

# KIC 008565446

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008565446-01	OBS	No	609.676941	221.733813	1095.1	10.796	27.2	2.0	2.06	6715	7.17	3.03
008565446-02	OBS	No	407.406601	485.037329	2353.4	14.175	20.1	2.8	2.06	6715	11.24	5.18
008565446-03	OBS	No	554.861964	435.855945	6848.0	6.843	19.4	6.6	2.06	6715	20.10	3.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008565446-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
008565446-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008565446-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_ALT—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.

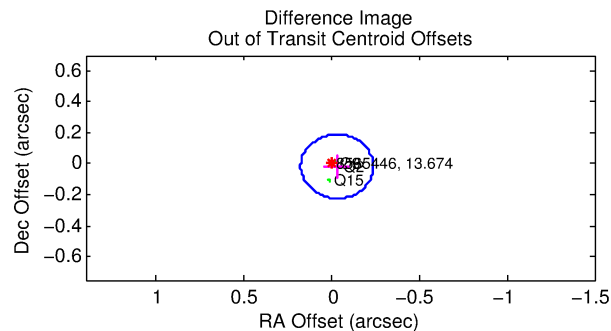
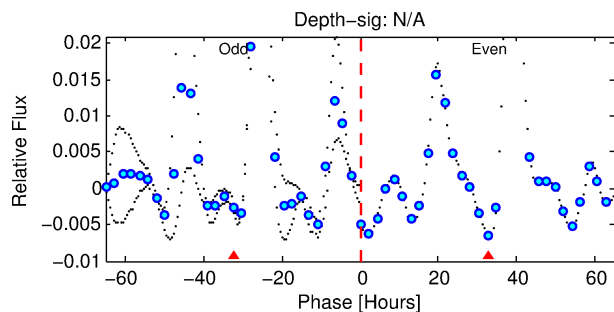
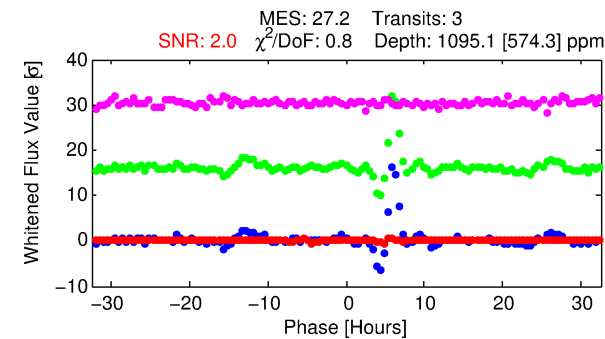
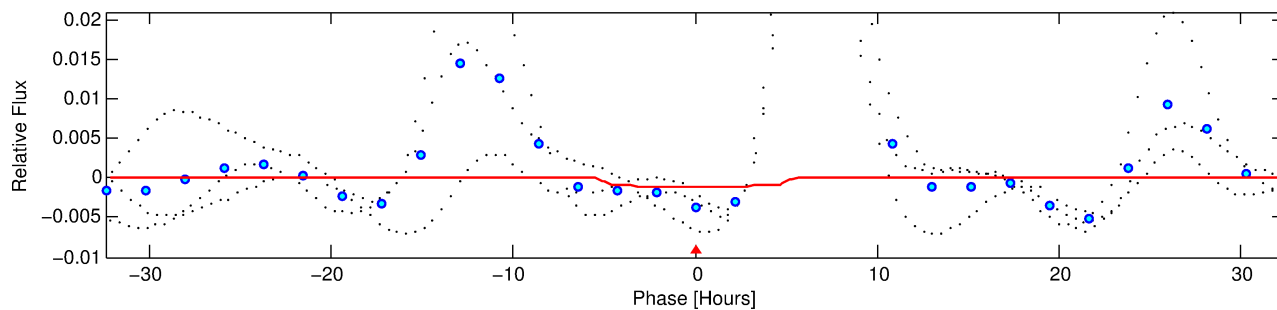
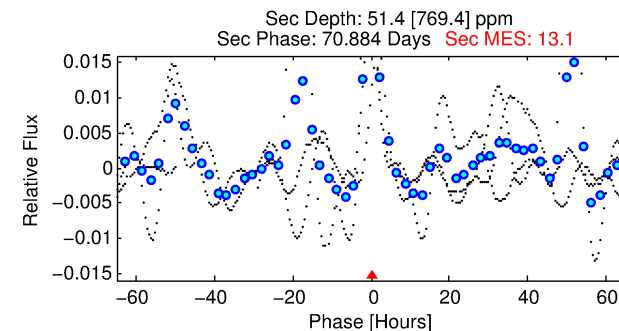
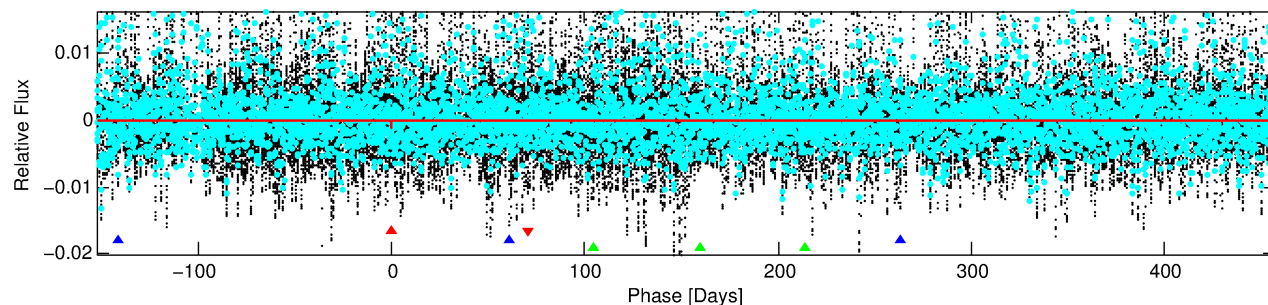
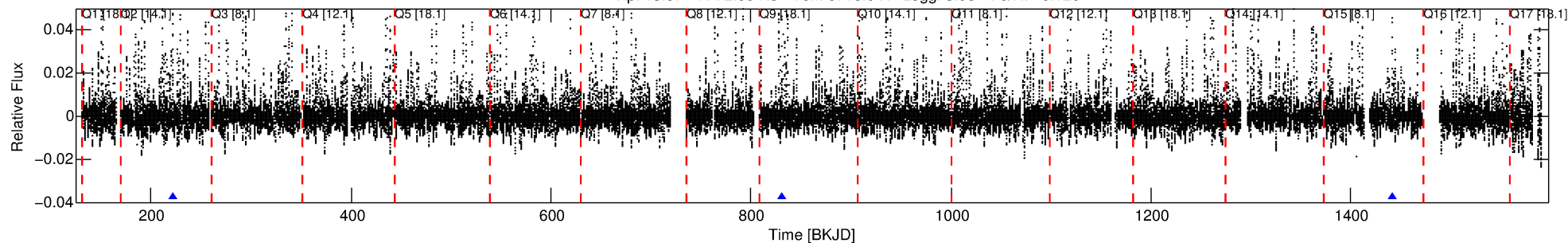
## Ephemeris Match Information For 008565446-01

No Significant Match Found

# DV One-Page Summary

KIC: 8565446 Candidate: 1 of 3 Period: 609.677 d

Kp: 13.67 R\*: 2.06 Rs Teff: 6715.0 K Logg: 3.98 Fe/H: -0.120



## DV Fit Results:

Period = 609.67694 [0.00726] d  
Epoch = 221.7338 [0.0117] BKJD  
Rp/R\* = 0.0319 [0.0147]  
a/R\* = 355.31 [541.38]  
b = 0.62 [1.52]  
Seff = 3.03 [1.64]  
Teq = 336 [45] K  
Rp = 7.17 [4.18] Re  
a = 1.5951 [0.5296] AU  
Ag = 1400.88 [21024.51] [0.07σ]  
Teffp = 3181 [11930] K [0.24σ]

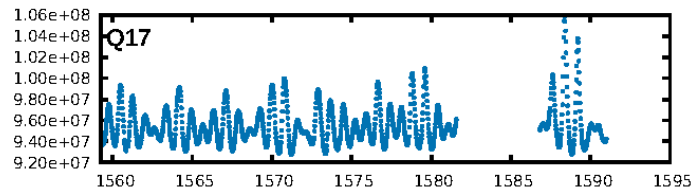
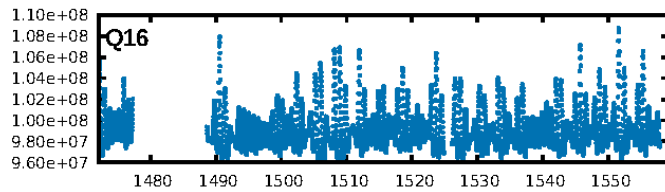
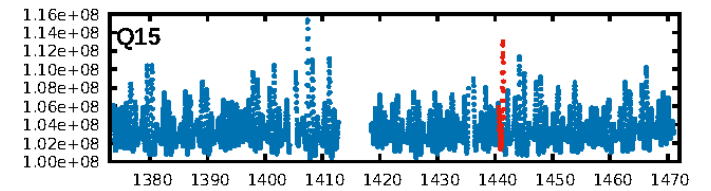
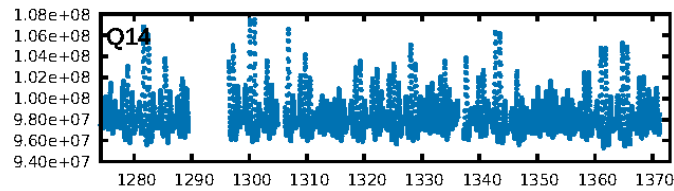
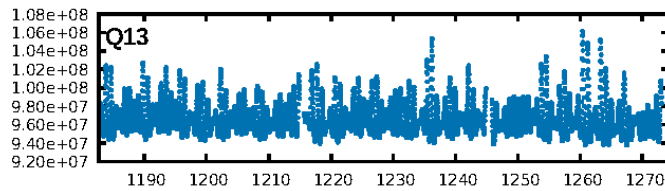
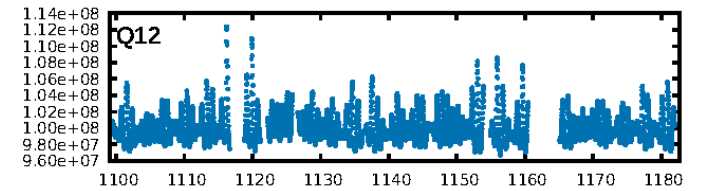
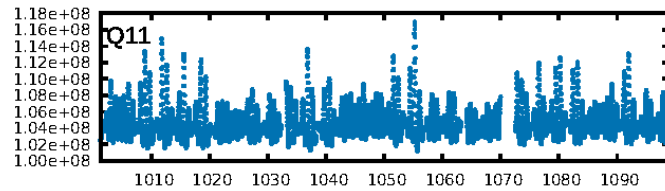
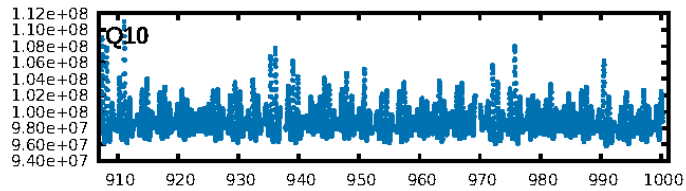
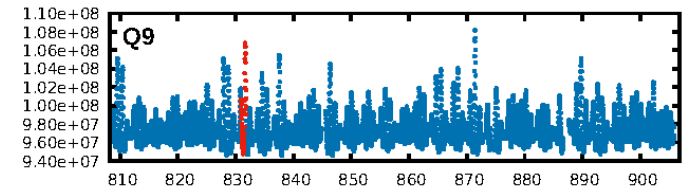
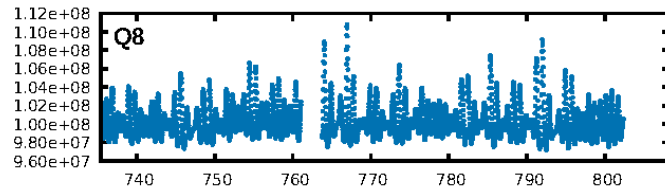
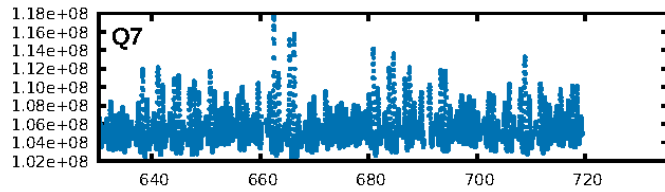
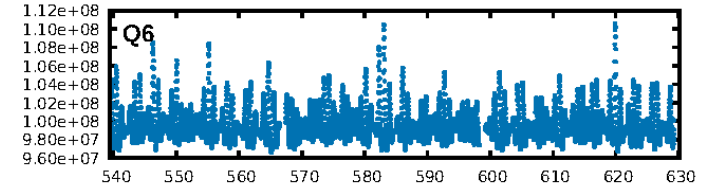
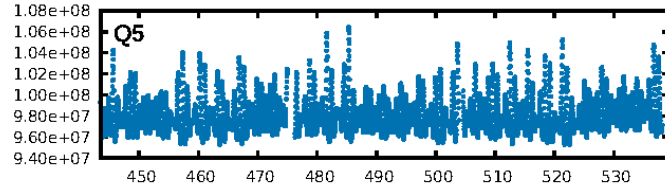
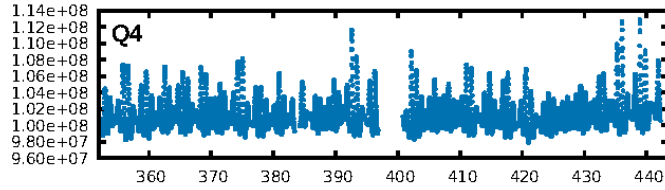
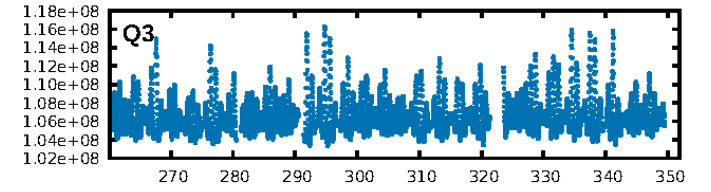
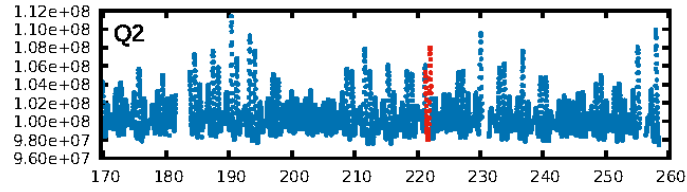
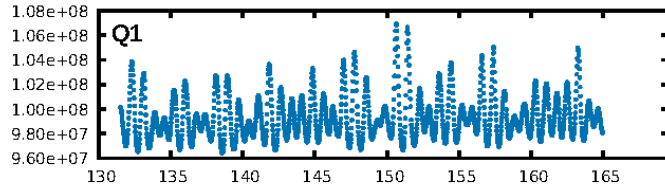
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [102.92σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 88.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 7.50e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.3044  
Centroid-sig: 3.7%  
Centroid-so: 1.231 arcsec [1.78σ]  
OotOffset-rm: 0.036 arcsec [0.52σ]  
KicOffset-rm: 0.189 arcsec [2.63σ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

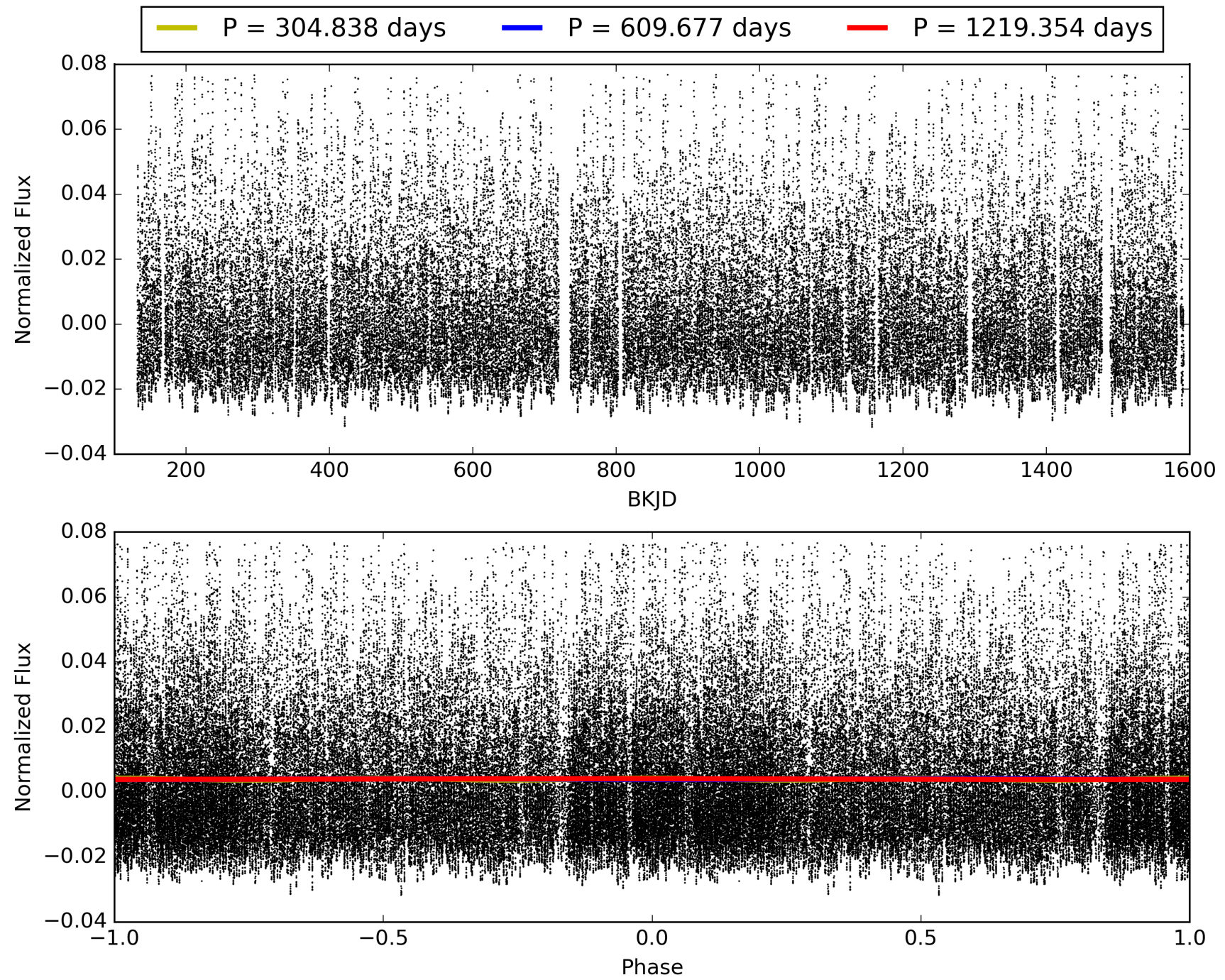
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 00565446-01, PDC Light Curves

