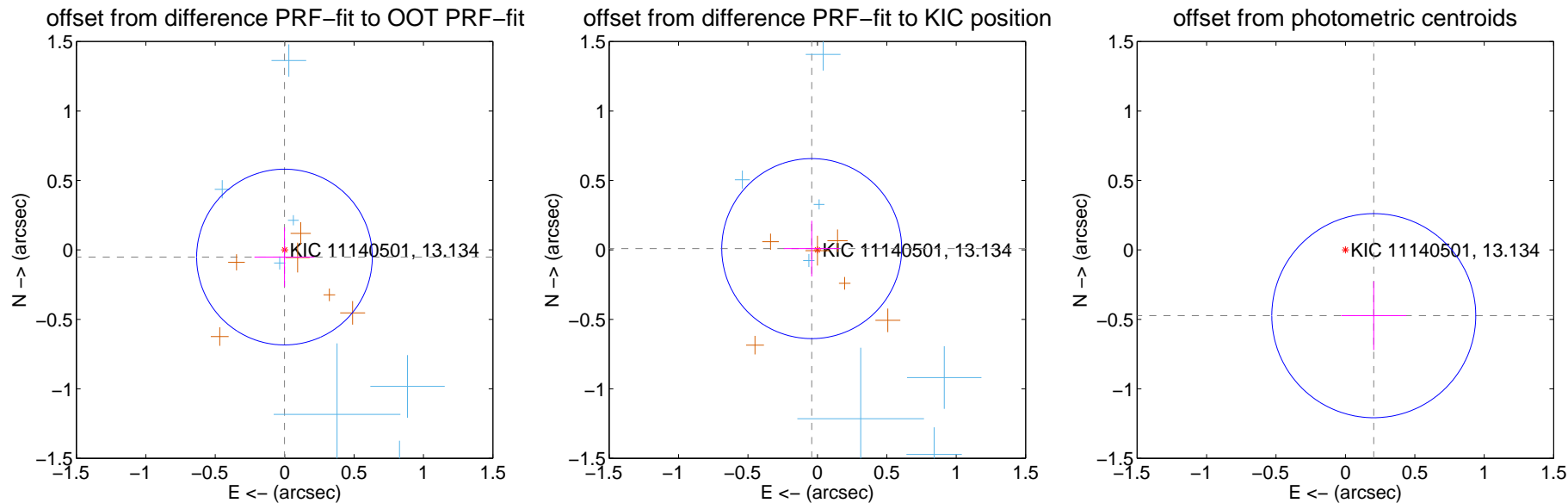
## DV Centroid Data

Supplemental centroid analysis for 011140501-05. Kepler magnitude: 13.13. Transit SNR 8.17

