

# KIC 011810124

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011810124-01	OBS	3344.02	3.638964	131.789503	187.5	2.433	12.7	14.2	1.17	5533	1.83	557.06
011810124-02	OBS	3344.01	11.604529	139.051527	265.1	3.529	11.7	12.7	1.17	5533	2.24	118.68
011810124-03	OBS	3344.03	208.548160	230.983042	593.7	10.069	8.2	8.8	1.17	5533	3.06	2.52

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011810124-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT
011810124-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011810124-03	OBS	PC	0.81	0	0	0	0	NO_COMMENT

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

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

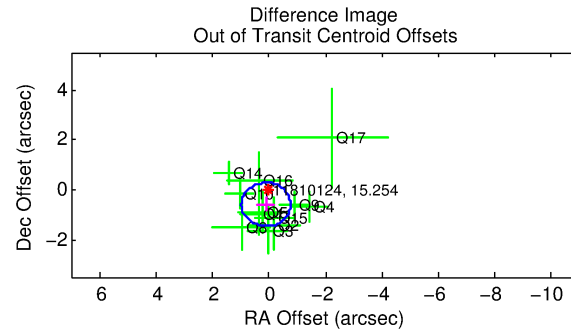
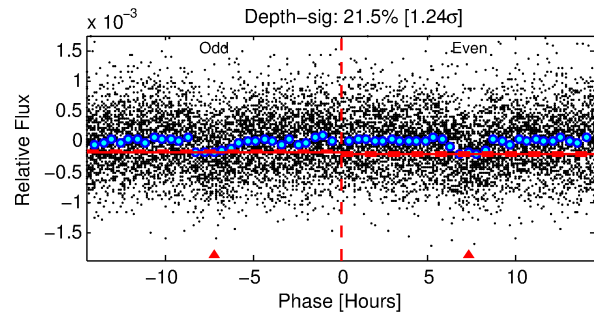
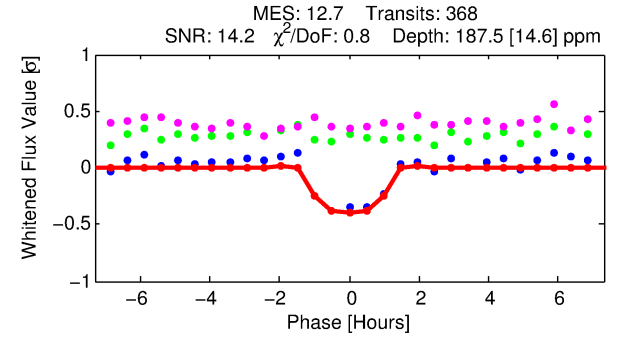
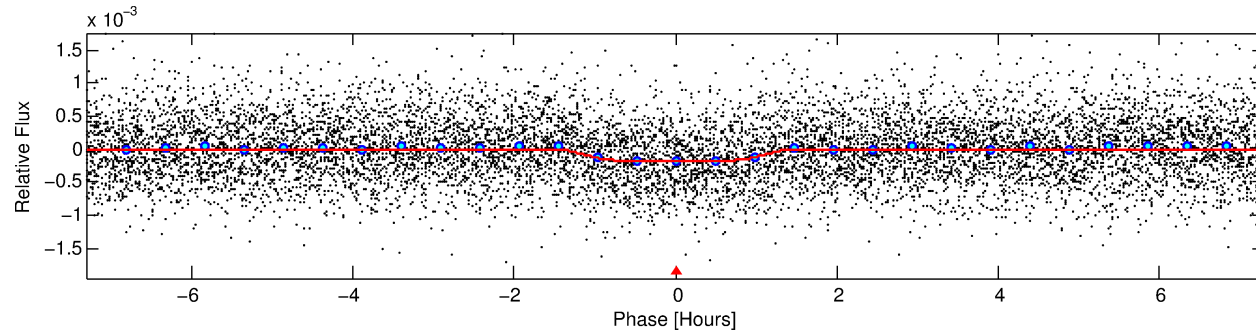
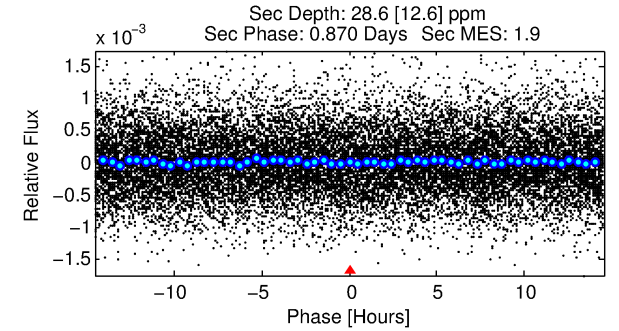
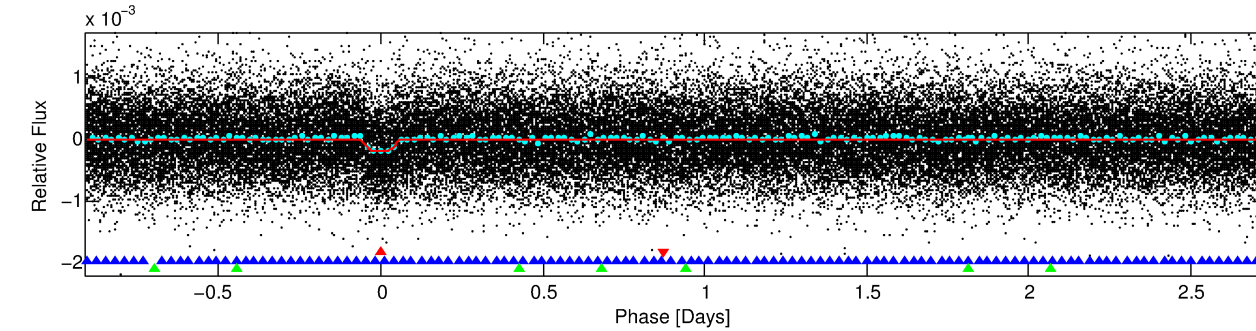
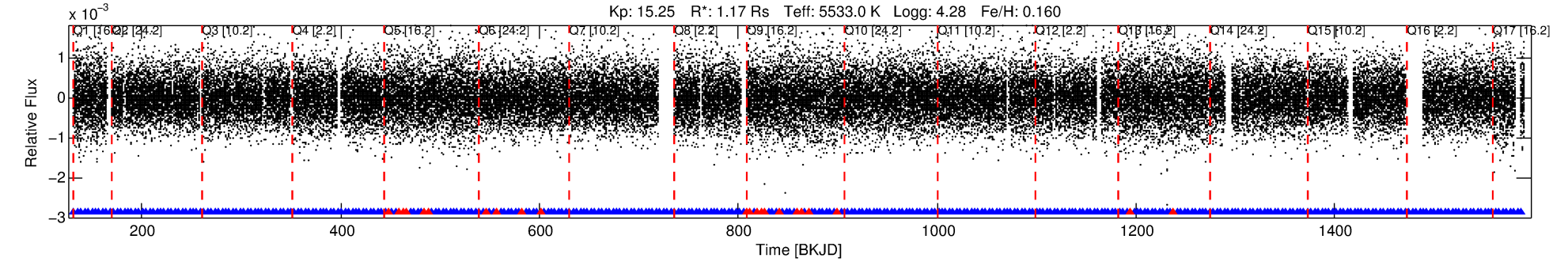
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011810124-01

No Significant Match Found

# DV One-Page Summary

KIC: 11810124 Candidate: 1 of 3 Period: 3.639 d  
KOI: K03344.02 Corr: 0.949



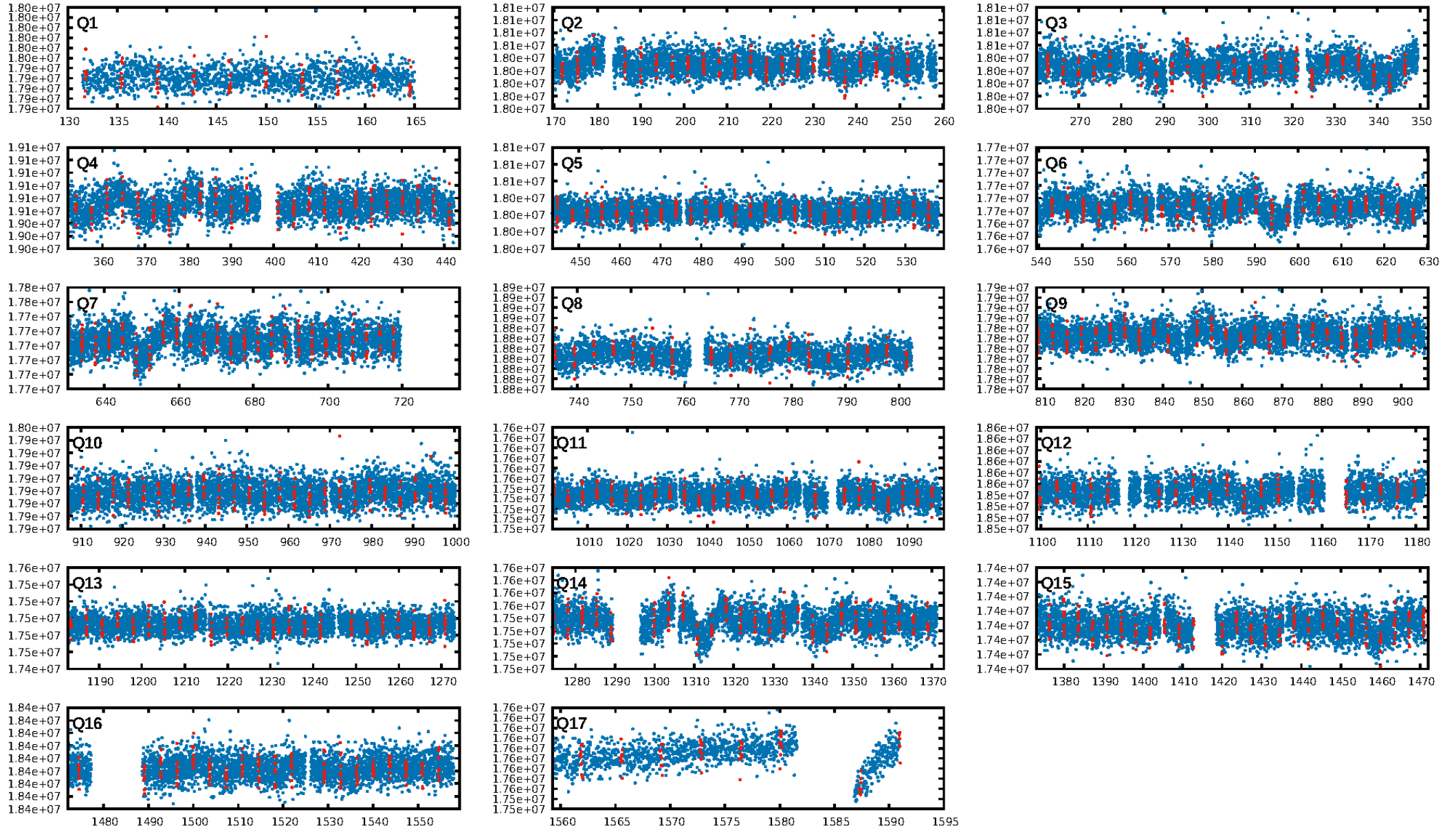
## DV Fit Results:

Period = 3.63896 [0.00002] d  
Epoch = 131.7895 [0.0030] BKJD  
Rp/R\* = 0.0143 [0.0111]  
a/R\* = 6.53 [20.80]  
b = 0.84 [1.16]  
Seff = 557.06 [162.22]  
Teff = 1239 [90] K  
Rp = 1.83 [1.45] Re  
a = 0.0453 [0.0080] AU  
Ag = 9.68 [15.81] [0.55σ]  
Teffp = 3379 [1359] K [1.57σ]

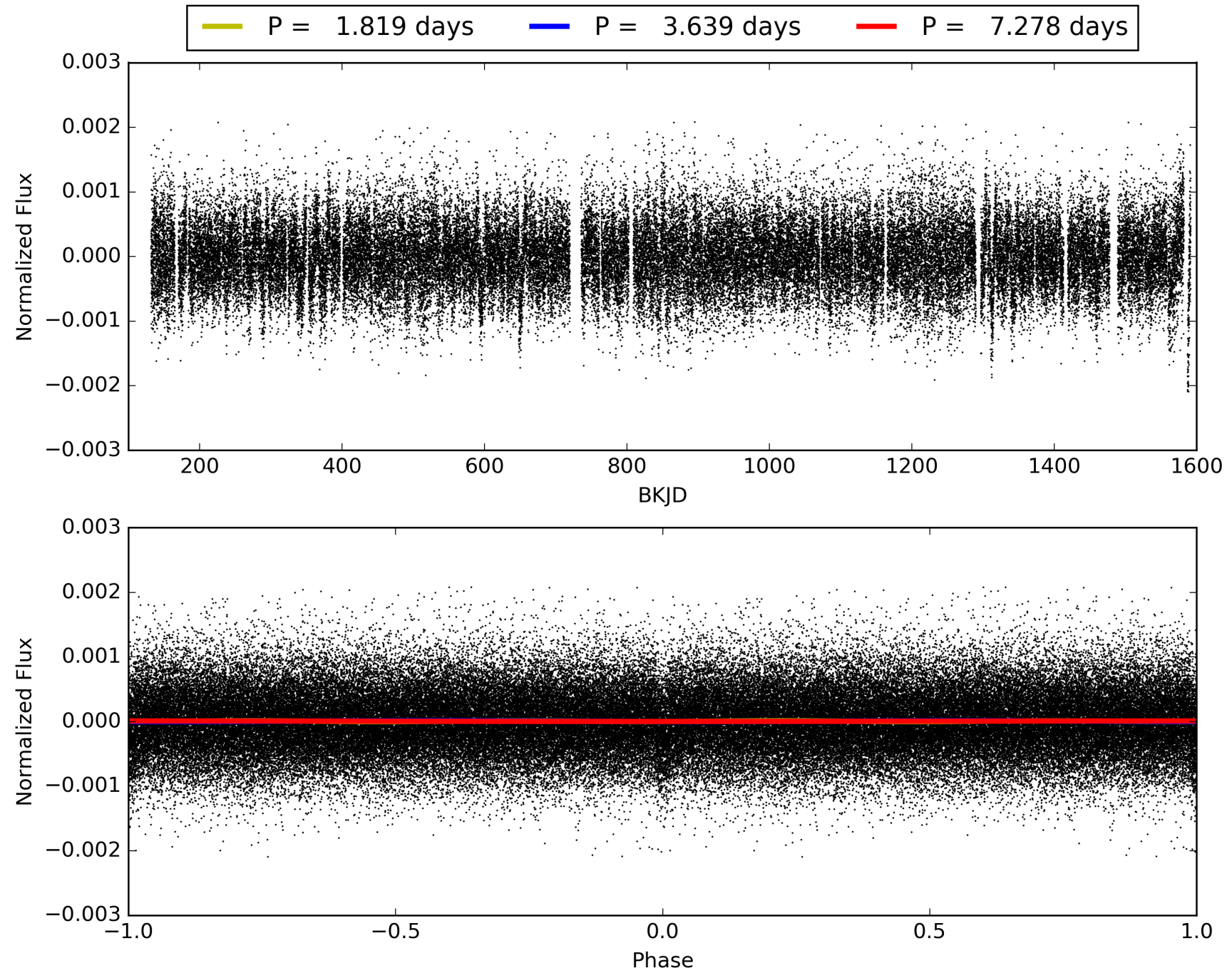
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [44.60σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.97e-37  
RollingBand-fgt: 0.94 [328/350]  
GhostDiagnostic-chr: 2.599  
Centroid-sig: 34.1%  
Centroid-so: 1.374 arcsec [1.24σ]  
OotOffset-rm: 0.607 arcsec [2.09σ]  
KicOffset-rm: 0.557 arcsec [1.60σ]  
OotOffset-st: 3/3/3 [12]  
KicOffset-st: 3/3/3 [12]  
DiffImageQuality-fgm: 0.75 [9/12]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 011810124-01, PDC Light Curves



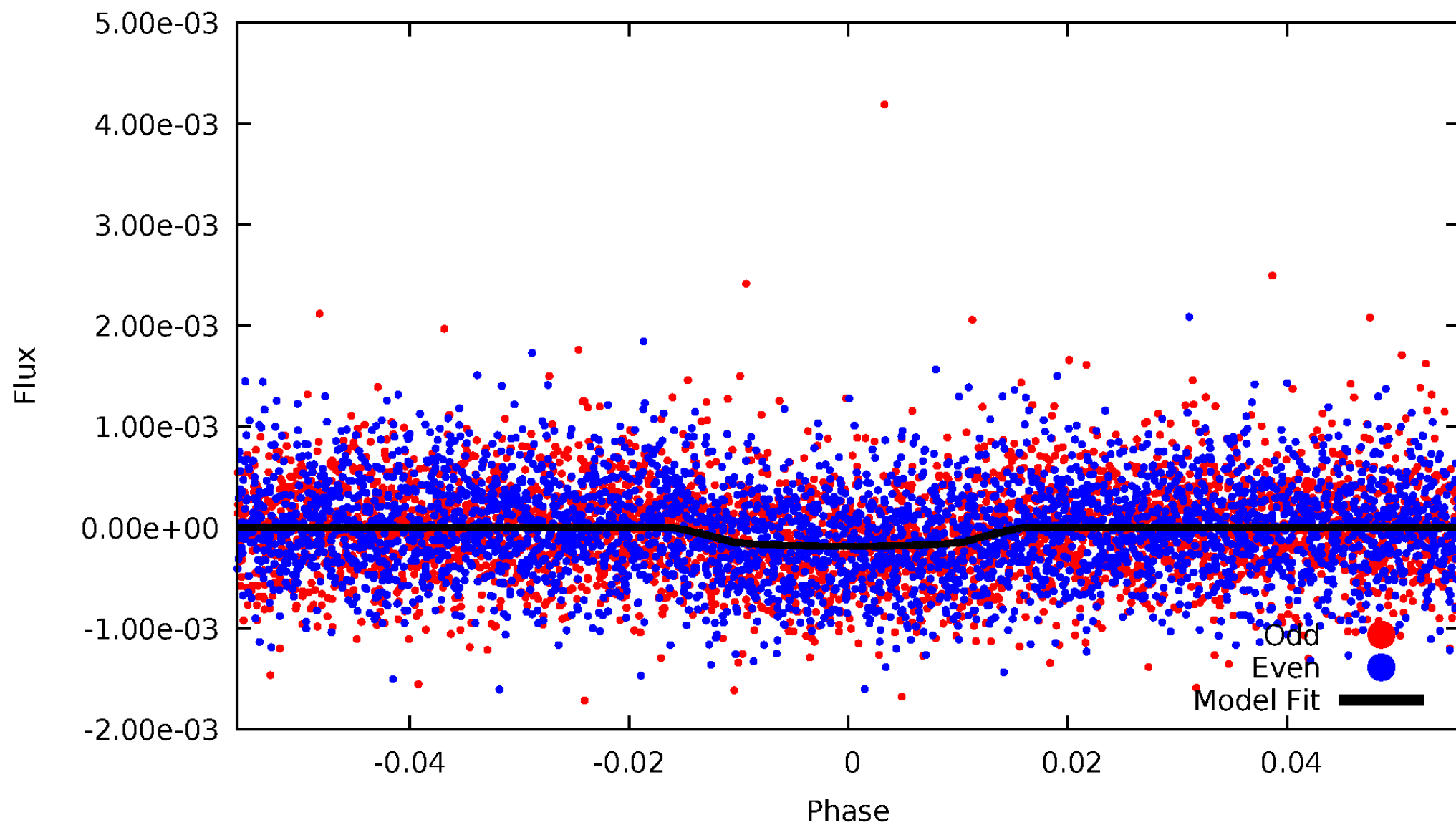
TCE 011810124-01





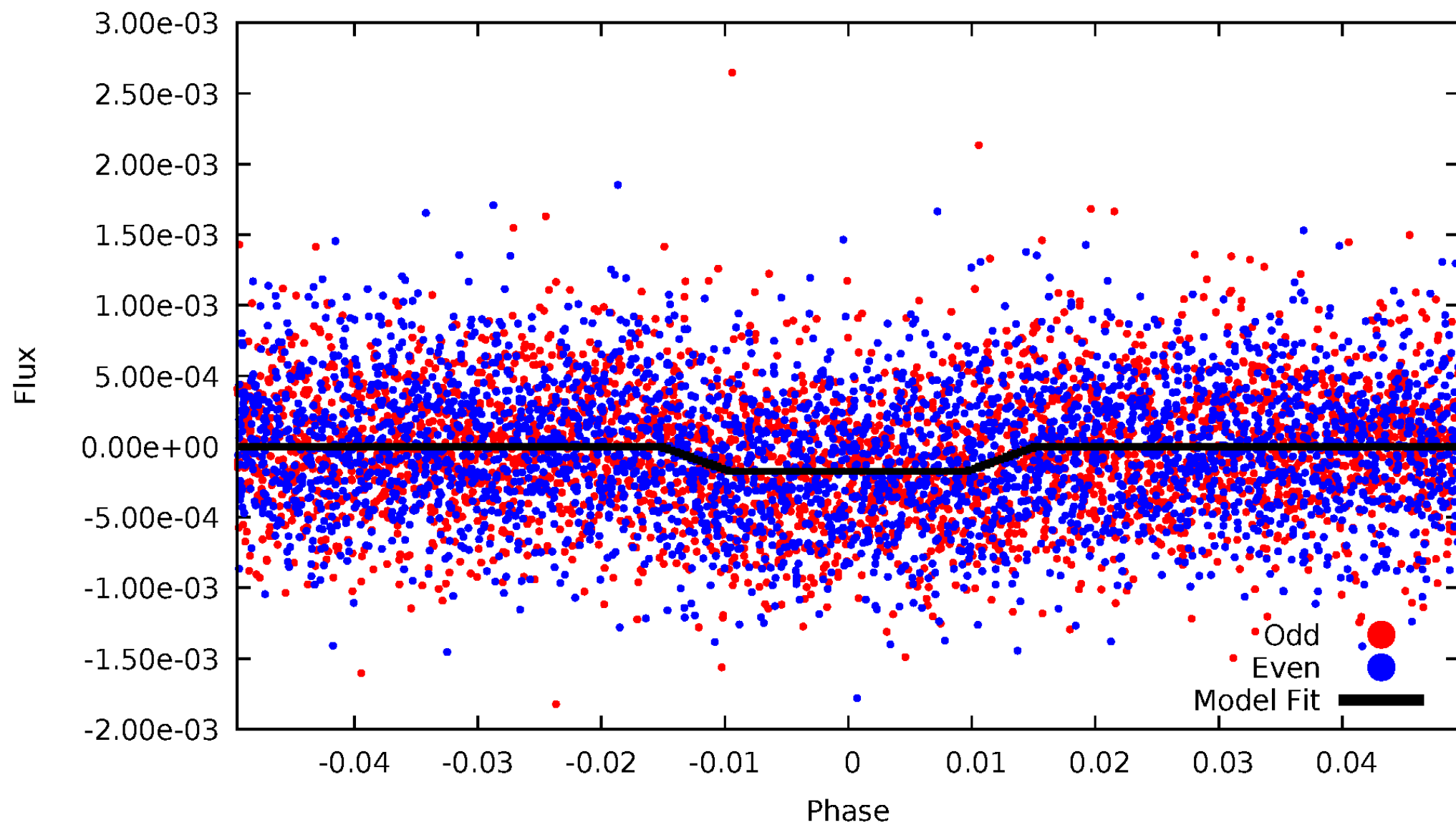
# DV Odd/Even

TCE 011810124-01



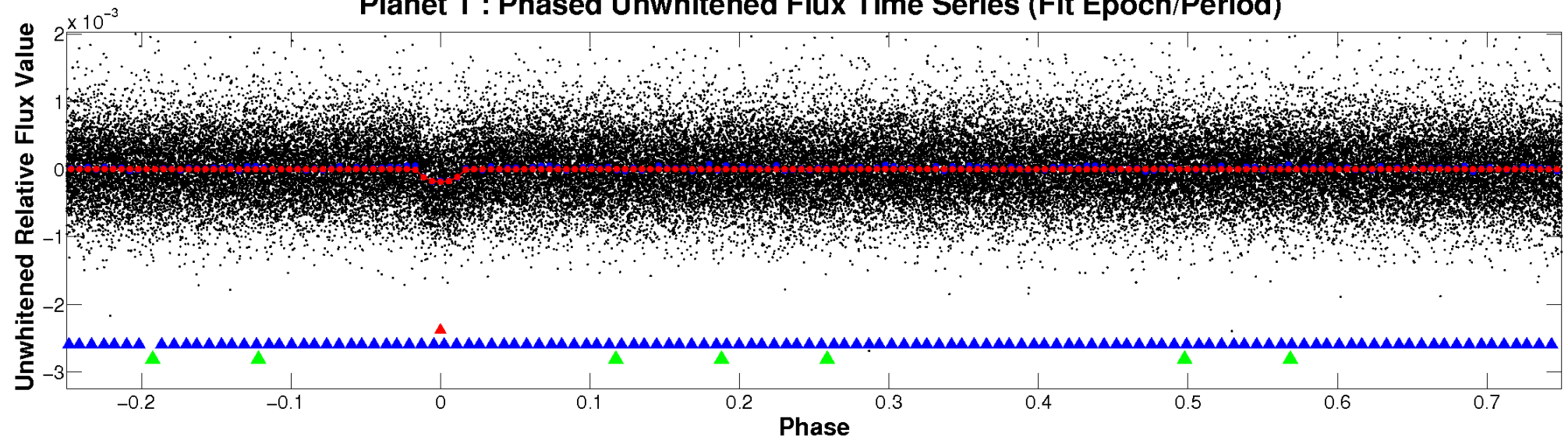
# ALT Odd/Even

TCE 011810124-01

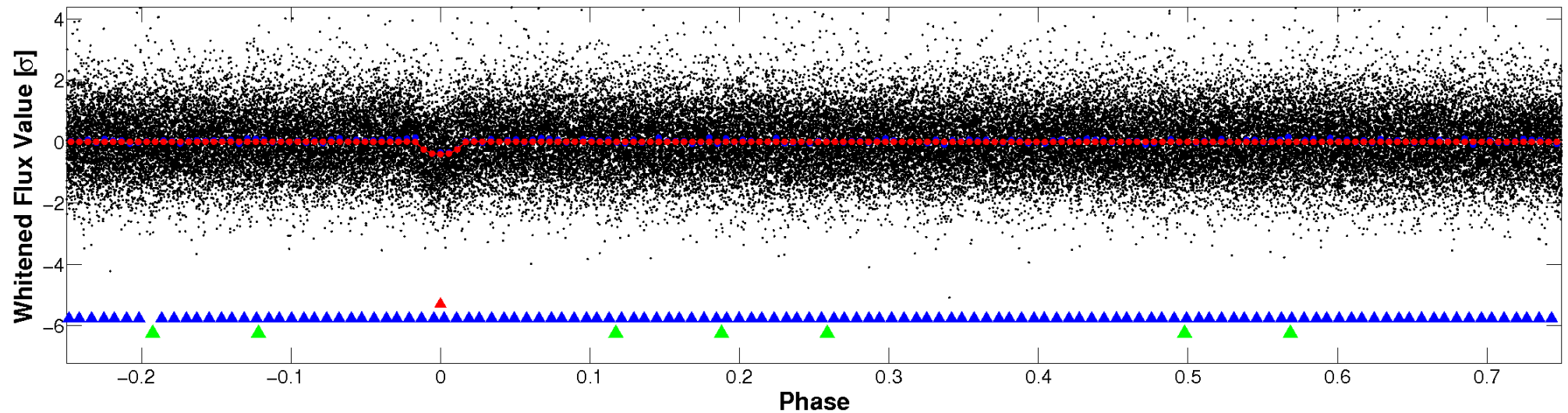


# Non-Whitened Vs. Whitened Light Curve

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

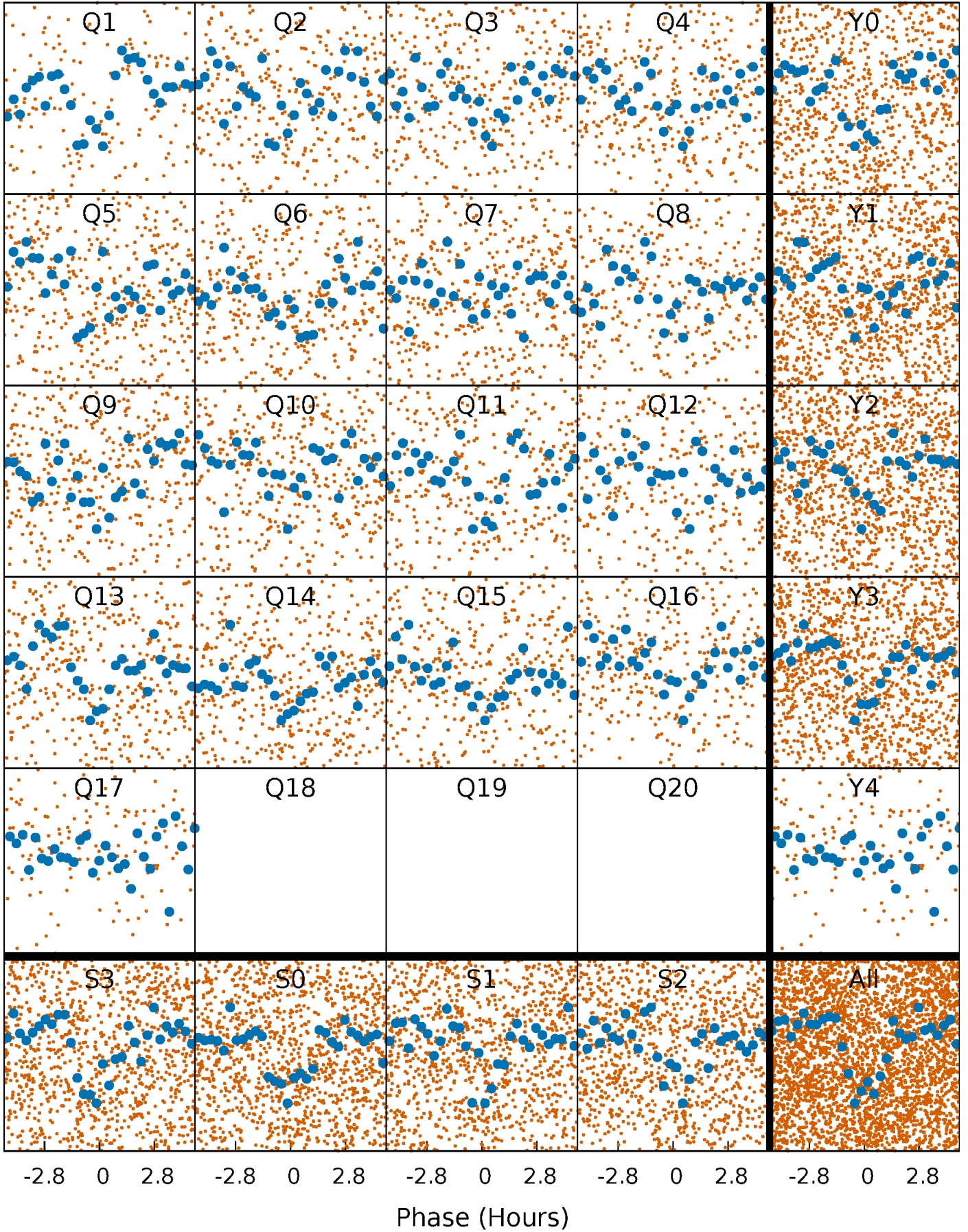


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

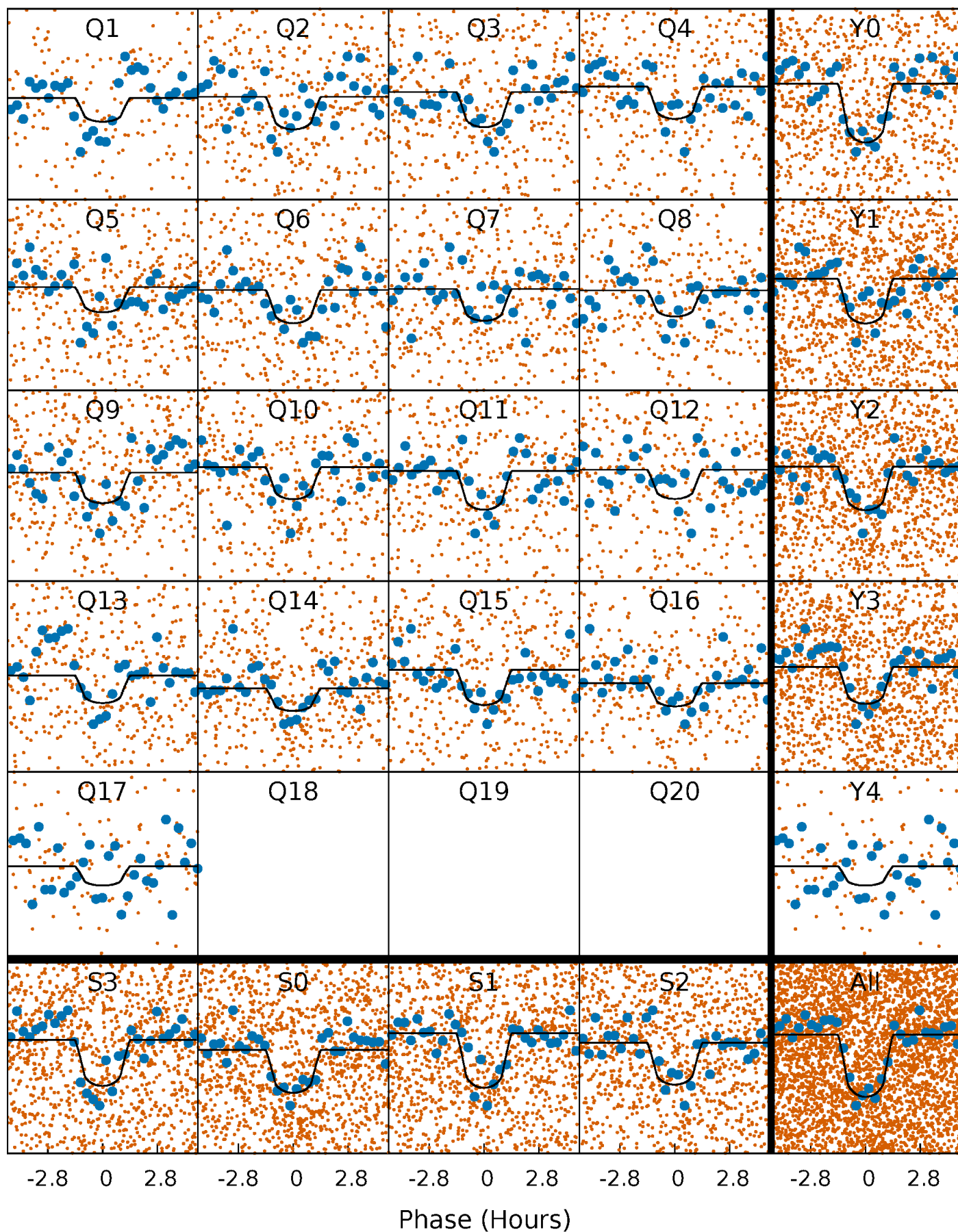
TCE 011810124-01   P= 3.638964 Days    $T_0=131.789503$  (BKJD)





