

# KIC 010734935

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010734935-01	OBS	No	0.654990	132.067806	37.1	1.688	13.8	7.1	3.40	7883	2.41	113389.71
010734935-02	OBS	No	0.654999	131.596550	75.9	2.176	13.9	14.5	3.40	7883	3.44	113387.69
010734935-03	OBS	No	103.778648	179.992030	883.3	5.279	9.4	7.9	3.40	7883	12.57	132.25
010734935-04	OBS	No	118.102871	167.313602	298.6	1.292	8.1	2.7	3.40	7883	6.33	111.31
010734935-05	OBS	No	19.639729	132.072591	538.3	4.025	8.5	9.6	3.40	7883	11.43	1217.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010734935-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010734935-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010734935-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

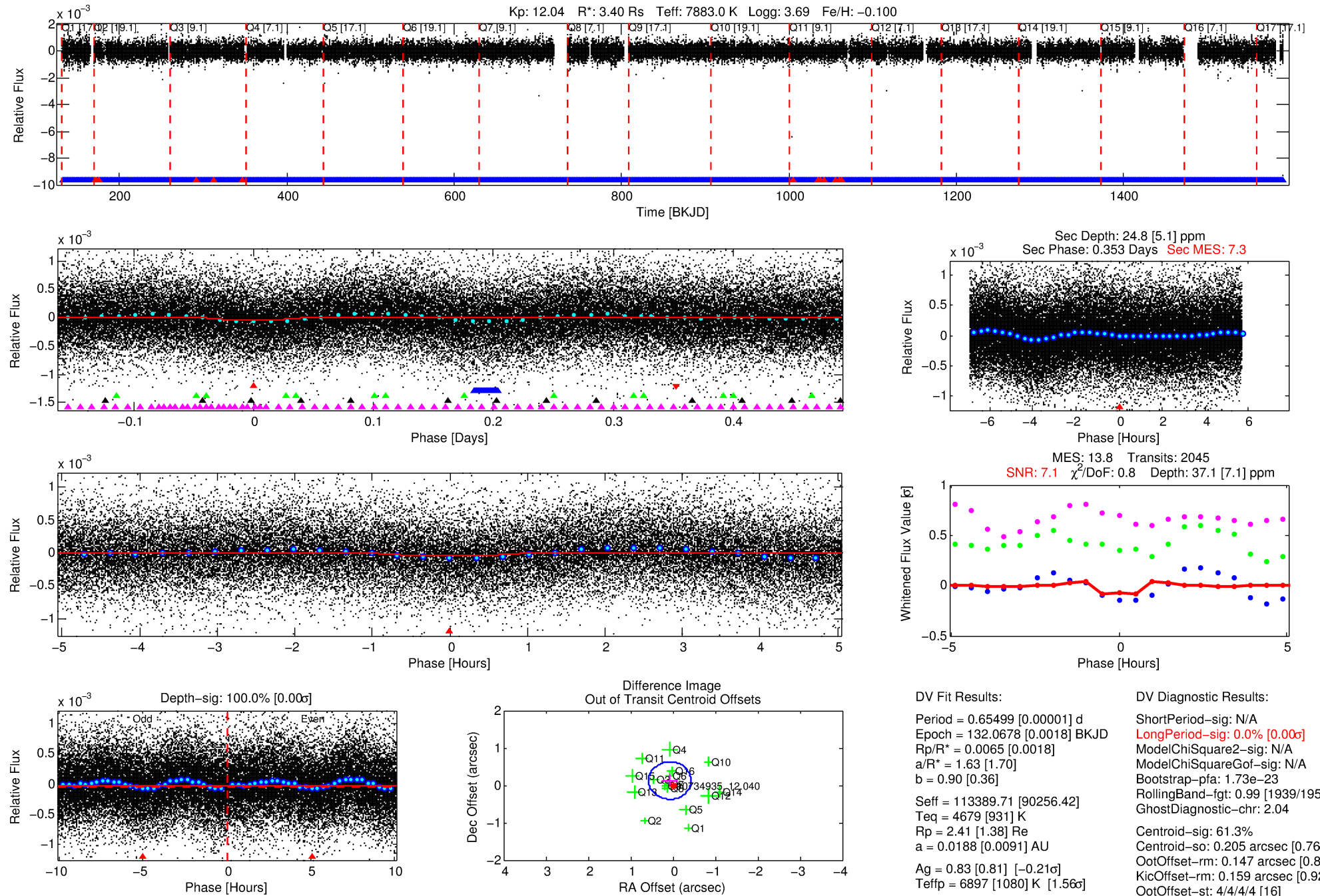
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010734935-01

No Significant Match Found

# DV One-Page Summary

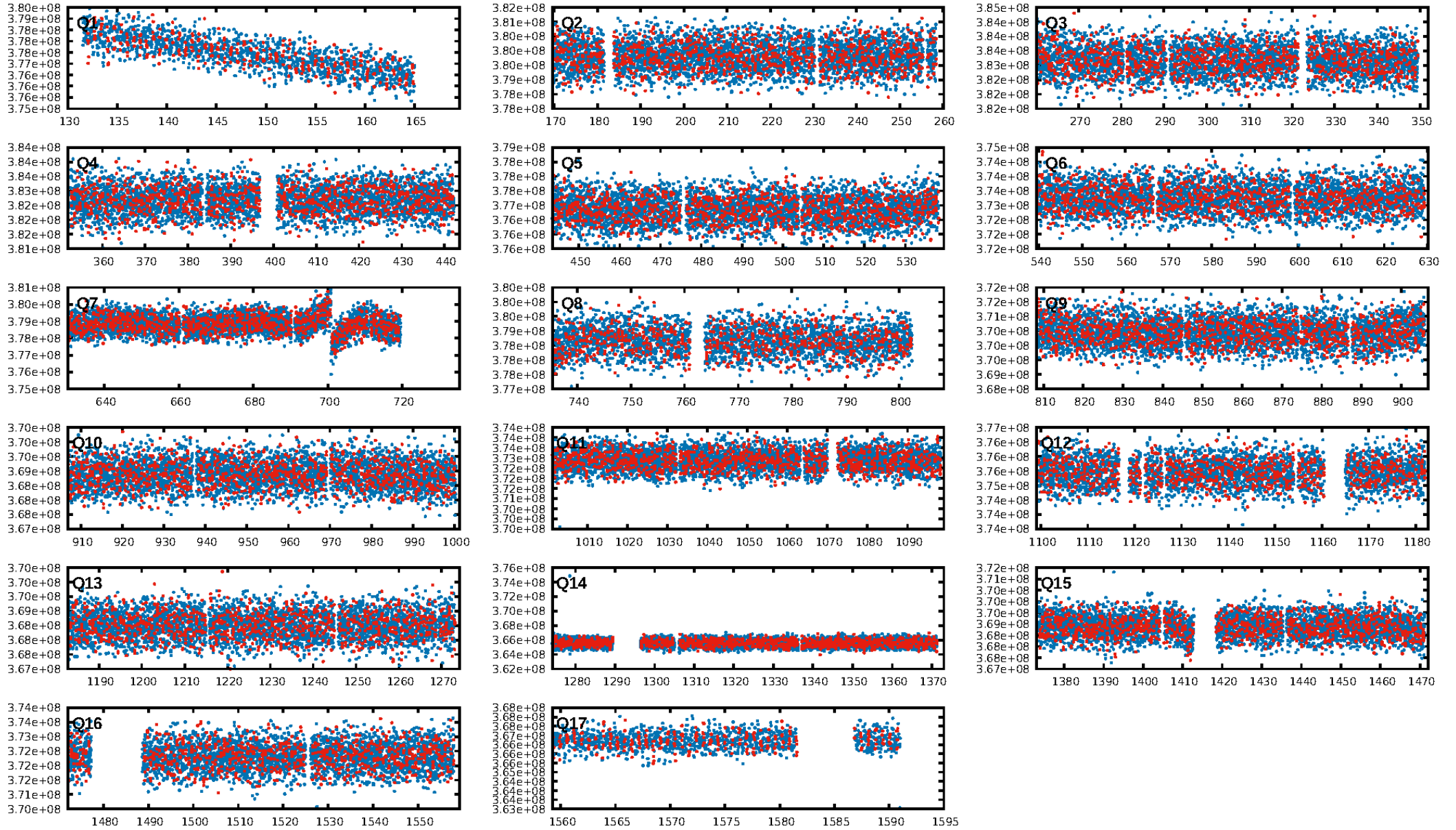
KIC: 10734935 Candidate: 1 of 5 Period: 0.655 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:04:31 Z

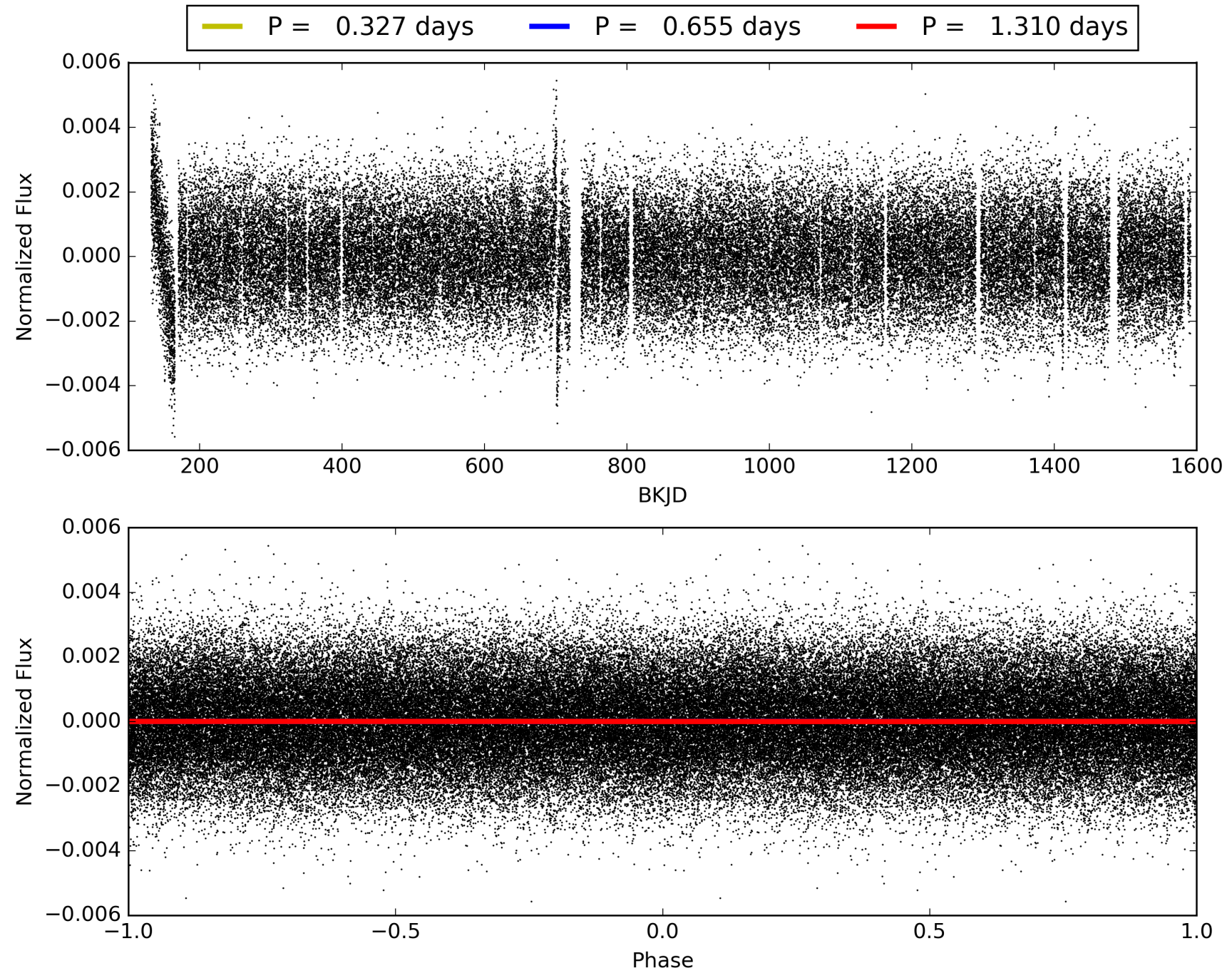
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 010734935-01, PDC Light Curves





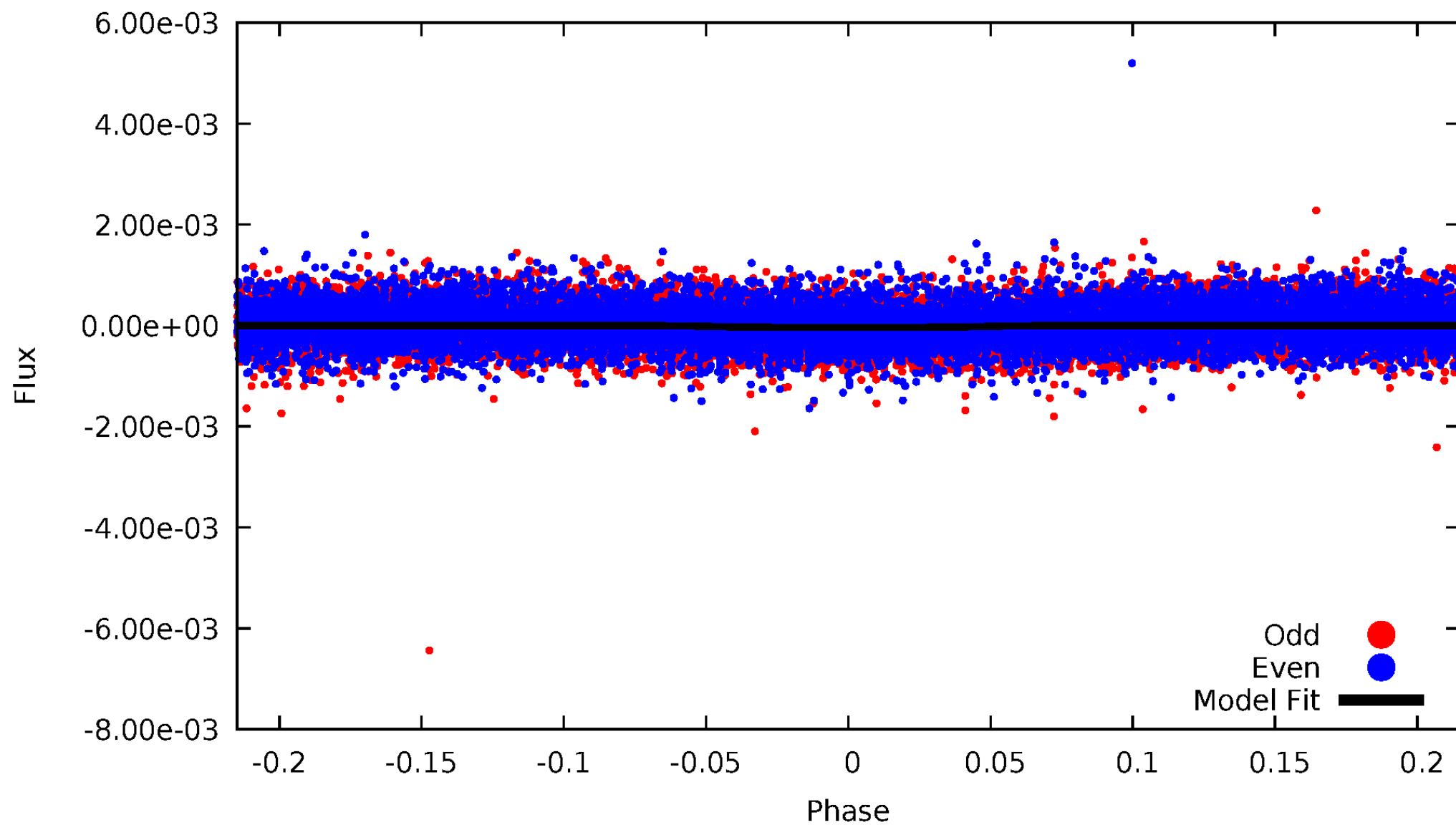
TCE 010734935-01





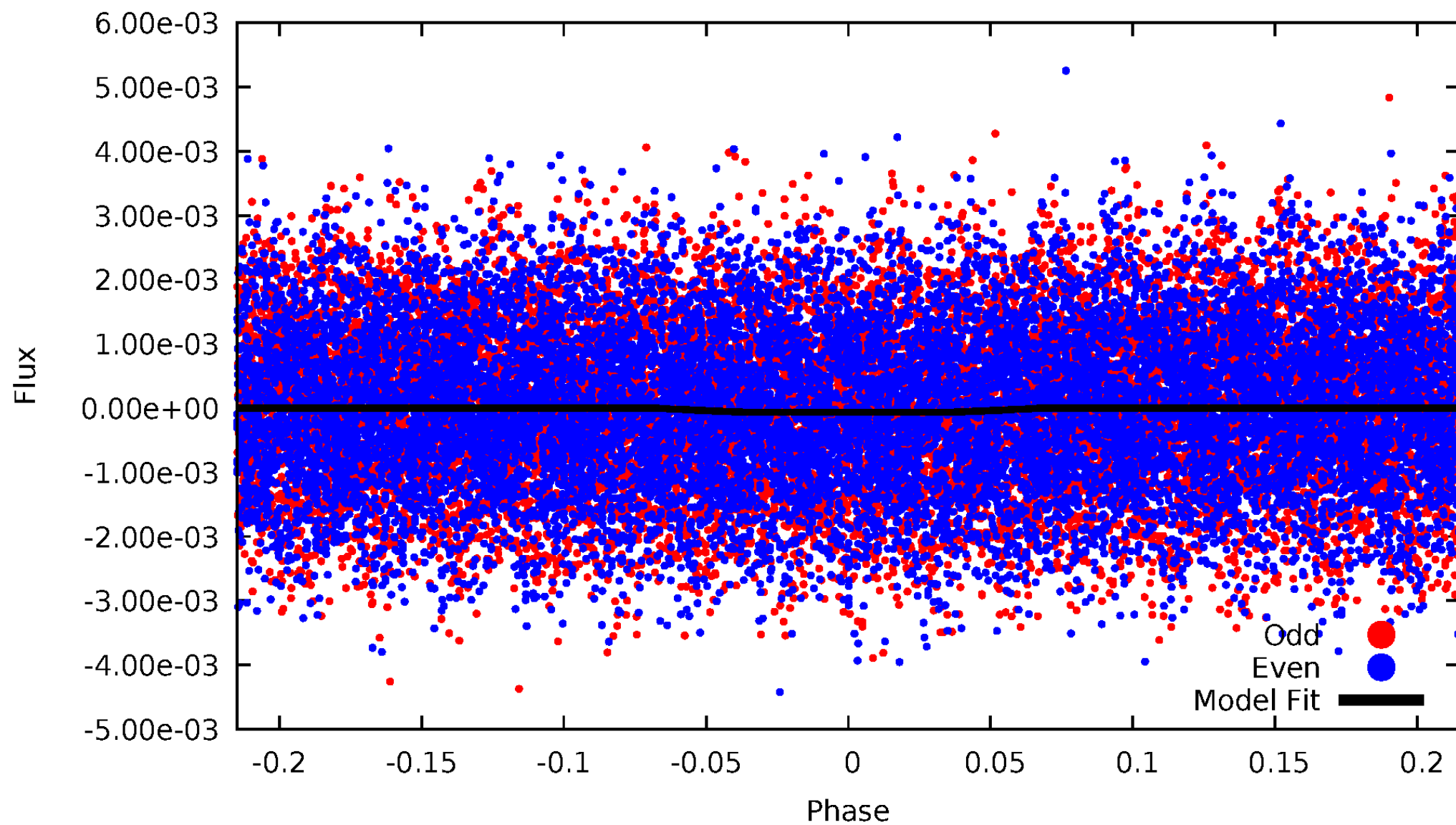
# DV Odd/Even

TCE 010734935-01



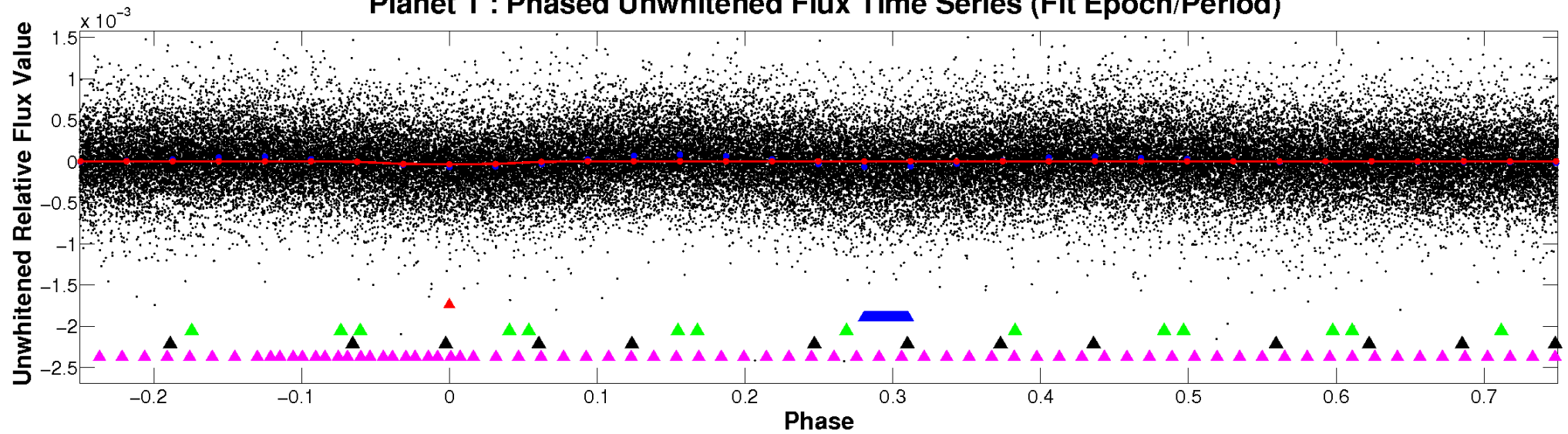
# ALT Odd/Even

TCE 010734935-01

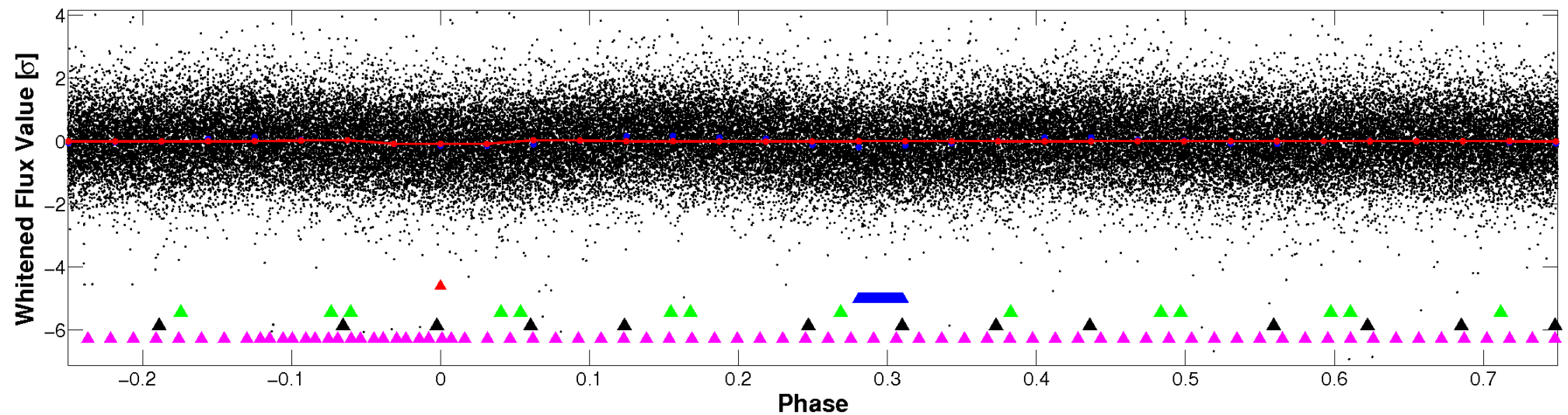


# Non-Whitened Vs. Whitened Light Curve

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



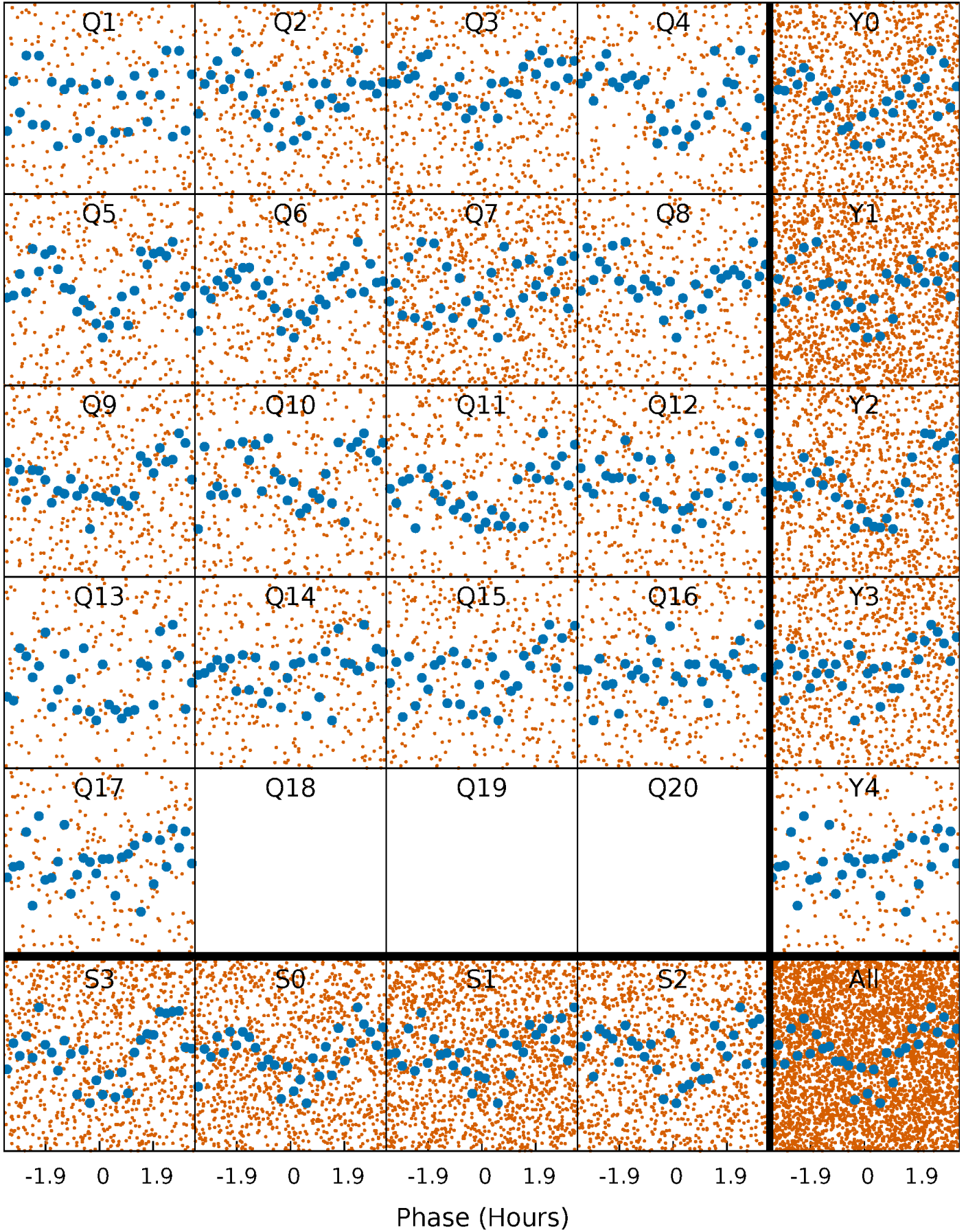
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





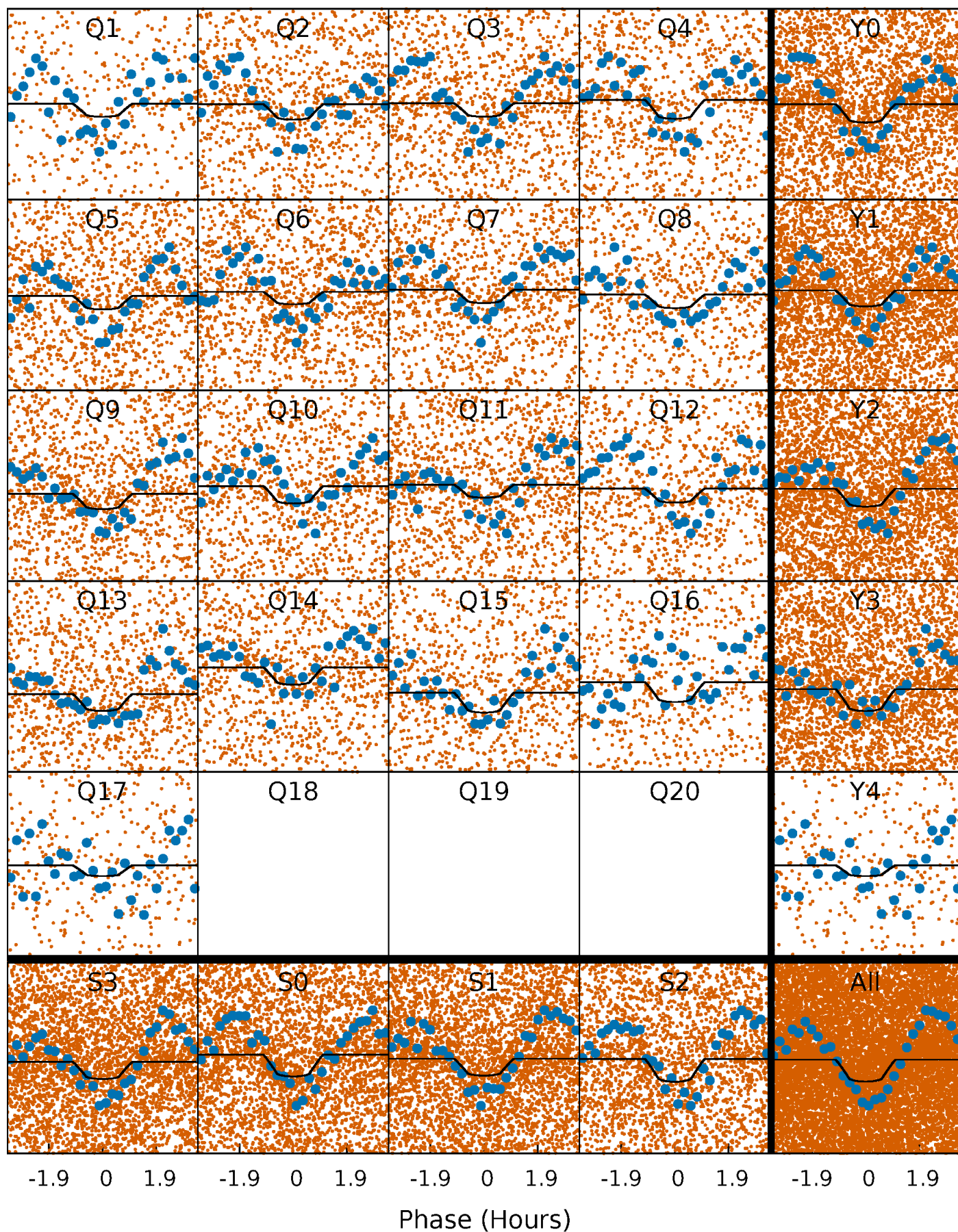
# PDC Quarter-Phased Transit Curves

TCE 010734935-01   P= 0.654990 Days    $T_0=132.067806$  (BKJD)



# DV Quarter-Phased Transit Curves

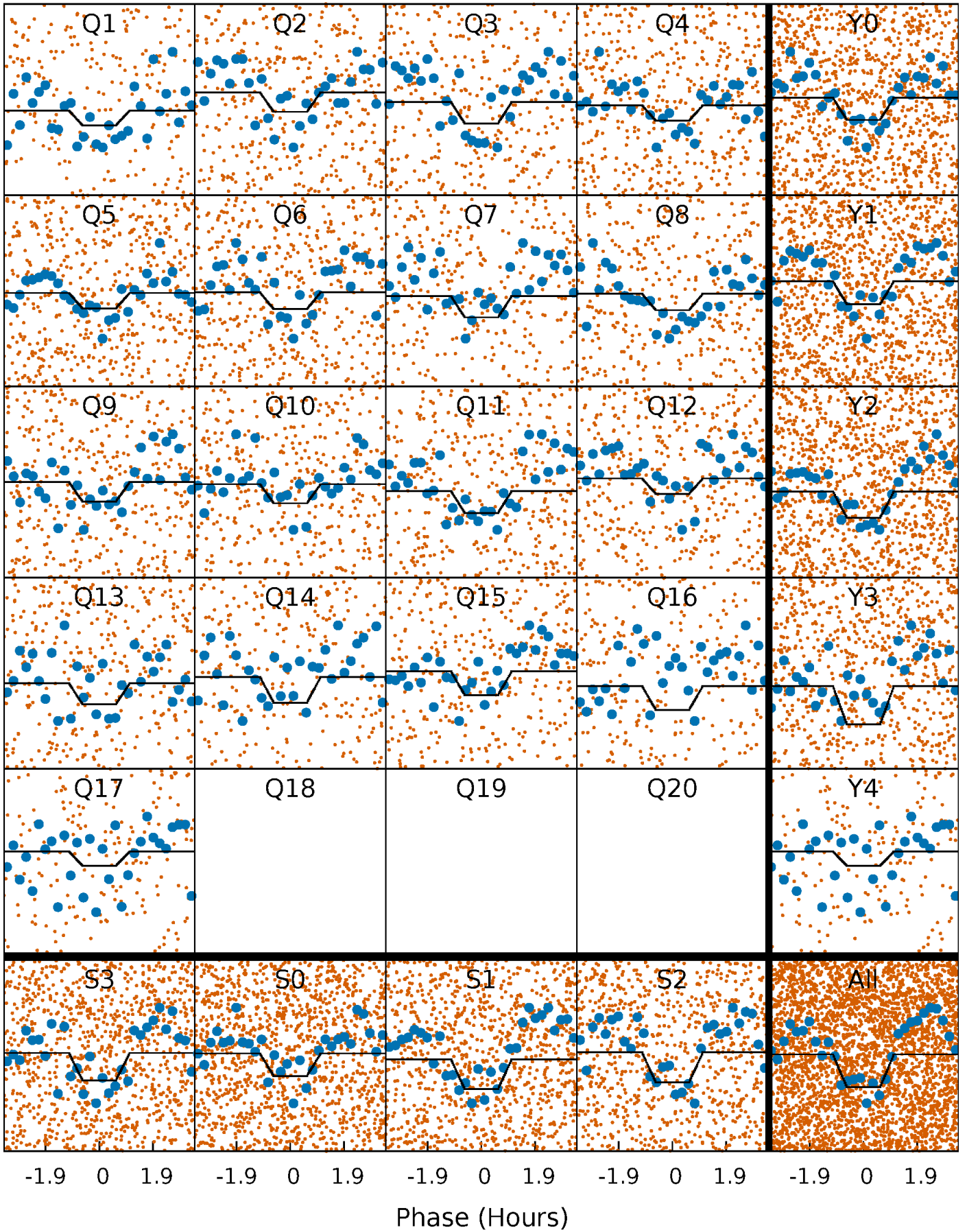
TCE 010734935-01 P= 0.654990 Days  $T_0=132.067806$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 010734935-01 P= 0.655002 Days  $T_0=132.063356$  (BKJD)

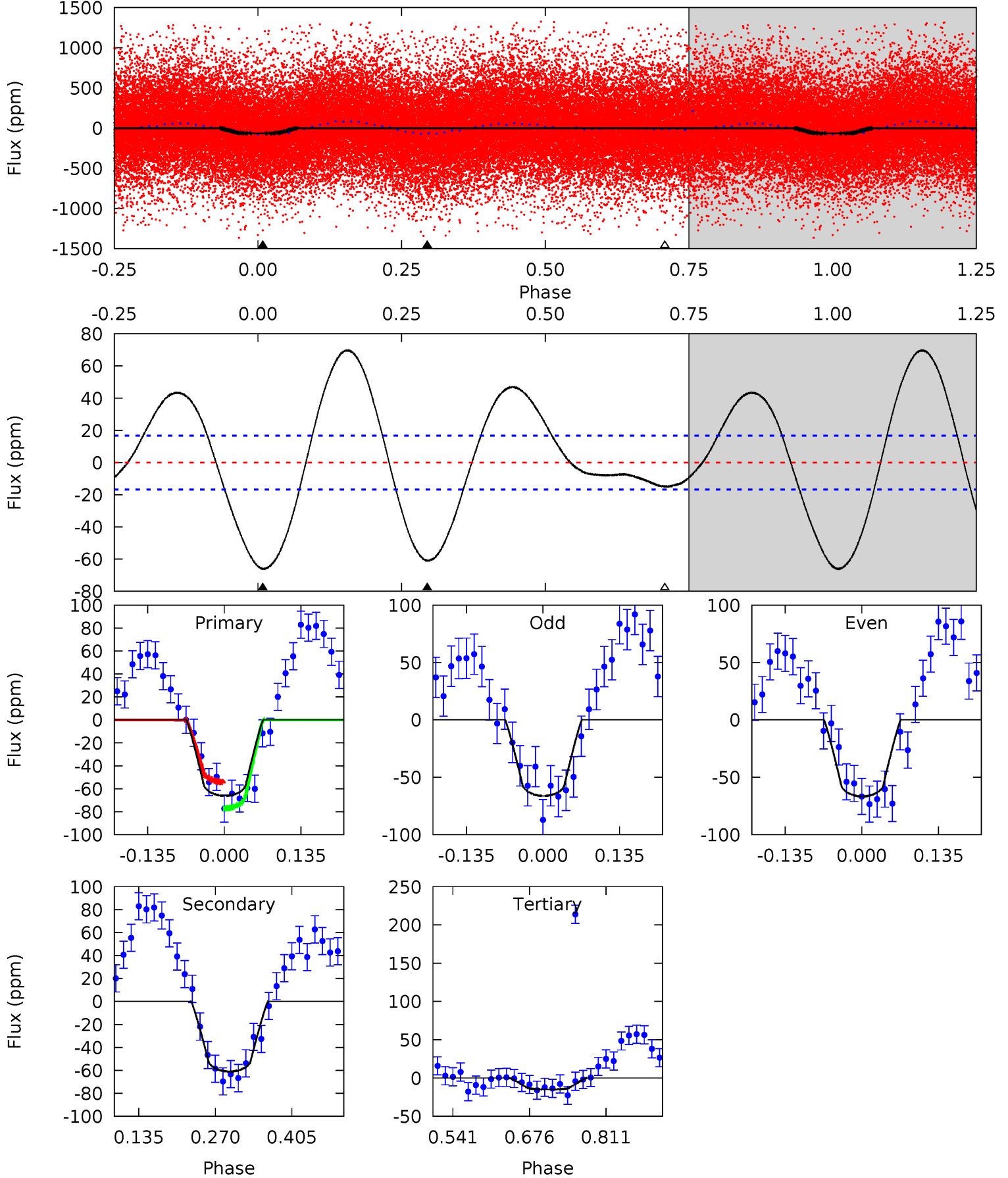




# DV Model-Shift Uniqueness Test

010734935-01, P = 0.654990 Days, E = 131.412816 Days

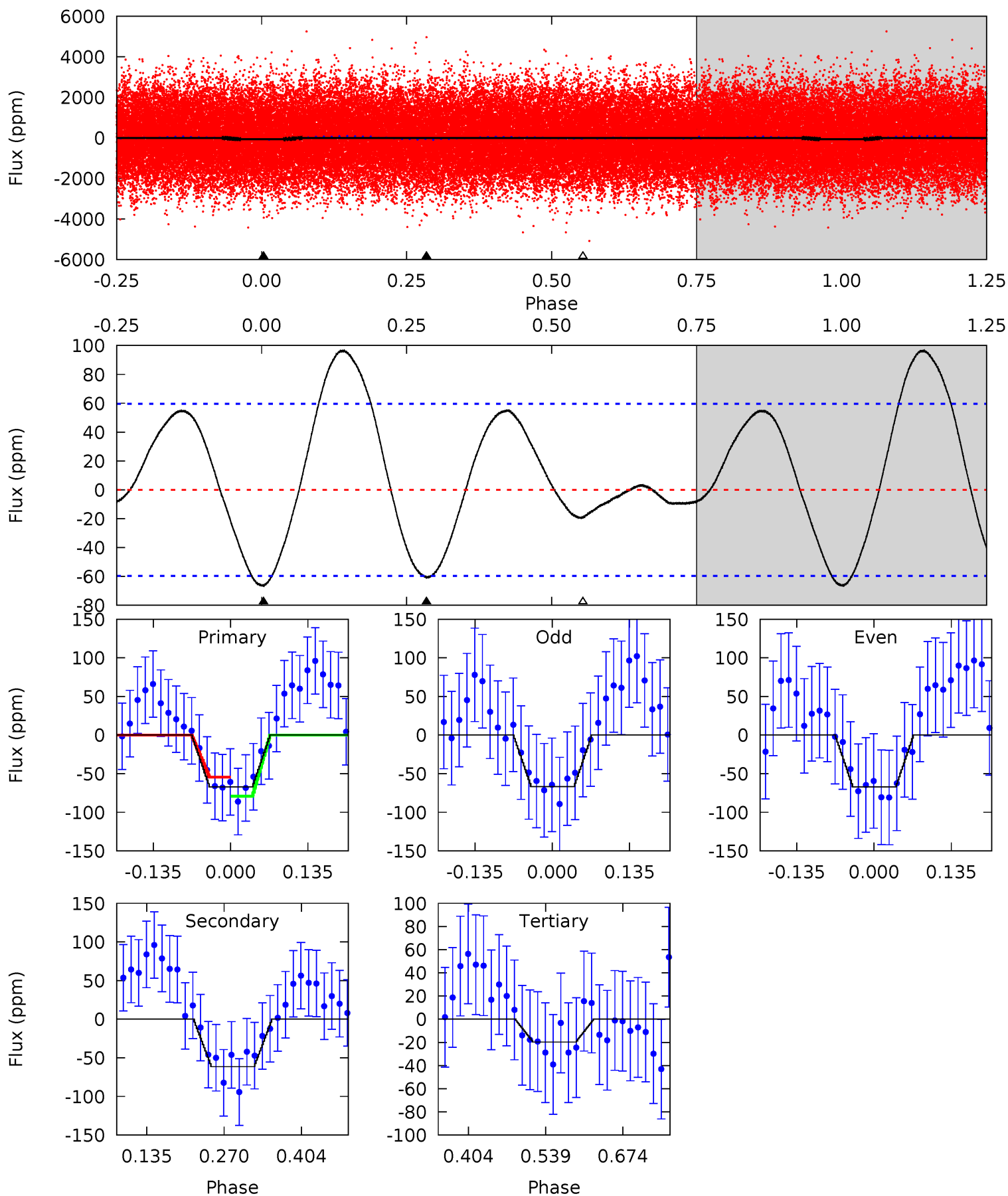
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	16.4	4.02	0	4.50	1.49	6.40	13.7	17.8	12.4	16.4	0.06	1.16	0.51	3.04



# Alt Model-Shift Uniqueness Test

010734935-01, P = 0.655002 Days, E = 131.408354 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.06	4.64	1.49	0	4.50	1.50	2.01	3.57	5.06	3.15	4.64	0.02	0.80	0.59	0.92



### Stellar Parameters For KIC 010734935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7883^{+218}_{-327}$	$3.688^{+0.459}_{-0.108}$	$-0.100^{+0.200}_{-0.350}$	$3.395^{+0.674}_{-1.686}$	$2.047^{+0.342}_{-0.513}$	$0.074^{+0.316}_{-0.025}$
	+3%/-4%	+12%/-3%	+200%/-350%	+20%/-50%	+17%/-25%	+428%/-34%
Source	KIC0	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 010734935-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-61 \pm 4$	$2.17^{+0.83}_{-0.79}$	$6362^{+480}_{-846}$	$8541^{+2604}_{-1498}$	$2.555^{+3.440}_{-1.199}$
Alt.	$-61 \pm 13$	$2.73^{+0.90}_{-0.83}$	$6360^{+473}_{-727}$	$7190^{+1734}_{-1155}$	$1.572^{+1.670}_{-0.694}$

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



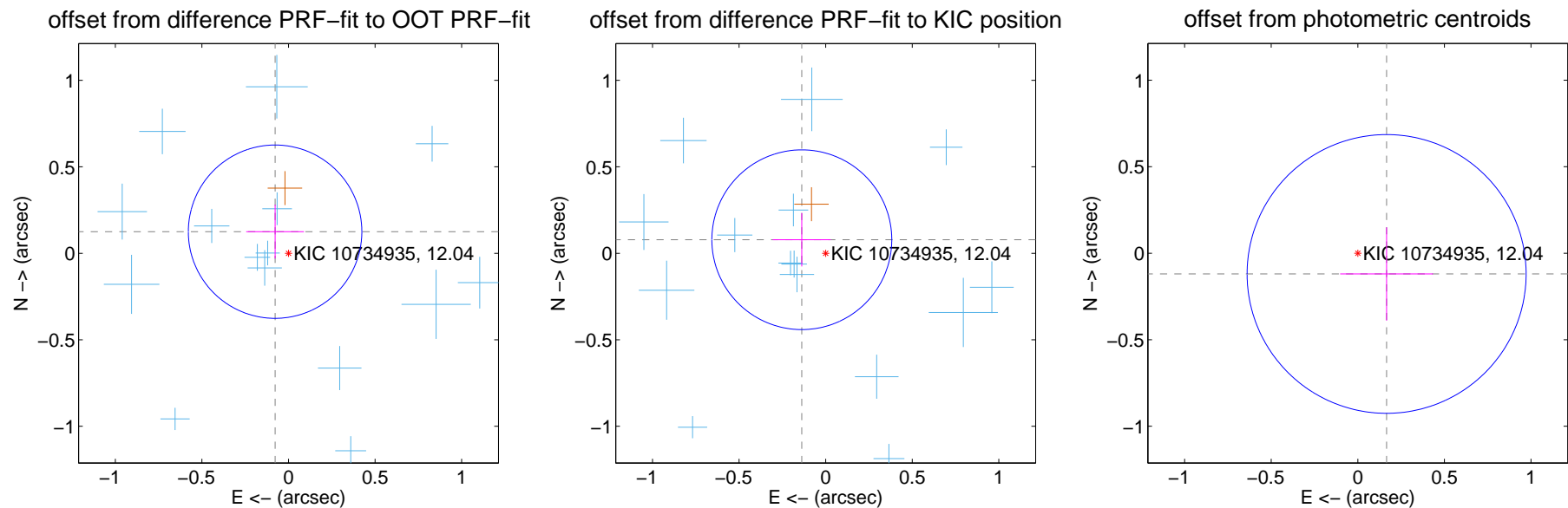
## DV Centroid Data

Supplemental centroid analysis for 010734935-01. Kepler magnitude: 12.04. Transit SNR 7.10

There are 15 quarters with good PRF difference image offsets

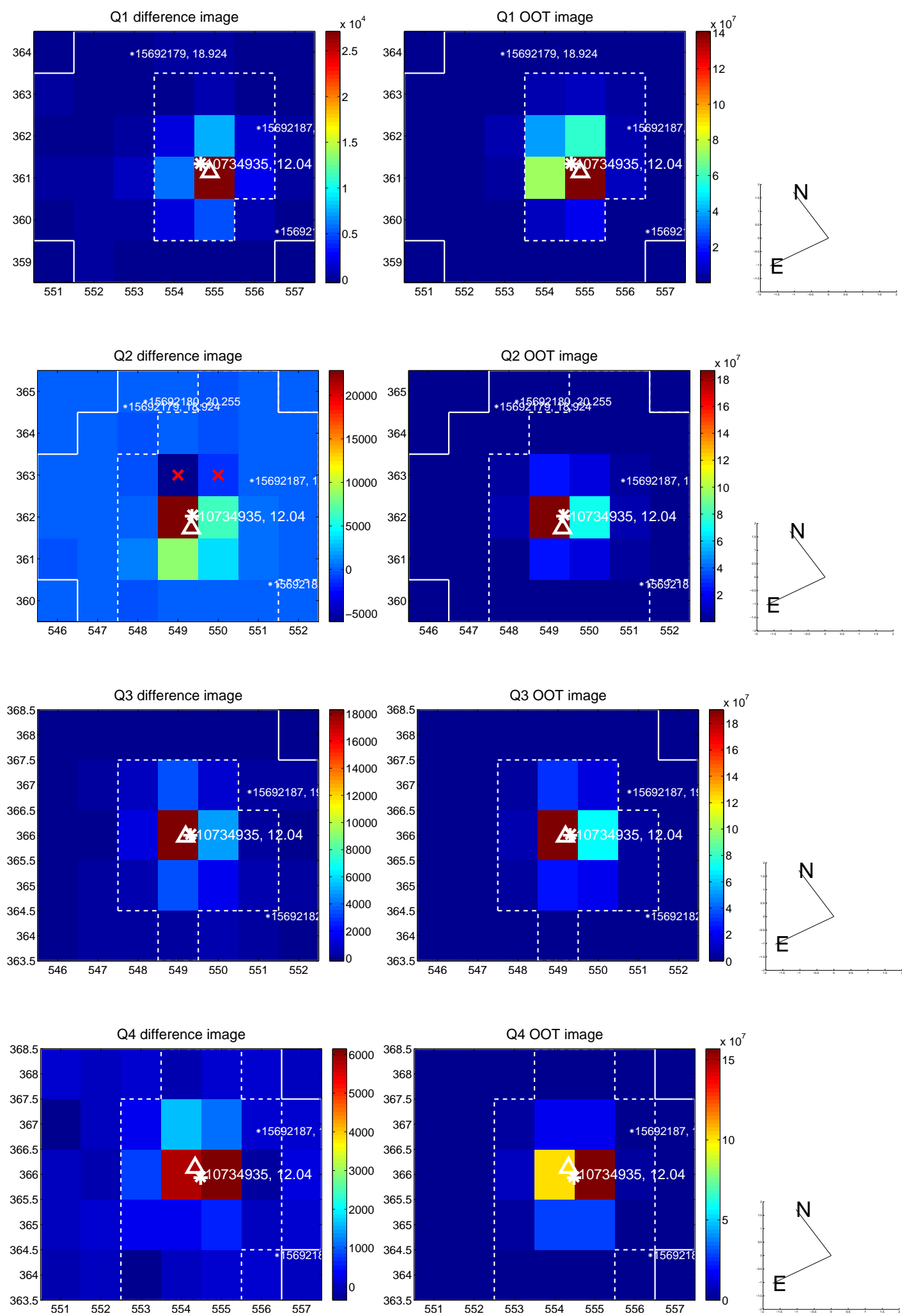
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.147 \pm 0.167$	0.88	$0.077 \pm 0.167$	$0.125 \pm 0.156$
PRF-fit source offset from KIC position	$0.159 \pm 0.173$	0.92	$0.138 \pm 0.167$	$0.078 \pm 0.155$
photometric centroid source offset	$0.21 \pm 0.27$	0.76	$-0.17 \pm 0.27$	$-0.12 \pm 0.27$

