

# KIC 006704862

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006704862-01	OBS	No	1.872681	131.992353	4.7	0.667	8.9	0.9	2.71	6711	0.62	11201.38
006704862-02	OBS	No	0.936709	131.769190	17.7	2.985	8.3	7.6	2.71	6711	1.33	28210.89
006704862-03	OBS	No	171.266268	297.998645	217.9	4.582	7.5	7.2	2.71	6711	4.40	27.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006704862-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006704862-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006704862-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

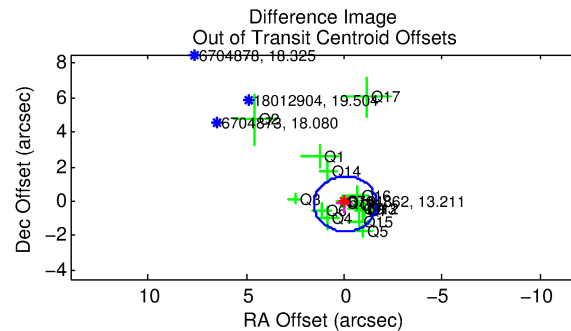
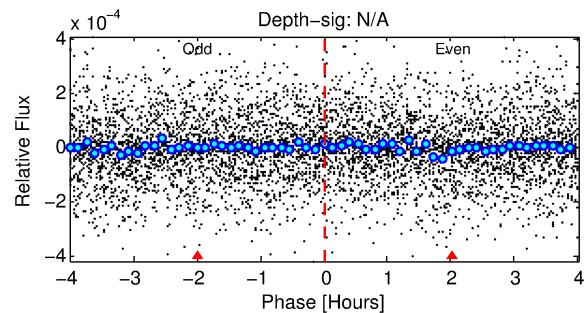
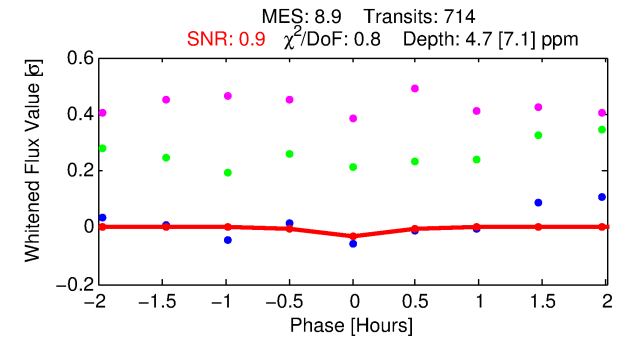
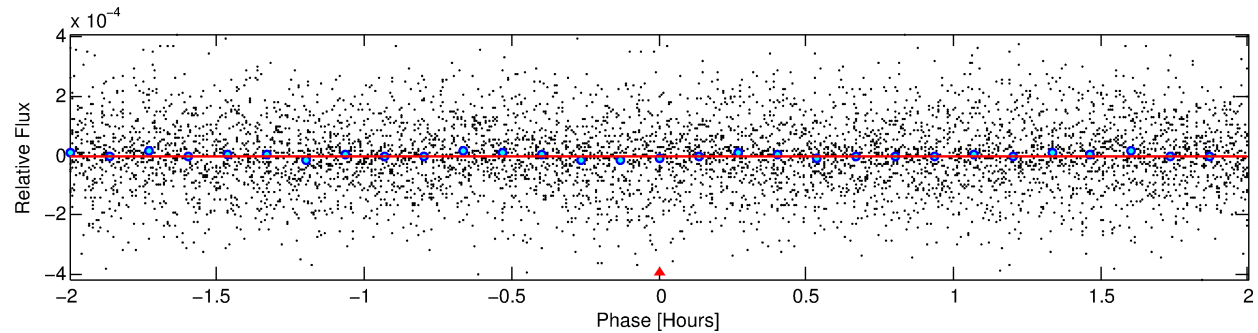
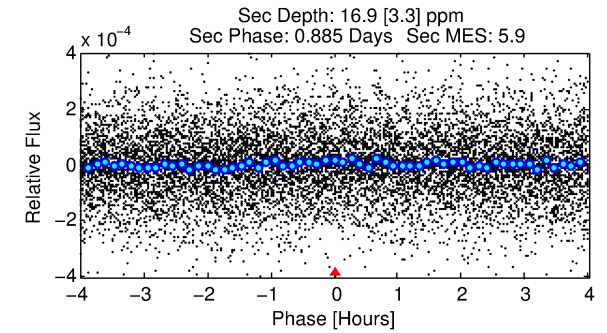
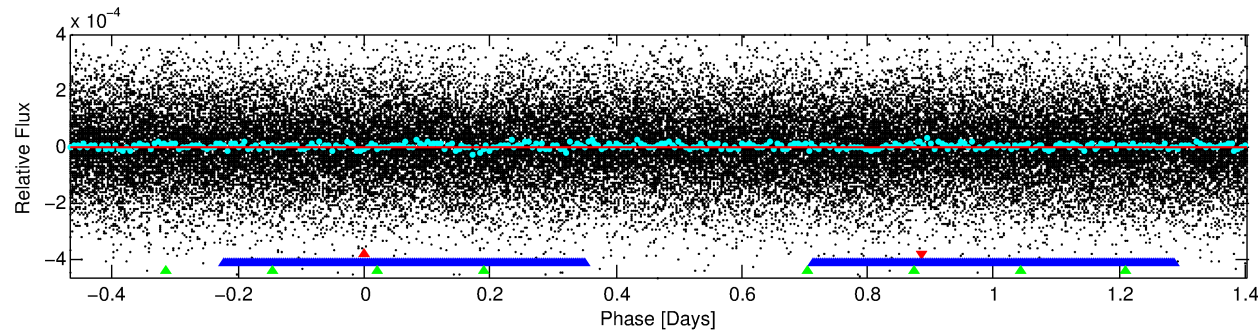
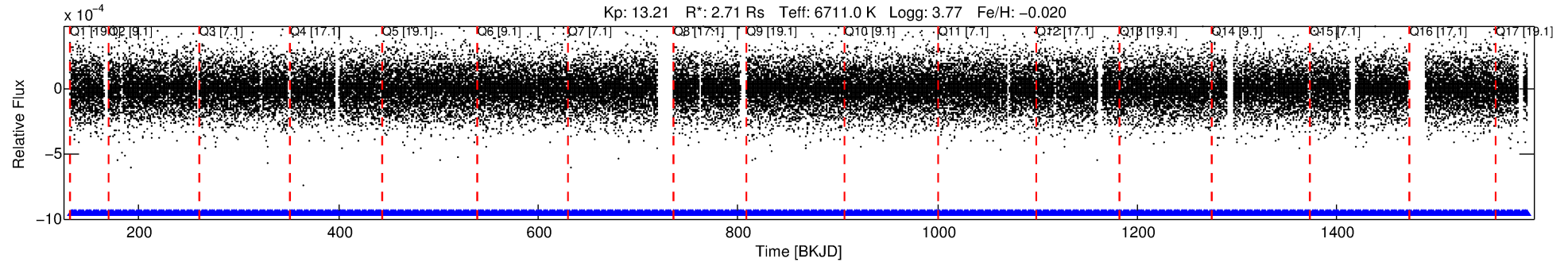
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006704862-01

No Significant Match Found

# DV One-Page Summary

KIC: 6704862 Candidate: 1 of 3 Period: 1.873 d



## DV Fit Results:

Period = 1.87268 [0.00011] d  
Epoch = 131.9924 [0.0146] BKJD  
Rp/R\* = 0.0021 [0.0028]  
a/R\* = 19.00 [117.61]  
b = 0.47 [10.24]  
Seff = 11201.37 [5790.42]  
Teq = 2623 [339] K  
Rp = 0.62 [0.84] Re  
a = 0.0346 [0.0110] AU  
Ag = 29.23 [78.94] [0.36σ]  
Teffp = 9431 [6262] K [1.09σ]

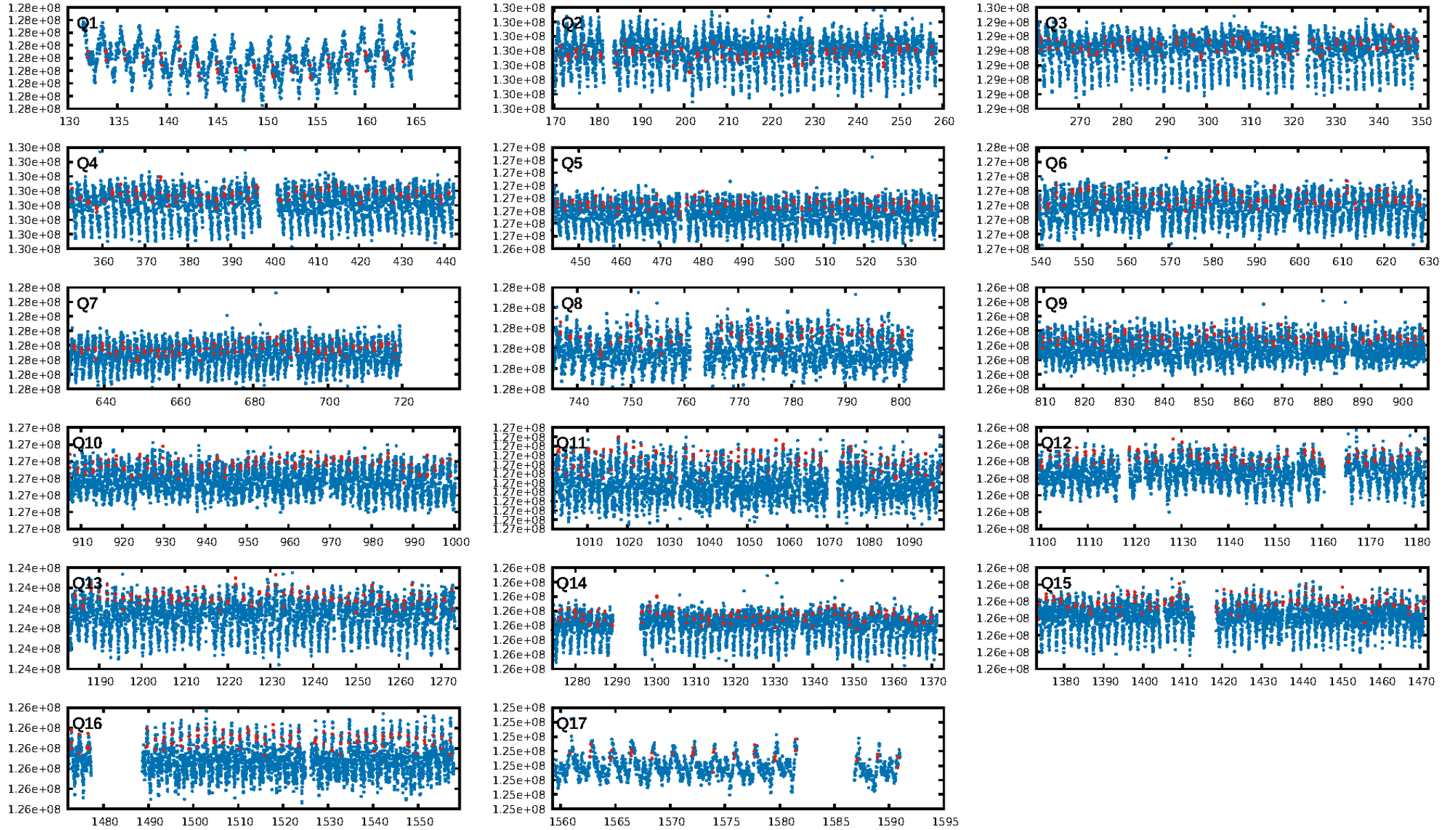
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.34σ]  
LongPeriod-sig: 100.0% [878.05σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.10e-15  
RollingBand-fgt: 1.00 [681/681]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.167 arcsec [0.31σ]  
KicOffset-rm: 0.378 arcsec [0.78σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.06 [1/17]  
DiffImageOverlap-fno: 0.18 [3/17]

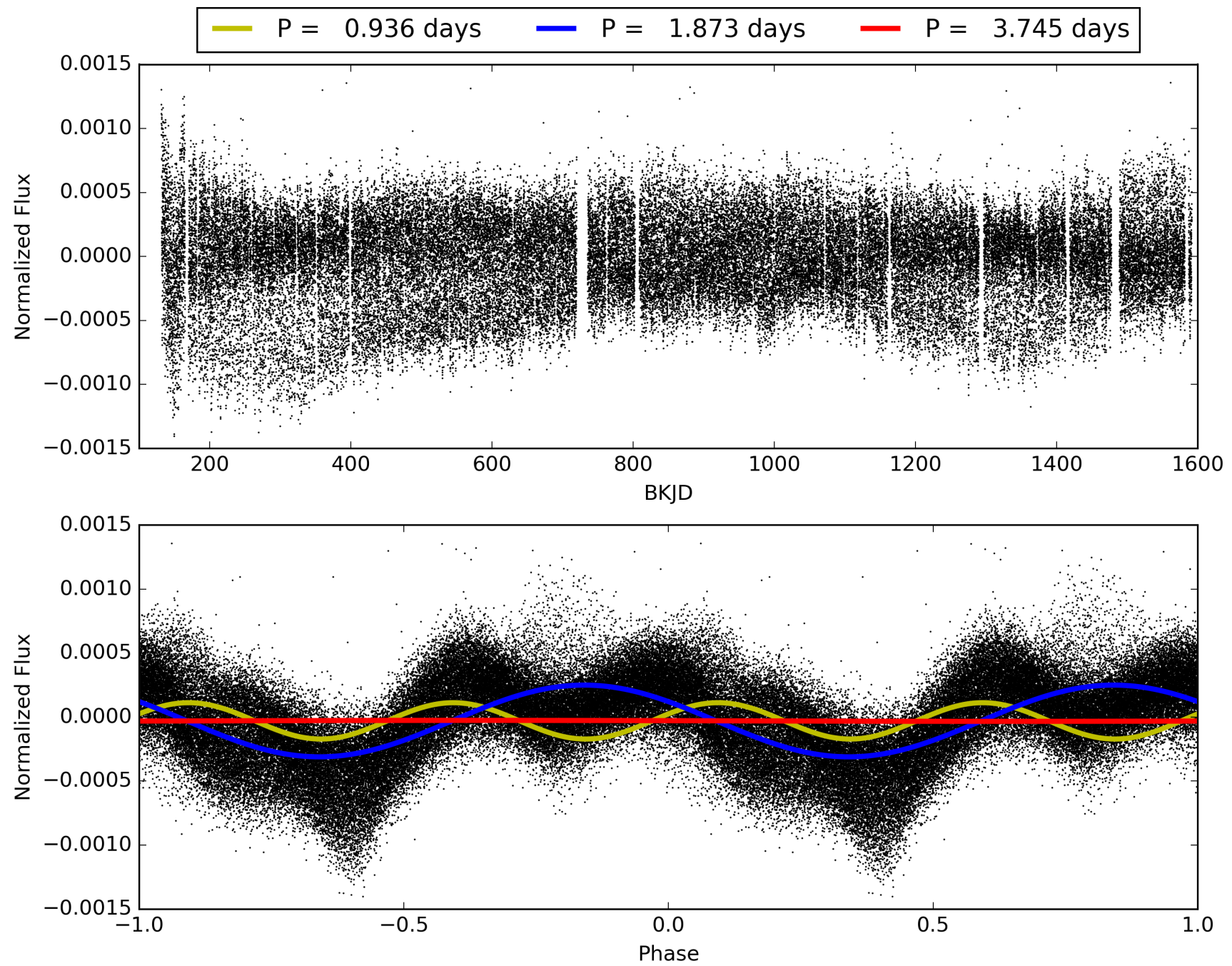
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:20:45 Z

