

# KIC 011568624

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011568624-01	OBS	No	0.811543	132.010512	101.3	4.186	12.4	7.0	8.02	4647	8.15	0.00
011568624-02	OBS	No	116.805705	148.190012	1808.1	1.685	14.2	6.0	8.02	4647	33.47	132.78
011568624-03	OBS	No	266.977553	336.884956	3117.3	8.348	9.3	5.2	8.02	4647	56.67	44.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011568624-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT
011568624-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011568624-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

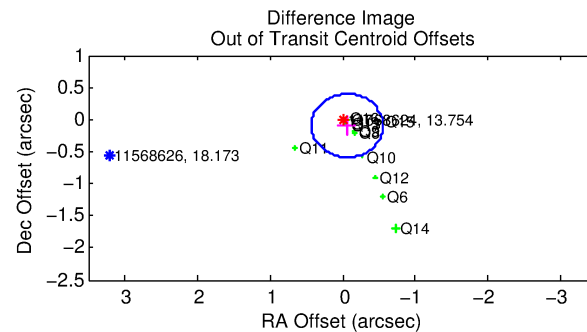
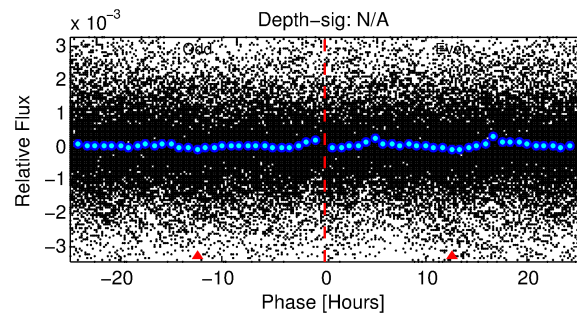
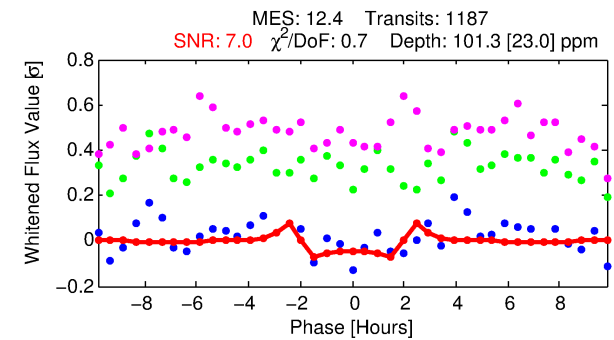
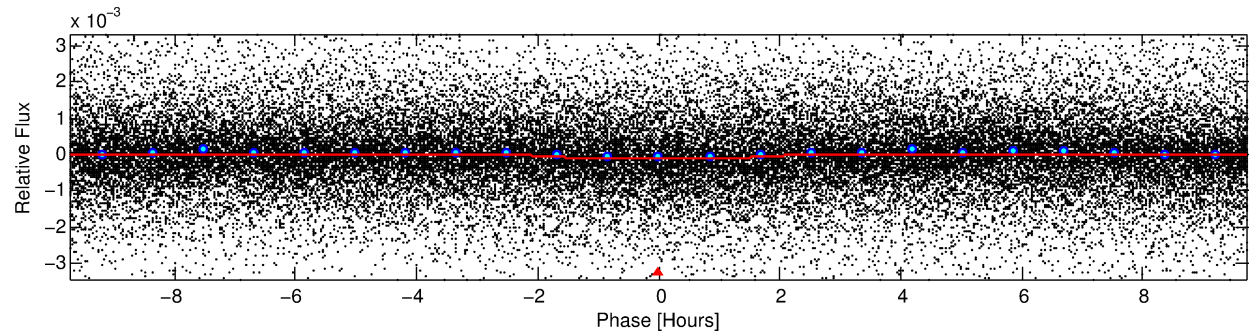
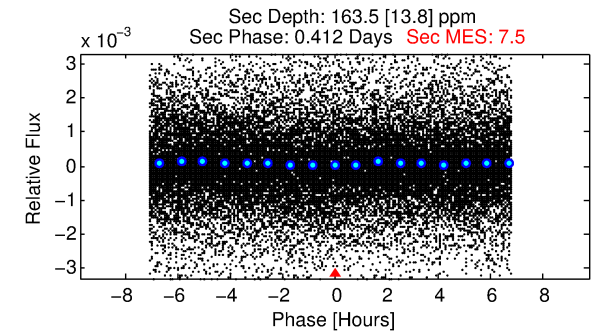
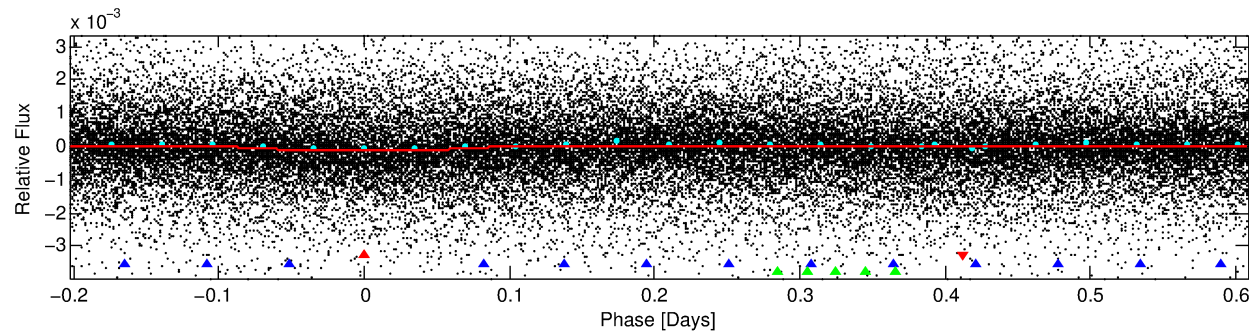
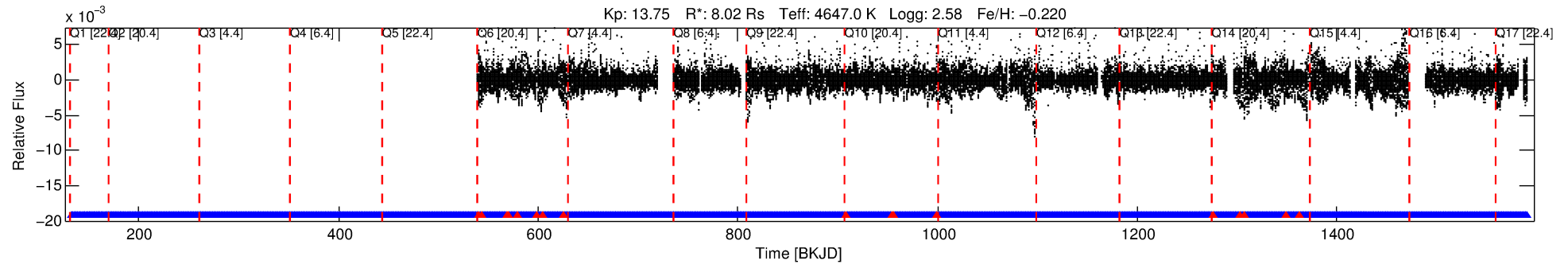
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011568624-01

No Significant Match Found

# DV One-Page Summary

KIC: 11568624 Candidate: 1 of 3 Period: 0.812 d



## DV Fit Results:

Period = 0.81154 [0.00001] d  
Epoch = 132.0105 [0.0022] BKJD  
Rp/R\* = 0.0093 [0.0040]  
a/R\* = 1.48 [1.15]  
b = 0.52 [2.06]  
Seff = N/A  
Teq = N/A  
Rp = 8.15 [5.85] Re  
a = N/A  
Ag = N/A  
Teffp = N/A

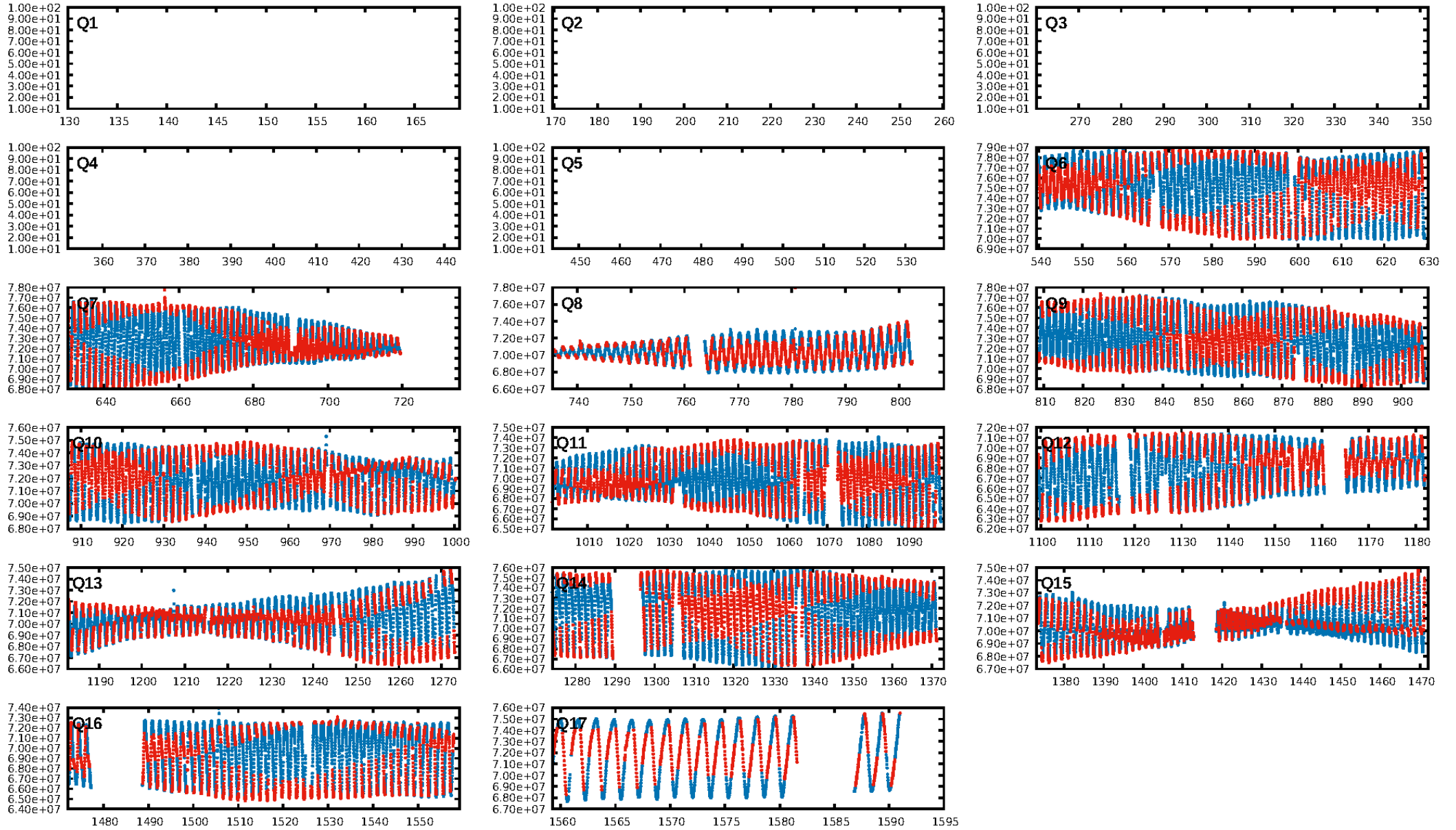
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [616.87σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.29e-27  
RollingBand-fgt: 0.99 [1137/1154]  
GhostDiagnostic-chr: 3.192  
Centroid-sig: 16.5%  
Centroid-so: 0.469 arcsec [1.40σ]  
OotOffset-rm: 0.113 arcsec [0.69σ]  
KicOffset-rm: 0.088 arcsec [0.70σ]  
OotOffset-st: 3/3/3 [12]  
KicOffset-st: 3/3/3 [12]  
DiffImageQuality-fgm: 0.58 [7/12]  
DiffImageOverlap-fno: 1.00 [12/12]

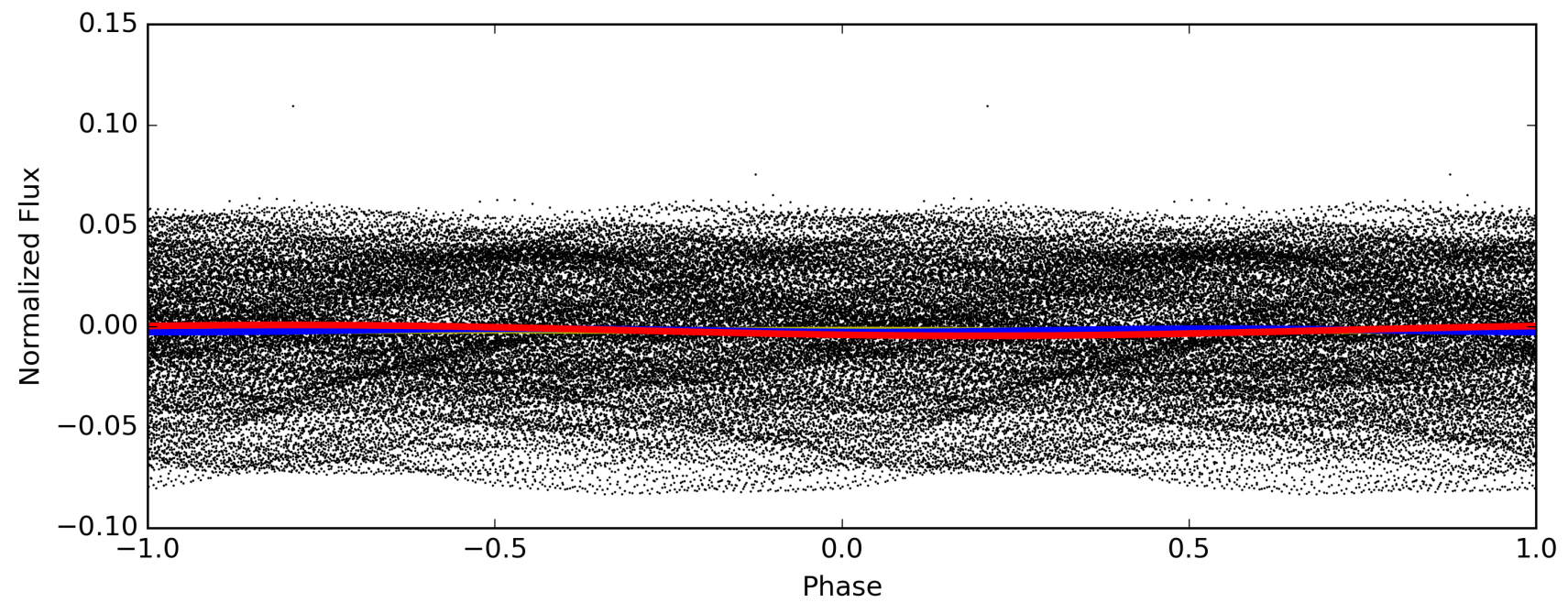
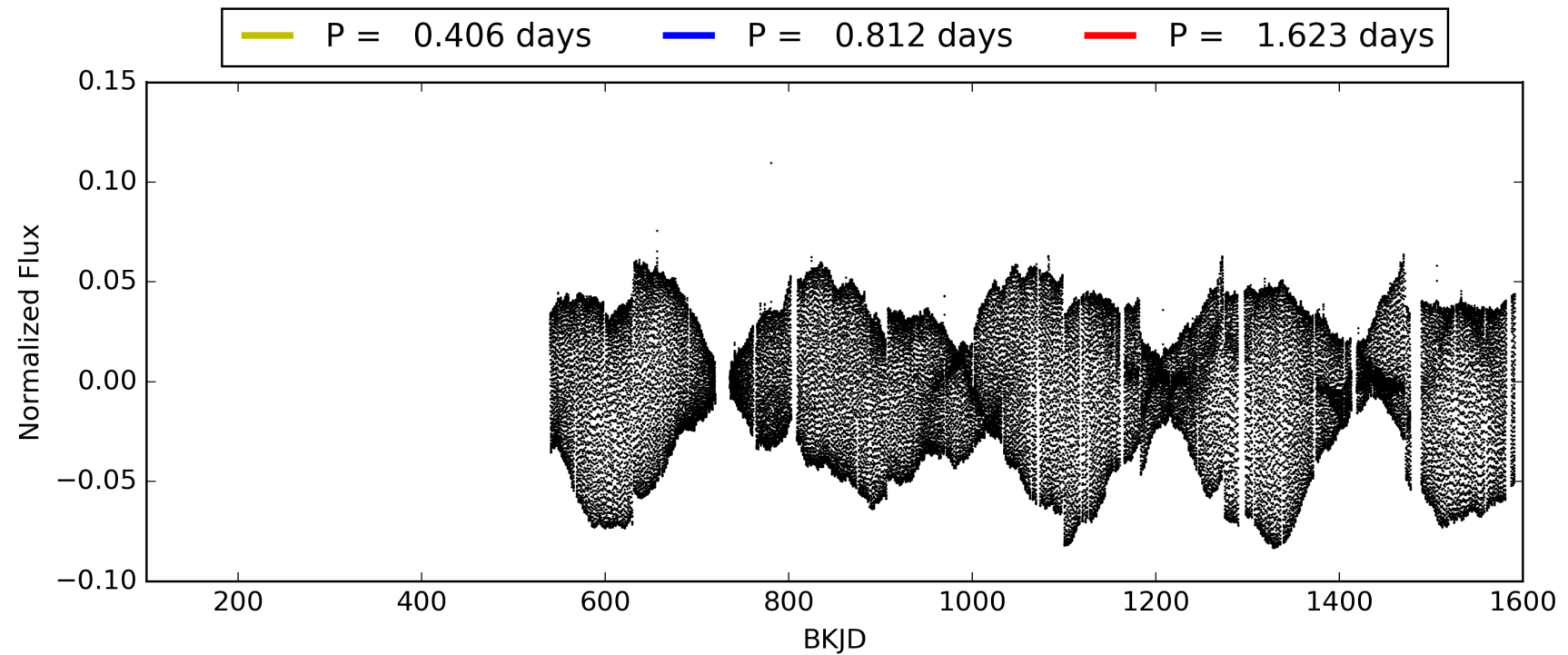
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:57:46 Z

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

# TCE 011568624-01, PDC Light Curves



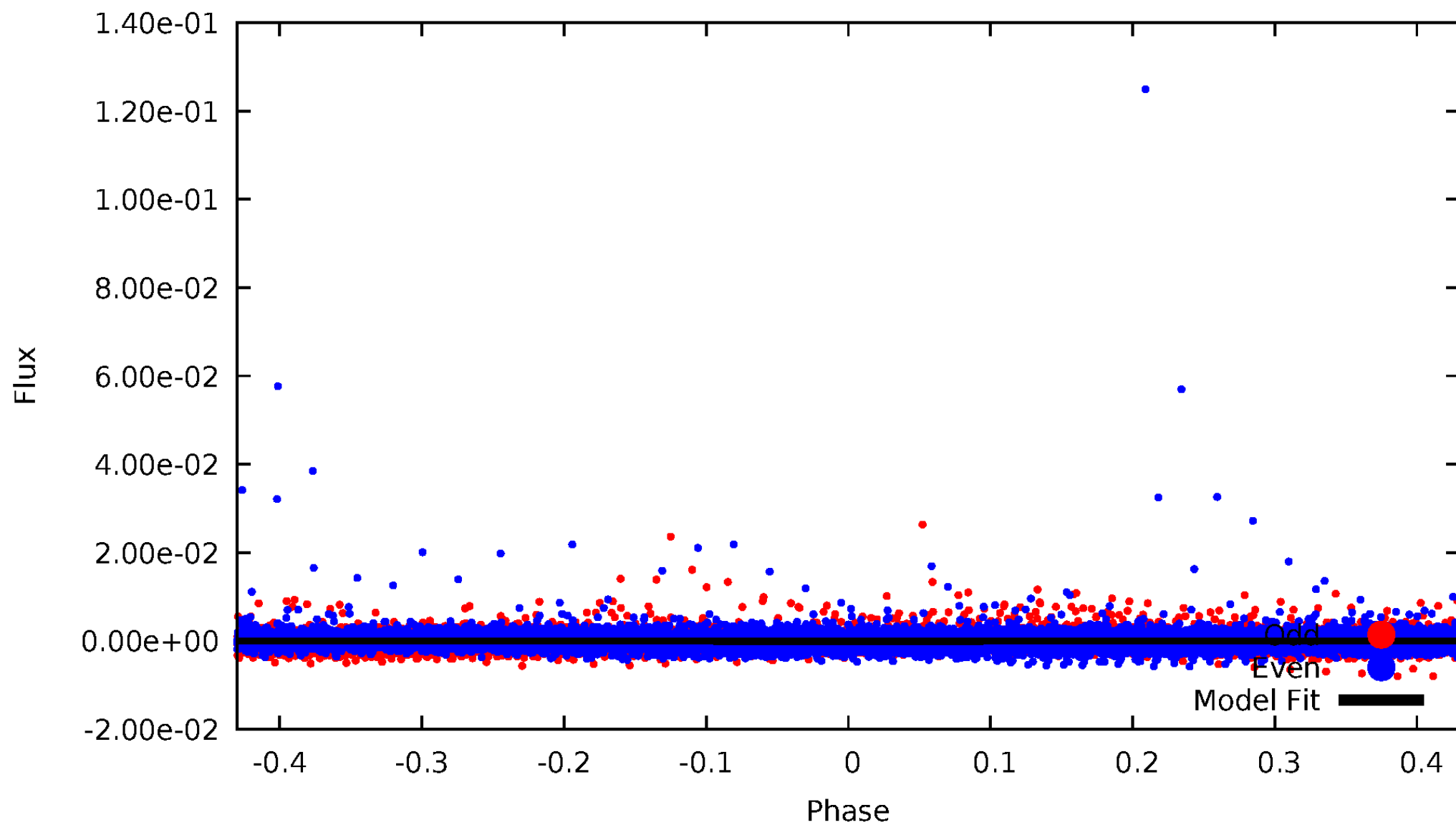
TCE 011568624-01





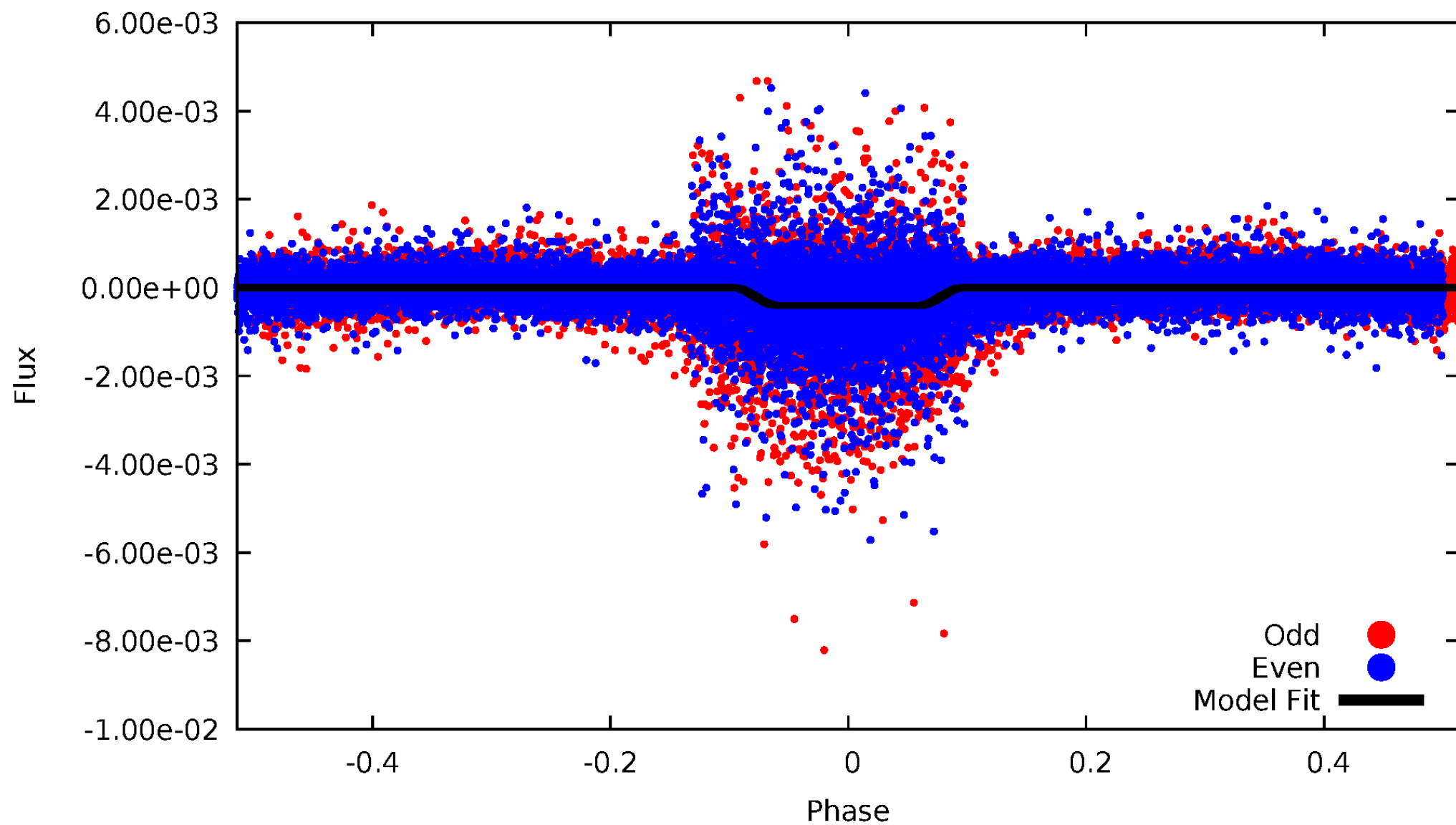
# DV Odd/Even

TCE 011568624-01

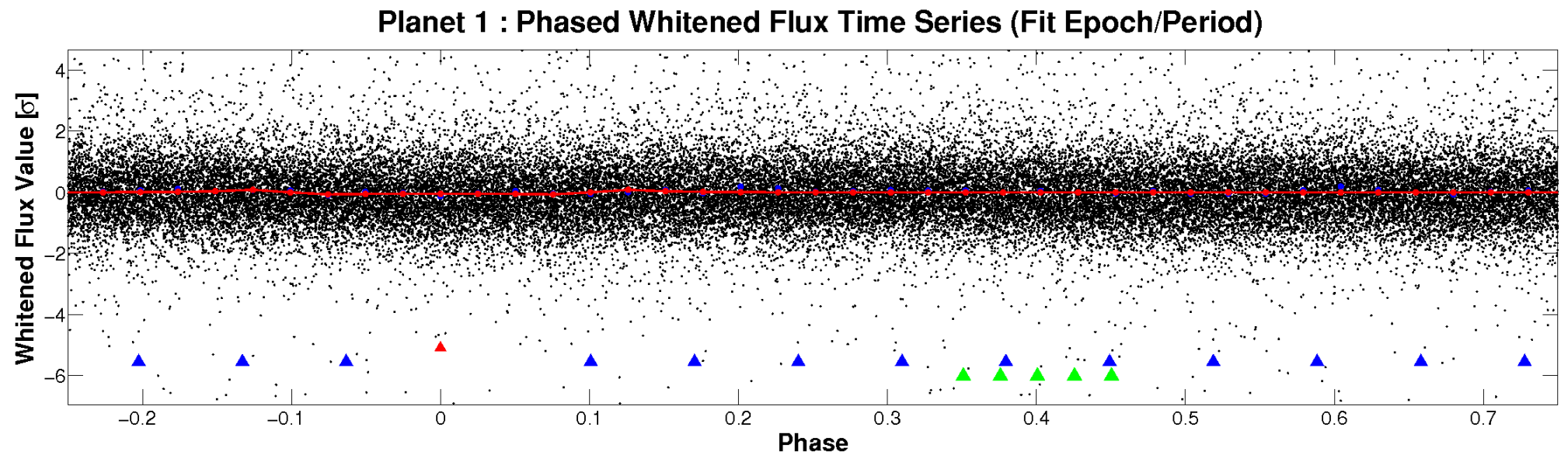
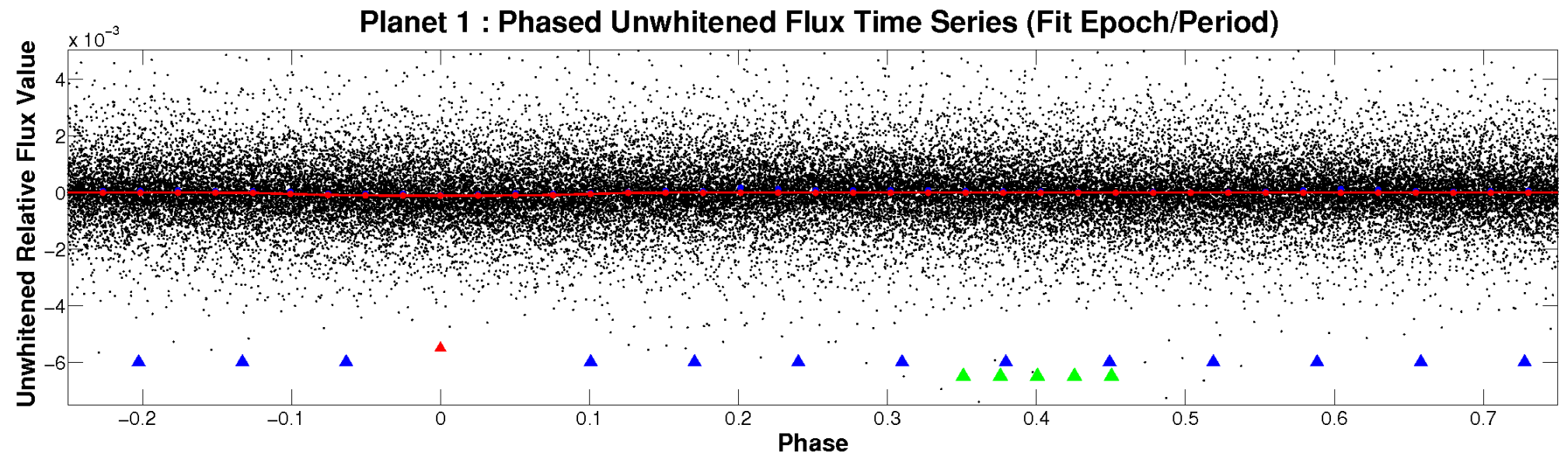


