

# KIC 008955867

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008955867-01	OBS	No	0.788426	131.941447	5.0	5.752	9.1	1.3	1.01	7074	0.23	7649.01
008955867-03	OBS	No	17.351355	137.848098	567.5	2.251	10.4	10.0	1.01	7074	4.57	124.03
008955867-04	OBS	No	21.298852	133.113658	729.9	0.829	9.4	9.1	1.01	7074	2.90	94.36
008955867-05	OBS	No	12.952332	132.340972	129.4	1.454	13.0	3.2	1.01	7074	1.37	183.16
008955867-06	OBS	No	26.819647	137.052263	777.5	1.441	9.6	9.0	1.01	7074	3.14	69.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008955867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008955867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008955867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT
008955867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008955867-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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

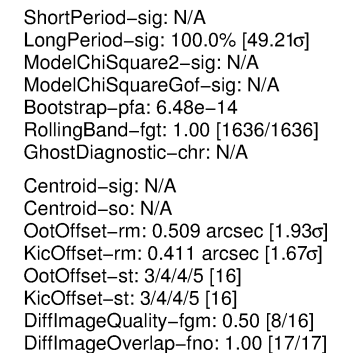
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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.

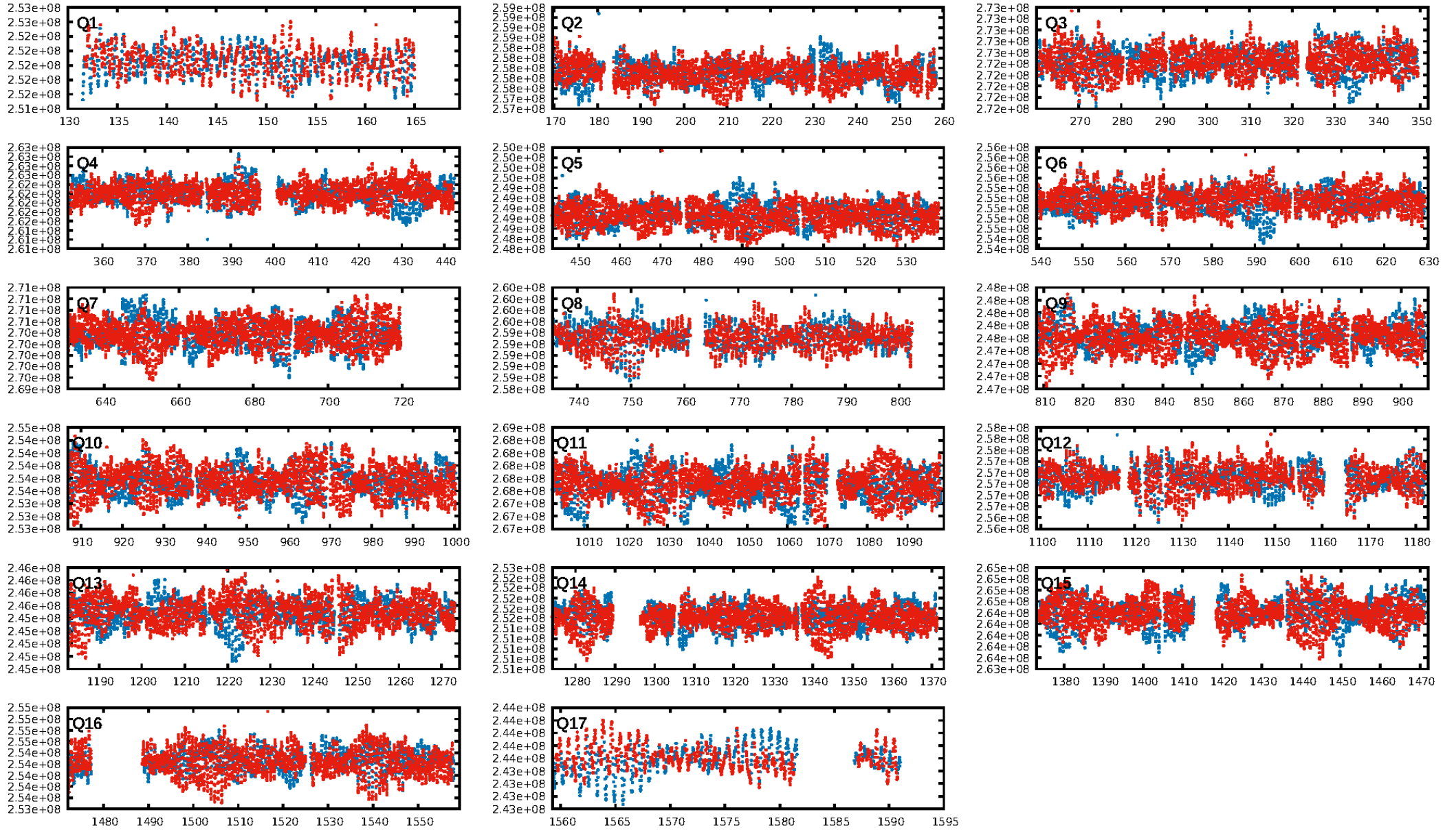
Ephemeris Match Information For 008955867-01

No Significant Match Found

## KIC: 8955867    Candidate: 1 of 6    Period: 0.788 d

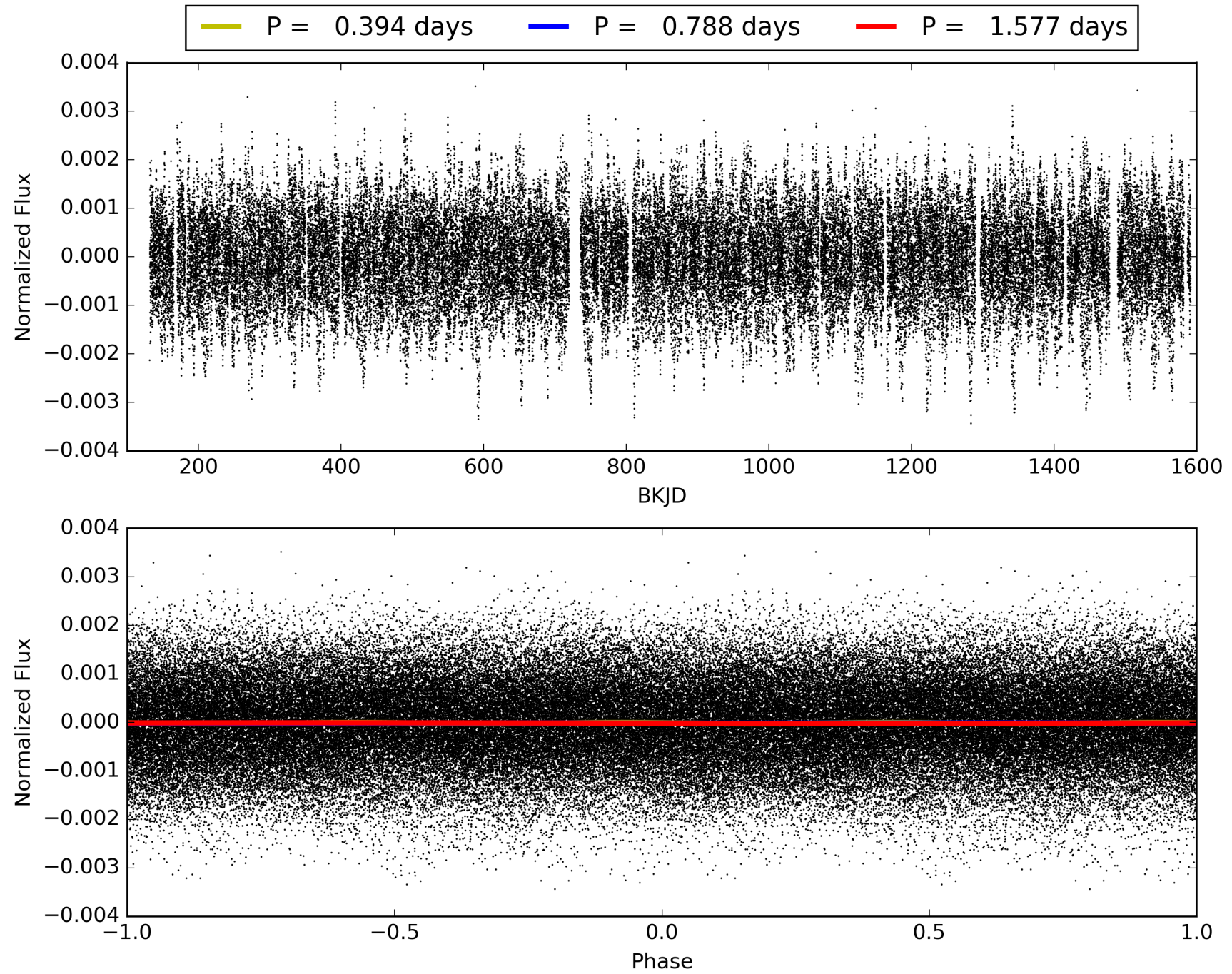


# TCE 008955867-01, PDC Light Curves





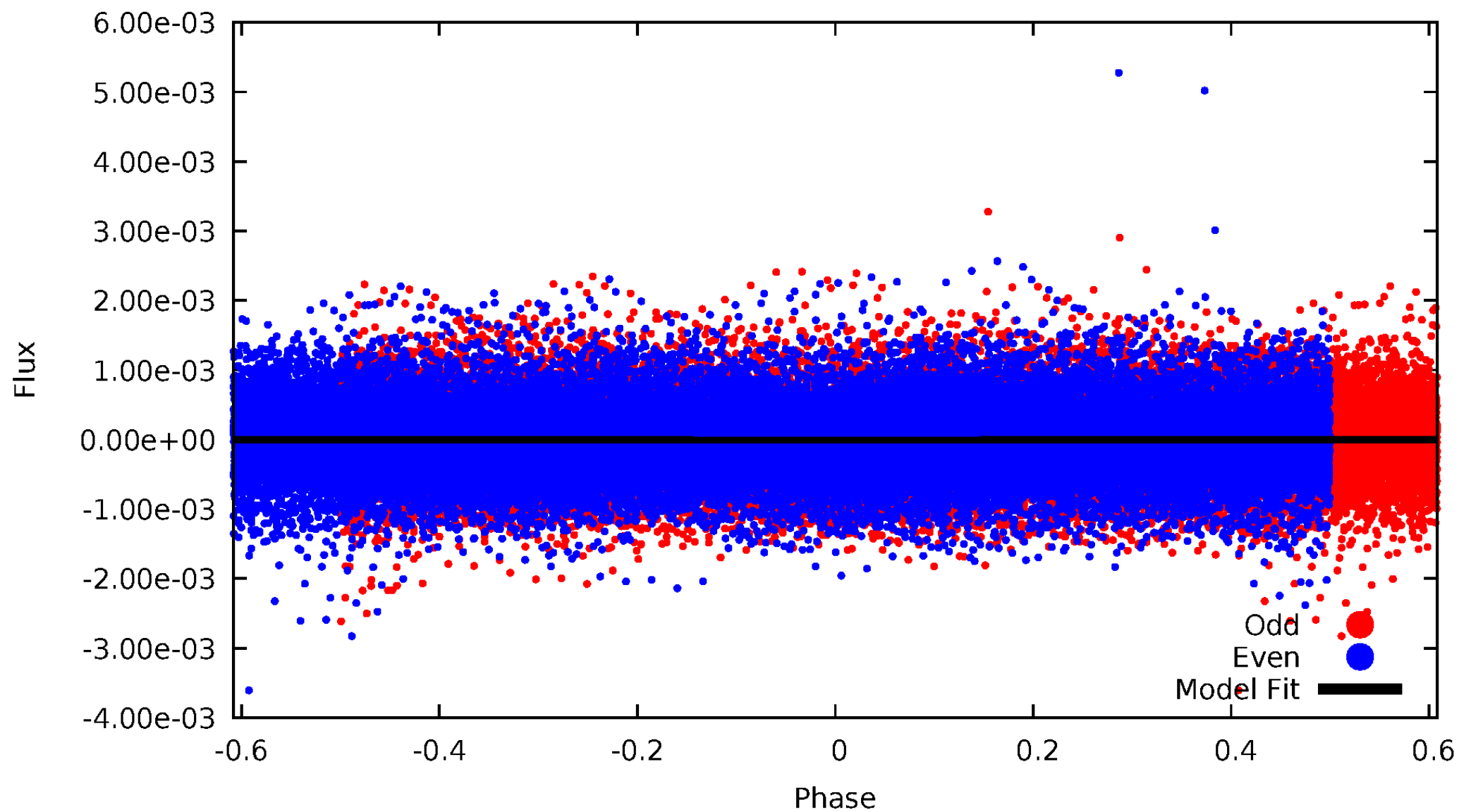
TCE 008955867-01





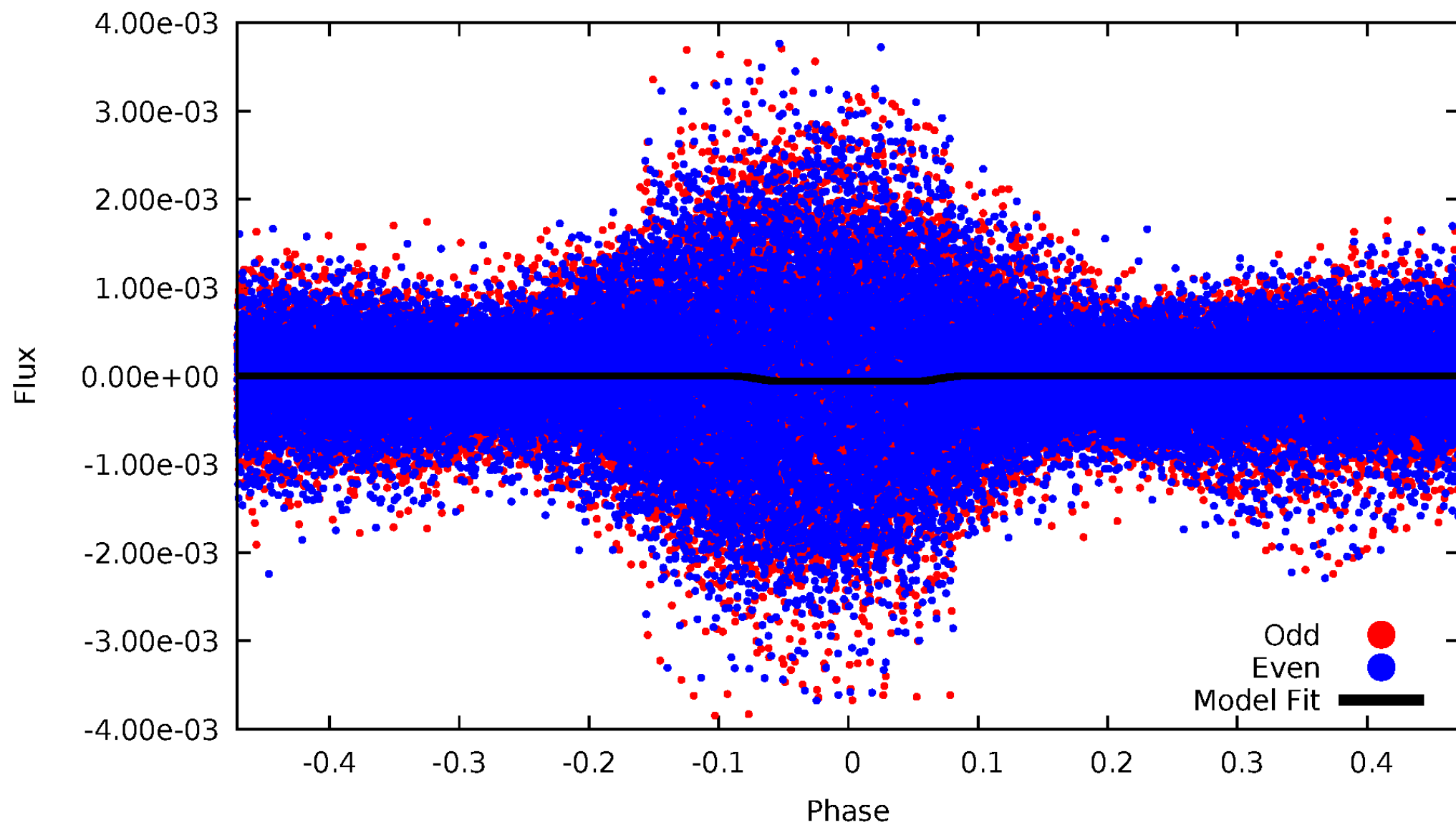
# DV Odd/Even

TCE 008955867-01



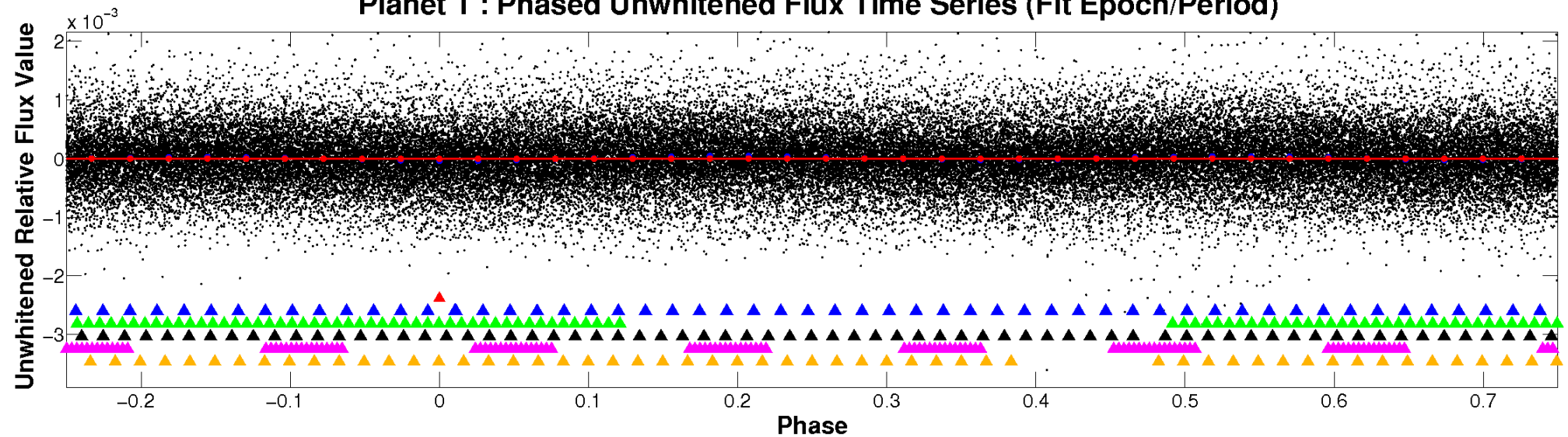
# ALT Odd/Even

TCE 008955867-01

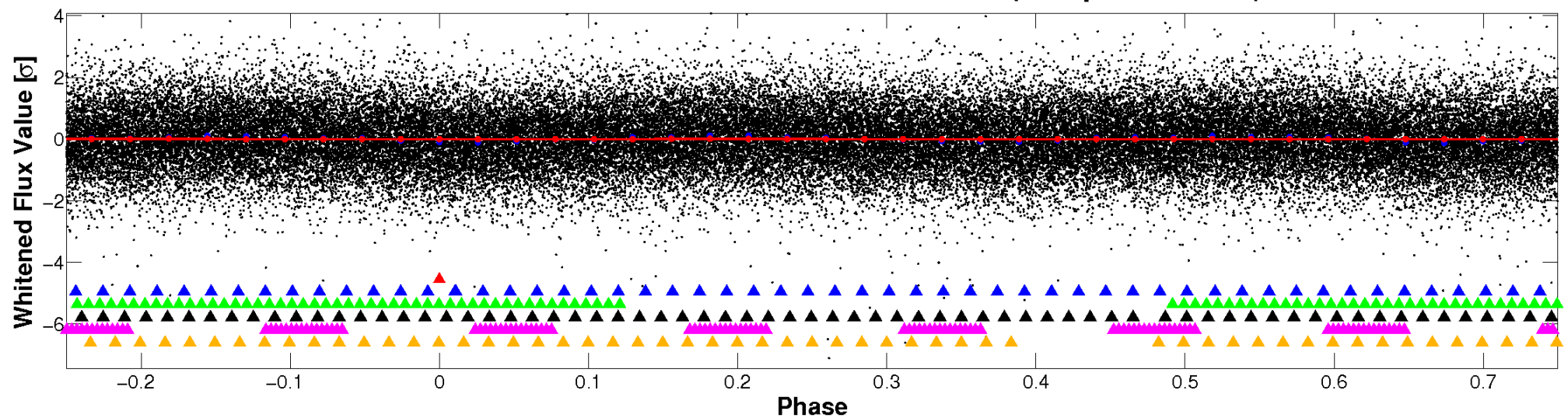


# Non-Whitened Vs. Whitened Light Curve

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



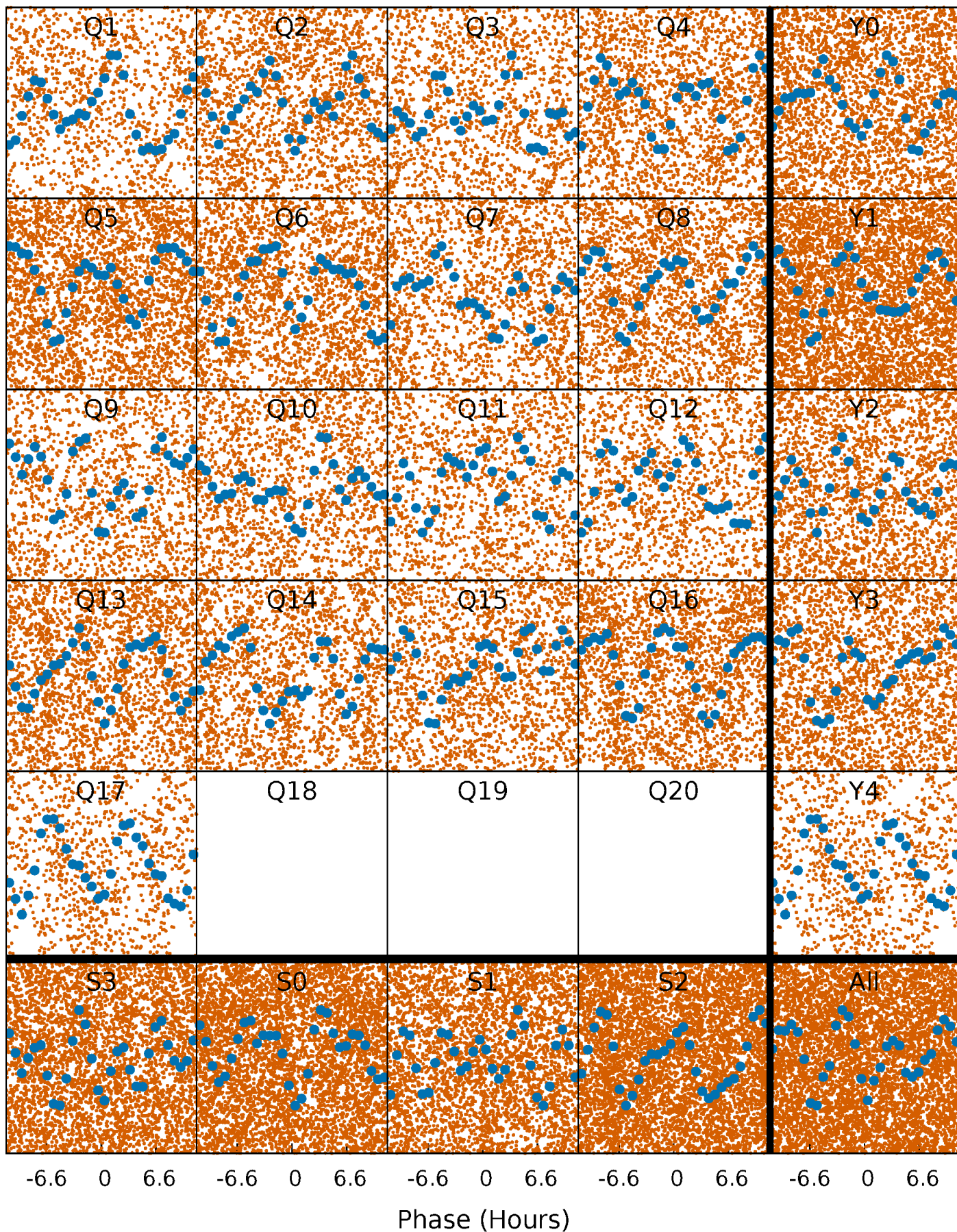
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

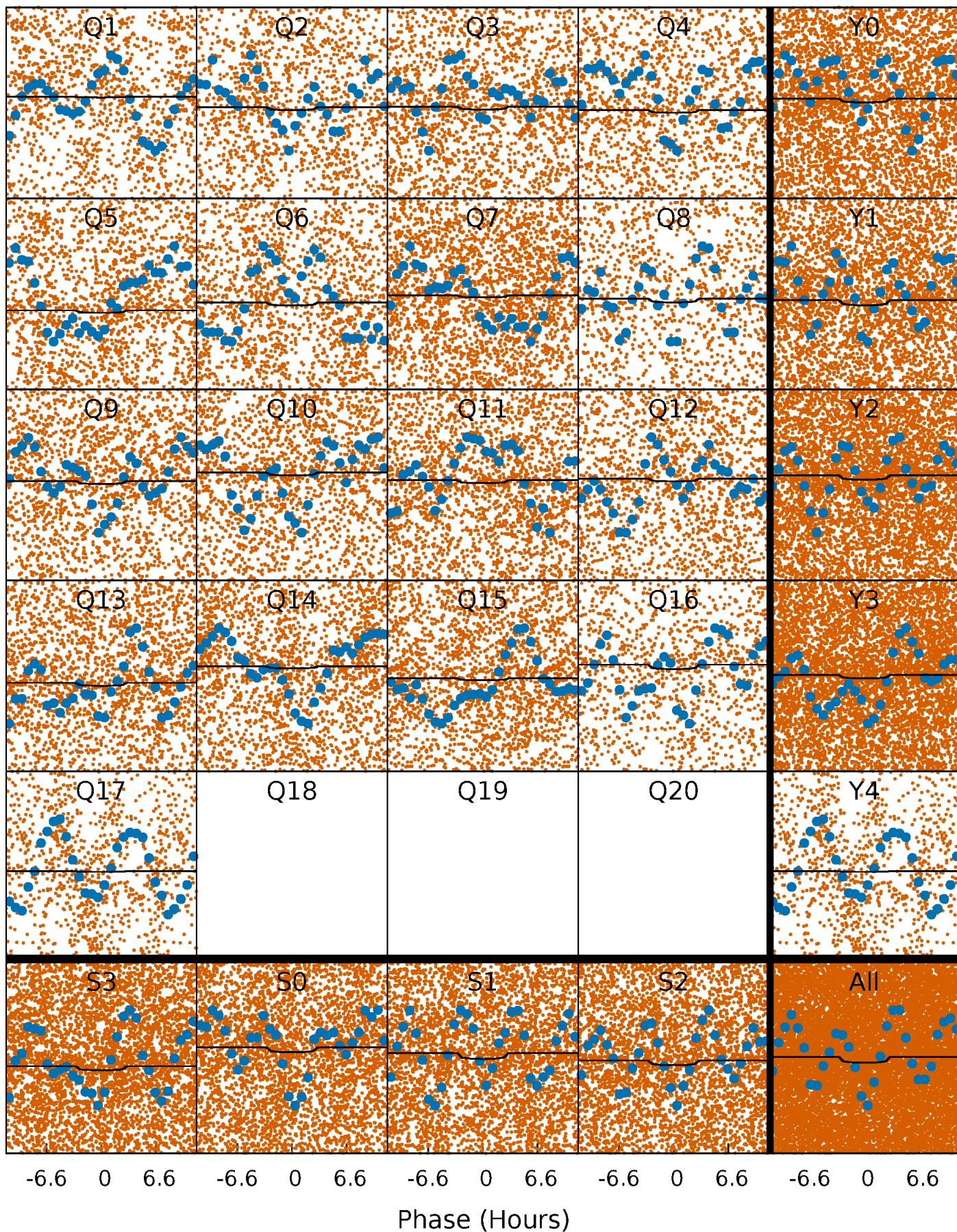
TCE 008955867-01 P= 0.788426 Days  $T_0=131.941447$  (BKJD)





# DV Quarter-Phased Transit Curves

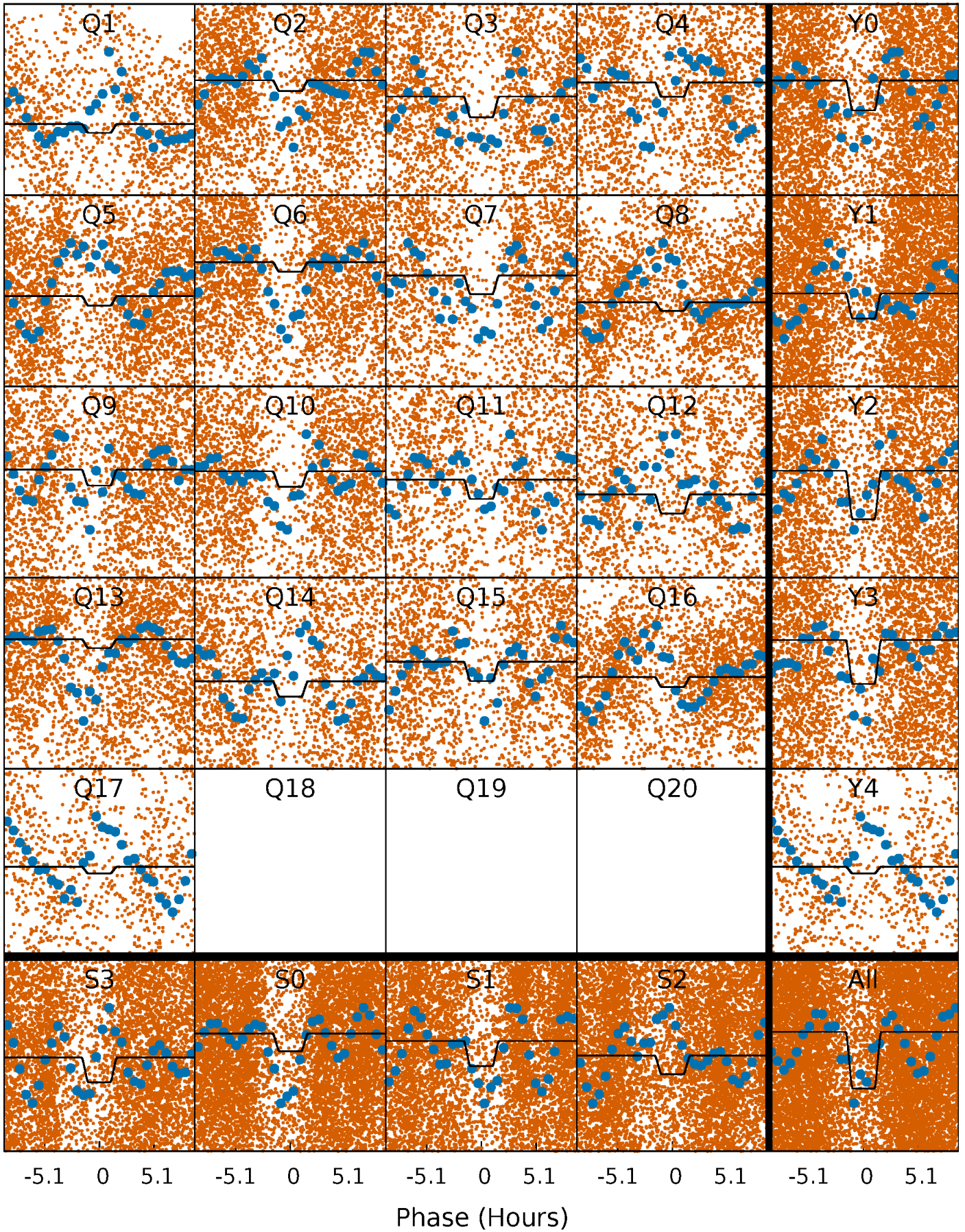
TCE 008955867-01   P= 0.788426 Days    $T_0=131.941447$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 008955867-01   P= 0.788481 Days    $T_0=131.950625$  (BKJD)

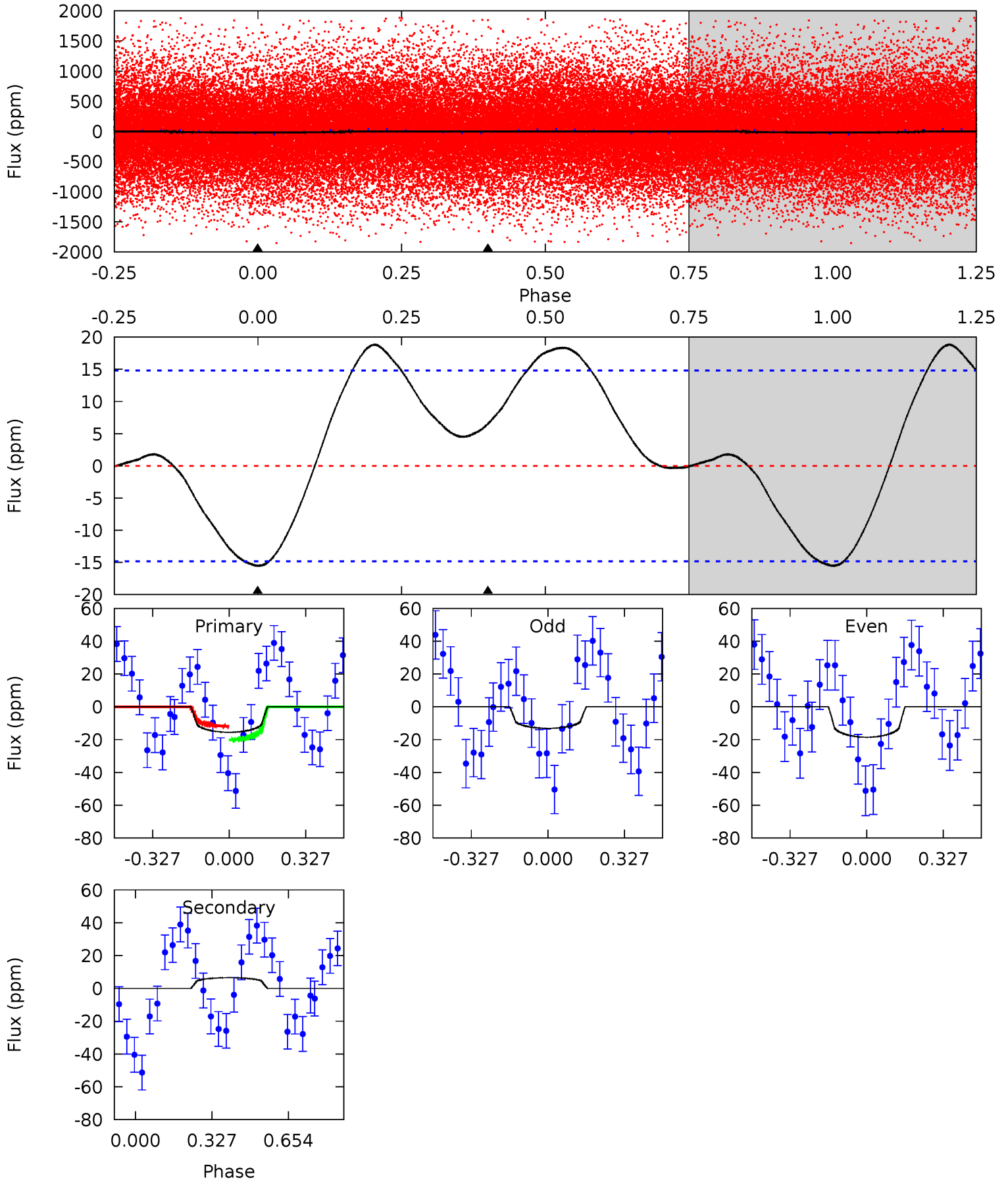




# DV Model-Shift Uniqueness Test

008955867-01, P = 0.788426 Days, E = 131.153021 Days

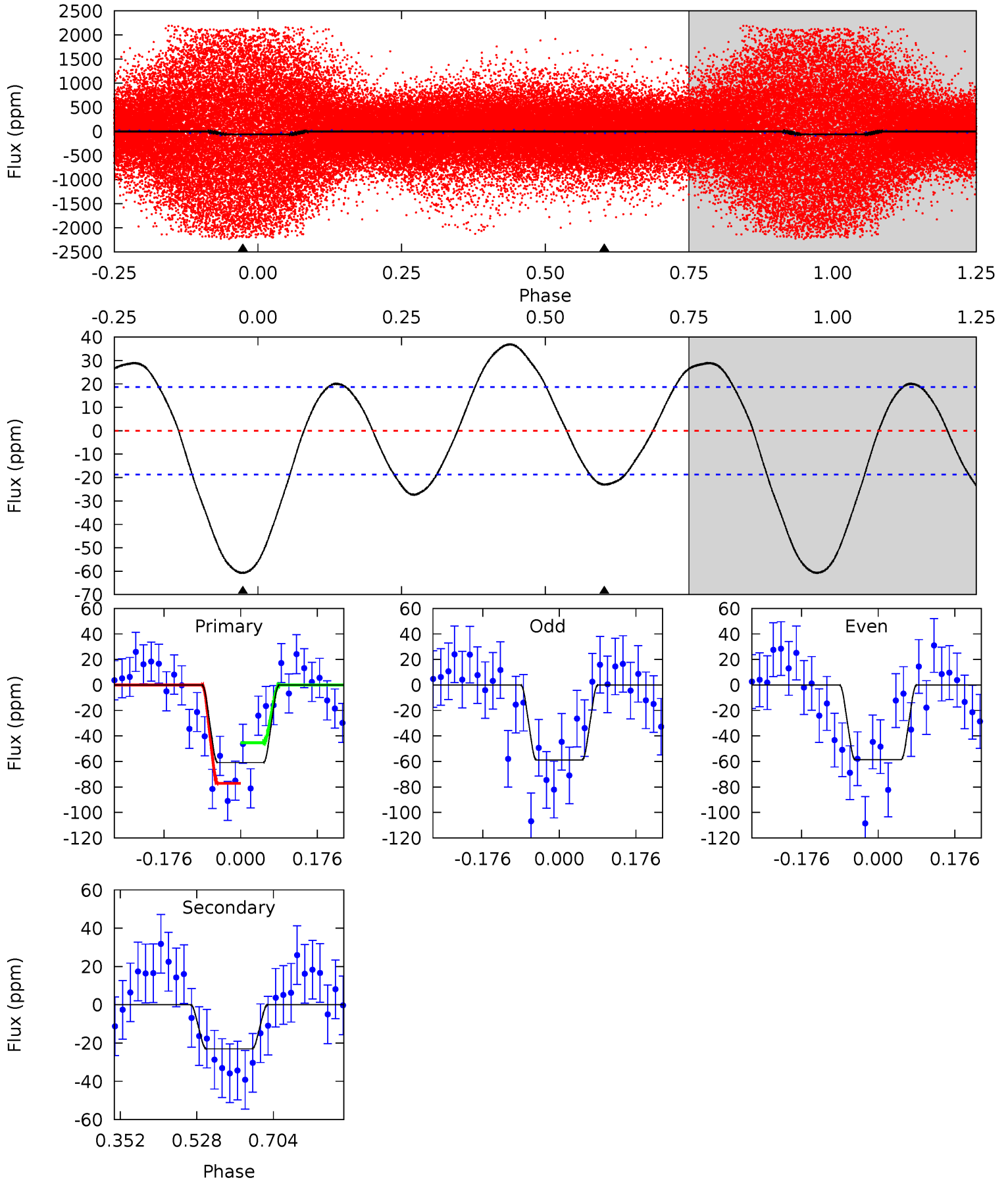
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.52	-1.89	0	0	4.31	0.98	0.38	4.52	4.52	-1.89	-1.89	0.79	0.67	0.55	1.24



# Alt Model-Shift Uniqueness Test

008955867-01, P = 0.788481 Days, E = 131.162144 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	5.47	0	0	4.44	1.35	4.85	14.4	14.4	5.47	5.47	0.01	1.12	0.38	3.90



### Stellar Parameters For KIC 008955867

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7074^{+177}_{-212}$	$4.473^{+0.027}_{-0.229}$	$-0.500^{+0.250}_{-0.350}$	$1.006^{+0.386}_{-0.043}$	$1.171^{+0.143}_{-0.117}$	$1.621^{+0.174}_{-0.975}$
	+3%/-3%	+1%/-5%	+50%/-70%	+38%/-4%	+12%/-10%	+11%/-60%
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 008955867-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$7 \pm 3$	$0.52^{+0.52}_{-0.36}$	$3435^{+275}_{-155}$	$-5380^{+1225}_{-4780}$	$-3.531^{+2.784}_{-27.400}$
Alt.	$-23 \pm 4$	$1.00^{+0.56}_{-0.57}$	$3434^{+252}_{-158}$	$5306^{+2958}_{-1023}$	$3.870^{+15.743}_{-2.345}$

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



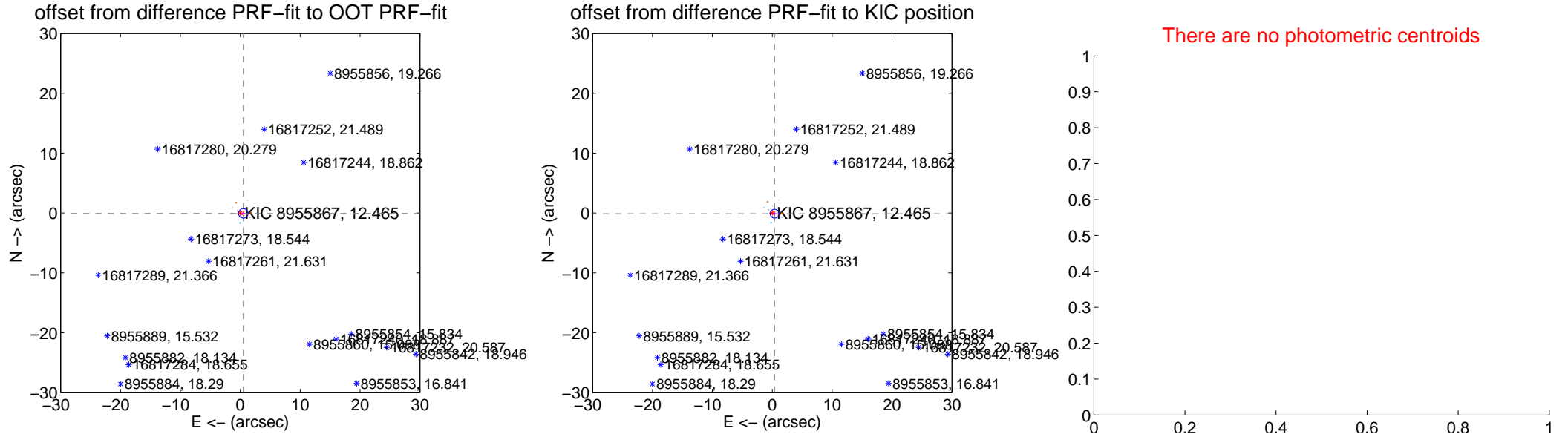
## DV Centroid Data

Supplemental centroid analysis for 008955867-01. Kepler magnitude: 12.46. Transit SNR 1.31

There are 8 quarters with good PRF difference image offsets

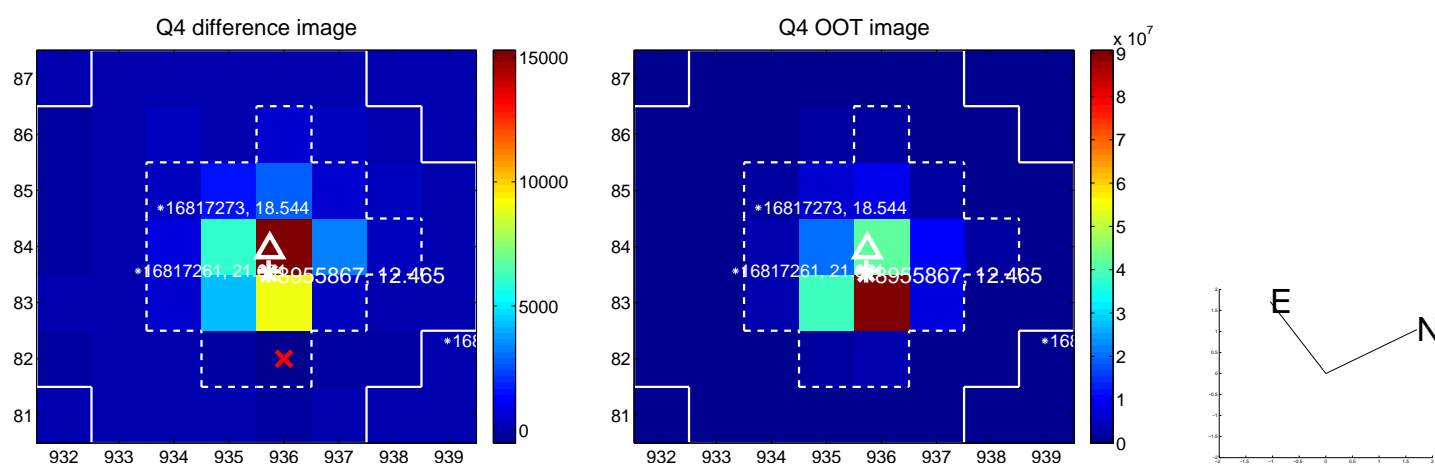
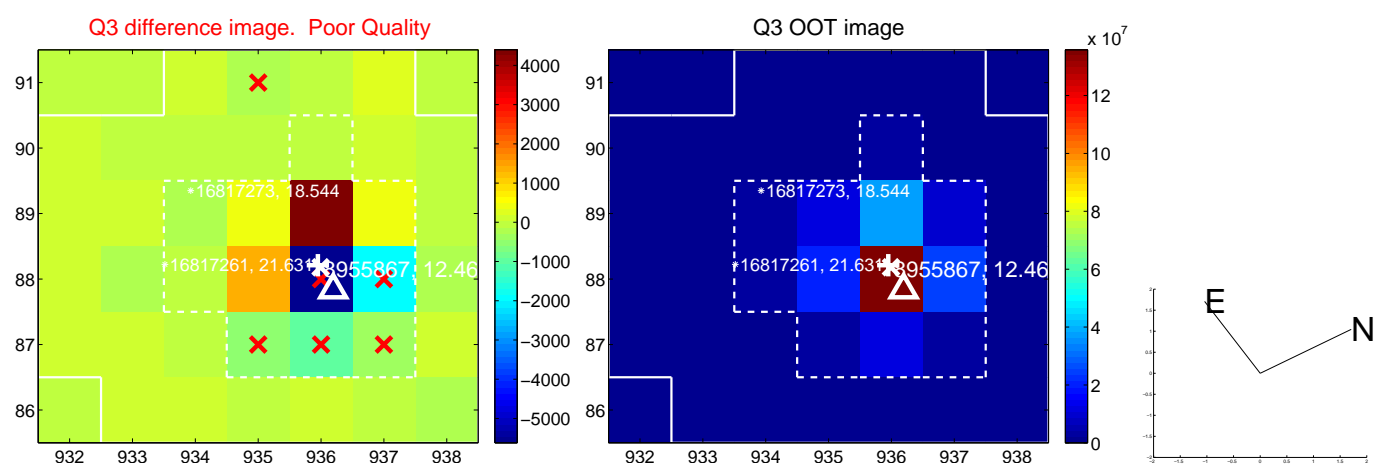
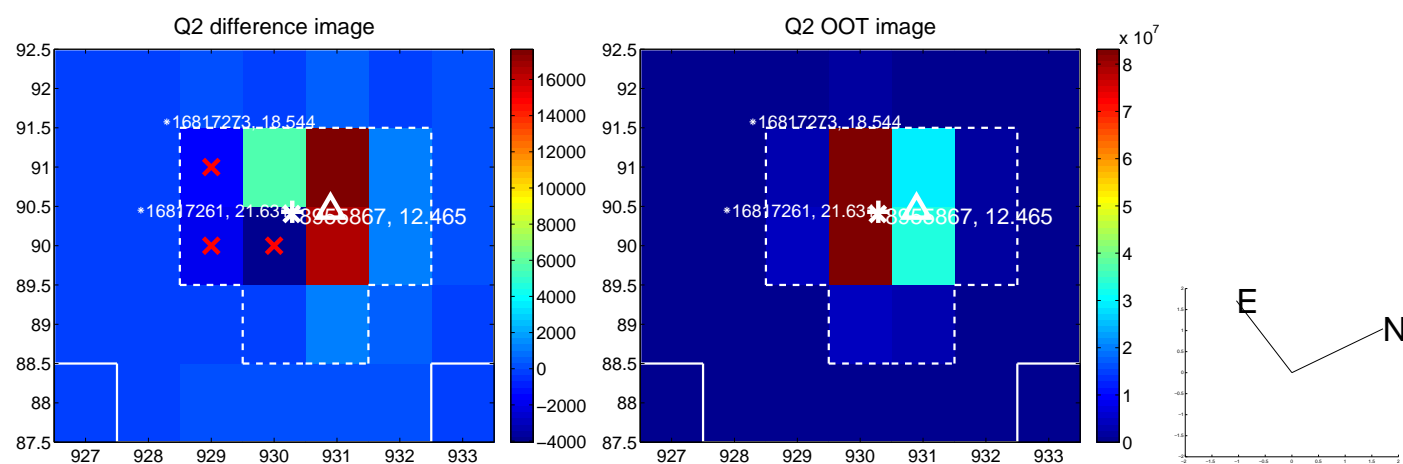
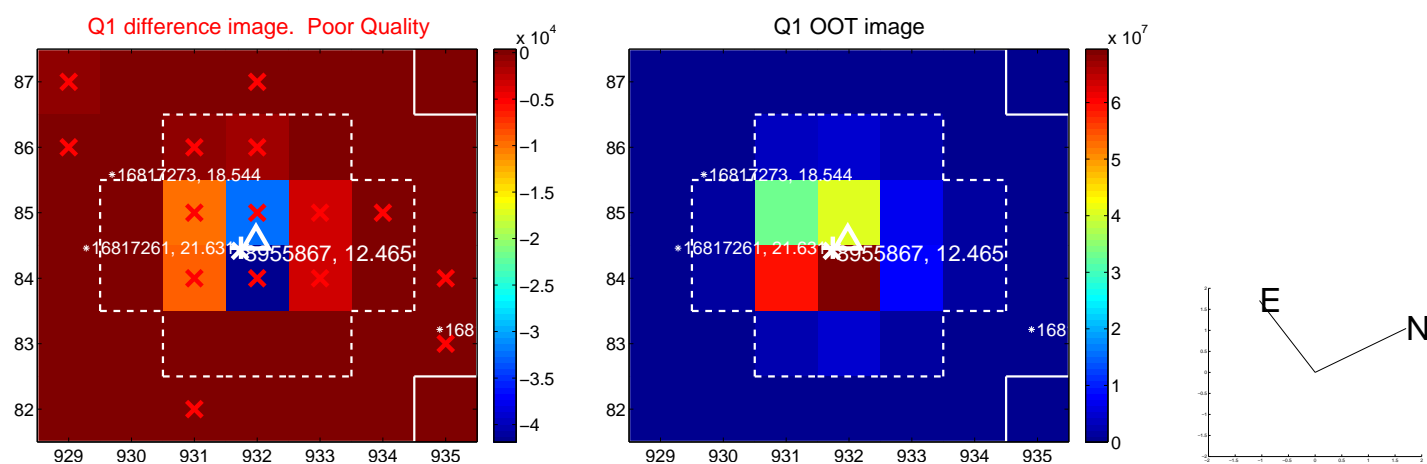
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.509 \pm 0.263$	1.93	$-0.504 \pm 0.252$	$-0.074 \pm 0.249$
PRF-fit source offset from KIC position	$0.411 \pm 0.247$	1.67	$-0.391 \pm 0.225$	$-0.126 \pm 0.263$
photometric centroid source offset	—	—	—	—