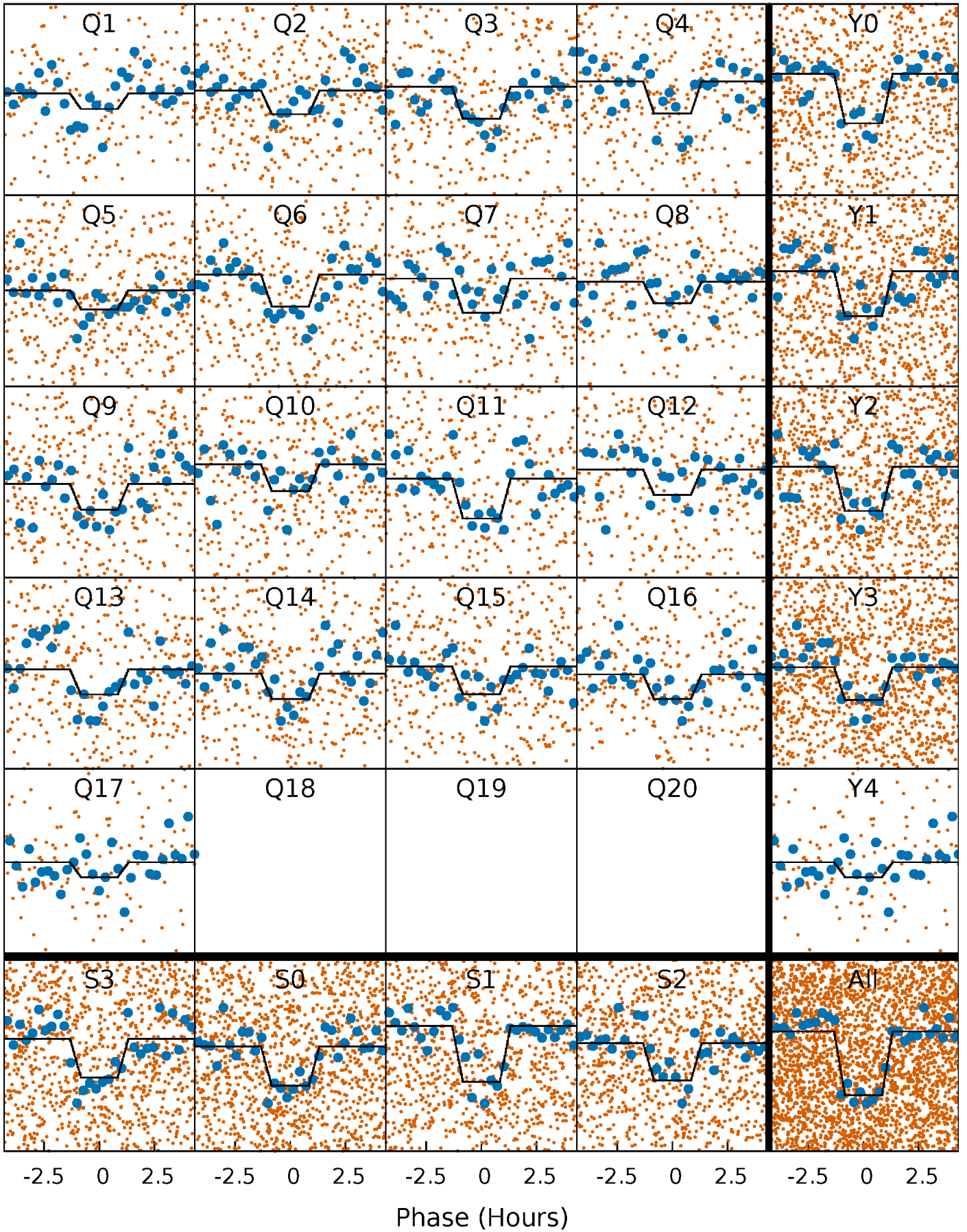
# DV Quarter-Phased Transit Curves

TCE 011810124-01 P= 3.638964 Days  $T_0=131.789503$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

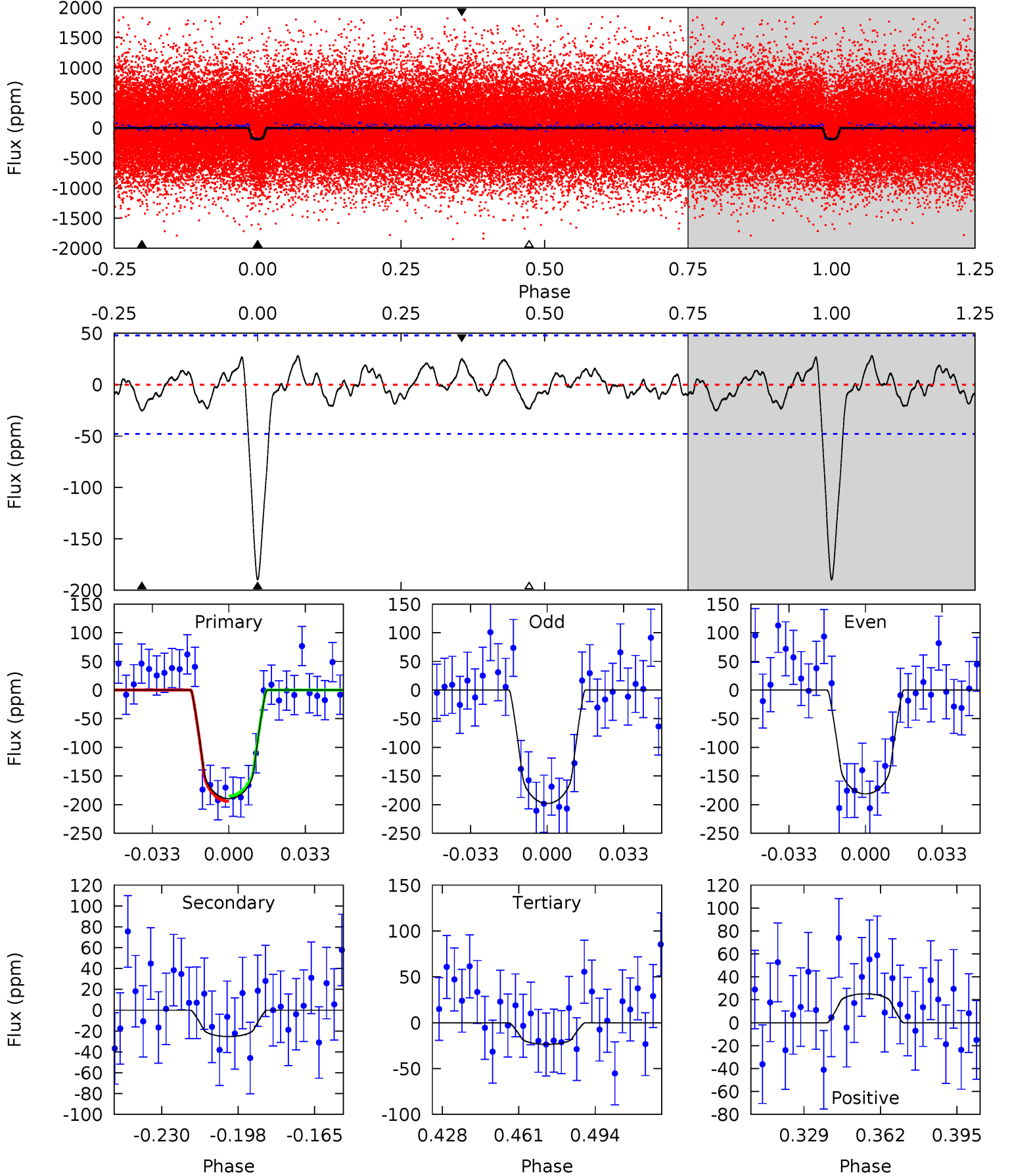
TCE 011810124-01 P= 3.638953 Days  $T_0=131.792329$  (BKJD)



# DV Model-Shift Uniqueness Test

011810124-01, P = 3.638964 Days, E = 128.150539 Days

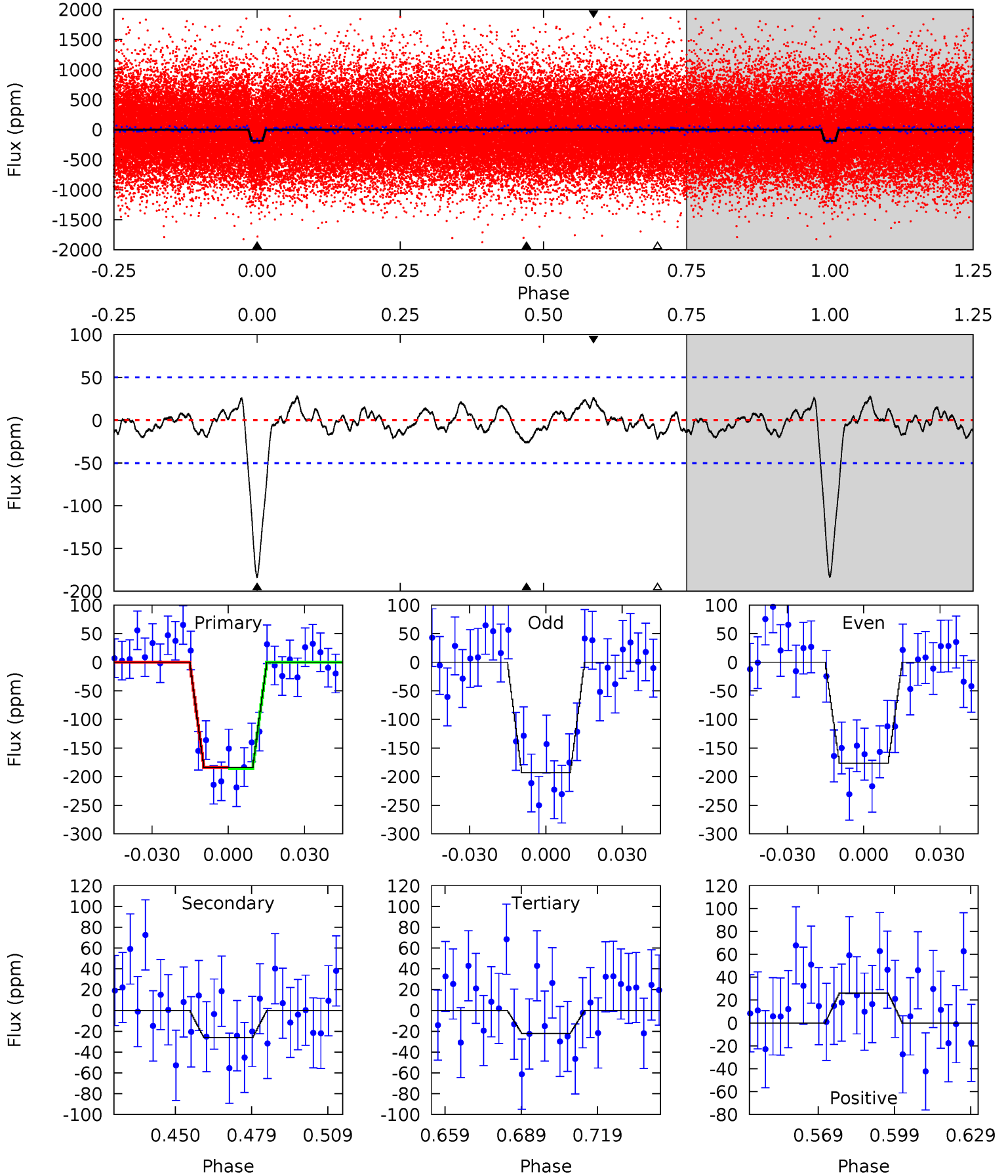
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	2.53	2.36	2.52	4.79	2.13	1.08	16.6	16.4	0.17	0.01	0.83	0.95	0.13	0.46



# Alt Model-Shift Uniqueness Test

011810124-01, P = 3.638953 Days, E = 128.153376 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	2.50	2.11	2.49	4.81	2.17	1.00	15.5	15.1	0.39	0.01	0.81	0.91	0.13	0.10





### Stellar Parameters For KIC 011810124

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5533^{+83}_{-74}$	$4.275^{+0.168}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.166^{+0.174}_{-0.212}$	$0.934^{+0.063}_{-0.045}$	$0.829^{+0.660}_{-0.269}$
	+2%/-1%	+4%/-3%	+94%/-94%	+15%/-18%	+7%/-5%	+80%/-32%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 011810124-01 / KOI 3344.02

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-25 \pm 10$	$1.94^{+1.39}_{-1.14}$	$1730^{+77}_{-95}$	$3537^{+1387}_{-609}$	$7.170^{+35.498}_{-4.968}$
Alt.	$-26 \pm 10$	$1.85^{+1.38}_{-1.07}$	$1726^{+83}_{-94}$	$3636^{+1391}_{-640}$	$8.531^{+37.808}_{-5.998}$

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

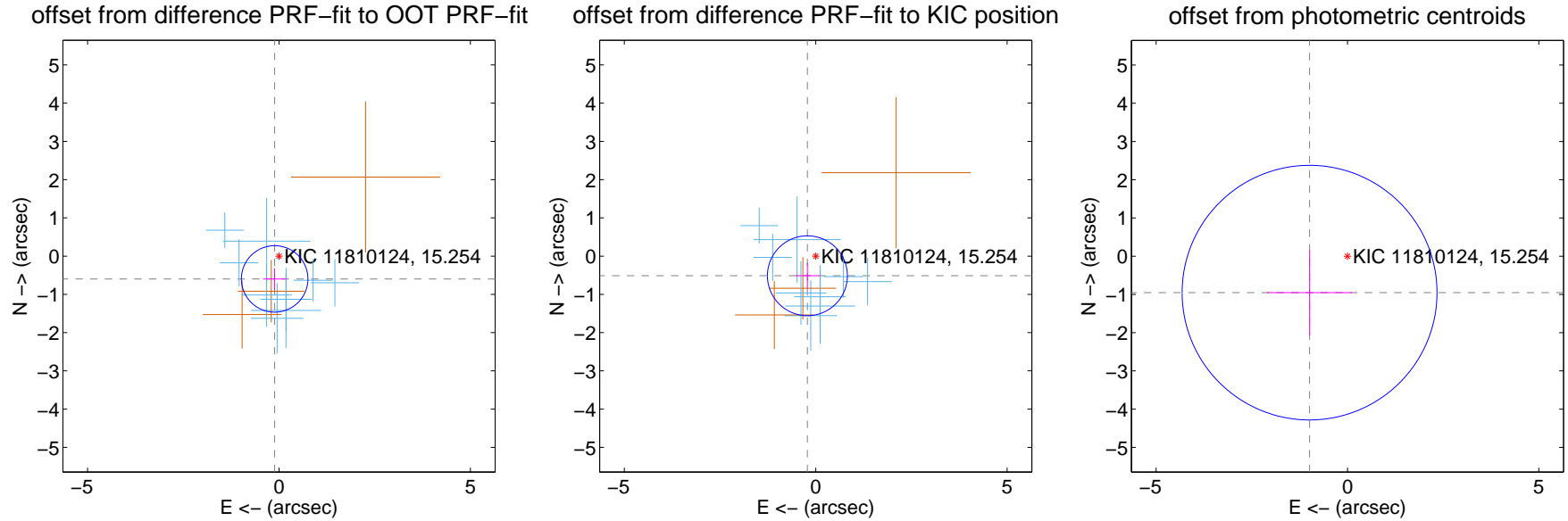
## DV Centroid Data

Supplemental centroid analysis for 011810124-01. Kepler magnitude: 15.25. Transit SNR 14.16

There are 9 quarters with good PRF difference image offsets

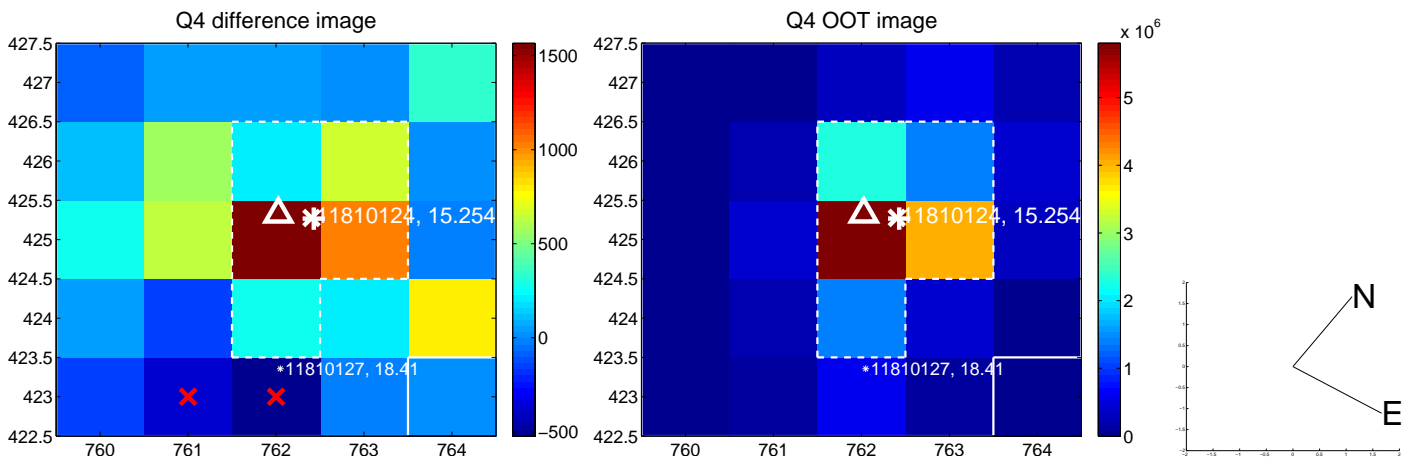
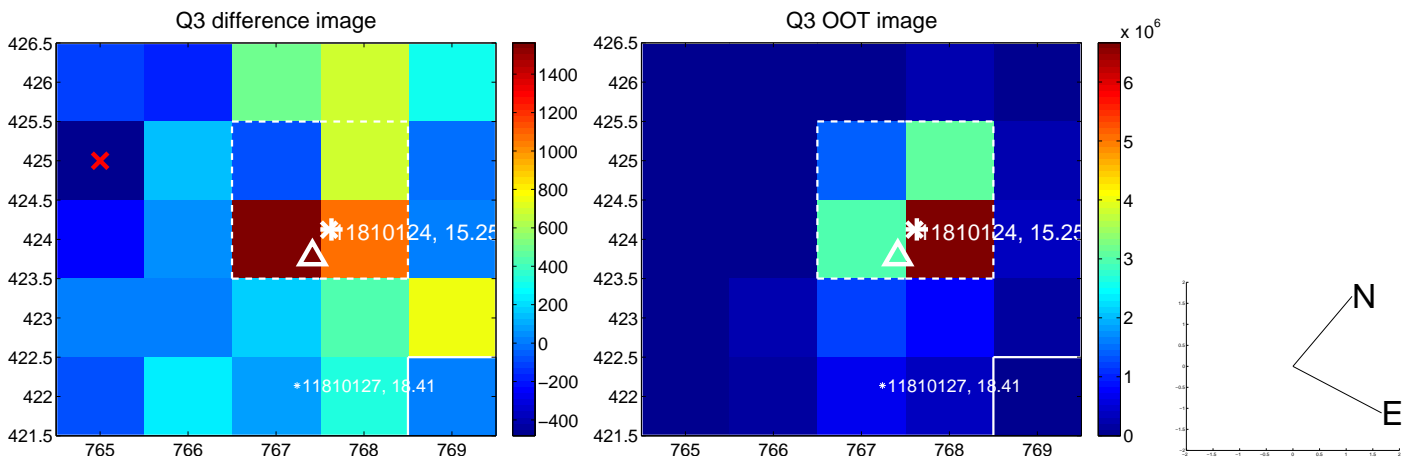
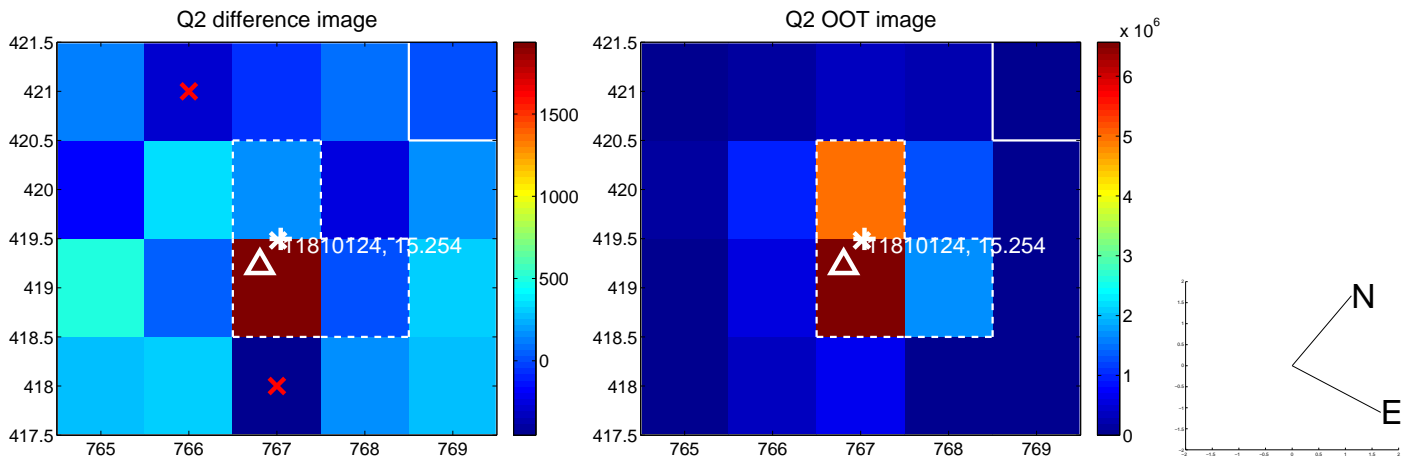
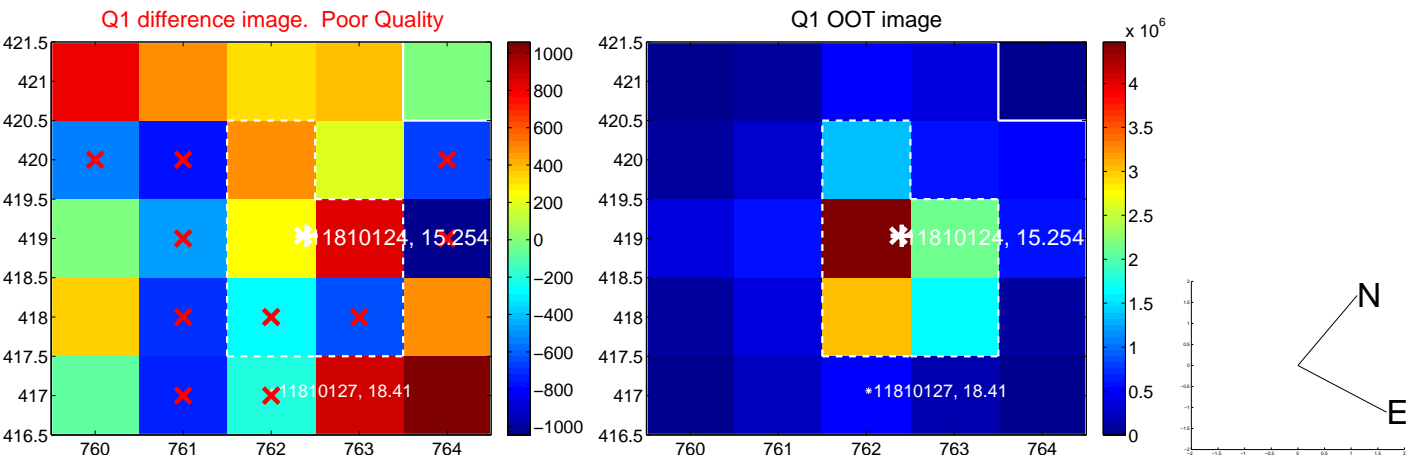
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.607 \pm 0.290$	2.09	$0.113 \pm 0.302$	$-0.596 \pm 0.278$
PRF-fit source offset from KIC position	$0.557 \pm 0.348$	1.60	$0.217 \pm 0.309$	$-0.513 \pm 0.335$
photometric centroid source offset	$1.37 \pm 1.11$	1.24	$0.99 \pm 1.11$	$-0.95 \pm 1.11$