There are 8 quarters with good PRF difference image offsets

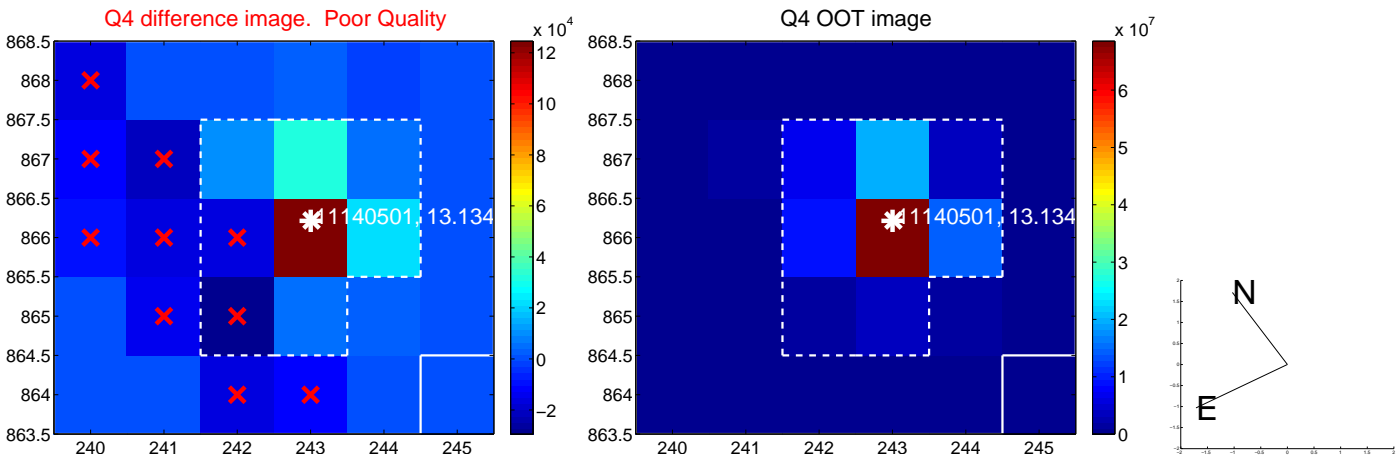
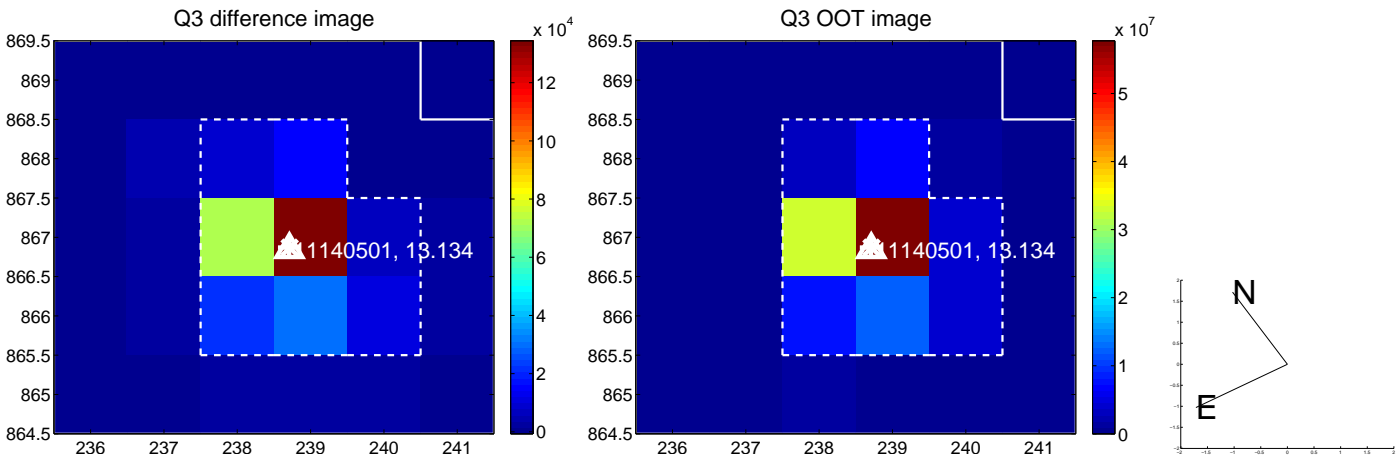
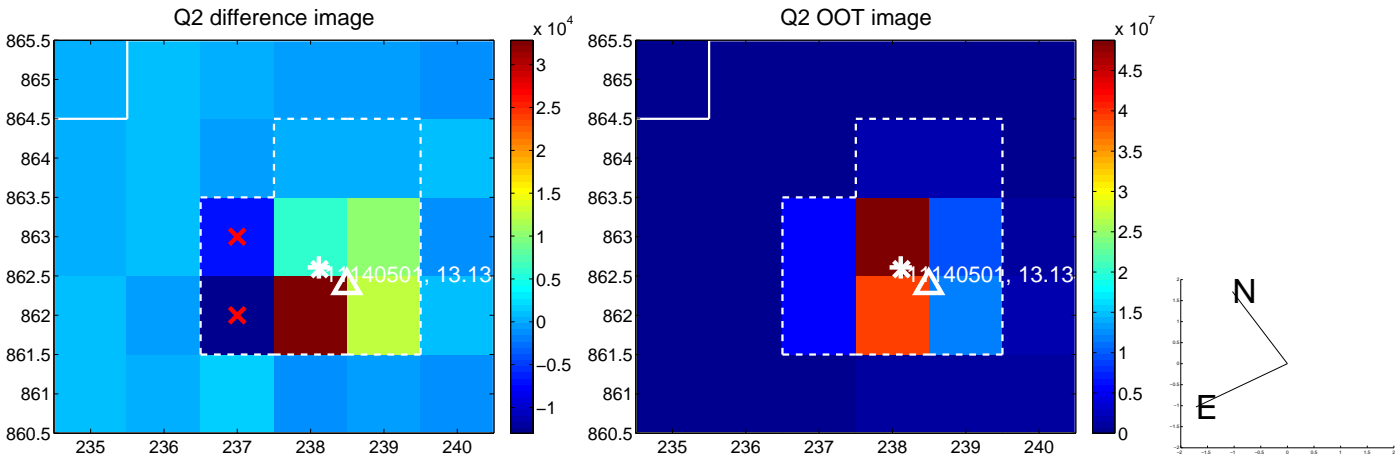
