

# KIC 007742534

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007742534-01	OBS	No	18.715828	134.782175	92474.6	9.879	108.2	278.3	2.94	8703	91.21	1478.15
007742534-02	OBS	No	8.216577	131.889119	152740.8	1.500	403.4	-1.0	2.94	8703	118.38	4430.07

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007742534-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007742534-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

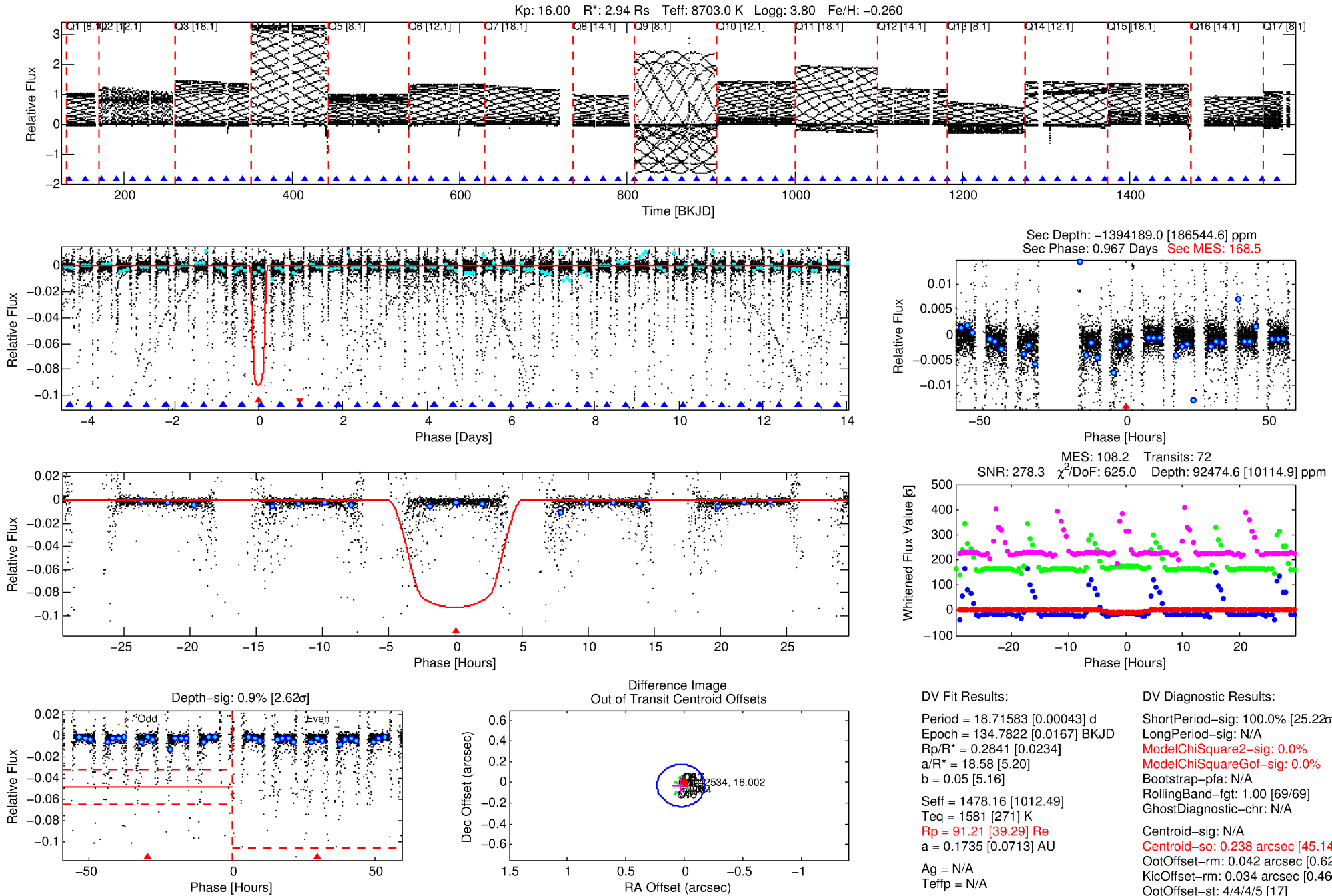
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007742534-01

