

# KIC 011772510

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011772510-01	OBS	No	1.290730	131.893810	19.6	9.845	8.5	8.7	3.88	7019	2.05	41089.33
011772510-02	OBS	No	9.424547	133.666991	278.2	1.754	19.3	19.4	3.88	7019	6.56	2900.65
011772510-03	OBS	No	6.053339	131.744603	372.5	0.896	17.8	18.1	3.88	7019	8.03	5234.19
011772510-04	OBS	No	7.909558	139.301180	336.7	0.848	15.5	15.4	3.88	7019	7.44	3664.15
011772510-05	OBS	No	16.527884	137.682870	1122.2	1.500	18.5	-1.0	3.88	7019	13.16	1371.58

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011772510-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011772510-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011772510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—NO_FITS—CENT_NOFITS

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

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

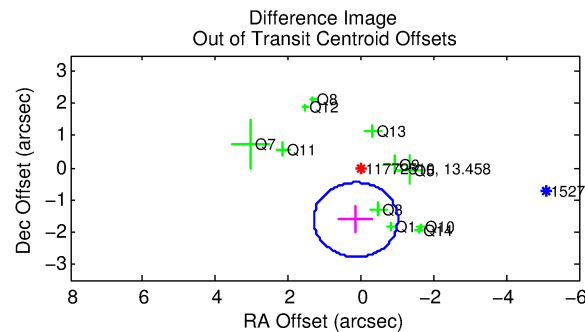
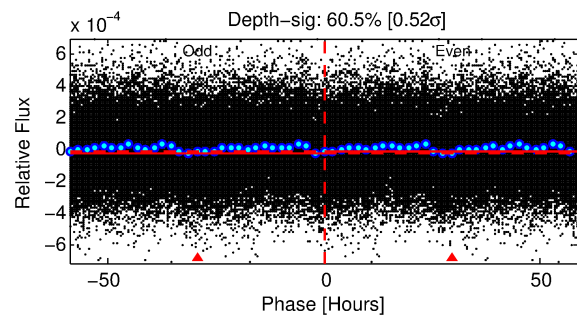
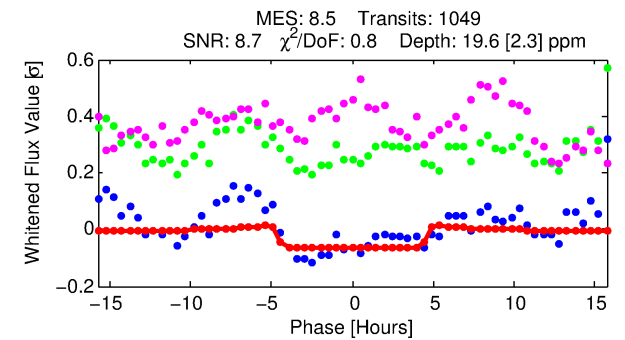
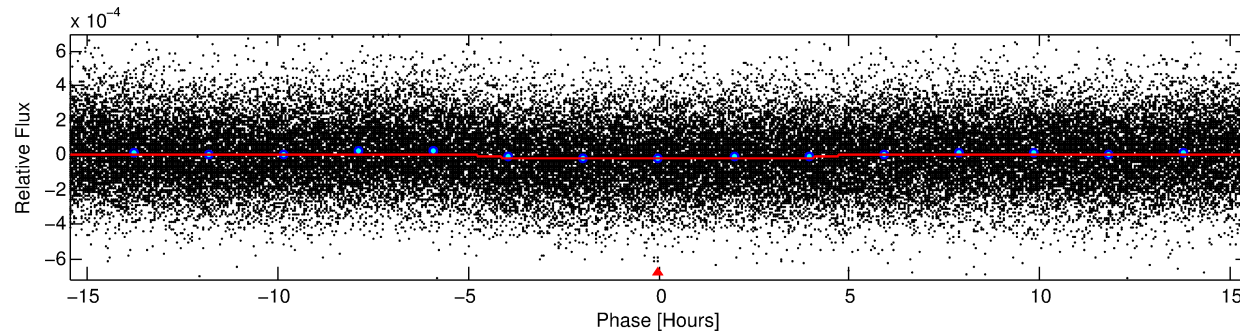
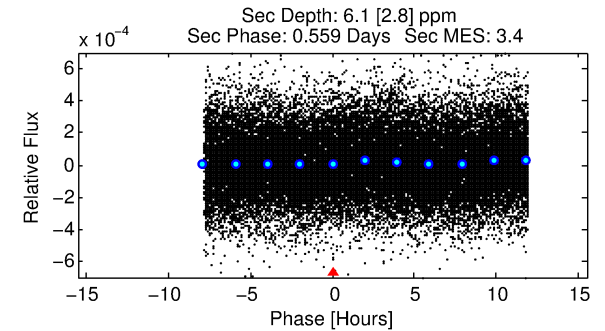
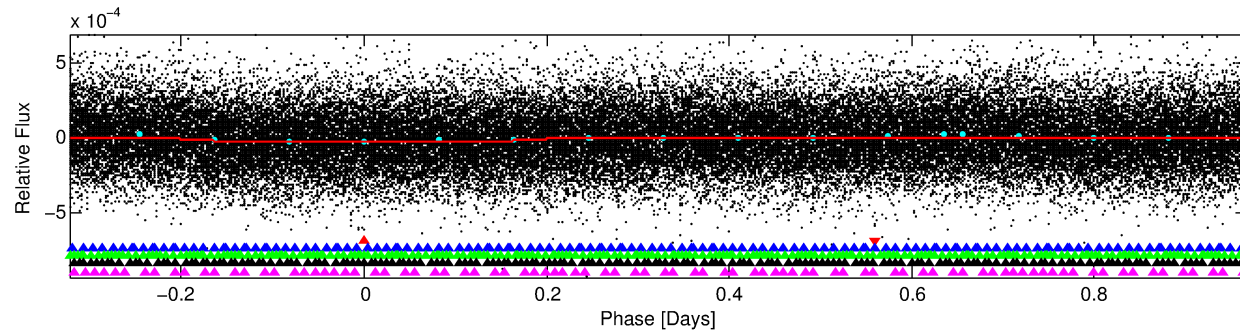
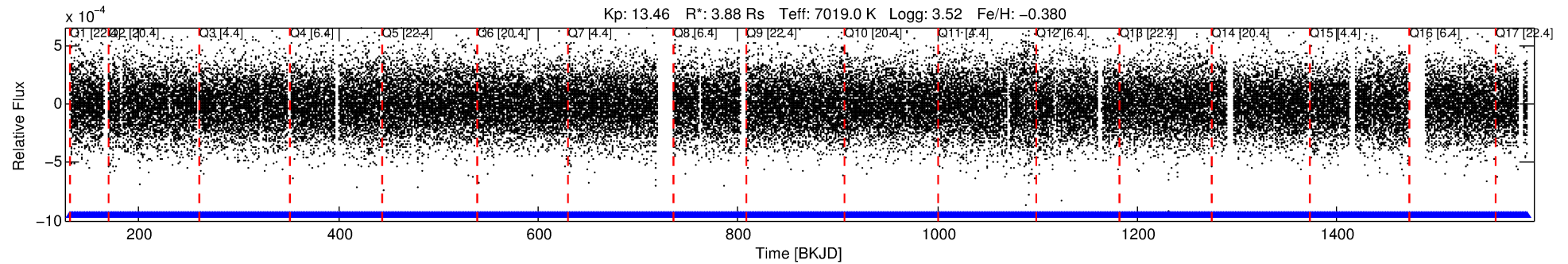
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011772510-01

No Significant Match Found

# DV One-Page Summary

KIC: 11772510 Candidate: 1 of 5 Period: 1.291 d



## DV Fit Results:

Period = 1.29073 [0.00002] d  
Epoch = 131.8938 [0.0072] BKJD  
Rp/R\* = 0.0048 [0.0009]  
a/R\* = 1.03 [0.08]  
b = 0.93 [0.17]  
Seff = 41089.33 [25757.96]  
Teff = 3630 [569] K  
Rp = 2.05 [0.91] Re  
a = 0.0282 [0.0108] AU  
Ag = 0.64 [0.55] [-0.67σ]  
Teffp = 5013 [771] K [1.44σ]

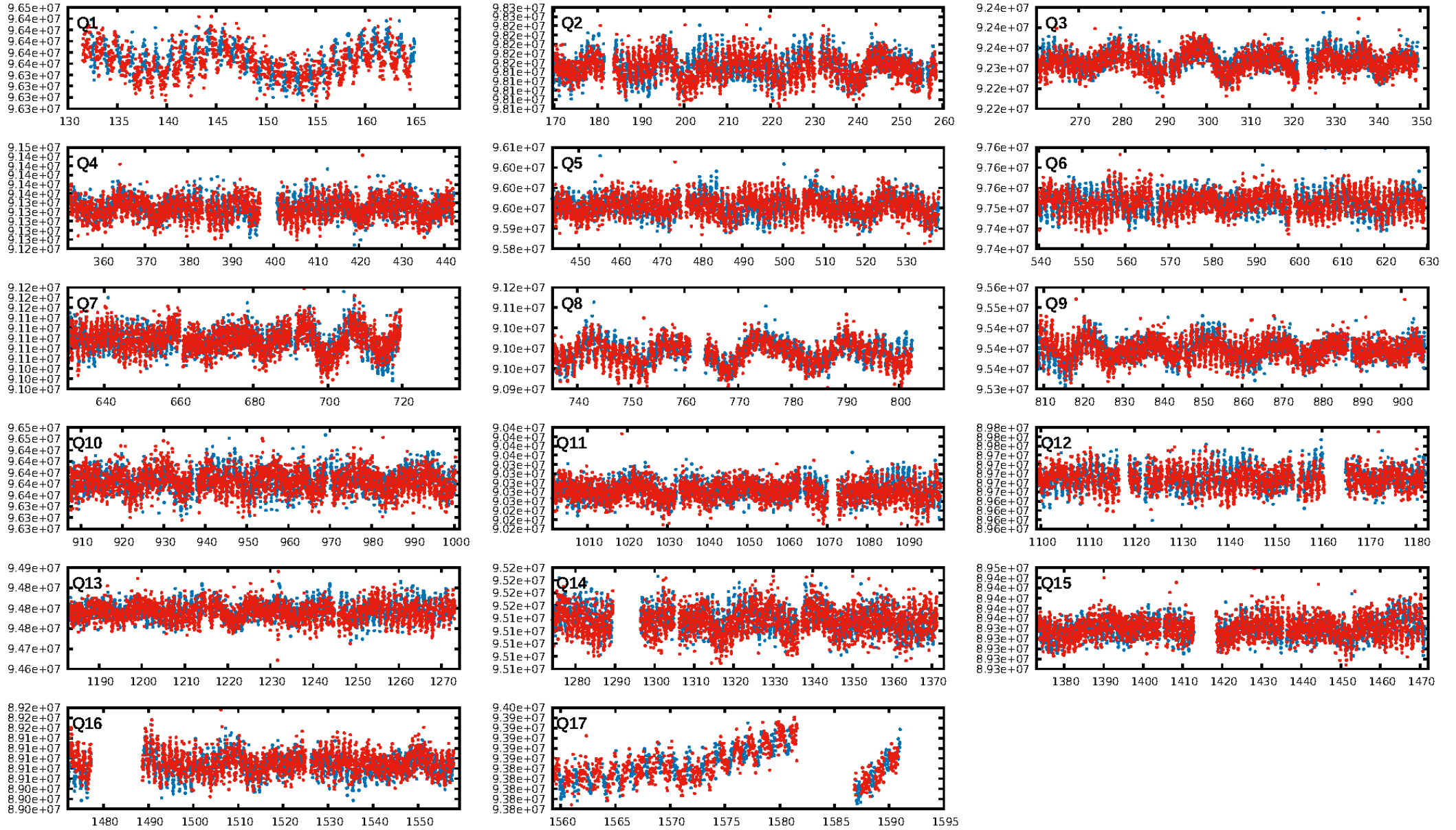
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [11.56σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1002/1002]  
GhostDiagnostic-chr: 1.32  
Centroid-sig: 4.9%  
Centroid-so: 1.376 arcsec [1.41σ]  
OotOffset-rm: 1.626 arcsec [4.21σ]  
KicOffset-rm: 1.614 arcsec [3.74σ]  
OotOffset-st: 2/3/2/4 [11]  
KicOffset-st: 2/3/2/4 [11]  
DiffImageQuality-fgm: 0.55 [6/11]  
DiffImageOverlap-fno: 1.00 [17/17]

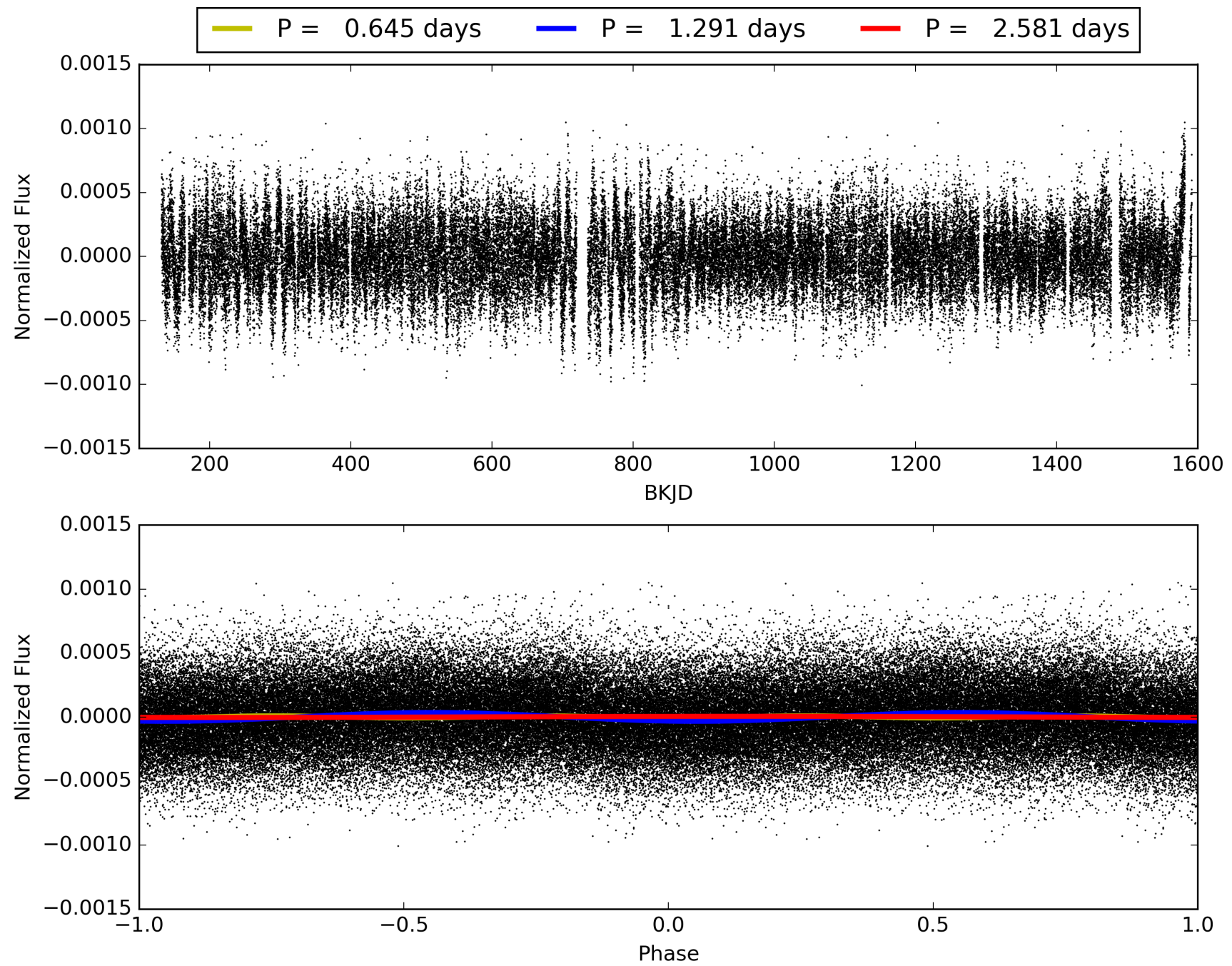
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:09:38 Z

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

# TCE 011772510-01, PDC Light Curves



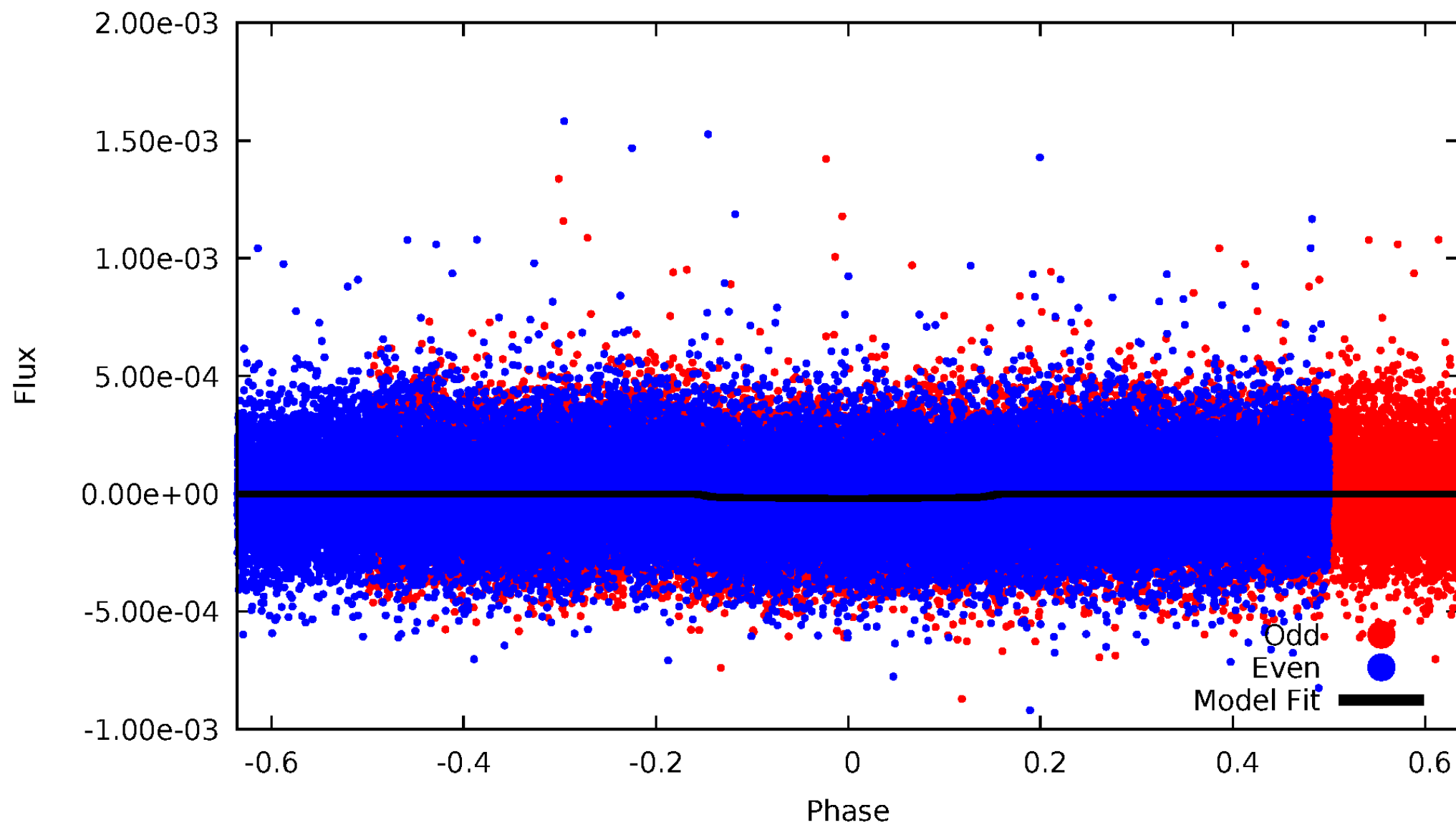
TCE 011772510-01





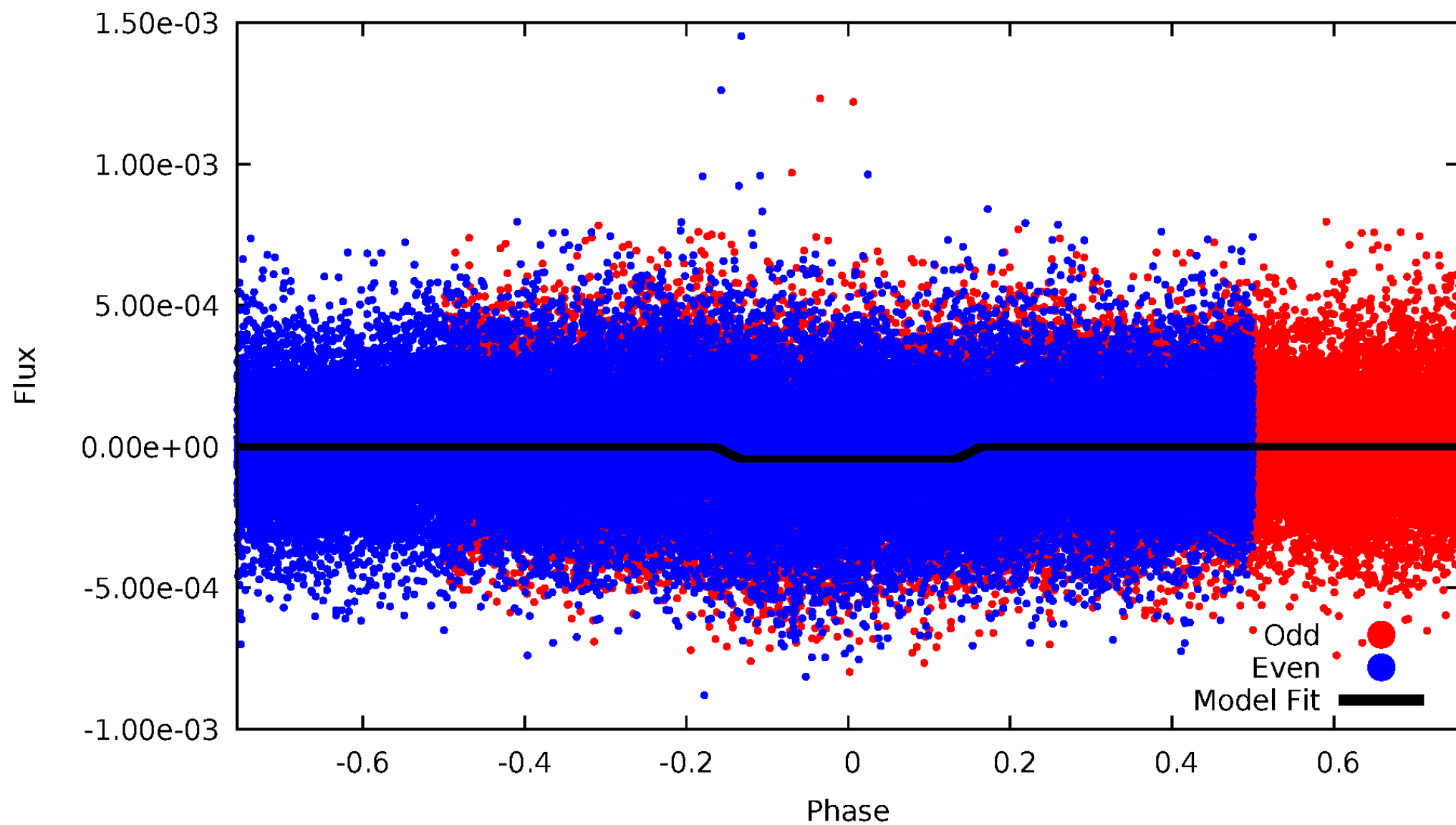
# DV Odd/Even

TCE 011772510-01

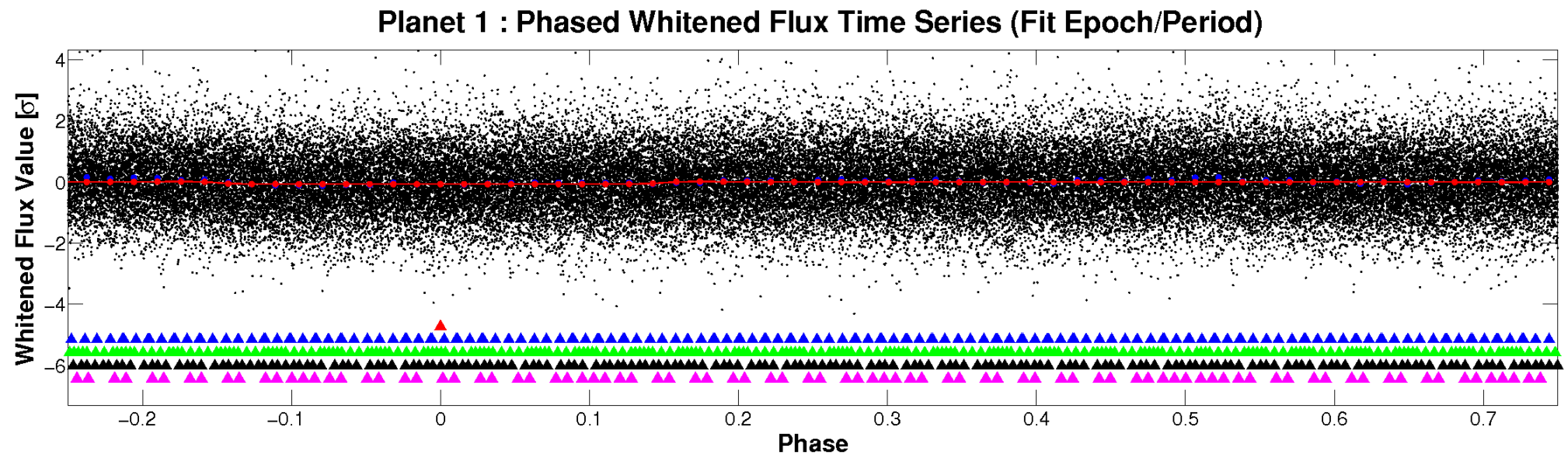
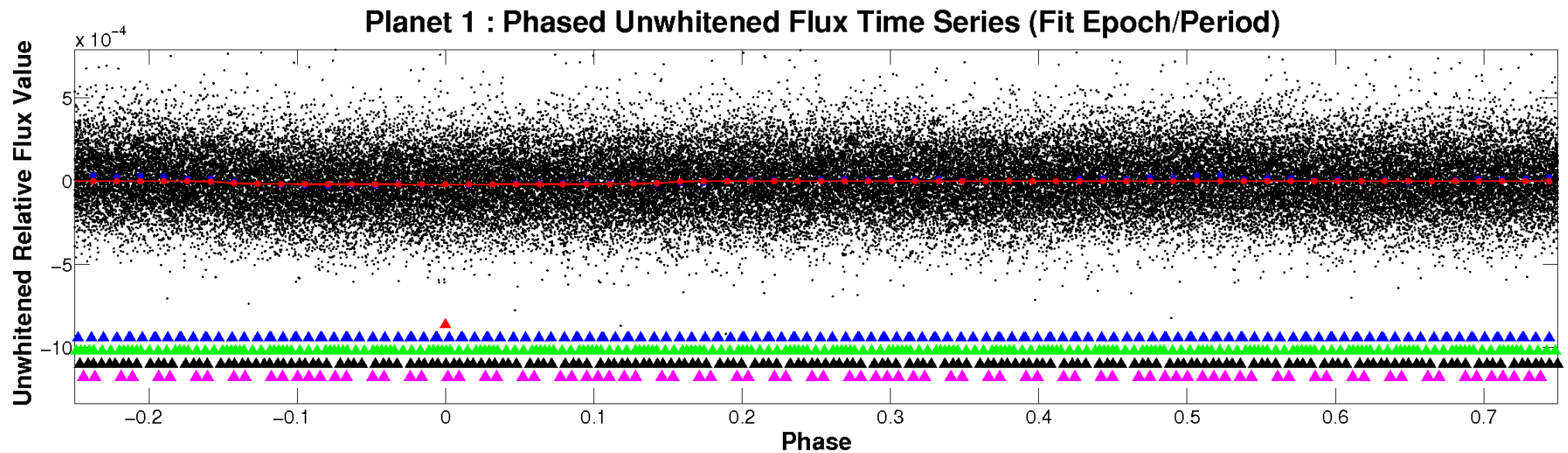


# ALT Odd/Even

TCE 011772510-01

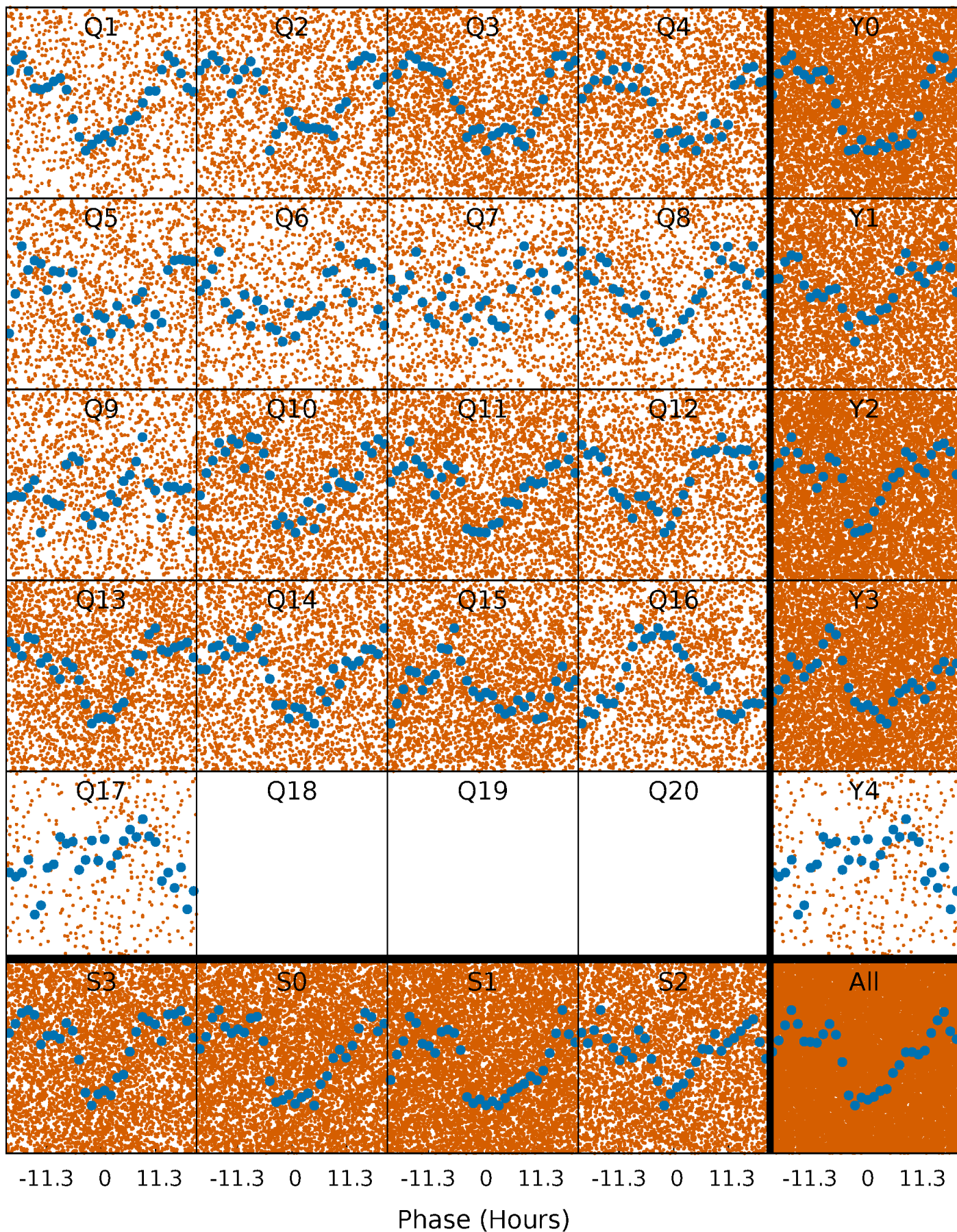


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

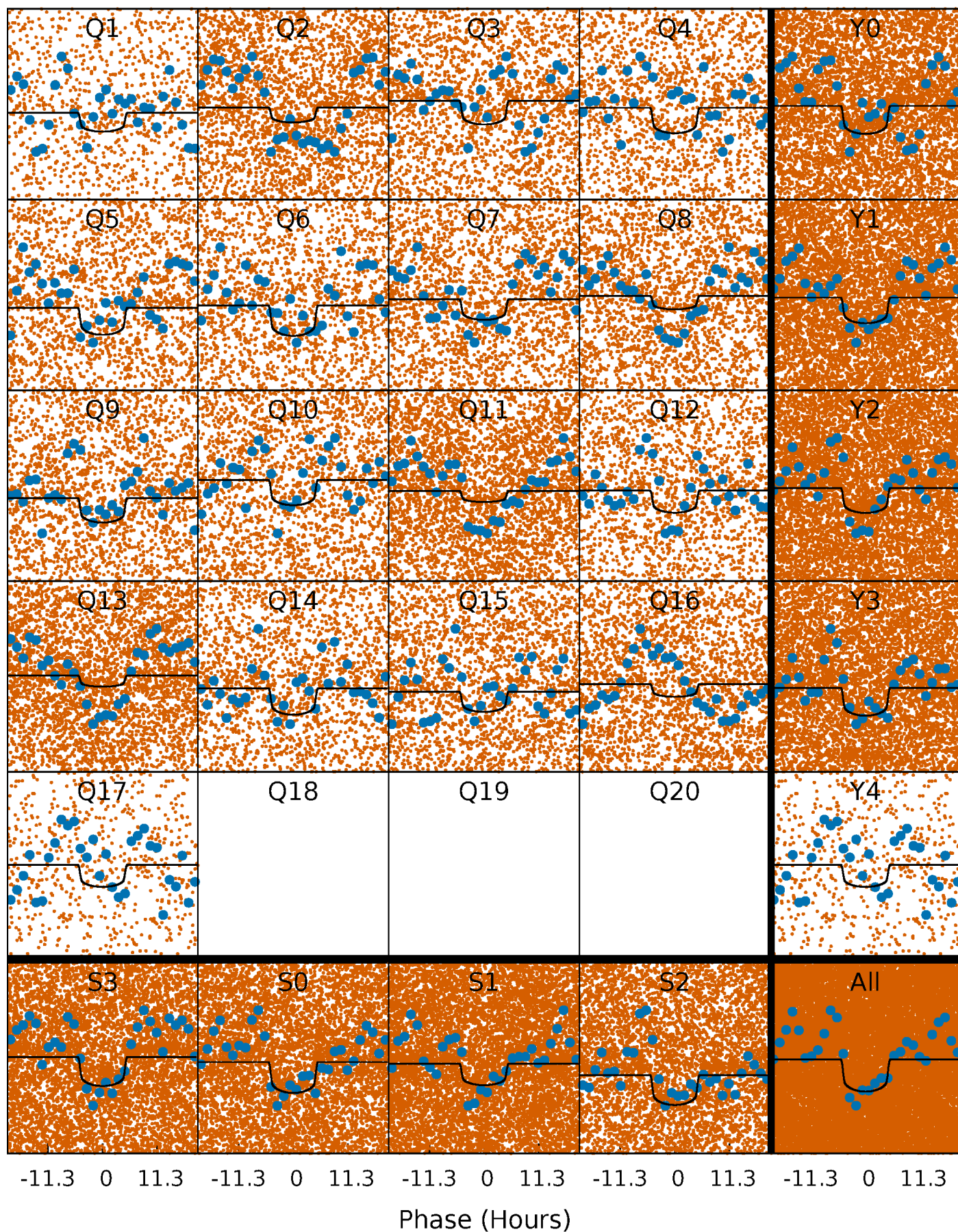
TCE 011772510-01 P= 1.290730 Days  $T_0=131.893810$  (BKJD)





# DV Quarter-Phased Transit Curves

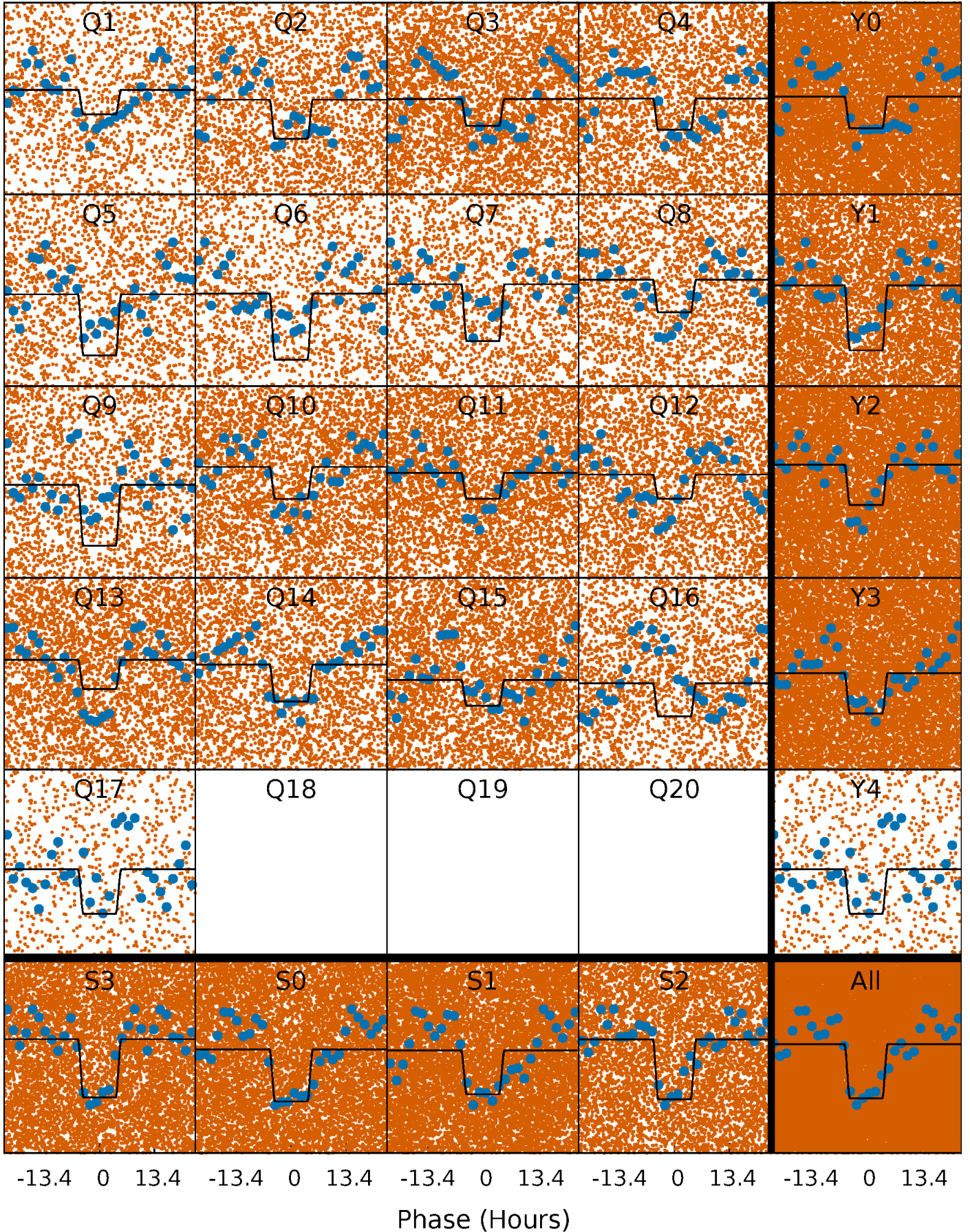
TCE 011772510-01 P= 1.290730 Days  $T_0=131.893810$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

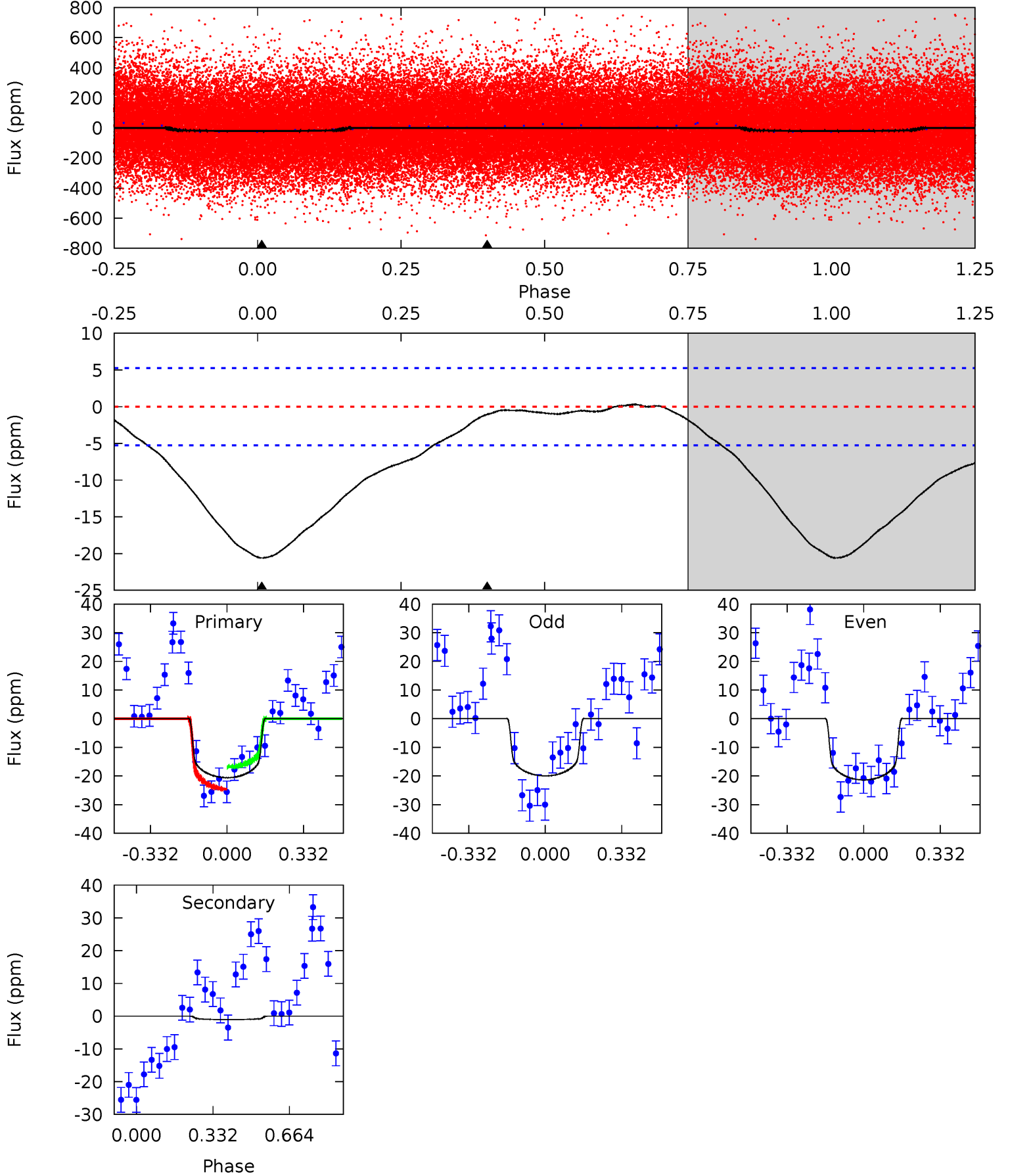
TCE 011772510-01 P= 1.290848 Days  $T_0=131.849749$  (BKJD)



# DV Model-Shift Uniqueness Test

011772510-01, P = 1.290730 Days, E = 130.603080 Days

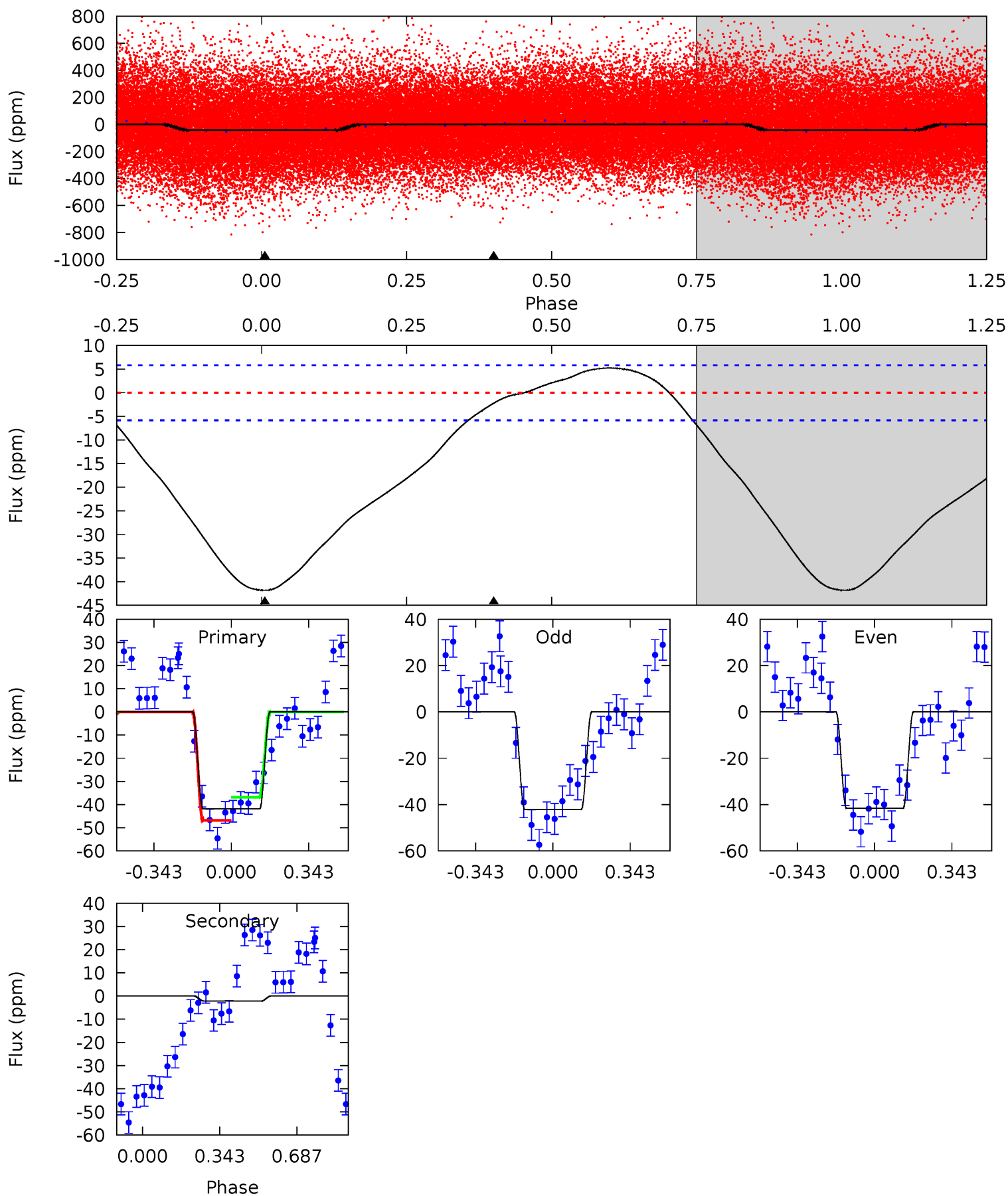
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	0.86	0	0	4.31	0.97	0.56	16.9	16.9	0.86	0.86	0.57	0.92	0.01	3.19



# Alt Model-Shift Uniqueness Test

011772510-01, P = 1.290848 Days, E = 130.558901 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.8	1.64	0	0	4.30	0.95	2.54	30.8	30.8	1.64	1.64	0.17	1.00	0.11	3.57





### Stellar Parameters For KIC 011772510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7019^{+190}_{-232}$	$3.515^{+0.360}_{-0.090}$	$-0.380^{+0.300}_{-0.250}$	$3.875^{+0.385}_{-1.539}$	$1.794^{+0.177}_{-0.383}$	$0.043^{+0.117}_{-0.012}$
	+3%/-3%	+10%/-3%	+79%/-66%	+10%/-40%	+10%/-21%	+270%/-28%
Source	PHO1	FLK73	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 011772510-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1\pm 1$	$1.89^{+0.52}_{-0.46}$	$4981^{+280}_{-499}$	$-3892^{+6765}_{-489}$	$0.119^{+0.210}_{-0.134}$
Alt.	$-2\pm 1$	$2.67^{+0.57}_{-0.59}$	$4963^{+284}_{-482}$	$-3837^{+851}_{-381}$	$0.132^{+0.124}_{-0.084}$

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

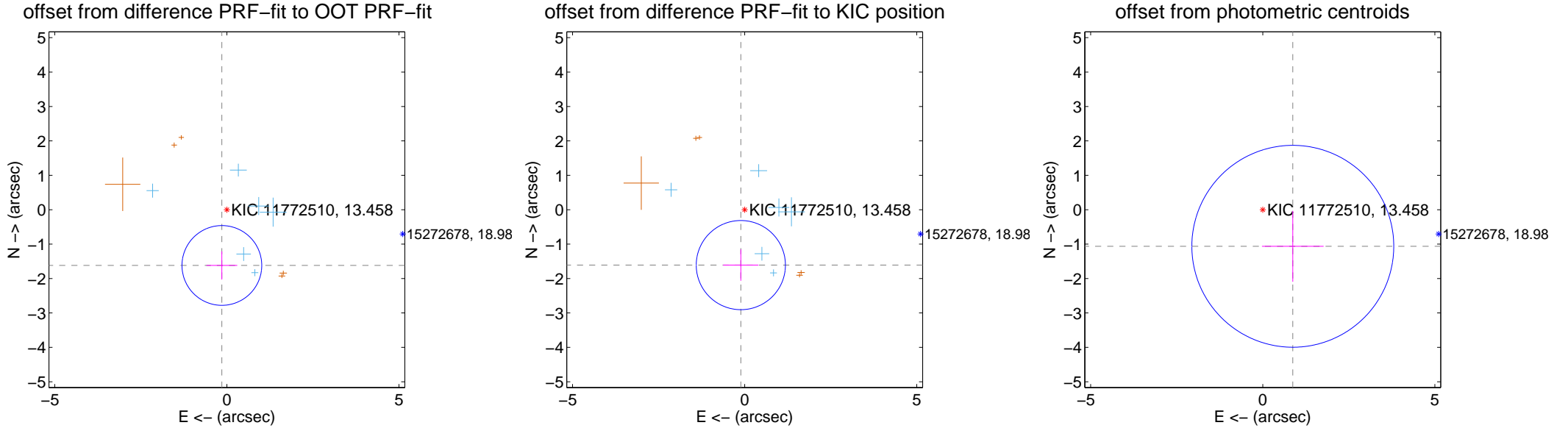
## DV Centroid Data

Supplemental centroid analysis for 011772510-01. Kepler magnitude: 13.46. Transit SNR 8.70