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

# TCE 006704862-01, PDC Light Curves



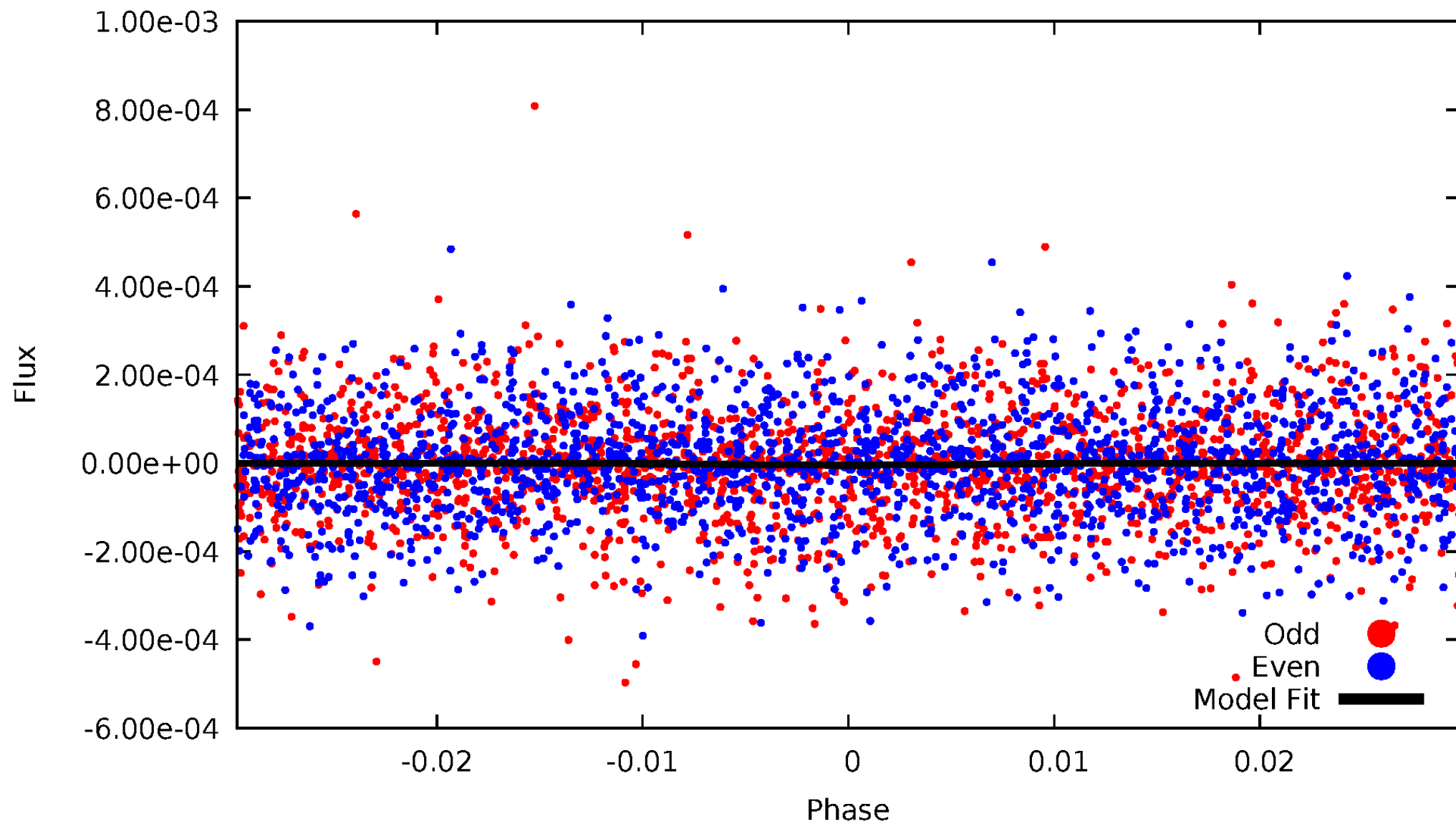
TCE 006704862-01





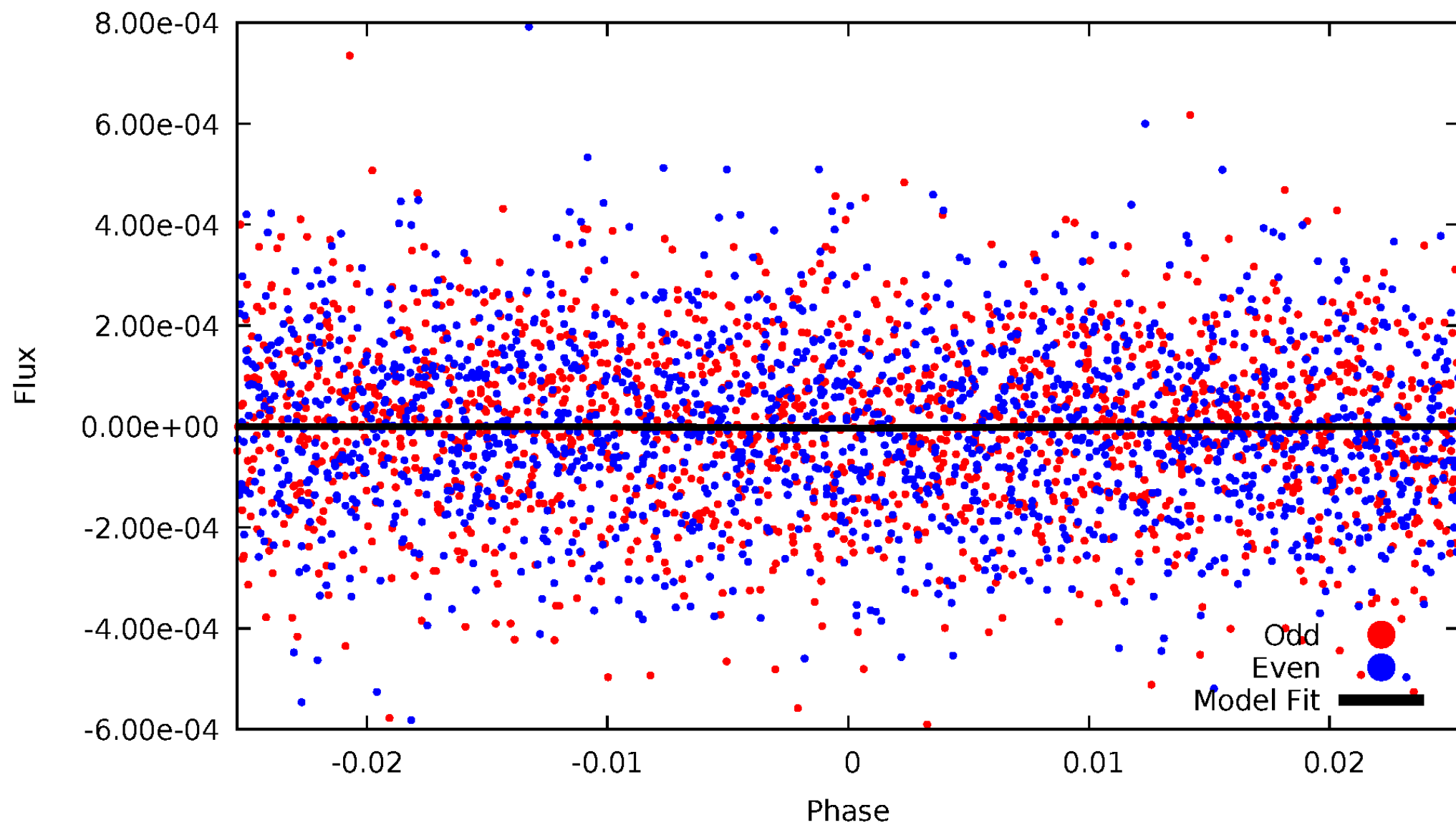
# DV Odd/Even

TCE 006704862-01



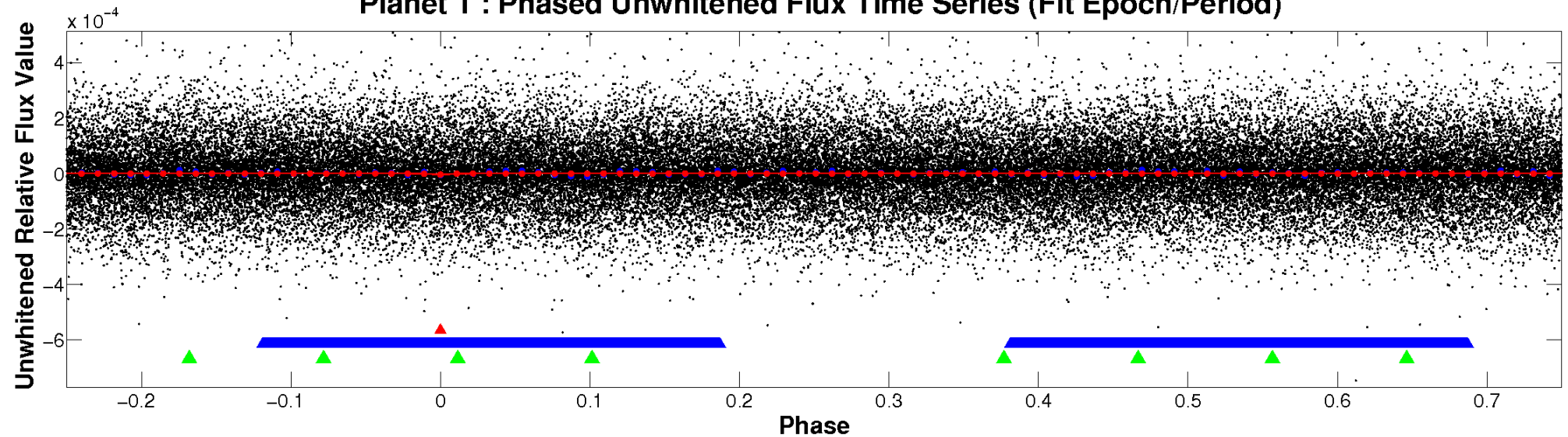
# ALT Odd/Even

TCE 006704862-01

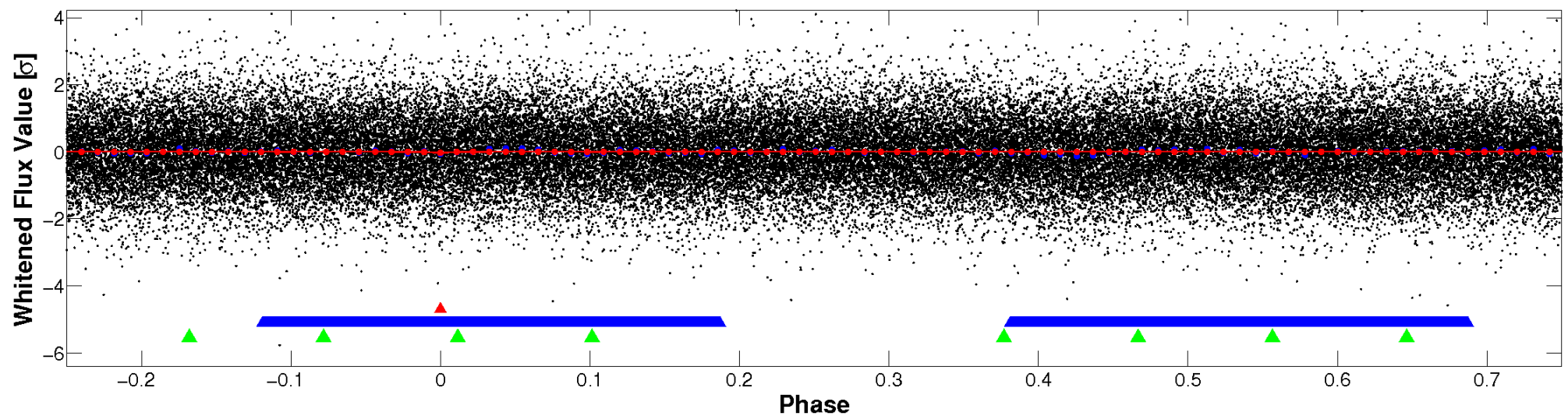


# Non-Whitened Vs. Whitened Light Curve

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

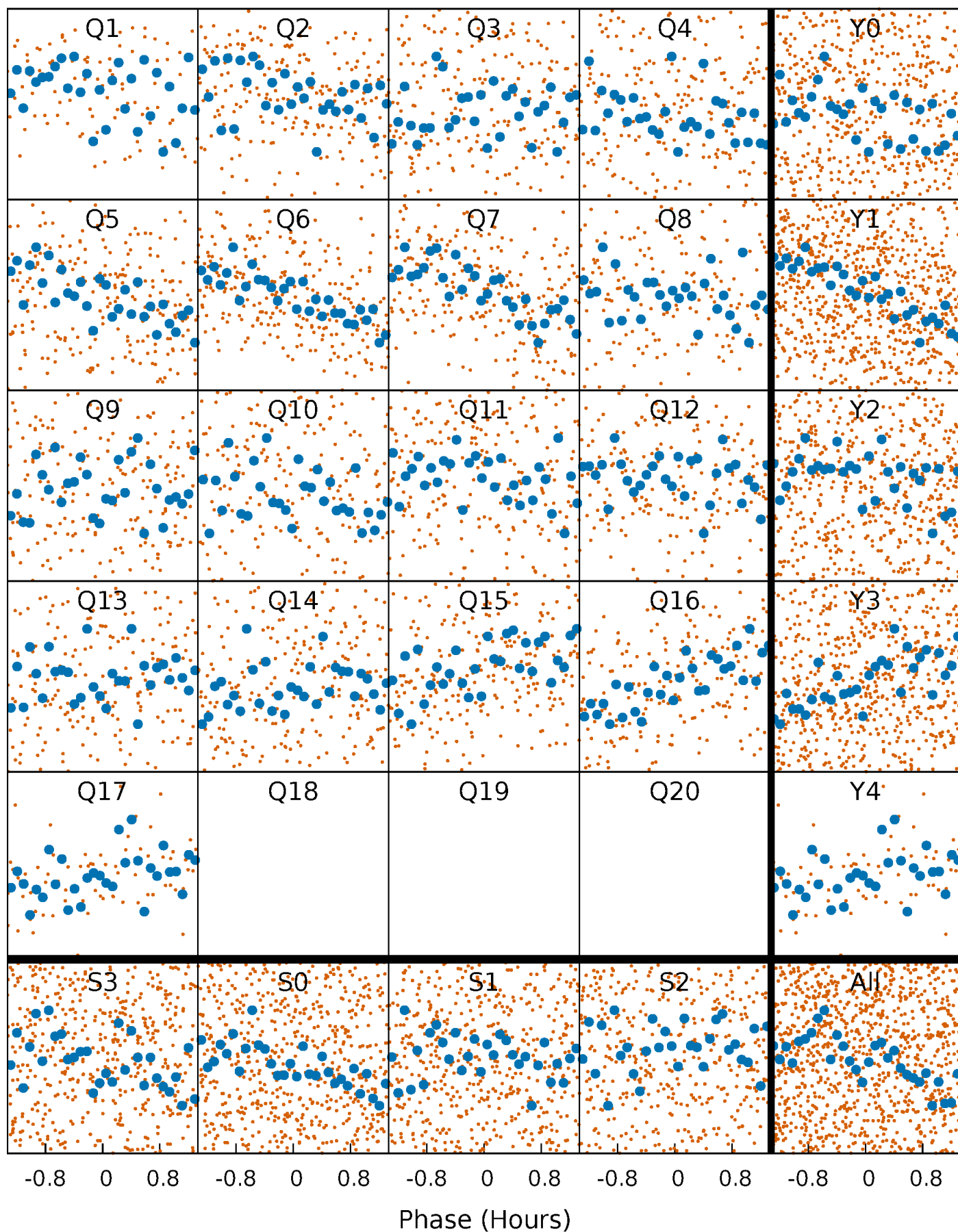


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

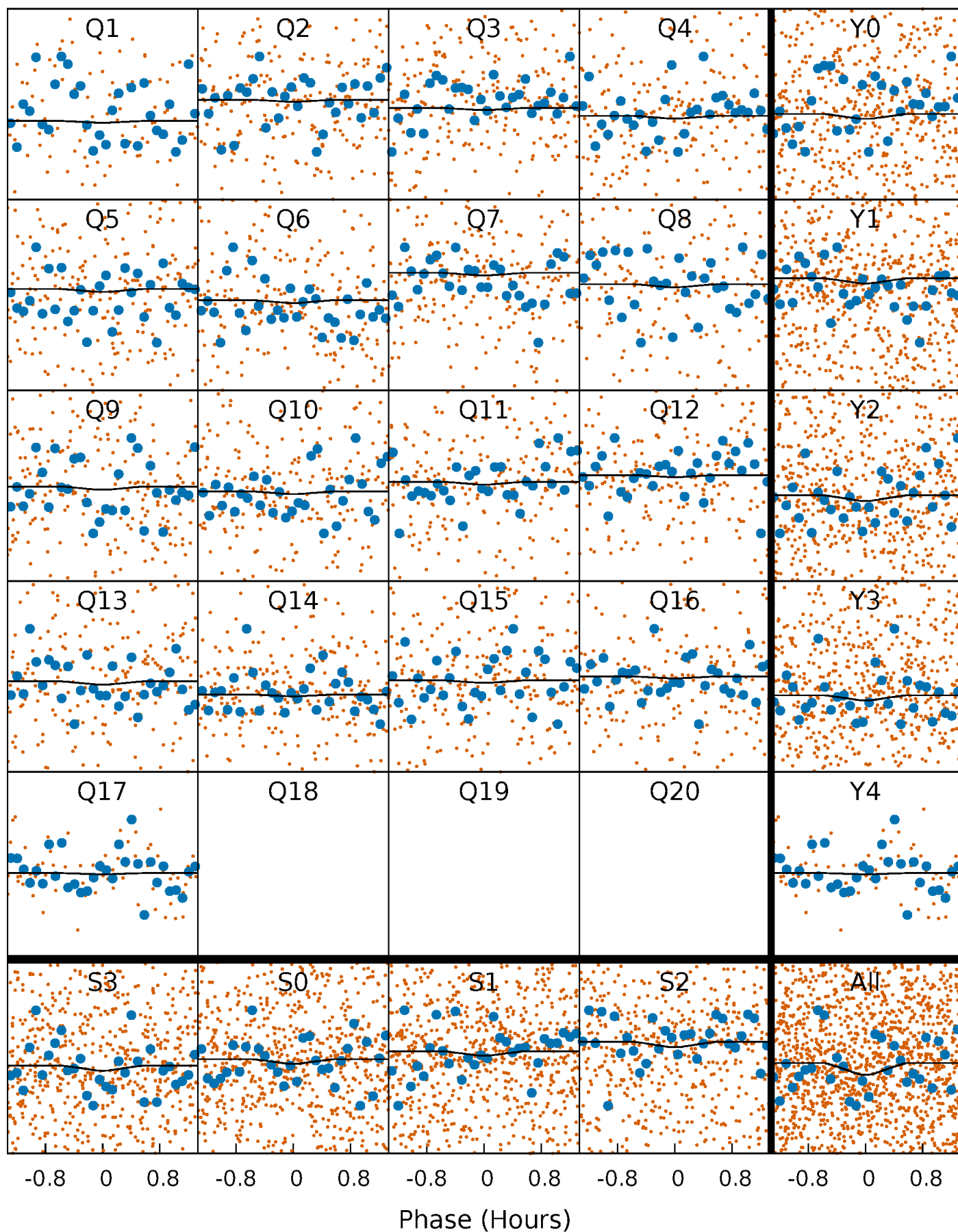
TCE 006704862-01 P= 1.872681 Days  $T_0=131.992353$  (BKJD)





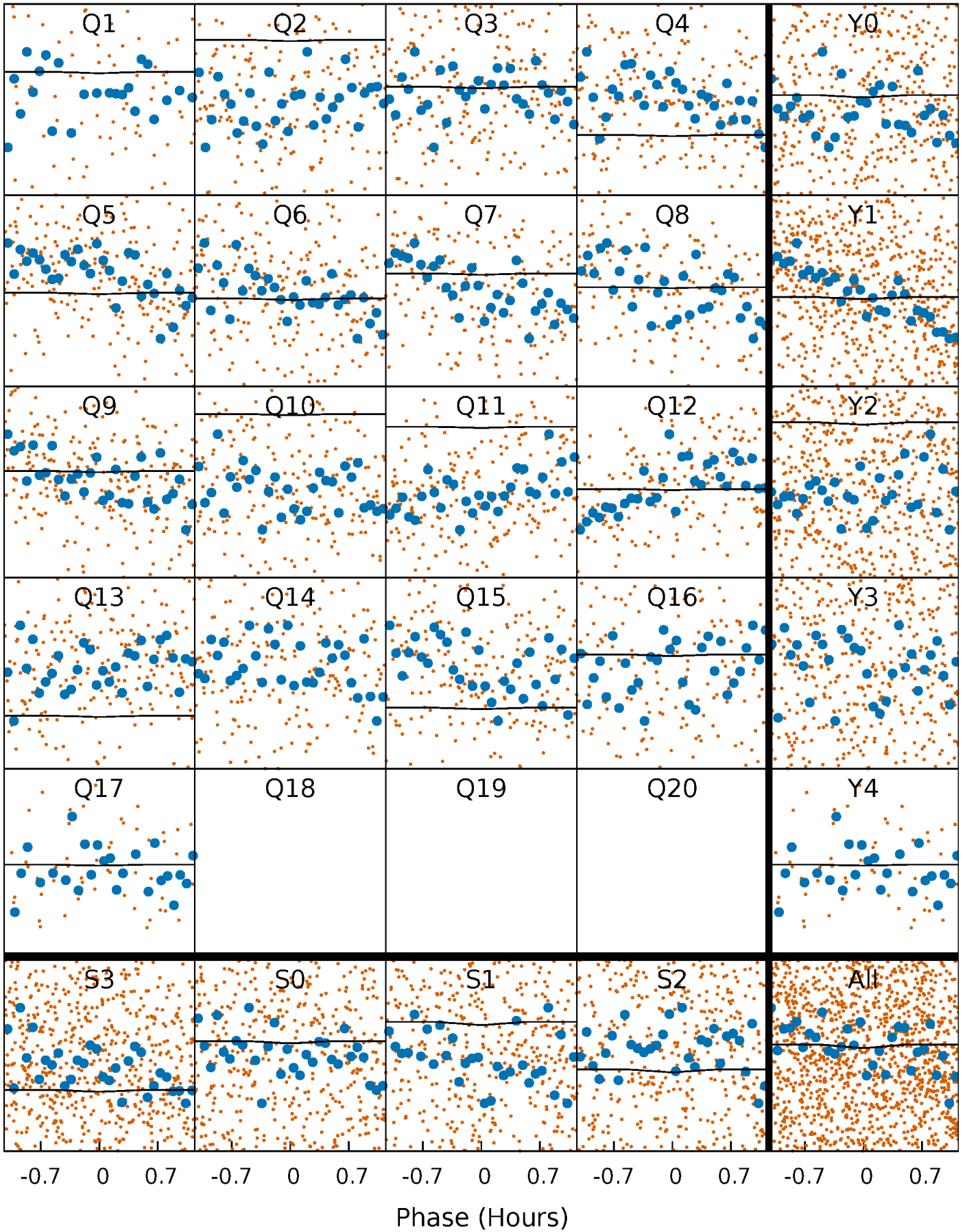
# DV Quarter-Phased Transit Curves

TCE 006704862-01 P= 1.872681 Days  $T_0=131.992353$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

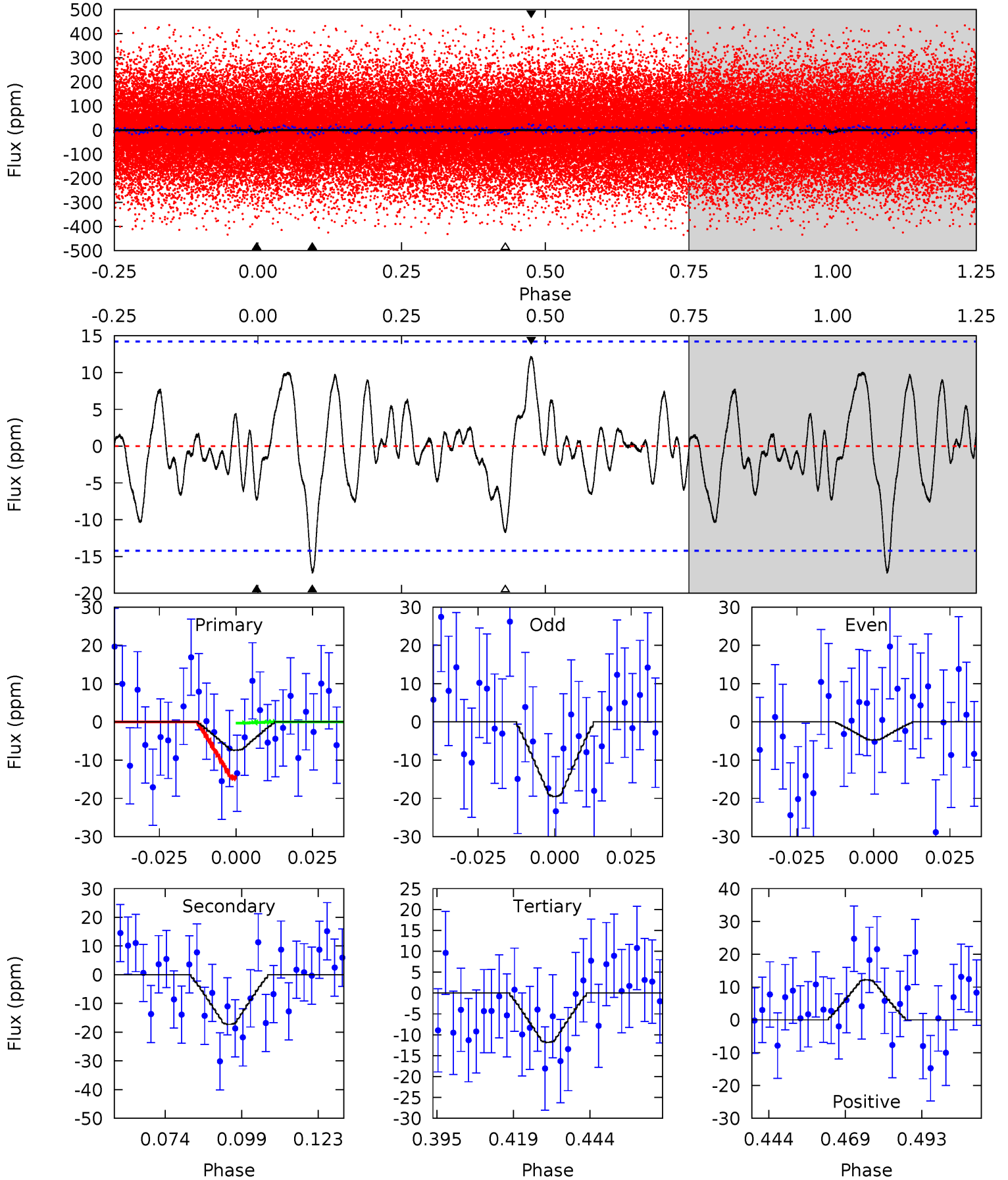
TCE 006704862-01 P= 1.873320 Days  $T_0=131.995107$  (BKJD)



# DV Model-Shift Uniqueness Test

006704862-01, P = 1.872681 Days, E = 130.119672 Days

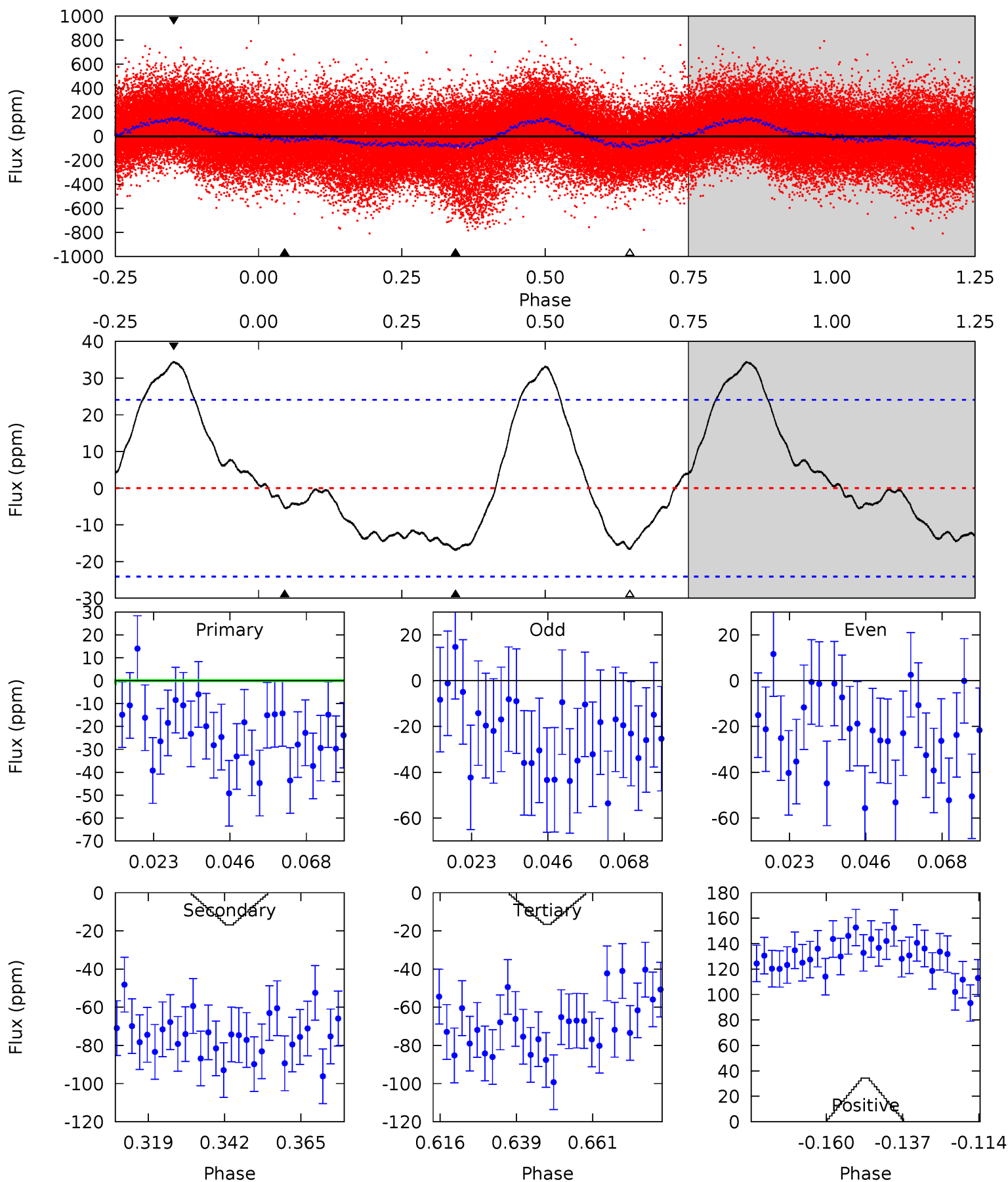
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.52	5.89	4.03	4.17	4.85	2.25	1.51	-1.51	-1.65	1.87	1.73	2.52	1.98	0.41	2.45



# Alt Model-Shift Uniqueness Test

006704862-01, P = 1.873320 Days, E = 130.121787 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
1.08	3.41	3.35	6.96	4.87	2.28	3.18	-2.27	-5.88	0.05	-3.55	0.50	-86.0	0.67	1.14





### Stellar Parameters For KIC 006704862

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6711^{+161}_{-202}$	$3.767^{+0.292}_{-0.097}$	$-0.020^{+0.250}_{-0.250}$	$2.715^{+0.499}_{-0.927}$	$1.573^{+0.222}_{-0.271}$	$0.111^{+0.223}_{-0.034}$
	+2%/-3%	+8%/-3%	+1250%/-1250%	+18%/-34%	+14%/-17%	+201%/-31%
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 006704862-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-17 \pm 3$	$0.80^{+0.63}_{-0.51}$	$3592^{+225}_{-324}$	$8171^{+11452}_{-2308}$	$18^{+122}_{-13}$
Alt.	$-17 \pm 5$	$0.75^{+0.73}_{-0.51}$	$3587^{+216}_{-292}$	$8431^{+13825}_{-2719}$	$20^{+159}_{-15}$

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

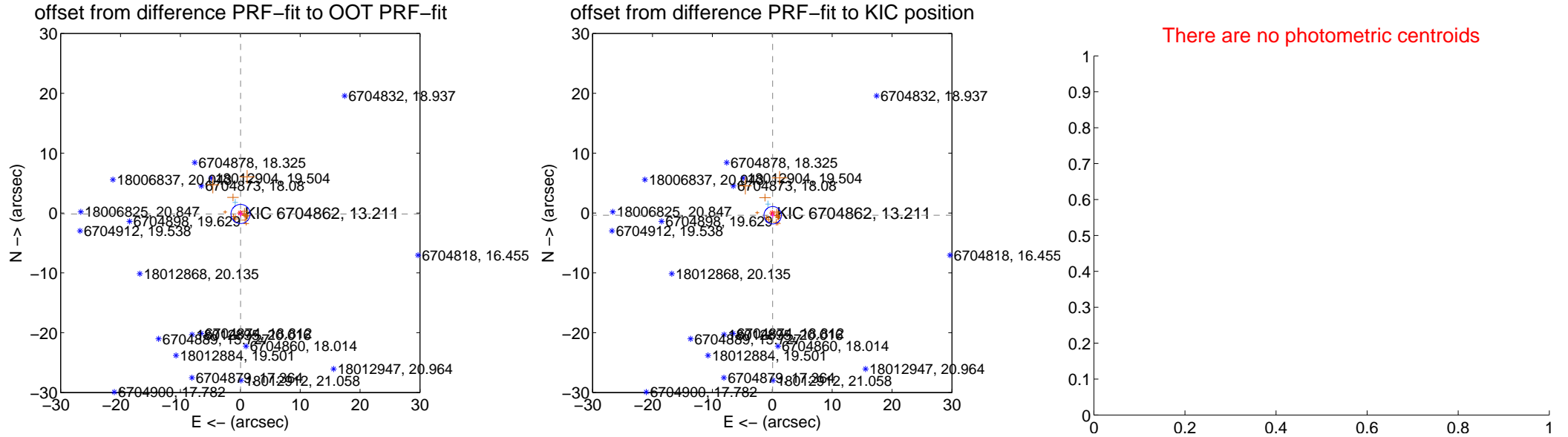
## DV Centroid Data

Supplemental centroid analysis for 006704862-01. Kepler magnitude: 13.21. Transit SNR 0.88

There are 1 quarters with good PRF difference image offsets

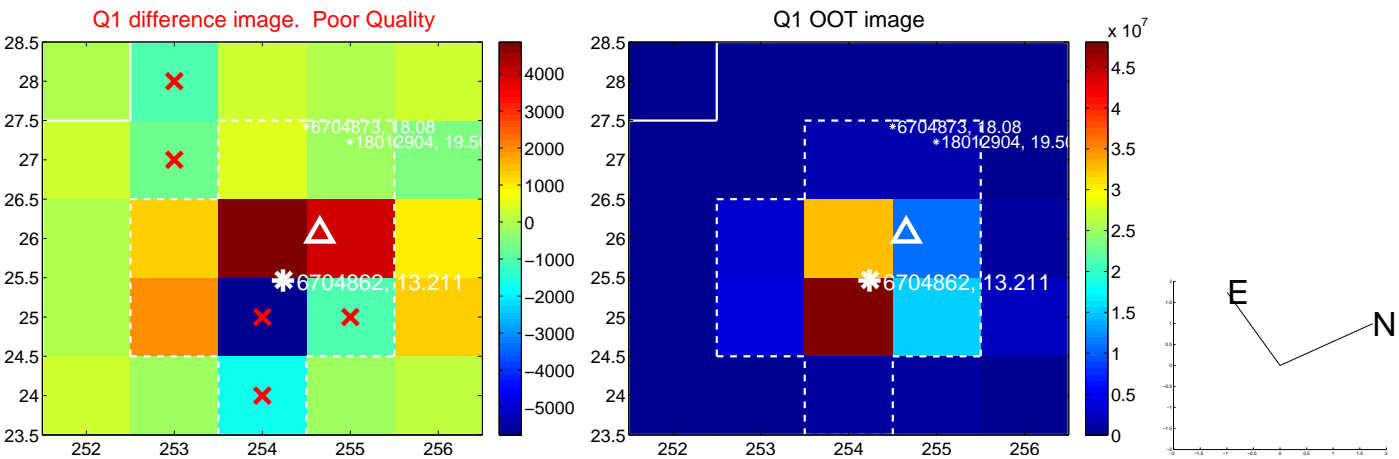
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.167 \pm 0.533$	0.31	$-0.045 \pm 0.381$	$-0.161 \pm 0.496$
PRF-fit source offset from KIC position	$0.378 \pm 0.485$	0.78	$-0.070 \pm 0.352$	$-0.371 \pm 0.465$
photometric centroid source offset	—	—	—	—