No Significant Match Found

# DV One-Page Summary

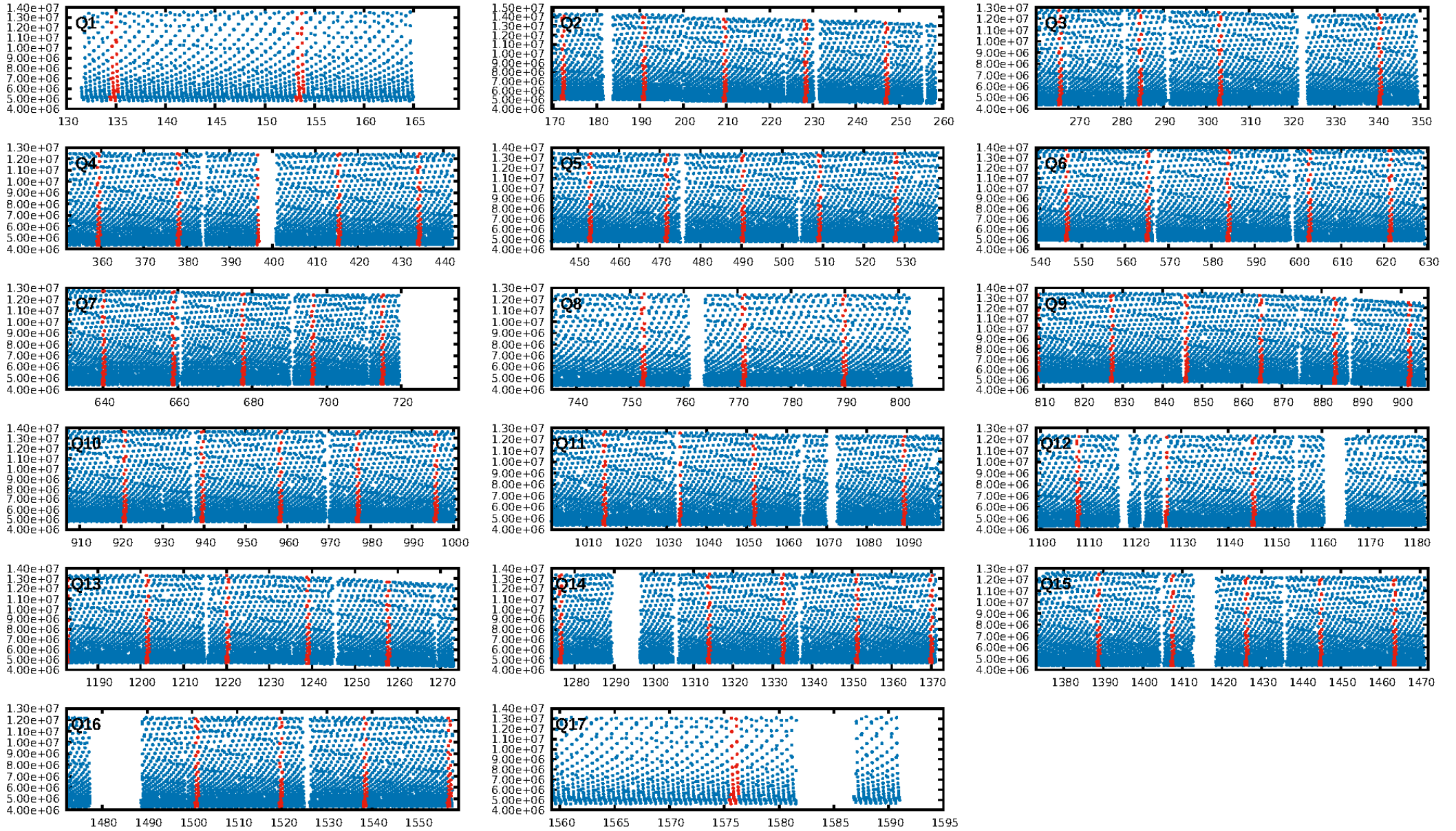
KIC: 7742534 Candidate: 1 of 2 Period: 18.716 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:37:21 Z

