

# KIC 008313667

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008313667-01	OBS	1145.01	30.587583	132.287736	400.9	7.681	22.4	23.6	1.08	5944	3.57	35.15
008313667-02	OBS	No	659.489748	251.910289	585.6	5.095	8.2	8.5	1.08	5944	3.72	0.59
008313667-03	OBS	No	607.007526	326.186952	476.0	5.609	7.7	8.0	1.08	5944	2.54	0.65

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008313667-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008313667-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008313667-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS

**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.

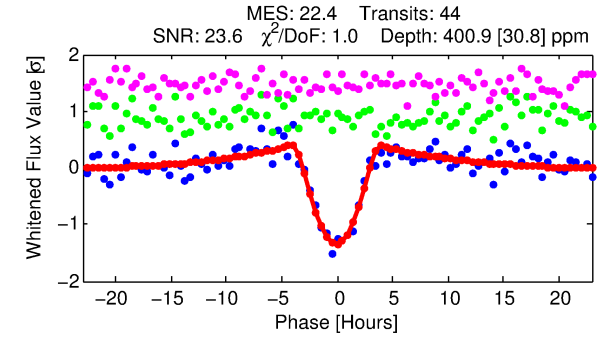
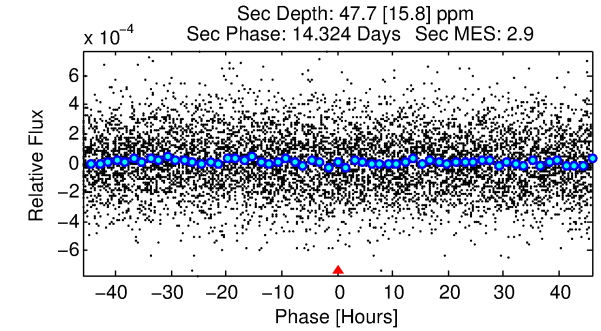
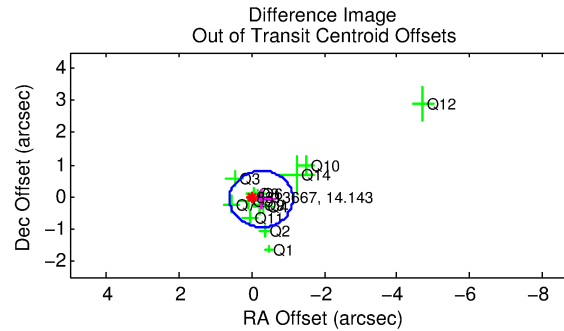
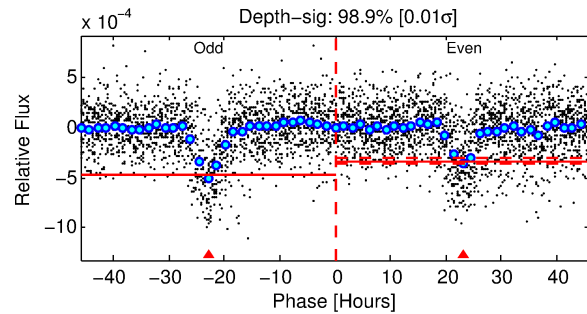
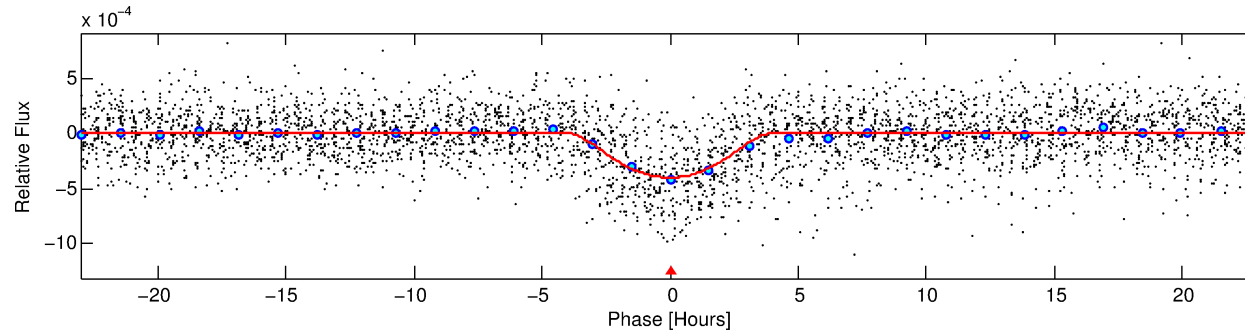
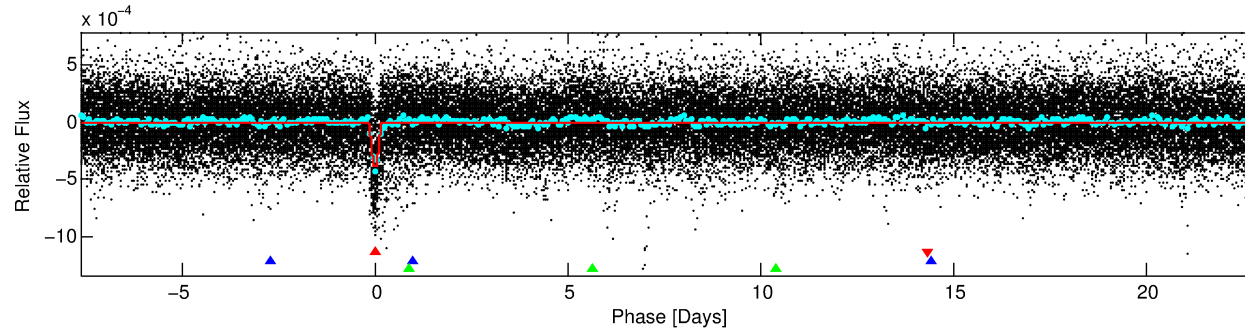
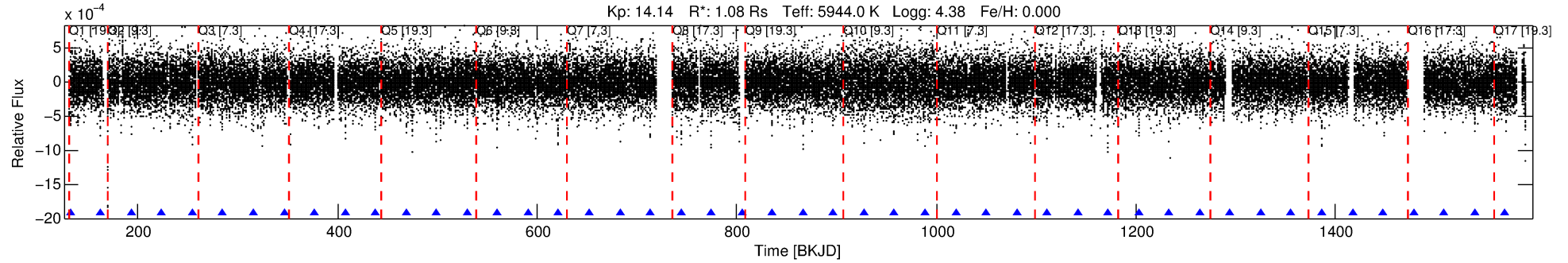
Ephemeris Match Information For 008313667-01

No Significant Match Found

# DV One-Page Summary

KIC: 8313667 Candidate: 1 of 3 Period: 30.588 d

KOI: K01145.01 Corr: 0.844



## DV Fit Results:

Period = 30.58758 [0.00024] d  
Epoch = 132.2877 [0.0065] BKJD  
Rp/R\* = 0.0302 [0.0172]  
a/R\* = 8.77 [1.77]  
b = 0.99 [0.03]  
Seff = 35.15 [8.17]  
Teq = 621 [36] K  
Rp = 3.57 [2.11] Re  
a = 0.1930 [0.0279] AU  
Ag = 76.77 [92.28] [0.82σ]  
Teffp = 2842 [842] K [2.63σ]

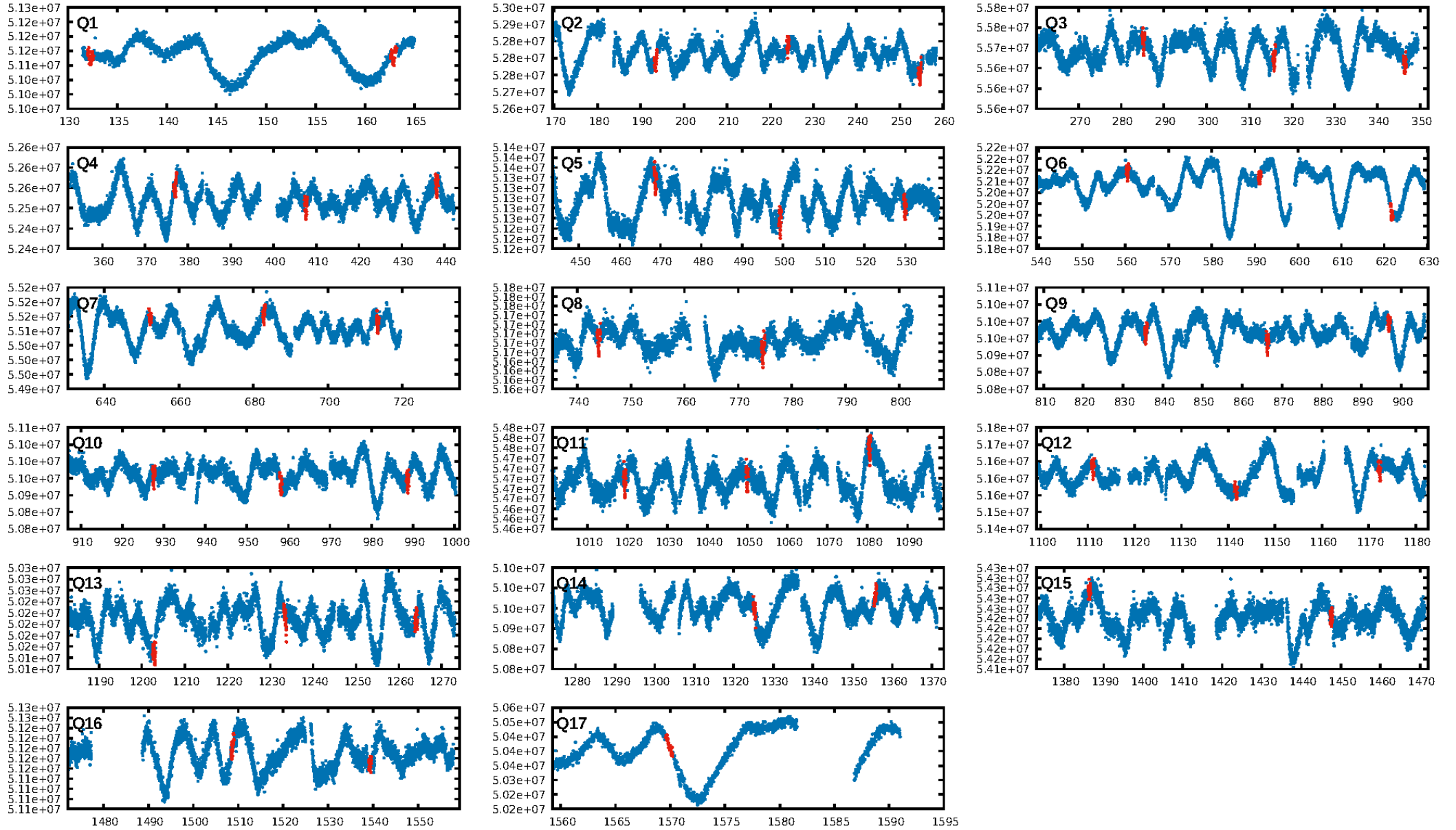
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [1454.62σ]  
**ModelChiSquare2-sig: 0.0%**  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.94e-101  
RollingBand-fgt: 1.00 [41/41]  
GhostDiagnostic-chr: 3.177  
Centroid-sig: 3.6%  
Centroid-so: 0.656 arcsec [1.53σ]  
OotOffset-rm: 0.274 arcsec [0.94σ]  
OotOffset-st: 4/3/3/3 [13]  
KicOffset-rm: 0.309 arcsec [1.64σ]  
KicOffset-st: 4/3/3/3 [13]  
DiffImageQuality-fgm: 0.77 [10/13]  
DiffImageOverlap-fno: 1.00 [17/17]

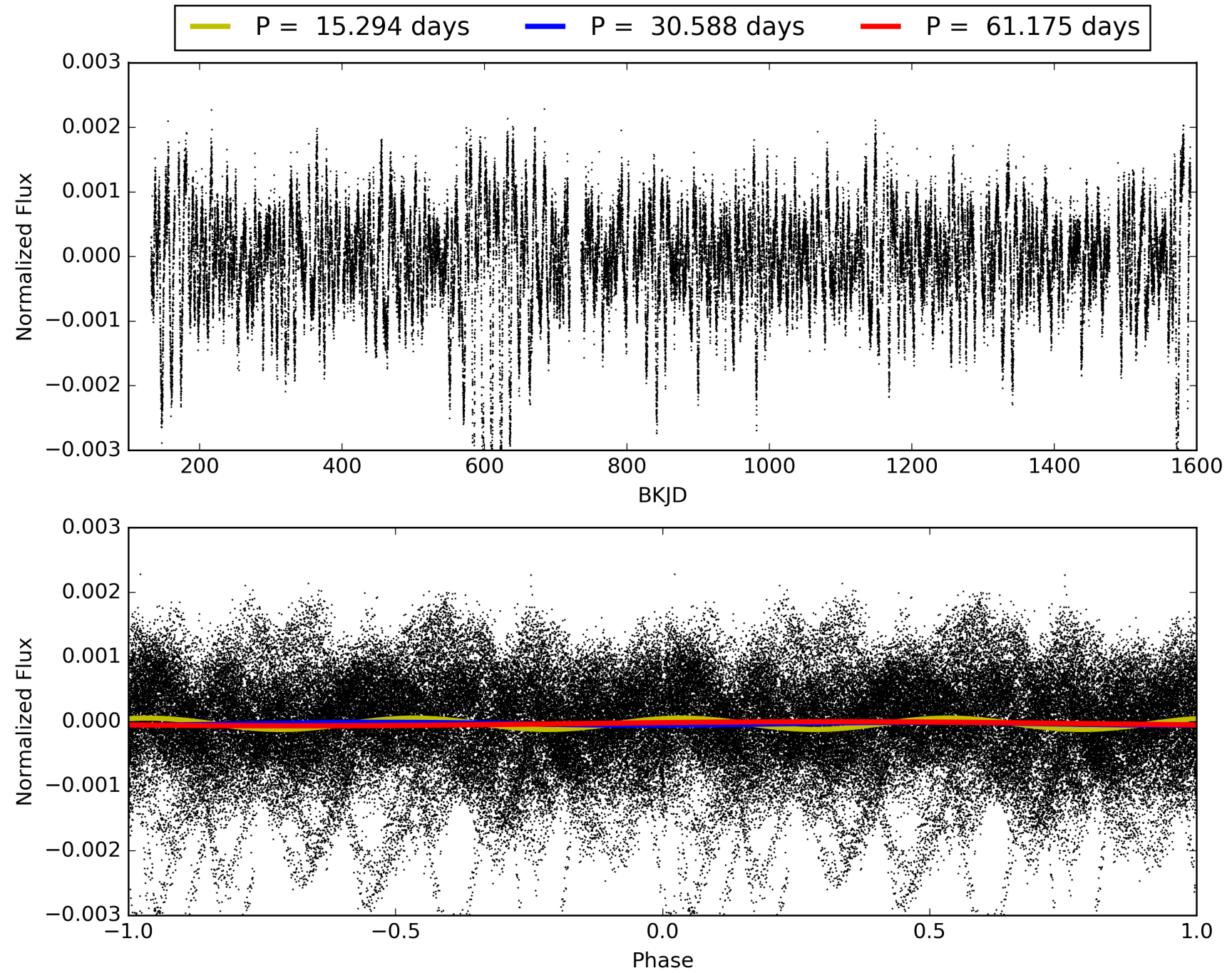
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:33:01 Z

