

# KIC 006507334

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006507334-01	OBS	8122.01	54.753686	156.235291	382.1	2.971	9.4	6.7	1.05	6242	2.21	17.50
006507334-02	OBS	No	479.956136	575.944436	1056.4	2.872	11.5	7.0	1.05	6242	3.69	0.97
006507334-03	OBS	No	277.314553	316.042396	1085.6	2.851	10.0	7.4	1.05	6242	4.24	2.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006507334-01	OBS	PC	0.73	0	0	0	0	NO_COMMENT
006507334-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006507334-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES

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

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

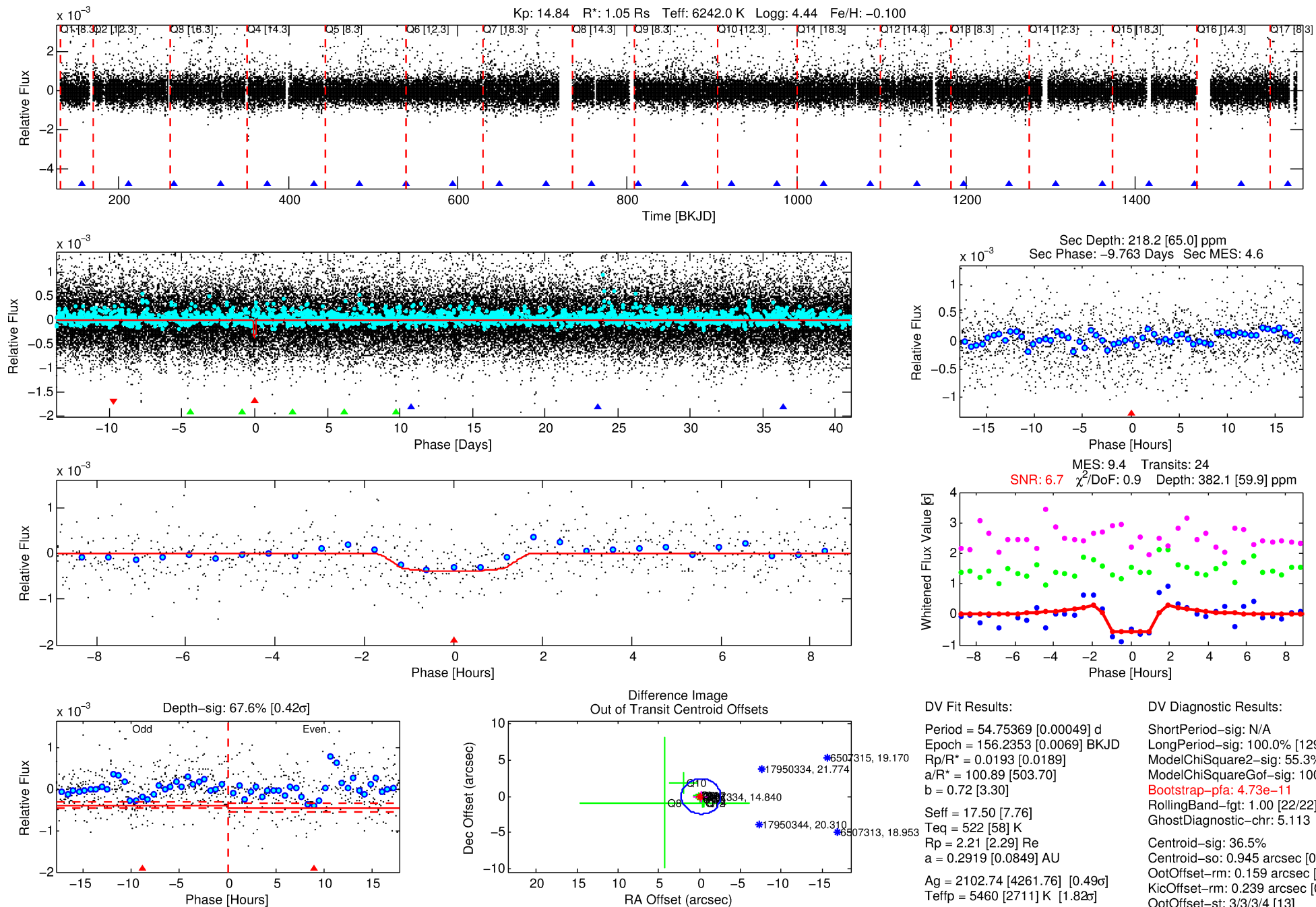
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006507334-01

No Significant Match Found

# DV One-Page Summary

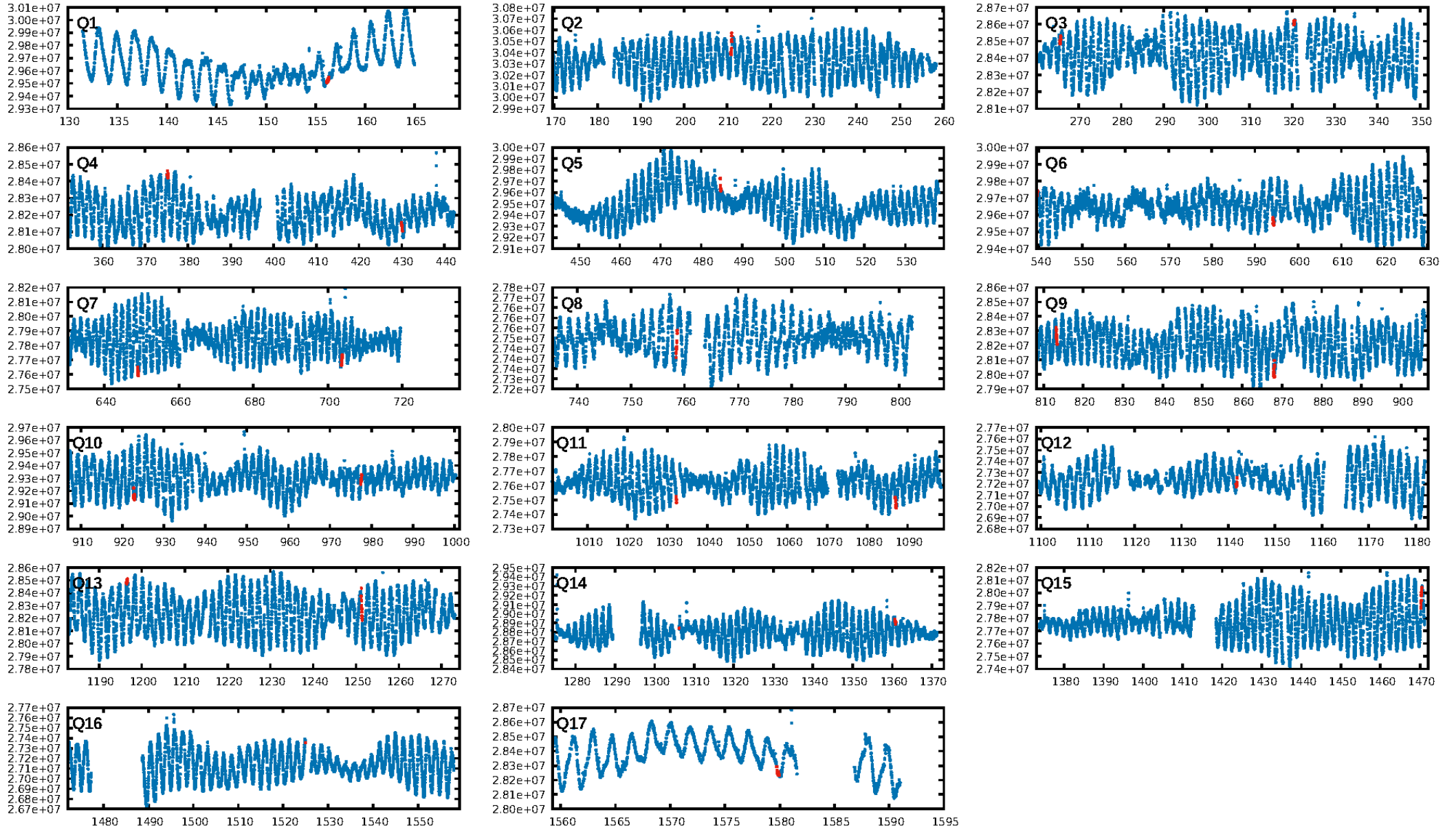
KIC: 6507334 Candidate: 1 of 3 Period: 54.754 d



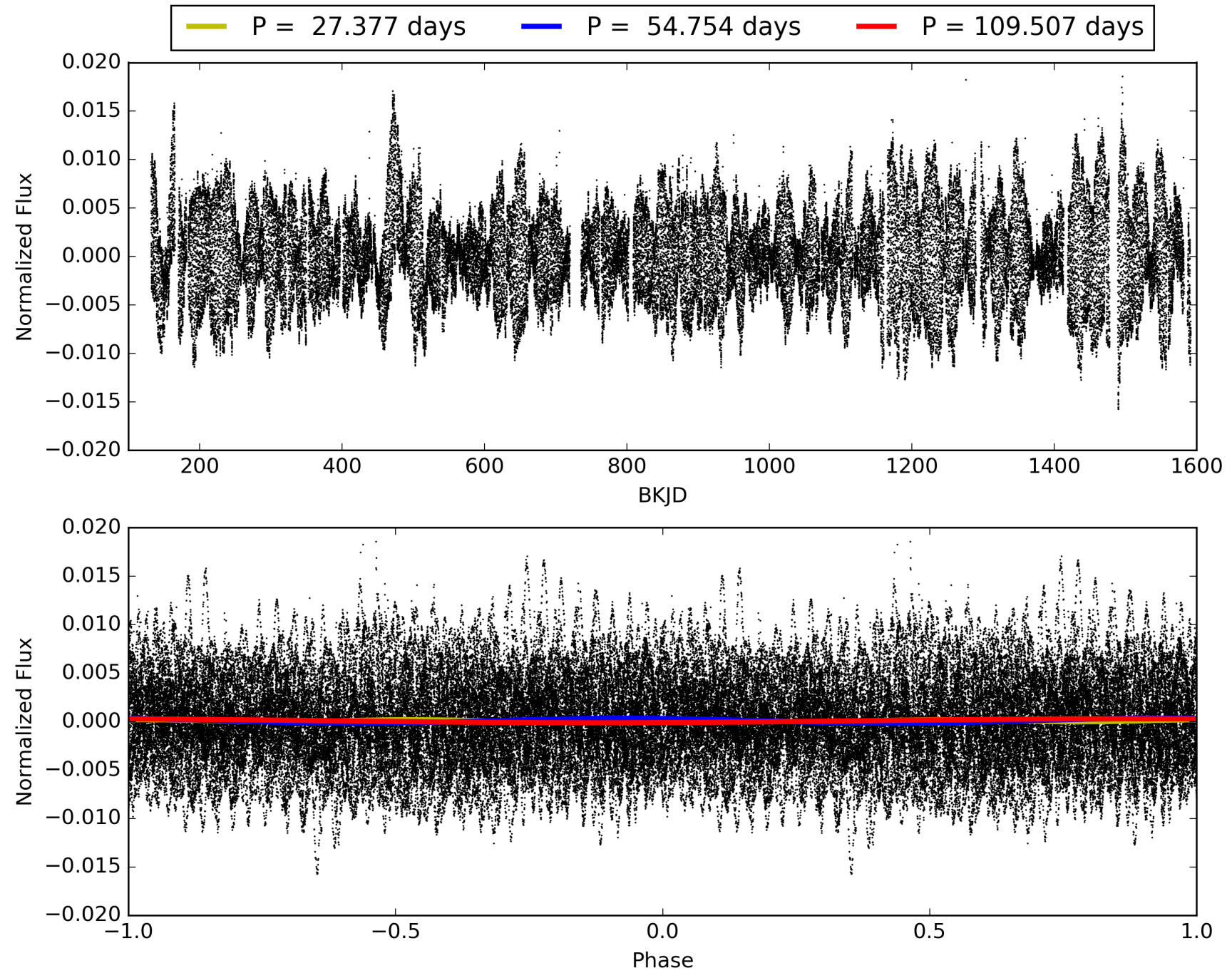
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:34:03 Z

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

# TCE 006507334-01, PDC Light Curves

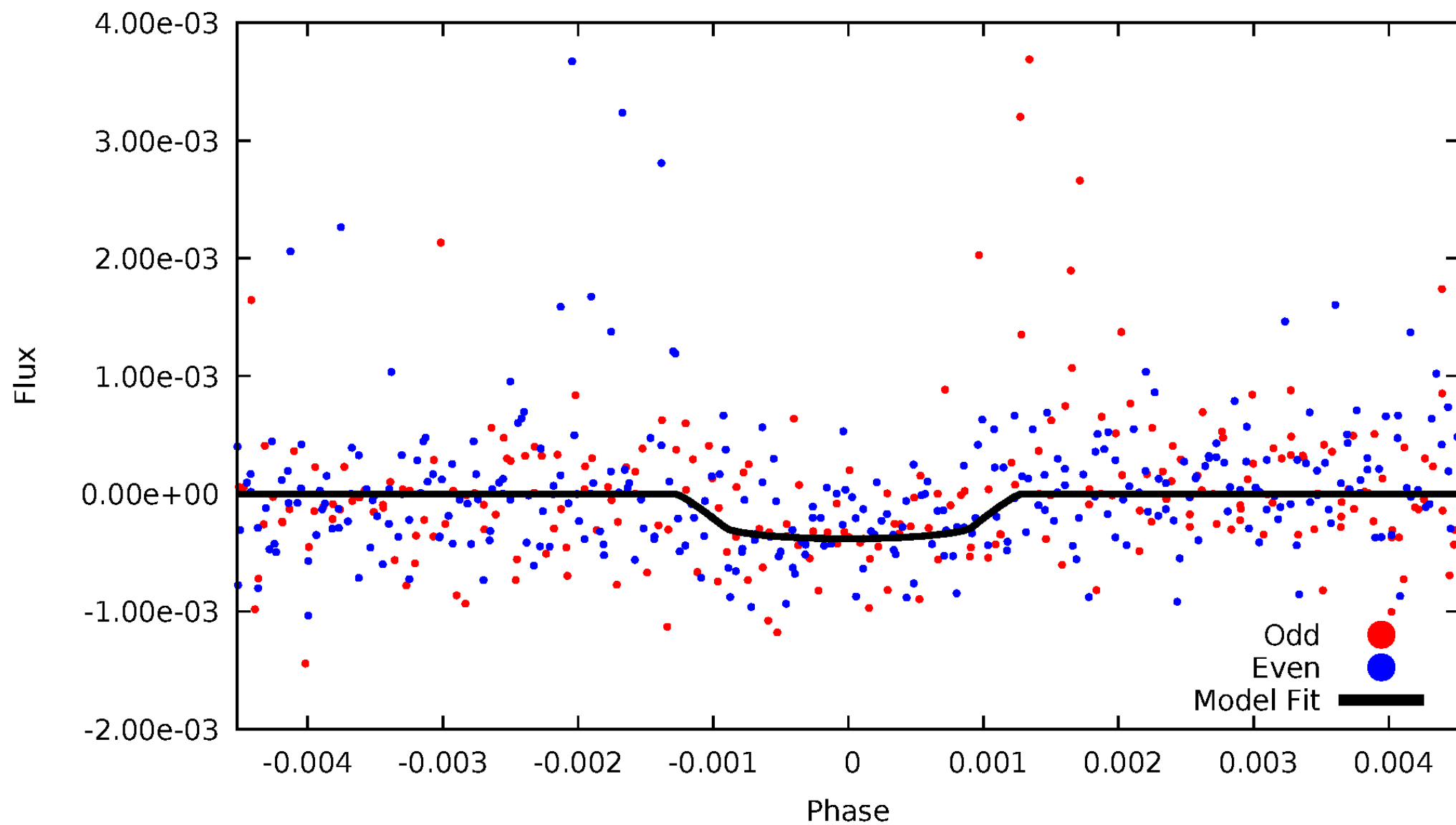


# TCE 006507334-01



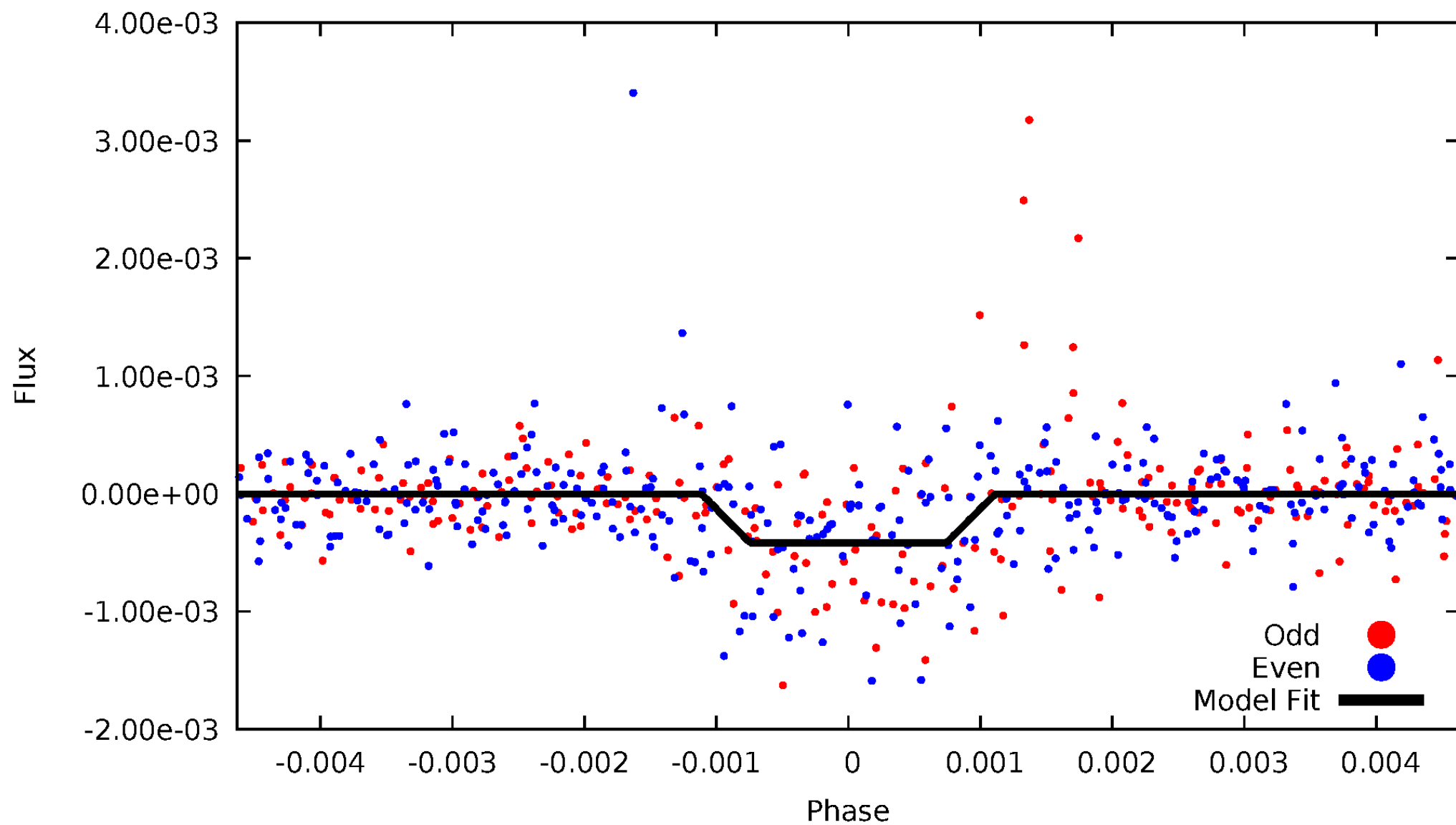
# DV Odd/Even

TCE 006507334-01



# ALT Odd/Even

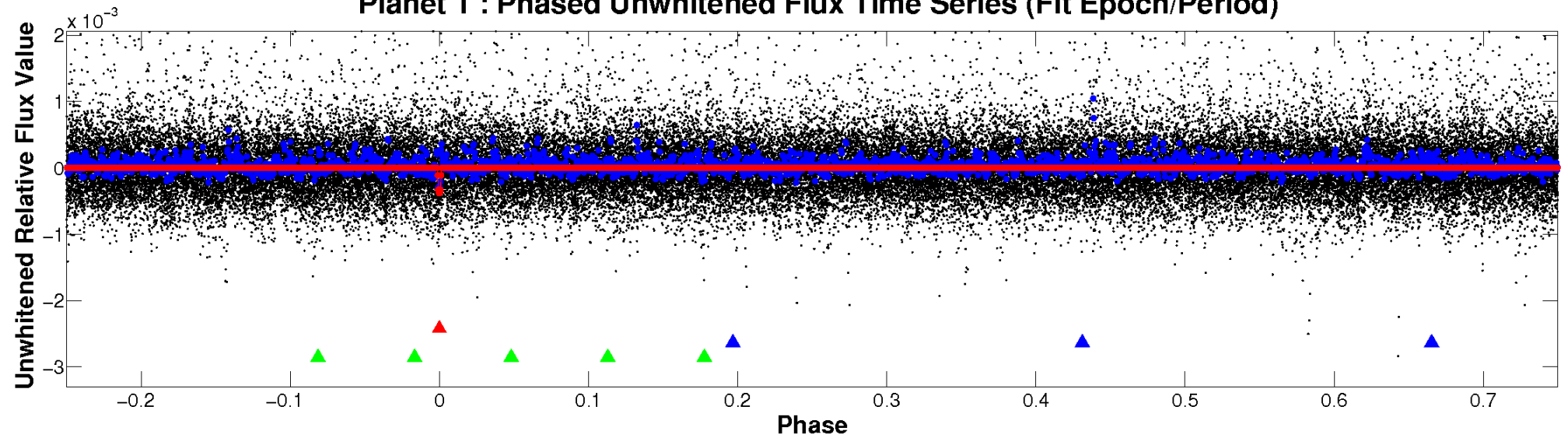
TCE 006507334-01



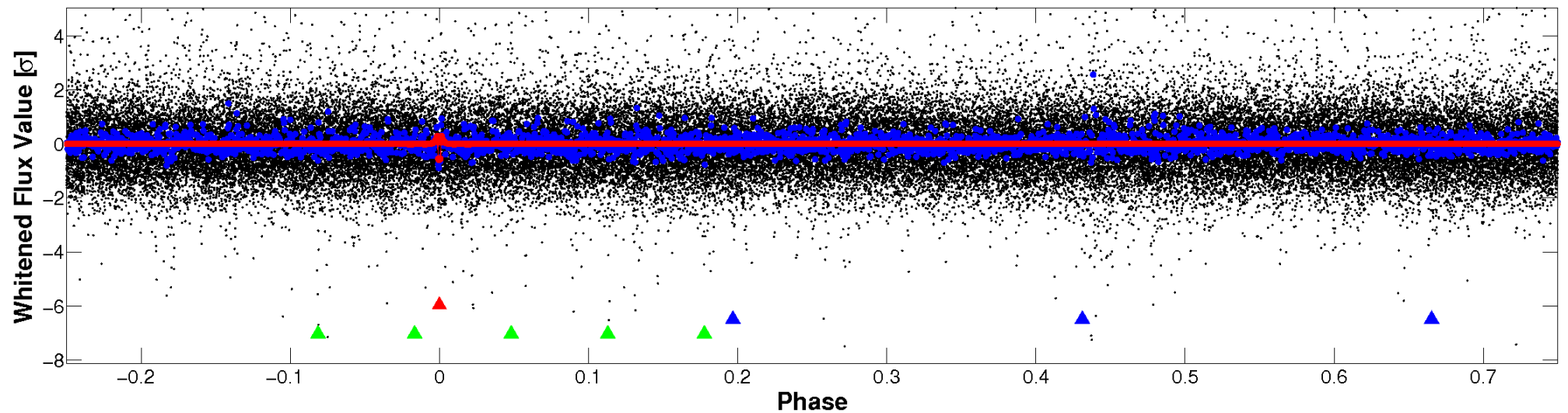


# Non-Whitened Vs. Whitened Light Curve

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

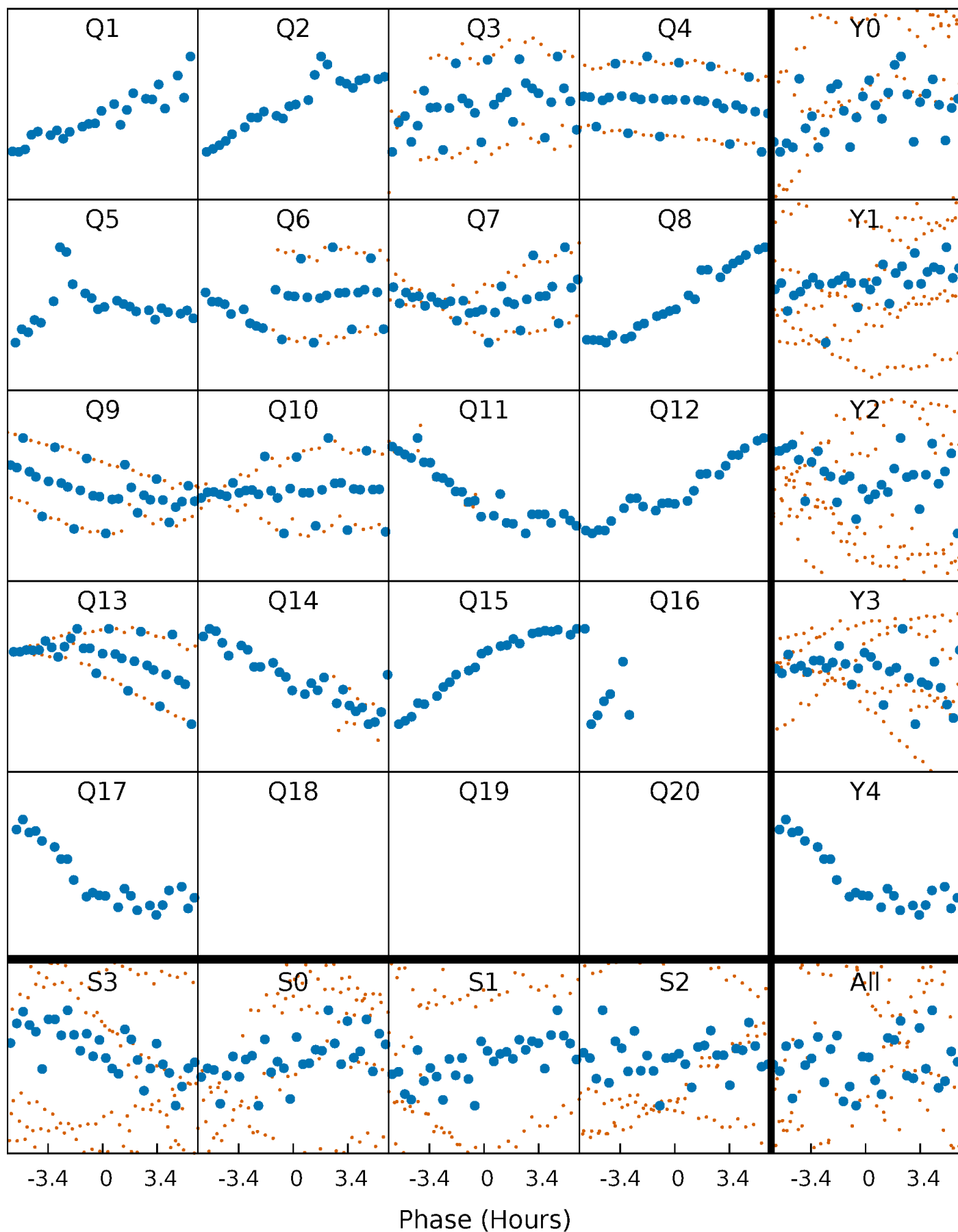


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

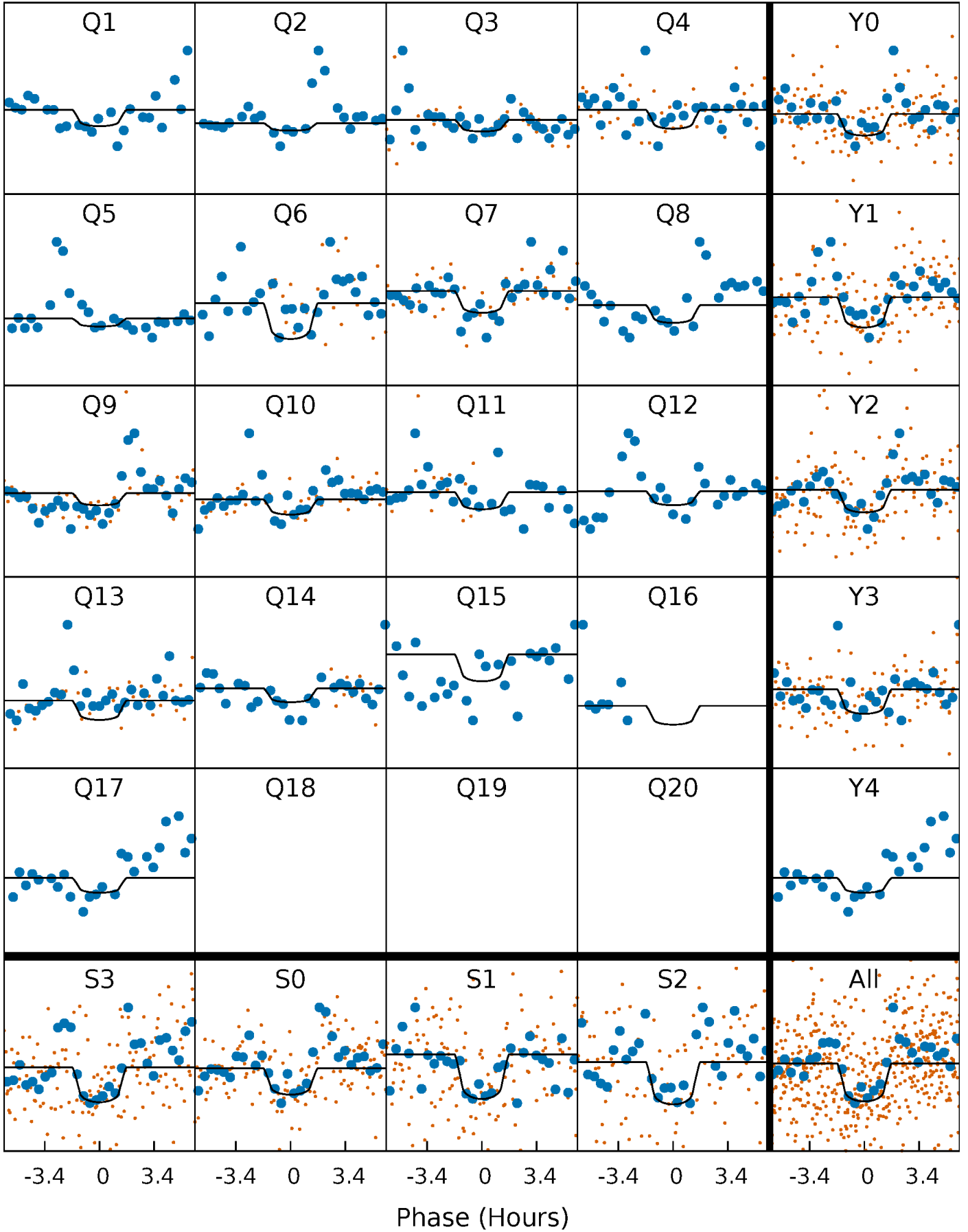
TCE 006507334-01 P= 54.753686 Days  $T_0=156.235291$  (BKJD)