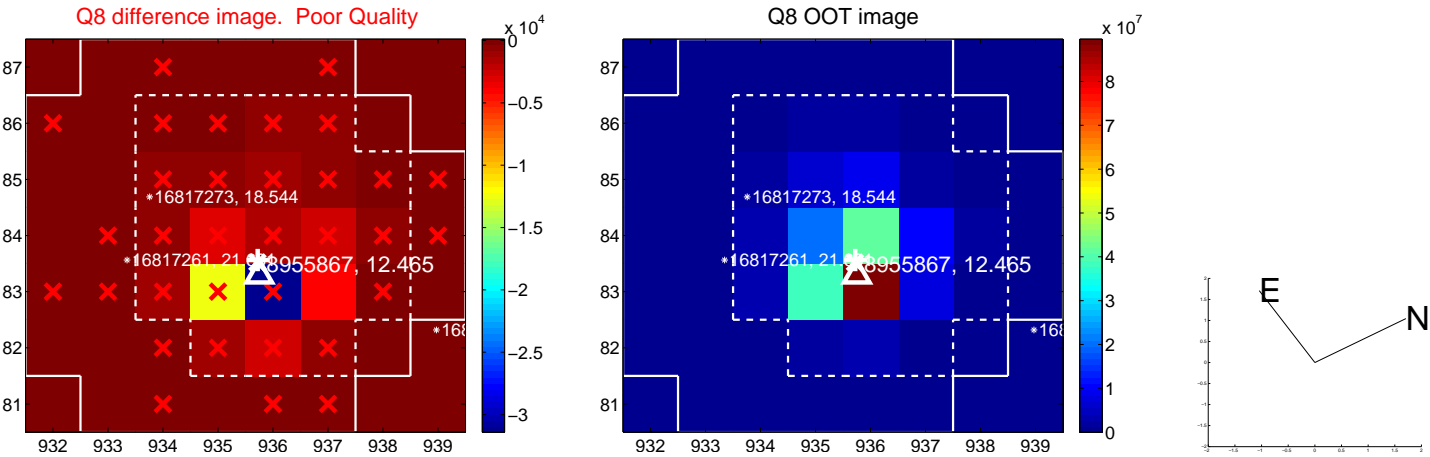
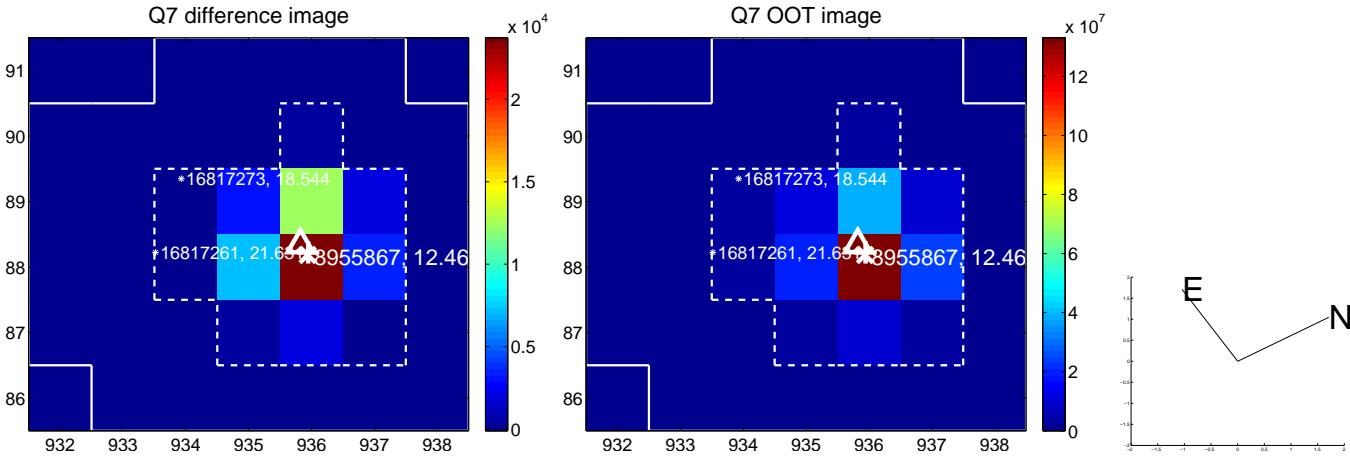
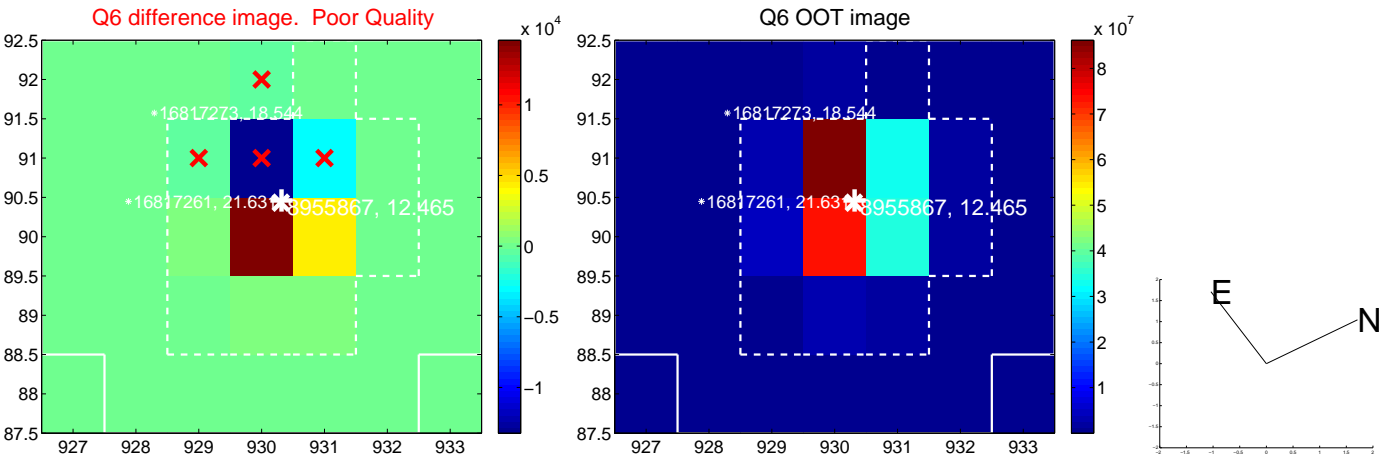
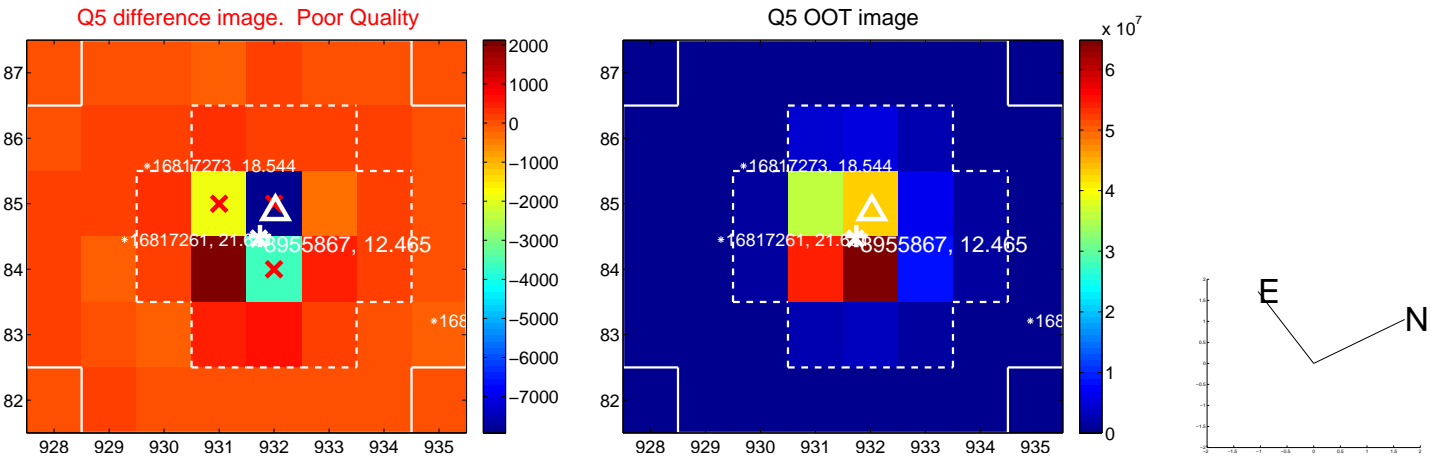


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

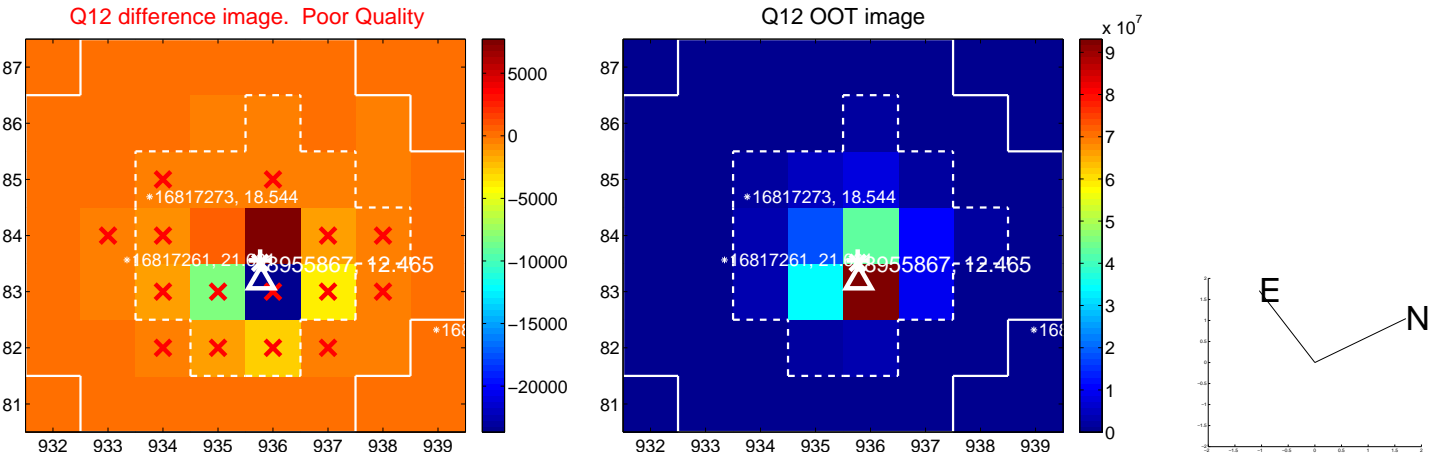
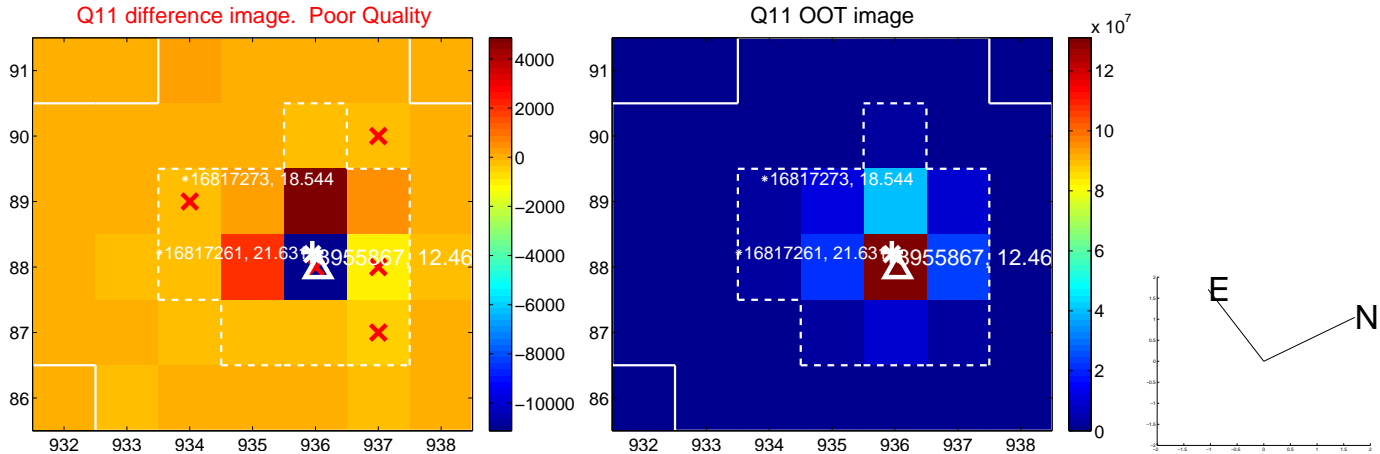
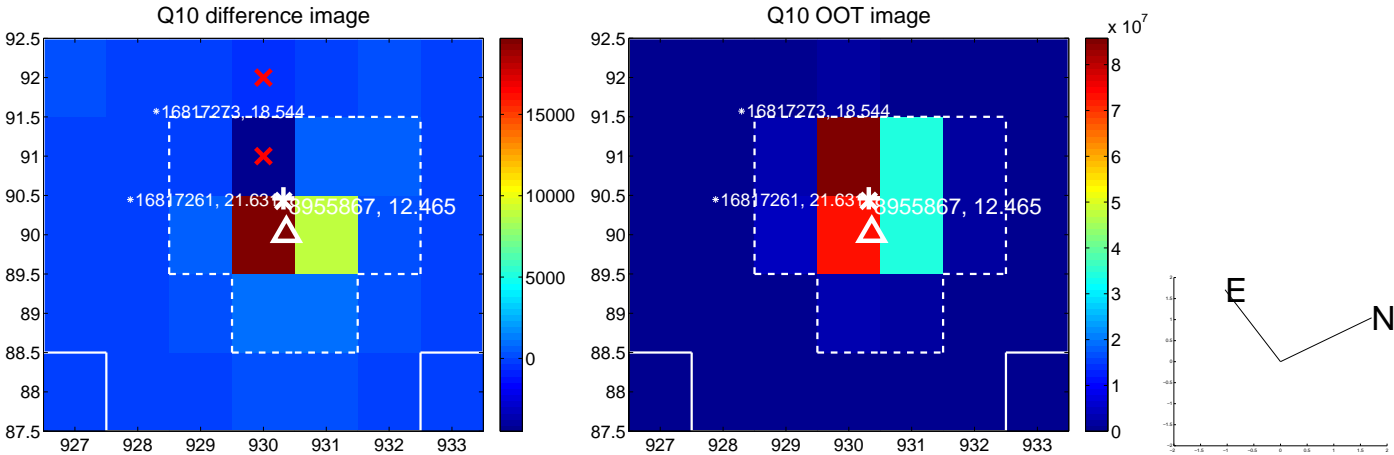
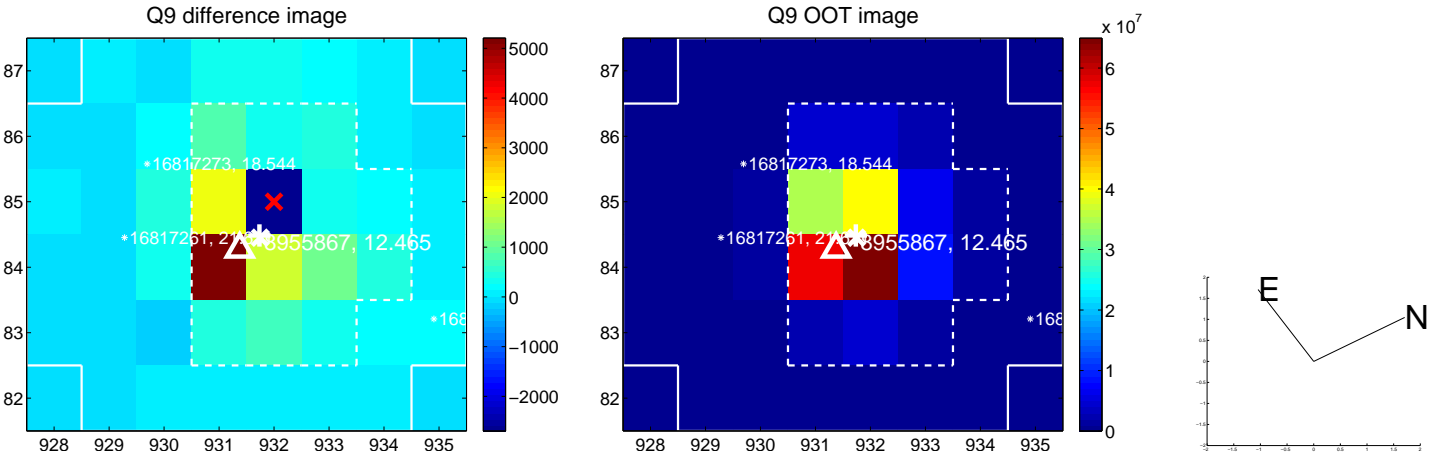


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

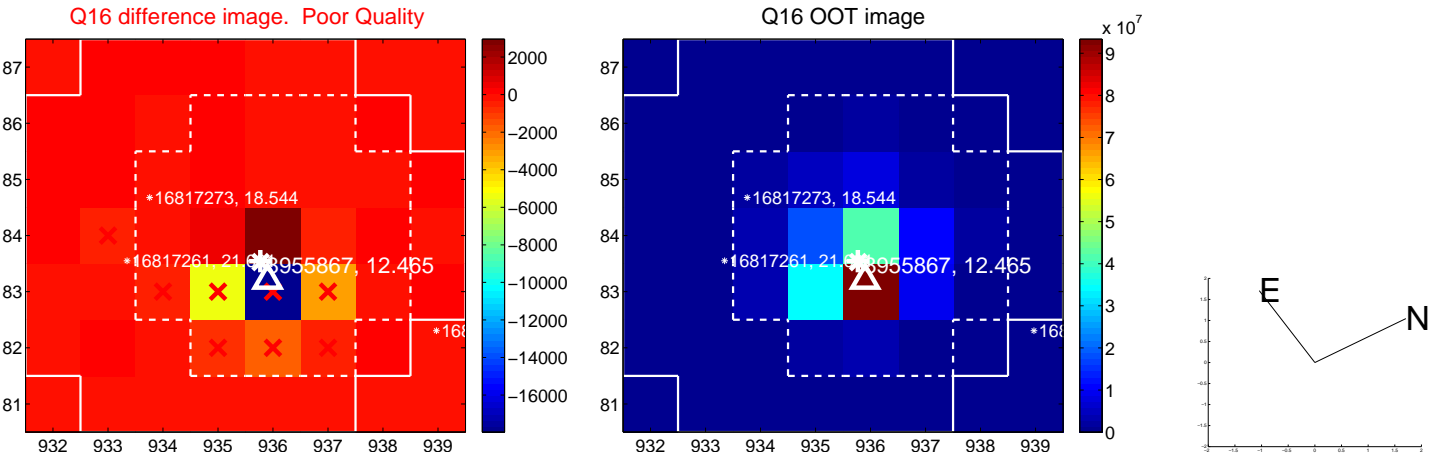
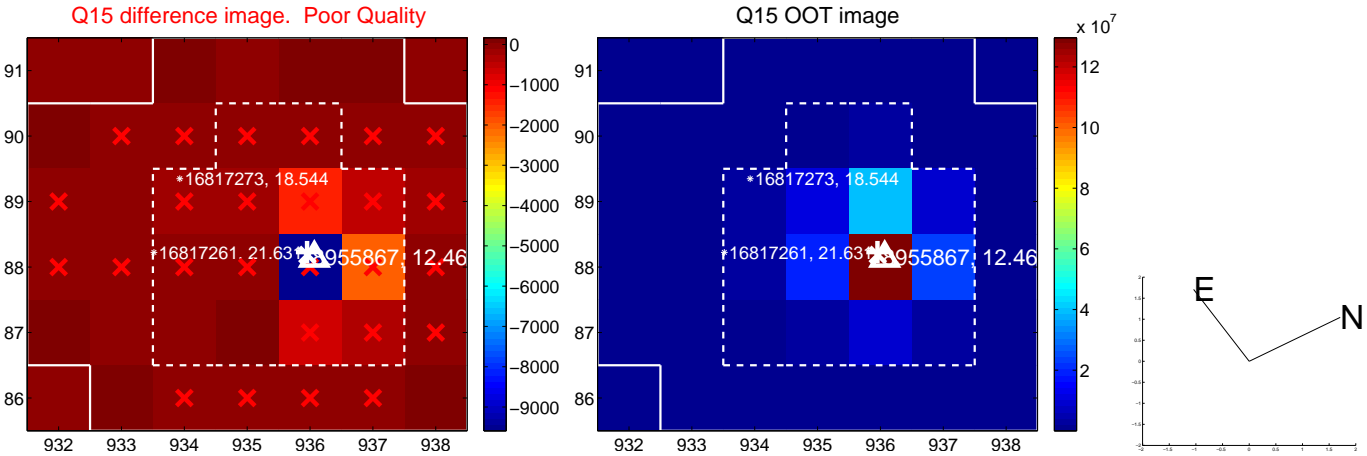
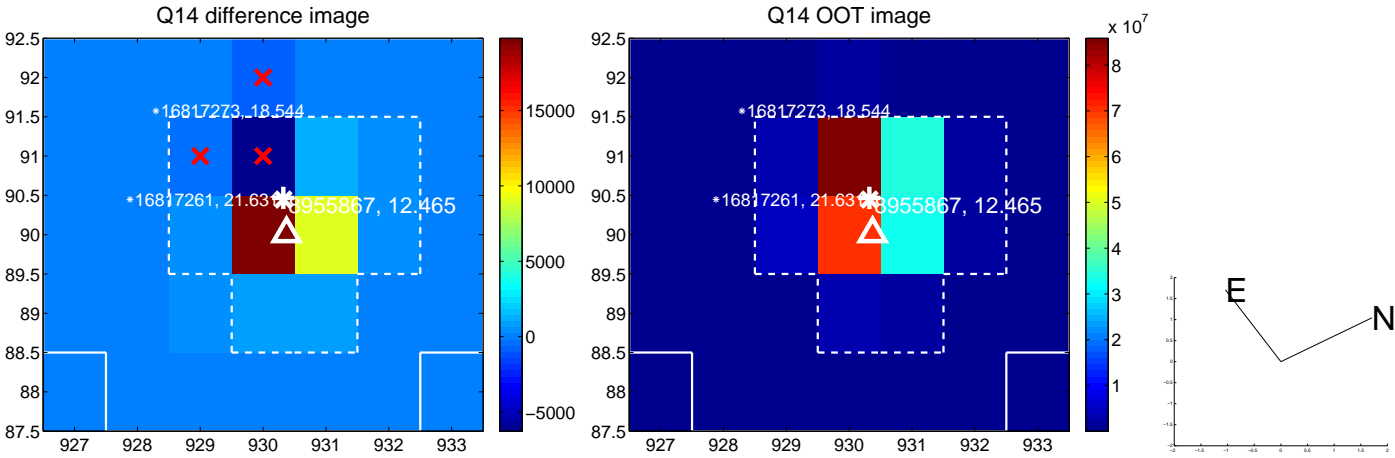
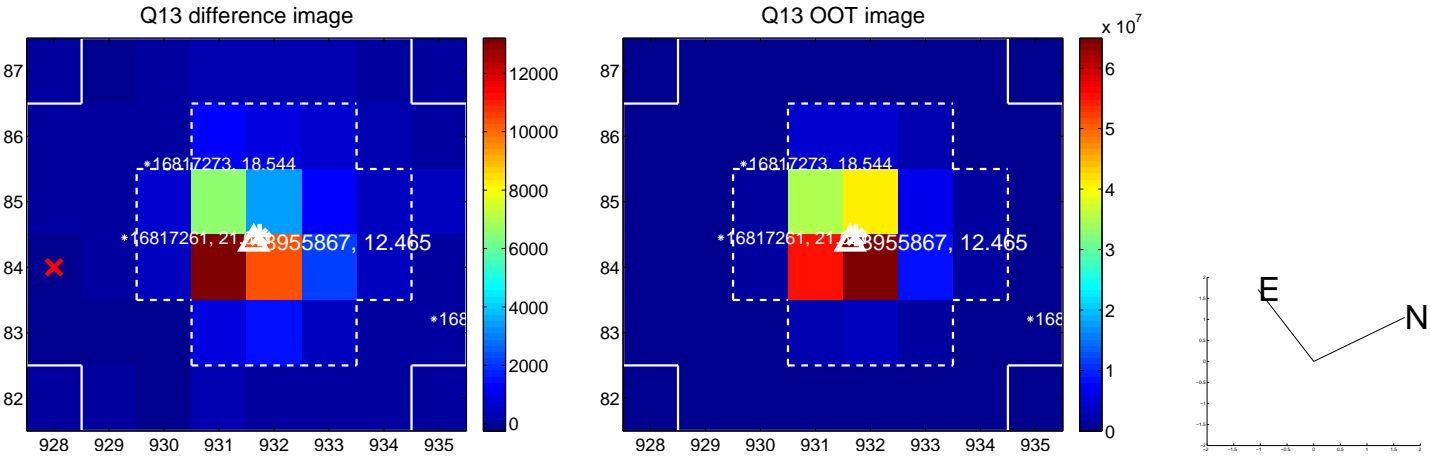




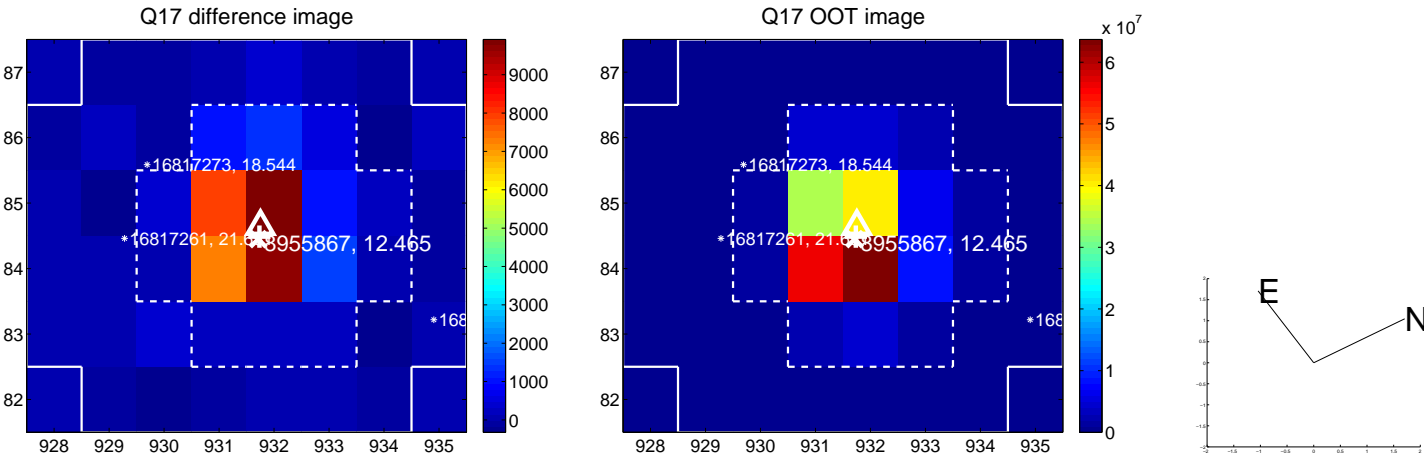
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



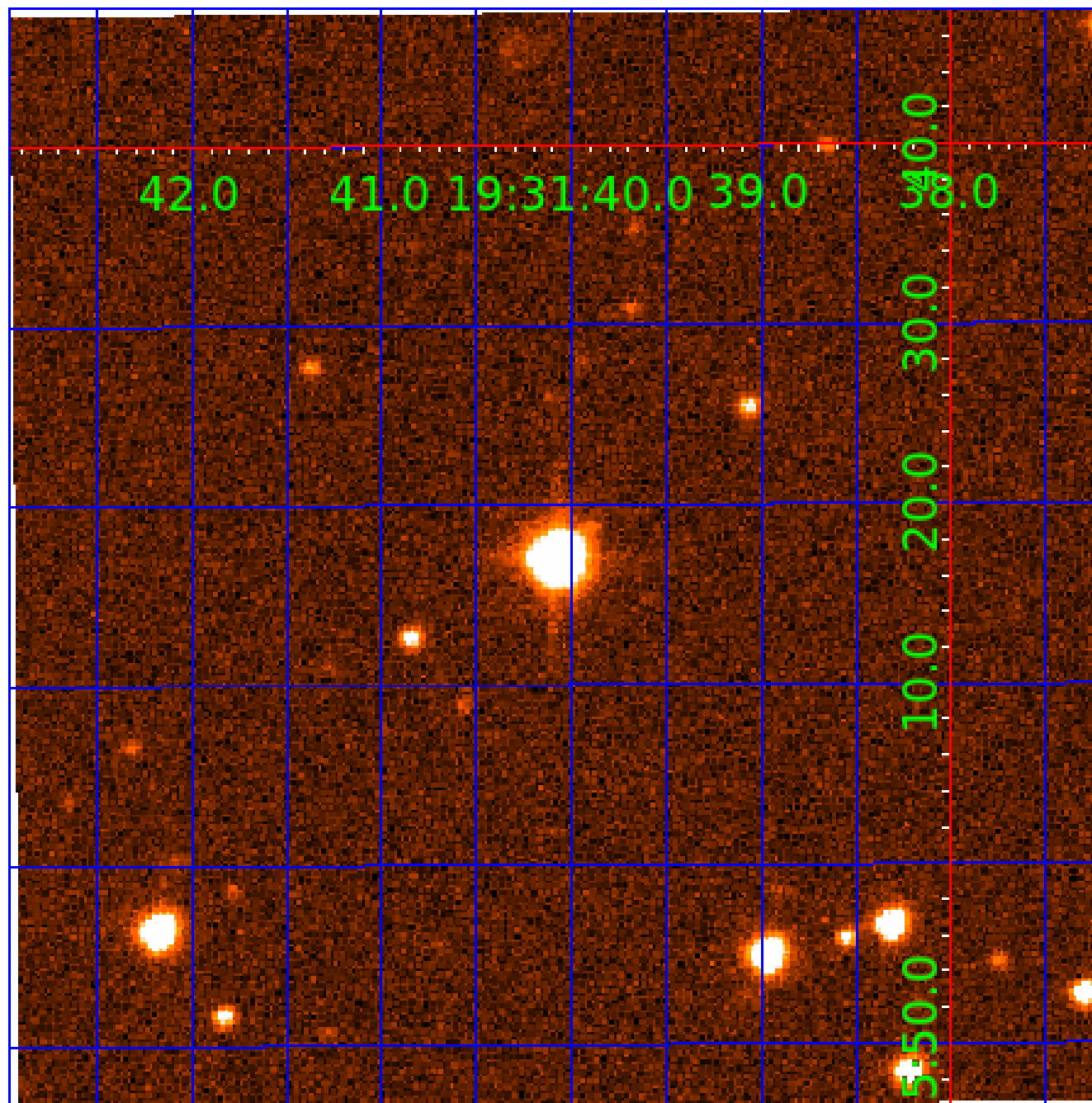
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination





# KIC 008955867

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008955867-01	OBS	No	0.788426	131.941447	5.0	5.752	9.1	1.3	1.01	7074	0.23	7649.01
008955867-03	OBS	No	17.351355	137.848098	567.5	2.251	10.4	10.0	1.01	7074	4.57	124.03
008955867-04	OBS	No	21.298852	133.113658	729.9	0.829	9.4	9.1	1.01	7074	2.90	94.36
008955867-05	OBS	No	12.952332	132.340972	129.4	1.454	13.0	3.2	1.01	7074	1.37	183.16
008955867-06	OBS	No	26.819647	137.052263	777.5	1.441	9.6	9.0	1.01	7074	3.14	69.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008955867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008955867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008955867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT
008955867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008955867-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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

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

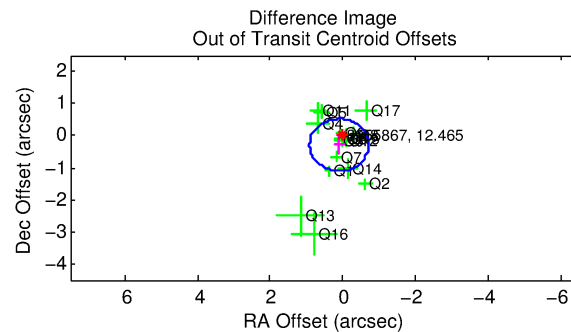
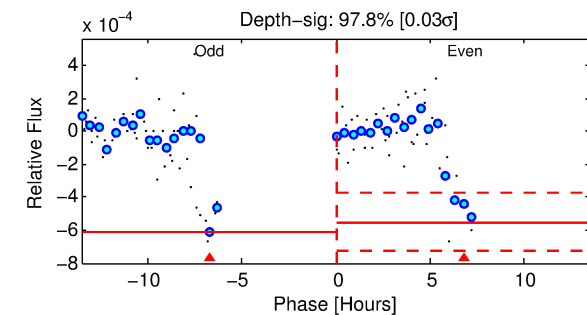
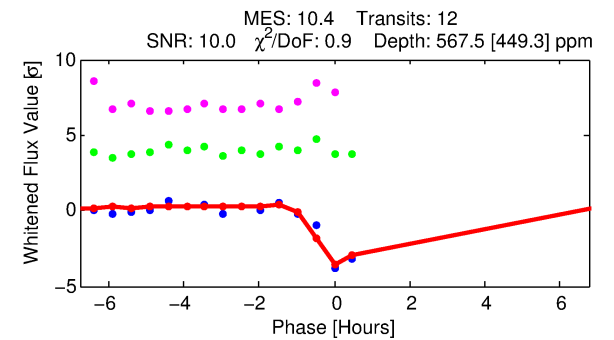
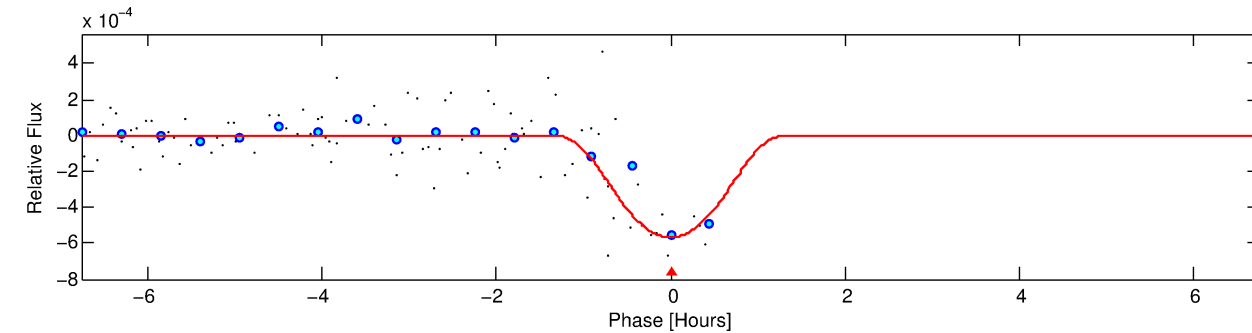
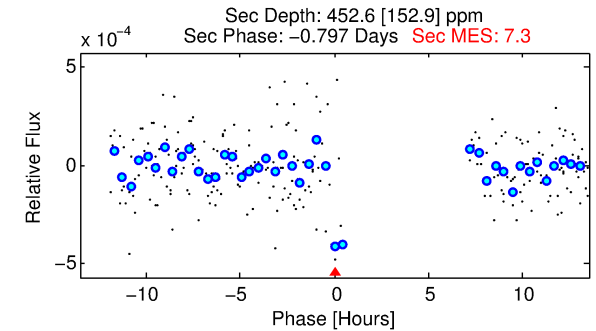
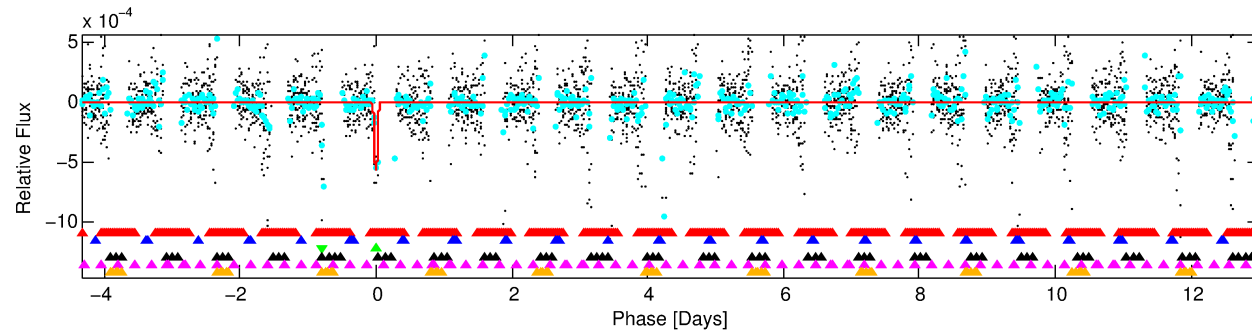
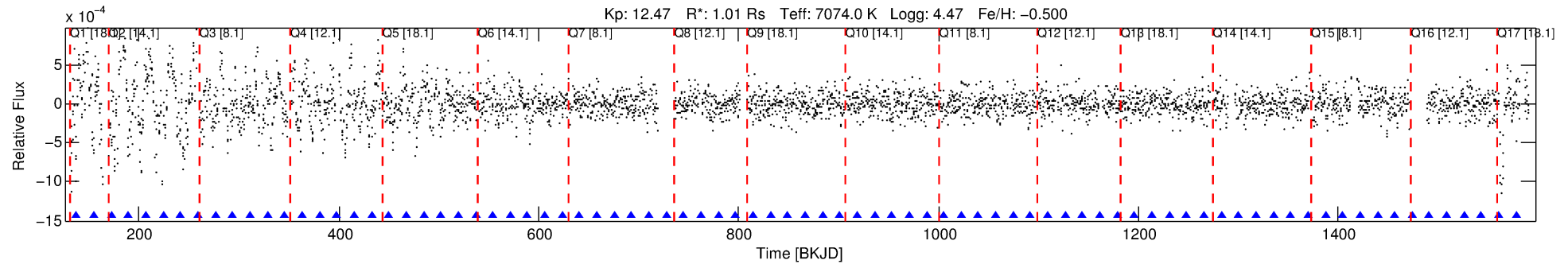
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008955867-03

No Significant Match Found

# DV One-Page Summary

KIC: 8955867 Candidate: 3 of 6 Period: 17.351 d



## DV Fit Results:

Period = 17.35135 [0.00087] d  
Epoch = 137.8481 [0.0047] BKJD  
Rp/R\* = 0.0417 [0.2235]  
a/R\* = 17.21 [24.46]  
b = 1.00 [0.30]  
Seff = 124.02 [55.93]  
Teq = 851 [96] K  
Rp = 4.57 [24.60] Re  
a = 0.1353 [0.0420] AU  
Ag = 217.91 [2341.28] [0.09σ]  
Teffp = 5055 [13567] K [0.31σ]

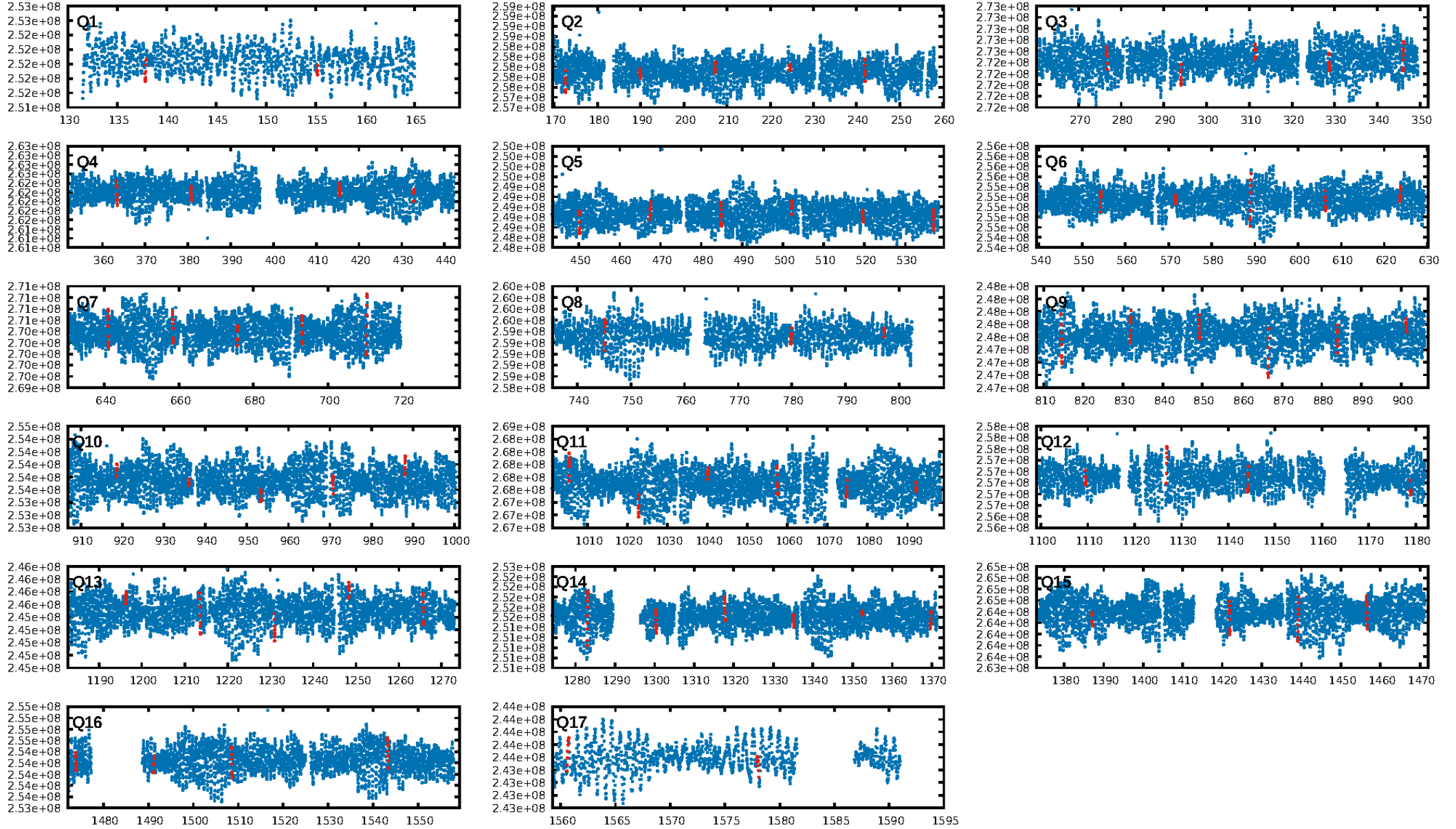
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [39.39σ]  
LongPeriod-sig: 100.0% [39.49σ]  
ModelChiSquare2-sig: 48.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.57e-19  
RollingBand-fgt: 1.00 [10/10]  
**GhostDiagnostic-chr: 0.4051**  
Centroid-sig: N/A  
Centroid-so: 0.100 arcsec [0.69σ]  
OotOffset-rm: 0.311 arcsec [1.15σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-rm: 0.306 arcsec [1.25σ]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.62 [10/16]  
DiffImageOverlap-fno: 0.00 [0/17]

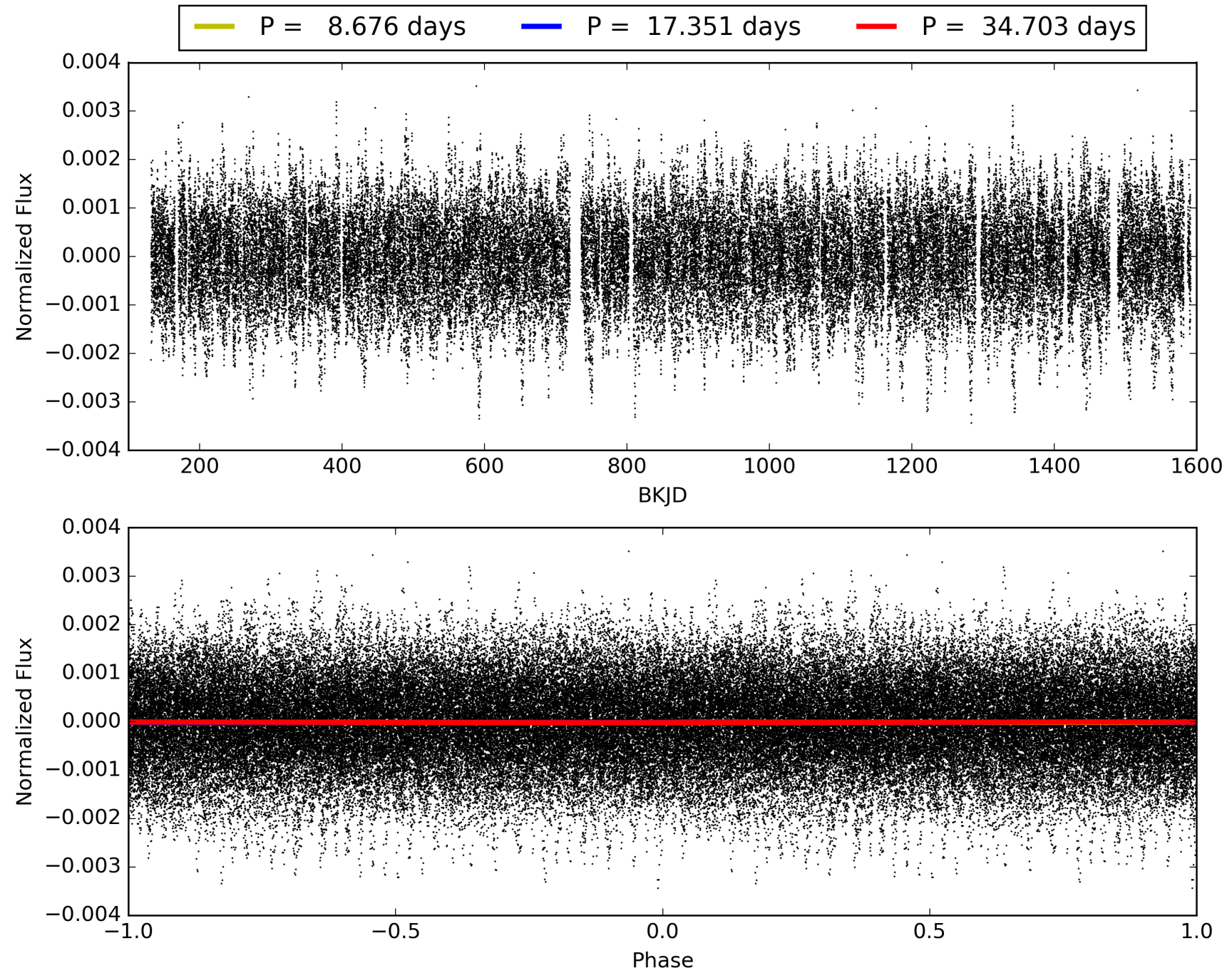
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:24:04 Z