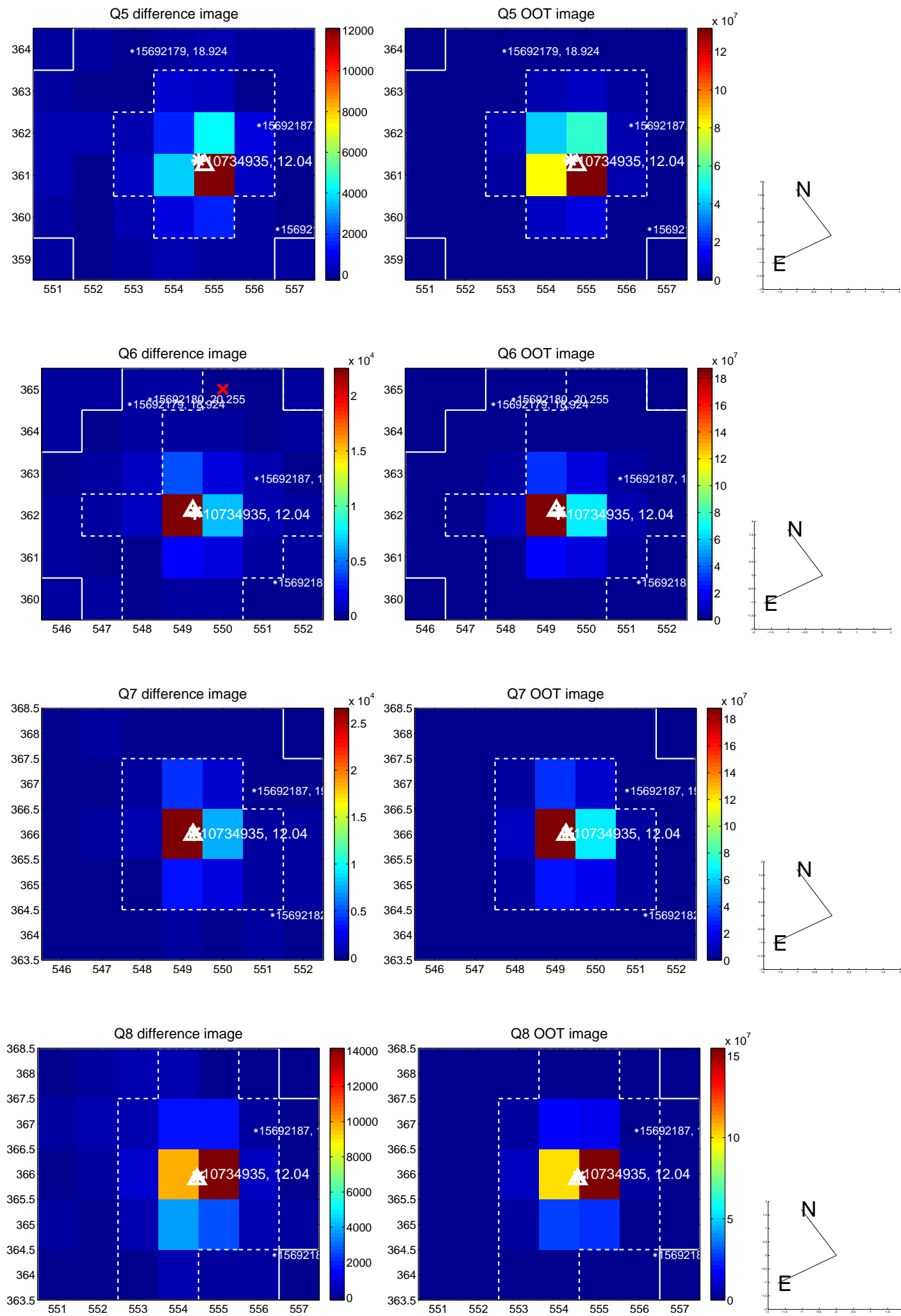


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

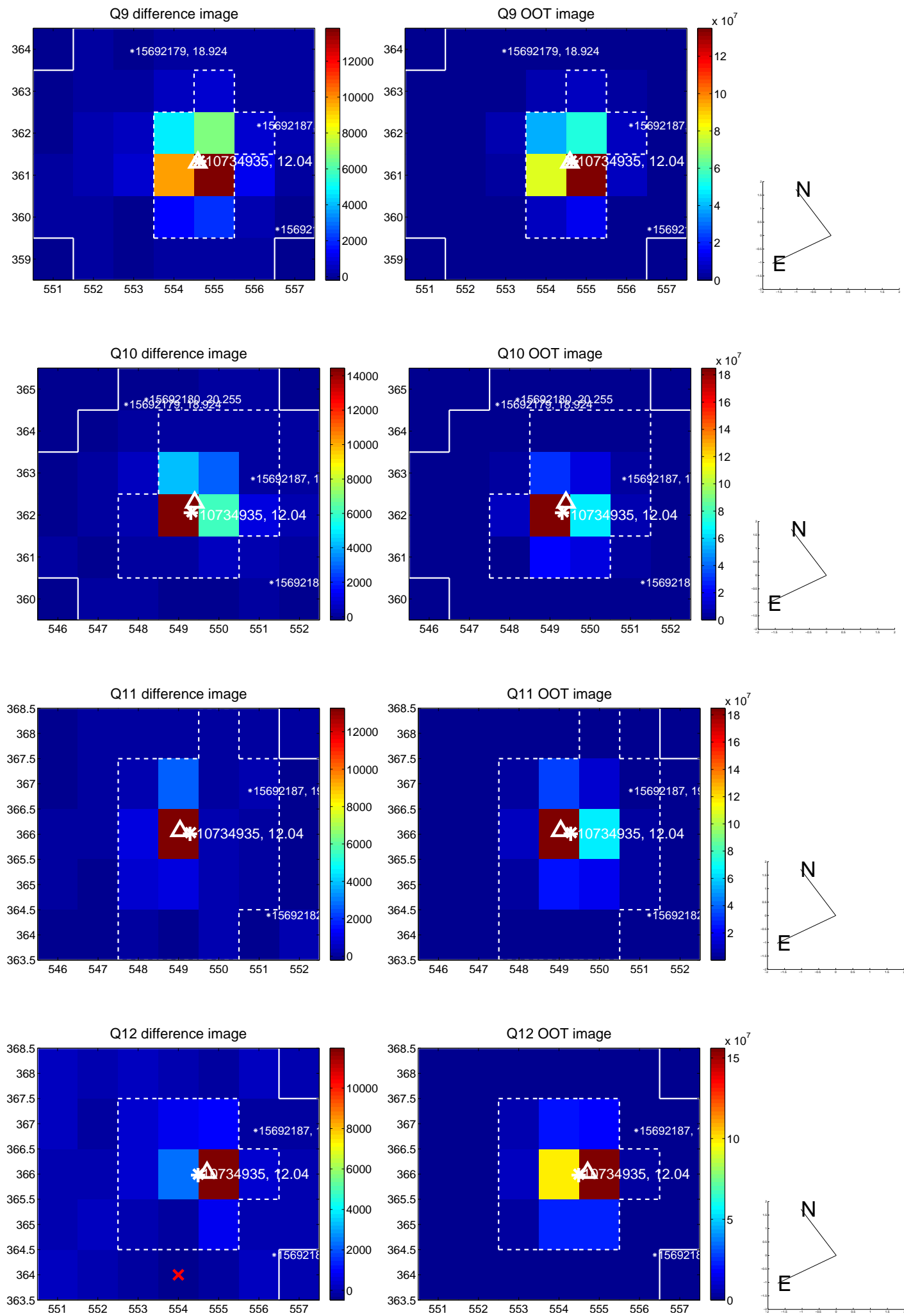


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

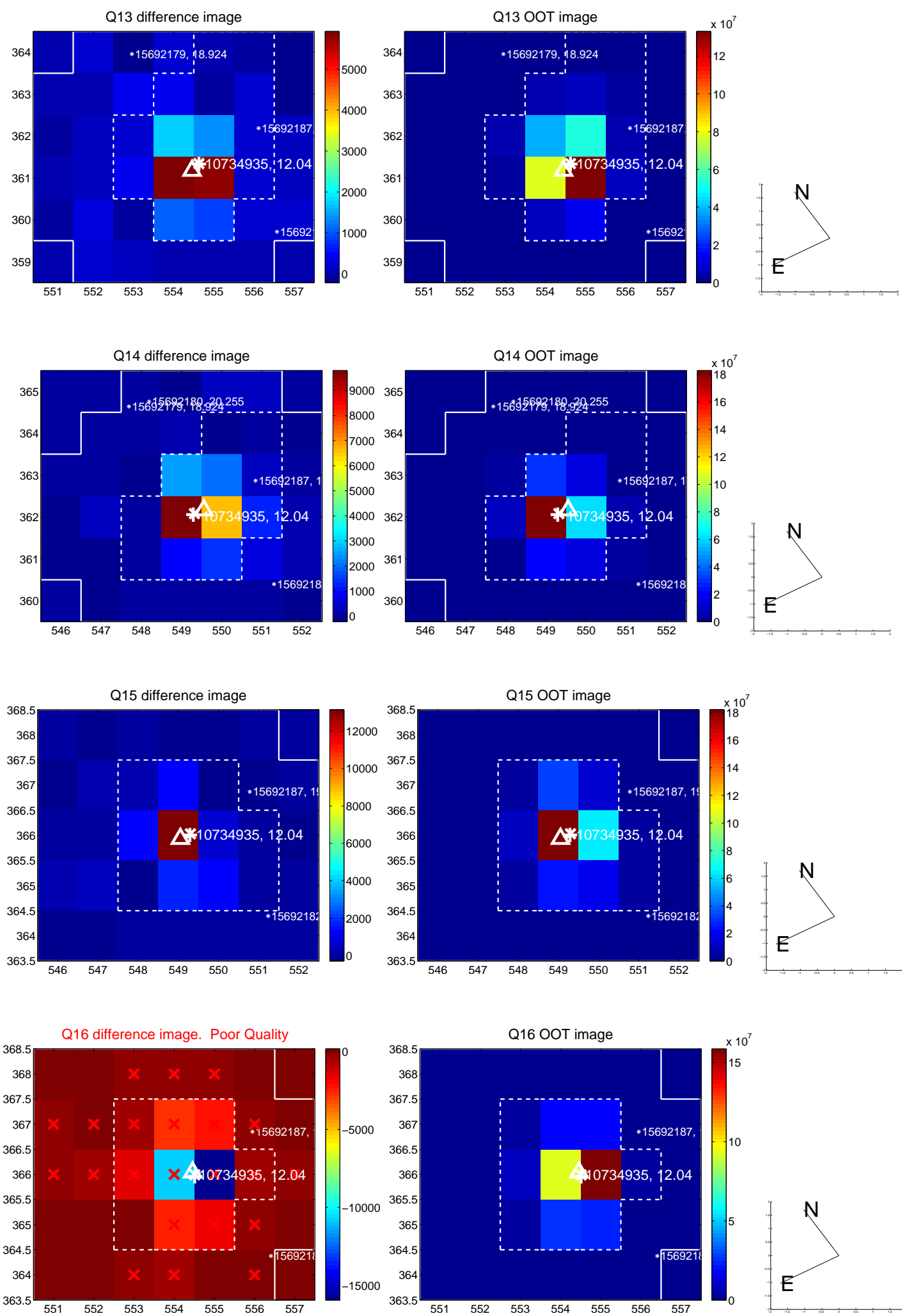




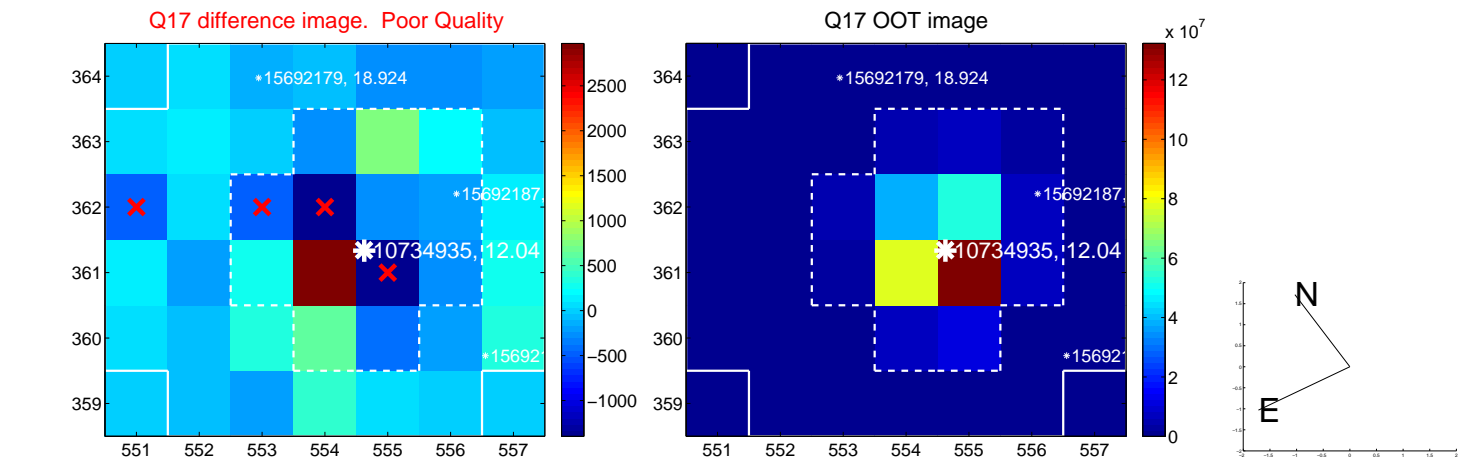
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



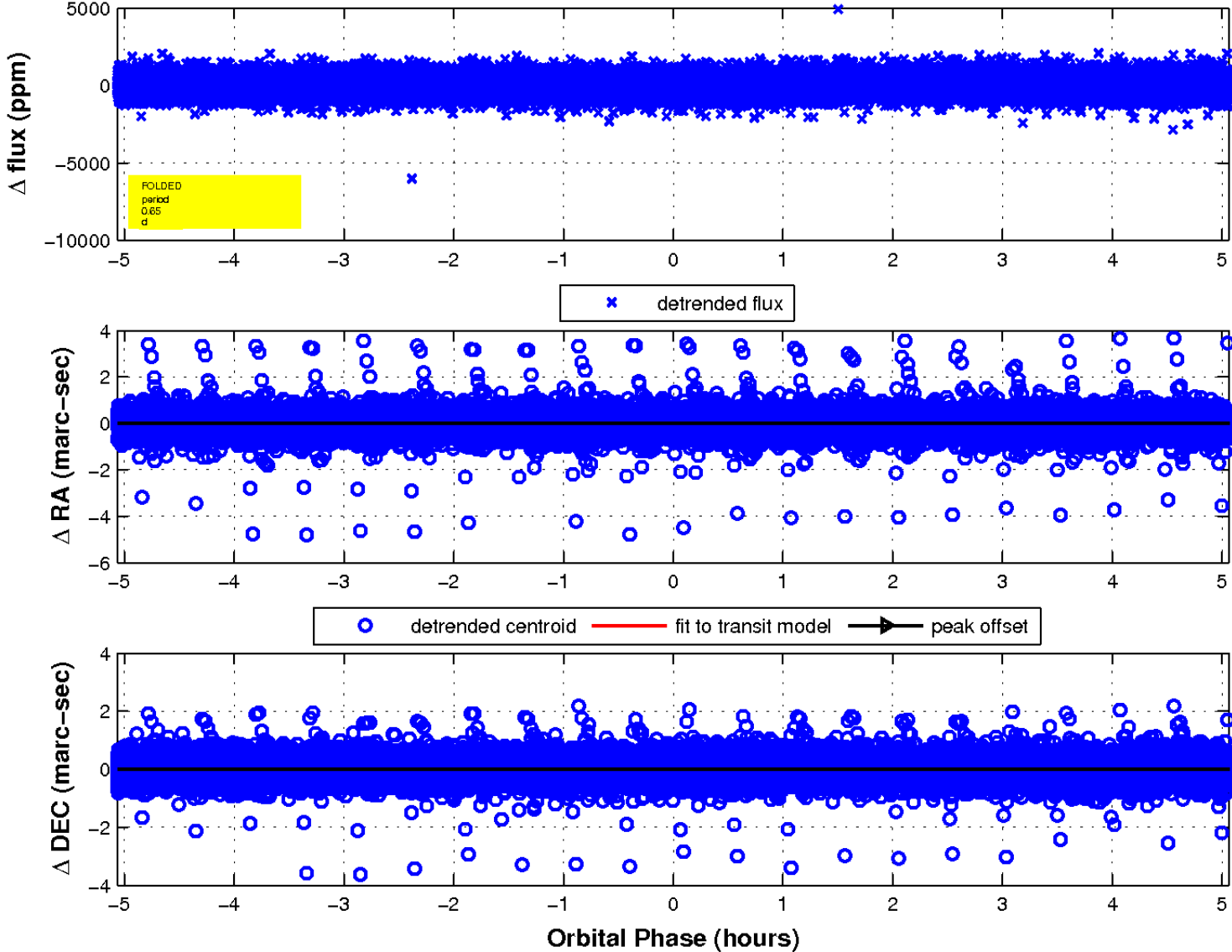
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

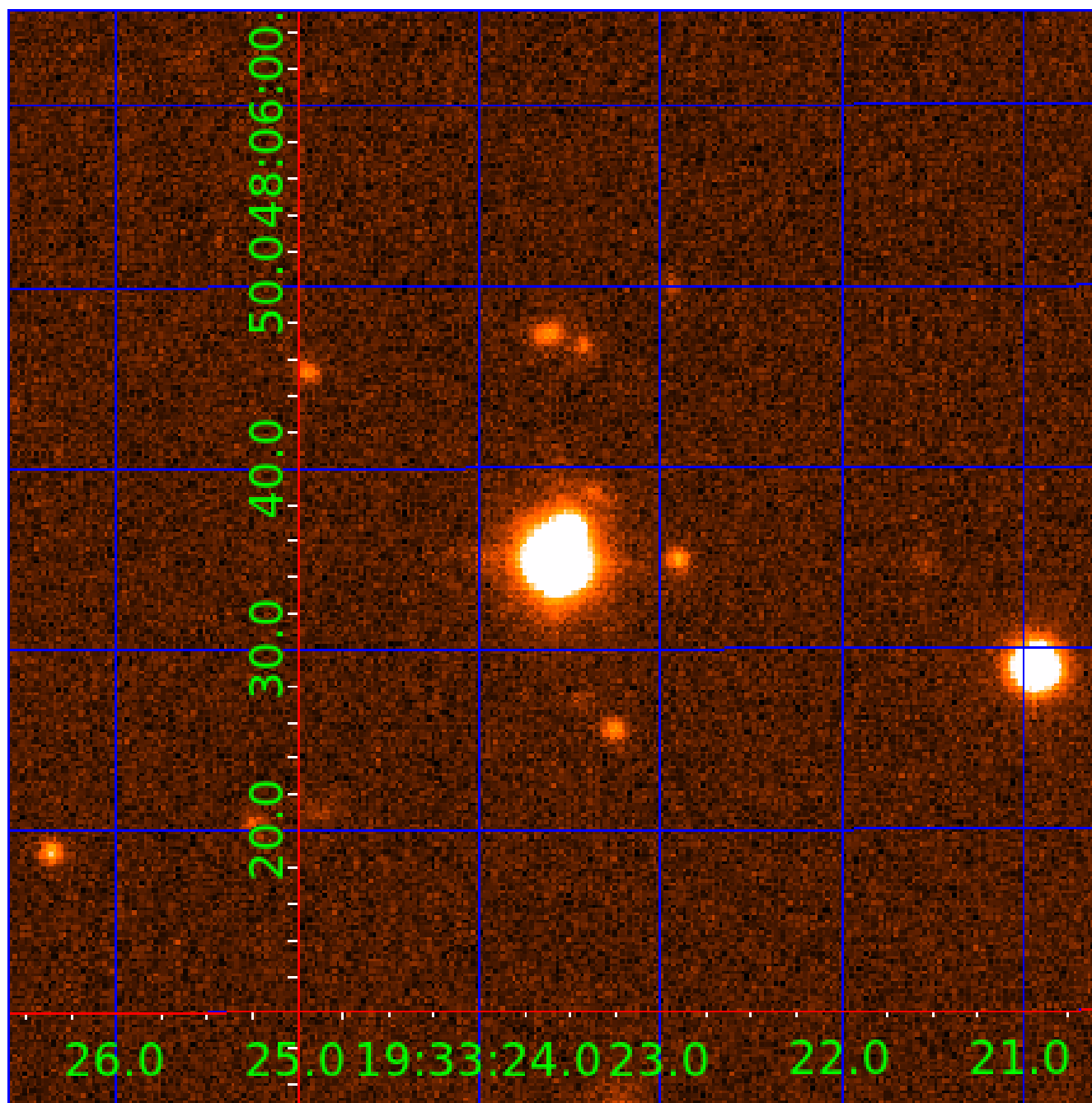


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



# KIC 010734935

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010734935-01	OBS	No	0.654990	132.067806	37.1	1.688	13.8	7.1	3.40	7883	2.41	113389.71
010734935-02	OBS	No	0.654999	131.596550	75.9	2.176	13.9	14.5	3.40	7883	3.44	113387.69
010734935-03	OBS	No	103.778648	179.992030	883.3	5.279	9.4	7.9	3.40	7883	12.57	132.25
010734935-04	OBS	No	118.102871	167.313602	298.6	1.292	8.1	2.7	3.40	7883	6.33	111.31
010734935-05	OBS	No	19.639729	132.072591	538.3	4.025	8.5	9.6	3.40	7883	11.43	1217.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010734935-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010734935-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010734935-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

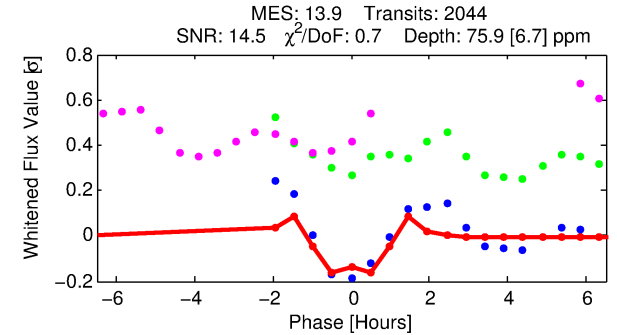
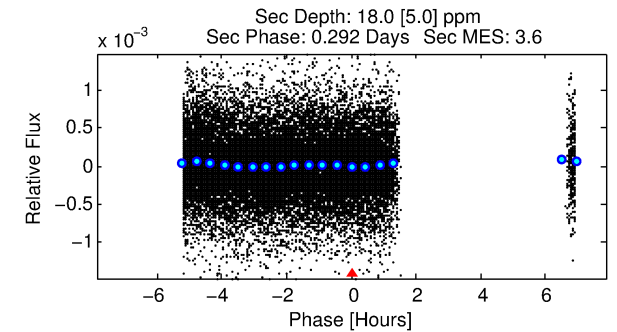
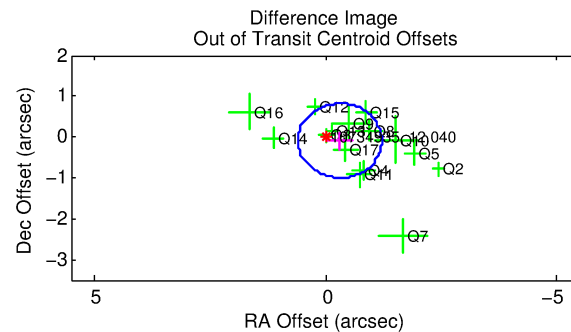
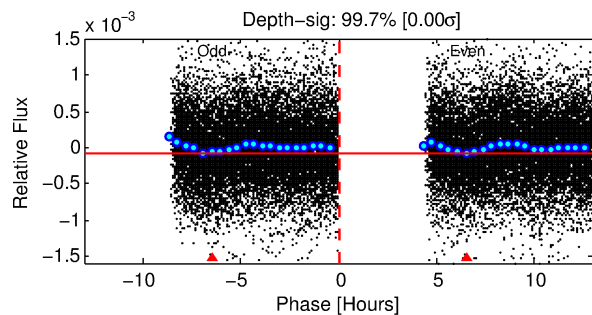
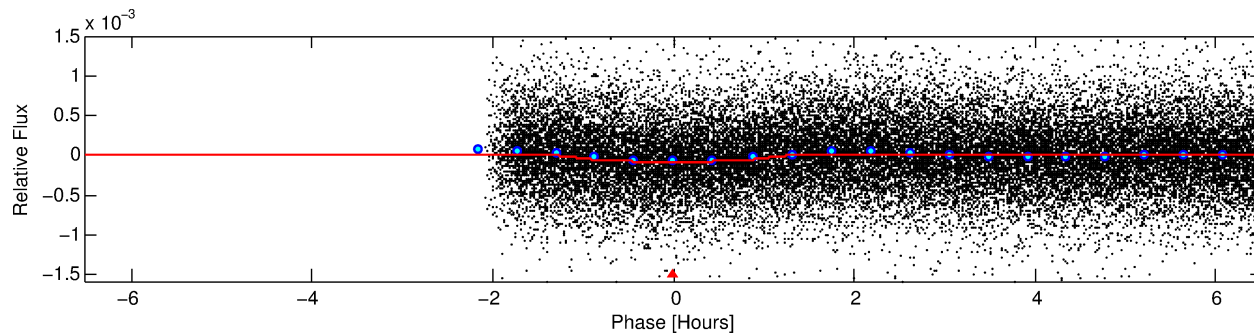
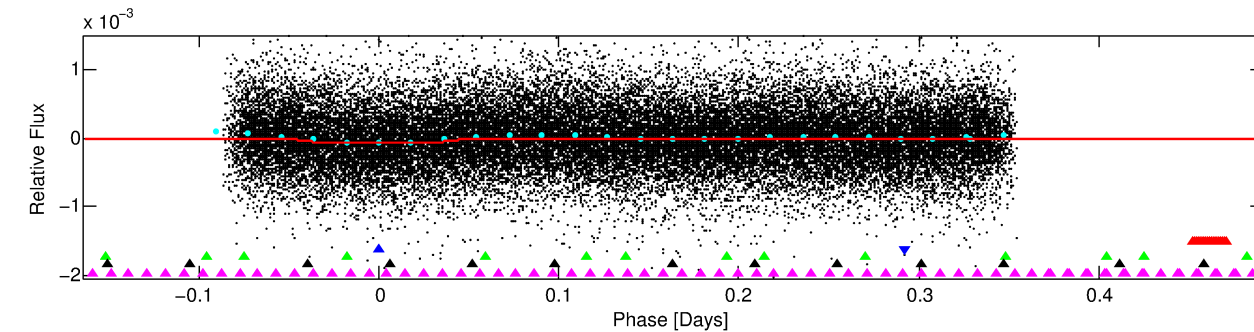
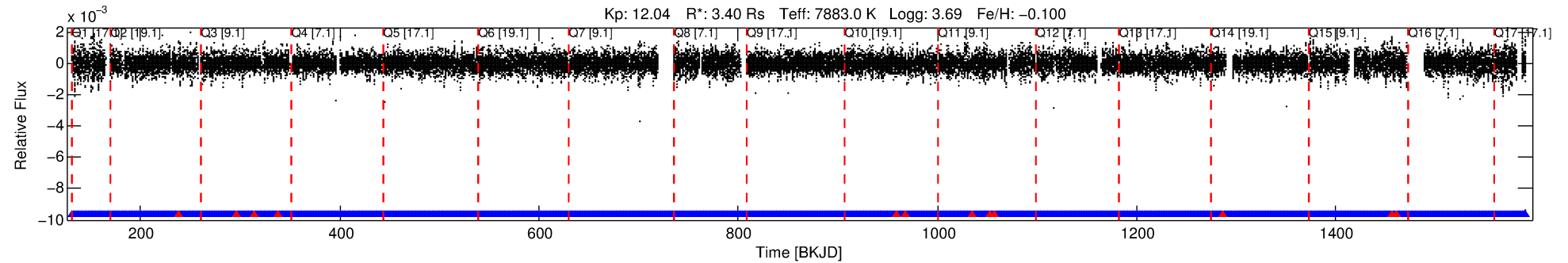
## Ephemeris Match Information For 010734935-02

No Significant Match Found



# DV One-Page Summary

KIC: 10734935 Candidate: 2 of 5 Period: 0.655 d



## DV Fit Results:

Period = 0.65500 [0.00001] d  
Epoch = 131.5966 [0.0010] BKJD  
Rp/R\* = 0.0093 [0.0018]  
a/R\* = 1.41 [0.81]  
b = 0.90 [0.25]  
Seff = 113387.69 [90254.81]  
Teff = 4679 [931] K  
Rp = 3.44 [1.84] Re  
a = 0.0188 [0.0091] AU  
Ag = 0.29 [0.27] [-2.63σ]  
Teffp = 5327 [669] K [0.57σ]

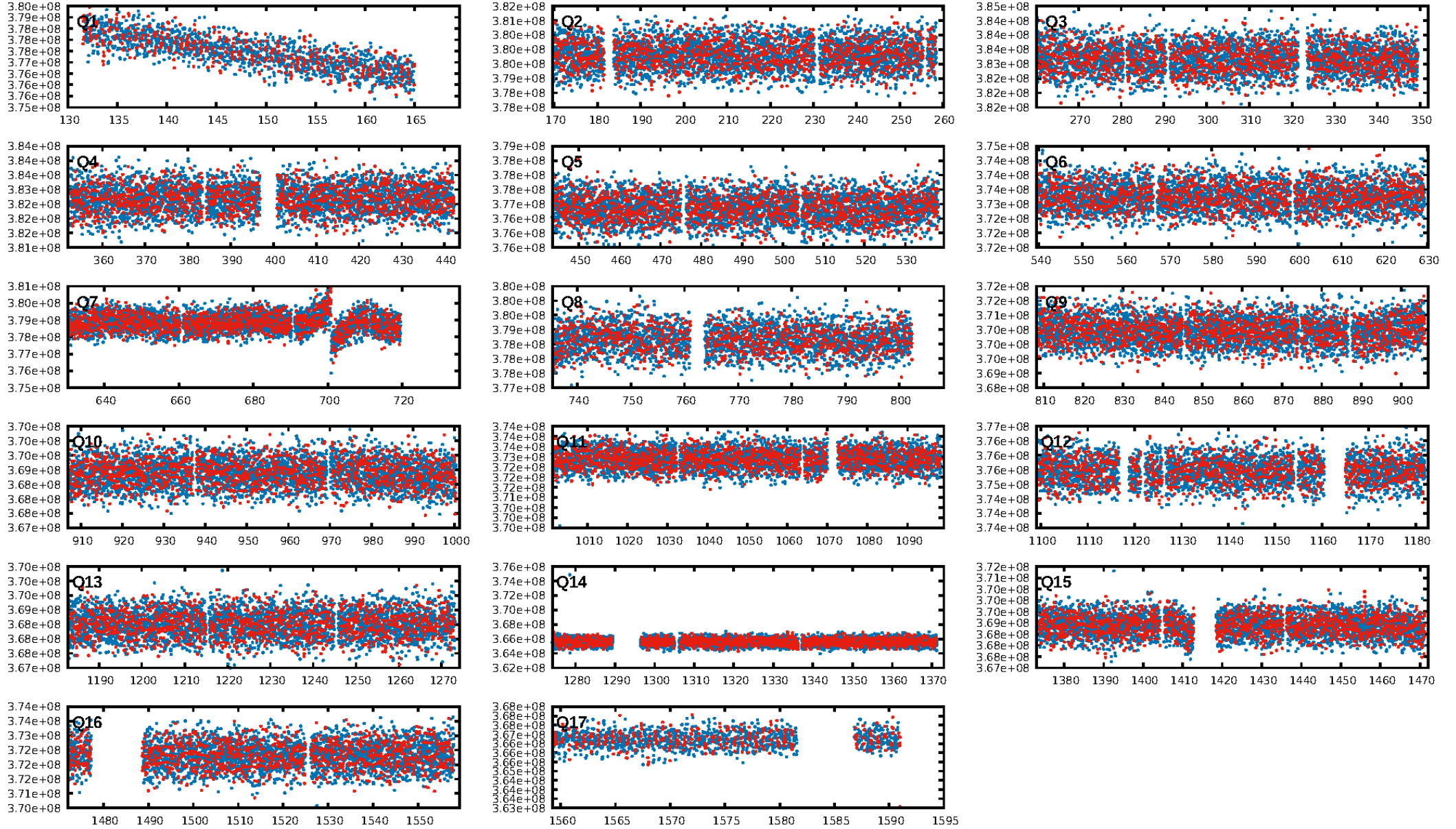
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 100.0% [99.58σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.06e-25  
RollingBand-fgt: 0.99 [1939/1951]  
GhostDiagnostic-chr: 6.964  
Centroid-sig: 42.9%  
Centroid-so: 0.129 arcsec [1.10σ]  
OotOffset-rm: 0.323 arcsec [1.07σ]  
KicOffset-rm: 0.291 arcsec [0.91σ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.87 [13/15]  
DiffImageOverlap-fno: 0.00 [0/17]

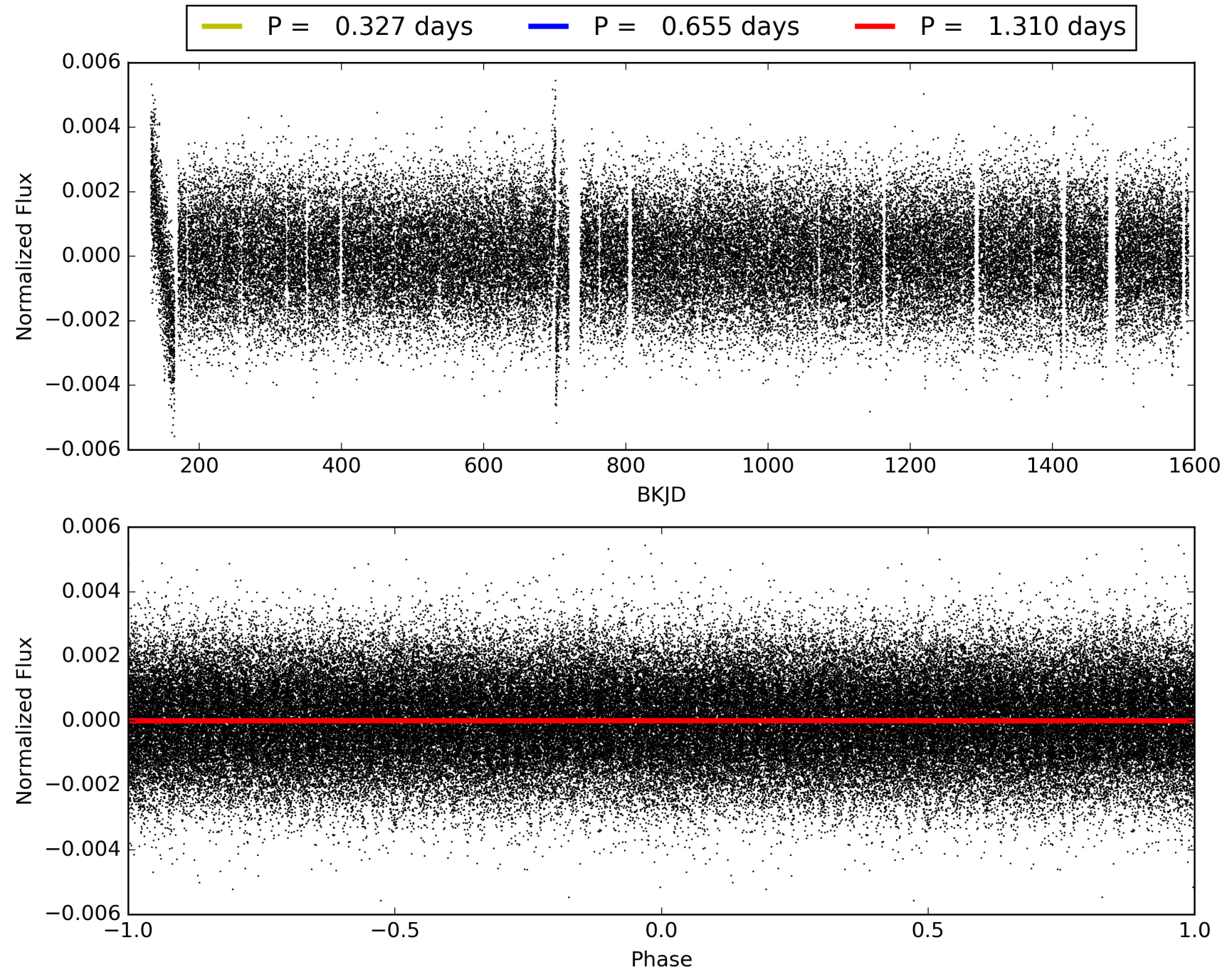
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:04:42 Z

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

# TCE 010734935-02, PDC Light Curves

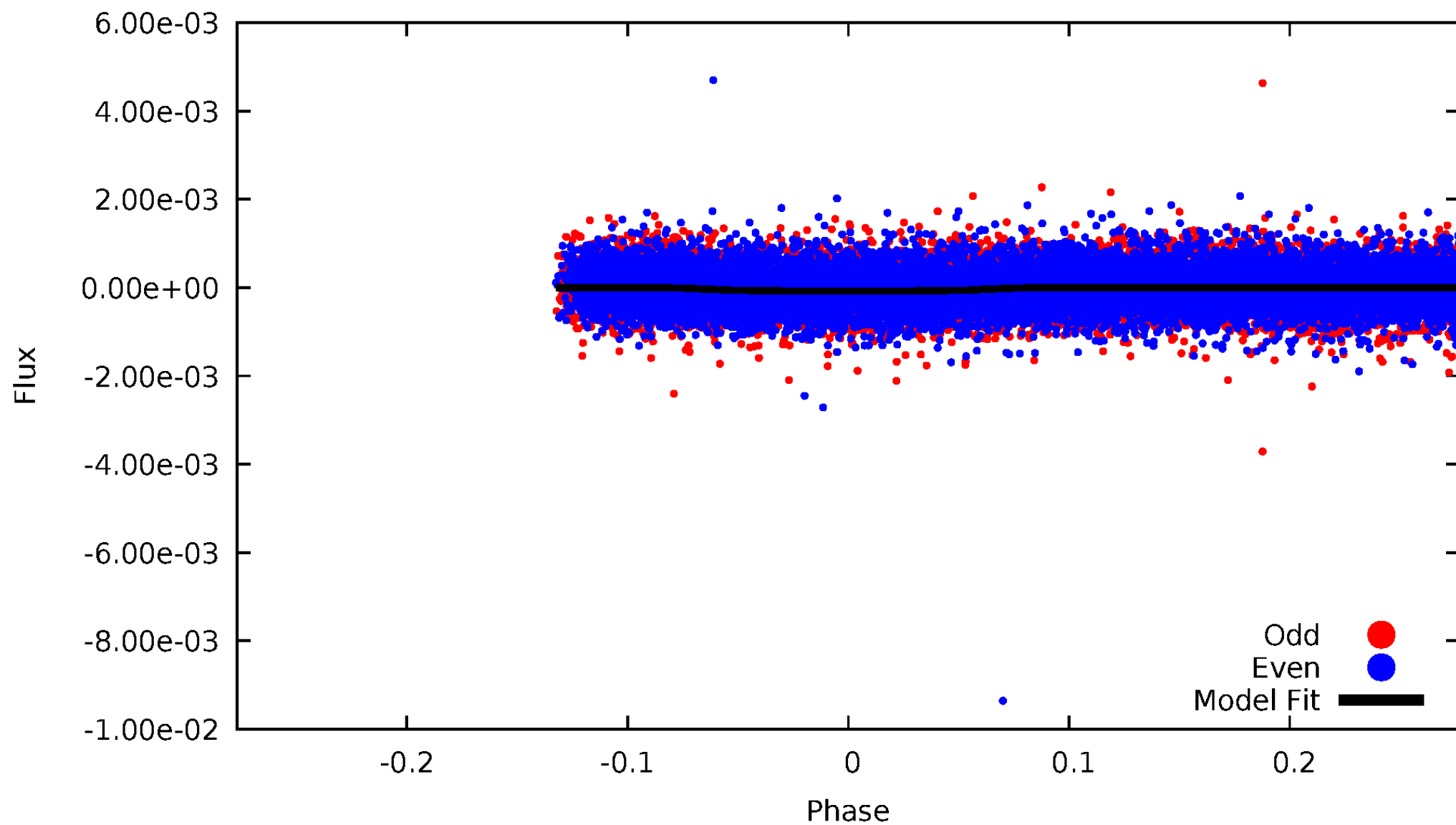


# TCE 010734935-02



# DV Odd/Even

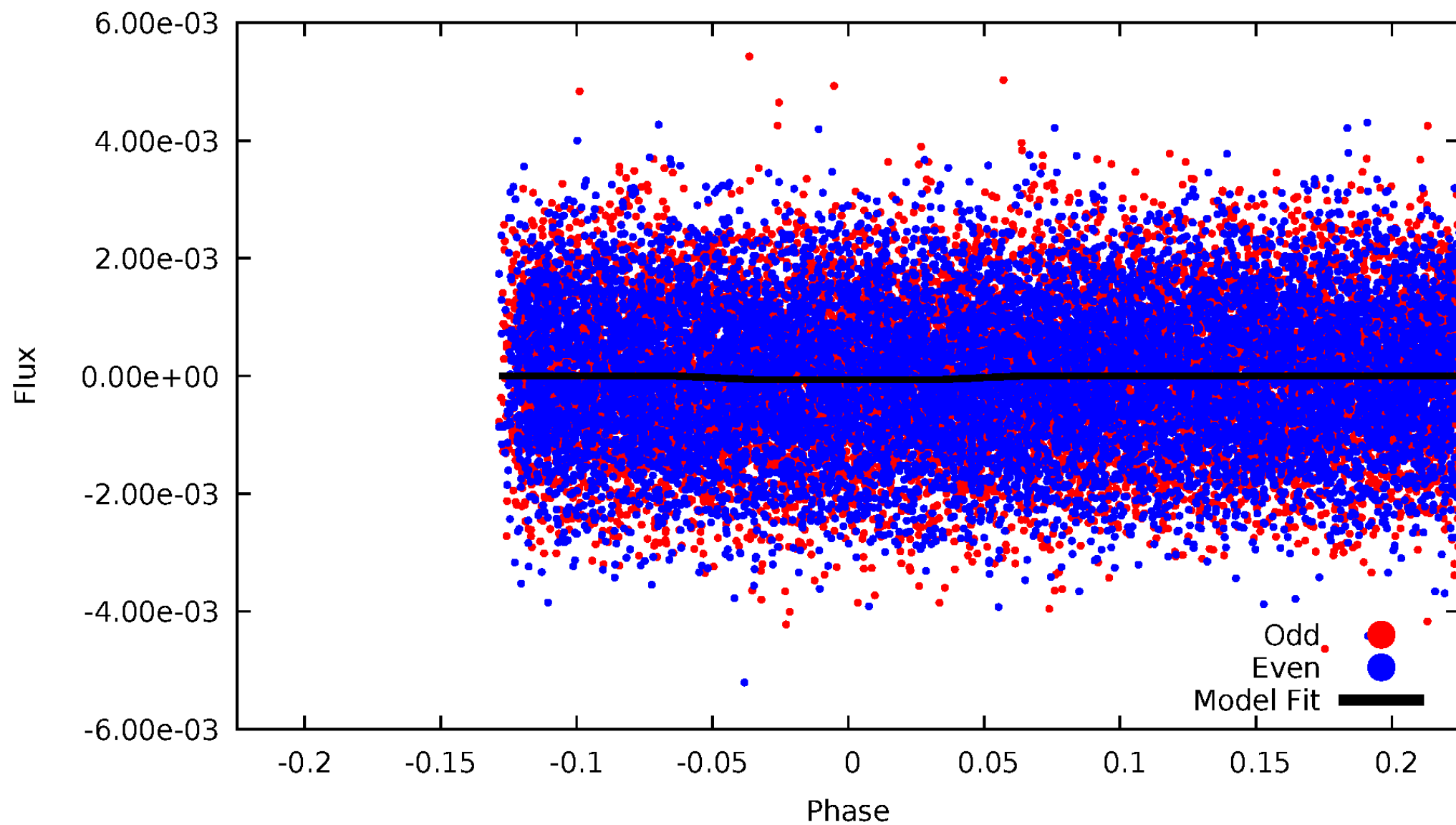
TCE 010734935-02





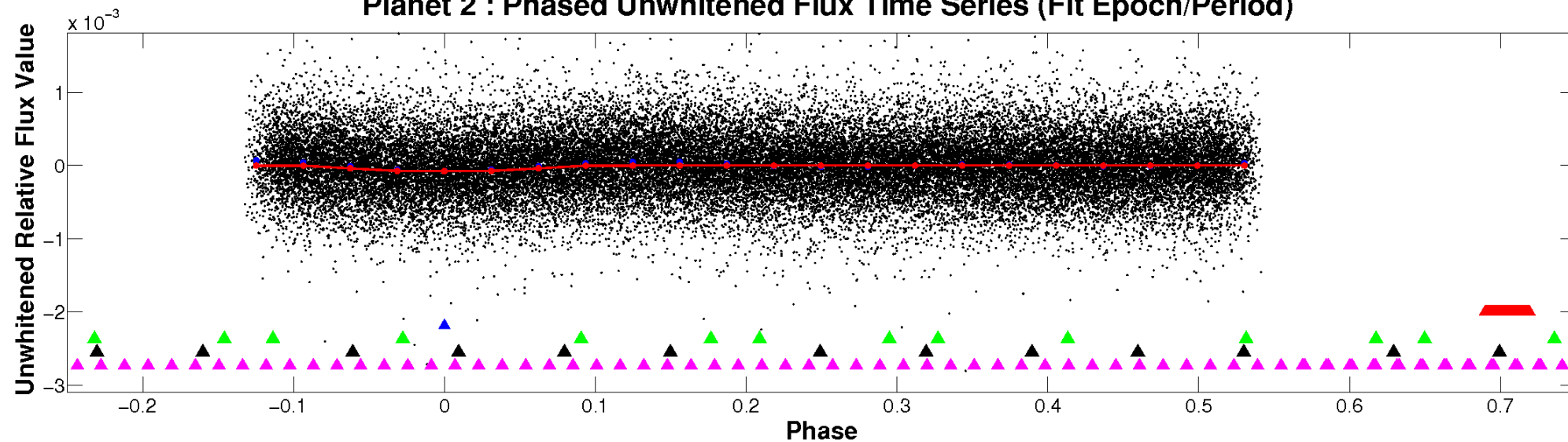
# ALT Odd/Even

TCE 010734935-02

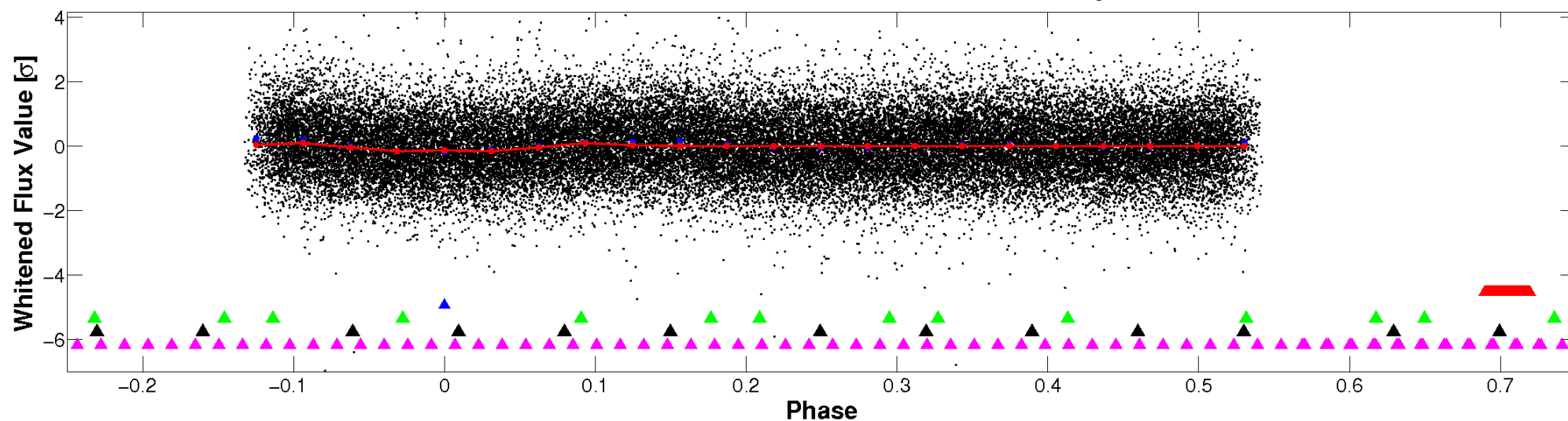


# Non-Whitened Vs. Whitened Light Curve

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

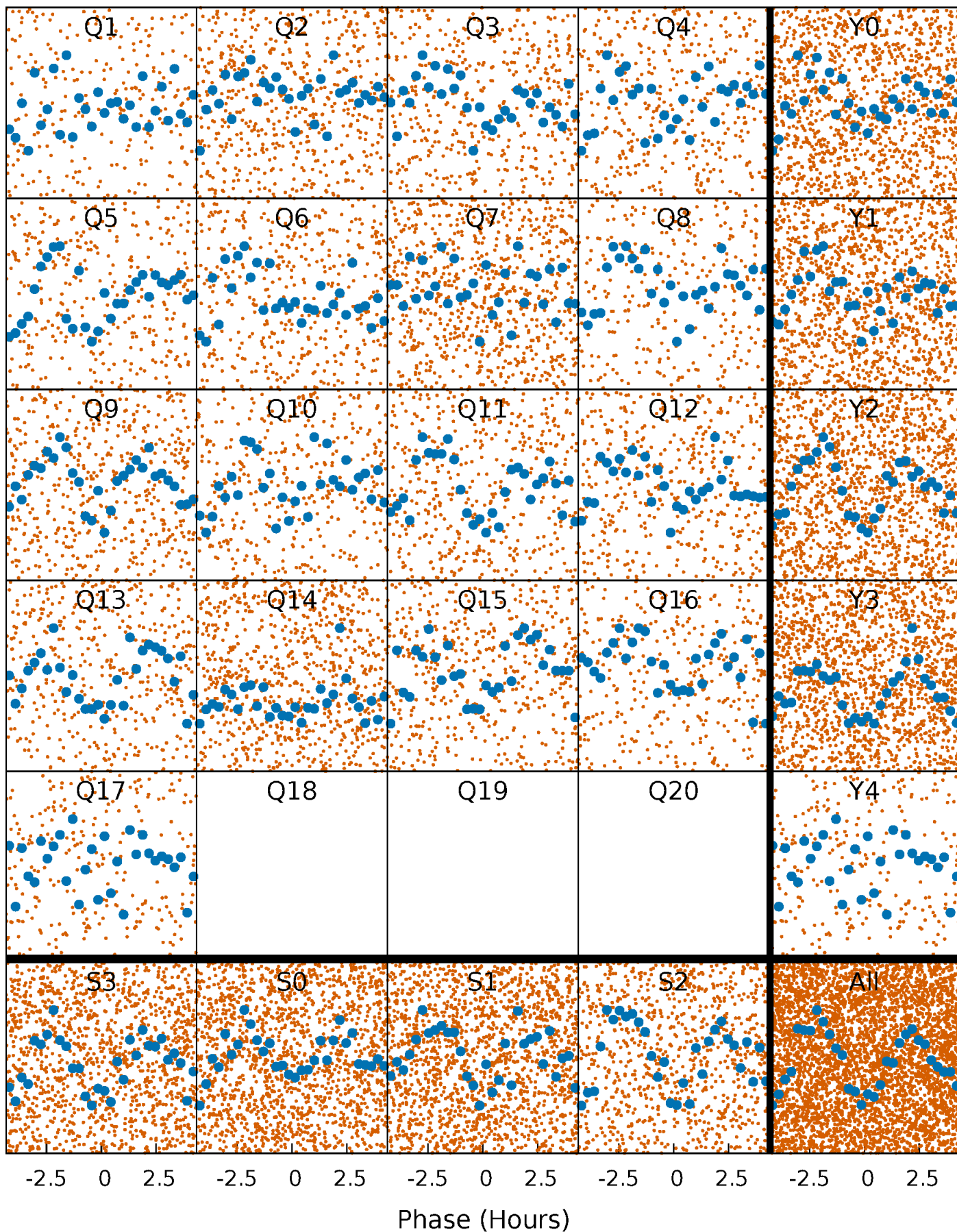


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



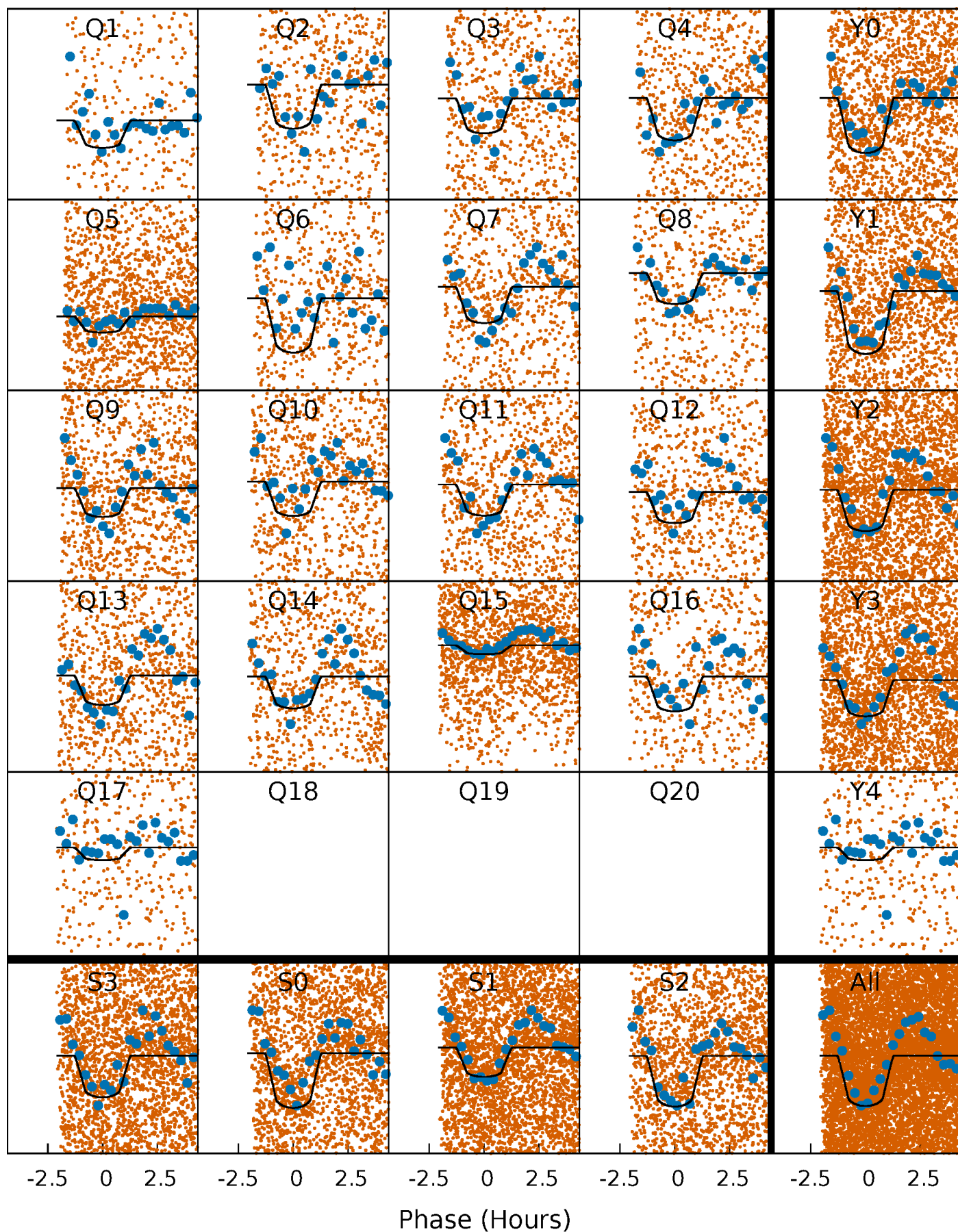
# PDC Quarter-Phased Transit Curves

TCE 010734935-02   P= 0.654999 Days    $T_0=131.596550$  (BKJD)