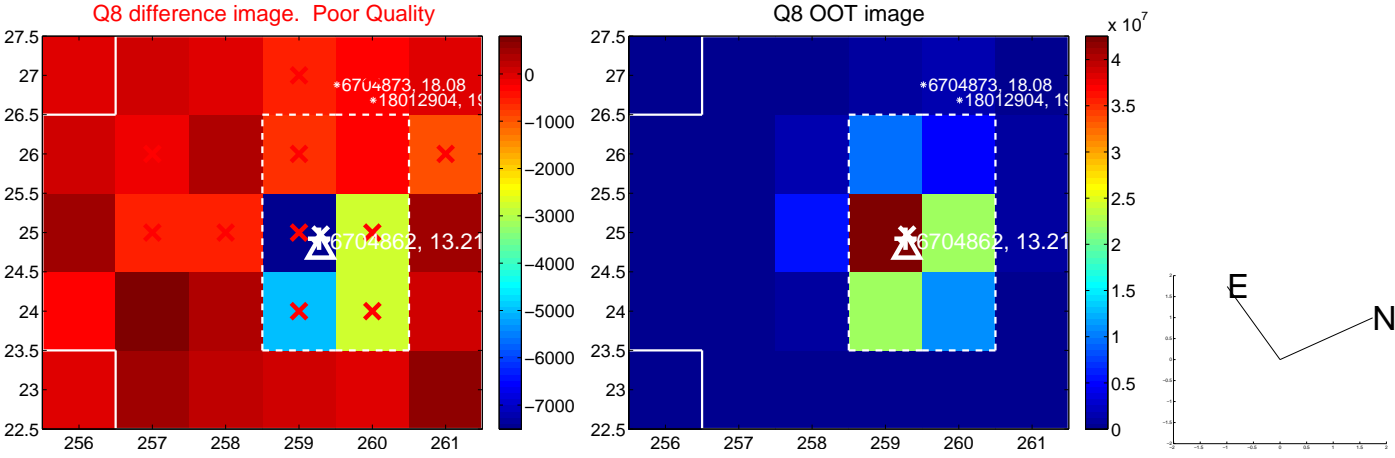
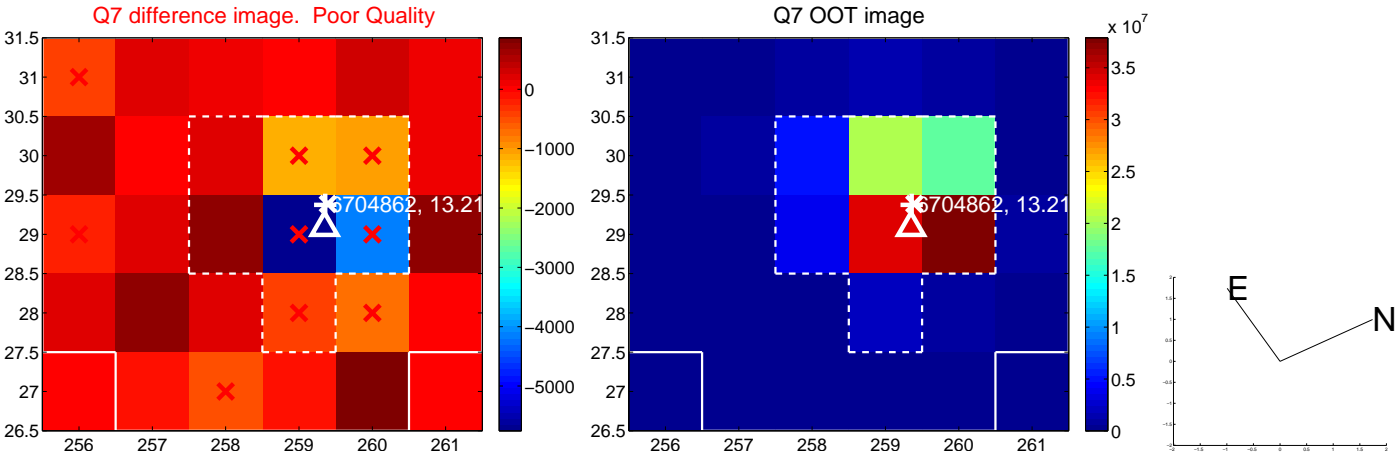
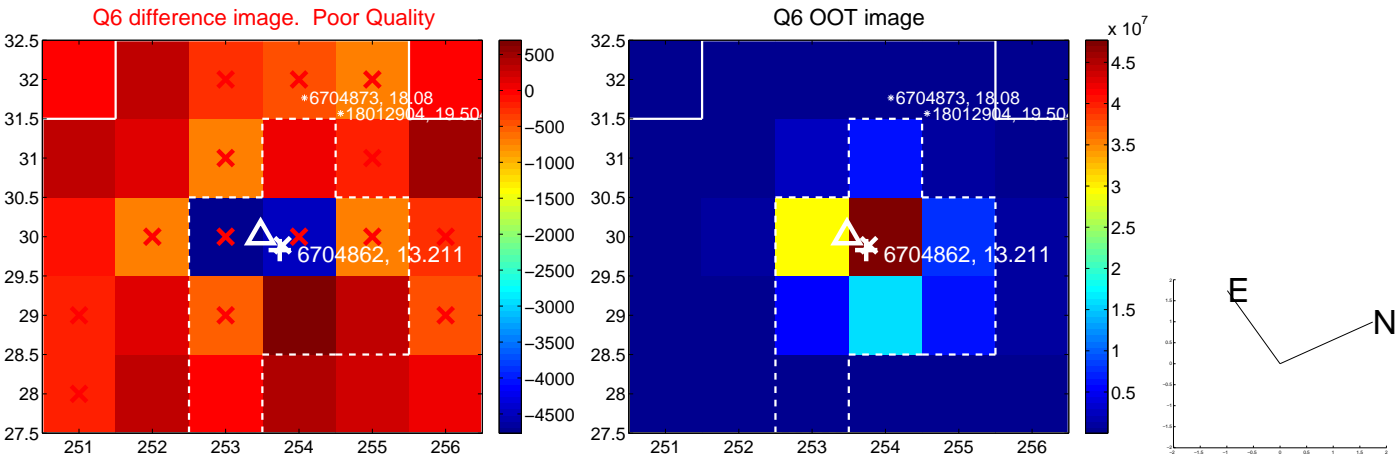
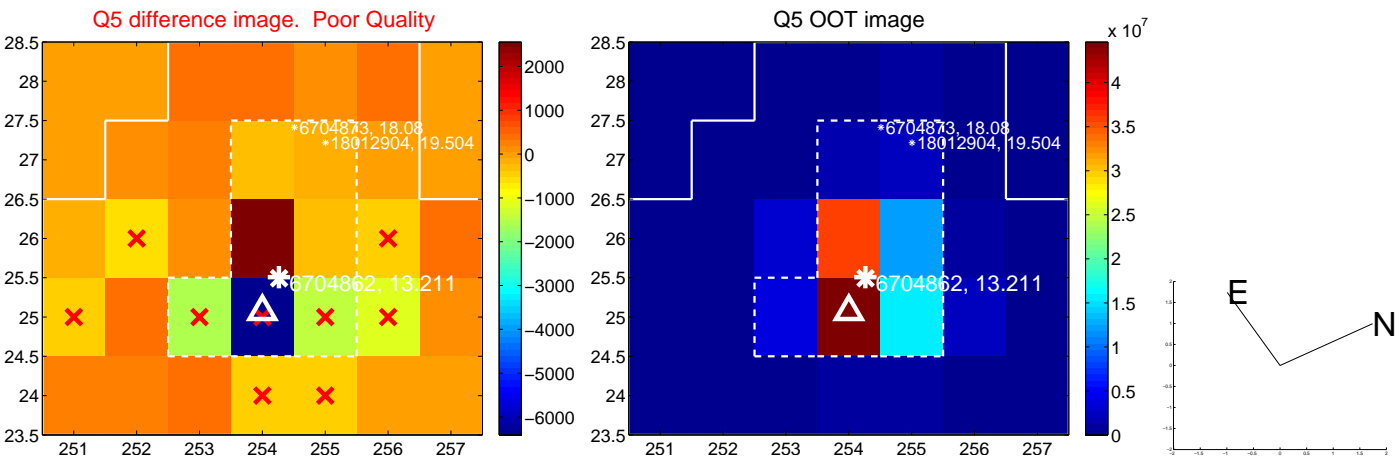


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

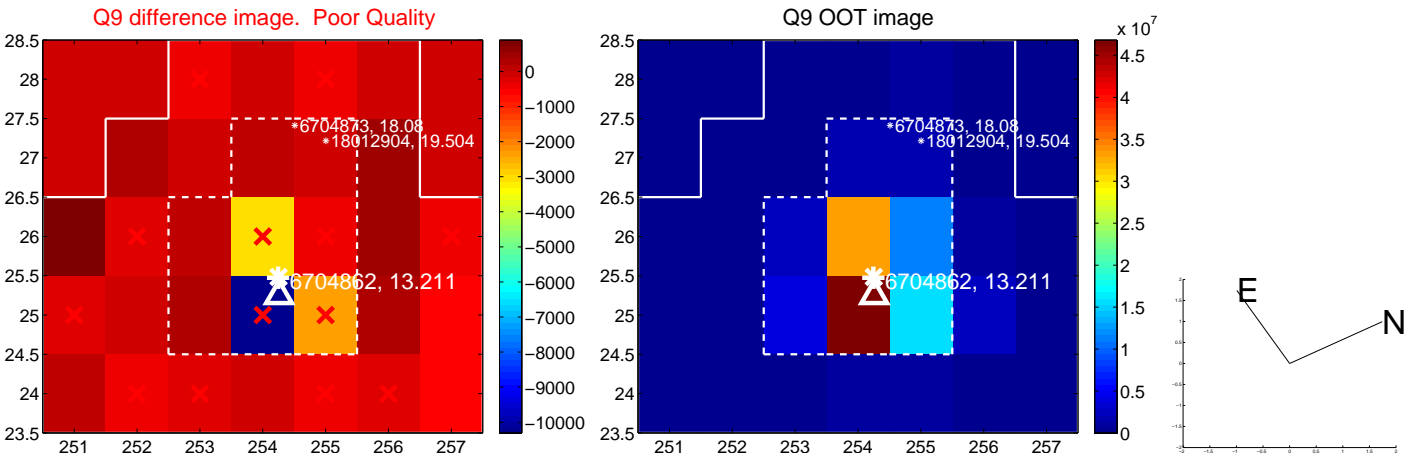


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

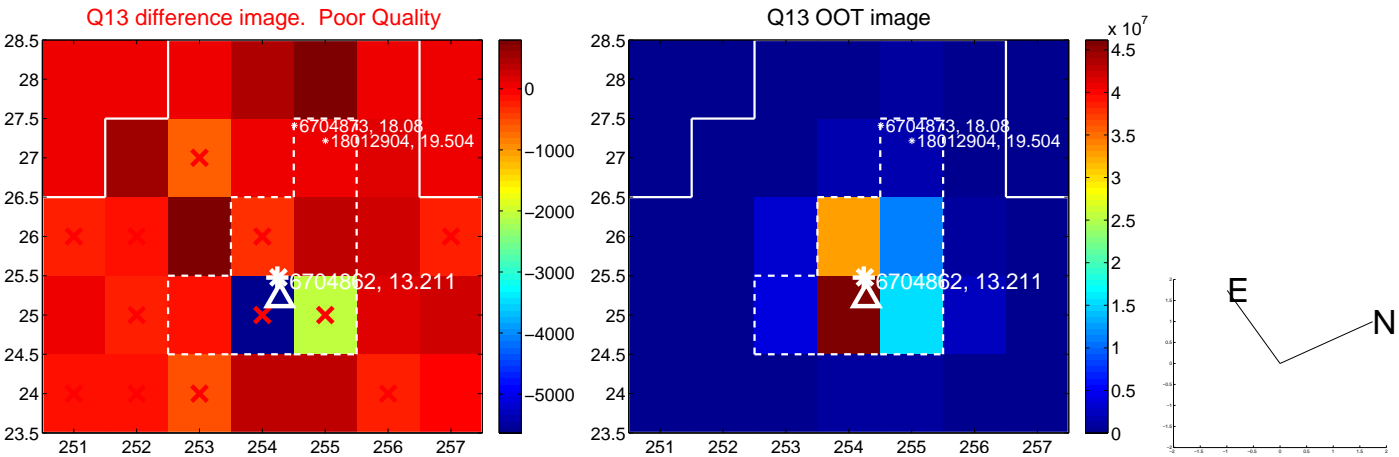




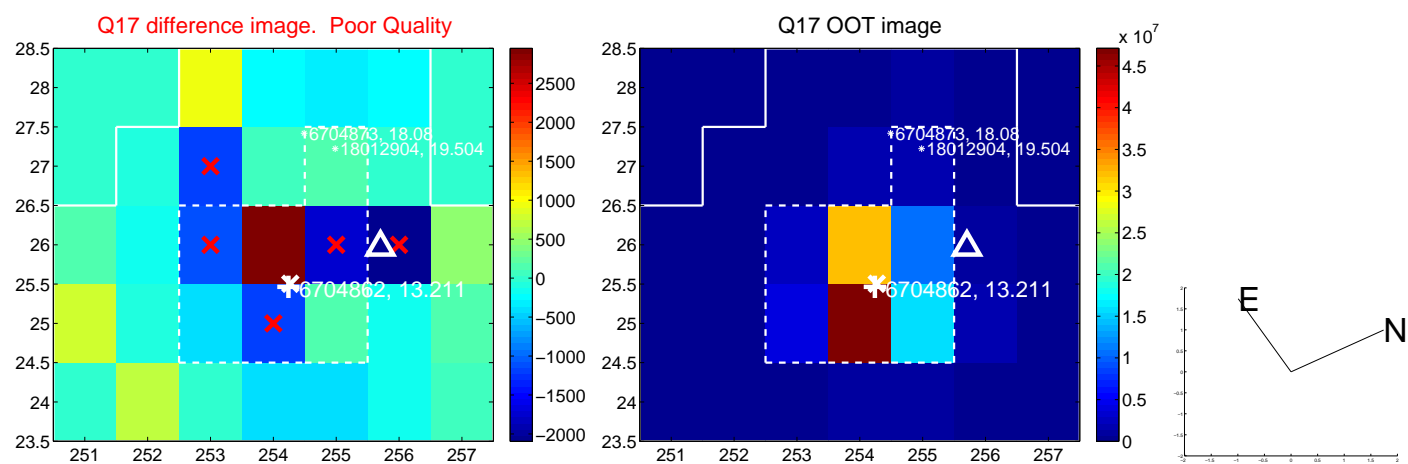
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



folded centroid time series figure for this object.



Declination



# KIC 006704862

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006704862-01	OBS	No	1.872681	131.992353	4.7	0.667	8.9	0.9	2.71	6711	0.62	11201.38
006704862-02	OBS	No	0.936709	131.769190	17.7	2.985	8.3	7.6	2.71	6711	1.33	28210.89
006704862-03	OBS	No	171.266268	297.998645	217.9	4.582	7.5	7.2	2.71	6711	4.40	27.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006704862-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006704862-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006704862-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

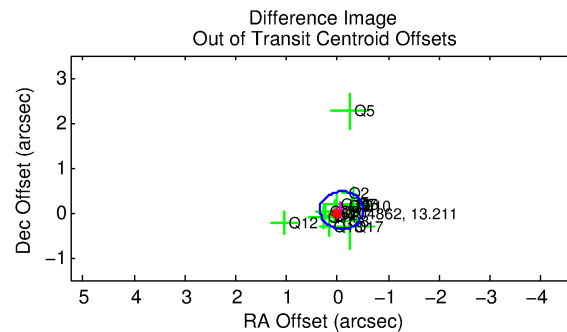
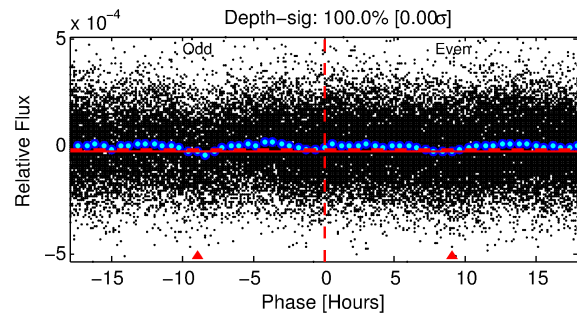
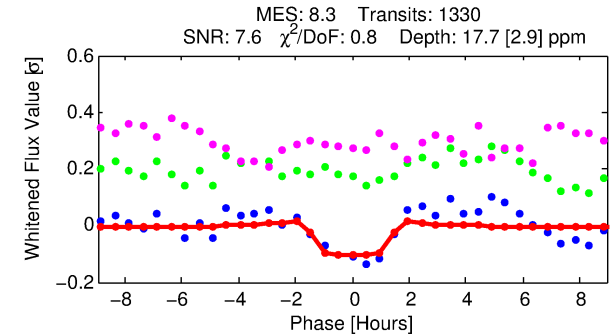
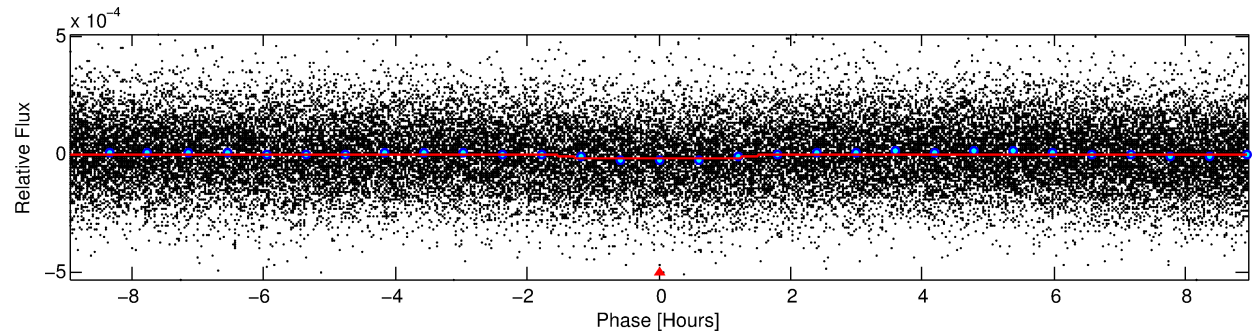
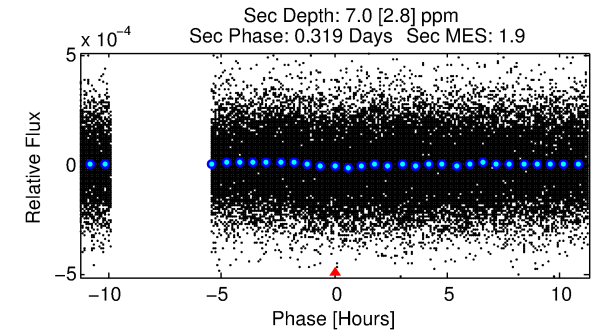
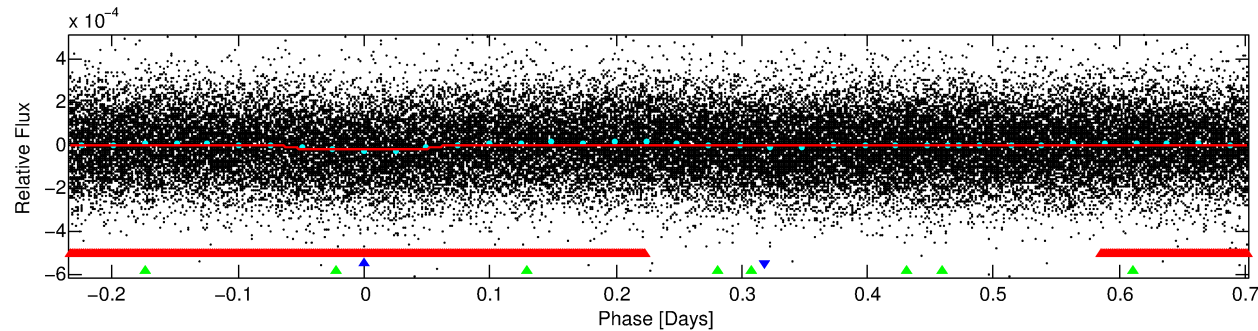
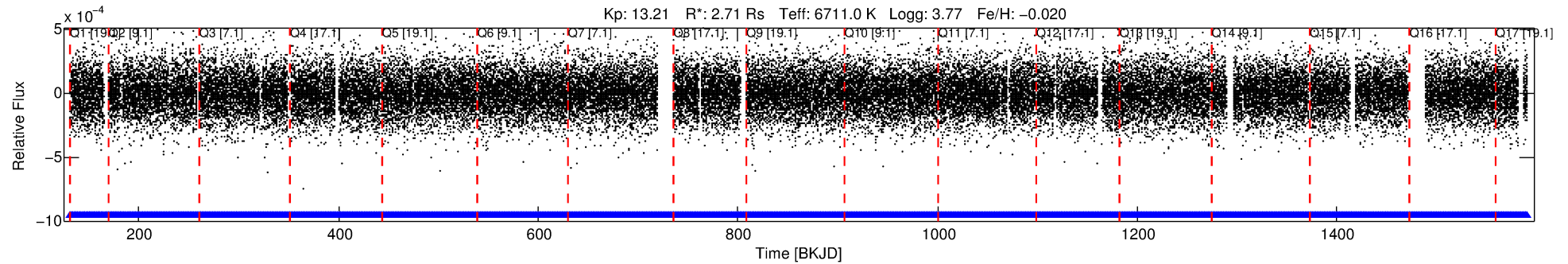
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006704862-02

No Significant Match Found

# DV One-Page Summary

KIC: 6704862 Candidate: 2 of 3 Period: 0.937 d



## DV Fit Results:

Period = 0.93671 [0.00001] d  
Epoch = 131.7692 [0.0040] BKJD  
Rp/R\* = 0.0045 [0.0016]  
a/R\* = 1.42 [1.55]  
b = 0.90 [0.46]  
Seff = 28210.89 [14583.28]  
Teq = 3305 [427] K  
Rp = 1.33 [0.67] Re  
a = 0.0218 [0.0070] AU  
Ag = 1.03 [1.00] [0.03σ]  
Teffp = 5142 [1090] K [1.57σ]

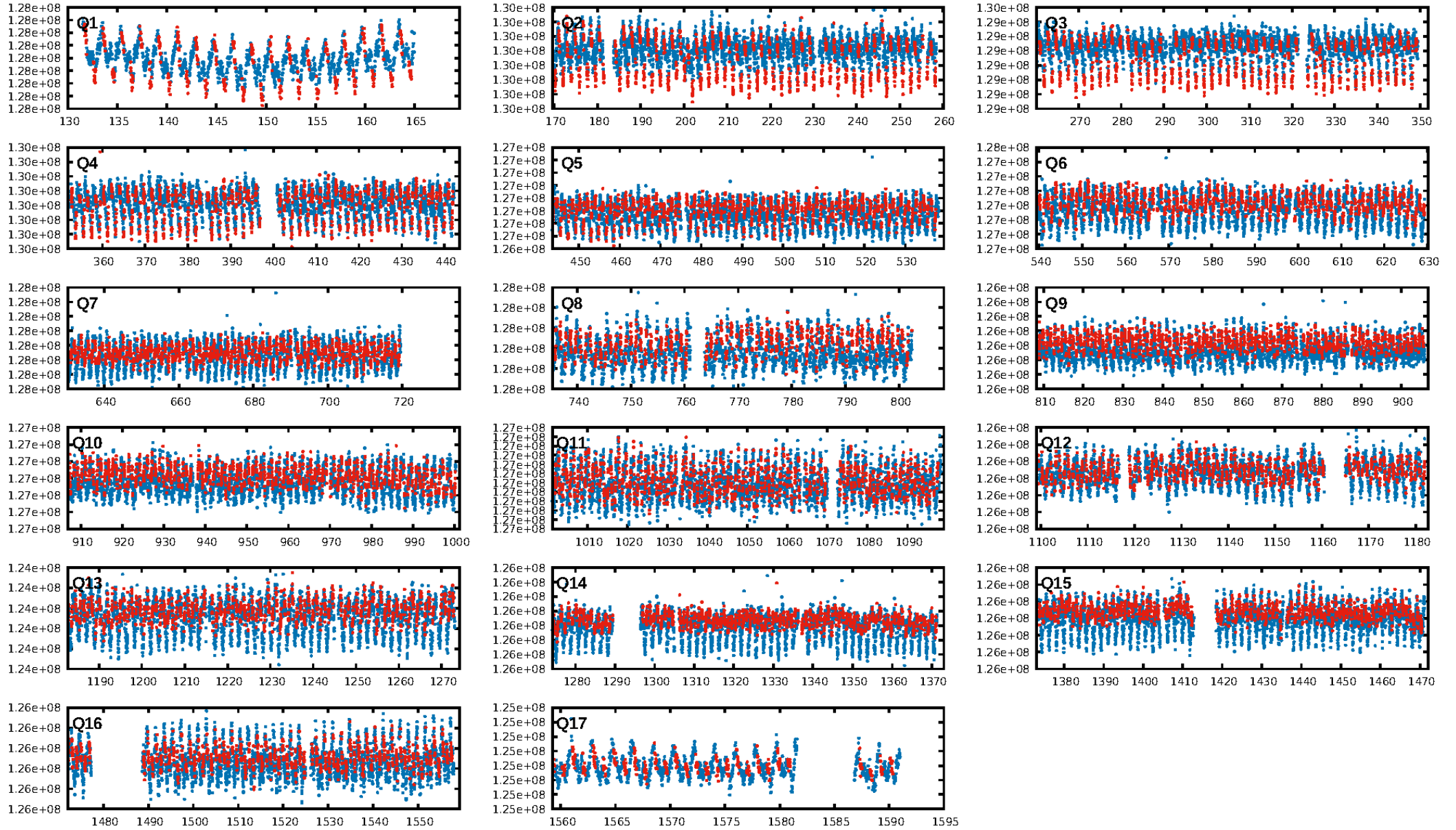
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [7.34σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.07e-13  
RollingBand-fgt: 1.00 [1266/1266]  
GhostDiagnostic-chr: -10.26  
Centroid-sig: 83.5%  
Centroid-so: 0.541 arcsec [0.58σ]  
OotOffset-rm: 0.093 arcsec [0.66σ]  
OotOffset-st: 4/3/4/5 [16]  
KicOffset-rm: 0.158 arcsec [1.48σ]  
KicOffset-st: 4/3/4/5 [16]  
DiffImageQuality-fgm: 0.50 [8/16]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:20:54 Z