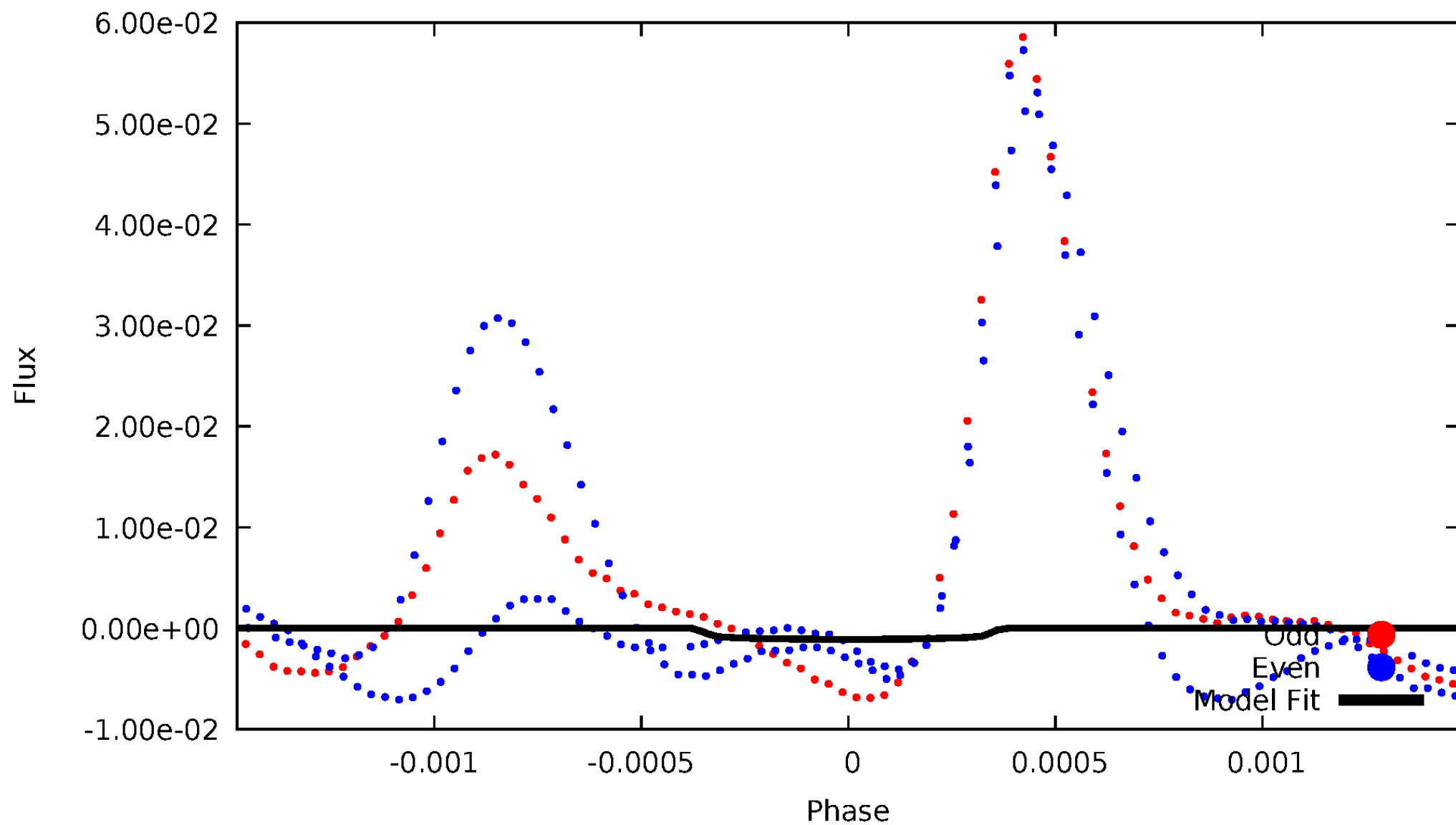


TCE 008565446-01



# DV Odd/Even

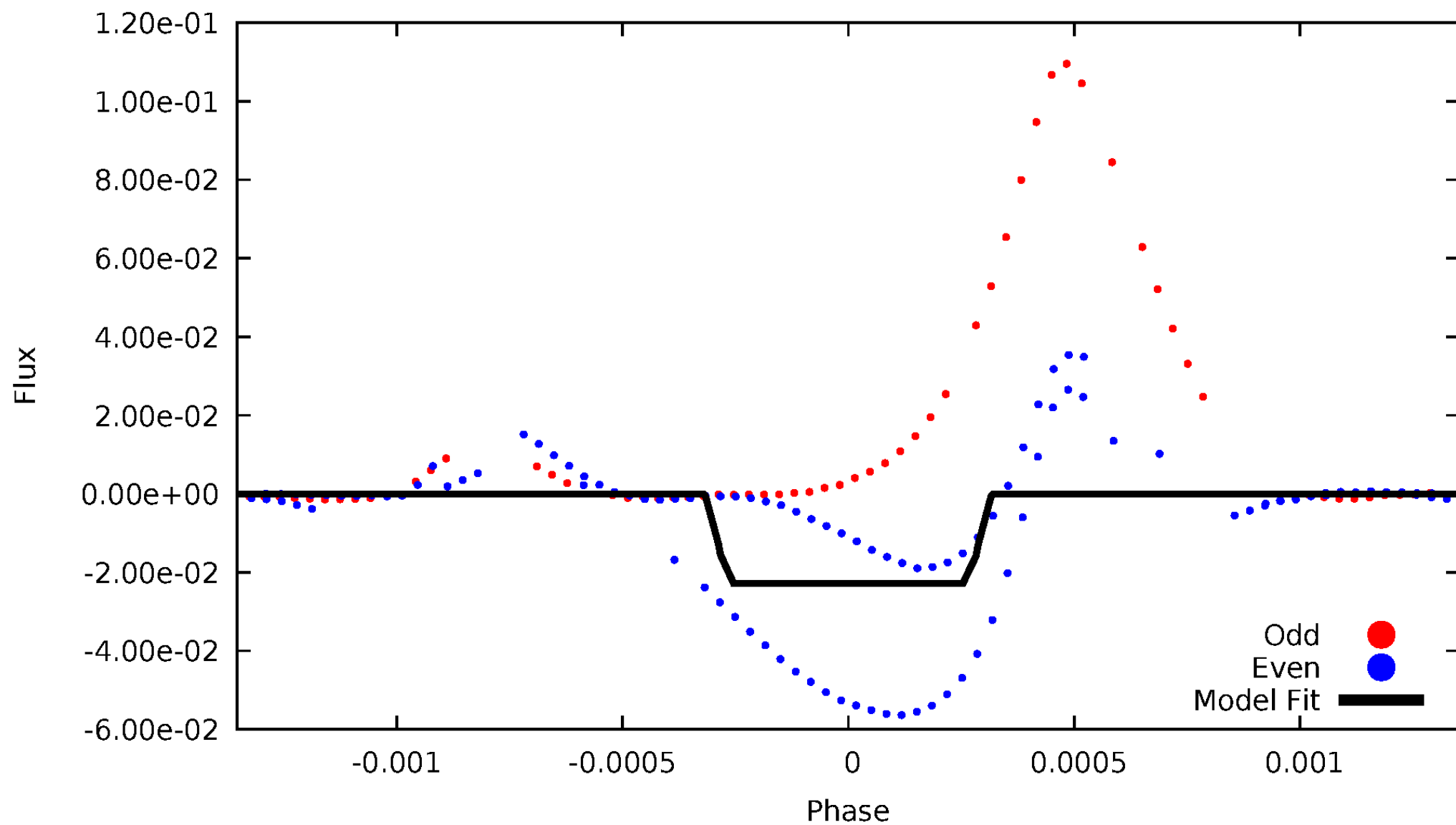
TCE 008565446-01





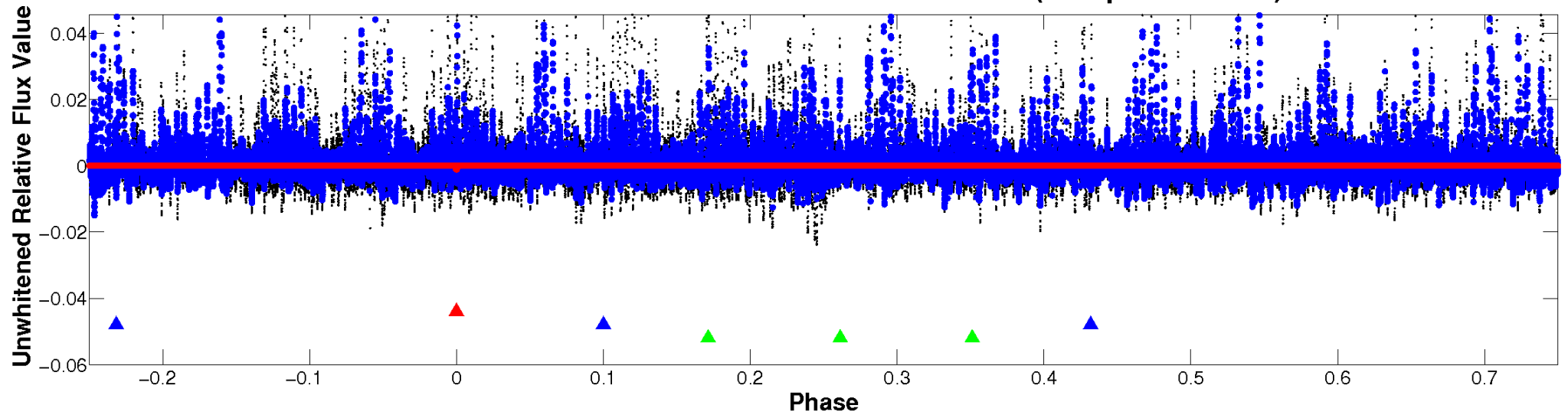
# ALT Odd/Even

TCE 008565446-01

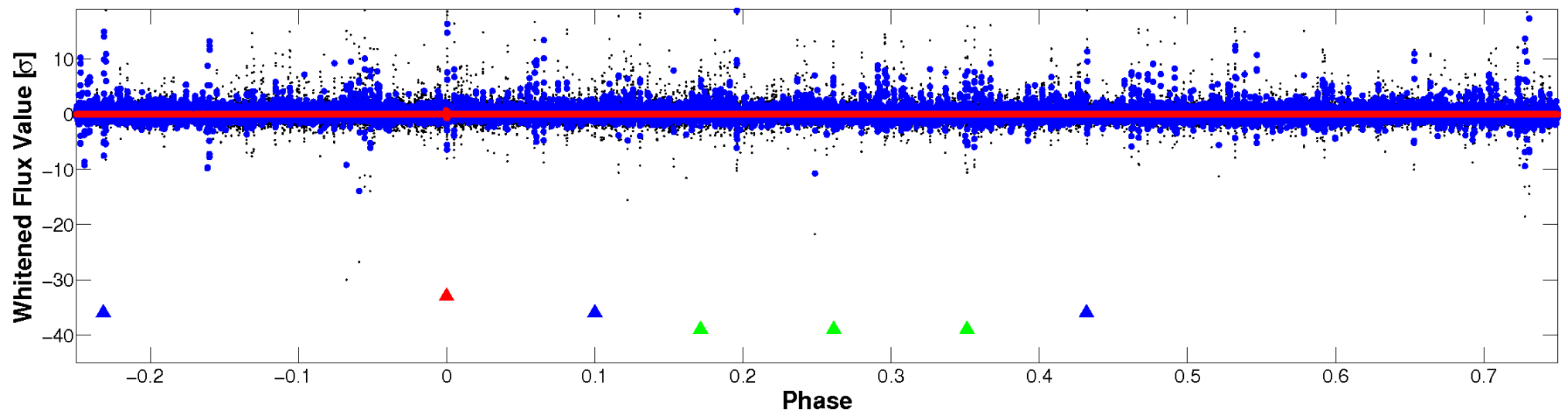


# Non-Whitened Vs. Whitened Light Curve

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

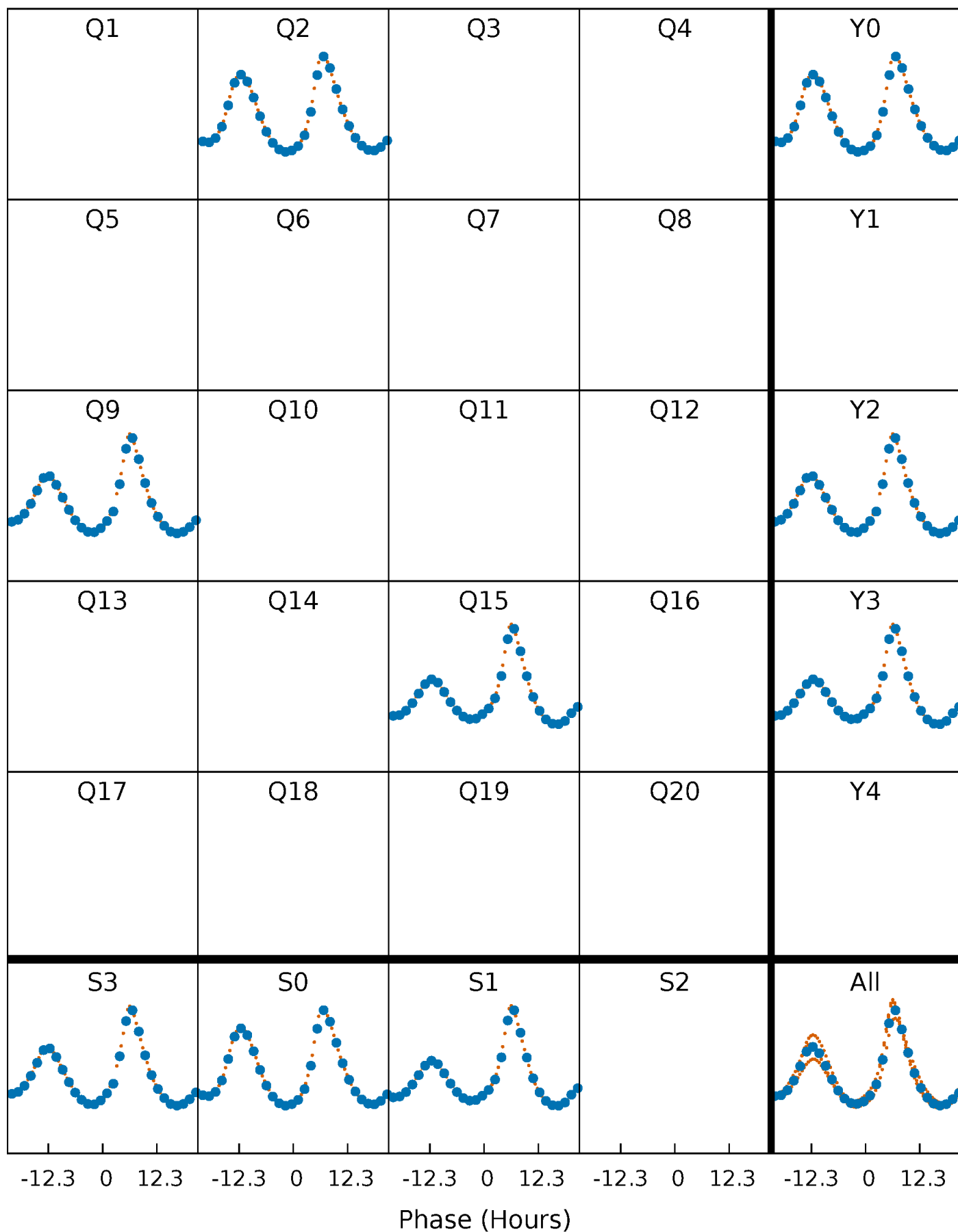


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

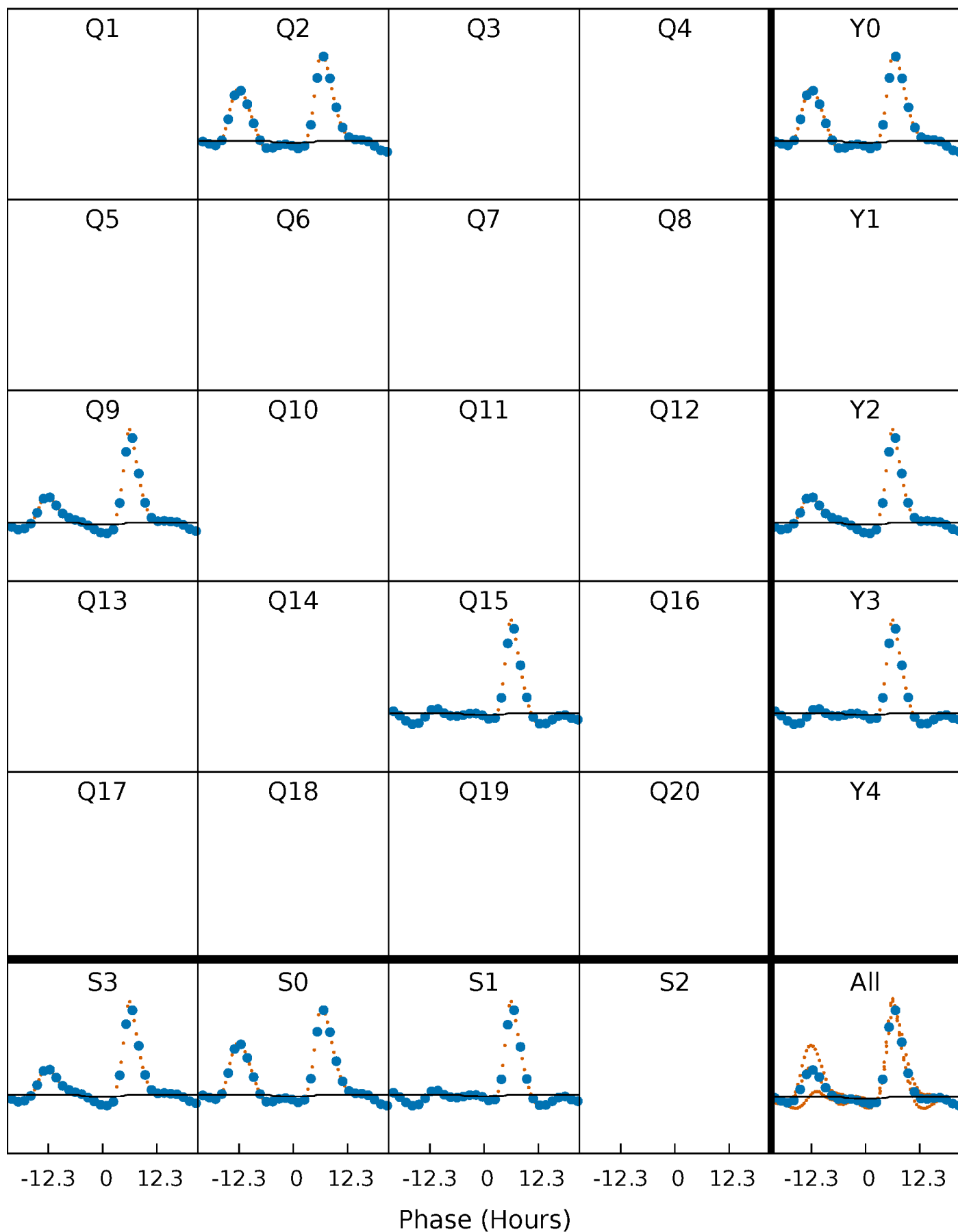
TCE 008565446-01 P=609.676941 Days  $T_0=221.733812$  (BKJD)





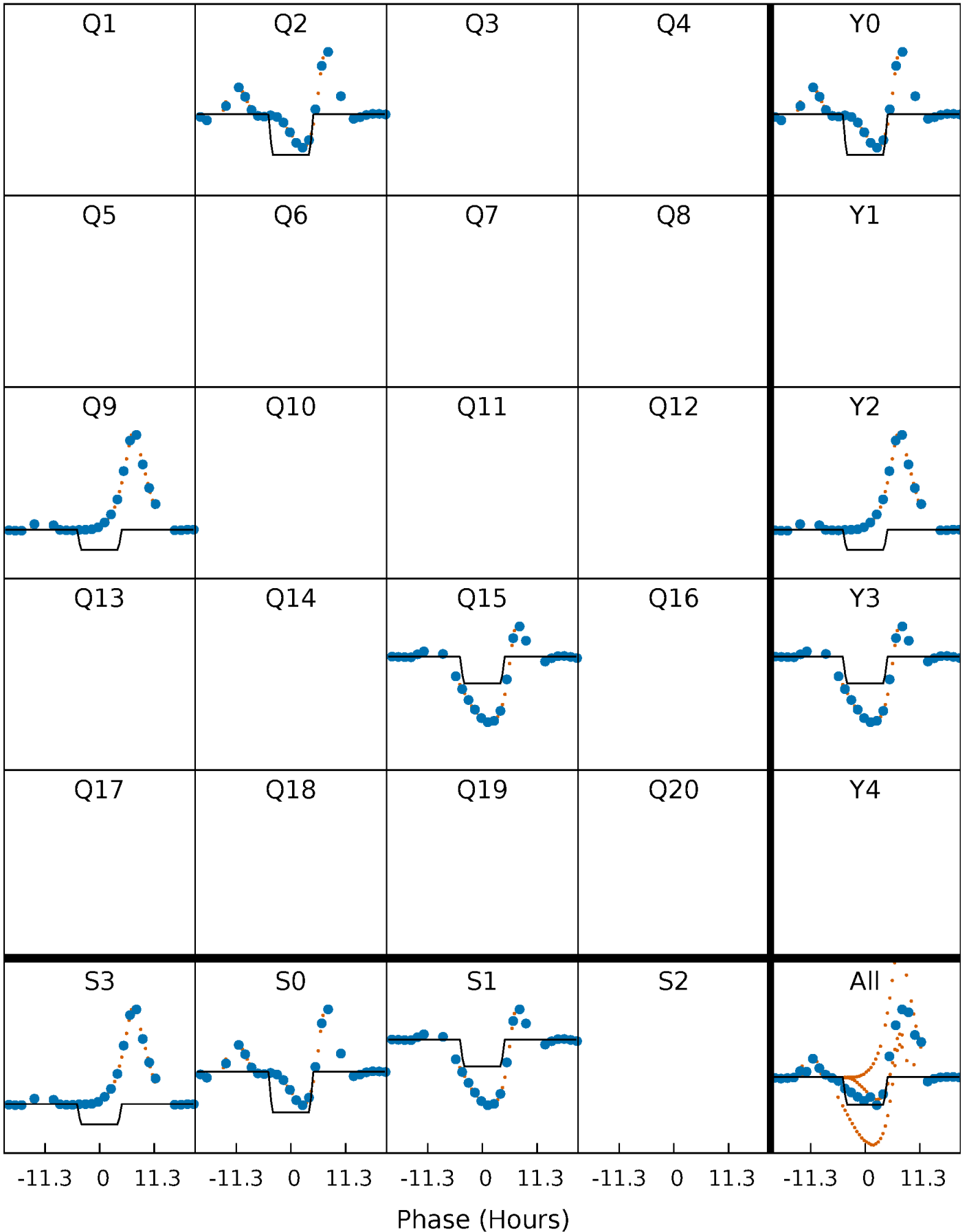
# DV Quarter-Phased Transit Curves

TCE 008565446-01 P=609.676941 Days  $T_0=221.733812$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

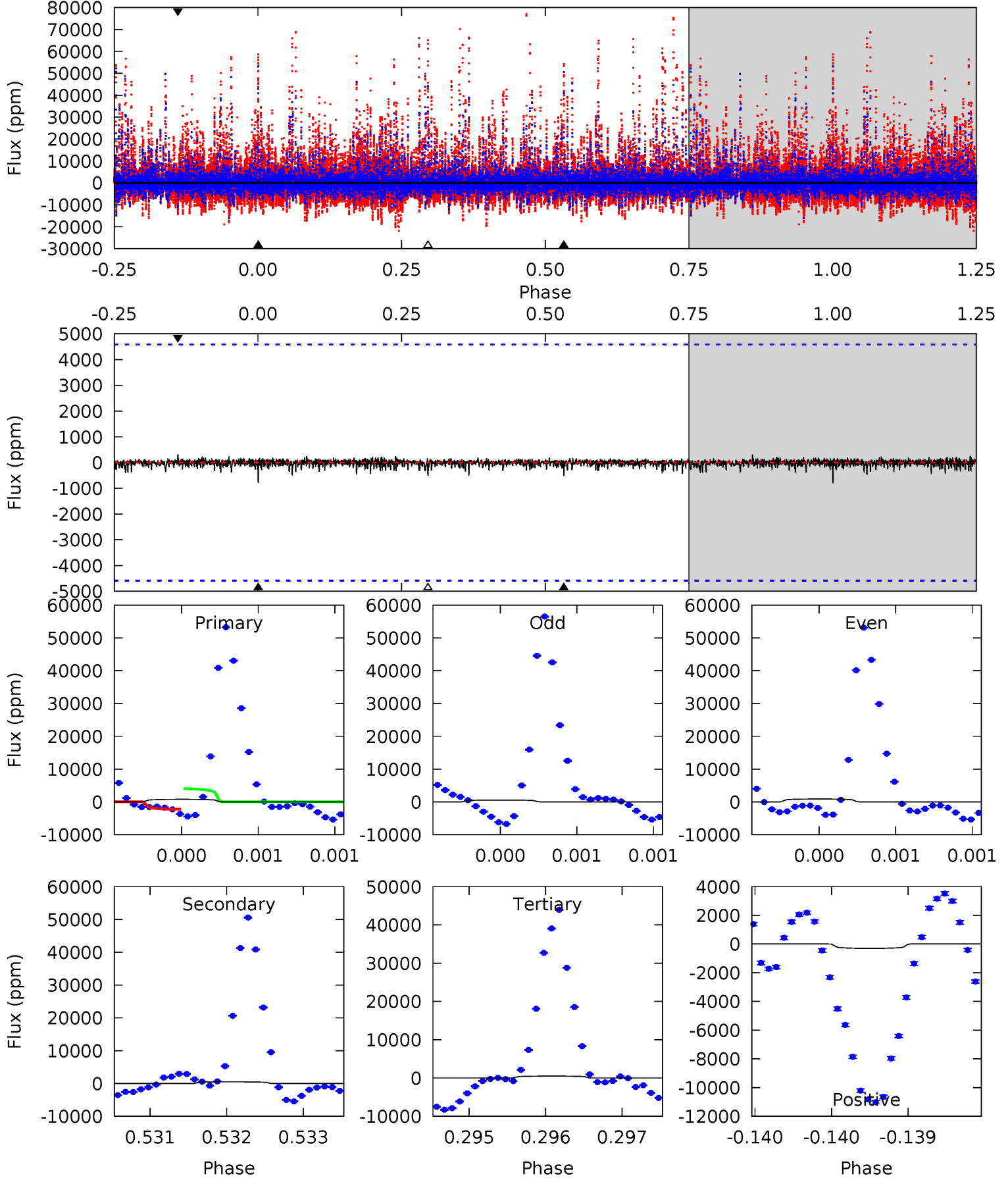
TCE 008565446-01 P=609.676130 Days  $T_0=221.696809$  (BKJD)



# DV Model-Shift Uniqueness Test

008565446-01, P = 609.676941 Days, E = 221.733812 Days

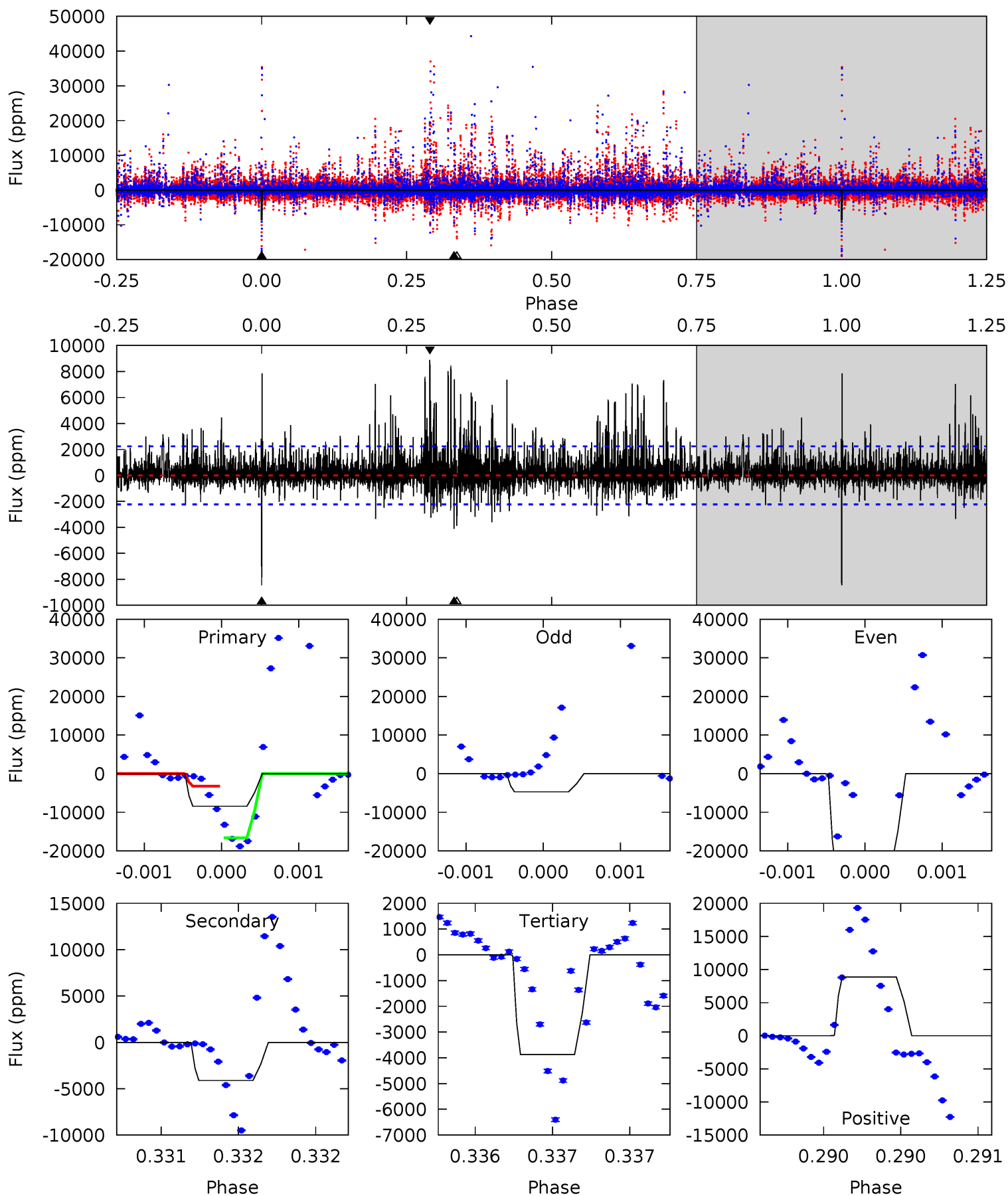
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.94	0.61	0.60	0.36	5.50	3.37	0.11	0.34	0.57	0.00	0.24	0.17	1.41	0.28	1.07



# Alt Model-Shift Uniqueness Test

008565446-01, P = 609.676130 Days, E = 221.696809 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
20.9	10.2	9.57	21.9	5.52	3.40	2.30	11.3	-1.07	0.58	-11.8	25.2	1.65	0.51	15.9



### Stellar Parameters For KIC 008565446

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6715^{+187}_{-258}$	$3.975^{+0.299}_{-0.161}$	$-0.120^{+0.300}_{-0.300}$	$2.056^{+0.605}_{-0.740}$	$1.459^{+0.208}_{-0.312}$	$0.236^{+0.501}_{-0.107}$
	+3%/-4%	+8%/-4%	+250%/-250%	+29%/-36%	+14%/-21%	+212%/-45%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008565446-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-505 \pm 833$	$6.81^{+3.76}_{-3.31}$	$463^{+39}_{-44}$	$5369^{+2870}_{-10276}$	$11003^{+52734}_{-19264}$
Alt.	$-4110 \pm 405$	$32.93^{+6.96}_{-6.96}$	$464^{+38}_{-47}$	$4518^{+244}_{-197}$	$5266^{+3156}_{-1679}$

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

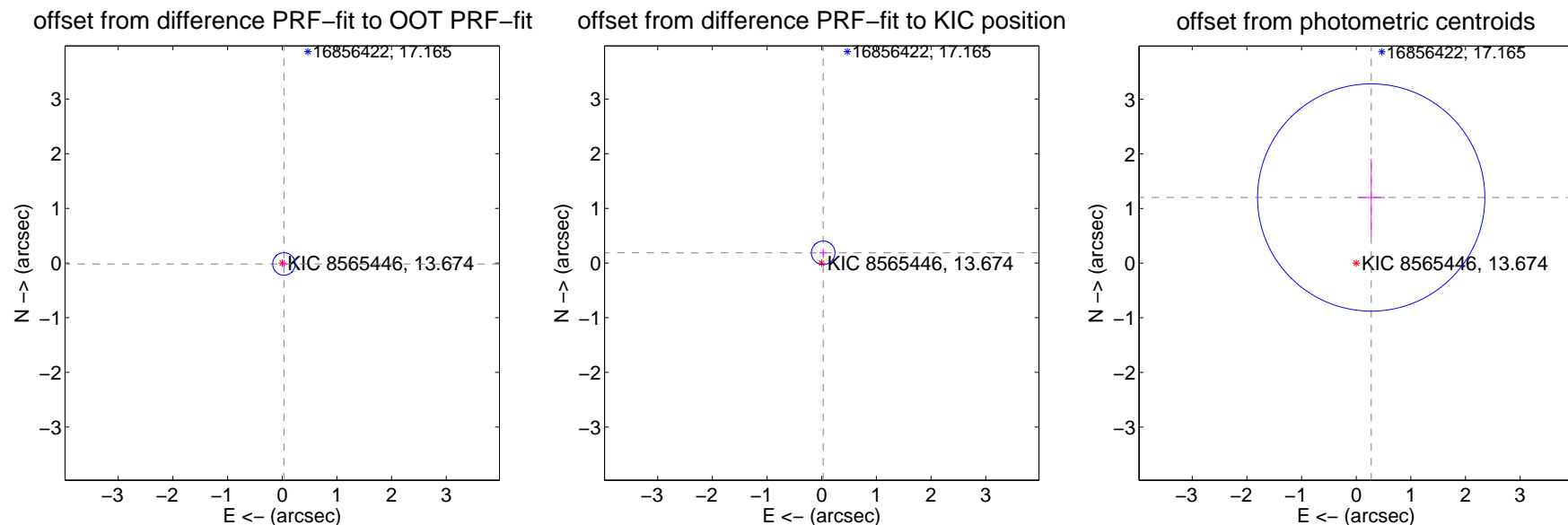
## DV Centroid Data

Supplemental centroid analysis for 008565446-01. Kepler magnitude: 13.67. Transit SNR 1.98