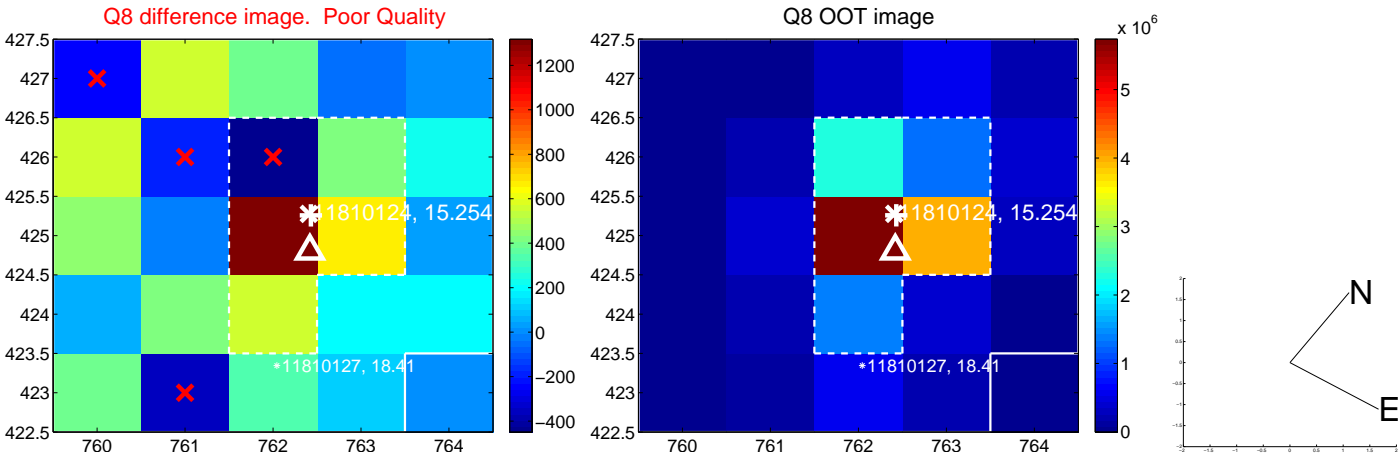
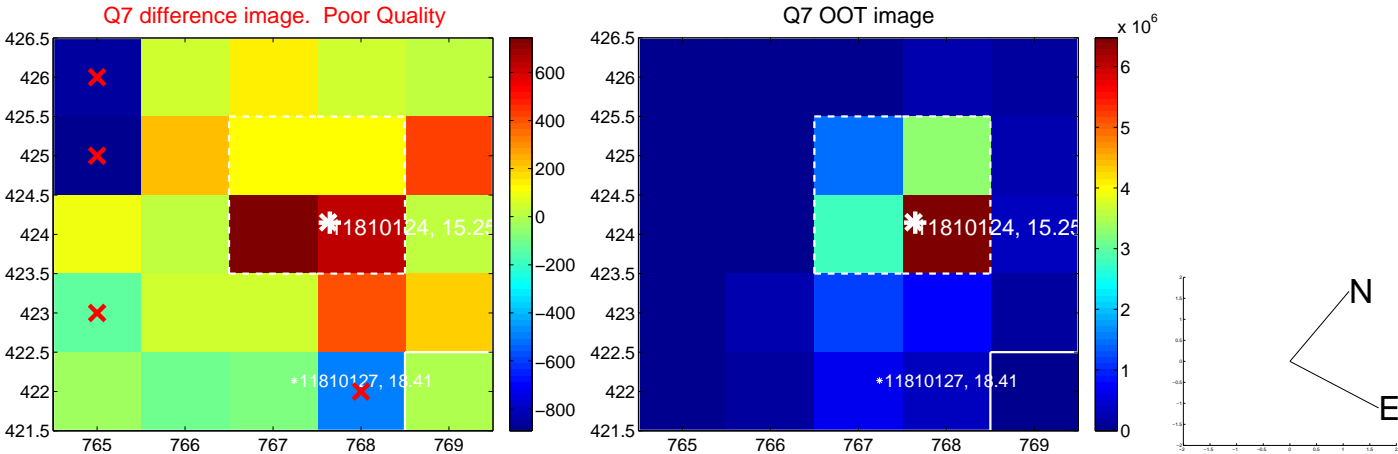
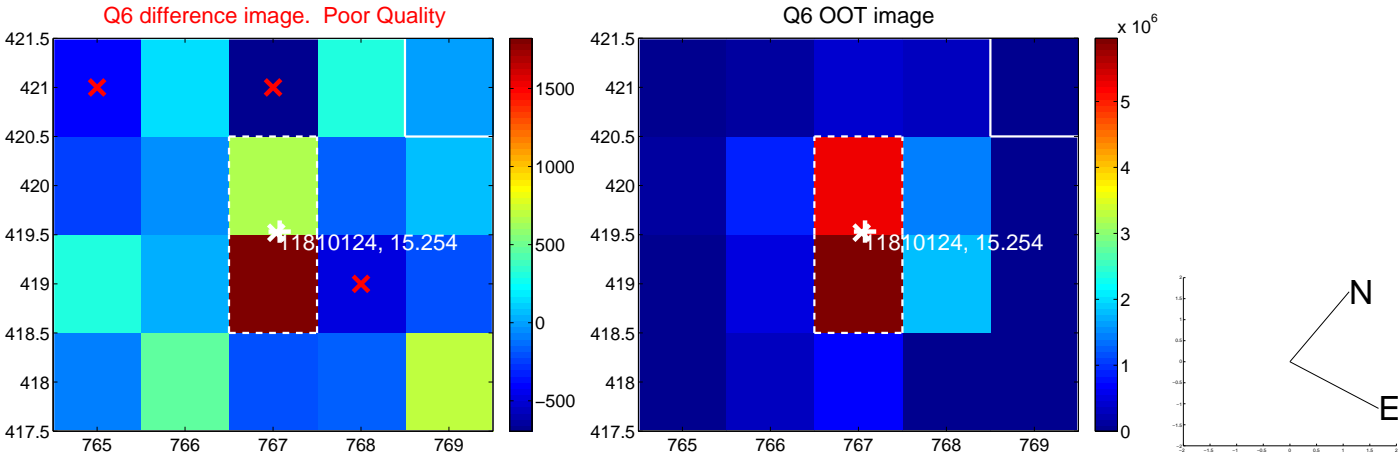
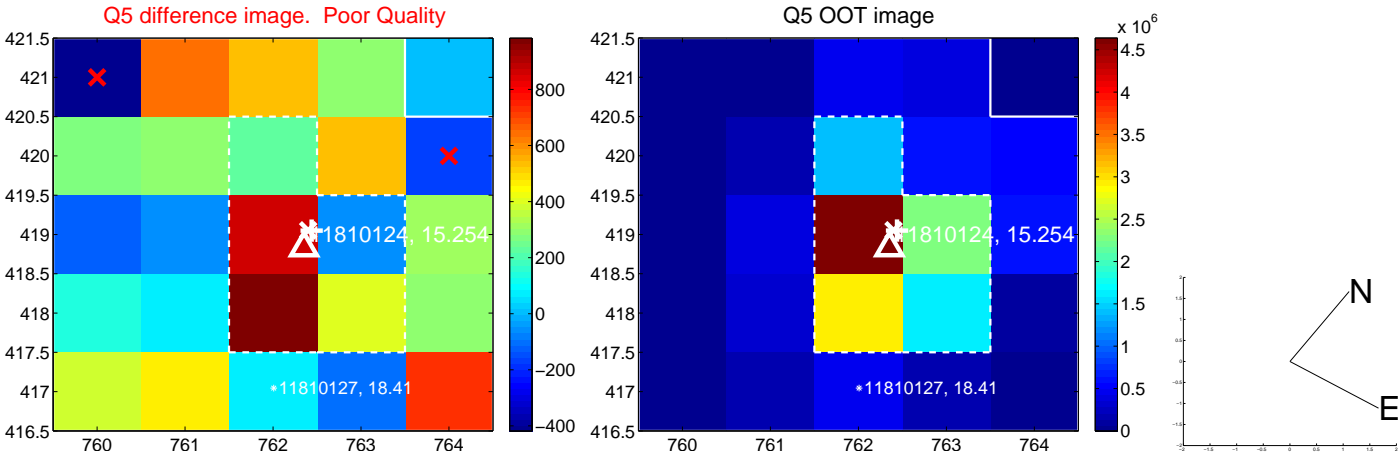


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

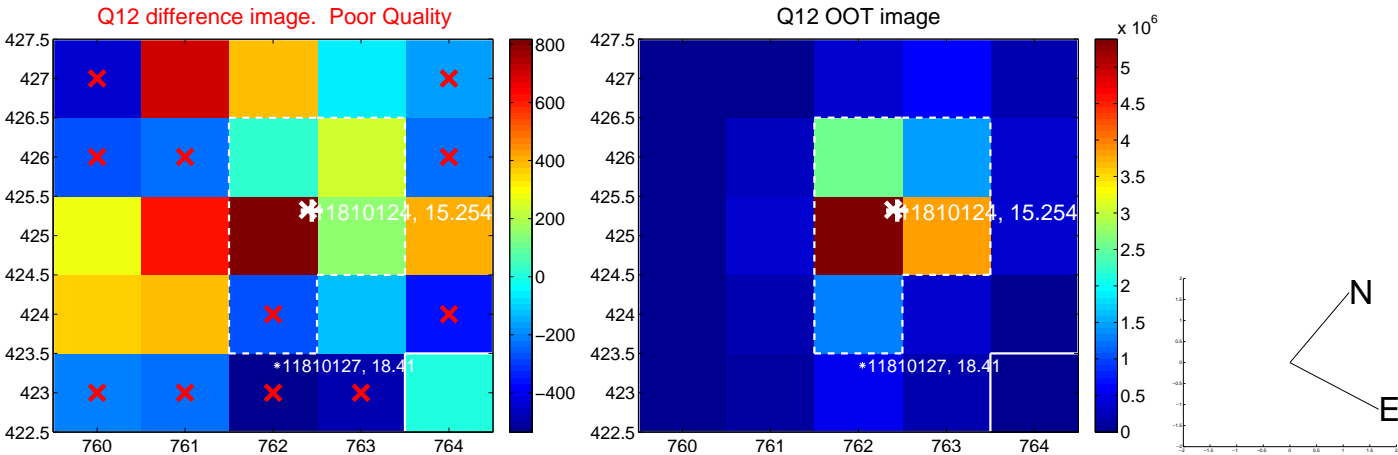
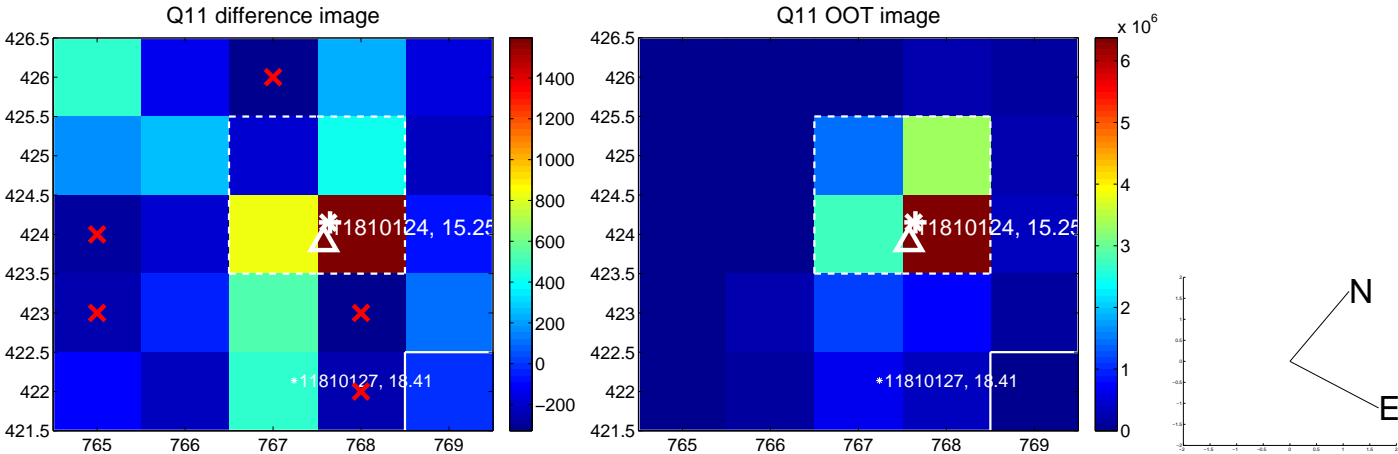
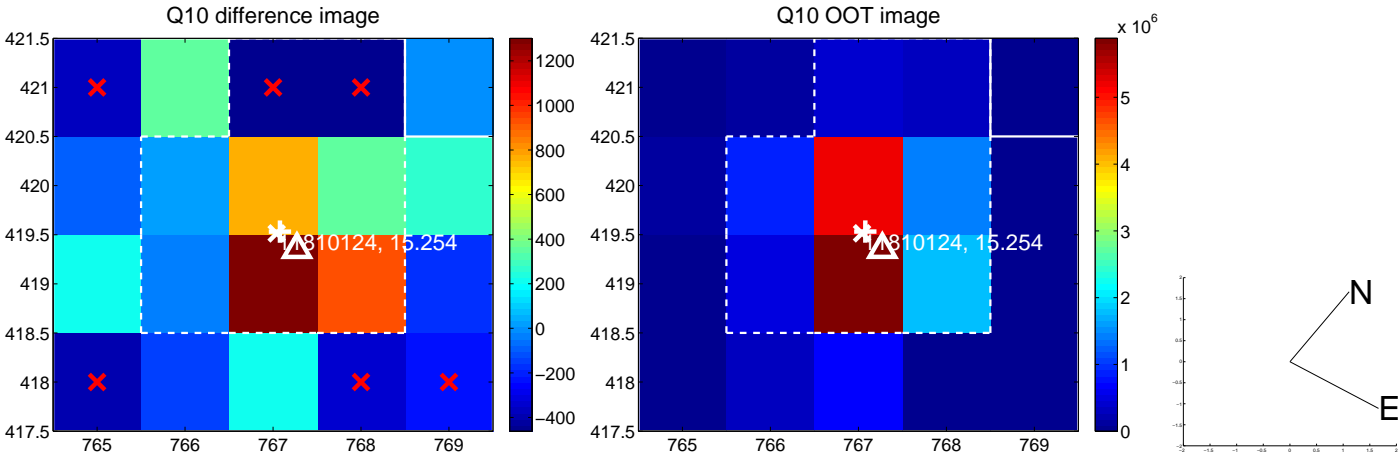
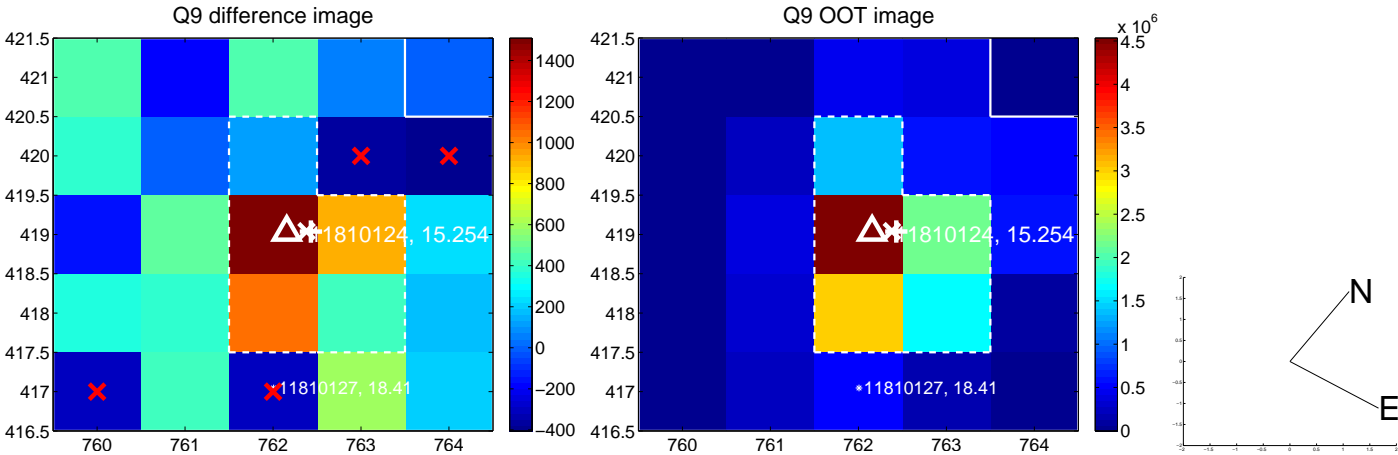


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

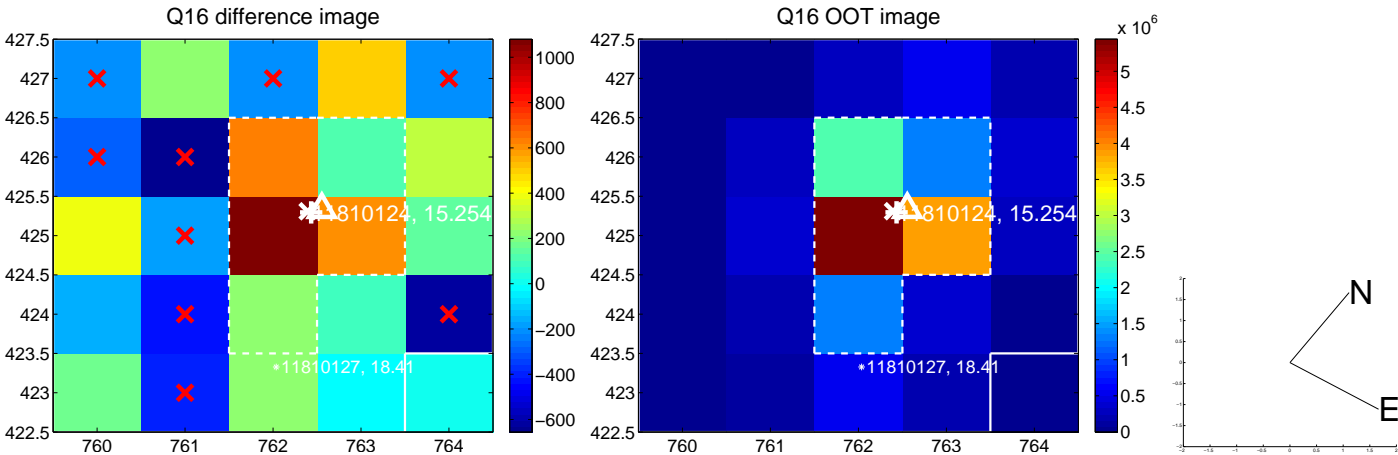
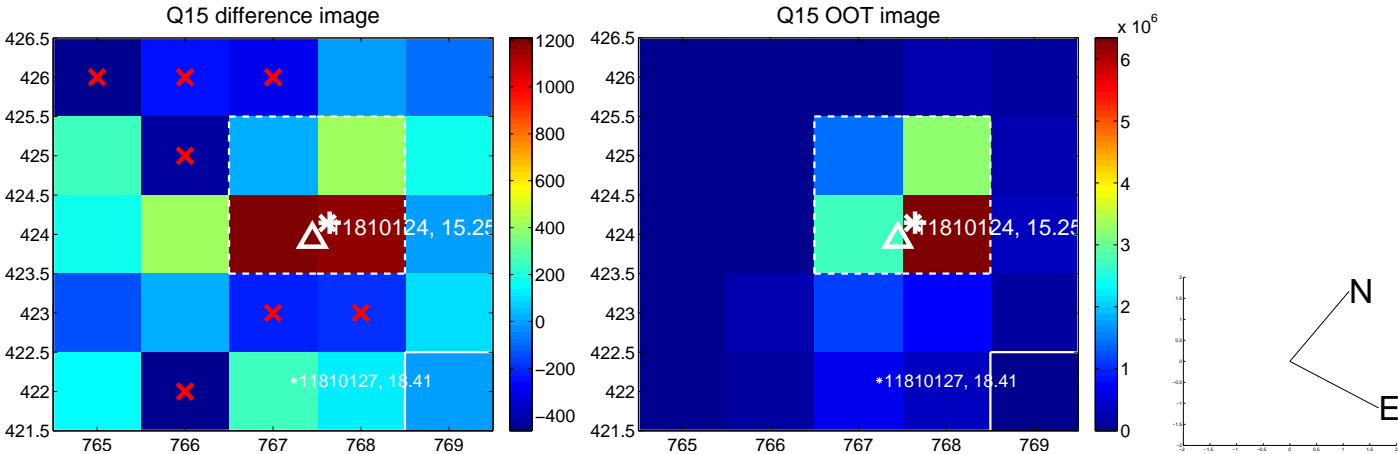
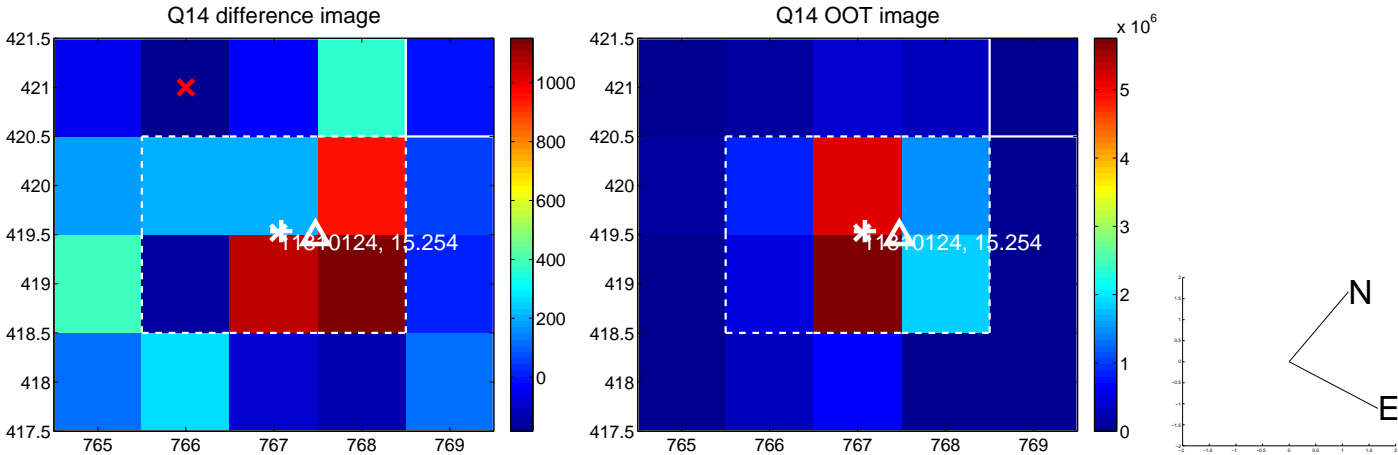
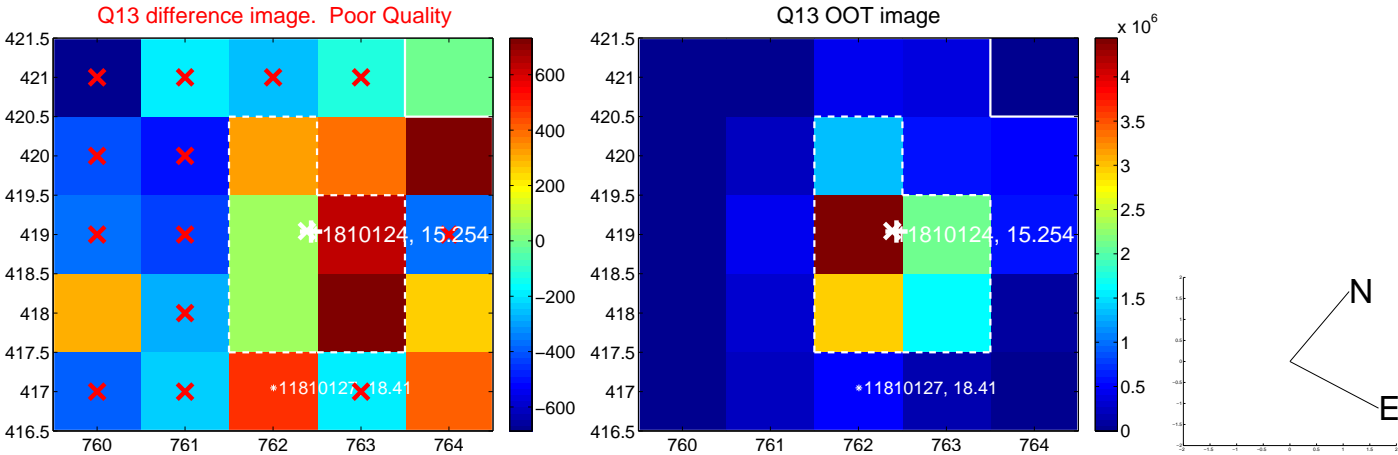




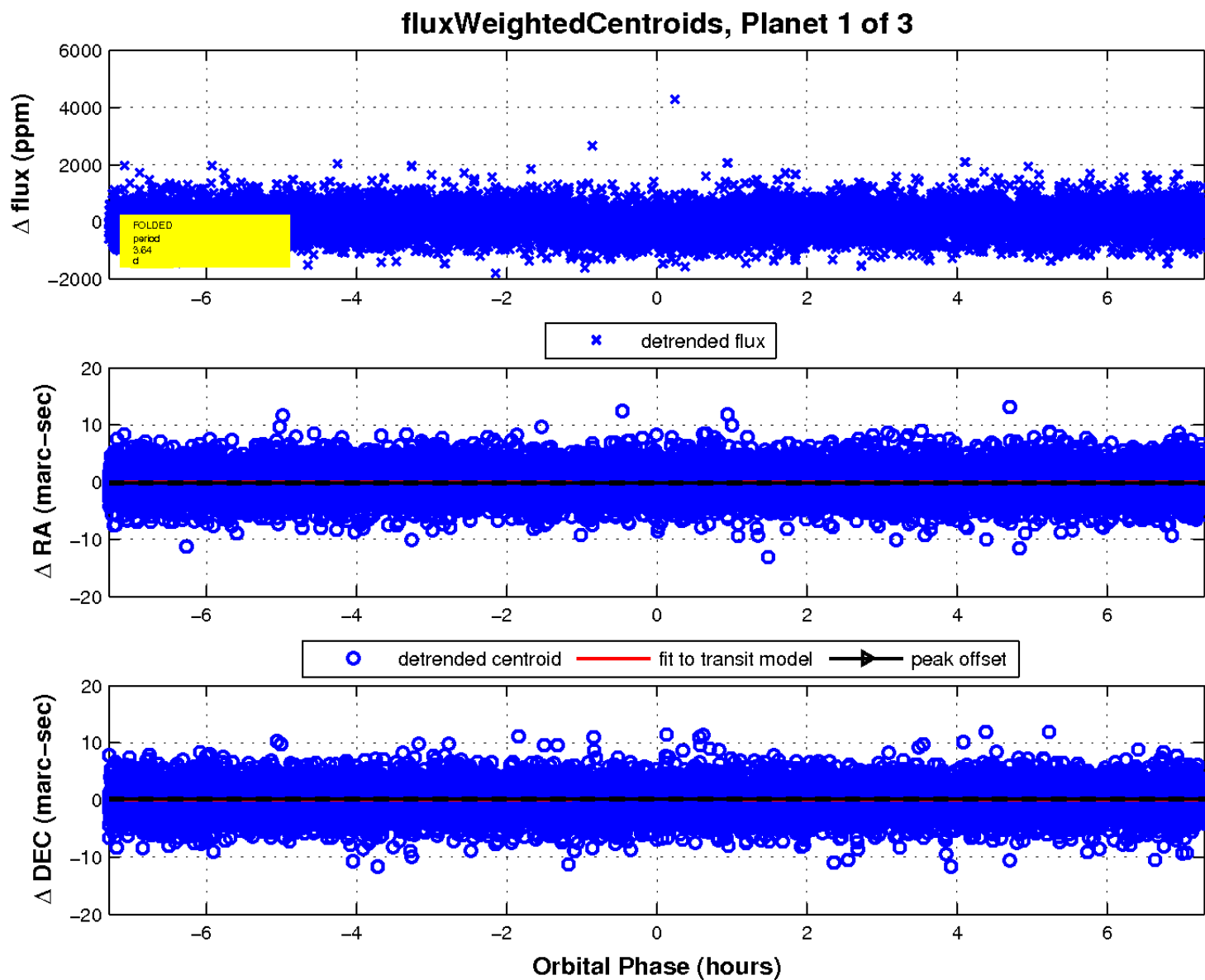
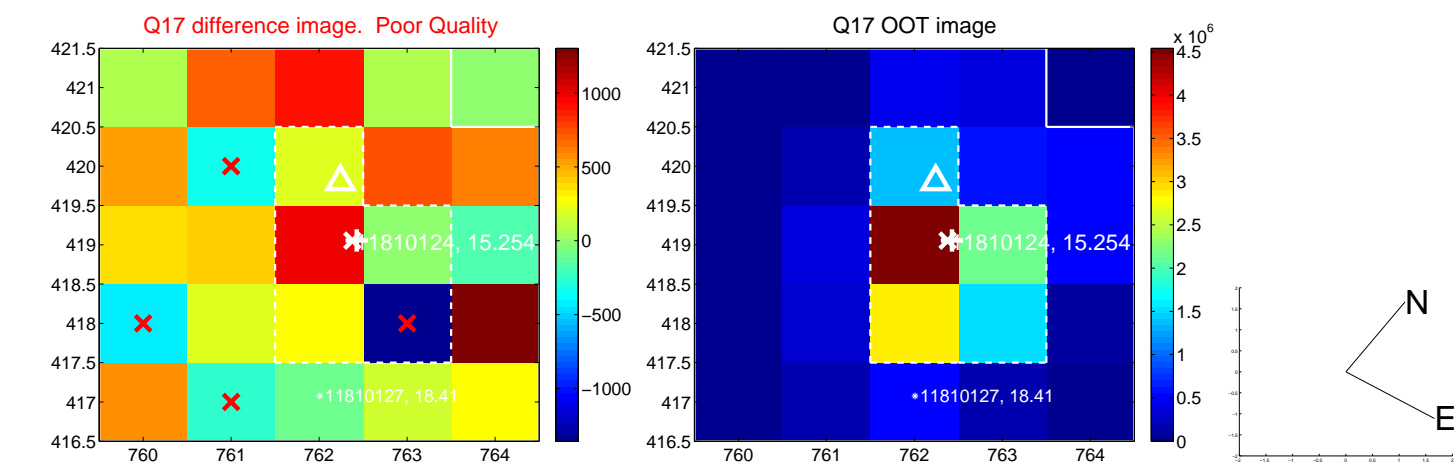
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

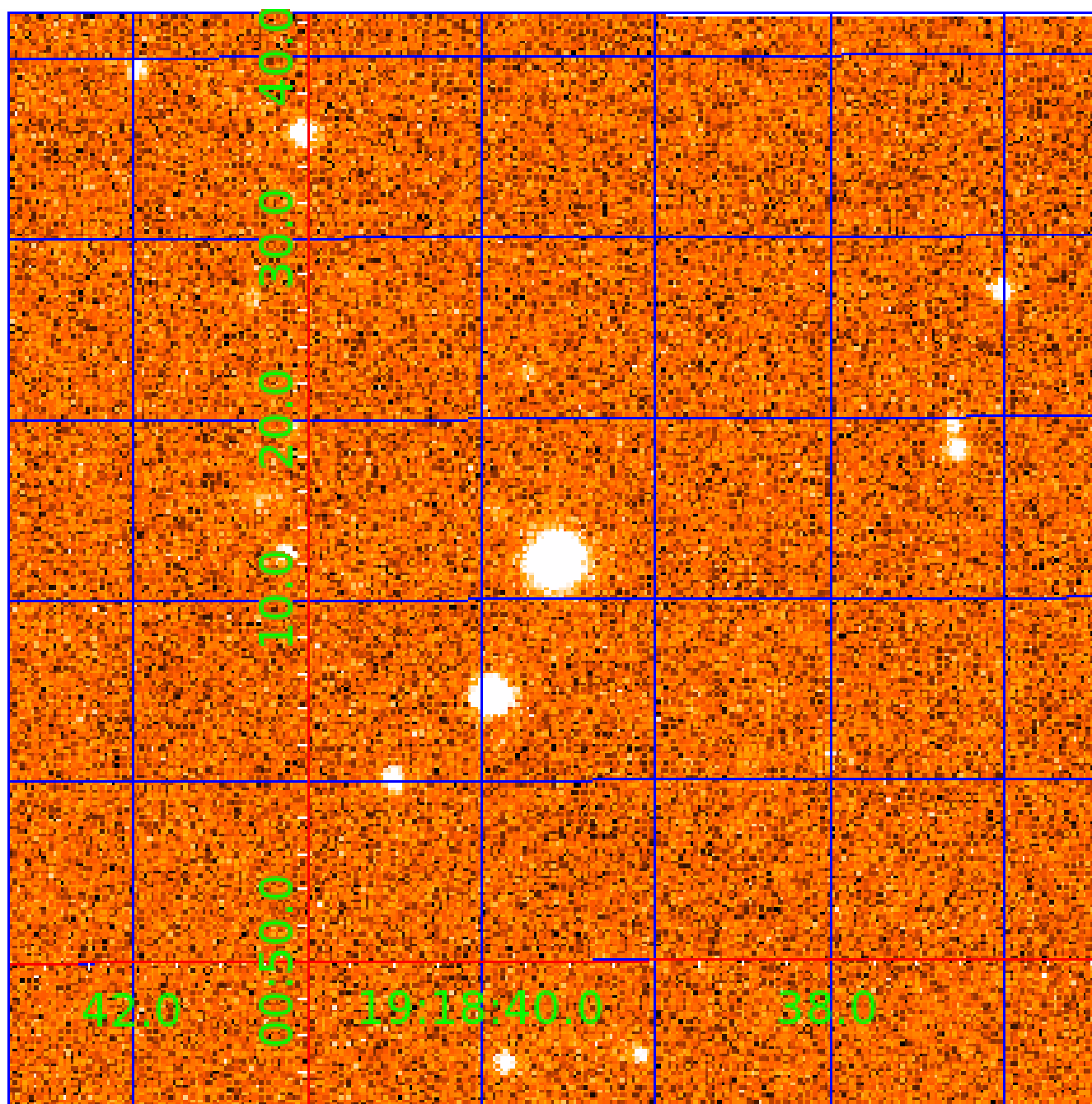


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 011810124

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011810124-01	OBS	3344.02	3.638964	131.789503	187.5	2.433	12.7	14.2	1.17	5533	1.83	557.06
011810124-02	OBS	3344.01	11.604529	139.051527	265.1	3.529	11.7	12.7	1.17	5533	2.24	118.68
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011810124-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT
011810124-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011810124-03	OBS	PC	0.81	0	0	0	0	NO_COMMENT