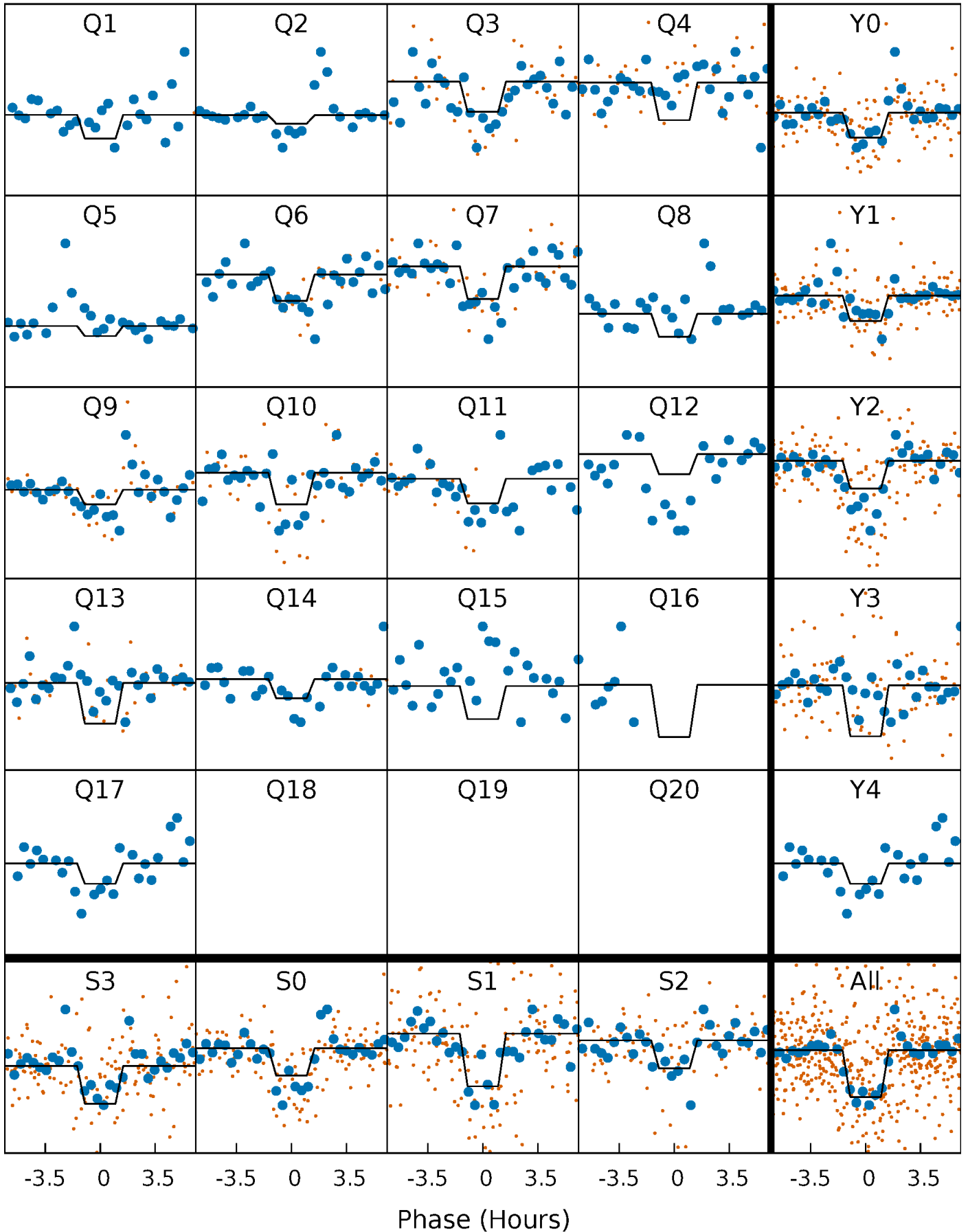
# DV Quarter-Phased Transit Curves

TCE 006507334-01 P= 54.753686 Days  $T_0=156.235291$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

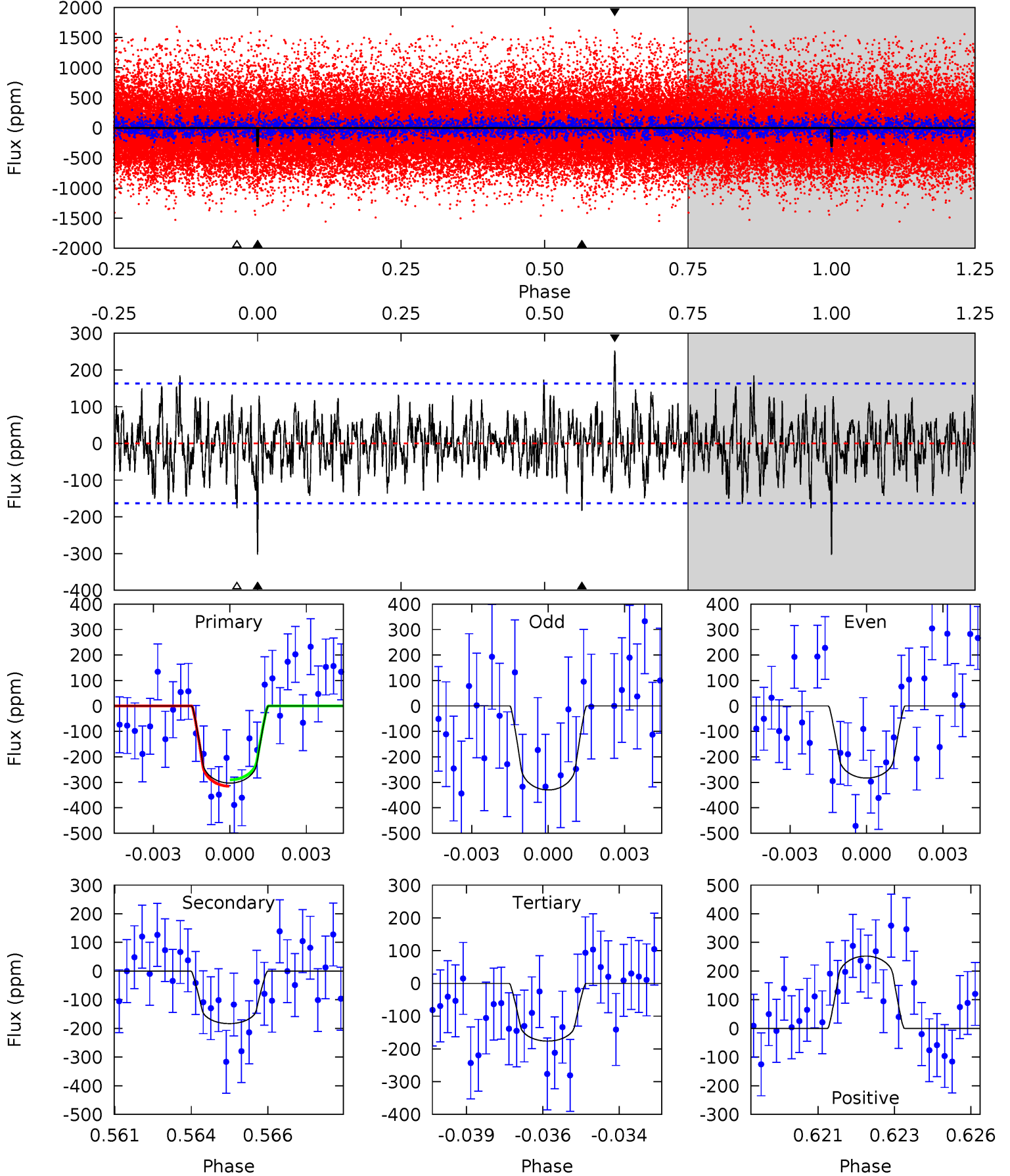
TCE 006507334-01 P= 54.753562 Days  $T_0=156.233792$  (BKJD)



# DV Model-Shift Uniqueness Test

006507334-01, P = 54.753686 Days, E = 101.481605 Days

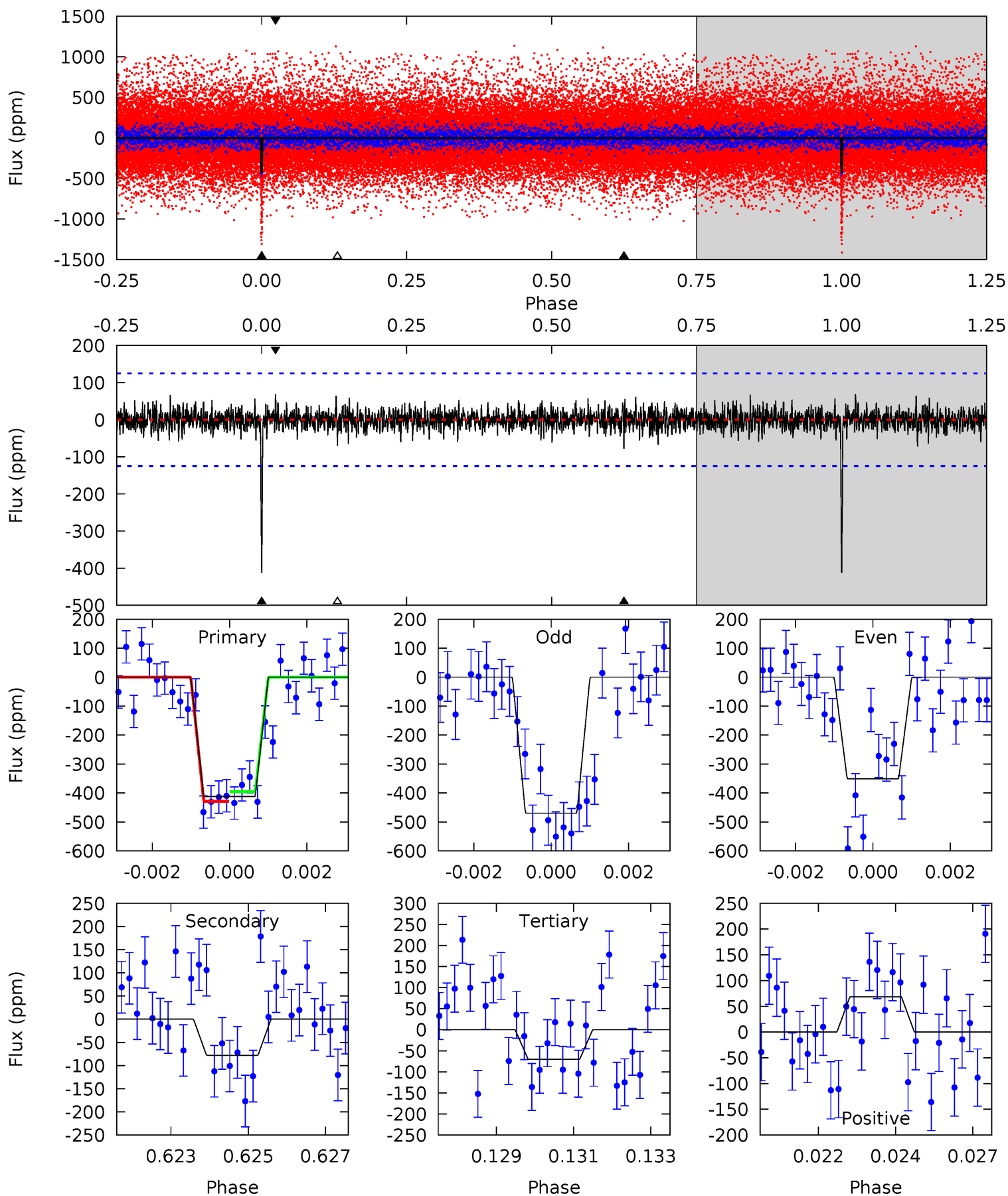
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.82	5.94	5.71	8.18	5.28	3.01	1.87	4.11	1.64	0.23	-2.24	0.75	0.99	0.45	0.41



# Alt Model-Shift Uniqueness Test

006507334-01, P = 54.753562 Days, E = 101.480230 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
17.5	3.31	2.99	2.91	5.31	3.06	0.82	14.5	14.6	0.32	0.39	2.51	1.20	0.14	0



### Stellar Parameters For KIC 006507334

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6242^{+168}_{-205}$	$4.442^{+0.058}_{-0.232}$	$-0.100^{+0.250}_{-0.300}$	$1.047^{+0.361}_{-0.120}$	$1.104^{+0.156}_{-0.140}$	$1.354^{+0.409}_{-0.740}$
	+3%/-3%	+1%/-5%	+250%/-300%	+34%/-11%	+14%/-13%	+30%/-55%
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 006507334-01 / KOI 8122.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-183 \pm 31$	$2.56^{+2.28}_{-1.51}$	$744^{+64}_{-37}$	$5086^{+2987}_{-1093}$	$1247^{+6734}_{-896}$
Alt.	$-78 \pm 24$	$2.84^{+2.19}_{-1.59}$	$746^{+63}_{-39}$	$4097^{+1580}_{-752}$	$423^{+1827}_{-296}$

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

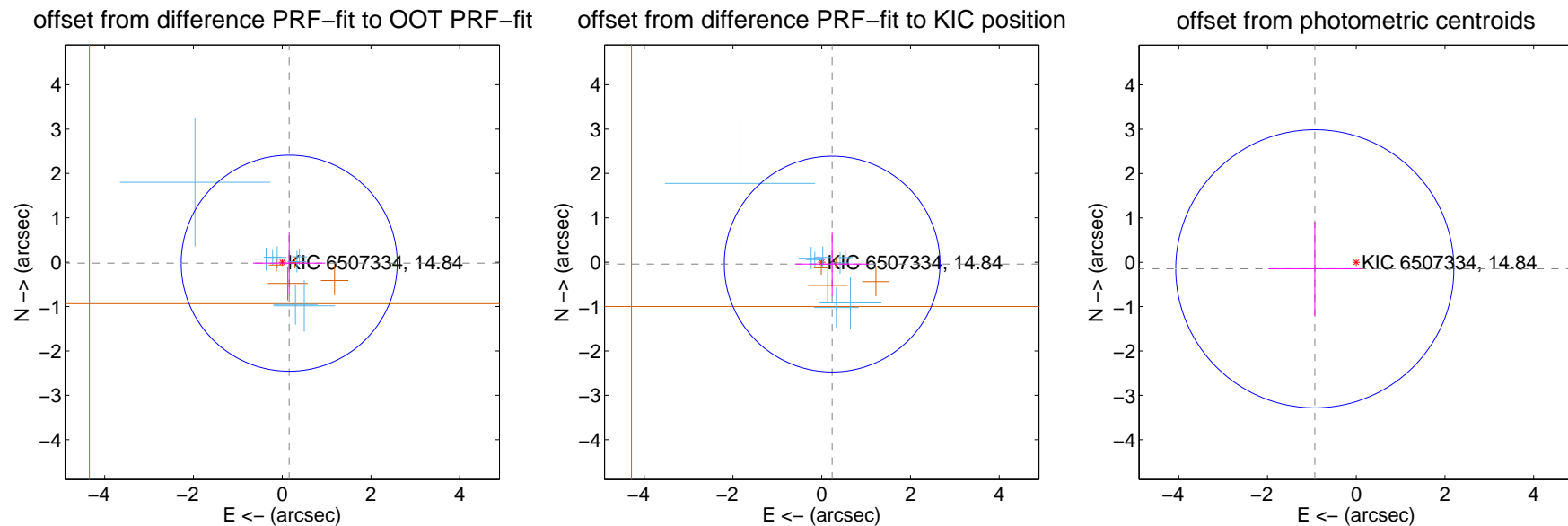
## DV Centroid Data

Supplemental centroid analysis for 006507334-01. Kepler magnitude: 14.84. Transit SNR 6.74

There are 8 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

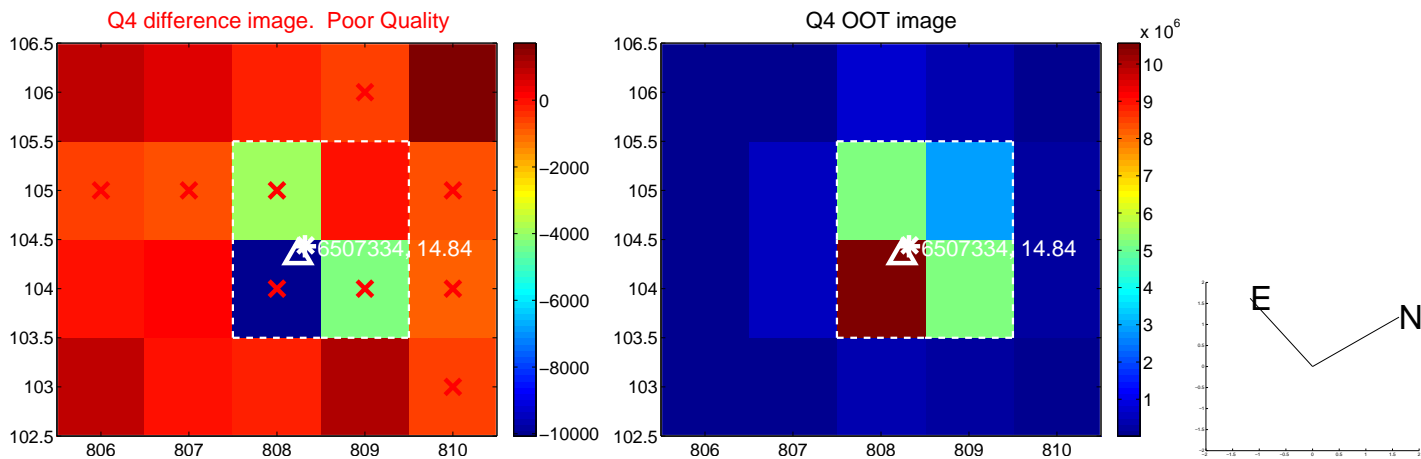
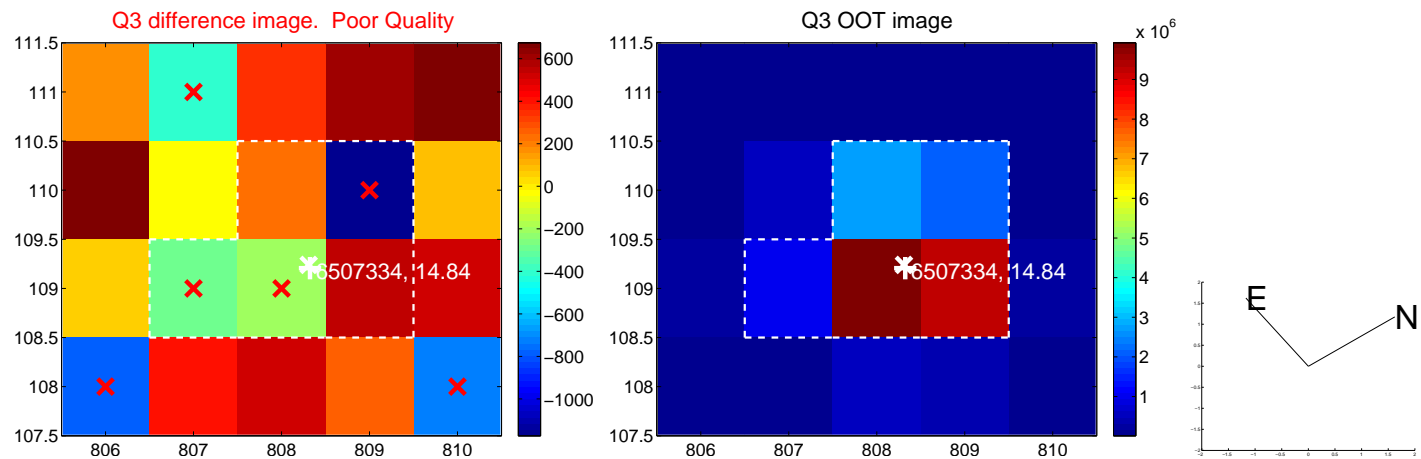
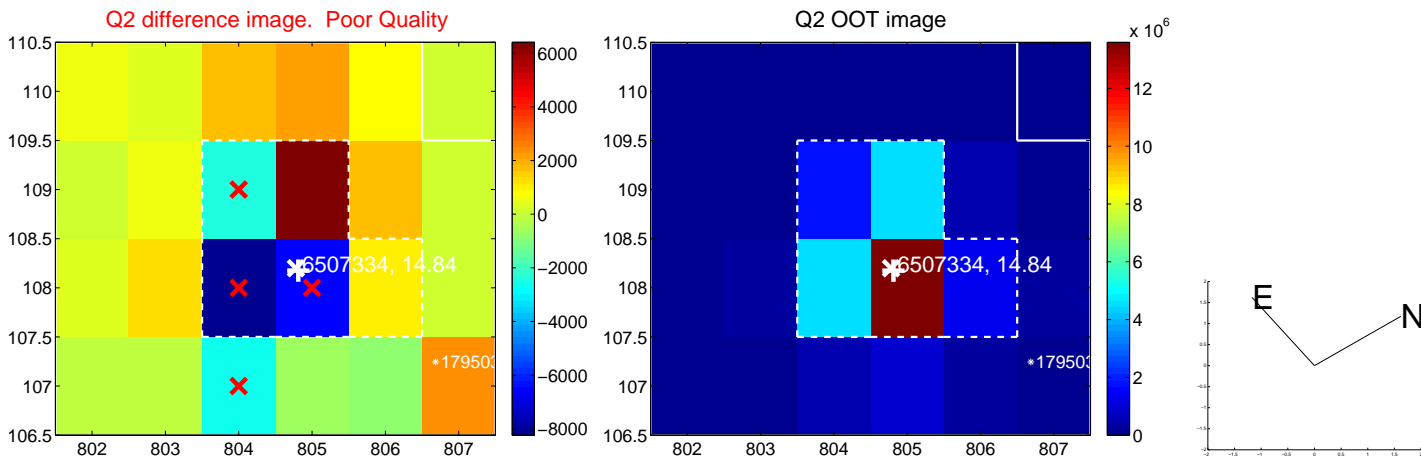
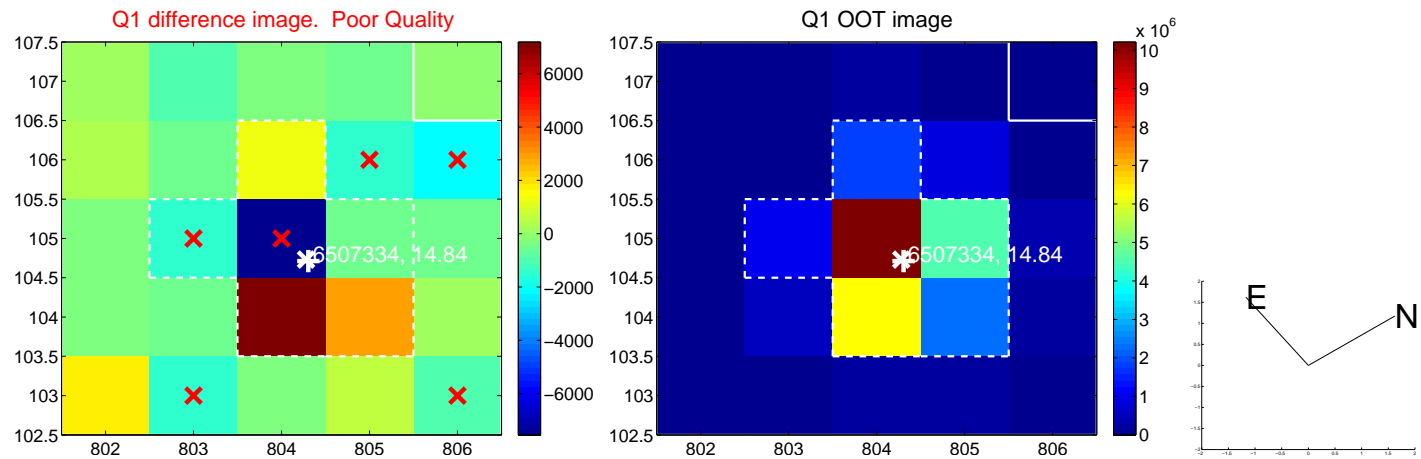
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.159 \pm 0.812$	0.20	$-0.157 \pm 0.814$	$-0.023 \pm 0.711$
PRF-fit source offset from KIC position	$0.239 \pm 0.810$	0.29	$-0.235 \pm 0.814$	$-0.043 \pm 0.711$
photometric centroid source offset	$0.95 \pm 1.05$	0.90	$0.93 \pm 1.04$	$-0.15 \pm 1.06$



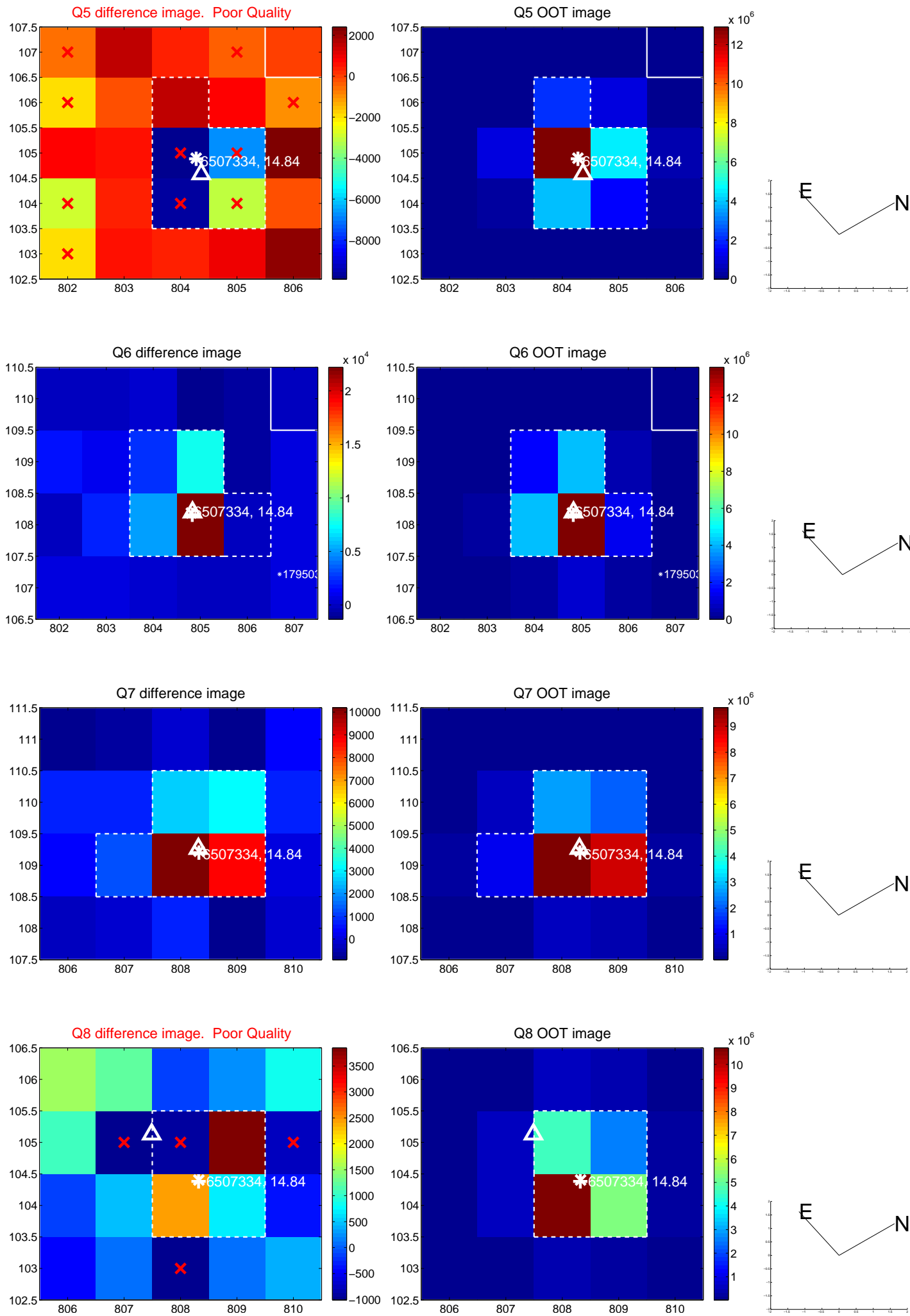
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