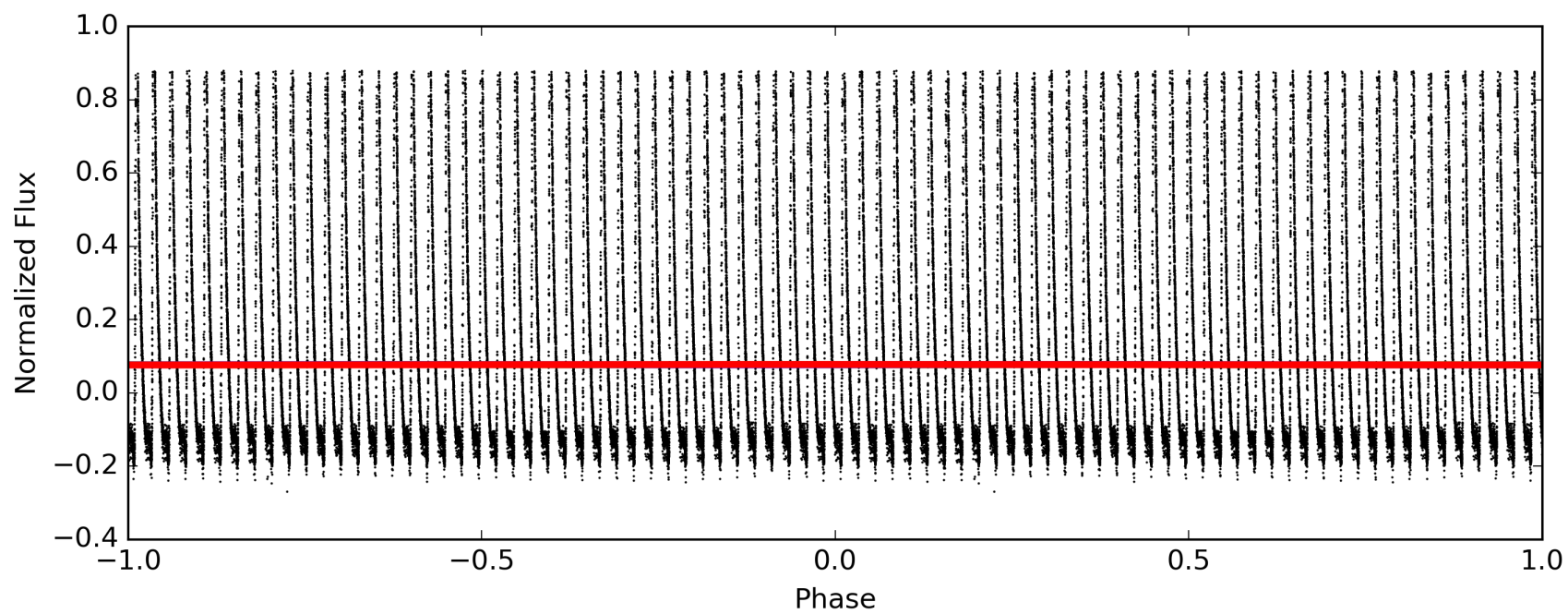
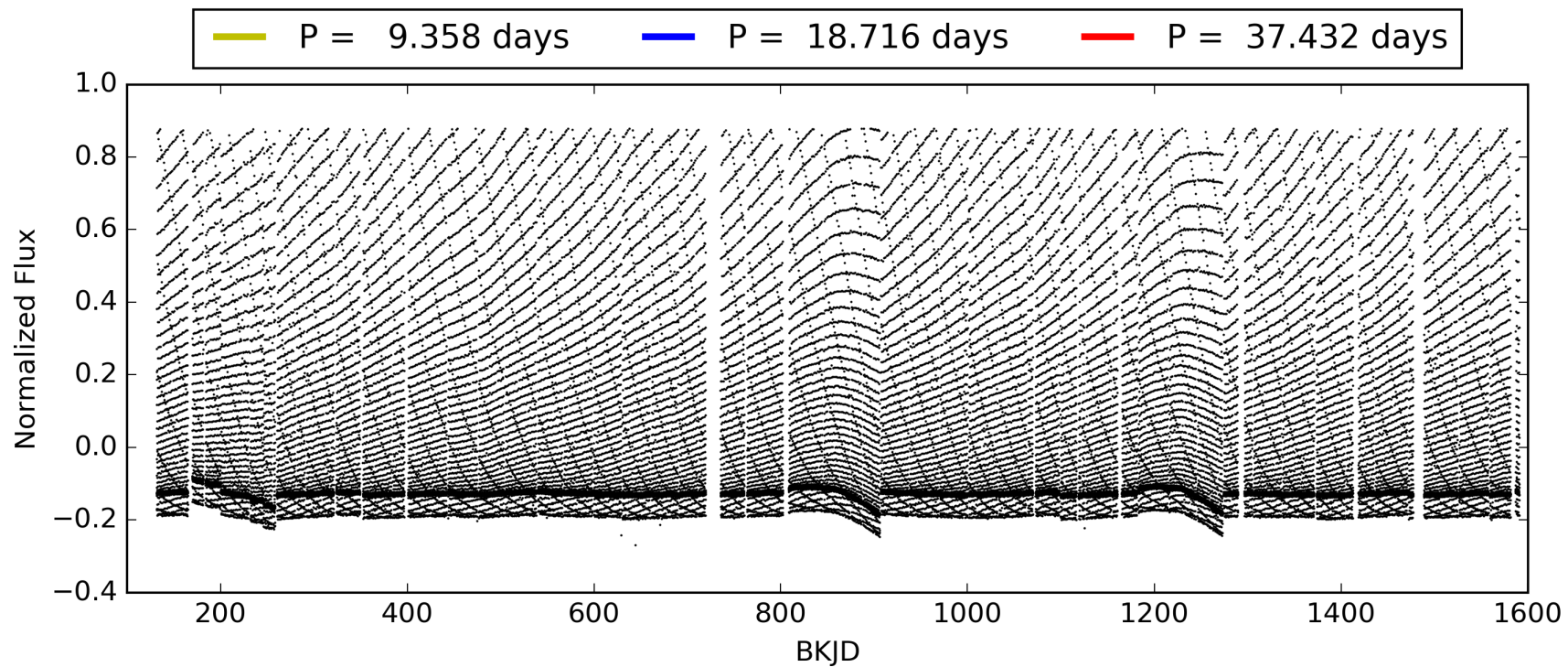
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007742534-01, PDC Light Curves