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

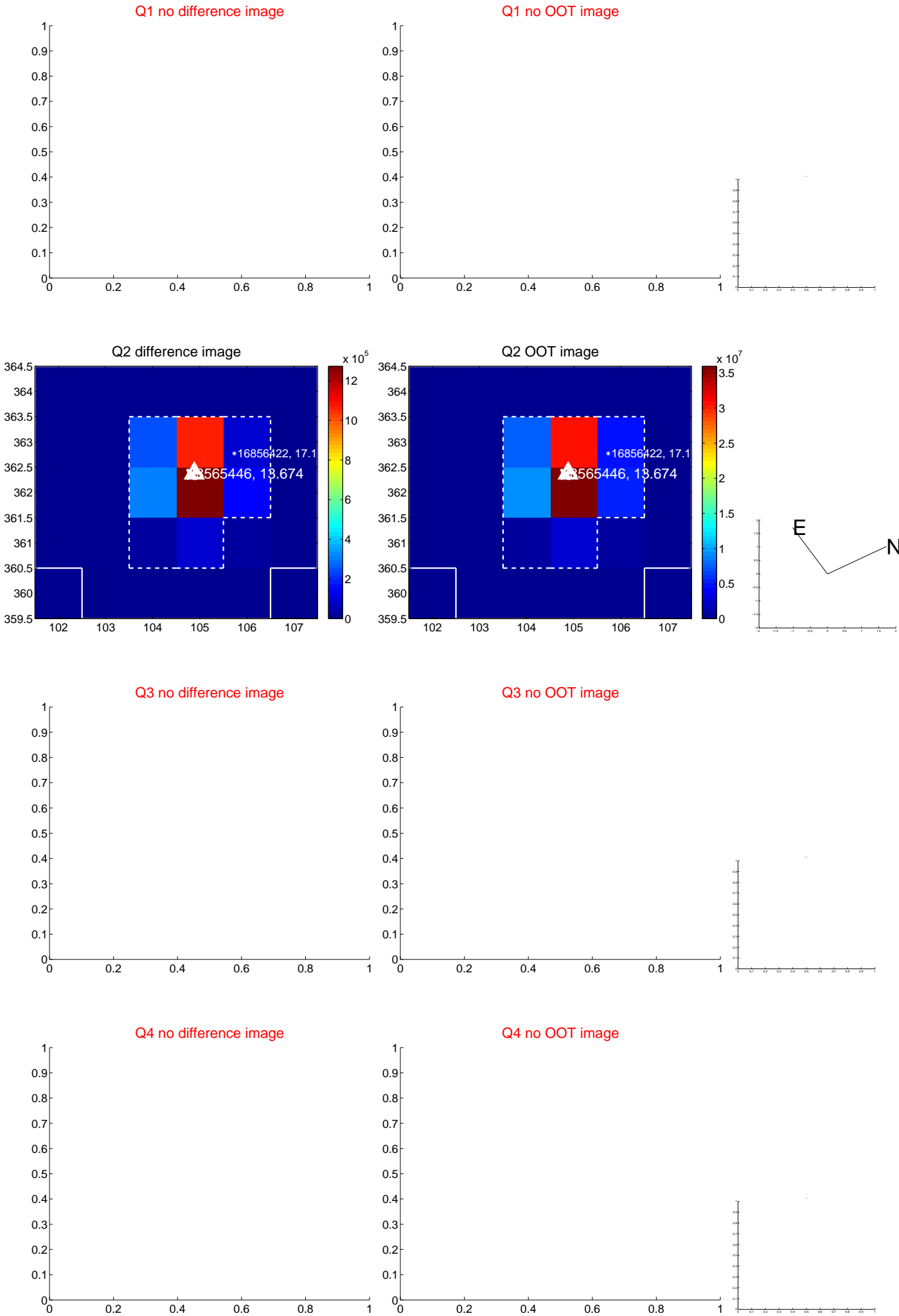
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.036 \pm 0.069$	0.52	$-0.032 \pm 0.068$	$-0.017 \pm 0.072$
PRF-fit source offset from KIC position	$0.189 \pm 0.072$	2.63	$-0.027 \pm 0.069$	$0.187 \pm 0.072$
photometric centroid source offset	$1.23 \pm 0.69$	1.78	$-0.27 \pm 0.25$	$1.20 \pm 0.71$



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.



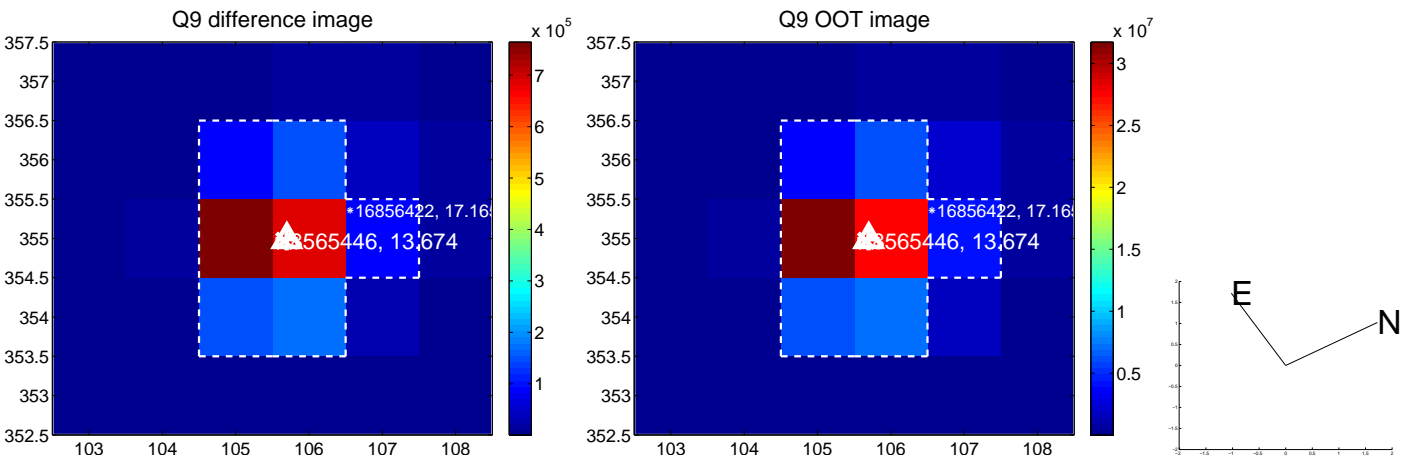
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



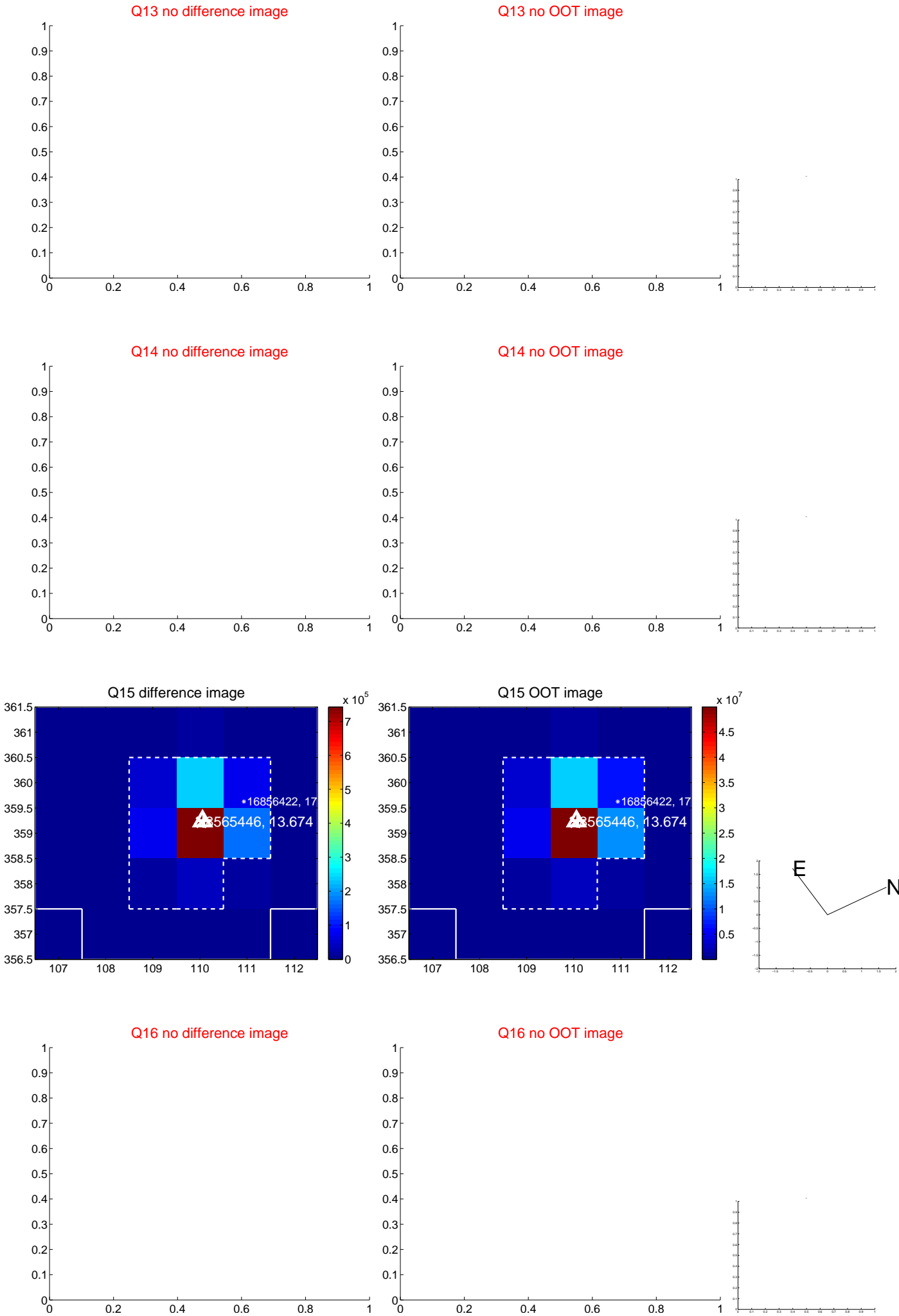
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



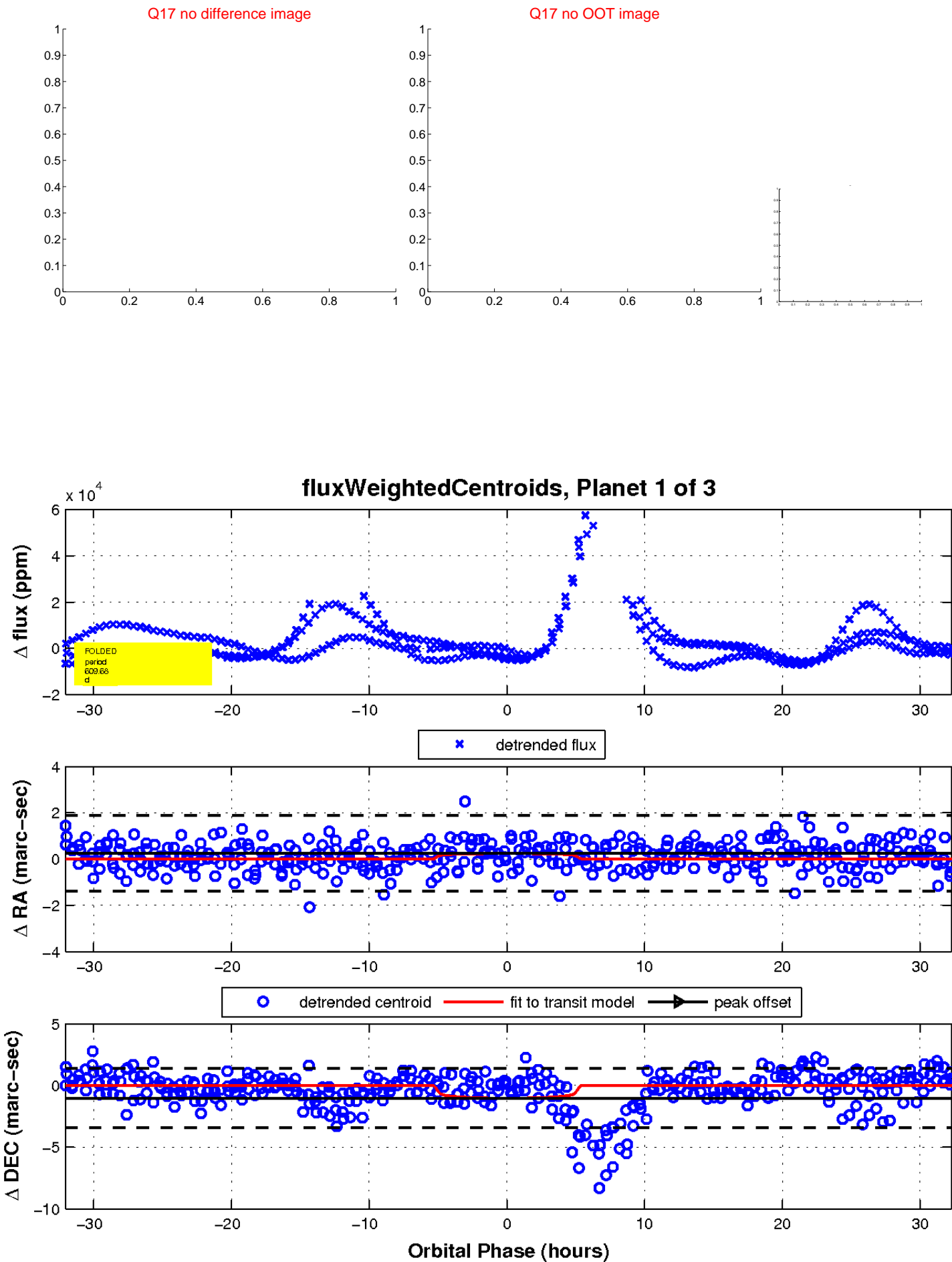
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

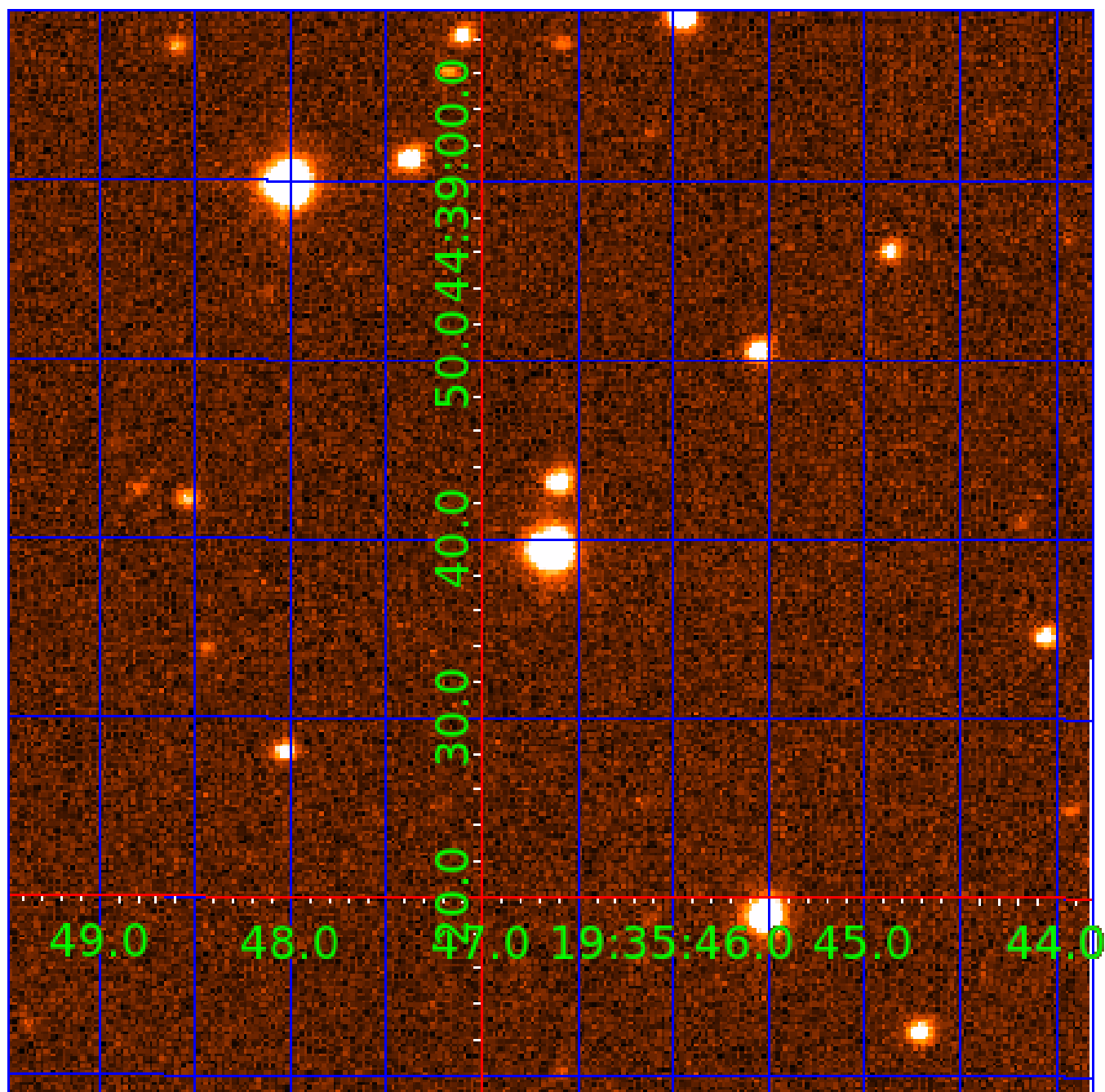


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008565446

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008565446-01	OBS	No	609.676941	221.733813	1095.1	10.796	27.2	2.0	2.06	6715	7.17	3.03
008565446-02	OBS	No	407.406601	485.037329	2353.4	14.175	20.1	2.8	2.06	6715	11.24	5.18
008565446-03	OBS	No	554.861964	435.855945	6848.0	6.843	19.4	6.6	2.06	6715	20.10	3.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008565446-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
008565446-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008565446-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_ALT—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.

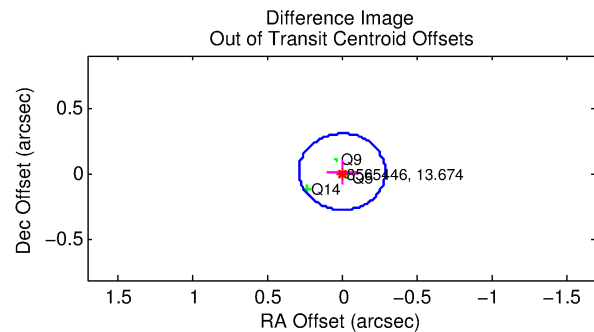
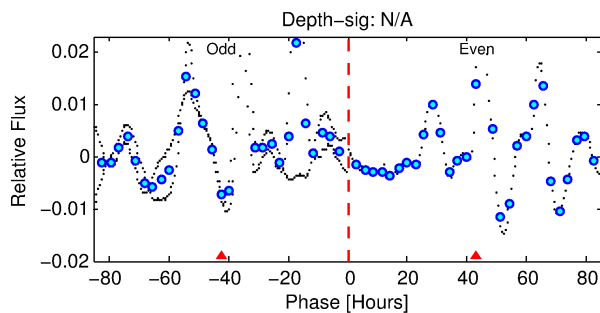
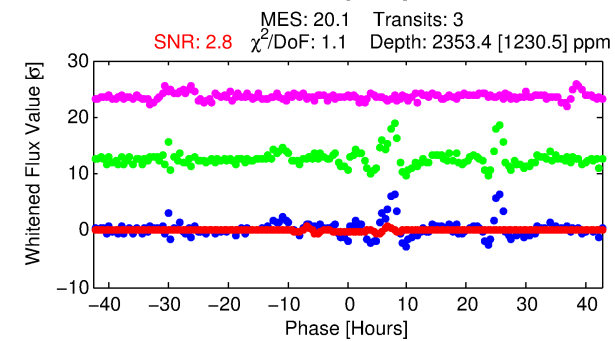
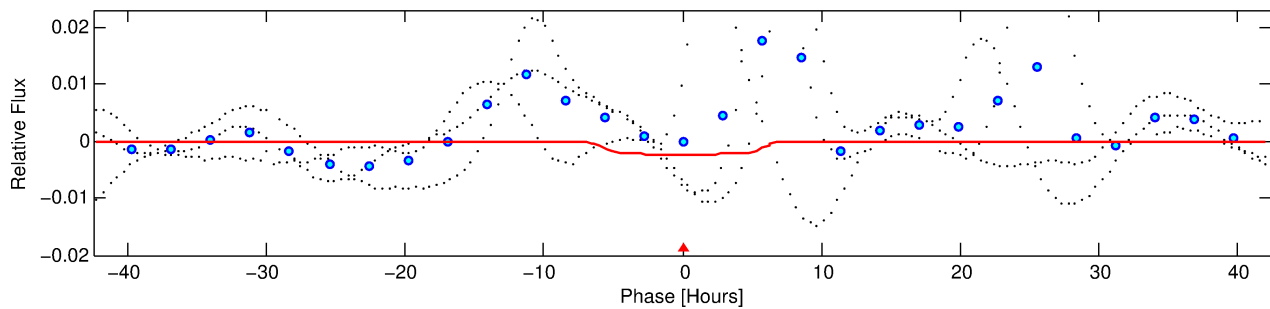
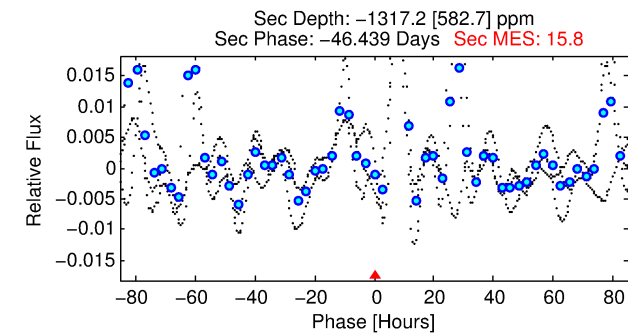
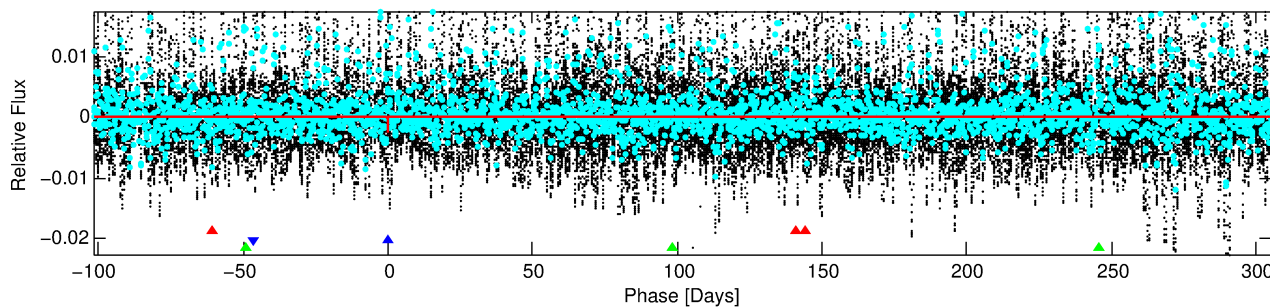
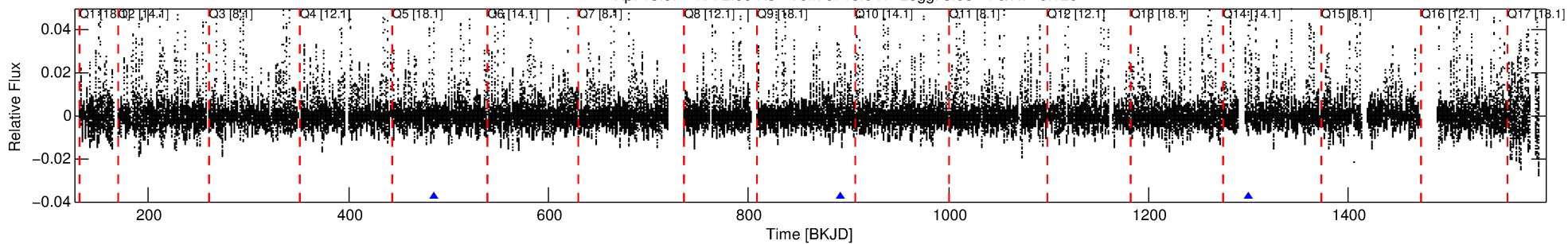
## Ephemeris Match Information For 008565446-02

No Significant Match Found

# DV One-Page Summary

KIC: 8565446 Candidate: 2 of 3 Period: 407.407 d

Kp: 13.67 R\*: 2.06 Rs Teff: 6715.0 K Logg: 3.98 Fe/H: -0.120



## DV Fit Results:

Period = 407.40660 [0.01124] d  
Epoch = 485.0373 [0.0141] BKJD  
Rp/R\* = 0.0501 [0.0130]  
a/R\* = 136.54 [15.19]  
b = 0.85 [0.04]  
Seff = 5.18 [2.80]  
Teq = 385 [52] K  
Rp = 11.25 [4.99] Re  
a = 1.2192 [0.4048] AU  
Ag = N/A  
Teffp = N/A

