

# KIC 010861194

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010861194-01	OBS	No	395.803276	446.329754	3547.7	5.362	15.9	5.9	0.66	5255	3.88	0.36
010861194-02	OBS	No	1.264656	132.774705	117.8	1.959	7.3	6.9	0.66	5255	0.86	760.58
010861194-03	OBS	No	465.585723	590.757497	3582.1	3.583	11.0	8.8	0.66	5255	4.02	0.29

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010861194-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010861194-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
010861194-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

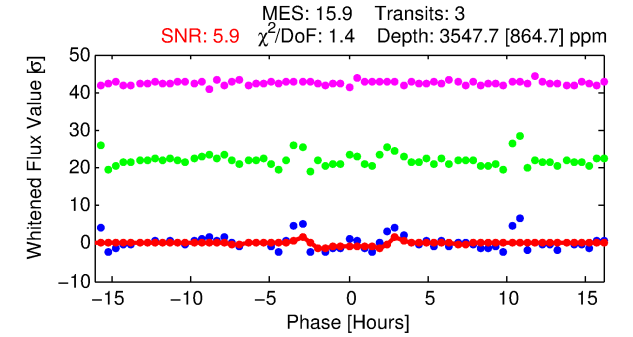
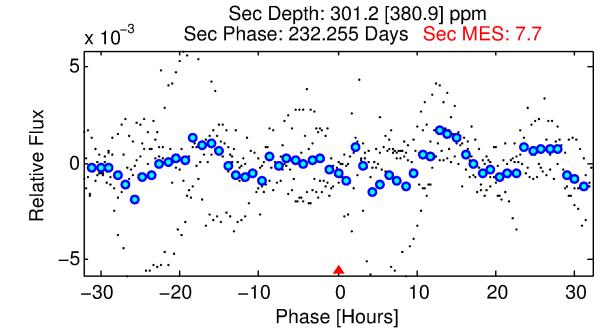
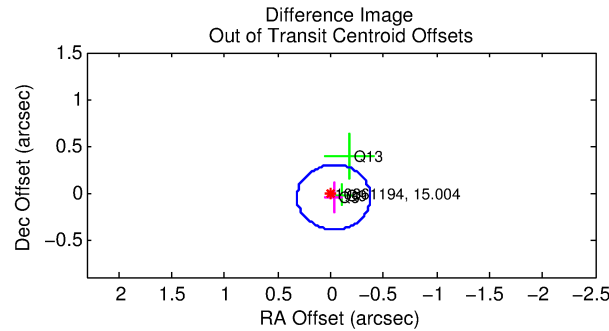
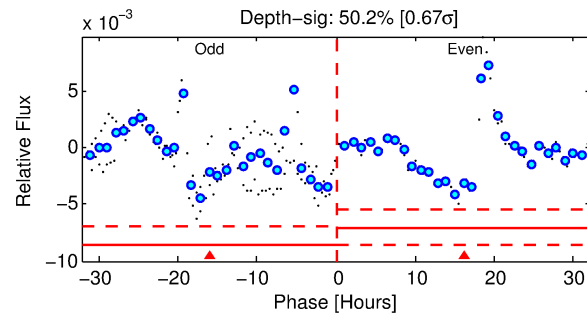
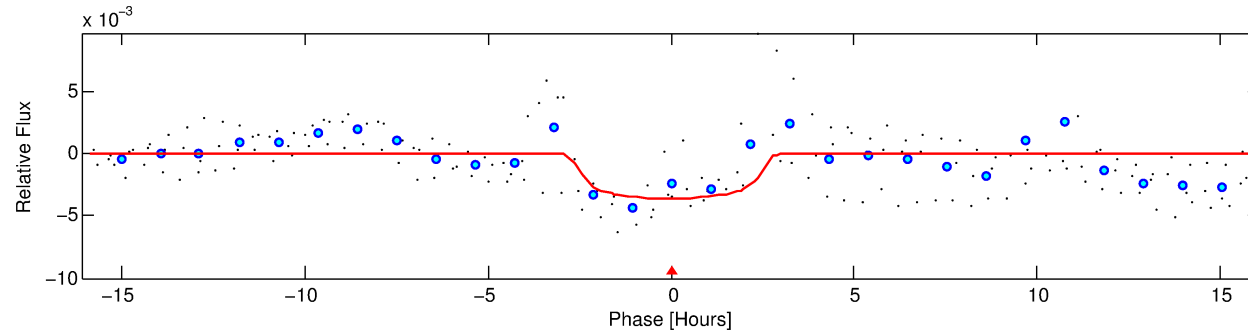
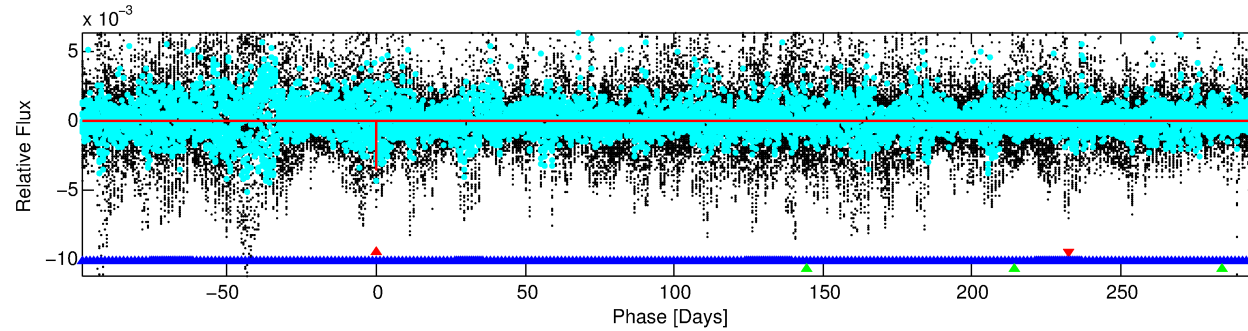
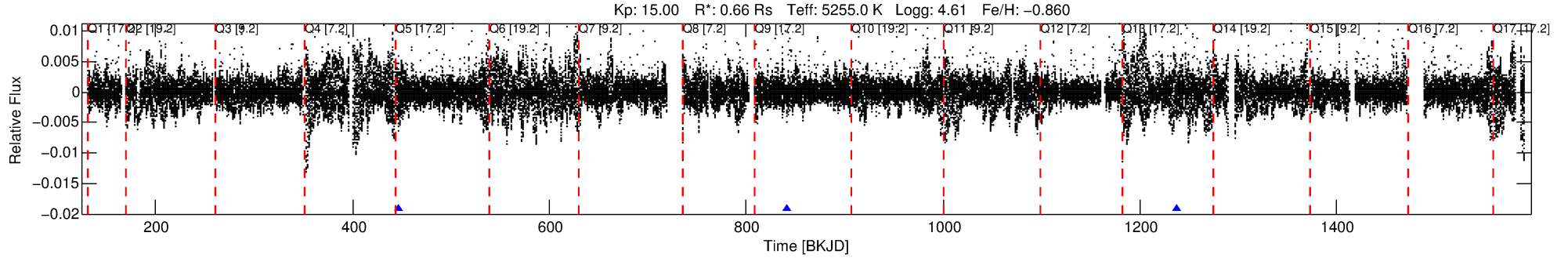
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010861194-01

No Significant Match Found

# DV One-Page Summary

KIC: 10861194 Candidate: 1 of 3 Period: 395.803 d



## DV Fit Results:

Period = 395.80328 [0.00506] d  
Epoch = 446.3298 [0.0049] BKJD  
Rp/R\* = 0.0539 [0.0430]  
a/R\* = 594.29 [1938.41]  
b = 0.00 [2041.29]  
Seff = 0.36 [0.07]  
Teq = 197 [9] K  
Rp = 3.88 [3.11] Re  
a = 0.9105 [0.0796] AU  
Ag = 9137.39 [18630.57] [0.49 $\sigma$ ]  
Teffp = 2981 [1520] K [1.83 $\sigma$ ]

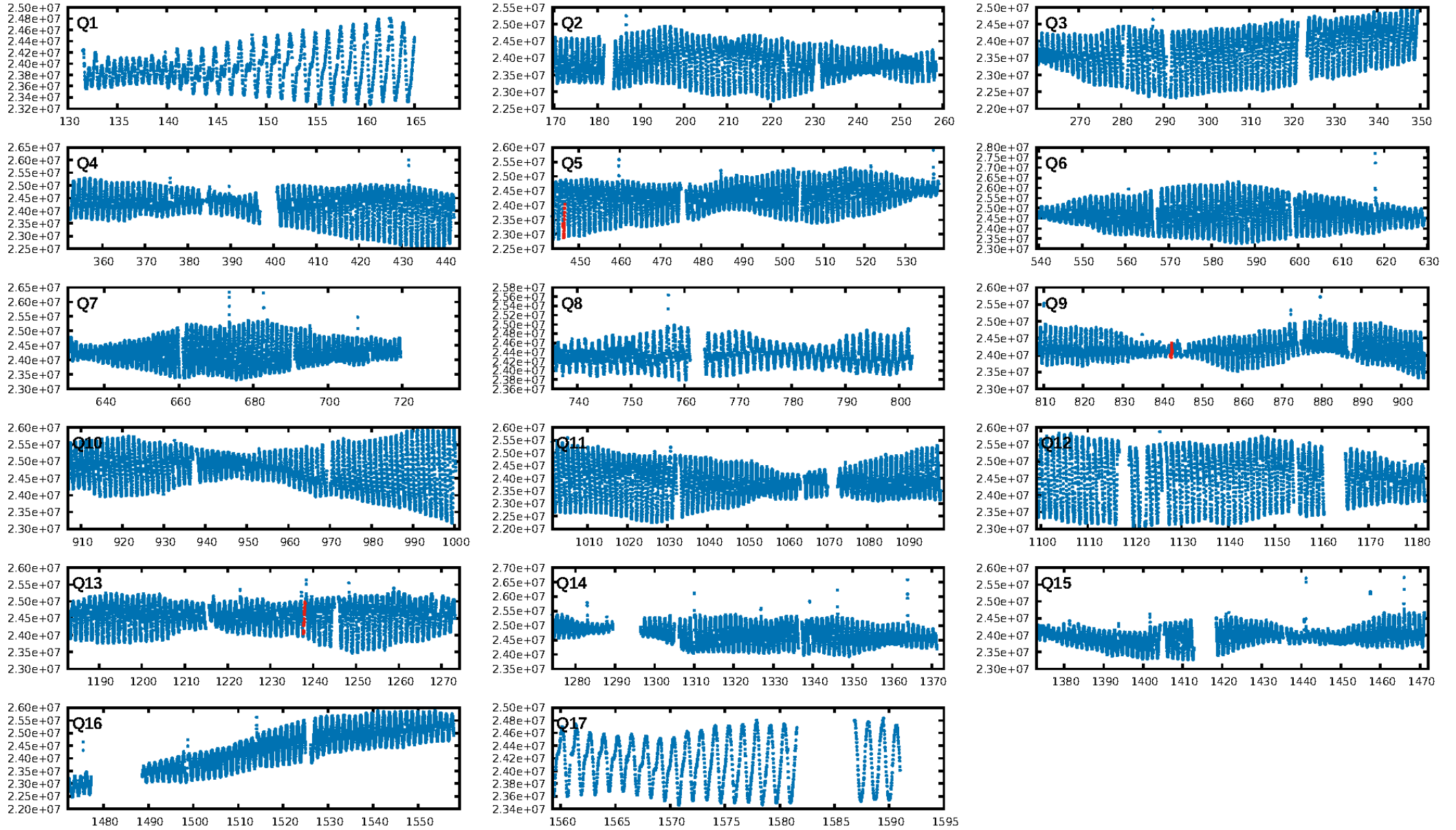
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1658.59 $\sigma$ ]  
LongPeriod-sig: 100.0% [259.68 $\sigma$ ]  
ModelChiSquare2-sig: 87.6%  
ModelChiSquareGof-sig: 44.7%  
Bootstrap-pfa: 1.54e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -1.677  
Centroid-sig: 76.5%  
Centroid-so: 0.386 arcsec [0.83 $\sigma$ ]  
OotOffset-rm: 0.057 arcsec [0.50 $\sigma$ ]  
KicOffset-rm: 0.182 arcsec [1.15 $\sigma$ ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 0.00 [0/3]

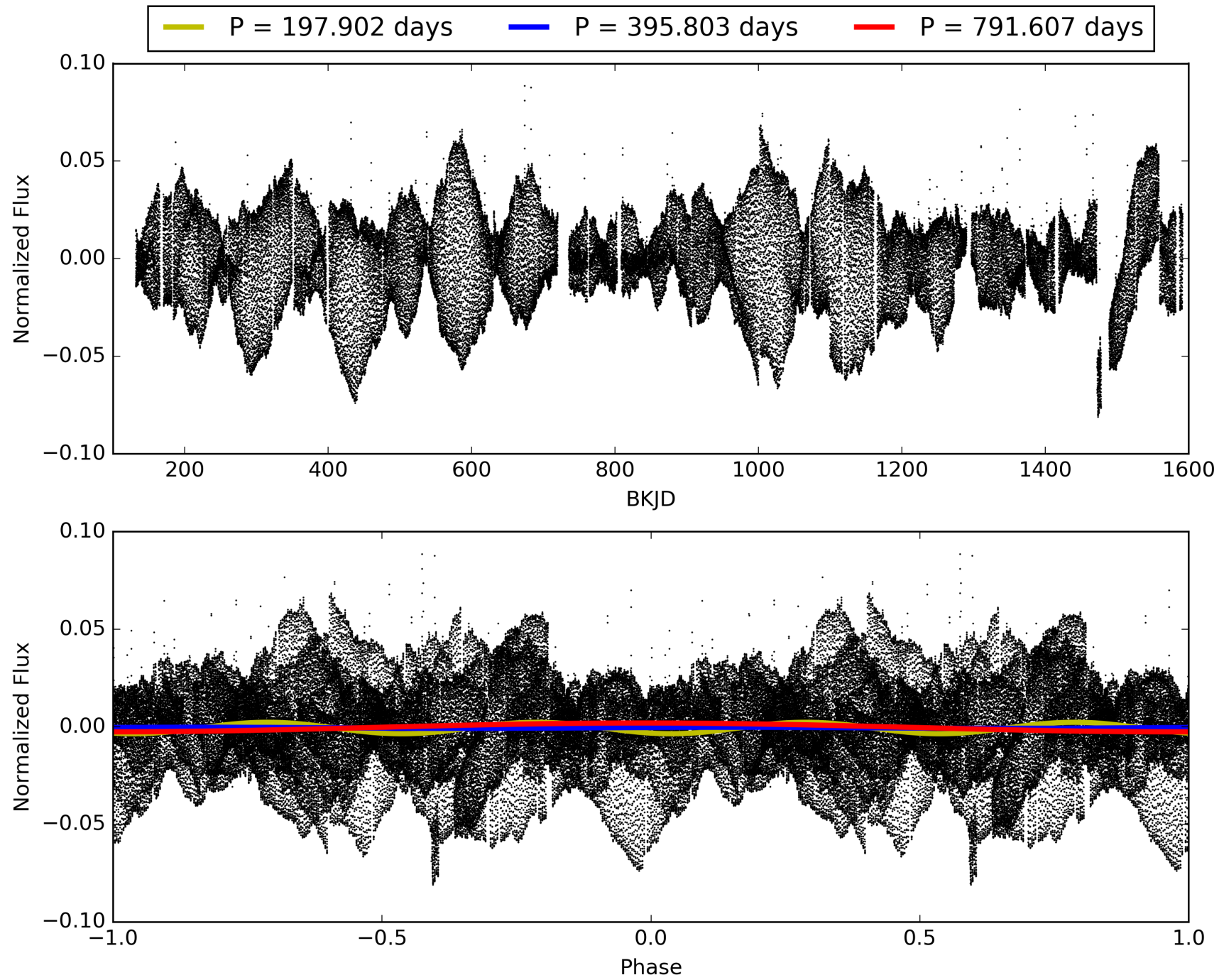
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:11:23 Z

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

# TCE 010861194-01, PDC Light Curves

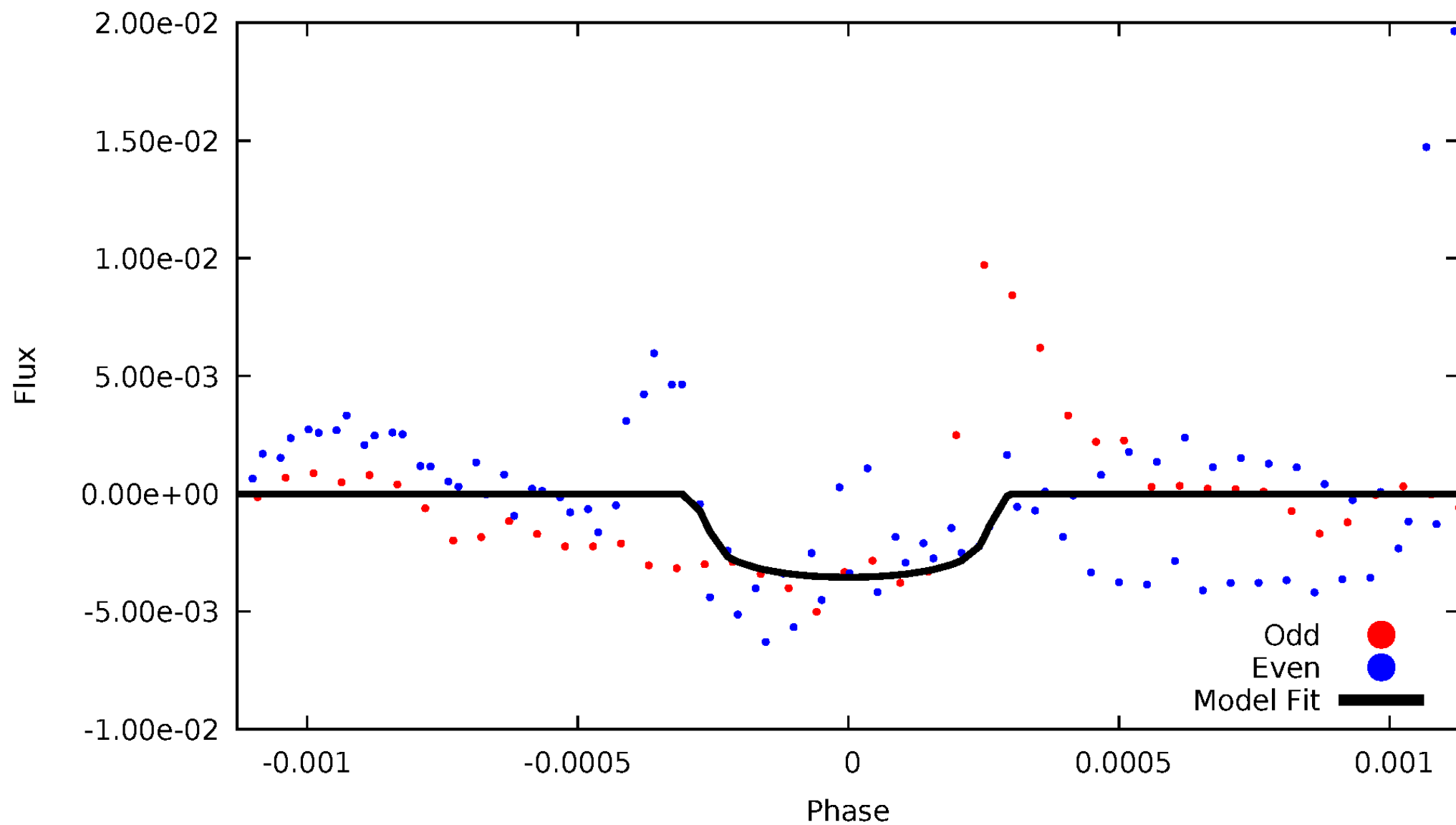


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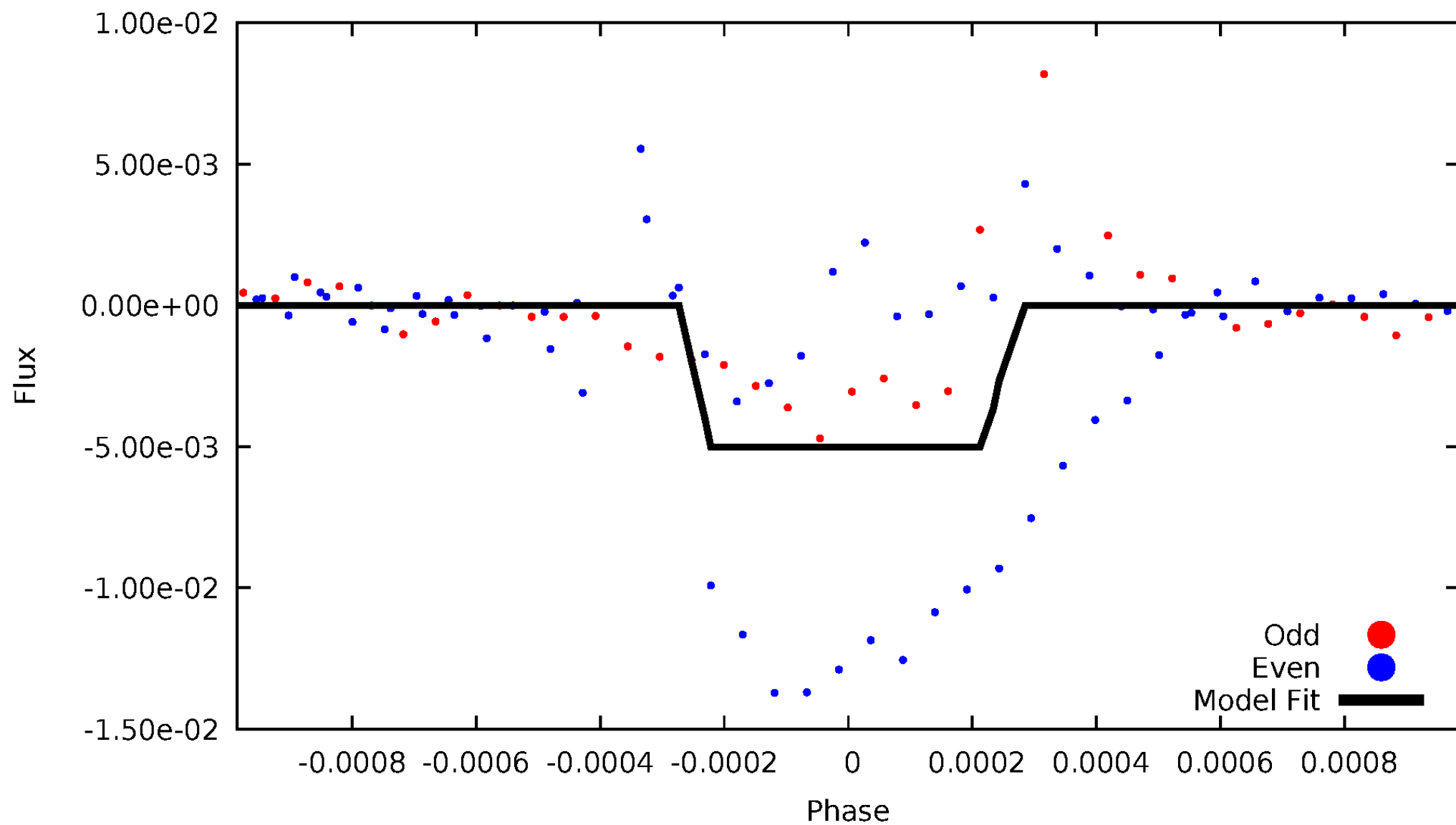
# DV Odd/Even