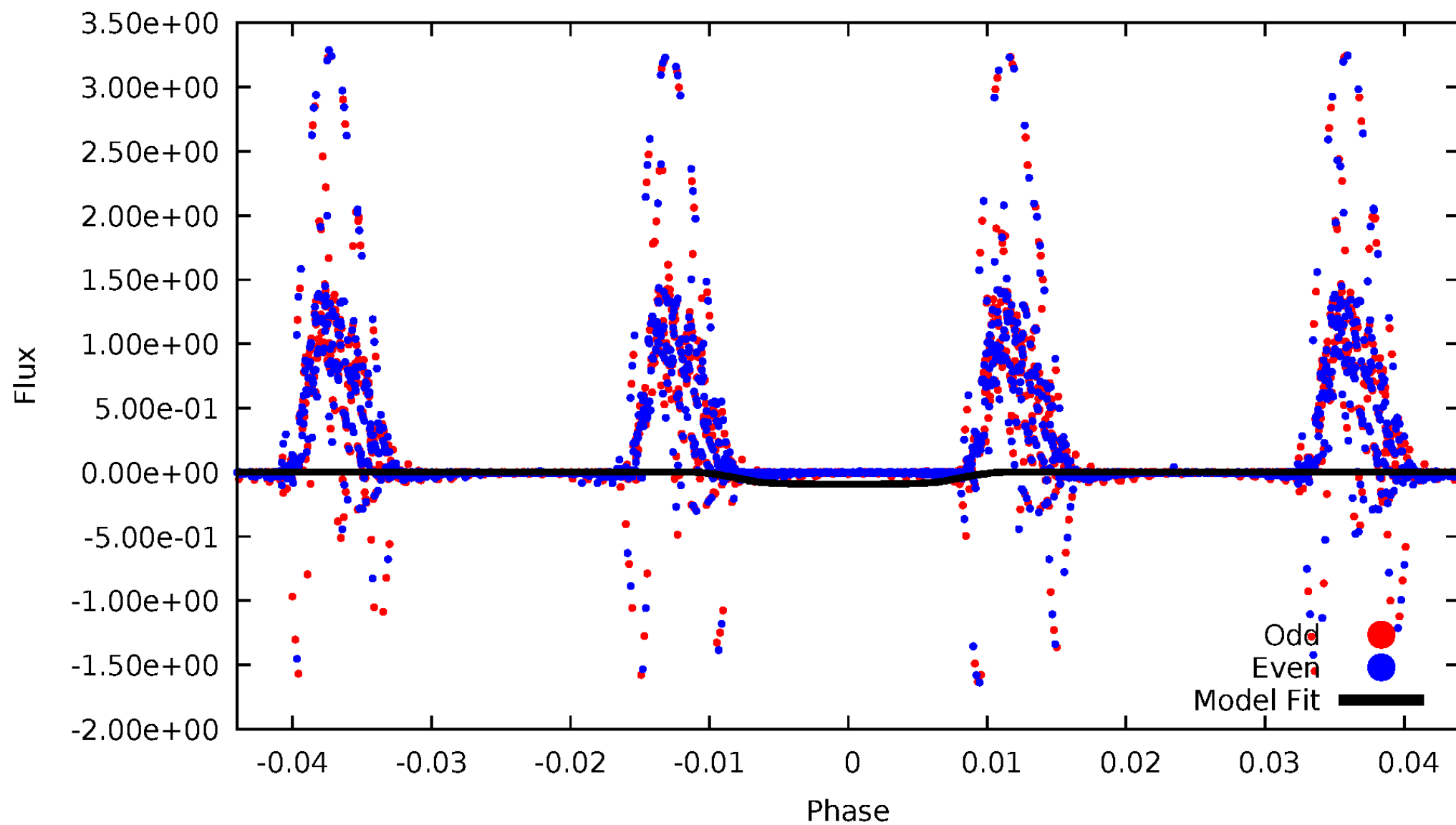


TCE 007742534-01



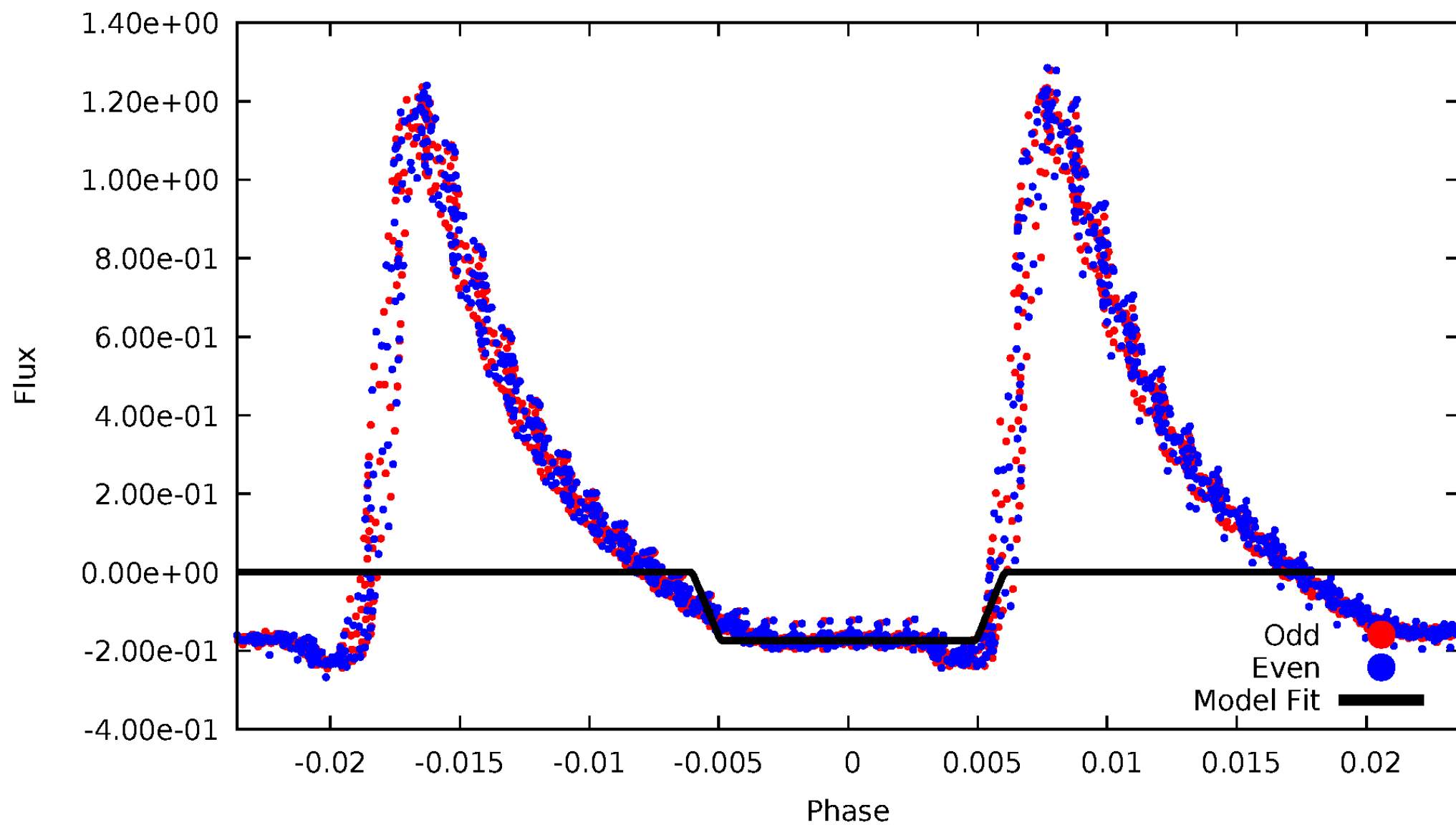
# DV Odd/Even

TCE 007742534-01