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

# TCE 008313667-01, PDC Light Curves

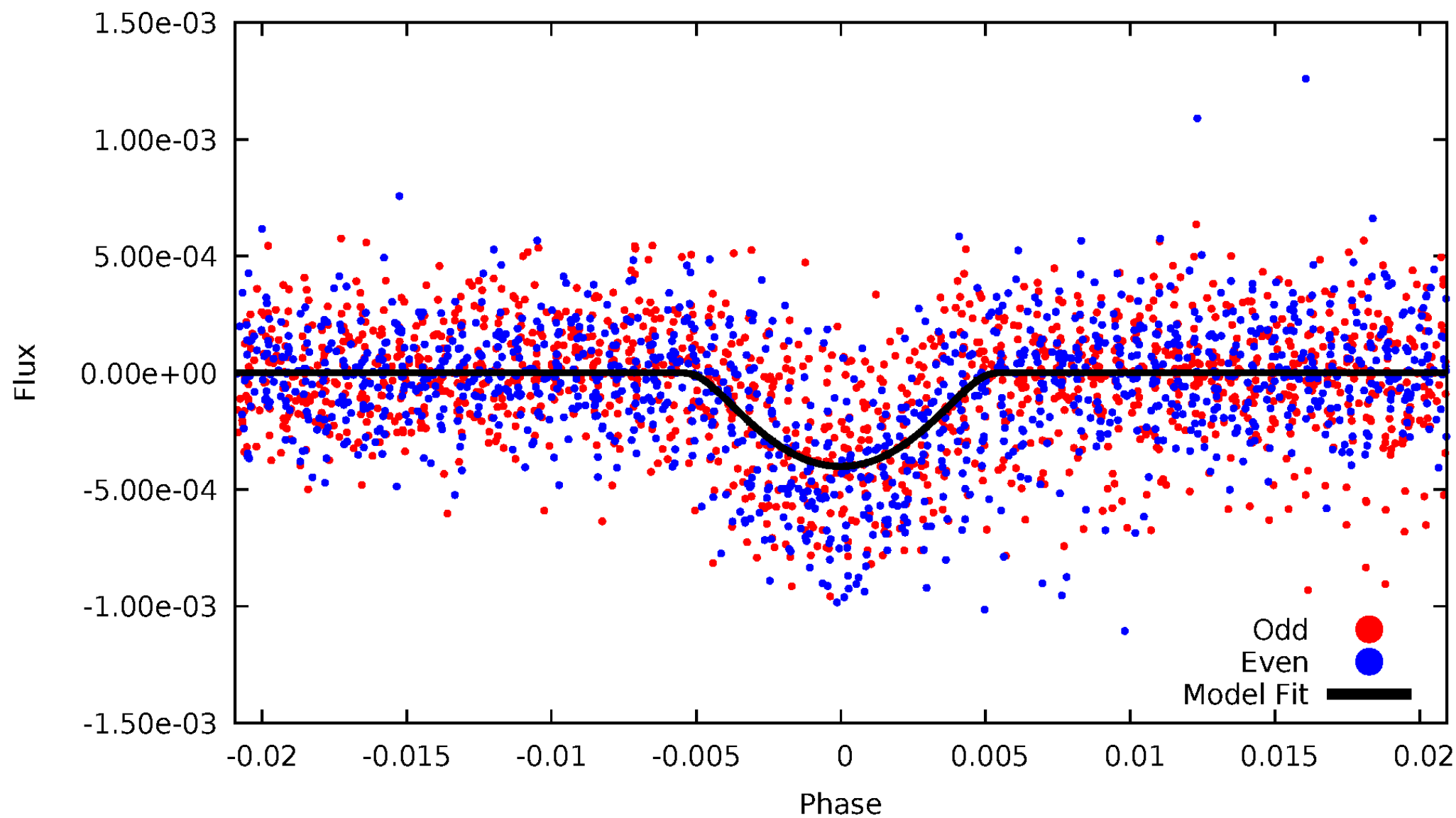


TCE 008313667-01



# DV Odd/Even

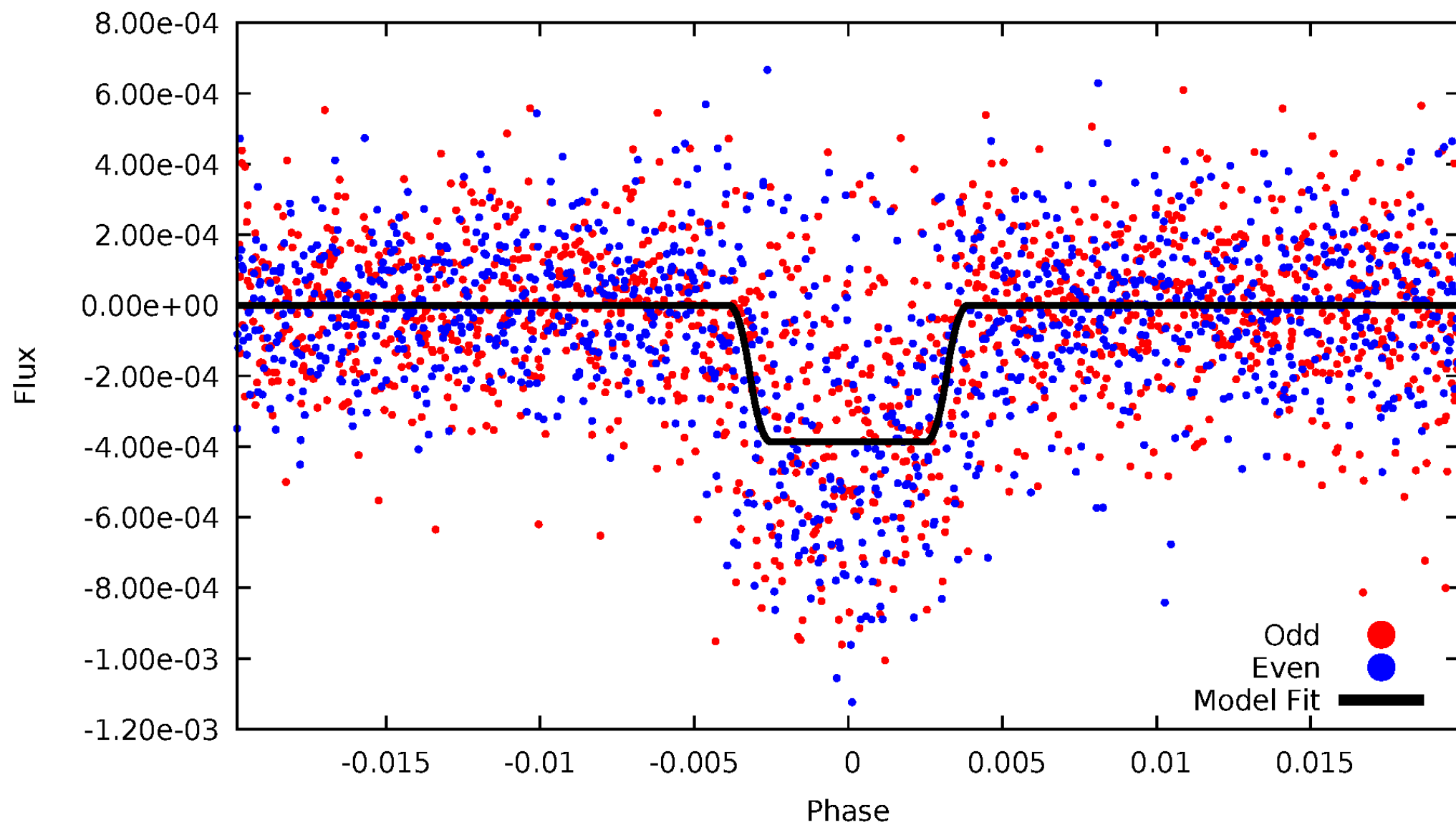
TCE 008313667-01





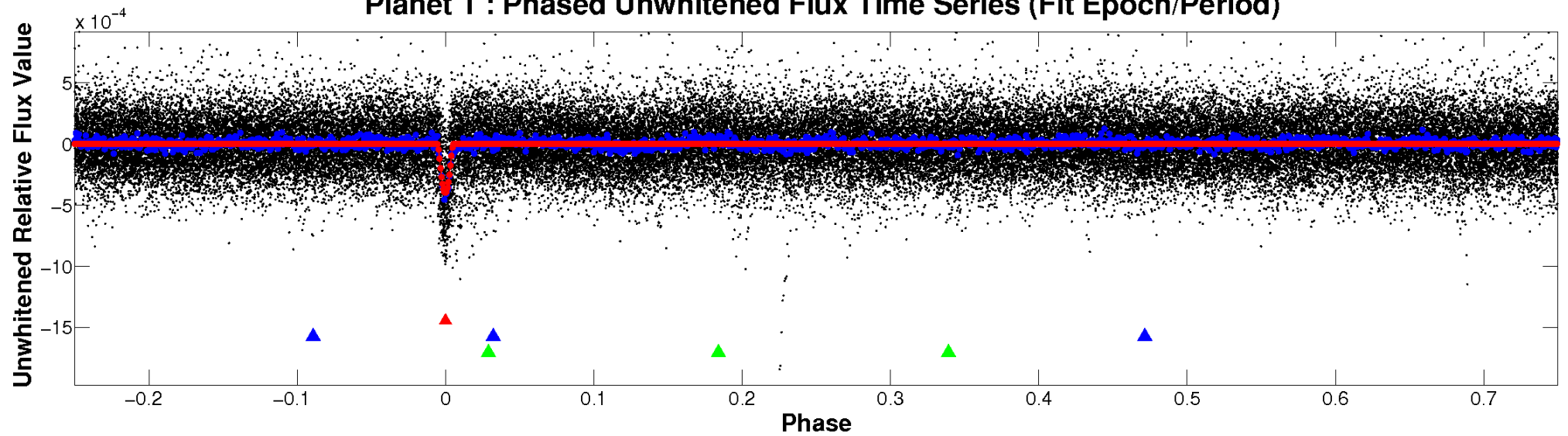
# ALT Odd/Even

TCE 008313667-01

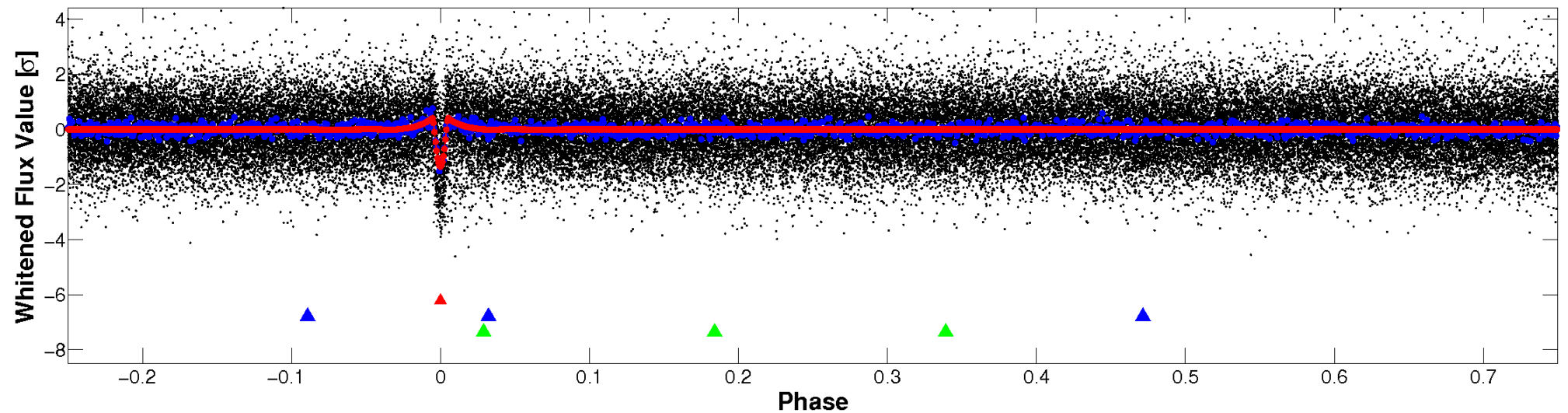


# Non-Whitened Vs. Whitened Light Curve

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

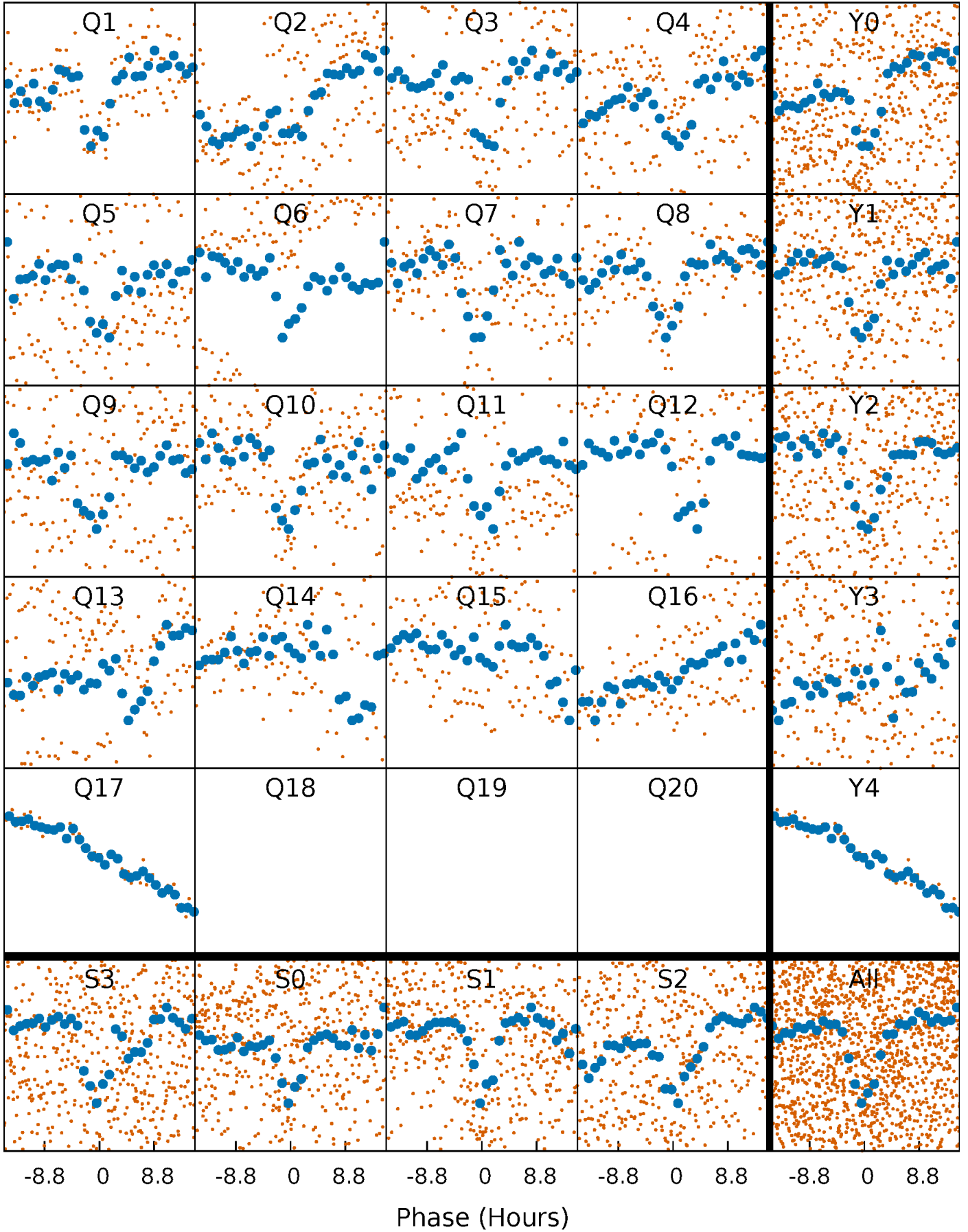


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

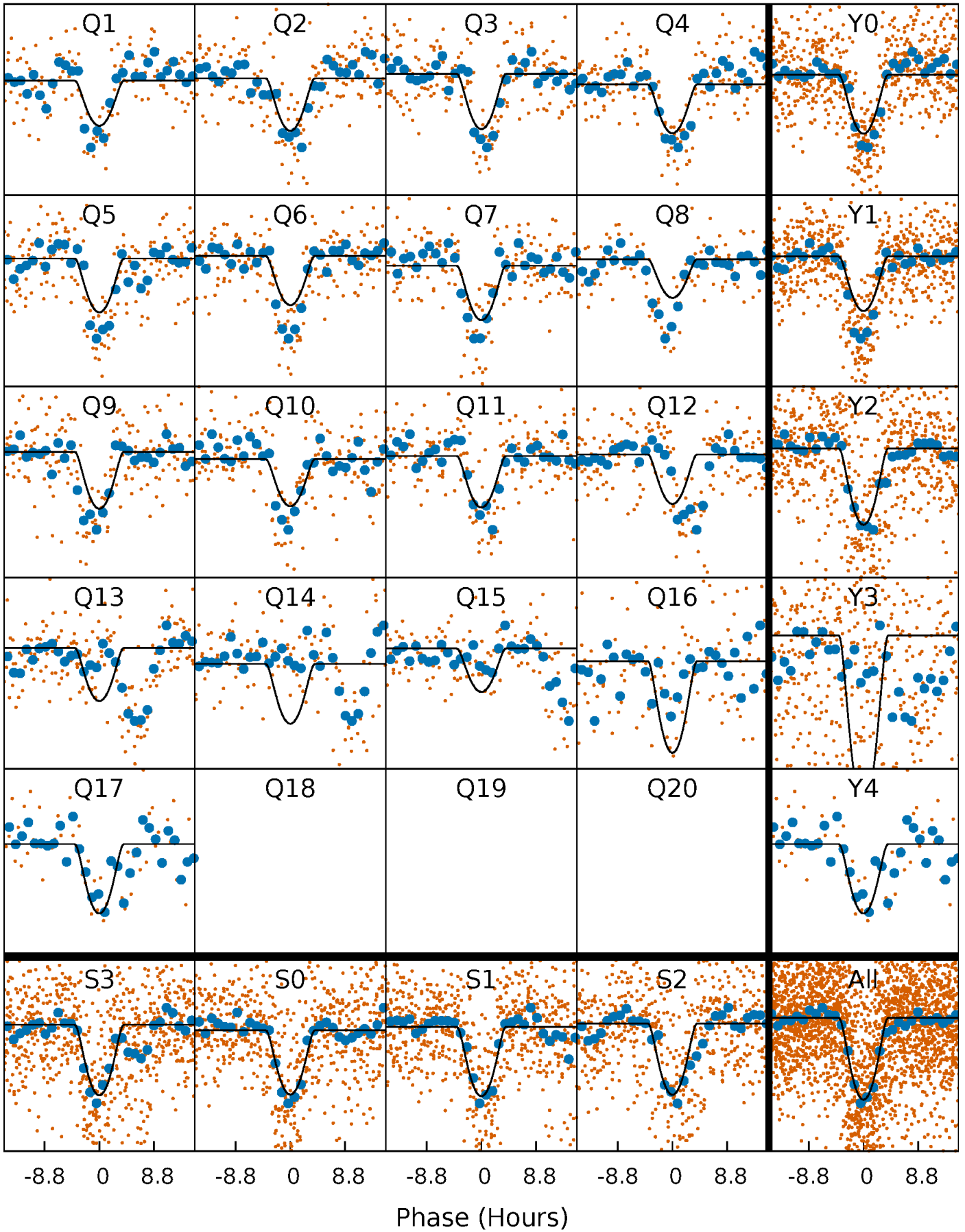
TCE 008313667-01 P= 30.587583 Days  $T_0=132.287735$  (BKJD)





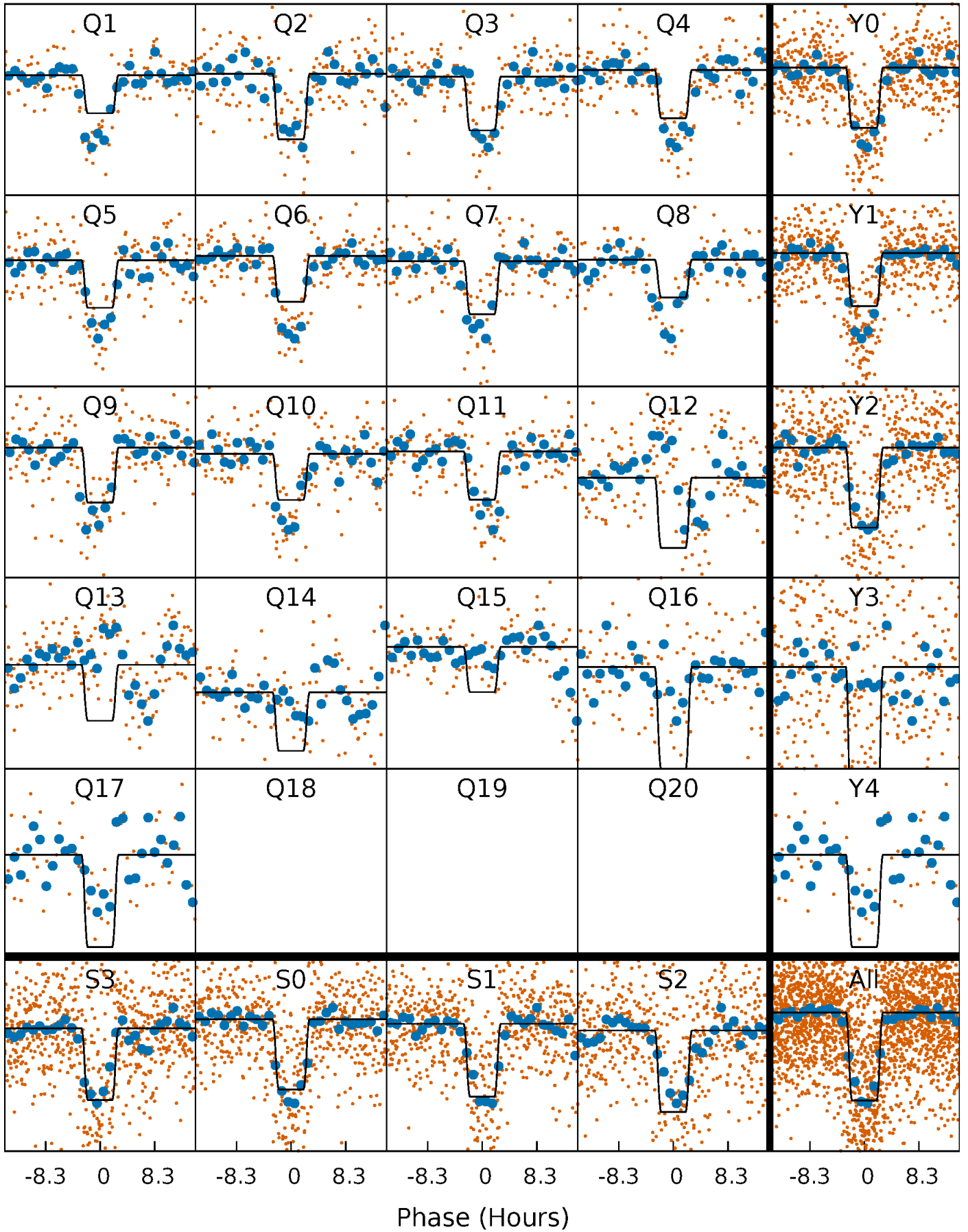
# DV Quarter-Phased Transit Curves

TCE 008313667-01 P= 30.587583 Days  $T_0=132.287735$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

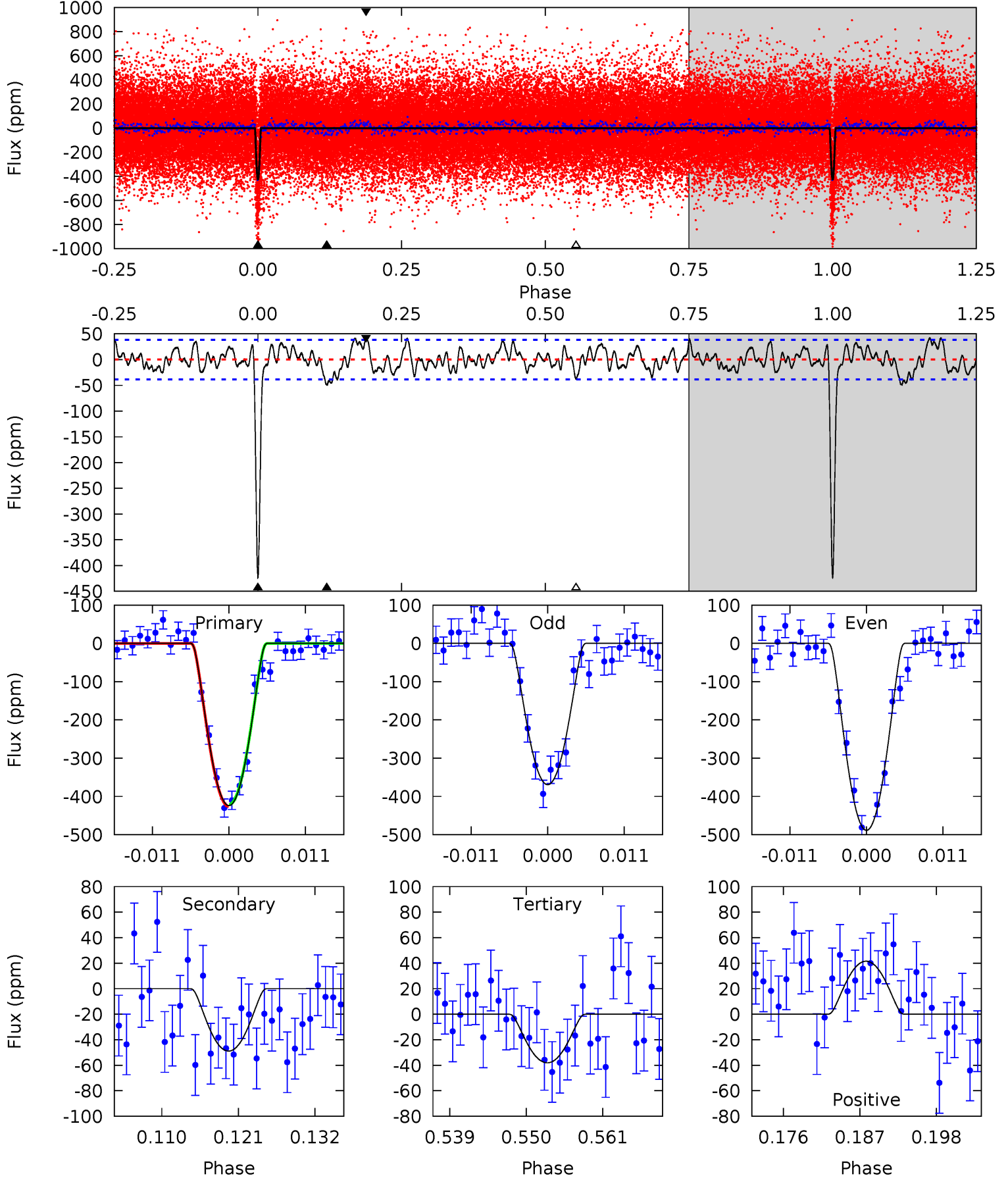
TCE 008313667-01 P= 30.586948 Days  $T_0=132.296355$  (BKJD)



# DV Model-Shift Uniqueness Test

008313667-01,  $P = 30.587583$  Days,  $E = 101.700152$  Days

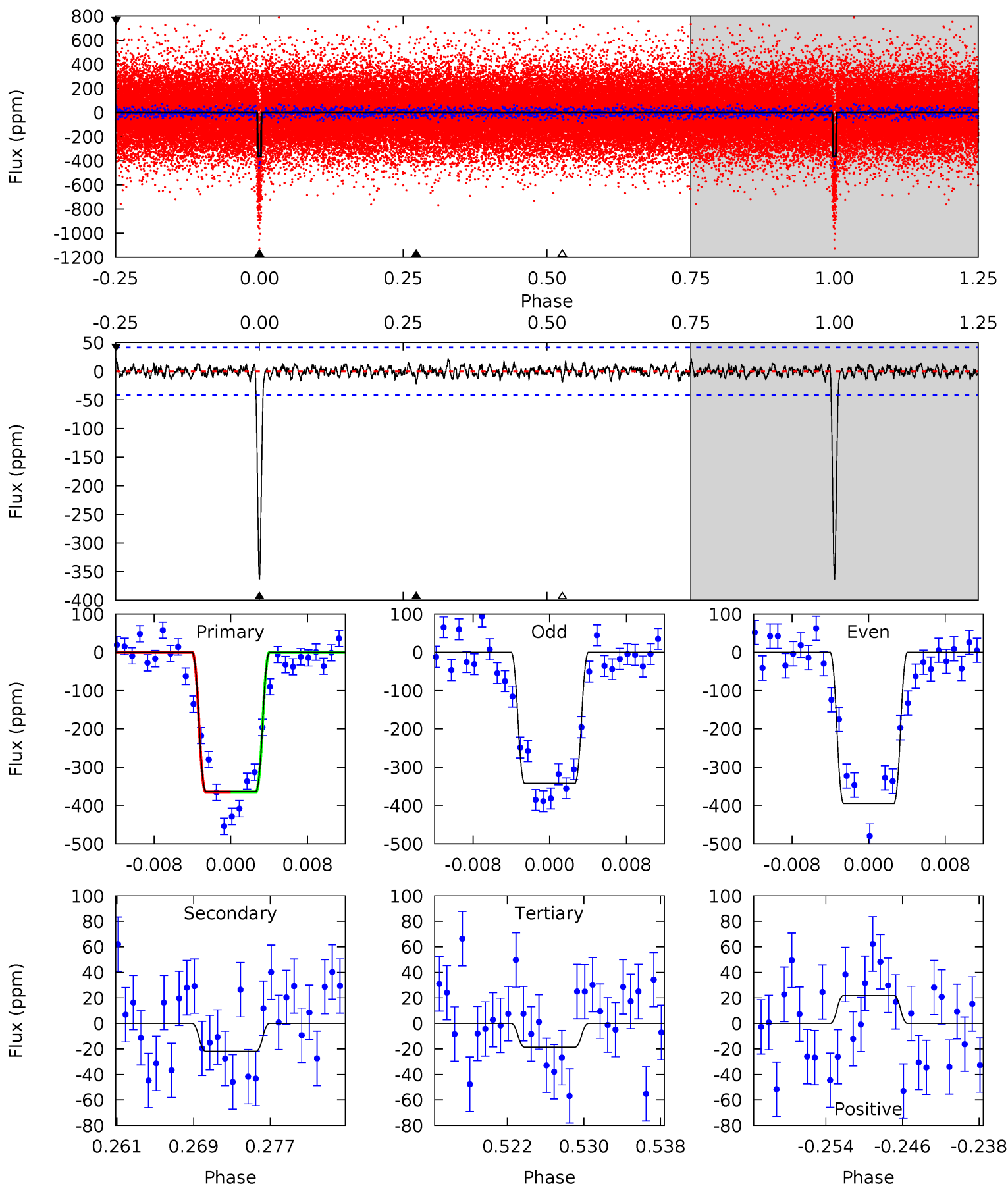
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.2	6.36	4.96	5.41	5.01	2.54	2.13	50.2	49.8	1.41	0.96	7.77	0.89	0.09	0.32



# Alt Model-Shift Uniqueness Test

008313667-01,  $P = 30.586948$  Days,  $E = 101.709407$  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
44.5	2.68	2.28	2.68	5.08	2.67	0.79	42.2	41.8	0.40	-0.00	3.24	0.81	0.06	0.01



### Stellar Parameters For KIC 008313667

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5944^{+106}_{-130}$	$4.380^{+0.080}_{-0.120}$	$0.000^{+0.150}_{-0.150}$	$1.082^{+0.181}_{-0.111}$	$1.024^{+0.083}_{-0.068}$	$1.138^{+0.381}_{-0.402}$
	+2%/-2%	+2%/-3%	+inf%/-inf%	+17%/-10%	+8%/-7%	+33%/-35%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008313667-01 / KOI 1145.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-49 \pm 8$	$3.71^{+2.12}_{-1.96}$	$872^{+39}_{-33}$	$3375^{+944}_{-438}$	$74^{+238}_{-45}$
Alt.	$-22 \pm 8$	$2.68^{+1.94}_{-1.57}$	$871^{+38}_{-33}$	$3238^{+1176}_{-489}$	$58^{+301}_{-41}$

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



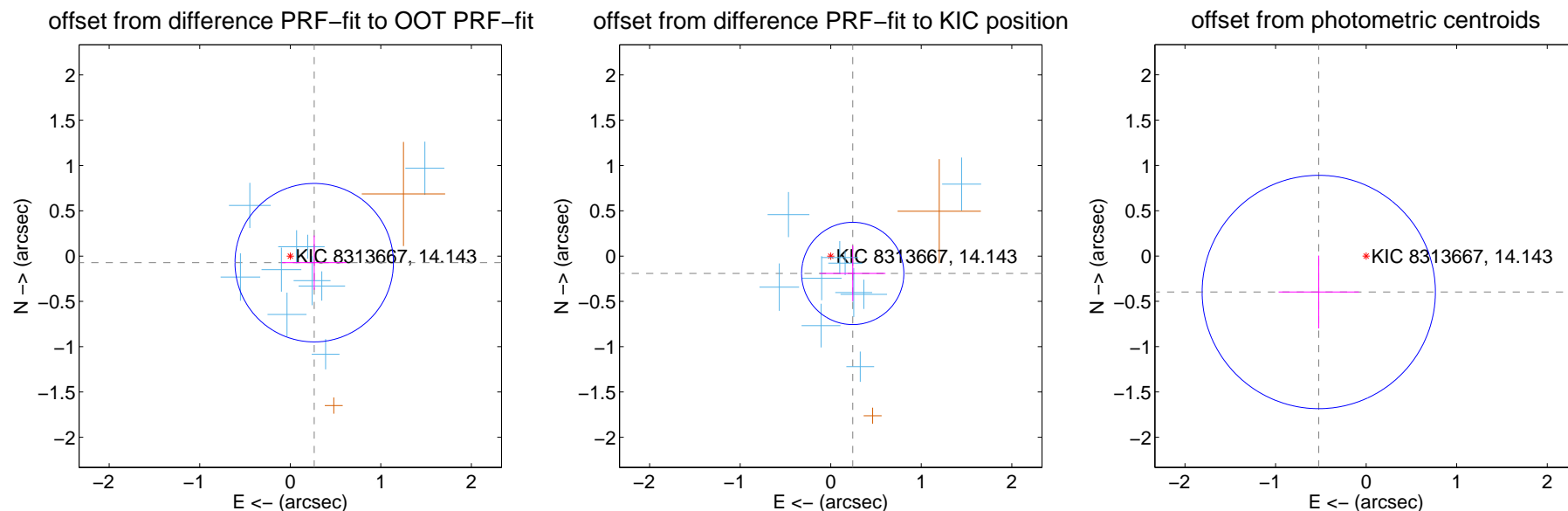
## DV Centroid Data

Supplemental centroid analysis for 008313667-01. Kepler magnitude: 14.14. Transit SNR 23.57

There are 10 quarters with good PRF difference image offsets

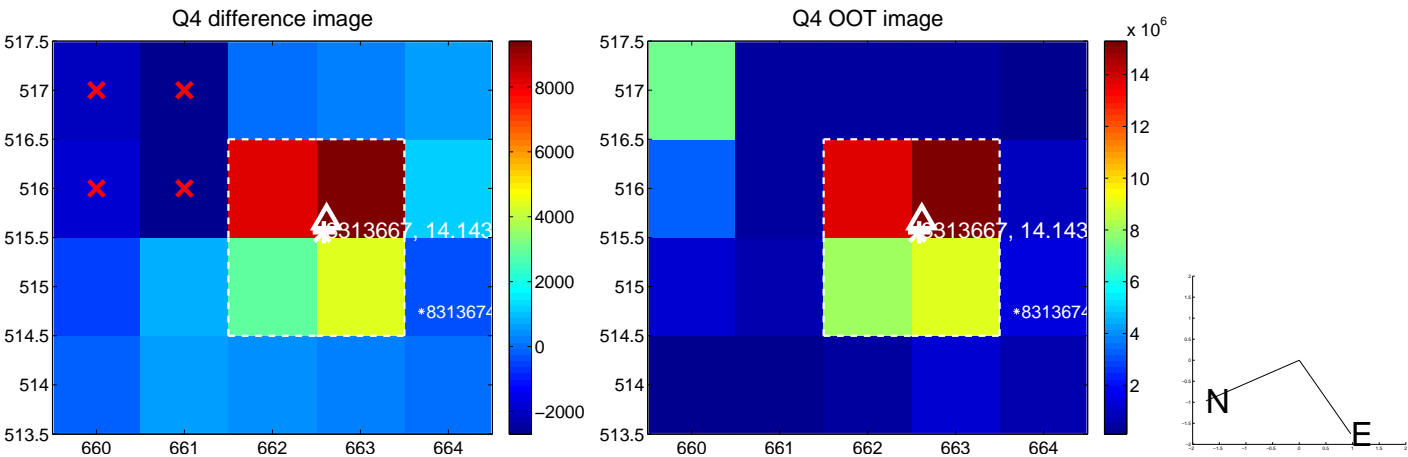
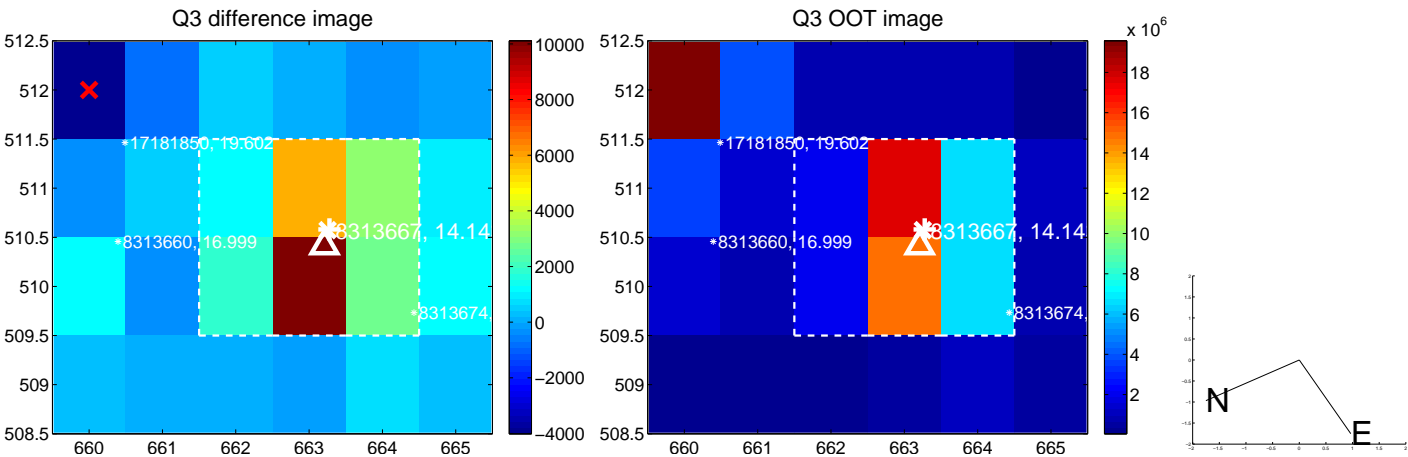
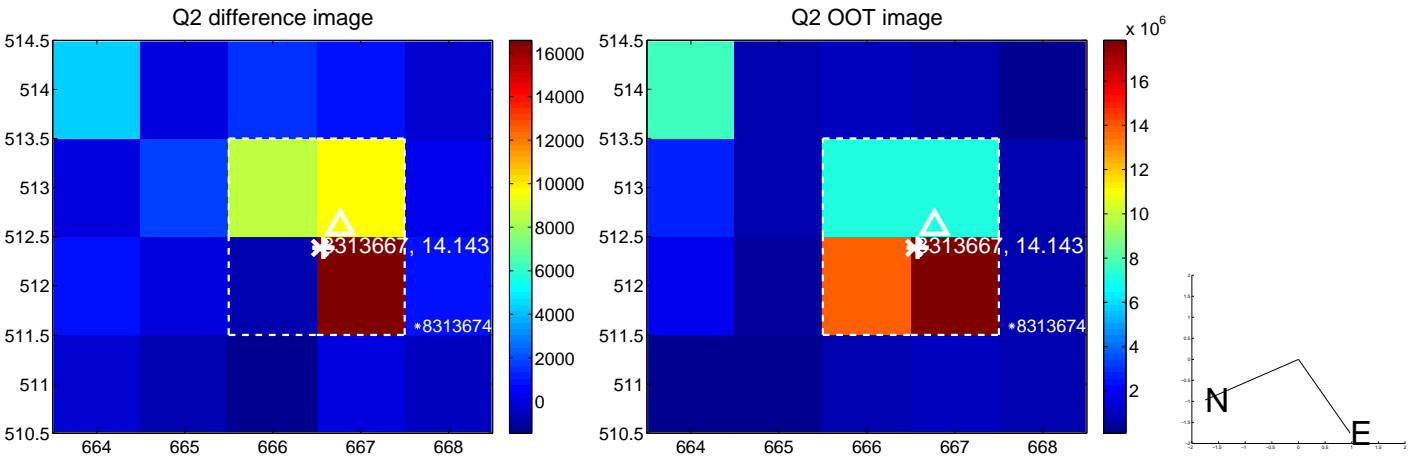
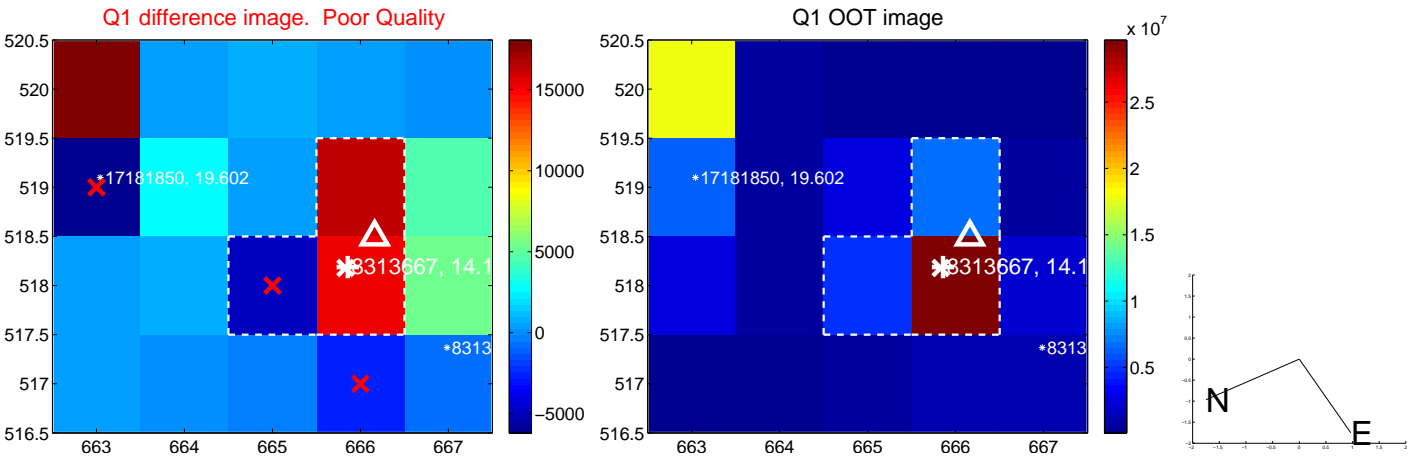
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.274 \pm 0.292$	0.94	$-0.264 \pm 0.357$	$-0.073 \pm 0.299$
PRF-fit source offset from KIC position	$0.309 \pm 0.188$	1.64	$-0.243 \pm 0.361$	$-0.191 \pm 0.307$
photometric centroid source offset	$0.66 \pm 0.43$	1.53	$0.52 \pm 0.44$	$-0.40 \pm 0.40$

