

# KIC 006148704

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006148704-01	OBS	No	0.917533	132.521023	142.9	0.630	8.6	28.6	1.10	6254	1.57	4839.88
006148704-02	OBS	No	0.917537	132.214050	168.0	0.589	22.0	33.8	1.10	6254	1.73	4839.85
006148704-03	OBS	No	0.917553	131.897304	153.4	0.567	21.2	30.1	1.10	6254	1.65	4839.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006148704-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_RESOLVED_OFFSET
006148704-02	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
006148704-03	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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

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

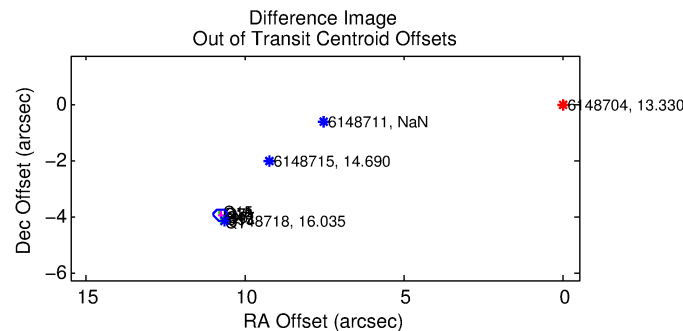
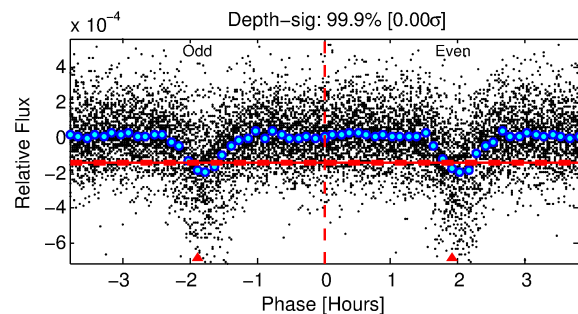
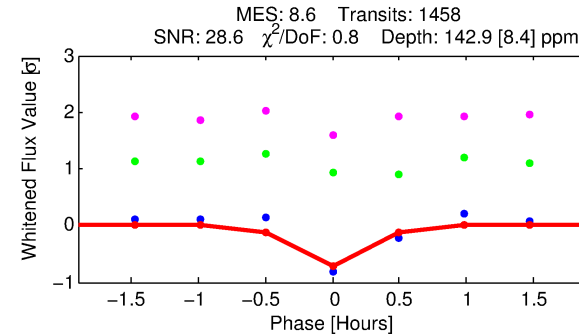
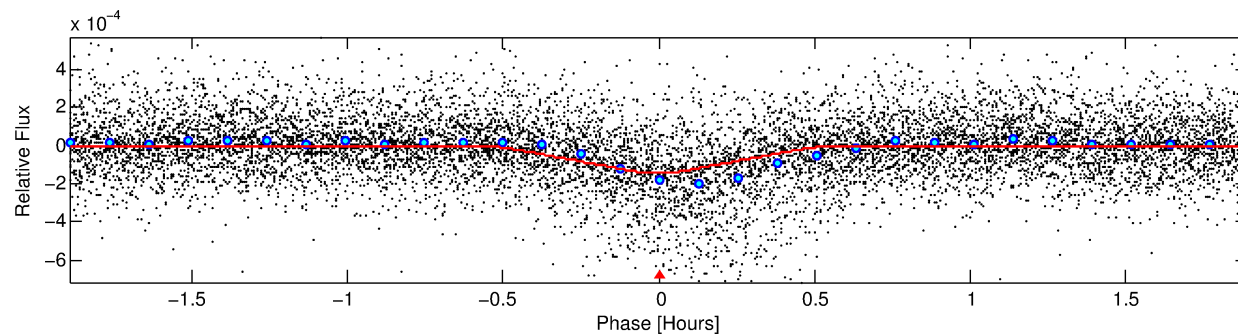
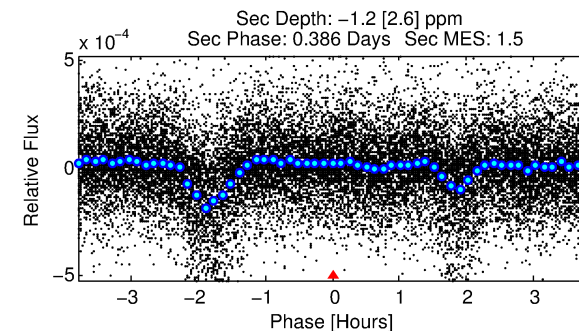
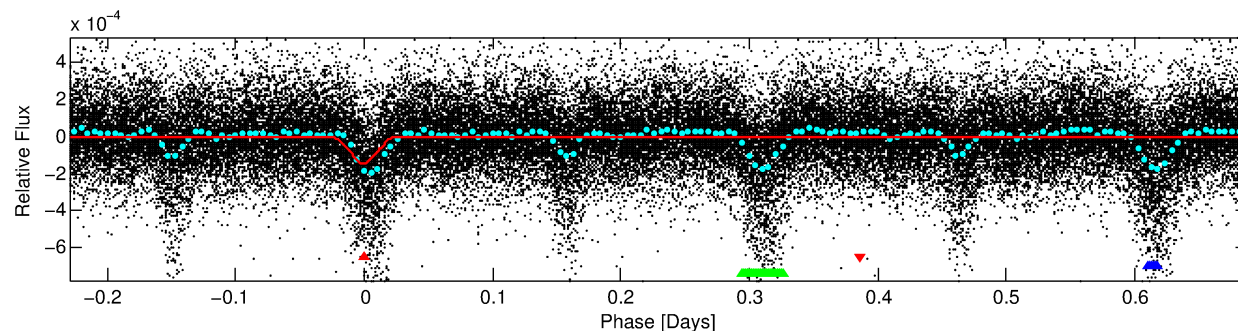
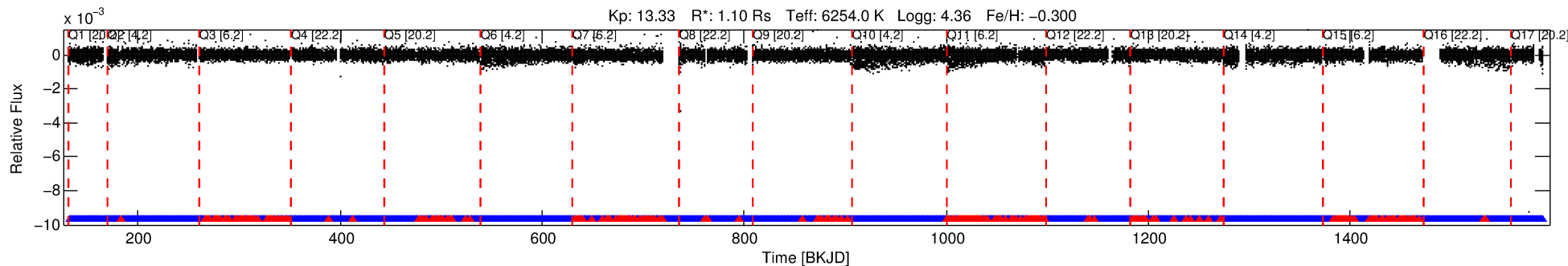
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006148704-01

No Significant Match Found

# DV One-Page Summary

KIC: 6148704 Candidate: 1 of 3 Period: 0.918 d



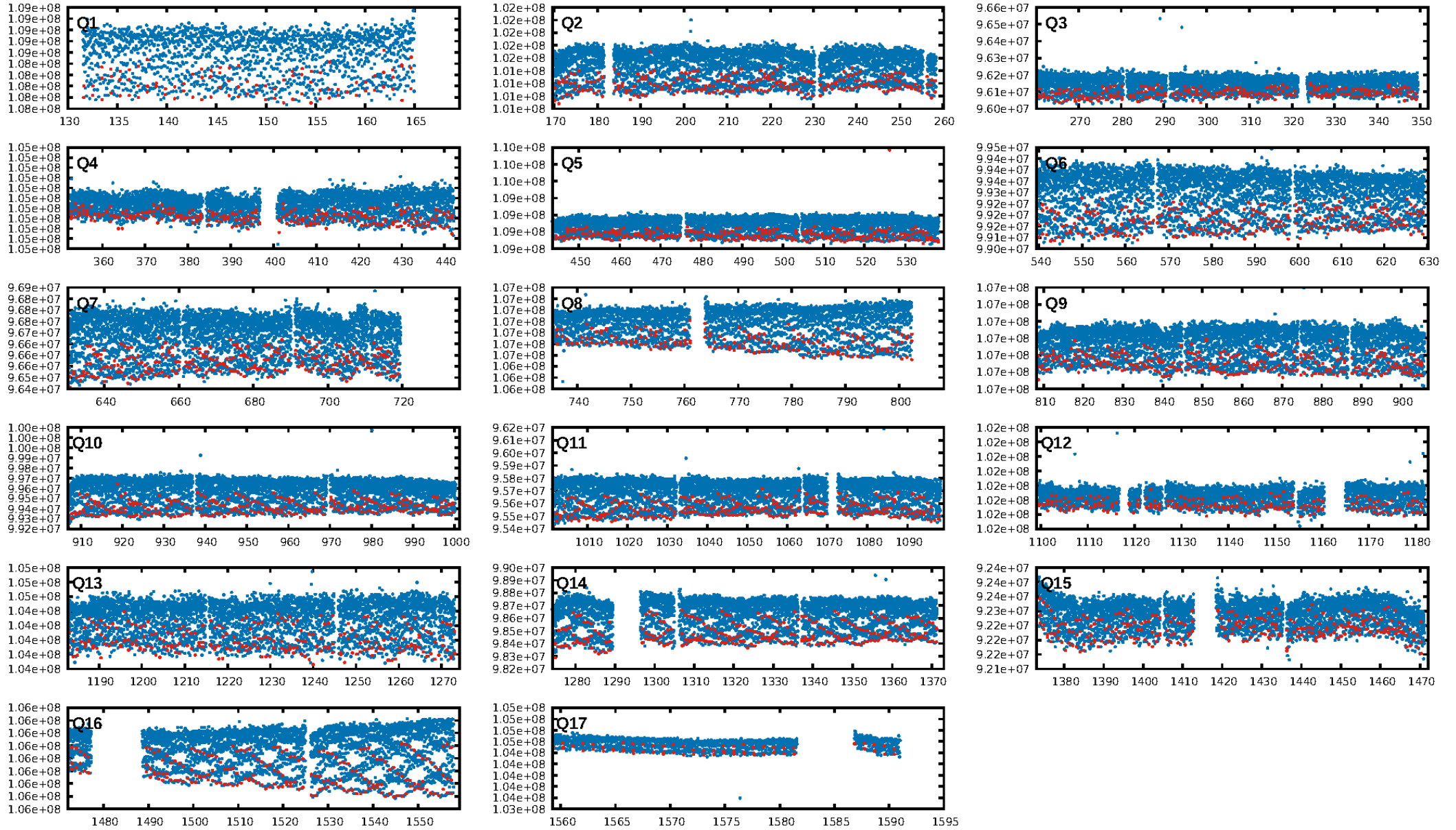
## DV Fit Results:

Period = 0.91753 [0.00000] d  
Epoch = 132.5210 [0.0004] BKJD  
Rp/R\* = 0.0132 [0.0014]  
a/R\* = 5.26 [2.93]  
b = 0.90 [0.12]  
Seff = 4839.88 [1888.75]  
Teq = 2127 [207] K  
Rp = 1.57 [0.50] Re  
a = 0.0185 [0.0047] AU  
Ag = N/A  
Teff = N/A

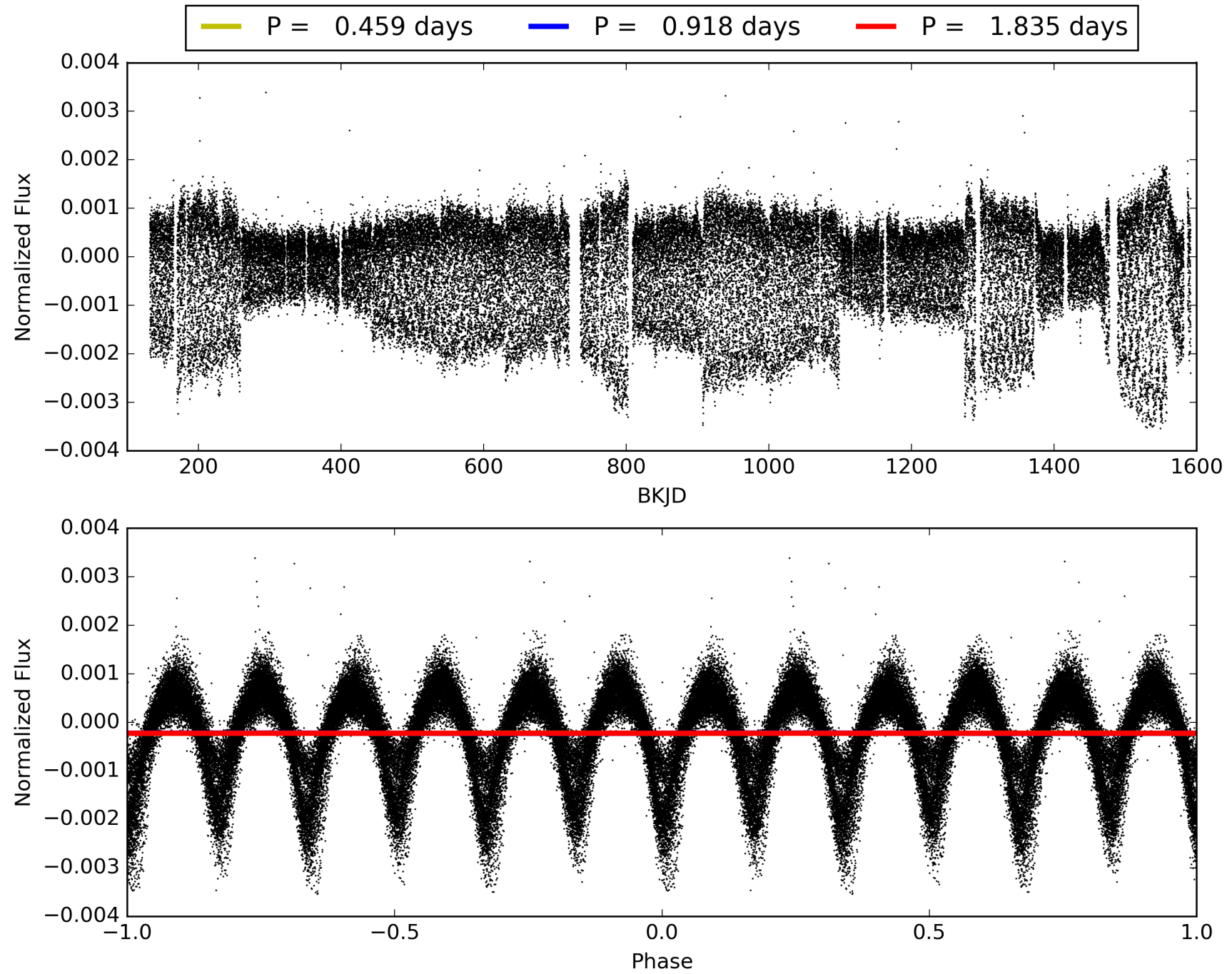
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.39e-18  
RollingBand-fgt: 0.83 [1152/1391]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 11.475 arcsec [166.61σ]  
KicOffset-rm: 11.466 arcsec [162.95σ]  
OotOffset-st: 0/4/1/5 [10]  
KicOffset-st: 0/4/1/5 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006148704-01, PDC Light Curves

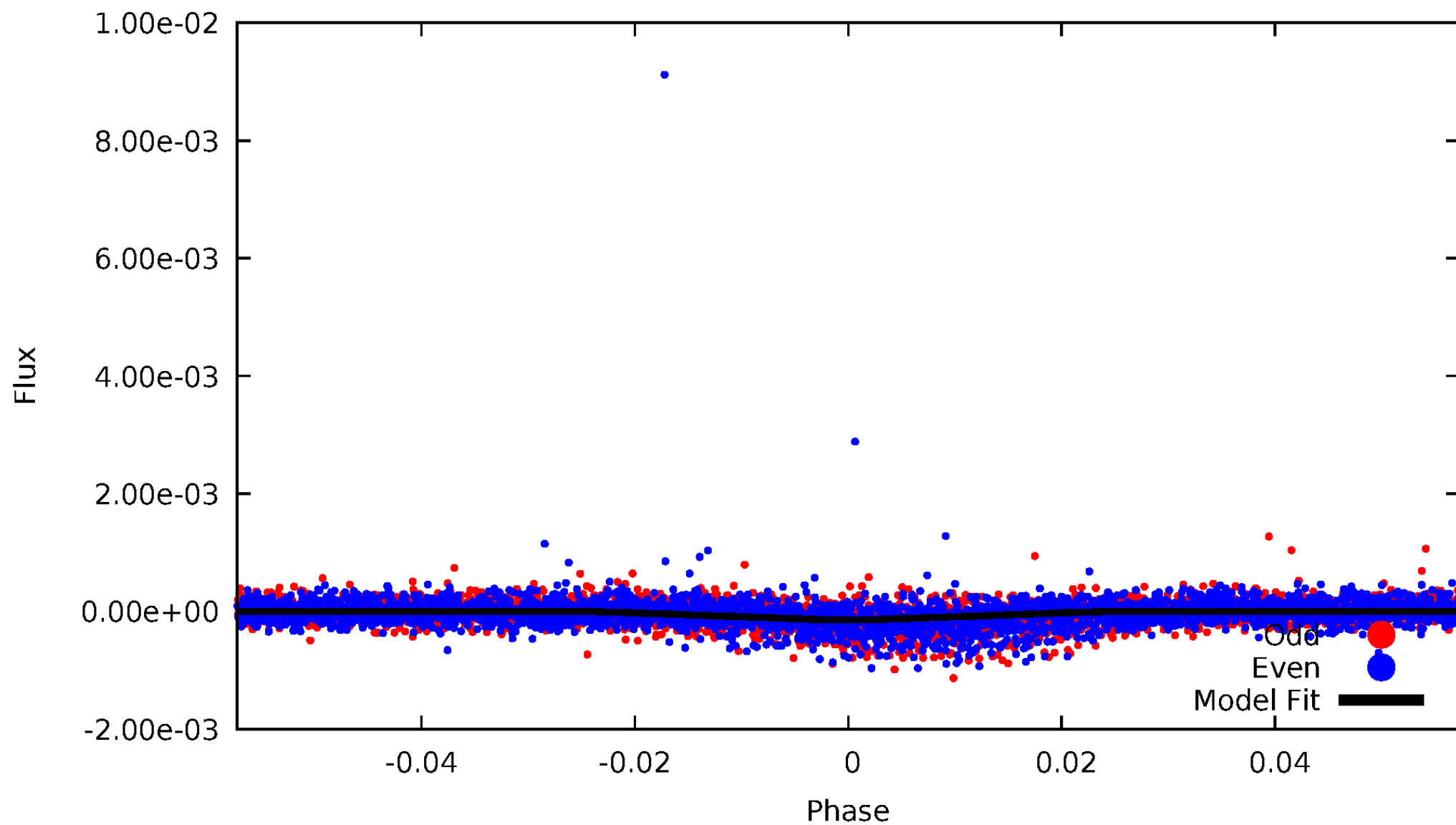


TCE 006148704-01



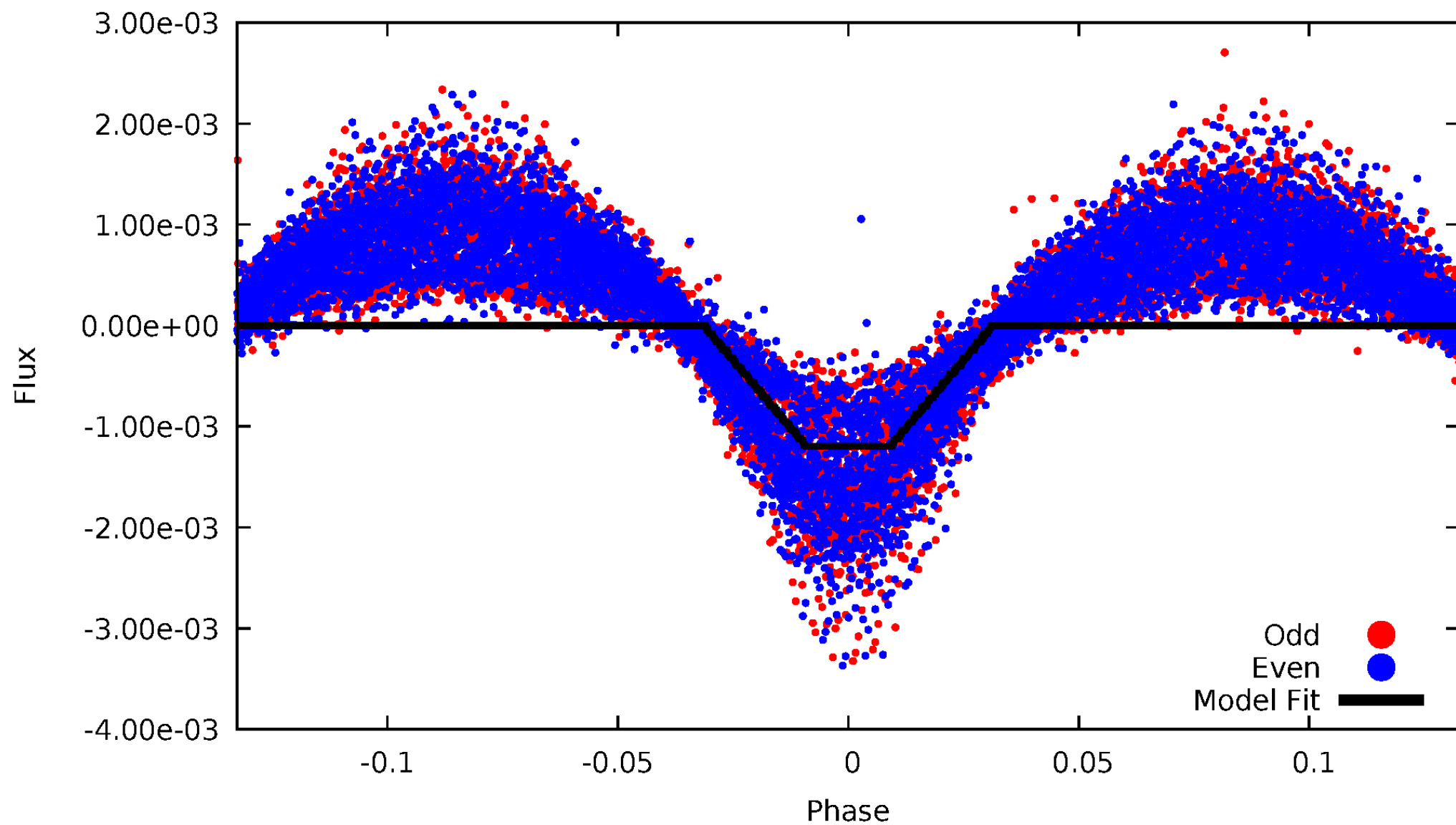
# DV Odd/Even

TCE 006148704-01



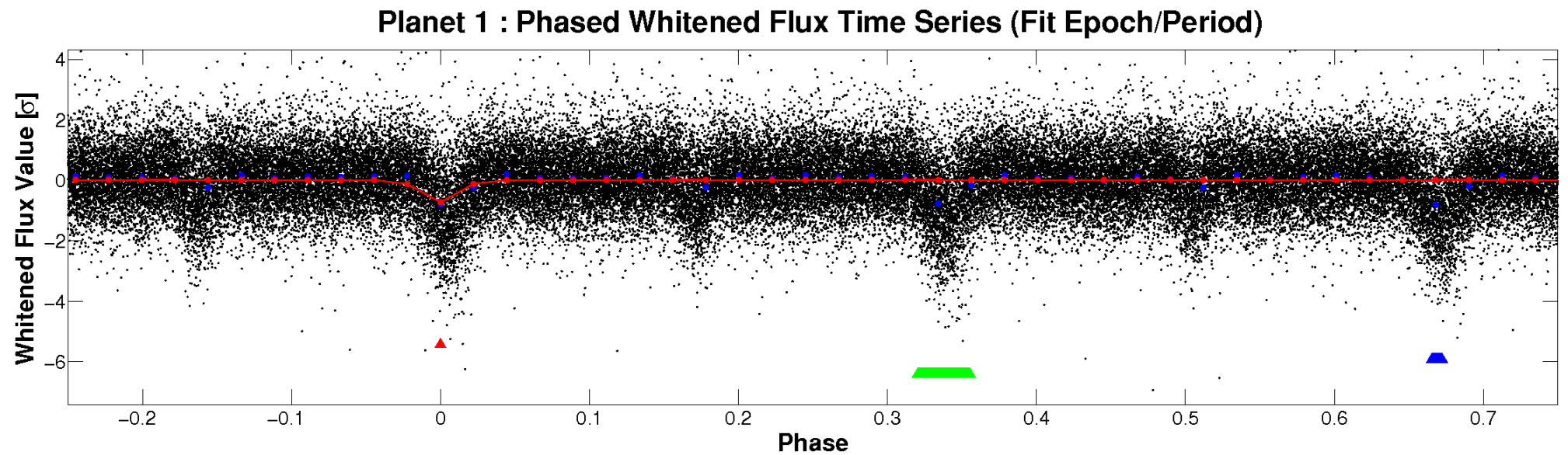
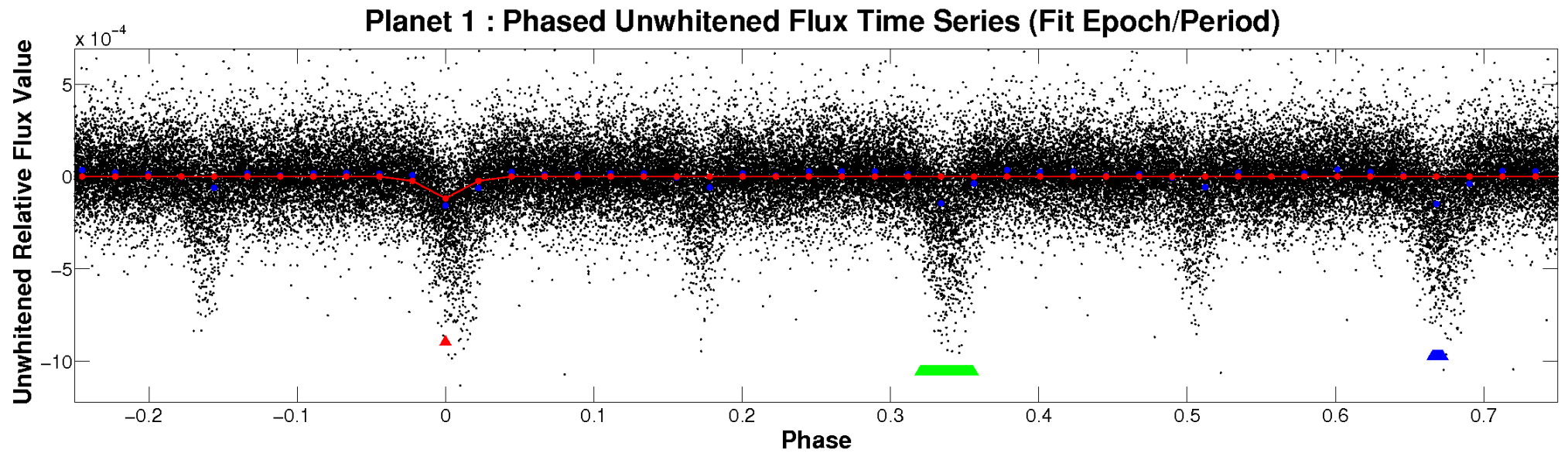
# ALT Odd/Even