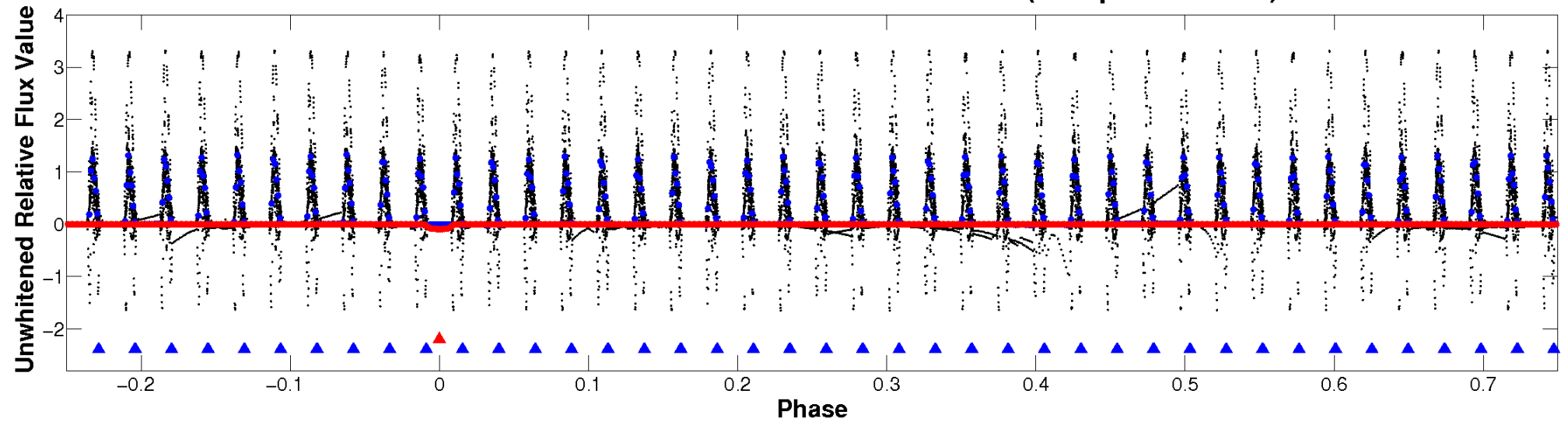
# ALT Odd/Even

TCE 007742534-01

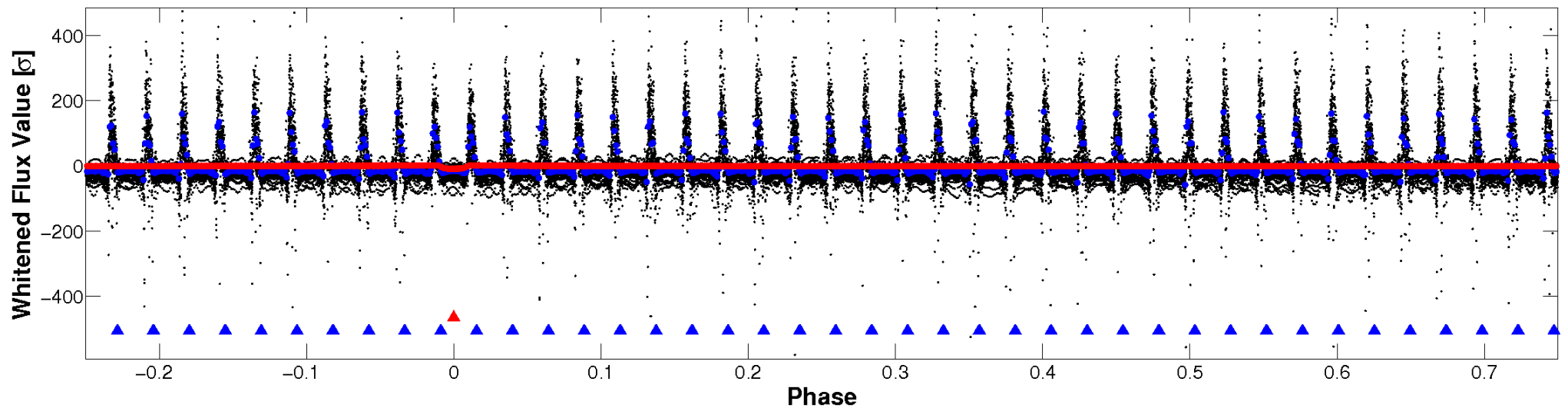


# Non-Whitened Vs. Whitened