There are 6 quarters with good PRF difference image offsets

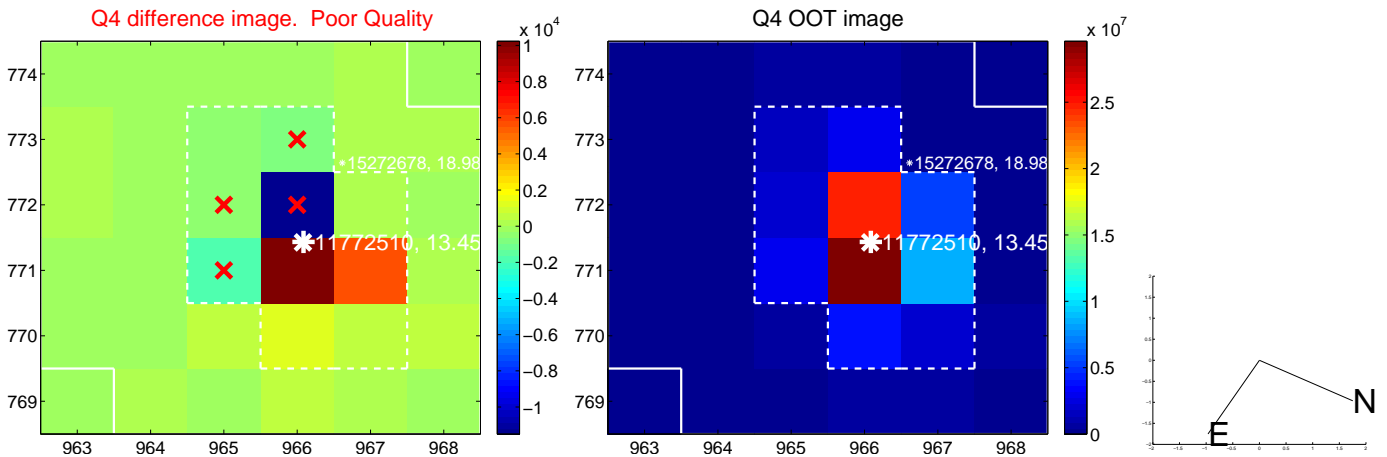
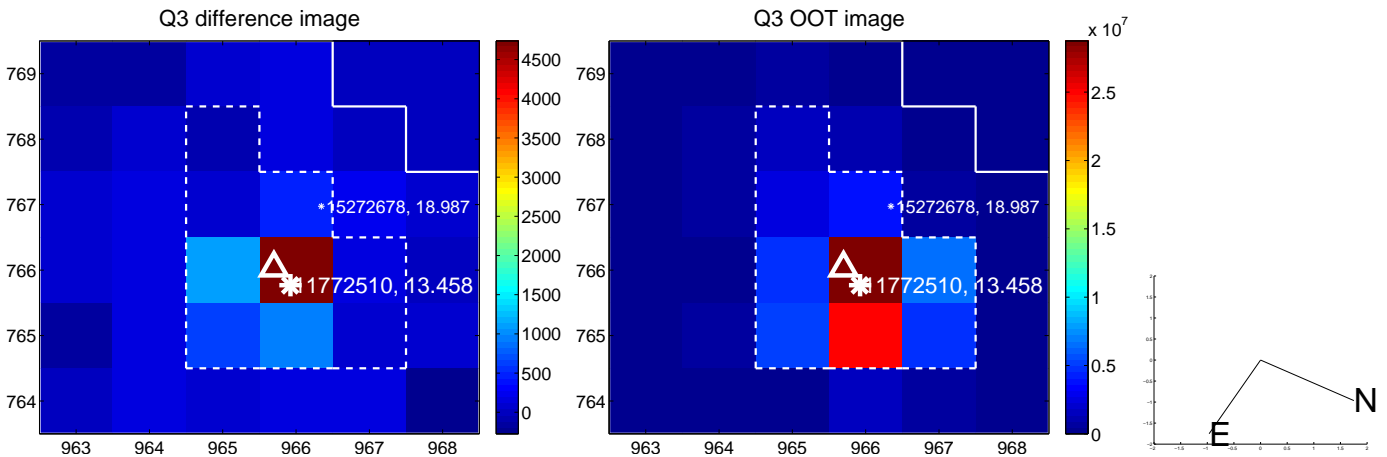
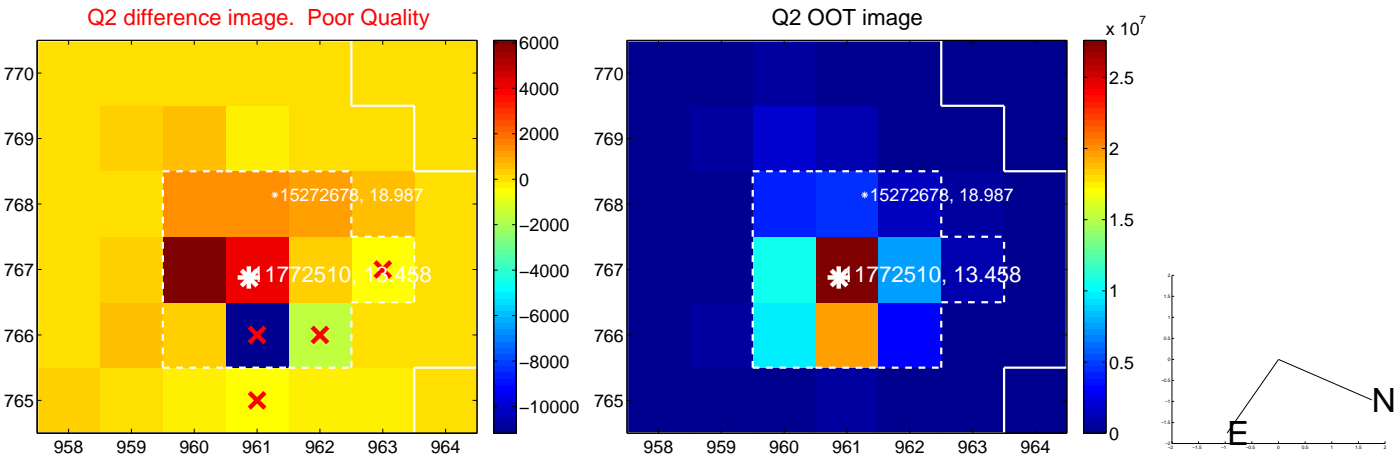
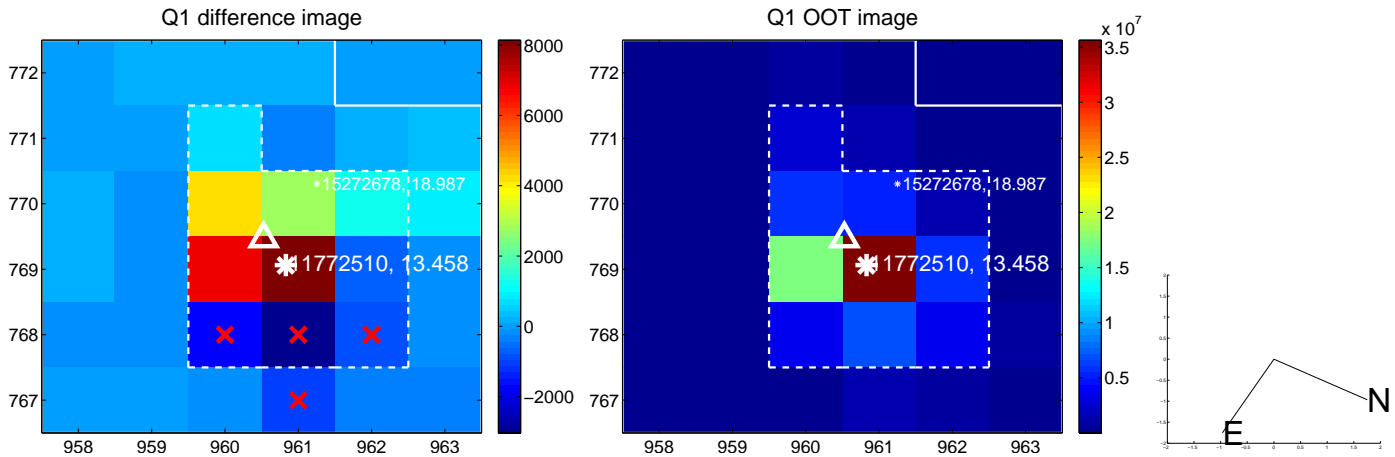
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.626 \pm 0.386$	4.21	$0.145 \pm 0.448$	$-1.620 \pm 0.410$
PRF-fit source offset from KIC position	$1.614 \pm 0.432$	3.74	$0.112 \pm 0.513$	$-1.610 \pm 0.456$
photometric centroid source offset	$1.38 \pm 0.98$	1.41	$-0.87 \pm 0.90$	$-1.06 \pm 1.03$

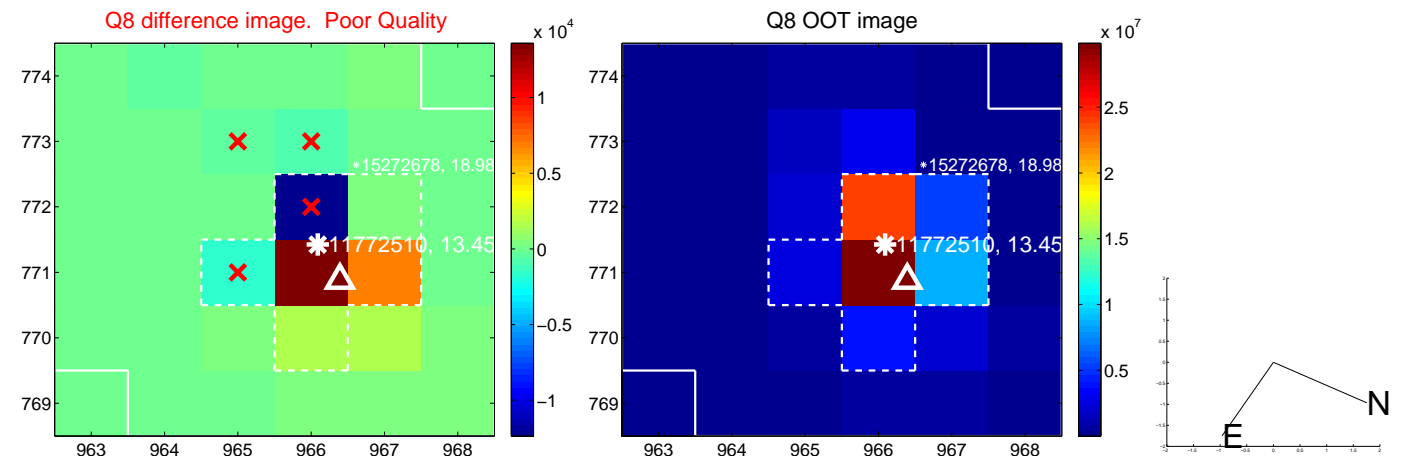
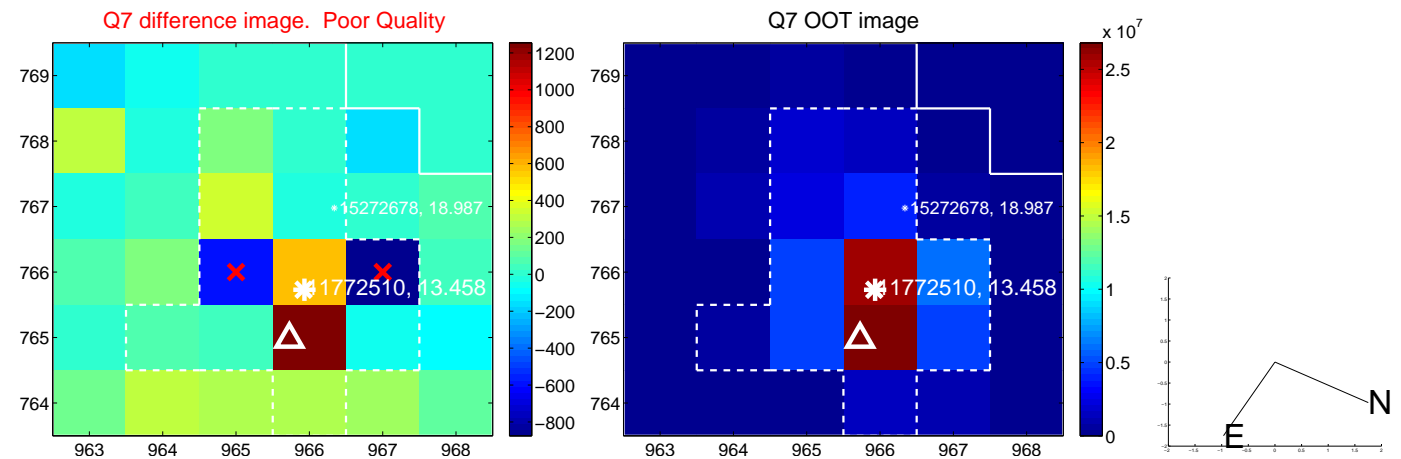
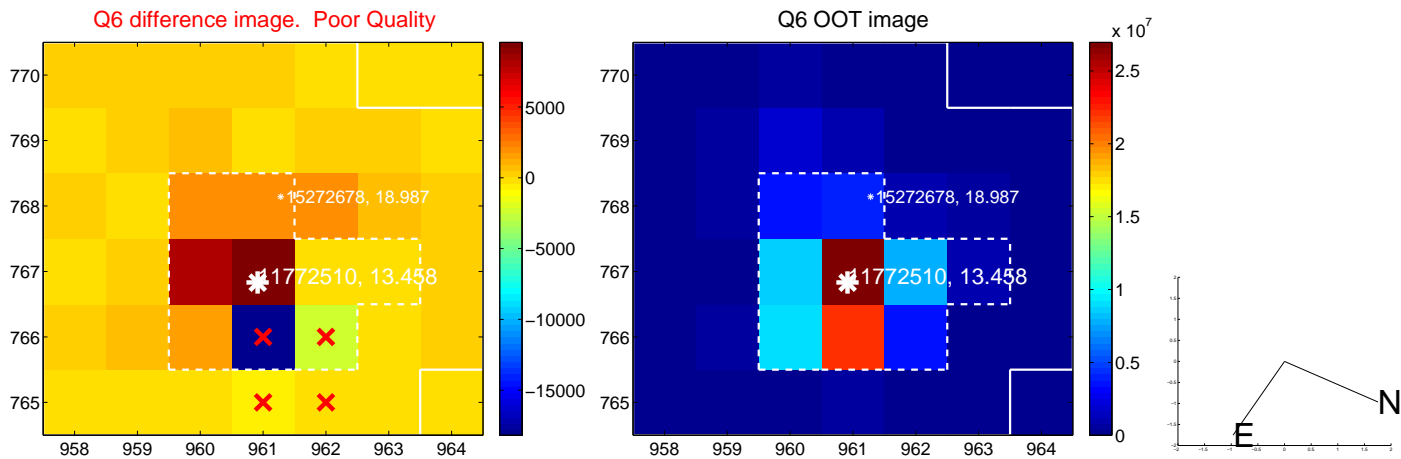
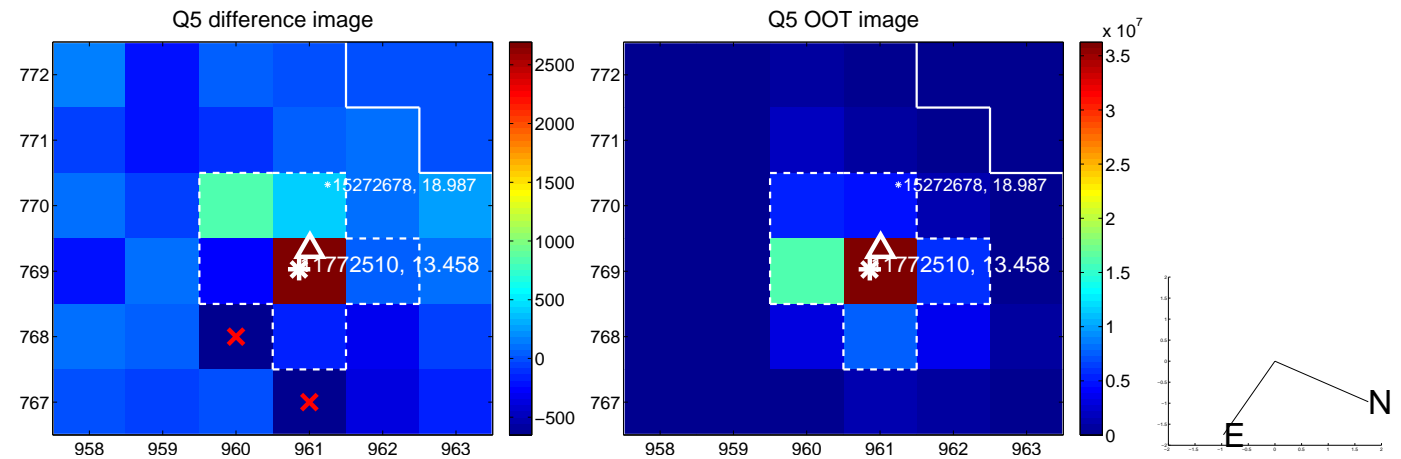


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

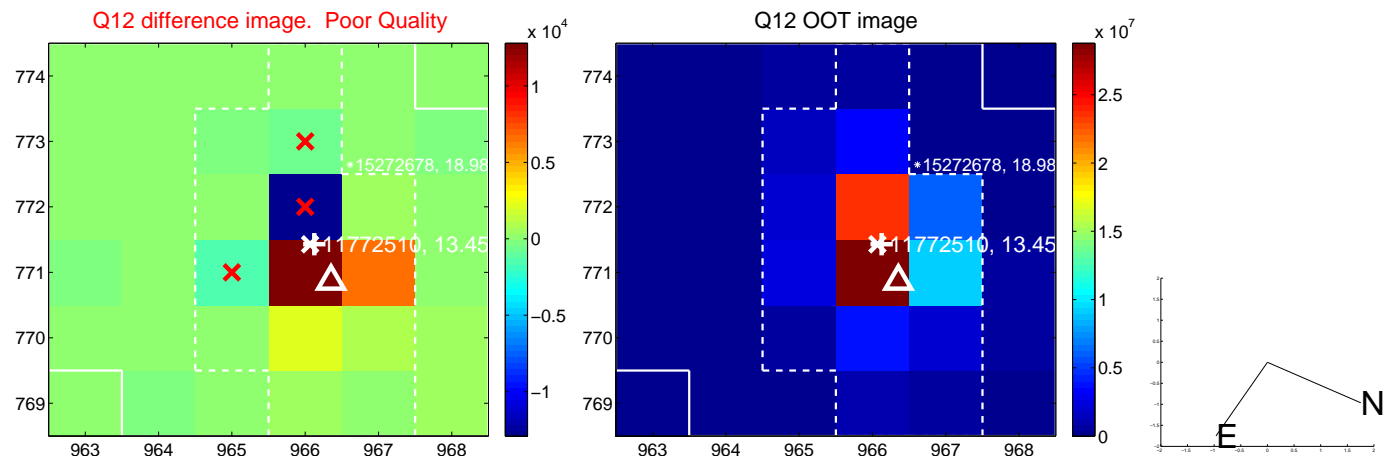
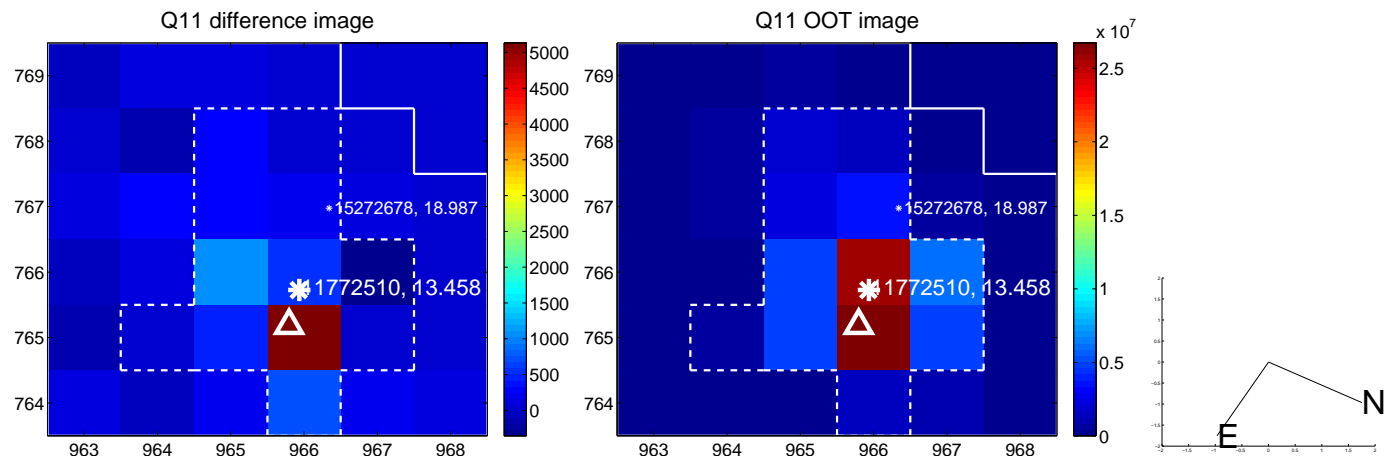
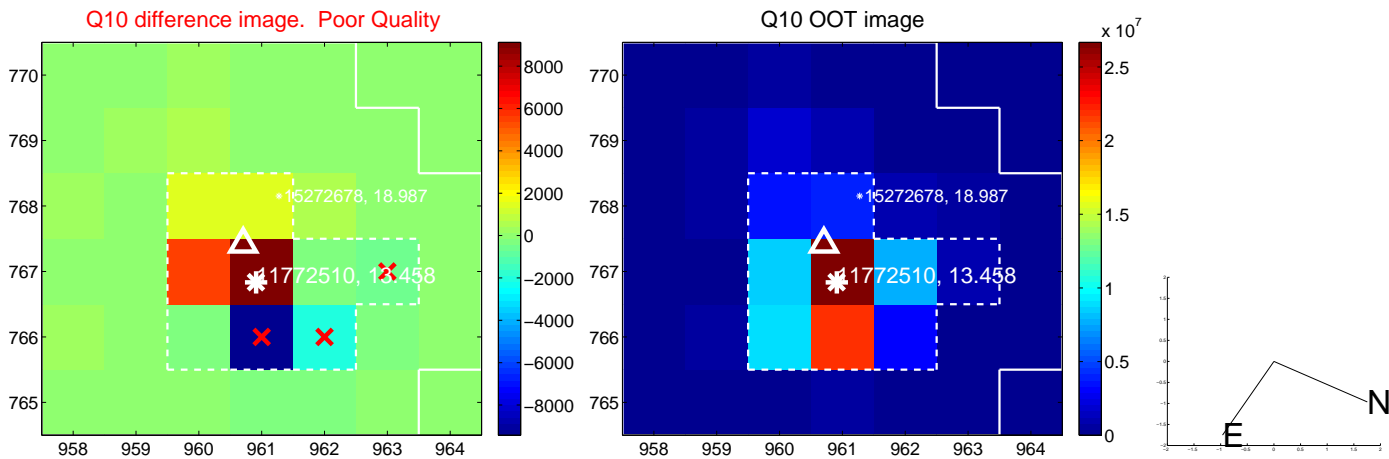
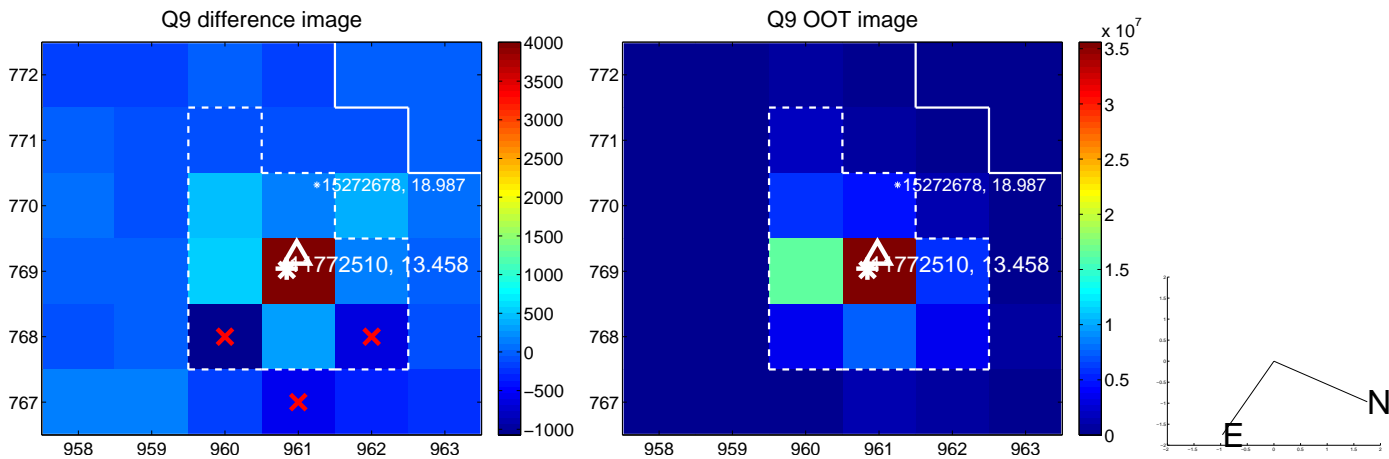


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

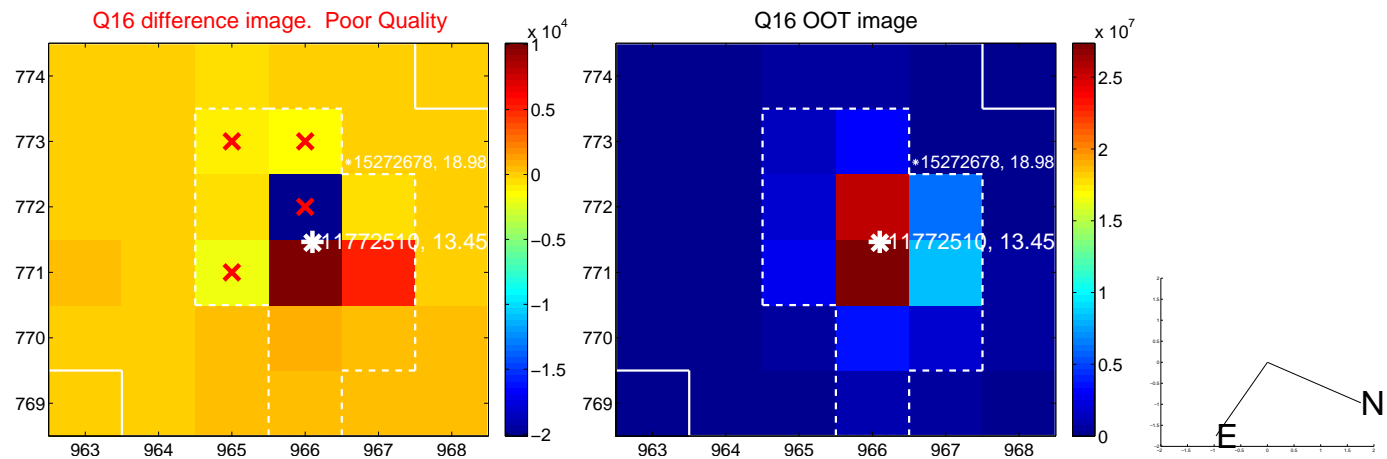
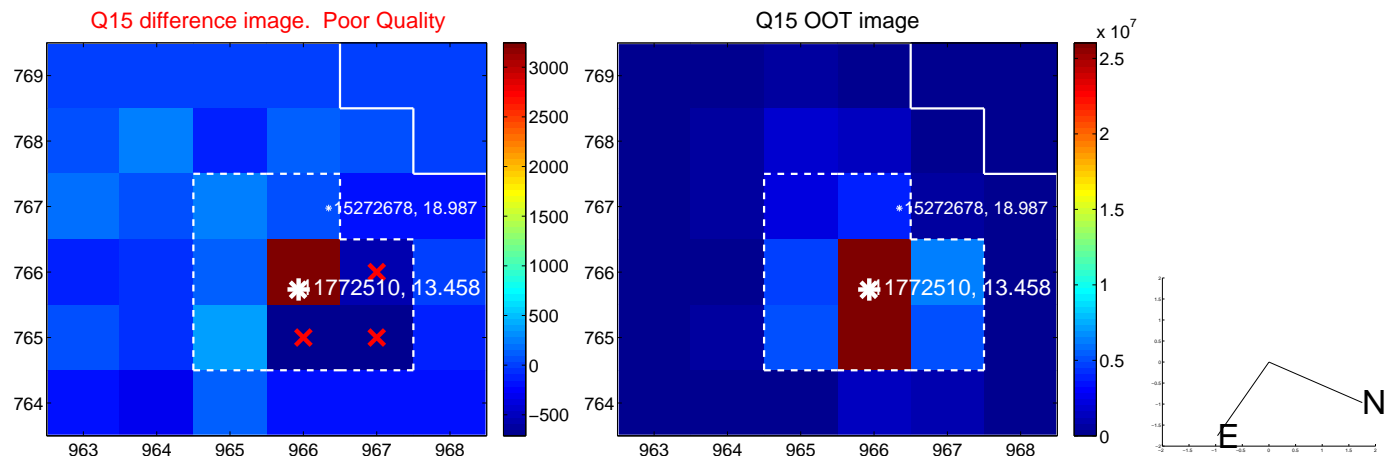
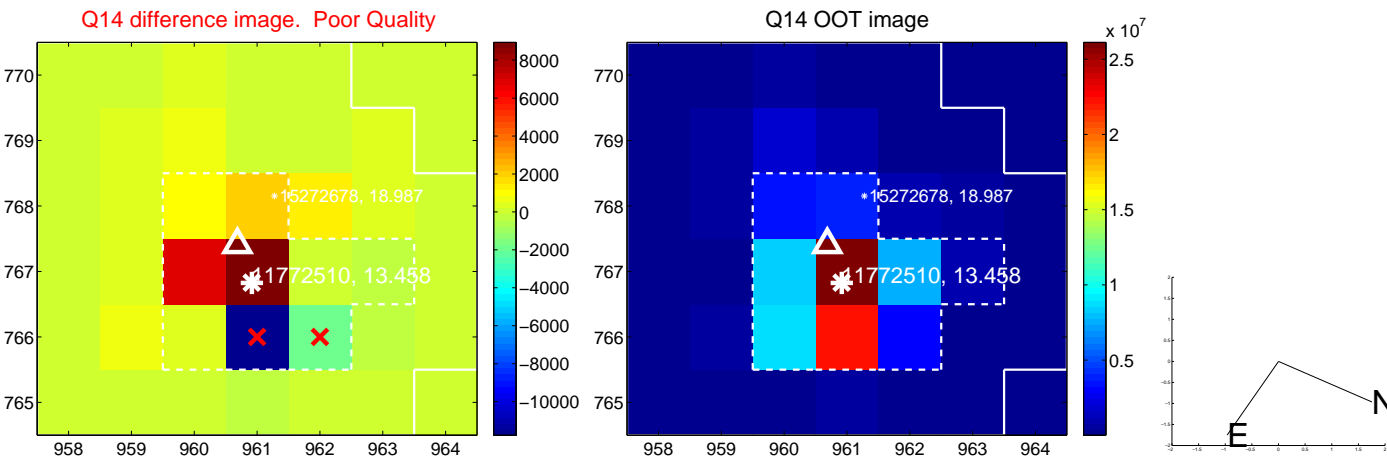
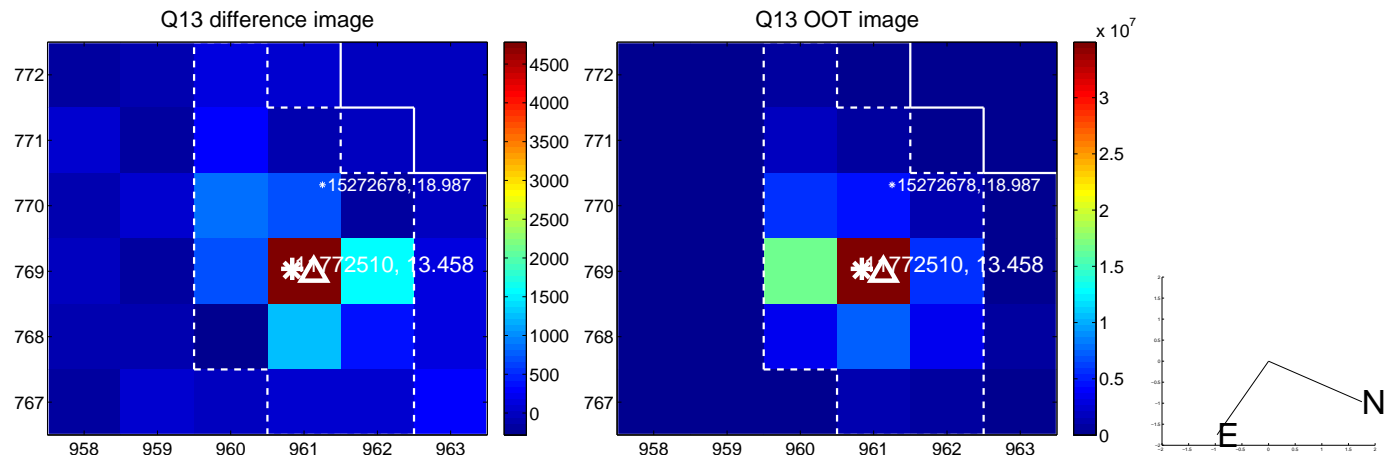




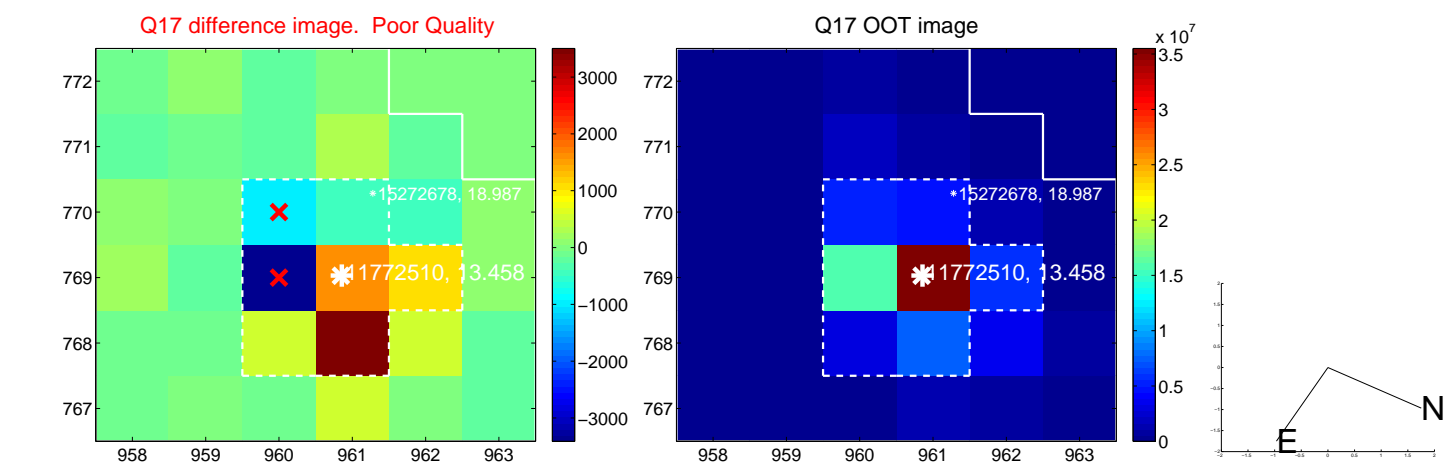
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



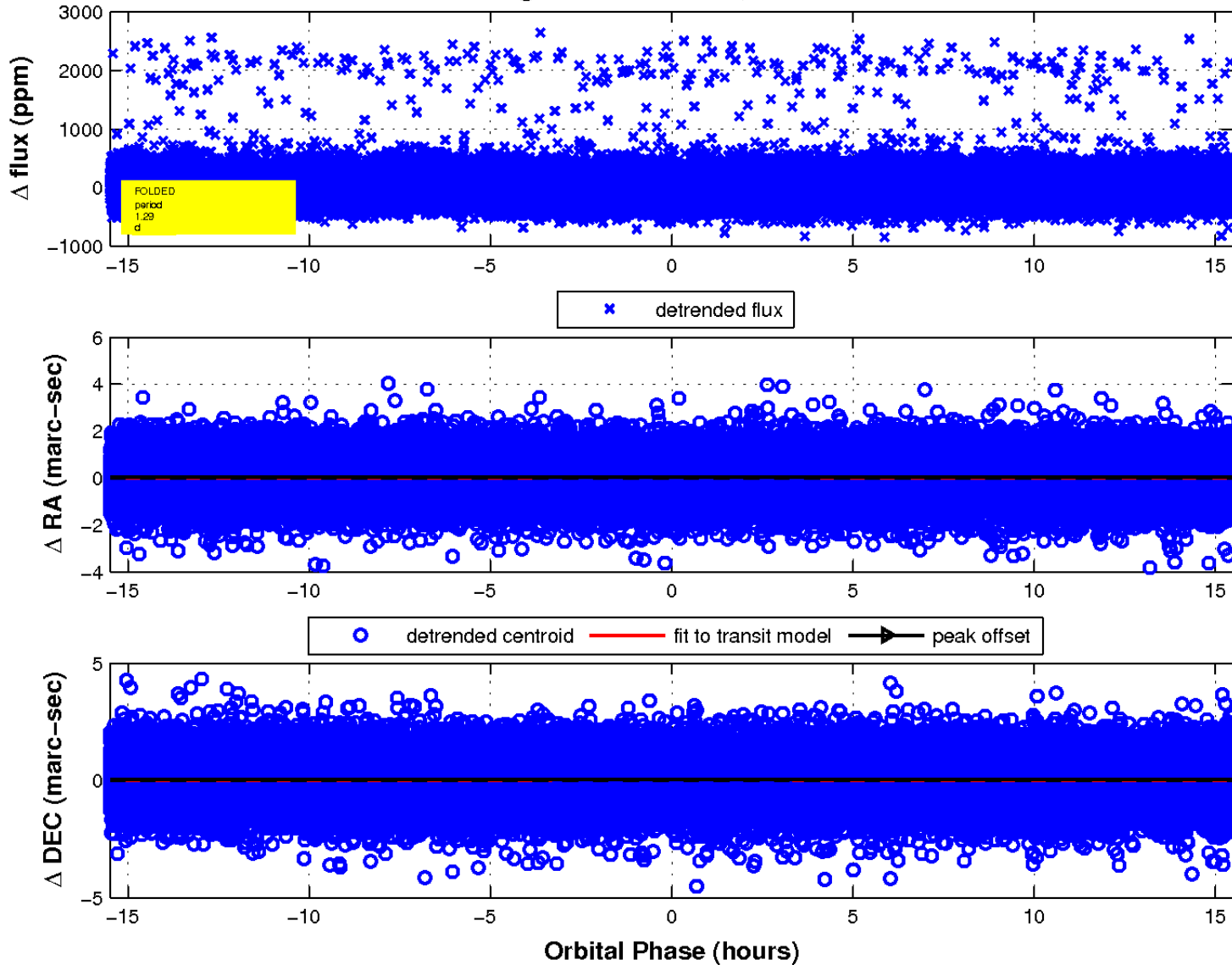
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



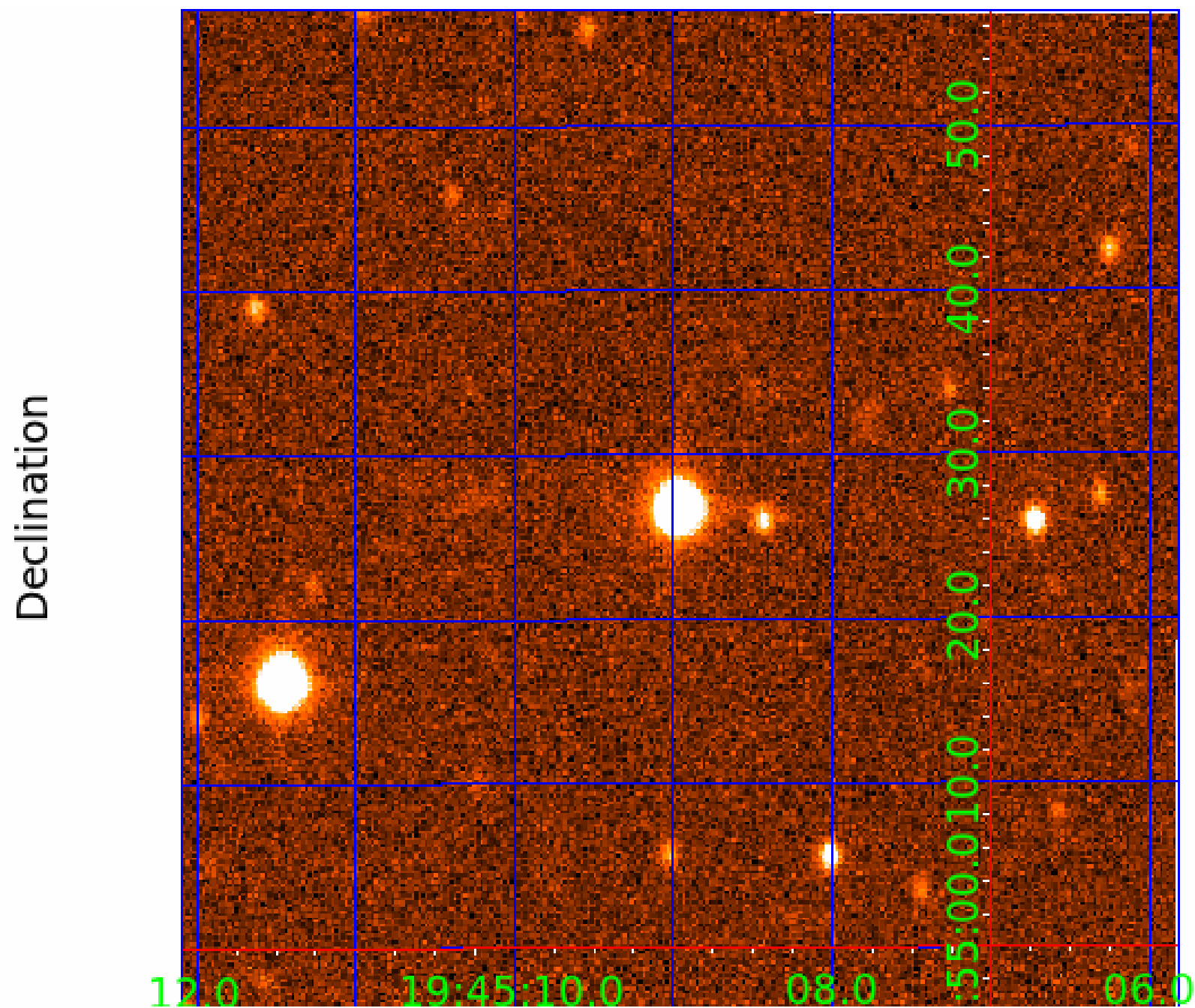
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 5



UKIRT Image





# KIC 011772510

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011772510-01	OBS	No	1.290730	131.893810	19.6	9.845	8.5	8.7	3.88	7019	2.05	41089.33
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011772510-03	OBS	No	6.053339	131.744603	372.5	0.896	17.8	18.1	3.88	7019	8.03	5234.19
011772510-04	OBS	No	7.909558	139.301180	336.7	0.848	15.5	15.4	3.88	7019	7.44	3664.15
011772510-05	OBS	No	16.527884	137.682870	1122.2	1.500	18.5	-1.0	3.88	7019	13.16	1371.58

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011772510-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011772510-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011772510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—NO_FITS—CENT_NOFITS

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

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

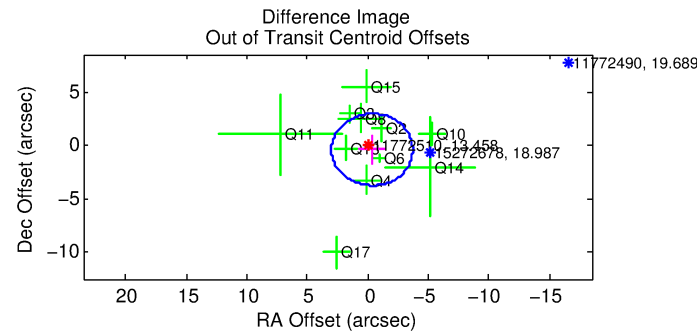
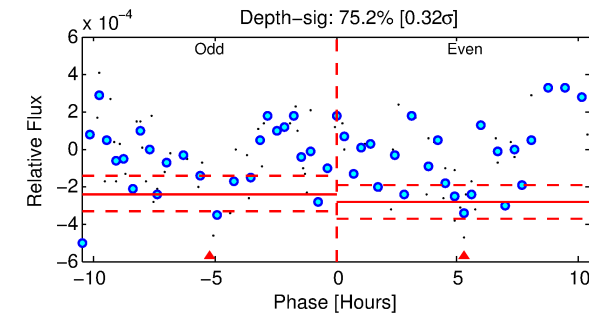
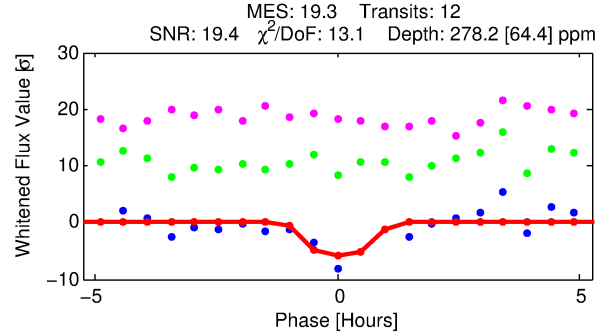
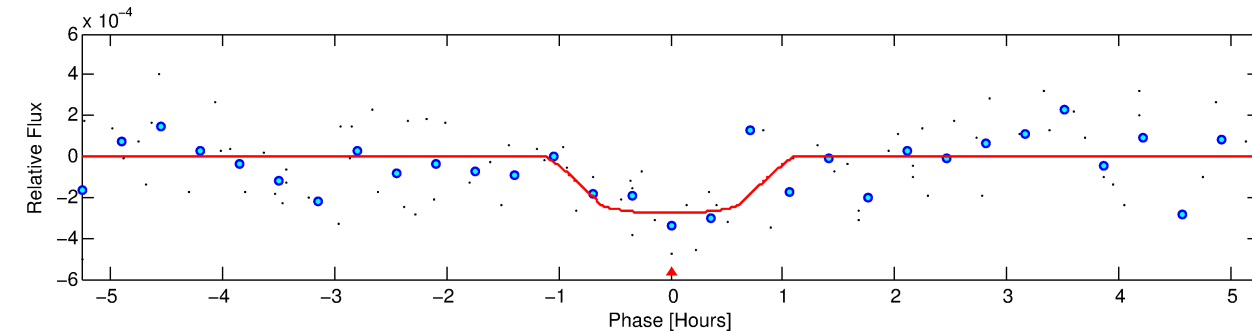
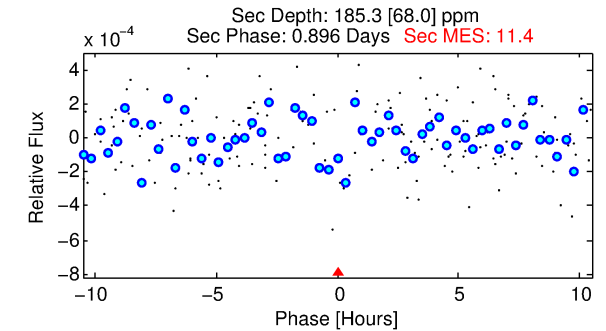
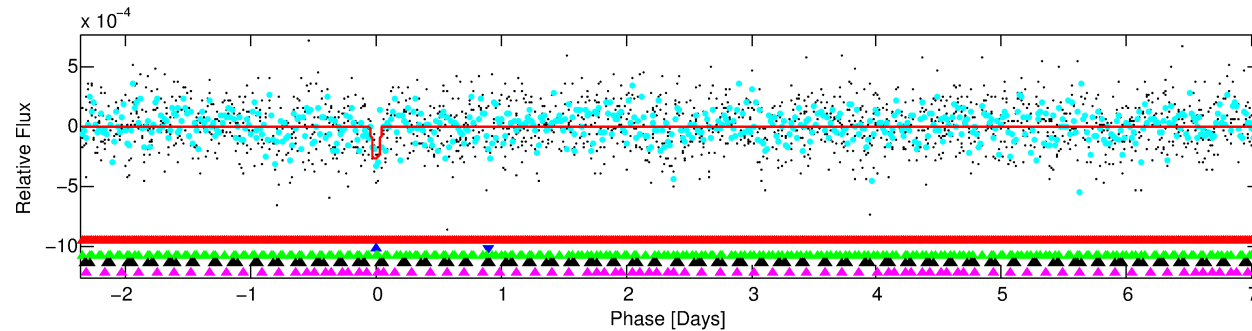
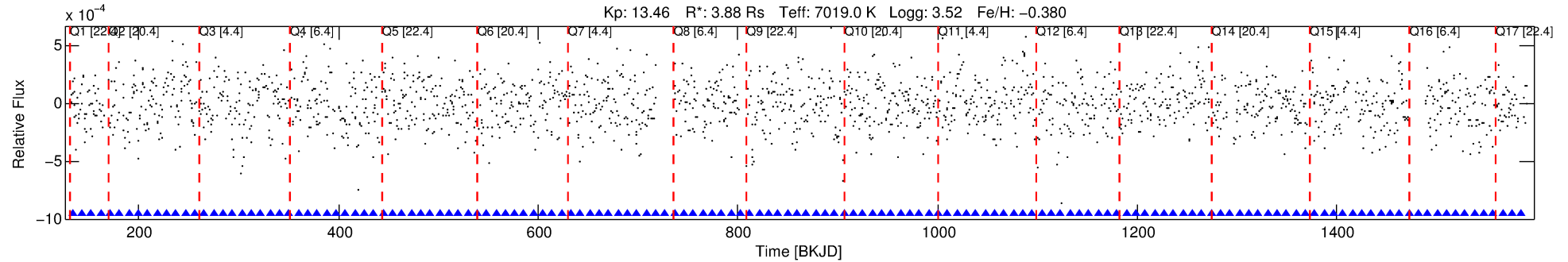
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011772510-02

No Significant Match Found

# DV One-Page Summary

KIC: 11772510 Candidate: 2 of 5 Period: 9.425 d



## DV Fit Results:

Period = 9.42455 [0.00014] d  
Epoch = 133.6670 [0.0119] BKJD  
Rp/R\* = 0.0155 [0.0376]  
a/R\* = 40.96 [546.64]  
b = 0.19 [68.77]  
Seff = 2900.65 [1818.35]  
Teq = 1871 [293] K  
Rp = 6.56 [16.10] Re  
a = 0.1061 [0.0406] AU  
Ag = 26.66 [130.50] [0.20 $\sigma$ ]  
Teffp = 6575 [7984] K [0.59 $\sigma$ ]

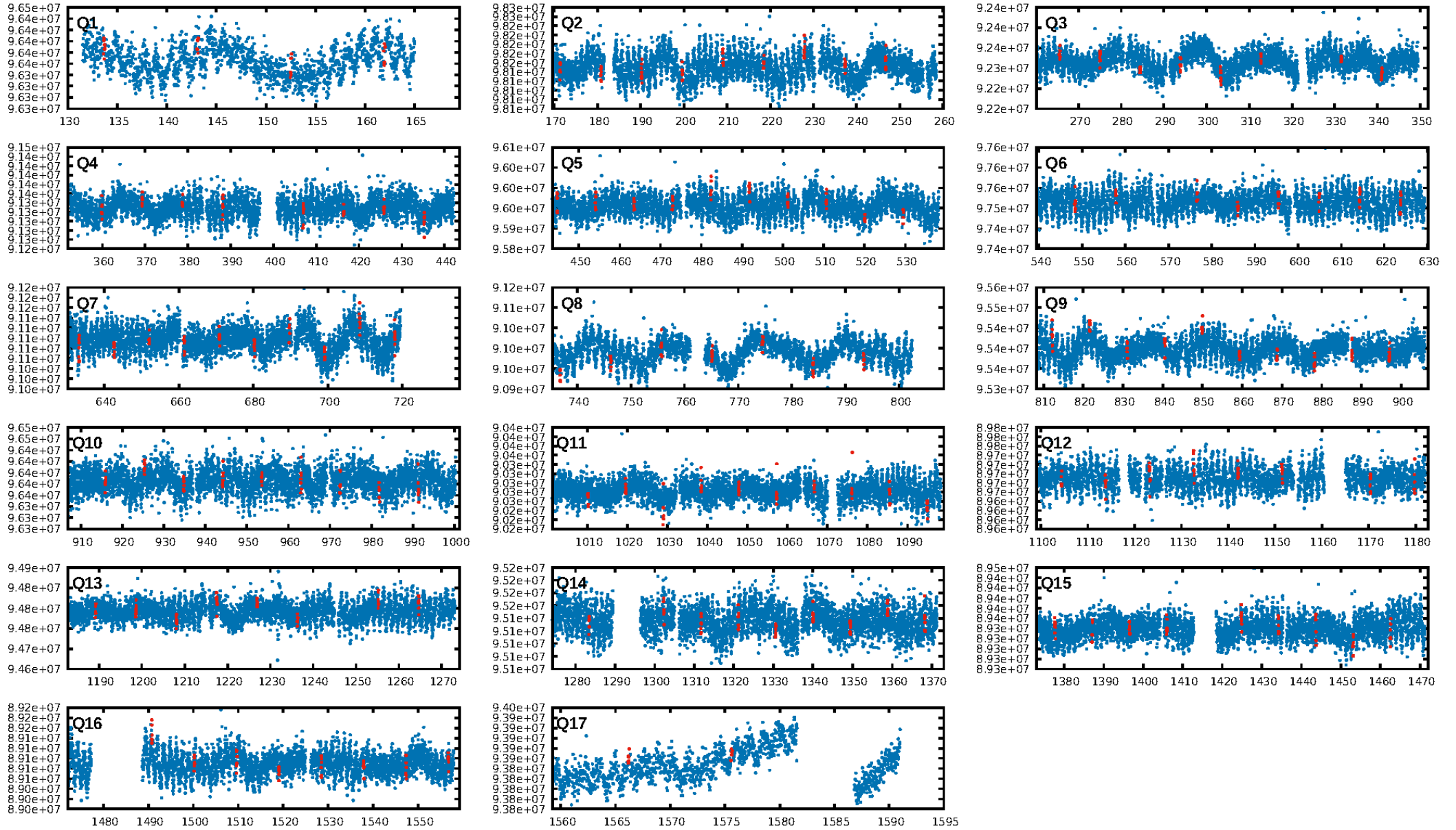
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.66 $\sigma$ ]  
LongPeriod-sig: 100.0% [73.87 $\sigma$ ]  
**ModelChiSquare2-sig: 0.0%**  
**ModelChiSquareGof-sig: 0.0%**  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [11/11]  
**GhostDiagnostic-chr: 1.744**  
Centroid-sig: 62.9%  
Centroid-so: 0.209 arcsec [0.53 $\sigma$ ]  
OotOffset-rm: 0.527 arcsec [0.47 $\sigma$ ]  
KicOffset-rm: 0.577 arcsec [0.58 $\sigma$ ]  
OotOffset-st: 4/3/2/2 [11]  
KicOffset-st: 4/3/2/2 [11]  
DiffImageQuality-fgm: 0.00 [0/11]  
DiffImageOverlap-fno: 0.88 [15/17]