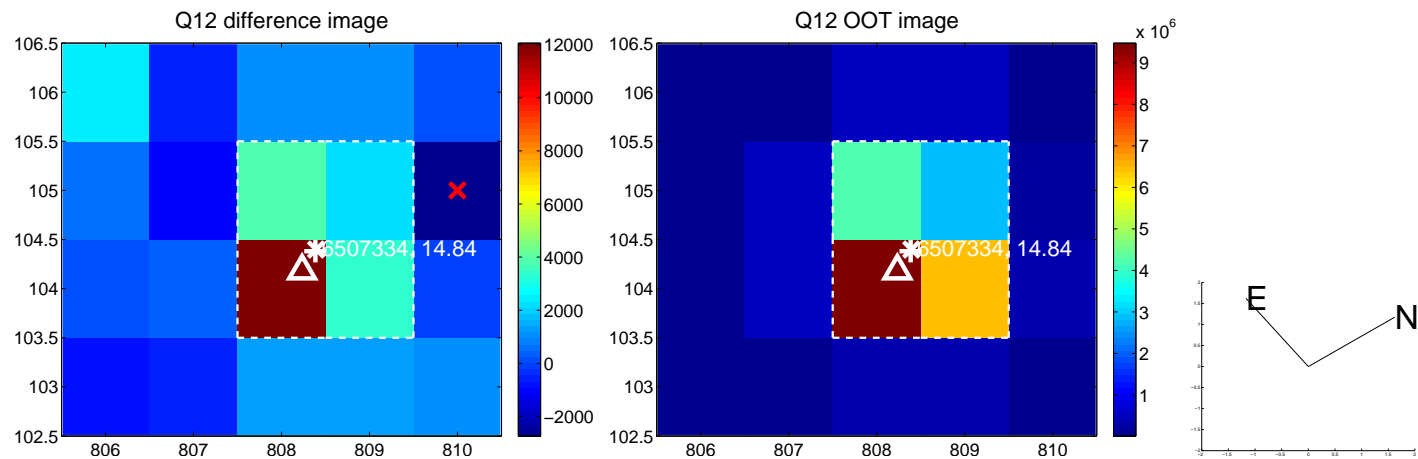
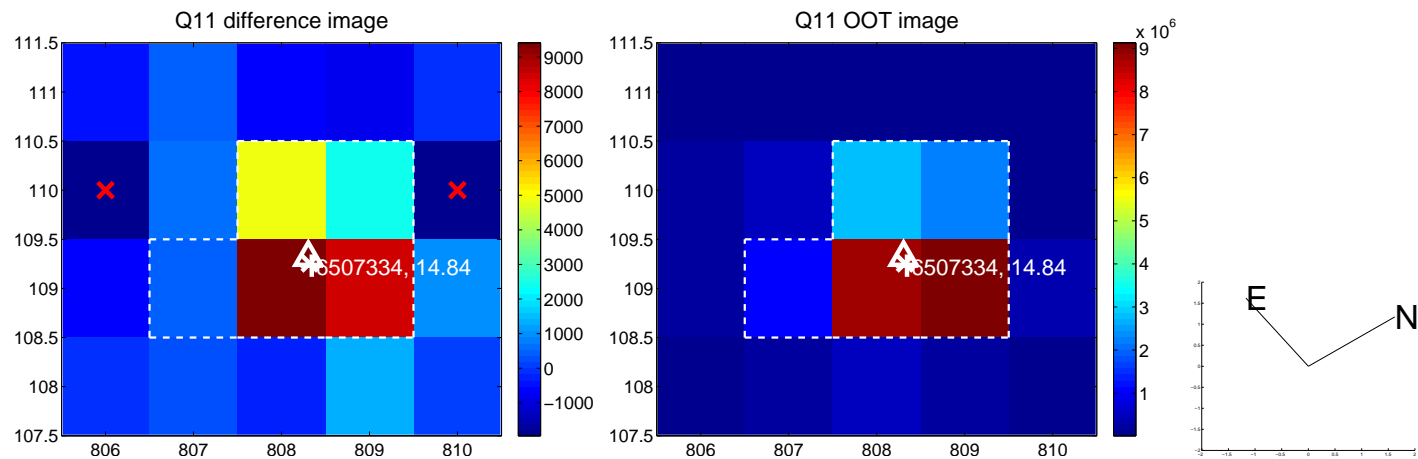
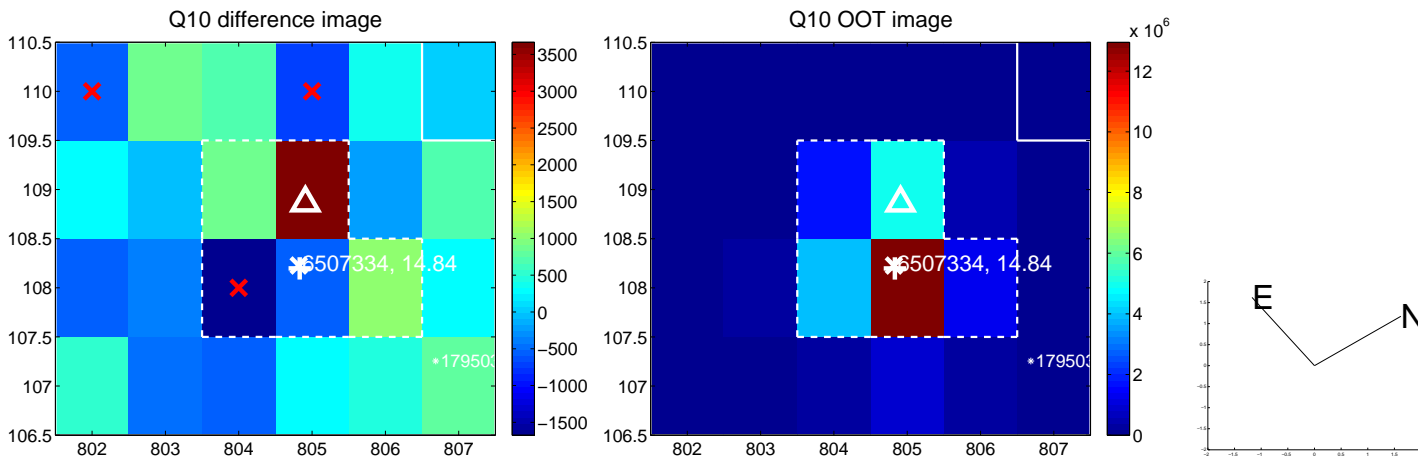
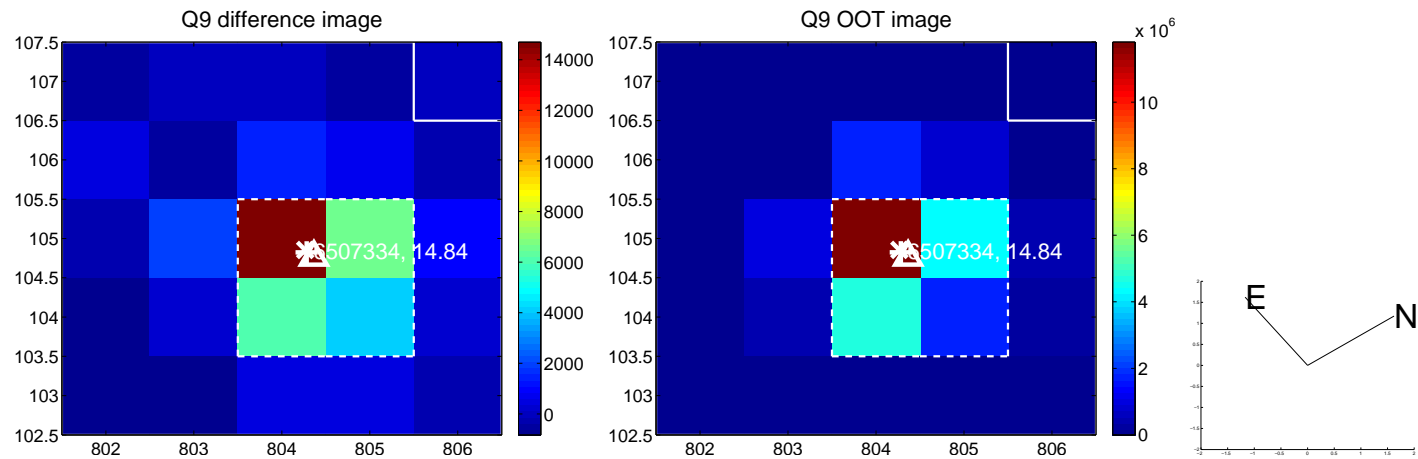
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



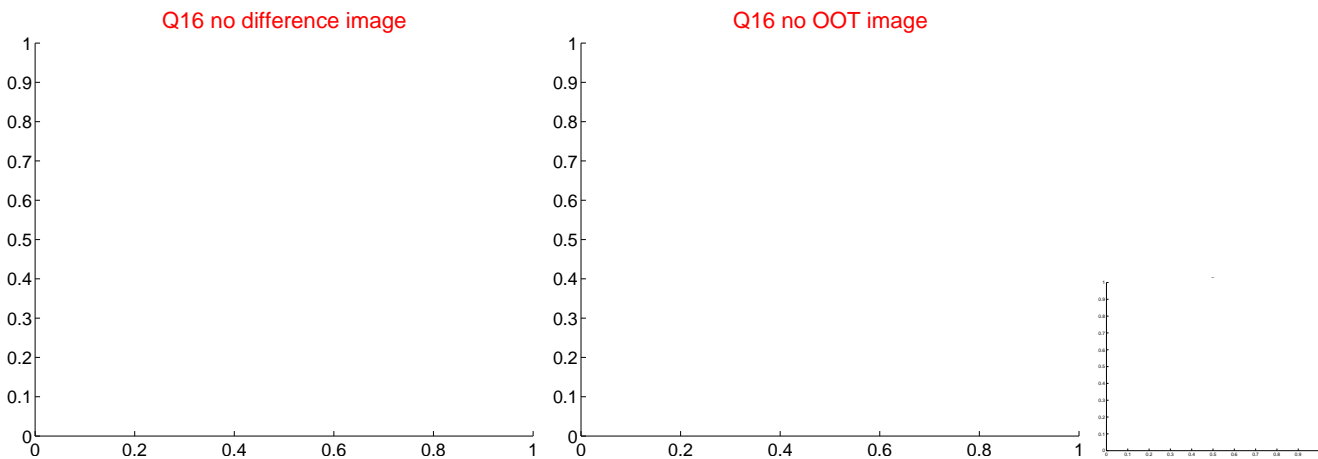
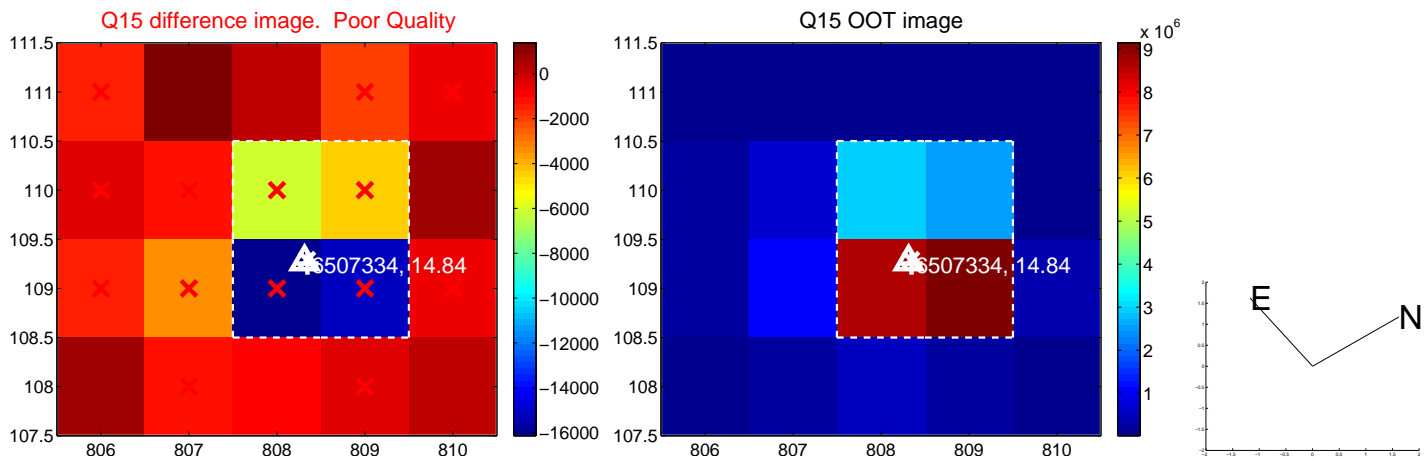
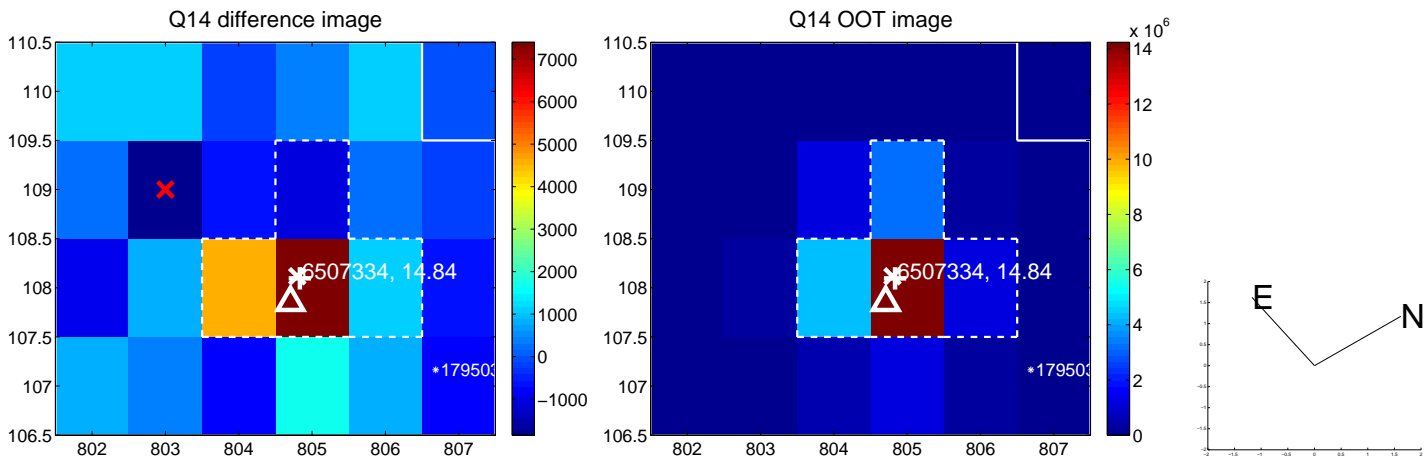
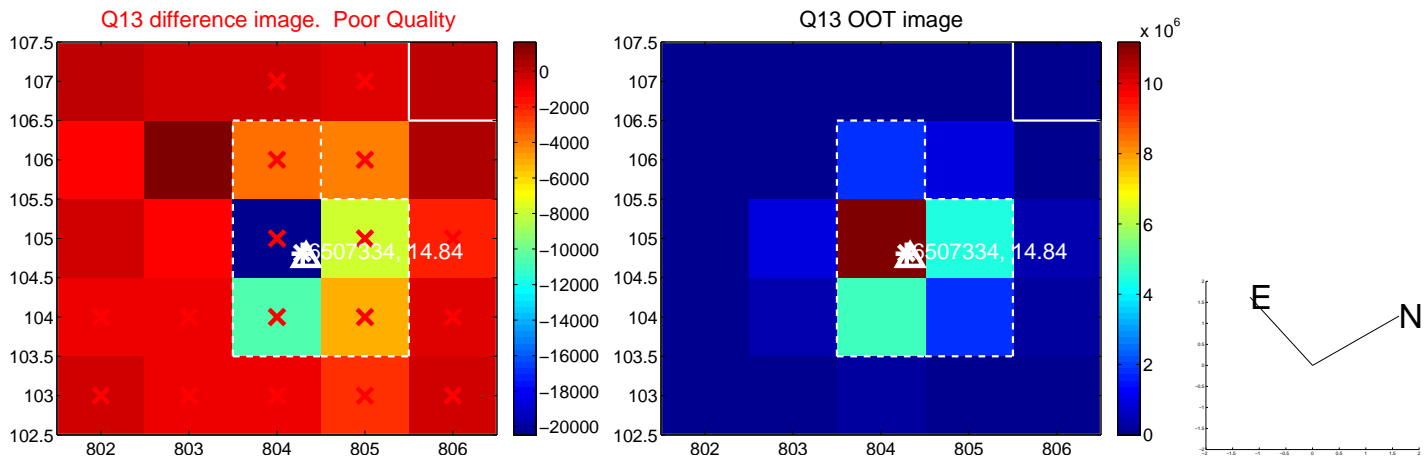
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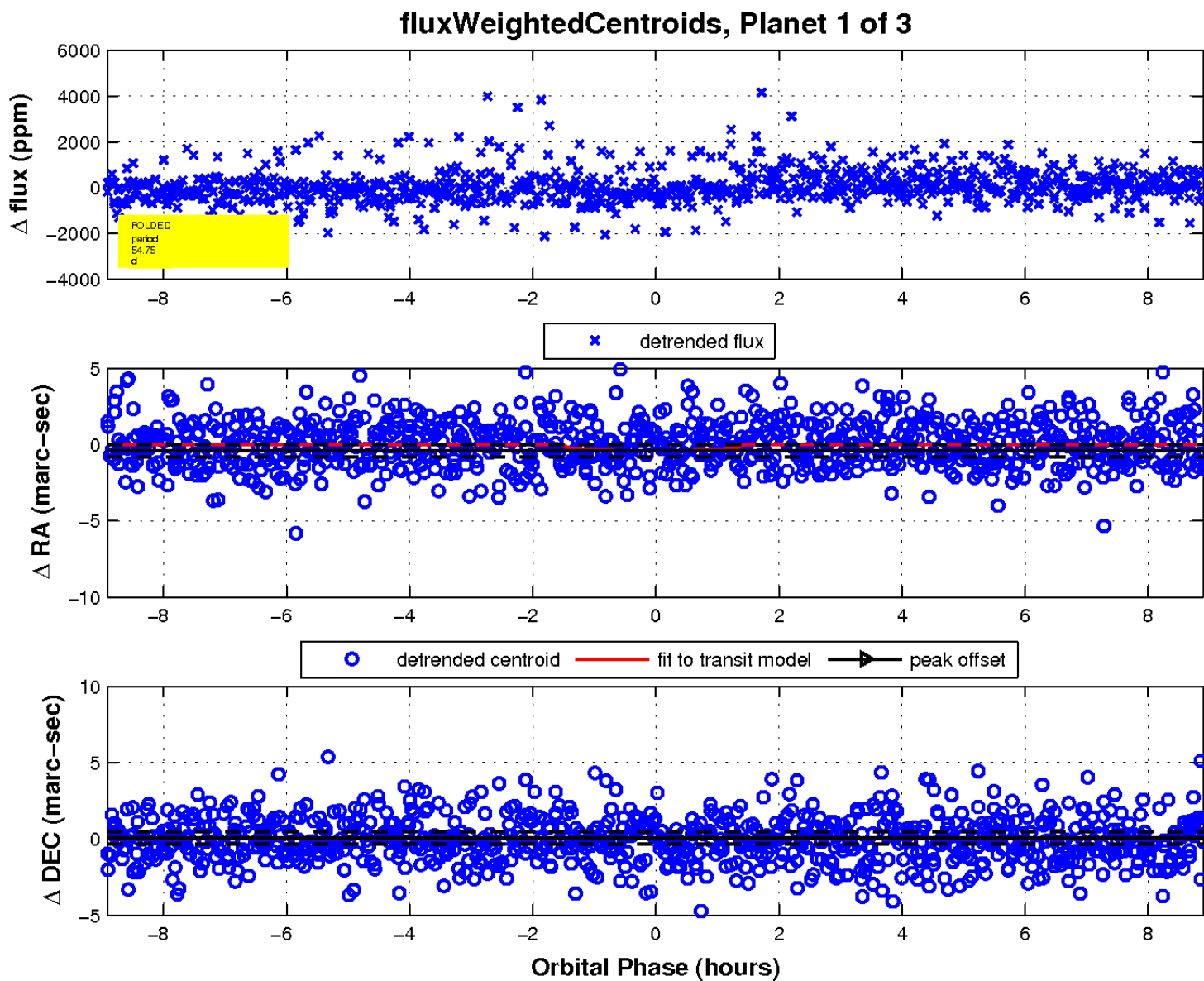
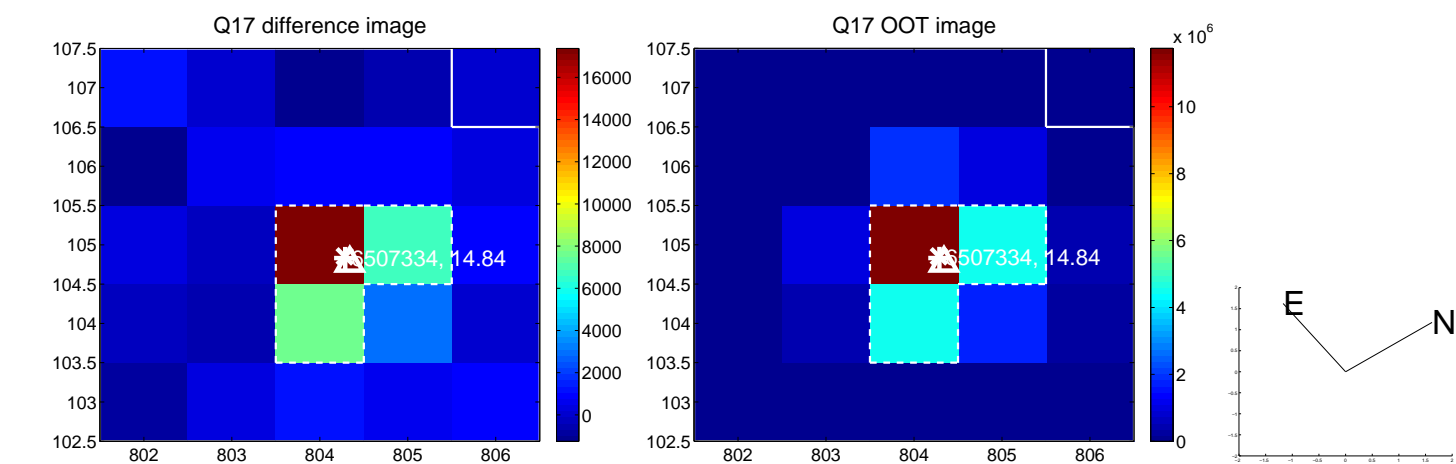
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

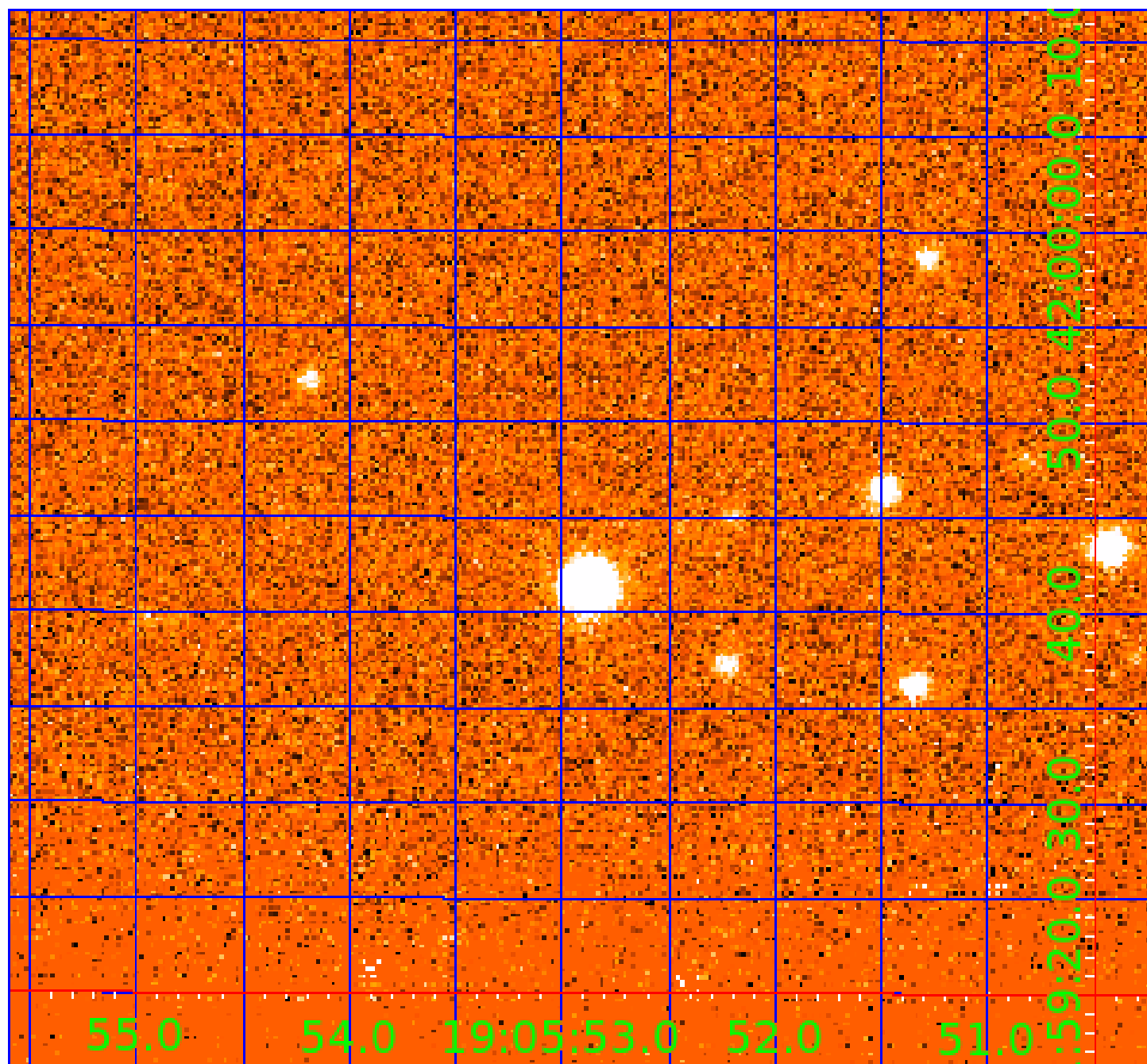


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 006507334

## 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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006507334-03	OBS	No	277.314553	316.042396	1085.6	2.851	10.0	7.4	1.05	6242	4.24	2.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006507334-01	OBS	PC	0.73	0	0	0	0	NO_COMMENT
006507334-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006507334-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES