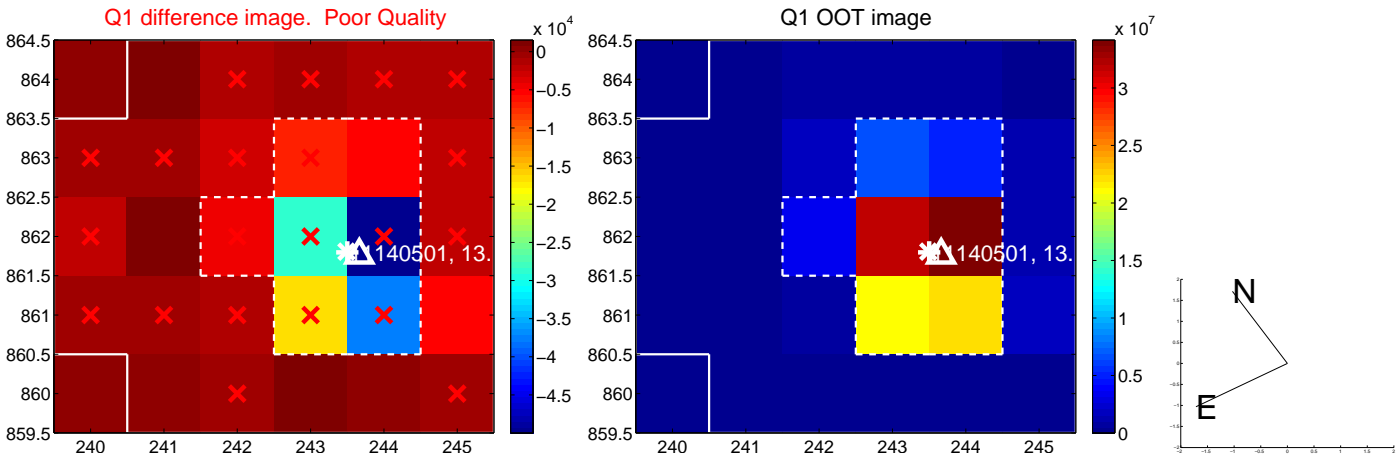
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.051 \pm 0.211$	0.24	$0.001 \pm 0.216$	$-0.051 \pm 0.214$
PRF-fit source offset from KIC