

# KIC 003554600

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003554600-01	OBS	No	7.544357	138.611250	235.4	5.851	11.5	12.2	0.82	5657	1.52	116.69
003554600-02	OBS	0803.01	7.543655	134.096589	241.4	6.628	12.2	13.7	0.82	5657	1.50	116.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003554600-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
003554600-02	OBS	FP	0.00	1	0	1	0	SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

**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.

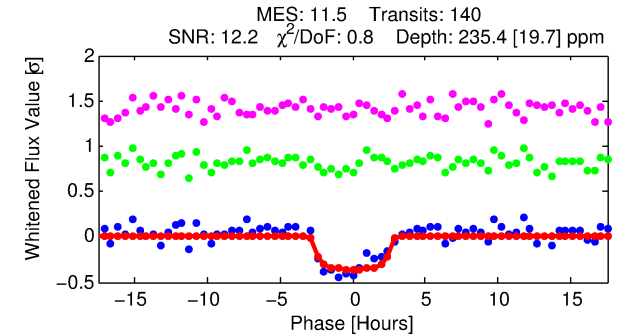
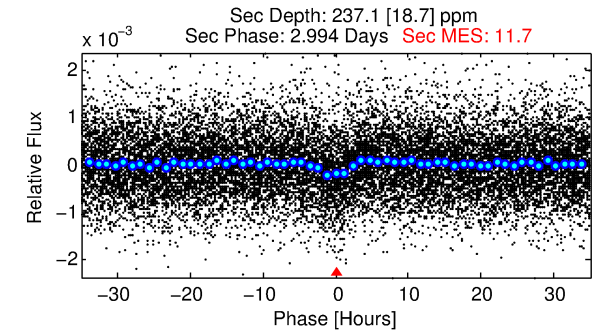
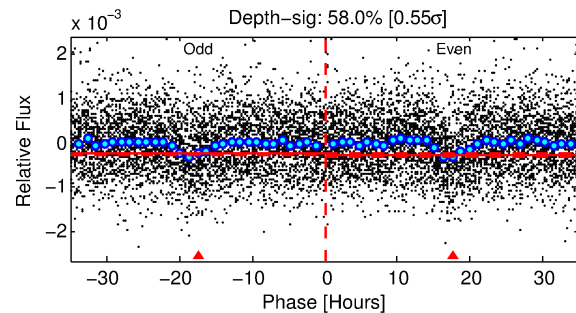
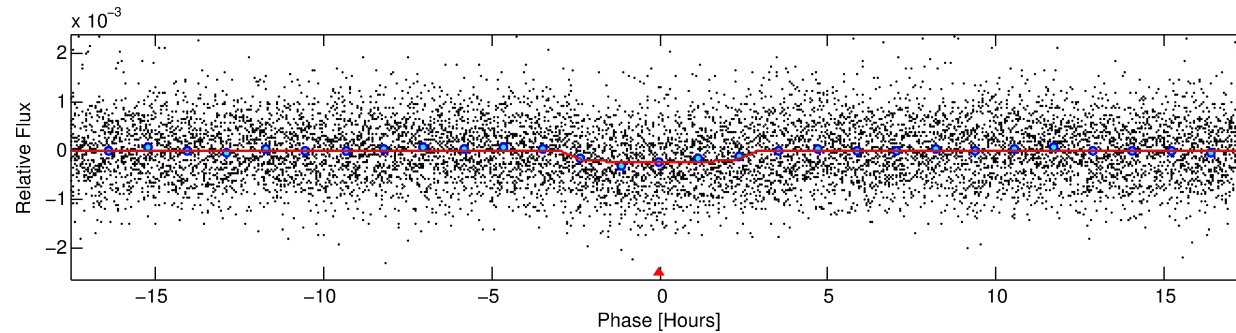
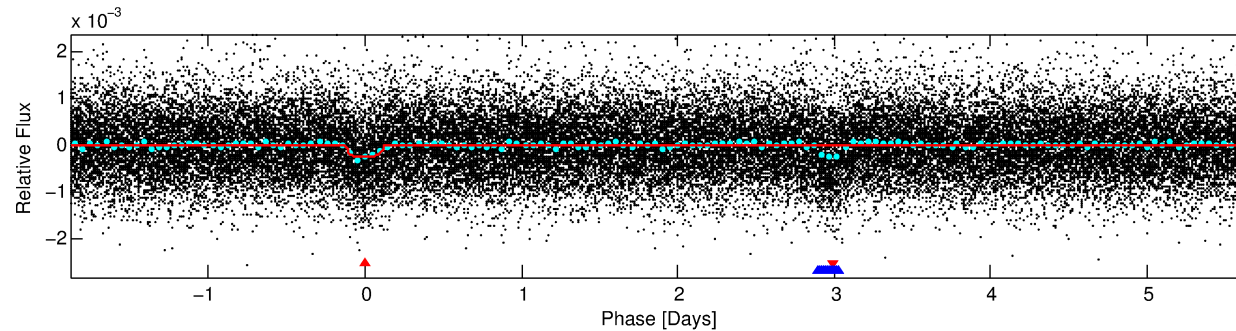
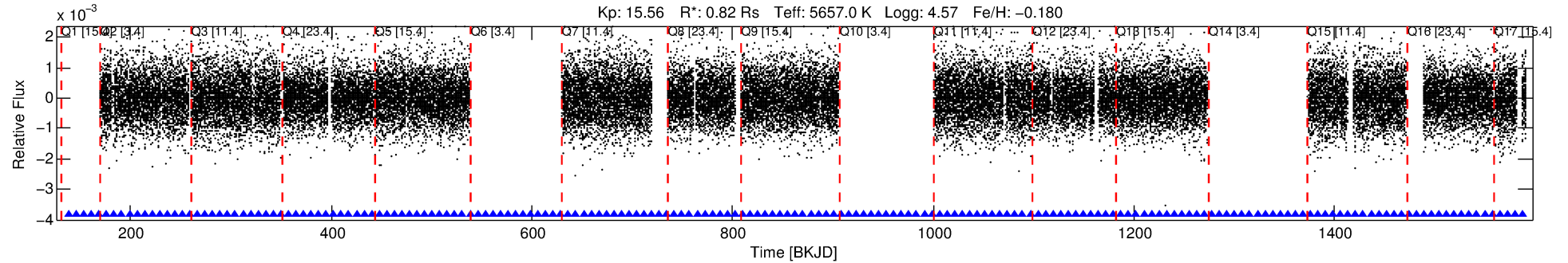
## Ephemeris Match Information For 003554600-01

No Significant Match Found

# DV One-Page Summary

KIC: 3554600 Candidate: 1 of 2 Period: 7.544 d  
KOI: K00803 Corr: No Ephemeris Match

Kp: 15.56 R\*: 0.82 Rs Teff: 5657.0 K Logg: 4.57 Fe/H: -0.180



## DV Fit Results:

Period = 7.54436 [0.00009] d  
Epoch = 138.6112 [0.0088] BKJD  
Rp/R\* = 0.0169 [0.0034]  
a/R\* = 4.60 [4.17]  
b = 0.91 [0.19]  
Seff = 116.69 [35.65]  
Teq = 838 [64] K  
Rp = 1.52 [0.47] Re  
a = 0.0731 [0.0143] AU  
Ag = 302.54 [151.94] [1.98σ]  
Teff = 5404 [585] K [7.76σ]

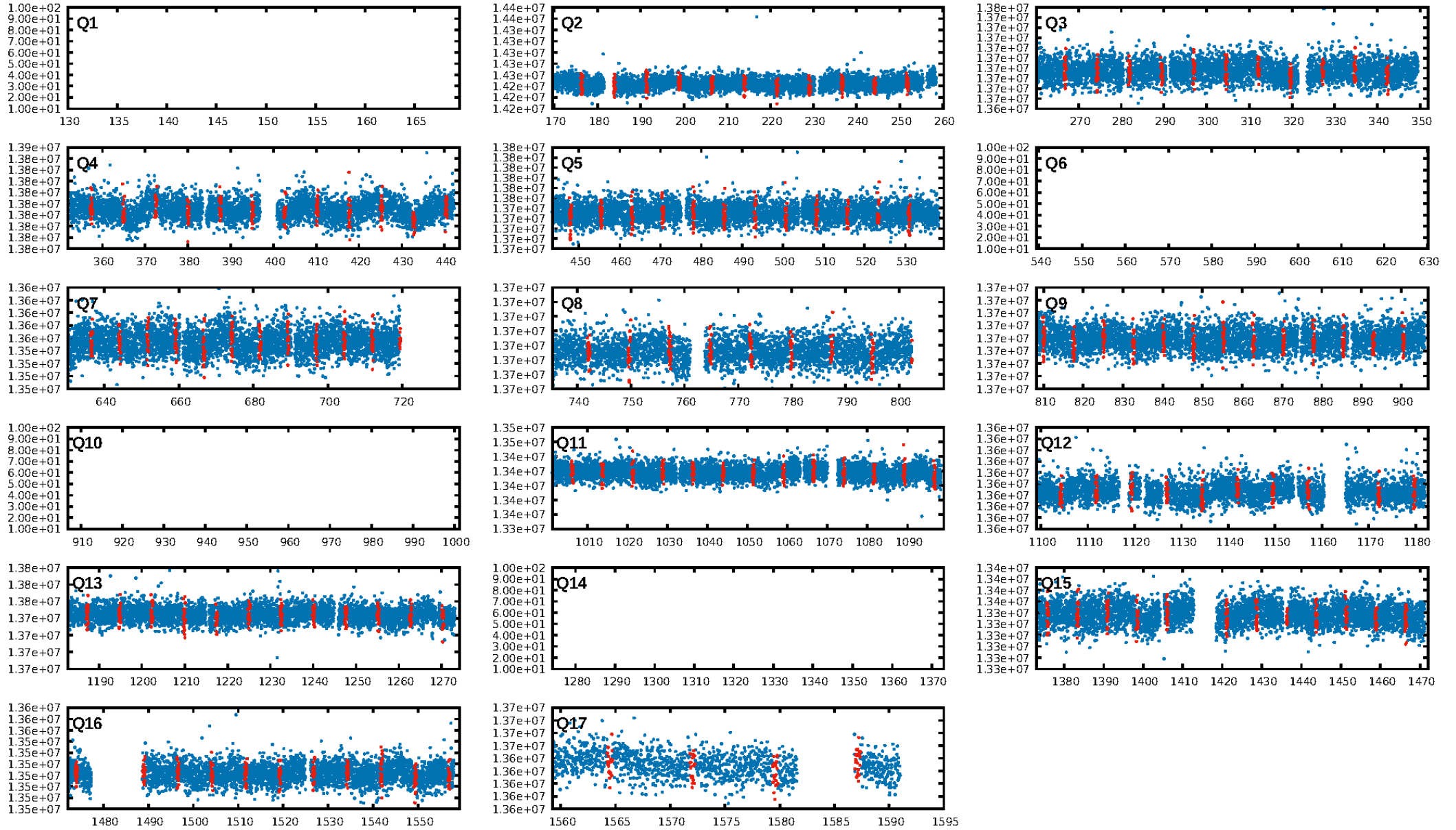
## DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 36.5%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 2.15e-30  
RollingBand-fgt: 1.00 [136/136]  
GhostDiagnostic-chr: -0.6852  
Centroid-sig: N/A  
Centroid-so: 51.174 arcsec [50.52σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [13/13]

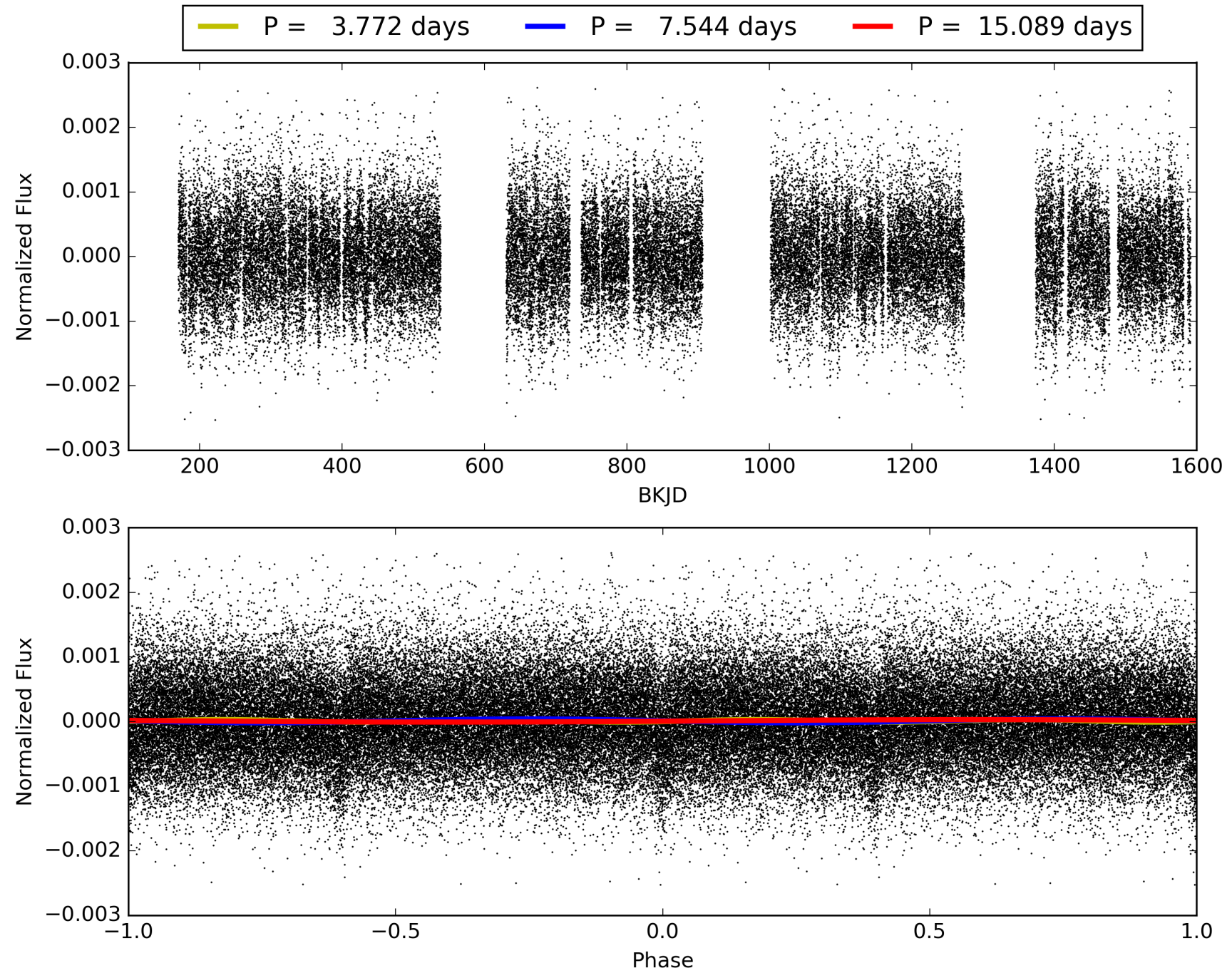
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:38:19 Z

