

# KIC 007658882

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007658882-01	OBS	No	422.621540	212.852157	606.3	3.311	9.7	6.2	1.74	5094	4.74	1.57
007658882-02	OBS	No	374.415280	452.093098	562.8	2.957	9.1	7.0	1.74	5094	4.74	1.85
007658882-03	OBS	No	0.677006	131.652400	36.6	6.023	8.6	10.2	1.74	5094	1.02	8382.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007658882-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007658882-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007658882-03	OBS	FP	0.00	1	0	0	0	LPP_DV

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

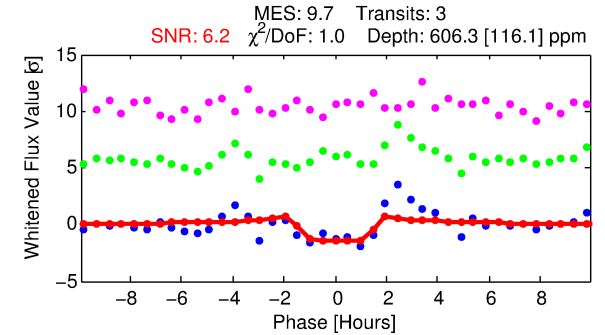
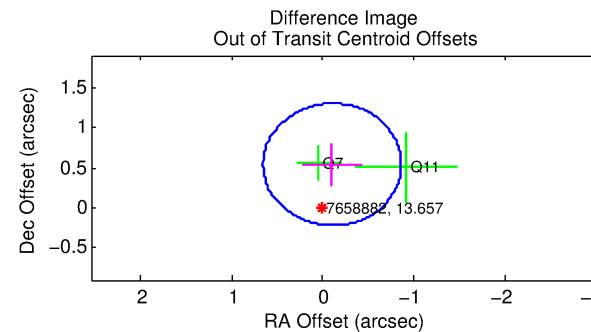
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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 007658882-01

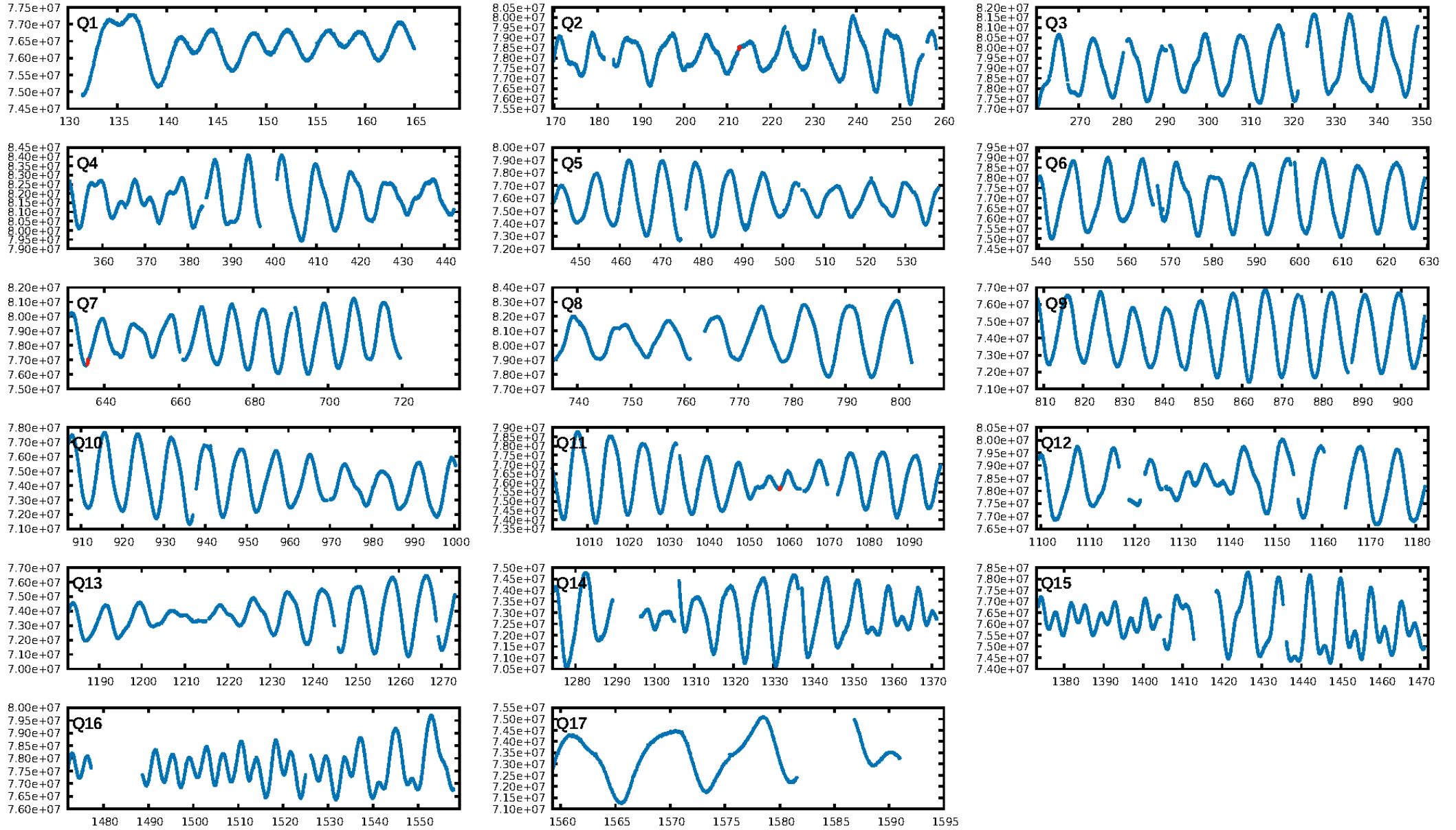
No Significant Match Found

## KIC: 7658882    Candidate: 1 of 3    Period: 422.622 d

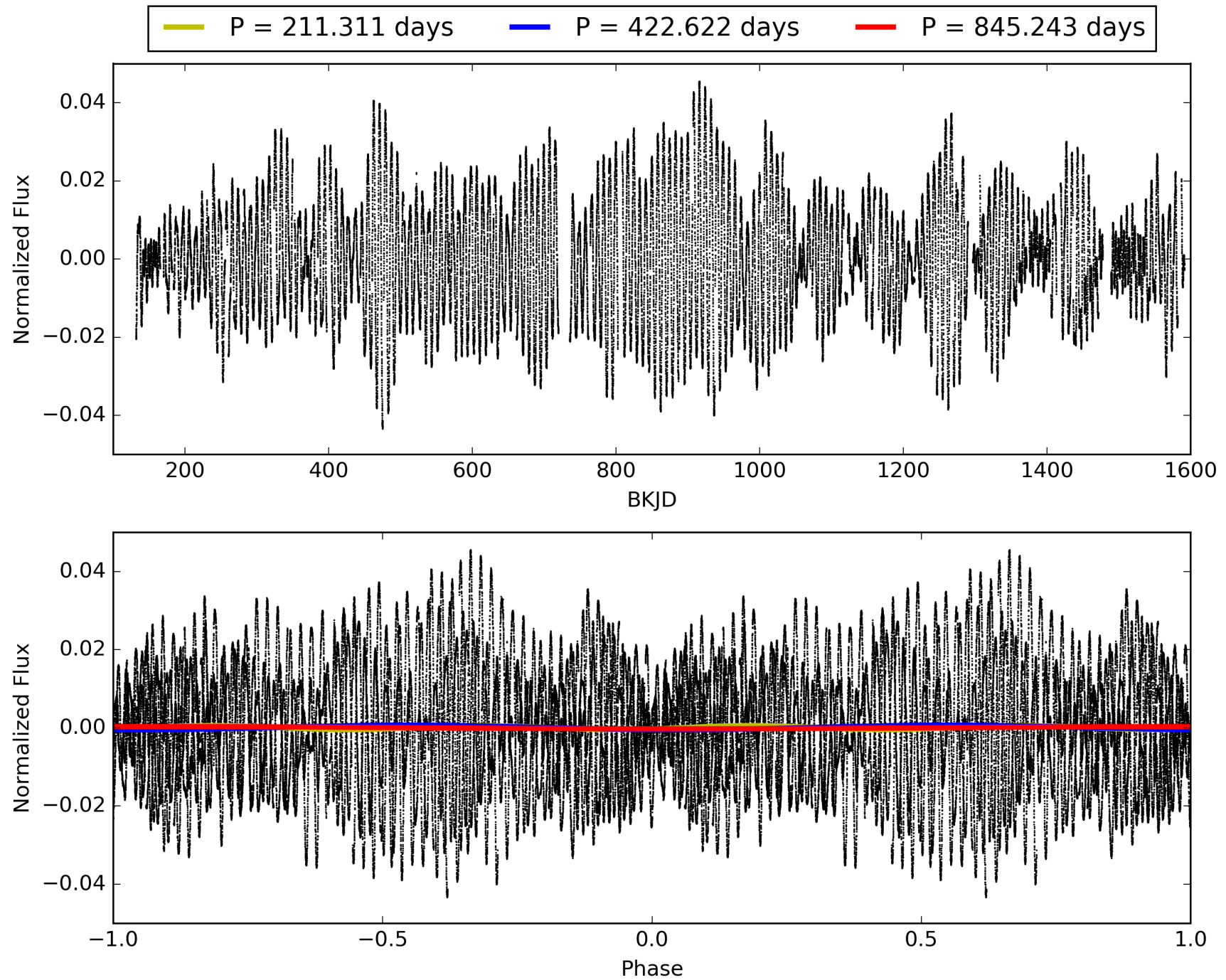


ShortPeriod-sig: 100.0% [260.59σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 48.4%  
ModelChiSquareGof-sig: 81.4%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 9.876  
  
Centroid-sig: 37.7%  
Centroid-so: 1.267 arcsec [0.88σ]  
OotOffset-rm: 0.550 arcsec [2.17σ]  
KicOffset-rm: 0.715 arcsec [2.80σ]  
OotOffset-st: 0/2/0/0 [2]  
KicOffset-st: 0/2/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 0.00 [0/3]

# TCE 007658882-01, PDC Light Curves

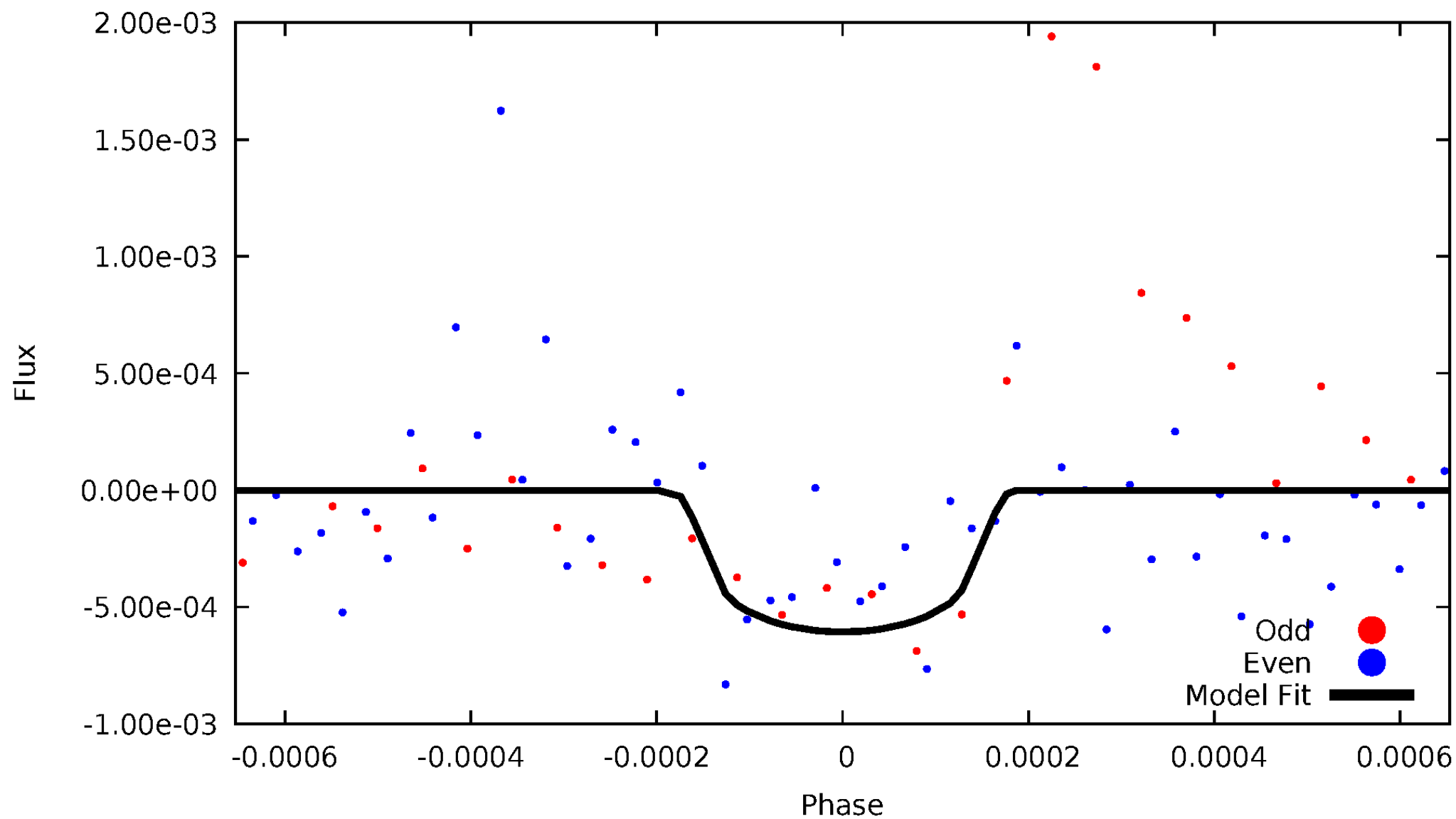


TCE 007658882-01



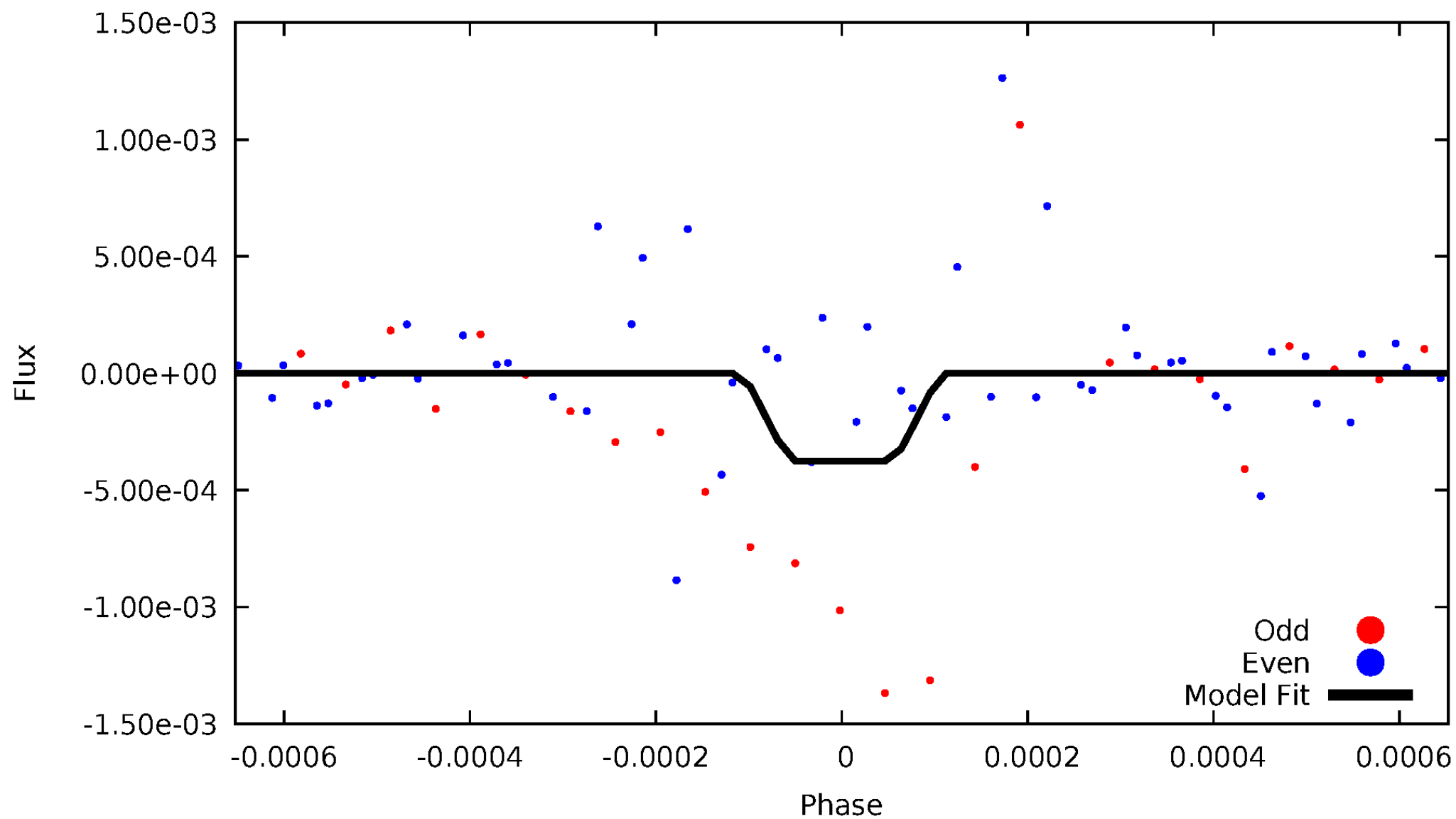
# DV Odd/Even

TCE 007658882-01



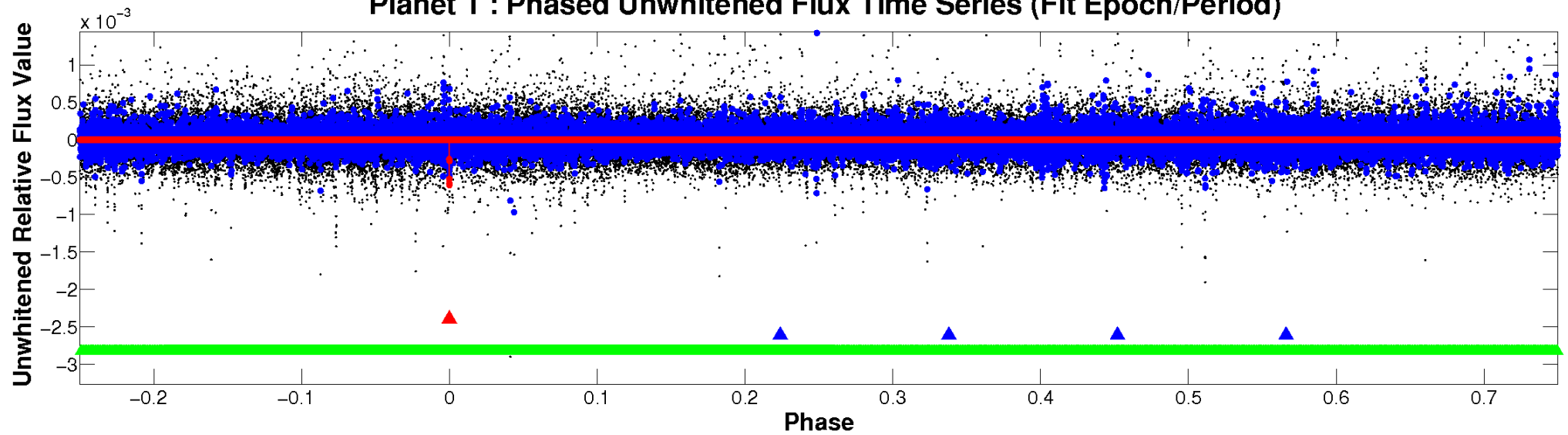
# ALT Odd/Even

TCE 007658882-01

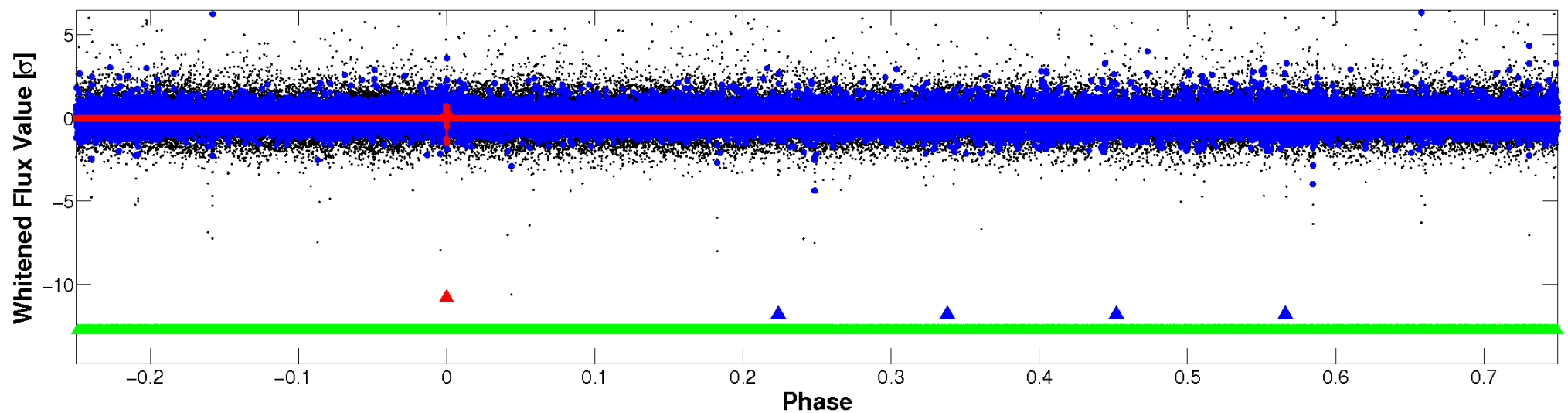


# Non-Whitened Vs. Whitened Light Curve

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

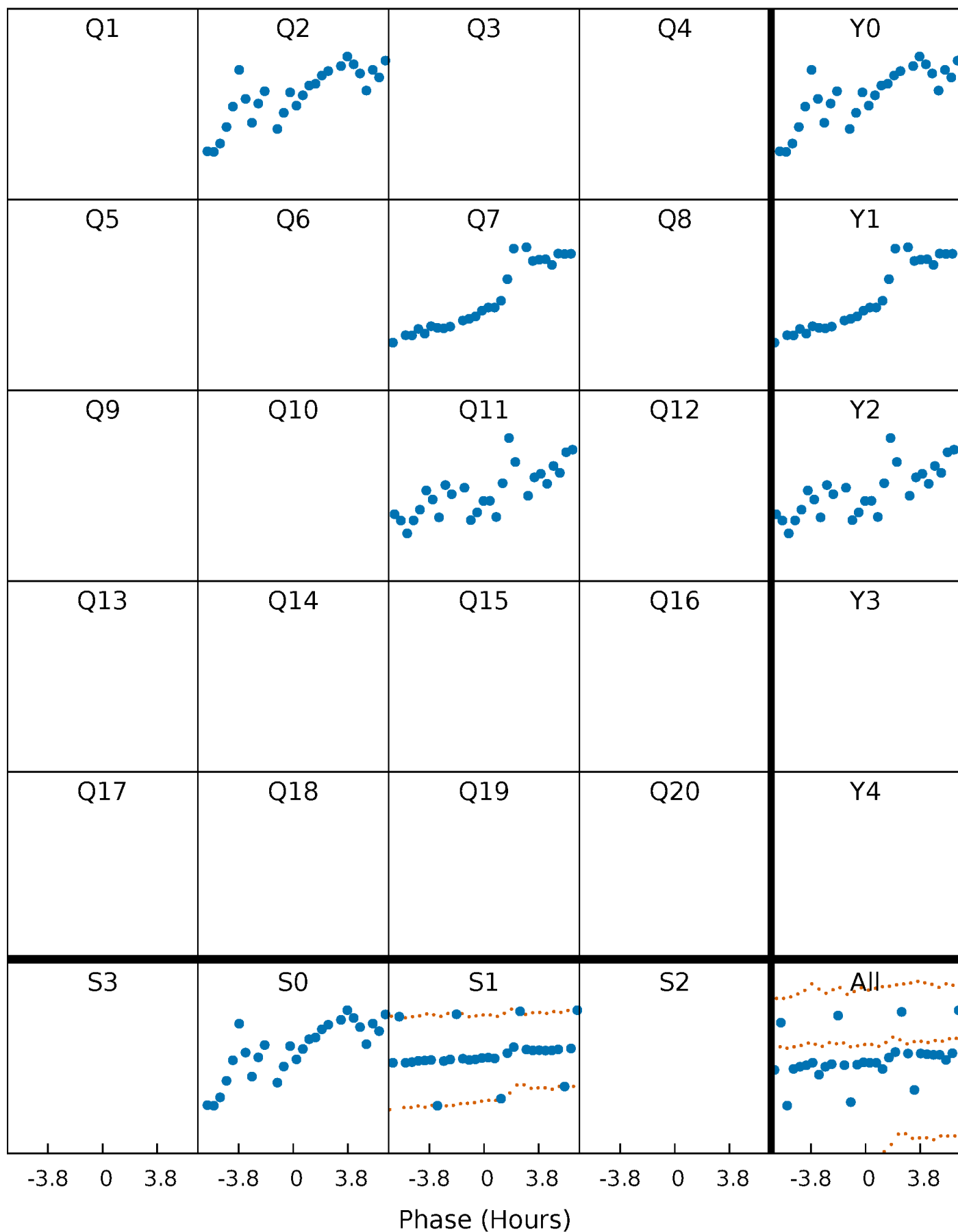


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

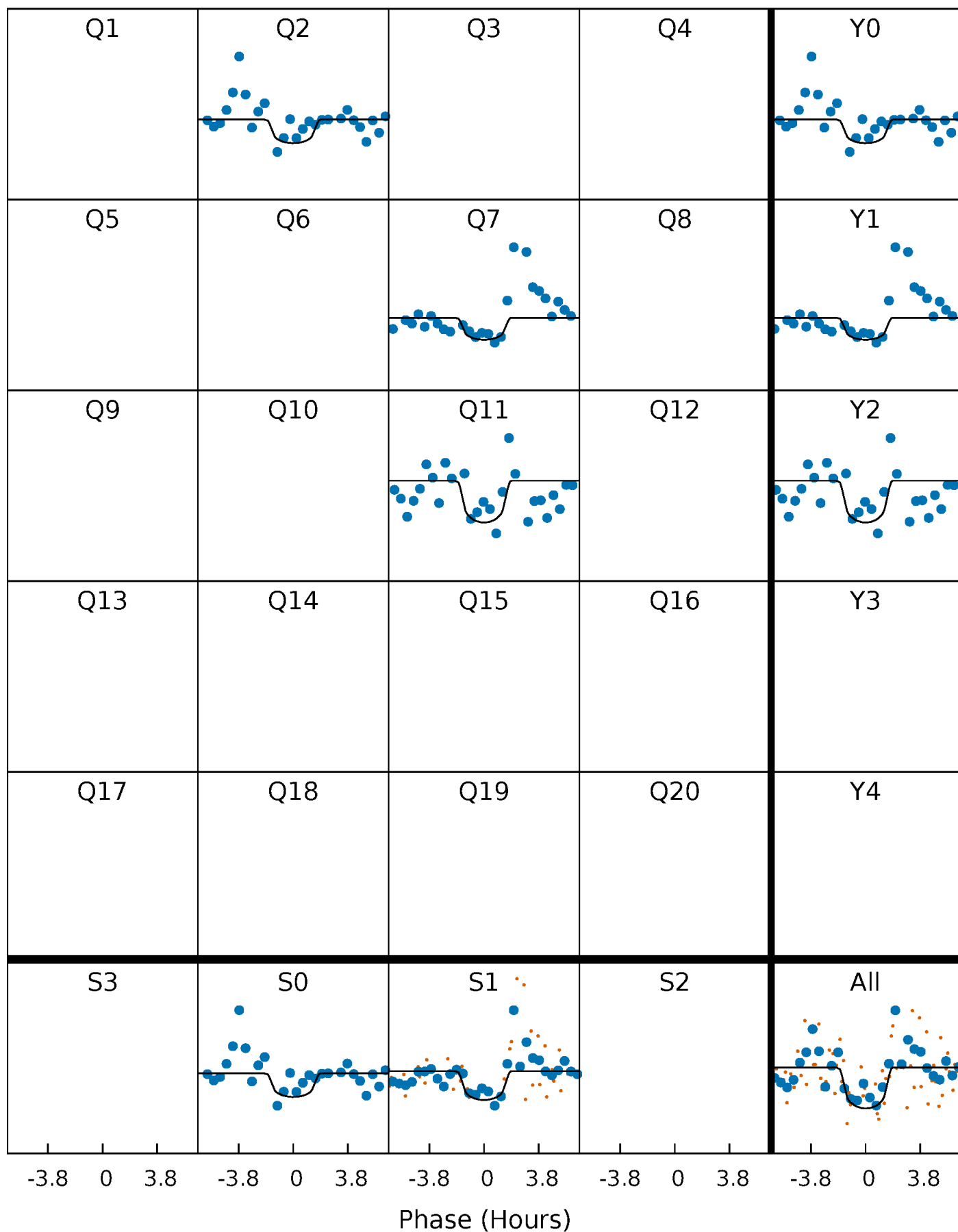
TCE 007658882-01 P=422.621540 Days  $T_0=212.852158$  (BKJD)