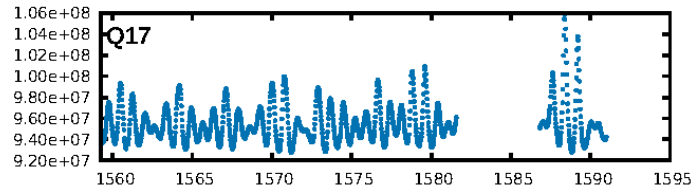
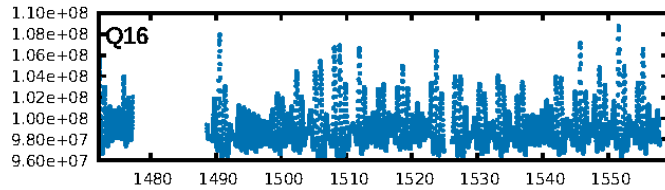
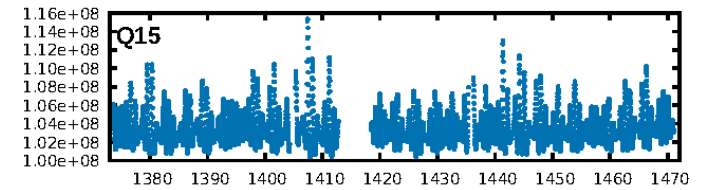
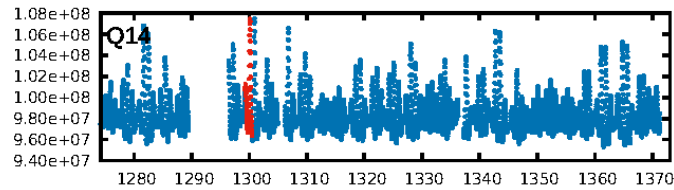
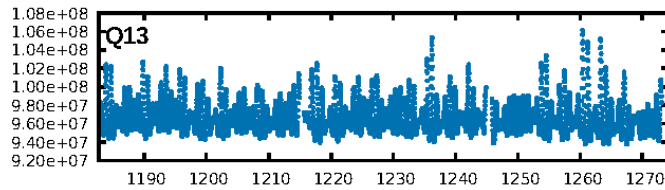
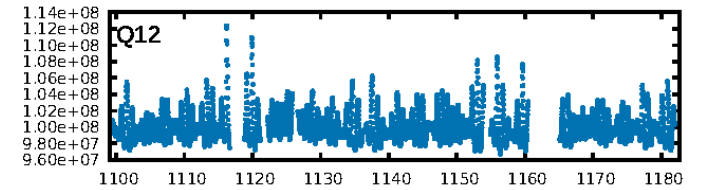
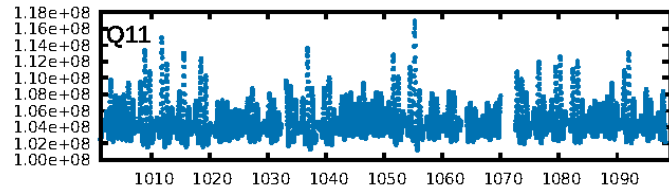
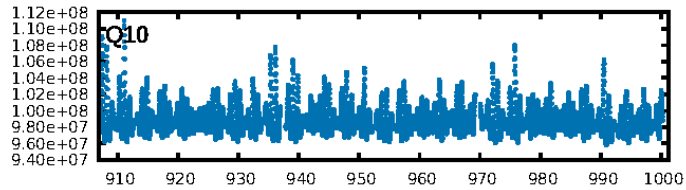
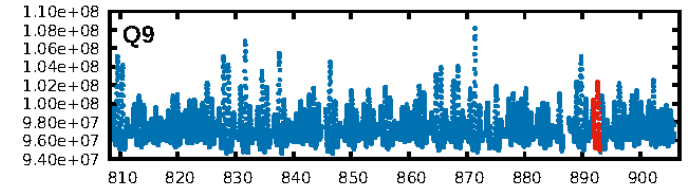
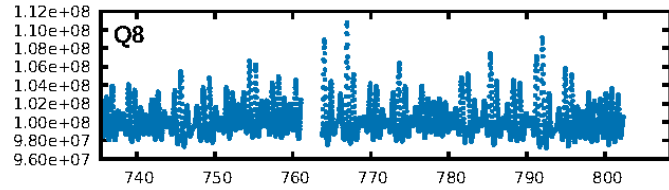
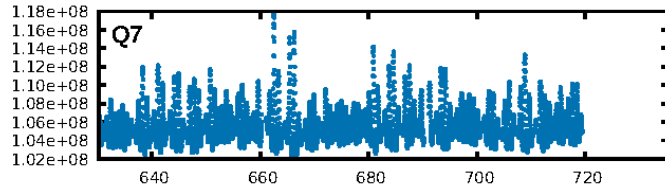
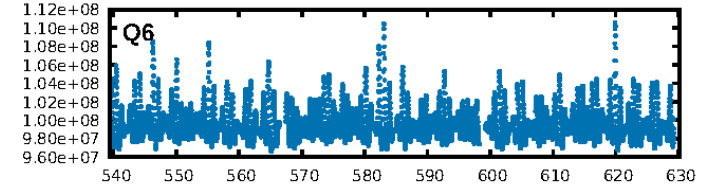
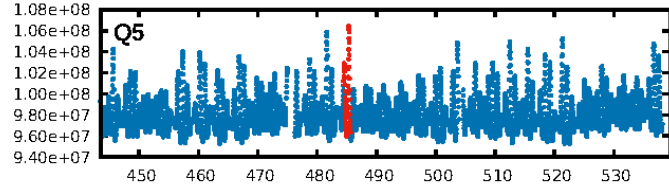
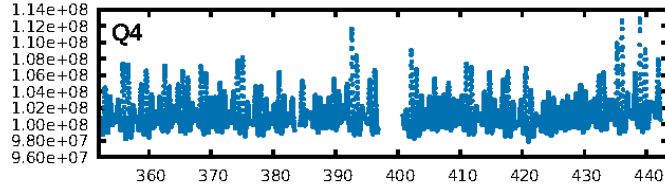
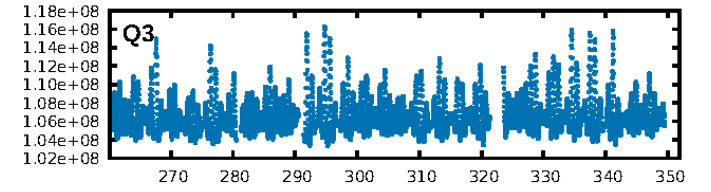
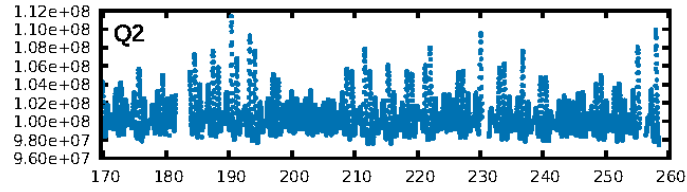
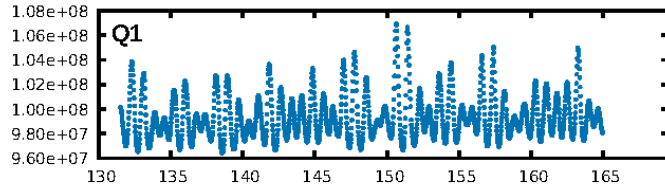
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [224.83σ]  
ModelChiSquare2-sig: 26.3%  
ModelChiSquareGof-sig: 99.5%  
**Bootstrap-pfa: 1.29e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.0316  
Centroid-sig: 8.6%  
Centroid-so: 0.664 arcsec [2.16σ]  
OotOffset-rm: 0.019 arcsec [0.20σ]  
OotOffset-st: 1/0/0/2 [3]  
KicOffset-rm: 0.200 arcsec [2.48σ]  
KicOffset-st: 1/0/0/2 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

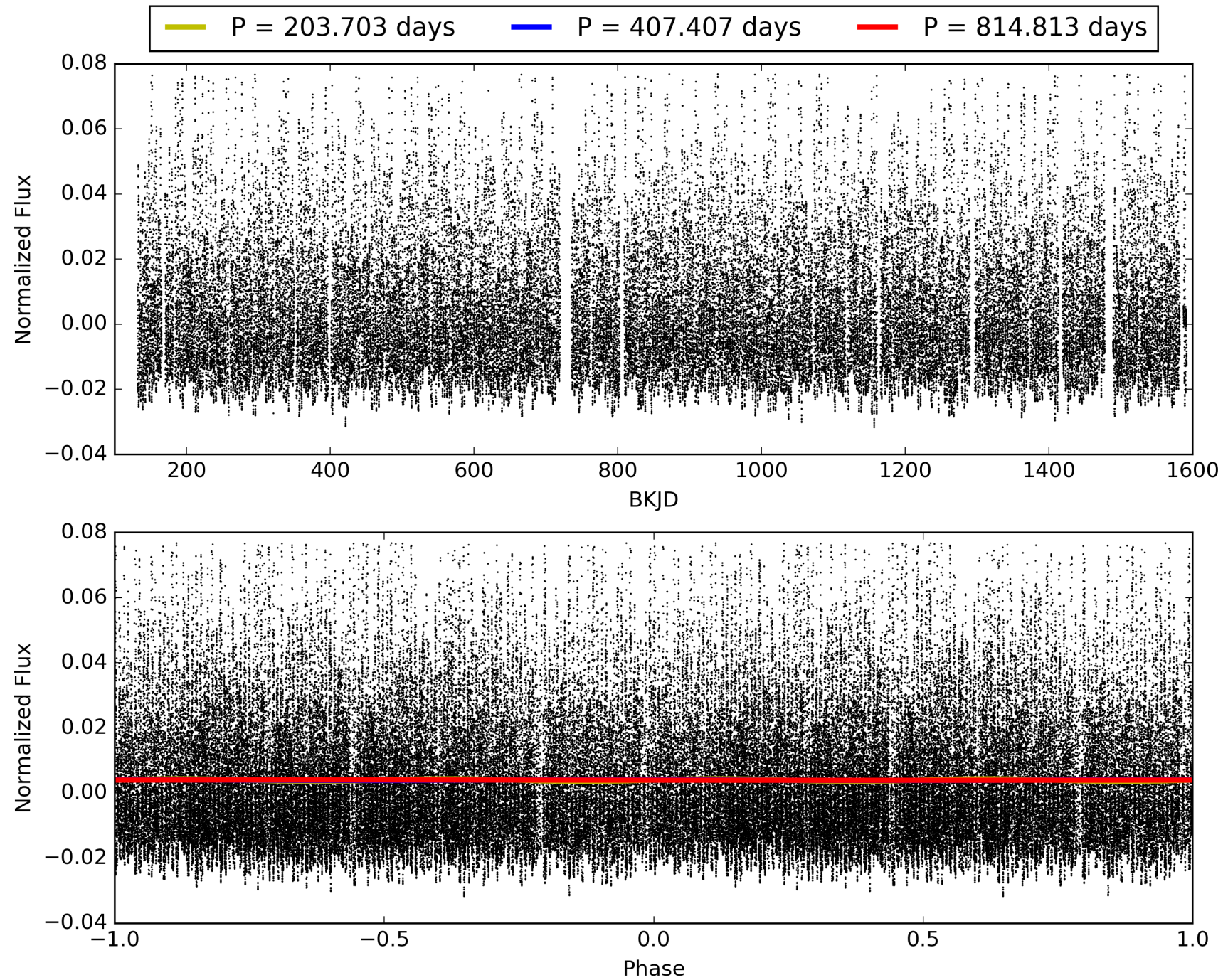
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:15:26 Z