position	$0.042 \pm 0.216$	0.19	$0.041 \pm 0.202$	$0.010 \pm 0.200$
photometric centroid source offset	$0.52 \pm 0.24$	2.11	$-0.20 \pm 0.23$	$-0.47 \pm 0.25$

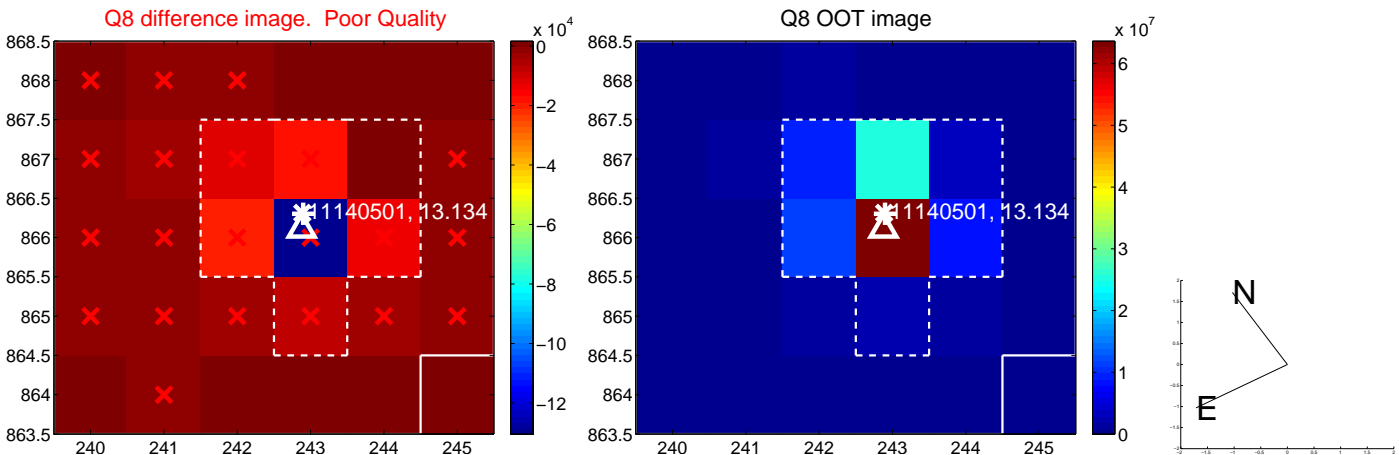
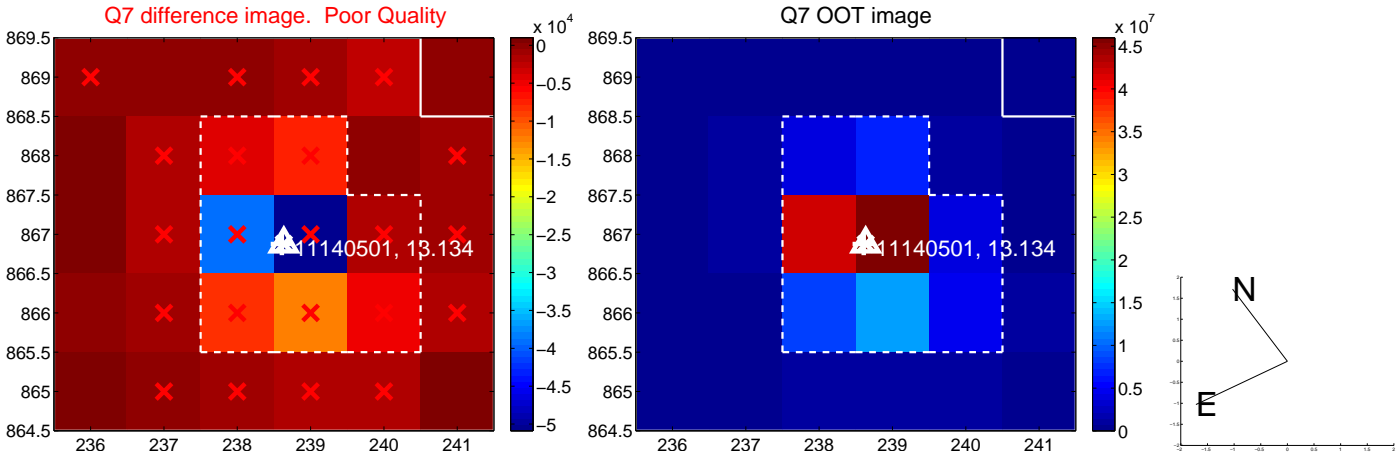
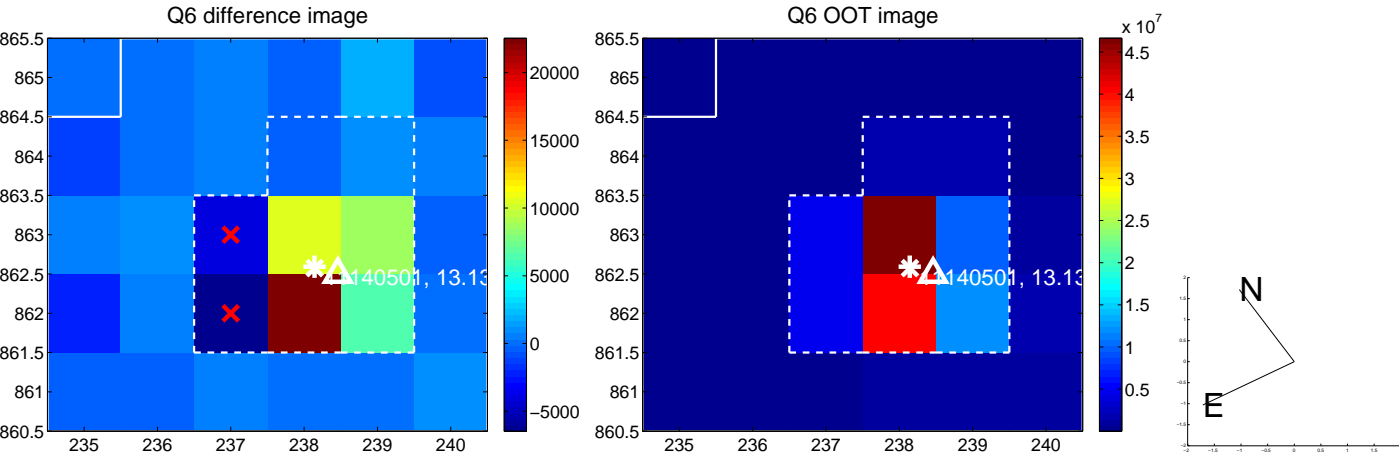
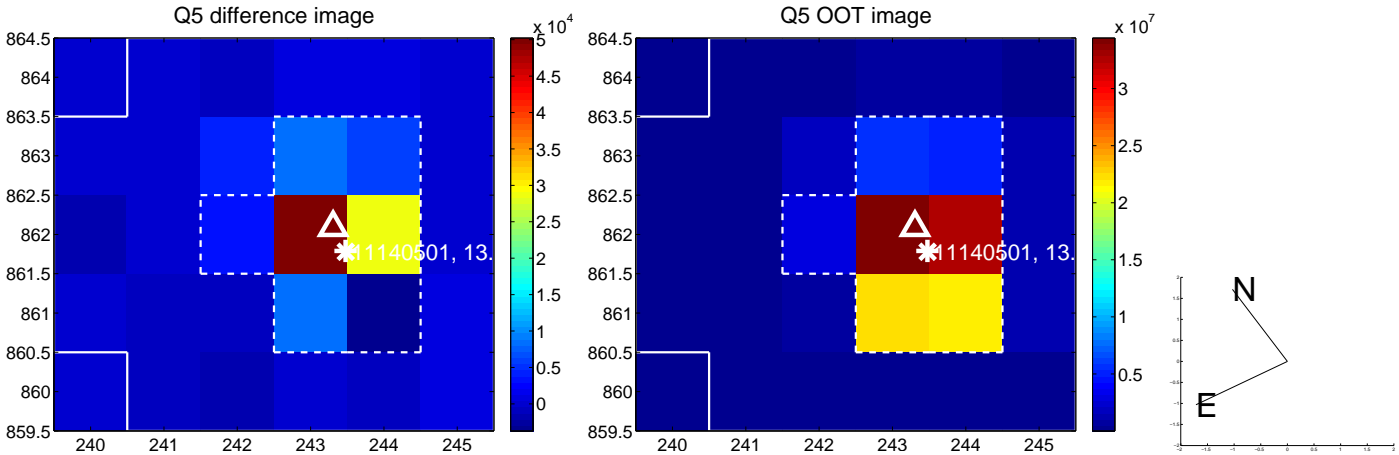