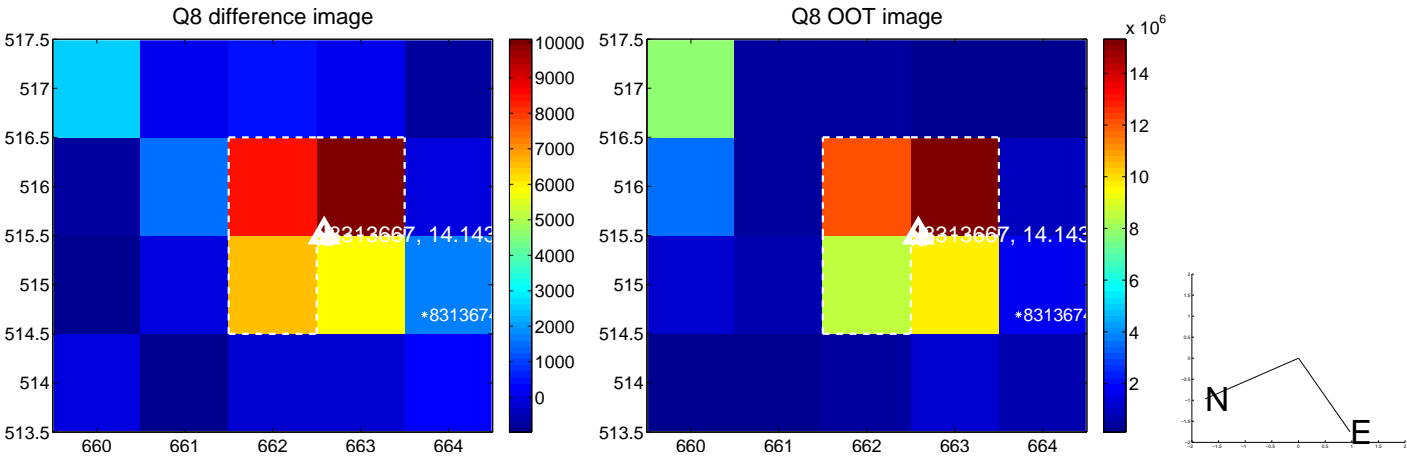
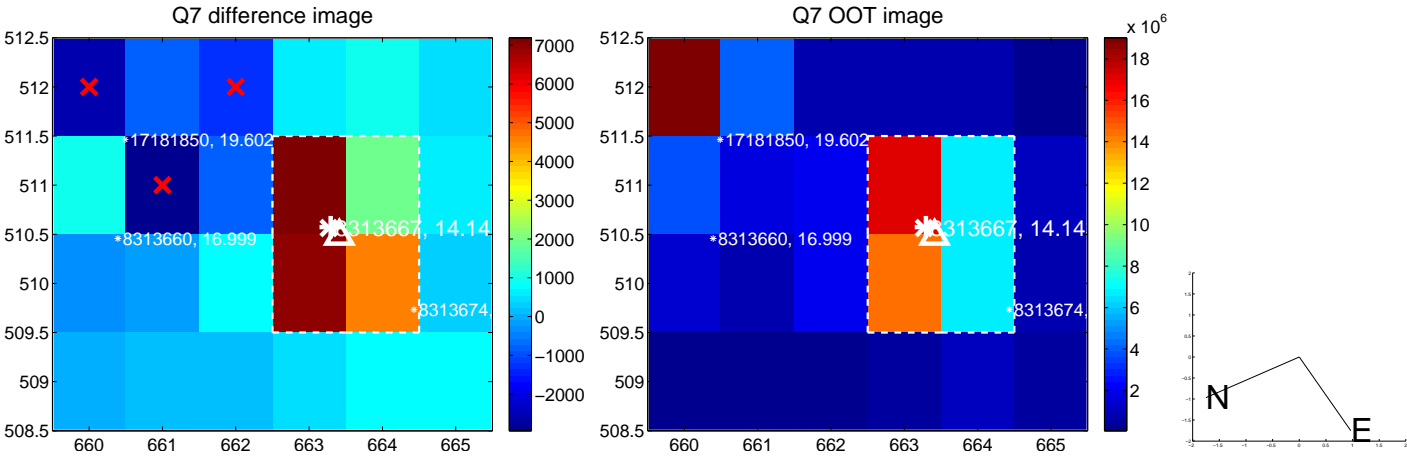
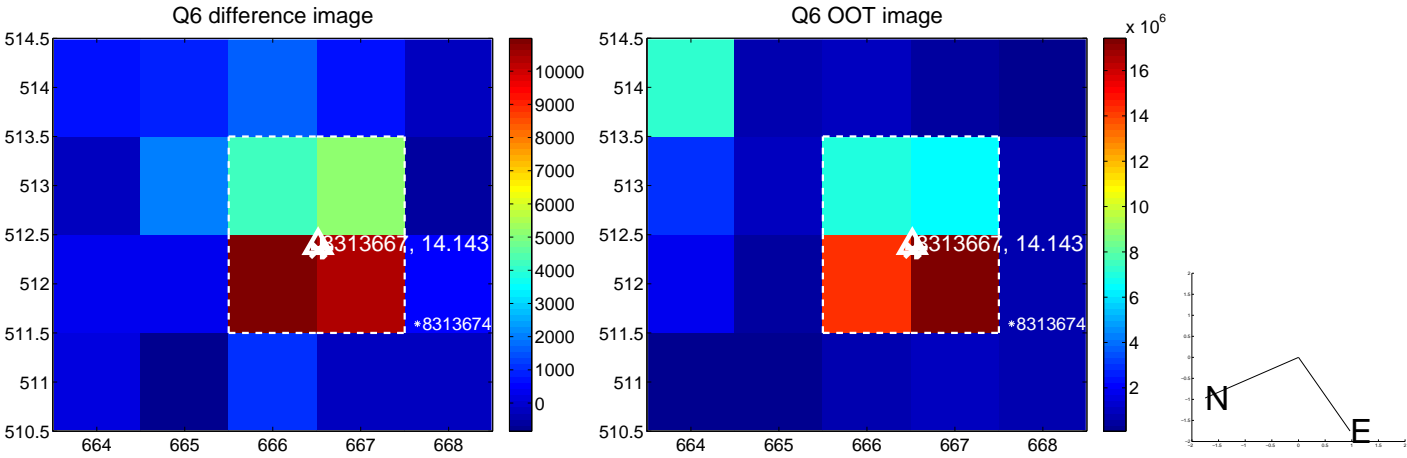
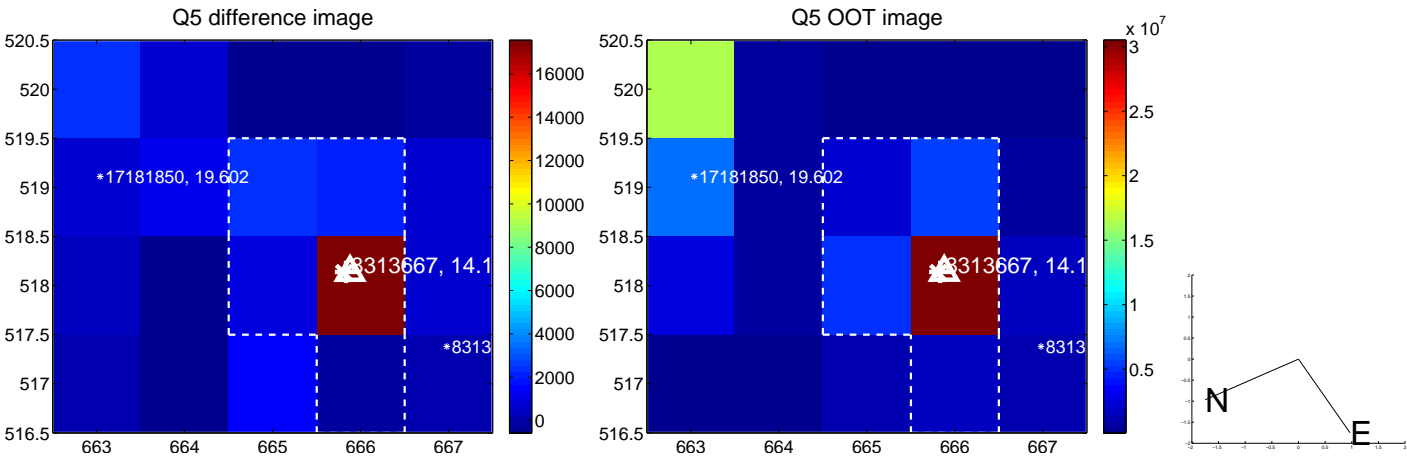


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

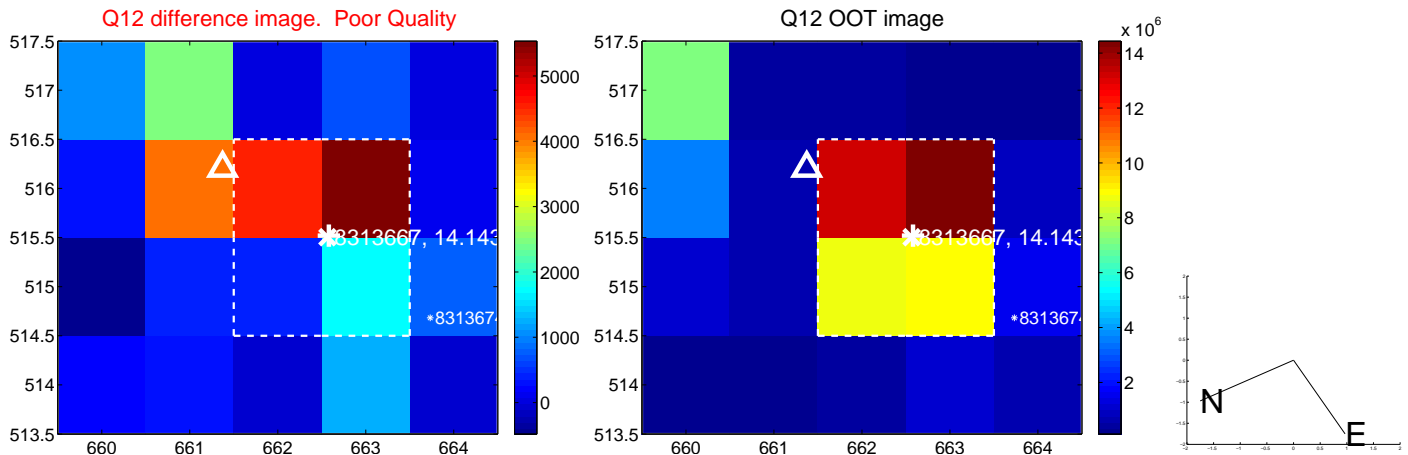
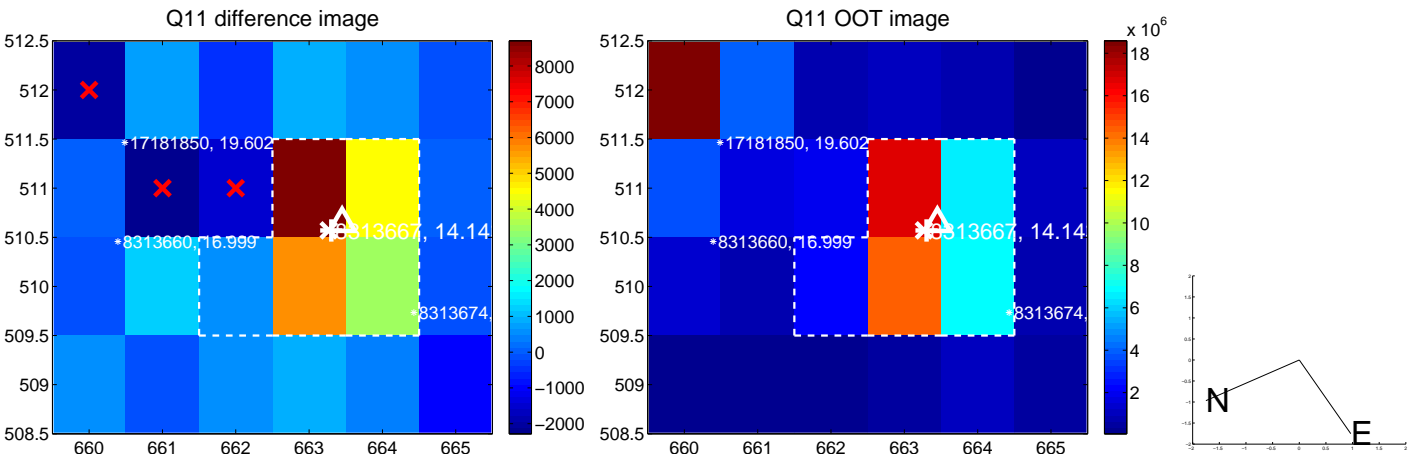
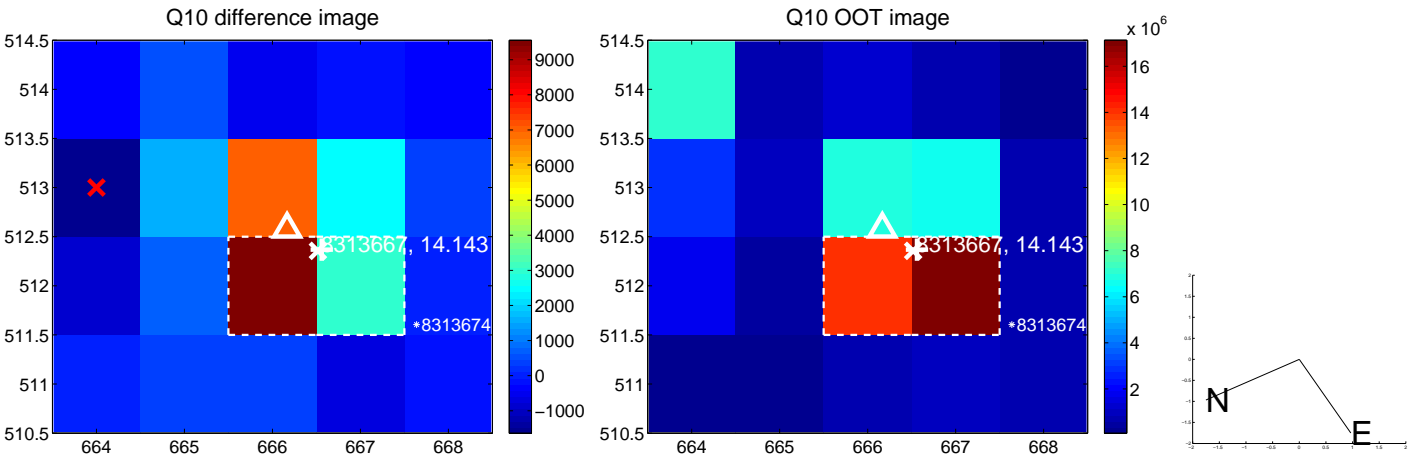
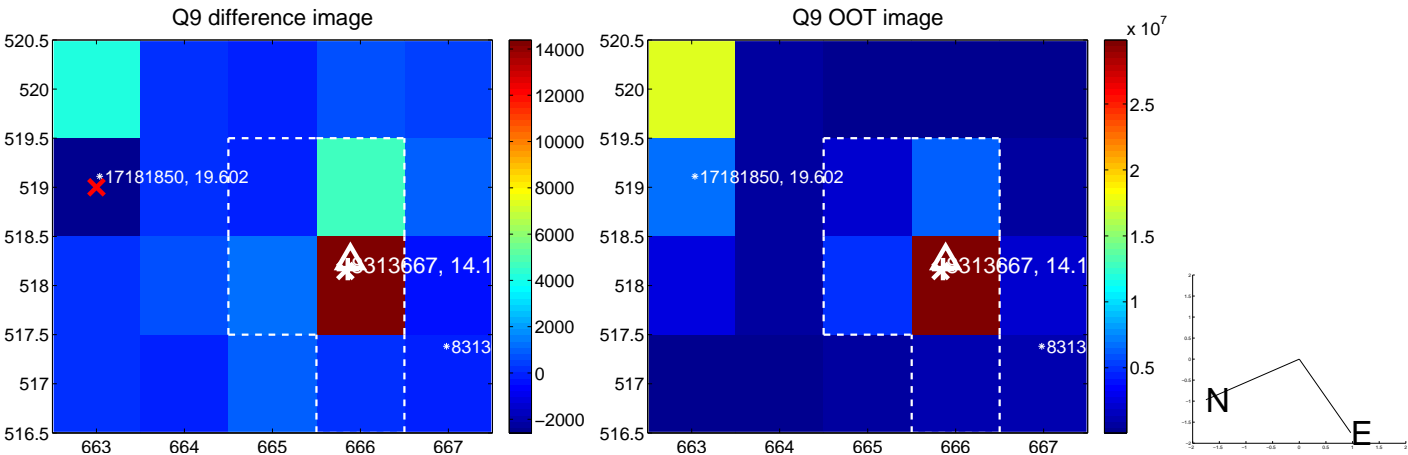
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



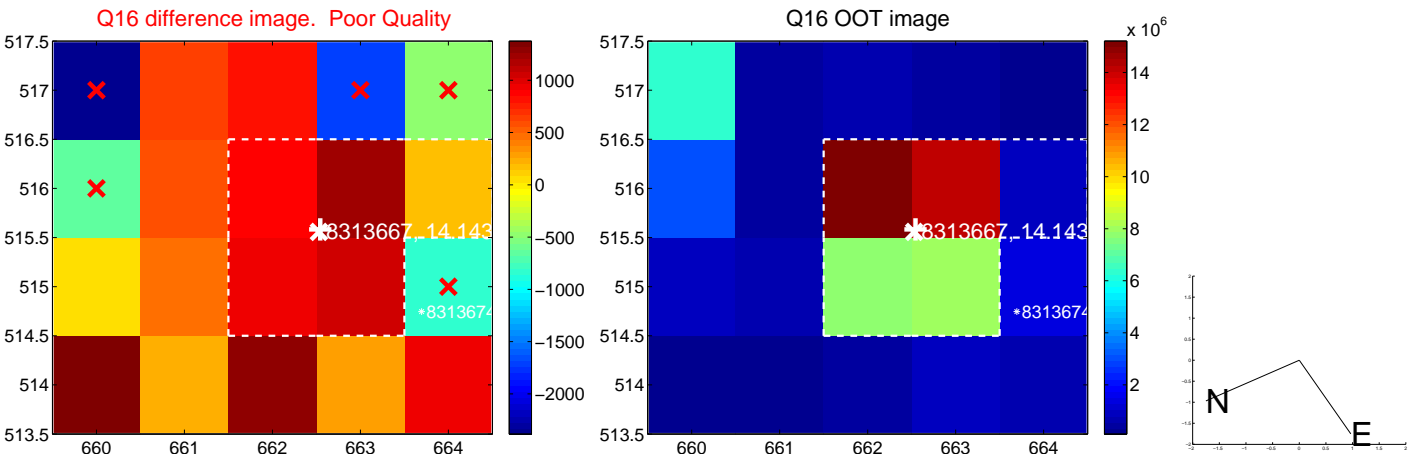
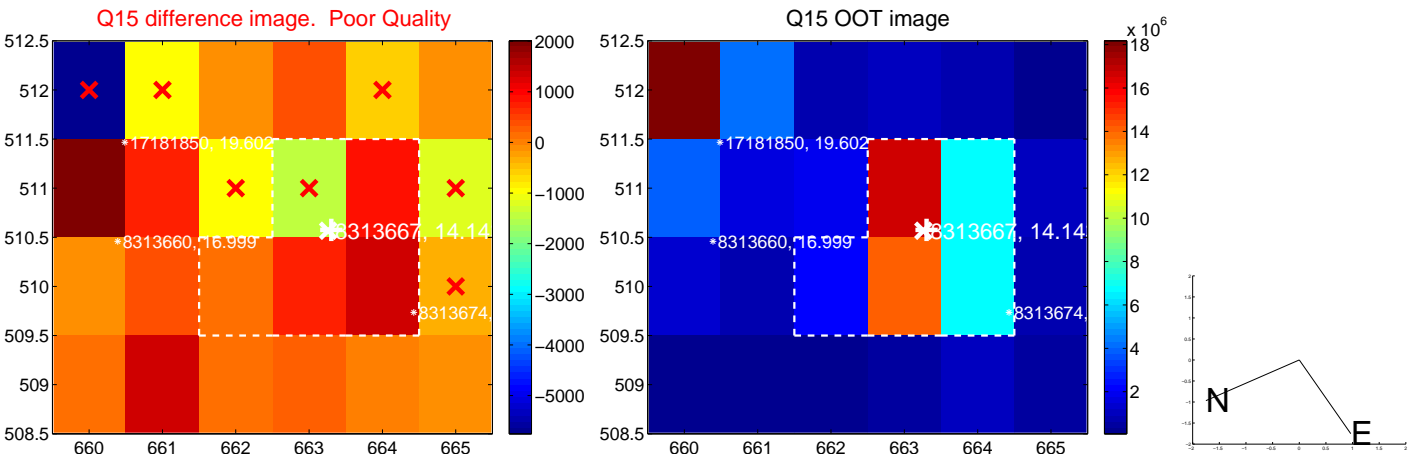
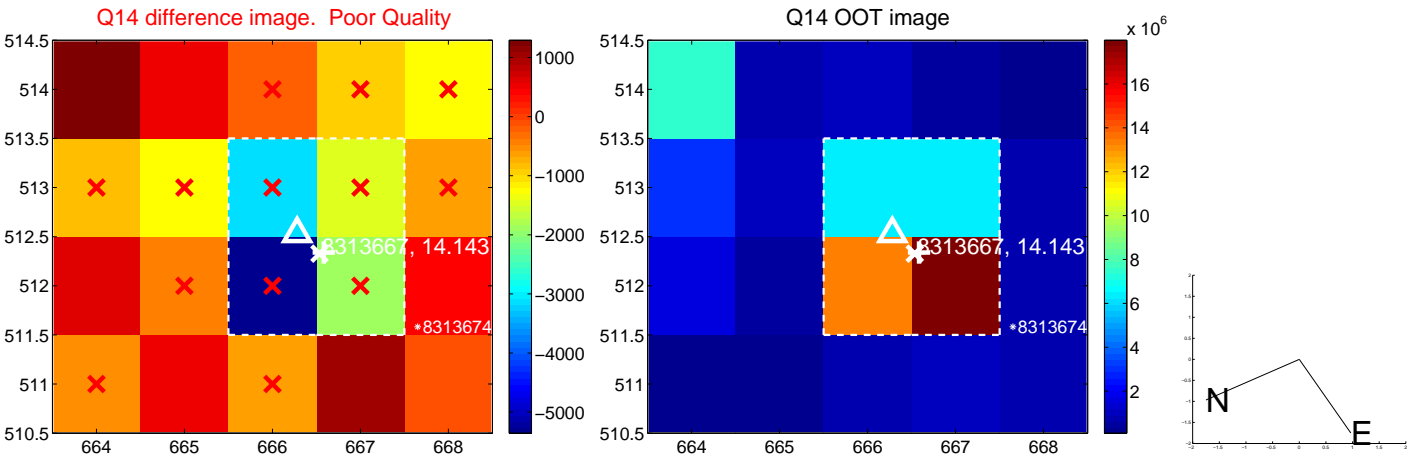
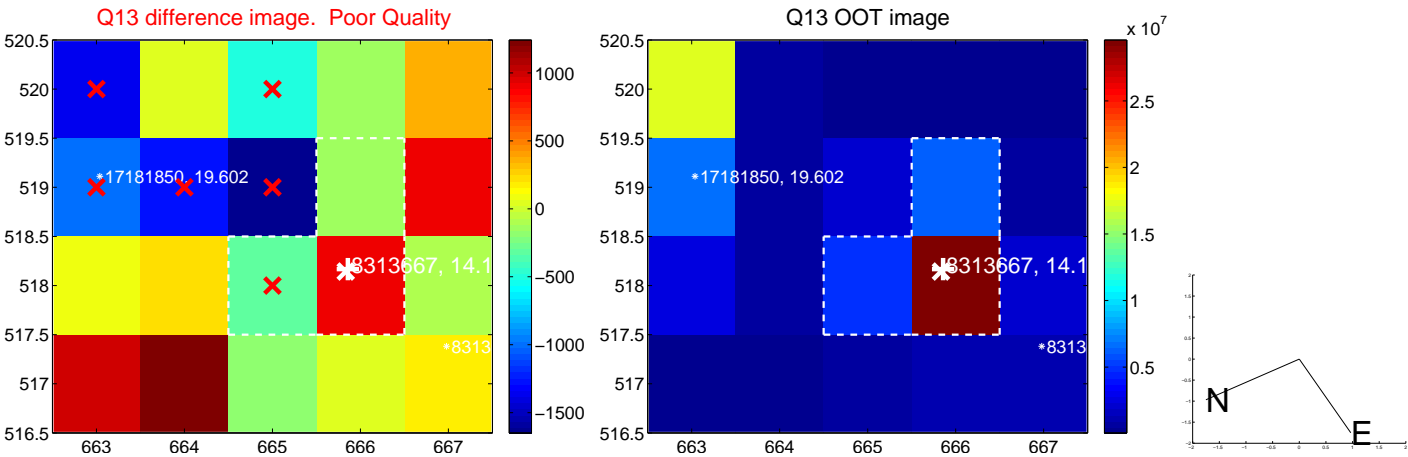
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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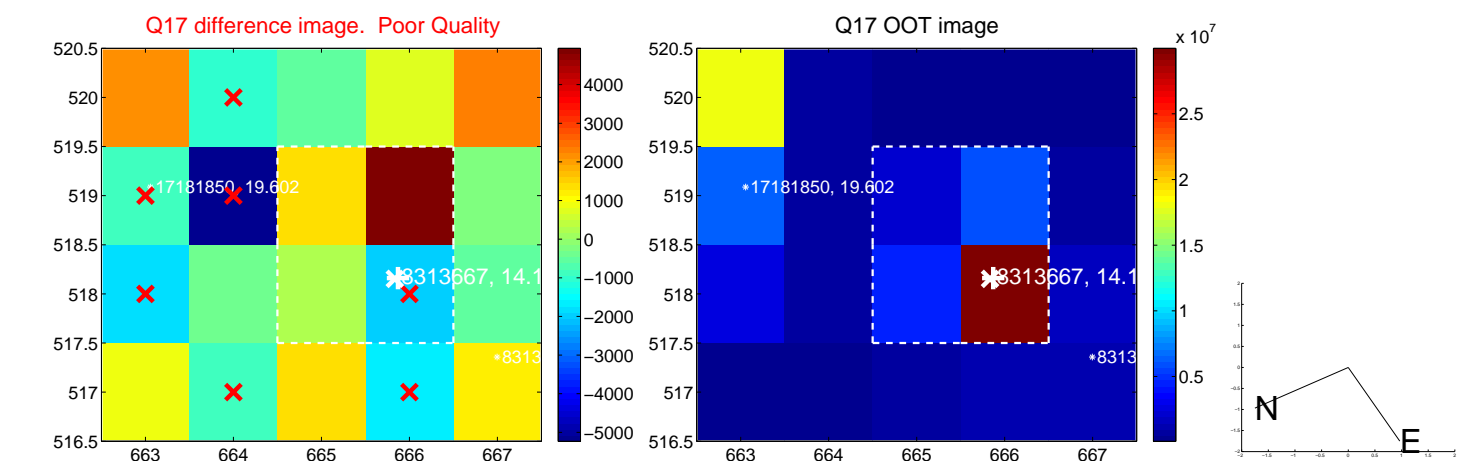