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

# TCE 00565446-02, PDC Light Curves



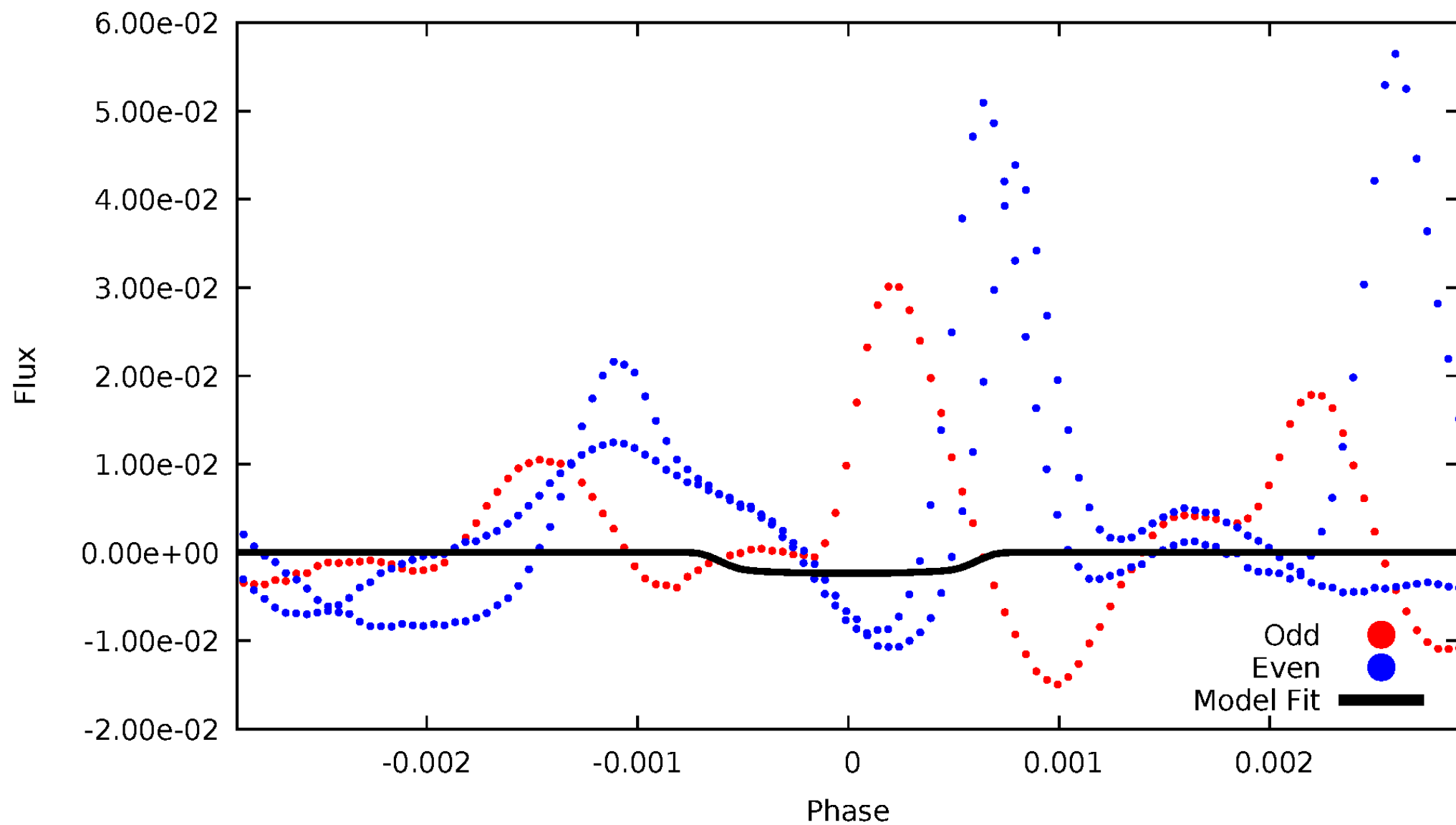
TCE 008565446-02





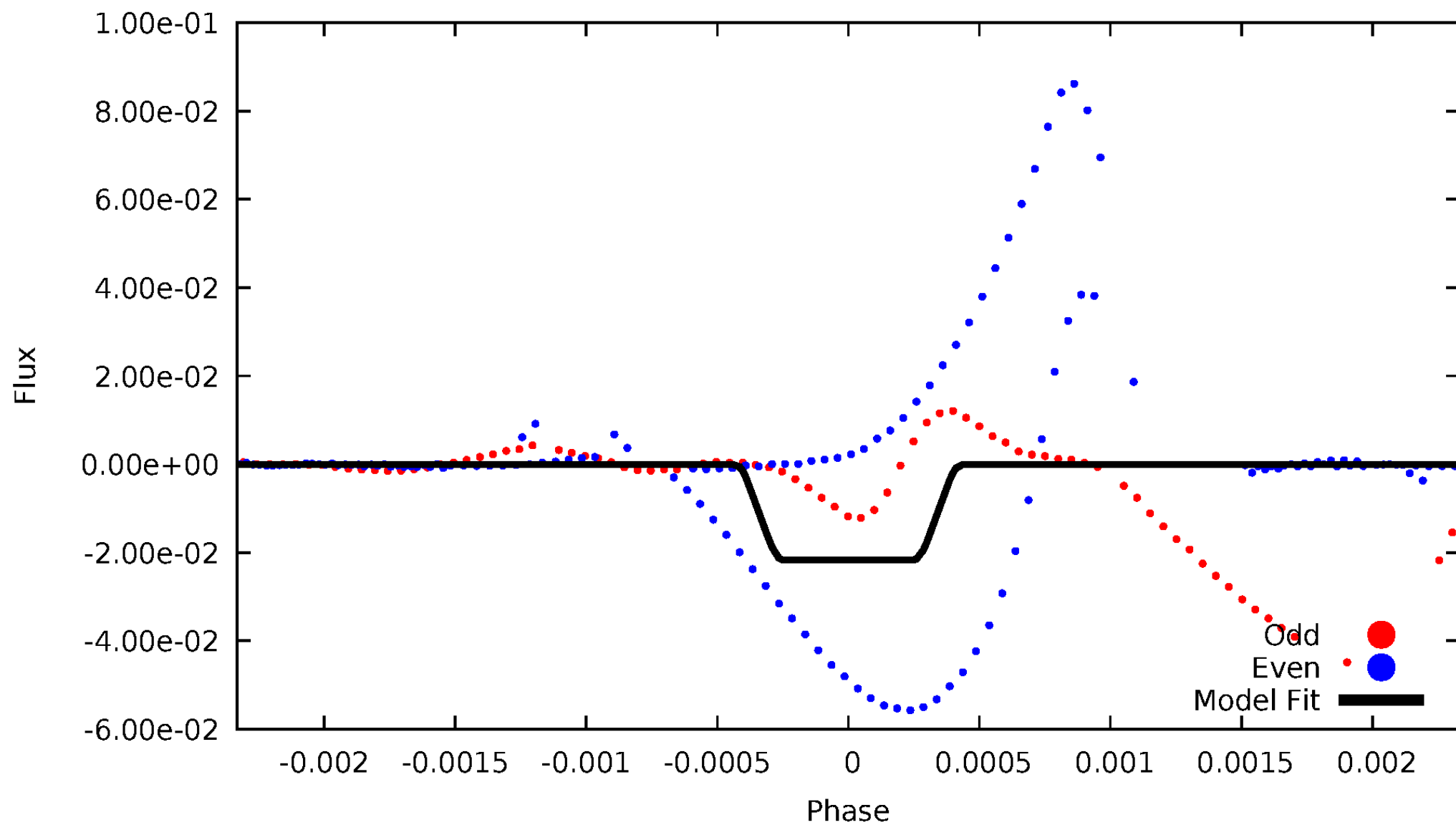
# DV Odd/Even

TCE 008565446-02



# ALT Odd/Even

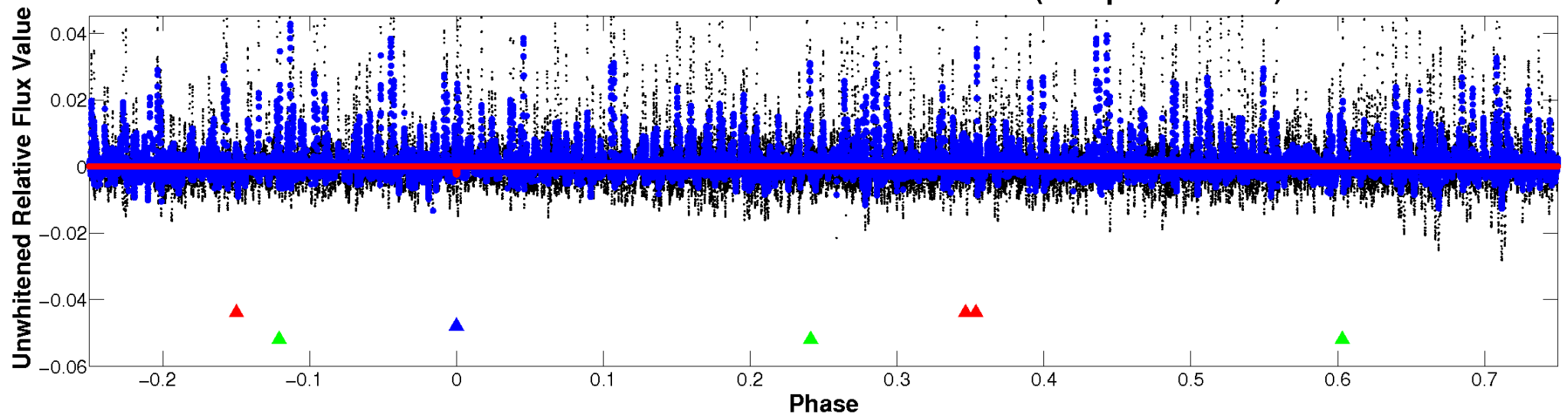
TCE 008565446-02



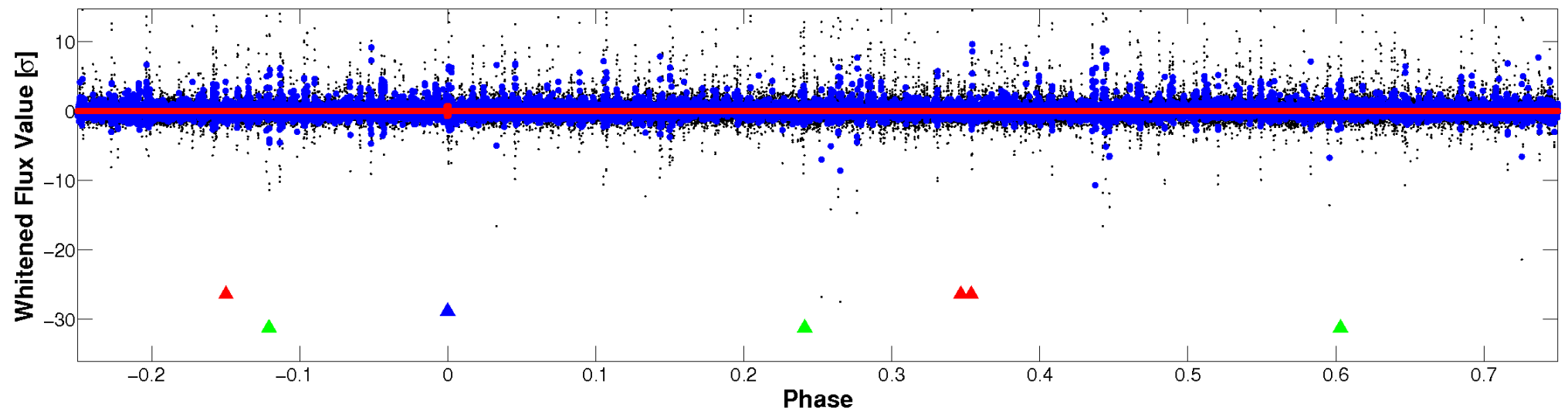


# Non-Whitened Vs. Whitened Light Curve

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

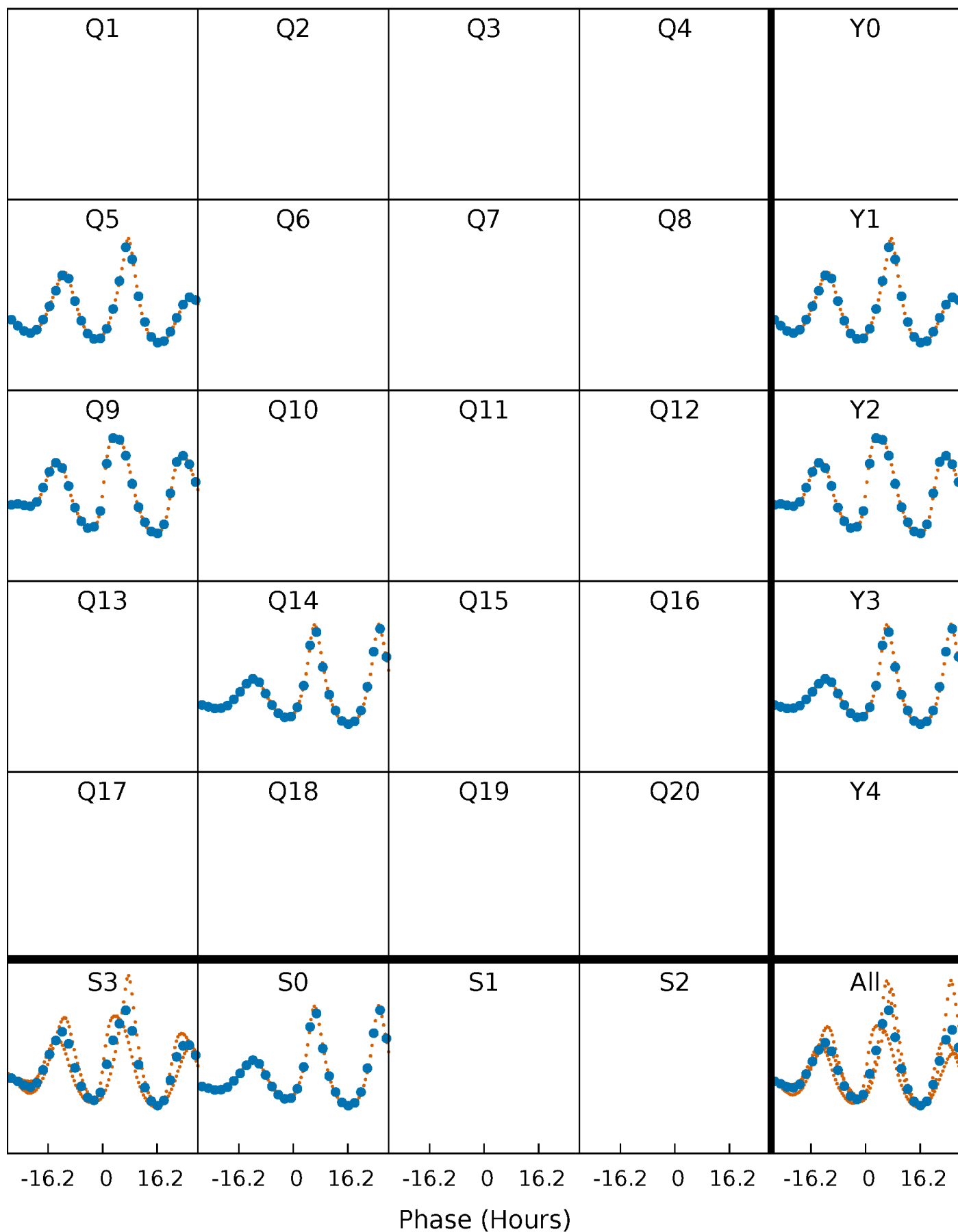


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



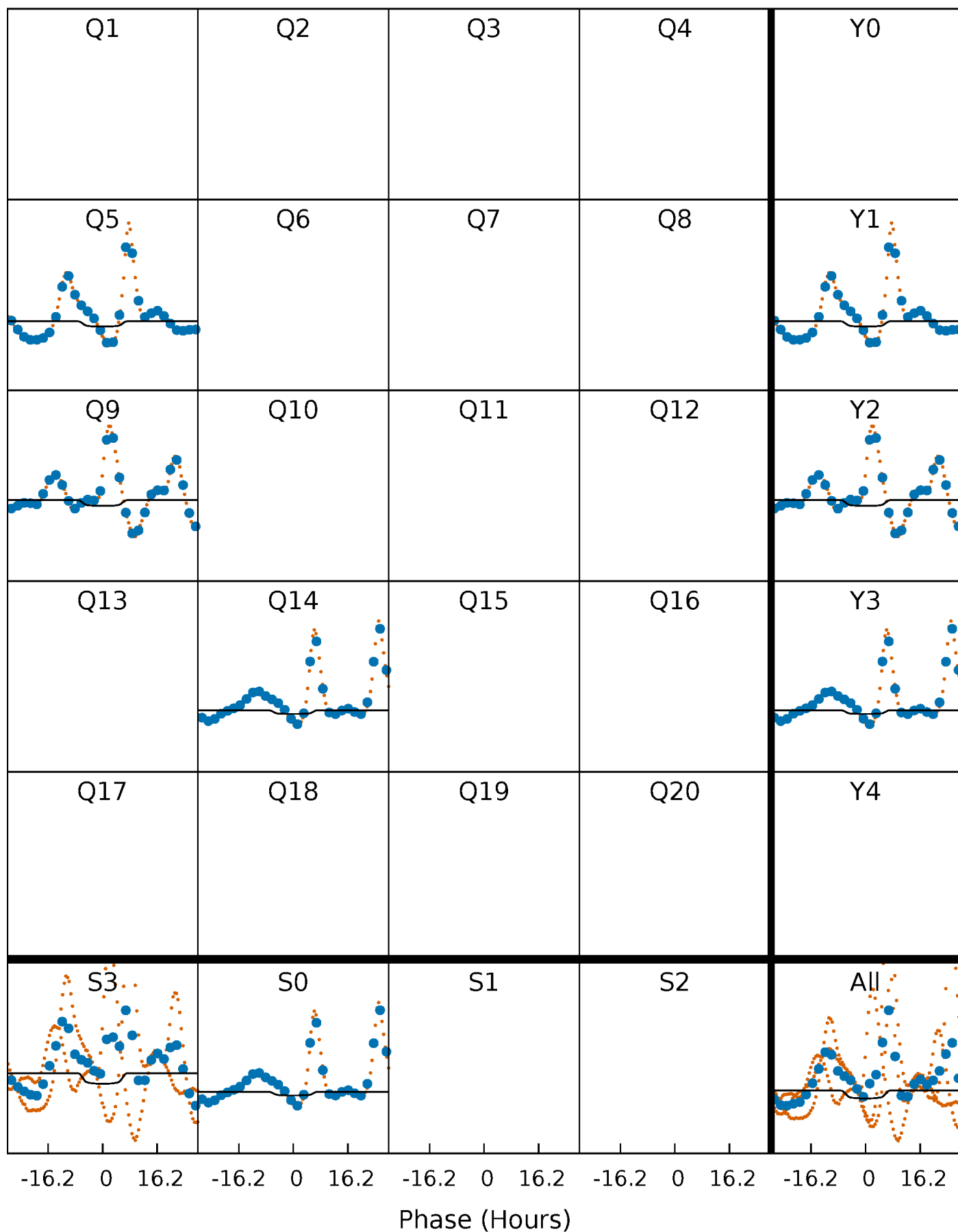
# PDC Quarter-Phased Transit Curves

TCE 008565446-02 P=407.406601 Days  $T_0=485.037329$  (BKJD)



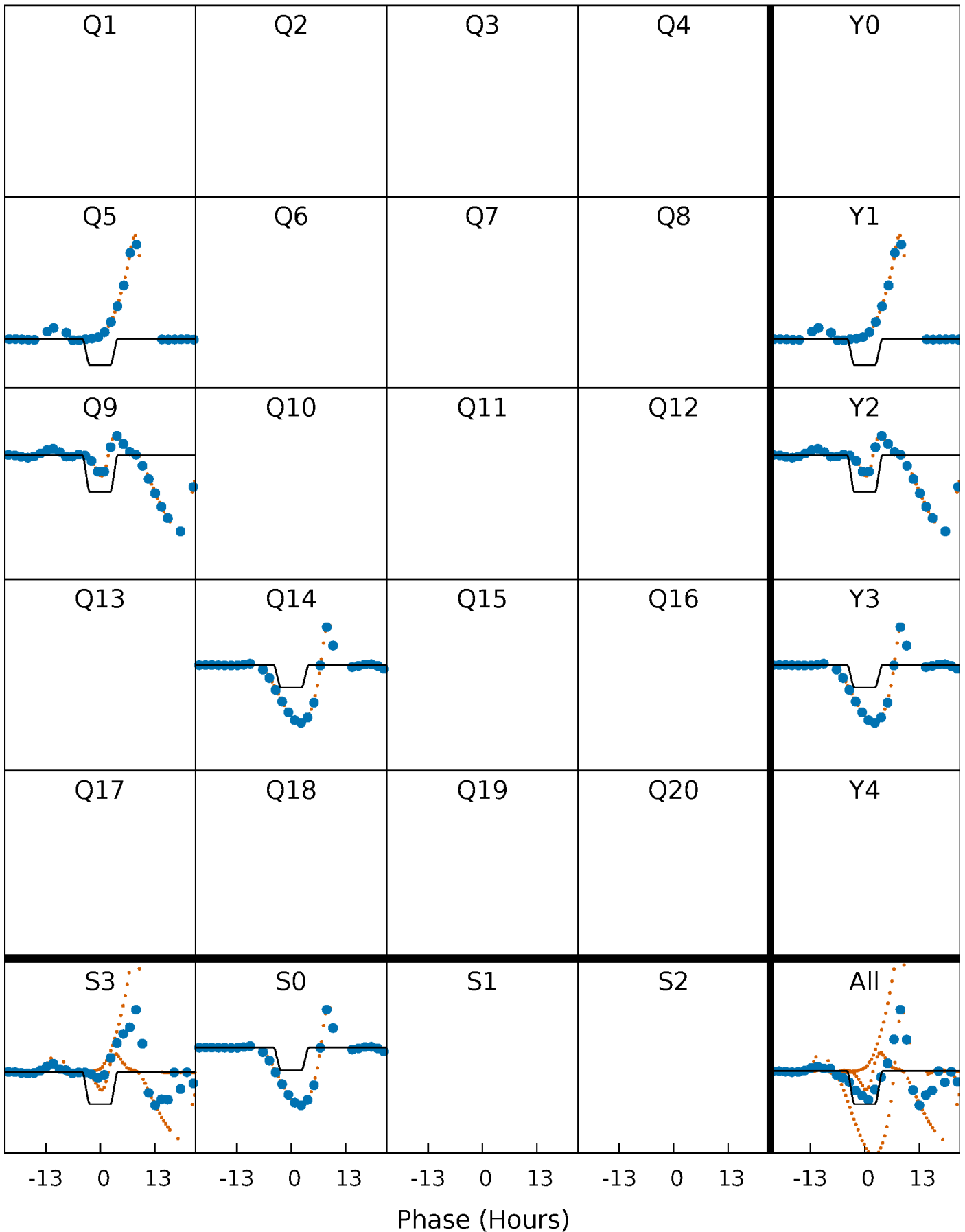
# DV Quarter-Phased Transit Curves

TCE 008565446-02     $P=407.406601$  Days     $T_0=485.037329$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

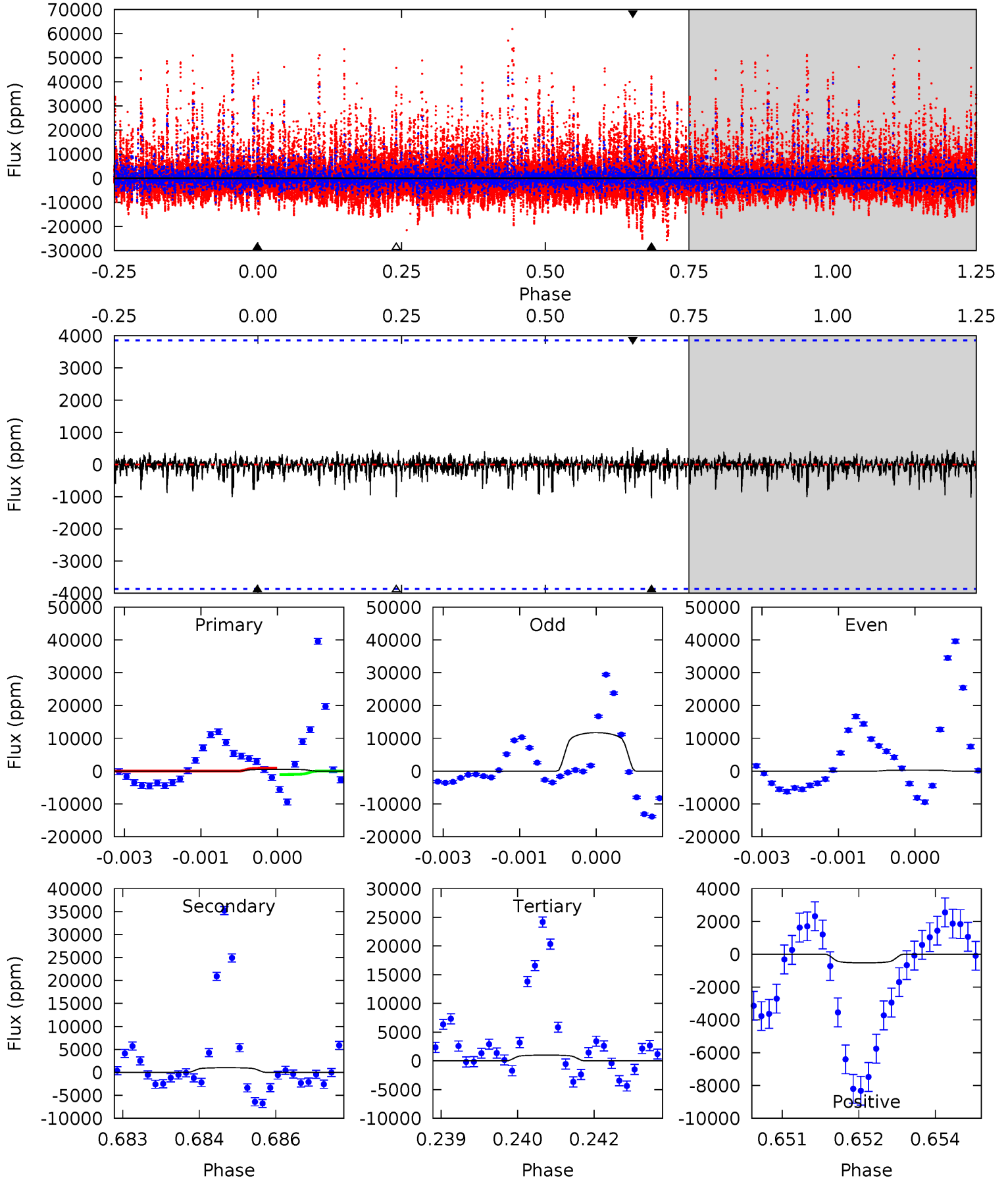
TCE 008565446-02     $P=407.370263$  Days     $T_0=485.008846$  (BKJD)



# DV Model-Shift Uniqueness Test

008565446-02, P = 407.406601 Days, E = 77.630728 Days

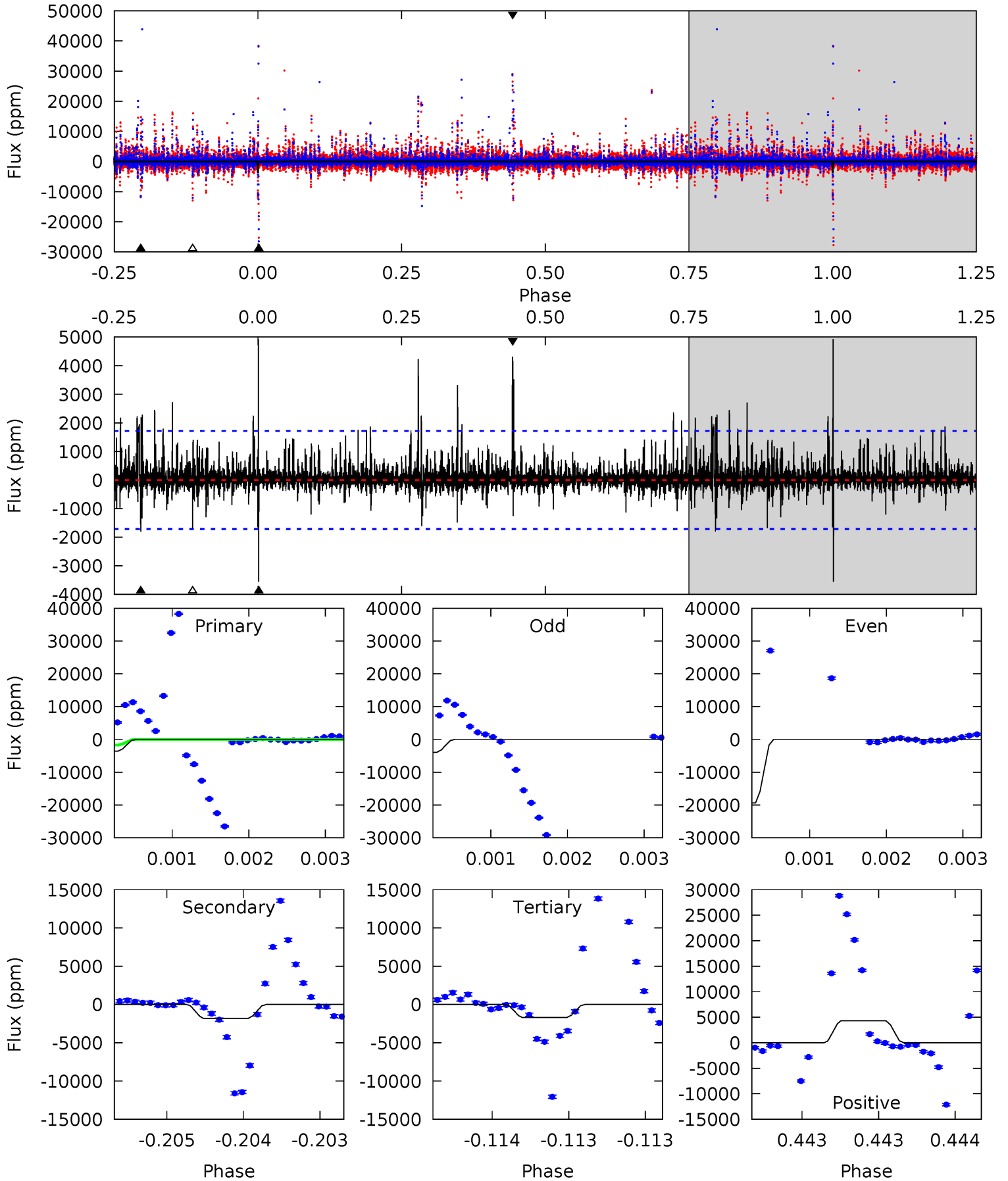
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.73	1.43	1.41	0.74	5.38	3.18	0.26	-0.68	-0.01	0.02	0.69	6.47	1.34	0.34	0.08



# Alt Model-Shift Uniqueness Test

008565446-02, P = 407.370263 Days, E = 77.638583 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	5.76	5.37	13.8	5.48	3.34	0.98	6.00	-2.41	0.38	-8.02	21.3	4.03	0.58	5.19





### Stellar Parameters For KIC 008565446

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6715^{+187}_{-258}$	$3.975^{+0.299}_{-0.161}$	$-0.120^{+0.300}_{-0.300}$	$2.056^{+0.605}_{-0.740}$	$1.459^{+0.208}_{-0.312}$	$0.236^{+0.501}_{-0.107}$
	+3%/-4%	+8%/-4%	+250%/-250%	+29%/-36%	+14%/-21%	+212%/-45%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008565446-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1022 \pm 717$	$10.68^{+3.94}_{-3.09}$	$531^{+44}_{-52}$	$5350^{+1091}_{-1211}$	$6552^{+9982}_{-4826}$
Alt.	$-1800 \pm 313$	$31.95^{+7.04}_{-6.24}$	$525^{+49}_{-46}$	$3921^{+194}_{-187}$	$1449^{+740}_{-499}$

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

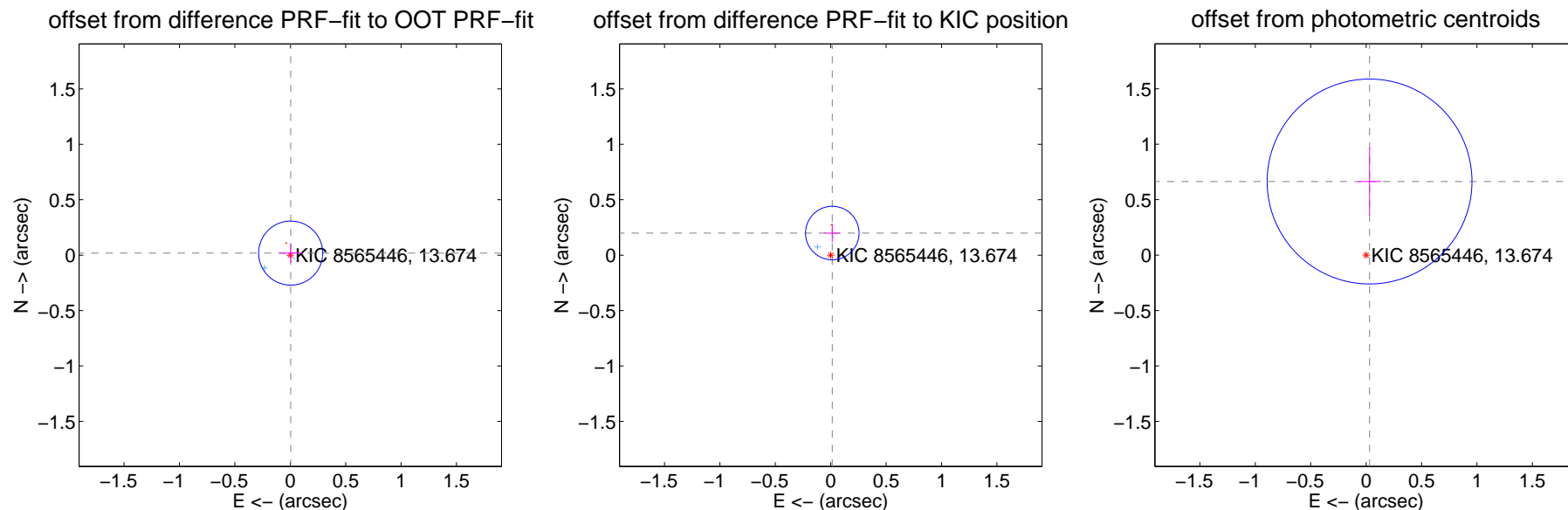
## DV Centroid Data

Supplemental centroid analysis for 008565446-02. Kepler magnitude: 13.67. Transit SNR 2.83

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.019 \pm 0.096$	0.20	$-0.004 \pm 0.103$	$0.019 \pm 0.088$
PRF-fit source offset from KIC position	$0.200 \pm 0.080$	2.48	$-0.014 \pm 0.071$	$0.199 \pm 0.081$
photometric centroid source offset	$0.66 \pm 0.31$	2.16	$-0.03 \pm 0.10$	$0.66 \pm 0.31$

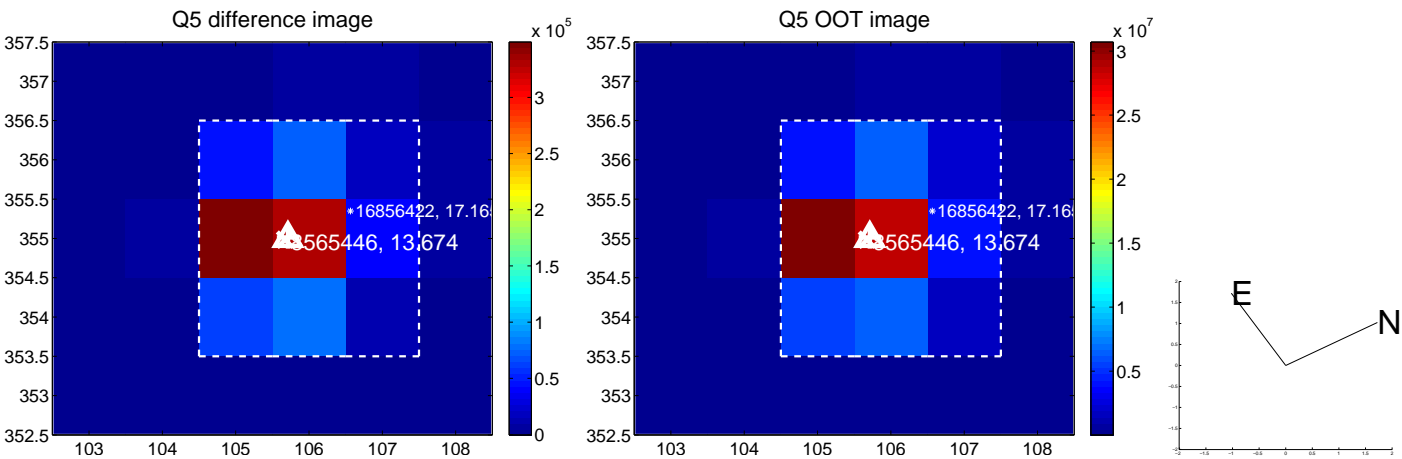


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

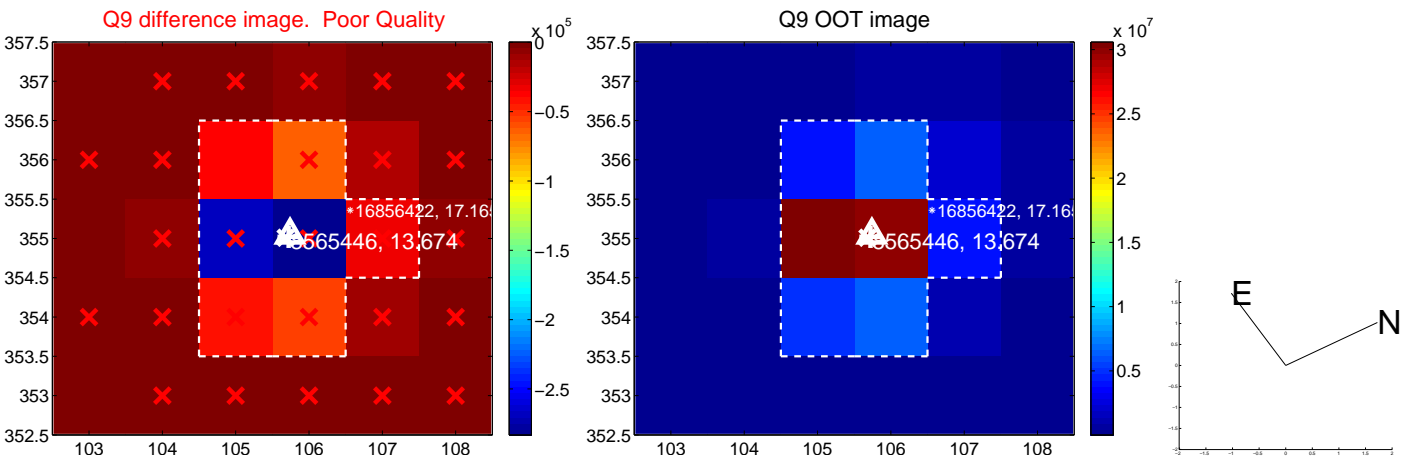
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