# ALT Odd/Even

TCE 011568624-01

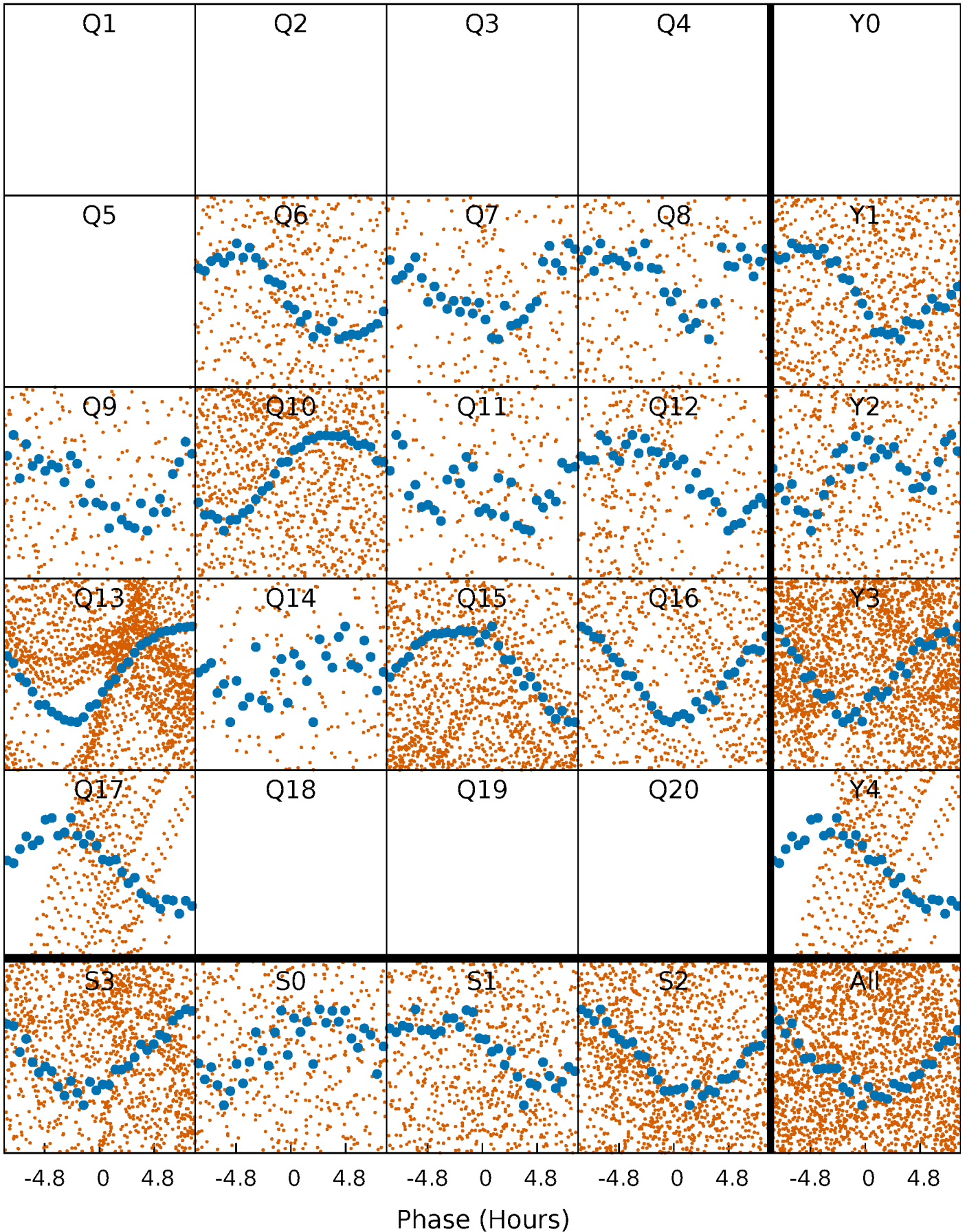


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

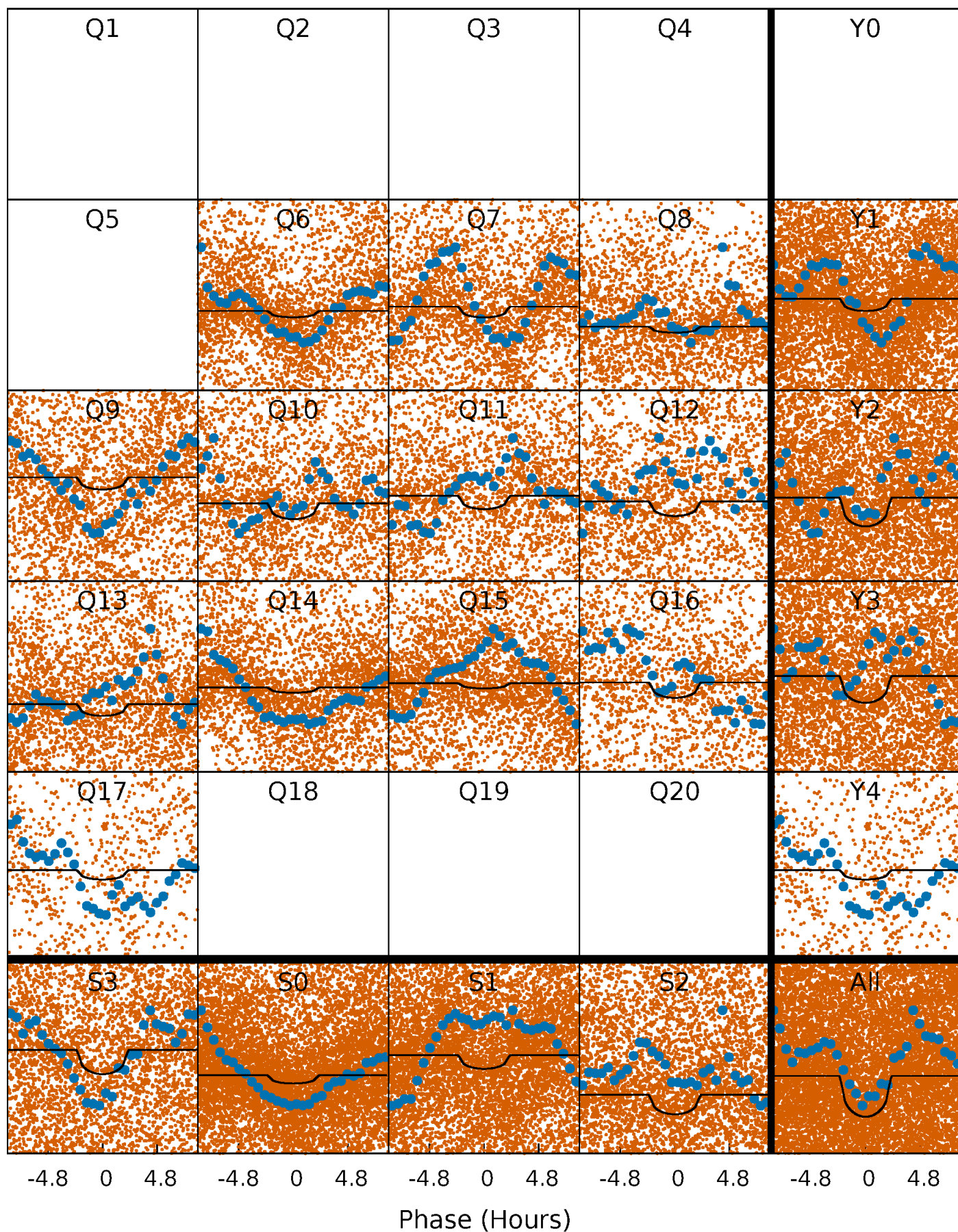
TCE 011568624-01 P= 0.811543 Days  $T_0=132.010512$  (BKJD)





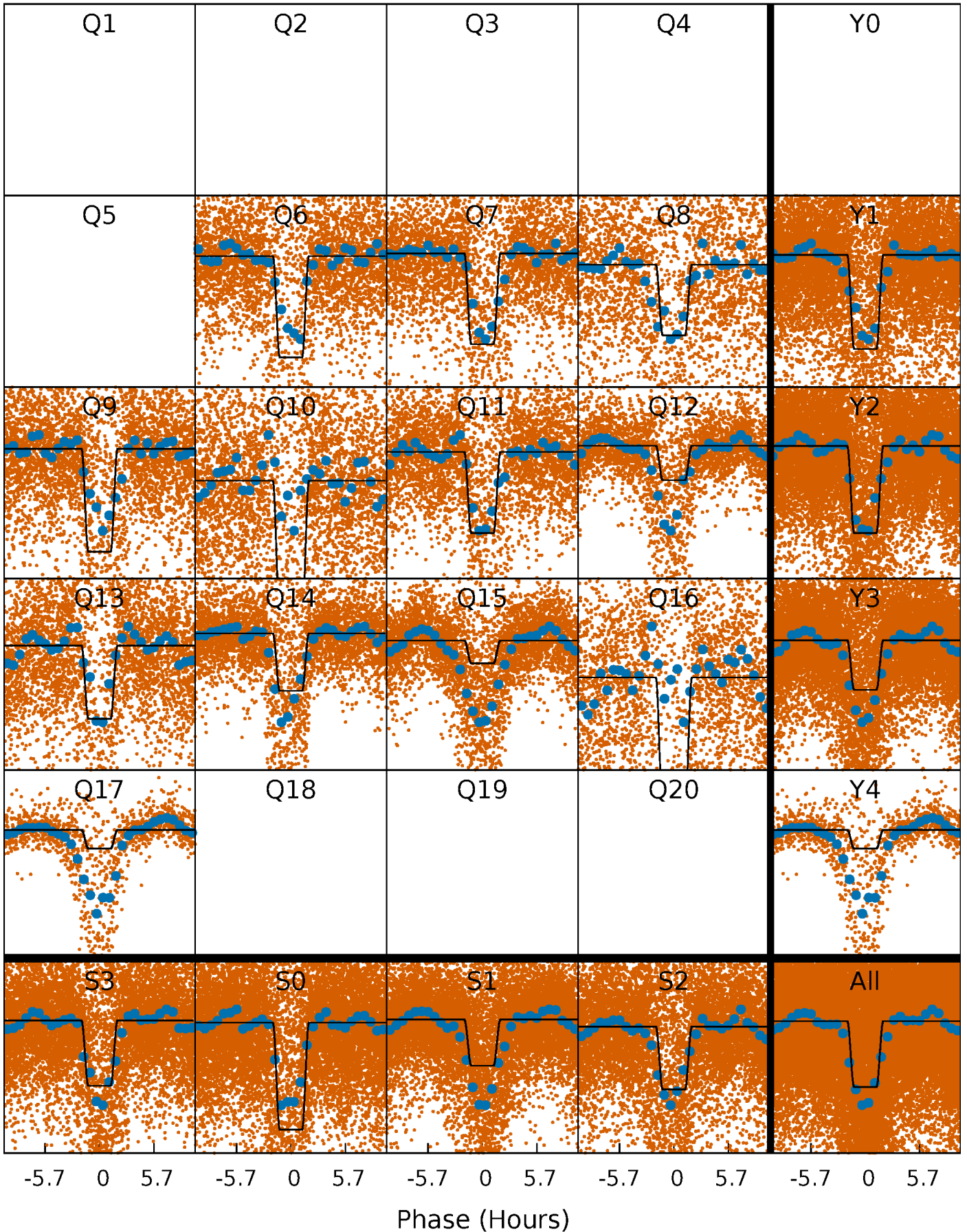
# DV Quarter-Phased Transit Curves

TCE 011568624-01 P= 0.811543 Days  $T_0=132.010512$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

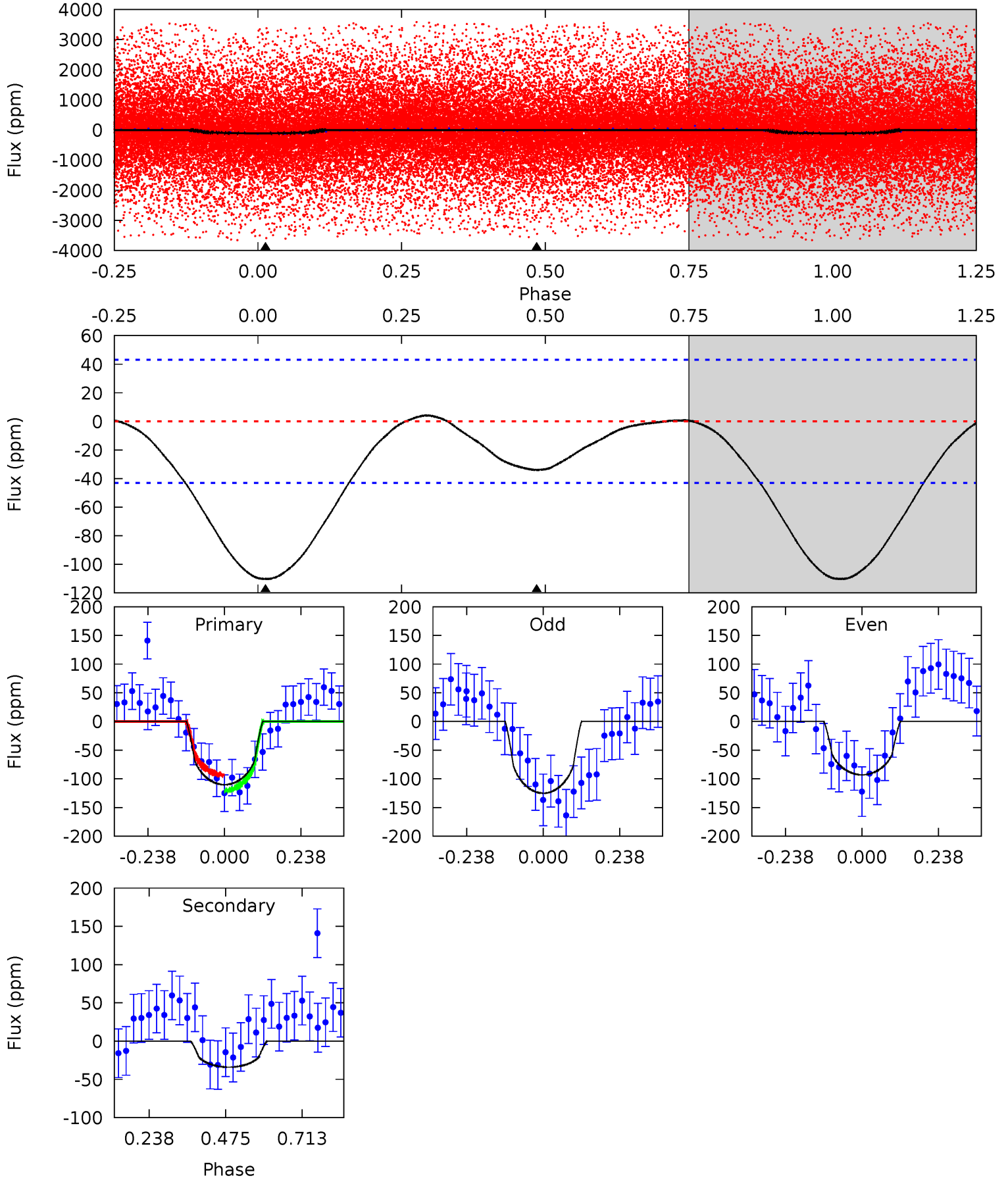
TCE 011568624-01 P= 0.811772 Days  $T_0=131.974820$  (BKJD)



# DV Model-Shift Uniqueness Test

011568624-01,  $P = 0.811543$  Days,  $E = 132.010512$  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
11.2	3.46	0	0	4.38	1.18	0.18	11.2	11.2	3.46	3.46	1.62	0.52	0.04	1.38

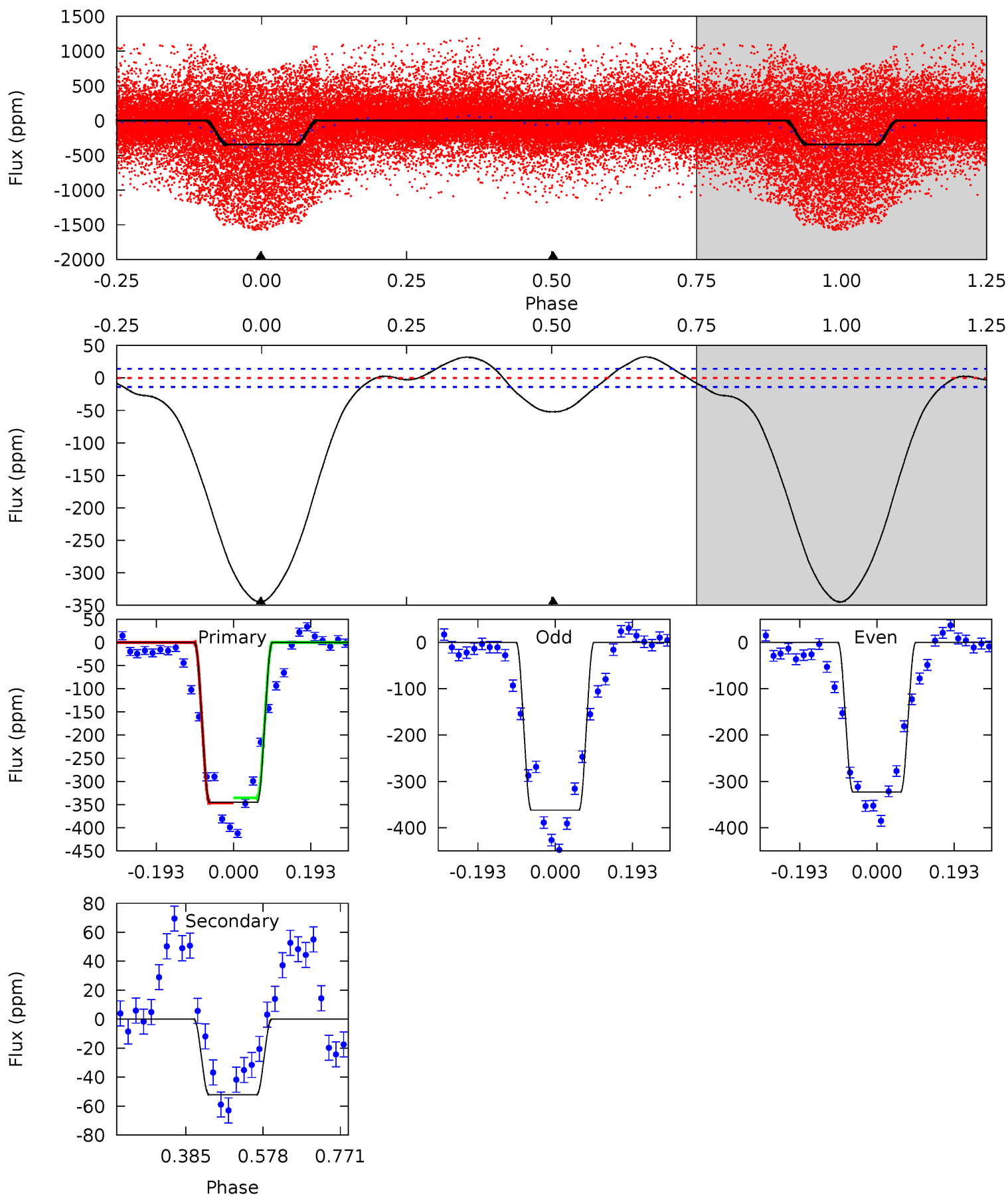




# Alt Model-Shift Uniqueness Test

011568624-01, P = 0.811772 Days, E = 131.974820 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
109.2	16.5	0	0	4.43	1.30	3.93	109.2	109.2	16.5	16.5	6.21	1.31	0.09	0



### Stellar Parameters For KIC 011568624

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4647^{+152}_{-105}$	$2.579^{+0.366}_{-0.244}$	$-0.220^{+0.300}_{-0.200}$	$8.021^{+4.610}_{-2.482}$	$0.891^{+0.497}_{-0.026}$	$0.002^{+0.006}_{-0.002}$
	+3%/-2%	+14%/-9%	+136%/-91%	+57%/-31%	+56%/-3%	+247%/-70%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 011568624-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-34 \pm 10$	$8.14^{+5.01}_{-3.67}$	$6270^{+737}_{-657}$	$-4640^{+1494}_{-642}$	$0.081^{+0.195}_{-0.050}$
Alt.	$-52 \pm 3$	$17.79^{+5.70}_{-4.98}$	$6239^{+719}_{-603}$	$-4917^{+441}_{-539}$	$0.027^{+0.024}_{-0.011}$

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



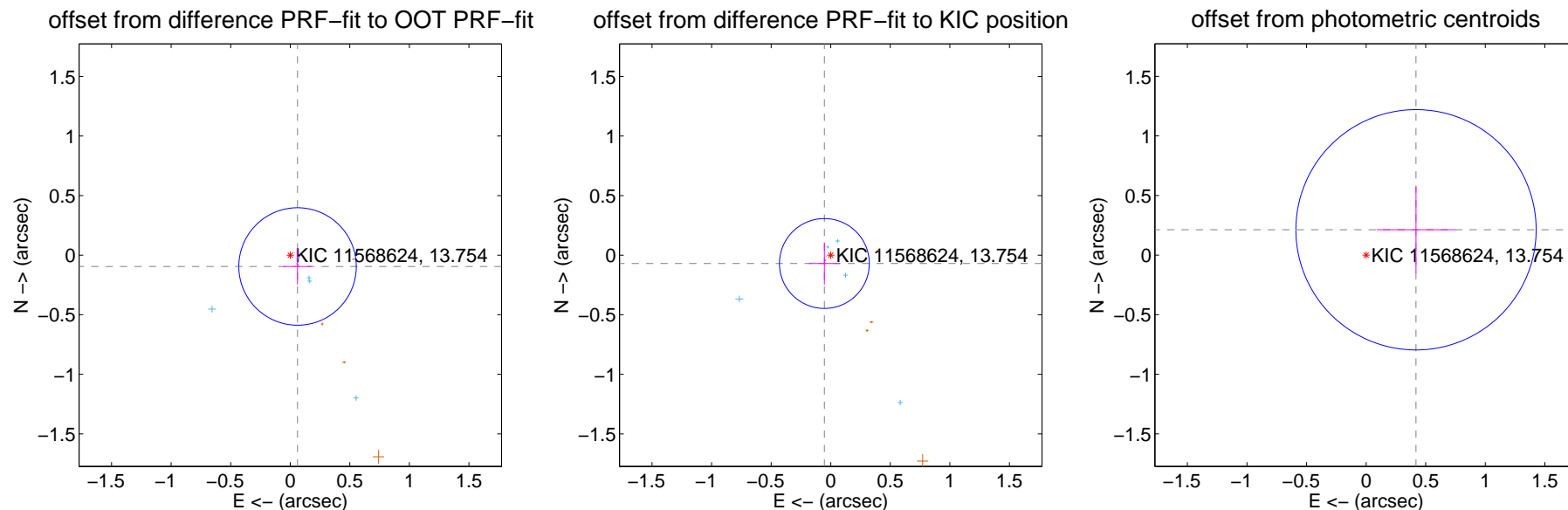
## DV Centroid Data

Supplemental centroid analysis for 011568624-01. Kepler magnitude: 13.75. Transit SNR 6.95

There are 7 quarters with good PRF difference image offsets

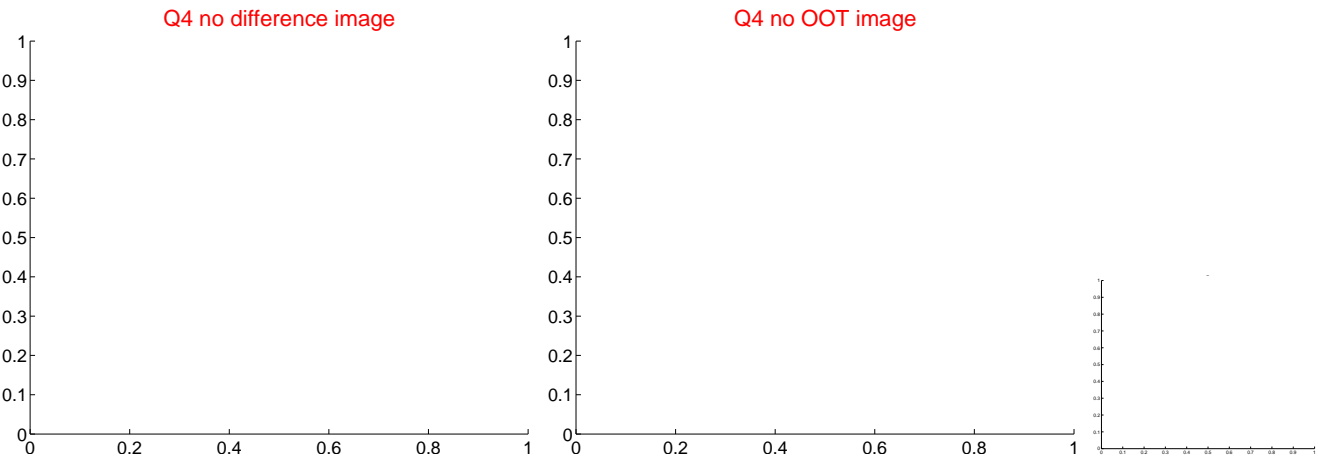
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.113 \pm 0.164$	0.69	$-0.061 \pm 0.118$	$-0.095 \pm 0.152$
PRF-fit source offset from KIC position	$0.088 \pm 0.126$	0.70	$0.053 \pm 0.130$	$-0.070 \pm 0.176$
photometric centroid source offset	$0.47 \pm 0.34$	1.40	$-0.42 \pm 0.33$	$0.21 \pm 0.36$