TCE 010861194-01



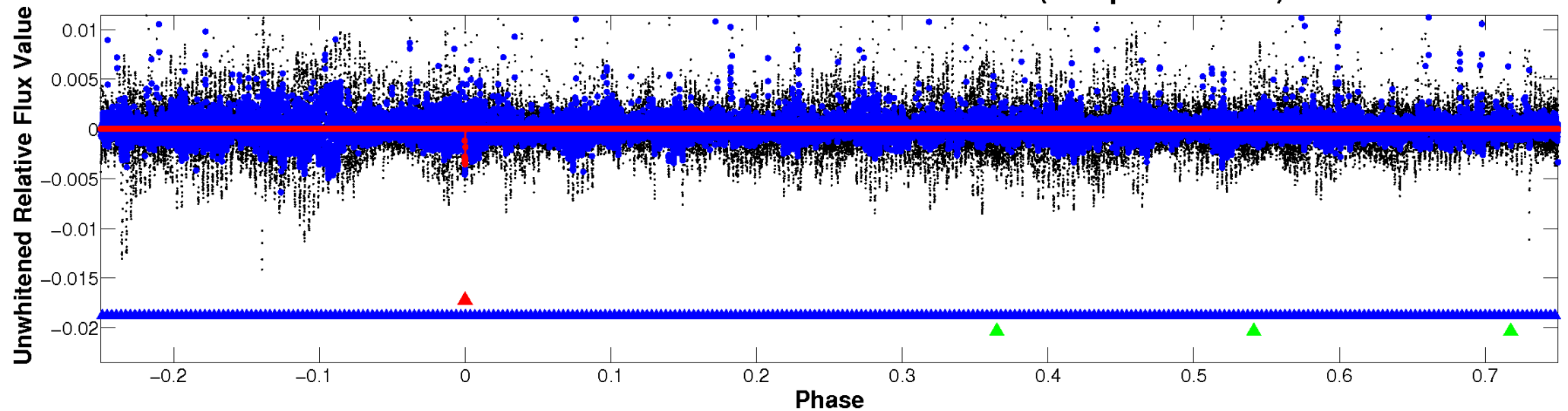
# ALT Odd/Even

TCE 010861194-01

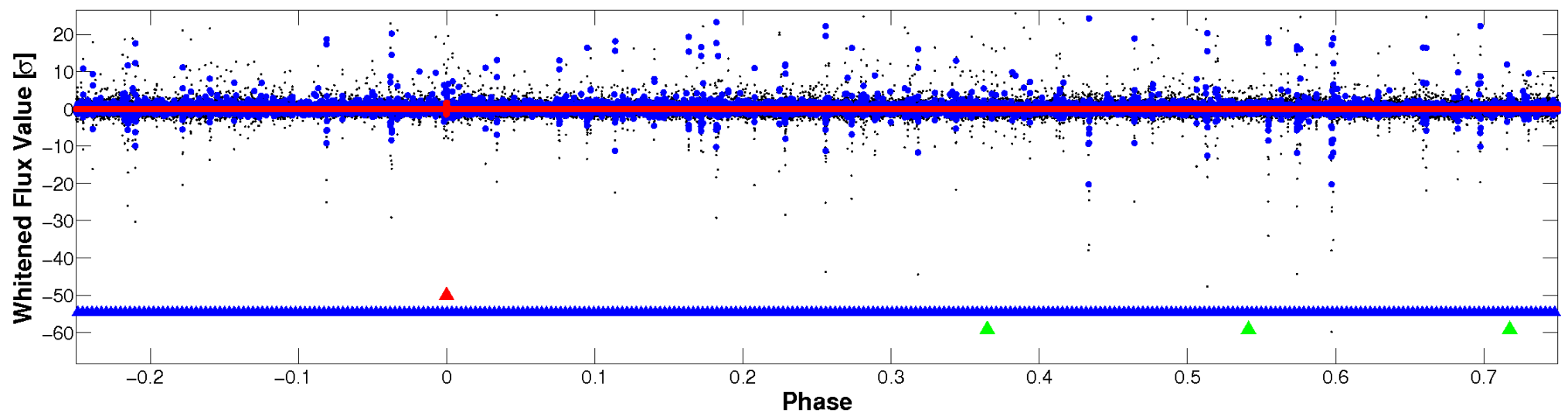


# Non-Whitened Vs. Whitened Light Curve

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

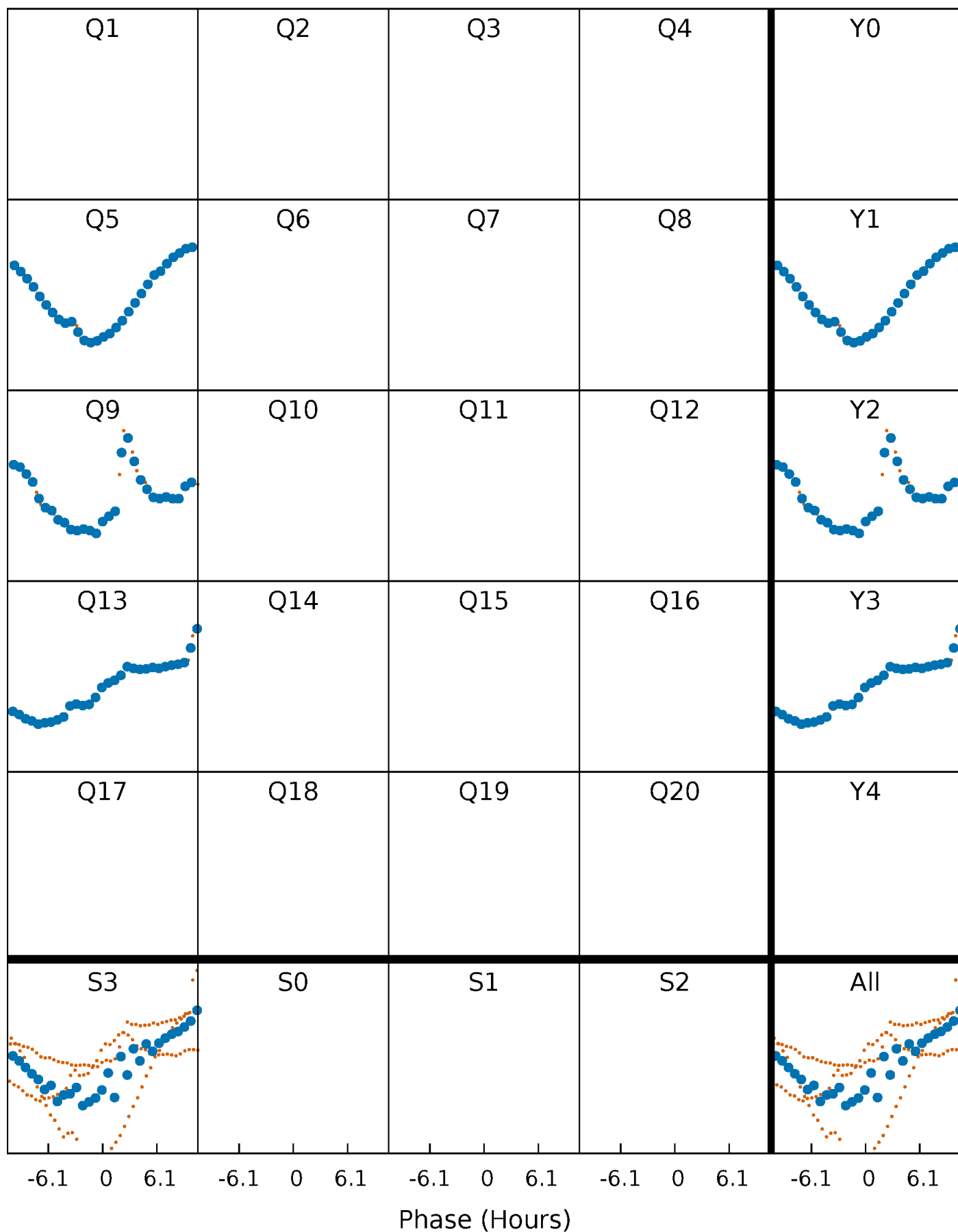


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

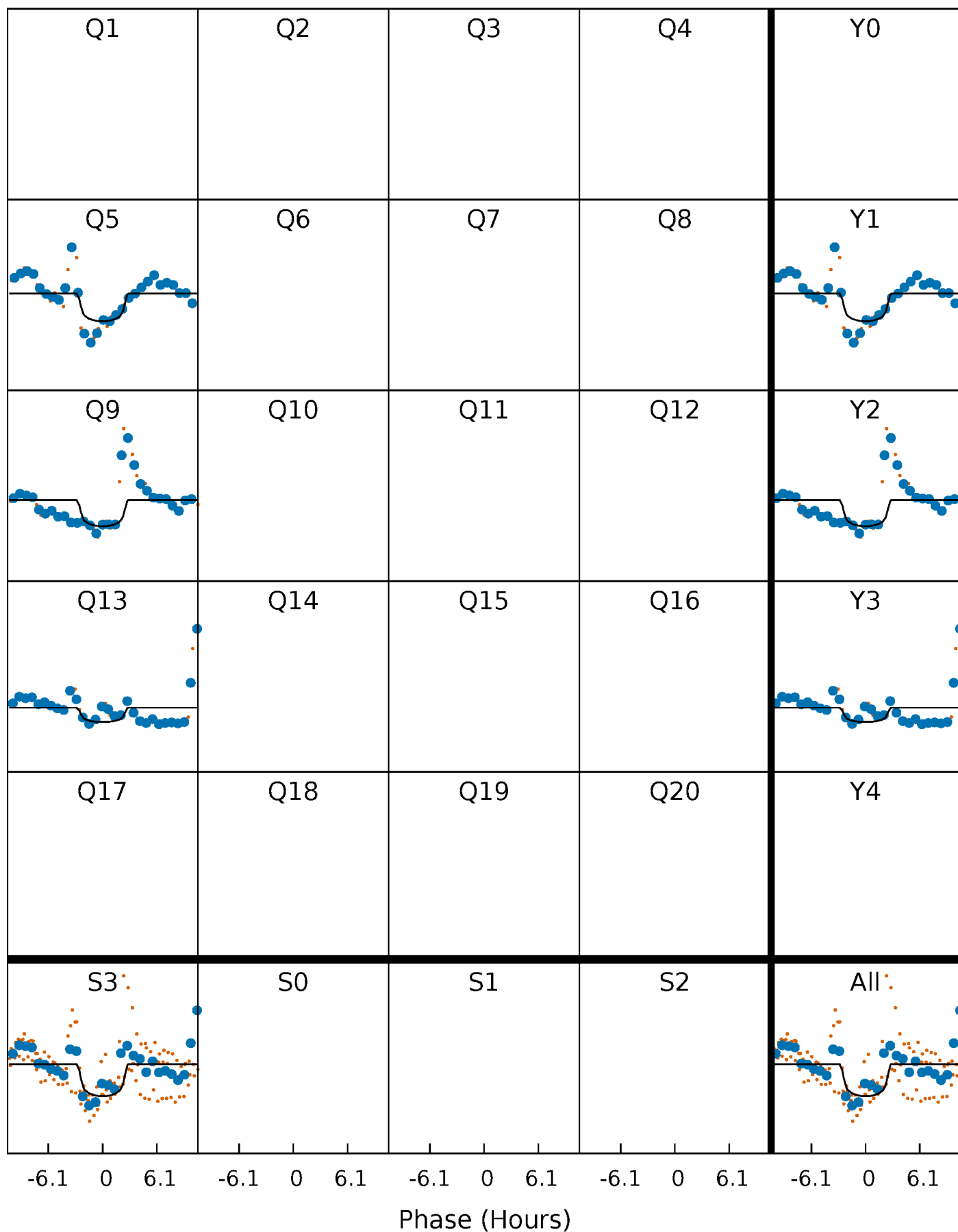
TCE 010861194-01 P=395.803276 Days  $T_0=446.329754$  (BKJD)





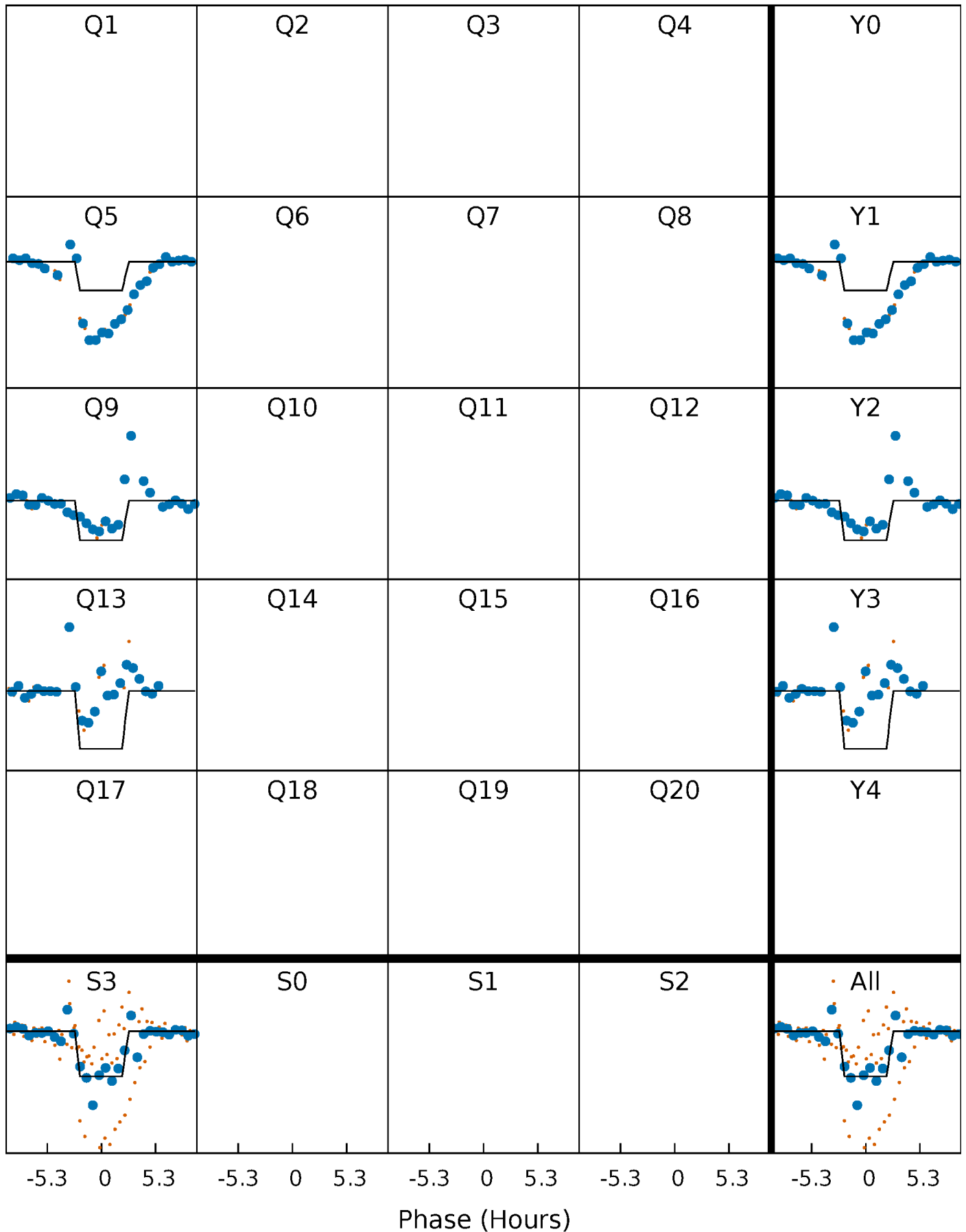
# DV Quarter-Phased Transit Curves

TCE 010861194-01     $P=395.803276$  Days     $T_0=446.329754$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

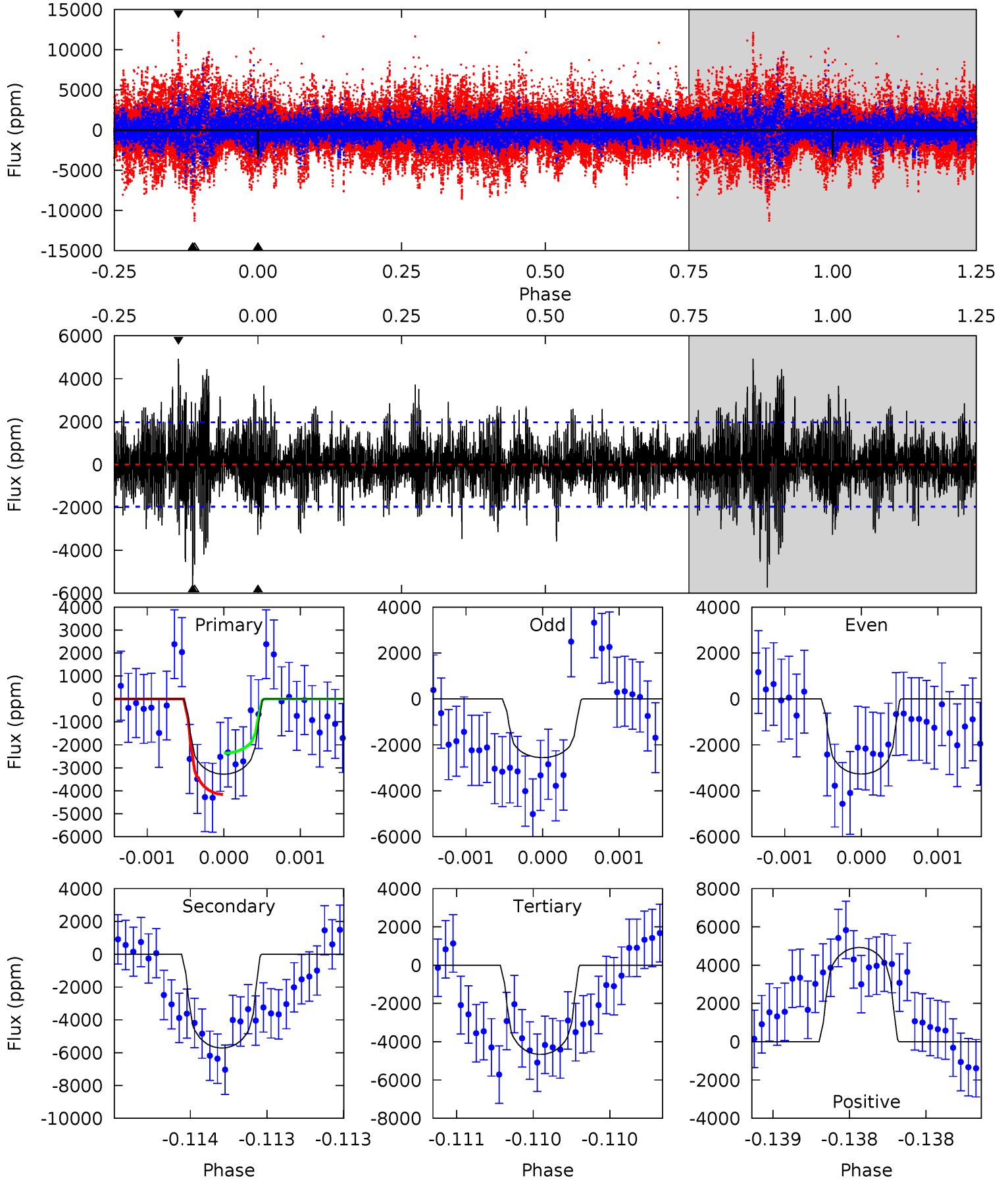
TCE 010861194-01 P=395.811680 Days  $T_0=446.316269$  (BKJD)



# DV Model-Shift Uniqueness Test

010861194-01, P = 395.803276 Days, E = 50.526478 Days

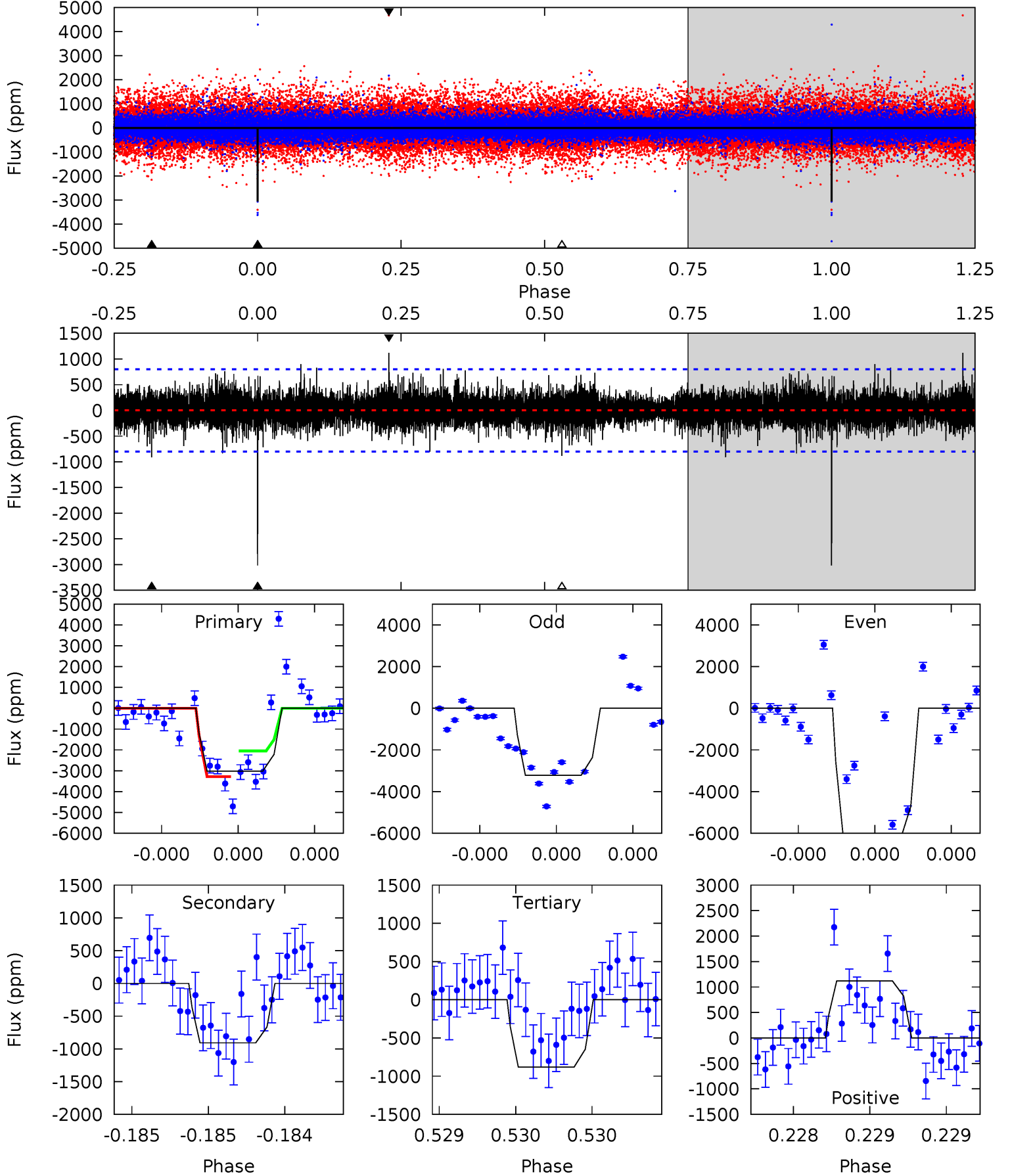
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.24	16.1	13.2	13.9	5.55	3.44	2.92	-3.91	-4.65	2.97	2.23	0.95	1.19	0.46	2.51



# Alt Model-Shift Uniqueness Test

010861194-01, P = 395.811680 Days, E = 50.504589 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
21.0	6.32	6.15	7.80	5.57	3.48	1.29	14.8	13.2	0.17	-1.47	13.6	1.98	0.27	0



### Stellar Parameters For KIC 010861194

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5255^{+173}_{-173}$	$4.608^{+0.078}_{-0.048}$	$-0.860^{+0.350}_{-0.300}$	$0.659^{+0.063}_{-0.056}$	$0.641^{+0.069}_{-0.028}$	$3.160^{+0.910}_{-0.591}$
	+3%/-3%	+2%/-1%	+41%/-35%	+10%/-8%	+11%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010861194-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-5717 \pm 355$	$4.40^{+2.81}_{-2.46}$	$274^{+10}_{-11}$	$5781^{+3456}_{-1110}$	$135476^{+556493}_{-83976}$
Alt.	$-908 \pm 144$	$5.50^{+2.81}_{-3.00}$	$275^{+12}_{-11}$	$3689^{+1282}_{-443}$	$14488^{+50078}_{-8398}$

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

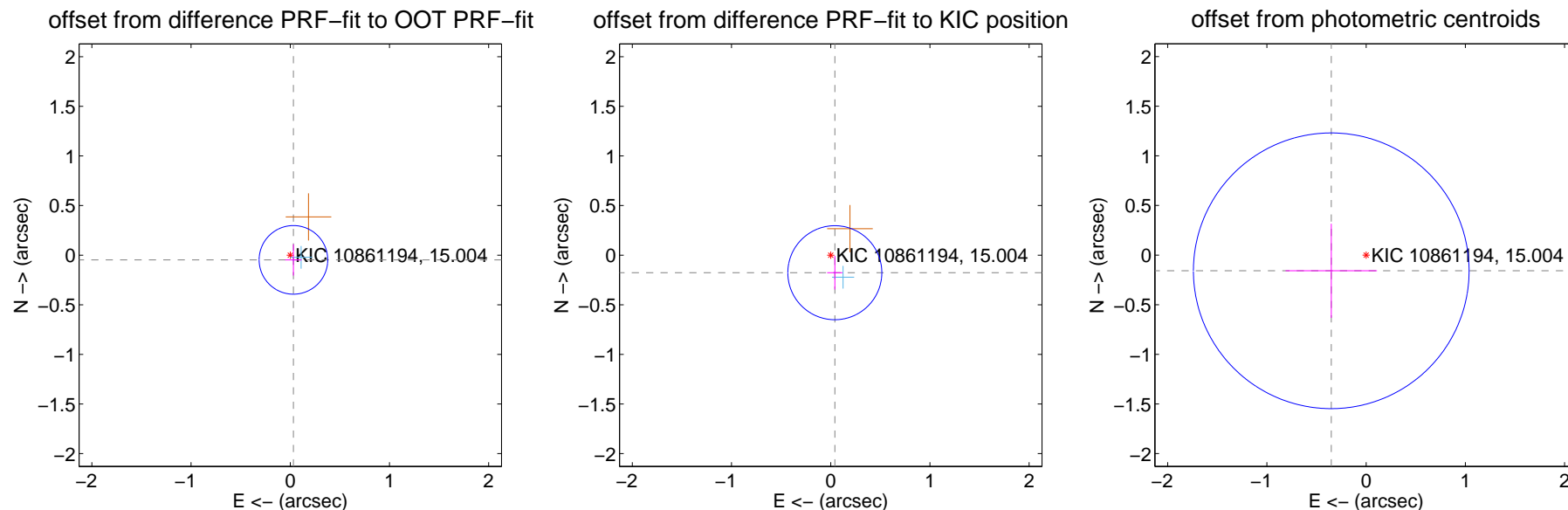
## DV Centroid Data

Supplemental centroid analysis for 010861194-01. Kepler magnitude: 15.00. Transit SNR 5.93

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.057 \pm 0.115$	0.50	$-0.032 \pm 0.083$	$-0.048 \pm 0.157$
PRF-fit source offset from KIC position	$0.182 \pm 0.158$	1.15	$-0.041 \pm 0.077$	$-0.177 \pm 0.169$
photometric centroid source offset	$0.39 \pm 0.46$	0.83	$0.35 \pm 0.46$	$-0.16 \pm 0.47$

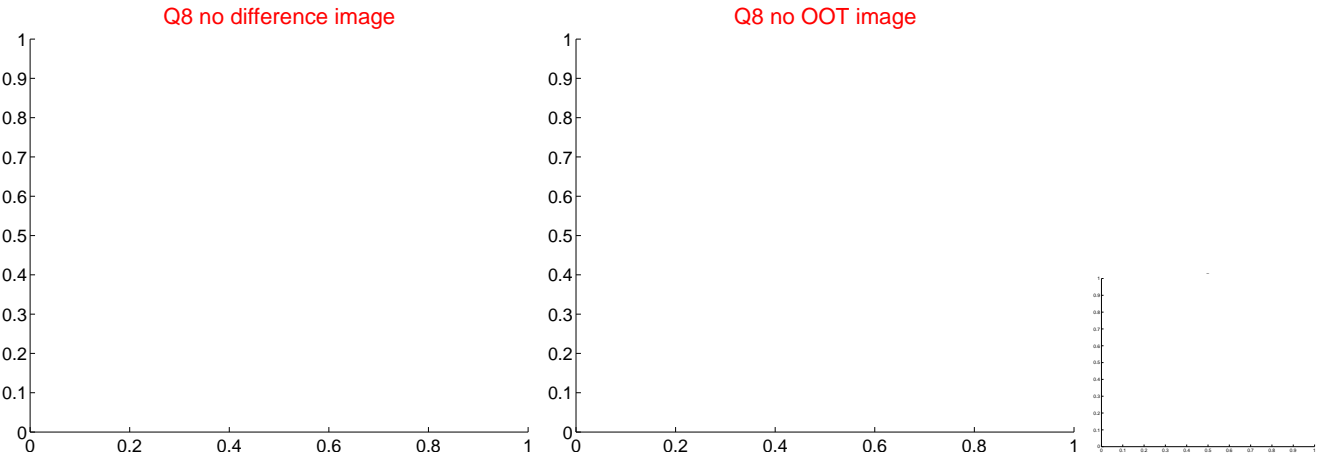
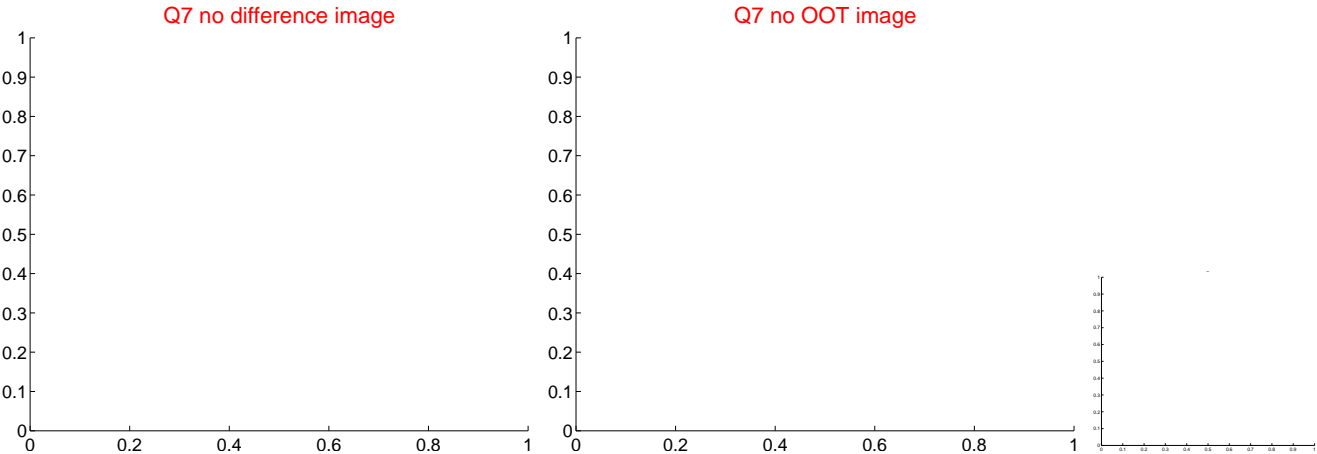
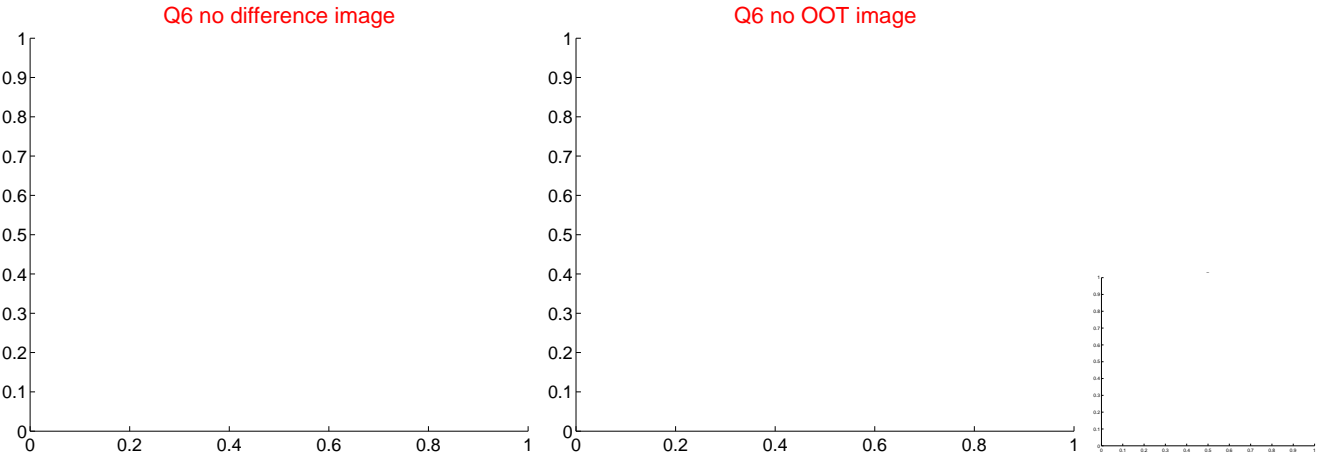
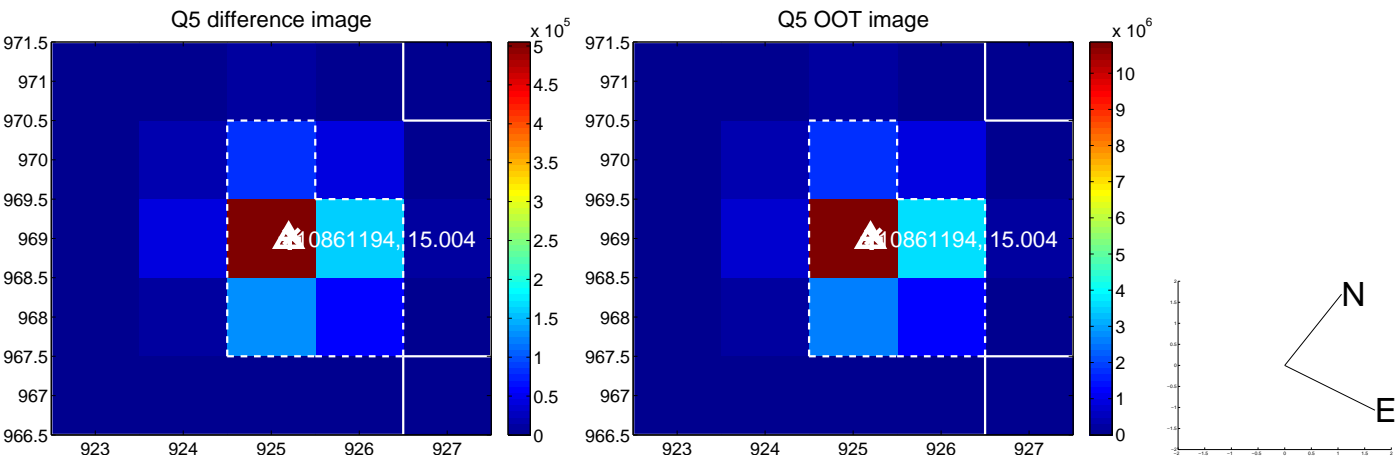