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

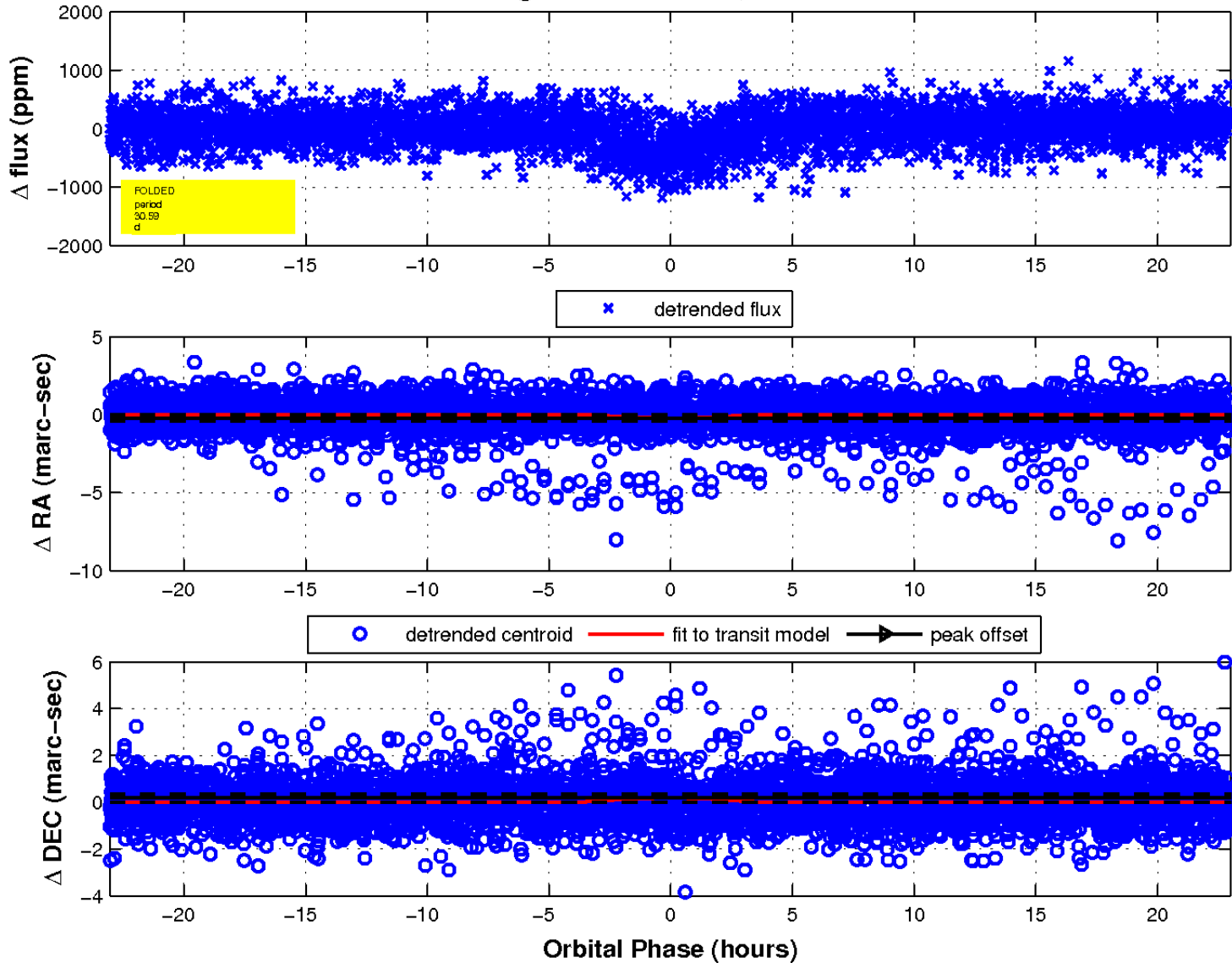




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

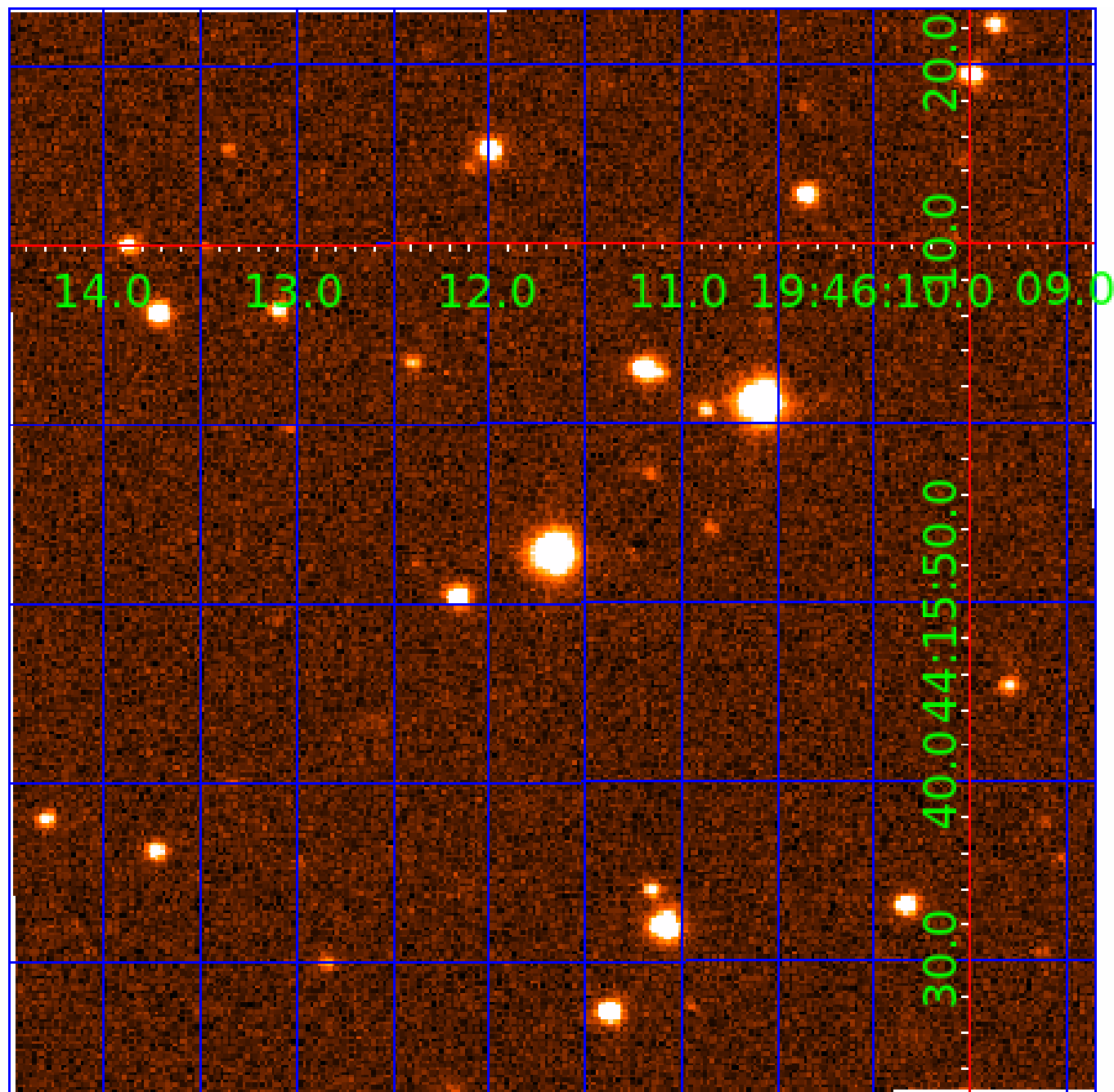


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



# KIC 008313667

## 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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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008313667-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008313667-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008313667-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS

**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 008313667-02

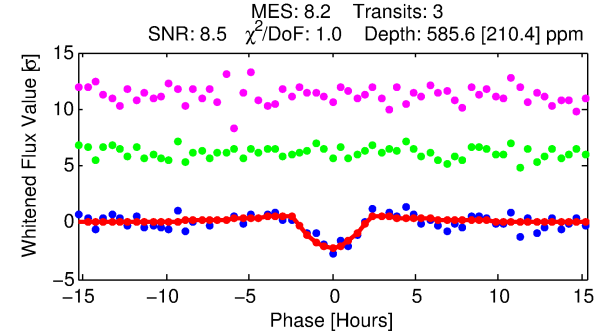
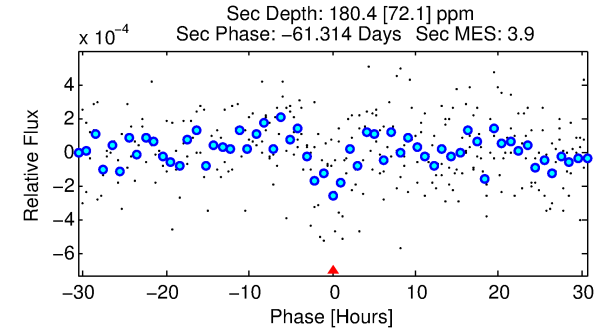
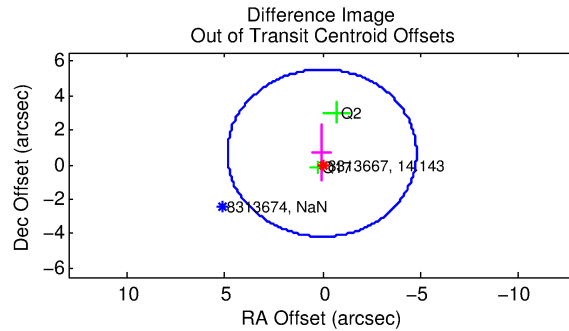
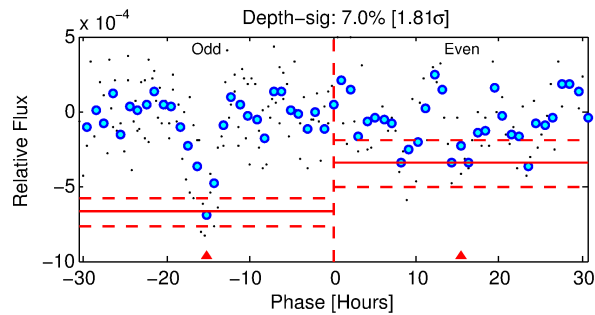
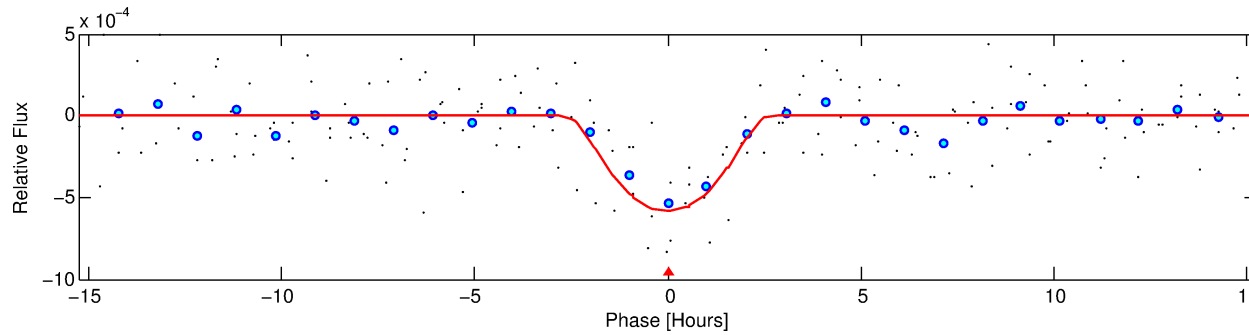
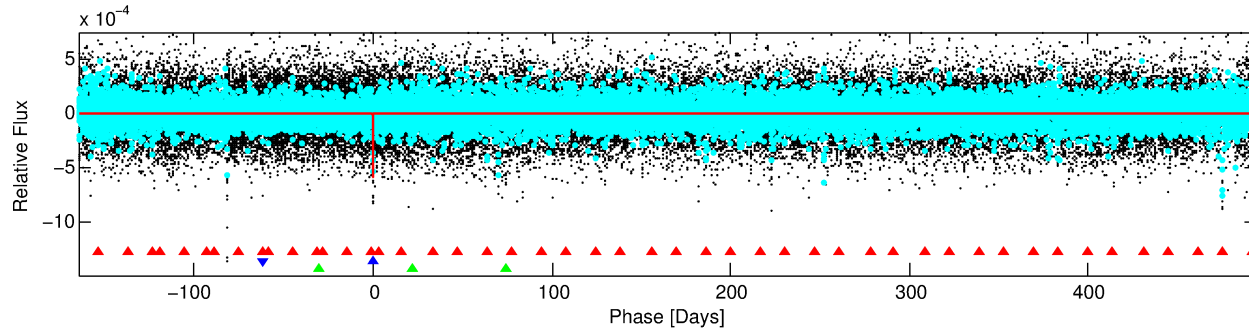
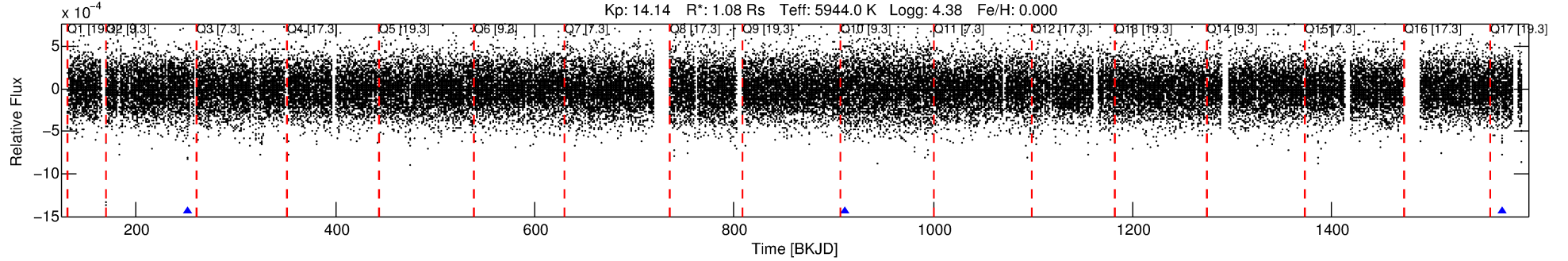
No Significant Match Found

# DV One-Page Summary

KIC: 8313667 Candidate: 2 of 3 Period: 659.490 d

KOI: K01145 Corr: No Ephemeris Match

Kp: 14.14 R\*: 1.08 Rs Teff: 5944.0 K Logg: 4.38 Fe/H: 0.000



## DV Fit Results:

Period = 659.48975 [0.00839] d  
Epoch = 251.9103 [0.0123] BKJD  
Rp/R\* = 0.0315 [0.0231]  
a/R\* = 325.34 [145.86]  
b = 0.98 [0.06]  
Seff = 0.59 [0.14]  
Teq = 223 [13] K  
Rp = 3.72 [2.80] Re  
a = 1.4950 [0.2162] AU  
Ag = 16055.00 [24672.62] [0.65σ]  
Teffp = 3882 [1479] K [2.47σ]

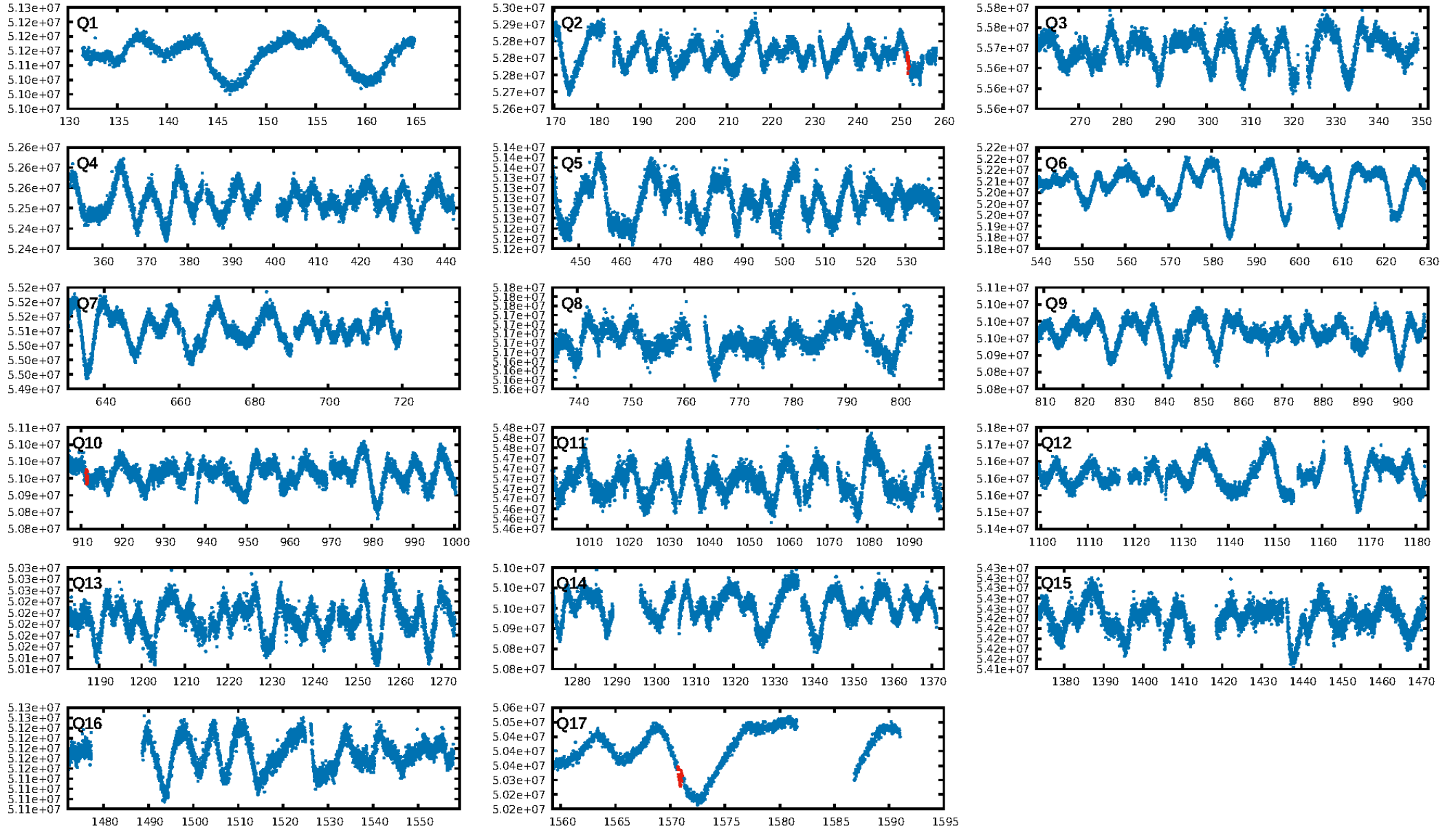
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [166.23σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 17.7%  
ModelChiSquareGof-sig: 64.9%  
**Bootstrap-pfa: 6.89e-11**  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 44.6  
Centroid-sig: 10.8%  
Centroid-so: 1.529 arcsec [1.34σ]  
OotOffset-rm: 0.674 arcsec [0.42σ]  
OotOffset-st: 1/0/0/1 [2]  
KicOffset-rm: 0.539 arcsec [0.34σ]  
KicOffset-st: 1/0/0/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:33:19 Z

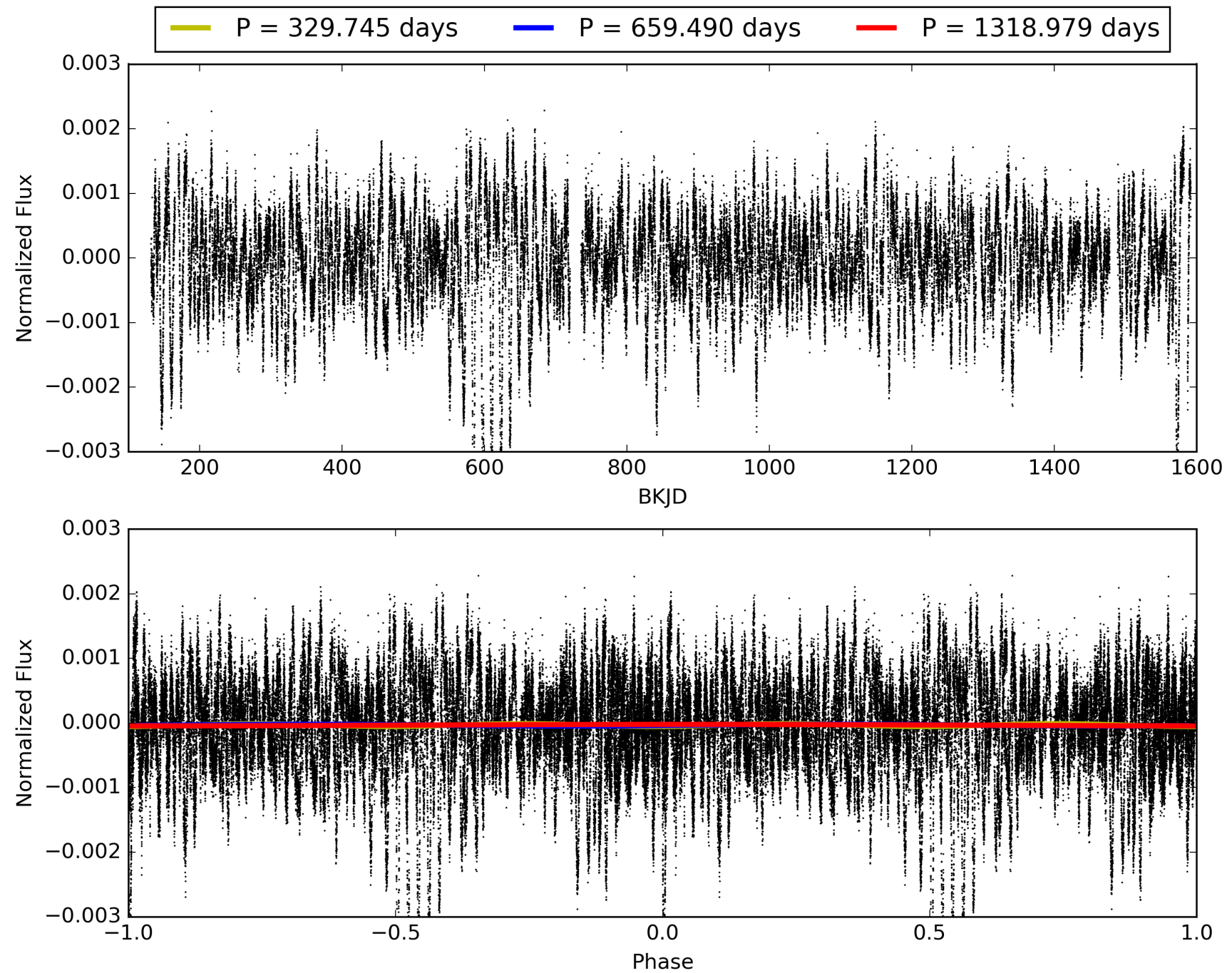
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008313667-02, PDC Light Curves