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

# TCE 003554600-01, PDC Light Curves



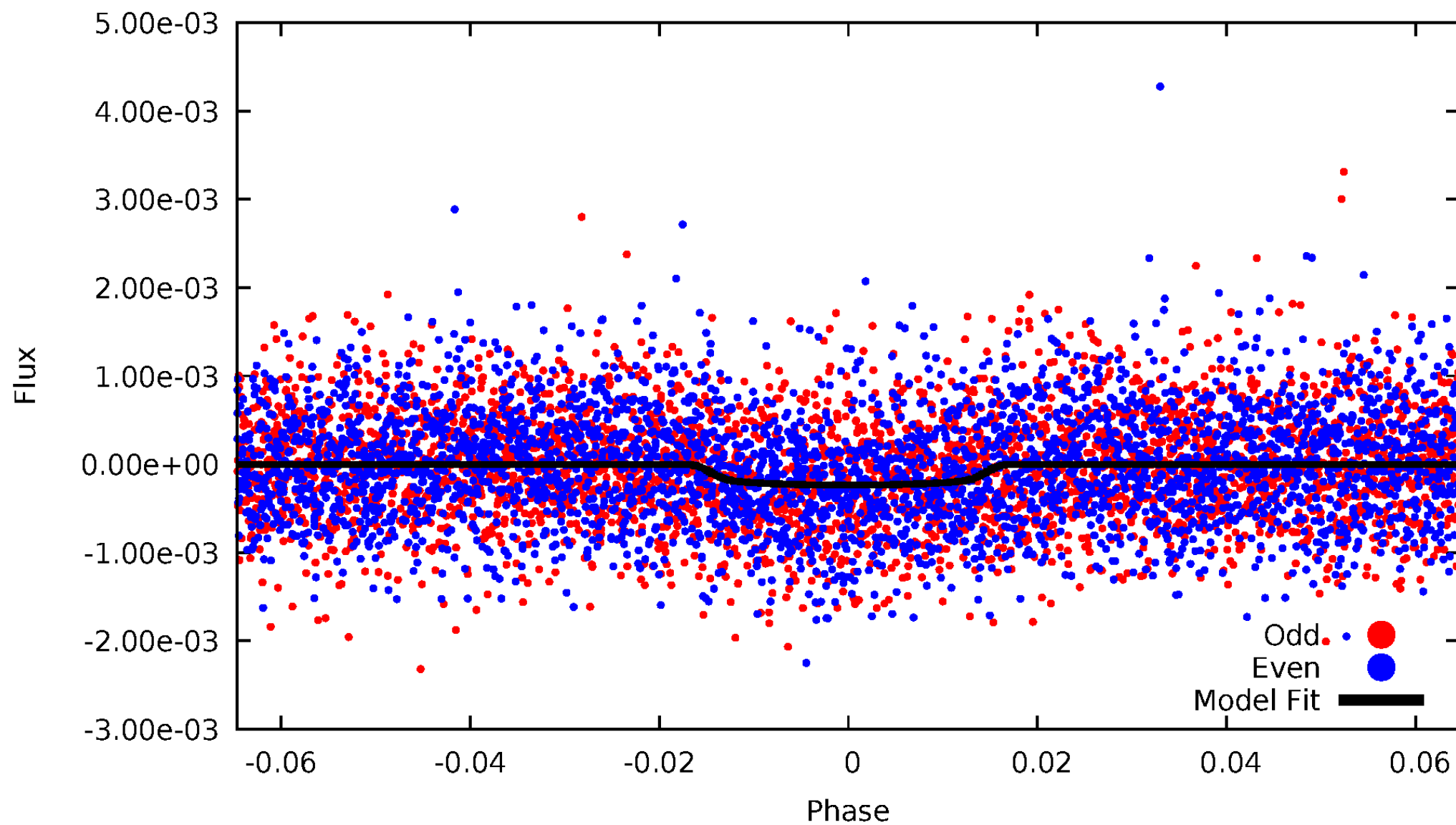
TCE 003554600-01





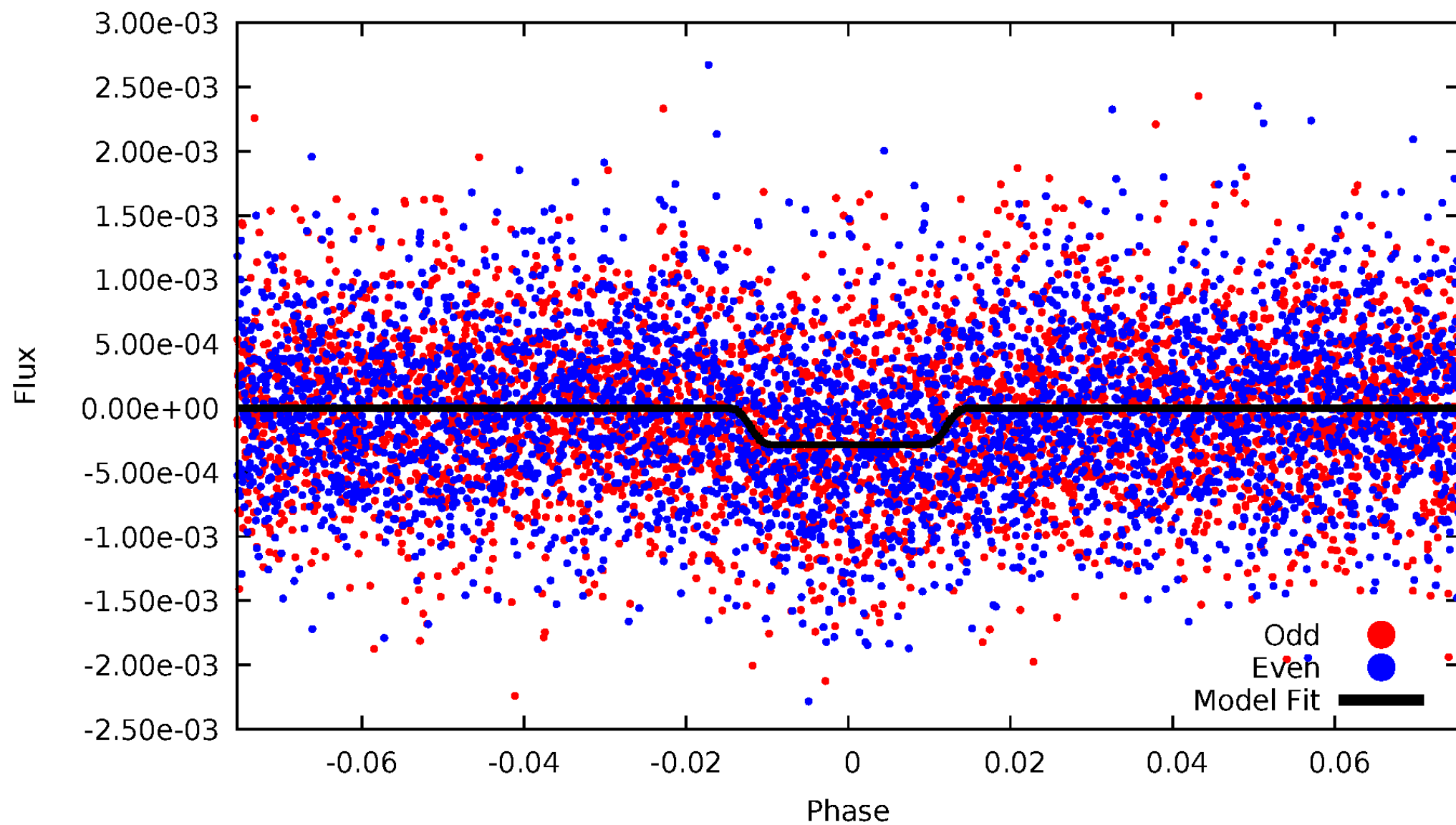
# DV Odd/Even

TCE 003554600-01

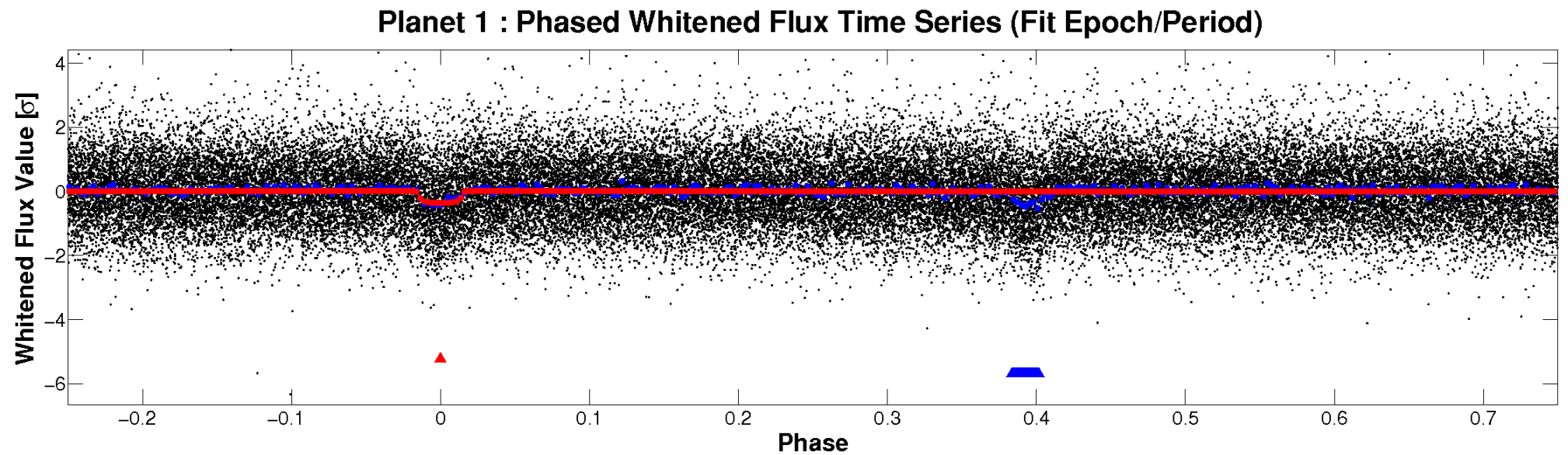
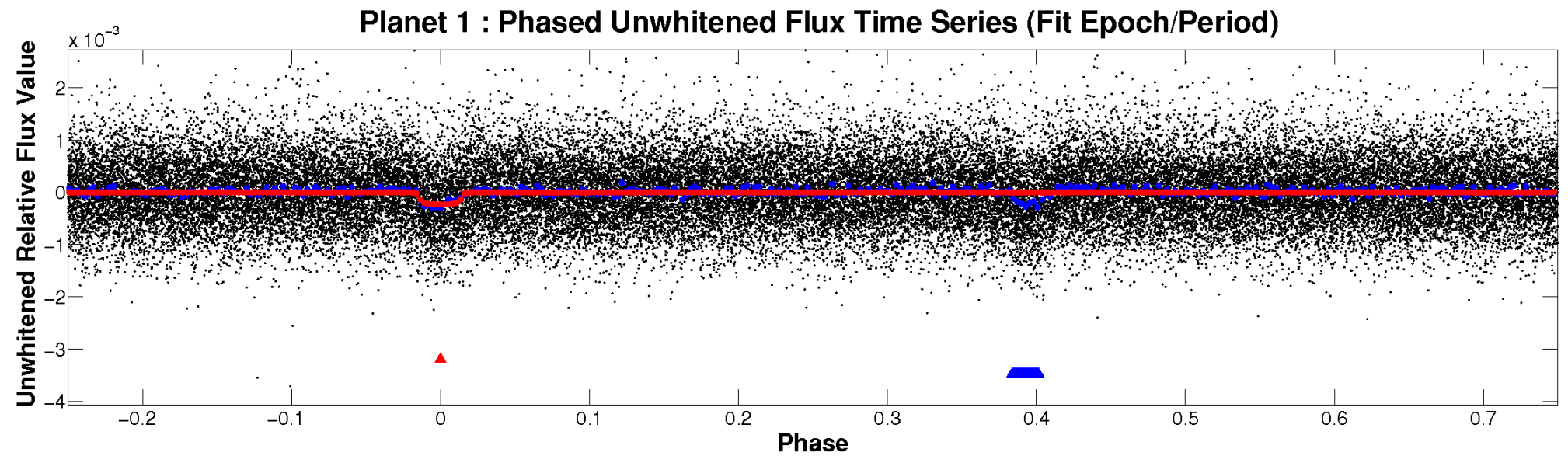


# ALT Odd/Even

TCE 003554600-01

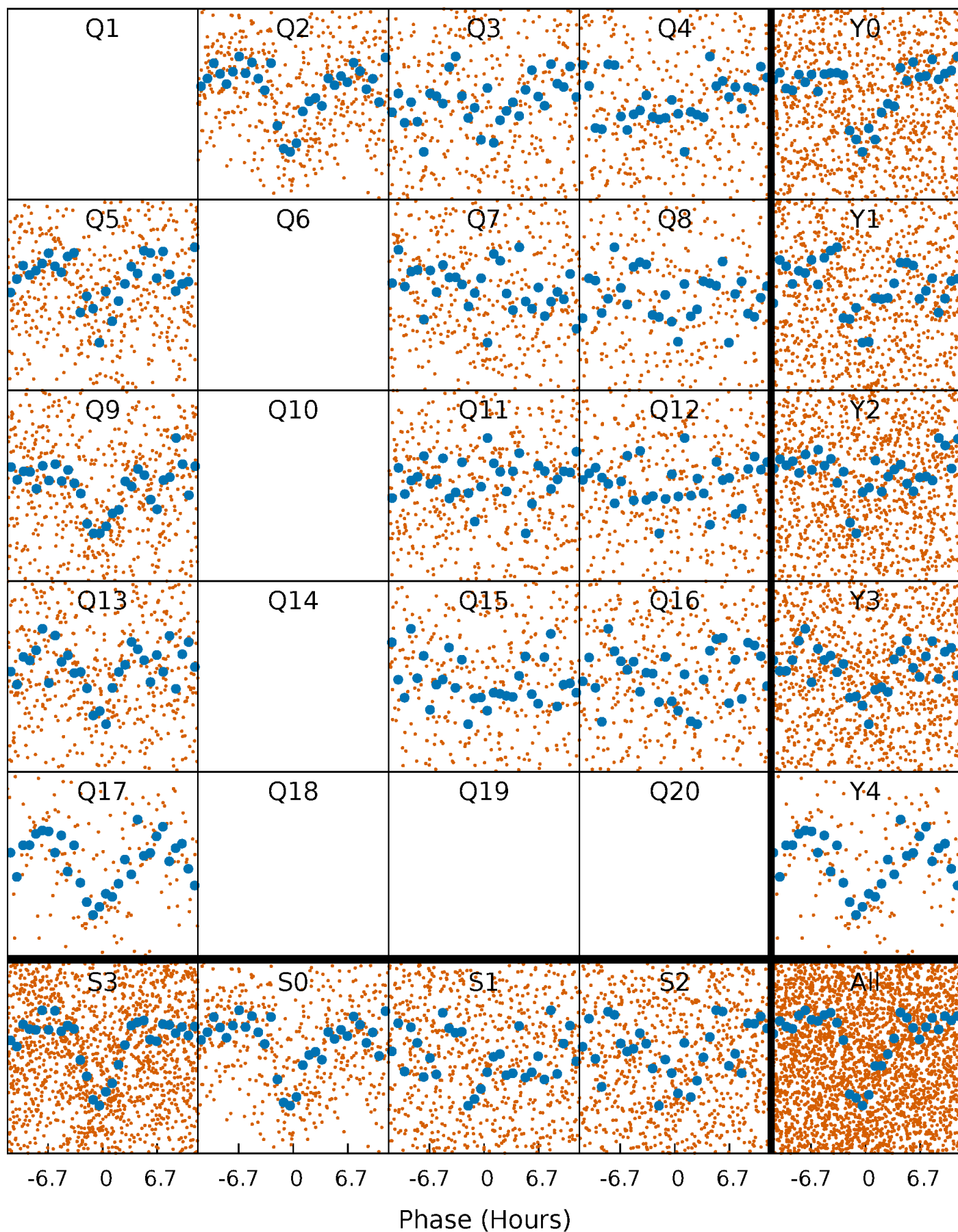


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

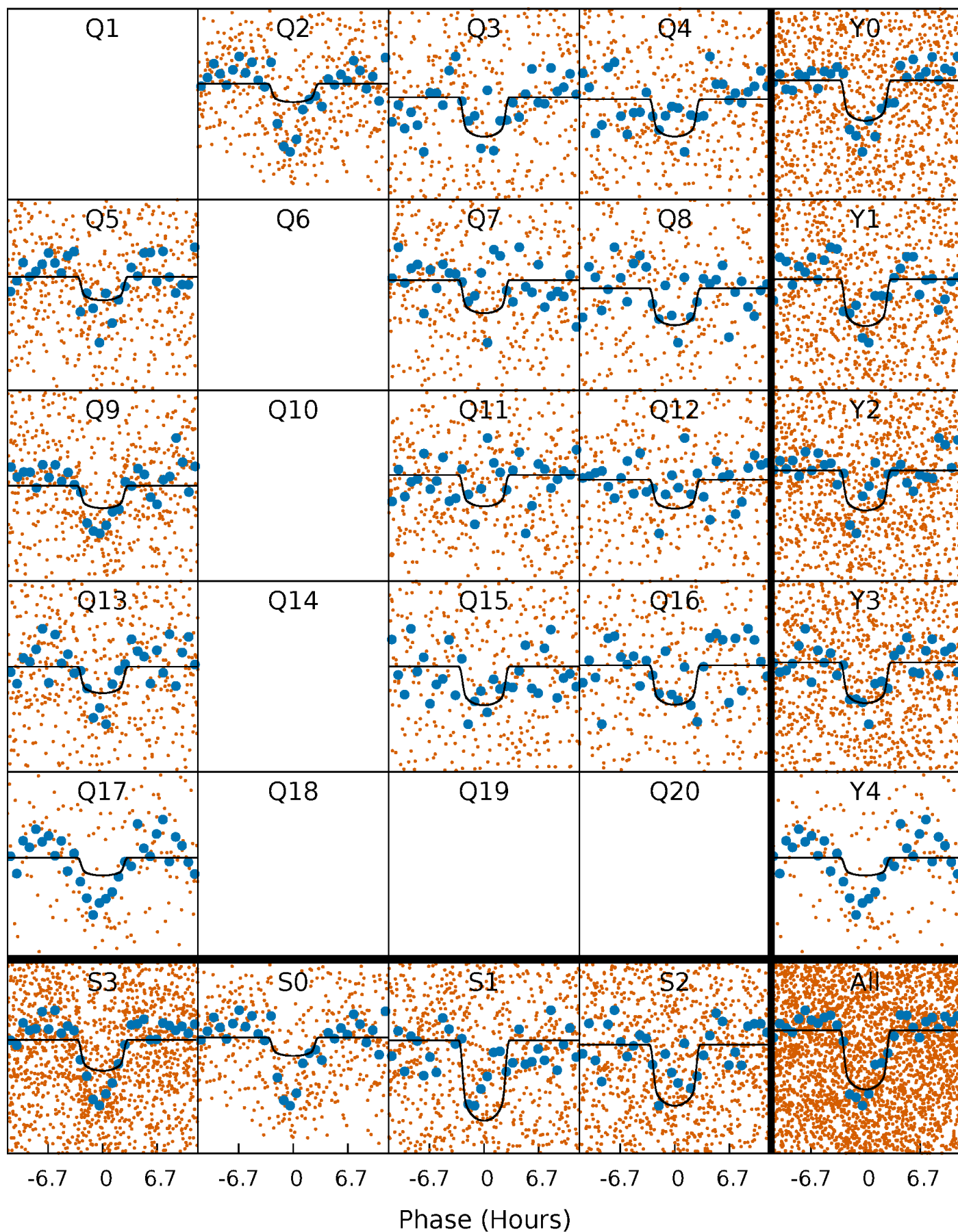
TCE 003554600-01   P= 7.544357 Days    $T_0=138.611250$  (BKJD)





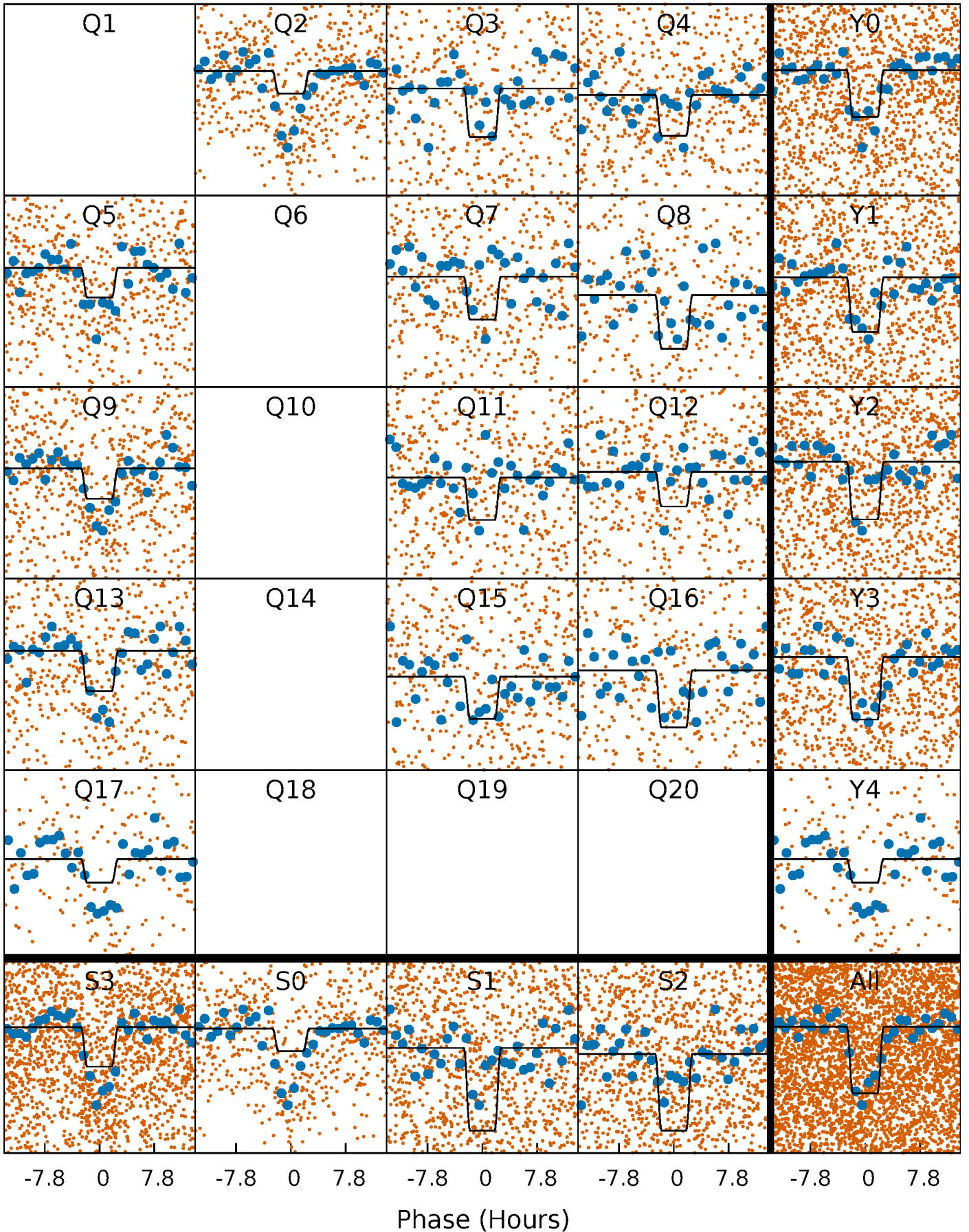
# DV Quarter-Phased Transit Curves

TCE 003554600-01 P= 7.544357 Days  $T_0=138.611250$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

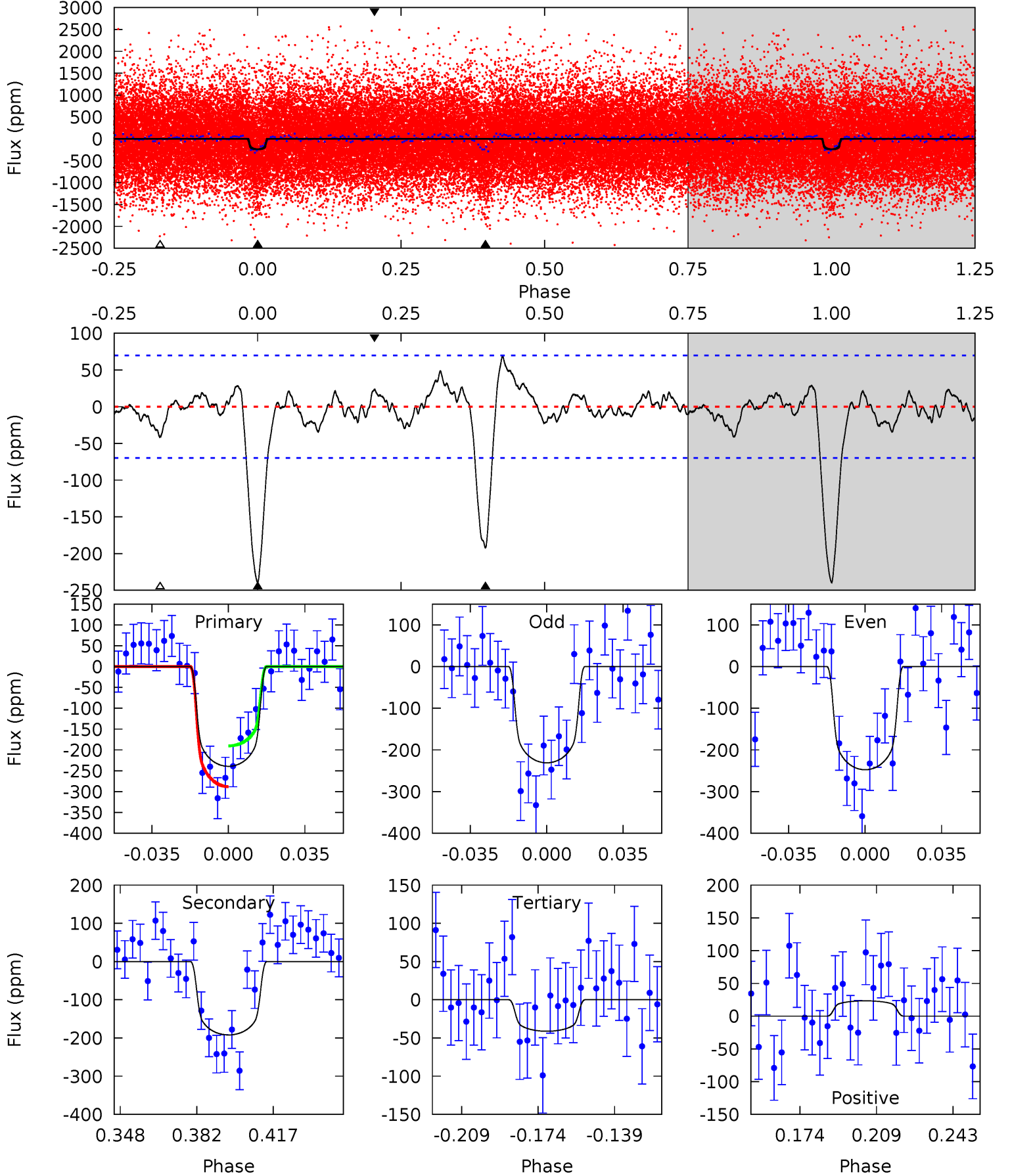
TCE 003554600-01 P= 7.544140 Days  $T_0=138.617062$  (BKJD)