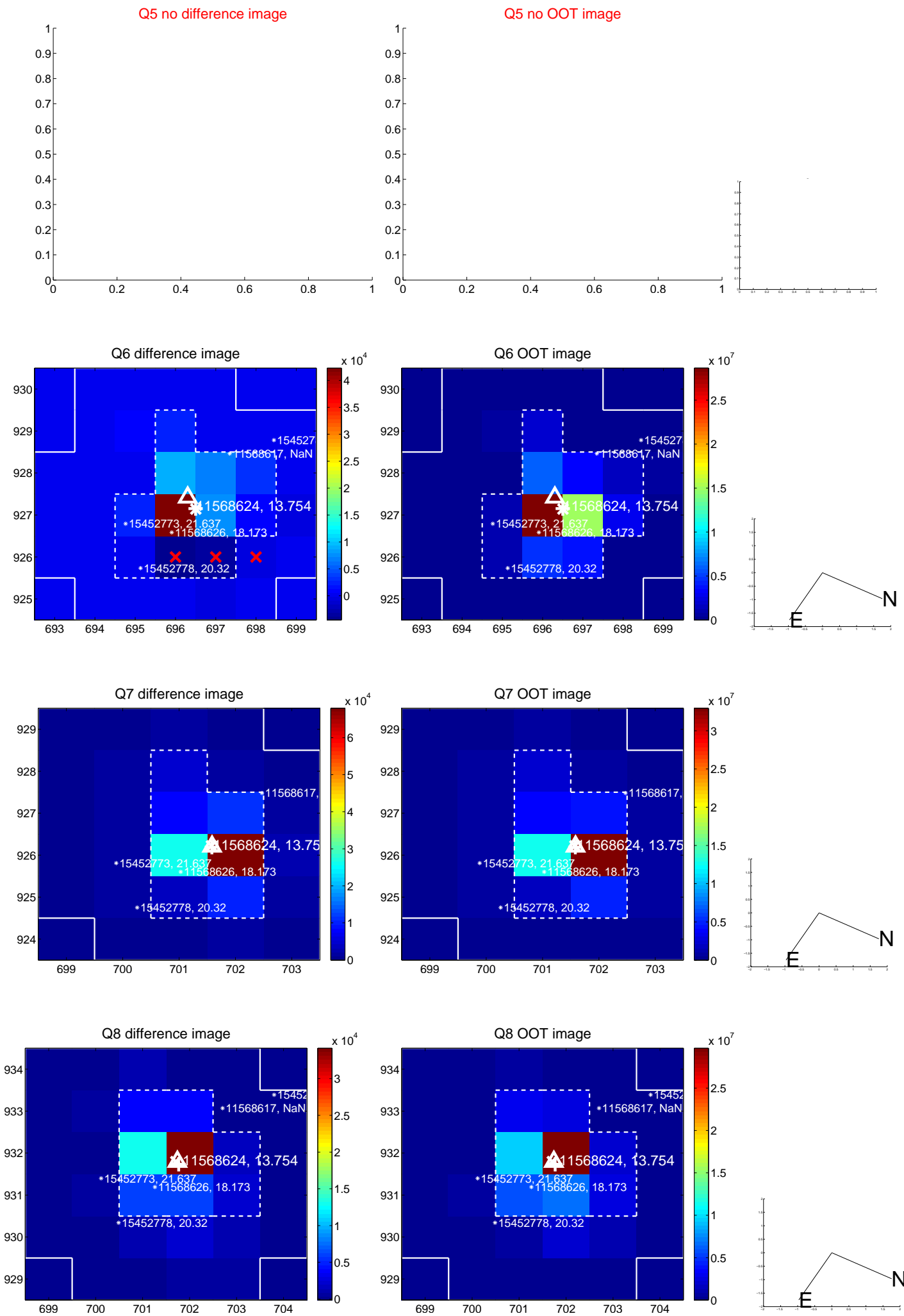


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

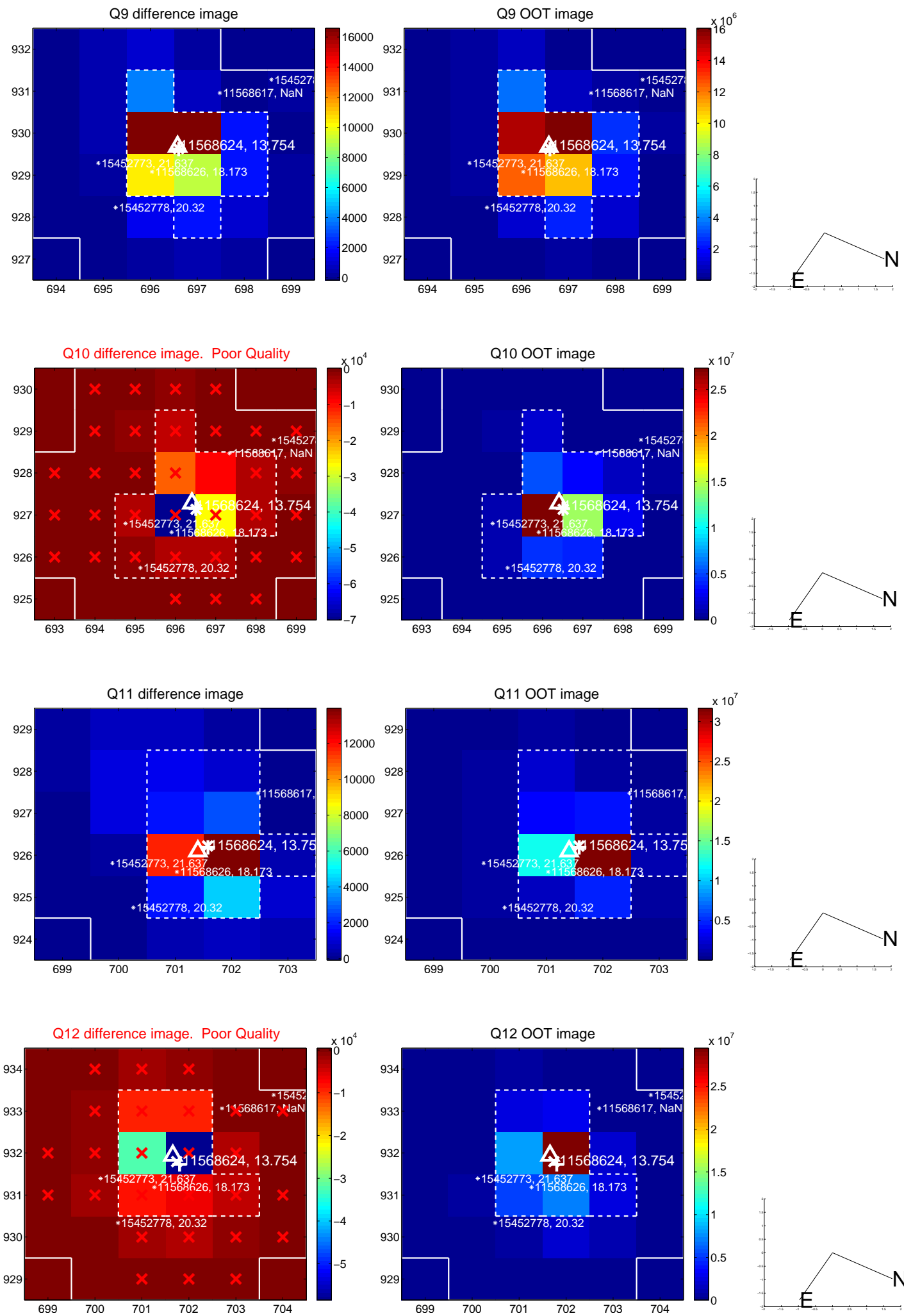
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



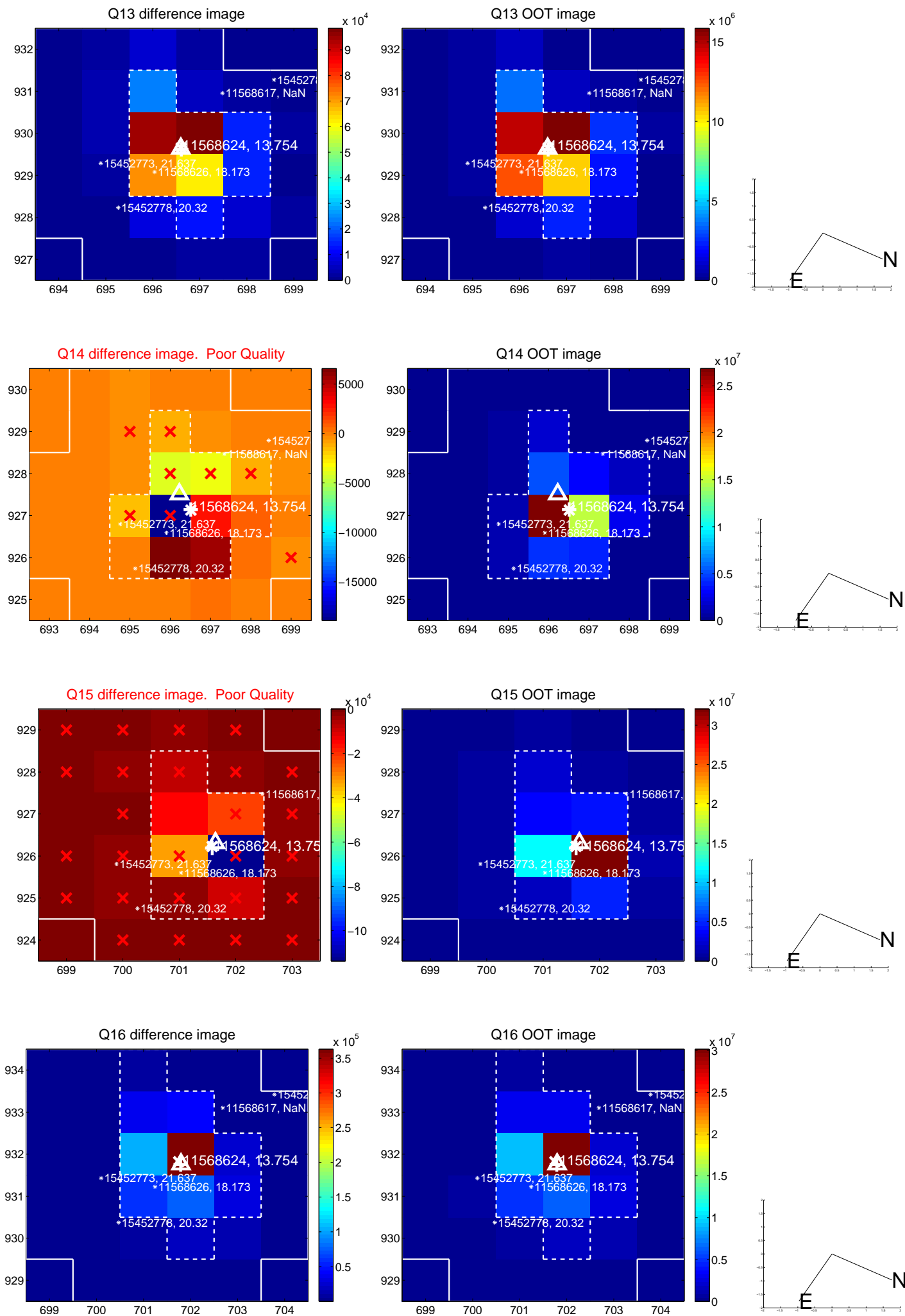
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

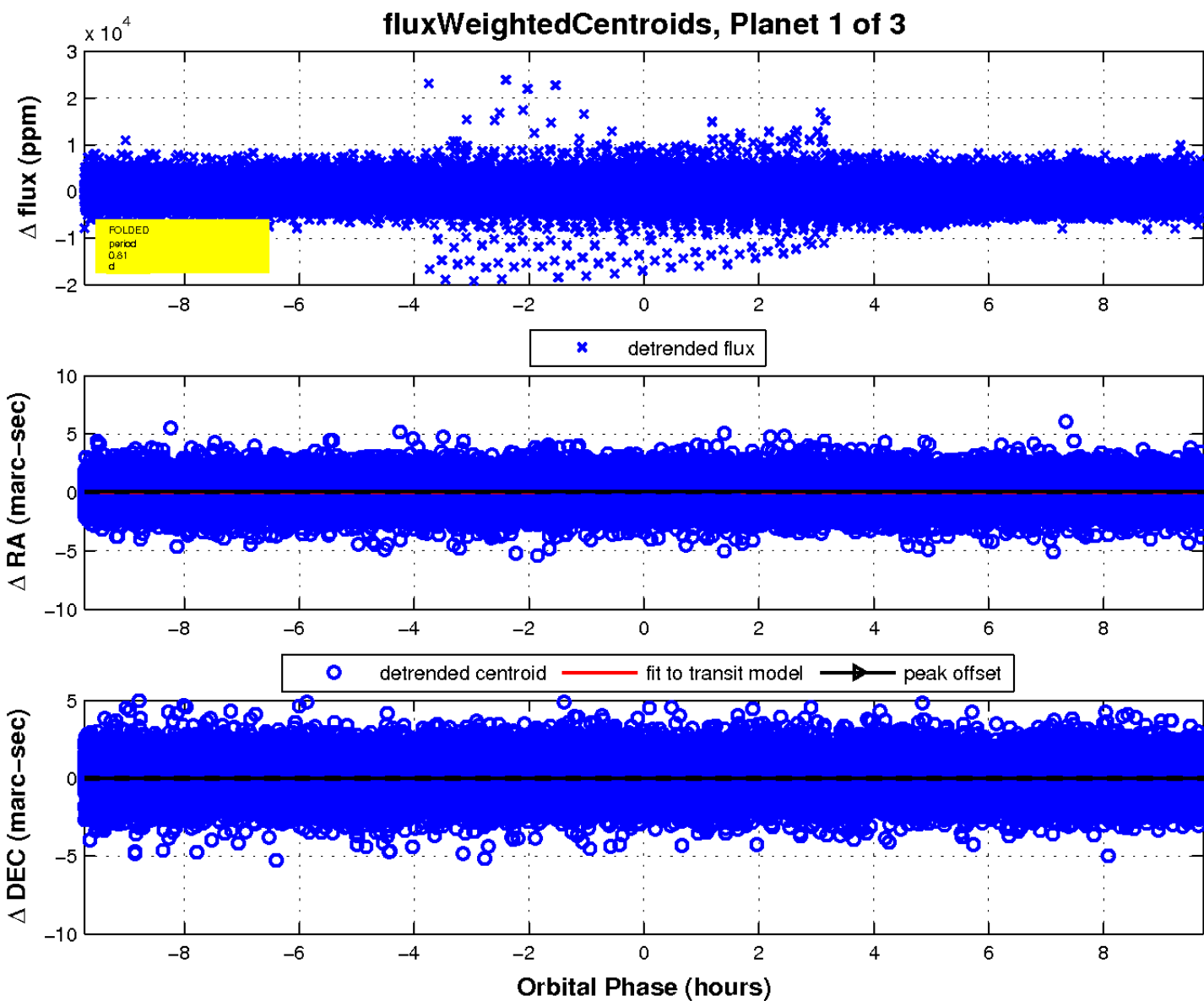
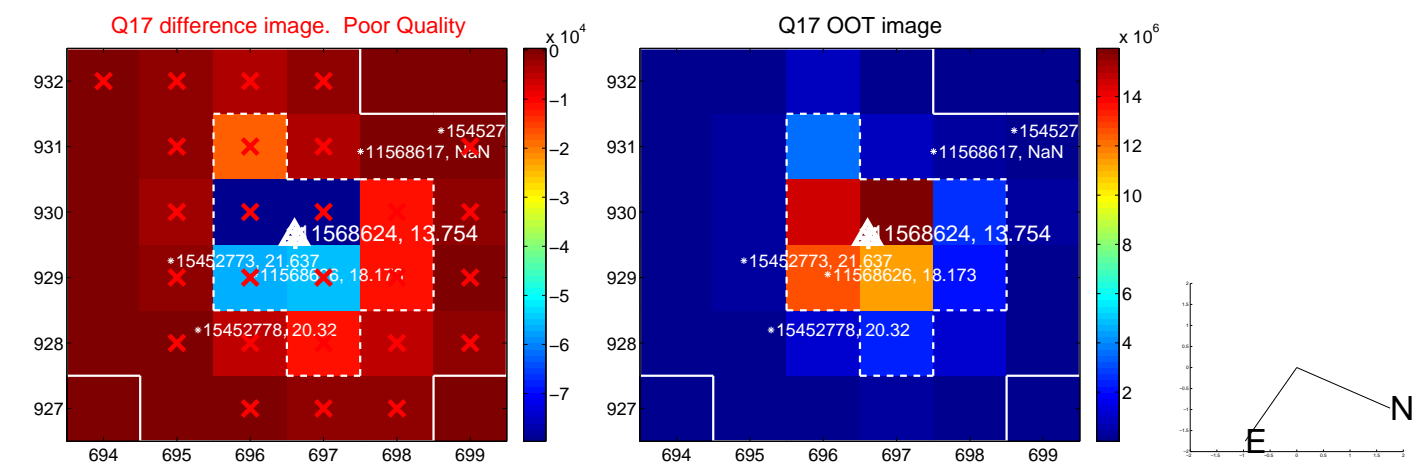


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



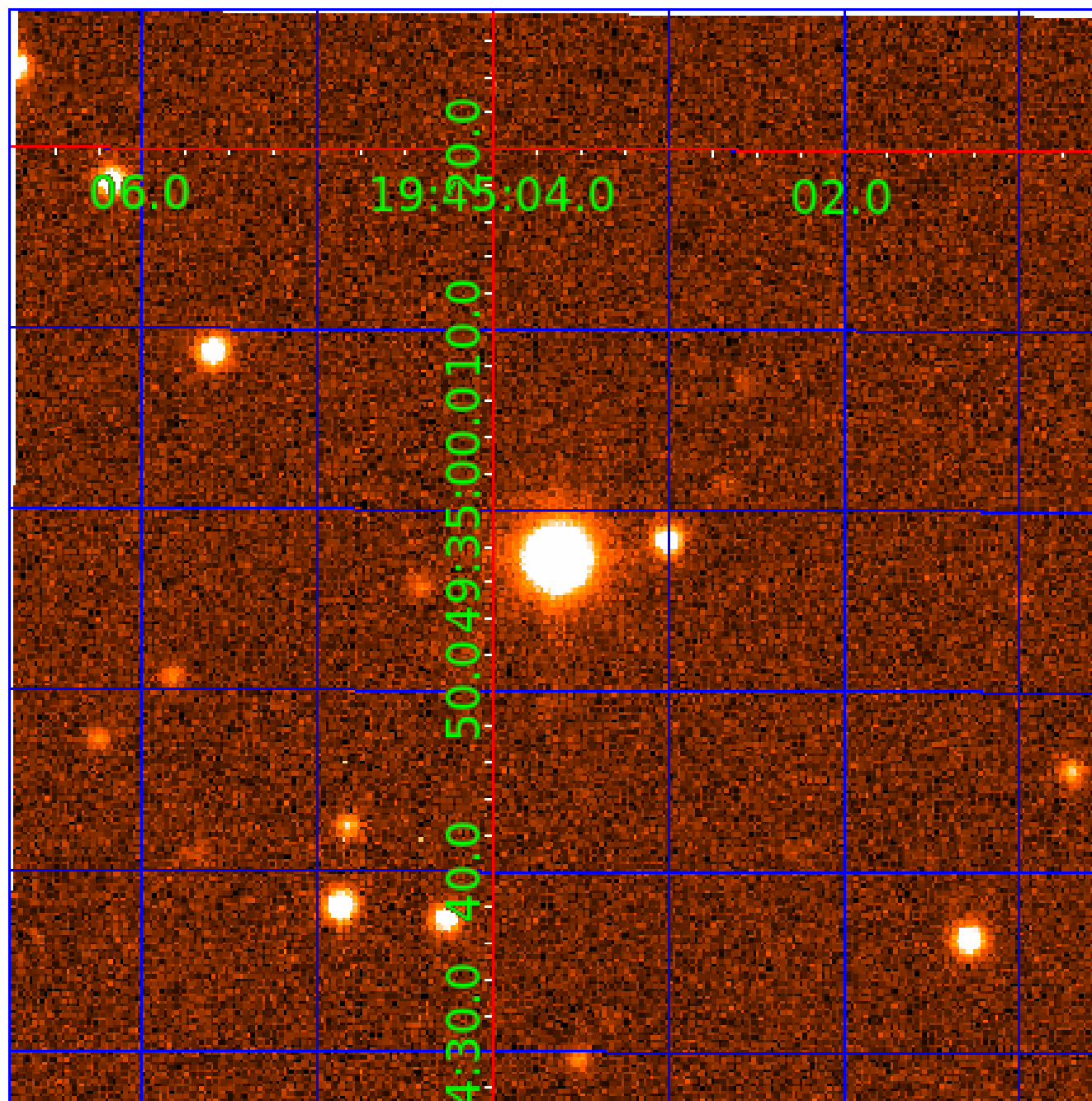


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011568624

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011568624-01	OBS	No	0.811543	132.010512	101.3	4.186	12.4	7.0	8.02	4647	8.15	0.00
011568624-02	OBS	No	116.805705	148.190012	1808.1	1.685	14.2	6.0	8.02	4647	33.47	132.78
011568624-03	OBS	No	266.977553	336.884956	3117.3	8.348	9.3	5.2	8.02	4647	56.67	44.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011568624-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT
011568624-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011568624-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

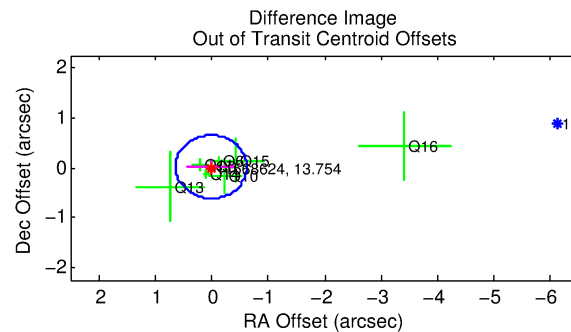
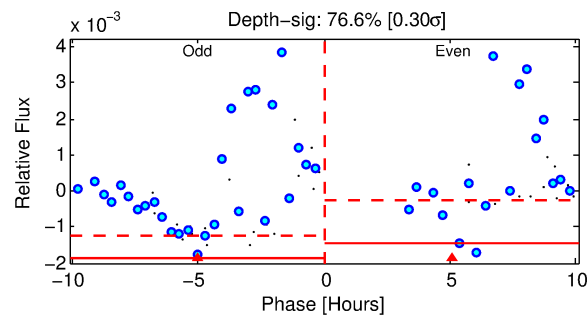
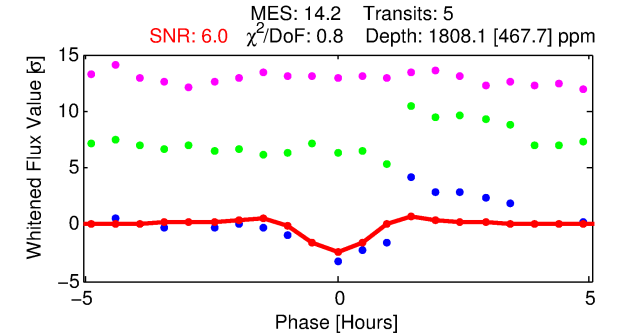
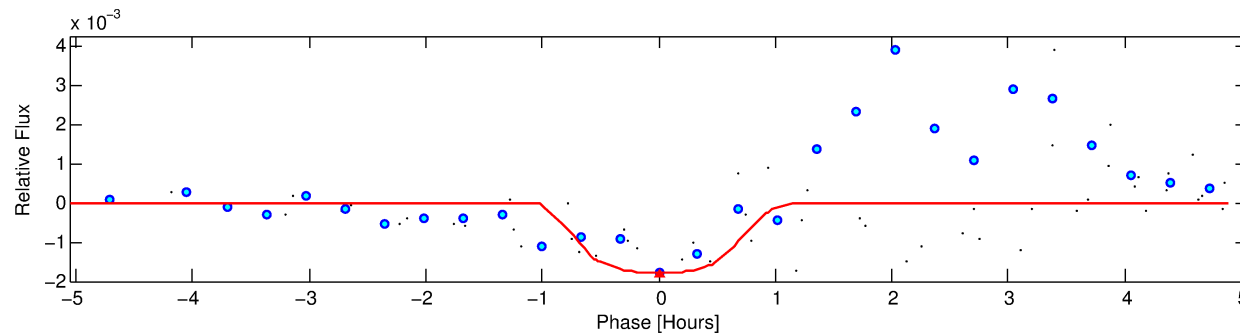
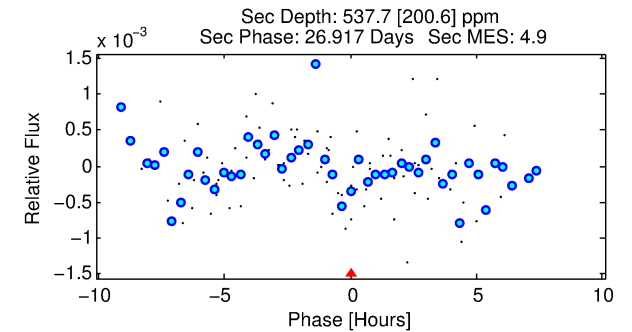
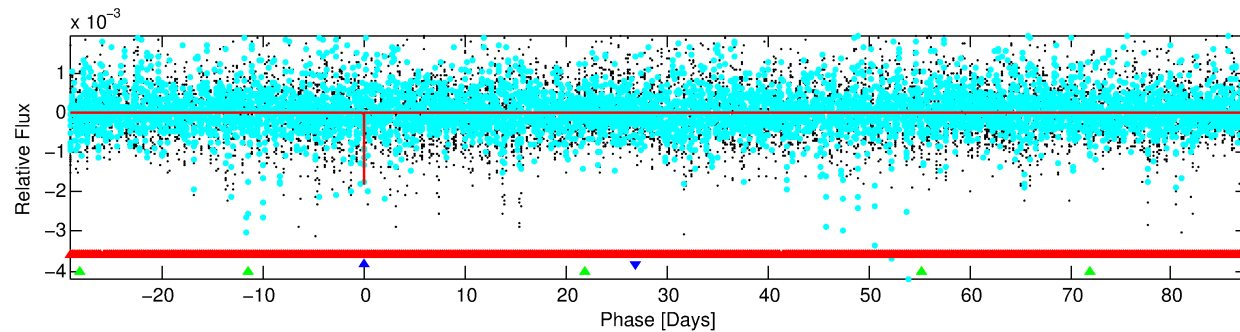
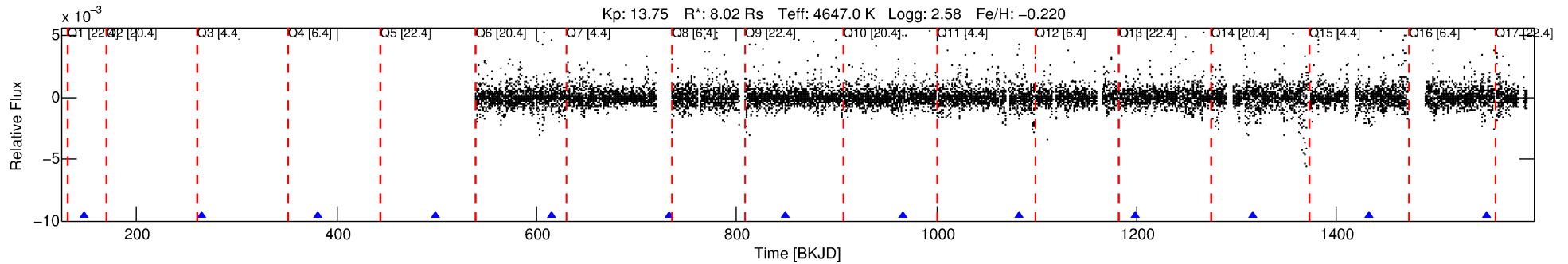
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011568624-02

No Significant Match Found

# DV One-Page Summary

KIC: 11568624 Candidate: 2 of 3 Period: 116.806 d



## DV Fit Results:

Period = 116.80571 [0.00345] d  
Epoch = 148.1900 [0.0239] BKJD  
Rp/R\* = 0.0382 [0.3241]  
a/R\* = 521.76 [13632.59]  
b = 0.33 [73.05]  
Seff = 132.78 [91.95]  
Teq = 866 [150] K  
Rp = 33.47 [284.29] Re  
a = 0.4499 [0.2138] AU  
Ag = 53.46 [907.05] [0.06σ]  
Teffp = 3619 [15338] K [0.18σ]