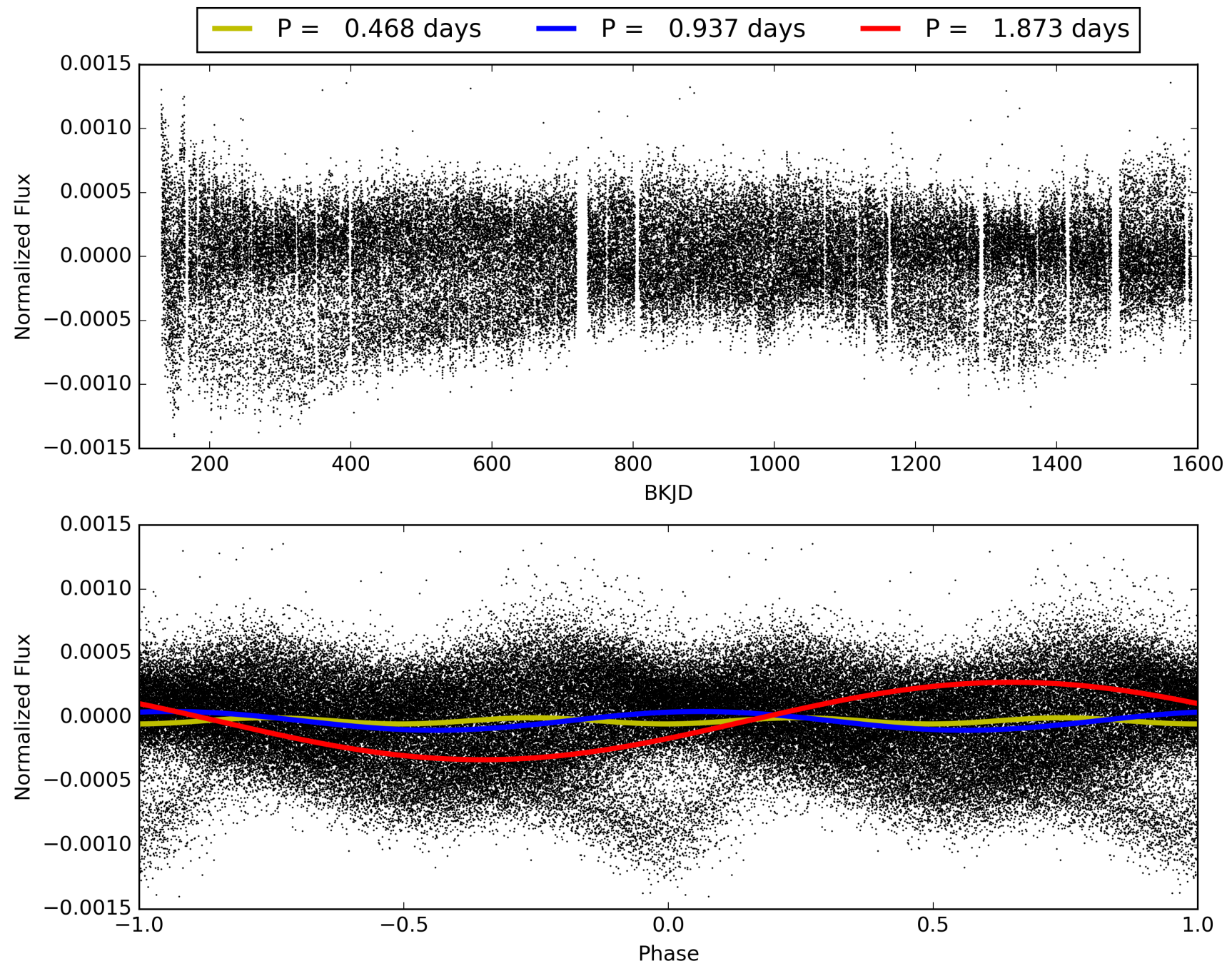
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006704862-02, PDC Light Curves



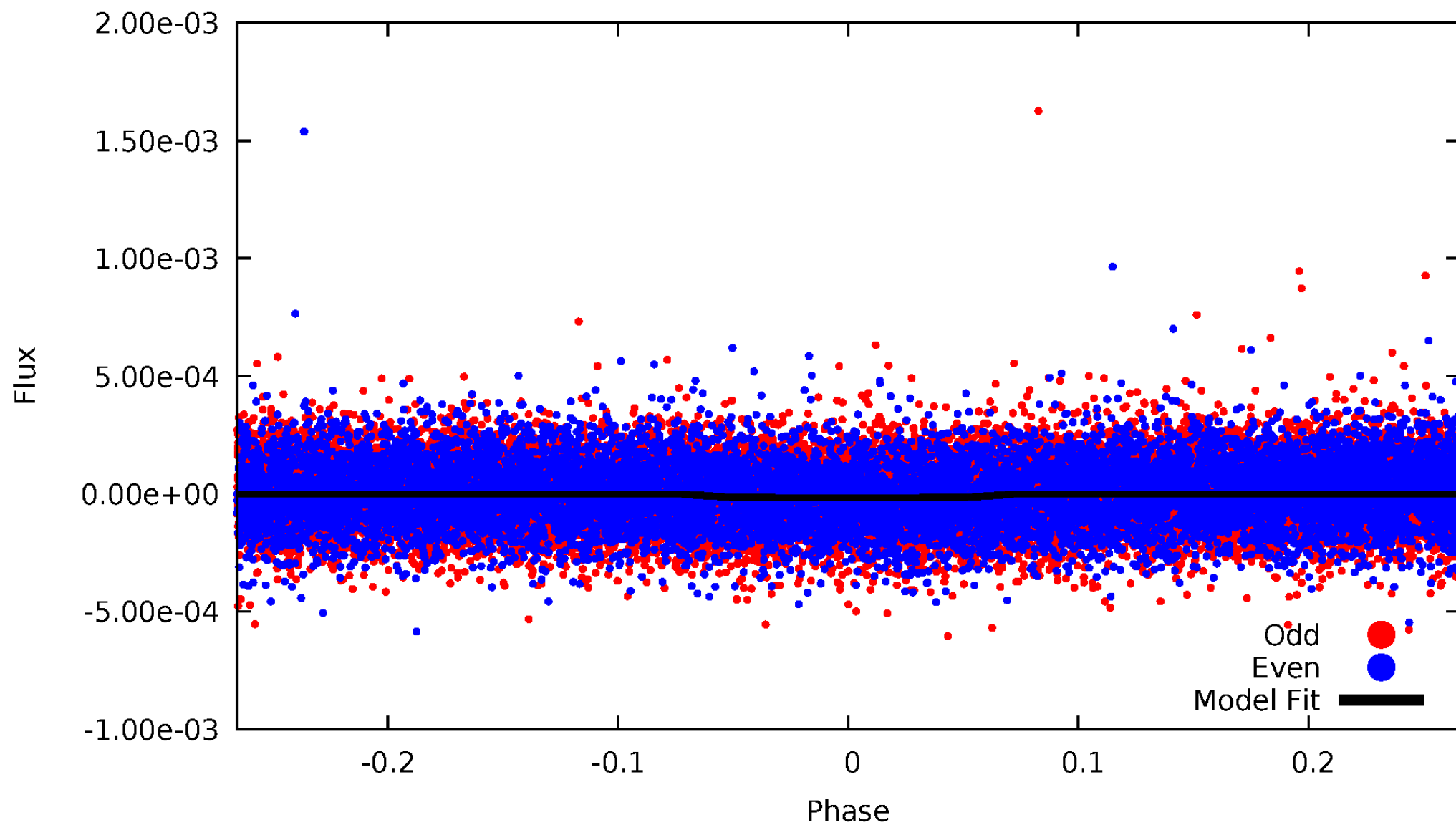


TCE 006704862-02



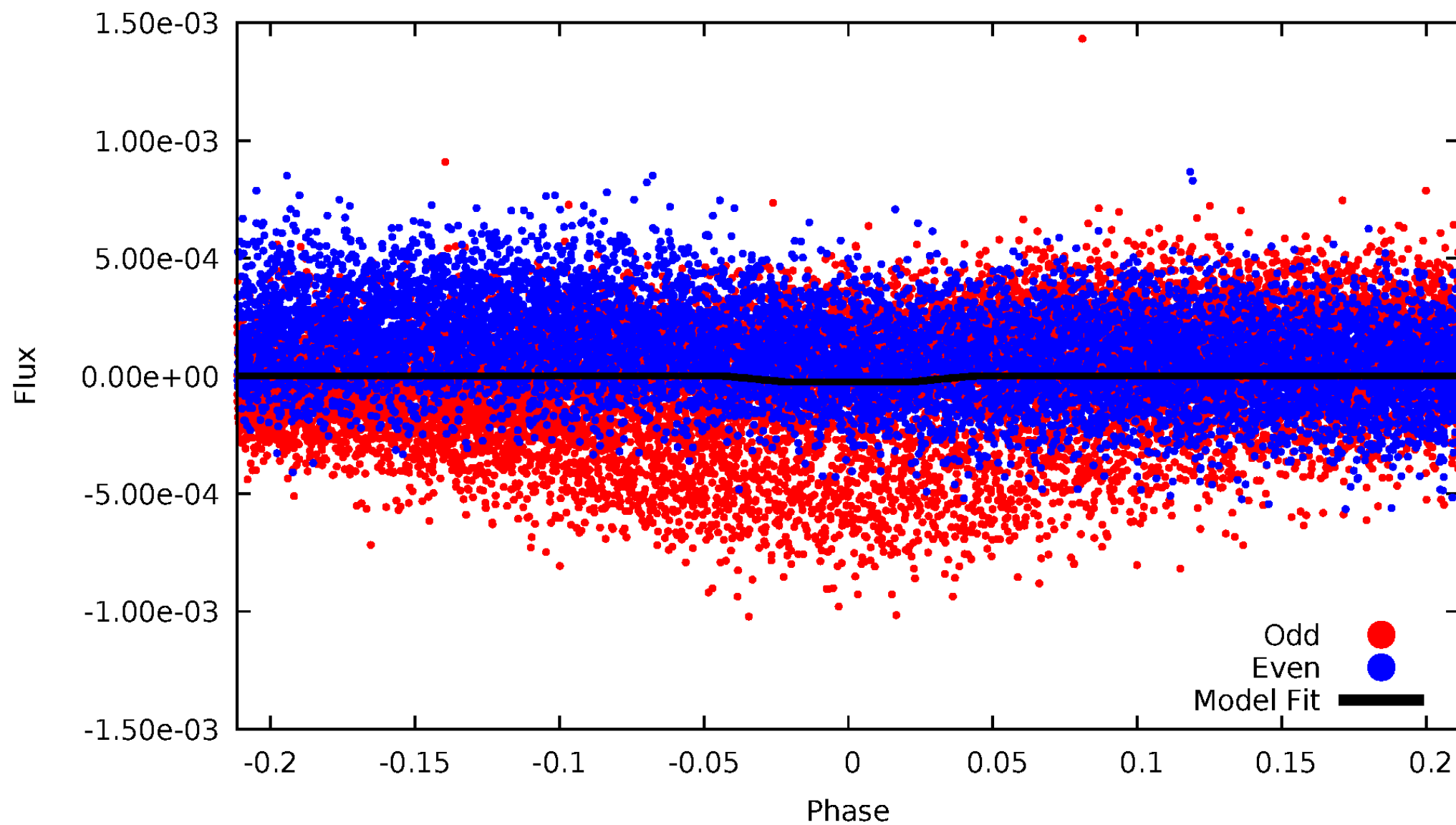
# DV Odd/Even

TCE 006704862-02



# ALT Odd/Even

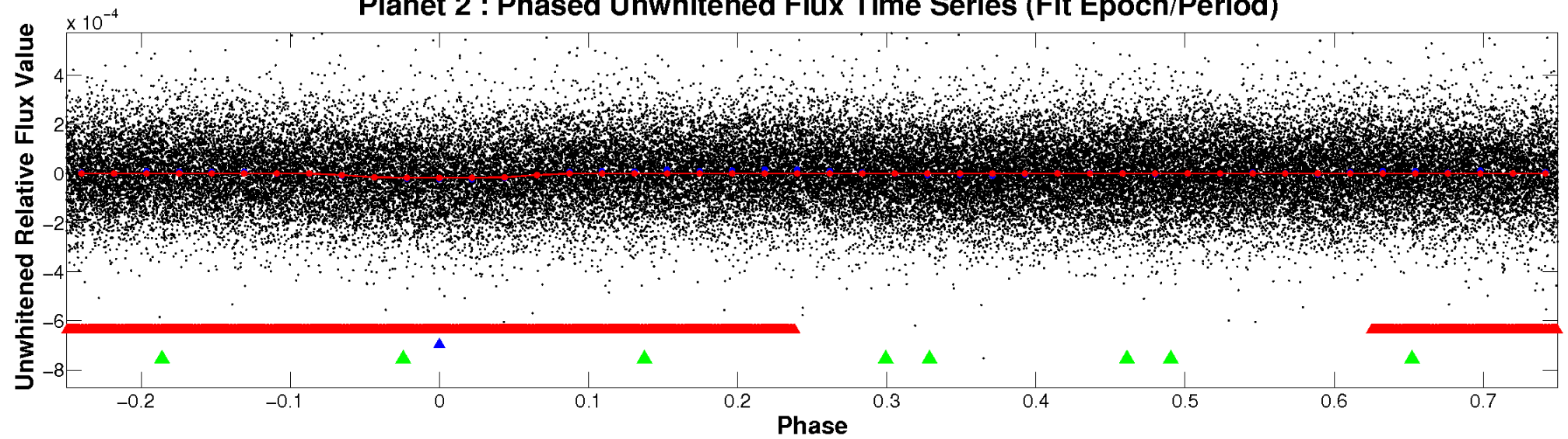
TCE 006704862-02



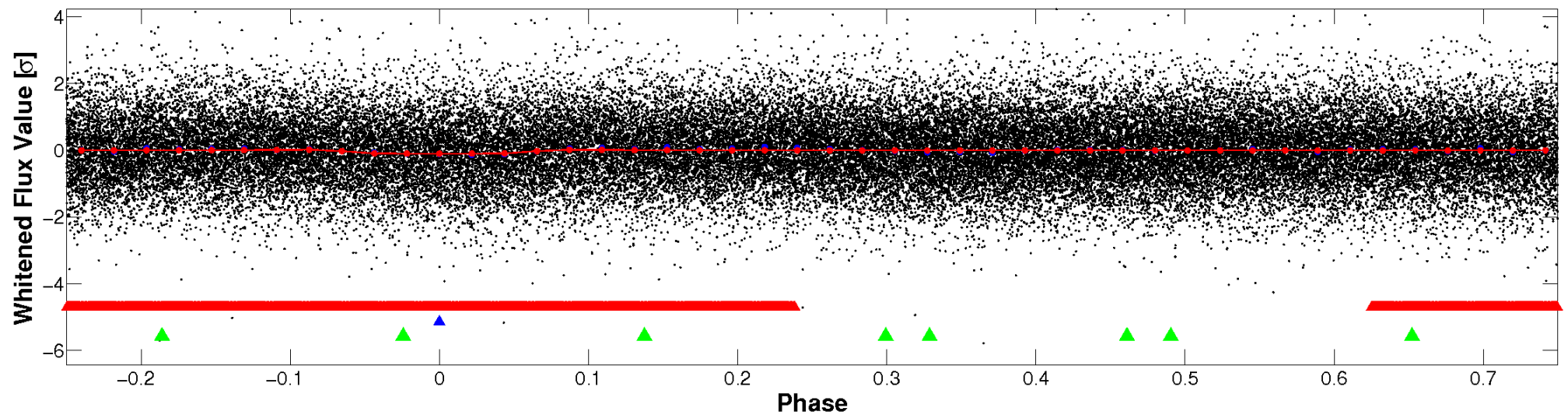


# Non-Whitened Vs. Whitened Light Curve

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

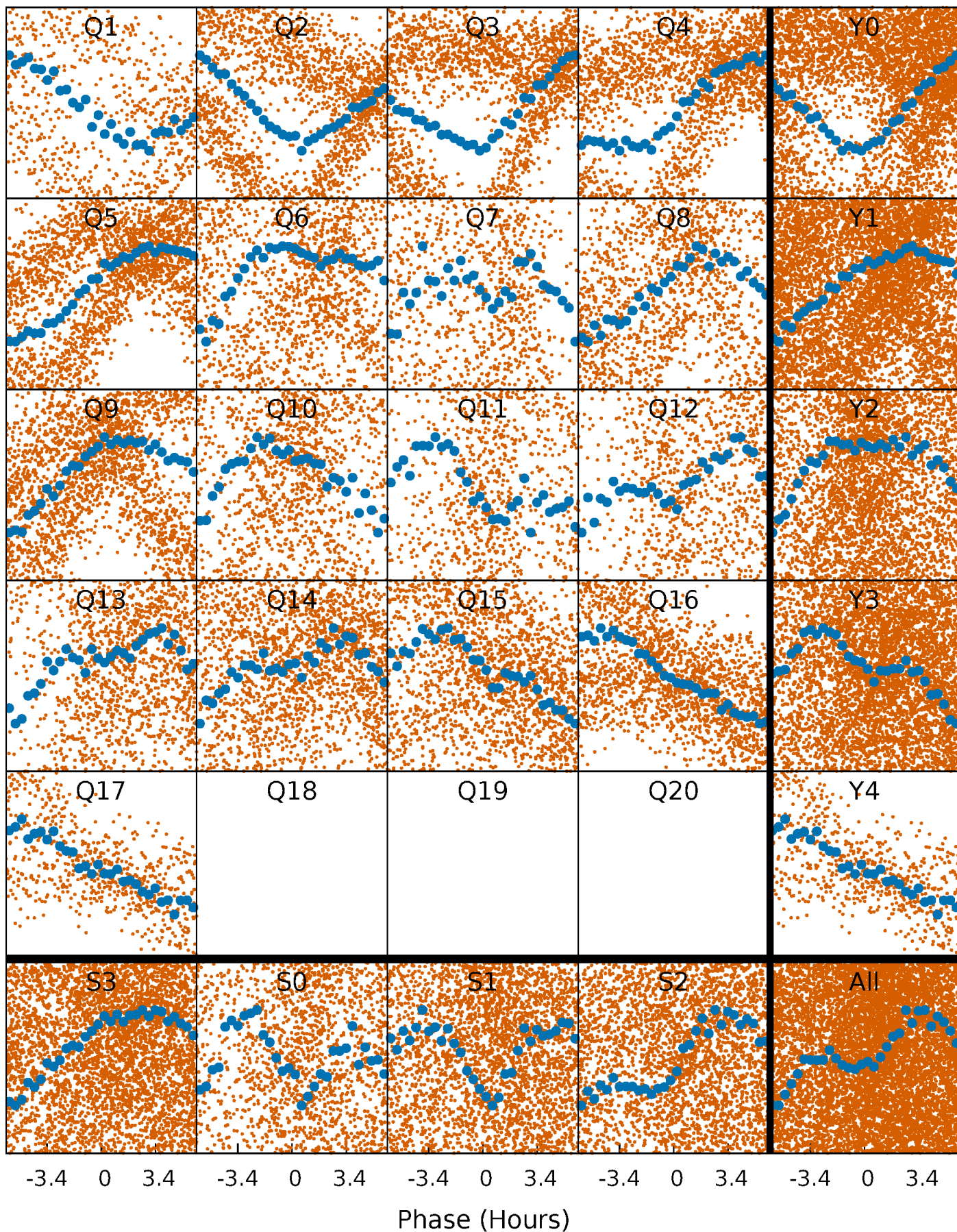


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

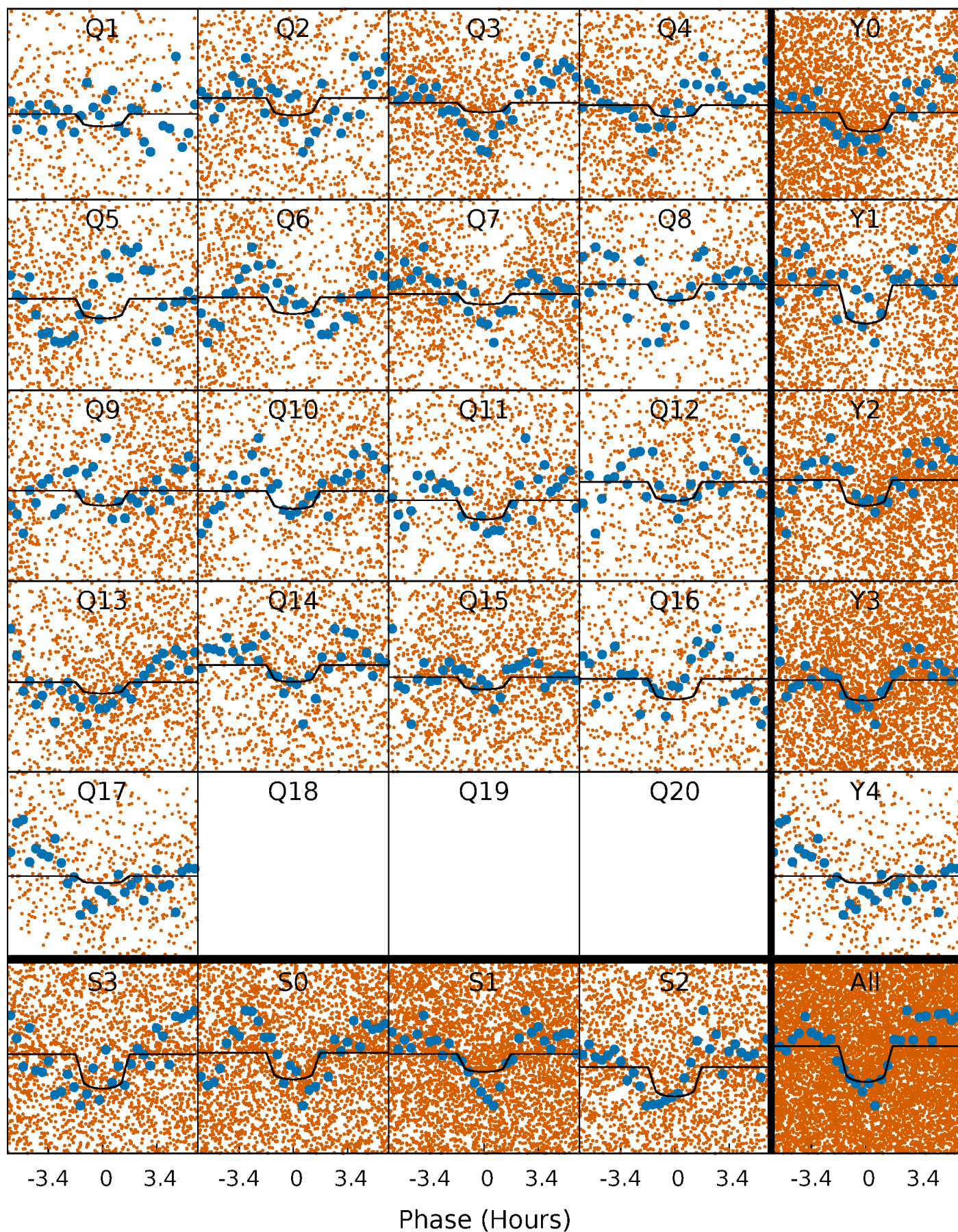
TCE 006704862-02   P= 0.936709 Days    $T_0=131.769190$  (BKJD)





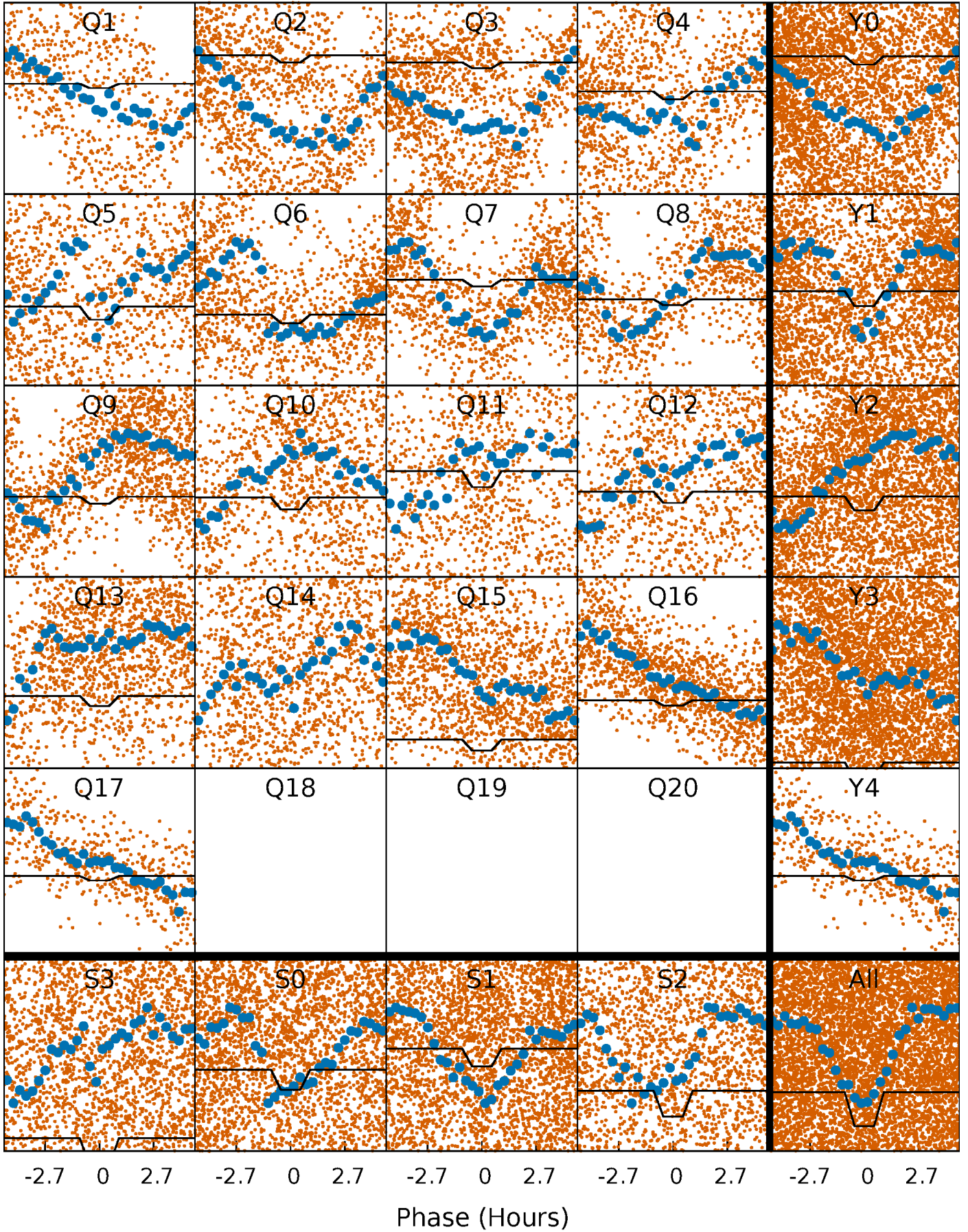
# DV Quarter-Phased Transit Curves

TCE 006704862-02   P= 0.936709 Days    $T_0=131.769190$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006704862-02   P= 0.936727 Days    $T_0=131.766504$  (BKJD)