TCE 006148704-01



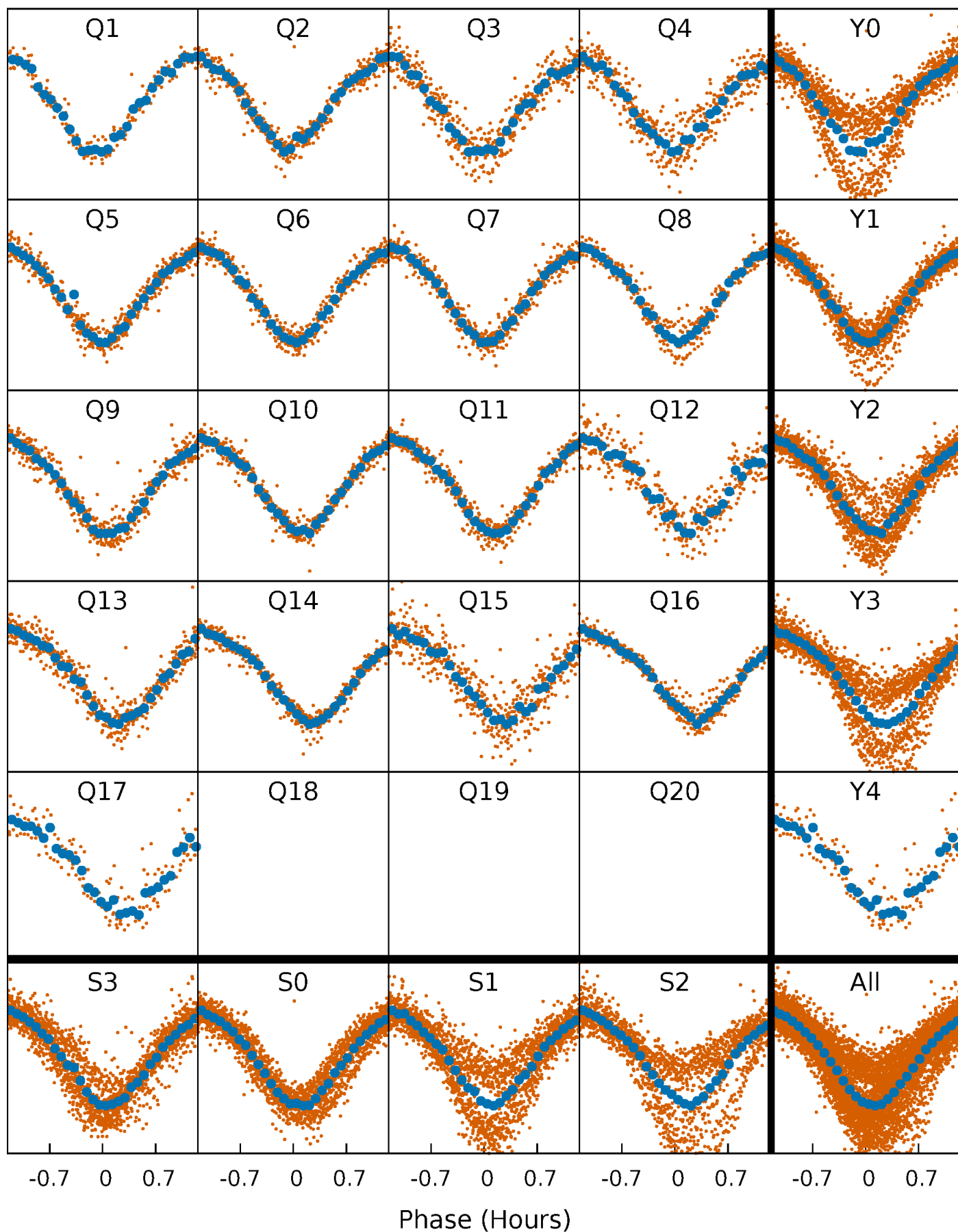


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

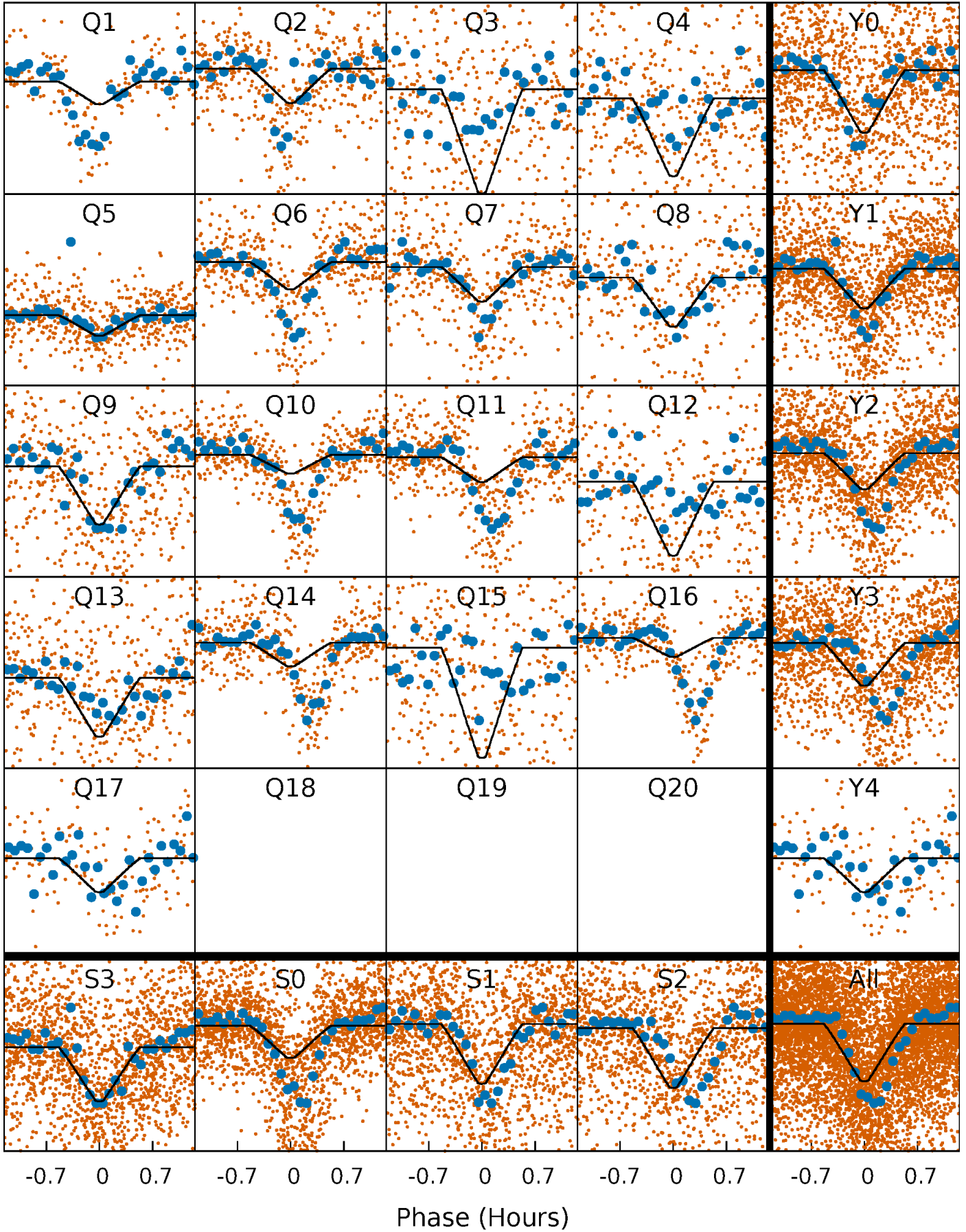
TCE 006148704-01 P= 0.917533 Days  $T_0=132.521023$  (BKJD)





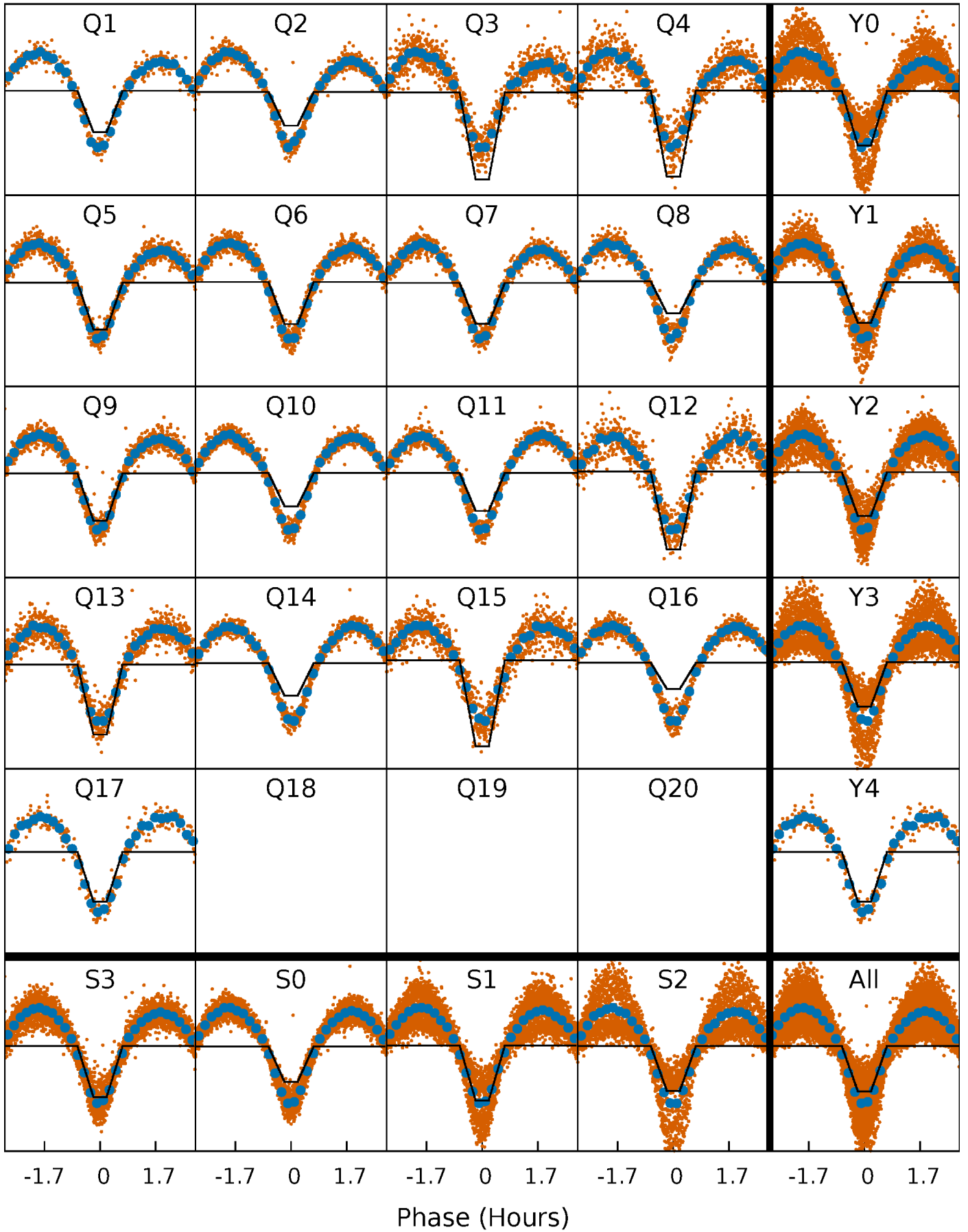
# DV Quarter-Phased Transit Curves

TCE 006148704-01 P= 0.917533 Days  $T_0=132.521023$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

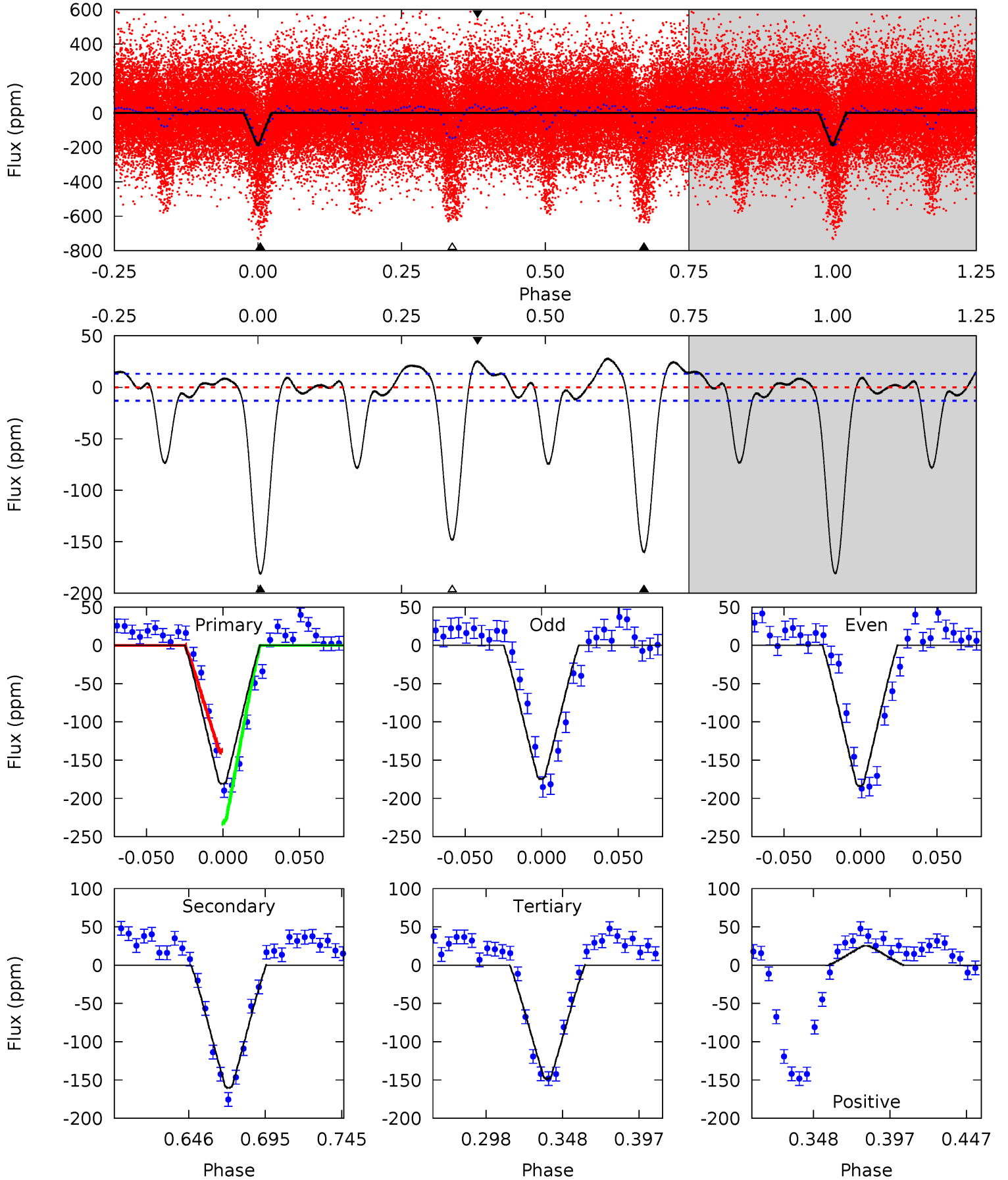
TCE 006148704-01 P= 0.917542 Days  $T_0=132.518426$  (BKJD)



# DV Model-Shift Uniqueness Test

006148704-01, P = 0.917533 Days, E = 130.685957 Days

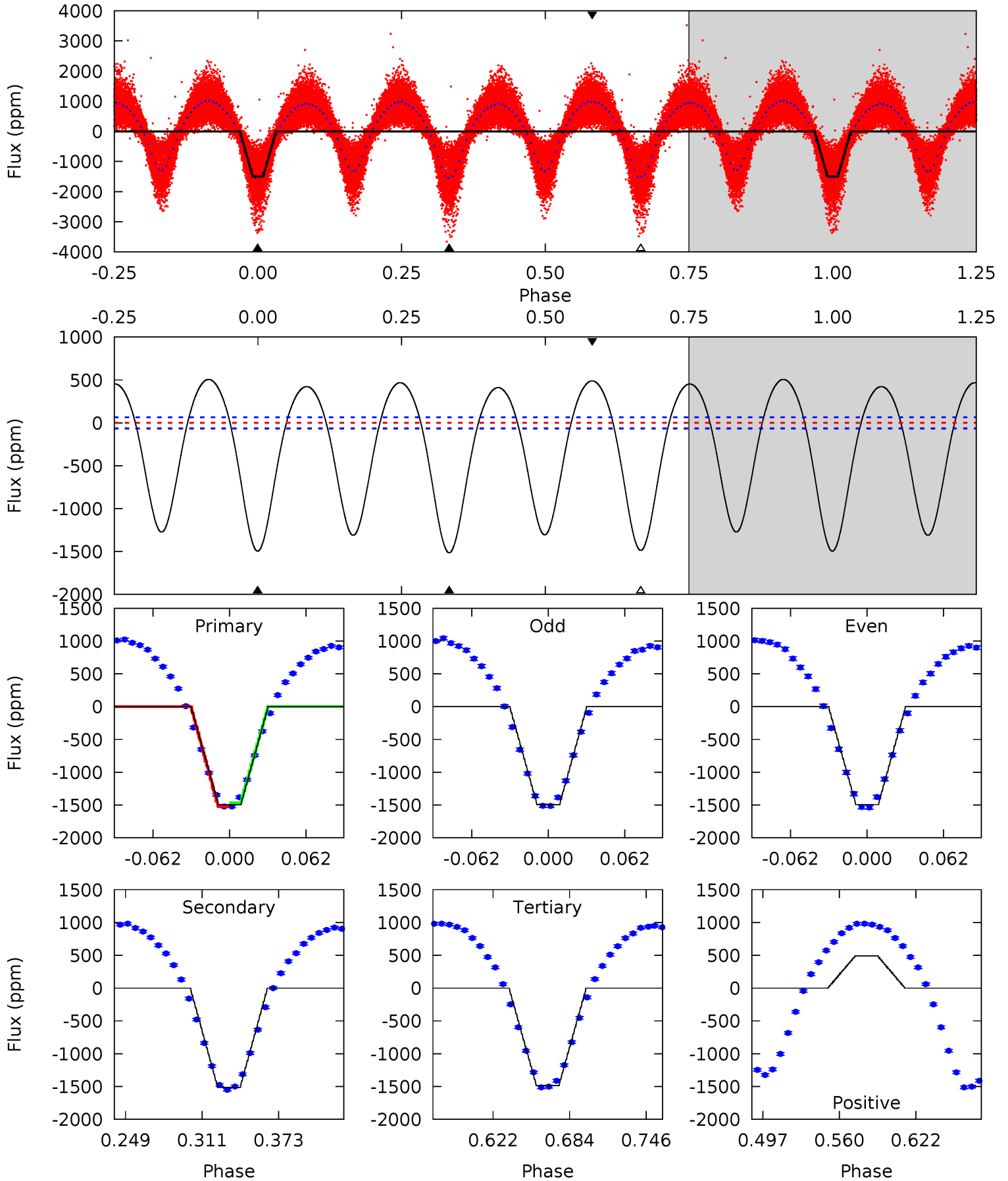
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
65.0	57.5	53.3	9.05	4.71	1.96	12.0	11.7	55.9	4.21	48.5	1.62	1.11	0.13	16.7



# Alt Model-Shift Uniqueness Test

006148704-01, P = 0.917542 Days, E = 130.683342 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
107.8	109.1	107.2	35.3	4.66	1.86	46.0	0.58	72.5	1.95	73.8	0.14	0.99	0.25	2.21



### Stellar Parameters For KIC 006148704

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6254^{+169}_{-206}$	$4.356^{+0.108}_{-0.201}$	$-0.300^{+0.250}_{-0.300}$	$1.097^{+0.328}_{-0.176}$	$0.994^{+0.158}_{-0.101}$	$1.060^{+0.524}_{-0.527}$
	+3%/-3%	+2%/-5%	+83%/-100%	+30%/-16%	+16%/-10%	+49%/-50%
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 006148704-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-160 \pm 3$	$1.63^{+0.31}_{-0.25}$	$3015^{+224}_{-180}$	$6083^{+436}_{-369}$	$11^{+4}_{-3}$
Alt.	$-1515 \pm 14$	$4.26^{+0.65}_{-0.44}$	$3011^{+220}_{-173}$	$6606^{+260}_{-237}$	$16^{+4}_{-4}$

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



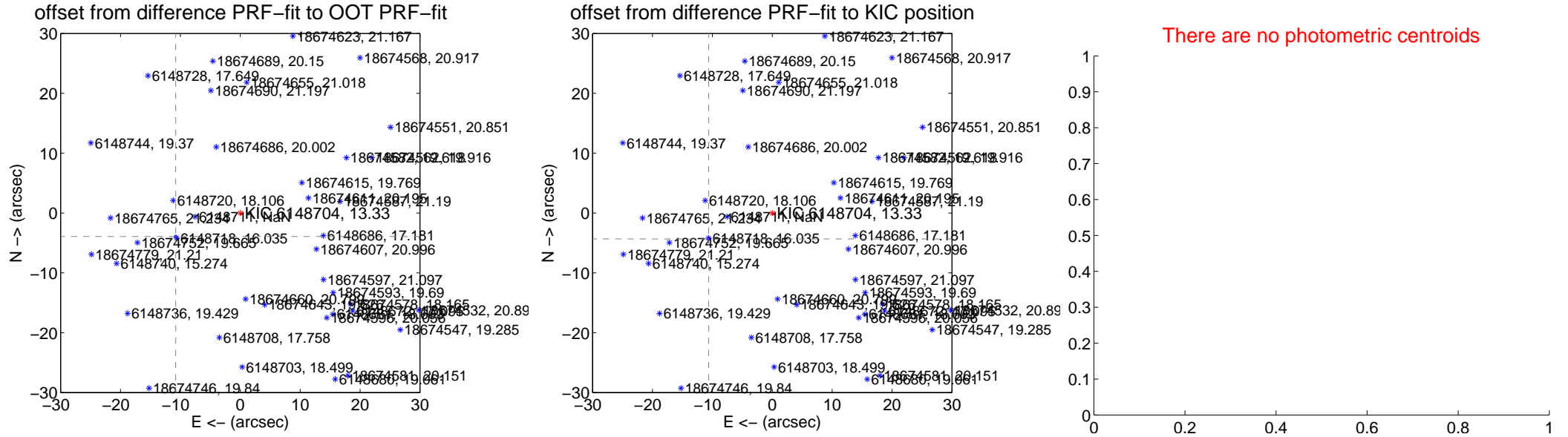
## DV Centroid Data

Supplemental centroid analysis for 006148704-01. Kepler magnitude: 13.33. Transit SNR 28.63

There are 10 quarters with good PRF difference image offsets

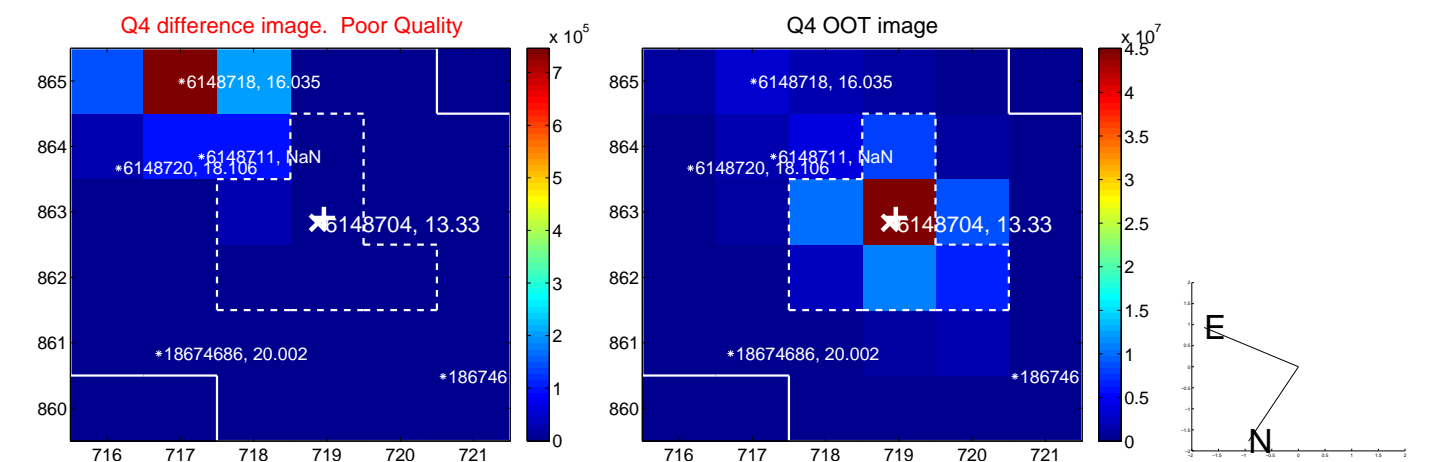
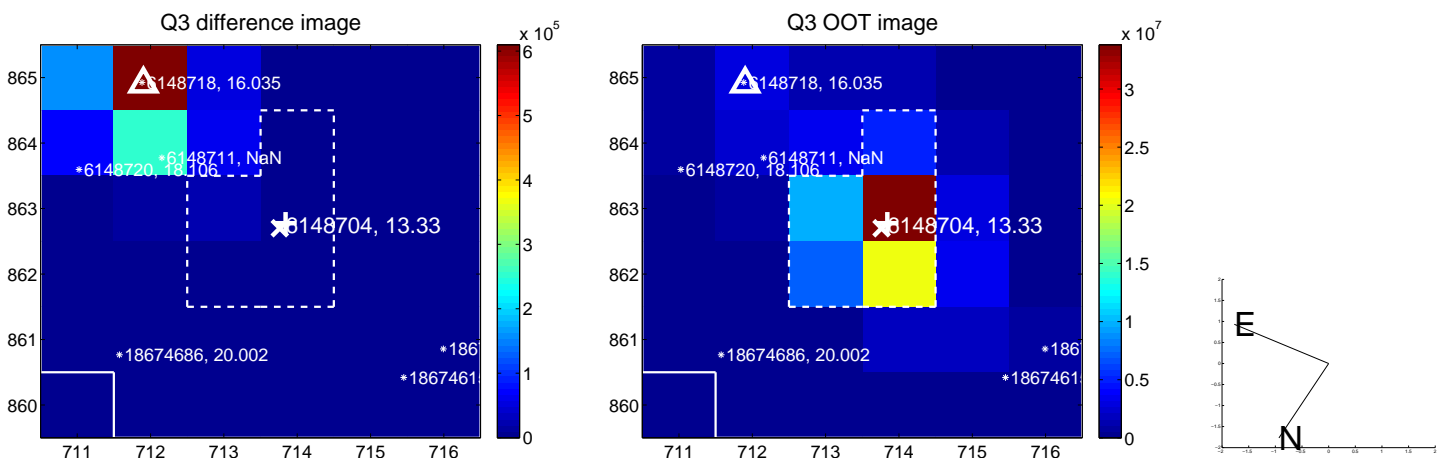
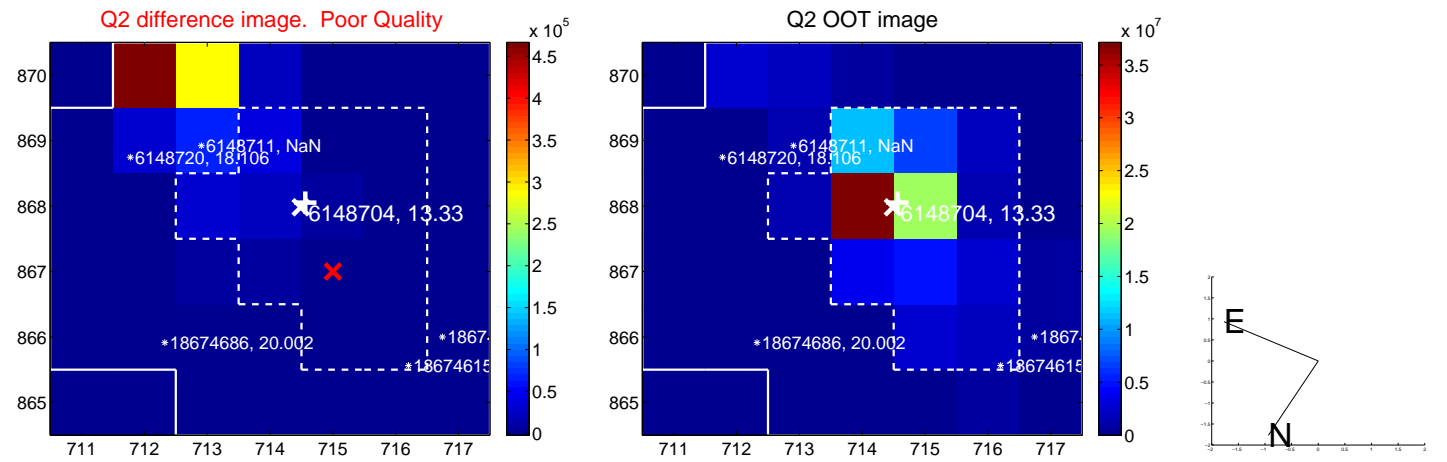
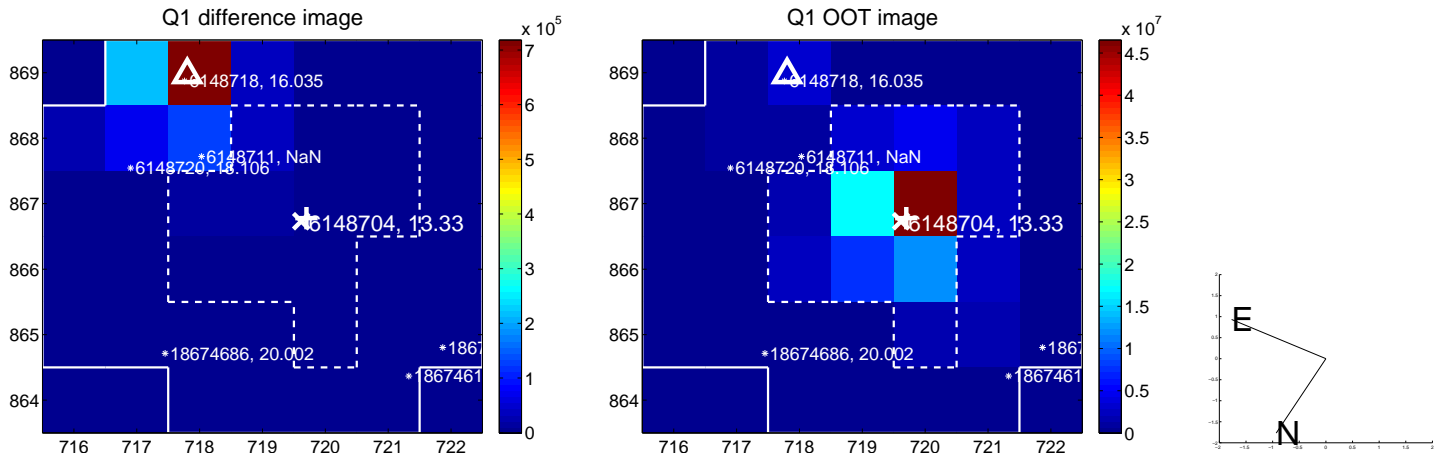
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>11.475 <math>\pm</math> 0.069</b>	<b>166.61</b>	10.784 $\pm$ 0.068	-3.924 $\pm$ 0.076
PRF-fit source offset from KIC position	<b>11.466 <math>\pm</math> 0.070</b>	<b>162.95</b>	10.617 $\pm$ 0.070	-4.331 $\pm$ 0.071
photometric centroid source offset	—	—	—	—