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

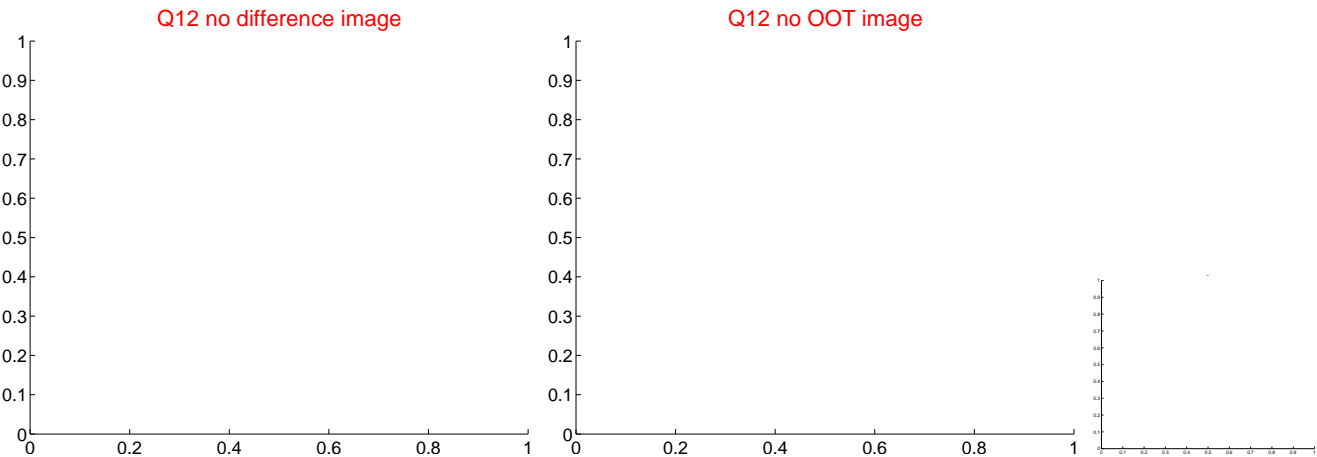
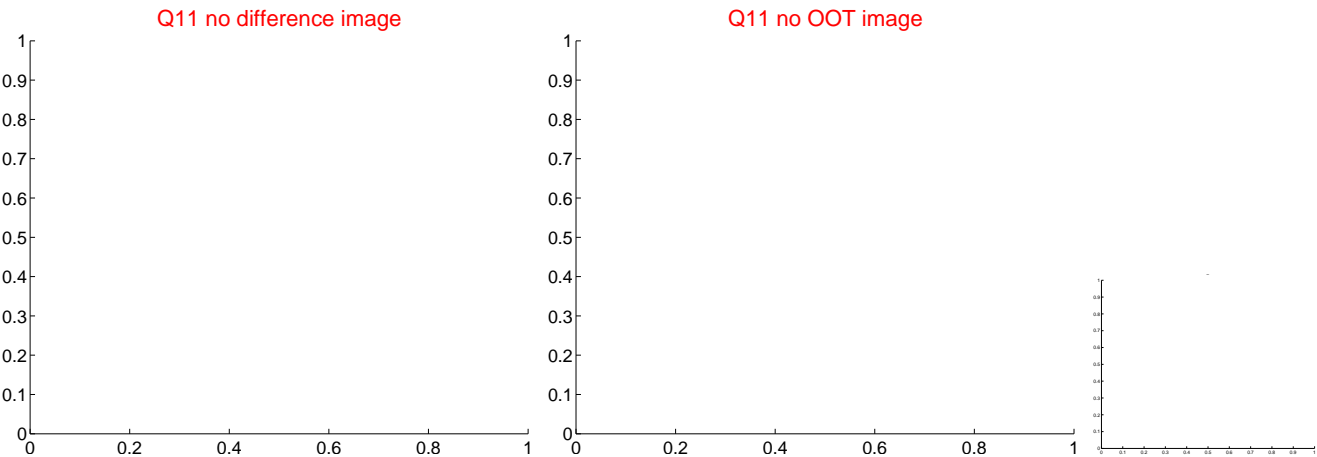
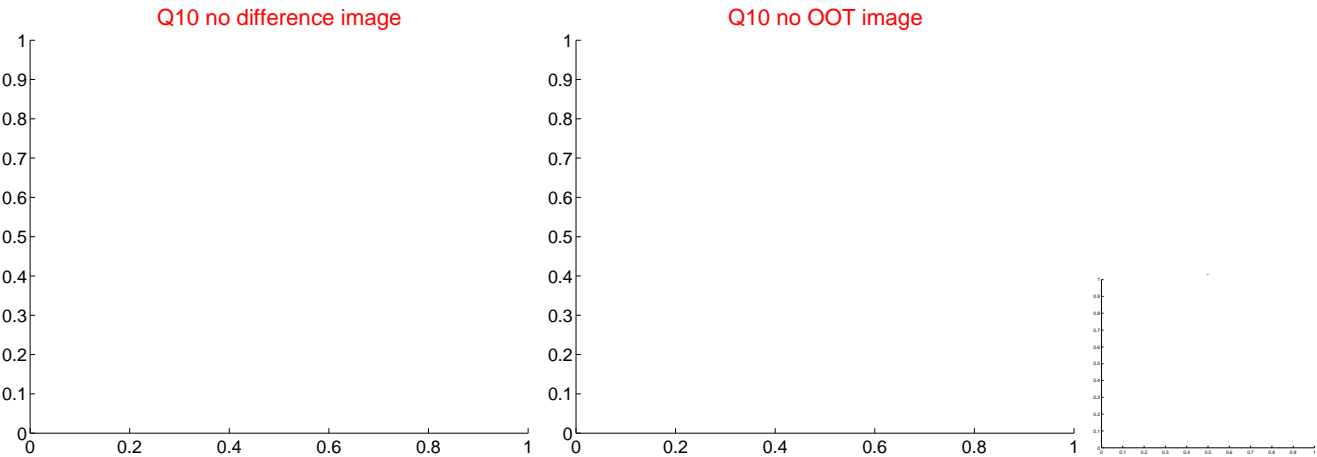
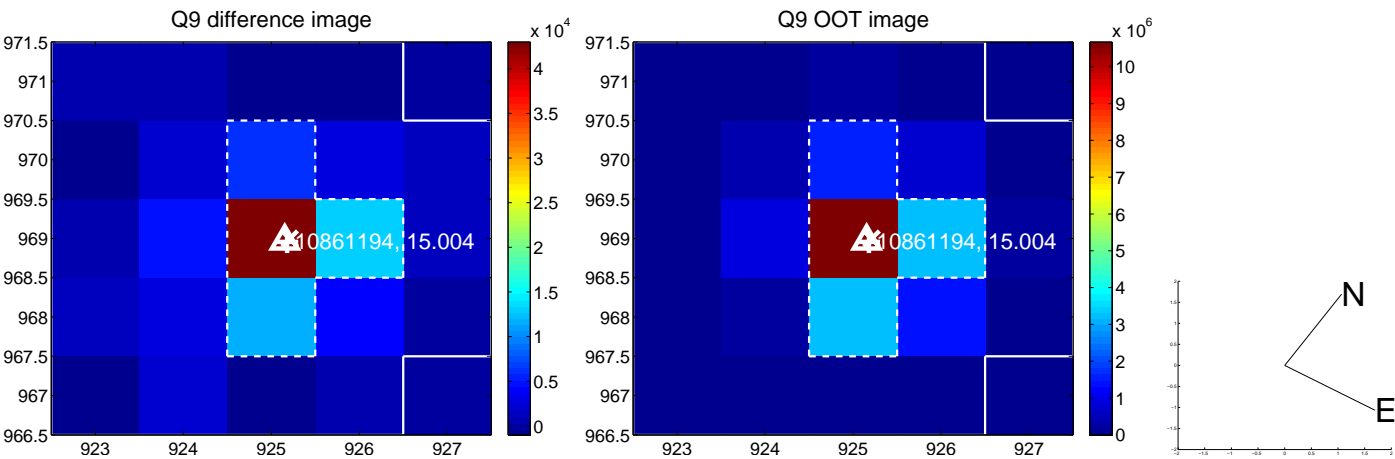


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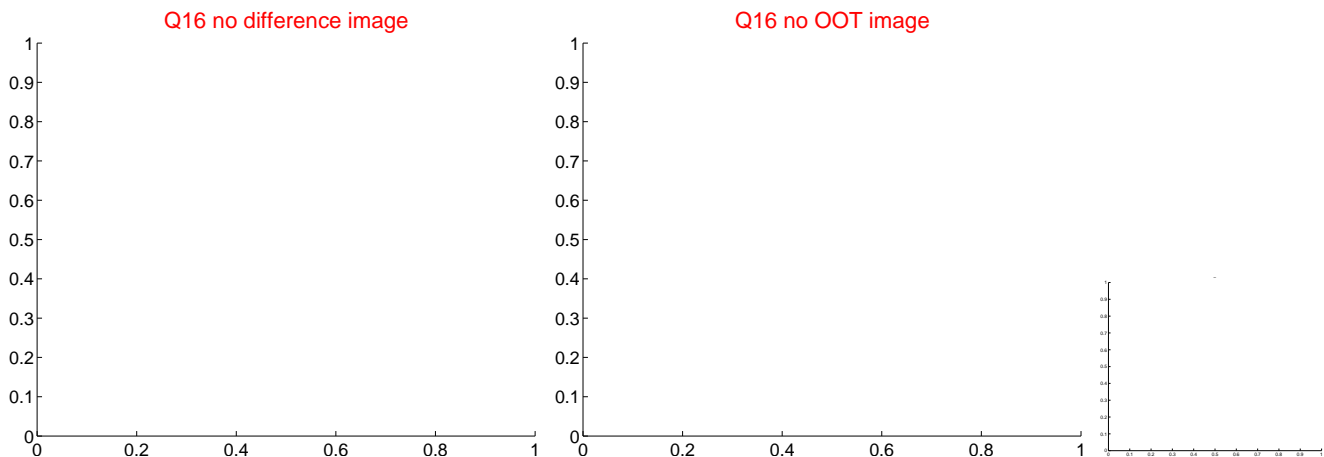
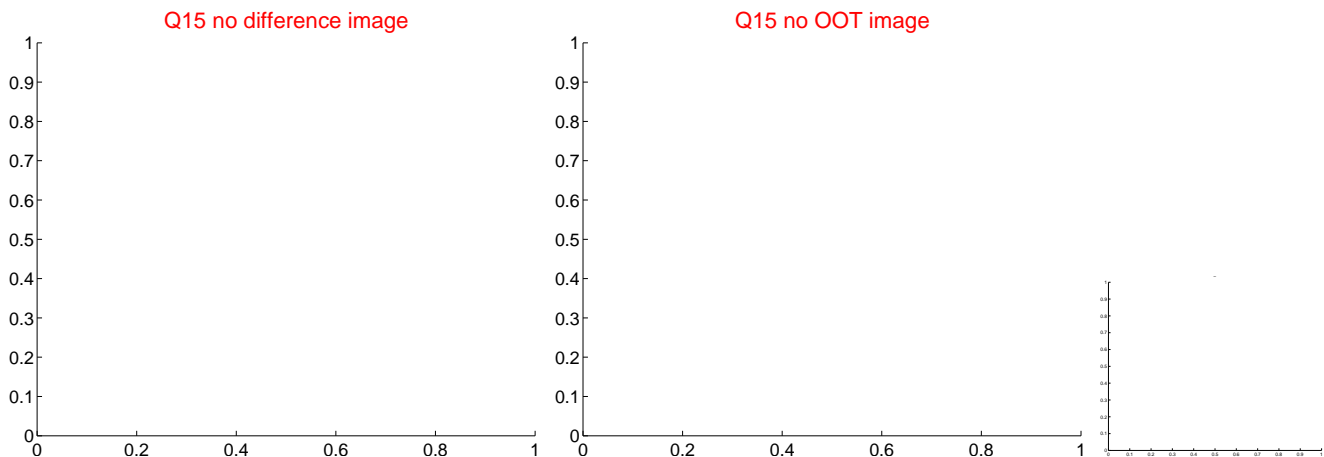
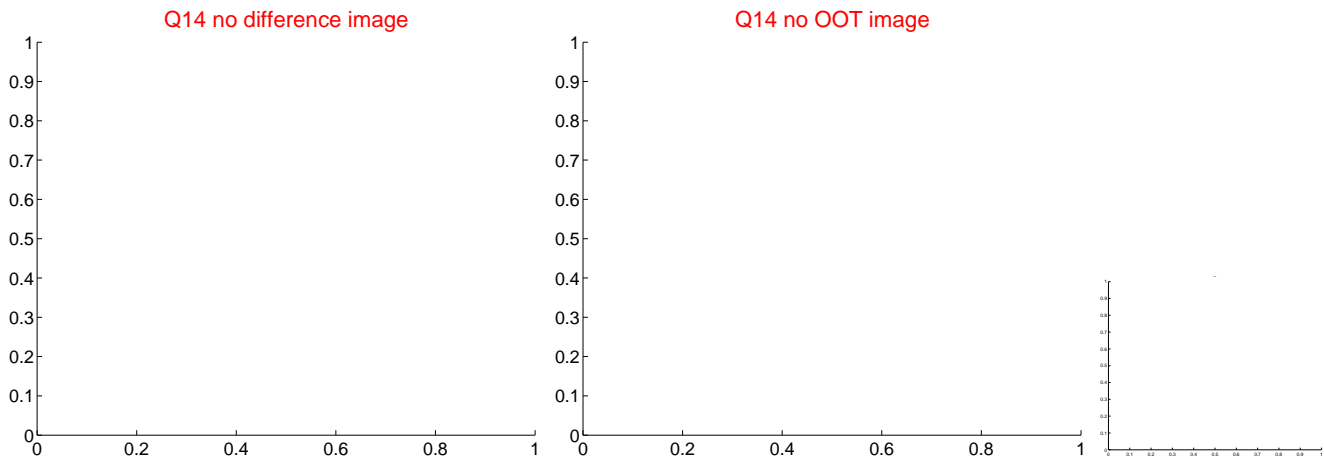
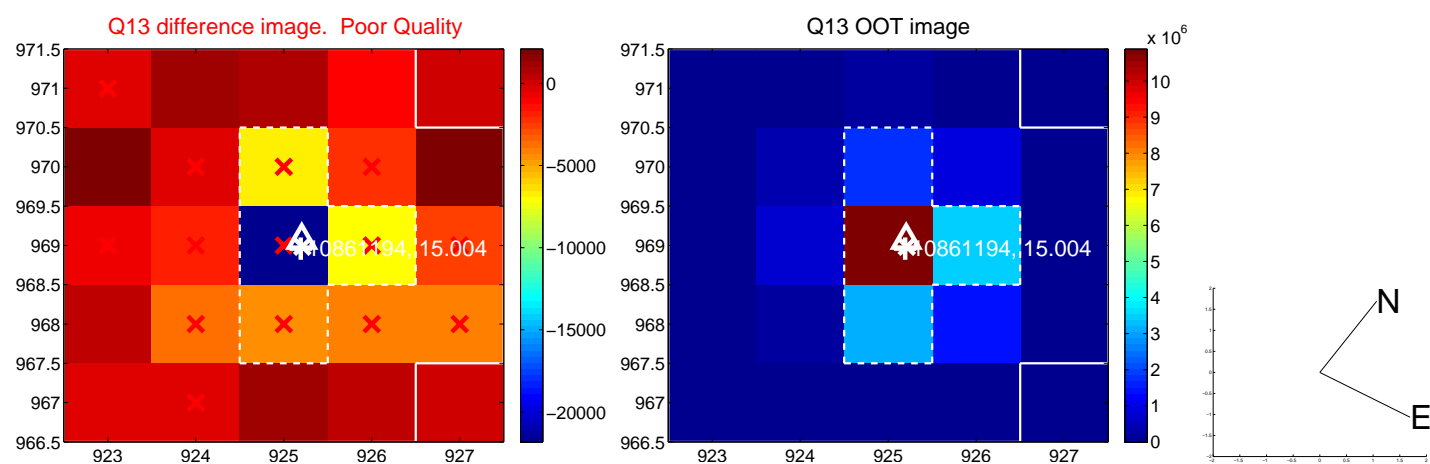




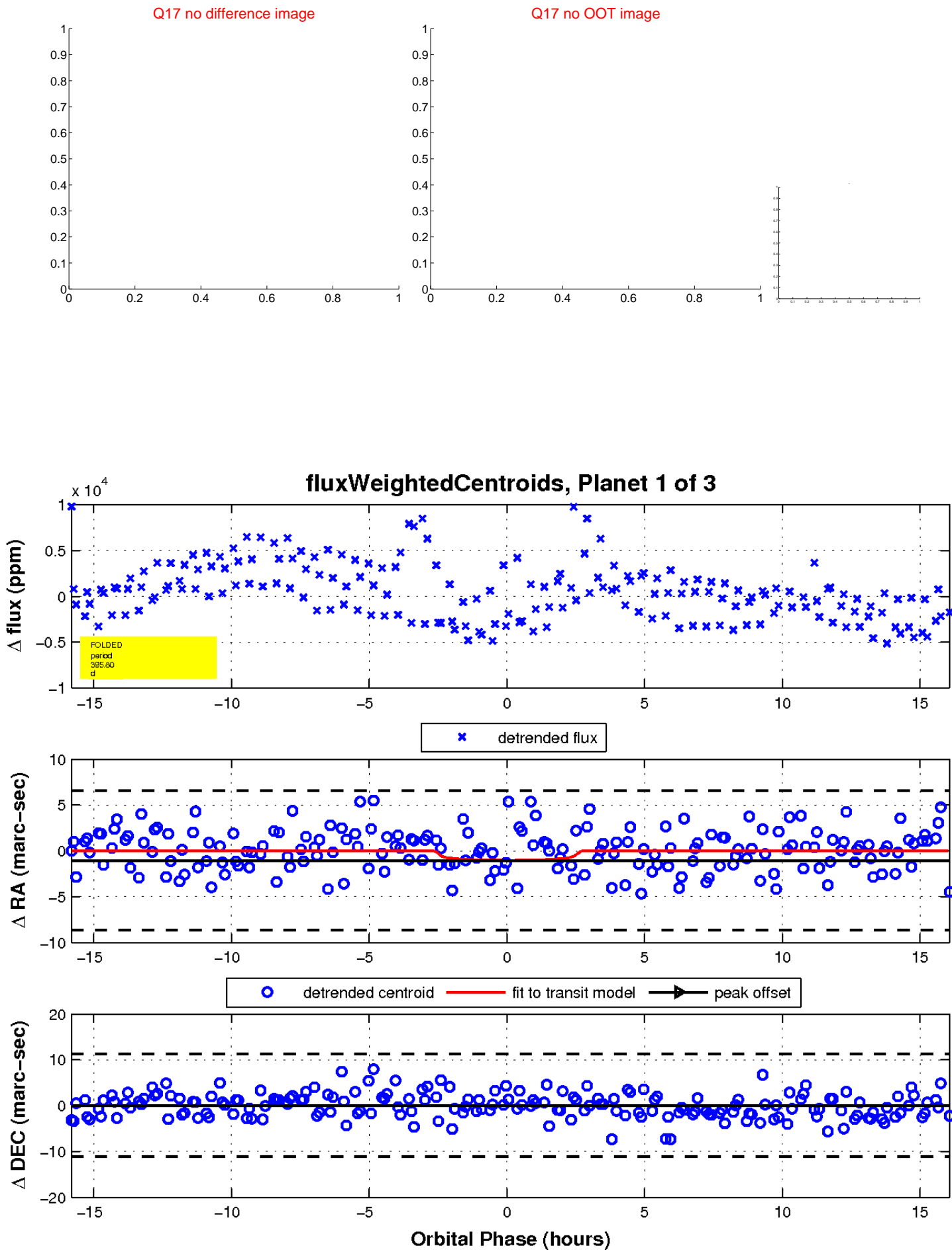
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

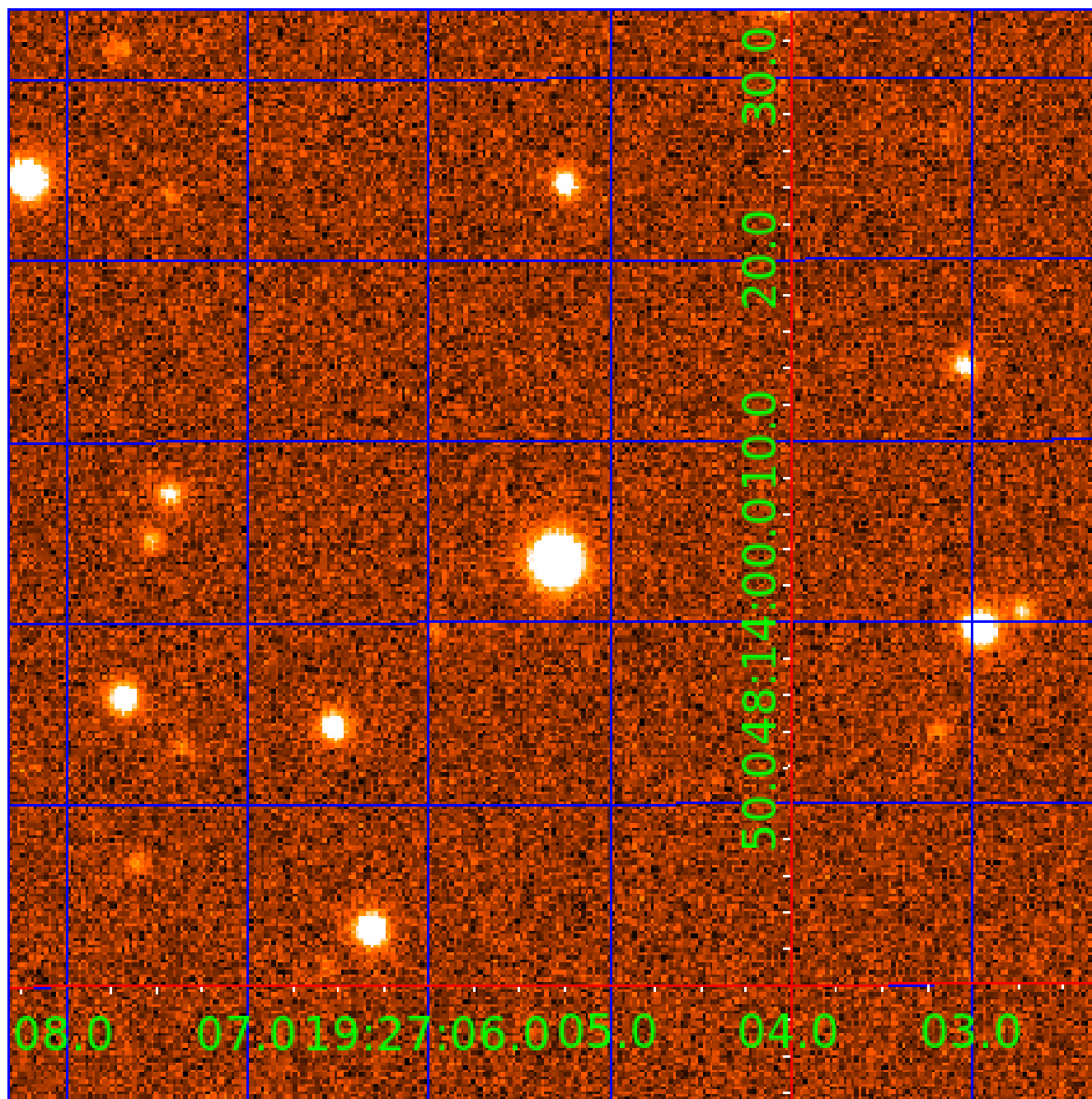


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 010861194

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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010861194-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
010861194-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

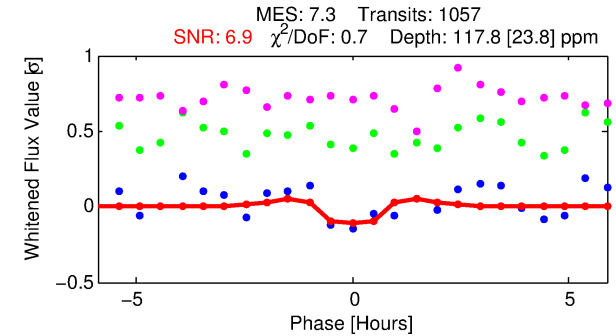
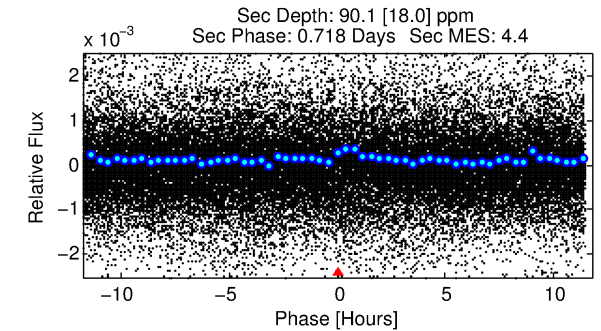
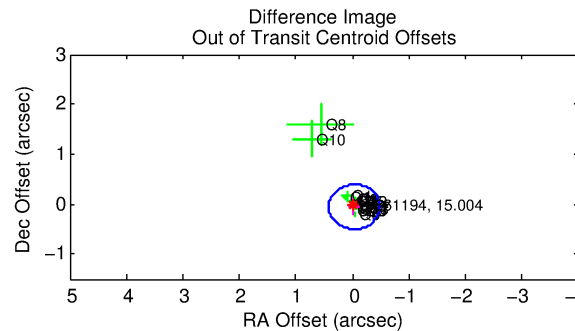
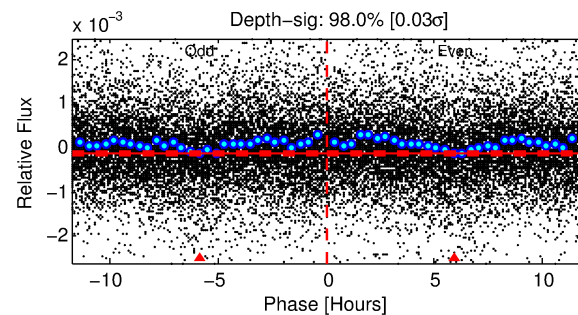
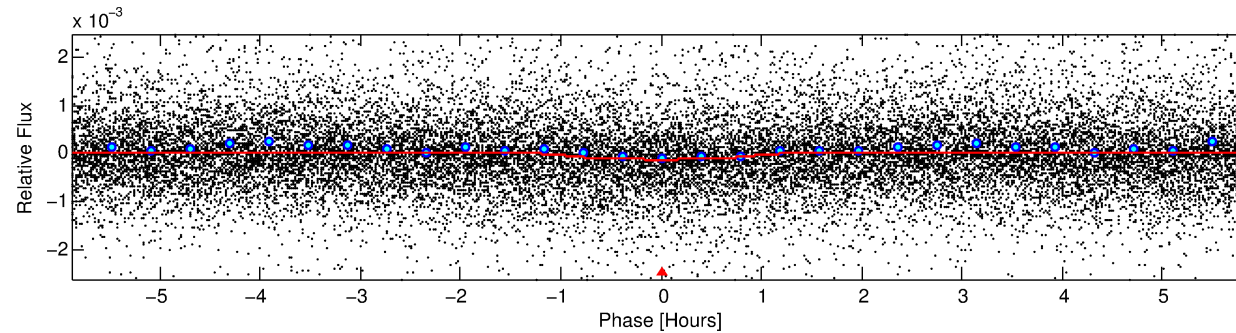
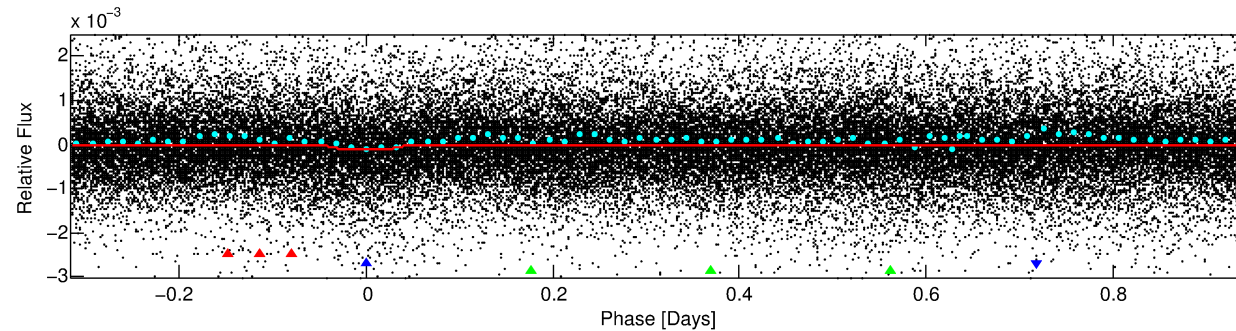
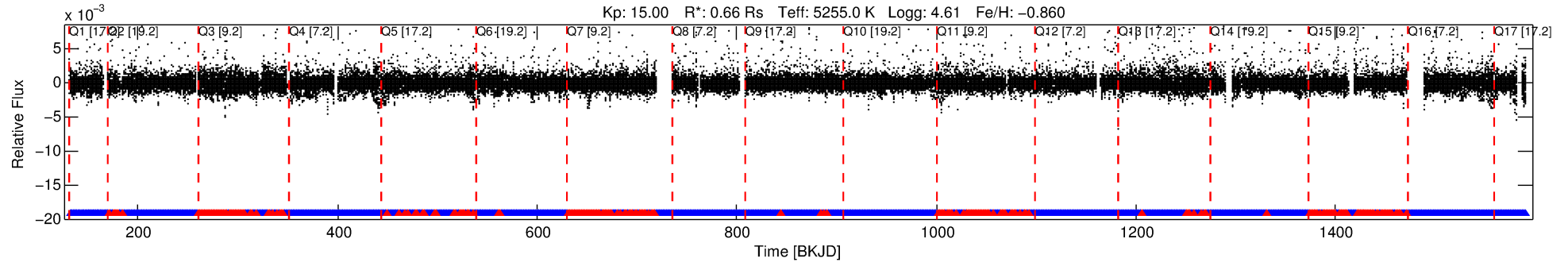
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## Ephemeris Match Information For 010861194-02

No Significant Match Found

# DV One-Page Summary

KIC: 10861194 Candidate: 2 of 3 Period: 1.265 d



## DV Fit Results:

Period = 1.26466 [0.00001] d  
Epoch = 132.7747 [0.0023] BKJD  
Rp/R\* = 0.0119 [0.0072]  
a/R\* = 2.42 [5.50]  
b = 0.91 [0.56]  
Seff = 760.58 [143.79]  
Teq = 1339 [63] K  
Rp = 0.86 [0.53] Re  
a = 0.0198 [0.0017] AU  
Ag = 26.23 [32.42] [0.78σ]  
Teffp = 4685 [1447] K [2.31σ]