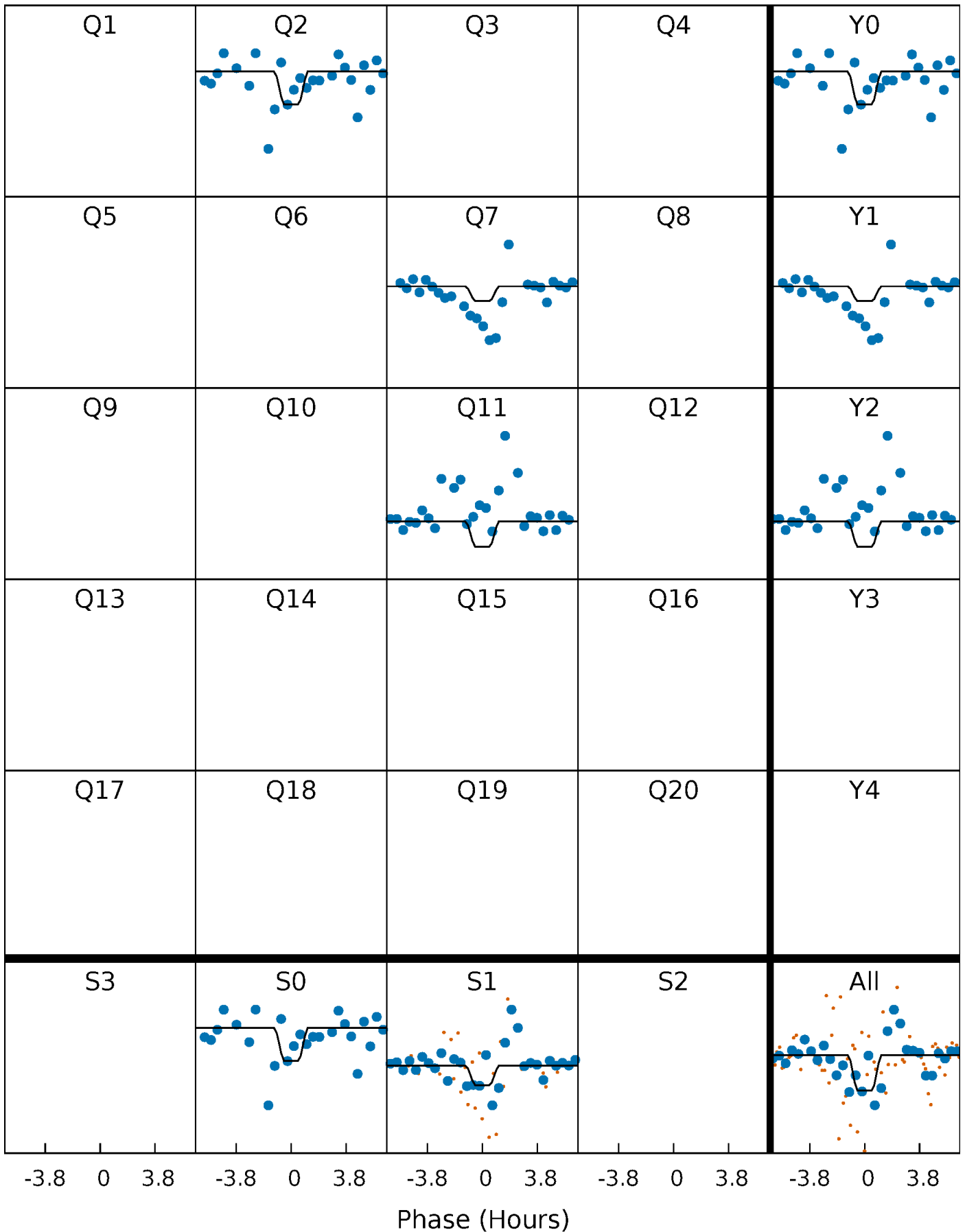
# DV Quarter-Phased Transit Curves

TCE 007658882-01 P=422.621540 Days  $T_0=212.852158$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

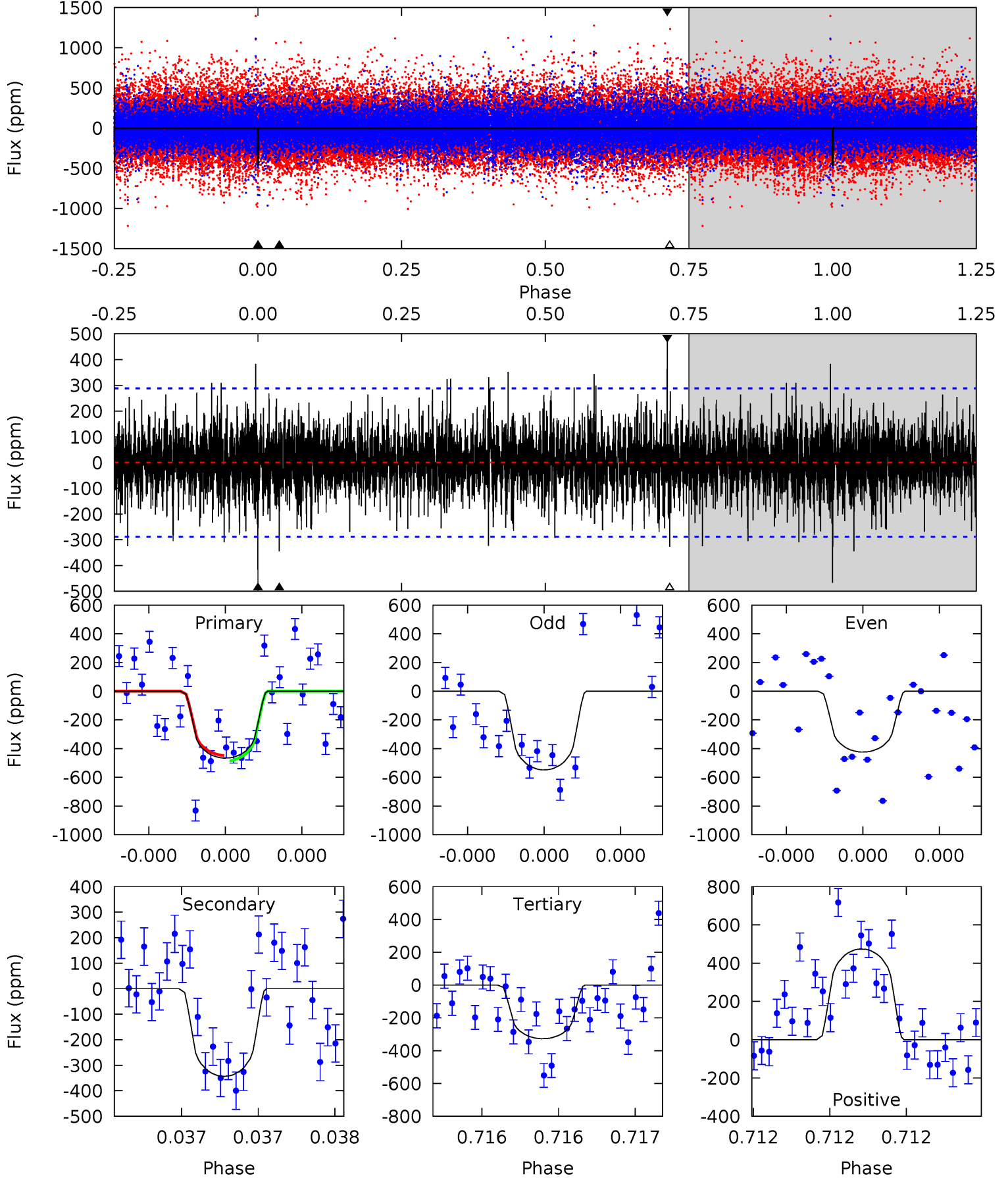
TCE 007658882-01 P=422.613699 Days  $T_0=212.874040$  (BKJD)



# DV Model-Shift Uniqueness Test

007658882-01, P = 422.621540 Days, E = 212.852158 Days

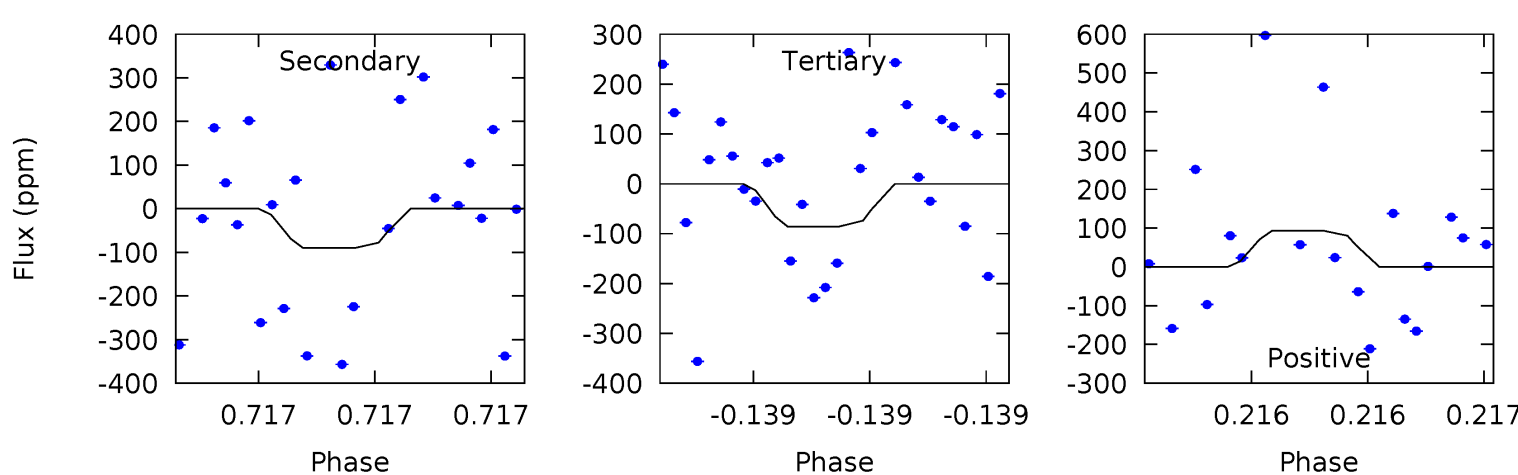
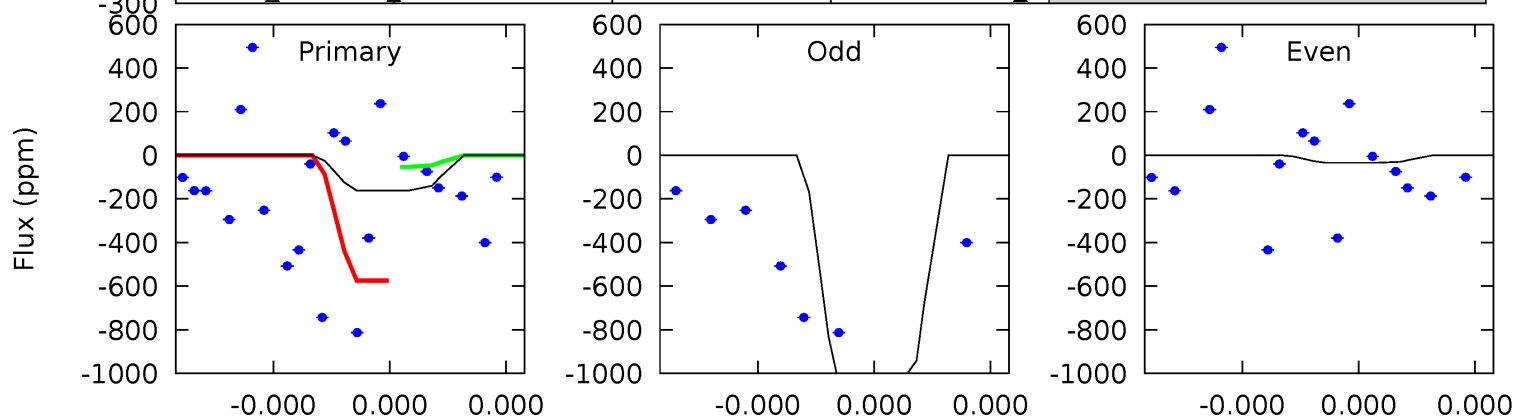
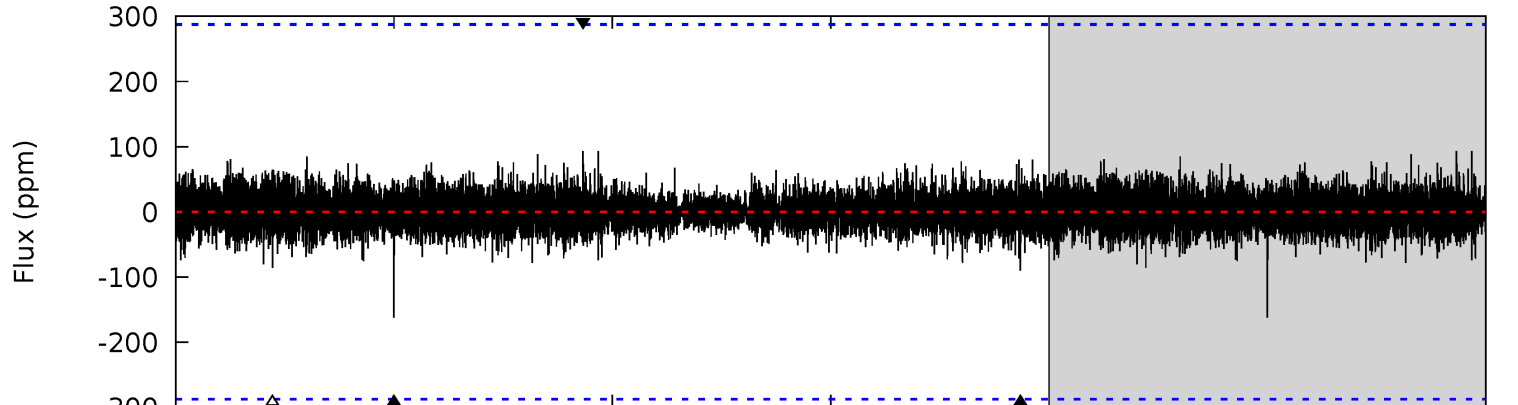
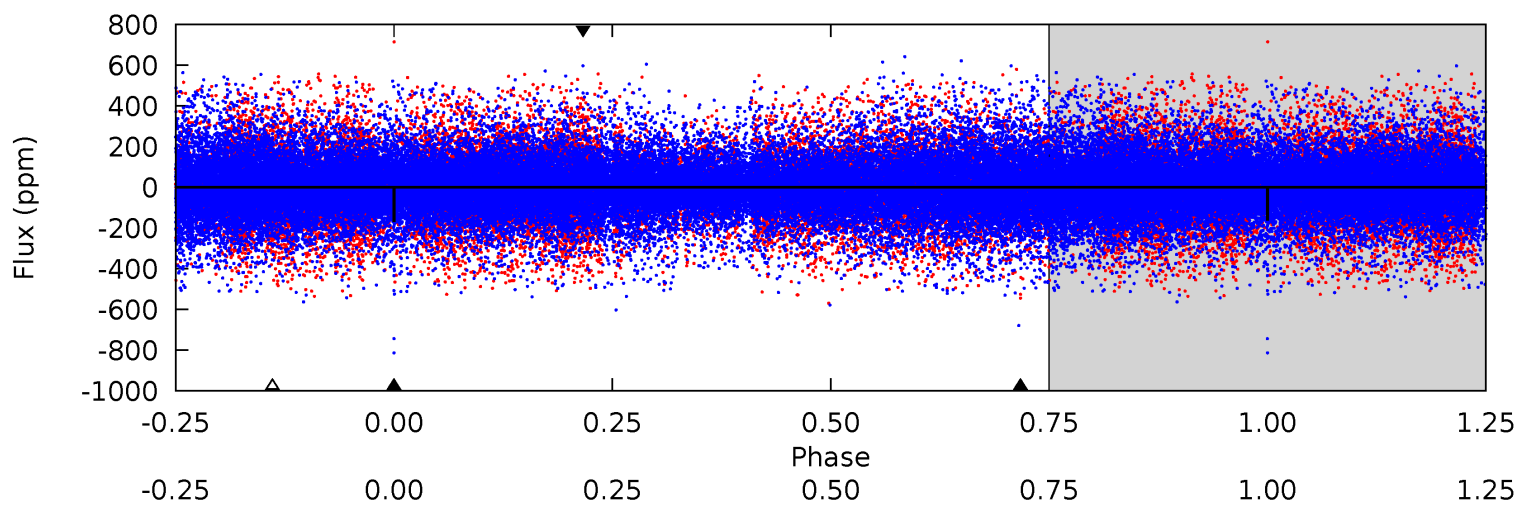
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.13	6.72	6.41	9.29	5.64	3.58	1.57	2.73	-0.16	0.32	-2.56	1.08	0.96	0.50	0.37



# Alt Model-Shift Uniqueness Test

007658882-01, P = 422.613699 Days, E = 212.874040 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
3.25	1.81	1.72	1.87	5.75	3.75	0.38	1.53	1.38	0.09	-0.06	10.9	2.07	0.37	5.25



### Stellar Parameters For KIC 007658882

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5094^{+168}_{-137}$	$3.927^{+0.624}_{-0.336}$	$0.040^{+0.300}_{-0.250}$	$1.736^{+0.984}_{-0.984}$	$0.928^{+0.186}_{-0.140}$	$0.250^{+2.215}_{-0.182}$
	+3%/-3%	+16%/-9%	+750%/-625%	+57%/-57%	+20%/-15%	+886%/-73%
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 007658882-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-344 \pm 51$	$5.90^{+6.16}_{-3.77}$	$397^{+58}_{-63}$	$4079^{+1900}_{-766}$	$6462^{+38629}_{-4916}$
Alt.	$-90 \pm 50$	$5.24^{+5.15}_{-3.56}$	$395^{+57}_{-59}$	$3328^{+1591}_{-655}$	$1886^{+15910}_{-1551}$

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

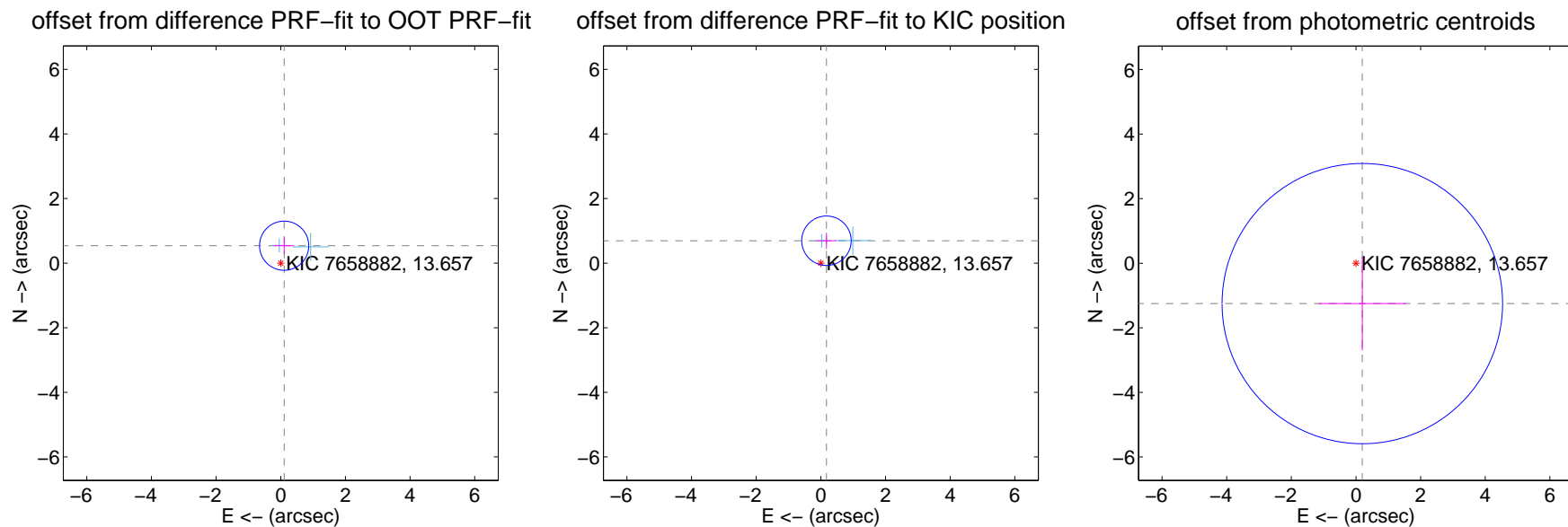
## DV Centroid Data

Supplemental centroid analysis for 007658882-01. Kepler magnitude: 13.66. Transit SNR 6.22

There are 2 quarters with good PRF difference image offsets

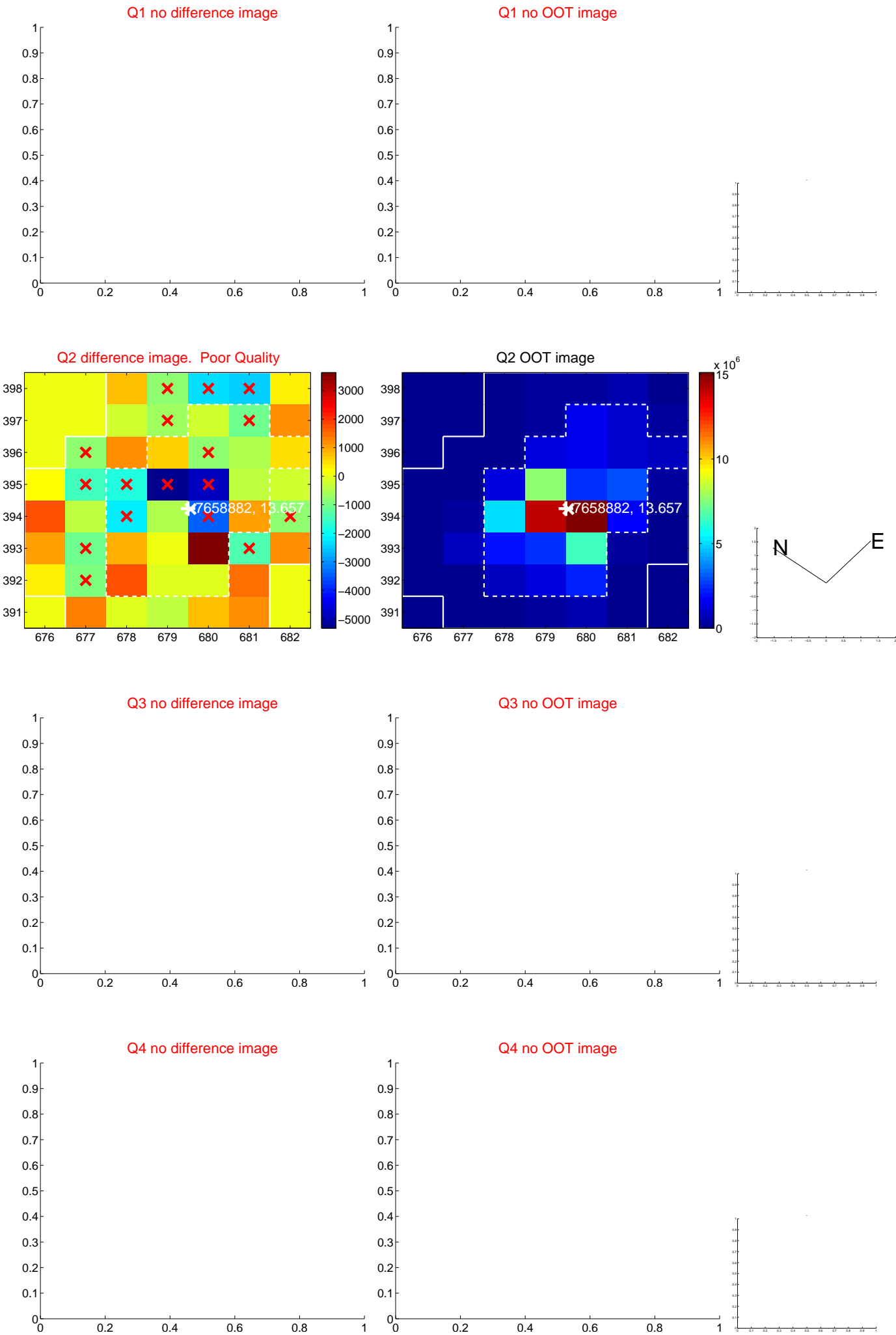
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.550 \pm 0.254$	2.17	$-0.105 \pm 0.310$	$0.540 \pm 0.251$
PRF-fit source offset from KIC position	$0.715 \pm 0.255$	2.80	$-0.173 \pm 0.310$	$0.694 \pm 0.251$
photometric centroid source offset	$1.27 \pm 1.45$	0.88	$-0.20 \pm 1.35$	$-1.25 \pm 1.45$