# DV Model-Shift Uniqueness Test

003554600-01, P = 7.544357 Days, E = 138.611250 Days

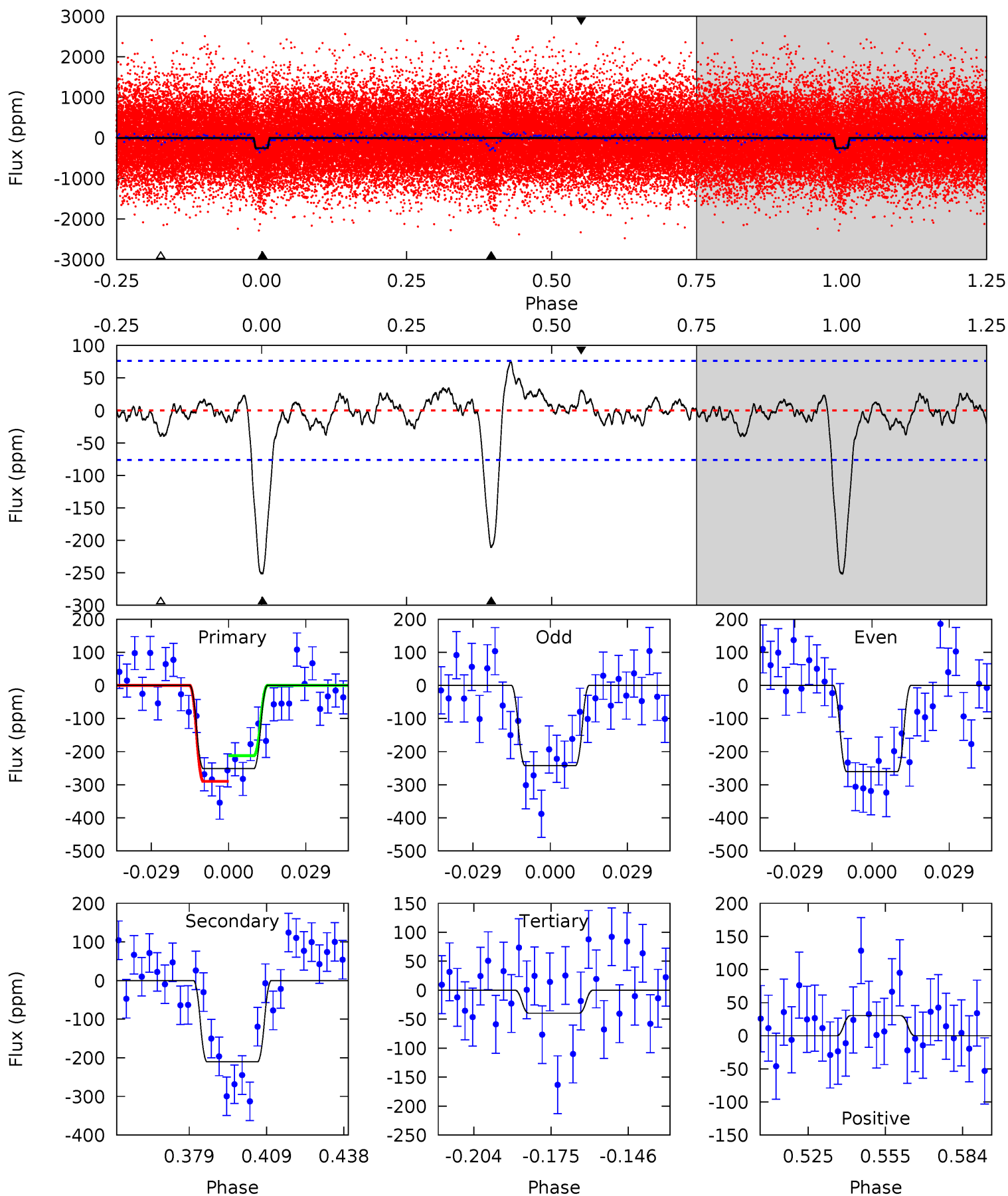
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	13.1	2.82	1.60	4.78	2.11	1.14	13.6	14.8	10.3	11.5	0.57	1.07	0.22	3.36



# Alt Model-Shift Uniqueness Test

003554600-01, P = 7.544140 Days, E = 138.617062 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
15.9	13.3	2.51	1.92	4.82	2.18	1.10	13.4	14.0	10.8	11.4	0.58	1.07	0.23	2.46





### Stellar Parameters For KIC 003554600

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5657^{+152}_{-169}$	$4.567^{+0.038}_{-0.152}$	$-0.180^{+0.300}_{-0.300}$	$0.824^{+0.194}_{-0.078}$	$0.919^{+0.083}_{-0.104}$	$2.319^{+0.474}_{-0.996}$
	+3%/-3%	+1%/-3%	+167%/-167%	+24%/-9%	+9%/-11%	+20%/-43%
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 003554600-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-192 \pm 15$	$1.58^{+0.37}_{-0.33}$	$1192^{+66}_{-49}$	$5189^{+568}_{-460}$	$224^{+134}_{-78}$
Alt.	$-210 \pm 16$	$1.58^{+0.35}_{-0.39}$	$1194^{+65}_{-52}$	$5293^{+672}_{-454}$	$243^{+193}_{-79}$

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

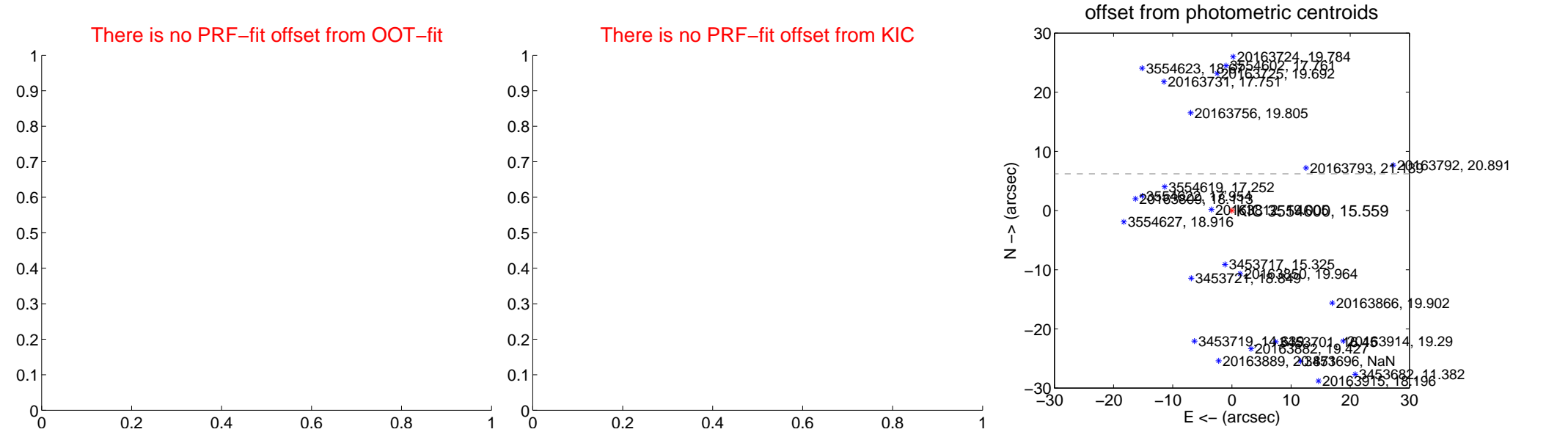
## DV Centroid Data

Supplemental centroid analysis for 003554600-01. Kepler magnitude: 15.56. Transit SNR 12.24

There are 0 quarters with good PRF difference image offsets

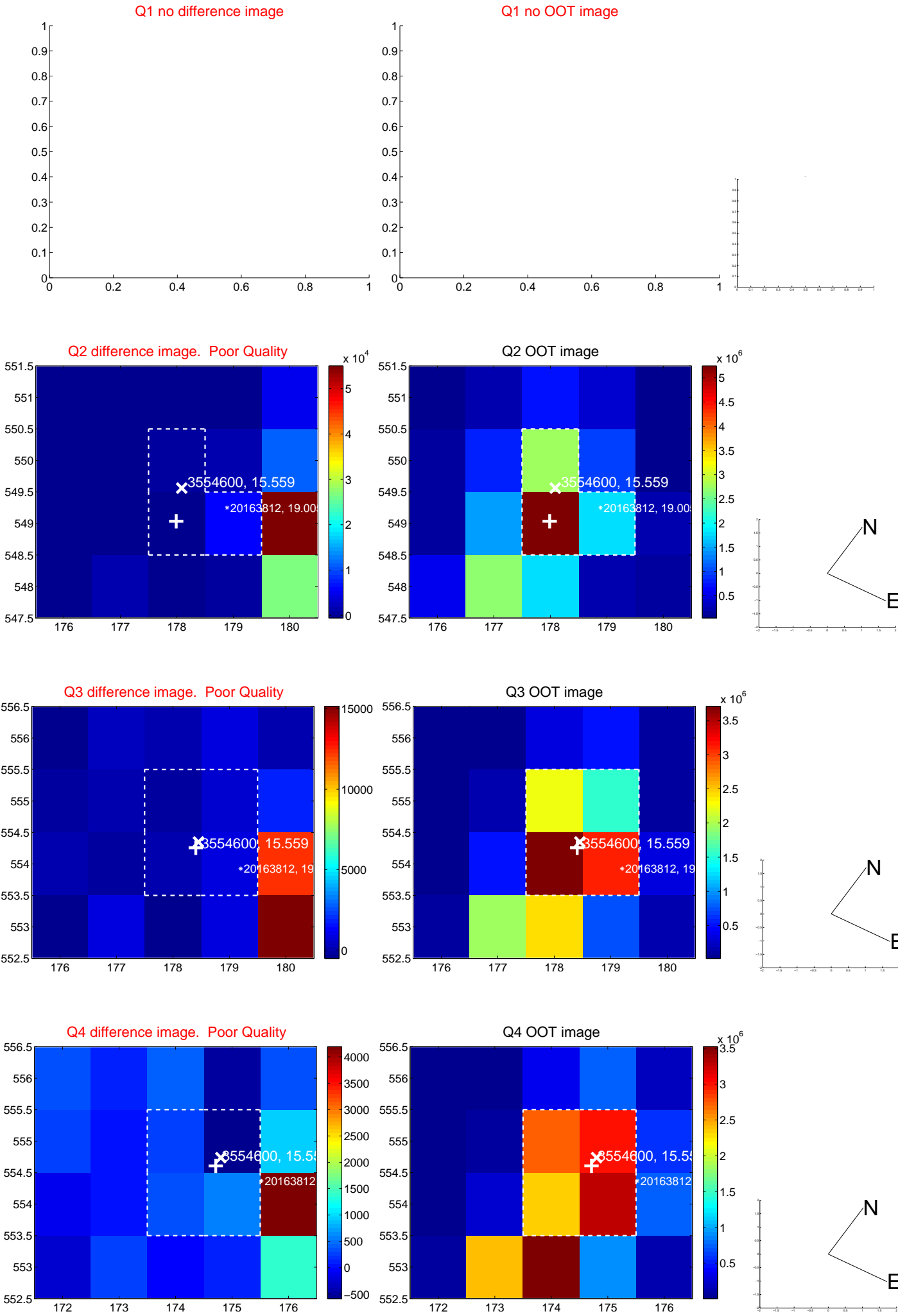
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$51.17 \pm 1.01$	50.52	$50.79 \pm 1.01$	$6.21 \pm 1.04$

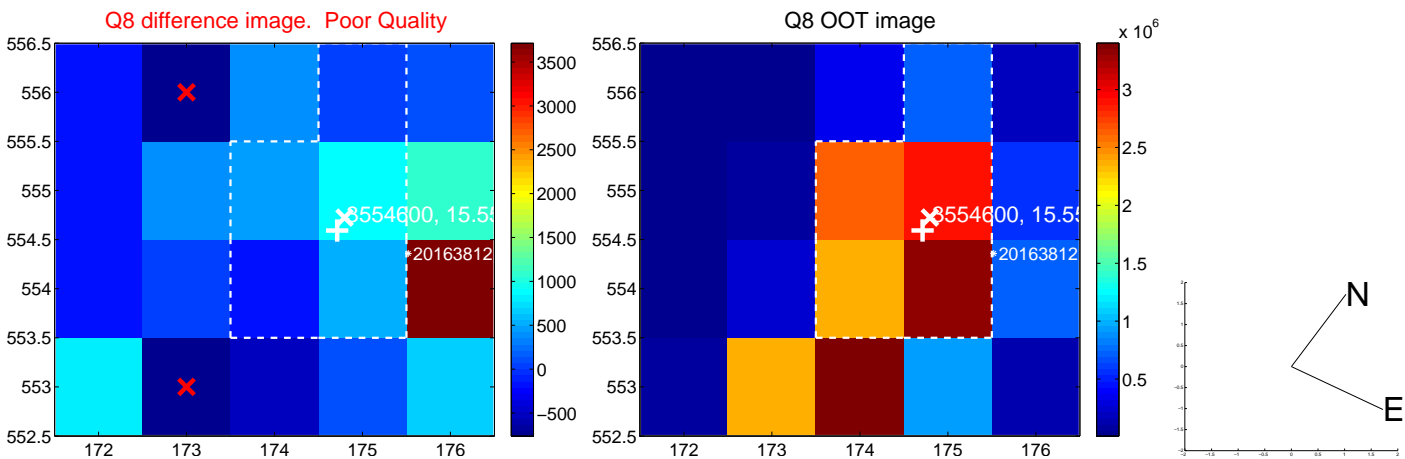
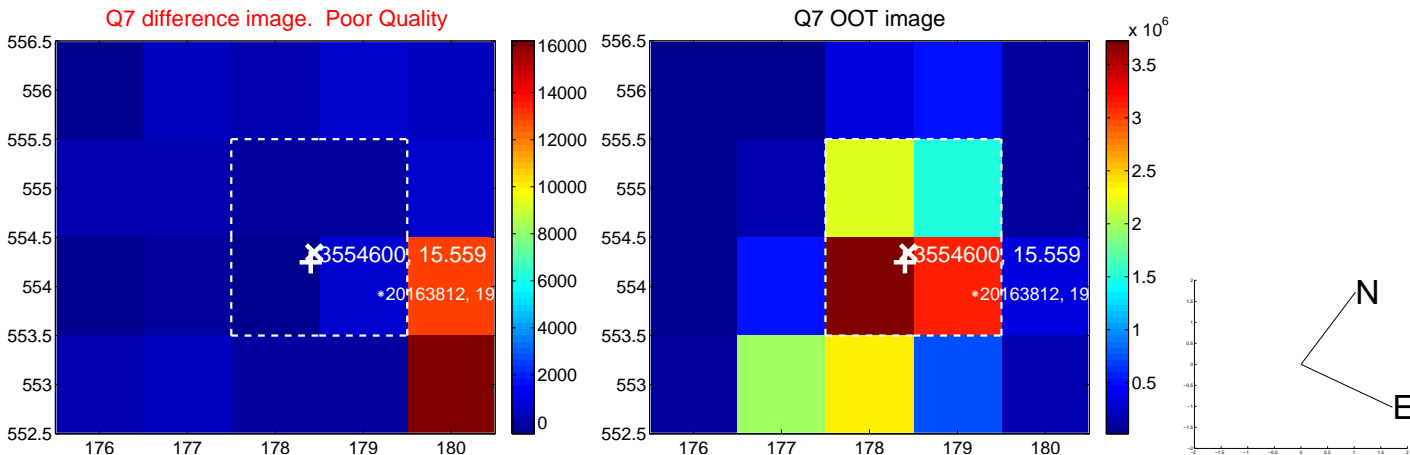
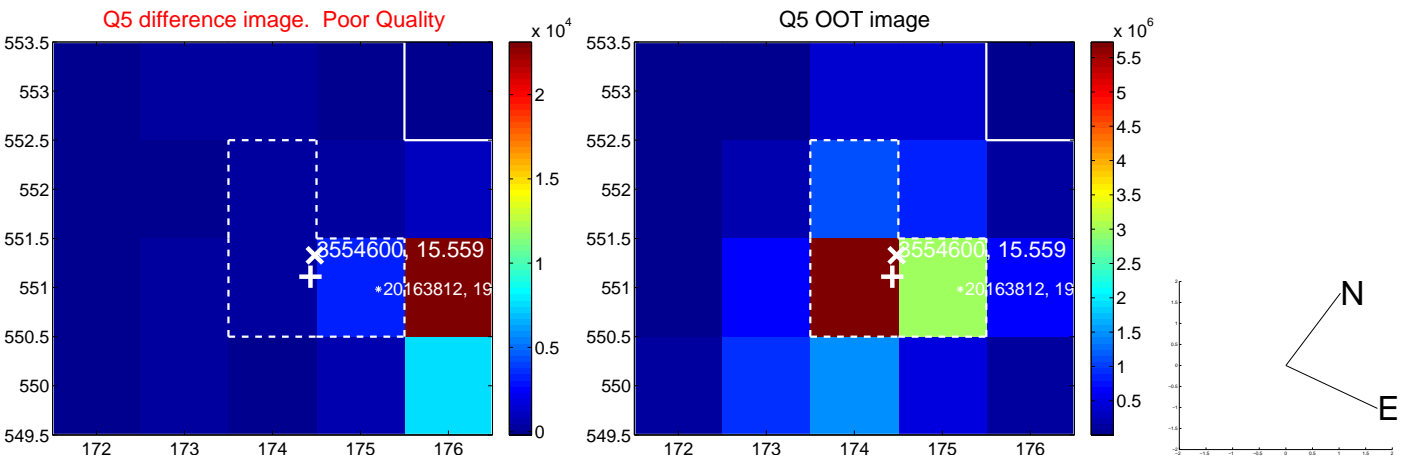


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

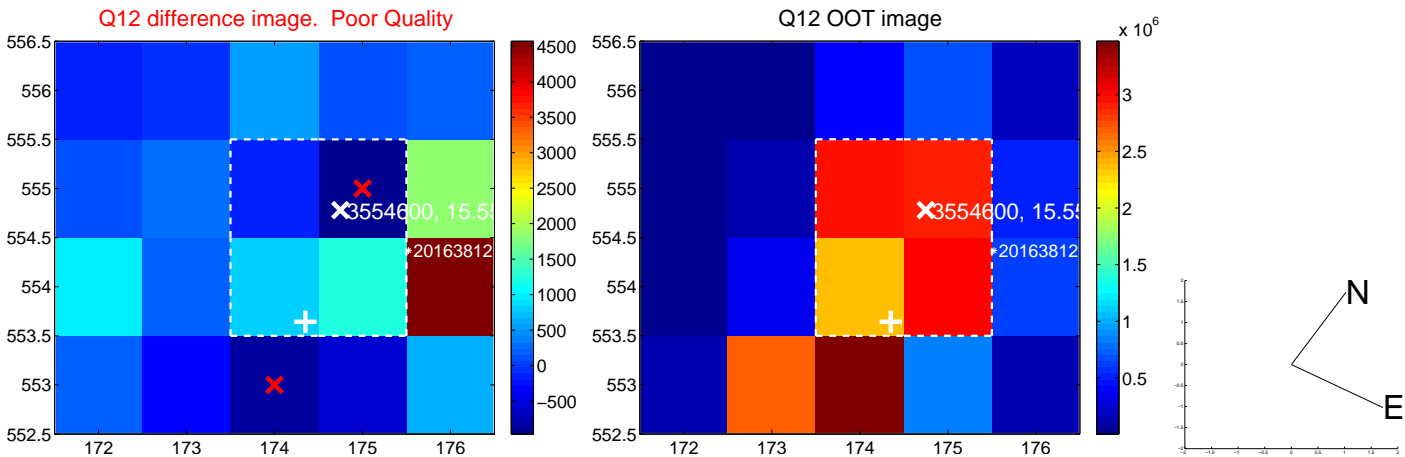
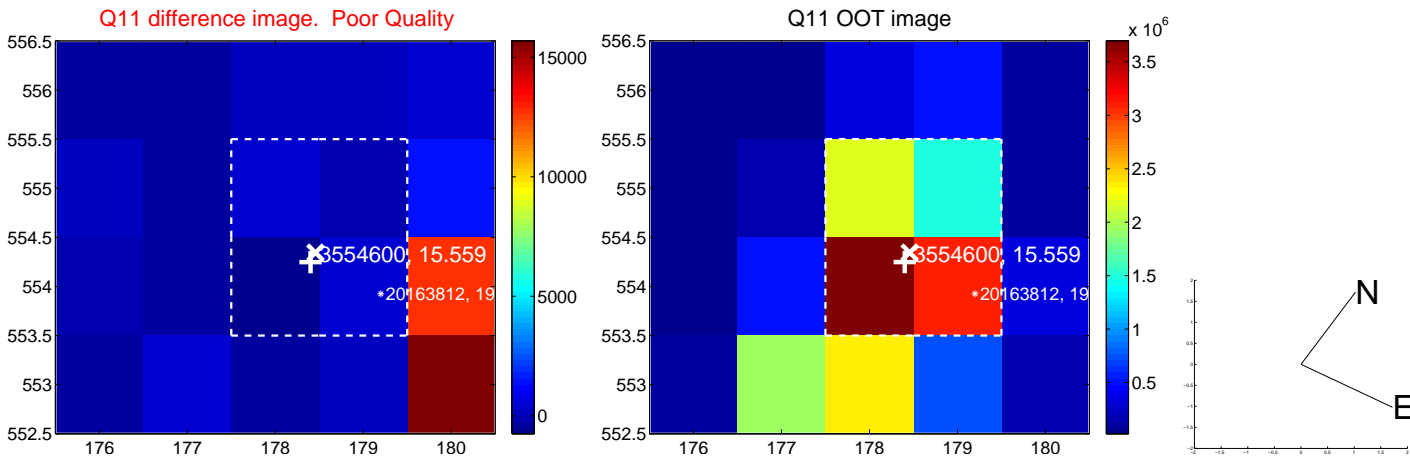
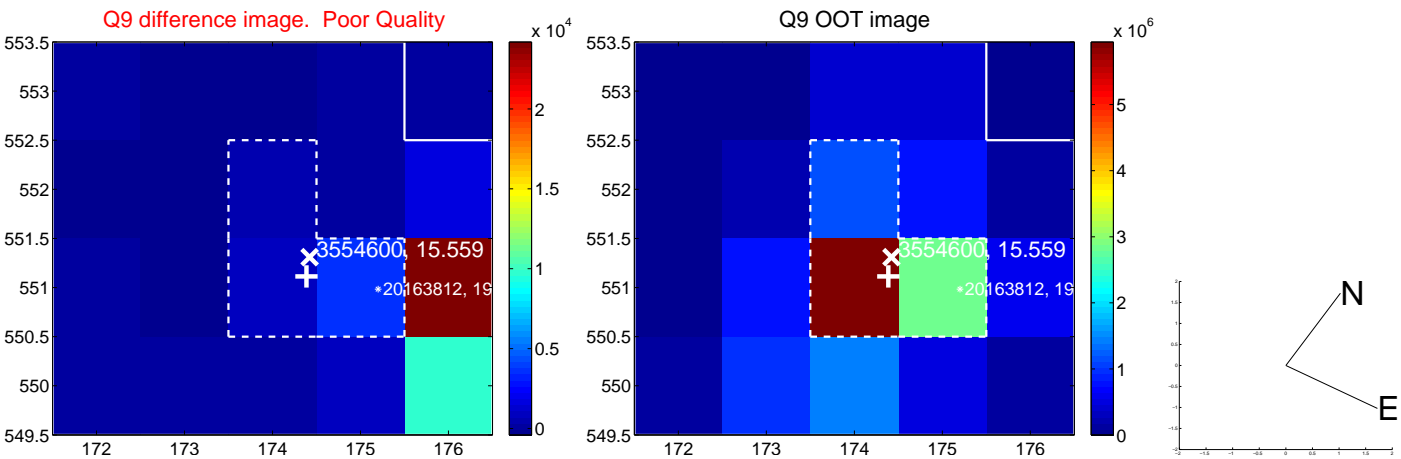