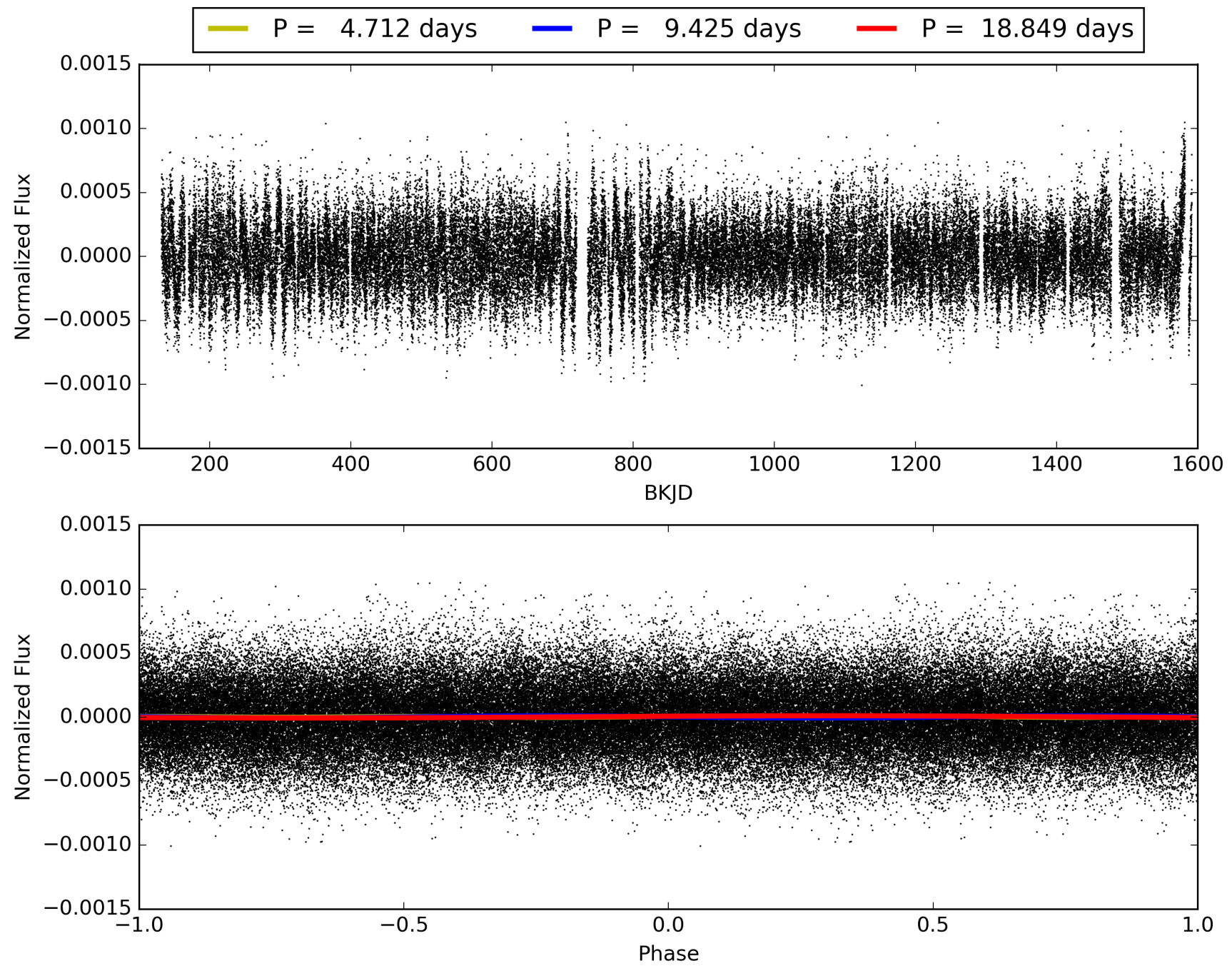
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:09:49 Z

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

# TCE 011772510-02, PDC Light Curves

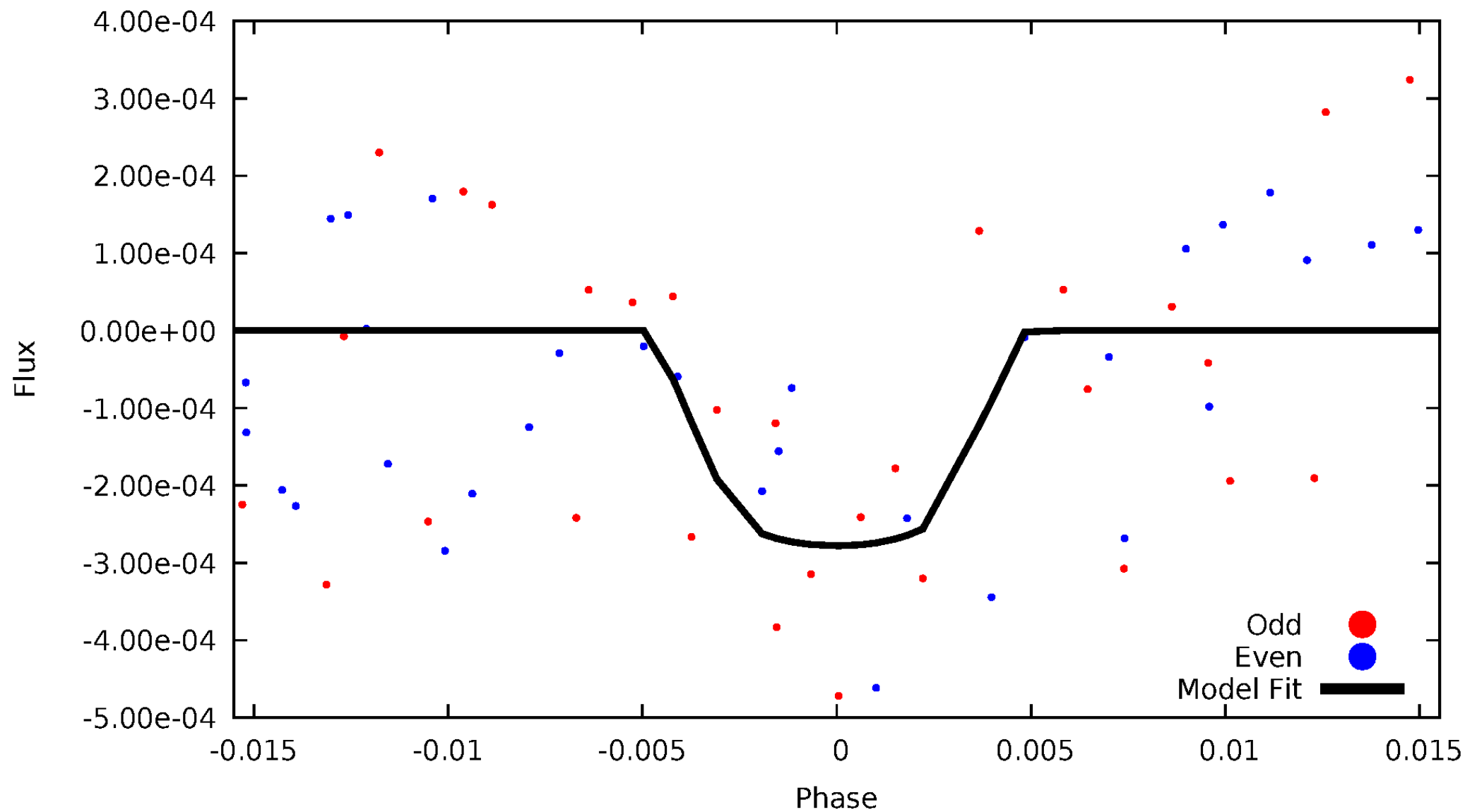


# TCE 011772510-02



# DV Odd/Even

TCE 011772510-02





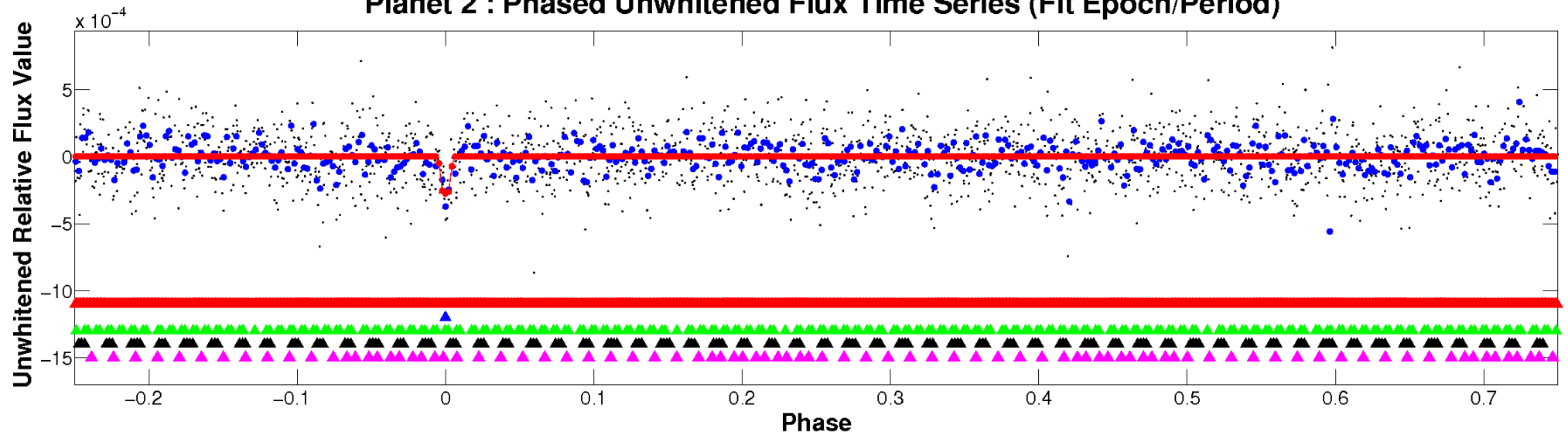


ALT Odd/Even

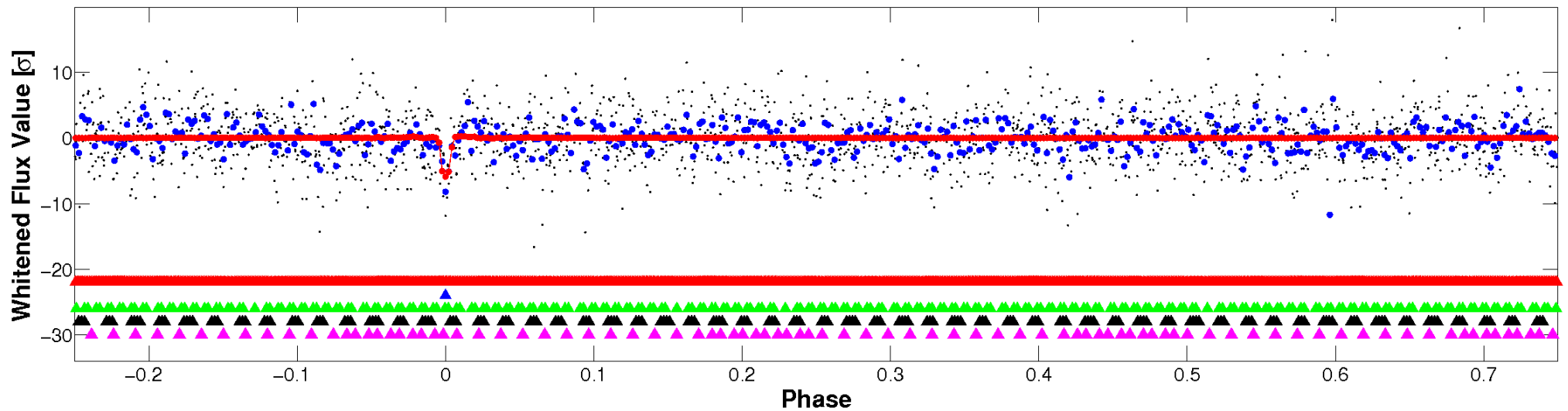
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

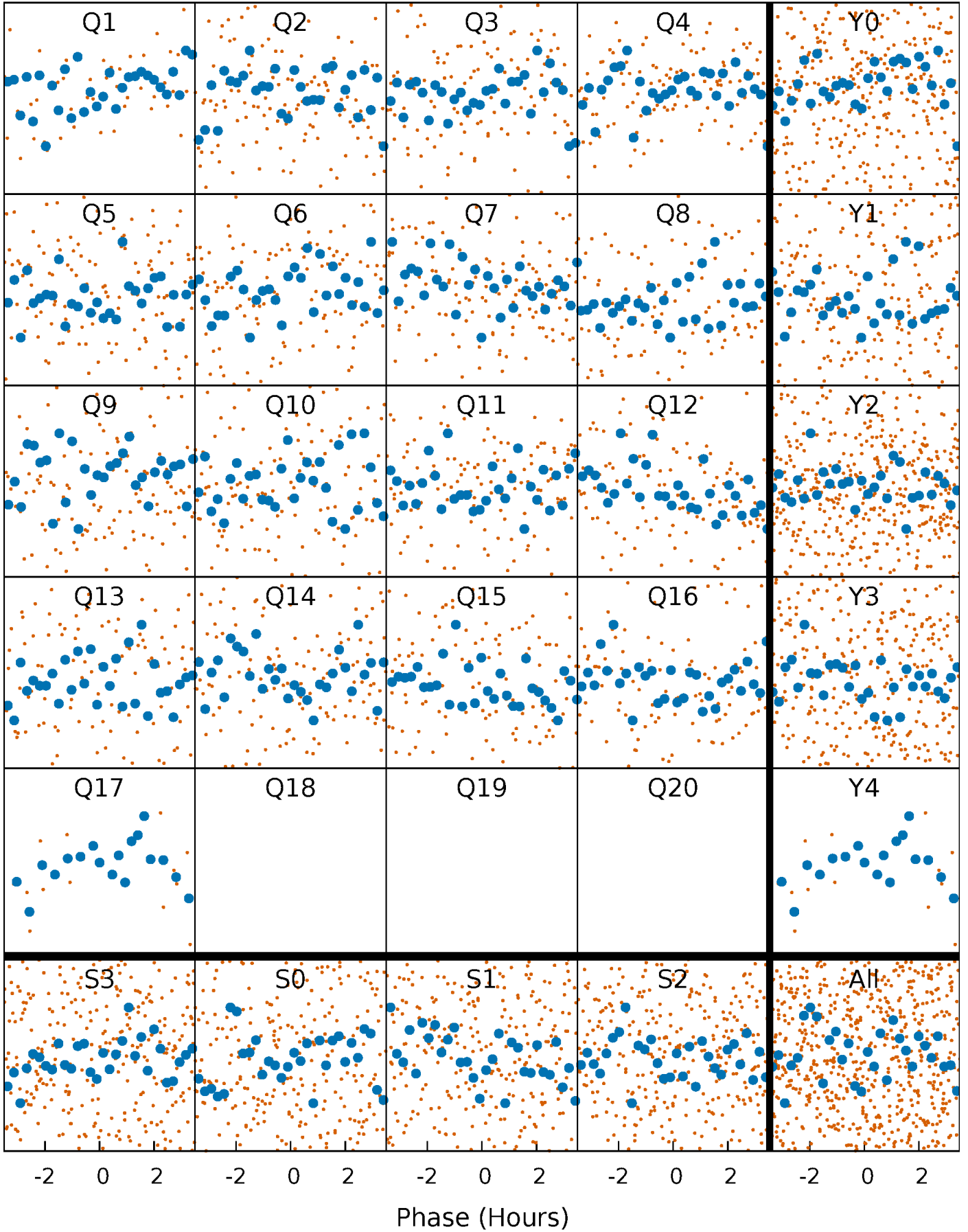


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



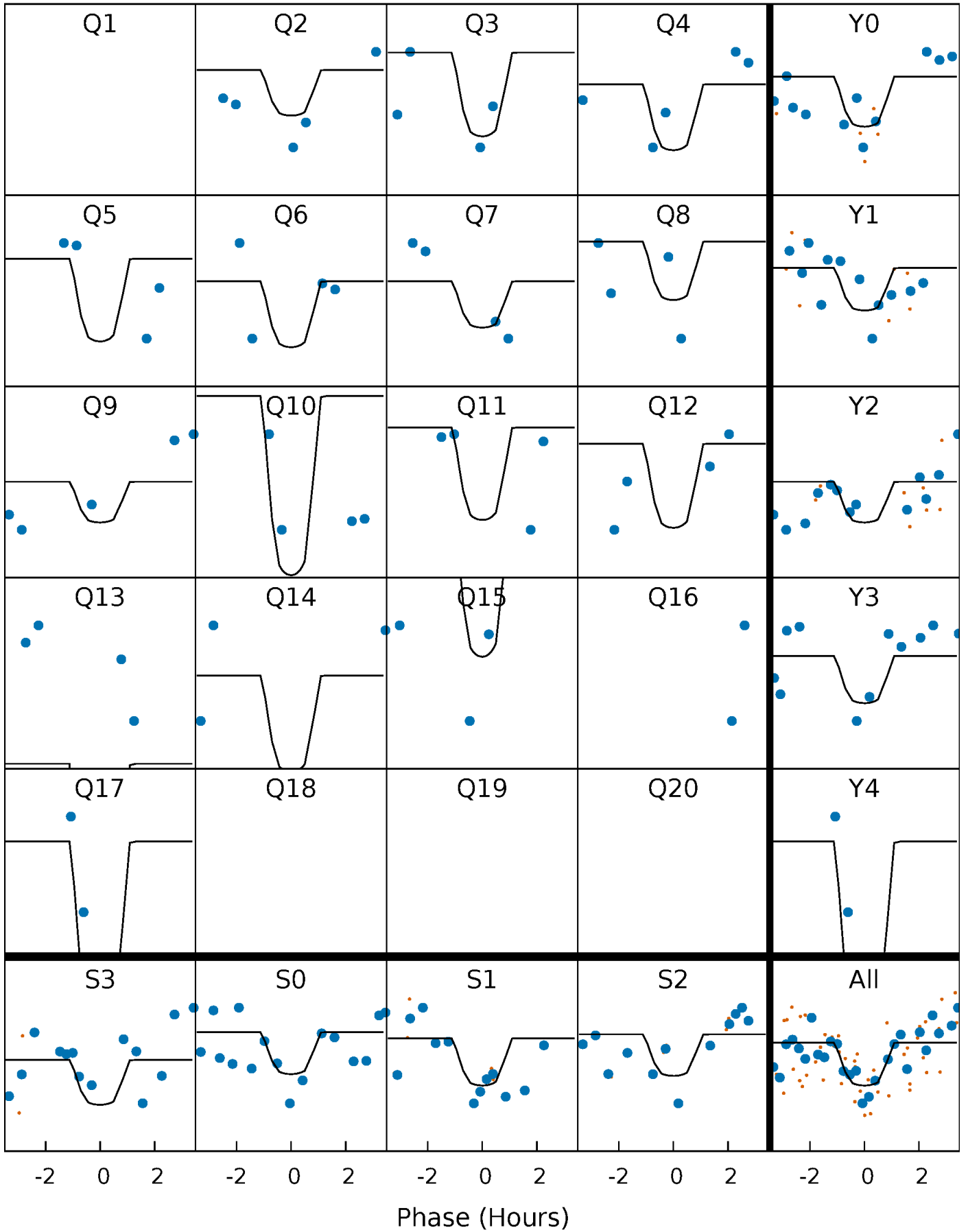
# PDC Quarter-Phased Transit Curves

TCE 011772510-02   P= 9.424547 Days    $T_0=133.666991$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 011772510-02   P= 9.424547 Days    $T_0=133.666991$  (BKJD)



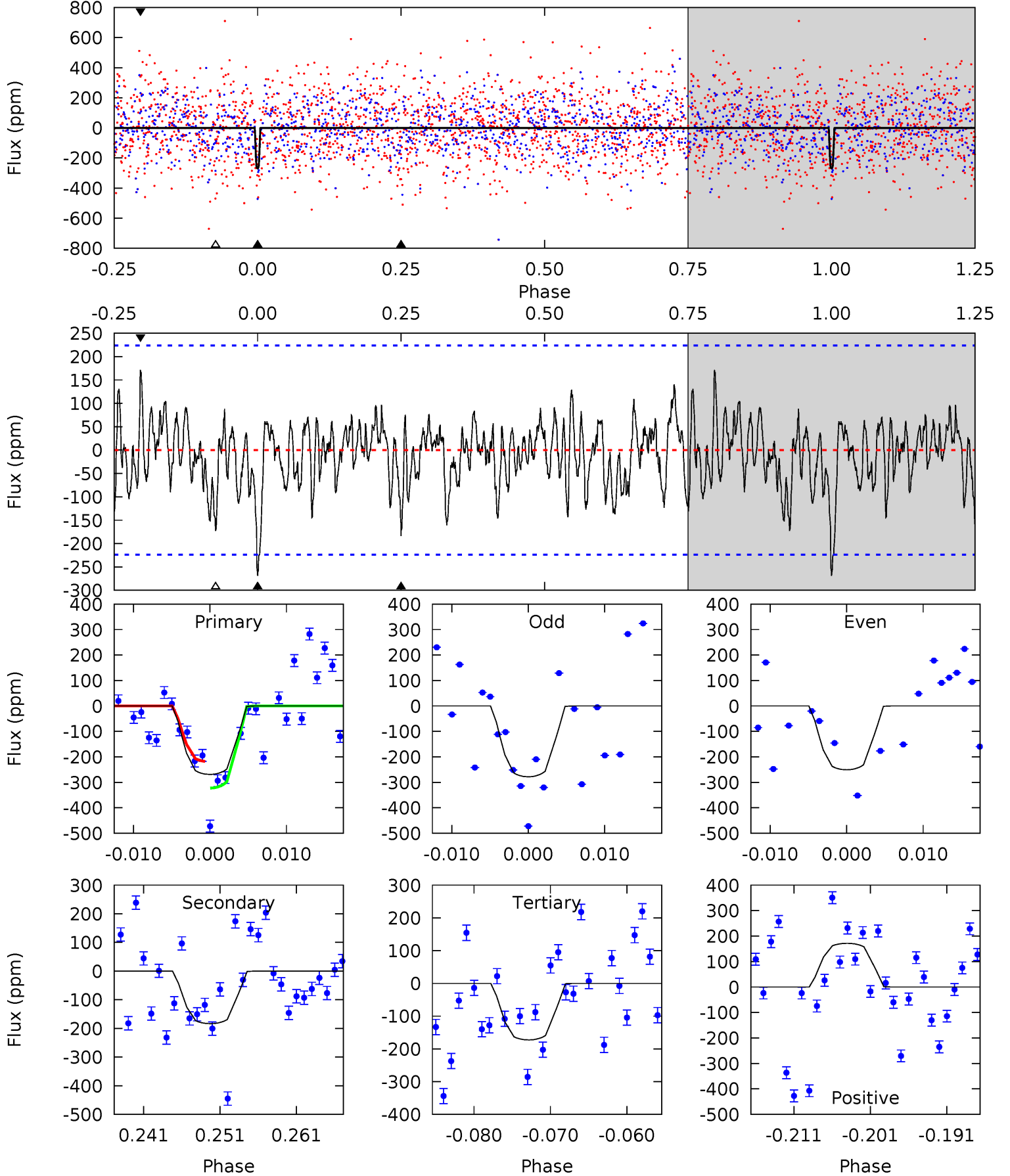
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

011772510-02, P = 9.424547 Days, E = 124.242444 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.05	4.12	3.88	3.86	5.03	2.57	1.29	2.16	2.19	0.24	0.27	0.31	1.06	0.39	1.19



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 011772510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7019^{+190}_{-232}$	$3.515^{+0.360}_{-0.090}$	$-0.380^{+0.300}_{-0.250}$	$3.875^{+0.385}_{-1.539}$	$1.794^{+0.177}_{-0.383}$	$0.043^{+0.117}_{-0.012}$
	+3%/-3%	+10%/-3%	+79%/-66%	+10%/-40%	+10%/-21%	+270%/-28%
Source	PHO1	FLK73	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 011772510-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-183 \pm 44$	$13.52^{+11.37}_{-9.19}$	$2556^{+156}_{-230}$	$4466^{+3228}_{-957}$	$6.113^{+49.684}_{-4.422}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

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

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

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

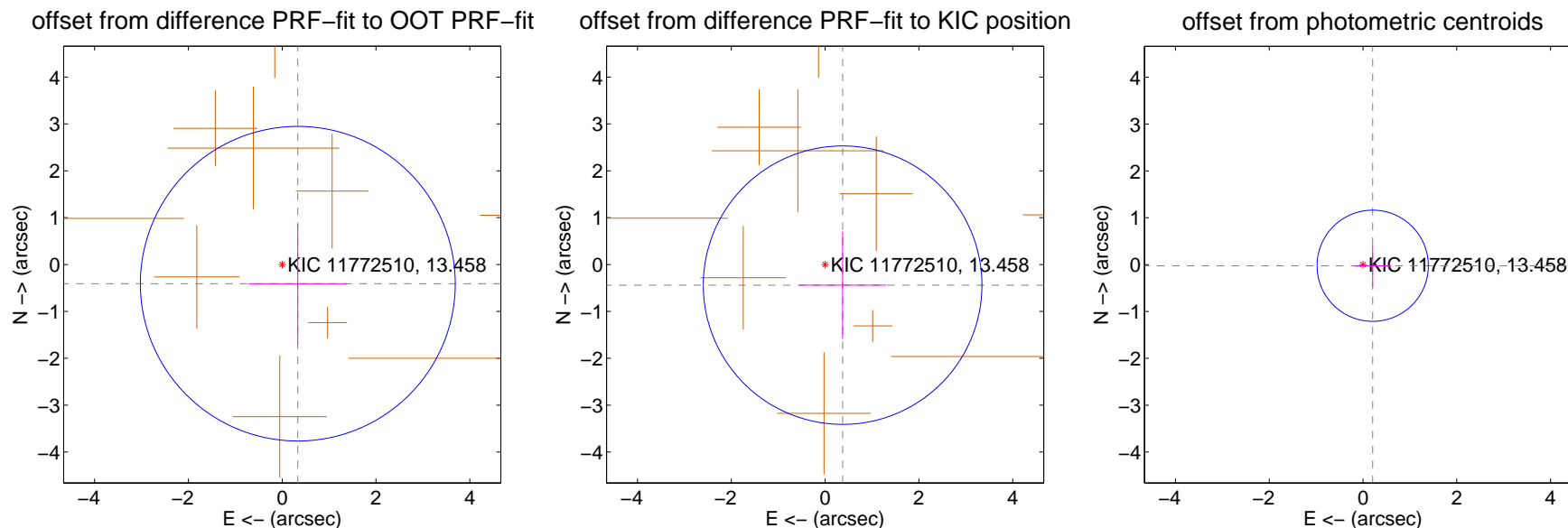
## DV Centroid Data

Supplemental centroid analysis for 011772510-02. Kepler magnitude: 13.46. Transit SNR 19.35

There are 0 quarters with good PRF difference image offsets

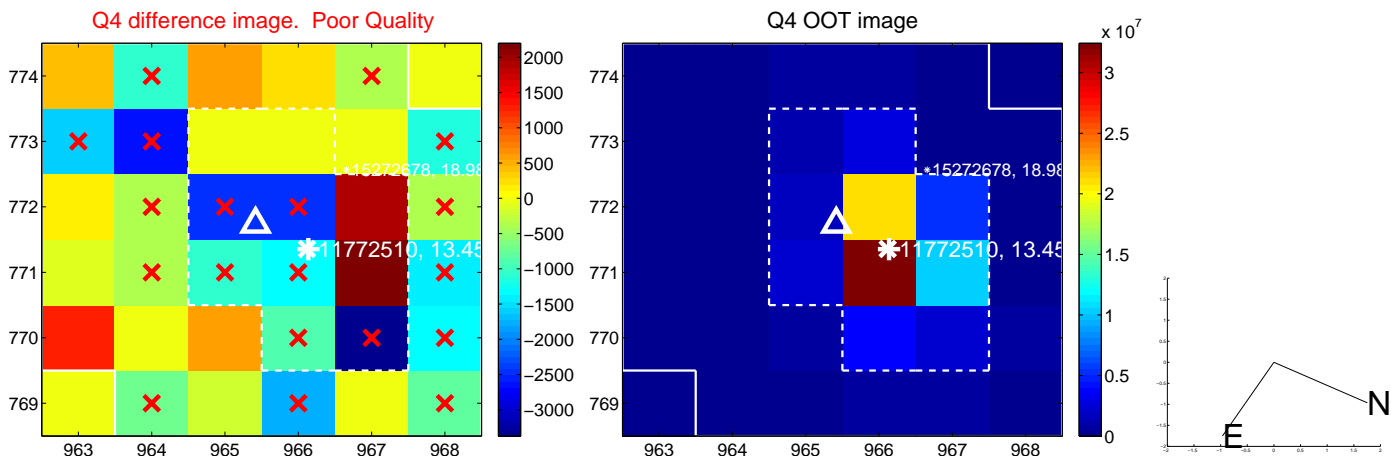
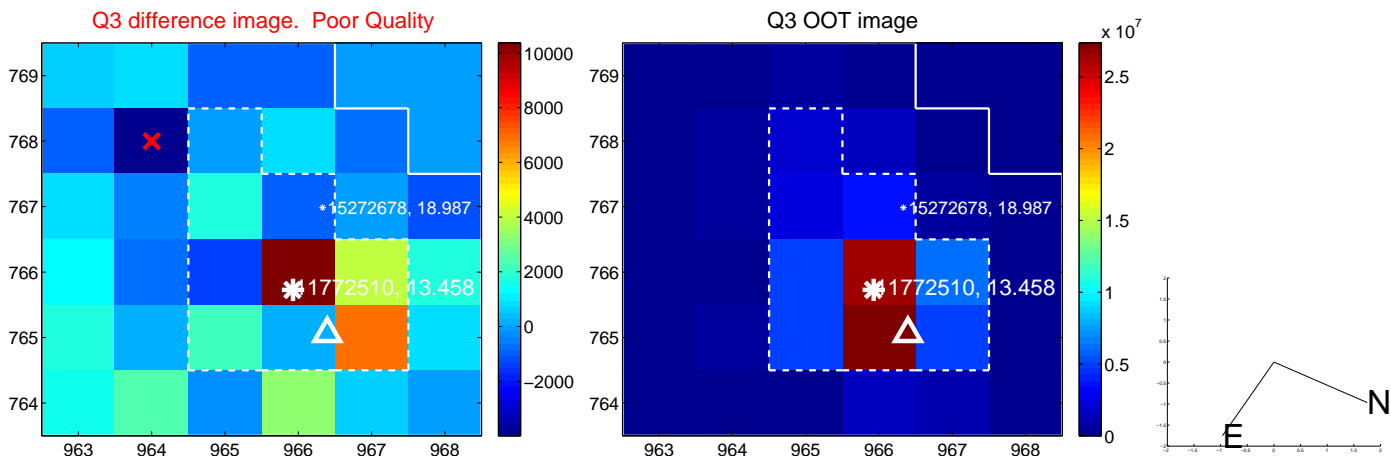
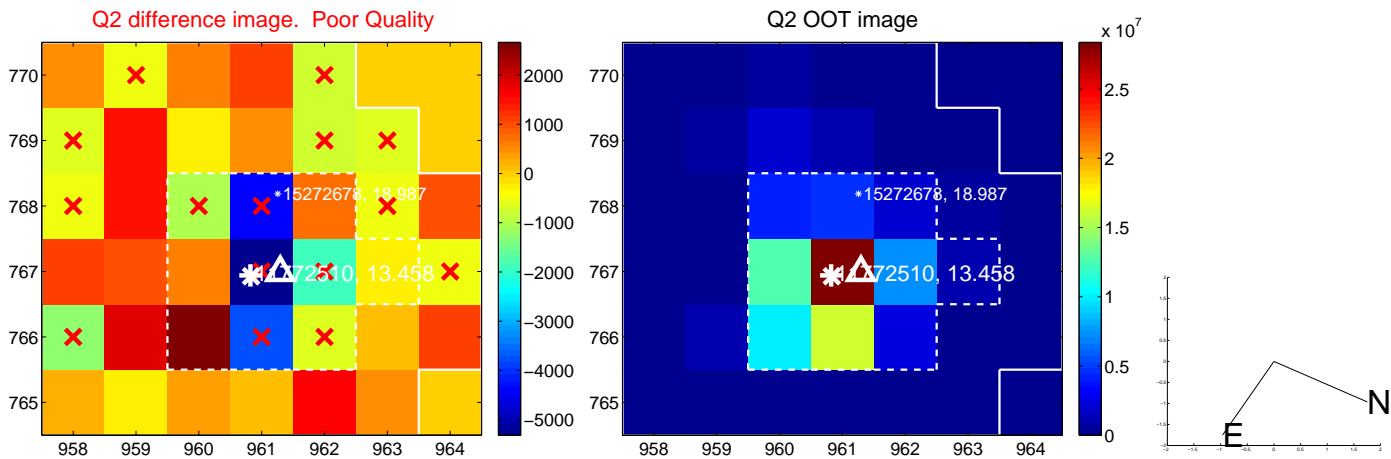
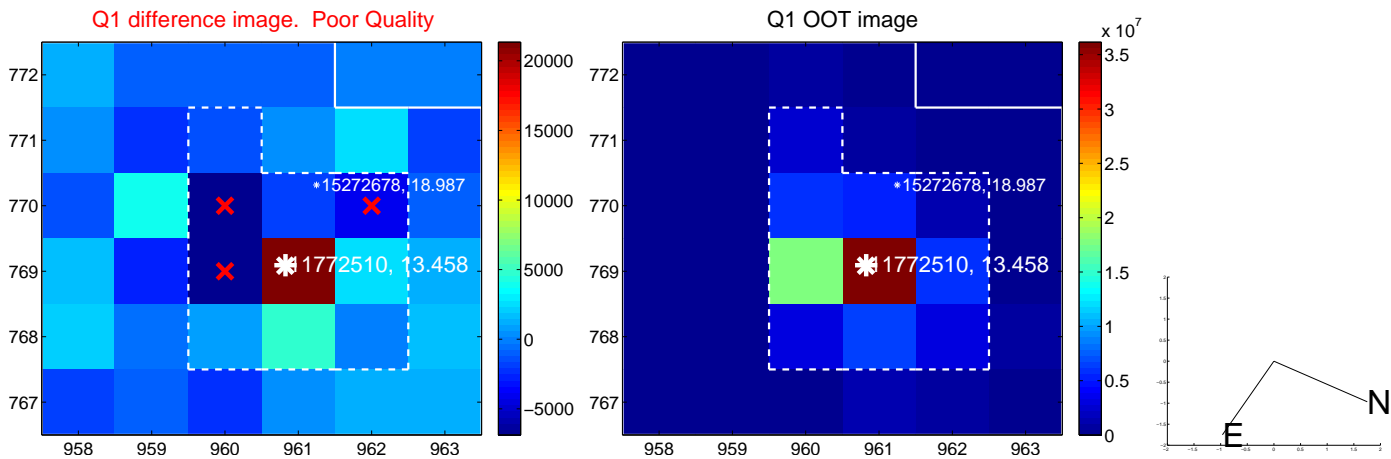
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.527 \pm 1.119$	0.47	$-0.333 \pm 1.052$	$-0.409 \pm 1.281$
PRF-fit source offset from KIC position	$0.577 \pm 0.990$	0.58	$-0.373 \pm 0.937$	$-0.440 \pm 1.147$
photometric centroid source offset	$0.21 \pm 0.40$	0.53	$-0.21 \pm 0.39$	$-0.02 \pm 0.45$



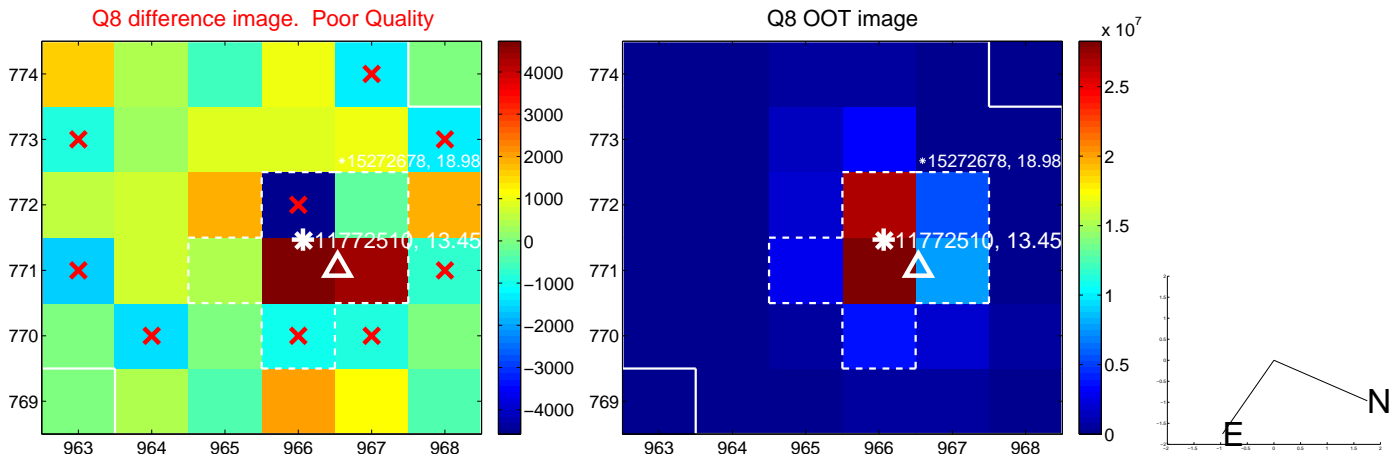
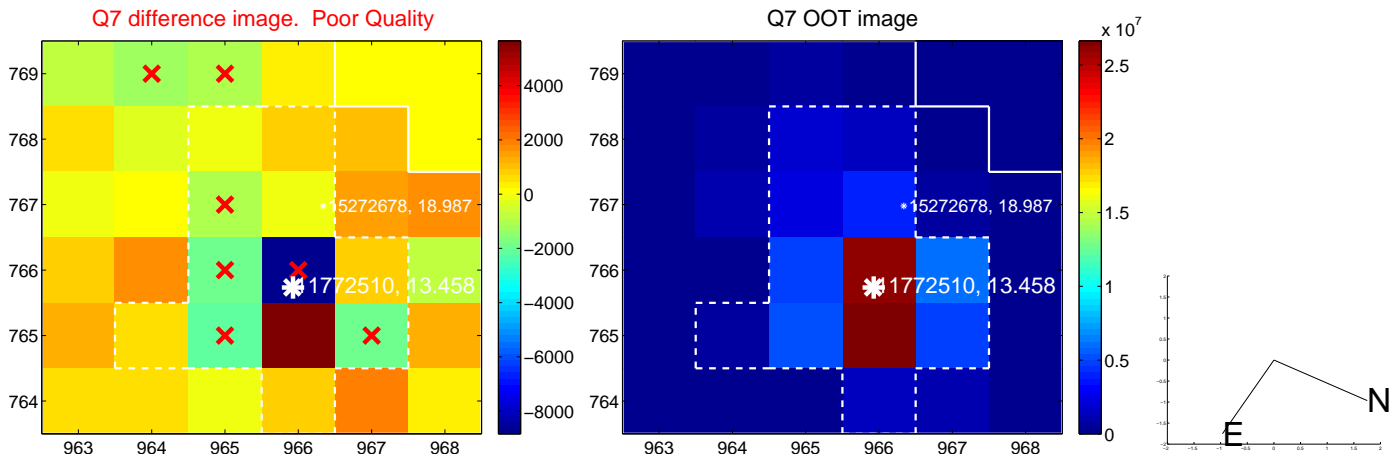
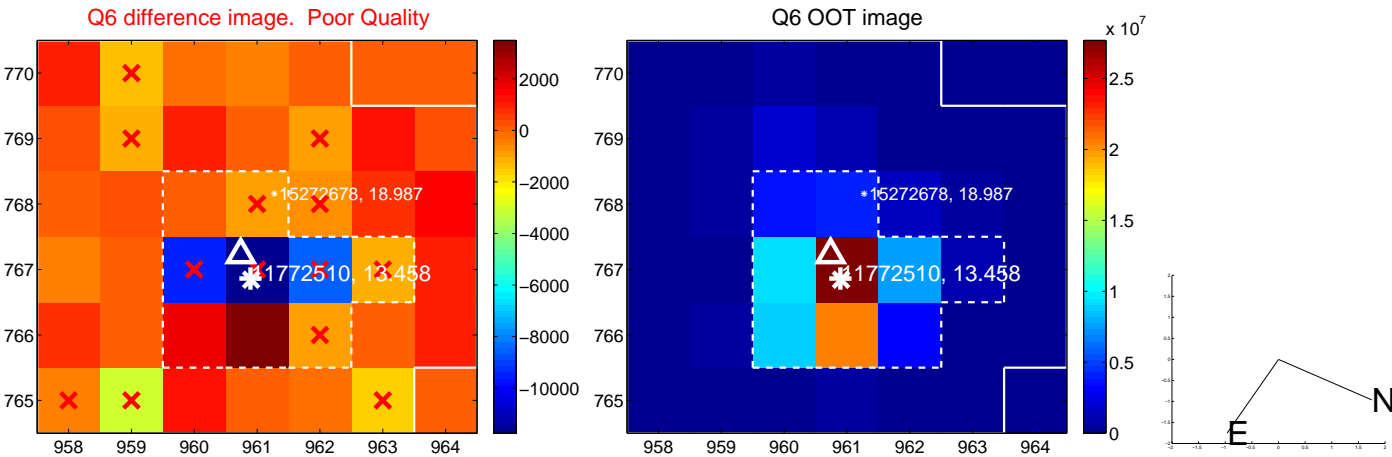
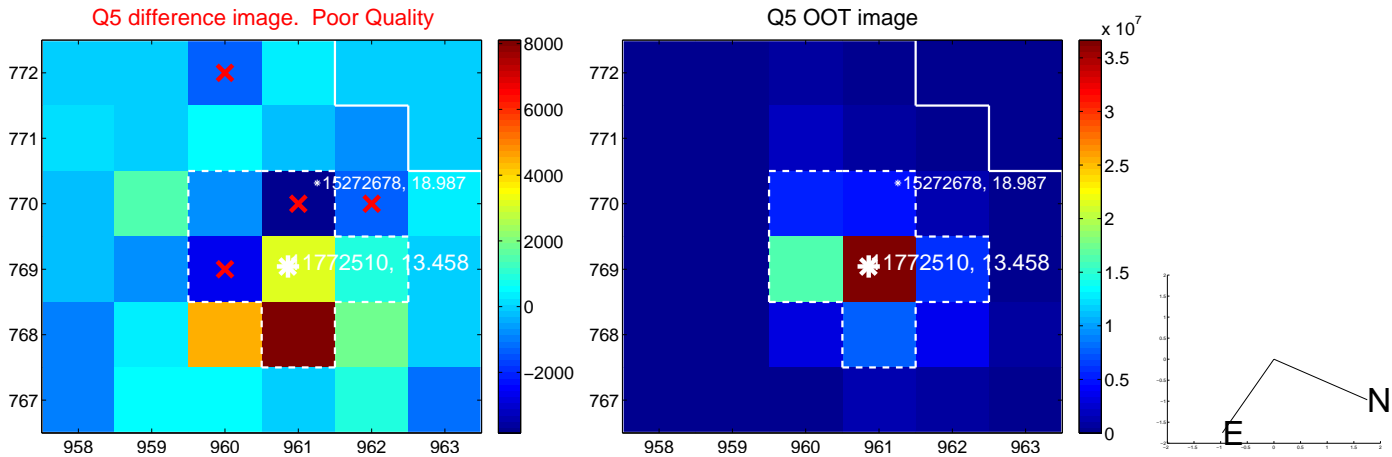
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

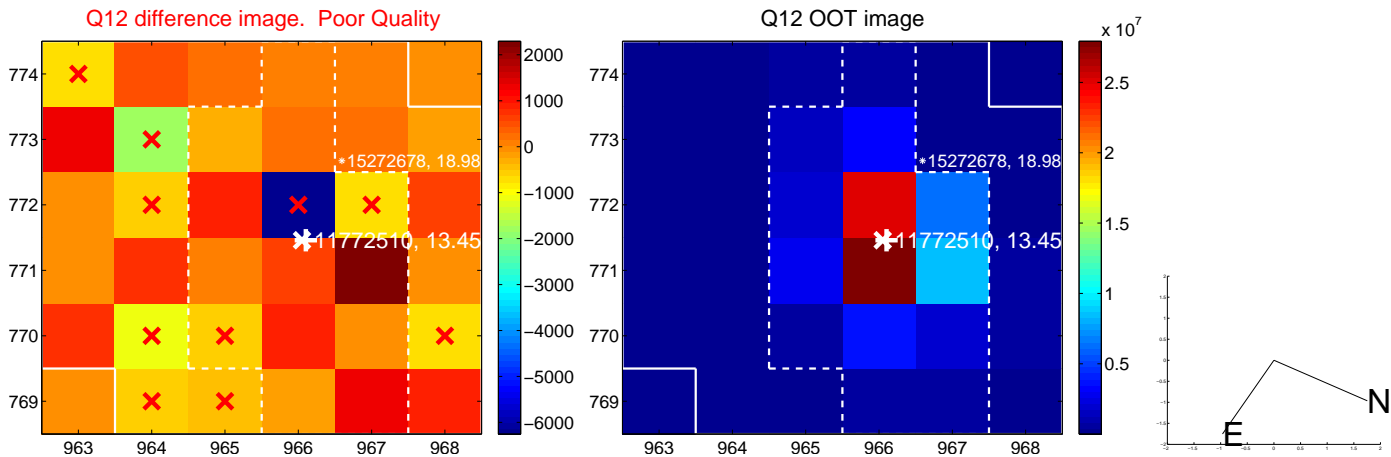
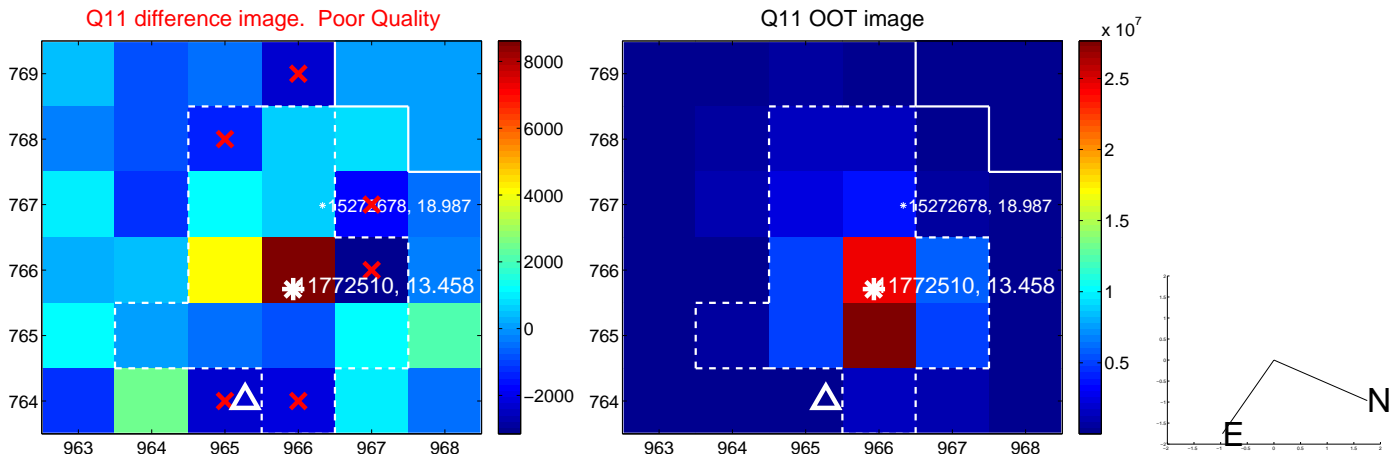
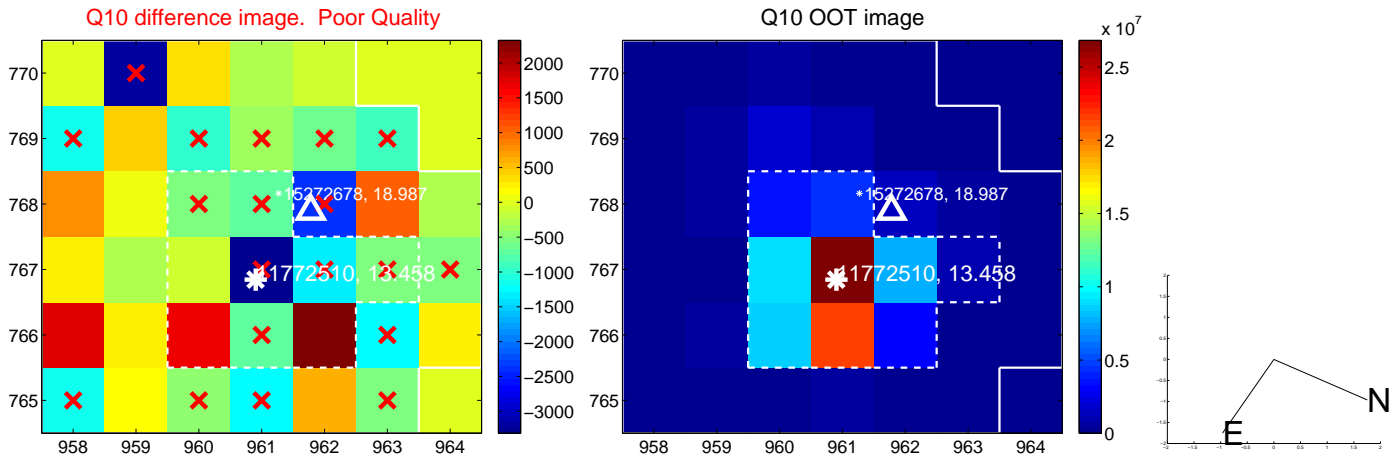
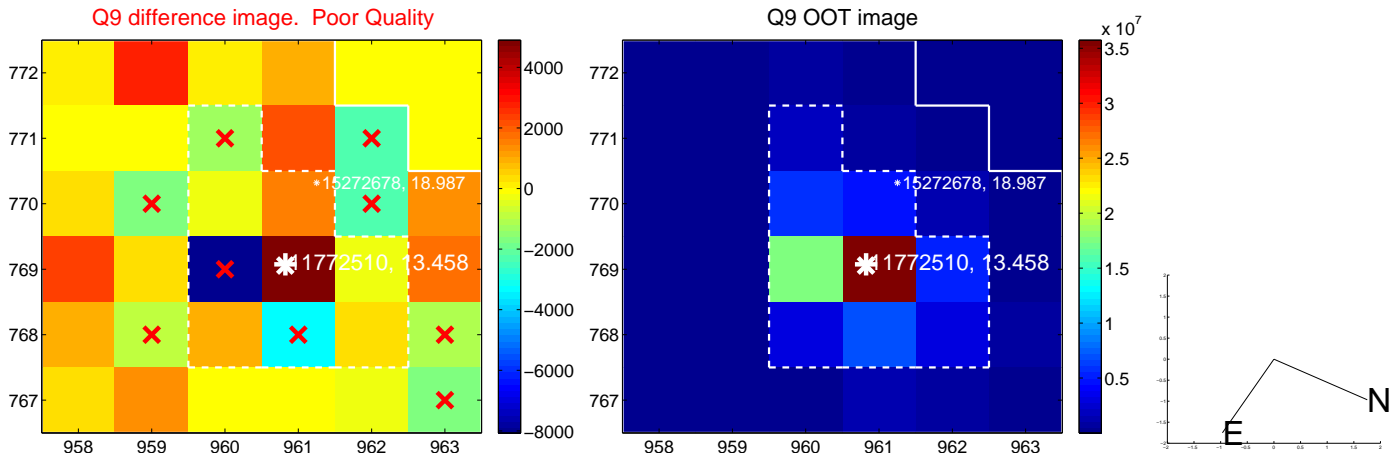