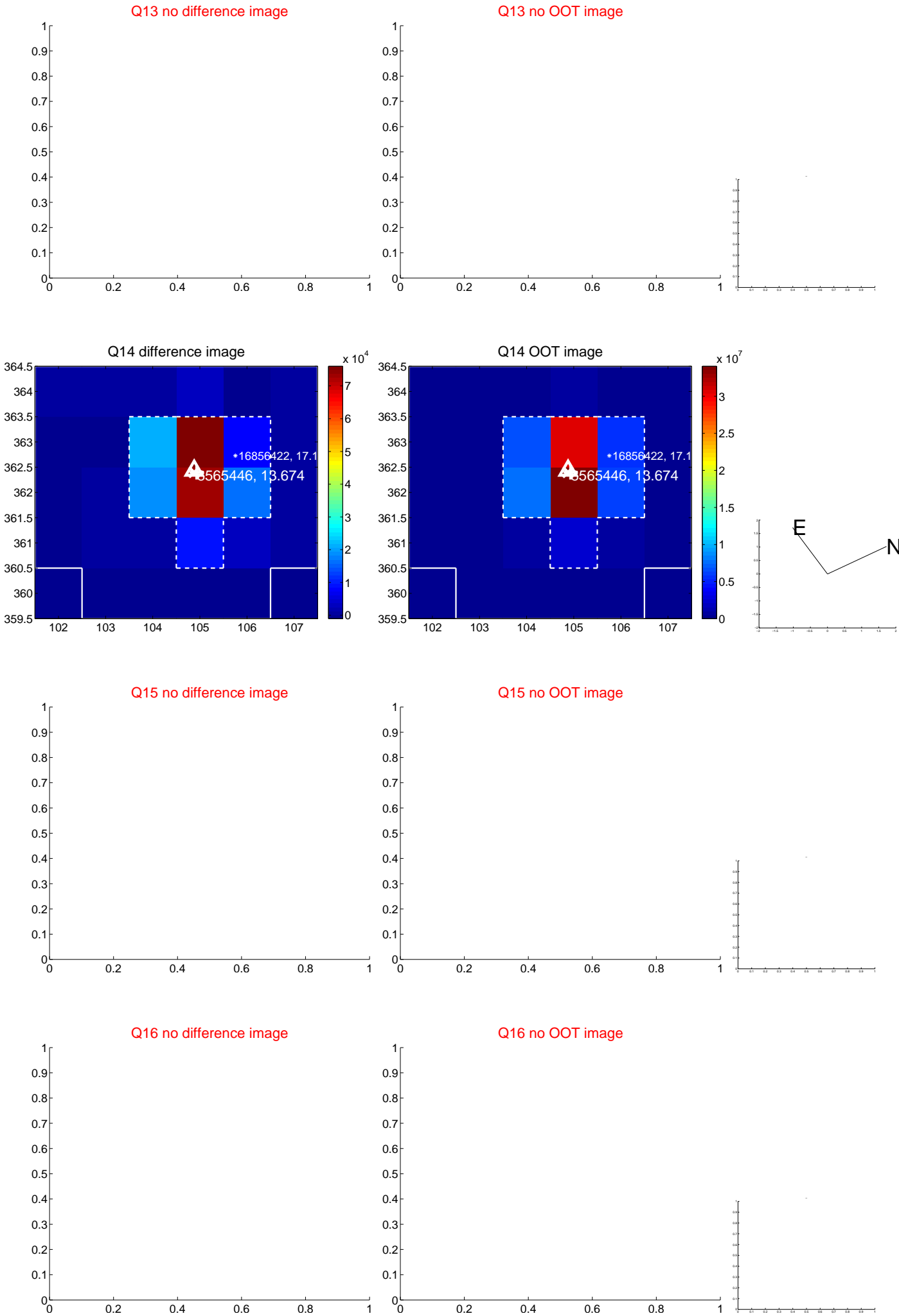
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



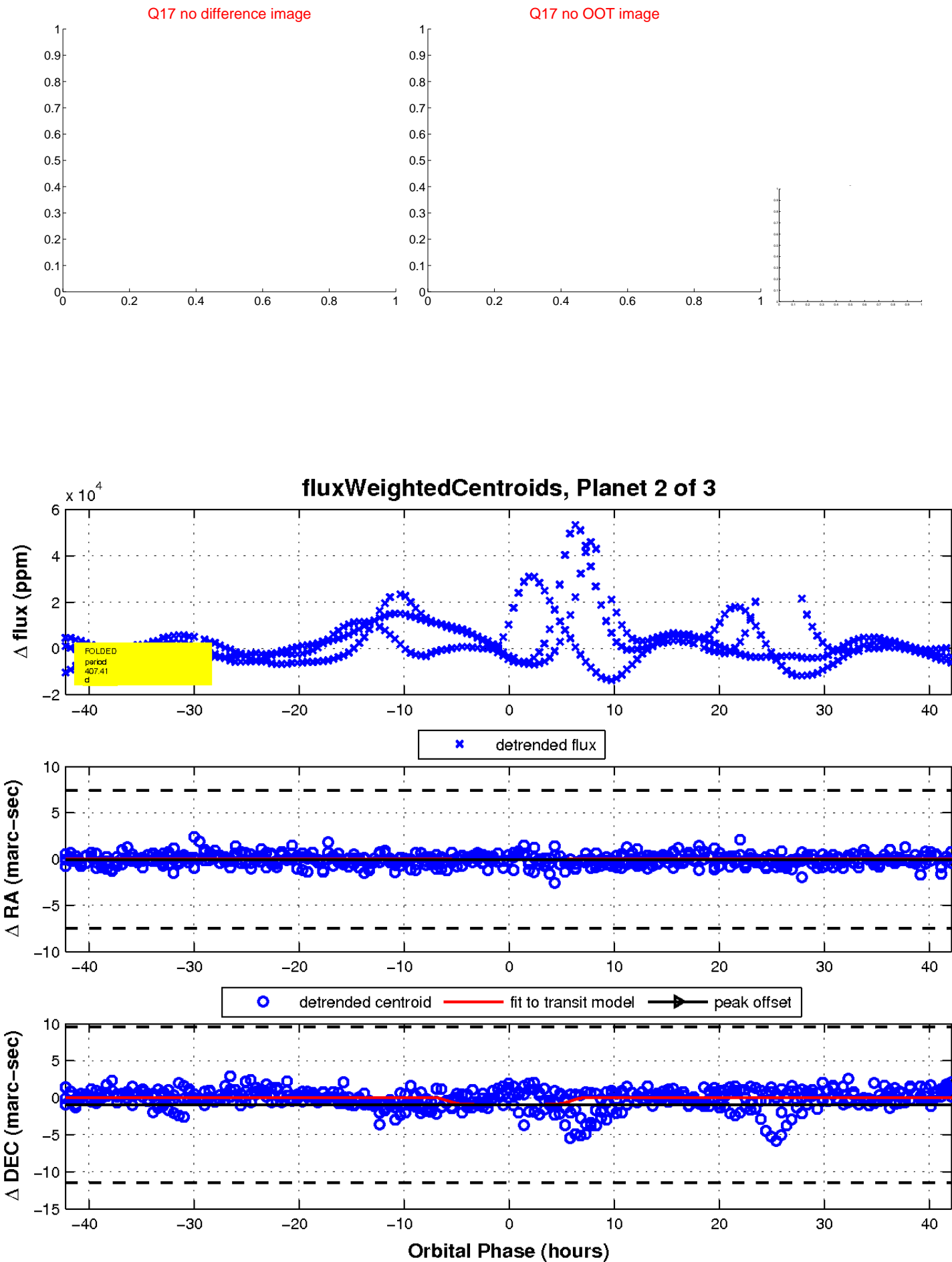
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

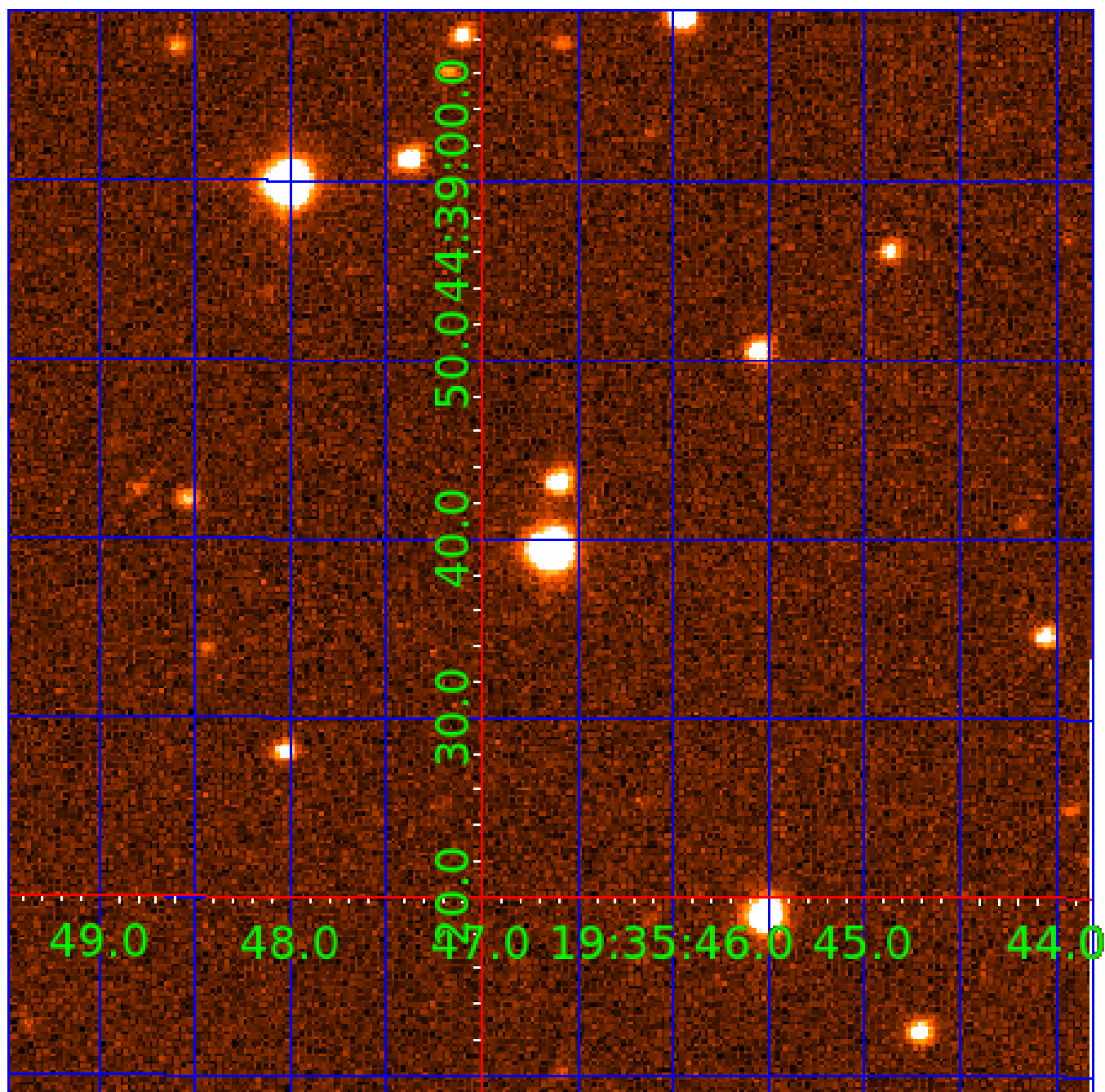


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008565446

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008565446-01	OBS	No	609.676941	221.733813	1095.1	10.796	27.2	2.0	2.06	6715	7.17	3.03
008565446-02	OBS	No	407.406601	485.037329	2353.4	14.175	20.1	2.8	2.06	6715	11.24	5.18
008565446-03	OBS	No	554.861964	435.855945	6848.0	6.843	19.4	6.6	2.06	6715	20.10	3.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008565446-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
008565446-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008565446-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_ALT—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.

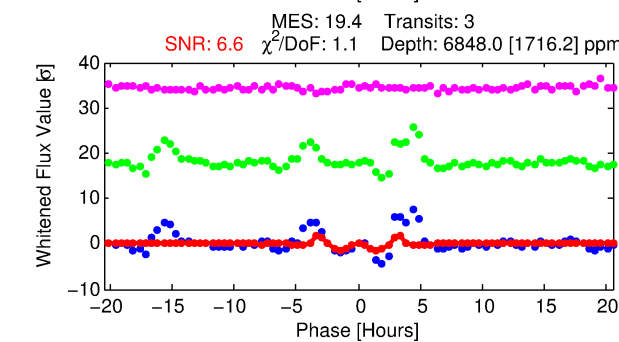
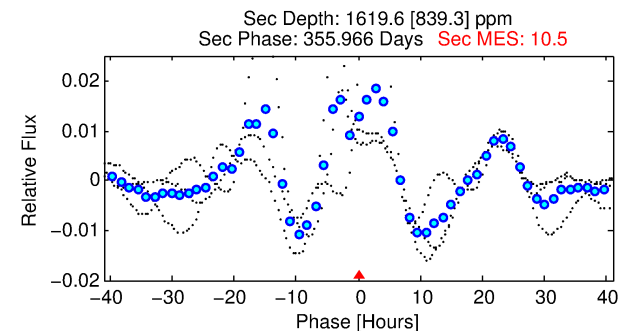
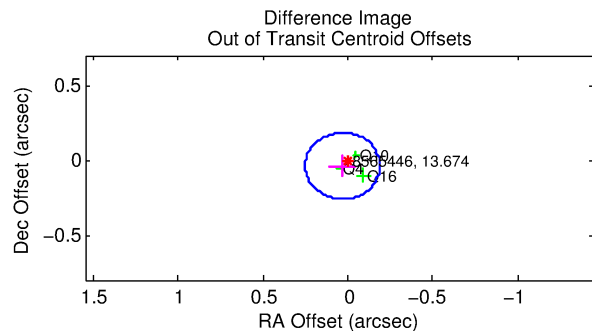
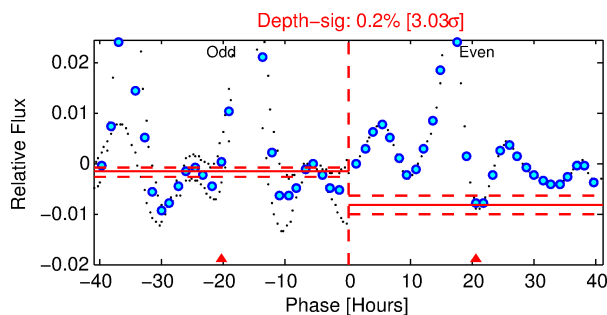
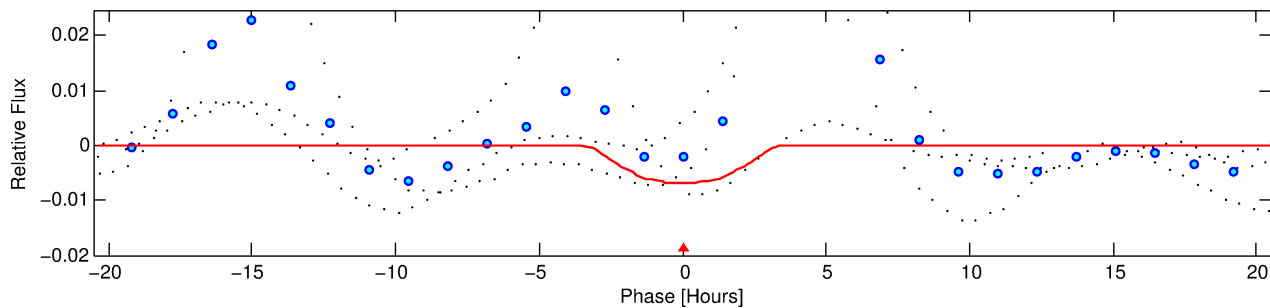
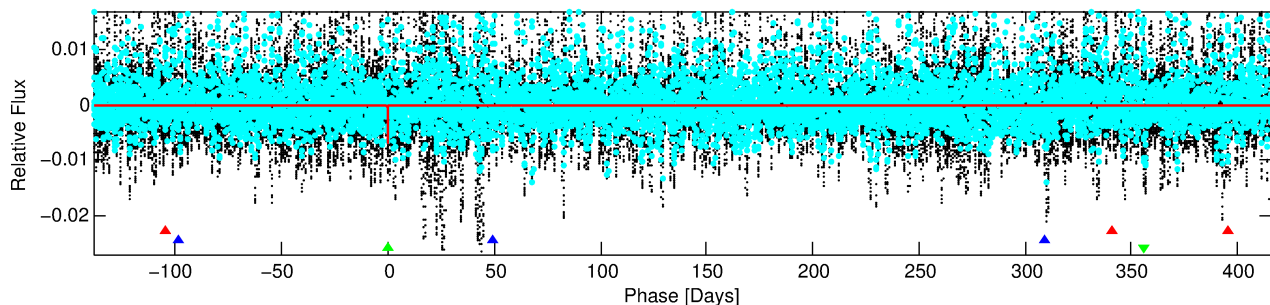
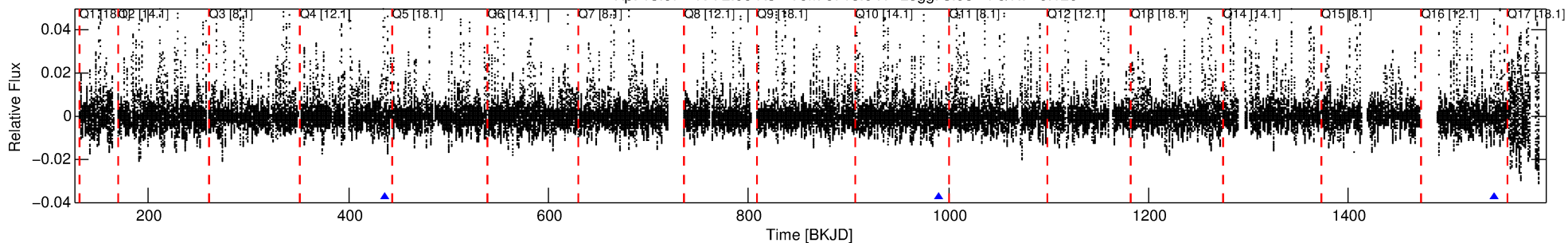
## Ephemeris Match Information For 008565446-03

No Significant Match Found

# DV One-Page Summary

KIC: 8565446 Candidate: 3 of 3 Period: 554.862 d

Kp: 13.67 R\*: 2.06 Rs Teff: 6715.0 K Logg: 3.98 Fe/H: -0.120



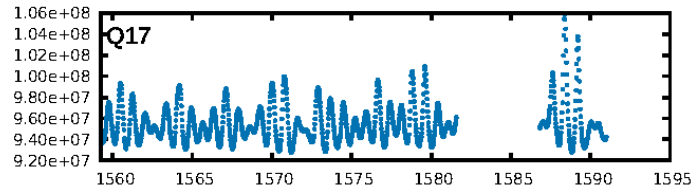
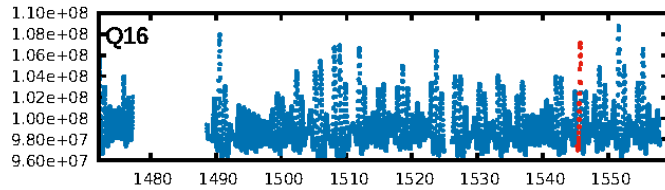
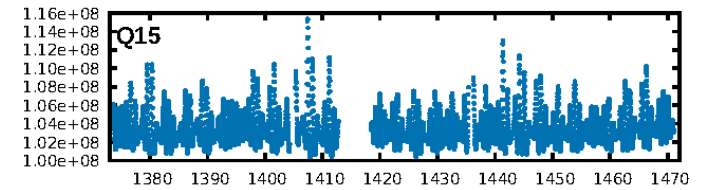
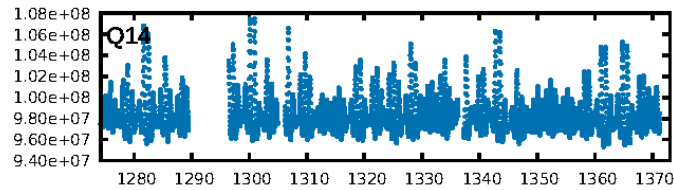
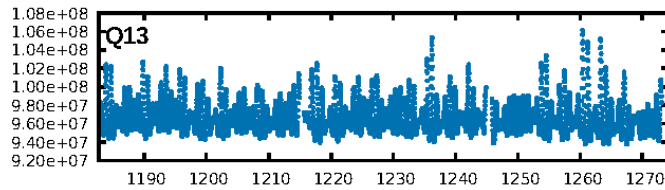
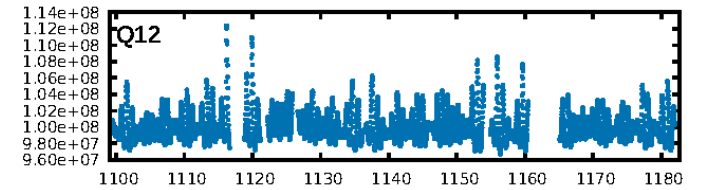
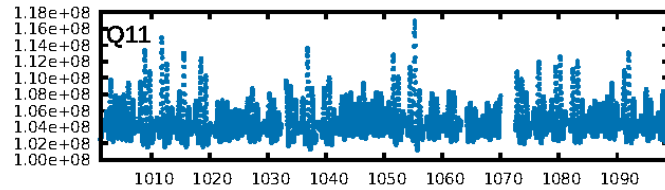
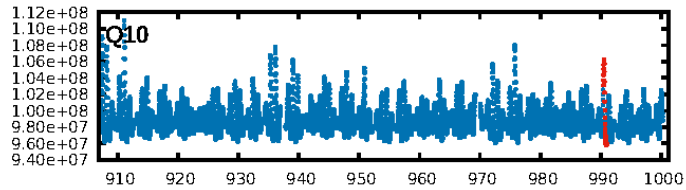
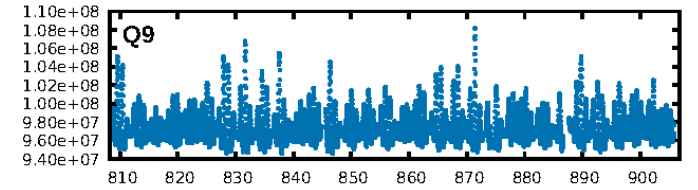
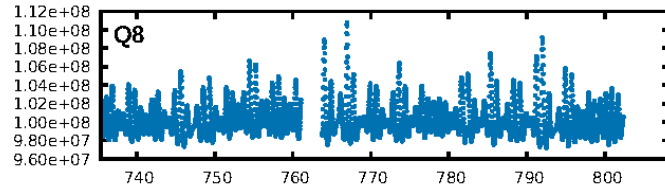
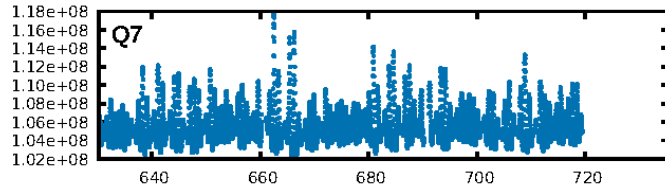
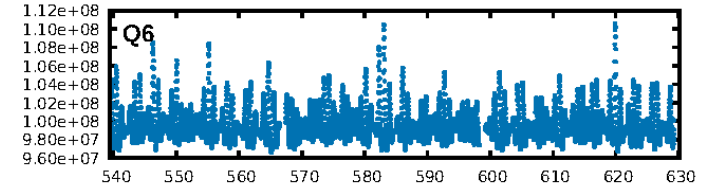
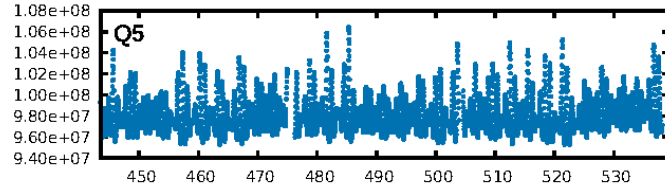
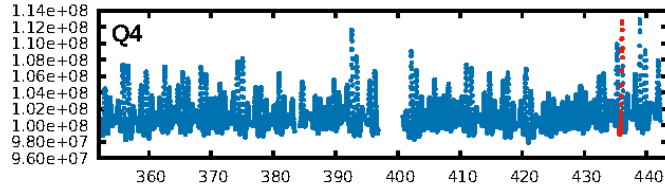
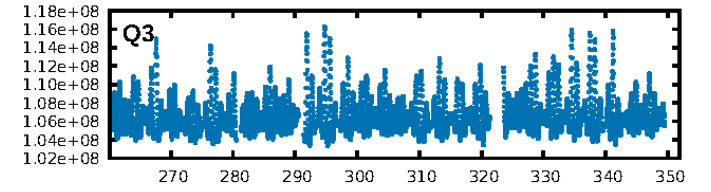
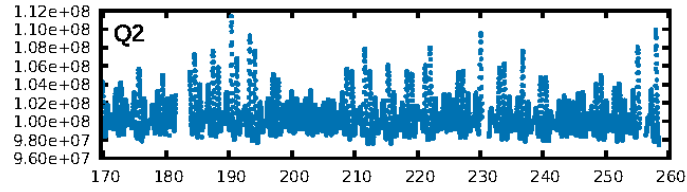
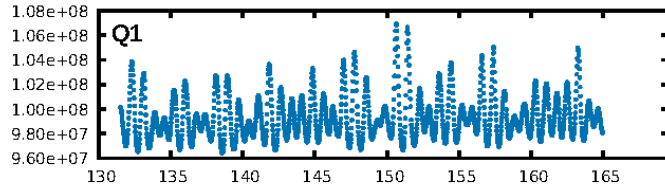
## DV Fit Results:

Period = 554.86196 [0.00514] d  
Epoch = 435.8559 [0.0074] BKJD  
Rp/R\* = 0.0896 [0.0117]  
a/R\* = 376.45 [17.52]  
b = 0.90 [0.01]  
Seff = 3.43 [1.85]  
Teq = 347 [47] K  
Rp = 20.10 [7.69] Re  
a = 1.4980 [0.4974] AU  
Ag = 4950.48 [3849.69] [1.29σ]  
Teffp = 4501 [675] K [6.14σ]