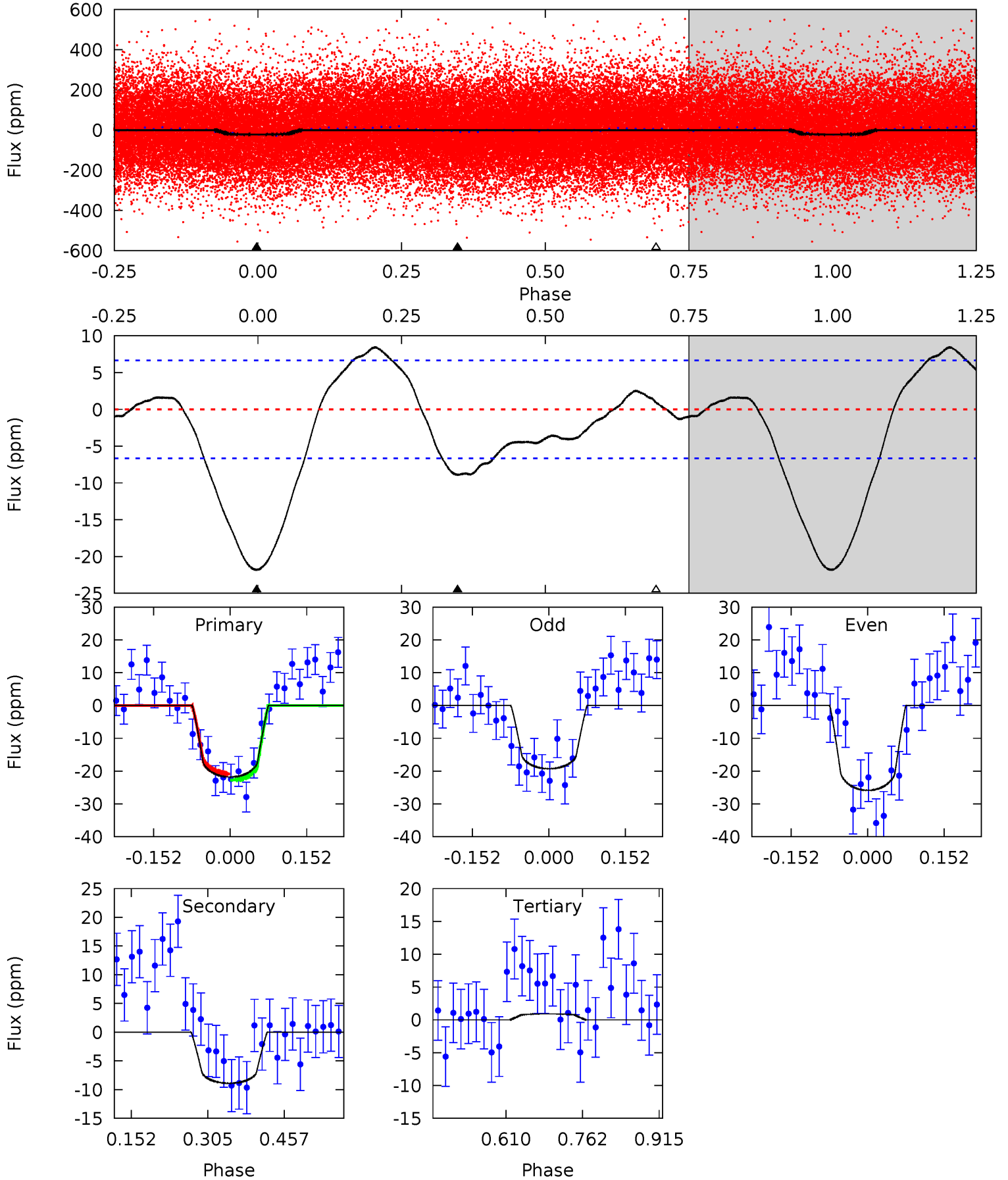




# DV Model-Shift Uniqueness Test

006704862-02, P = 0.936709 Days, E = 130.832481 Days

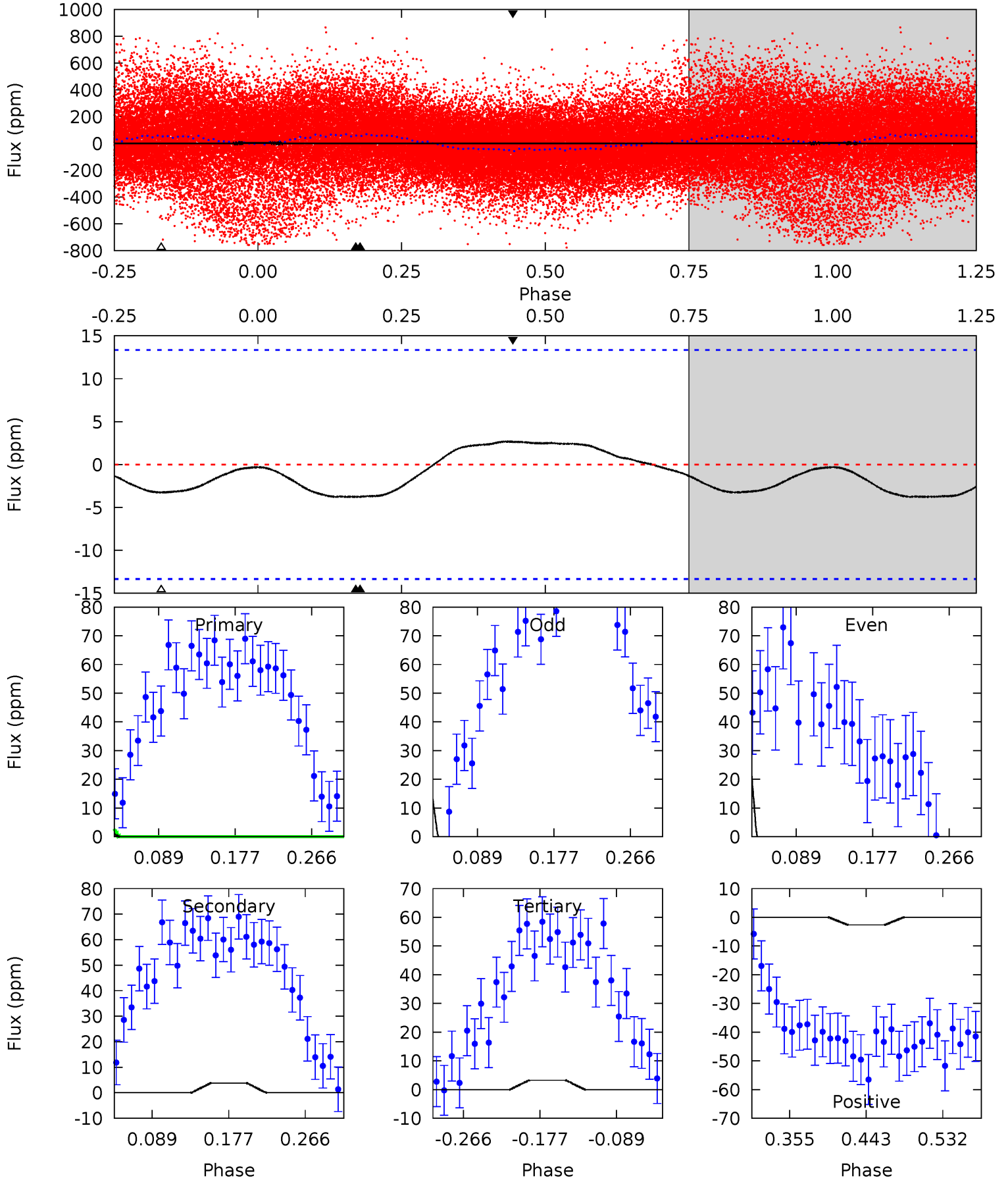
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	5.99	-0.62	0	4.48	1.43	2.06	15.3	14.7	6.61	5.99	2.15	1.10	0.28	0.62



# Alt Model-Shift Uniqueness Test

006704862-02, P = 0.936727 Days, E = 130.829777 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
1.30	1.29	1.12	0.91	4.59	1.70	0.68	0.18	0.38	0.17	0.38	5.99	0.01	0.42	0.92





### Stellar Parameters For KIC 006704862

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6711^{+161}_{-202}$	$3.767^{+0.292}_{-0.097}$	$-0.020^{+0.250}_{-0.250}$	$2.715^{+0.499}_{-0.927}$	$1.573^{+0.222}_{-0.271}$	$0.111^{+0.223}_{-0.034}$
	+2%/-3%	+8%/-3%	+1250%/-1250%	+18%/-34%	+14%/-17%	+201%/-31%
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 006704862-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-9 \pm 1$	$1.27^{+0.53}_{-0.50}$	$4526^{+277}_{-421}$	$5119^{+1669}_{-836}$	$1.426^{+2.514}_{-0.711}$
Alt.	$-4 \pm 3$	$1.41^{+0.54}_{-0.49}$	$4530^{+284}_{-442}$	$3526^{+1419}_{-7273}$	$0.460^{+0.910}_{-0.350}$

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

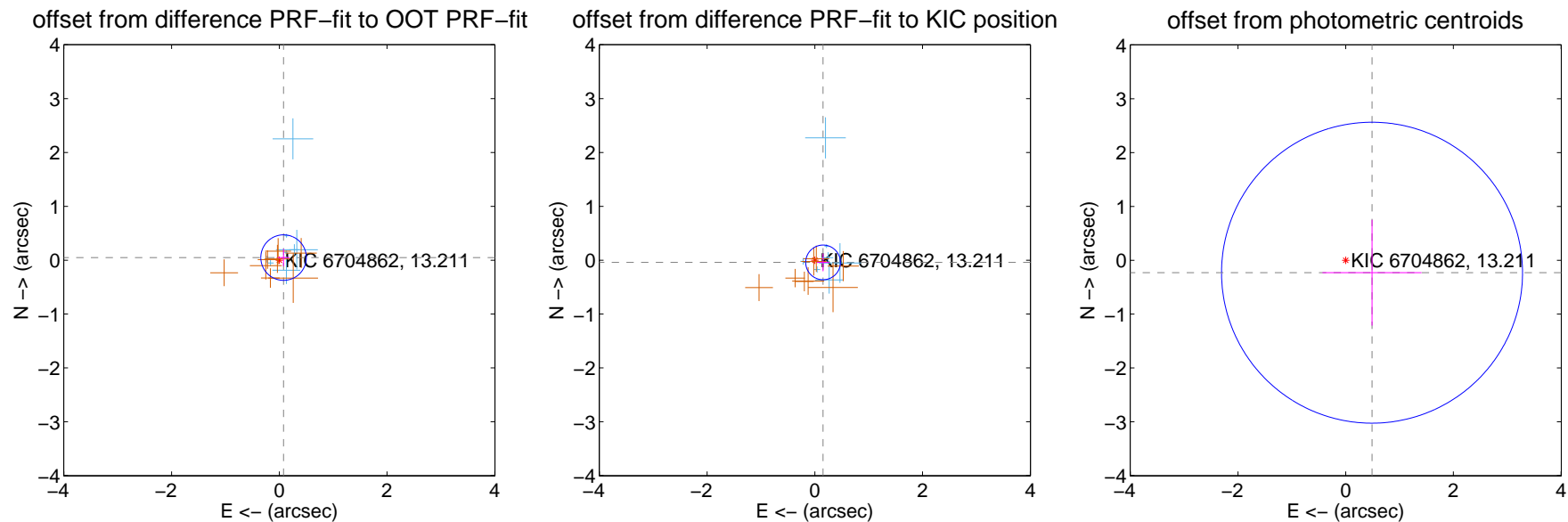
## DV Centroid Data

Supplemental centroid analysis for 006704862-02. Kepler magnitude: 13.21. Transit SNR 7.60

There are 8 quarters with good PRF difference image offsets

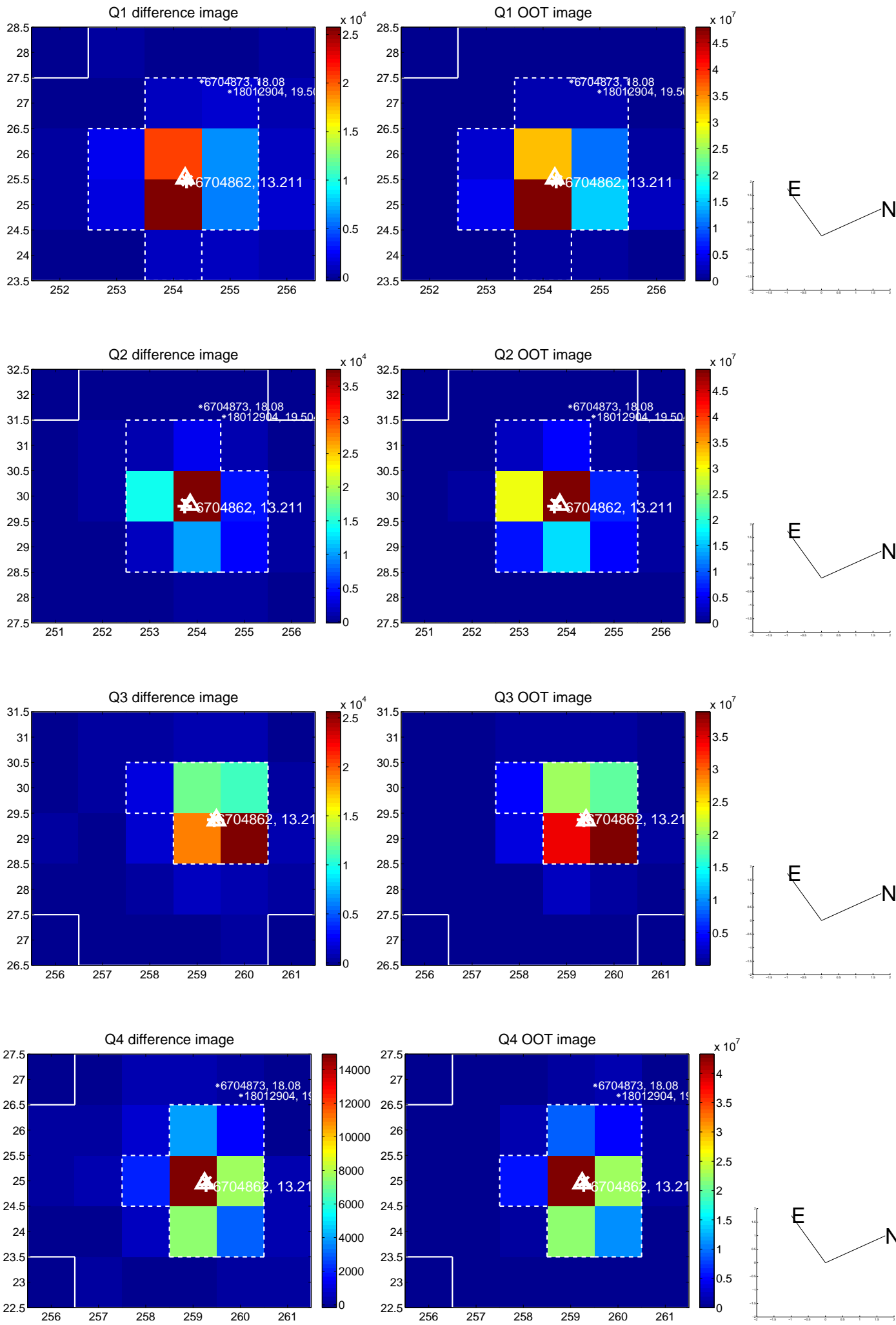
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.093 \pm 0.141$	0.66	$-0.079 \pm 0.109$	$0.048 \pm 0.161$
PRF-fit source offset from KIC position	$0.158 \pm 0.107$	1.48	$-0.153 \pm 0.114$	$-0.041 \pm 0.165$
photometric centroid source offset	$0.54 \pm 0.93$	0.58	$-0.49 \pm 0.92$	$-0.23 \pm 0.98$

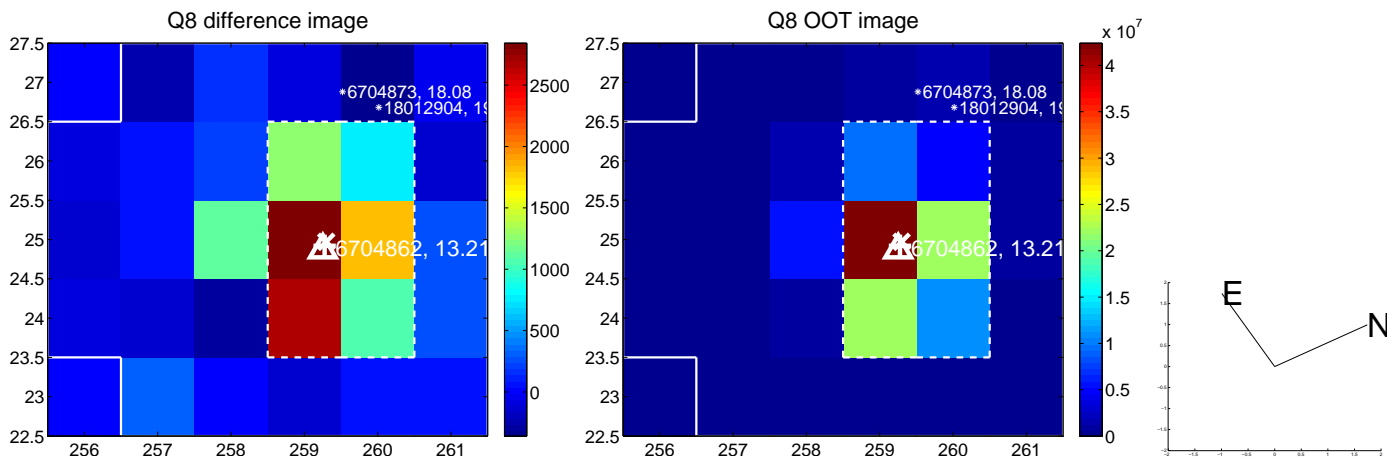
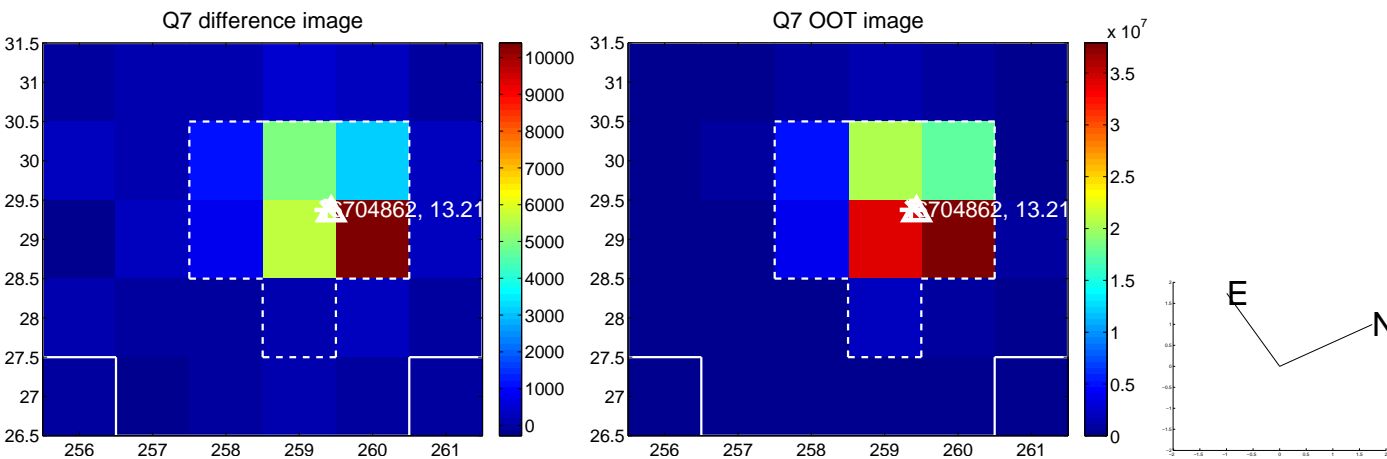
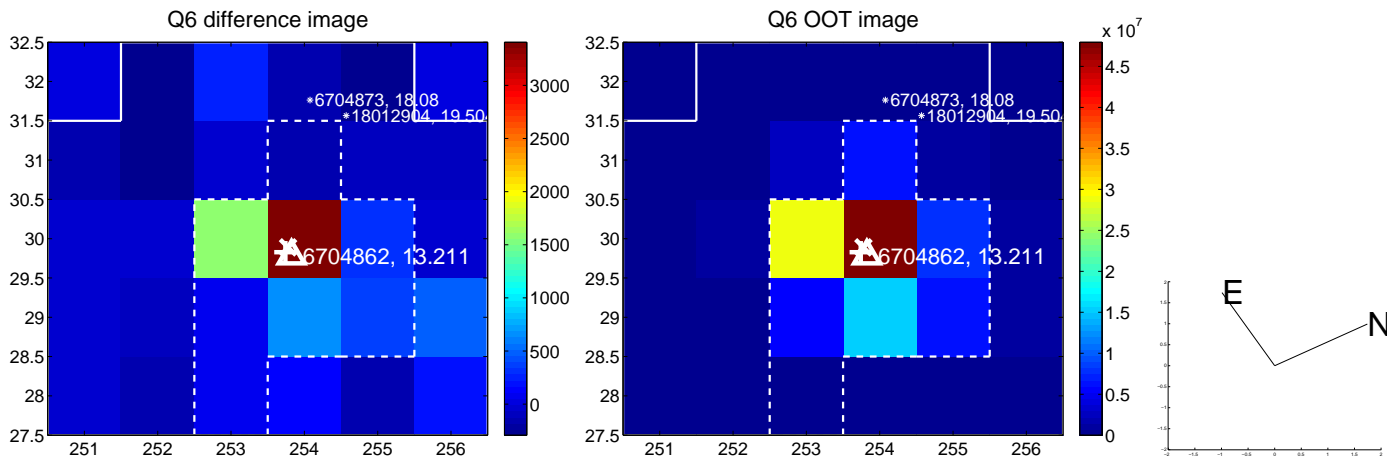
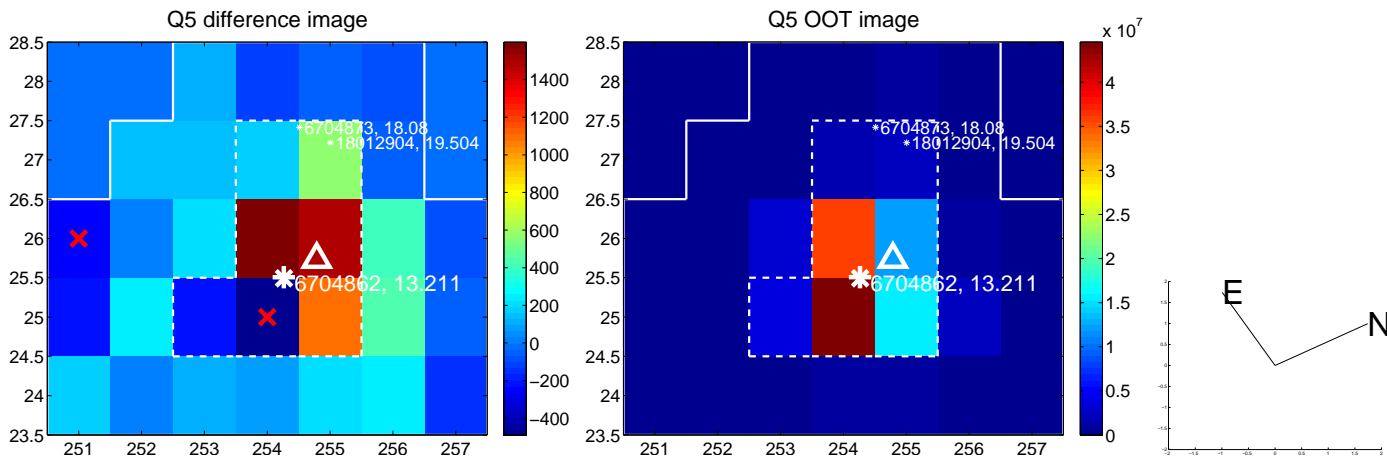


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

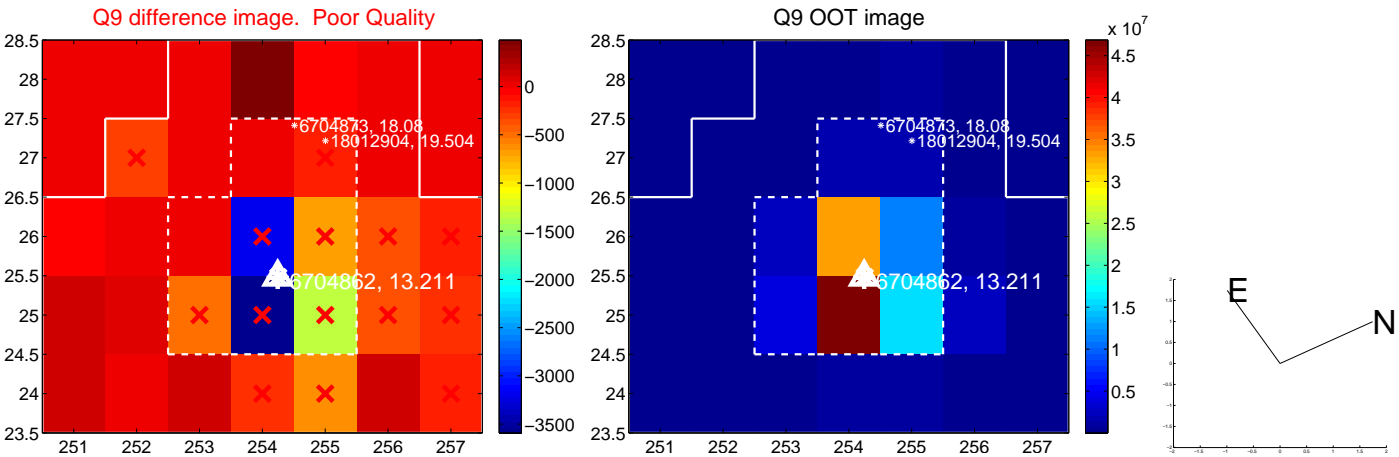
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



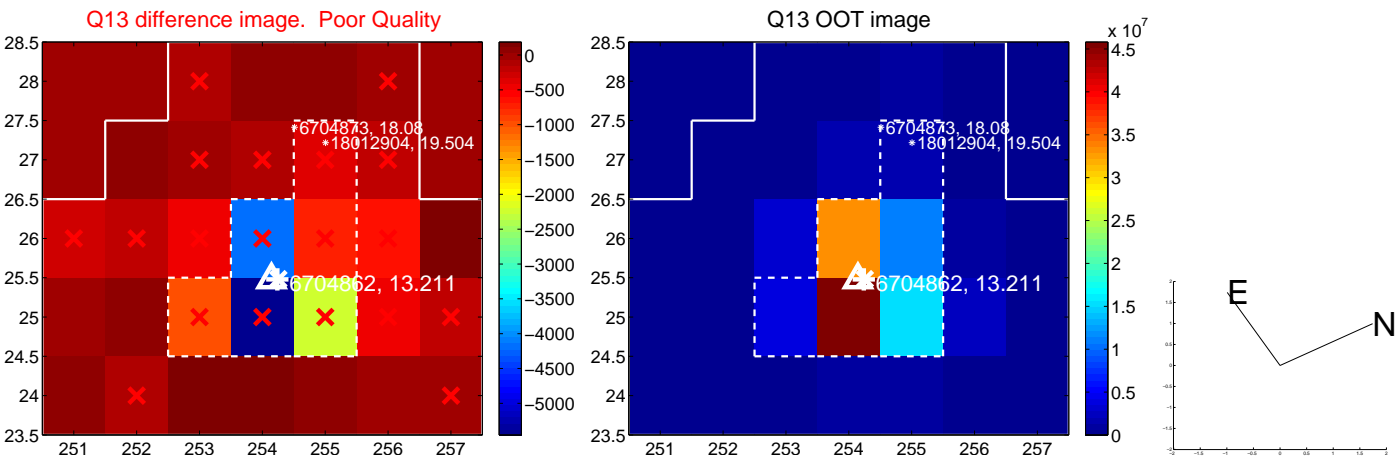
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