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

# TCE 008955867-03, PDC Light Curves



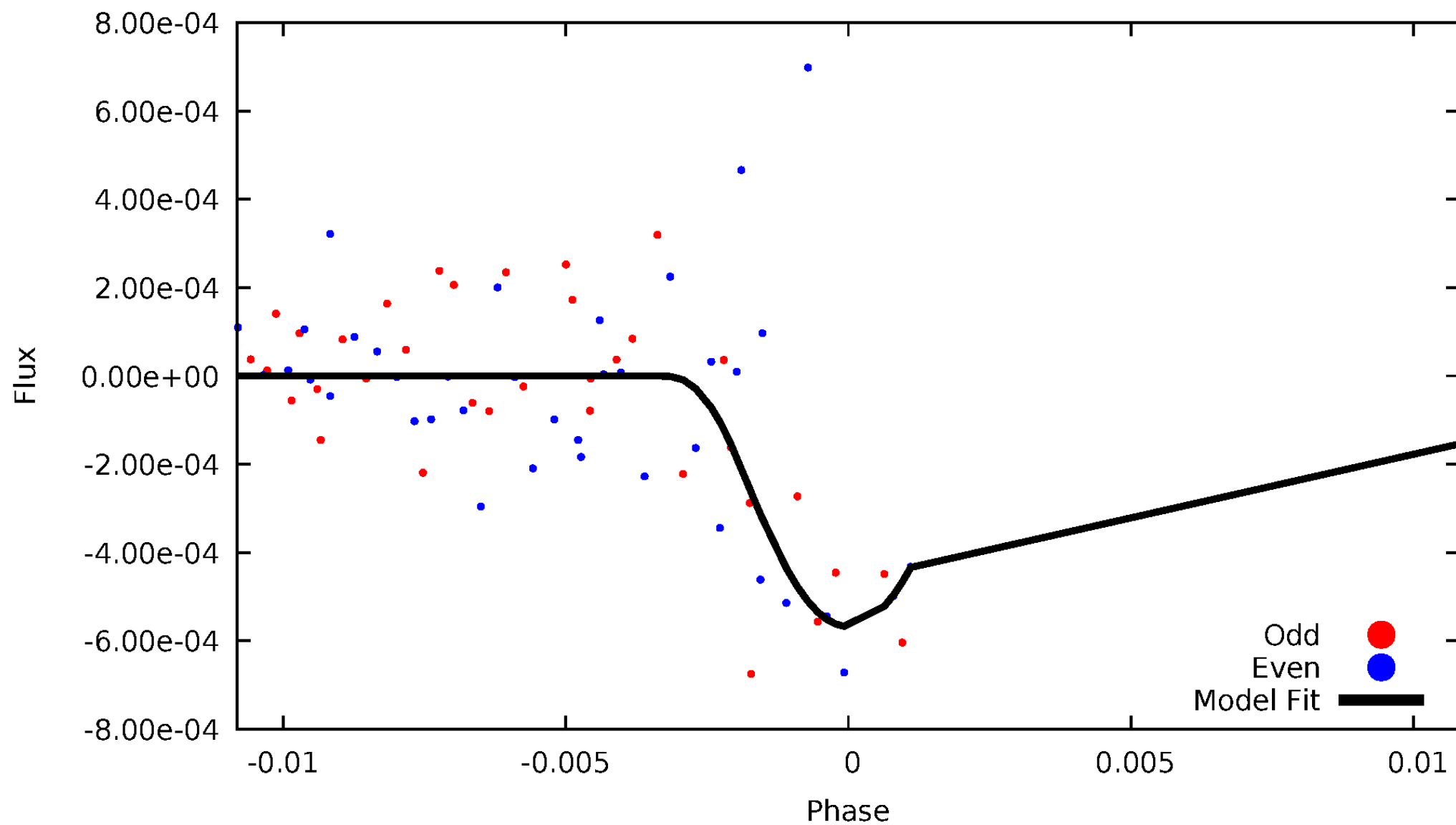
TCE 008955867-03





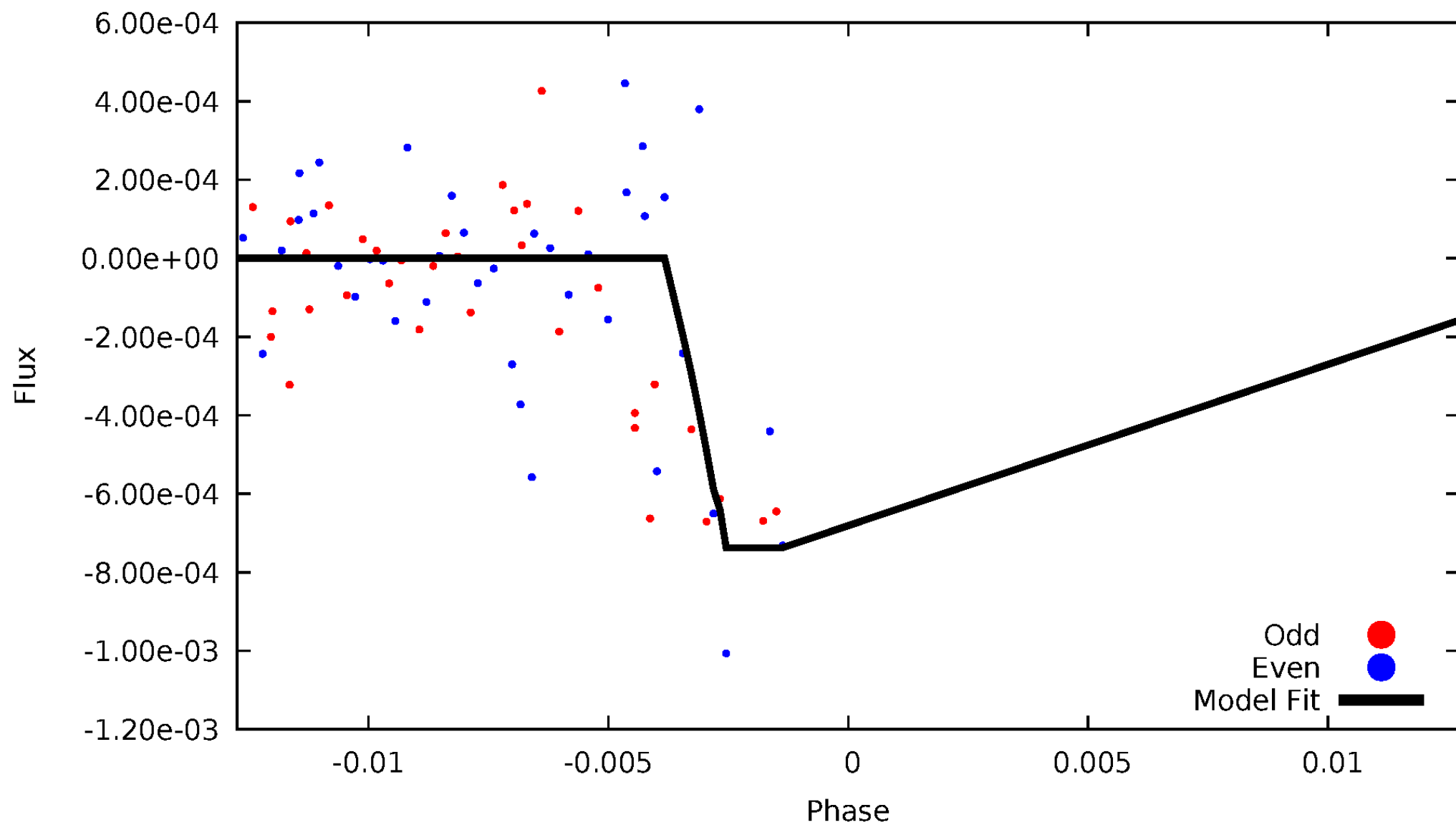
# DV Odd/Even

TCE 008955867-03



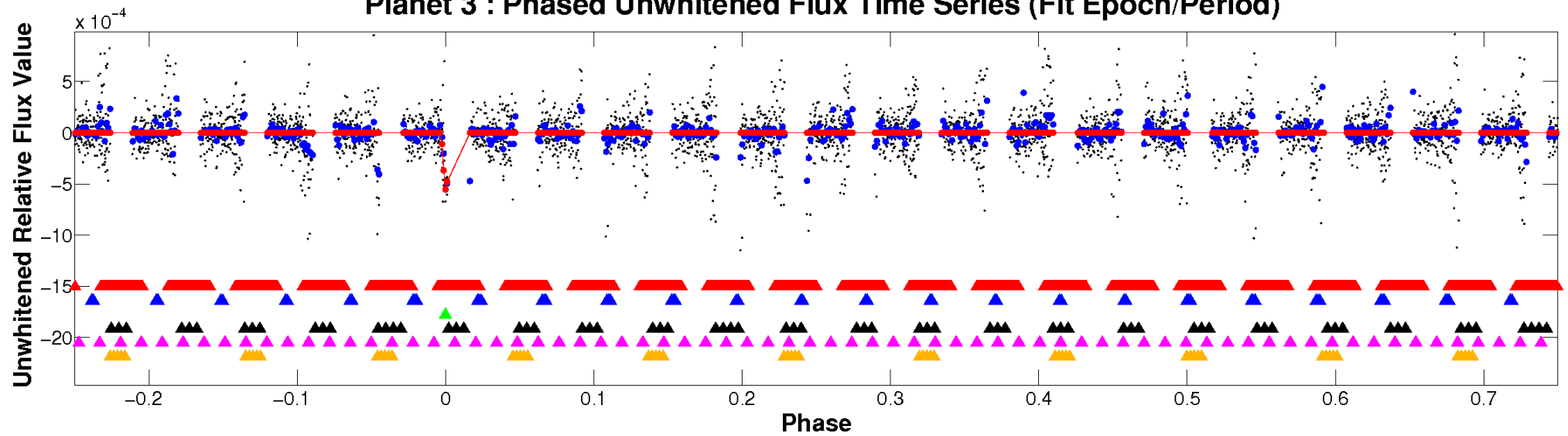
# ALT Odd/Even

TCE 008955867-03

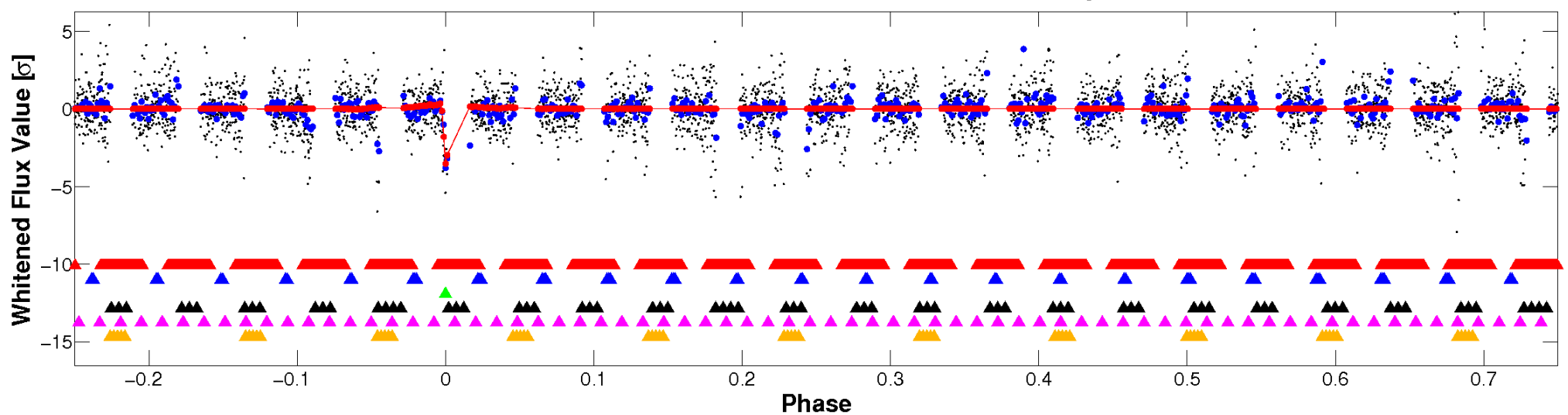


# Non-Whitened Vs. Whitened Light Curve

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

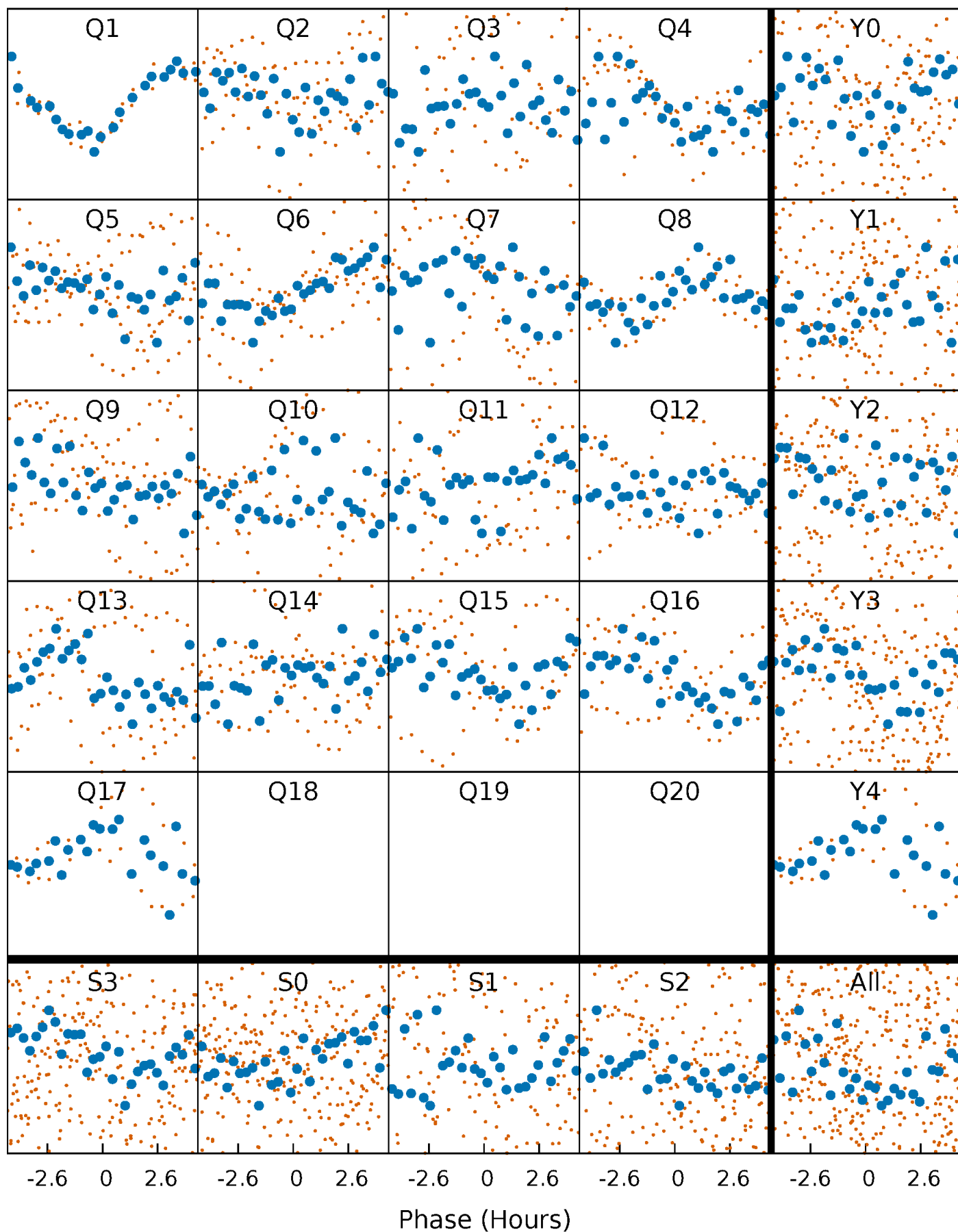


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

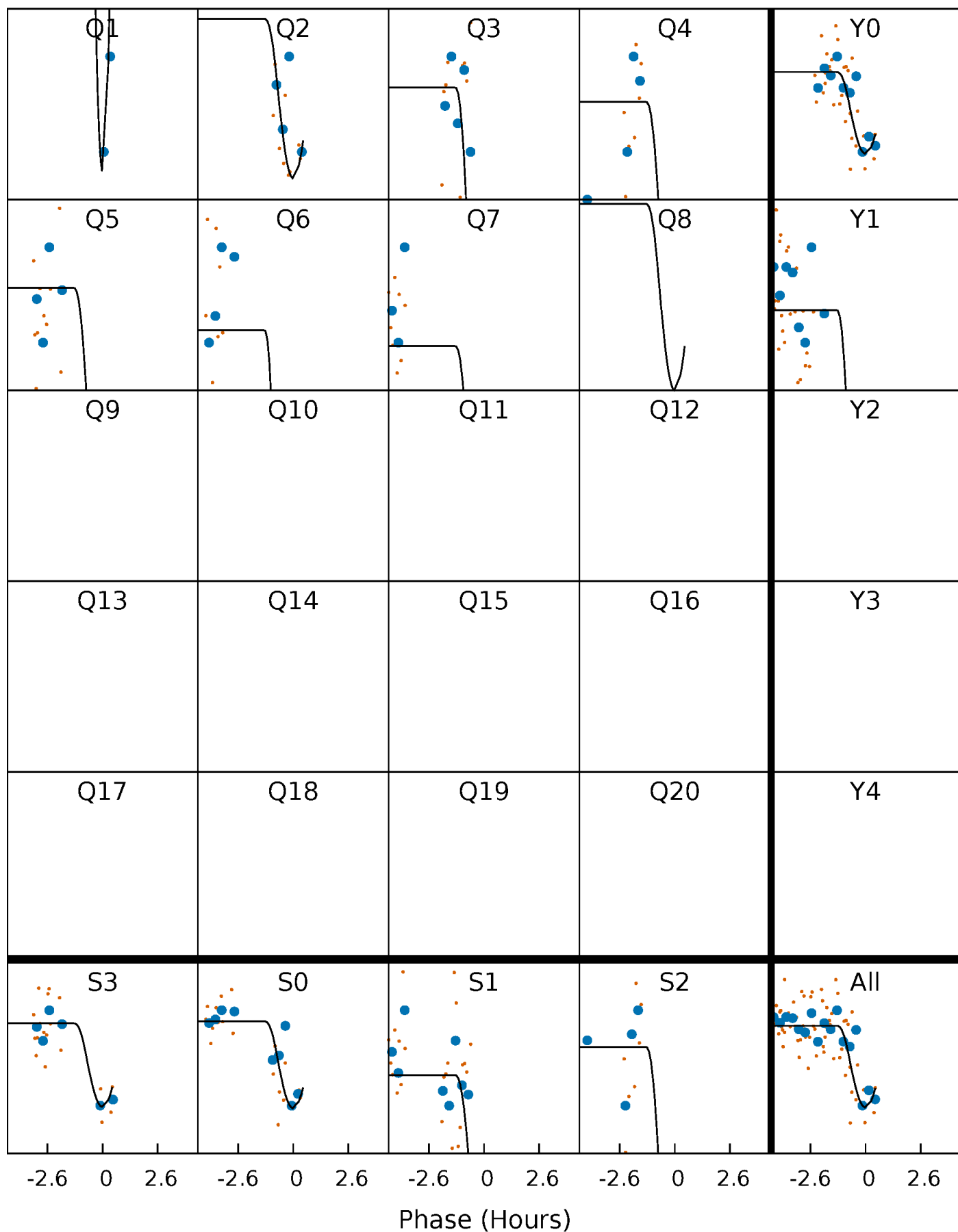
TCE 008955867-03 P= 17.351355 Days  $T_0=137.848098$  (BKJD)





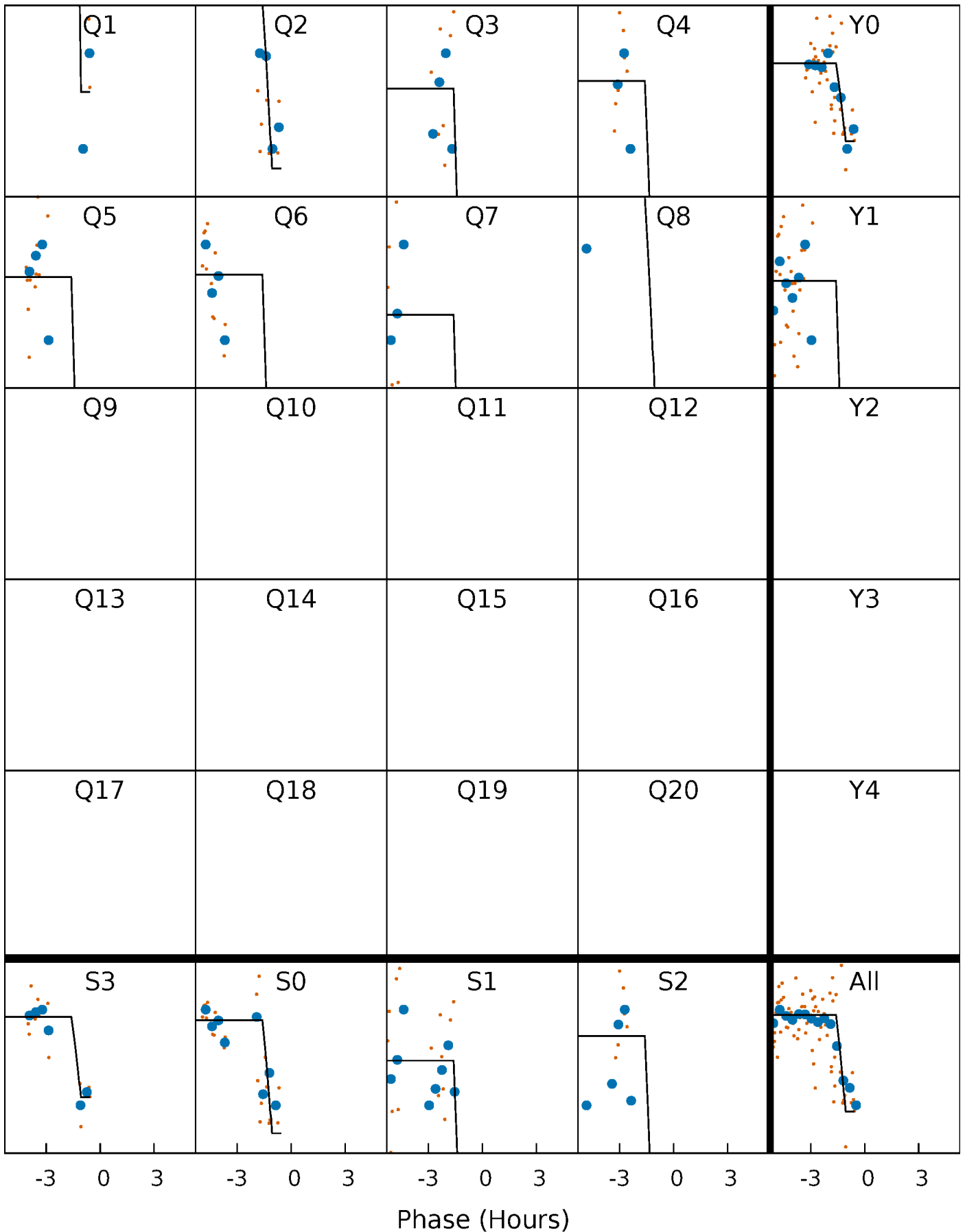
# DV Quarter-Phased Transit Curves

TCE 008955867-03     $P = 17.351355$  Days     $T_0 = 137.848098$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

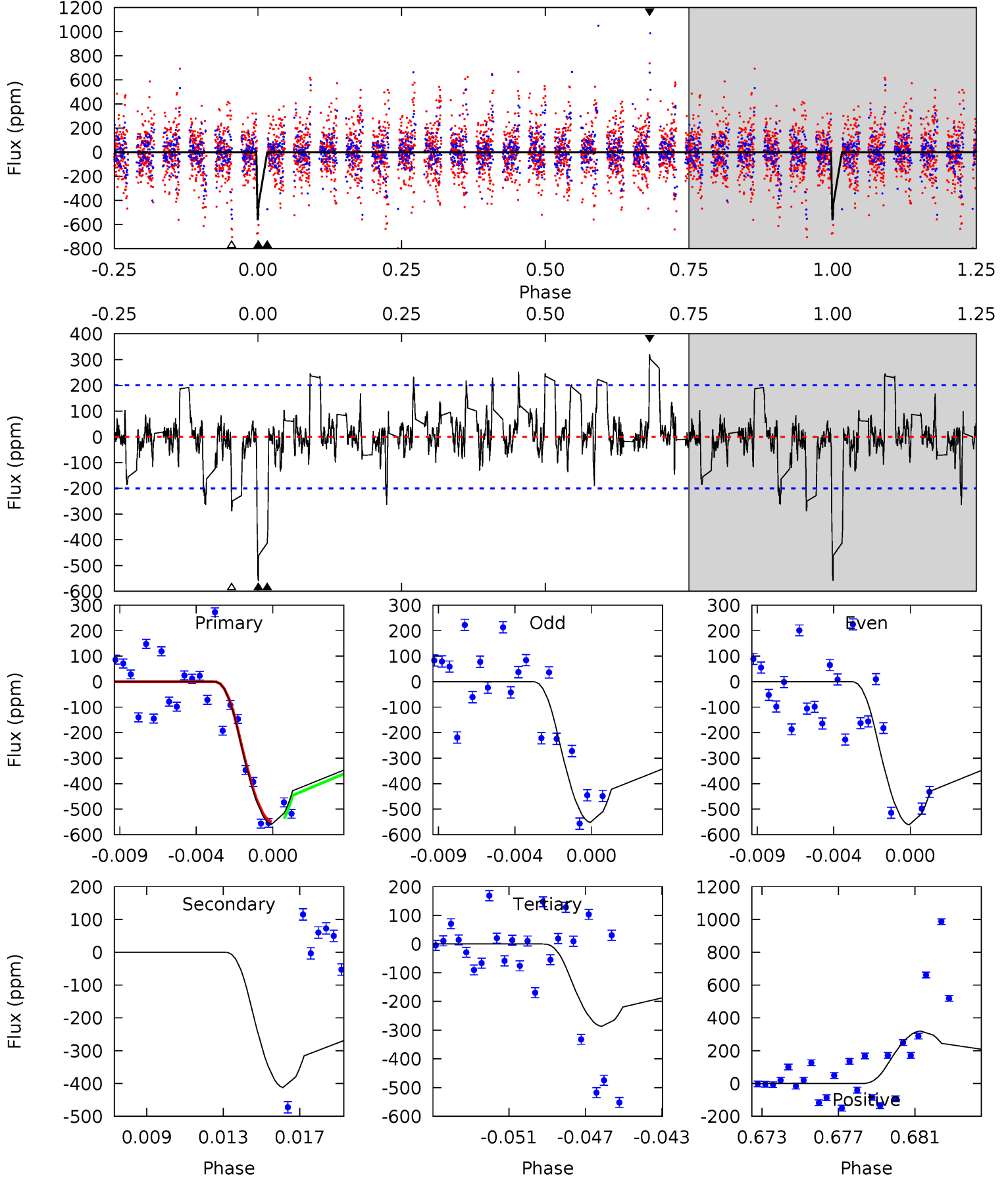
TCE 008955867-03   P= 17.350997 Days    $T_0=137.891025$  (BKJD)



# DV Model-Shift Uniqueness Test

008955867-03, P = 17.351355 Days, E = 120.496743 Days

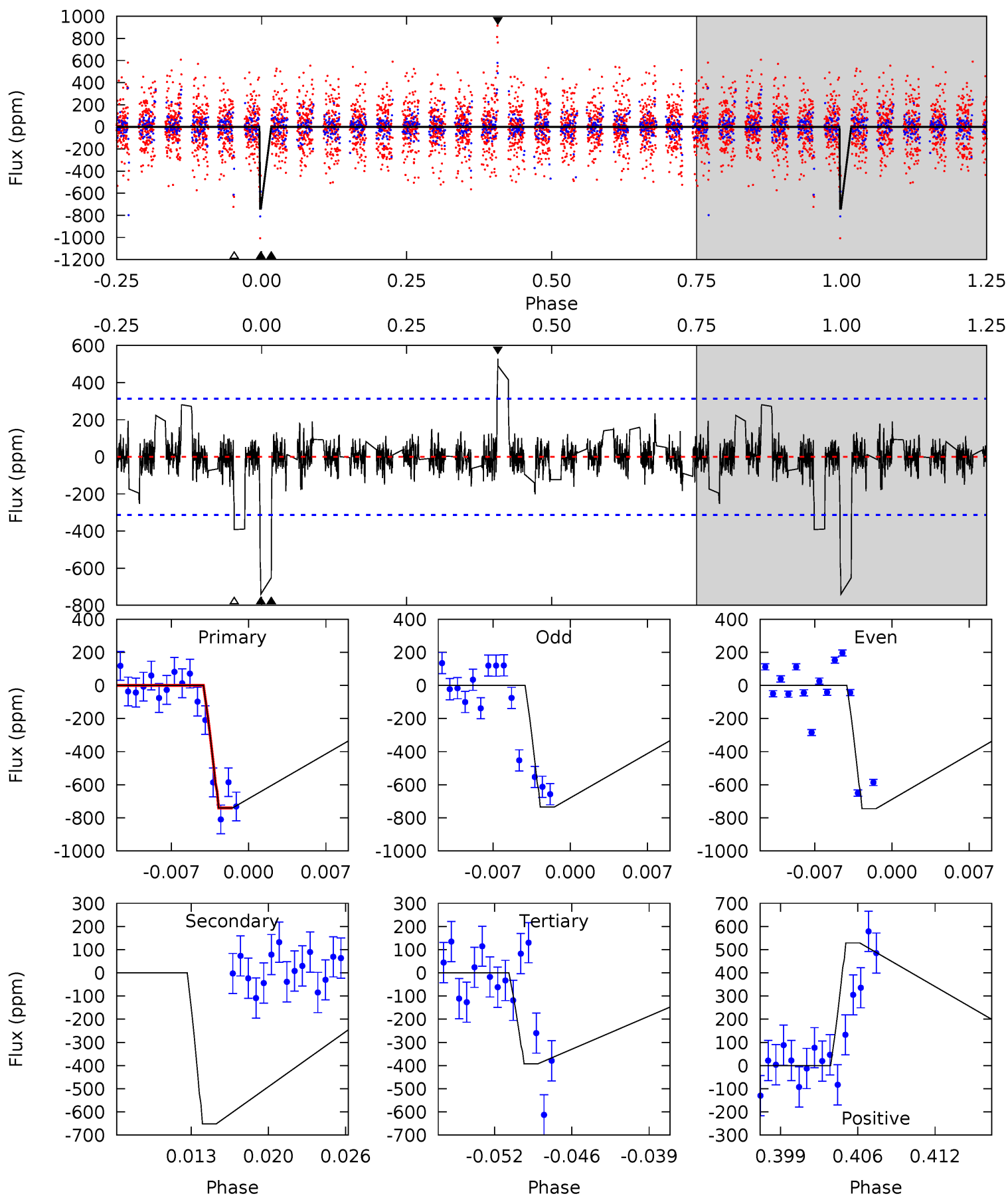
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	10.7	7.43	8.29	5.19	2.86	1.65	7.06	6.20	3.26	2.40	0.12	0.54	0.36	0.12



# Alt Model-Shift Uniqueness Test

008955867-03, P = 17.350997 Days, E = 120.540028 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	10.6	6.39	8.62	5.11	2.72	1.03	5.68	3.45	4.23	2.00	0.08	0	0.42	0





### Stellar Parameters For KIC 008955867

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7074^{+177}_{-212}$	$4.473^{+0.027}_{-0.229}$	$-0.500^{+0.250}_{-0.350}$	$1.006^{+0.386}_{-0.043}$	$1.171^{+0.143}_{-0.117}$	$1.621^{+0.174}_{-0.975}$
	+3%/-3%	+1%/-5%	+50%/-70%	+38%/-4%	+12%/-10%	+11%/-60%
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 008955867-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-413 \pm 39$	$21.18^{+21.81}_{-15.25}$	$1232^{+92}_{-61}$	$3064^{+1523}_{-554}$	$10^{+107}_{-8}$
Alt.	$-652 \pm 61$	$18.40^{+22.16}_{-12.68}$	$1226^{+93}_{-58}$	$3390^{+1737}_{-683}$	$20^{+184}_{-16}$

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

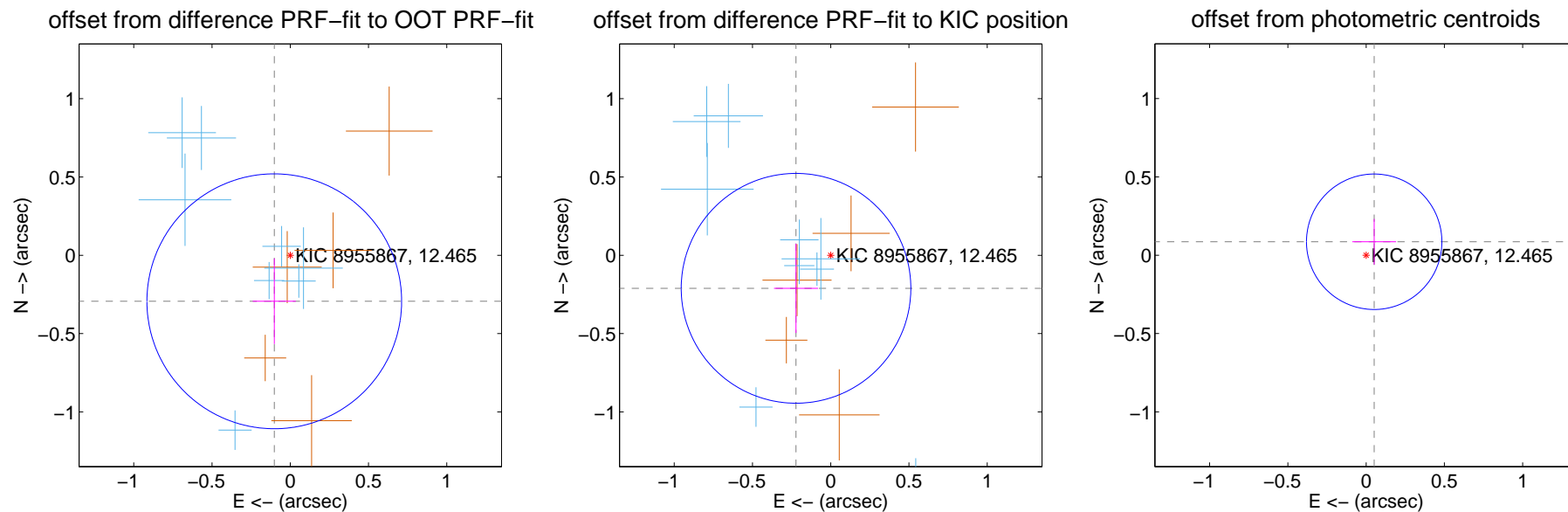
## DV Centroid Data

Supplemental centroid analysis for 008955867-03. Kepler magnitude: 12.46. Transit SNR 10.02

There are 10 quarters with good PRF difference image offsets

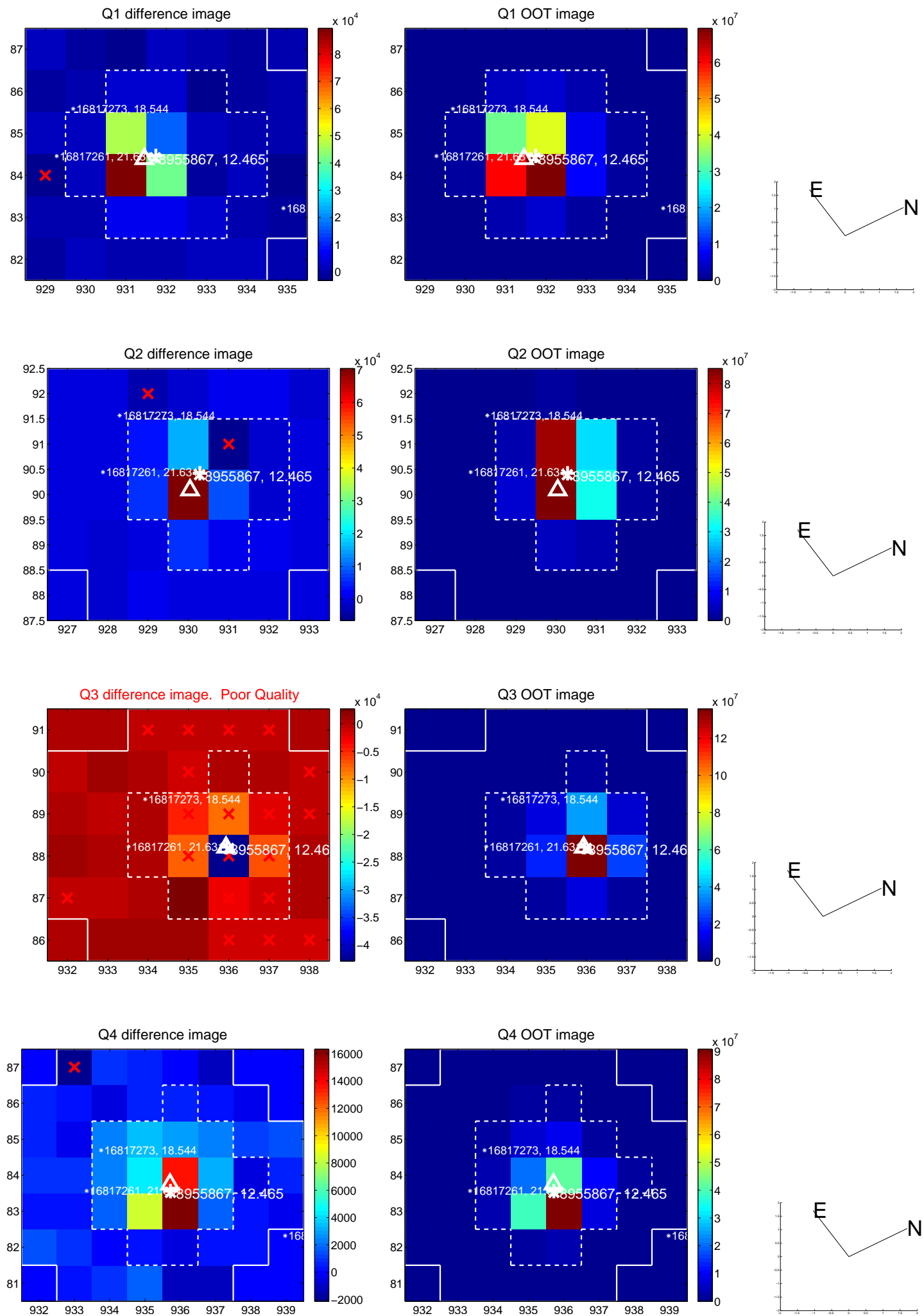
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.311 \pm 0.271$	1.15	$0.102 \pm 0.138$	$-0.294 \pm 0.273$
PRF-fit source offset from KIC position	$0.306 \pm 0.245$	1.25	$0.222 \pm 0.141$	$-0.211 \pm 0.285$
photometric centroid source offset	$0.10 \pm 0.14$	0.69	$-0.05 \pm 0.14$	$0.09 \pm 0.15$

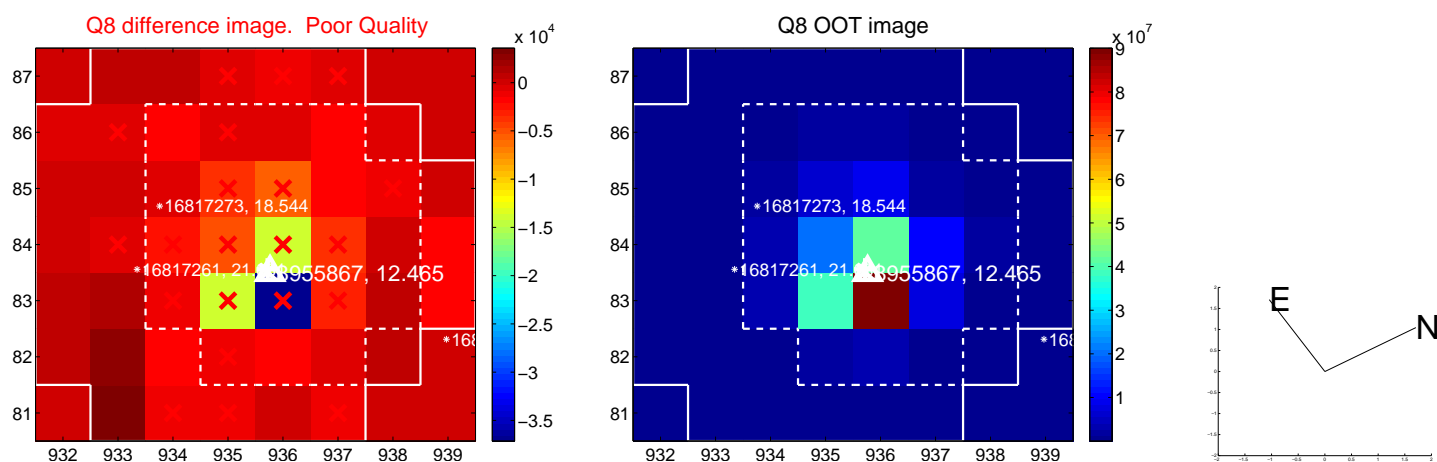
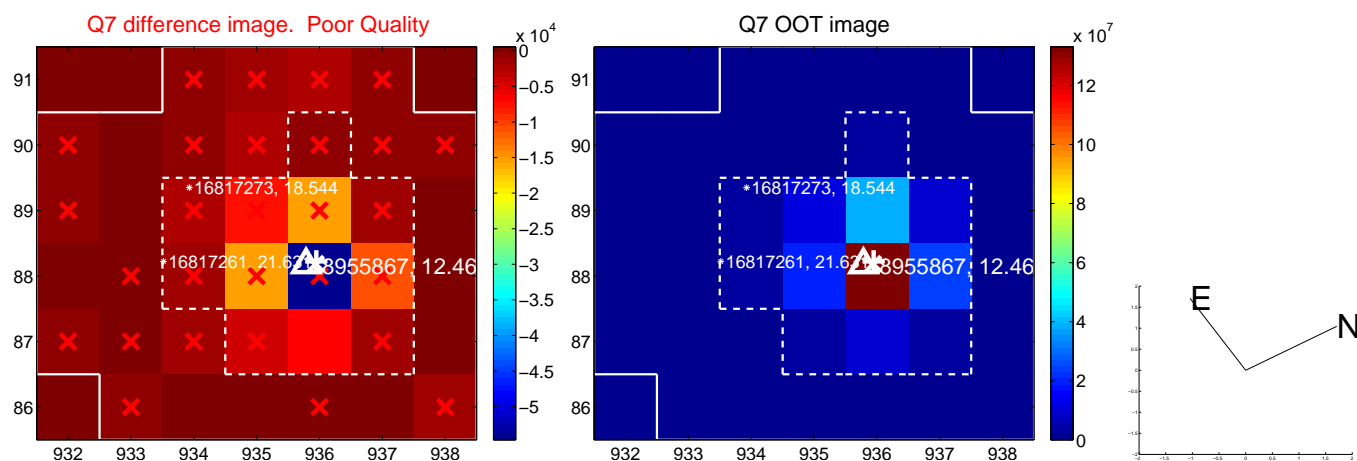
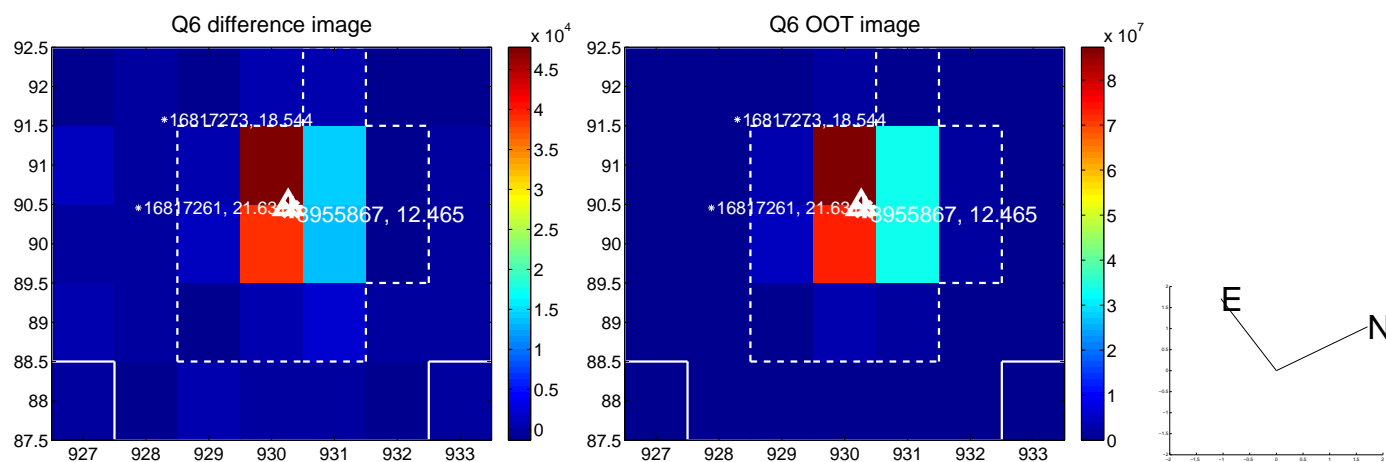
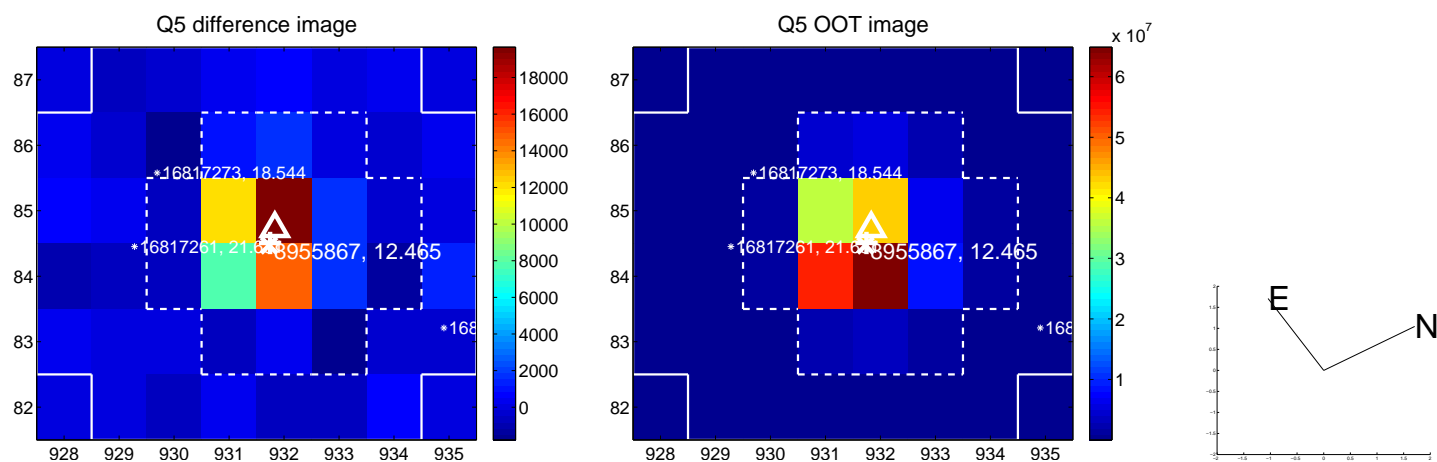


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

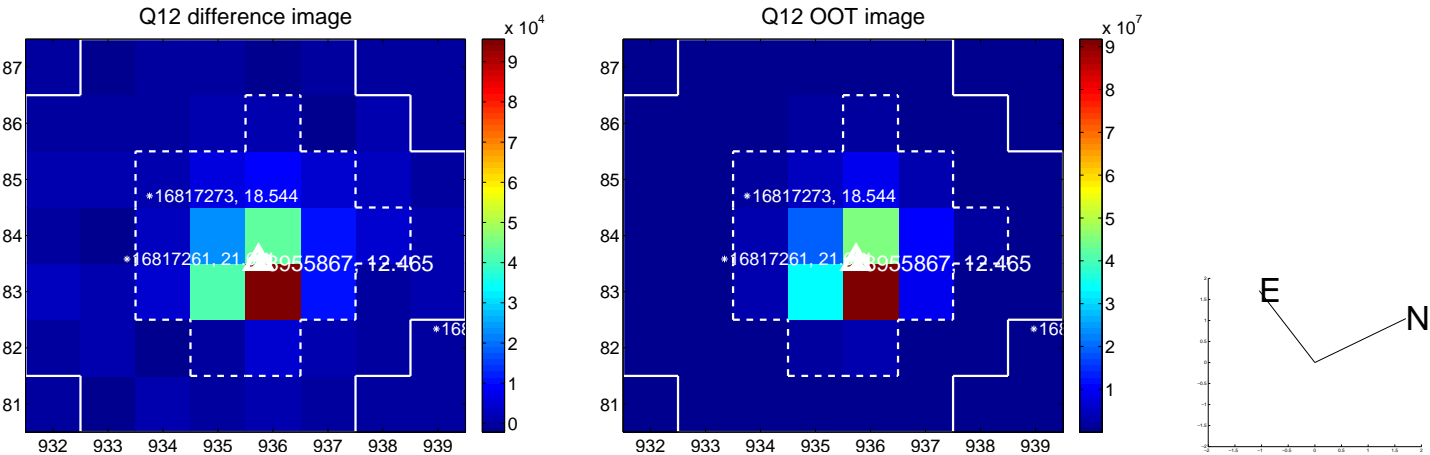
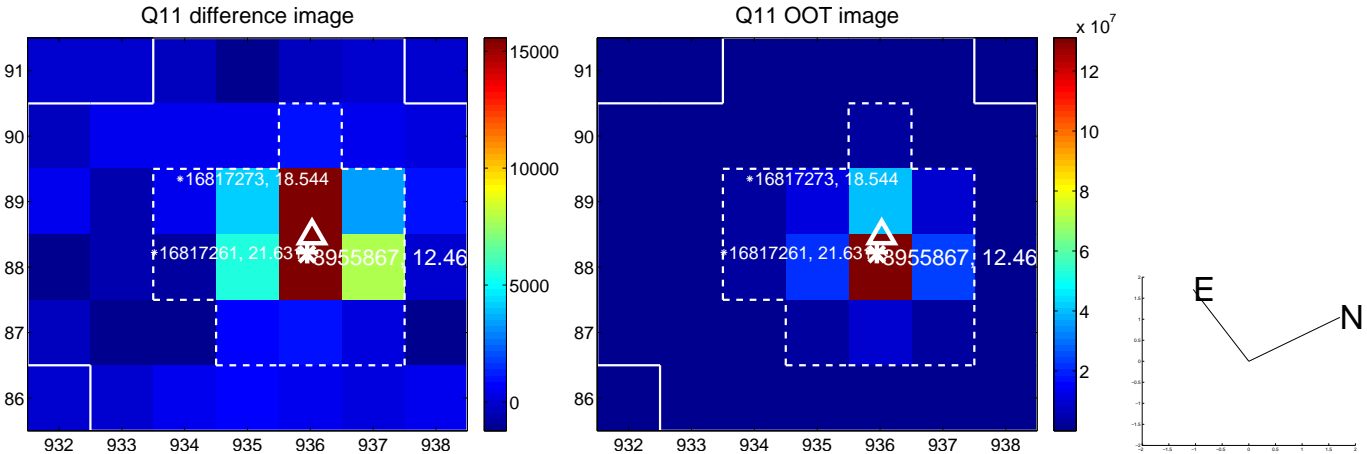
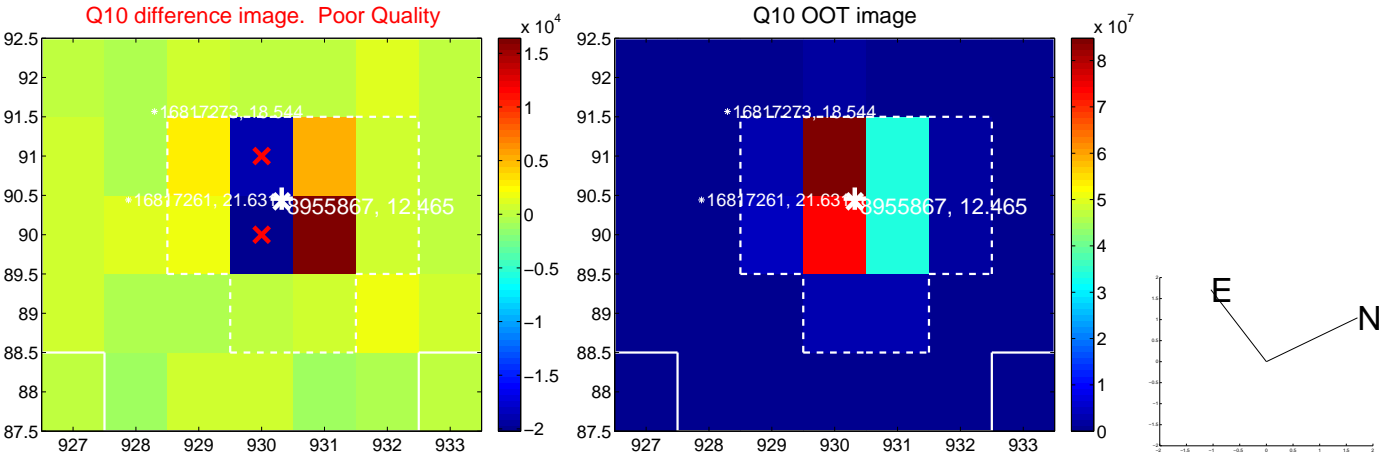
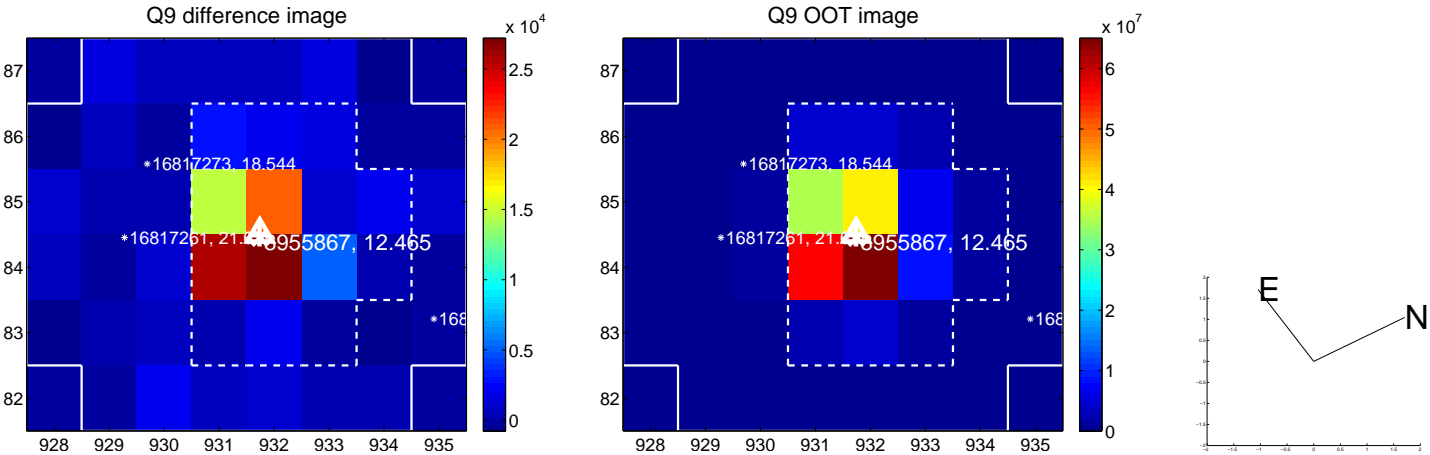
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

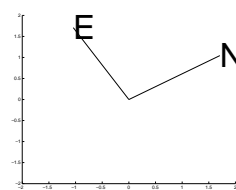
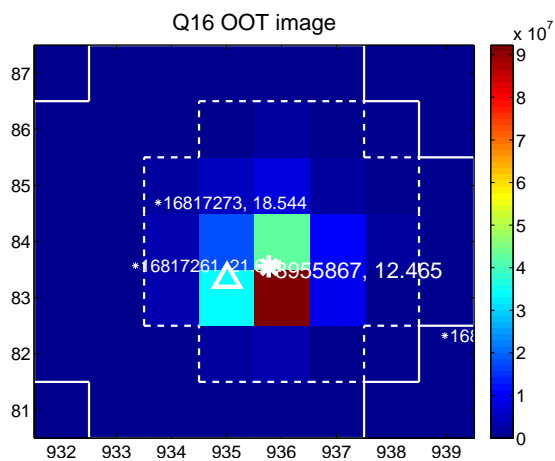
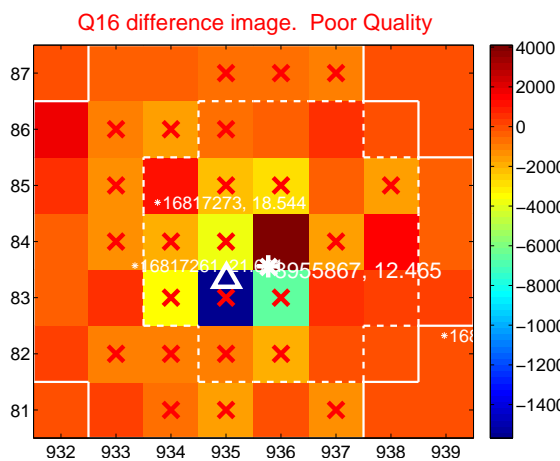
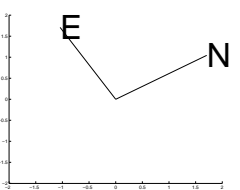
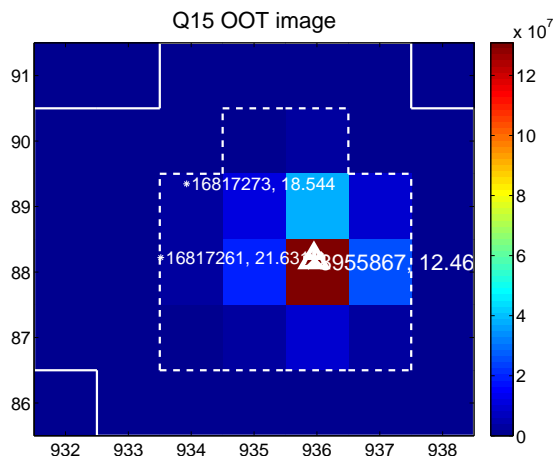
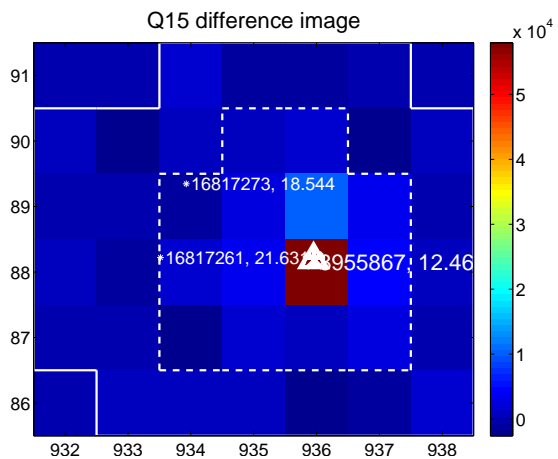
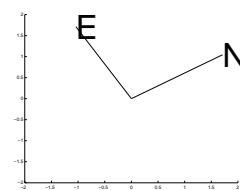
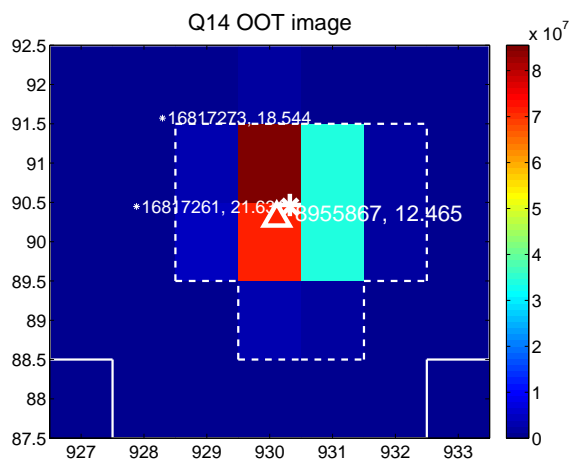
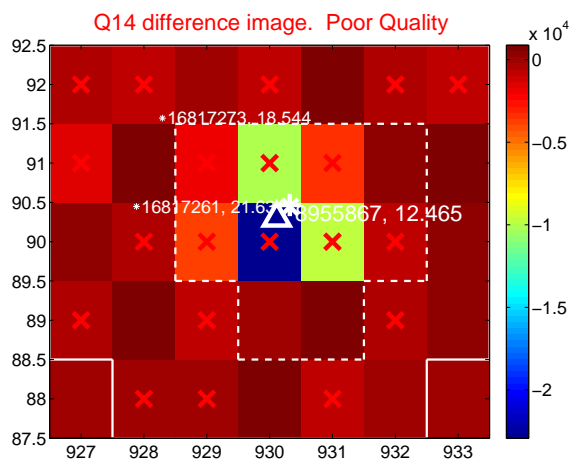
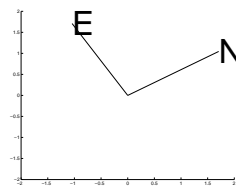
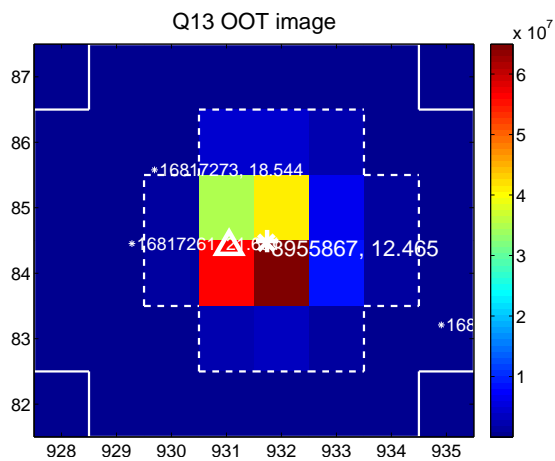
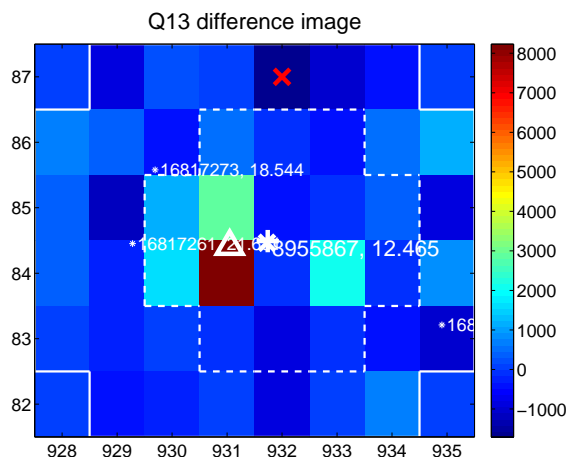