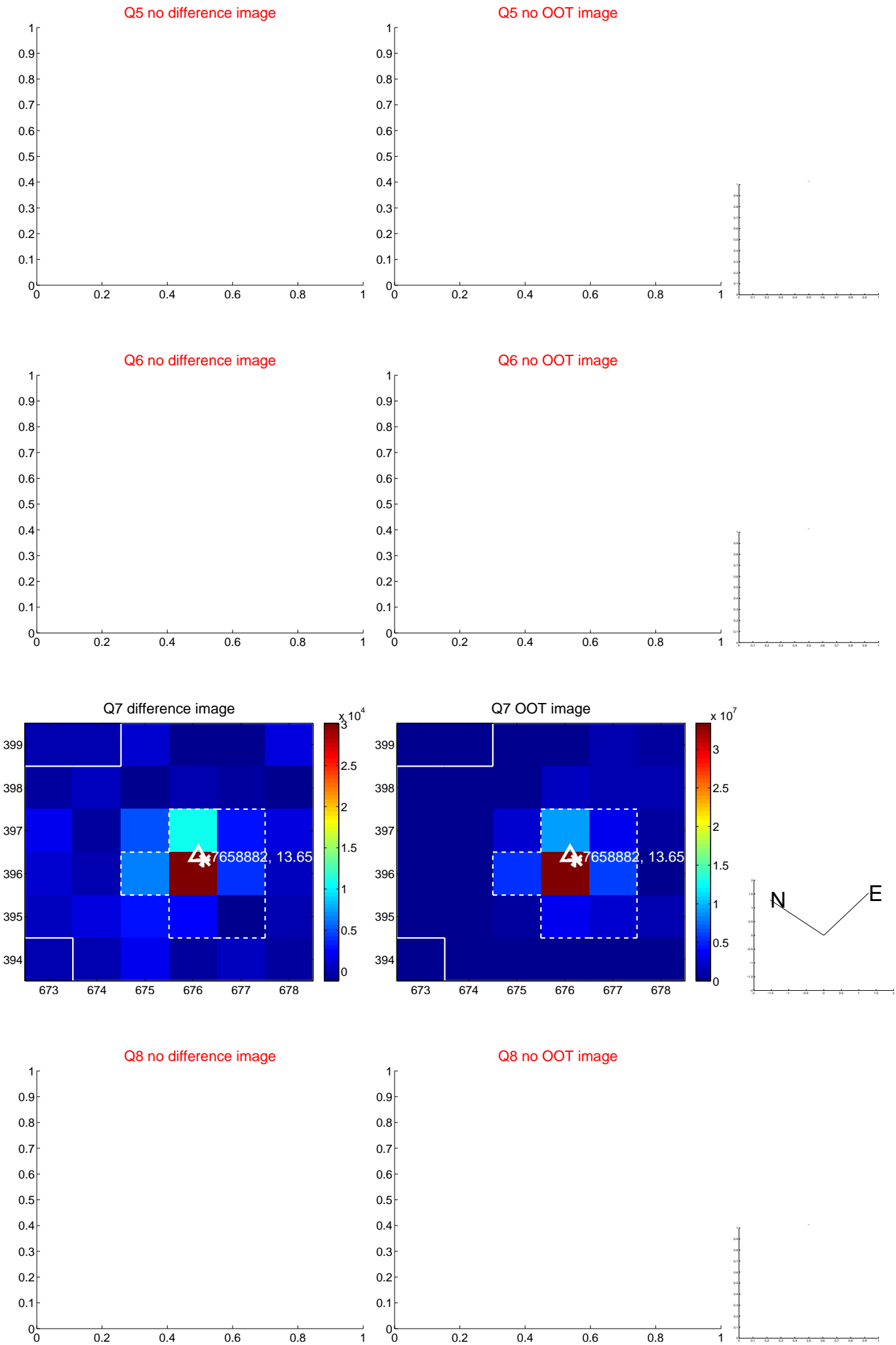


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

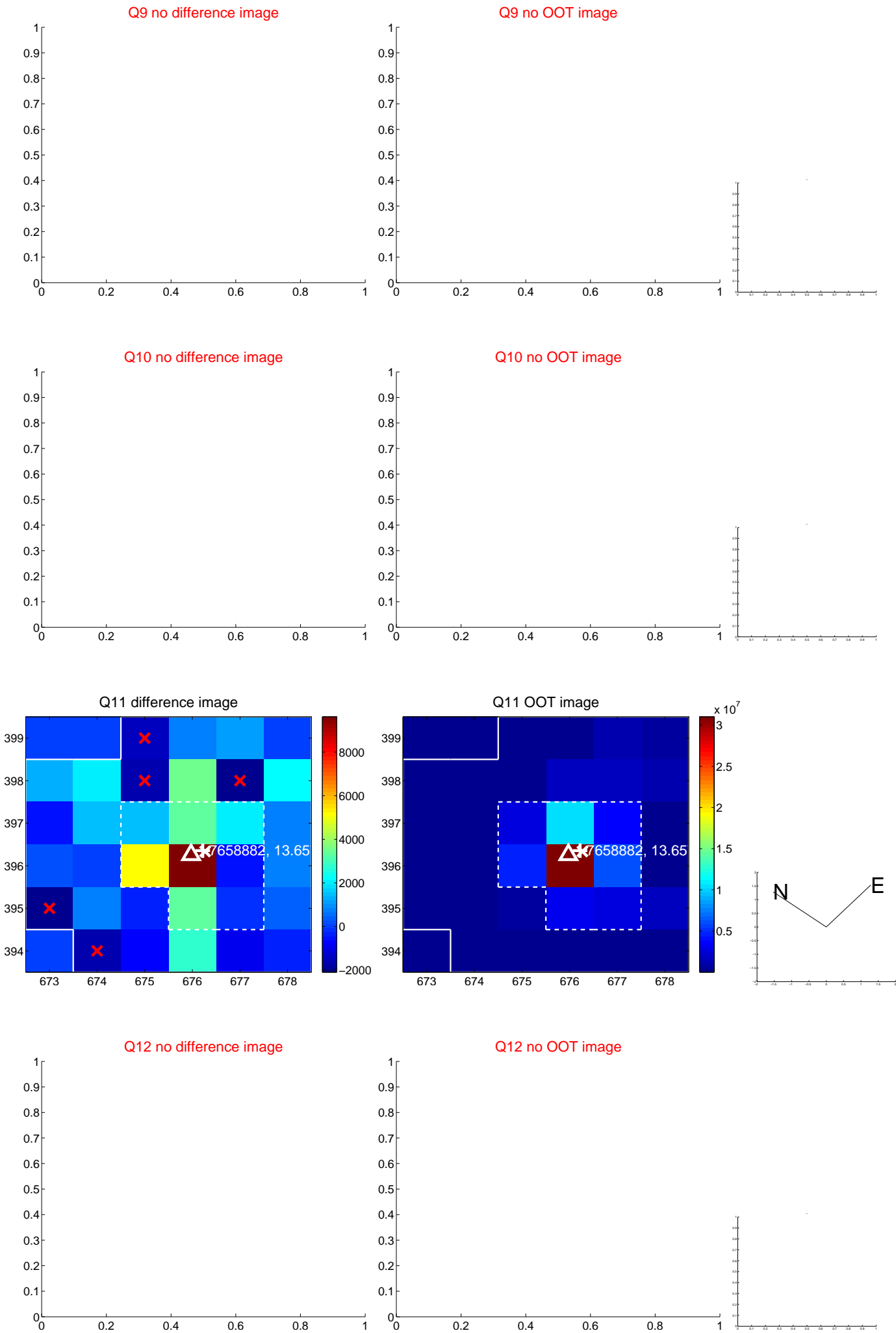


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





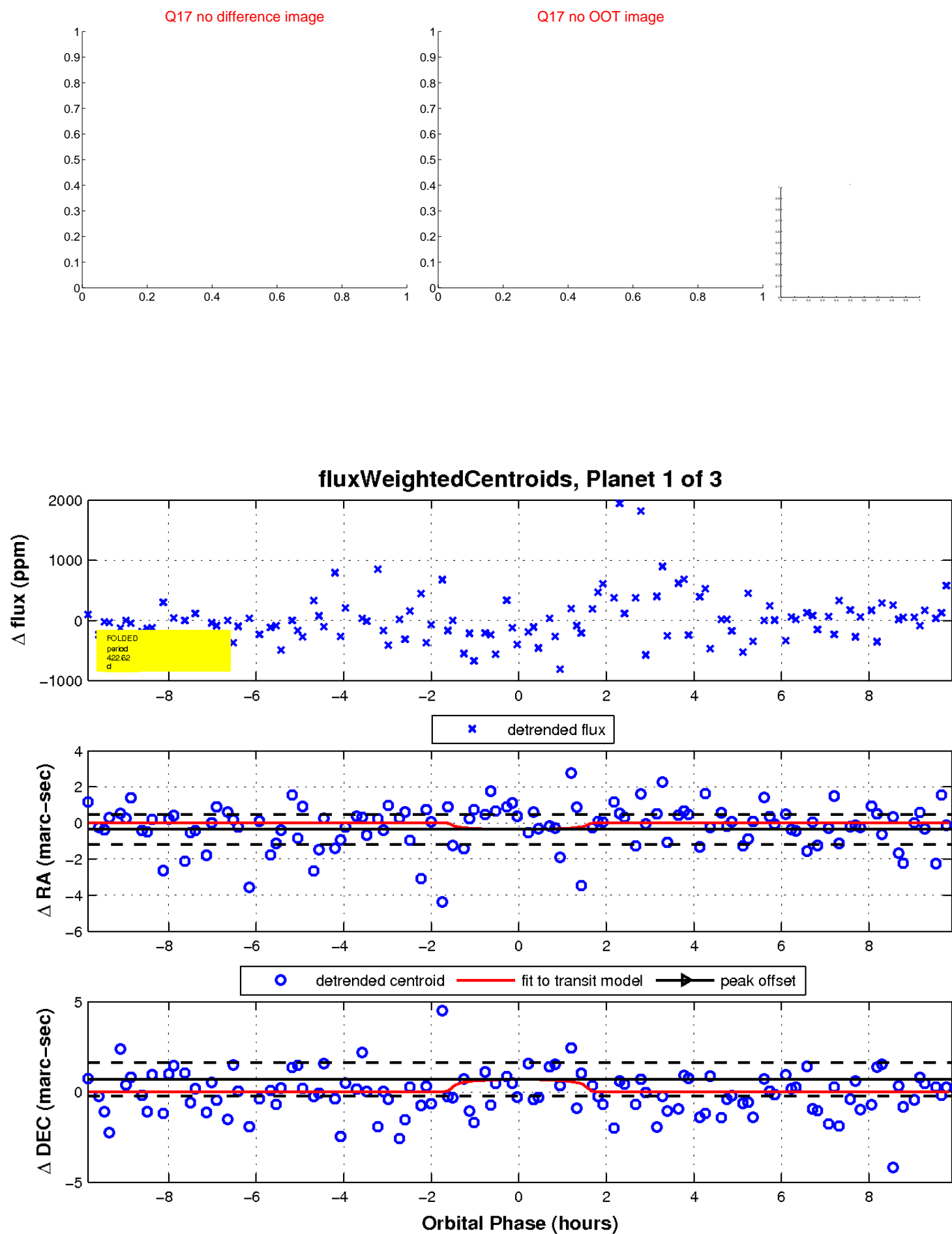
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

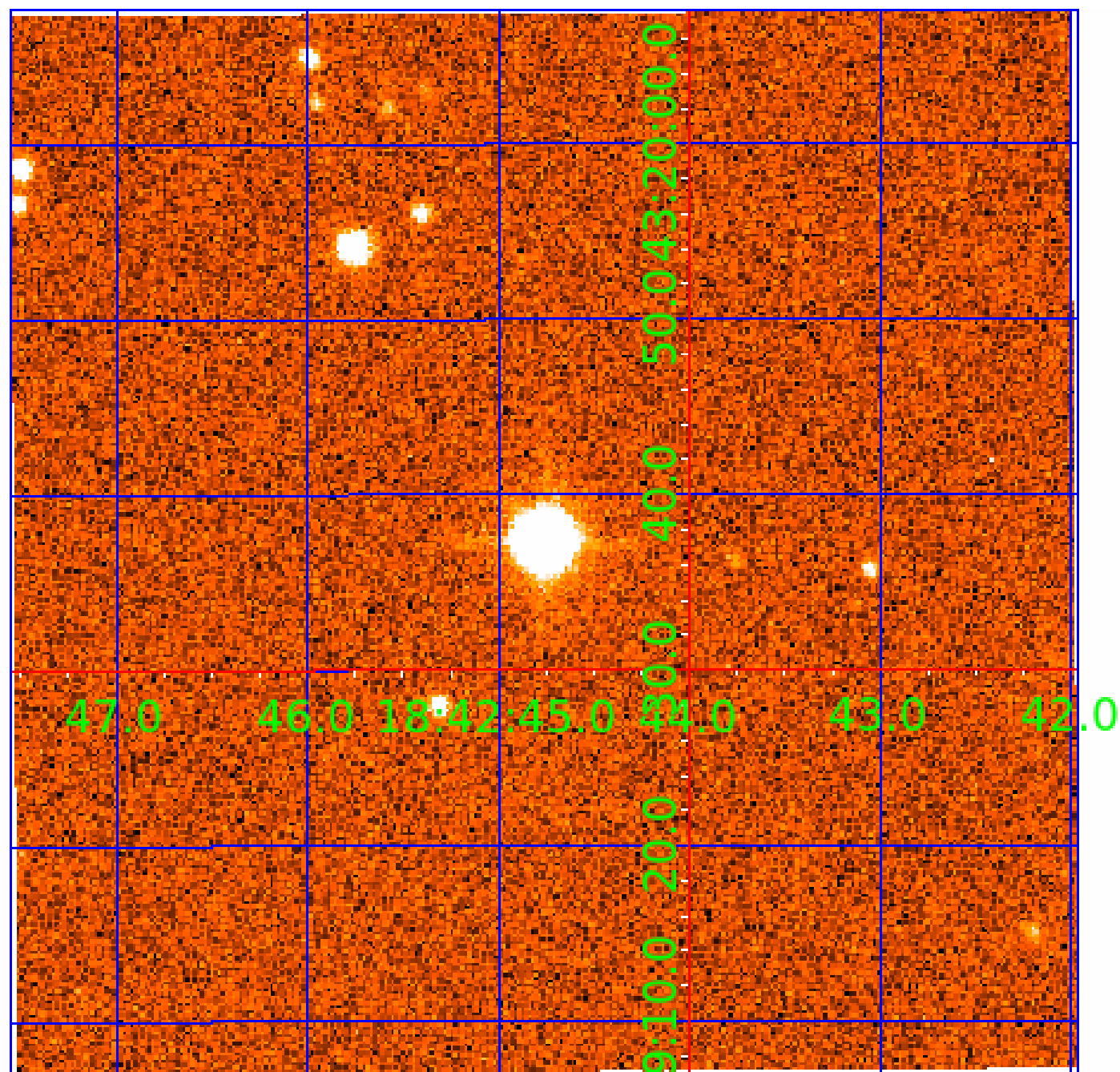


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 007658882

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007658882-01	OBS	No	422.621540	212.852157	606.3	3.311	9.7	6.2	1.74	5094	4.74	1.57
007658882-02	OBS	No	374.415280	452.093098	562.8	2.957	9.1	7.0	1.74	5094	4.74	1.85
007658882-03	OBS	No	0.677006	131.652400	36.6	6.023	8.6	10.2	1.74	5094	1.02	8382.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007658882-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007658882-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007658882-03	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

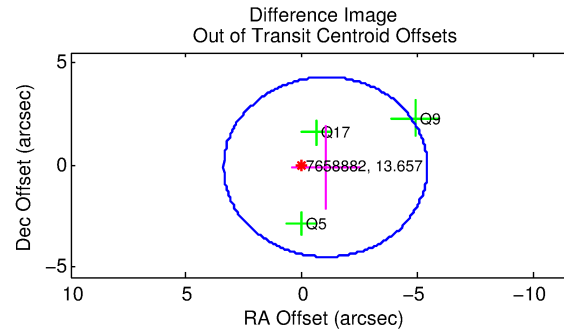
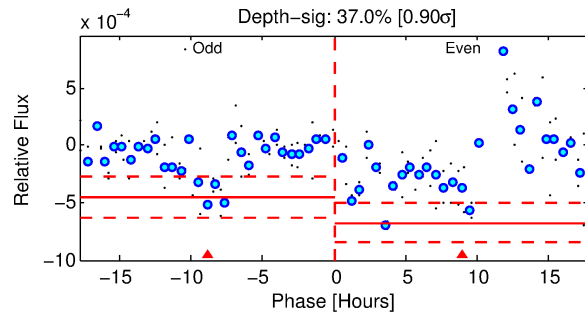
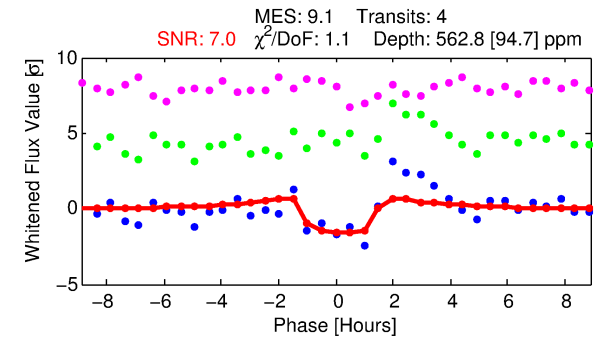
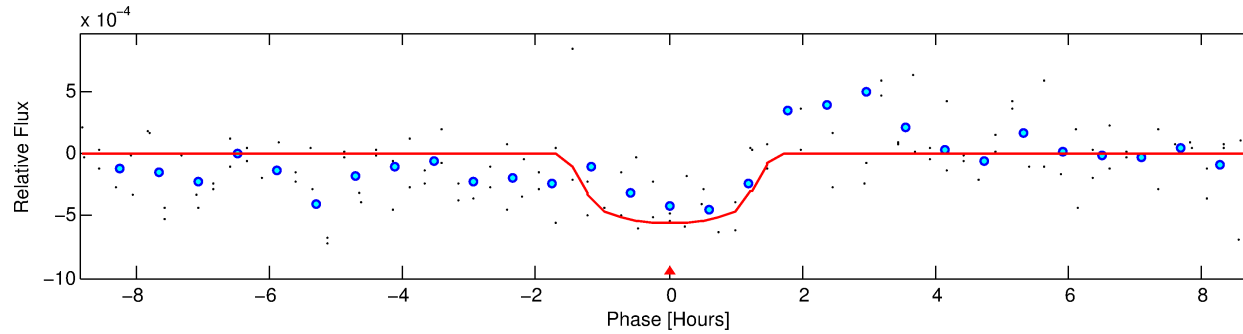
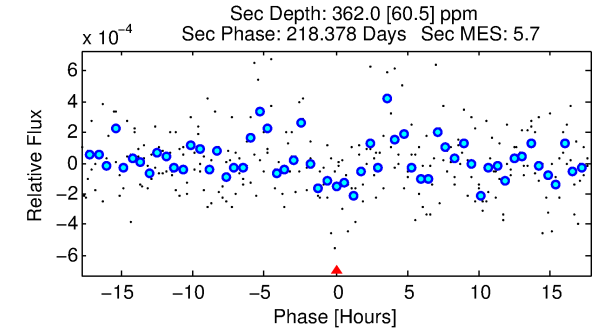
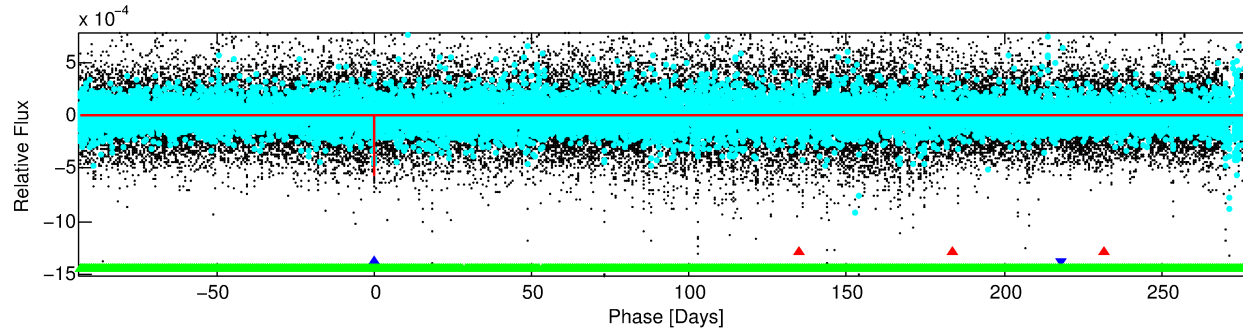
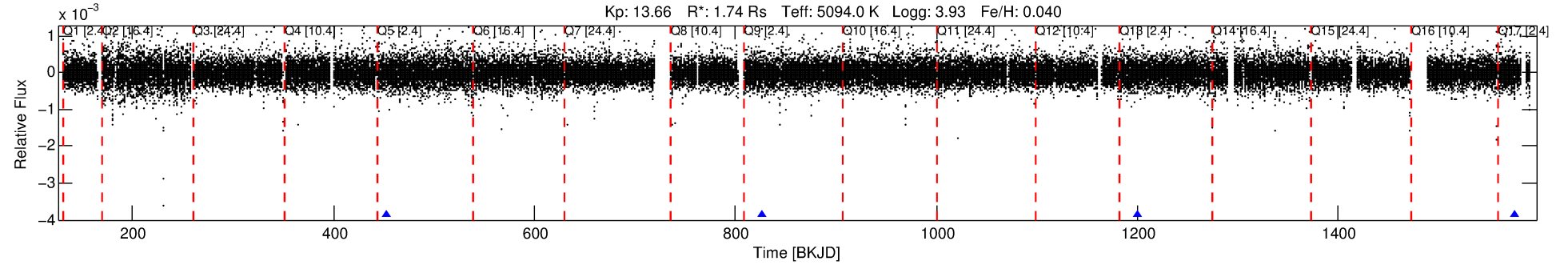
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007658882-02

No Significant Match Found

# DV One-Page Summary

KIC: 7658882 Candidate: 2 of 3 Period: 374.415 d



## DV Fit Results:

Period = 374.41528 [0.00341] d  
Epoch = 452.0931 [0.0070] BKJD  
Rp/R\* = 0.0250 [0.0387]  
a/R\* = 568.09 [3365.26]  
b = 0.84 [2.13]  
Seff = 1.85 [1.92]  
Teq = 297 [77] K  
Rp = 4.74 [7.81] Re  
a = 0.9923 [0.6053] AU  
Ag = 8744.01 [28567.54] [0.31σ]  
Teffp = 4444 [3448] K [1.20σ]

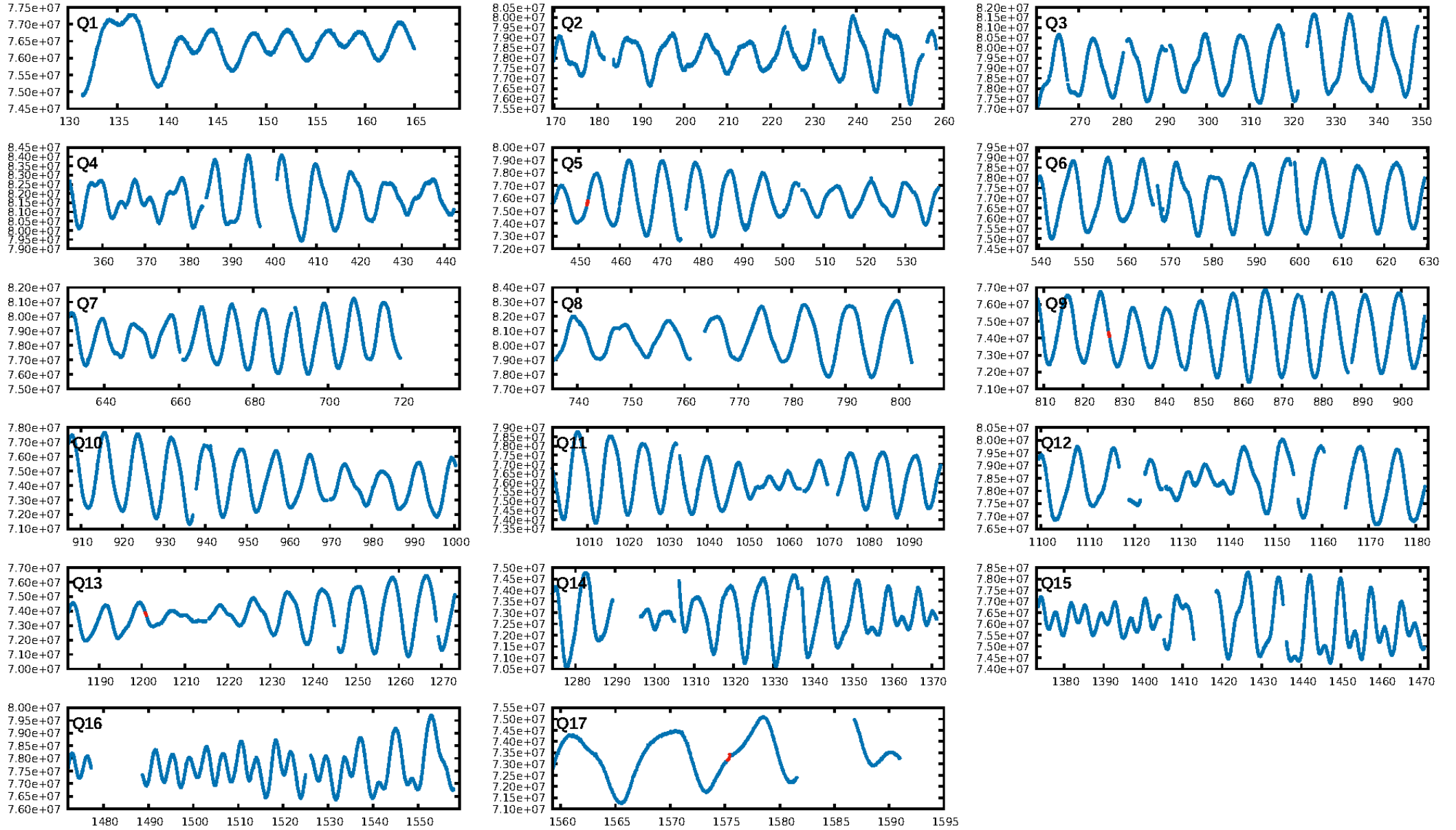
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1336.76σ]  
LongPeriod-sig: 100.0% [260.59σ]  
ModelChiSquare2-sig: 21.5%  
ModelChiSquareGof-sig: 95.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.3441  
Centroid-sig: 52.7%  
Centroid-so: 1.231 arcsec [0.93σ]  
OotOffset-rm: 1.033 arcsec [0.70σ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-rm: 1.086 arcsec [0.74σ]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 0.00 [0/3]

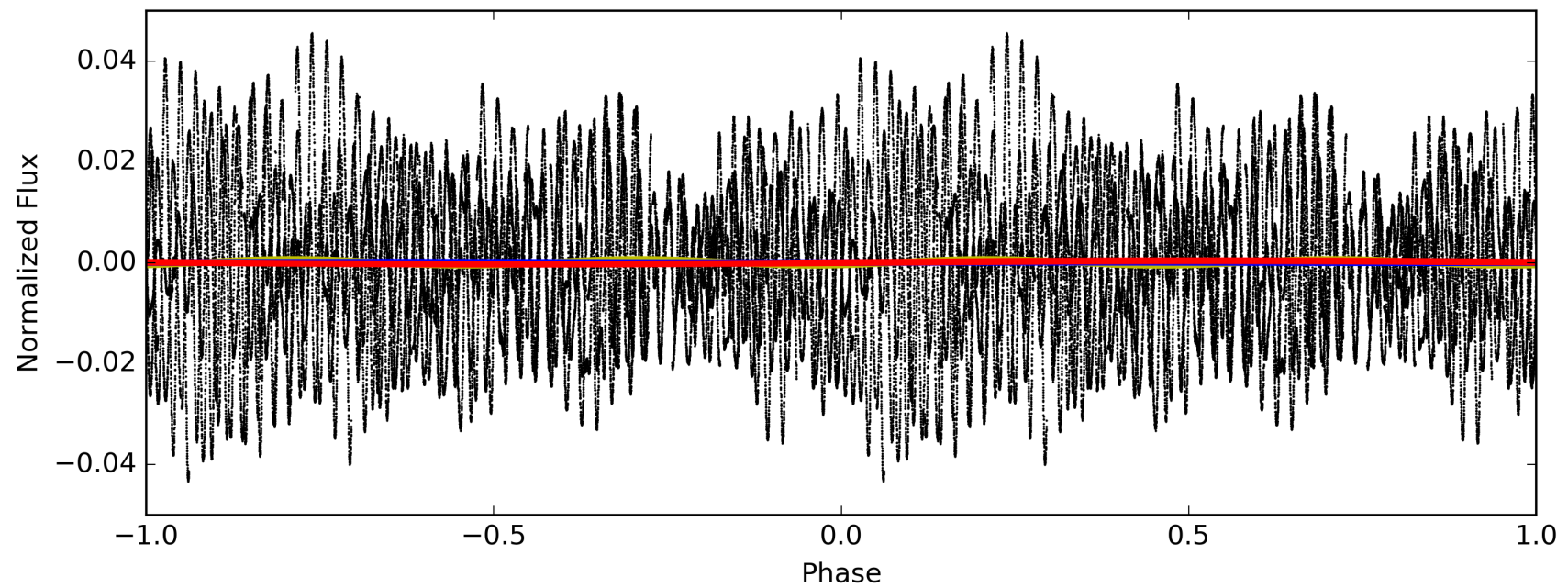
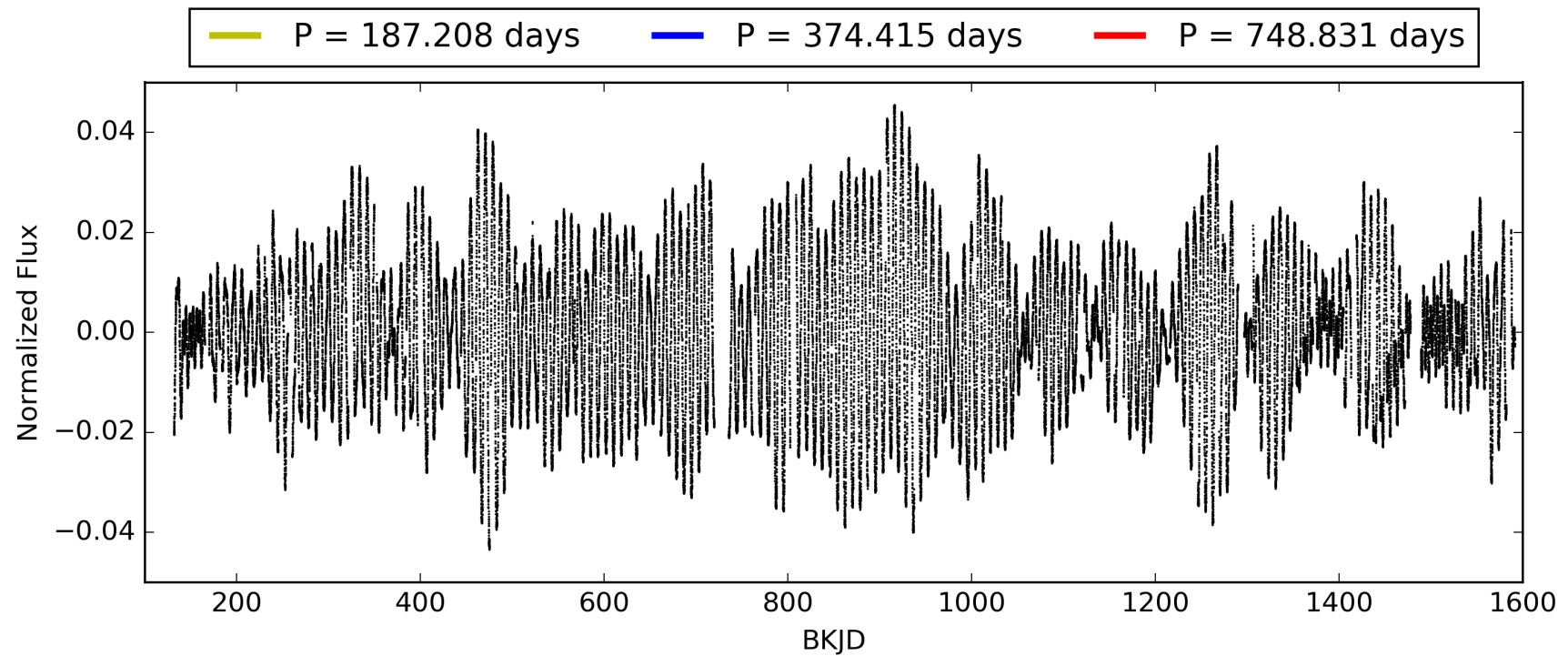
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:46:21 Z