**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.

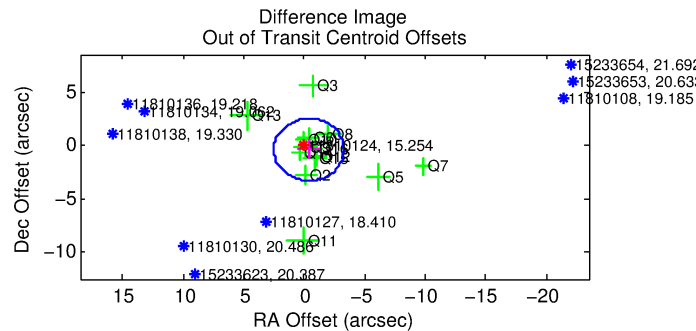
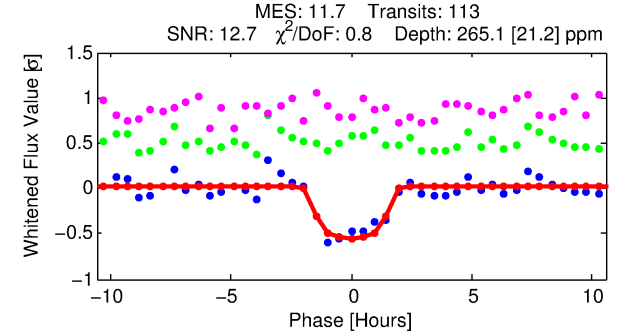
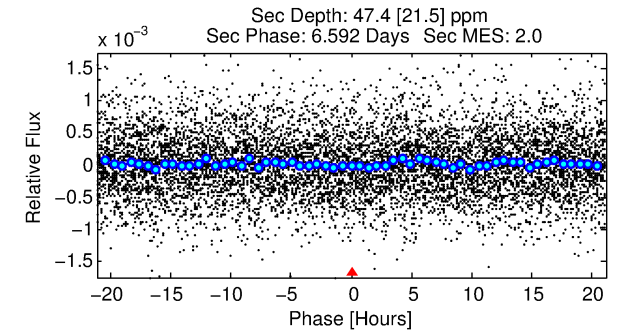
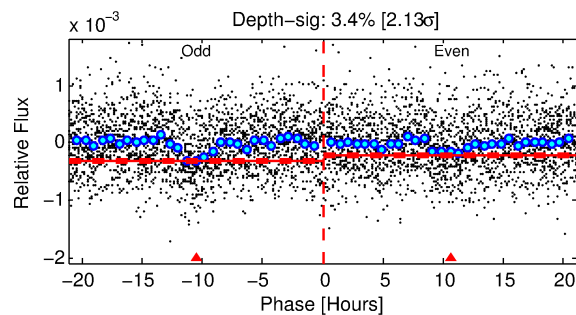
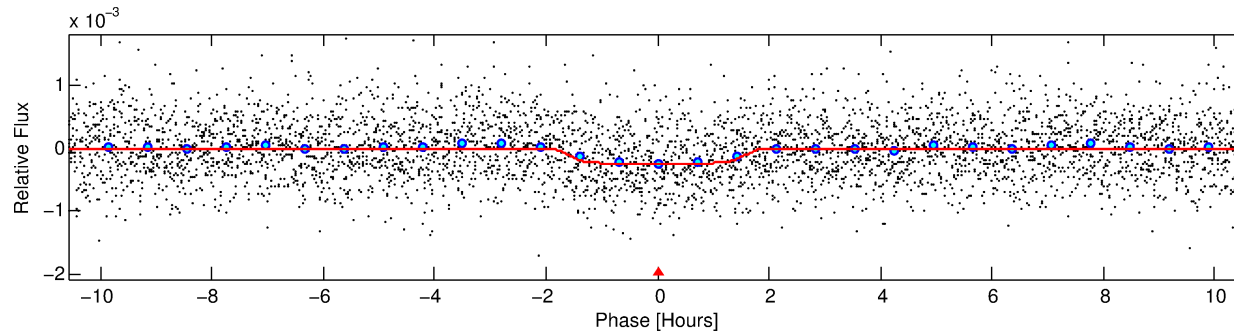
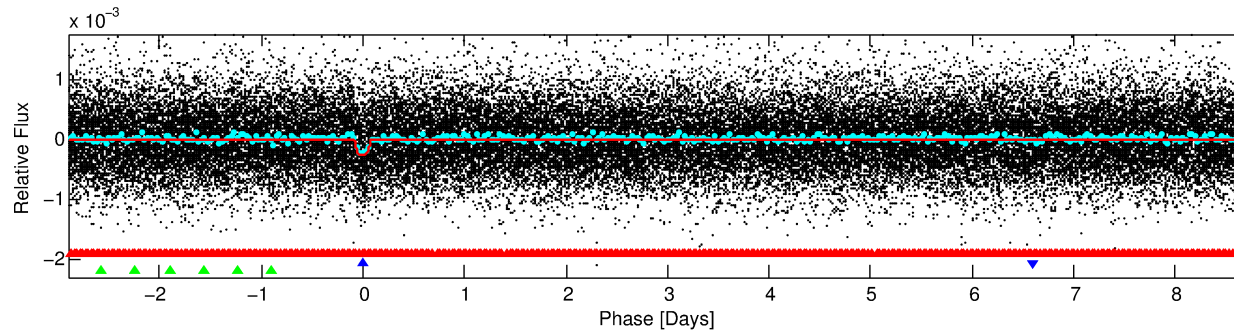
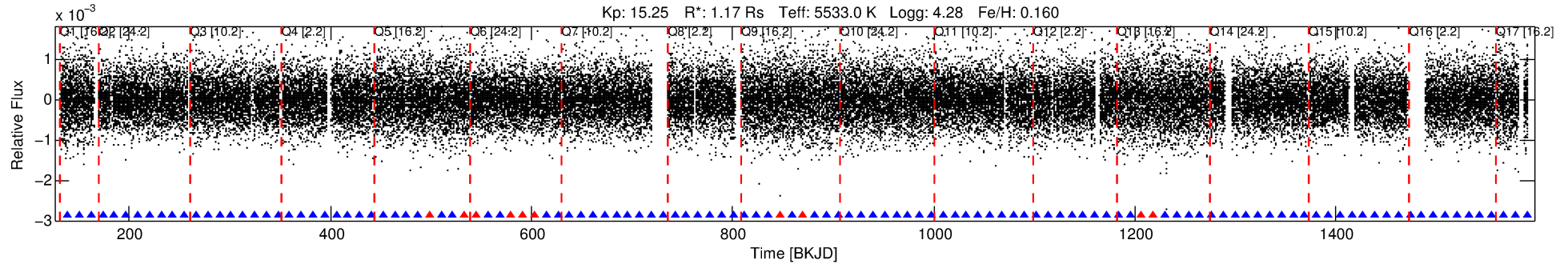
## Ephemeris Match Information For 011810124-02

No Significant Match Found

# DV One-Page Summary

KIC: 11810124 Candidate: 2 of 3 Period: 11.605 d

KOI: K03344.01 Corr: 0.972



## DV Fit Results:

Period = 11.60453 [0.00009] d  
Epoch = 139.0515 [0.0059] BKJD  
Rp/R\* = 0.0176 [0.0077]  
a/R\* = 12.66 [23.98]  
b = 0.88 [0.48]  
Seff = 118.68 [34.56]  
Teq = 842 [61] K  
Rp = 2.24 [1.06] Re  
a = 0.0981 [0.0174] AU  
Ag = 49.84 [51.19] [0.95 $\sigma$ ]  
Teffp = 3457 [855] K [3.05 $\sigma$ ]

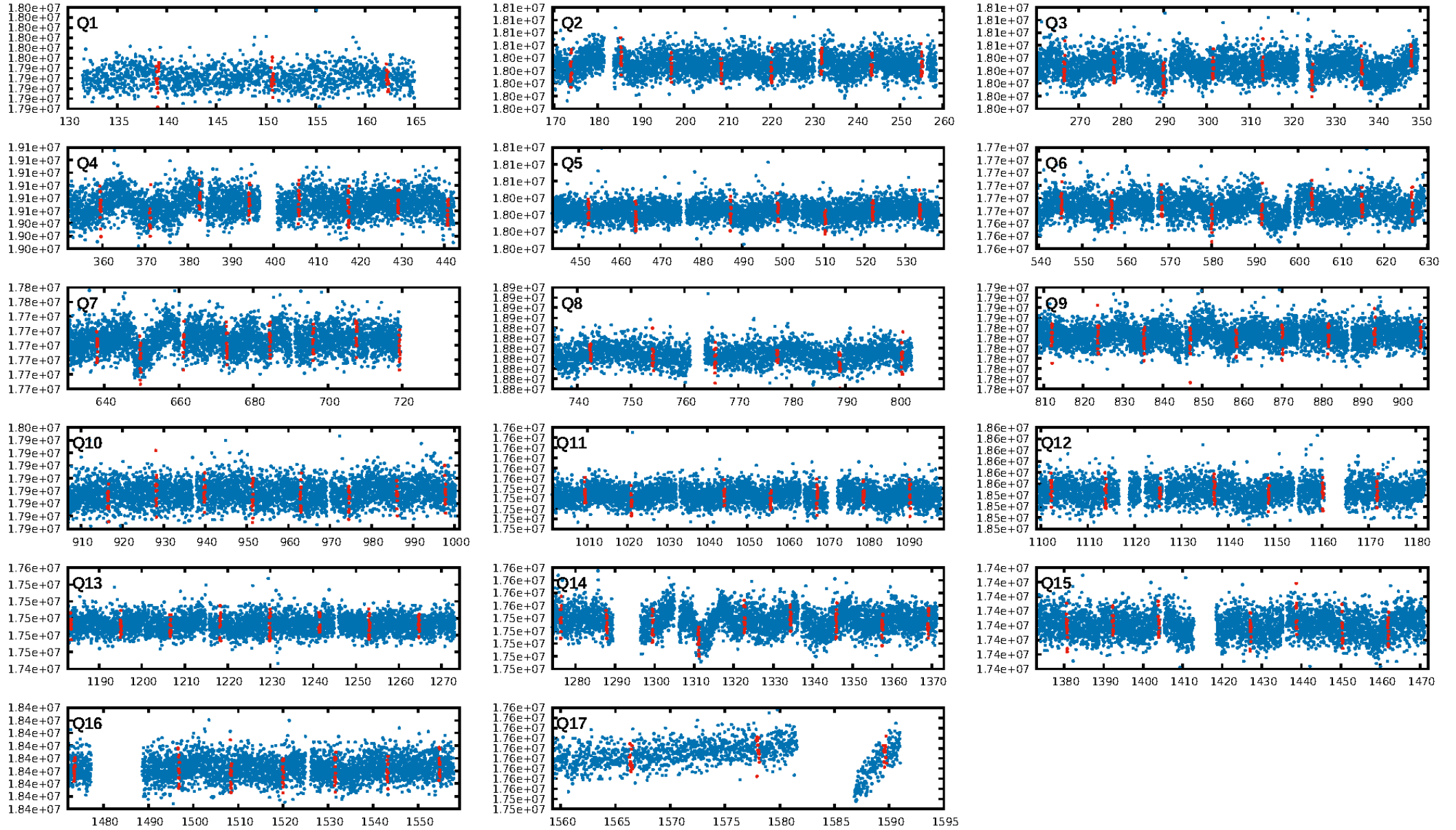
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [44.60 $\sigma$ ]  
LongPeriod-sig: 100.0% [443.02 $\sigma$ ]  
ModelChiSquare2-sig: 99.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.74e-32  
RollingBand-fgt: 0.91 [98/108]  
GhostDiagnostic-chr: 2.887  
Centroid-sig: 0.1%  
Centroid-so: 2.492 arcsec [2.18 $\sigma$ ]  
OotOffset-rm: 0.558 arcsec [0.58 $\sigma$ ]  
KicOffset-rm: 0.436 arcsec [0.45 $\sigma$ ]  
OotOffset-st: 4/4/3/3 [14]  
KicOffset-st: 4/4/3/3 [14]  
DiffImageQuality-fgm: 0.29 [4/14]  
DiffImageOverlap-fno: 1.00 [17/17]

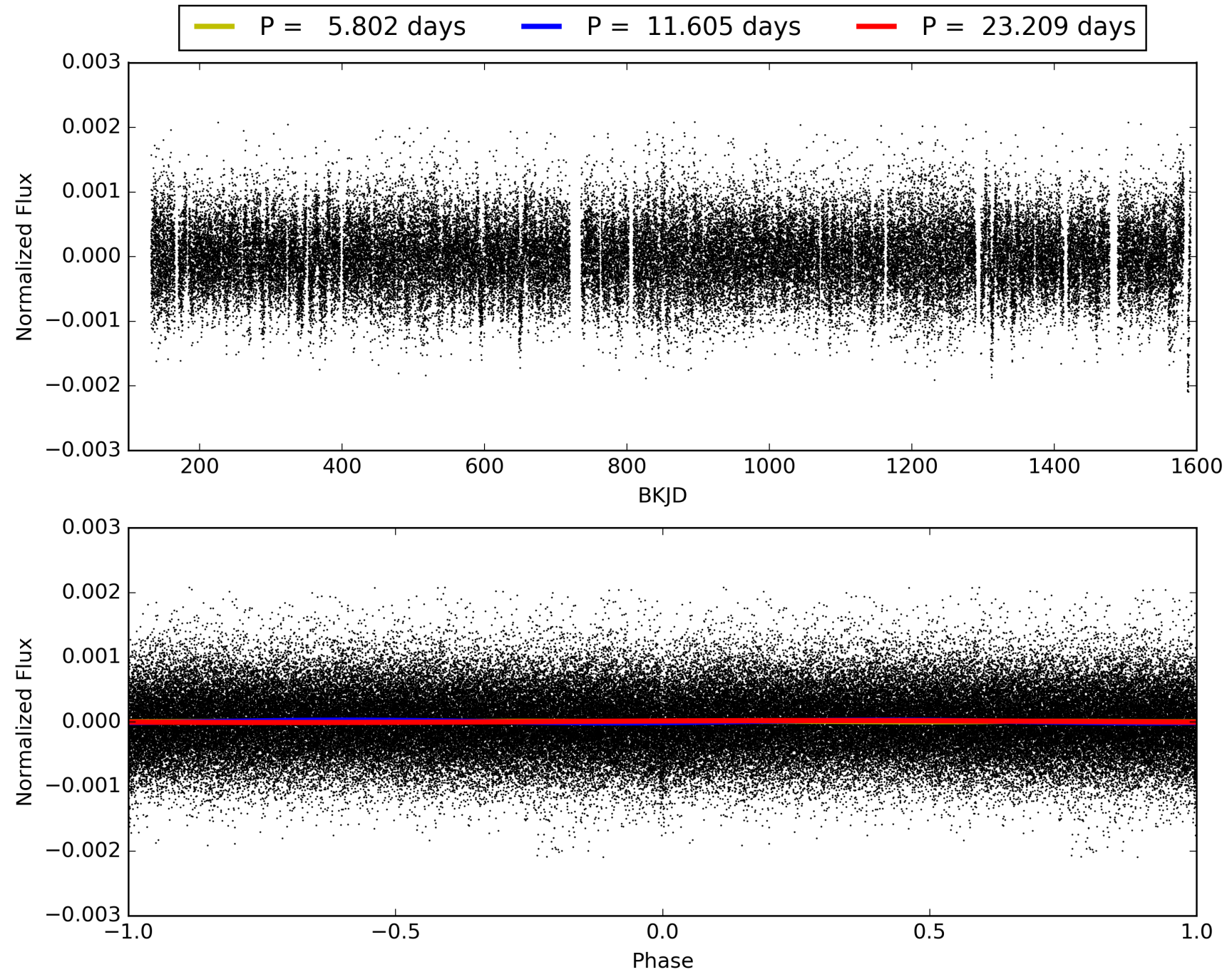
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:10:53 Z

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

# TCE 011810124-02, PDC Light Curves

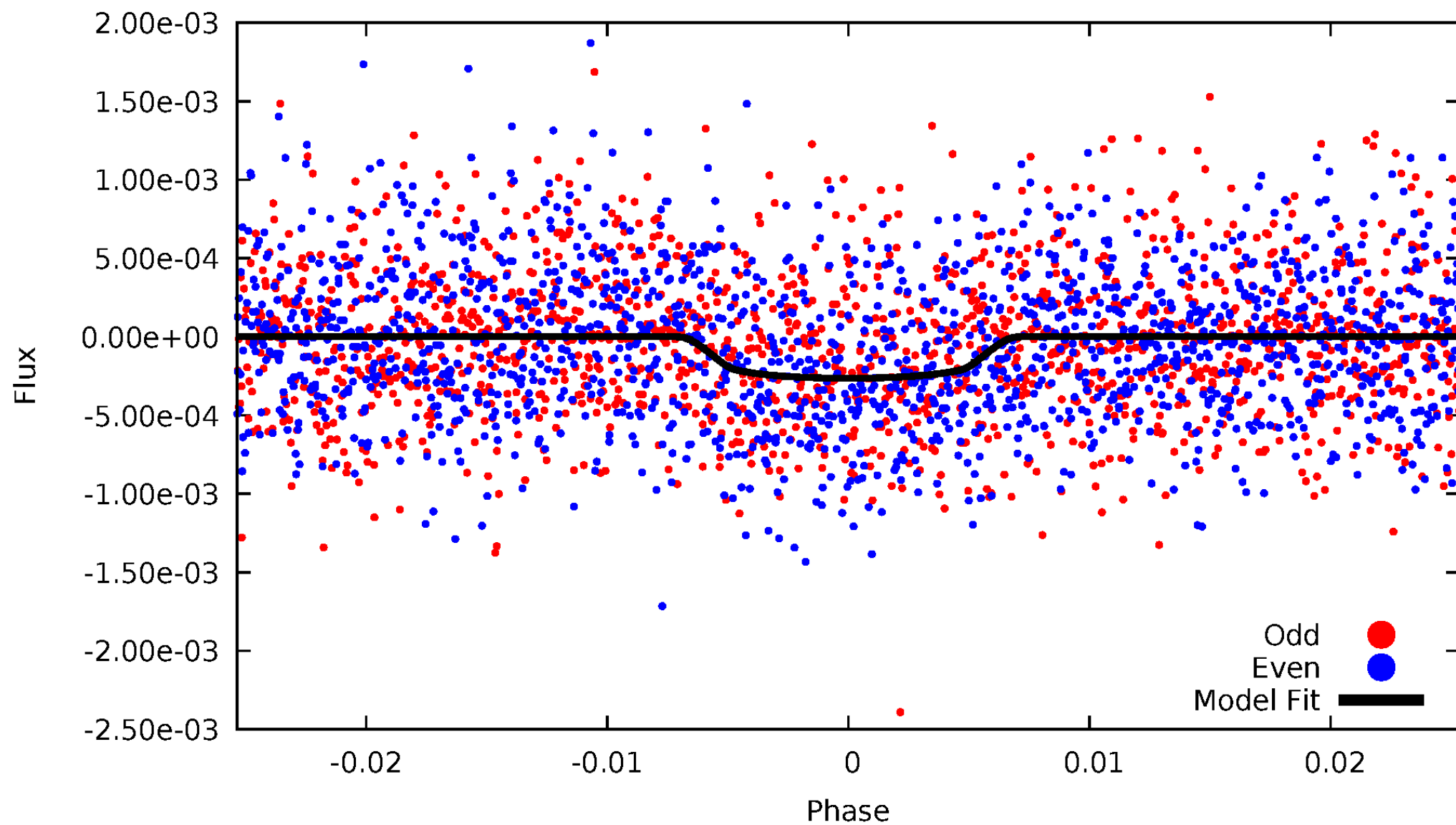


TCE 011810124-02



# DV Odd/Even

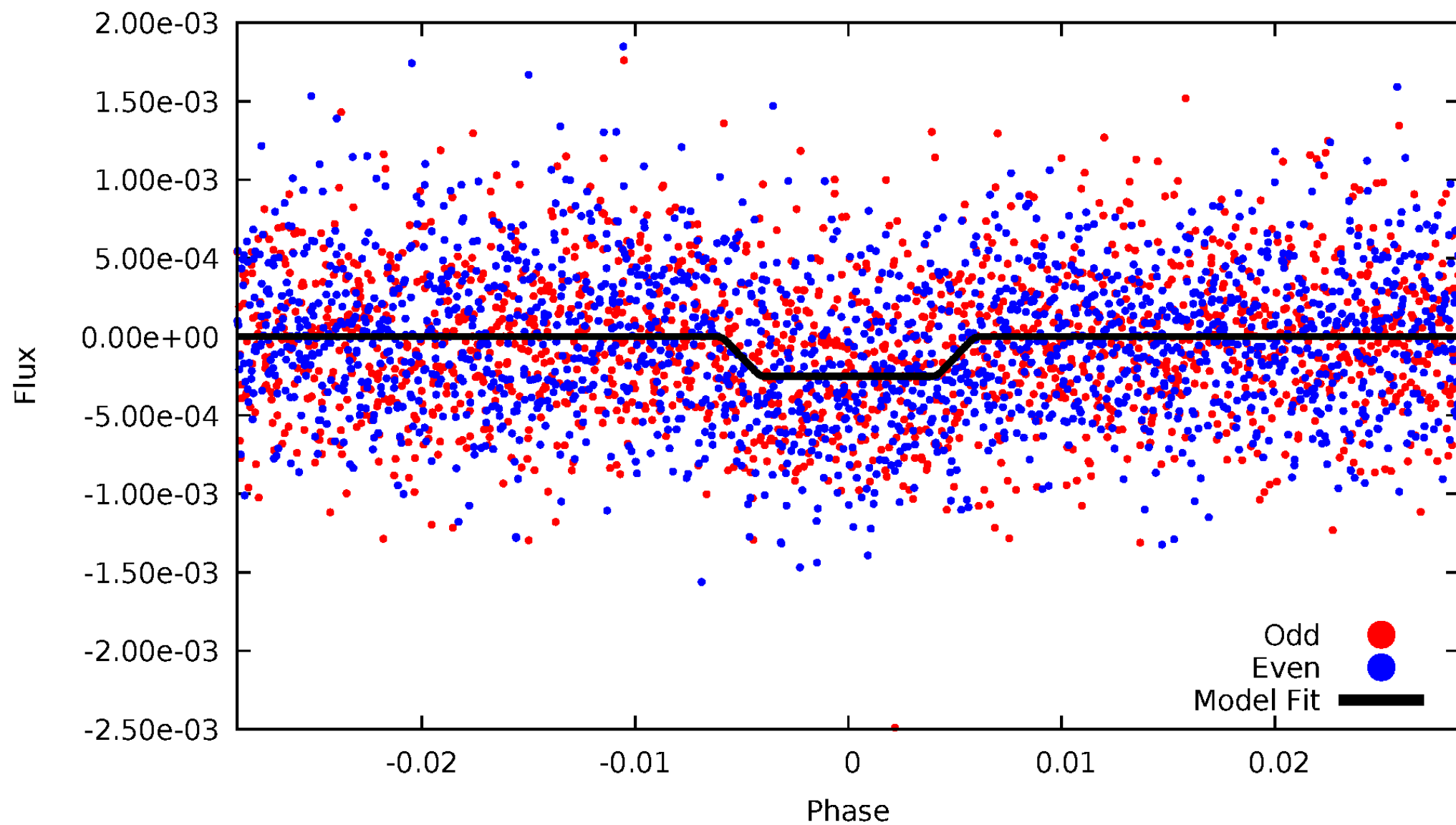
TCE 011810124-02





# ALT Odd/Even

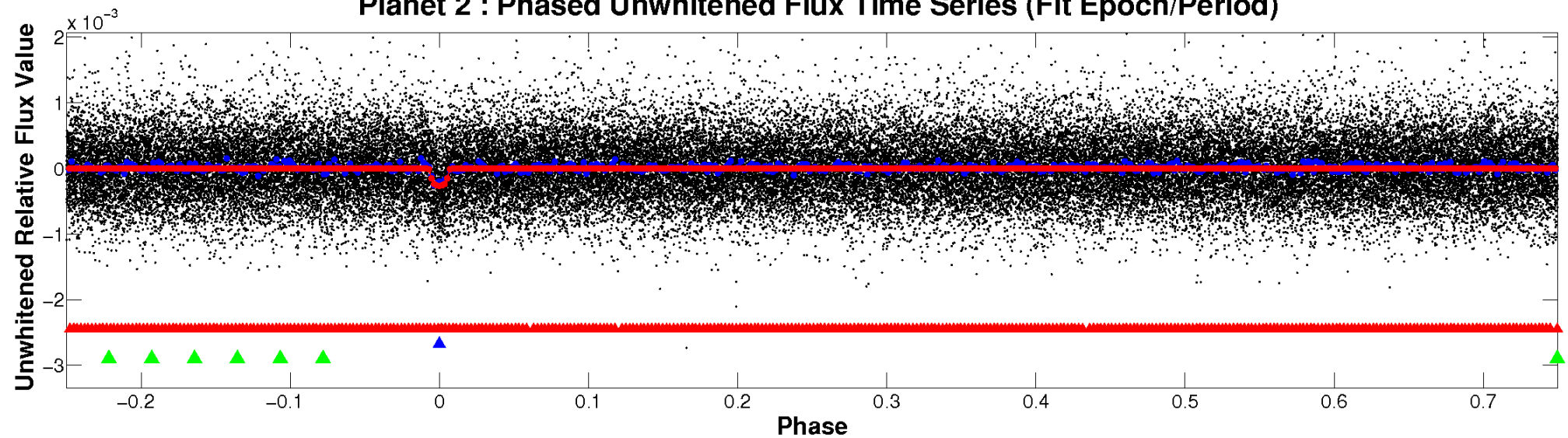
TCE 011810124-02



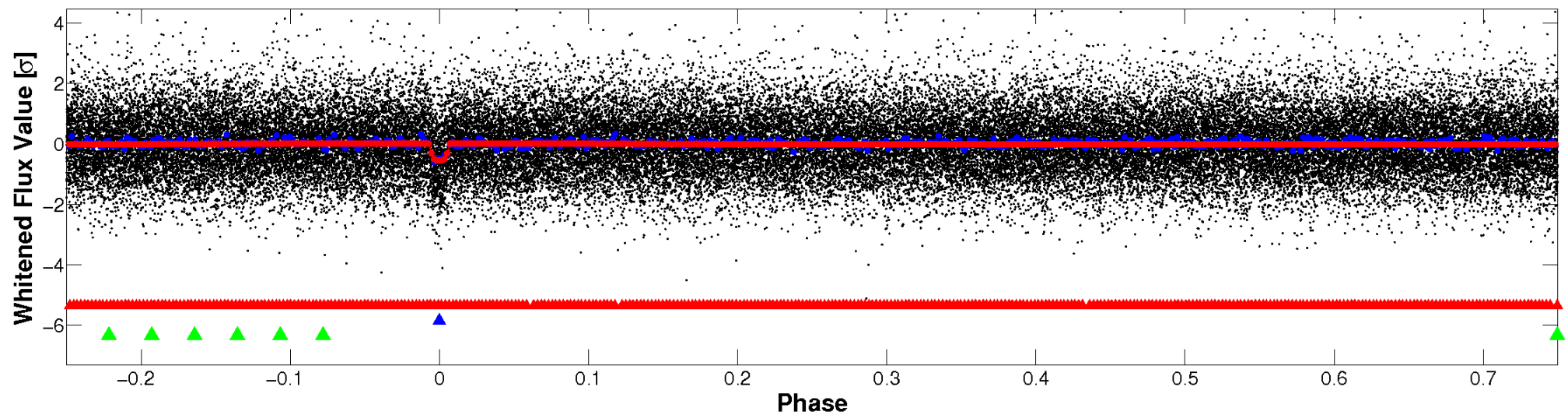


# Non-Whitened Vs. Whitened Light Curve

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

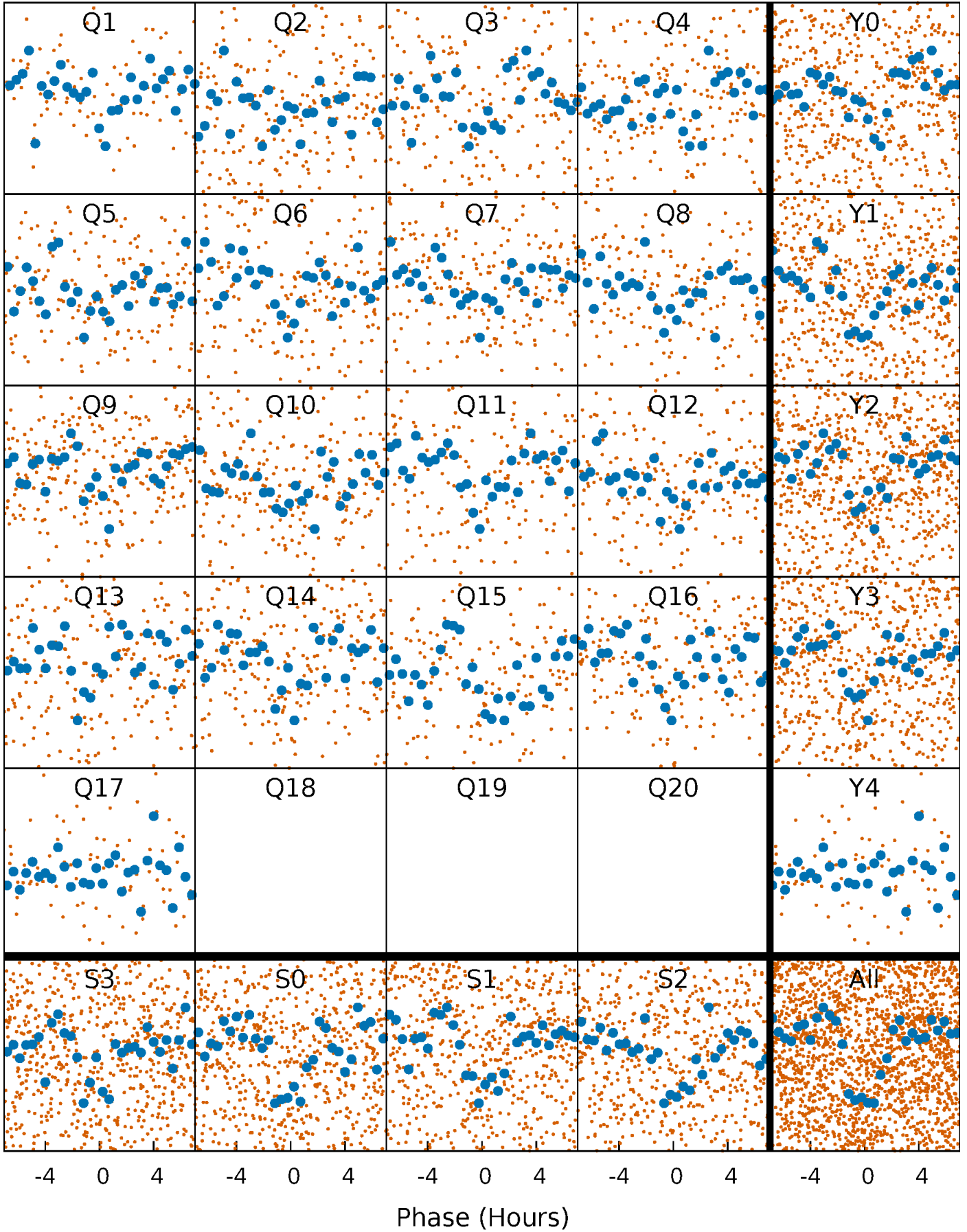


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



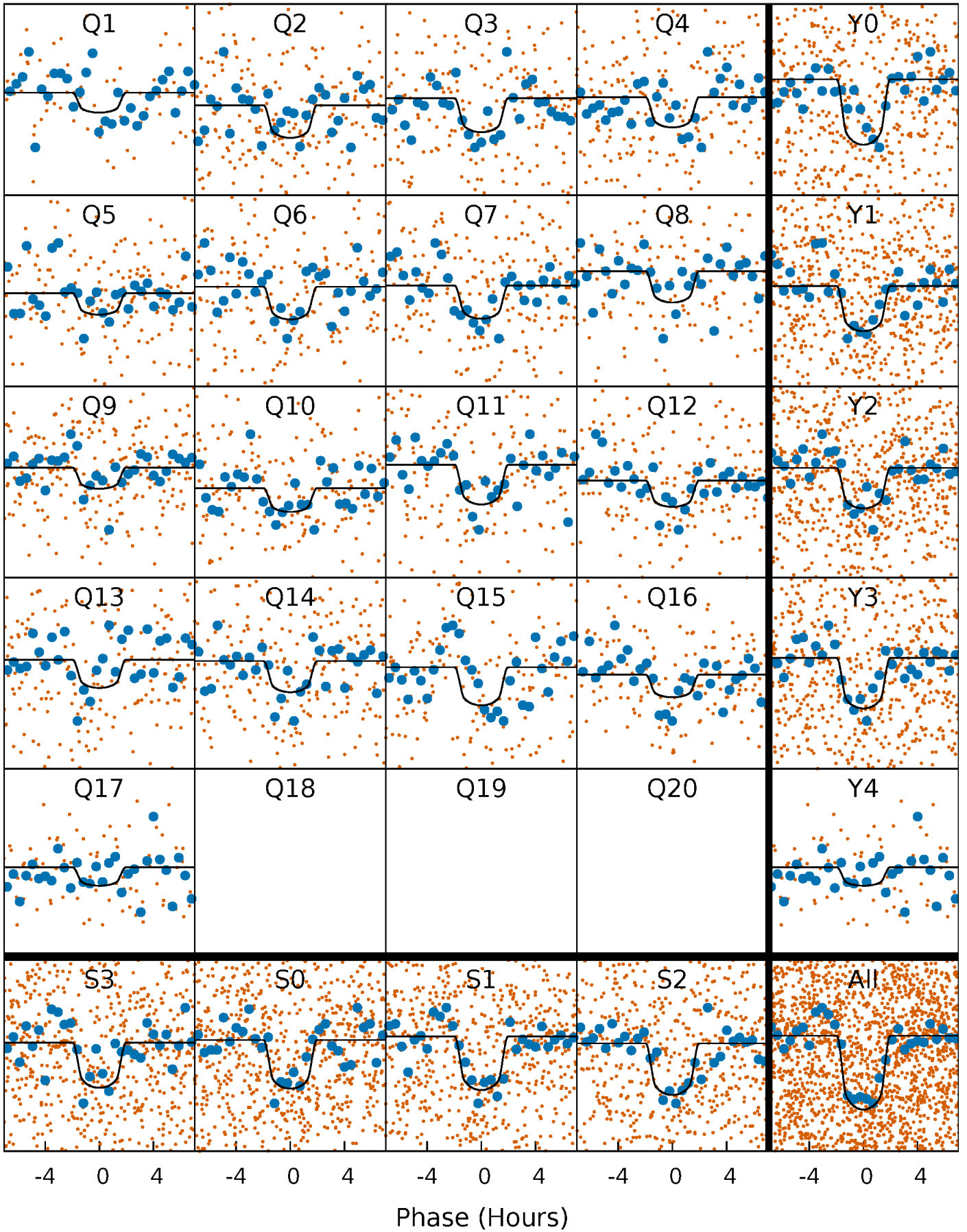
# PDC Quarter-Phased Transit Curves

TCE 011810124-02 P= 11.604529 Days  $T_0=139.051527$  (BKJD)