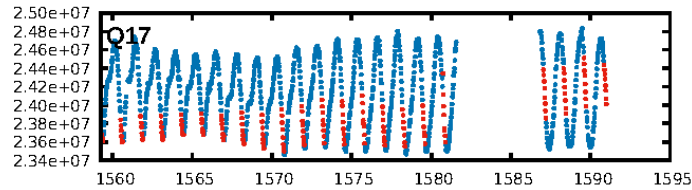
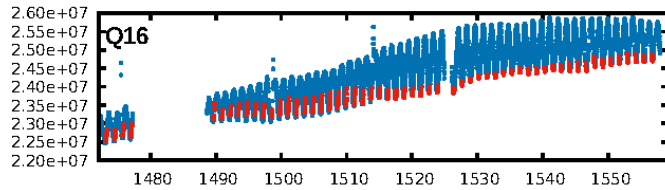
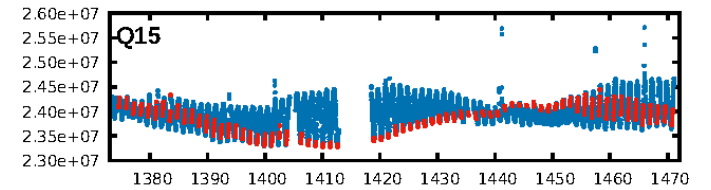
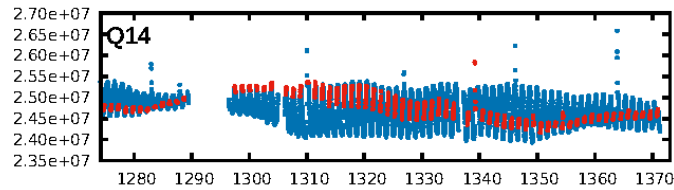
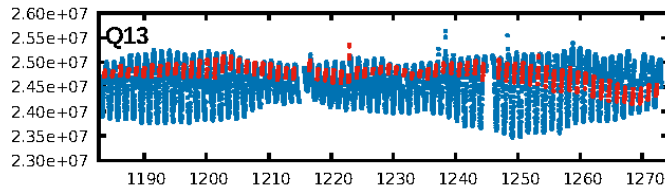
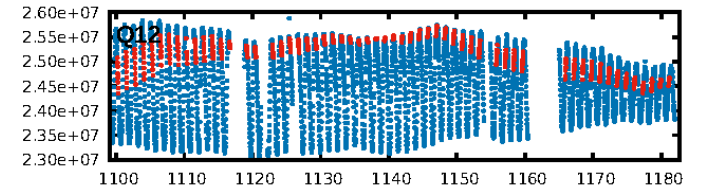
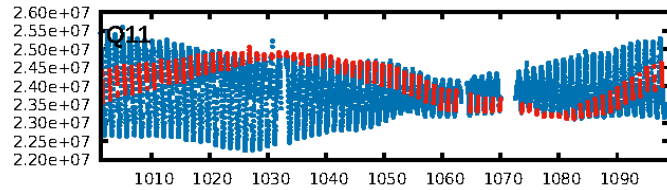
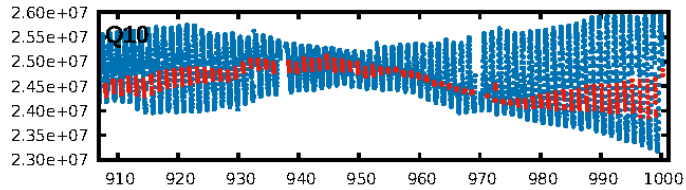
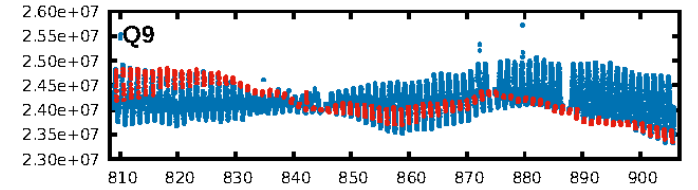
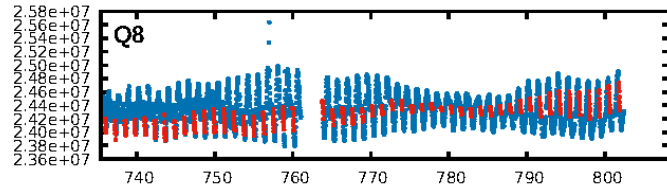
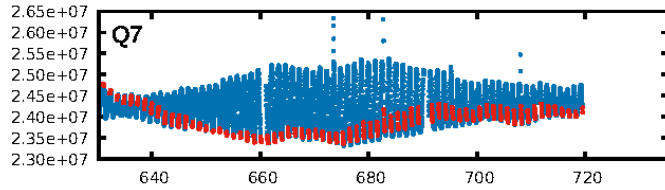
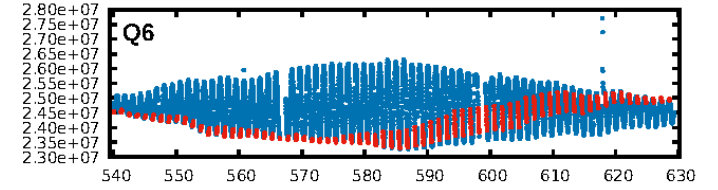
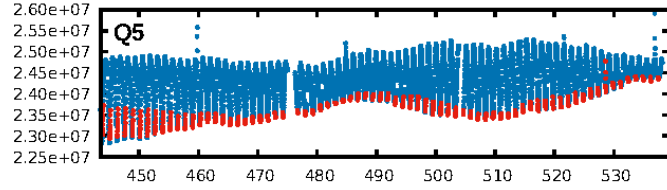
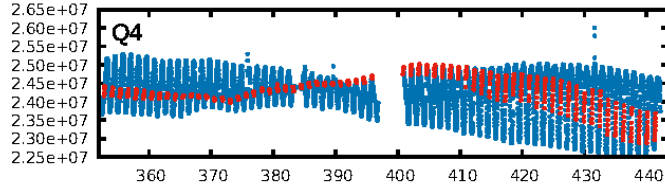
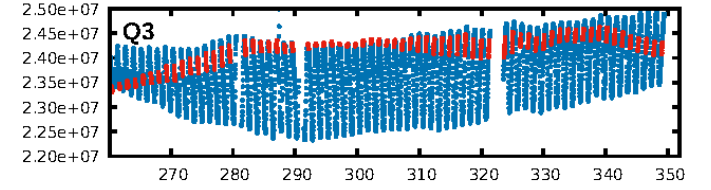
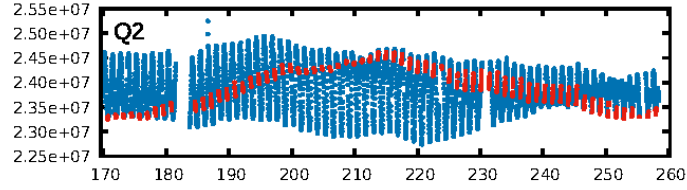
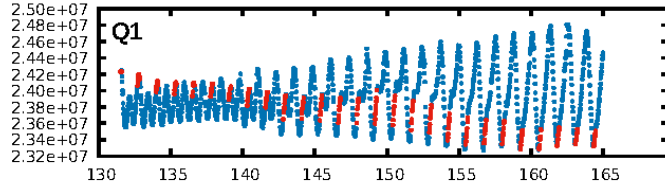
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [1658.59σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.08e-11  
RollingBand-ftg: 0.76 [769/1008]  
GhostDiagnostic-chr: 2.072  
Centroid-sig: 29.9%  
Centroid-so: 1.107 arcsec [1.34σ]  
OotOffset-rm: 0.062 arcsec [0.41σ]  
KicOffset-rm: 0.194 arcsec [1.37σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.53 [9/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:11:30 Z

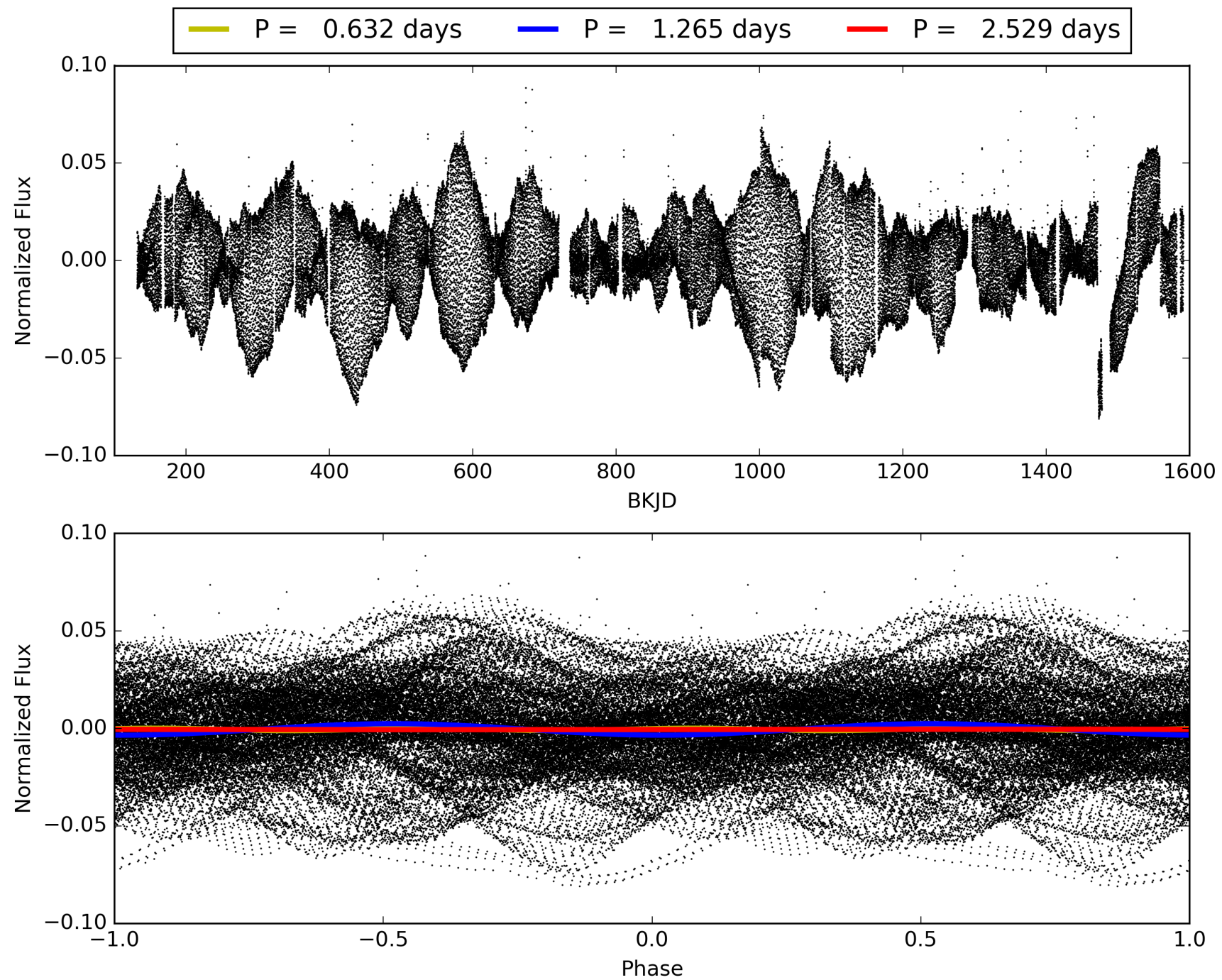
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 010861194-02, PDC Light Curves





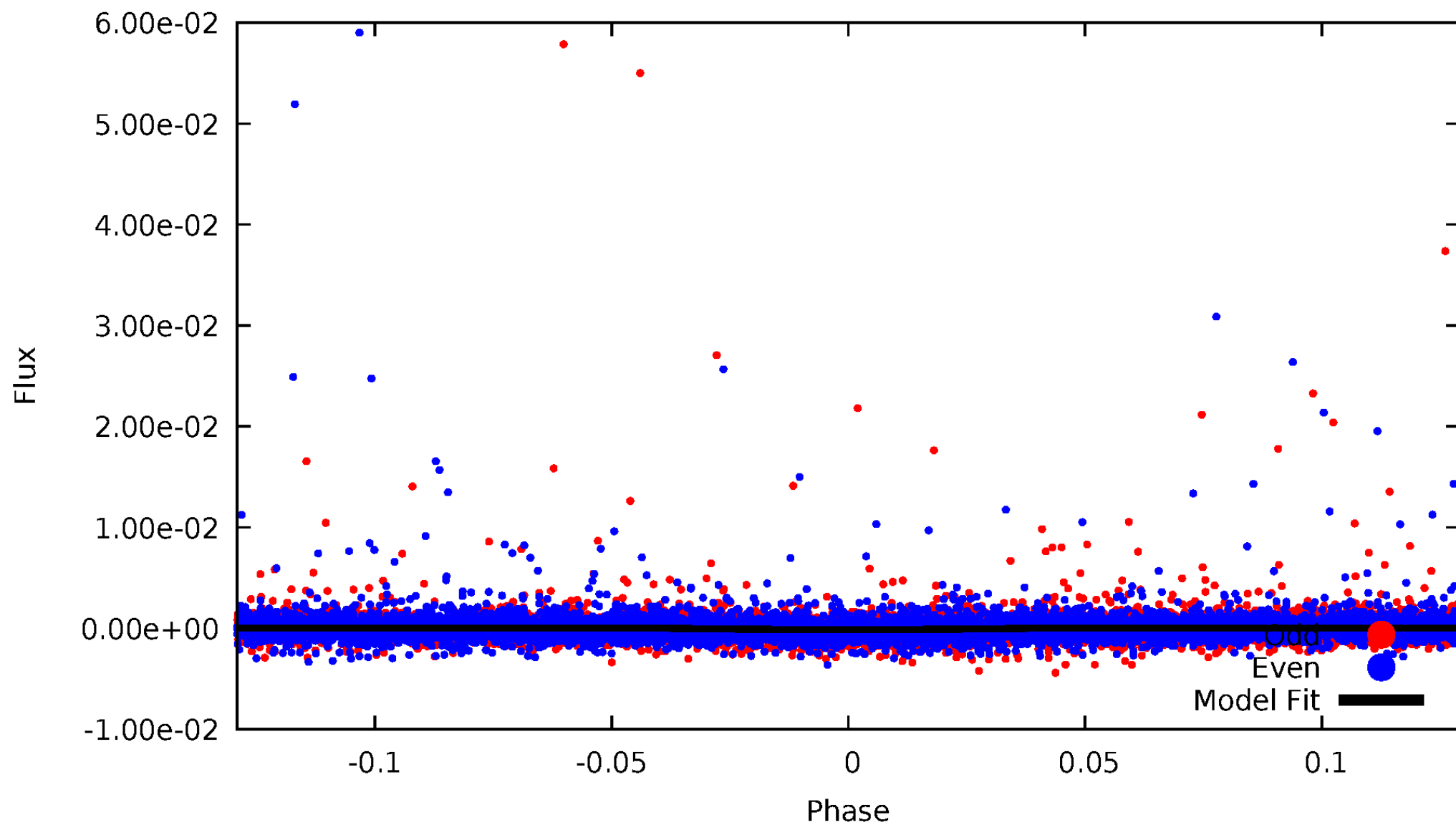
TCE 010861194-02





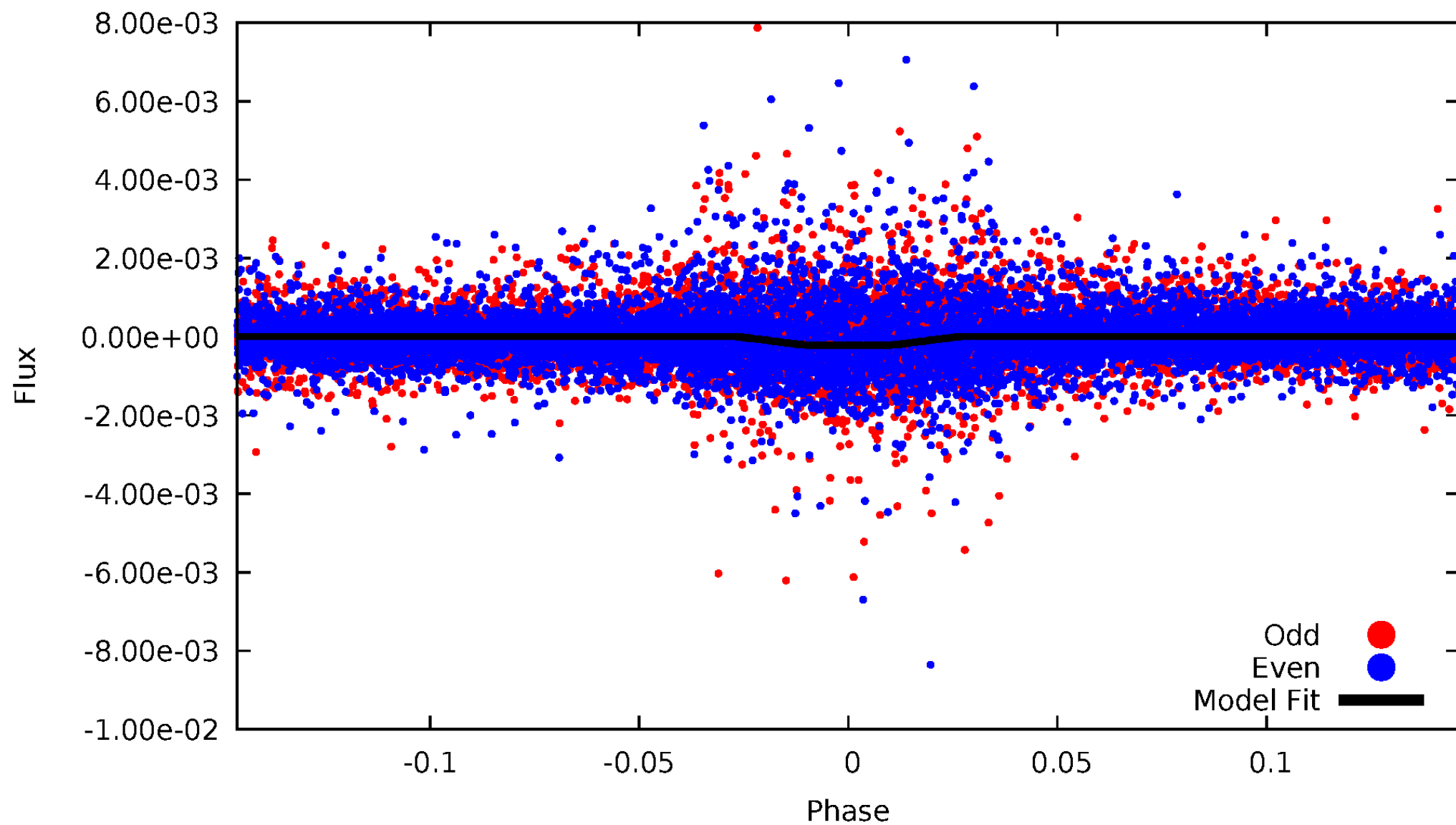
# DV Odd/Even

TCE 010861194-02



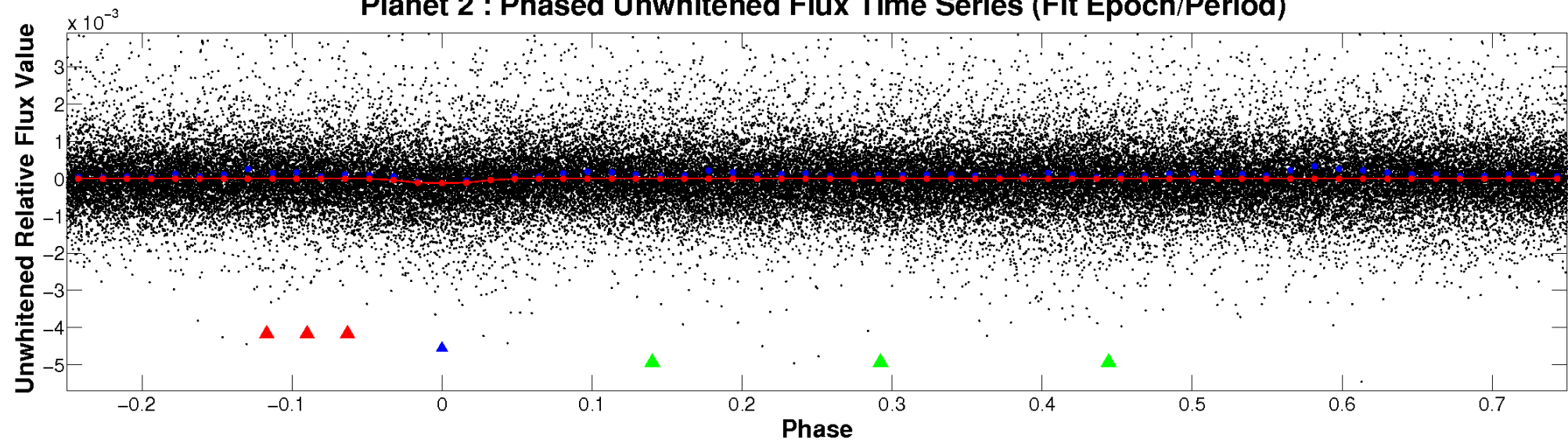
# ALT Odd/Even

TCE 010861194-02

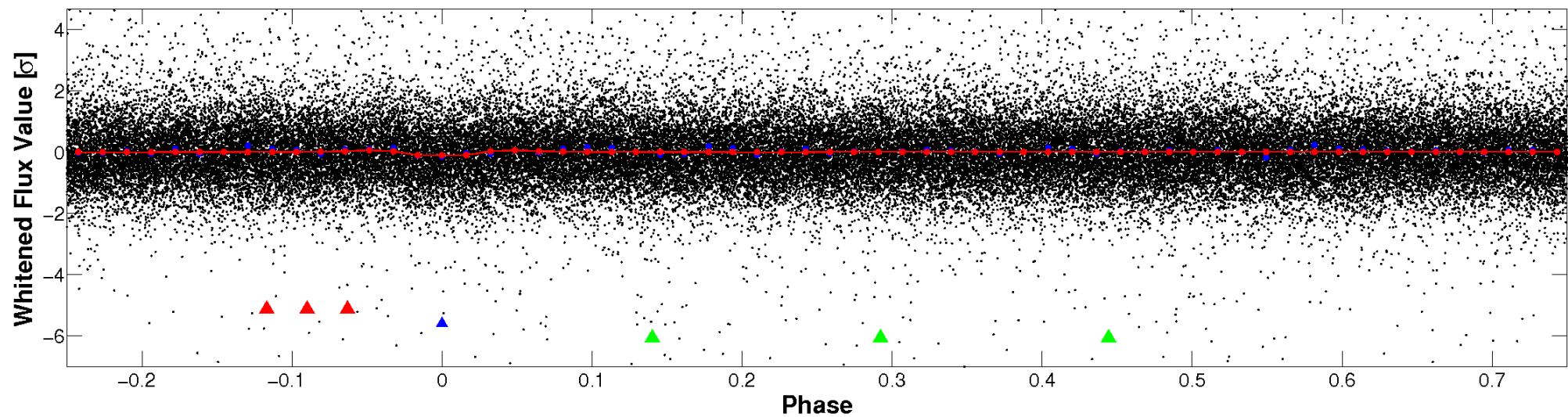


# Non-Whitened Vs. Whitened Light Curve

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

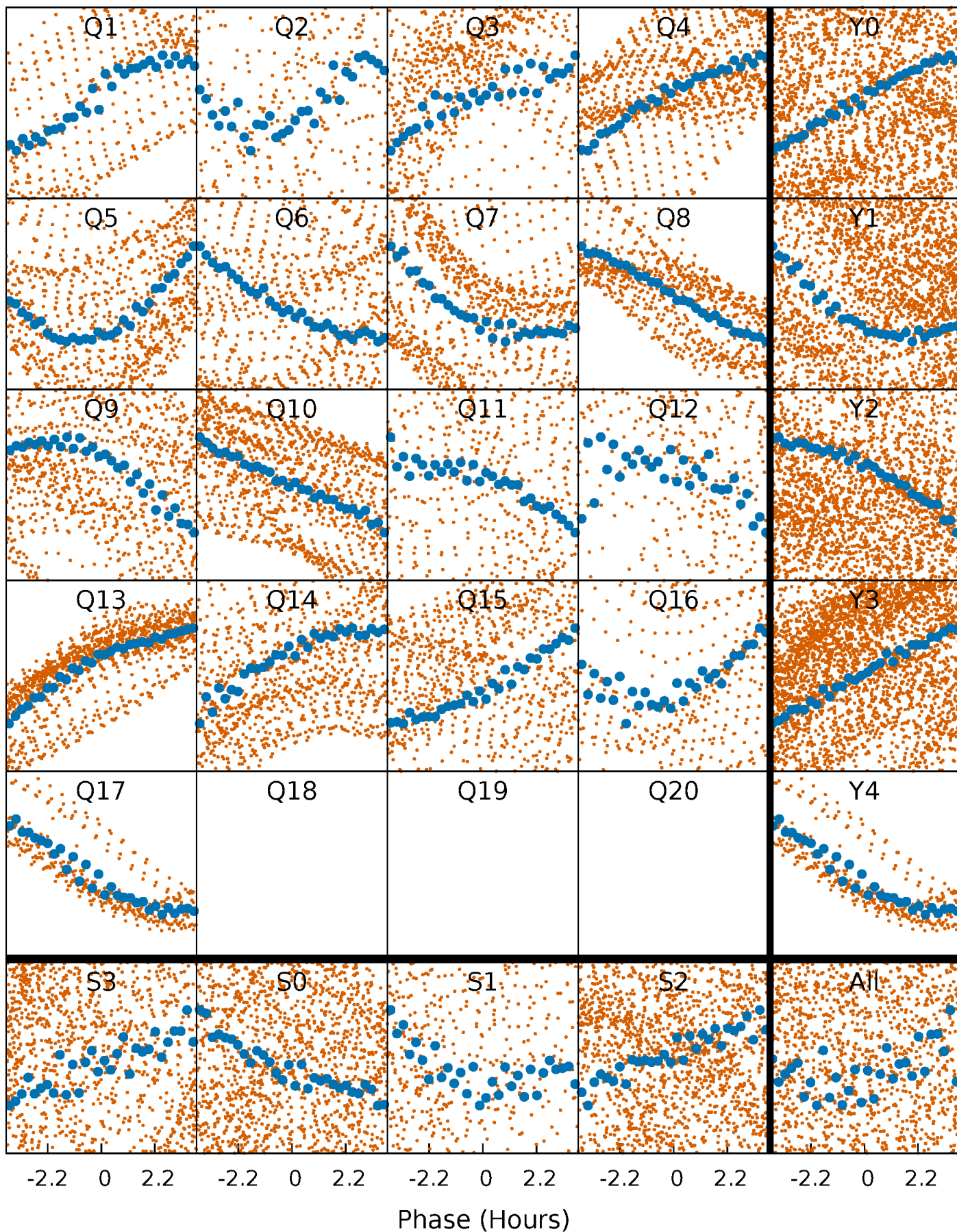


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

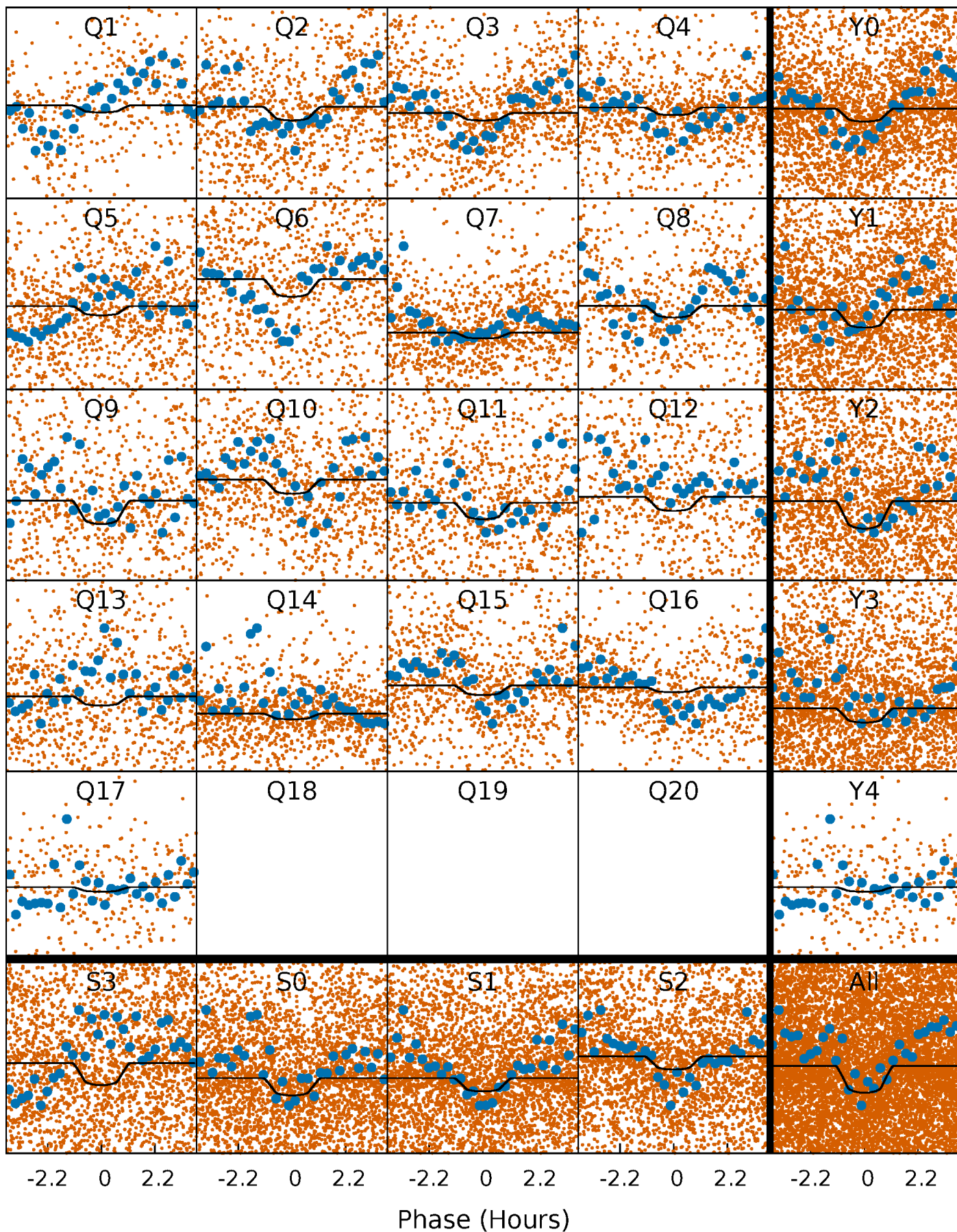
TCE 010861194-02 P= 1.264656 Days  $T_0=132.774706$  (BKJD)