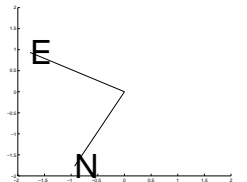
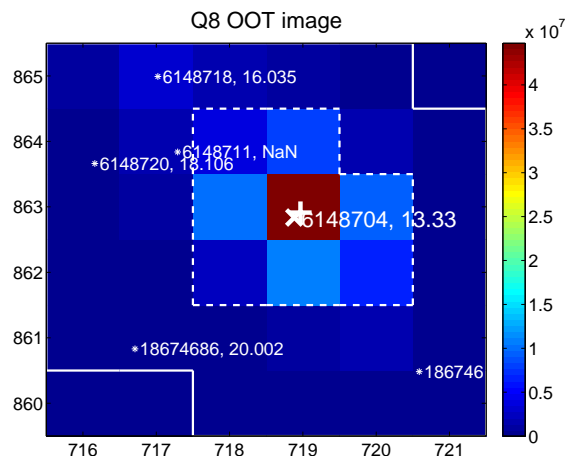
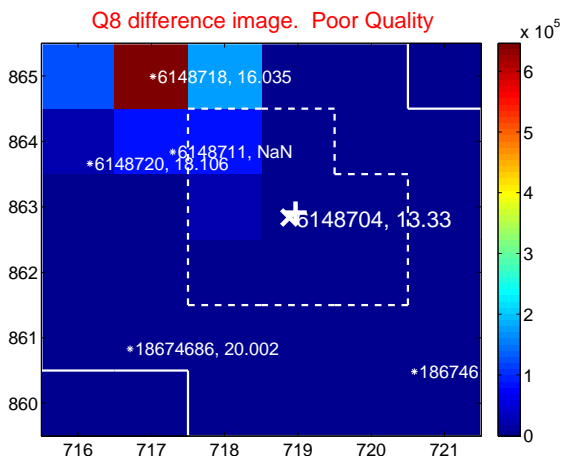
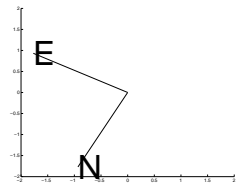
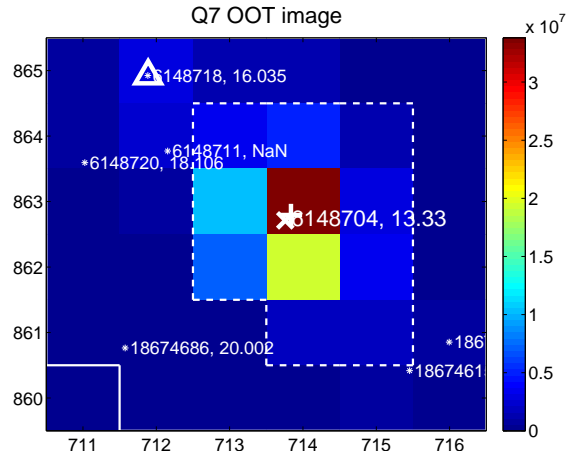
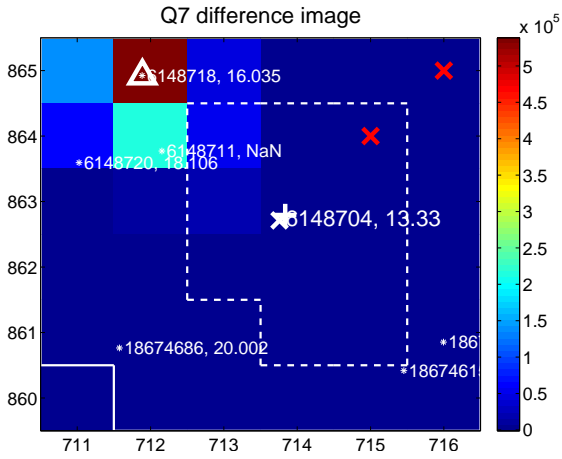
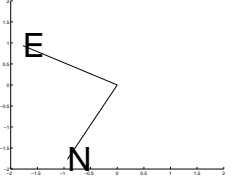
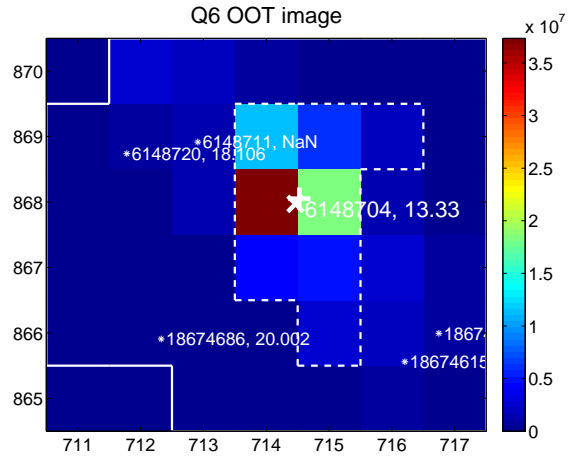
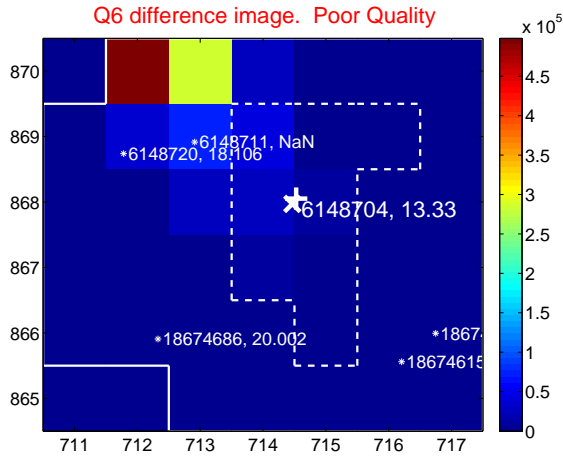
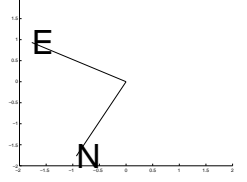
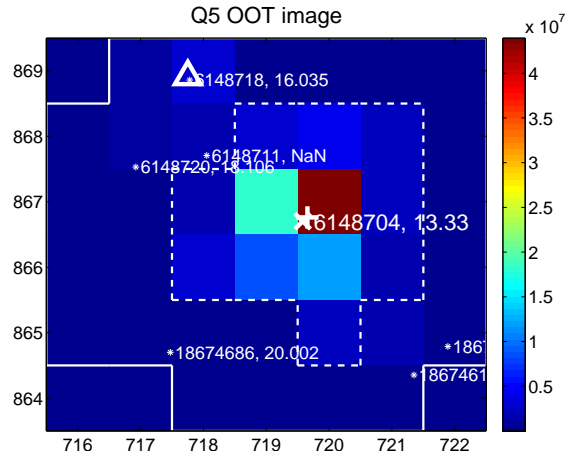
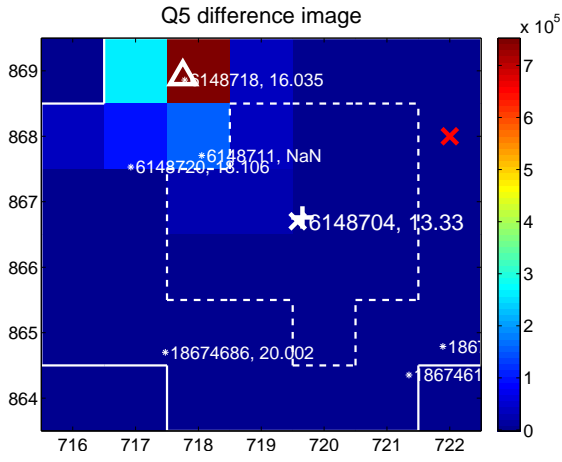


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

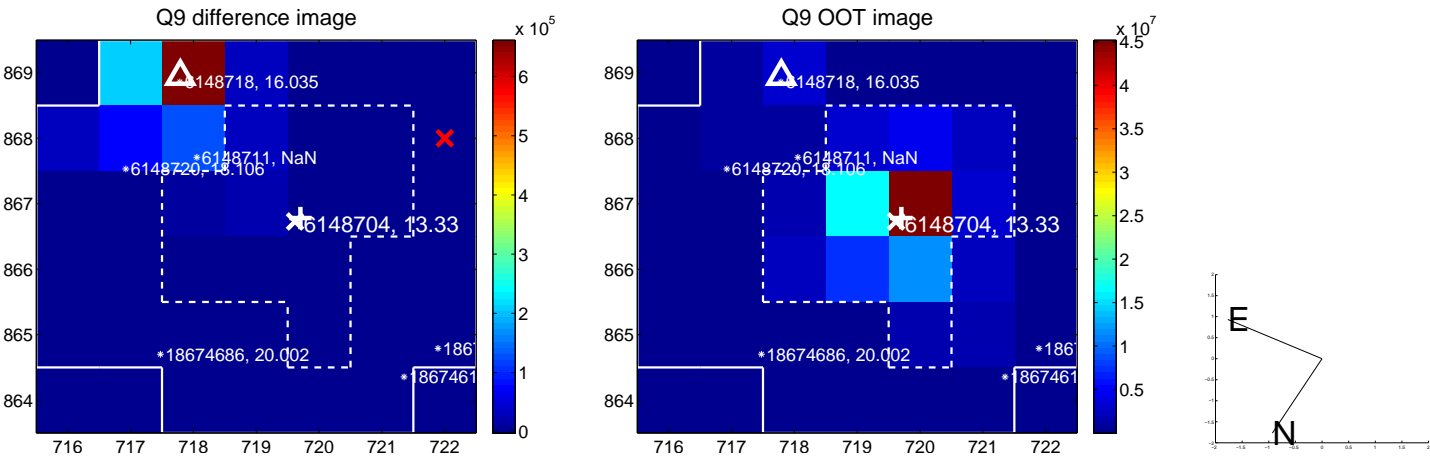
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



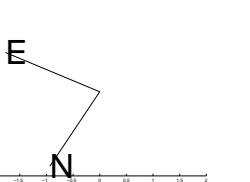
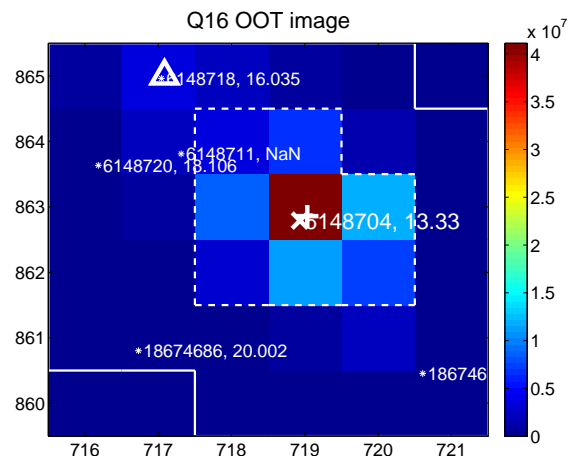
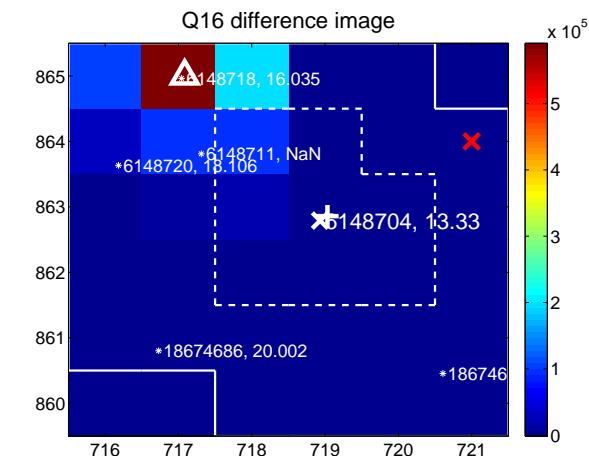
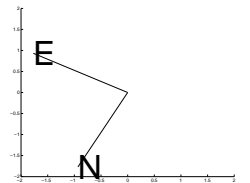
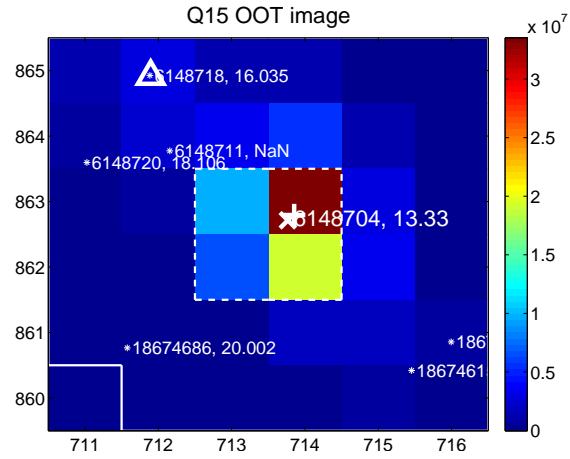
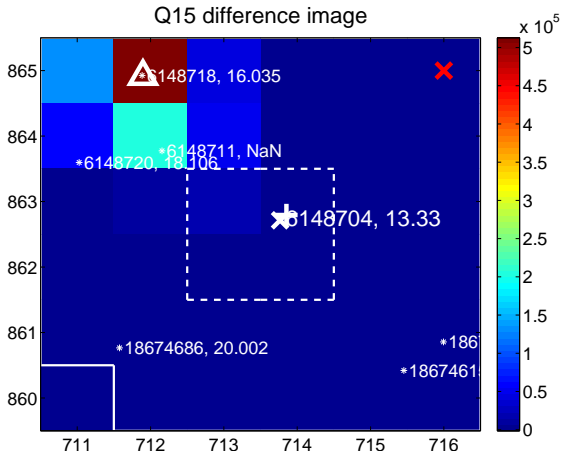
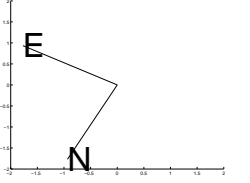
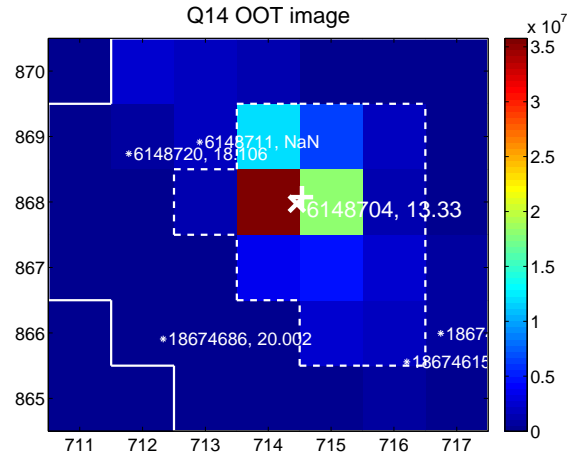
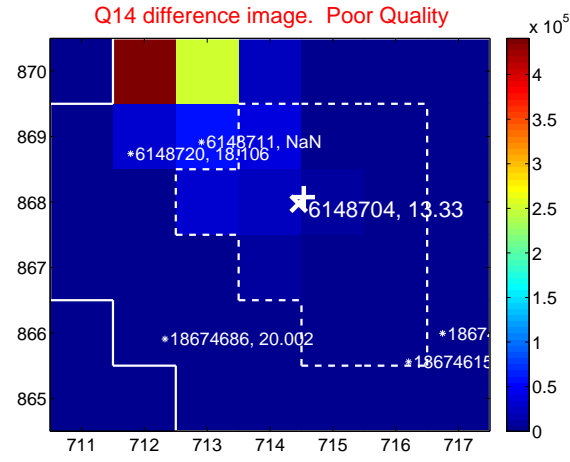
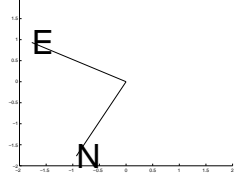
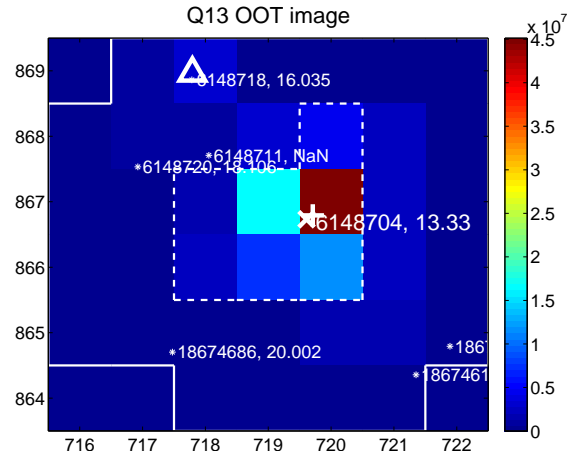
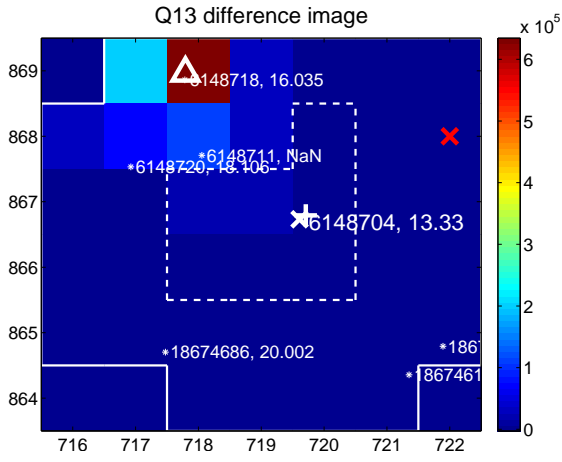
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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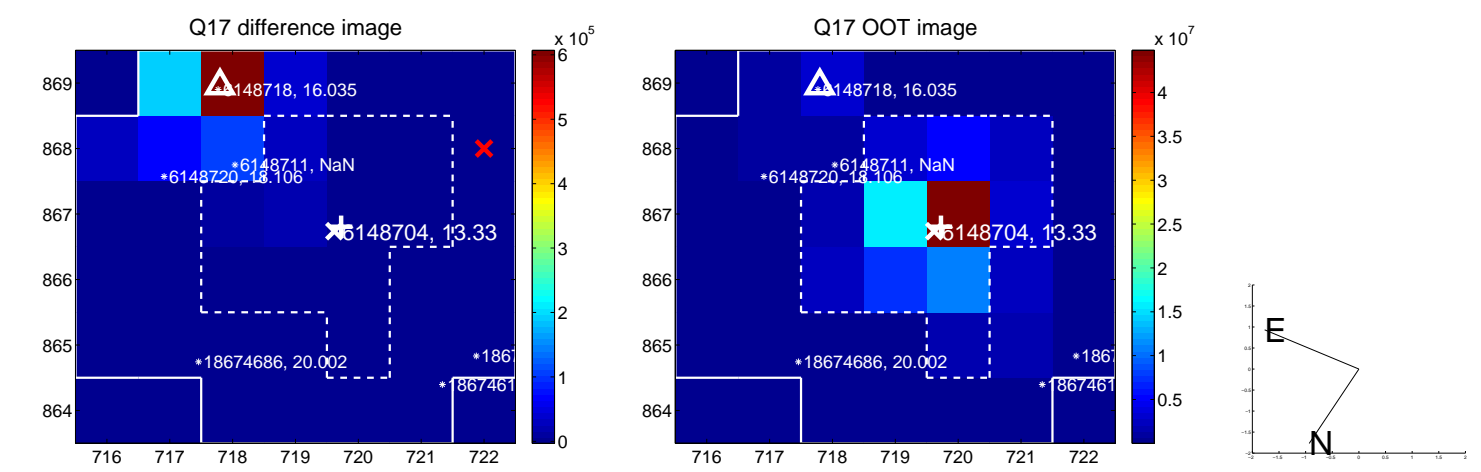


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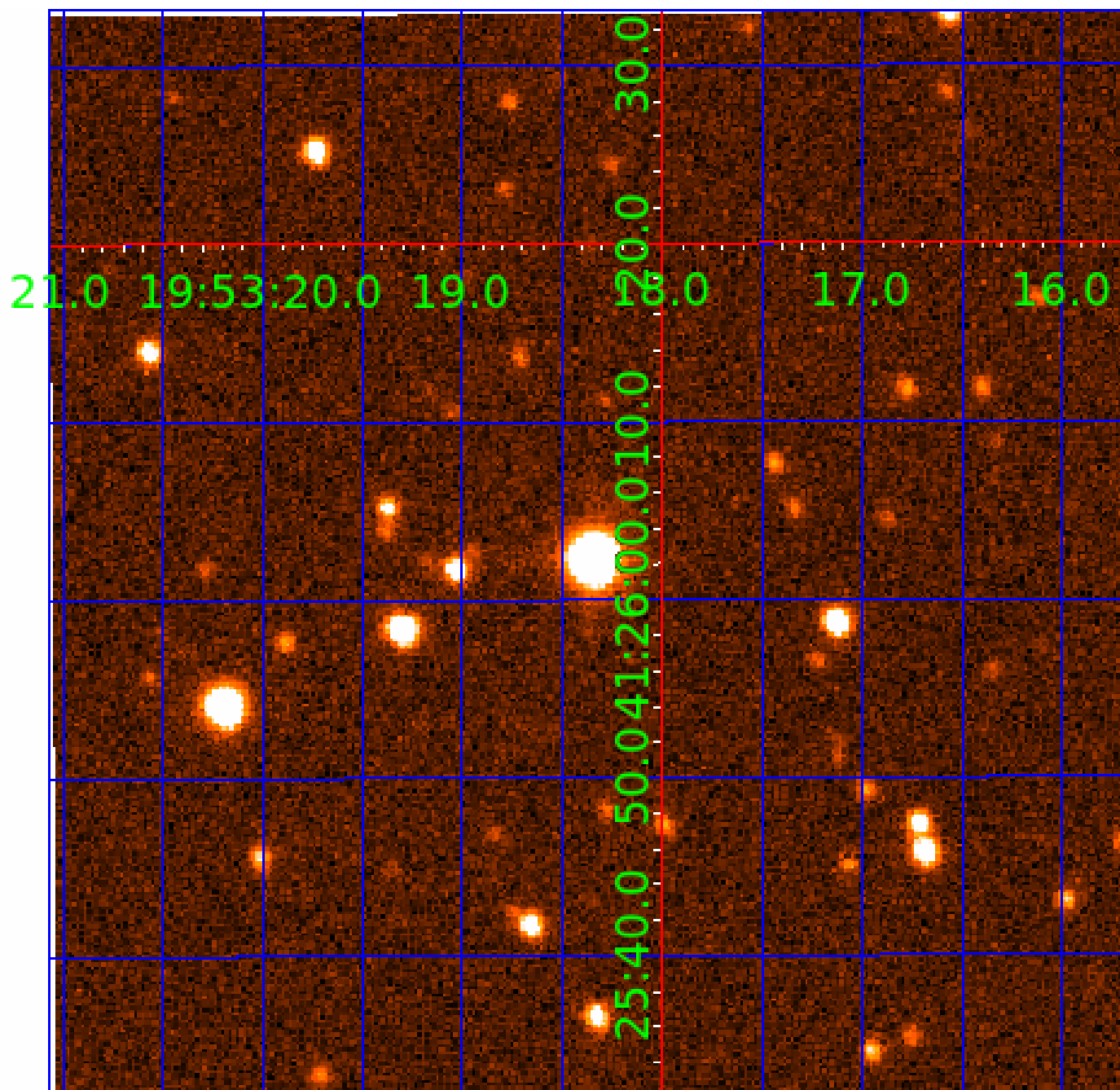
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



# KIC 006148704

## 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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006148704-03	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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

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

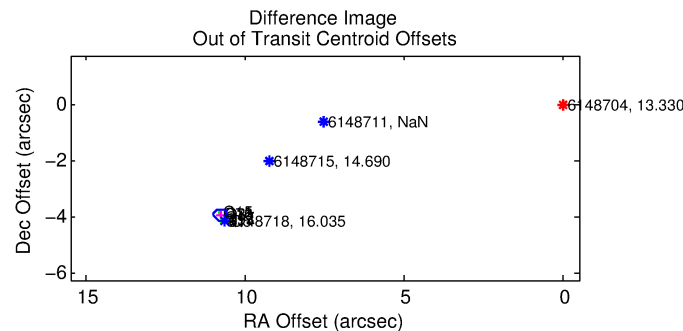
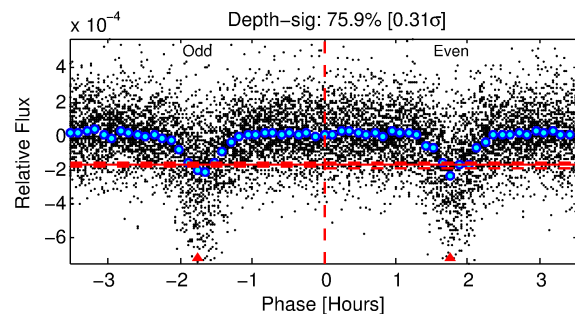
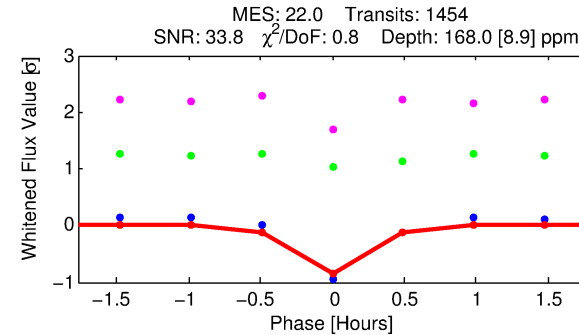
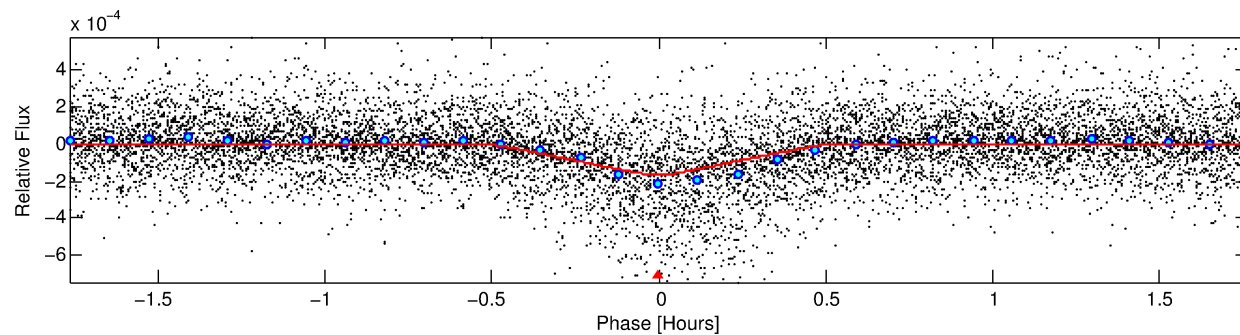
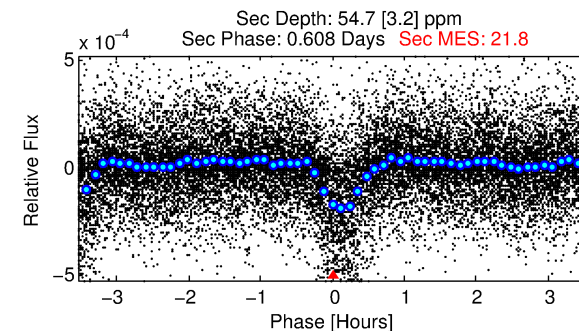
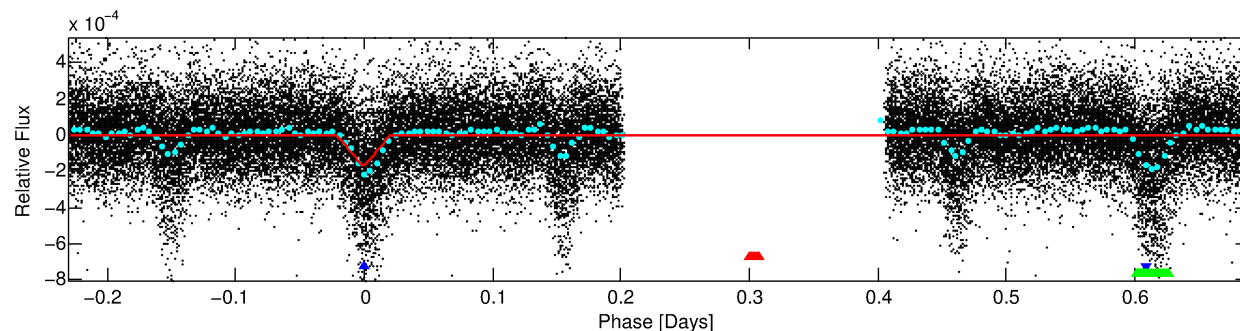
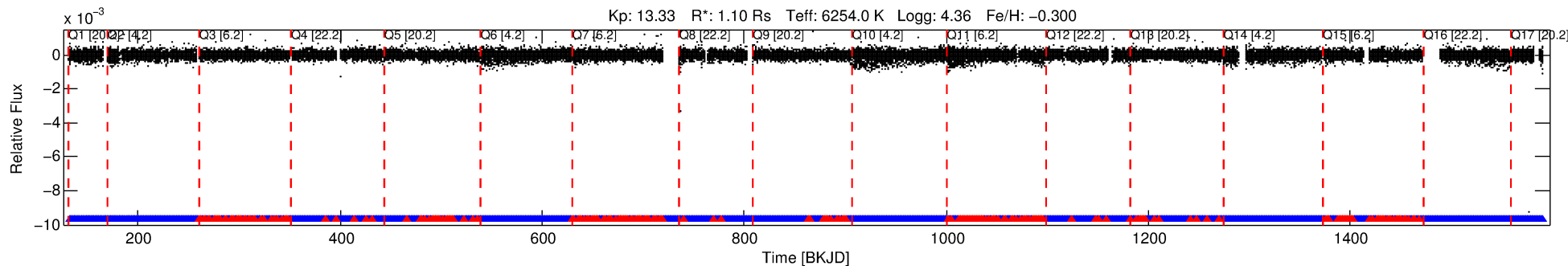
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006148704-02