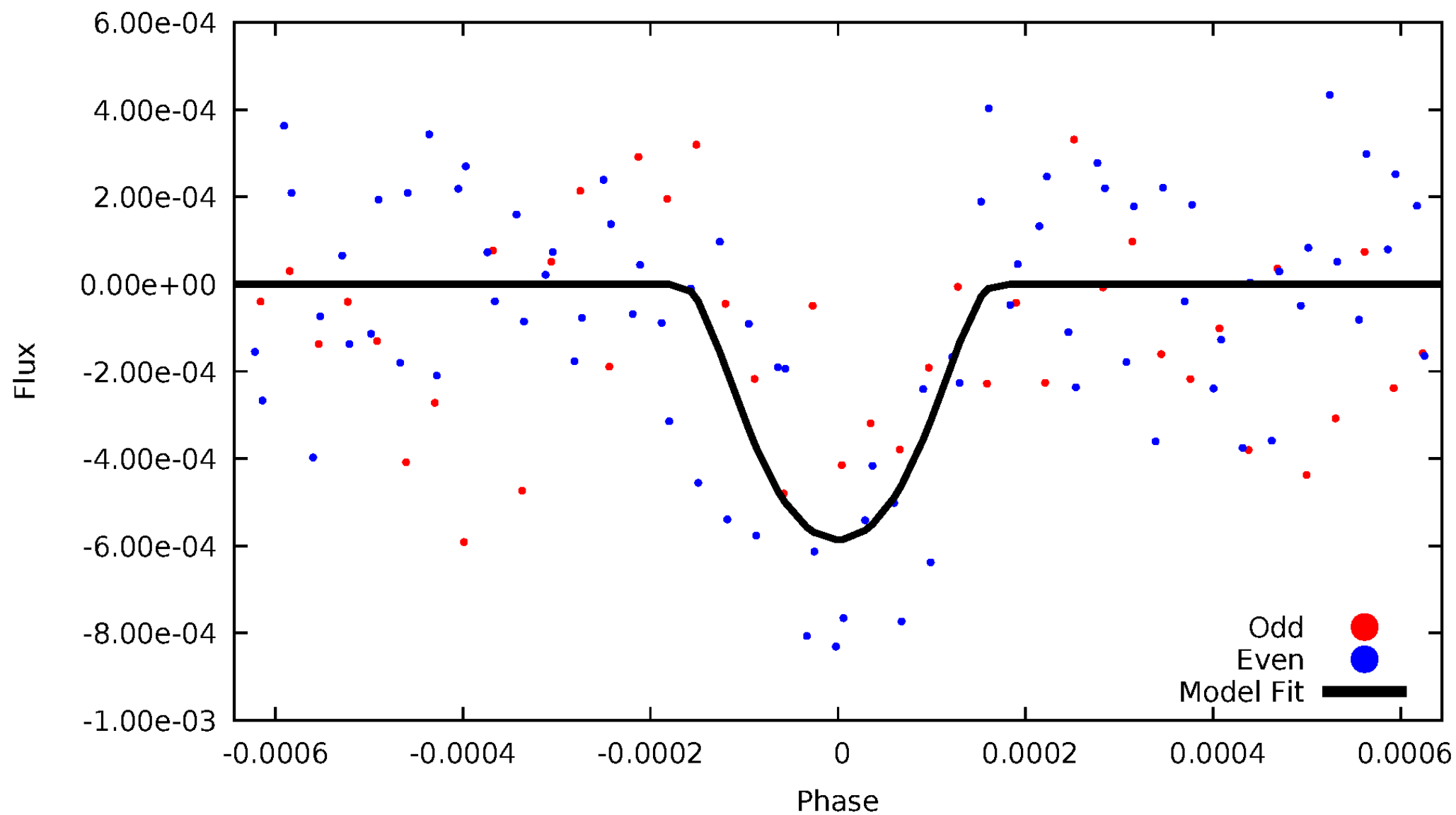


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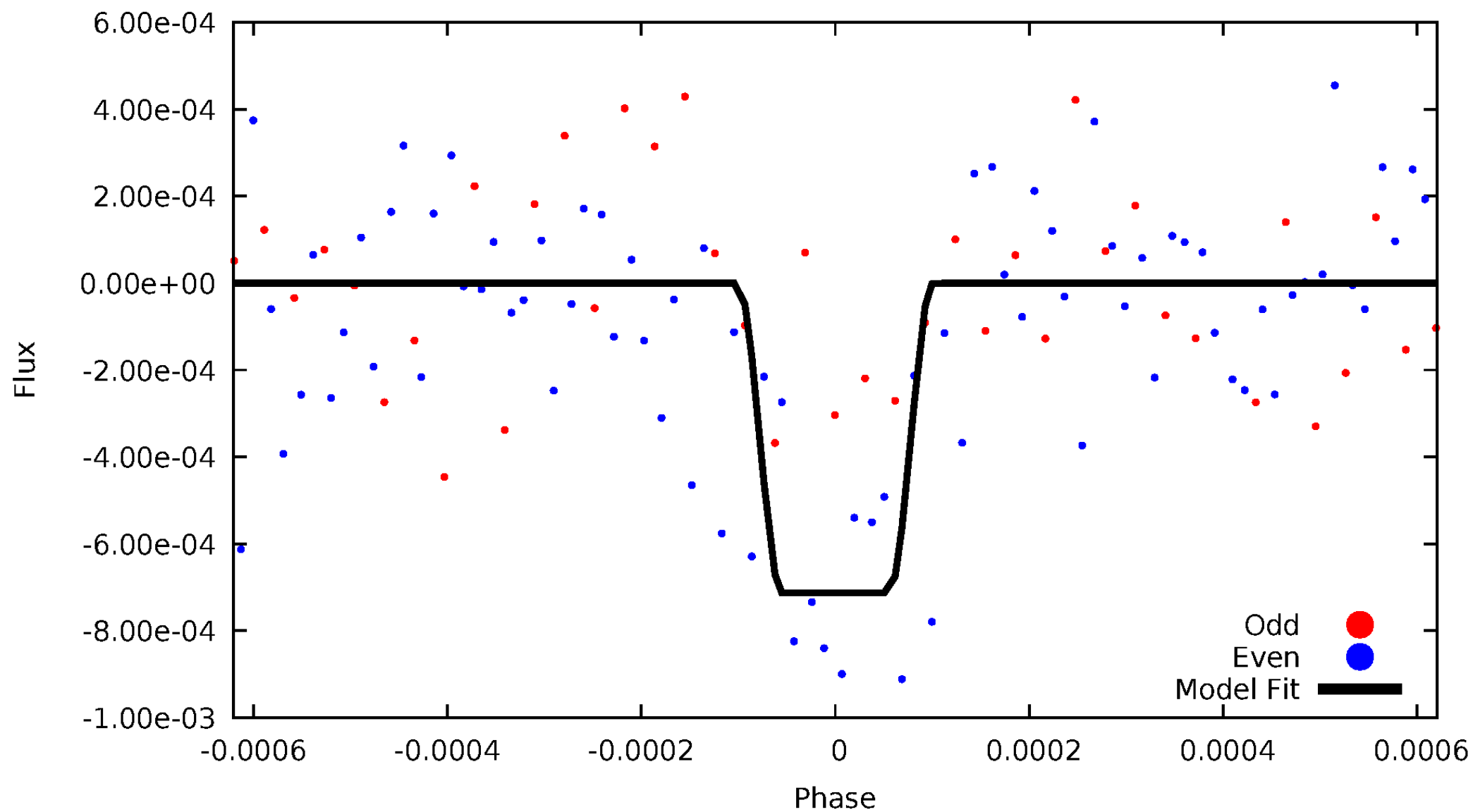
# DV Odd/Even

TCE 008313667-02



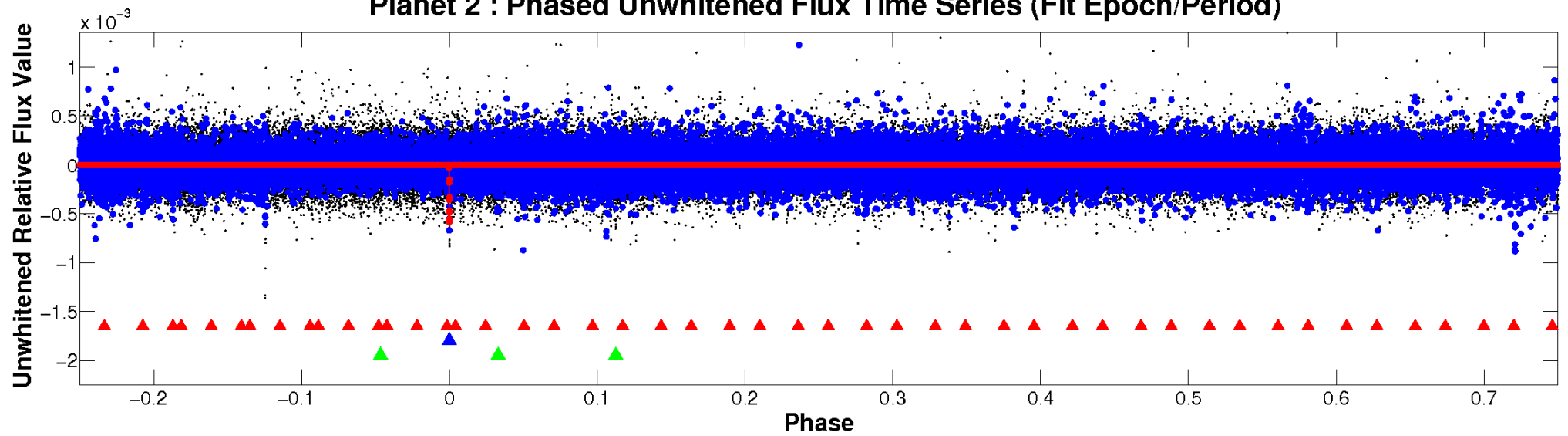
# ALT Odd/Even

TCE 008313667-02

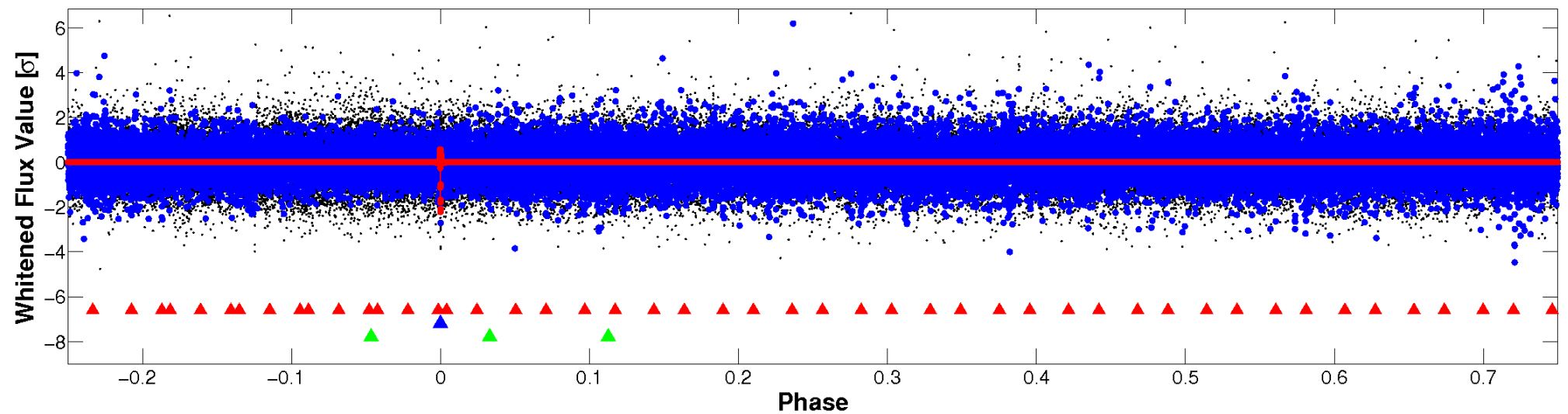


# Non-Whitened Vs. Whitened Light Curve

## 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

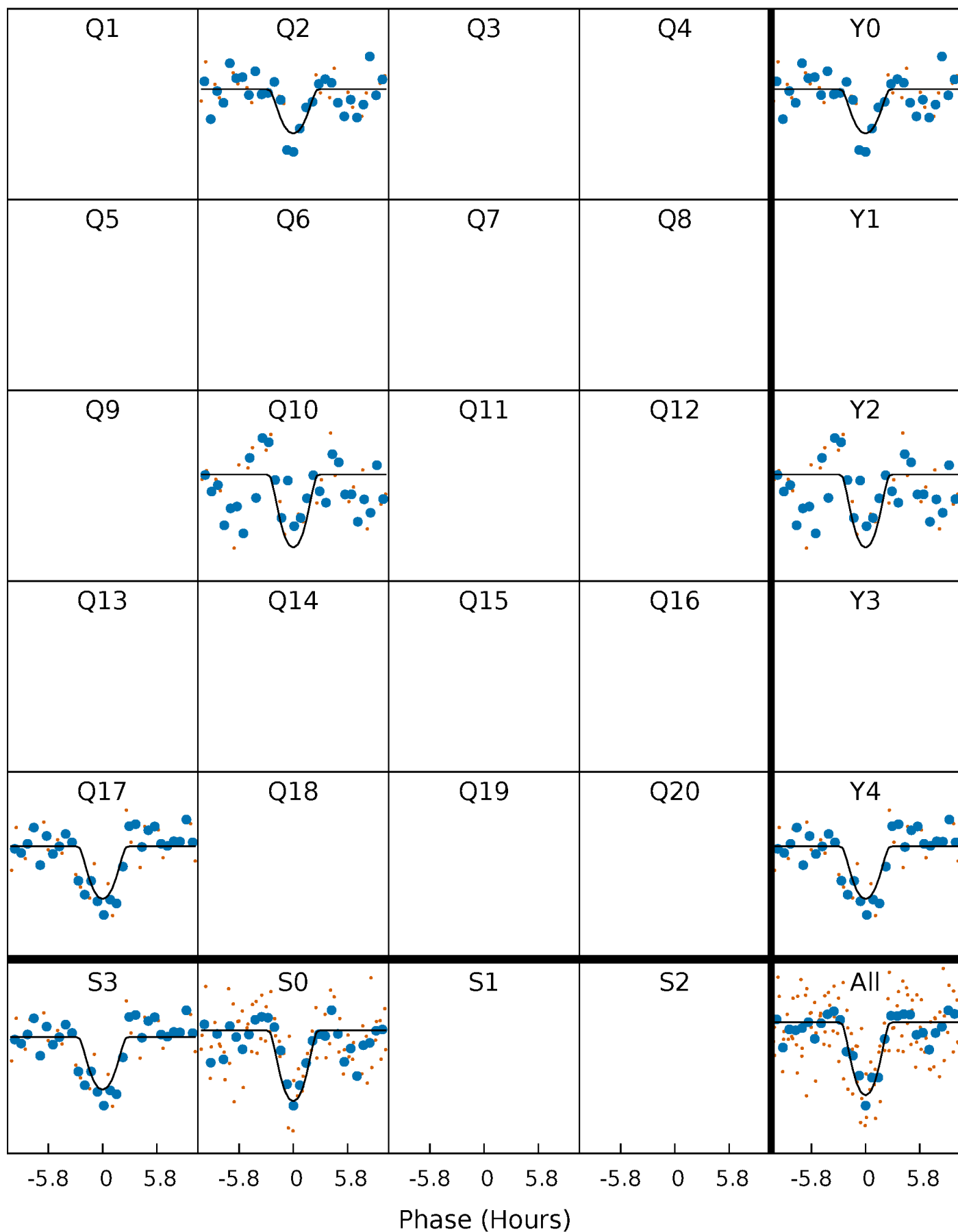
TCE 008313667-02     $P=659.489748$  Days     $T_0=251.910289$  (BKJD)





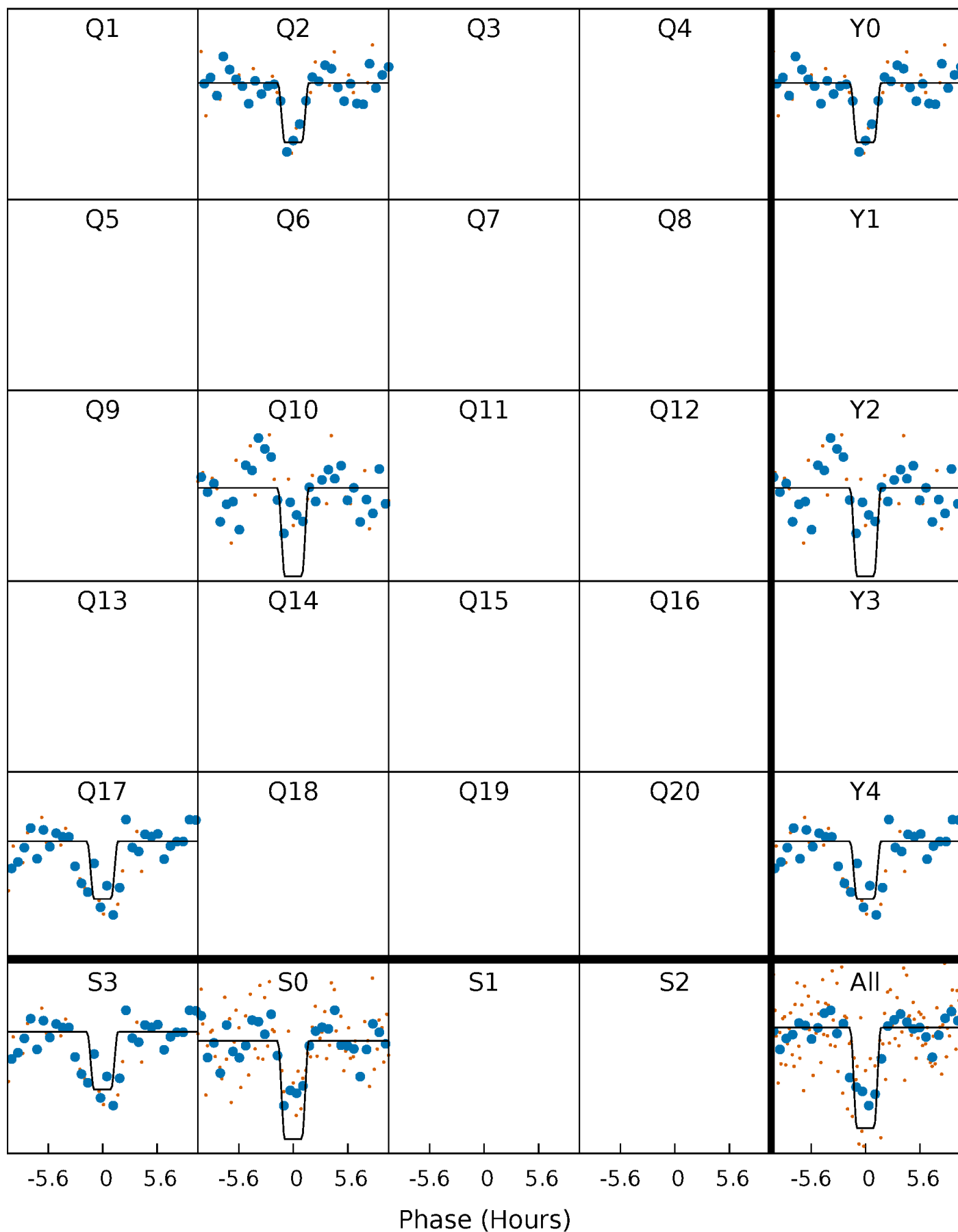
# DV Quarter-Phased Transit Curves

TCE 008313667-02 P=659.489748 Days  $T_0=251.910289$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

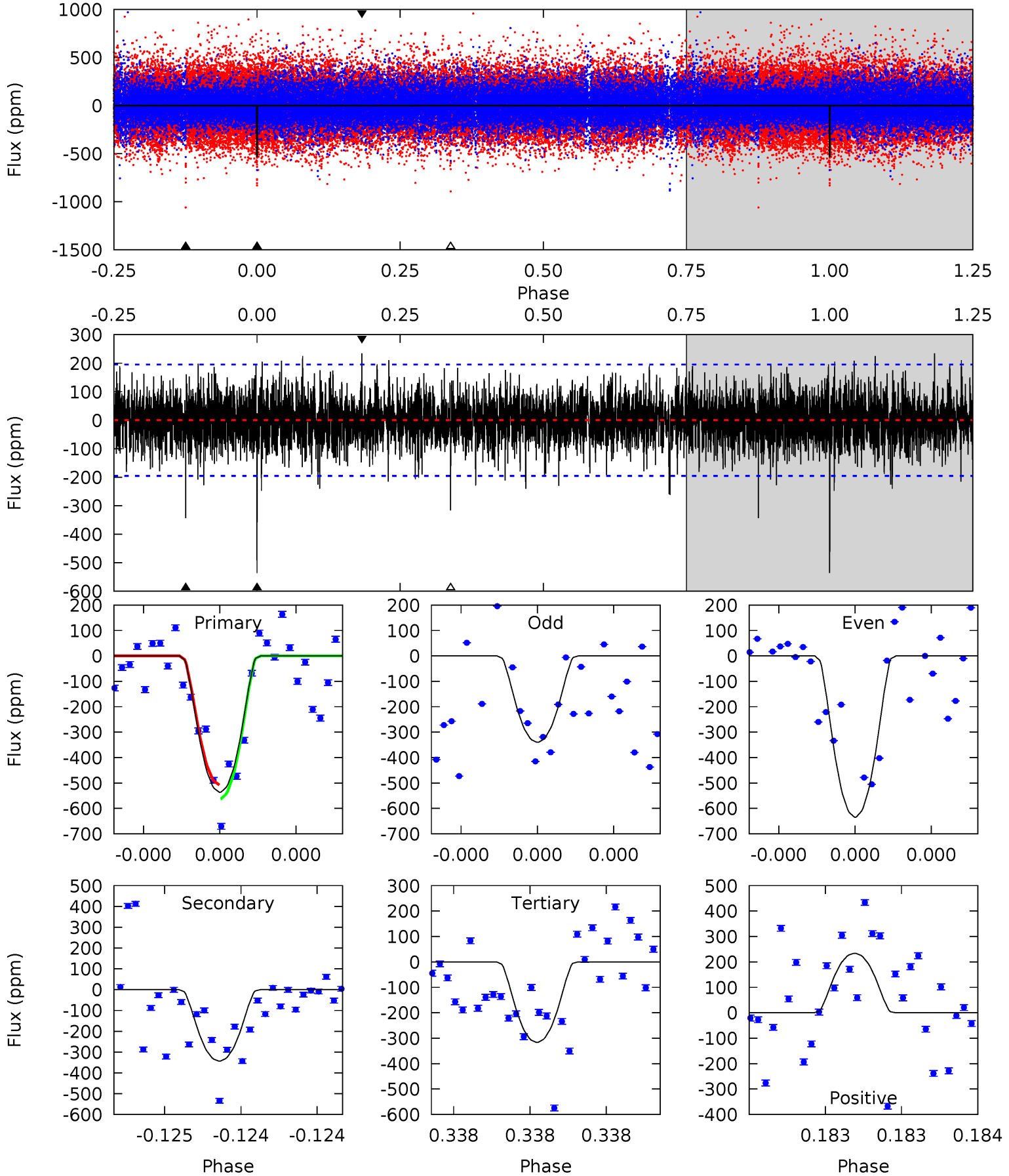
TCE 008313667-02 P=659.486338 Days  $T_0=251.916385$  (BKJD)



# DV Model-Shift Uniqueness Test

008313667-02, P = 659.489748 Days, E = 251.910289 Days

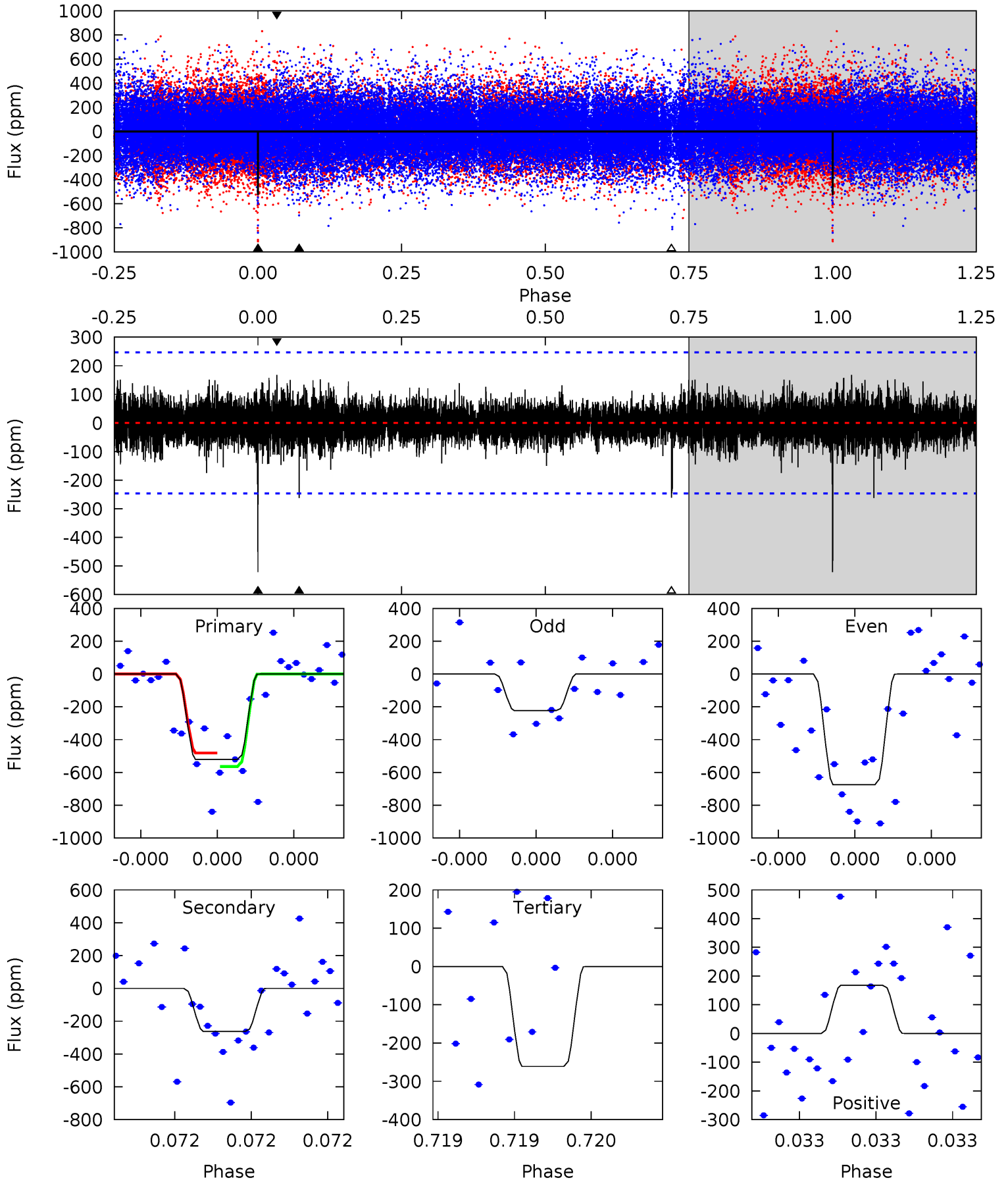
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	9.91	9.13	6.75	5.64	3.58	1.73	6.34	8.72	0.78	3.16	4.01	0.93	0.30	0.80



# Alt Model-Shift Uniqueness Test

008313667-02, P = 659.486338 Days, E = 251.916385 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
12.1	6.10	6.07	3.90	5.74	3.73	0.91	6.04	8.21	0.03	2.20	4.90	0.82	0.24	0.96



### Stellar Parameters For KIC 008313667

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5944^{+106}_{-130}$	$4.380^{+0.080}_{-0.120}$	$0.000^{+0.150}_{-0.150}$	$1.082^{+0.181}_{-0.111}$	$1.024^{+0.083}_{-0.068}$	$1.138^{+0.381}_{-0.402}$
	+2%/-2%	+2%/-3%	+inf%/-inf%	+17%/-10%	+8%/-7%	+33%/-35%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008313667-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-344 \pm 35$	$3.96^{+2.49}_{-2.36}$	$313^{+15}_{-12}$	$4618^{+2308}_{-773}$	$26835^{+140679}_{-16834}$
Alt.	$-262 \pm 43$	$3.84^{+2.73}_{-2.36}$	$312^{+15}_{-12}$	$4400^{+2318}_{-748}$	$21981^{+125838}_{-14483}$

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

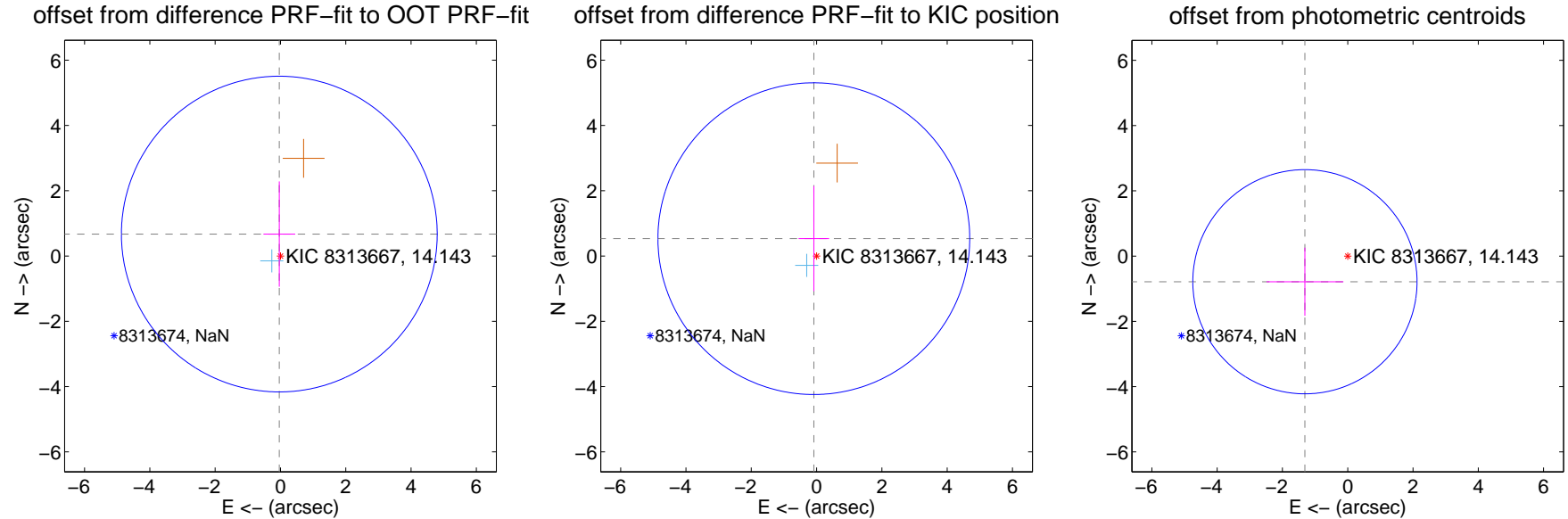
## DV Centroid Data

Supplemental centroid analysis for 008313667-02. Kepler magnitude: 14.14. Transit SNR 8.52

There are 1 quarters with good PRF difference image offsets

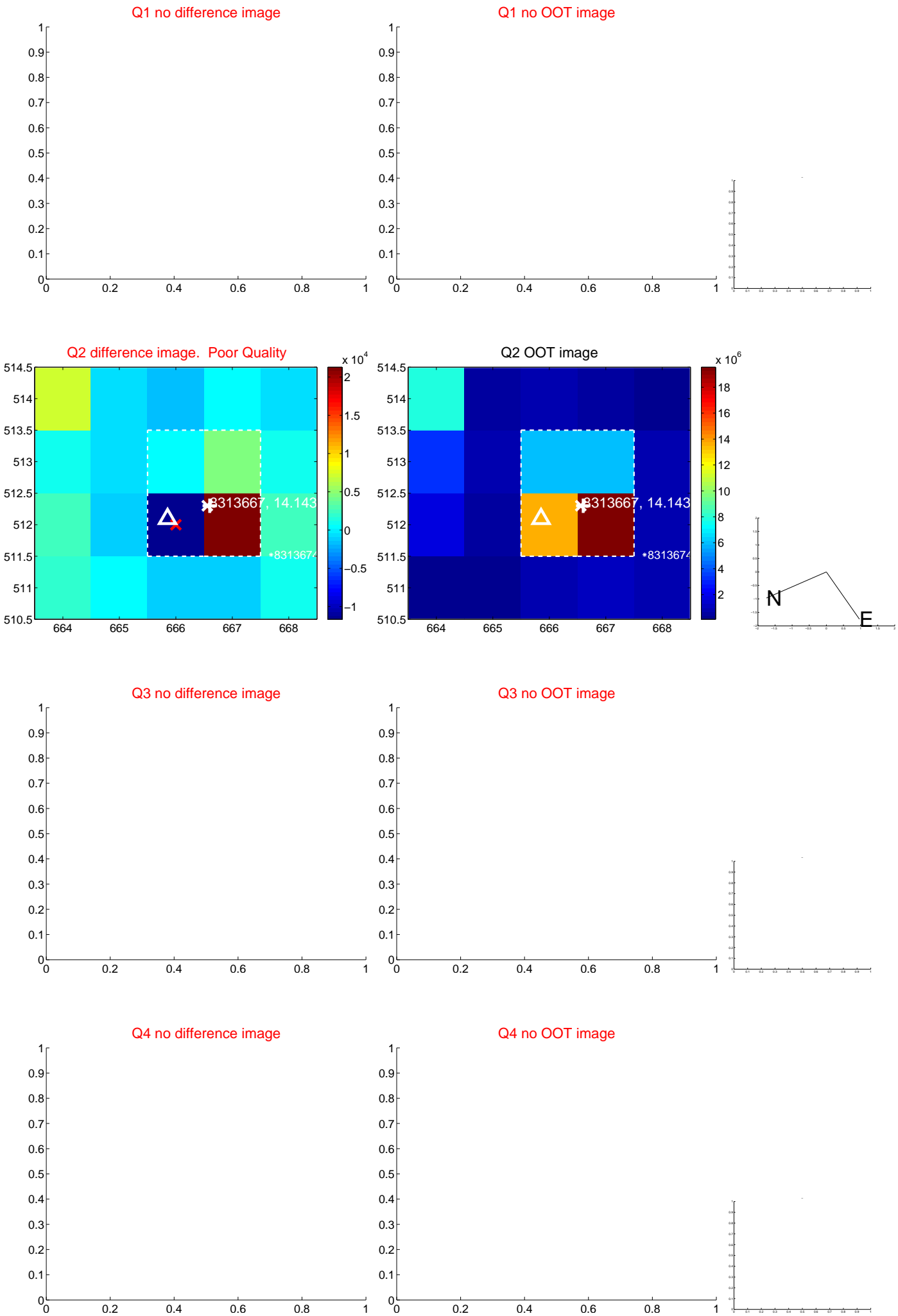
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.674 \pm 1.612$	0.42	$0.035 \pm 0.486$	$0.673 \pm 1.614$
PRF-fit source offset from KIC position	$0.539 \pm 1.592$	0.34	$0.084 \pm 0.467$	$0.532 \pm 1.610$
photometric centroid source offset	$1.53 \pm 1.14$	1.34	$1.31 \pm 1.18$	$-0.79 \pm 1.04$



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.