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

# TCE 007658882-02, PDC Light Curves



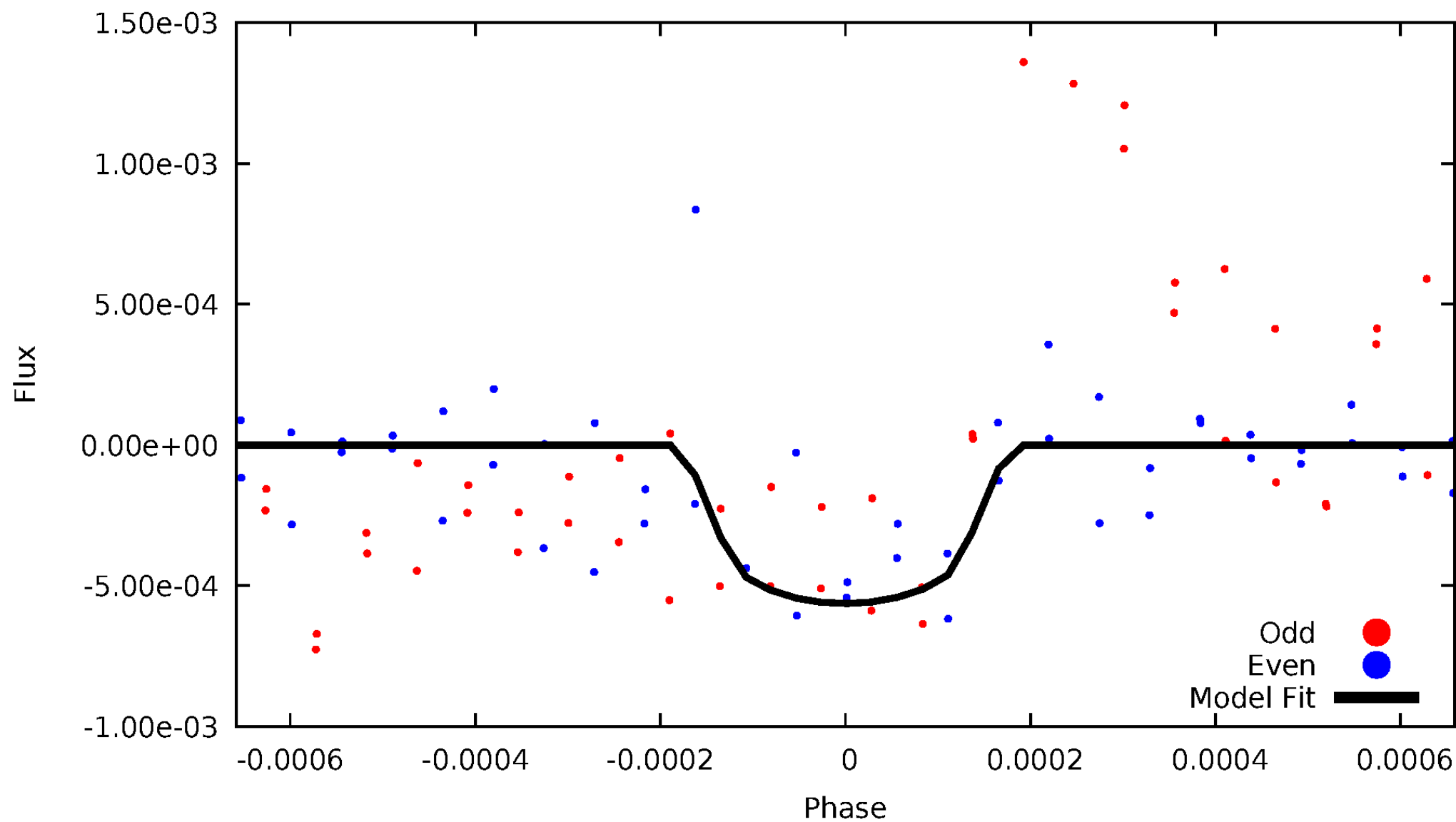
TCE 007658882-02





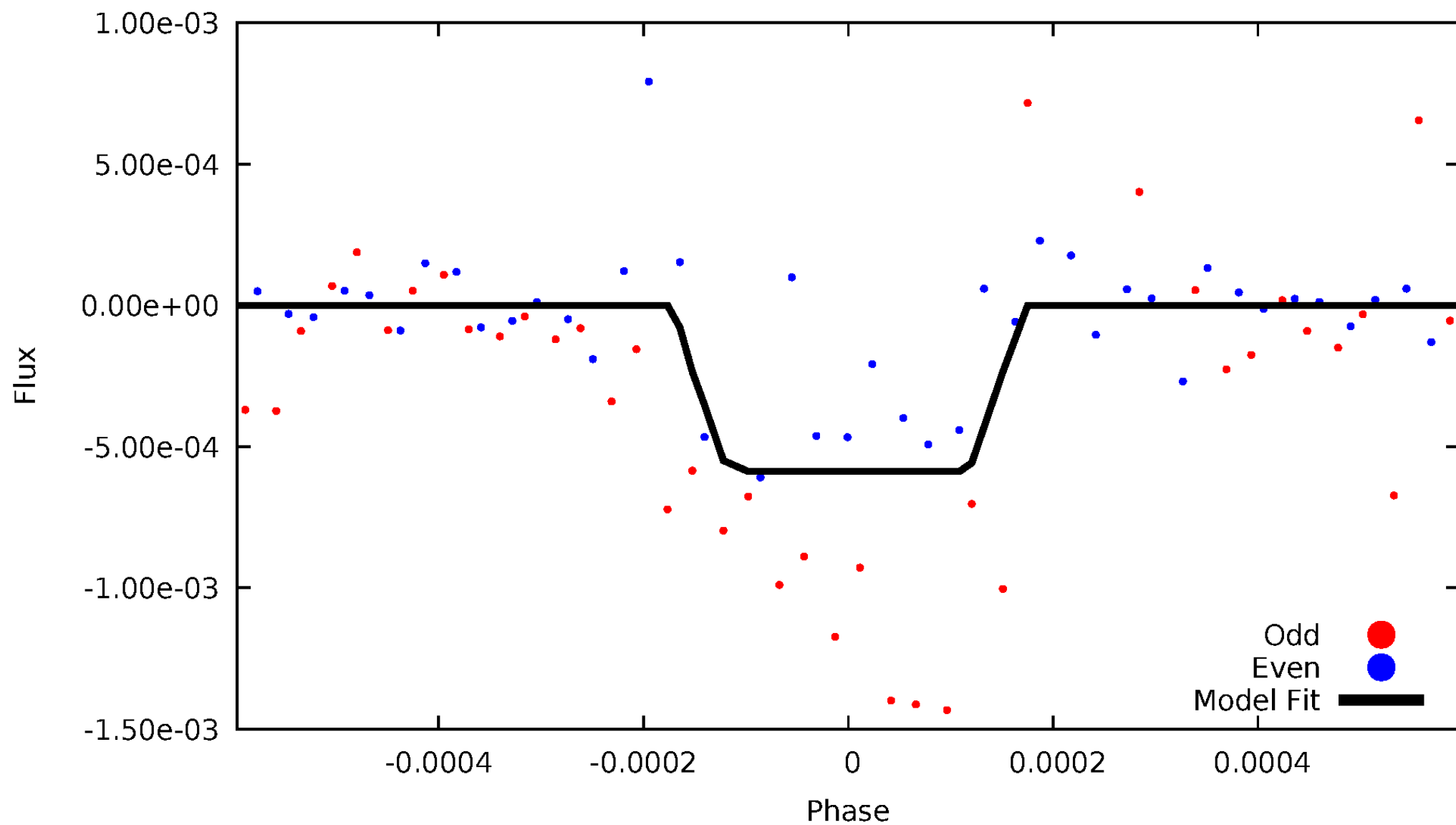
# DV Odd/Even

TCE 007658882-02



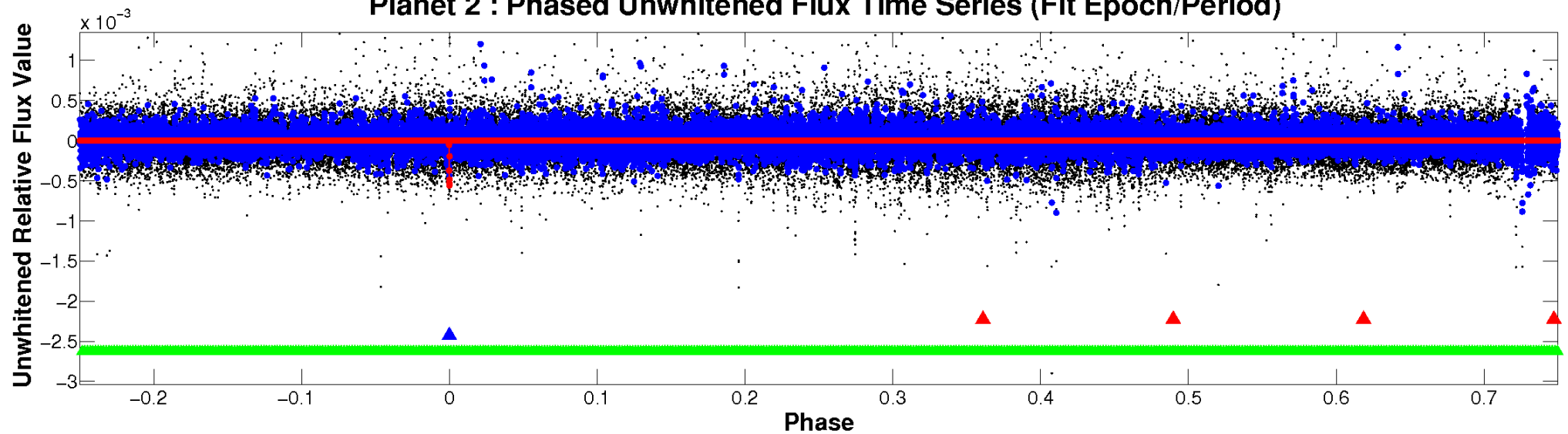
# ALT Odd/Even

TCE 007658882-02

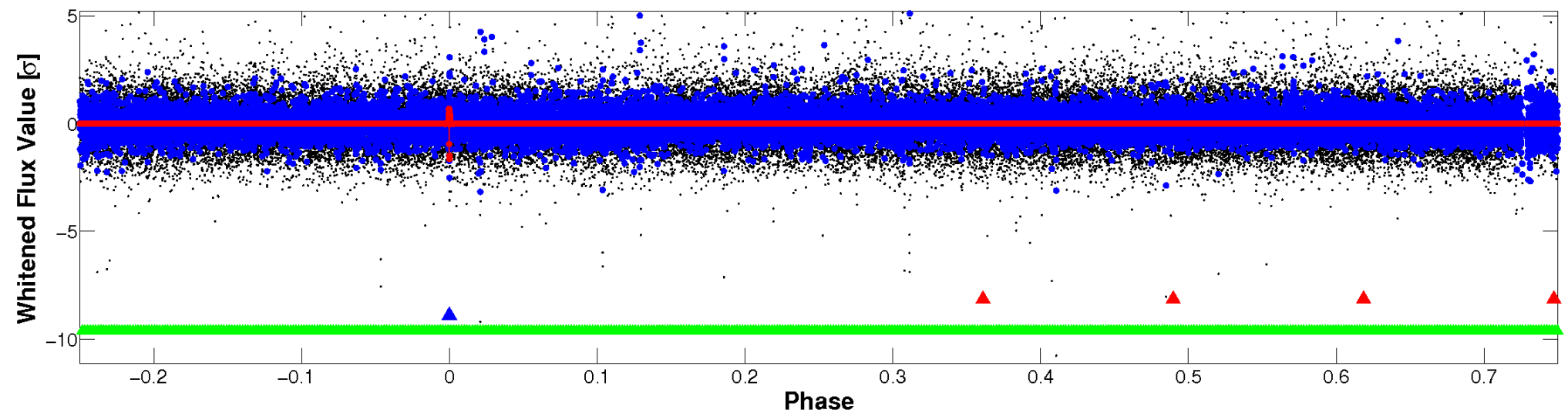


# Non-Whitened Vs. Whitened Light Curve

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

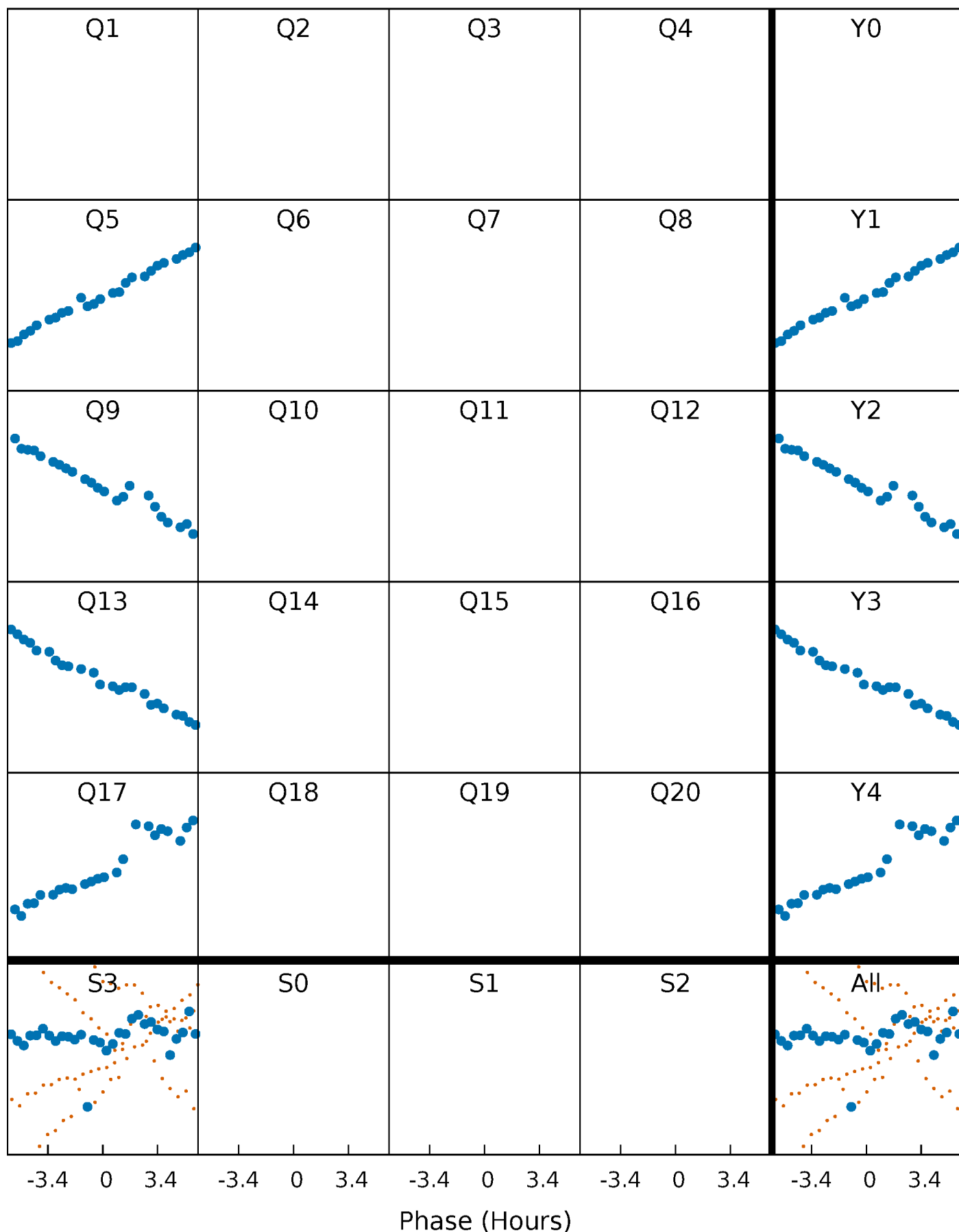


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



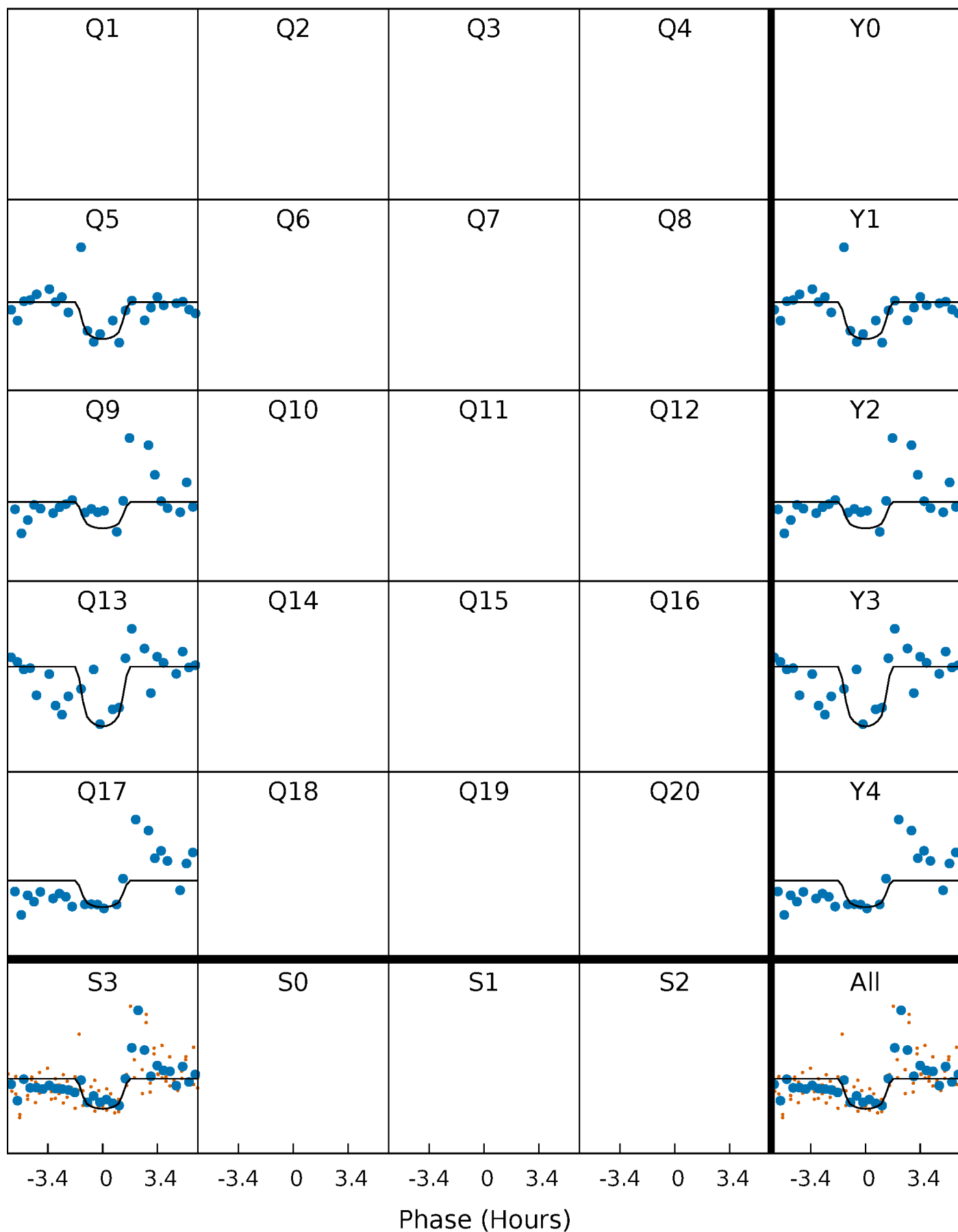
# PDC Quarter-Phased Transit Curves

TCE 007658882-02     $P=374.415279$  Days     $T_0=452.093098$  (BKJD)



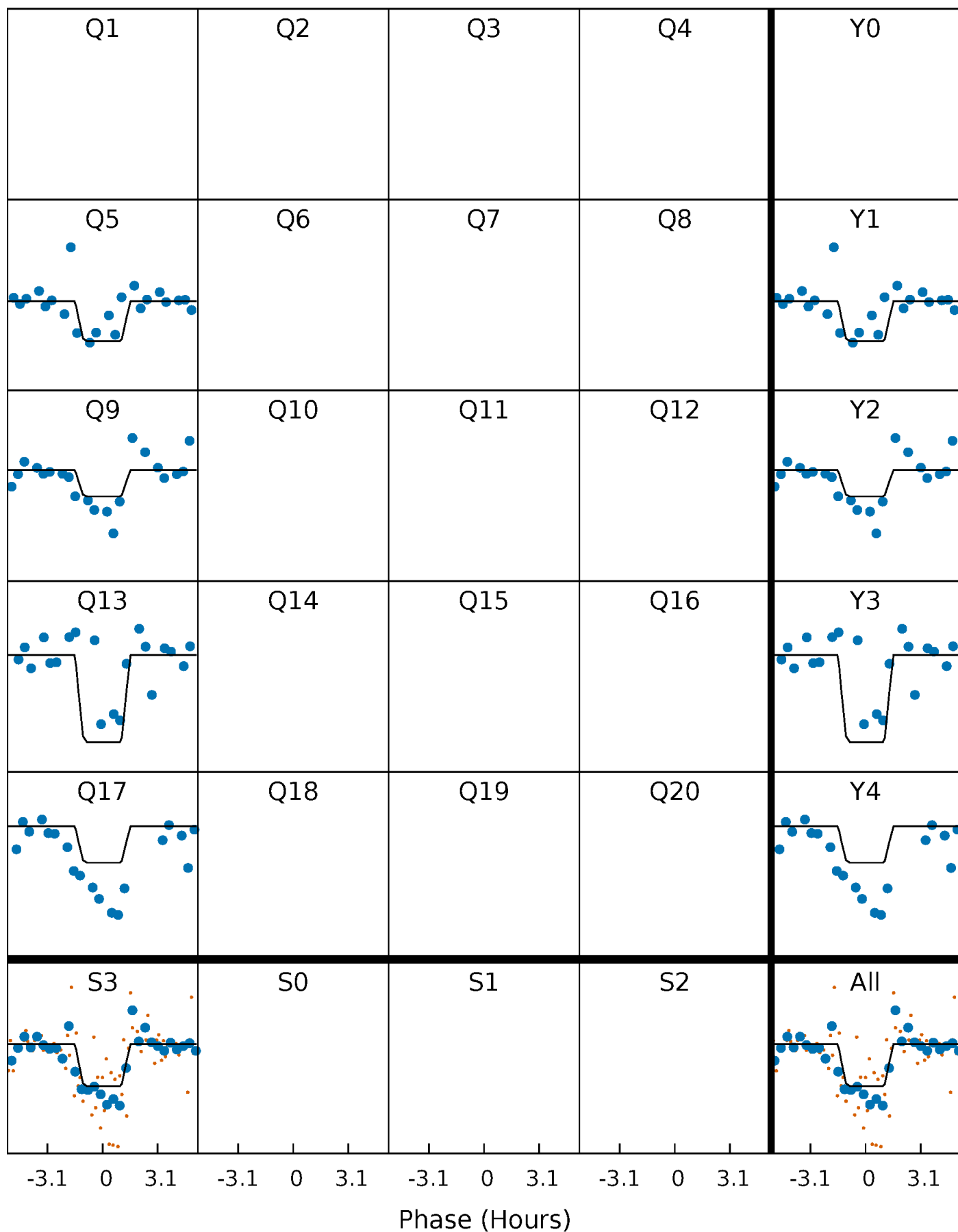
# DV Quarter-Phased Transit Curves

TCE 007658882-02     $P=374.415279$  Days     $T_0=452.093098$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

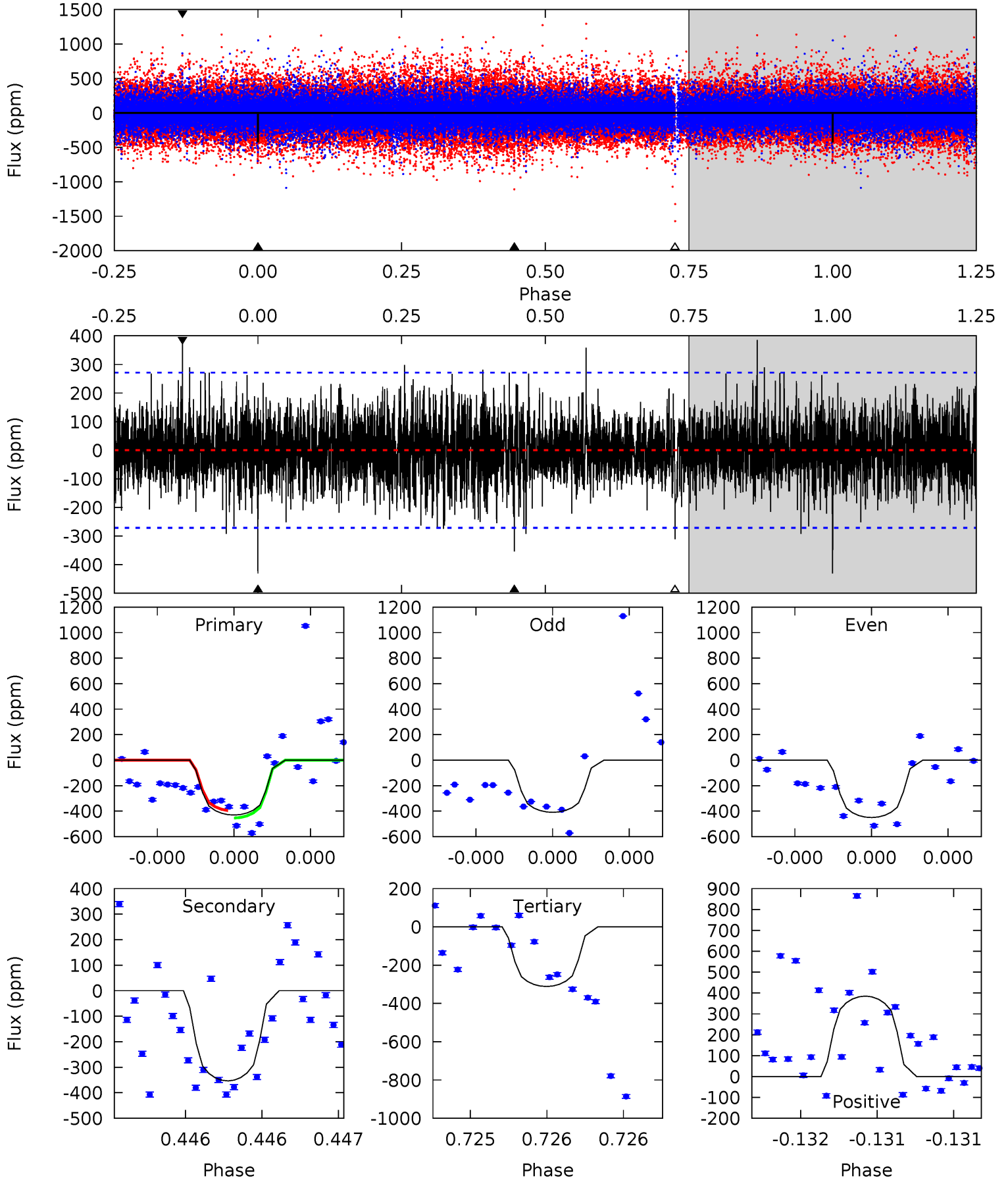
TCE 007658882-02 P=374.409439 Days  $T_0=452.105505$  (BKJD)