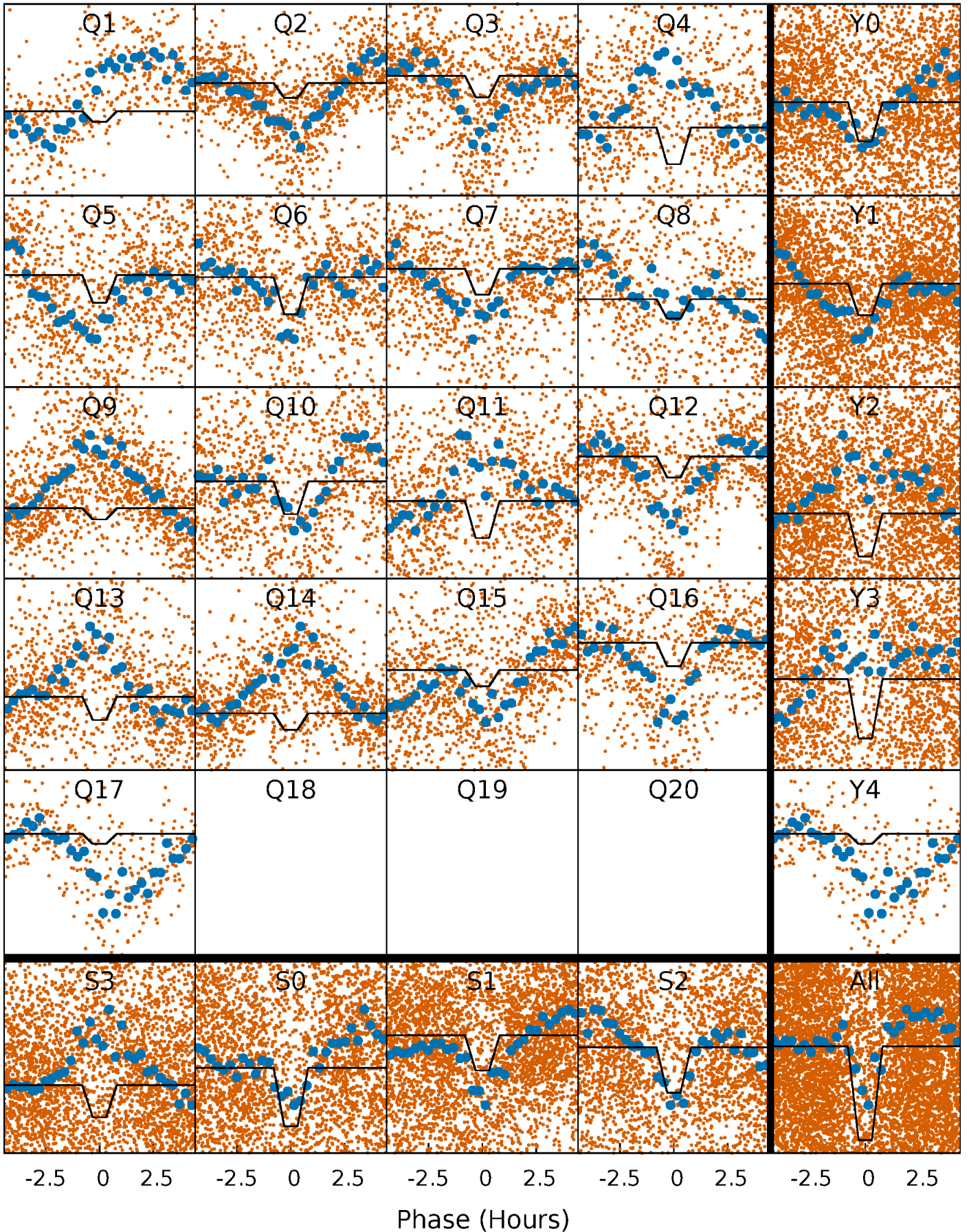
# DV Quarter-Phased Transit Curves

TCE 010861194-02 P= 1.264656 Days  $T_0=132.774706$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010861194-02 P= 1.264680 Days  $T_0=132.759057$  (BKJD)

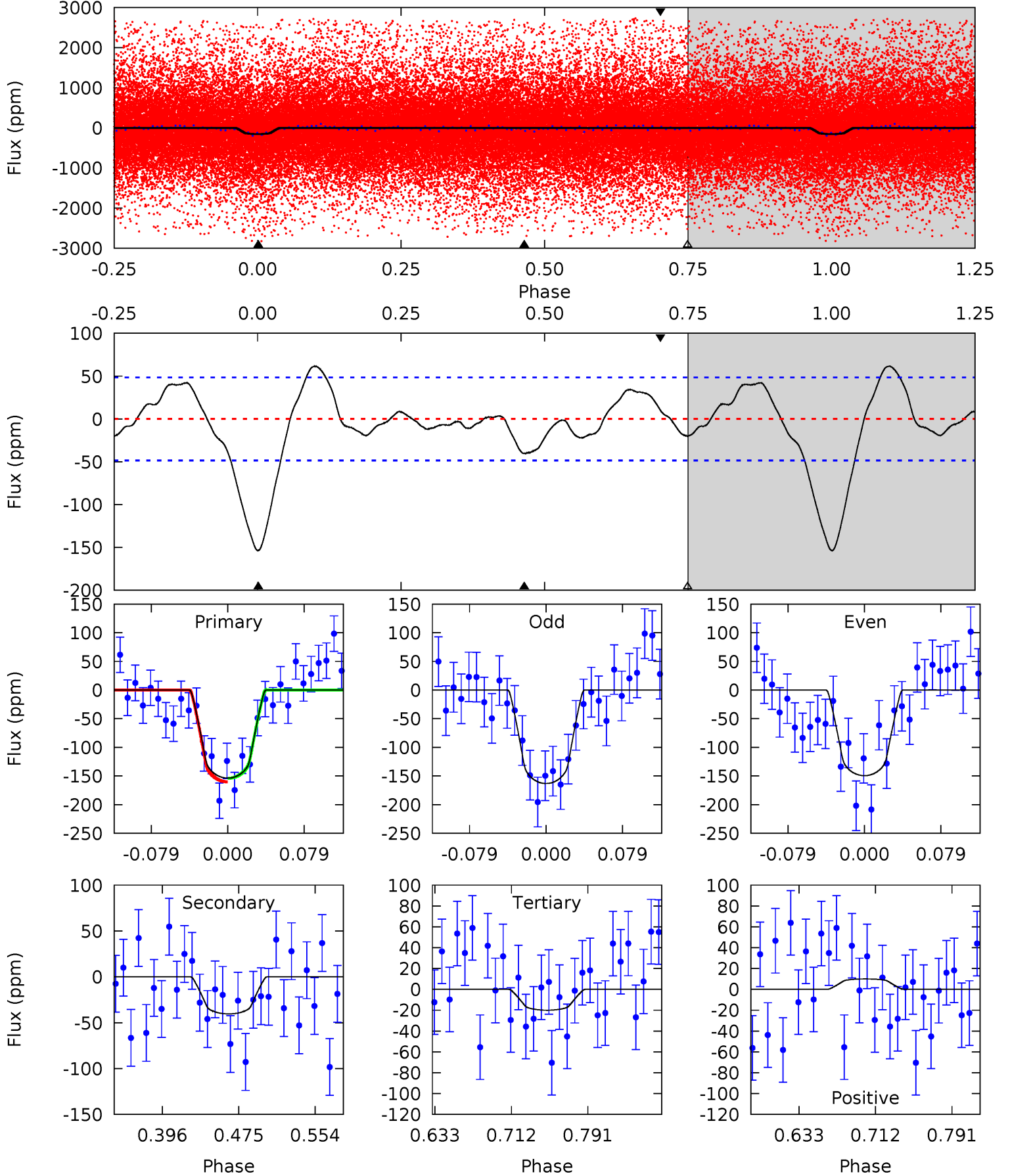




# DV Model-Shift Uniqueness Test

010861194-02, P = 1.264656 Days, E = 131.510050 Days

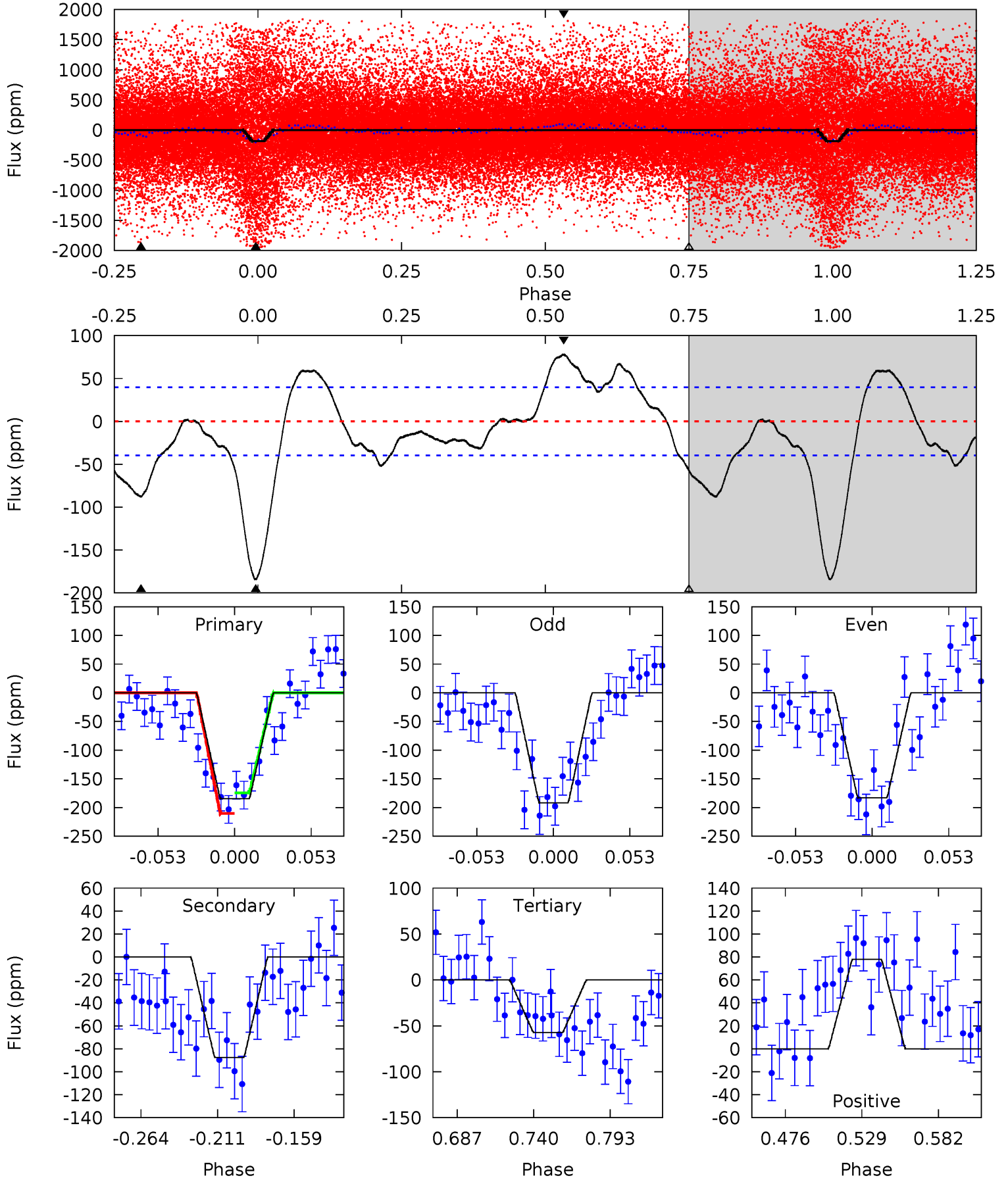
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	3.85	1.91	0.95	4.61	1.76	2.08	12.7	13.7	1.94	2.90	0.66	0.71	0.29	0.29



# Alt Model-Shift Uniqueness Test

010861194-02, P = 1.264680 Days, E = 131.494377 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
21.8	10.4	6.78	9.22	4.70	1.94	4.19	15.0	12.6	3.59	1.15	0.51	0.56	0.30	2.09





### Stellar Parameters For KIC 010861194

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5255^{+173}_{-173}$	$4.608^{+0.078}_{-0.048}$	$-0.860^{+0.350}_{-0.300}$	$0.659^{+0.063}_{-0.056}$	$0.641^{+0.069}_{-0.028}$	$3.160^{+0.910}_{-0.591}$
	+3%/-3%	+2%/-1%	+41%/-35%	+10%/-8%	+11%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010861194-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-40 \pm 10$	$0.89^{+0.55}_{-0.48}$	$1865^{+72}_{-74}$	$3991^{+1473}_{-635}$	$11^{+42}_{-7}$
Alt.	$-88 \pm 8$	$1.04^{+0.57}_{-0.46}$	$1862^{+75}_{-78}$	$4392^{+1238}_{-680}$	$18^{+41}_{-10}$

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

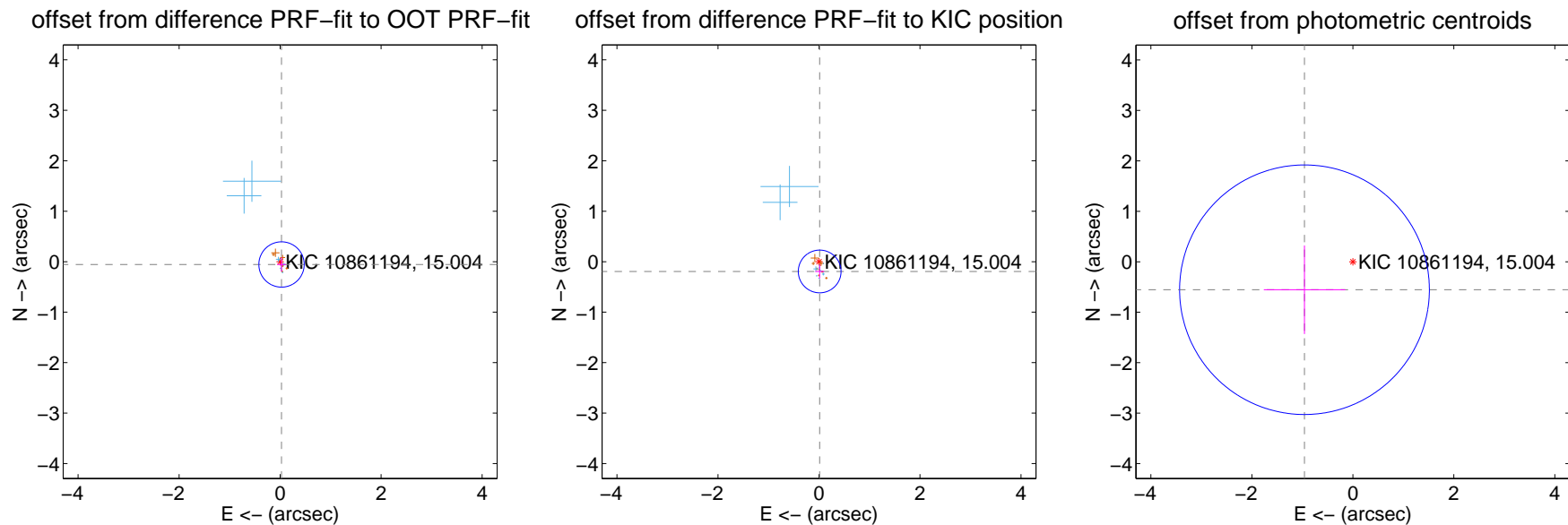
## DV Centroid Data

Supplemental centroid analysis for 010861194-02. Kepler magnitude: 15.00. Transit SNR 6.86

There are 9 quarters with good PRF difference image offsets

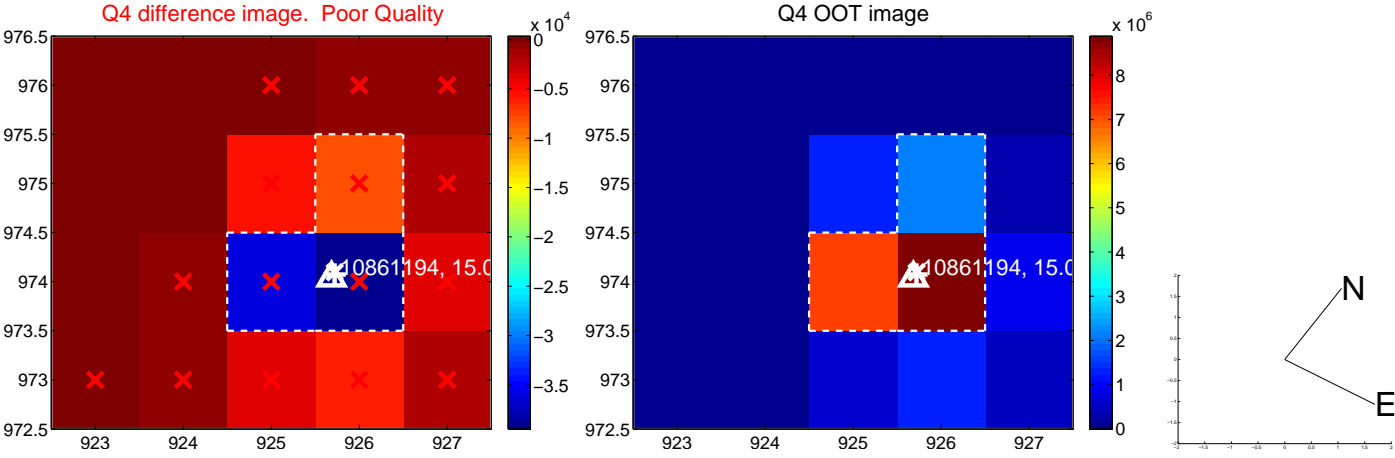
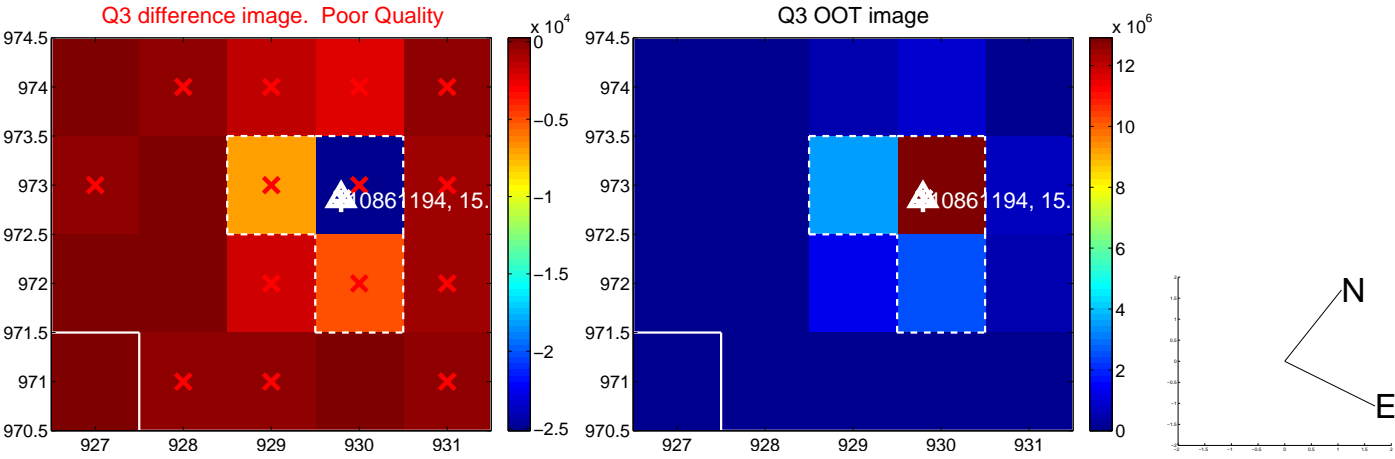
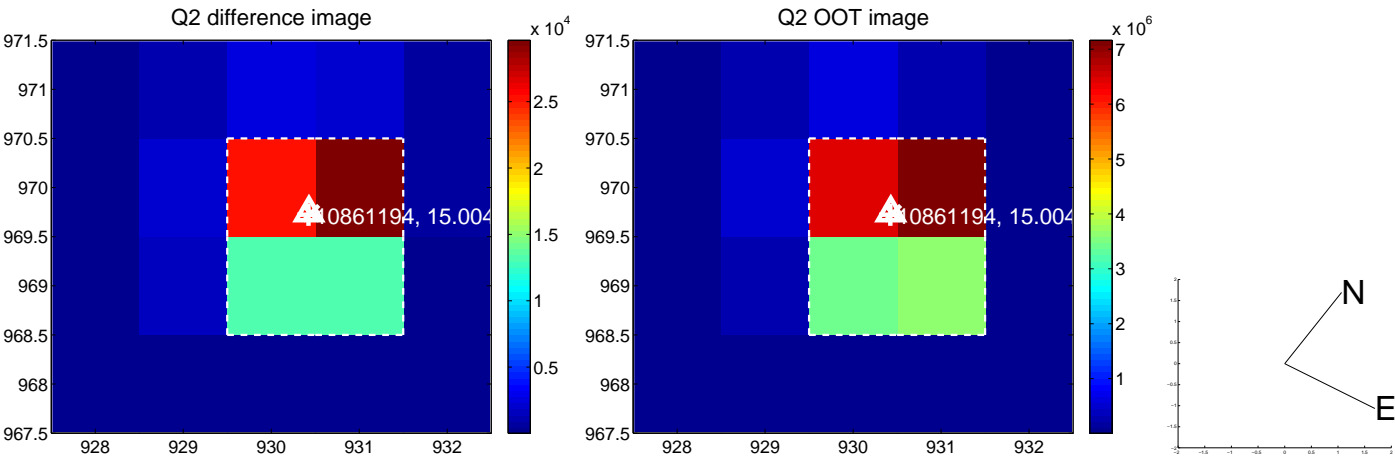
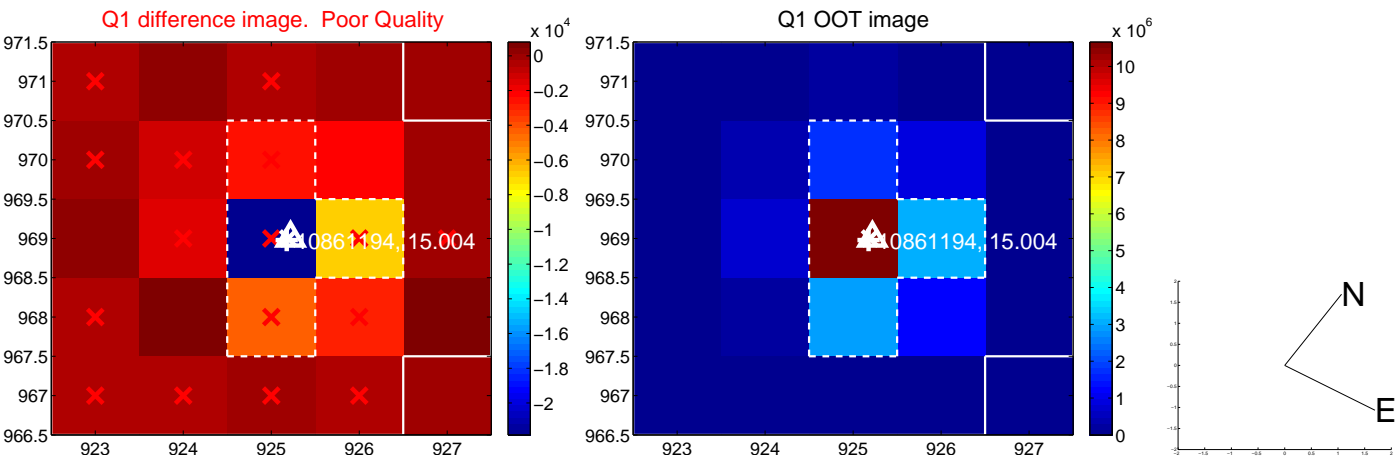
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.062 \pm 0.150$	0.41	$-0.028 \pm 0.087$	$-0.055 \pm 0.140$
PRF-fit source offset from KIC position	$0.194 \pm 0.141$	1.37	$-0.014 \pm 0.088$	$-0.193 \pm 0.138$
photometric centroid source offset	$1.11 \pm 0.82$	1.34	$0.96 \pm 0.81$	$-0.55 \pm 0.88$

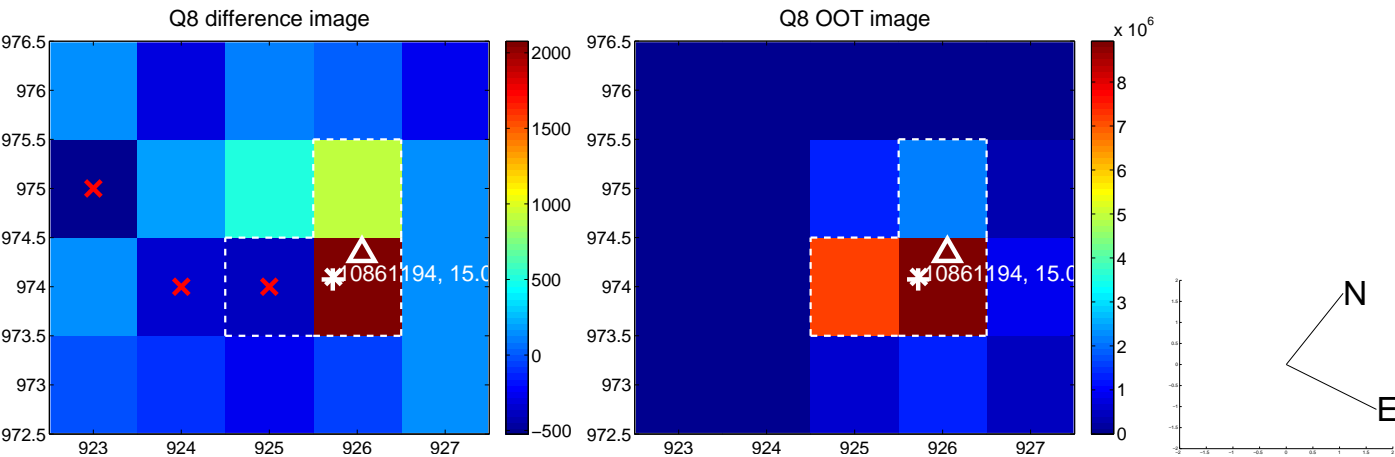
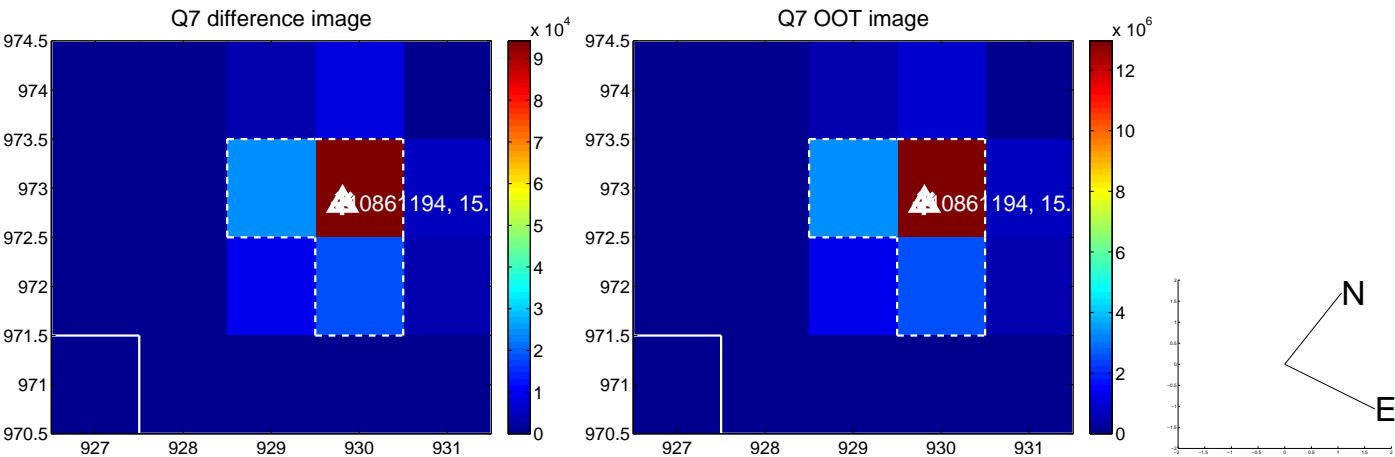
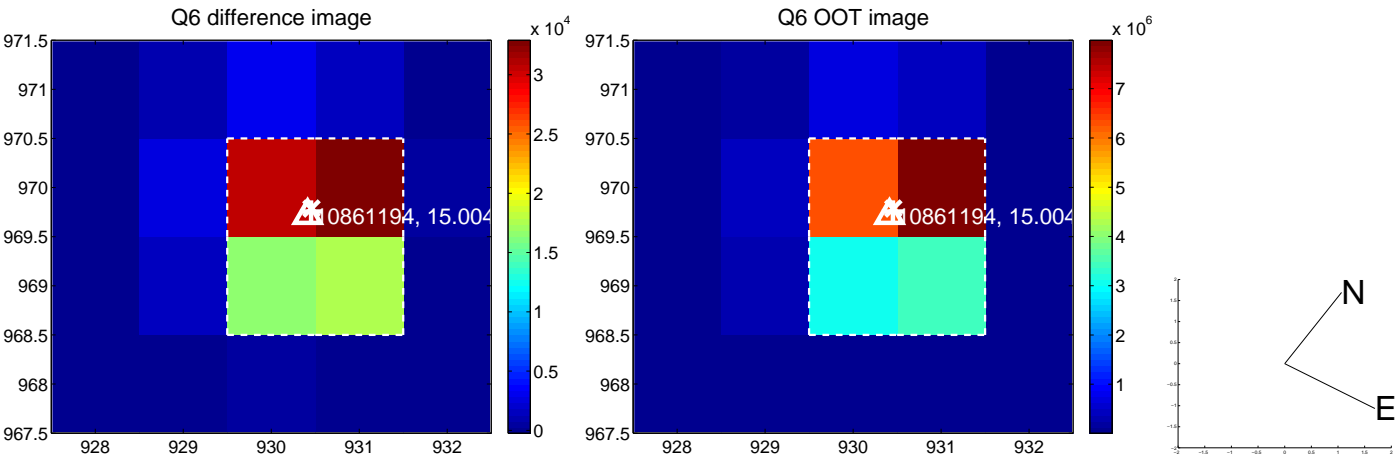
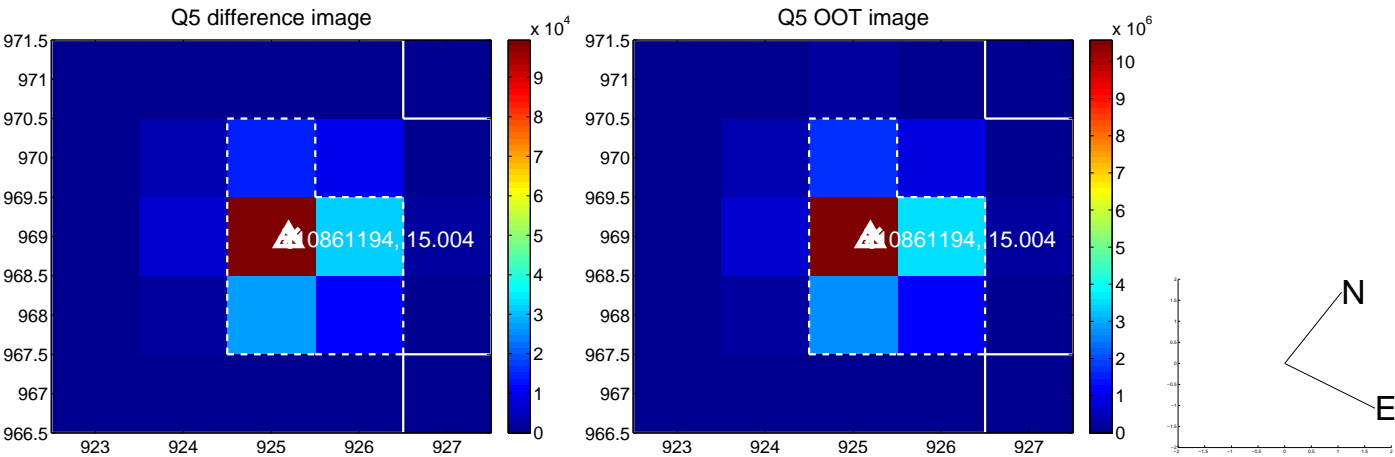