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

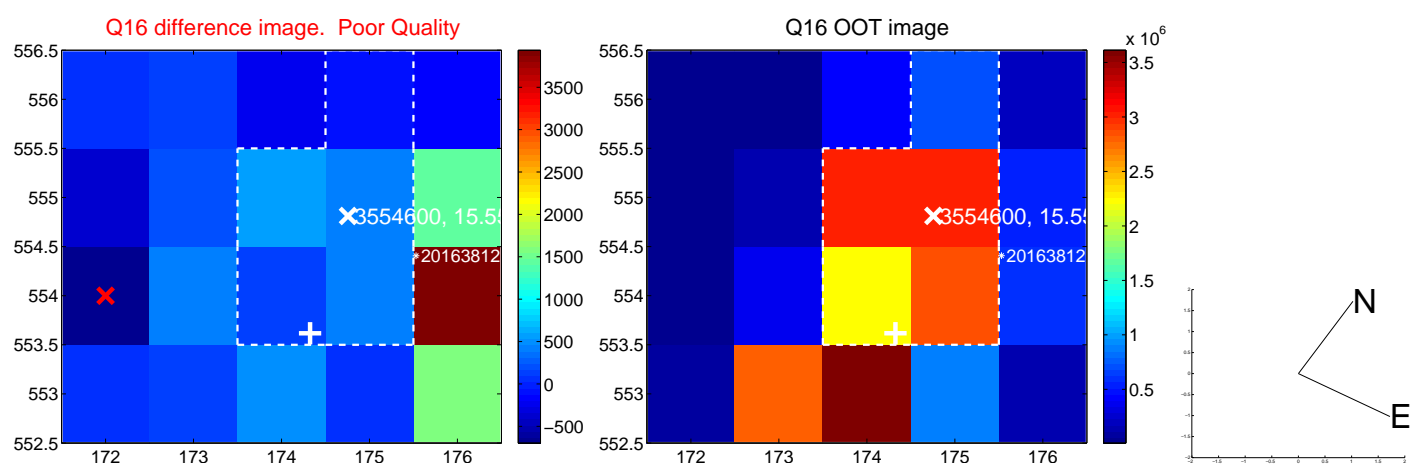
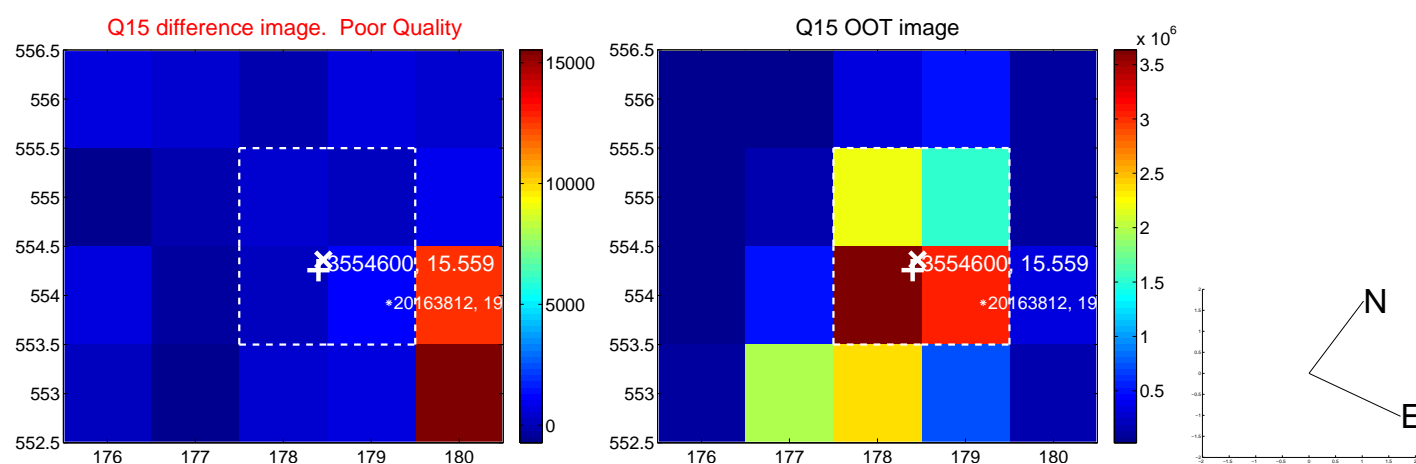
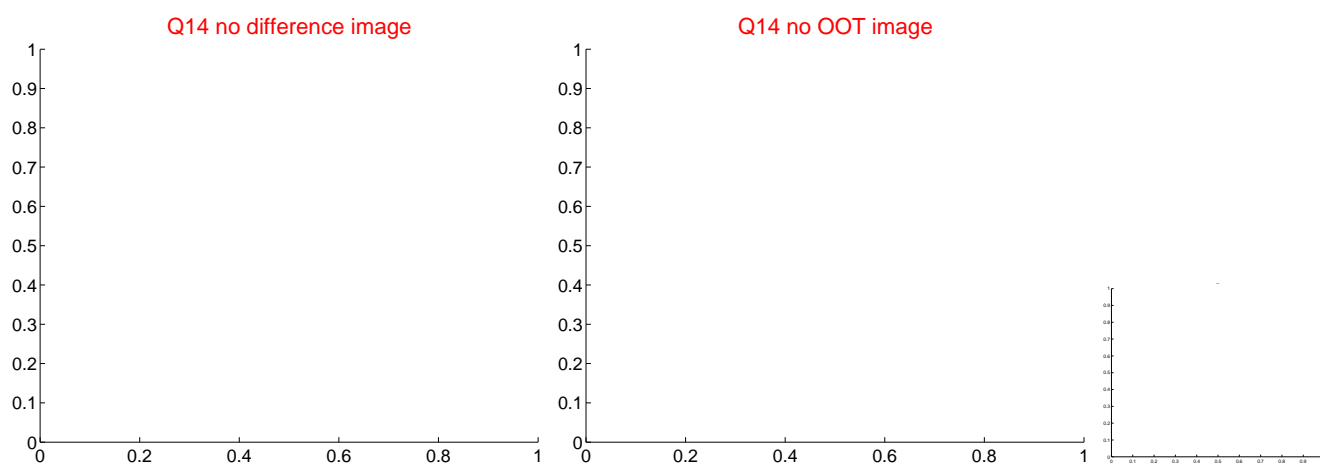
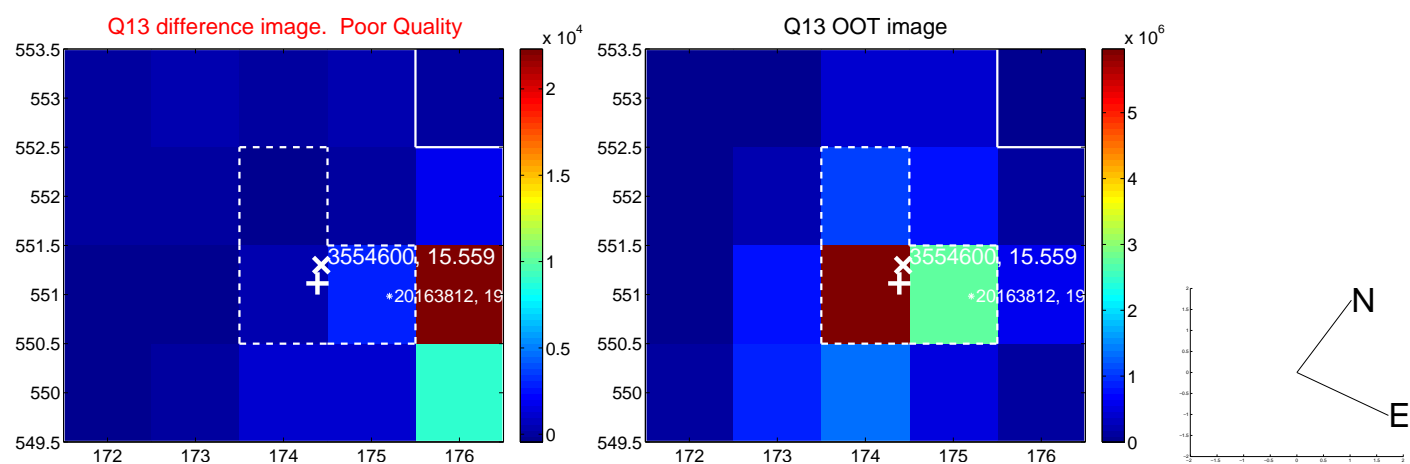




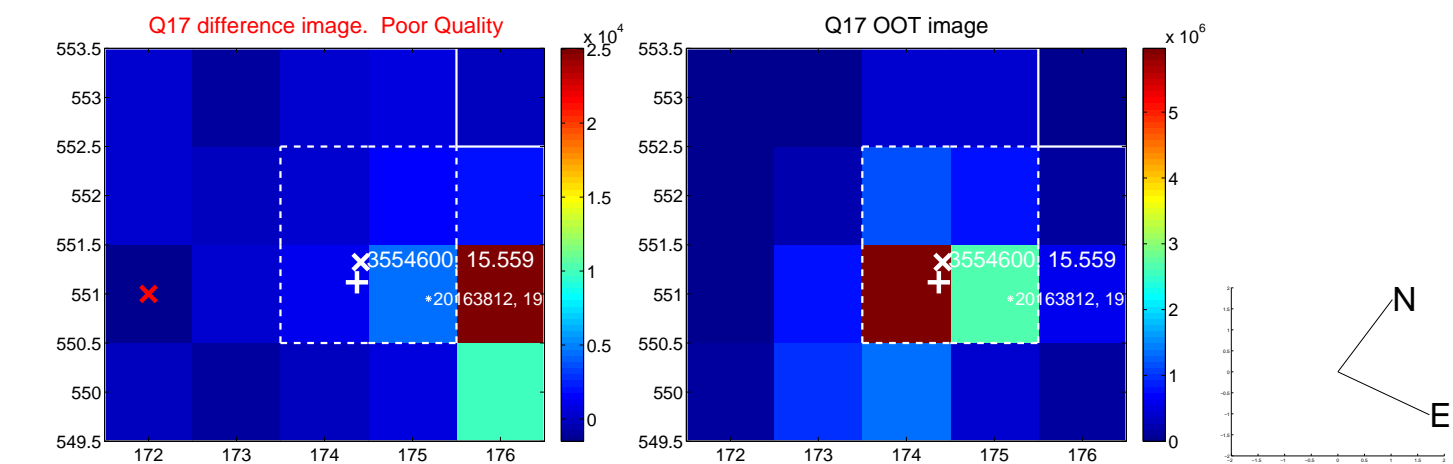
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



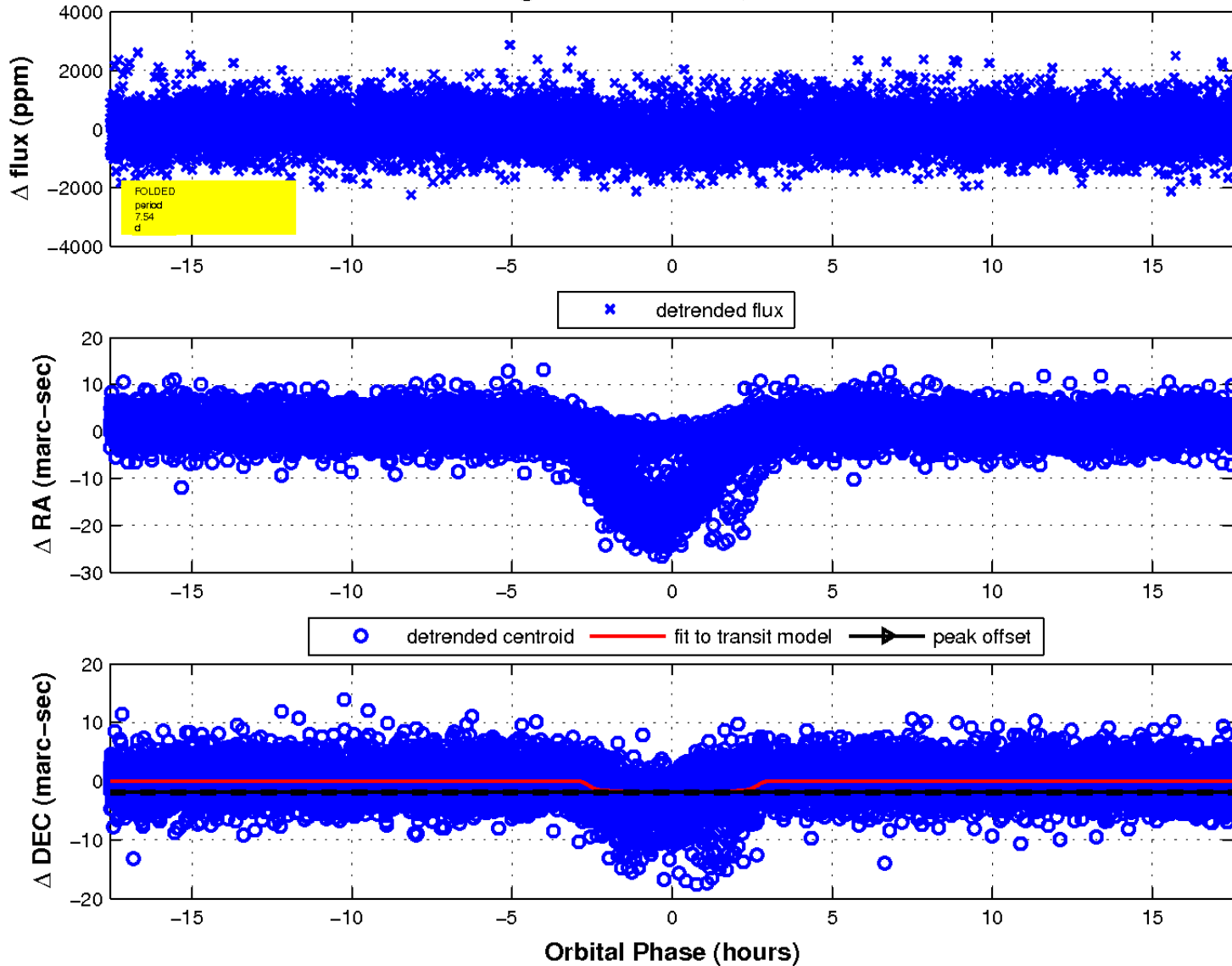
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

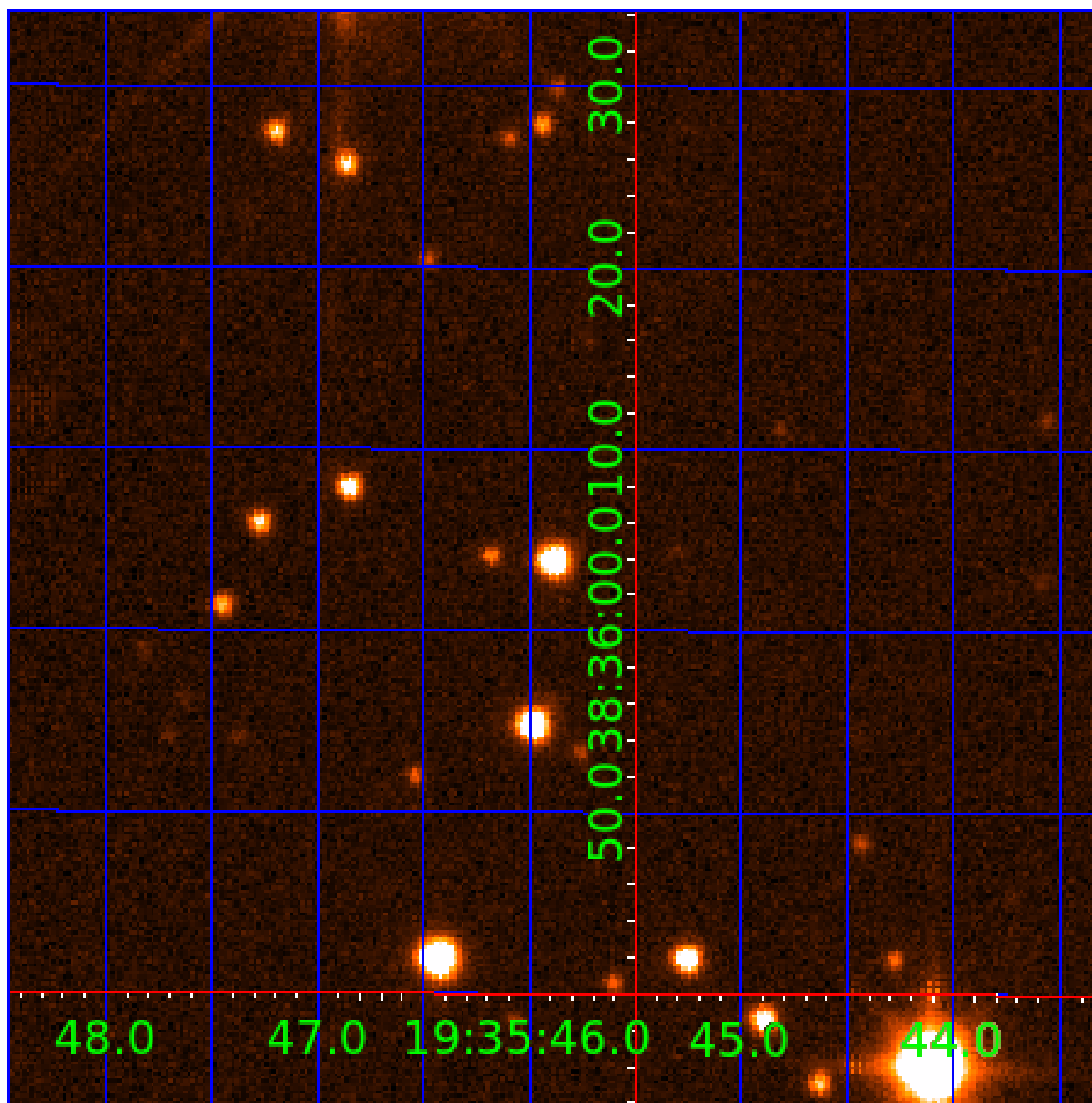


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination





# KIC 003554600

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003554600-01	OBS	No	7.544357	138.611250	235.4	5.851	11.5	12.2	0.82	5657	1.52	116.69
003554600-02	OBS	0803.01	7.543655	134.096589	241.4	6.628	12.2	13.7	0.82	5657	1.50	116.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003554600-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
003554600-02	OBS	FP	0.00	1	0	1	0	SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