# DV Quarter-Phased Transit Curves

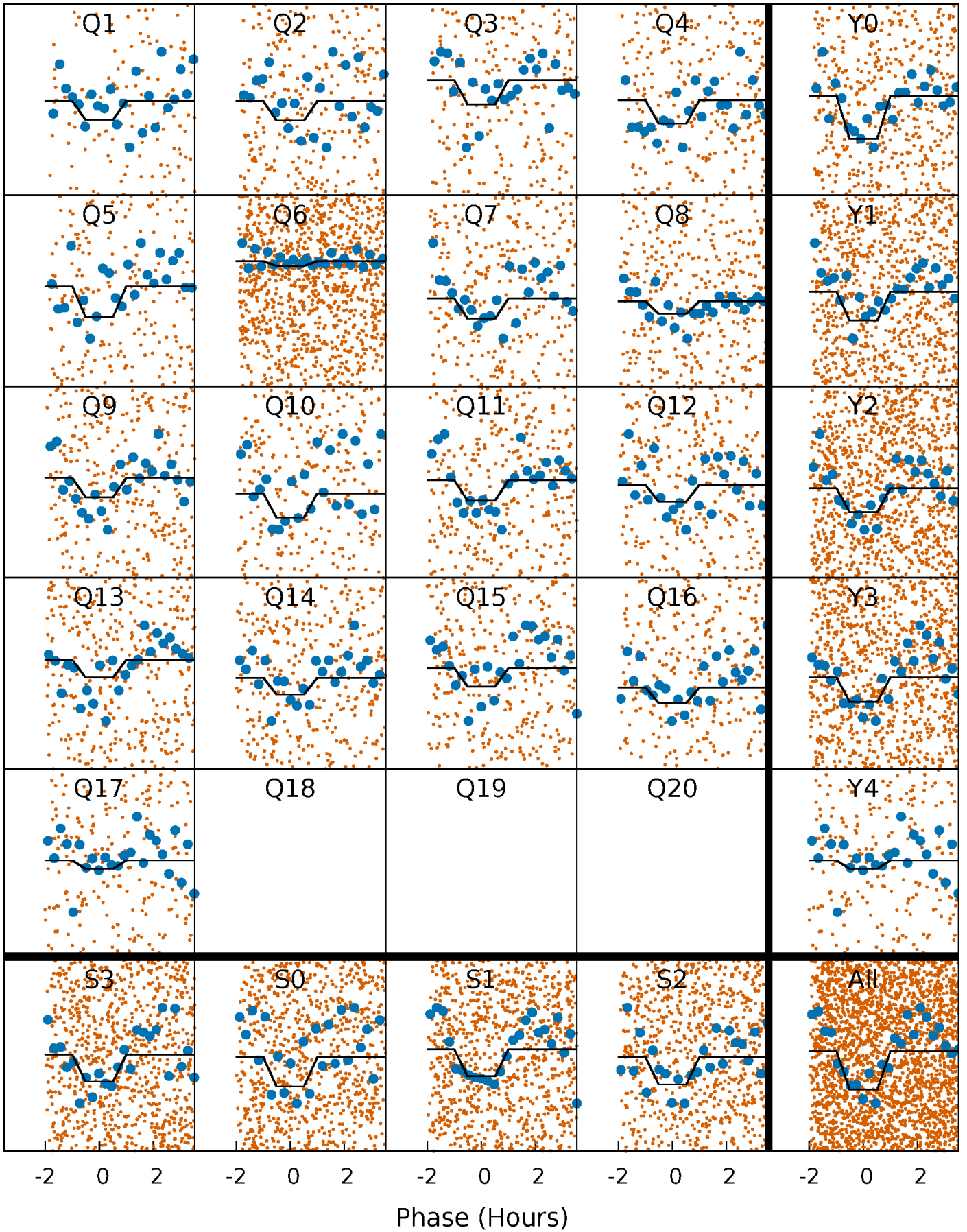
TCE 010734935-02     $P = 0.654999$  Days     $T_0 = 131.596550$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 010734935-02     $P = 0.654994$  Days     $T_0 = 131.604488$  (BKJD)

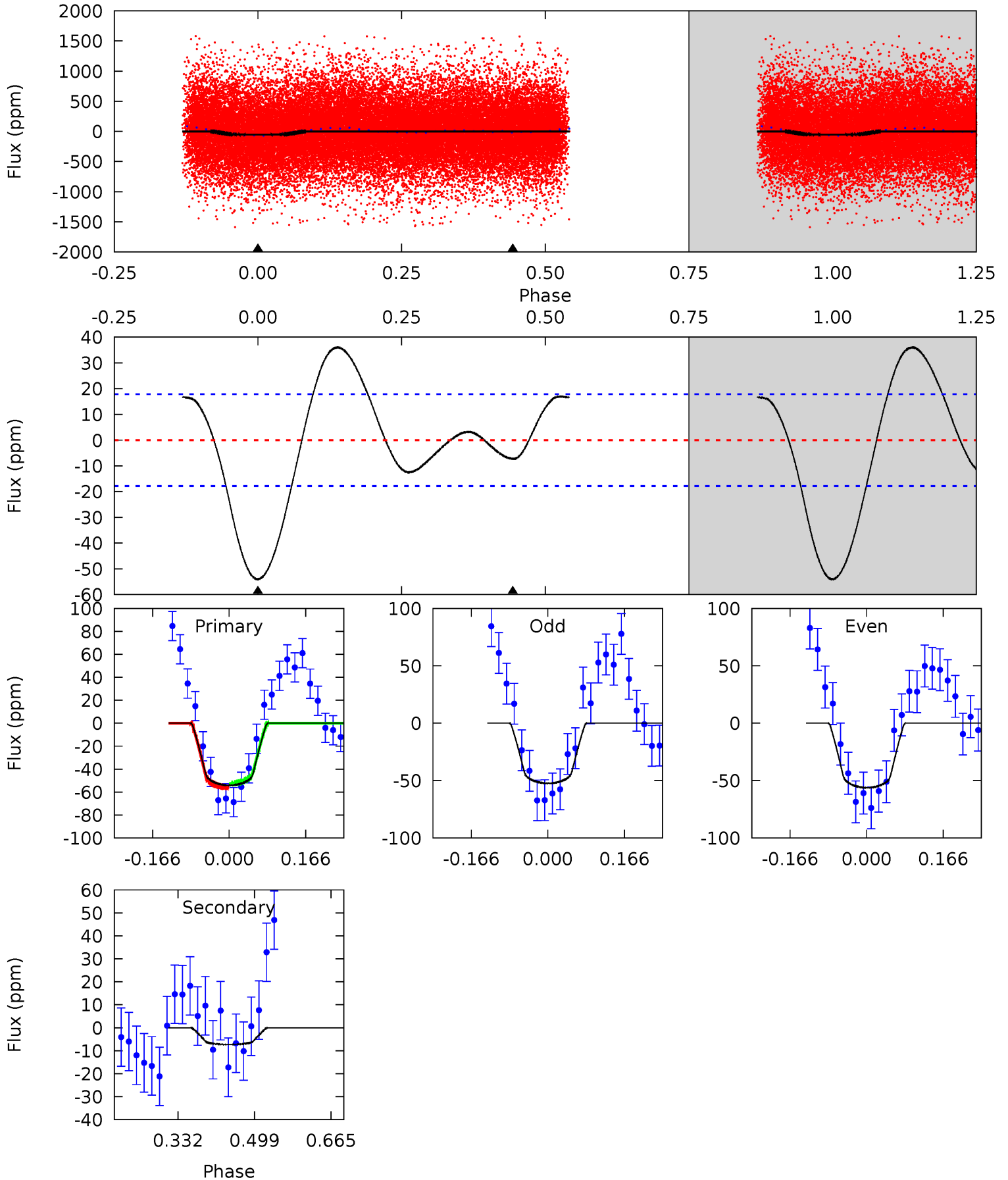




# DV Model-Shift Uniqueness Test

010734935-02, P = 0.654999 Days, E = 130.941551 Days

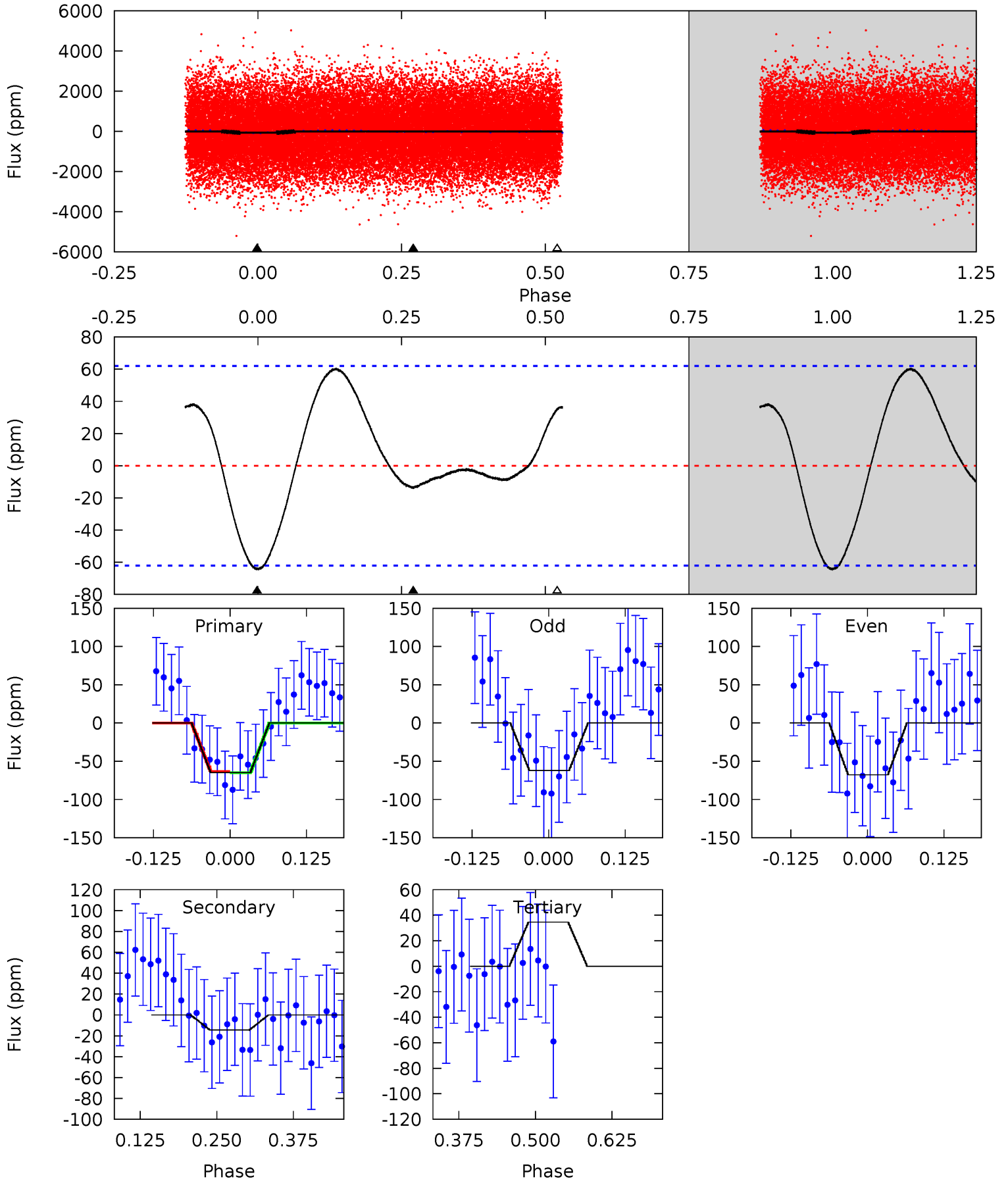
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	1.83	0	0	4.46	1.38	3.56	13.5	13.5	1.83	1.83	0.48	1.05	0.40	0.41



# Alt Model-Shift Uniqueness Test

010734935-02, P = 0.654994 Days, E = 130.949494 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
4.72	1.04	-2.52	0	4.52	1.53	1.71	7.24	4.72	3.56	1.04	0.20	0.84	0.48	0.05



### Stellar Parameters For KIC 010734935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7883^{+218}_{-327}$	$3.688^{+0.459}_{-0.108}$	$-0.100^{+0.200}_{-0.350}$	$3.395^{+0.674}_{-1.686}$	$2.047^{+0.342}_{-0.513}$	$0.074^{+0.316}_{-0.025}$
	+3%/-4%	+12%/-3%	+200%/-350%	+20%/-50%	+17%/-25%	+428%/-34%
Source	KIC0	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 010734935-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-7\pm4$	$3.24^{+0.95}_{-0.96}$	$6349^{+505}_{-715}$	$-4541^{+7289}_{-586}$	$0.135^{+0.173}_{-0.082}$
Alt.	$-14\pm14$	$2.71^{+0.96}_{-0.86}$	$6291^{+509}_{-775}$	$3702^{+2194}_{-8694}$	$0.354^{+0.642}_{-0.310}$

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

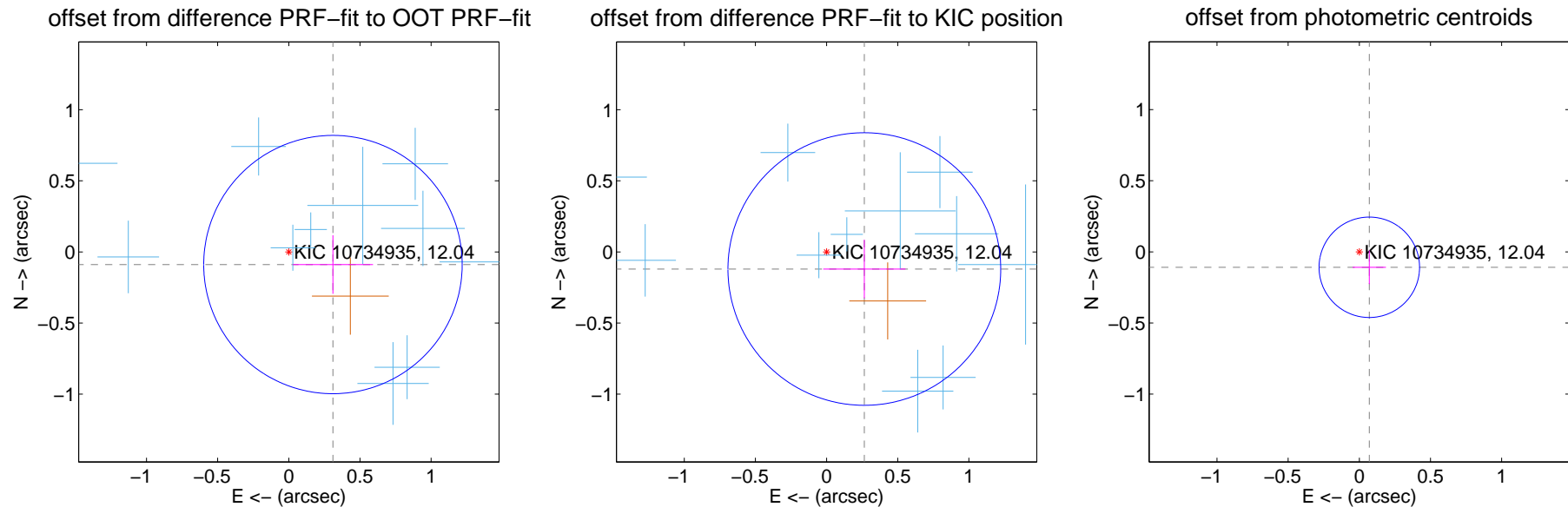
## DV Centroid Data

Supplemental centroid analysis for 010734935-02. Kepler magnitude: 12.04. Transit SNR 14.49

There are 13 quarters with good PRF difference image offsets

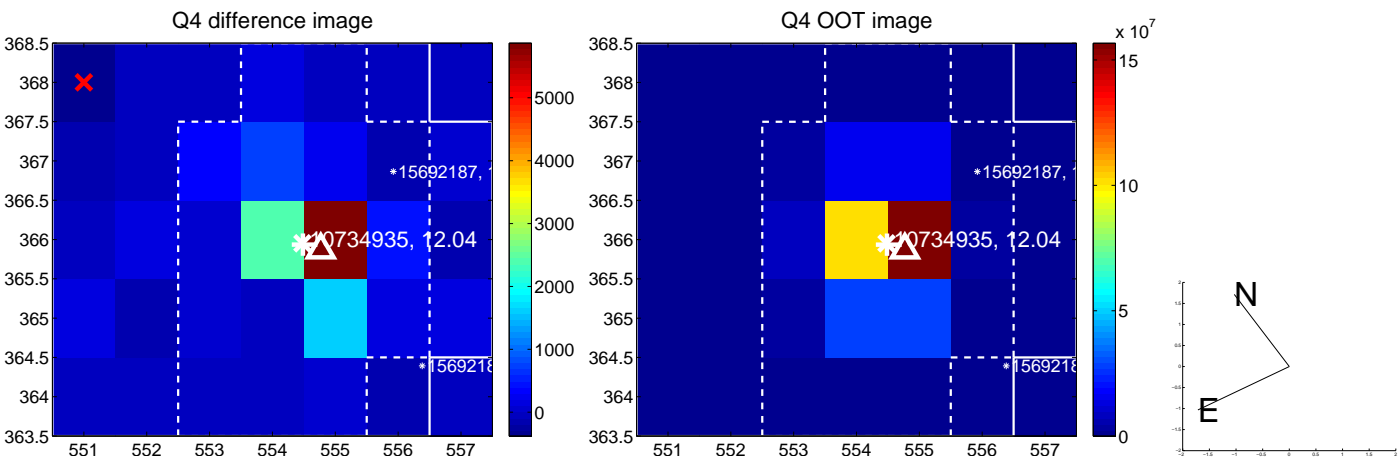
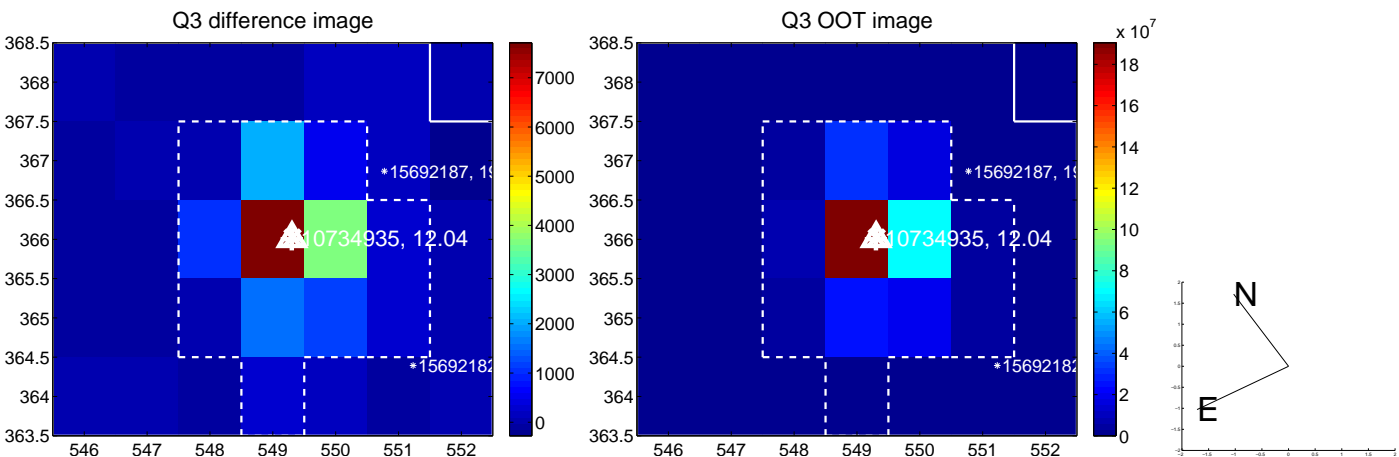
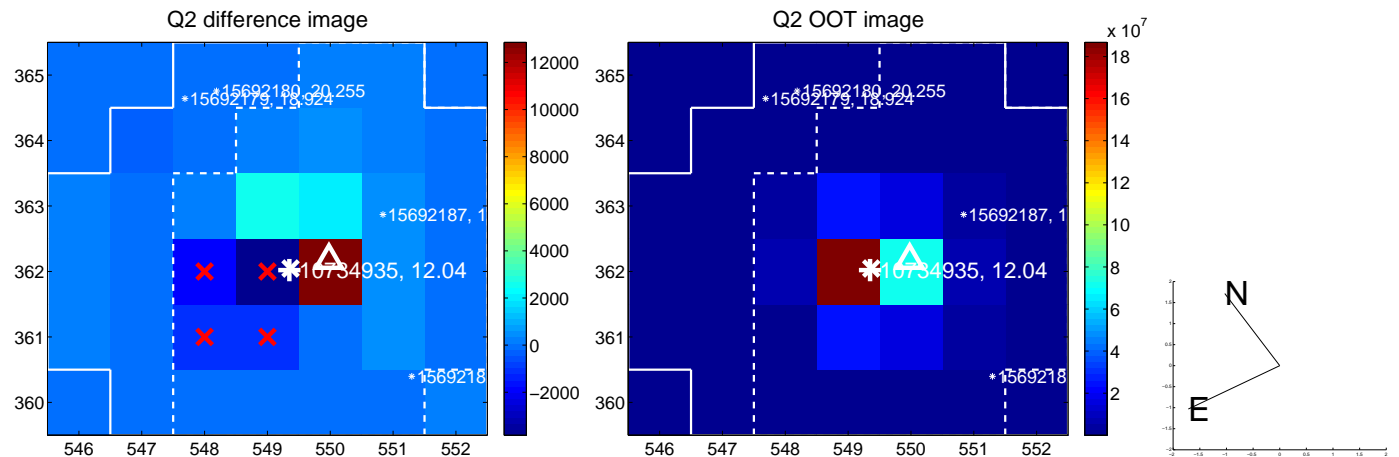
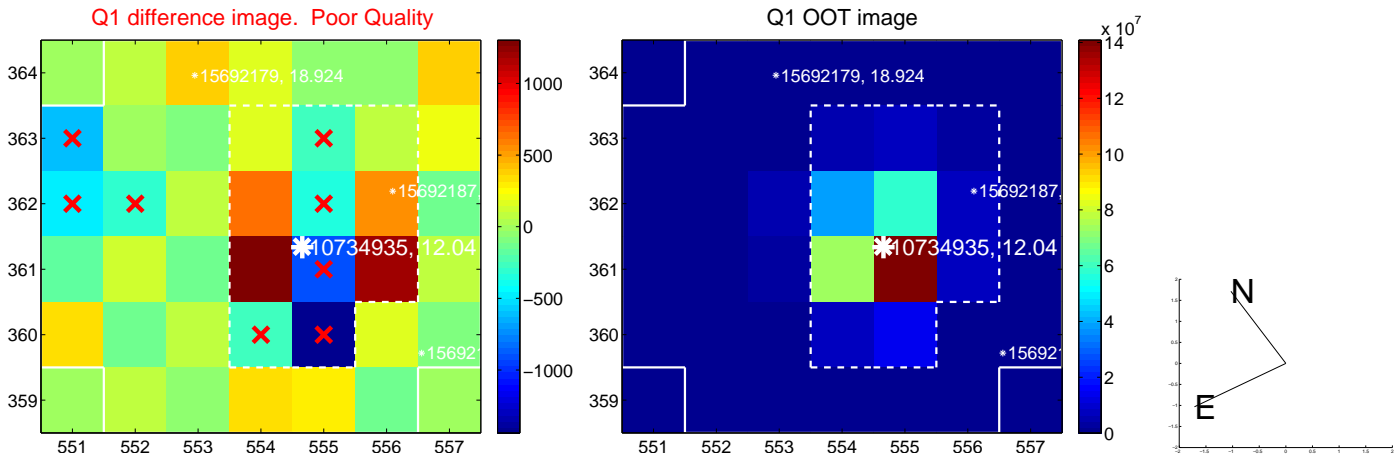
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.323 \pm 0.303$	1.07	$-0.310 \pm 0.282$	$-0.089 \pm 0.206$
PRF-fit source offset from KIC position	$0.291 \pm 0.320$	0.91	$-0.265 \pm 0.289$	$-0.120 \pm 0.206$
photometric centroid source offset	$0.13 \pm 0.12$	1.10	$-0.07 \pm 0.12$	$-0.11 \pm 0.12$



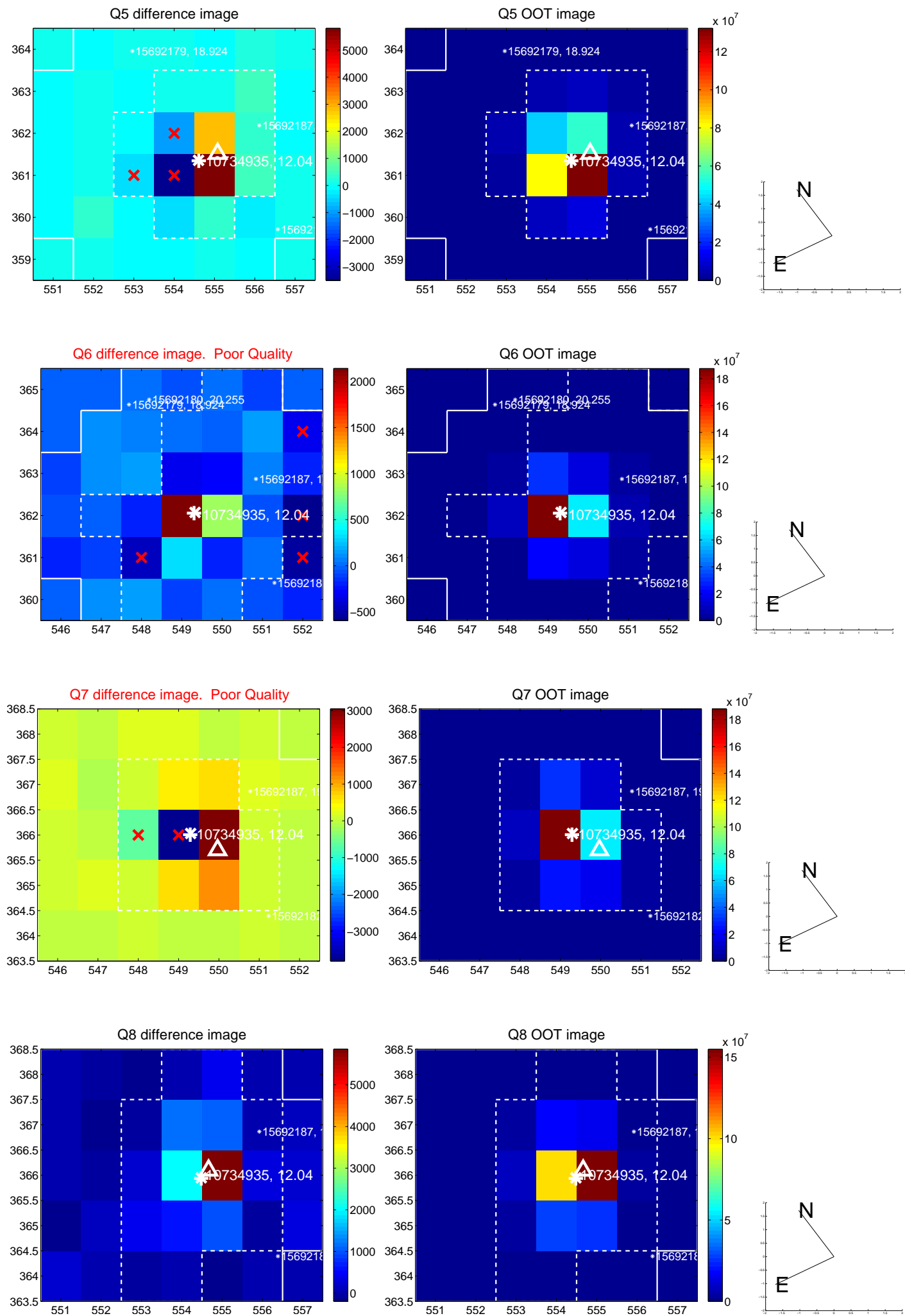
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

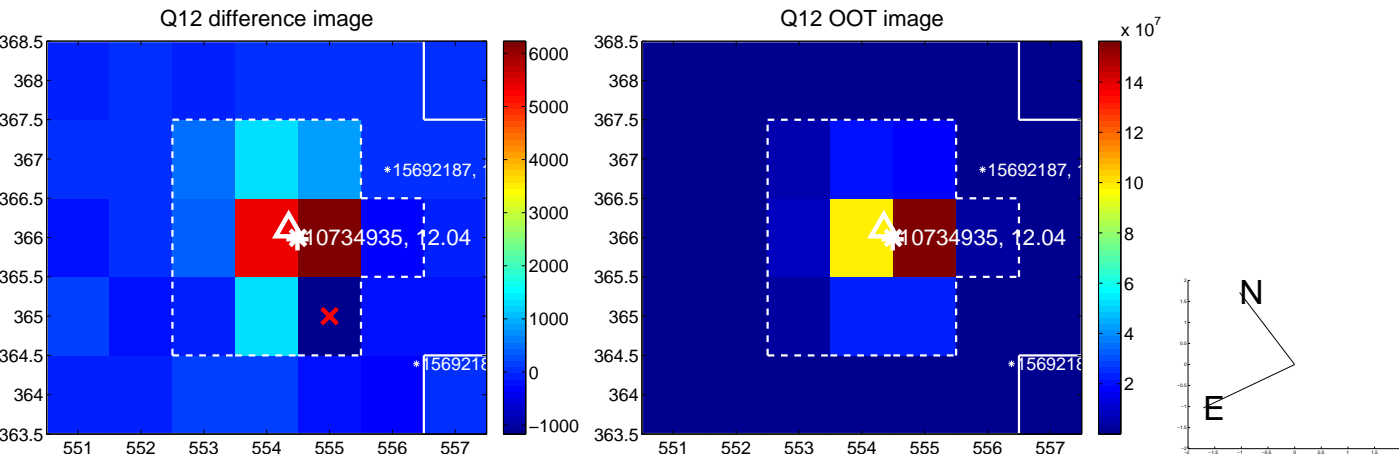
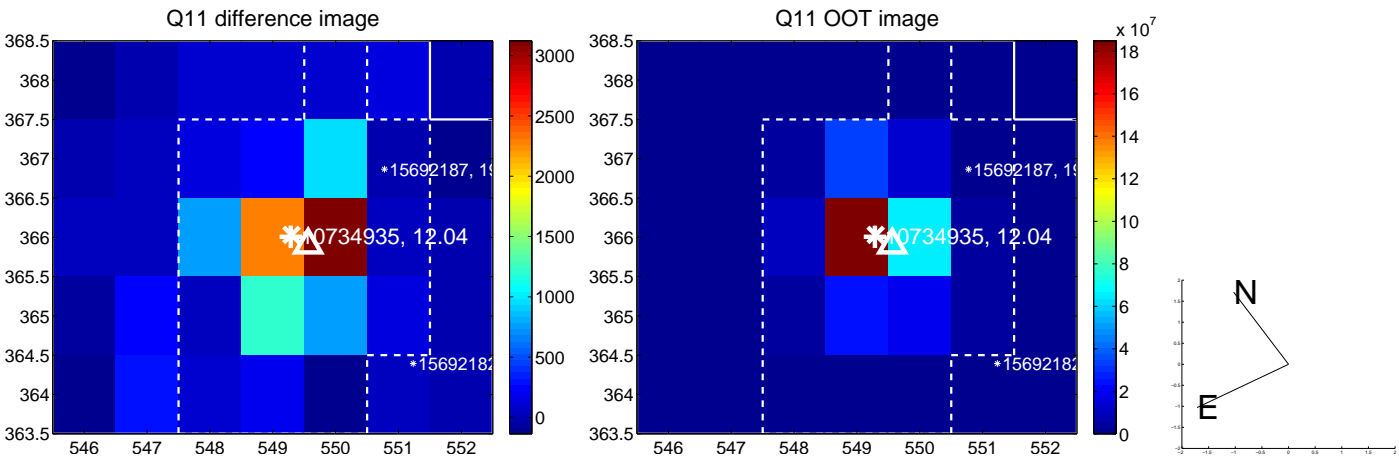
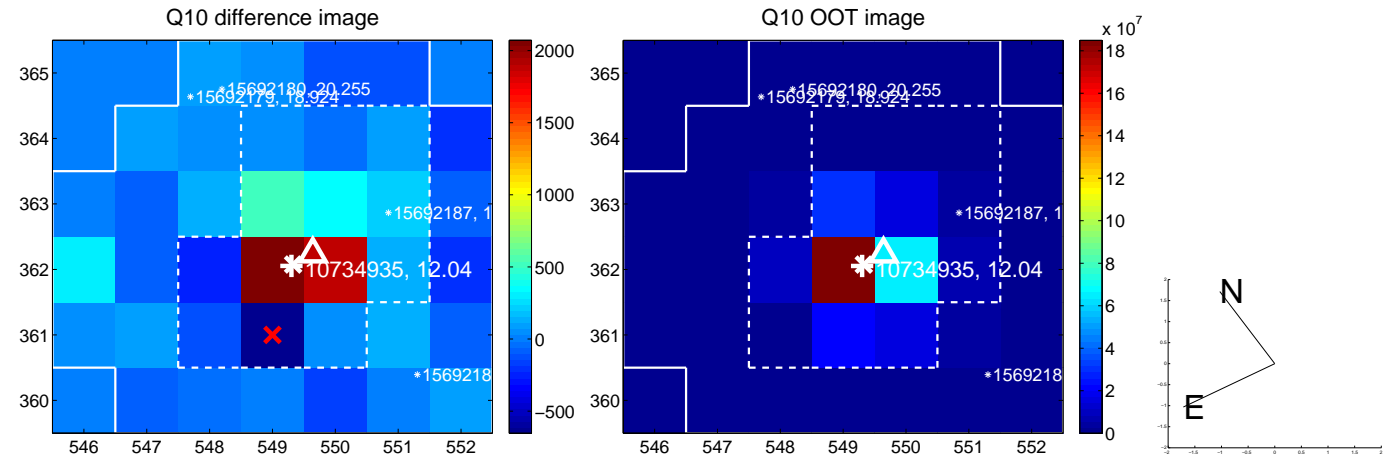
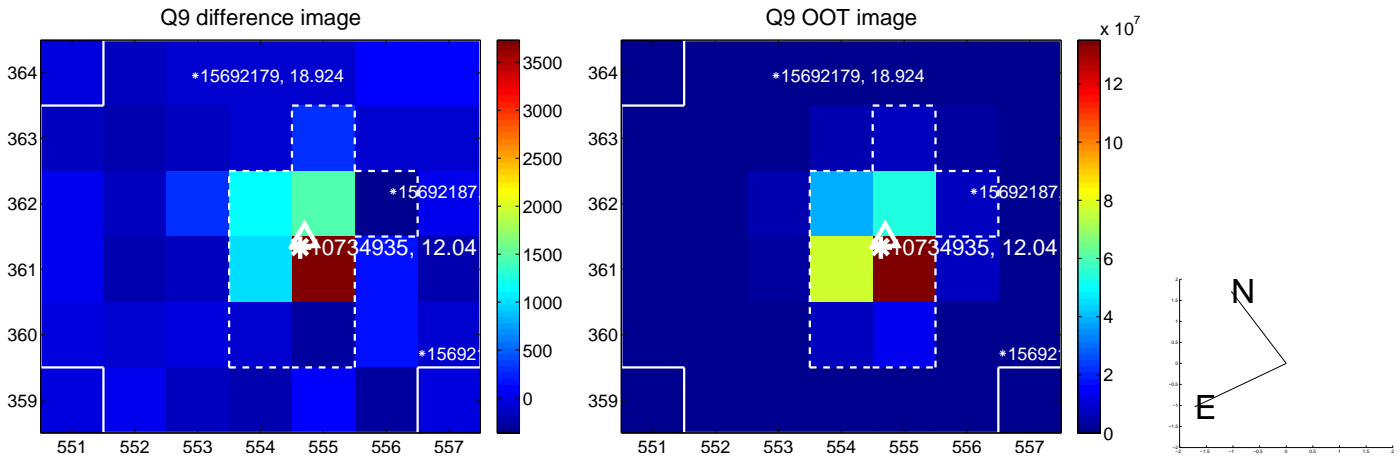




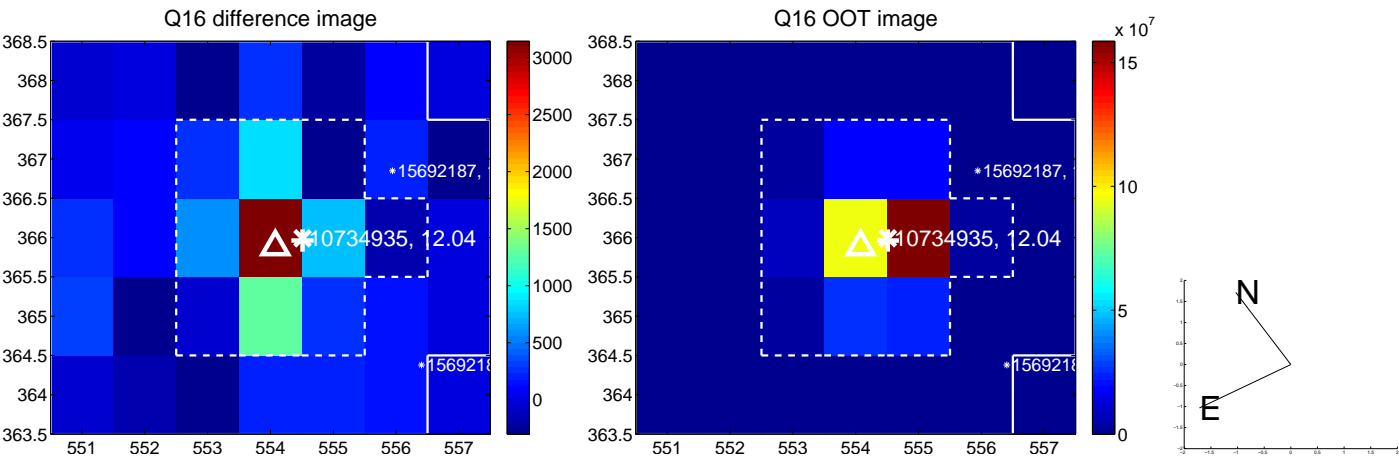
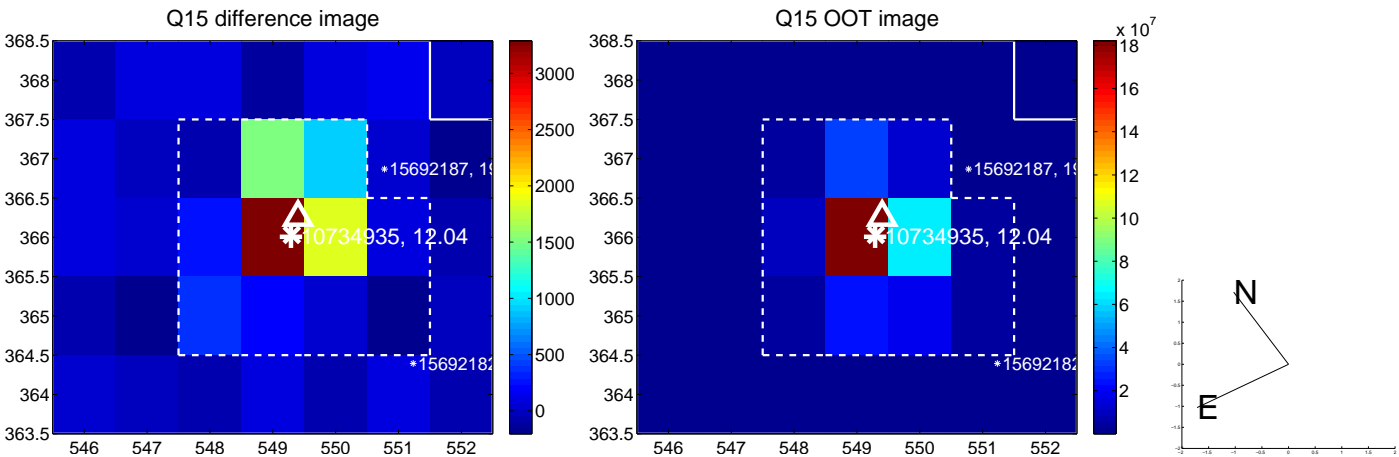
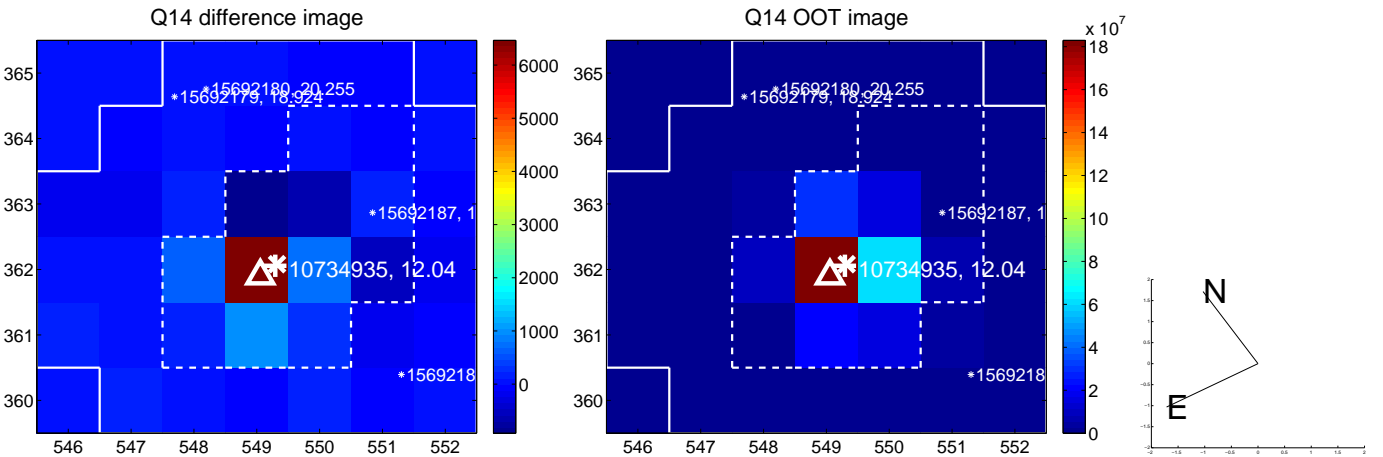
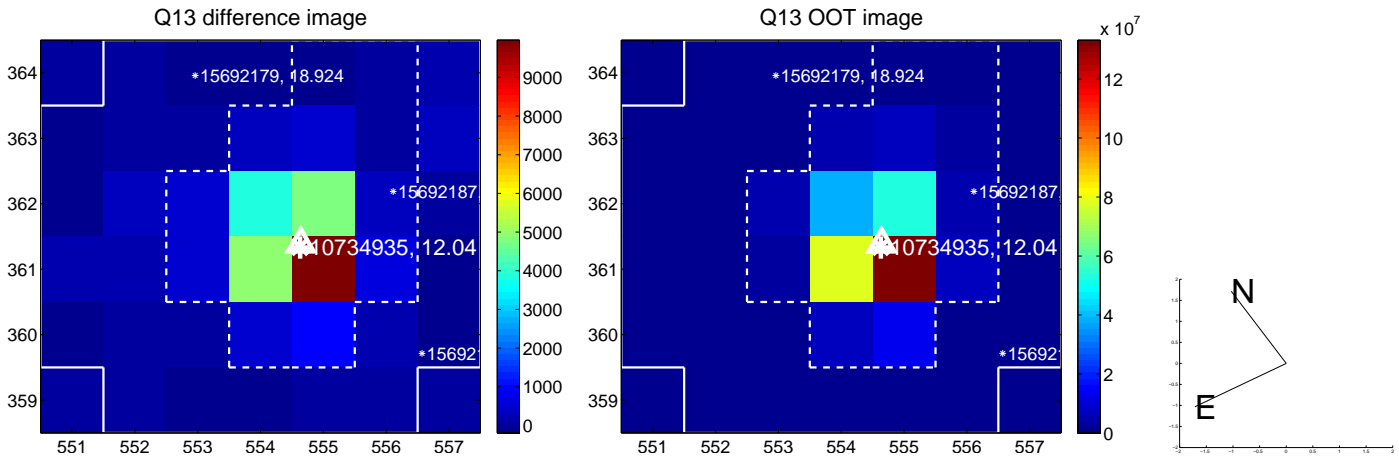
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