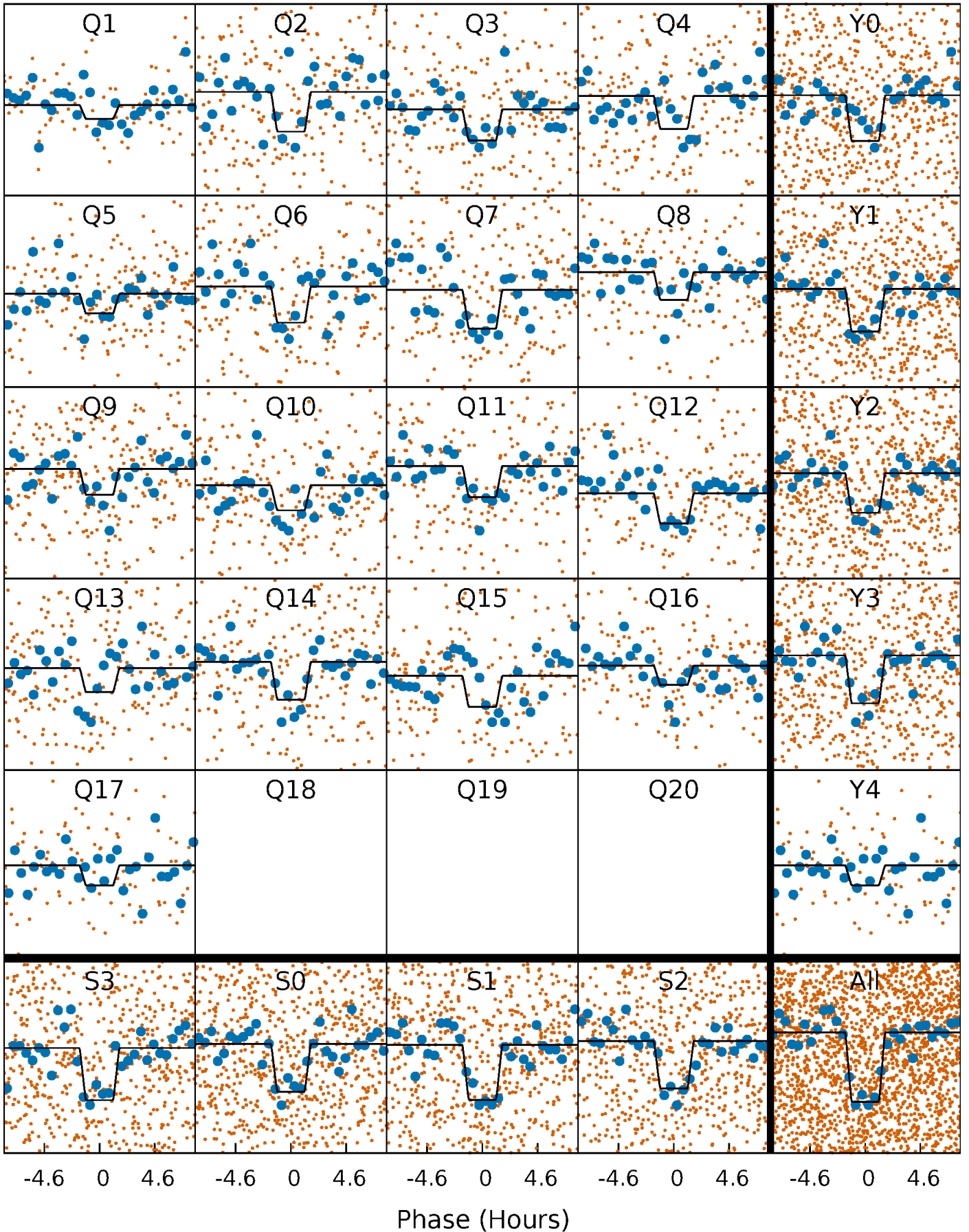
# DV Quarter-Phased Transit Curves

TCE 011810124-02 P= 11.604529 Days  $T_0=139.051527$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 011810124-02 P= 11.604381 Days  $T_0=139.060194$  (BKJD)

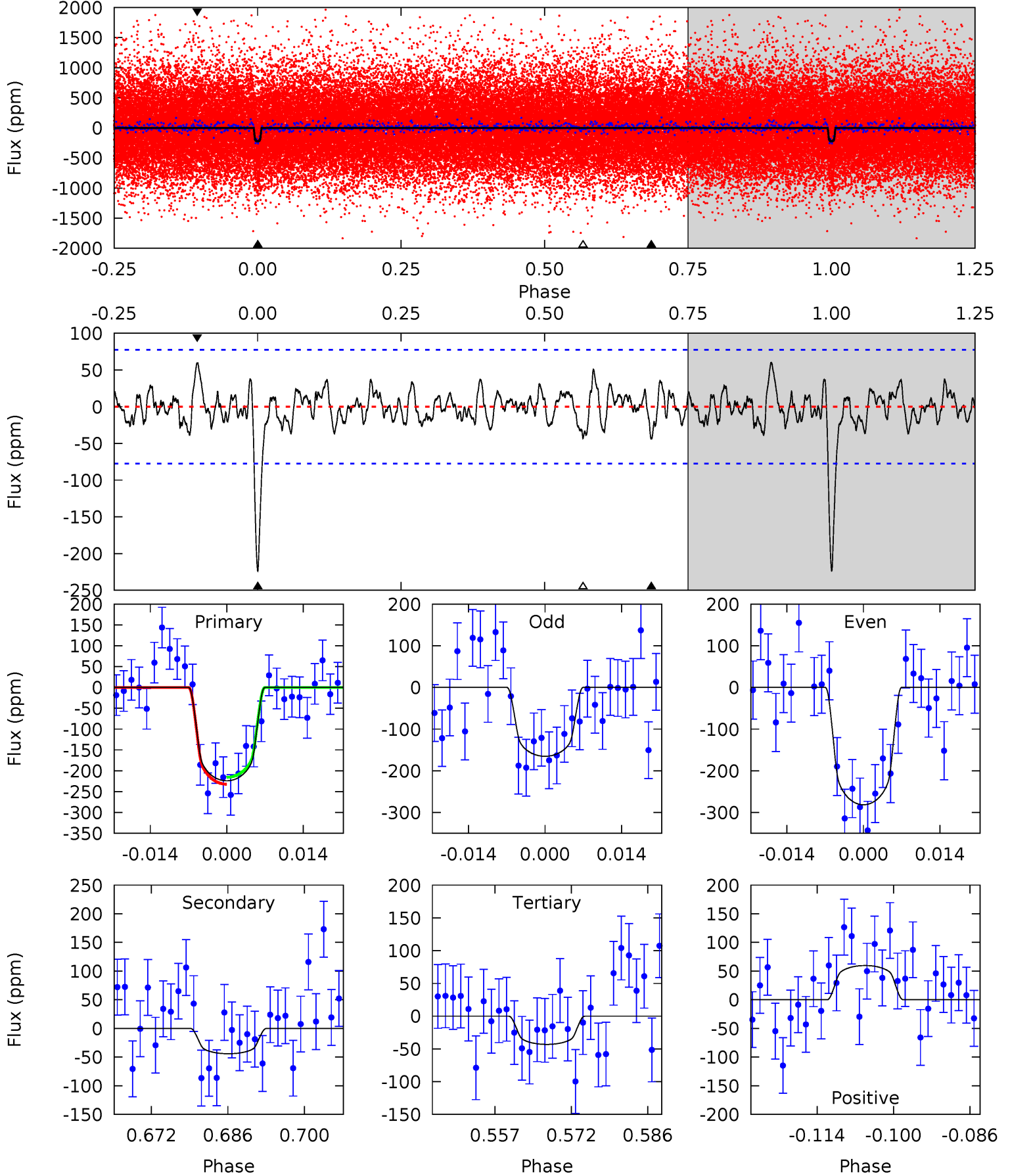




# DV Model-Shift Uniqueness Test

011810124-02,  $P = 11.604529$  Days,  $E = 127.446998$  Days

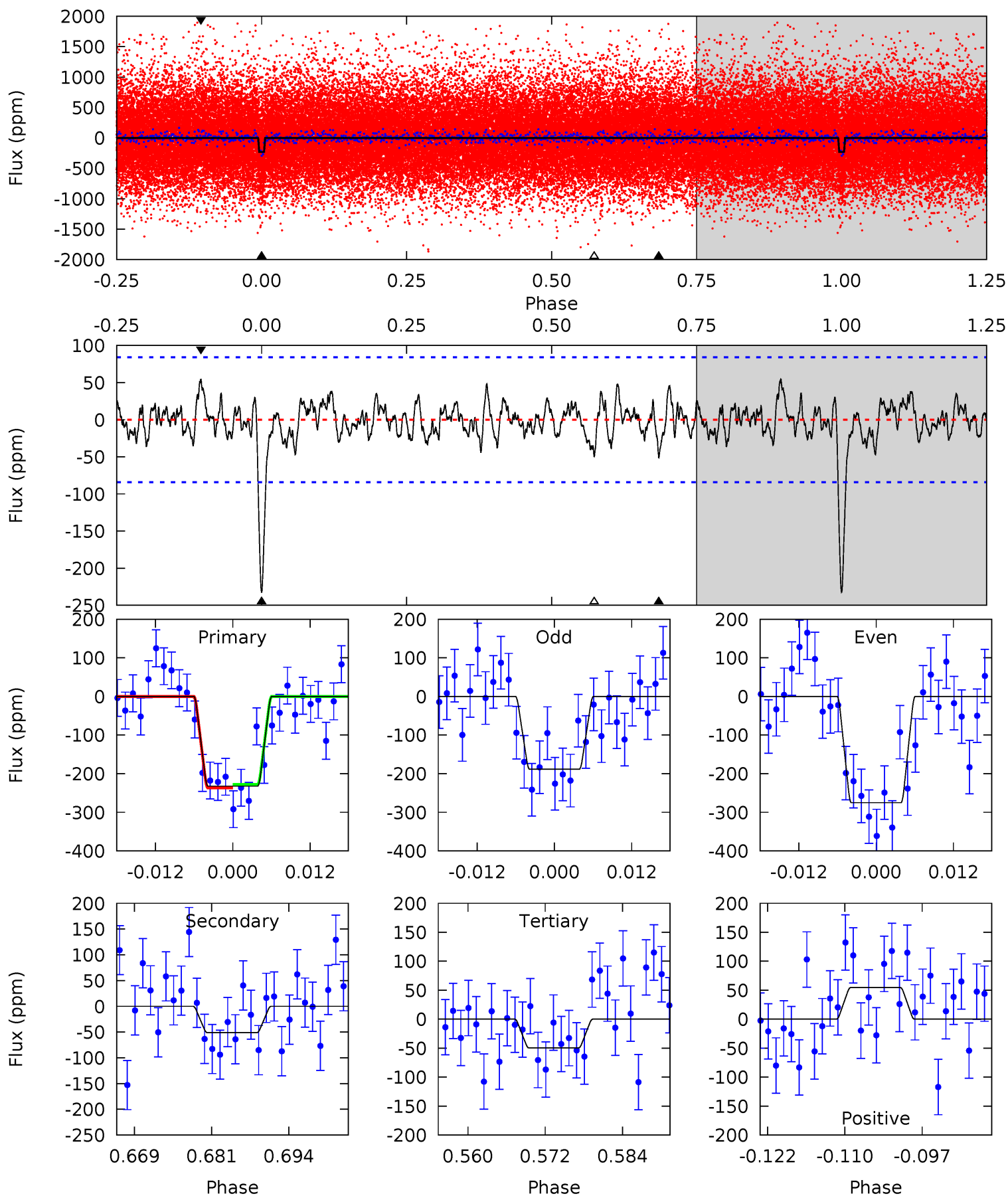
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	2.82	2.76	3.82	4.96	2.45	1.13	11.6	10.5	0.06	-0.99	3.72	0.96	0.21	0.52



# Alt Model-Shift Uniqueness Test

011810124-02,  $P = 11.604381$  Days,  $E = 127.455813$  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
13.8	3.03	2.94	3.24	4.99	2.51	1.09	10.8	10.5	0.10	-0.20	2.57	1.06	0.19	0.26



### Stellar Parameters For KIC 011810124

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5533^{+83}_{-74}$	$4.275^{+0.168}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.166^{+0.174}_{-0.212}$	$0.934^{+0.063}_{-0.045}$	$0.829^{+0.660}_{-0.269}$
	+2%/-1%	+4%/-3%	+94%/-94%	+15%/-18%	+7%/-5%	+80%/-32%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 011810124-02 / KOI 3344.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	-44±16	$2.26^{+1.01}_{-0.96}$	$1174^{+54}_{-62}$	$3736^{+872}_{-474}$	$45^{+96}_{-26}$
Alt.	-51±17	$1.97^{+1.13}_{-0.92}$	$1176^{+51}_{-61}$	$4021^{+1120}_{-579}$	$65^{+173}_{-39}$

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



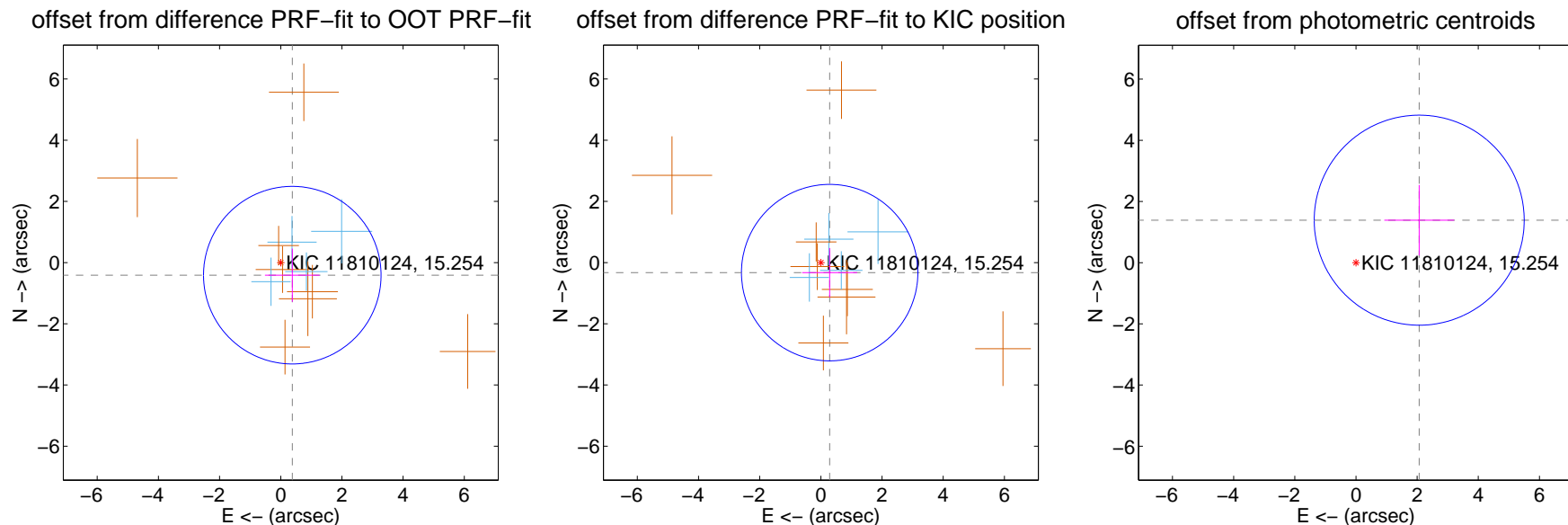
## DV Centroid Data

Supplemental centroid analysis for 011810124-02. Kepler magnitude: 15.25. Transit SNR 12.71

There are 4 quarters with good PRF difference image offsets

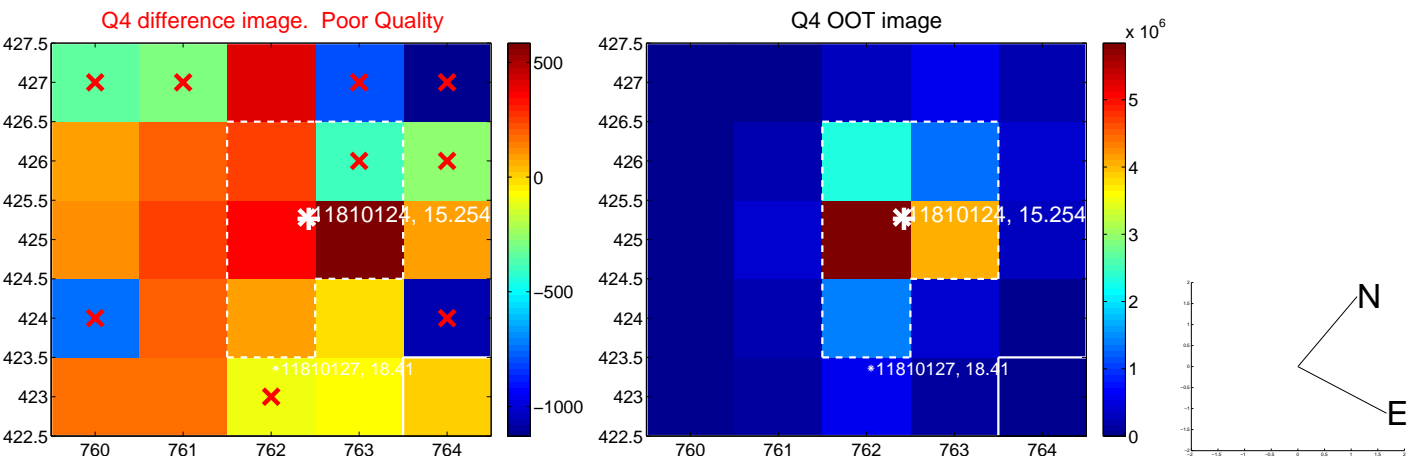
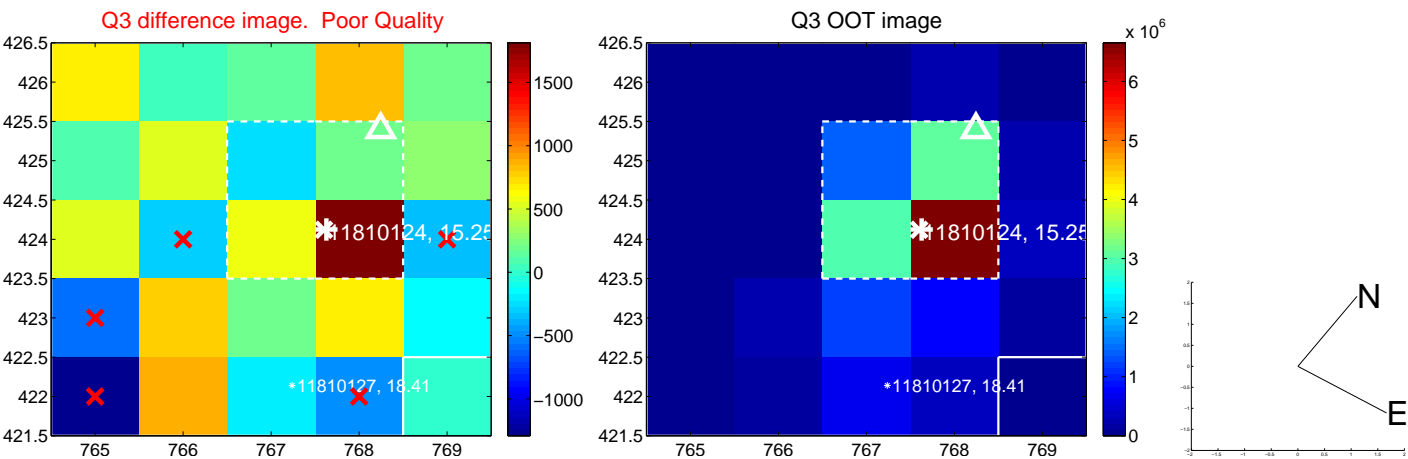
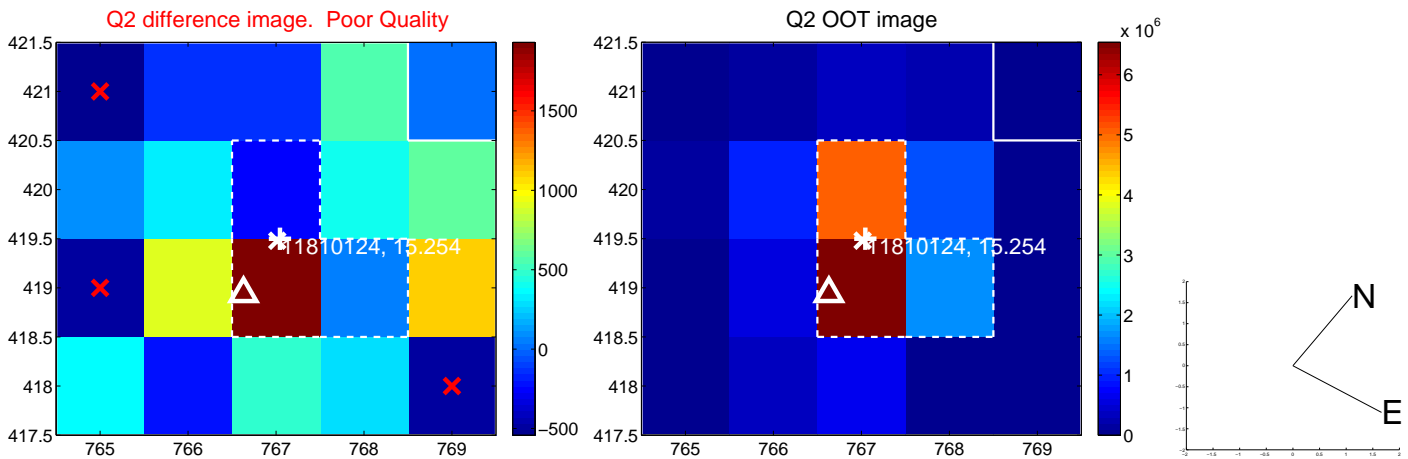
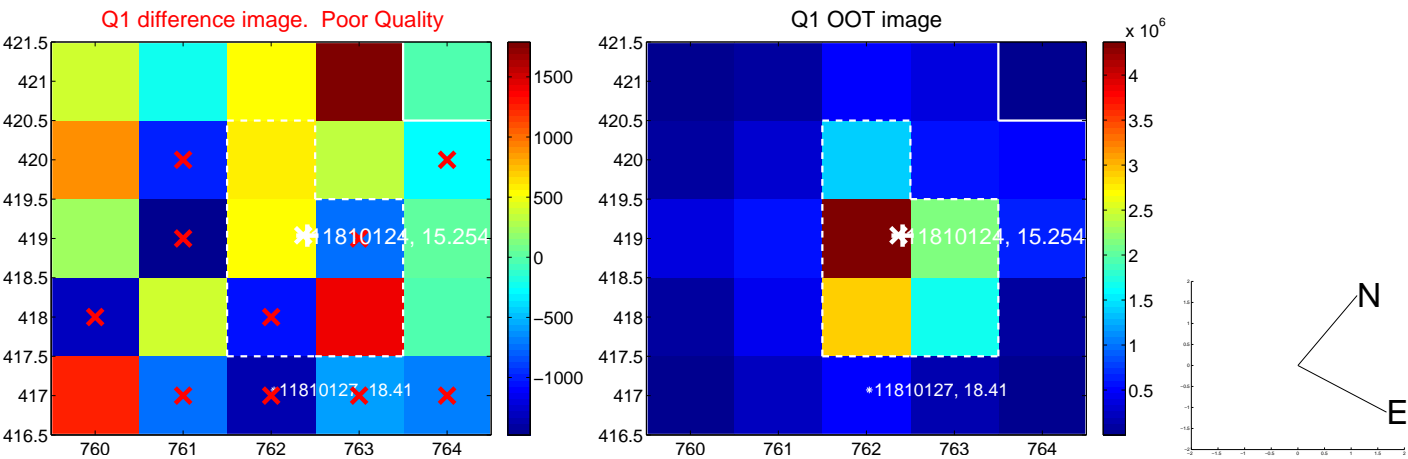
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.558 \pm 0.967$	0.58	$-0.377 \pm 0.893$	$-0.411 \pm 0.868$
PRF-fit source offset from KIC position	$0.436 \pm 0.961$	0.45	$-0.288 \pm 0.899$	$-0.328 \pm 0.804$
photometric centroid source offset	$2.49 \pm 1.14$	2.18	$-2.07 \pm 1.14$	$1.39 \pm 1.15$