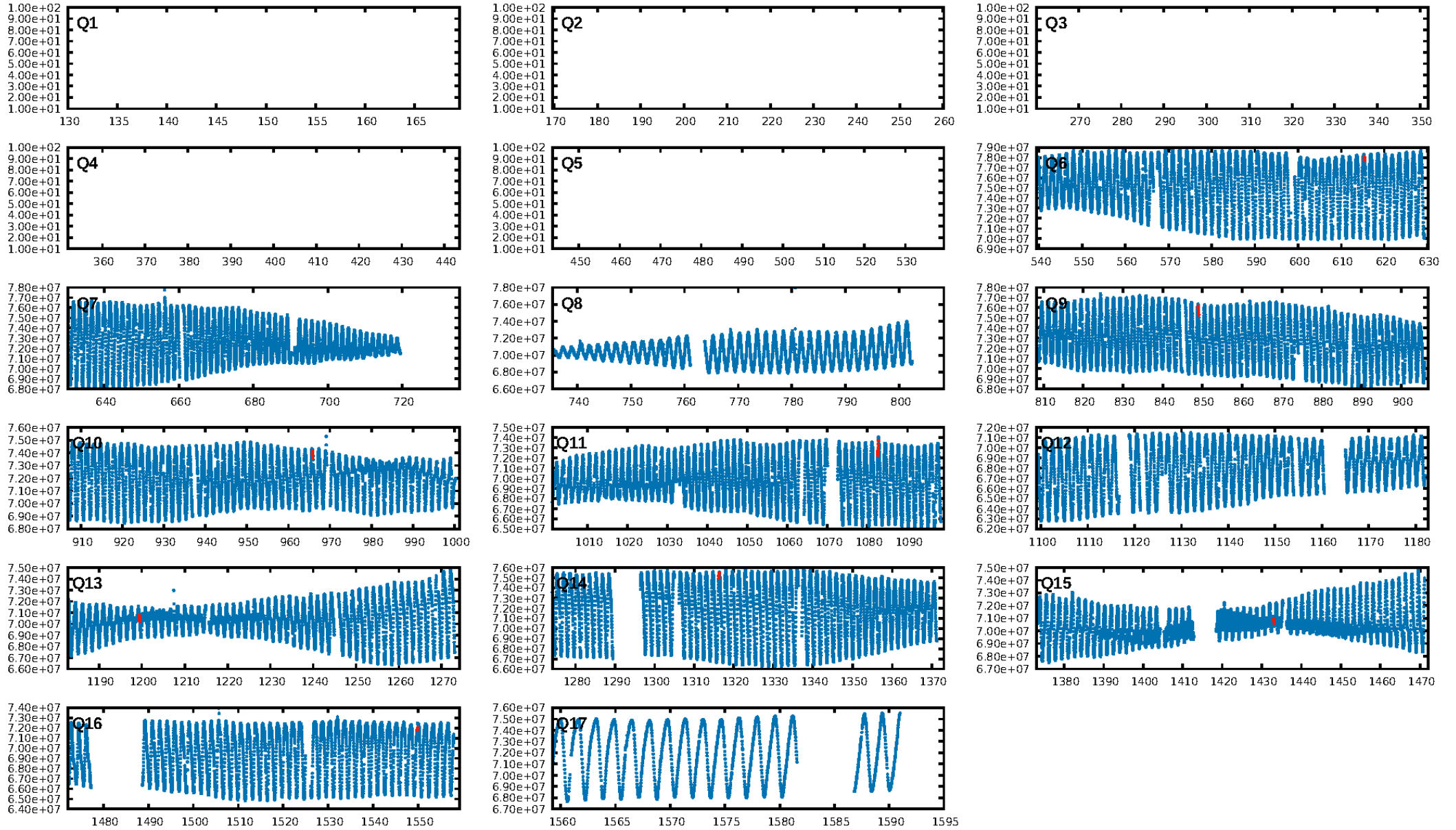
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [616.87σ]  
LongPeriod-sig: 100.0% [423.18σ]  
ModelChiSquare2-sig: 29.7%  
ModelChiSquareGof-sig: 98.9%  
Bootstrap-pfa: 3.48e-25  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: -0.8796  
Centroid-sig: 63.3%  
Centroid-so: 0.419 arcsec [1.16σ]  
OotOffset-rm: 0.021 arcsec [0.10σ]  
KicOffset-rm: 0.026 arcsec [0.13σ]  
OotOffset-st: 3/2/1/2 [8]  
KicOffset-st: 3/2/1/2 [8]  
DiffImageQuality-fgm: 0.12 [1/8]  
DiffImageOverlap-fno: 0.25 [2/8]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:57:57 Z

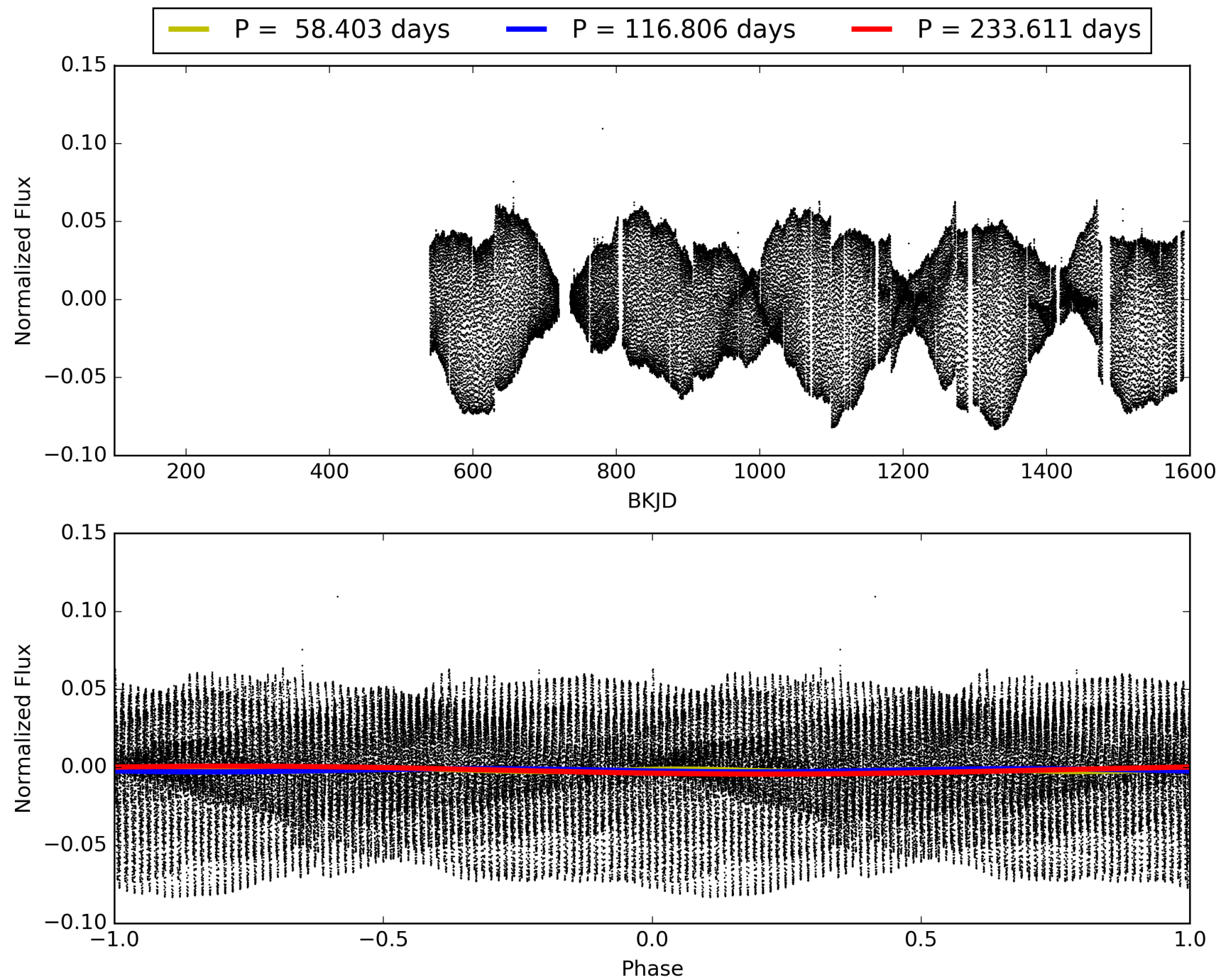
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011568624-02, PDC Light Curves



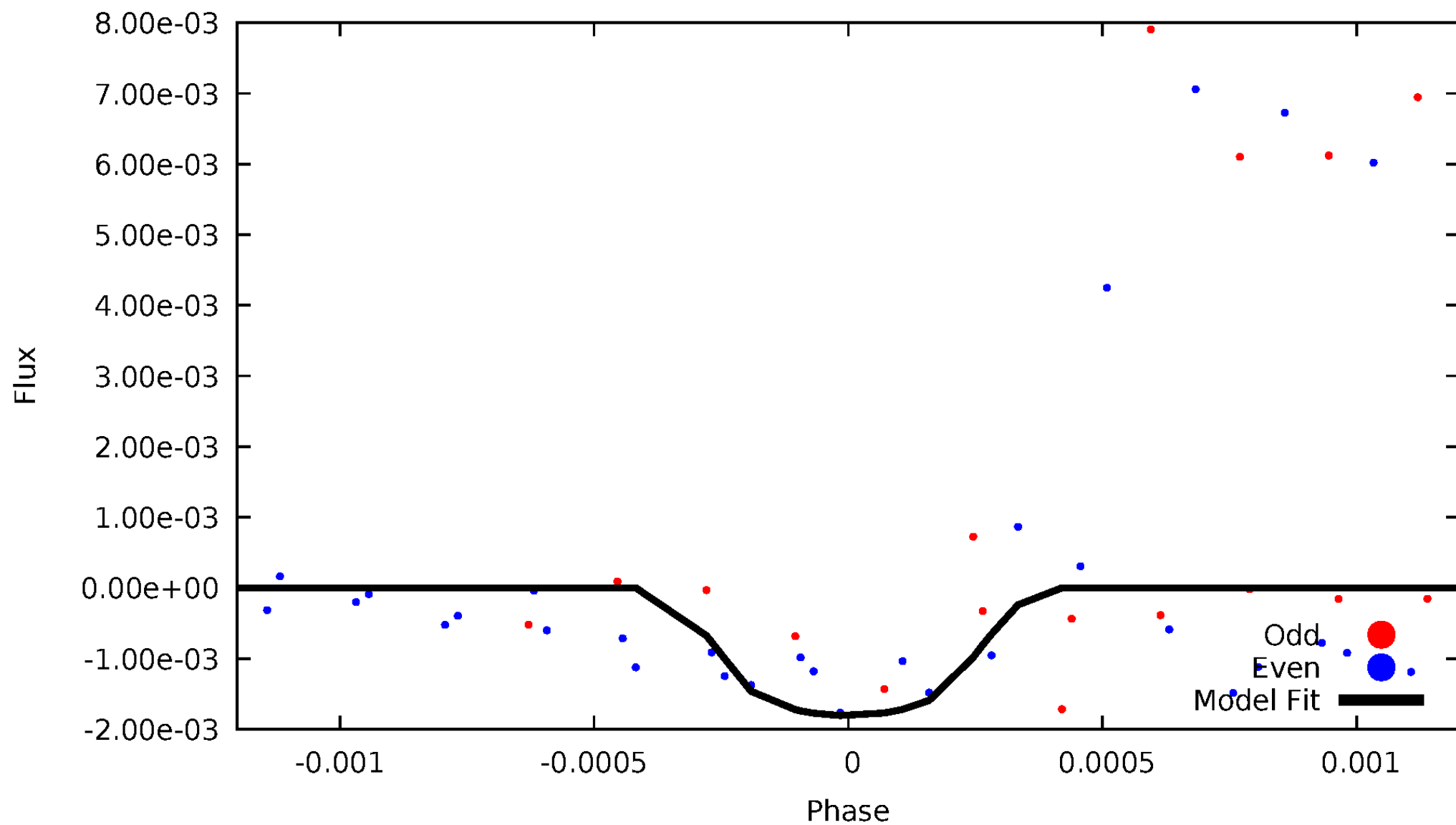


# TCE 011568624-02



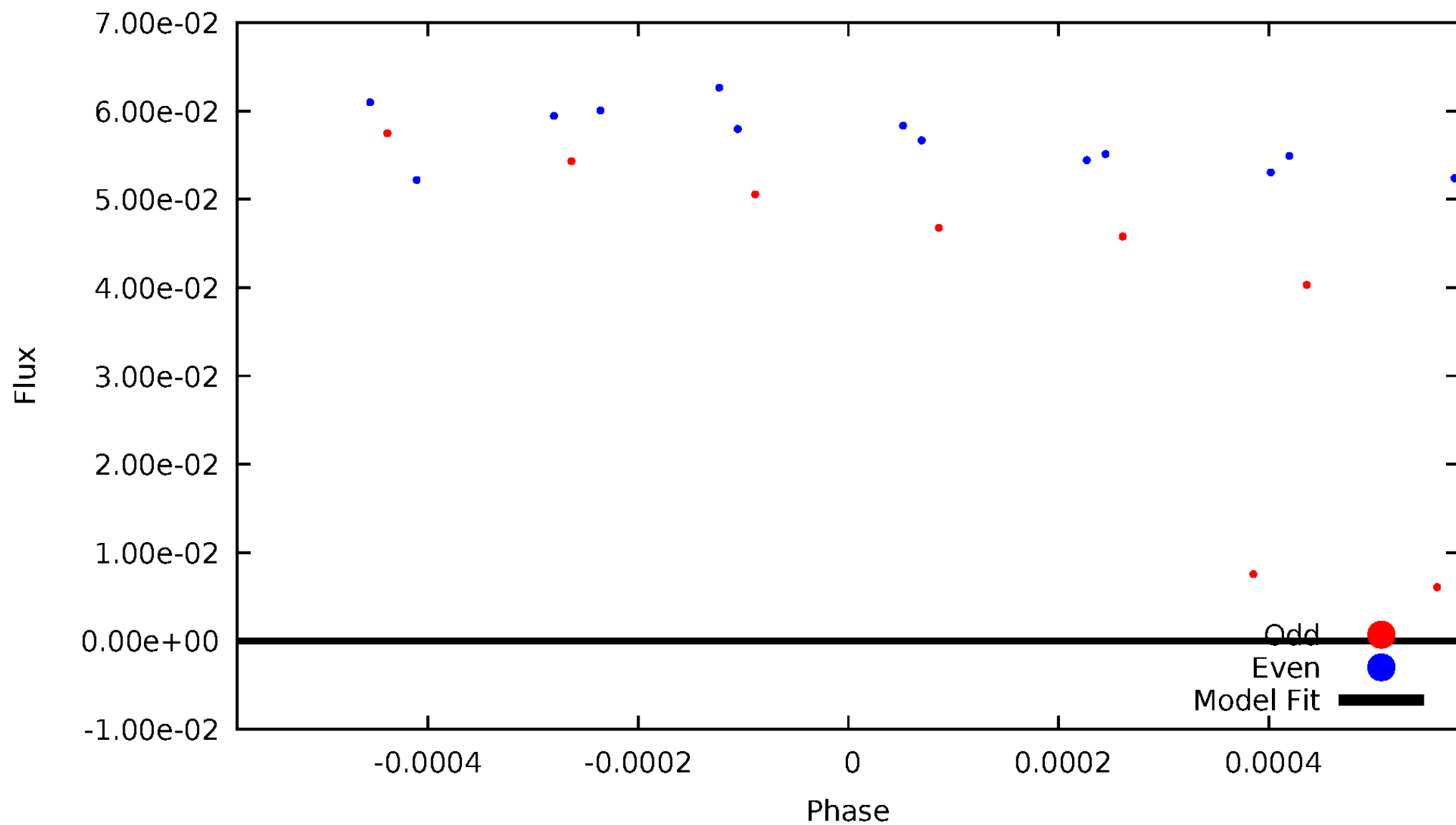
# DV Odd/Even

TCE 011568624-02



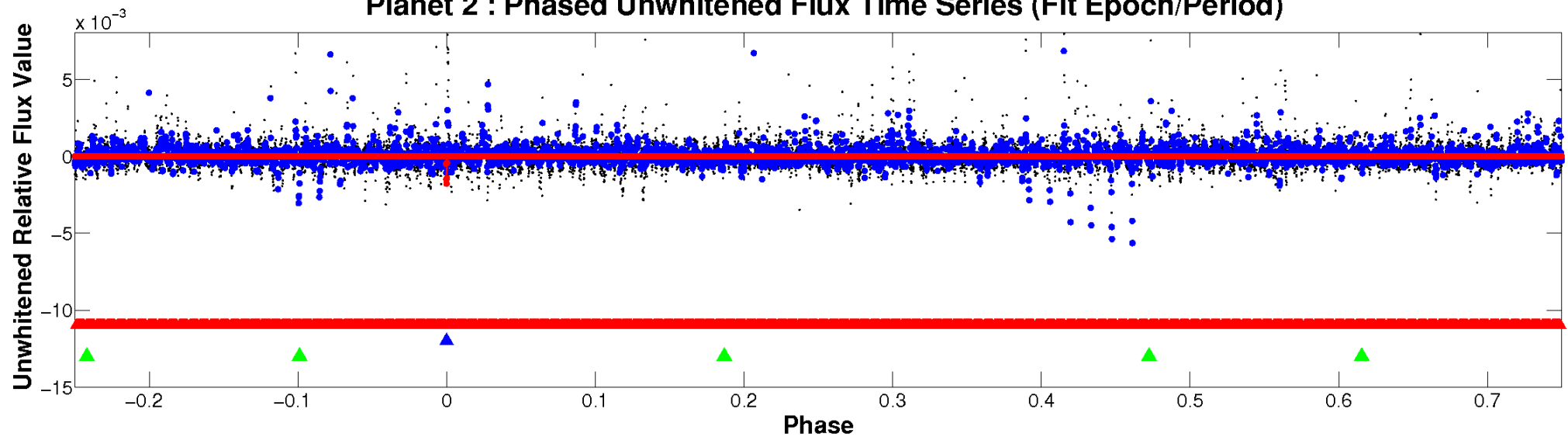
# ALT Odd/Even

TCE 011568624-02

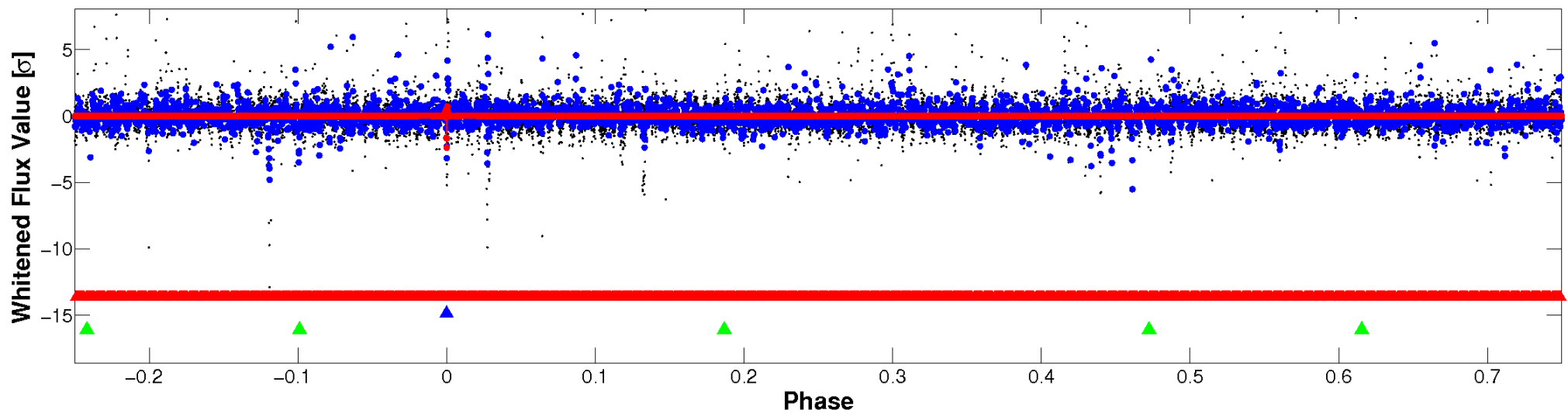


# Non-Whitened Vs. Whitened Light Curve

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

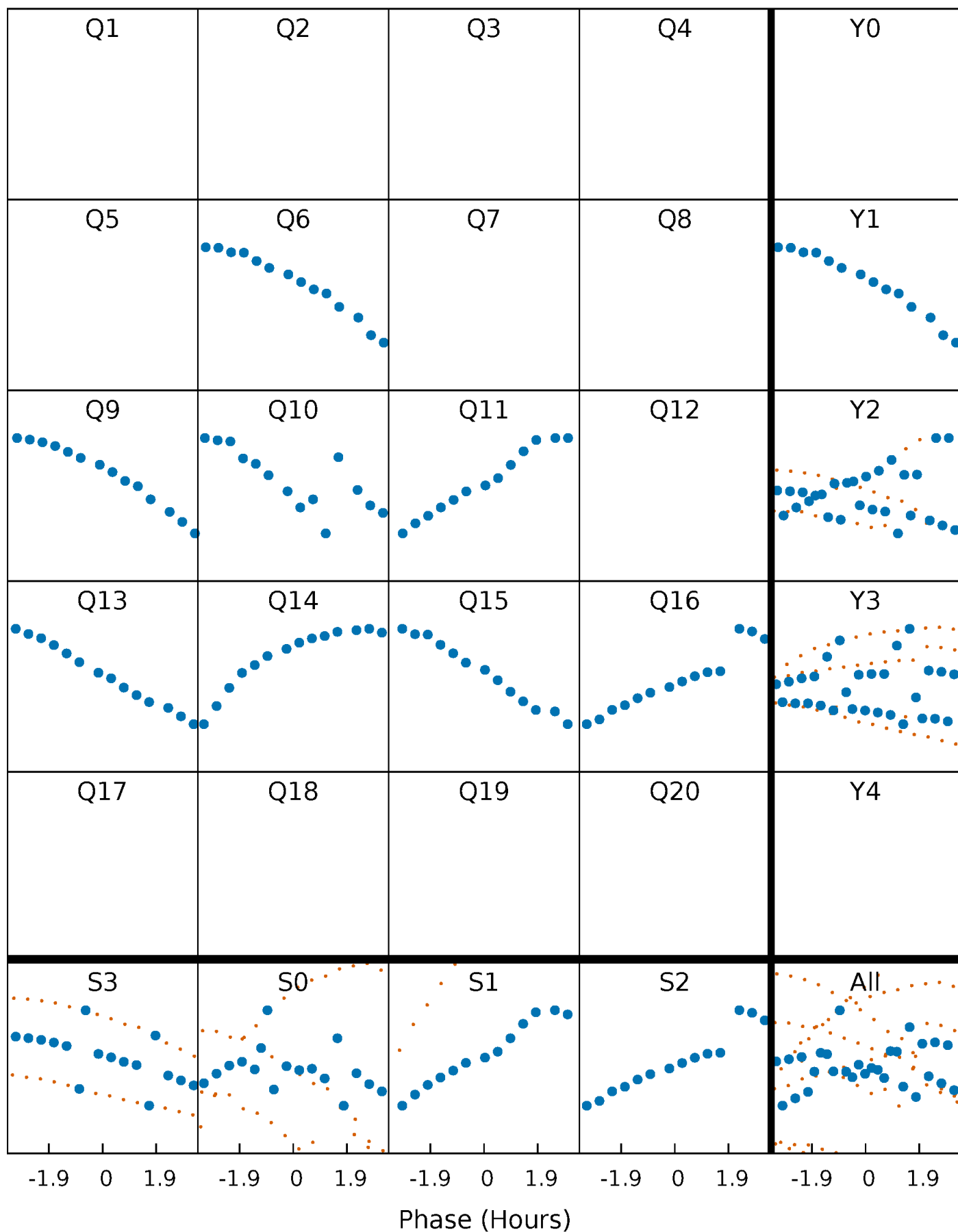


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

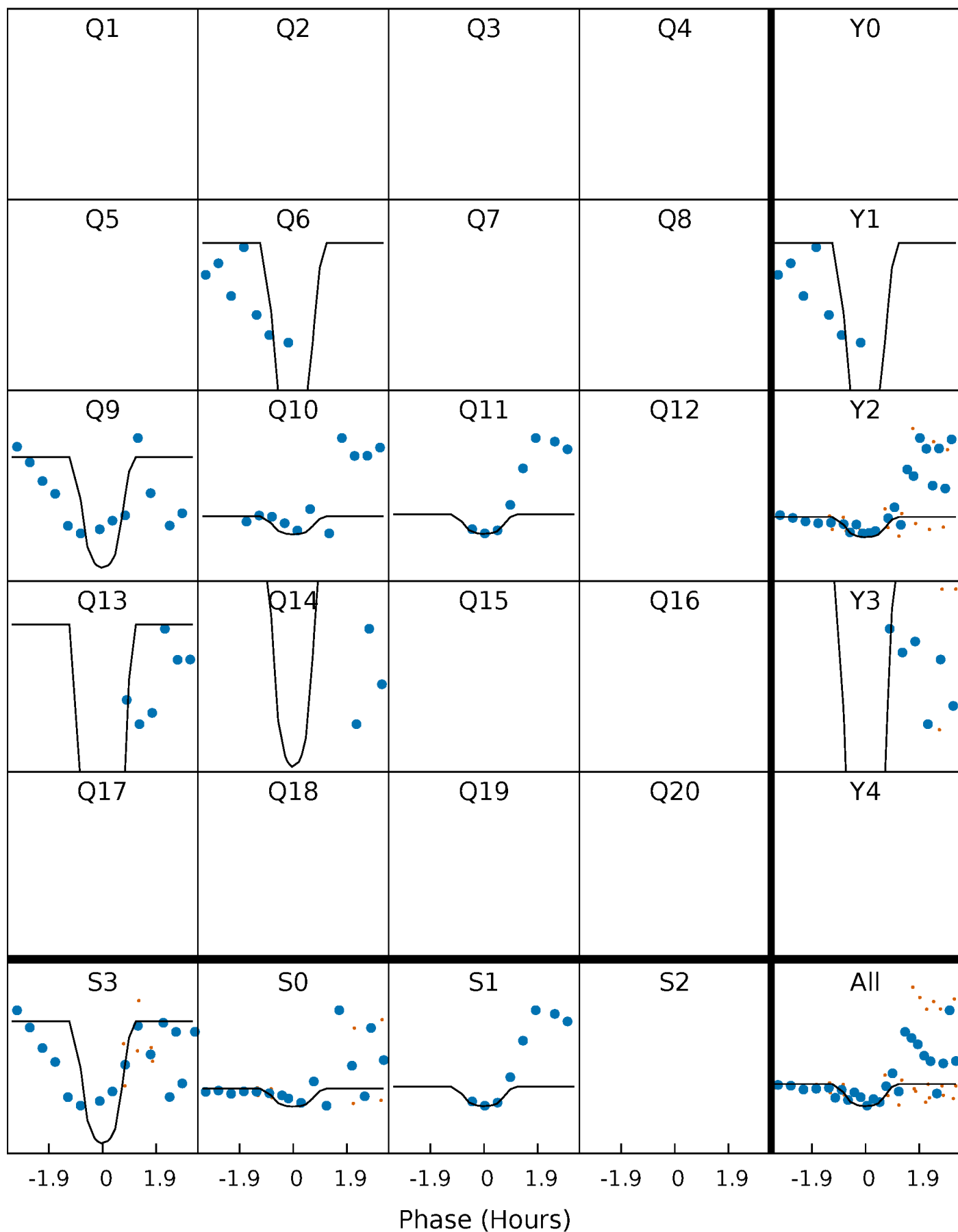
TCE 011568624-02 P=116.805705 Days  $T_0=148.190012$  (BKJD)





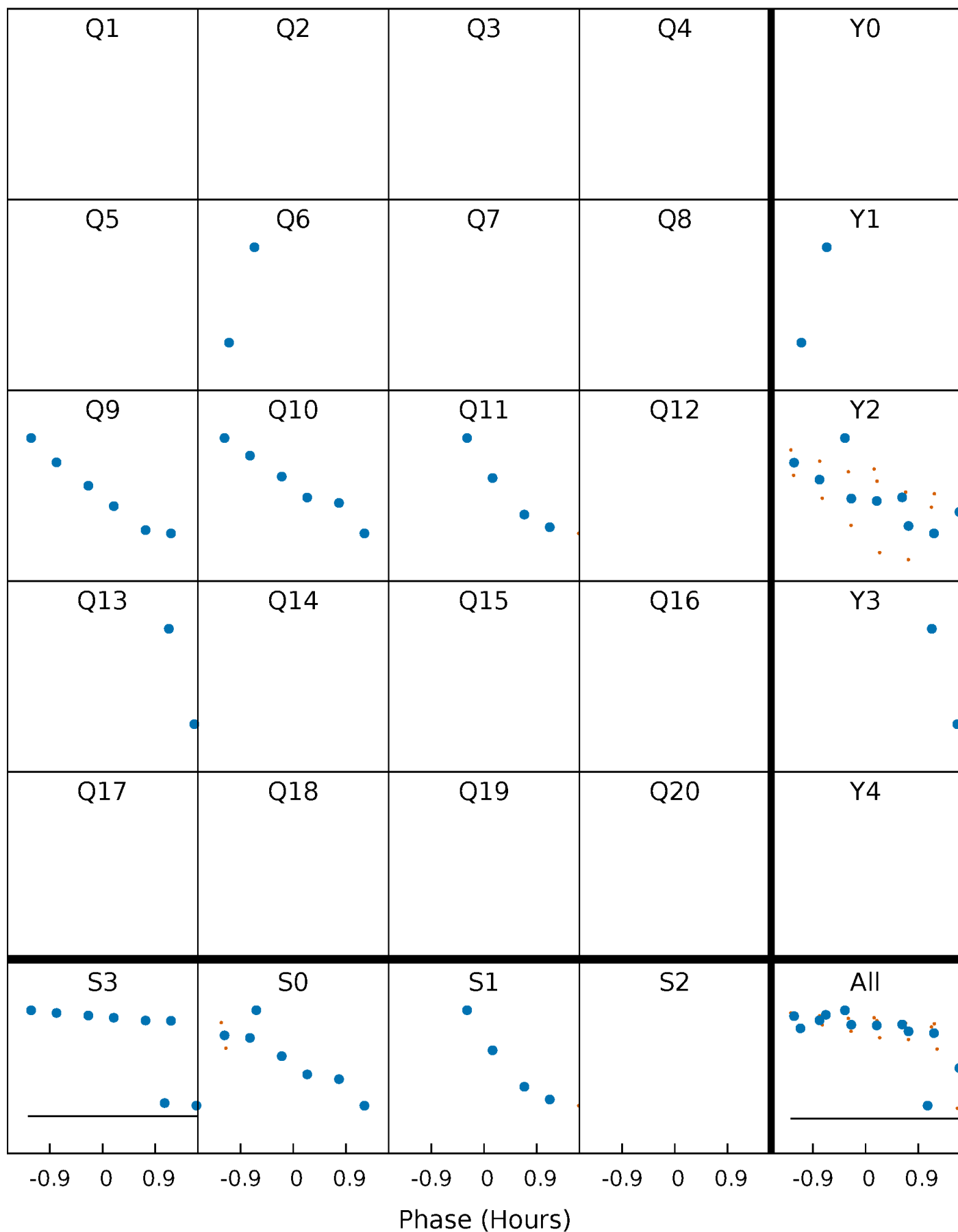
# DV Quarter-Phased Transit Curves

TCE 011568624-02 P=116.805705 Days  $T_0=148.190012$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