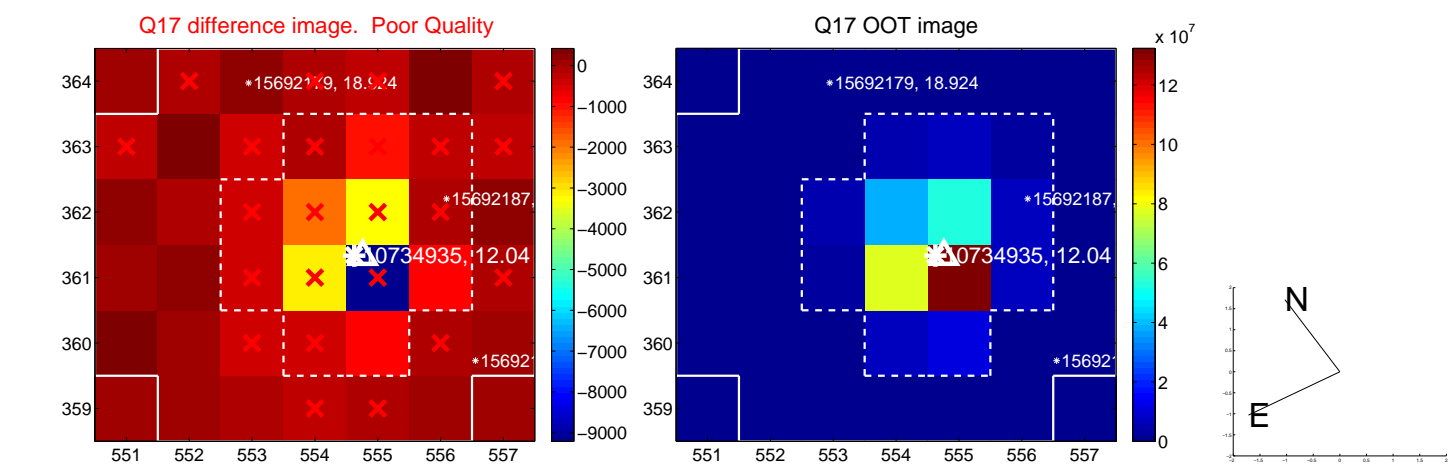
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



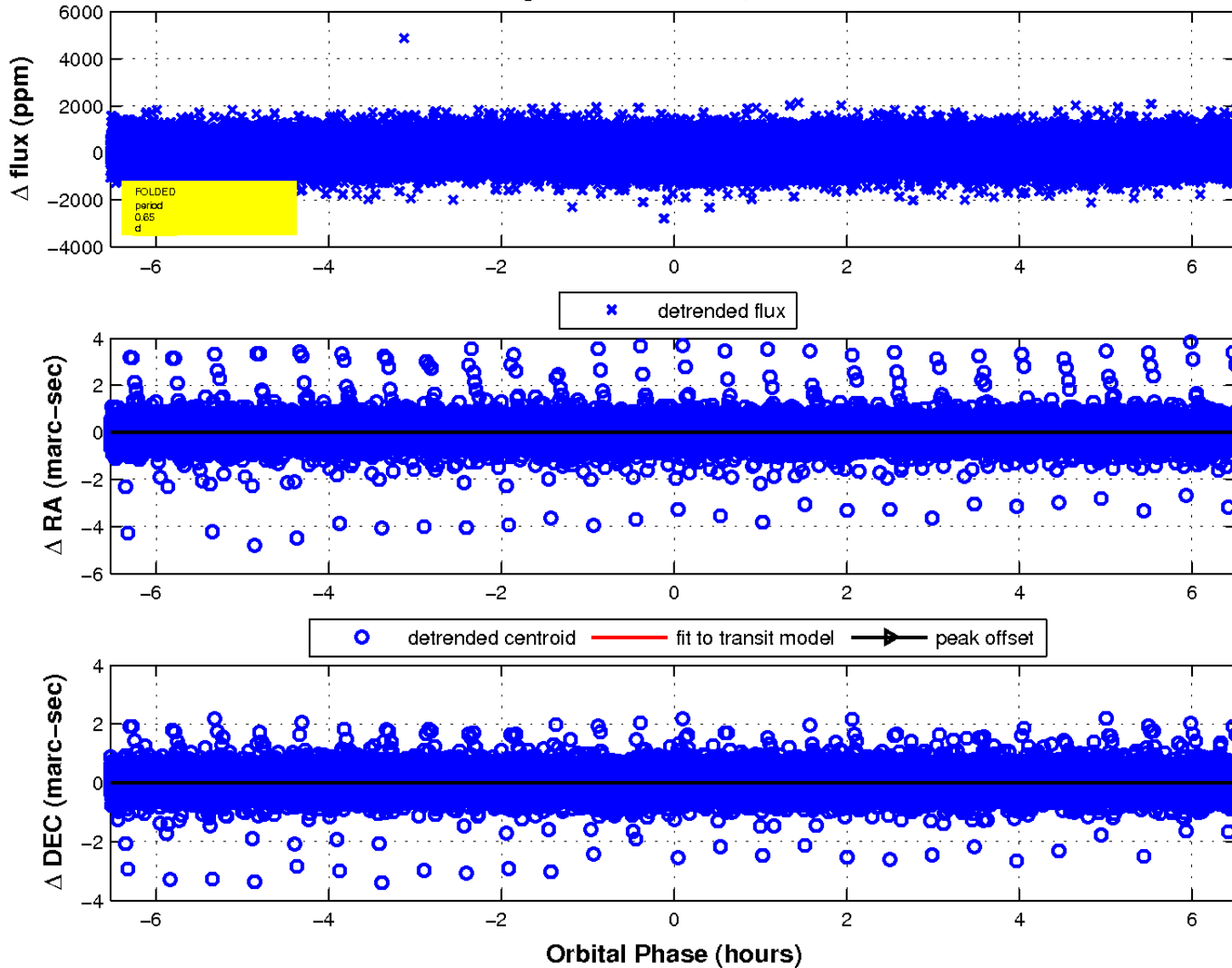
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

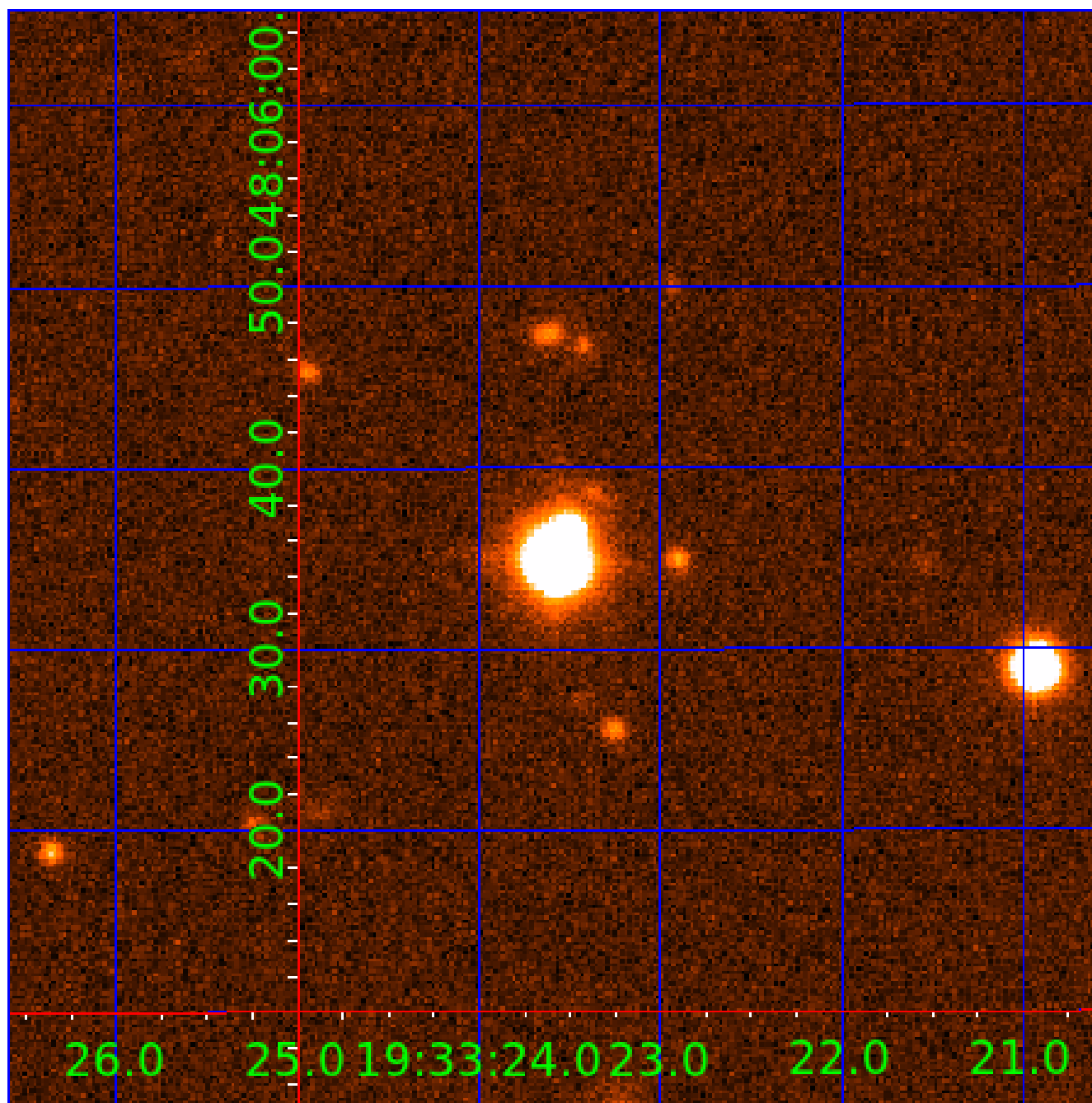


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination





# KIC 010734935

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010734935-01	OBS	No	0.654990	132.067806	37.1	1.688	13.8	7.1	3.40	7883	2.41	113389.71
010734935-02	OBS	No	0.654999	131.596550	75.9	2.176	13.9	14.5	3.40	7883	3.44	113387.69
010734935-03	OBS	No	103.778648	179.992030	883.3	5.279	9.4	7.9	3.40	7883	12.57	132.25
010734935-04	OBS	No	118.102871	167.313602	298.6	1.292	8.1	2.7	3.40	7883	6.33	111.31
010734935-05	OBS	No	19.639729	132.072591	538.3	4.025	8.5	9.6	3.40	7883	11.43	1217.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010734935-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010734935-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010734935-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

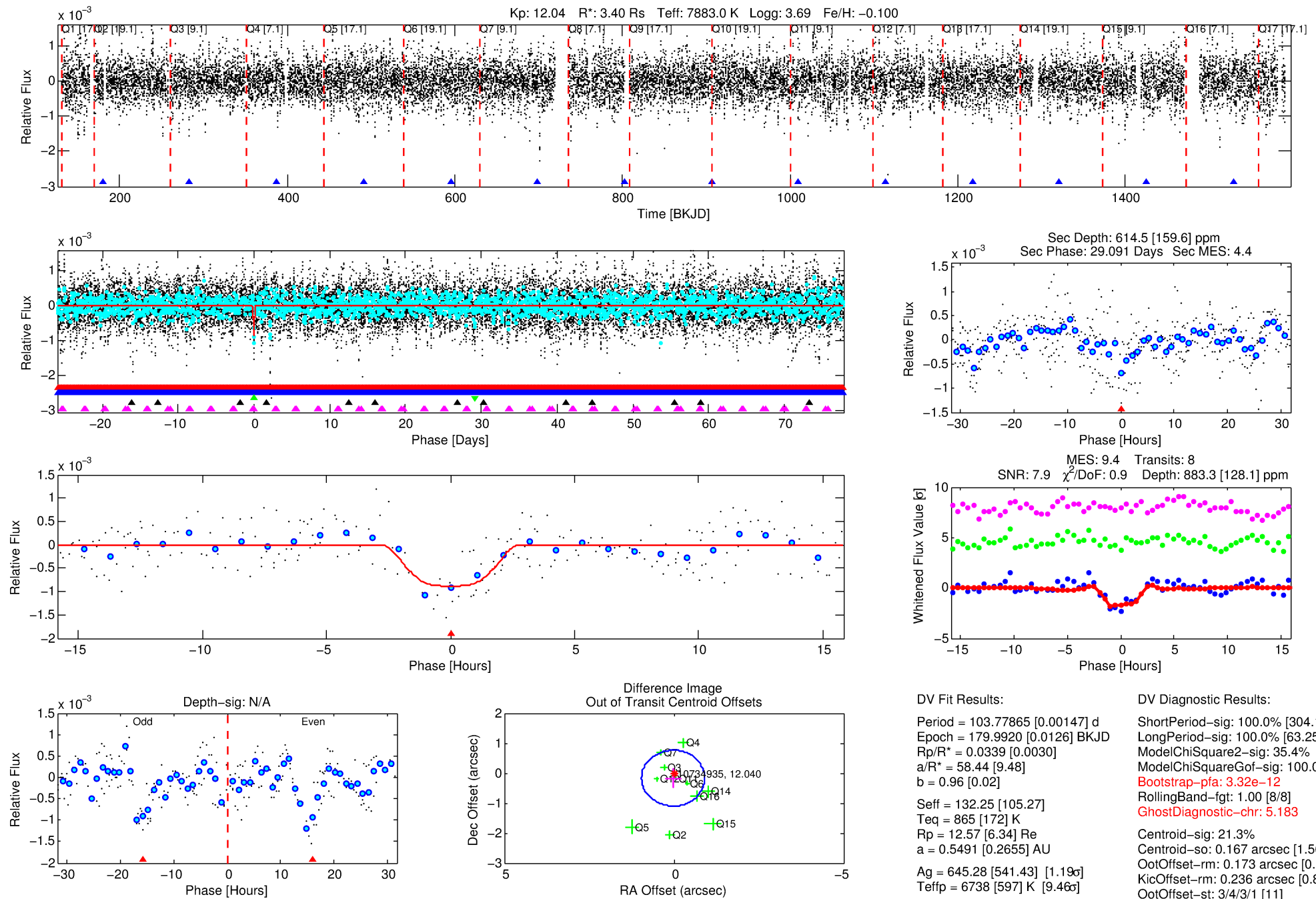
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010734935-03

No Significant Match Found

# DV One-Page Summary

KIC: 10734935 Candidate: 3 of 5 Period: 103.779 d



## DV Fit Results:

Period = 103.77865 [0.00147] d  
Epoch = 179.9920 [0.0126] BKJD  
Rp/R\* = 0.0339 [0.0030]  
a/R\* = 58.44 [9.48]  
b = 0.96 [0.02]  
Seff = 132.25 [105.27]  
Teq = 865 [172] K  
Rp = 12.57 [6.34] Re  
a = 0.5491 [0.2655] AU  
Ag = 645.28 [541.43] [1.19σ]  
Teffp = 6738 [597] K [9.46σ]

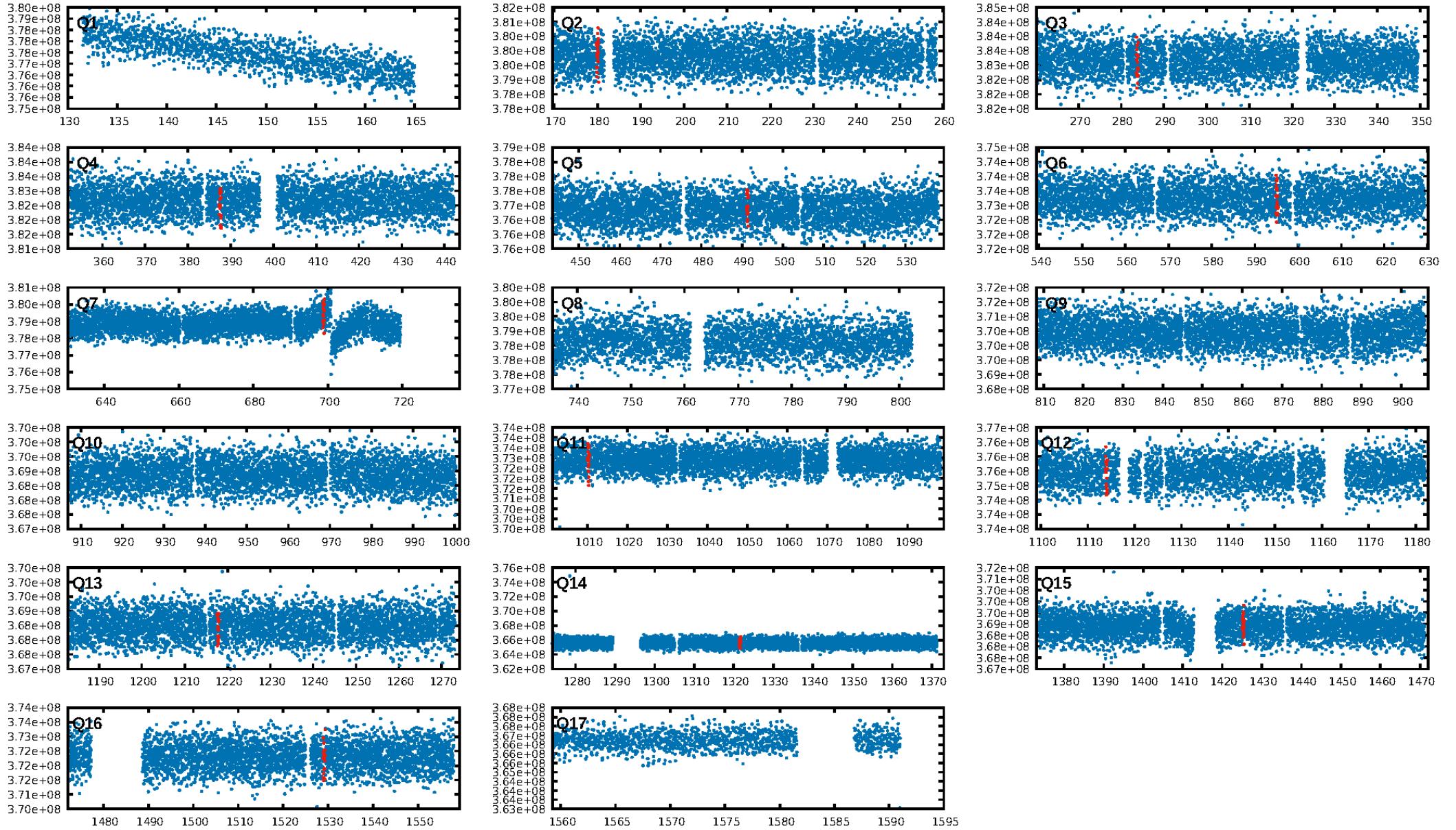
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [304.18σ]  
LongPeriod-sig: 100.0% [63.25σ]  
ModelChiSquare2-sig: 35.4%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.32e-12**  
RollingBand-fgt: 1.00 [8/8]  
**GhostDiagnostic-chr: 5.183**  
Centroid-sig: 21.3%  
Centroid-so: 0.167 arcsec [1.56σ]  
OotOffset-rm: 0.173 arcsec [0.56σ]  
KicOffset-rm: 0.236 arcsec [0.85σ]  
OotOffset-st: 3/4/3/1 [11]  
KicOffset-st: 3/4/3/1 [11]  
DiffImageQuality-fgm: 0.55 [6/11]  
DiffImageOverlap-fno: 0.00 [0/11]

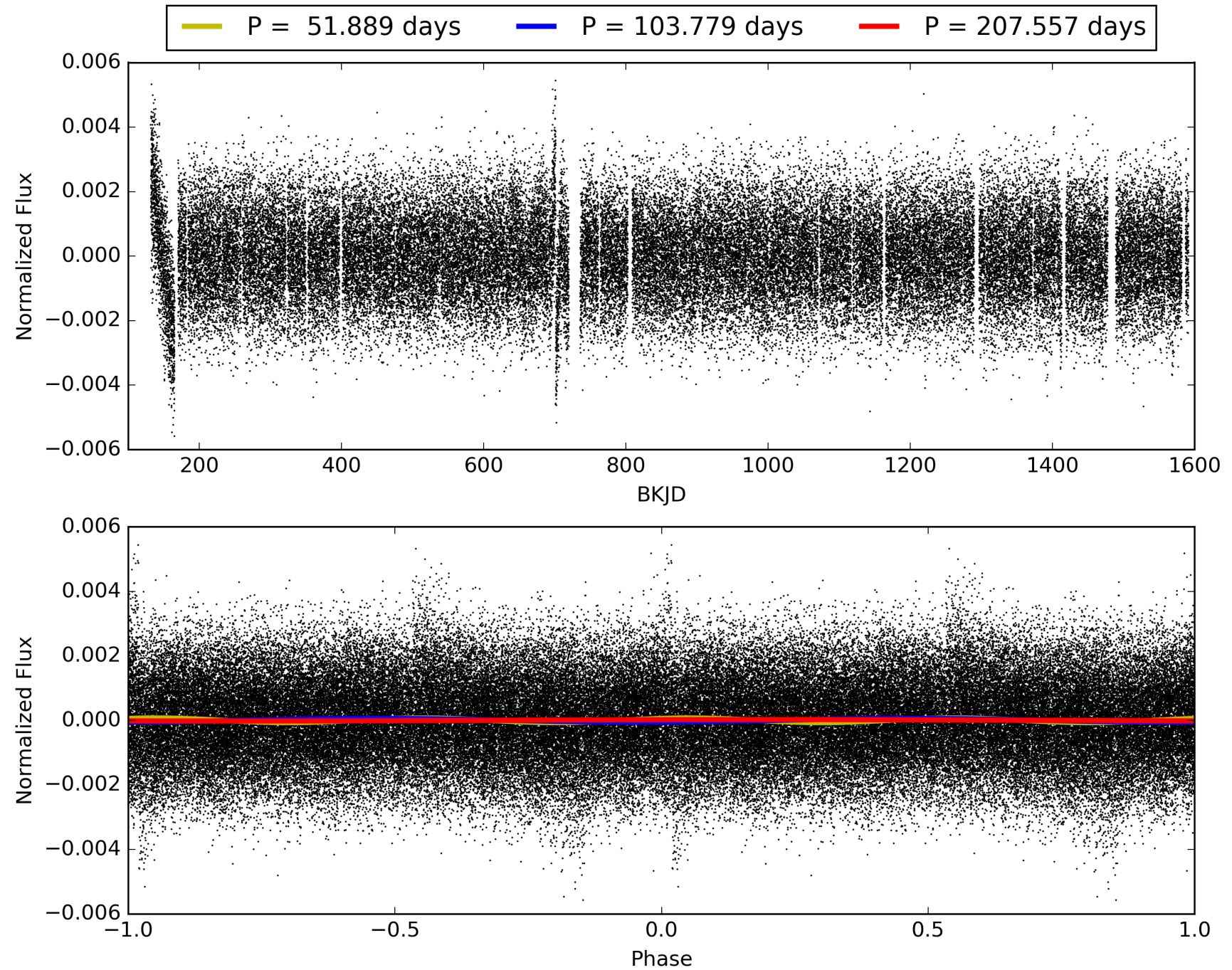
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:04:50 Z

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

# TCE 010734935-03, PDC Light Curves

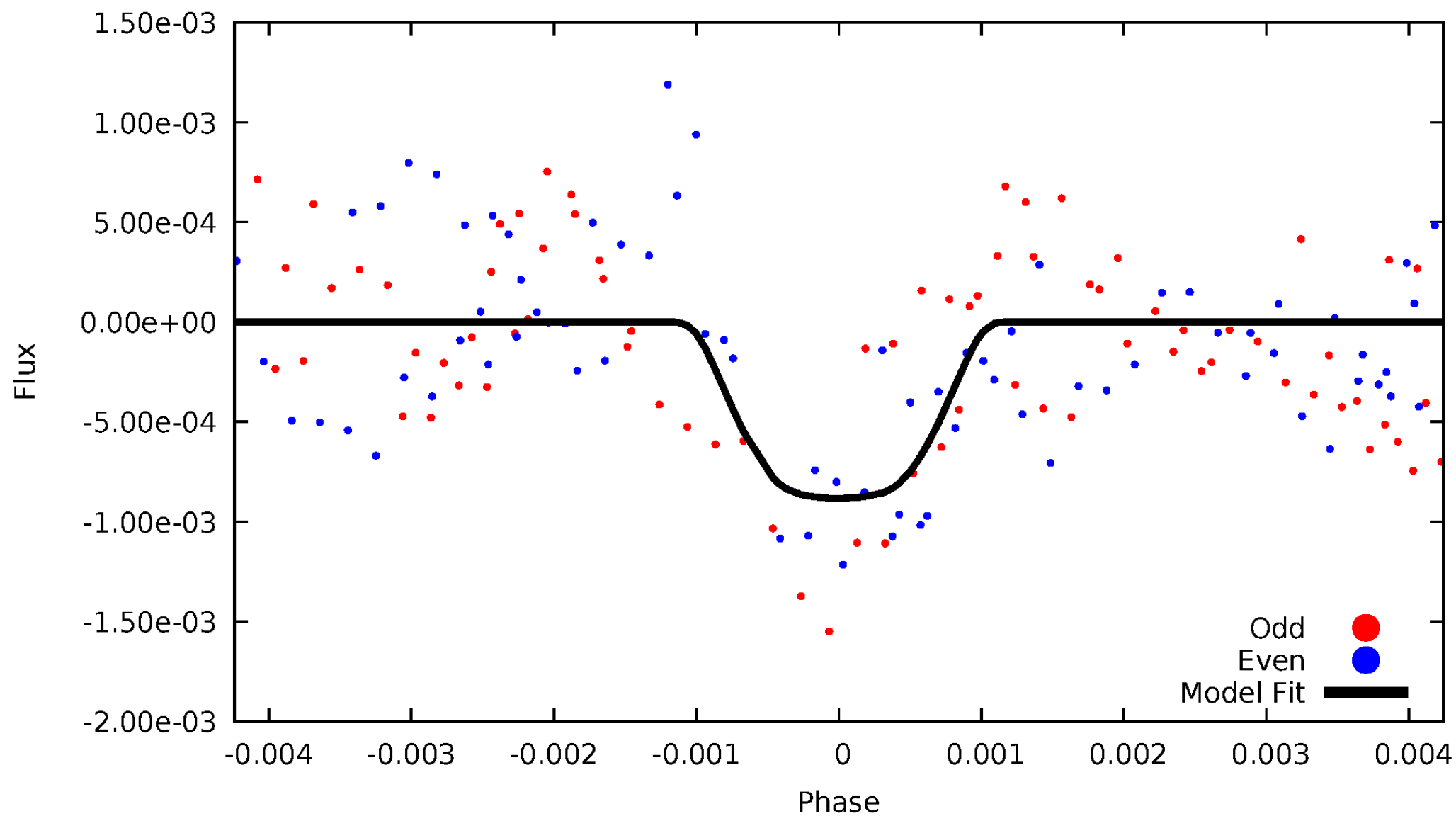


# TCE 010734935-03



# DV Odd/Even

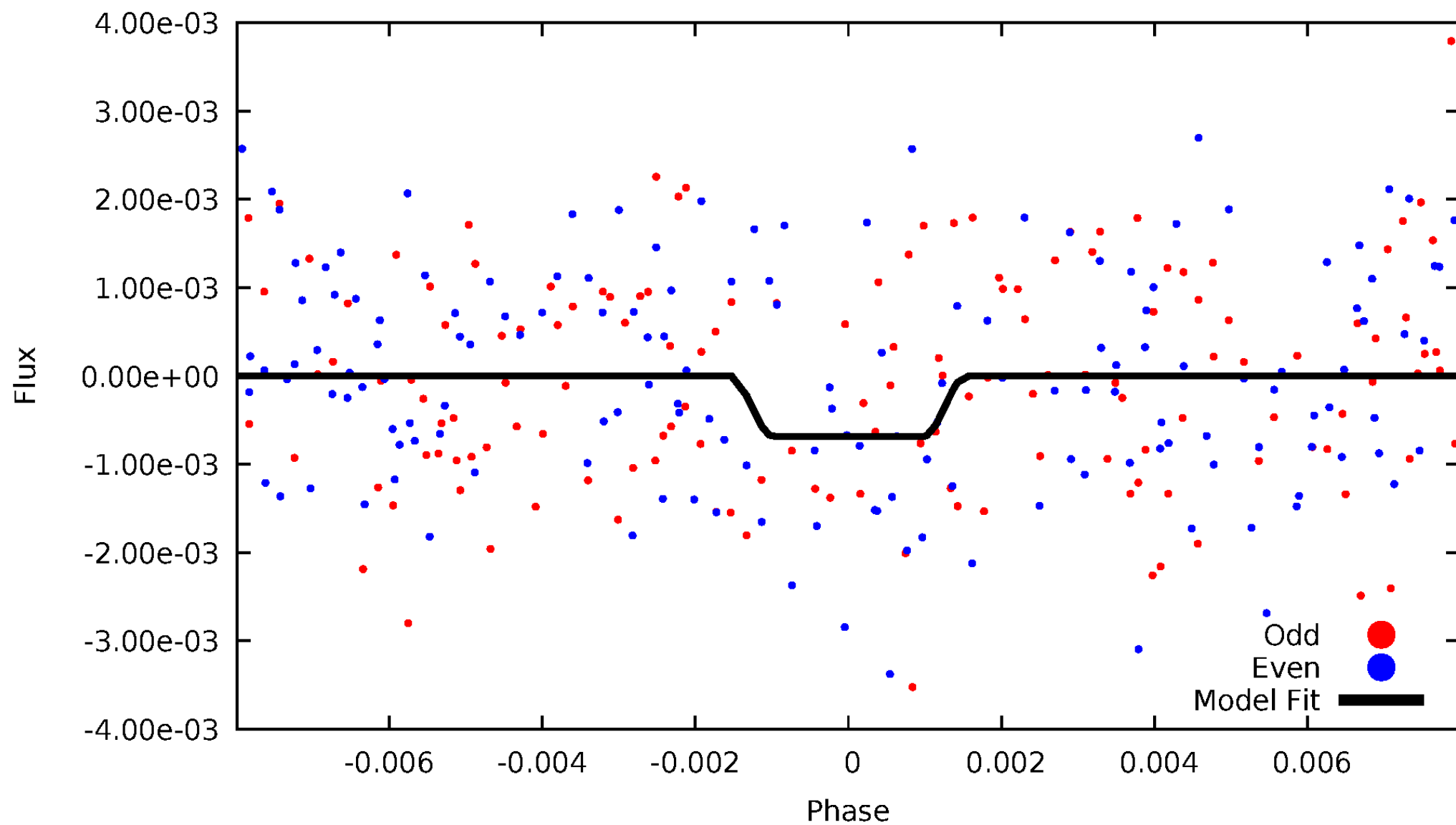
TCE 010734935-03





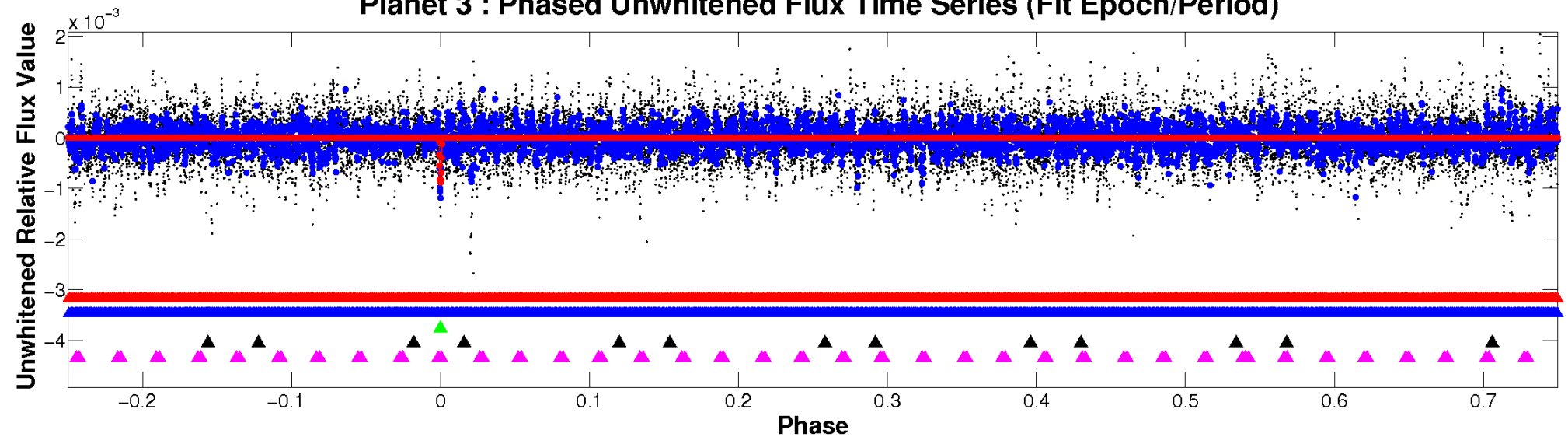
# ALT Odd/Even

TCE 010734935-03

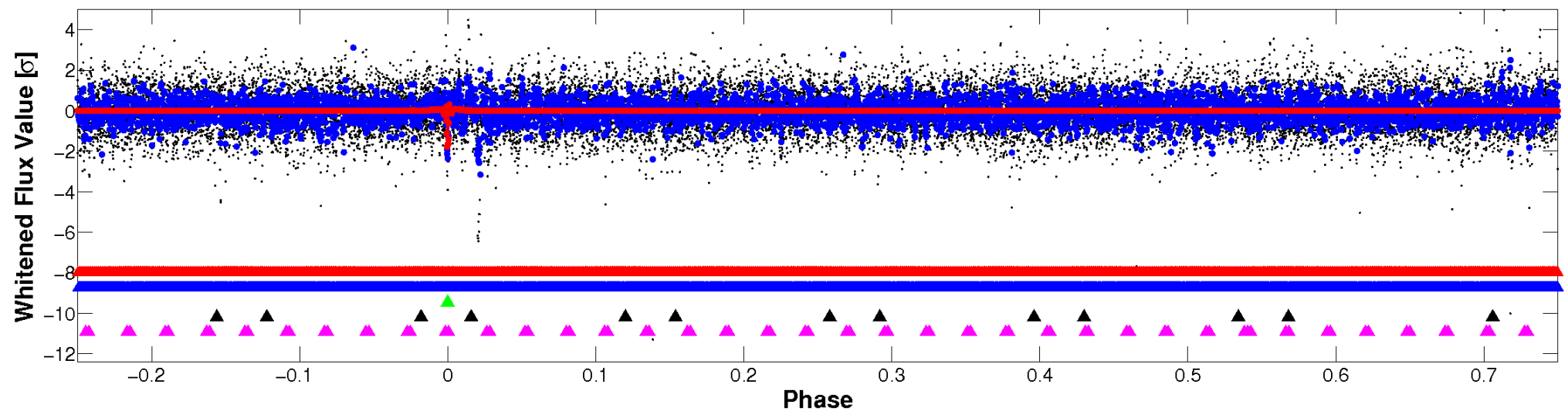


# Non-Whitened Vs. Whitened Light Curve

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

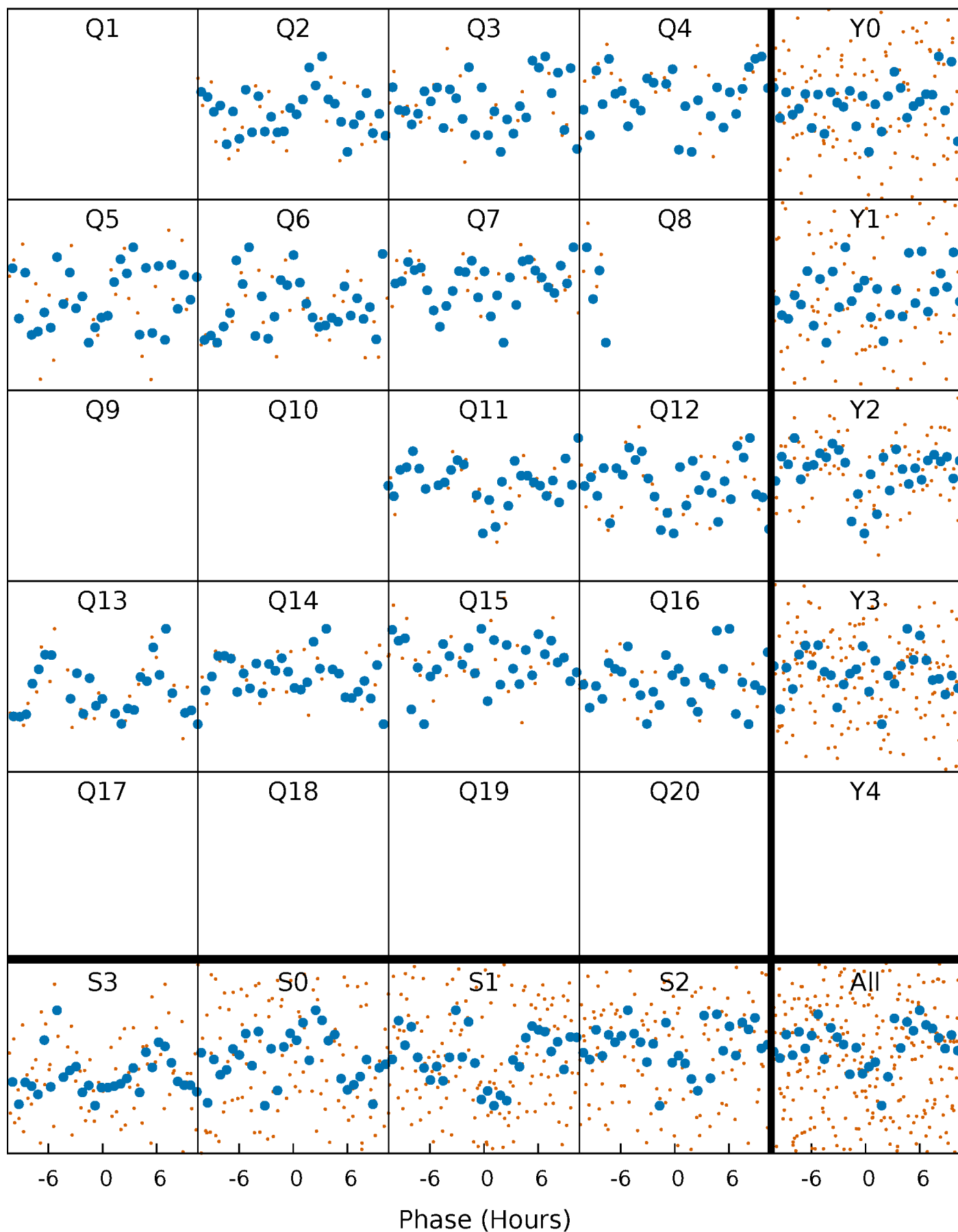


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



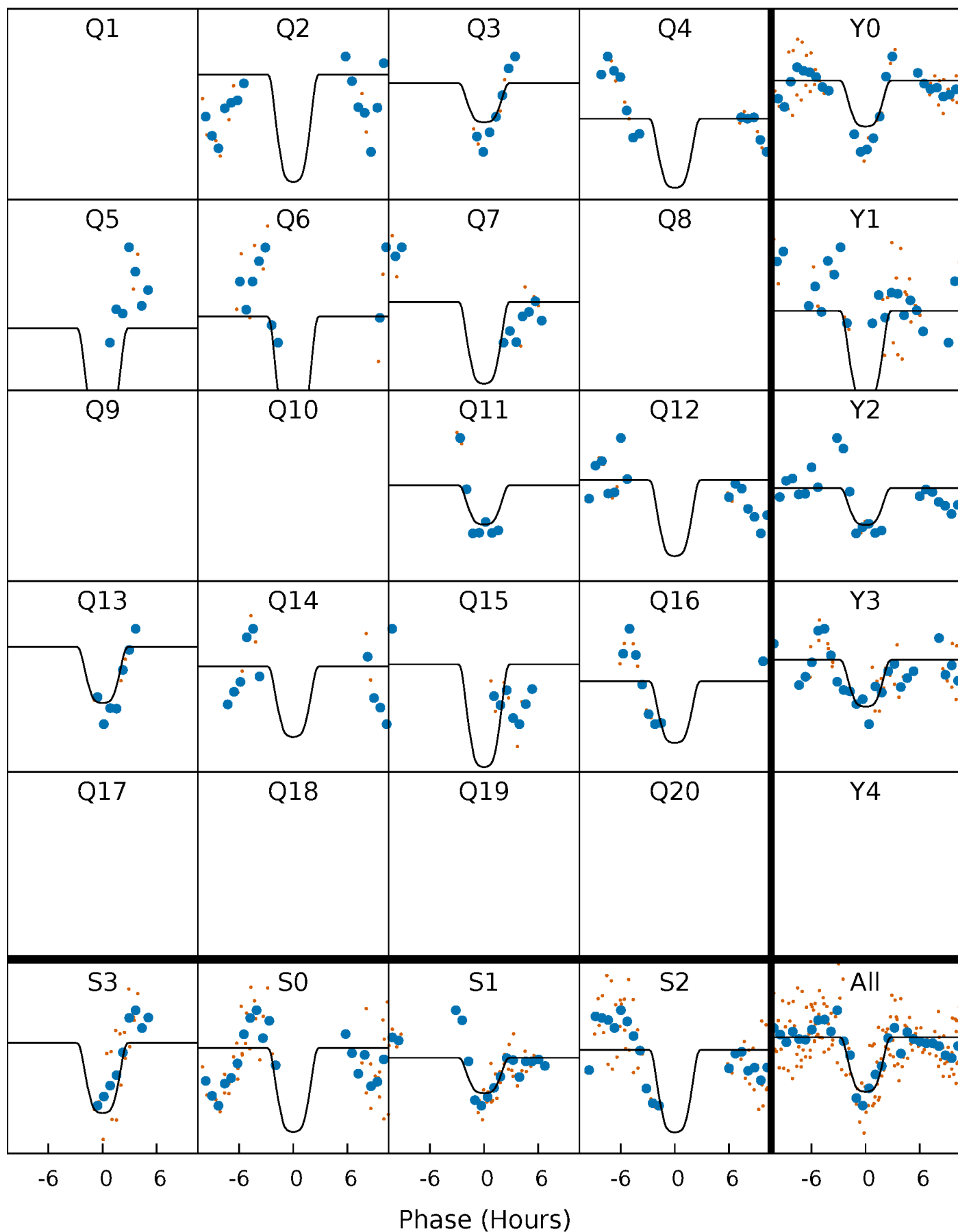
# PDC Quarter-Phased Transit Curves

TCE 010734935-03     $P=103.778648$  Days     $T_0=179.992030$  (BKJD)



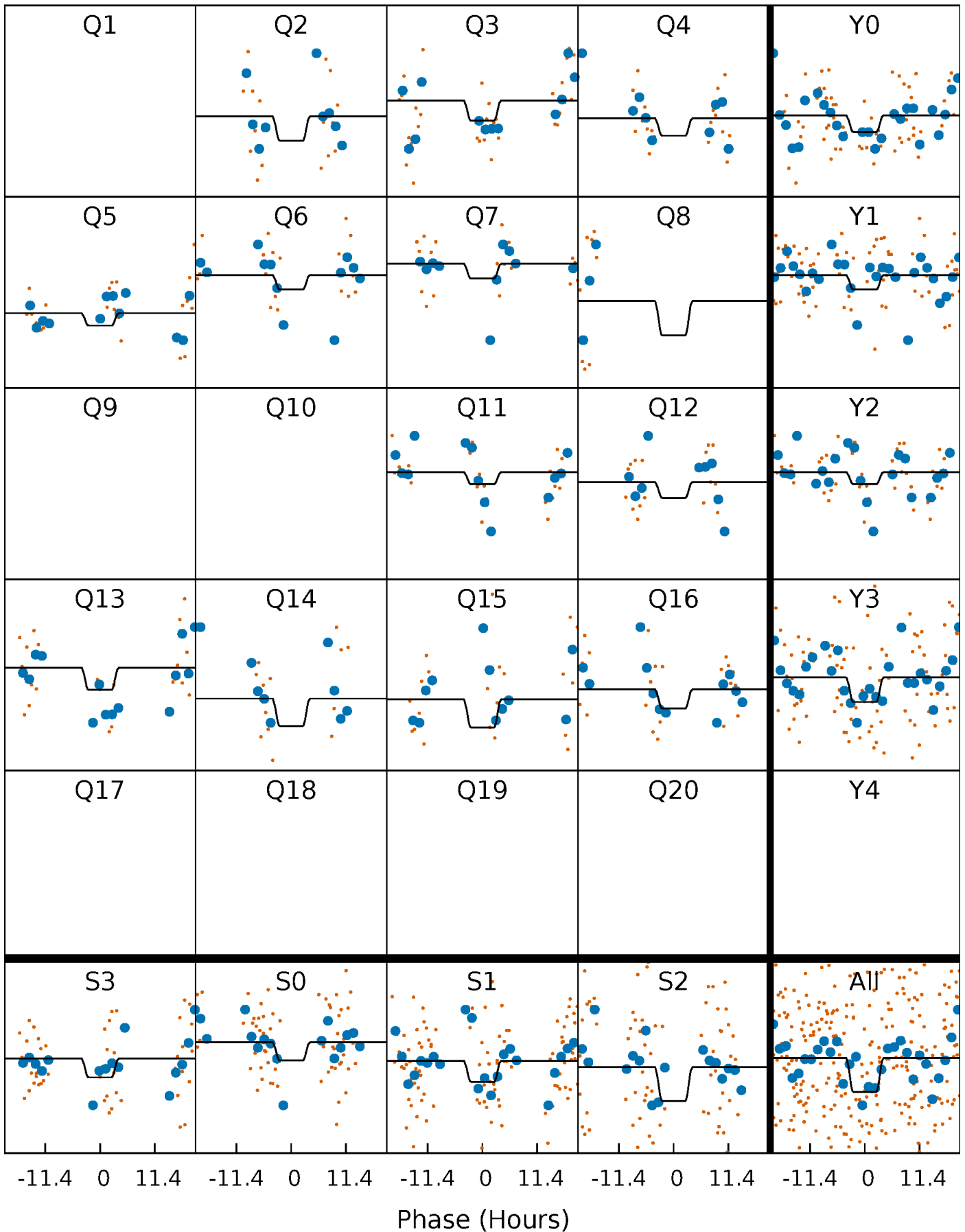
# DV Quarter-Phased Transit Curves

TCE 010734935-03 P=103.778648 Days  $T_0=179.992030$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010734935-03 P=103.779509 Days  $T_0=179.988310$  (BKJD)

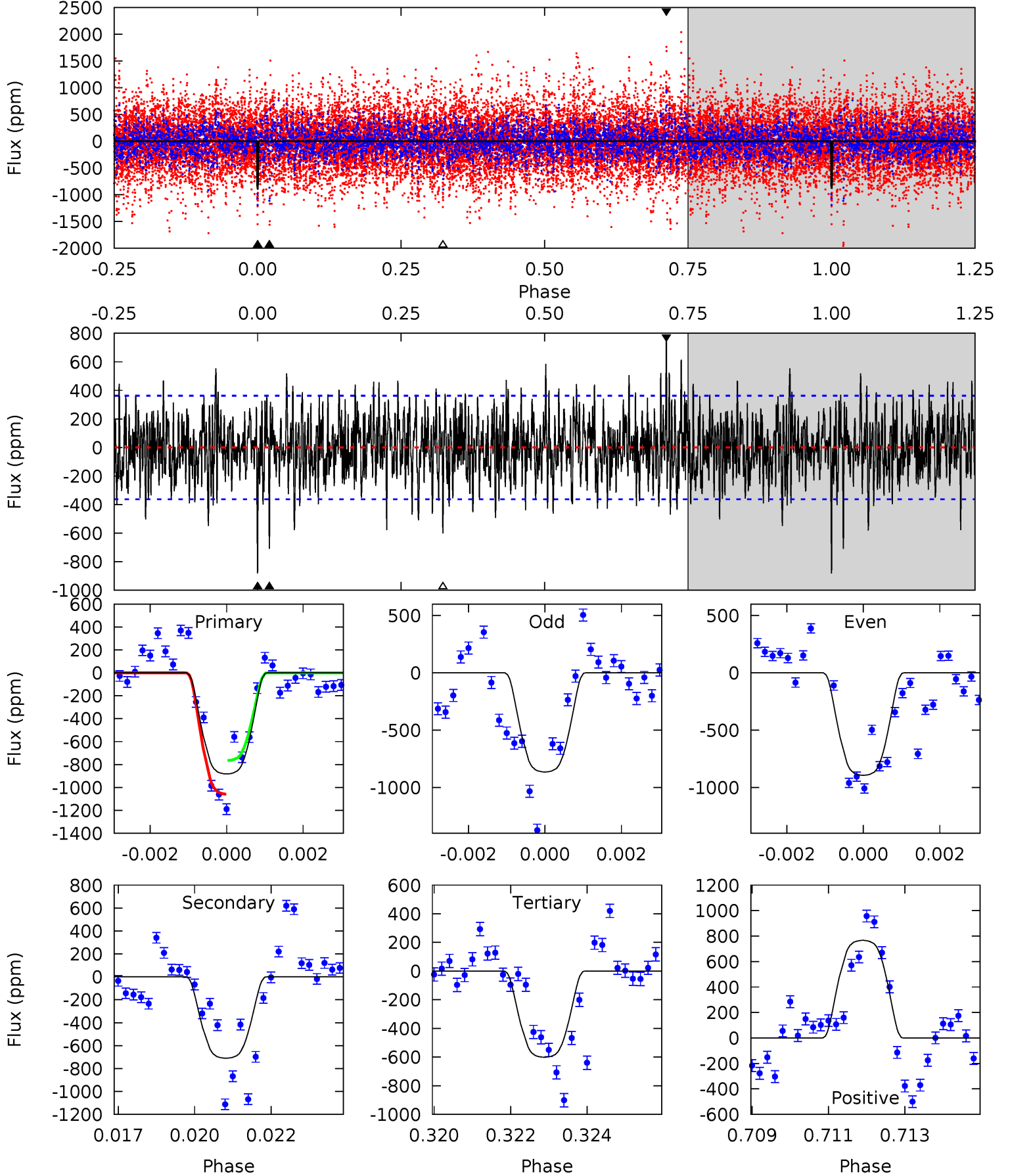




# DV Model-Shift Uniqueness Test

010734935-03,  $P = 103.778648$  Days,  $E = 76.213382$  Days

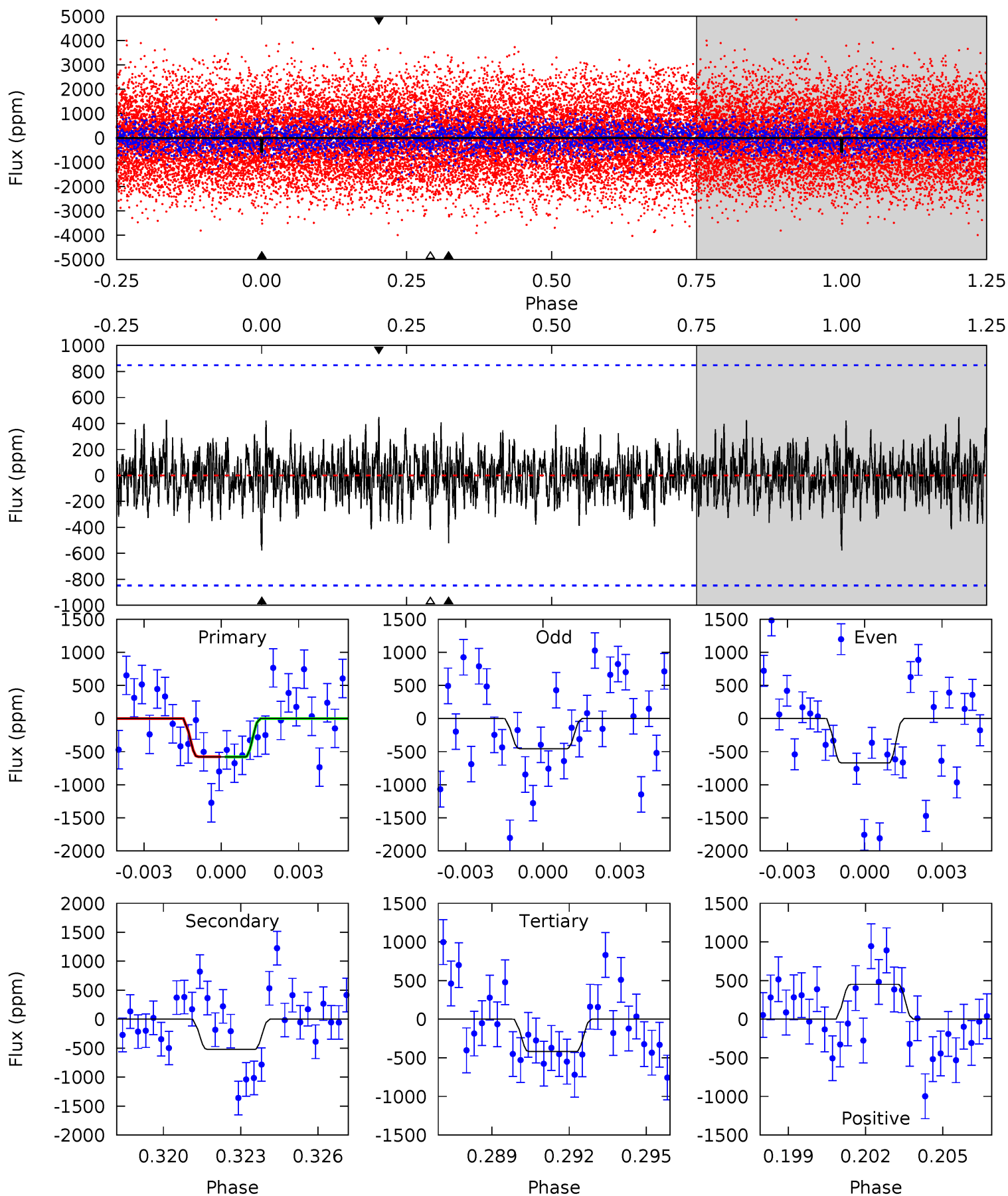
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	10.4	8.81	11.2	5.31	3.07	2.73	4.13	1.70	1.59	-0.83	0.21	0.74	0.46	2.08