No Significant Match Found

# DV One-Page Summary

KIC: 6148704 Candidate: 2 of 3 Period: 0.918 d



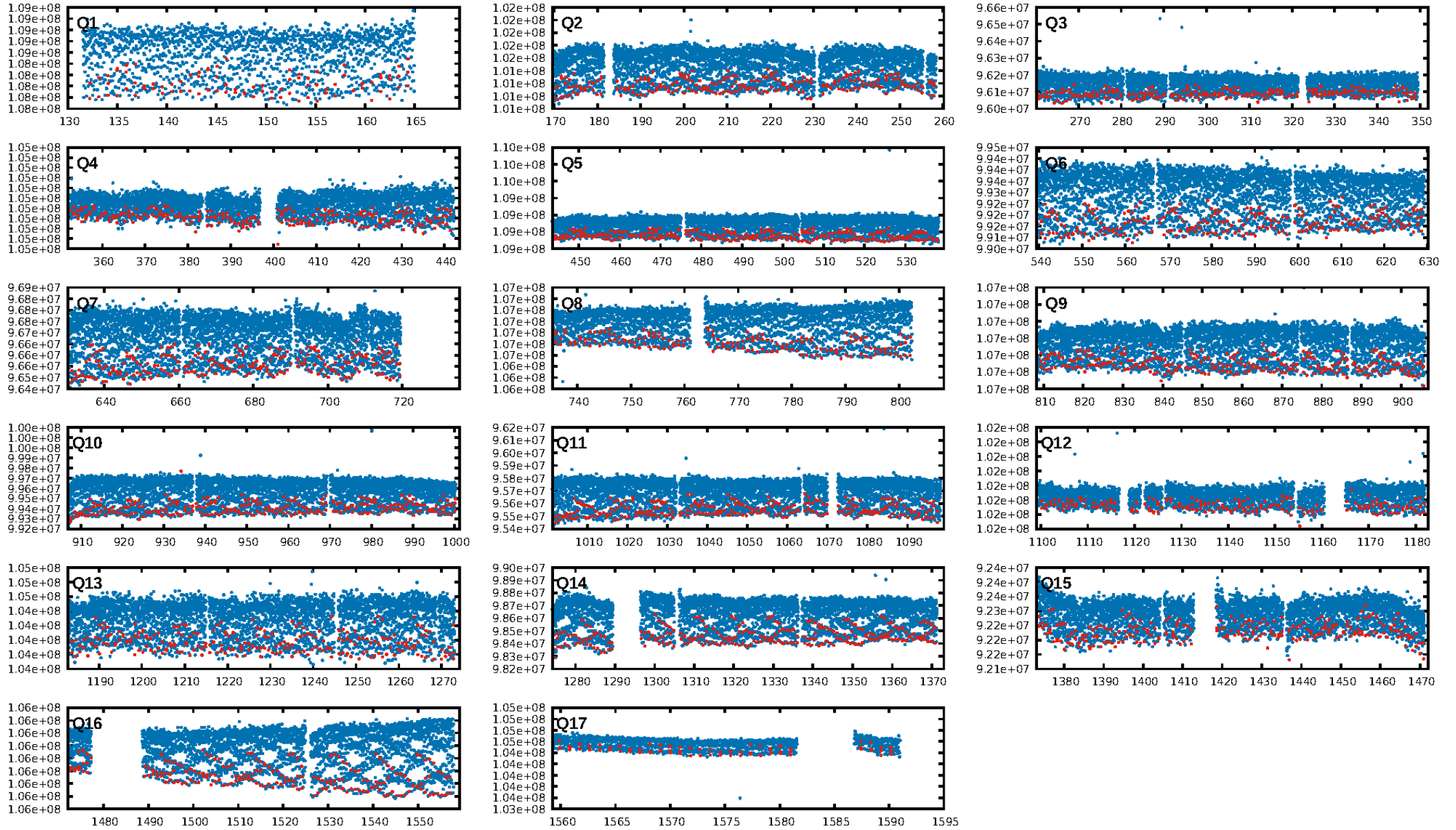
## DV Fit Results:

Period = 0.91754 [0.00000] d  
Epoch = 132.2141 [0.0004] BKJD  
Rp/R\* = 0.0144 [0.0013]  
a/R\* = 5.48 [2.49]  
b = 0.91 [0.09]  
Seff = 4839.86 [1888.74]  
Teq = 2127 [207] K  
Rp = 1.73 [0.54] Re  
a = 0.0185 [0.0047] AU  
Ag = 3.43 [1.42] [1.71σ]  
Teff = 4476 [261] K [7.05σ]

## DV Diagnostic Results:

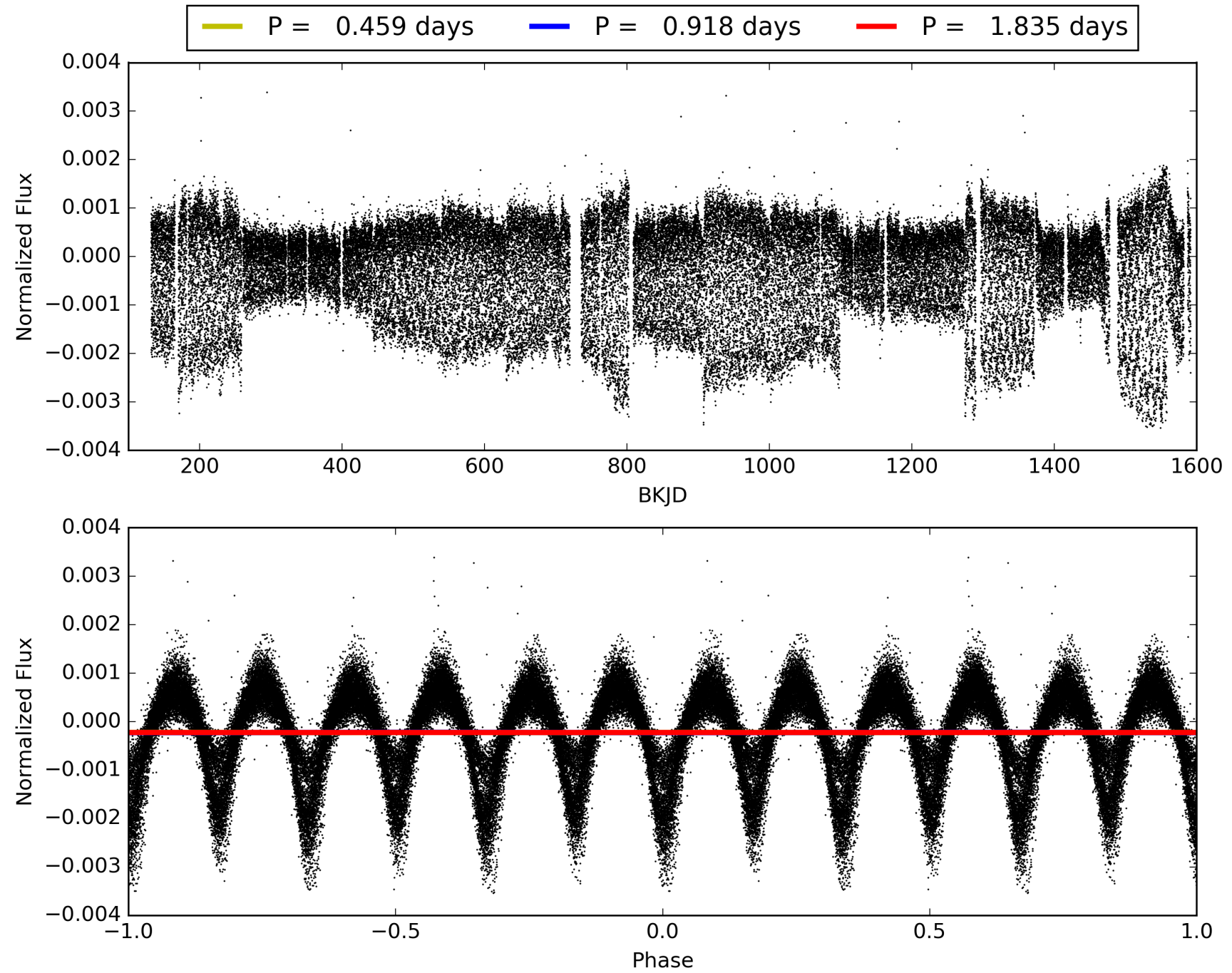
ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.10e-94  
RollingBand-fgt: 0.81 [1127/1390]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 11.486 arcsec [166.91σ]  
KicOffset-rm: 11.467 arcsec [162.72σ]  
OotOffset-st: 0/4/1/5 [10]  
KicOffset-st: 0/4/1/5 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006148704-02, PDC Light Curves



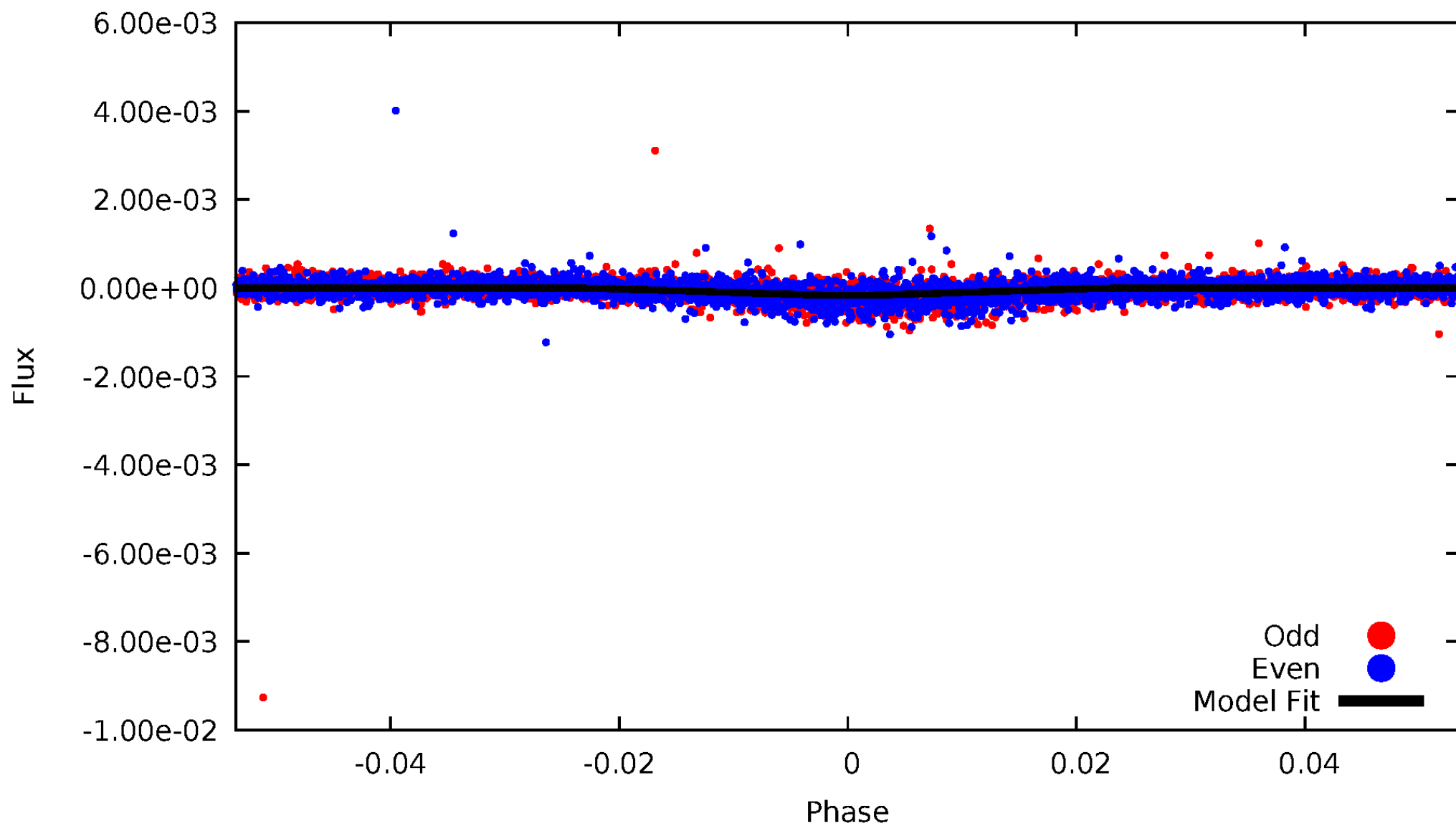


# TCE 006148704-02



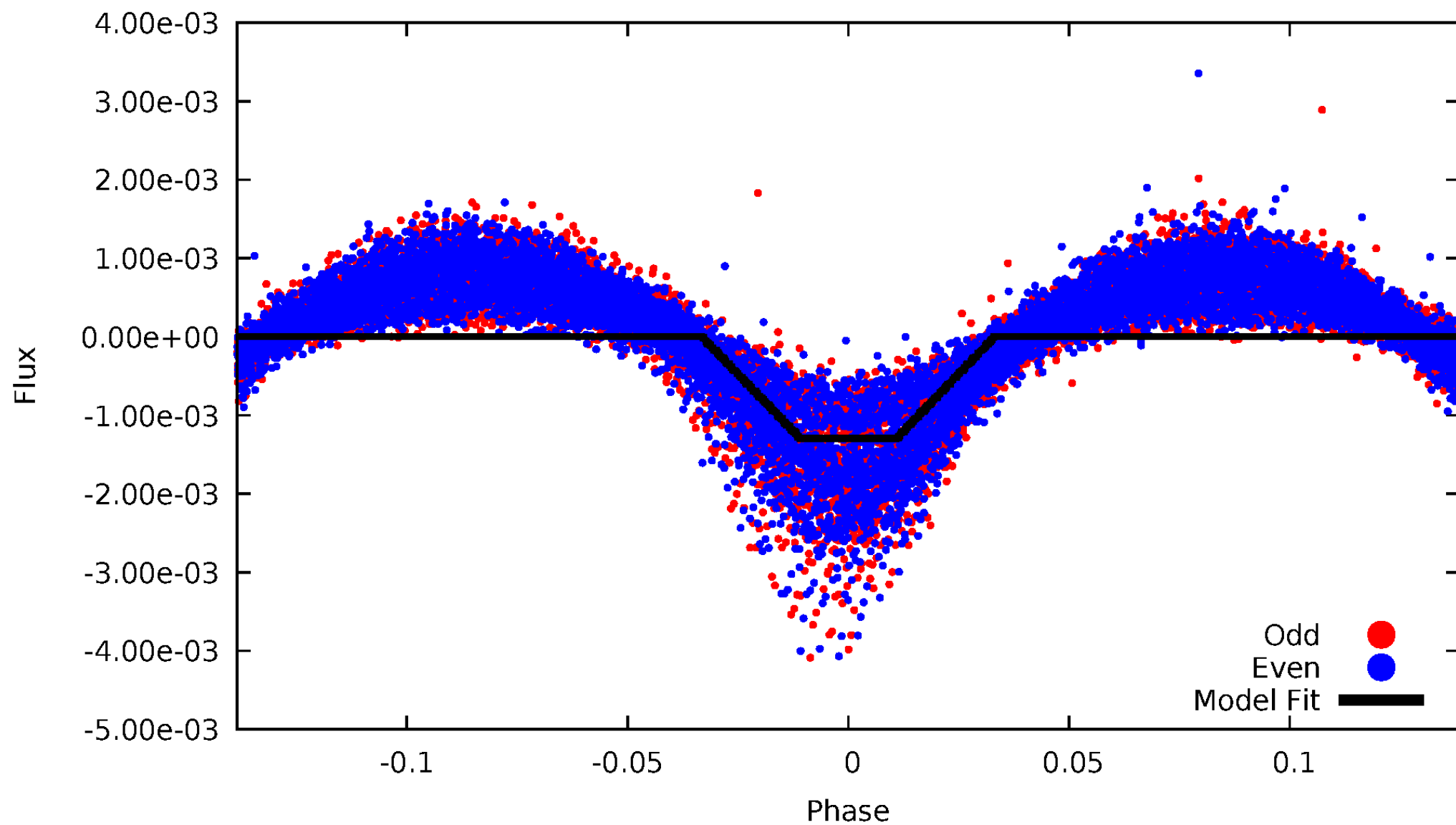
# DV Odd/Even

TCE 006148704-02



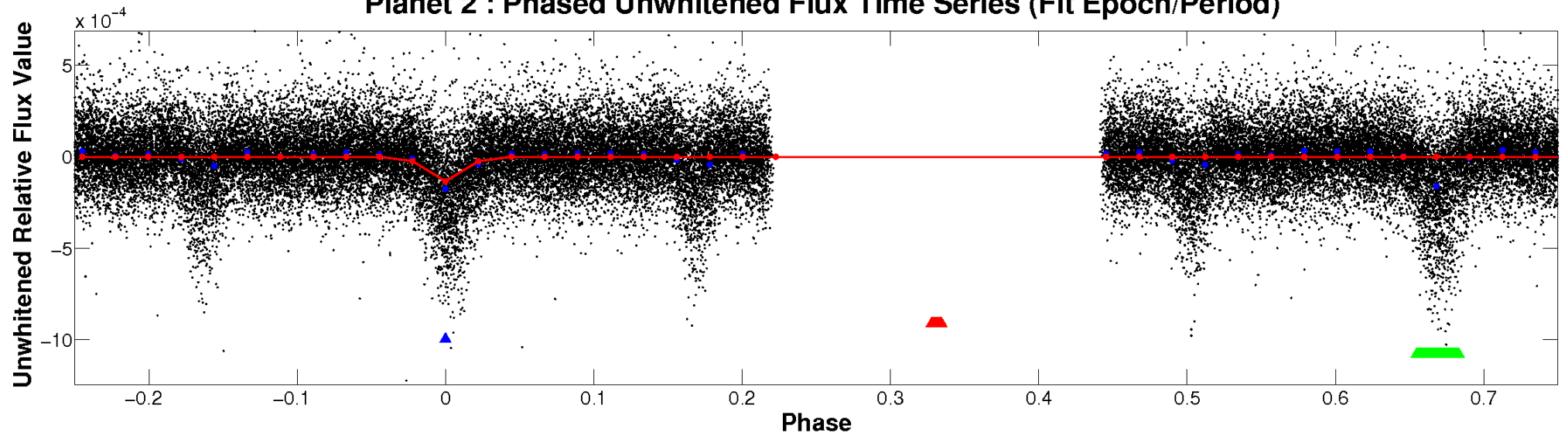
# ALT Odd/Even

TCE 006148704-02

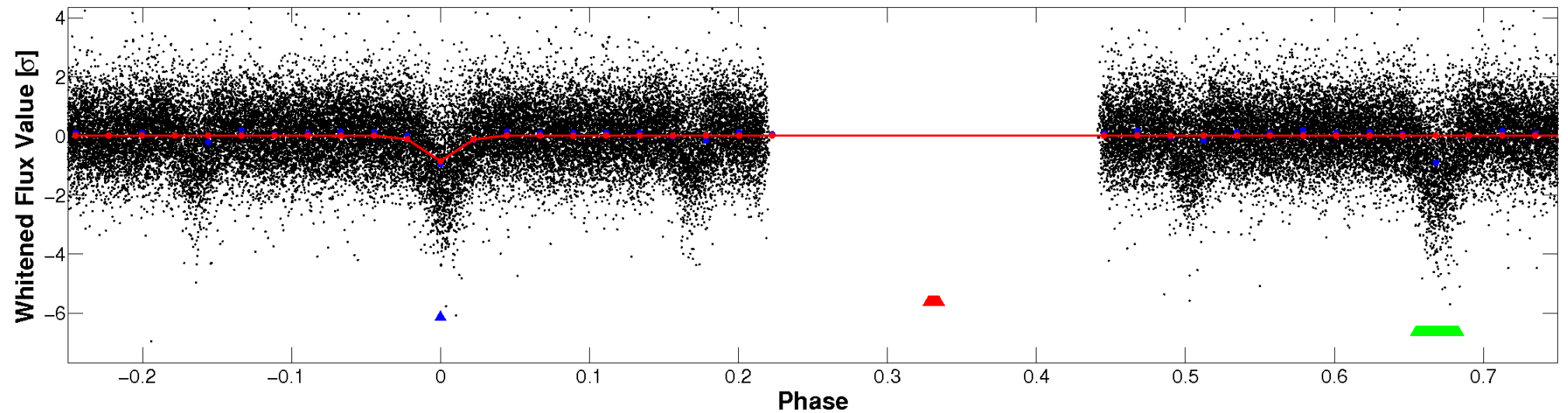


# Non-Whitened Vs. Whitened Light Curve

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

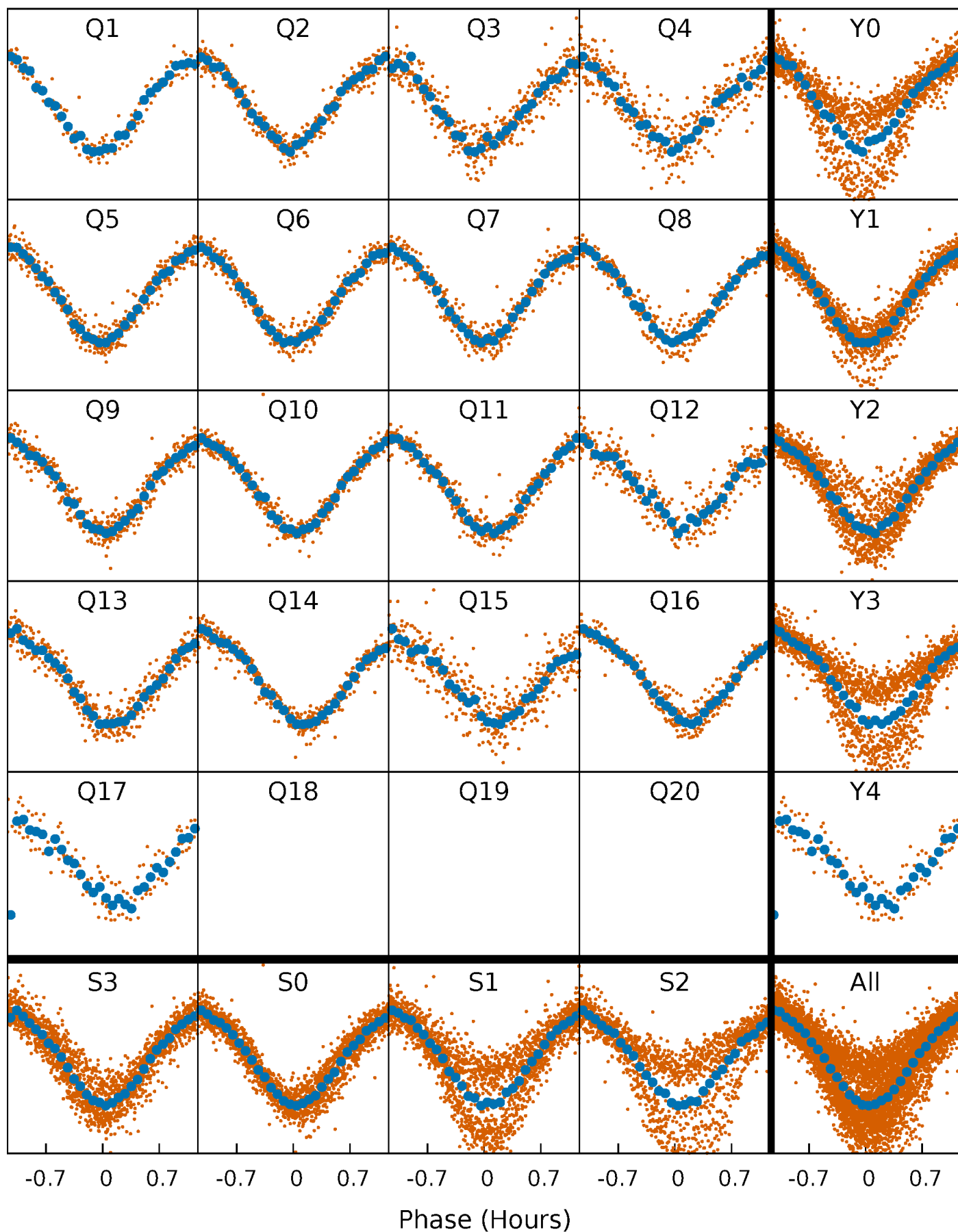


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

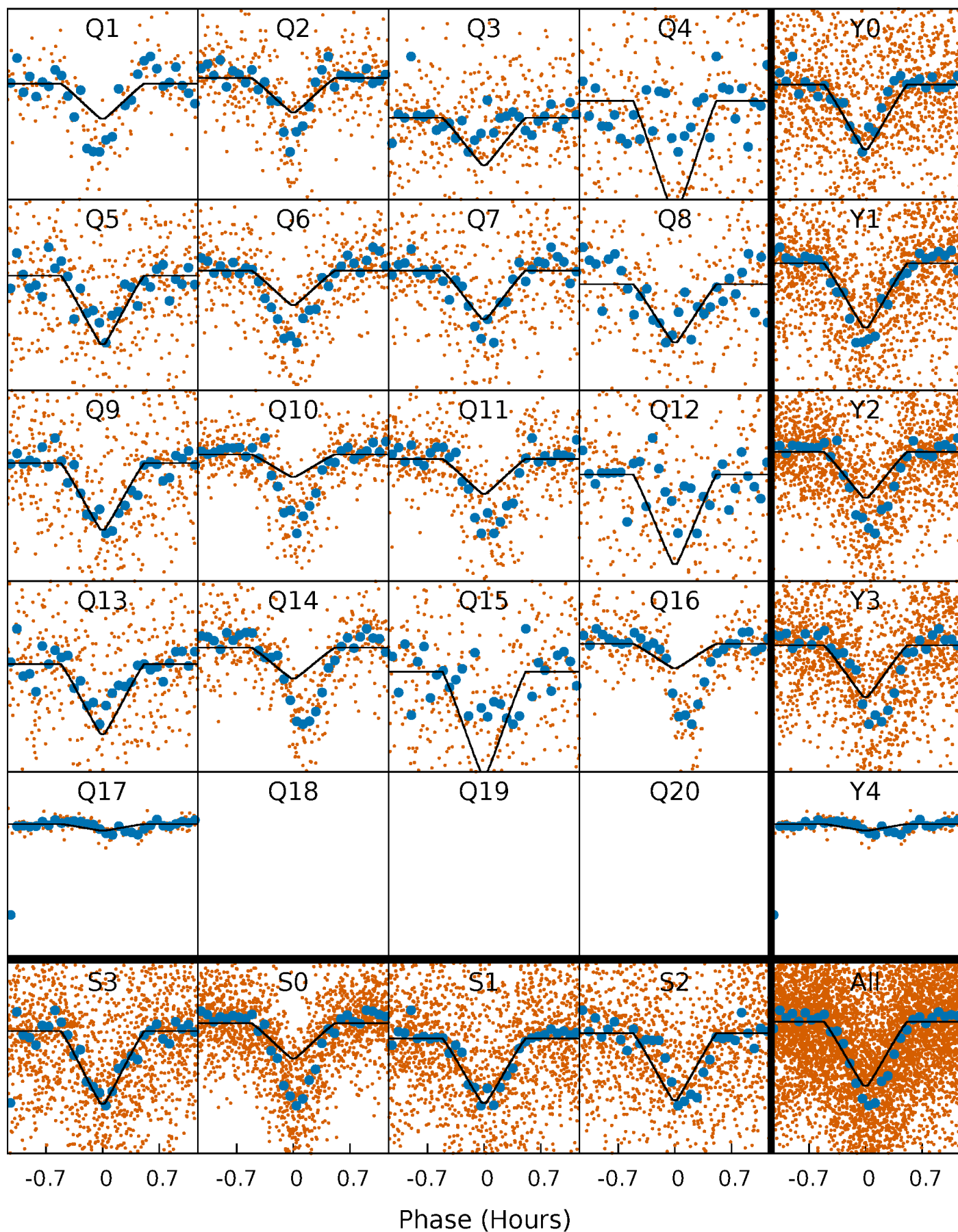
TCE 006148704-02   P= 0.917537 Days    $T_0=132.214050$  (BKJD)





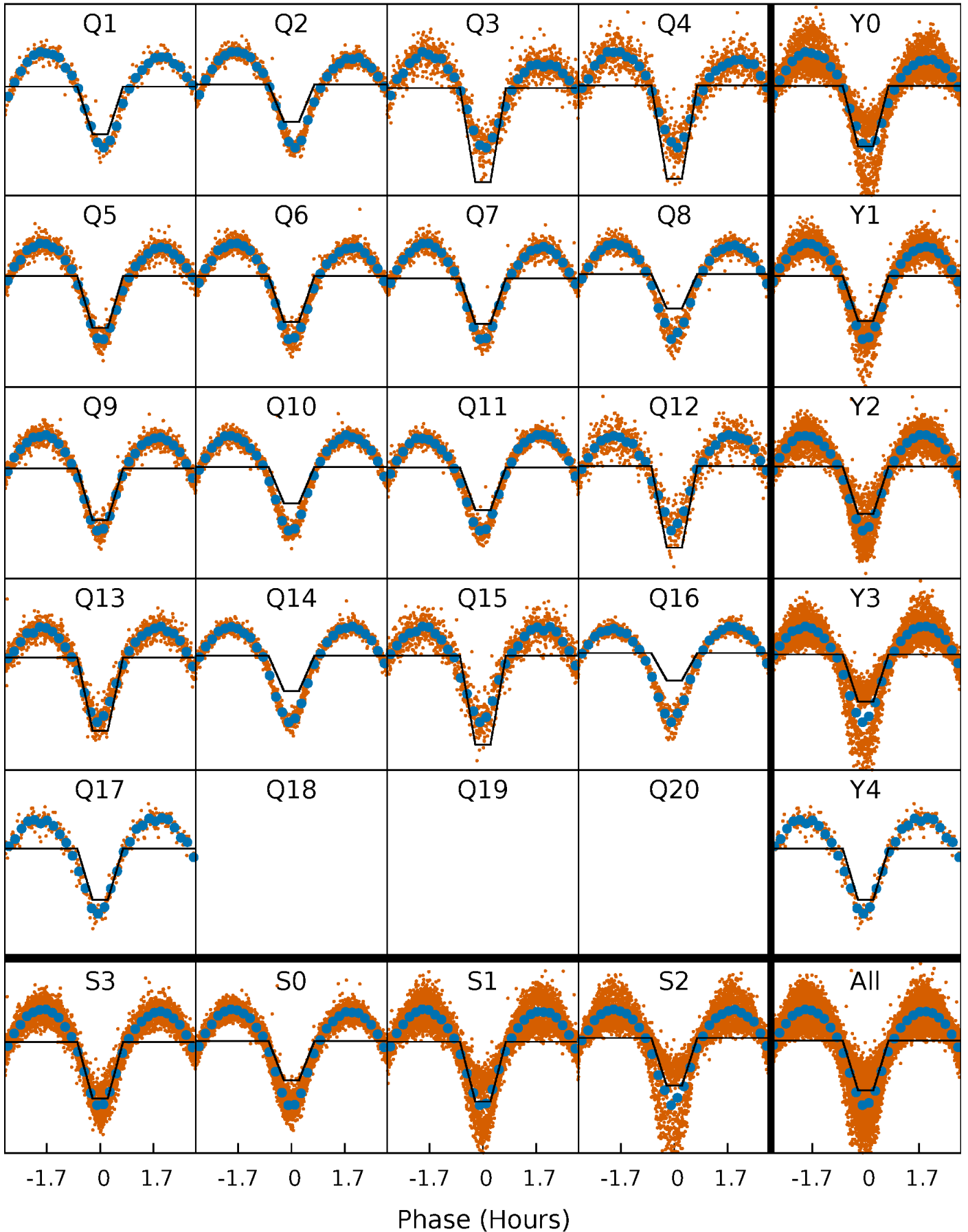
# DV Quarter-Phased Transit Curves

TCE 006148704-02   P= 0.917537 Days    $T_0=132.214050$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