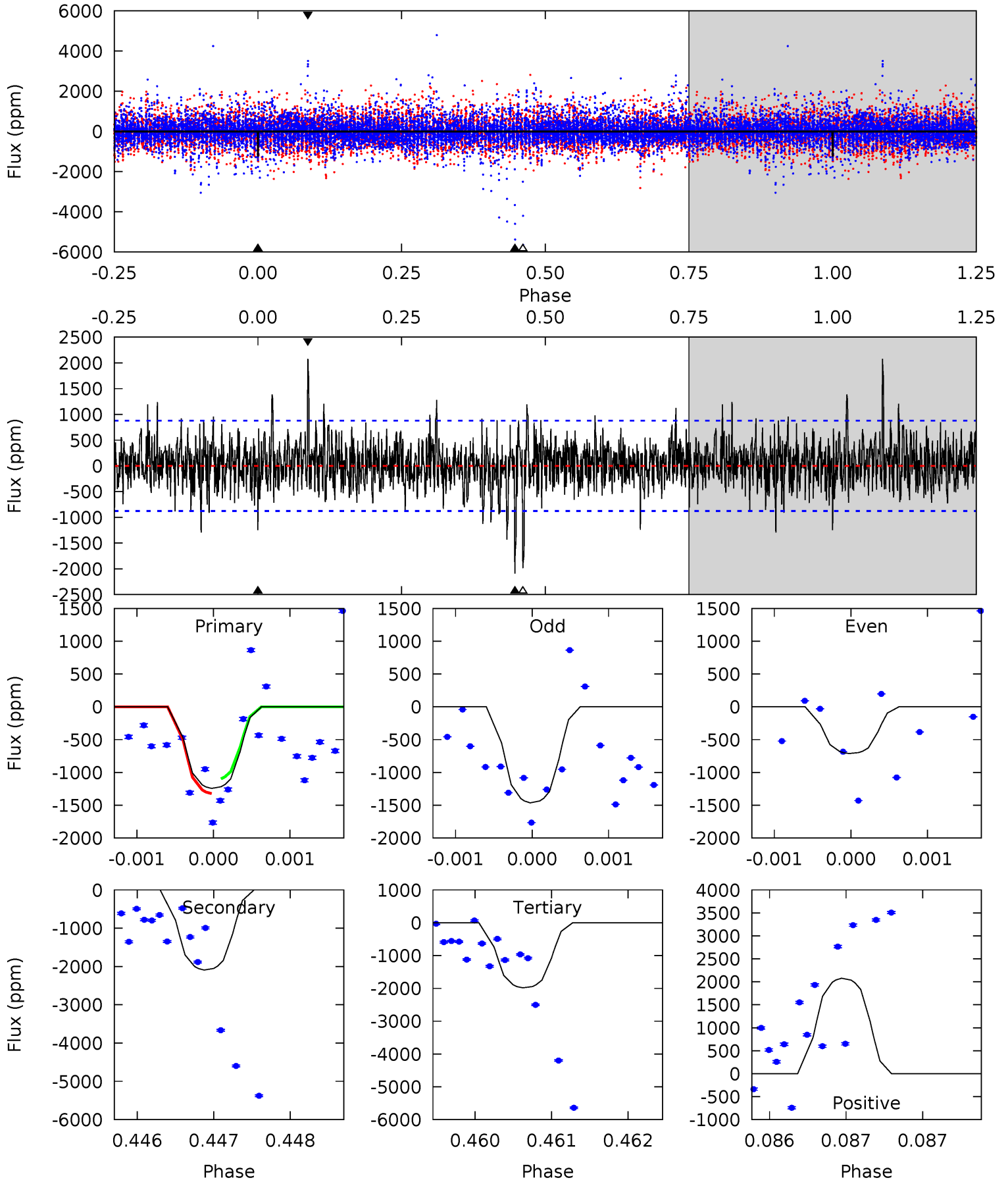
TCE 011568624-02 P=116.799566 Days  $T_0=148.231156$  (BKJD)



# DV Model-Shift Uniqueness Test

011568624-02, P = 116.805705 Days, E = 148.190012 Days

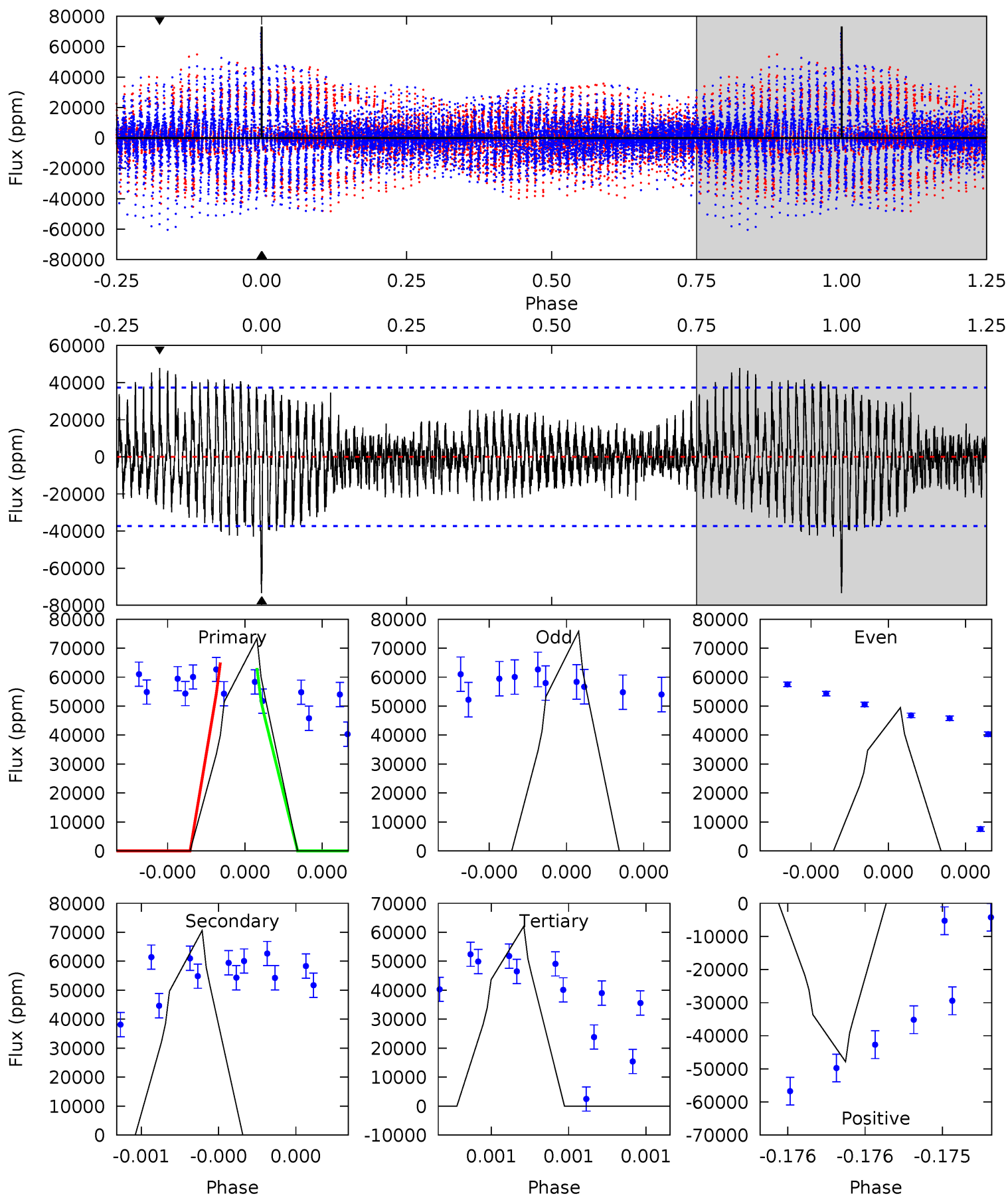
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.81	13.1	12.5	13.0	5.51	3.39	1.91	-4.65	-5.24	0.68	0.09	1.95	0.96	0.50	0.71



# Alt Model-Shift Uniqueness Test

011568624-02, P = 116.799566 Days, E = 148.231156 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
11.1	10.7	9.39	7.23	5.64	3.59	1.79	1.70	3.85	1.29	3.44	1.97	1.02	0.39	0



### Stellar Parameters For KIC 011568624

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4647^{+152}_{-105}$	$2.579^{+0.366}_{-0.244}$	$-0.220^{+0.300}_{-0.200}$	$8.021^{+4.610}_{-2.482}$	$0.891^{+0.497}_{-0.026}$	$0.002^{+0.006}_{-0.002}$
	+3%/-2%	+14%/-9%	+136%/-91%	+57%/-31%	+56%/-3%	+247%/-70%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 011568624-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-2093 \pm 159$	$214.23^{+226.07}_{-153.91}$	$1190^{+128}_{-126}$	$2741^{+1171}_{-492}$	$5.967^{+65.666}_{-4.607}$
Alt.	$-70626 \pm 6615$	$185.55^{+243.57}_{-130.38}$	$1184^{+150}_{-129}$	$5127^{+4964}_{-1309}$	$261^{+2866}_{-207}$

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

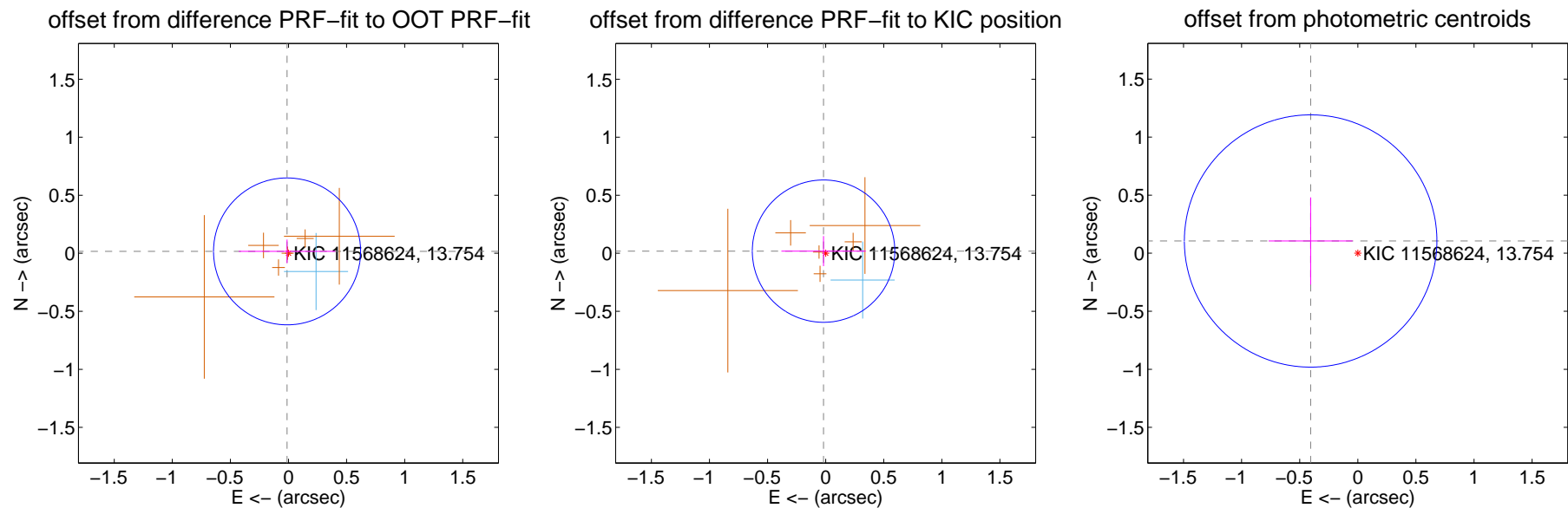
## DV Centroid Data

Supplemental centroid analysis for 011568624-02. Kepler magnitude: 13.75. Transit SNR 6.02

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.021 \pm 0.211$	0.10	$0.012 \pm 0.416$	$0.016 \pm 0.102$
PRF-fit source offset from KIC position	$0.026 \pm 0.204$	0.13	$0.018 \pm 0.363$	$0.018 \pm 0.130$
photometric centroid source offset	$0.42 \pm 0.36$	1.16	$0.41 \pm 0.36$	$0.11 \pm 0.38$



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

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





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

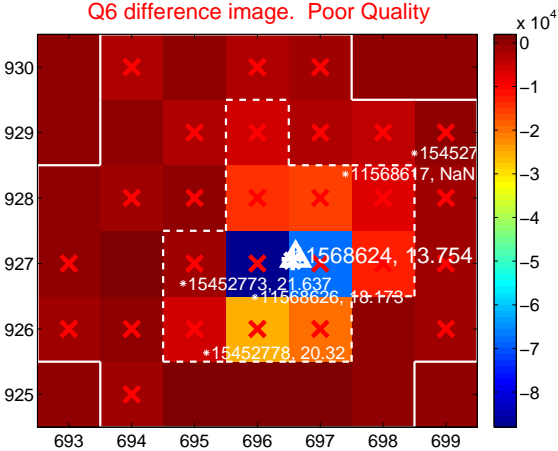
Q5 no difference image



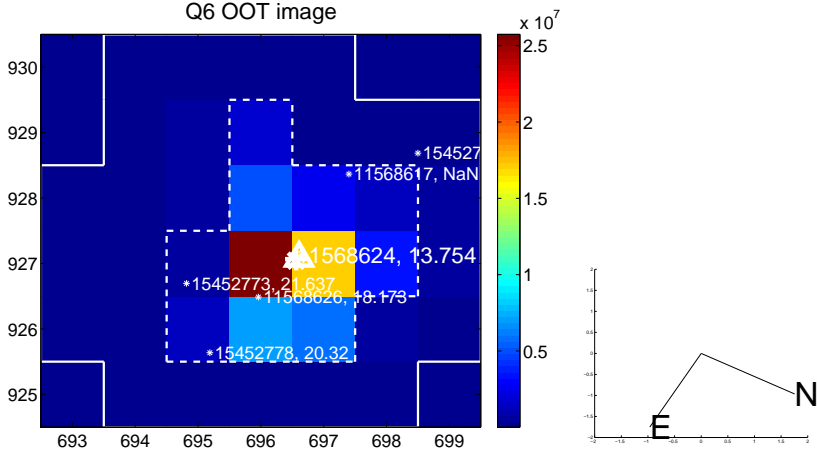
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



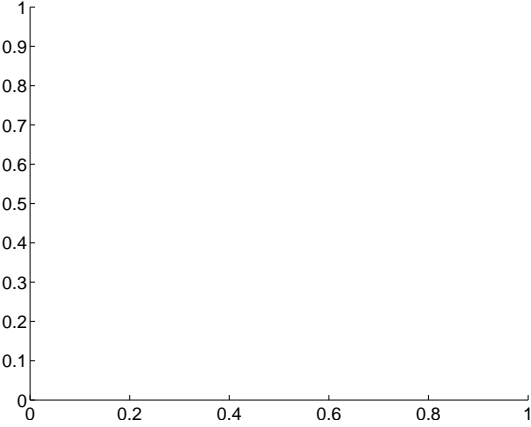
Q7 no difference image



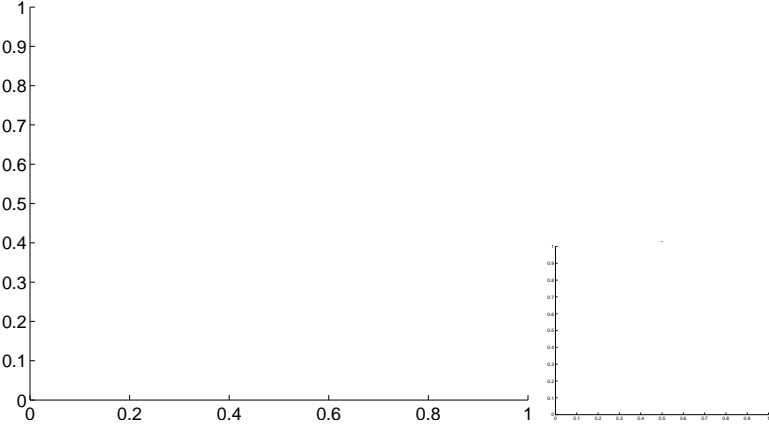
Q7 no OOT image



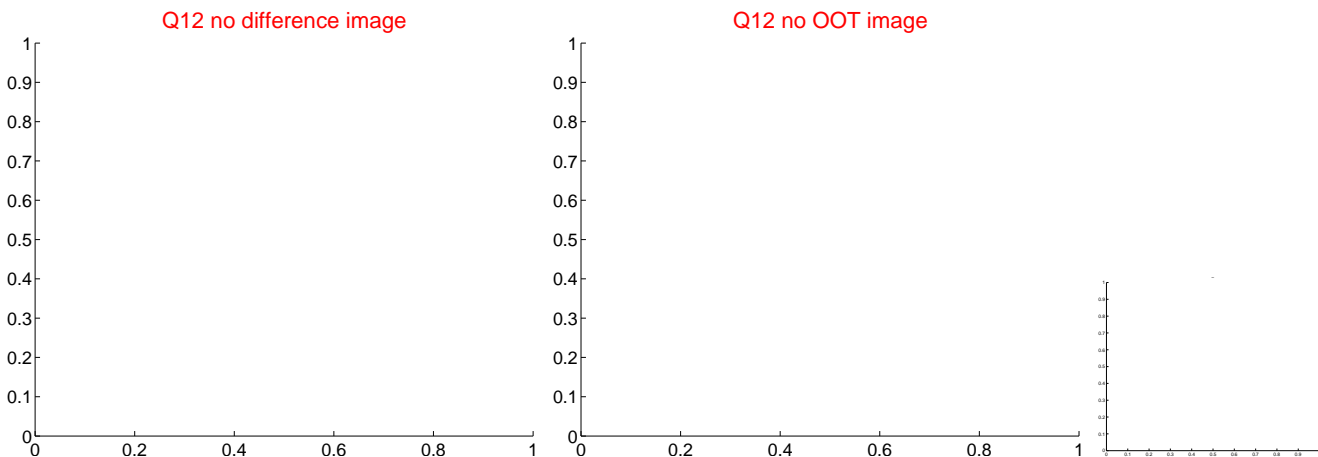
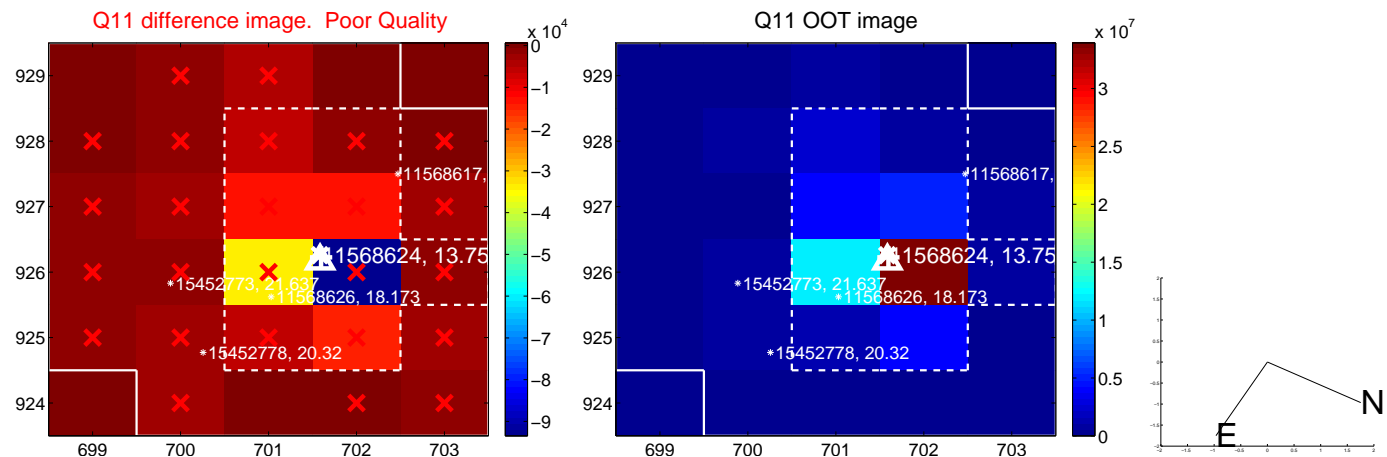
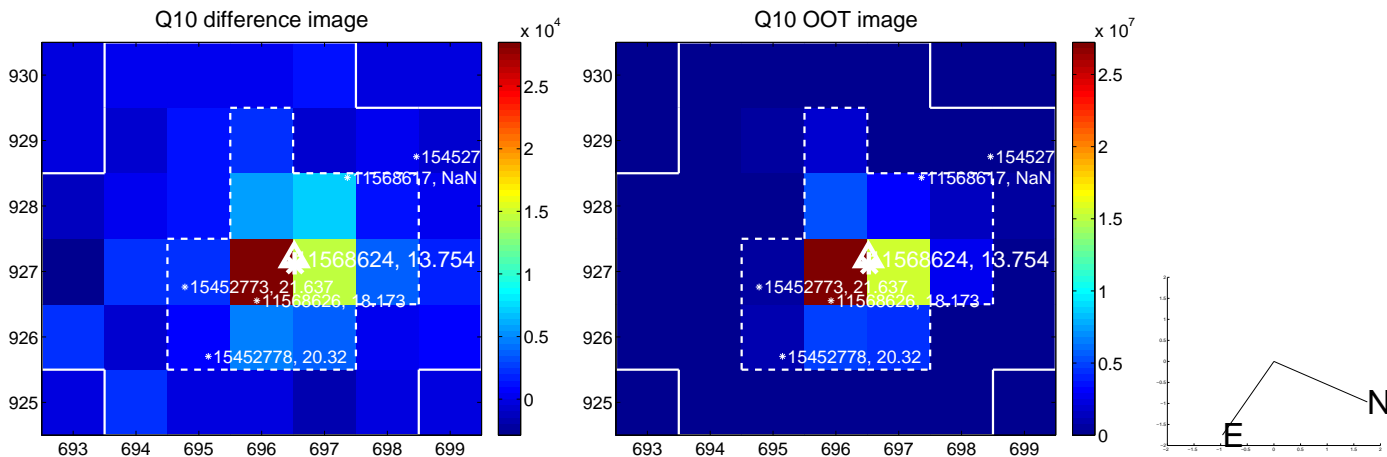
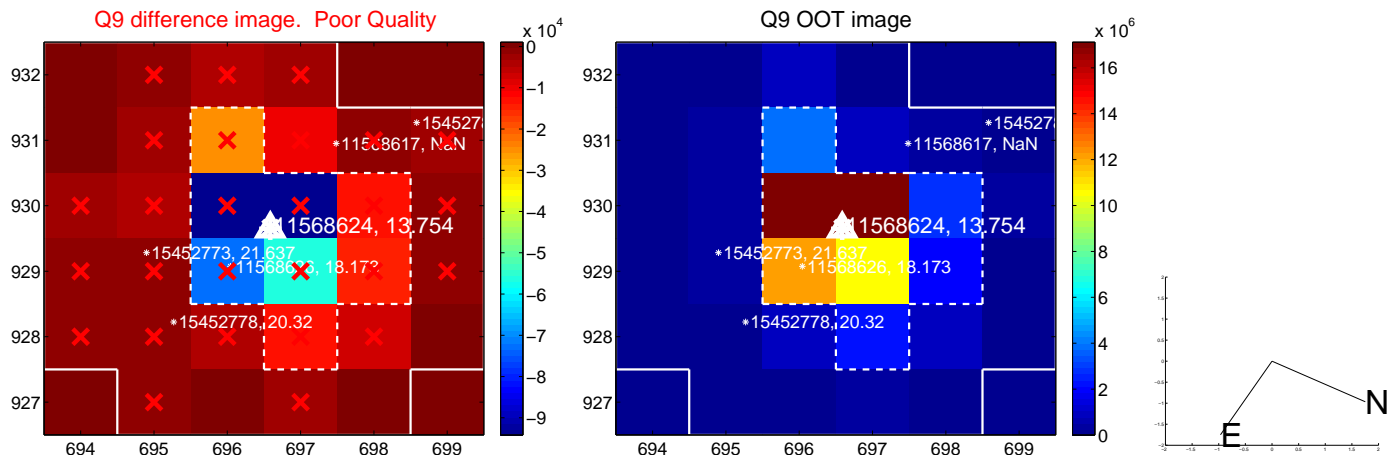
Q8 no difference image