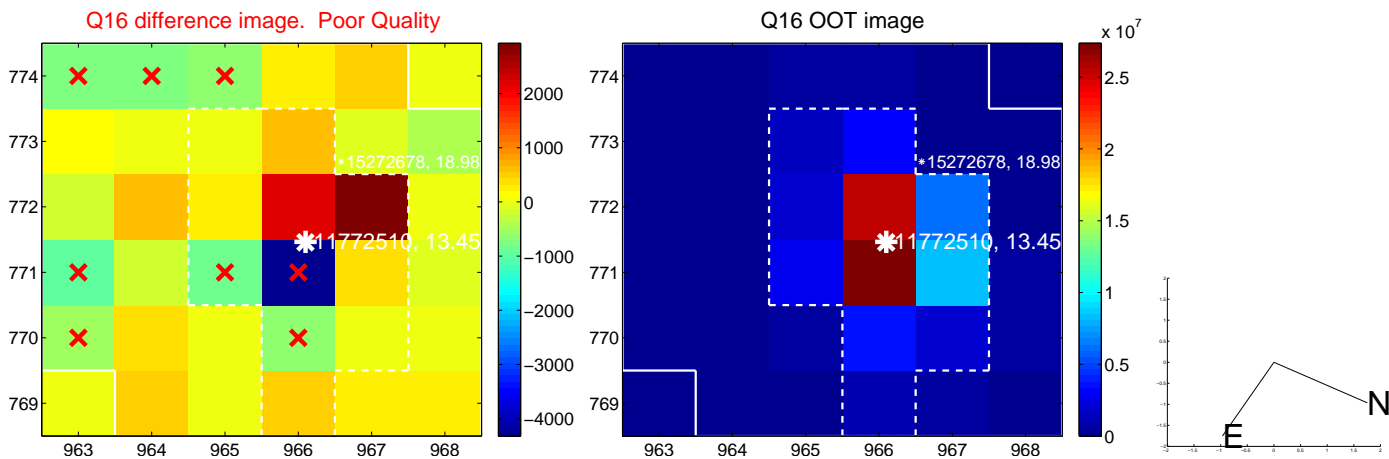
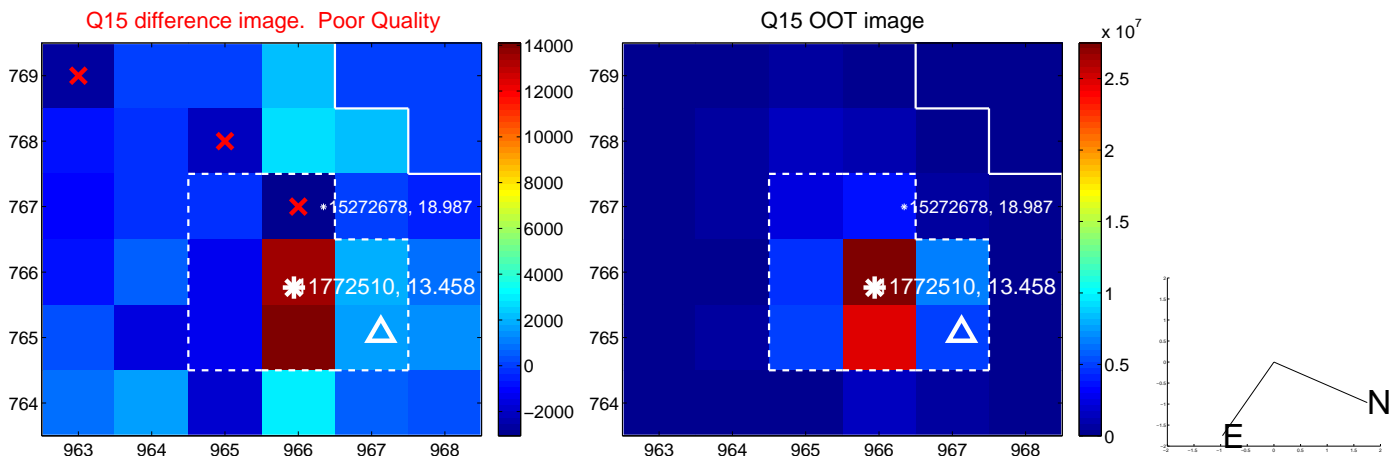
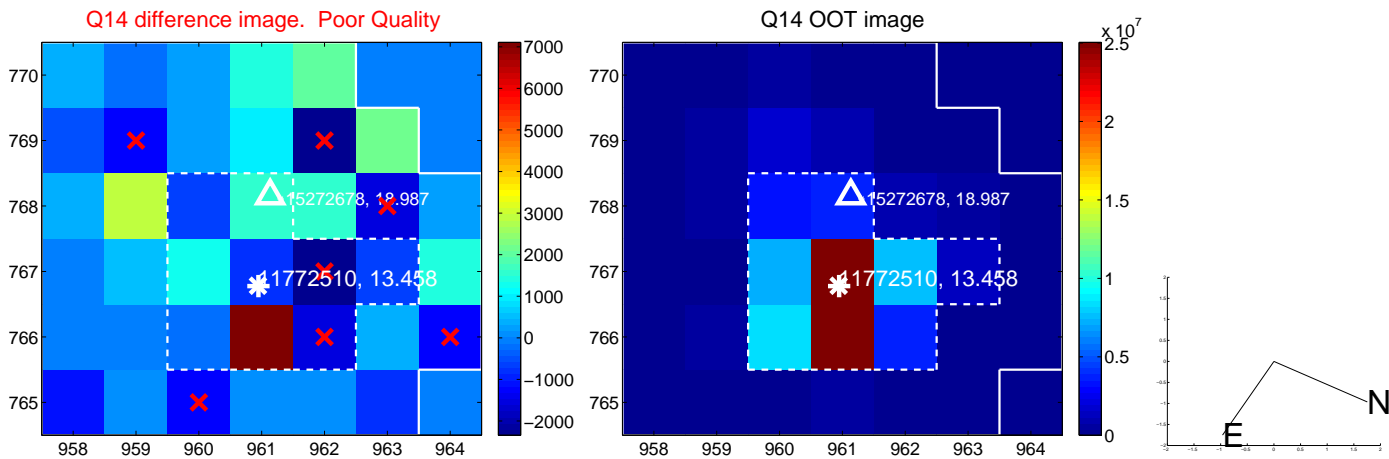
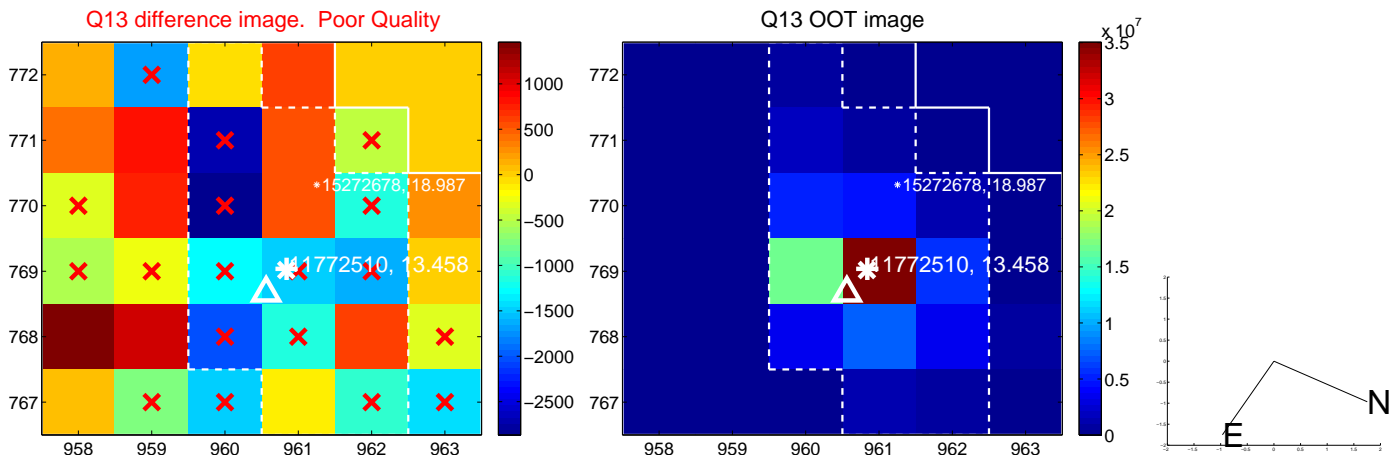
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



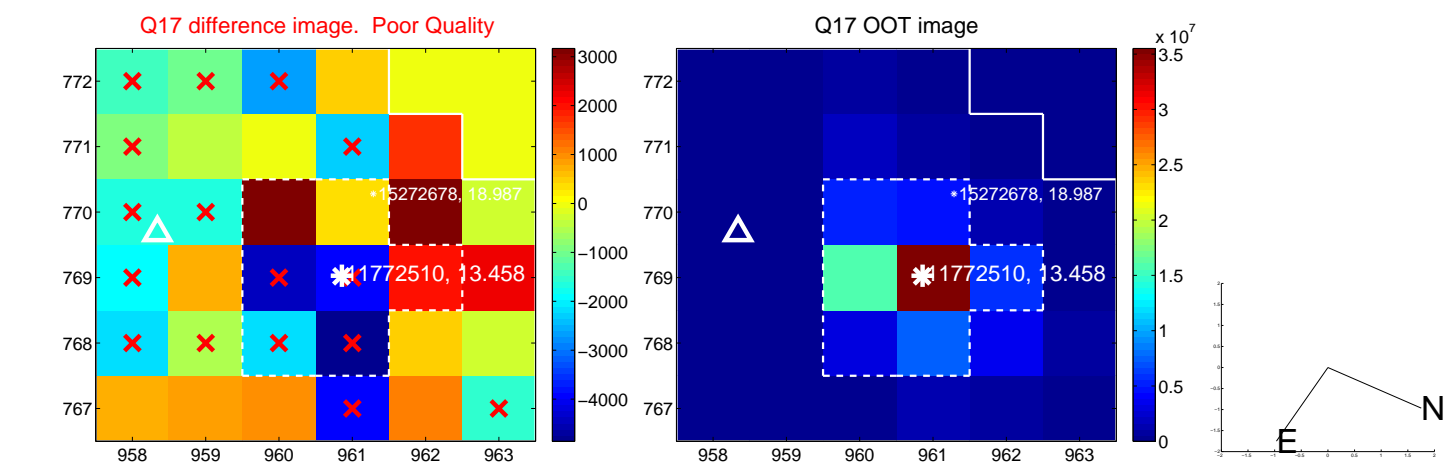
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



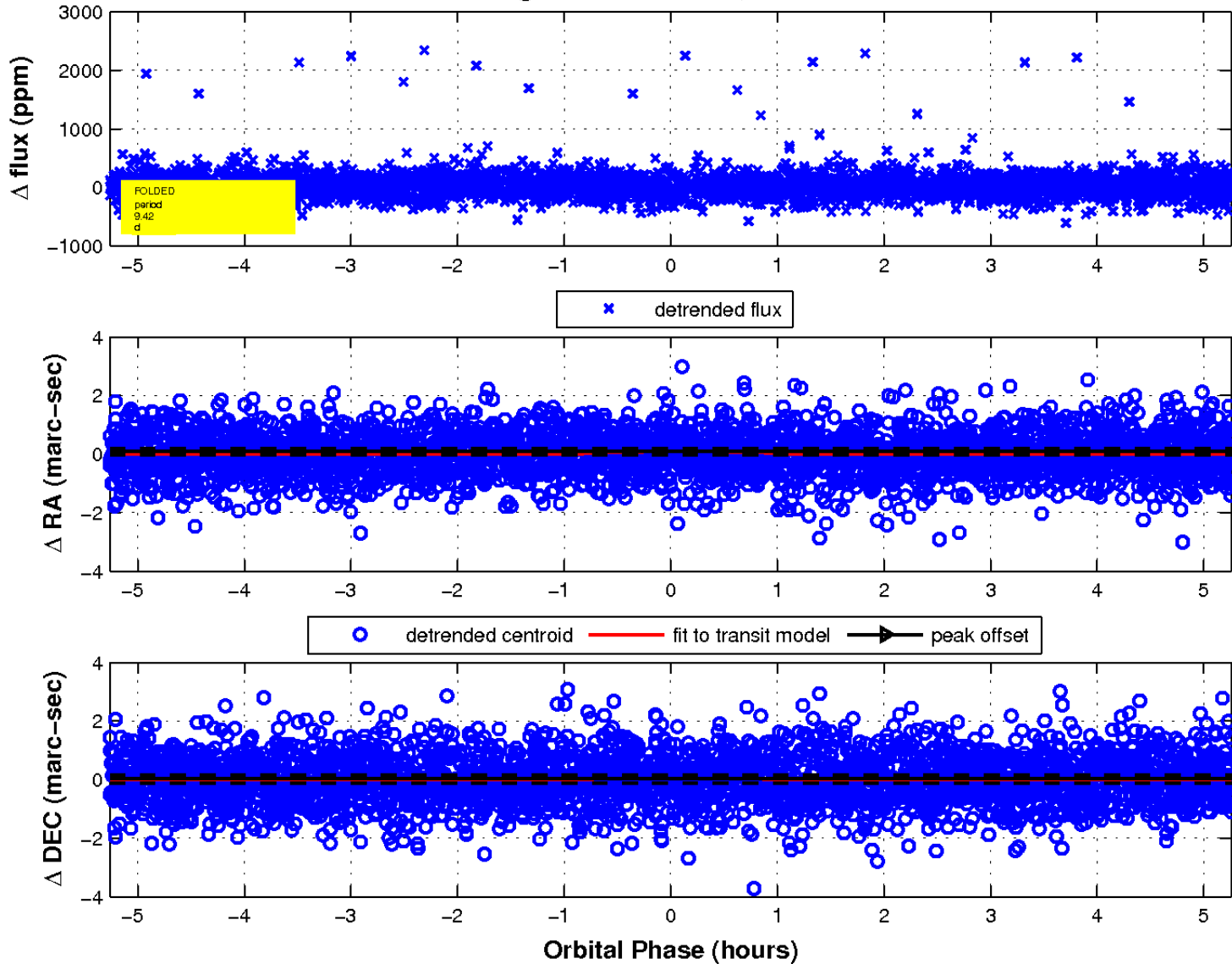
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



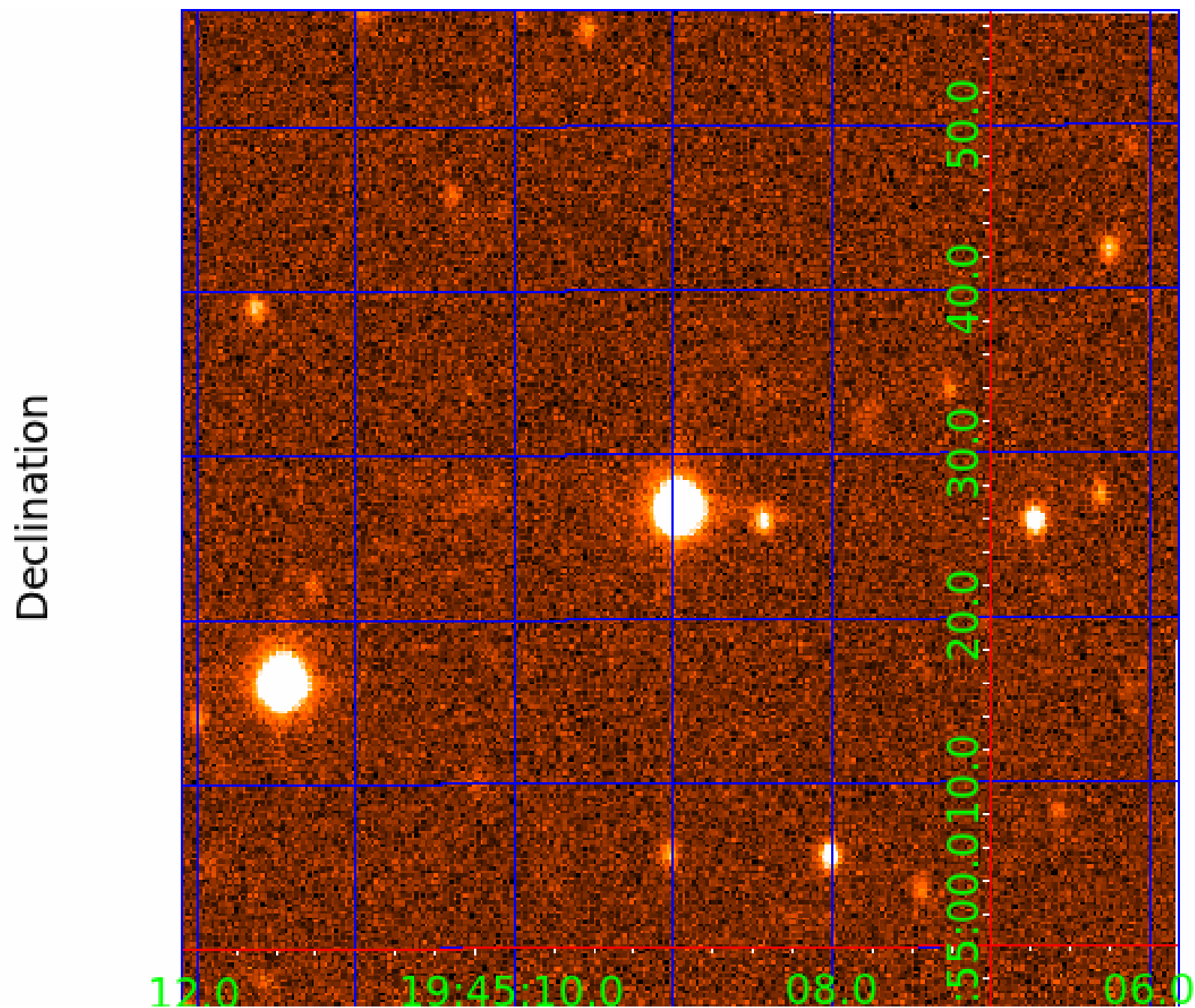
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 5



UKIRT Image





# KIC 011772510

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011772510-01	OBS	No	1.290730	131.893810	19.6	9.845	8.5	8.7	3.88	7019	2.05	41089.33
011772510-02	OBS	No	9.424547	133.666991	278.2	1.754	19.3	19.4	3.88	7019	6.56	2900.65
011772510-03	OBS	No	6.053339	131.744603	372.5	0.896	17.8	18.1	3.88	7019	8.03	5234.19
011772510-04	OBS	No	7.909558	139.301180	336.7	0.848	15.5	15.4	3.88	7019	7.44	3664.15
011772510-05	OBS	No	16.527884	137.682870	1122.2	1.500	18.5	-1.0	3.88	7019	13.16	1371.58

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011772510-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011772510-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011772510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—NO_FITS—CENT_NOFITS

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

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

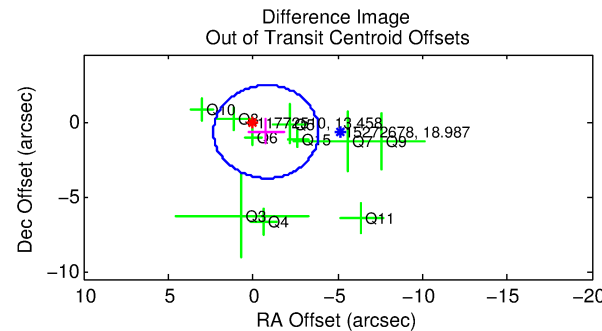
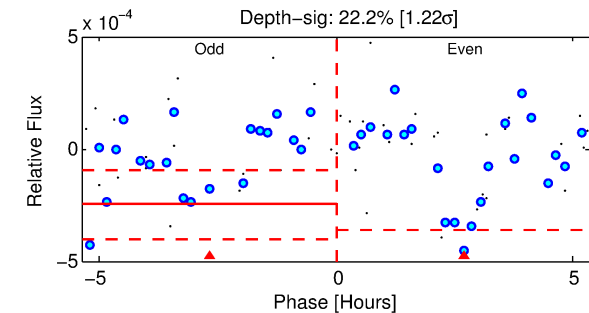
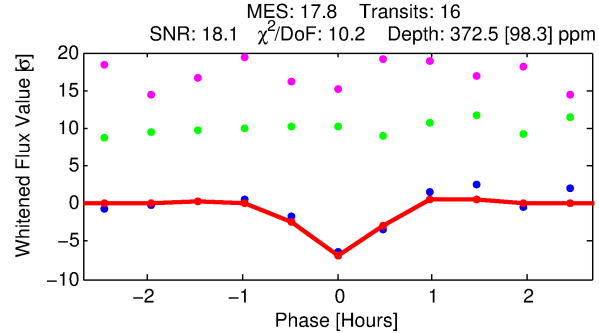
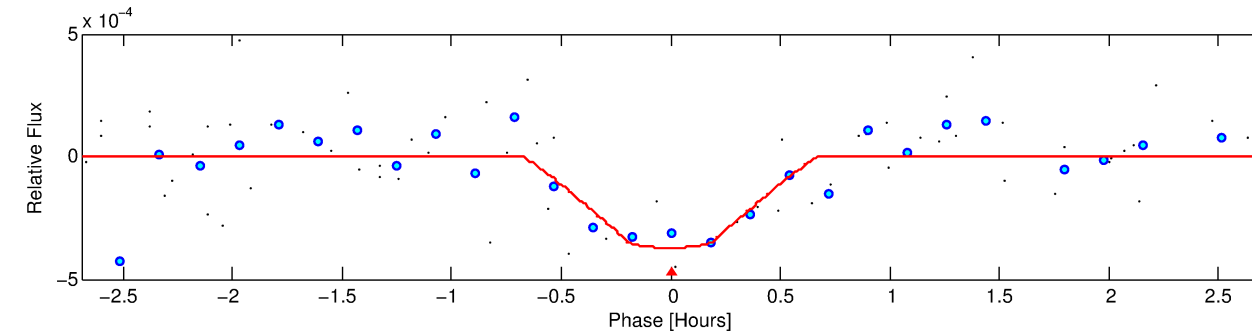
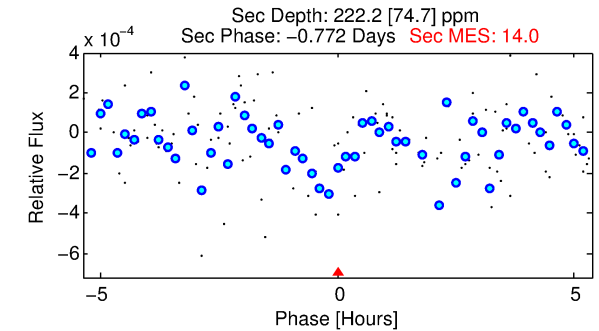
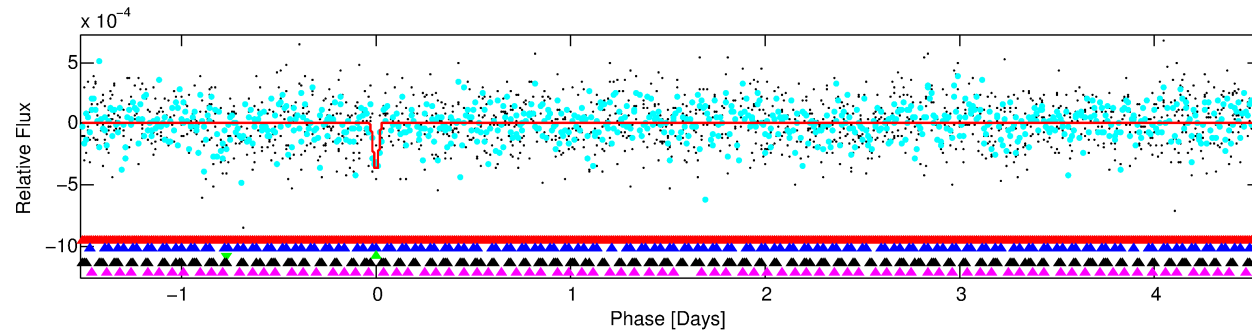
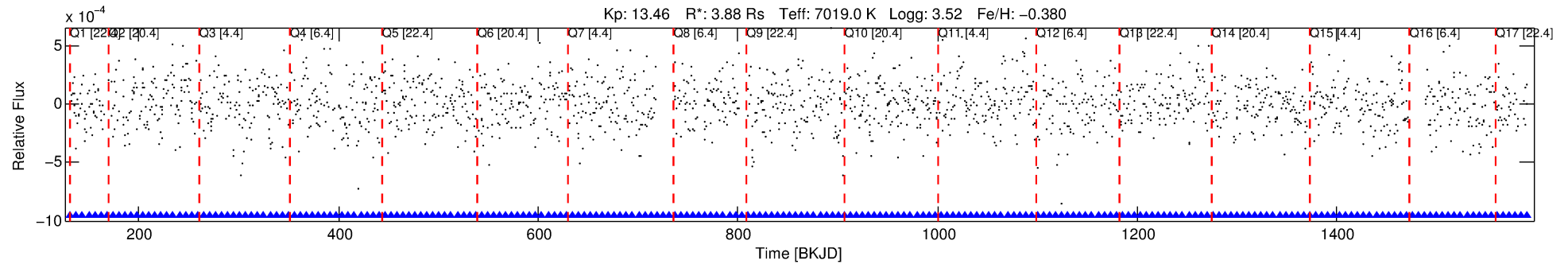
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011772510-03

No Significant Match Found

# DV One-Page Summary

KIC: 11772510 Candidate: 3 of 5 Period: 6.053 d



## DV Fit Results:

Period = 6.05334 [0.00005] d  
Epoch = 131.7446 [0.0051] BKJD  
Rp/R\* = 0.0190 [0.0157]  
a/R\* = 39.82 [189.75]  
b = 0.67 [3.97]  
Seff = 5234.19 [3281.20]  
Teq = 2169 [340] K  
Rp = 8.03 [7.35] Re  
a = 0.0790 [0.0302] AU  
Ag = 11.83 [21.20] [0.51 $\sigma$ ]  
Teffp = 6219 [2626] K [1.53 $\sigma$ ]

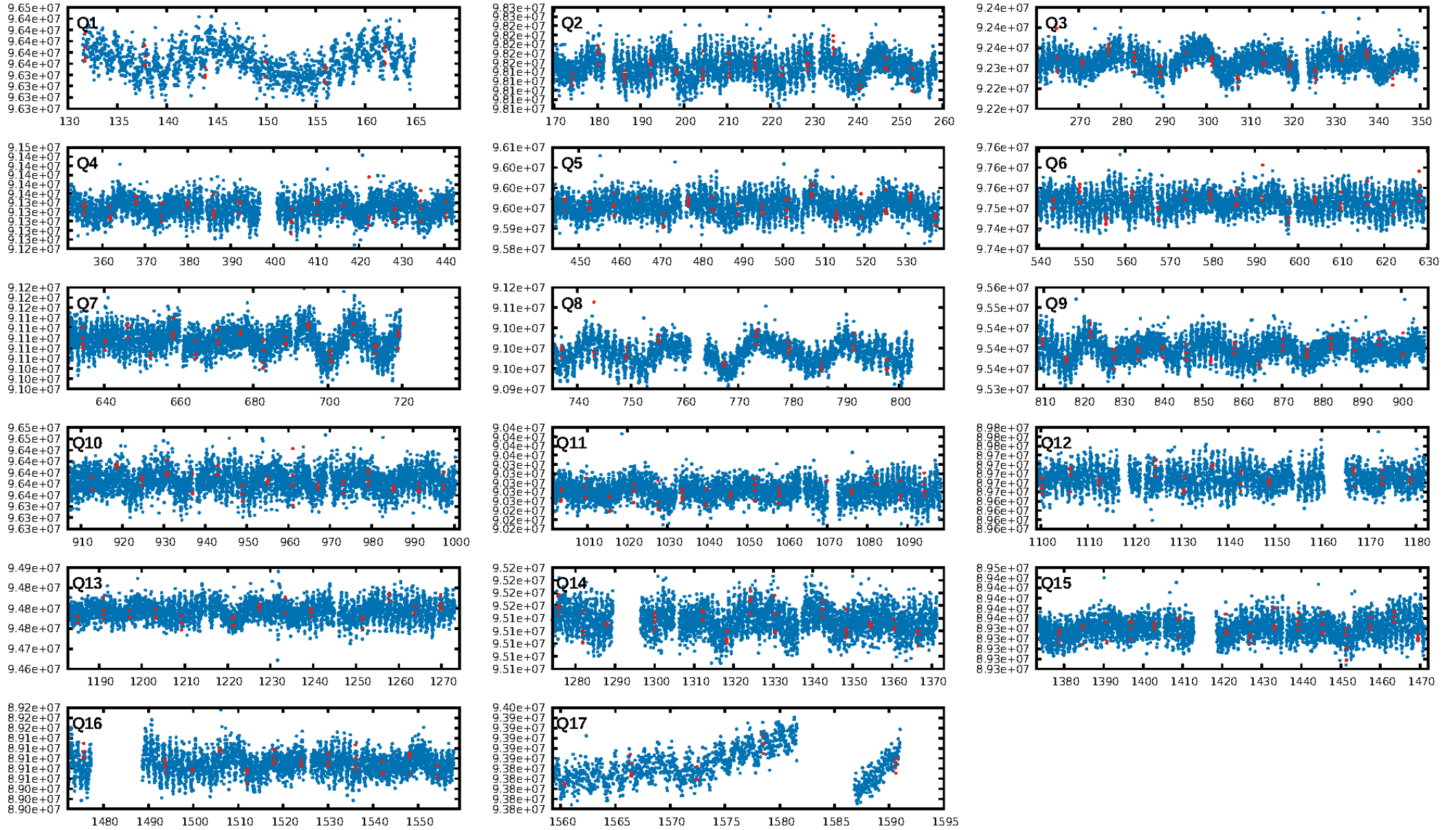
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [11.56 $\sigma$ ]  
LongPeriod-sig: 100.0% [36.11 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [16/16]  
GhostDiagnostic-chr: 0.6308  
Centroid-sig: 5.4%  
Centroid-so: 0.609 arcsec [1.80 $\sigma$ ]  
OotOffset-rm: 1.033 arcsec [1.00 $\sigma$ ]  
OotOffset-st: 2/4/2/2 [10]  
KicOffset-rm: 1.038 arcsec [0.97 $\sigma$ ]  
KicOffset-st: 2/4/2/2 [10]  
DiffImageQuality-fgm: 0.20 [2/10]  
DiffImageOverlap-fno: 0.94 [16/17]

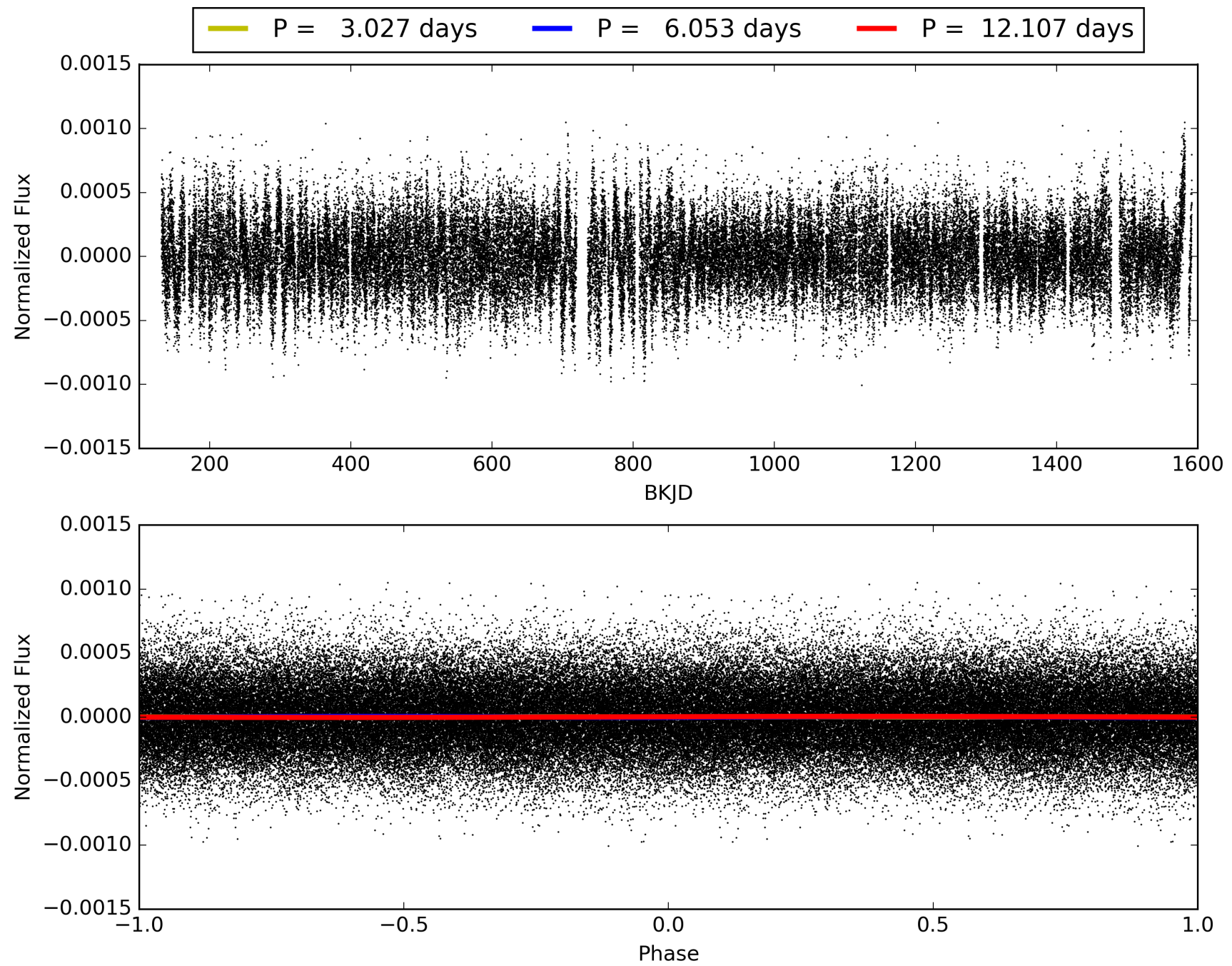
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:09:52 Z

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

# TCE 011772510-03, PDC Light Curves

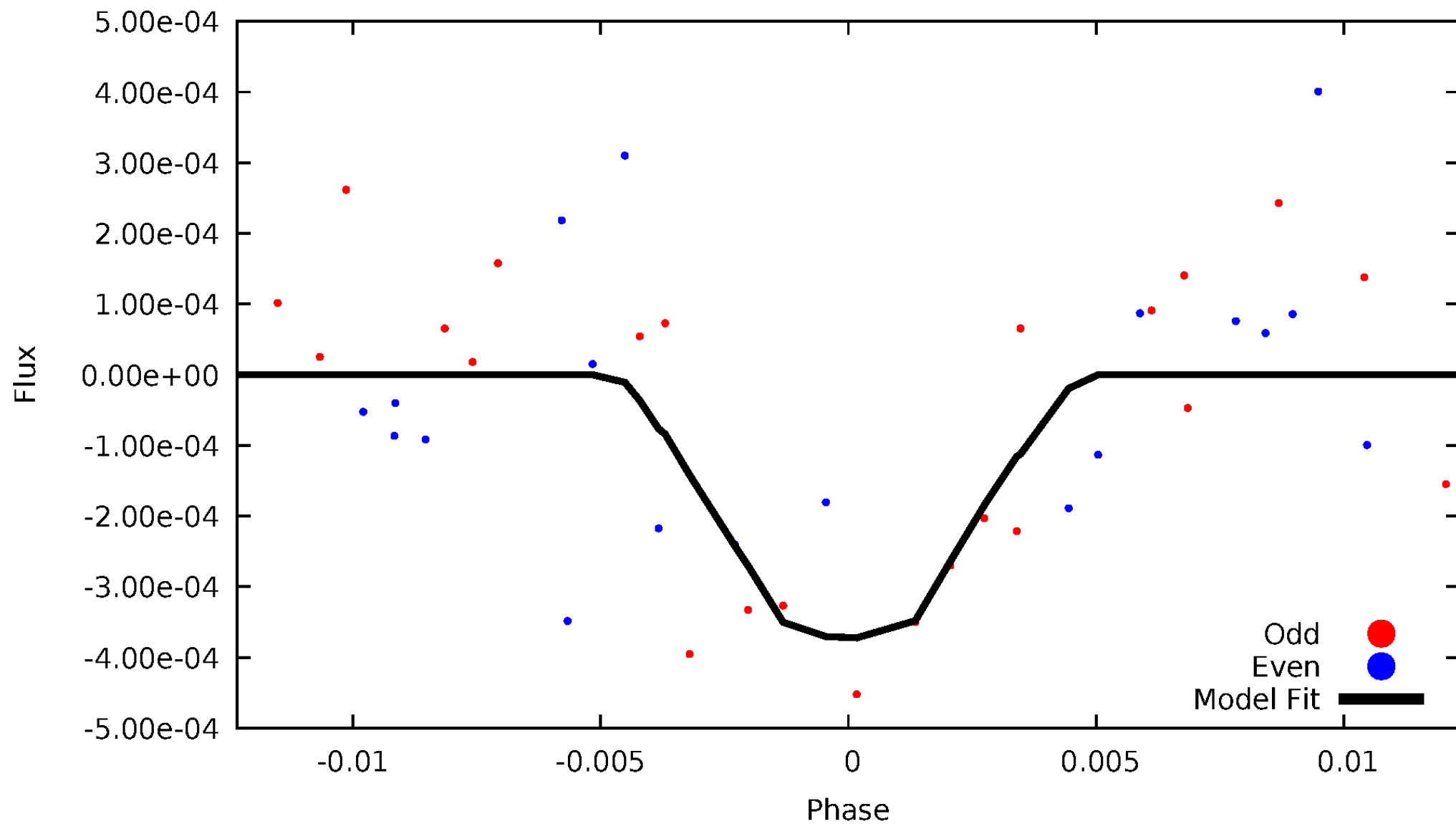


TCE 011772510-03



# DV Odd/Even

TCE 011772510-03





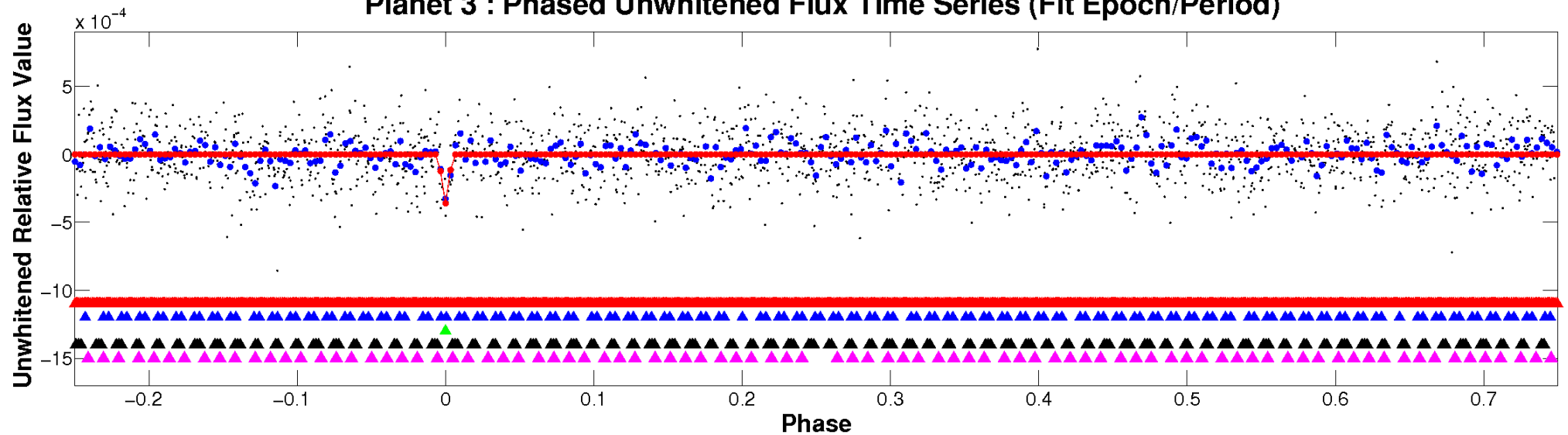


ALT Odd/Even

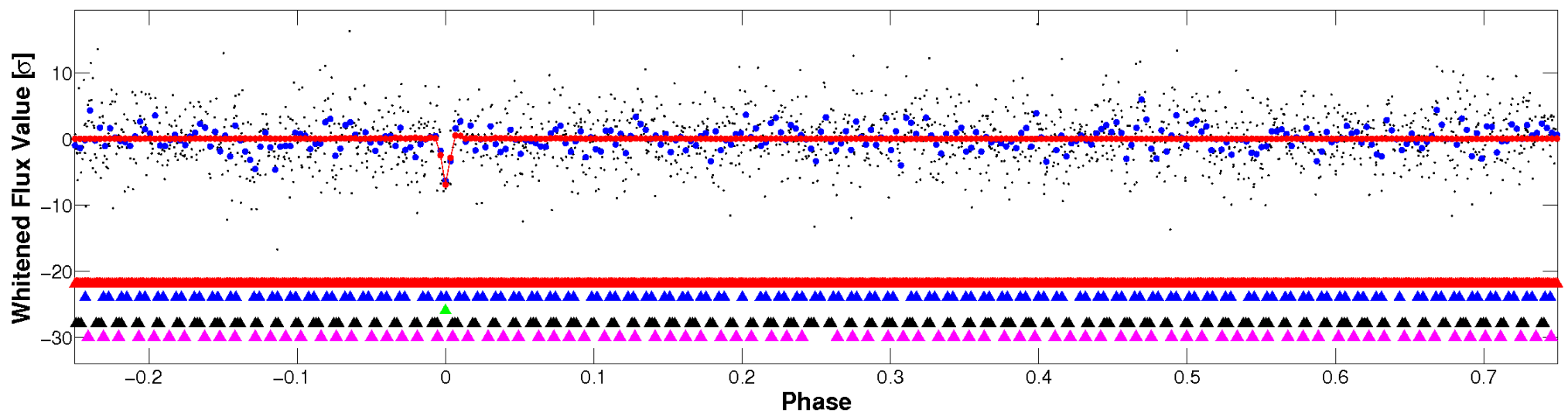
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

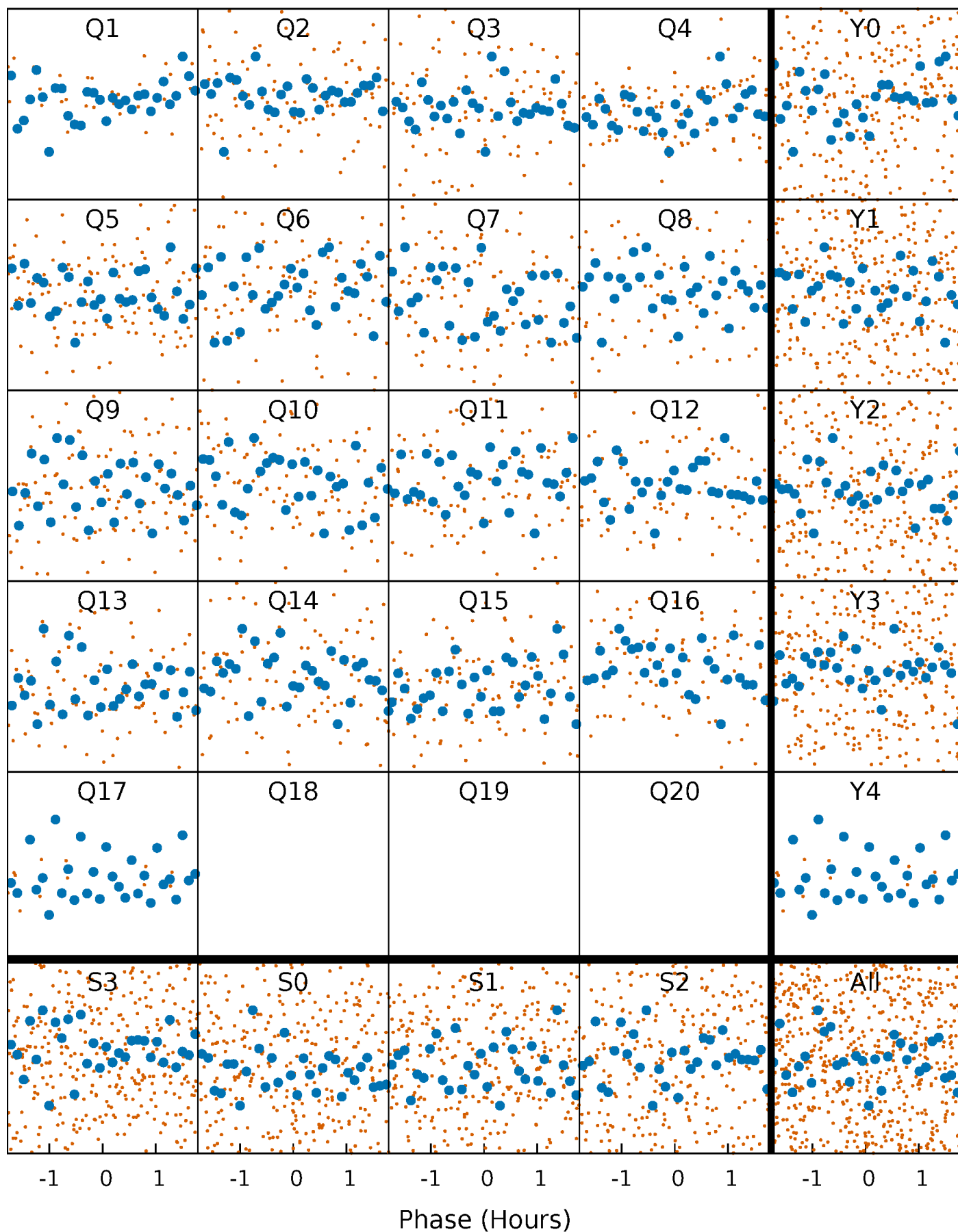


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



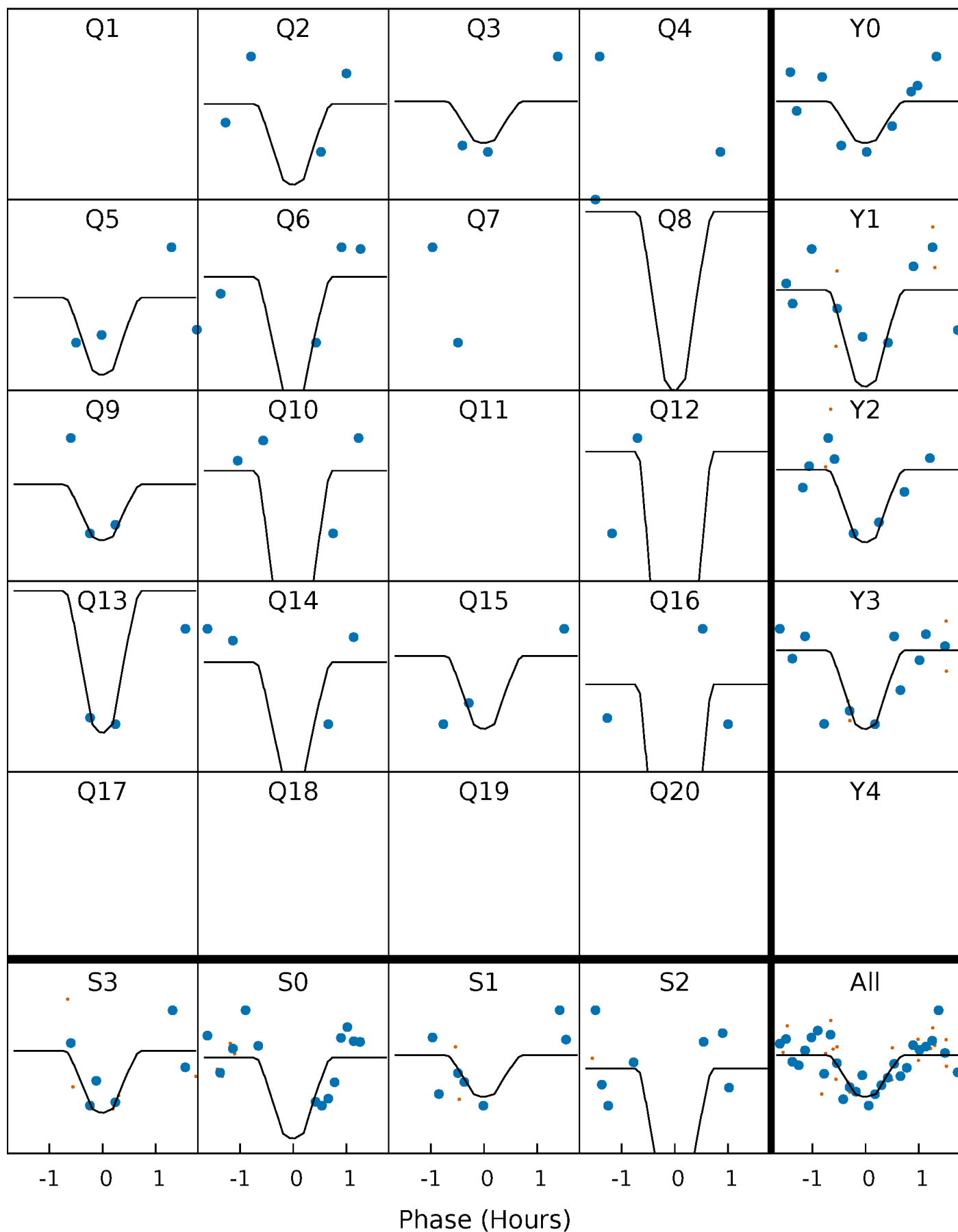
# PDC Quarter-Phased Transit Curves

TCE 011772510-03 P= 6.053339 Days  $T_0=131.744603$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 011772510-03 P= 6.053339 Days  $T_0=131.744603$  (BKJD)

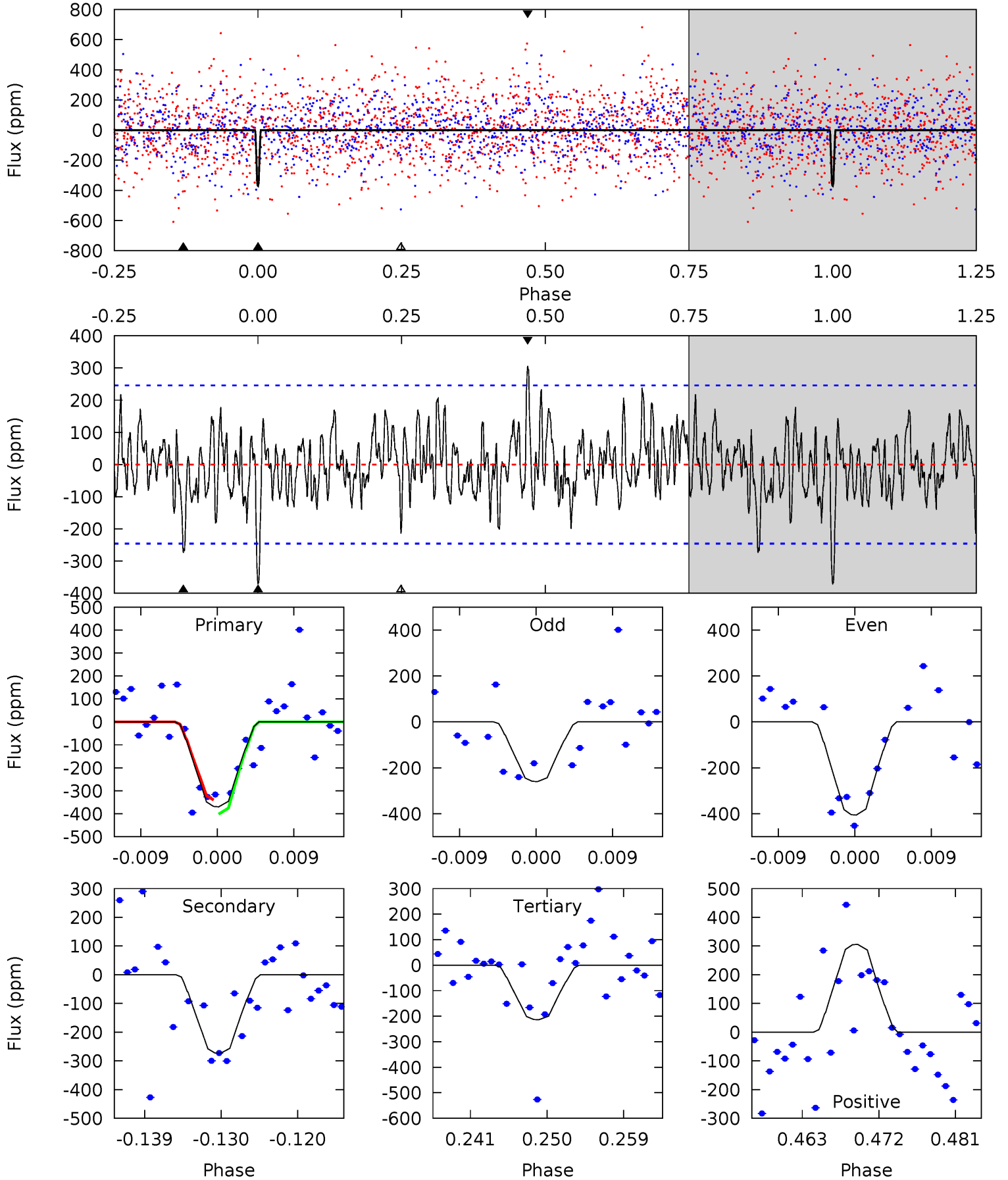


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

011772510-03, P = 6.053339 Days, E = 131.744603 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.59	5.62	4.39	6.28	5.04	2.60	1.67	3.21	1.31	1.24	-0.66	1.37	0.99	0.45	0.63