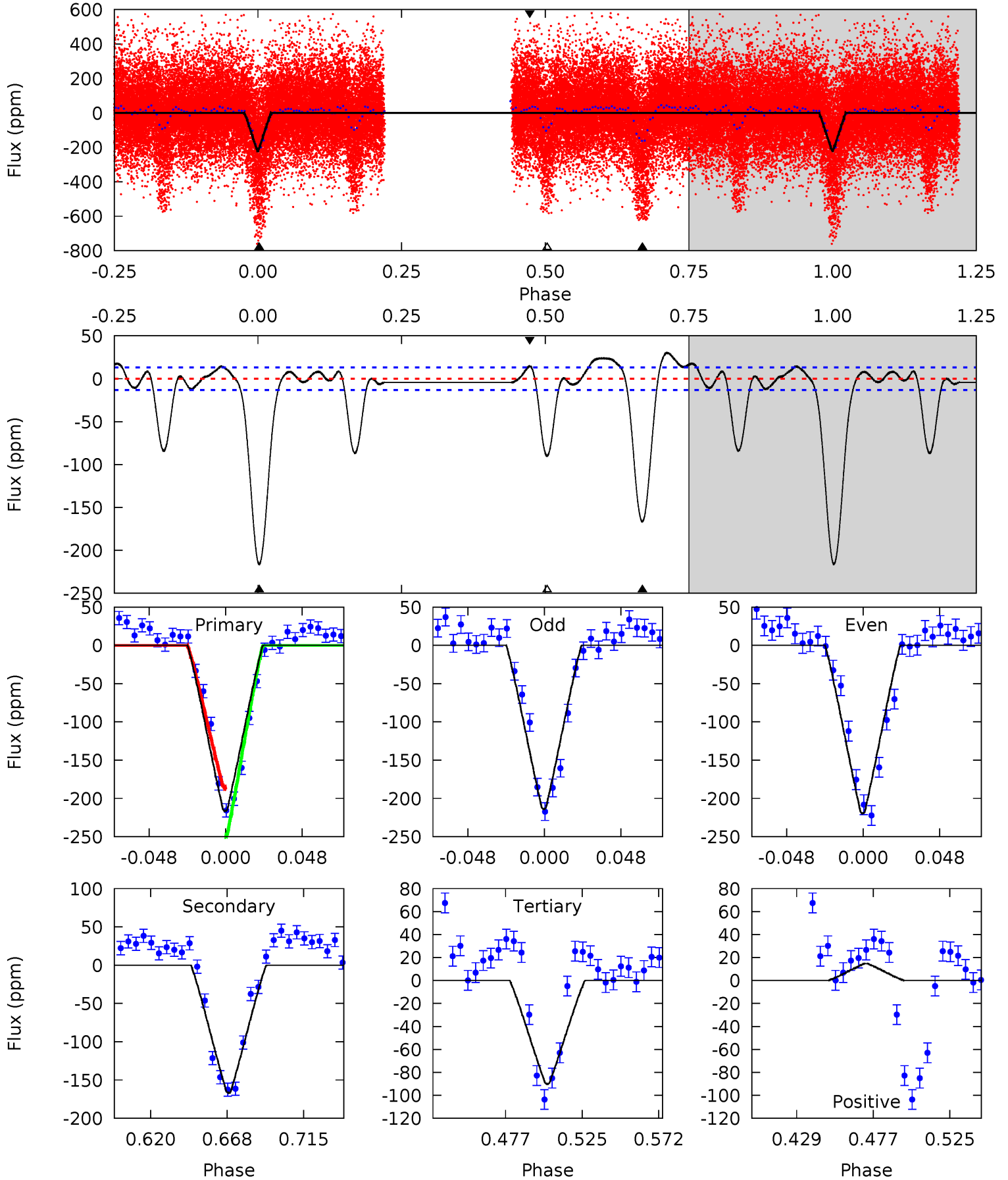
TCE 006148704-02     $P = 0.917548$  Days     $T_0 = 132.207384$  (BKJD)



# DV Model-Shift Uniqueness Test

006148704-02, P = 0.917537 Days, E = 131.296513 Days

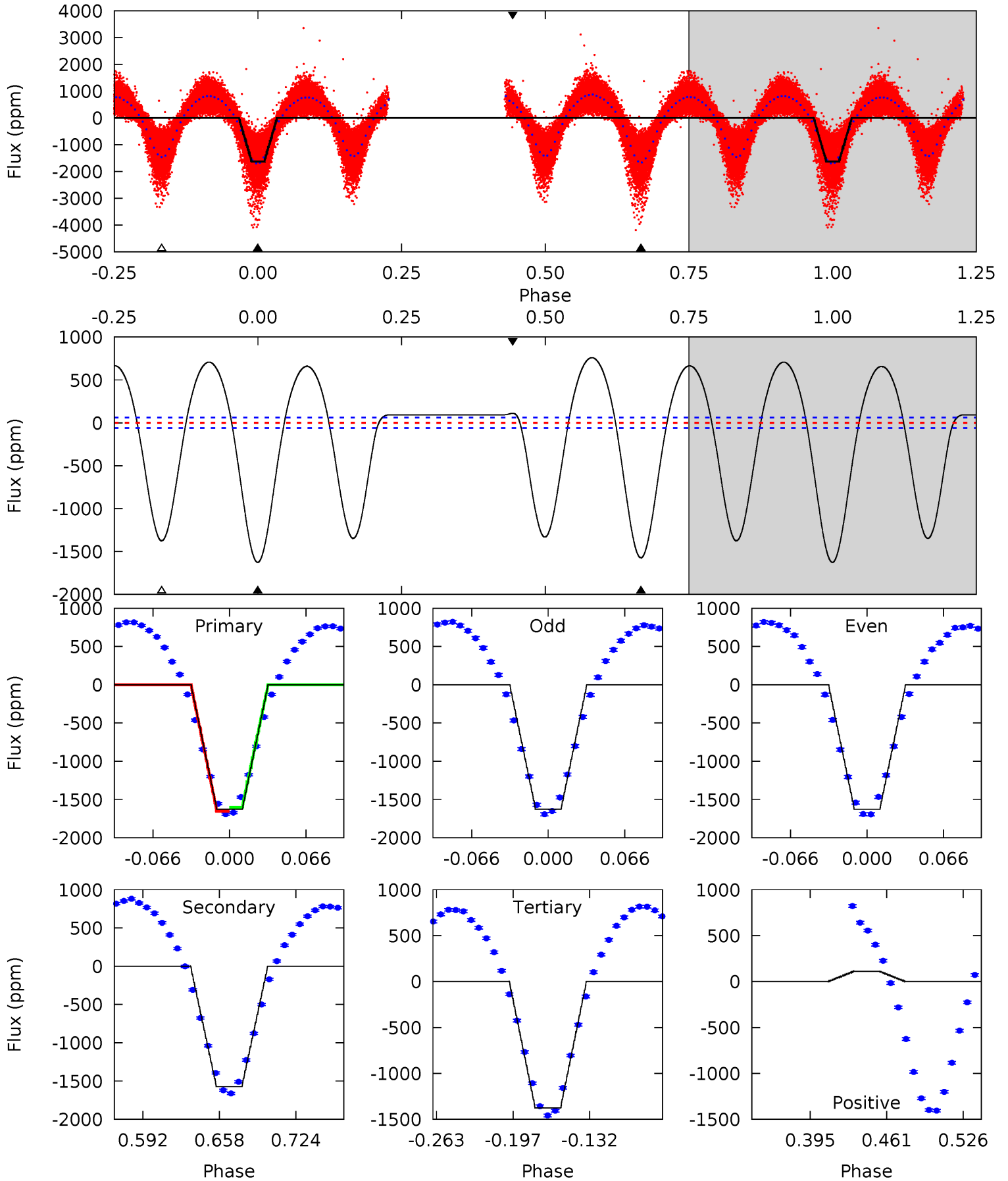
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
77.4	59.6	32.2	5.25	4.72	1.98	9.93	45.2	72.1	27.4	54.4	1.02	1.13	0.12	11.3



# Alt Model-Shift Uniqueness Test

006148704-02, P = 0.917548 Days, E = 131.289836 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
124.9	120.8	105.6	8.53	4.65	1.84	56.0	19.3	116.4	15.2	112.3	0.13	1.01	0.32	1.97



### Stellar Parameters For KIC 006148704

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$6254^{+169}_{-206}$	$4.356^{+0.108}_{-0.201}$	$-0.300^{+0.250}_{-0.300}$	$1.097^{+0.328}_{-0.176}$	$0.994^{+0.158}_{-0.101}$	$1.060^{+0.524}_{-0.527}$
	+3%/-3%	+2%/-5%	+83%/-100%	+30%/-16%	+16%/-10%	+49%/-50%
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 006148704-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-167 \pm 3$	$1.76^{+0.31}_{-0.23}$	$2992^{+217}_{-165}$	$5859^{+325}_{-277}$	$10^{+3}_{-3}$
Alt.	$-1574 \pm 13$	$4.42^{+0.70}_{-0.46}$	$3003^{+238}_{-167}$	$6523^{+241}_{-246}$	$15^{+3}_{-4}$

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

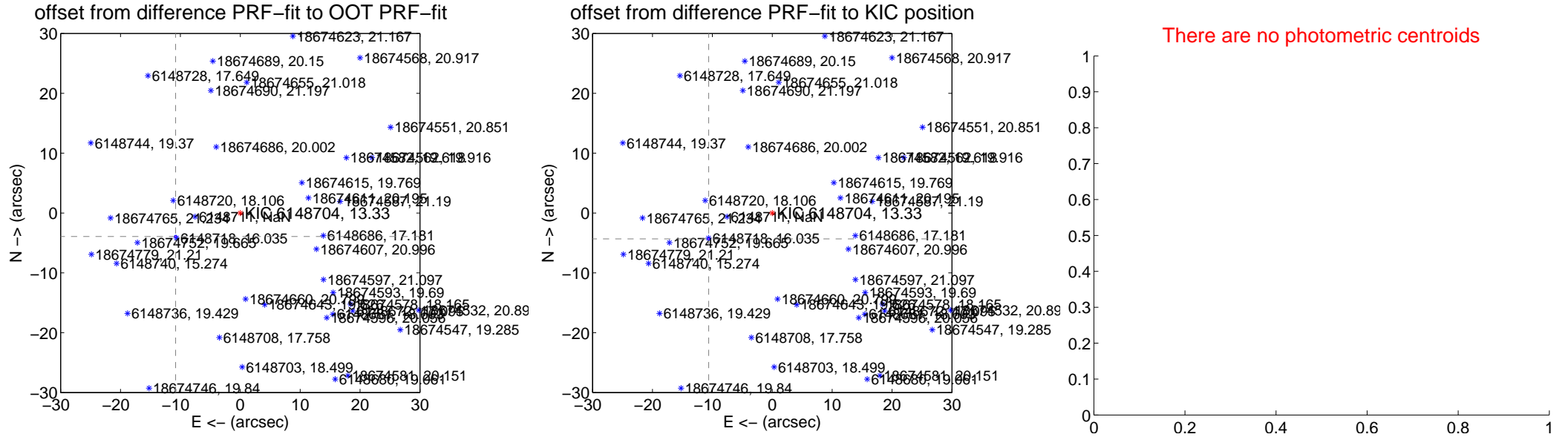
## DV Centroid Data

Supplemental centroid analysis for 006148704-02. Kepler magnitude: 13.33. Transit SNR 33.84

There are 10 quarters with good PRF difference image offsets

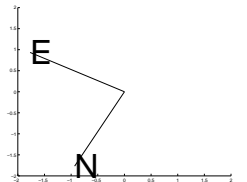
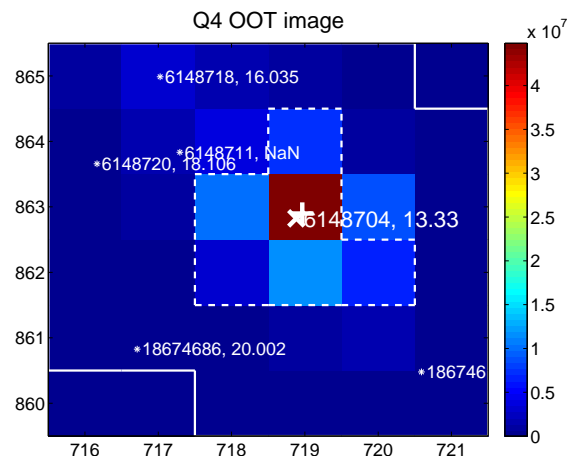
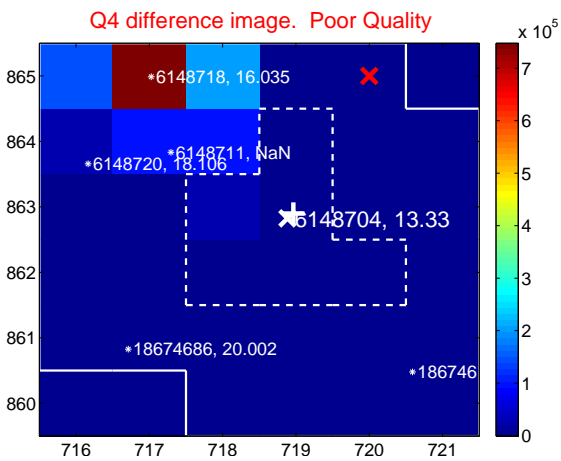
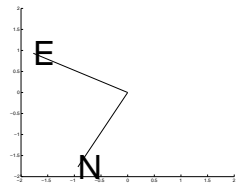
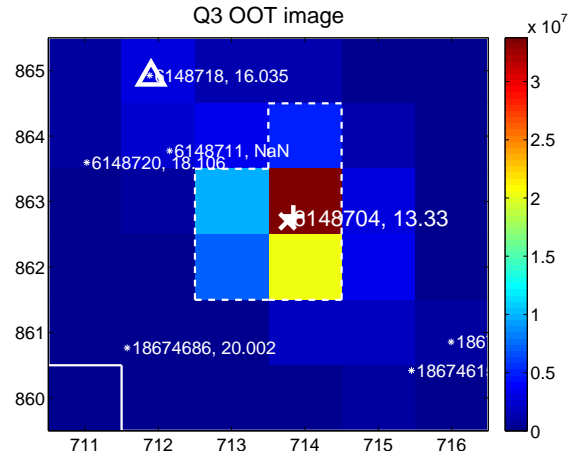
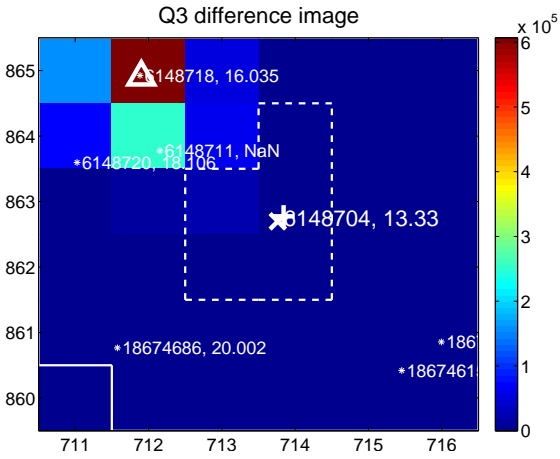
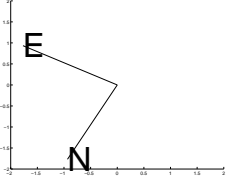
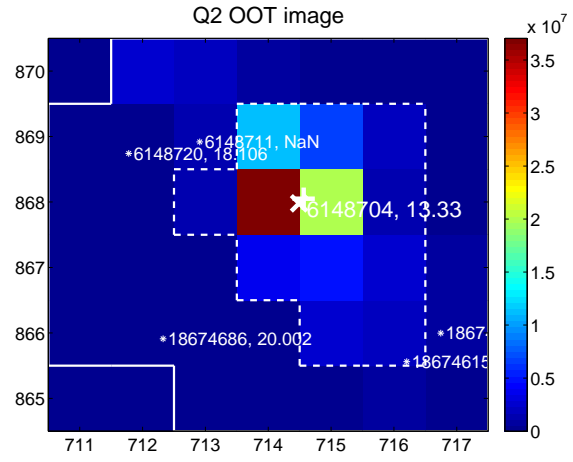
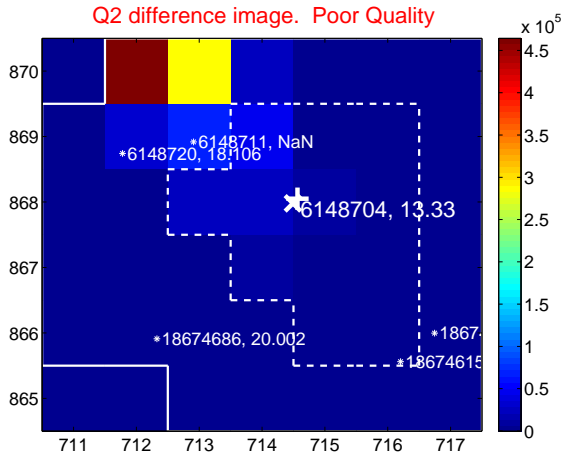
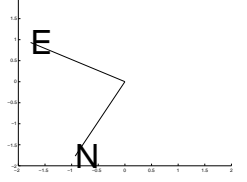
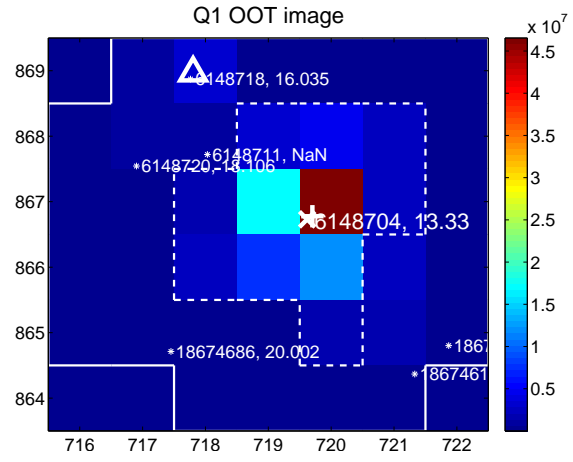
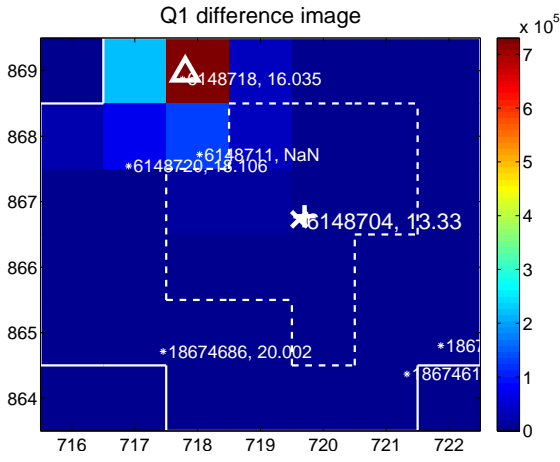
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>11.486 <math>\pm</math> 0.069</b>	<b>166.91</b>	10.794 $\pm$ 0.067	-3.928 $\pm$ 0.078
PRF-fit source offset from KIC position	<b>11.467 <math>\pm</math> 0.070</b>	<b>162.72</b>	10.618 $\pm$ 0.070	-4.330 $\pm$ 0.072
photometric centroid source offset	—	—	—	—



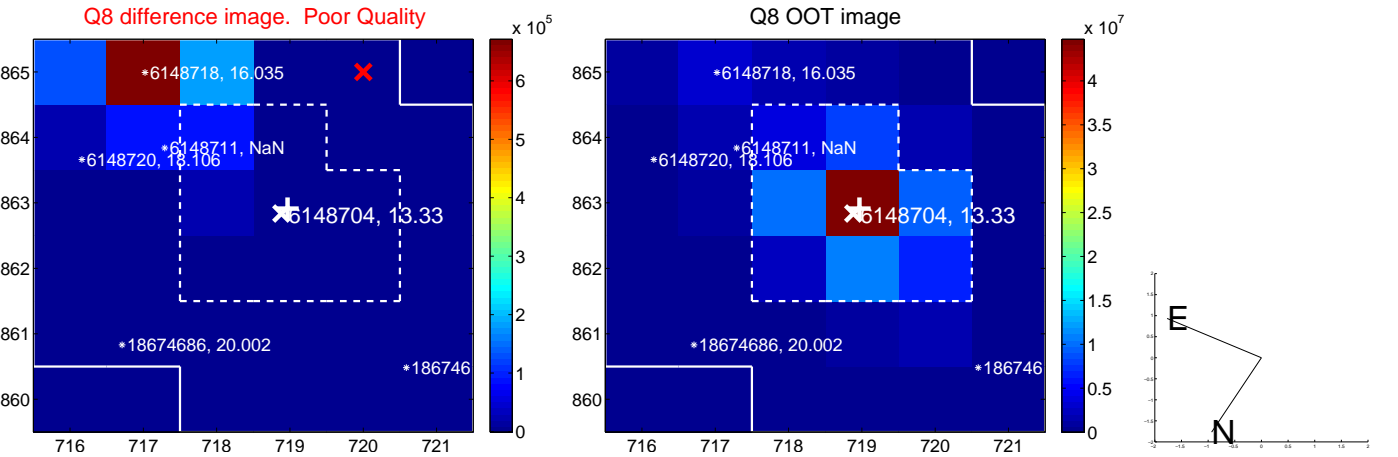
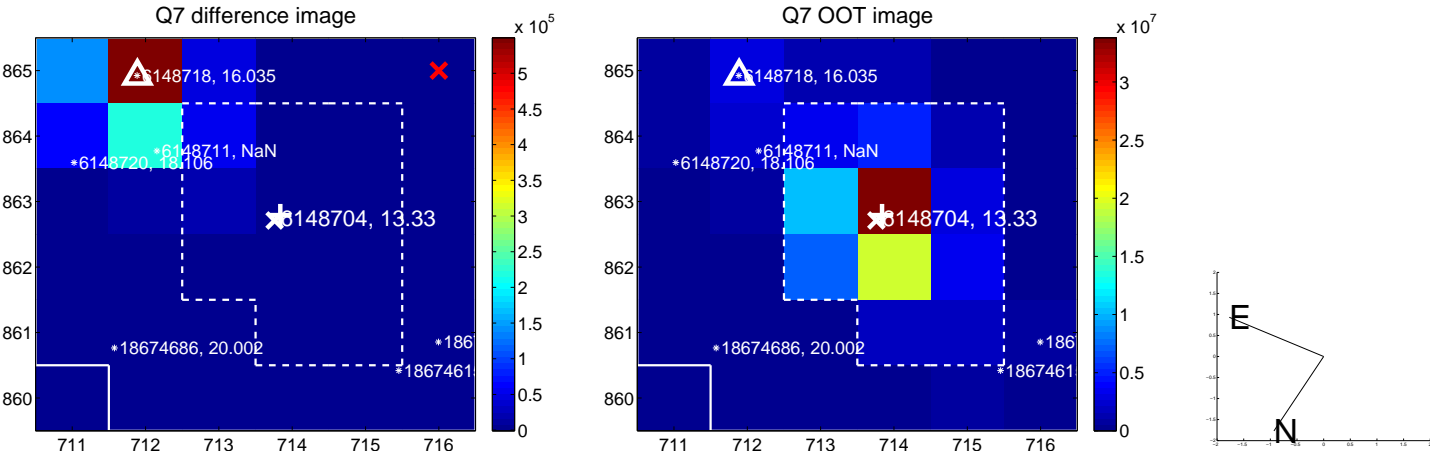
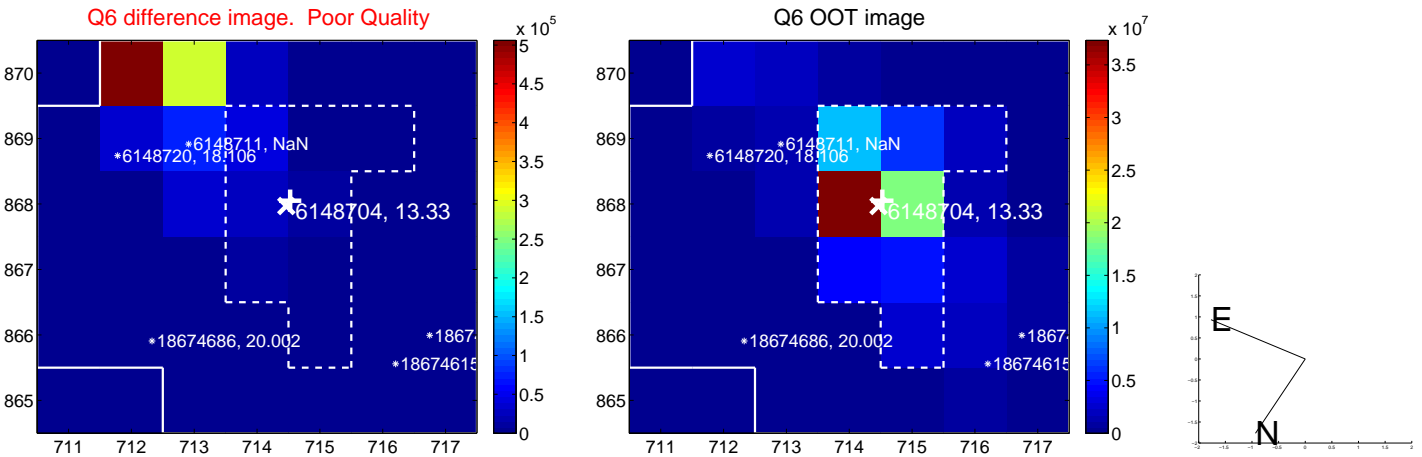
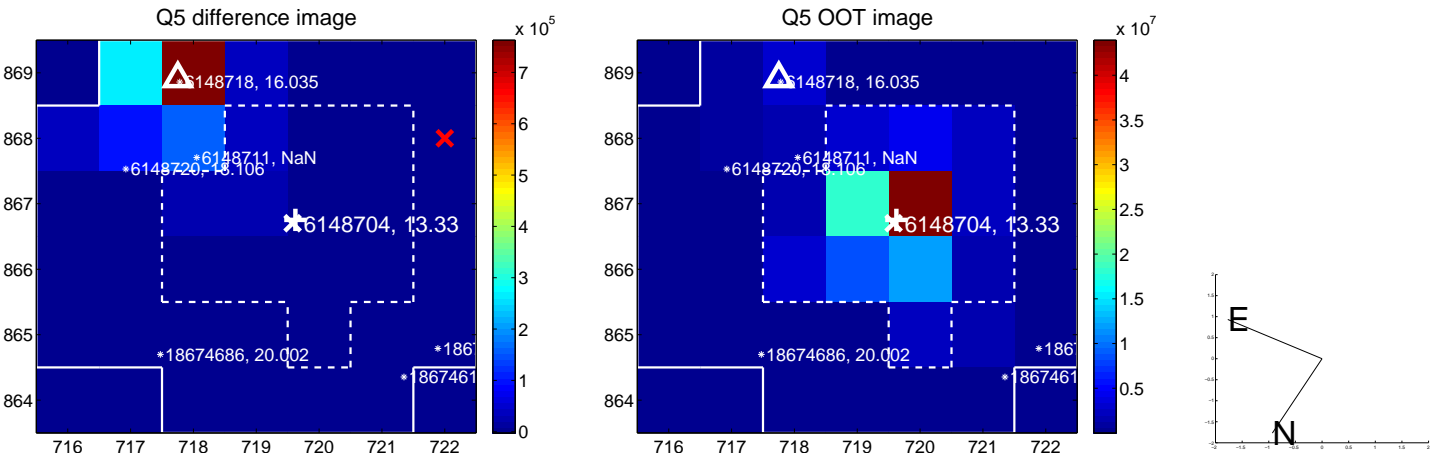
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

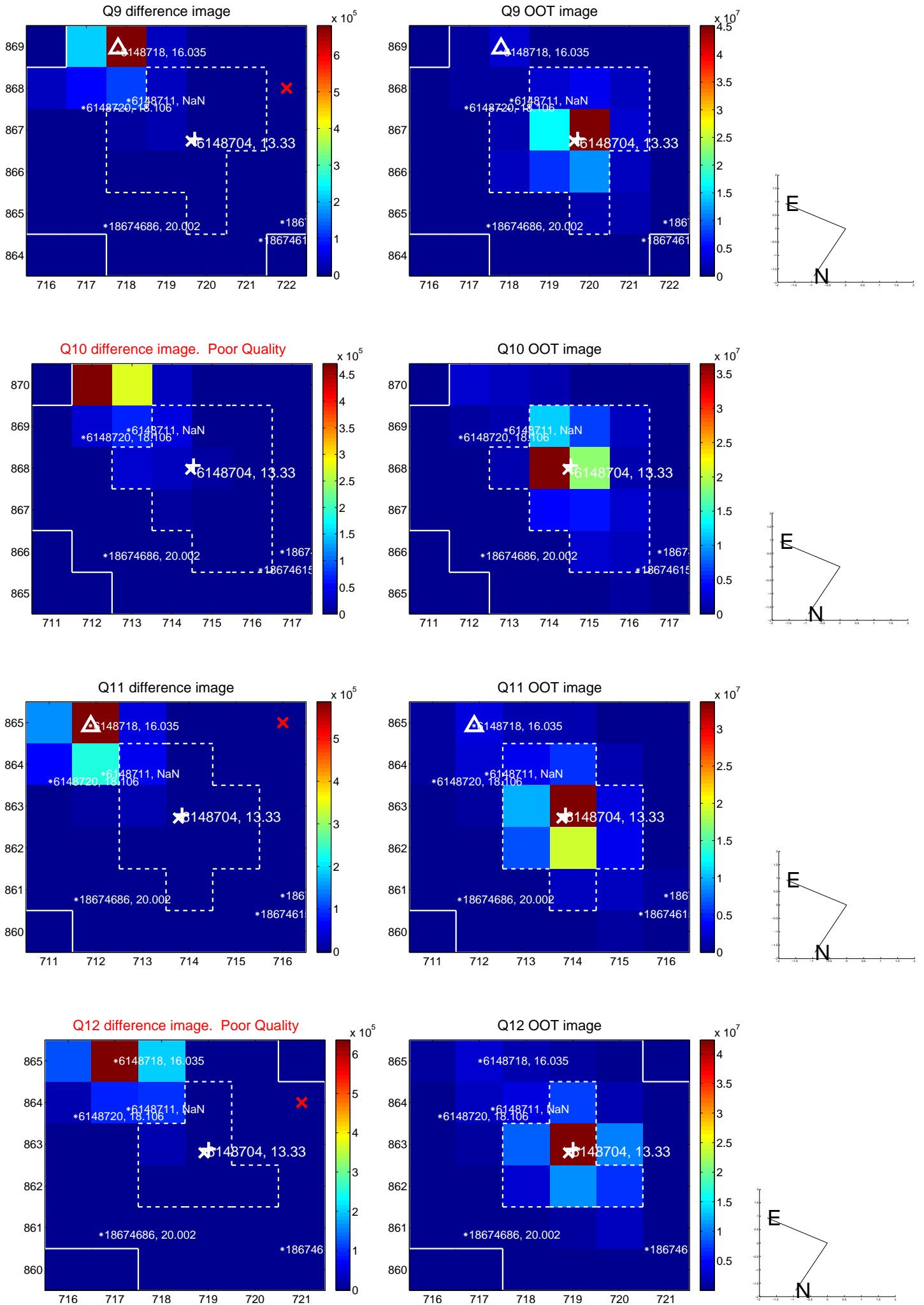




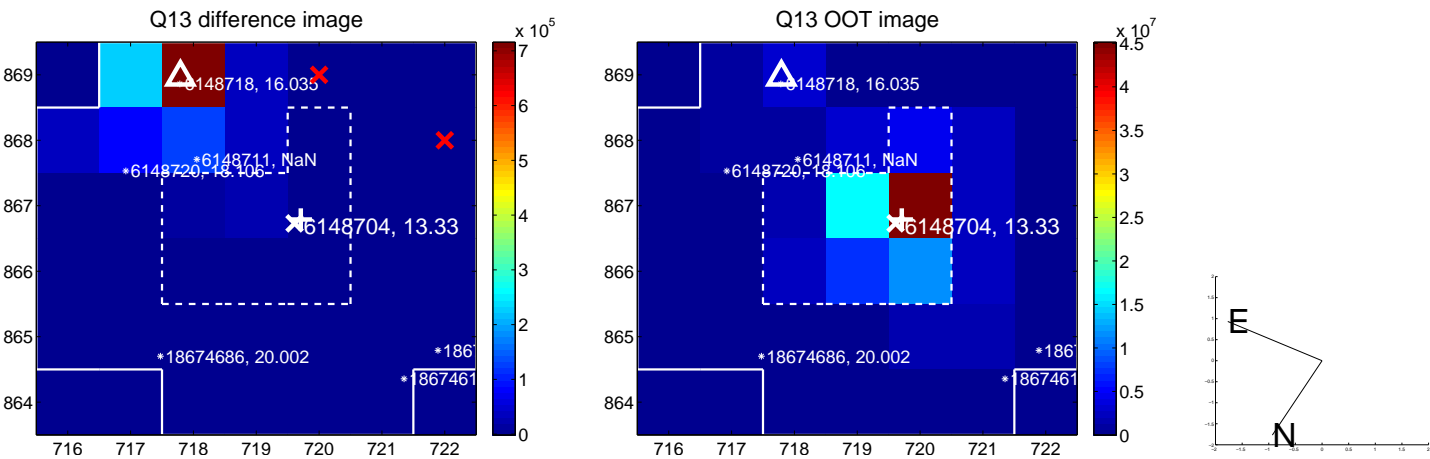
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