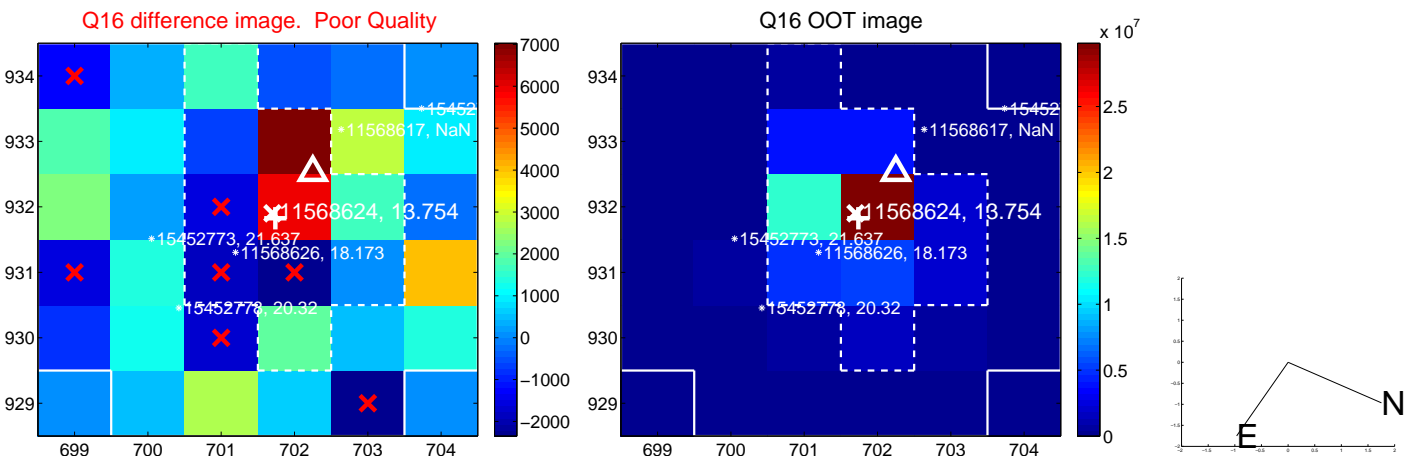
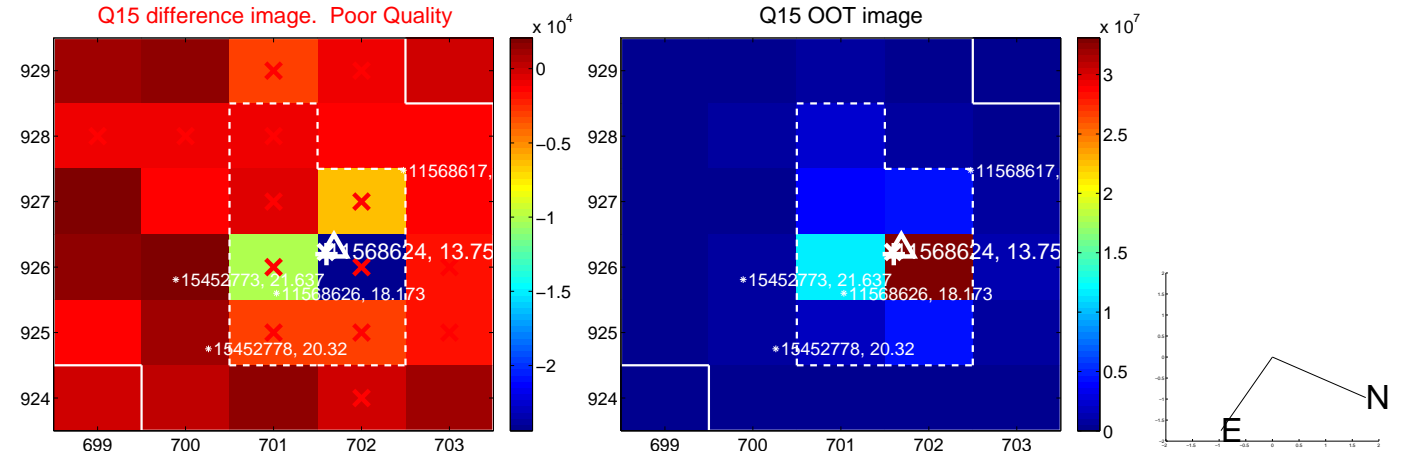
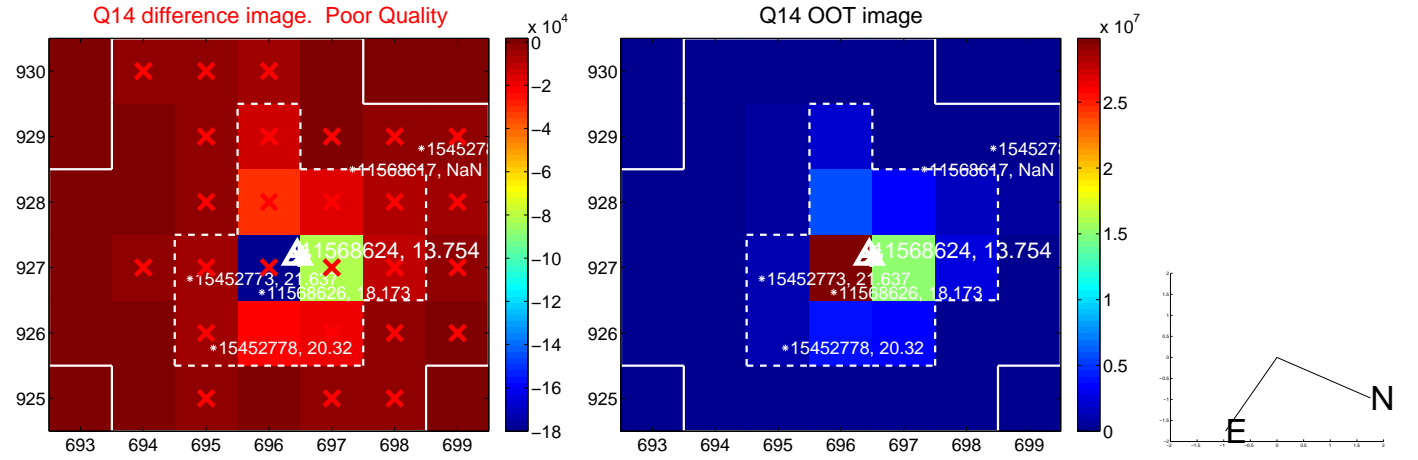
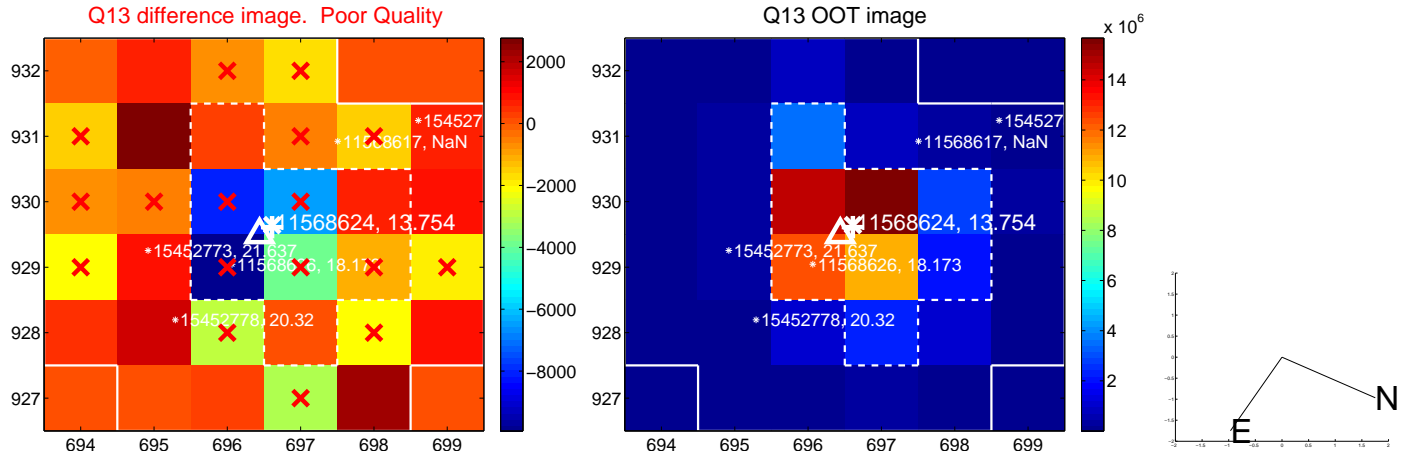
Q8 no OOT image



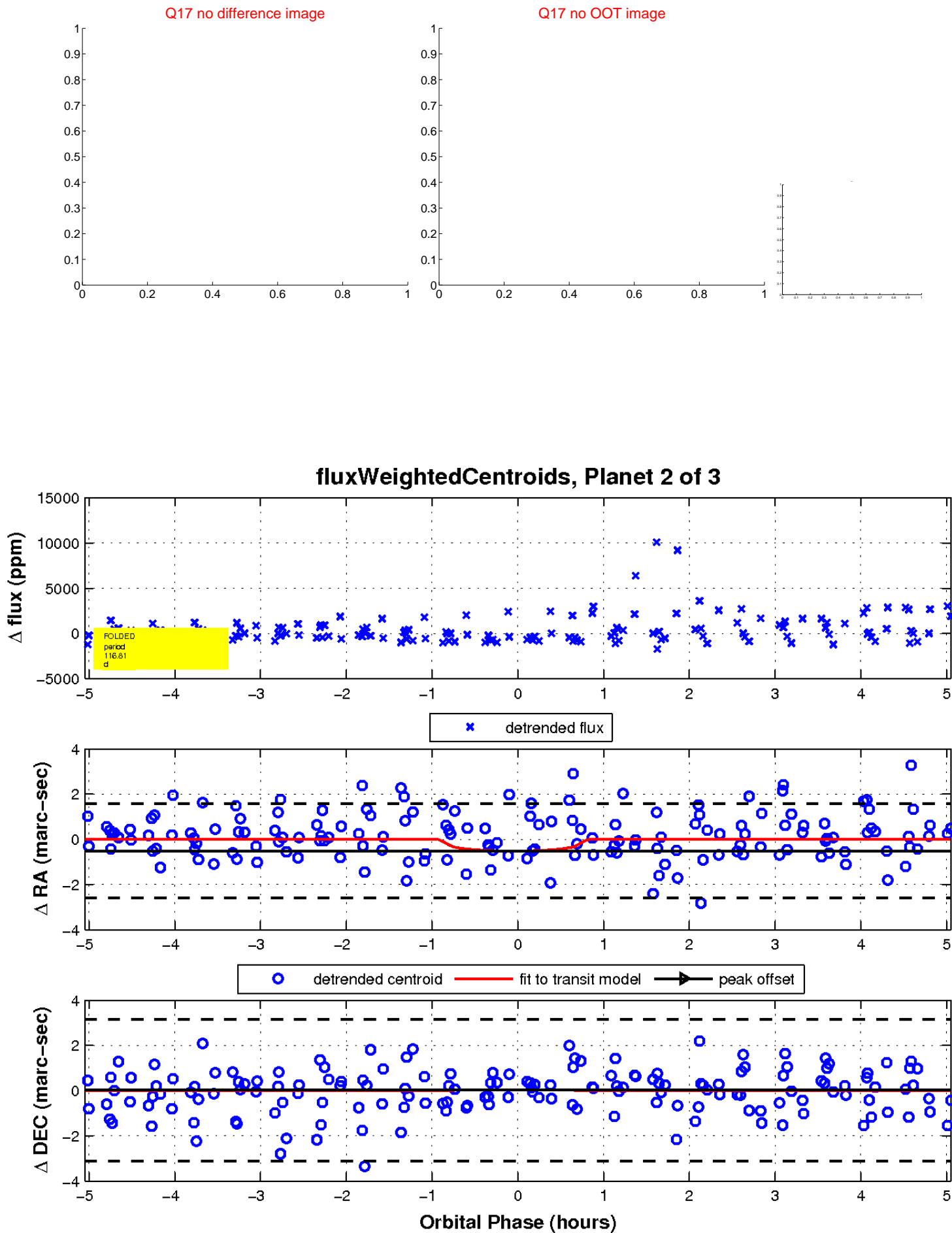
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

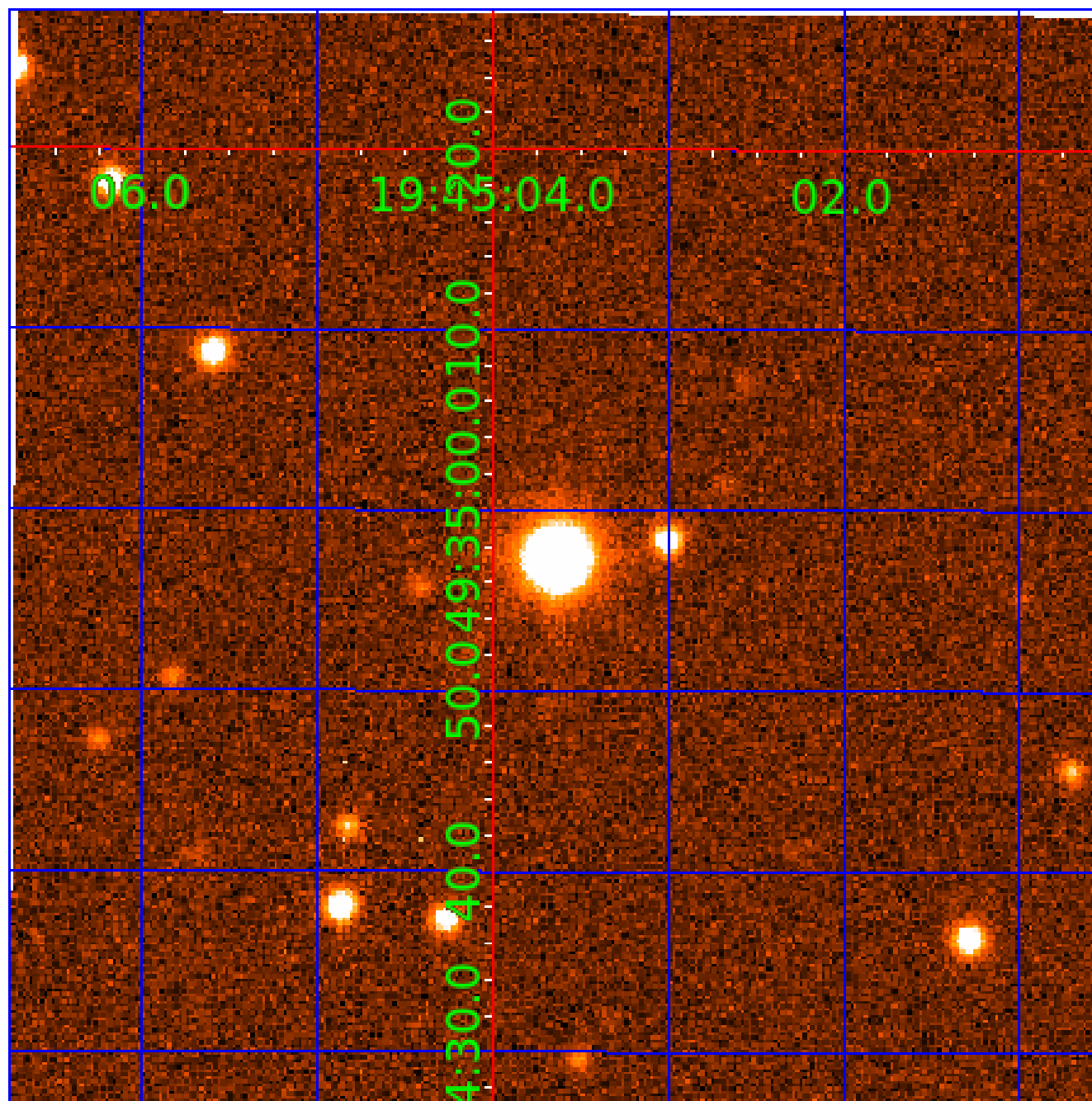


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011568624

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011568624-01	OBS	No	0.811543	132.010512	101.3	4.186	12.4	7.0	8.02	4647	8.15	0.00
011568624-02	OBS	No	116.805705	148.190012	1808.1	1.685	14.2	6.0	8.02	4647	33.47	132.78
011568624-03	OBS	No	266.977553	336.884956	3117.3	8.348	9.3	5.2	8.02	4647	56.67	44.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011568624-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT
011568624-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011568624-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

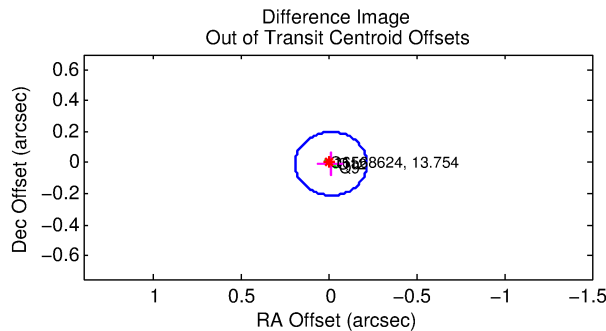
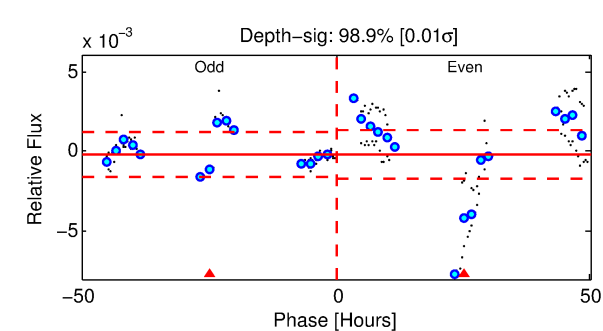
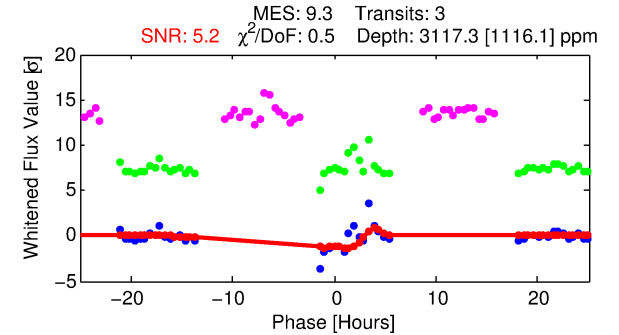
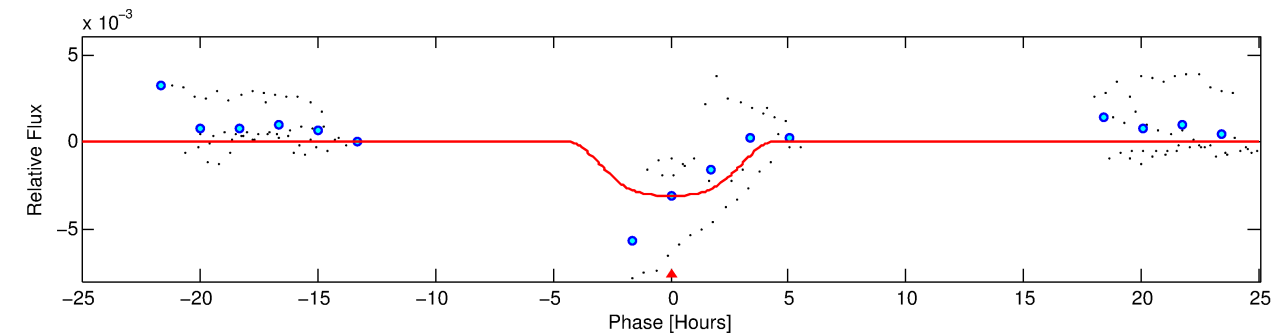
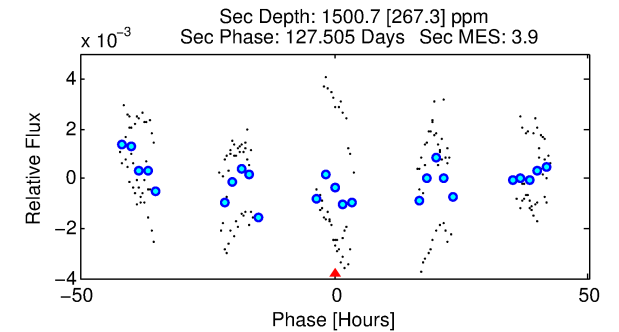
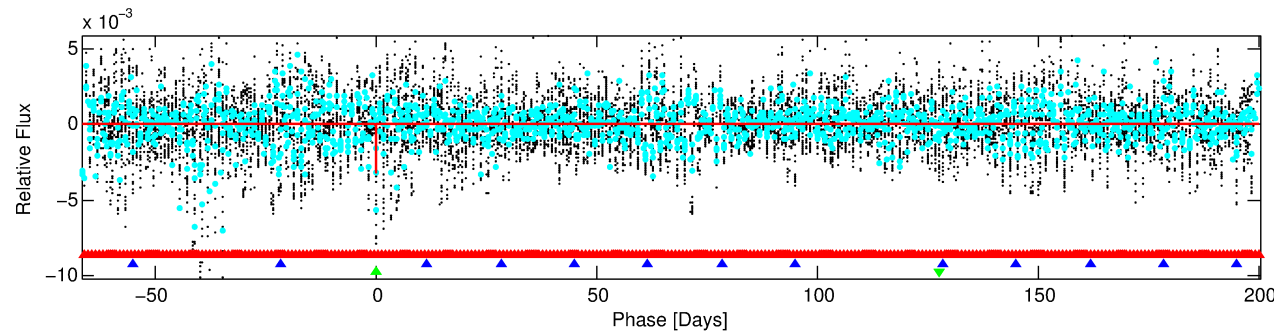
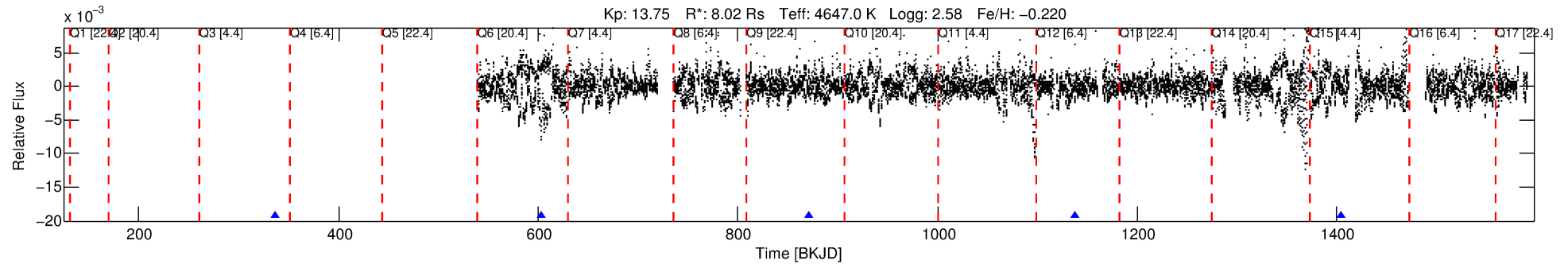
## Ephemeris Match Information For 011568624-03

No Significant Match Found



# DV One-Page Summary

KIC: 11568624 Candidate: 3 of 3 Period: 266.978 d



## DV Fit Results:

Period = 266.97755 [0.01444] d  
Epoch = 336.8850 [0.0529] BKJD  
Rp/R\* = 0.0648 [0.0110]  
a/R\* = 131.82 [37.71]  
b = 0.92 [0.03]  
Seff = 44.10 [30.54]  
Teff = 657 [114] K  
Rp = 56.67 [33.97] Re  
a = 0.7807 [0.3709] AU  
Ag = 156.67 [122.38] [1.27σ]  
Teffp = 3594 [365] K [7.69σ]

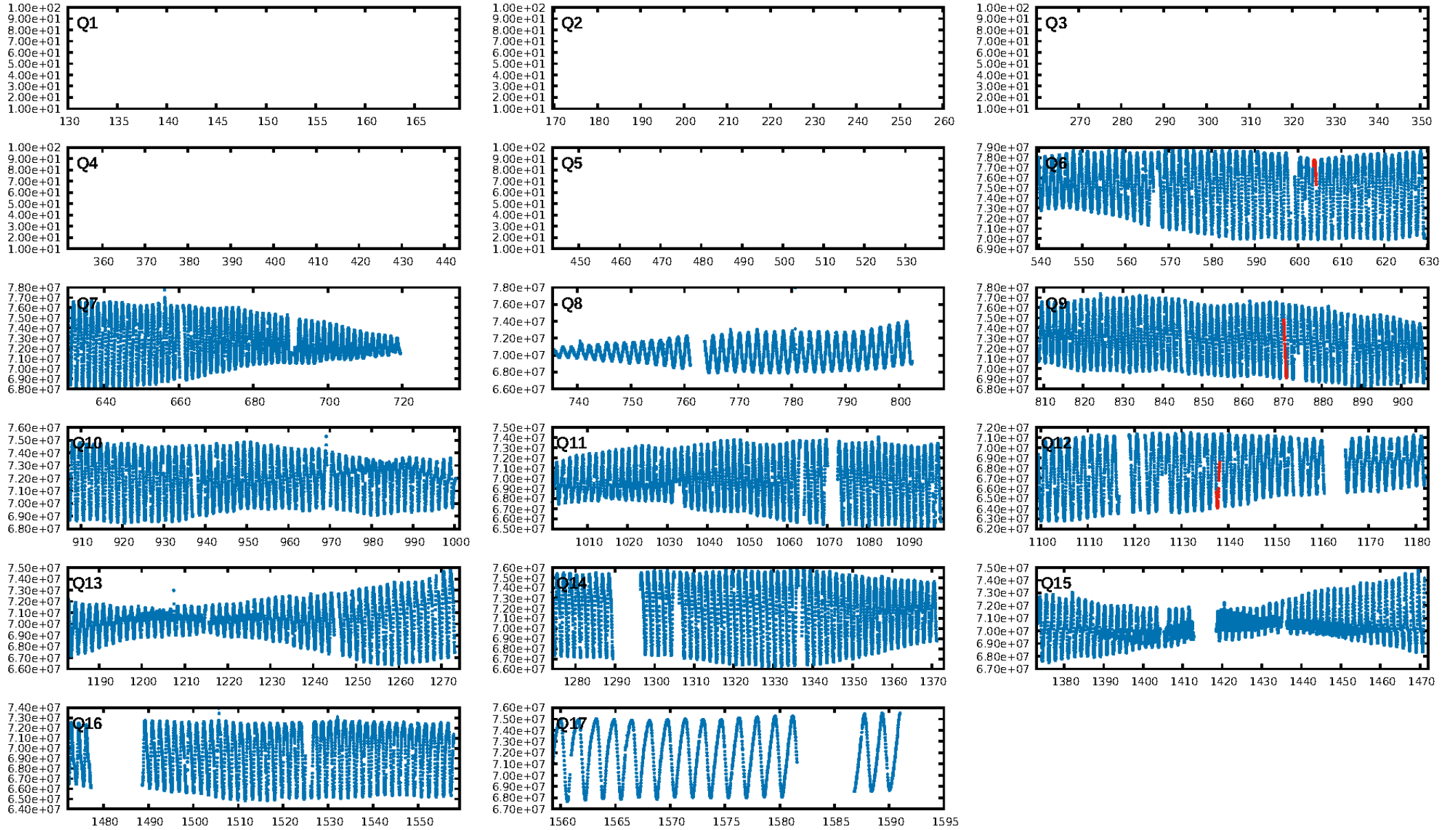
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [423.18σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 96.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.54e-10  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -3.466  
Centroid-sig: 10.2%  
Centroid-so: 0.322 arcsec [1.42σ]  
OotOffset-rm: 0.013 arcsec [0.19σ]  
KicOffset-rm: 0.231 arcsec [1.66σ]  
OotOffset-st: 1/0/1/1 [3]  
KicOffset-st: 1/0/1/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 0.00 [0/3]

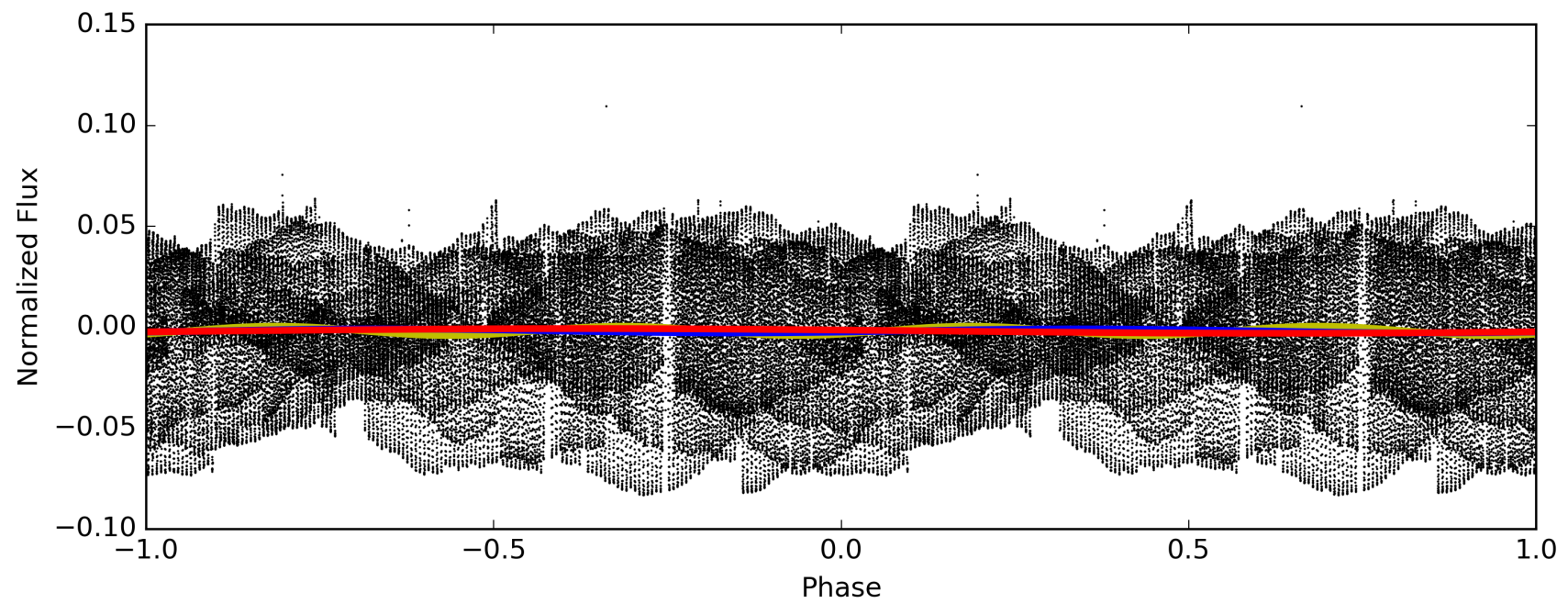
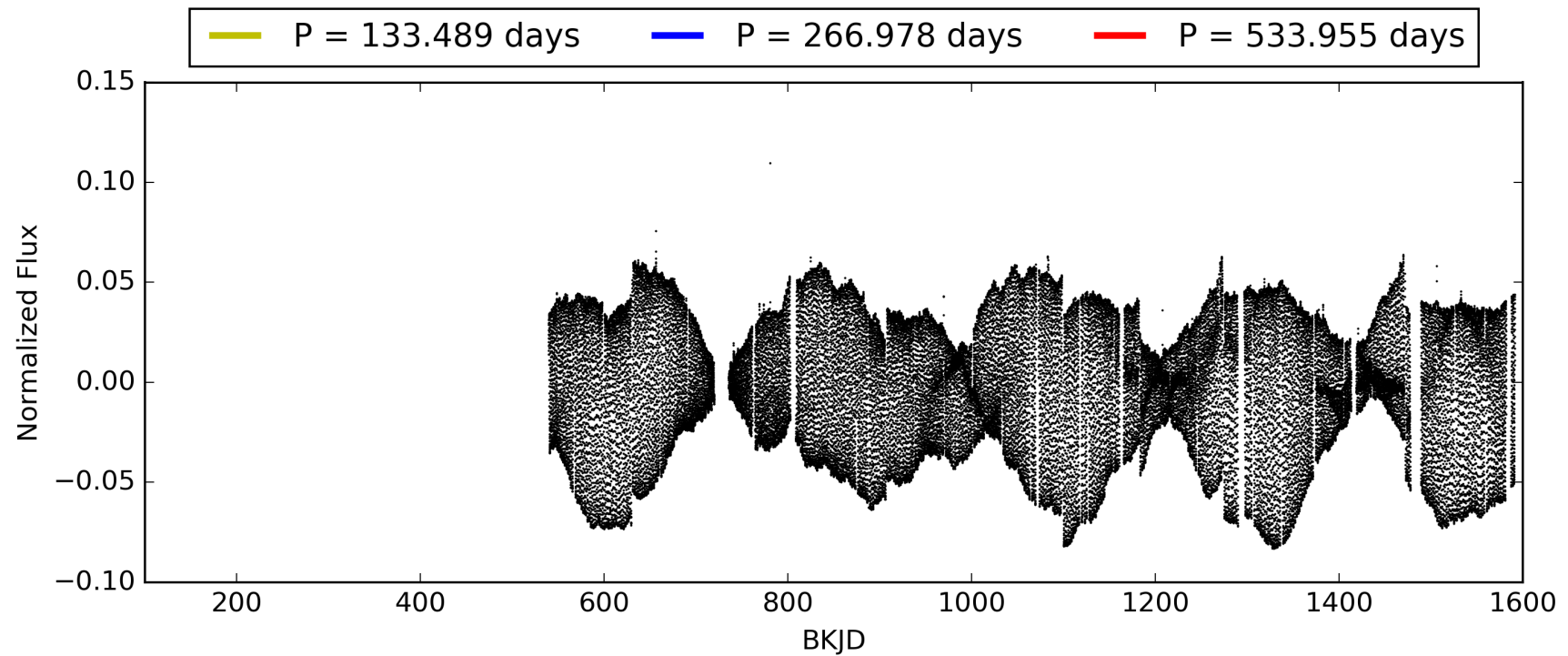
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:58:01 Z