Light Curve

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

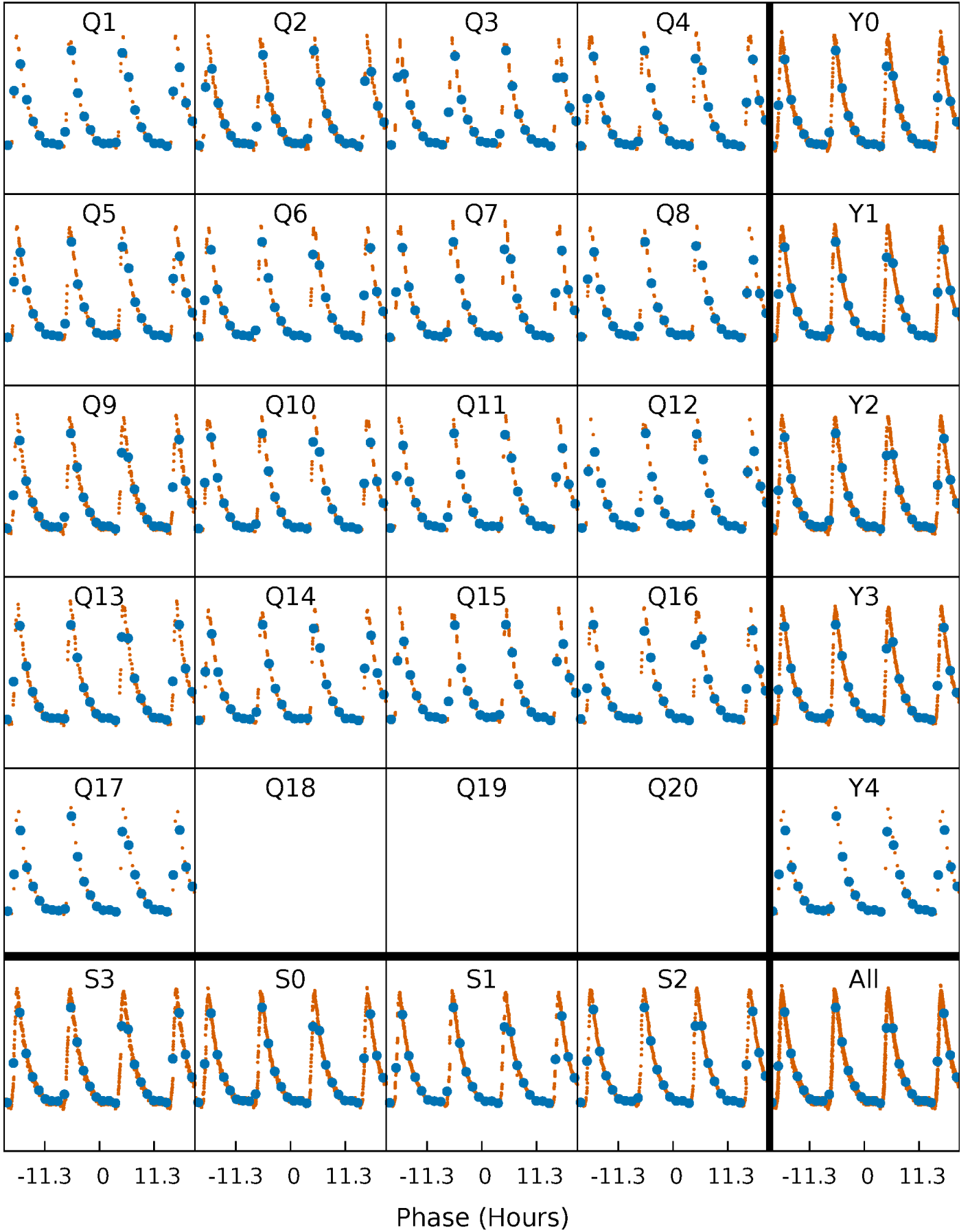