# Alt Model-Shift Uniqueness Test

010734935-03, P = 103.779509 Days, E = 76.208801 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
3.58	3.22	2.59	2.78	5.25	2.96	0.86	0.99	0.79	0.64	0.44	0.66	0.94	0.44	0.01



### Stellar Parameters For KIC 010734935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7883^{+218}_{-327}$	$3.688^{+0.459}_{-0.108}$	$-0.100^{+0.200}_{-0.350}$	$3.395^{+0.674}_{-1.686}$	$2.047^{+0.342}_{-0.513}$	$0.074^{+0.316}_{-0.025}$
	+3%/-4%	+12%/-3%	+200%/-350%	+20%/-50%	+17%/-25%	+428%/-34%
Source	KIC0	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 010734935-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-710 \pm 68$	$11.69^{+2.38}_{-2.73}$	$1167^{+90}_{-139}$	$6830^{+455}_{-411}$	$867^{+571}_{-258}$
Alt.	$-521 \pm 162$	$9.15^{+1.92}_{-2.20}$	$1169^{+90}_{-136}$	$7250^{+856}_{-875}$	$1040^{+794}_{-425}$

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

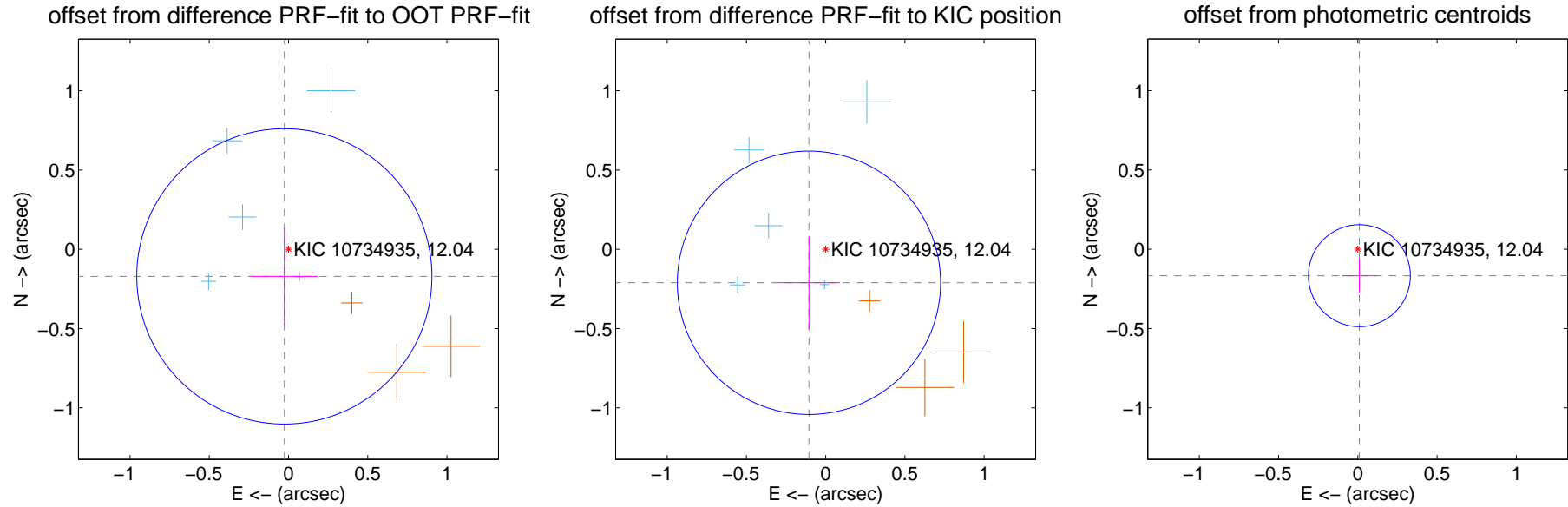
## DV Centroid Data

Supplemental centroid analysis for 010734935-03. Kepler magnitude: 12.04. Transit SNR 7.89

There are 6 quarters with good PRF difference image offsets

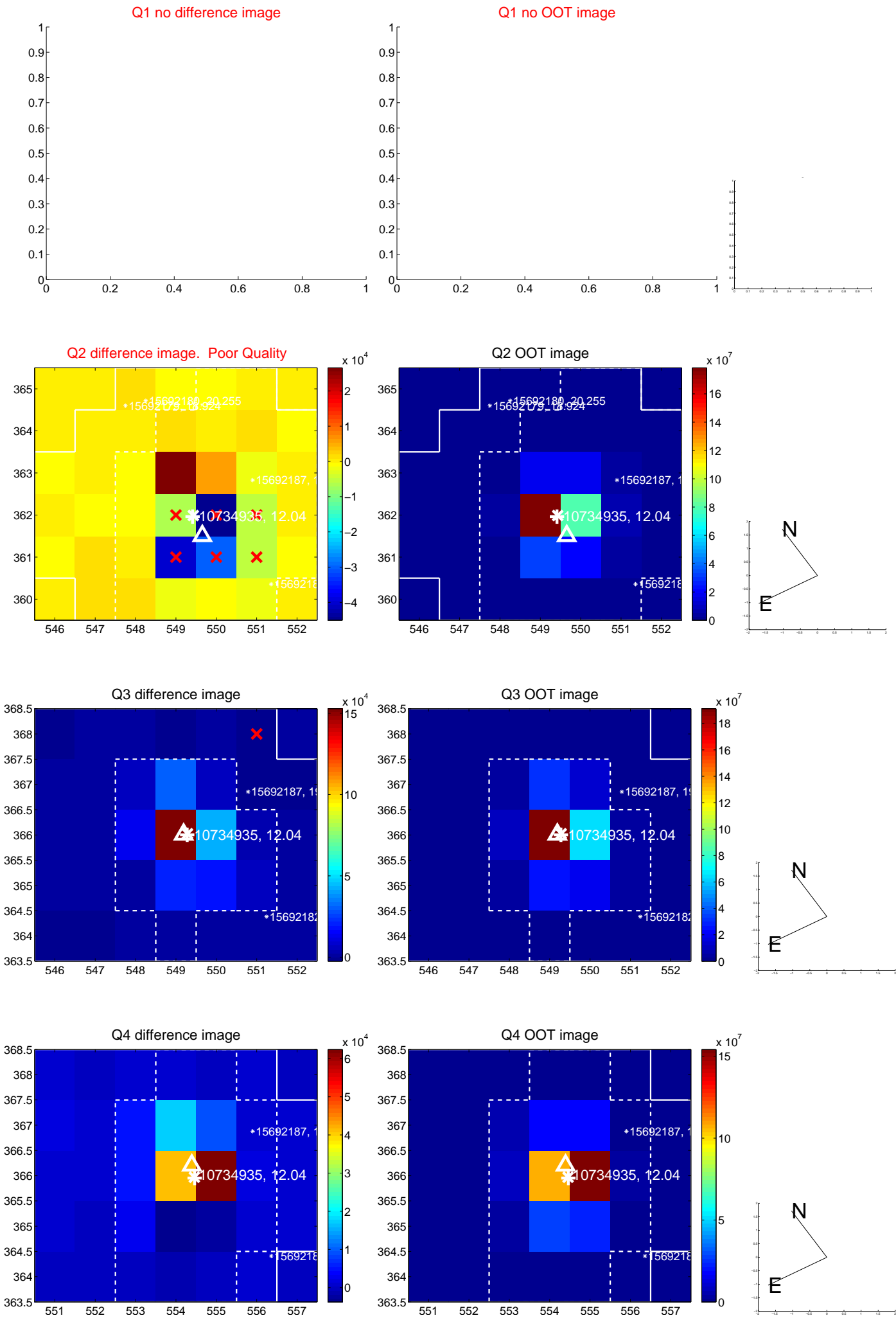
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.173 \pm 0.311$	0.56	$0.026 \pm 0.213$	$-0.171 \pm 0.310$
PRF-fit source offset from KIC position	$0.236 \pm 0.277$	0.85	$0.105 \pm 0.196$	$-0.211 \pm 0.296$
photometric centroid source offset	$0.17 \pm 0.11$	1.56	$-0.01 \pm 0.11$	$-0.17 \pm 0.11$



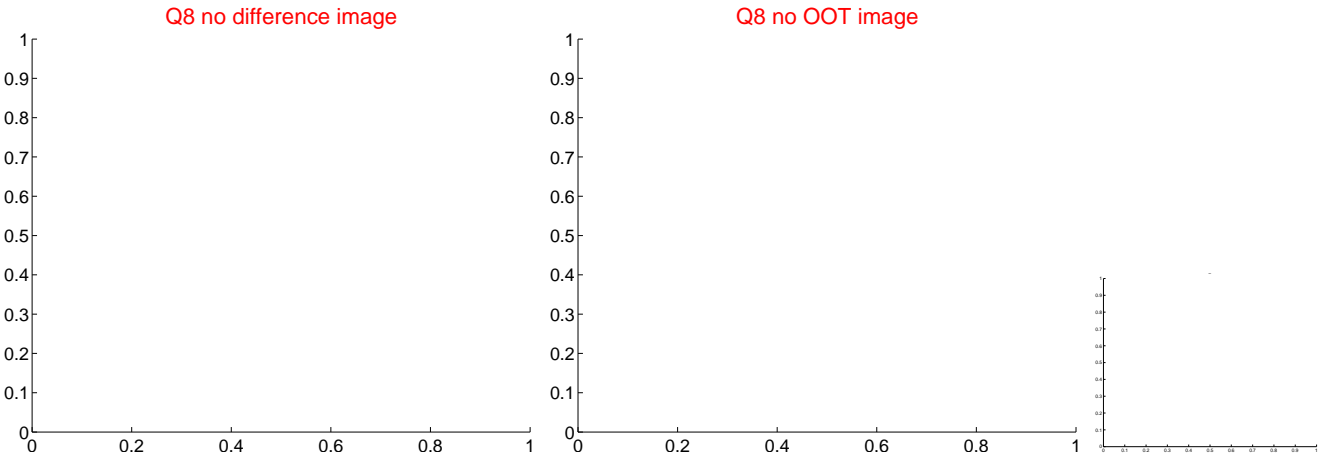
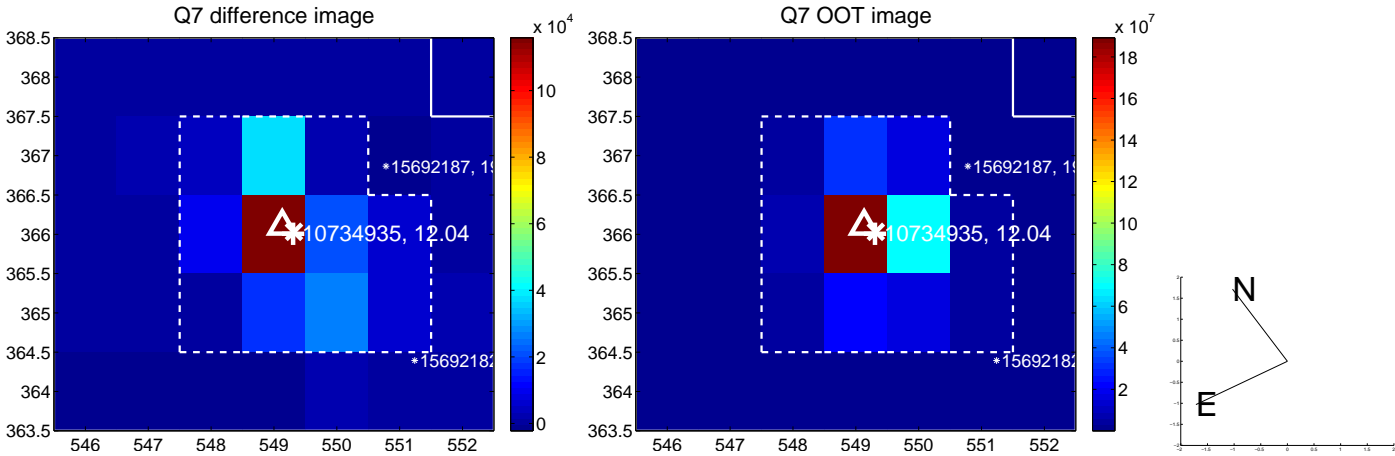
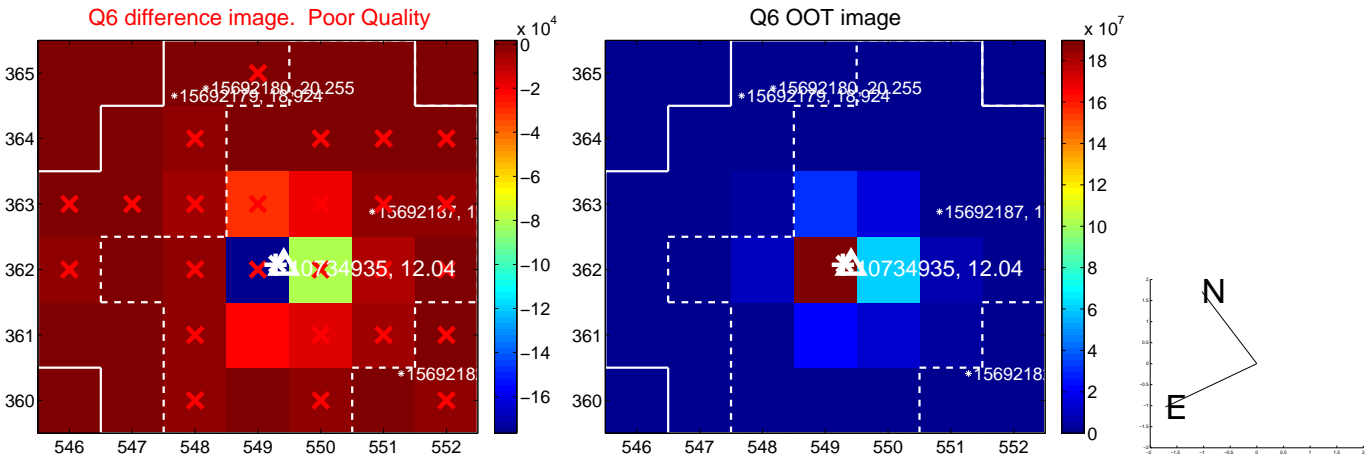
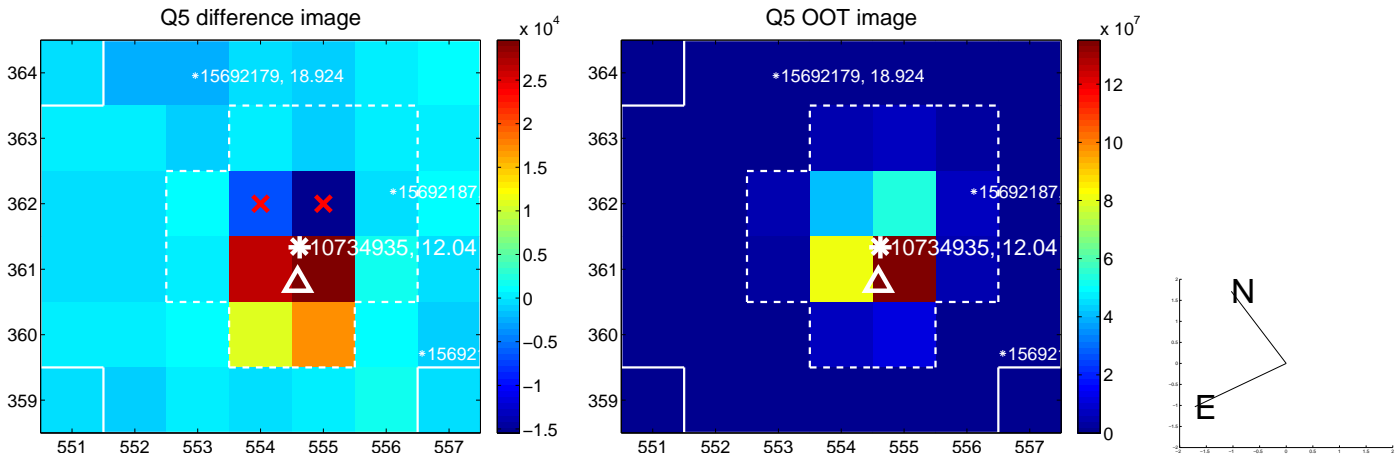
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

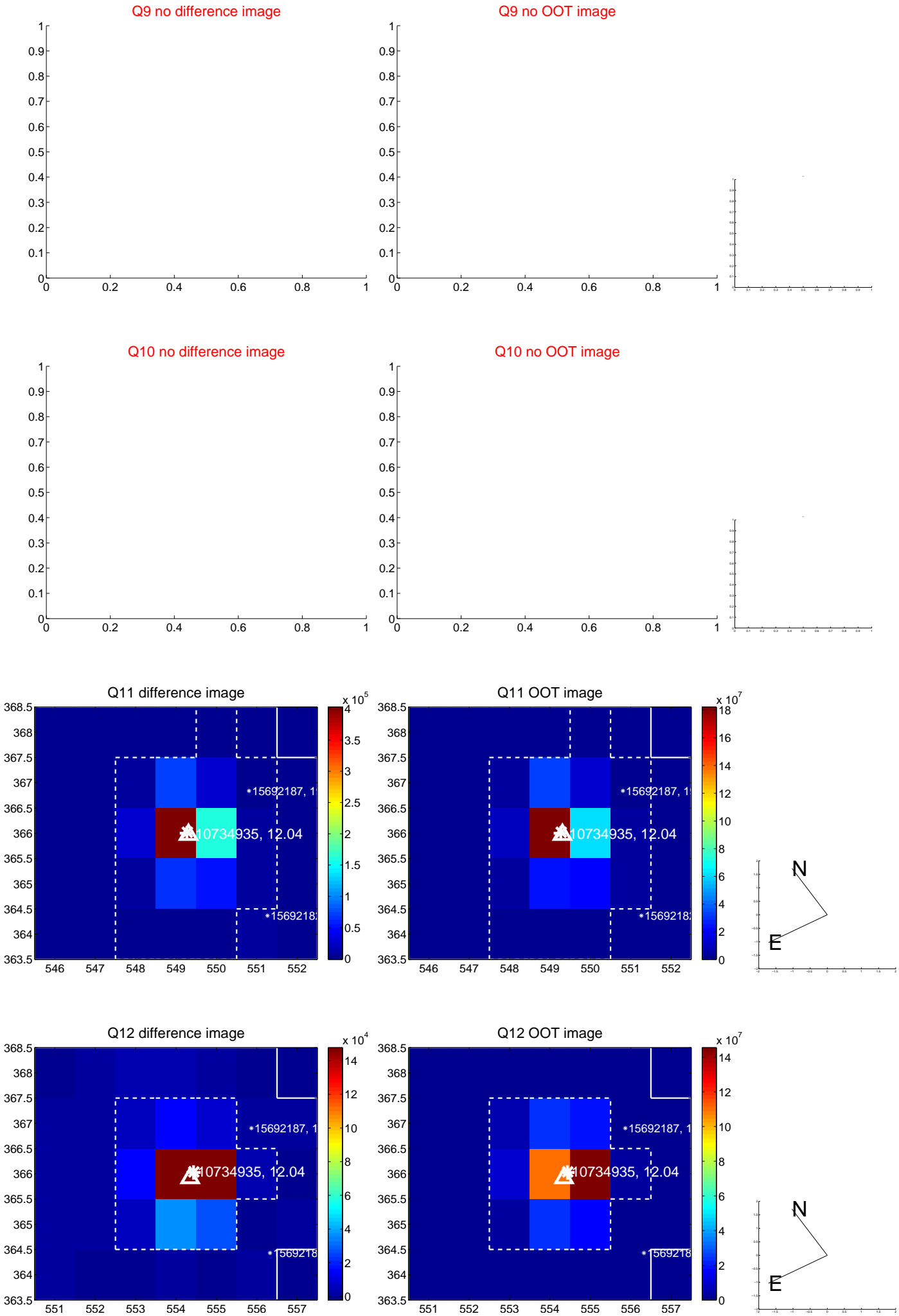




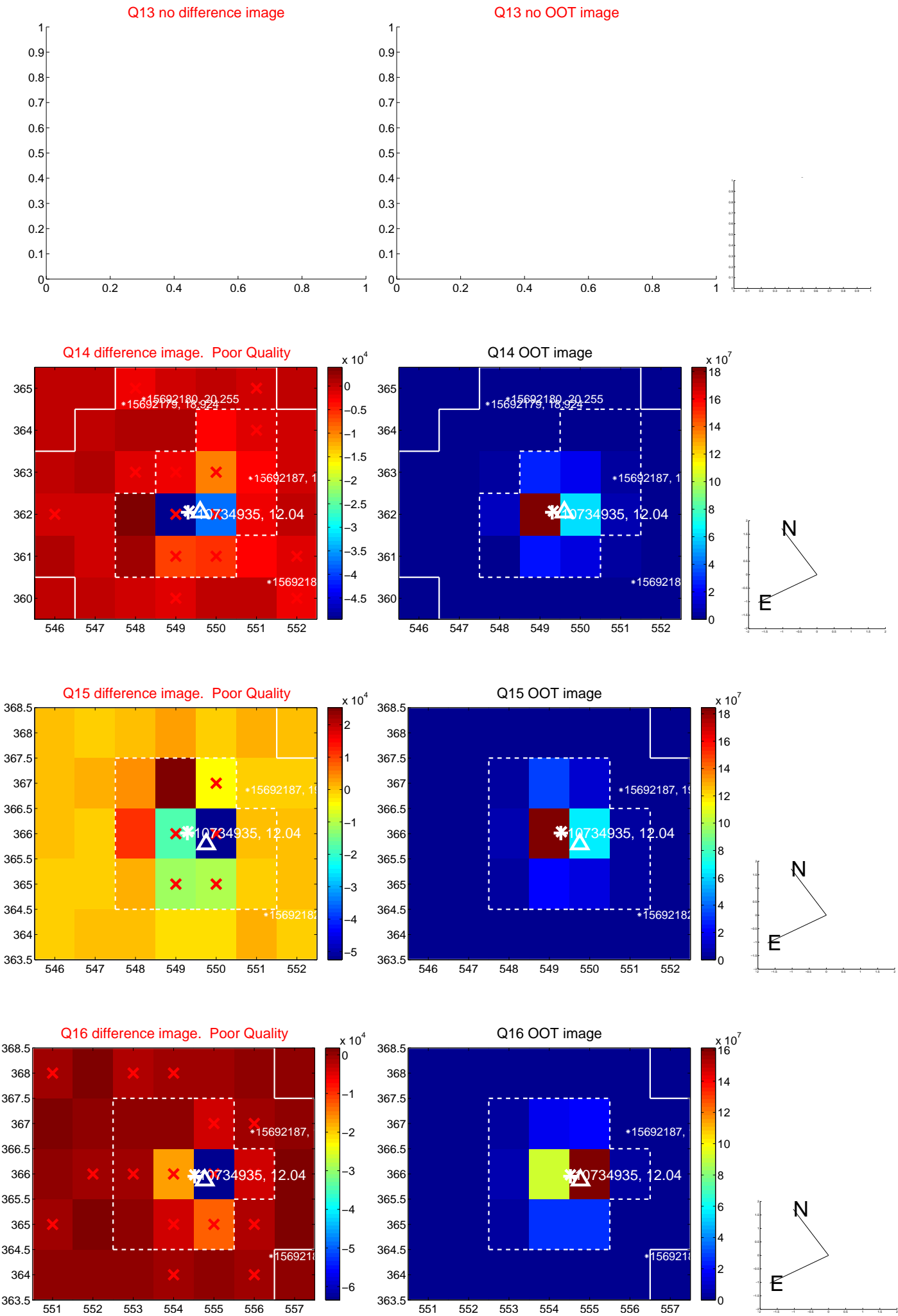
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



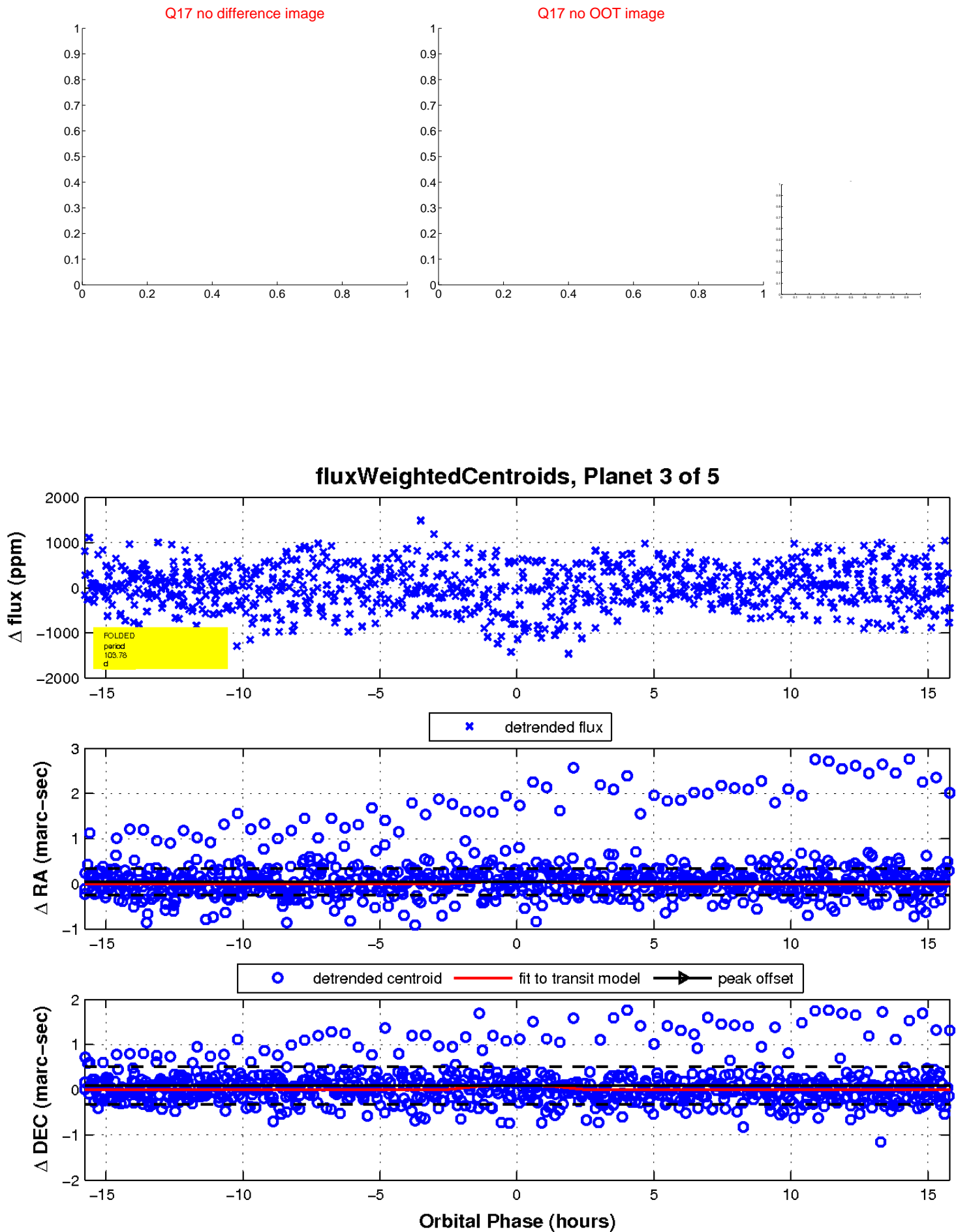
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

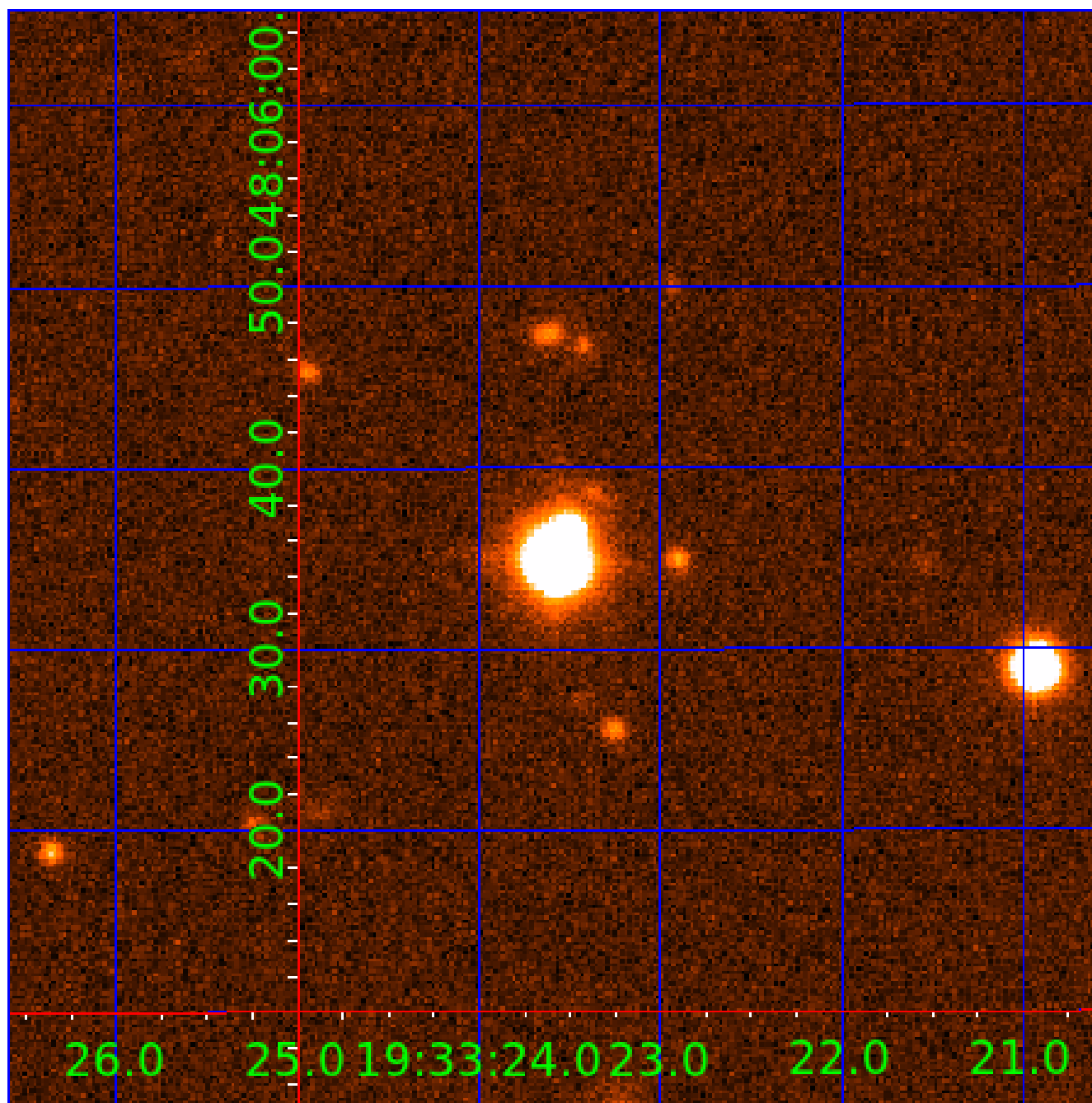


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 010734935

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010734935-01	OBS	No	0.654990	132.067806	37.1	1.688	13.8	7.1	3.40	7883	2.41	113389.71
010734935-02	OBS	No	0.654999	131.596550	75.9	2.176	13.9	14.5	3.40	7883	3.44	113387.69
010734935-03	OBS	No	103.778648	179.992030	883.3	5.279	9.4	7.9	3.40	7883	12.57	132.25
010734935-04	OBS	No	118.102871	167.313602	298.6	1.292	8.1	2.7	3.40	7883	6.33	111.31
010734935-05	OBS	No	19.639729	132.072591	538.3	4.025	8.5	9.6	3.40	7883	11.43	1217.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010734935-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010734935-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010734935-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

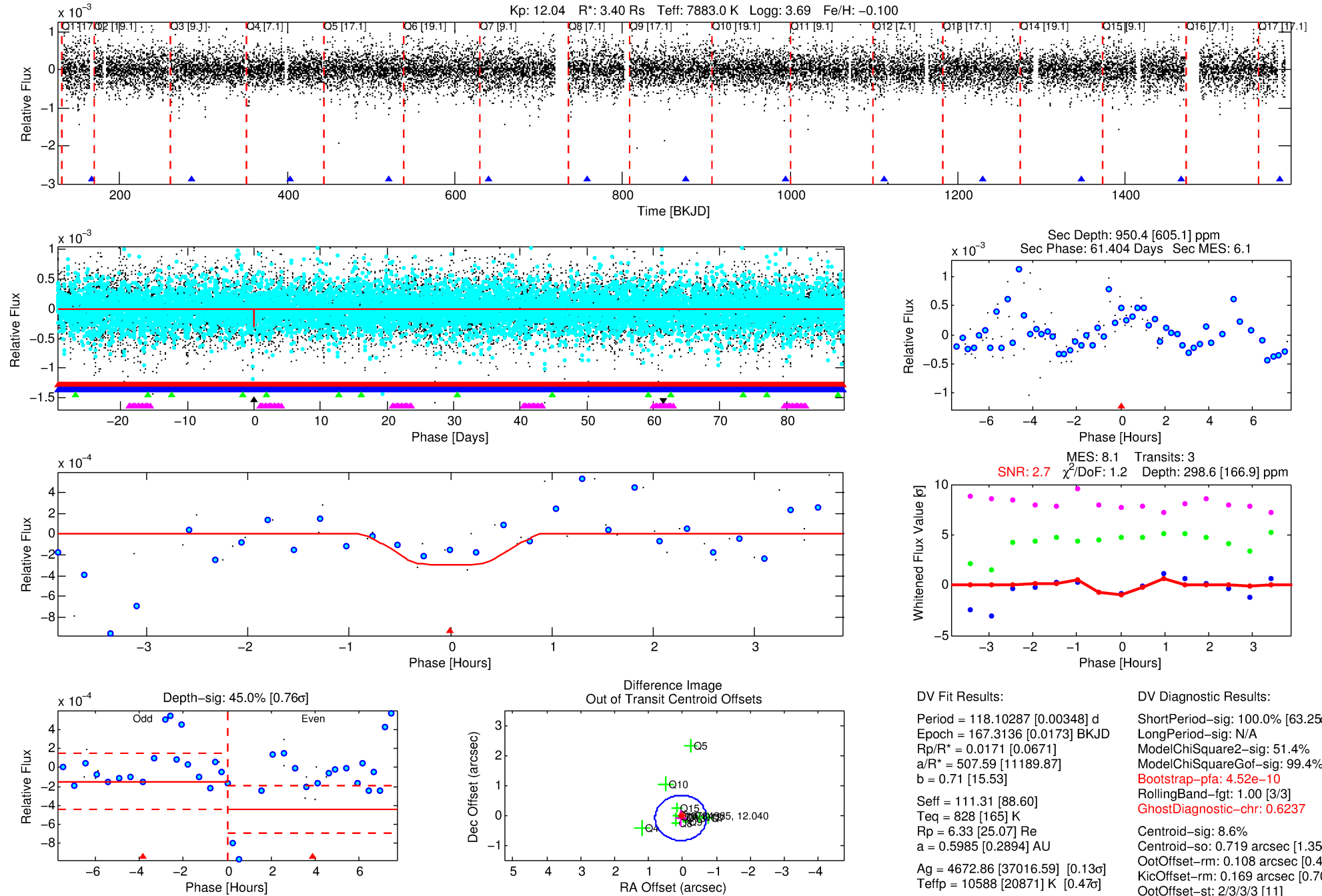
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010734935-04

No Significant Match Found

# DV One-Page Summary

KIC: 10734935 Candidate: 4 of 5 Period: 118.103 d



## DV Fit Results:

Period = 118.10287 [0.00348] d  
Epoch = 167.3136 [0.0173] BKJD  
Rp/R\* = 0.0171 [0.0671]  
a/R\* = 507.59 [11189.87]  
b = 0.71 [15.53]  
Seff = 111.31 [88.60]  
Teq = 828 [165] K  
Rp = 6.33 [25.07] Re  
a = 0.5985 [0.2894] AU  
Ag = 4672.86 [37016.59] [0.13 $\sigma$ ]  
Teffp = 10588 [20871] K [0.47 $\sigma$ ]

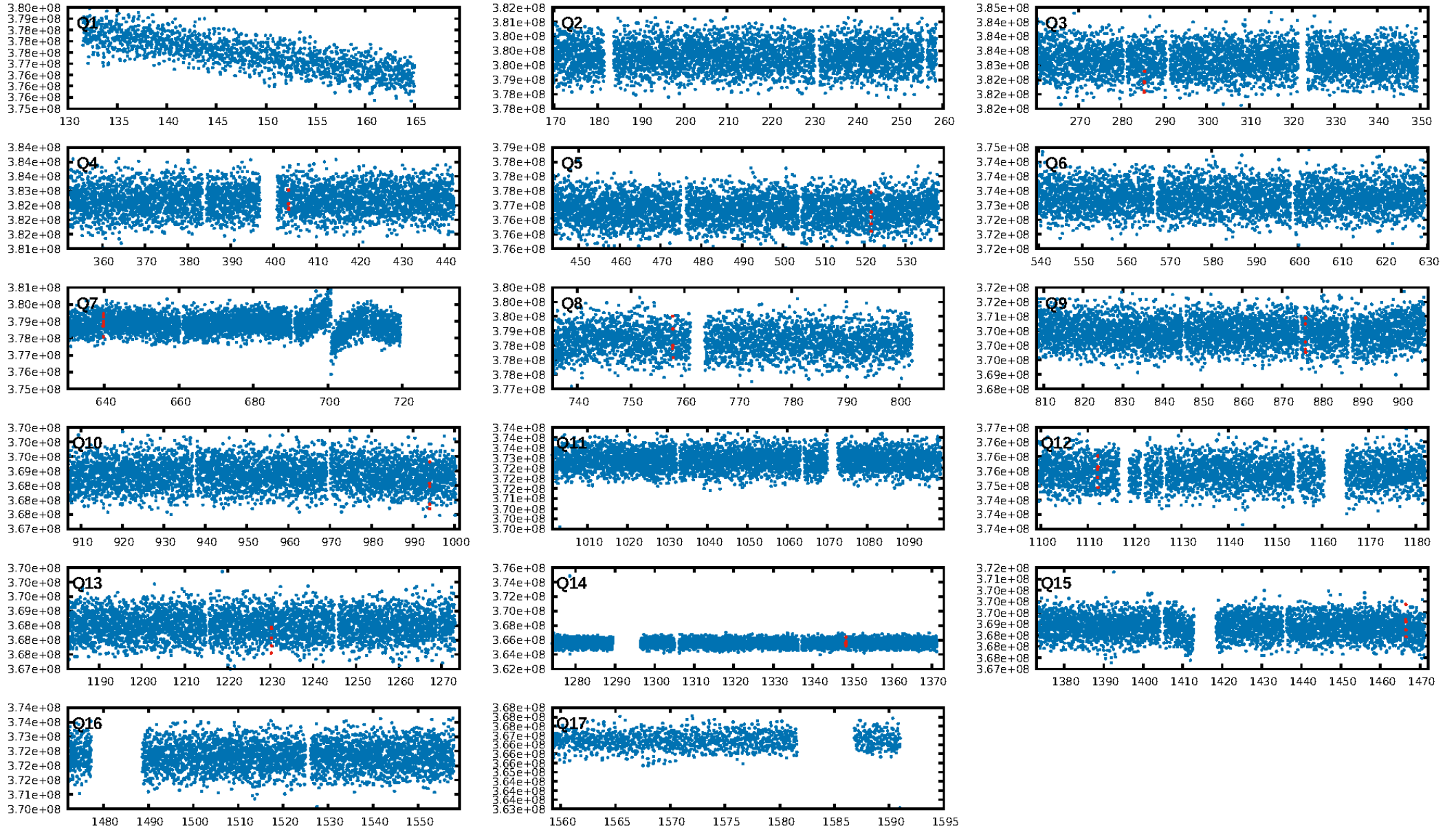
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [63.25 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 51.4%  
ModelChiSquareGof-sig: 99.4%  
**Bootstrap-pfa: 4.52e-10**  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.6237**  
Centroid-sig: 8.6%  
Centroid-so: 0.719 arcsec [1.35 $\sigma$ ]  
OotOffset-rm: 0.108 arcsec [0.43 $\sigma$ ]  
KicOffset-rm: 0.169 arcsec [0.70 $\sigma$ ]  
OotOffset-st: 2/3/3/3 [11]  
KicOffset-st: 2/3/3/3 [11]  
DiffImageQuality-fgm: 0.55 [6/11]  
DiffImageOverlap-fno: 0.00 [0/11]

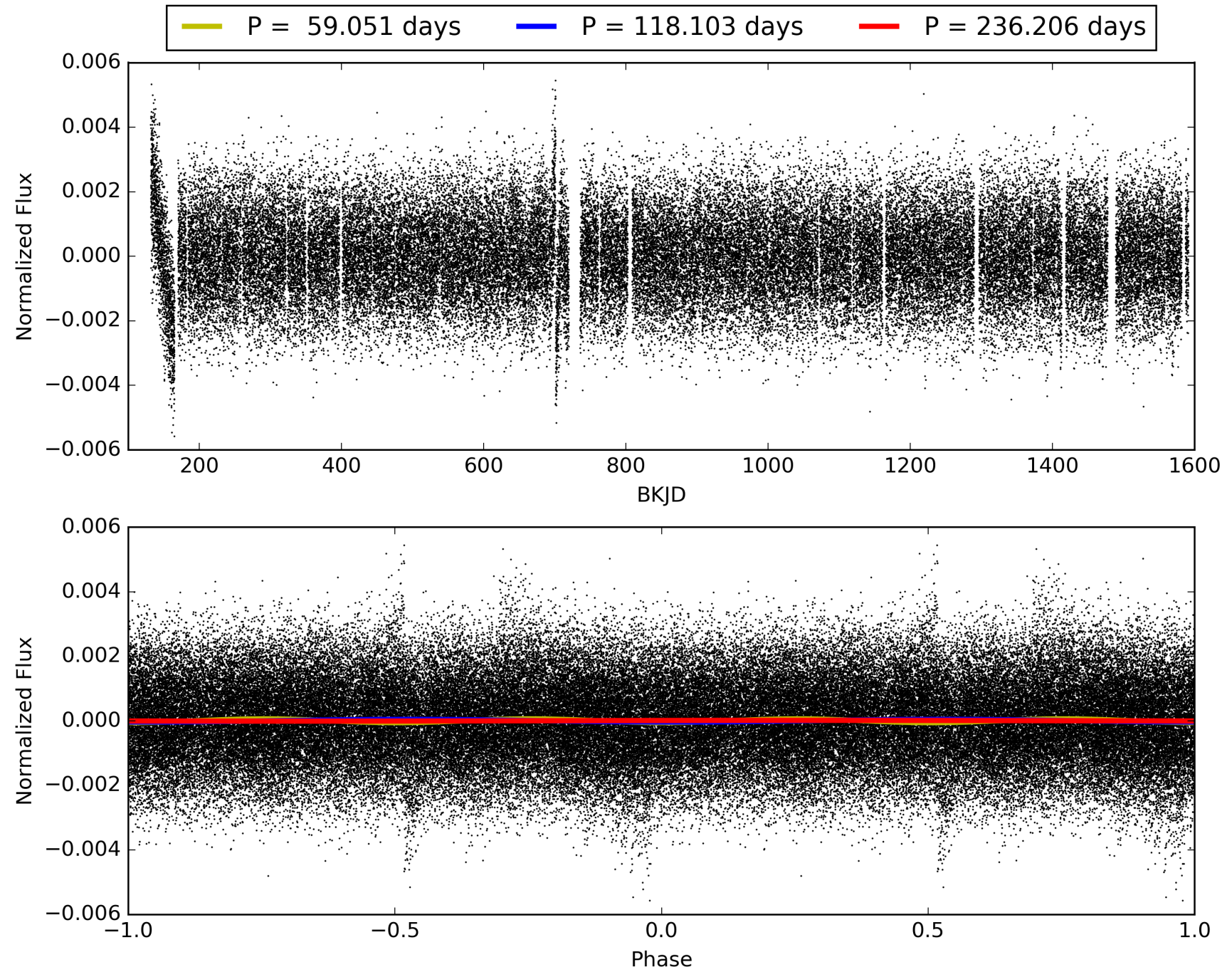
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:04:57 Z