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

# TCE 011568624-03, PDC Light Curves

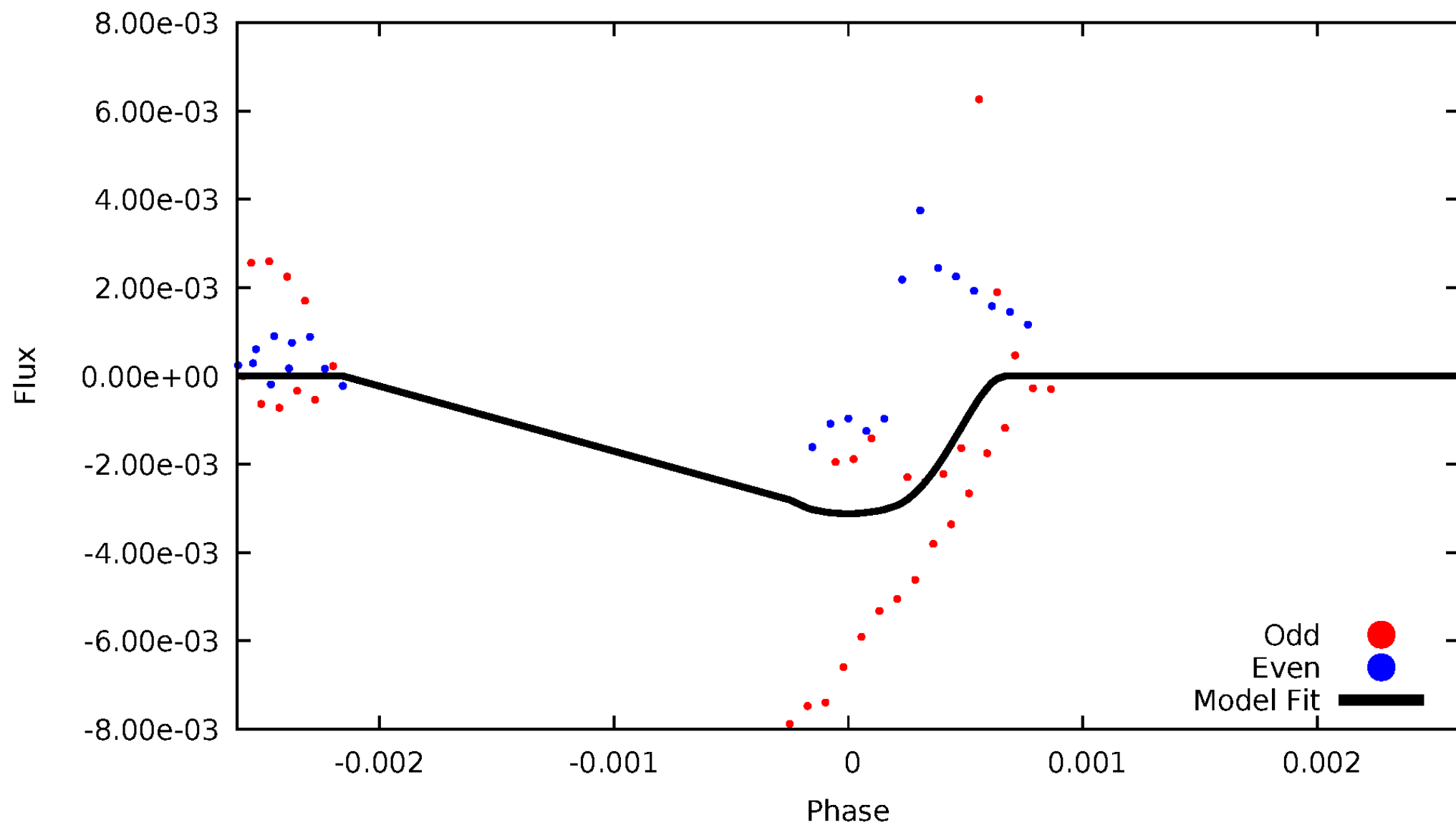


TCE 011568624-03



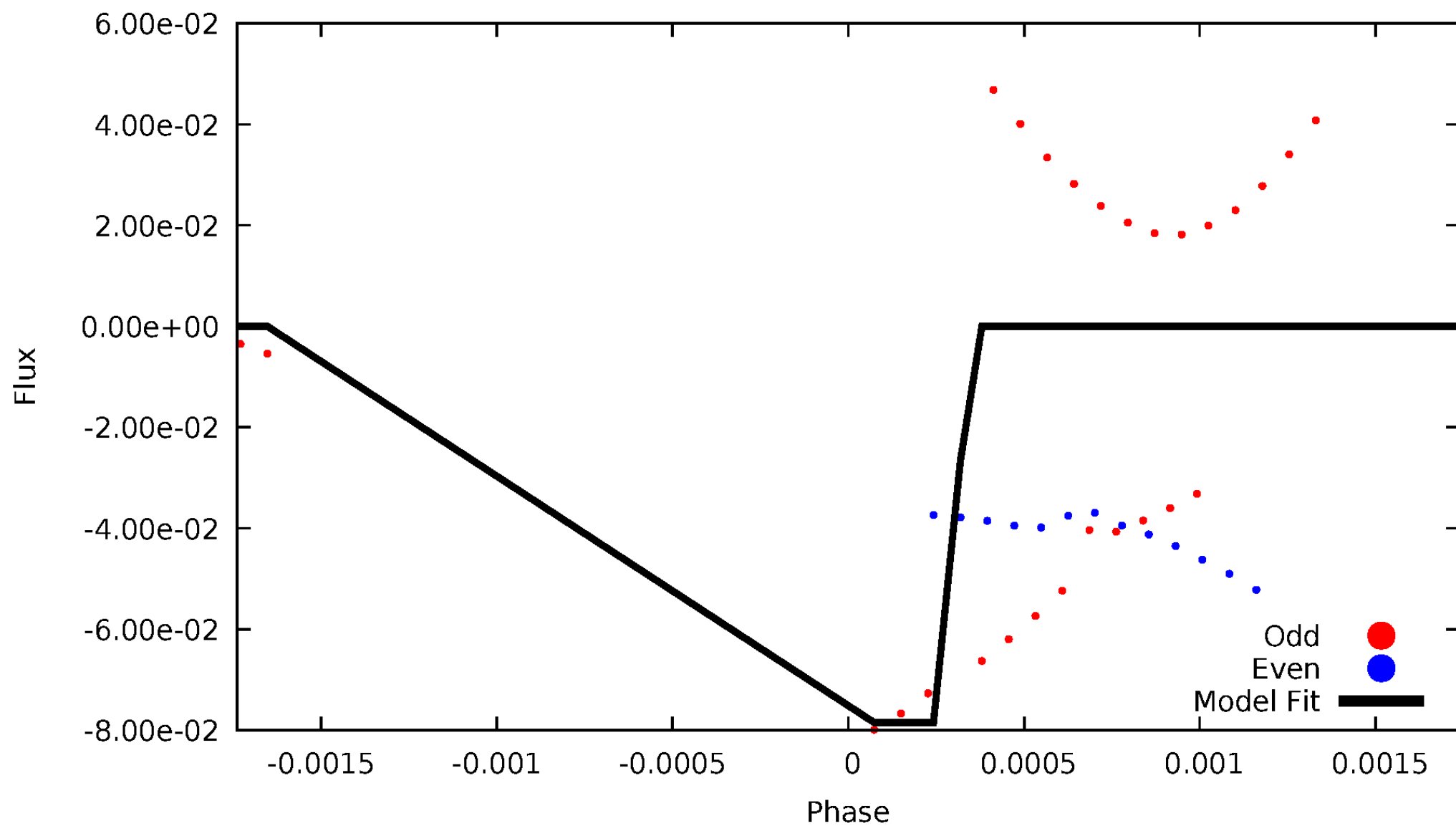
# DV Odd/Even

TCE 011568624-03



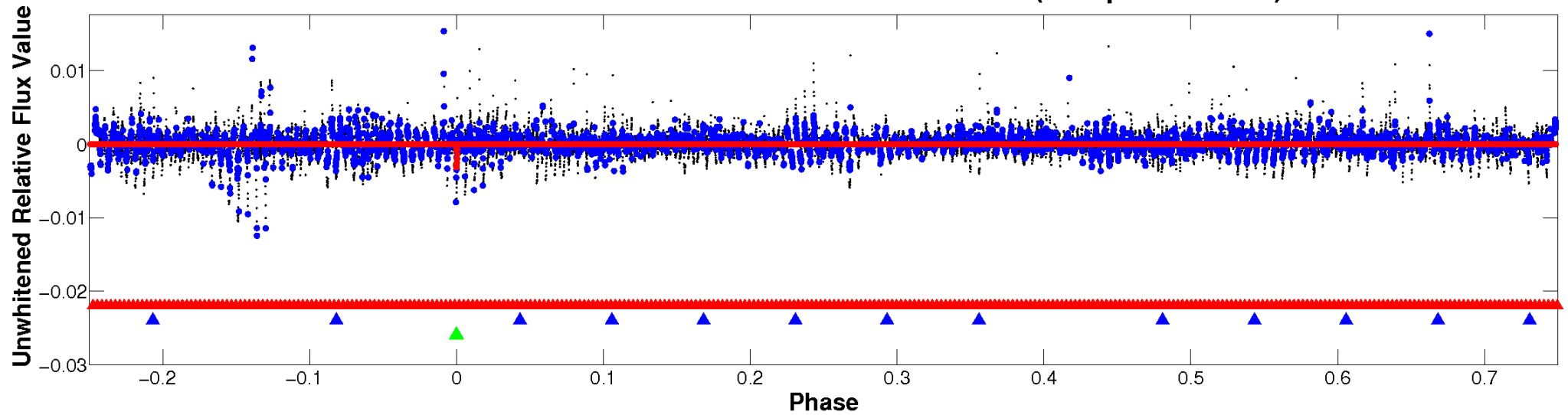
# ALT Odd/Even

TCE 011568624-03

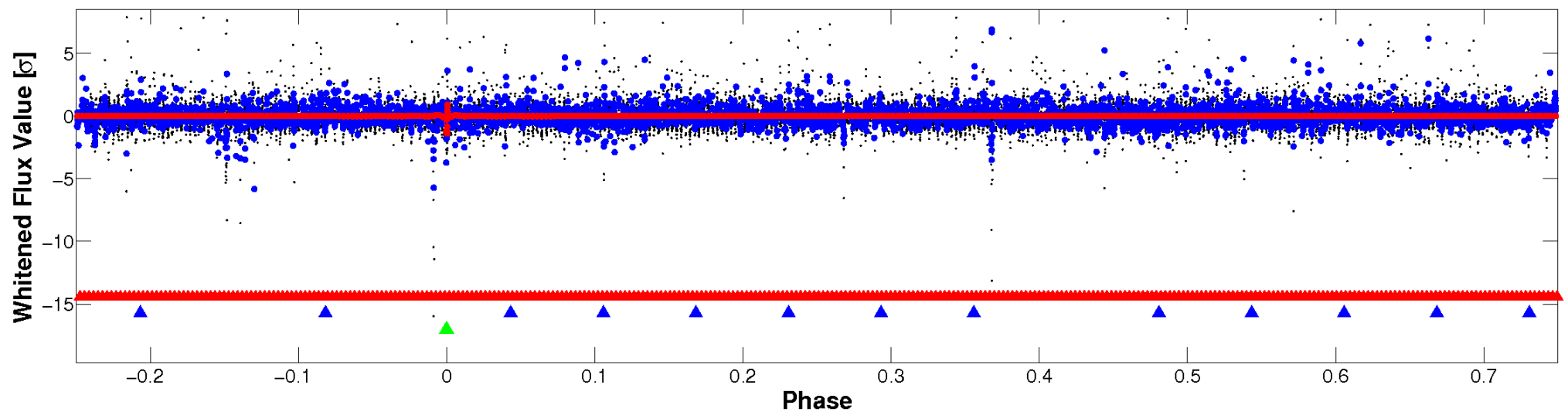


# Non-Whitened Vs. Whitened Light Curve

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



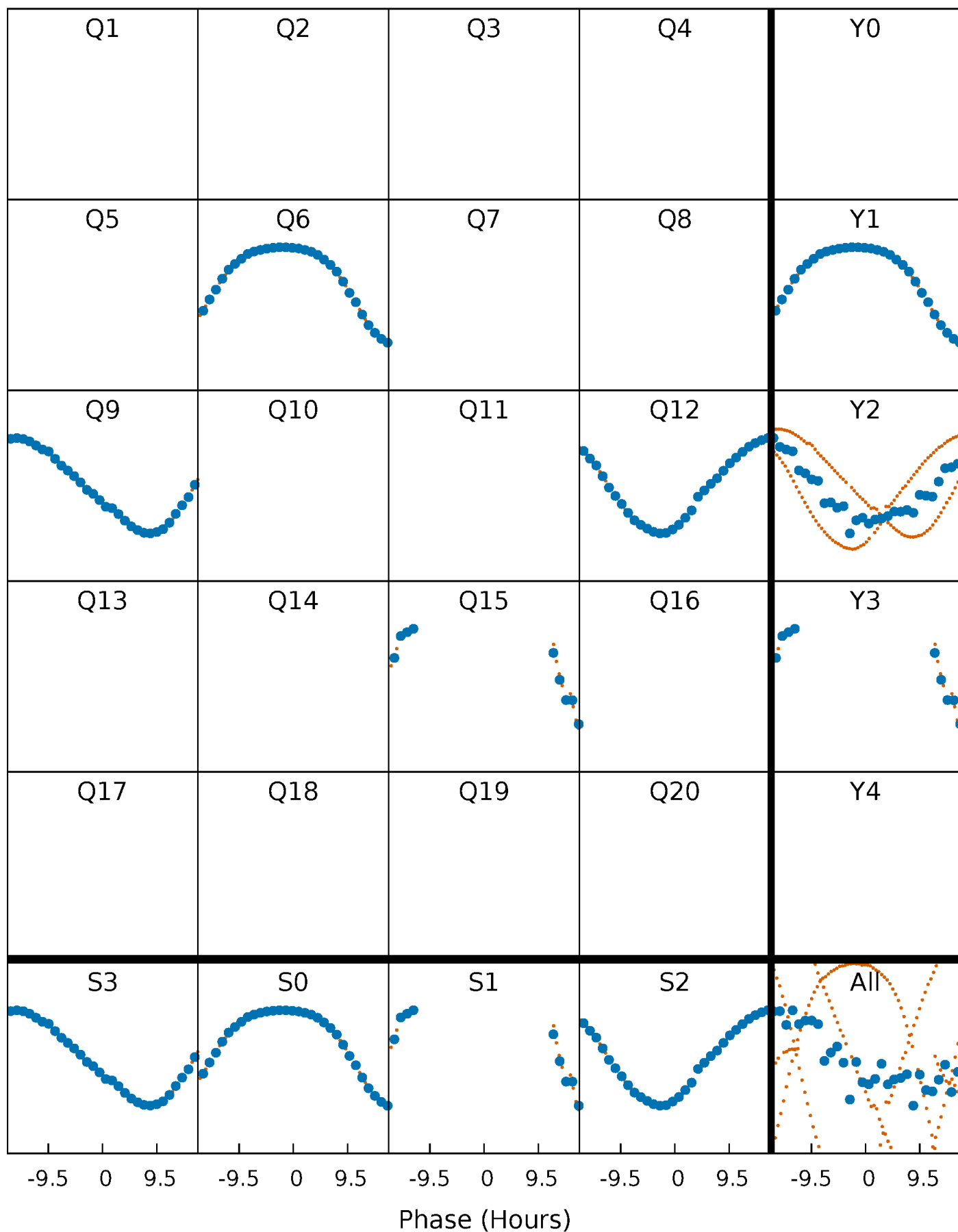
Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





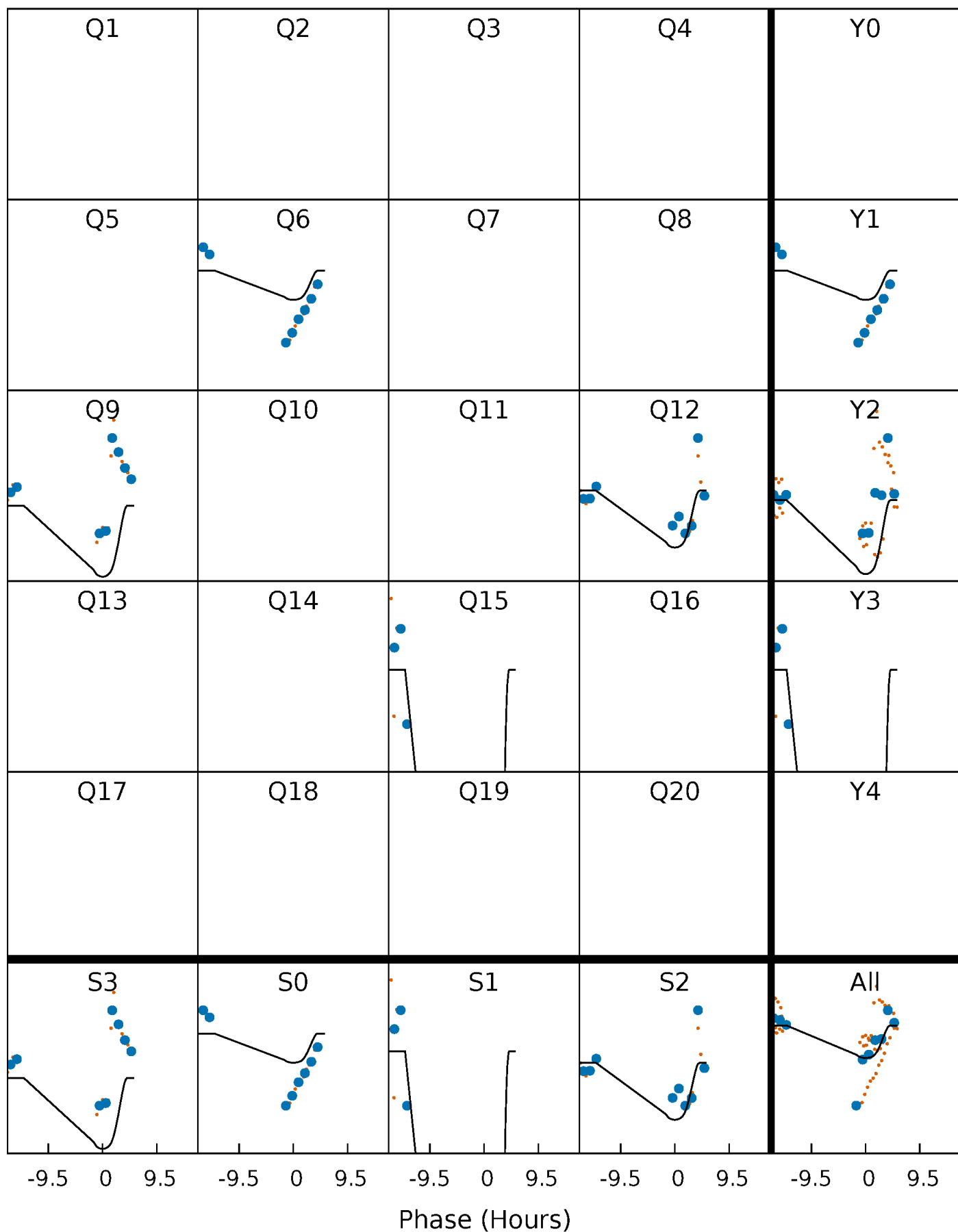
# PDC Quarter-Phased Transit Curves

TCE 011568624-03     $P=266.977553$  Days     $T_0=336.884956$  (BKJD)



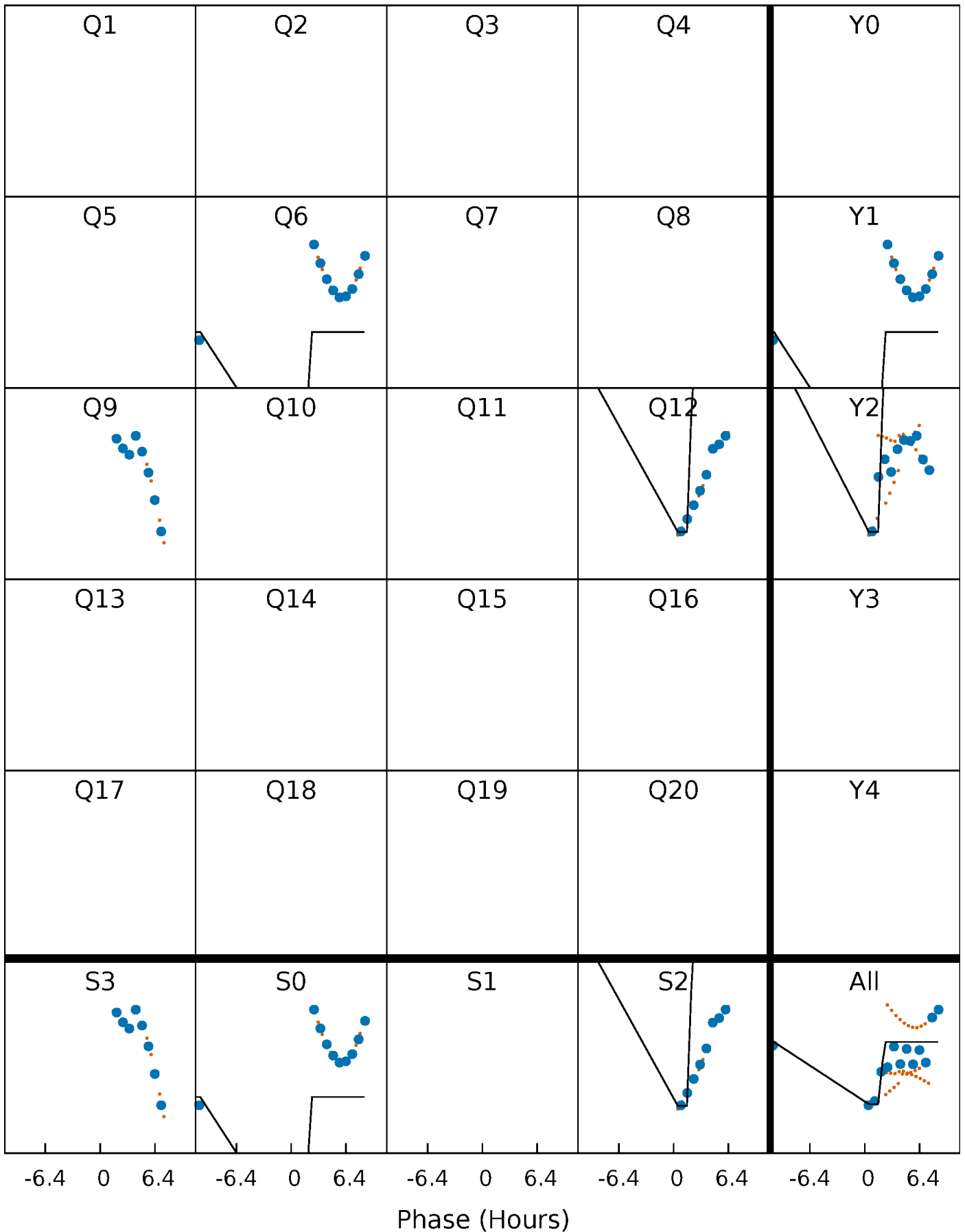
# DV Quarter-Phased Transit Curves

TCE 011568624-03     $P=266.977553$  Days     $T_0=336.884956$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

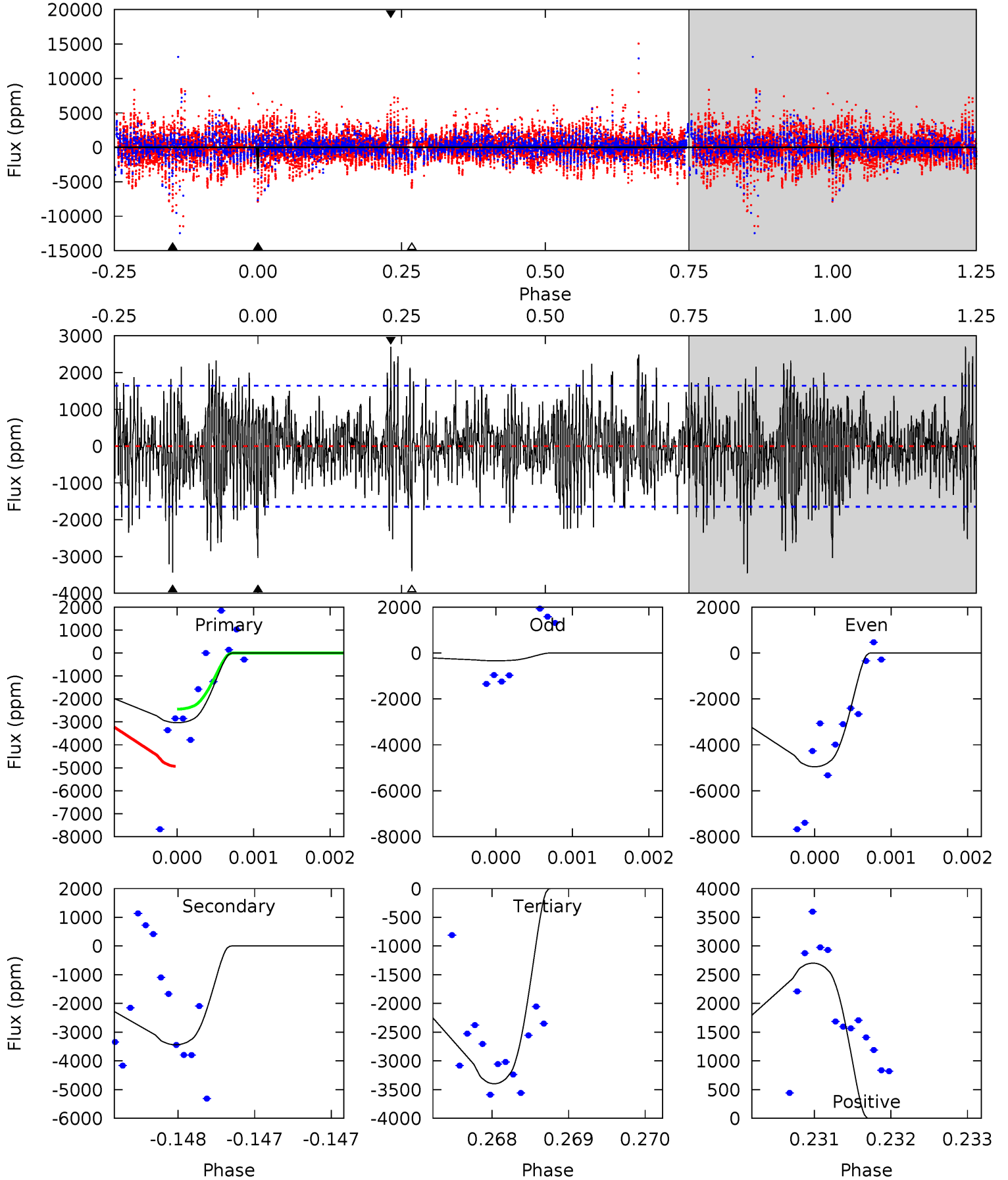
TCE 011568624-03 P=267.048997 Days  $T_0=336.636447$  (BKJD)