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

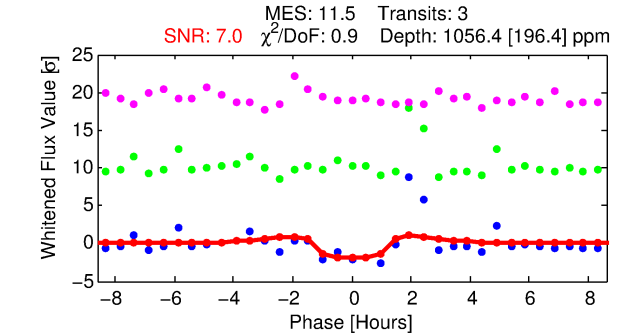
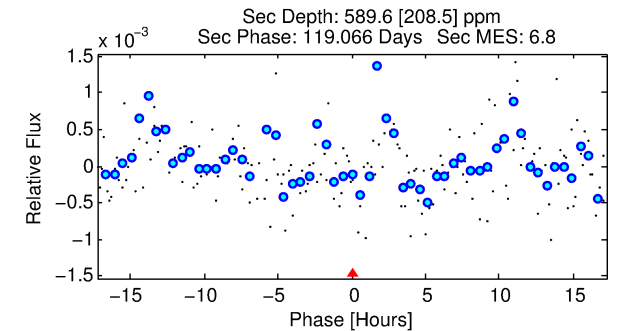
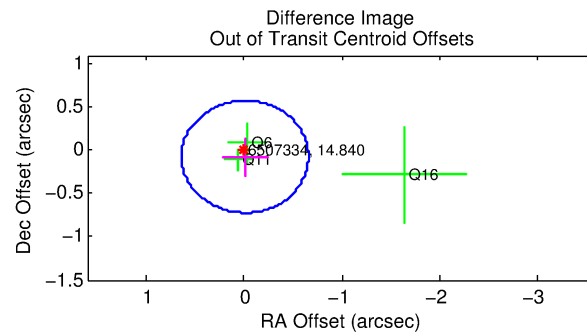
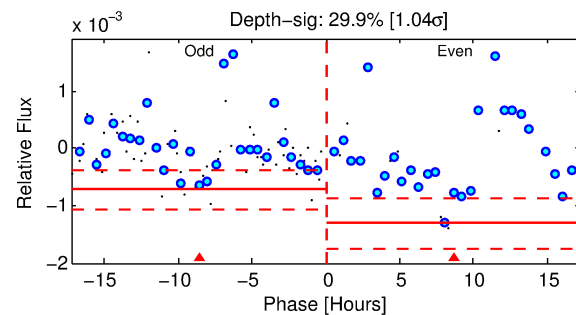
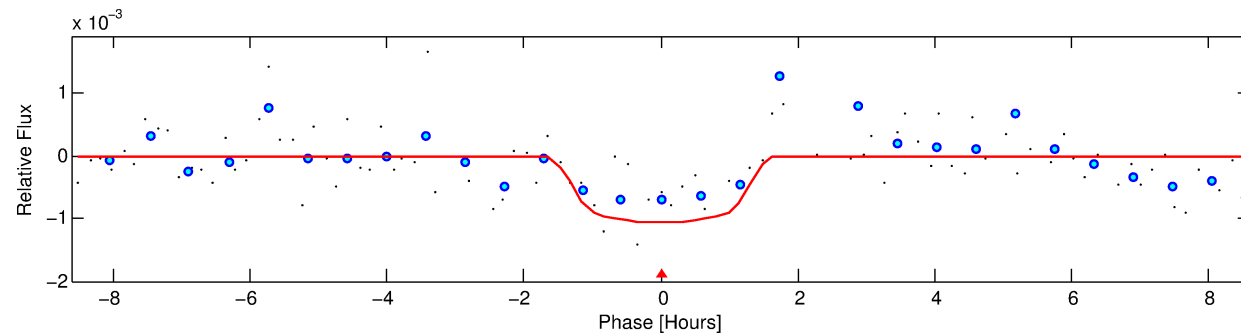
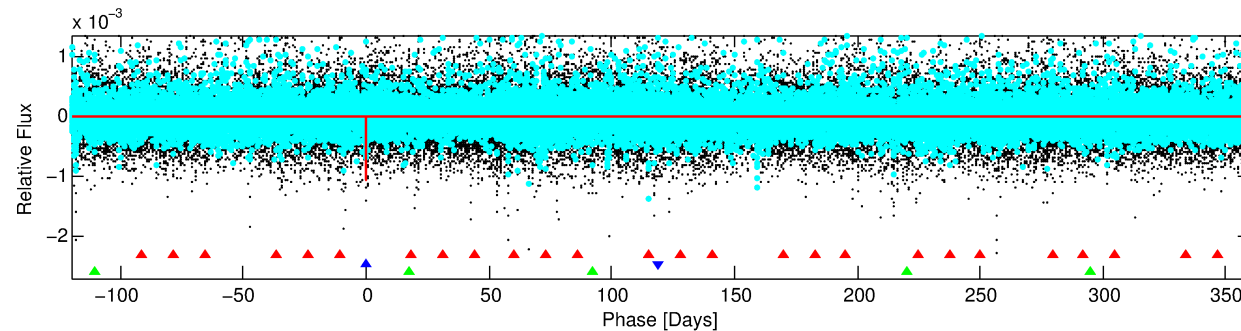
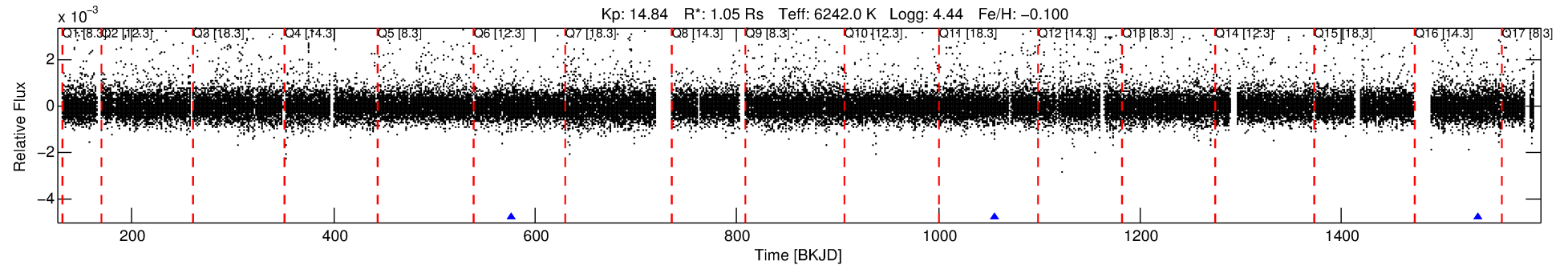
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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 006507334-02

No Significant Match Found

KIC: 6507334    Candidate: 2 of 3    Period: 479.956 d



DV Fit Results:

Period = 479.95614 [0.00596] d  
 Epoch = 575.9444 [0.0079] BKJD  
 Rp/R\* = 0.0323 [0.0411]  
 a/R\* = 919.74 [5903.60]  
 b = 0.74 [3.97]  
 Seff = 0.97 [0.43]  
 Teq = 253 [28] K  
 Rp = 3.68 [4.87] Re  
 a = 1.2411 [0.3609] AU  
 Ag = 36798.71 [96073.82] [0.38σ]  
 Tefp = 5416 [3493] K [1.48σ]

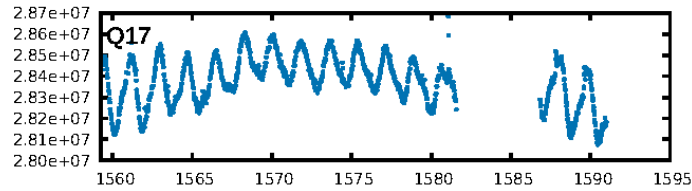
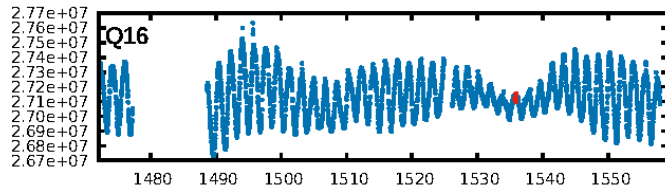
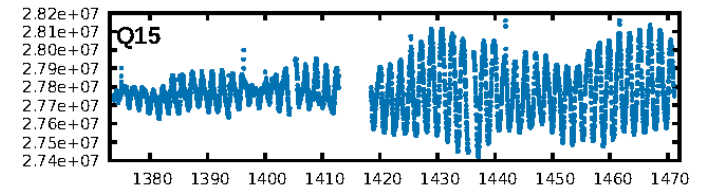
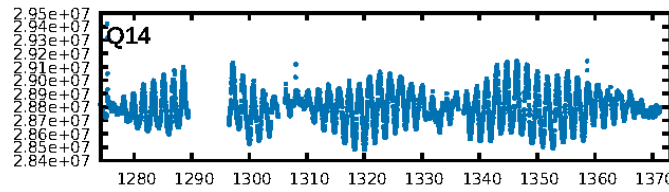
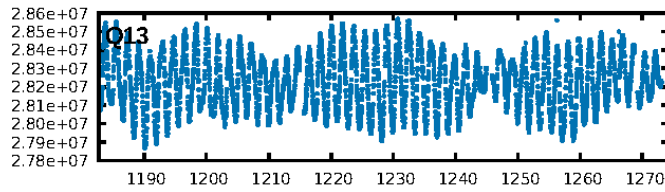
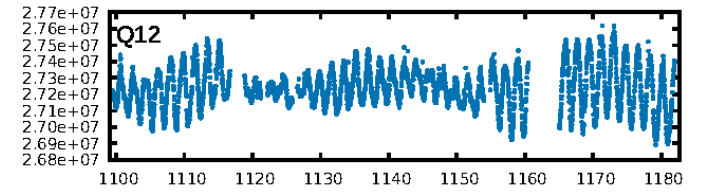
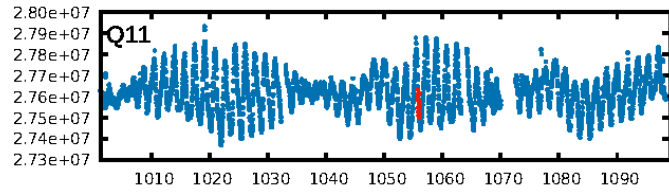
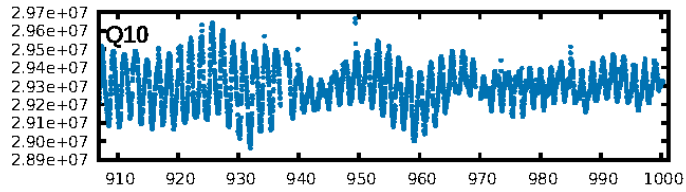
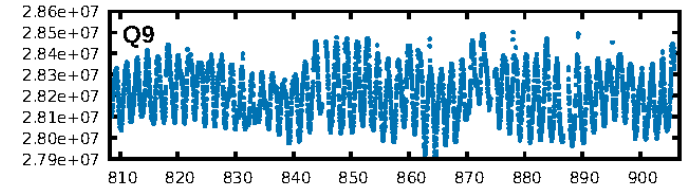
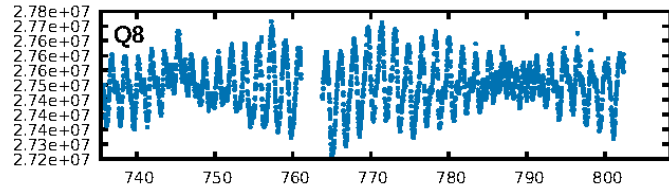
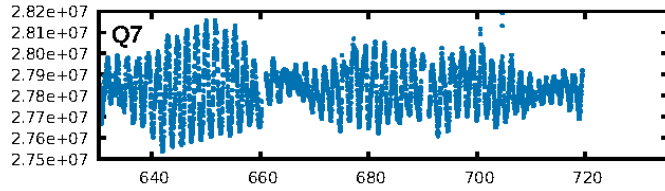
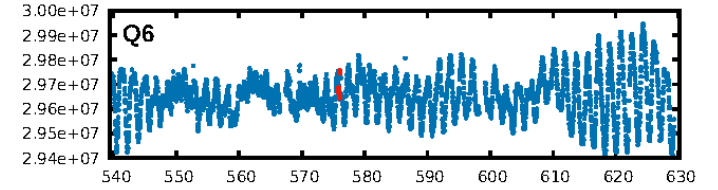
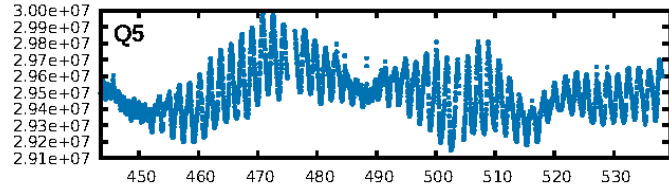
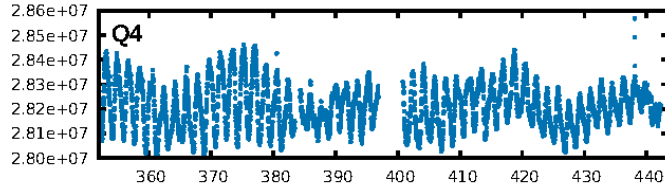
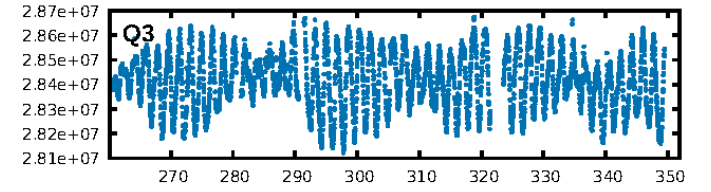
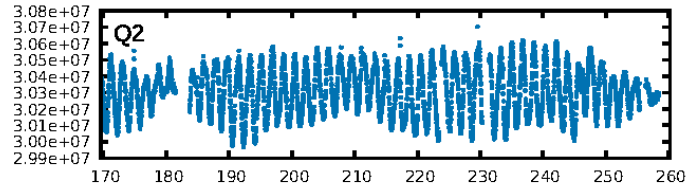
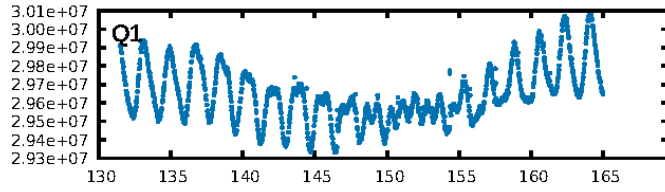
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1201.88σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 3.5%  
ModelChiSquareGof-sig: 90.4%  
**Bootstrap-pfa: 1.59e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -3.767  
  
Centroid-sig: 96.5%  
Centroid-so: 0.117 arcsec [0.10σ]  
OotOffset-rm: 0.075 arcsec [0.35σ]  
KicOffset-rm: 0.156 arcsec [0.43σ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

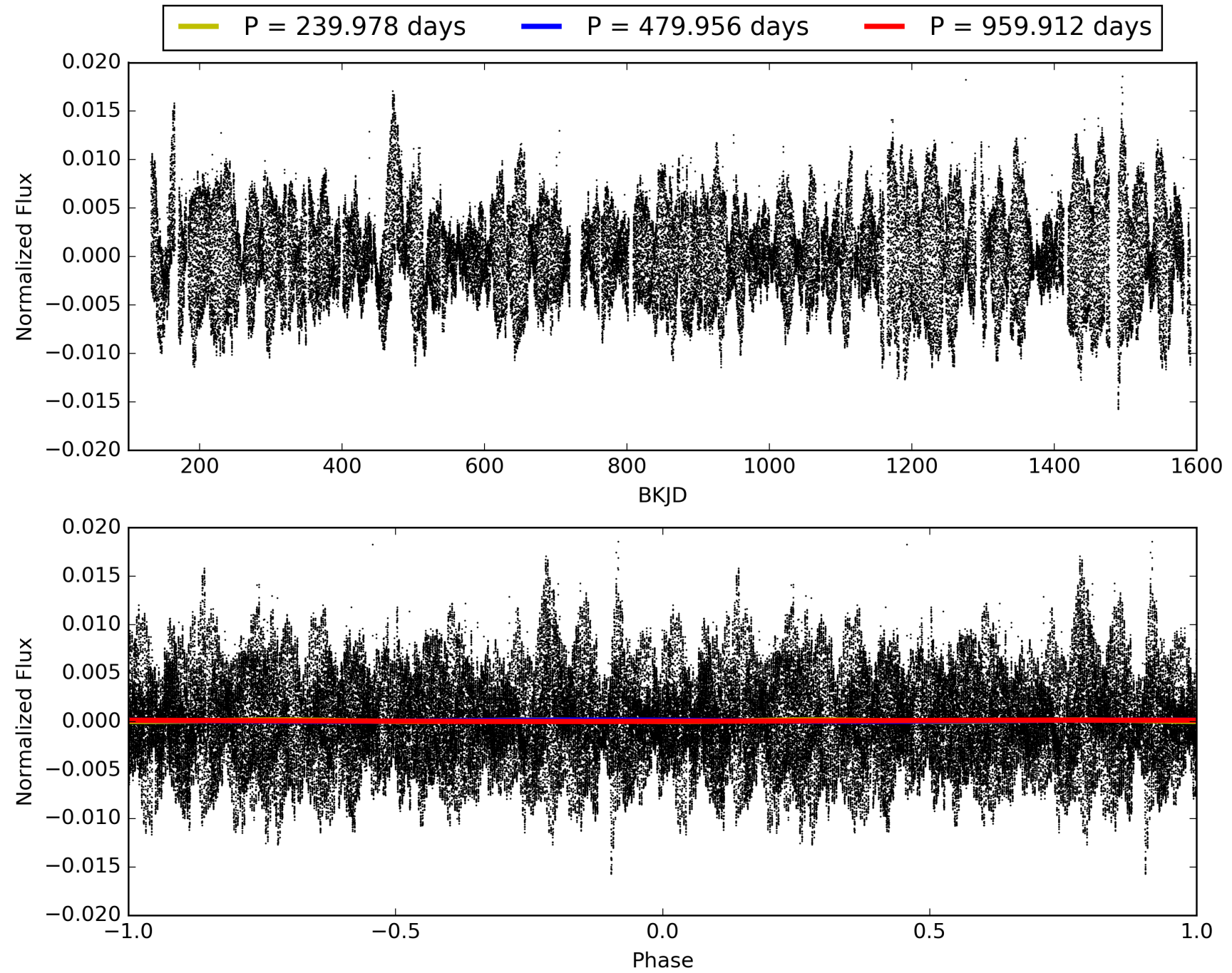
Software Revision: <svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958> -- Date Generated: 01-Feb-2016 12:34:25 Z