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

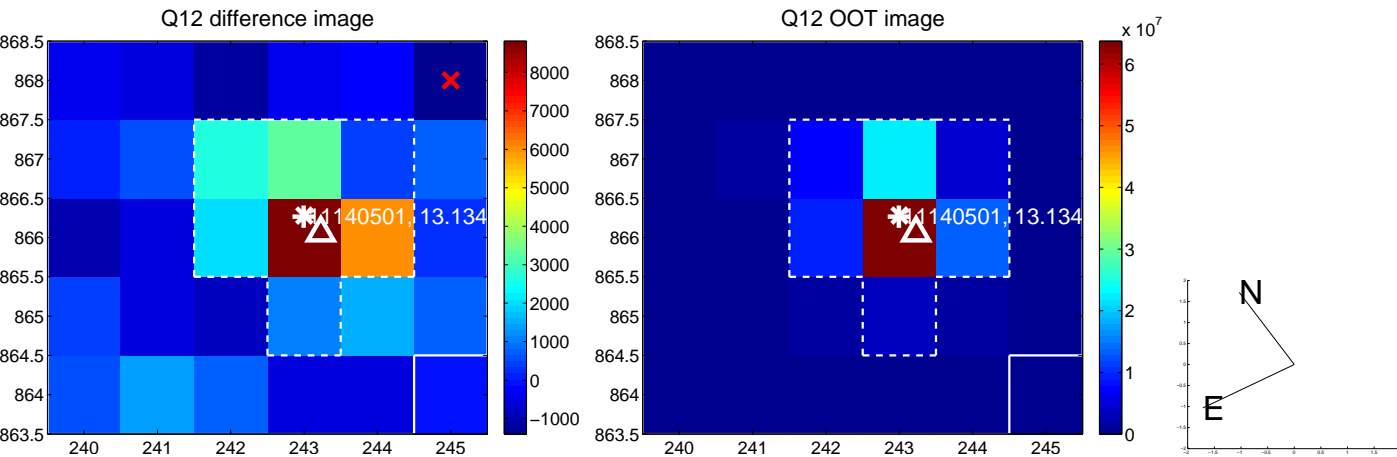
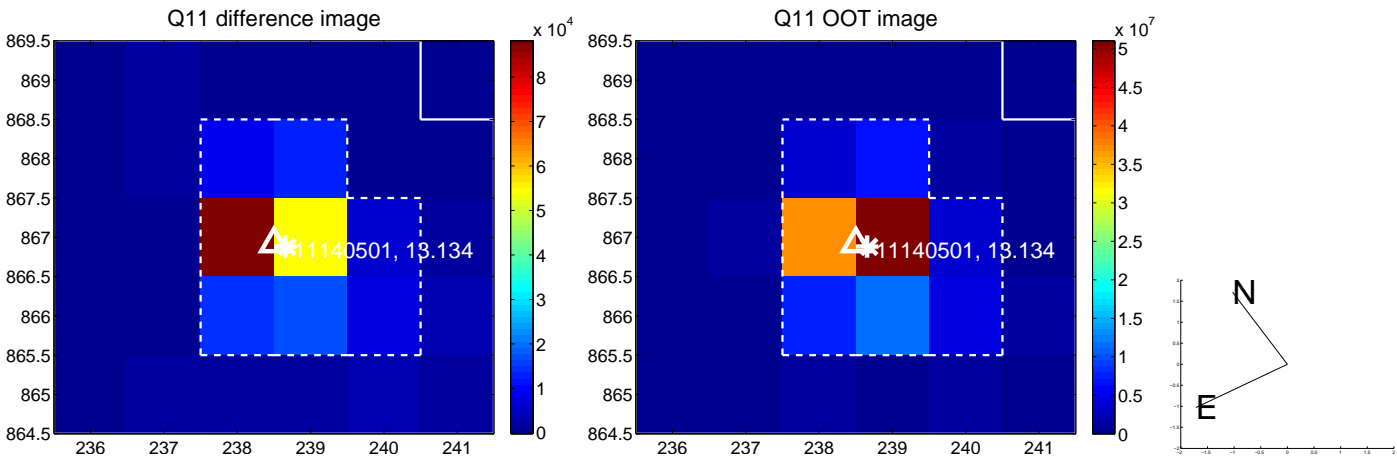
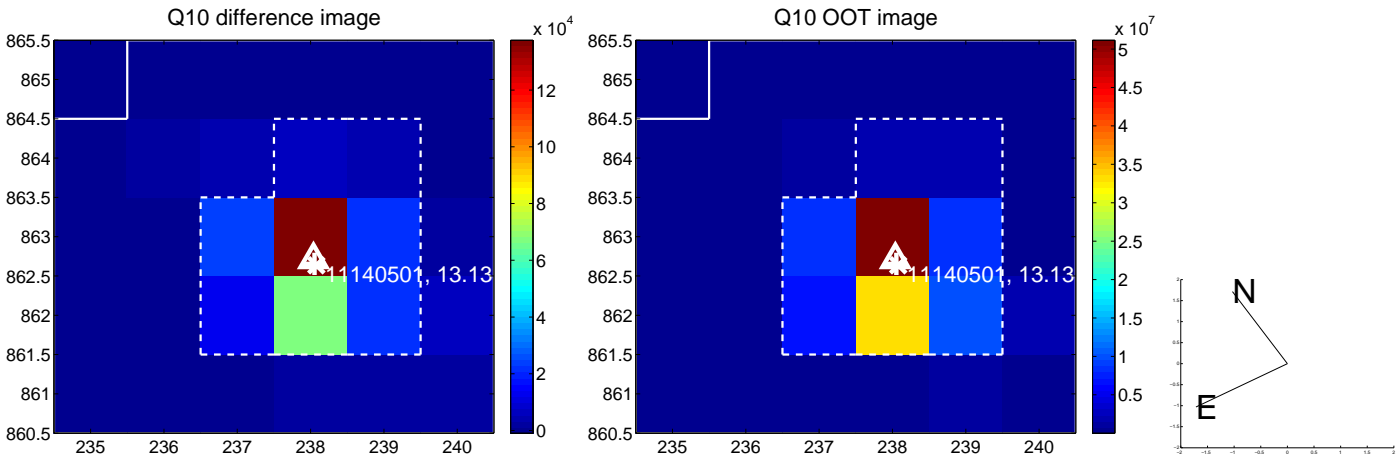