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

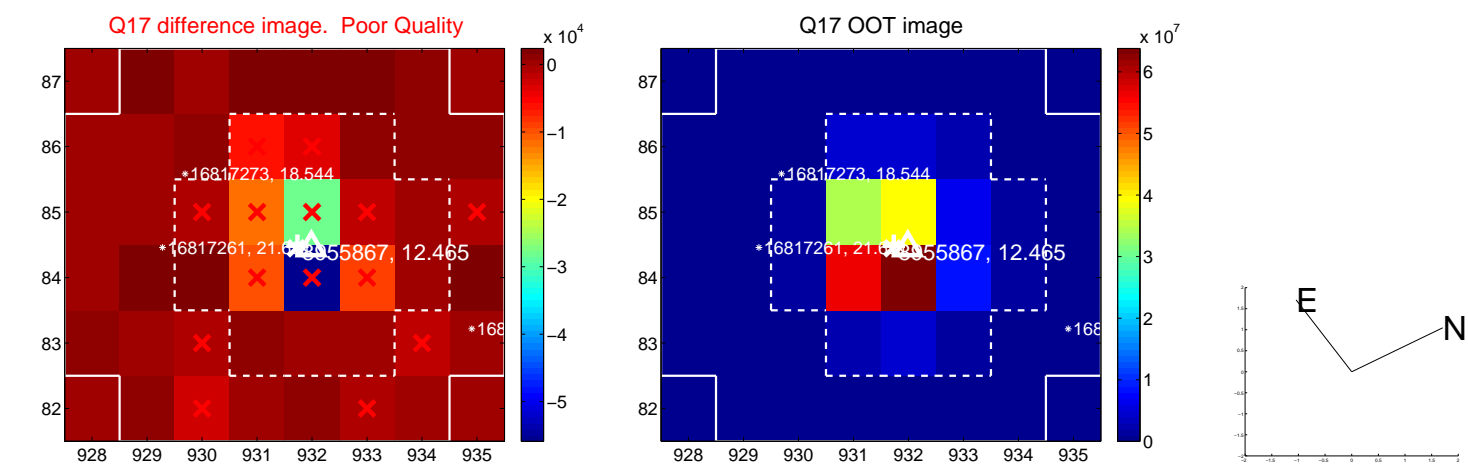




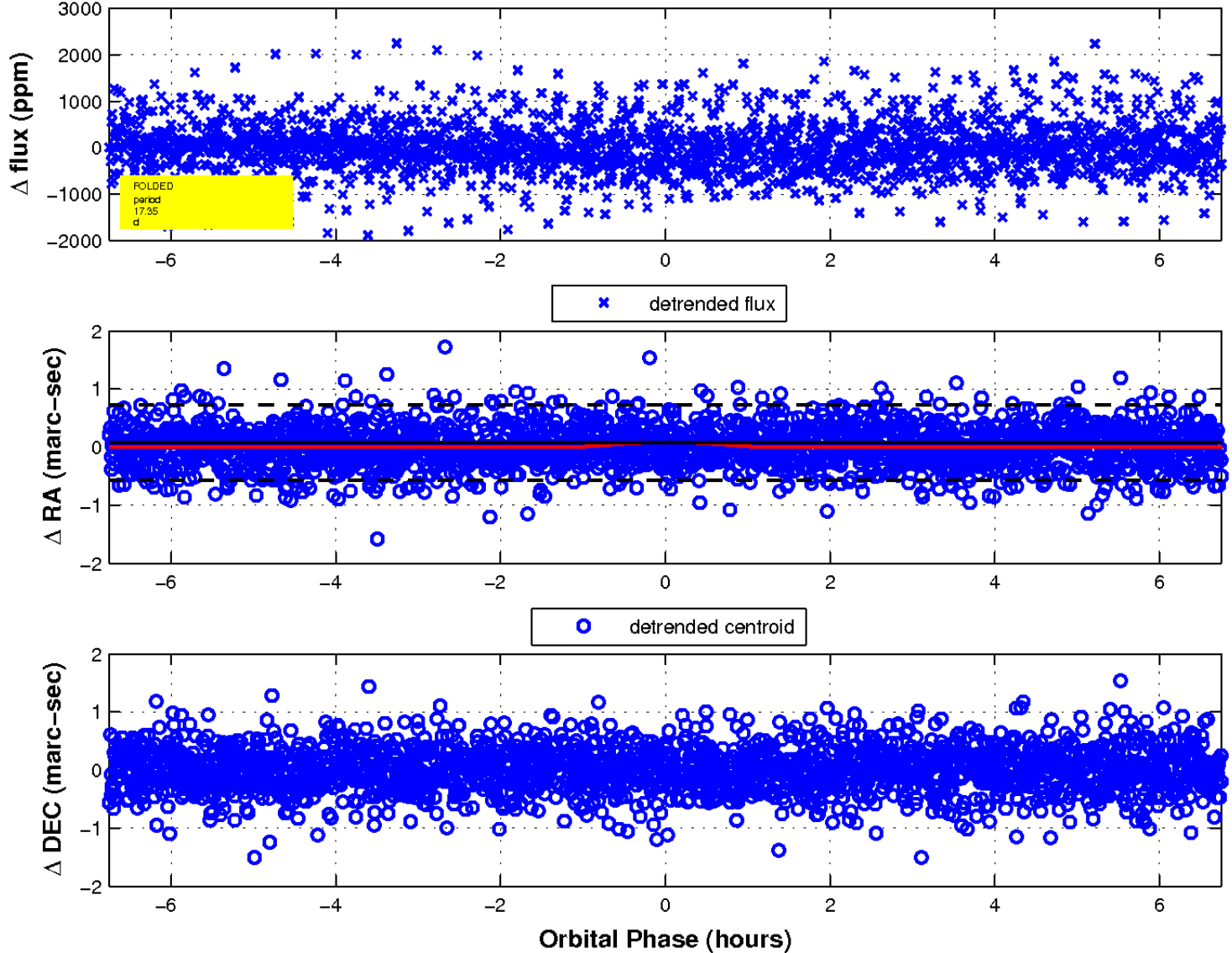
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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

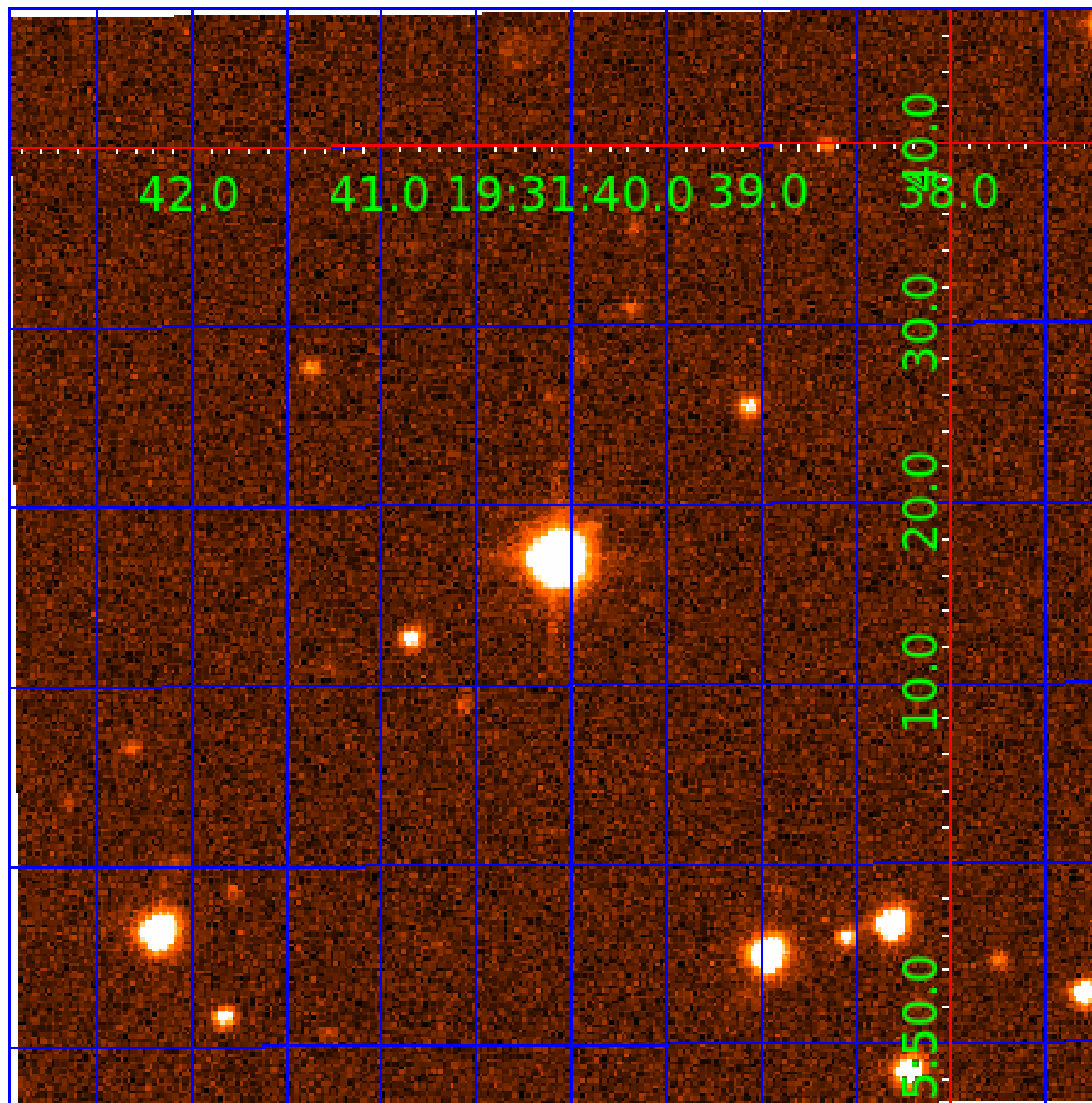


fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination



# KIC 008955867

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008955867-01	OBS	No	0.788426	131.941447	5.0	5.752	9.1	1.3	1.01	7074	0.23	7649.01
008955867-03	OBS	No	17.351355	137.848098	567.5	2.251	10.4	10.0	1.01	7074	4.57	124.03
008955867-04	OBS	No	21.298852	133.113658	729.9	0.829	9.4	9.1	1.01	7074	2.90	94.36
008955867-05	OBS	No	12.952332	132.340972	129.4	1.454	13.0	3.2	1.01	7074	1.37	183.16
008955867-06	OBS	No	26.819647	137.052263	777.5	1.441	9.6	9.0	1.01	7074	3.14	69.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008955867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008955867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008955867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT
008955867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008955867-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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

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

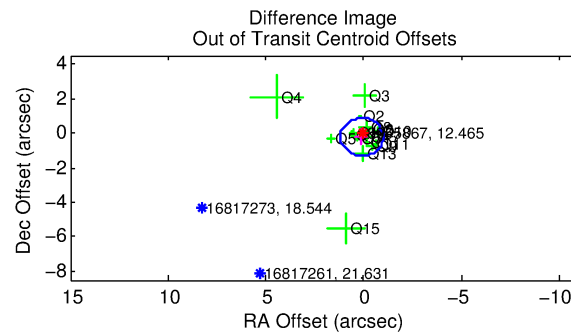
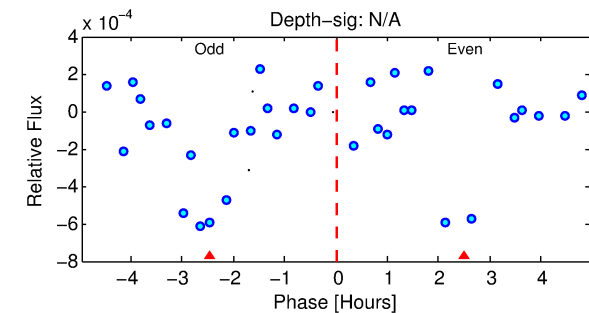
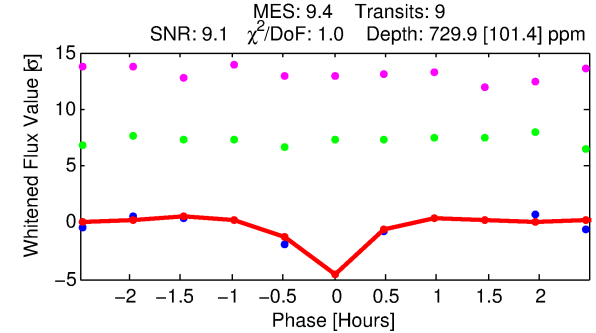
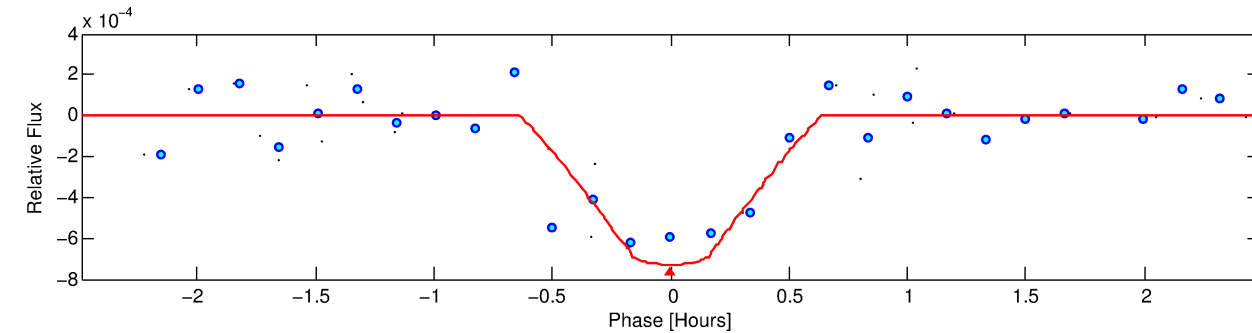
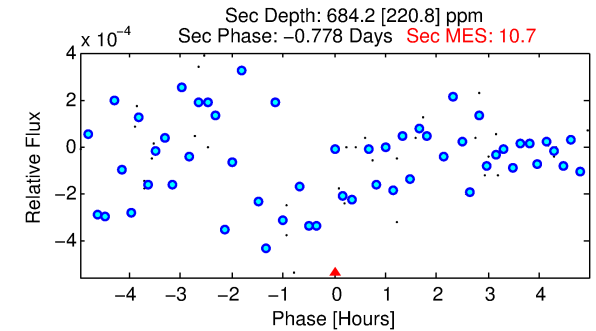
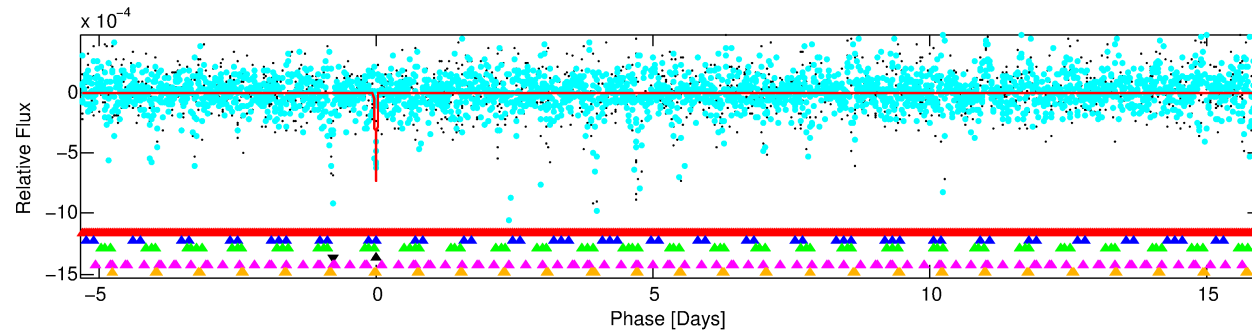
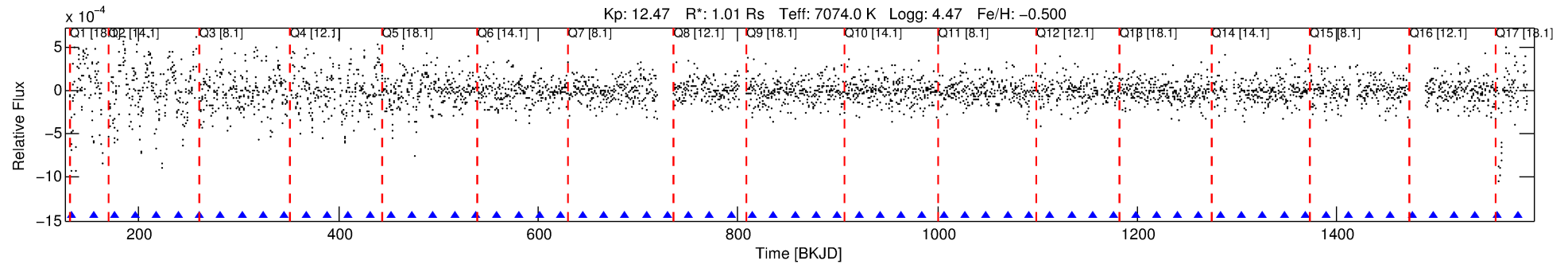
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008955867-04

No Significant Match Found

# DV One-Page Summary

KIC: 8955867 Candidate: 4 of 6 Period: 21.299 d



## DV Fit Results:

Period = 21.29885 [0.00010] d  
Epoch = 133.1137 [0.0026] BKJD  
Rp/R\* = 0.0264 [0.0212]  
a/R\* = 160.75 [746.28]  
b = 0.62 [4.70]  
Seff = 94.37 [42.56]  
Teq = 795 [90] K  
Rp = 2.90 [2.58] Re  
a = 0.1551 [0.0481] AU  
Ag = 1077.56 [1824.81] [0.59]  
Teffp = 7040 [2888] K [2.16]

## DV Diagnostic Results:

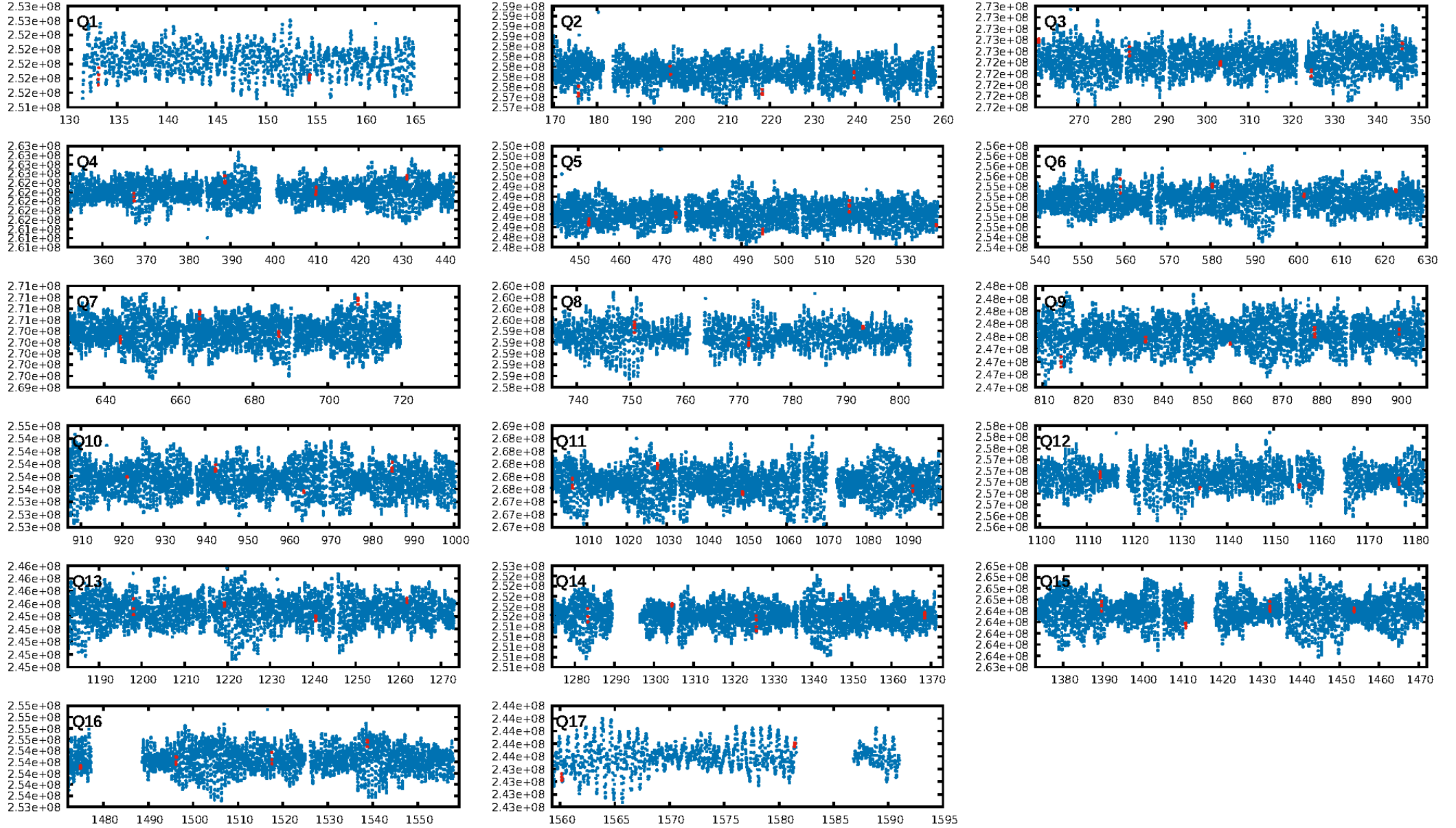
ShortPeriod-sig: 100.0% [39.49]  
LongPeriod-sig: 100.0% [95.66]  
ModelChiSquare2-sig: 55.9%  
ModelChiSquareGof-sig: 98.4%  
Bootstrap-pfa: 2.13e-14  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 0.2628  
Centroid-sig: N/A  
Centroid-so: 0.167 arcsec [1.01]  
OotOffset-rm: 0.247 arcsec [0.68]  
KicOffset-rm: 0.240 arcsec [0.77]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 0.44 [7/16]  
DiffImageOverlap-fno: 0.24 [4/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:24:07 Z

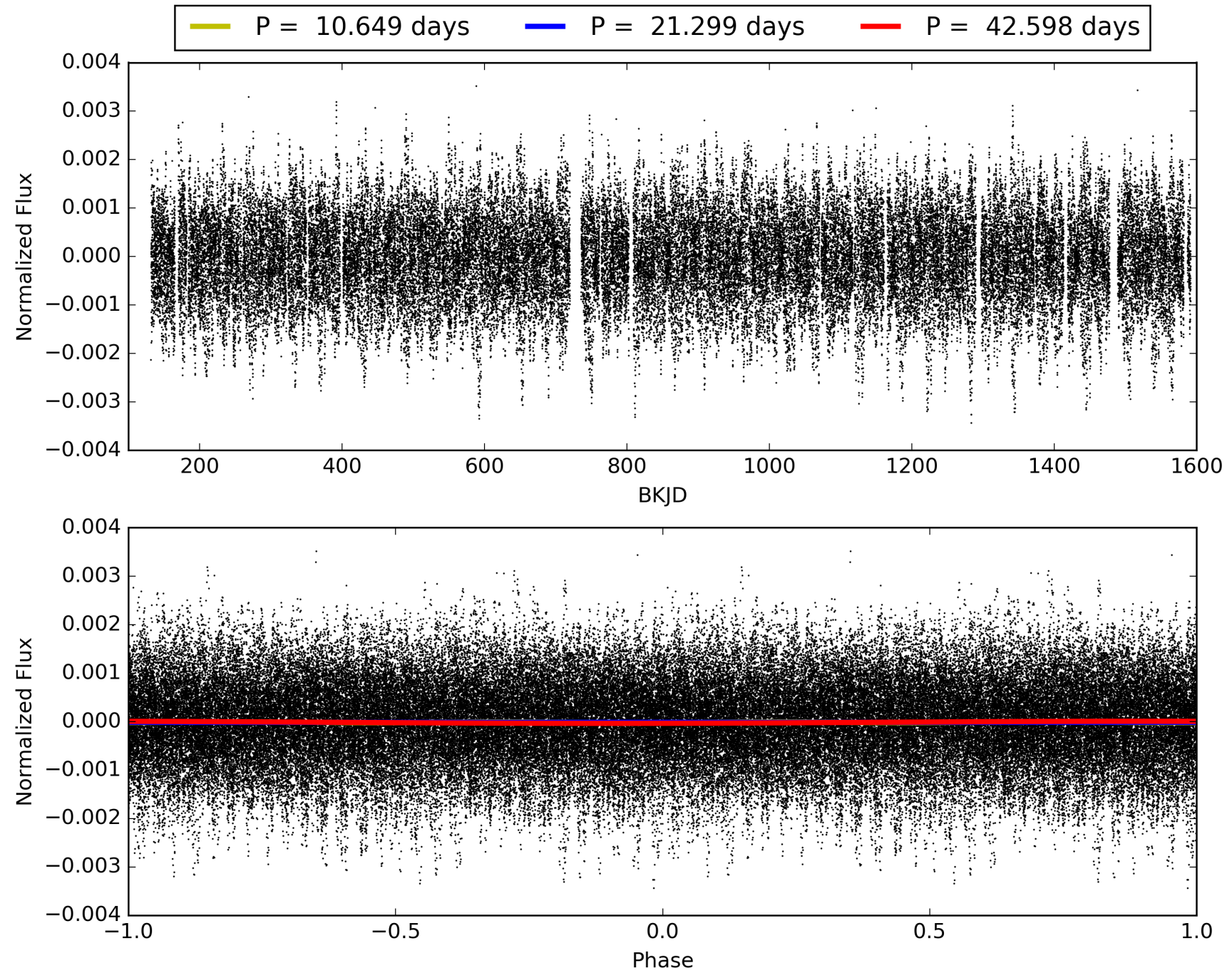
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 008955867-04, PDC Light Curves

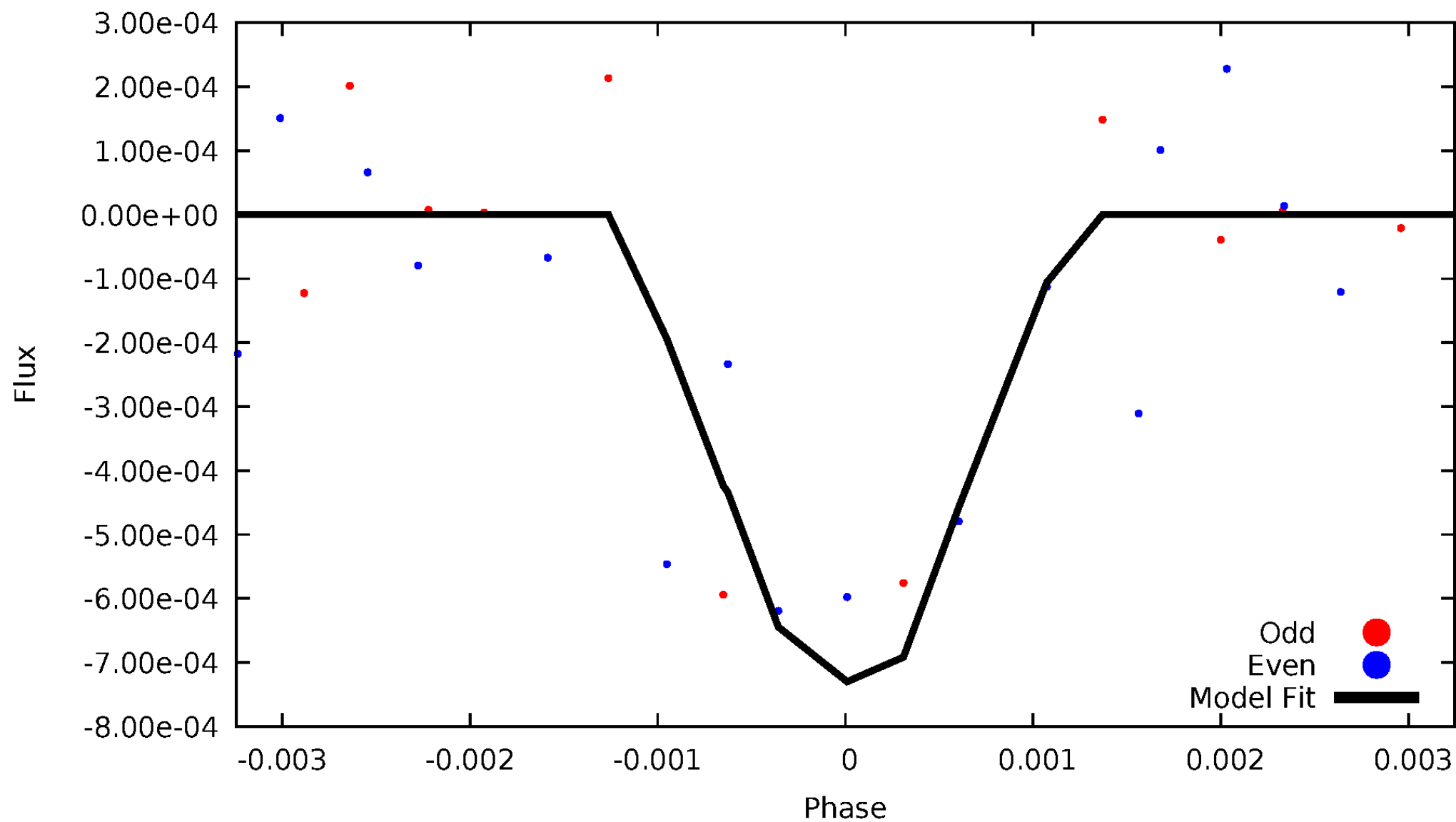


TCE 008955867-04



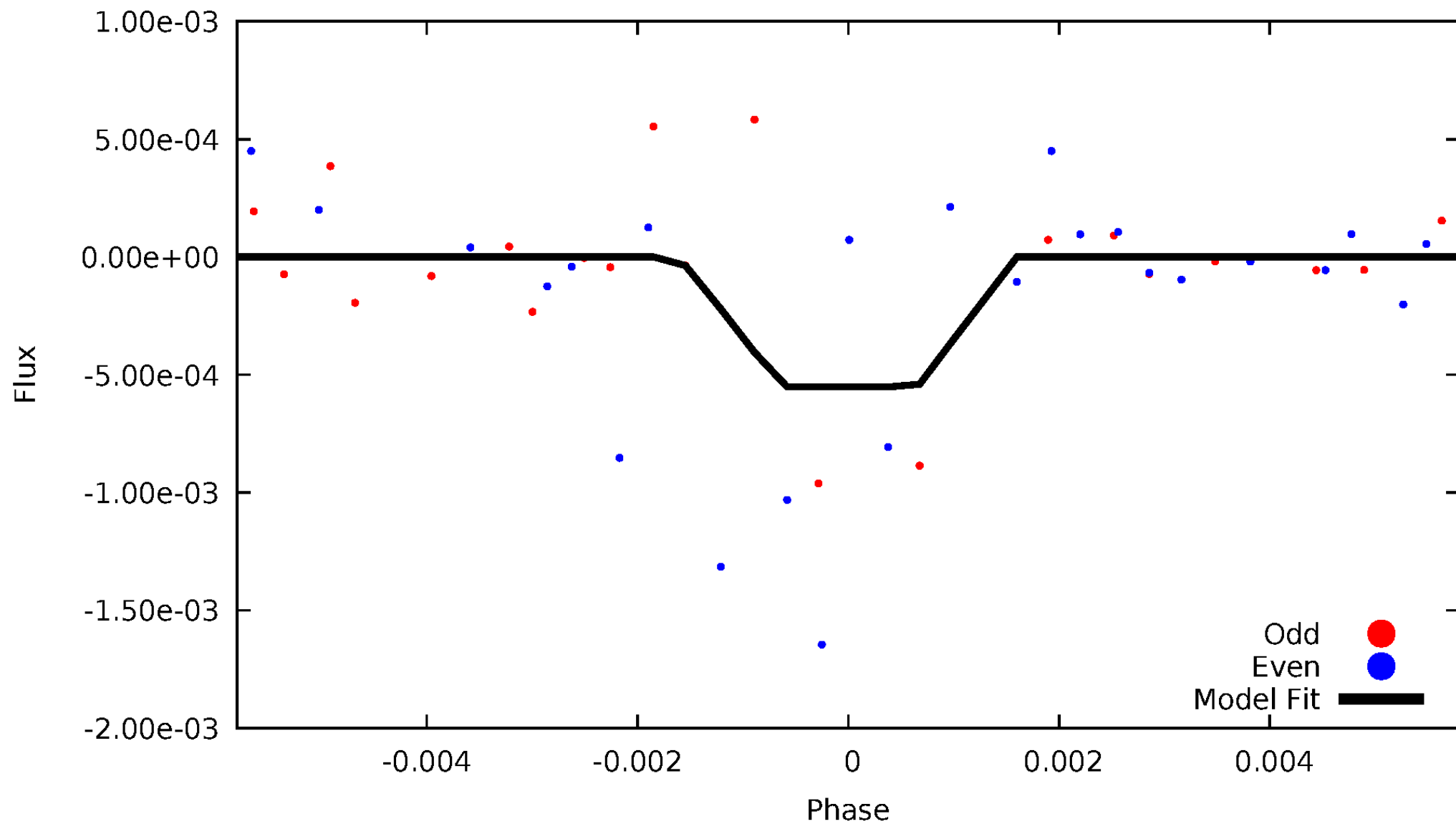
# DV Odd/Even

TCE 008955867-04



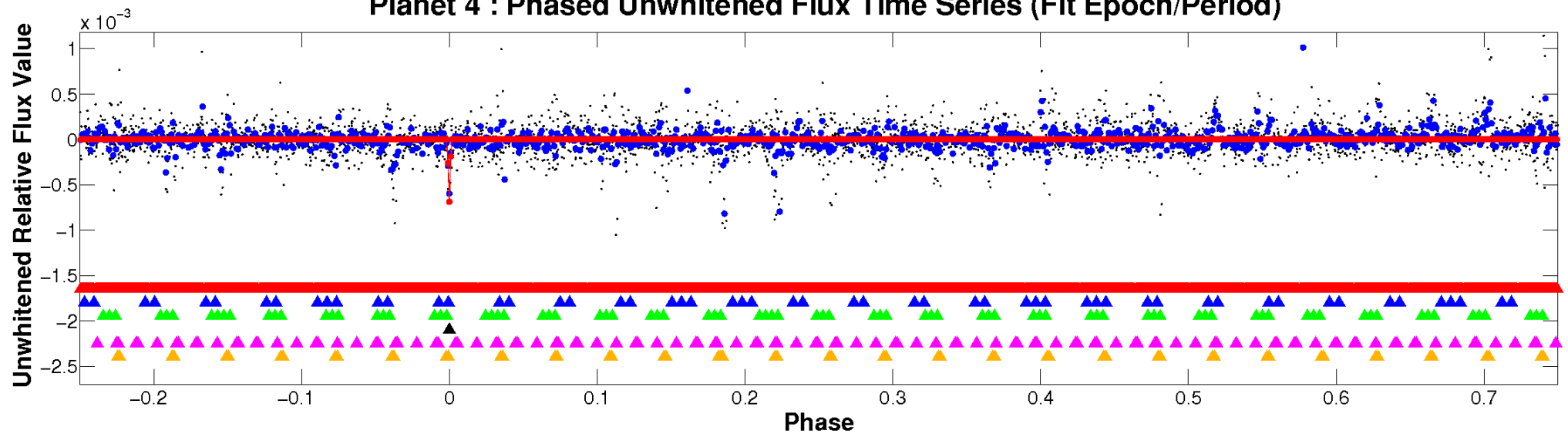
# ALT Odd/Even

TCE 008955867-04

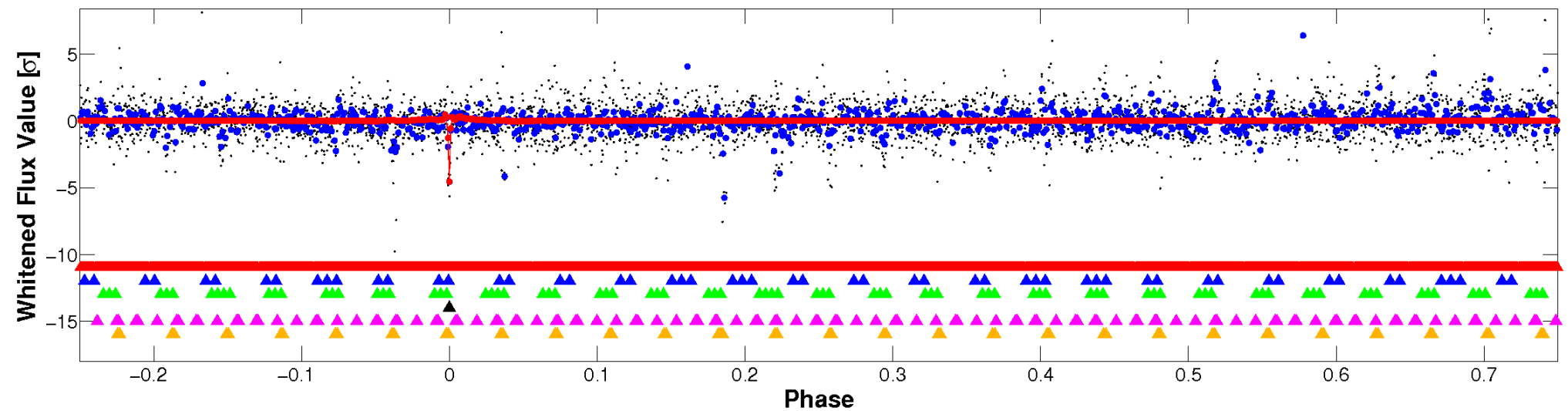


# Non-Whitened Vs. Whitened Light Curve

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



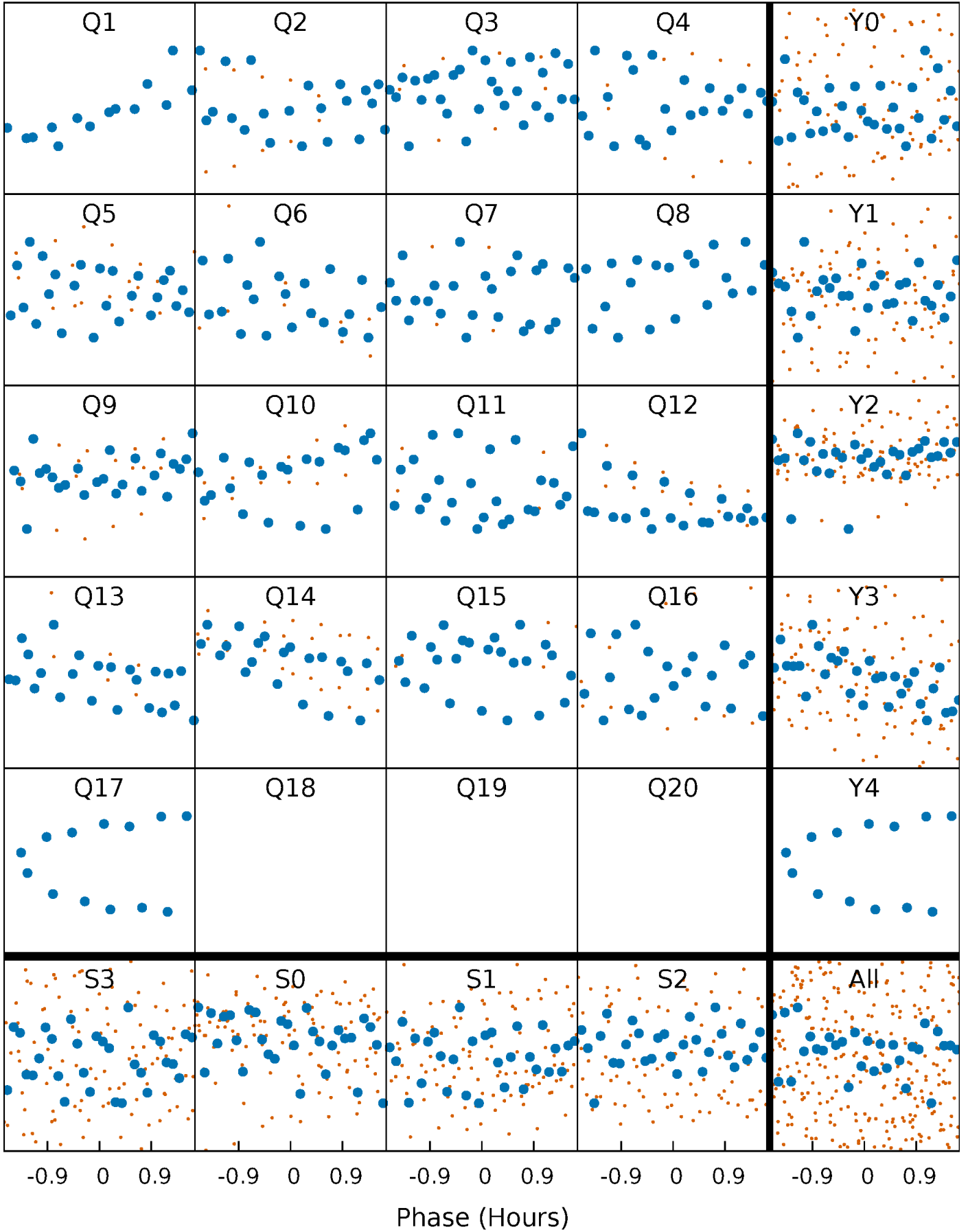
## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)





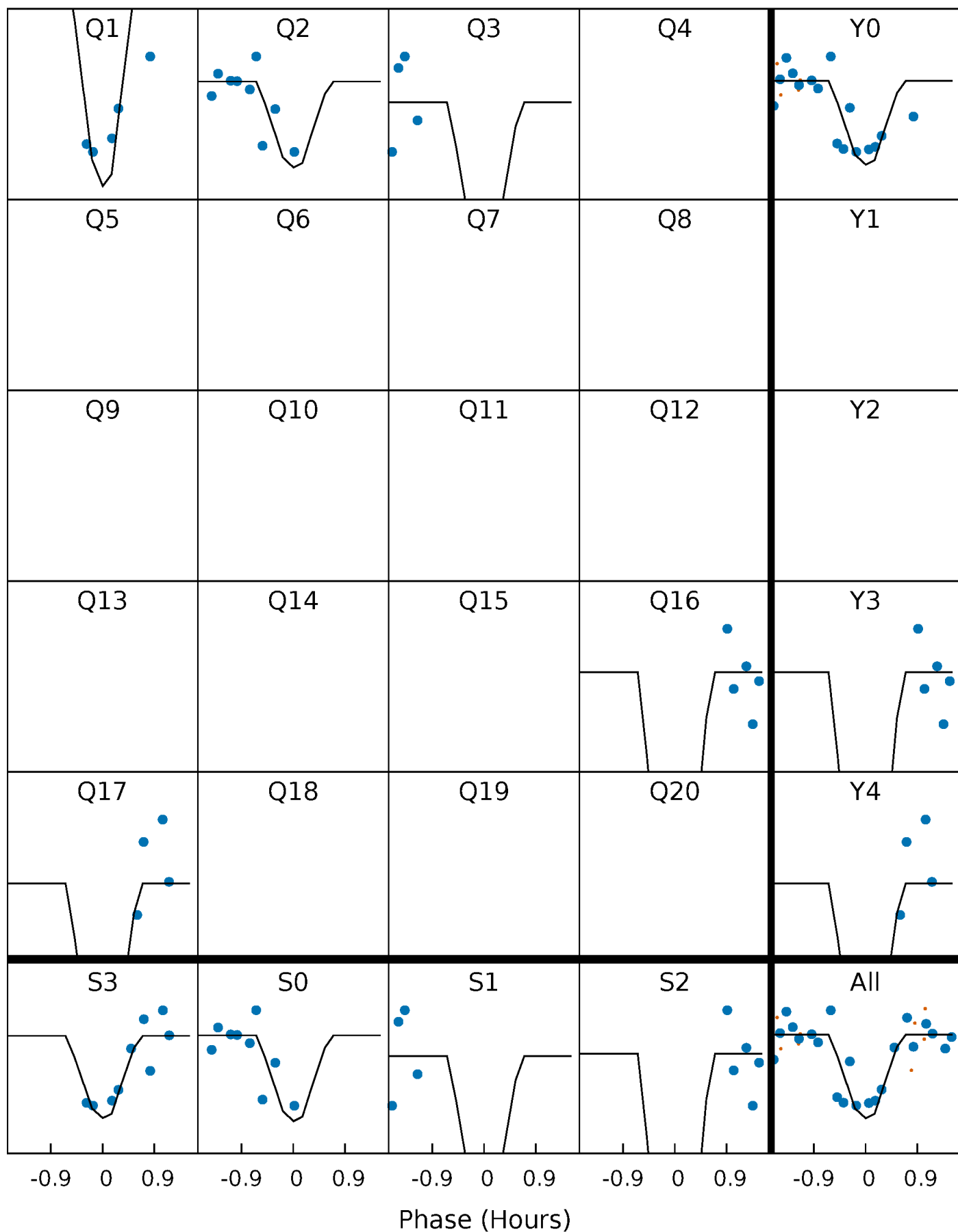
# PDC Quarter-Phased Transit Curves

TCE 008955867-04   P= 21.298852 Days    $T_0=133.113658$  (BKJD)



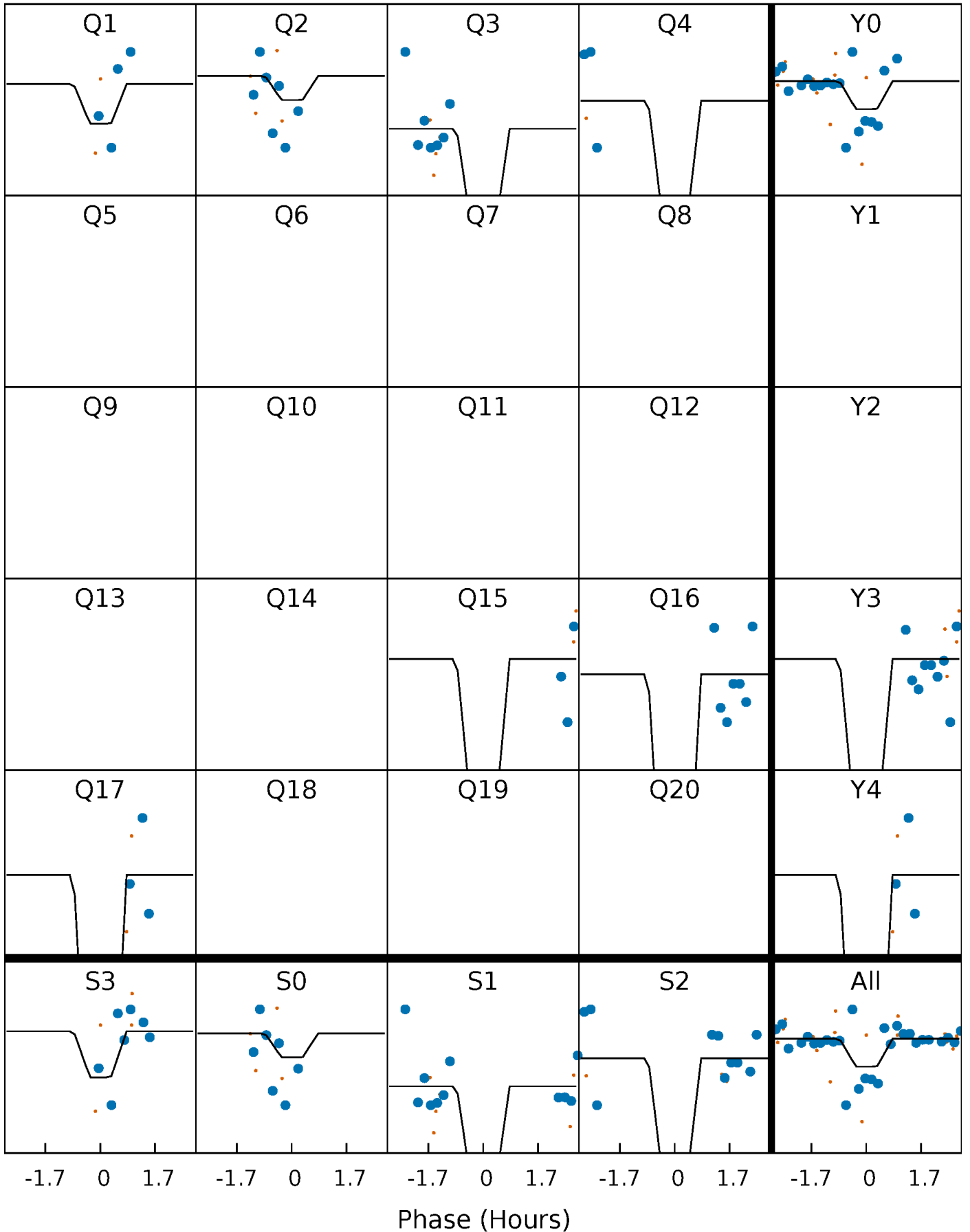
# DV Quarter-Phased Transit Curves

TCE 008955867-04   P= 21.298852 Days    $T_0=133.113658$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

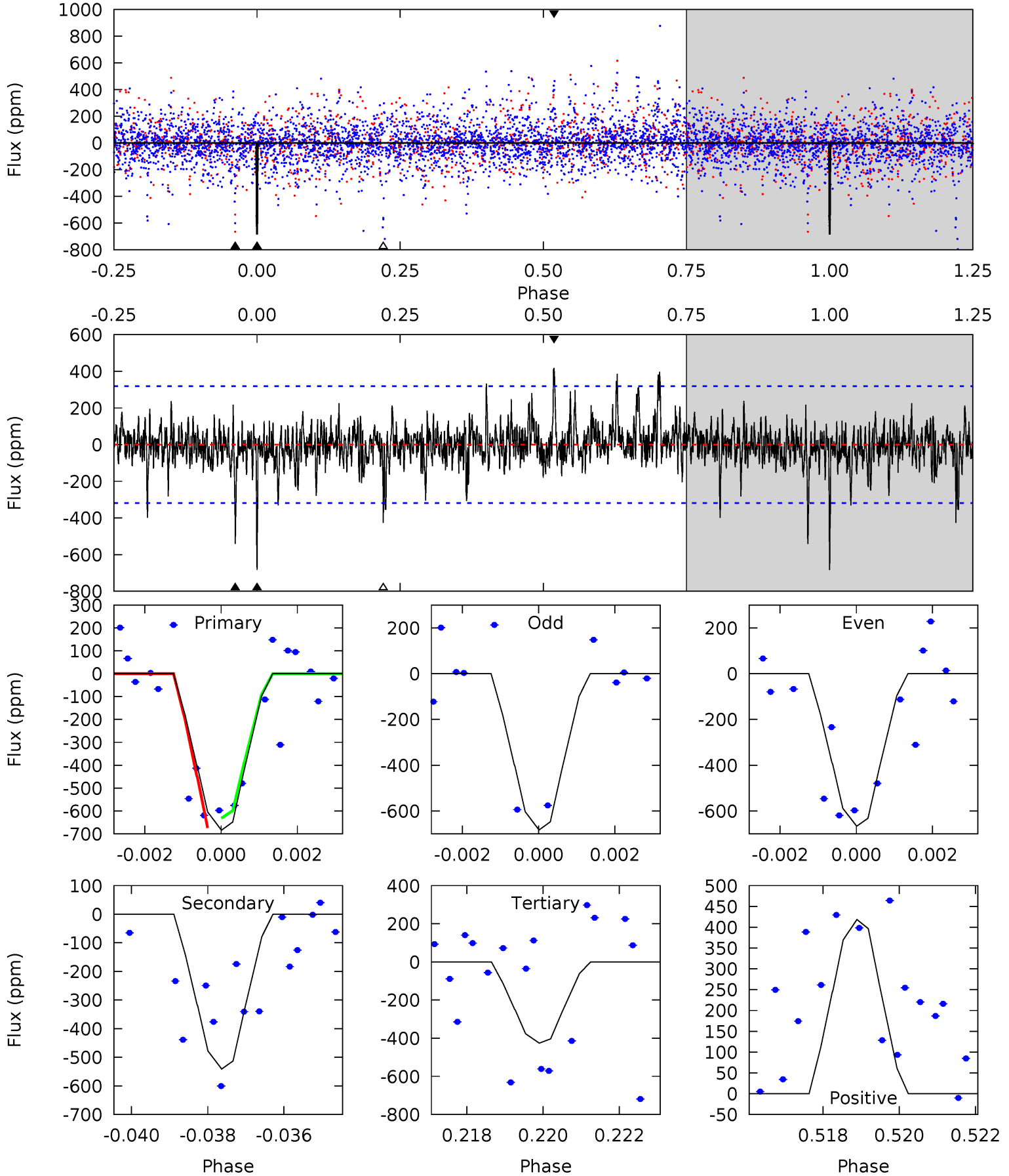
TCE 008955867-04   P= 21.298801 Days    $T_0=133.105874$  (BKJD)