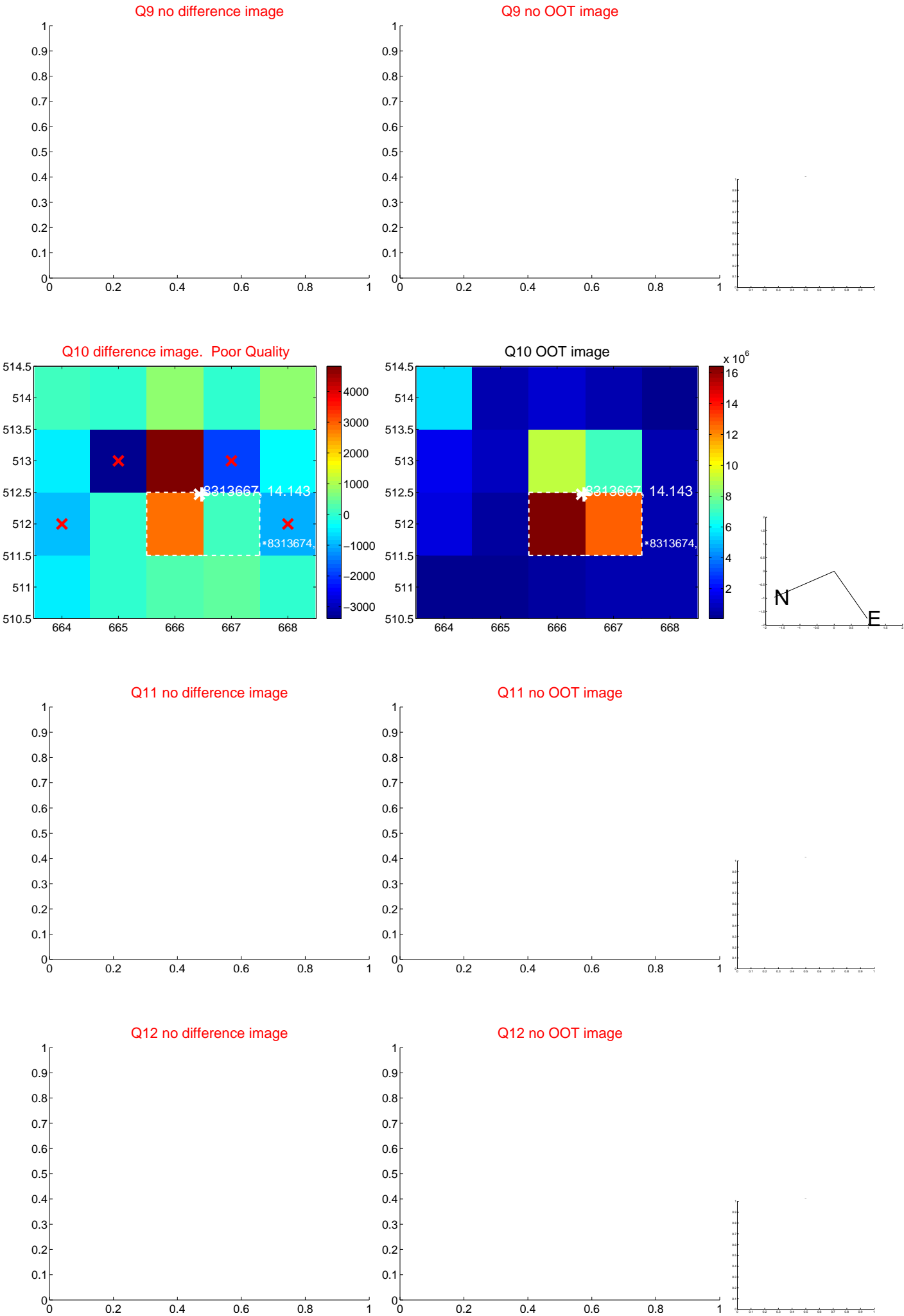




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



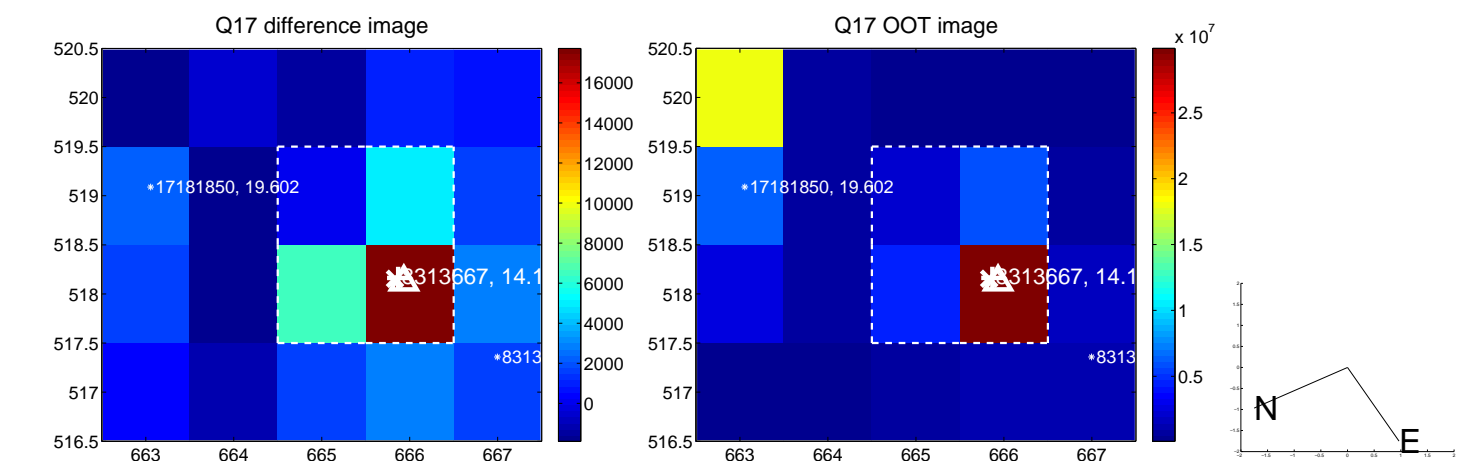
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



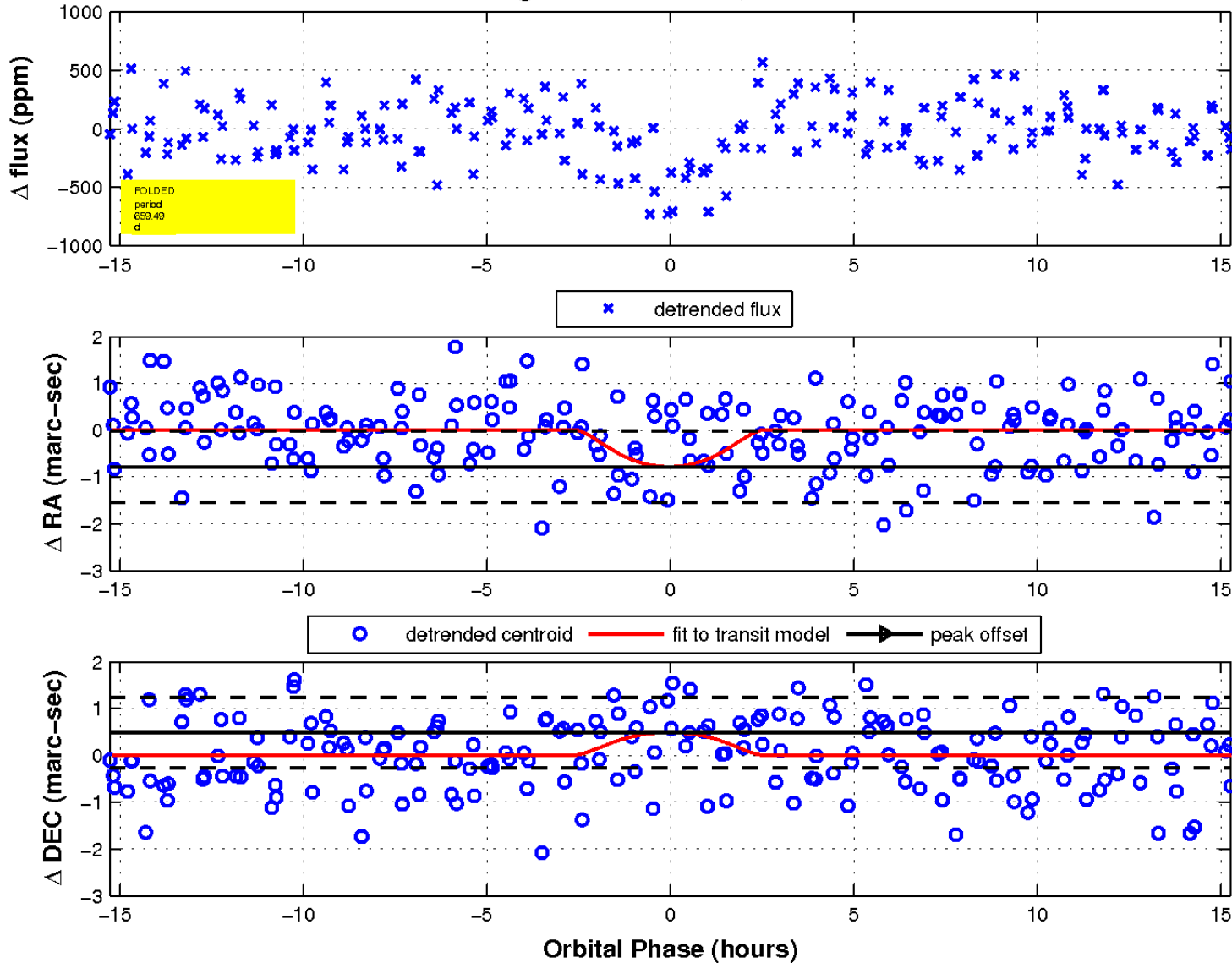
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

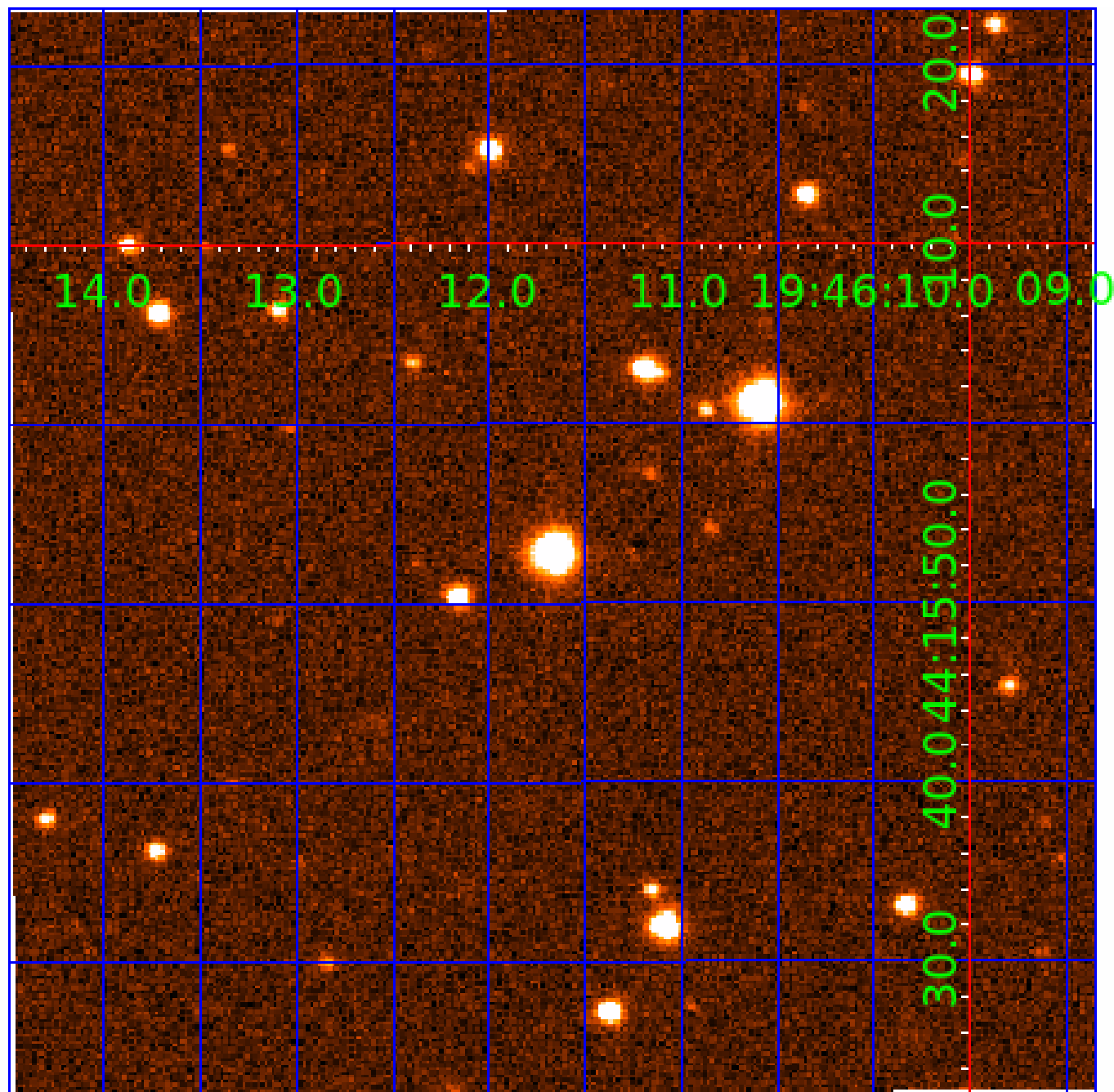


fluxWeightedCentroids, Planet 2 of 3



# UKIRT Image

Declination



# KIC 008313667

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008313667-01	OBS	1145.01	30.587583	132.287736	400.9	7.681	22.4	23.6	1.08	5944	3.57	35.15
008313667-02	OBS	No	659.489748	251.910289	585.6	5.095	8.2	8.5	1.08	5944	3.72	0.59
008313667-03	OBS	No	607.007526	326.186952	476.0	5.609	7.7	8.0	1.08	5944	2.54	0.65

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008313667-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008313667-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008313667-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS

**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 008313667-03

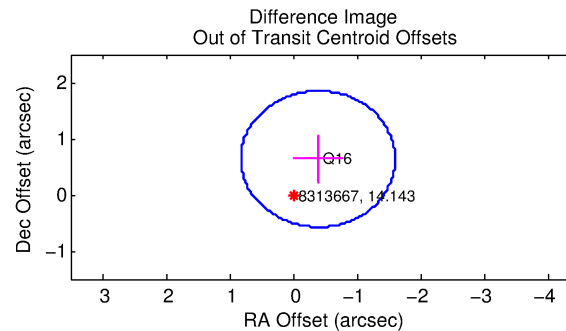
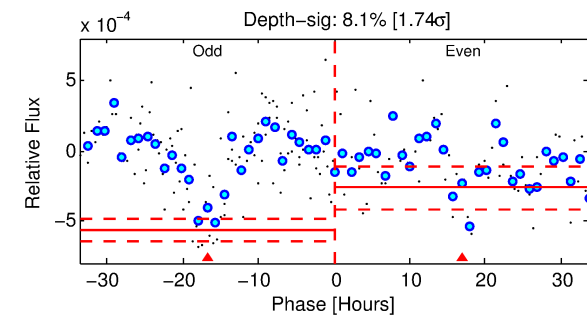
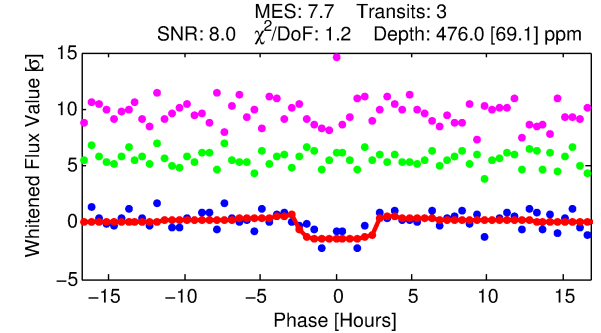
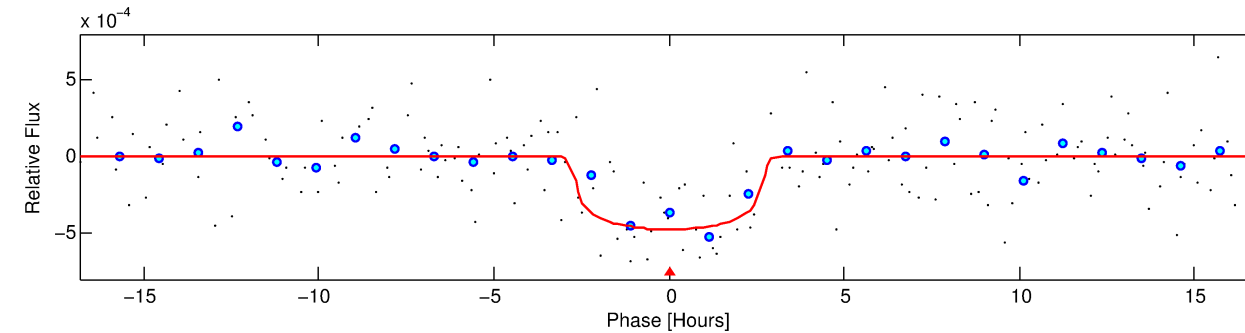
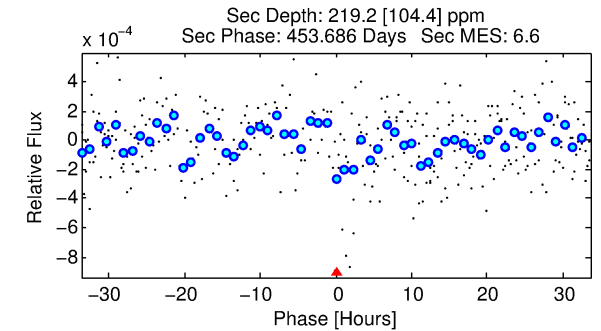
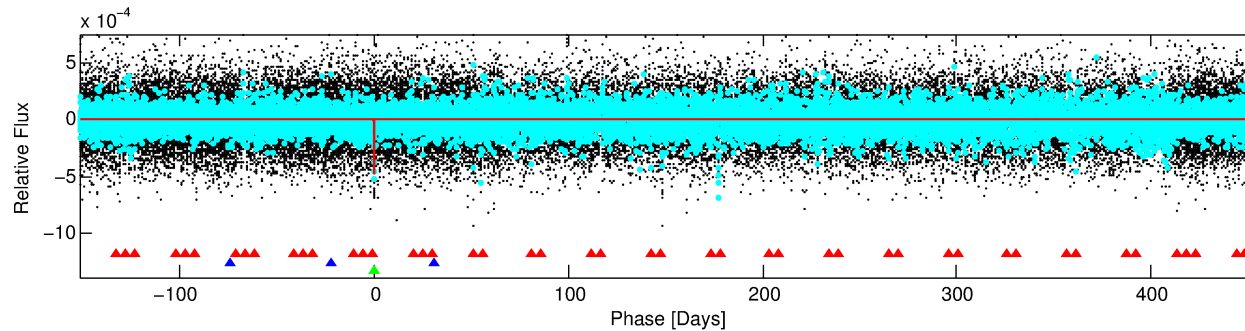
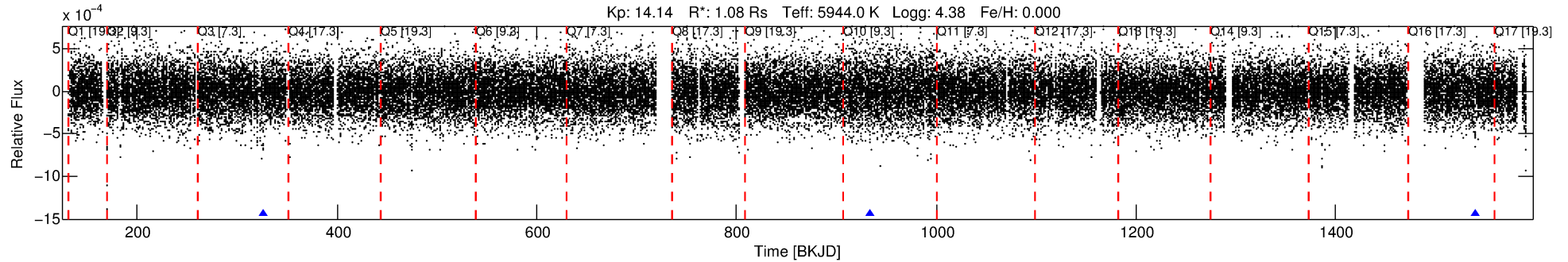
No Significant Match Found

# DV One-Page Summary

KIC: 8313667 Candidate: 3 of 3 Period: 607.008 d

KOI: K01145 Corr: No Ephemeris Match

Kp: 14.14 R\*: 1.08 Rs Teff: 5944.0 K Logg: 4.38 Fe/H: 0.000



## DV Fit Results:

Period = 607.00753 [0.00729] d  
Epoch = 326.1870 [0.0092] BKJD  
Rp/R\* = 0.0215 [0.0158]  
a/R\* = 597.78 [2011.14]  
b = 0.72 [2.26]  
Seff = 0.65 [0.15]  
Teq = 229 [13] K  
Rp = 2.54 [1.91] Re  
a = 1.4146 [0.2046] AU  
Ag = 37459.66 [58323.11] [0.64σ]  
Teffp = 4933 [1905] K [2.47σ]