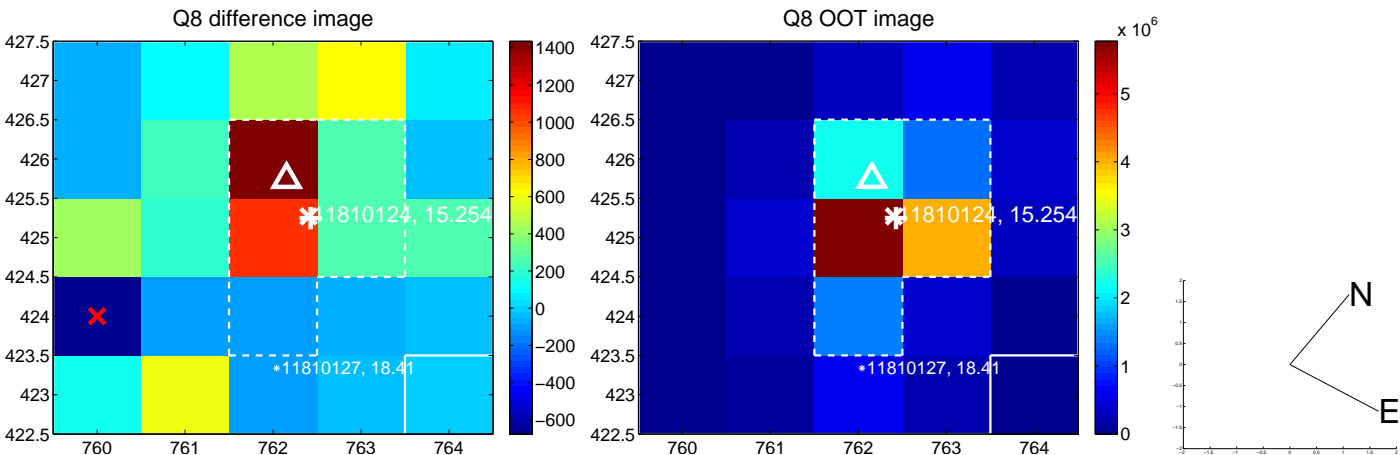
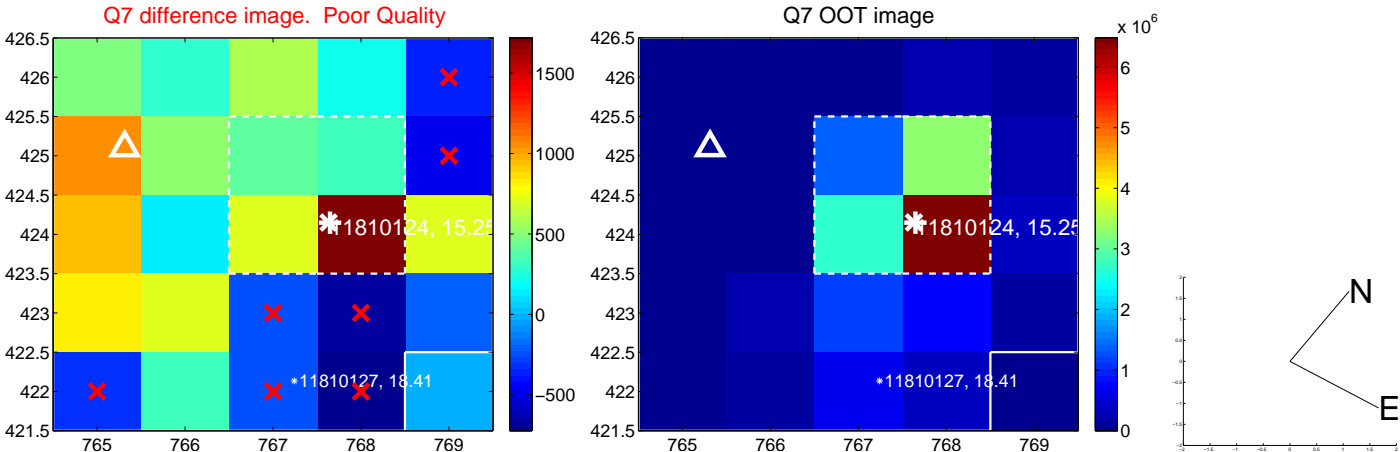
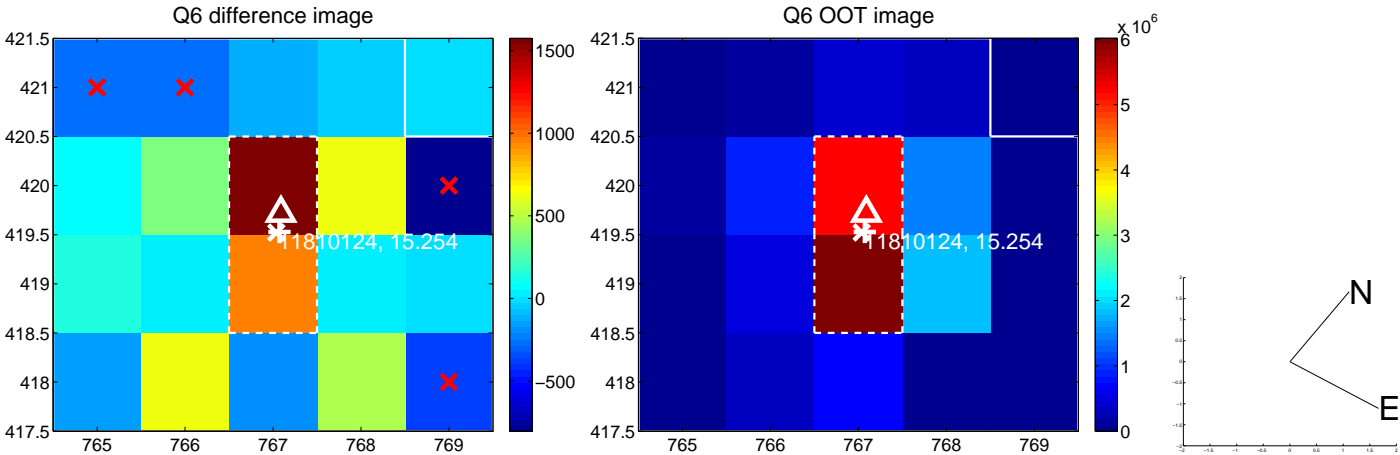
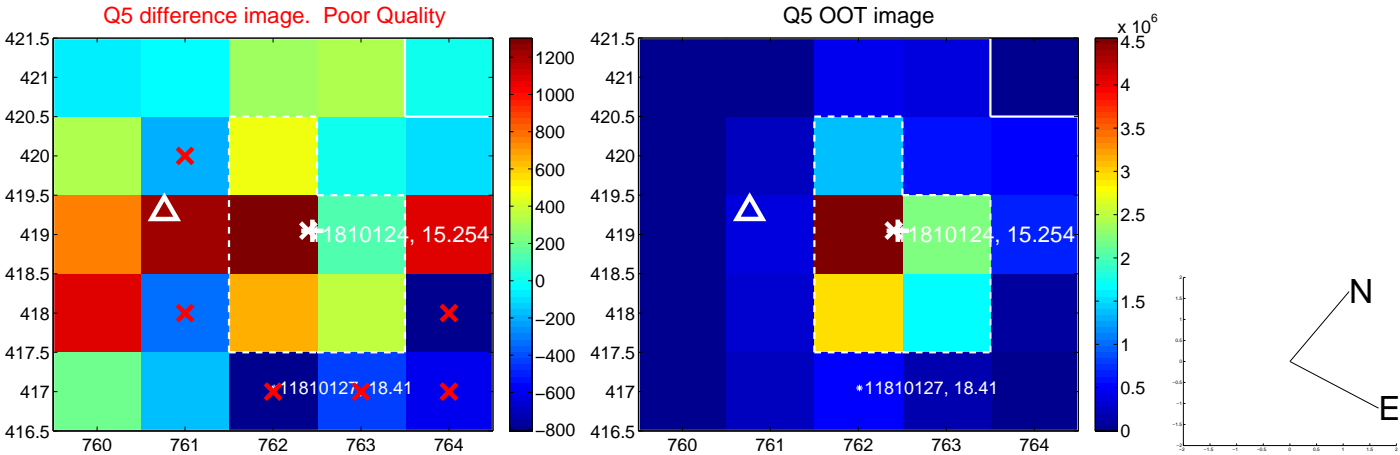


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

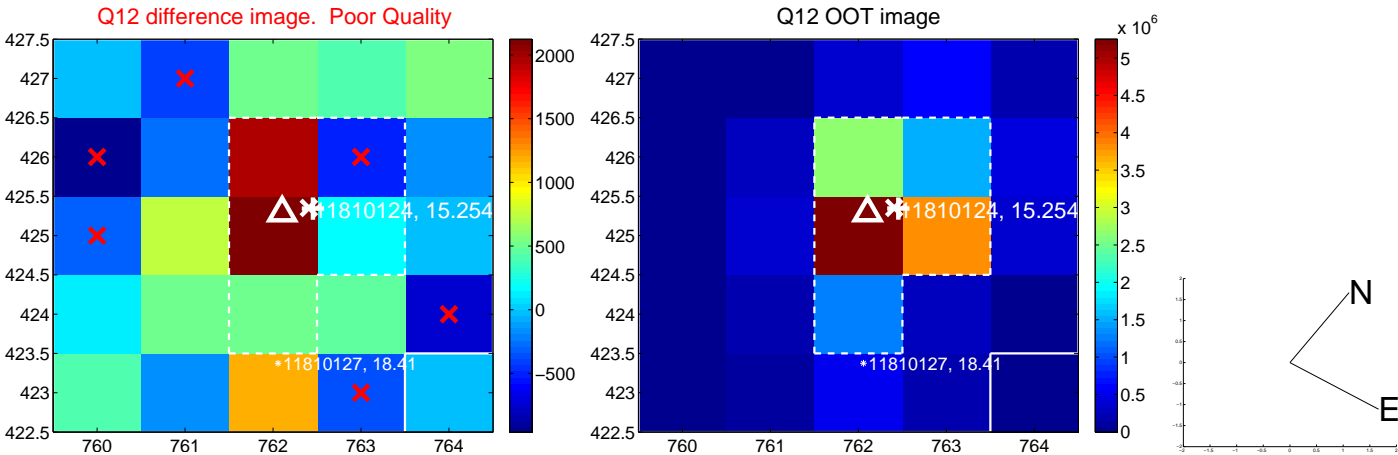
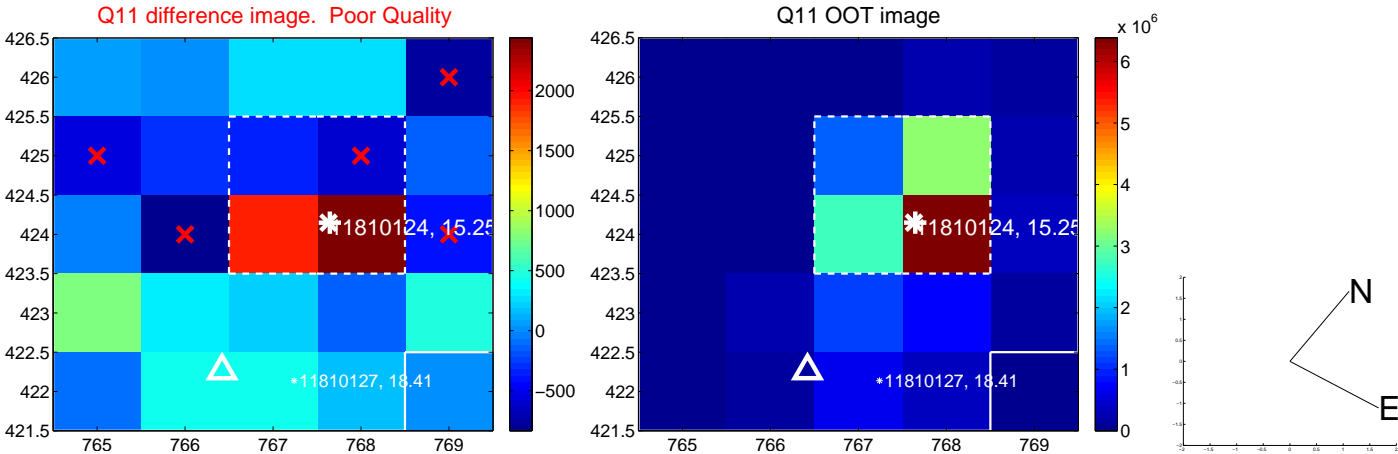
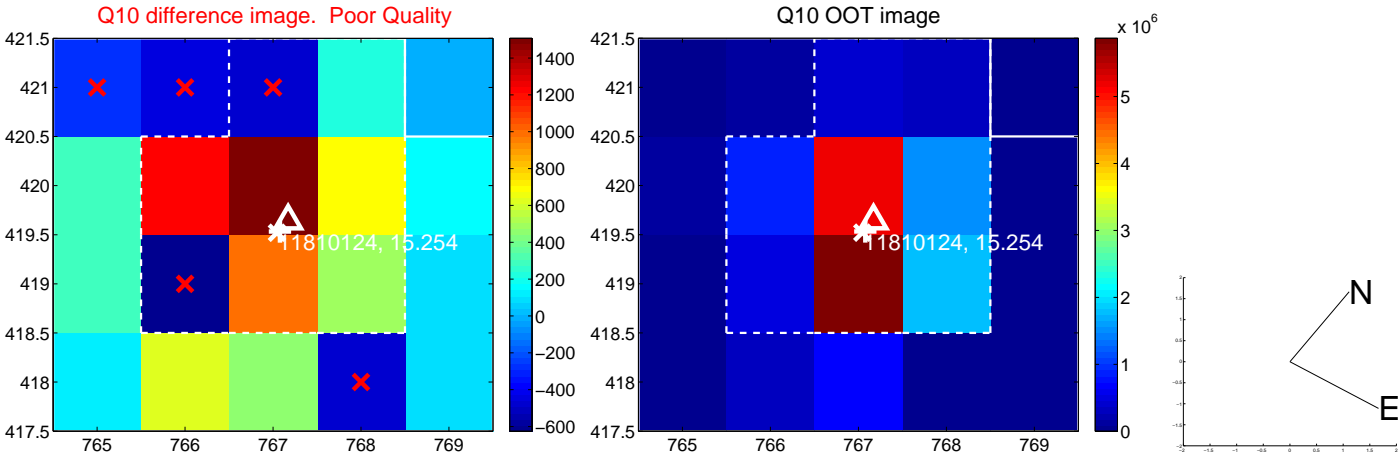
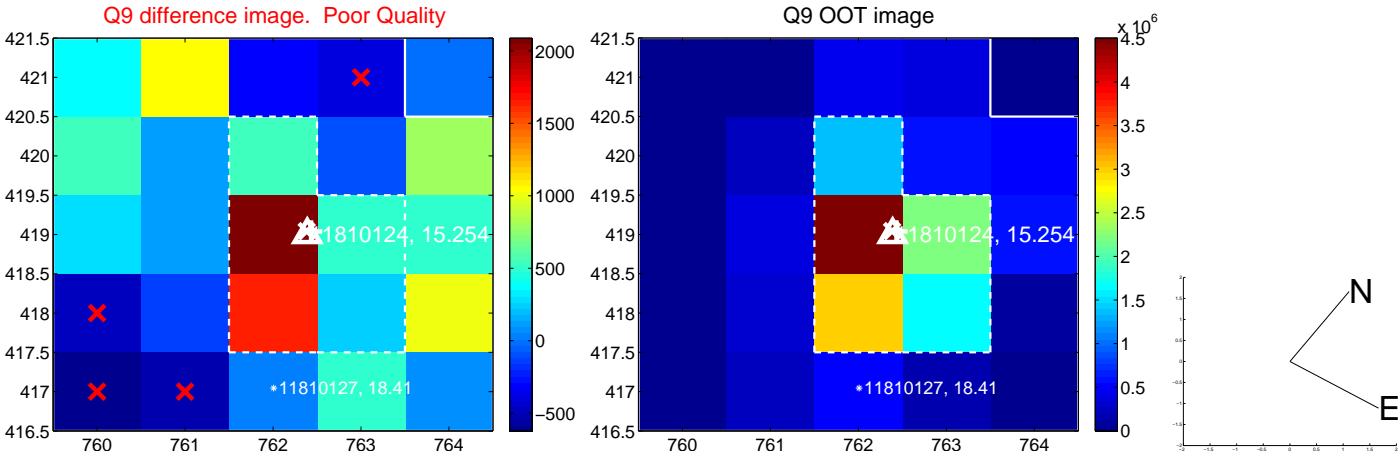
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



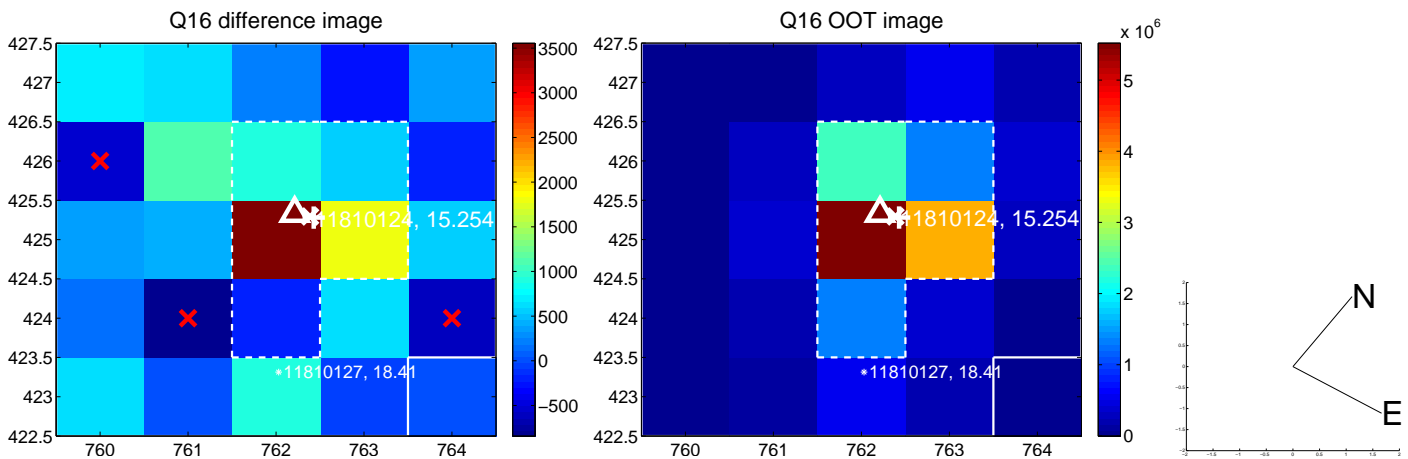
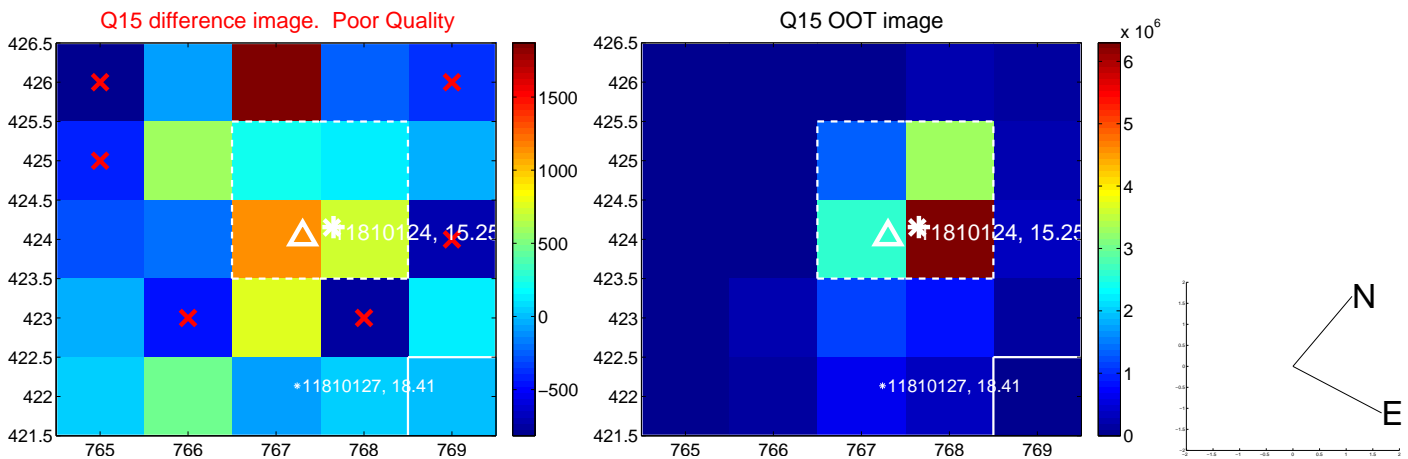
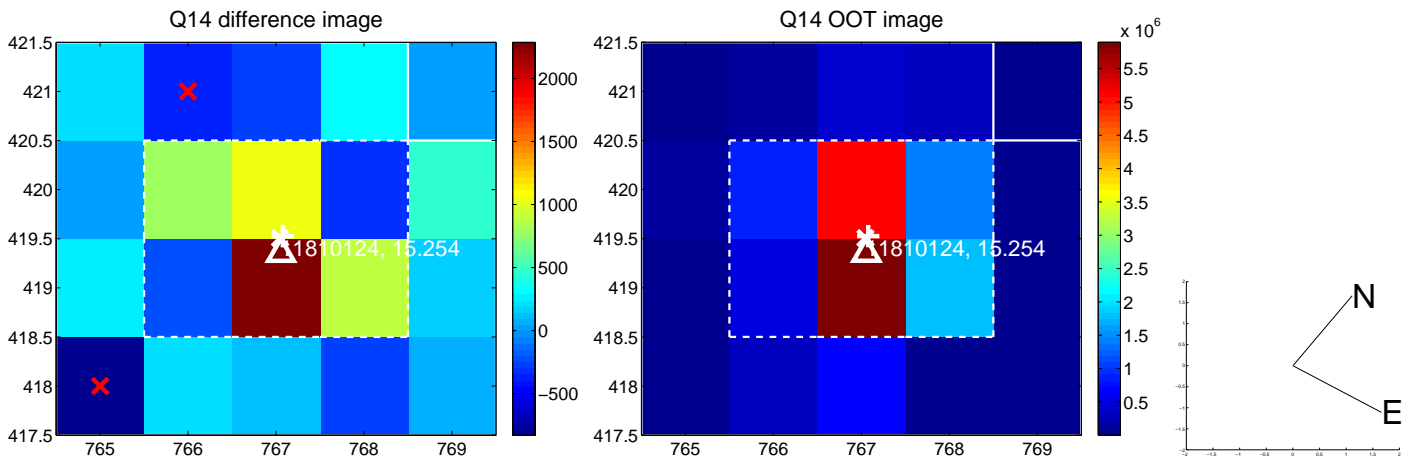
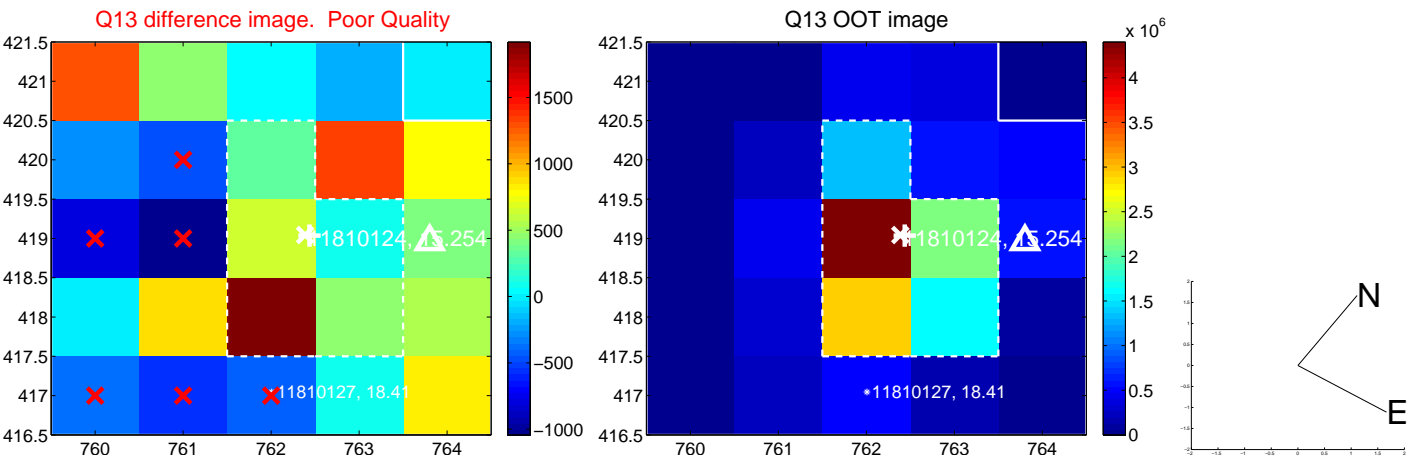
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



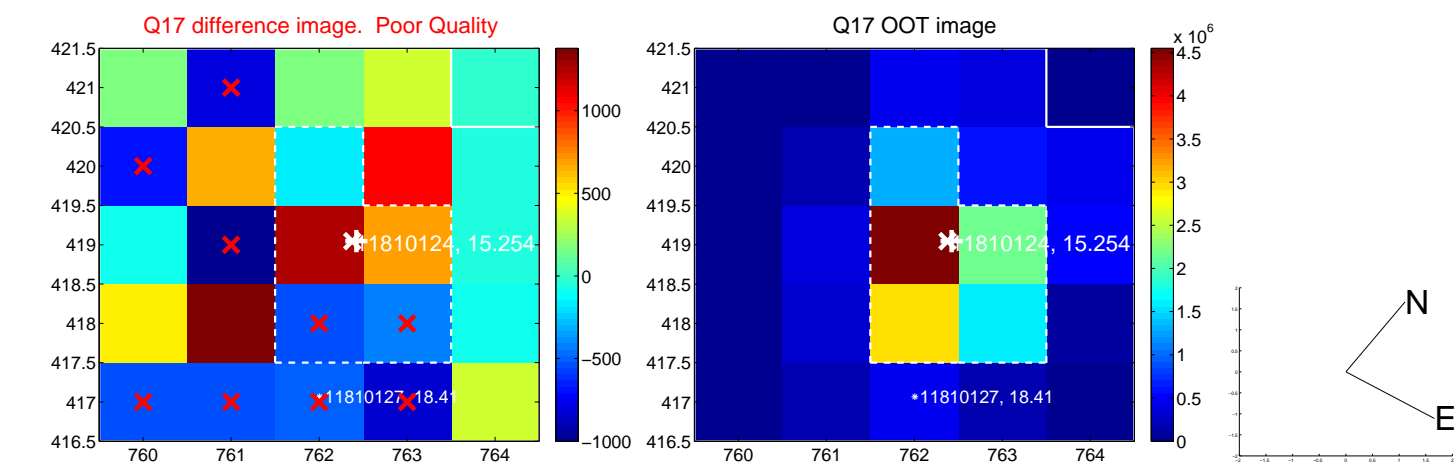
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



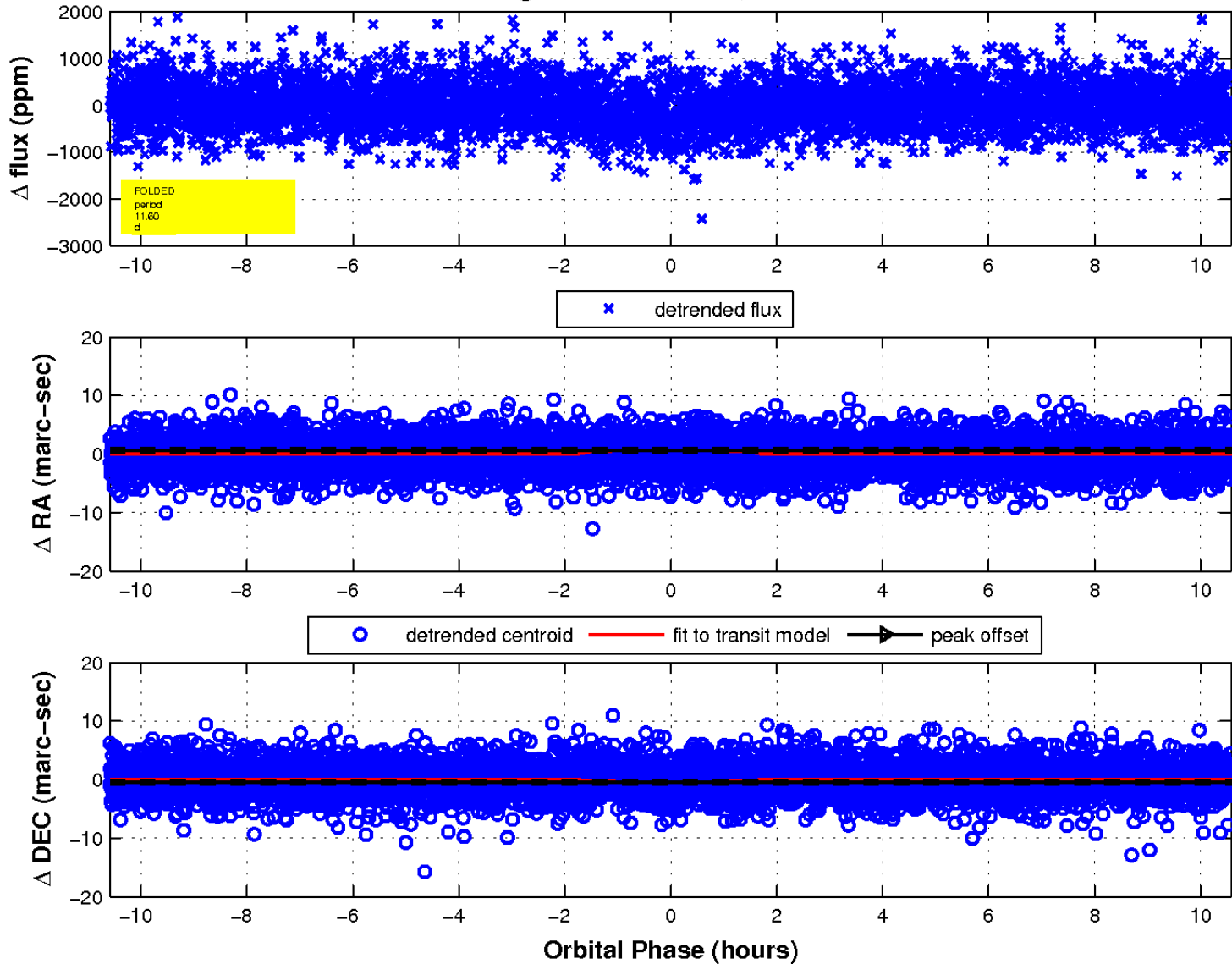
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

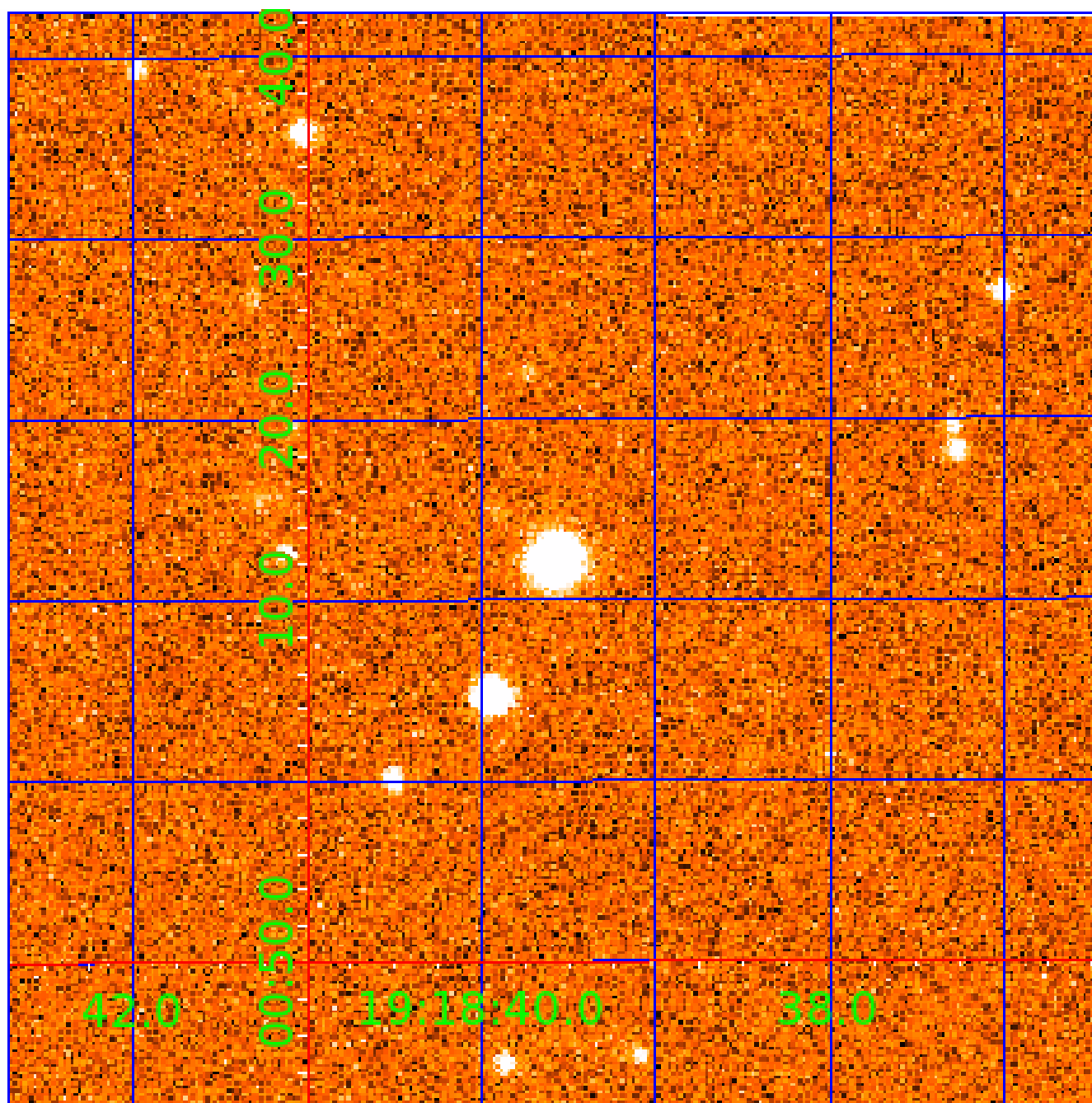


### fluxWeightedCentroids, Planet 2 of 3



# UKIRT Image

Declination





# KIC 011810124

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011810124-01	OBS	3344.02	3.638964	131.789503	187.5	2.433	12.7	14.2	1.17	5533	1.83	557.06
011810124-02	OBS	3344.01	11.604529	139.051527	265.1	3.529	11.7	12.7	1.17	5533	2.24	118.68
011810124-03	OBS	3344.03	208.548160	230.983042	593.7	10.069	8.2	8.8	1.17	5533	3.06	2.52