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

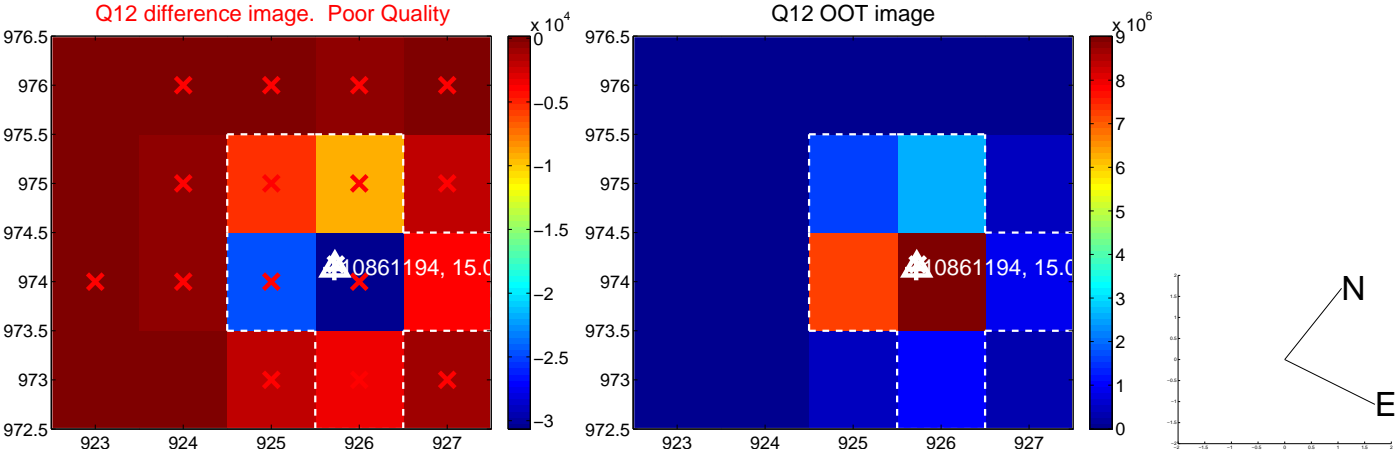
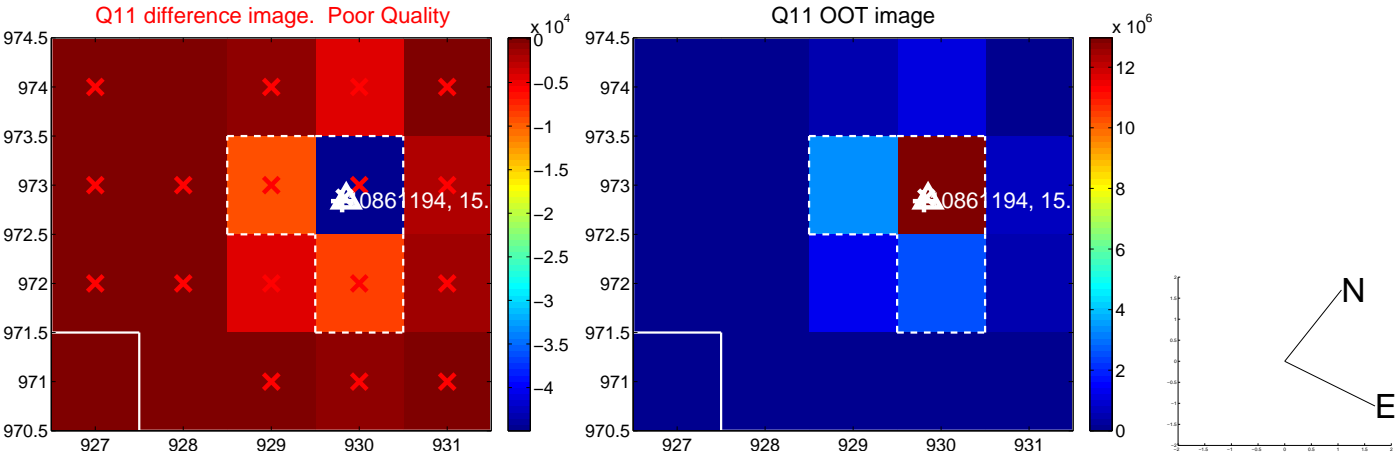
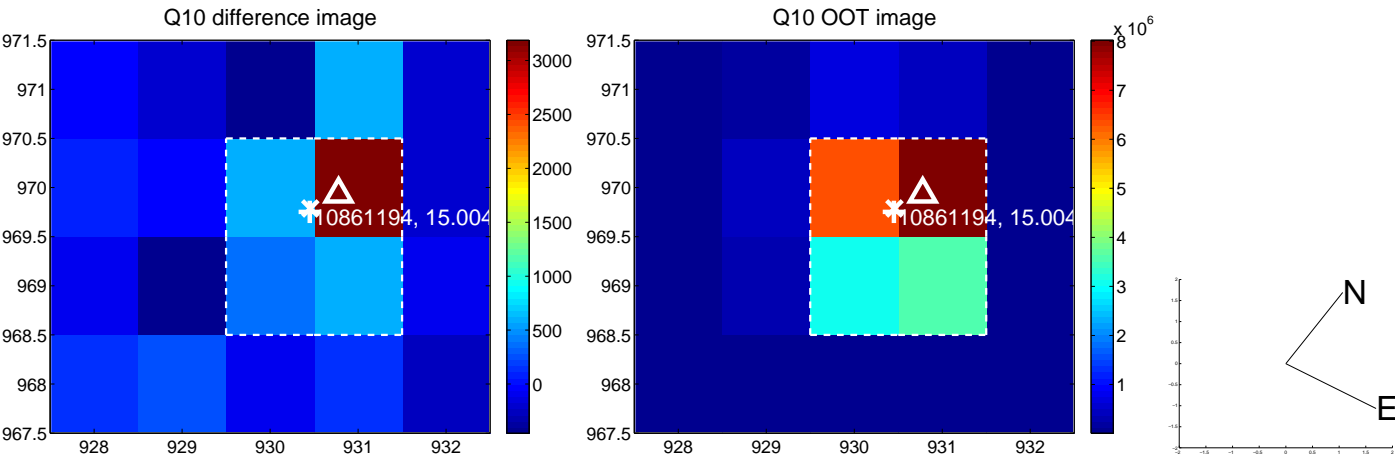
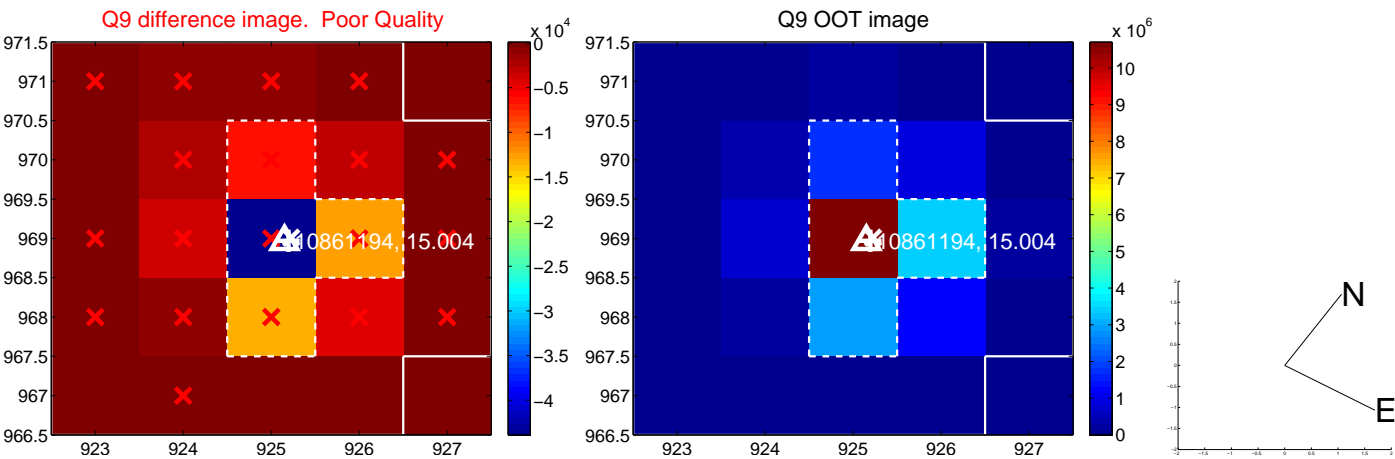
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



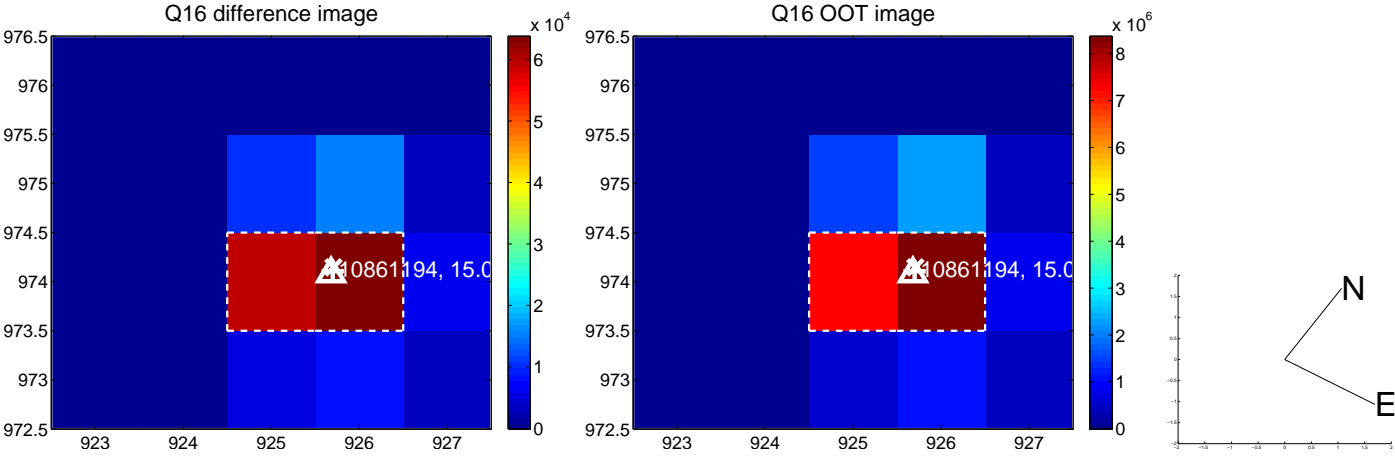
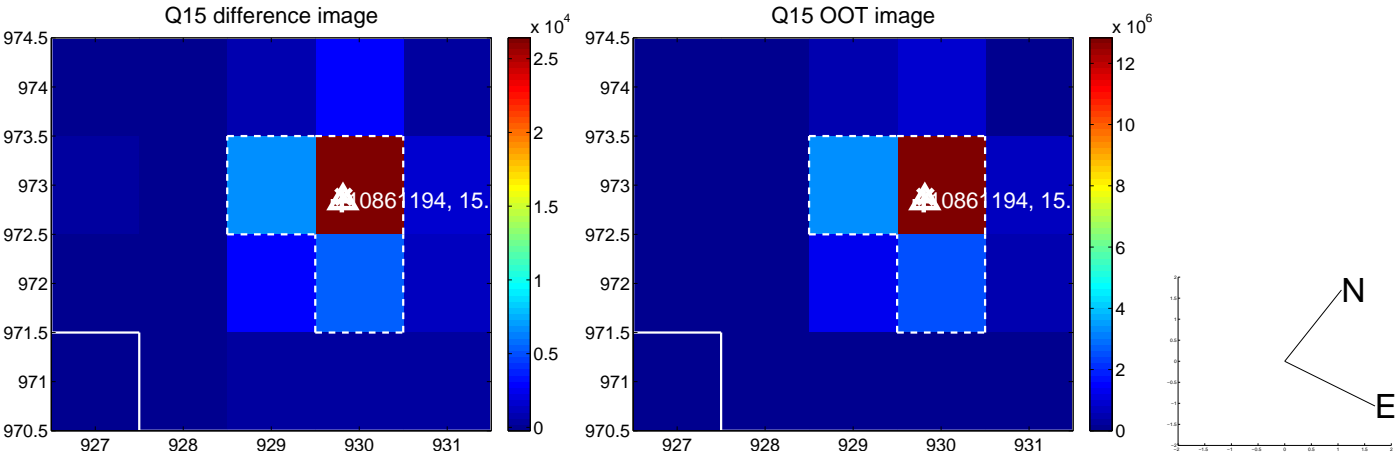
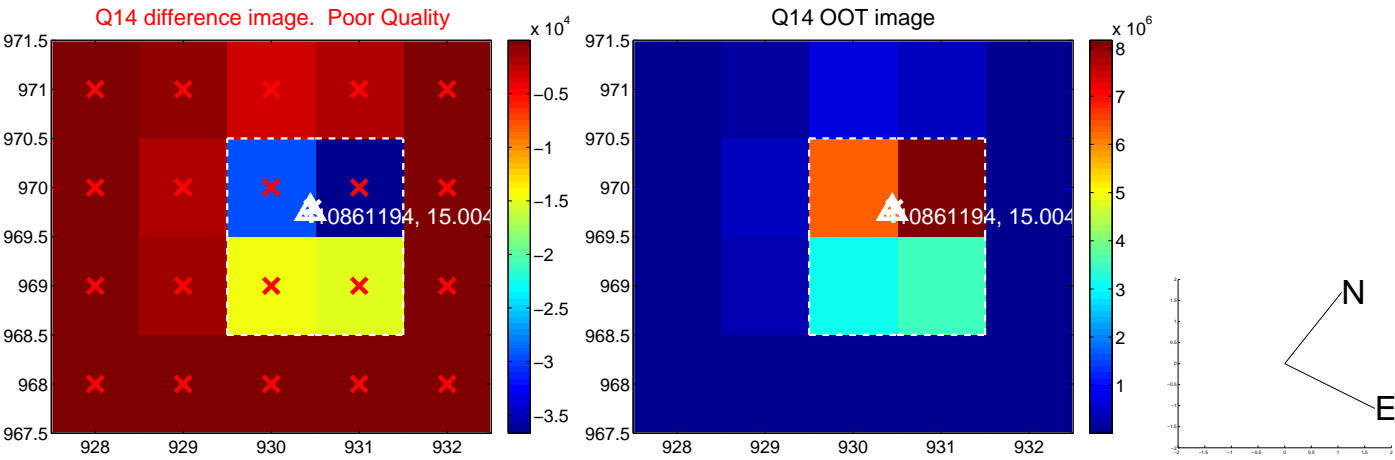
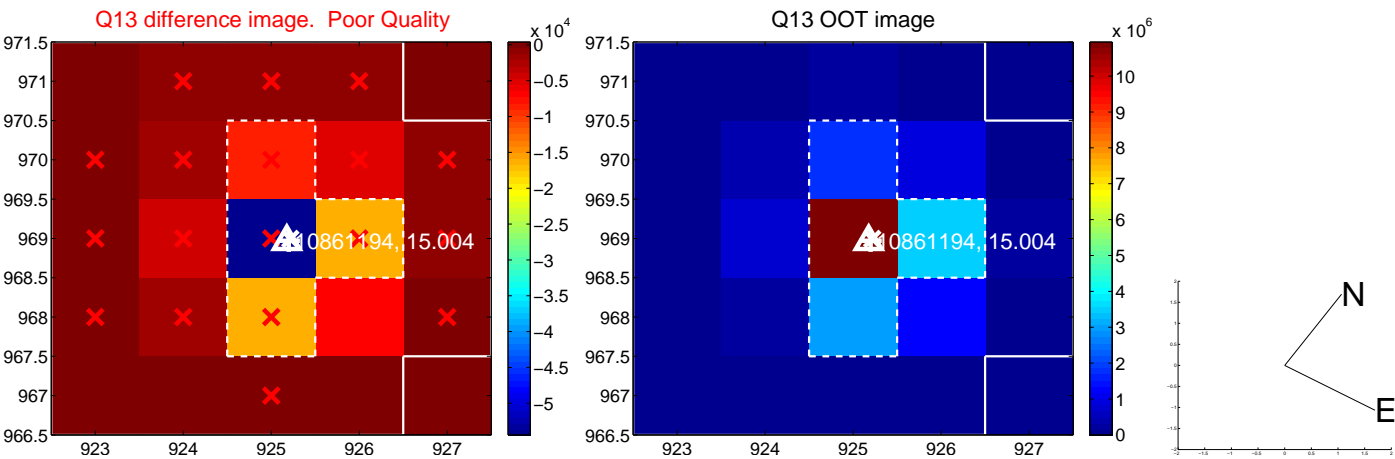
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



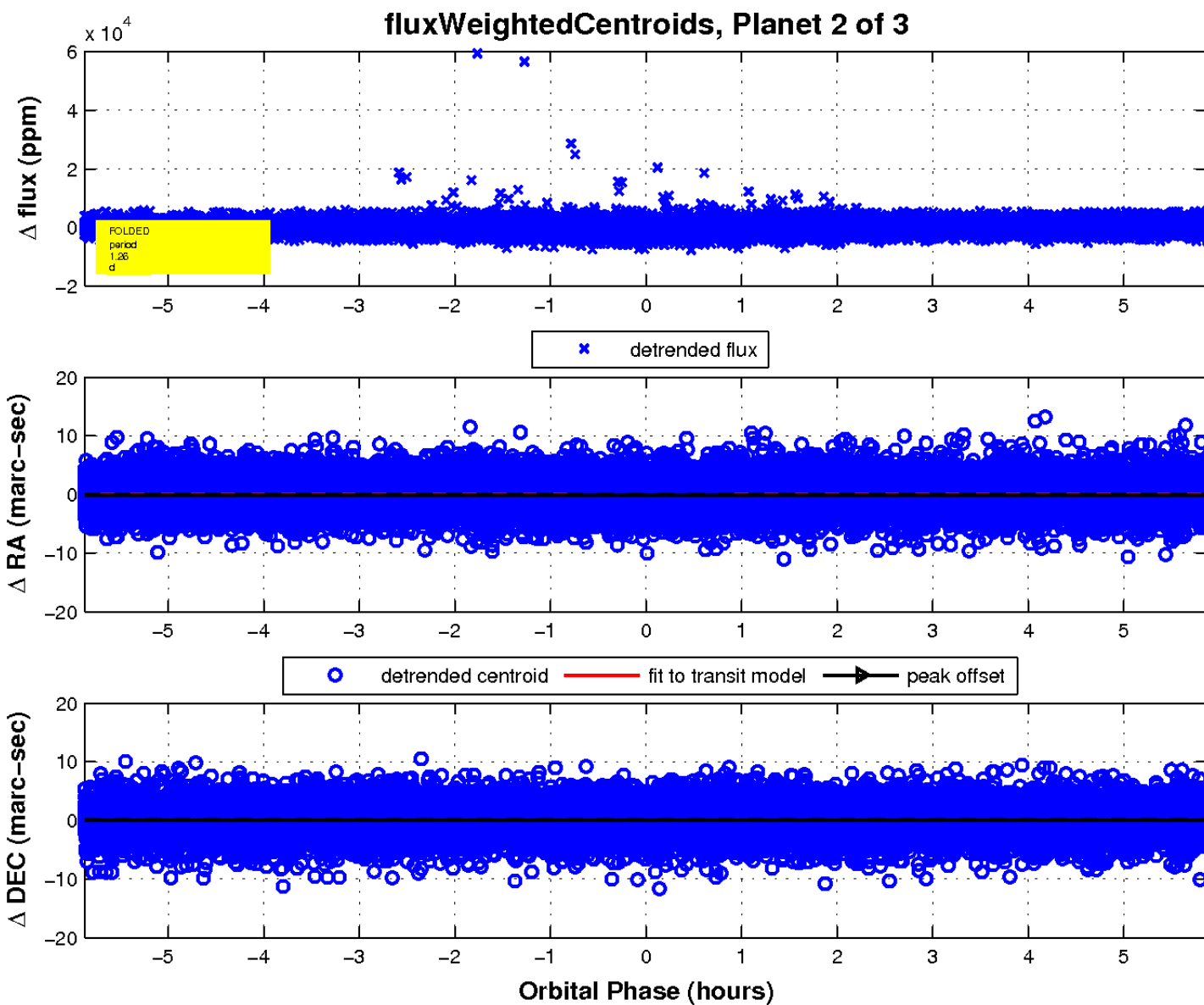
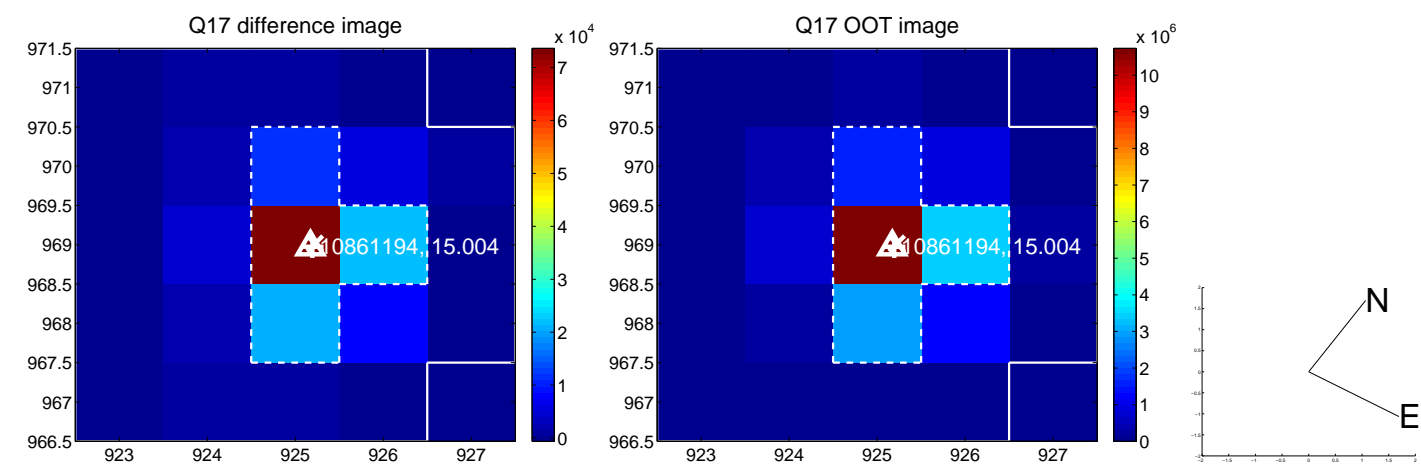
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

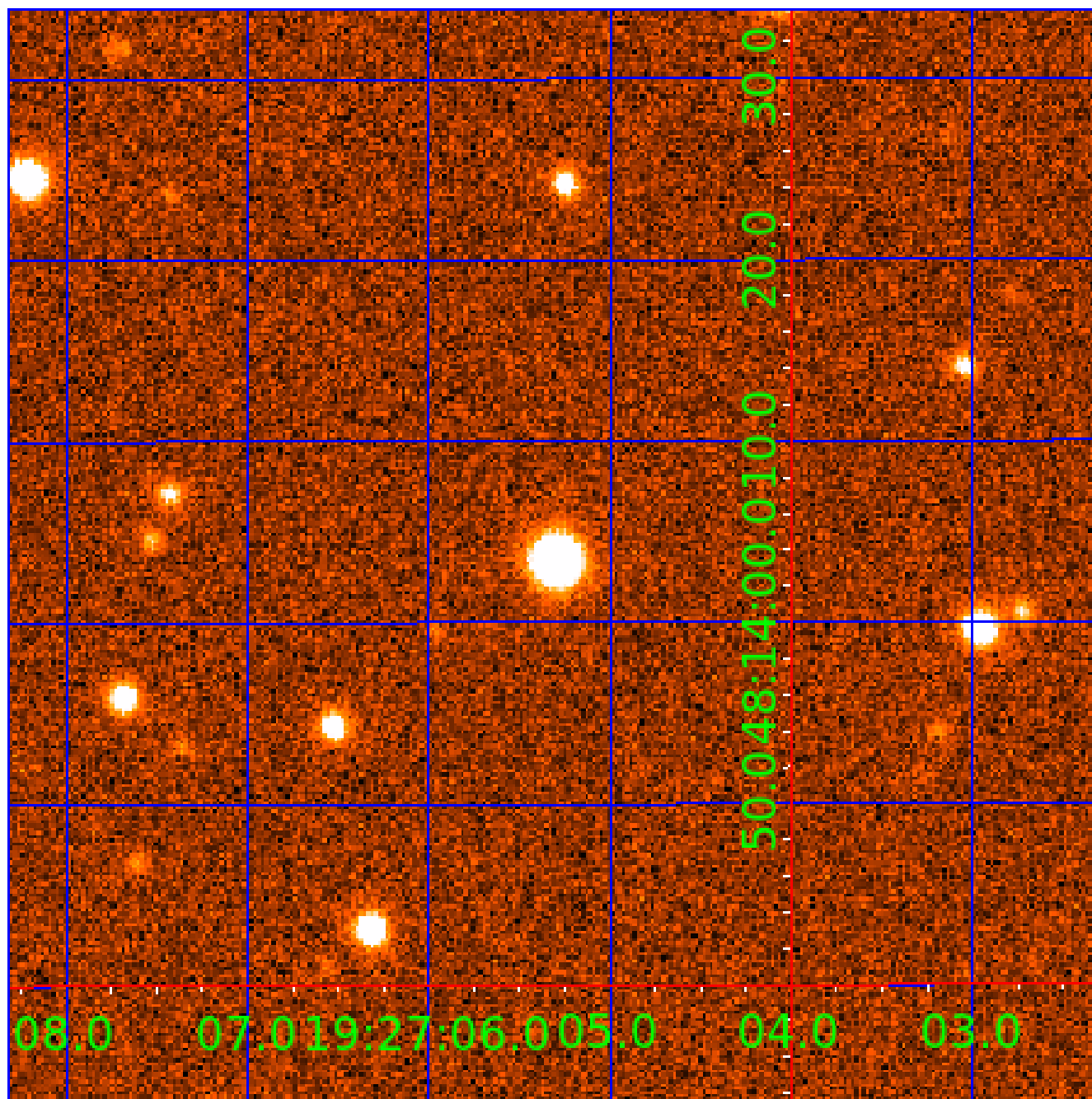


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 010861194

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010861194-01	OBS	No	395.803276	446.329754	3547.7	5.362	15.9	5.9	0.66	5255	3.88	0.36
010861194-02	OBS	No	1.264656	132.774705	117.8	1.959	7.3	6.9	0.66	5255	0.86	760.58
010861194-03	OBS	No	465.585723	590.757497	3582.1	3.583	11.0	8.8	0.66	5255	4.02	0.29

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010861194-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010861194-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
010861194-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

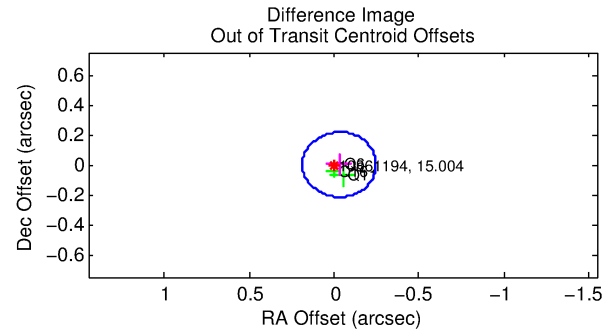
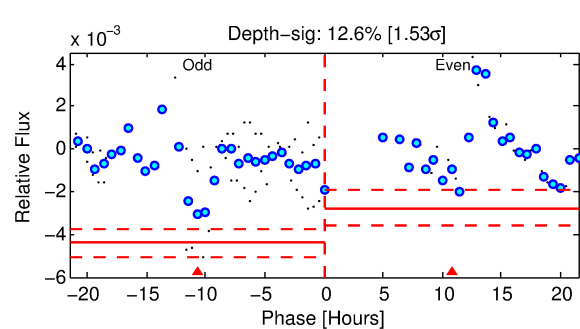
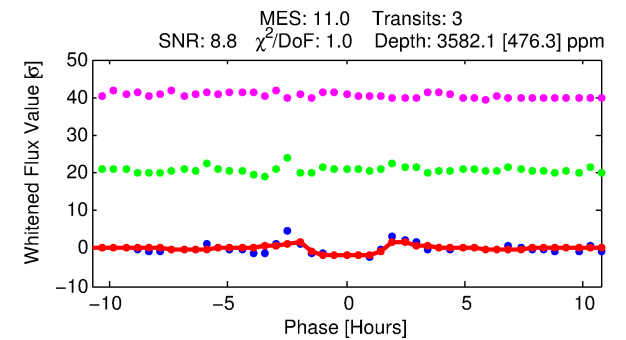
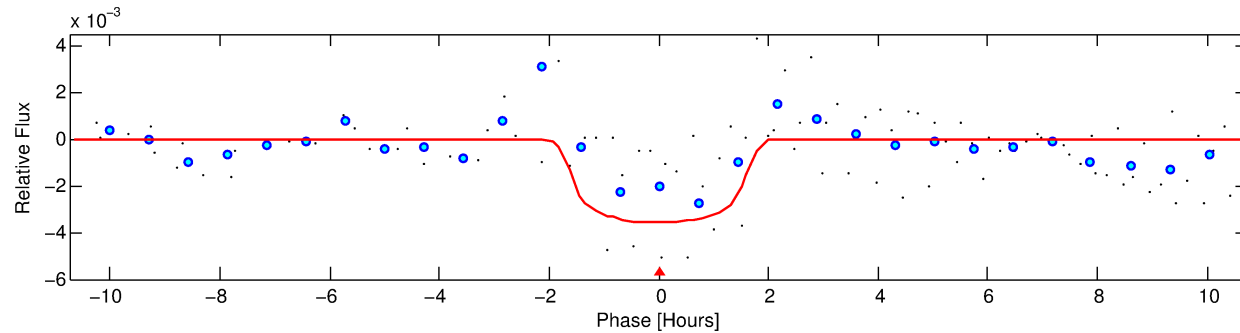
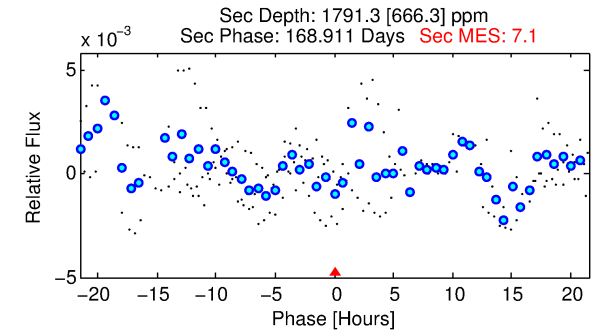
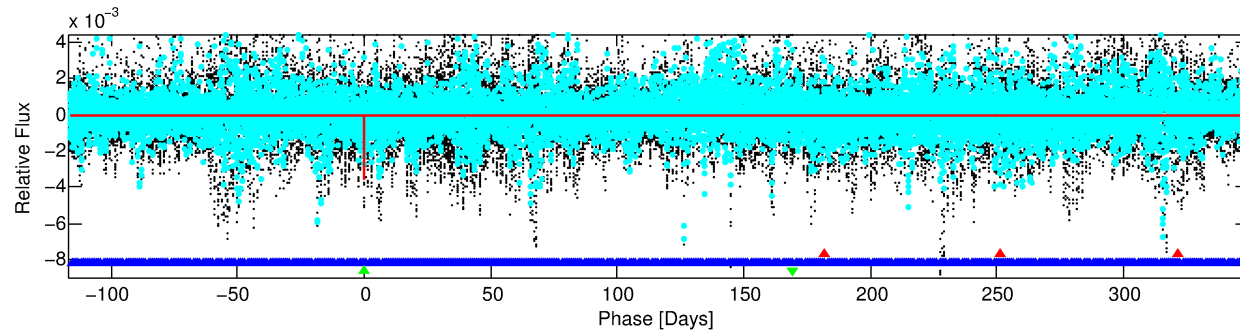
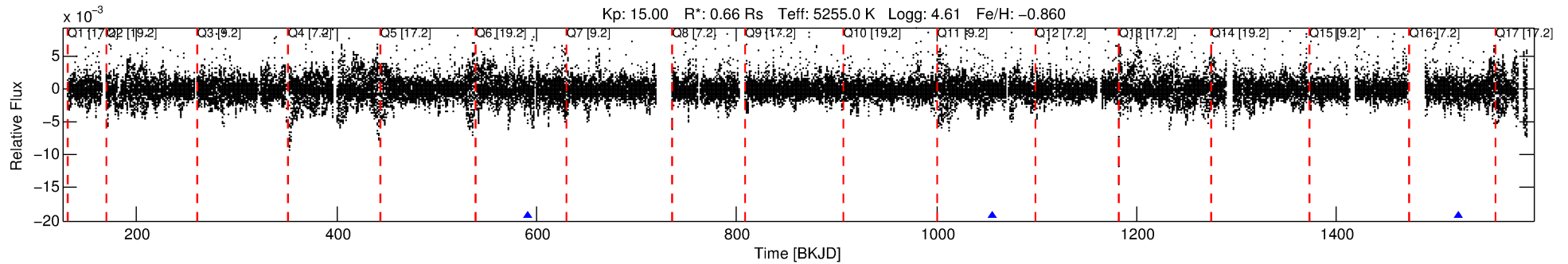
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010861194-03