# DV Model-Shift Uniqueness Test

007658882-02,  $P = 374.415279$  Days,  $E = 77.677819$  Days

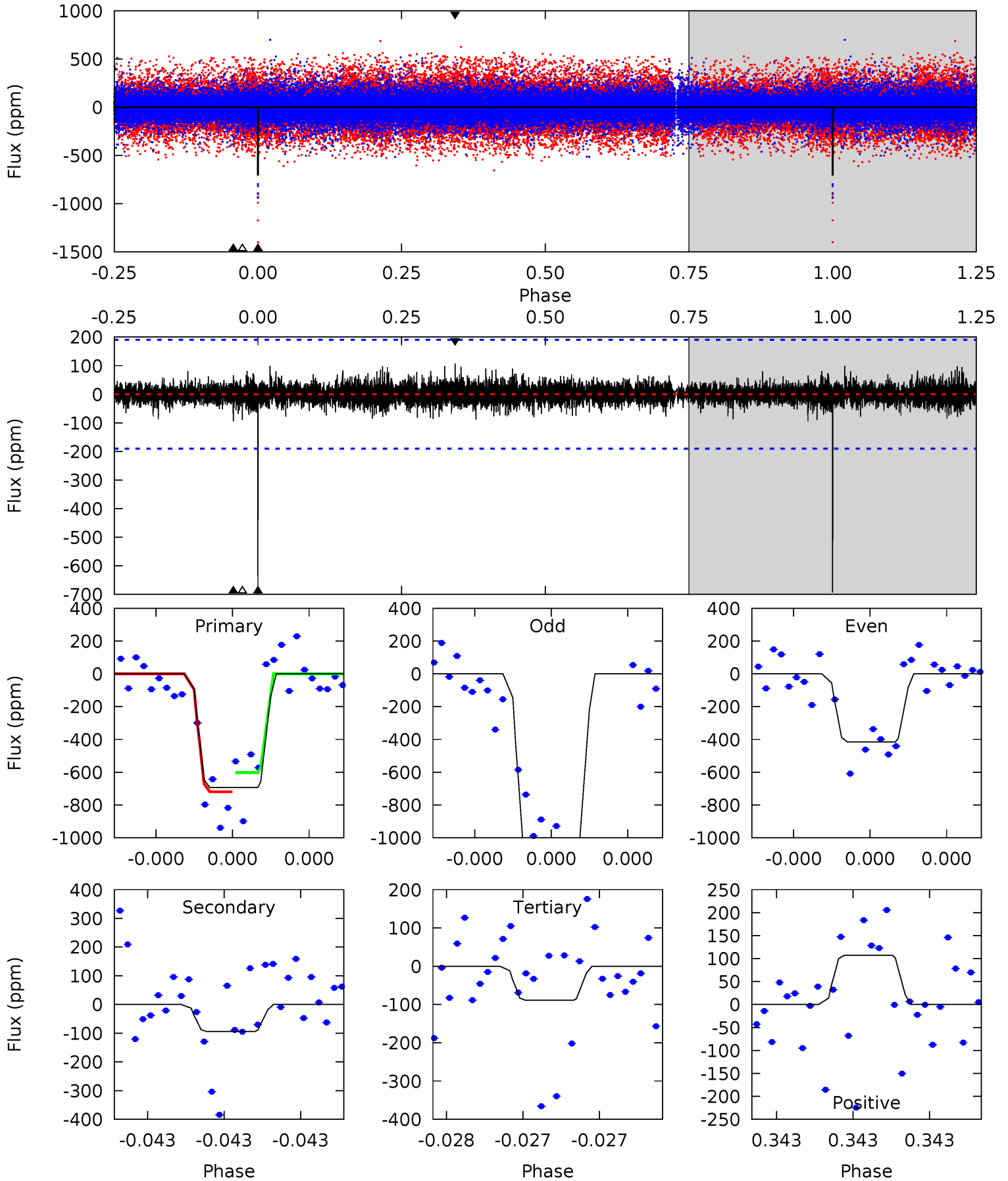
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.97	7.36	6.49	8.03	5.65	3.59	1.57	2.48	0.94	0.88	-0.66	0.41	0.99	0.47	0.61



# Alt Model-Shift Uniqueness Test

007658882-02, P = 374.409439 Days, E = 77.696066 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
20.6	2.80	2.65	3.18	5.65	3.59	0.61	17.9	17.4	0.15	-0.38	10.7	1.06	0.13	1.69





### Stellar Parameters For KIC 007658882

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5094^{+168}_{-137}$	$3.927^{+0.624}_{-0.336}$	$0.040^{+0.300}_{-0.250}$	$1.736^{+0.984}_{-0.984}$	$0.928^{+0.186}_{-0.140}$	$0.250^{+2.215}_{-0.182}$
	+3%/-3%	+16%/-9%	+750%/-625%	+57%/-57%	+20%/-15%	+886%/-73%
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 007658882-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-353 \pm 48$	$6.47^{+7.45}_{-4.63}$	$413^{+61}_{-69}$	$3953^{+2529}_{-761}$	$4549^{+51870}_{-3557}$
Alt.	$-94 \pm 34$	$6.77^{+6.58}_{-4.69}$	$410^{+63}_{-68}$	$3121^{+1350}_{-496}$	$1035^{+9784}_{-772}$

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

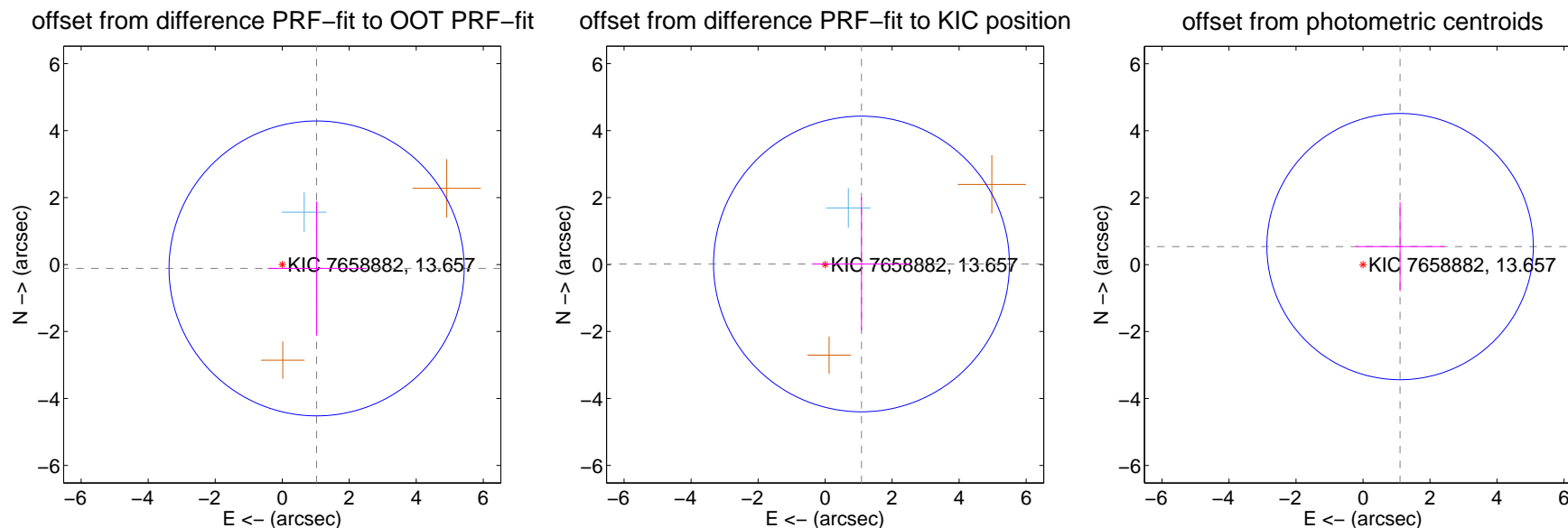
## DV Centroid Data

Supplemental centroid analysis for 007658882-02. Kepler magnitude: 13.66. Transit SNR 7.03

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.033 \pm 1.468$	0.70	$-1.026 \pm 1.460$	$-0.116 \pm 2.005$
PRF-fit source offset from KIC position	$1.086 \pm 1.472$	0.74	$-1.085 \pm 1.472$	$0.017 \pm 1.992$
photometric centroid source offset	$1.23 \pm 1.33$	0.93	$-1.11 \pm 1.32$	$0.54 \pm 1.33$

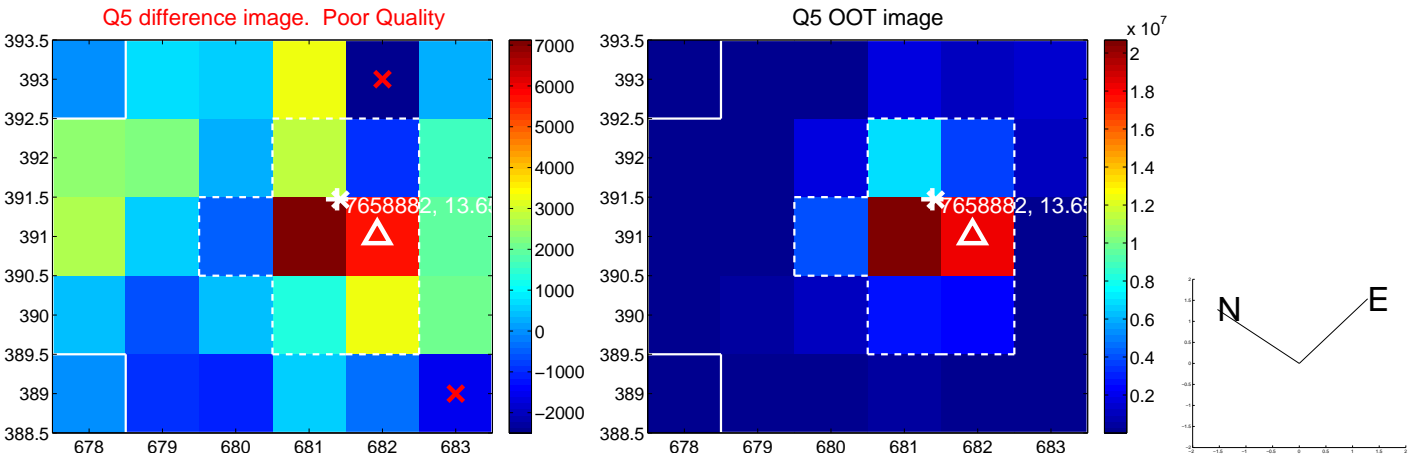


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

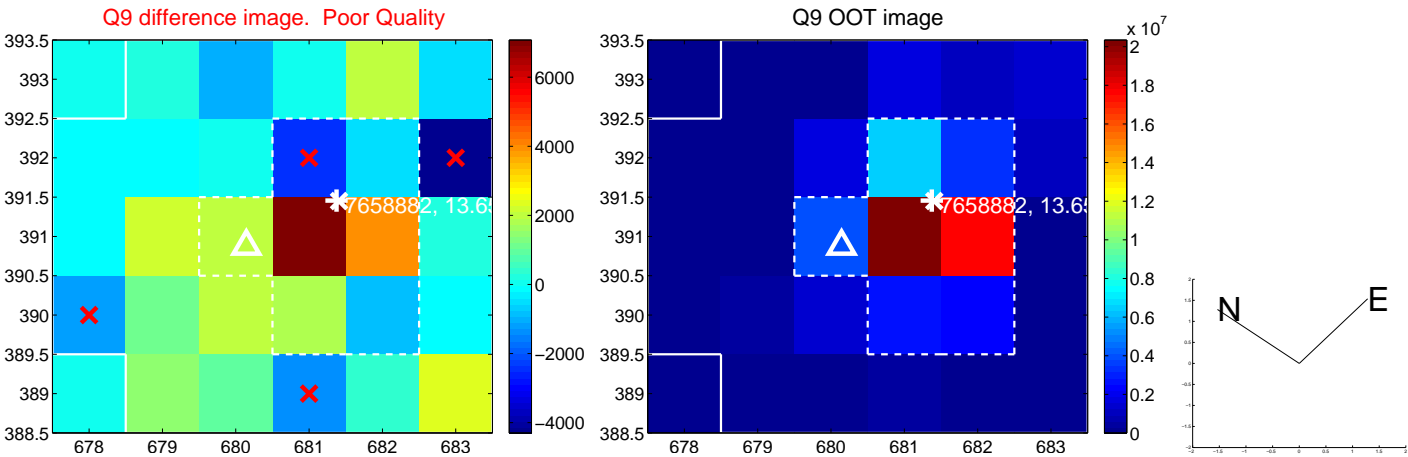
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



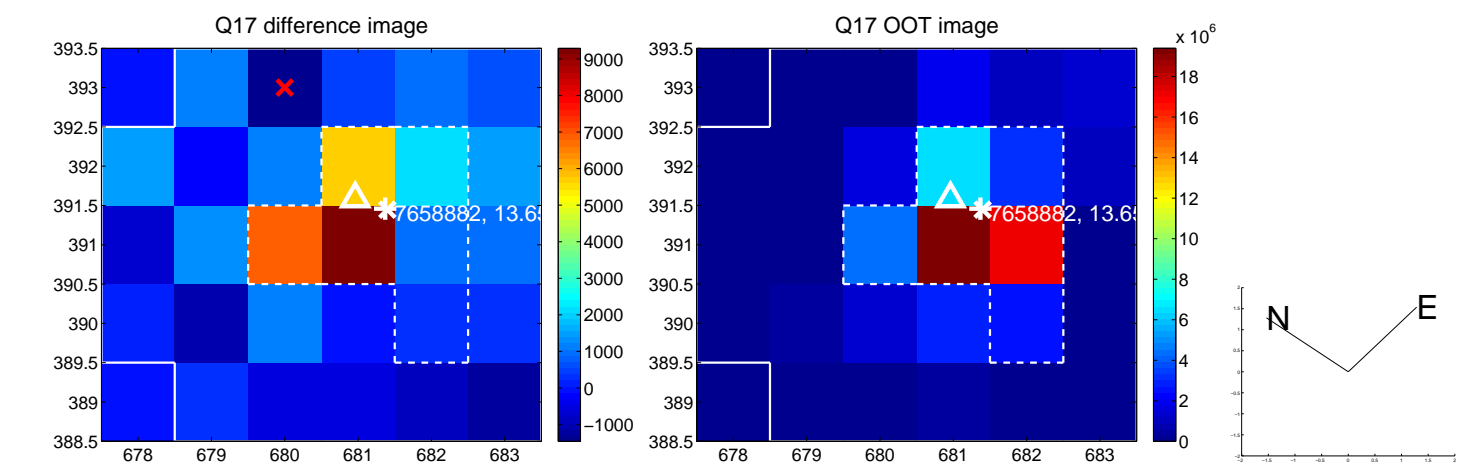
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



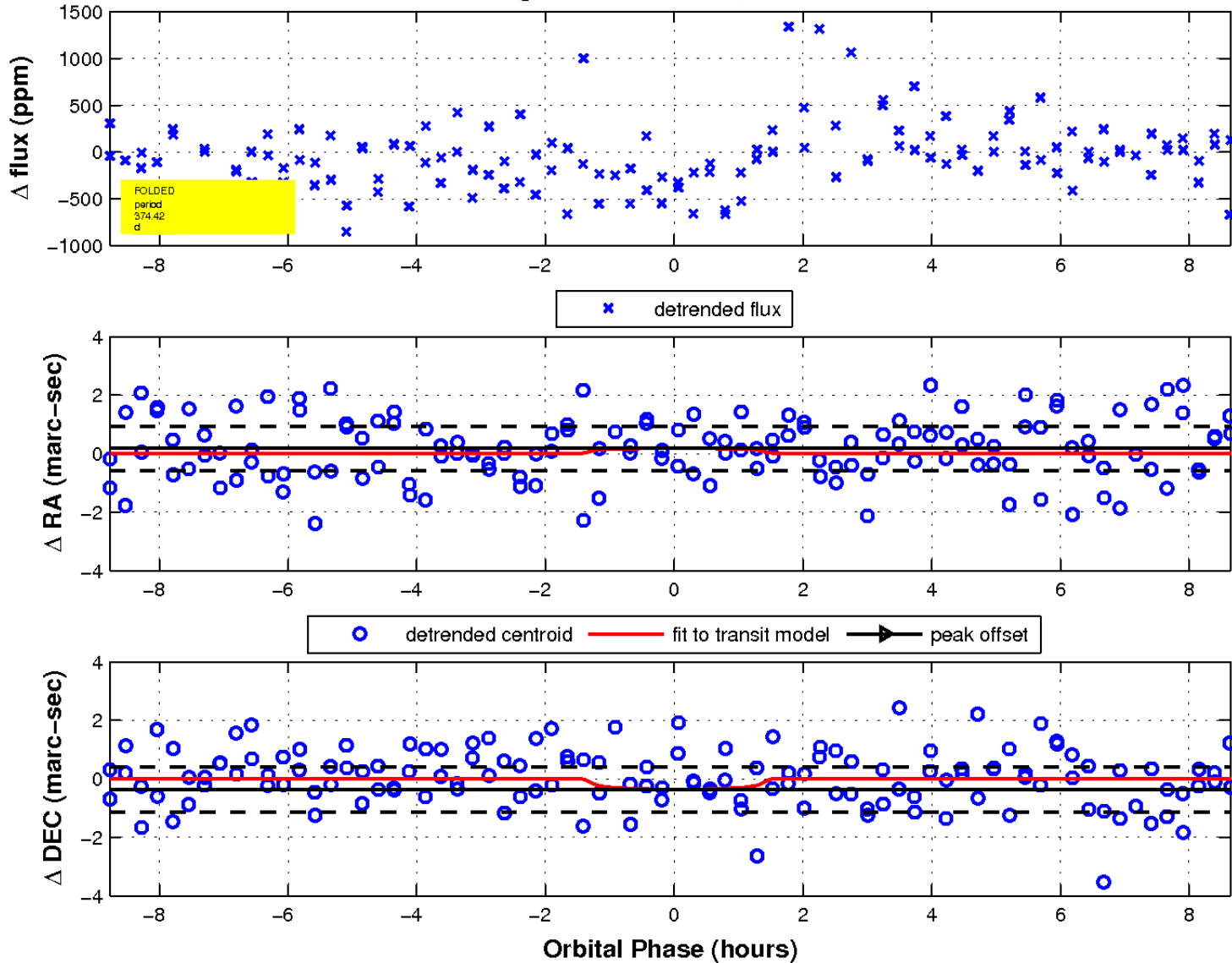
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



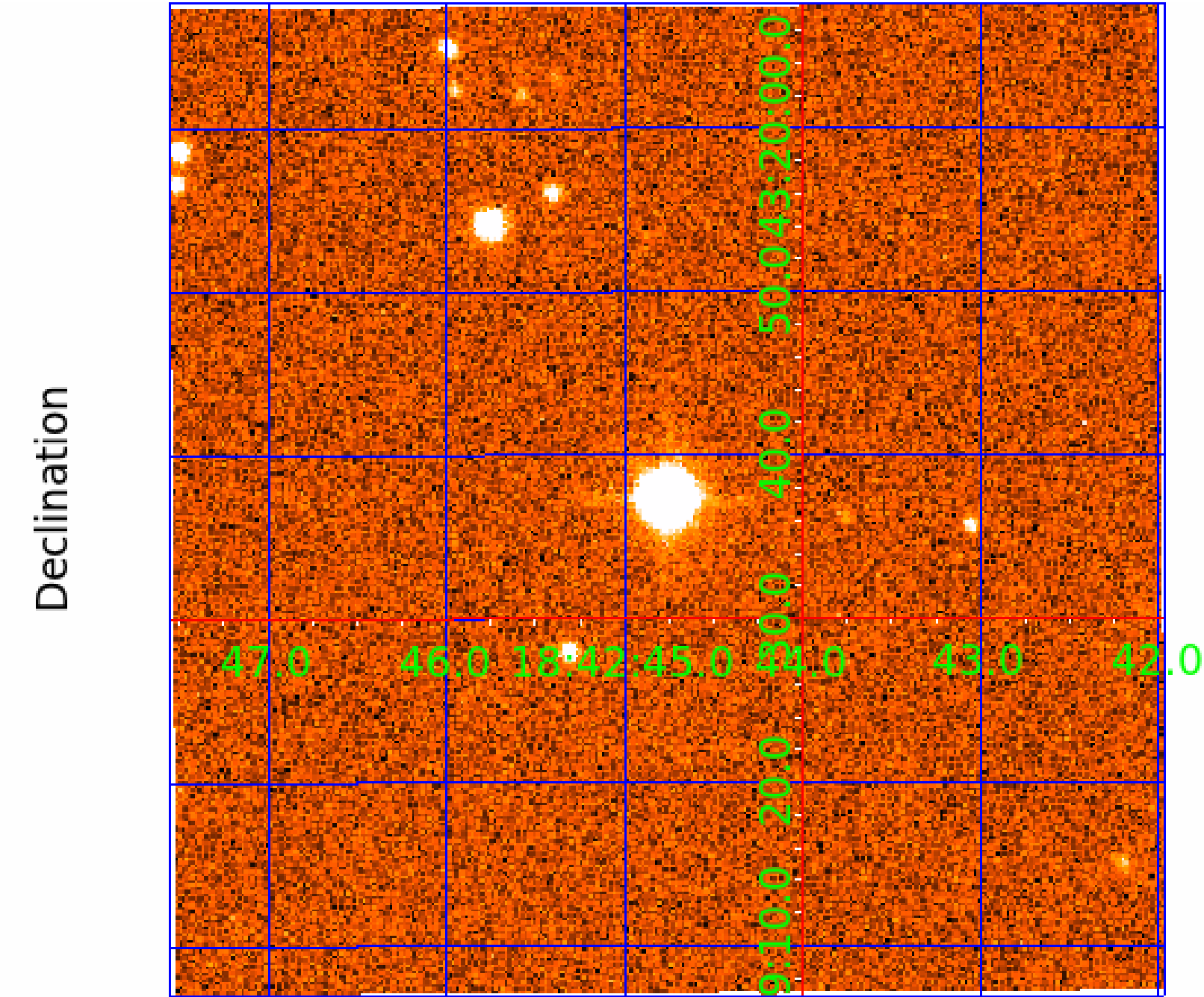
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 3



UKIRT Image





# KIC 007658882

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007658882-01	OBS	No	422.621540	212.852157	606.3	3.311	9.7	6.2	1.74	5094	4.74	1.57
007658882-02	OBS	No	374.415280	452.093098	562.8	2.957	9.1	7.0	1.74	5094	4.74	1.85
007658882-03	OBS	No	0.677006	131.652400	36.6	6.023	8.6	10.2	1.74	5094	1.02	8382.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007658882-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007658882-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007658882-03	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

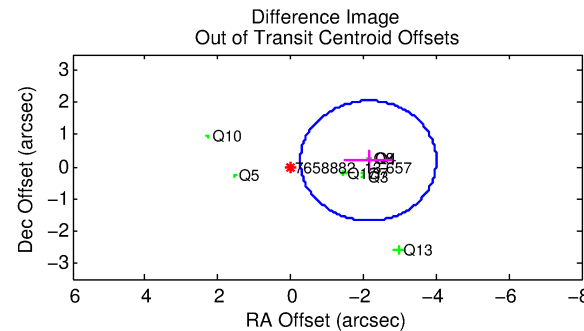
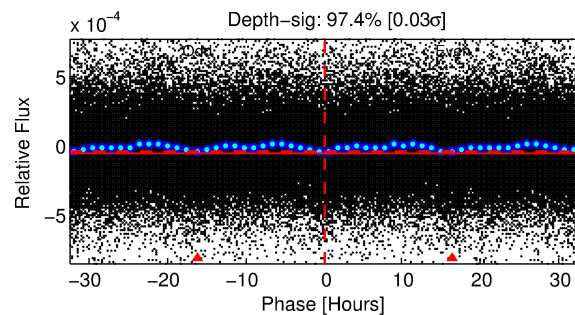
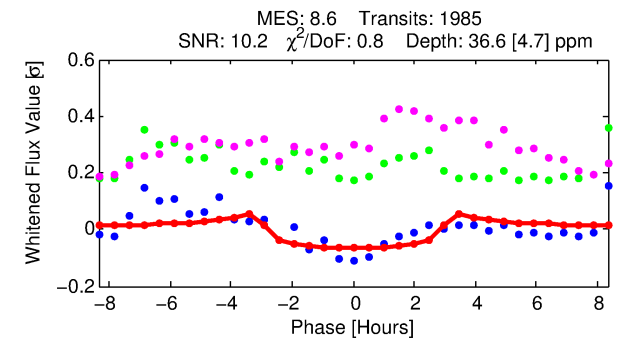
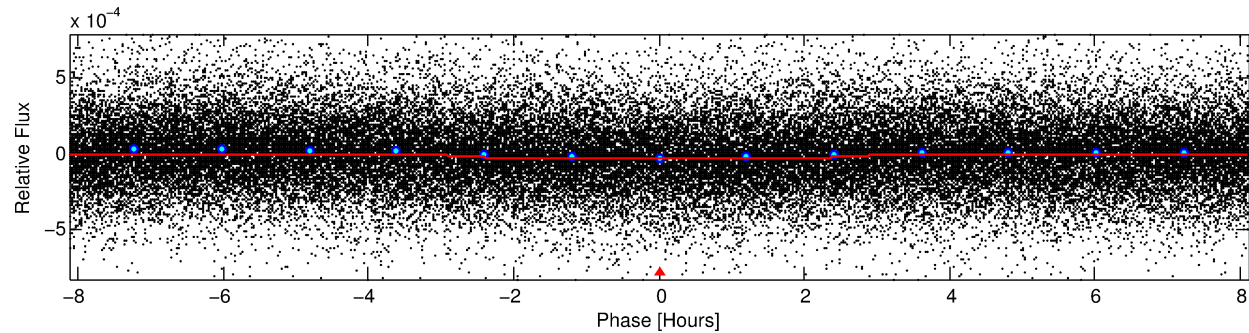
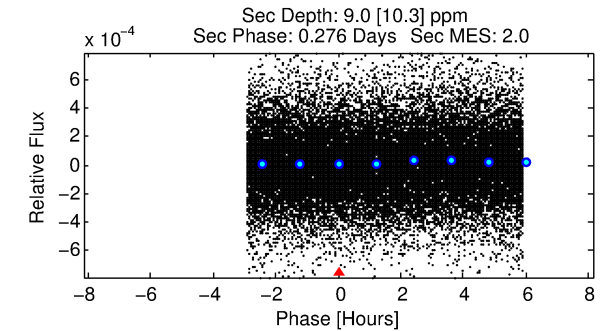
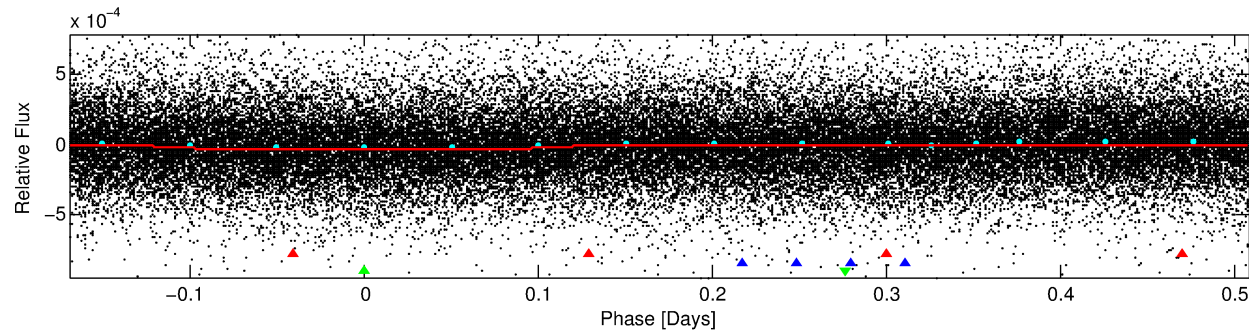
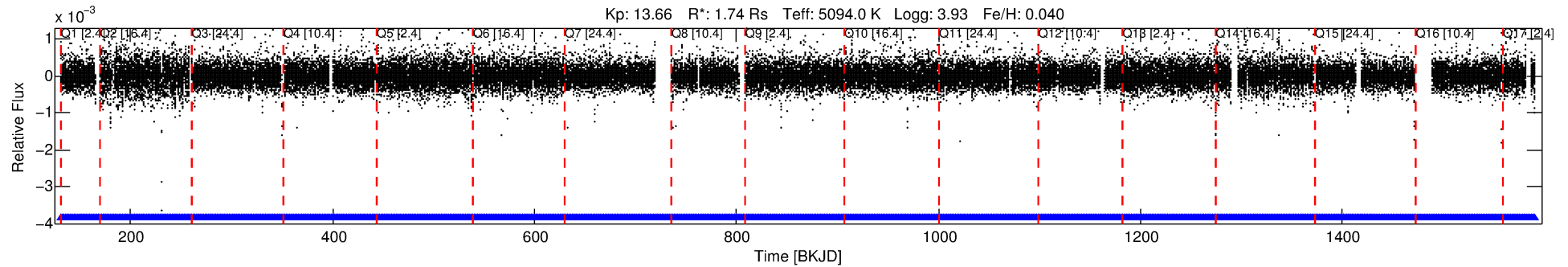
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007658882-03