## DV Diagnostic Results:

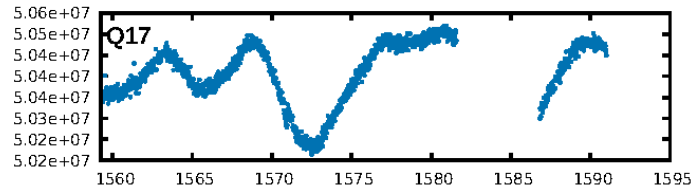
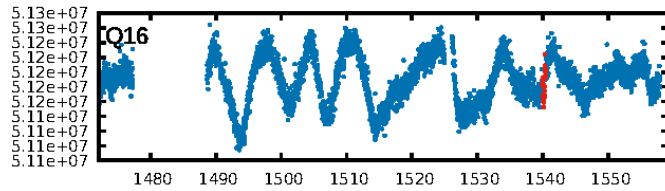
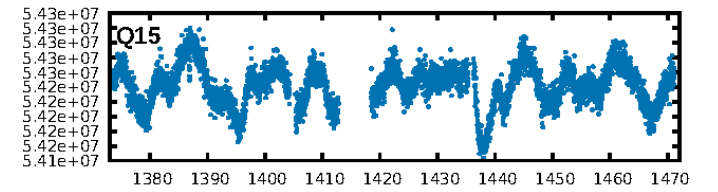
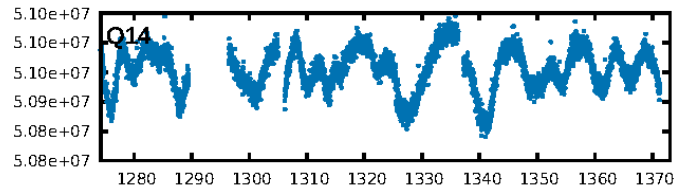
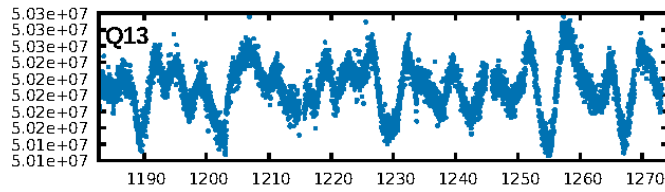
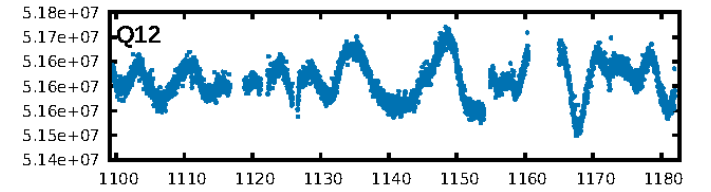
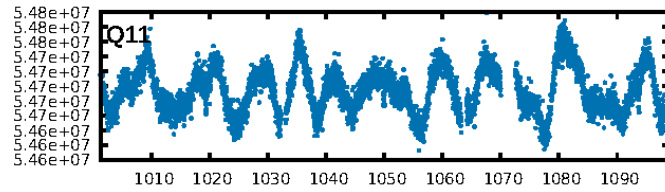
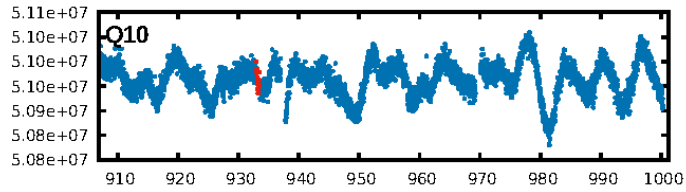
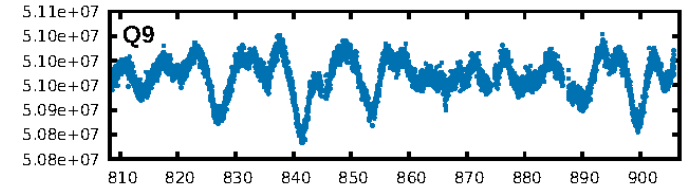
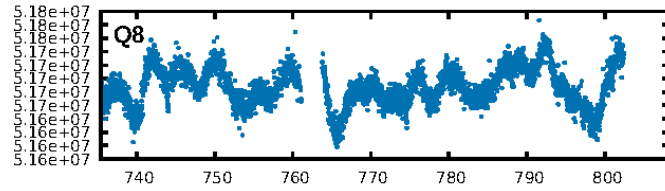
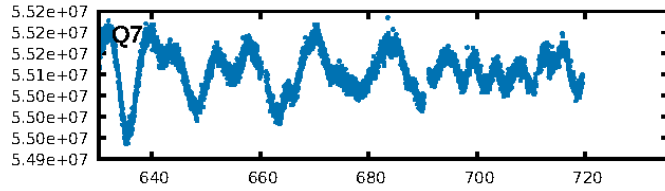
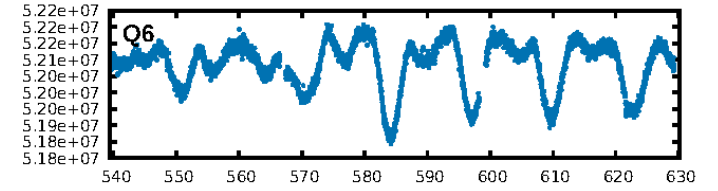
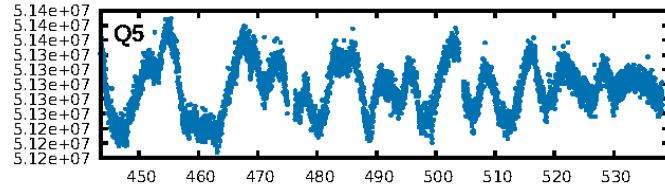
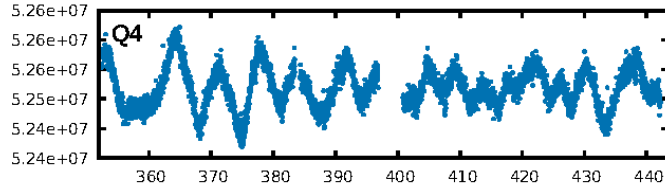
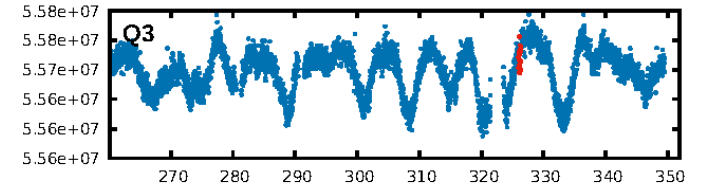
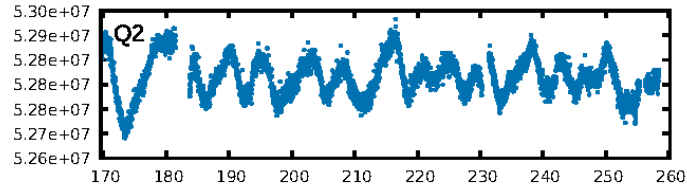
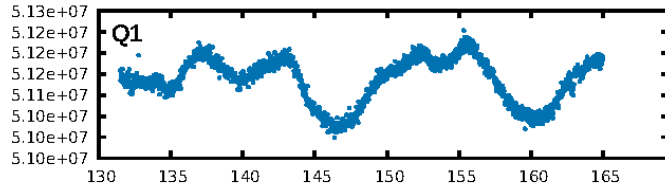
ShortPeriod-sig: 100.0% [1454.62σ]  
LongPeriod-sig: 100.0% [166.23σ]  
ModelChiSquare2-sig: 15.6%  
ModelChiSquareGof-sig: 85.8%  
**Bootstrap-pfa: 1.26e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 41.53  
Centroid-sig: 3.4%  
Centroid-so: 2.766 arcsec [2.18σ]  
OotOffset-rm: 0.747 arcsec [1.85σ]  
KicOffset-rm: 0.706 arcsec [1.76σ]  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:33:36 Z

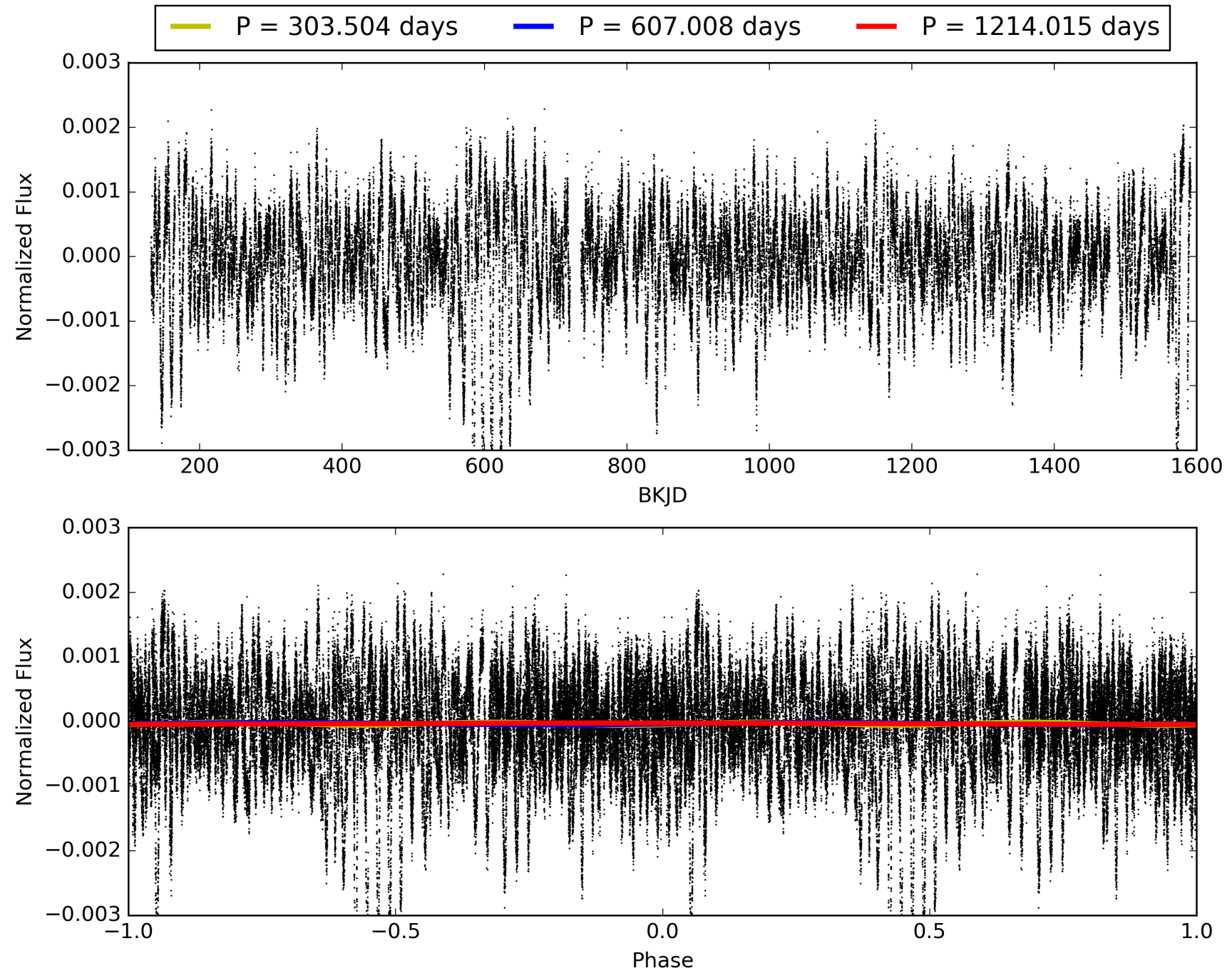
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 008313667-03, PDC Light Curves

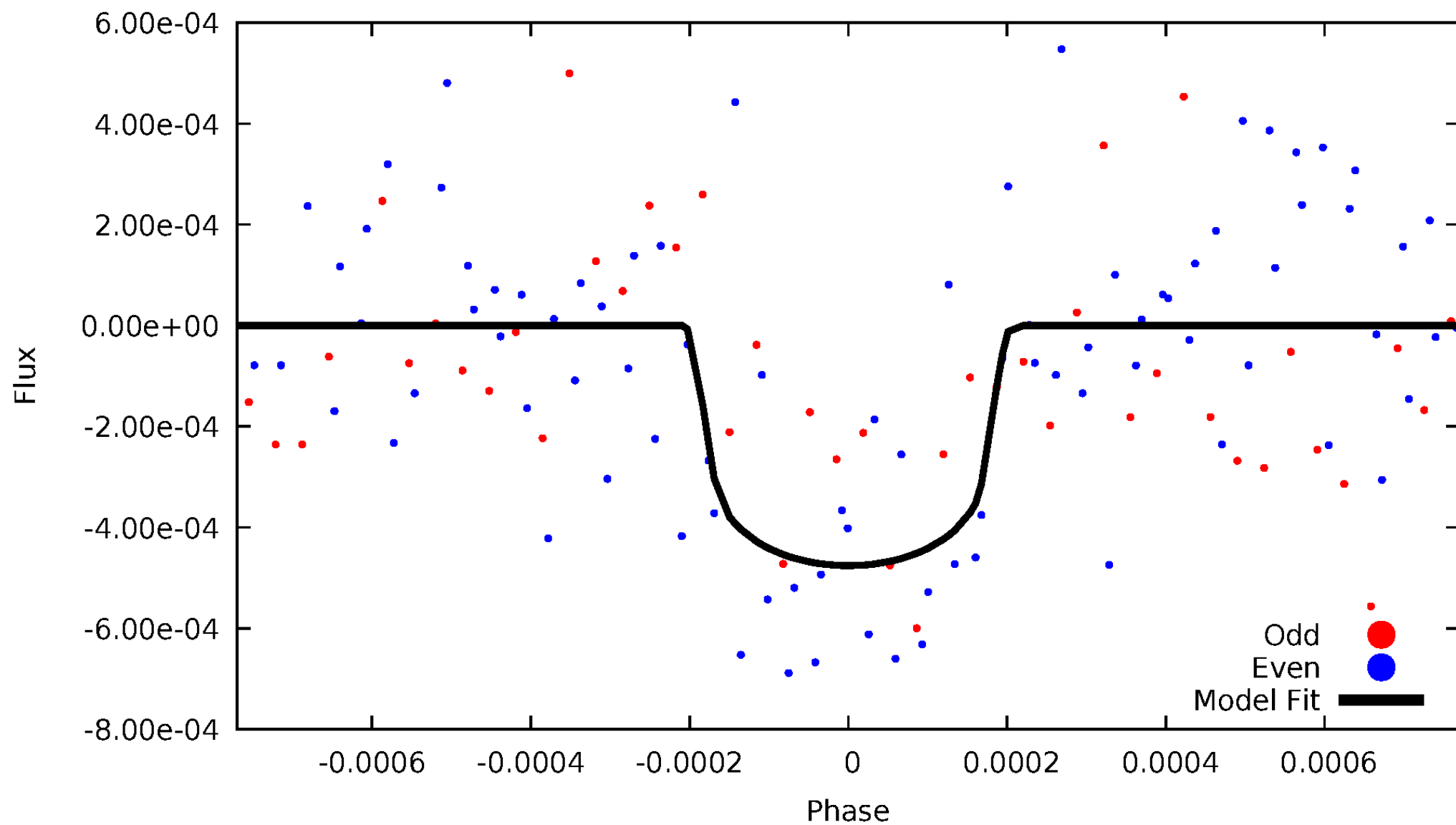


TCE 008313667-03



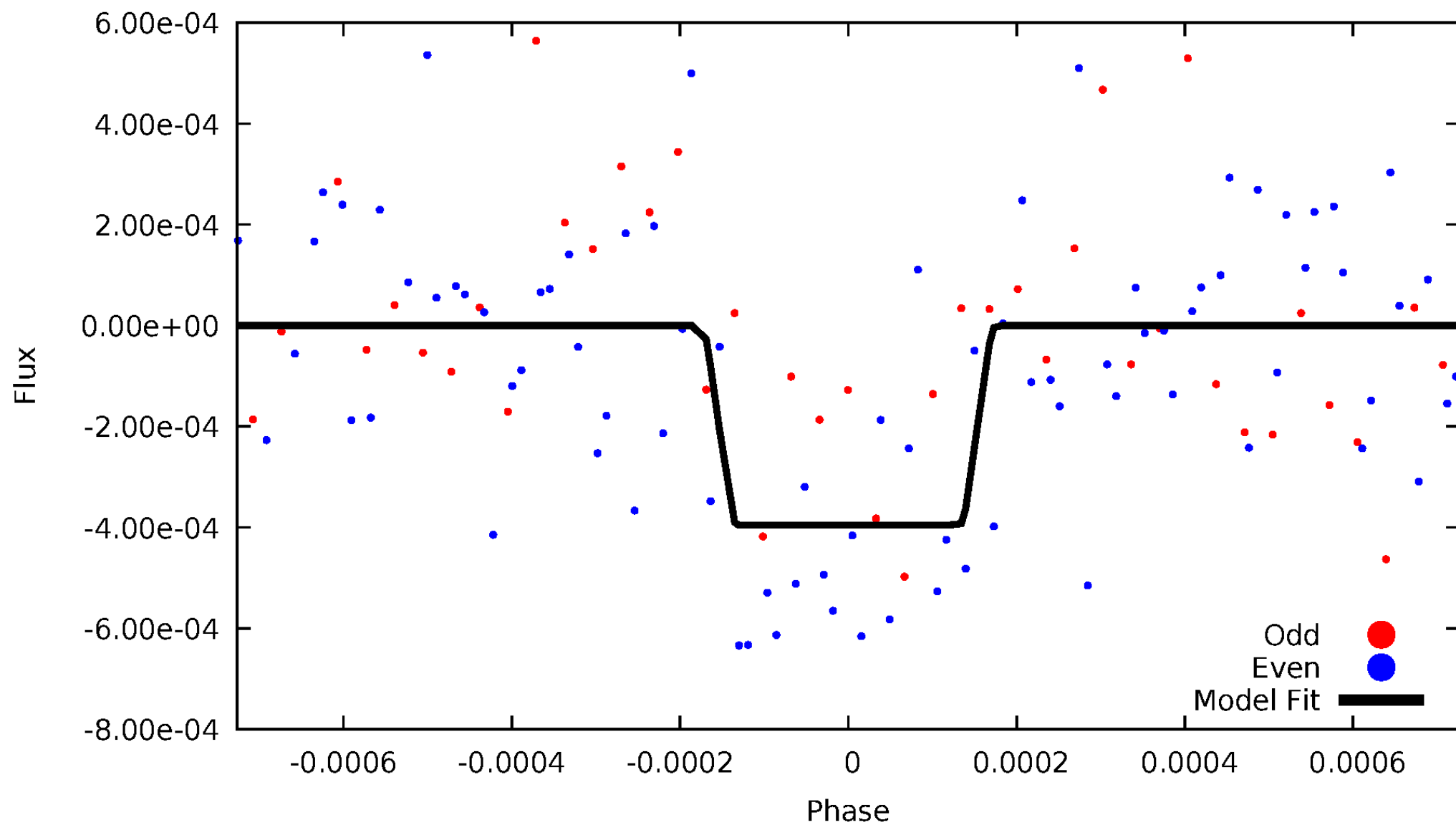
# DV Odd/Even

TCE 008313667-03

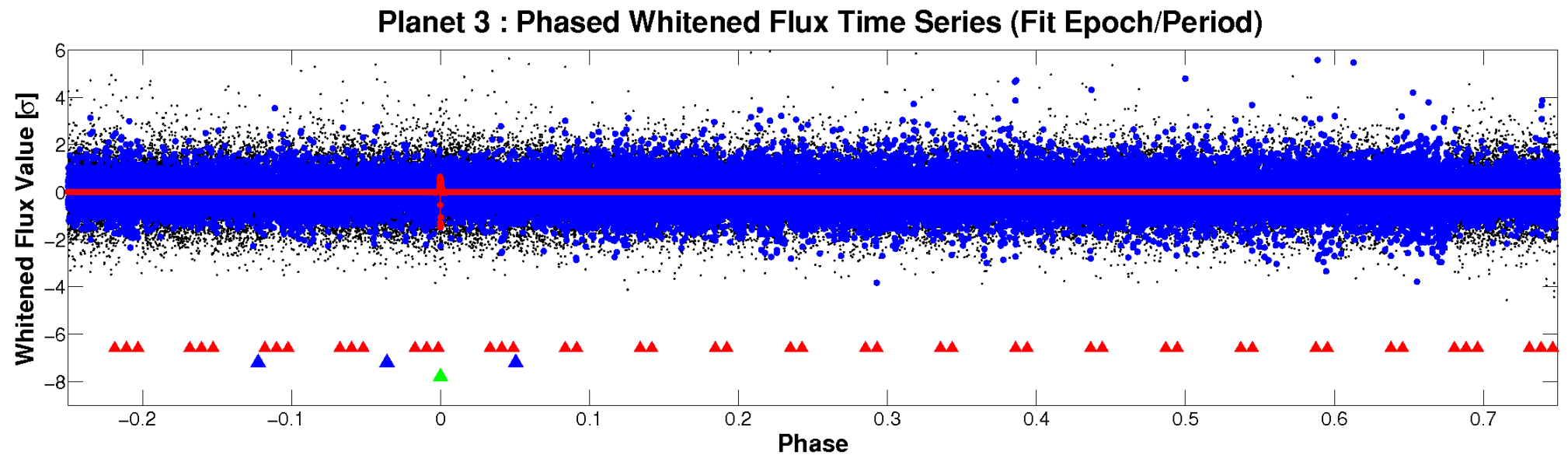
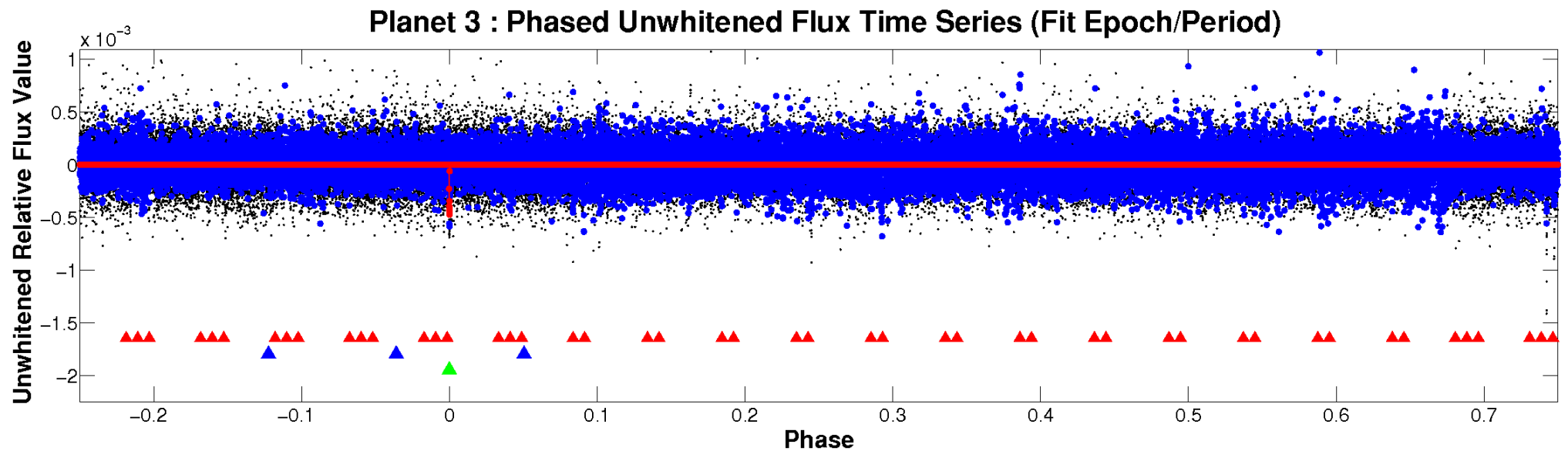


# ALT Odd/Even

TCE 008313667-03

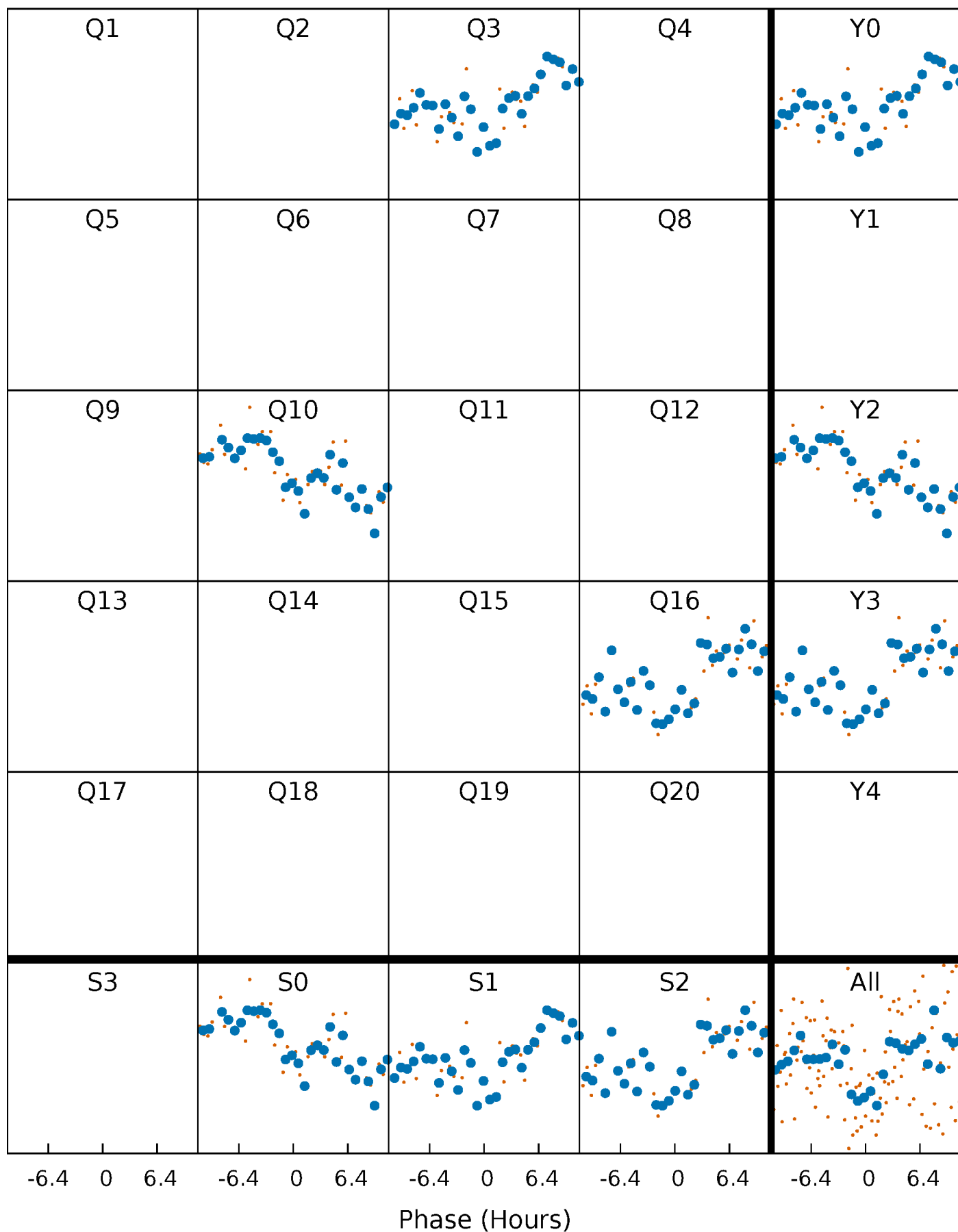


# Non-Whitened Vs. Whitened Light Curve



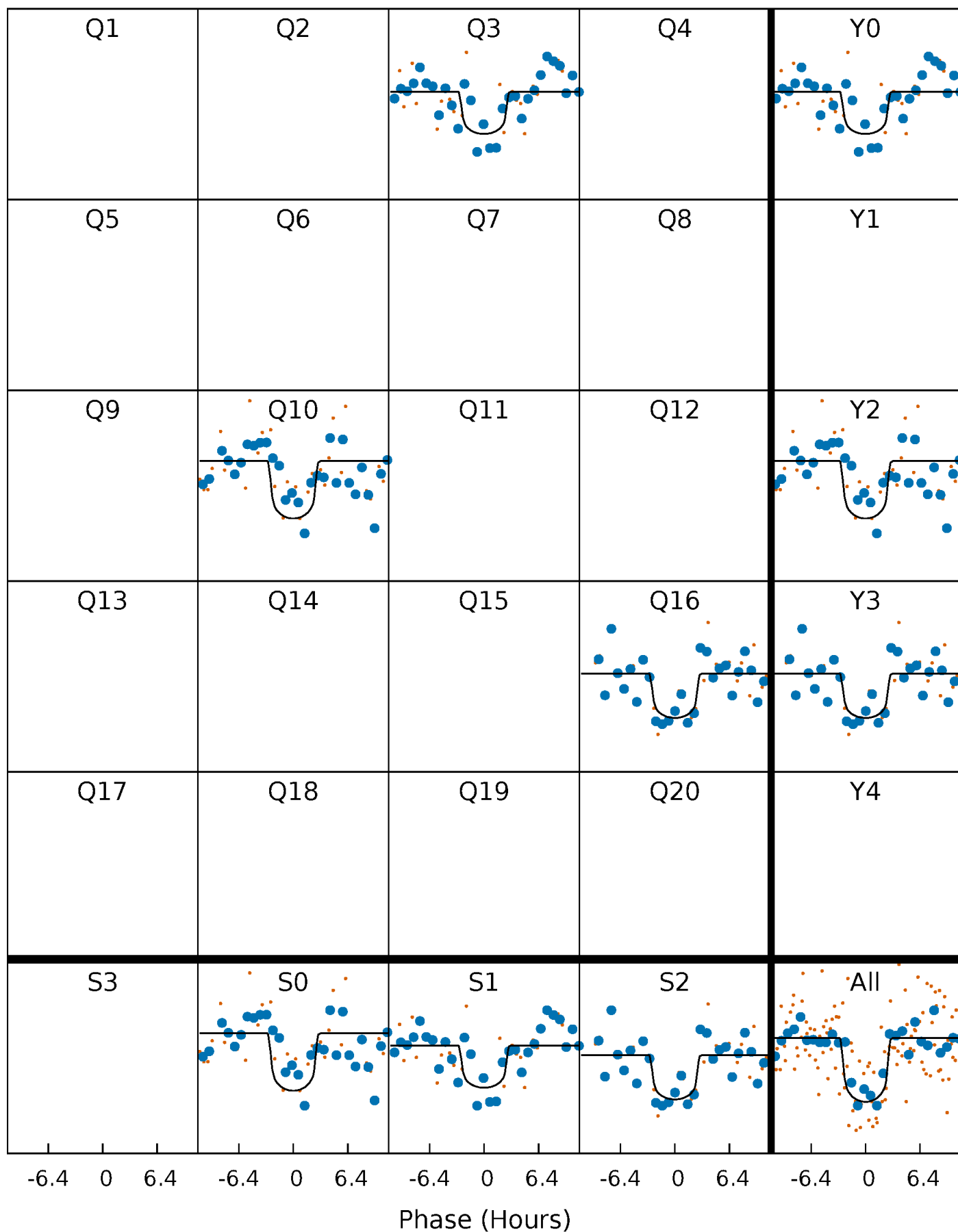
# PDC Quarter-Phased Transit Curves

TCE 008313667-03     $P=607.007526$  Days     $T_0=326.186952$  (BKJD)