**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 003554600-02

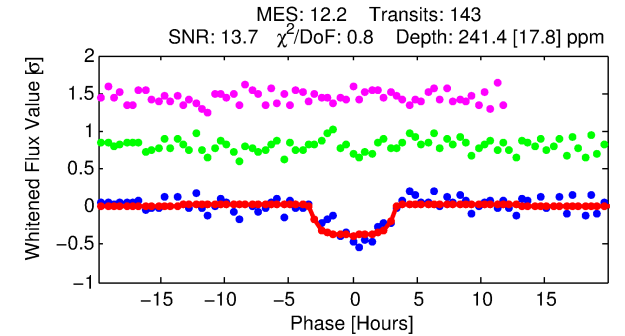
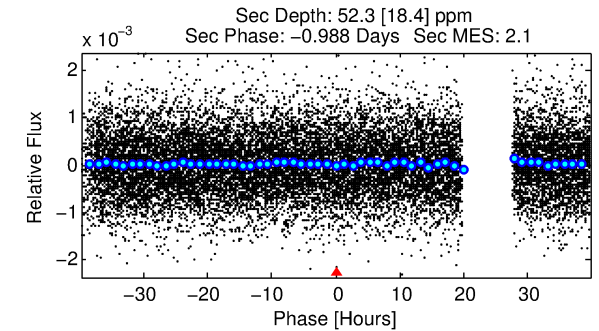
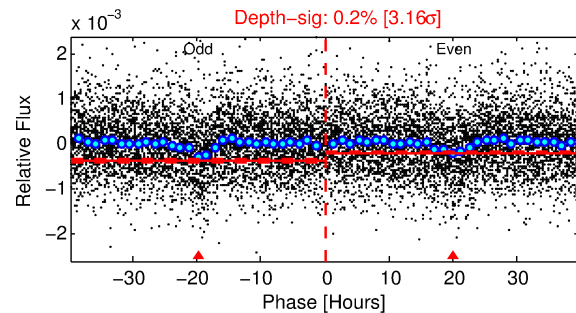
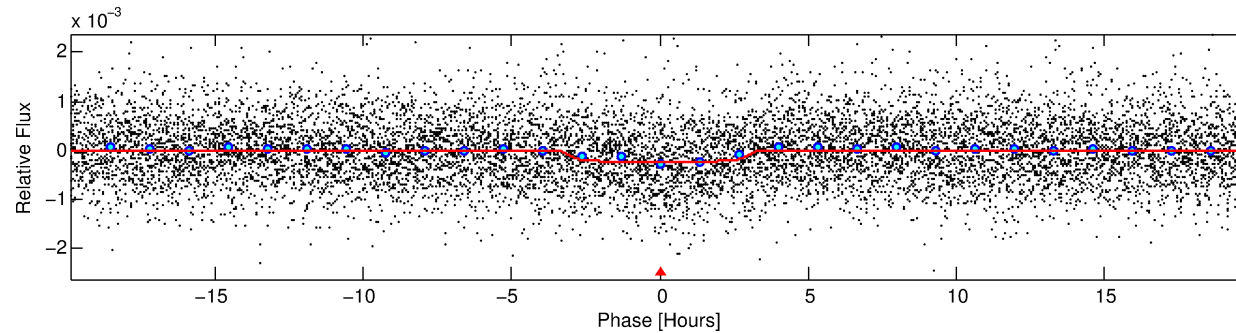
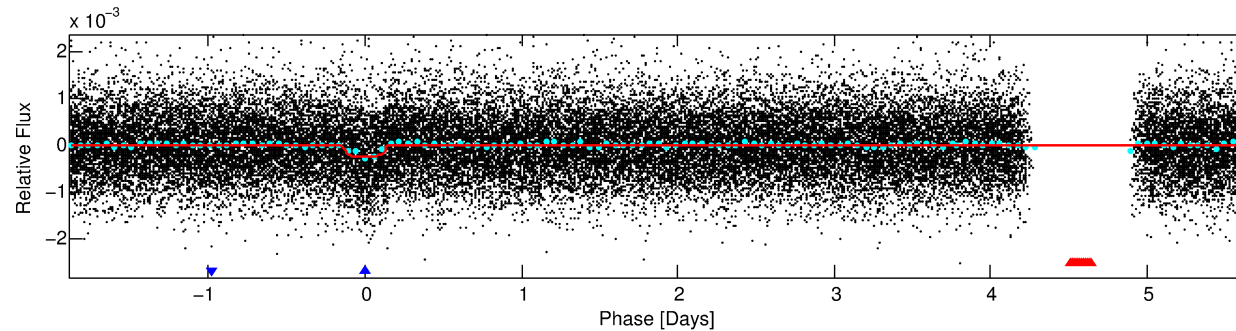
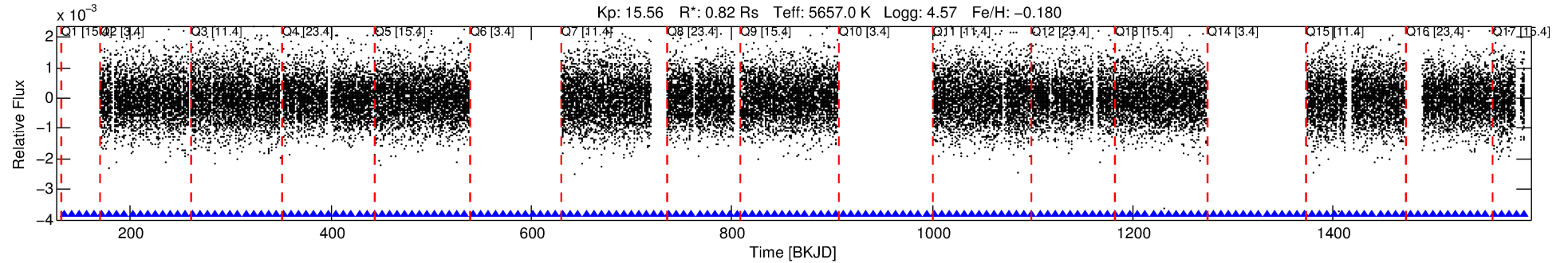
No Significant Match Found

# DV One-Page Summary

KIC: 3554600 Candidate: 2 of 2 Period: 7.544 d

KOI: K00803.01 Corr: 0.902

Kp: 15.56 R\*: 0.82 Rs Teff: 5657.0 K Logg: 4.57 Fe/H: -0.180



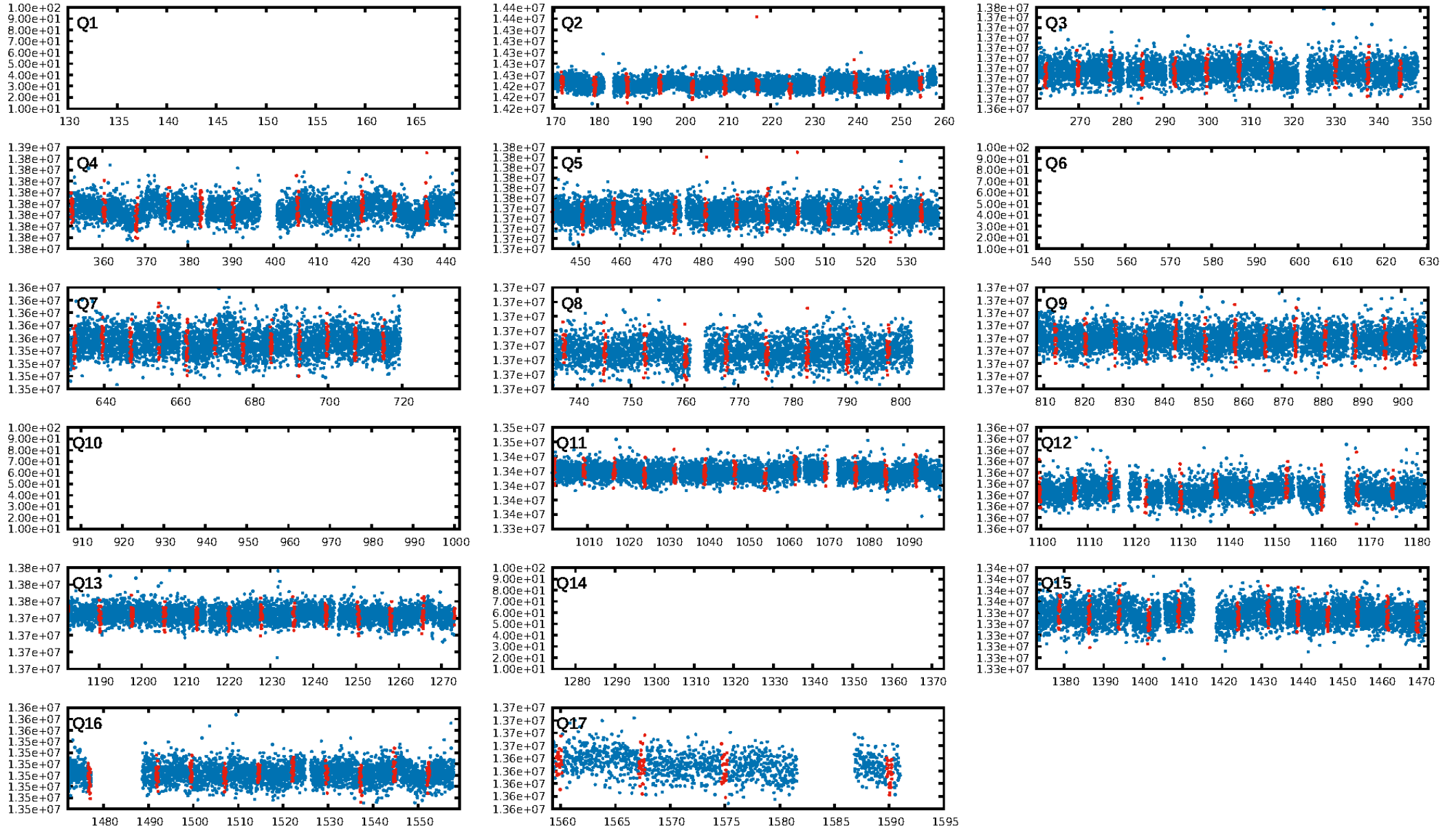
## DV Fit Results:

Period = 7.54366 [0.00008] d  
Epoch = 134.0966 [0.0085] BKJD  
Rp/R\* = 0.0166 [0.0040]  
a/R\* = 4.52 [4.76]  
b = 0.88 [0.29]  
Seff = 116.70 [35.66]  
Teq = 838 [64] K  
Rp = 1.50 [0.50] Re  
a = 0.0731 [0.0143] AU  
Ag = 68.59 [45.17] [1.50σ]  
Teff = 3729 [566] K [5.0σ]

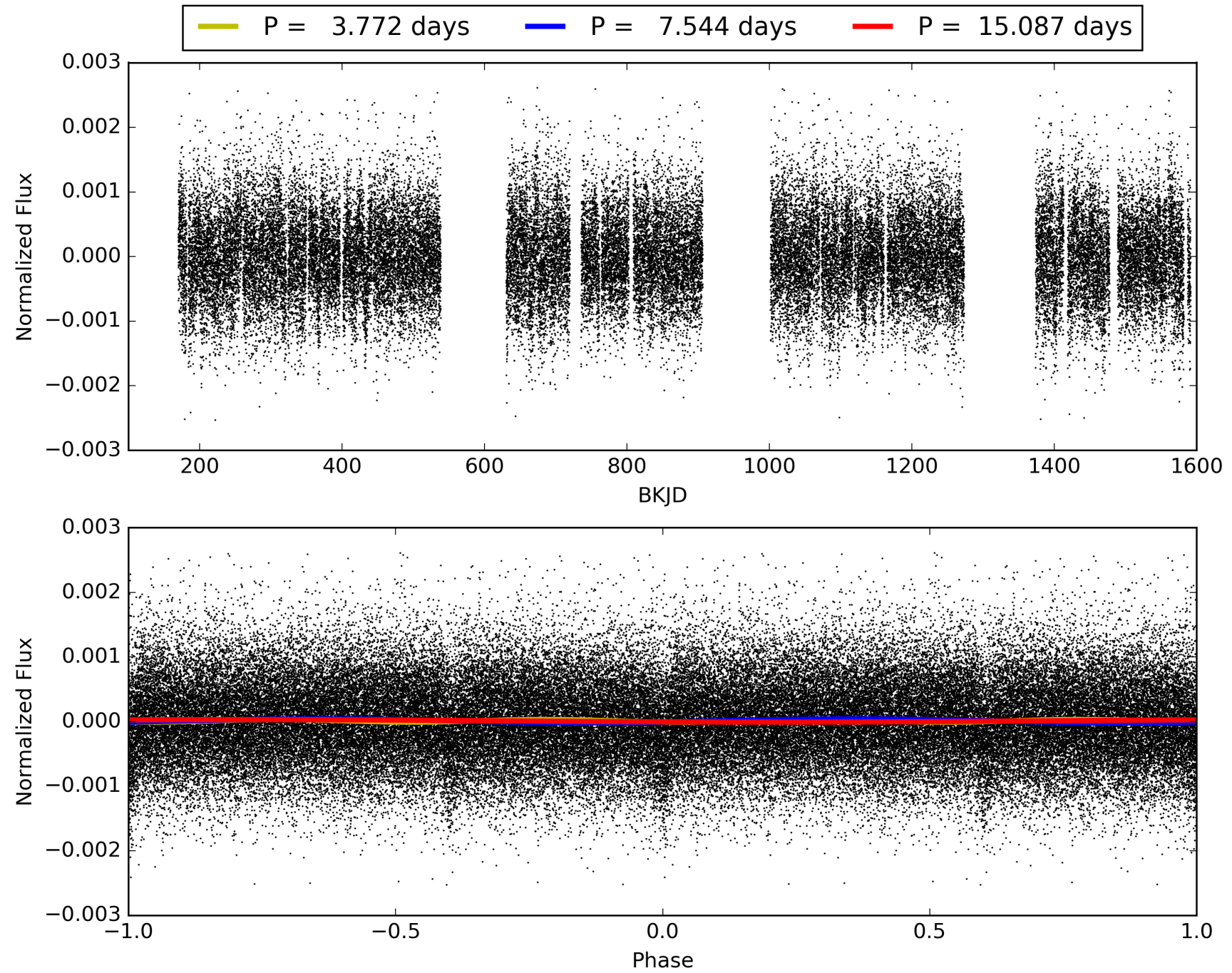
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.2% [0.00σ]  
ModelChiSquare2-sig: 15.5%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 1.93e-33  
RollingBand-fgt: 1.00 [139/139]  
GhostDiagnostic-chr: -0.6292  
Centroid-sig: N/A  
Centroid-so: 33.399 arcsec [35.76σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [13/13]