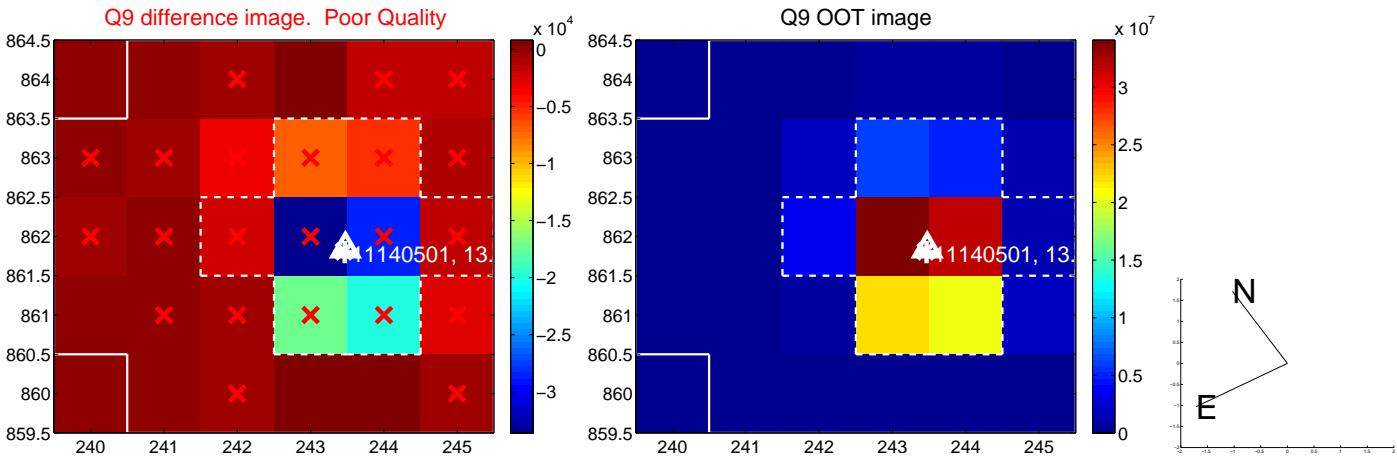


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

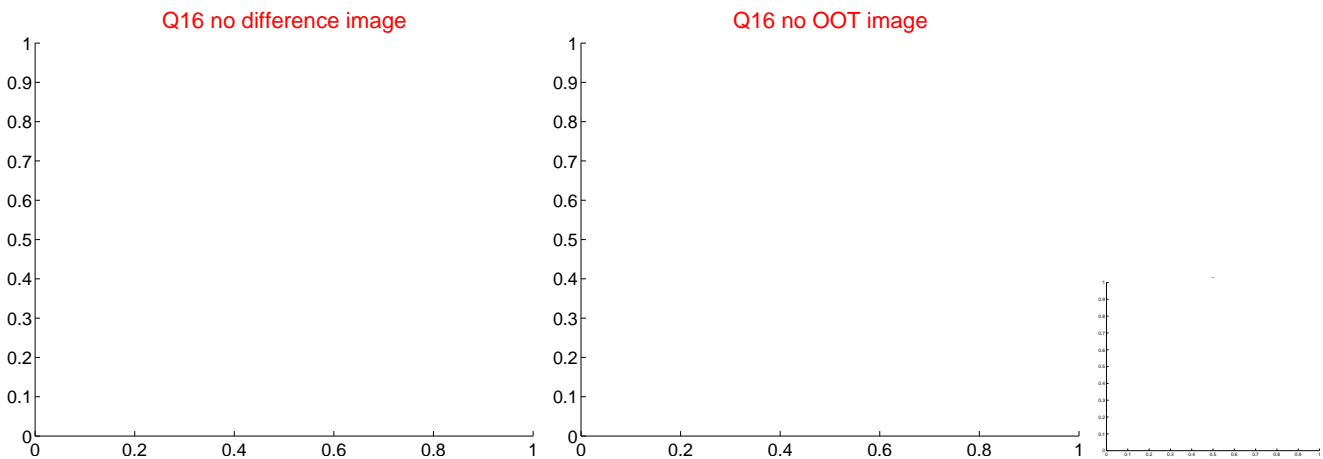
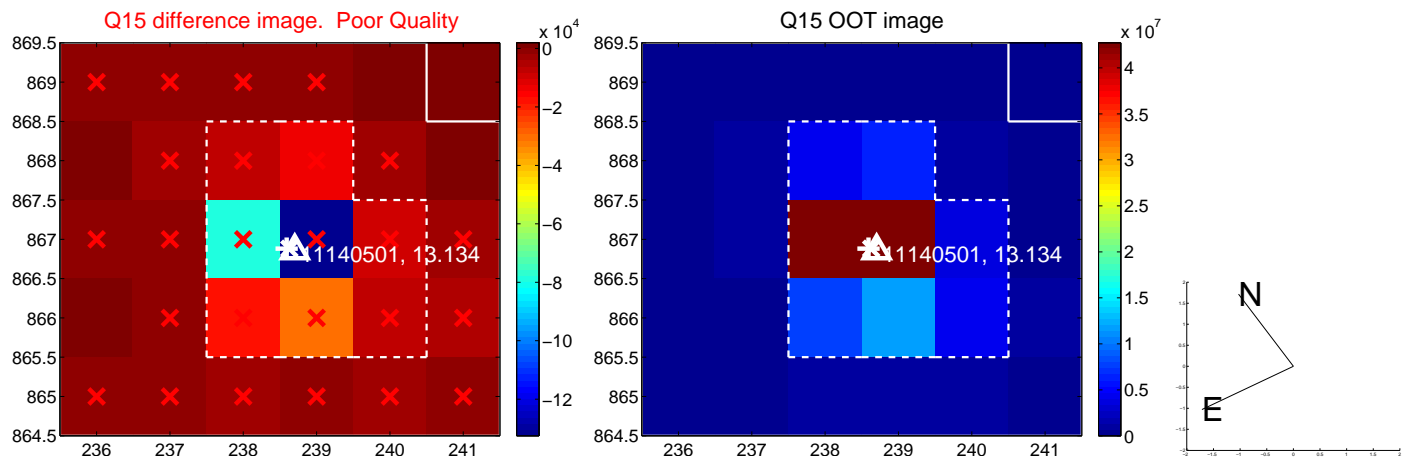