# DV Quarter-Phased Transit Curves

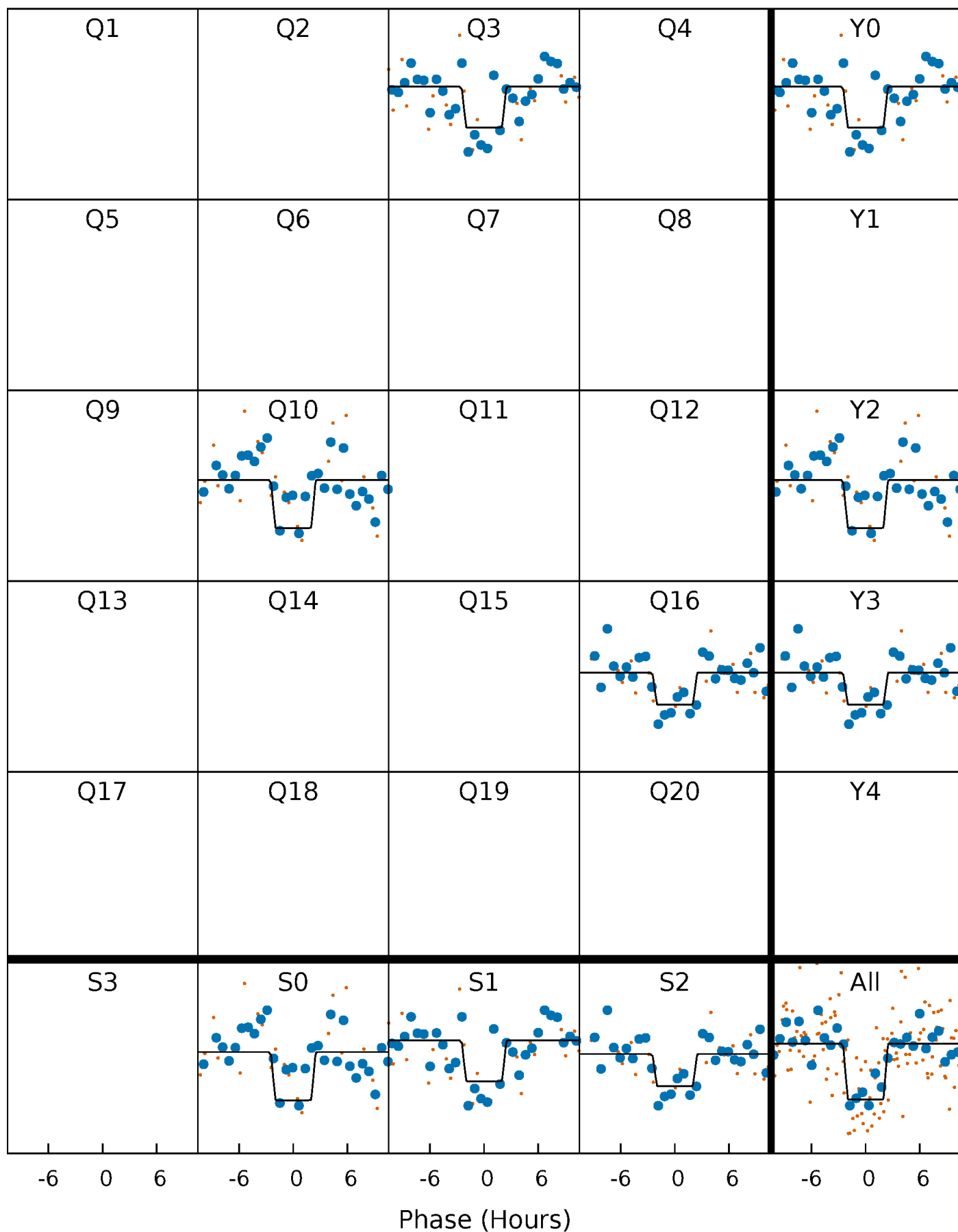
TCE 008313667-03     $P=607.007526$  Days     $T_0=326.186952$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

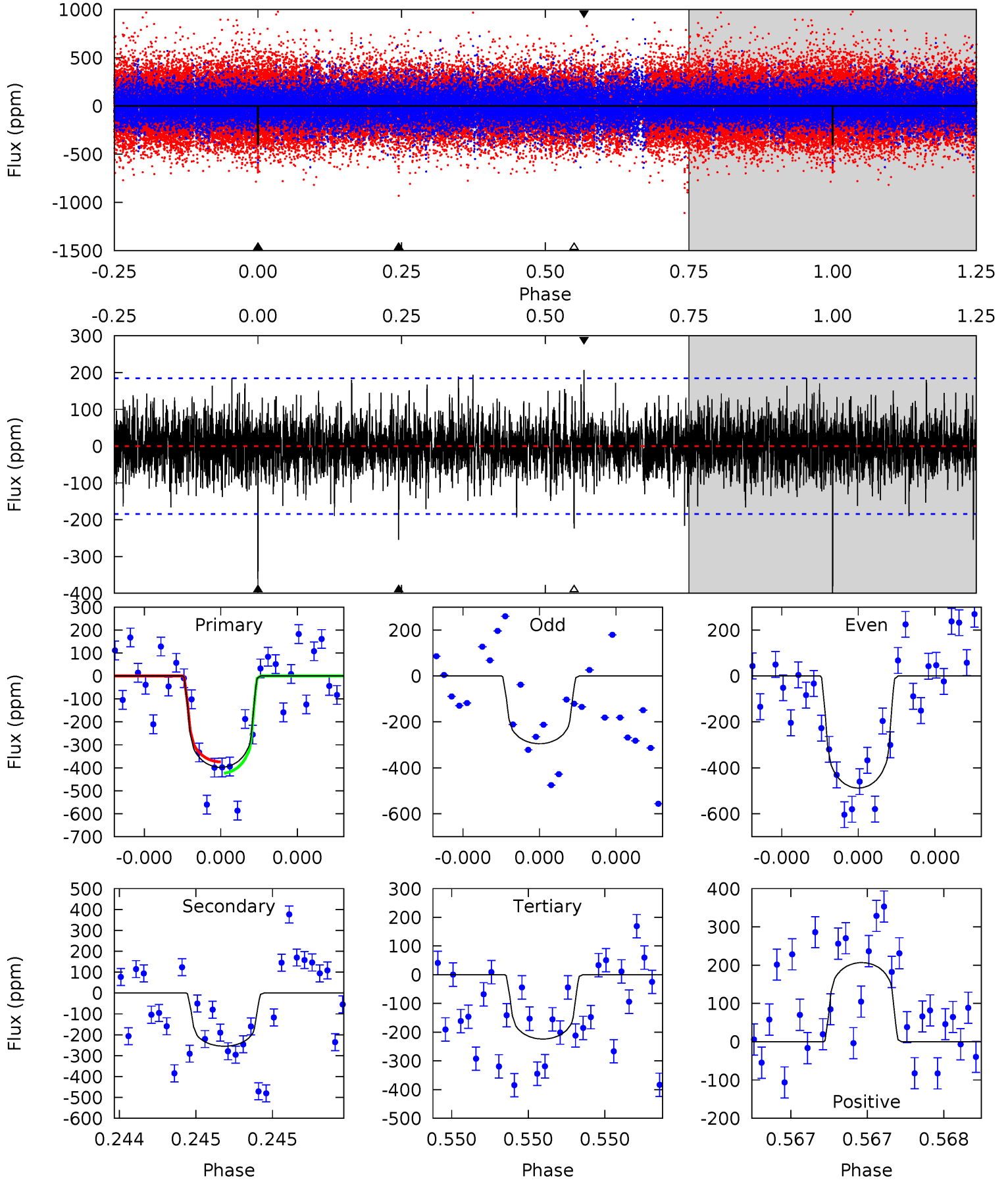
TCE 008313667-03 P=606.992522 Days  $T_0=326.213673$  (BKJD)



# DV Model-Shift Uniqueness Test

008313667-03, P = 607.007526 Days, E = 326.186952 Days

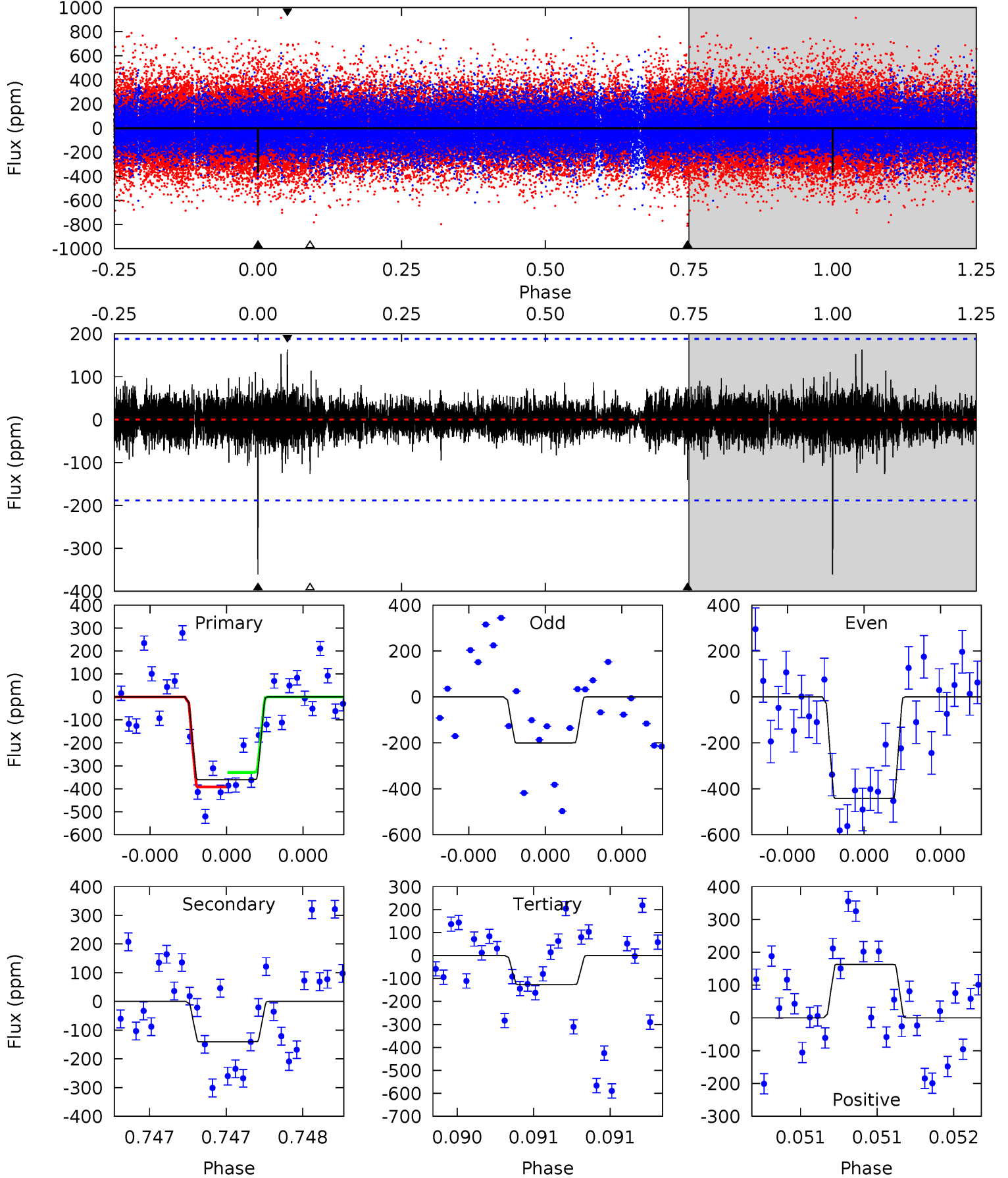
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	7.74	6.80	6.28	5.60	3.53	1.50	5.28	5.81	0.94	1.46	2.74	0.95	0.34	0.76



# Alt Model-Shift Uniqueness Test

008313667-03, P = 606.992522 Days, E = 326.213673 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
10.8	4.20	3.79	4.89	5.64	3.58	0.75	7.01	5.91	0.42	-0.68	3.36	0.85	0.31	0.95



### Stellar Parameters For KIC 008313667

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5944^{+106}_{-130}$	$4.380^{+0.080}_{-0.120}$	$0.000^{+0.150}_{-0.150}$	$1.082^{+0.181}_{-0.111}$	$1.024^{+0.083}_{-0.068}$	$1.138^{+0.381}_{-0.402}$
	+2%/-2%	+2%/-3%	+inf%/-inf%	+17%/-10%	+8%/-7%	+33%/-35%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008313667-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-255 \pm 33$	$2.63^{+1.81}_{-1.49}$	$322^{+15}_{-13}$	$5103^{+2819}_{-938}$	$40427^{+166332}_{-26397}$
Alt.	$-140 \pm 33$	$2.56^{+1.83}_{-1.43}$	$322^{+14}_{-12}$	$4564^{+2128}_{-825}$	$23333^{+101967}_{-15777}$

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

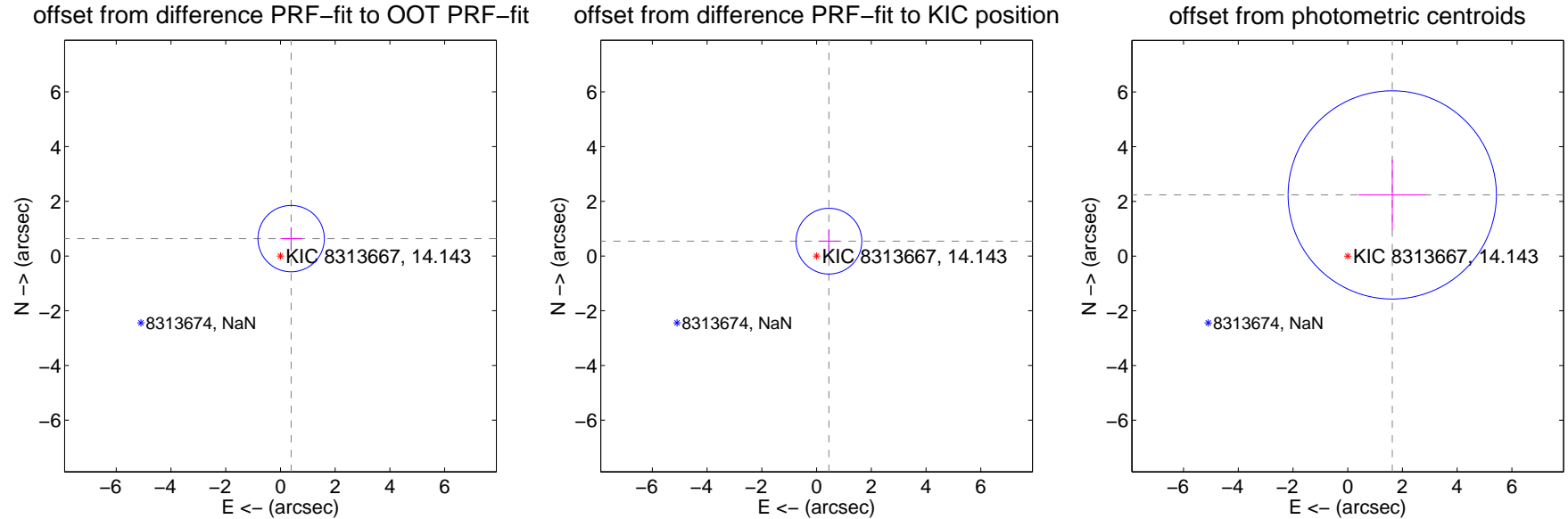
## DV Centroid Data

Supplemental centroid analysis for 008313667-03. Kepler magnitude: 14.14. Transit SNR 8.03

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.747 \pm 0.404$	1.85	$-0.391 \pm 0.383$	$0.636 \pm 0.412$
PRF-fit source offset from KIC position	$0.706 \pm 0.400$	1.76	$-0.451 \pm 0.383$	$0.543 \pm 0.412$
photometric centroid source offset	$2.77 \pm 1.27$	2.18	$-1.63 \pm 1.24$	$2.24 \pm 1.28$



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.

Q1 no difference image



Q1 no OOT image



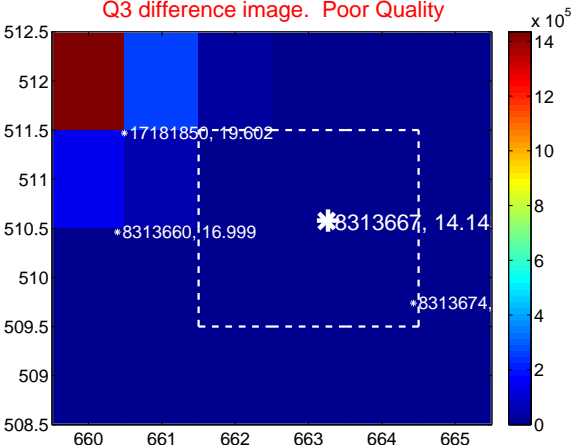
Q2 no difference image



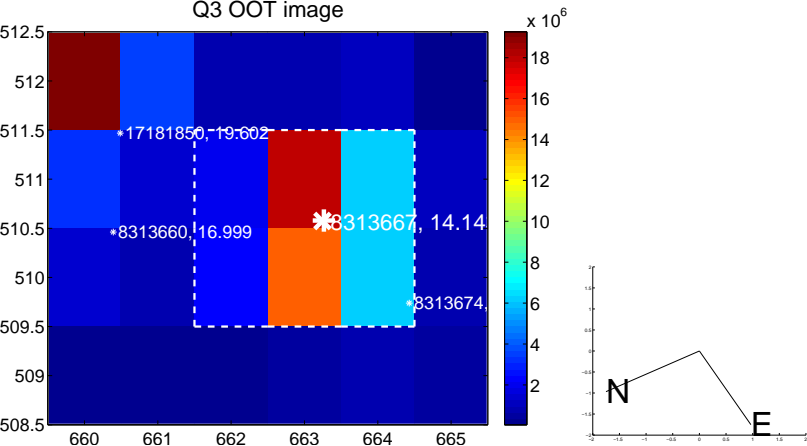
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



Q4 no OOT image

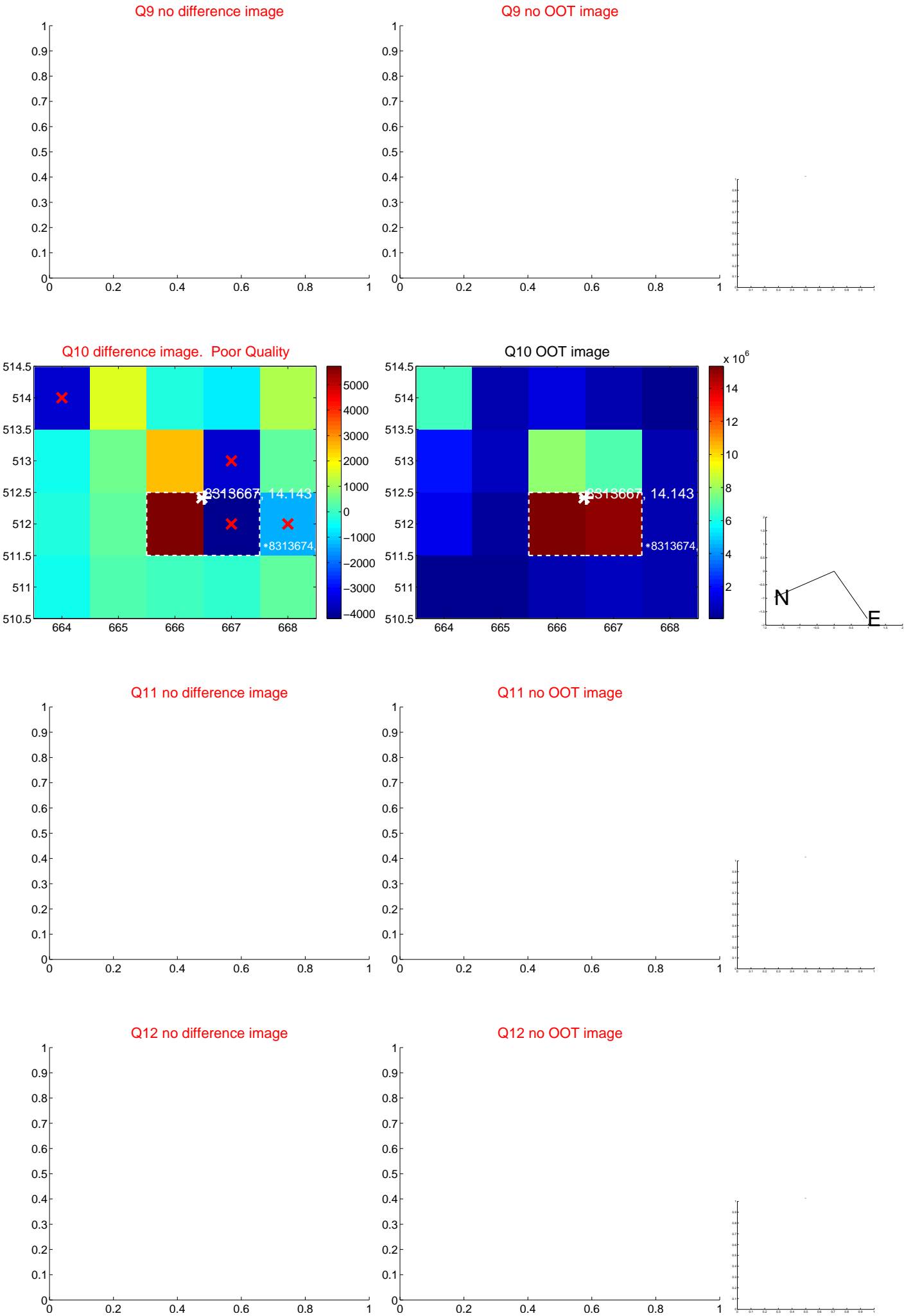


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

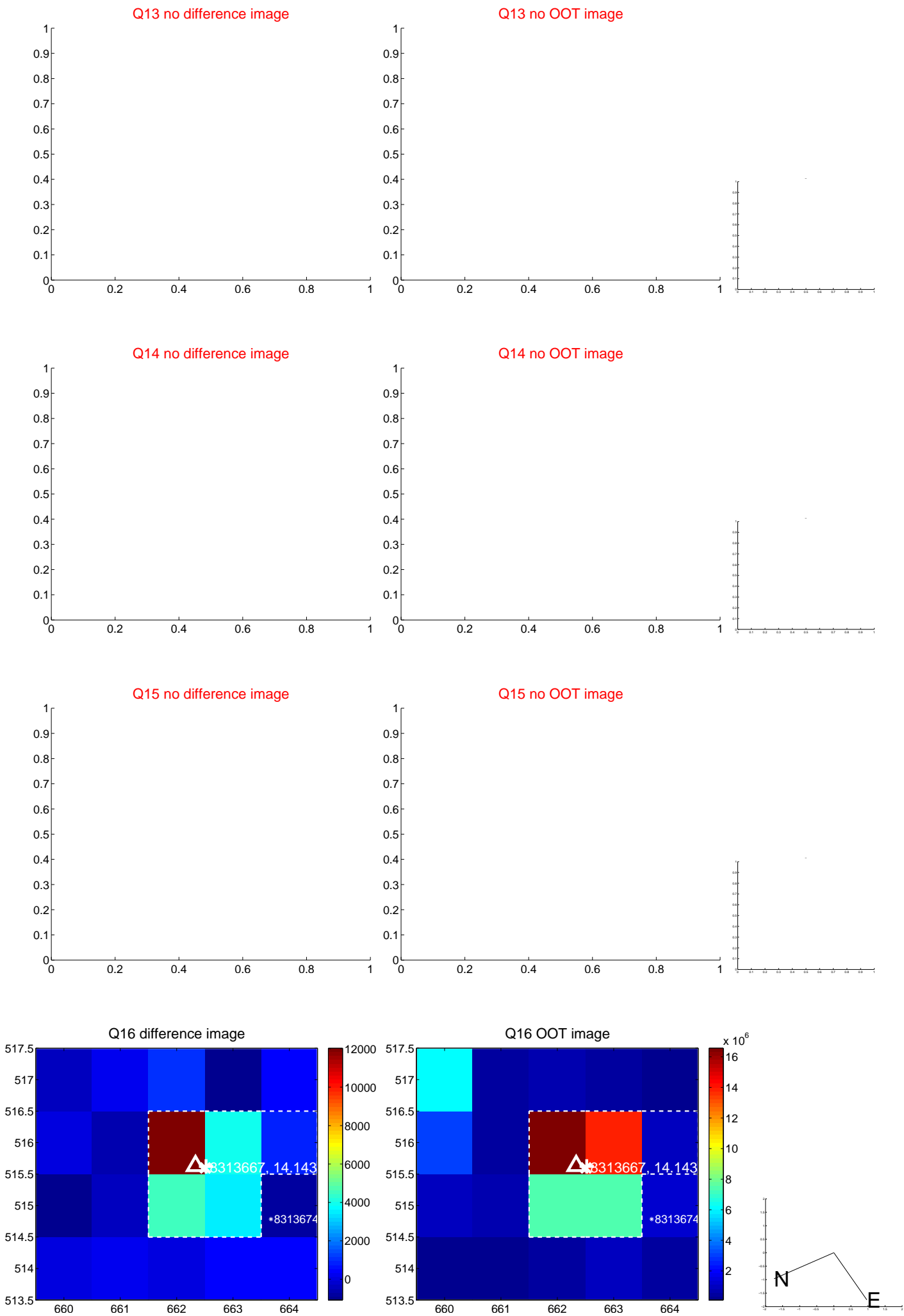




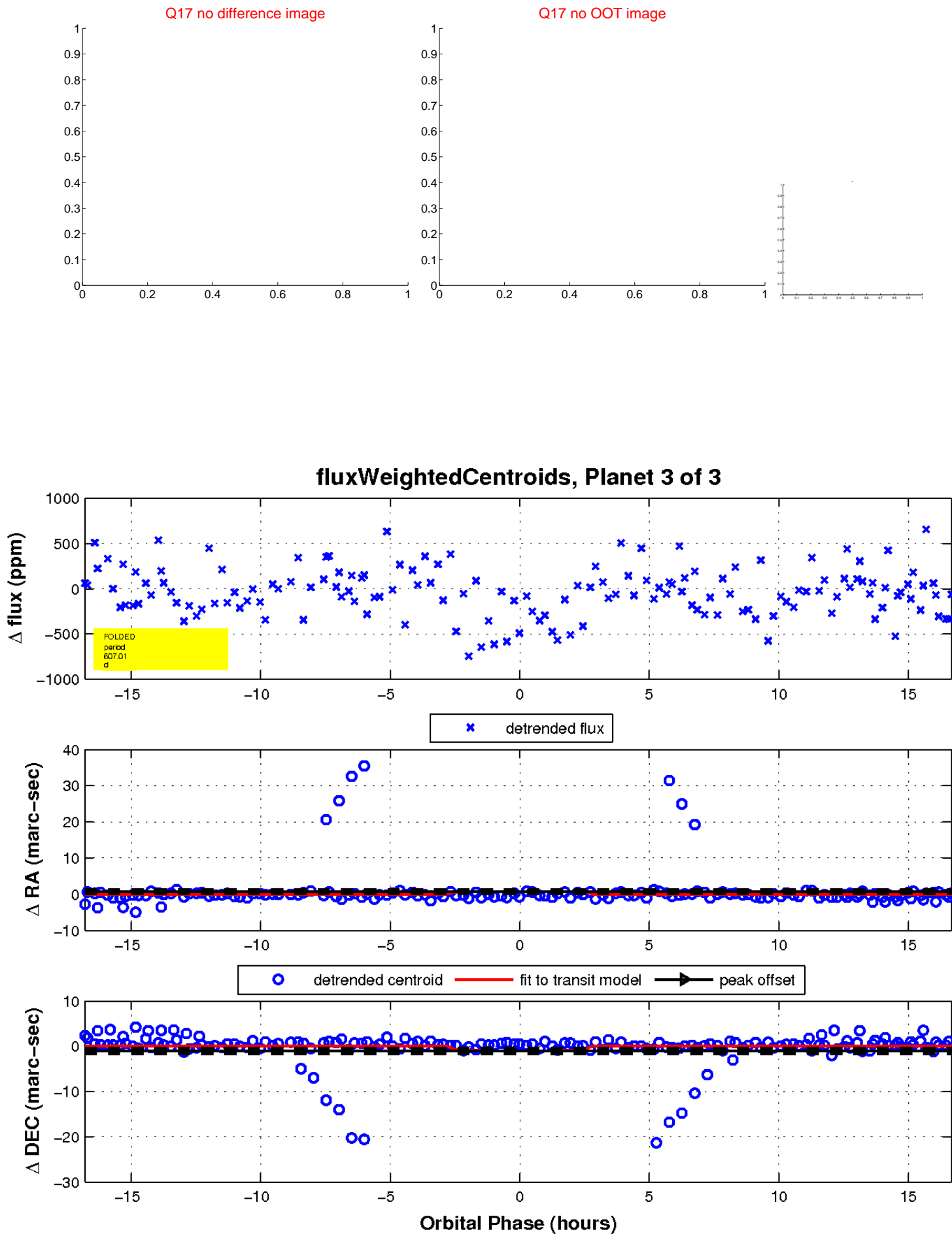
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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