# DV Model-Shift Uniqueness Test

008955867-04, P = 21.298852 Days, E = 111.814806 Days

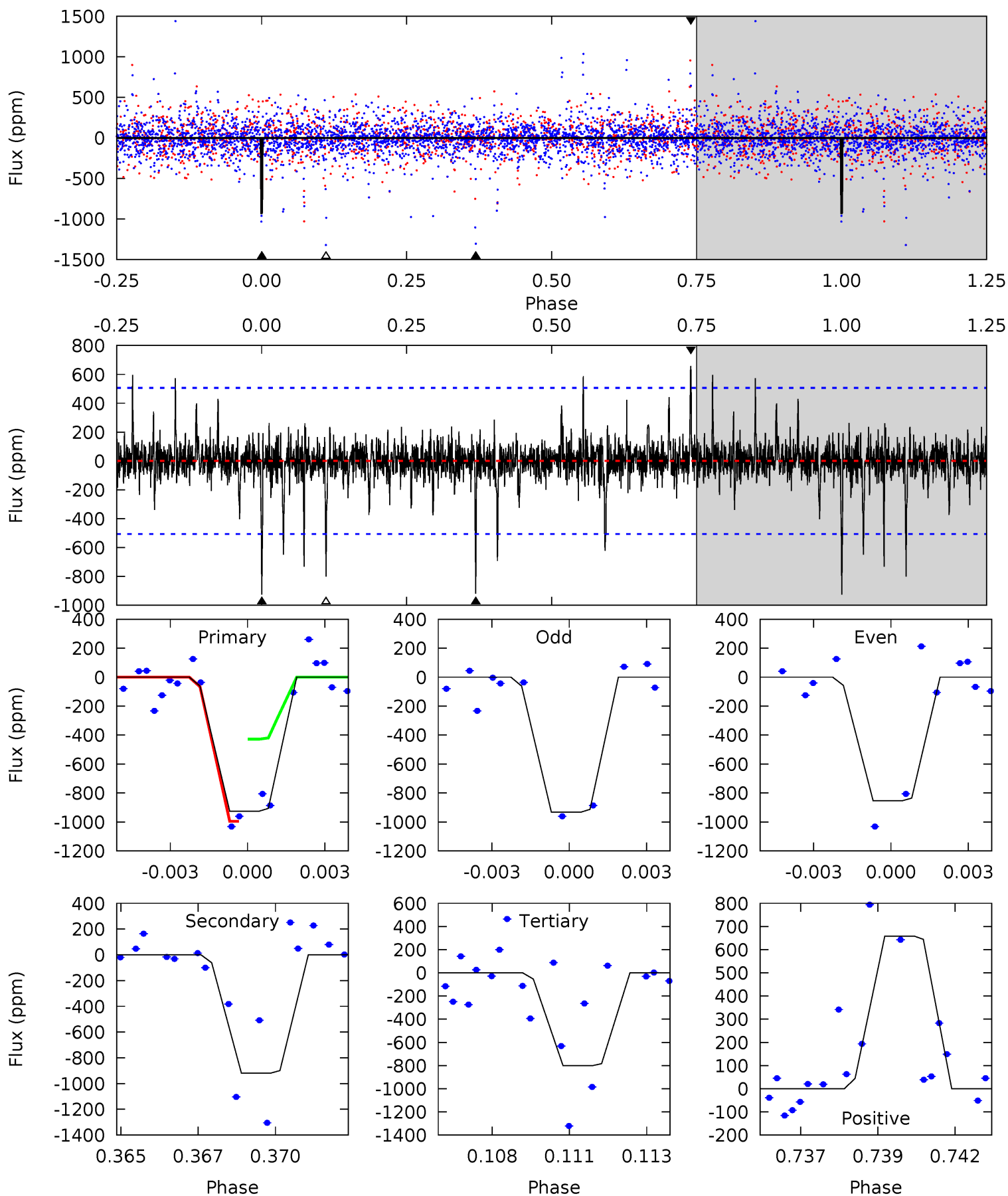
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	9.04	7.11	6.99	5.32	3.09	1.49	4.31	4.43	1.92	2.05	0.12	0.99	0.38	0.36



# Alt Model-Shift Uniqueness Test

008955867-04, P = 21.298801 Days, E = 111.807073 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
9.67	9.60	8.37	6.88	5.28	3.02	1.08	1.30	2.79	1.23	2.72	0.40	0.97	0.42	0





### Stellar Parameters For KIC 008955867

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7074^{+177}_{-212}$	$4.473^{+0.027}_{-0.229}$	$-0.500^{+0.250}_{-0.350}$	$1.006^{+0.386}_{-0.043}$	$1.171^{+0.143}_{-0.117}$	$1.621^{+0.174}_{-0.975}$
	+3%/-3%	+1%/-5%	+50%/-70%	+38%/-4%	+12%/-10%	+11%/-60%
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 008955867-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-541 \pm 60$	$3.52^{+2.53}_{-2.12}$	$1145^{+91}_{-53}$	$6302^{+4916}_{-1390}$	$600^{+3114}_{-401}$
Alt.	$-919 \pm 96$	$3.17^{+2.40}_{-1.97}$	$1146^{+93}_{-50}$	$7736^{+8826}_{-1953}$	$1249^{+7245}_{-851}$

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

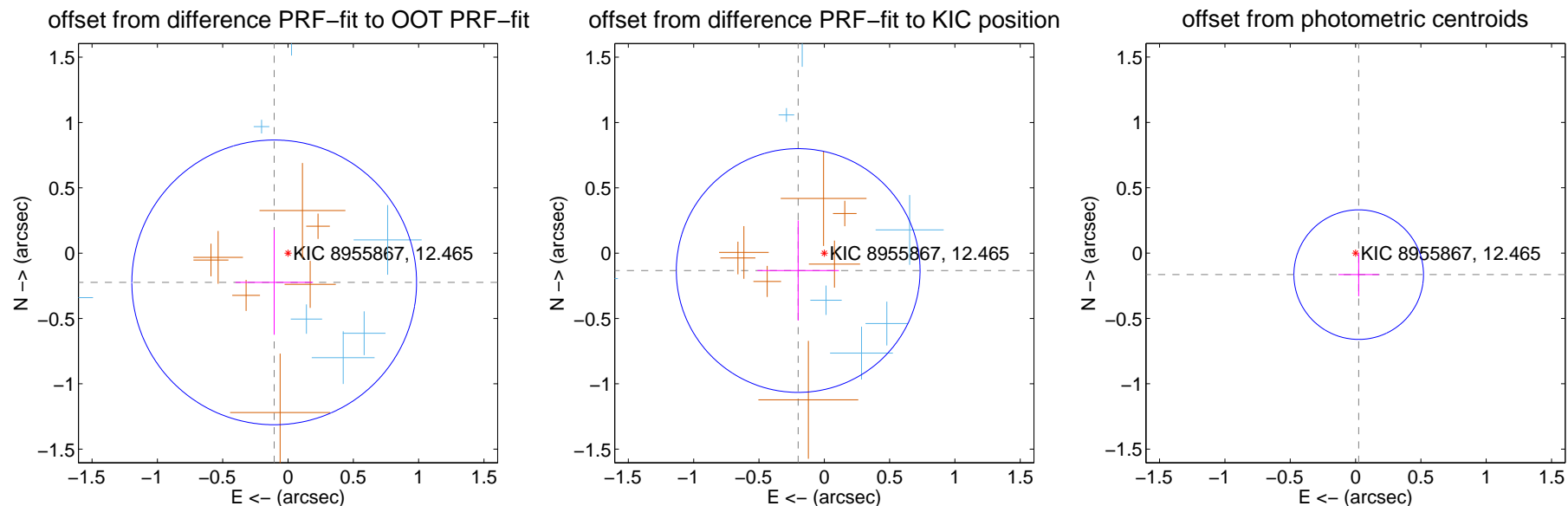
## DV Centroid Data

Supplemental centroid analysis for 008955867-04. Kepler magnitude: 12.46. Transit SNR 9.06

There are 7 quarters with good PRF difference image offsets

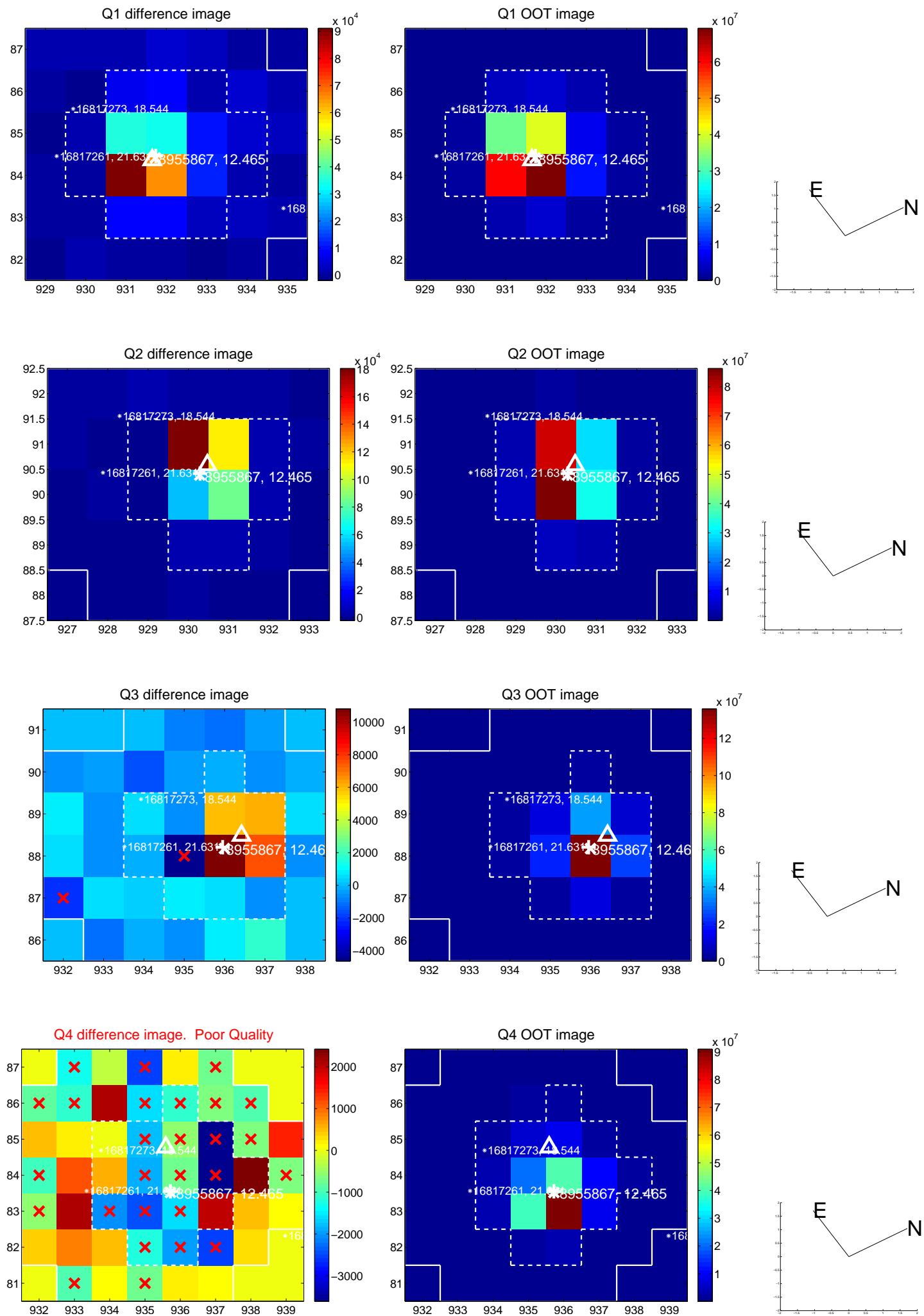
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.247 \pm 0.363$	0.68	$0.106 \pm 0.297$	$-0.224 \pm 0.401$
PRF-fit source offset from KIC position	$0.240 \pm 0.311$	0.77	$0.200 \pm 0.312$	$-0.133 \pm 0.383$
photometric centroid source offset	$0.17 \pm 0.17$	1.01	$-0.02 \pm 0.16$	$-0.16 \pm 0.17$

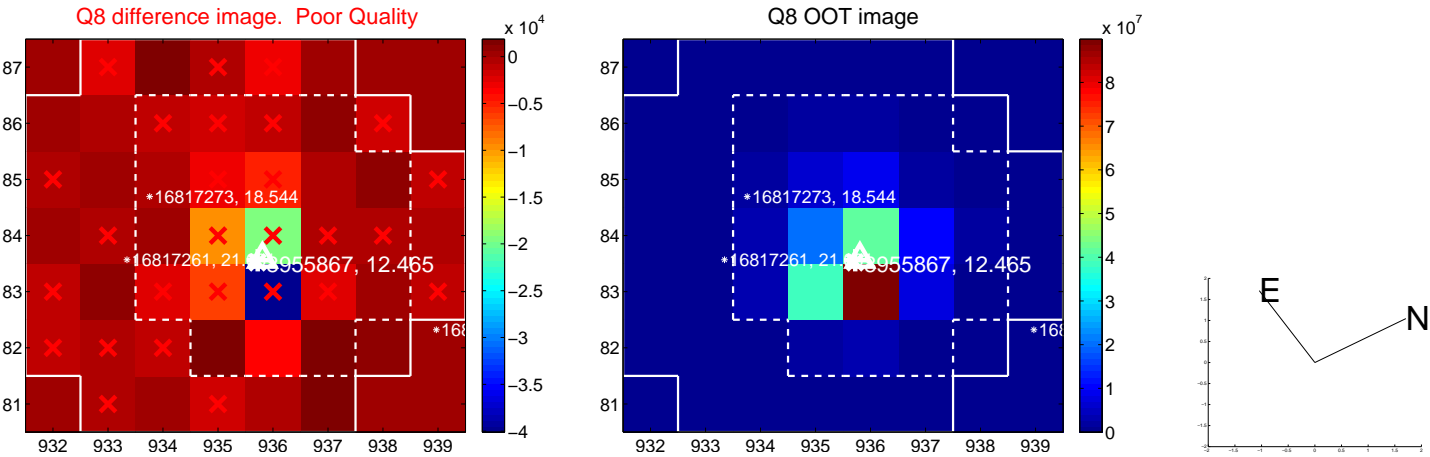
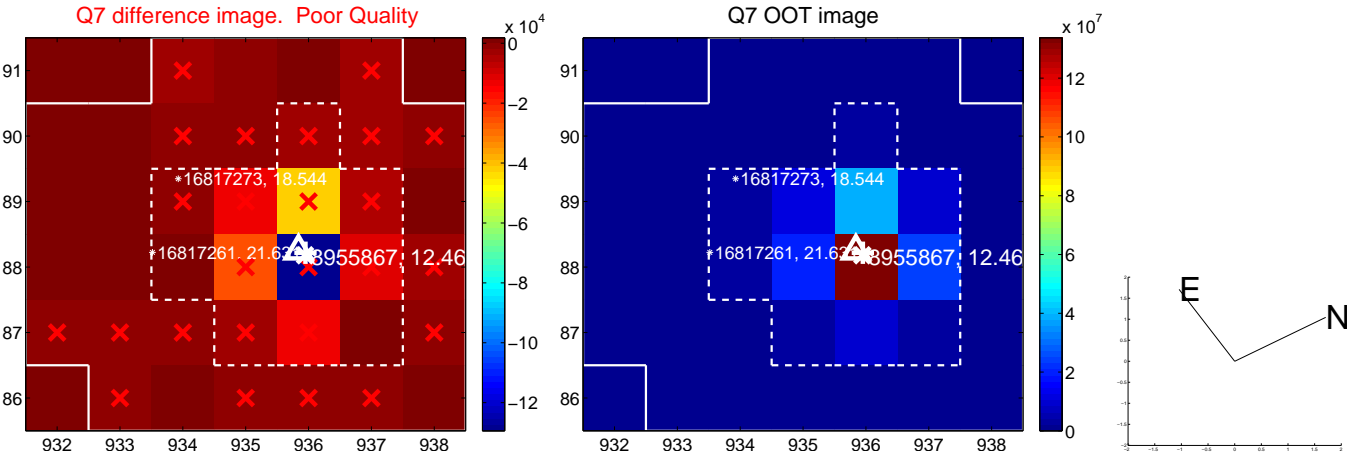
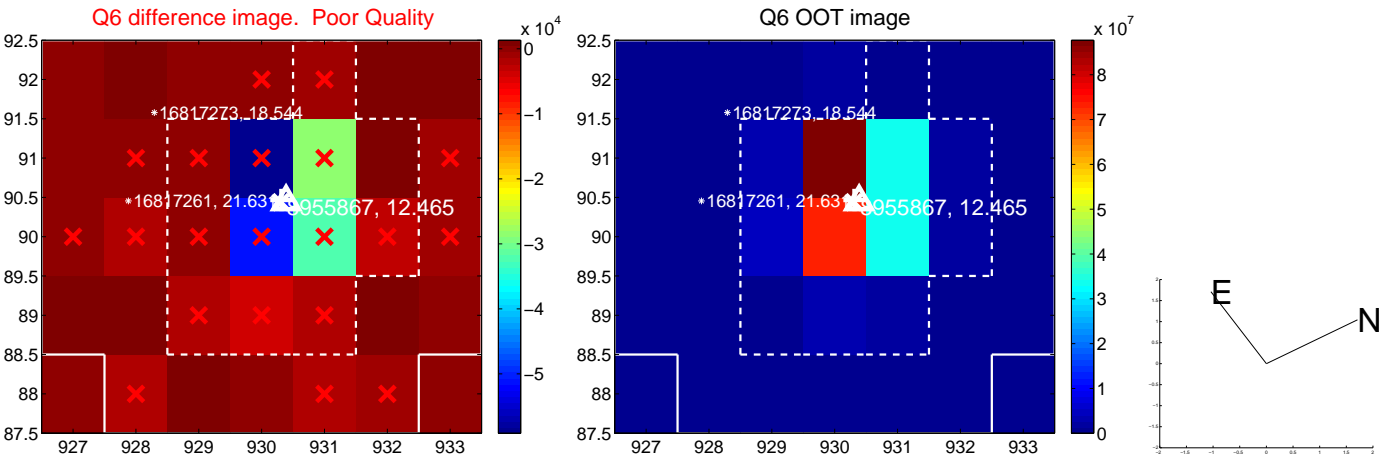
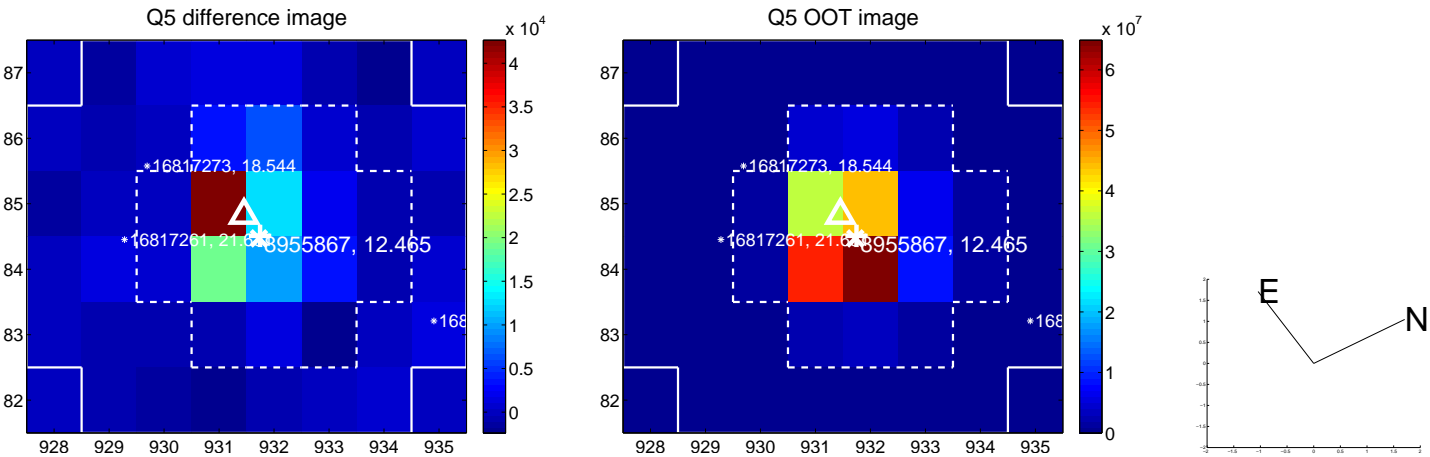


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

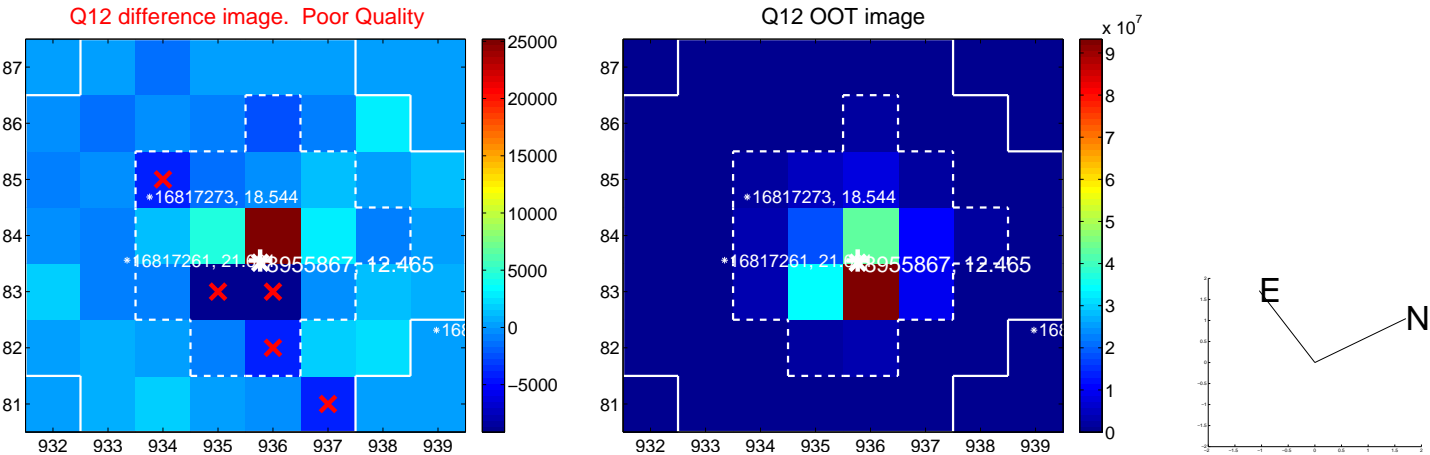
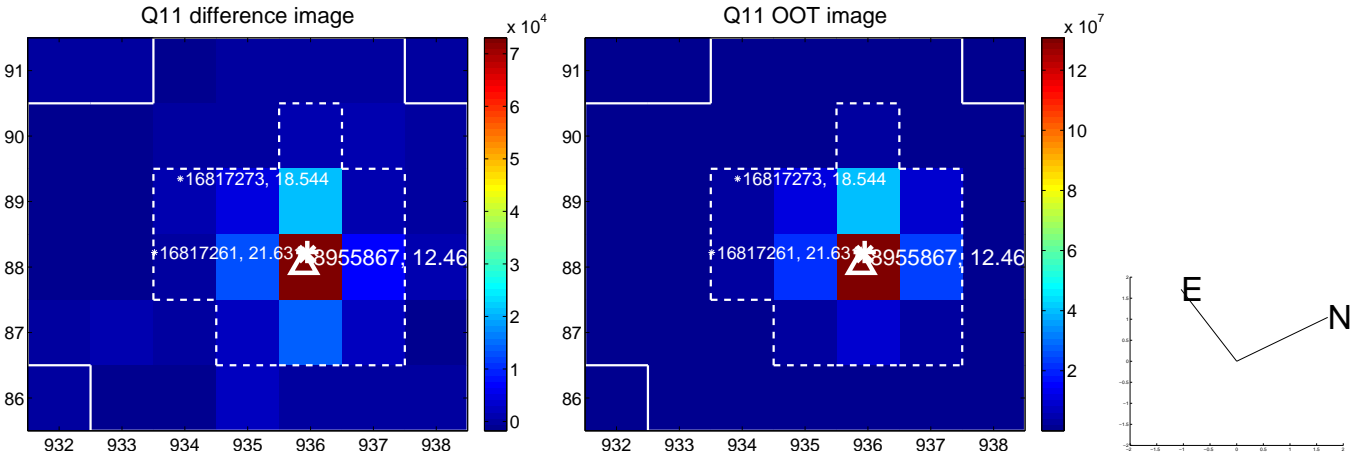
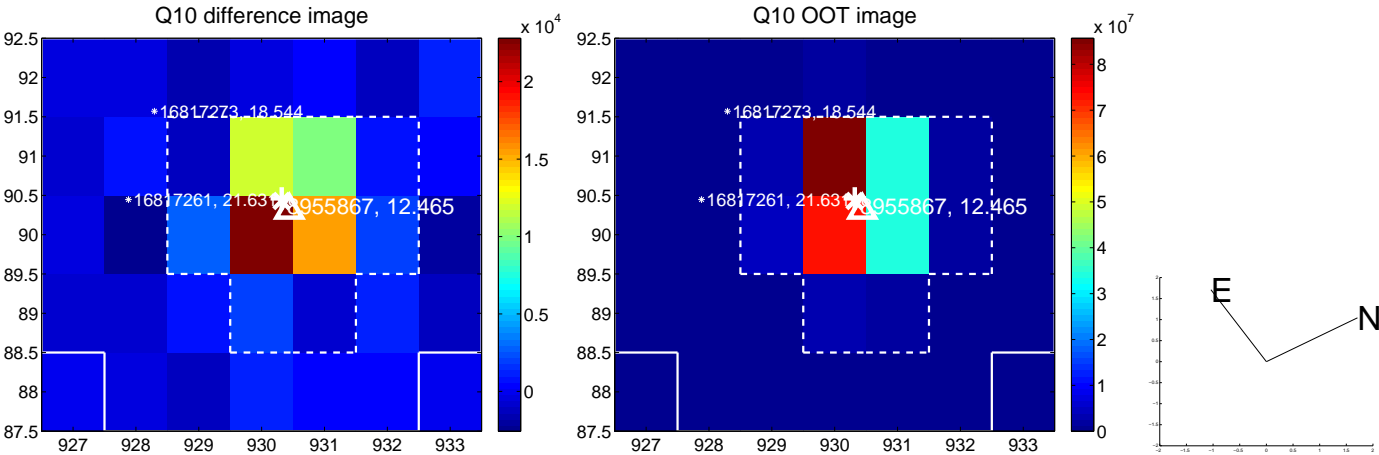
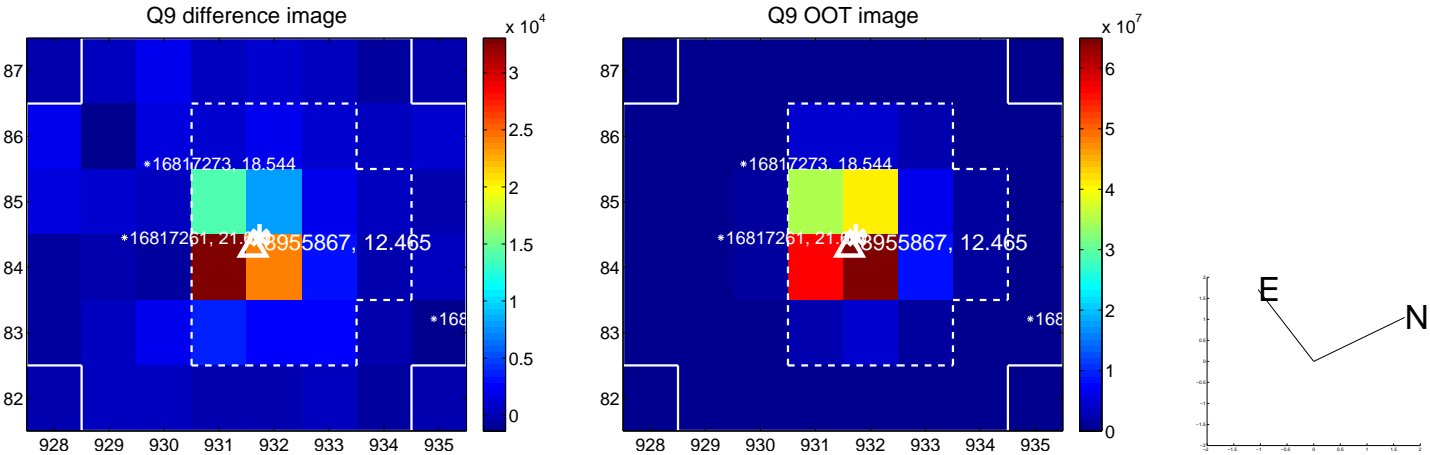
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



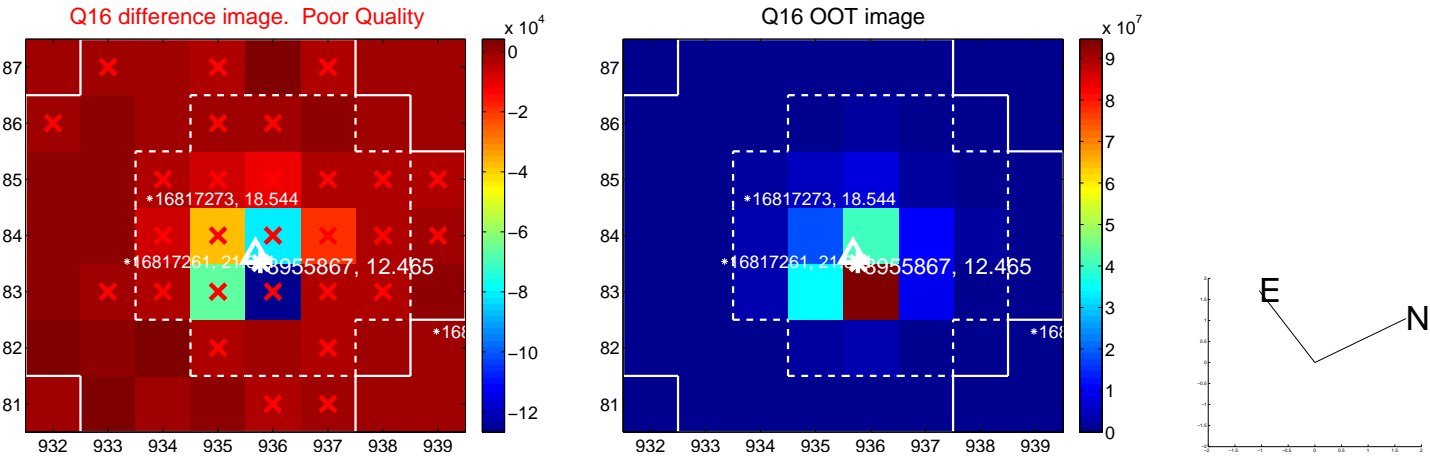
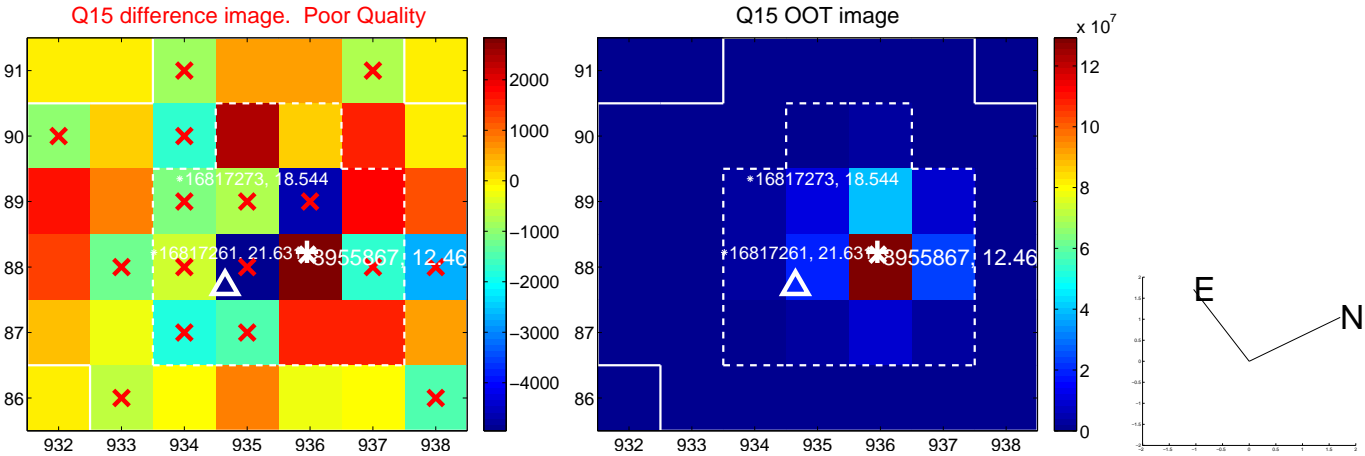
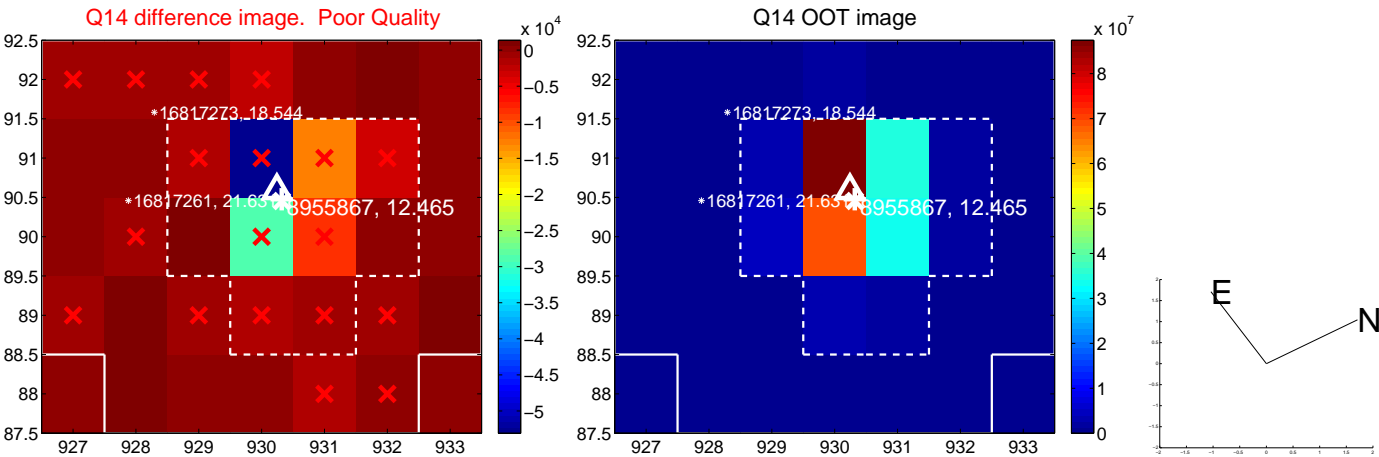
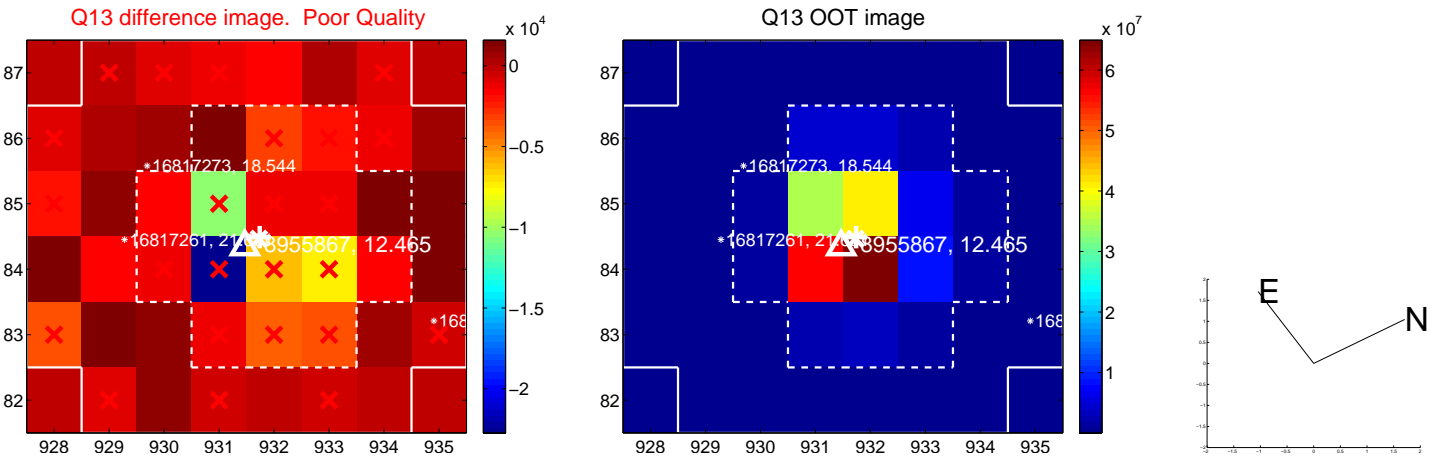
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

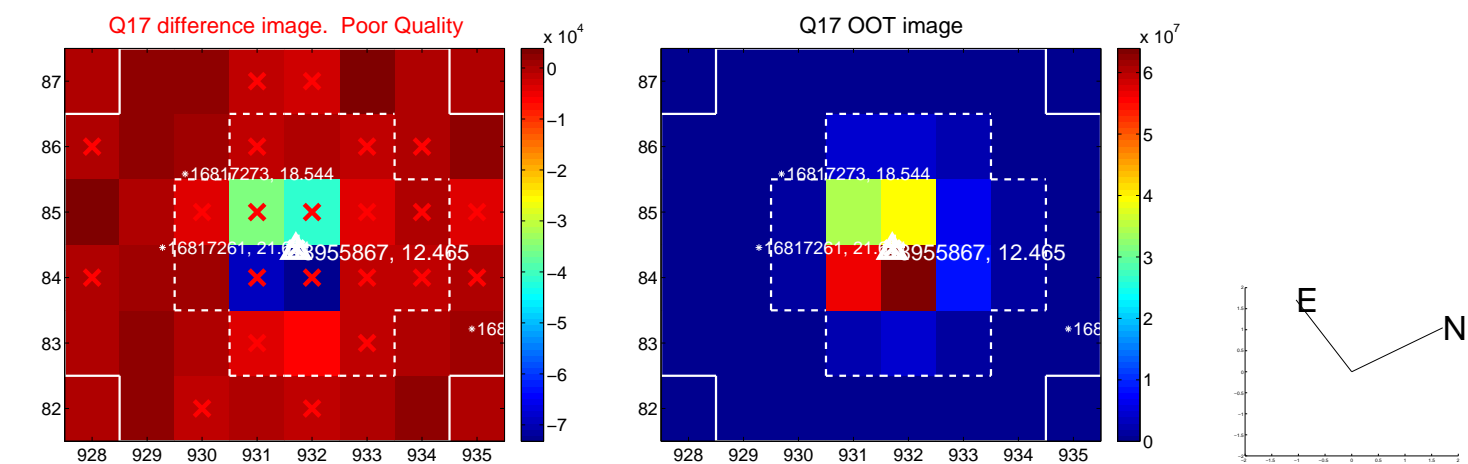


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

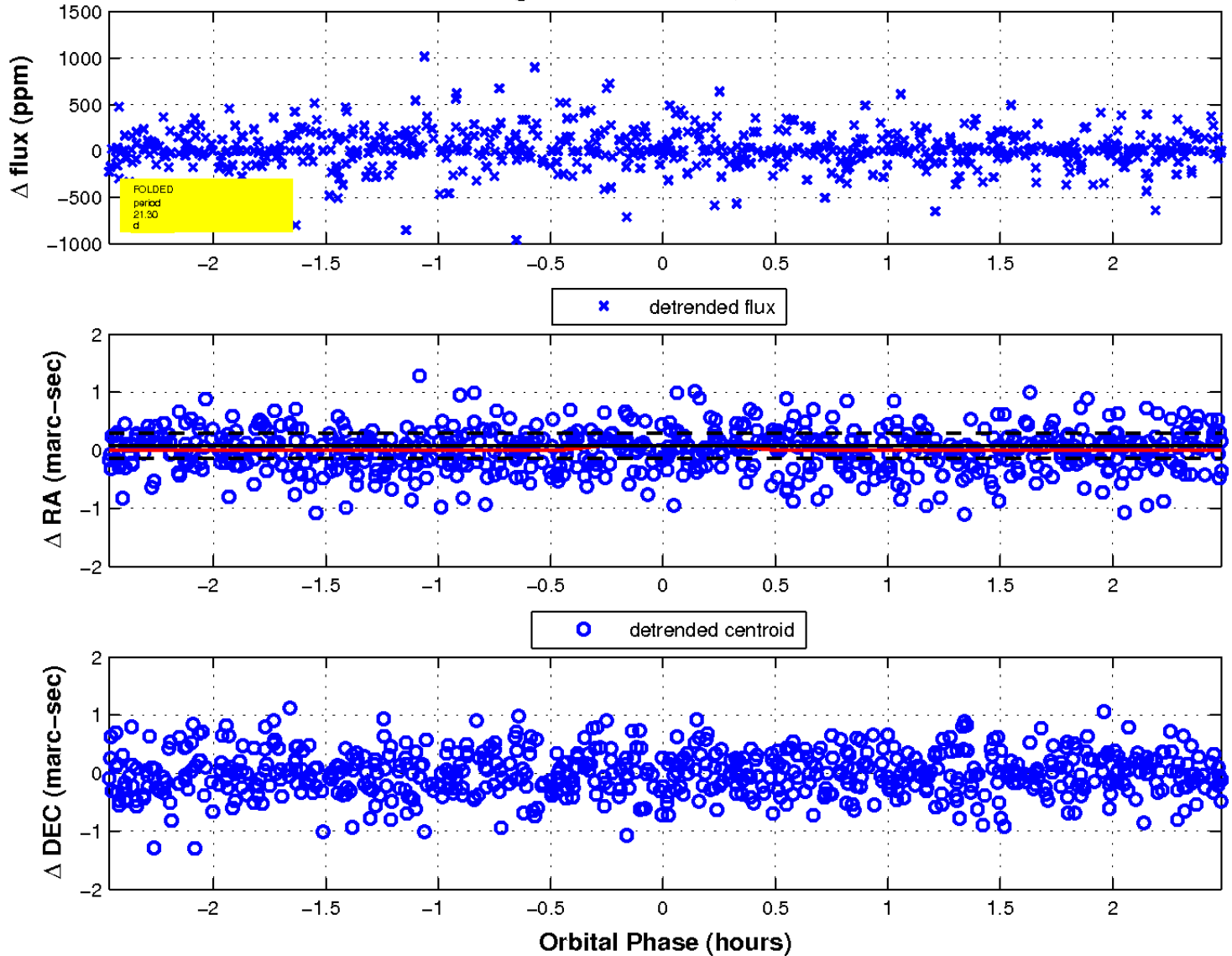




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

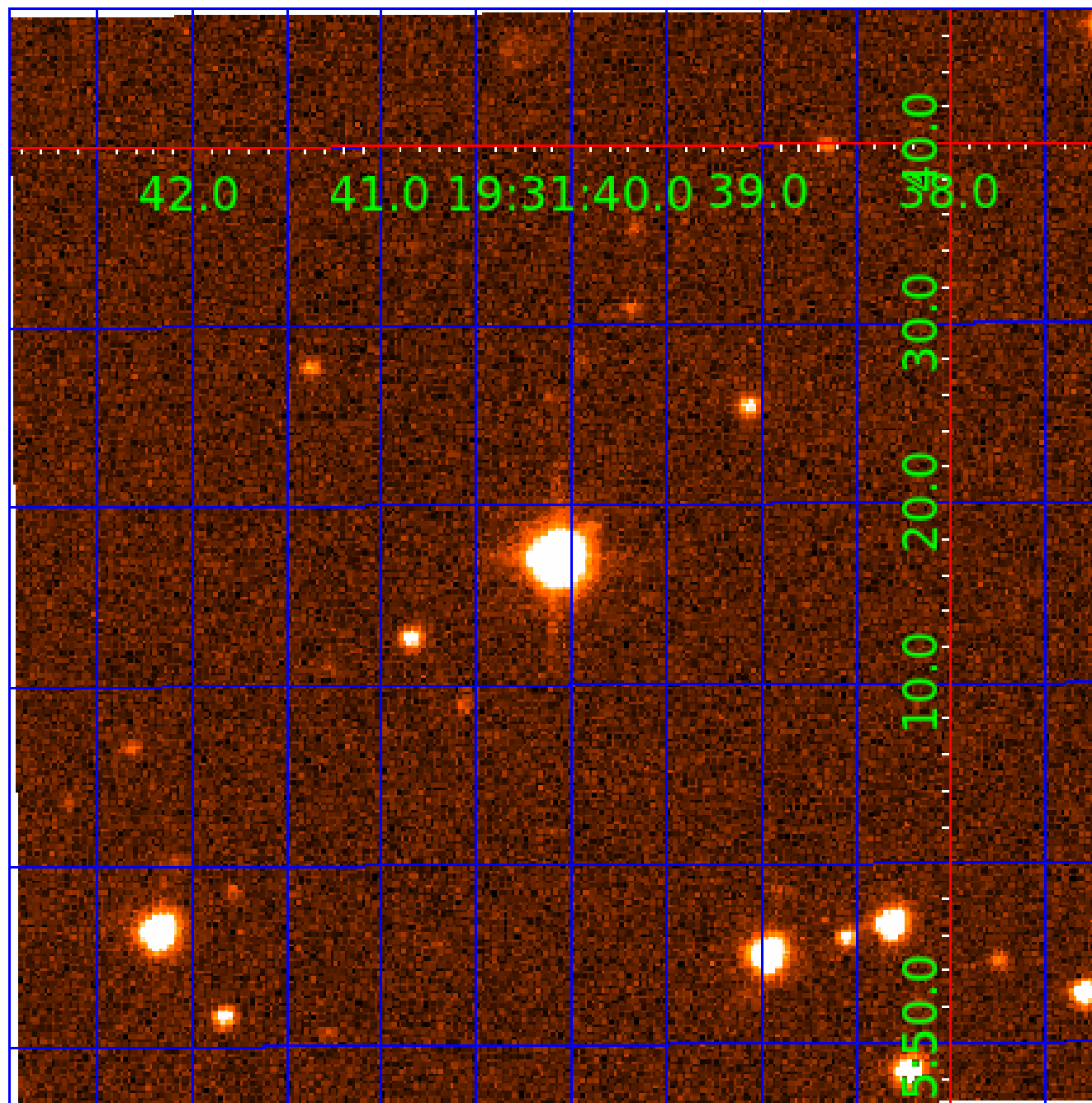


fluxWeightedCentroids, Planet 4 of 6



UKIRT Image

Declination



# KIC 008955867

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008955867-01	OBS	No	0.788426	131.941447	5.0	5.752	9.1	1.3	1.01	7074	0.23	7649.01
008955867-03	OBS	No	17.351355	137.848098	567.5	2.251	10.4	10.0	1.01	7074	4.57	124.03
008955867-04	OBS	No	21.298852	133.113658	729.9	0.829	9.4	9.1	1.01	7074	2.90	94.36
008955867-05	OBS	No	12.952332	132.340972	129.4	1.454	13.0	3.2	1.01	7074	1.37	183.16
008955867-06	OBS	No	26.819647	137.052263	777.5	1.441	9.6	9.0	1.01	7074	3.14	69.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008955867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008955867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008955867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT
008955867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008955867-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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

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

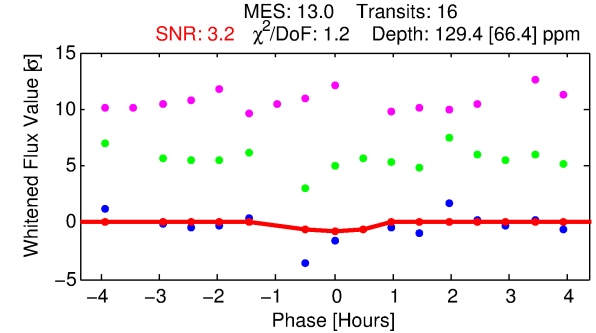
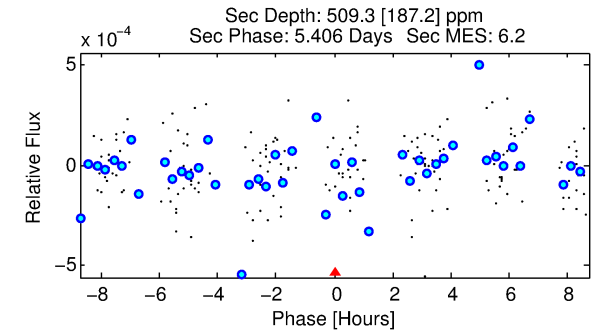
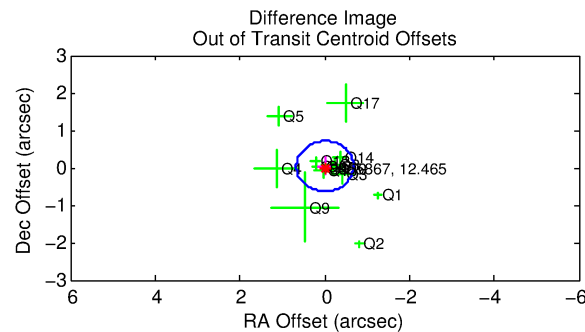
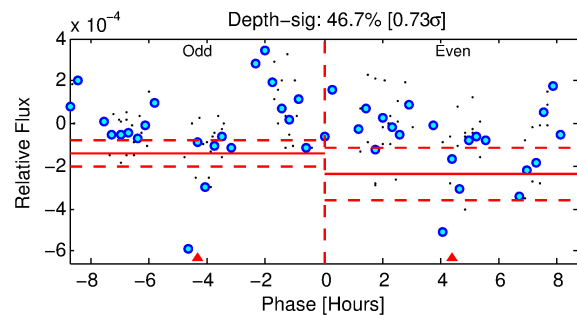
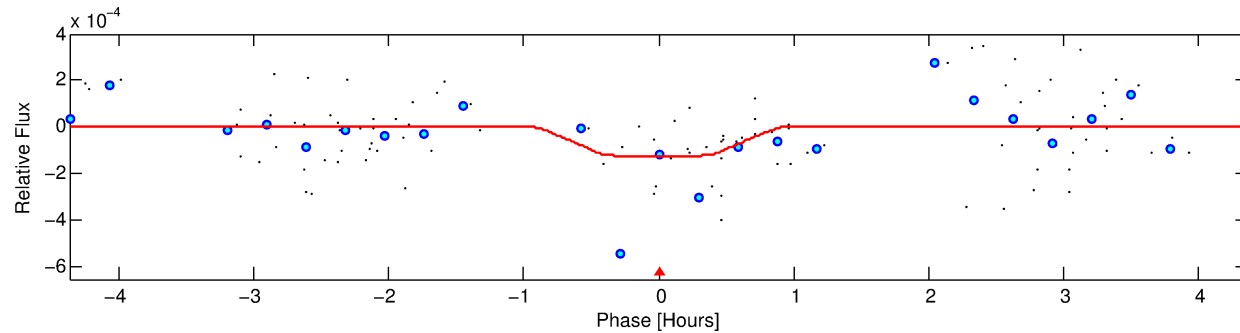
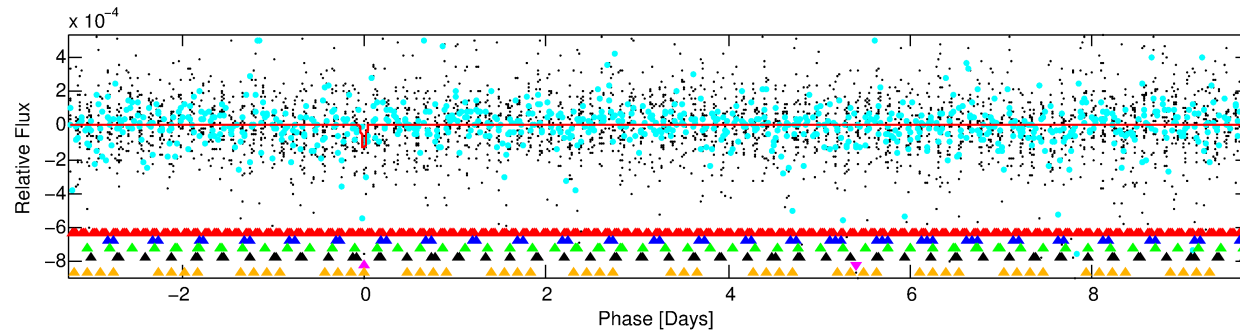
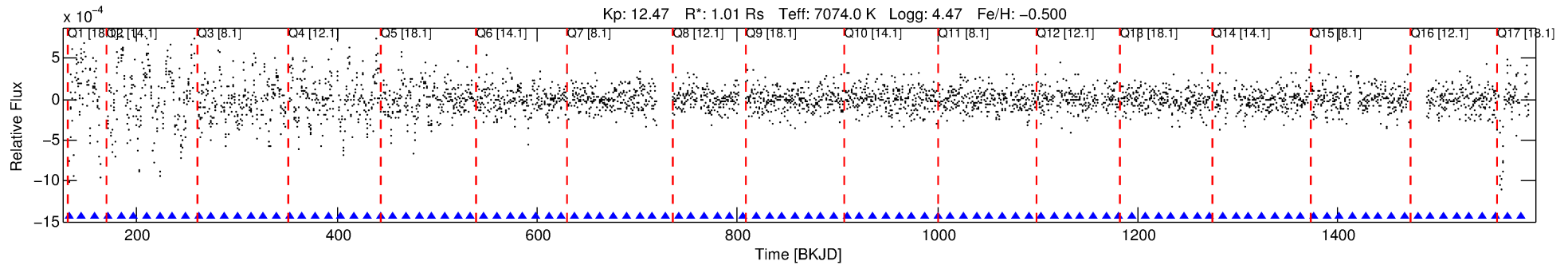
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008955867-05