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

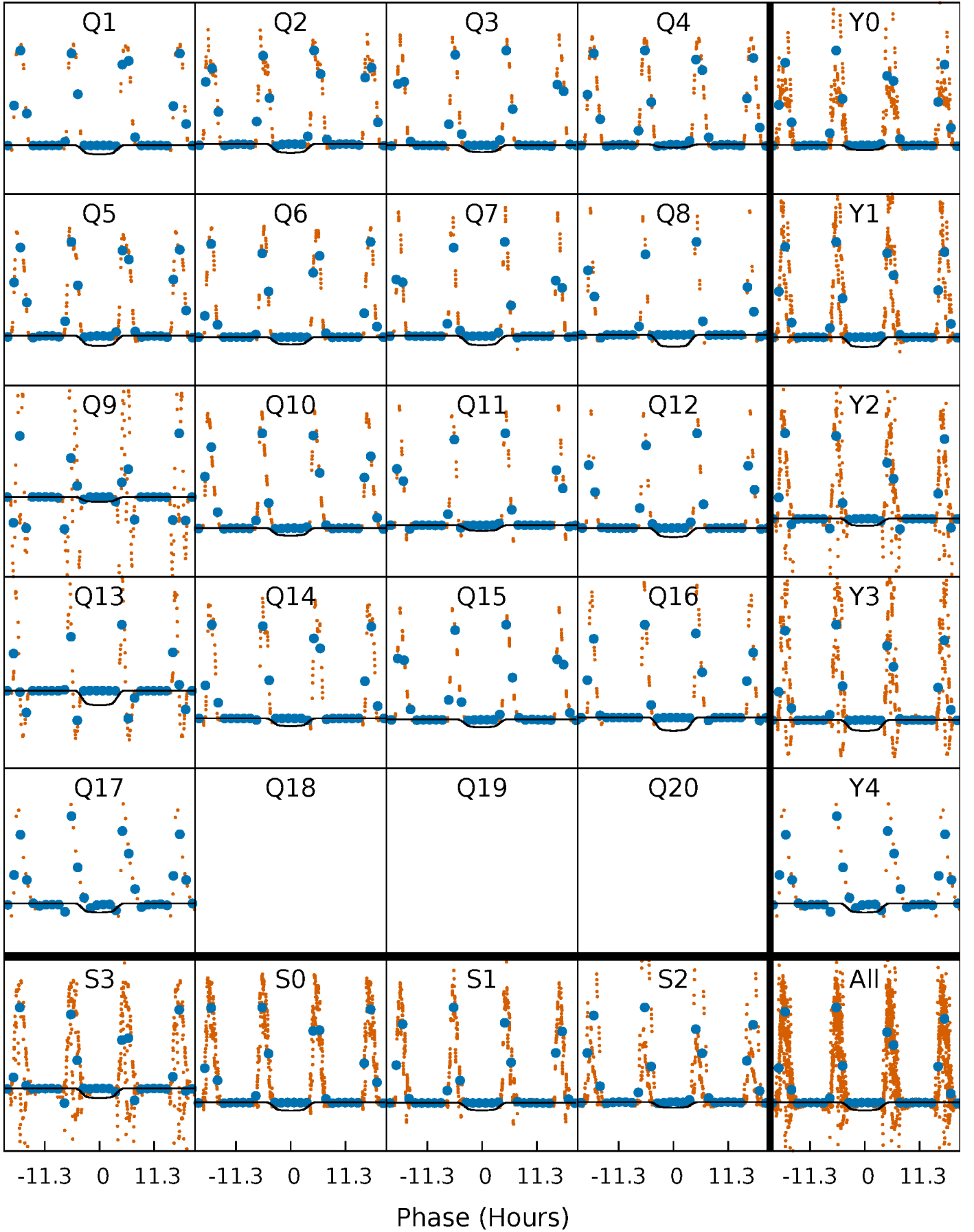
TCE 007742534-01   P= 18.715828 Days    $T_0=134.782175$  (BKJD)