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 011772510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7019^{+190}_{-232}$	$3.515^{+0.360}_{-0.090}$	$-0.380^{+0.300}_{-0.250}$	$3.875^{+0.385}_{-1.539}$	$1.794^{+0.177}_{-0.383}$	$0.043^{+0.117}_{-0.012}$
	+3%/-3%	+10%/-3%	+79%/-66%	+10%/-40%	+10%/-21%	+270%/-28%
Source	PHO1	FLK73	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 011772510-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-274 \pm 49$	$7.71^{+6.47}_{-4.71}$	$2973^{+180}_{-291}$	$6214^{+5512}_{-1433}$	$15^{+89}_{-11}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

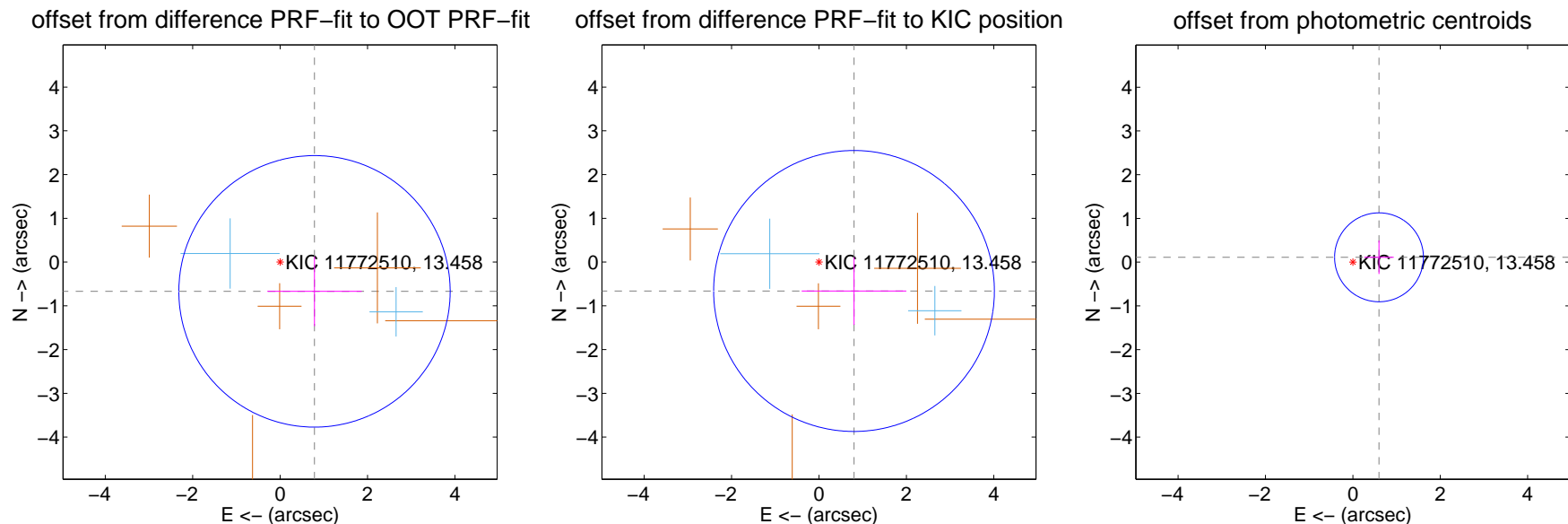
## DV Centroid Data

Supplemental centroid analysis for 011772510-03. Kepler magnitude: 13.46. Transit SNR 18.07

There are 2 quarters with good PRF difference image offsets

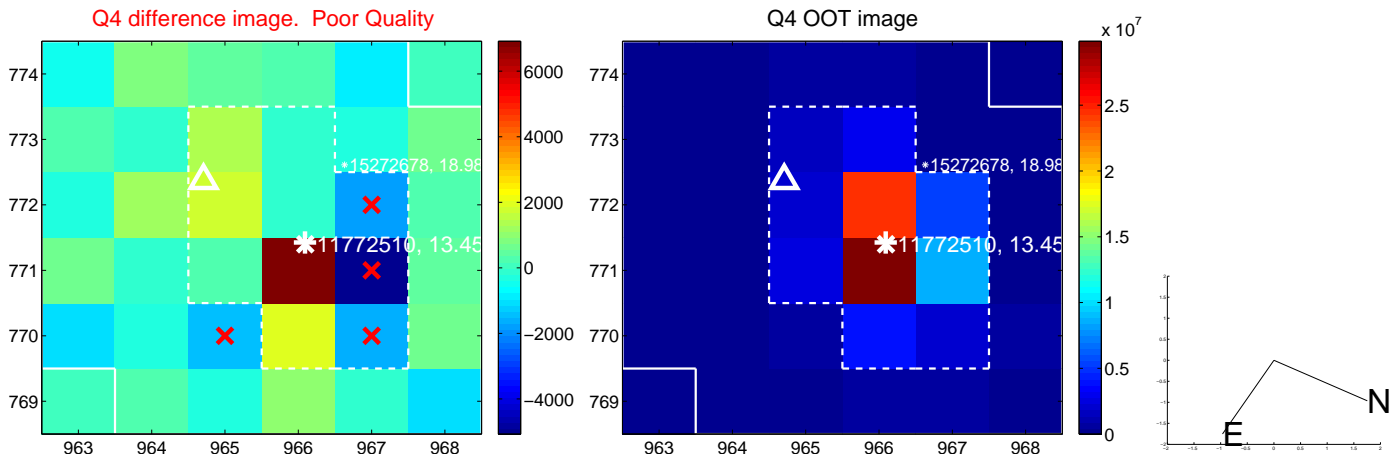
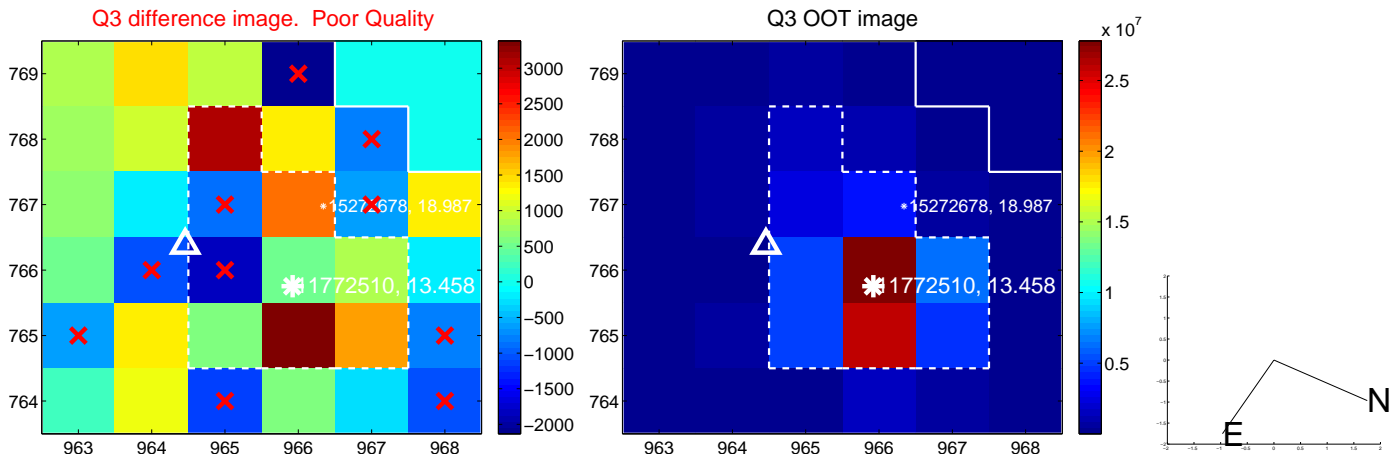
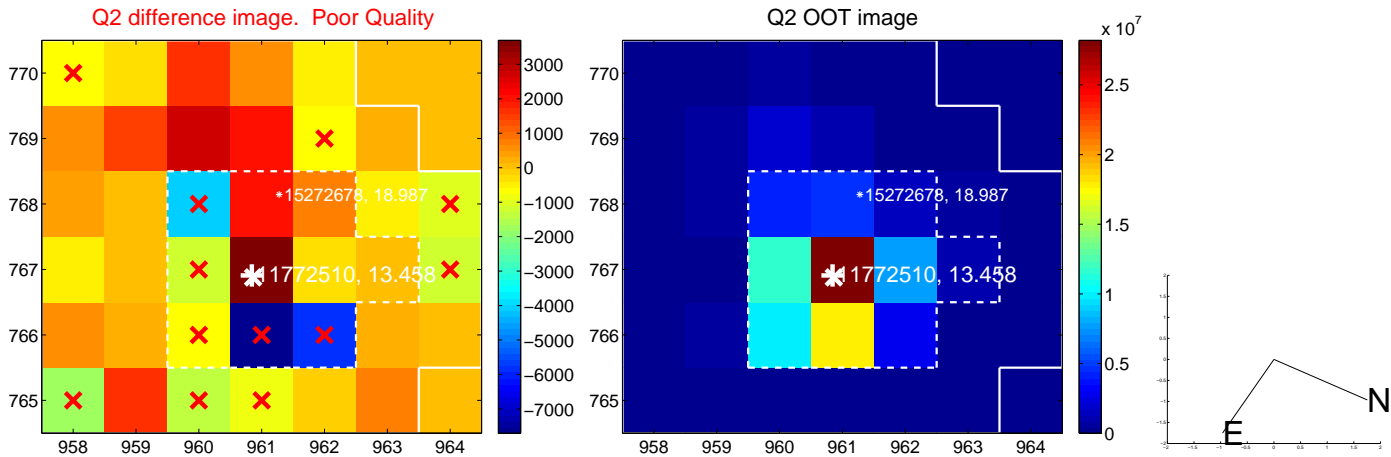
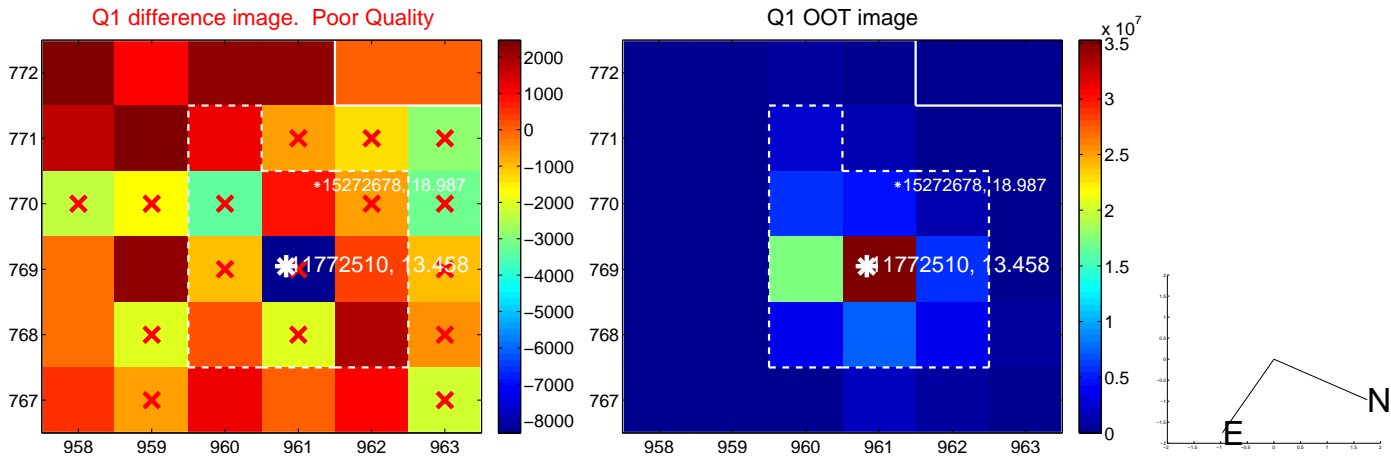
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.033 \pm 1.034$	1.00	$-0.787 \pm 1.079$	$-0.669 \pm 0.795$
PRF-fit source offset from KIC position	$1.038 \pm 1.070$	0.97	$-0.801 \pm 1.198$	$-0.661 \pm 0.773$
photometric centroid source offset	$0.61 \pm 0.34$	1.80	$-0.60 \pm 0.34$	$0.11 \pm 0.38$

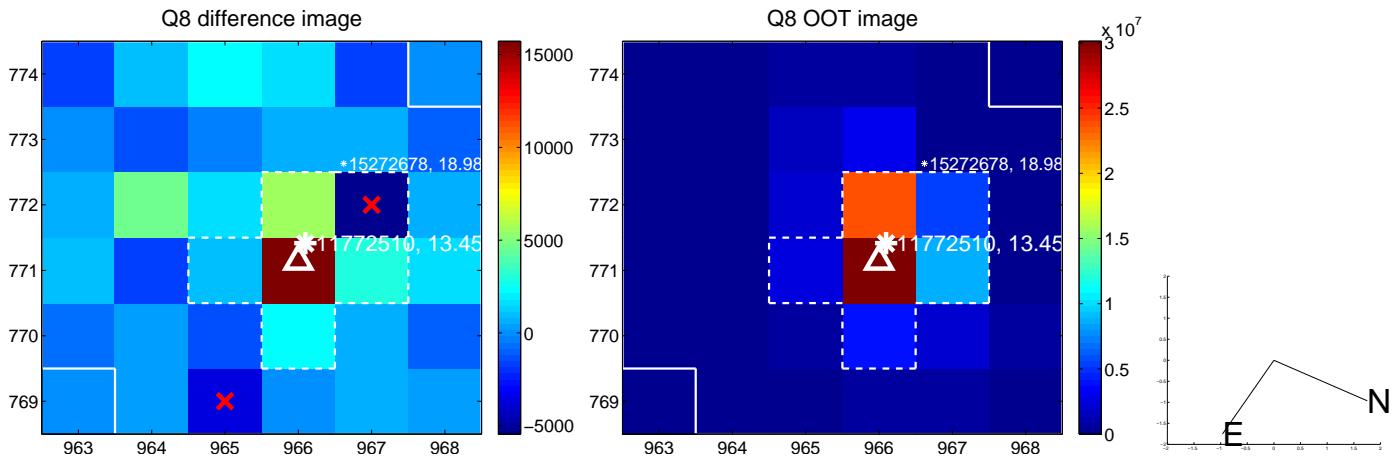
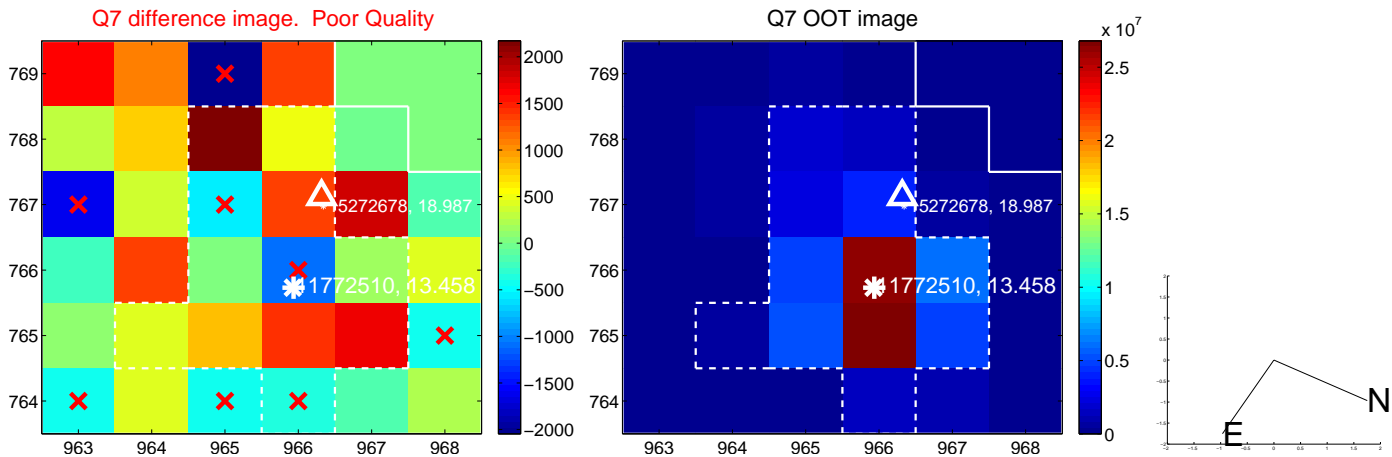
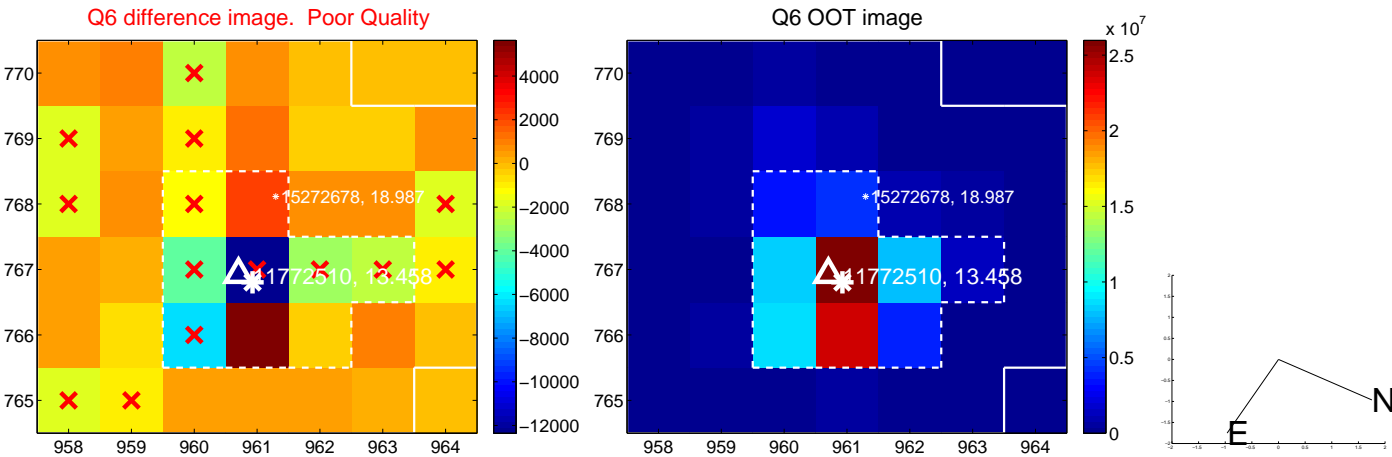
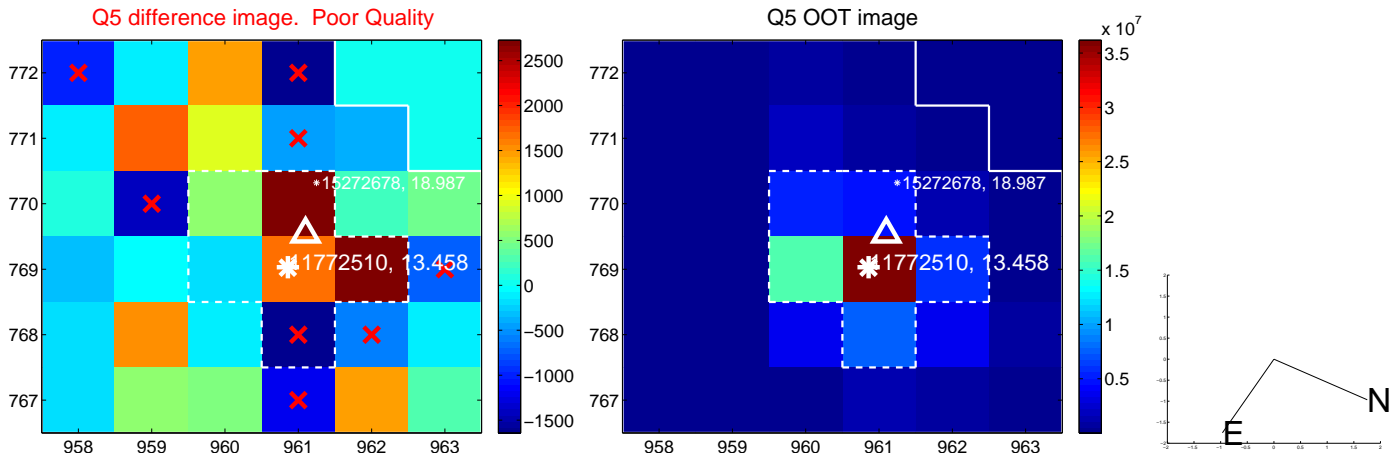


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

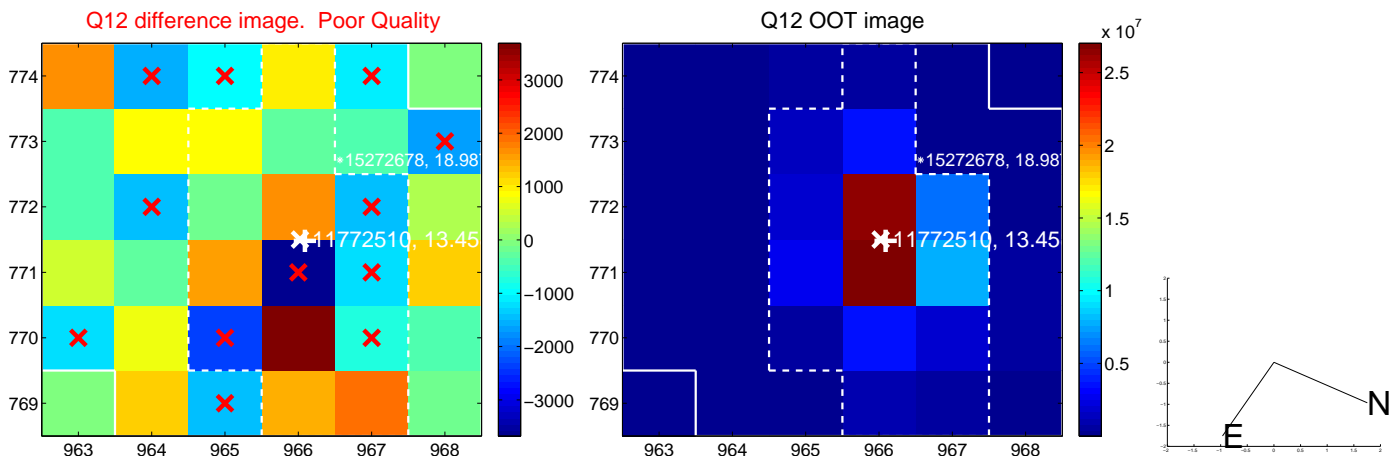
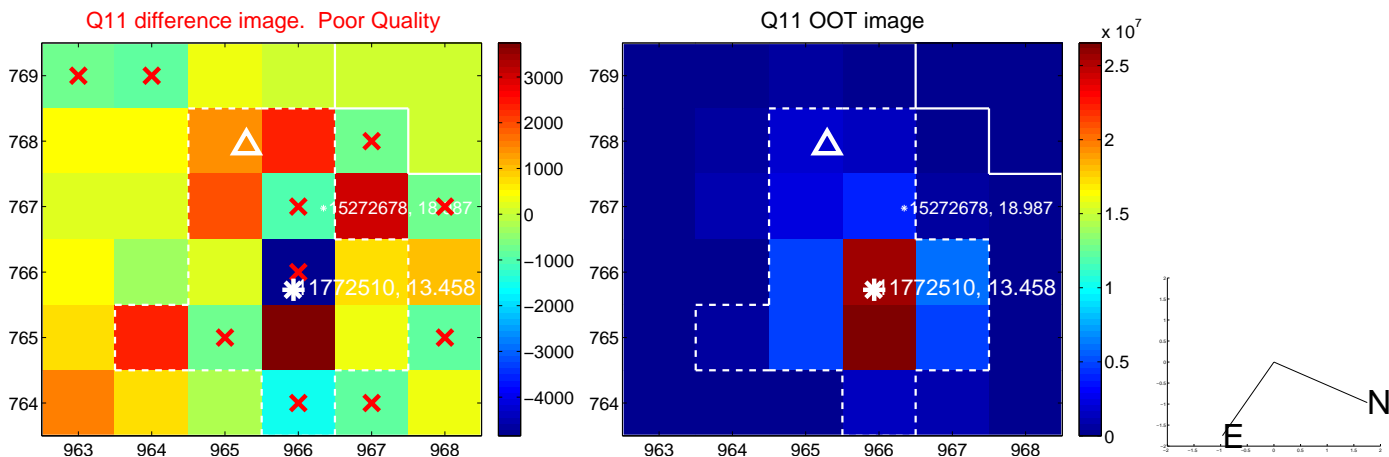
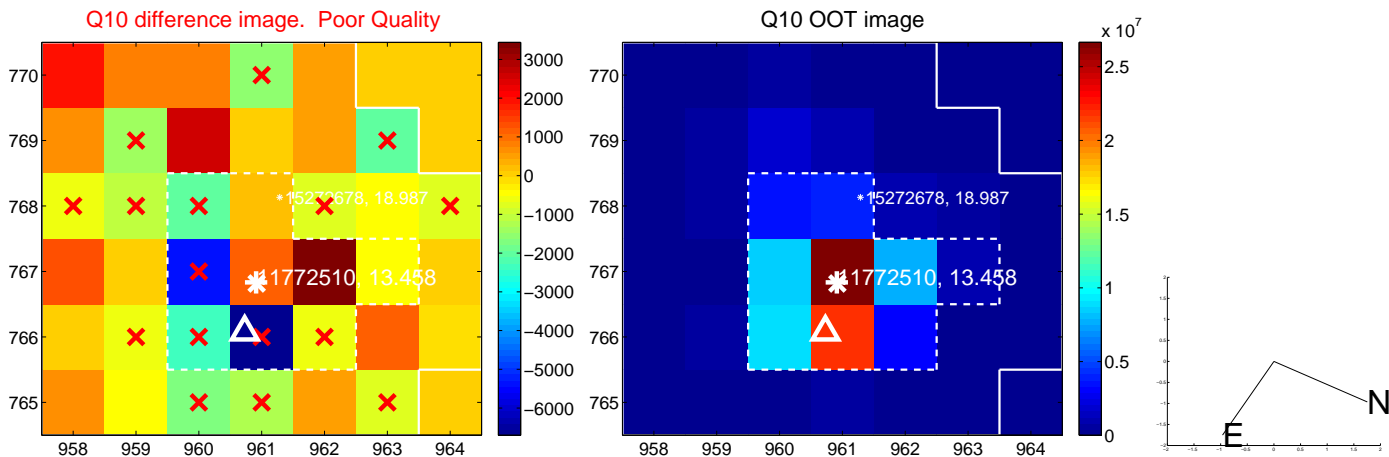
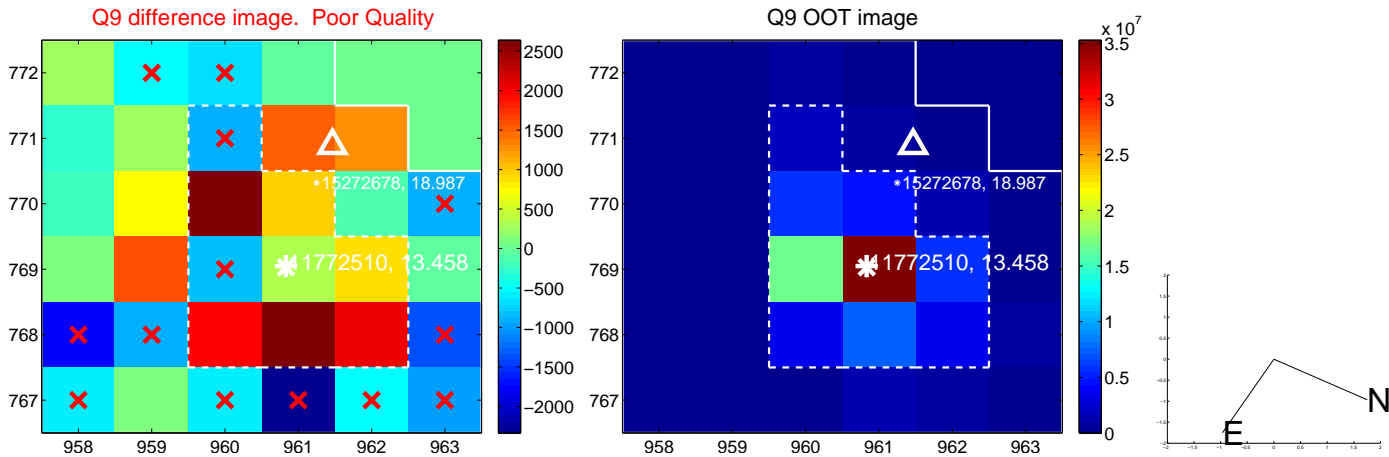
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



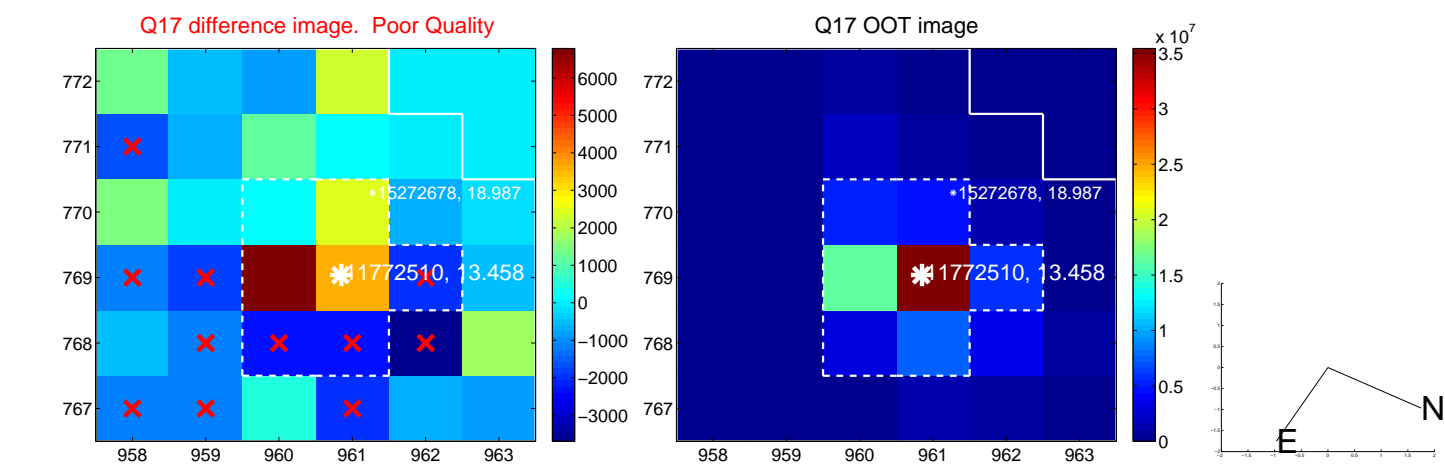
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



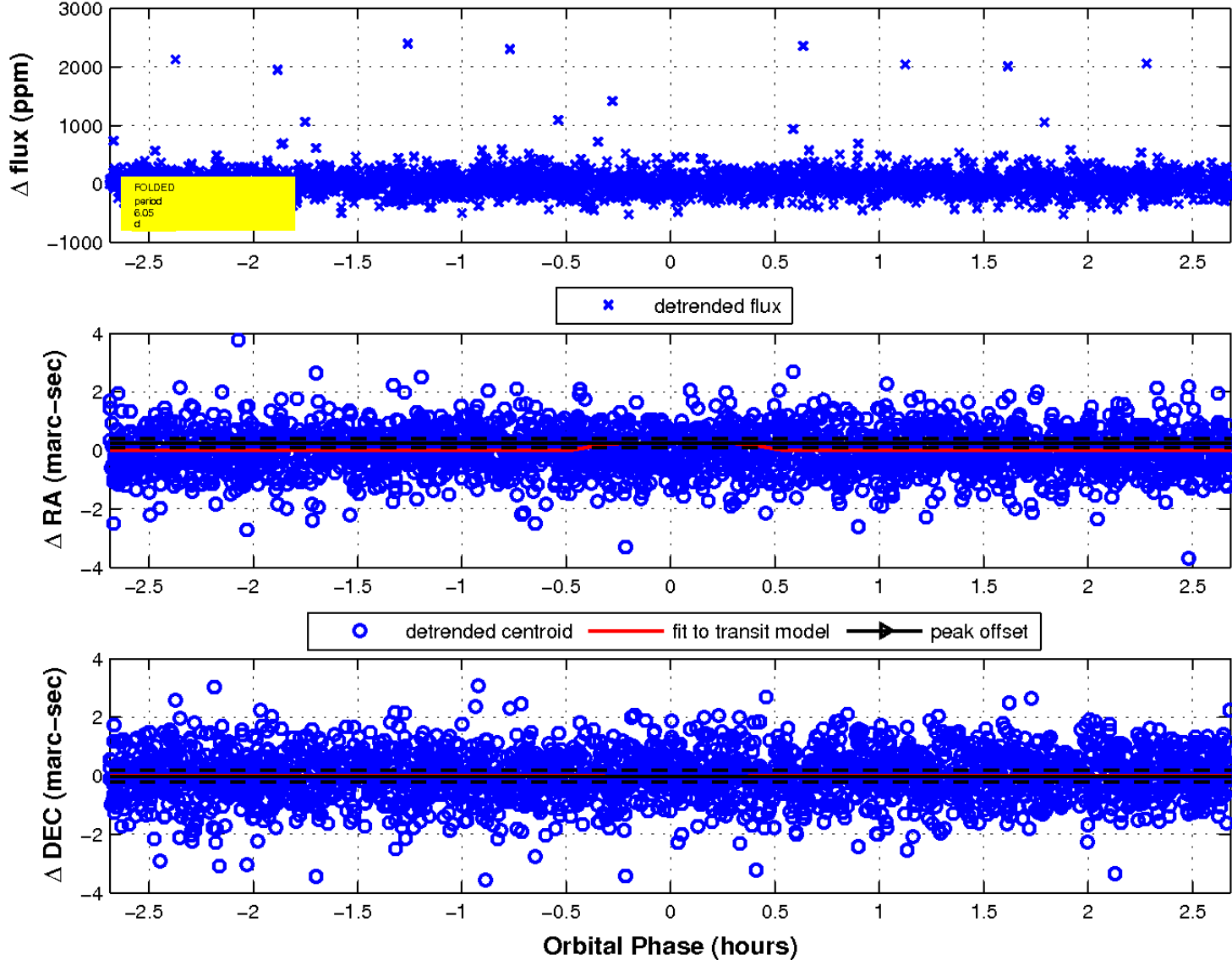




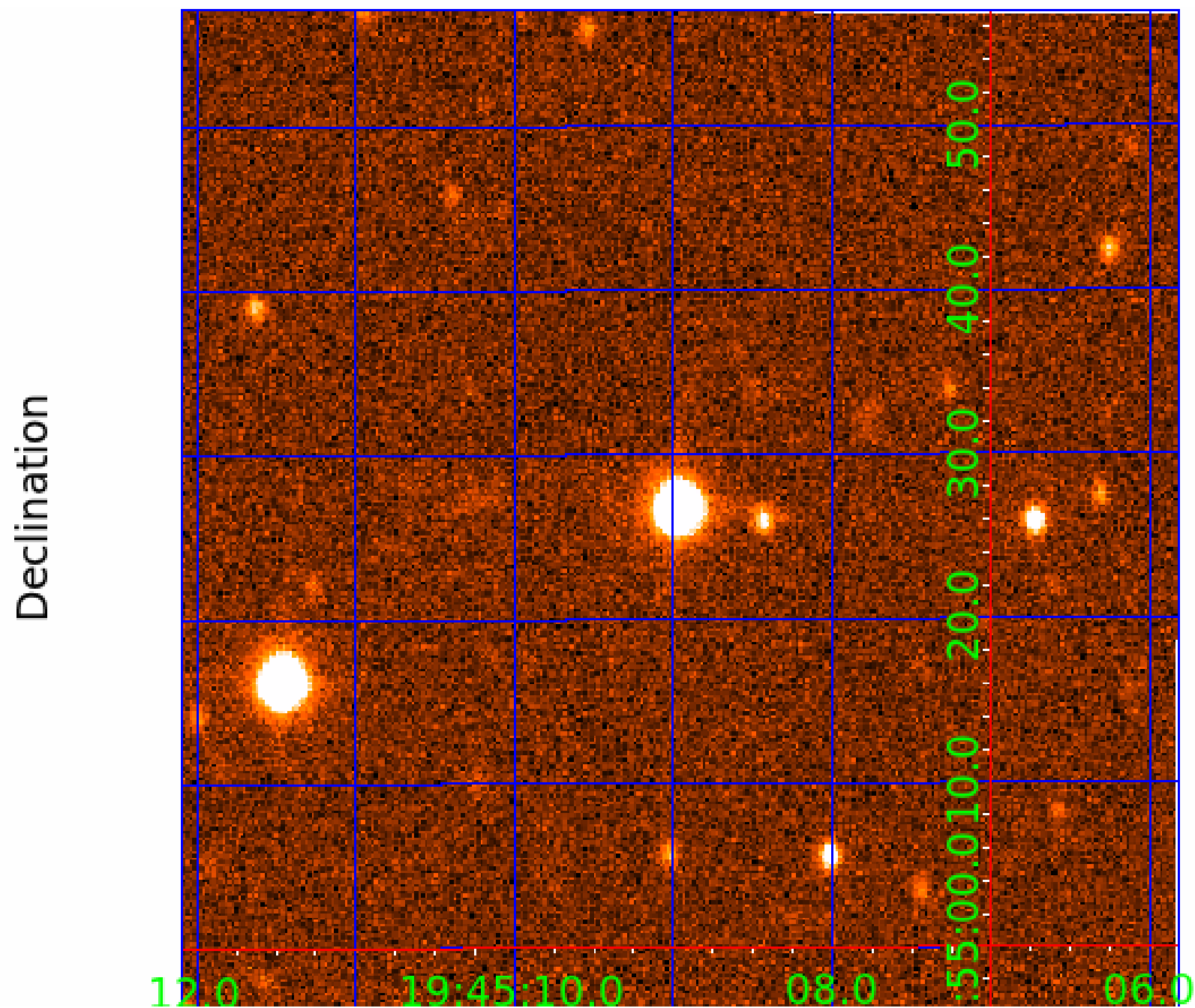
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 3 of 5



UKIRT Image



# KIC 011772510

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011772510-01	OBS	No	1.290730	131.893810	19.6	9.845	8.5	8.7	3.88	7019	2.05	41089.33
011772510-02	OBS	No	9.424547	133.666991	278.2	1.754	19.3	19.4	3.88	7019	6.56	2900.65
011772510-03	OBS	No	6.053339	131.744603	372.5	0.896	17.8	18.1	3.88	7019	8.03	5234.19
011772510-04	OBS	No	7.909558	139.301180	336.7	0.848	15.5	15.4	3.88	7019	7.44	3664.15
011772510-05	OBS	No	16.527884	137.682870	1122.2	1.500	18.5	-1.0	3.88	7019	13.16	1371.58

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011772510-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011772510-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011772510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—NO_FITS—CENT_NOFITS

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

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

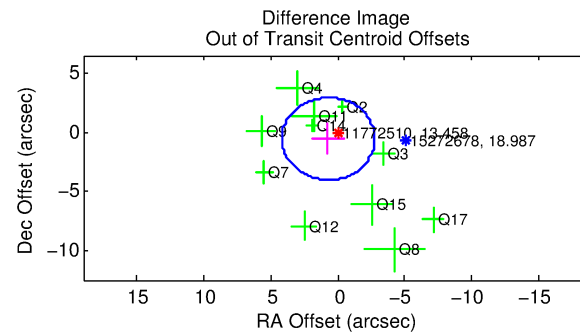
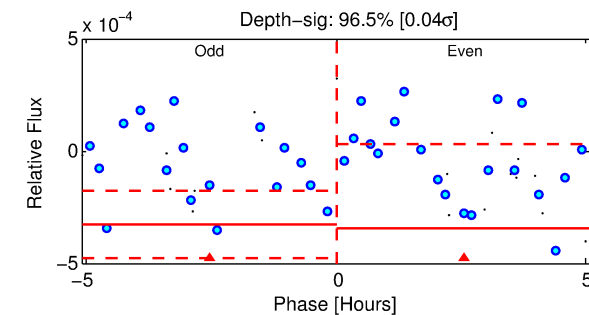
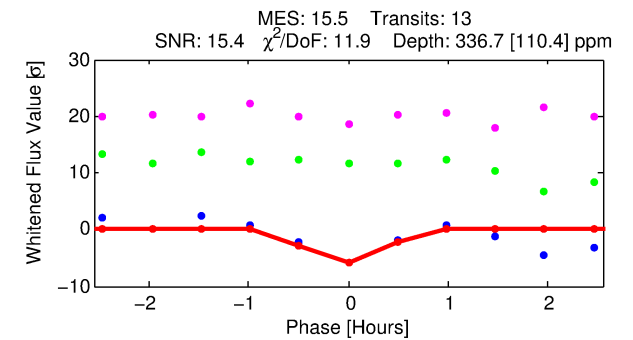
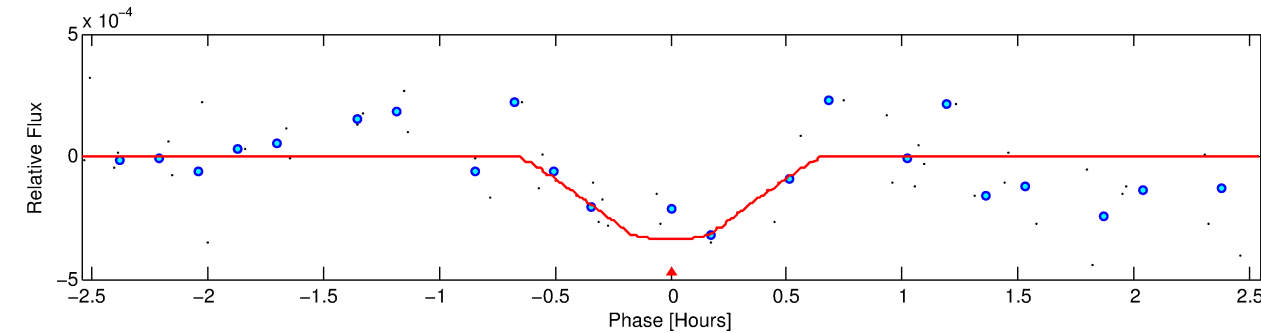
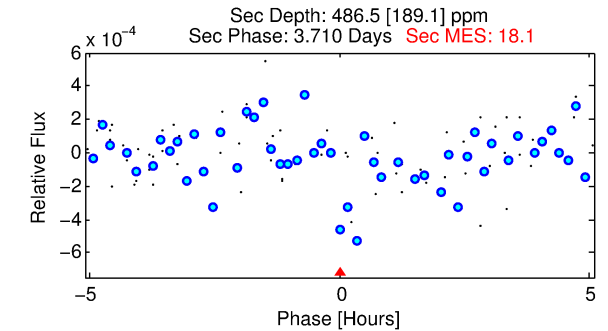
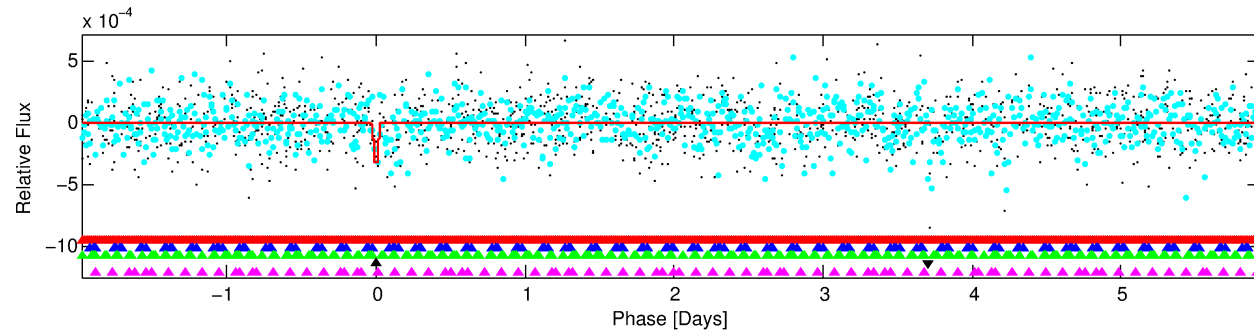
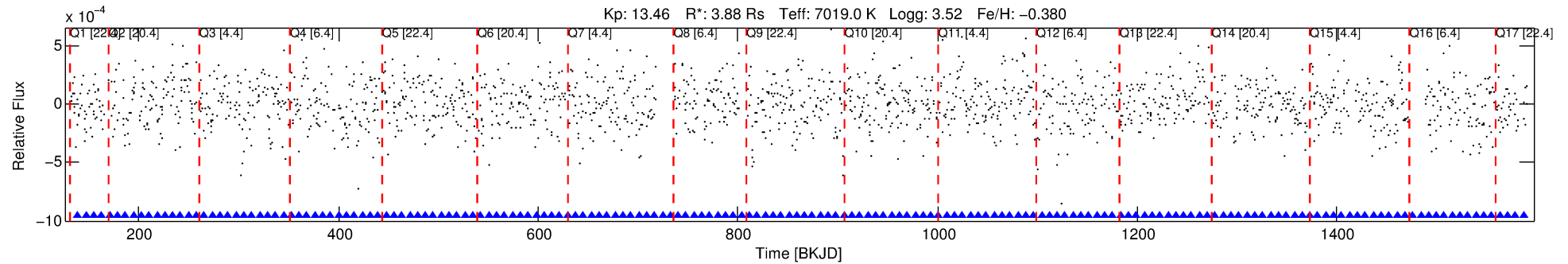
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011772510-04

No Significant Match Found

# DV One-Page Summary

KIC: 11772510 Candidate: 4 of 5 Period: 7.910 d



## DV Fit Results:

Period = 7.90956 [0.00009] d  
Epoch = 139.3012 [0.0084] BKJD  
Rp/R\* = 0.0176 [0.0286]  
a/R\* = 63.36 [561.09]  
b = 0.50 [13.84]  
Seff = 3664.15 [2296.97]  
Teq = 1984 [311] K  
Rp = 7.44 [12.46] Re  
a = 0.0944 [0.0361] AU  
Ag = 43.05 [143.41] [0.29 $\sigma$ ]  
Teffp = 7857 [6437] K [0.91 $\sigma$ ]

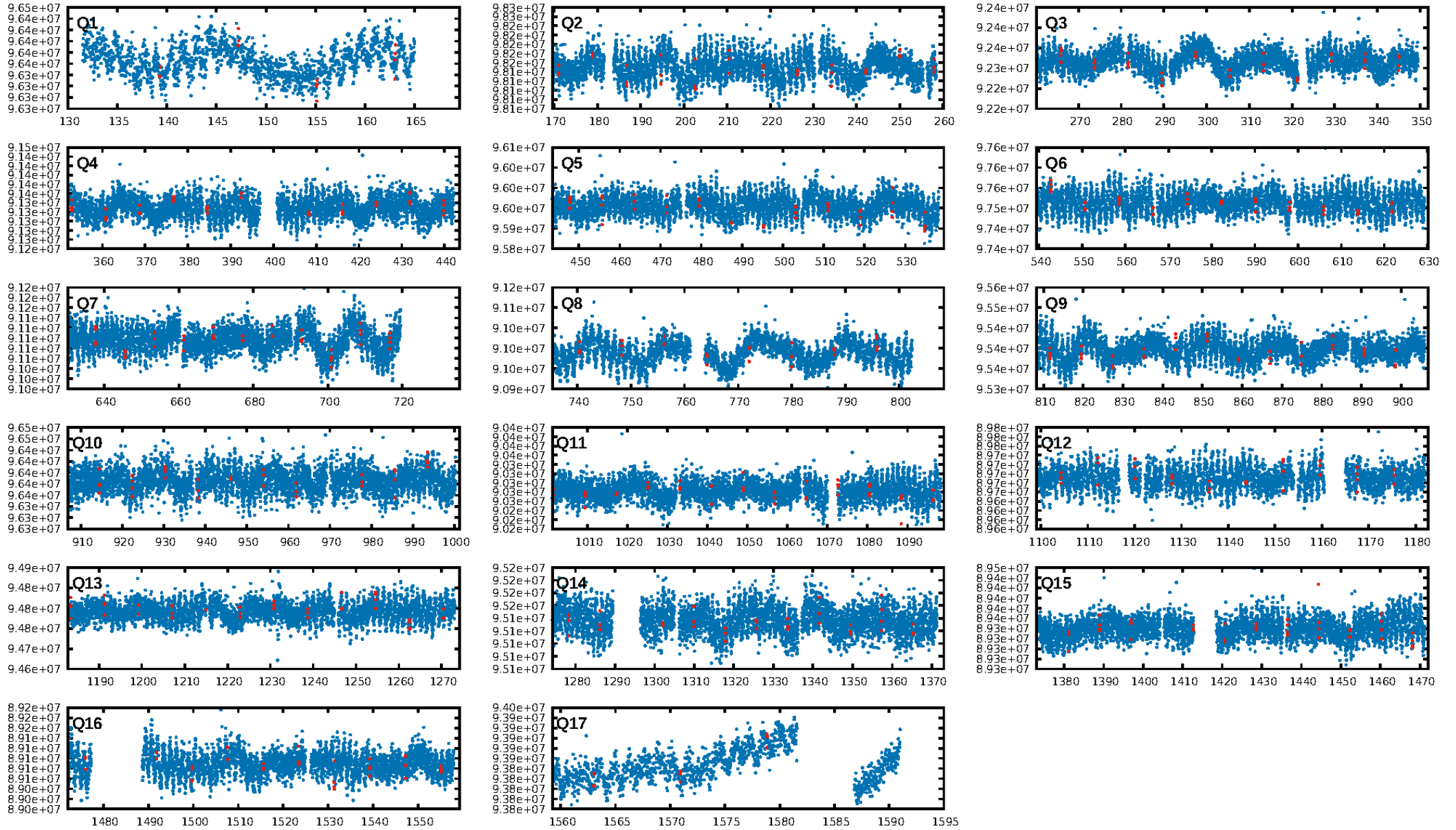
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [36.11 $\sigma$ ]  
LongPeriod-sig: 100.0% [18.66 $\sigma$ ]  
**ModelChiSquare2-sig: 0.0%**  
ModelChiSquareGof-sig: 1.9%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [13/13]  
GhostDiagnostic-chr: 1.941  
Centroid-sig: 10.9%  
Centroid-so: 0.644 arcsec [1.42 $\sigma$ ]  
OotOffset-rm: 0.894 arcsec [0.77 $\sigma$ ]  
KicOffset-rm: 0.865 arcsec [0.75 $\sigma$ ]  
OotOffset-st: 2/4/3/2 [11]  
KicOffset-st: 2/4/3/2 [11]  
DiffImageQuality-fgm: 0.09 [1/11]  
DiffImageOverlap-fno: 0.88 [15/17]