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011810124-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT
011810124-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011810124-03	OBS	PC	0.81	0	0	0	0	NO_COMMENT

**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.

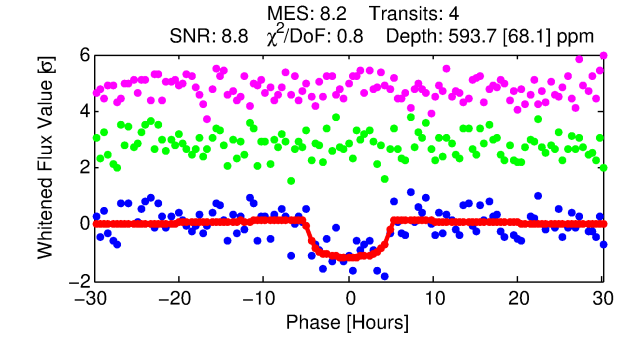
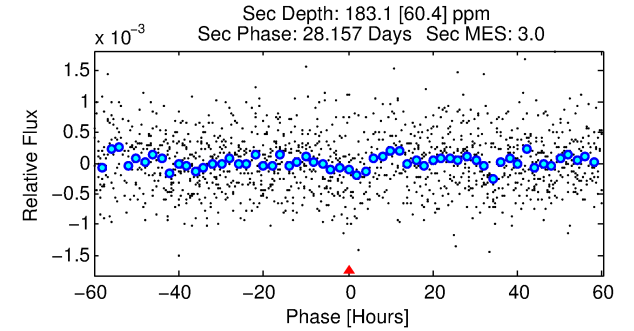
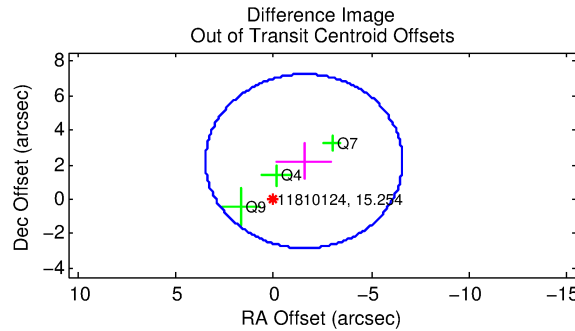
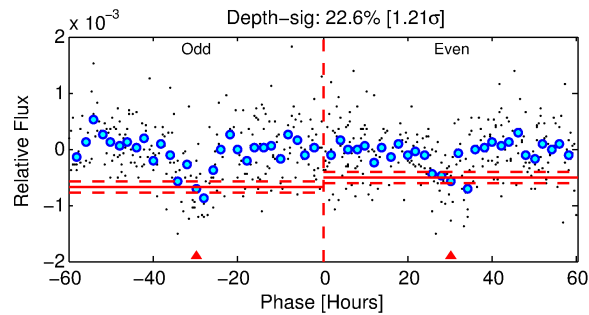
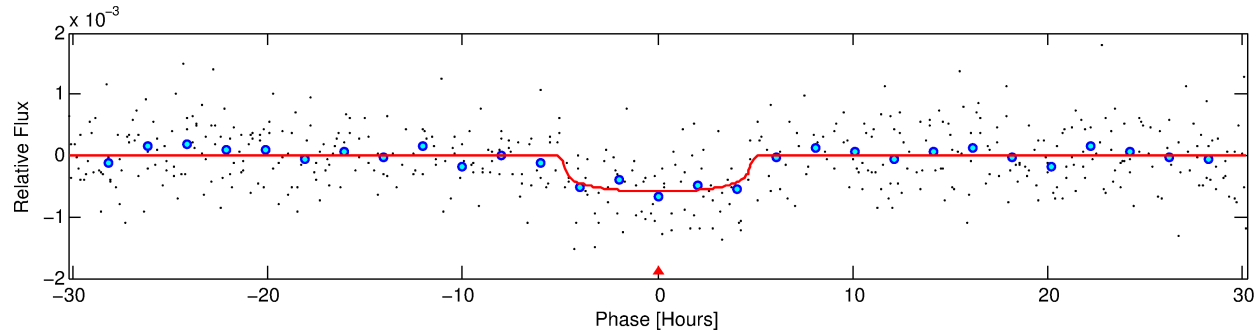
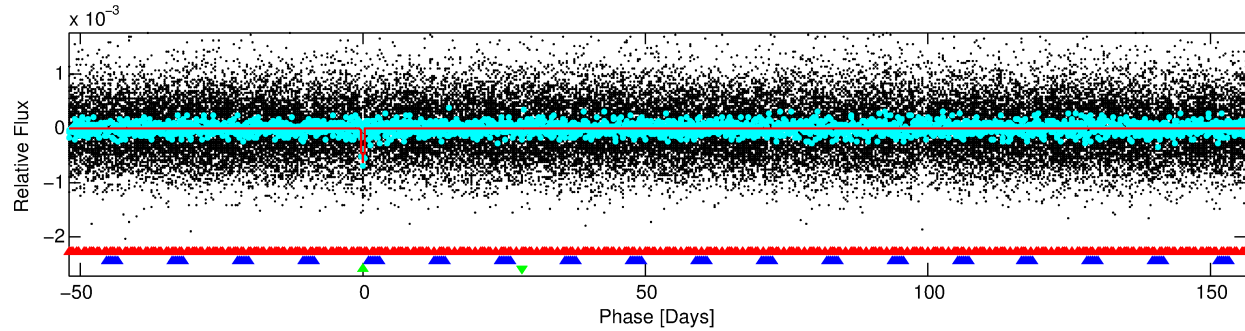
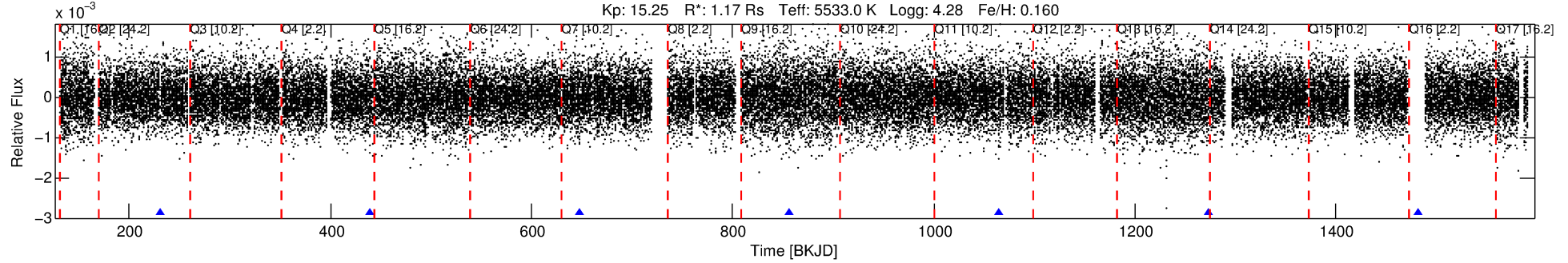
## Ephemeris Match Information For 011810124-03

No Significant Match Found

# DV One-Page Summary

KIC: 11810124 Candidate: 3 of 3 Period: 208.548 d  
KOI: K03344.03 Corr: 0.985

Kp: 15.25 R\*: 1.17 Rs Teff: 5533.0 K Logg: 4.28 Fe/H: 0.160



## DV Fit Results:

Period = 208.54816 [0.00872] d  
Epoch = 230.9830 [0.0238] BKJD  
Rp/R\* = 0.0241 [0.0134]  
a/R\* = 113.96 [258.08]  
b = 0.73 [1.48]  
Seff = 2.52 [0.73]  
Teq = 321 [23] K  
Rp = 3.06 [1.80] Re  
a = 0.6729 [0.1191] AU  
Ag = 4866.92 [5832.89] [0.83σ]  
Teffp = 4149 [1209] K [3.17σ]

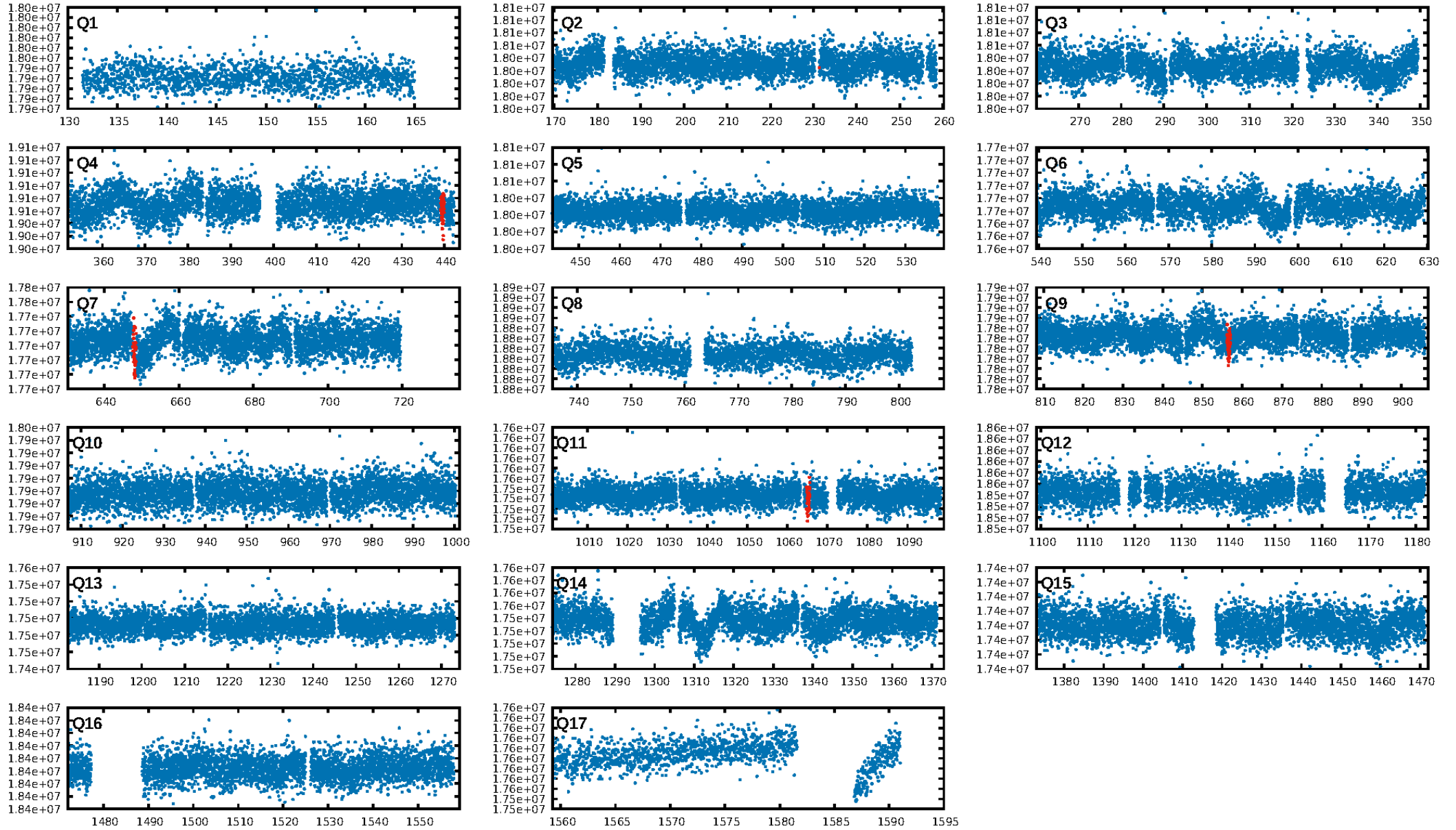
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [443.02σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 58.0%  
ModelChiSquareGof-sig: 99.7%  
Bootstrap-pfa: 1.57e-17  
RollingBand-fgt: 1.00 [4/4]  
**GhostDiagnostic-chr: 0.8245**  
Centroid-sig: 1.6%  
Centroid-so: 3.171 arcsec [1.82σ]  
OotOffset-rm: 2.700 arcsec [1.61σ]  
KicOffset-rm: 2.689 arcsec [2.27σ]  
OotOffset-st: 0/1/1/1 [3]  
KicOffset-st: 0/1/1/1 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 0.33 [1/3]

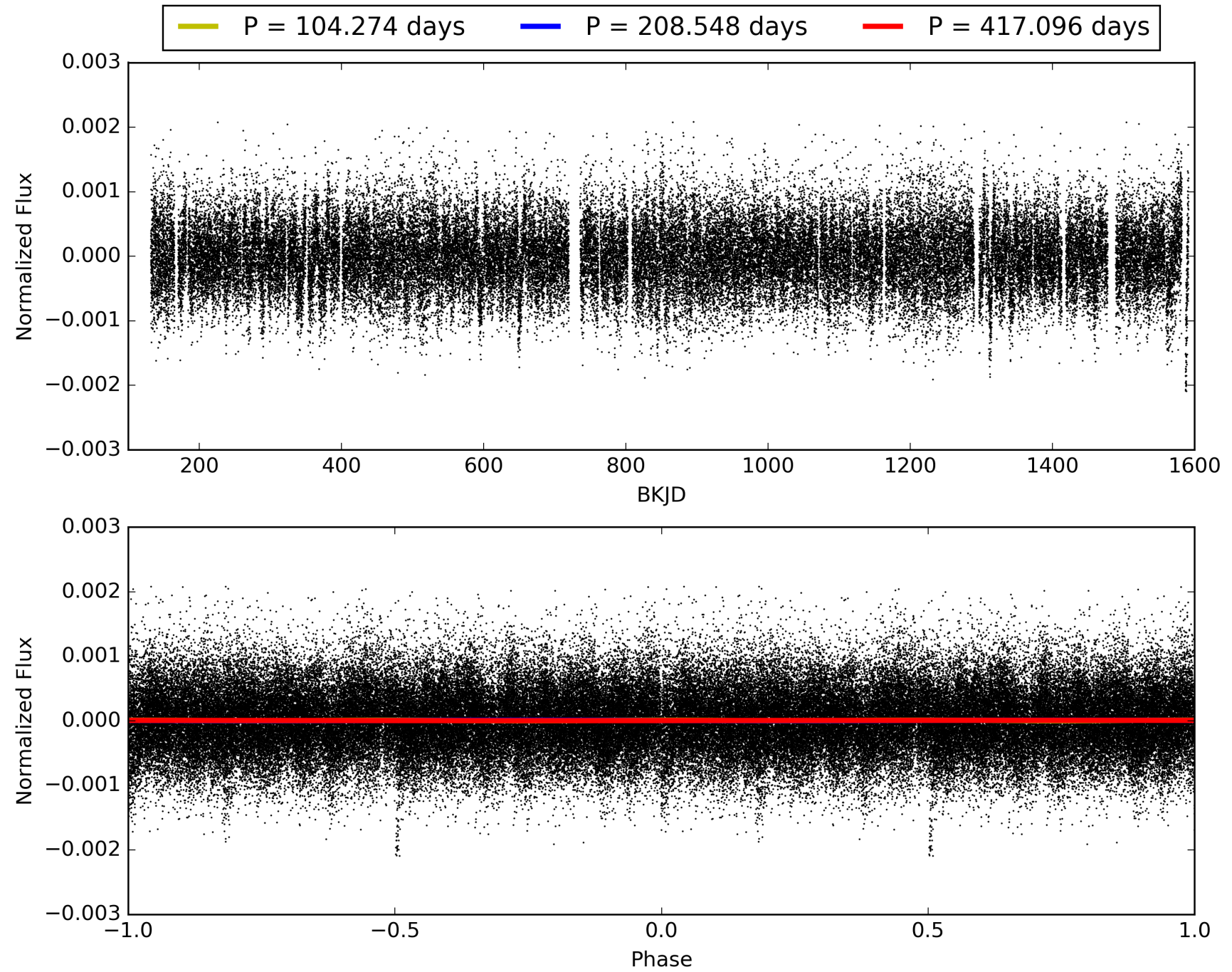
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:11:01 Z

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

# TCE 011810124-03, PDC Light Curves

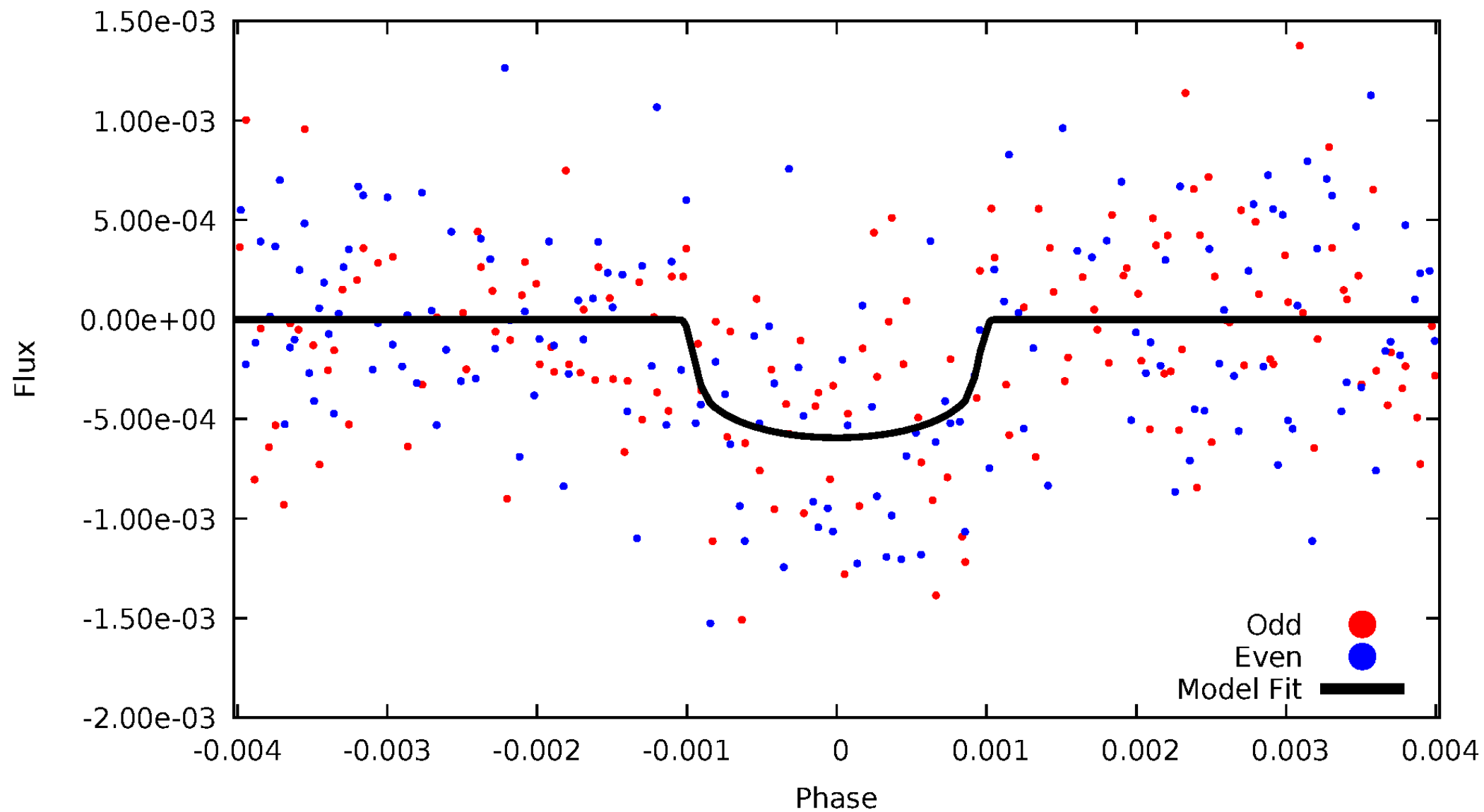


# TCE 011810124-03



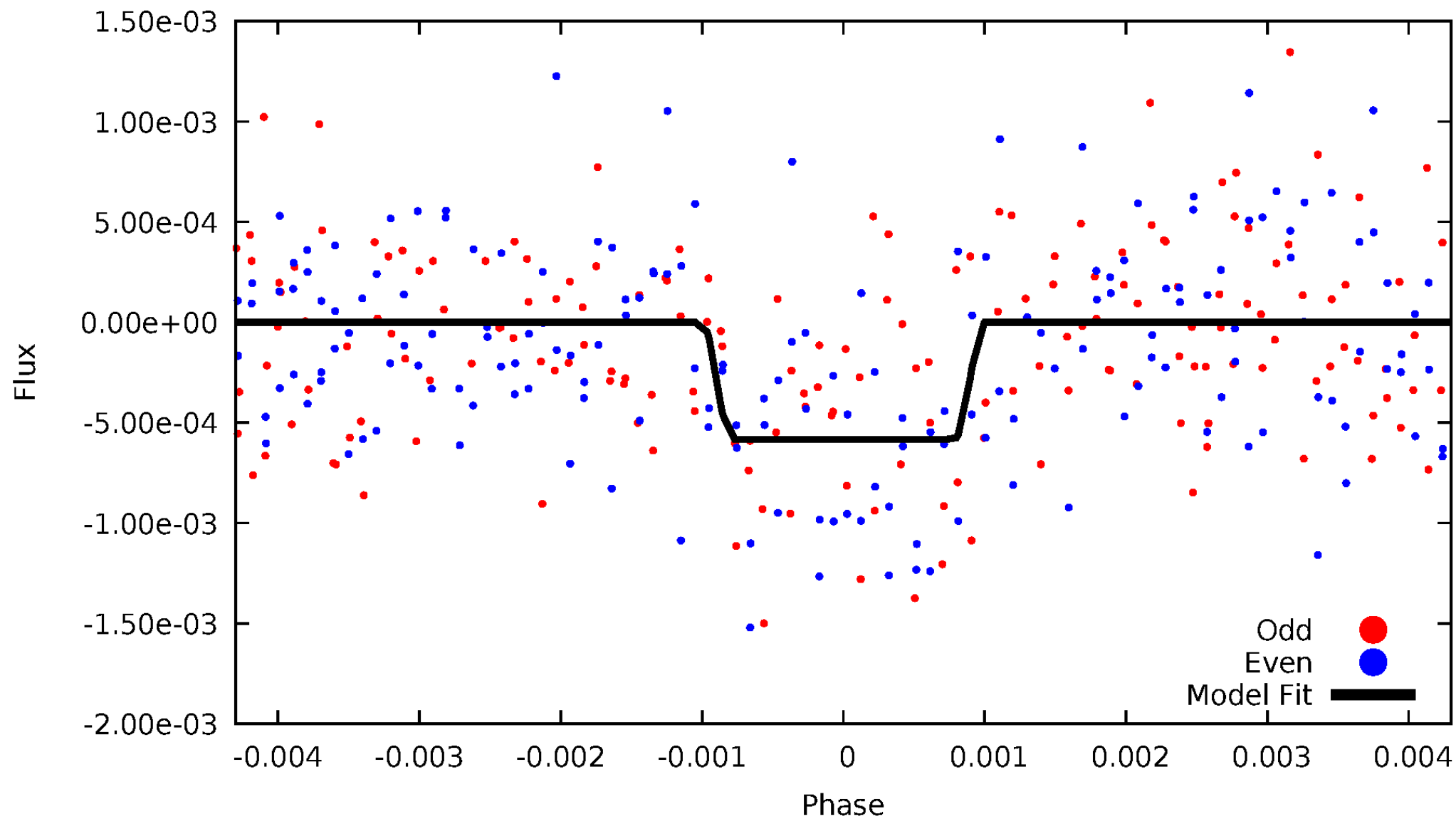
# DV Odd/Even

TCE 011810124-03



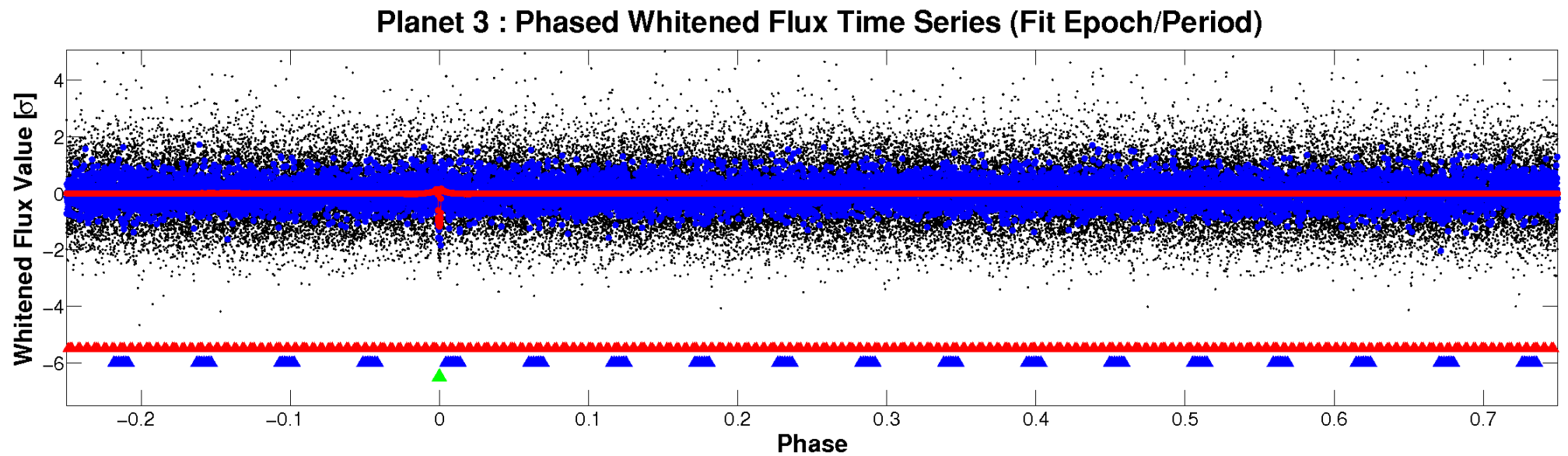
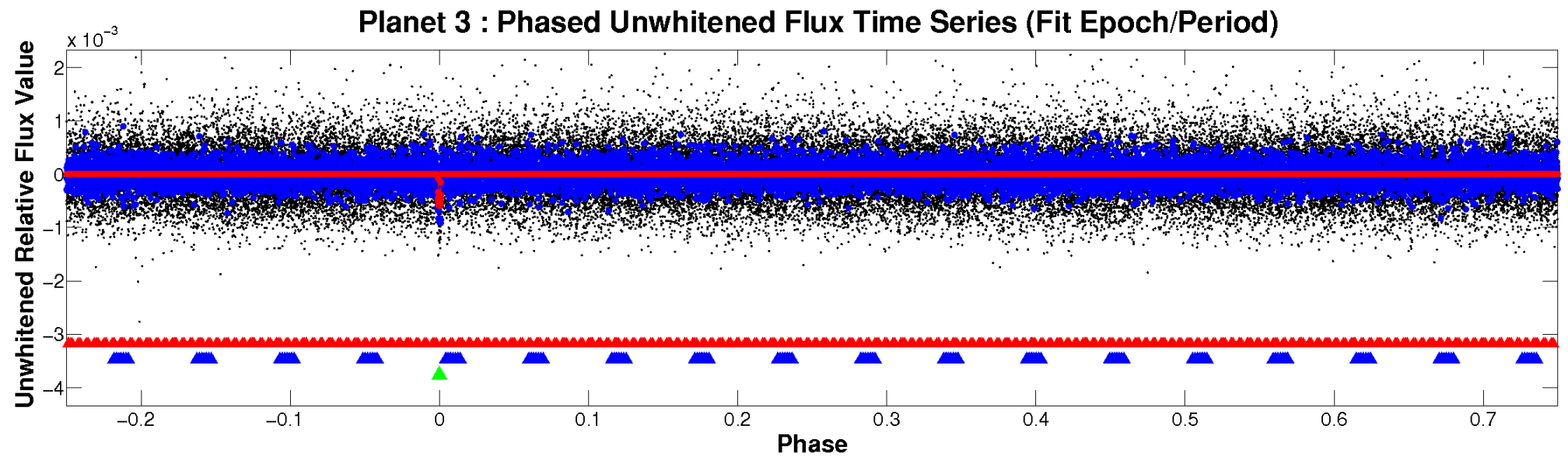
# ALT Odd/Even