No Significant Match Found

# DV One-Page Summary

KIC: 7658882 Candidate: 3 of 3 Period: 0.677 d



## DV Fit Results:

Period = 0.67701 [0.00001] d  
Epoch = 131.6524 [0.0038] BKJD  
Rp/R\* = 0.0054 [0.0030]  
a/R\* = 1.09 [0.34]  
b = 0.05 [38.39]  
Seff = 8382.50 [8702.16]  
Teq = 2440 [633] K  
Rp = 1.02 [0.81] Re  
a = 0.0147 [0.0090] AU  
Ag = 1.04 [1.97] [0.02σ]  
Teffp = 3808 [1518] K [0.83σ]

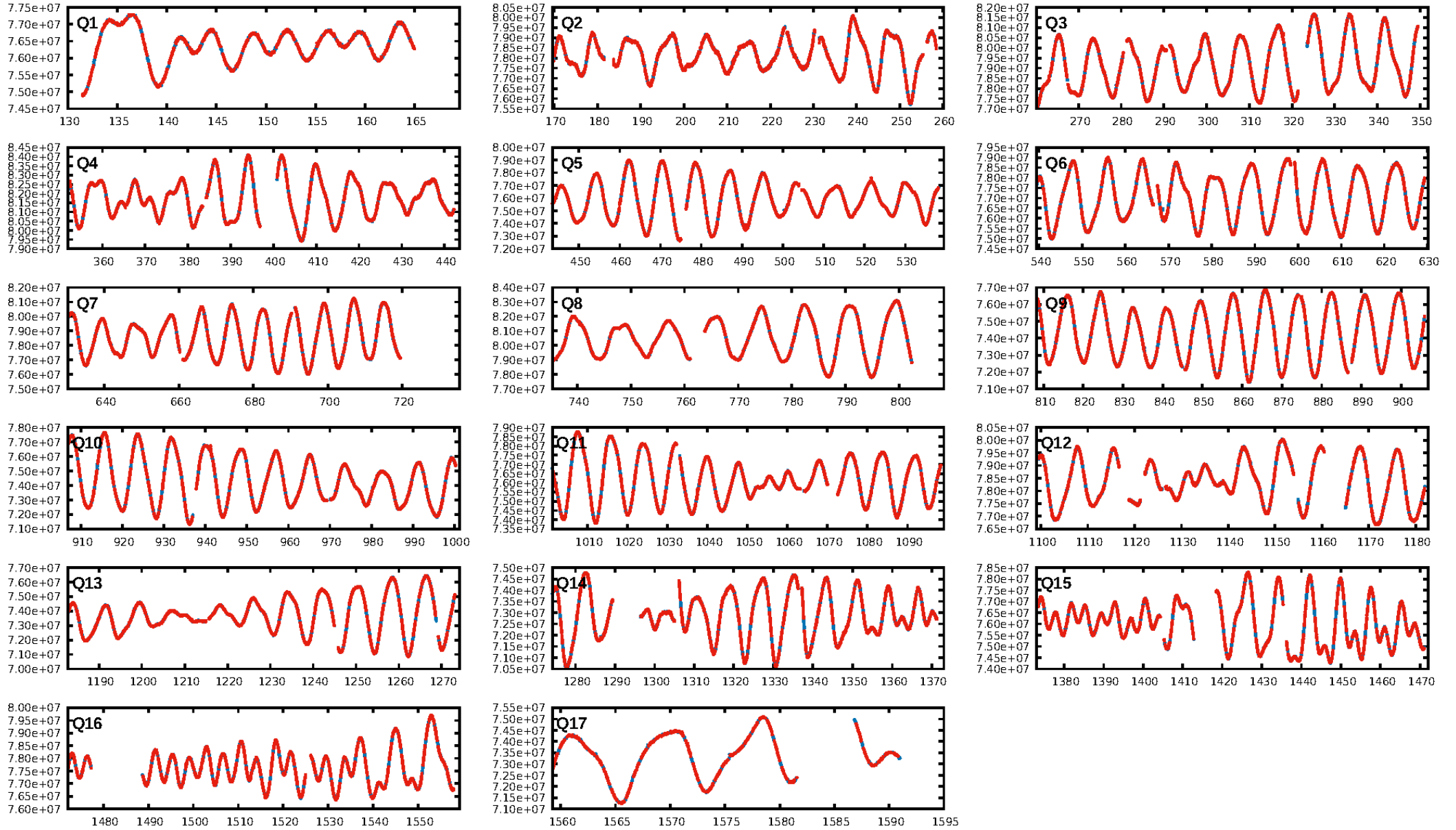
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [1336.76σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1896/1896]  
GhostDiagnostic-chr: 6.463  
Centroid-sig: 2.6%  
Centroid-so: 0.822 arcsec [1.26σ]  
OotOffset-rm: 2.141 arcsec [3.44σ]  
KicOffset-rm: 2.197 arcsec [3.17σ]  
OotOffset-st: 1/2/2/3 [8]  
KicOffset-st: 1/2/2/3 [8]  
DiffImageQuality-fgm: 0.88 [7/8]  
DiffImageOverlap-fno: 1.00 [17/17]

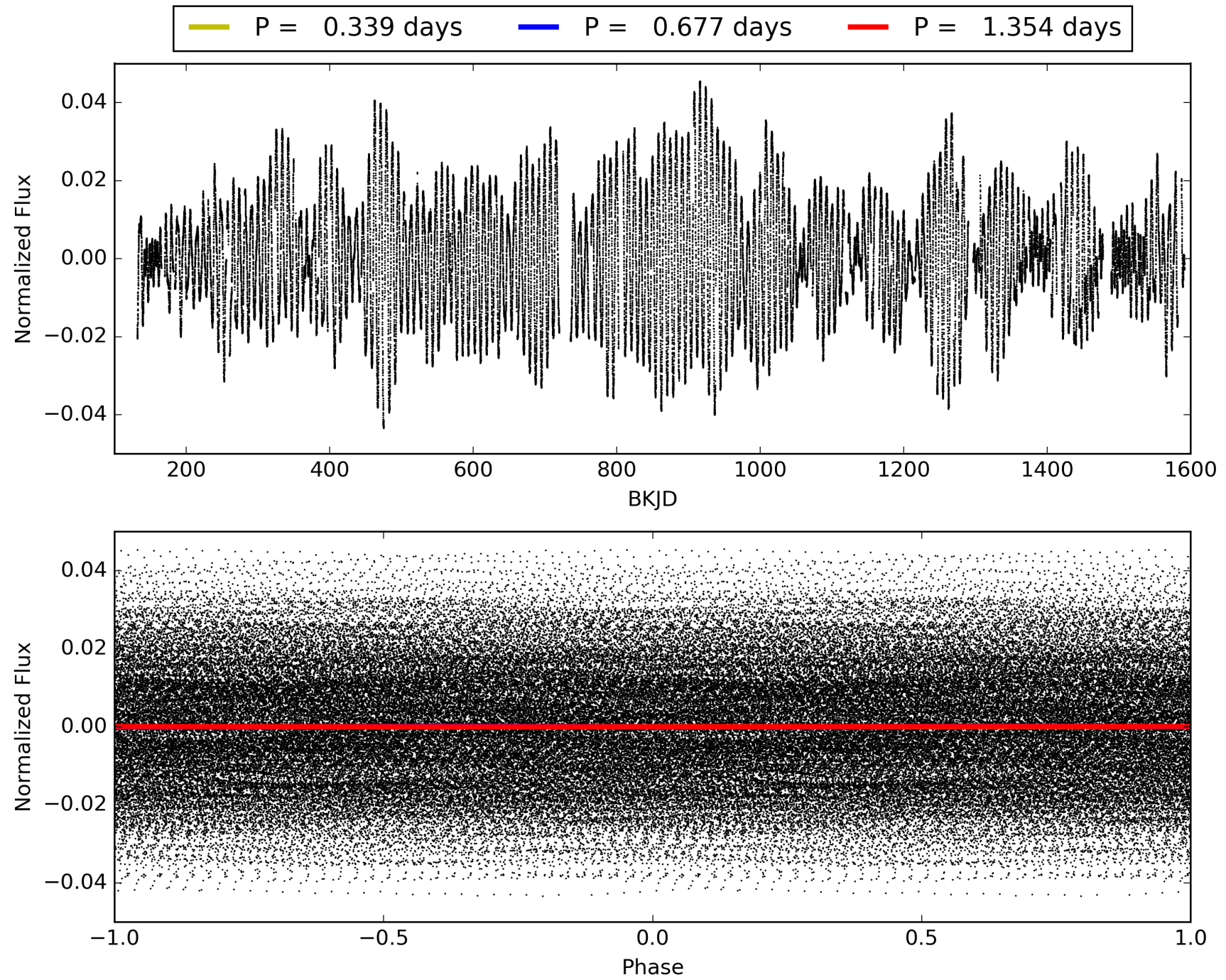
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:46:33 Z

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

# TCE 007658882-03, PDC Light Curves



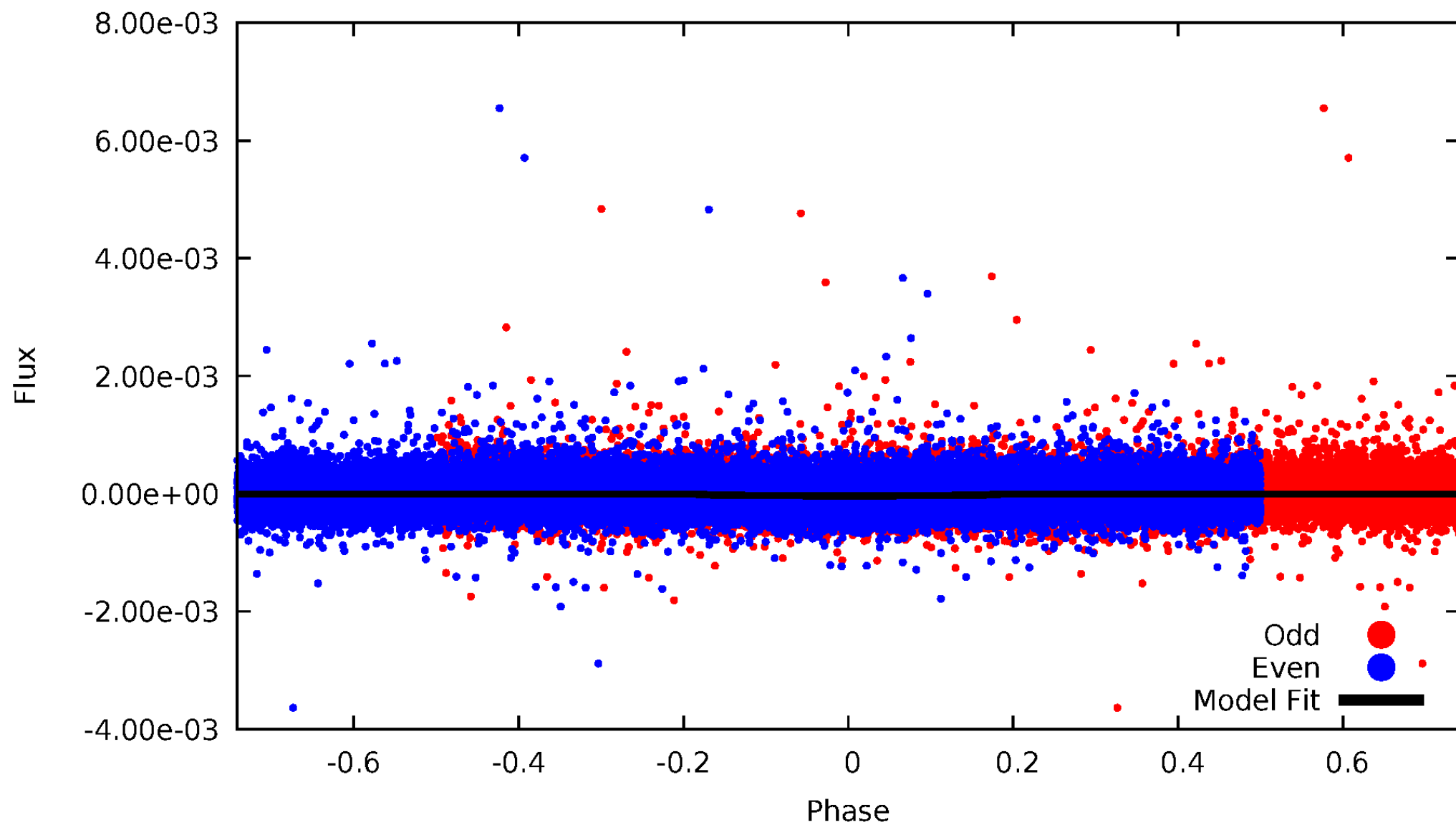
TCE 007658882-03





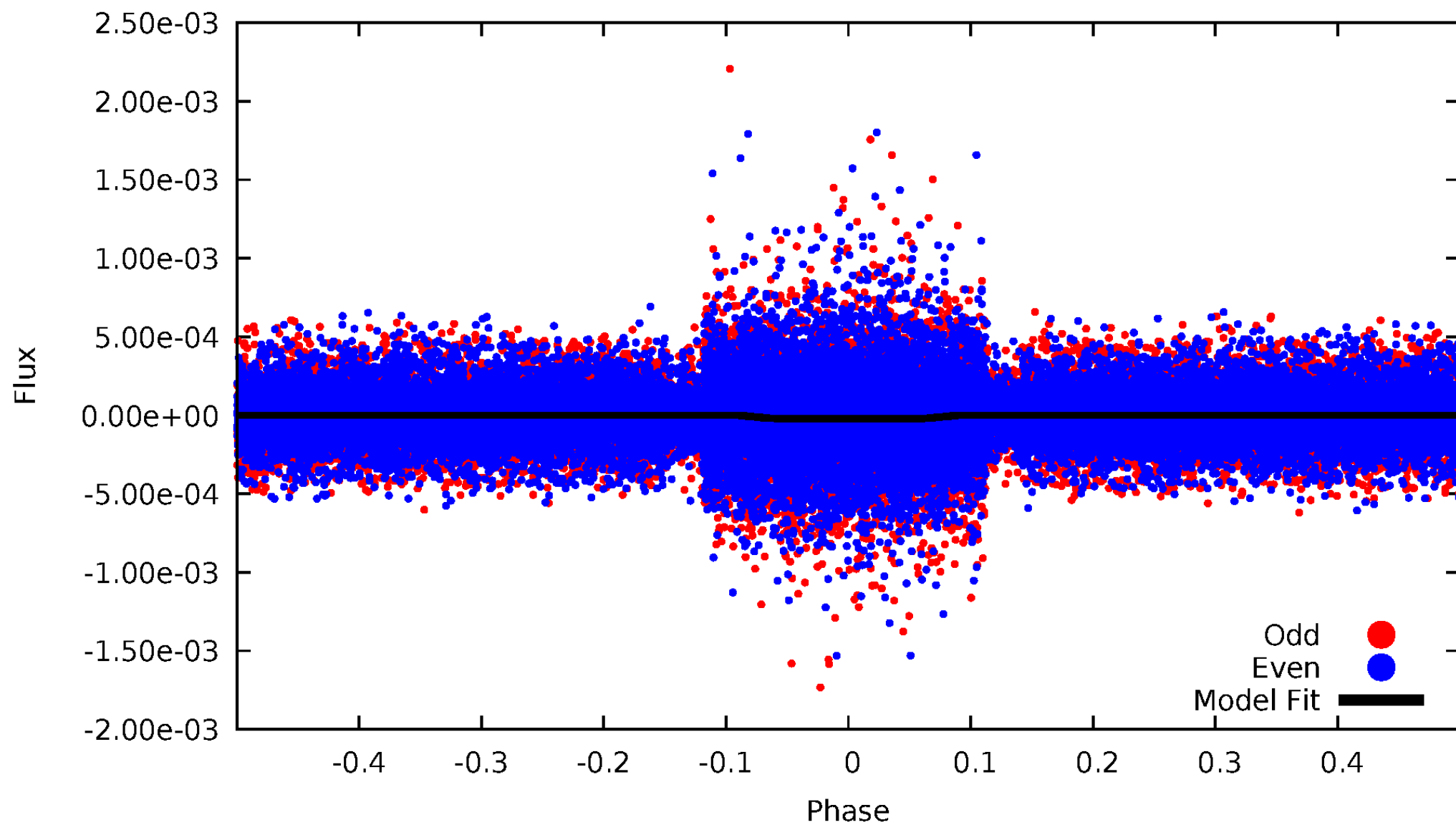
# DV Odd/Even

TCE 007658882-03

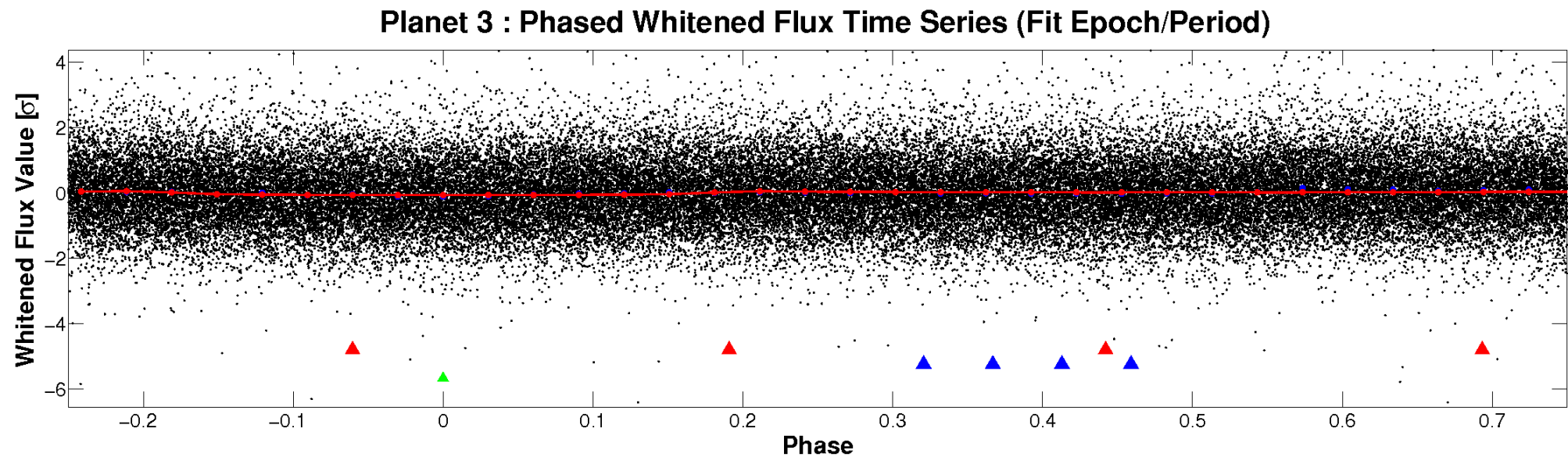
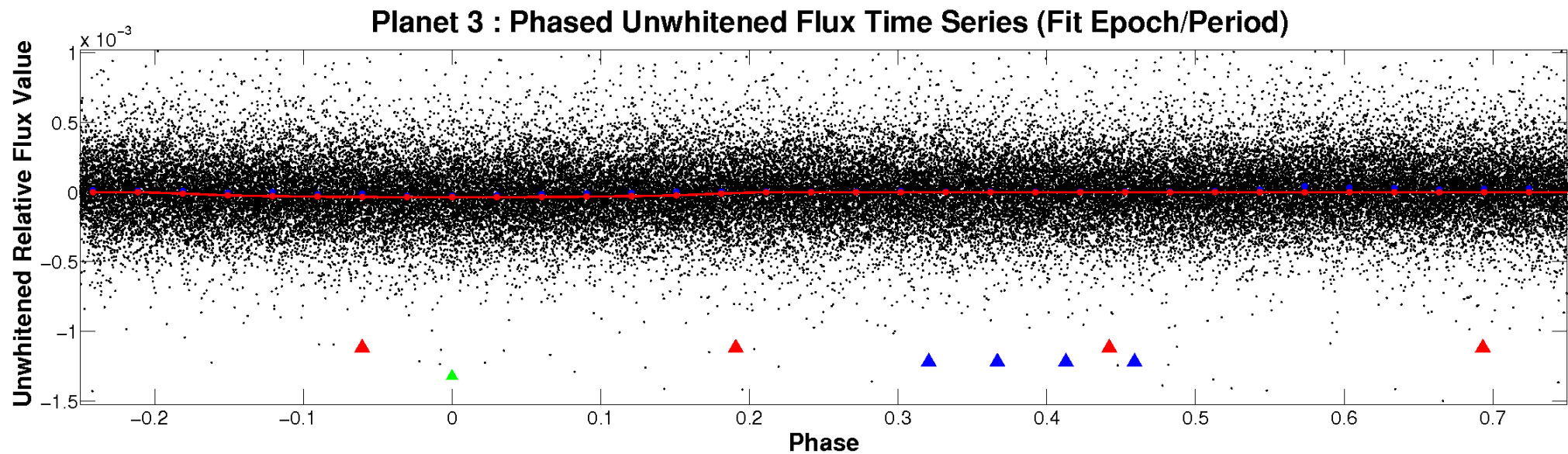


# ALT Odd/Even

TCE 007658882-03

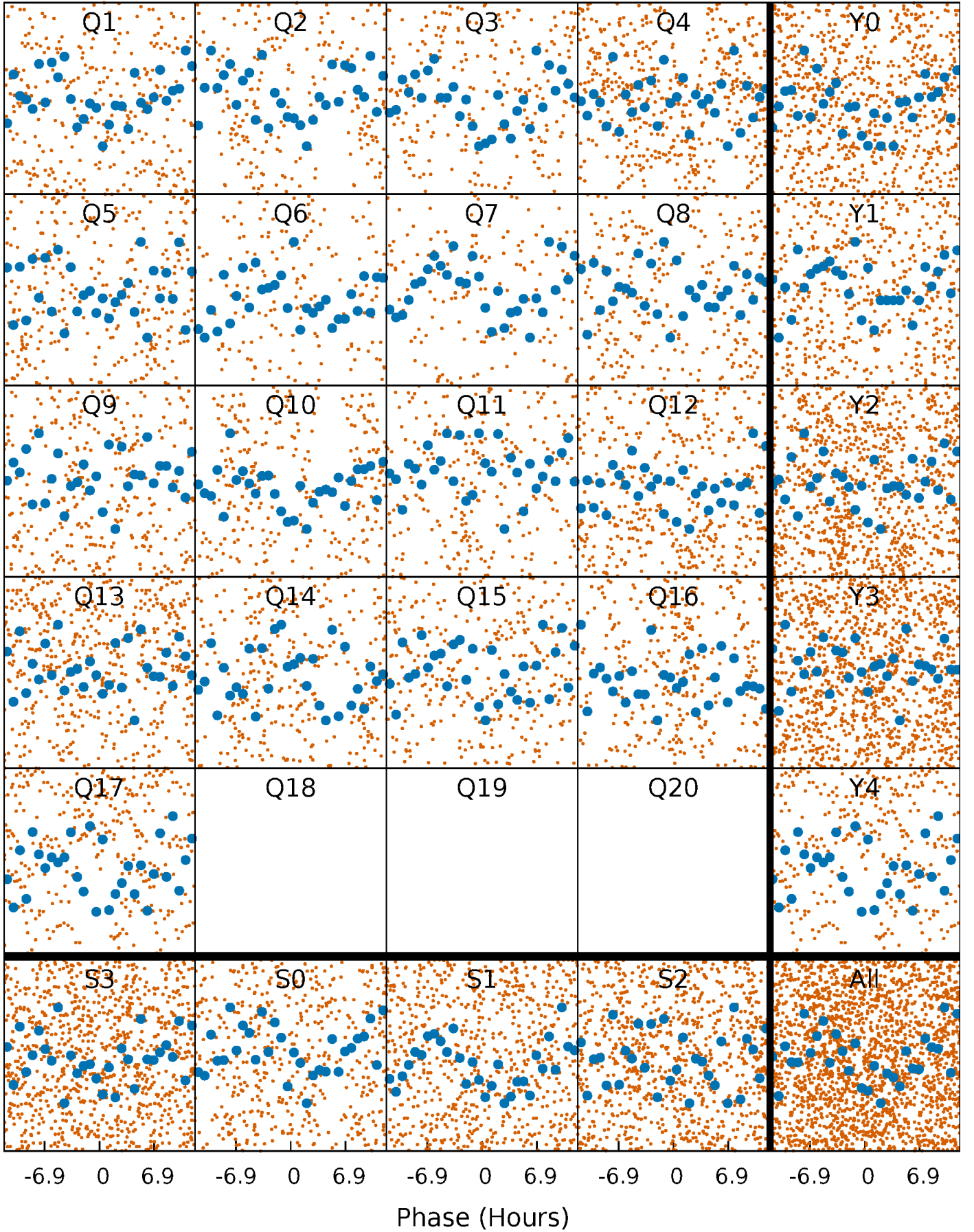


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

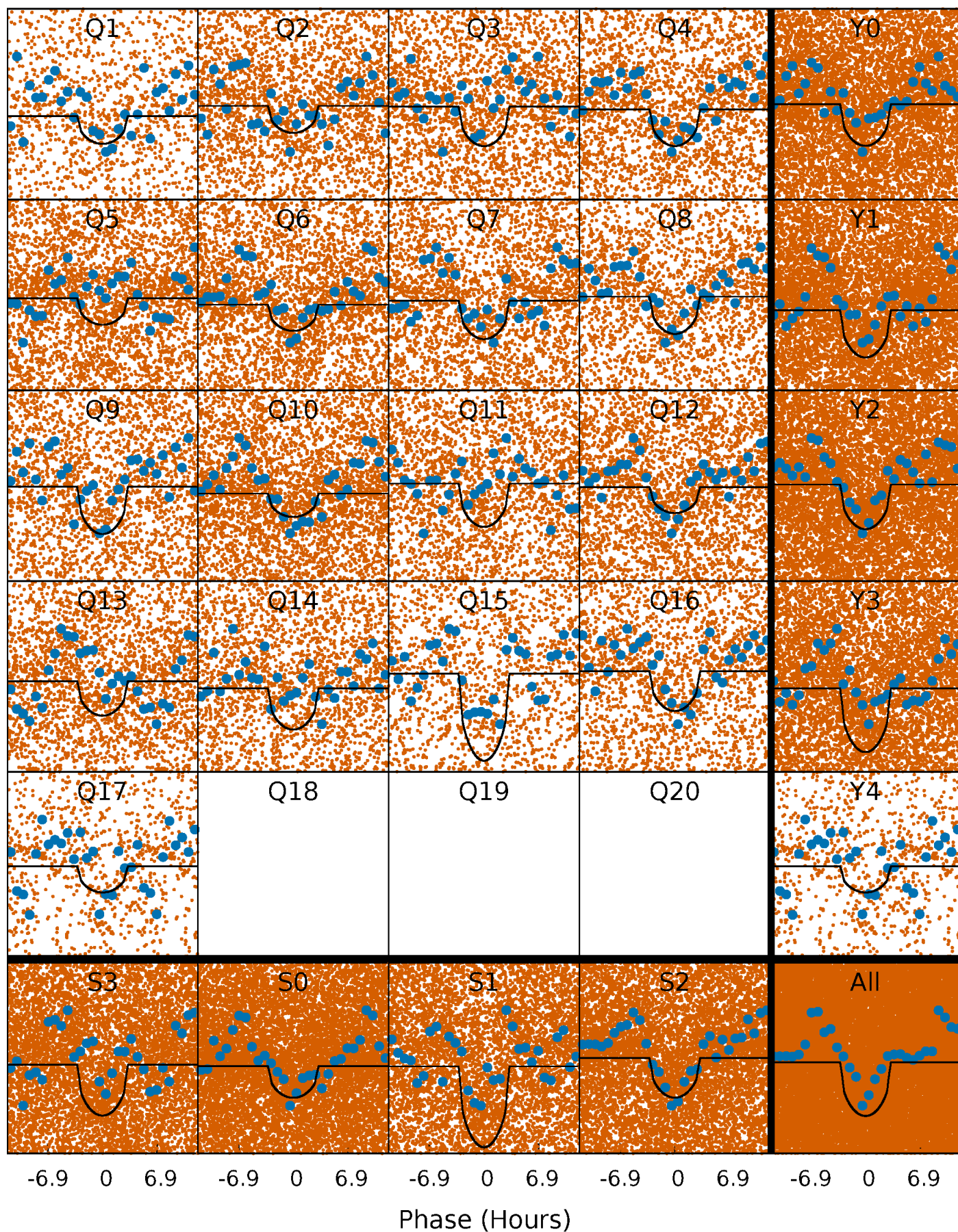
TCE 007658882-03 P= 0.677006 Days  $T_0=131.652400$  (BKJD)