No Significant Match Found

# DV One-Page Summary

KIC: 8955867 Candidate: 5 of 6 Period: 12.952 d



## DV Fit Results:

Period = 12.95233 [0.00023] d  
Epoch = 132.3410 [0.0198] BKJD  
Rp/R\* = 0.0124 [0.0412]  
a/R\* = 27.48 [584.98]  
b = 0.93 [3.17]  
Seff = 183.16 [82.60]  
Teq = 938 [106] K  
Rp = 1.37 [4.55] Re  
a = 0.1113 [0.0346] AU  
Ag = 1859.48 [12341.01] [0.15 $\sigma$ ]  
Teffp = 9524 [15771] K [0.54 $\sigma$ ]

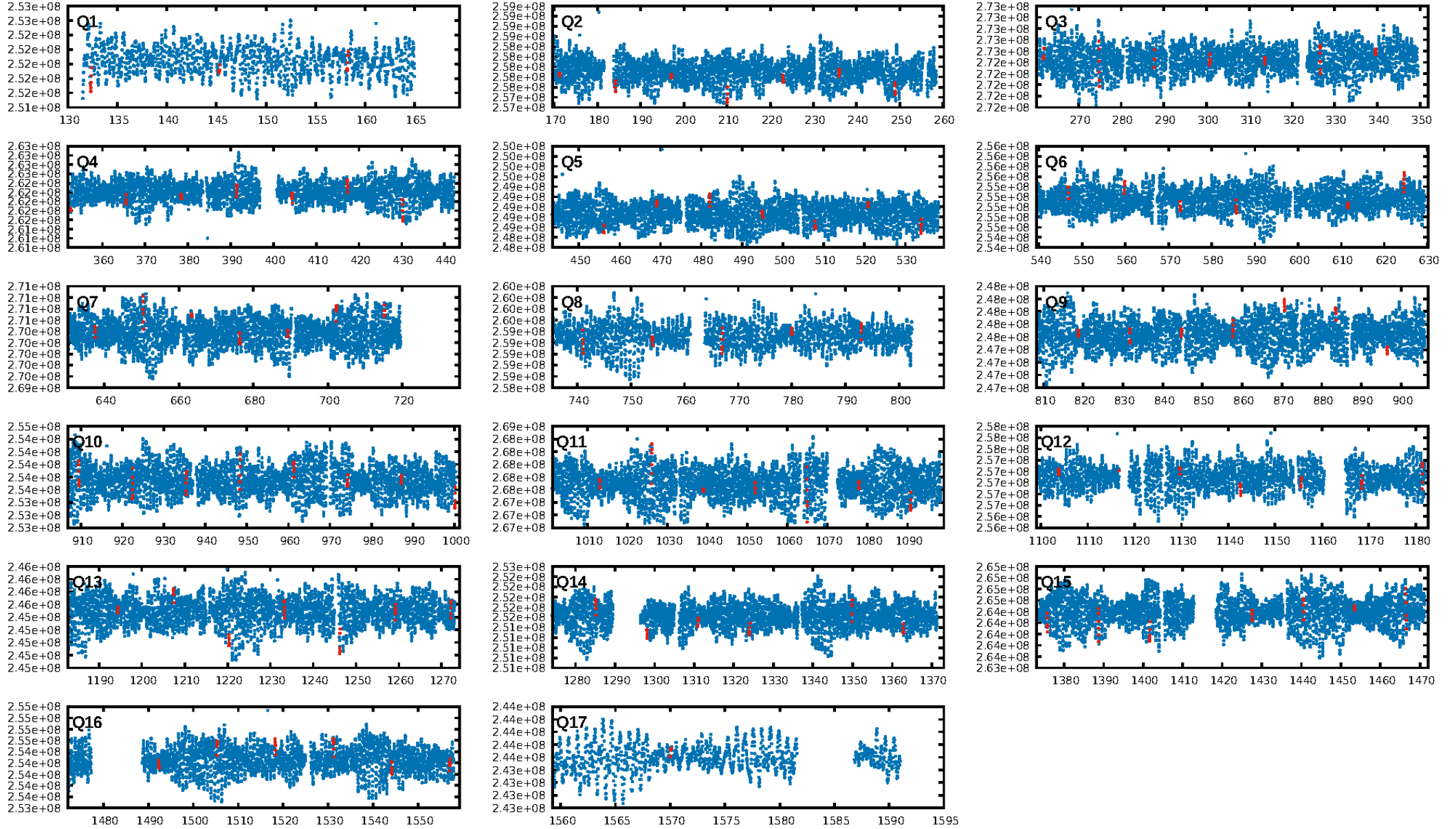
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [49.21 $\sigma$ ]  
LongPeriod-sig: 100.0% [39.39 $\sigma$ ]  
ModelChiSquare2-sig: 44.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.33e-26  
RollingBand-fgt: 1.00 [15/15]  
GhostDiagnostic-chr: -0.3204  
Centroid-sig: N/A  
Centroid-so: 1.475 arcsec [2.72 $\sigma$ ]  
OotOffset-rm: 0.036 arcsec [0.16 $\sigma$ ]  
OotOffset-st: 4/3/3/5 [15]  
KicOffset-rm: 0.160 arcsec [0.68 $\sigma$ ]  
KicOffset-st: 4/3/3/5 [15]  
DiffImageQuality-fgm: 0.60 [9/15]  
DiffImageOverlap-fno: 0.82 [14/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:24:10 Z

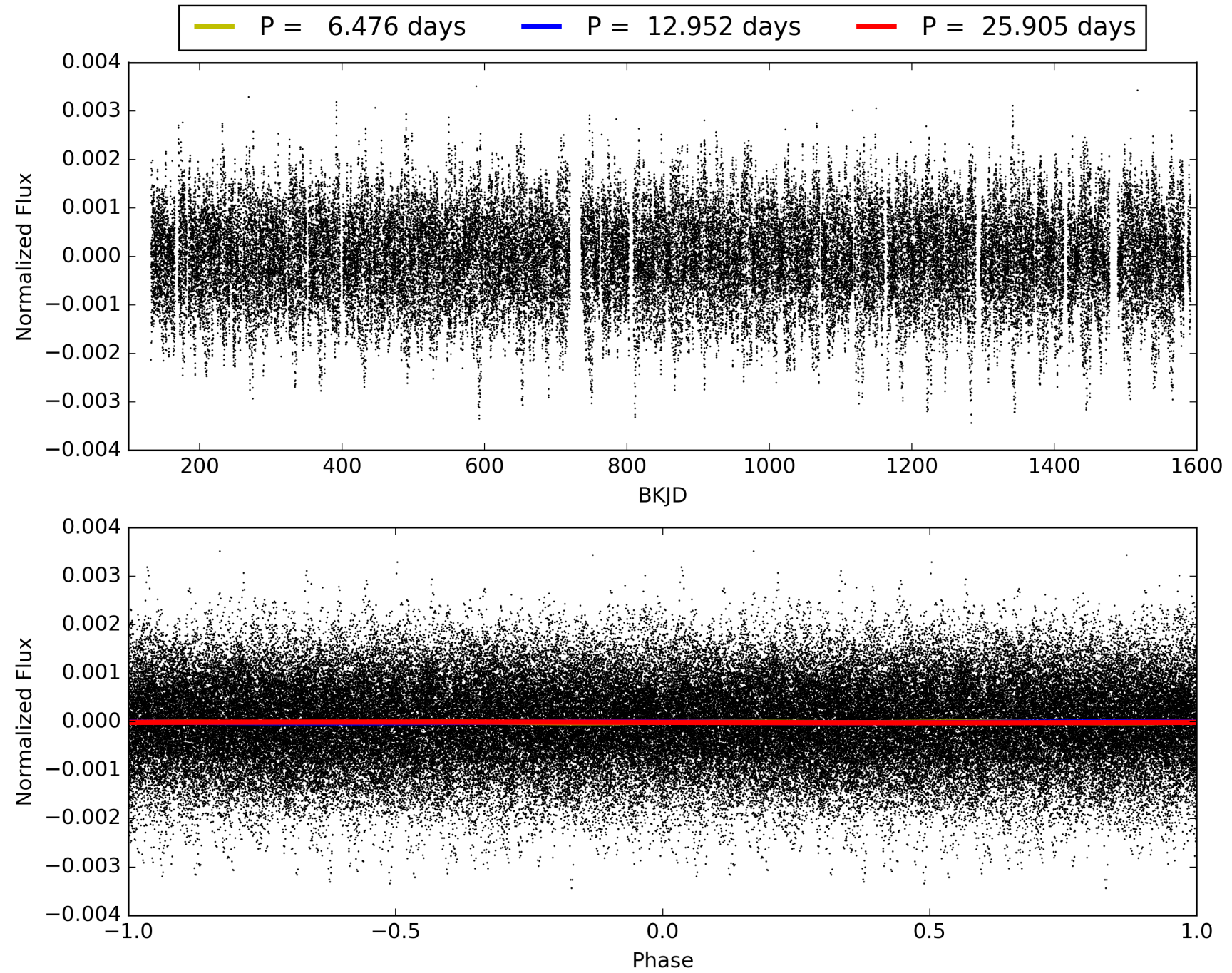
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008955867-05, PDC Light Curves





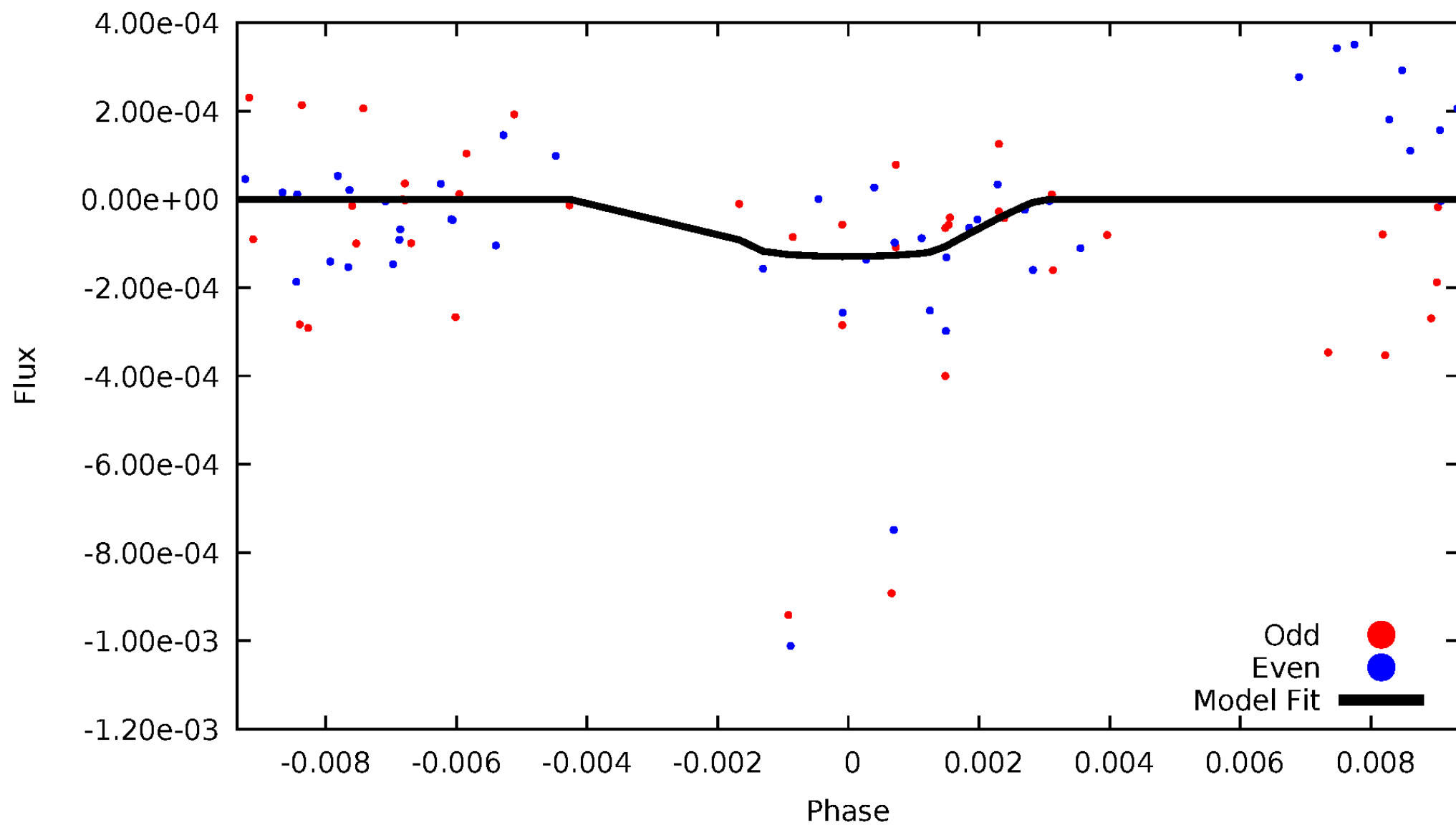
TCE 008955867-05





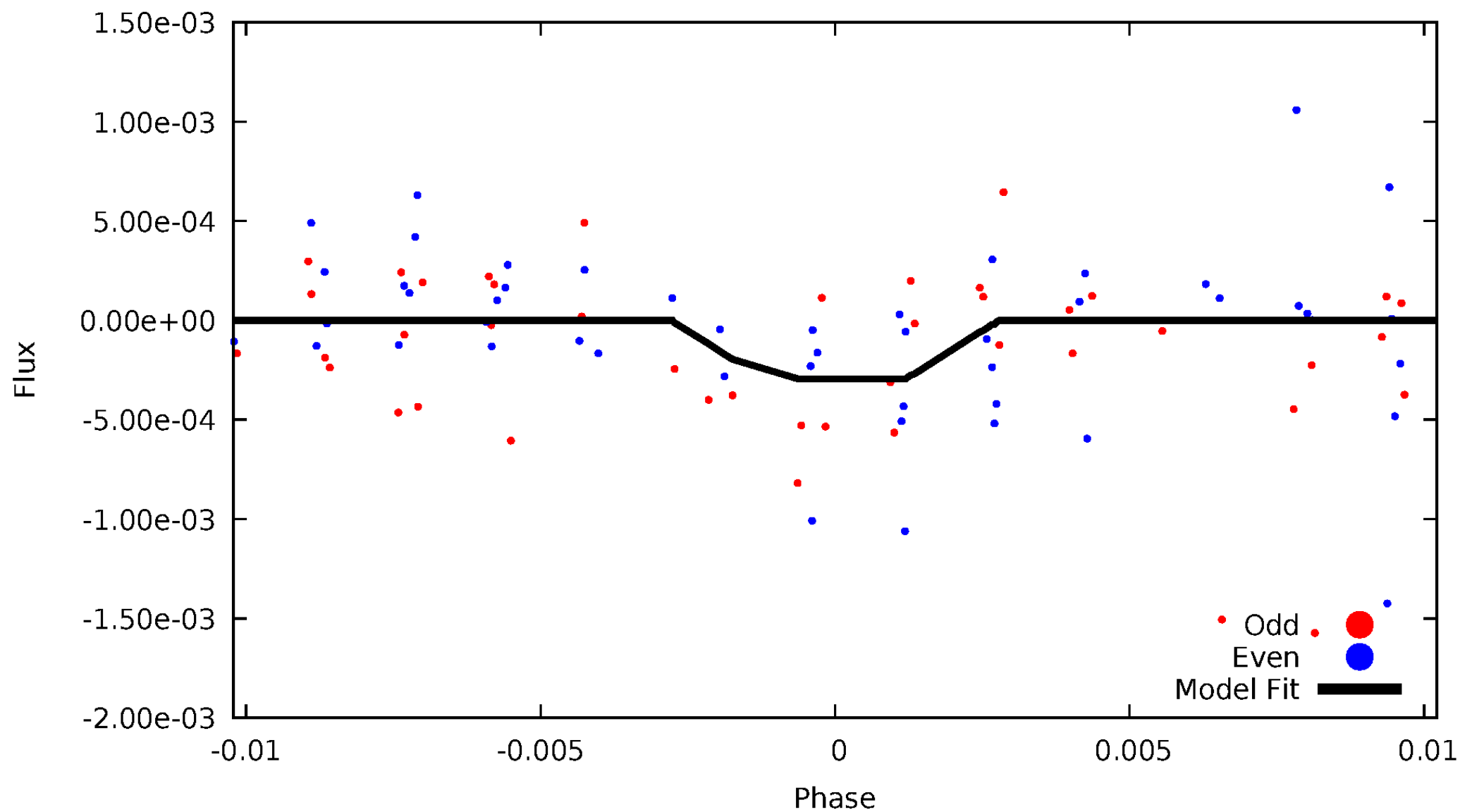
# DV Odd/Even

TCE 008955867-05



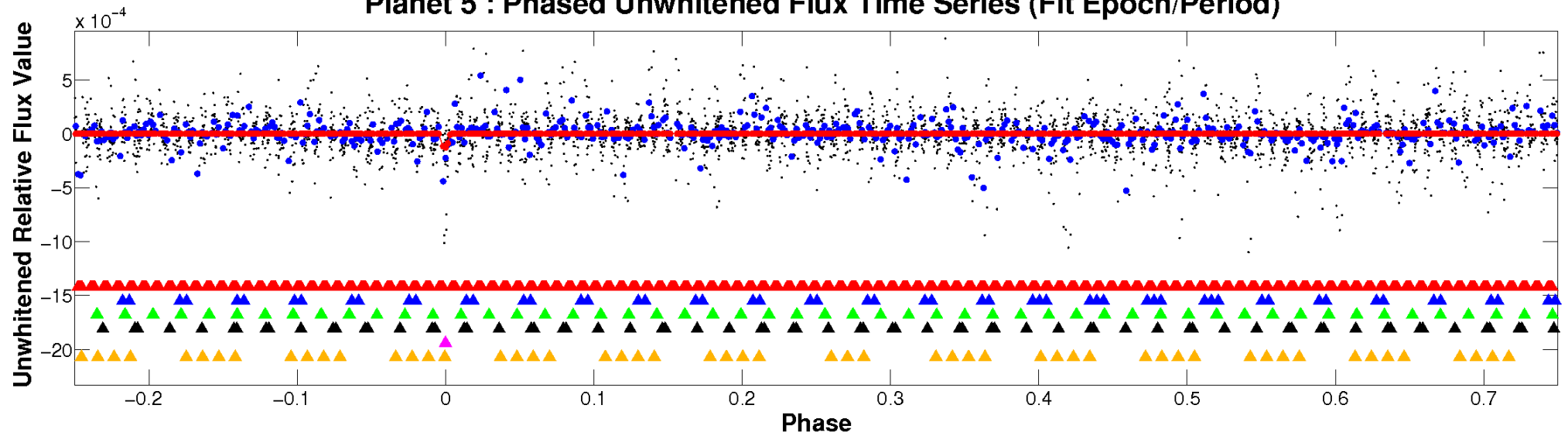
# ALT Odd/Even

TCE 008955867-05

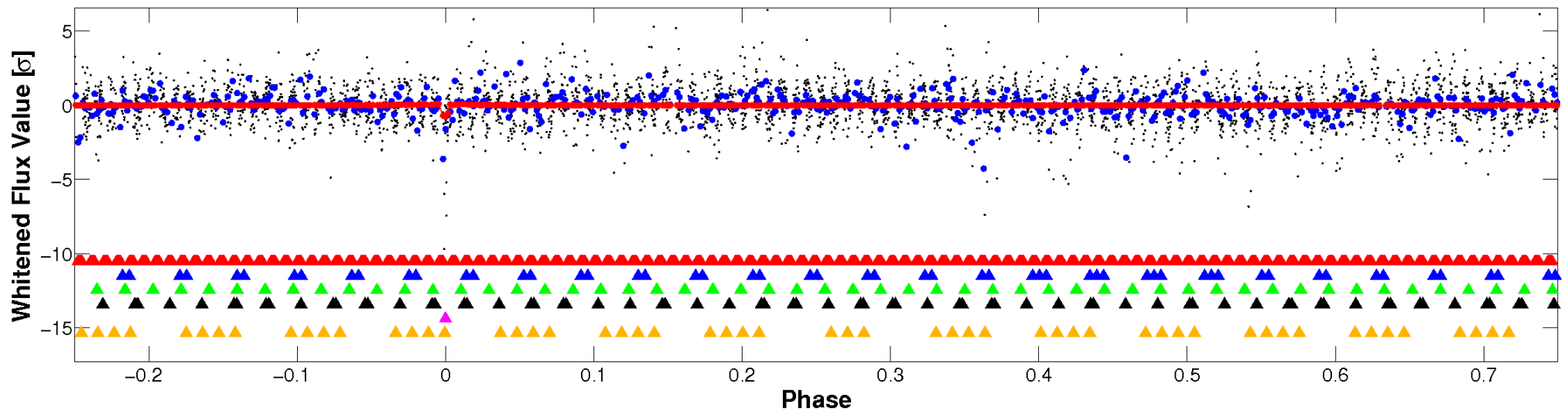


# Non-Whitened Vs. Whitened Light Curve

## Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

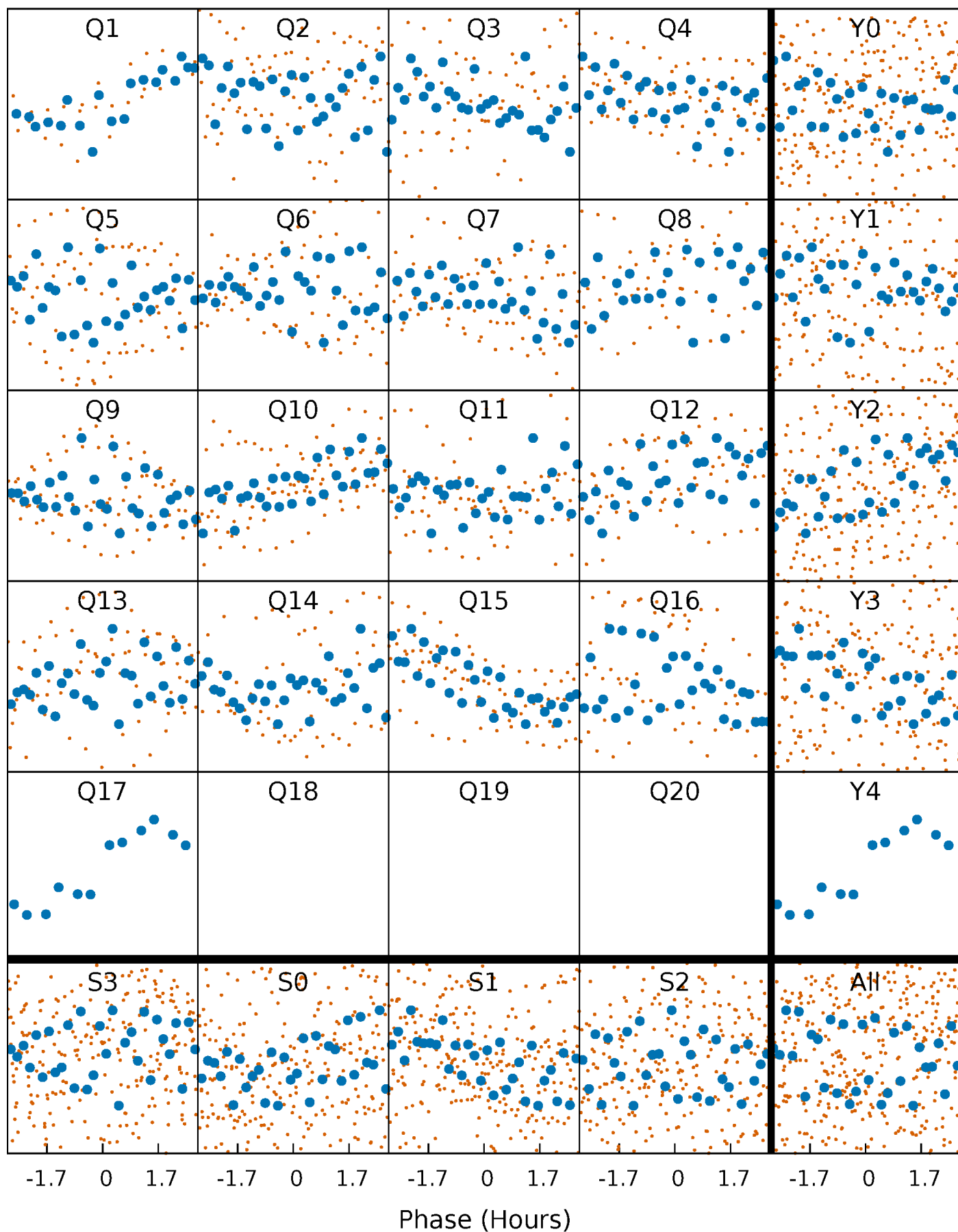


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



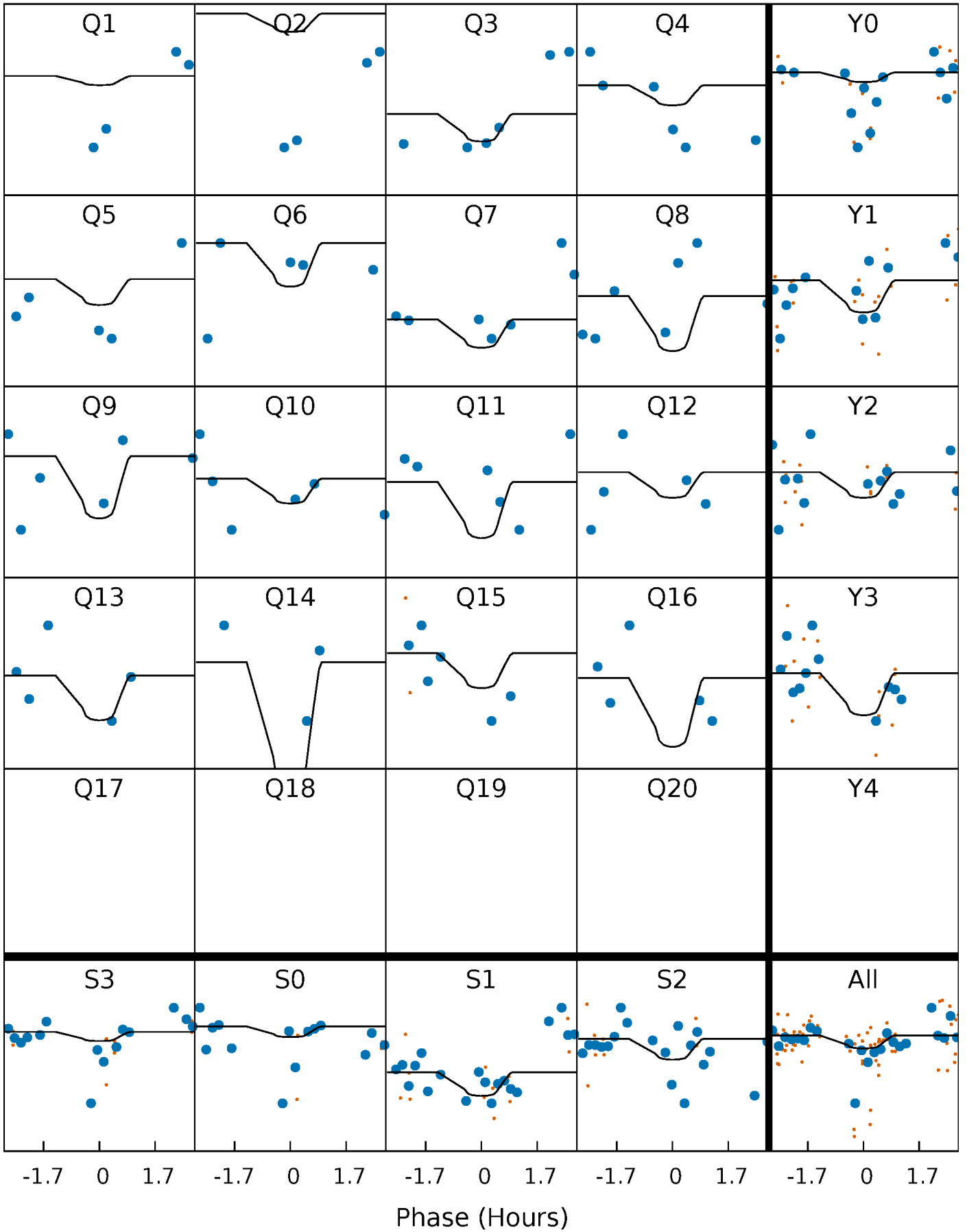
# PDC Quarter-Phased Transit Curves

TCE 008955867-05     $P = 12.952332$  Days     $T_0 = 132.340972$  (BKJD)



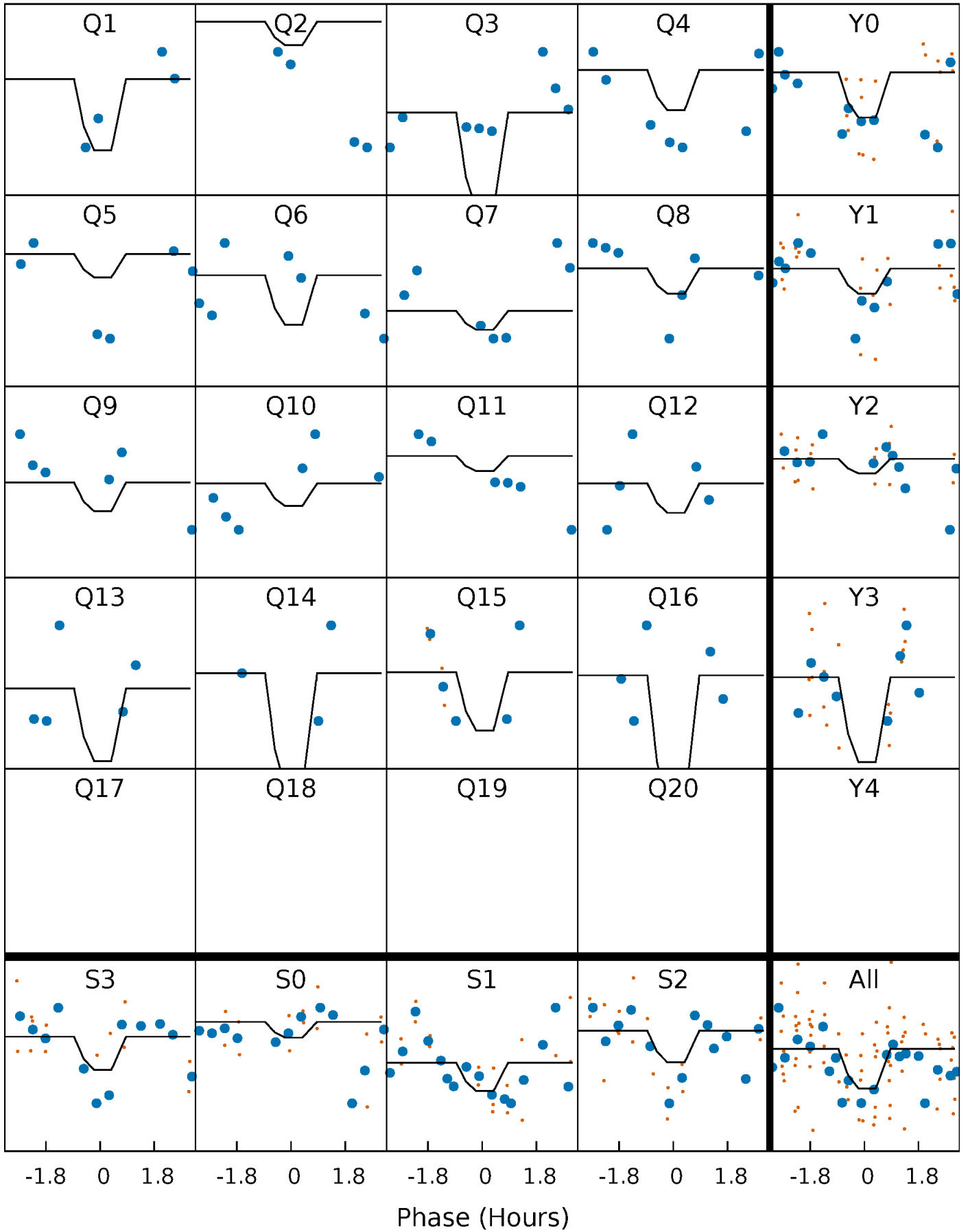
# DV Quarter-Phased Transit Curves

TCE 008955867-05   P= 12.952332 Days    $T_0=132.340972$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008955867-05     $P = 12.952013$  Days     $T_0 = 132.353868$  (BKJD)

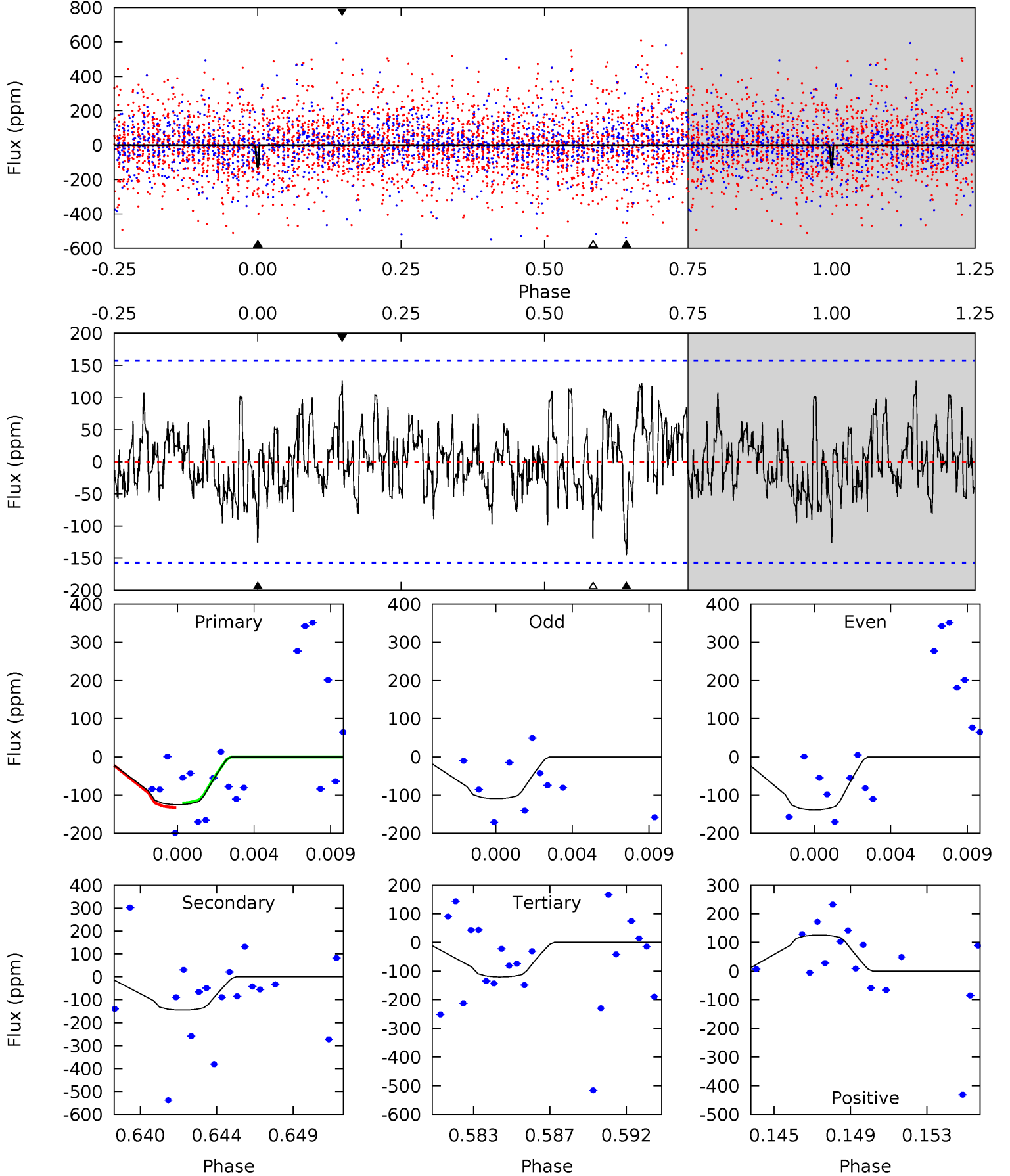




# DV Model-Shift Uniqueness Test

008955867-05, P = 12.952332 Days, E = 119.388640 Days

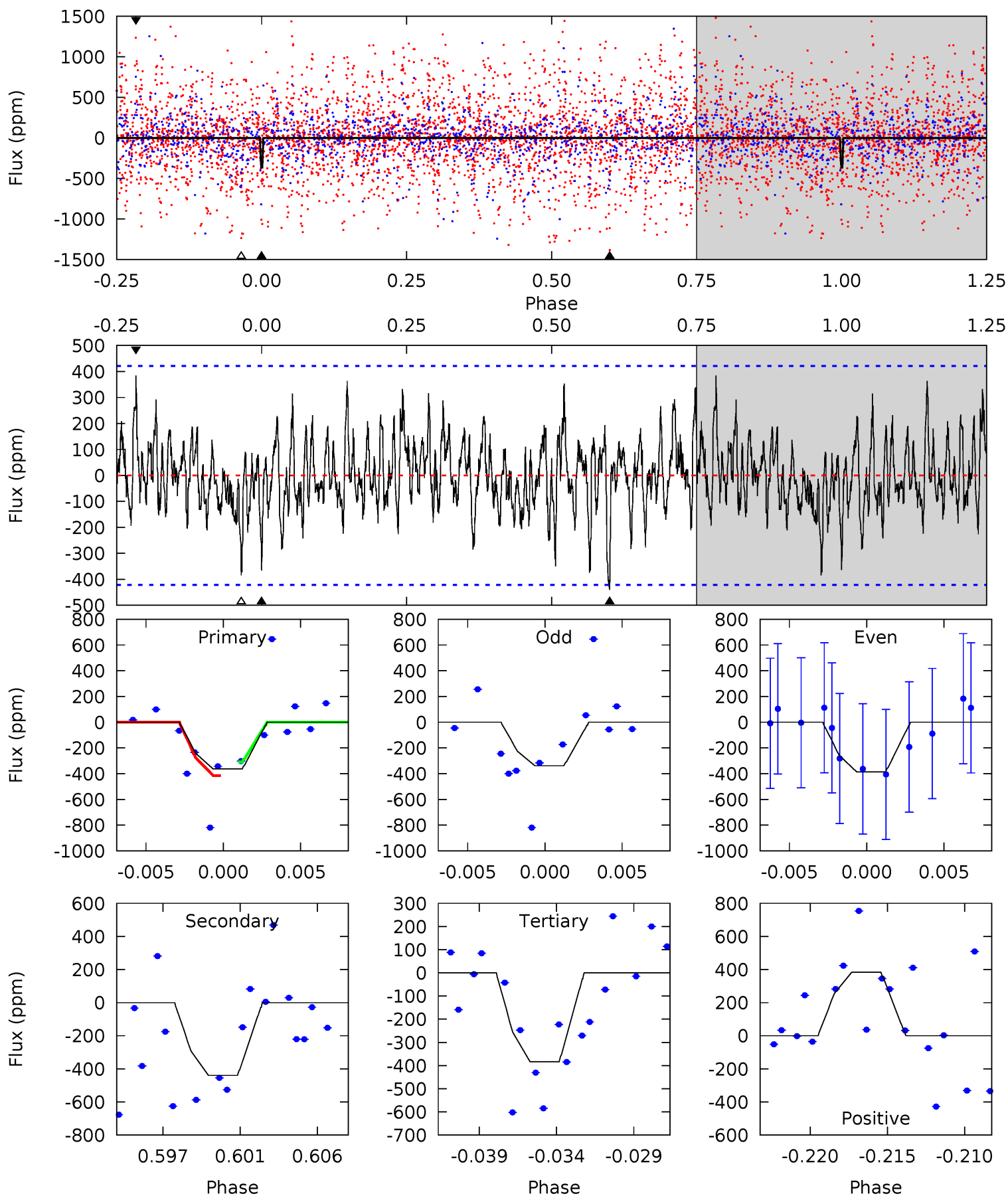
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.13	4.80	3.97	4.15	5.18	2.85	1.35	0.16	-0.02	0.82	0.64	0.48	2.06	0.46	0.16



# Alt Model-Shift Uniqueness Test

008955867-05, P = 12.952013 Days, E = 119.401855 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
4.45	5.39	4.71	4.71	5.16	2.81	1.50	-0.26	-0.26	0.68	0.68	0.28	0.86	0.47	0.64



### Stellar Parameters For KIC 008955867

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7074^{+177}_{-212}$	$4.473^{+0.027}_{-0.229}$	$-0.500^{+0.250}_{-0.350}$	$1.006^{+0.386}_{-0.043}$	$1.171^{+0.143}_{-0.117}$	$1.621^{+0.174}_{-0.975}$
	+3%/-3%	+1%/-5%	+50%/-70%	+38%/-4%	+12%/-10%	+11%/-60%
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 008955867-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-145 \pm 30$	$4.13^{+3.85}_{-2.86}$	$1348^{+105}_{-58}$	$4371^{+3278}_{-888}$	$57^{+564}_{-41}$
Alt.	$-440 \pm 82$	$4.38^{+4.07}_{-2.94}$	$1355^{+104}_{-63}$	$5395^{+4823}_{-1282}$	$158^{+1375}_{-117}$

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

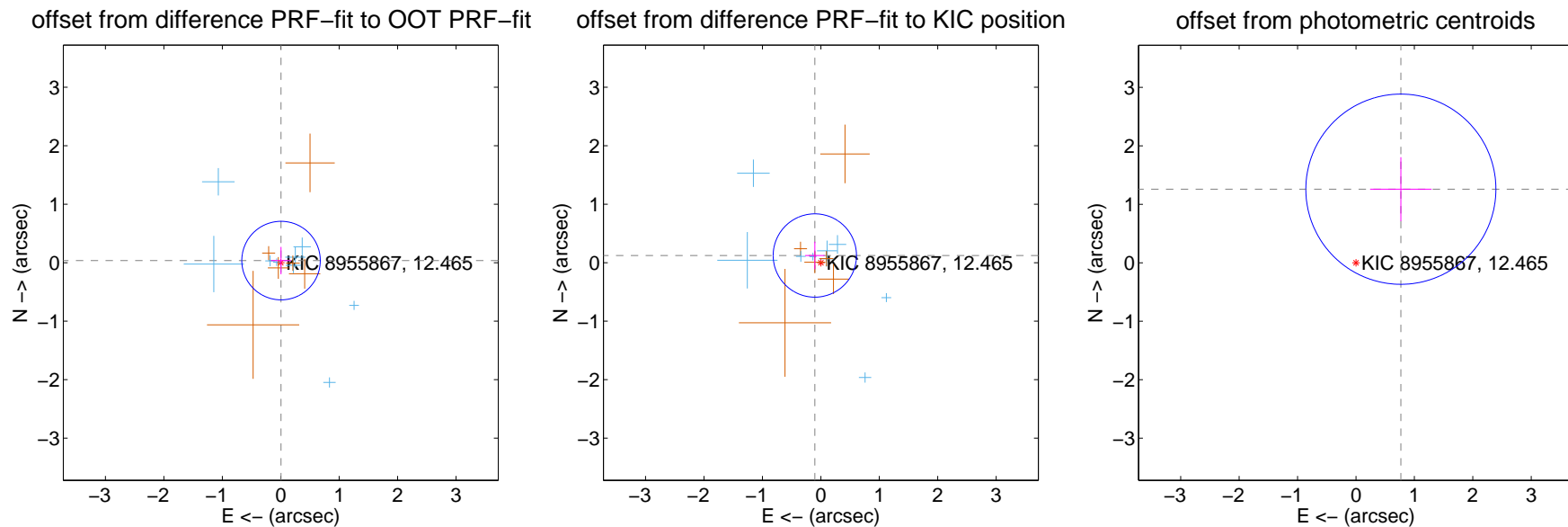
## DV Centroid Data

Supplemental centroid analysis for 008955867-05. Kepler magnitude: 12.46. Transit SNR 3.25

There are 9 quarters with good PRF difference image offsets

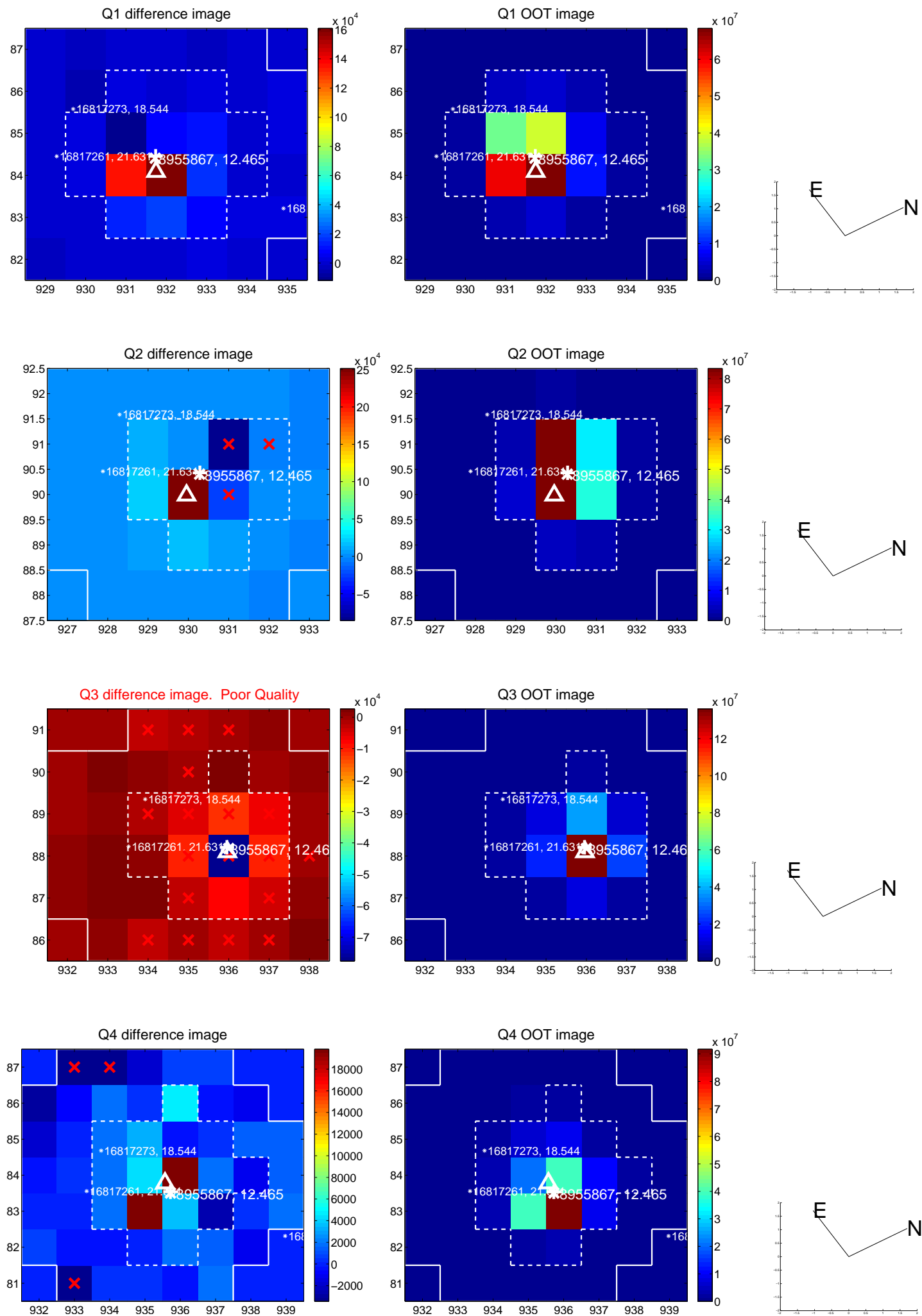
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.036 \pm 0.224$	0.16	$-0.005 \pm 0.171$	$0.036 \pm 0.234$
PRF-fit source offset from KIC position	$0.160 \pm 0.238$	0.68	$0.103 \pm 0.166$	$0.123 \pm 0.235$
photometric centroid source offset	$1.47 \pm 0.54$	2.72	$-0.77 \pm 0.53$	$1.26 \pm 0.55$

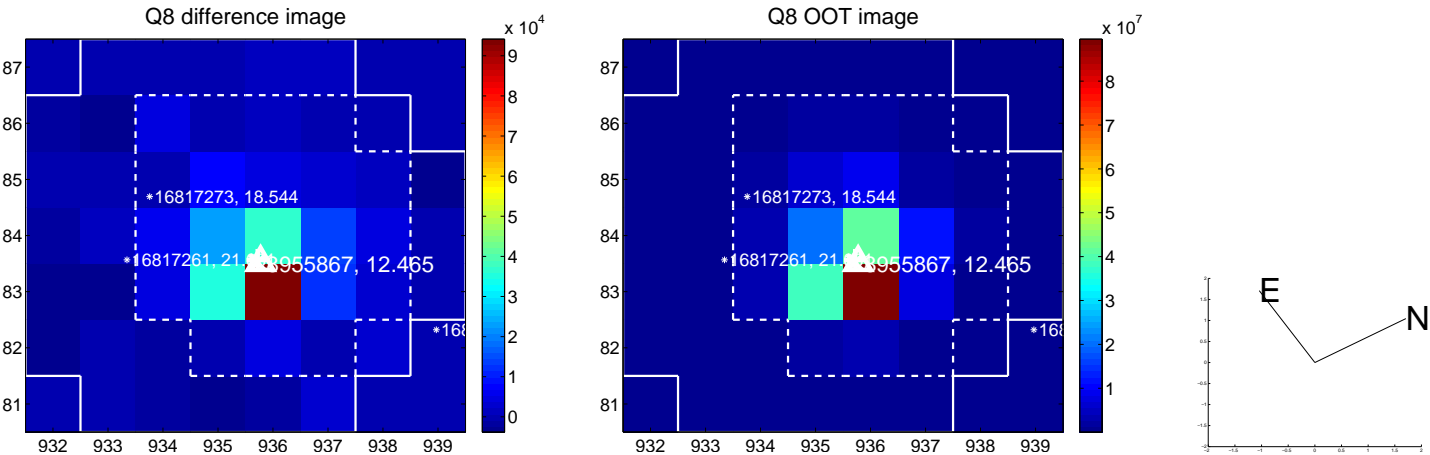
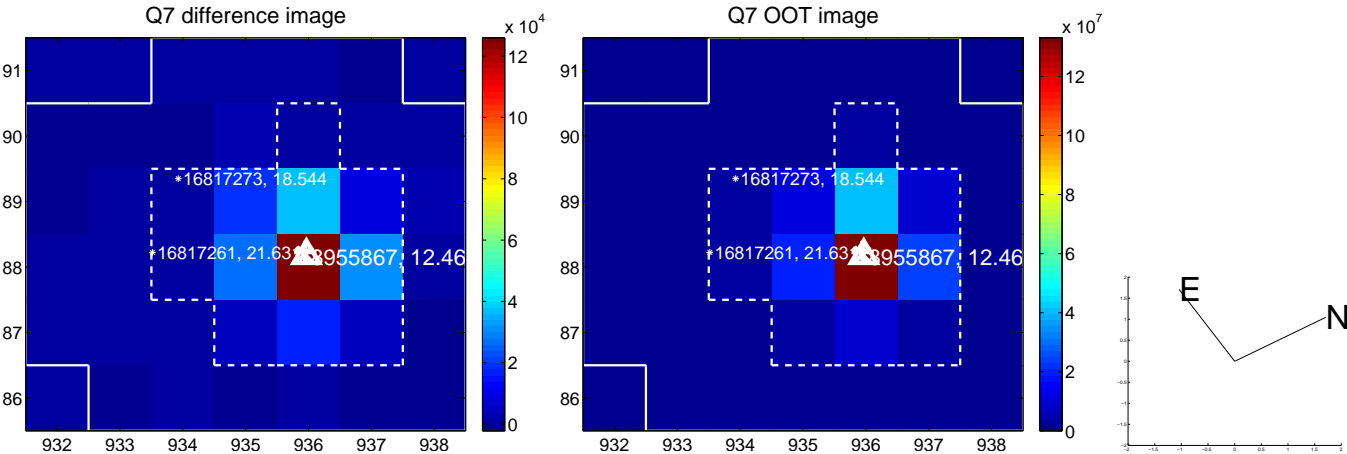
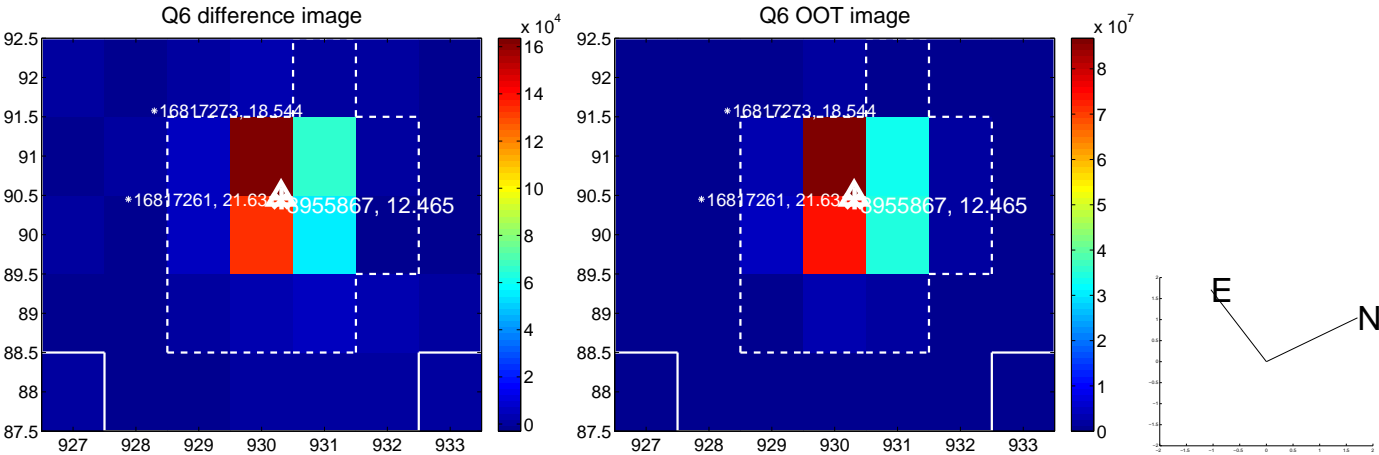
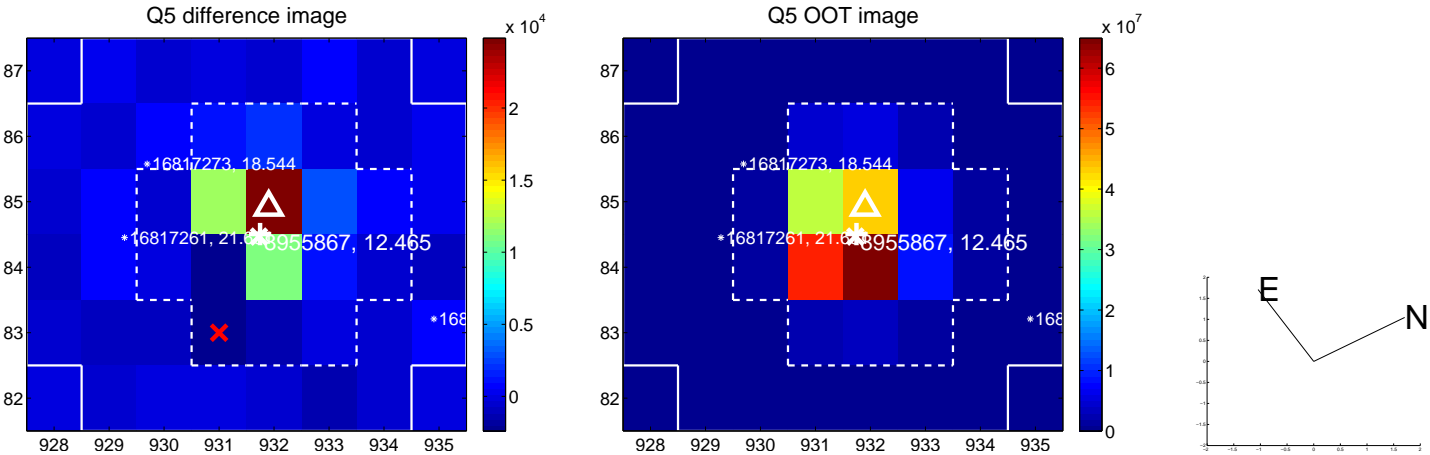