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

# TCE 010734935-04, PDC Light Curves

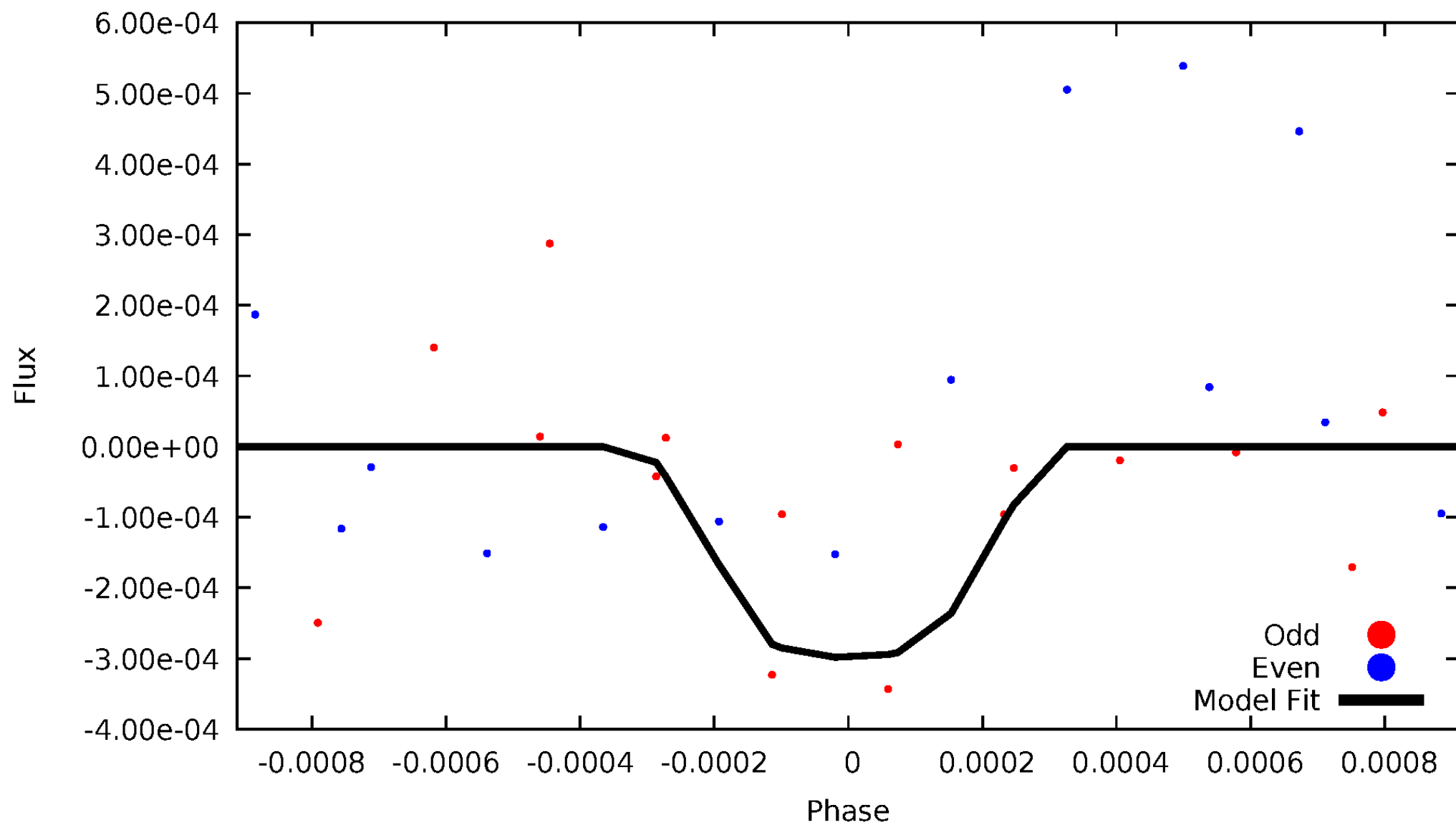


# TCE 010734935-04



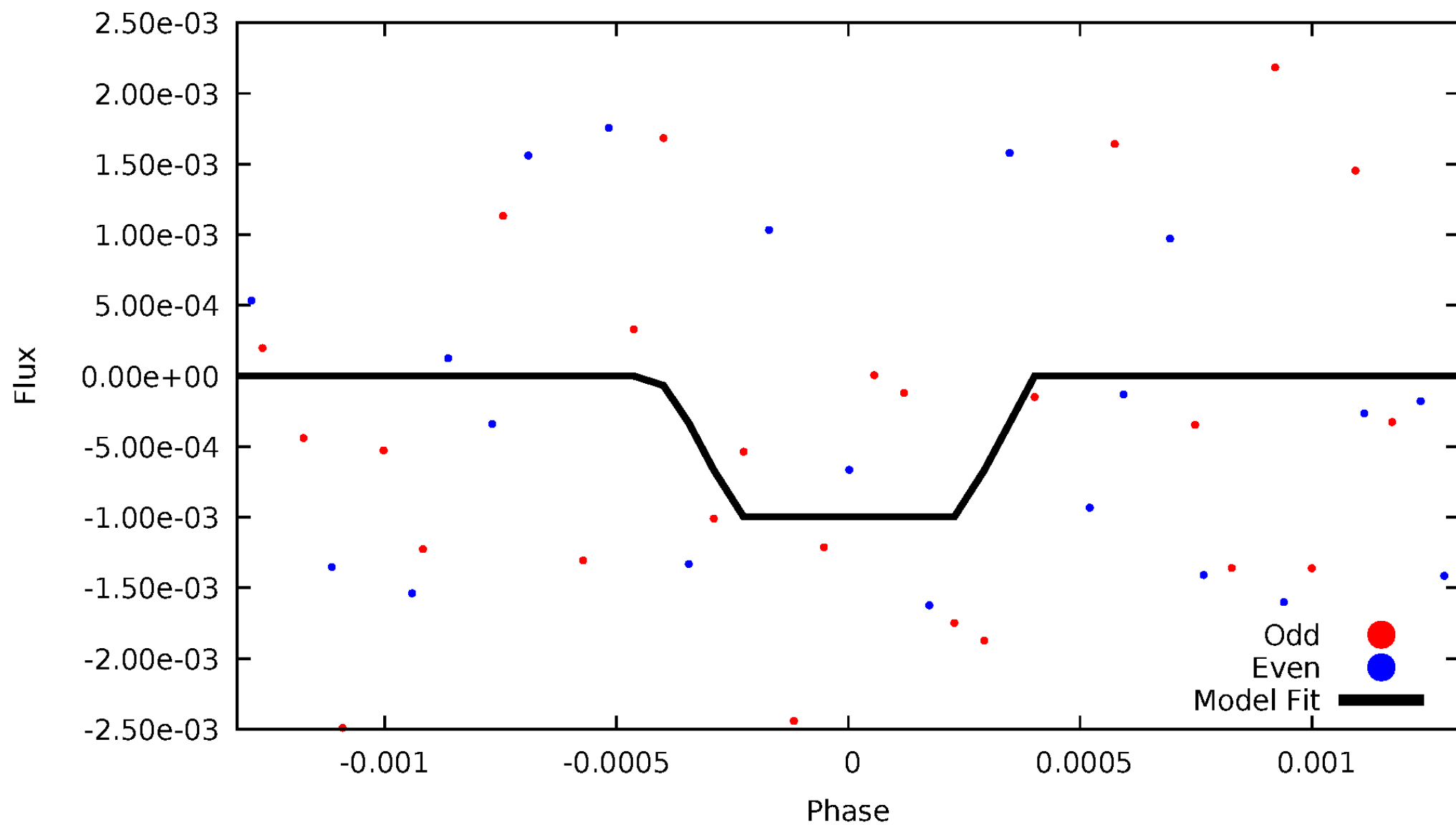
# DV Odd/Even

TCE 010734935-04



# ALT Odd/Even

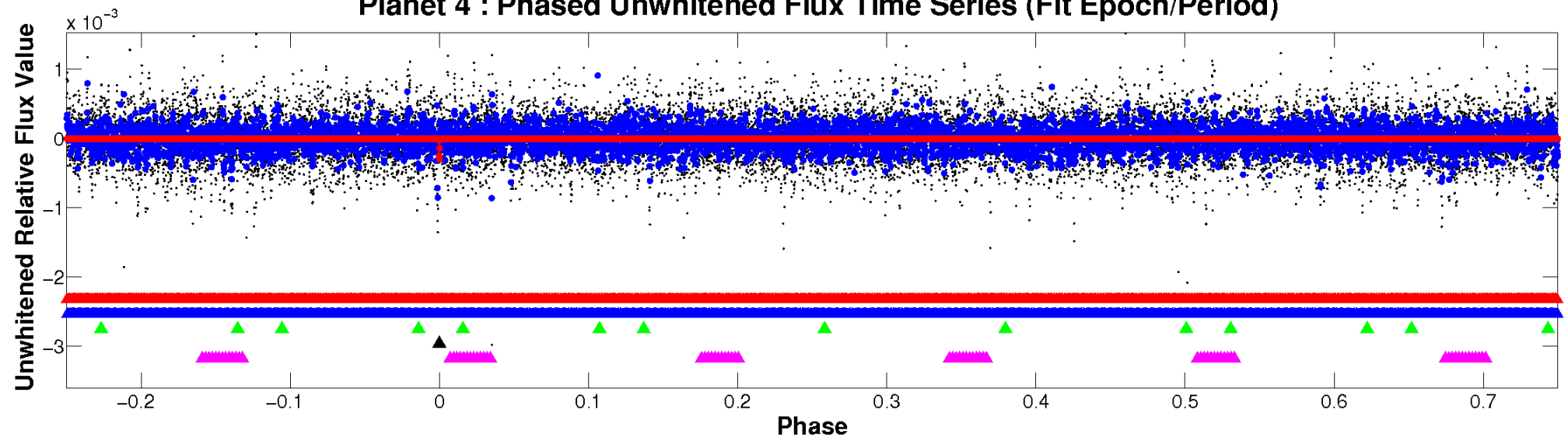
TCE 010734935-04



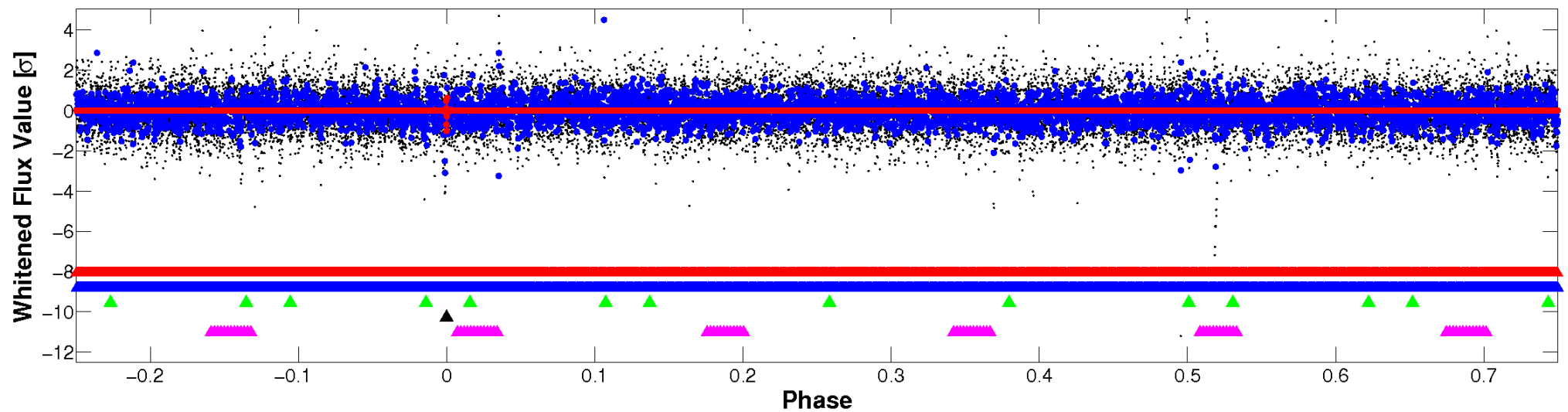


# Non-Whitened Vs. Whitened Light Curve

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

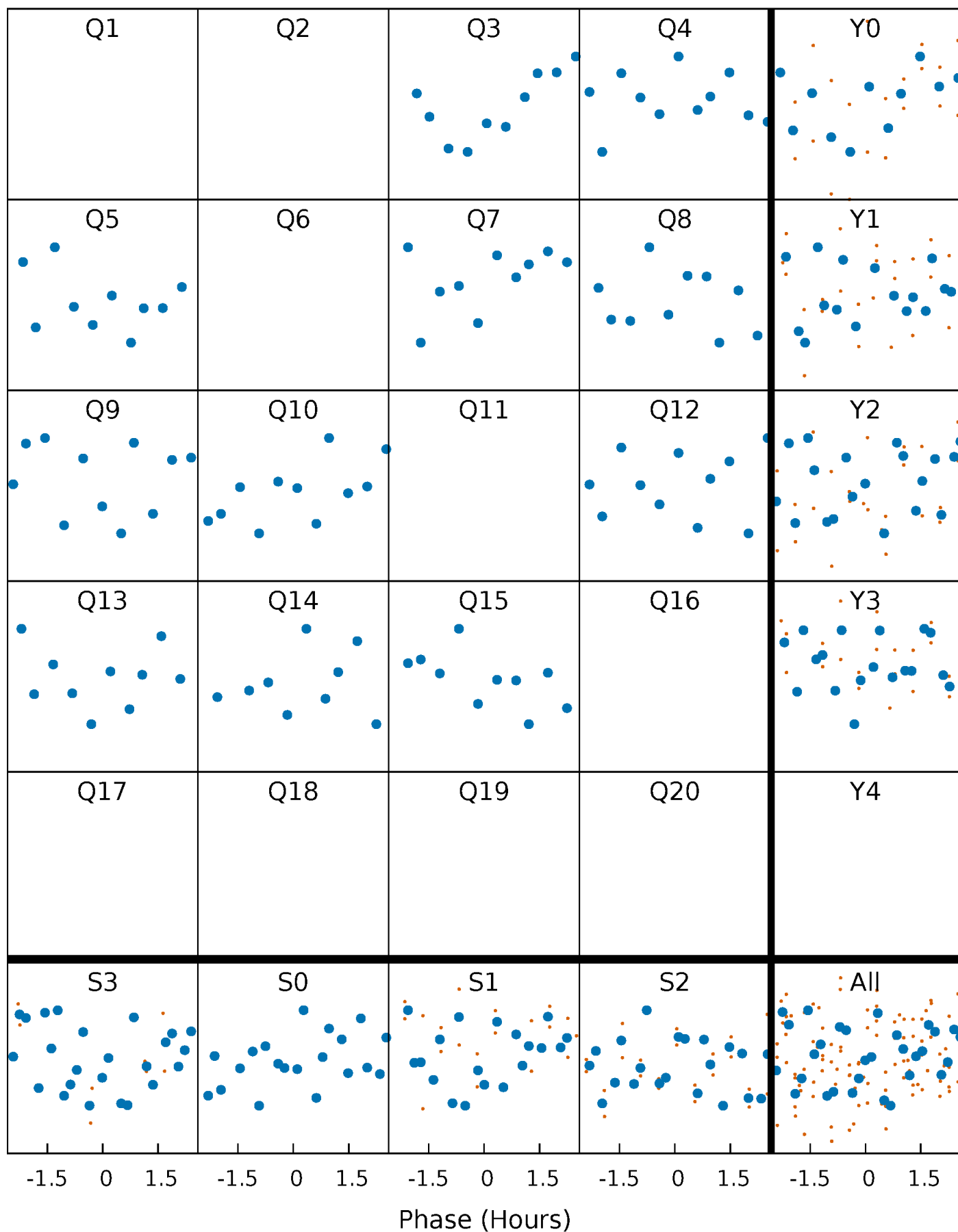


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



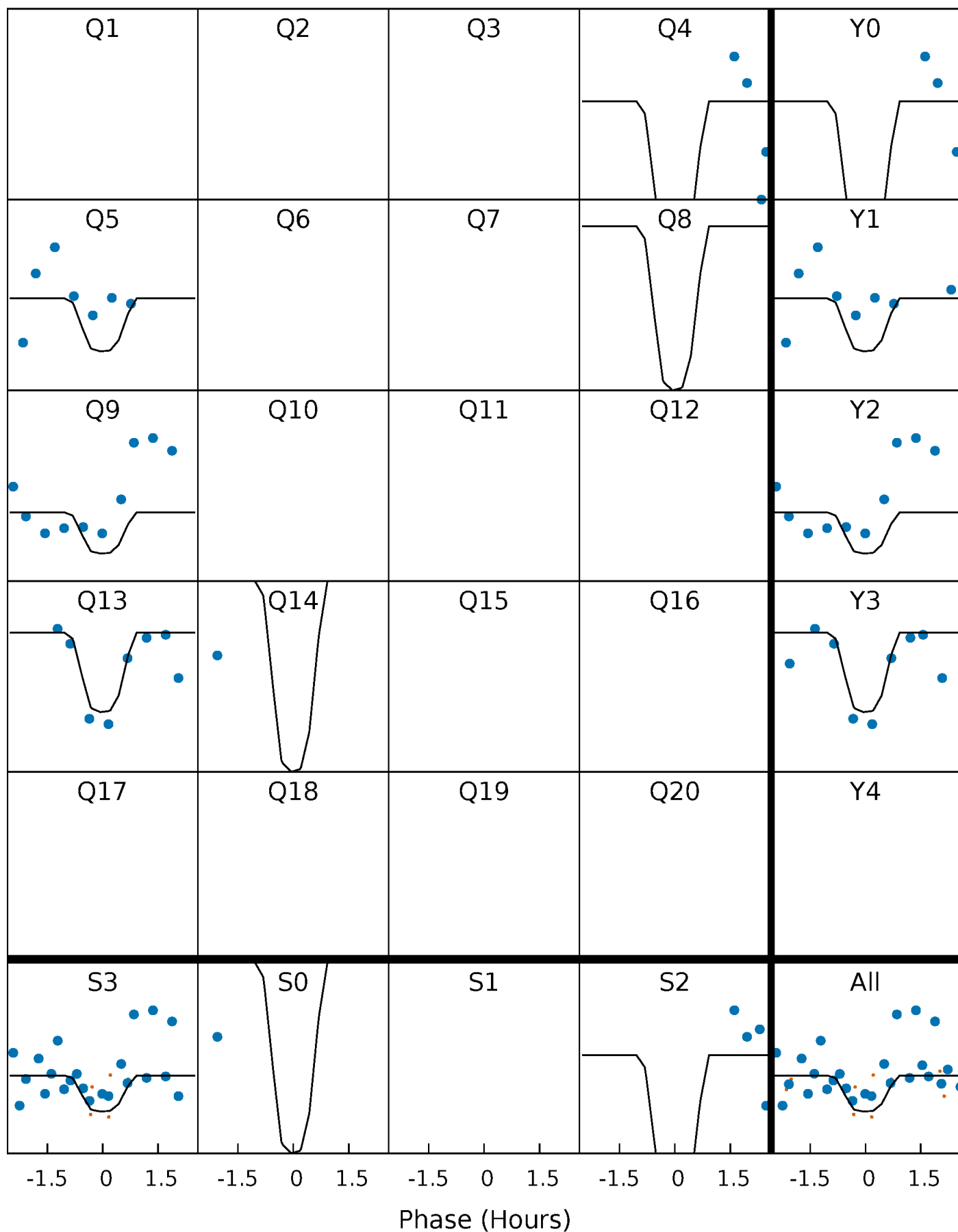
# PDC Quarter-Phased Transit Curves

TCE 010734935-04 P=118.102871 Days  $T_0=167.313602$  (BKJD)



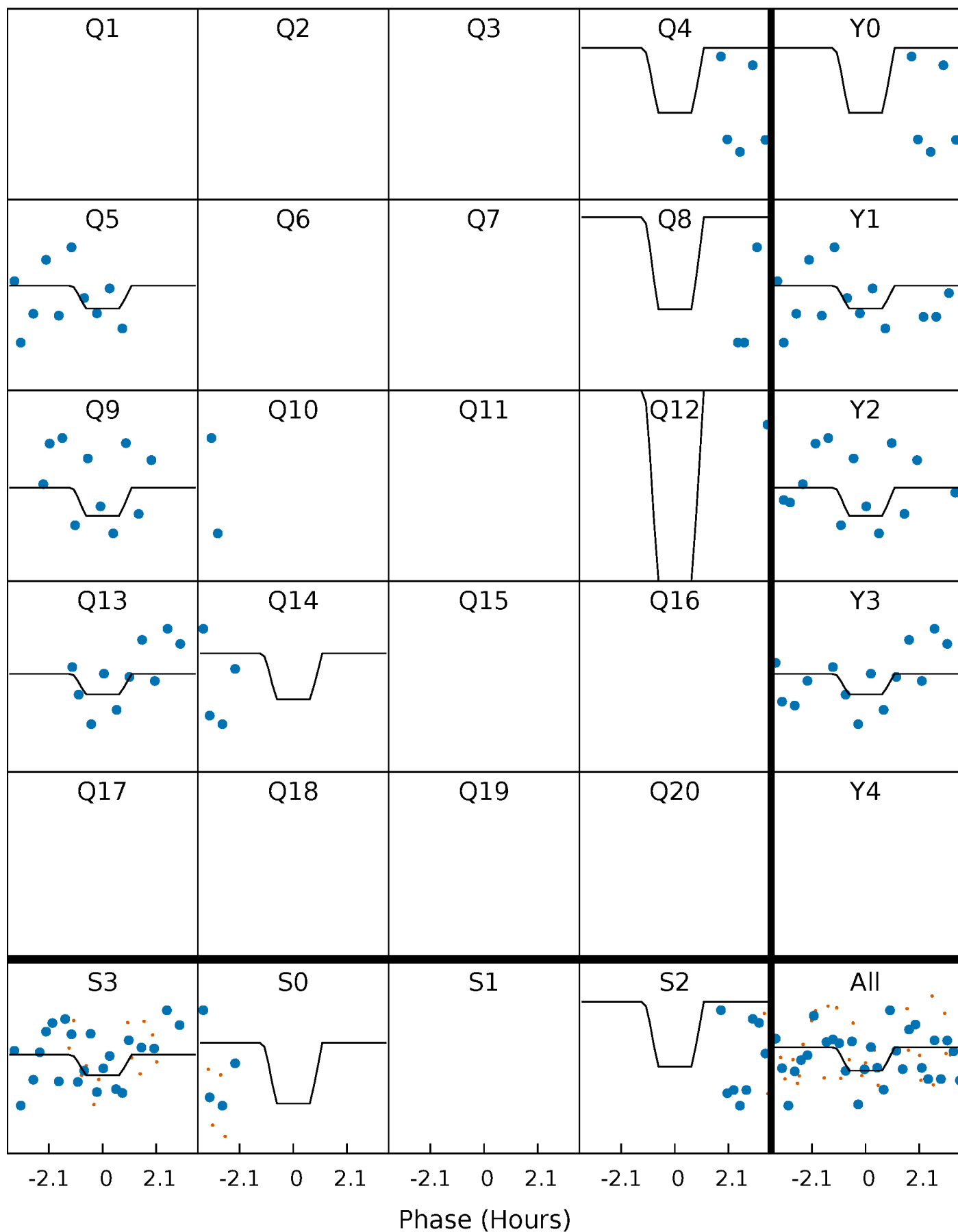
# DV Quarter-Phased Transit Curves

TCE 010734935-04 P=118.102871 Days  $T_0=167.313602$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

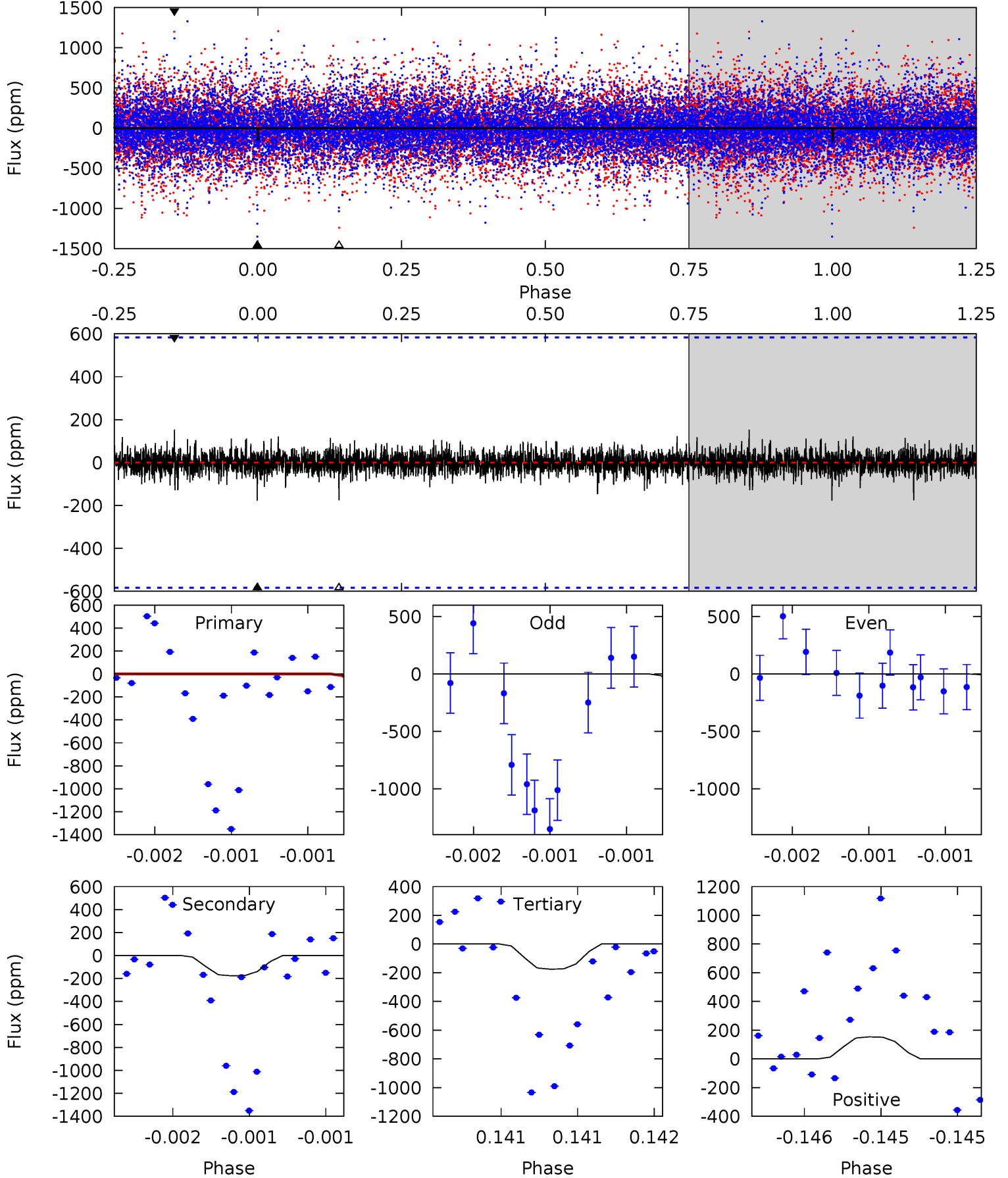
TCE 010734935-04 P=118.103856 Days  $T_0=167.305147$  (BKJD)



# DV Model-Shift Uniqueness Test

010734935-04, P = 118.102871 Days, E = 49.210731 Days

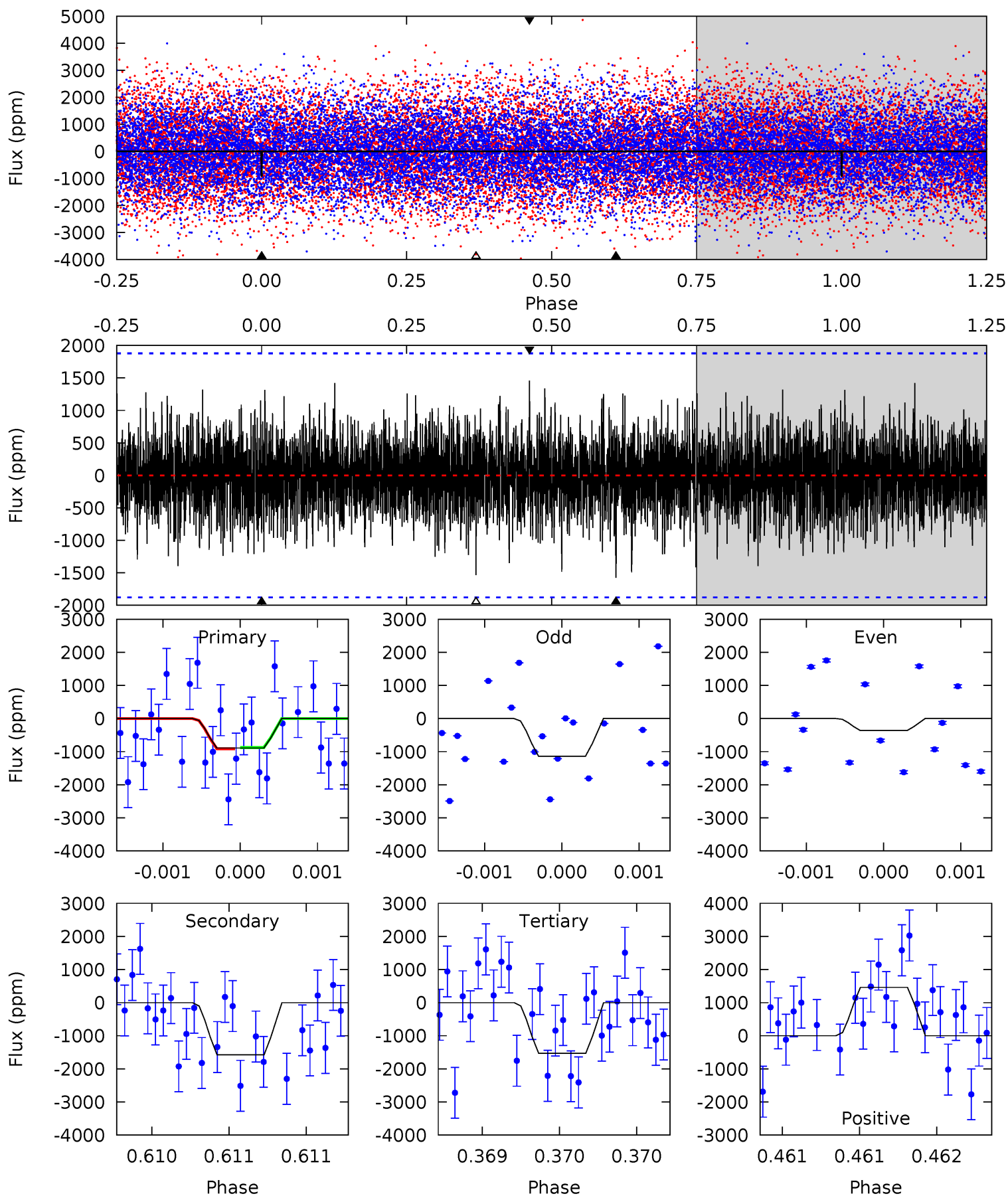
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.47	1.68	1.67	1.46	5.57	3.47	0.33	-0.20	0.01	0.01	0.22	0.56	2.18	0.47	0.41



# Alt Model-Shift Uniqueness Test

010734935-04, P = 118.103856 Days, E = 49.201291 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
2.62	4.62	4.50	4.28	5.50	3.37	1.29	-1.88	-1.66	0.12	0.34	1.15	1.01	0.48	0.05





### Stellar Parameters For KIC 010734935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7883^{+218}_{-327}$	$3.688^{+0.459}_{-0.108}$	$-0.100^{+0.200}_{-0.350}$	$3.395^{+0.674}_{-1.686}$	$2.047^{+0.342}_{-0.513}$	$0.074^{+0.316}_{-0.025}$
	+3%/-4%	+12%/-3%	+200%/-350%	+20%/-50%	+17%/-25%	+428%/-34%
Source	KIC0	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 010734935-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-176 \pm 105$	$17.93^{+17.84}_{-12.40}$	$1125^{+83}_{-142}$	$4027^{+2414}_{-969}$	$98^{+764}_{-81}$
Alt.	$-1575 \pm 341$	$19.40^{+20.07}_{-12.47}$	$1116^{+87}_{-151}$	$6278^{+5974}_{-1650}$	$784^{+5745}_{-595}$

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

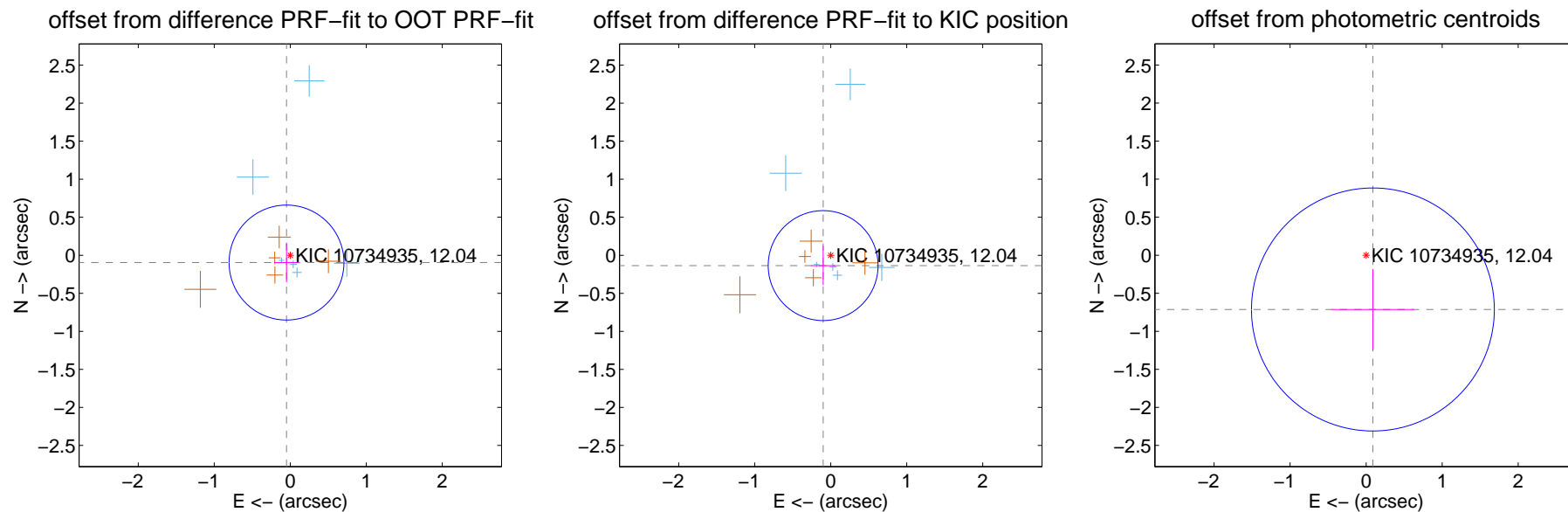
## DV Centroid Data

Supplemental centroid analysis for 010734935-04. Kepler magnitude: 12.04. Transit SNR 2.74

There are 6 quarters with good PRF difference image offsets

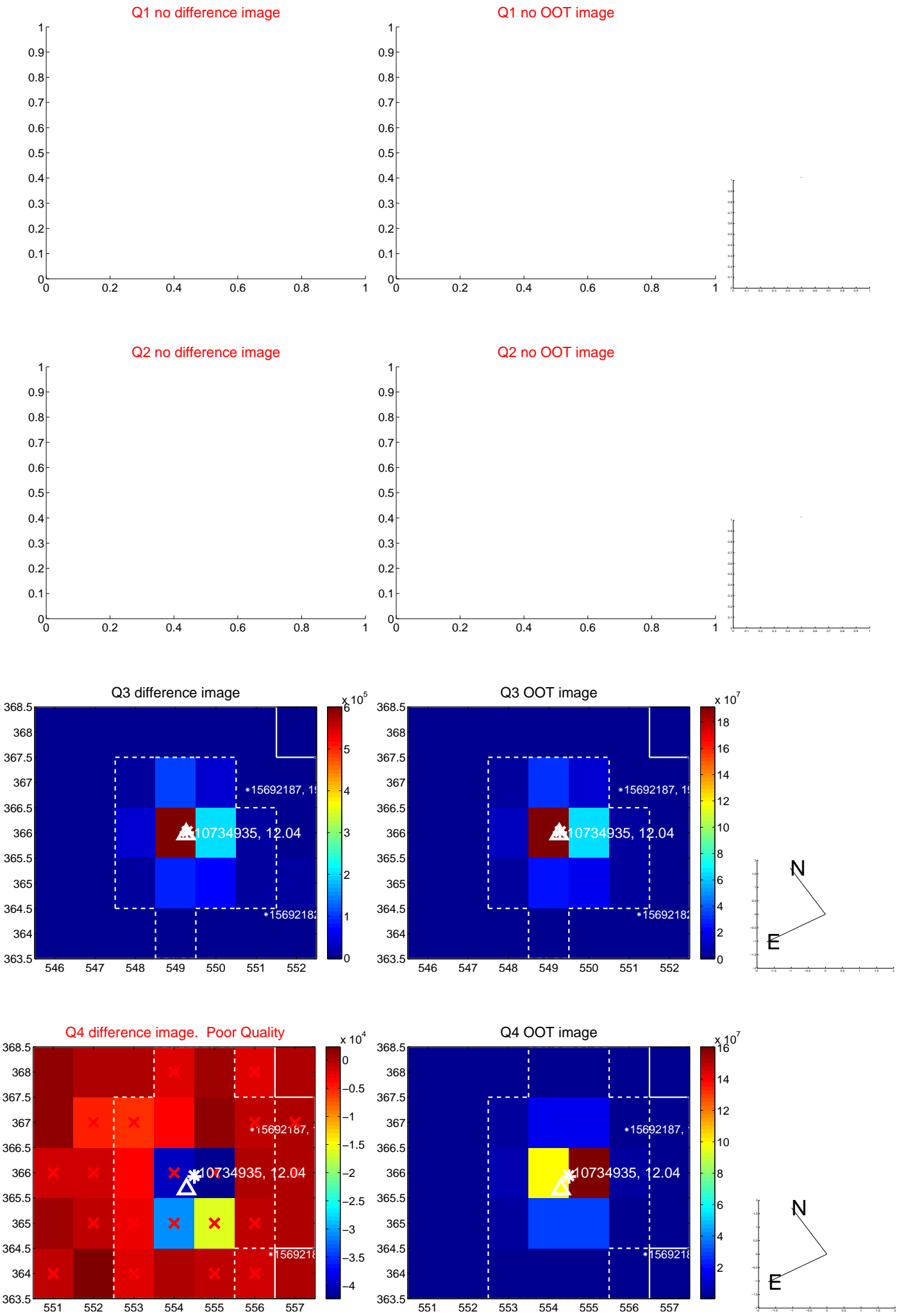
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.108 \pm 0.252$	0.43	$0.049 \pm 0.163$	$-0.096 \pm 0.259$
PRF-fit source offset from KIC position	$0.169 \pm 0.241$	0.70	$0.100 \pm 0.160$	$-0.136 \pm 0.258$
photometric centroid source offset	$0.72 \pm 0.53$	1.35	$-0.09 \pm 0.54$	$-0.71 \pm 0.53$

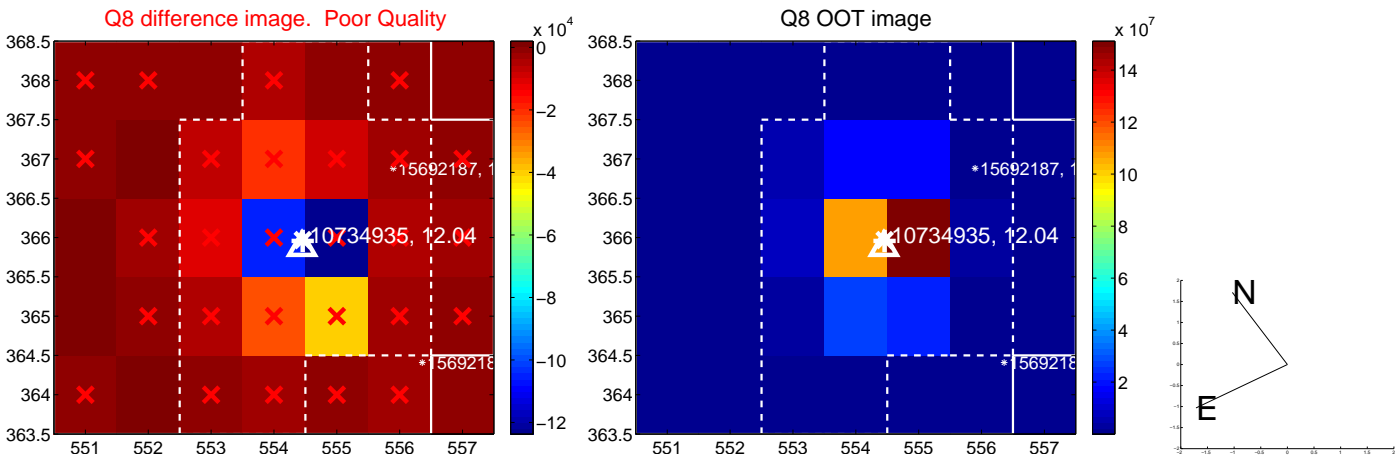
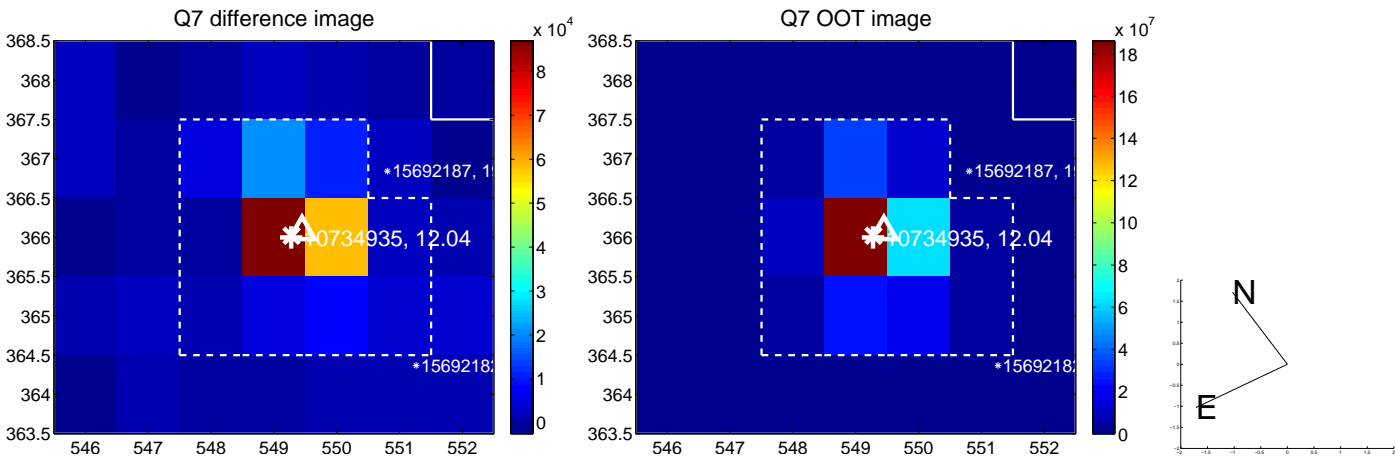
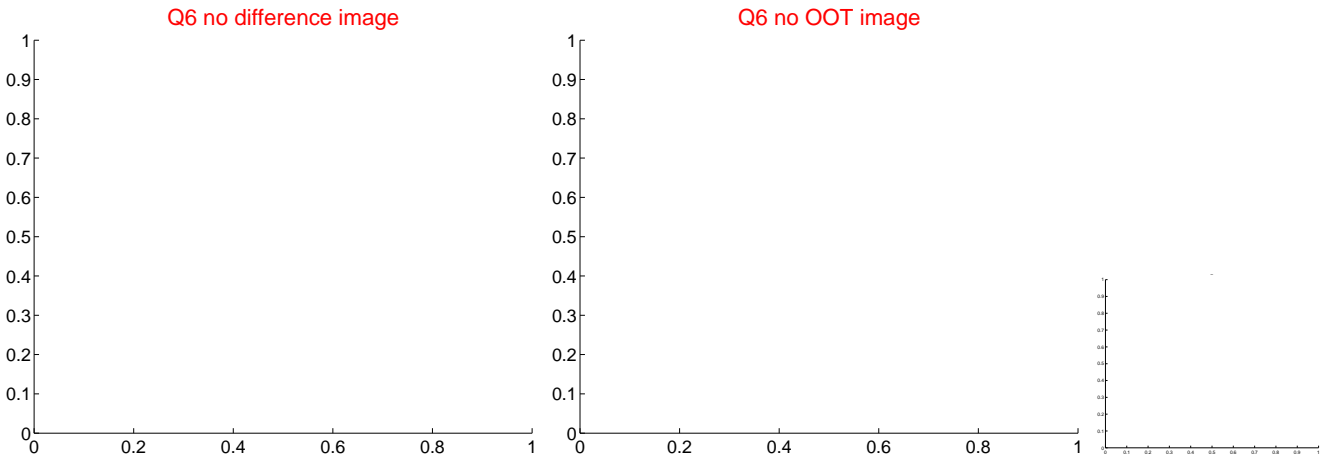
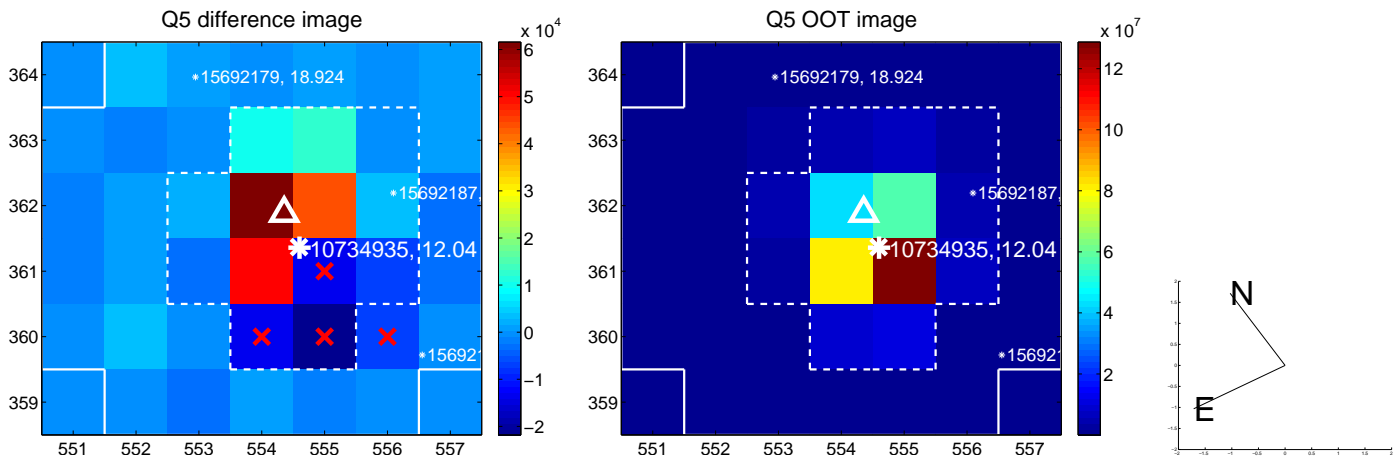


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

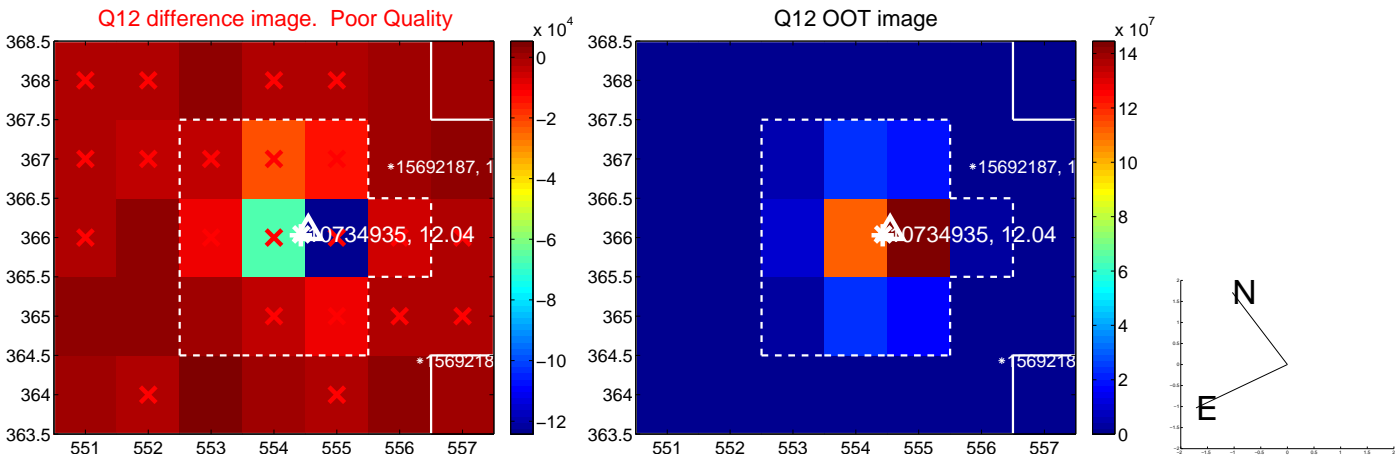
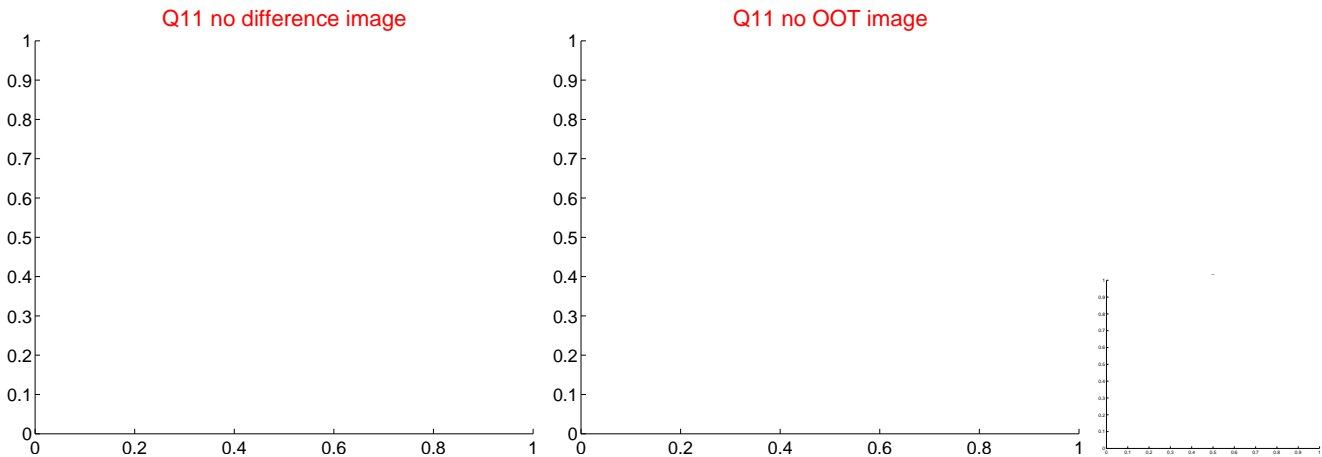
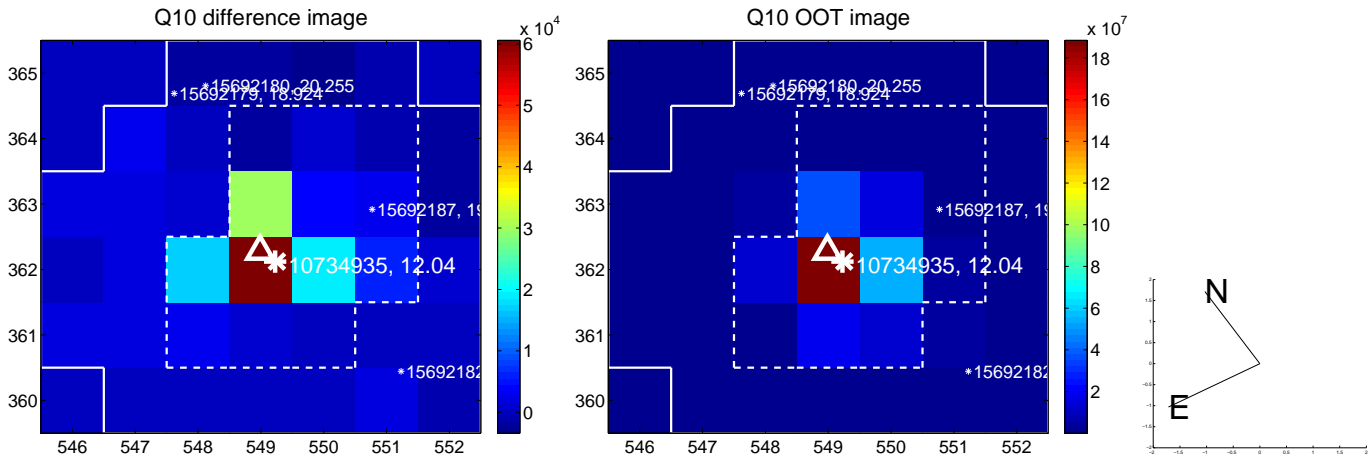
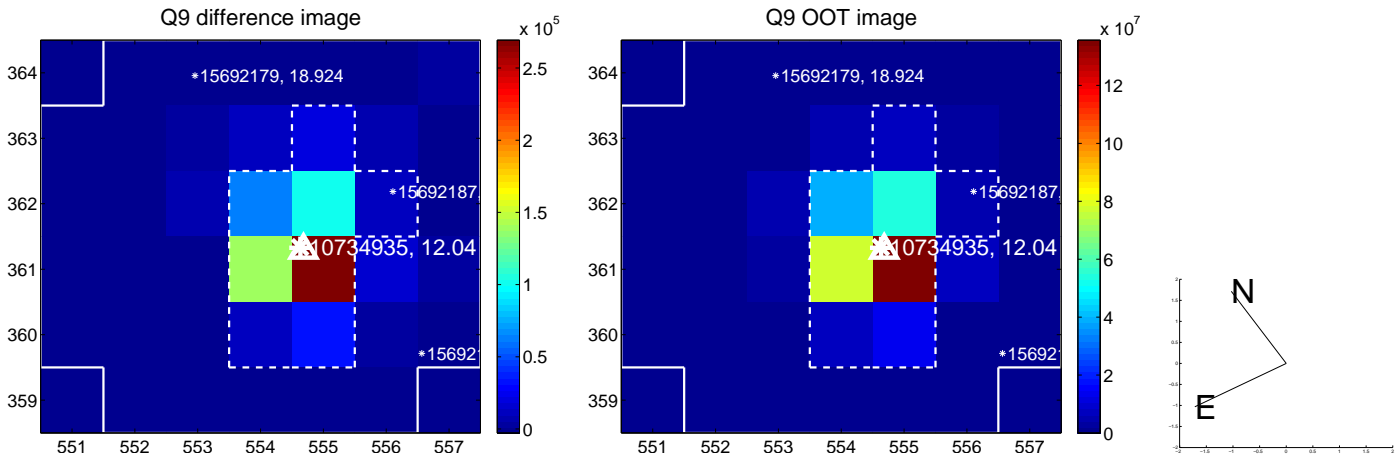
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