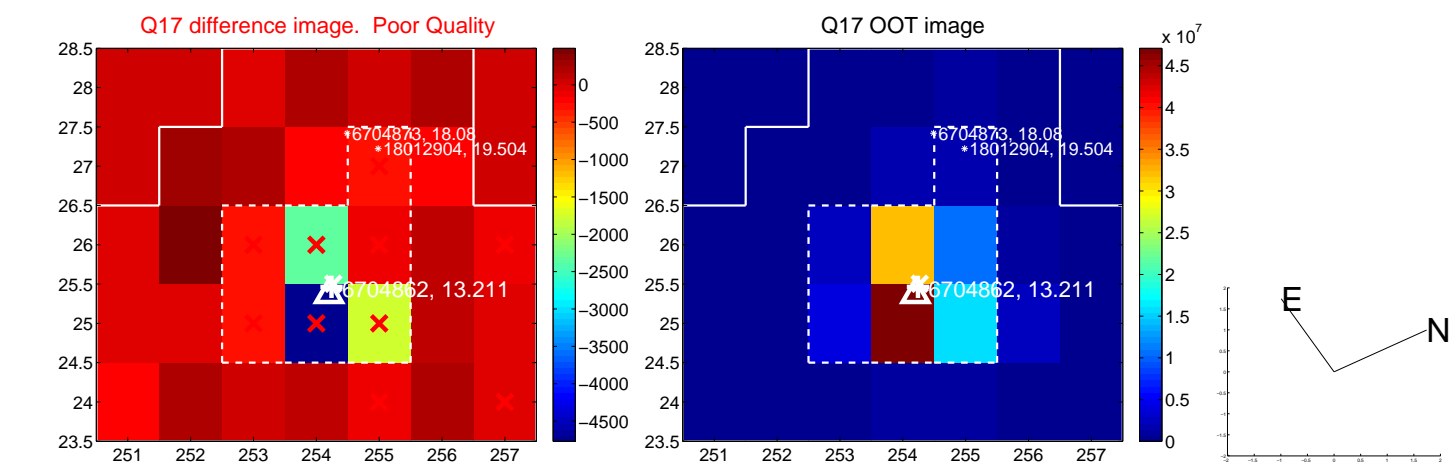


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

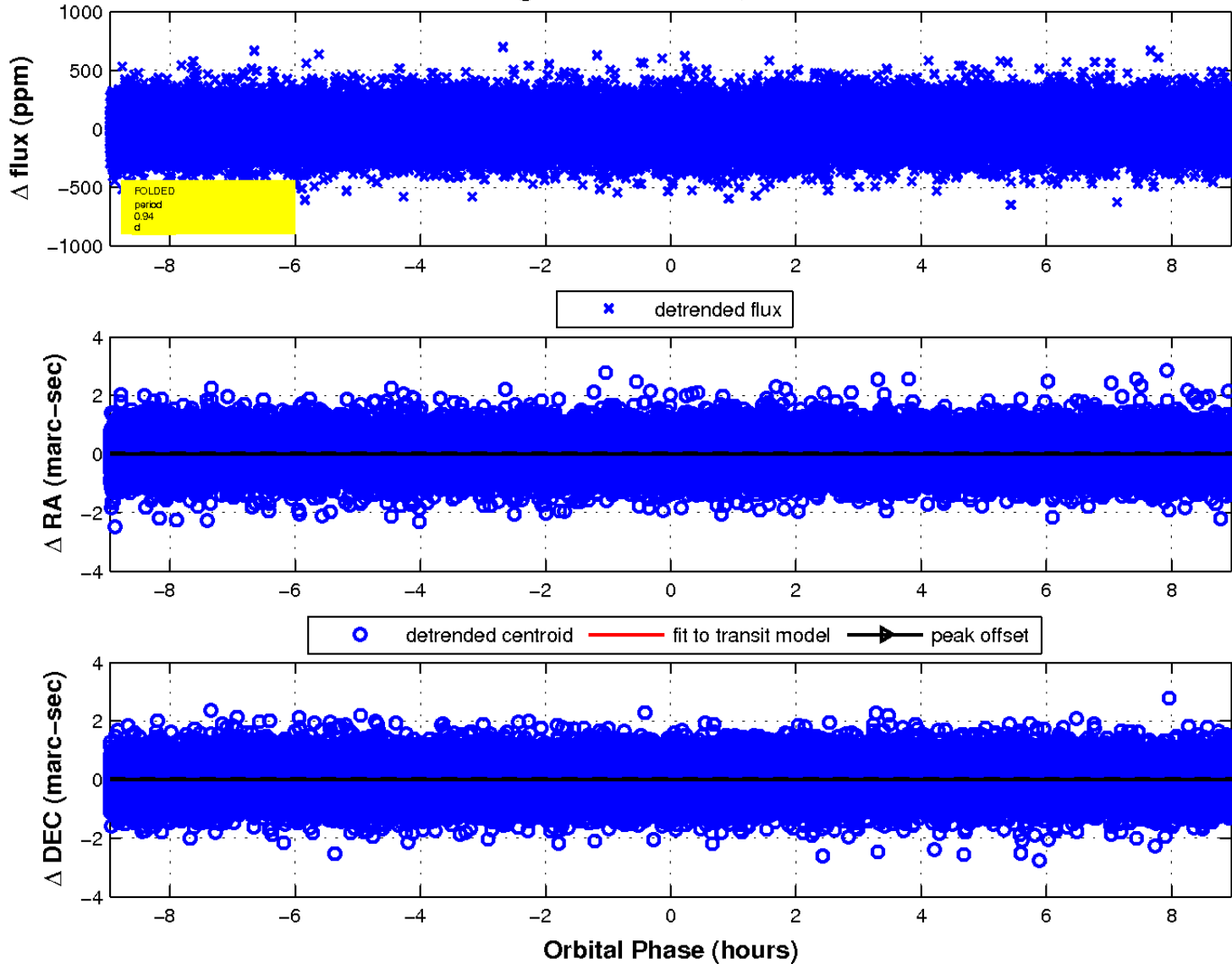




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 3



Declination

# KIC 006704862

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006704862-01	OBS	No	1.872681	131.992353	4.7	0.667	8.9	0.9	2.71	6711	0.62	11201.38
006704862-02	OBS	No	0.936709	131.769190	17.7	2.985	8.3	7.6	2.71	6711	1.33	28210.89
006704862-03	OBS	No	171.266268	297.998645	217.9	4.582	7.5	7.2	2.71	6711	4.40	27.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006704862-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006704862-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006704862-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

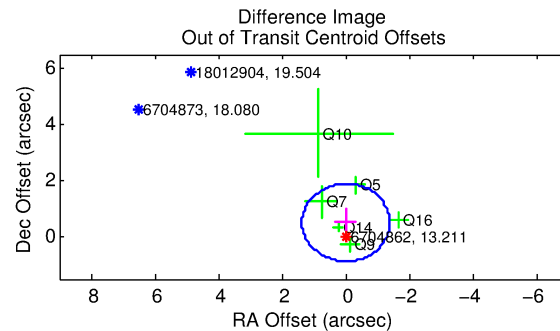
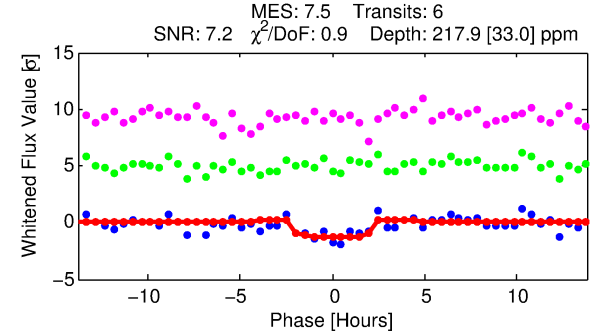
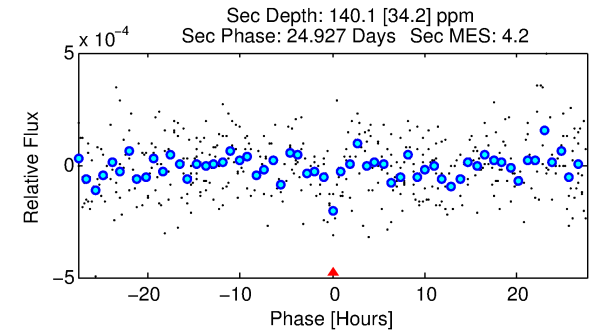
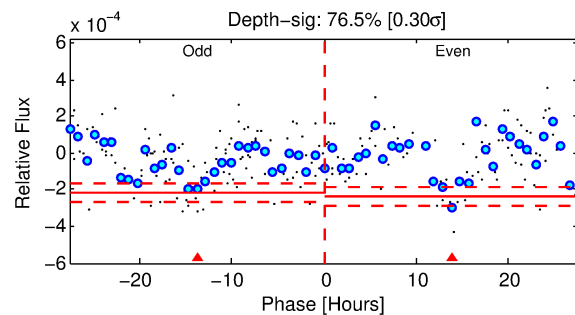
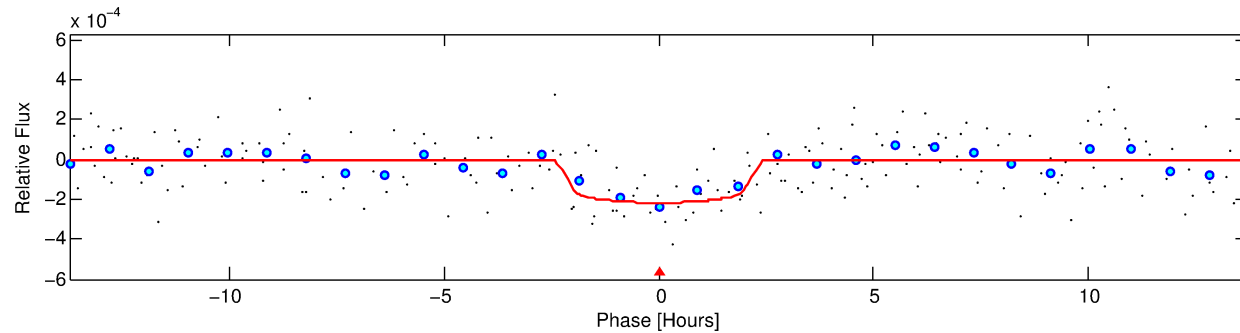
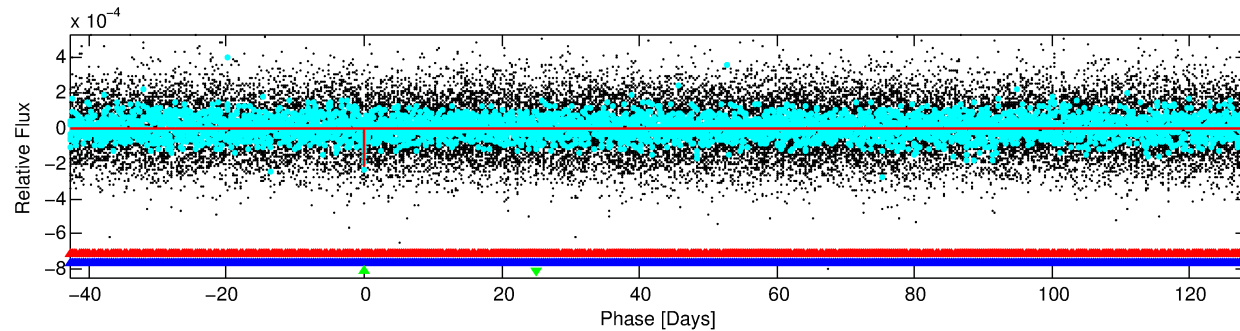
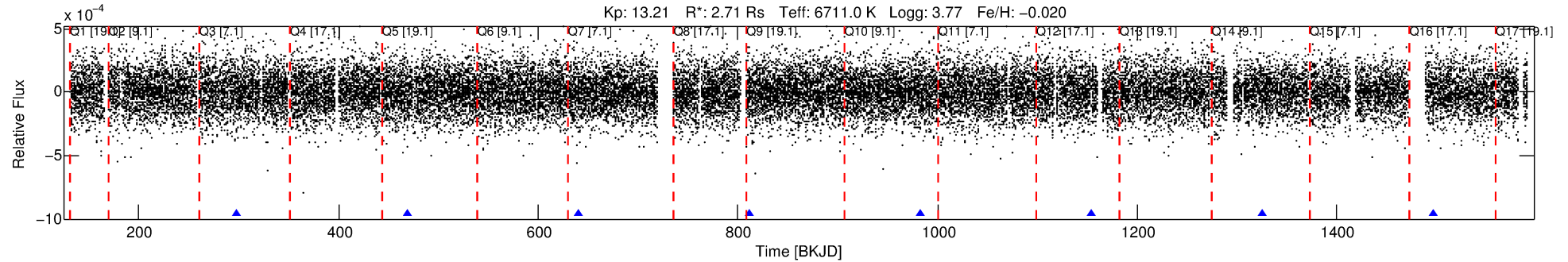
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006704862-03

No Significant Match Found

# DV One-Page Summary

KIC: 6704862 Candidate: 3 of 3 Period: 171.266 d



## DV Fit Results:

Period = 171.26627 [0.00200] d  
Epoch = 297.9986 [0.0092] BKJD  
Rp/R\* = 0.0149 [0.0085]  
a/R\* = 182.63 [584.53]  
b = 0.79 [1.55]  
Seff = 27.18 [14.05]  
Teq = 582 [75] K  
Rp = 4.40 [2.93] Re  
a = 0.7020 [0.2242] AU  
Ag = 1957.87 [2489.22] [0.79 $\sigma$ ]  
Teffp = 5988 [1757] K [3.07 $\sigma$ ]

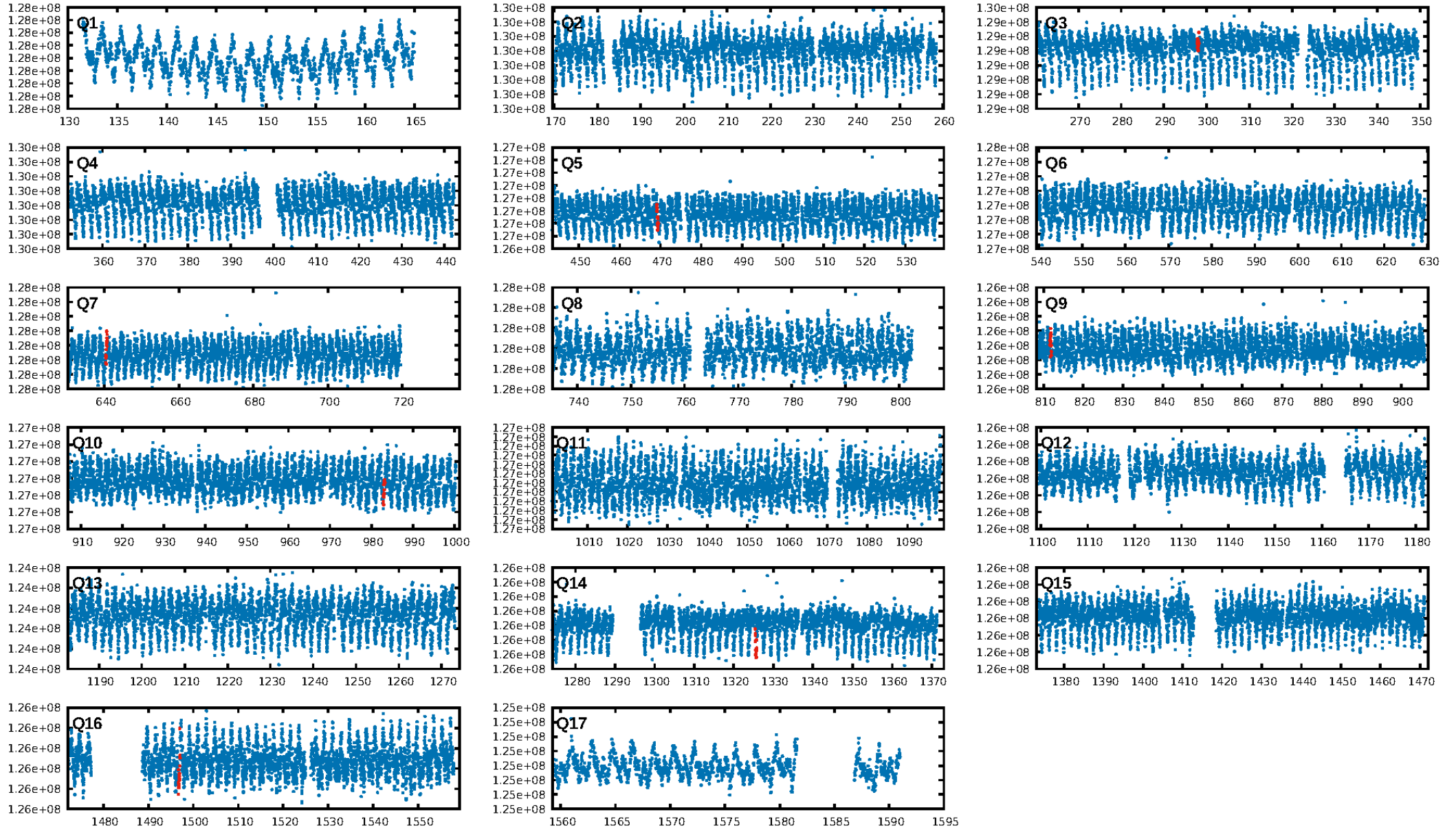
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [878.05 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 57.3%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.14e-10**  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 3.501  
Centroid-sig: 9.7%  
Centroid-so: 1.441 arcsec [1.57 $\sigma$ ]  
OotOffset-rm: 0.508 arcsec [1.10 $\sigma$ ]  
KicOffset-rm: 0.321 arcsec [0.64 $\sigma$ ]  
OotOffset-st: 2/1/1/2 [6]  
KicOffset-st: 2/1/1/2 [6]  
DiffImageQuality-fgm: 0.50 [3/6]  
DiffImageOverlap-fno: 0.00 [0/7]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:21:05 Z

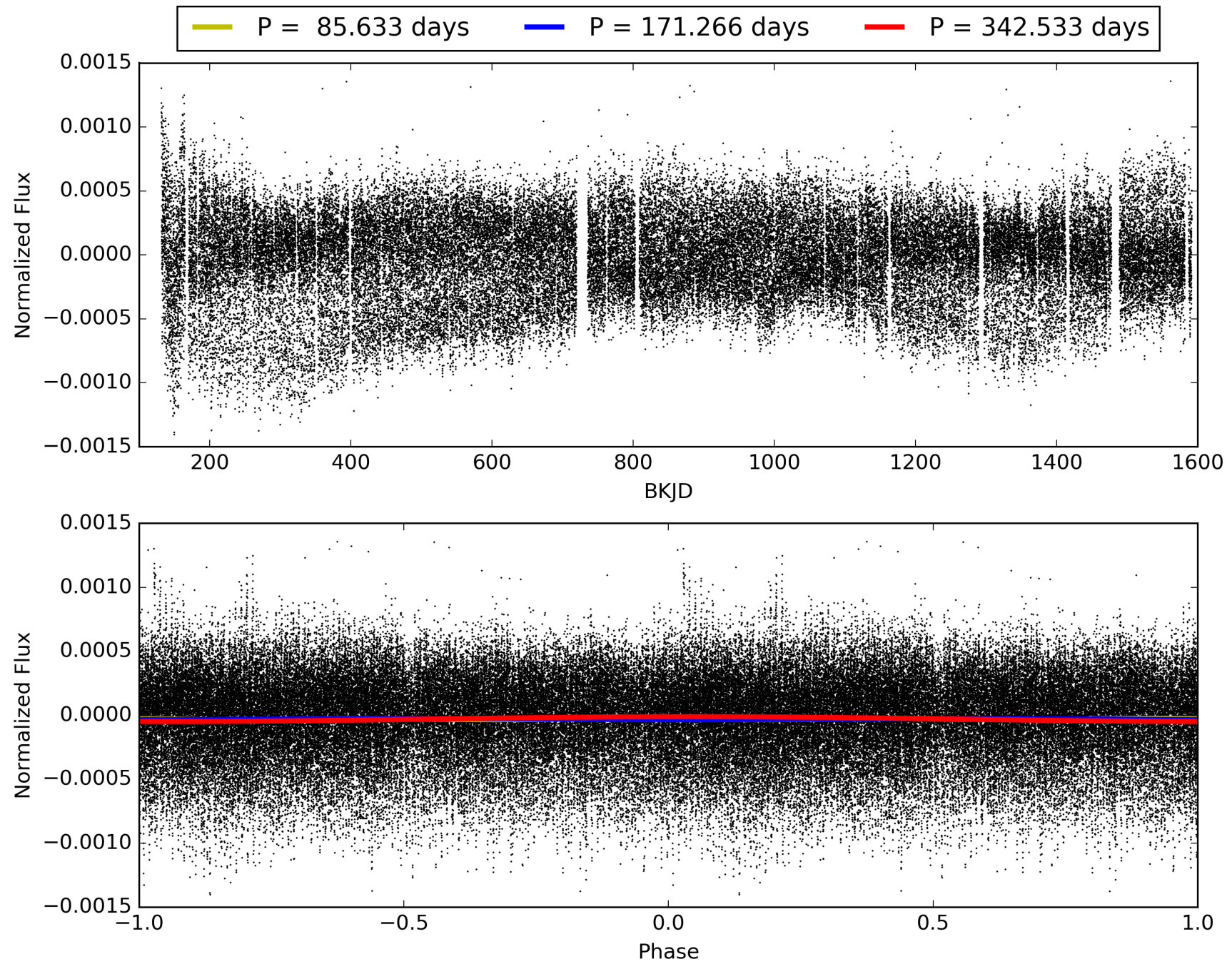
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006704862-03, PDC Light Curves