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

# TCE 006507334-02, PDC Light Curves

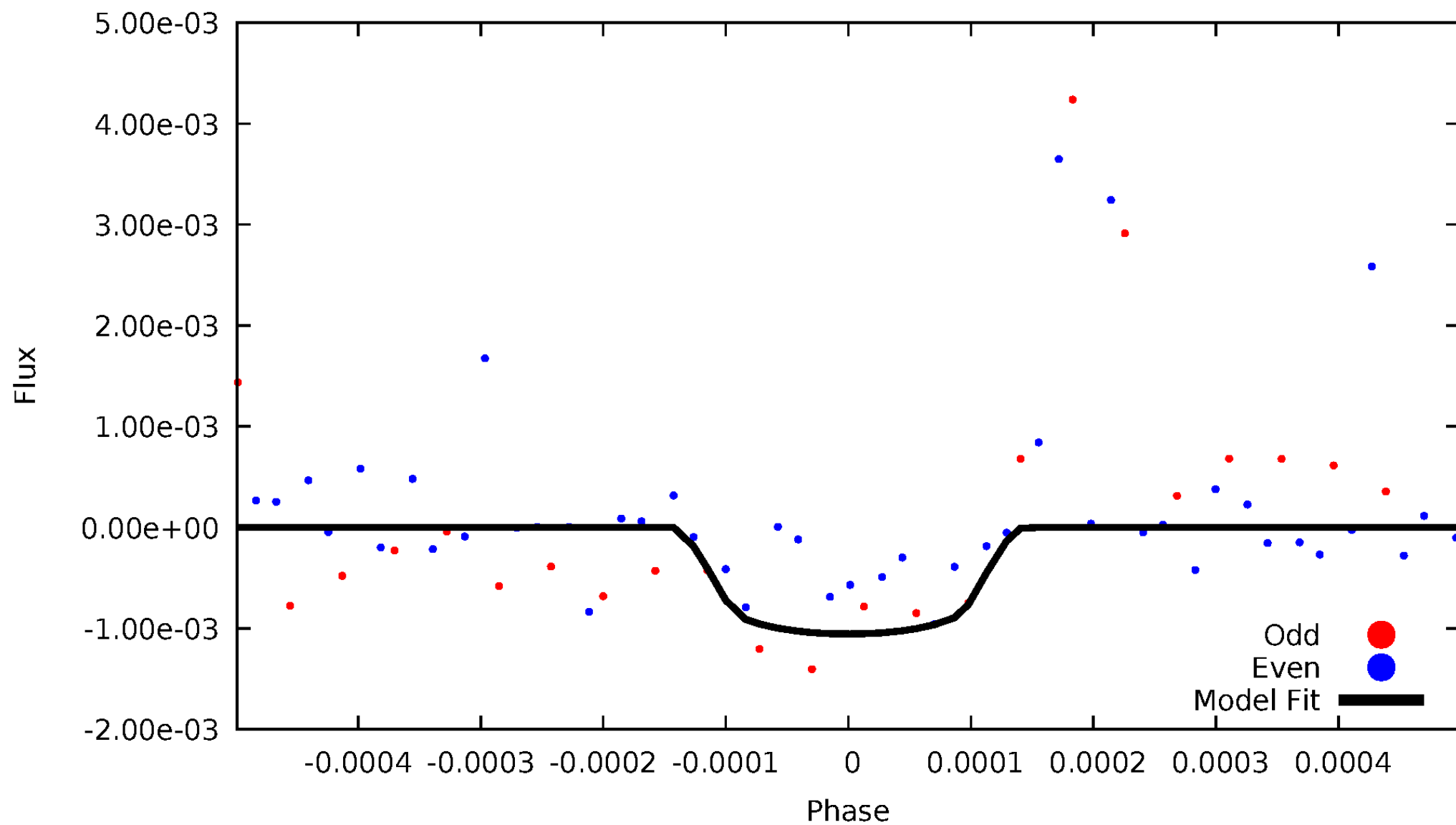


# TCE 006507334-02



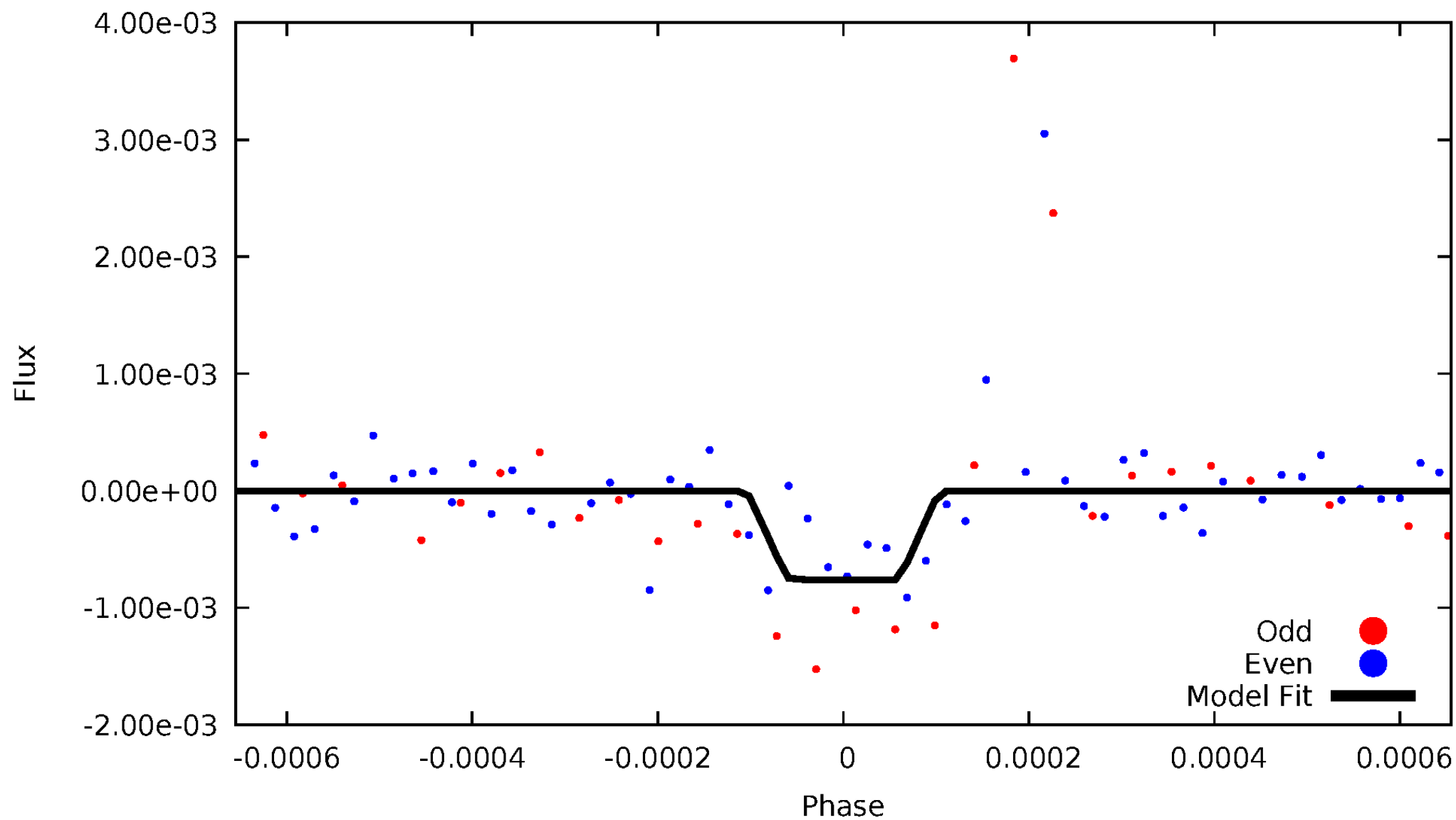
# DV Odd/Even

TCE 006507334-02



# ALT Odd/Even

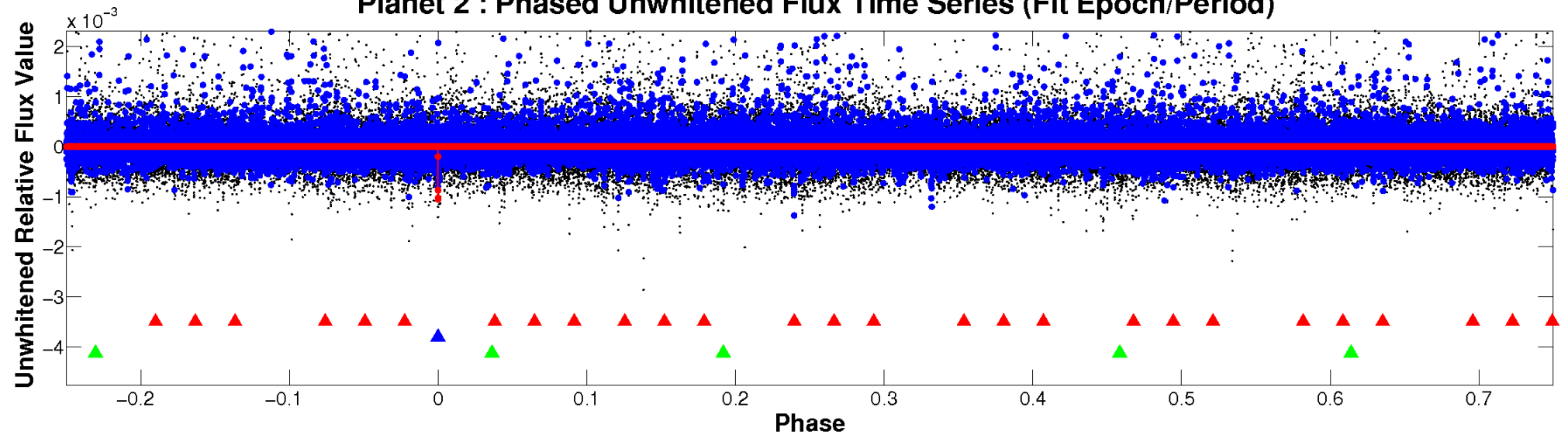
TCE 006507334-02



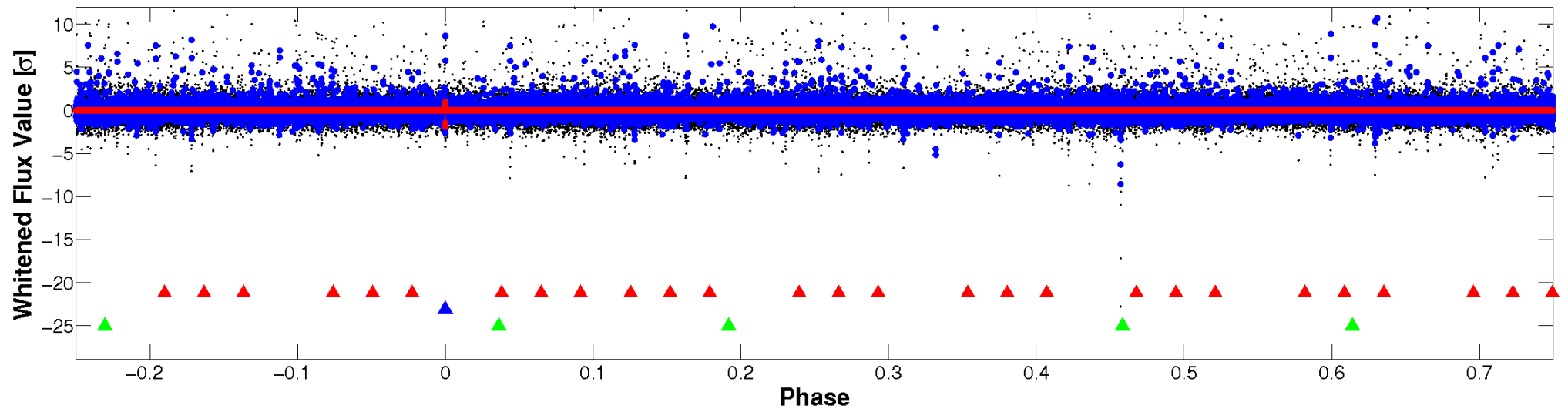


# Non-Whitened Vs. Whitened Light Curve

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

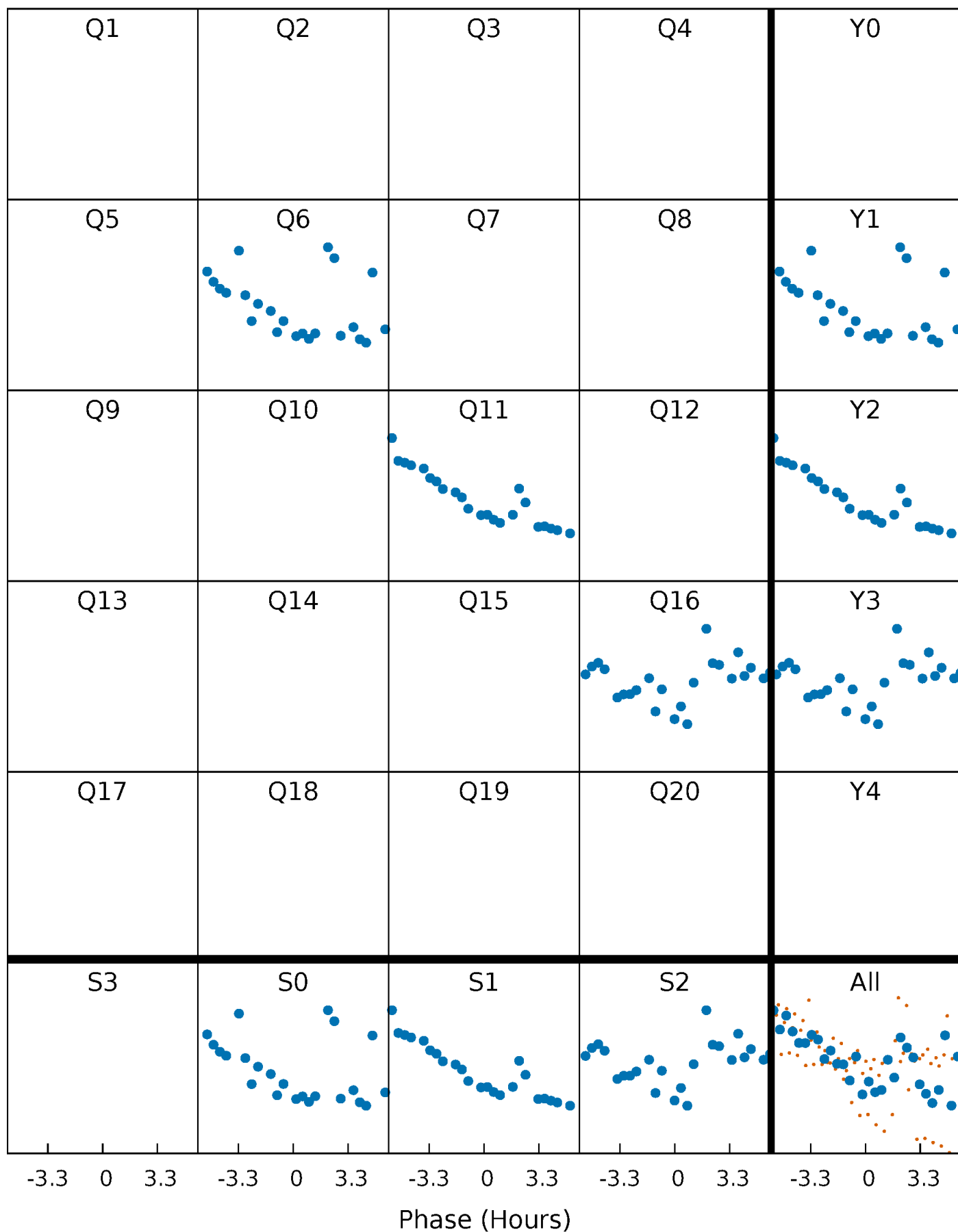


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



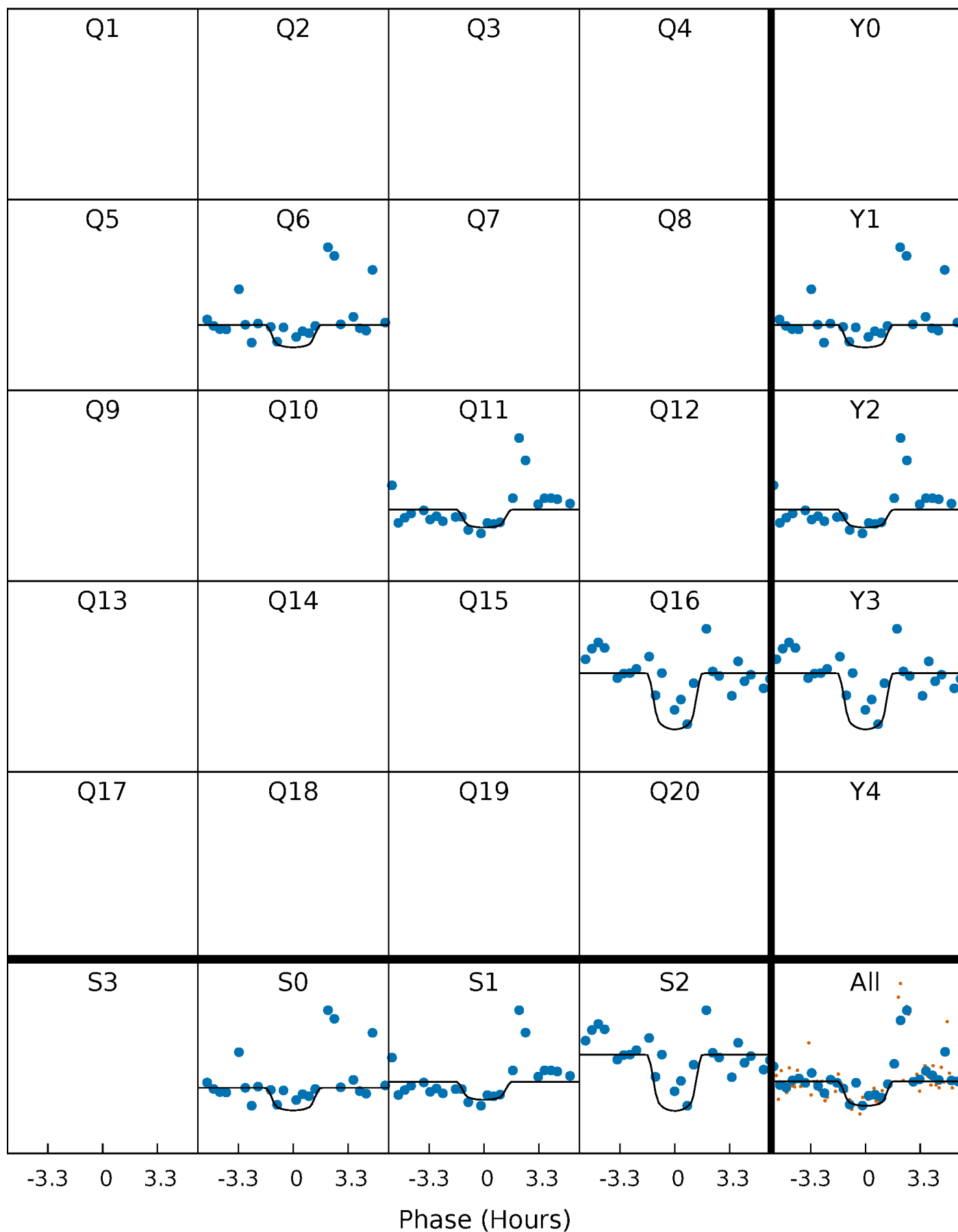
# PDC Quarter-Phased Transit Curves

TCE 006507334-02 P=479.956136 Days  $T_0=575.944436$  (BKJD)



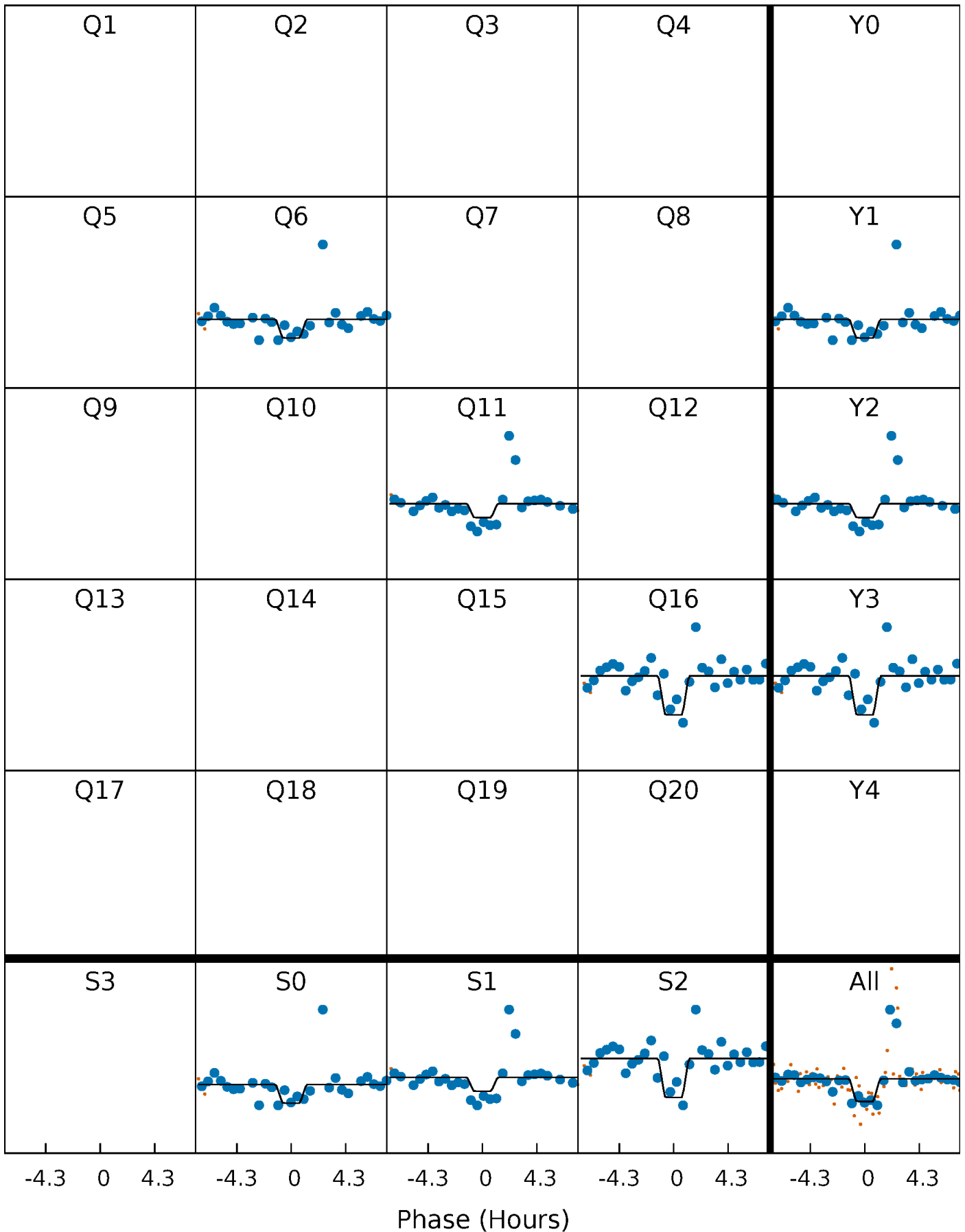
# DV Quarter-Phased Transit Curves

TCE 006507334-02 P=479.956136 Days  $T_0=575.944436$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

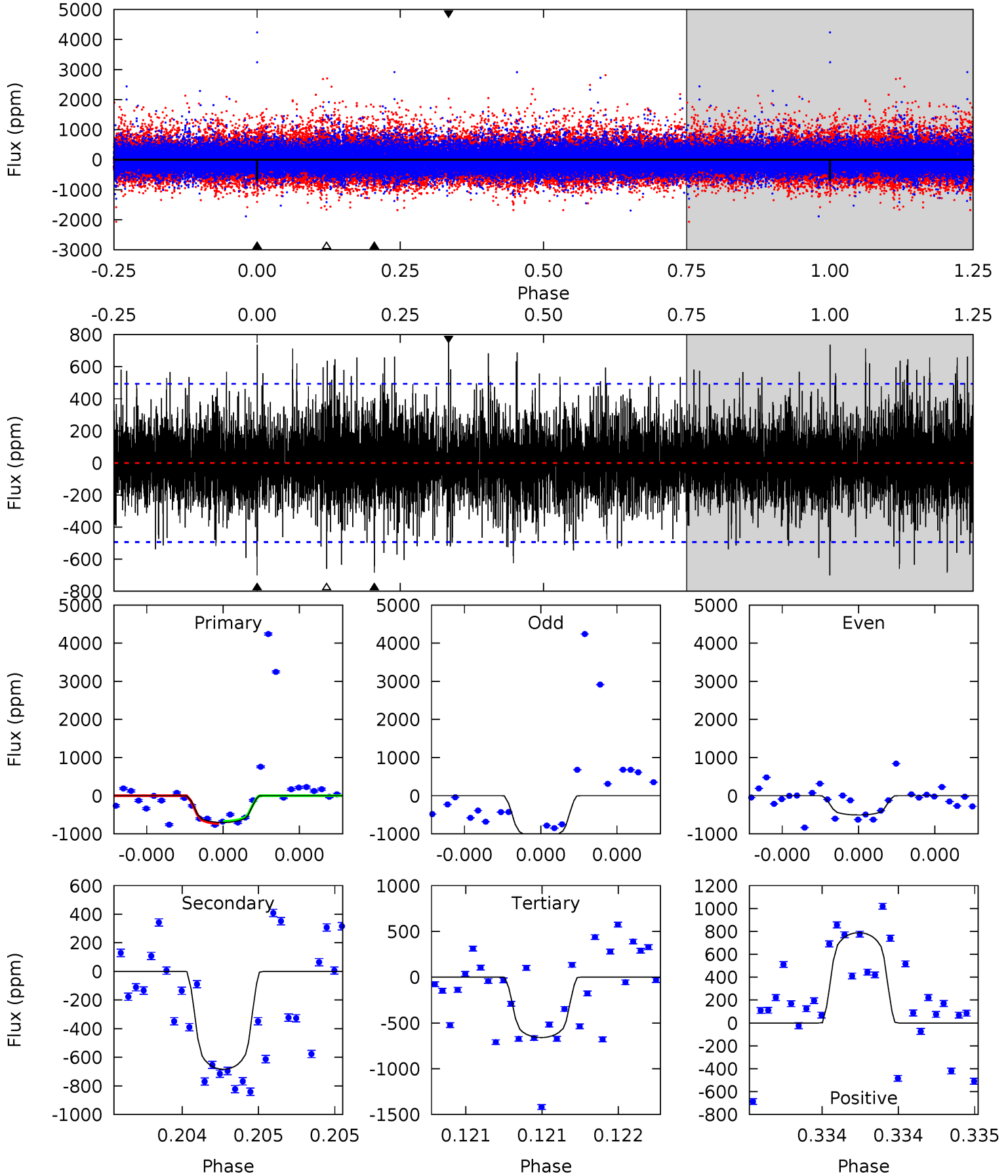
TCE 006507334-02 P=479.957080 Days  $T_0=575.943254$  (BKJD)



# DV Model-Shift Uniqueness Test

006507334-02, P = 479.956136 Days, E = 95.988300 Days

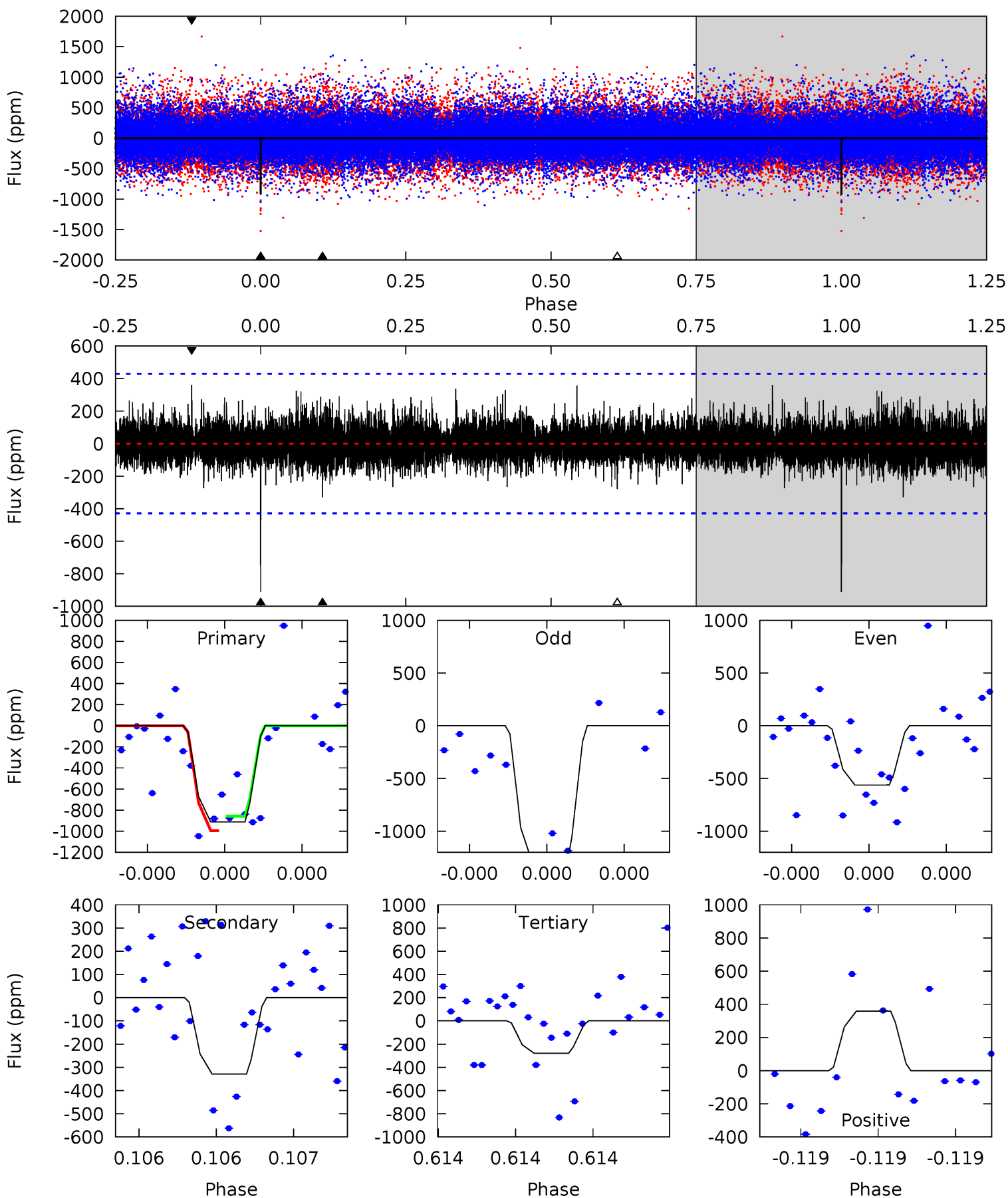
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.04	7.85	7.57	9.06	5.66	3.62	1.83	0.47	-1.01	0.28	-1.20	2.83	1.27	0.53	0.34



# Alt Model-Shift Uniqueness Test

006507334-02, P = 479.957080 Days, E = 95.986174 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
12.2	4.39	3.73	4.78	5.72	3.70	0.93	8.43	7.38	0.66	-0.39	4.58	1.33	0.28	0.89





### Stellar Parameters For KIC 006507334

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6242^{+168}_{-205}$	$4.442^{+0.058}_{-0.232}$	$-0.100^{+0.250}_{-0.300}$	$1.047^{+0.361}_{-0.120}$	$1.104^{+0.156}_{-0.140}$	$1.354^{+0.409}_{-0.740}$
	+3%/-3%	+1%/-5%	+250%/-300%	+34%/-11%	+14%/-13%	+30%/-55%
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 006507334-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-684 \pm 87$	$5.35^{+4.71}_{-3.37}$	$361^{+29}_{-20}$	$4835^{+3262}_{-966}$	$19275^{+126180}_{-13596}$
Alt.	$-329 \pm 75$	$5.10^{+4.48}_{-3.36}$	$362^{+31}_{-19}$	$4341^{+2715}_{-858}$	$10851^{+79865}_{-7973}$

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

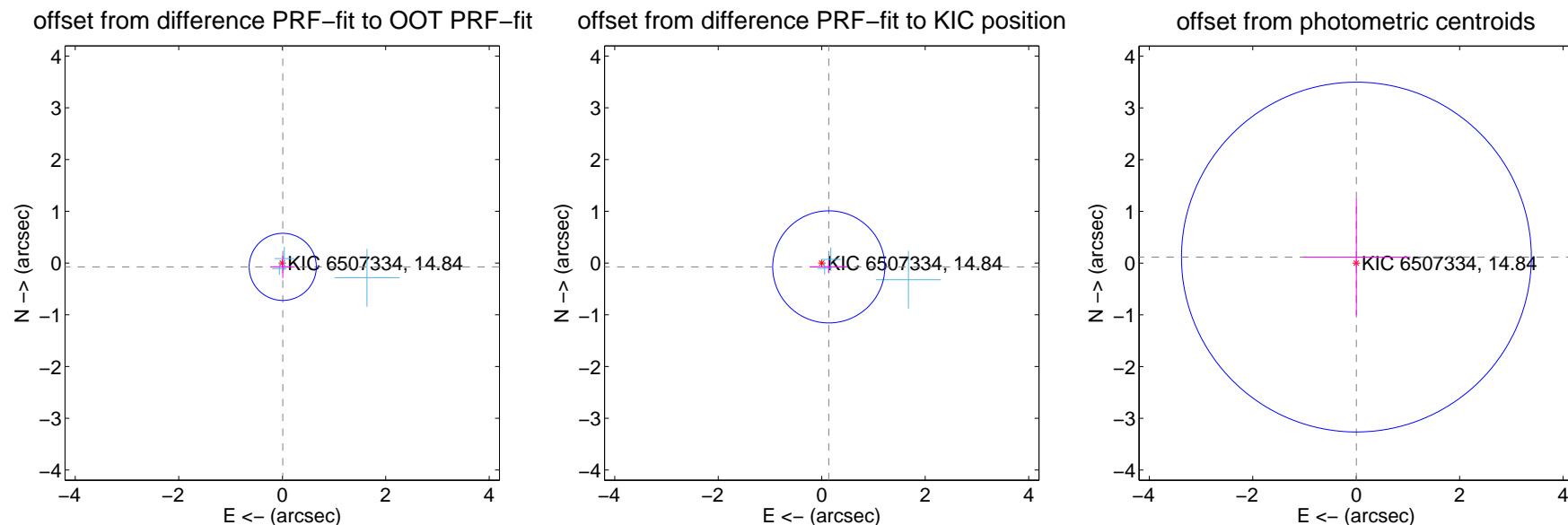
## DV Centroid Data

Supplemental centroid analysis for 006507334-02. Kepler magnitude: 14.84. Transit SNR 7.04

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.075 \pm 0.216$	0.35	$-0.010 \pm 0.233$	$-0.074 \pm 0.216$
PRF-fit source offset from KIC position	$0.156 \pm 0.361$	0.43	$-0.137 \pm 0.363$	$-0.074 \pm 0.121$
photometric centroid source offset	$0.12 \pm 1.13$	0.10	$-0.00 \pm 1.03$	$0.12 \pm 1.13$



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.

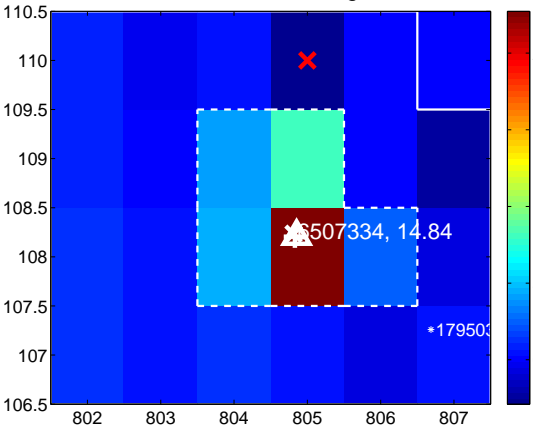
Q5 no difference image



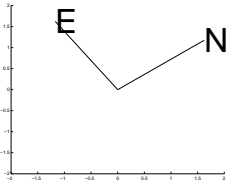
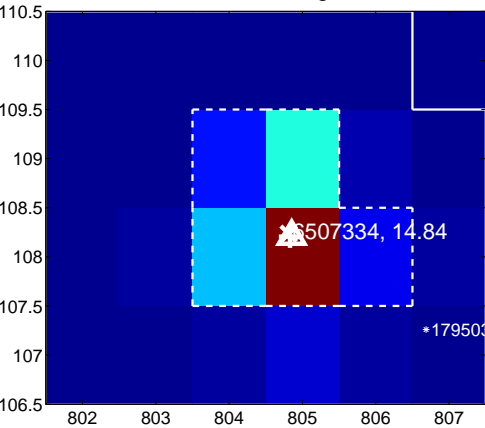
Q5 no OOT image