# DV Quarter-Phased Transit Curves

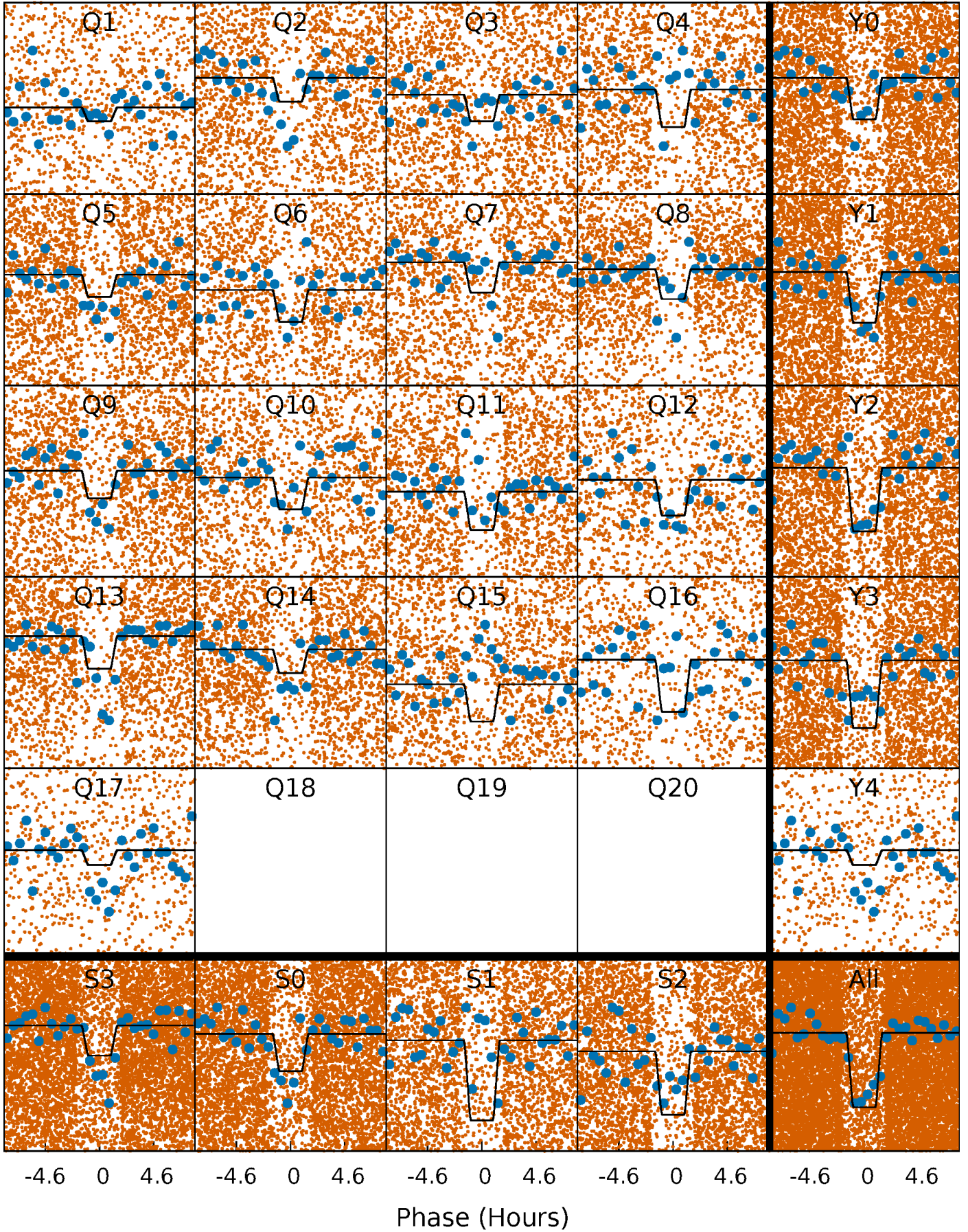
TCE 007658882-03 P= 0.677006 Days  $T_0=131.652400$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

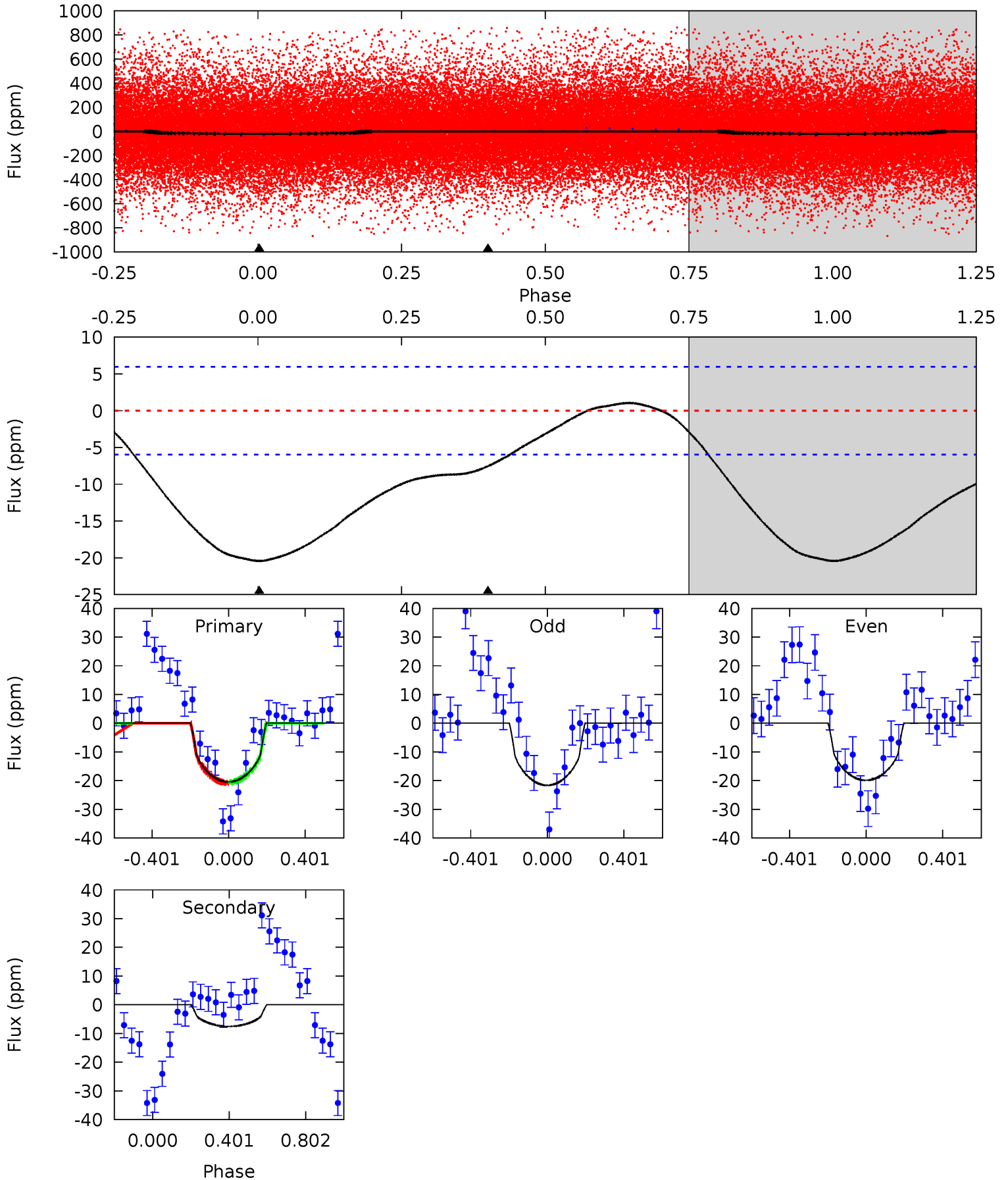
TCE 007658882-03 P= 0.677003 Days  $T_0=131.658258$  (BKJD)



# DV Model-Shift Uniqueness Test

007658882-03, P = 0.677006 Days, E = 130.975394 Days

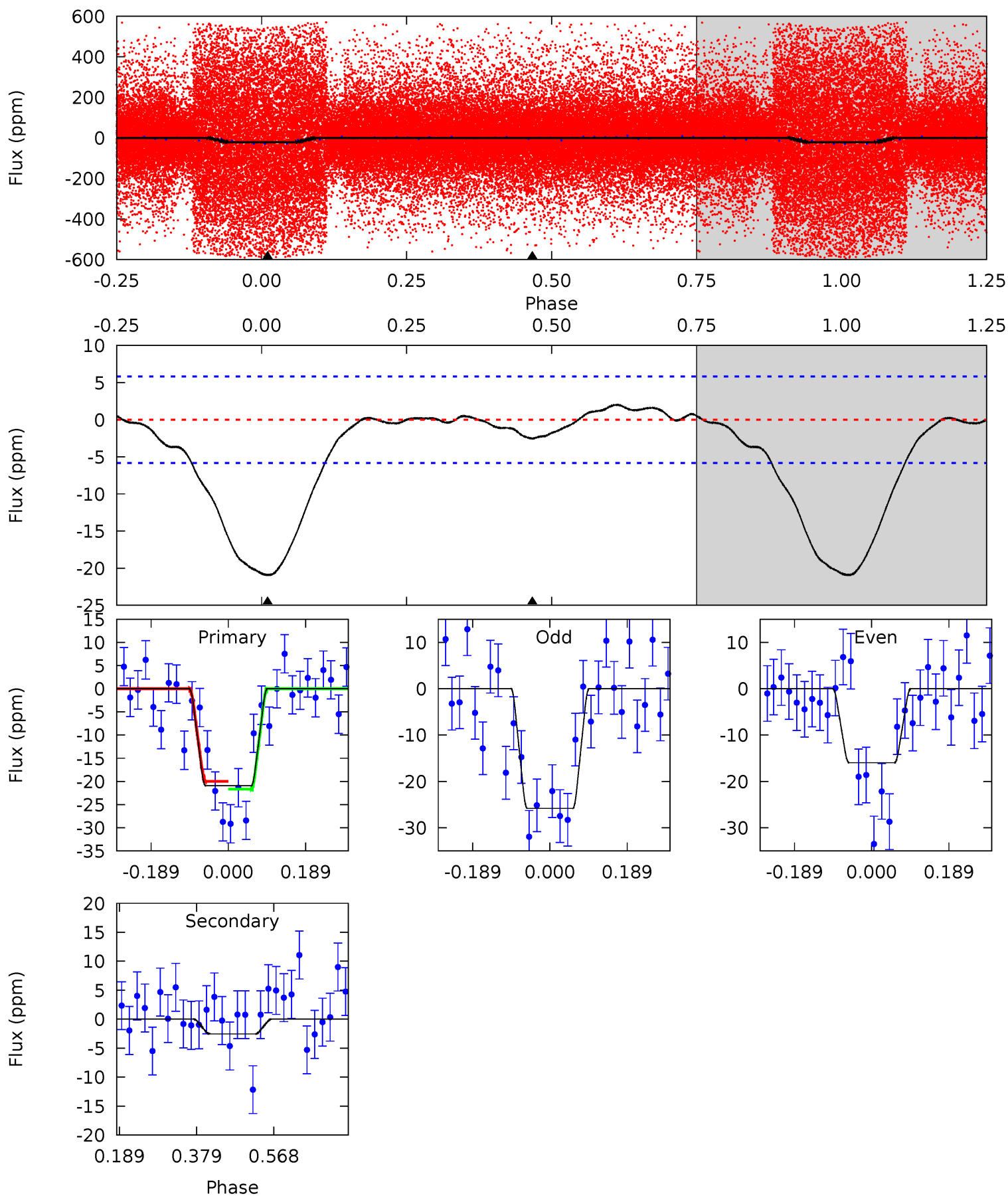
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	5.39	0	0	4.26	0.84	0.84	14.6	14.6	5.39	5.39	0.63	0.66	0.05	0.09



# Alt Model-Shift Uniqueness Test

007658882-03, P = 0.677003 Days, E = 130.981255 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
15.9	1.94	0	0	4.43	1.31	0.62	15.9	15.9	1.94	1.94	3.75	0.98	0.09	0.65



### Stellar Parameters For KIC 007658882

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5094^{+168}_{-137}$	$3.927^{+0.624}_{-0.336}$	$0.040^{+0.300}_{-0.250}$	$1.736^{+0.984}_{-0.984}$	$0.928^{+0.186}_{-0.140}$	$0.250^{+2.215}_{-0.182}$
	+3%/-3%	+16%/-9%	+750%/-625%	+57%/-57%	+20%/-15%	+886%/-73%
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 007658882-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-8 \pm 1$	$0.93^{+0.73}_{-0.50}$	$3384^{+500}_{-569}$	$3674^{+1345}_{-1439}$	$1.020^{+4.136}_{-0.706}$
Alt.	$-3 \pm 1$	$0.86^{+0.62}_{-0.48}$	$3376^{+527}_{-545}$	$2519^{+1600}_{-5739}$	$0.352^{+1.556}_{-0.259}$

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

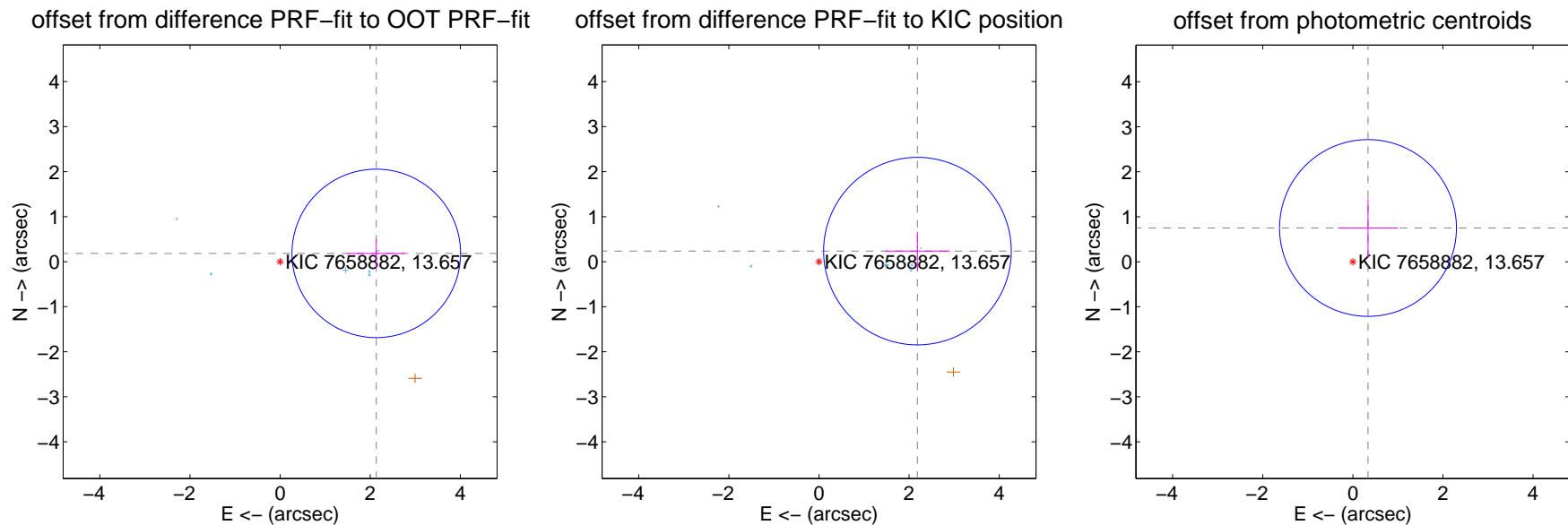
## DV Centroid Data

Supplemental centroid analysis for 007658882-03. Kepler magnitude: 13.66. Transit SNR 10.24

There are 7 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

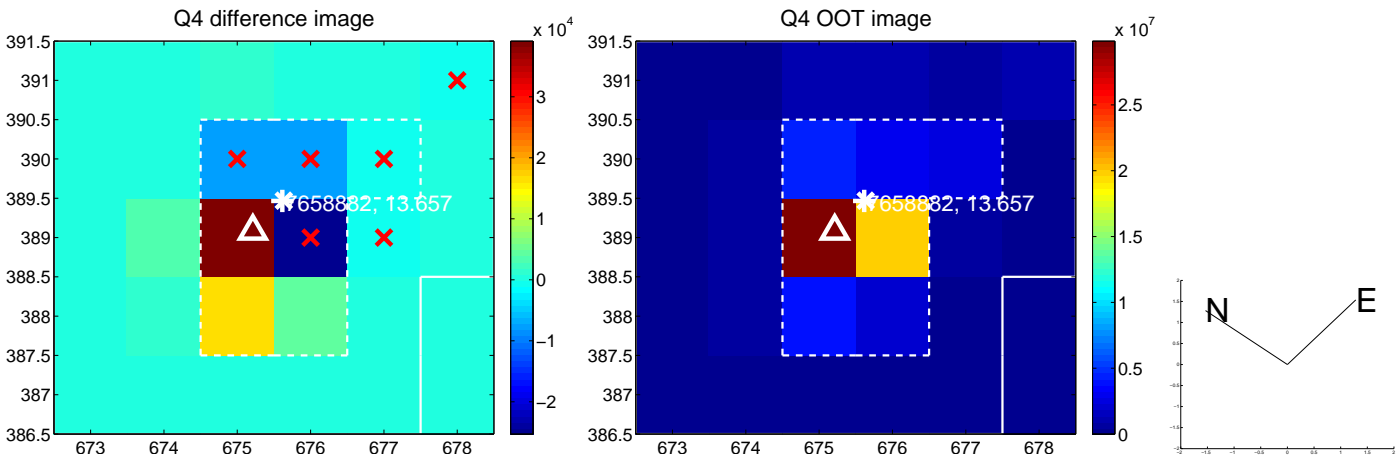
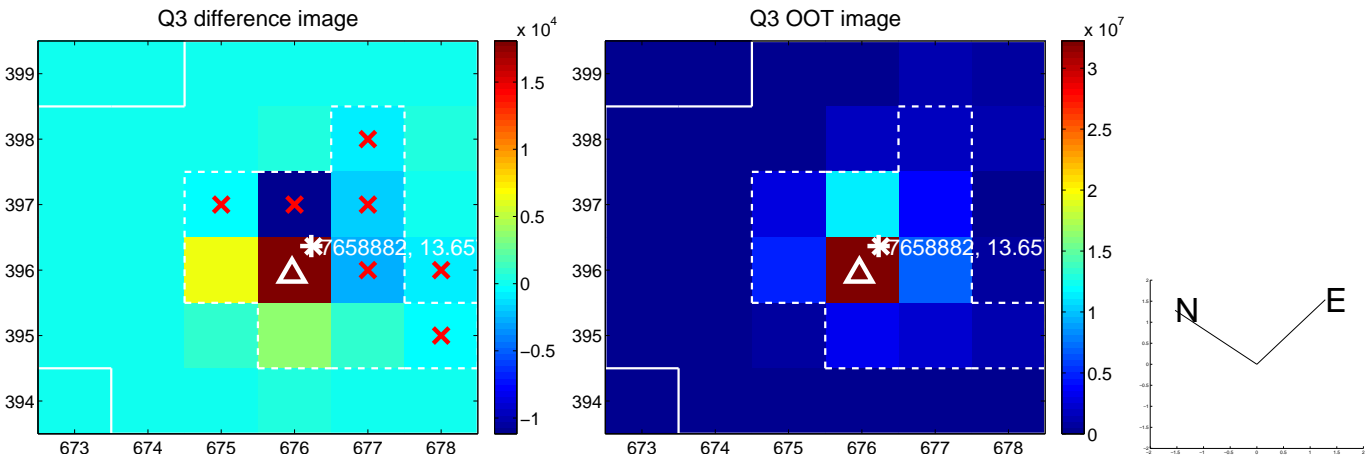
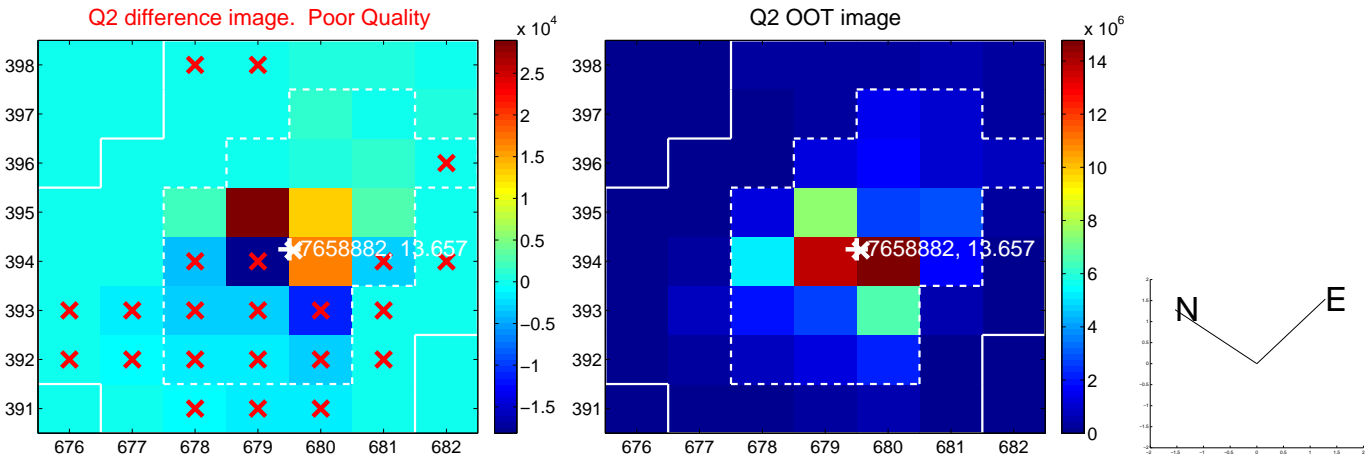
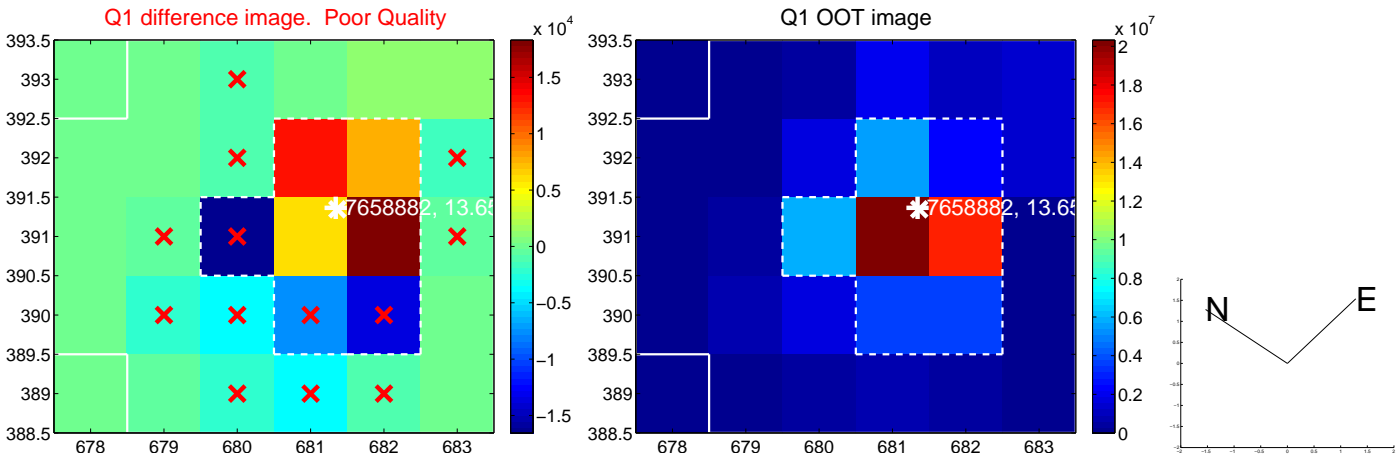
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>2.141 \pm 0.623</math></b>	<b>3.44</b>	$-2.134 \pm 0.640$	$0.185 \pm 0.323$
PRF-fit source offset from KIC position	<b><math>2.197 \pm 0.694</math></b>	<b>3.17</b>	$-2.185 \pm 0.726$	$0.235 \pm 0.422$
photometric centroid source offset	$0.82 \pm 0.65$	1.26	$-0.34 \pm 0.67$	$0.75 \pm 0.65$