# TCE 003554600-02, PDC Light Curves



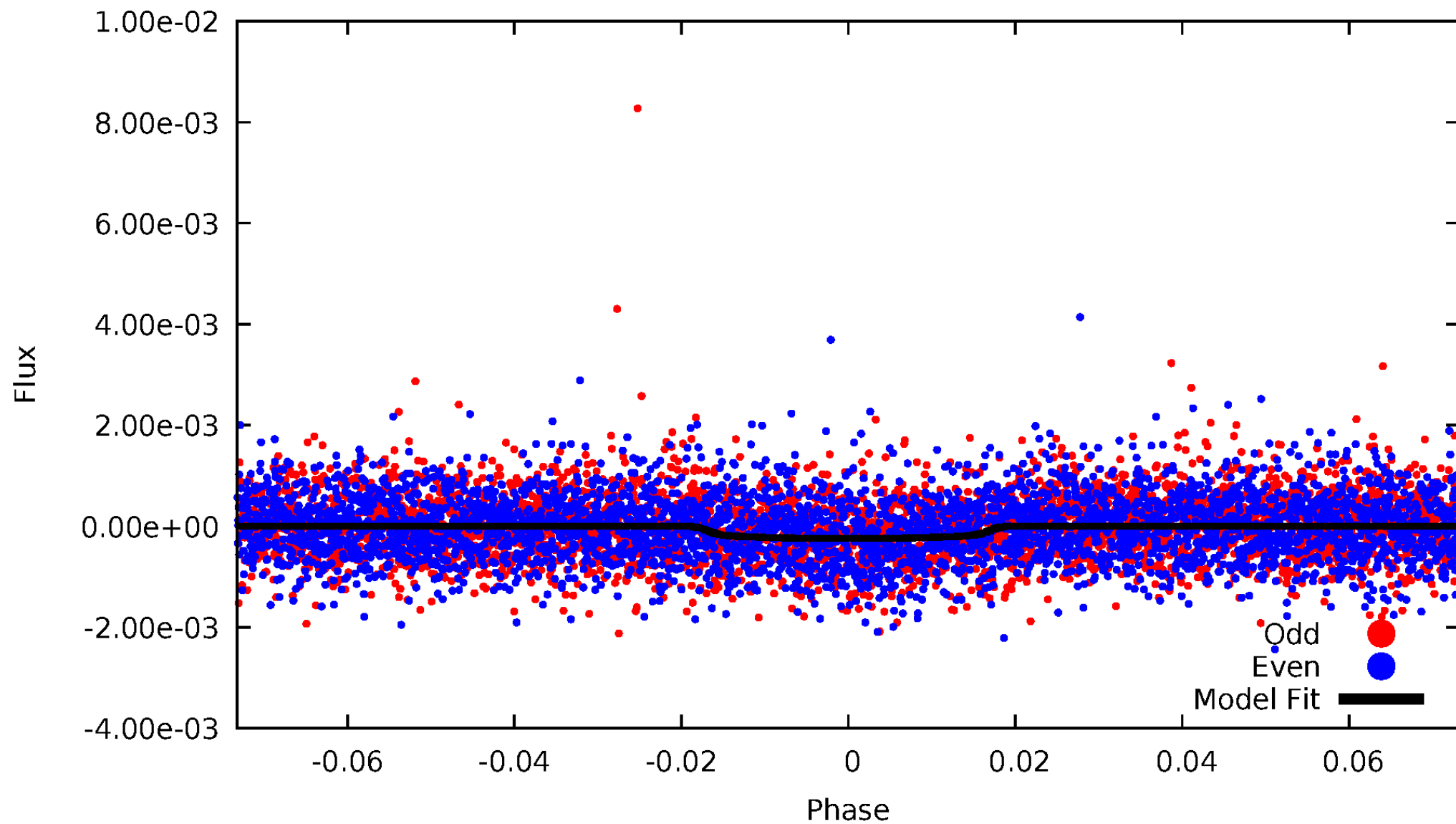
TCE 003554600-02





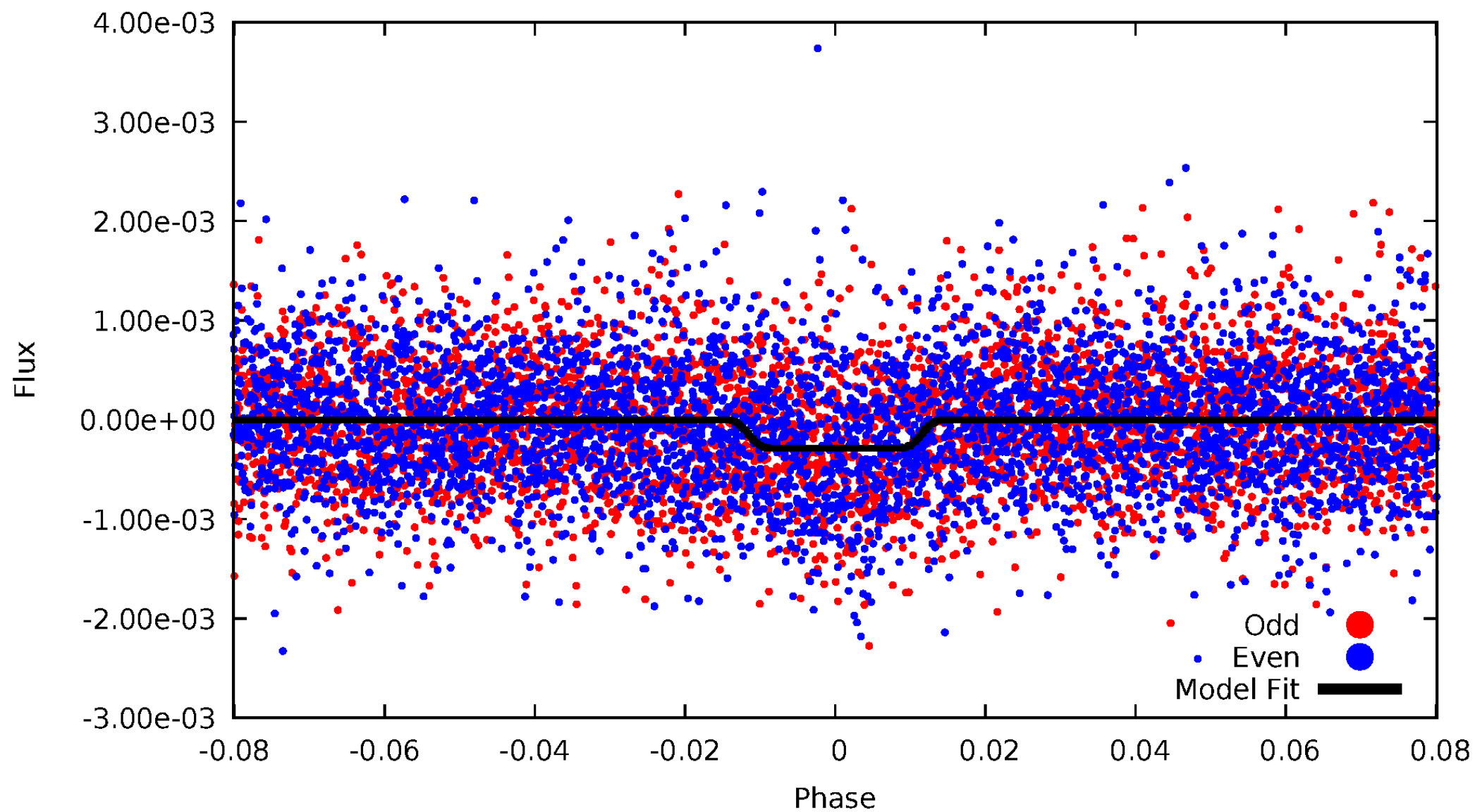
# DV Odd/Even

TCE 003554600-02



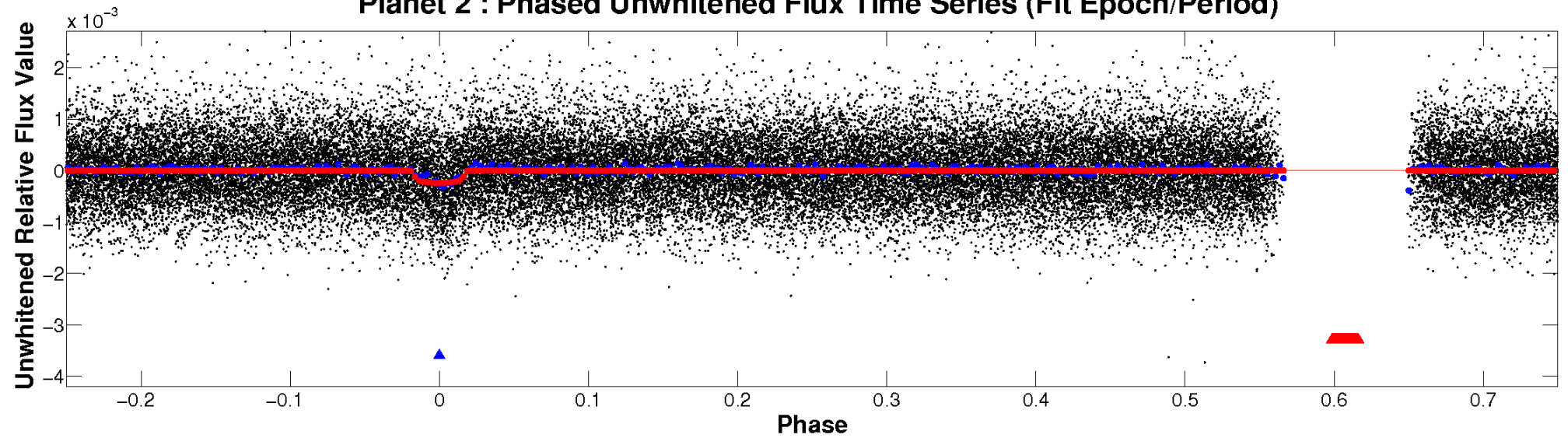
# ALT Odd/Even

TCE 003554600-02

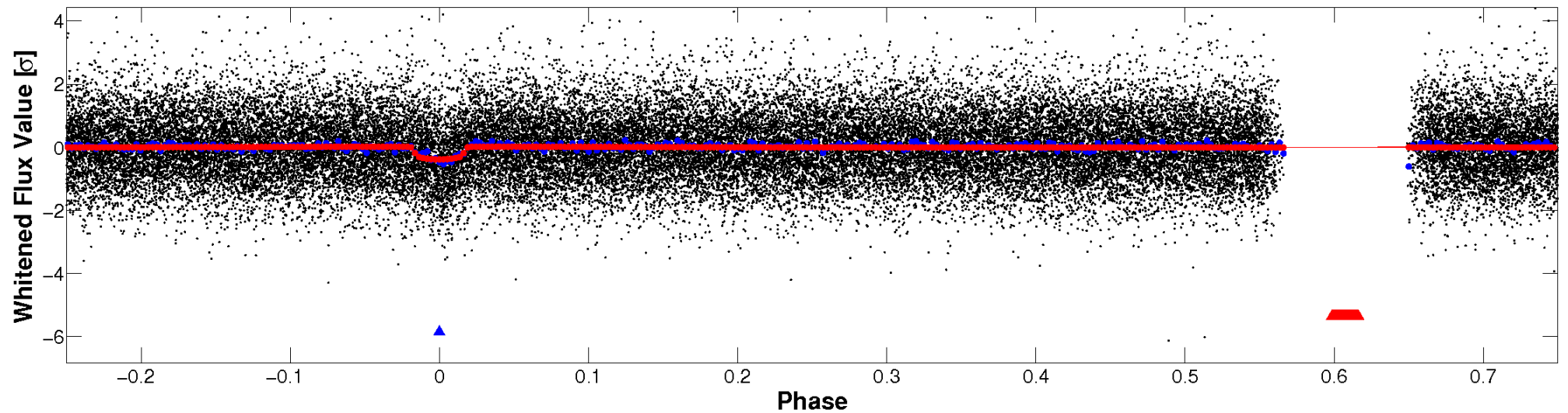


# Non-Whitened Vs. Whitened Light Curve

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

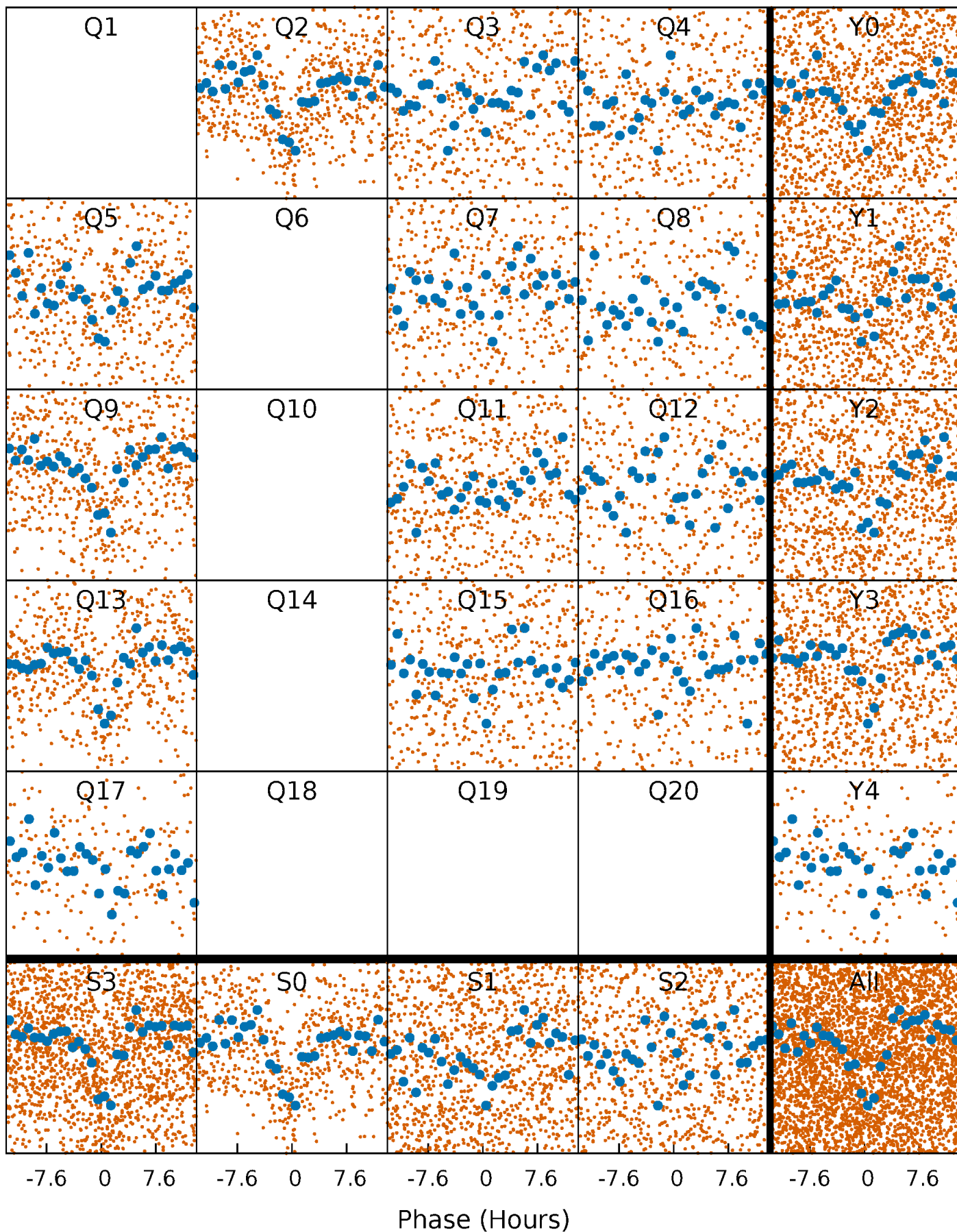


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

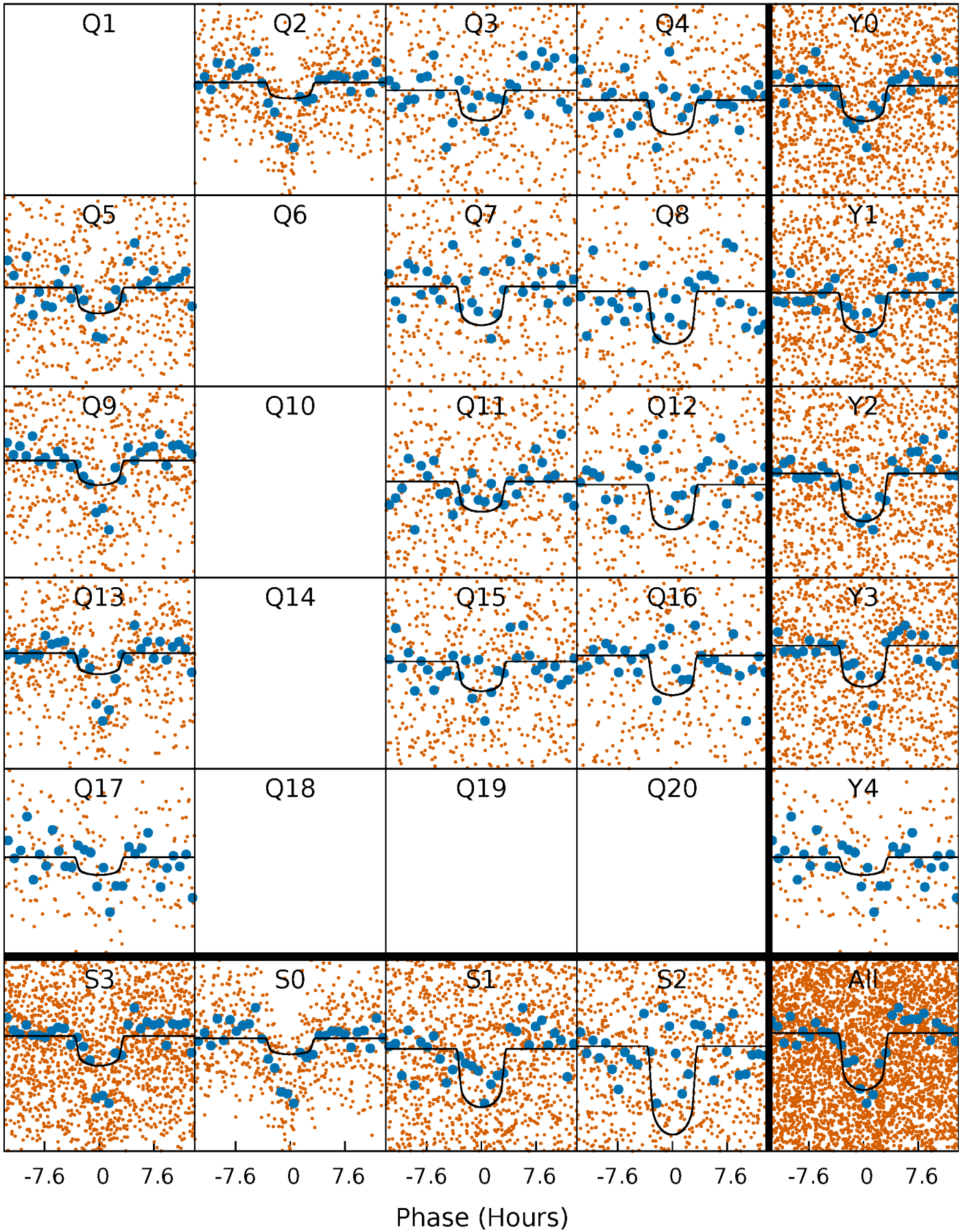
TCE 003554600-02    P= 7.543655 Days     $T_0=134.096589$  (BKJD)





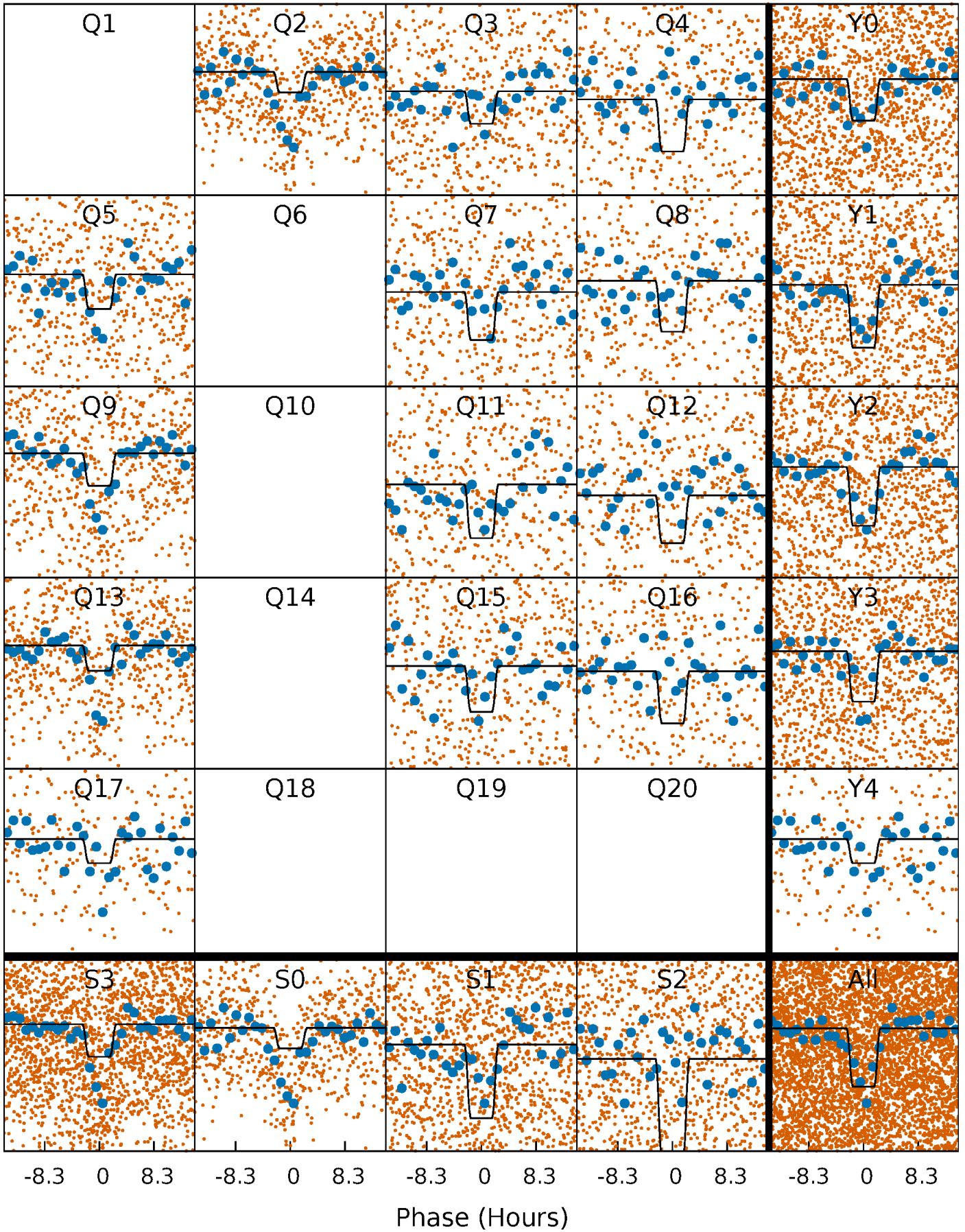
# DV Quarter-Phased Transit Curves

TCE 003554600-02   P= 7.543655 Days    $T_0=134.096589$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

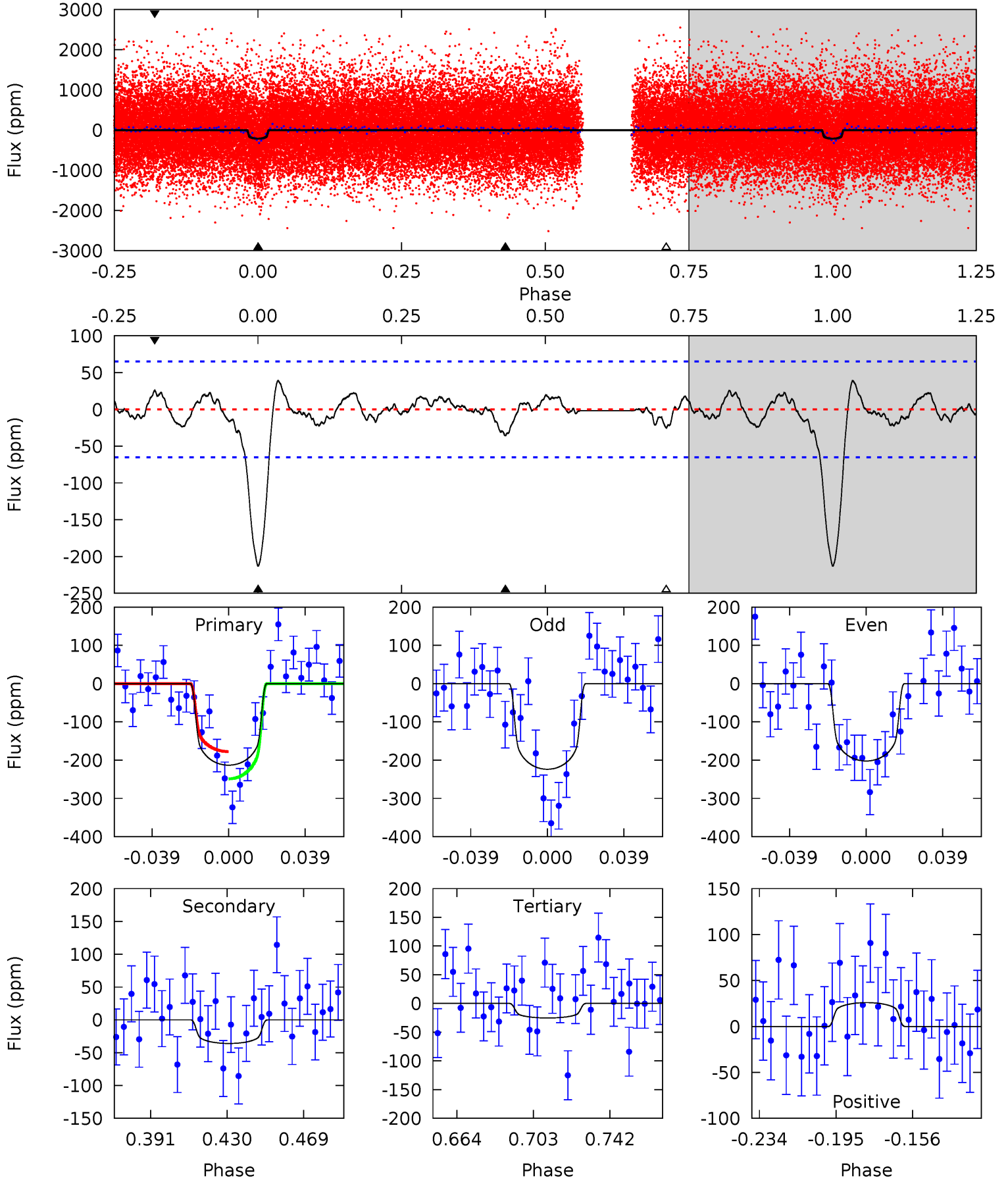
TCE 003554600-02    P= 7.543882 Days     $T_0=134.089203$  (BKJD)



# DV Model-Shift Uniqueness Test

003554600-02, P = 7.543655 Days, E = 134.096589 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
15.6	2.63	1.85	1.89	4.76	2.06	0.88	13.7	13.7	0.78	0.74	0.79	1.09	0.15	2.61

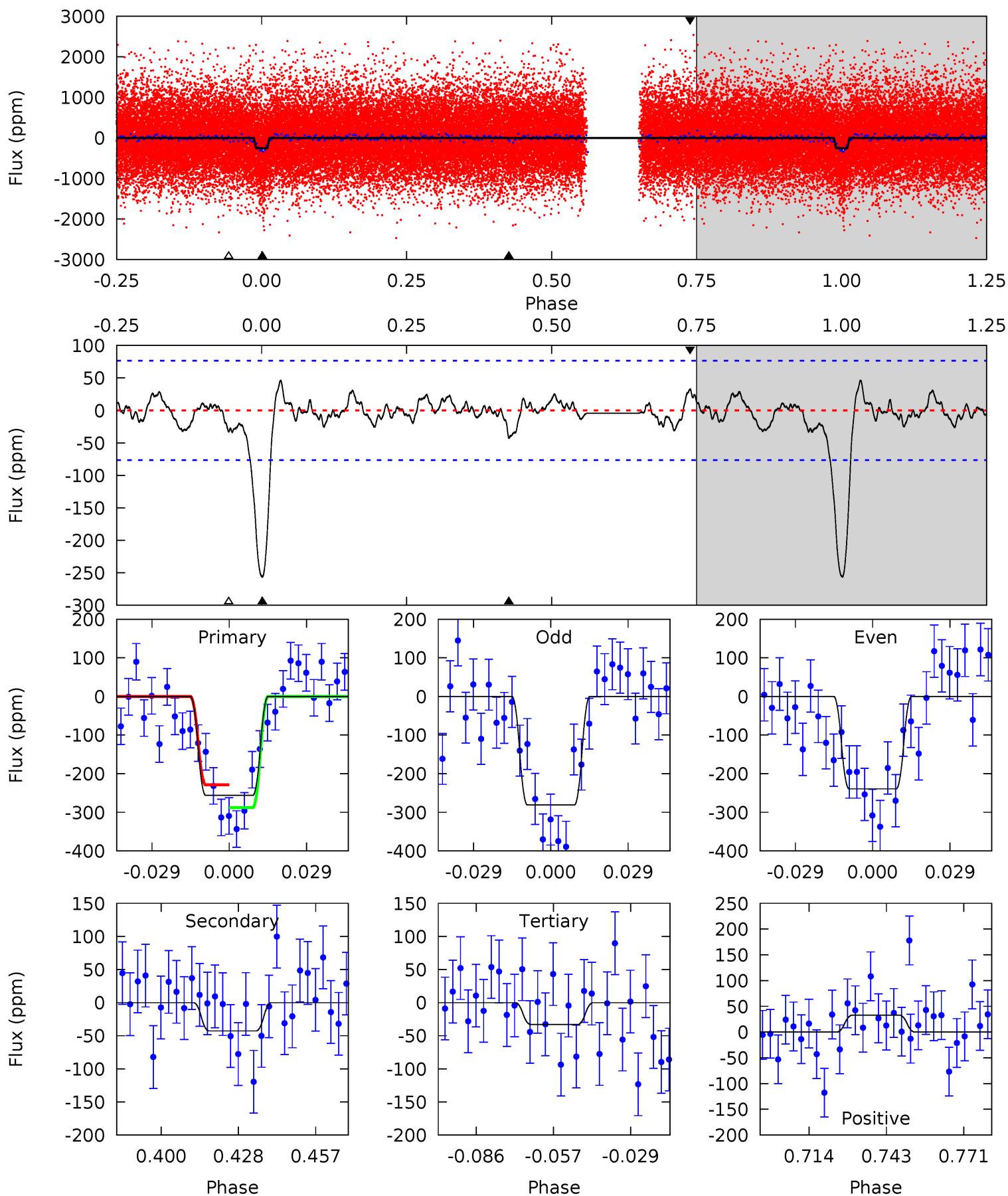




# Alt Model-Shift Uniqueness Test

003554600-02, P = 7.543882 Days, E = 134.089203 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
16.1	2.70	2.08	2.07	4.82	2.19	0.93	14.0	14.1	0.62	0.63	1.31	1.09	0.15	1.86