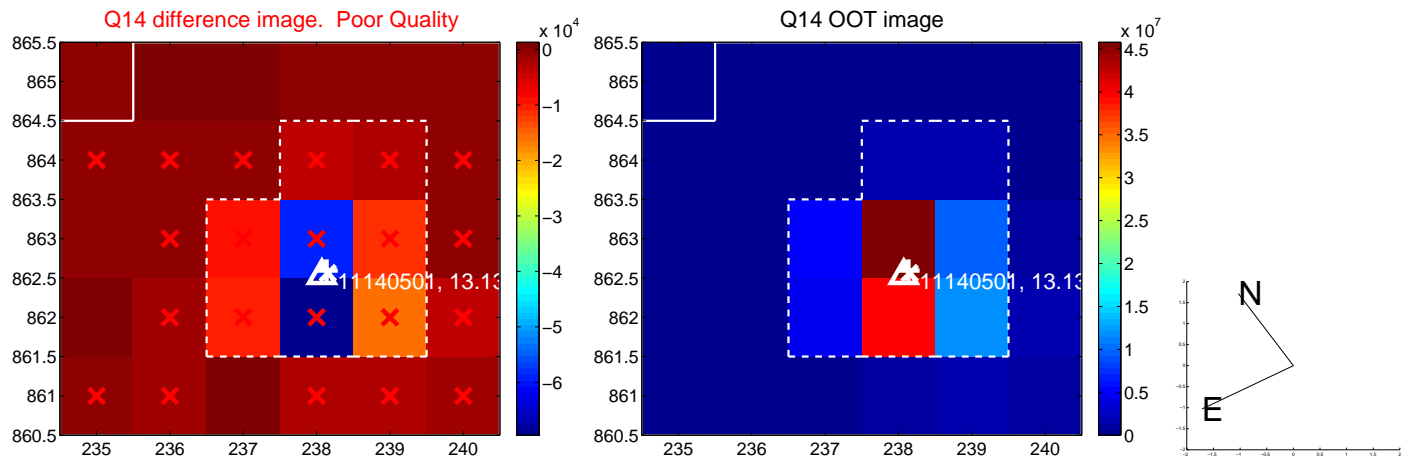
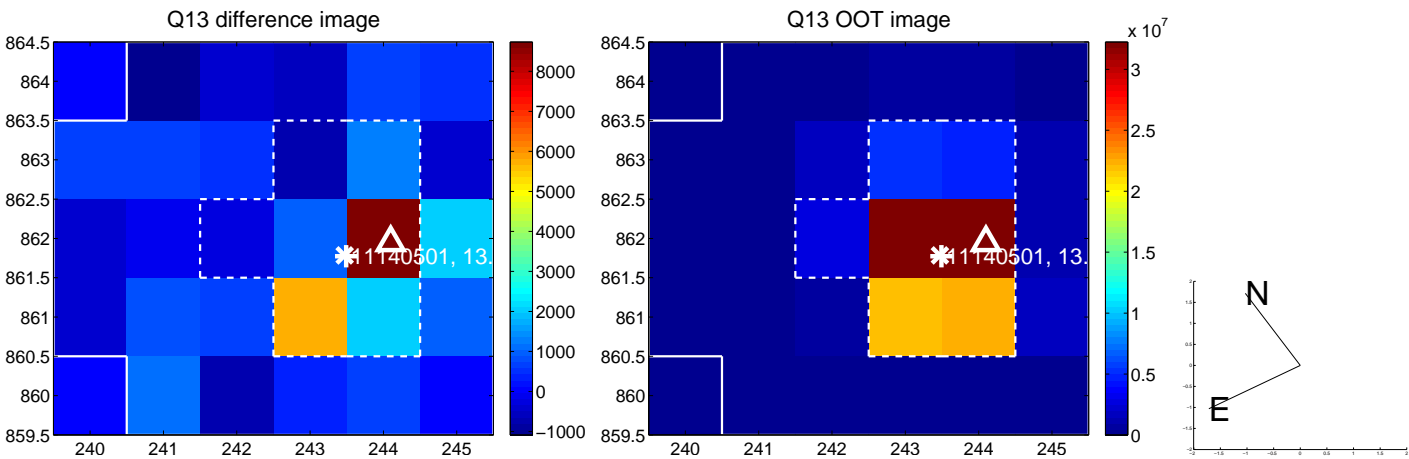




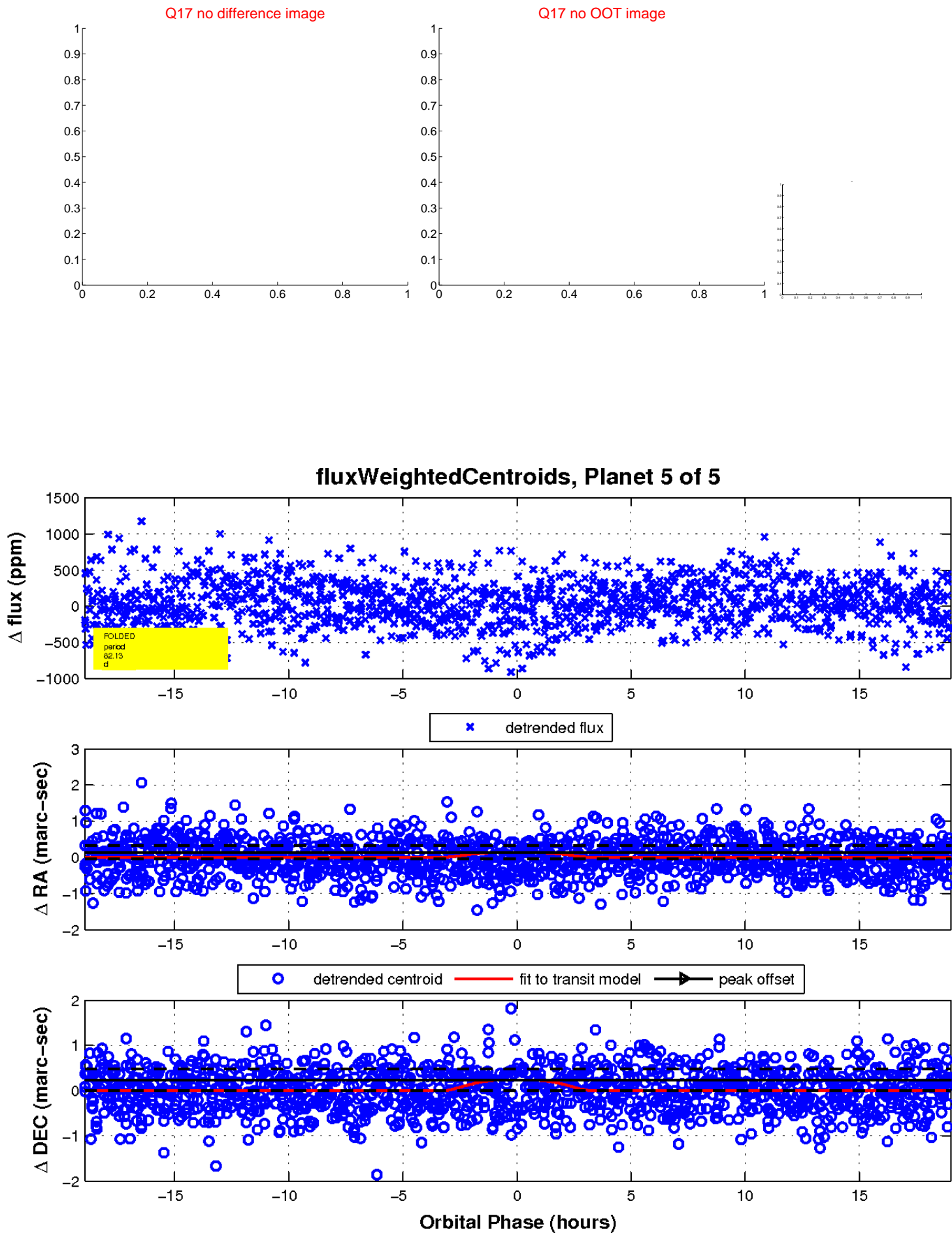
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