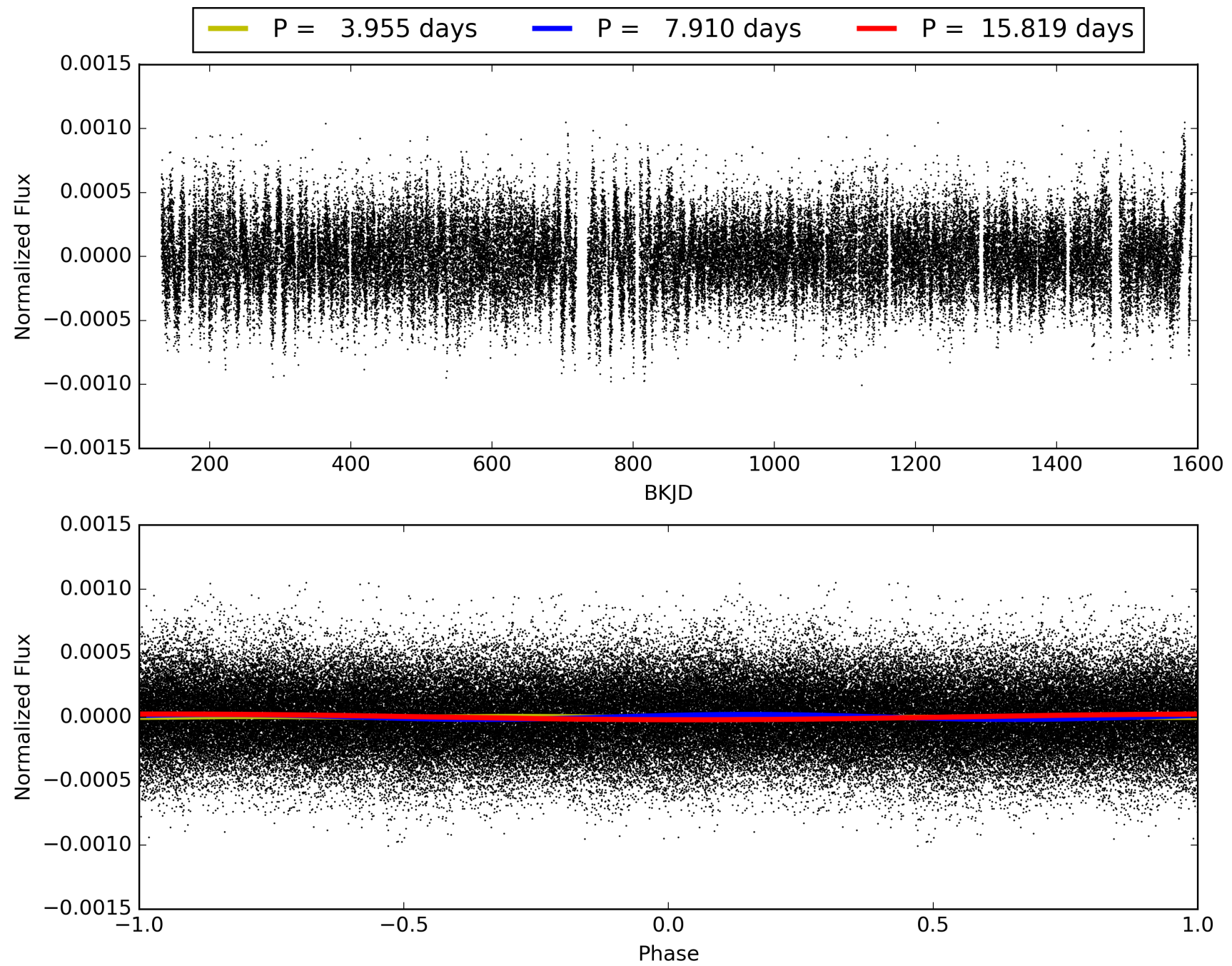
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:09:55 Z

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

# TCE 011772510-04, PDC Light Curves



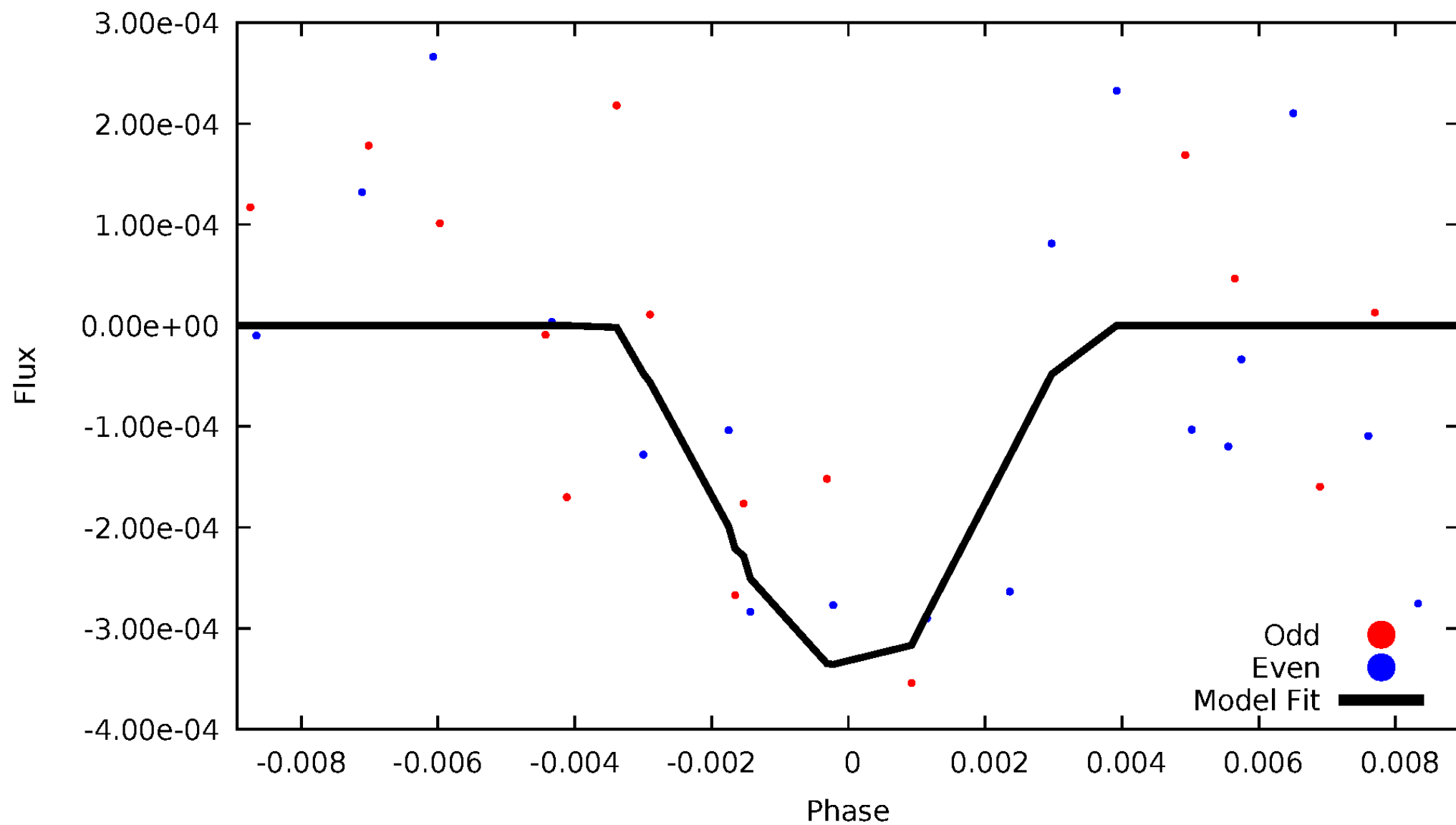
TCE 011772510-04





# DV Odd/Even

TCE 011772510-04



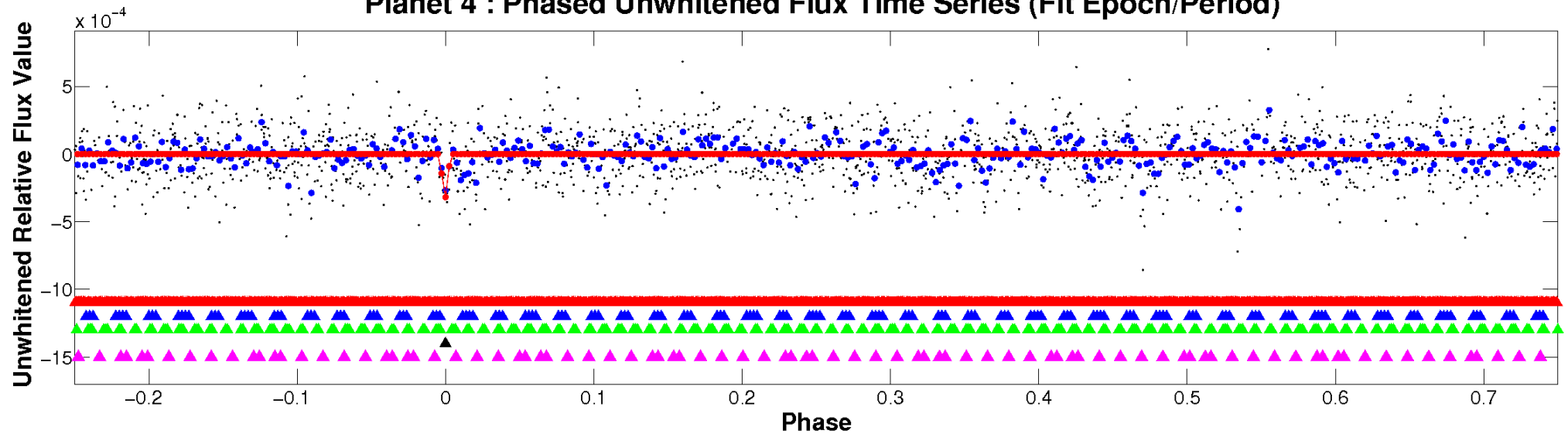


ALT Odd/Even

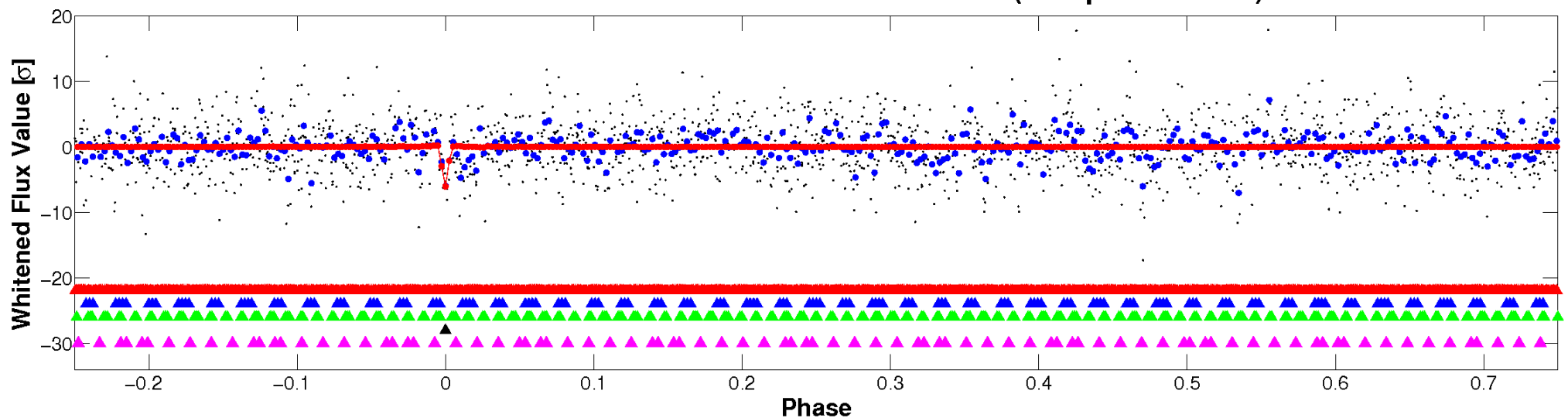
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

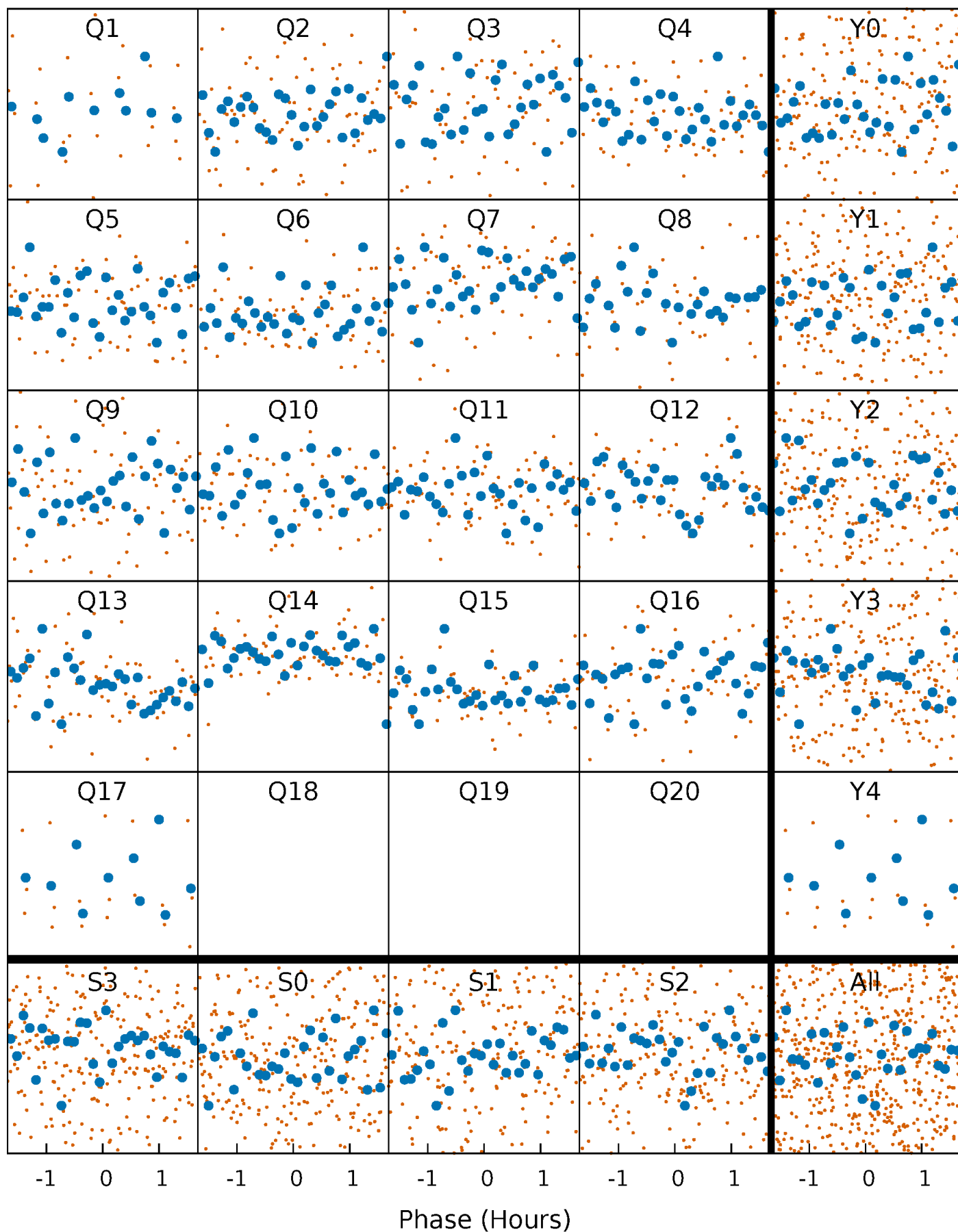


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



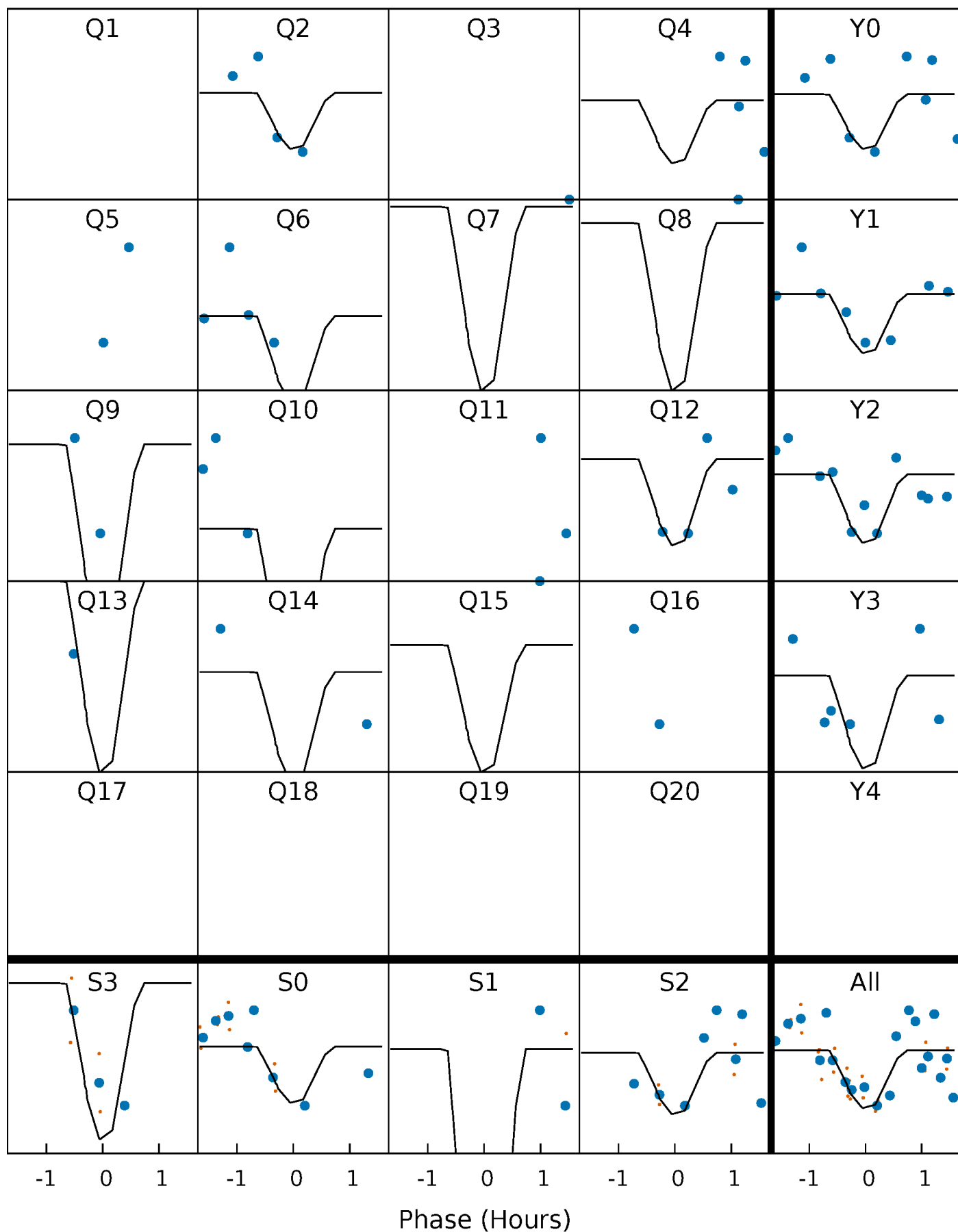
# PDC Quarter-Phased Transit Curves

TCE 011772510-04     $P = 7.909558$  Days     $T_0 = 139.301180$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 011772510-04 P= 7.909558 Days  $T_0=139.301180$  (BKJD)



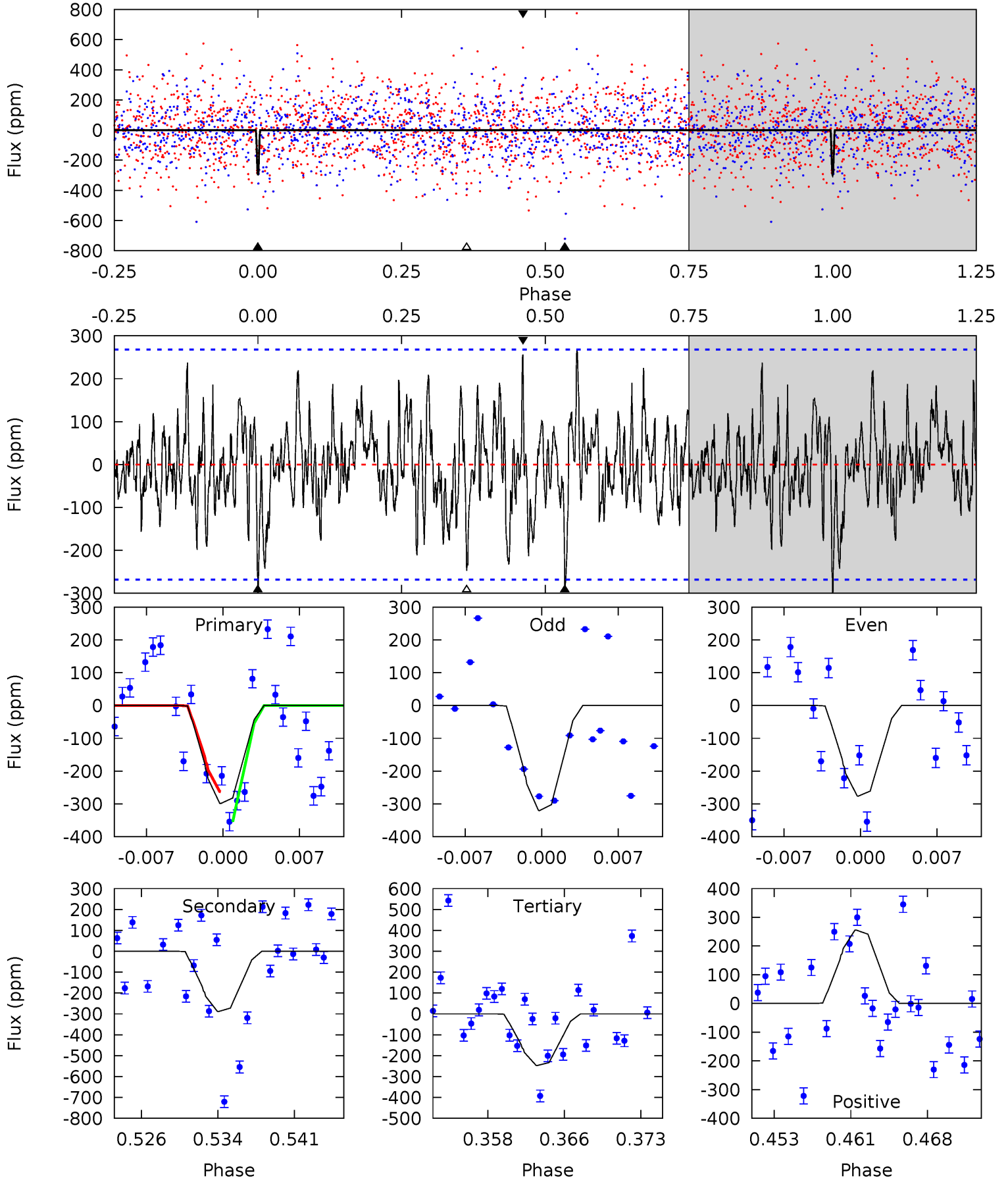
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

011772510-04, P = 7.909558 Days, E = 131.391622 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
5.67	5.48	4.69	4.86	5.09	2.68	1.64	0.98	0.82	0.78	0.62	0.41	0.89	0.47	0.82



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 011772510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7019^{+190}_{-232}$	$3.515^{+0.360}_{-0.090}$	$-0.380^{+0.300}_{-0.250}$	$3.875^{+0.385}_{-1.539}$	$1.794^{+0.177}_{-0.383}$	$0.043^{+0.117}_{-0.012}$
	+3%/-3%	+10%/-3%	+79%/-66%	+10%/-40%	+10%/-21%	+270%/-28%
Source	PHO1	FLK73	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 011772510-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-289 \pm 53$	$10.55^{+10.06}_{-7.02}$	$2727^{+156}_{-266}$	$5507^{+4863}_{-1372}$	$13^{+97}_{-10}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

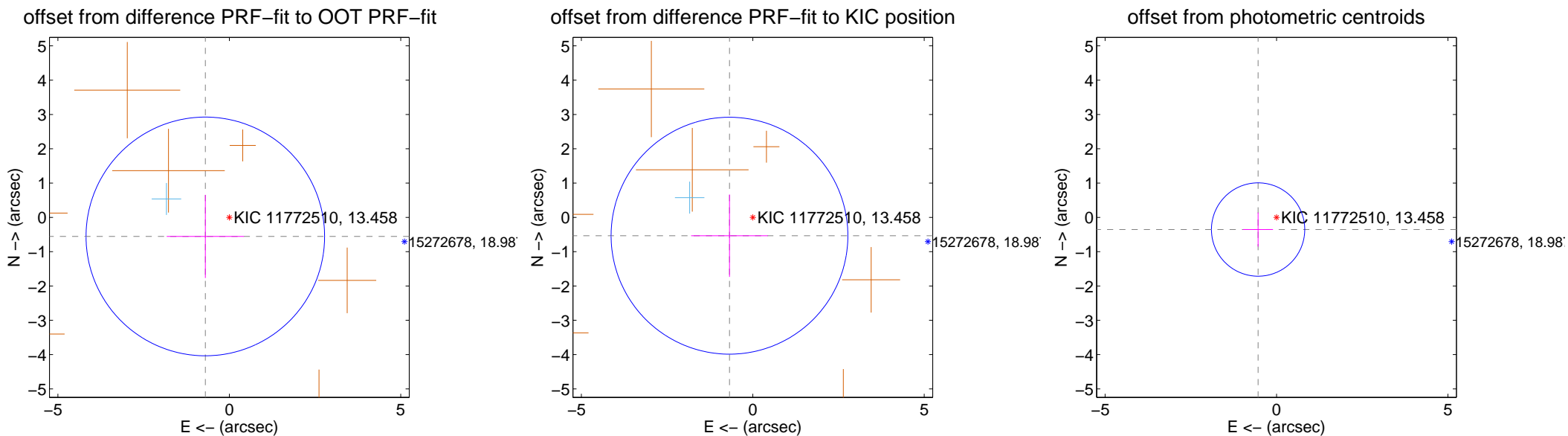
## DV Centroid Data

Supplemental centroid analysis for 011772510-04. Kepler magnitude: 13.46. Transit SNR 15.39

There are 1 quarters with good PRF difference image offsets

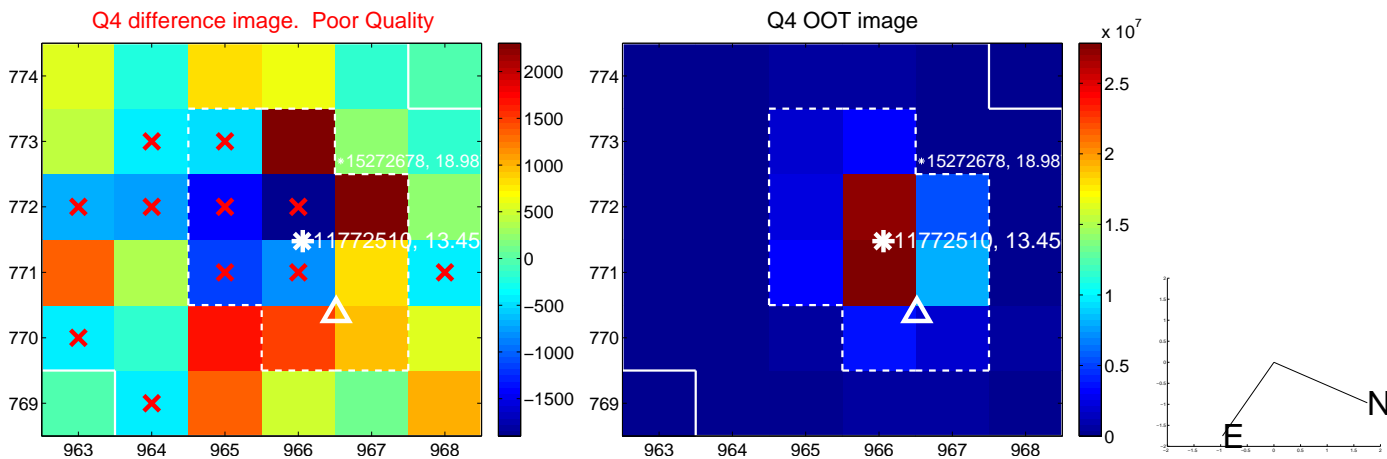
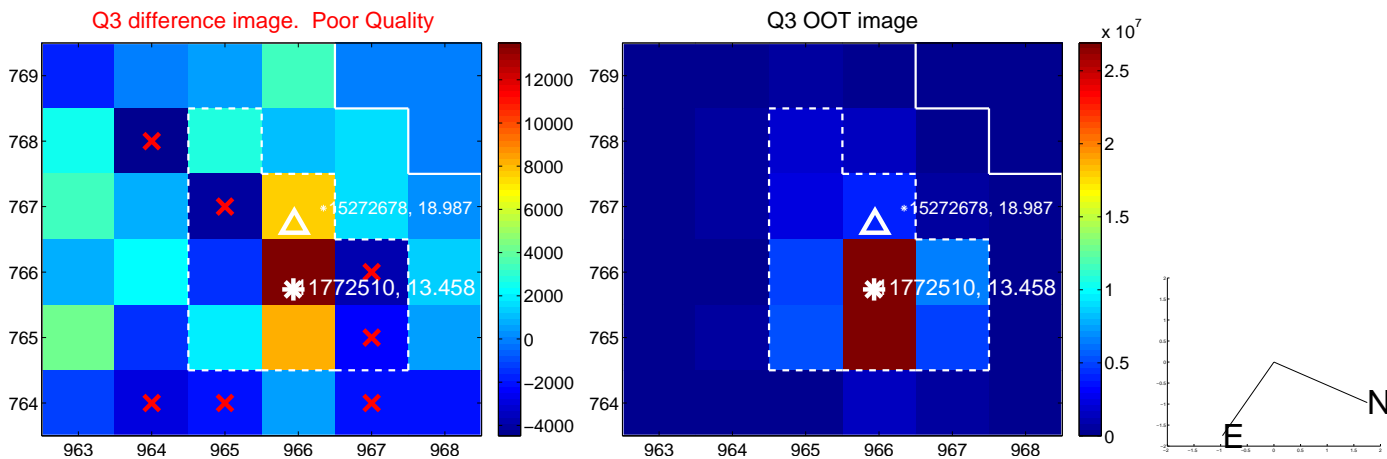
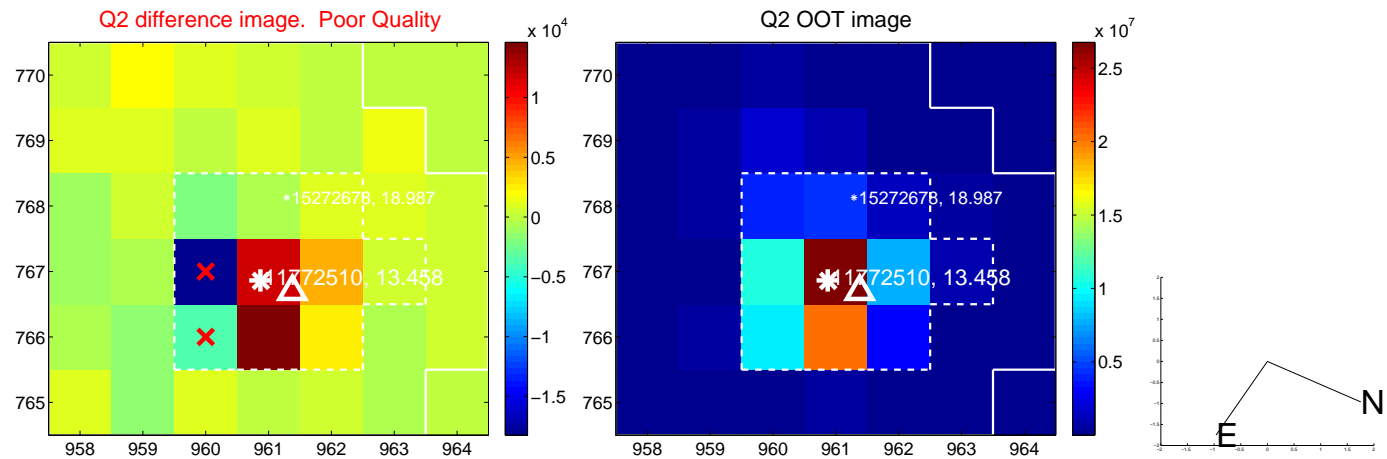
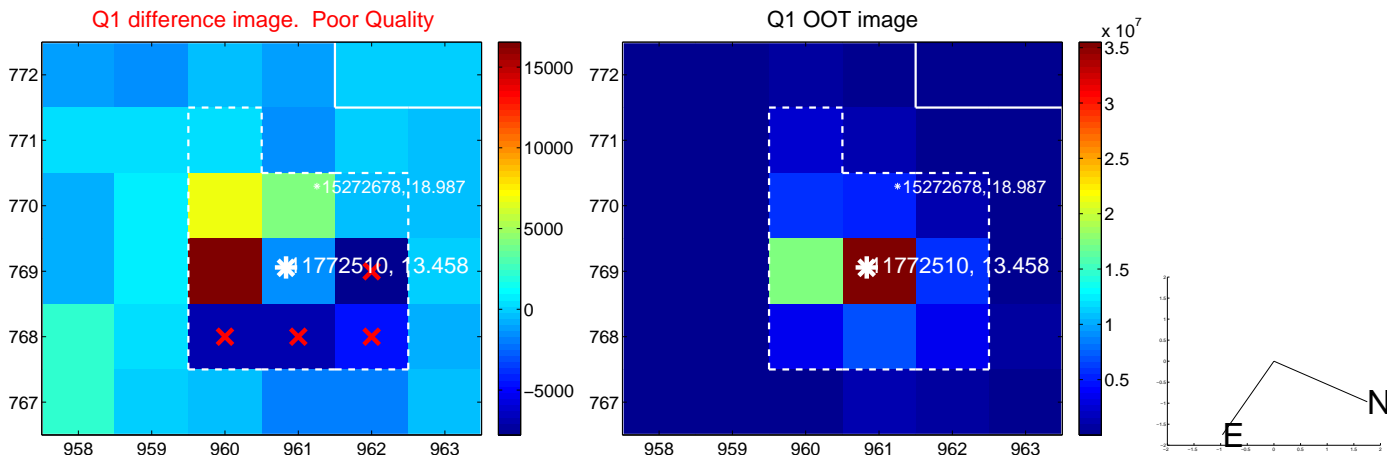
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.894 \pm 1.160$	0.77	$0.700 \pm 1.126$	$-0.555 \pm 1.212$
PRF-fit source offset from KIC position	$0.865 \pm 1.151$	0.75	$0.680 \pm 1.119$	$-0.534 \pm 1.201$
photometric centroid source offset	$0.64 \pm 0.45$	1.42	$0.54 \pm 0.43$	$-0.35 \pm 0.50$

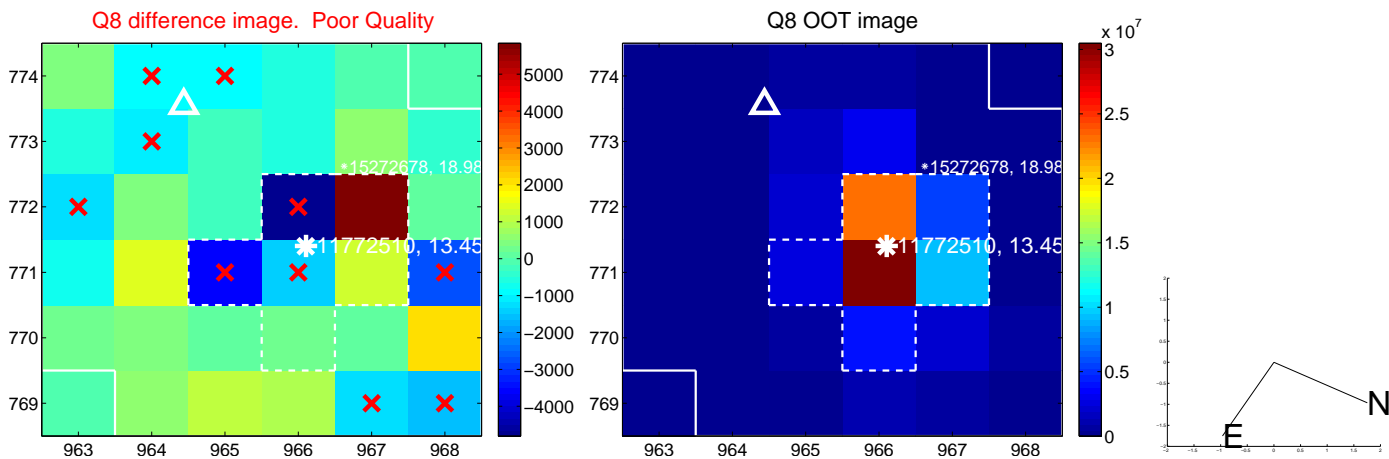
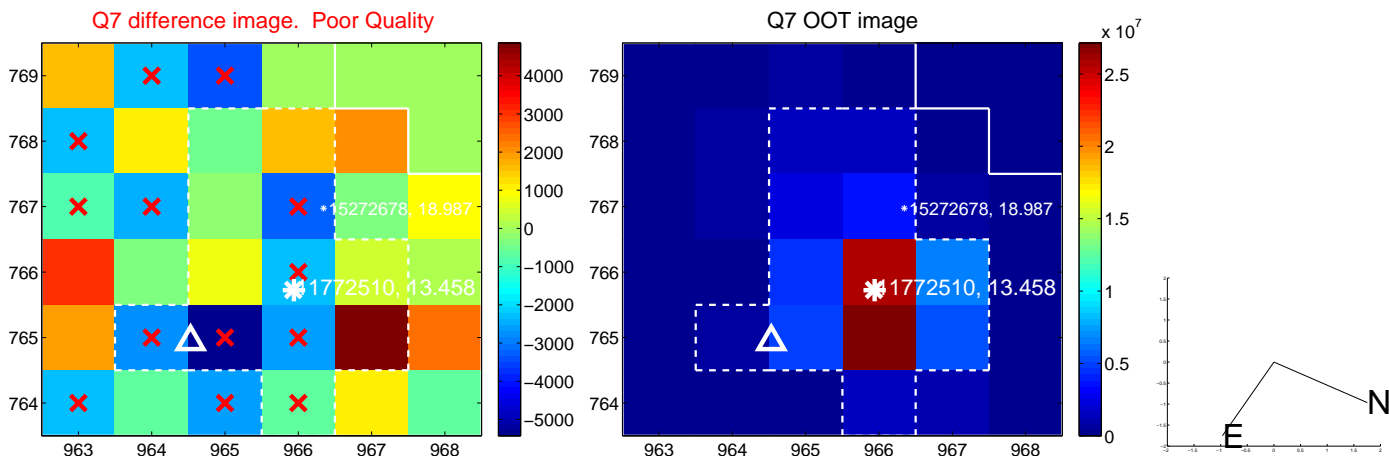
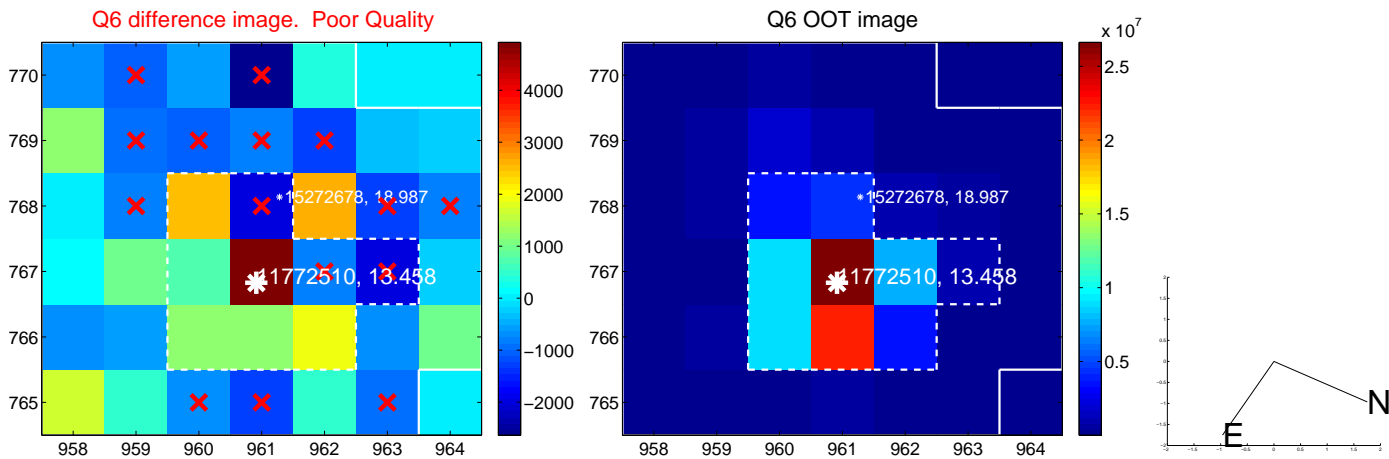
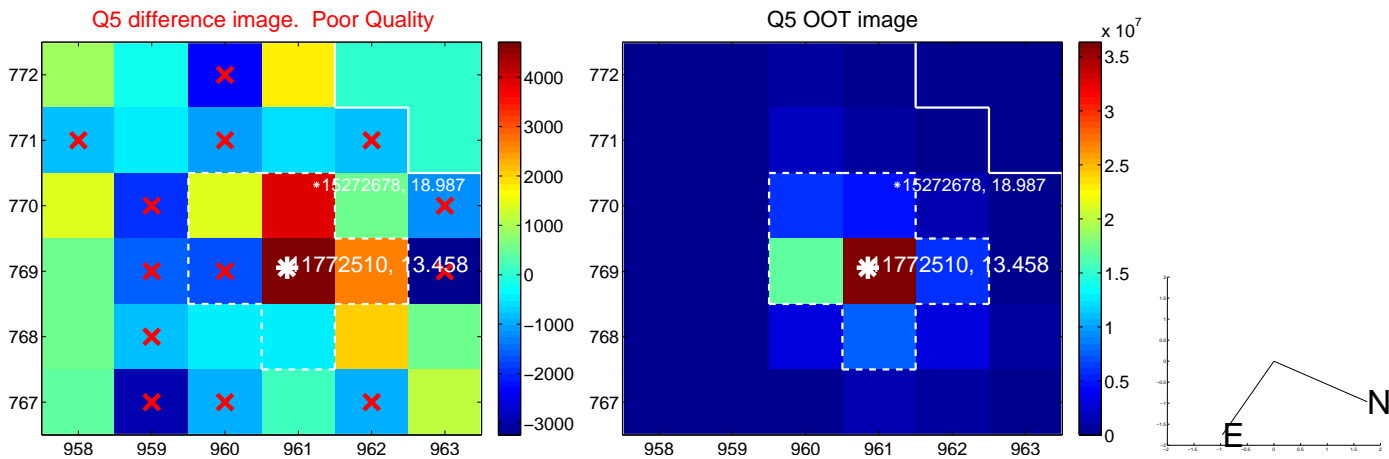


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

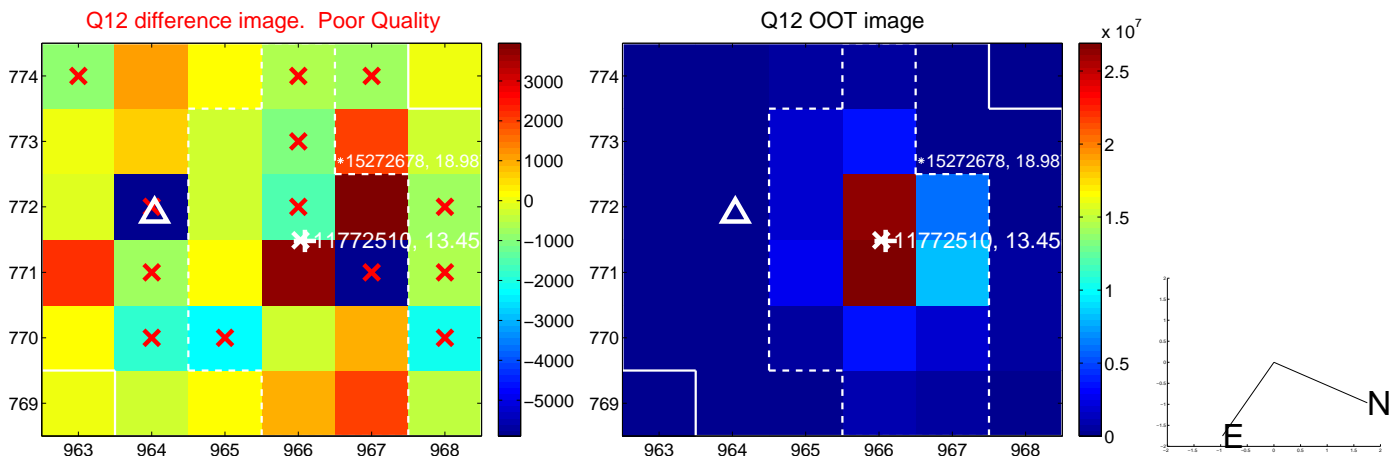
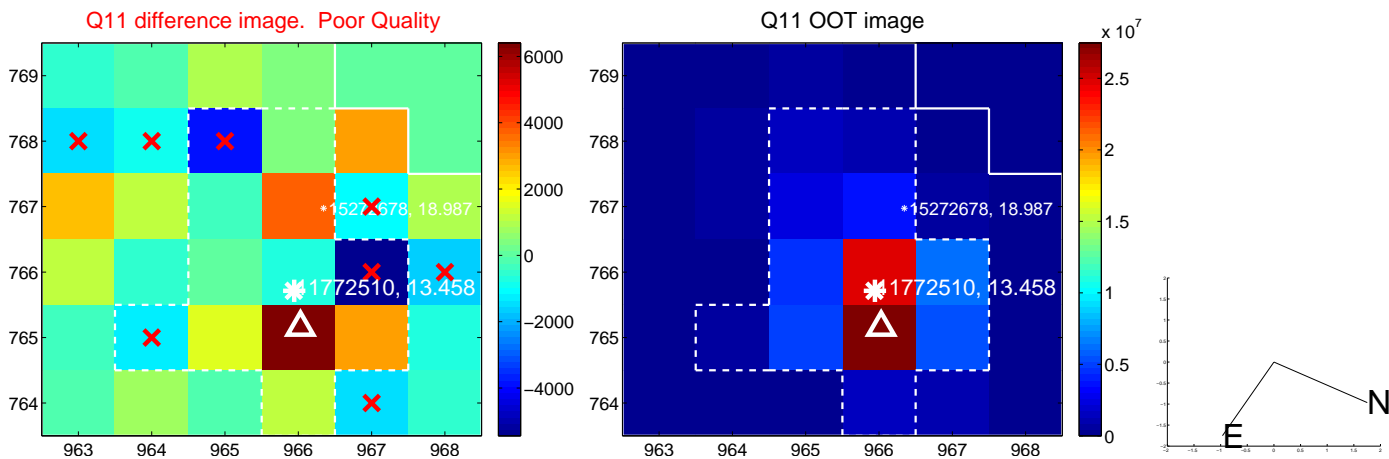
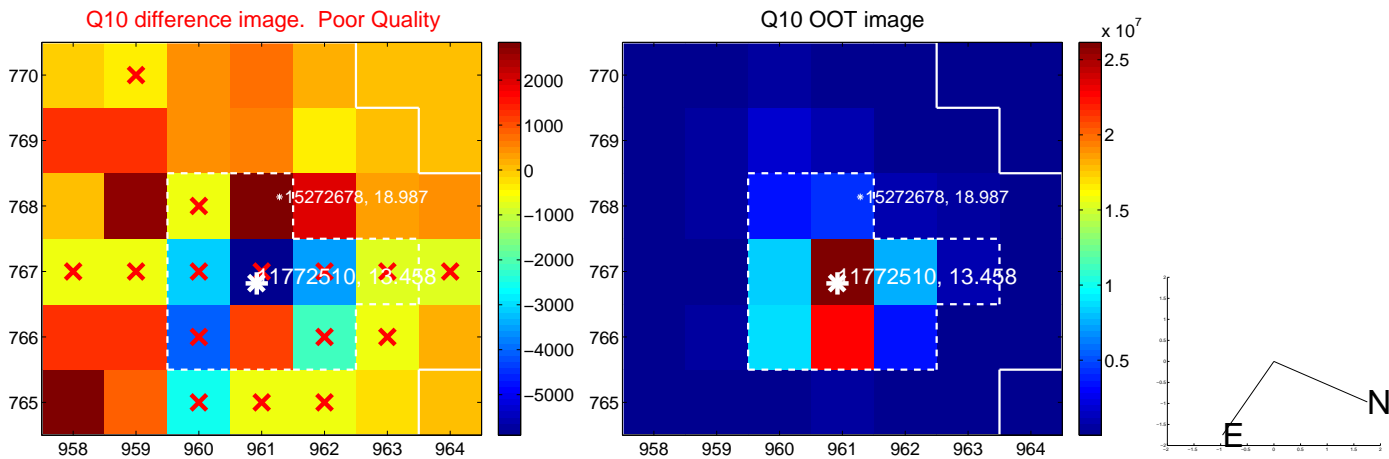
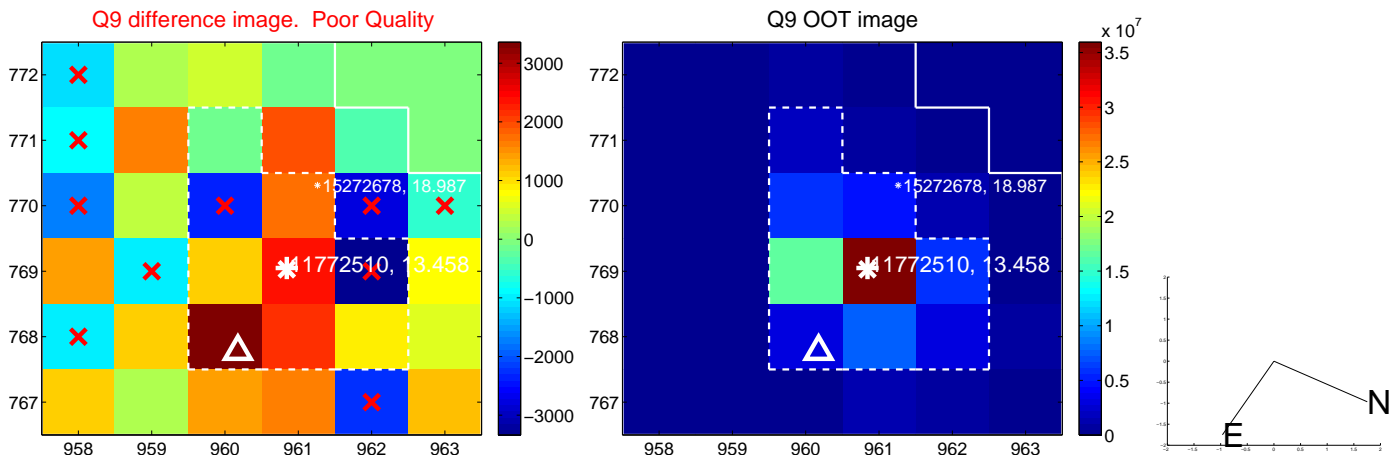
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