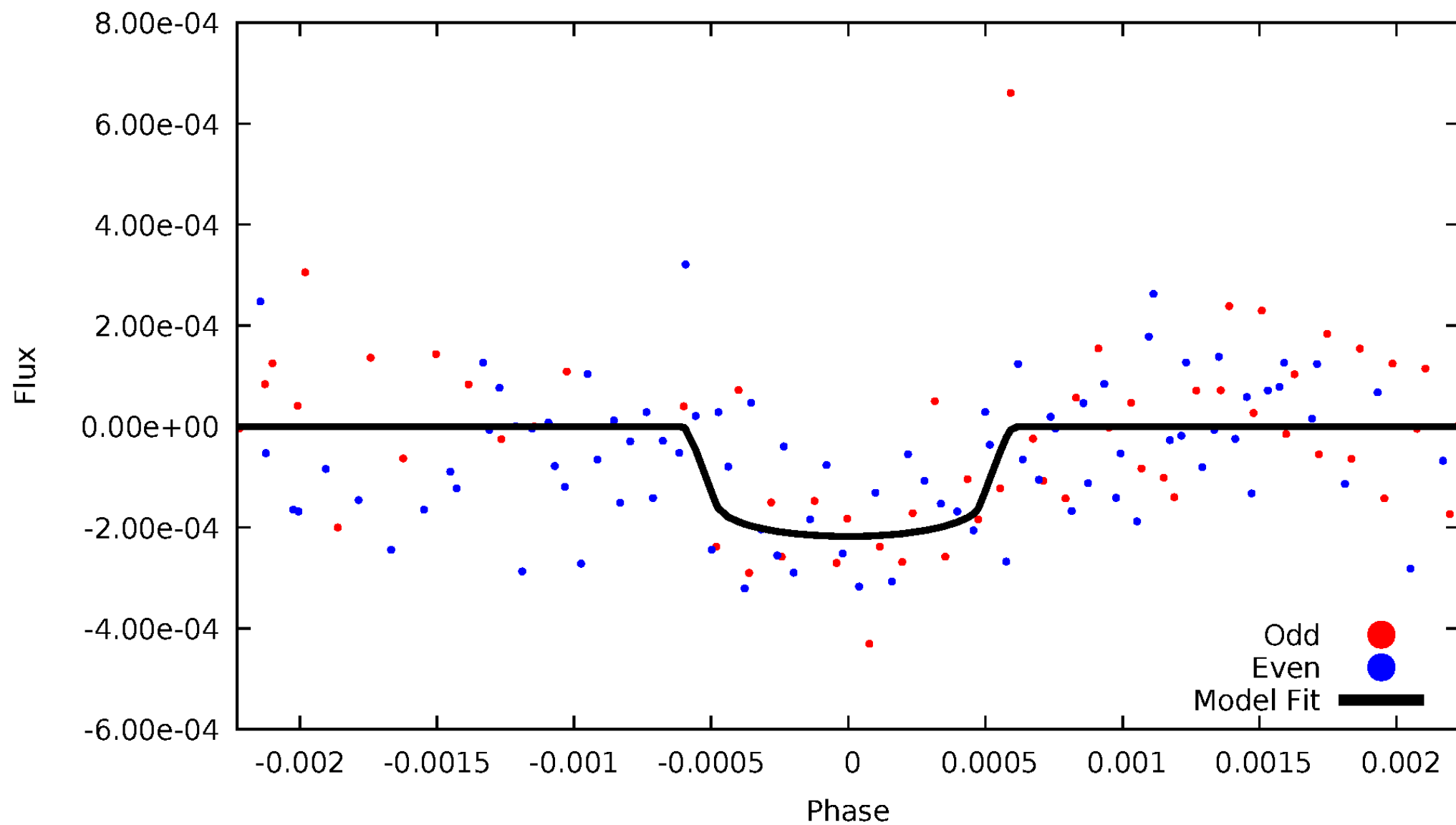
TCE 006704862-03





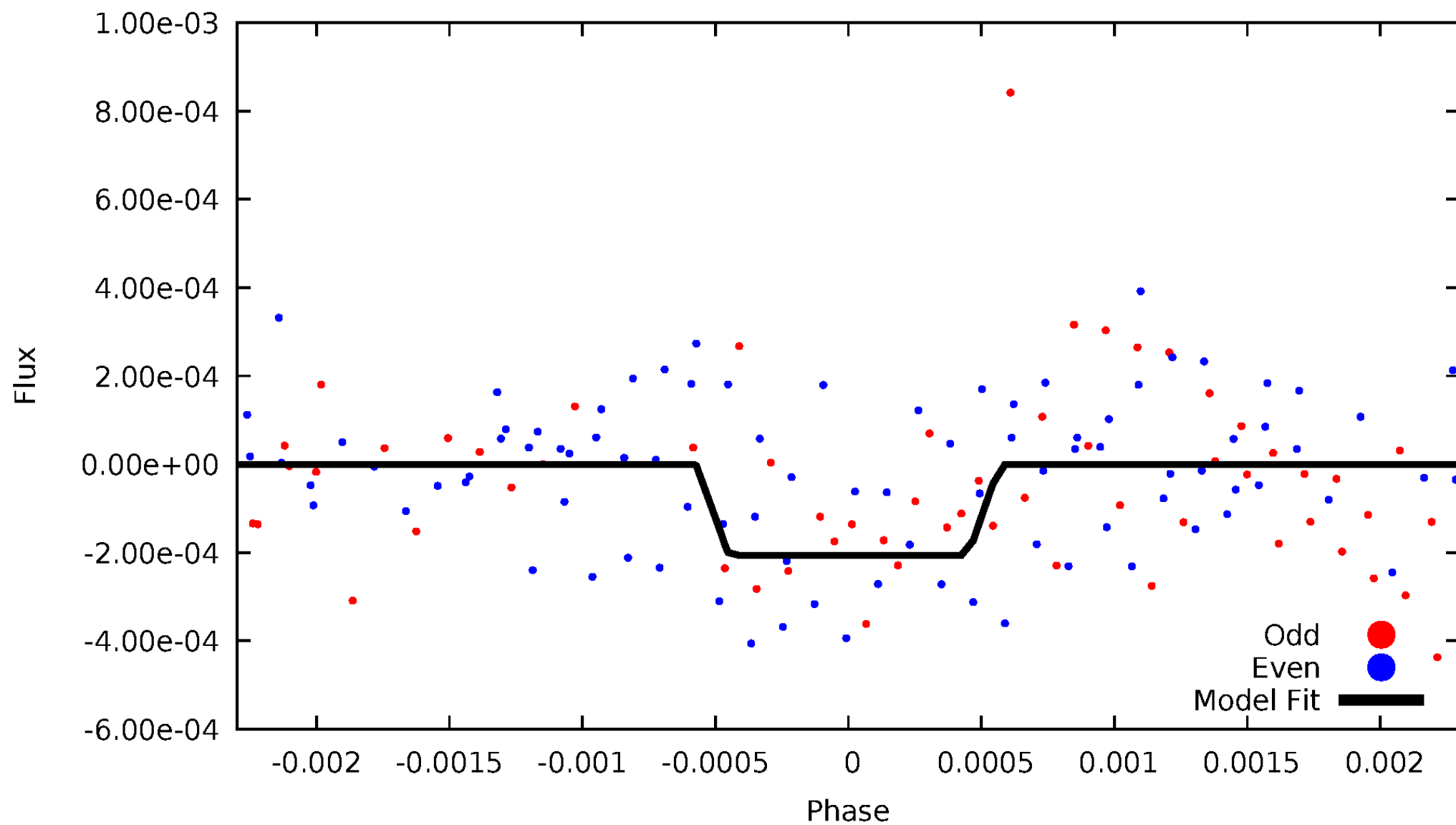
# DV Odd/Even

TCE 006704862-03



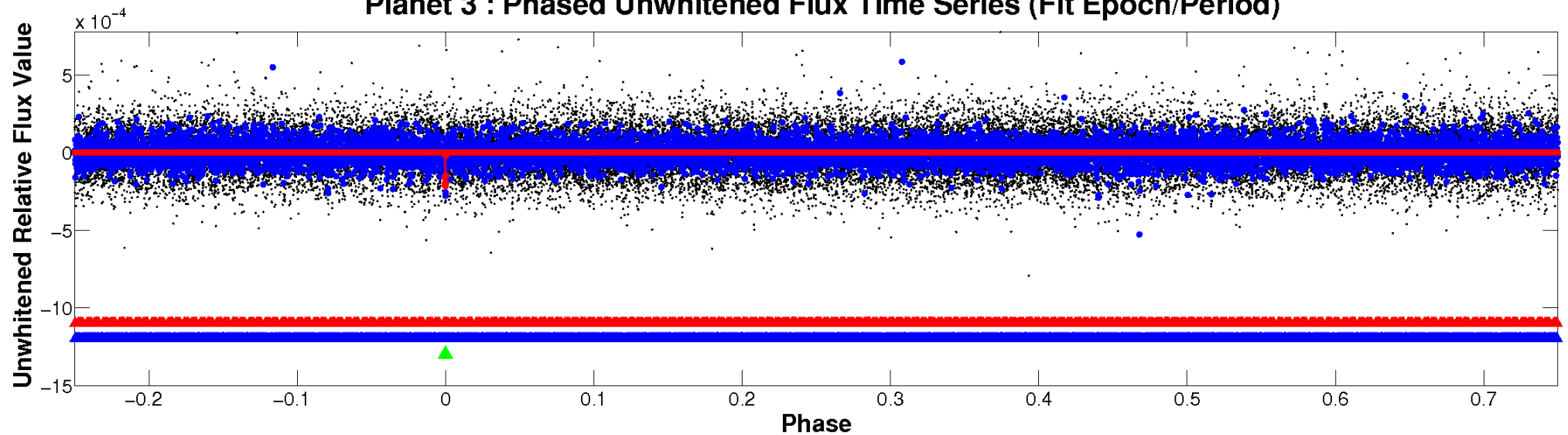
# ALT Odd/Even

TCE 006704862-03

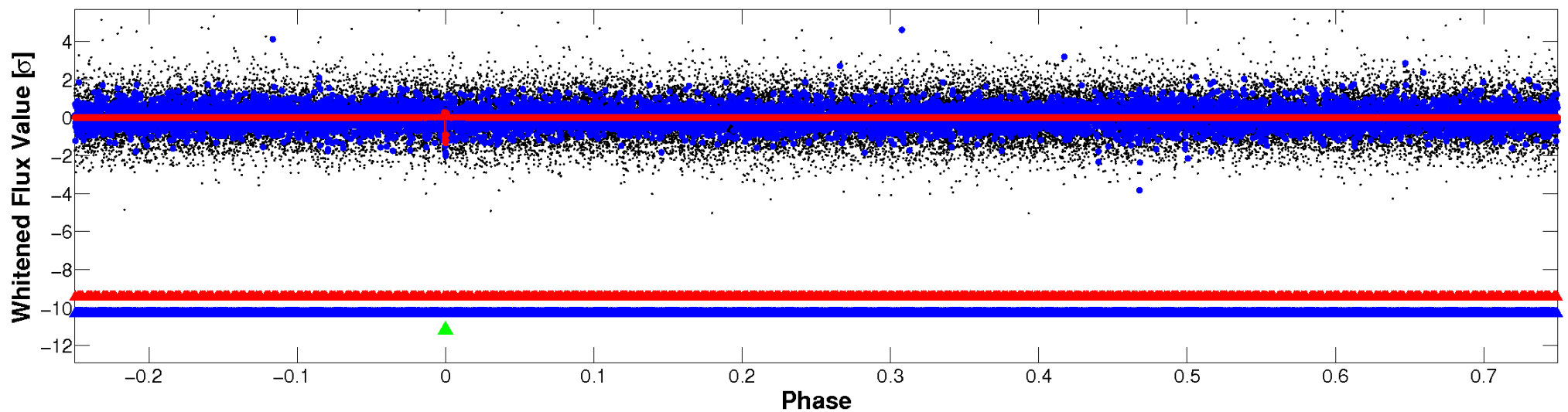


# Non-Whitened Vs. Whitened Light Curve

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

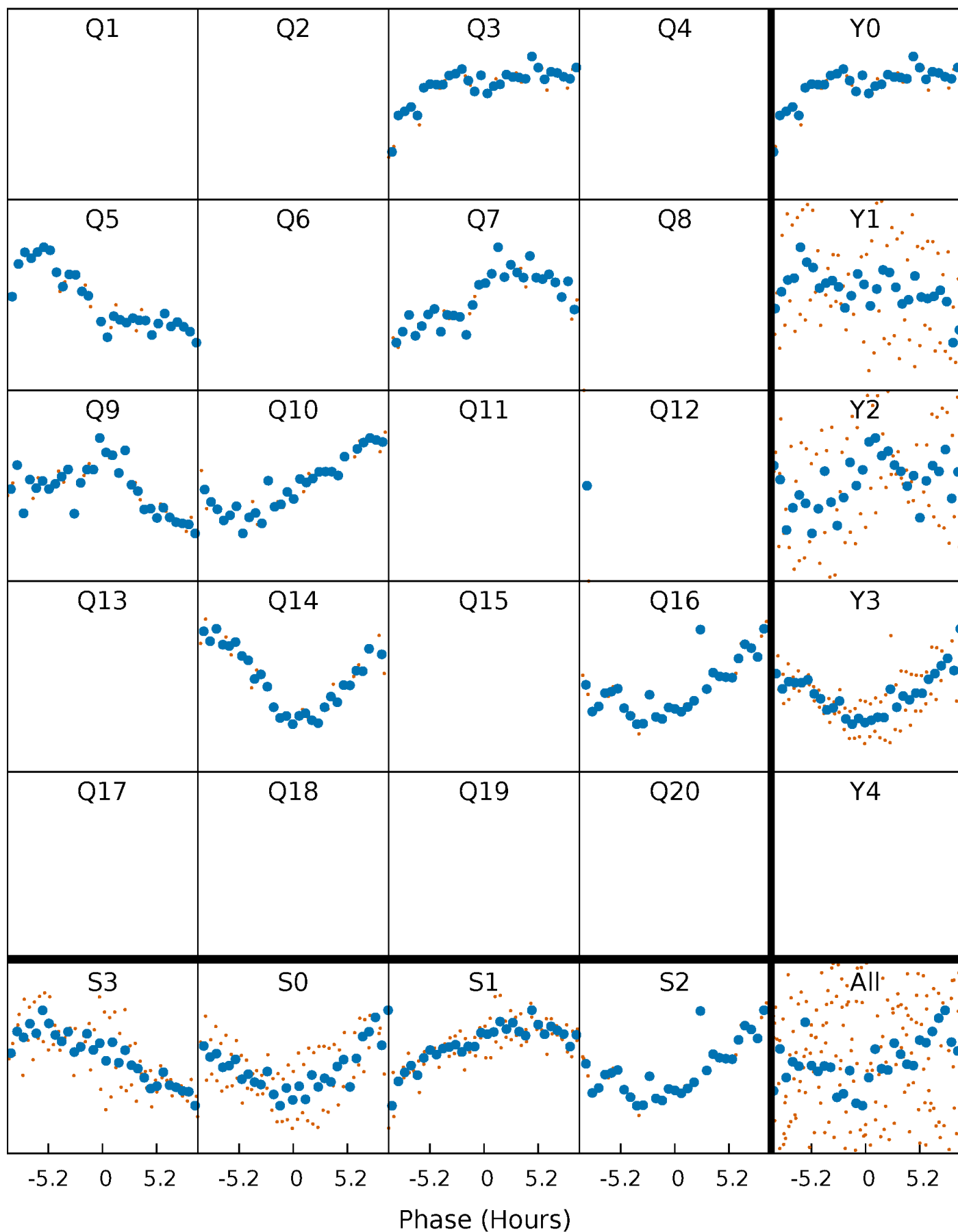


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



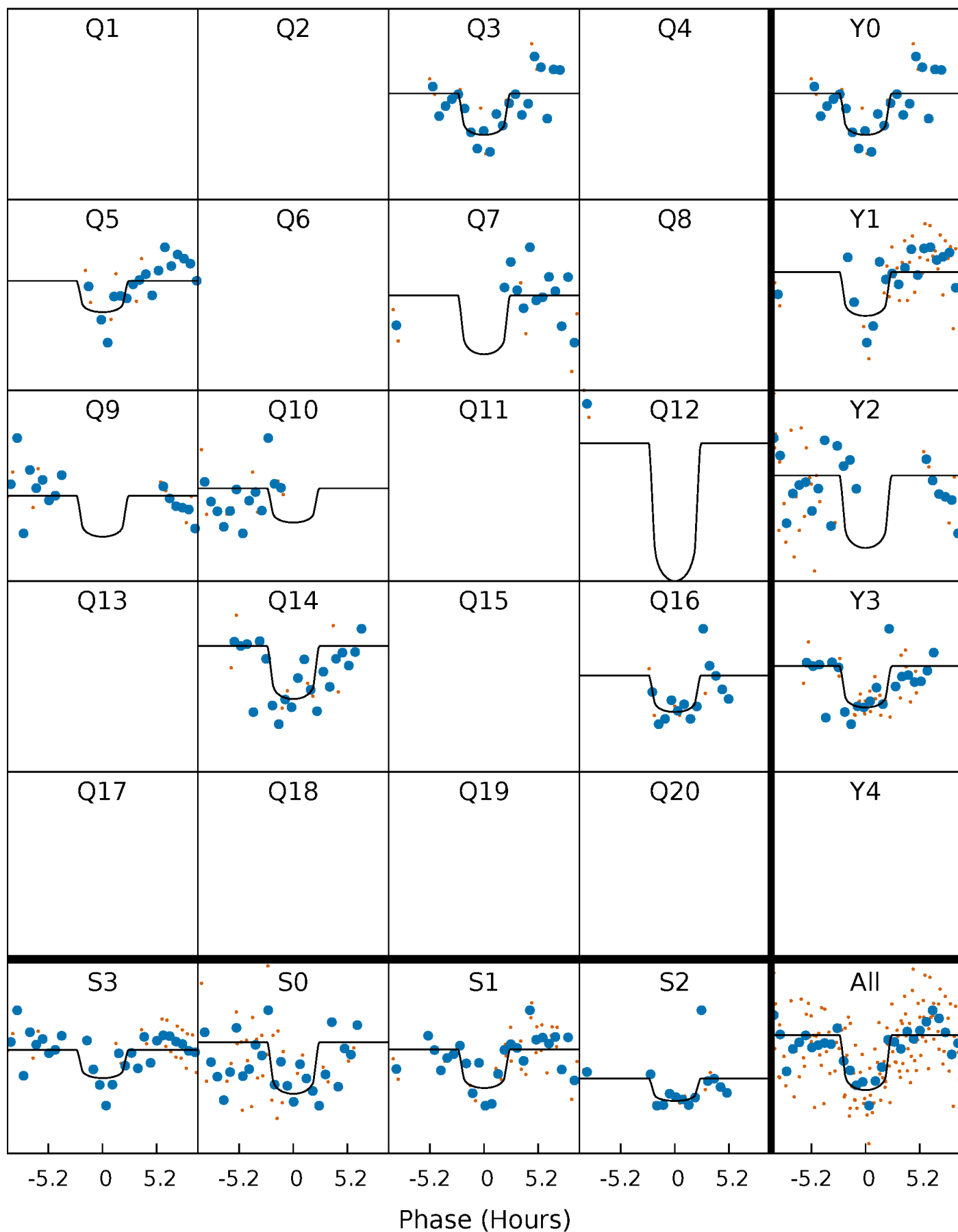
# PDC Quarter-Phased Transit Curves

TCE 006704862-03     $P=171.266268$  Days     $T_0=297.998645$  (BKJD)



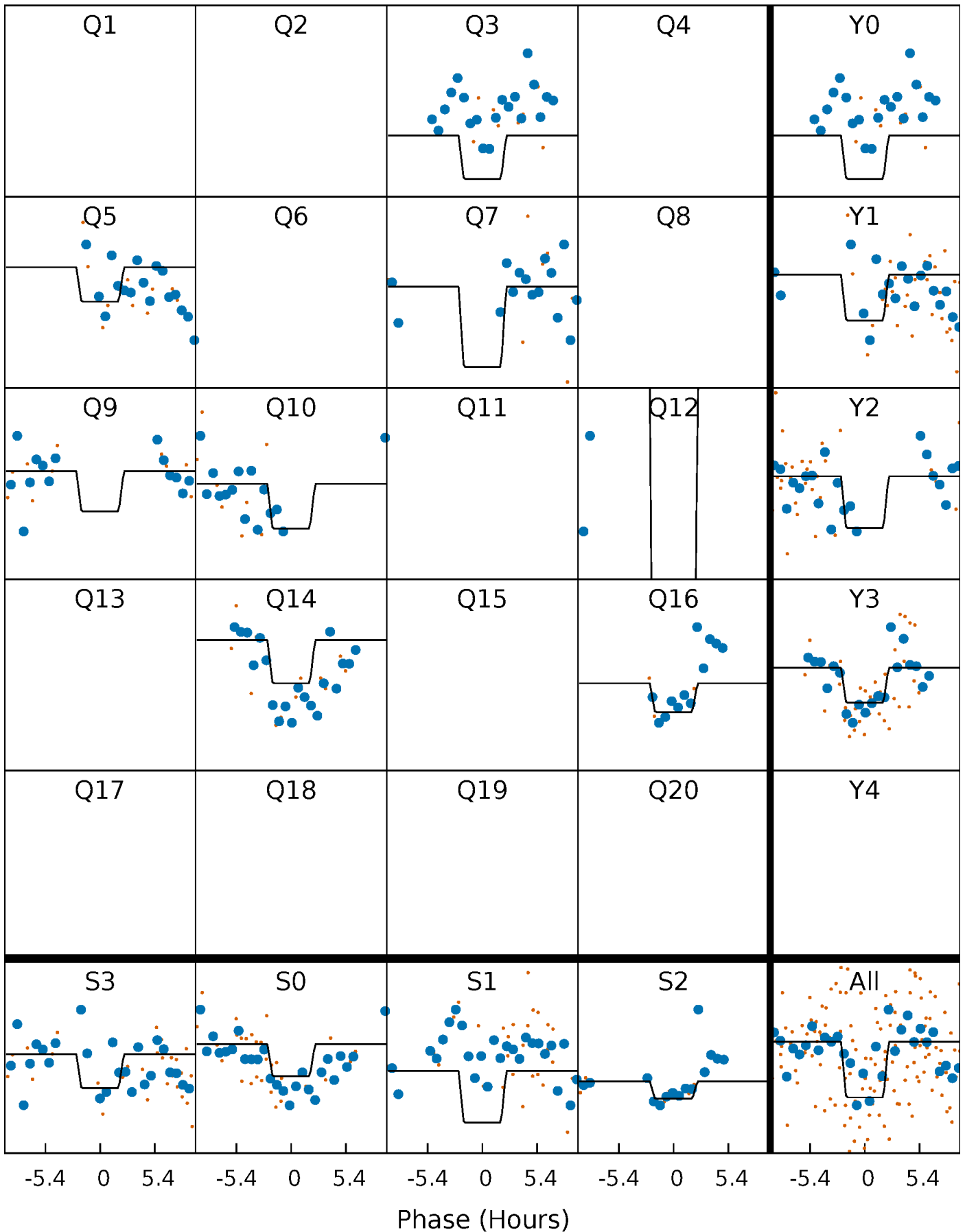
# DV Quarter-Phased Transit Curves

TCE 006704862-03     $P=171.266268$  Days     $T_0=297.998645$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006704862-03 P=171.265491 Days  $T_0=298.001102$  (BKJD)

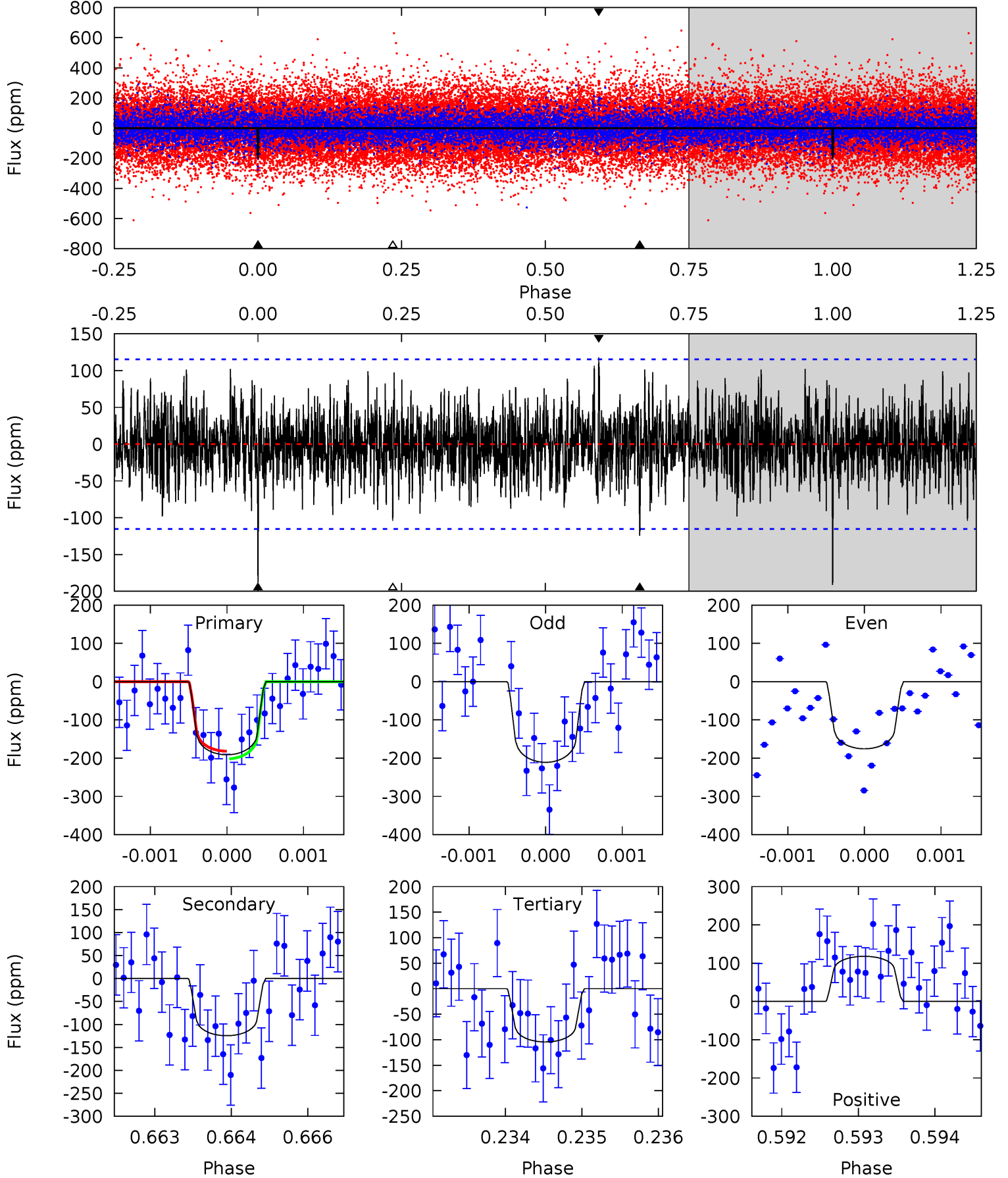




# DV Model-Shift Uniqueness Test

006704862-03, P = 171.266268 Days, E = 126.732377 Days

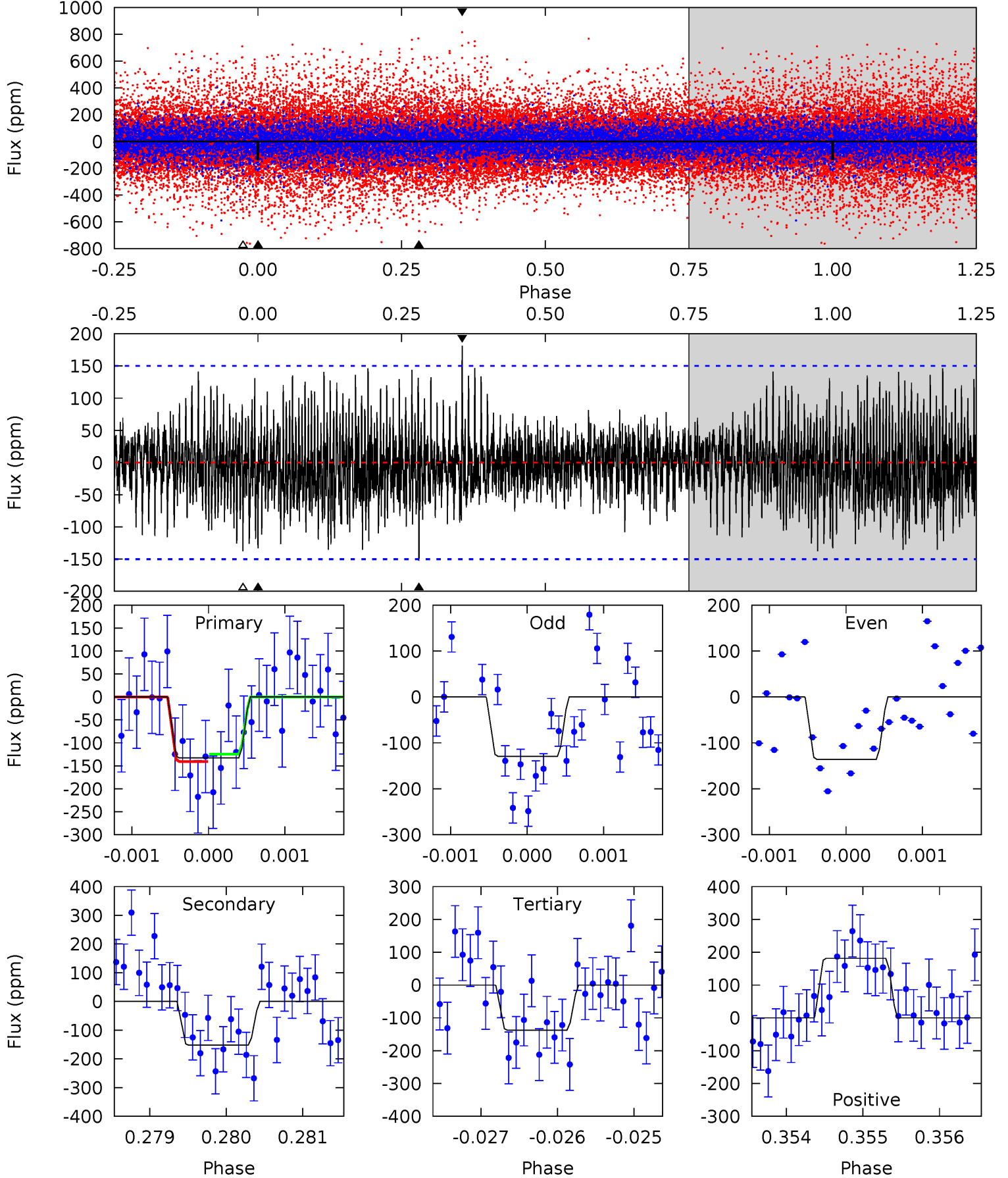
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.98	5.86	4.90	5.54	5.42	3.24	1.51	4.08	3.44	0.95	0.31	0.82	0.81	0.38	0.47



# Alt Model-Shift Uniqueness Test

006704862-03, P = 171.265491 Days, E = 126.735611 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
4.82	5.51	4.98	6.58	5.44	3.27	1.53	-0.17	-1.76	0.53	-1.07	0.12	0.82	0.54	0.29



### Stellar Parameters For KIC 006704862

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6711^{+161}_{-202}$	$3.767^{+0.292}_{-0.097}$	$-0.020^{+0.250}_{-0.250}$	$2.715^{+0.499}_{-0.927}$	$1.573^{+0.222}_{-0.271}$	$0.111^{+0.223}_{-0.034}$
	+2%/-3%	+8%/-3%	+1250%/-1250%	+18%/-34%	+14%/-17%	+201%/-31%
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 006704862-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-125 \pm 21$	$4.09^{+2.65}_{-2.08}$	$792^{+54}_{-64}$	$5803^{+2606}_{-1101}$	$2047^{+6102}_{-1311}$
Alt.	$-152 \pm 28$	$4.12^{+2.38}_{-2.22}$	$798^{+45}_{-70}$	$6057^{+3544}_{-1107}$	$2405^{+8958}_{-1426}$