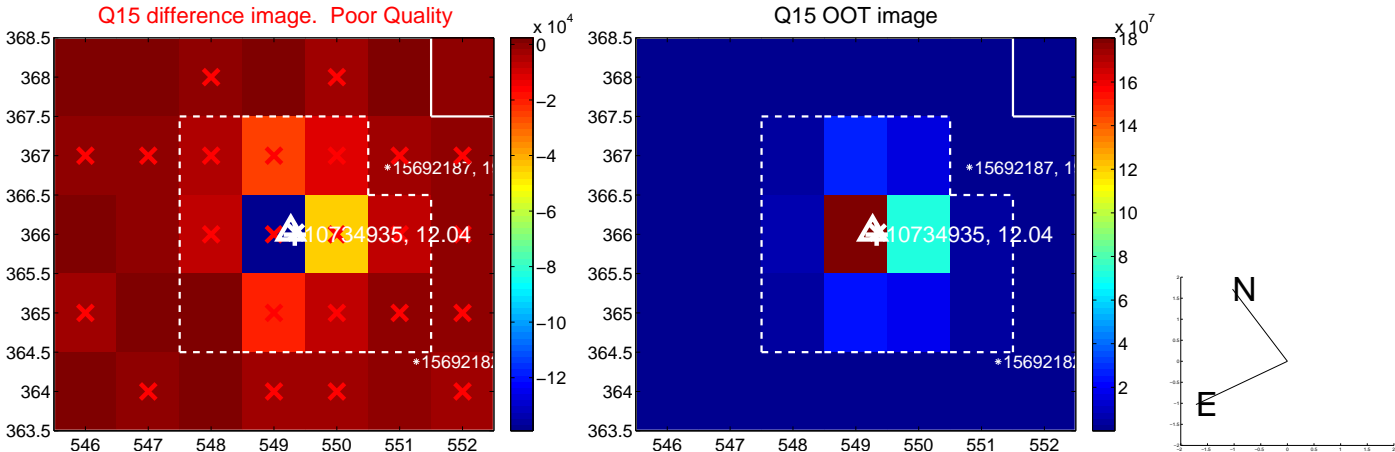
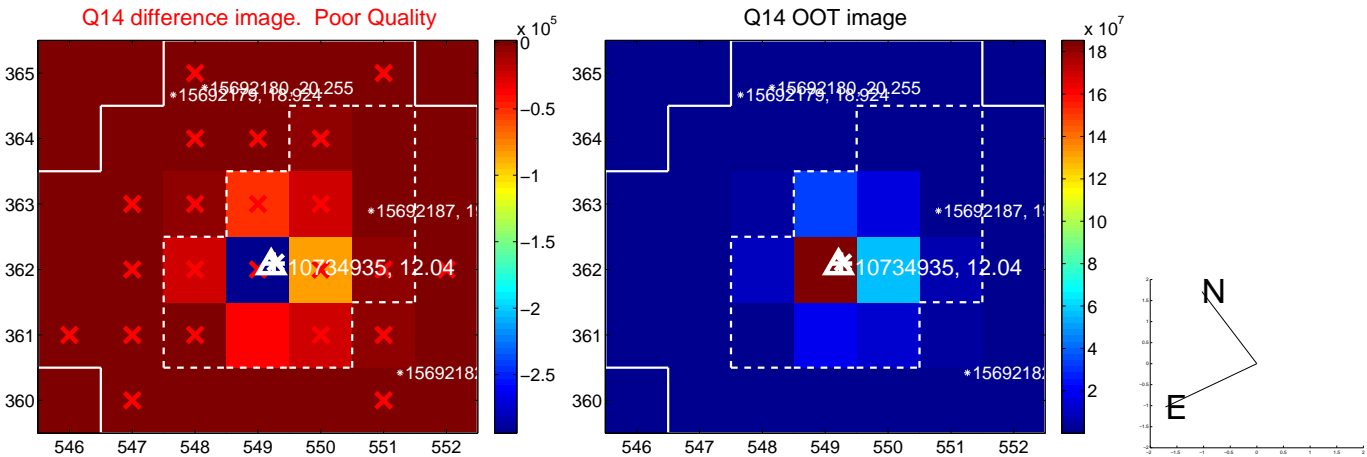
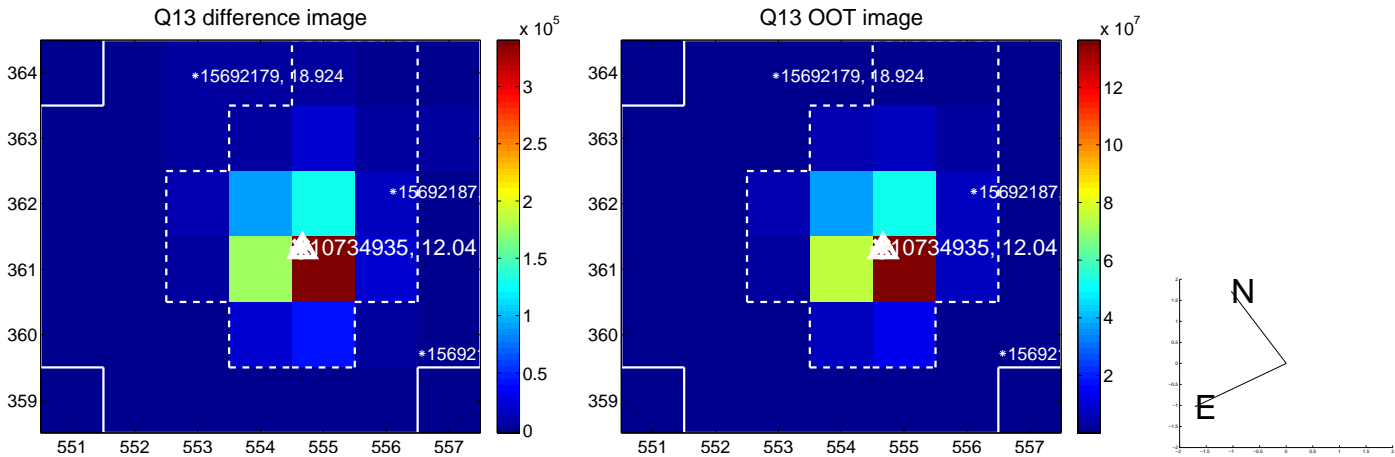
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

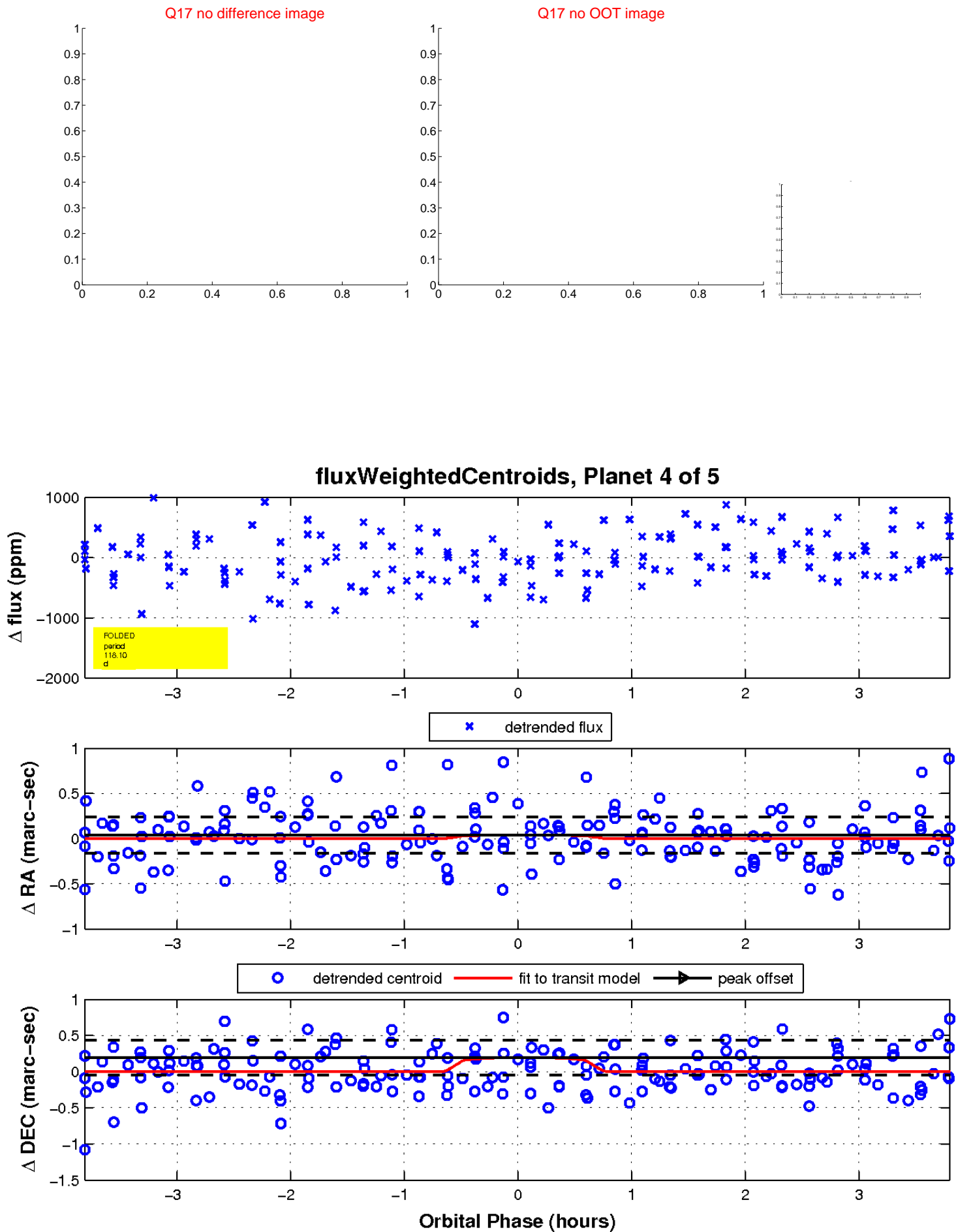


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



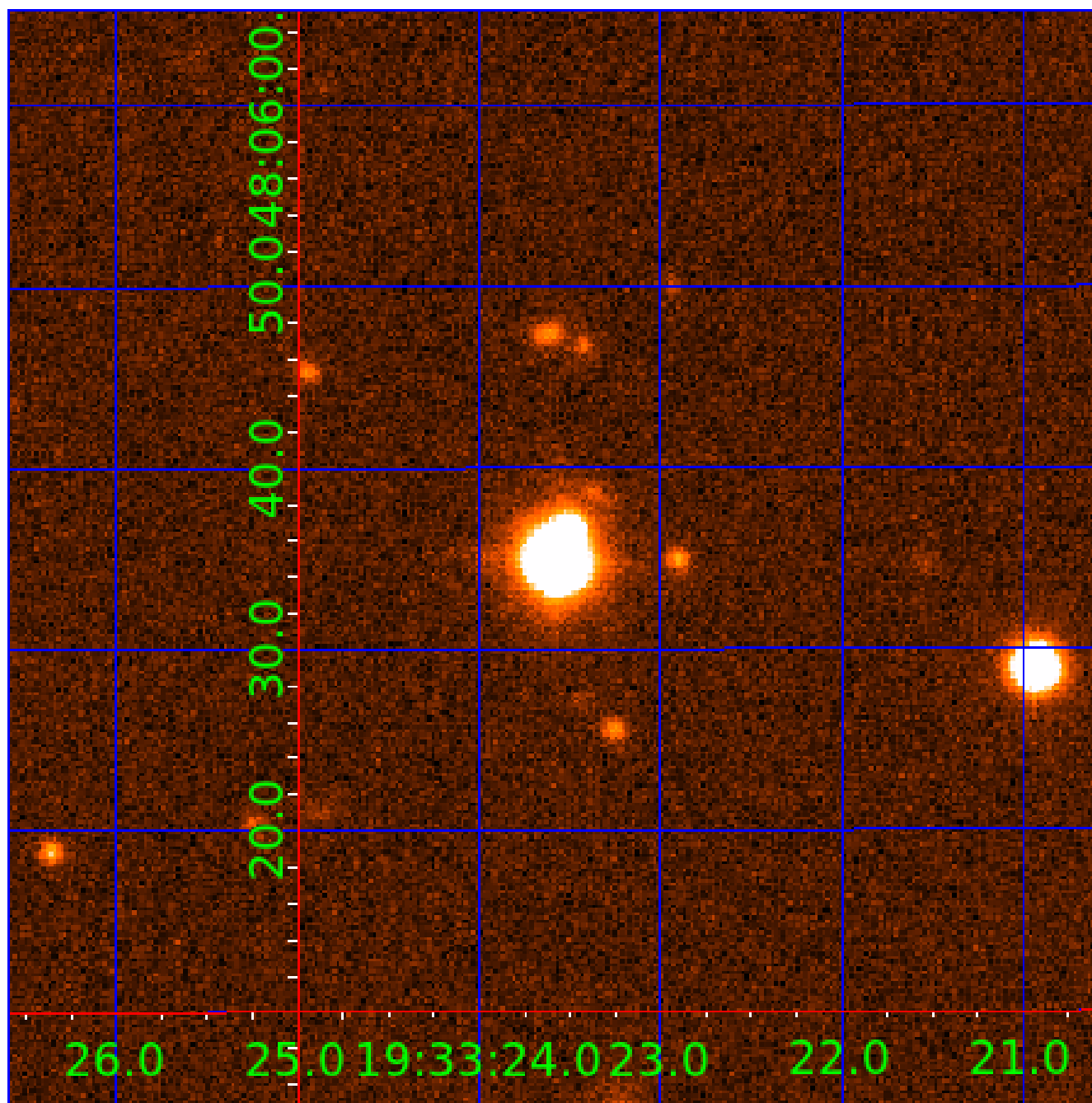


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 010734935

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010734935-01	OBS	No	0.654990	132.067806	37.1	1.688	13.8	7.1	3.40	7883	2.41	113389.71
010734935-02	OBS	No	0.654999	131.596550	75.9	2.176	13.9	14.5	3.40	7883	3.44	113387.69
010734935-03	OBS	No	103.778648	179.992030	883.3	5.279	9.4	7.9	3.40	7883	12.57	132.25
010734935-04	OBS	No	118.102871	167.313602	298.6	1.292	8.1	2.7	3.40	7883	6.33	111.31
010734935-05	OBS	No	19.639729	132.072591	538.3	4.025	8.5	9.6	3.40	7883	11.43	1217.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010734935-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010734935-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
010734935-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010734935-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

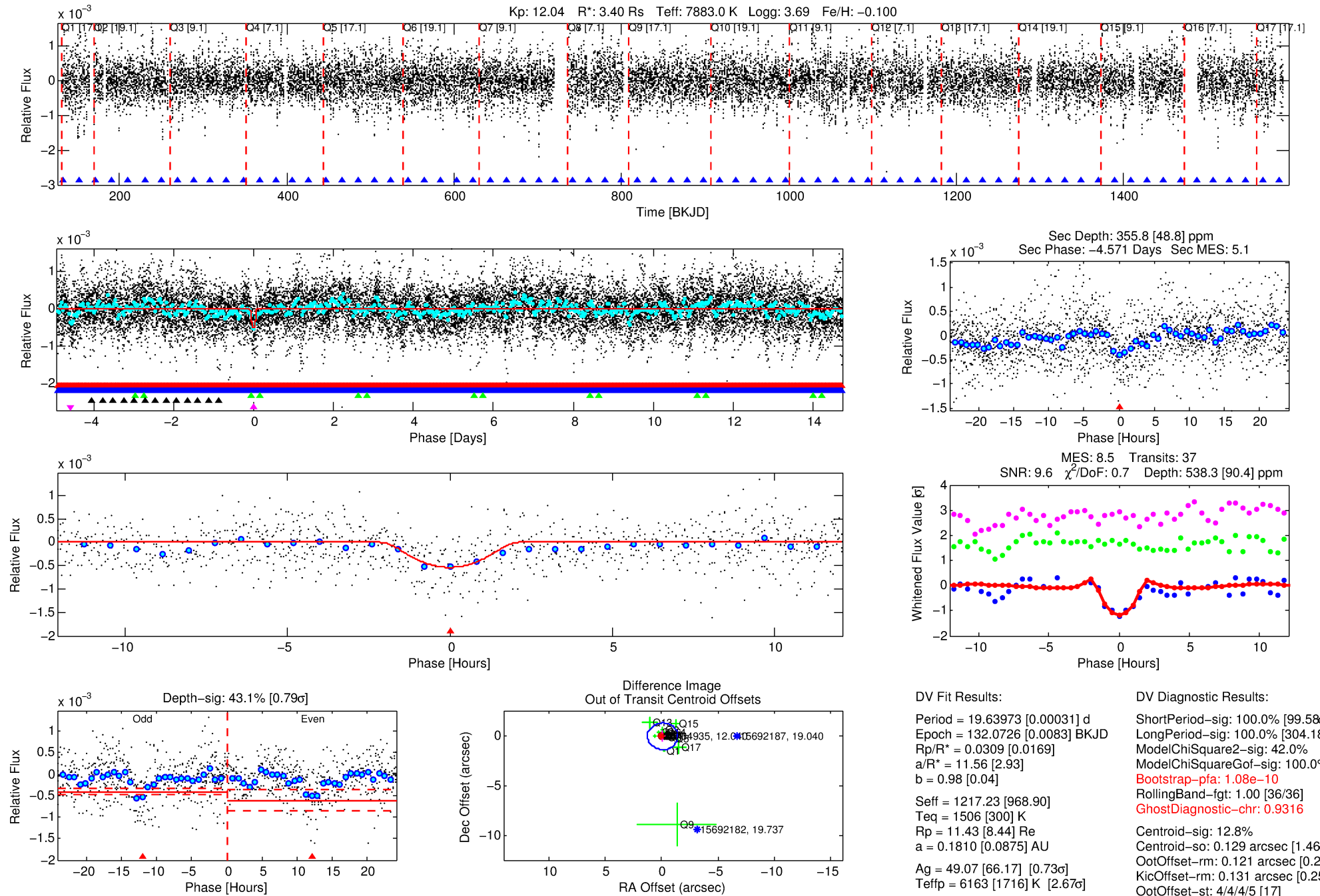
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010734935-05

No Significant Match Found

# DV One-Page Summary

KIC: 10734935 Candidate: 5 of 5 Period: 19.640 d



## DV Fit Results:

Period = 19.63973 [0.00031] d  
Epoch = 132.0726 [0.0083] BKJD  
Rp/R\* = 0.0309 [0.0169]  
a/R\* = 11.56 [2.93]  
b = 0.98 [0.04]  
Seff = 1217.23 [968.90]  
Teff = 1506 [300] K  
Rp = 11.43 [8.44] Re  
a = 0.1810 [0.0875] AU  
Ag = 49.07 [66.17] [0.73 $\sigma$ ]  
Teffp = 6163 [1716] K [2.67 $\sigma$ ]

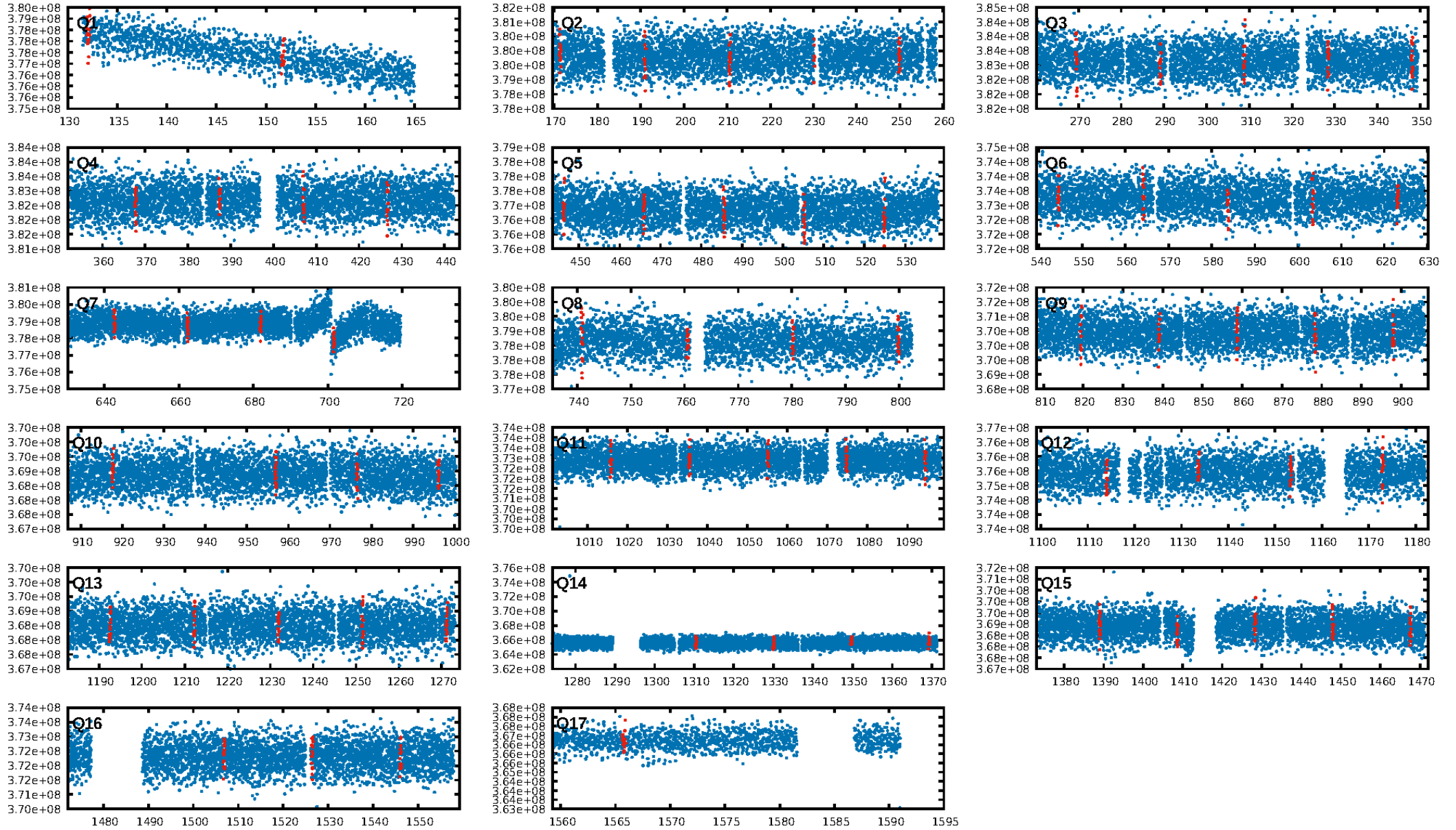
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [99.58 $\sigma$ ]  
LongPeriod-sig: 100.0% [304.18 $\sigma$ ]  
ModelChiSquare2-sig: 42.0%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 1.08e-10**  
RollingBand-fgt: 1.00 [36/36]  
**GhostDiagnostic-chr: 0.9316**  
Centroid-sig: 12.8%  
Centroid-so: 0.129 arcsec [1.46 $\sigma$ ]  
OotOffset-rm: 0.121 arcsec [0.27 $\sigma$ ]  
KicOffset-rm: 0.131 arcsec [0.25 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.65 [11/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:05:01 Z

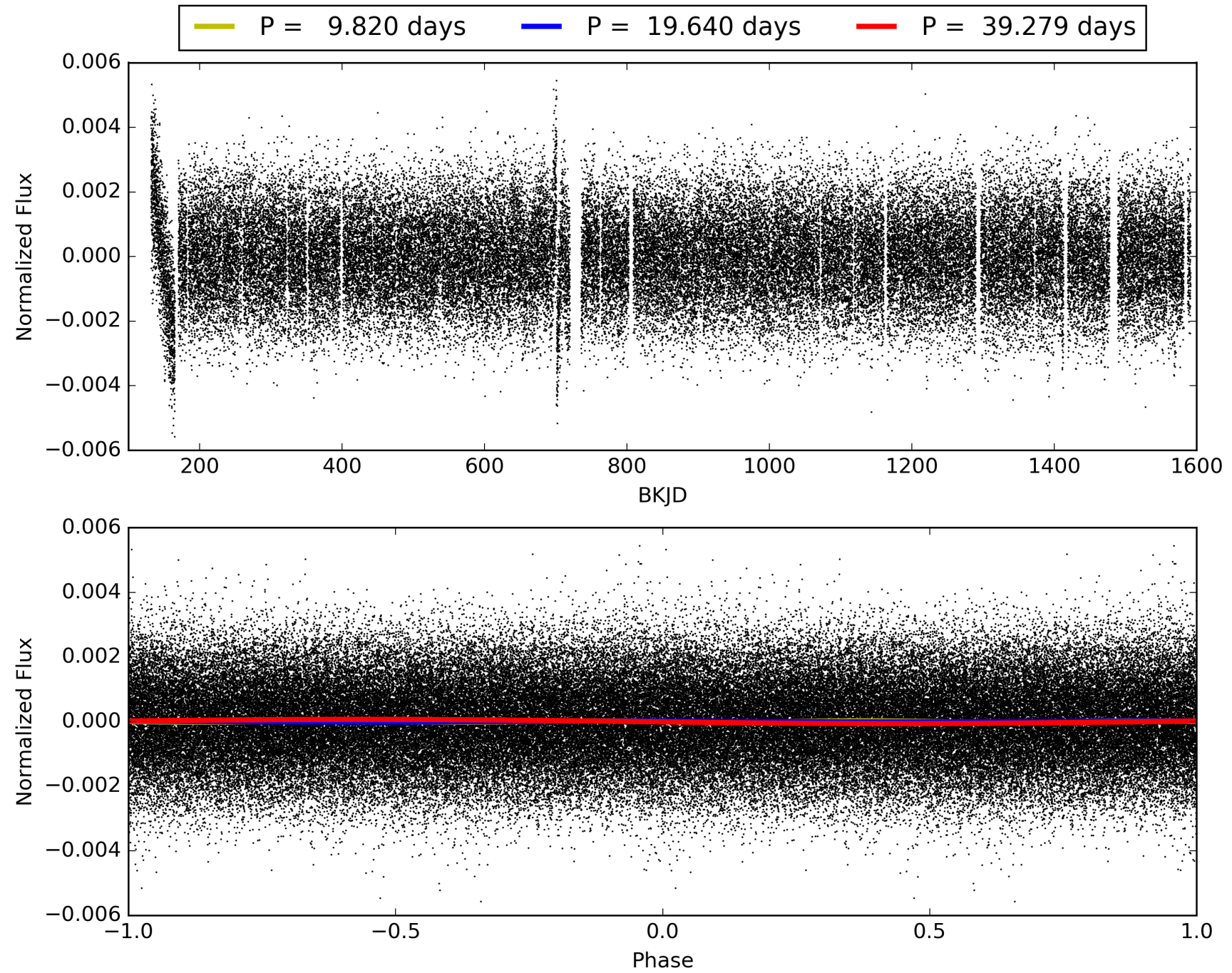
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 010734935-05, PDC Light Curves





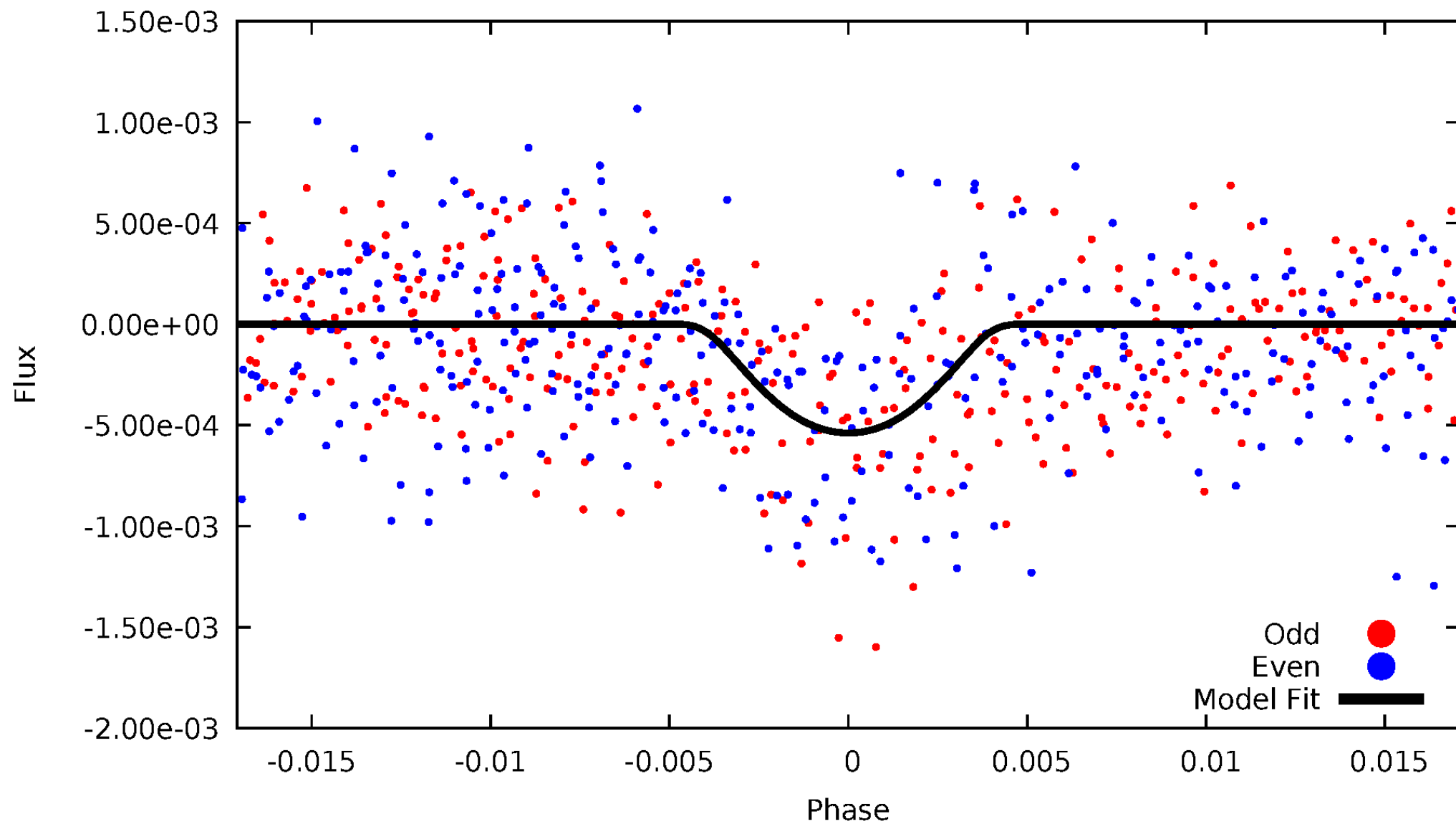
TCE 010734935-05





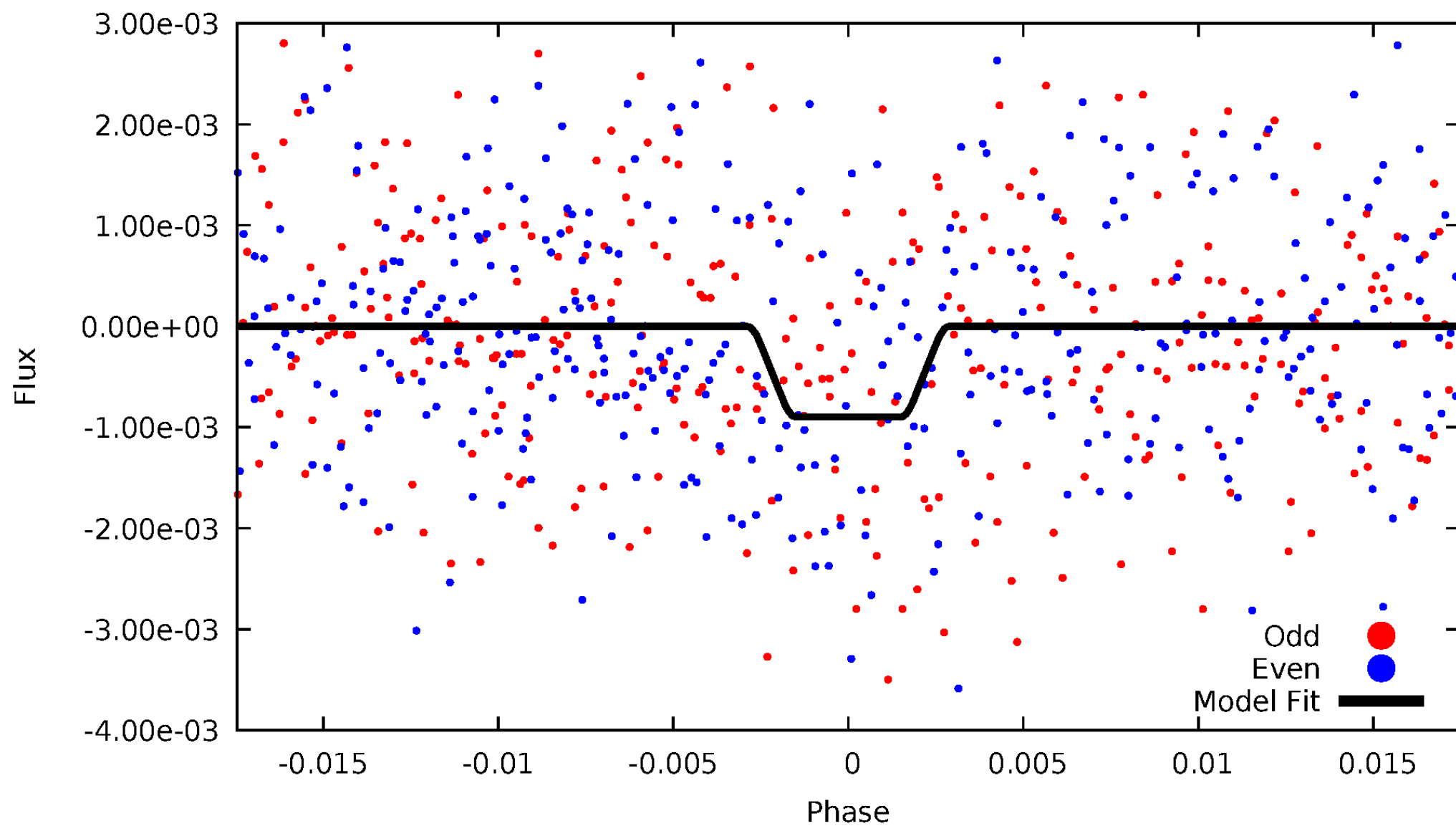
# DV Odd/Even

TCE 010734935-05

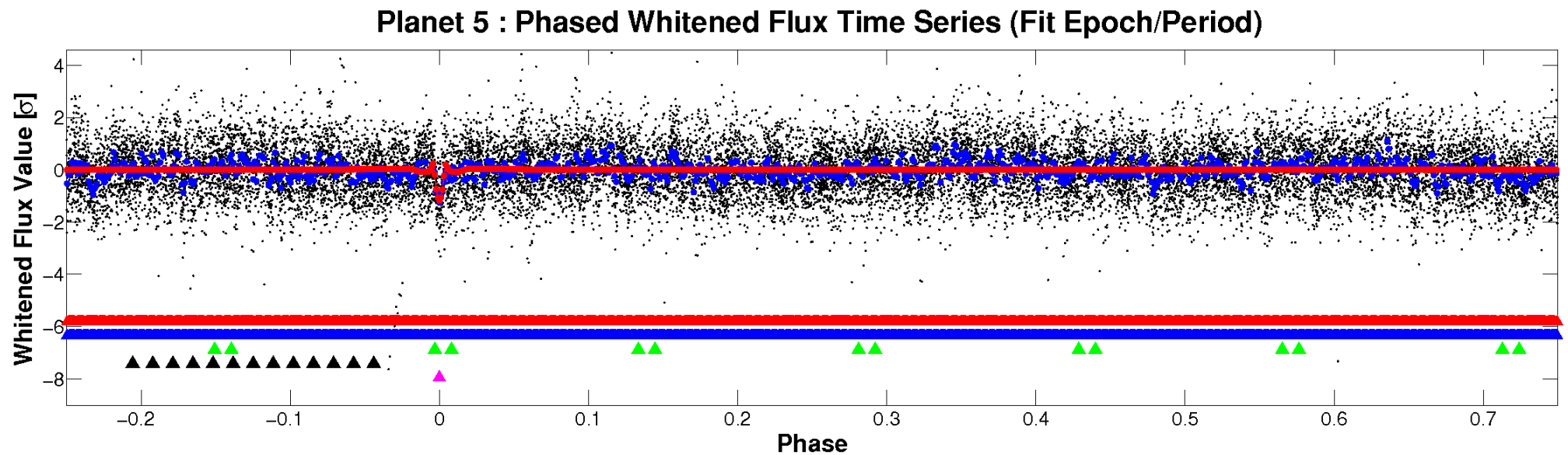
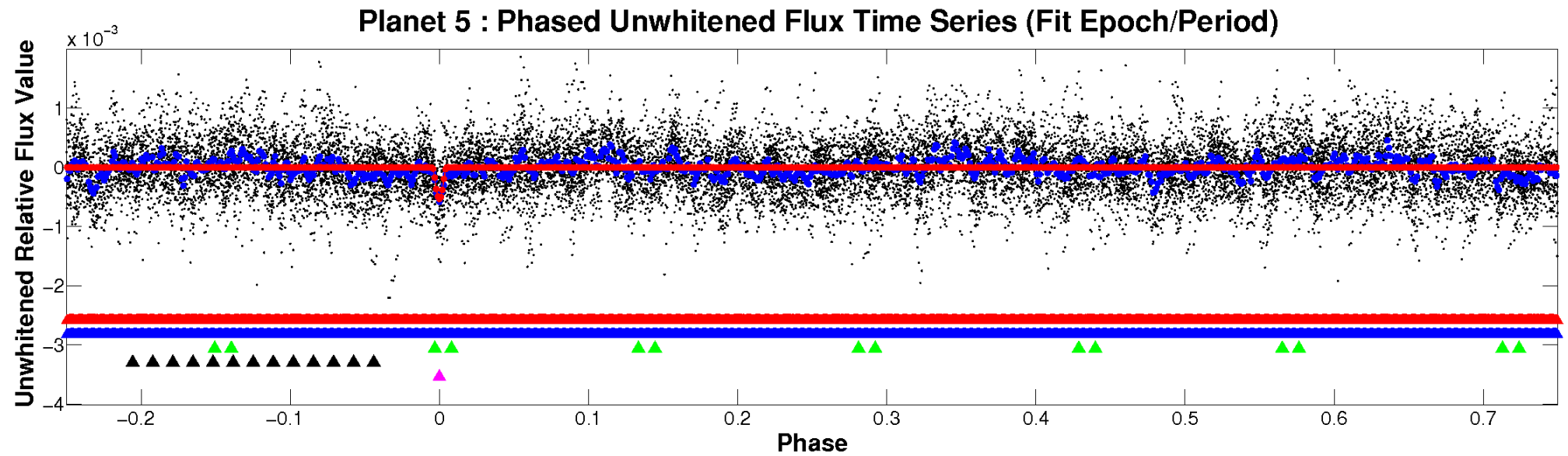


# ALT Odd/Even

TCE 010734935-05

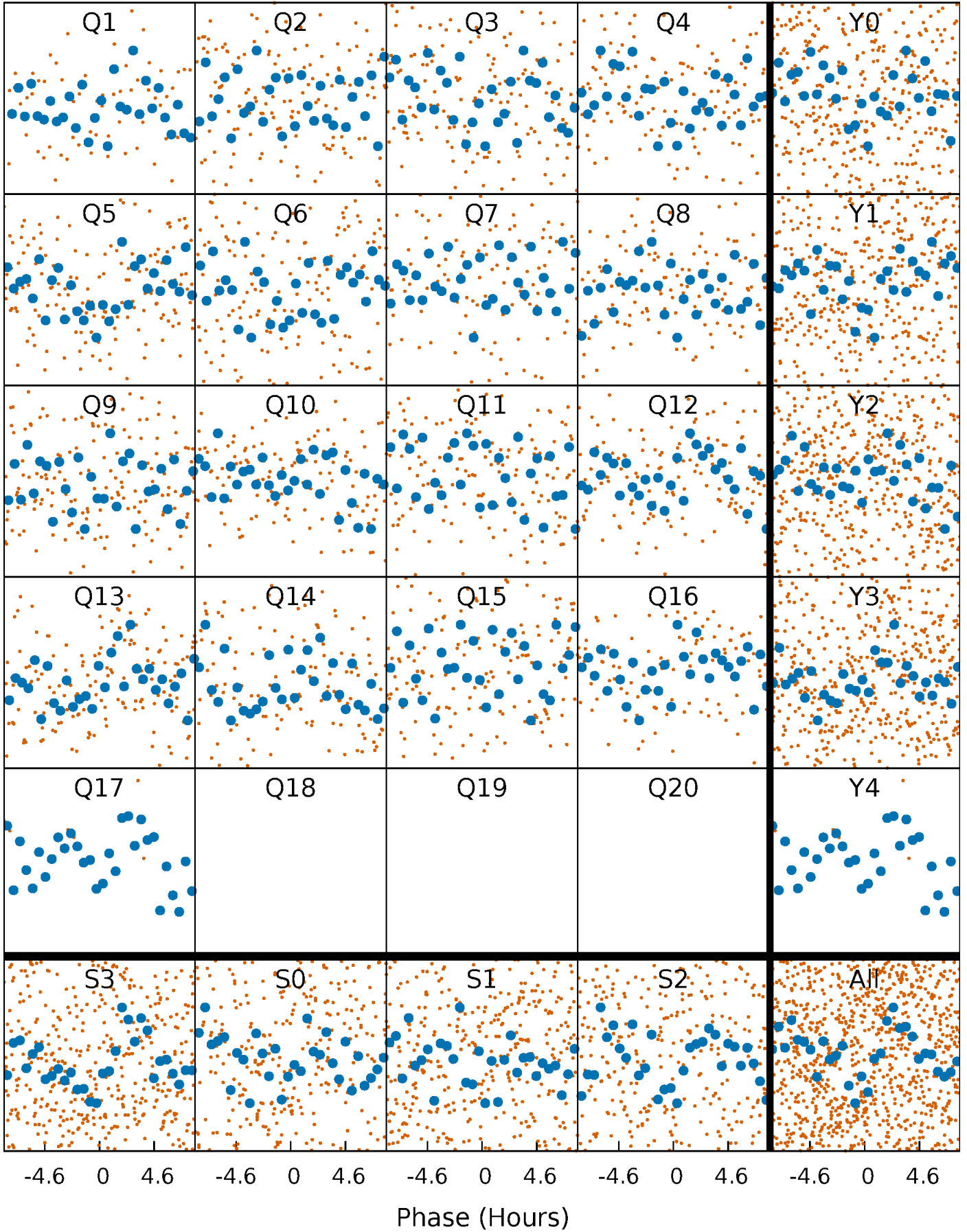


# Non-Whitened Vs. Whitened Light Curve



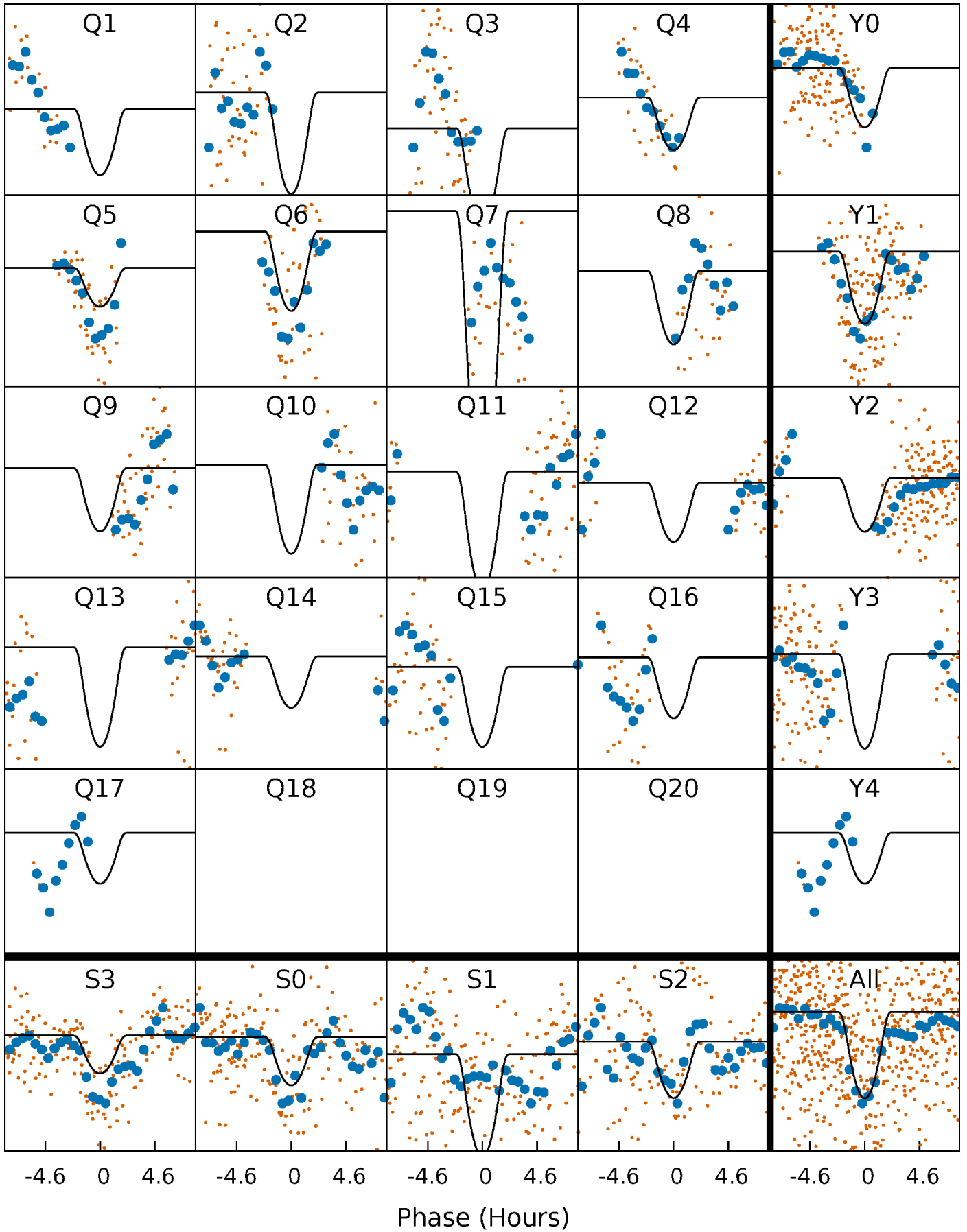
# PDC Quarter-Phased Transit Curves

TCE 010734935-05   P= 19.639729 Days    $T_0=132.072591$  (BKJD)



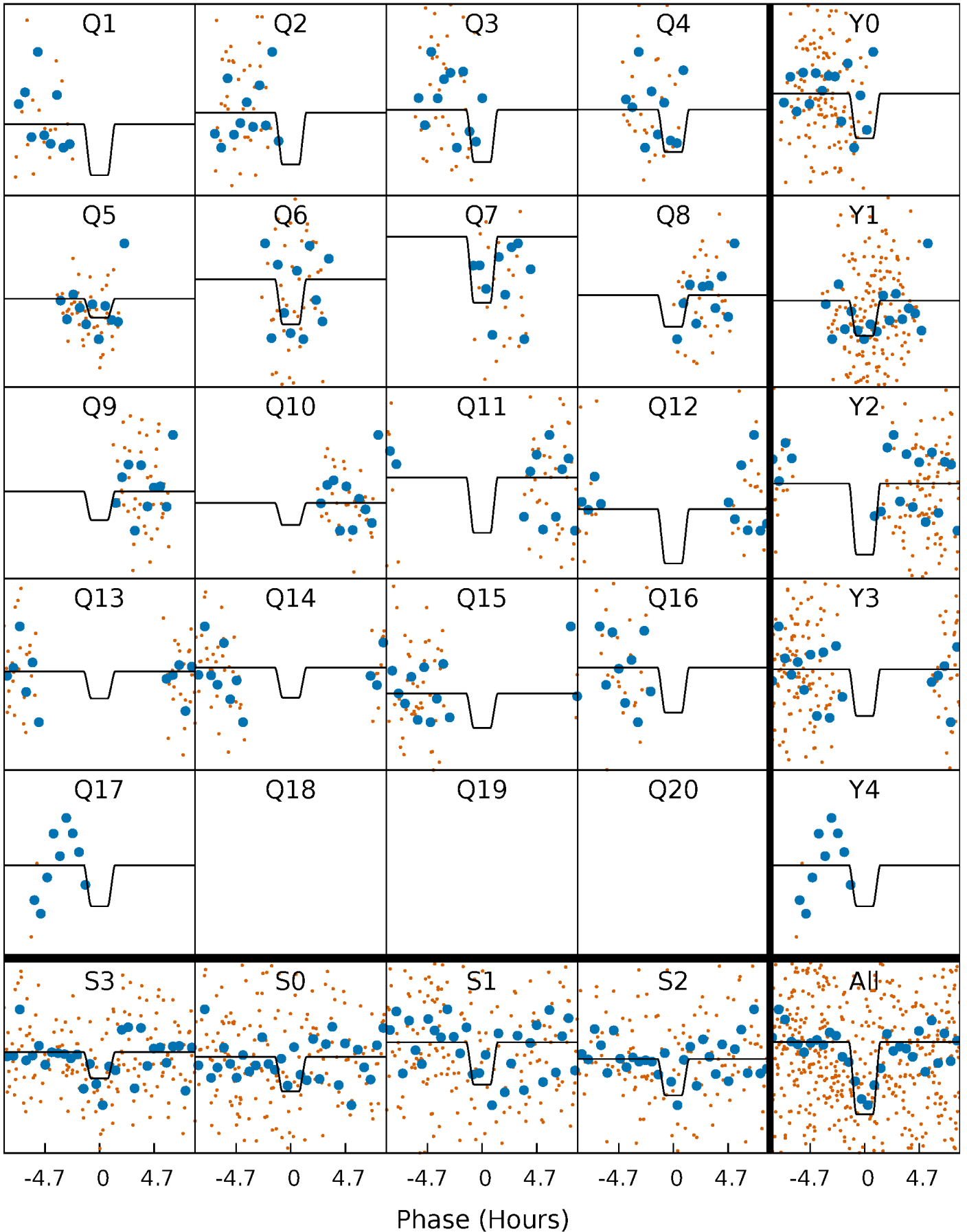
# DV Quarter-Phased Transit Curves

TCE 010734935-05   P= 19.639729 Days    $T_0=132.072591$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010734935-05   P= 19.640131 Days    $T_0=132.055227$  (BKJD)