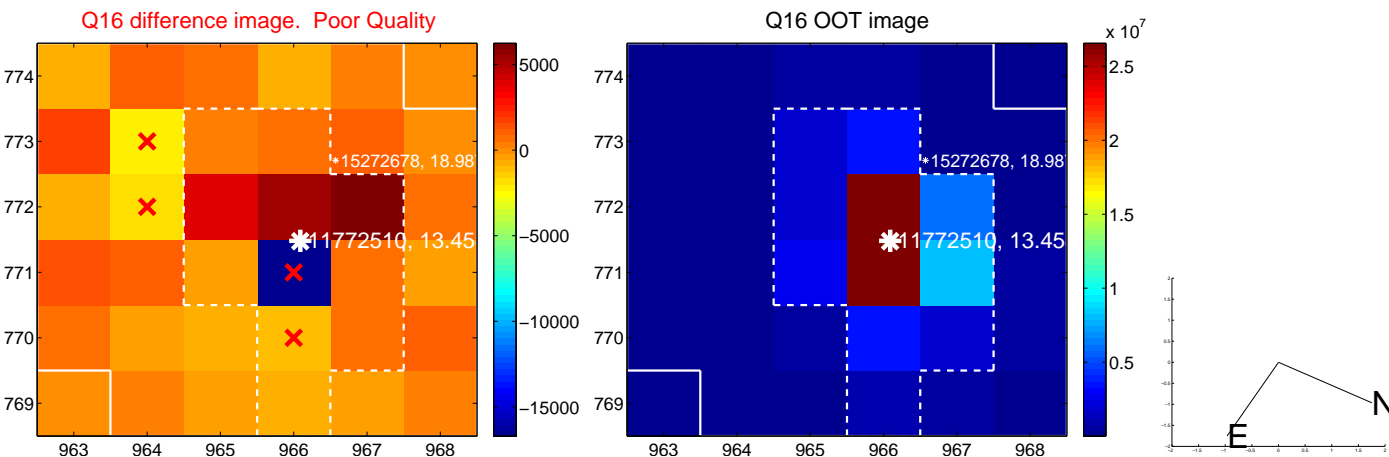
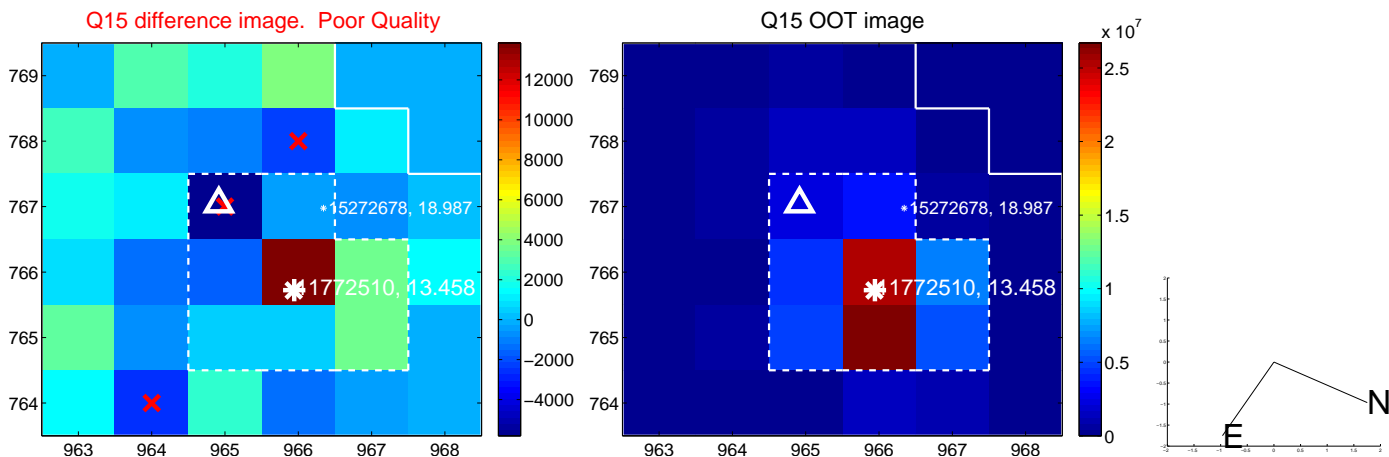
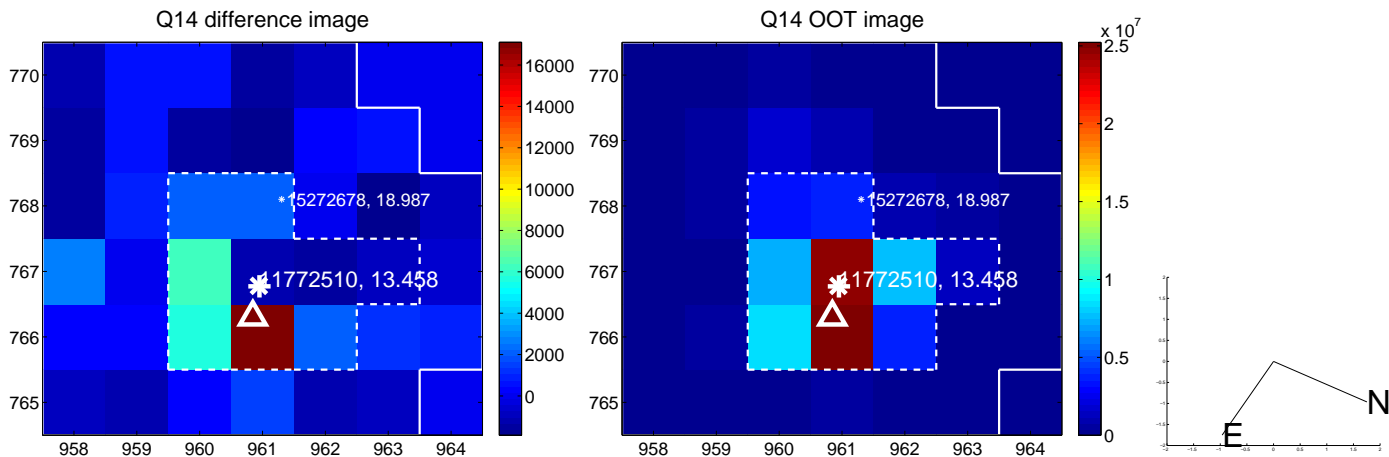
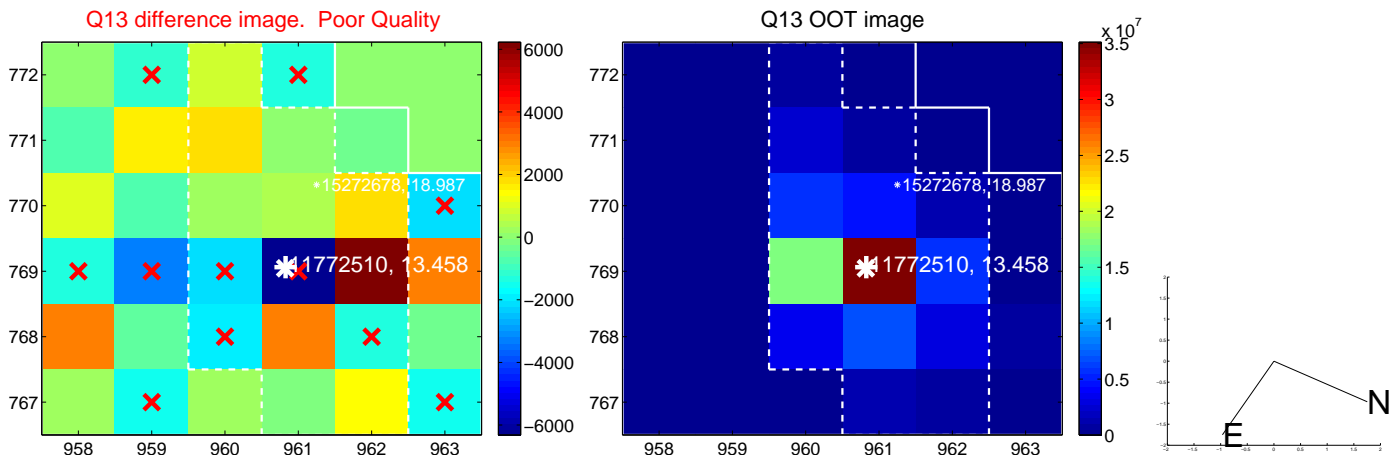
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

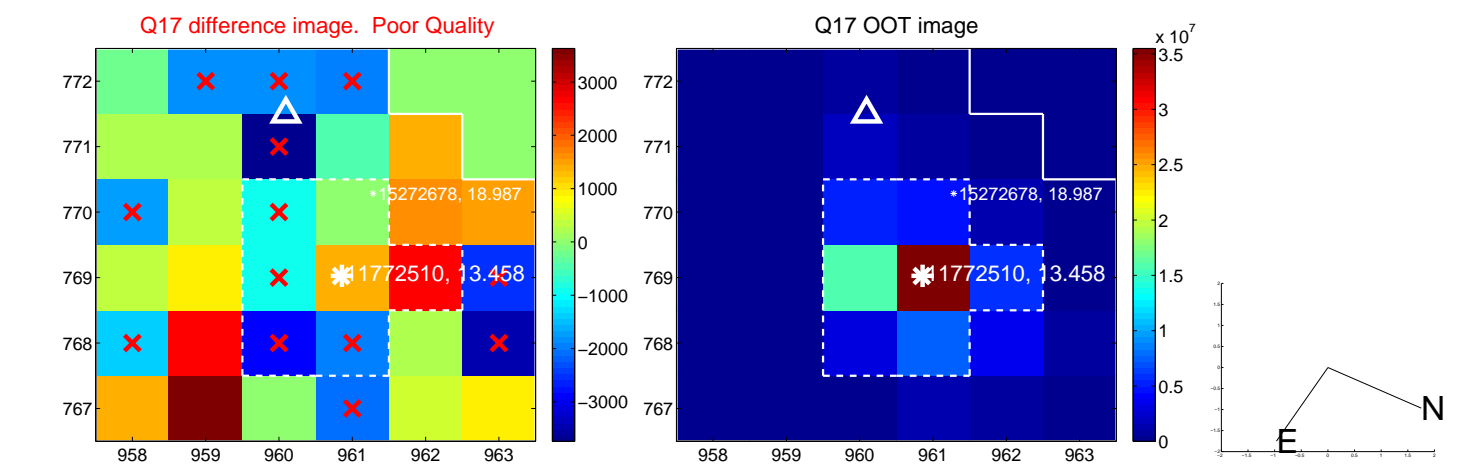


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

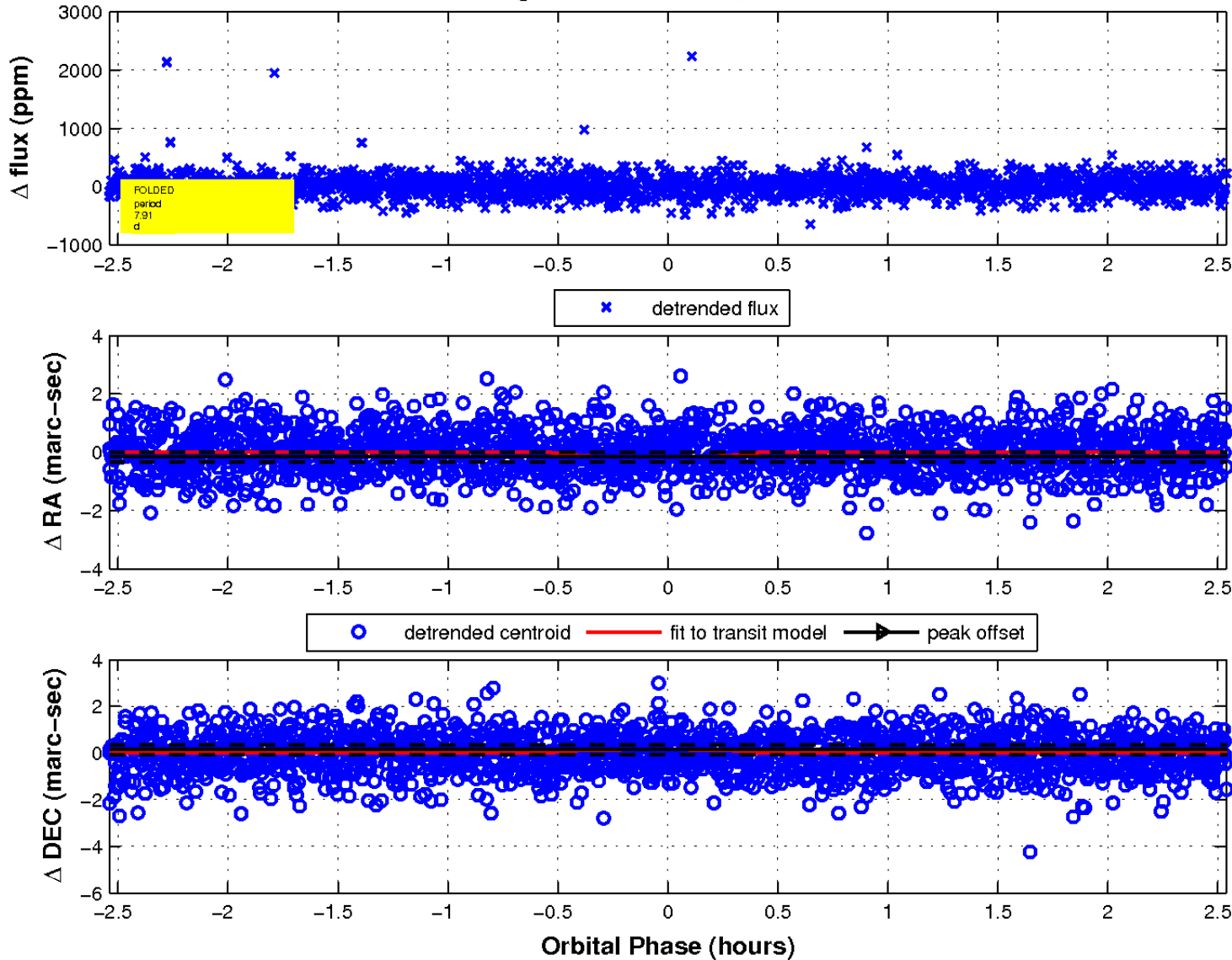




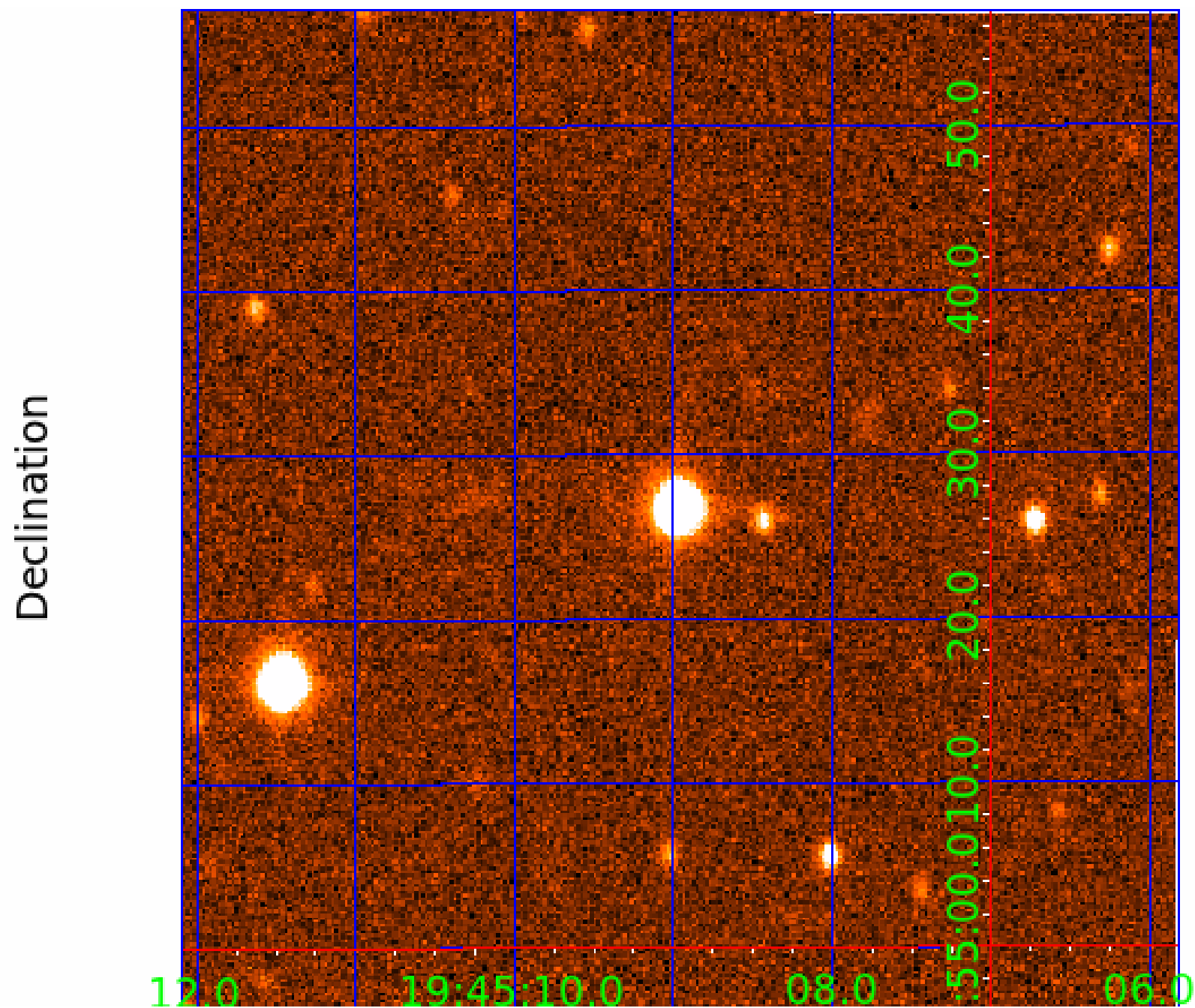
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 4 of 5



UKIRT Image



# KIC 011772510

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011772510-01	OBS	No	1.290730	131.893810	19.6	9.845	8.5	8.7	3.88	7019	2.05	41089.33
011772510-02	OBS	No	9.424547	133.666991	278.2	1.754	19.3	19.4	3.88	7019	6.56	2900.65
011772510-03	OBS	No	6.053339	131.744603	372.5	0.896	17.8	18.1	3.88	7019	8.03	5234.19
011772510-04	OBS	No	7.909558	139.301180	336.7	0.848	15.5	15.4	3.88	7019	7.44	3664.15
011772510-05	OBS	No	16.527884	137.682870	1122.2	1.500	18.5	-1.0	3.88	7019	13.16	1371.58

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011772510-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011772510-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011772510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
011772510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—NO_FITS—CENT_NOFITS

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

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

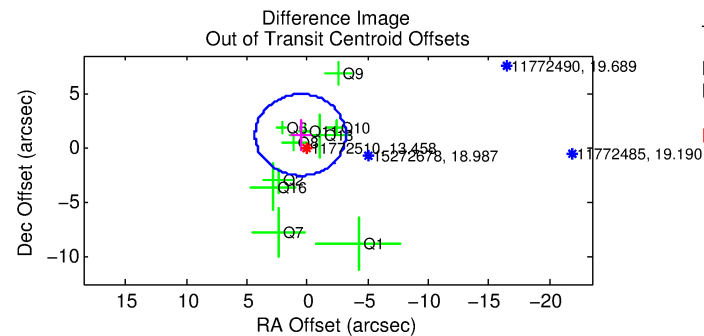
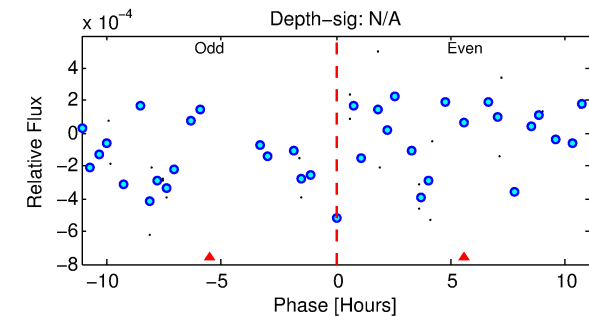
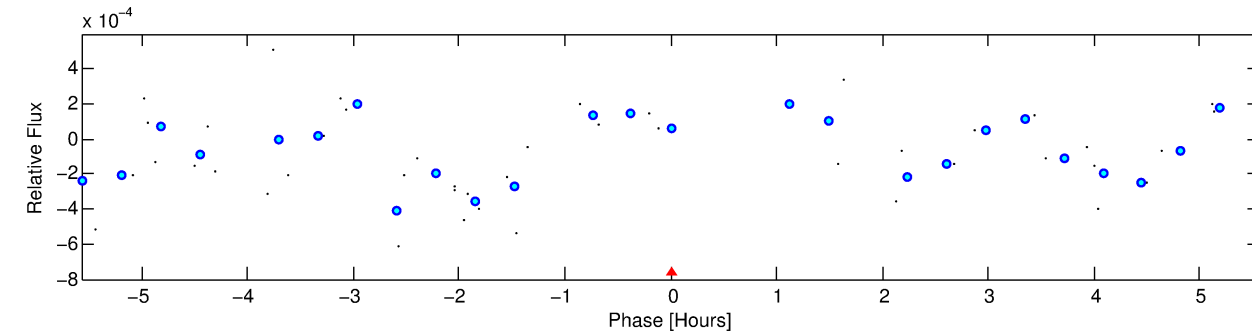
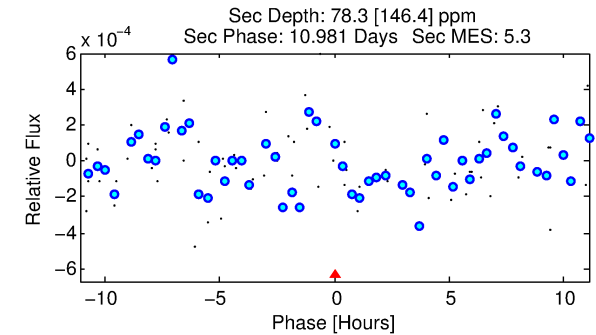
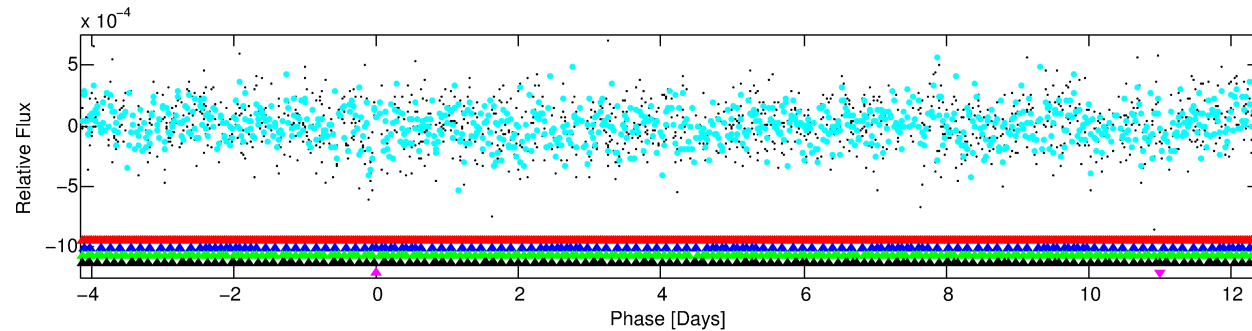
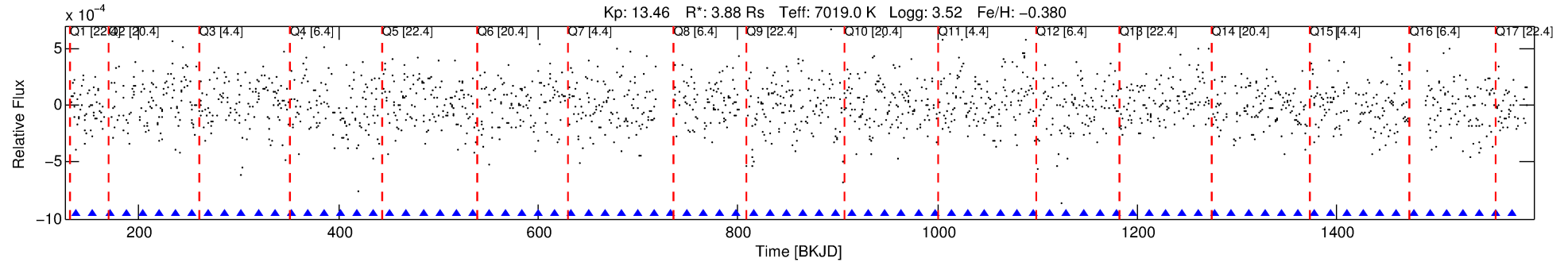
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011772510-05

No Significant Match Found

# DV One-Page Summary

KIC: 11772510 Candidate: 5 of 5 Period: 16.528 d



## TPS TCE Results:

Period = 16.52788 d  
Epoch = 137.6829 BKJD

DV fit results are unavailable

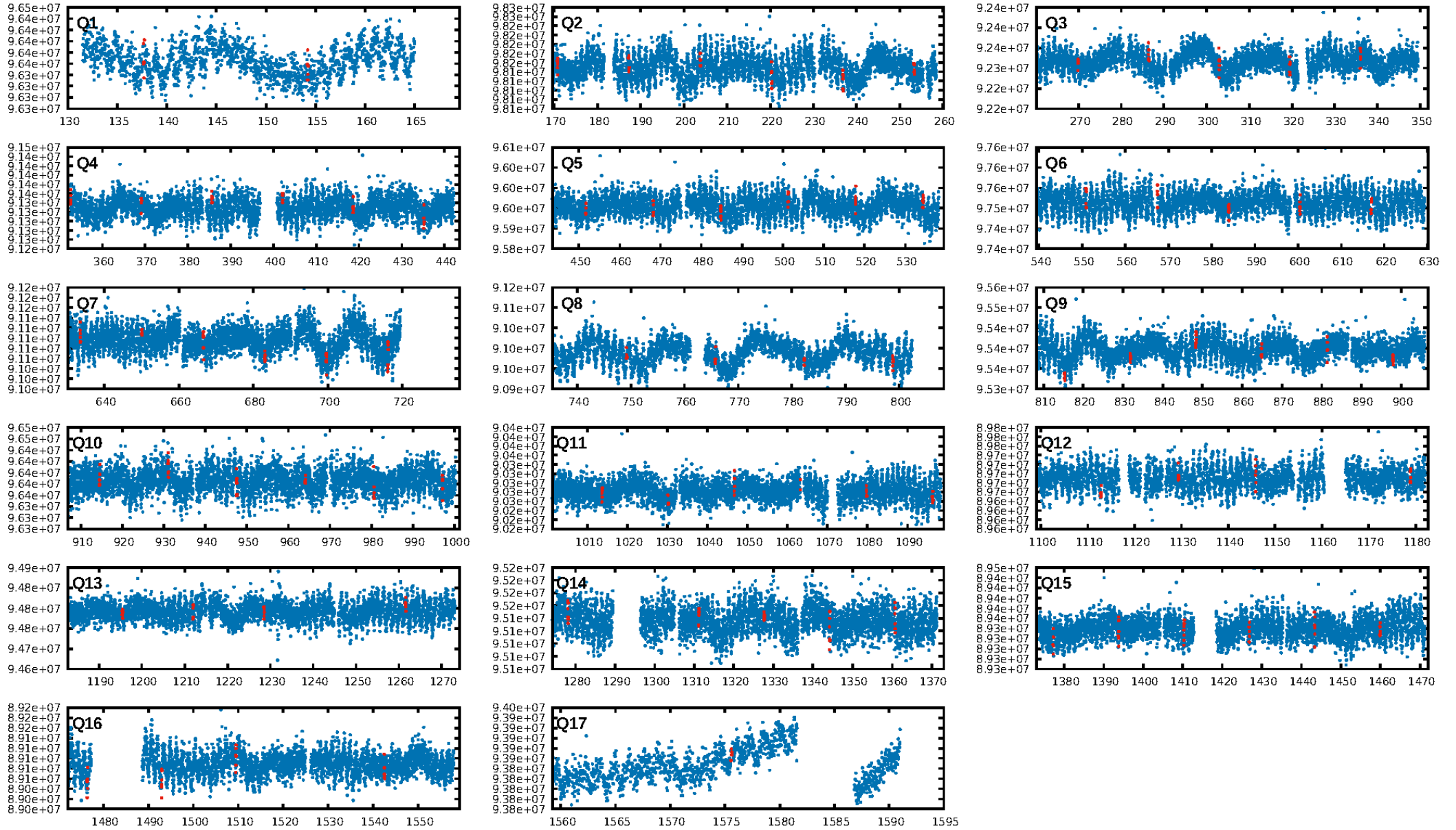
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [73.87 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.8013  
Centroid-sig: 43.7%  
Centroid-so: 0.098 arcsec [1.26 $\sigma$ ]  
OotOffset-rm: 1.332 arcsec [1.07 $\sigma$ ]  
KicOffset-rm: 1.349 arcsec [1.10 $\sigma$ ]  
OotOffset-st: 3/2/2/3 [10]  
KicOffset-st: 3/2/2/3 [10]  
DiffImageQuality-fgm: 0.00 [0/10]  
DiffImageOverlap-fno: 0.59 [10/17]

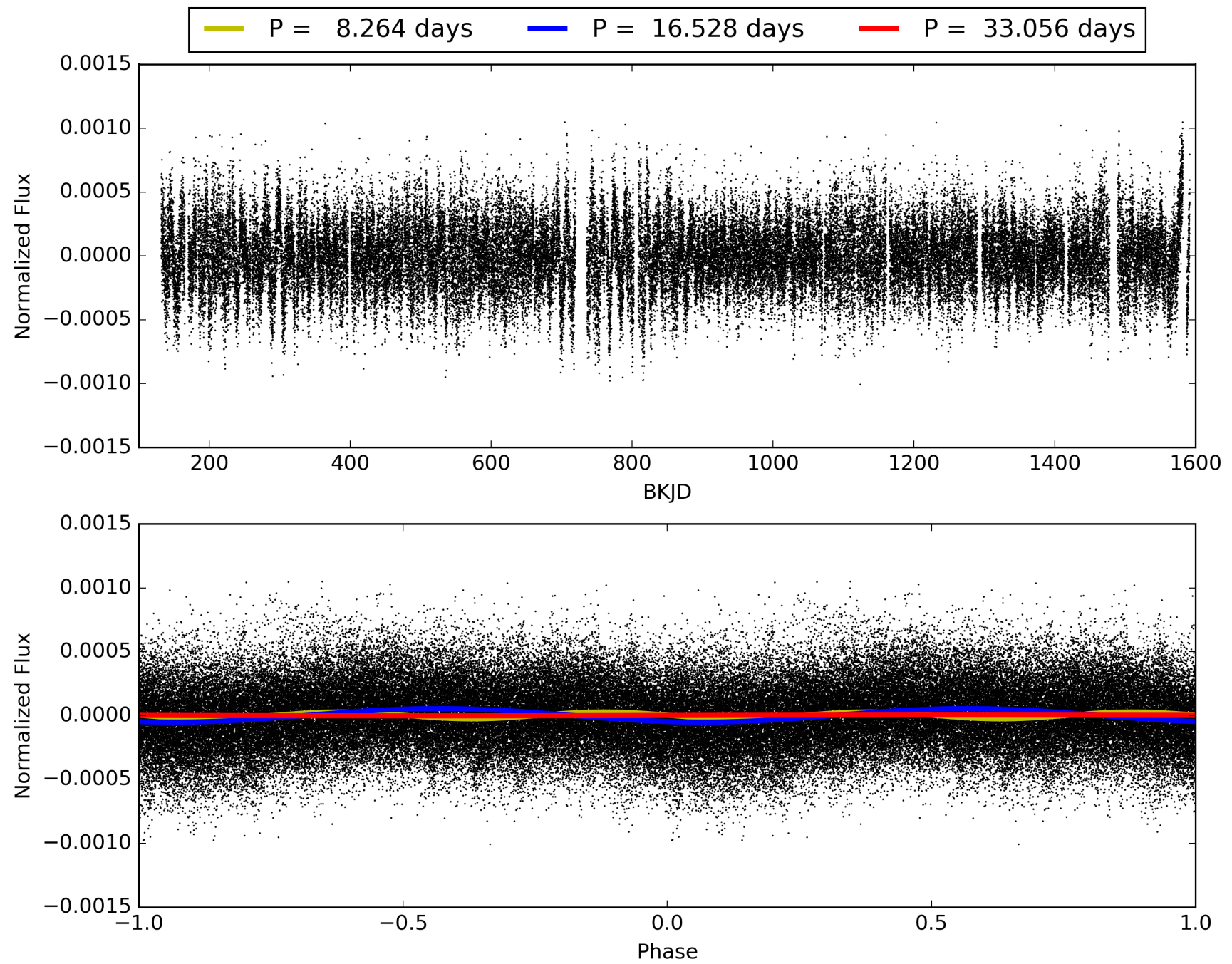
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:09:57 Z

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

# TCE 011772510-05, PDC Light Curves

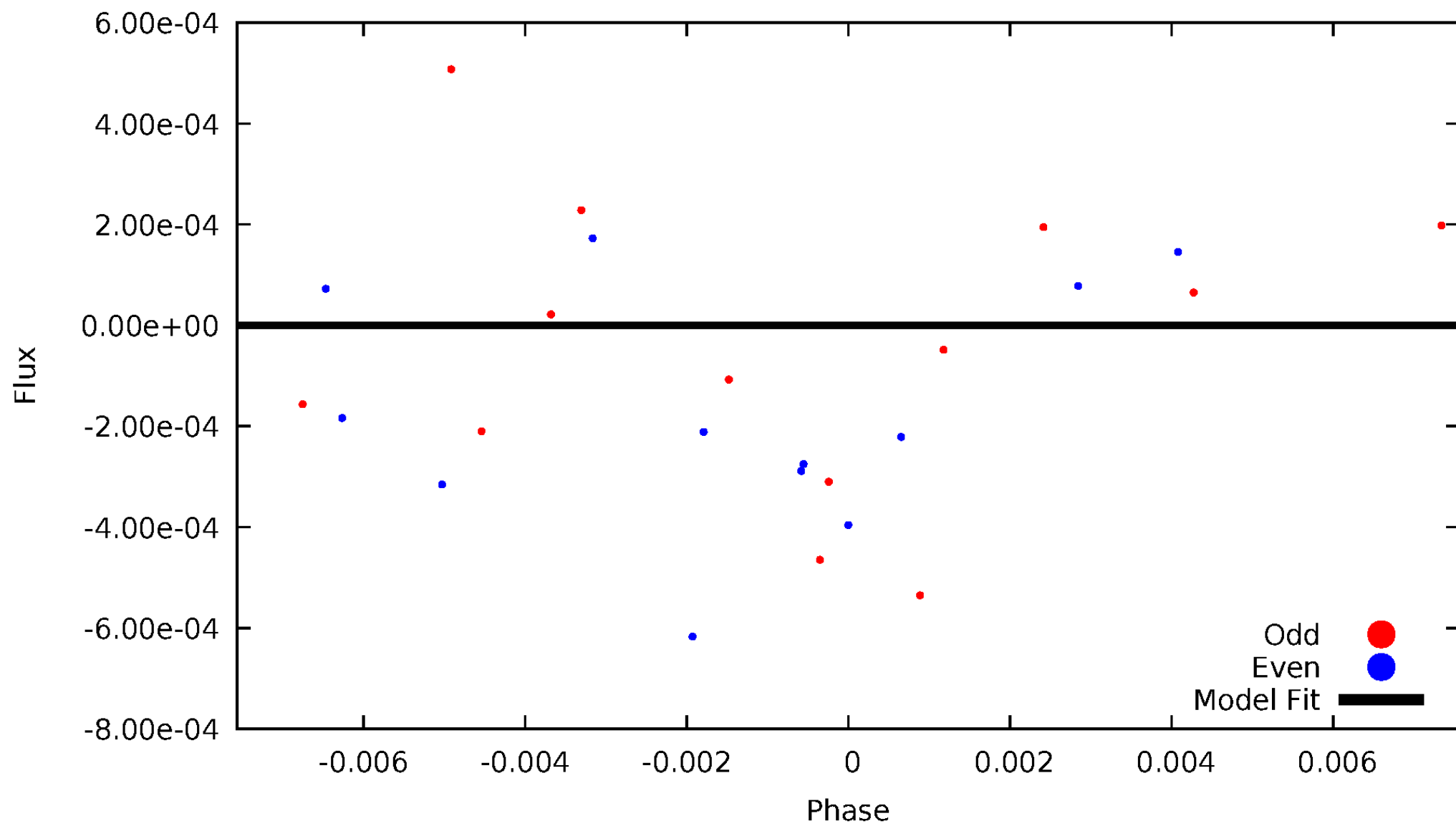


# TCE 011772510-05



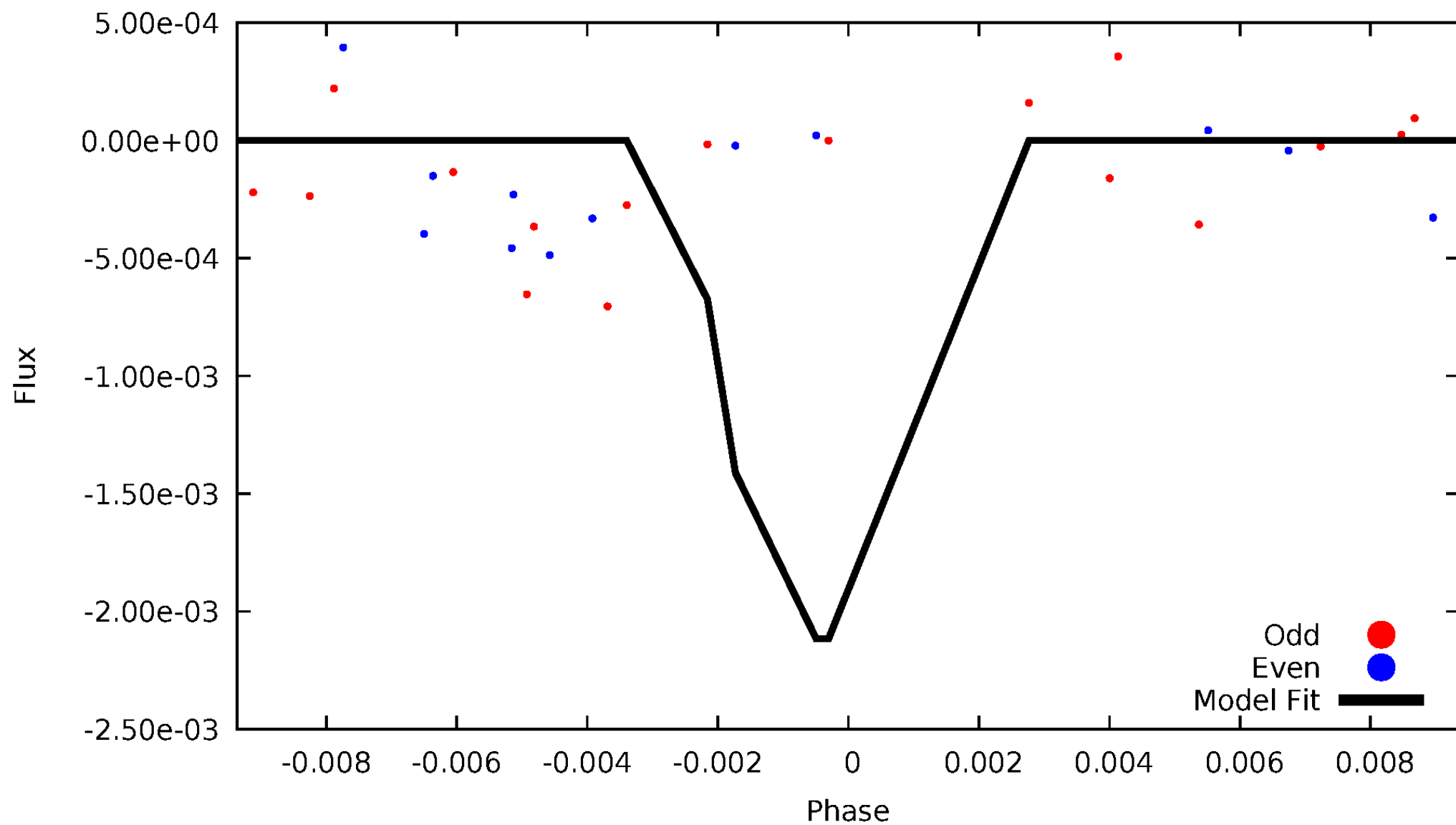
# DV Odd/Even

TCE 011772510-05



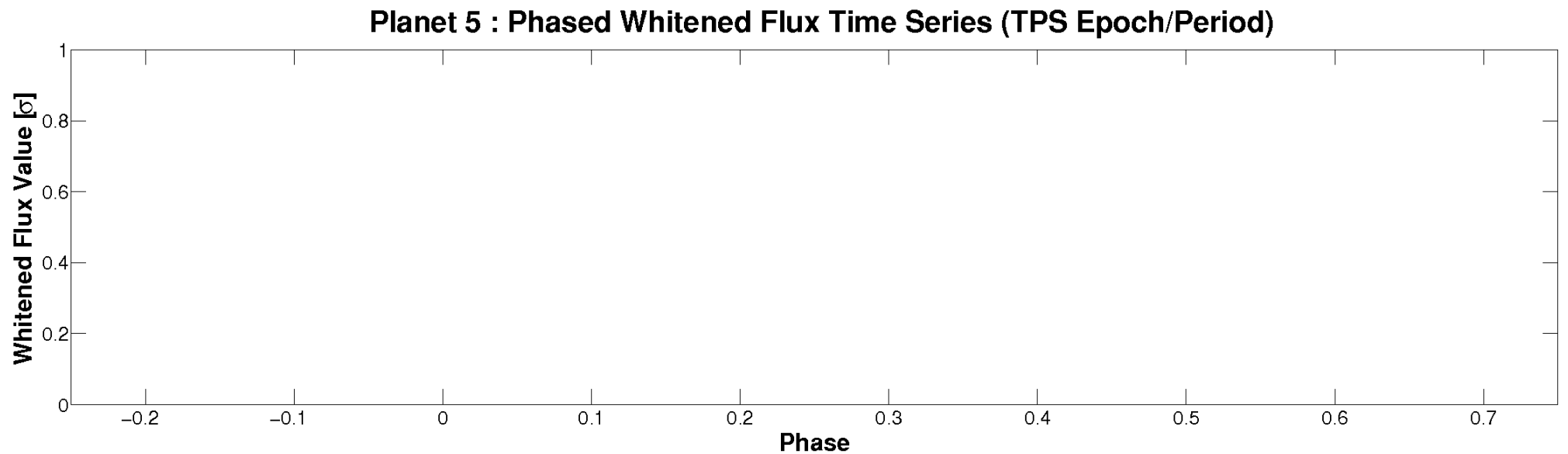
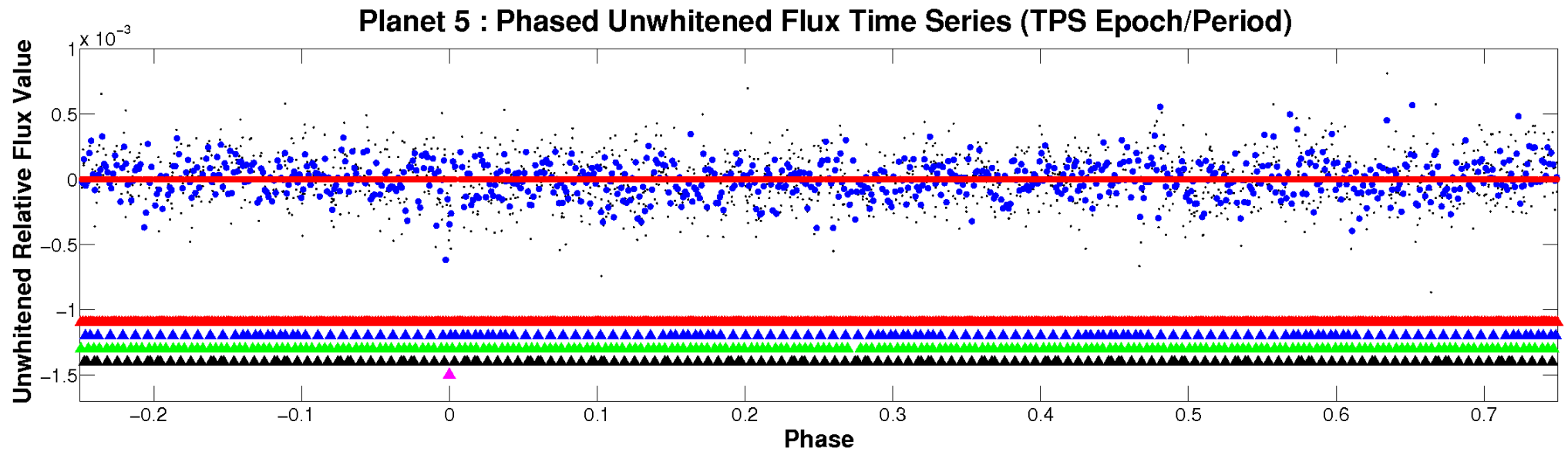
ALT Odd/Even

TCE 011772510-05



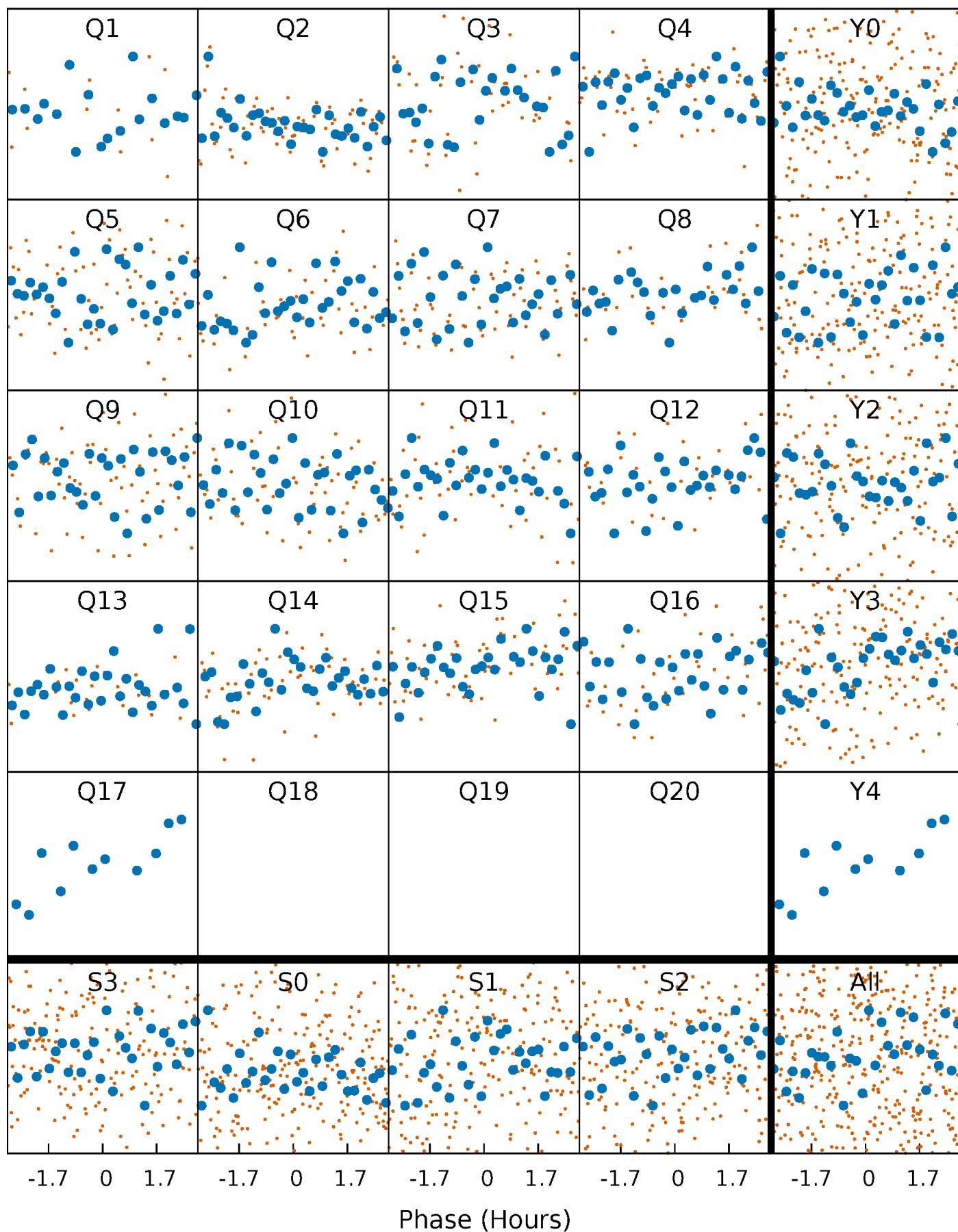


# Non-Whitened Vs. Whitened Light Curve



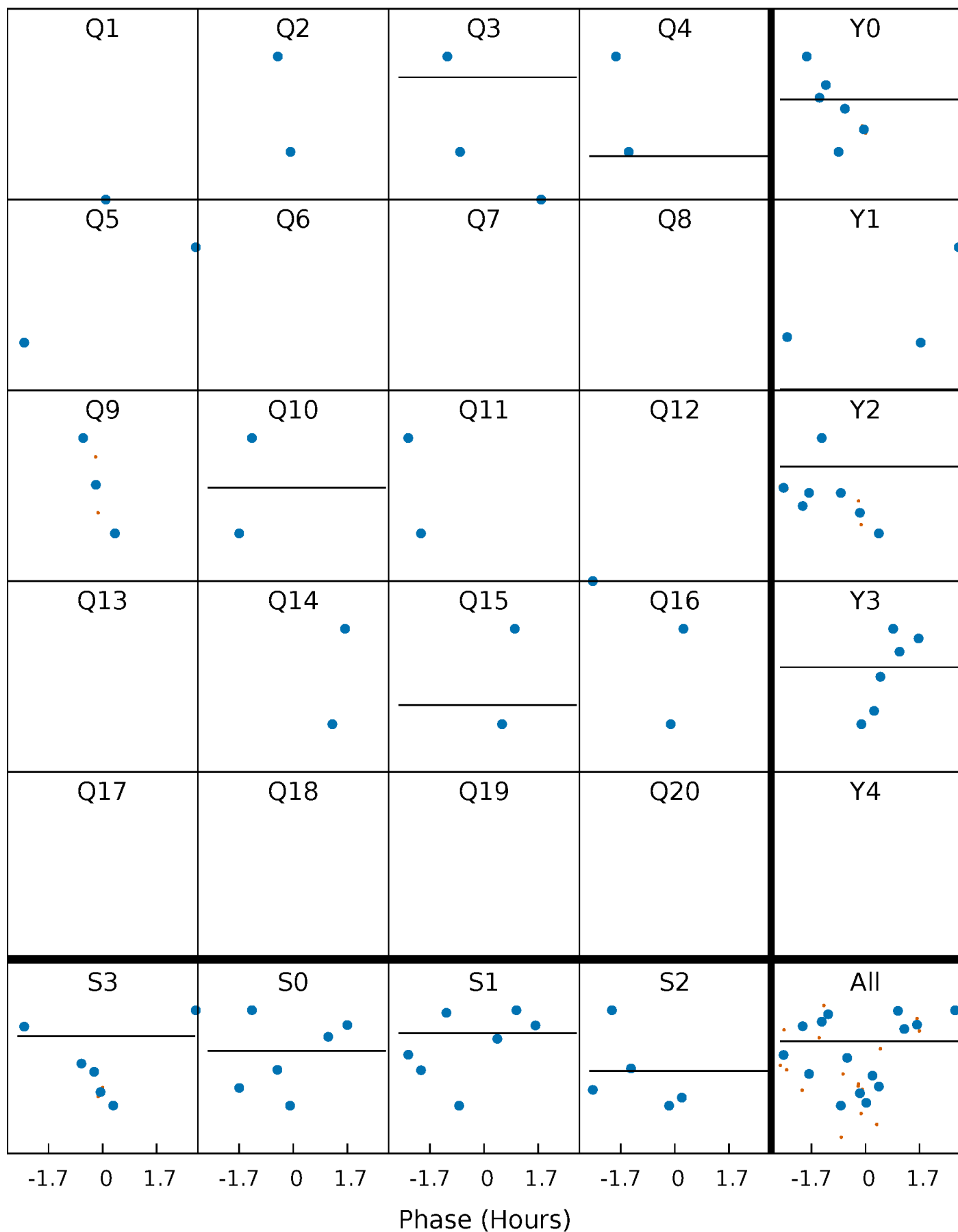
# PDC Quarter-Phased Transit Curves

TCE 011772510-05 P= 16.527884 Days  $T_0=137.682870$  (BKJD)