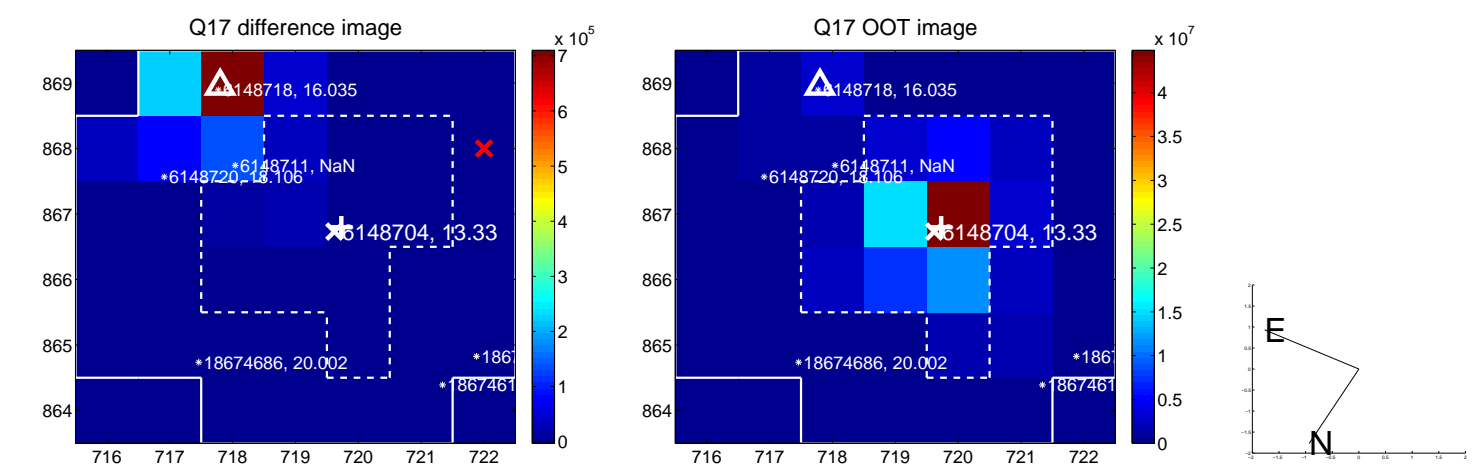
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



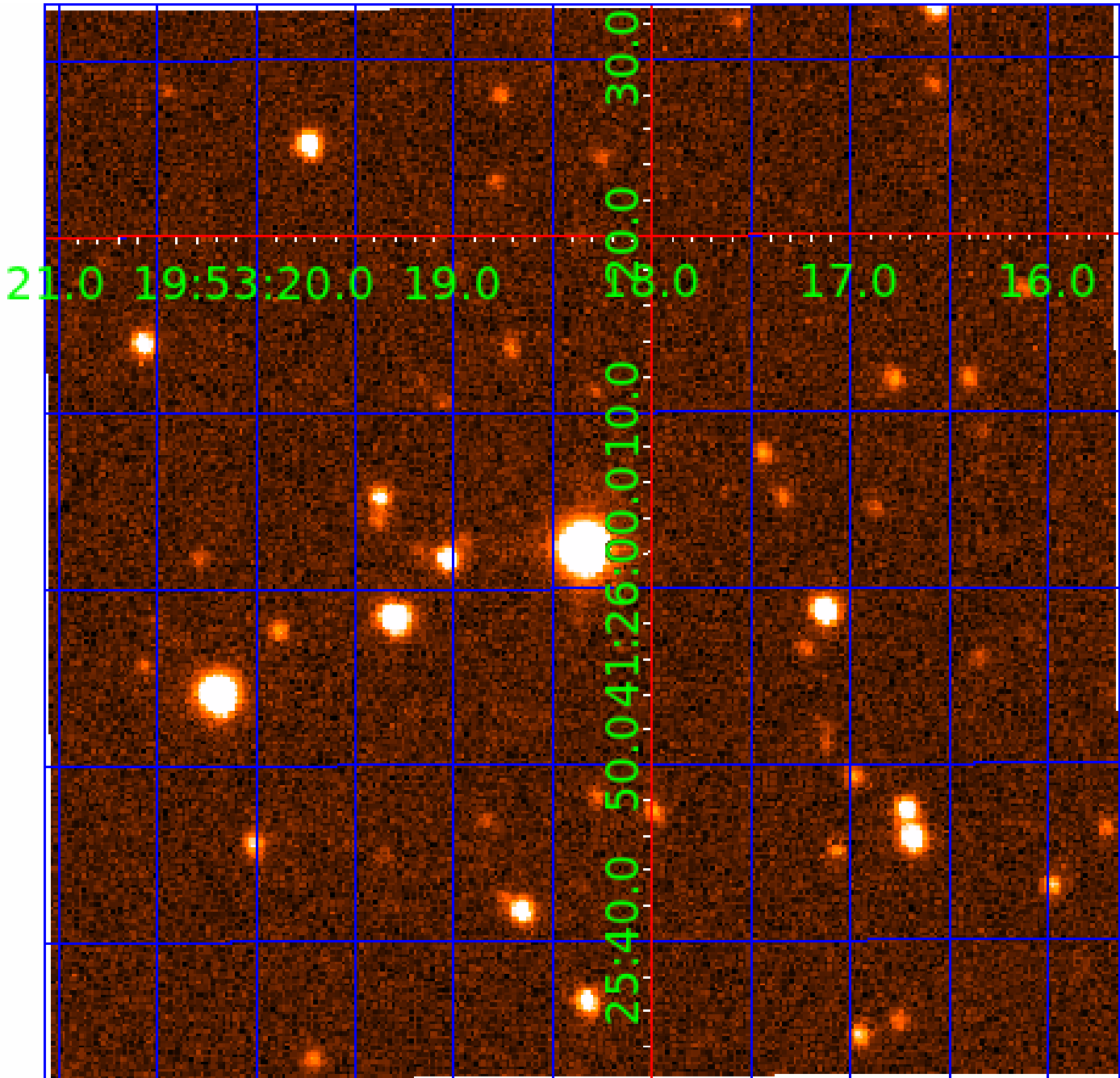
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



# KIC 006148704

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006148704-01	OBS	No	0.917533	132.521023	142.9	0.630	8.6	28.6	1.10	6254	1.57	4839.88
006148704-02	OBS	No	0.917537	132.214050	168.0	0.589	22.0	33.8	1.10	6254	1.73	4839.85
006148704-03	OBS	No	0.917553	131.897304	153.4	0.567	21.2	30.1	1.10	6254	1.65	4839.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006148704-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_RESOLVED_OFFSET
006148704-02	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
006148704-03	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

**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.

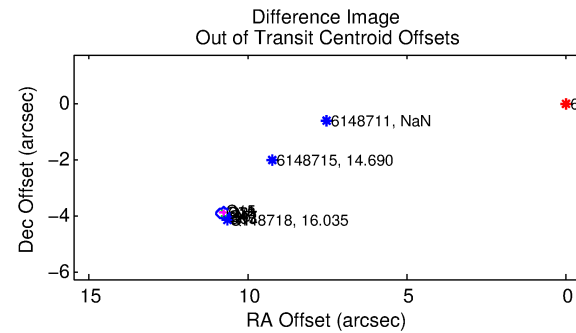
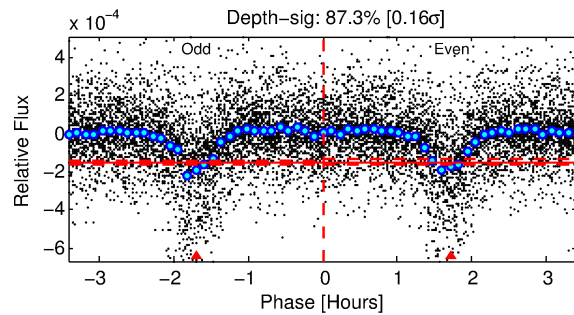
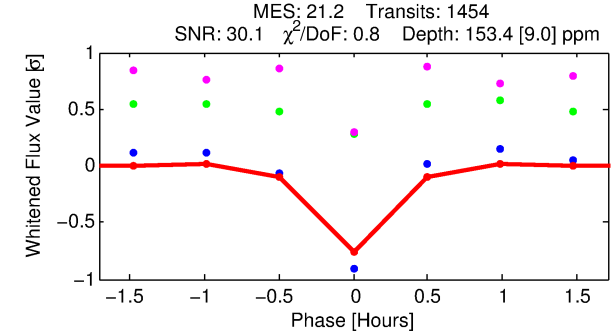
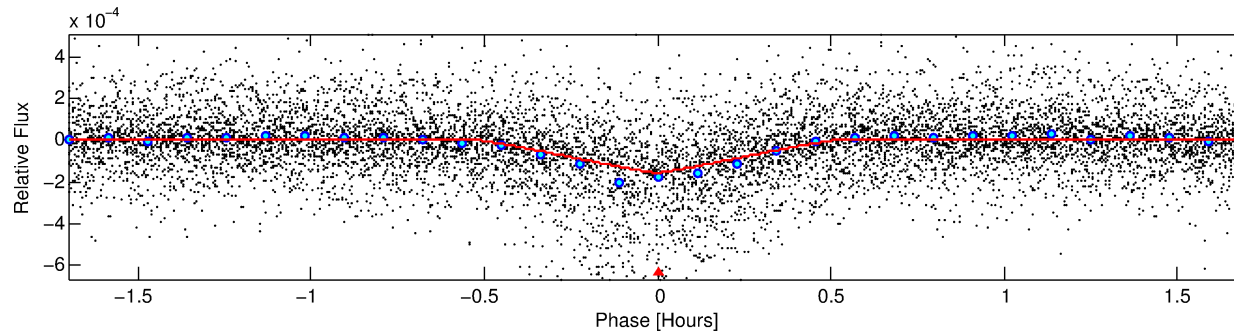
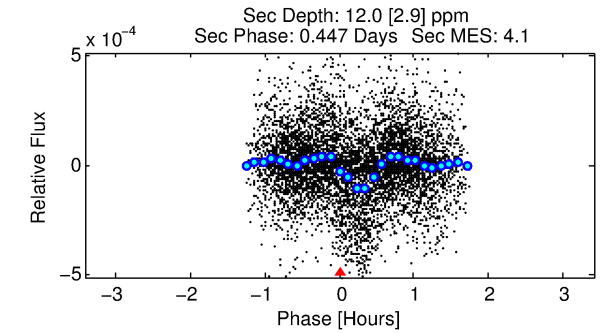
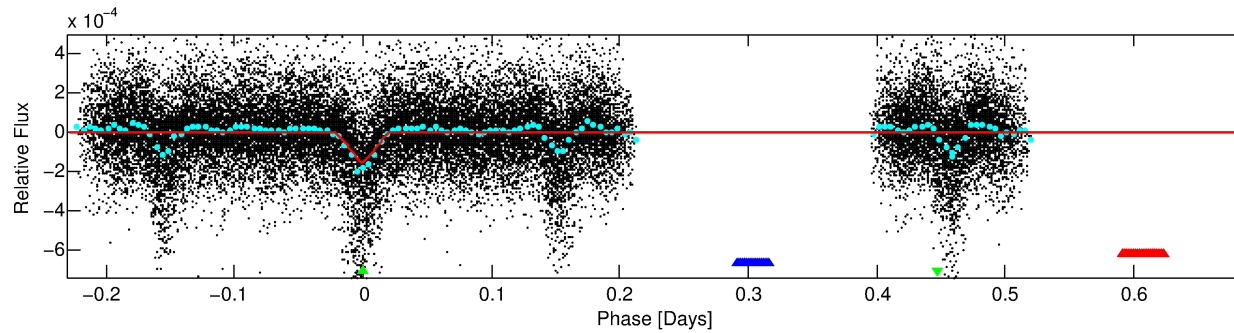
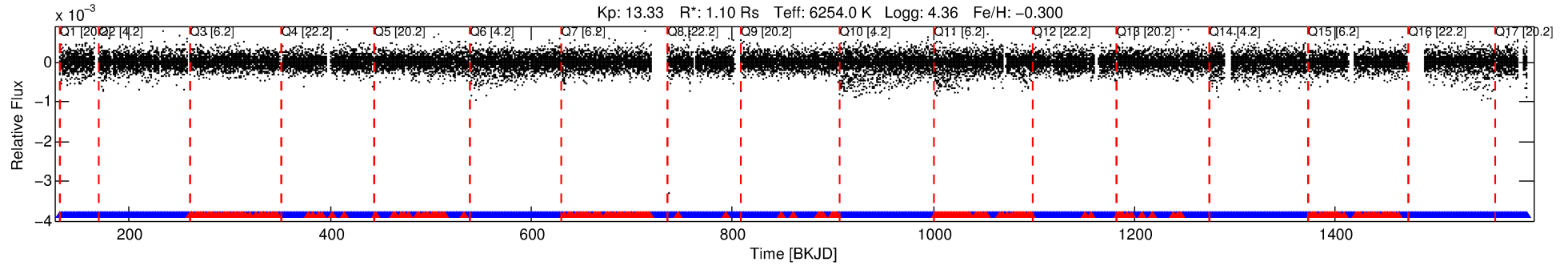
## Ephemeris Match Information For 006148704-03

No Significant Match Found



# DV One-Page Summary

KIC: 6148704 Candidate: 3 of 3 Period: 0.918 d



## DV Fit Results:

Period = 0.91755 [0.00000] d  
Epoch = 131.8973 [0.0004] BKJD  
Rp/R\* = 0.0138 [0.0014]  
a/R\* = 5.72 [2.90]  
b = 0.90 [0.11]  
Seff = 4839.74 [1888.70]  
Teff = 2127 [207] K  
Rp = 1.65 [0.52] Re  
a = 0.0185 [0.0047] AU  
Ag = 0.83 [0.40] [-0.44σ]  
Teffp = 3134 [267] K [2.98σ]

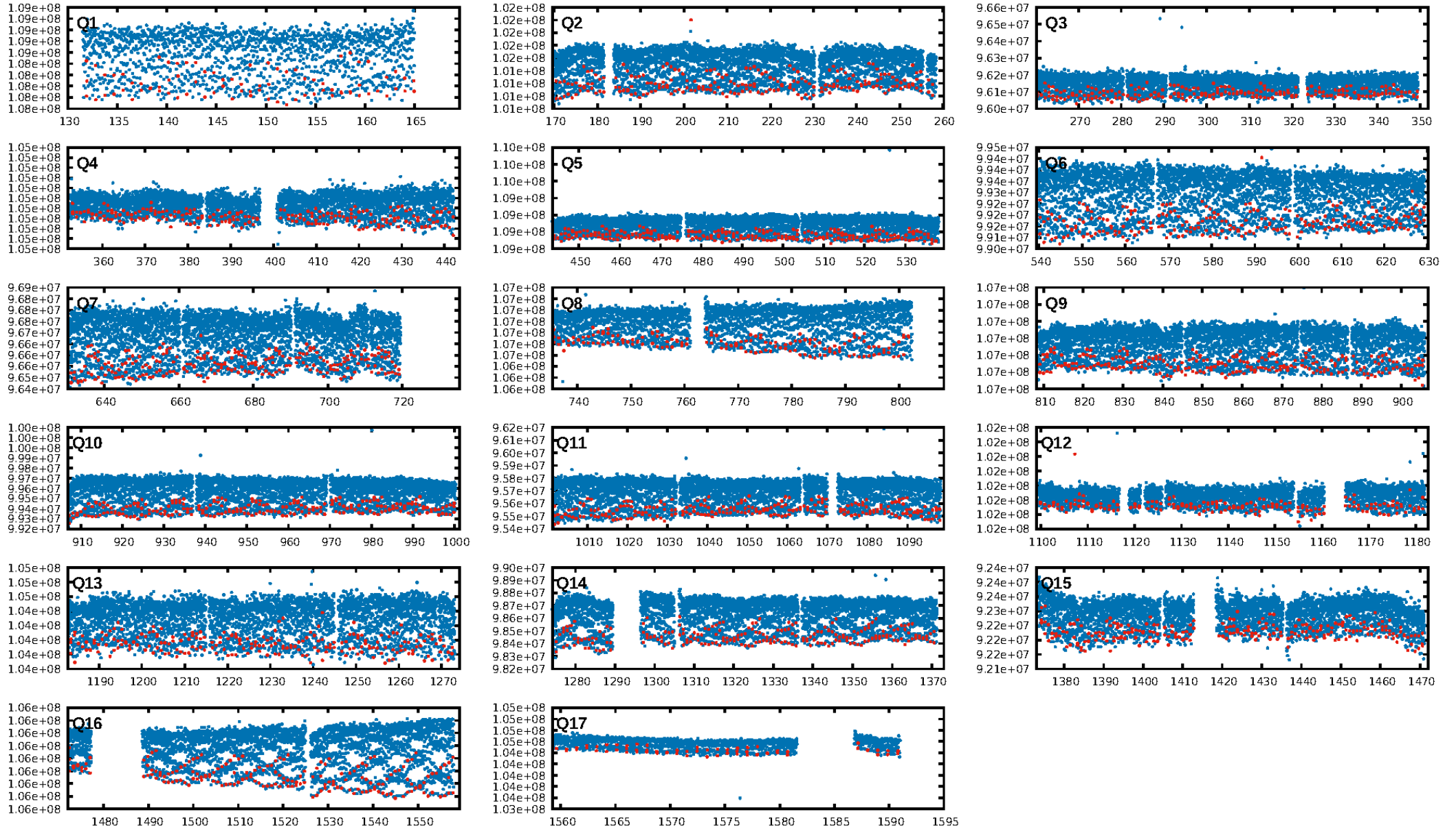
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.42e-87  
RollingBand-fgt: 0.81 [1128/1388]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 11.478 arcsec [167.12σ]  
KicOffset-rm: 11.465 arcsec [163.43σ]  
OotOffset-st: 0/4/1/5 [10]  
KicOffset-st: 0/4/1/5 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [17/17]

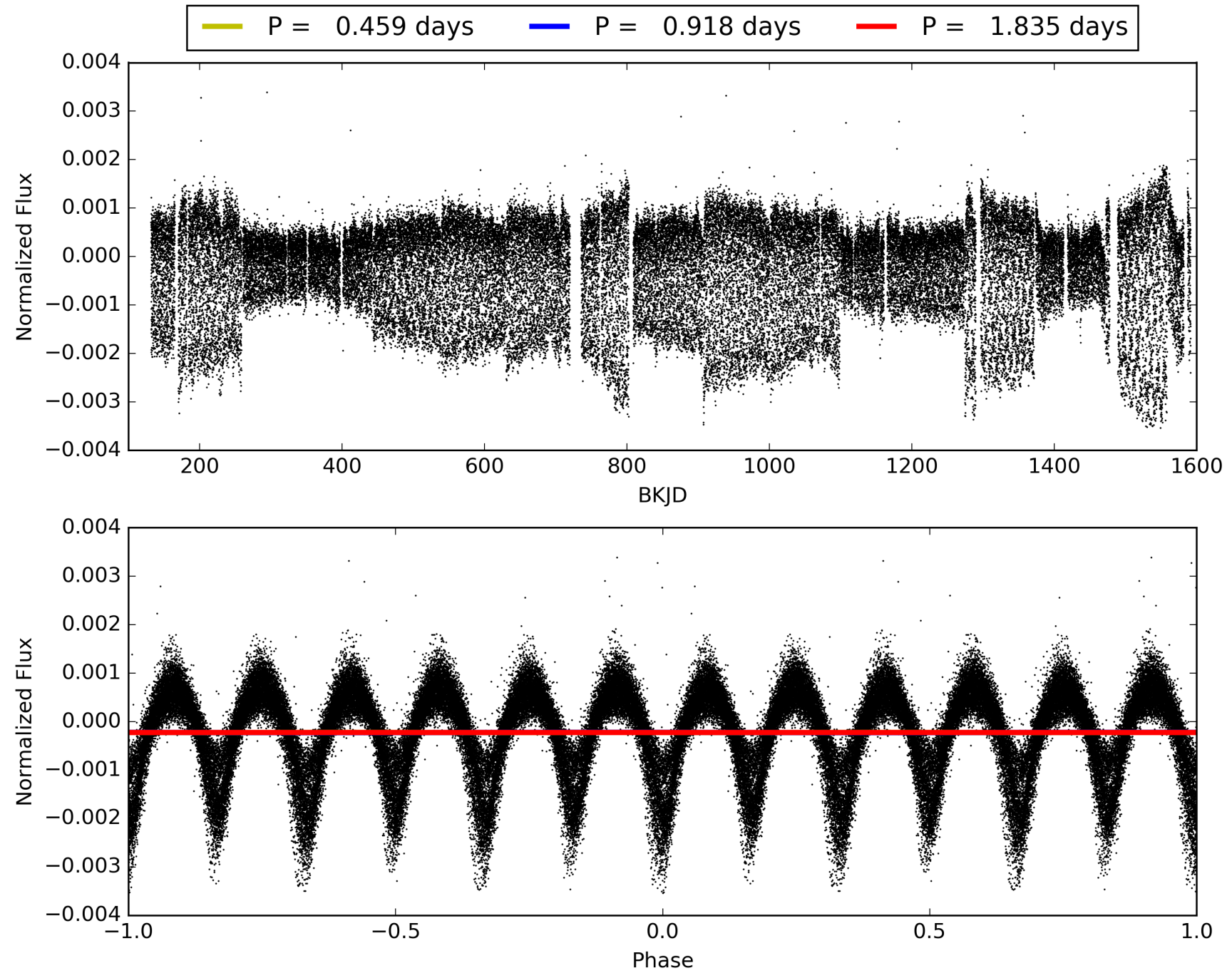
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:47:10 Z