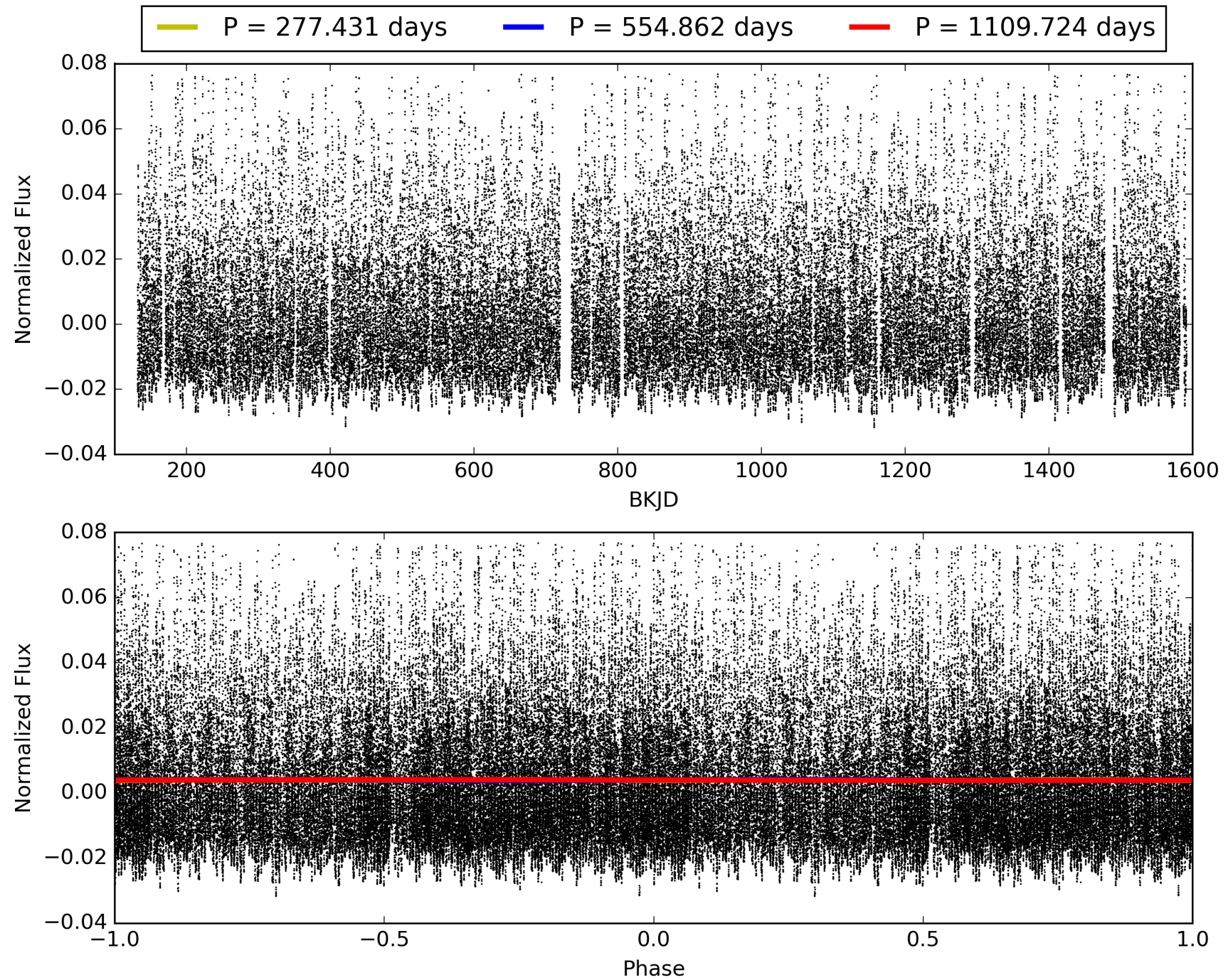
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [224.83σ]  
LongPeriod-sig: 100.0% [102.92σ]  
ModelChiSquare2-sig: 70.8%  
ModelChiSquareGof-sig: 94.9%  
Bootstrap-pfa: 5.21e-10  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.525  
Centroid-sig: 53.3%  
Centroid-so: 0.358 arcsec [2.58σ]  
OotOffset-rm: 0.050 arcsec [0.68σ]  
OotOffset-st: 1/0/2/0 [3]  
KicOffset-rm: 0.269 arcsec [2.76σ]  
KicOffset-st: 1/0/2/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 00565446-03, PDC Light Curves

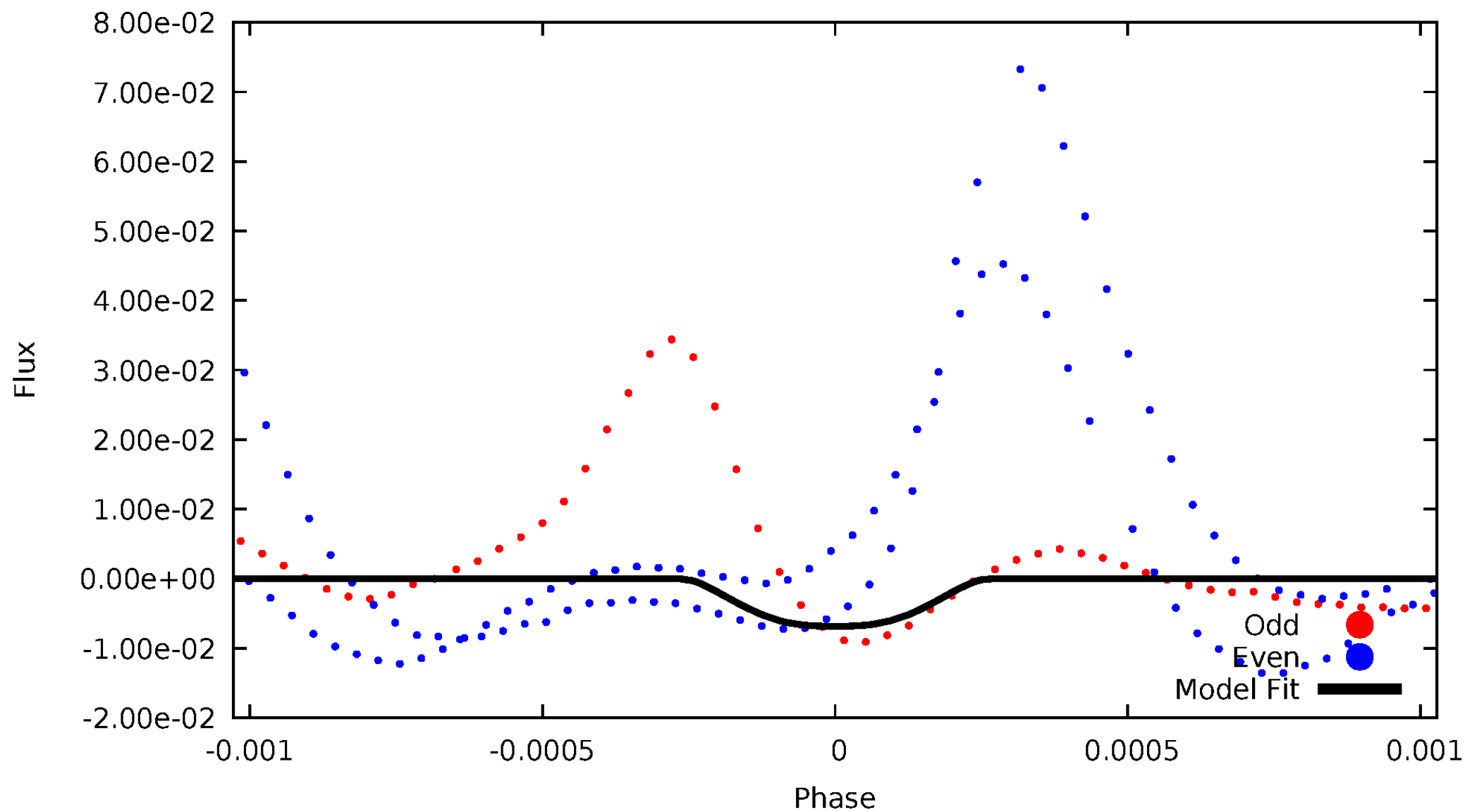


TCE 008565446-03



# DV Odd/Even

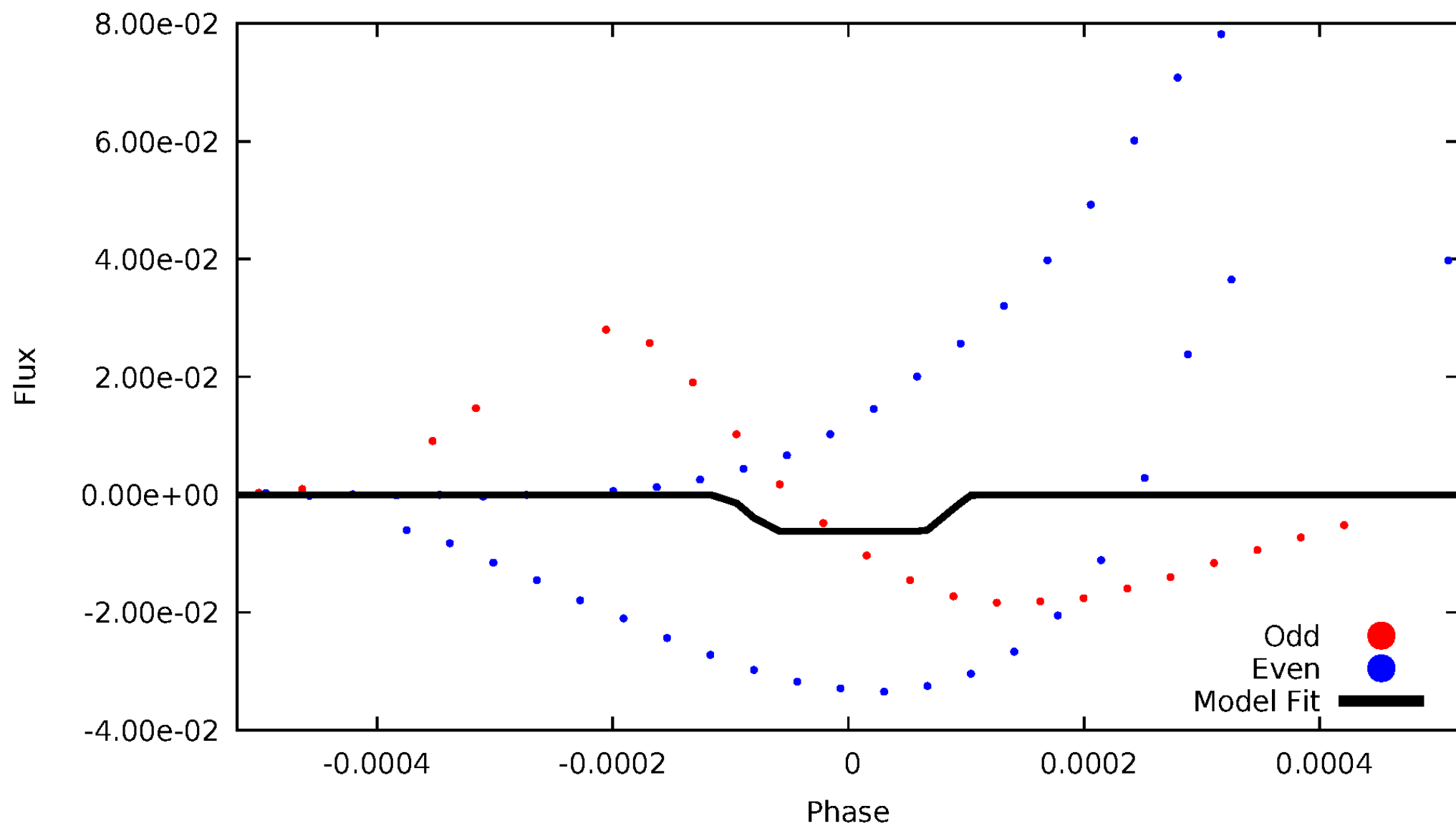
TCE 008565446-03





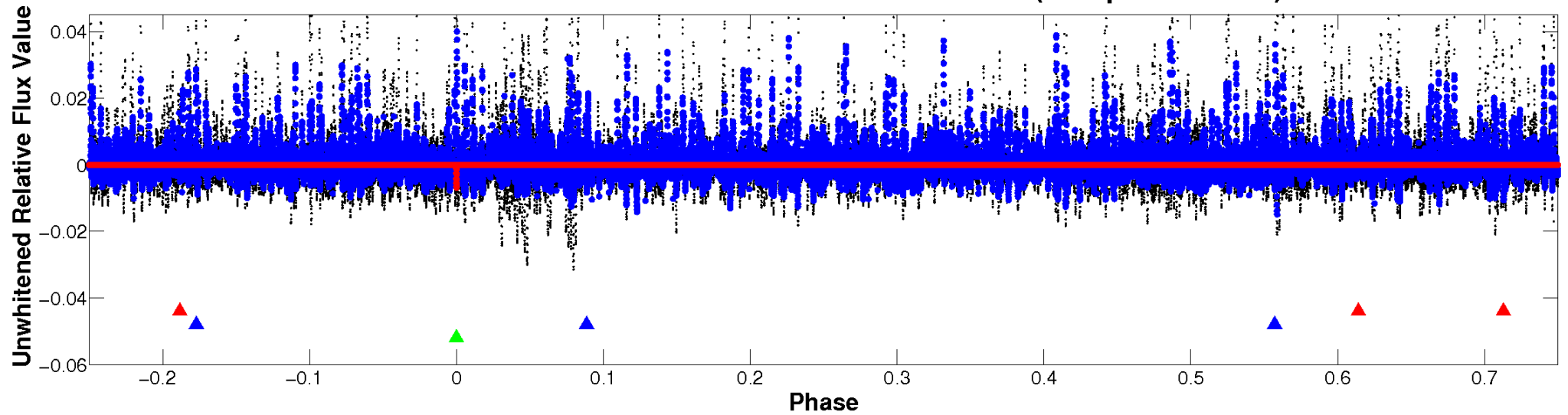
# ALT Odd/Even

TCE 008565446-03

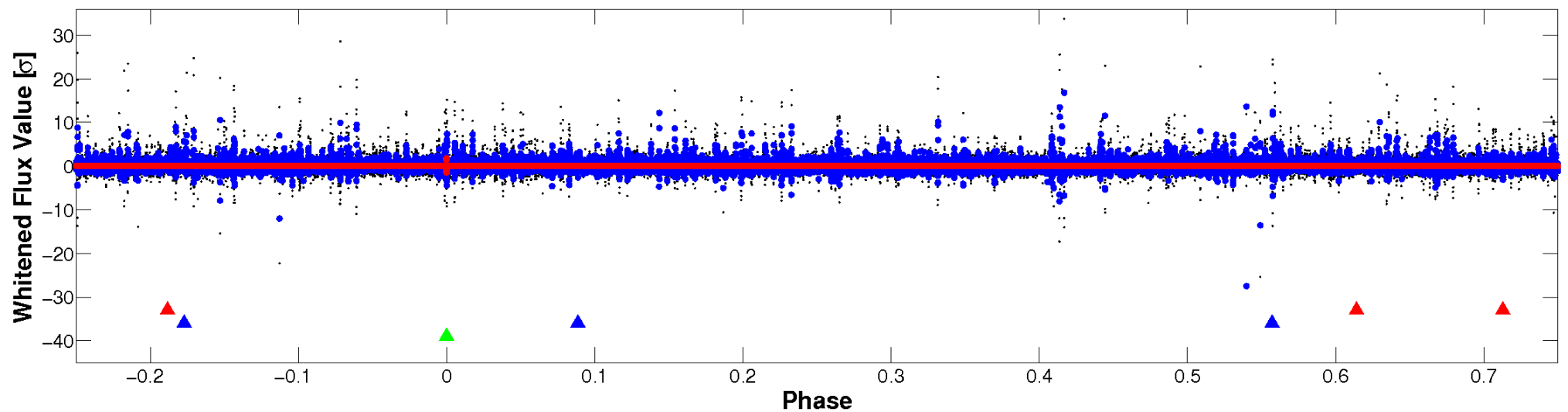


# Non-Whitened Vs. Whitened Light Curve

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

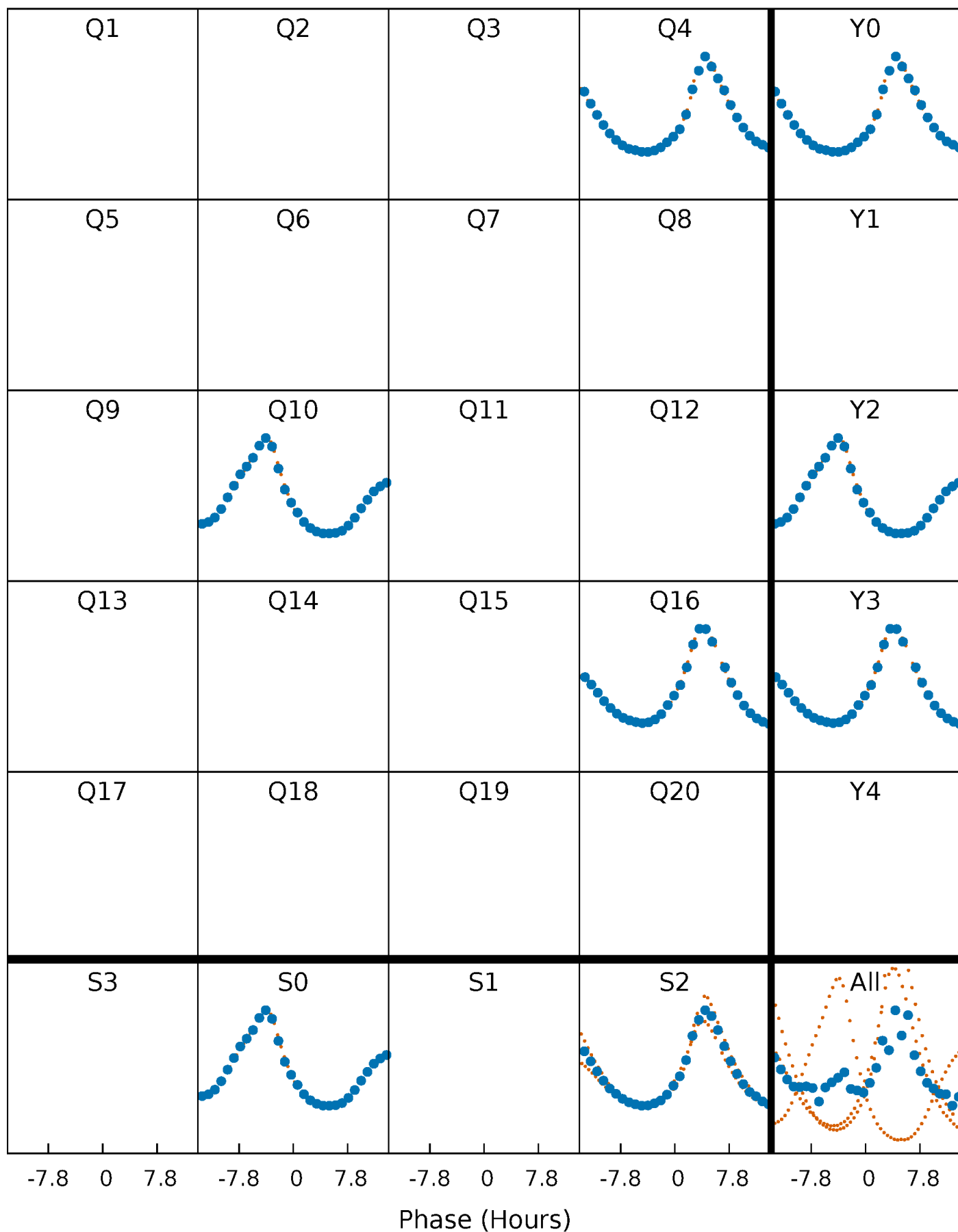


**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

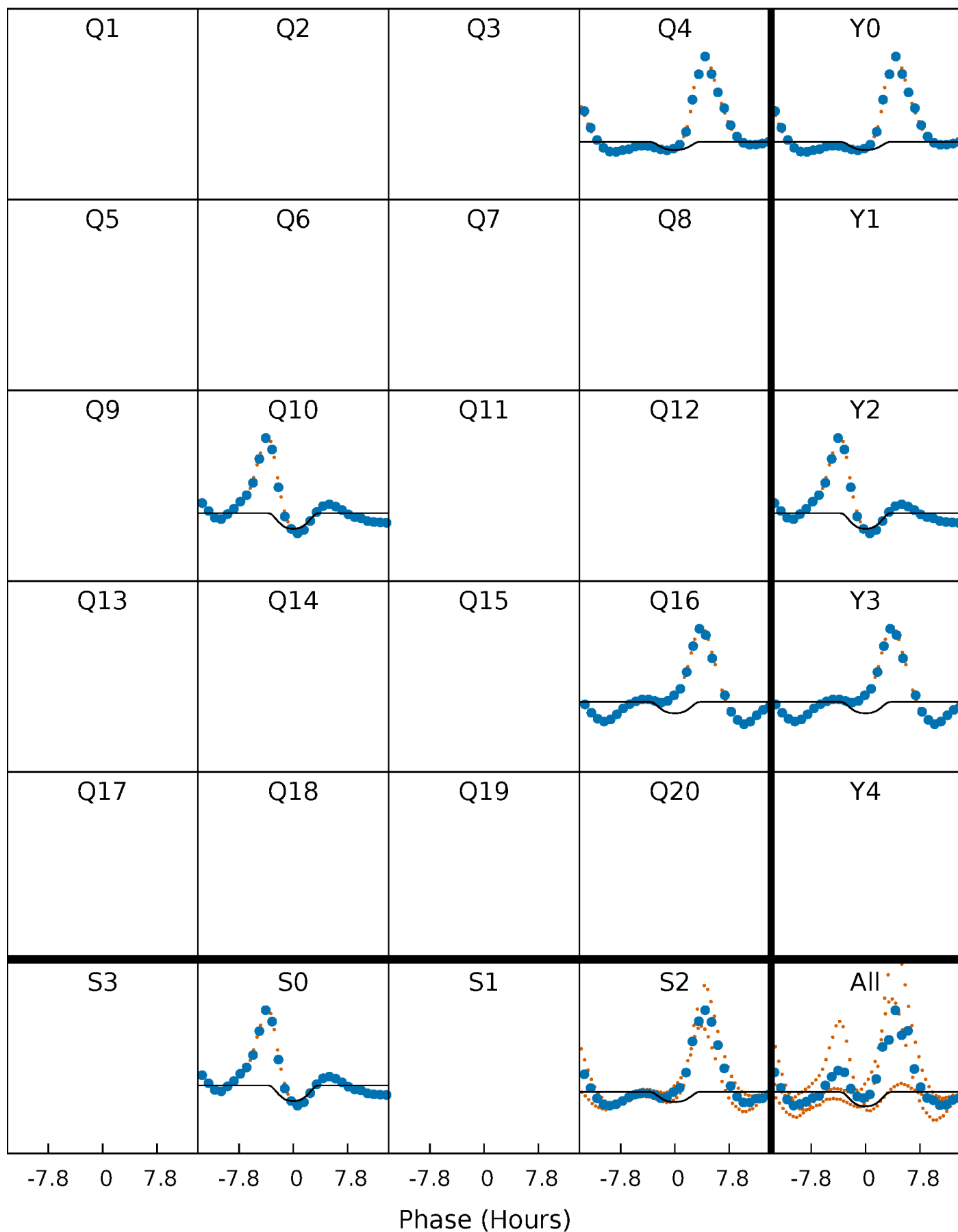
TCE 008565446-03     $P=554.861964$  Days     $T_0=435.855945$  (BKJD)





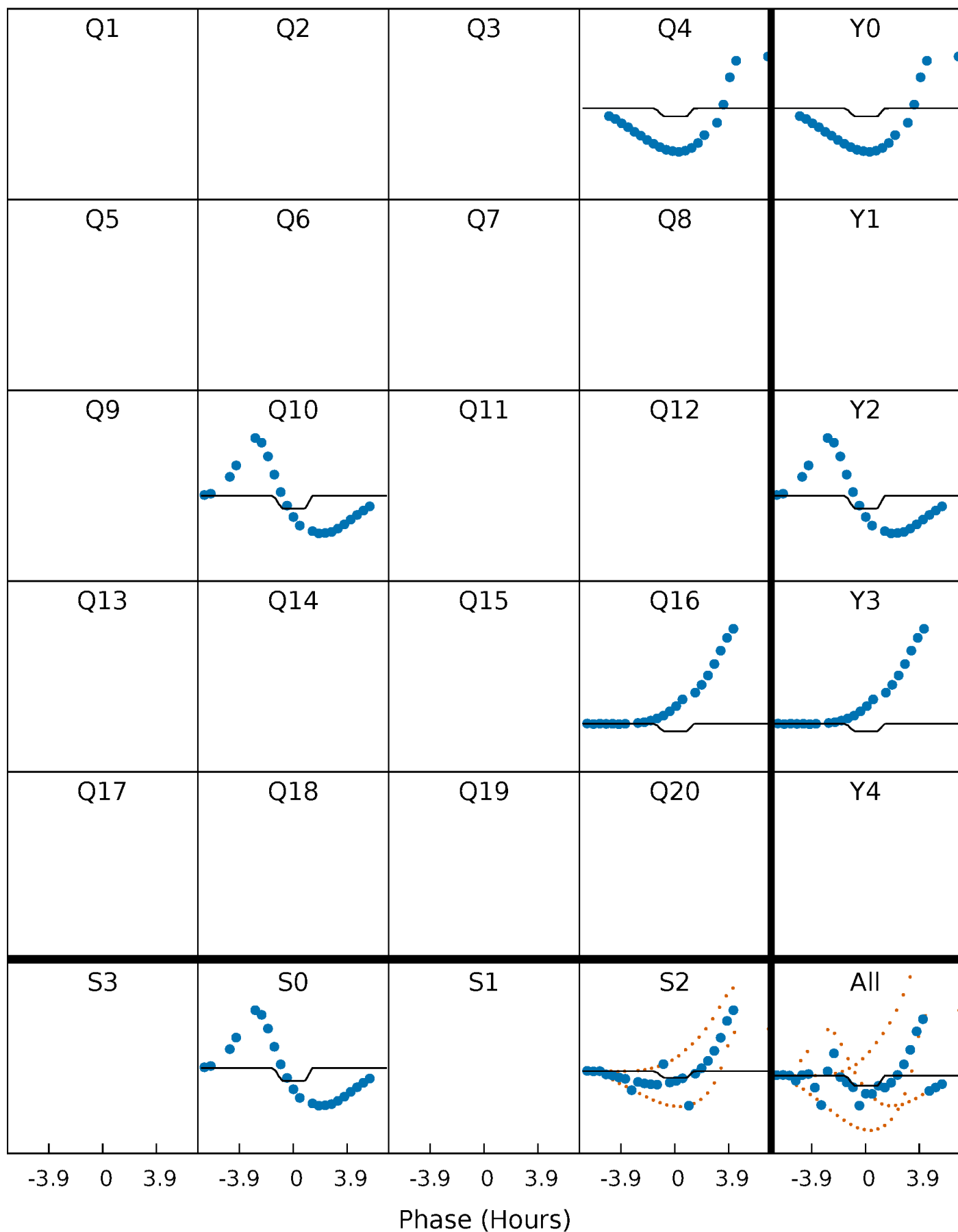
# DV Quarter-Phased Transit Curves

TCE 008565446-03     $P=554.861964$  Days     $T_0=435.855945$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