# DV Model-Shift Uniqueness Test

011568624-03, P = 266.977553 Days, E = 336.884956 Days

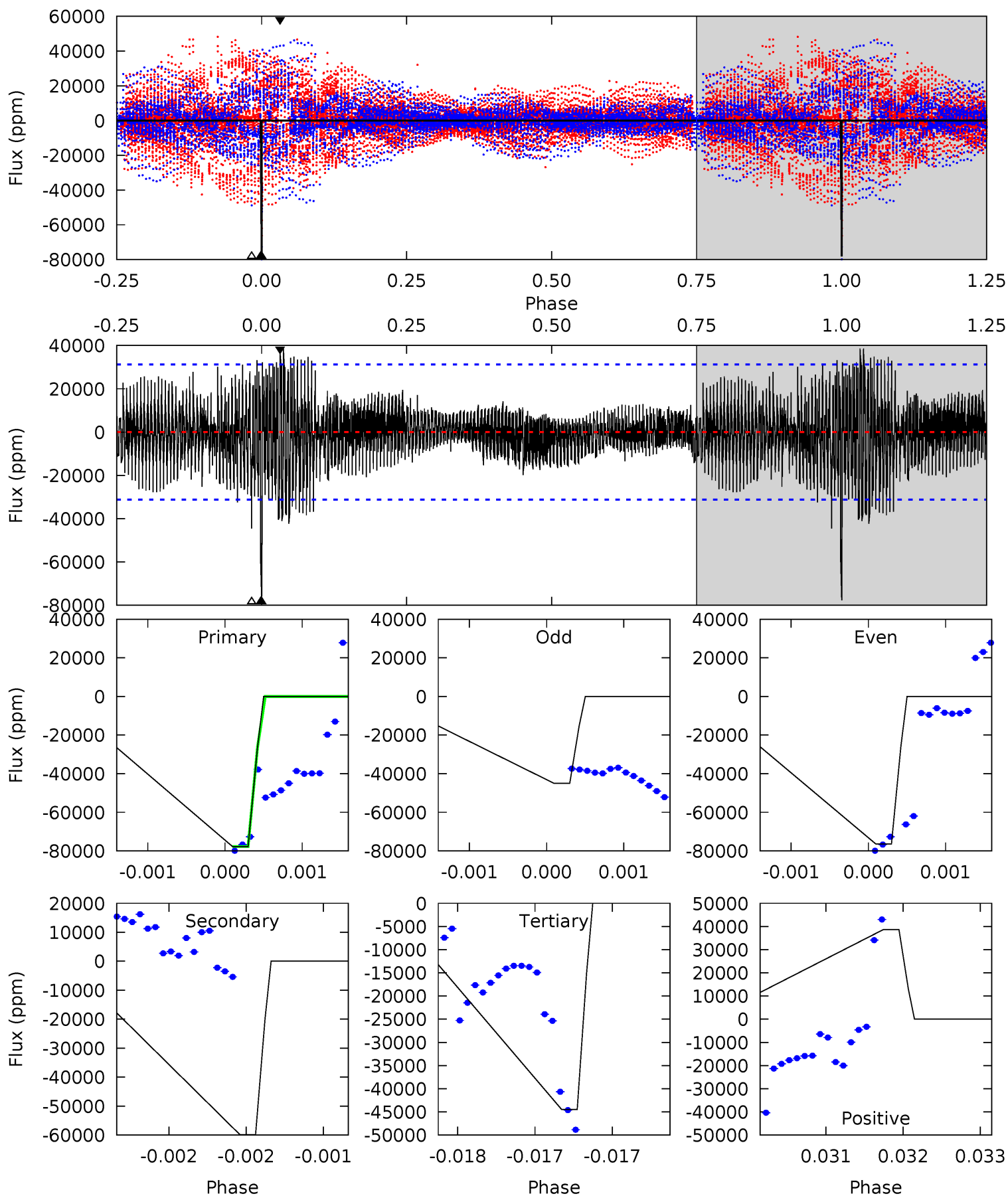
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	11.4	11.3	8.97	5.46	3.31	2.86	-1.19	1.12	0.13	2.44	6.96	1.35	0.44	3.06



# Alt Model-Shift Uniqueness Test

011568624-03, P = 267.048997 Days, E = 336.636447 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	10.5	7.84	6.81	5.50	3.37	1.42	5.86	6.88	2.71	3.74	3.01	1.00	0.33	0



### Stellar Parameters For KIC 011568624

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4647^{+152}_{-105}$	$2.579^{+0.366}_{-0.244}$	$-0.220^{+0.300}_{-0.200}$	$8.021^{+4.610}_{-2.482}$	$0.891^{+0.497}_{-0.026}$	$0.002^{+0.006}_{-0.002}$
	+3%/-2%	+14%/-9%	+136%/-91%	+57%/-31%	+56%/-3%	+247%/-70%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 011568624-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-3438 \pm 301$	$57.21^{+18.91}_{-14.74}$	$909^{+113}_{-97}$	$4490^{+363}_{-293}$	$392^{+300}_{-172}$
Alt.	$-59887 \pm 5677$	$244.35^{+73.40}_{-48.18}$	$904^{+104}_{-102}$	$4470^{+169}_{-154}$	$384^{+243}_{-136}$

$T_{\text{max}}$  = 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

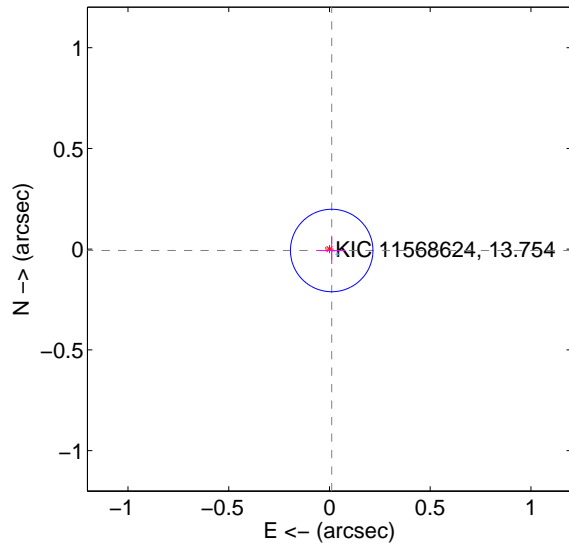
Supplemental centroid analysis for 011568624-03. Kepler magnitude: 13.75. Transit SNR 5.22

There are 2 quarters with good PRF difference image offsets

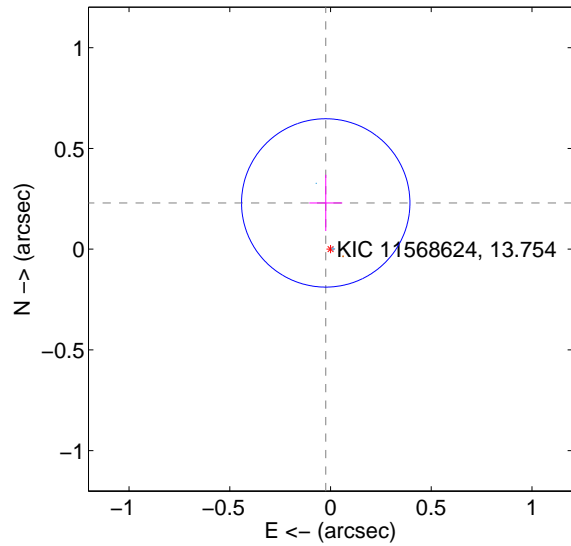
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.013 \pm 0.068$	0.19	$-0.011 \pm 0.069$	$-0.007 \pm 0.067$
PRF-fit source offset from KIC position	$0.231 \pm 0.139$	1.66	$0.024 \pm 0.082$	$0.230 \pm 0.140$
photometric centroid source offset	$0.32 \pm 0.23$	1.42	$0.28 \pm 0.22$	$-0.16 \pm 0.25$

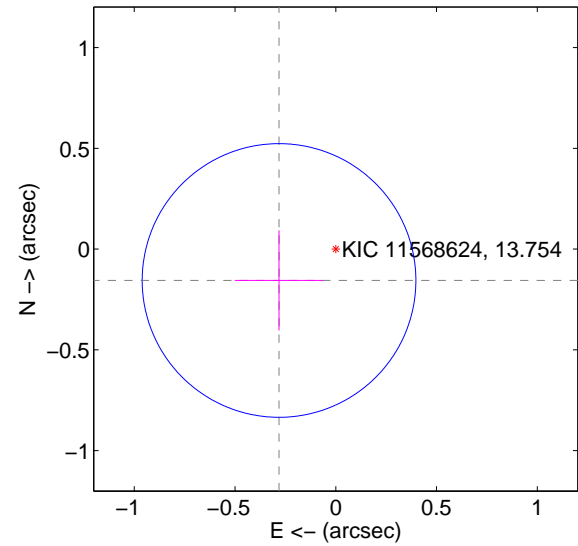
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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



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

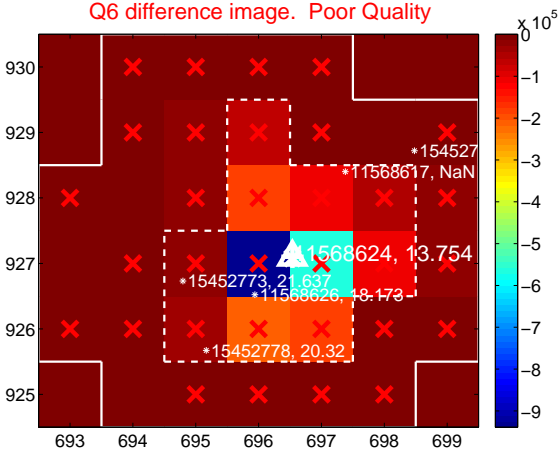
Q5 no difference image



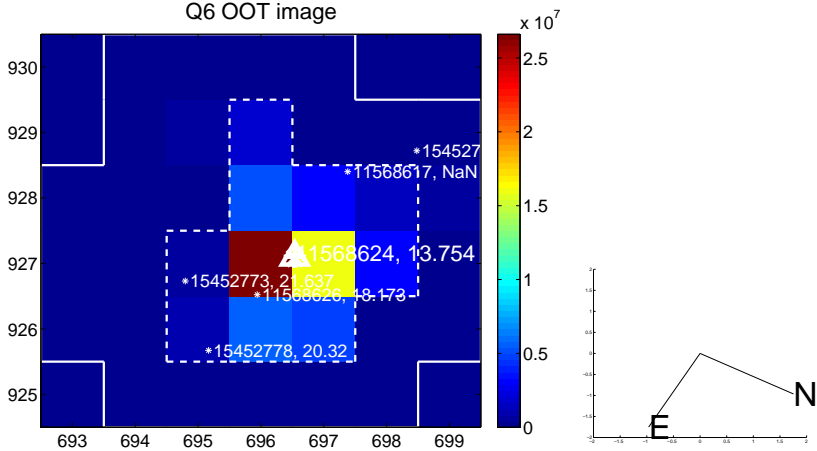
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



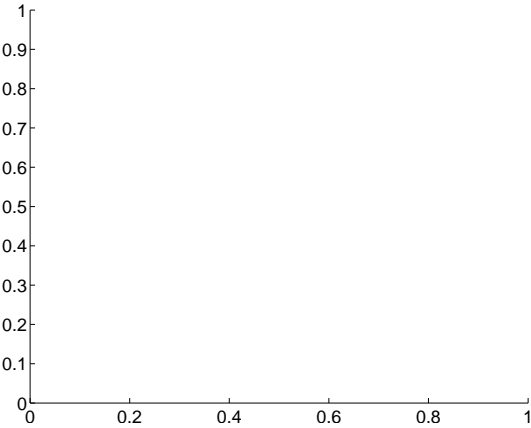
Q7 no difference image



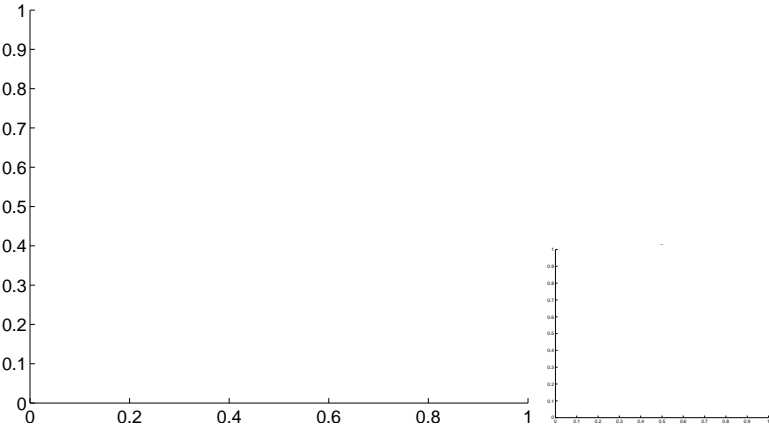
Q7 no OOT image



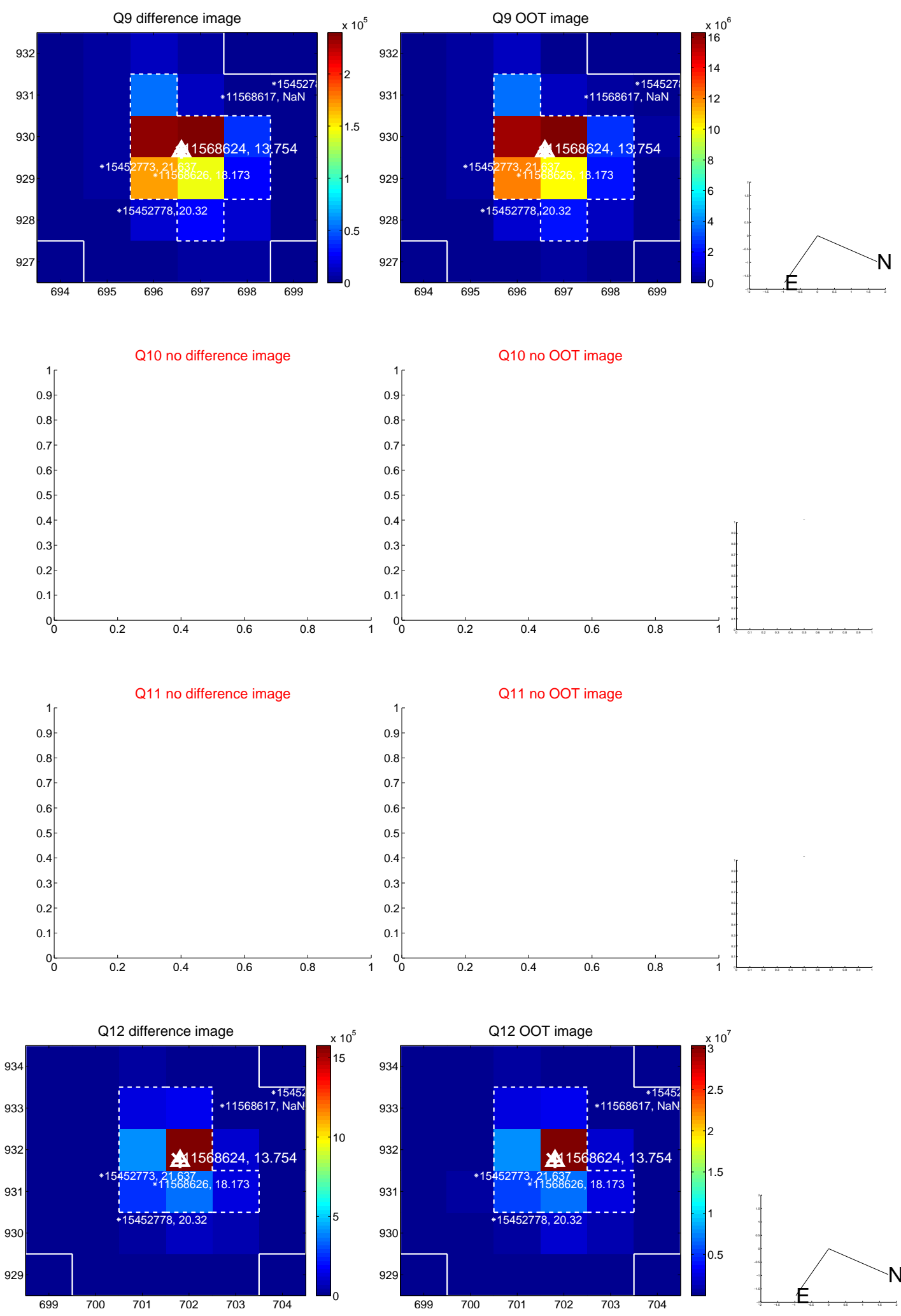
Q8 no difference image



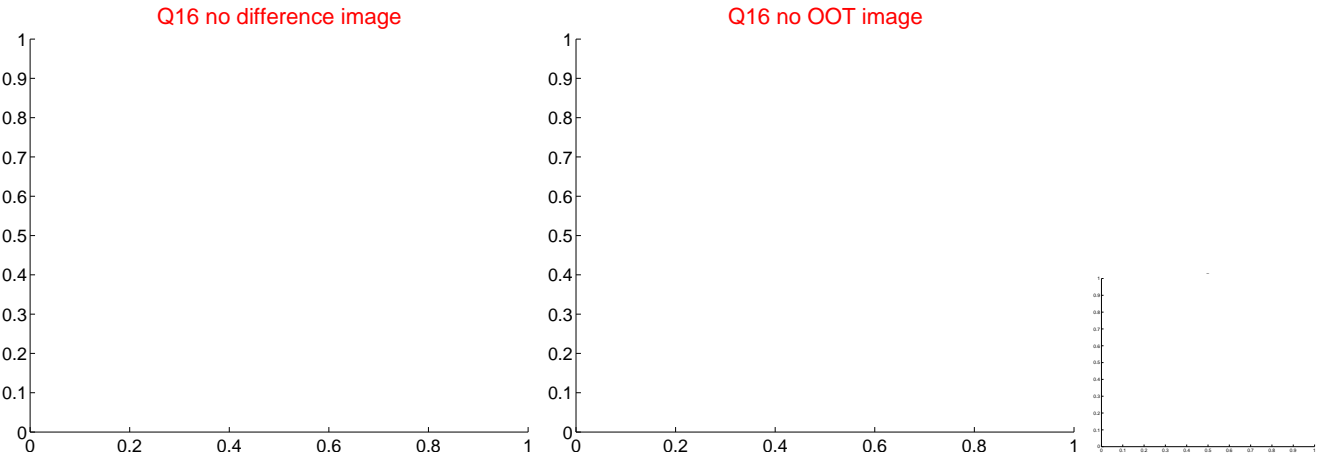
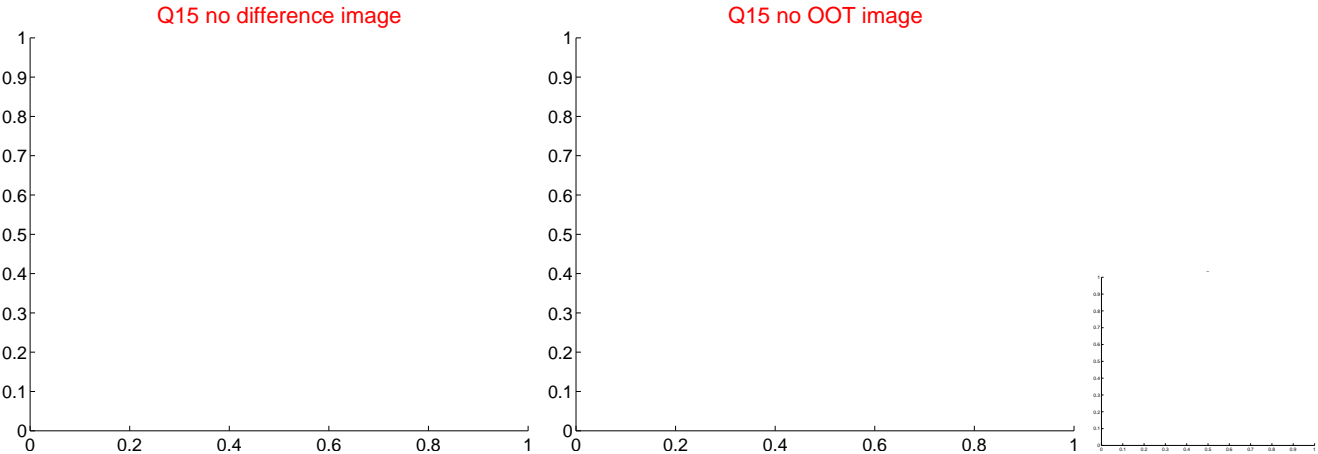
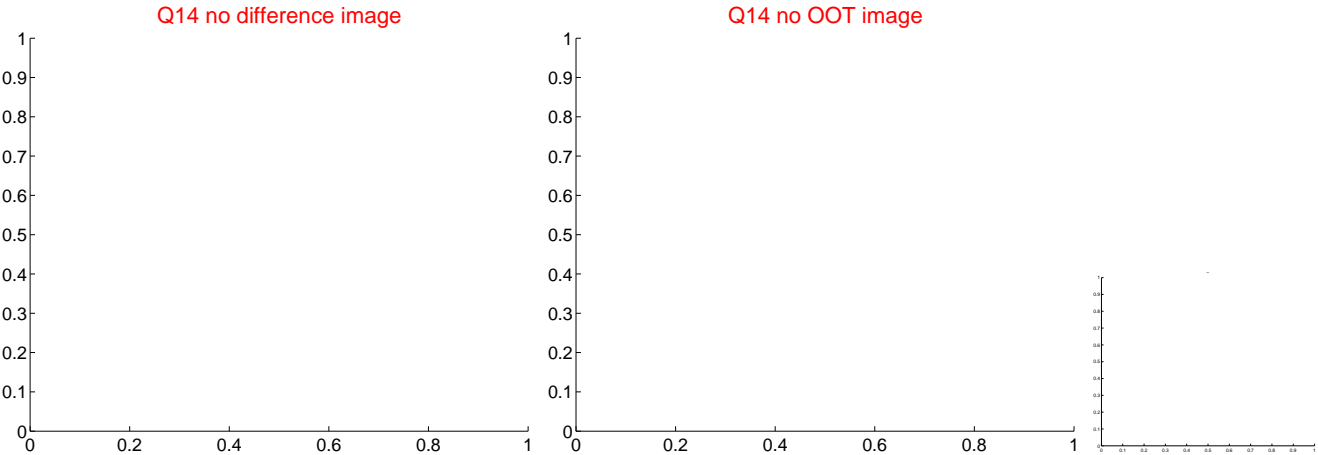
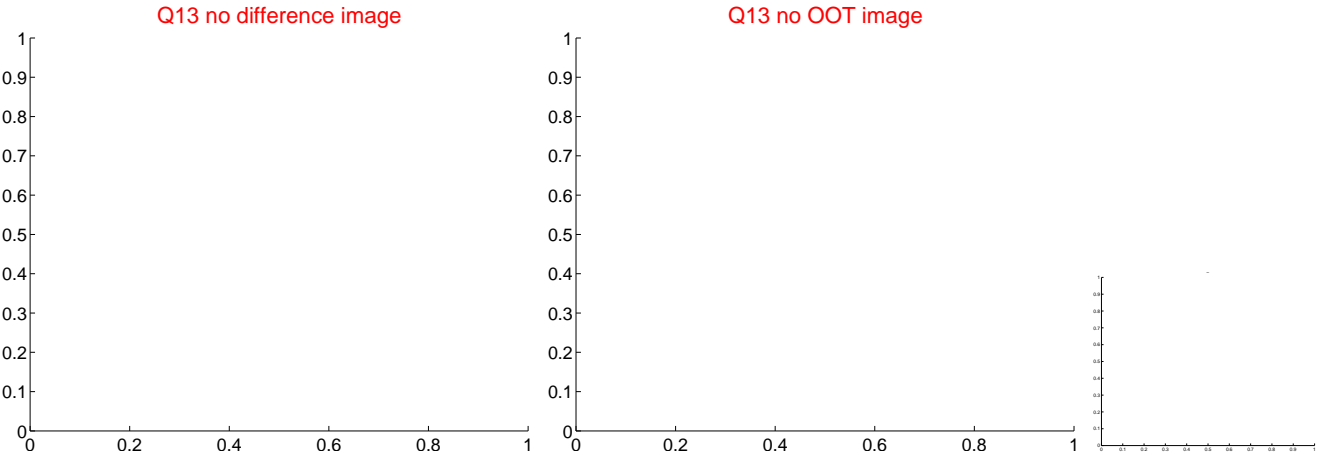
Q8 no OOT image



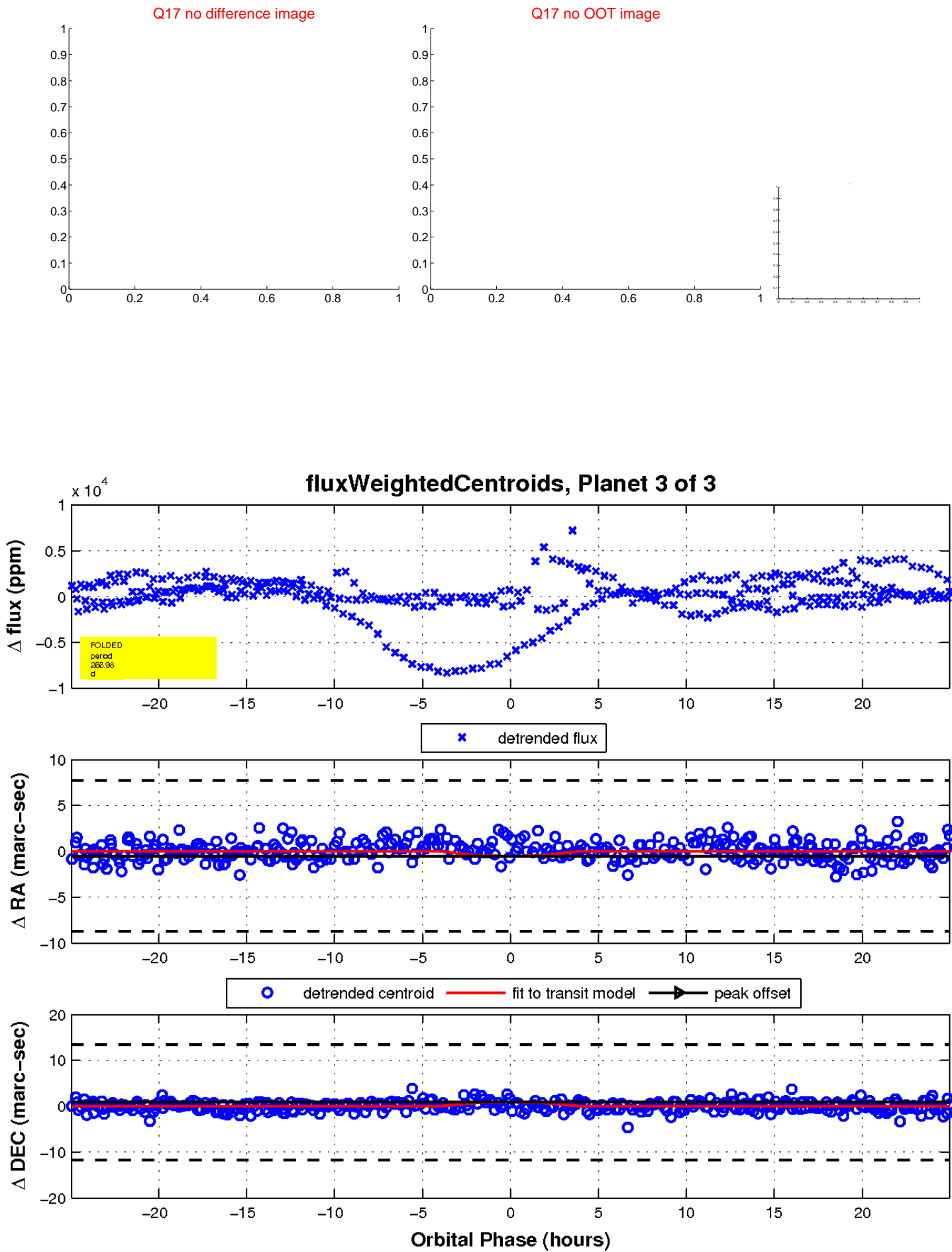
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : 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