$T_{max}$  = 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

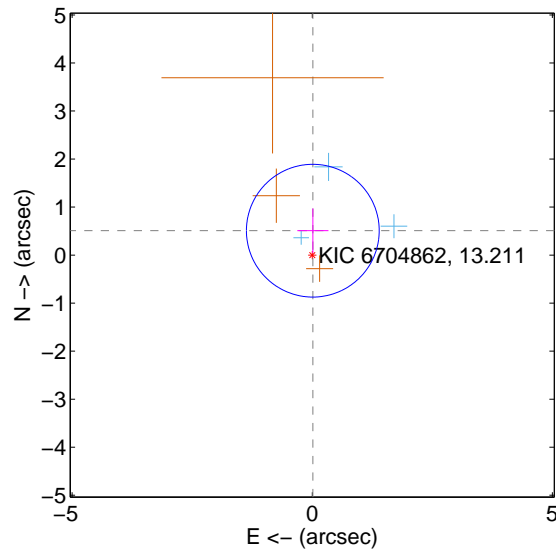
Supplemental centroid analysis for 006704862-03. Kepler magnitude: 13.21. Transit SNR 7.24

There are 3 quarters with good PRF difference image offsets

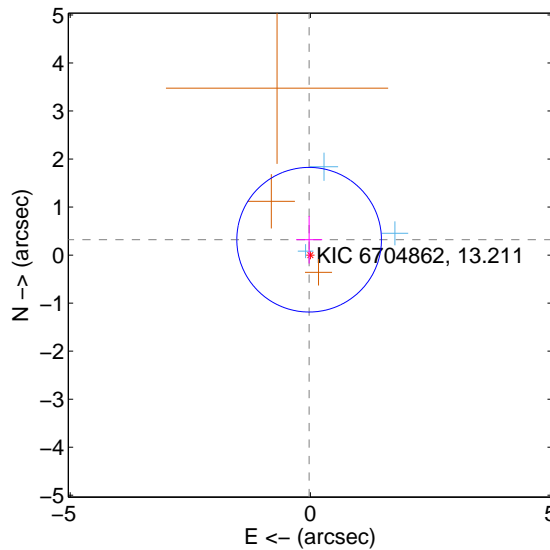
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.508 \pm 0.461$	1.10	$-0.012 \pm 0.324$	$0.508 \pm 0.463$
PRF-fit source offset from KIC position	$0.321 \pm 0.502$	0.64	$0.025 \pm 0.271$	$0.320 \pm 0.495$
photometric centroid source offset	$1.44 \pm 0.92$	1.57	$-1.39 \pm 0.91$	$0.38 \pm 1.03$

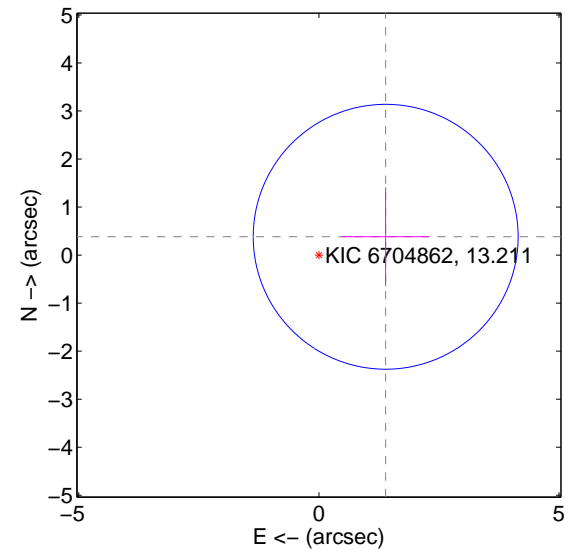
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

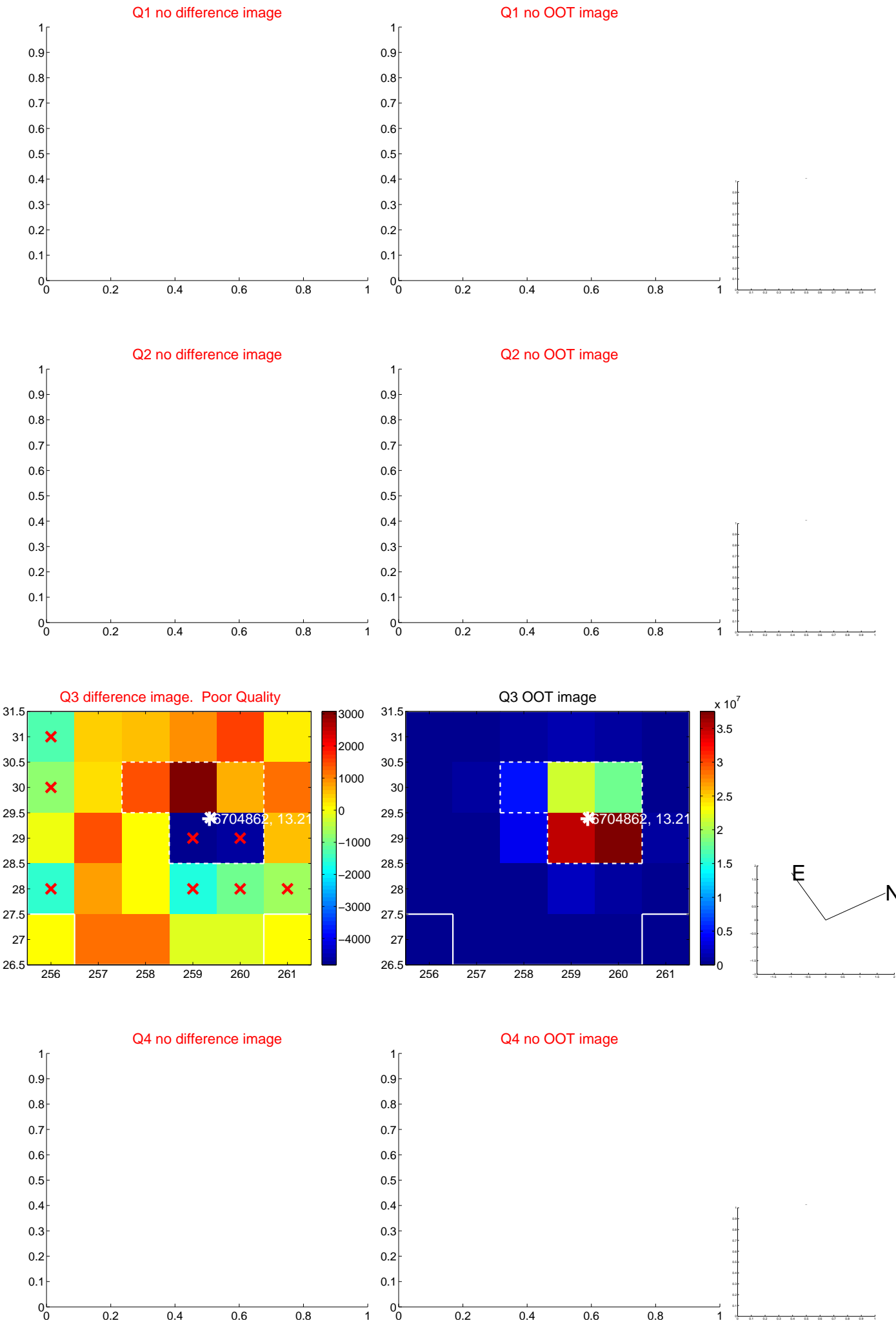


offset from photometric centroids

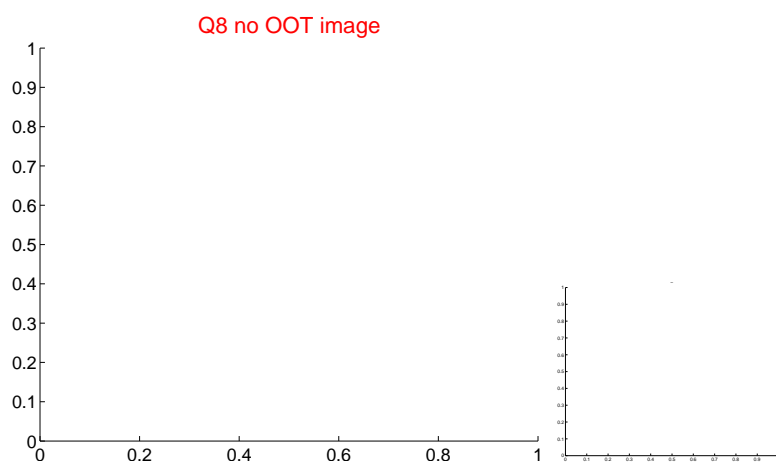
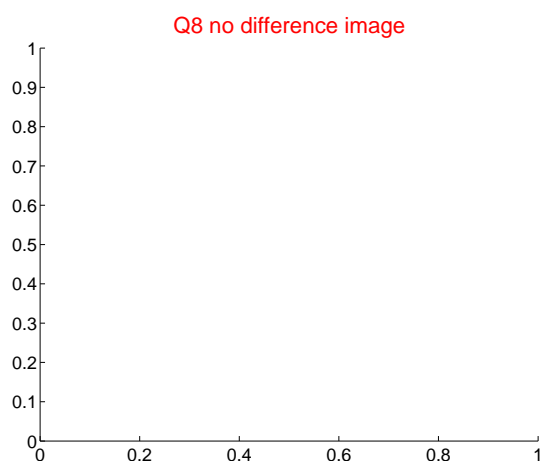
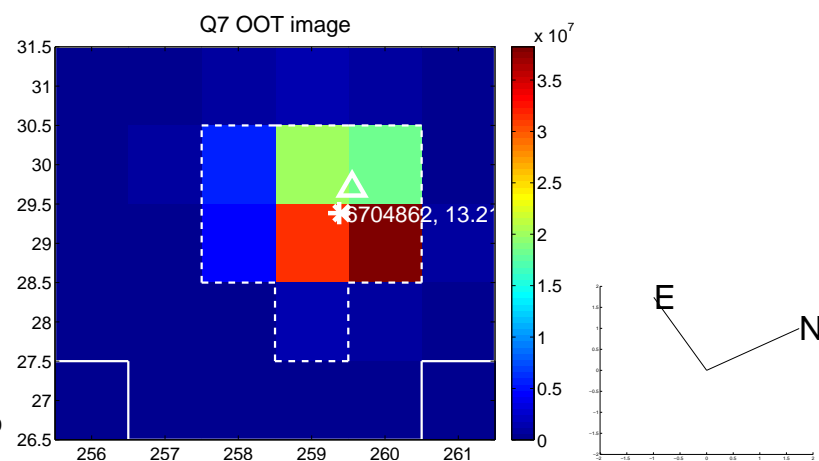
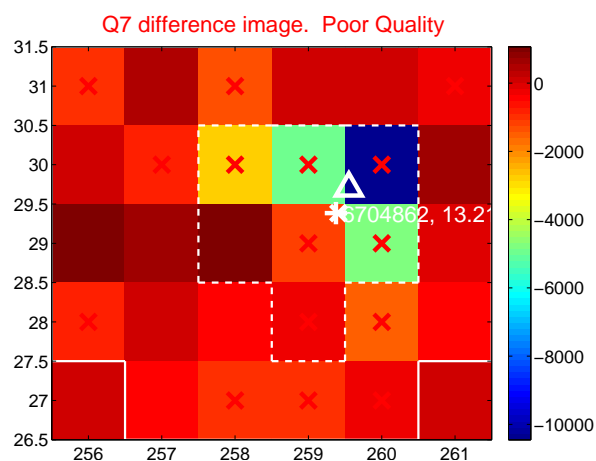
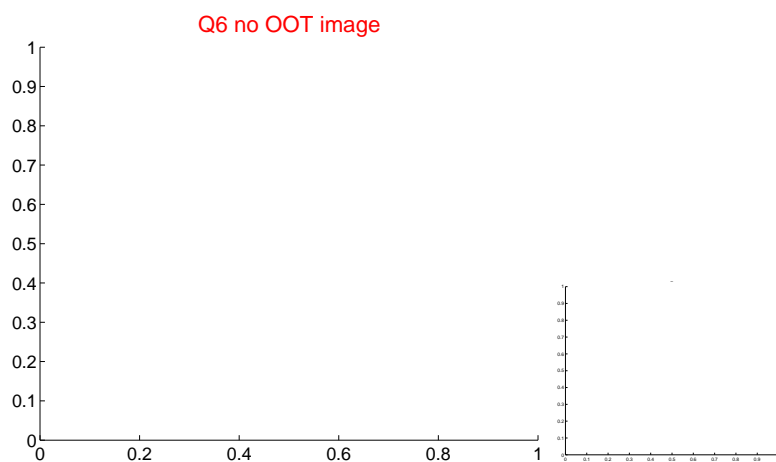
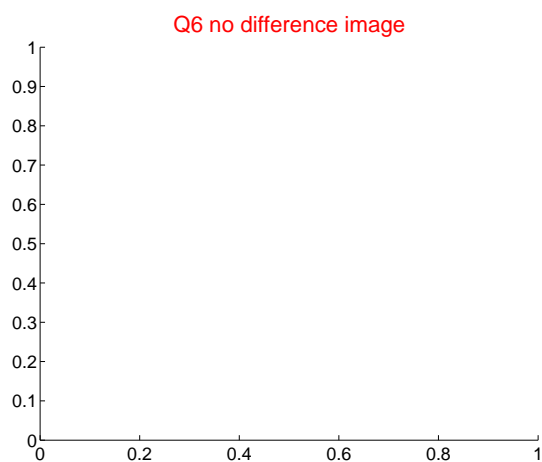
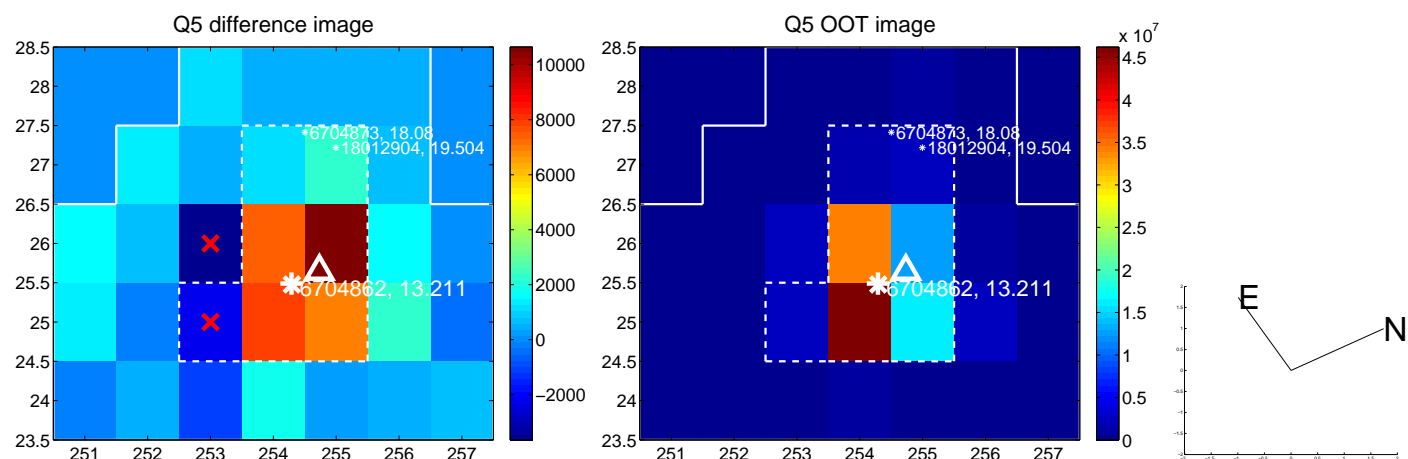


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

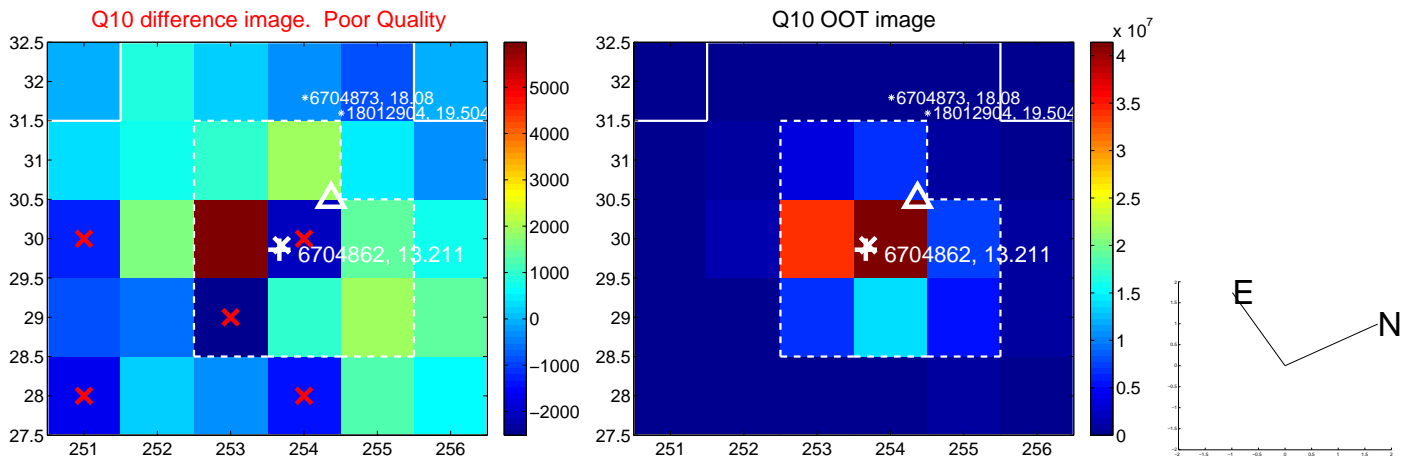
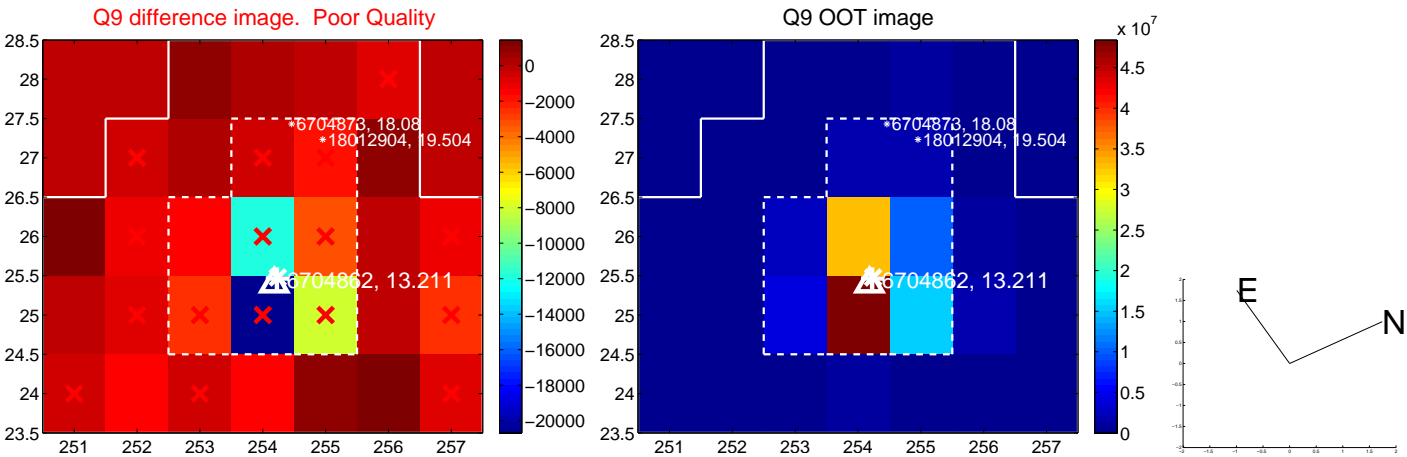


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value





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



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

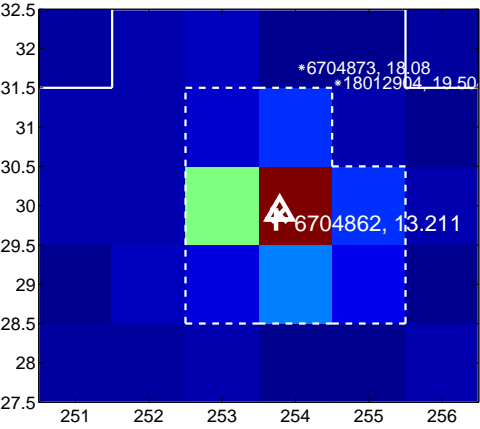
Q13 no difference image



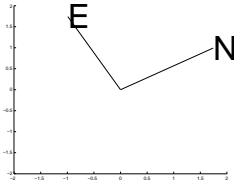
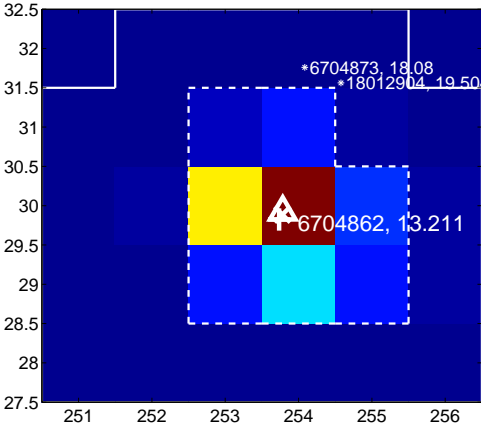
Q13 no OOT image



Q14 difference image



Q14 OOT image



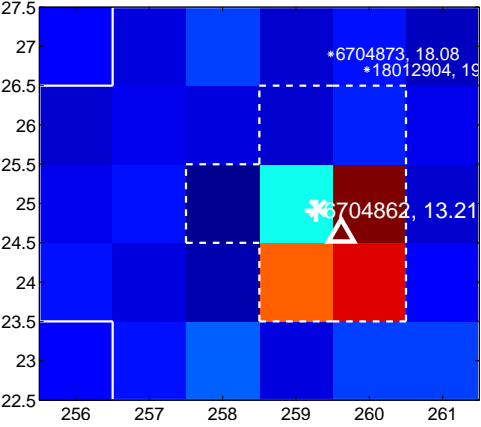
Q15 no difference image



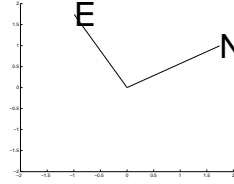
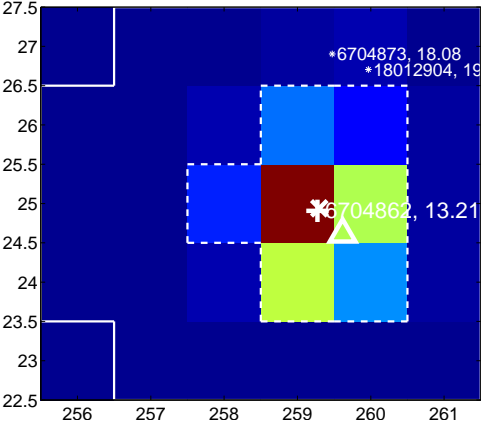
Q15 no OOT image



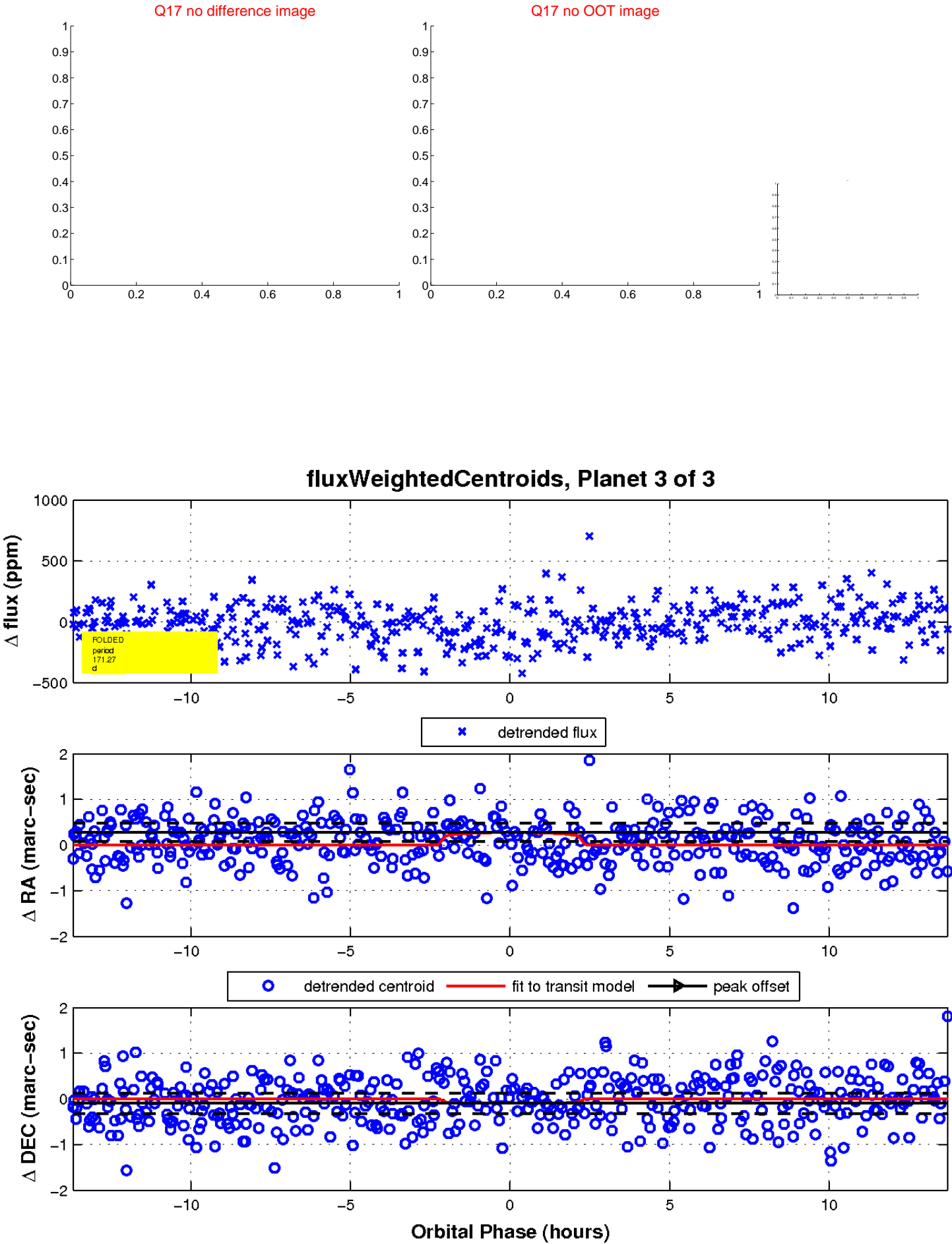
Q16 difference image



Q16 OOT image



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



UKIRT Image