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

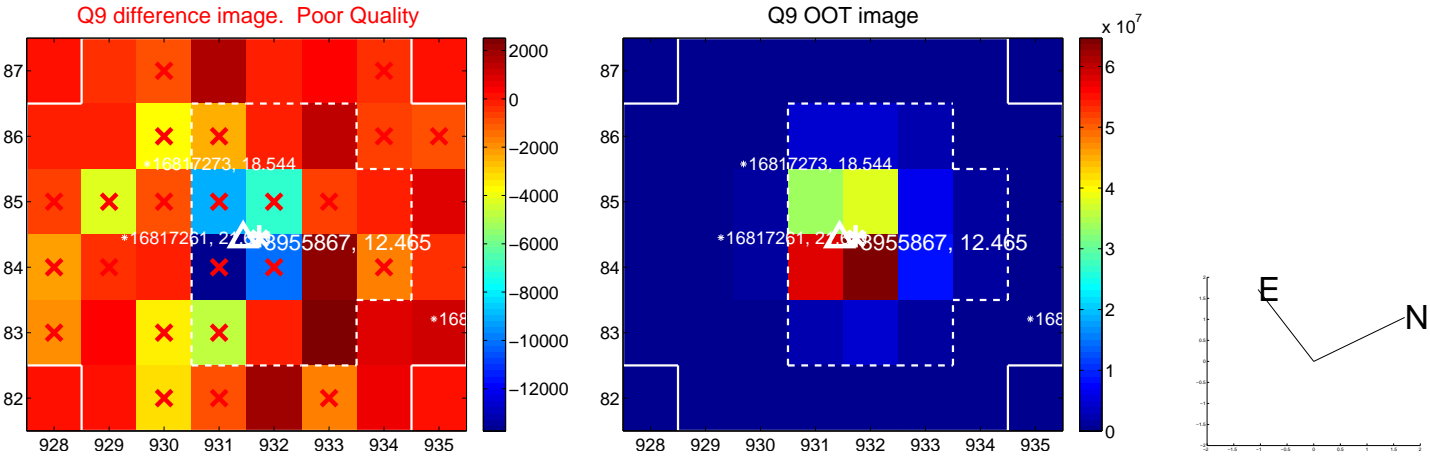


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

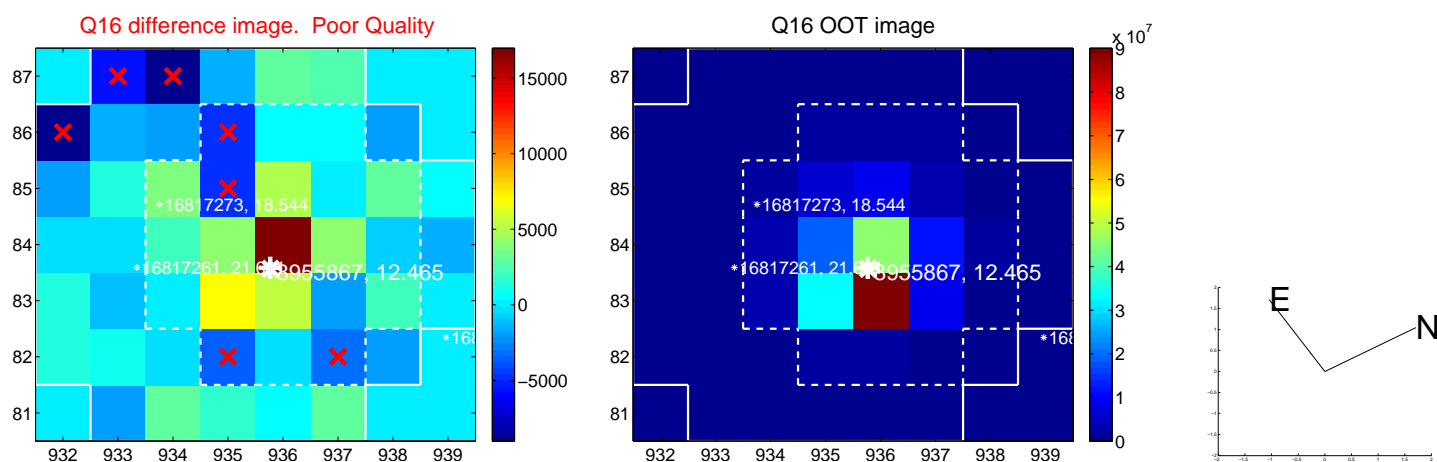
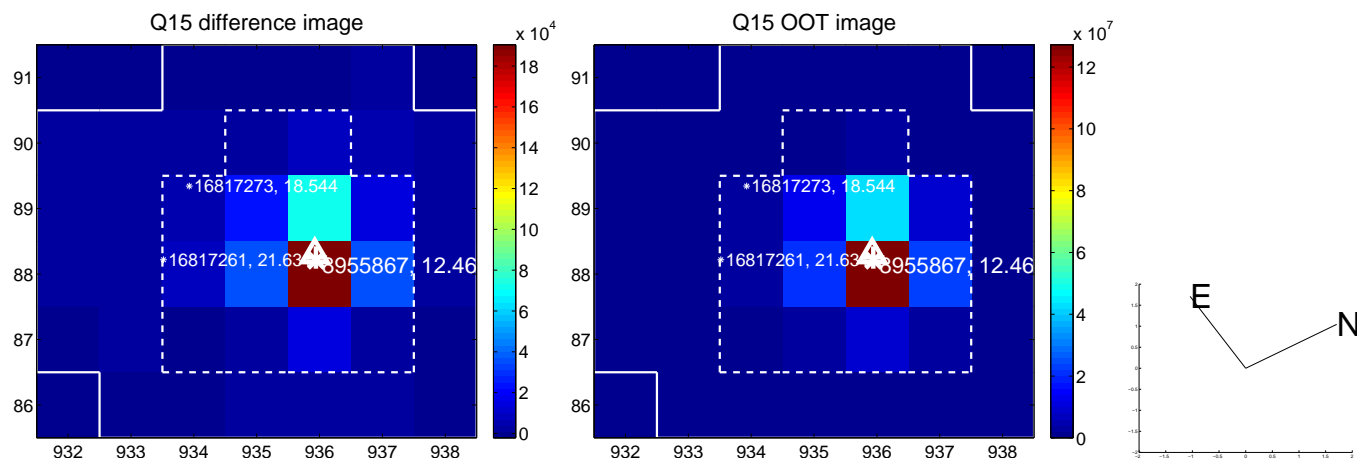
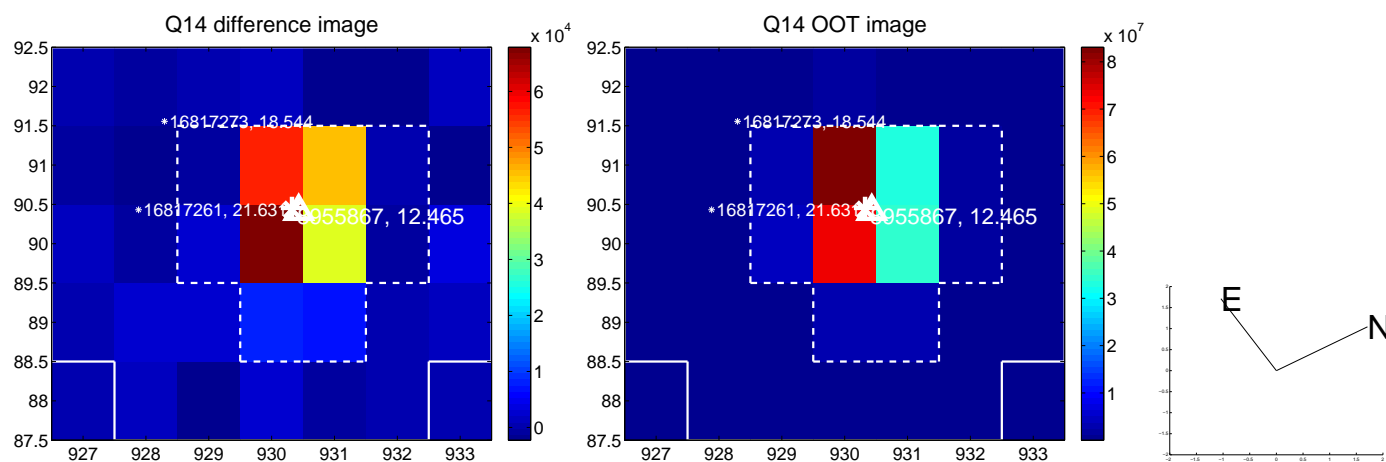
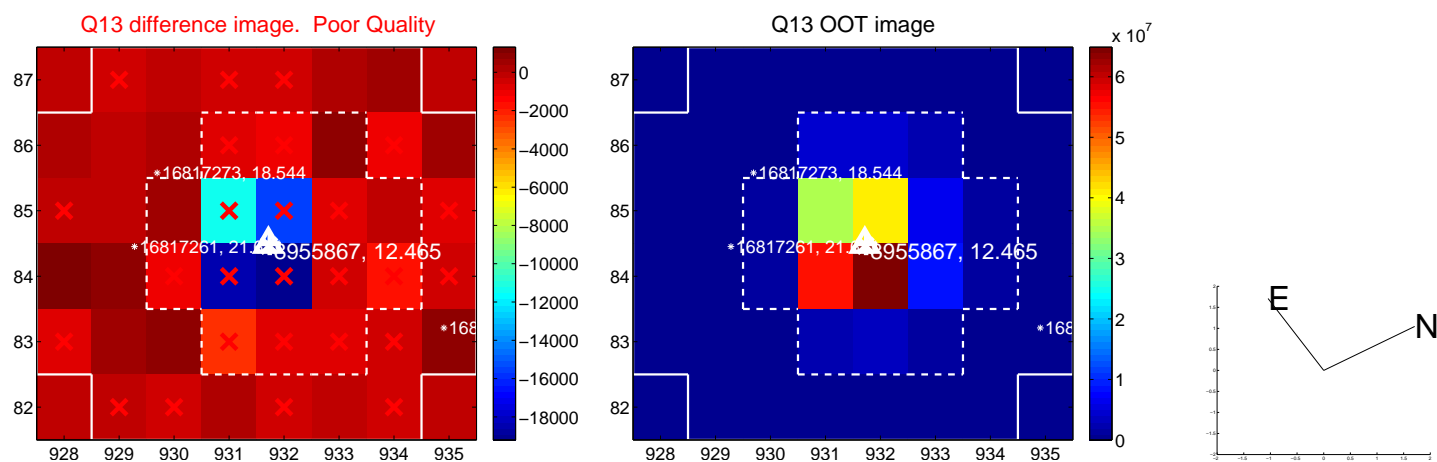




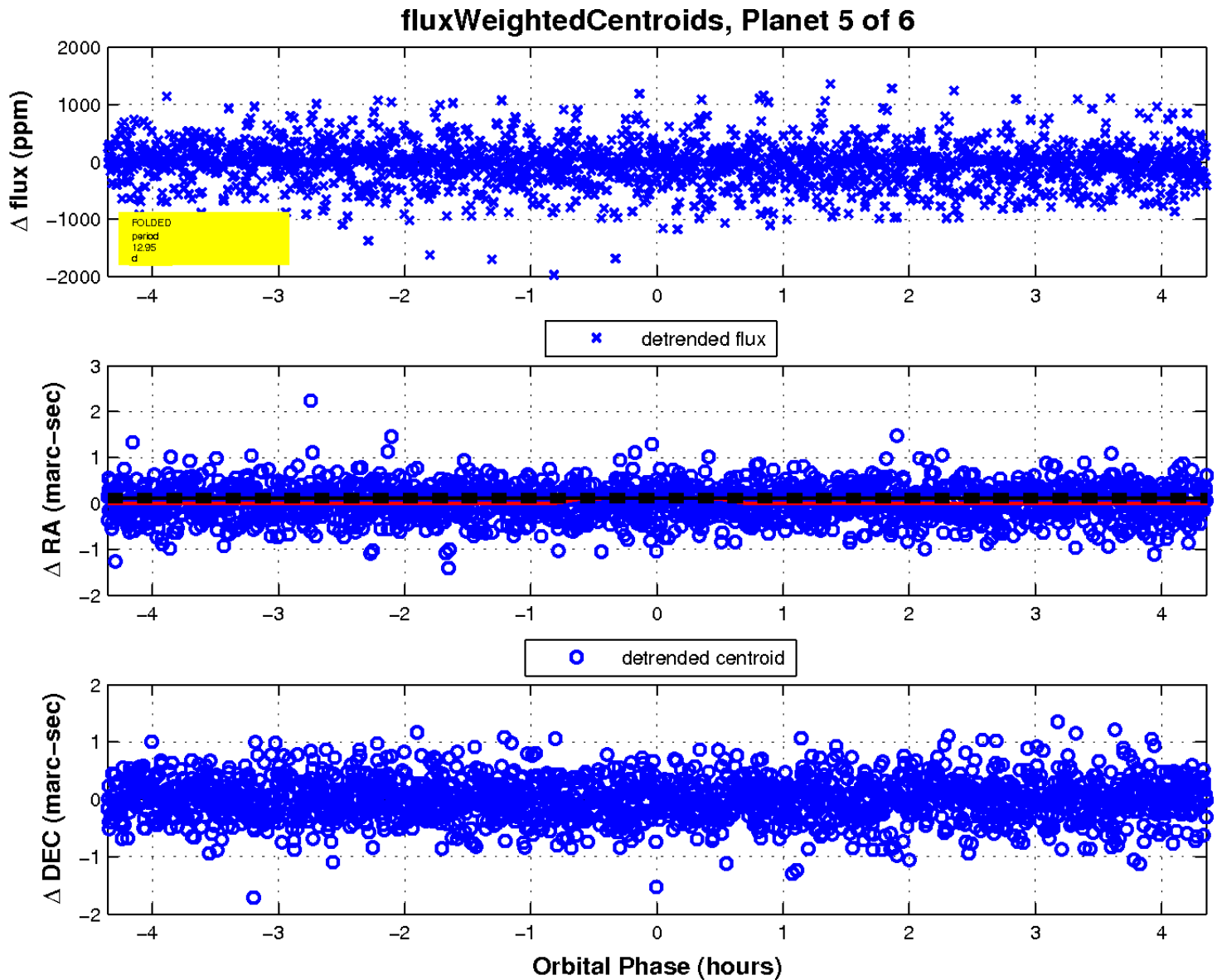
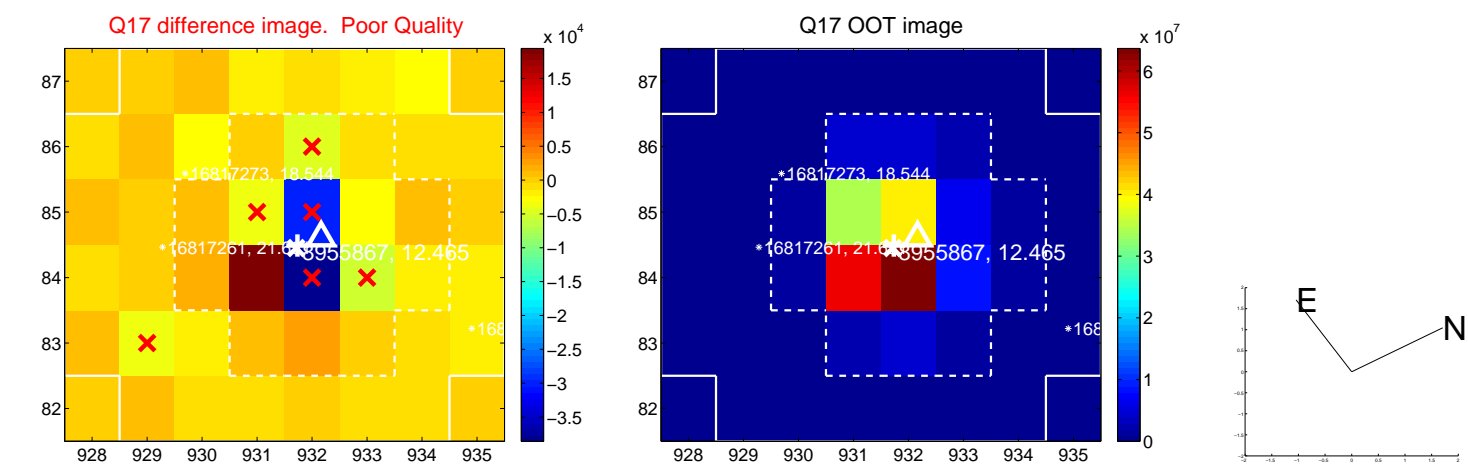
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

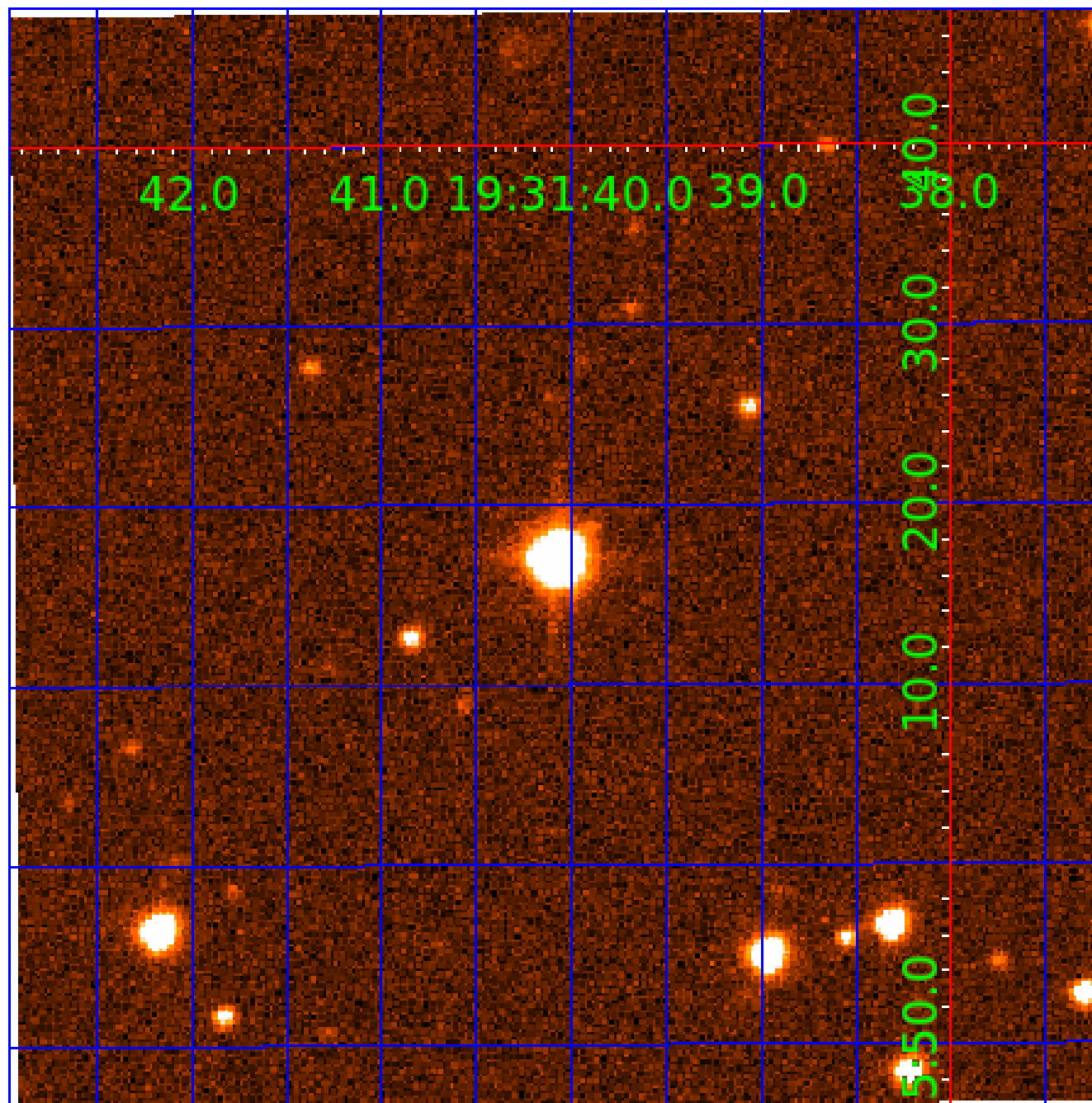


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008955867

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008955867-01	OBS	No	0.788426	131.941447	5.0	5.752	9.1	1.3	1.01	7074	0.23	7649.01
008955867-03	OBS	No	17.351355	137.848098	567.5	2.251	10.4	10.0	1.01	7074	4.57	124.03
008955867-04	OBS	No	21.298852	133.113658	729.9	0.829	9.4	9.1	1.01	7074	2.90	94.36
008955867-05	OBS	No	12.952332	132.340972	129.4	1.454	13.0	3.2	1.01	7074	1.37	183.16
008955867-06	OBS	No	26.819647	137.052263	777.5	1.441	9.6	9.0	1.01	7074	3.14	69.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008955867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008955867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008955867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT
008955867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008955867-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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

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

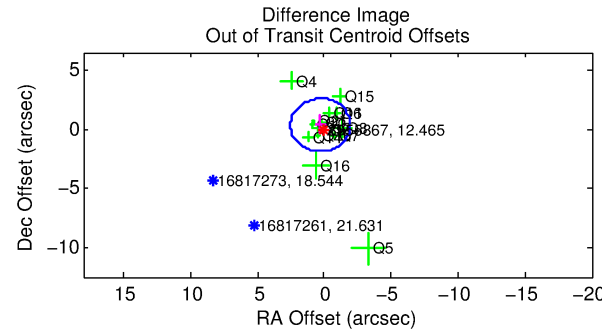
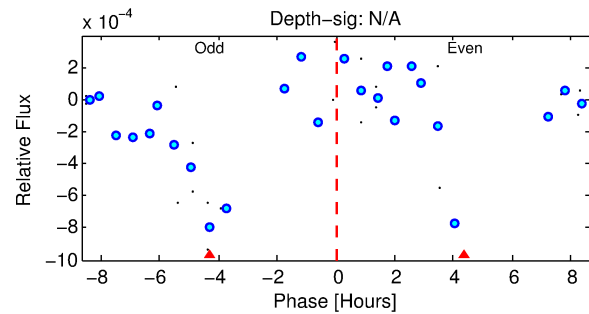
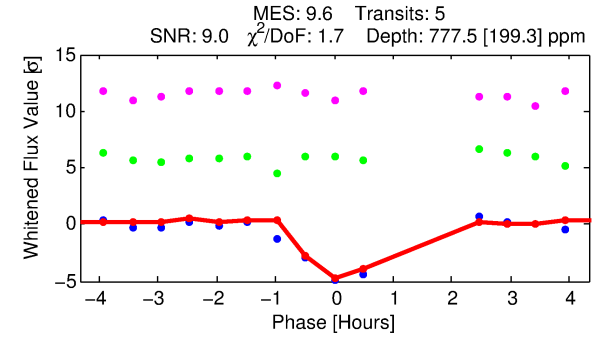
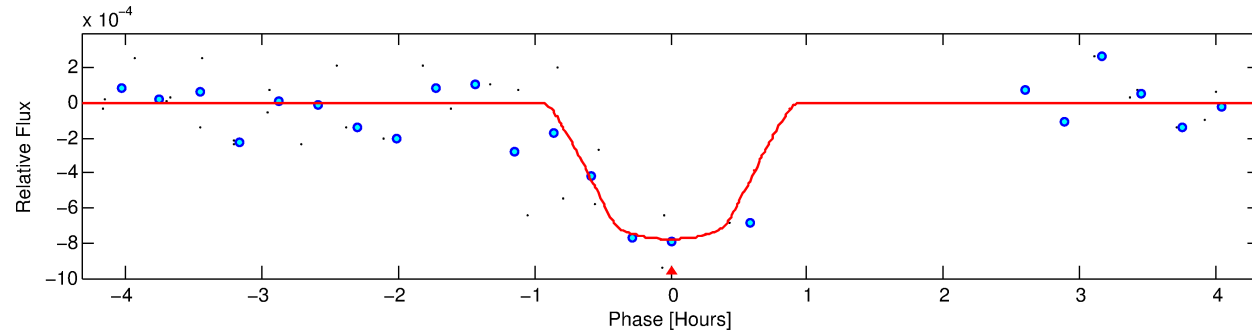
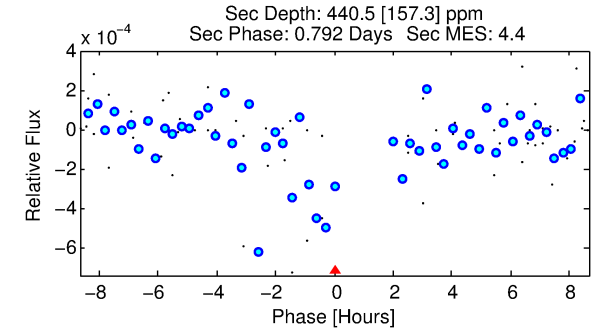
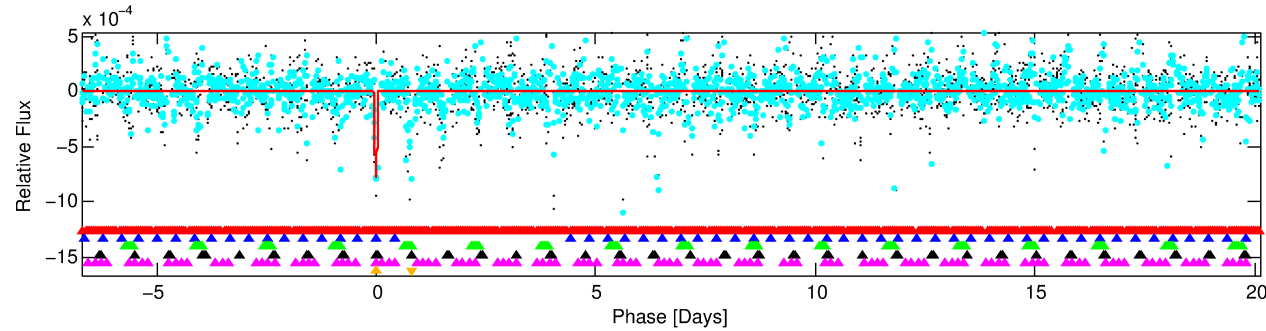
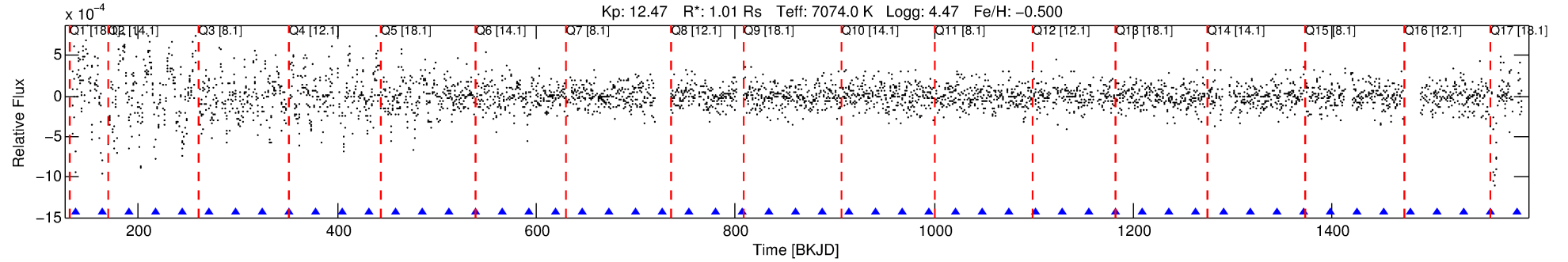
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008955867-06

No Significant Match Found

# DV One-Page Summary

KIC: 8955867 Candidate: 6 of 6 Period: 26.820 d



## DV Fit Results:

Period = 26.81965 [0.00170] d  
Epoch = 137.0523 [0.0115] BKJD  
Rp/R\* = 0.0286 [0.0673]  
a/R\* = 86.18 [1222.97]  
b = 0.83 [5.25]  
Seff = 69.40 [31.30]  
Teq = 736 [83] K  
Rp = 3.14 [7.48] Re  
a = 0.1809 [0.0561] AU  
Ag = 802.29 [3796.52] [0.21σ]  
Teffp = 6056 [7136] K [0.75σ]

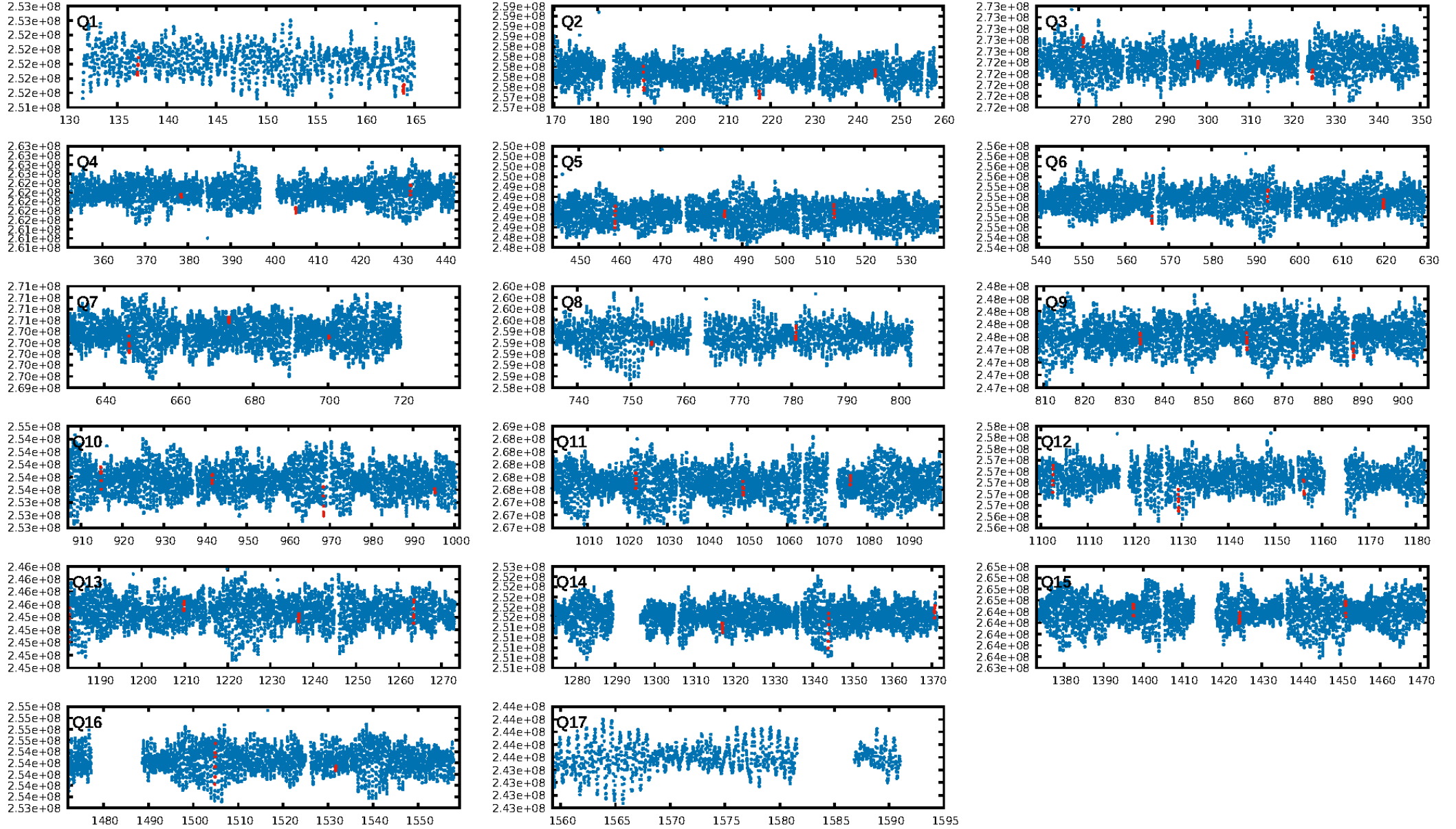
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.71σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 19.0%  
ModelChiSquareGof-sig: 97.4%  
Bootstrap-pfa: 1.93e-16  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 10.06  
Centroid-sig: N/A  
Centroid-so: 0.099 arcsec [0.77σ]  
OotOffset-rm: 0.453 arcsec [0.61σ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-rm: 0.591 arcsec [0.77σ]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 0.53 [8/15]  
DiffImageOverlap-fno: 0.19 [3/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:24:13 Z

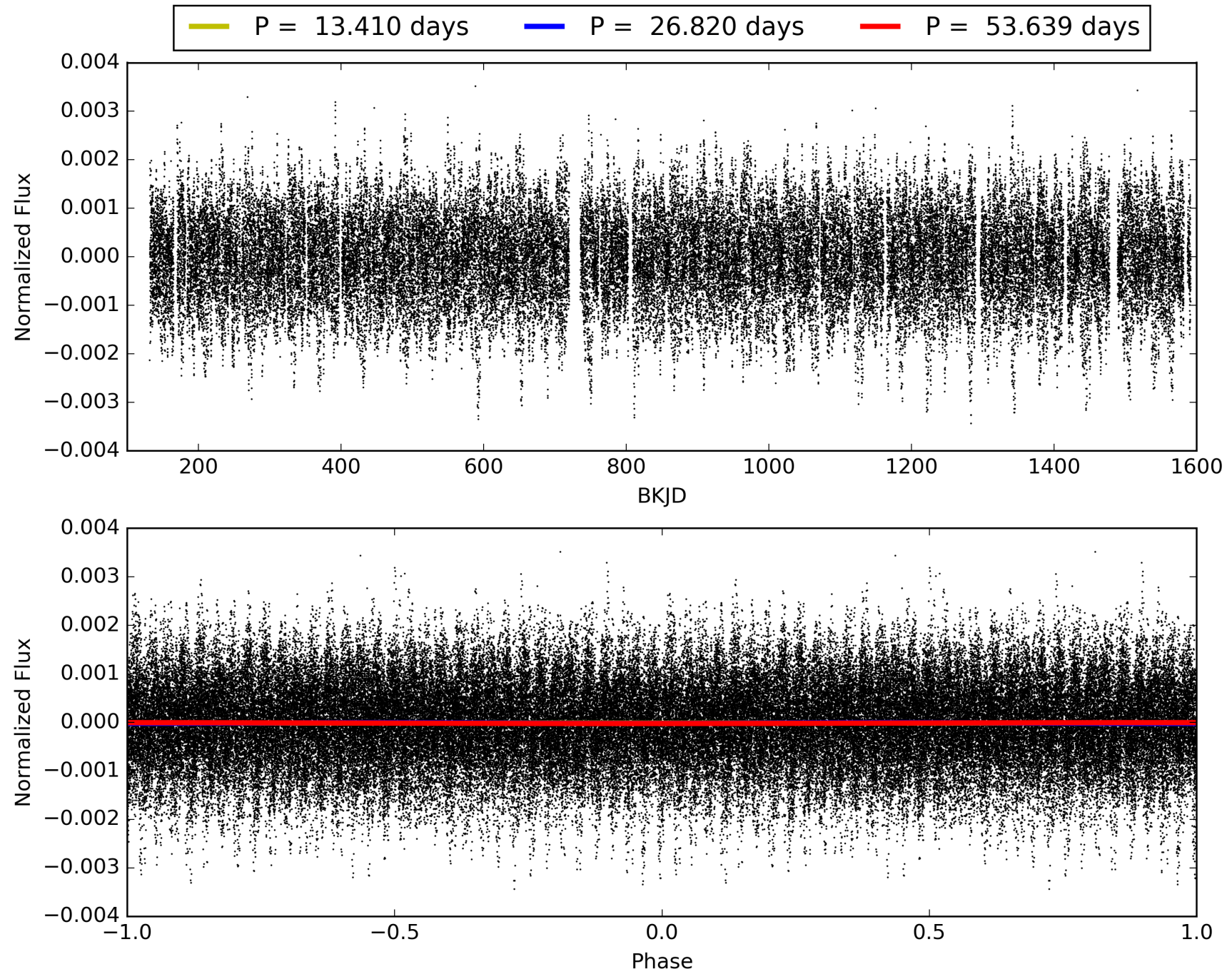
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008955867-06, PDC Light Curves



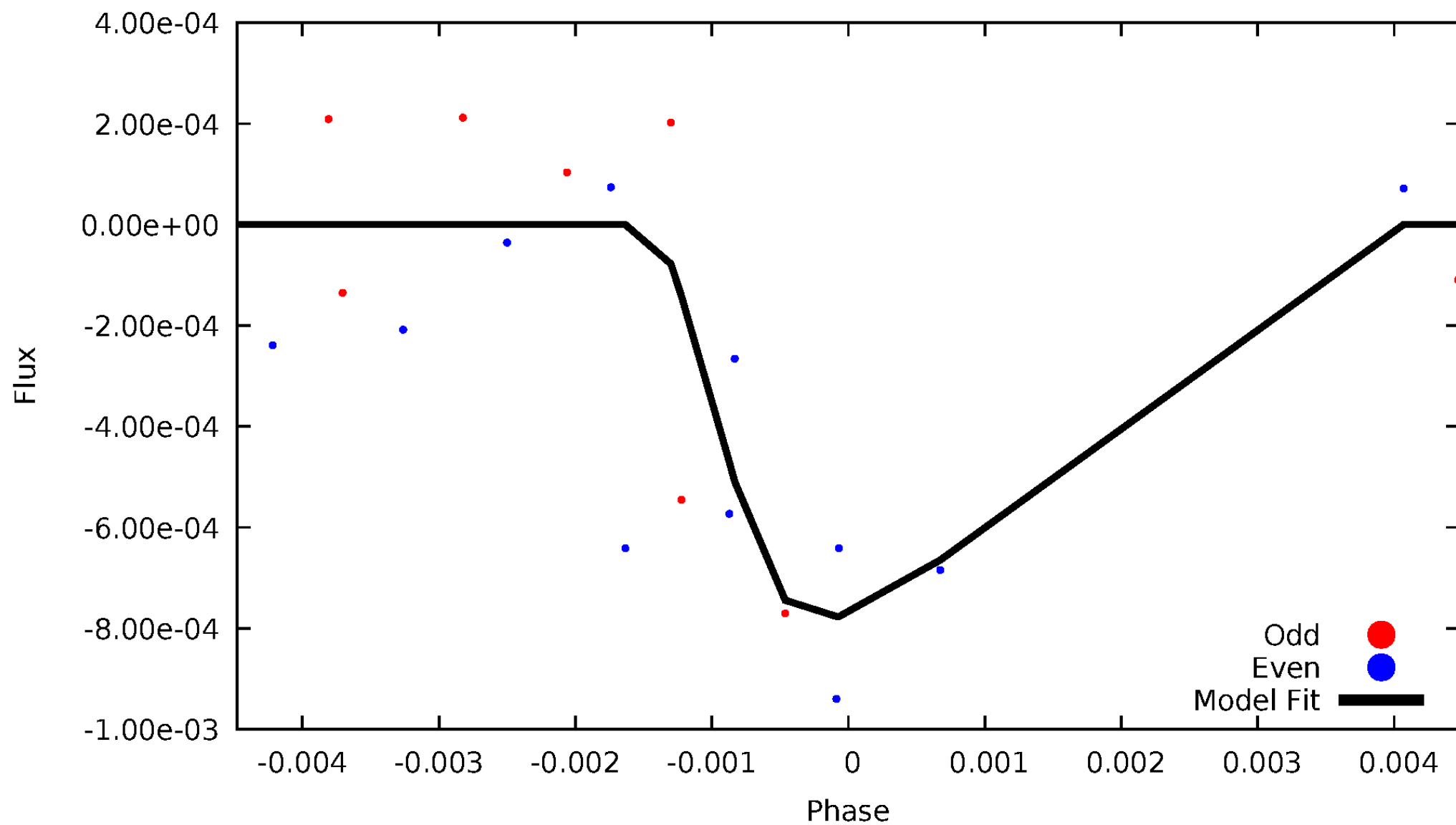


TCE 008955867-06



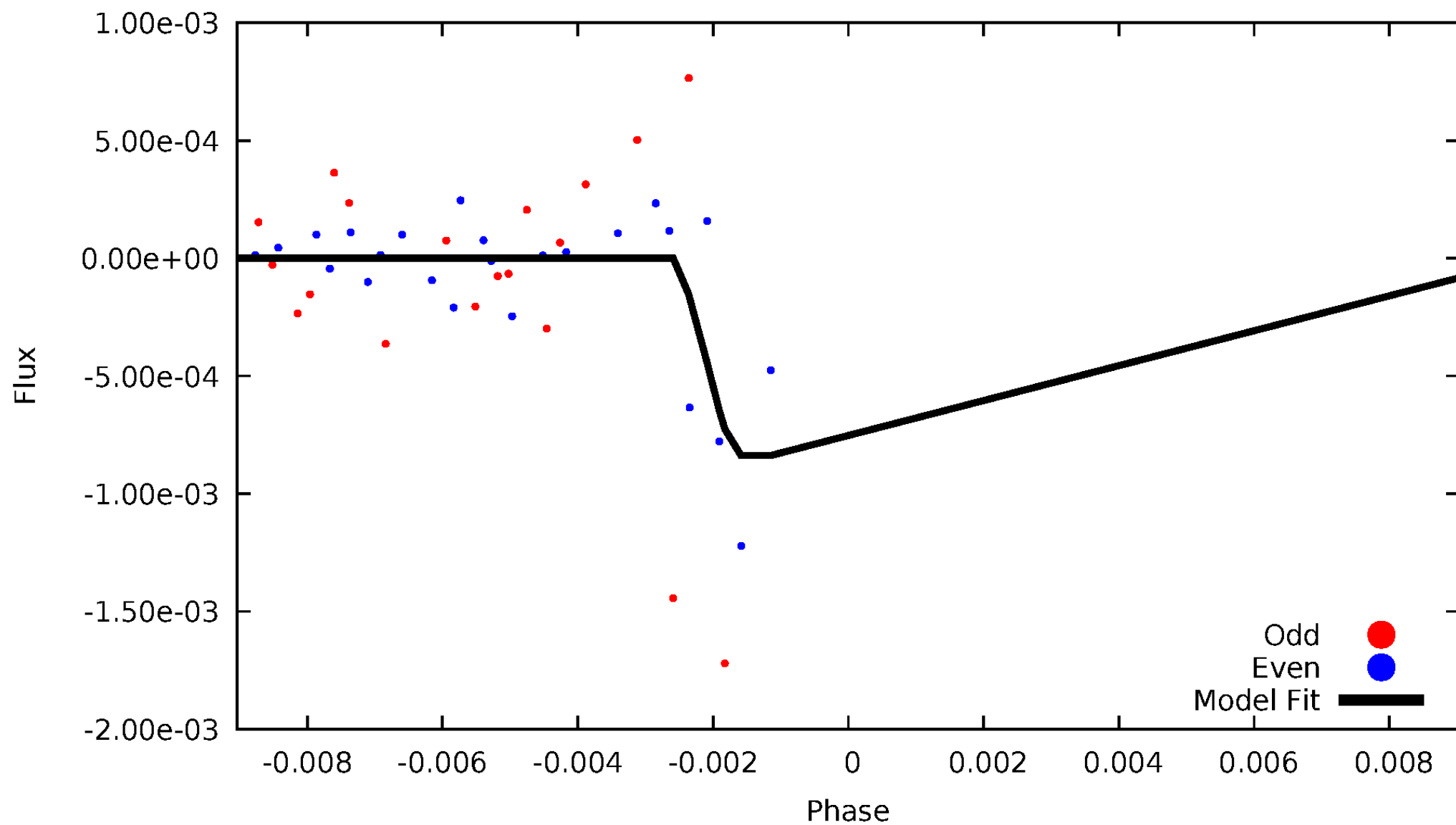
# DV Odd/Even

TCE 008955867-06



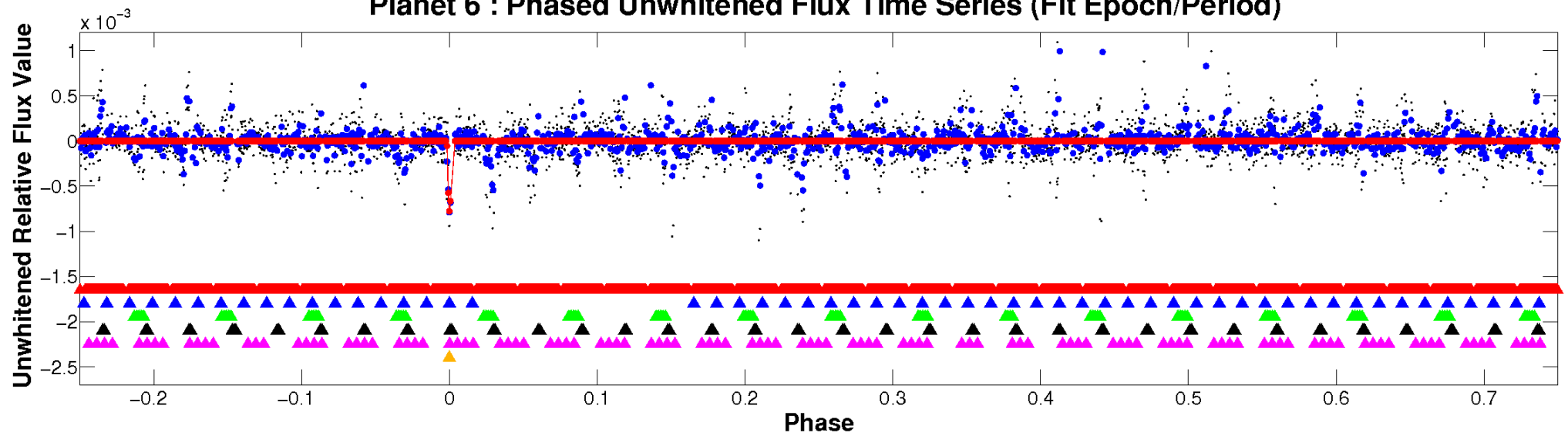
# ALT Odd/Even

TCE 008955867-06

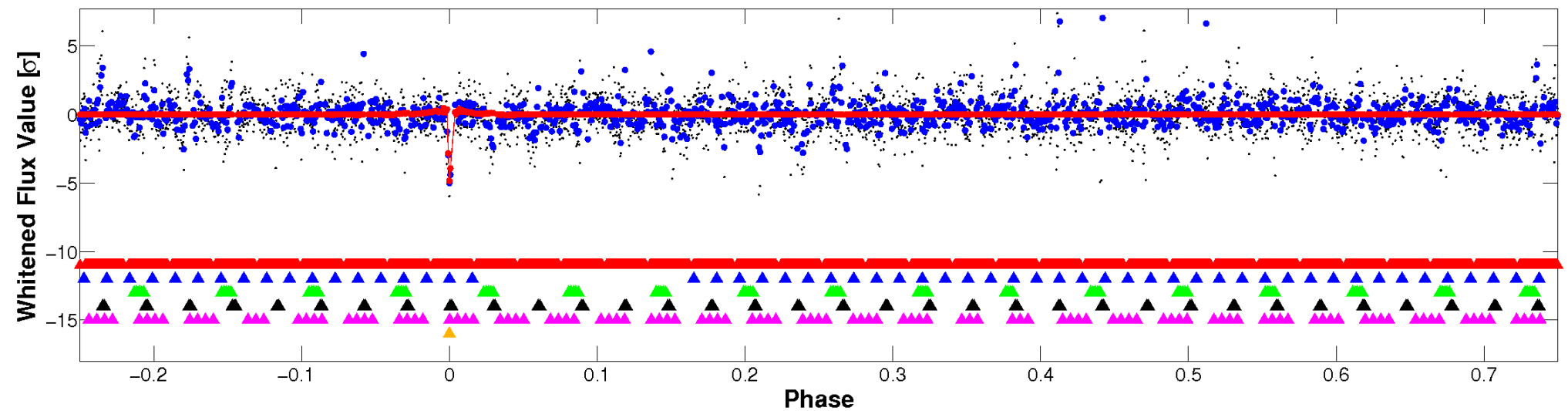


# Non-Whitened Vs. Whitened Light Curve

## Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

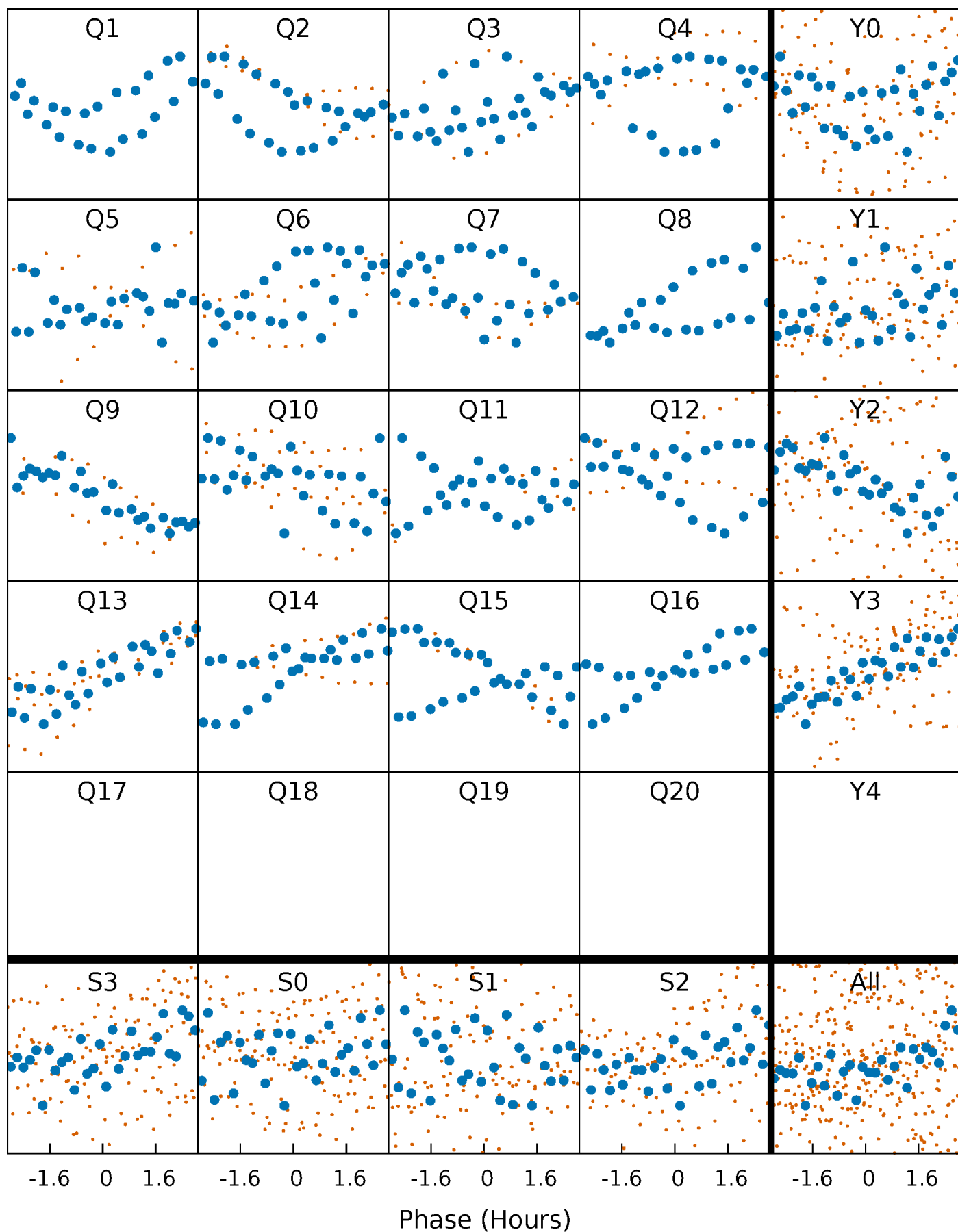


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



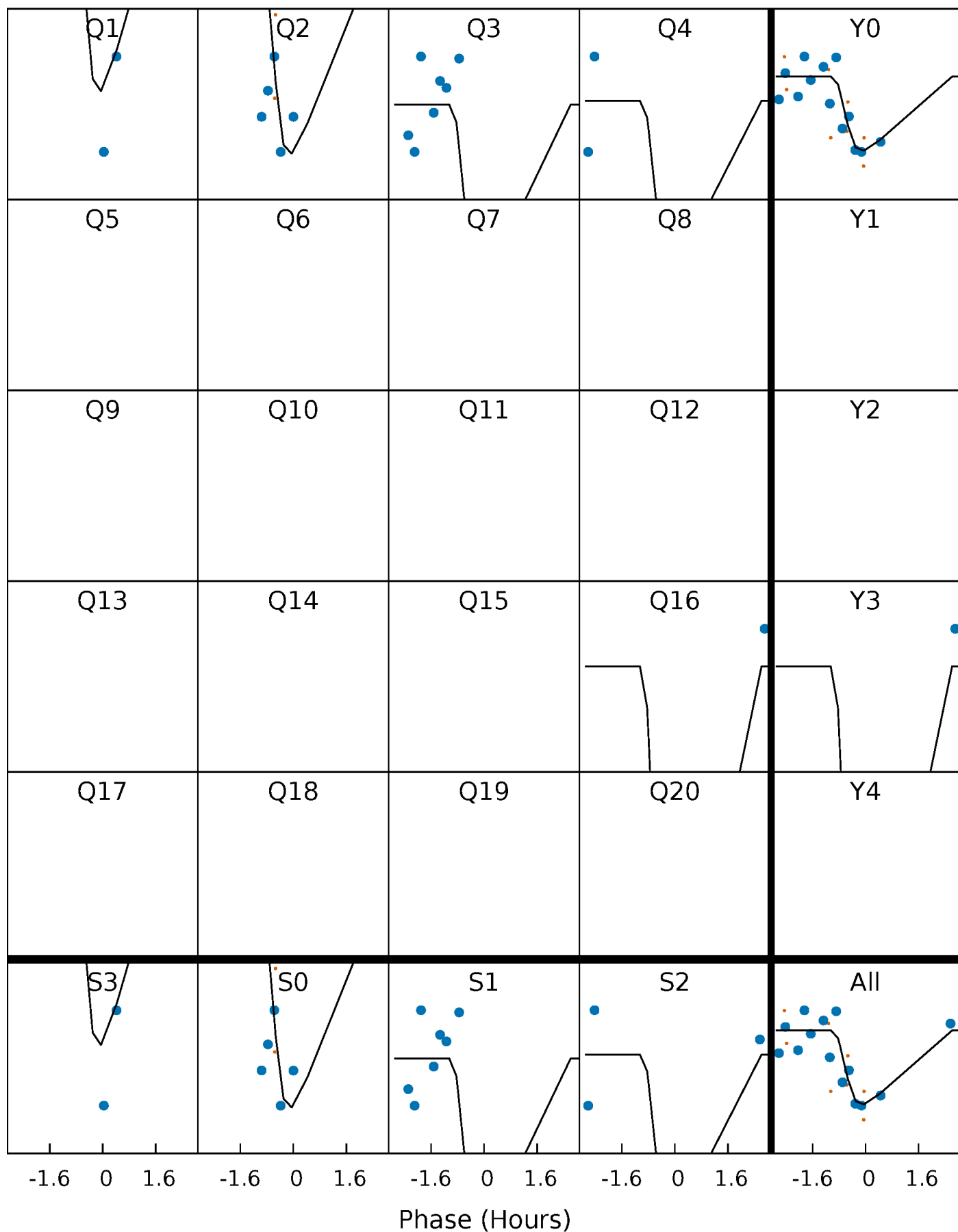
# PDC Quarter-Phased Transit Curves

TCE 008955867-06 P= 26.819647 Days  $T_0=137.052263$  (BKJD)