### Stellar Parameters For KIC 003554600

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5657^{+152}_{-169}$	$4.567^{+0.038}_{-0.152}$	$-0.180^{+0.300}_{-0.300}$	$0.824^{+0.194}_{-0.078}$	$0.919^{+0.083}_{-0.104}$	$2.319^{+0.474}_{-0.996}$
	+3%/-3%	+1%/-3%	+167%/-167%	+24%/-9%	+9%/-11%	+20%/-43%
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 003554600-02 / KOI 0803.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-36 \pm 14$	$1.53^{+0.44}_{-0.39}$	$1196^{+69}_{-52}$	$3791^{+489}_{-414}$	$43^{+42}_{-22}$
Alt.	$-43 \pm 16$	$1.59^{+0.40}_{-0.41}$	$1194^{+60}_{-50}$	$3830^{+511}_{-405}$	$47^{+48}_{-22}$

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

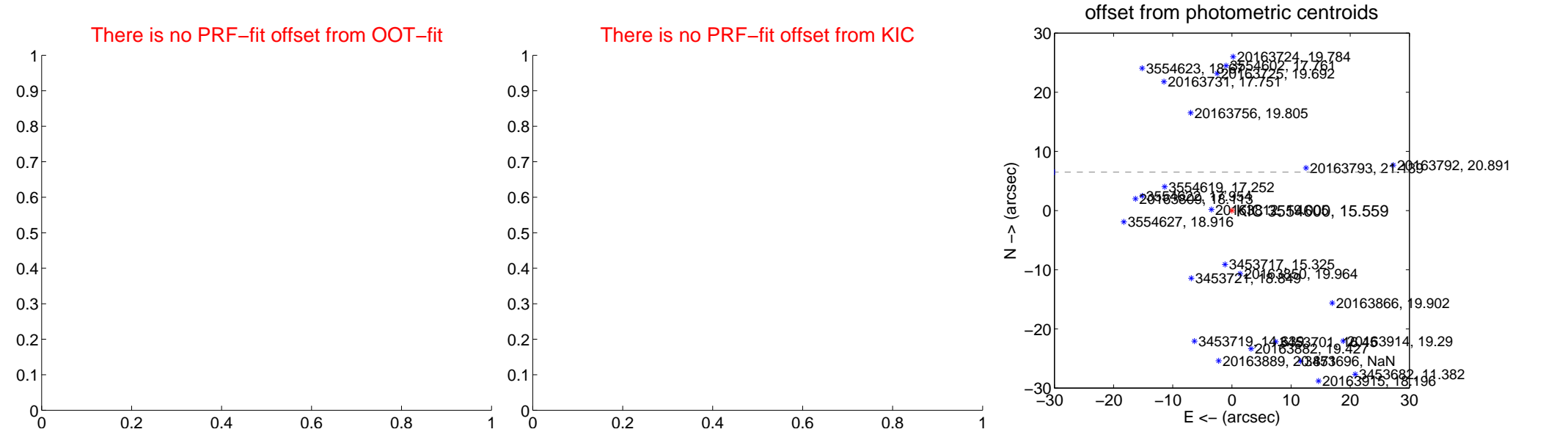
## DV Centroid Data

Supplemental centroid analysis for 003554600-02. Kepler magnitude: 15.56. Transit SNR 13.70

There are 0 quarters with good PRF difference image offsets

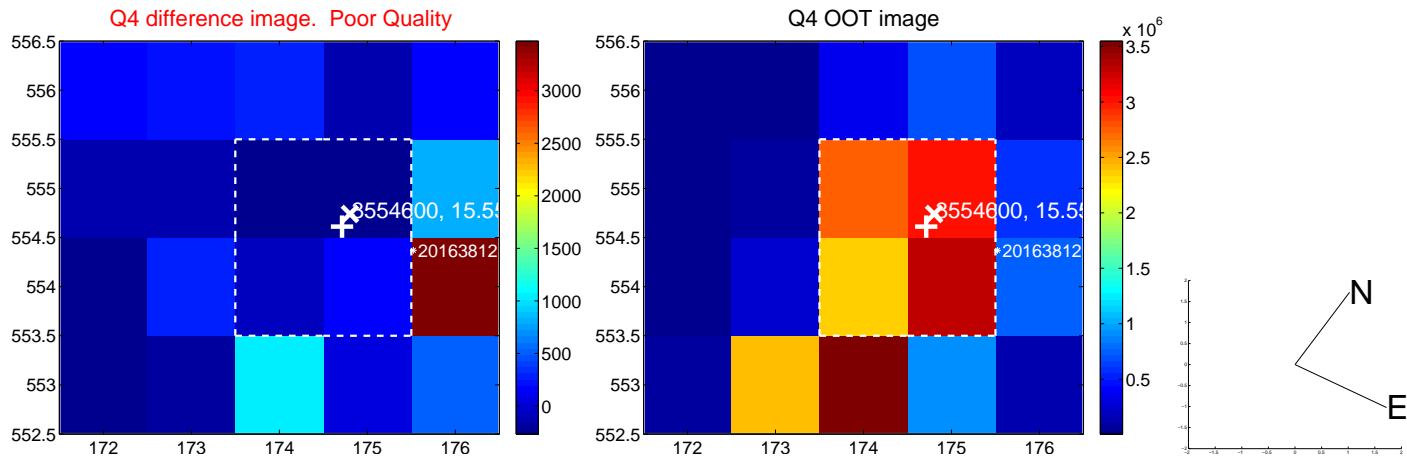
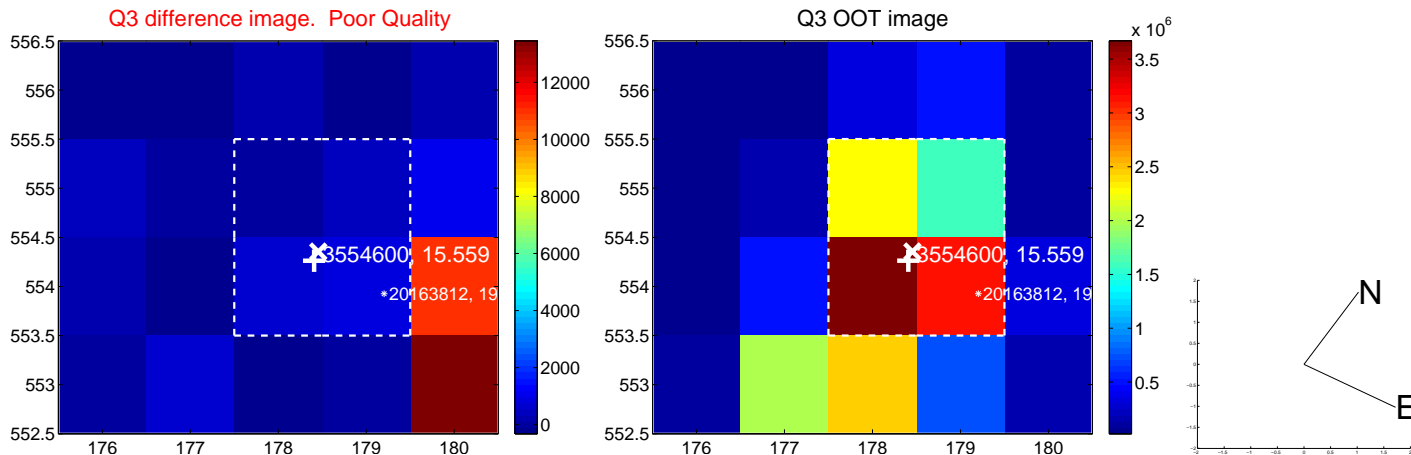
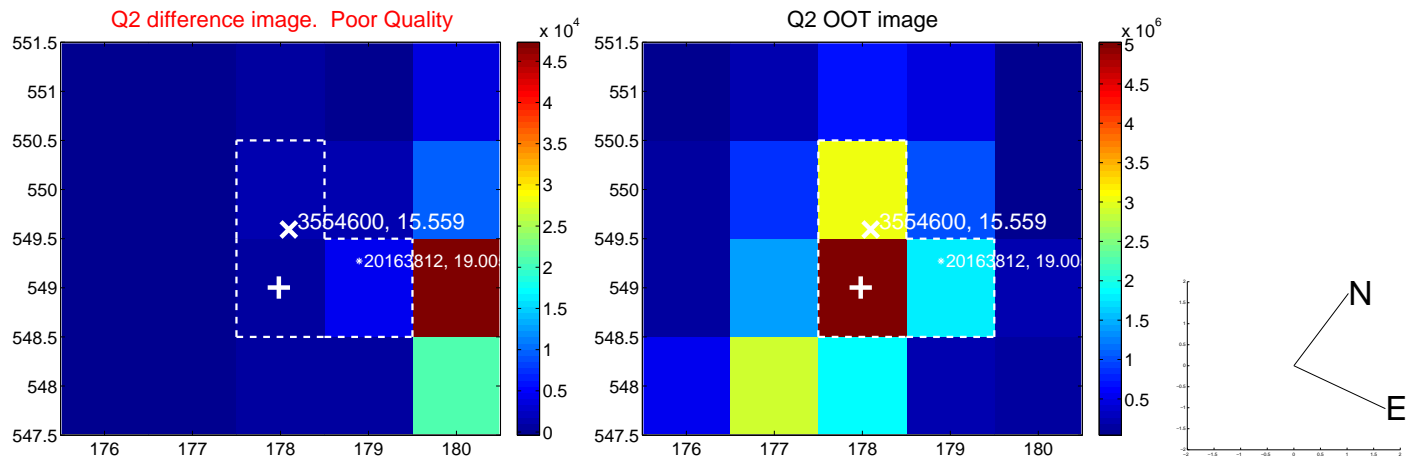
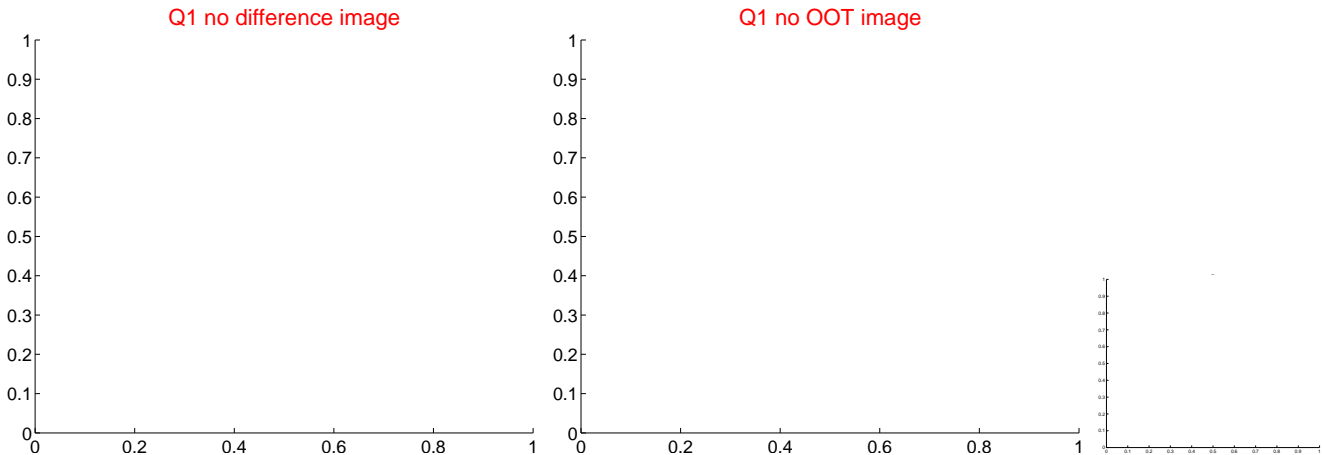
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$33.40 \pm 0.93$	$35.76$	$32.76 \pm 0.93$	$6.49 \pm 0.95$

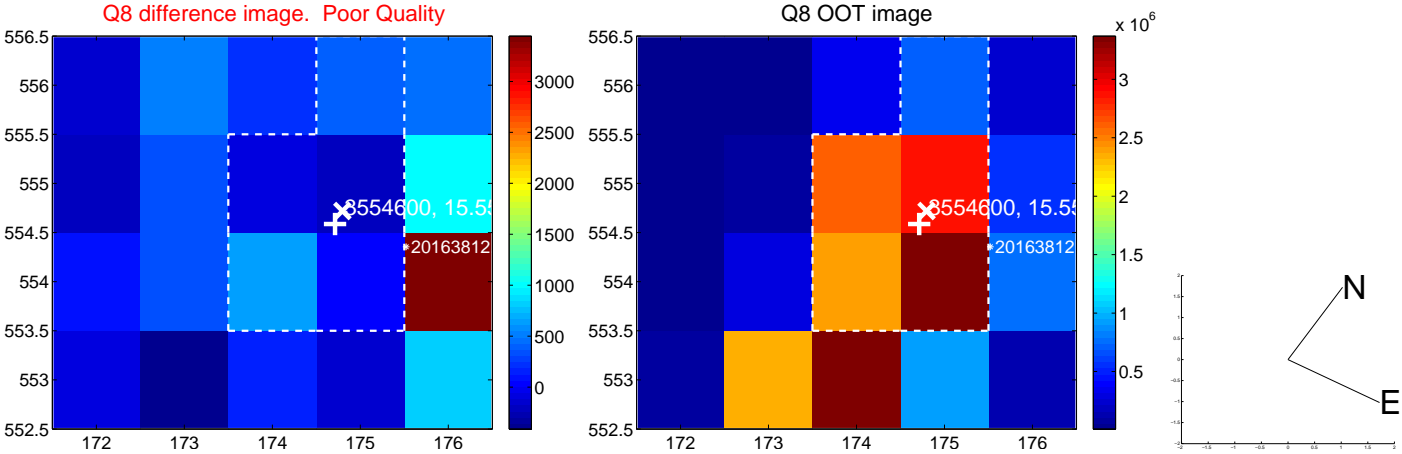
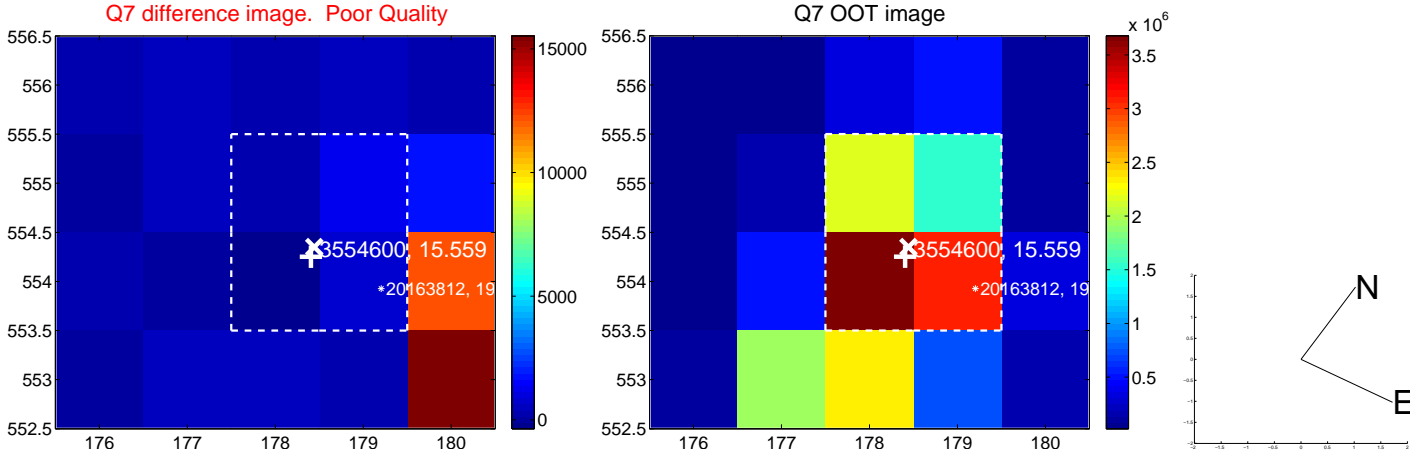
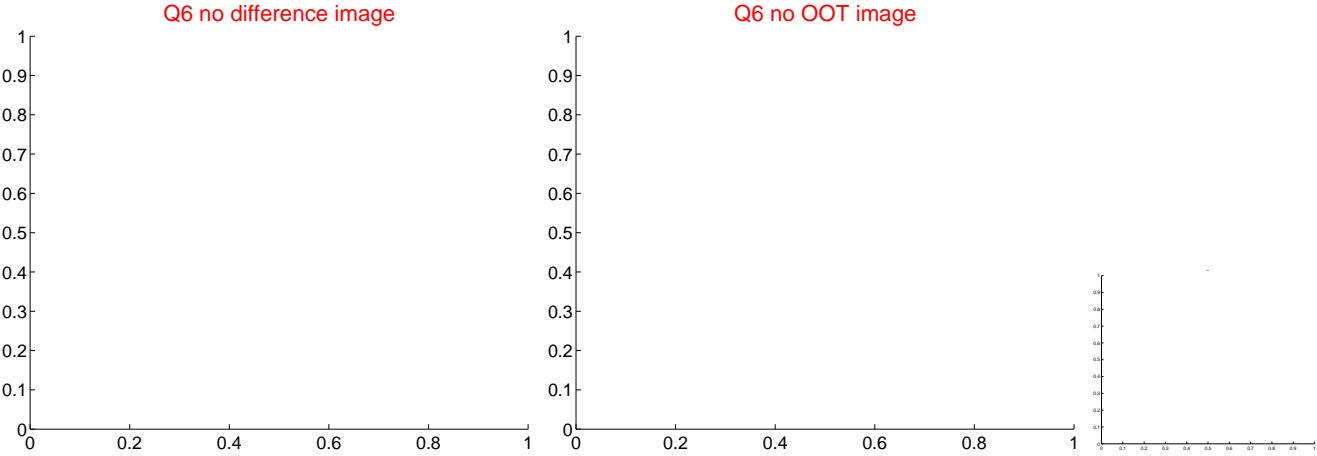
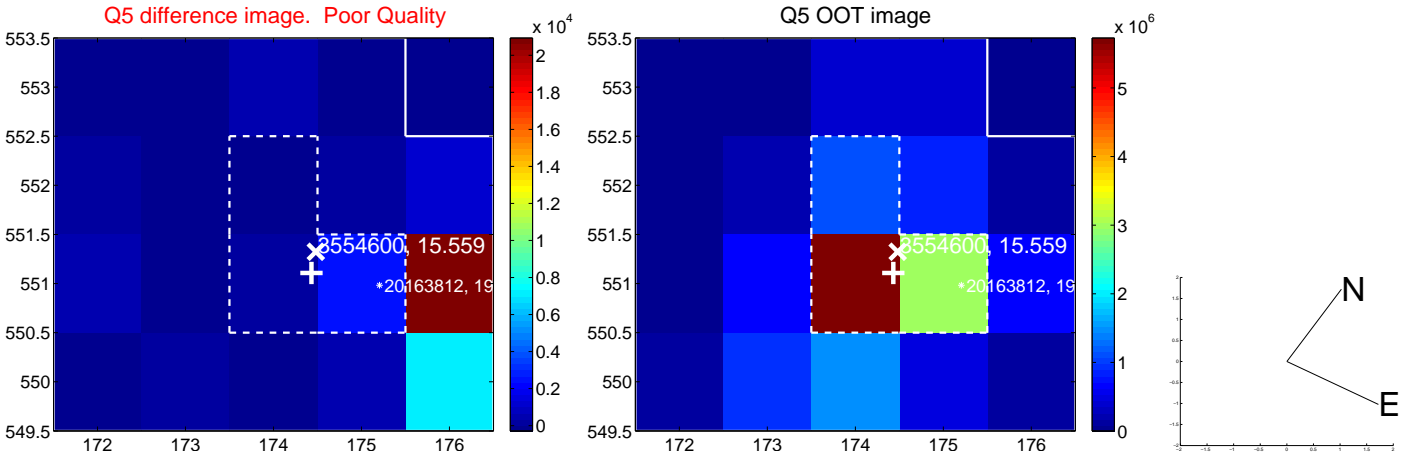