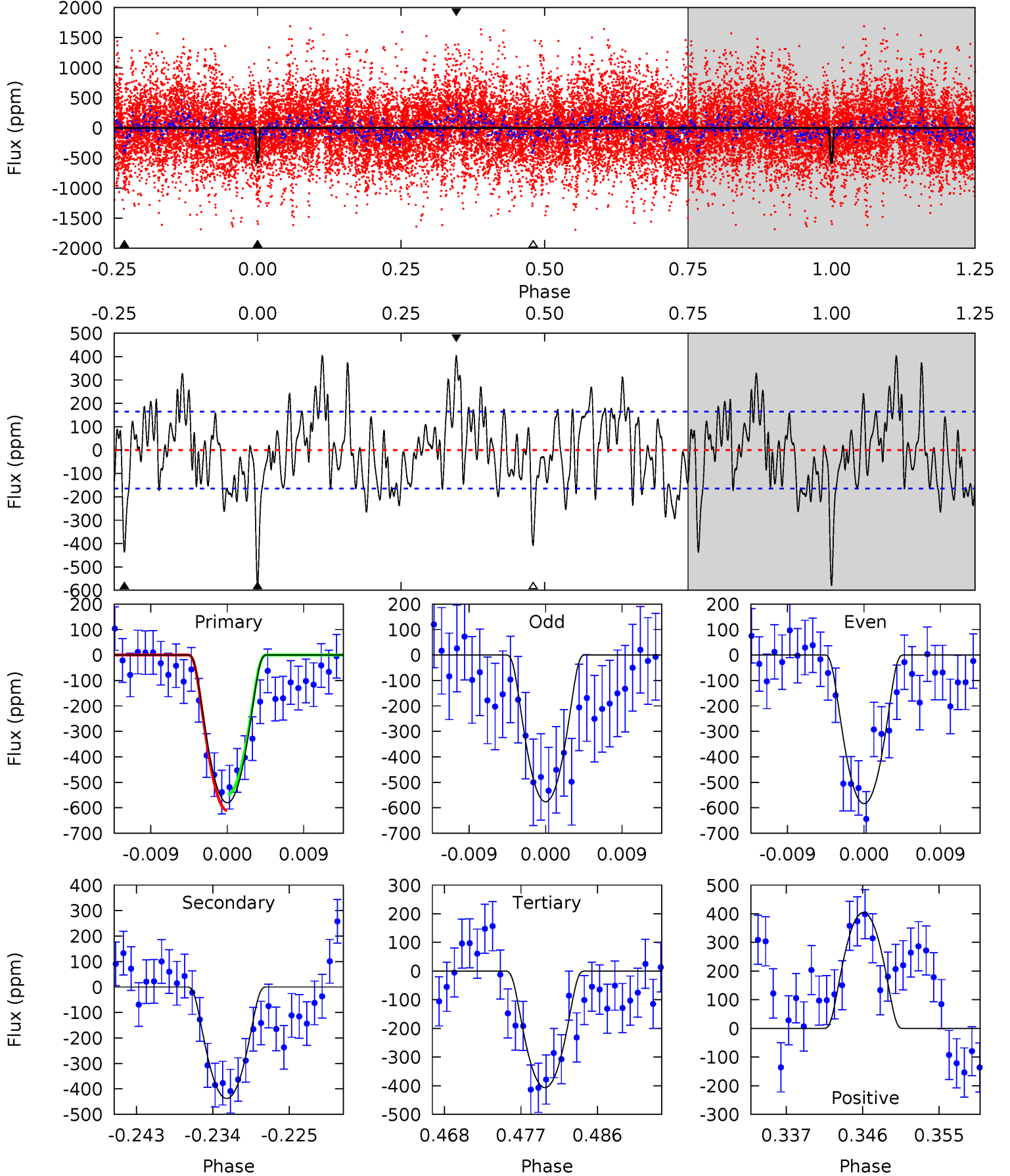




# DV Model-Shift Uniqueness Test

010734935-05, P = 19.639729 Days, E = 112.432862 Days

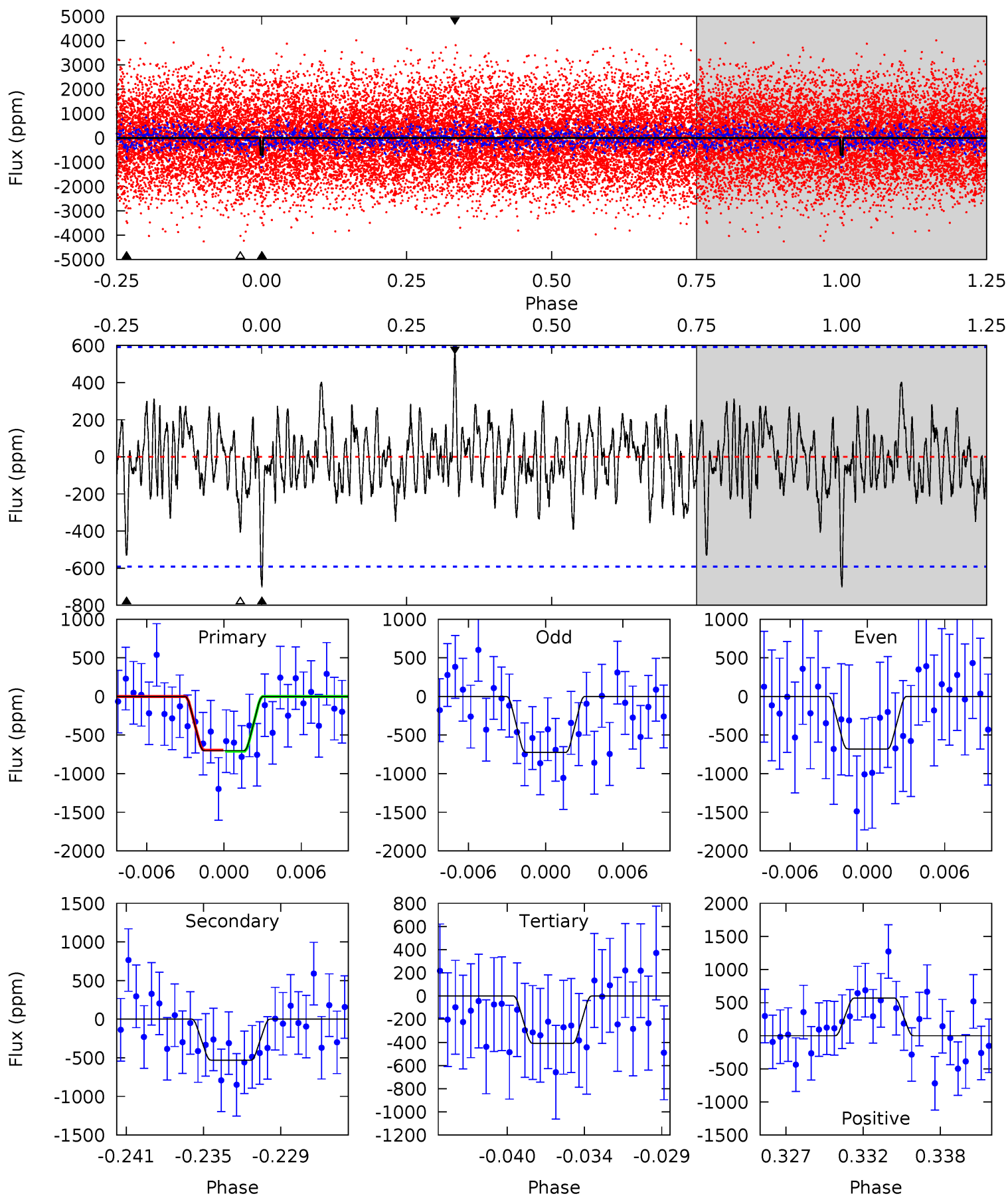
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	13.4	12.5	12.4	5.04	2.60	4.24	5.32	5.39	0.95	1.02	0.11	1.24	0.41	0.94



# Alt Model-Shift Uniqueness Test

010734935-05, P = 19.640131 Days, E = 112.415096 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.10	4.61	3.55	4.95	5.13	2.76	1.26	2.55	1.15	1.06	-0.34	0.20	0.83	0.45	0.07



### Stellar Parameters For KIC 010734935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7883^{+218}_{-327}$	$3.688^{+0.459}_{-0.108}$	$-0.100^{+0.200}_{-0.350}$	$3.395^{+0.674}_{-1.686}$	$2.047^{+0.342}_{-0.513}$	$0.074^{+0.316}_{-0.025}$
	+3%/-4%	+12%/-3%	+200%/-350%	+20%/-50%	+17%/-25%	+428%/-34%
Source	KIC0	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 010734935-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-438 \pm 33$	$10.15^{+6.27}_{-5.42}$	$2045^{+151}_{-269}$	$6383^{+3434}_{-1204}$	$77^{+256}_{-48}$
Alt.	$-532 \pm 115$	$10.11^{+6.68}_{-5.11}$	$2028^{+166}_{-238}$	$6666^{+3614}_{-1348}$	$92^{+289}_{-57}$

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

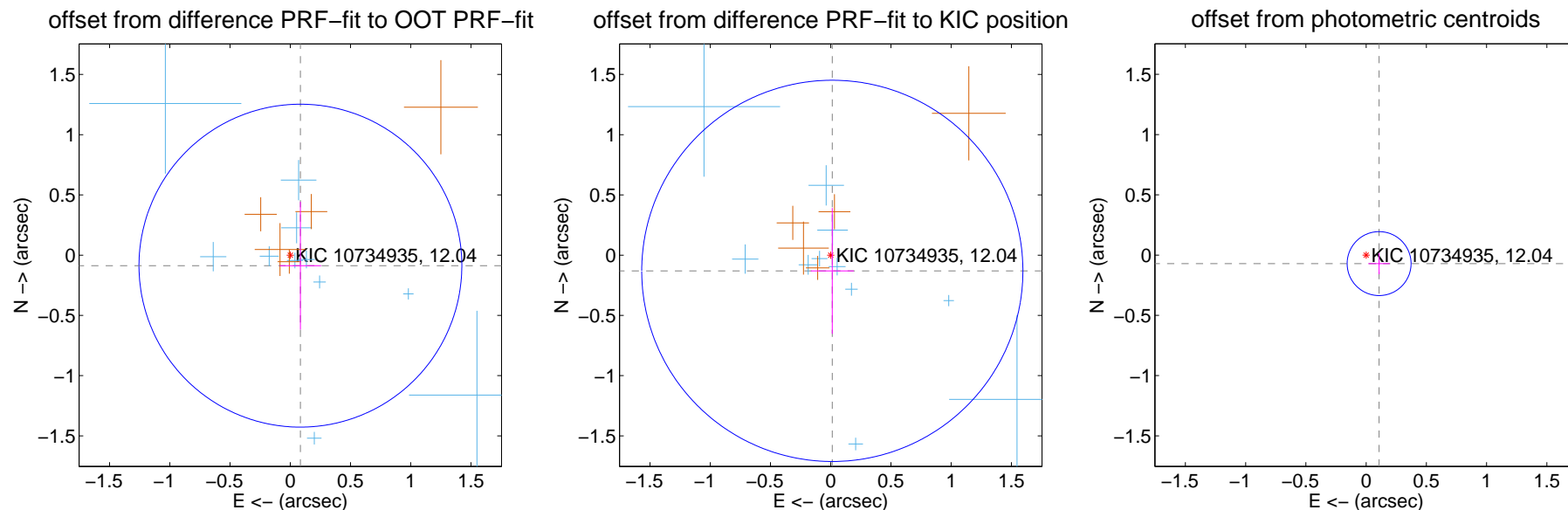
## DV Centroid Data

Supplemental centroid analysis for 010734935-05. Kepler magnitude: 12.04. Transit SNR 9.57

There are 11 quarters with good PRF difference image offsets

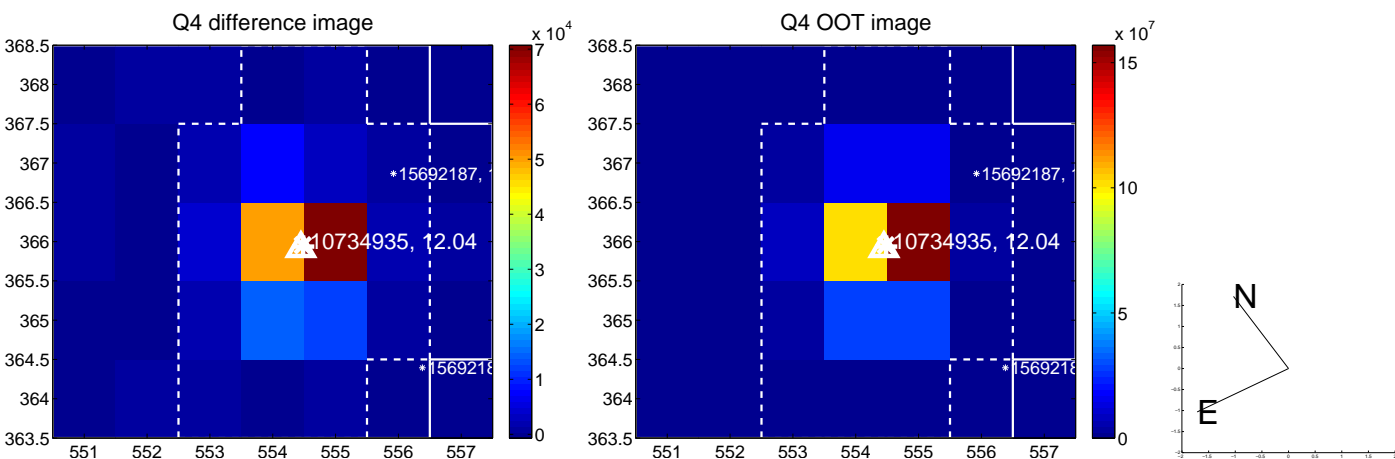
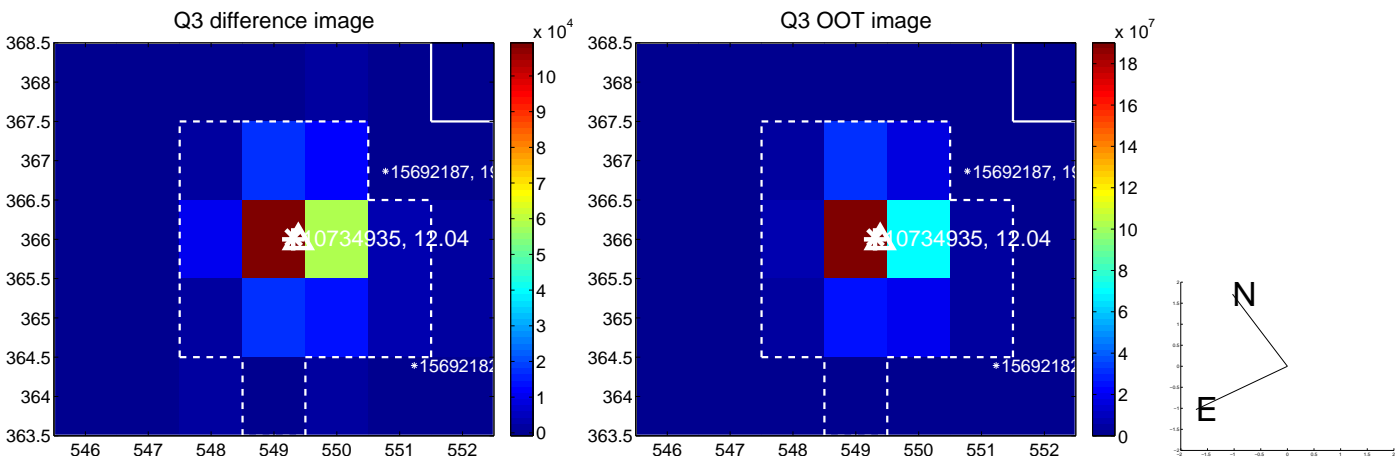
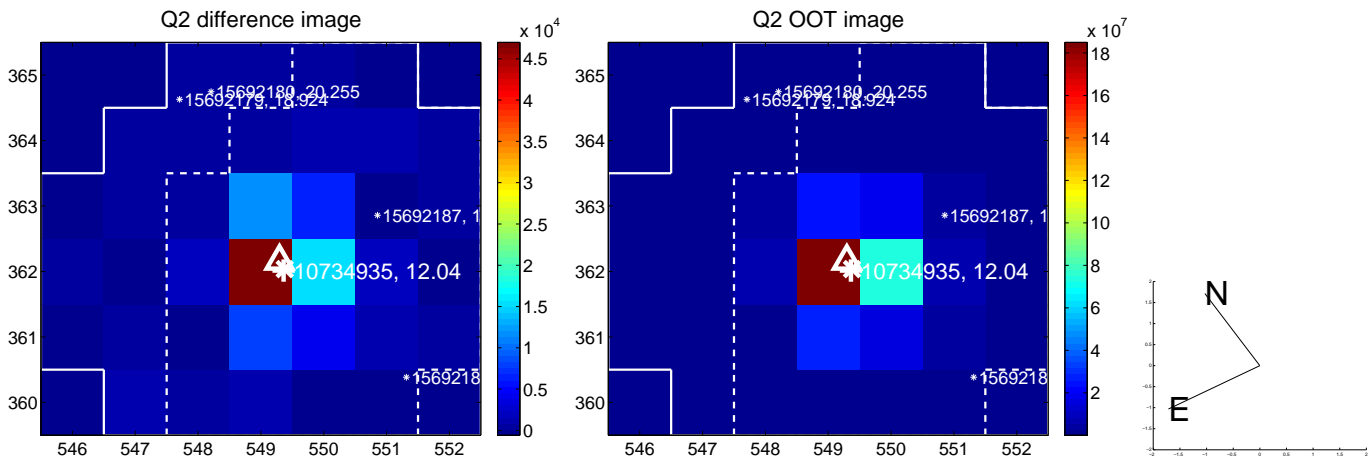
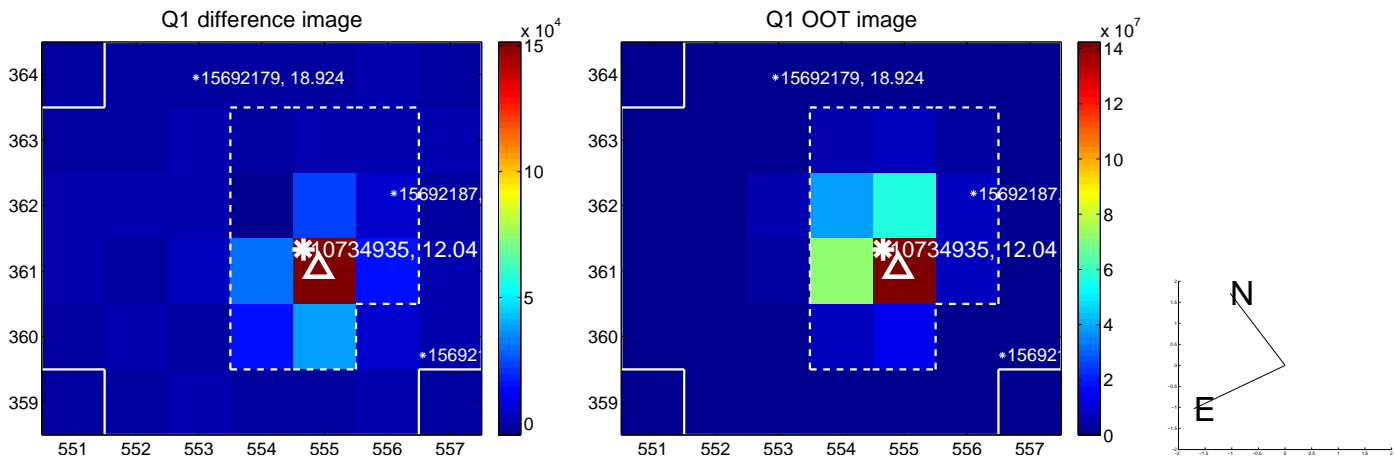
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.121 \pm 0.447$	0.27	$-0.084 \pm 0.172$	$-0.087 \pm 0.530$
PRF-fit source offset from KIC position	$0.131 \pm 0.527$	0.25	$-0.013 \pm 0.178$	$-0.130 \pm 0.522$
photometric centroid source offset	$0.13 \pm 0.09$	1.46	$-0.11 \pm 0.09$	$-0.07 \pm 0.09$

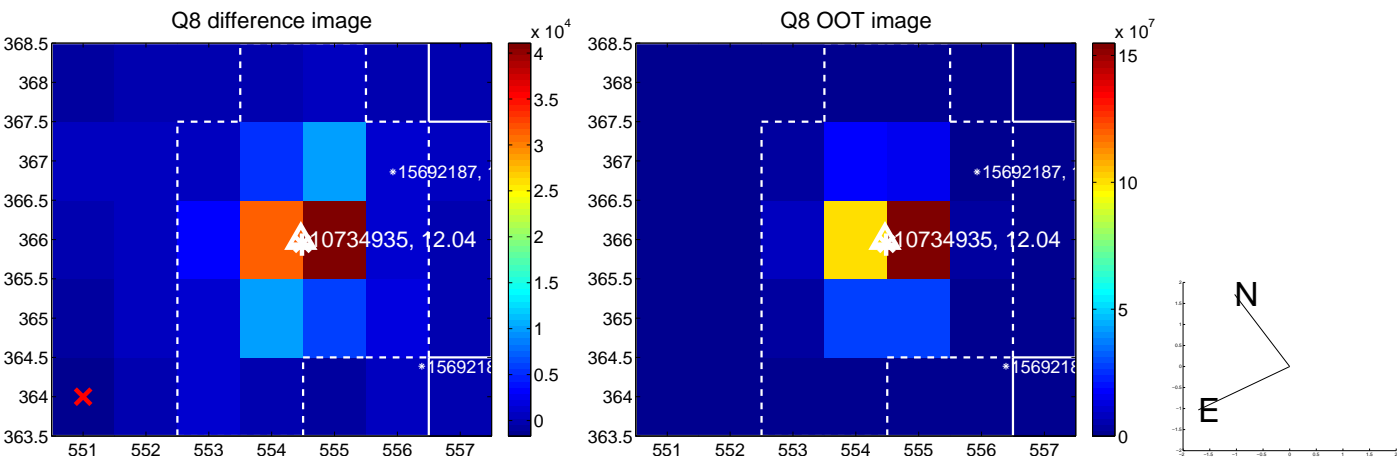
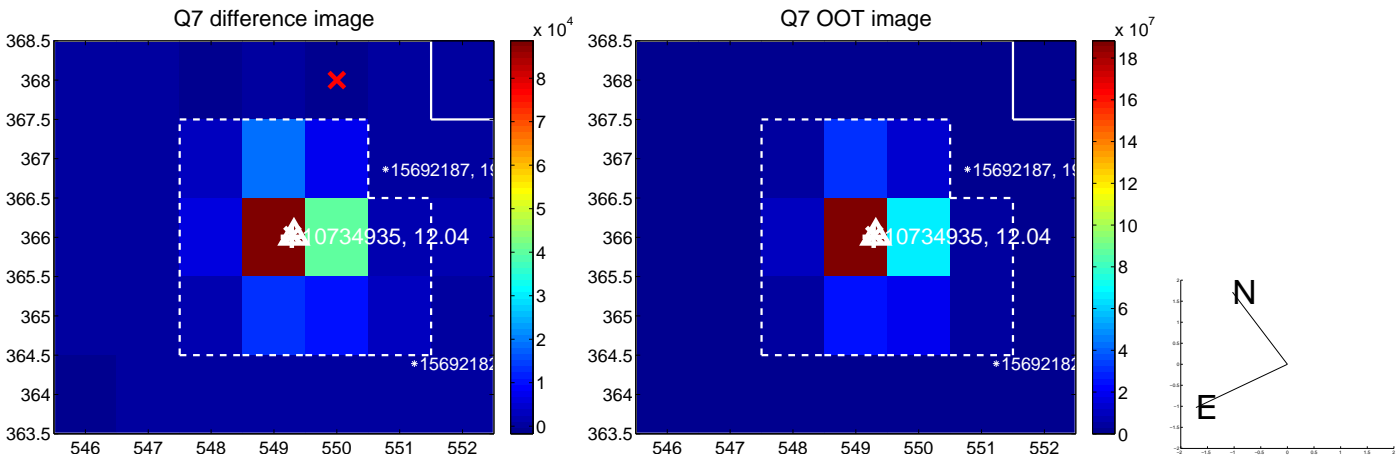
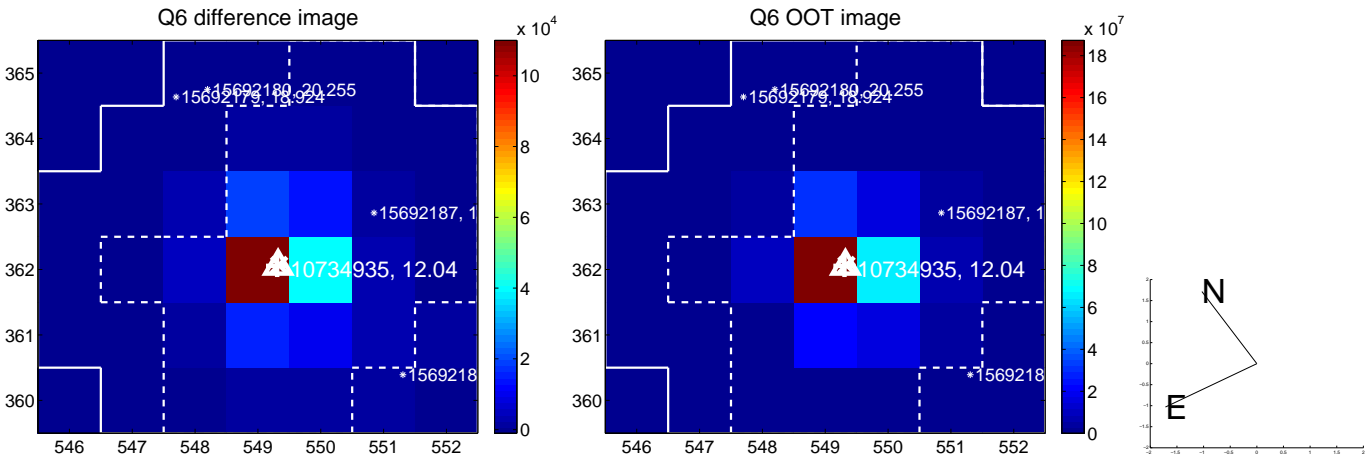
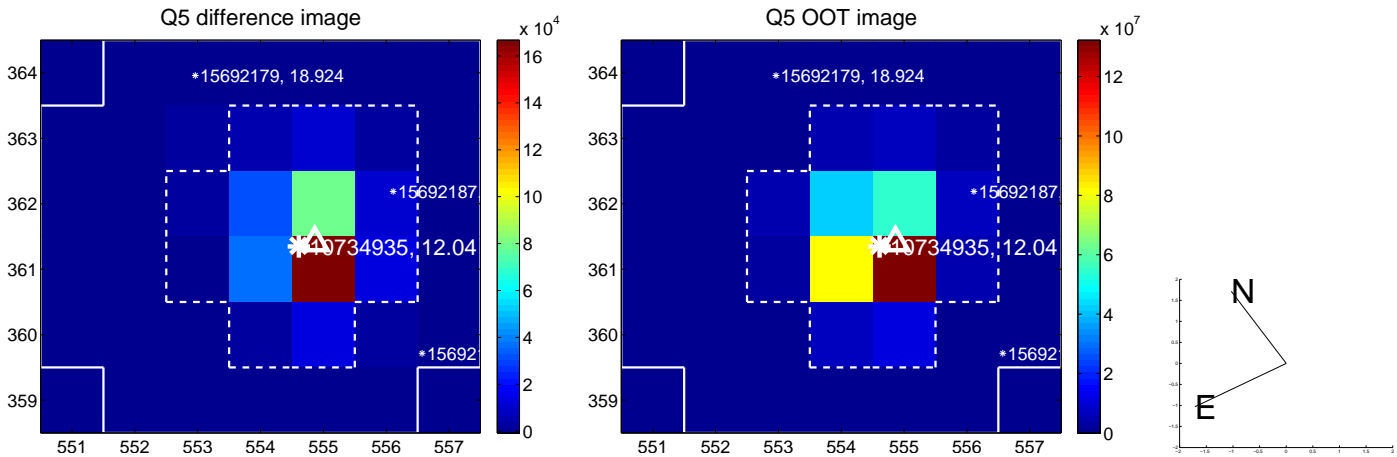


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

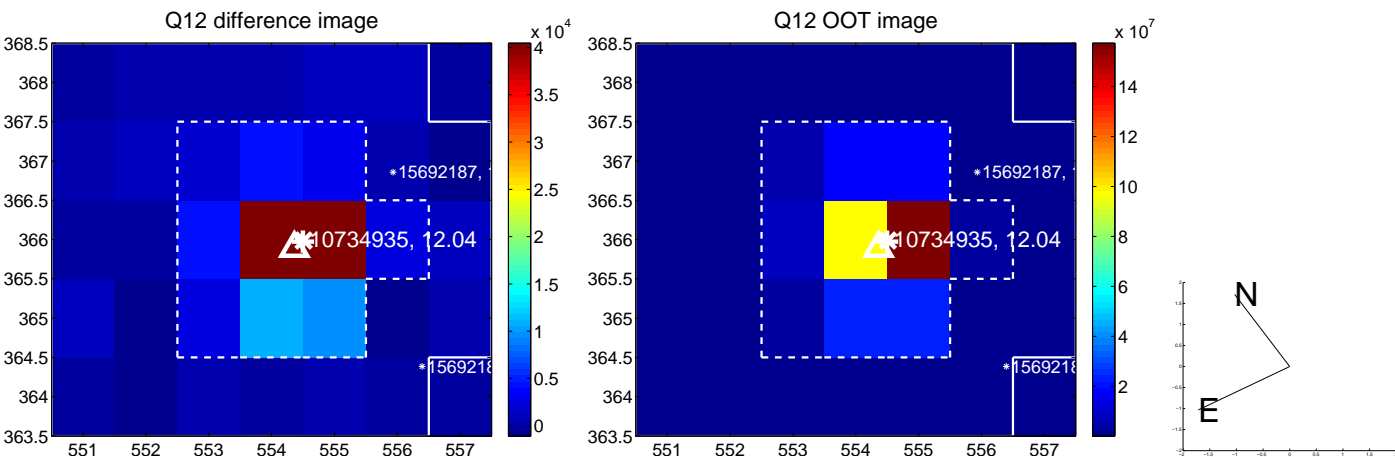
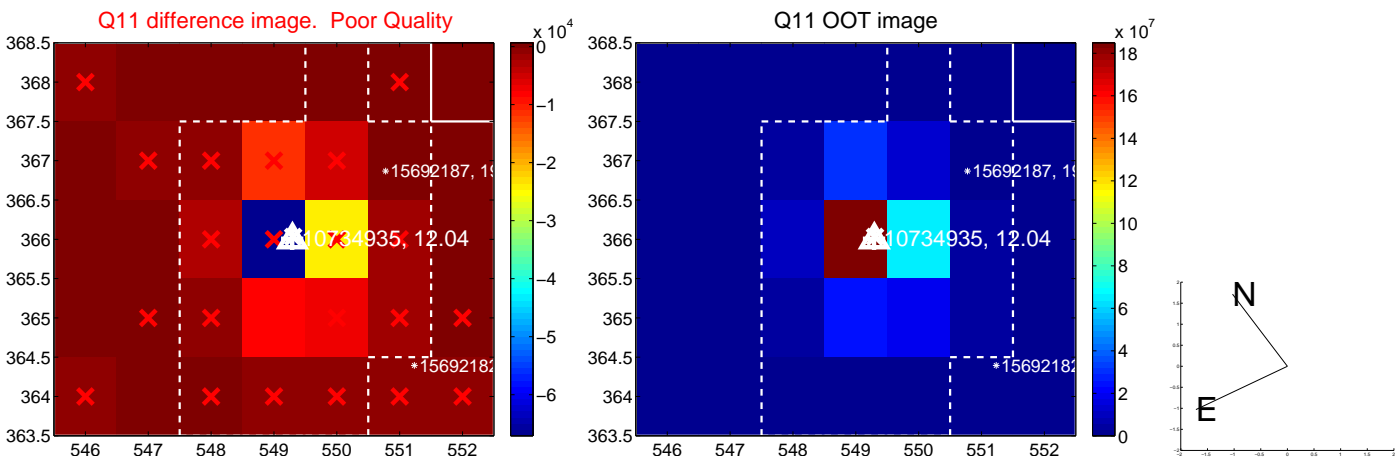
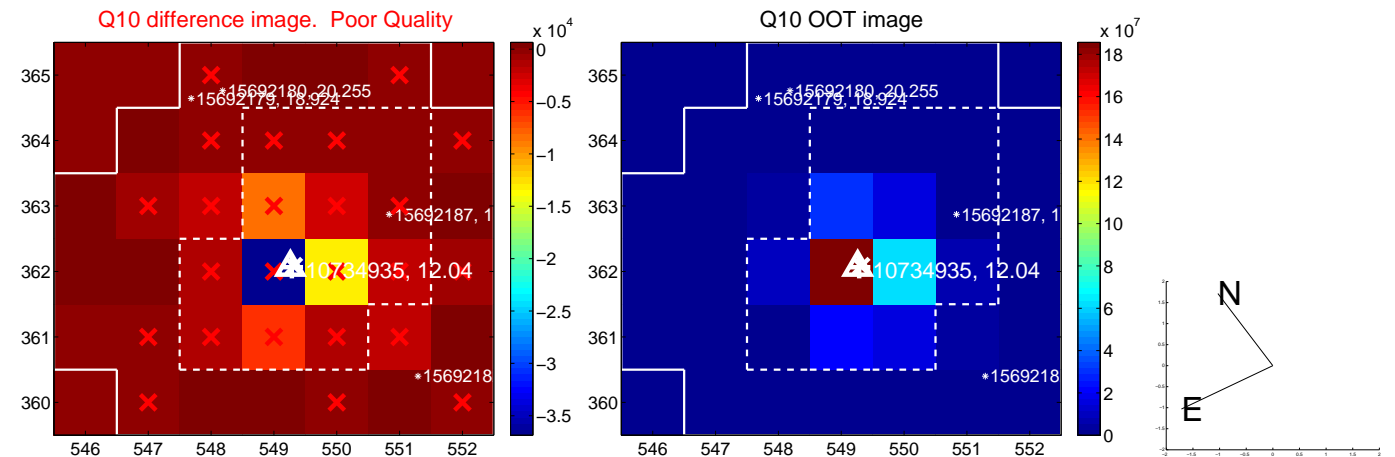
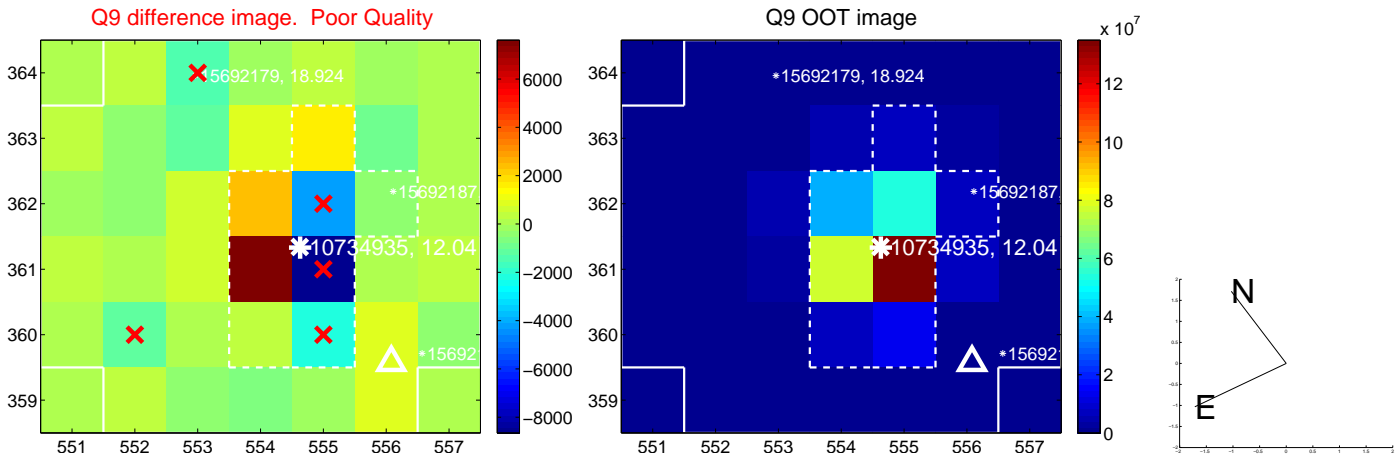


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

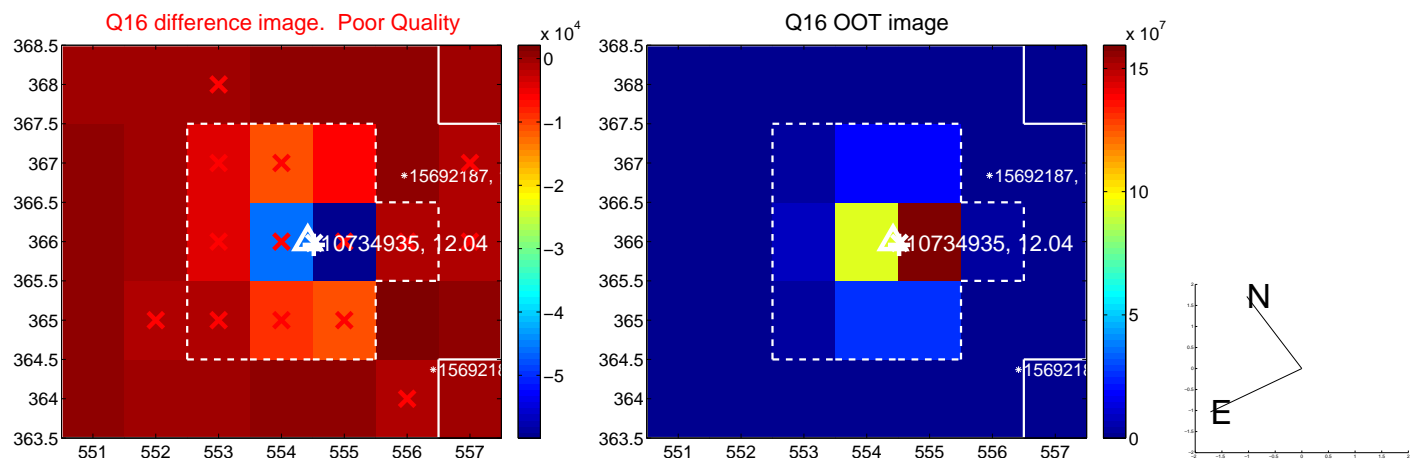
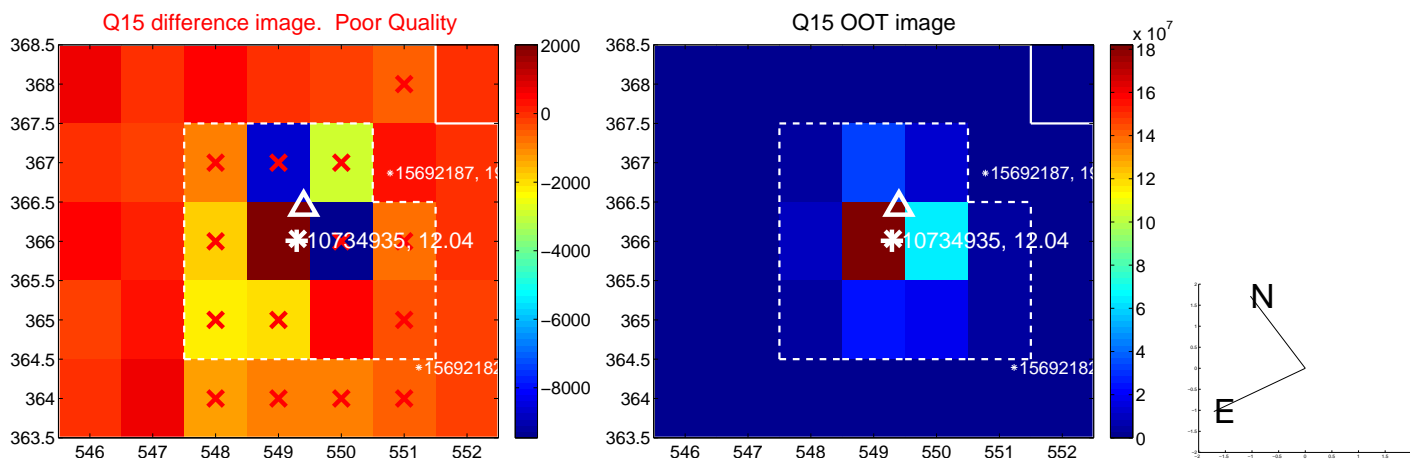
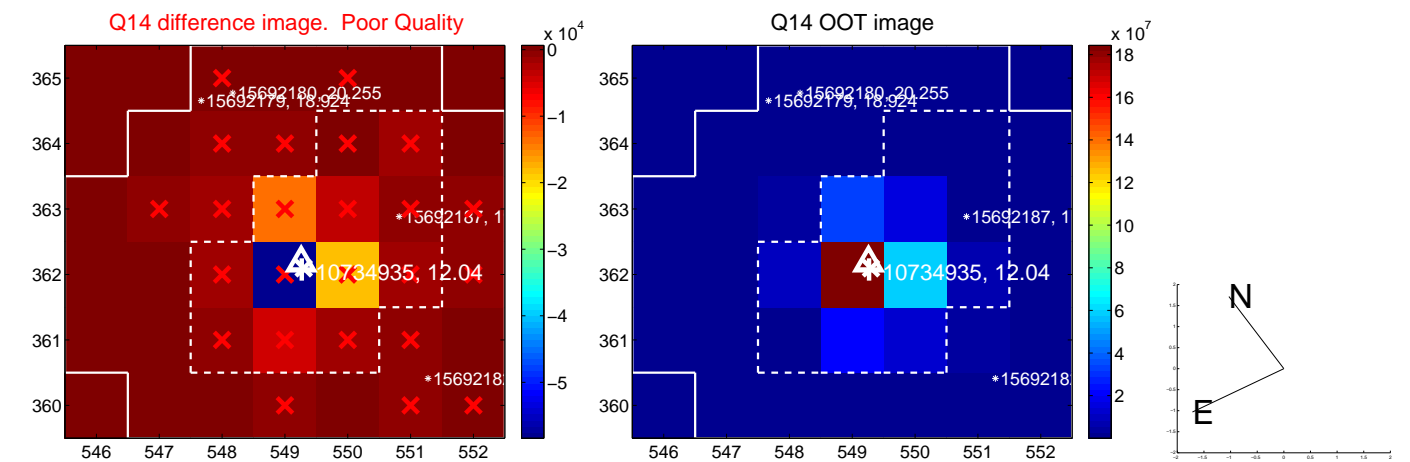
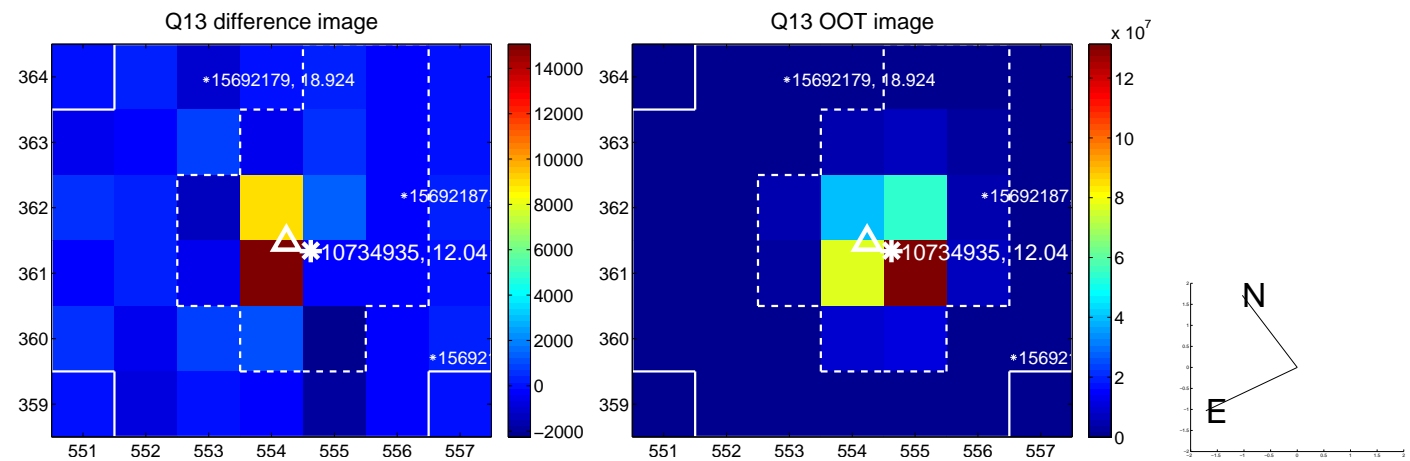




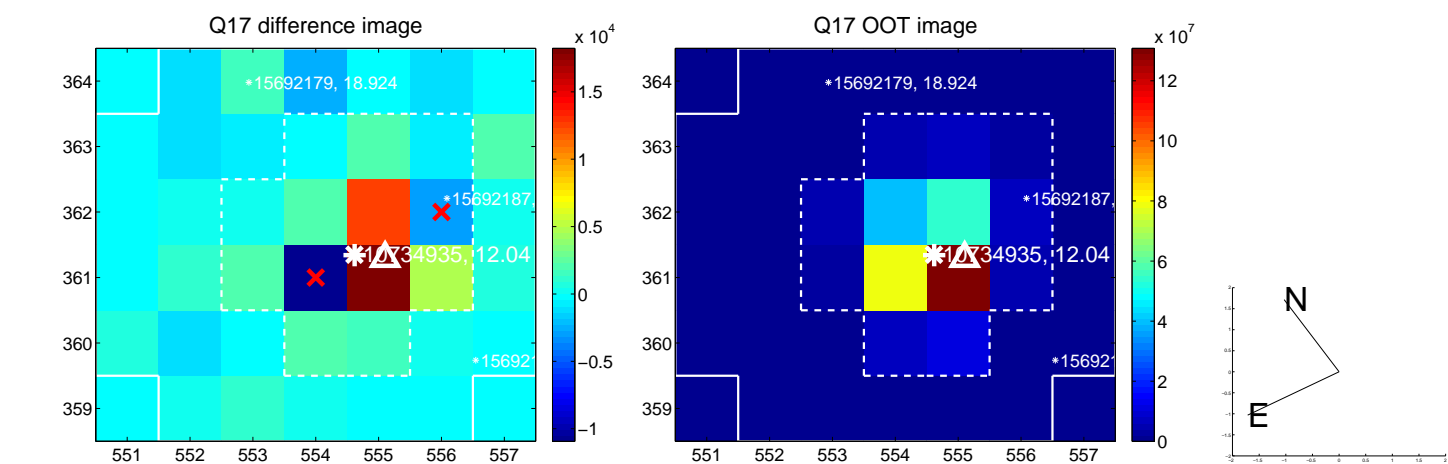
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



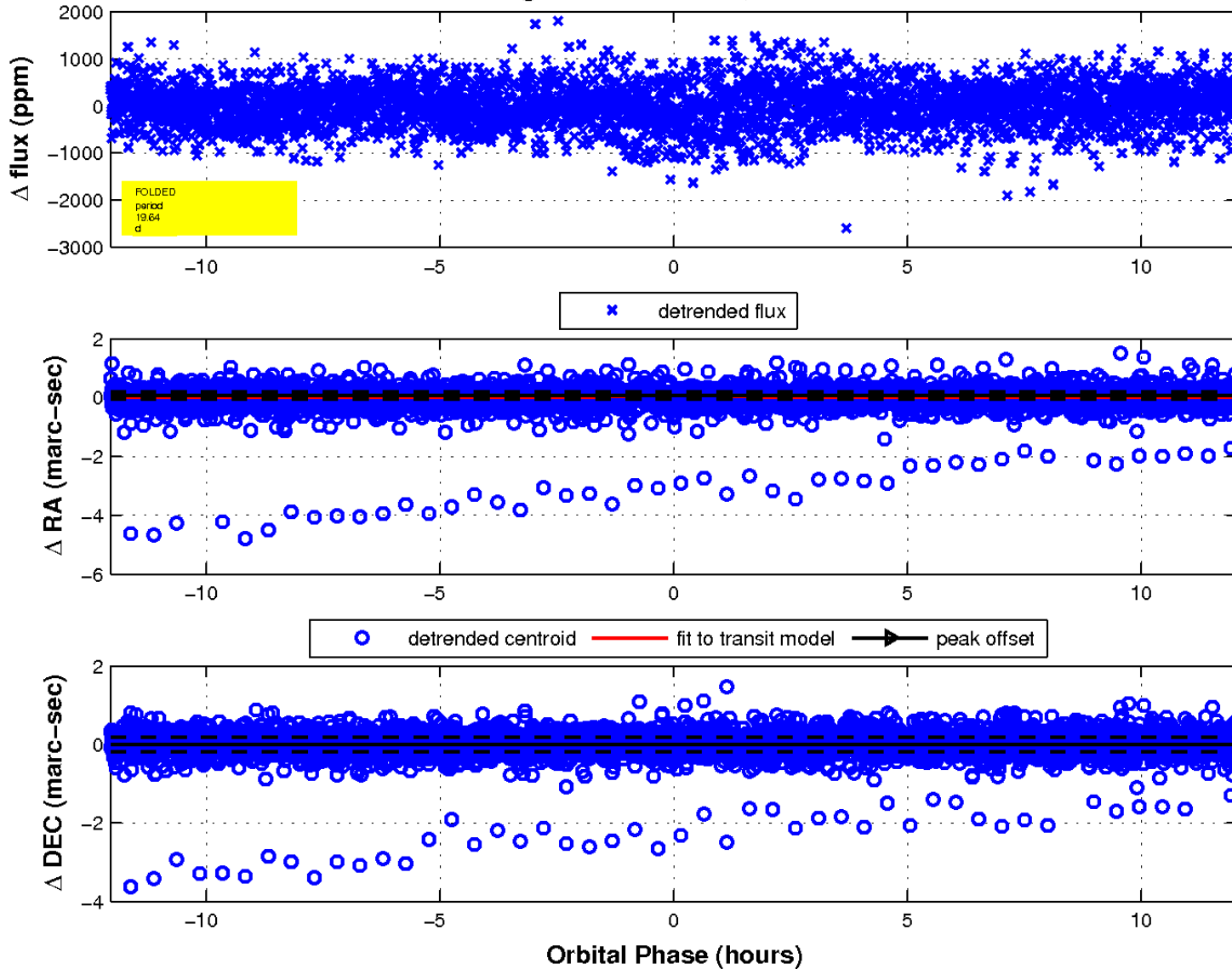
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 5 of 5



UKIRT Image

Declination