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

# TCE 006148704-03, PDC Light Curves

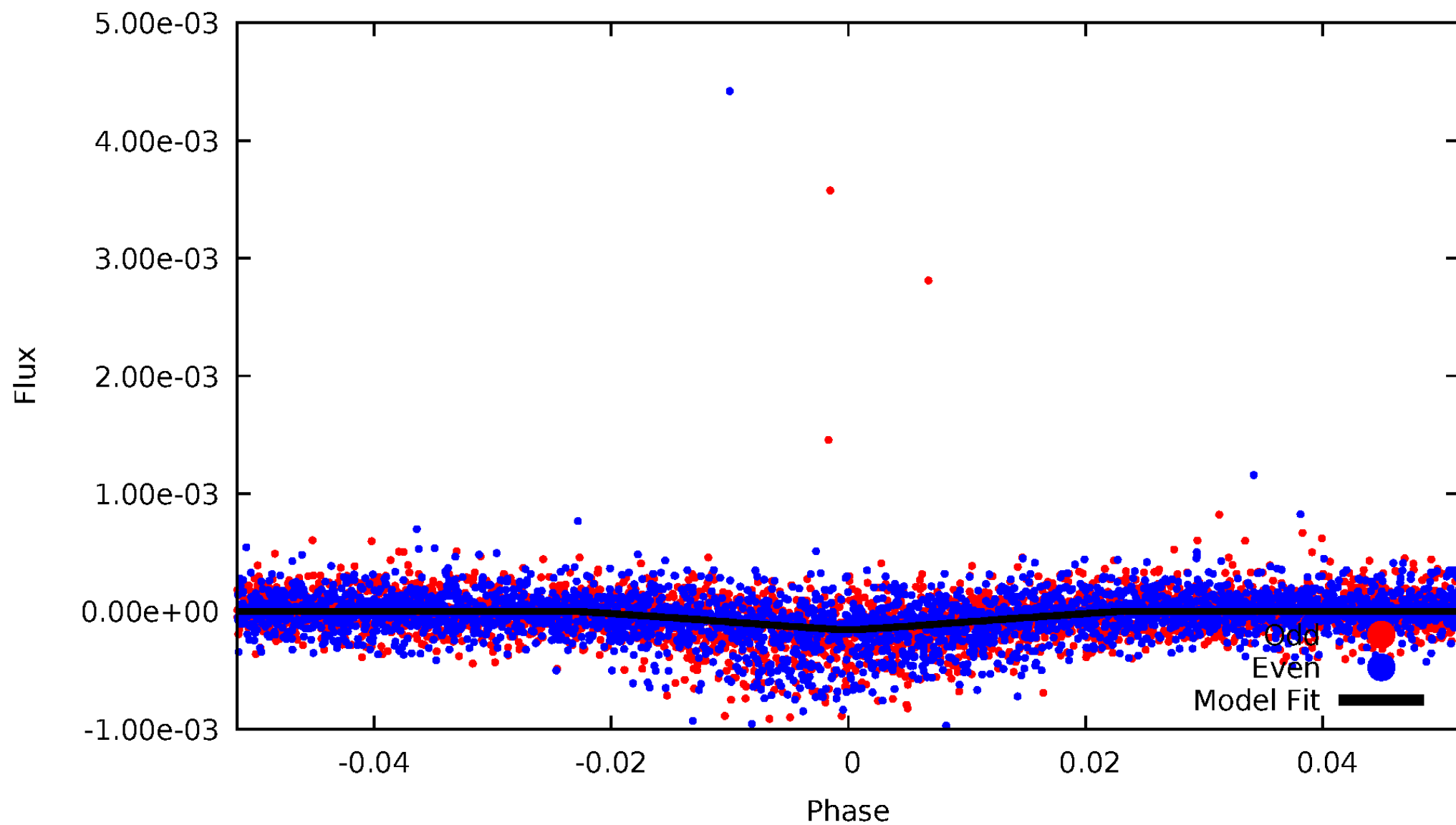


# TCE 006148704-03



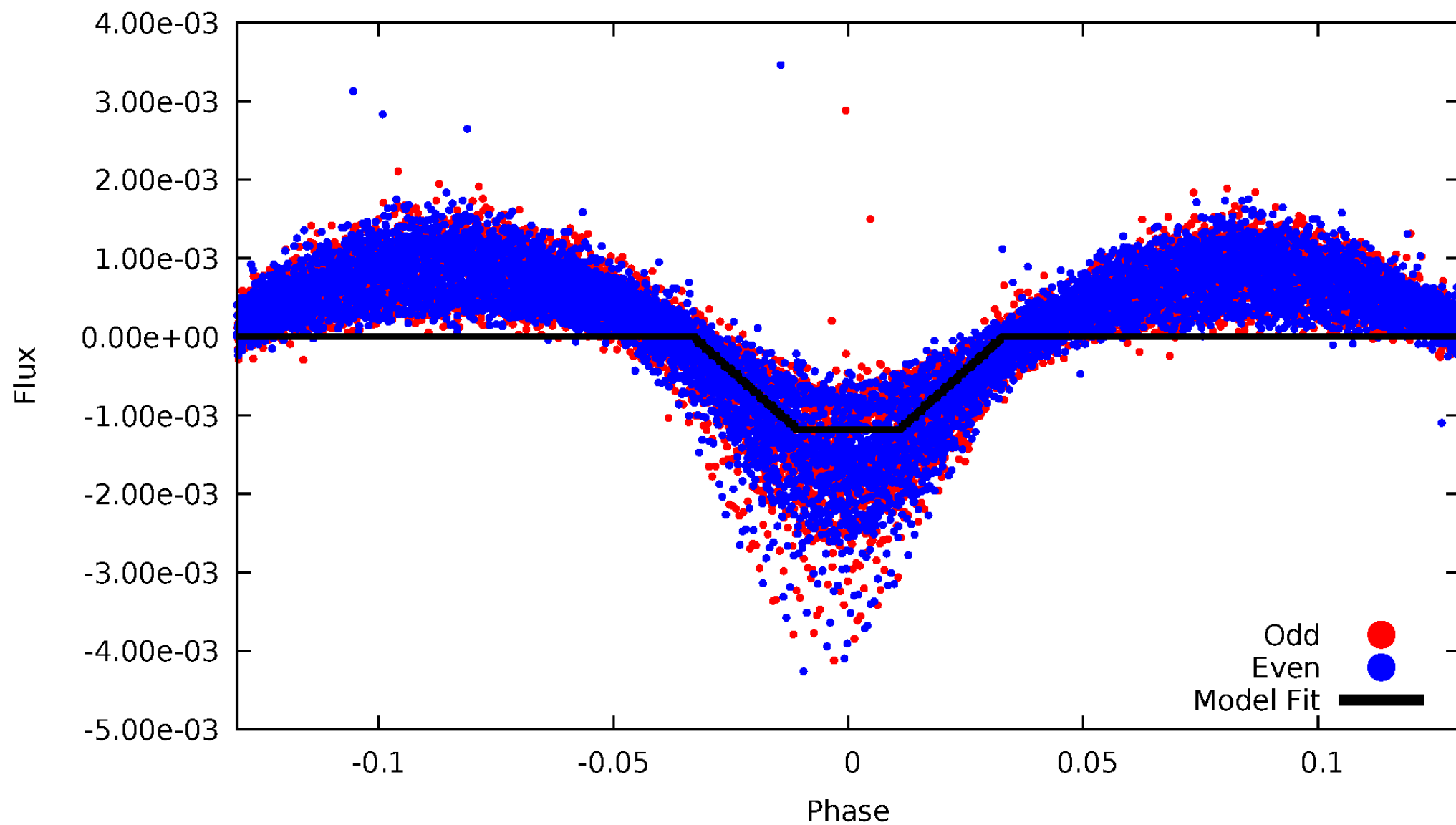
# DV Odd/Even

TCE 006148704-03



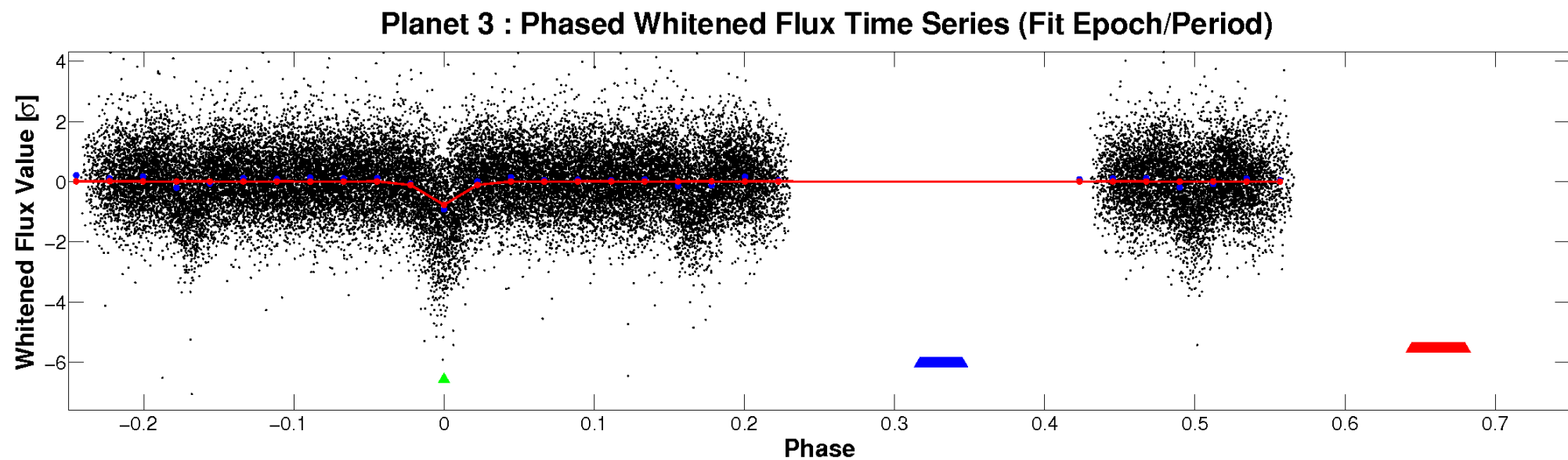
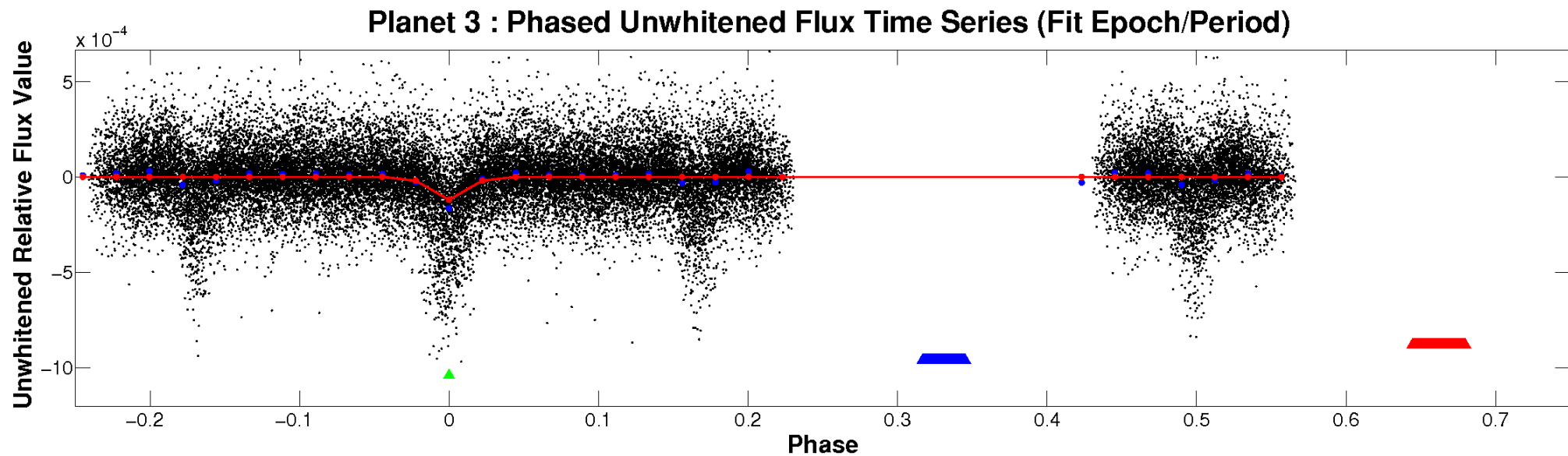
# ALT Odd/Even

TCE 006148704-03



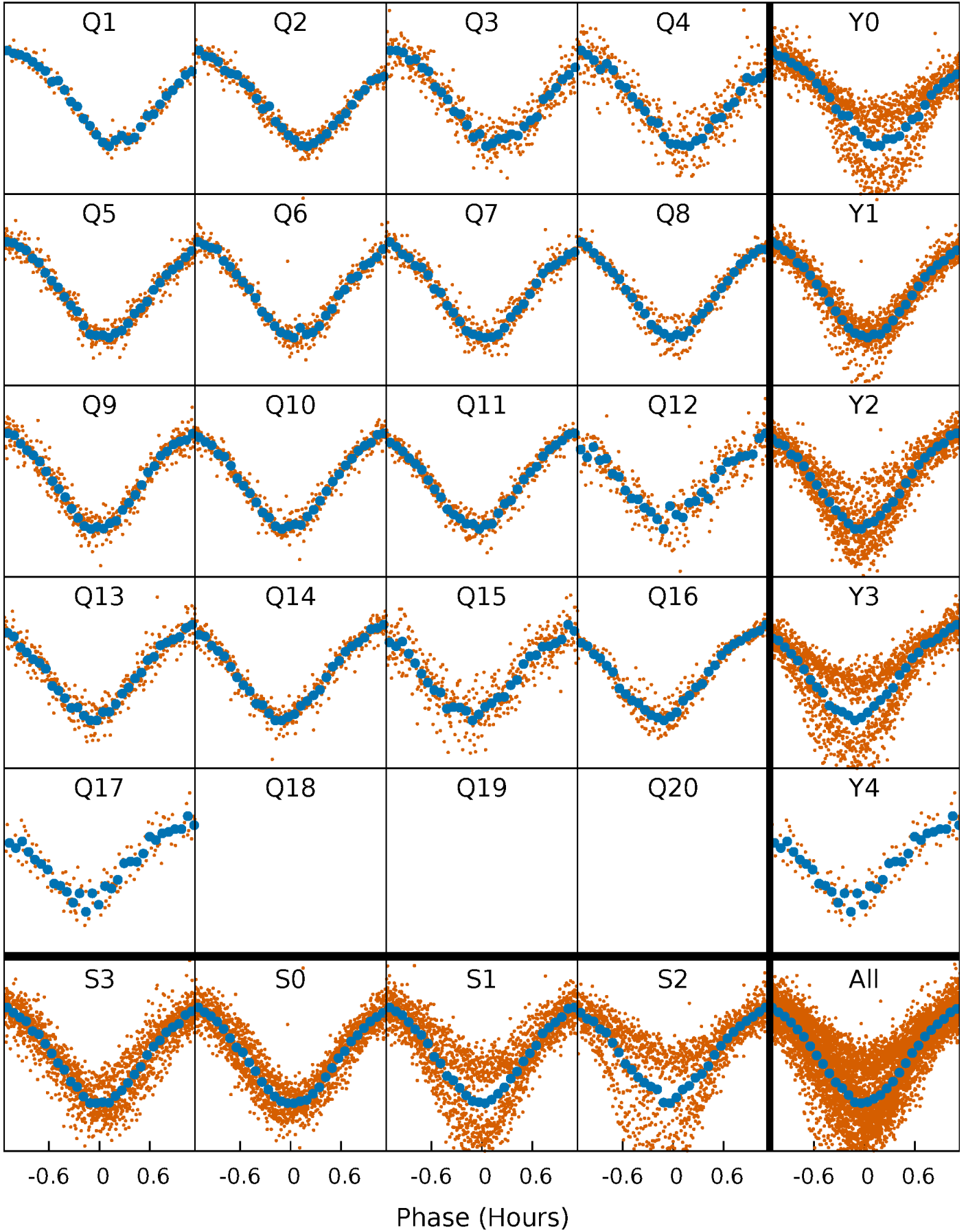


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

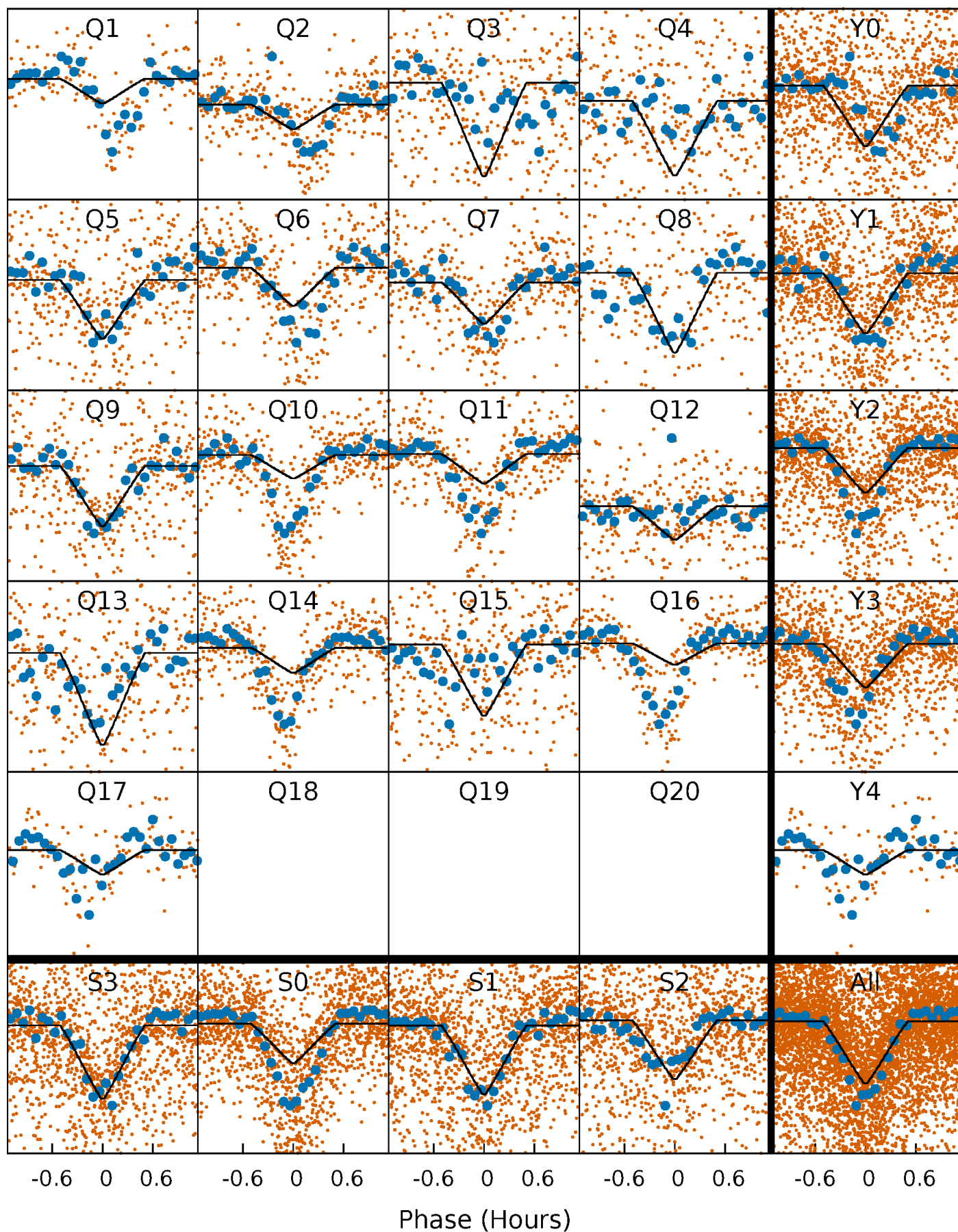
TCE 006148704-03   P= 0.917553 Days    $T_0=131.897304$  (BKJD)





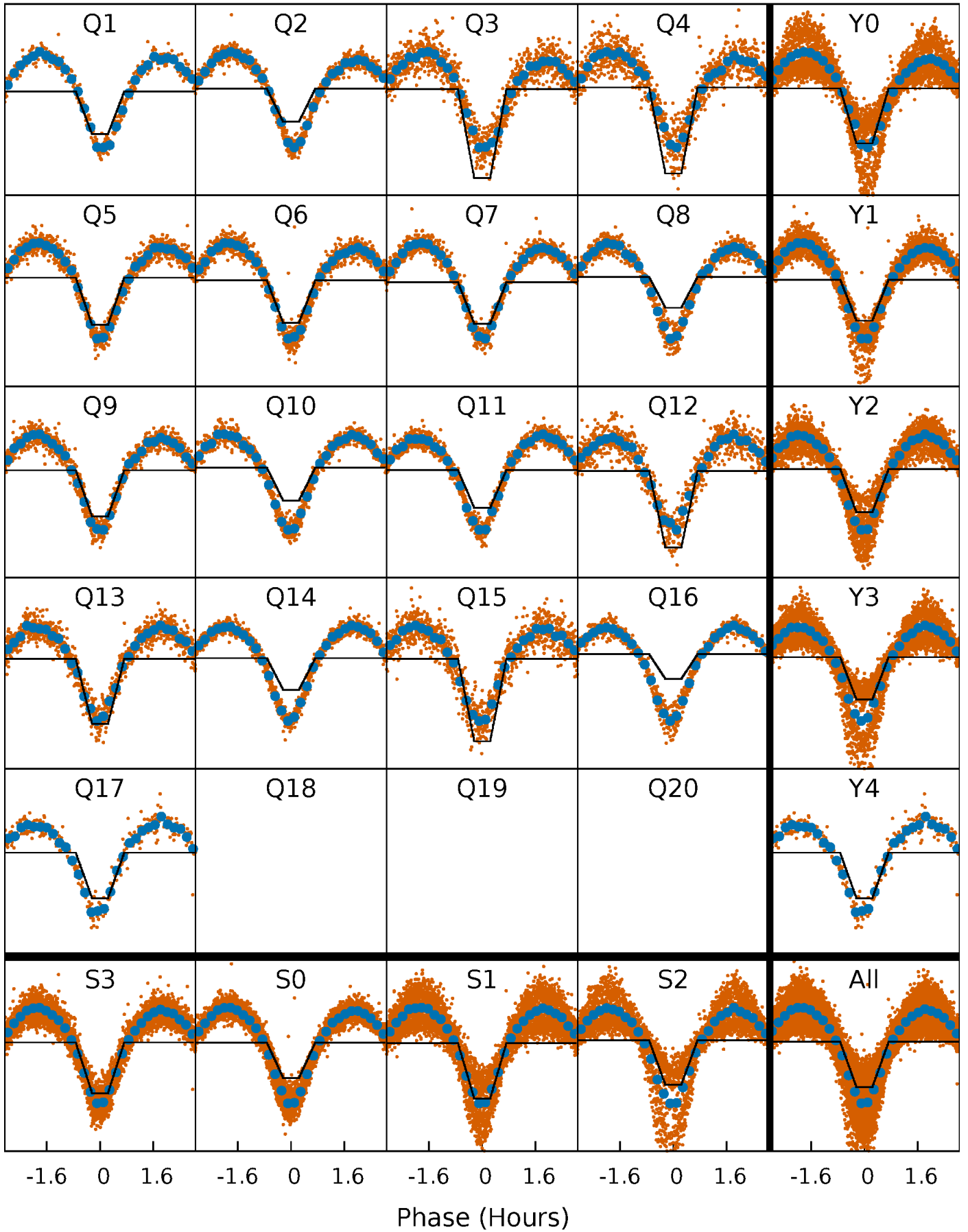
# DV Quarter-Phased Transit Curves

TCE 006148704-03 P= 0.917553 Days  $T_0=131.897304$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

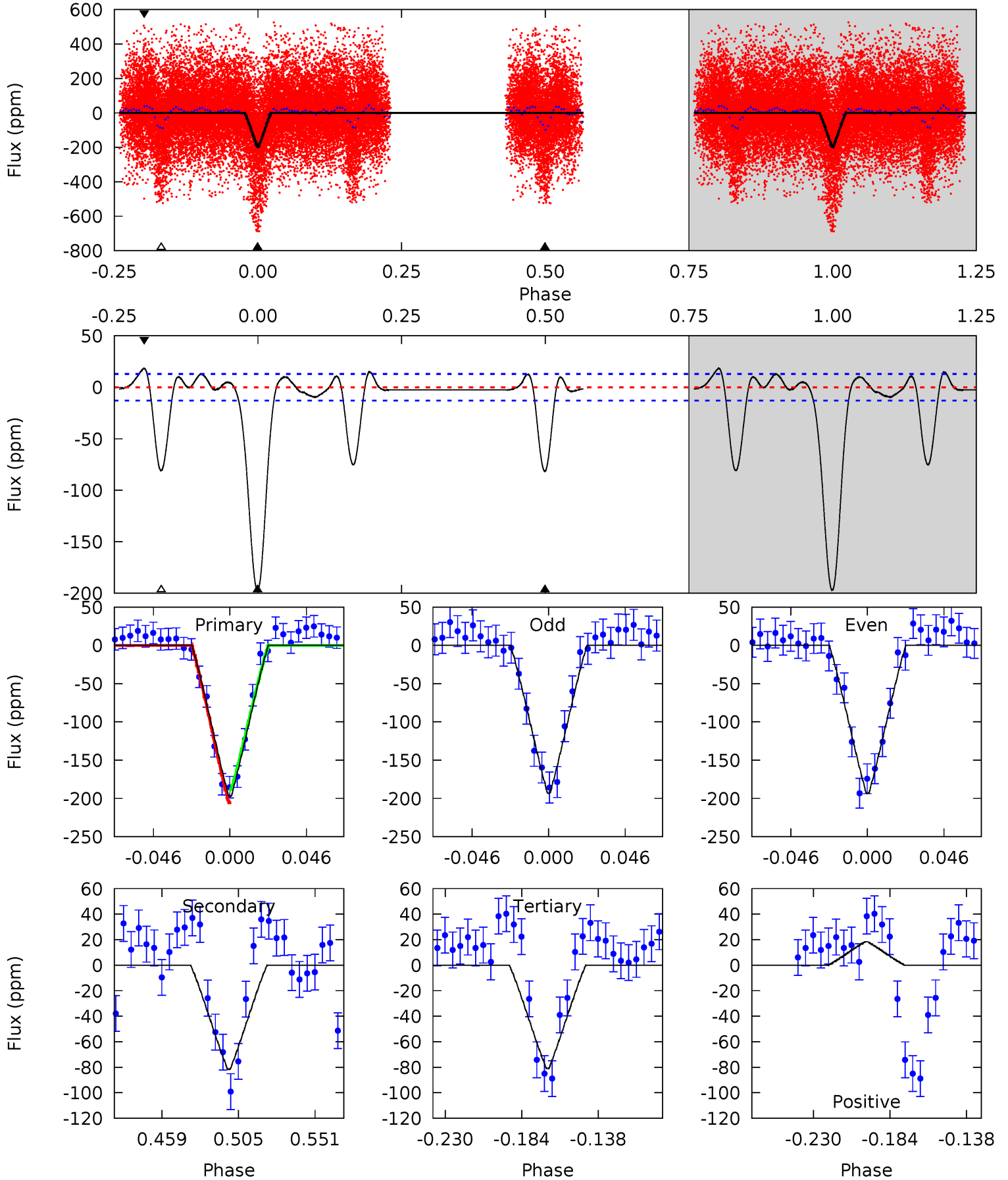
TCE 006148704-03     $P = 0.917548$  Days     $T_0 = 131.901689$  (BKJD)



# DV Model-Shift Uniqueness Test

006148704-03, P = 0.917553 Days, E = 130.979751 Days

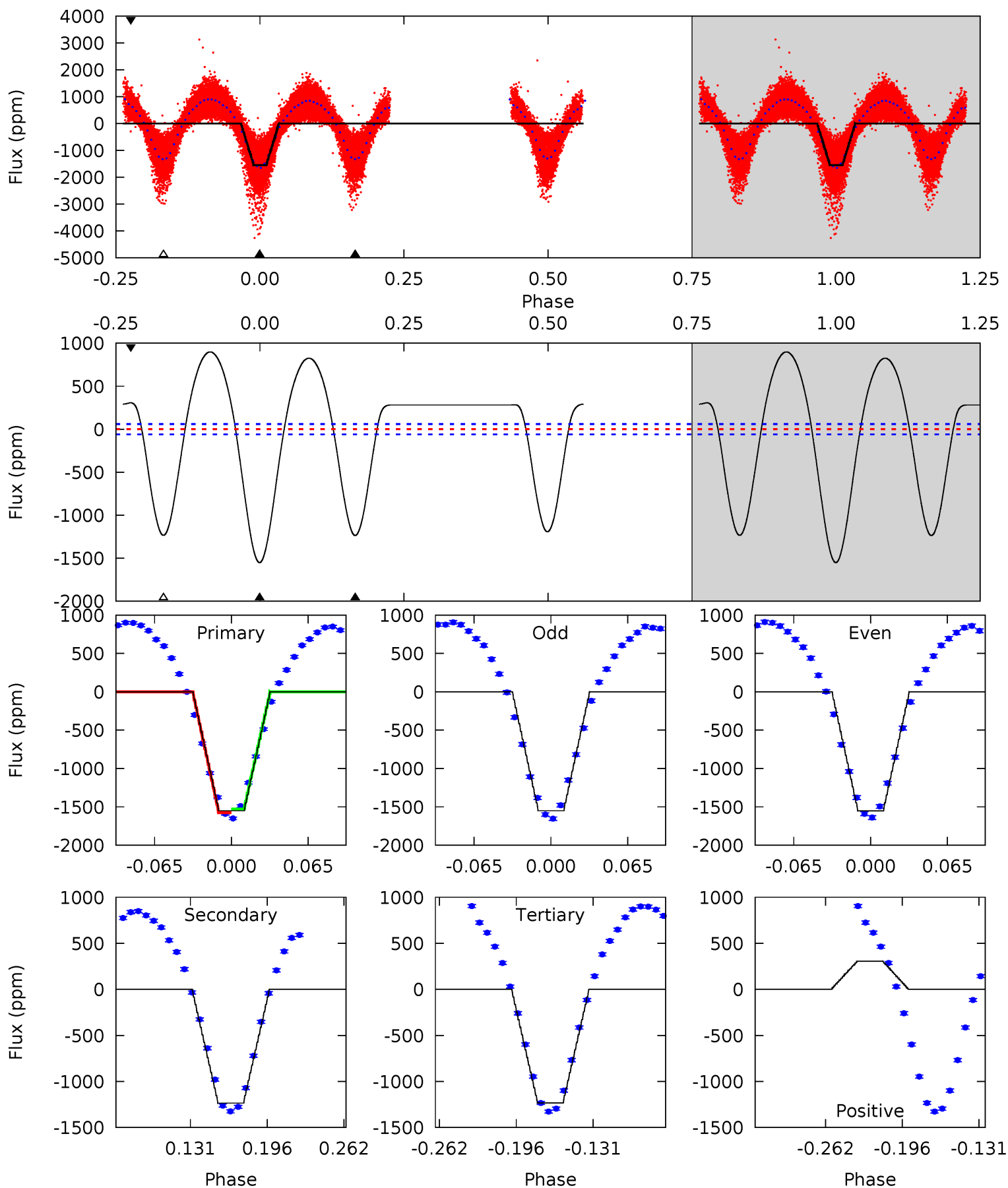
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
72.2	29.8	29.6	6.72	4.73	2.00	8.85	42.6	65.5	0.21	23.1	0.07	1.16	0.09	3.23



# Alt Model-Shift Uniqueness Test

006148704-03, P = 0.917548 Days, E = 130.984141 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
120.6	96.1	95.9	23.8	4.65	1.84	56.3	24.7	96.7	0.16	72.2	0.04	1.03	0.37	1.90



### Stellar Parameters For KIC 006148704

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6254^{+169}_{-206}$	$4.356^{+0.108}_{-0.201}$	$-0.300^{+0.250}_{-0.300}$	$1.097^{+0.328}_{-0.176}$	$0.994^{+0.158}_{-0.101}$	$1.060^{+0.524}_{-0.527}$
	+3%/-3%	+2%/-5%	+83%/-100%	+30%/-16%	+16%/-10%	+49%/-50%
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 006148704-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-82 \pm 3$	$1.69^{+0.29}_{-0.25}$	$2982^{+209}_{-154}$	$5058^{+273}_{-233}$	$5.433^{+1.767}_{-1.419}$
Alt.	$-1236 \pm 13$	$4.21^{+0.70}_{-0.44}$	$3001^{+225}_{-172}$	$6268^{+221}_{-237}$	$13^{+3}_{-3}$

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

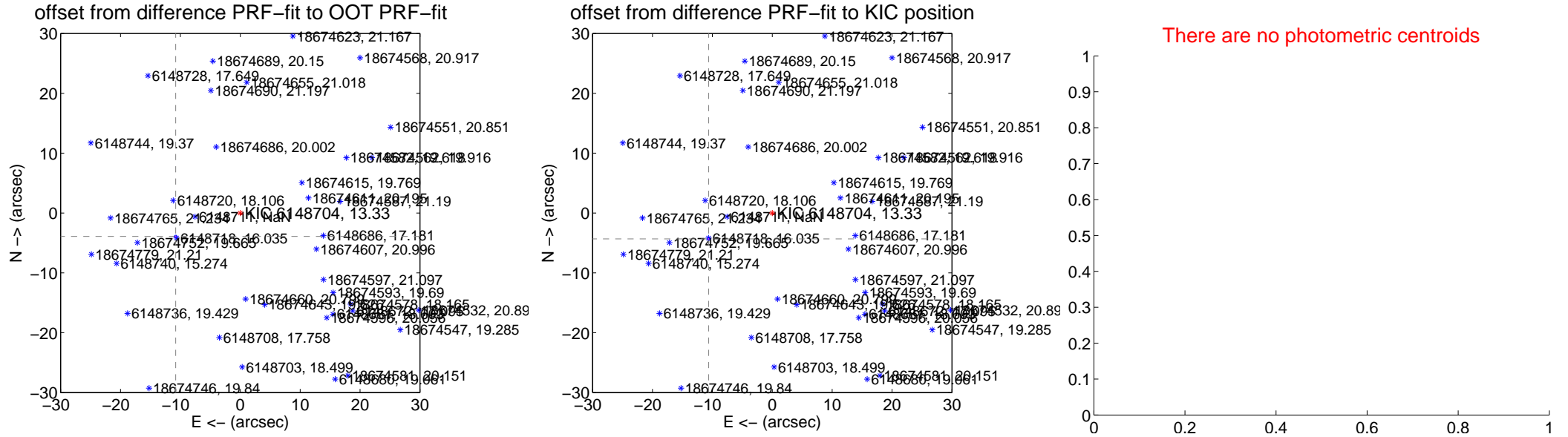
## DV Centroid Data

Supplemental centroid analysis for 006148704-03. Kepler magnitude: 13.33. Transit SNR 30.09