Q6 difference image



Q6 OOT image



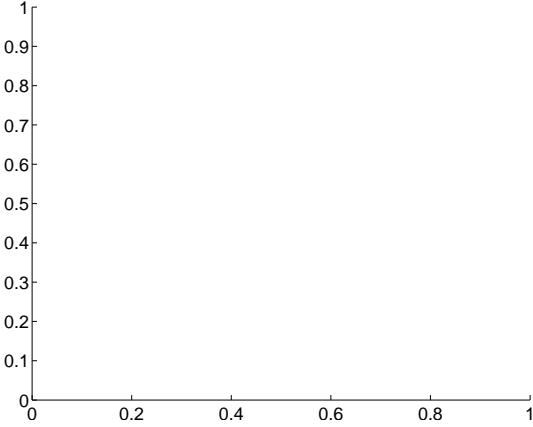
Q7 no difference image



Q7 no OOT image



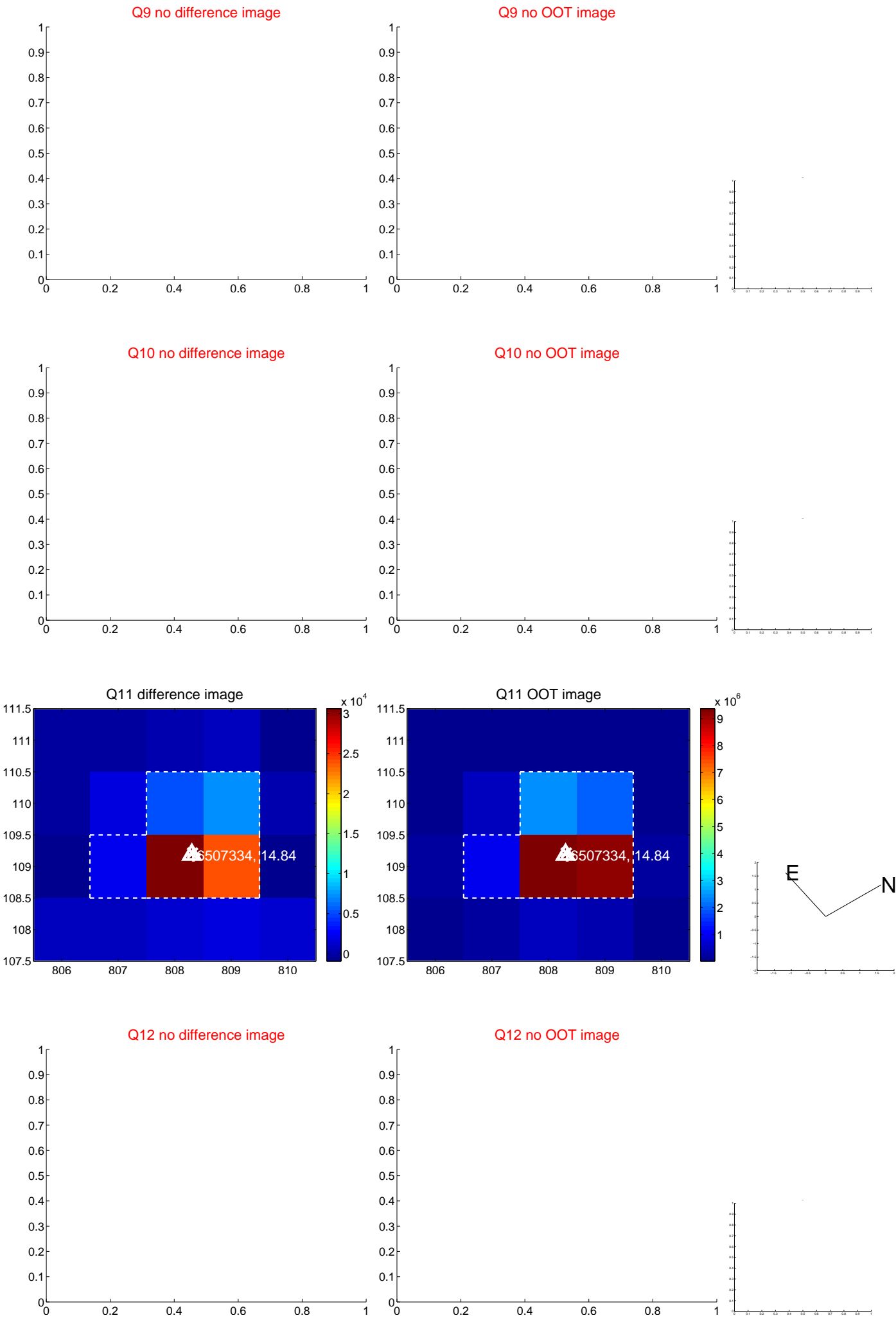
Q8 no difference image



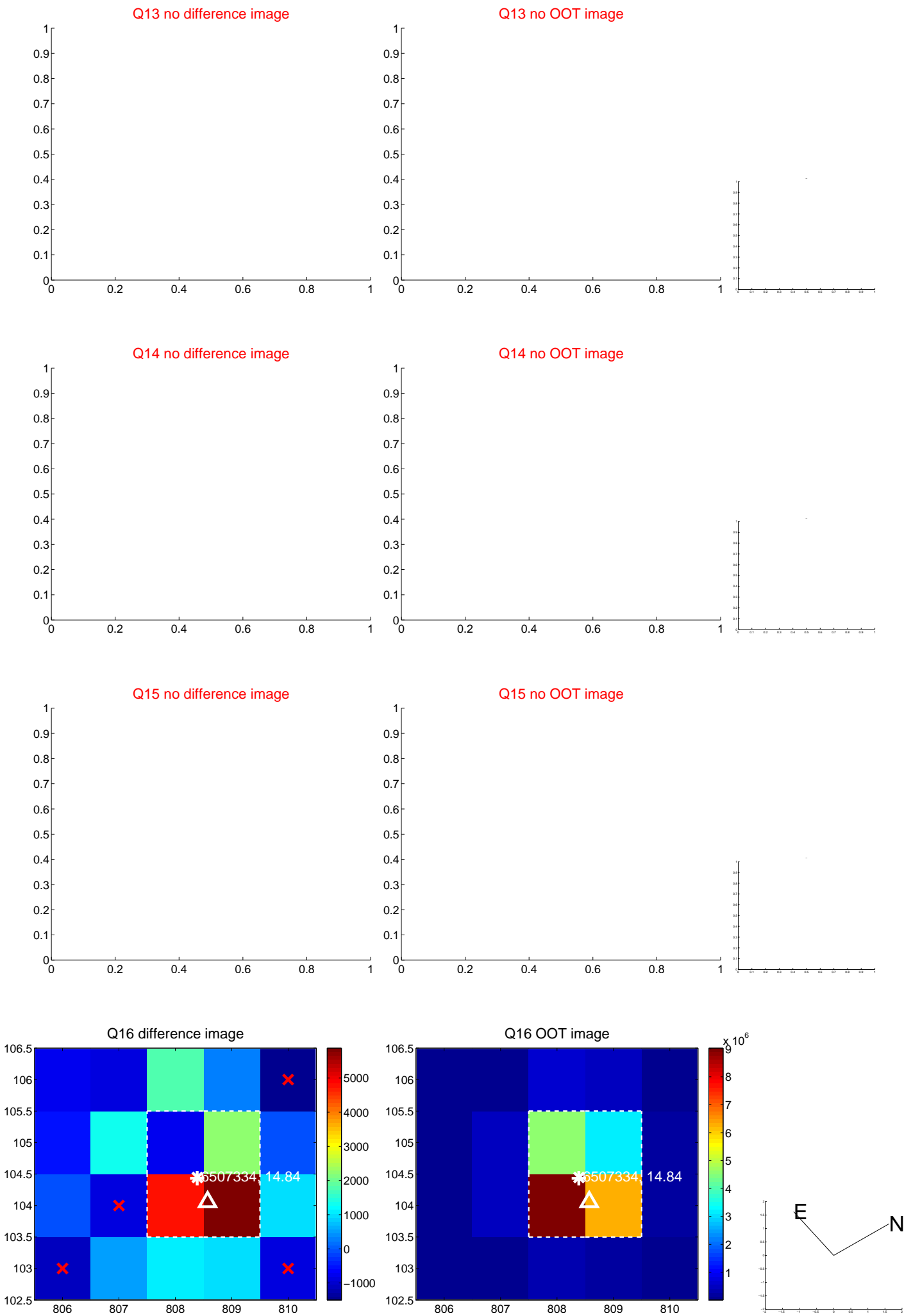
Q8 no OOT image



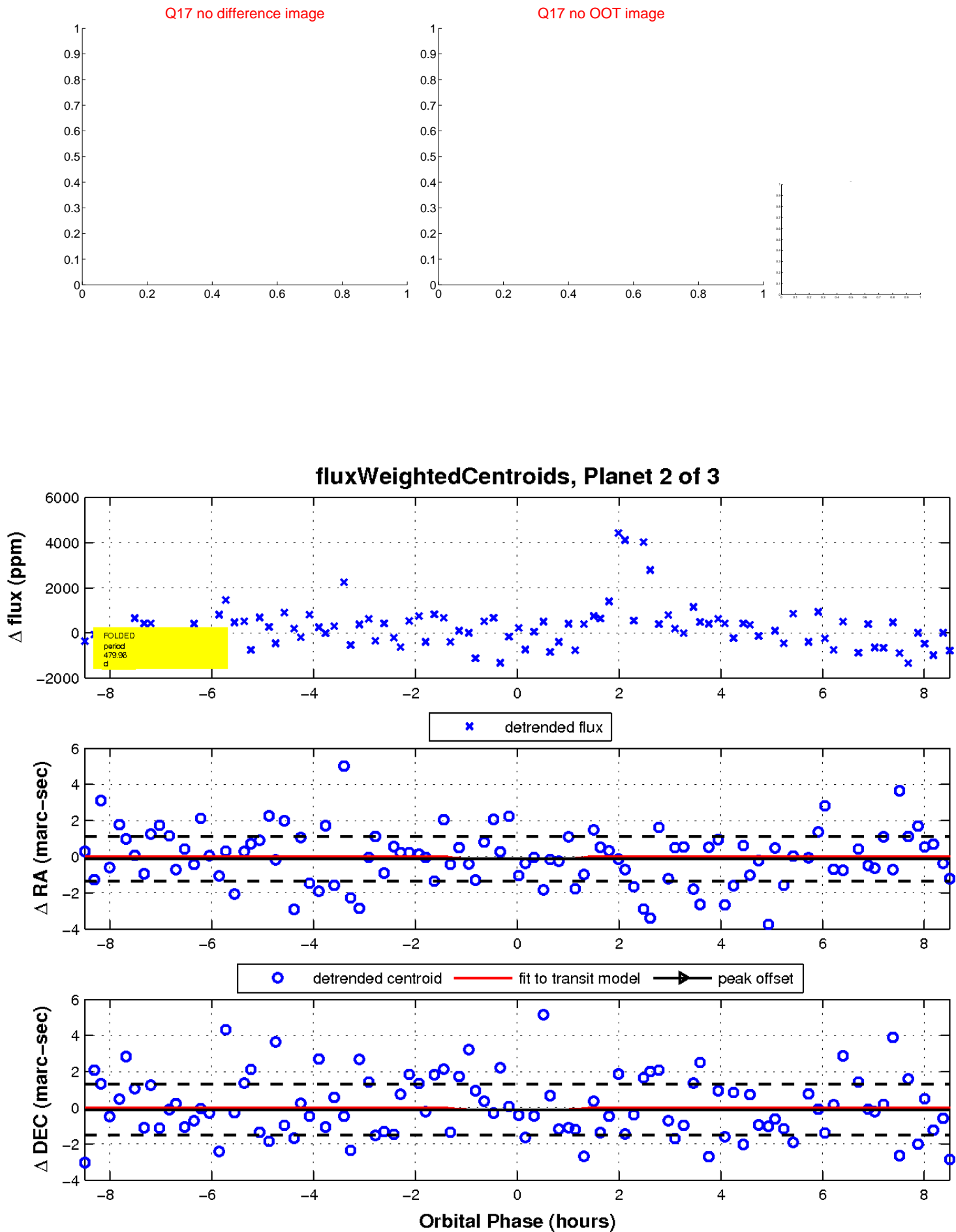
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

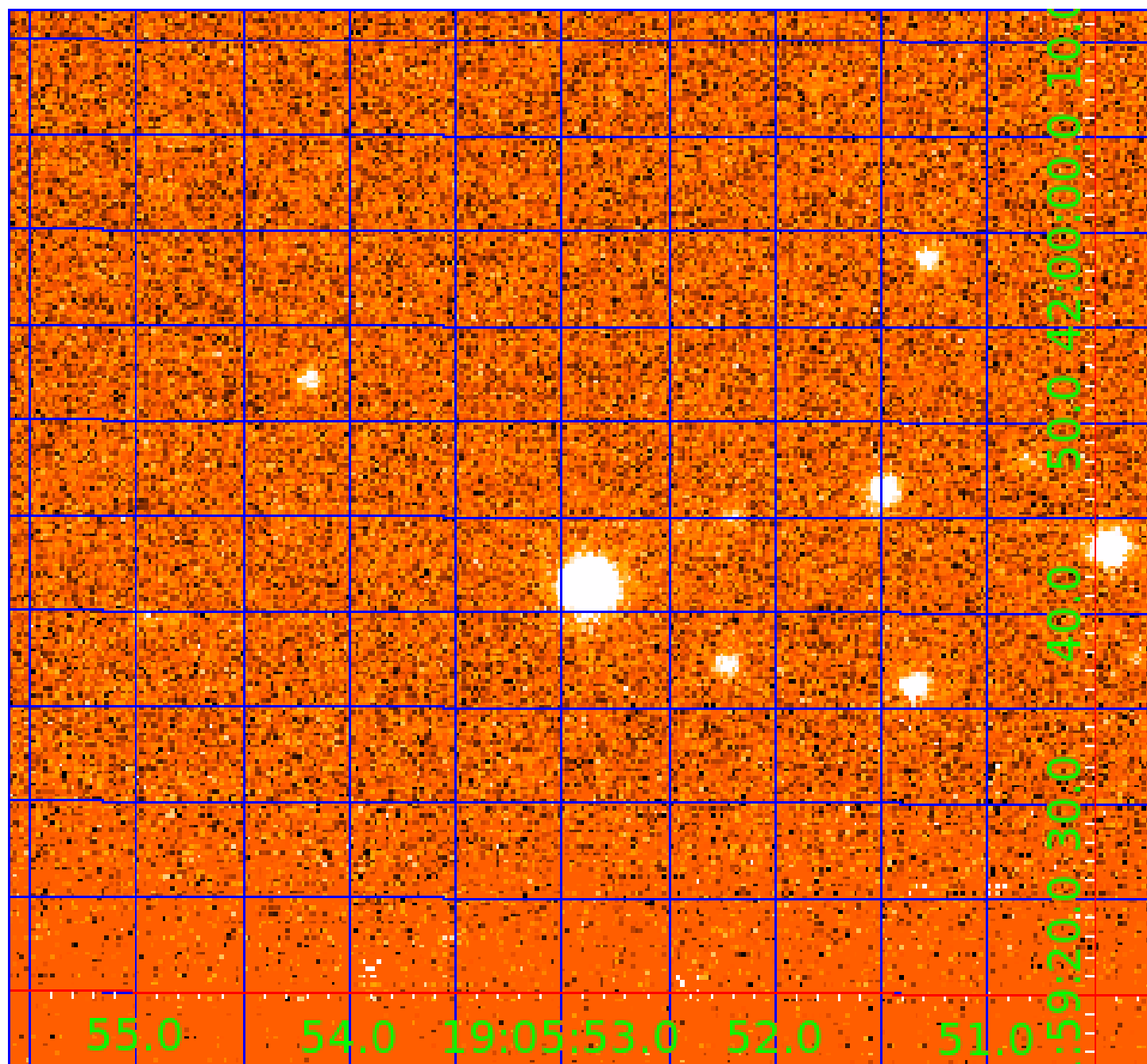


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 006507334

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006507334-01	OBS	8122.01	54.753686	156.235291	382.1	2.971	9.4	6.7	1.05	6242	2.21	17.50
006507334-02	OBS	No	479.956136	575.944436	1056.4	2.872	11.5	7.0	1.05	6242	3.69	0.97
006507334-03	OBS	No	277.314553	316.042396	1085.6	2.851	10.0	7.4	1.05	6242	4.24	2.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006507334-01	OBS	PC	0.73	0	0	0	0	NO_COMMENT
006507334-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006507334-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES

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

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

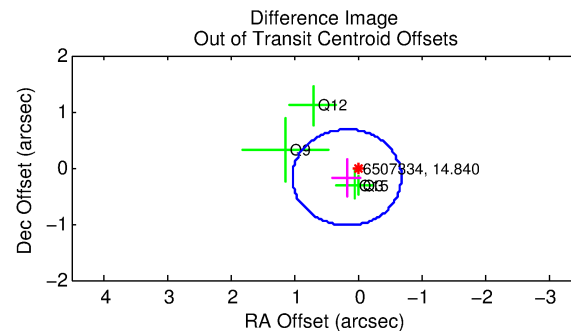
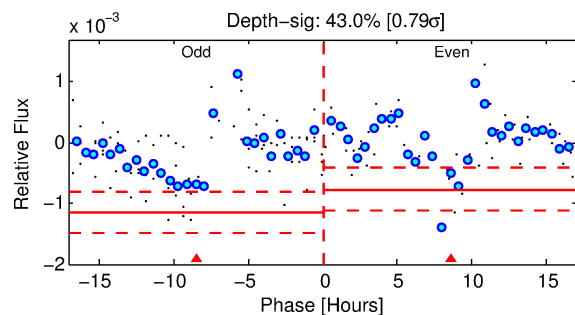
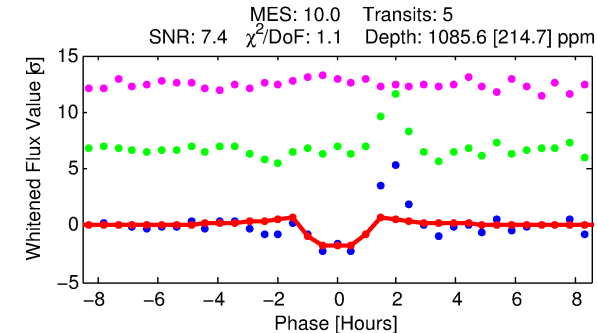
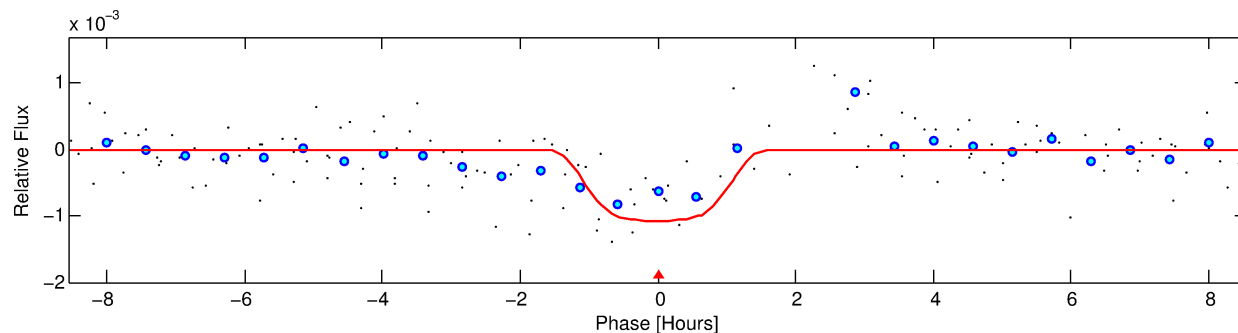
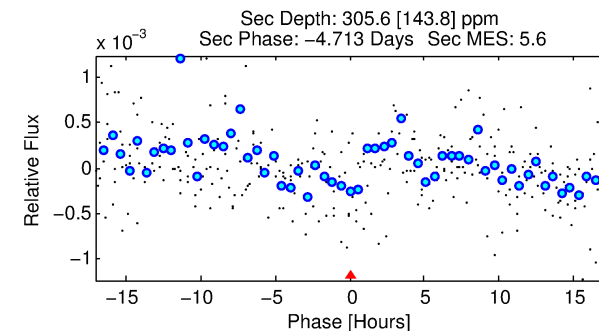
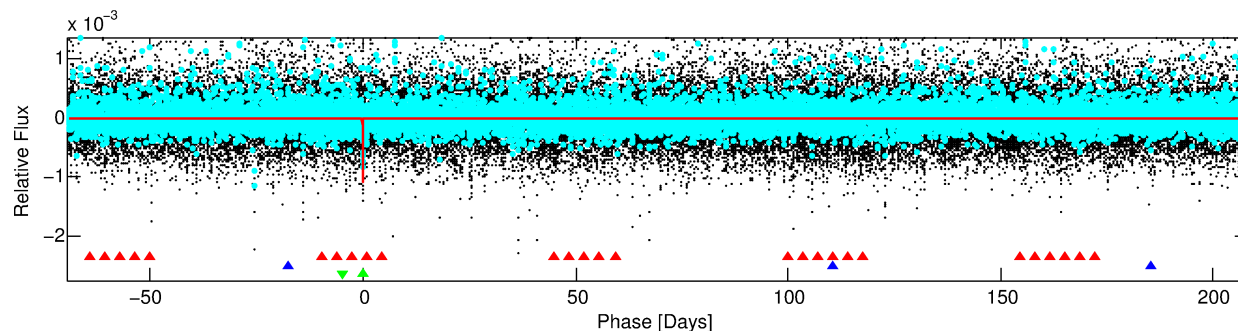
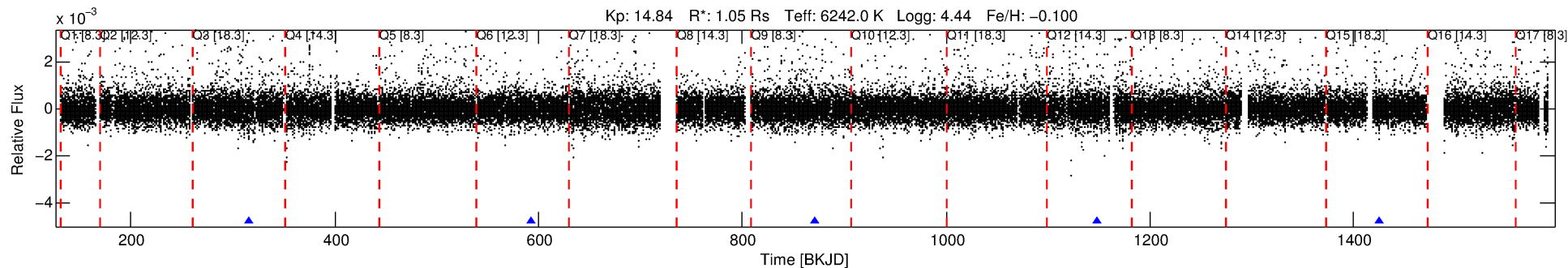
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006507334-03

No Significant Match Found

# DV One-Page Summary

KIC: 6507334 Candidate: 3 of 3 Period: 277.315 d



## DV Fit Results:

Period = 277.31455 [0.00315] d  
Epoch = 316.0424 [0.0080] BKJD  
Rp/R\* = 0.0371 [0.0056]  
a/R\* = 326.92 [147.91]  
b = 0.94 [0.06]  
Seff = 2.01 [0.89]  
Teq = 304 [34] K  
Rp = 4.24 [1.60] Re  
a = 0.8609 [0.2503] AU  
Ag = 6923.56 [4857.77] [1.43σ]  
Teff = 4283 [615] K [6.46σ]

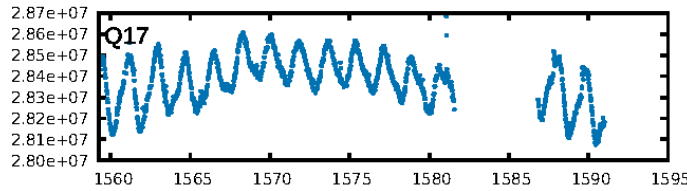
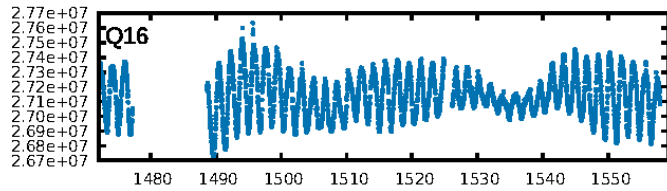
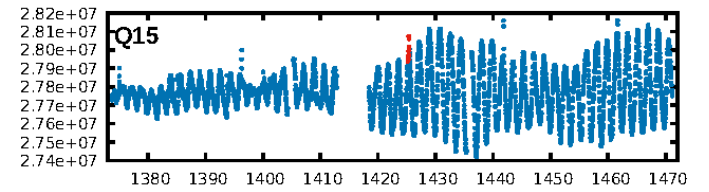
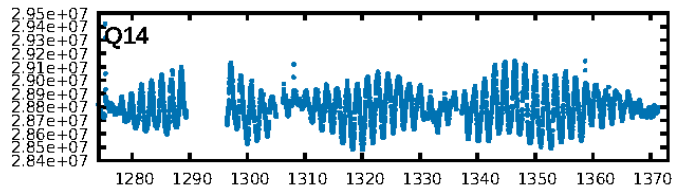
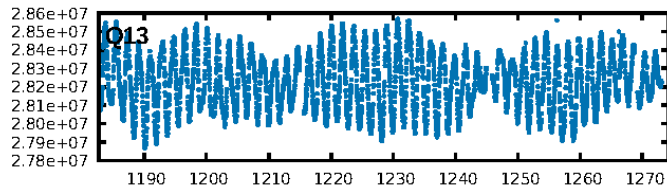
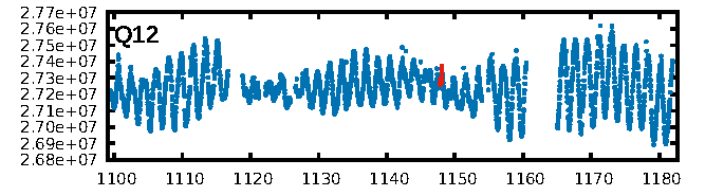
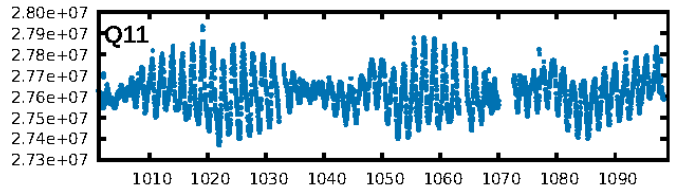
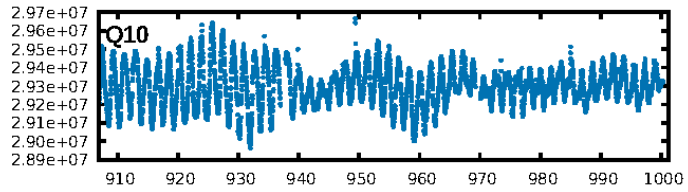
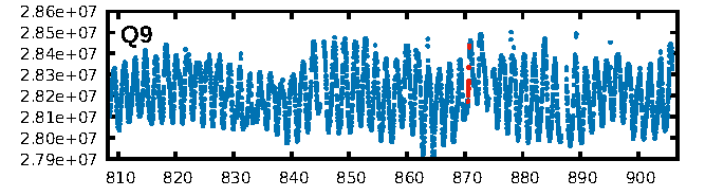
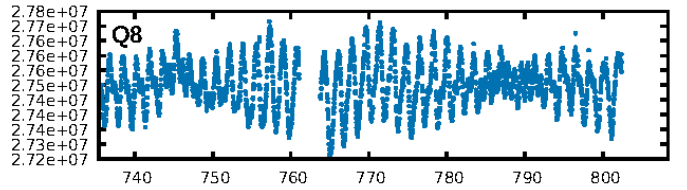
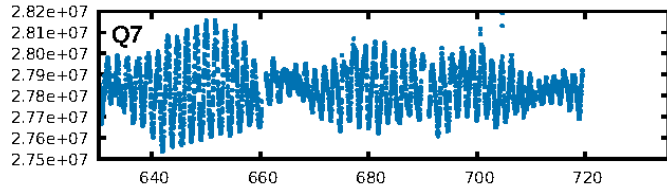
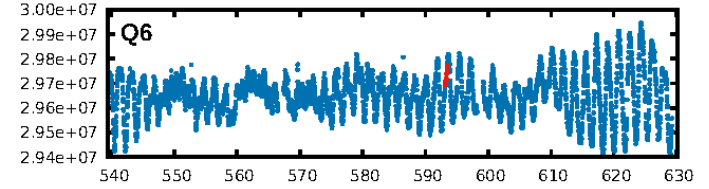
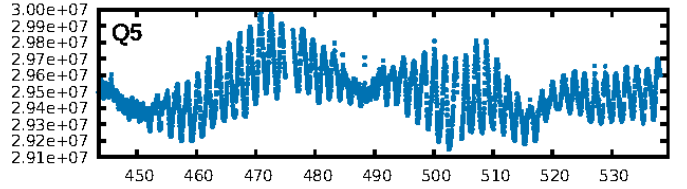
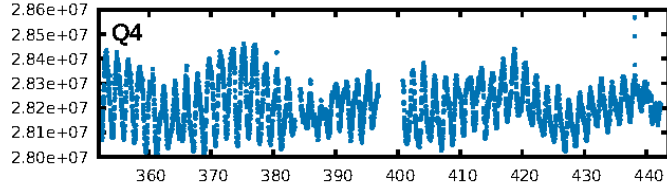
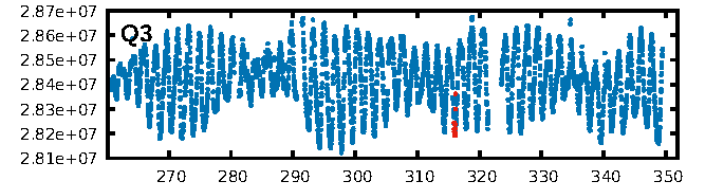
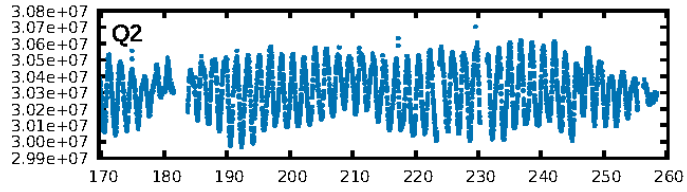
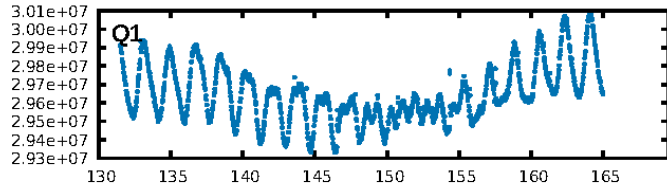
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1297.29σ]  
LongPeriod-sig: 100.0% [1201.88σ]  
ModelChiSquare2-sig: 20.6%  
ModelChiSquareGof-sig: 92.8%  
**Bootstrap-pfa: 5.94e-09**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 2.392  
Centroid-sig: 2.7%  
Centroid-so: 1.478 arcsec [1.60σ]  
OotOffset-rm: 0.245 arcsec [0.86σ]  
OotOffset-st: 0.252 arcsec [0.83σ]  
OotOffset-st: 0/2/1/1 [4]  
KicOffset-st: 0/2/1/1 [4]  
DiffImageQuality-fgm: 0.75 [3/4]  
DiffImageOverlap-fno: 1.00 [5/5]