No Significant Match Found

# DV One-Page Summary

KIC: 10861194 Candidate: 3 of 3 Period: 465.586 d



## DV Fit Results:

Period = 465.58572 [0.00391] d  
Epoch = 590.7575 [0.0056] BKJD  
Rp/R\* = 0.0560 [0.0445]  
a/R\* = 926.87 [3065.58]  
b = 0.49 [5.13]  
Seff = 0.29 [0.05]  
Teff = 187 [9] K  
Rp = 4.02 [3.23] Re  
a = 1.0146 [0.0887] AU  
Ag = 62643.69 [102777.01] [0.61 $\sigma$ ]  
Teffp = 4570 [1874] K [2.34 $\sigma$ ]

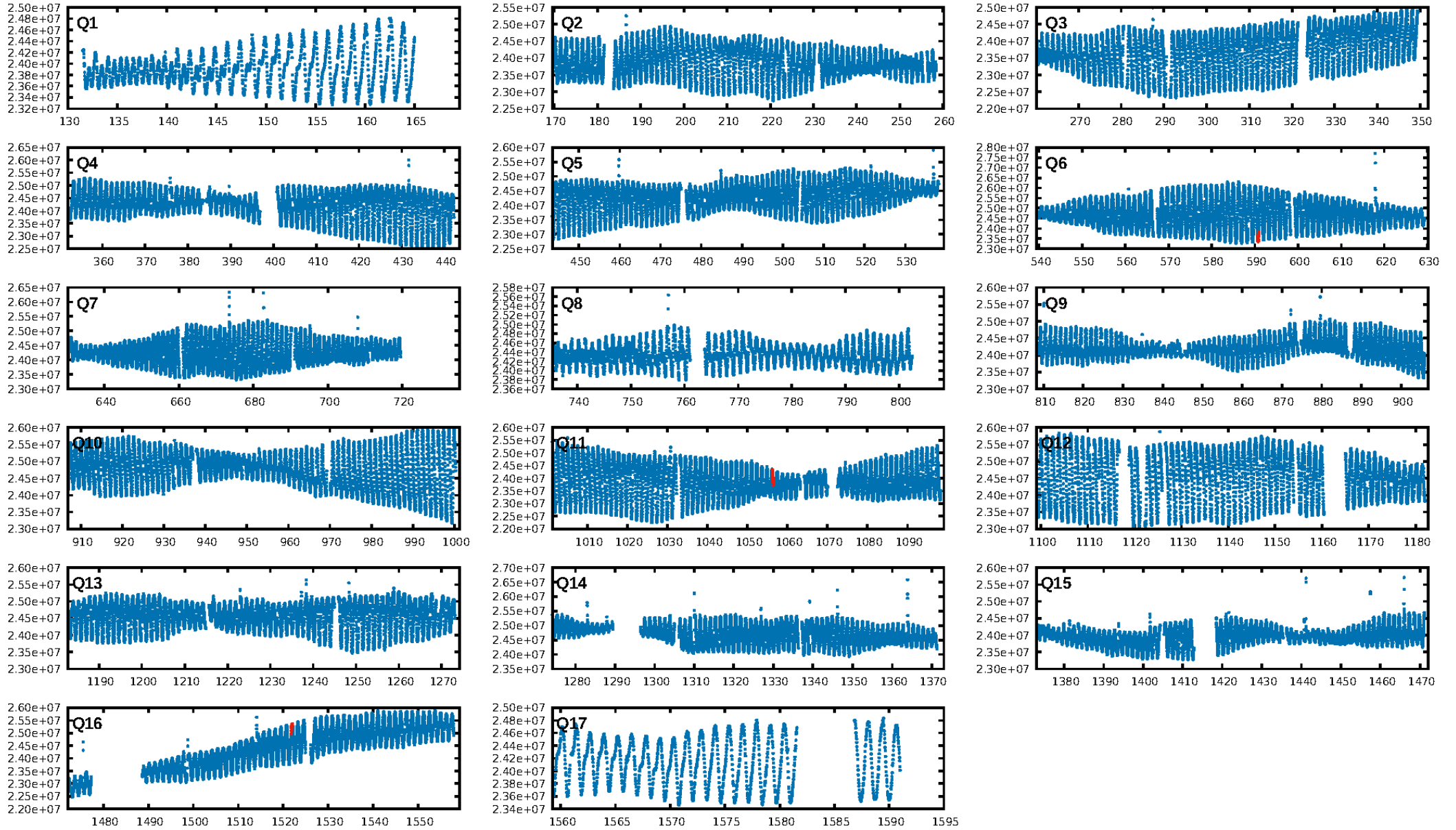
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [259.68 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.8%  
ModelChiSquareGof-sig: 66.2%  
**Bootstrap-pfa: 3.51e-08**  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.03848**  
Centroid-sig: 33.8%  
Centroid-so: 0.389 arcsec [1.13 $\sigma$ ]  
OotOffset-rm: 0.029 arcsec [0.41 $\sigma$ ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-rm: 0.118 arcsec [1.59 $\sigma$ ]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 0.33 [1/3]

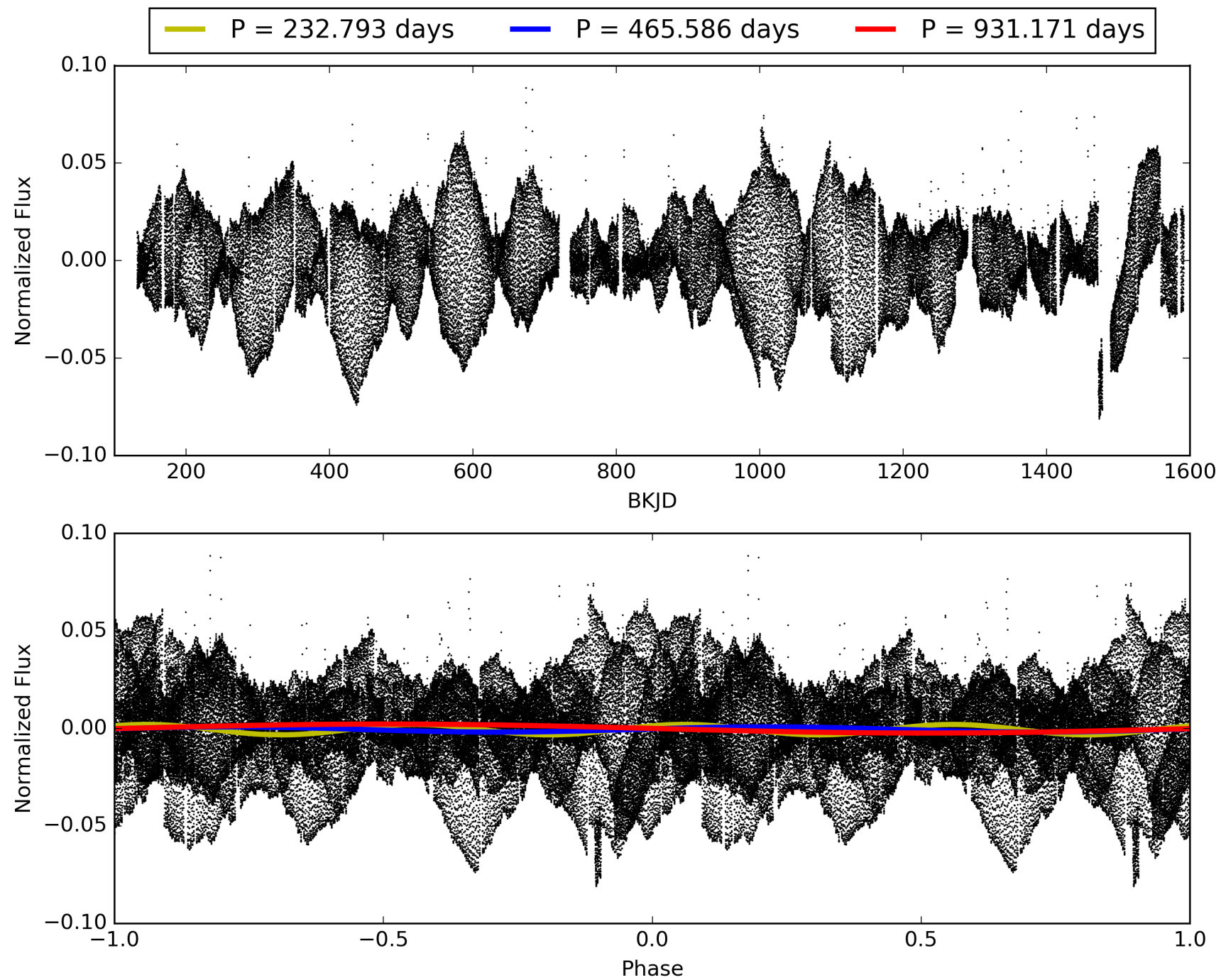
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:11:48 Z

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

# TCE 010861194-03, PDC Light Curves

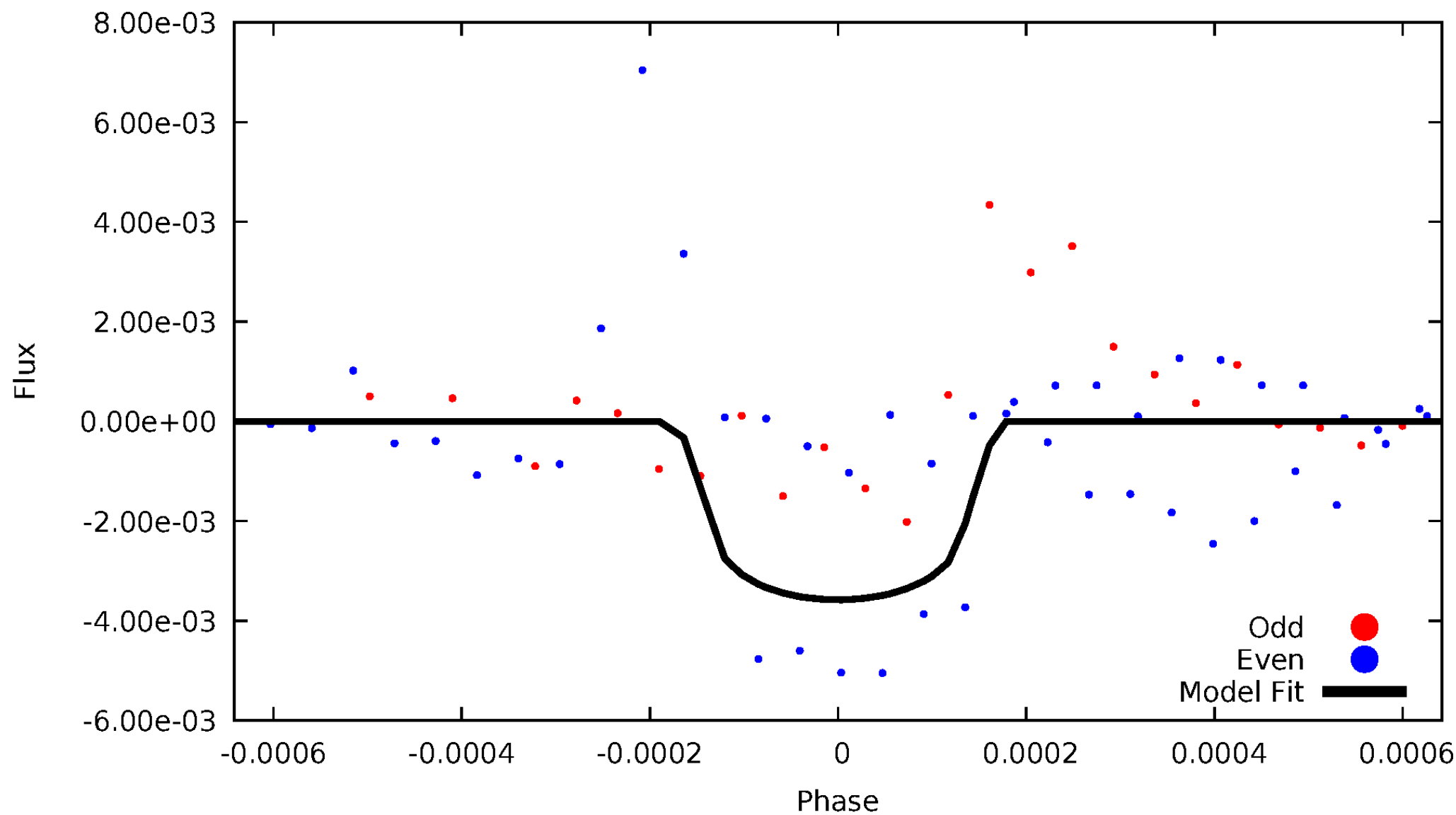


TCE 010861194-03



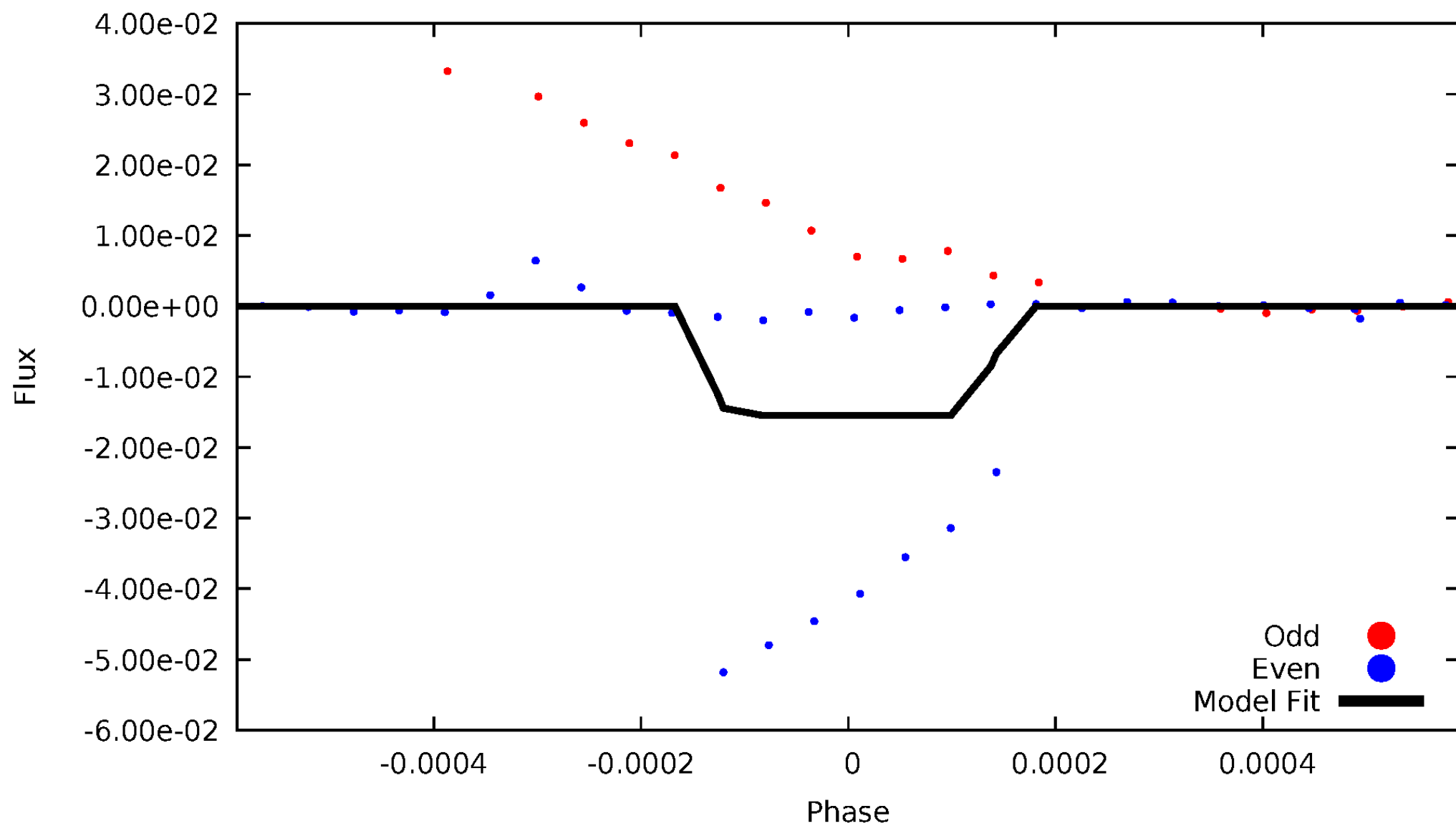
# DV Odd/Even

TCE 010861194-03



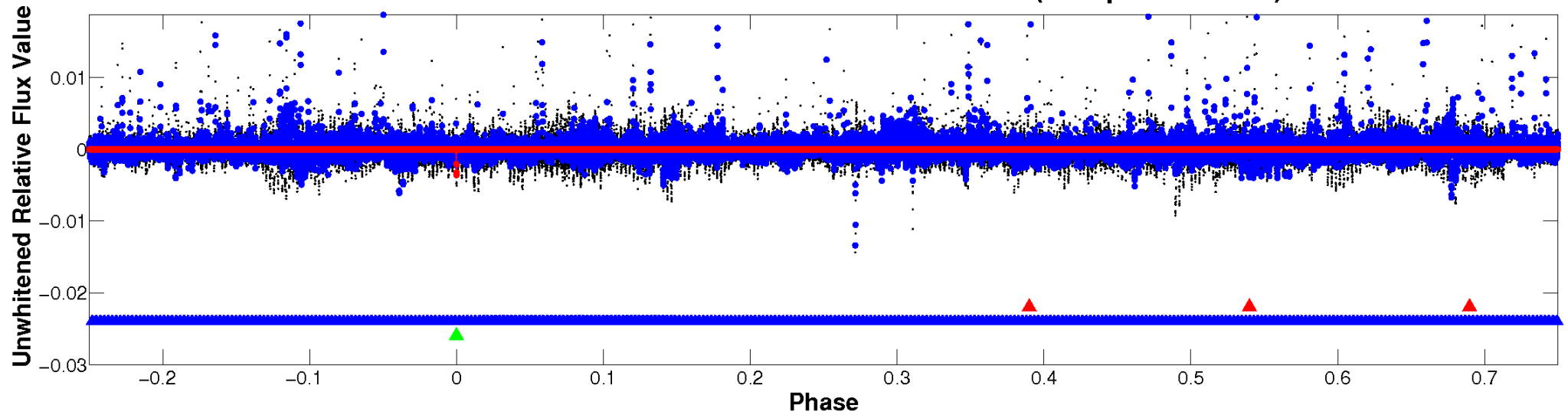
# ALT Odd/Even

TCE 010861194-03

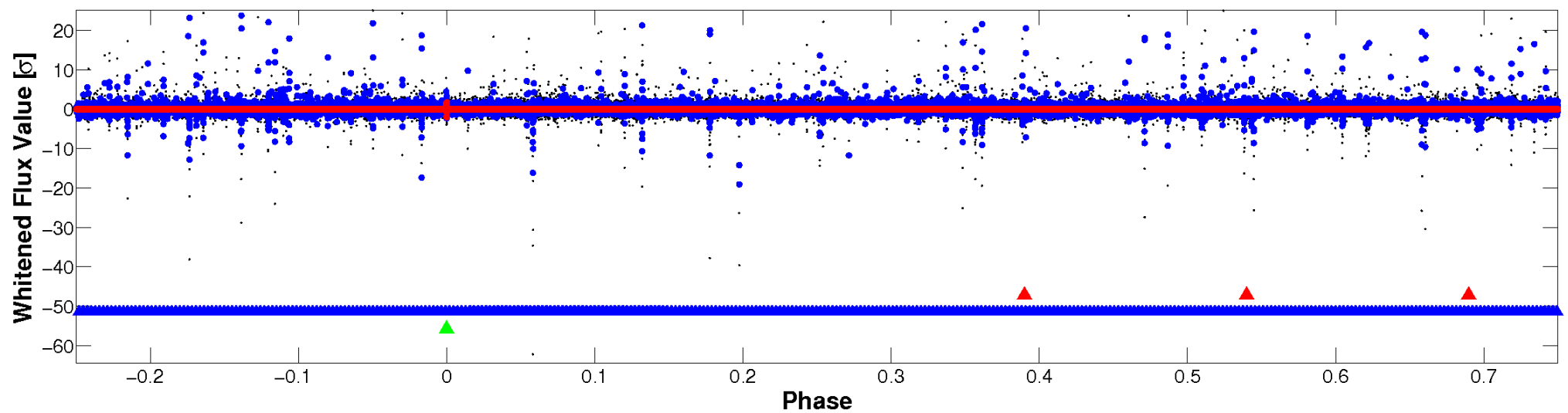


# Non-Whitened Vs. Whitened Light Curve

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

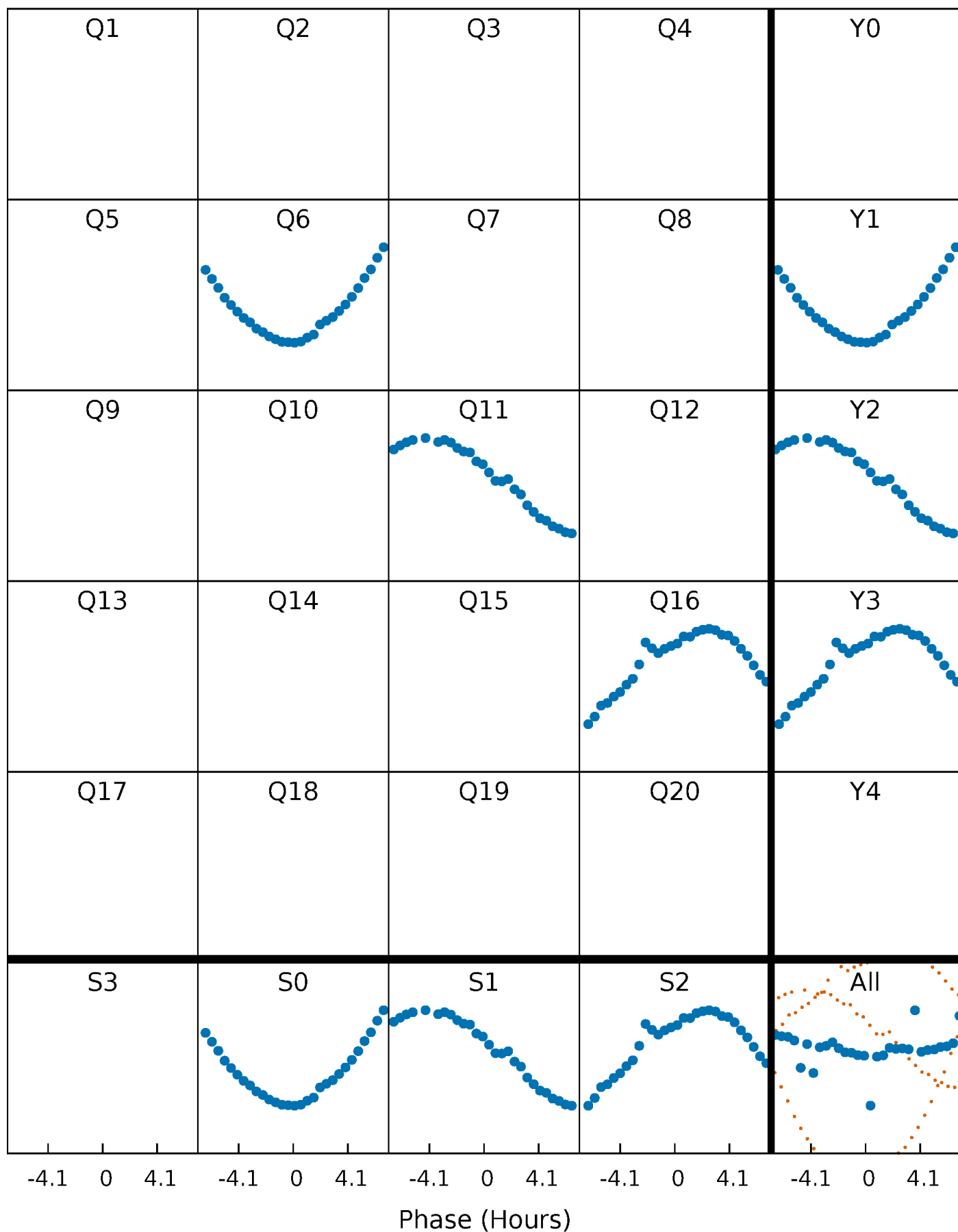


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

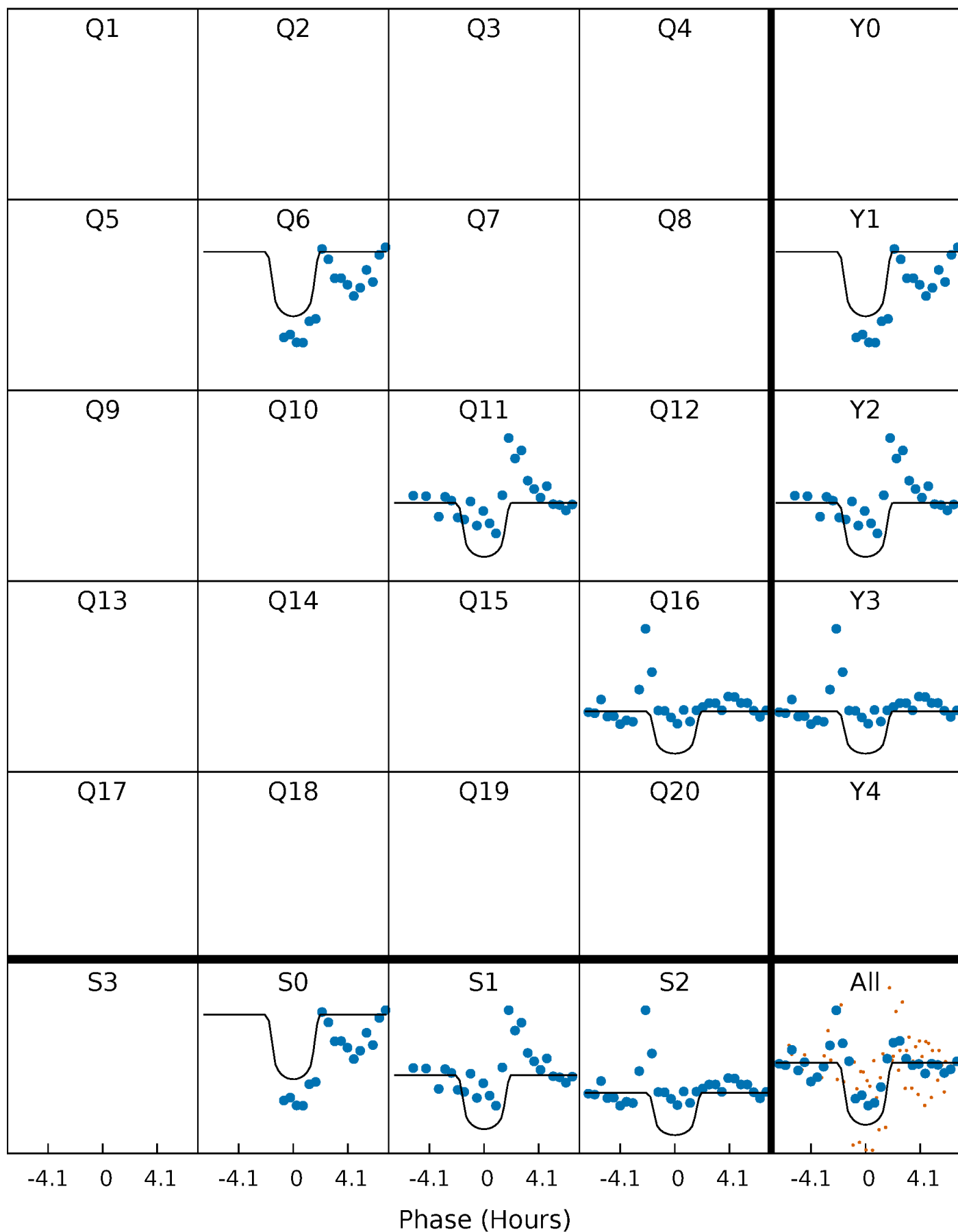
TCE 010861194-03 P=465.585723 Days  $T_0=590.757497$  (BKJD)