There are 10 quarters with good PRF difference image offsets

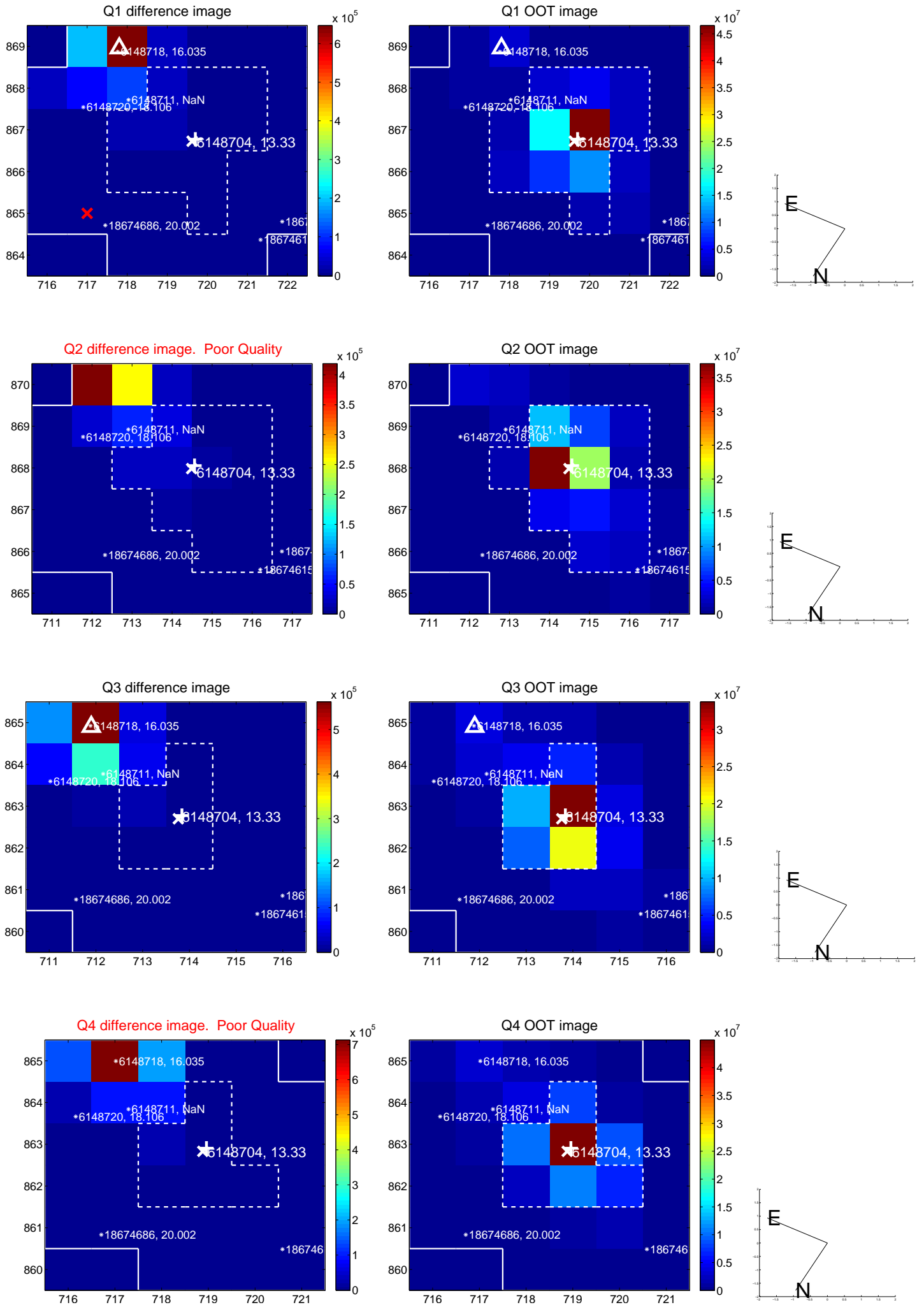
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>11.478 <math>\pm</math> 0.069</b>	<b>167.12</b>	10.790 $\pm$ 0.068	-3.916 $\pm$ 0.076
PRF-fit source offset from KIC position	<b>11.465 <math>\pm</math> 0.070</b>	<b>163.43</b>	10.618 $\pm$ 0.070	-4.325 $\pm$ 0.071
photometric centroid source offset	—	—	—	—



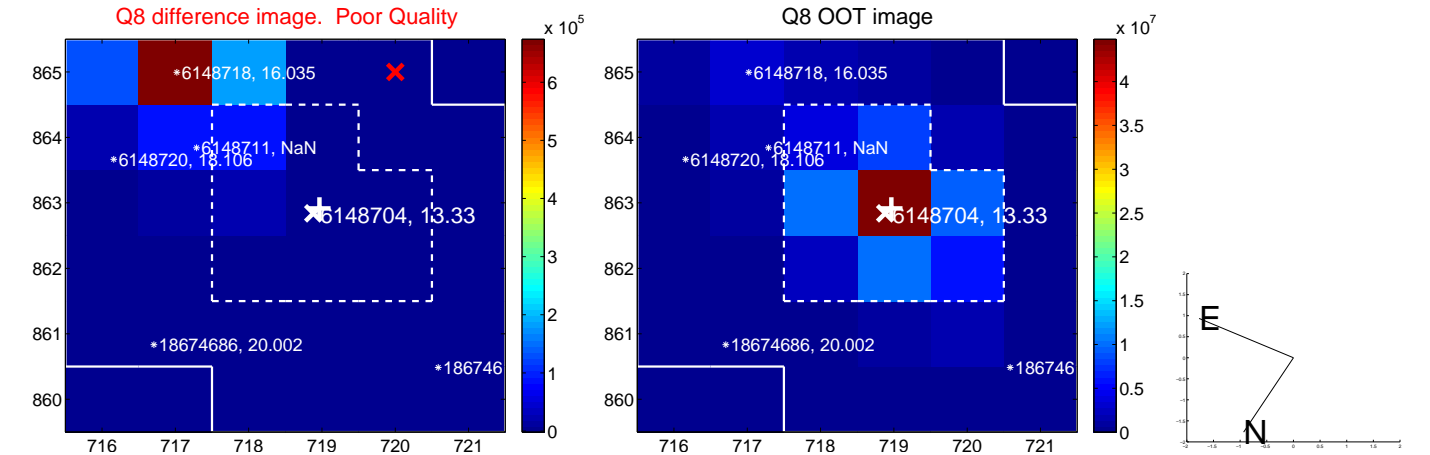
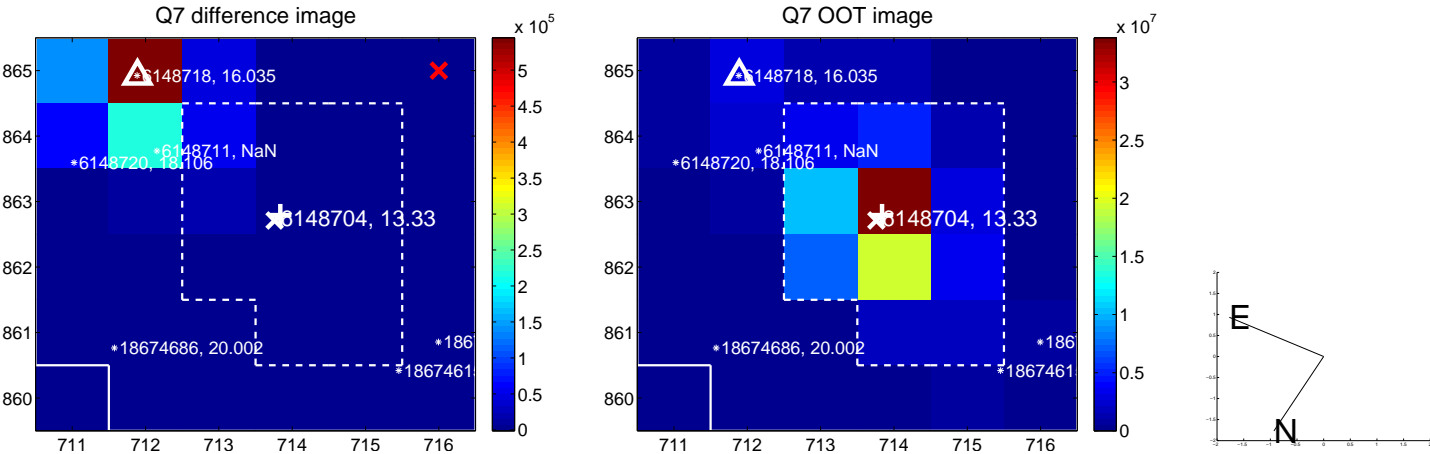
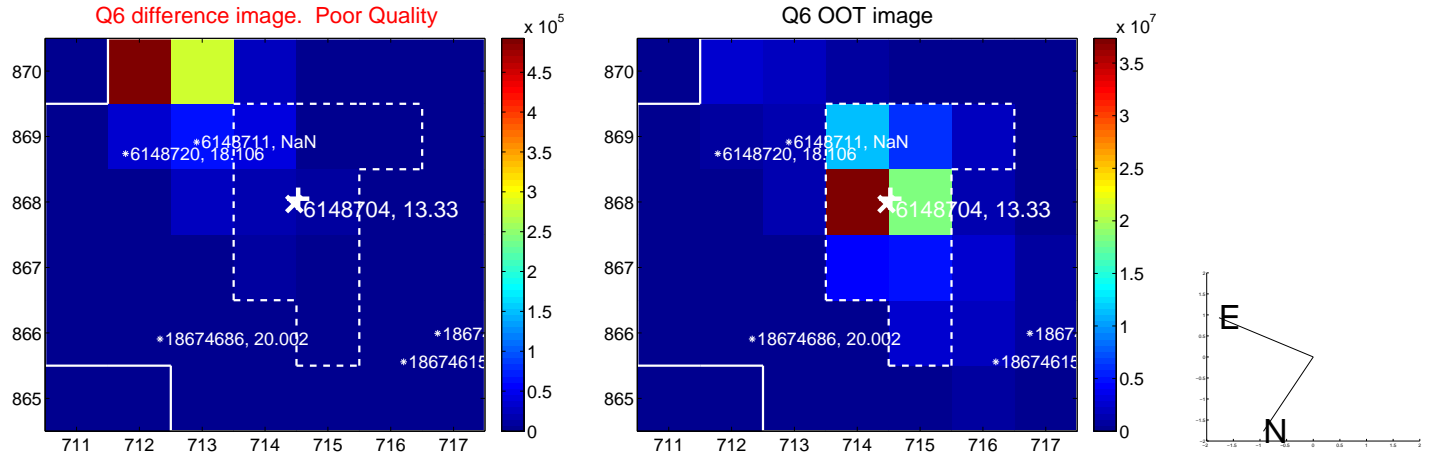
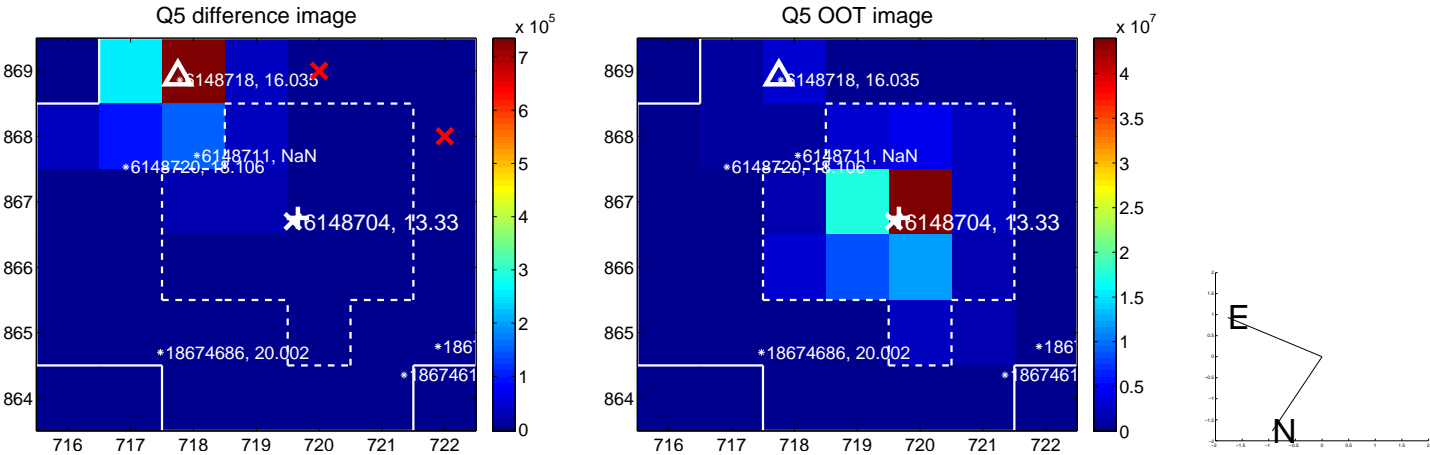
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

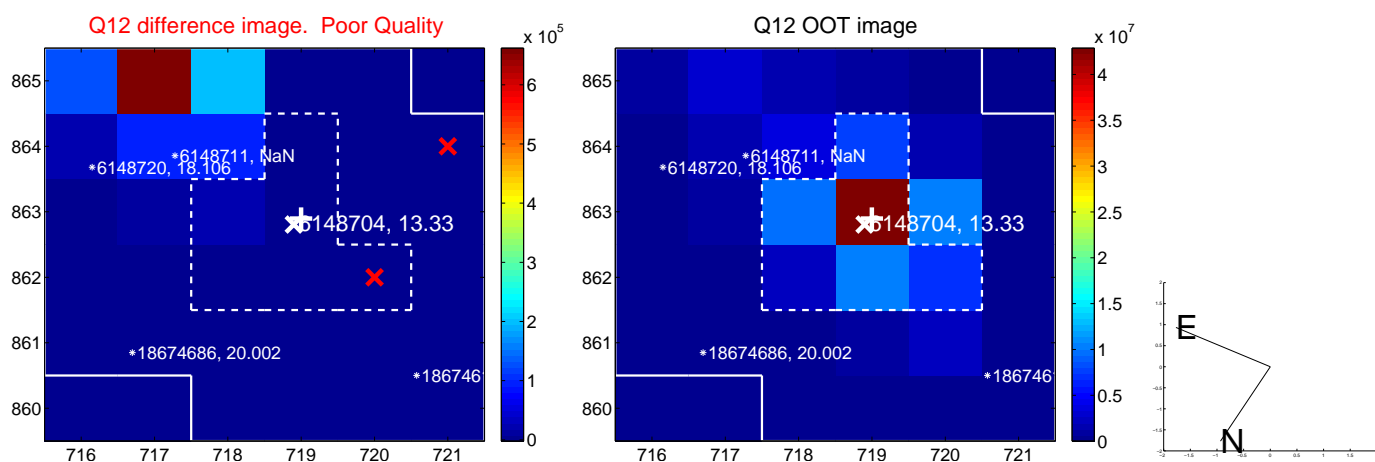
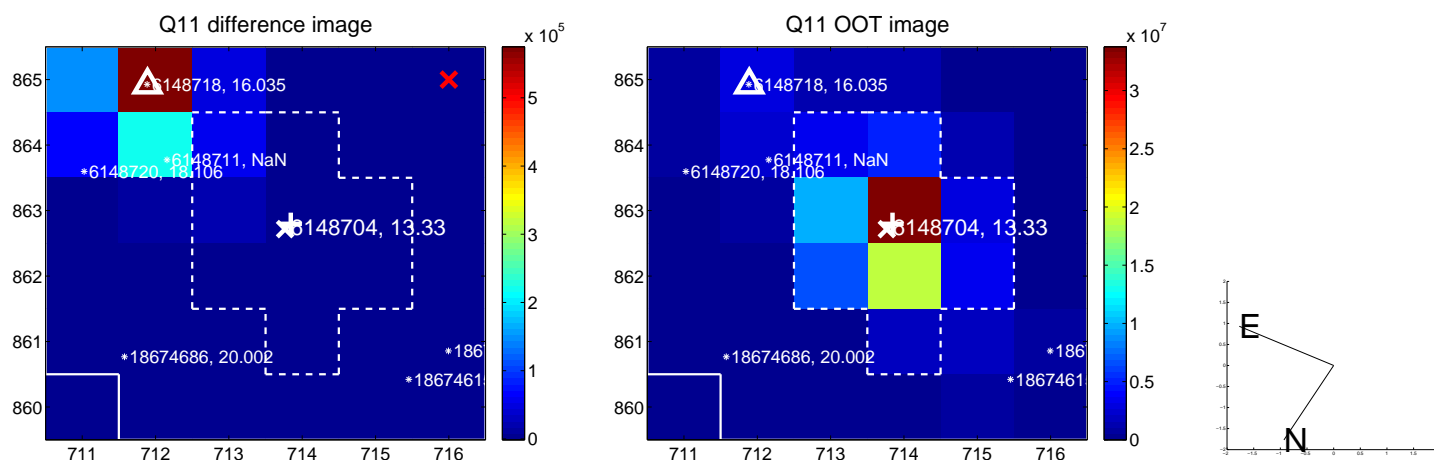
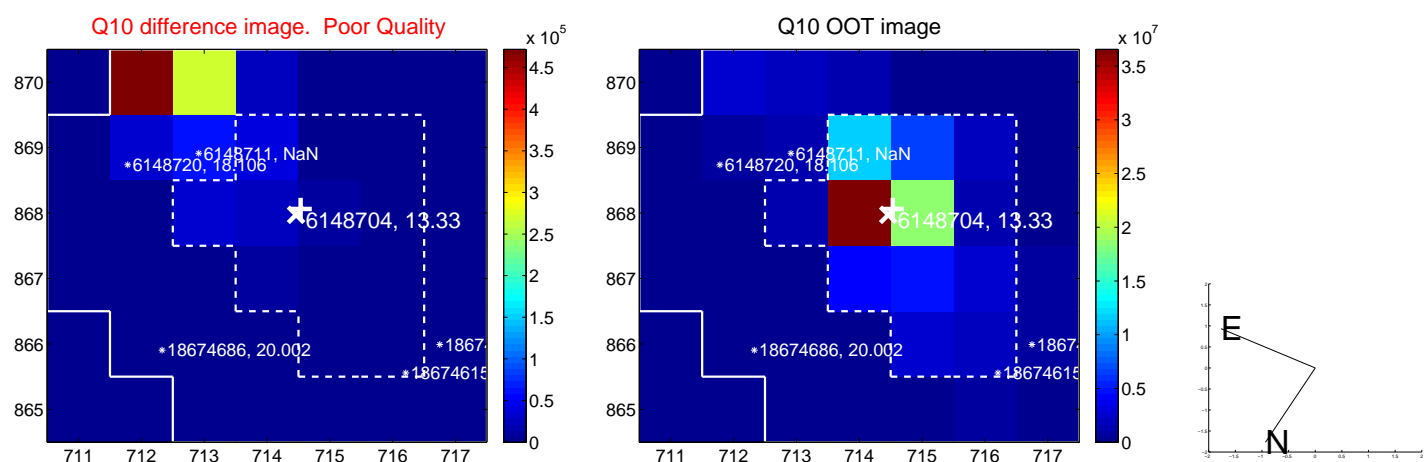
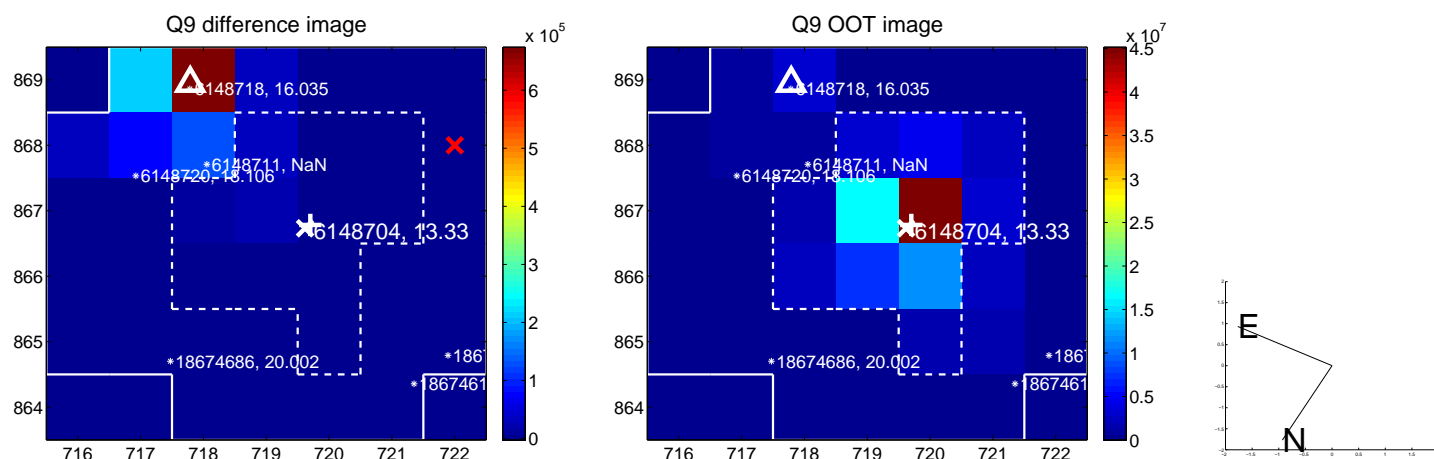




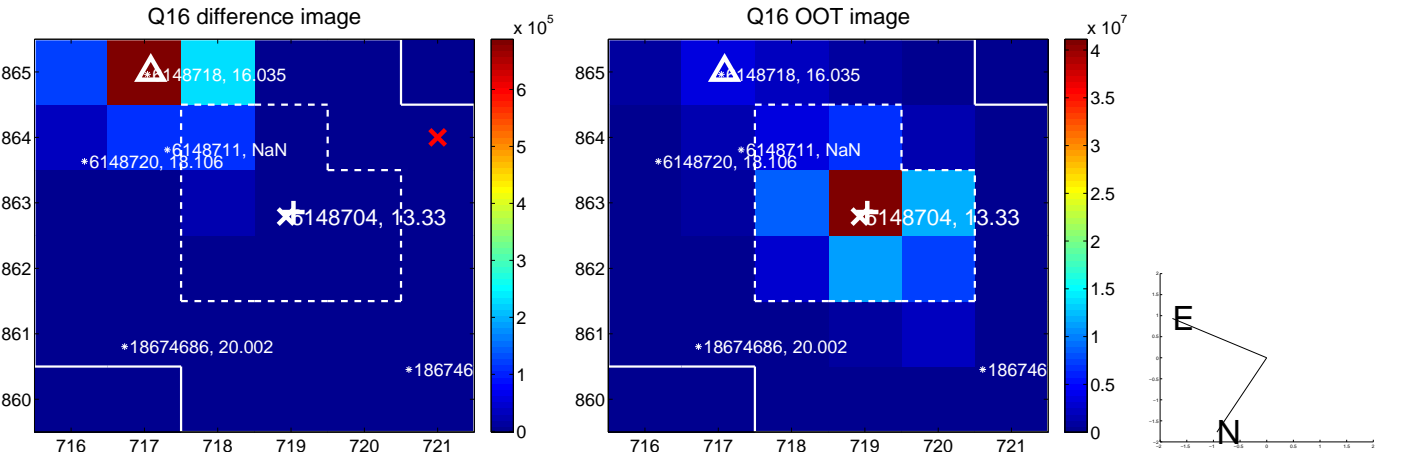
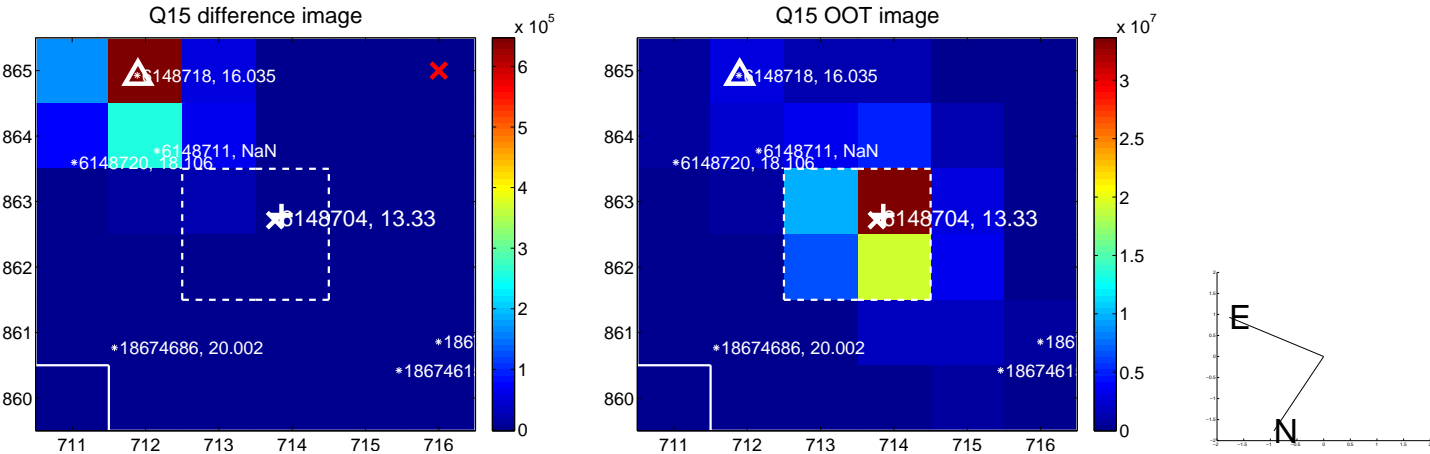
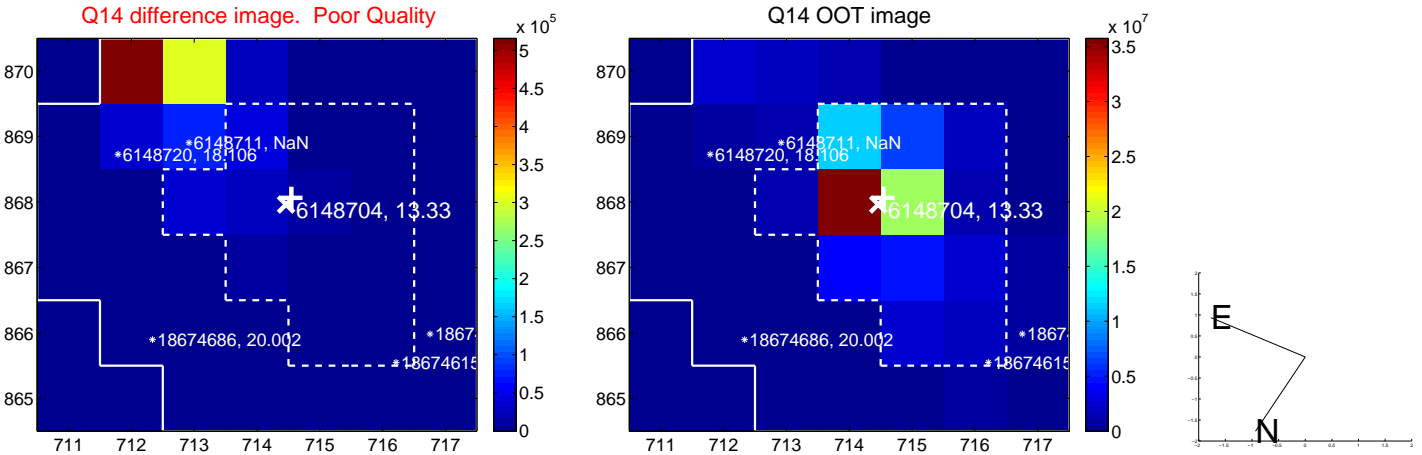
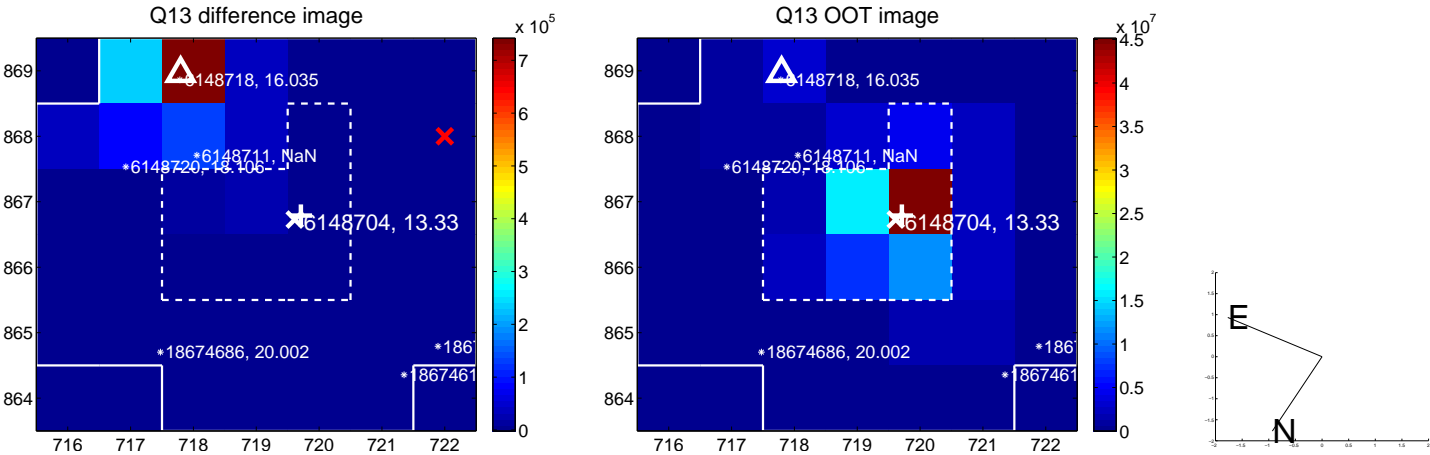
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



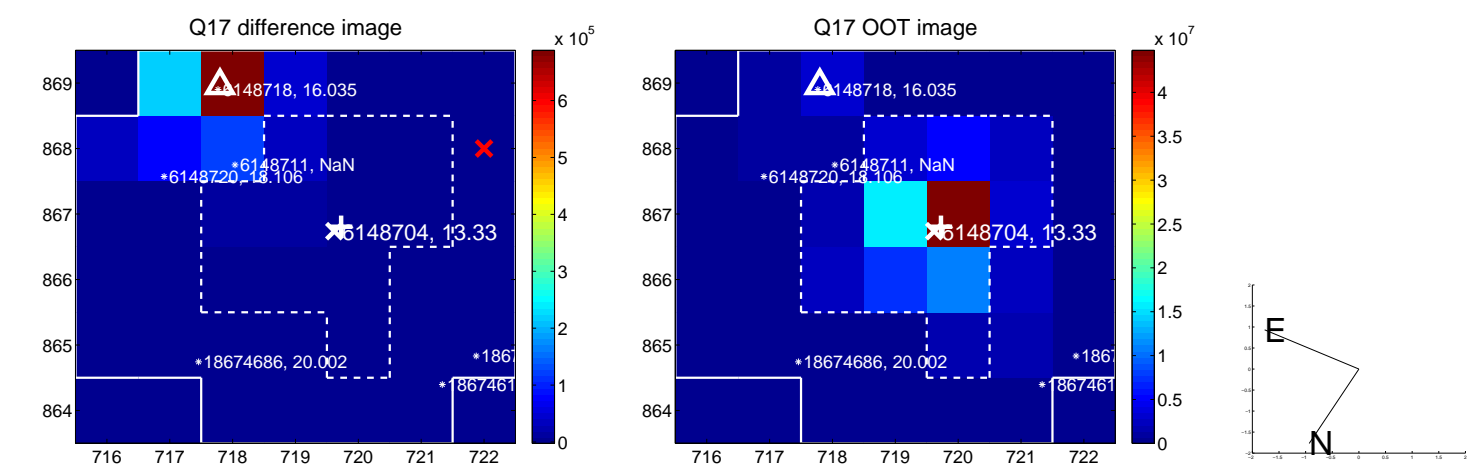
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



folded centroid time series figure for this object.

UKIRT Image

Declination