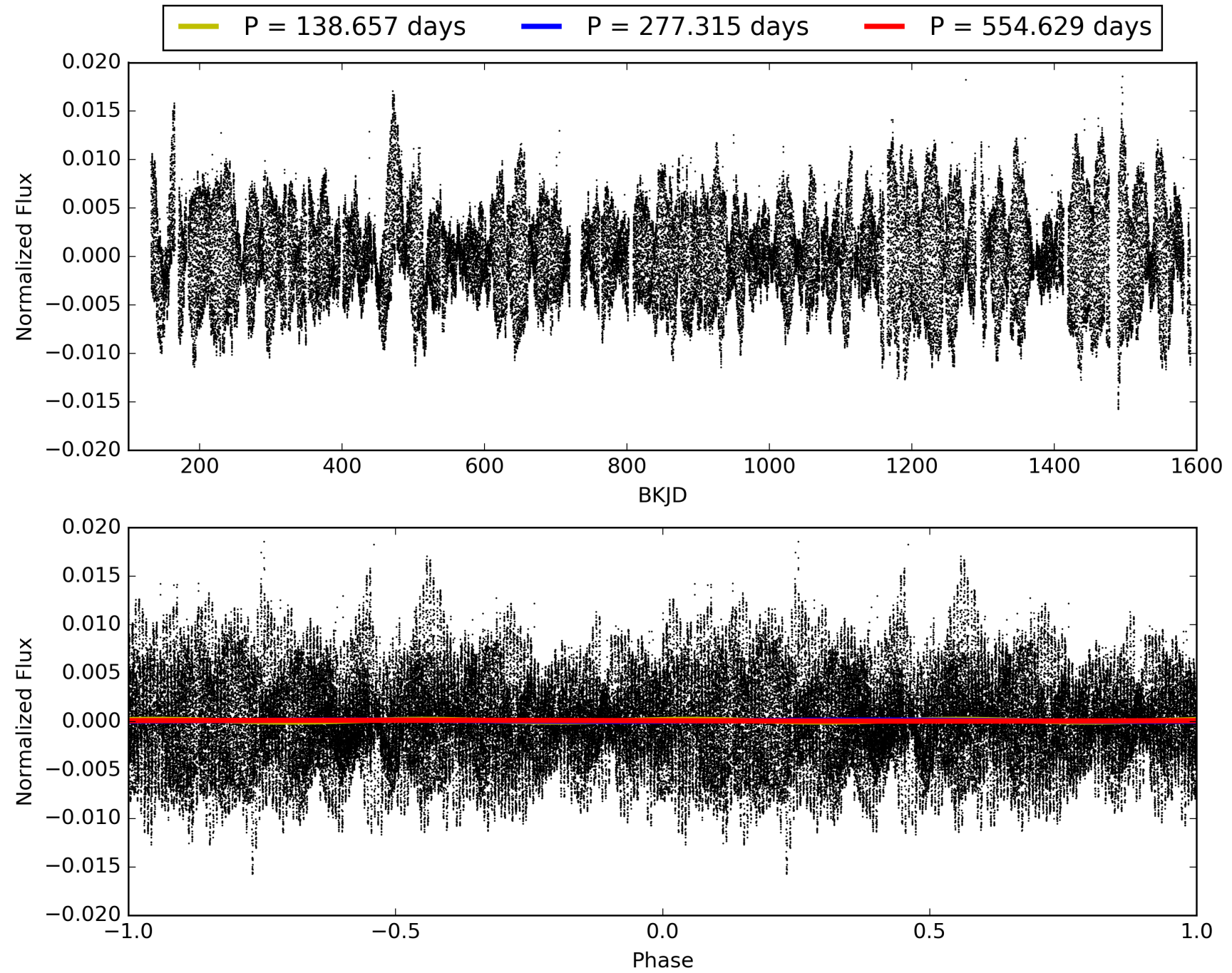
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:34:41 Z

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

## TCE 006507334-03, PDC Light Curves

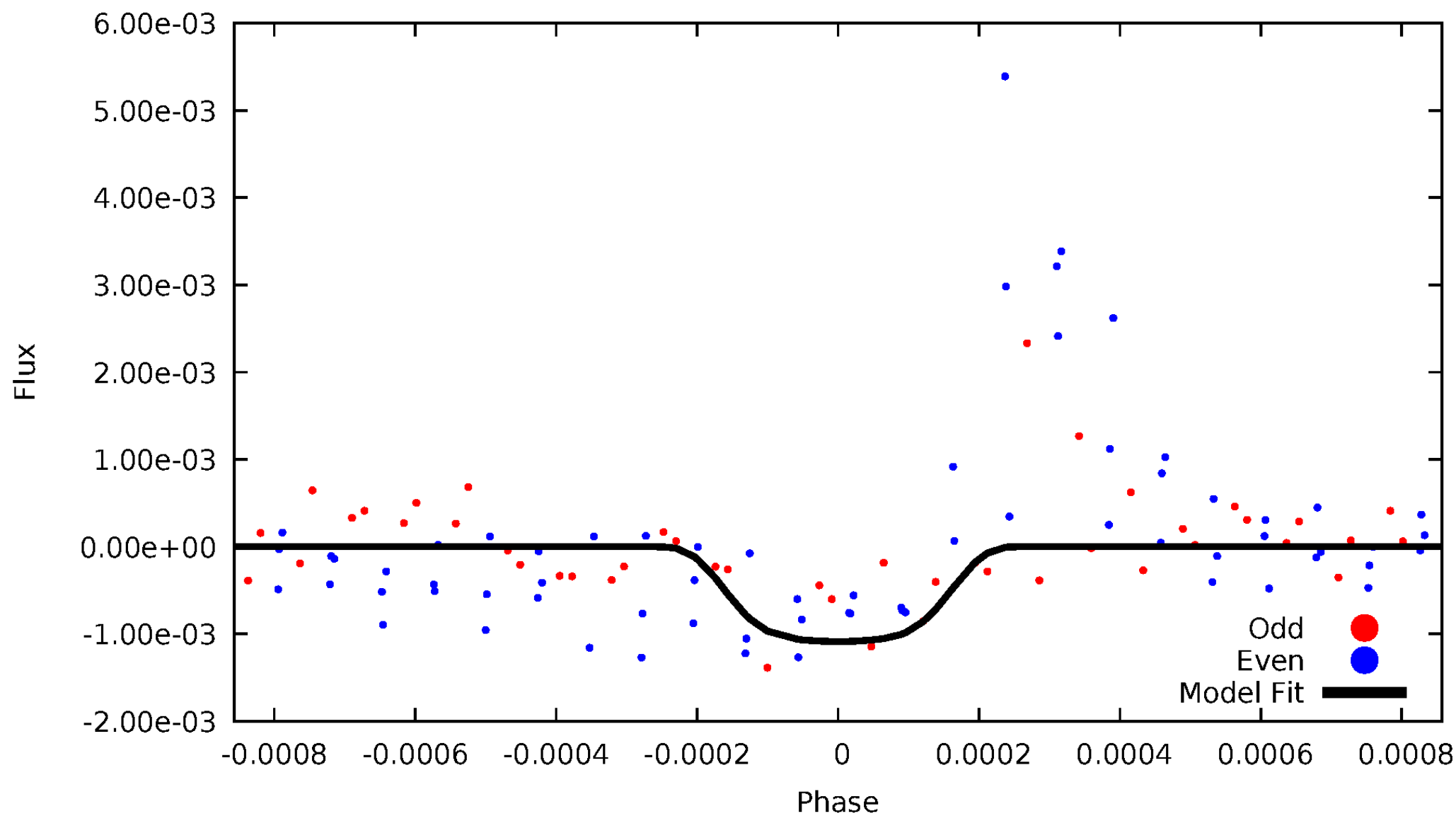


TCE 006507334-03



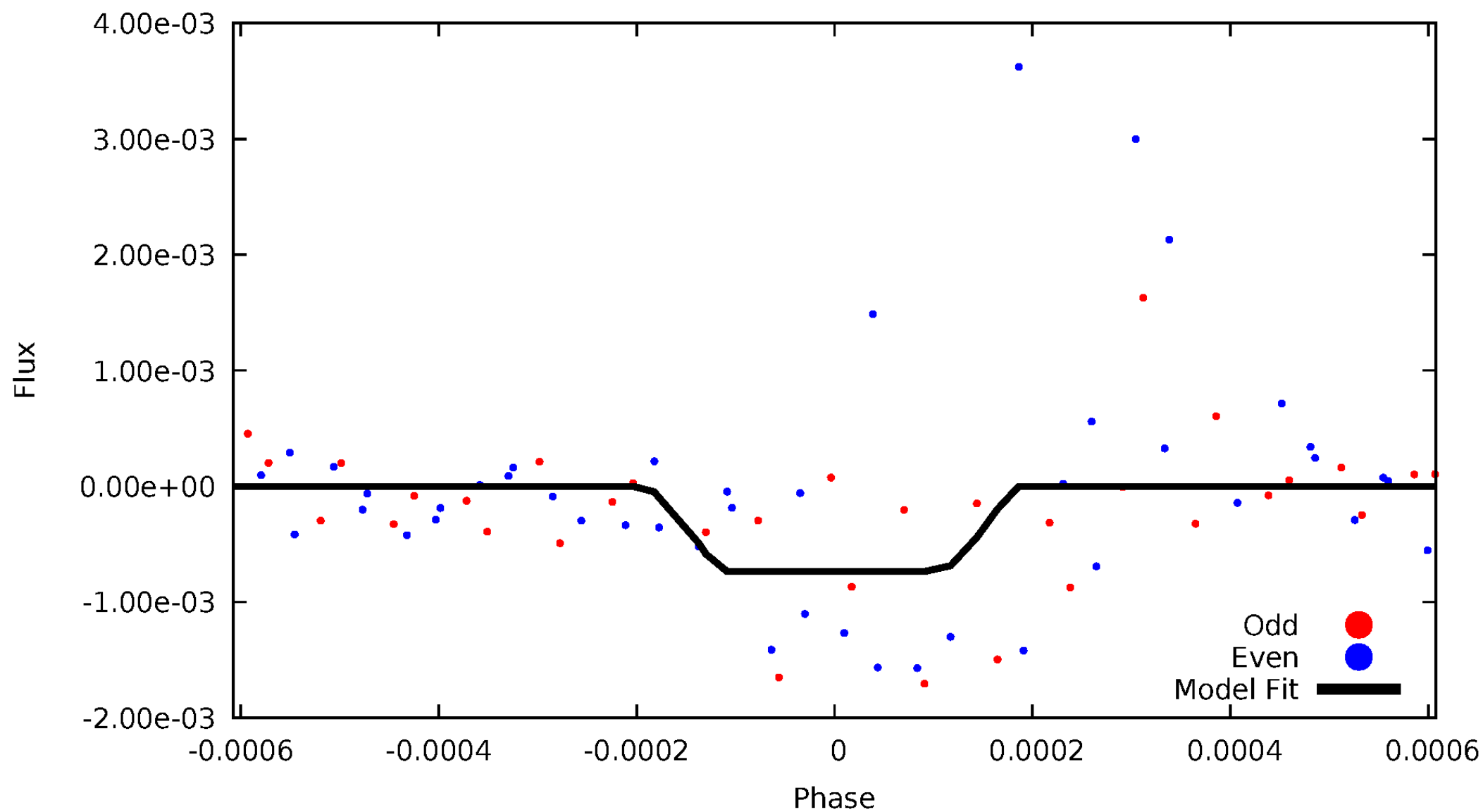
# DV Odd/Even

TCE 006507334-03



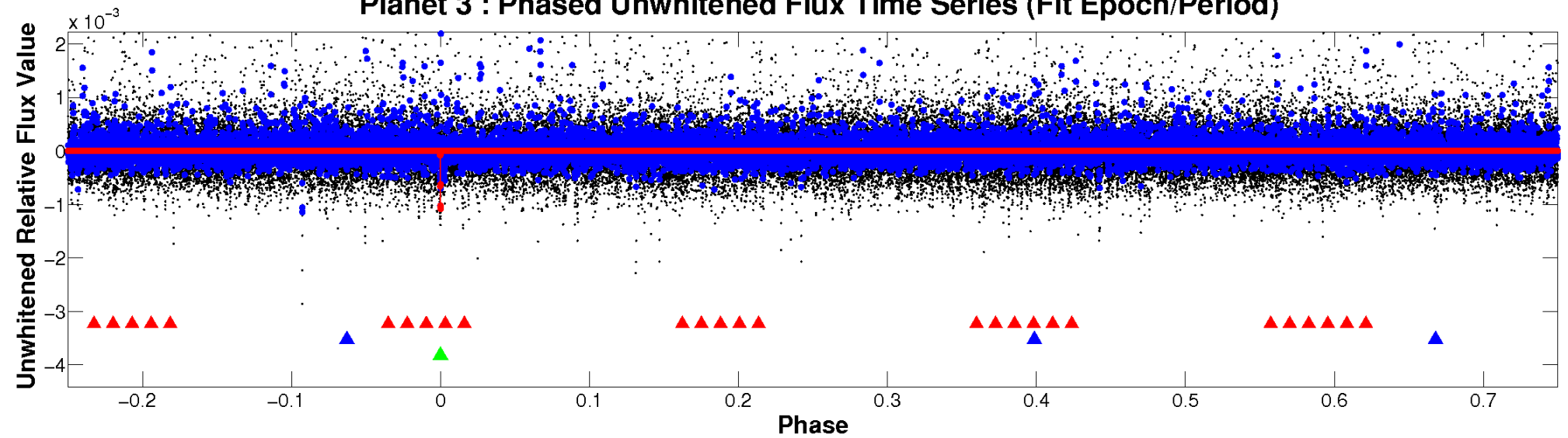
# ALT Odd/Even

TCE 006507334-03

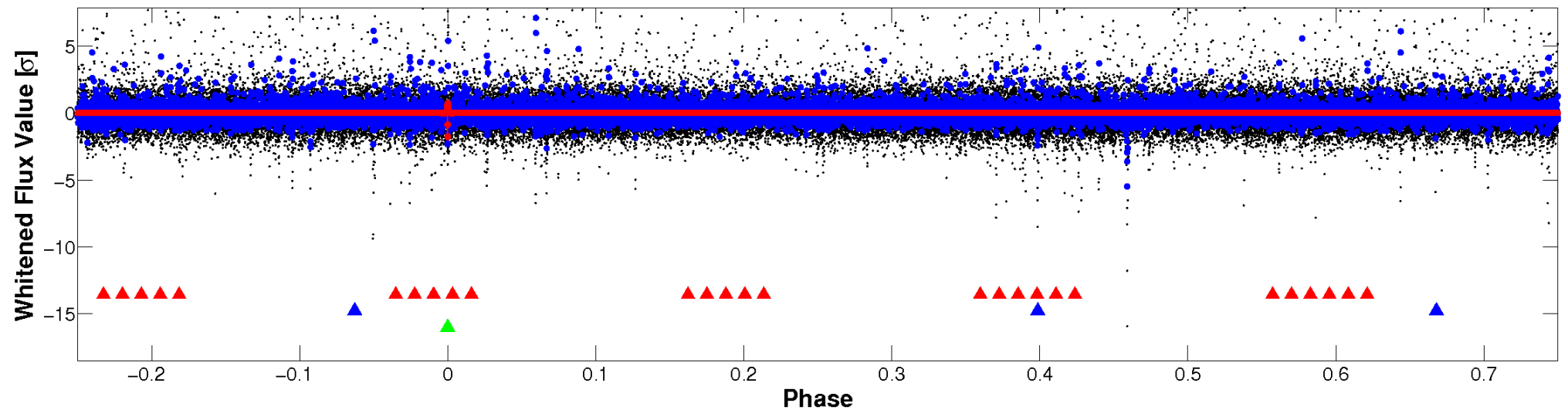


# Non-Whitened Vs. Whitened Light Curve

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



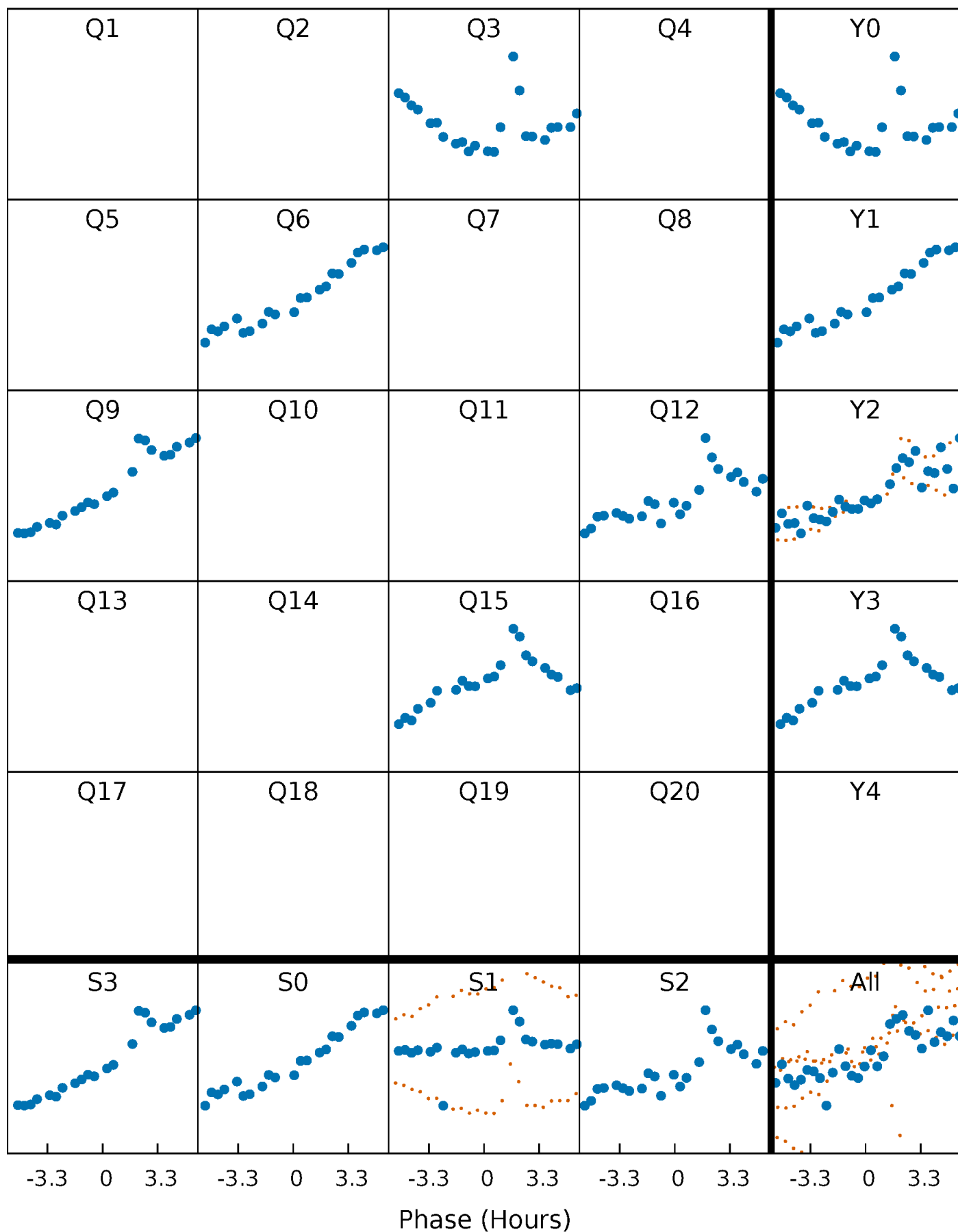
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

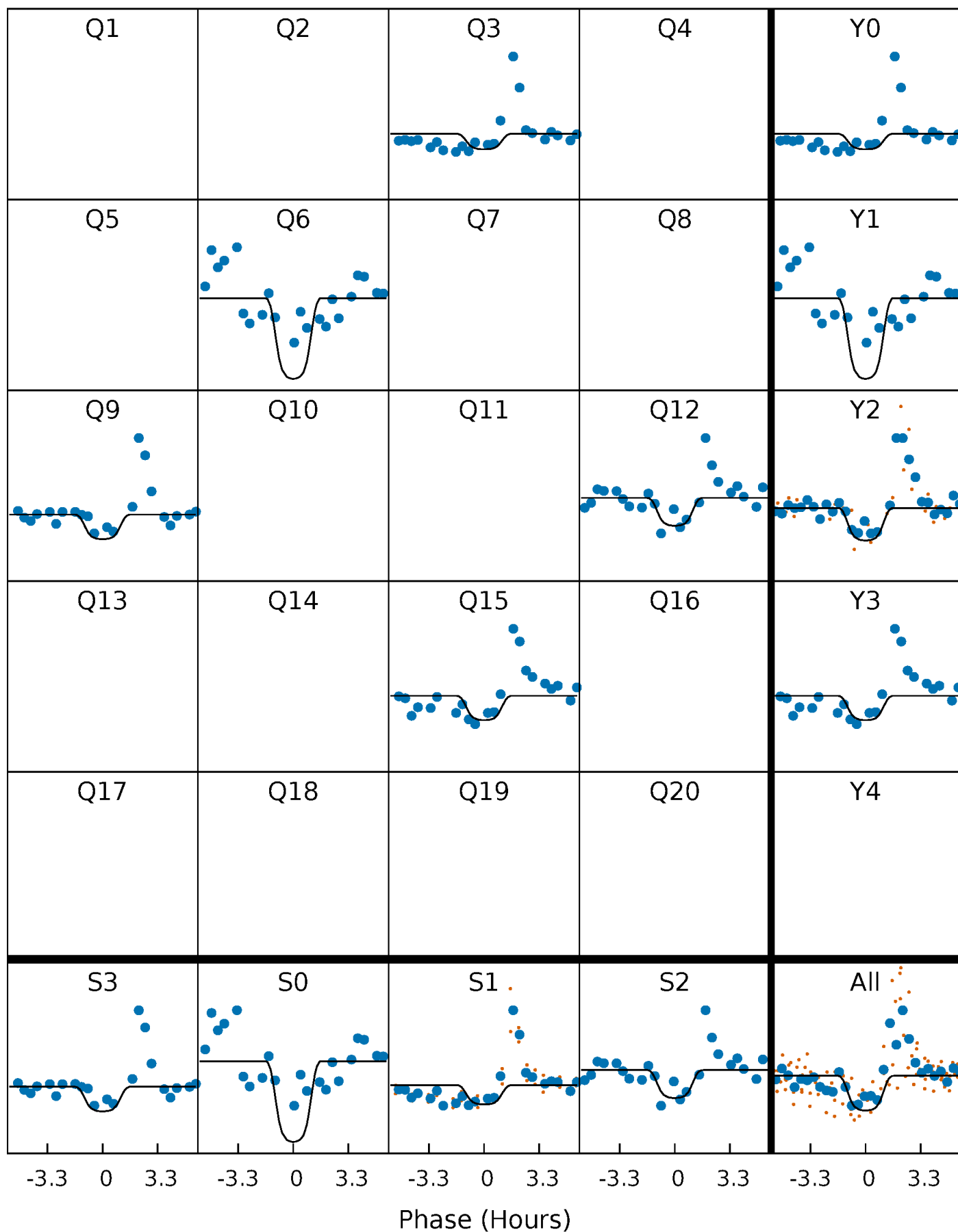
TCE 006507334-03 P=277.314553 Days  $T_0=316.042396$  (BKJD)





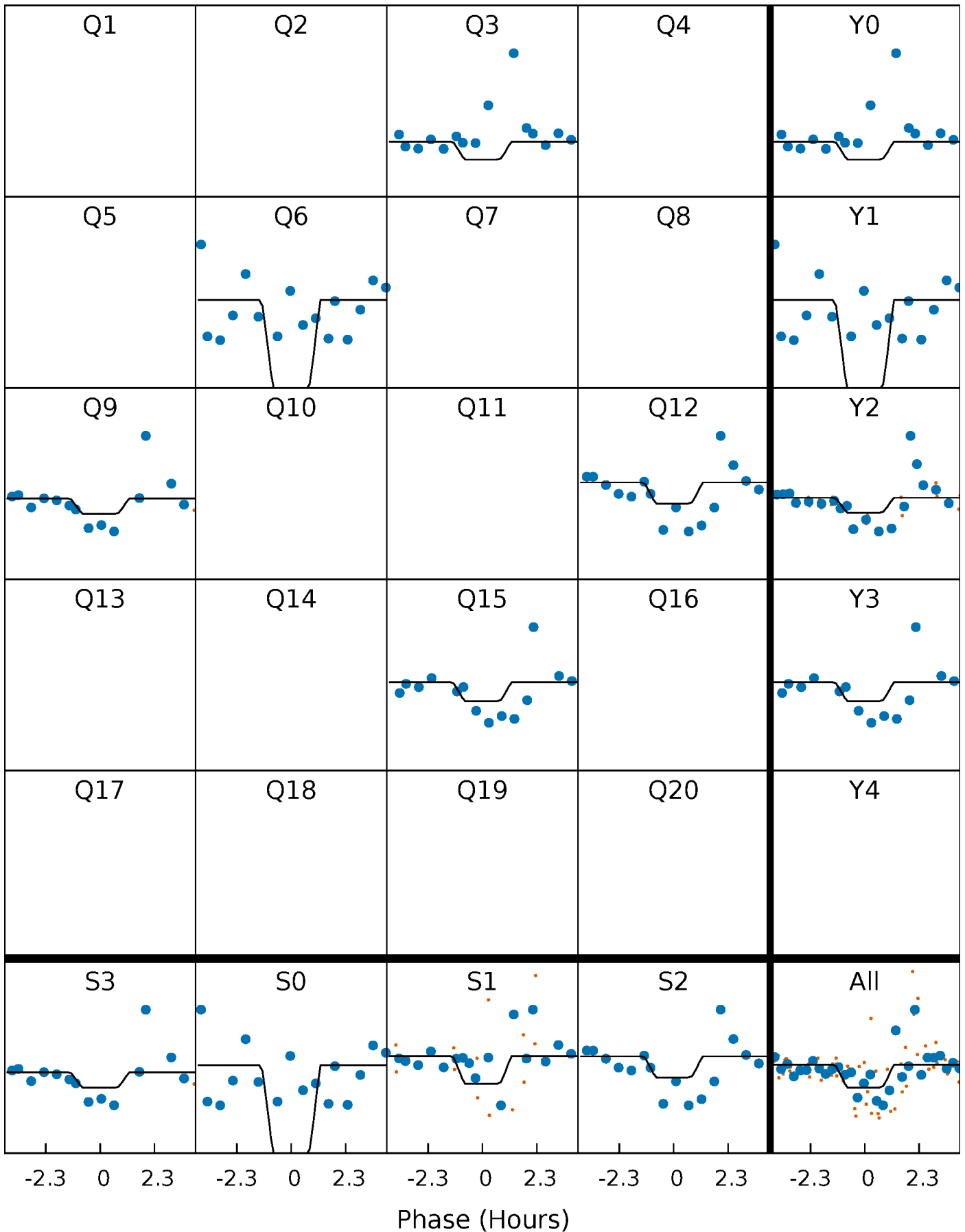
# DV Quarter-Phased Transit Curves

TCE 006507334-03     $P=277.314553$  Days     $T_0=316.042396$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

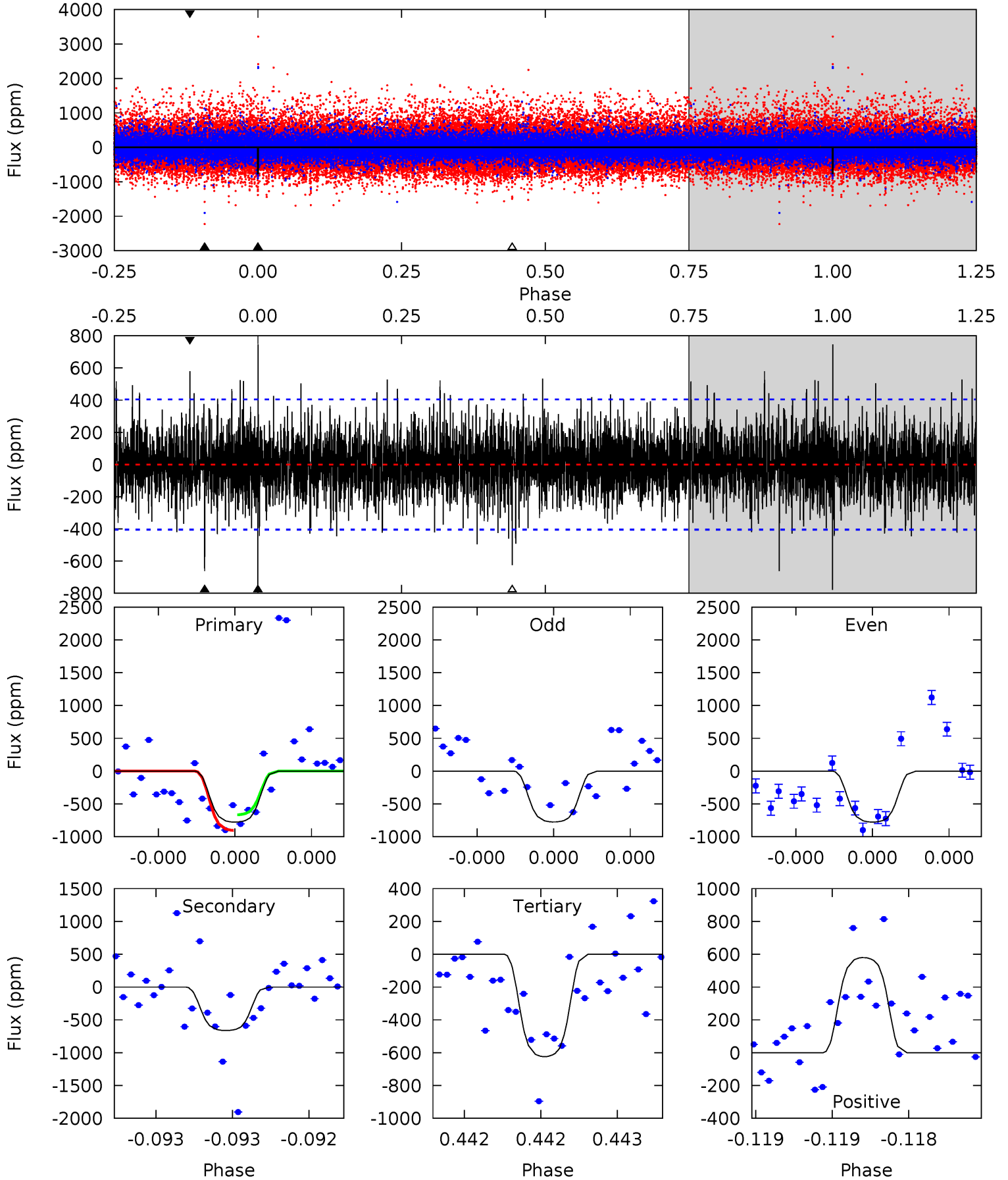
TCE 006507334-03     $P=277.298999$  Days     $T_0=316.076877$  (BKJD)