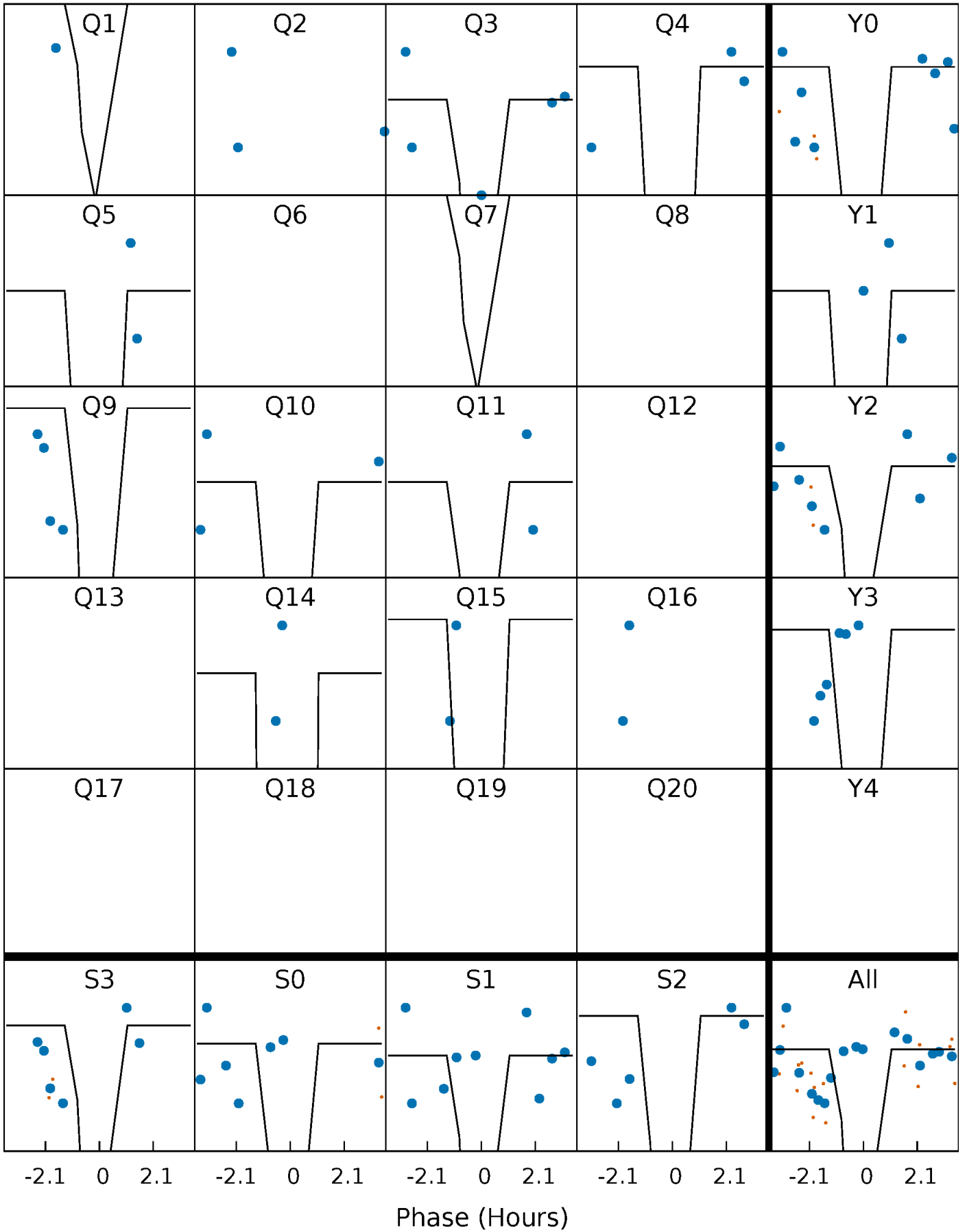
# DV Quarter-Phased Transit Curves

TCE 011772510-05     $P = 16.527884$  Days     $T_0 = 137.682870$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

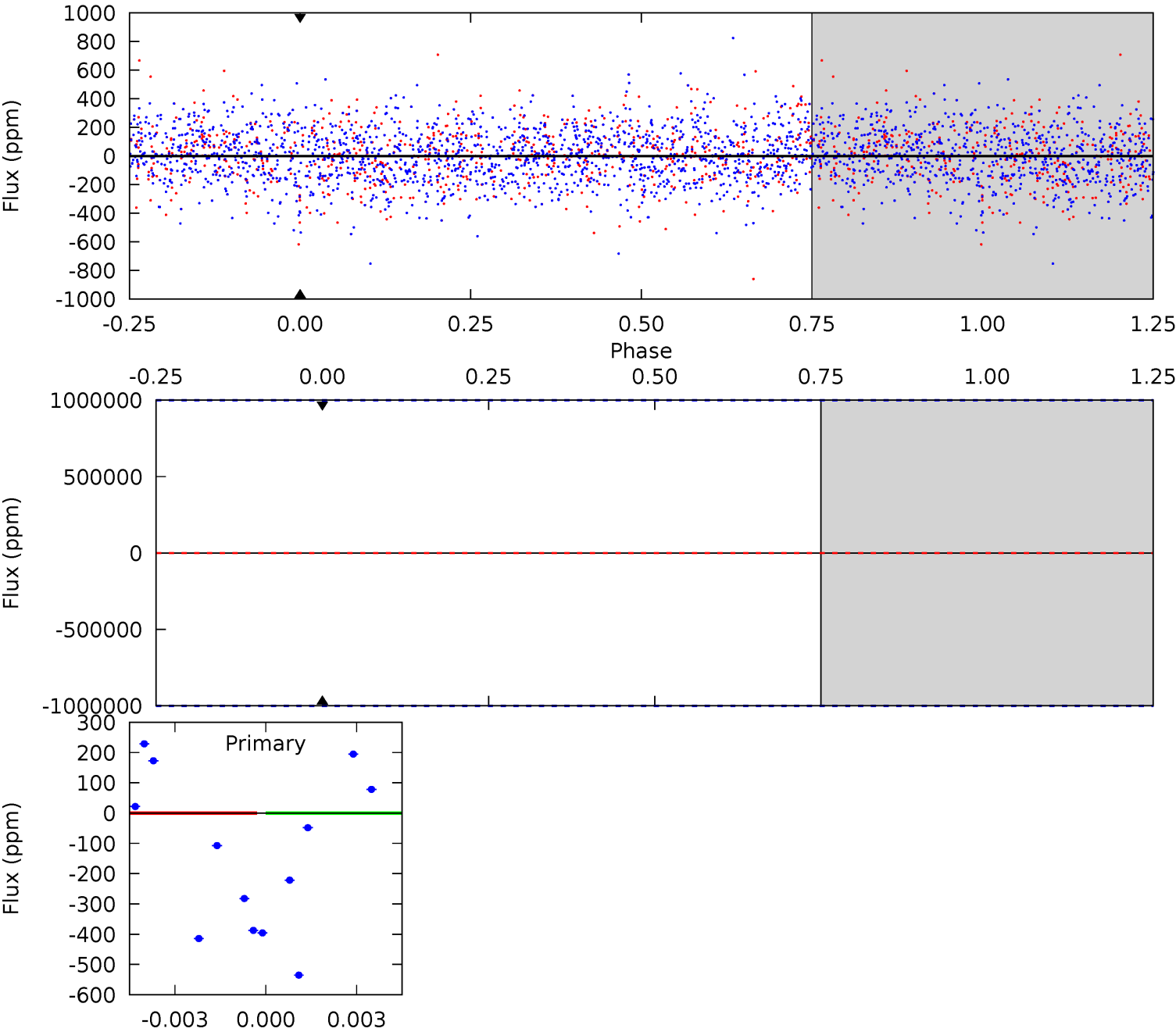
TCE 011772510-05   P= 16.527884 Days    $T_0=137.758469$  (BKJD)



# DV Model-Shift Uniqueness Test

011772510-05, P = 16.527884 Days, E = 121.154986 Days

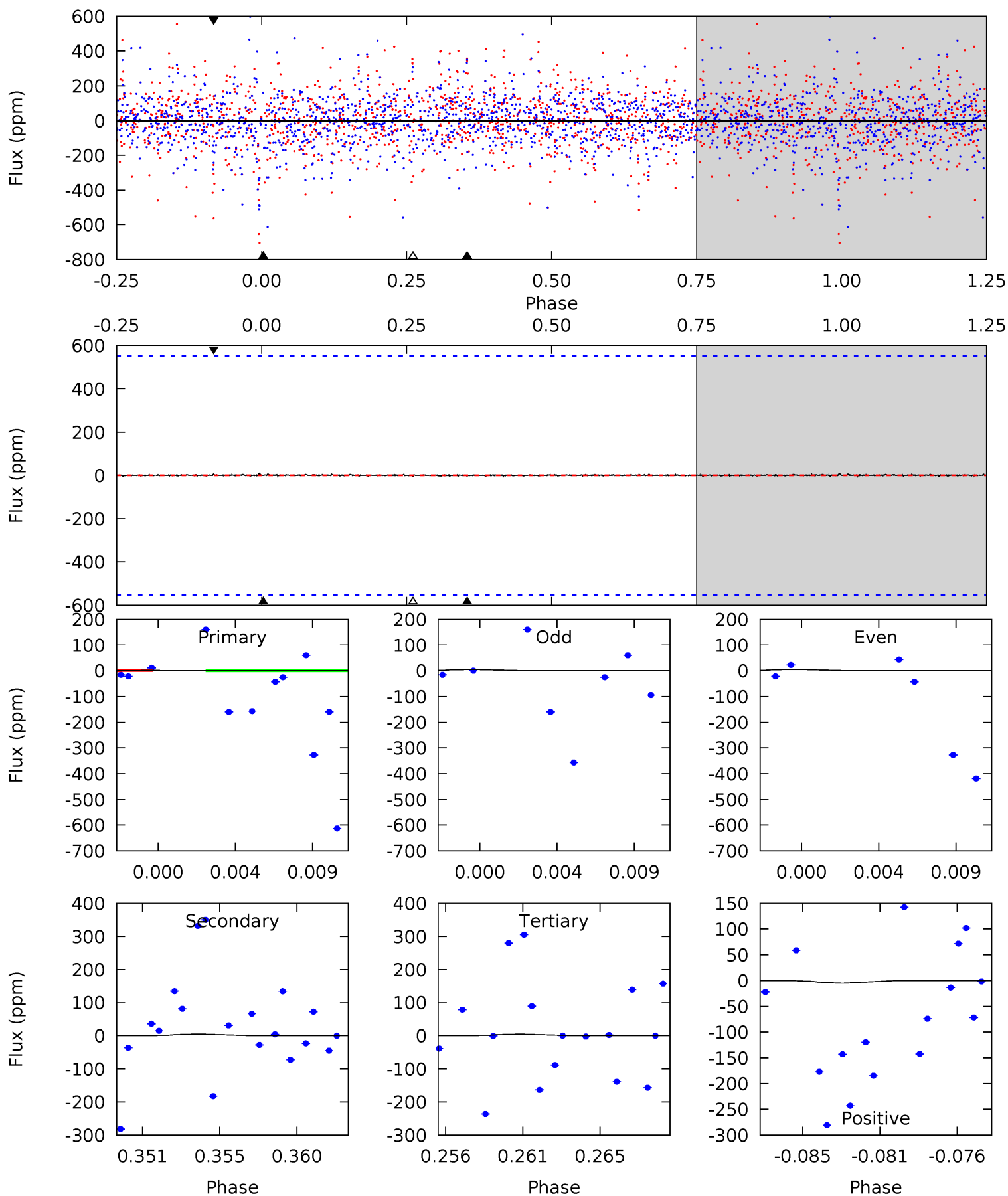
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

011772510-05, P = 16.527884 Days, E = 121.230585 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	0.05	0.05	0.05	5.18	2.84	0.01	-0.05	-0.05	0.00	0.00	0.00	0	0.59	0



### Stellar Parameters For KIC 011772510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7019^{+190}_{-232}$	$3.515^{+0.360}_{-0.090}$	$-0.380^{+0.300}_{-0.250}$	$3.875^{+0.385}_{-1.539}$	$1.794^{+0.177}_{-0.383}$	$0.043^{+0.117}_{-0.012}$
	+3%/-3%	+10%/-3%	+79%/-66%	+10%/-40%	+10%/-21%	+270%/-28%
Source	PHO1	FLK73	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 011772510-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$30.11^{+33.15}_{-20.70}$	$2132^{+123}_{-196}$	$-5840^{+37409}_{-23023}$	$-37.249^{+2745.396}_{-2328.801}$
Alt.	$-5 \pm 107$	$32.87^{+32.30}_{-21.98}$	$2139^{+116}_{-209}$	$-2504^{+5787}_{-803}$	$0.039^{+2.360}_{-1.934}$

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

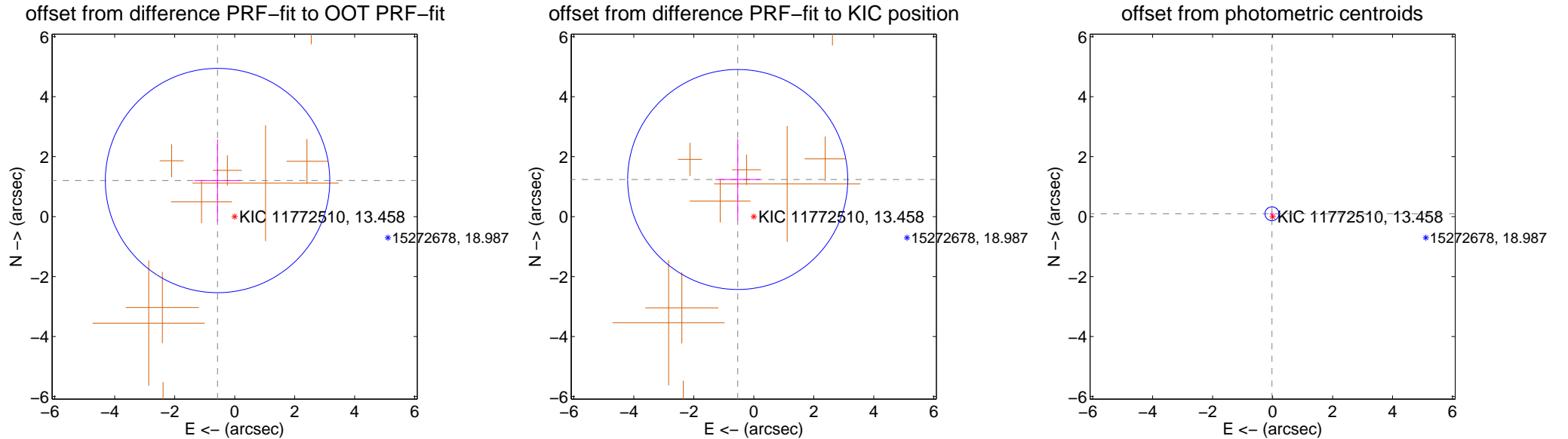
## DV Centroid Data

Supplemental centroid analysis for 011772510-05. Kepler magnitude: 13.46. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

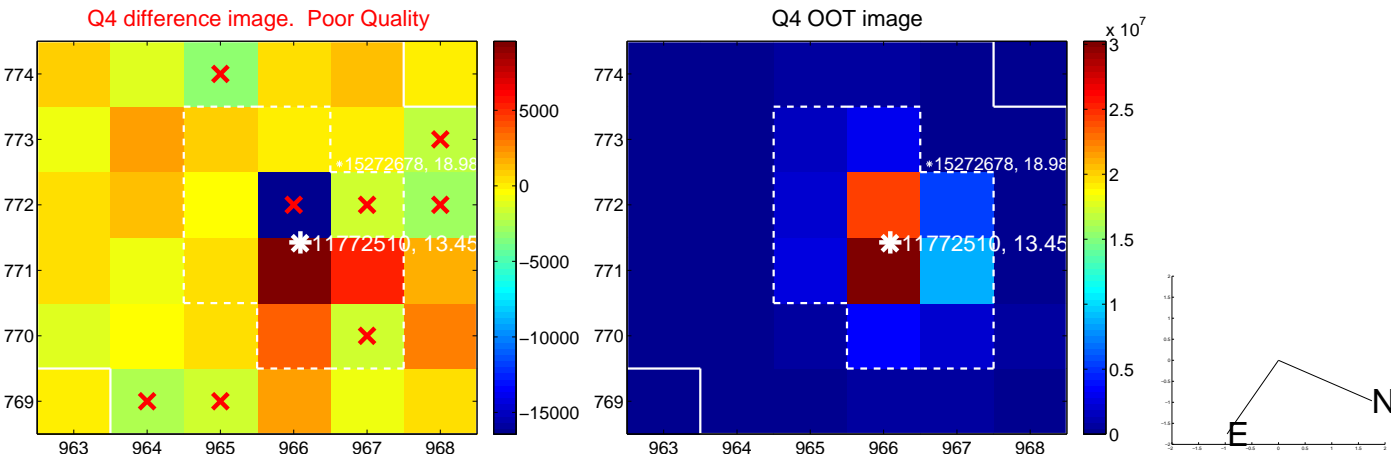
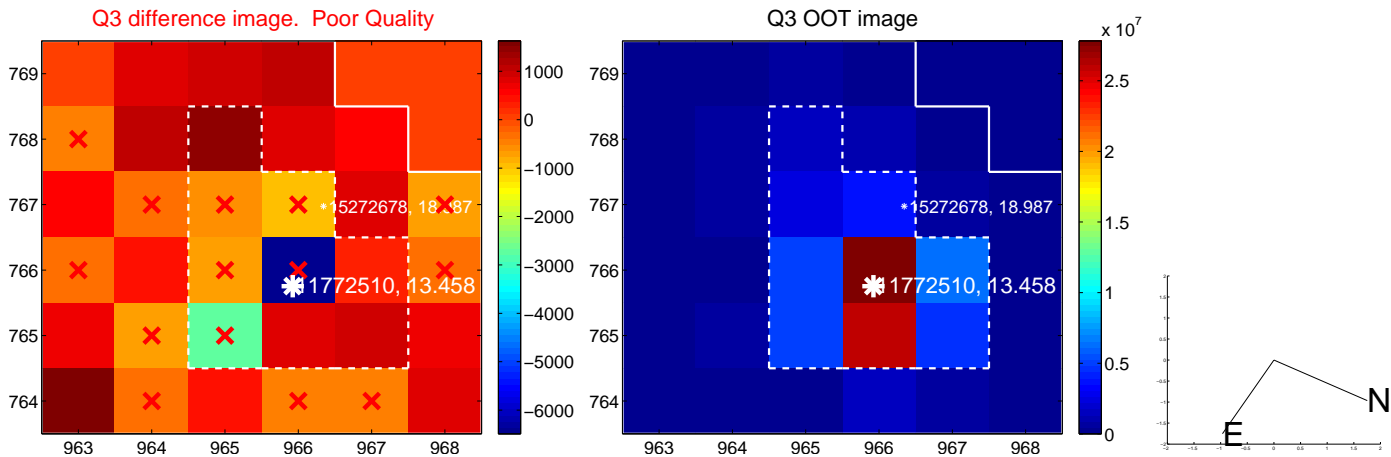
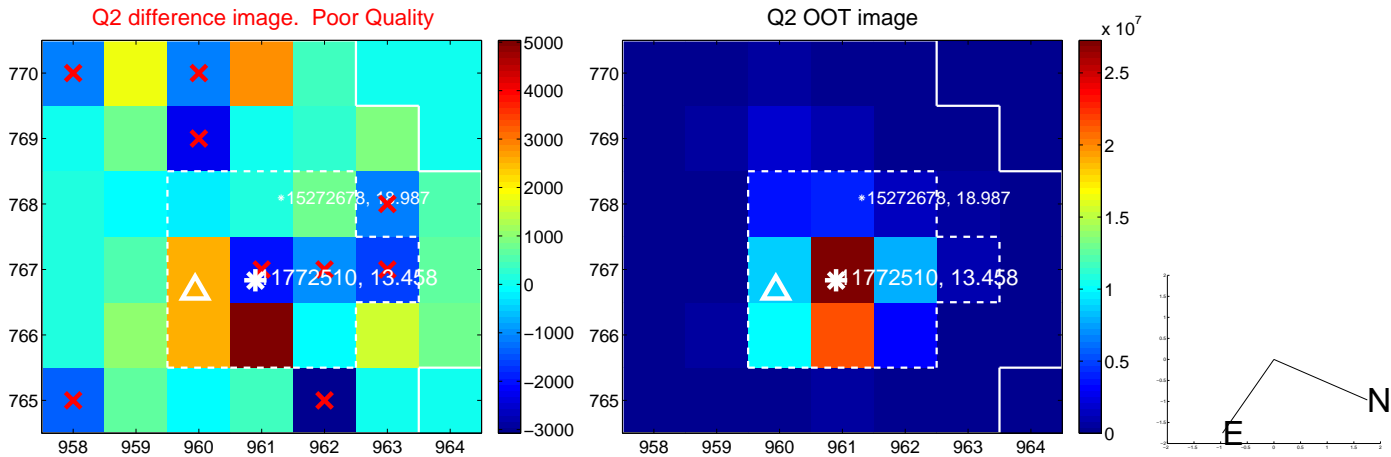
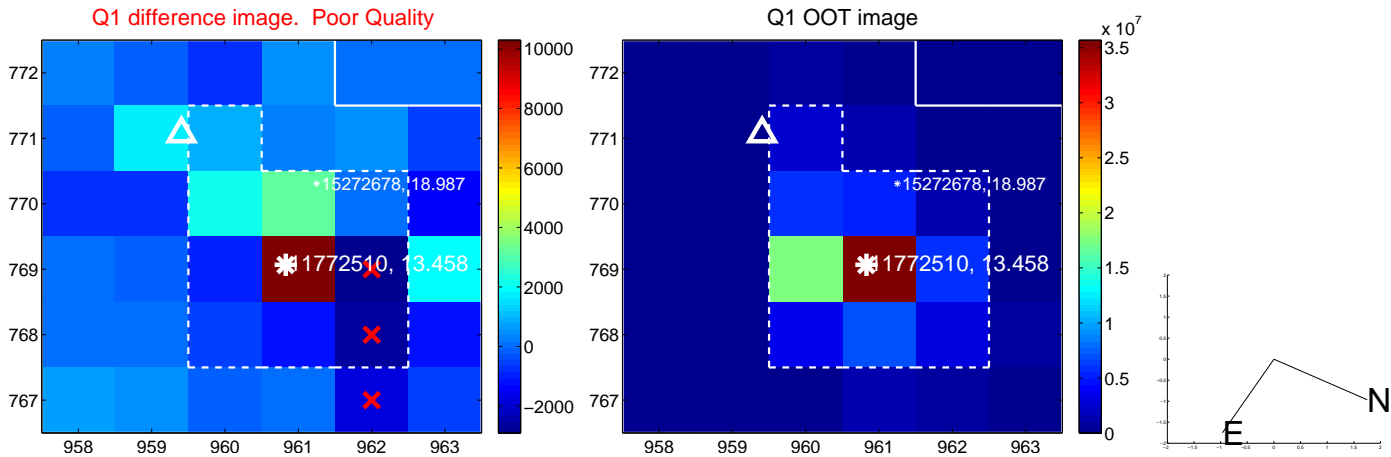
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.332 \pm 1.247$	1.07	$0.571 \pm 0.774$	$1.203 \pm 1.373$
PRF-fit source offset from KIC position	$1.349 \pm 1.223$	1.10	$0.536 \pm 0.745$	$1.238 \pm 1.354$
photometric centroid source offset	$0.10 \pm 0.08$	1.26	$0.02 \pm 0.07$	$0.10 \pm 0.08$



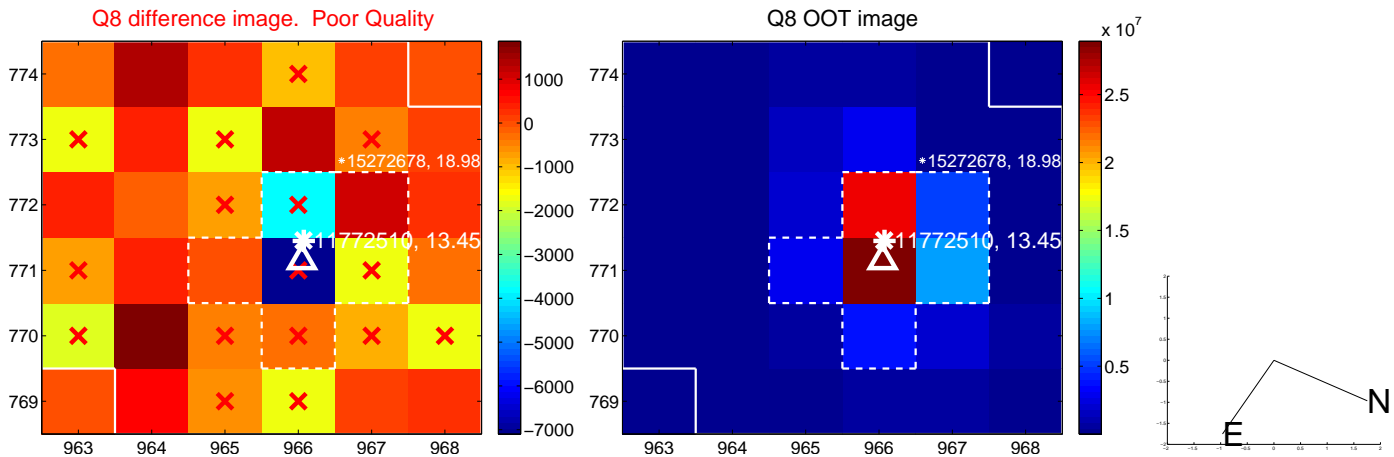
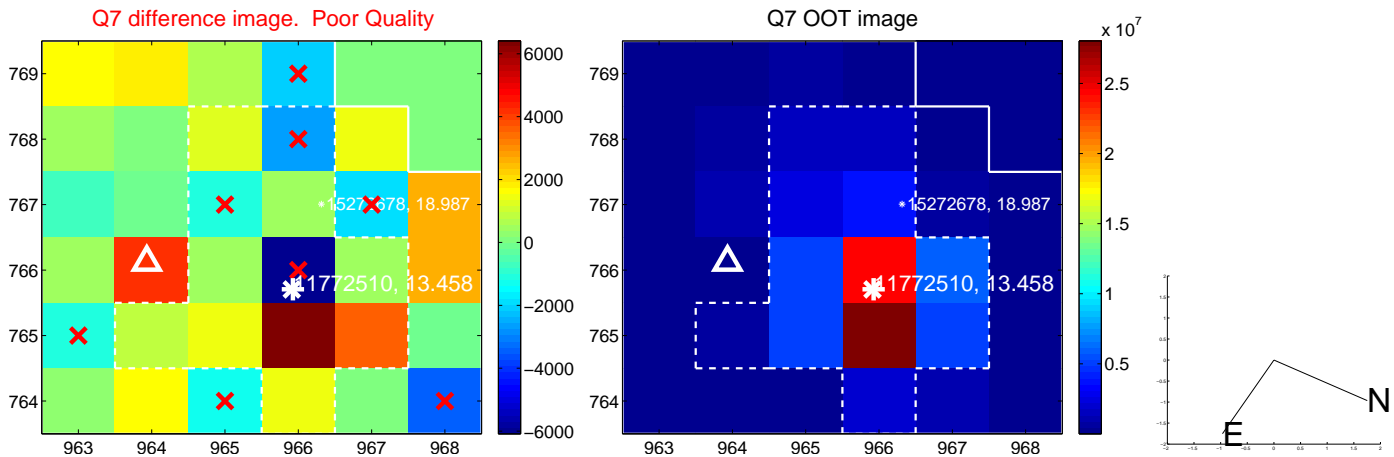
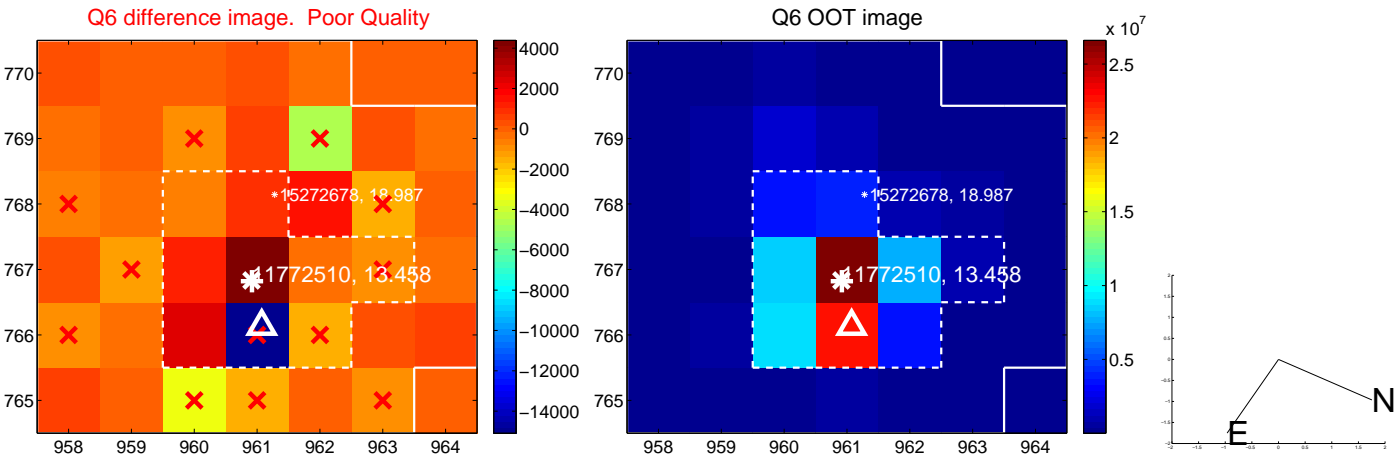
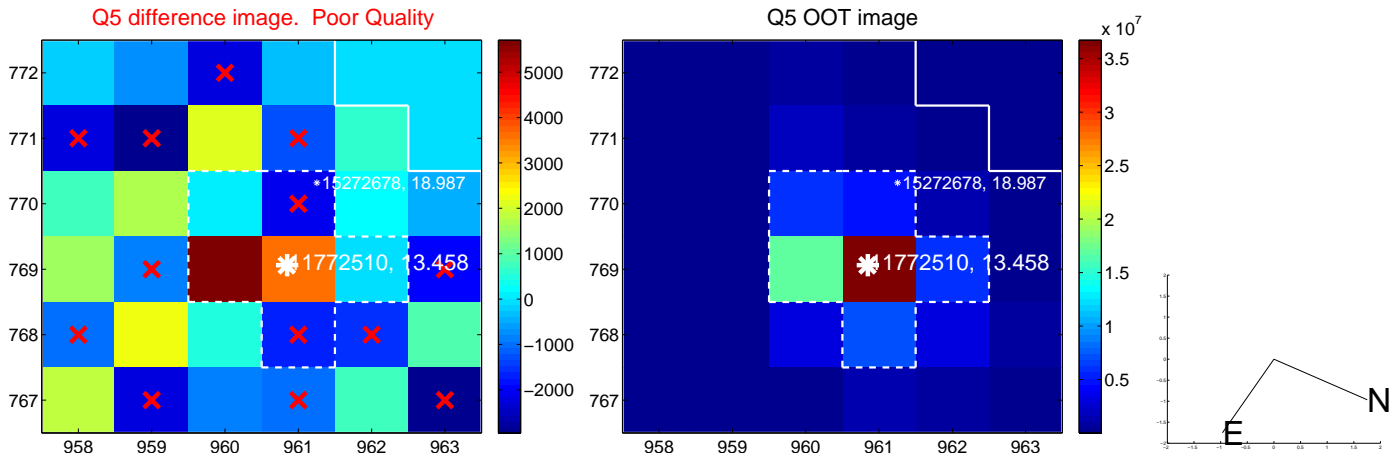
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



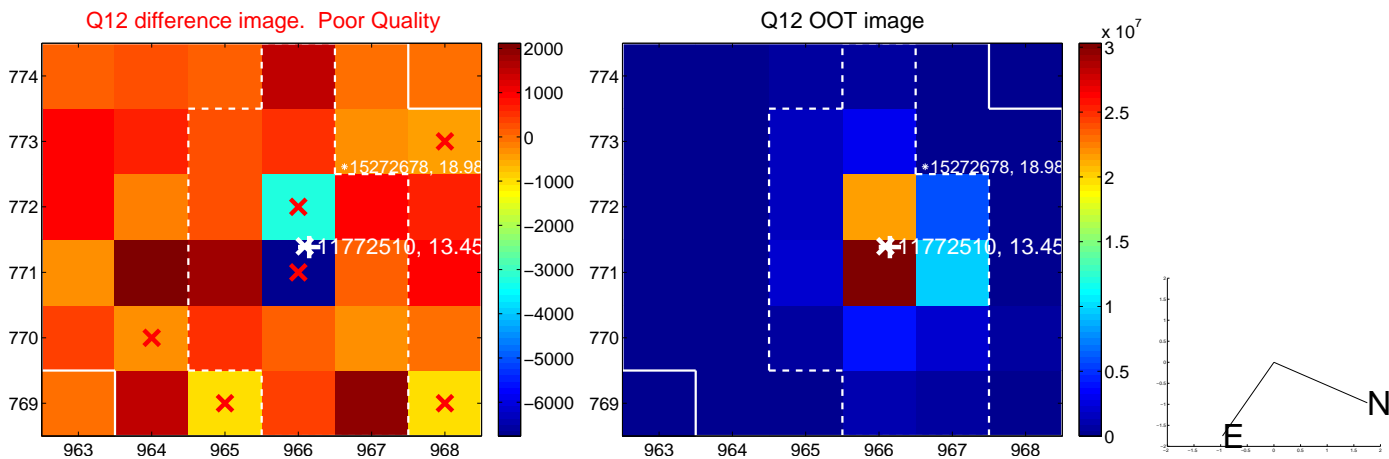
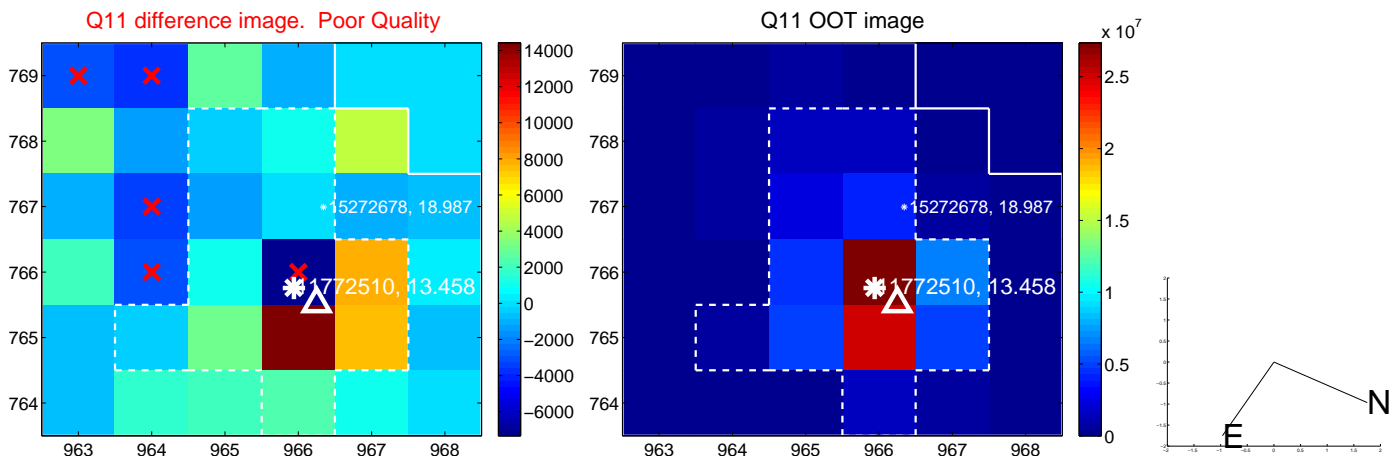
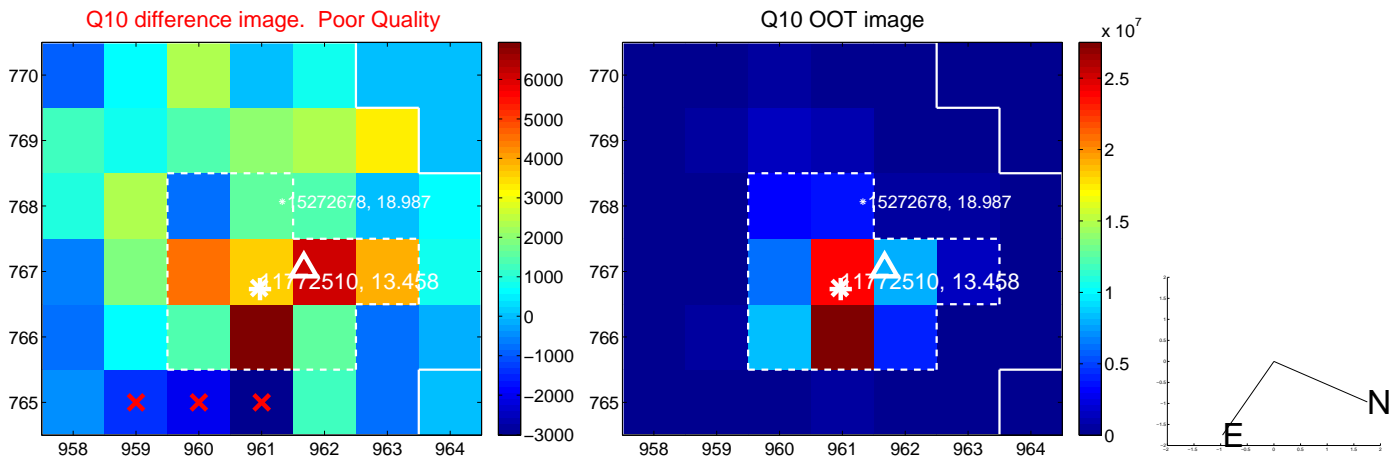
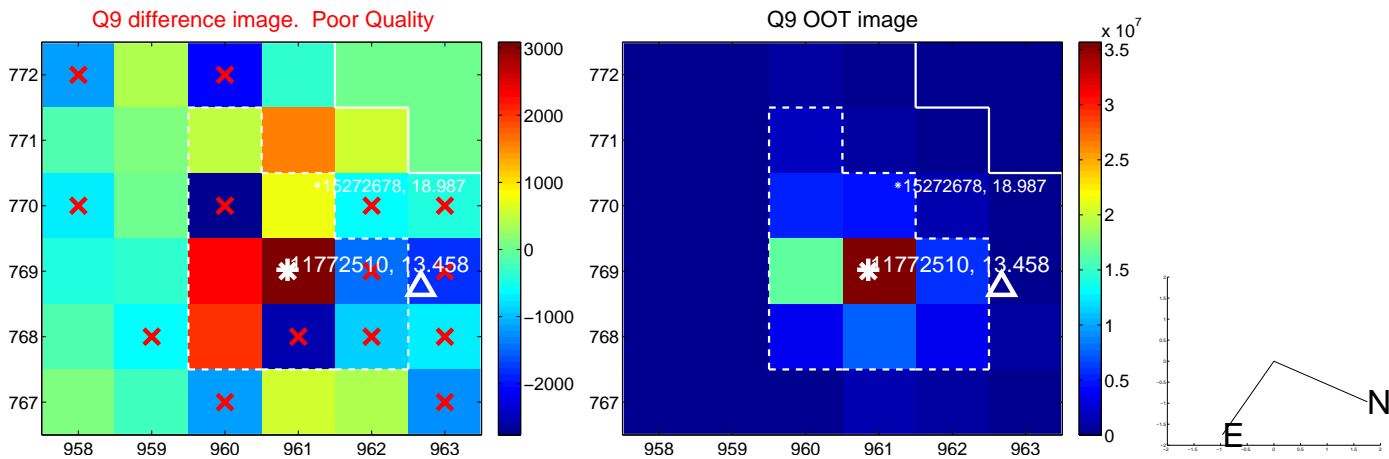
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



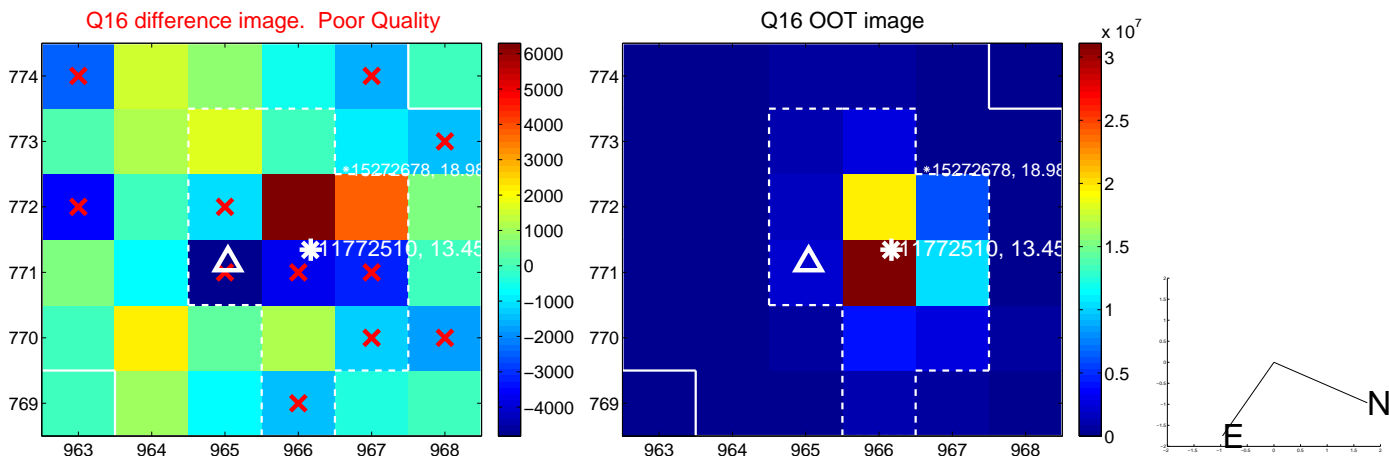
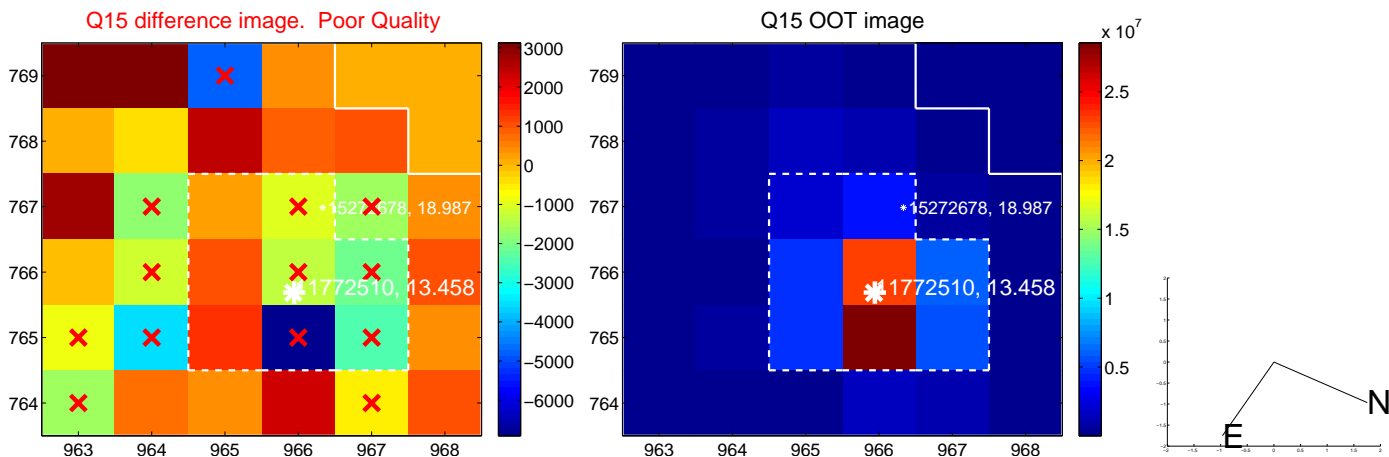
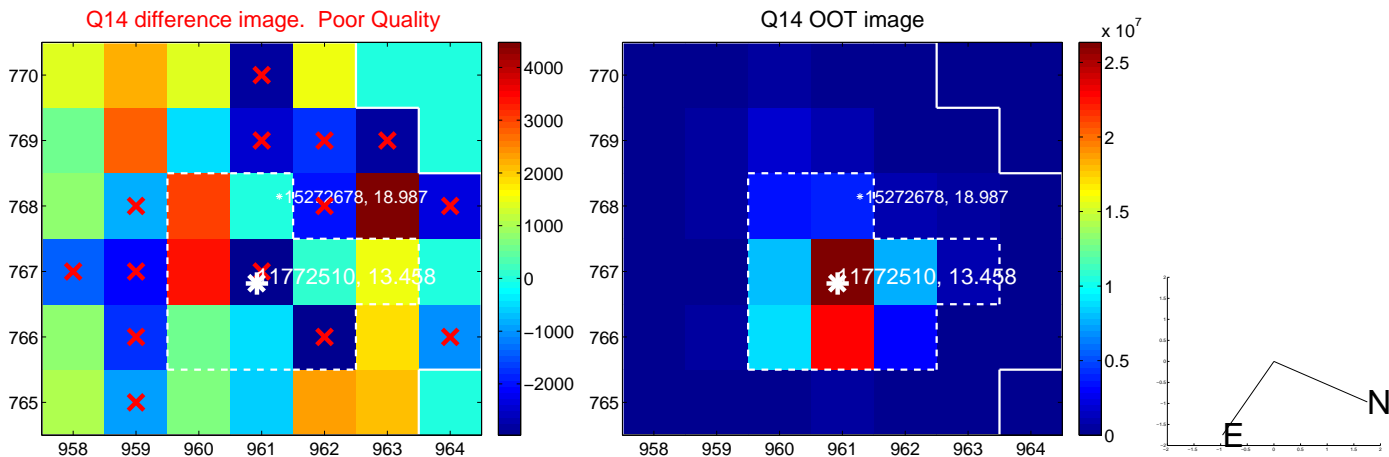
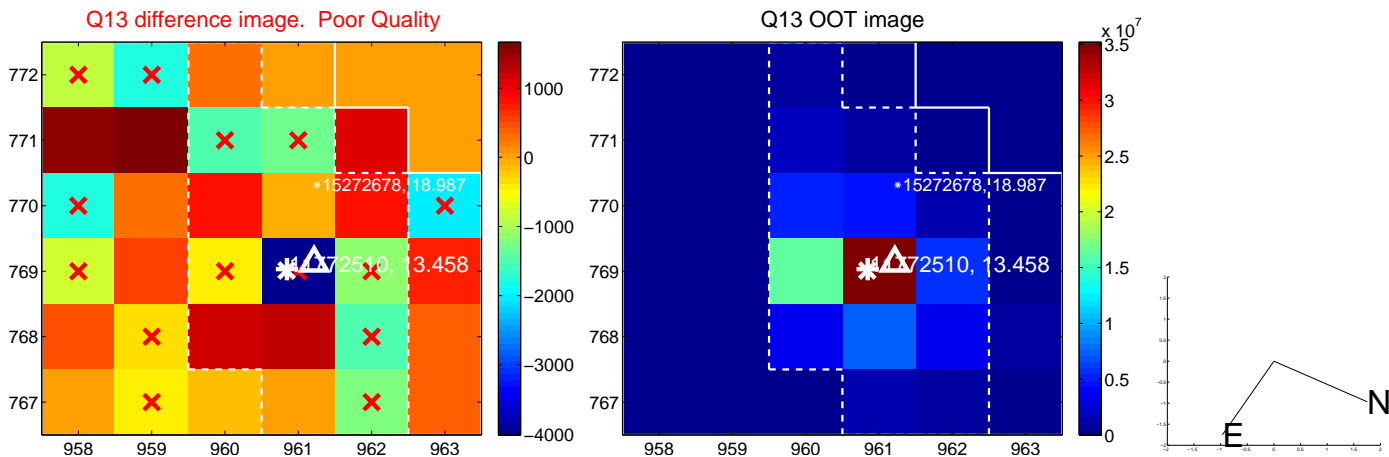
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



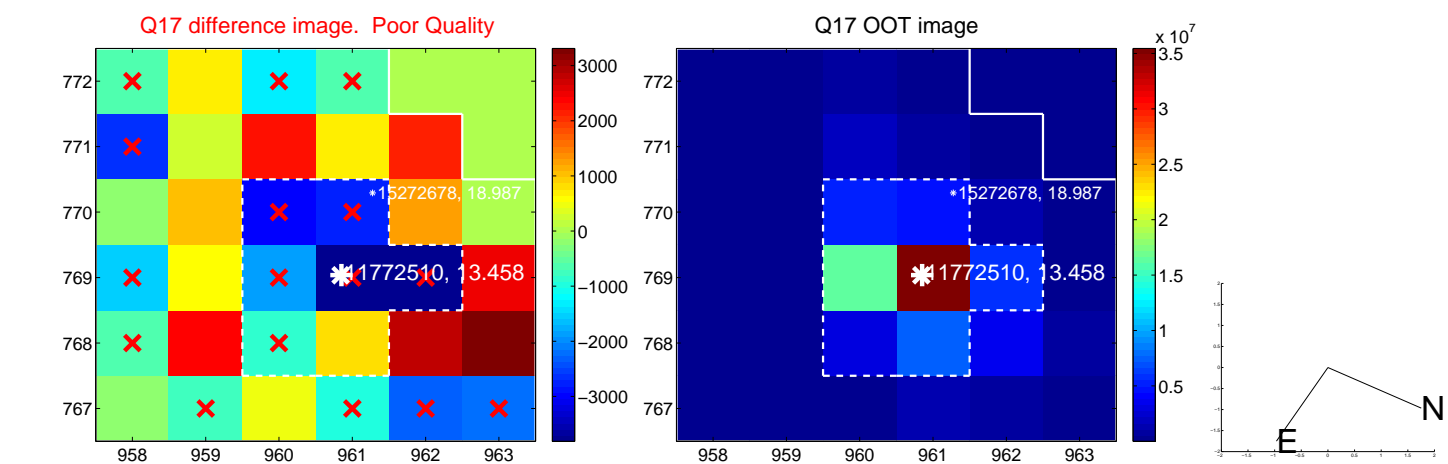
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



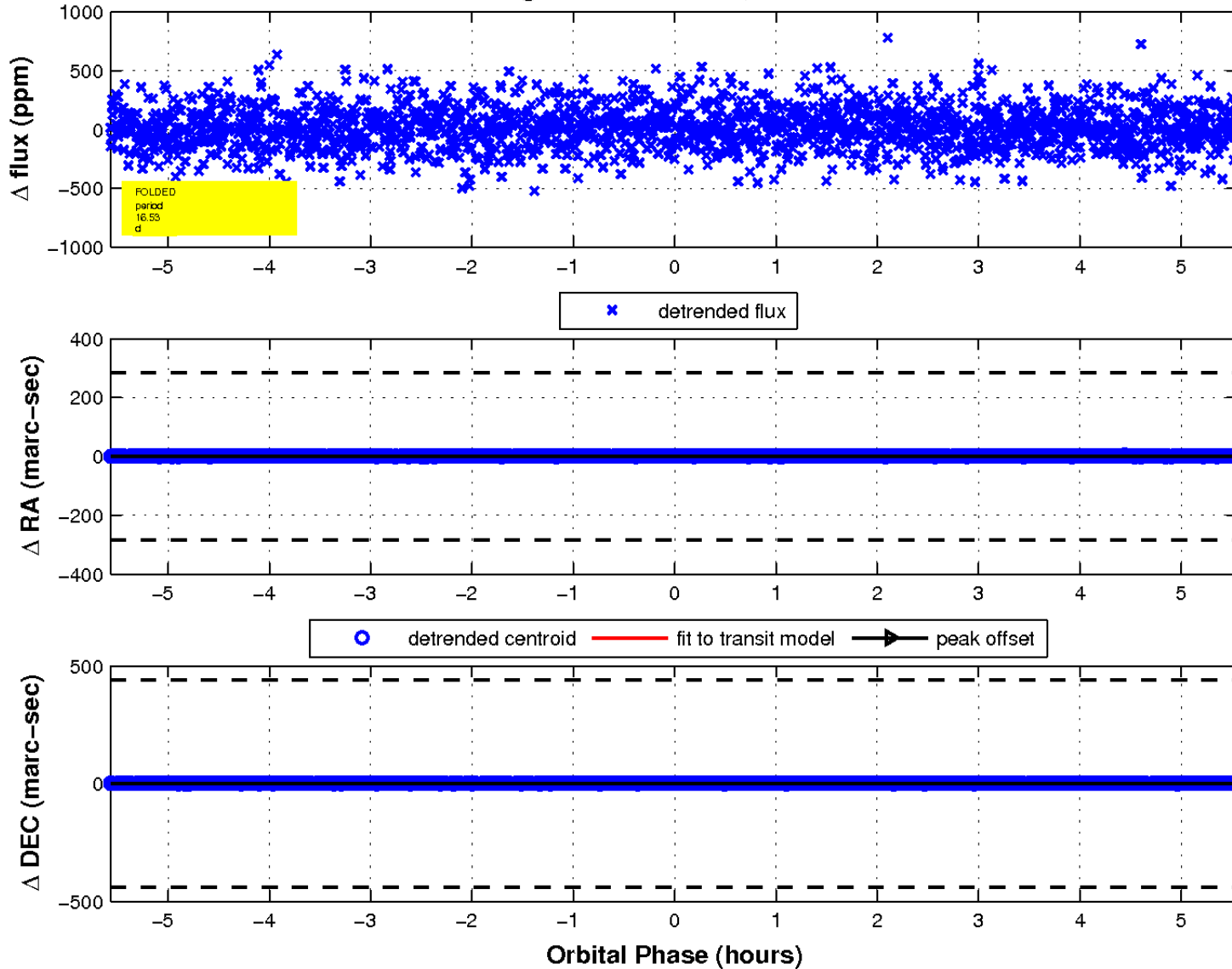
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 5 of 5



UKIRT Image