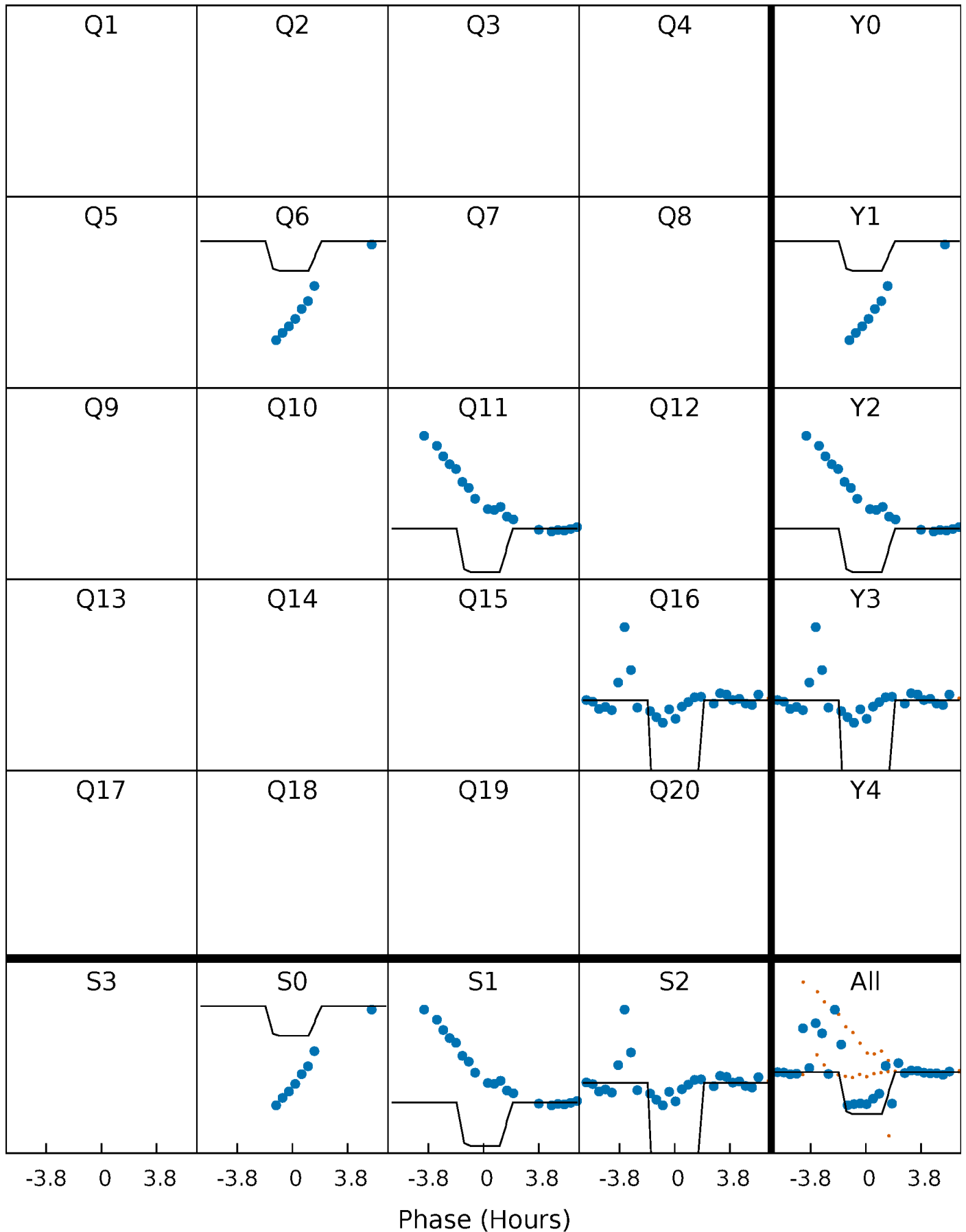
# DV Quarter-Phased Transit Curves

TCE 010861194-03 P=465.585723 Days  $T_0=590.757497$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

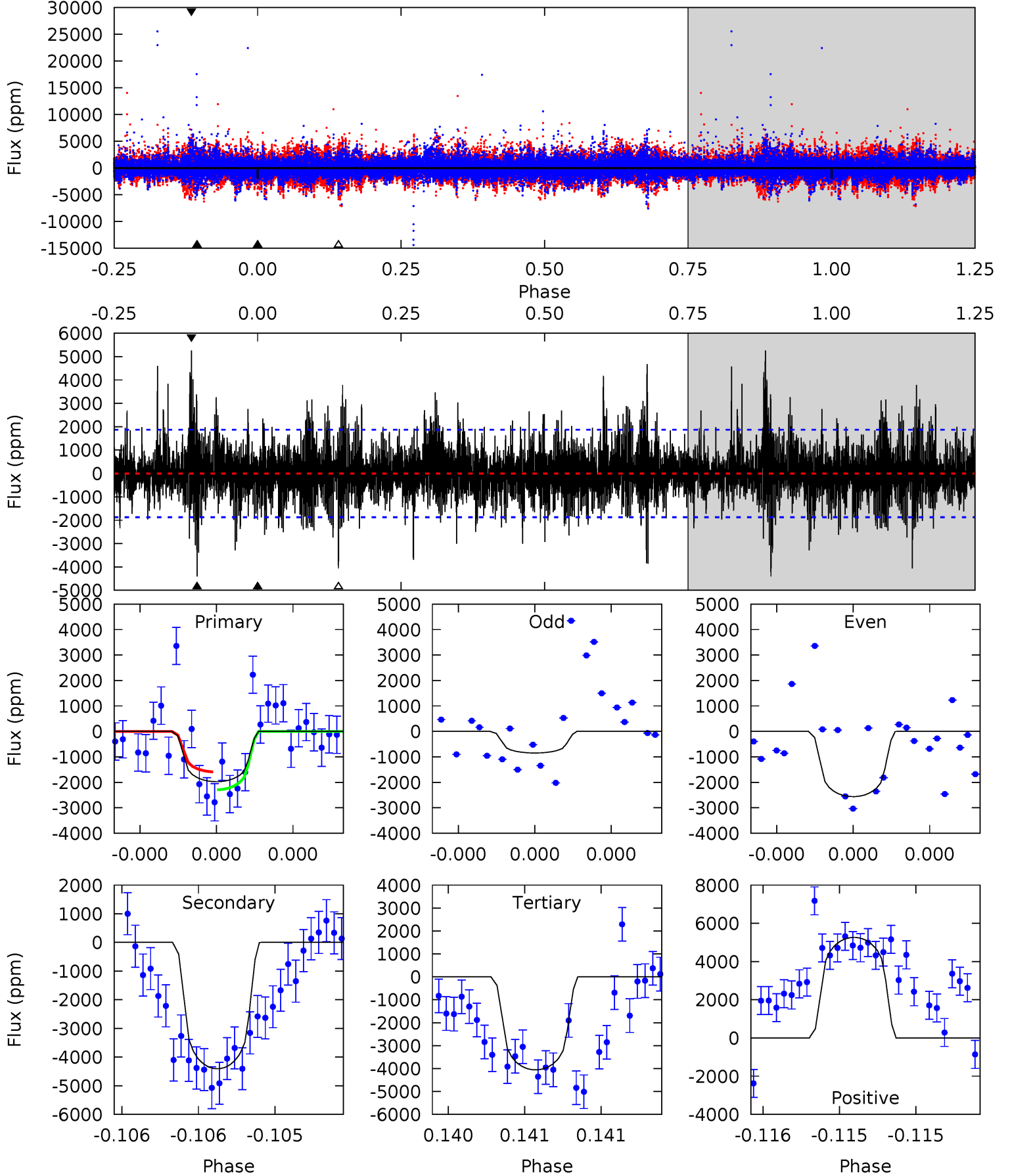
TCE 010861194-03 P=465.599098 Days  $T_0=590.774324$  (BKJD)



# DV Model-Shift Uniqueness Test

010861194-03, P = 465.585723 Days, E = 125.171774 Days

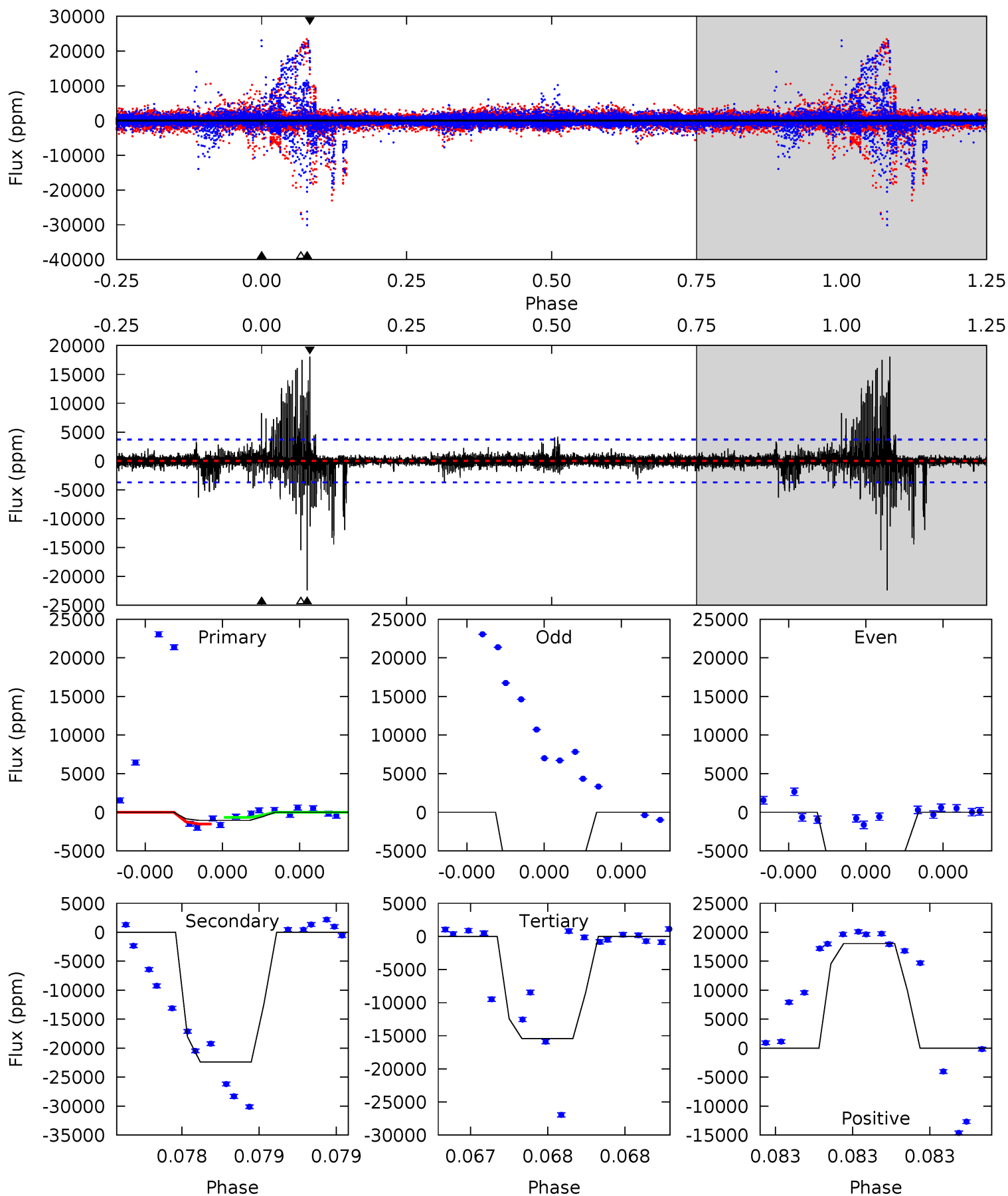
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.96	13.3	12.2	15.9	5.65	3.59	2.67	-6.28	-9.92	1.06	-2.58	2.23	2.42	0.54	1.05



# Alt Model-Shift Uniqueness Test

010861194-03, P = 465.599098 Days, E = 125.175226 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
1.60	34.4	23.7	27.8	5.68	3.65	1.60	-22.1	-26.2	10.7	6.65	1.26	10.6	0.45	0



### Stellar Parameters For KIC 010861194

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5255^{+173}_{-173}$	$4.608^{+0.078}_{-0.048}$	$-0.860^{+0.350}_{-0.300}$	$0.659^{+0.063}_{-0.056}$	$0.641^{+0.069}_{-0.028}$	$3.160^{+0.910}_{-0.591}$
	+3%/-3%	+2%/-1%	+41%/-35%	+10%/-8%	+11%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010861194-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-4409 \pm 331$	$4.51^{+3.25}_{-2.64}$	$260^{+11}_{-10}$	$5384^{+3273}_{-1054}$	$124107^{+616004}_{-80786}$
Alt.	$-22391 \pm 651$	$8.93^{+3.20}_{-3.26}$	$260^{+11}_{-10}$	$5752^{+1525}_{-746}$	$163097^{+248749}_{-74046}$

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

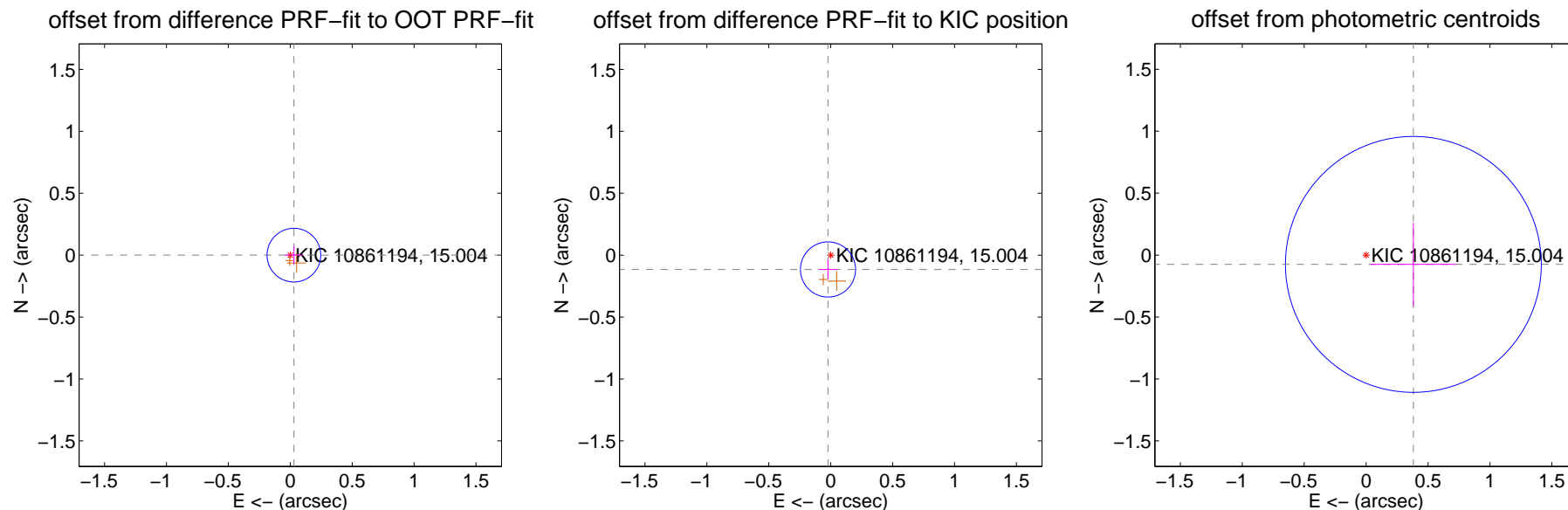
## DV Centroid Data

Supplemental centroid analysis for 010861194-03. Kepler magnitude: 15.00. Transit SNR 8.79

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.029 \pm 0.072$	0.41	$-0.029 \pm 0.072$	$0.000 \pm 0.073$
PRF-fit source offset from KIC position	$0.118 \pm 0.074$	1.59	$0.022 \pm 0.074$	$-0.116 \pm 0.076$
photometric centroid source offset	$0.39 \pm 0.34$	1.13	$-0.38 \pm 0.34$	$-0.08 \pm 0.34$

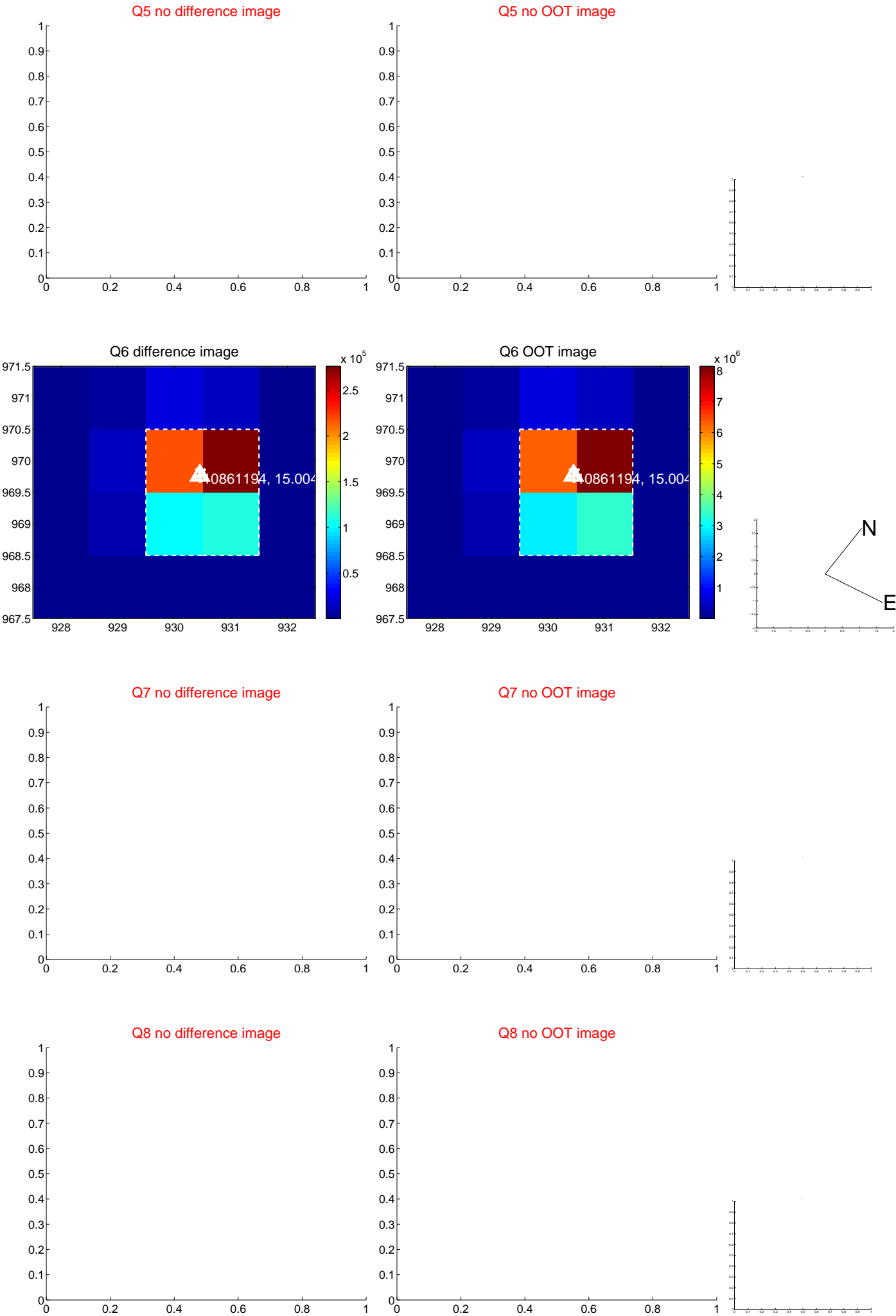


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

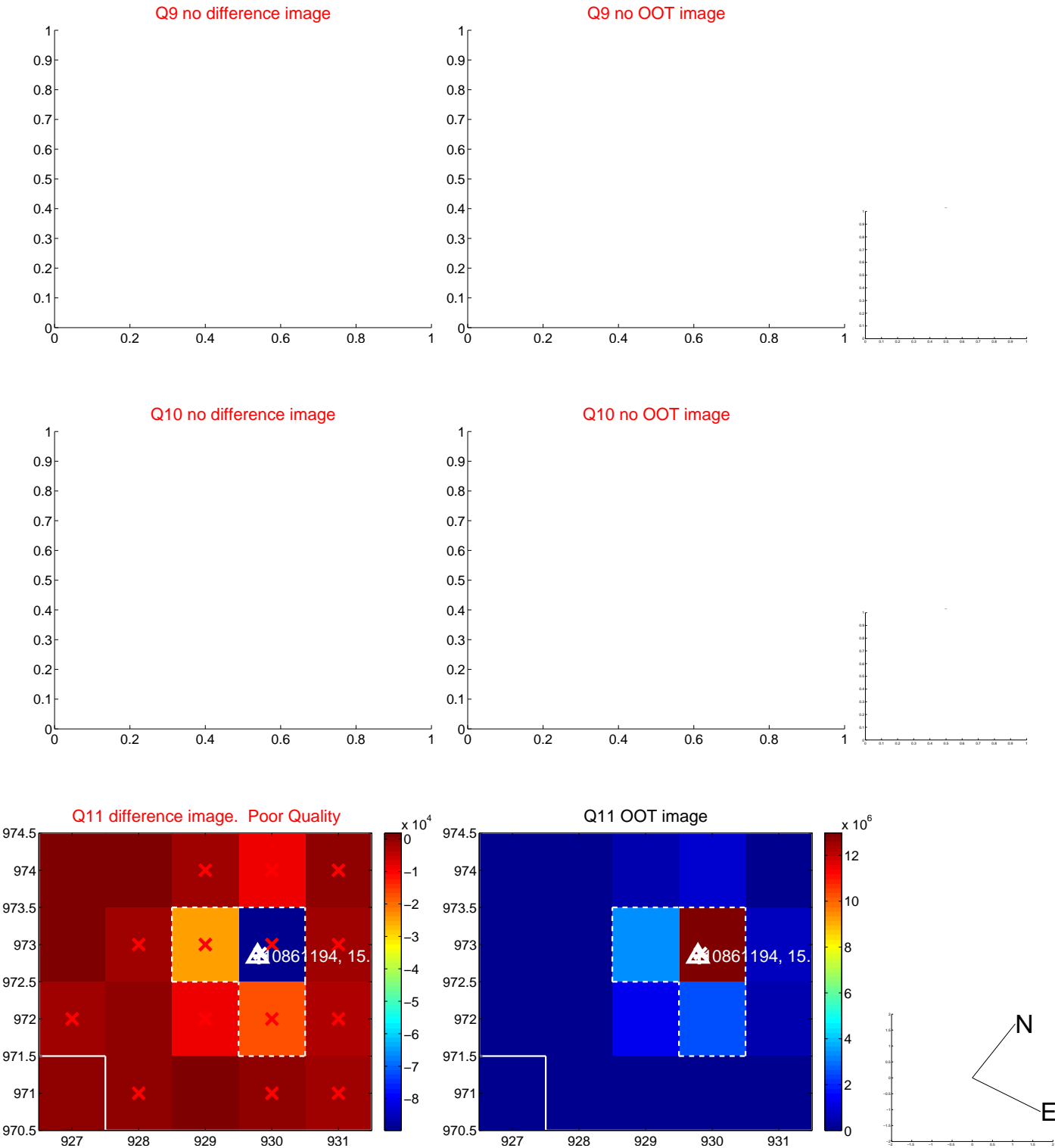


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

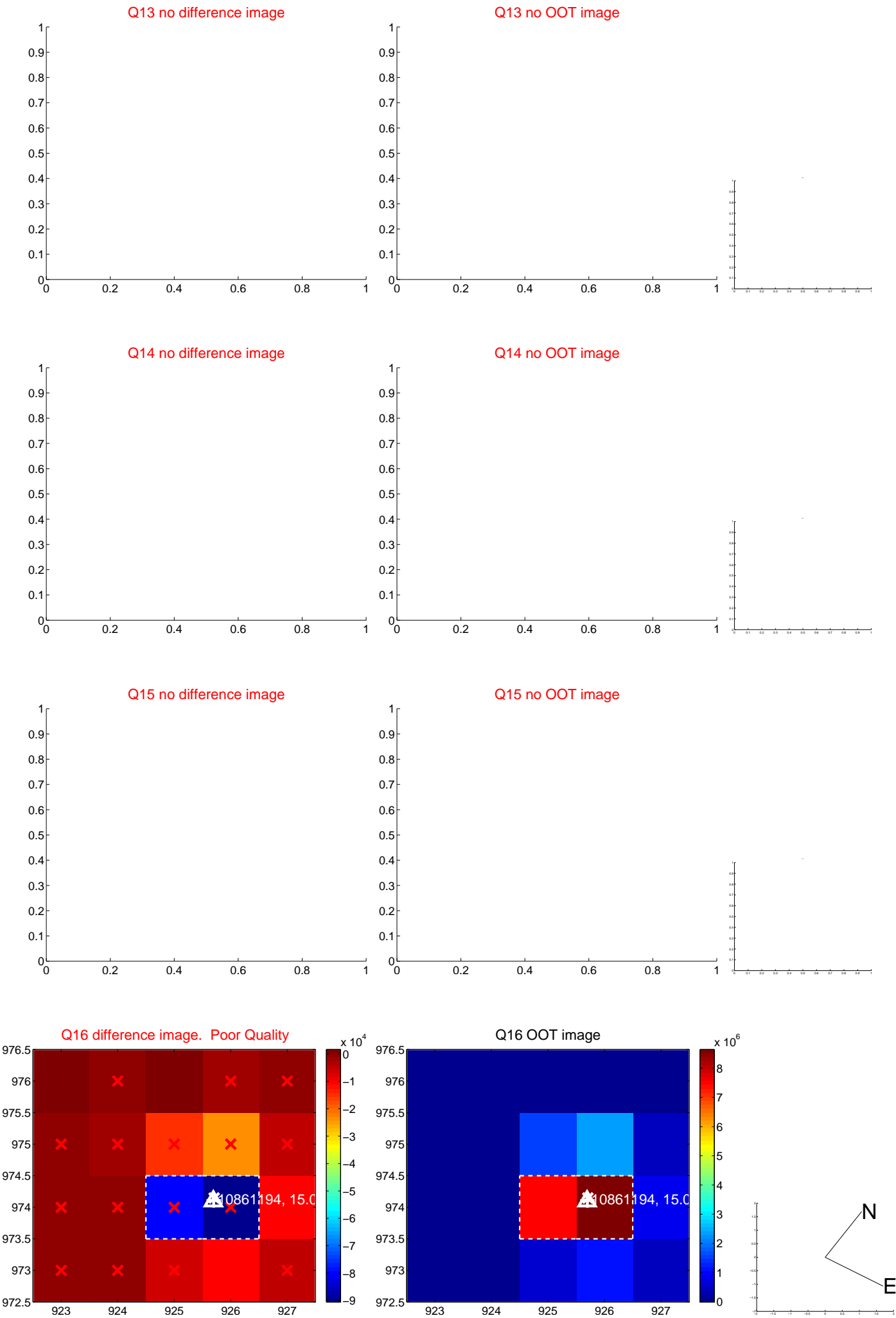




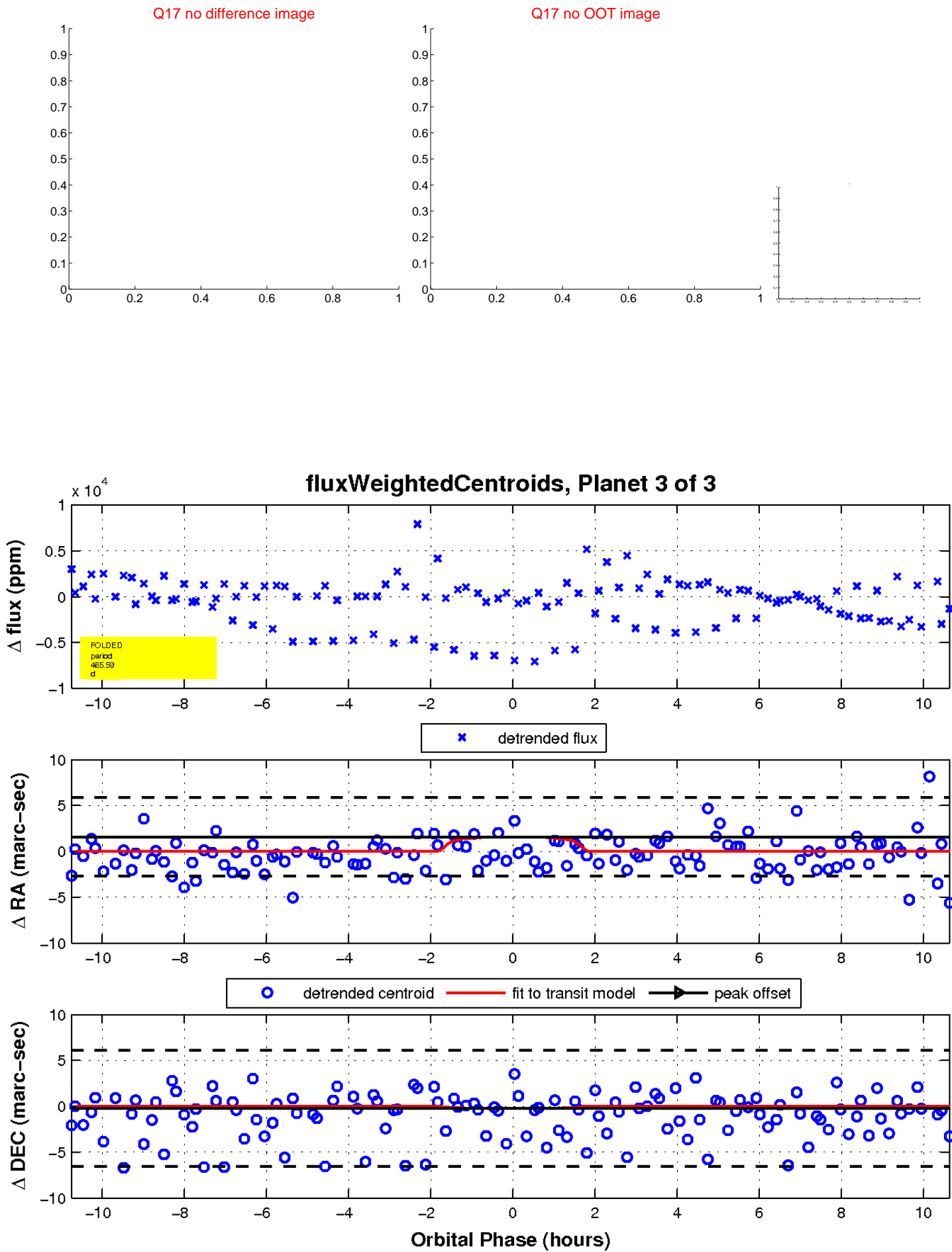
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