# DV Model-Shift Uniqueness Test

006507334-03, P = 277.314553 Days, E = 38.727843 Days

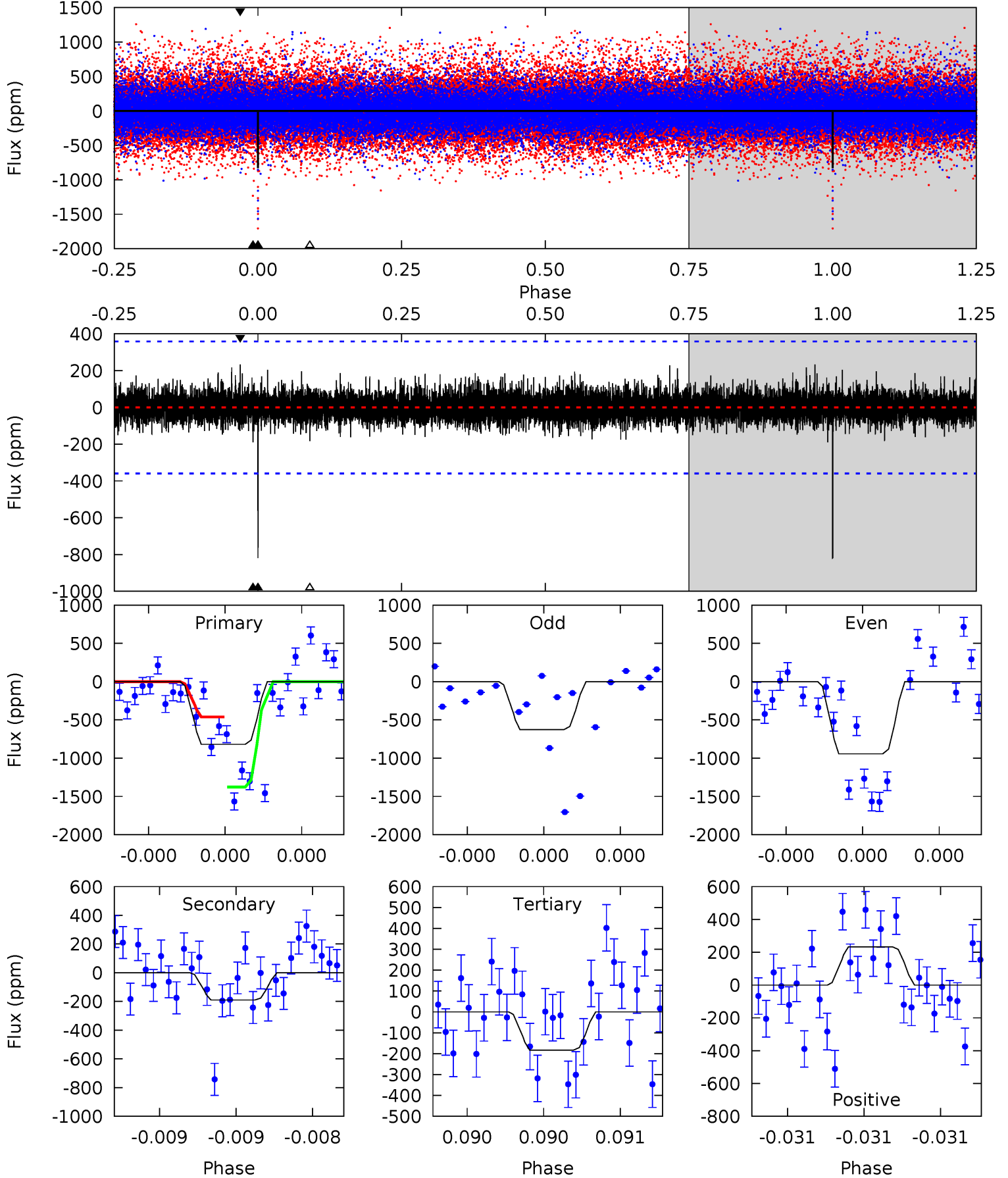
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	9.14	8.61	8.00	5.58	3.50	1.85	2.12	2.73	0.52	1.14	0.01	1.06	0.49	1.65



# Alt Model-Shift Uniqueness Test

006507334-03, P = 277.298999 Days, E = 38.777878 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	2.98	2.87	3.66	5.64	3.58	0.78	9.99	9.20	0.11	-0.68	2.38	0.65	0.22	6.93



### Stellar Parameters For KIC 006507334

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6242^{+168}_{-205}$	$4.442^{+0.058}_{-0.232}$	$-0.100^{+0.250}_{-0.300}$	$1.047^{+0.361}_{-0.120}$	$1.104^{+0.156}_{-0.140}$	$1.354^{+0.409}_{-0.740}$
	+3%/-3%	+1%/-5%	+250%/-300%	+34%/-11%	+14%/-13%	+30%/-55%
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 006507334-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-662 \pm 72$	$4.46^{+0.97}_{-0.78}$	$433^{+36}_{-22}$	$5219^{+446}_{-346}$	$13252^{+6128}_{-4411}$
Alt.	$-190 \pm 64$	$3.32^{+0.83}_{-0.80}$	$434^{+34}_{-22}$	$4579^{+556}_{-460}$	$6846^{+5698}_{-3067}$

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

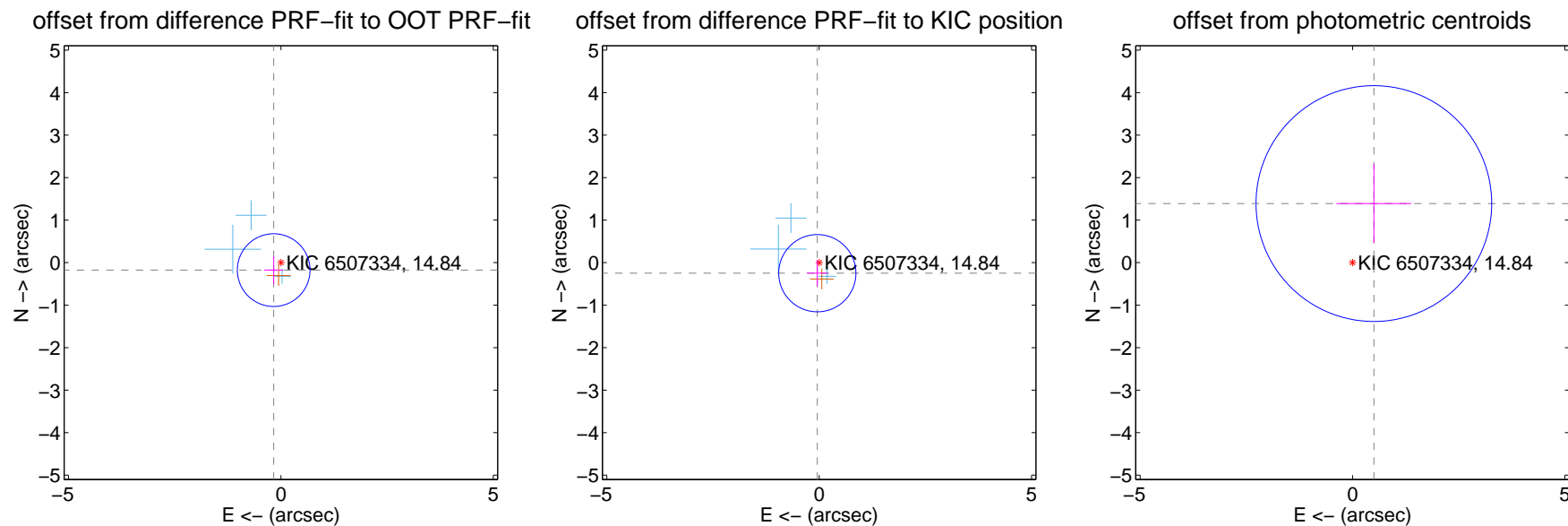
## DV Centroid Data

Supplemental centroid analysis for 006507334-03. Kepler magnitude: 14.84. Transit SNR 7.37

There are 3 quarters with good PRF difference image offsets

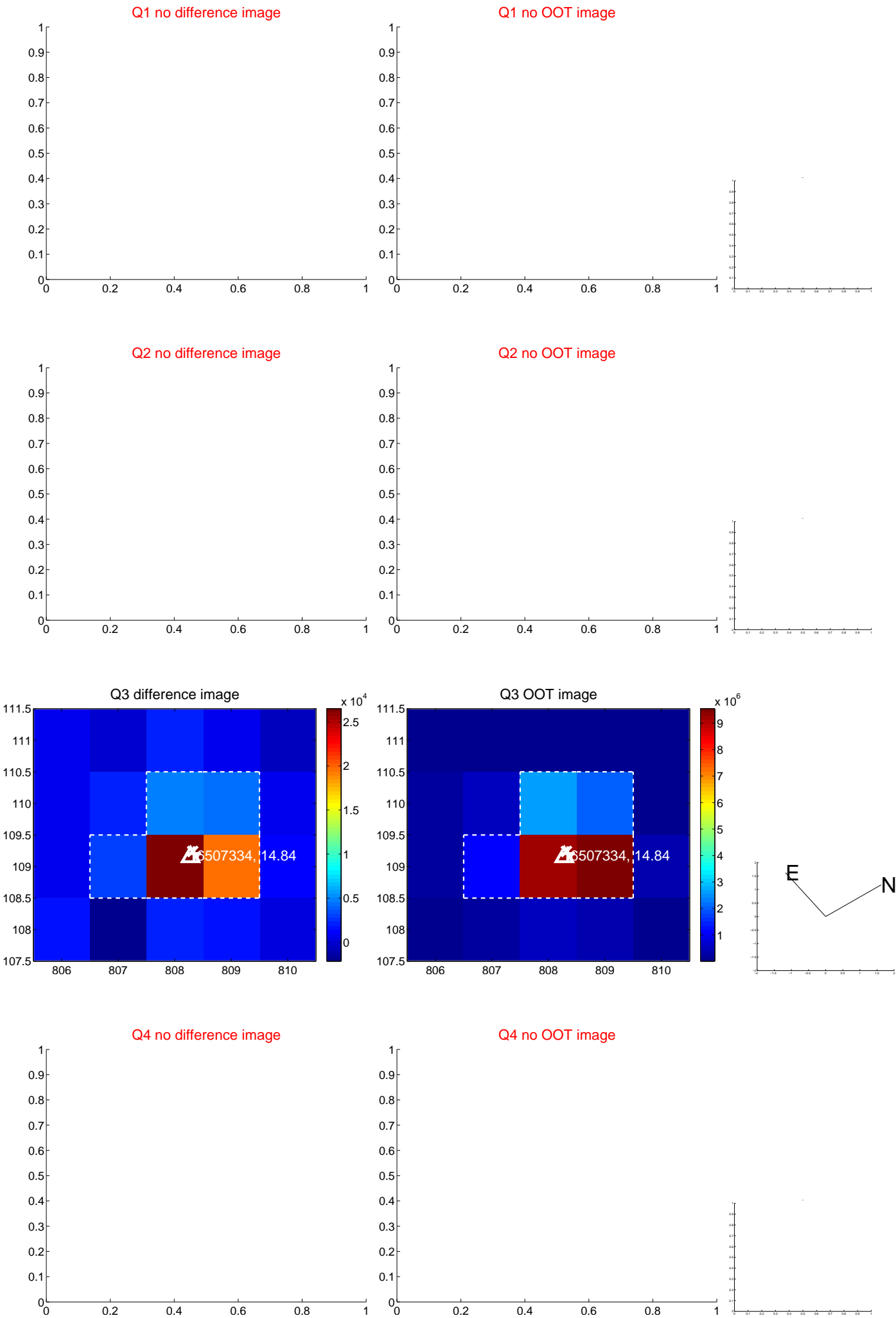
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.245 \pm 0.285$	0.86	$0.171 \pm 0.226$	$-0.176 \pm 0.332$
PRF-fit source offset from KIC position	$0.252 \pm 0.303$	0.83	$0.044 \pm 0.244$	$-0.248 \pm 0.305$
photometric centroid source offset	$1.48 \pm 0.92$	1.60	$-0.50 \pm 0.88$	$1.39 \pm 0.93$



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

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



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

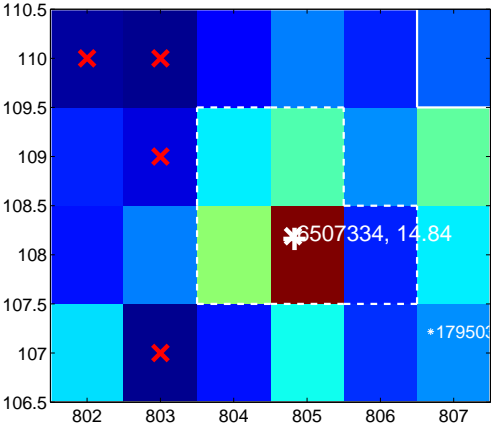
Q5 no difference image



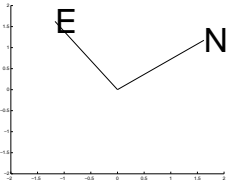
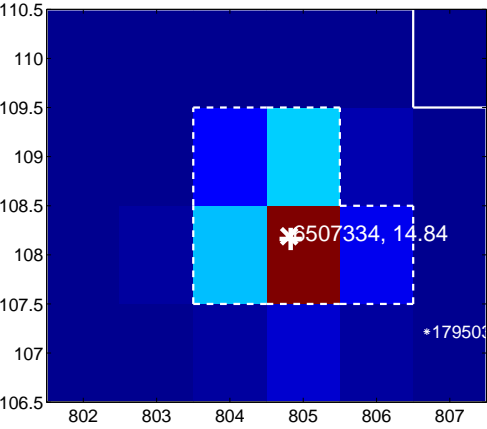
Q5 no OOT image



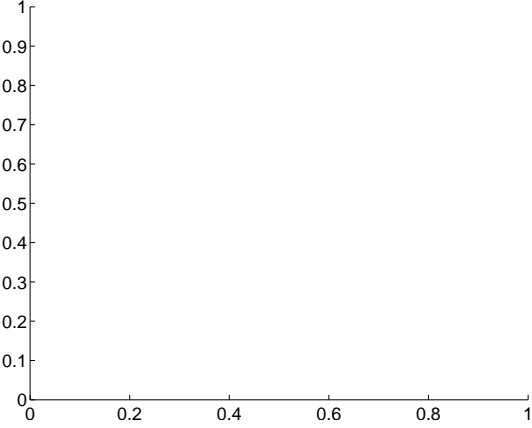
Q6 difference image. Poor Quality



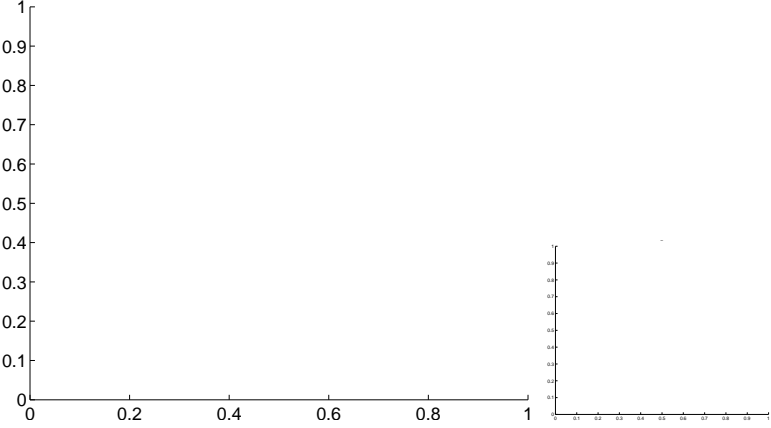
Q6 OOT image



Q7 no difference image



Q7 no OOT image



Q8 no difference image

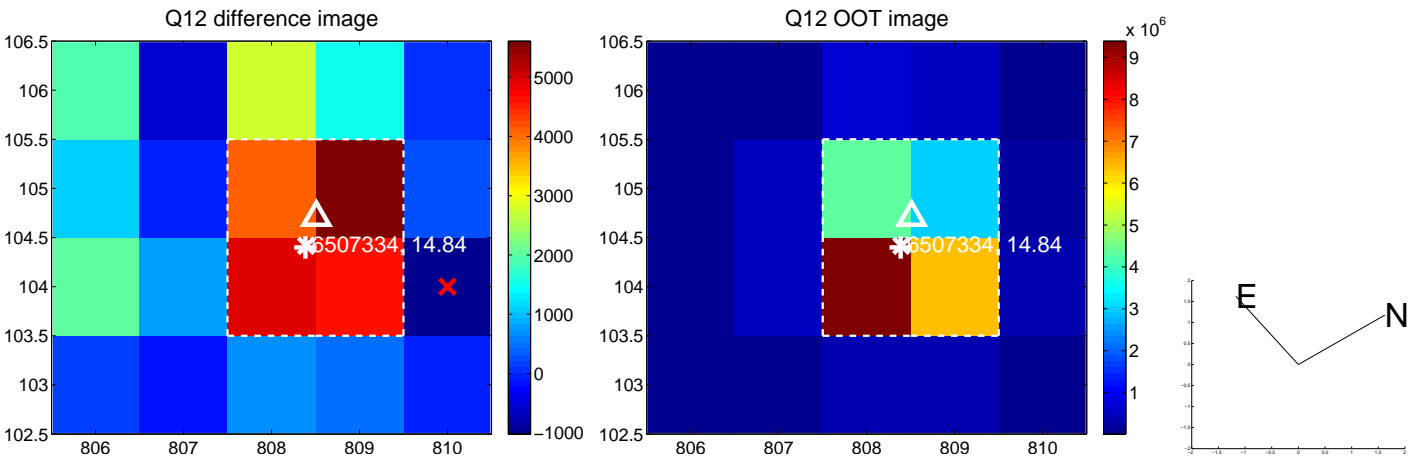
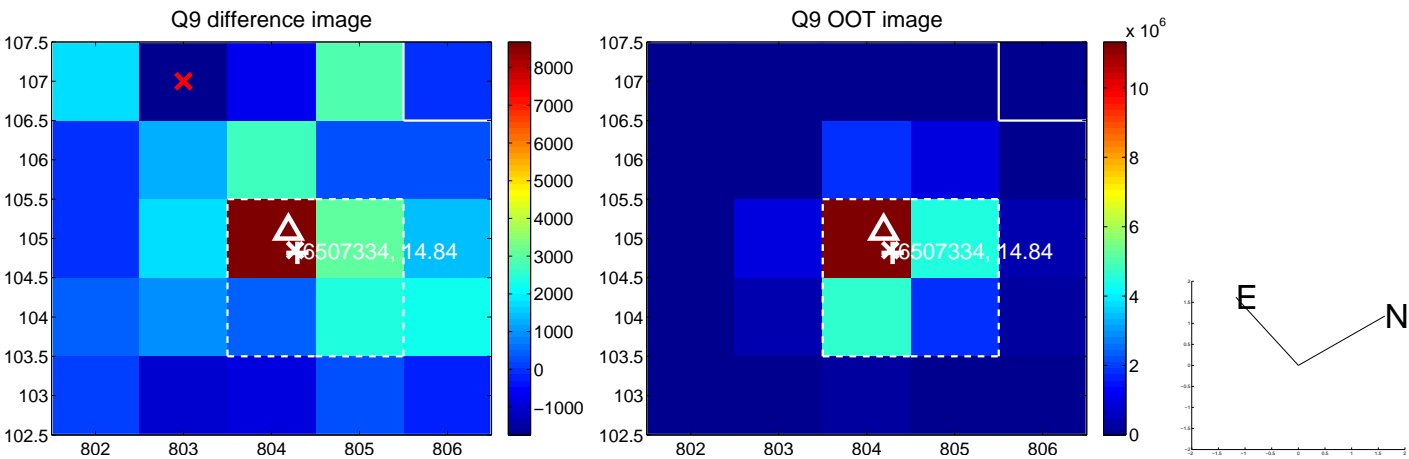


Q8 no OOT image





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



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

Q13 no difference image



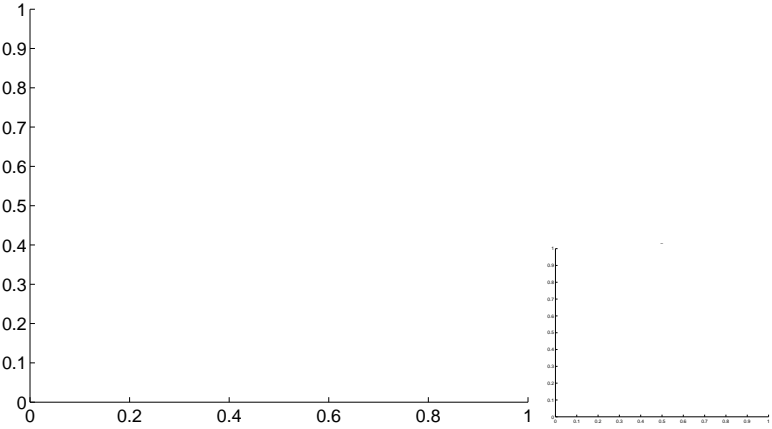
Q13 no OOT image



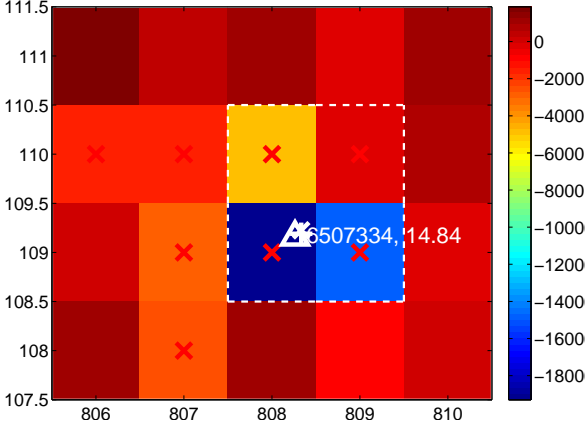
Q14 no difference image



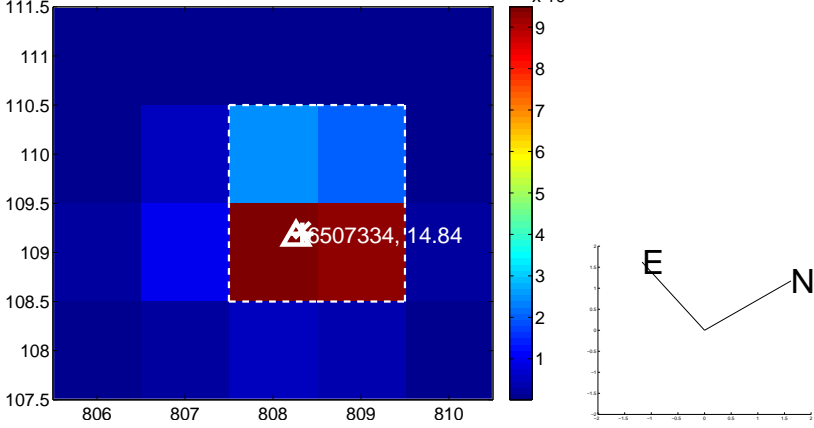
Q14 no OOT image



Q15 difference image. Poor Quality



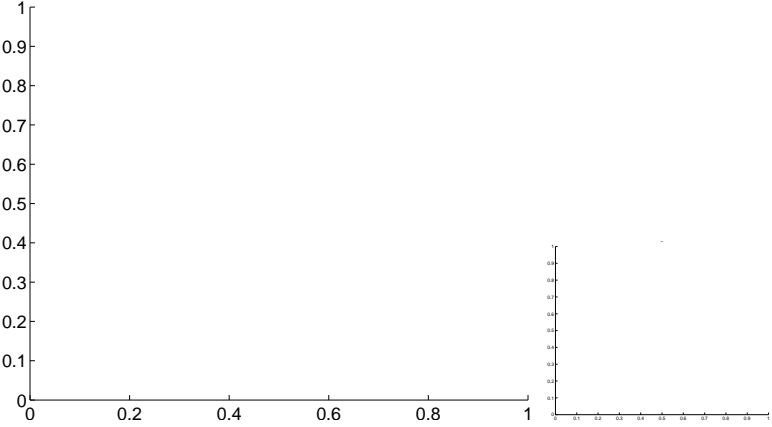
Q15 OOT image



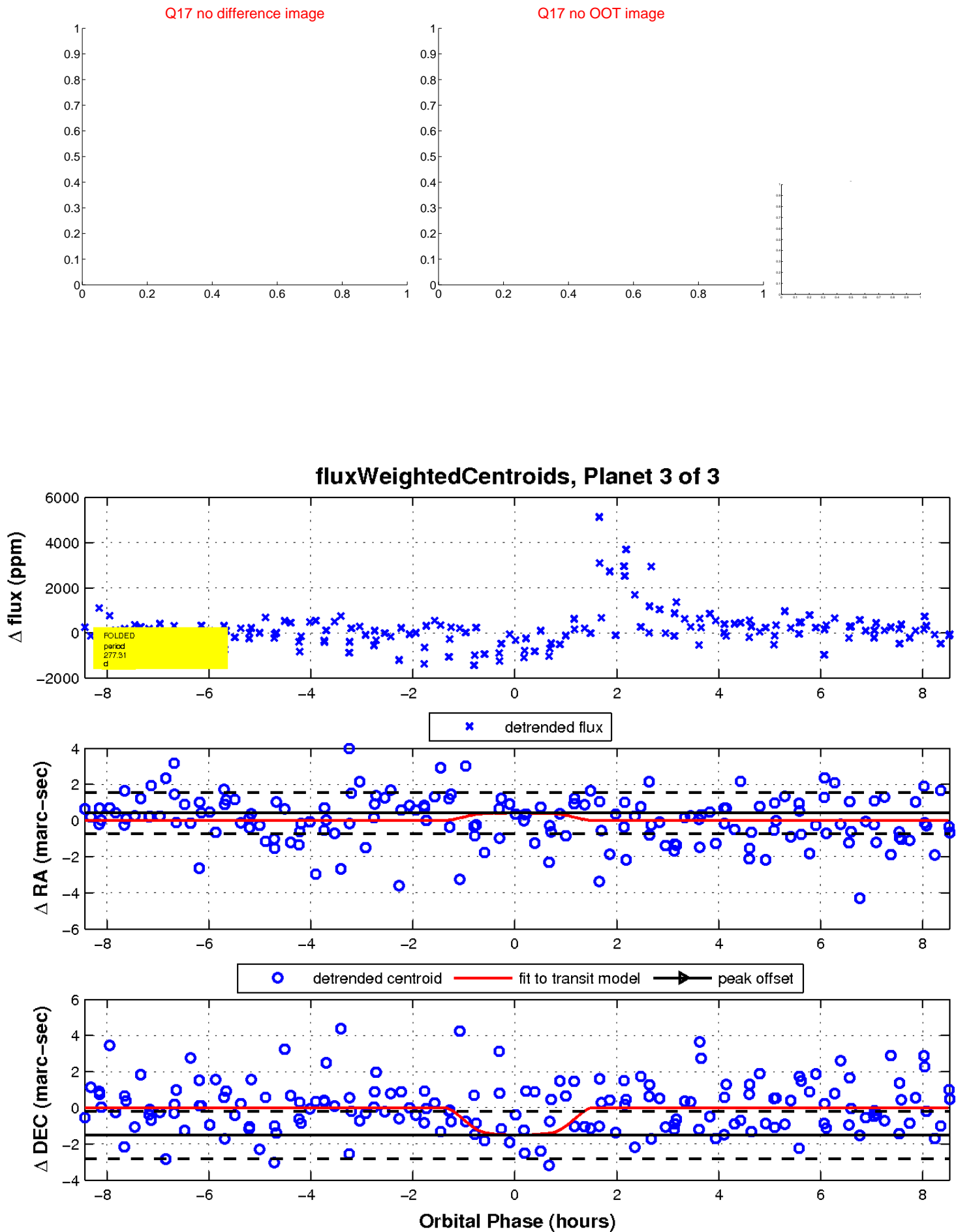
Q16 no difference image



Q16 no OOT image



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



# UKIRT Image

Declination