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

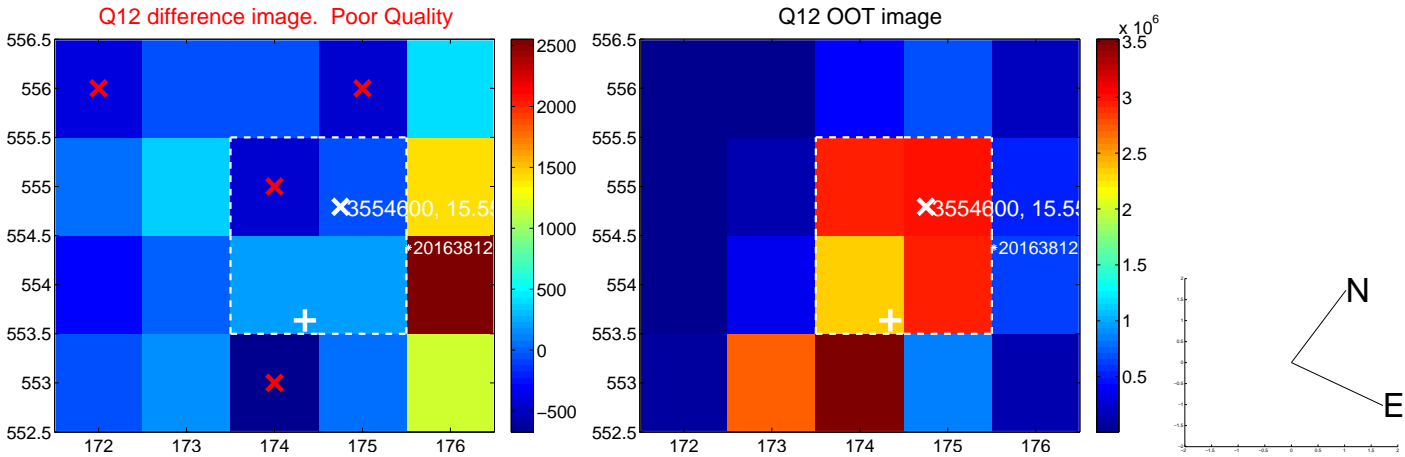
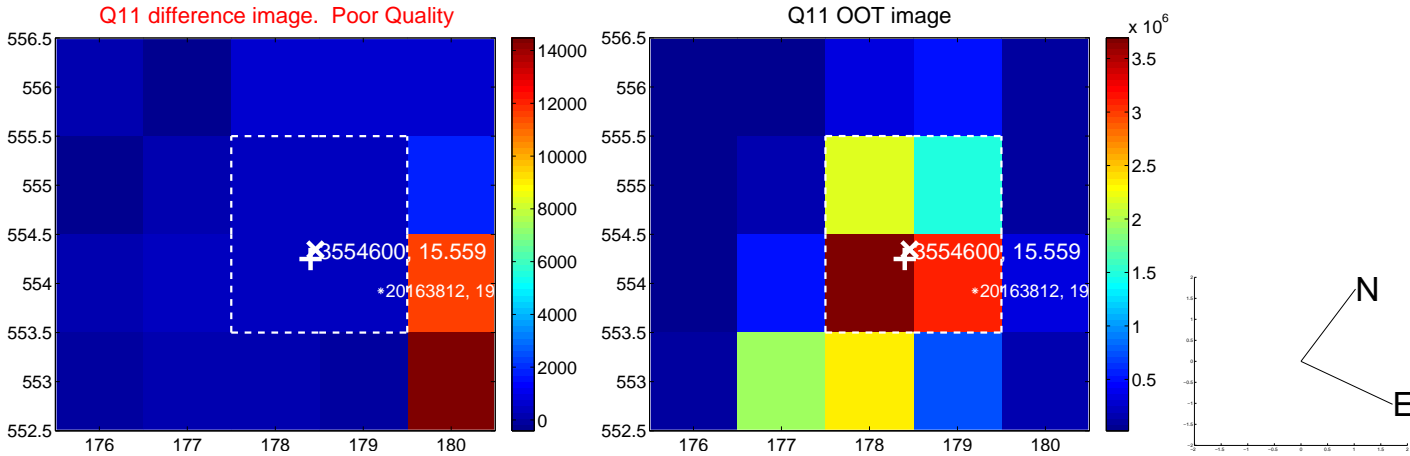
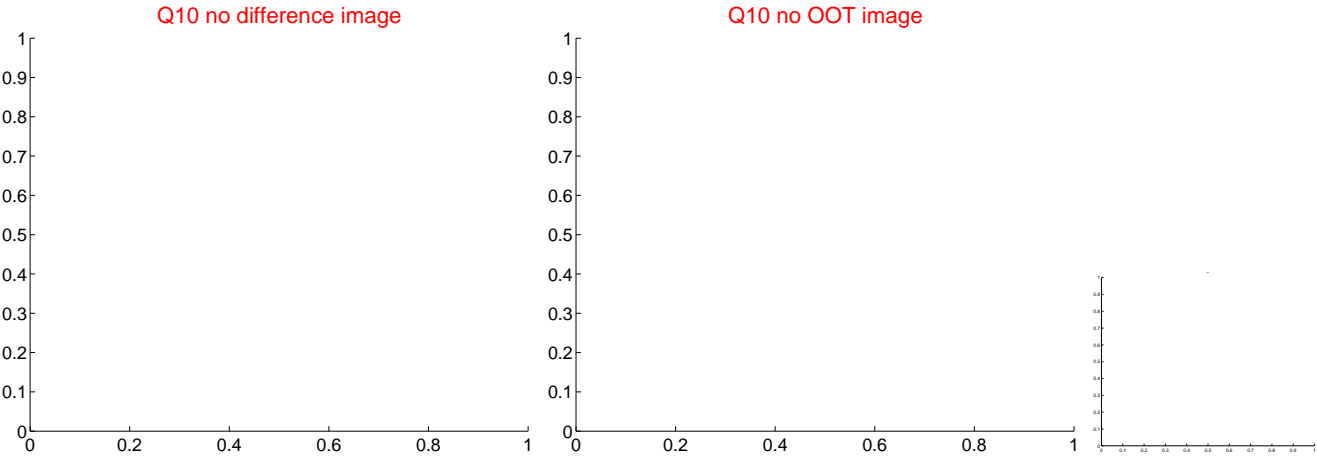
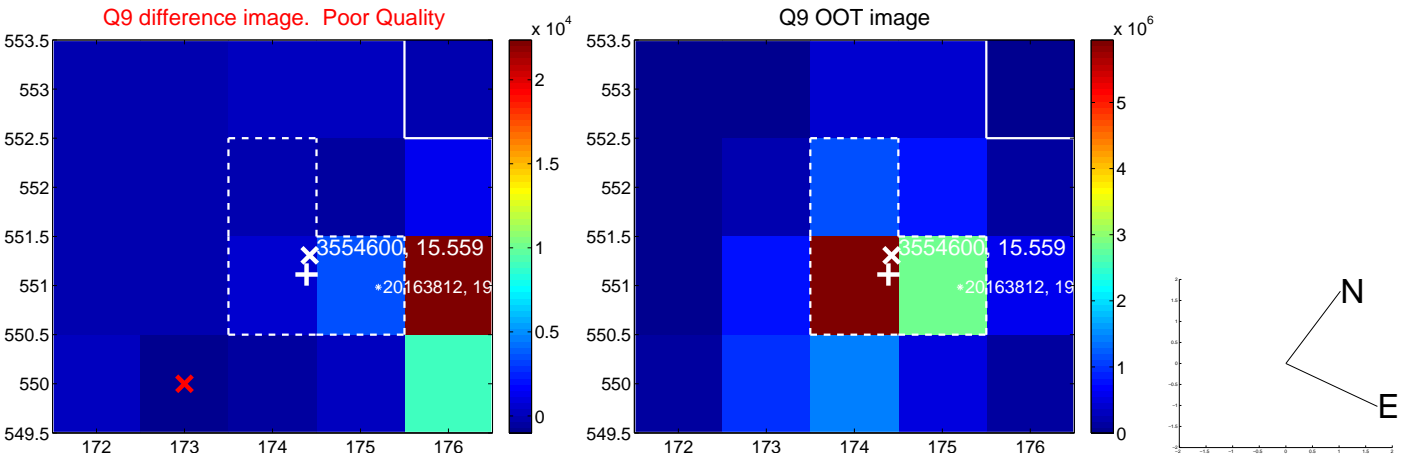
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



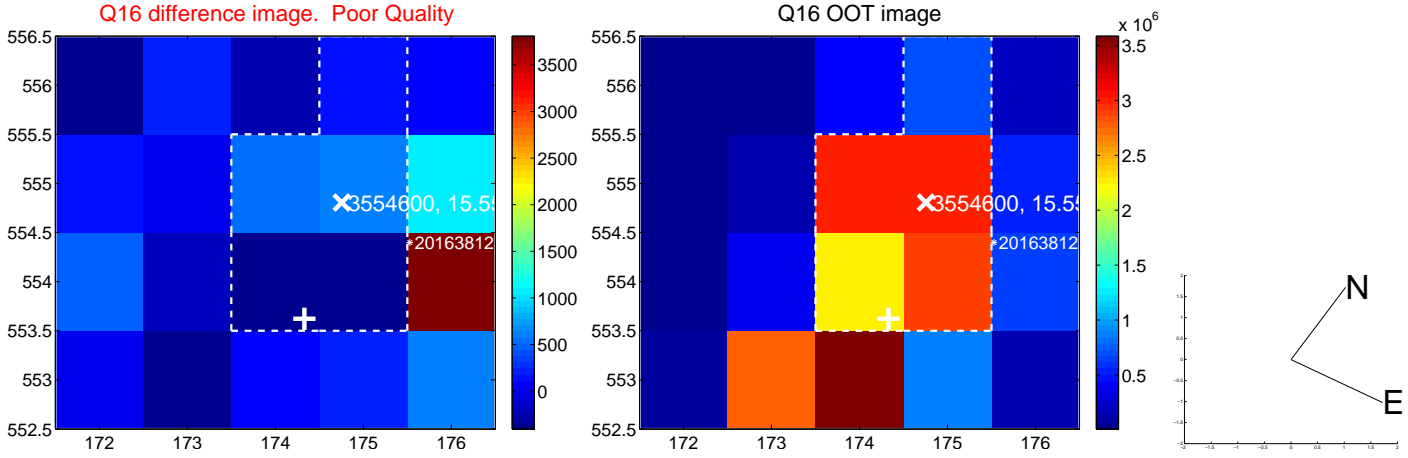
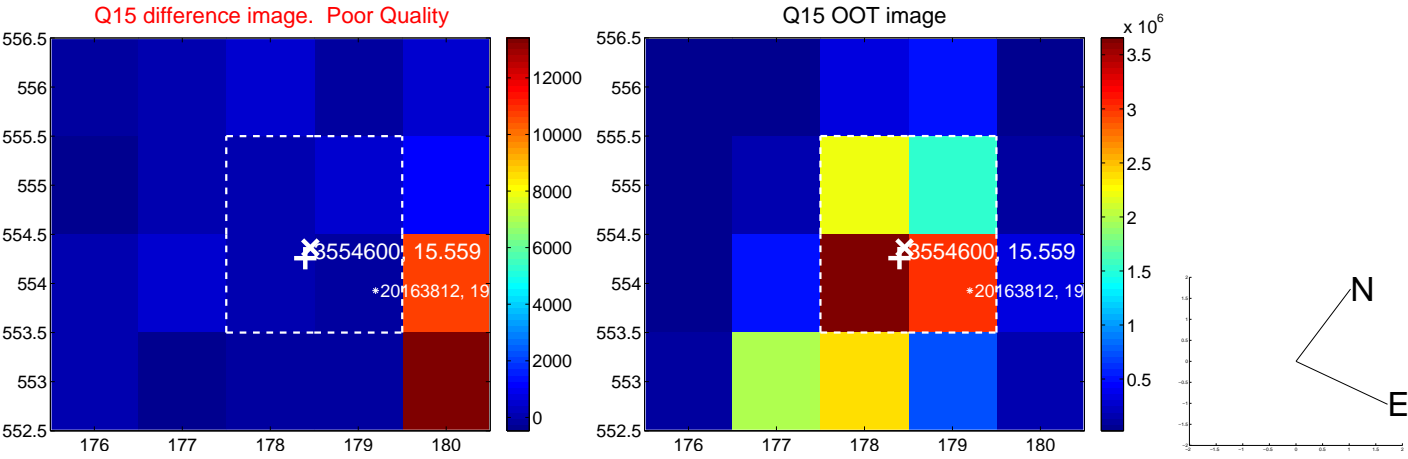
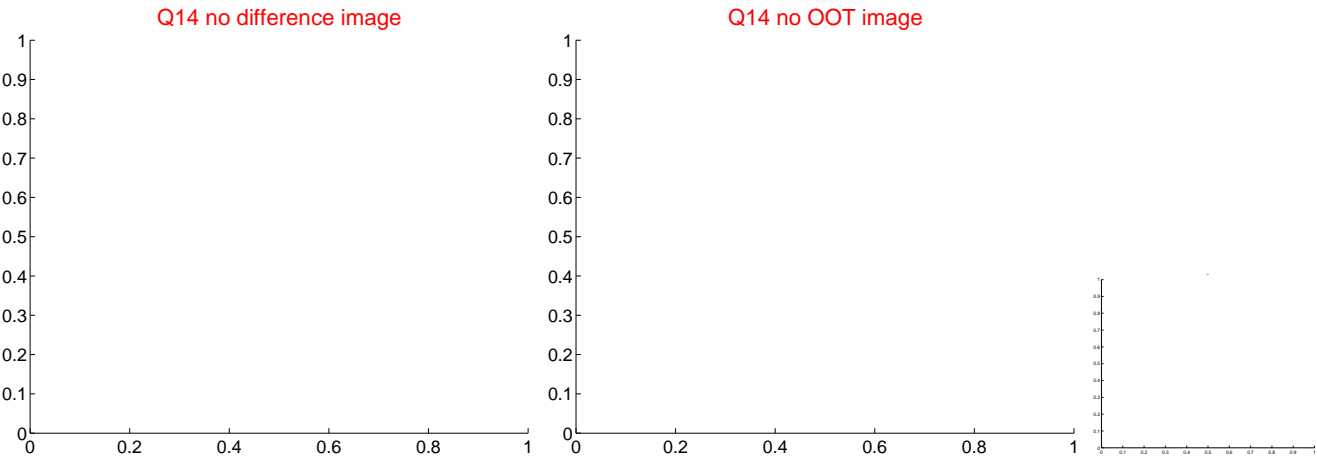
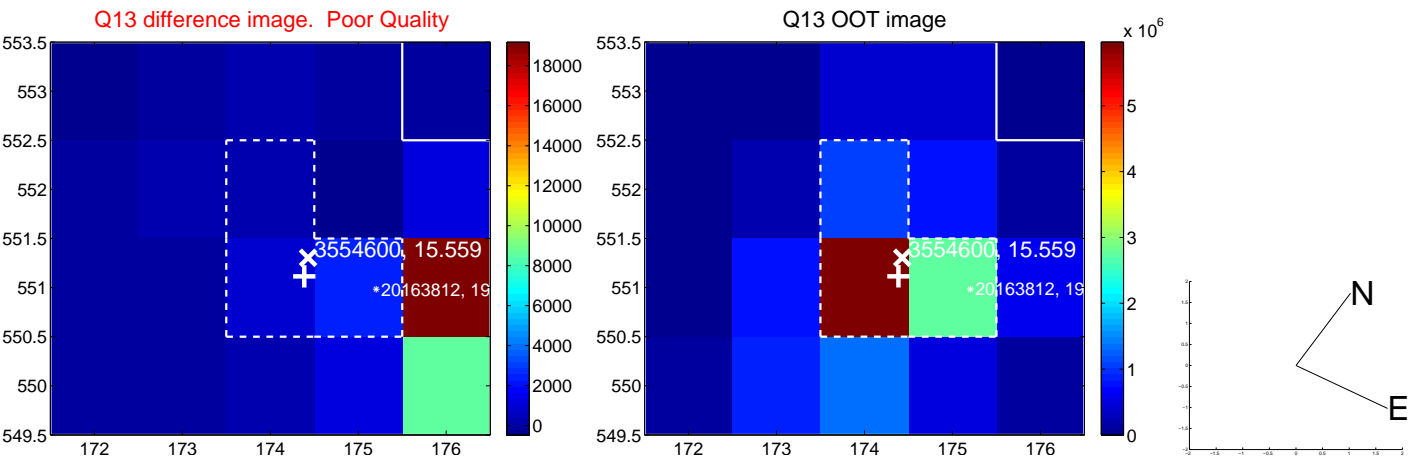
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

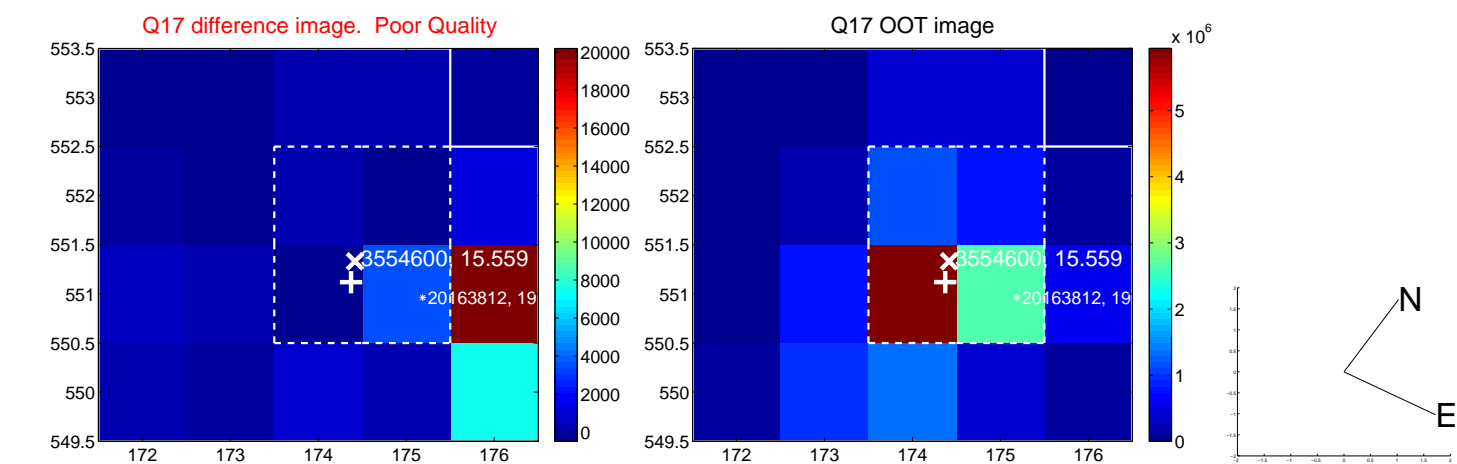


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

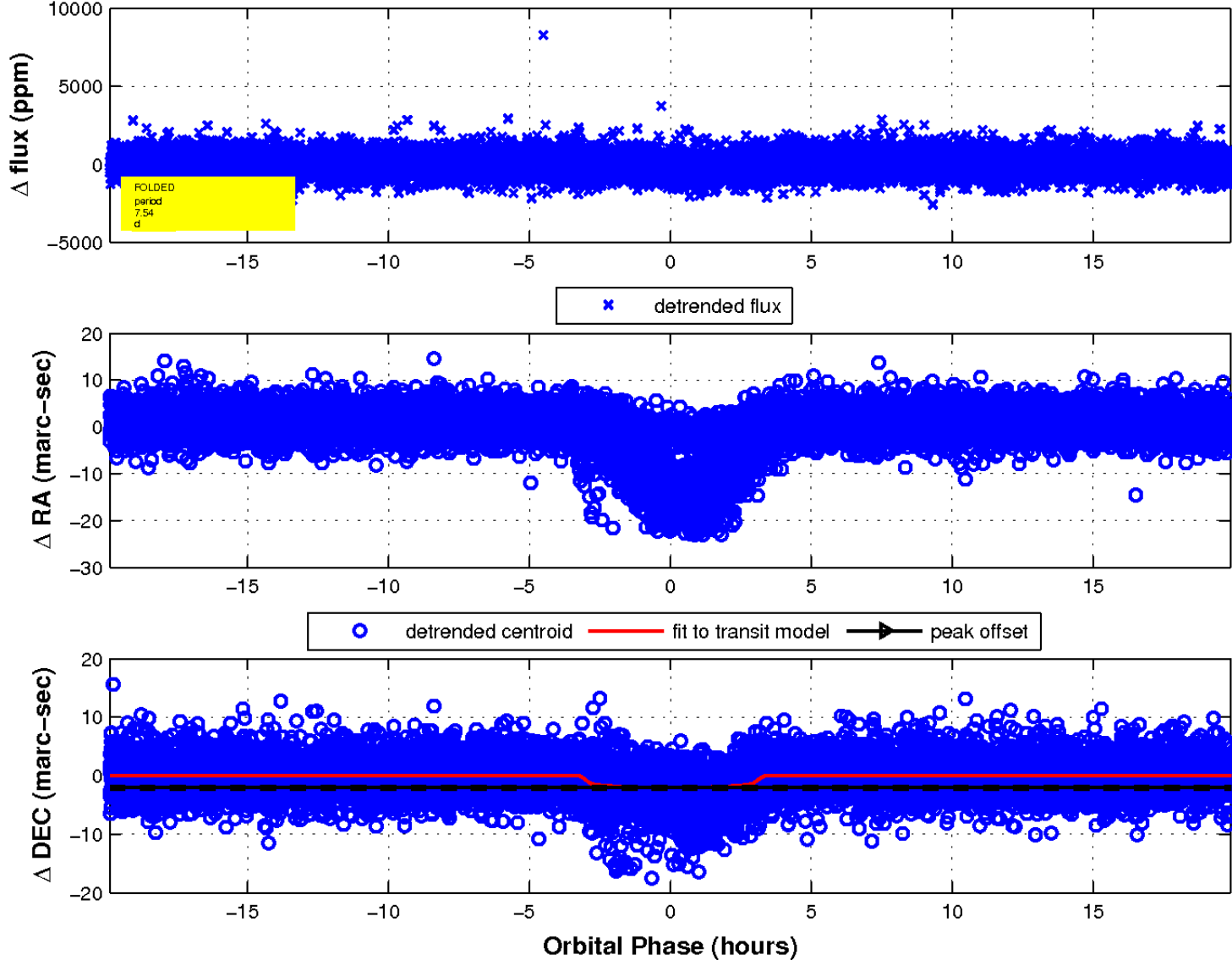




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