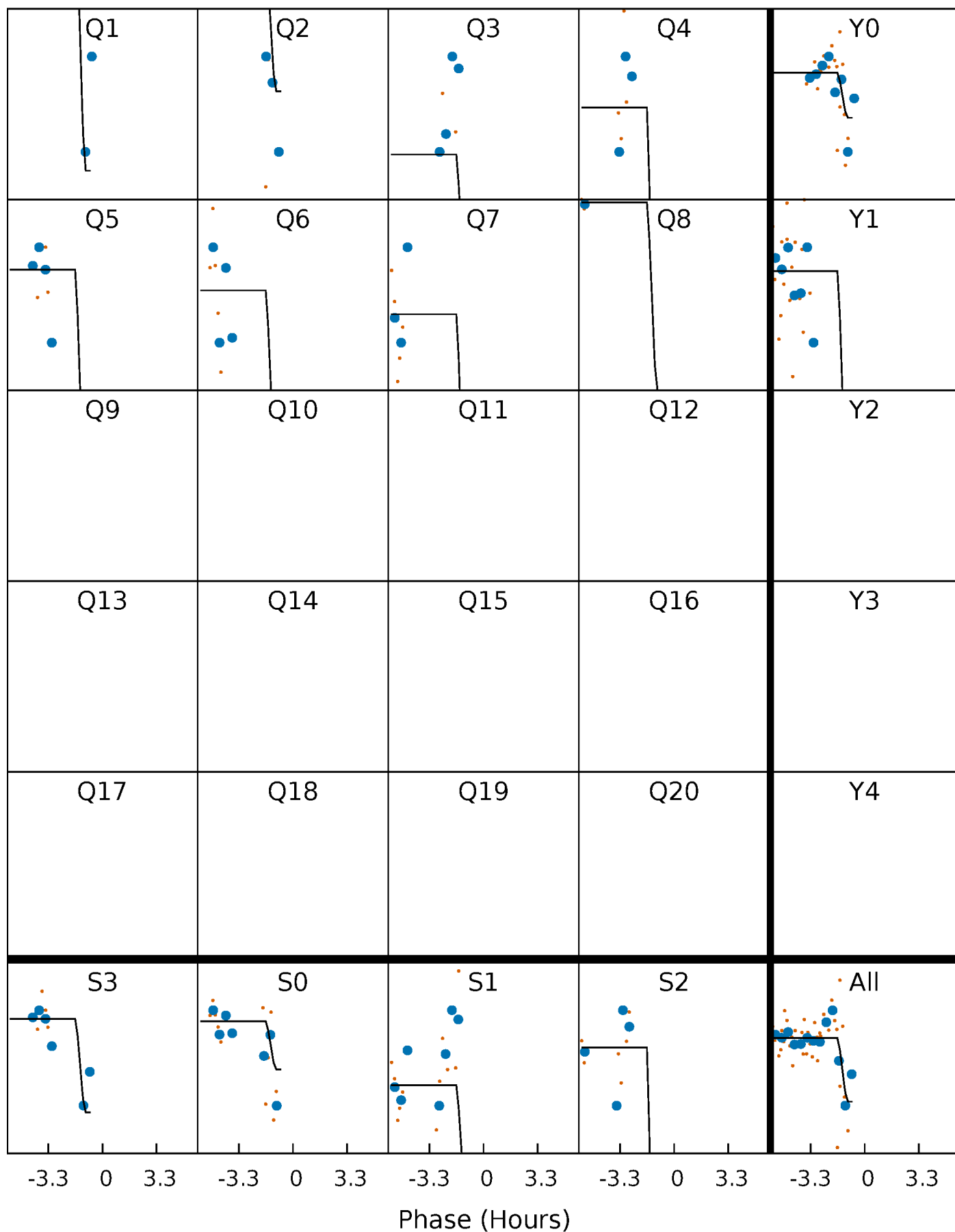
# DV Quarter-Phased Transit Curves

TCE 008955867-06 P= 26.819647 Days  $T_0=137.052263$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008955867-06 P= 26.815569 Days  $T_0=137.101085$  (BKJD)

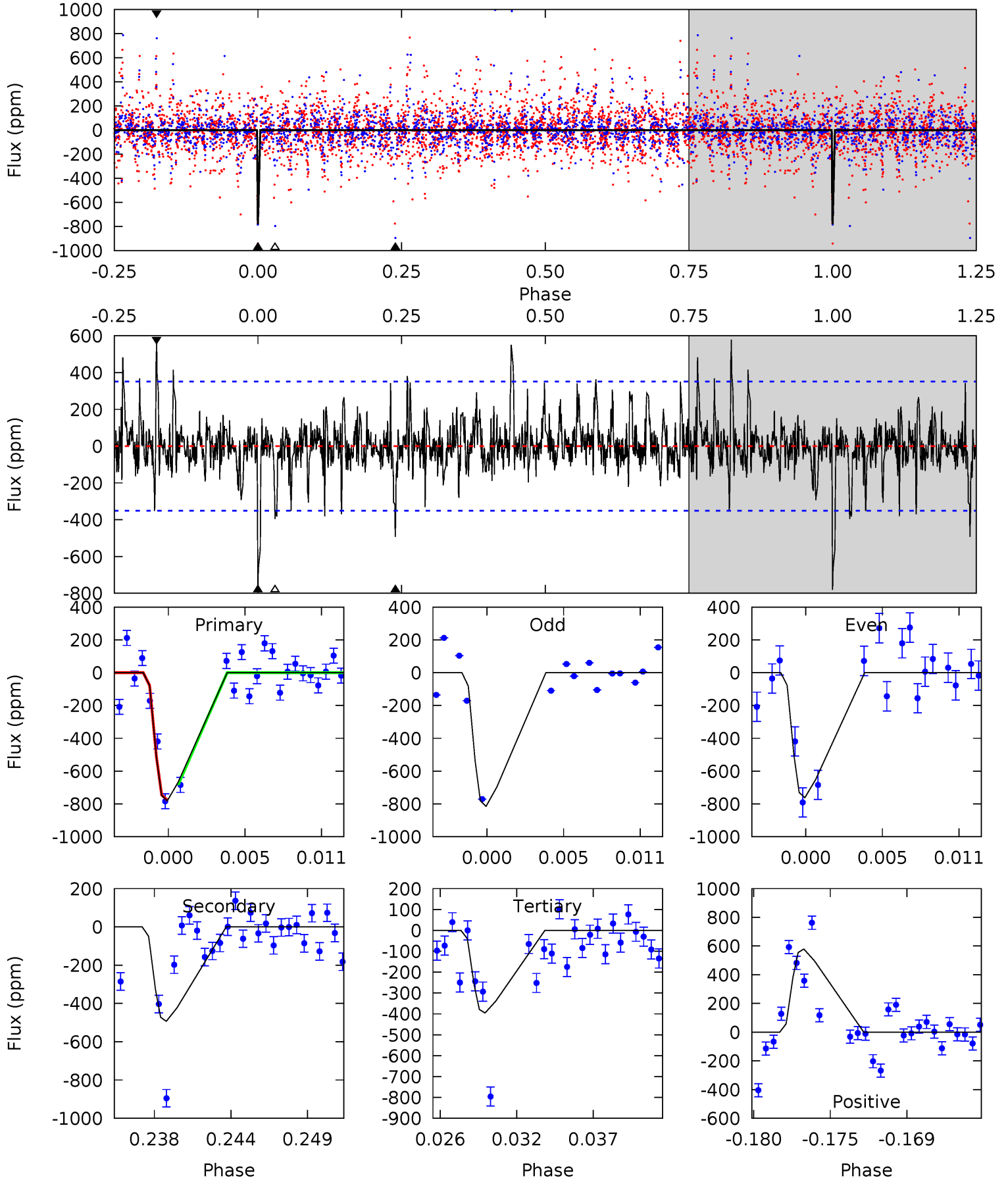




# DV Model-Shift Uniqueness Test

008955867-06,  $P = 26.819647$  Days,  $E = 110.232616$  Days

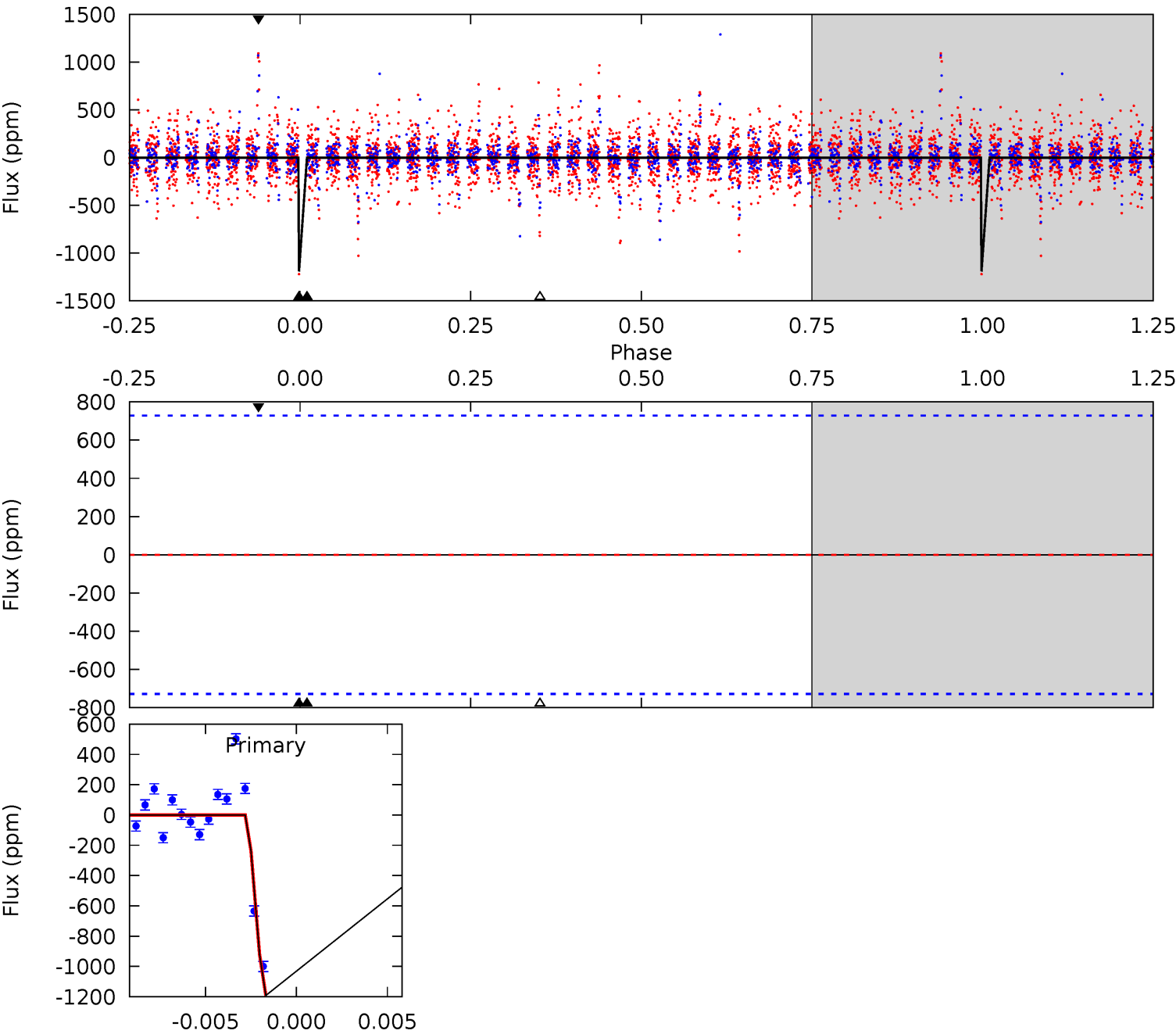
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	7.23	5.80	8.49	5.15	2.79	1.44	5.65	2.96	1.43	-1.26	0.27	0.88	0.43	0.50



# Alt Model-Shift Uniqueness Test

008955867-06, P = 26.815569 Days, E = 110.285516 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
0	0	0	0	5.17	2.83	0	0	0	0	0	3.25	0	0	0



### Stellar Parameters For KIC 008955867

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7074^{+177}_{-212}$	$4.473^{+0.027}_{-0.229}$	$-0.500^{+0.250}_{-0.350}$	$1.006^{+0.386}_{-0.043}$	$1.171^{+0.143}_{-0.117}$	$1.621^{+0.174}_{-0.975}$
	+3%/-3%	+1%/-5%	+50%/-70%	+38%/-4%	+12%/-10%	+11%/-60%
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 008955867-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-493 \pm 68$	$7.04^{+7.21}_{-4.72}$	$1065^{+85}_{-50}$	$4496^{+3280}_{-960}$	$180^{+1443}_{-135}$
Alt.	$-0 \pm 141$	$7.25^{+6.59}_{-5.02}$	$1064^{+83}_{-50}$	$-2269^{+6089}_{-1642}$	$-1.210^{+71.193}_{-87.946}$

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

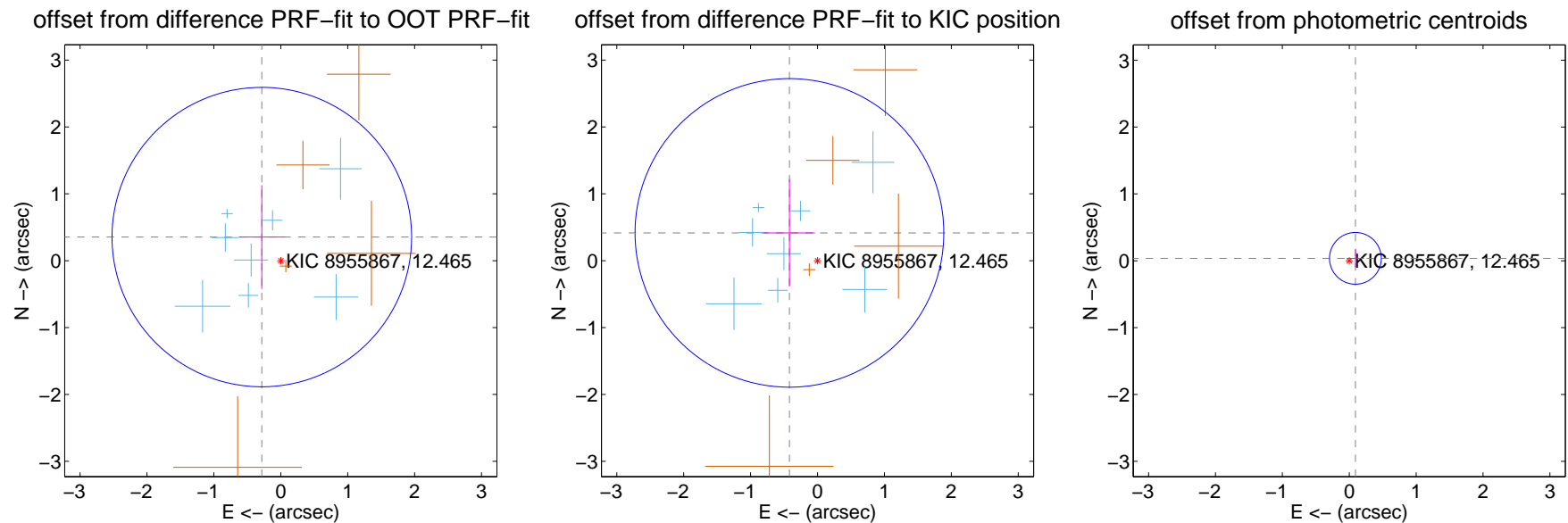
## DV Centroid Data

Supplemental centroid analysis for 008955867-06. Kepler magnitude: 12.46. Transit SNR 9.03

There are 8 quarters with good PRF difference image offsets

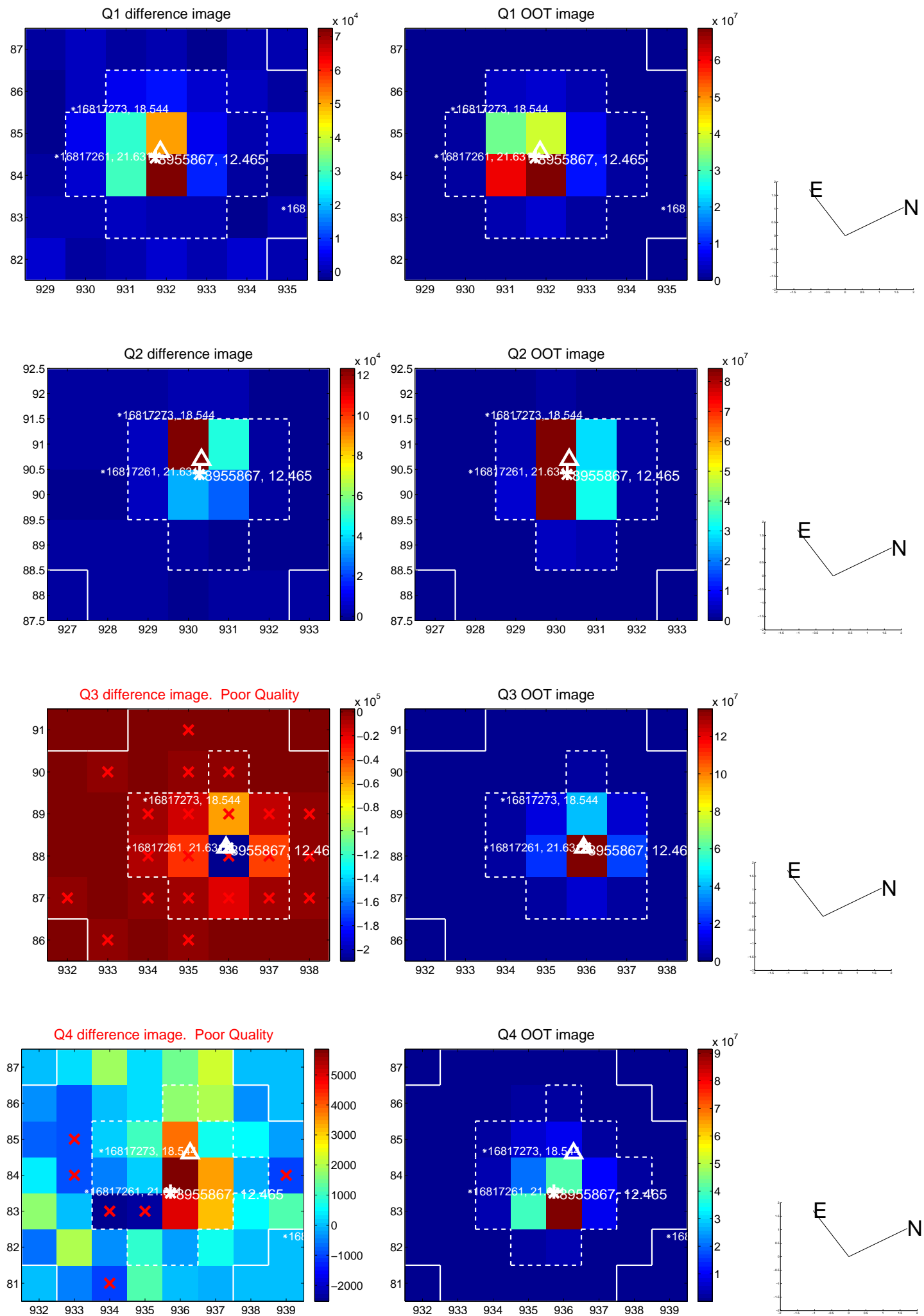
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.453 \pm 0.746$	0.61	$0.284 \pm 0.343$	$0.353 \pm 0.776$
PRF-fit source offset from KIC position	$0.591 \pm 0.769$	0.77	$0.420 \pm 0.383$	$0.416 \pm 0.803$
photometric centroid source offset	$0.10 \pm 0.13$	0.77	$-0.09 \pm 0.13$	$0.04 \pm 0.13$

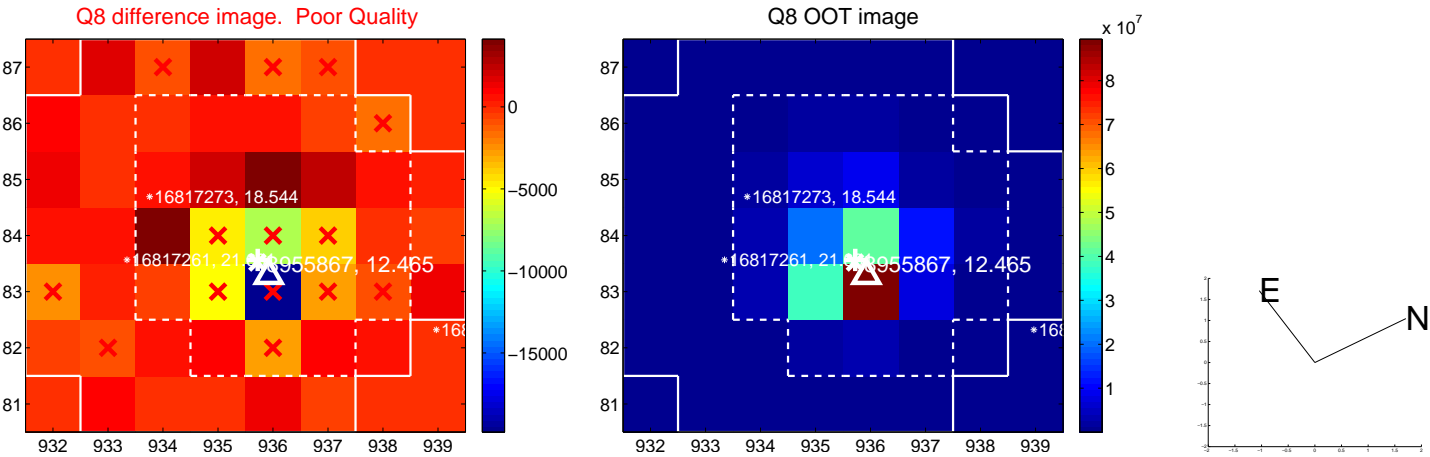
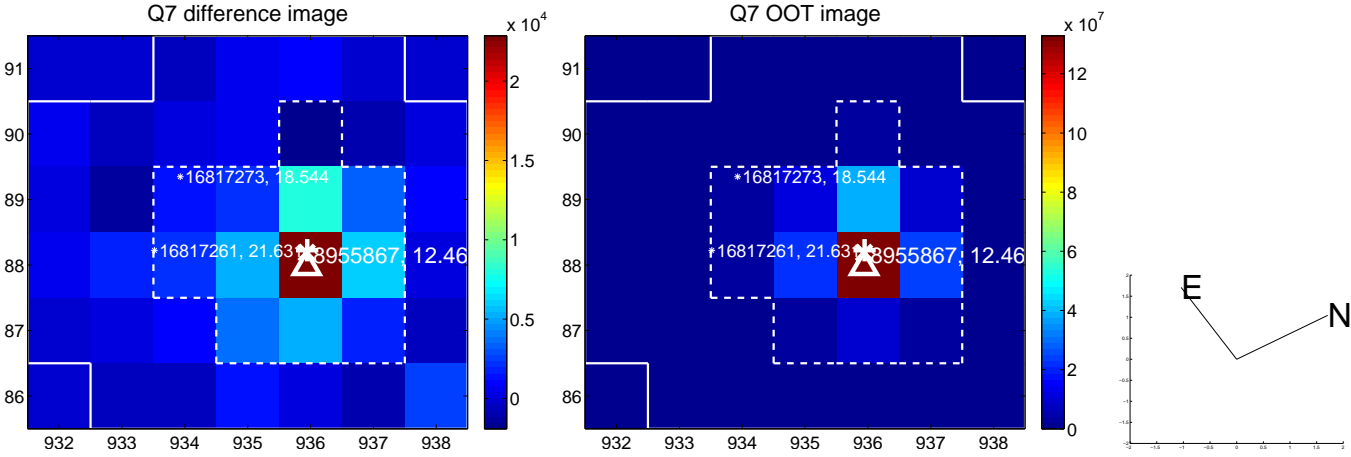
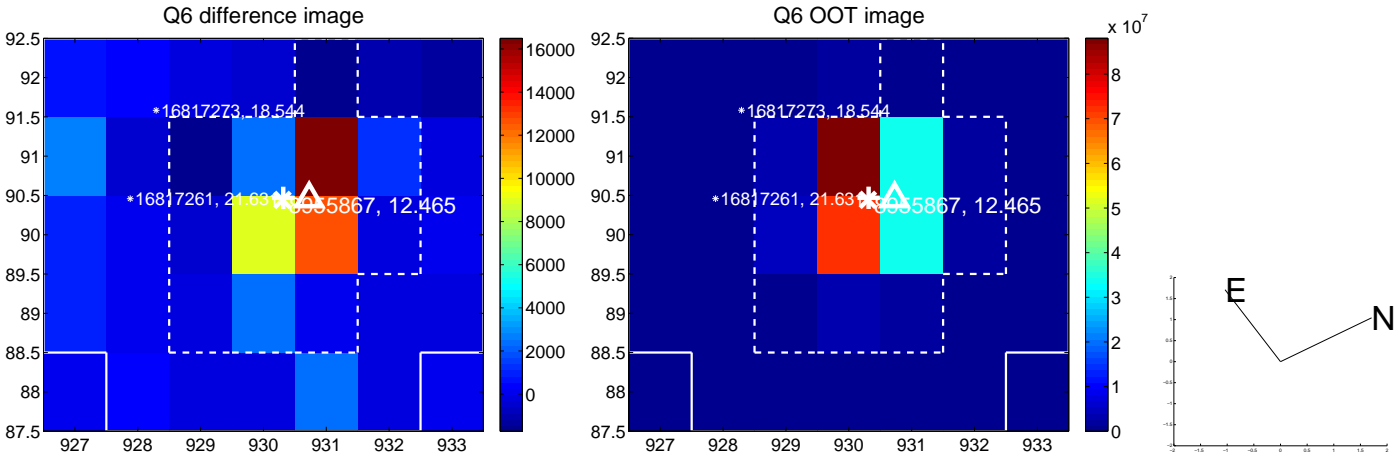
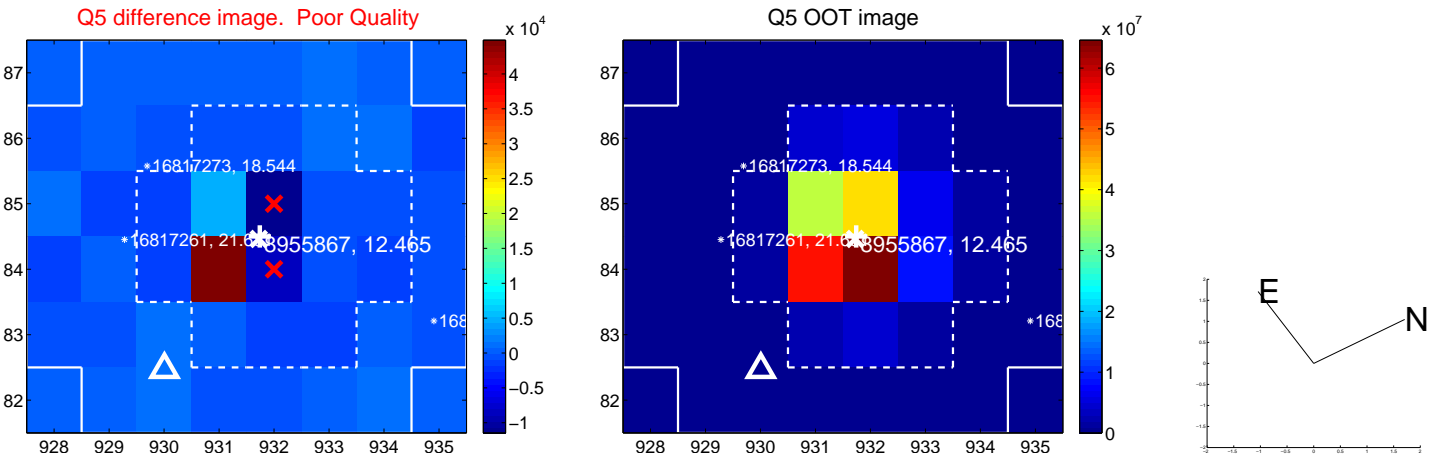


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

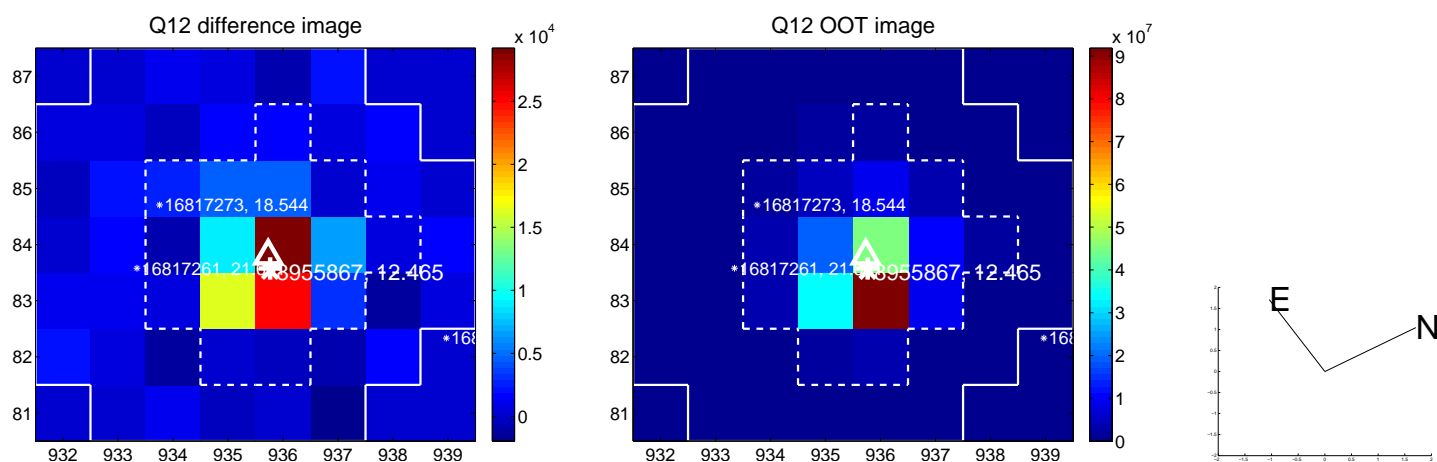
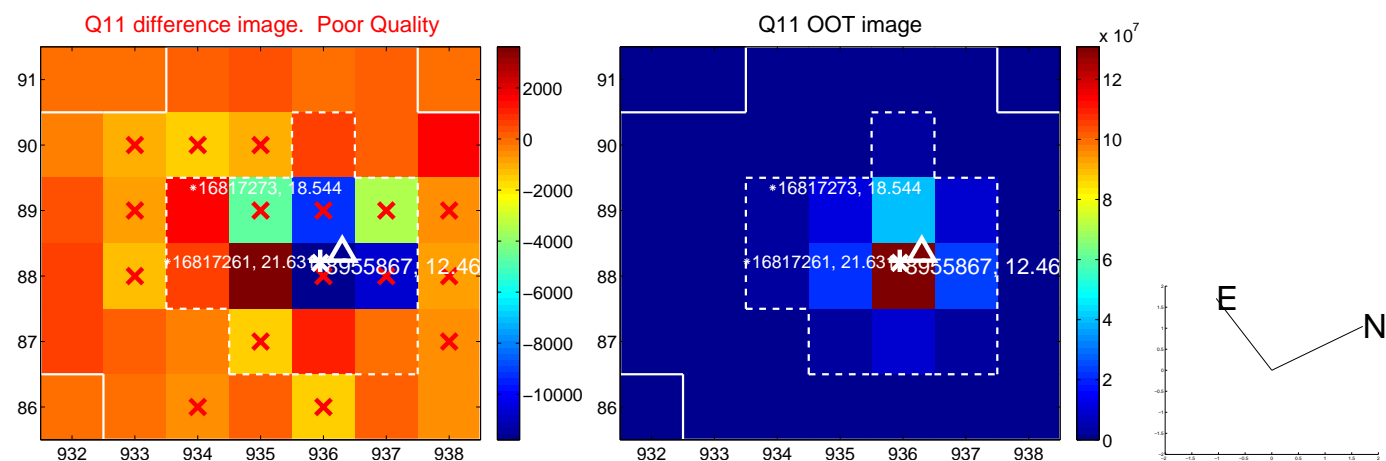
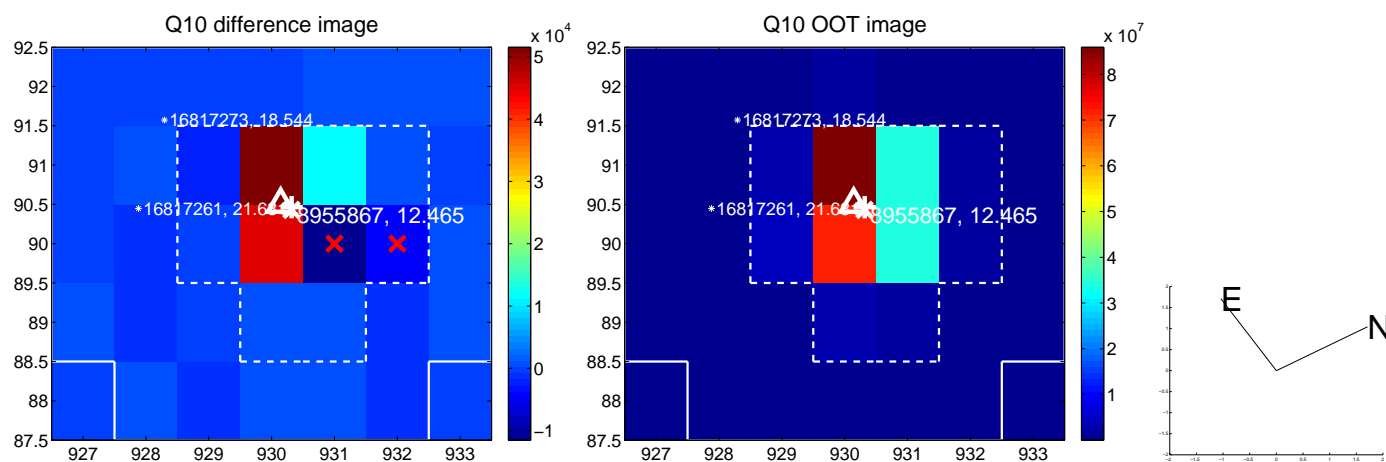
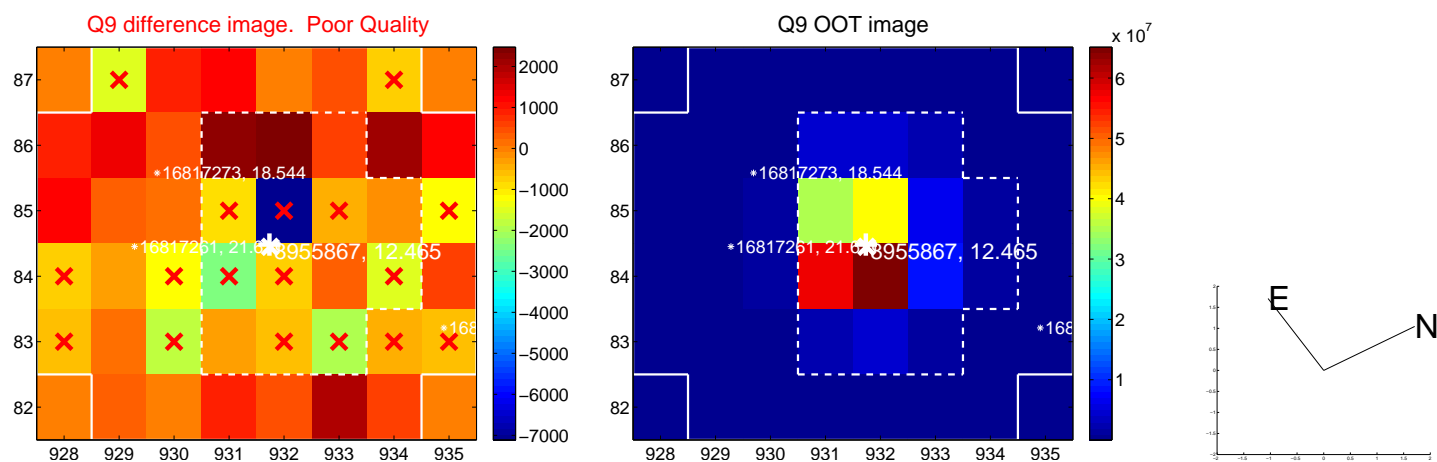
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

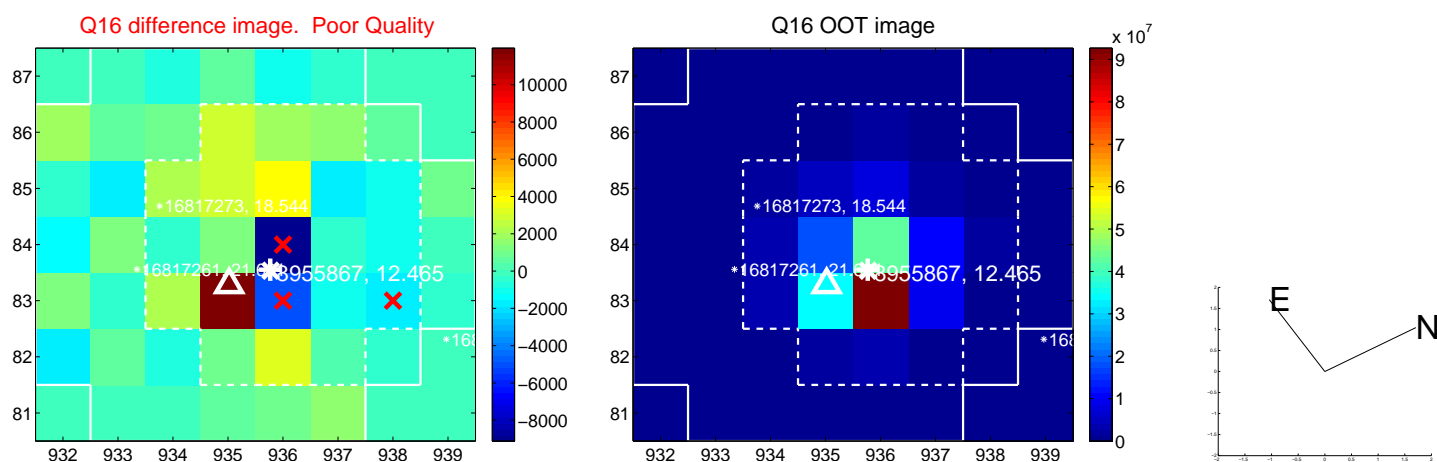
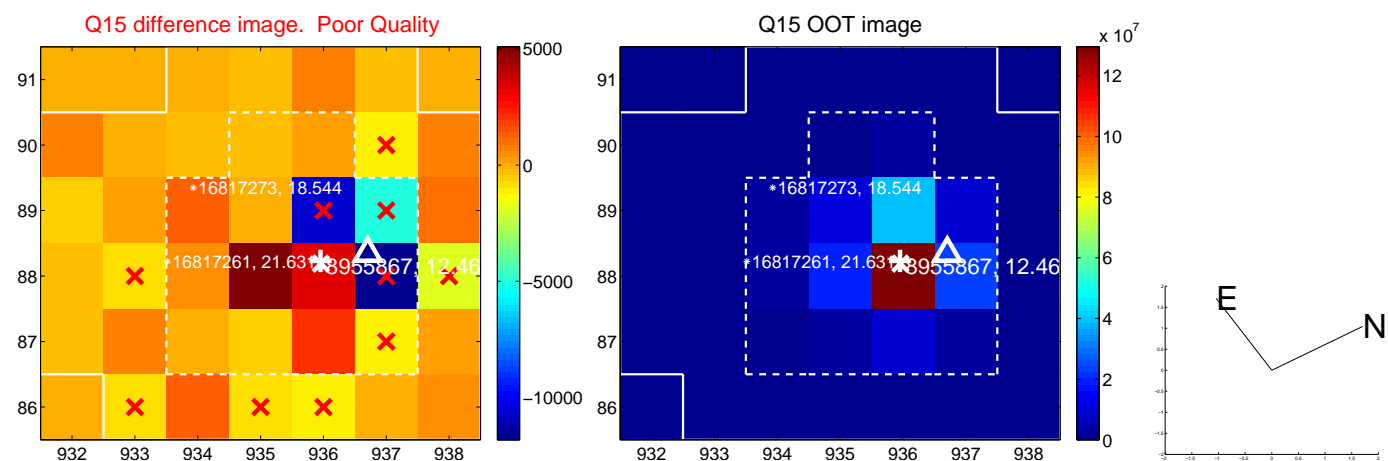
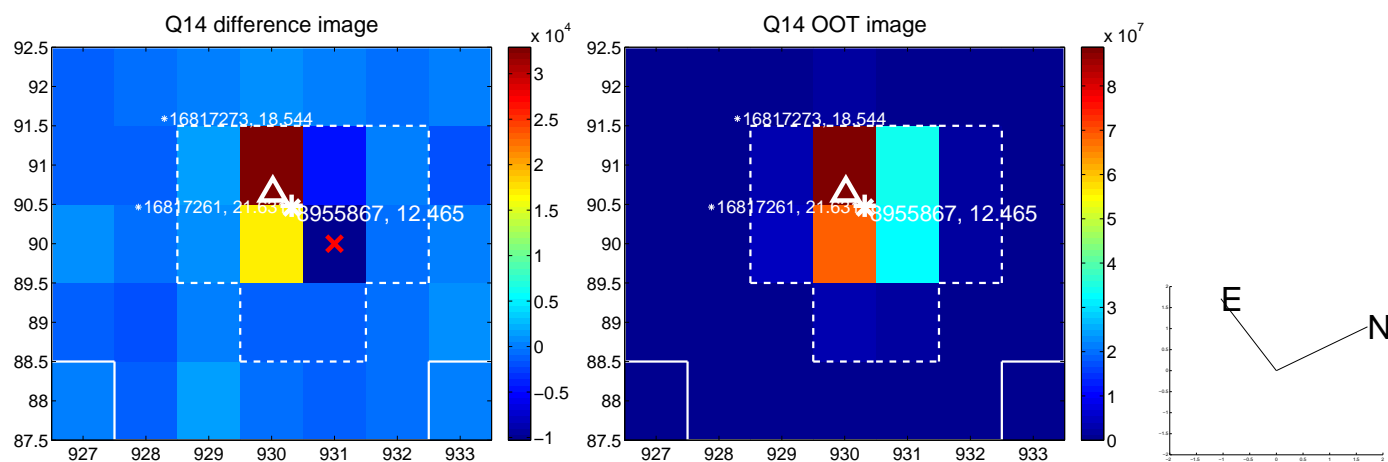
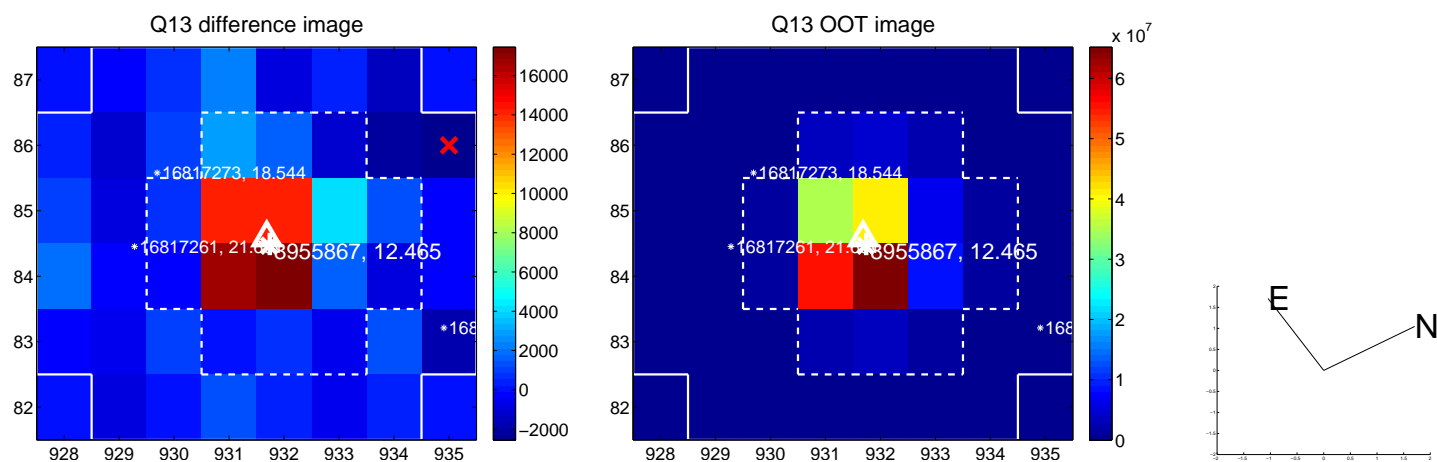


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

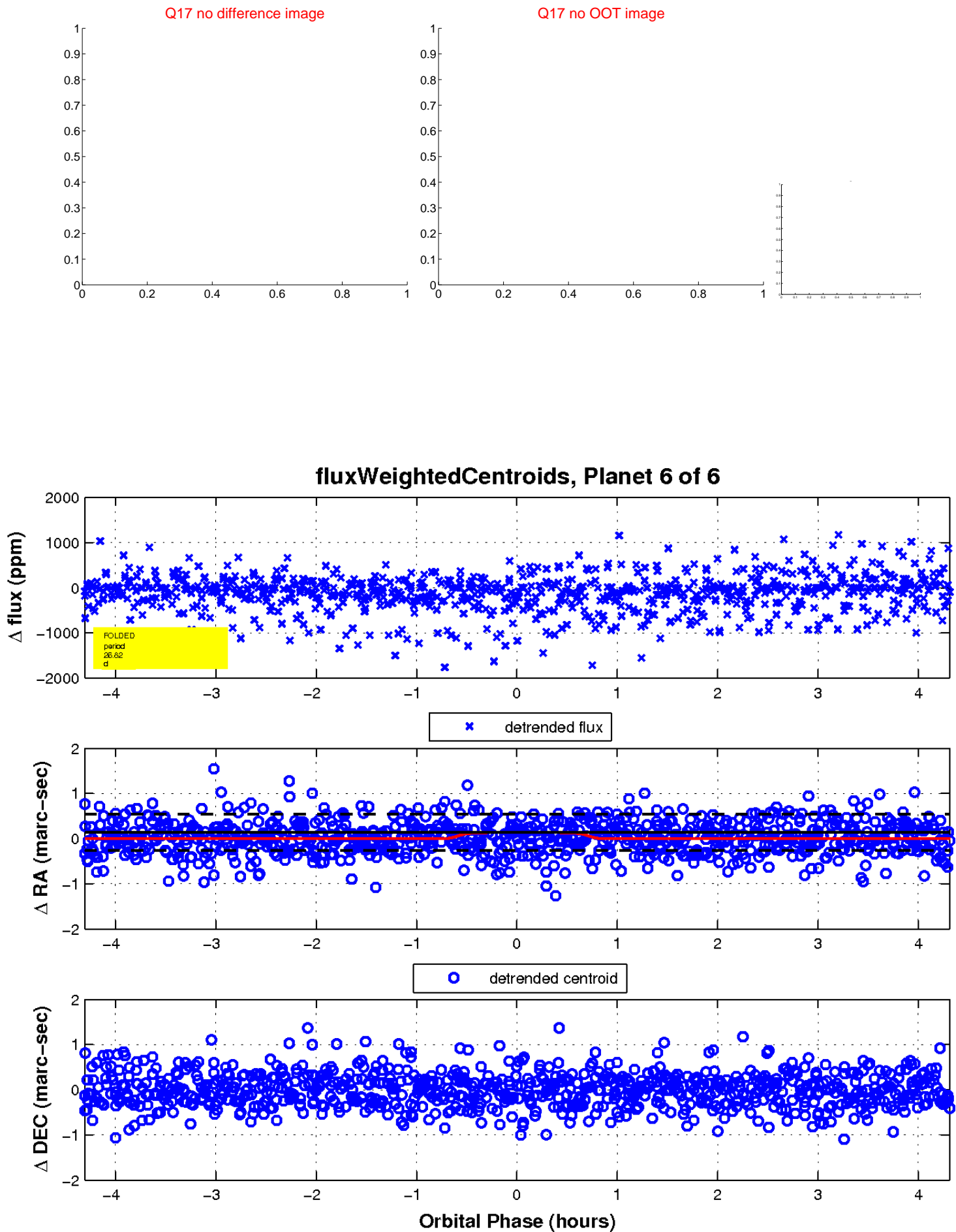




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