TCE 011810124-03



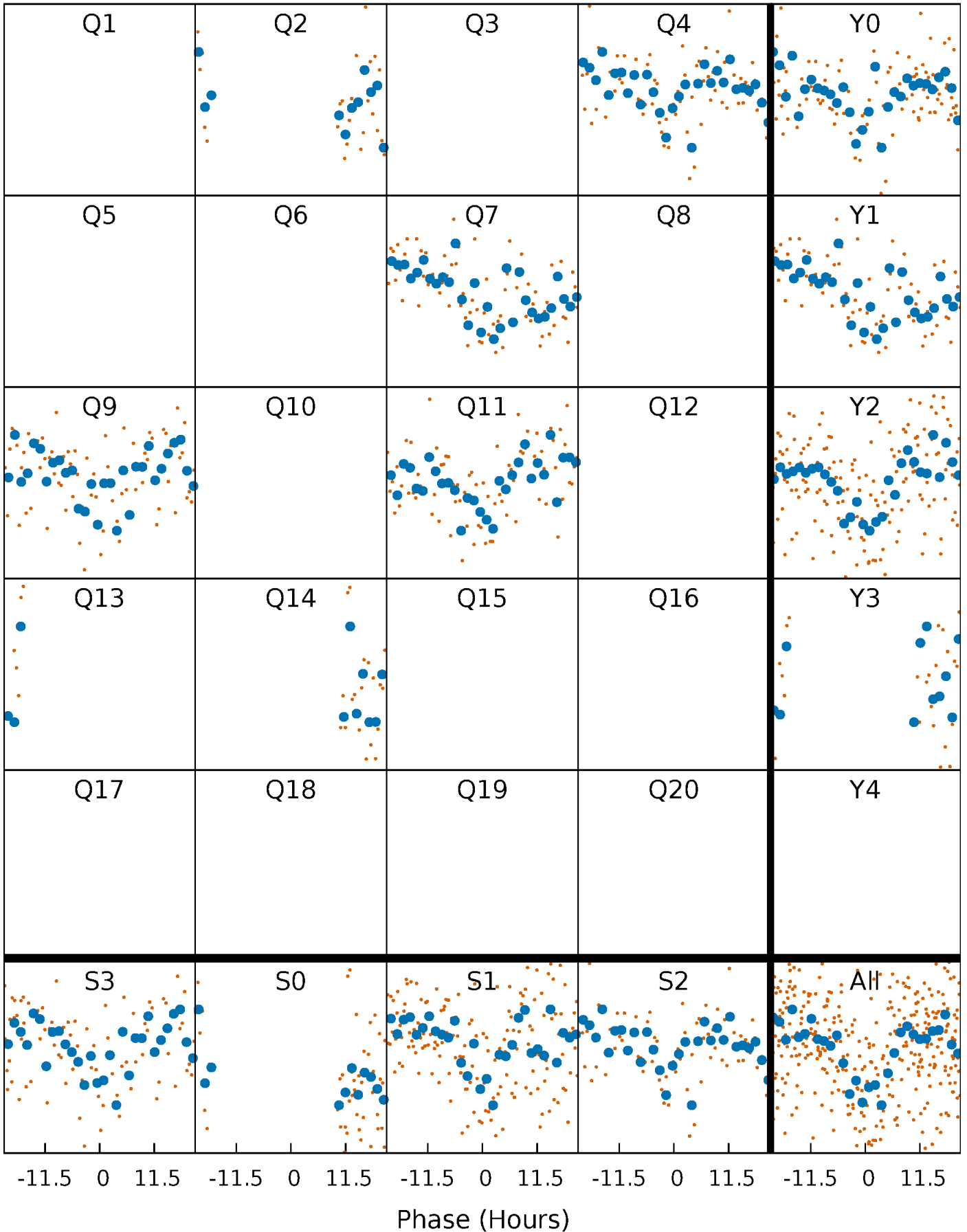


# Non-Whitened Vs. Whitened Light Curve



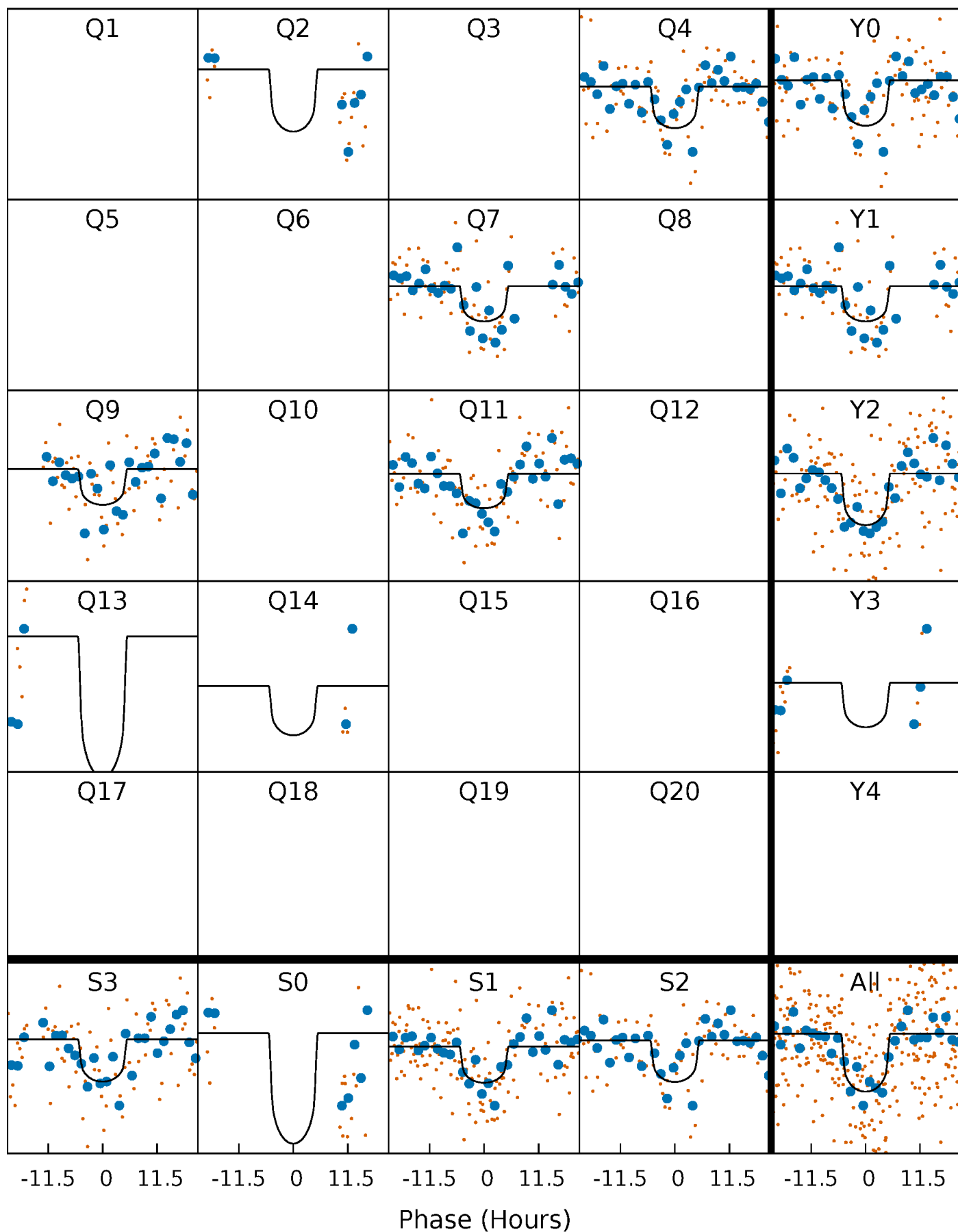
# PDC Quarter-Phased Transit Curves

TCE 011810124-03     $P=208.548160$  Days     $T_0=230.983042$  (BKJD)



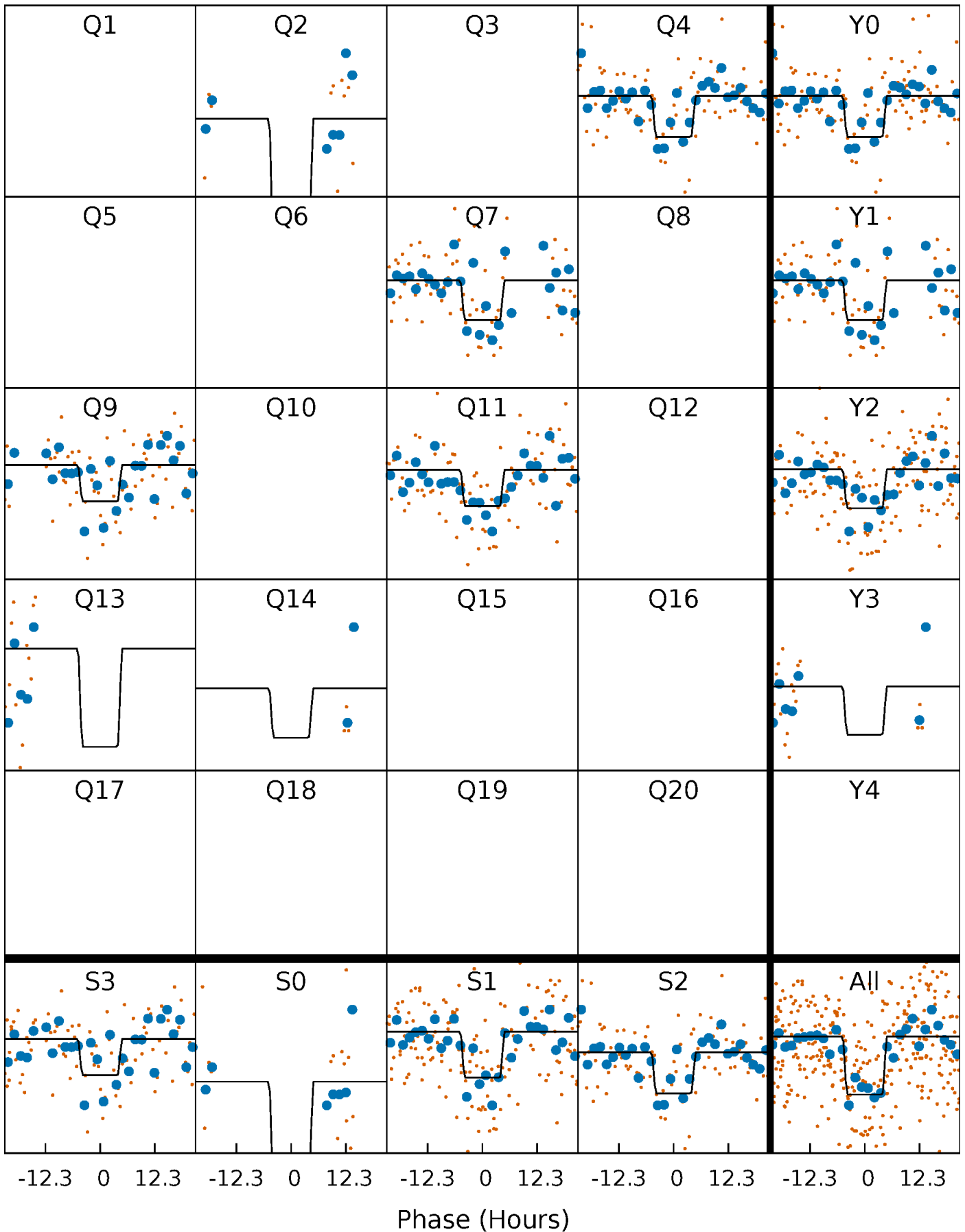
# DV Quarter-Phased Transit Curves

TCE 011810124-03 P=208.548160 Days  $T_0=230.983042$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

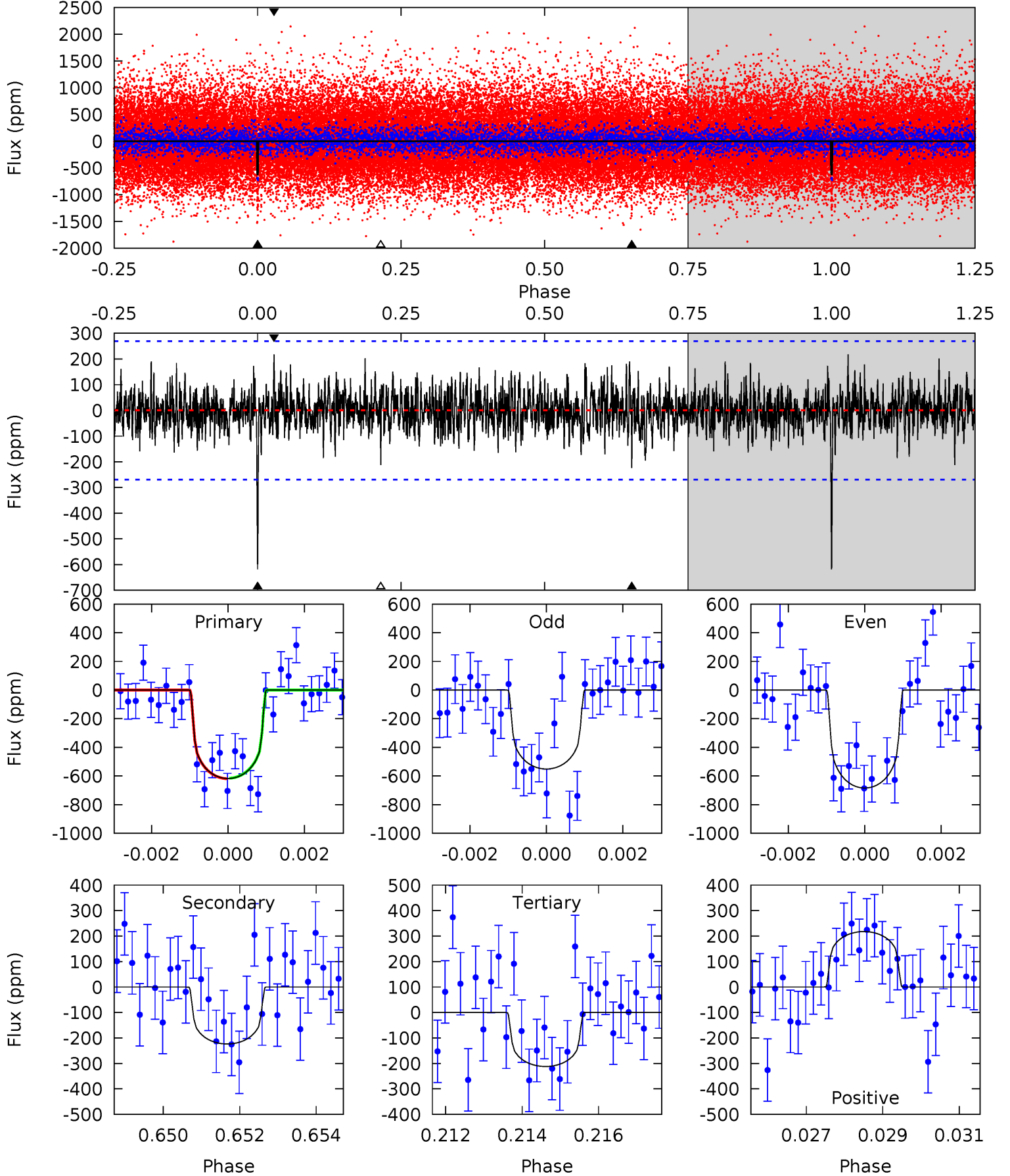
TCE 011810124-03 P=208.524480 Days  $T_0=231.039486$  (BKJD)



# DV Model-Shift Uniqueness Test

011810124-03, P = 208.548160 Days, E = 22.434882 Days

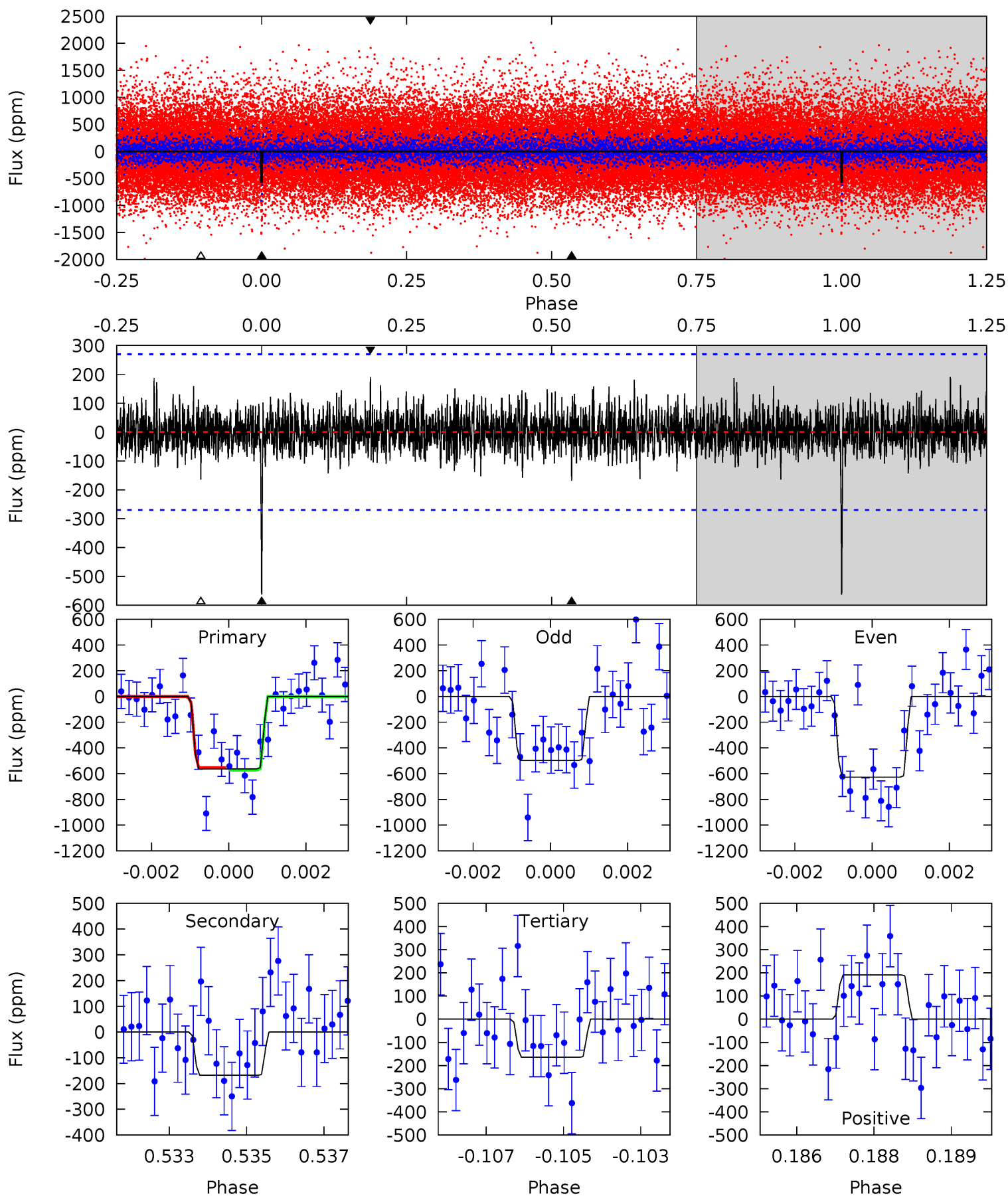
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	4.42	4.19	4.30	5.32	3.08	1.18	8.02	7.90	0.23	0.12	1.31	0.98	0.26	0.03



# Alt Model-Shift Uniqueness Test

011810124-03,  $P = 208.524480$  Days,  $E = 22.515006$  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	3.32	3.25	3.77	5.33	3.09	0.95	7.87	7.35	0.07	-0.45	1.28	1.00	0.25	0.20





### Stellar Parameters For KIC 011810124

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5533^{+83}_{-74}$	$4.275^{+0.168}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.166^{+0.174}_{-0.212}$	$0.934^{+0.063}_{-0.045}$	$0.829^{+0.660}_{-0.269}$
	+2%/-1%	+4%/-3%	+94%/-94%	+15%/-18%	+7%/-5%	+80%/-32%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 011810124-03 / KOI 3344.03

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-224 \pm 51$	$3.12^{+1.62}_{-1.54}$	$448^{+20}_{-23}$	$4476^{+1461}_{-677}$	$5717^{+16409}_{-3349}$
Alt.	$-168 \pm 51$	$3.06^{+1.76}_{-1.46}$	$447^{+21}_{-25}$	$4254^{+1353}_{-662}$	$4445^{+12927}_{-2792}$

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

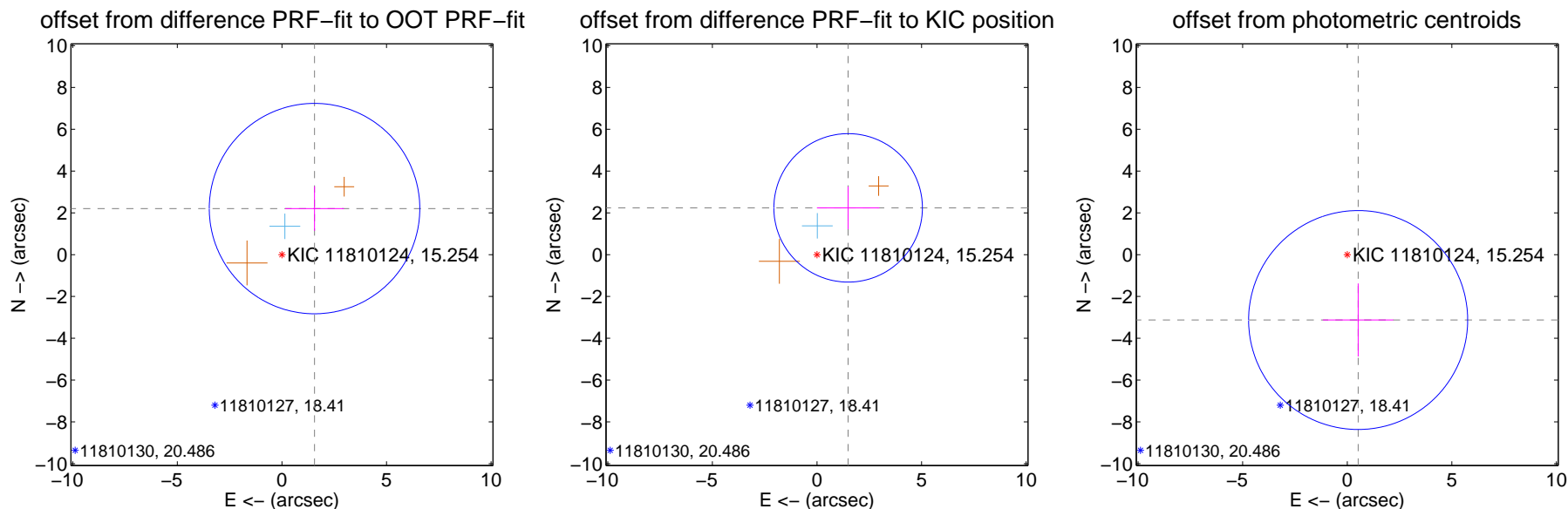
## DV Centroid Data

Supplemental centroid analysis for 011810124-03. Kepler magnitude: 15.25. Transit SNR 8.78

There are 1 quarters with good PRF difference image offsets

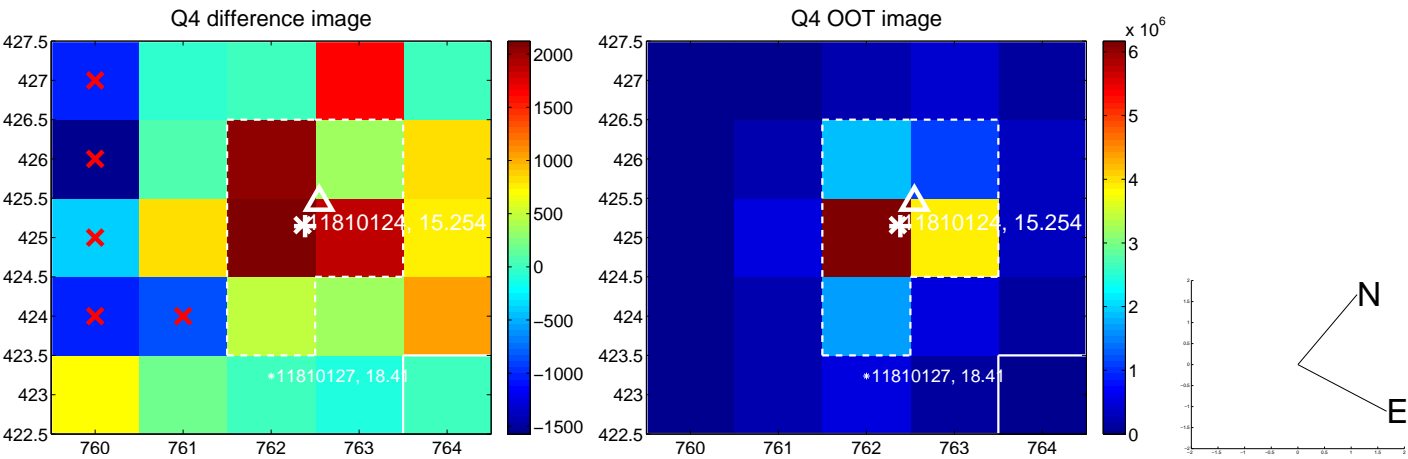
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.700 \pm 1.678$	1.61	$-1.560 \pm 1.406$	$2.204 \pm 1.063$
PRF-fit source offset from KIC position	$2.689 \pm 1.184$	2.27	$-1.490 \pm 1.493$	$2.238 \pm 1.017$
photometric centroid source offset	$3.17 \pm 1.75$	1.82	$-0.52 \pm 1.68$	$-3.13 \pm 1.75$

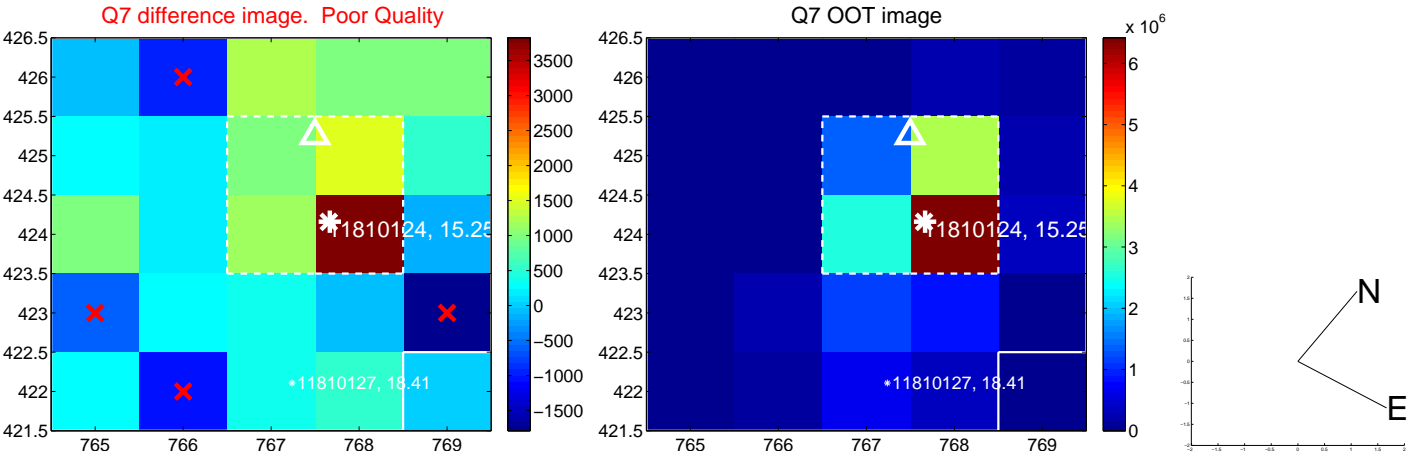


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

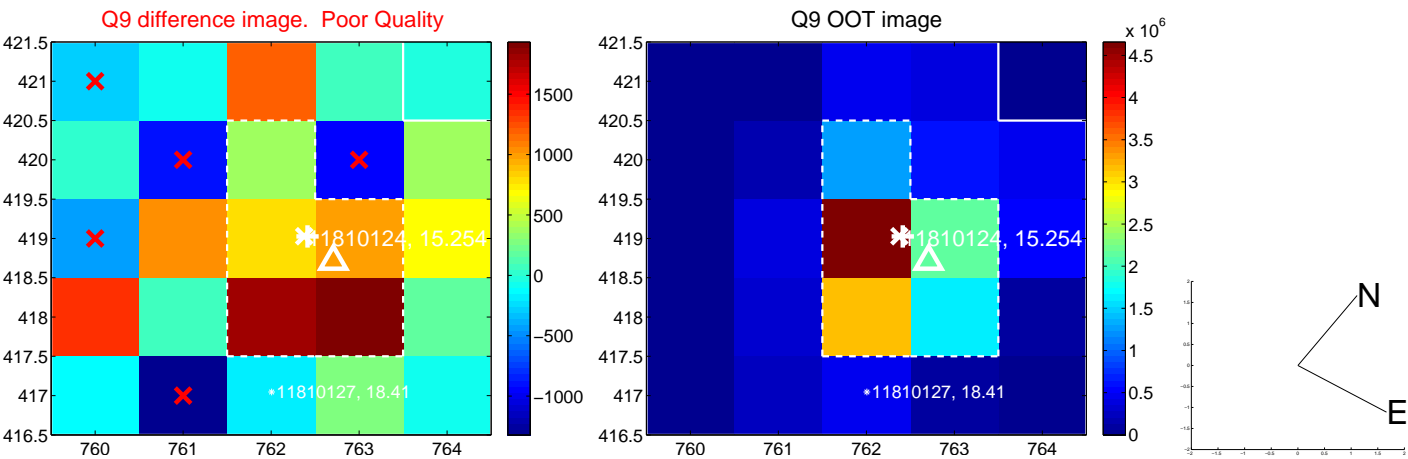
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

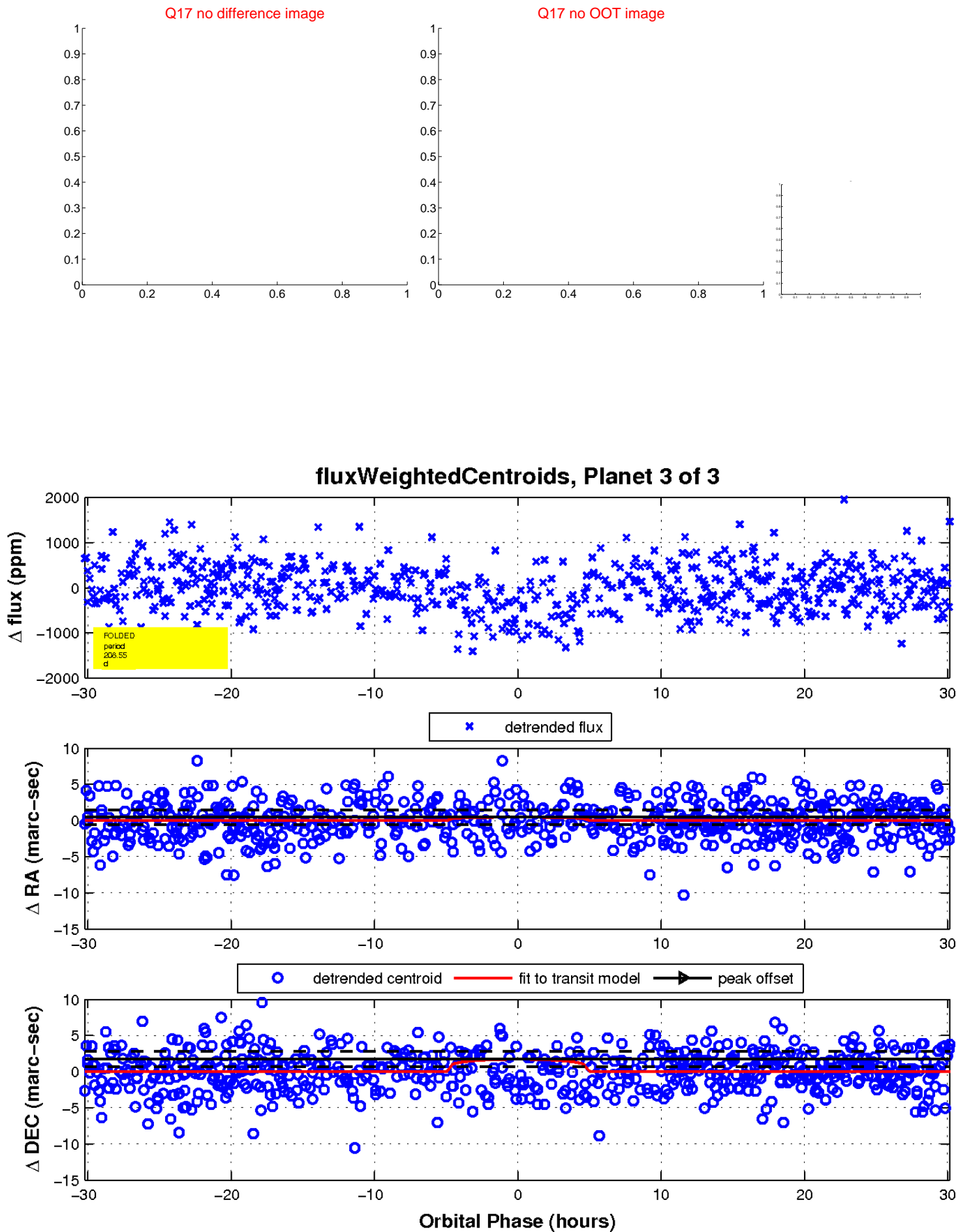


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



# UKIRT Image

Declination