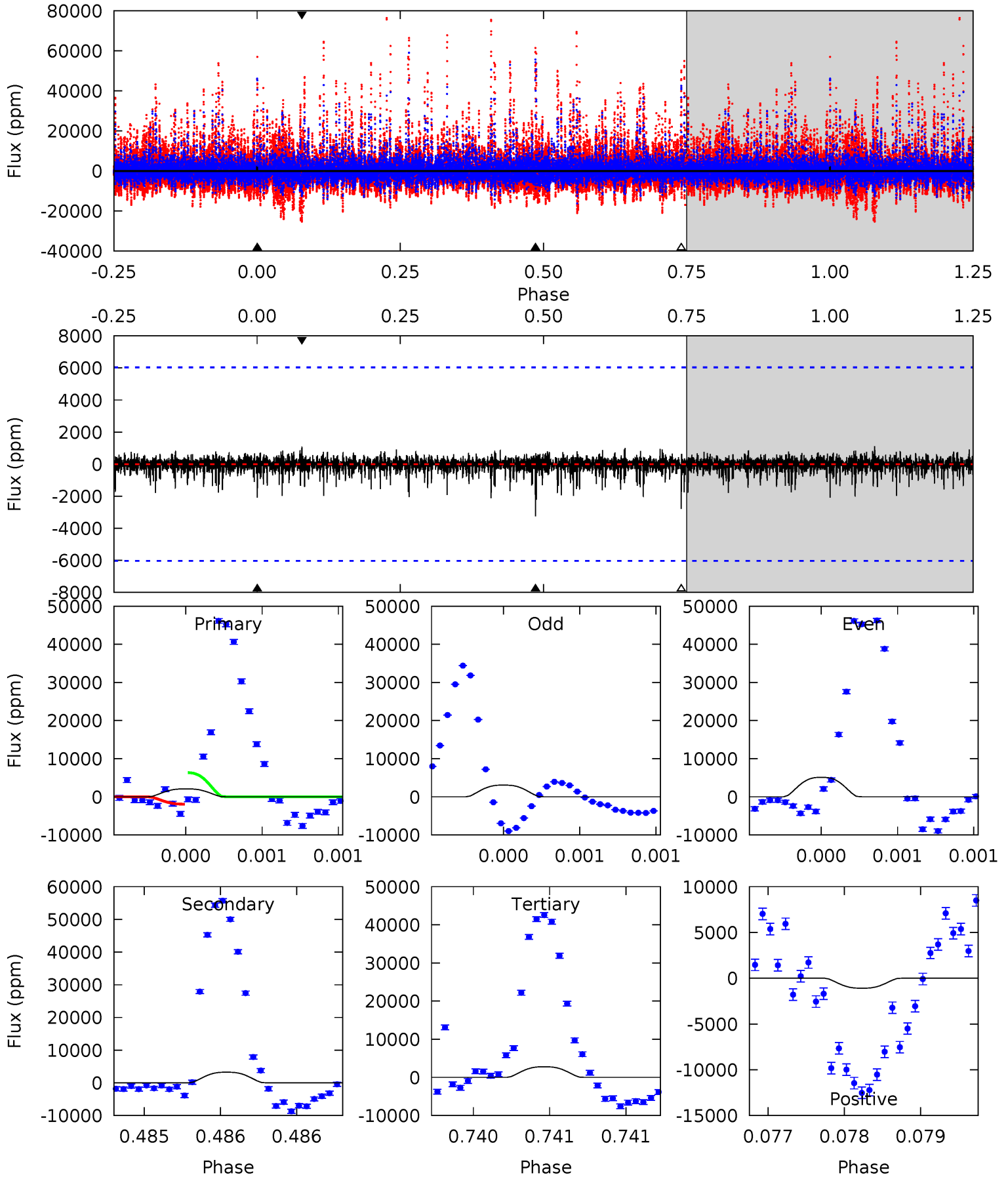
TCE 008565446-03     $P=554.866511$  Days     $T_0=435.810447$  (BKJD)



# DV Model-Shift Uniqueness Test

008565446-03, P = 554.861964 Days, E = 435.855945 Days

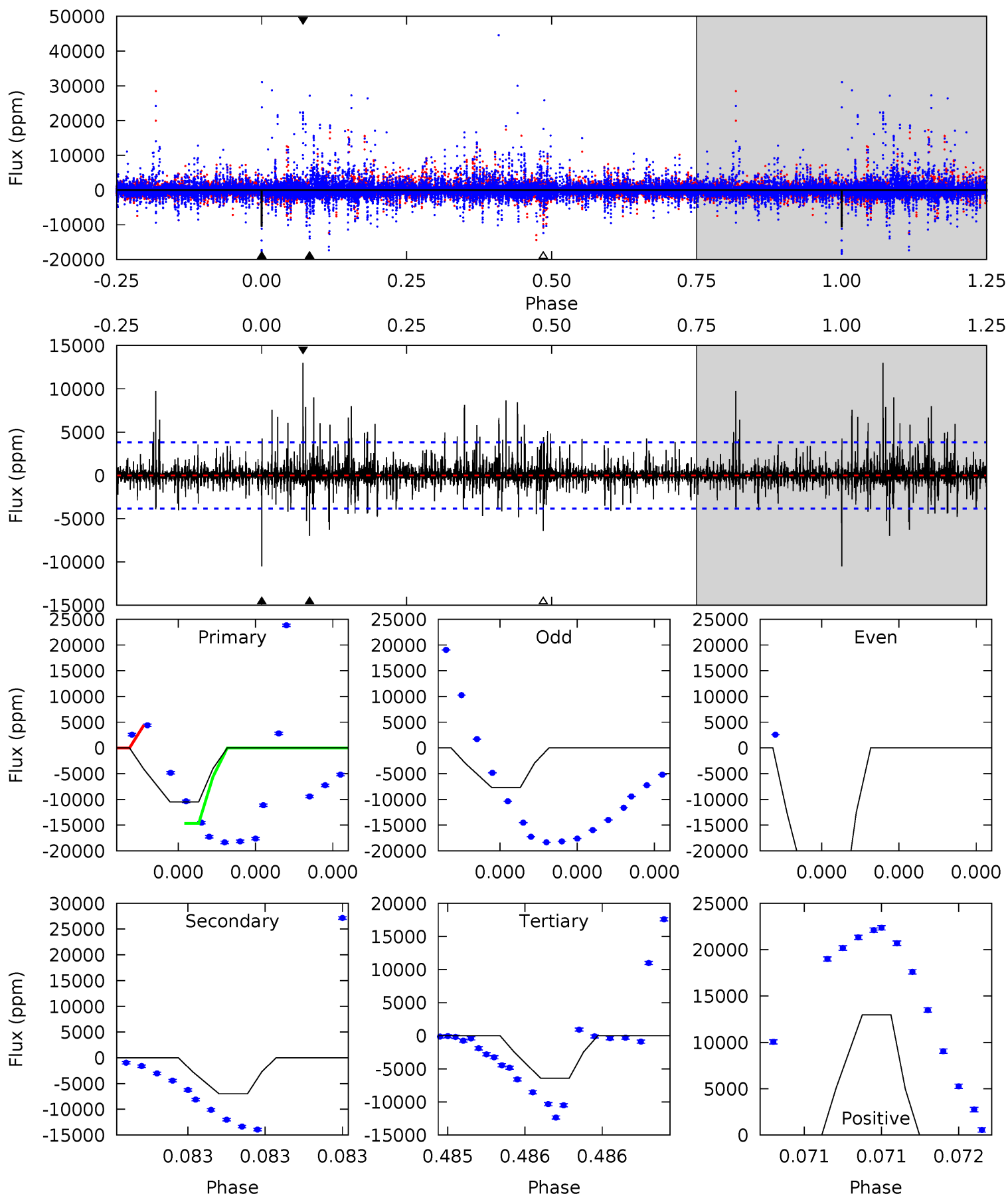
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.92	3.00	2.56	1.01	5.56	3.46	0.33	-0.64	0.91	0.44	1.99	0.82	3.44	0.25	2.03



# Alt Model-Shift Uniqueness Test

008565446-03, P = 554.866511 Days, E = 435.810447 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	10.4	9.57	19.4	5.73	3.72	0.93	6.10	-3.72	0.84	-8.98	17.2	1.22	0.55	0



### Stellar Parameters For KIC 008565446

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6715^{+187}_{-258}$	$3.975^{+0.299}_{-0.161}$	$-0.120^{+0.300}_{-0.300}$	$2.056^{+0.605}_{-0.740}$	$1.459^{+0.208}_{-0.312}$	$0.236^{+0.501}_{-0.107}$
	+3%/-4%	+8%/-4%	+250%/-250%	+29%/-36%	+14%/-21%	+212%/-45%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008565446-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-3253 \pm 1085$	$19.56^{+4.45}_{-4.40}$	$479^{+39}_{-42}$	$5346^{+545}_{-512}$	$10355^{+7519}_{-4461}$
Alt.	$-6963 \pm 669$	$16.69^{+4.26}_{-3.84}$	$474^{+39}_{-47}$	$6932^{+727}_{-578}$	$30072^{+20542}_{-10156}$

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

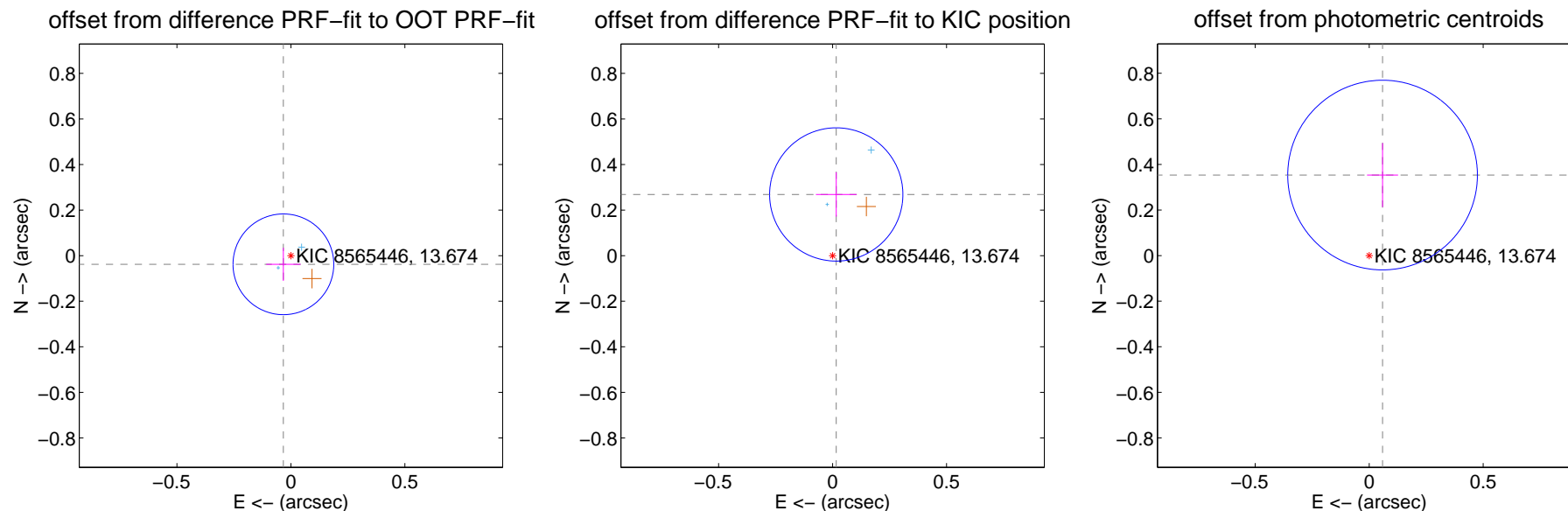
## DV Centroid Data

Supplemental centroid analysis for 008565446-03. Kepler magnitude: 13.67. Transit SNR 6.56

There are 2 quarters with good PRF difference image offsets

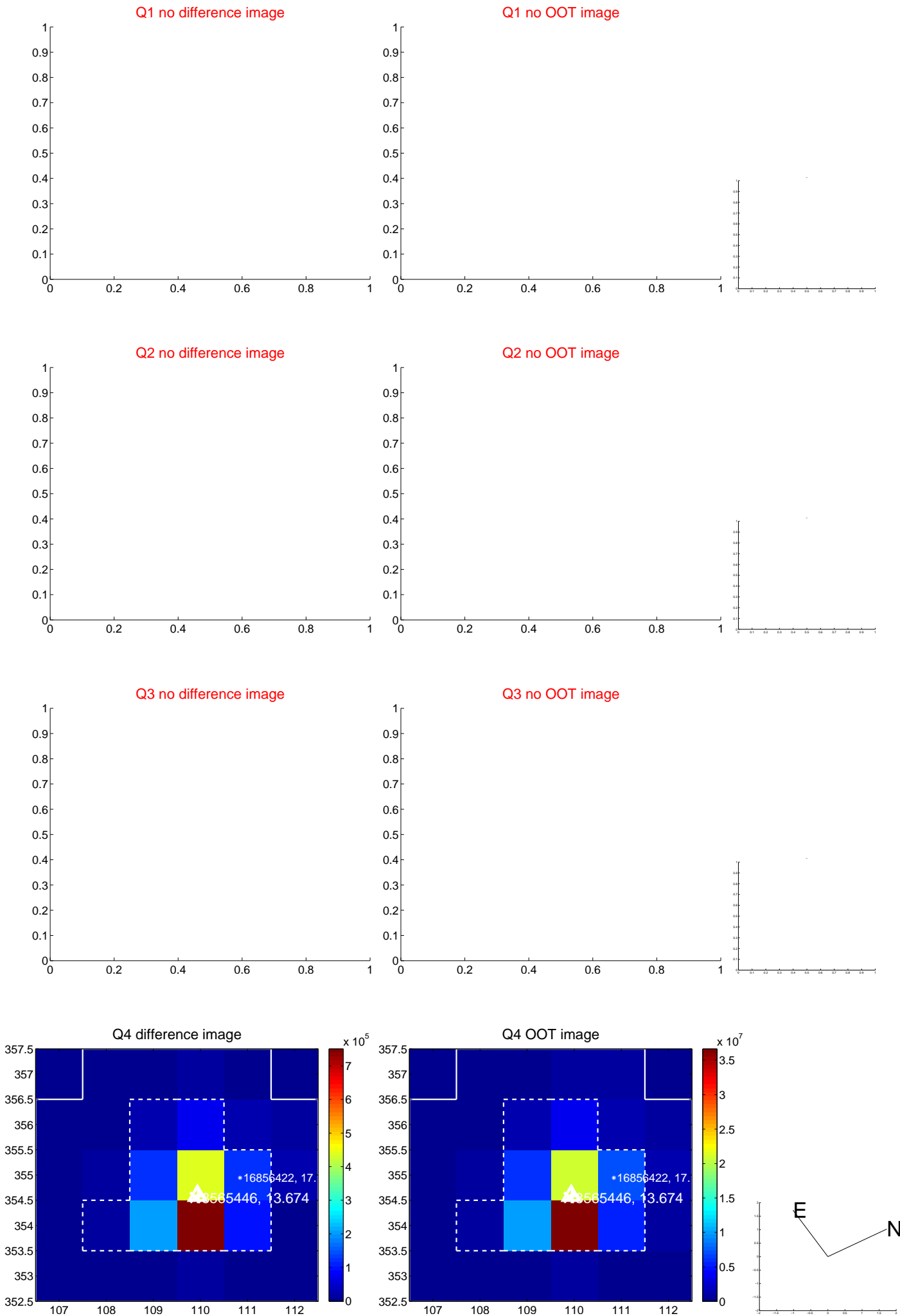
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.050 \pm 0.074$	0.68	$0.033 \pm 0.075$	$-0.038 \pm 0.072$
PRF-fit source offset from KIC position	$0.269 \pm 0.097$	2.76	$-0.016 \pm 0.089$	$0.269 \pm 0.097$
photometric centroid source offset	$0.36 \pm 0.14$	2.58	$-0.06 \pm 0.07$	$0.35 \pm 0.14$



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.

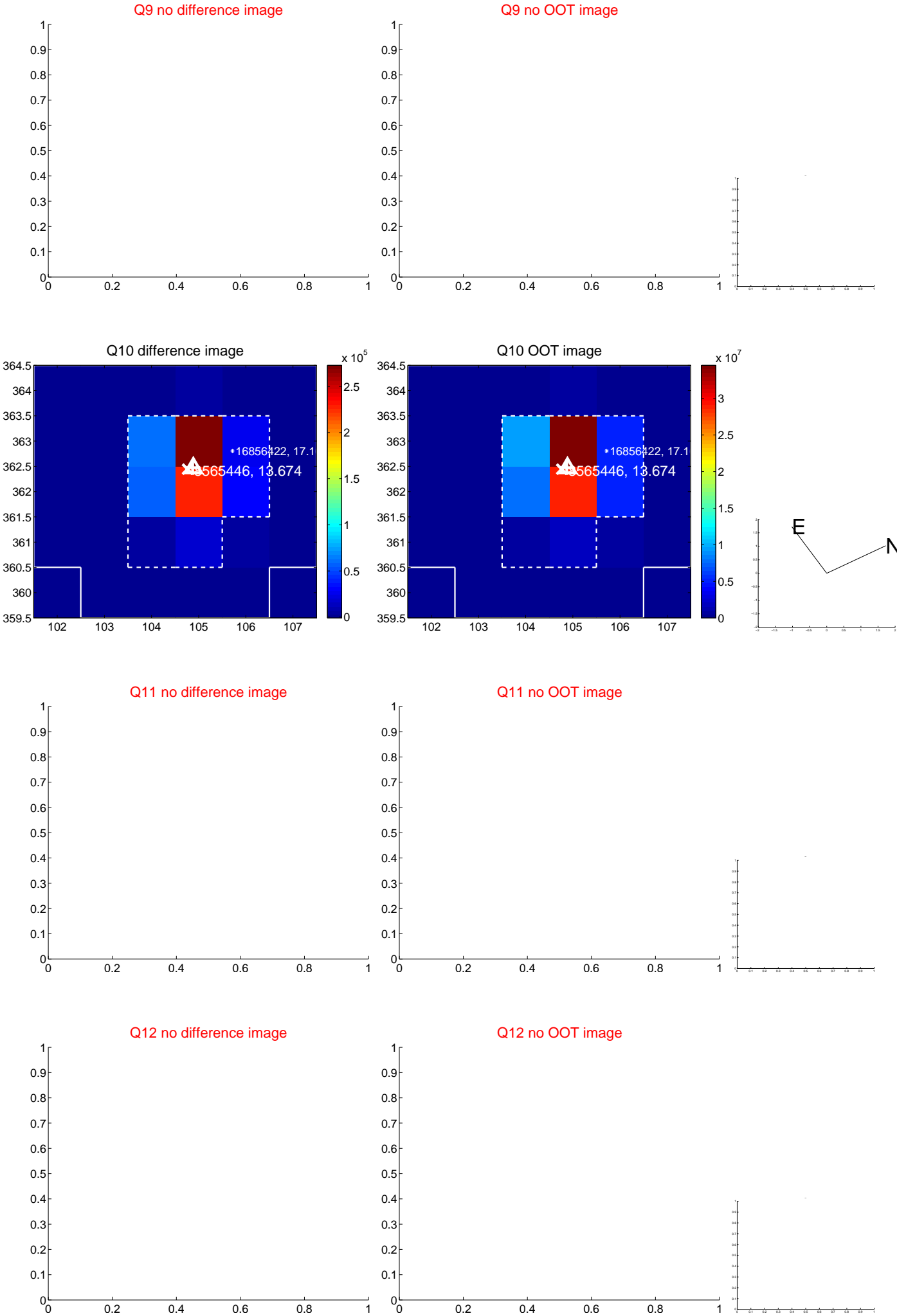


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

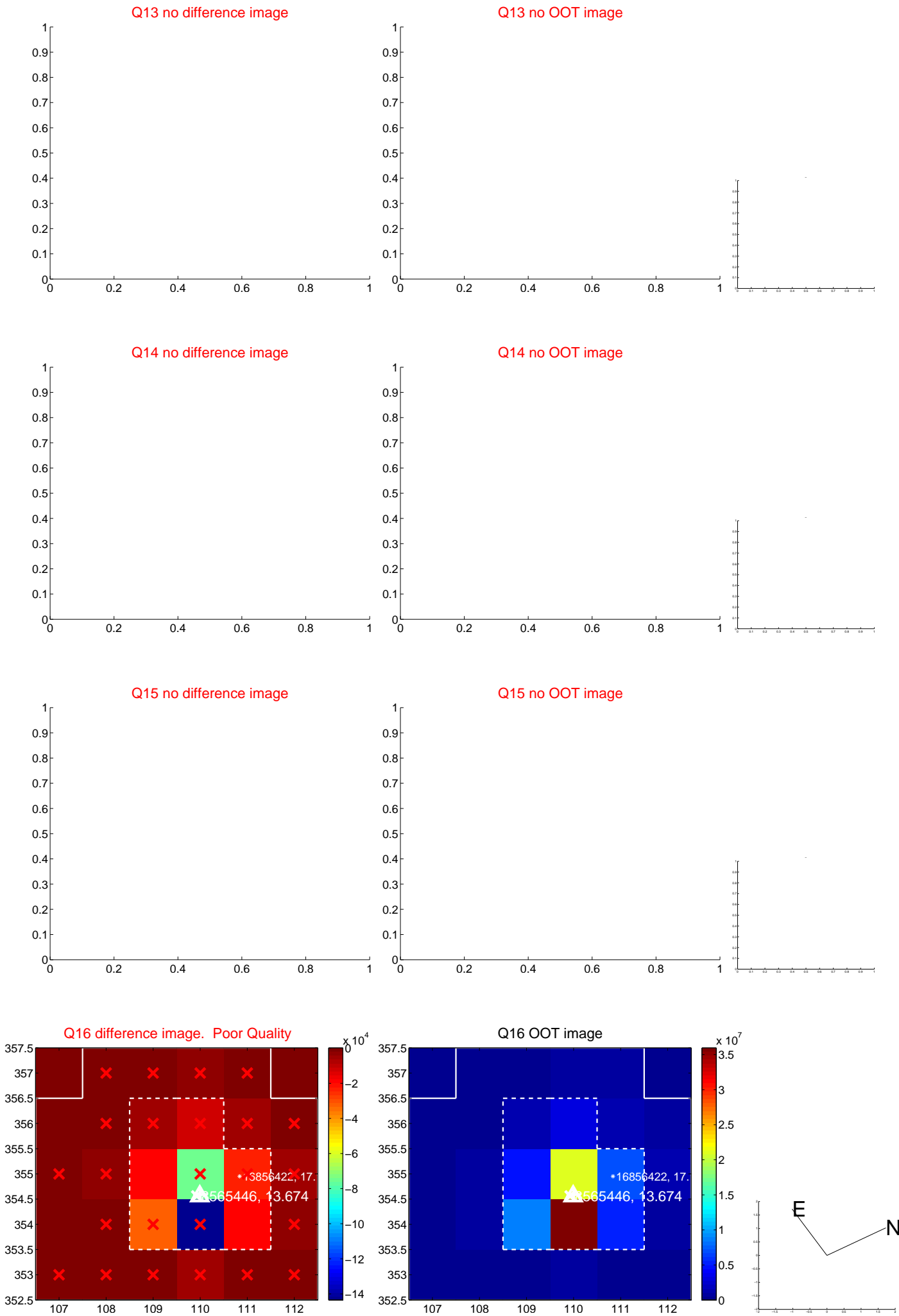




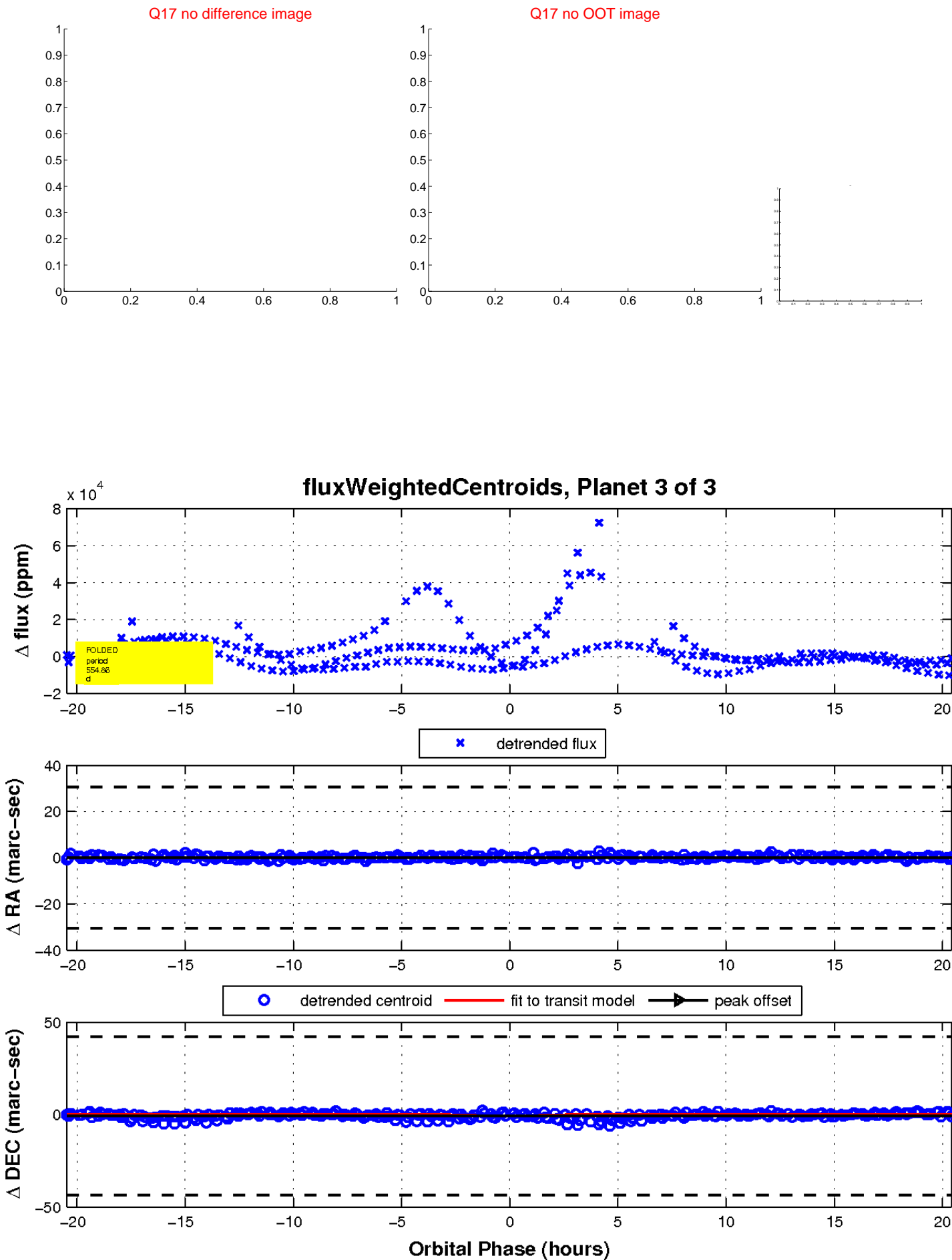
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