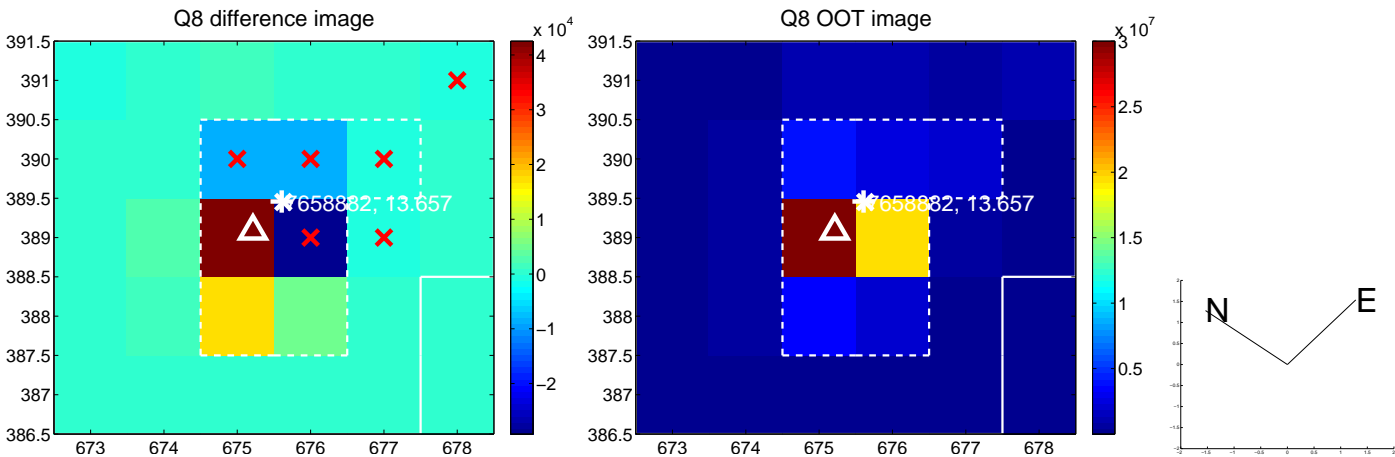
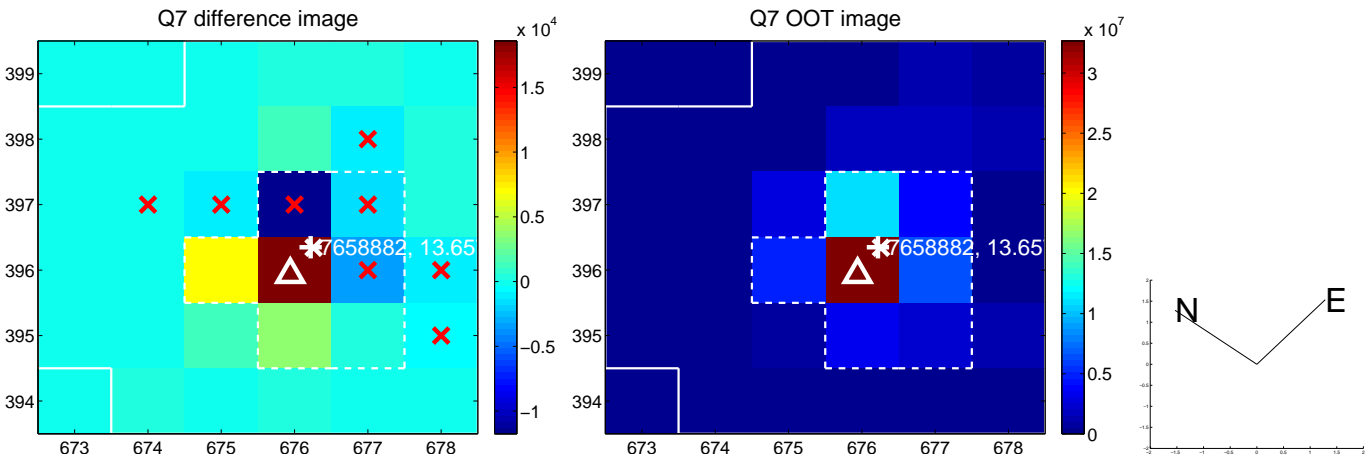
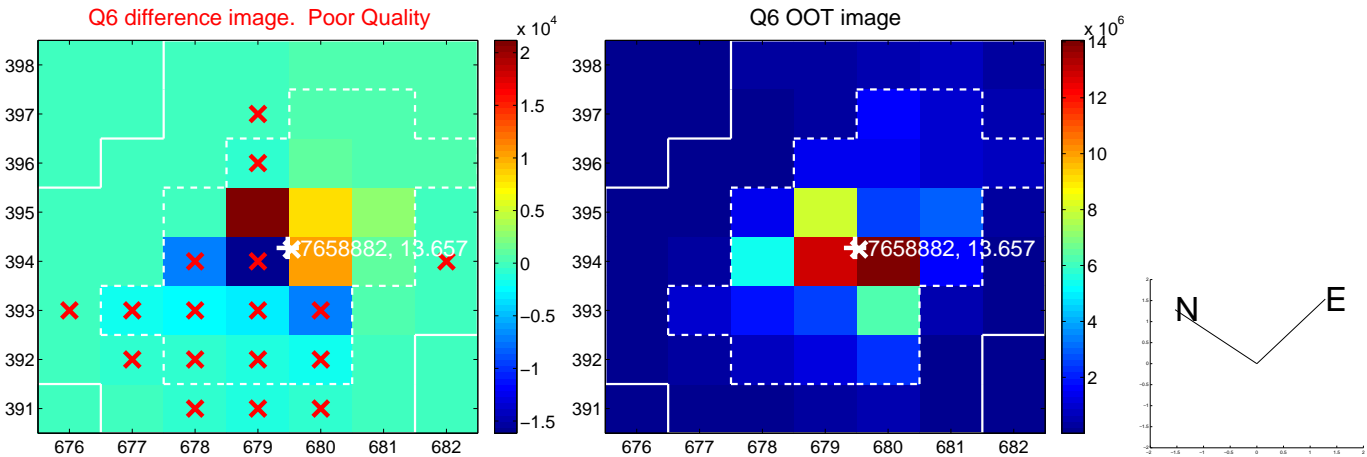
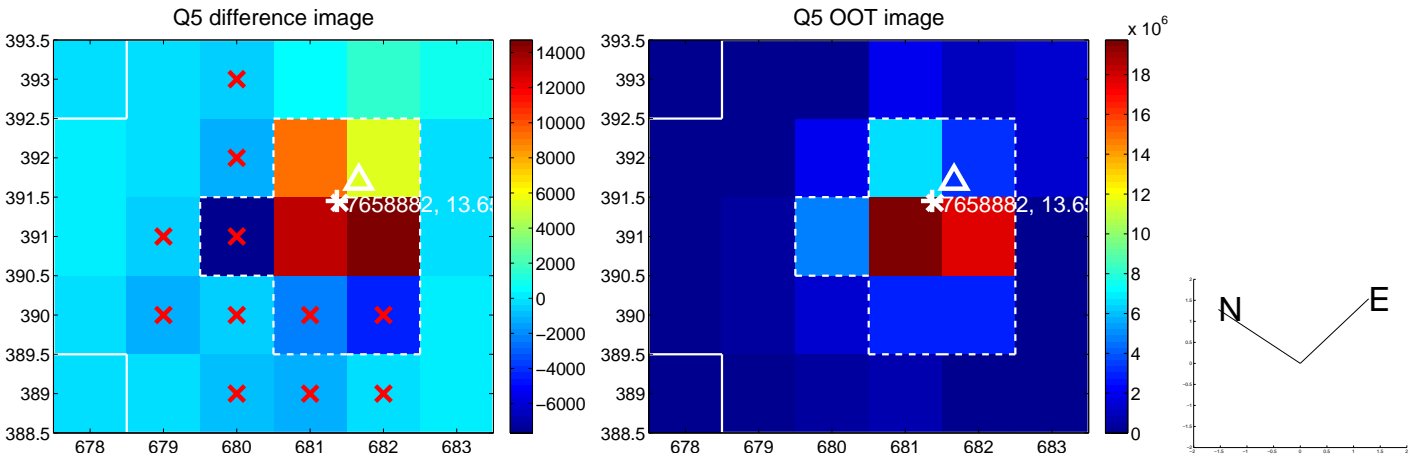
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

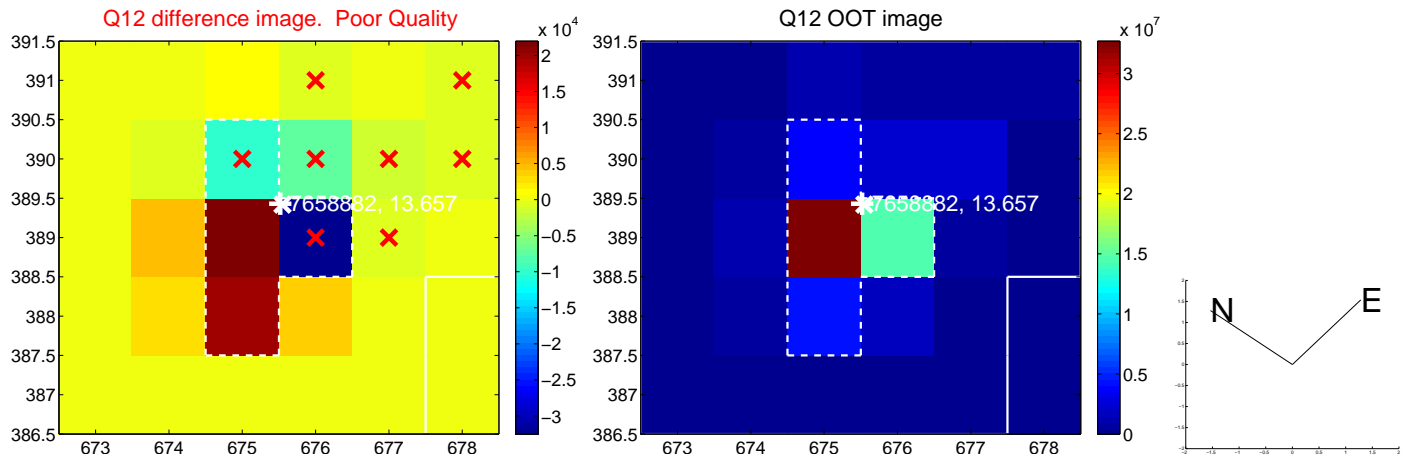
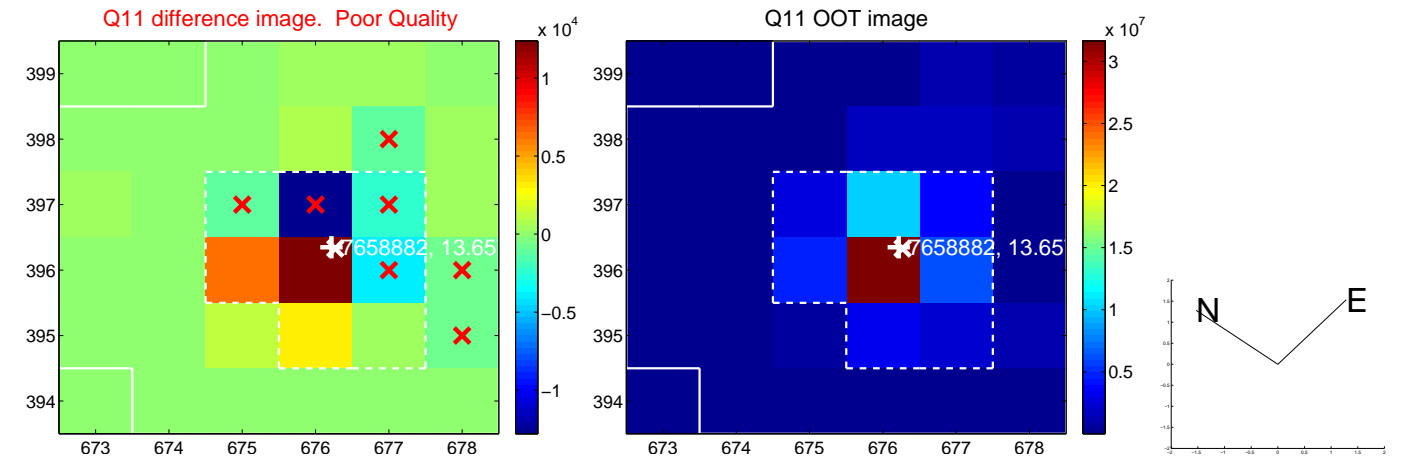
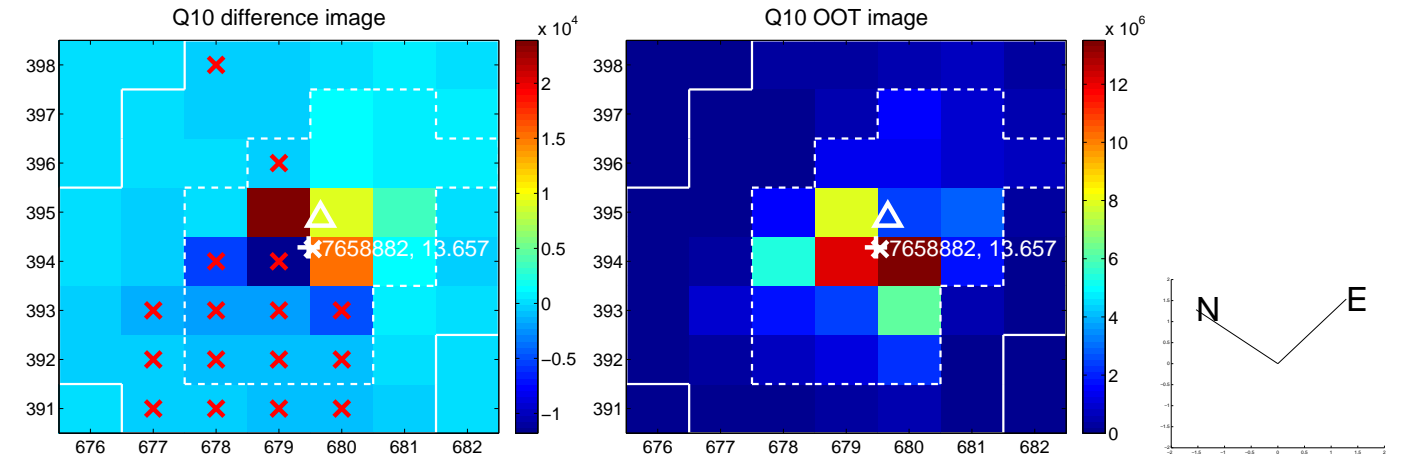
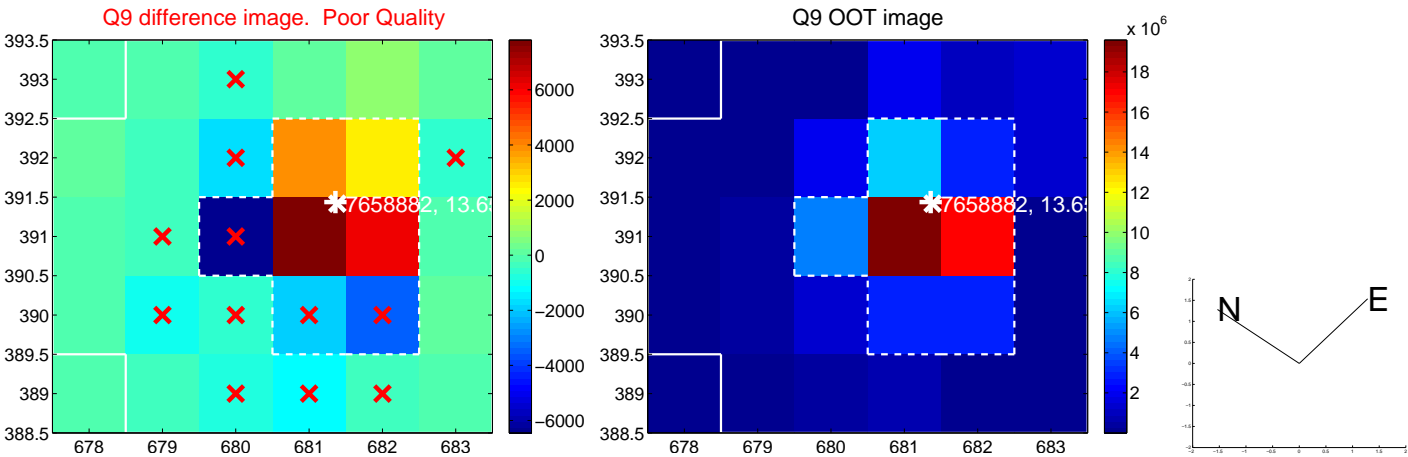


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

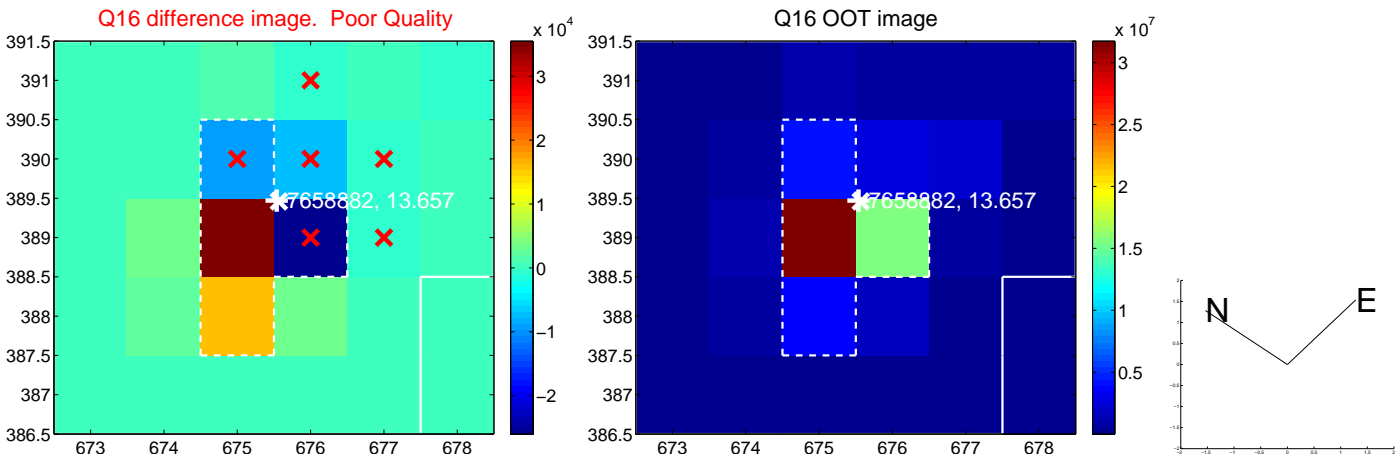
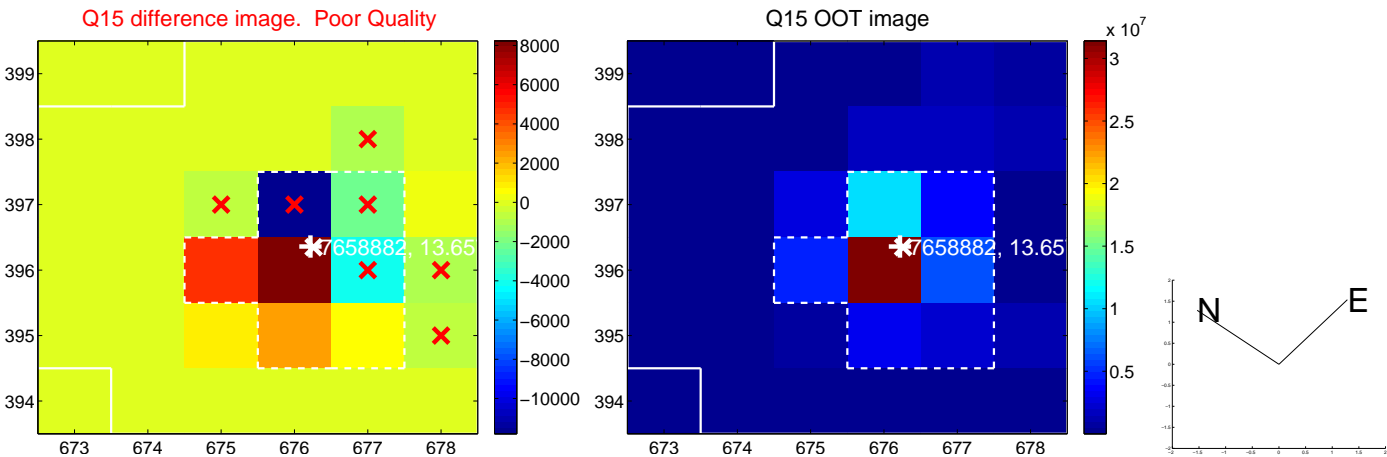
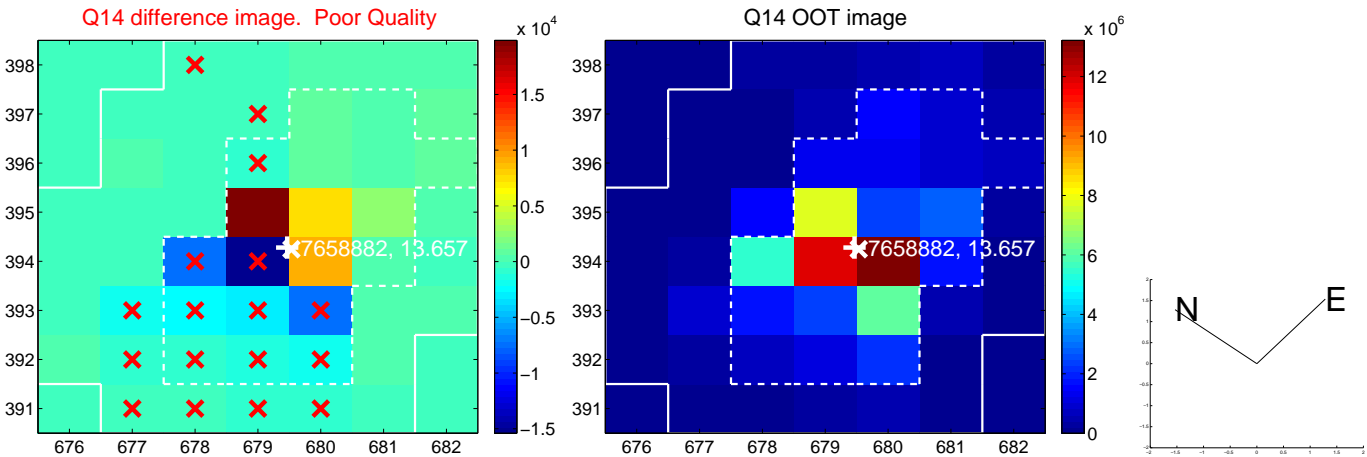
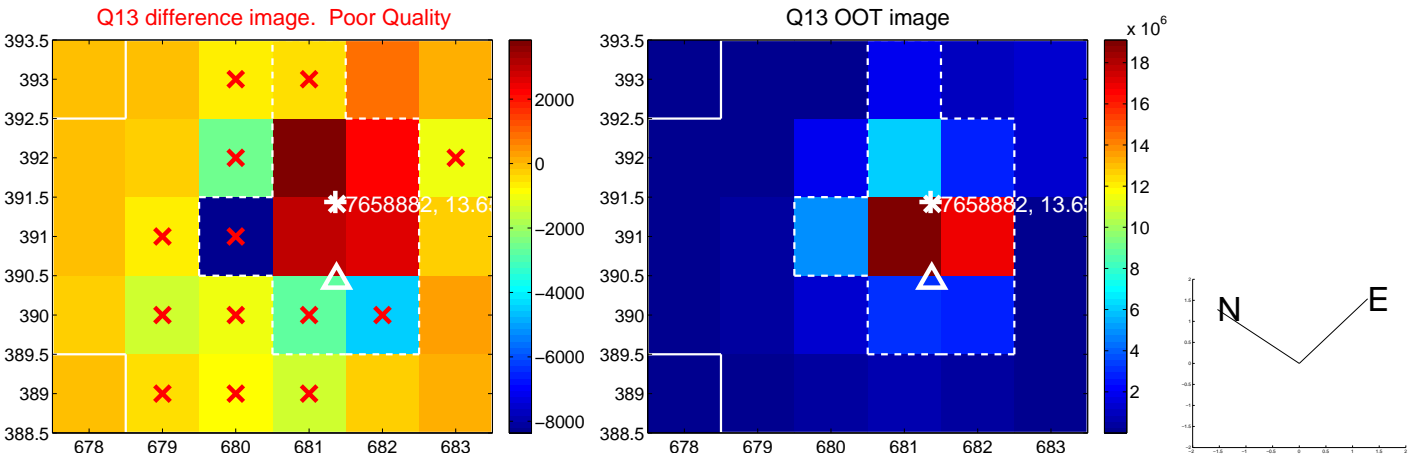




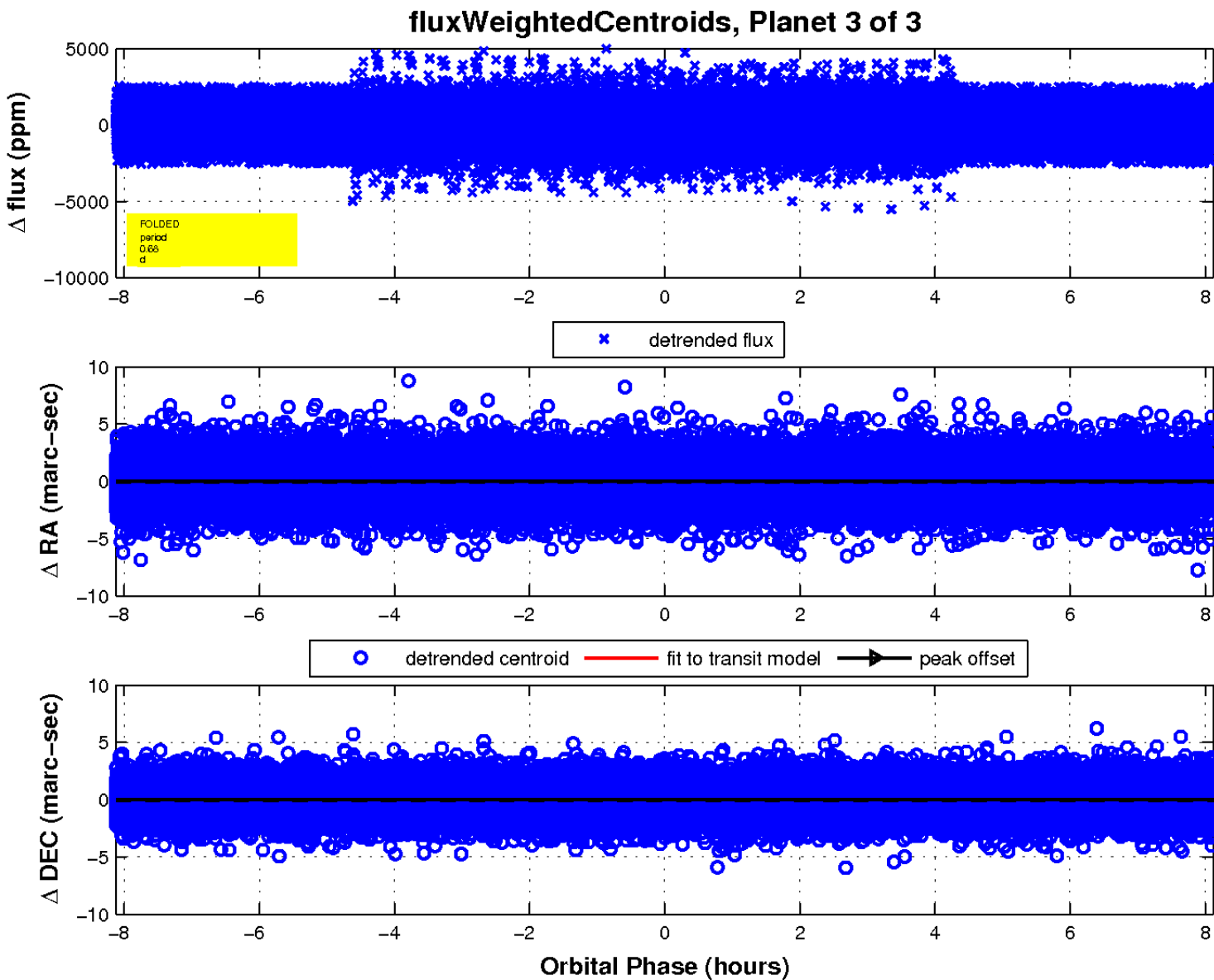
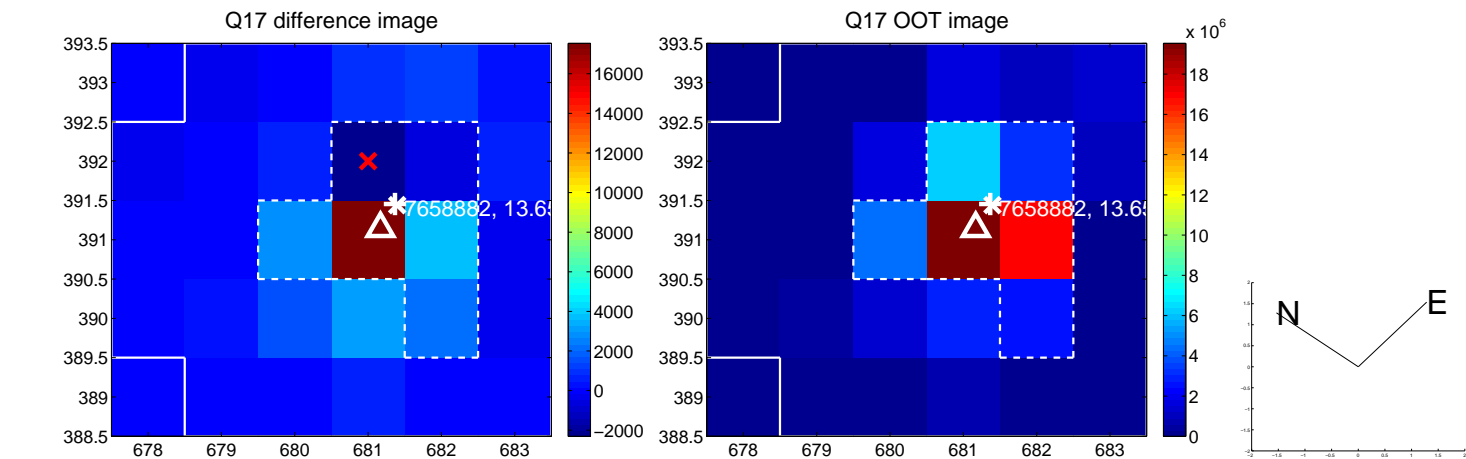
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