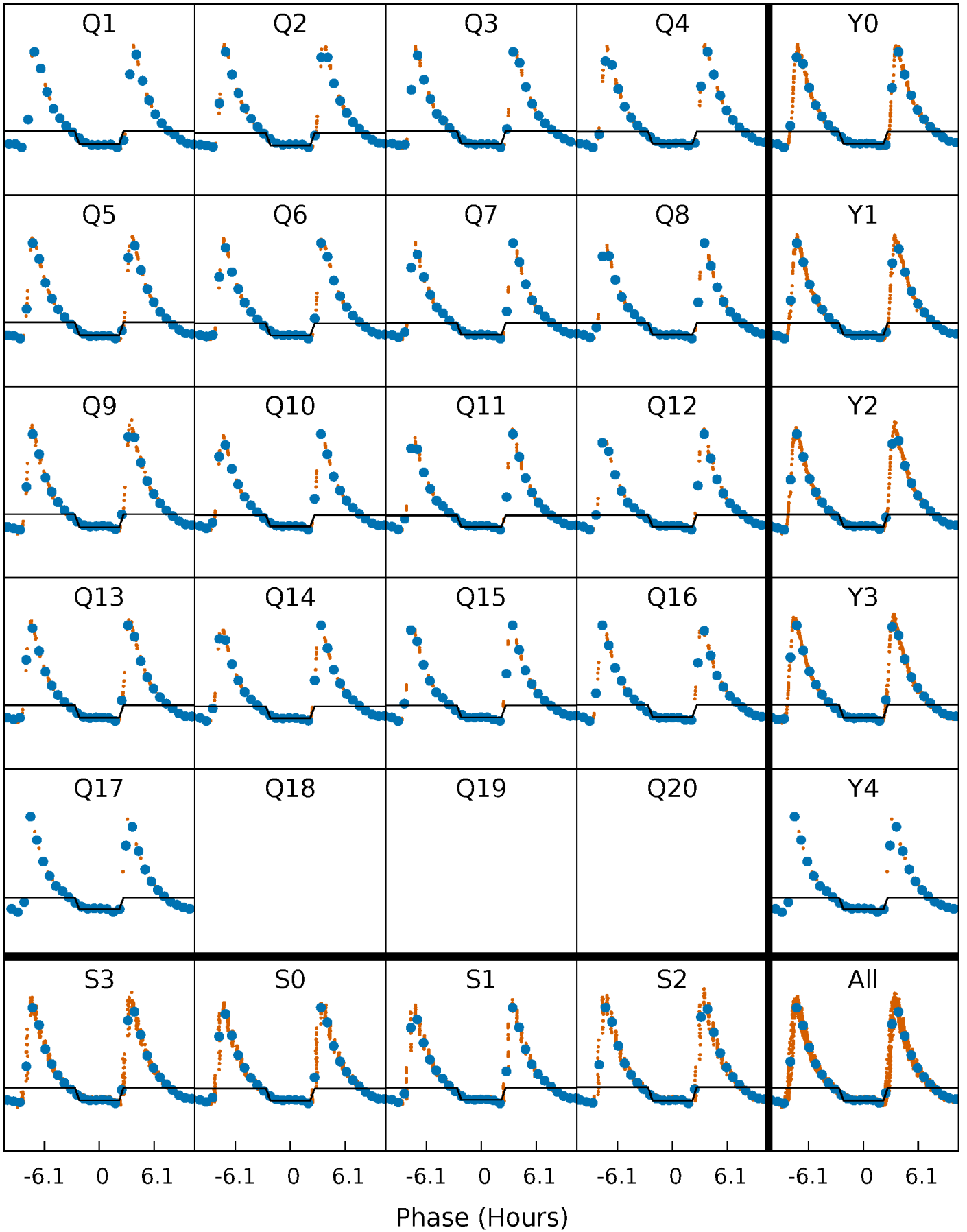
# DV Quarter-Phased Transit Curves

TCE 007742534-01 P= 18.715828 Days  $T_0=134.782175$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

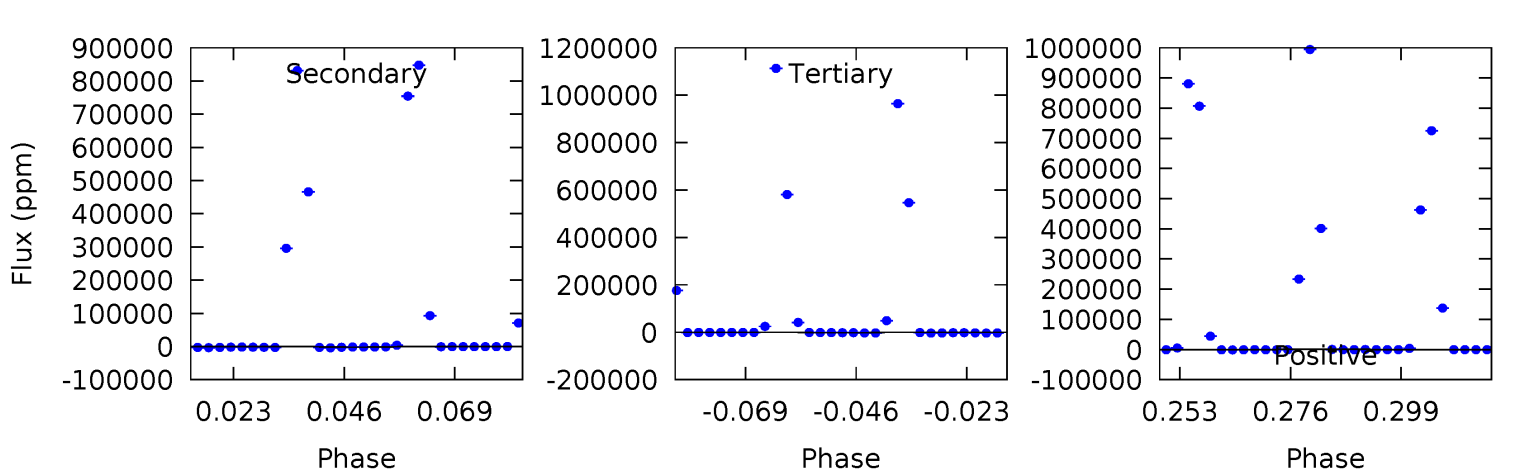
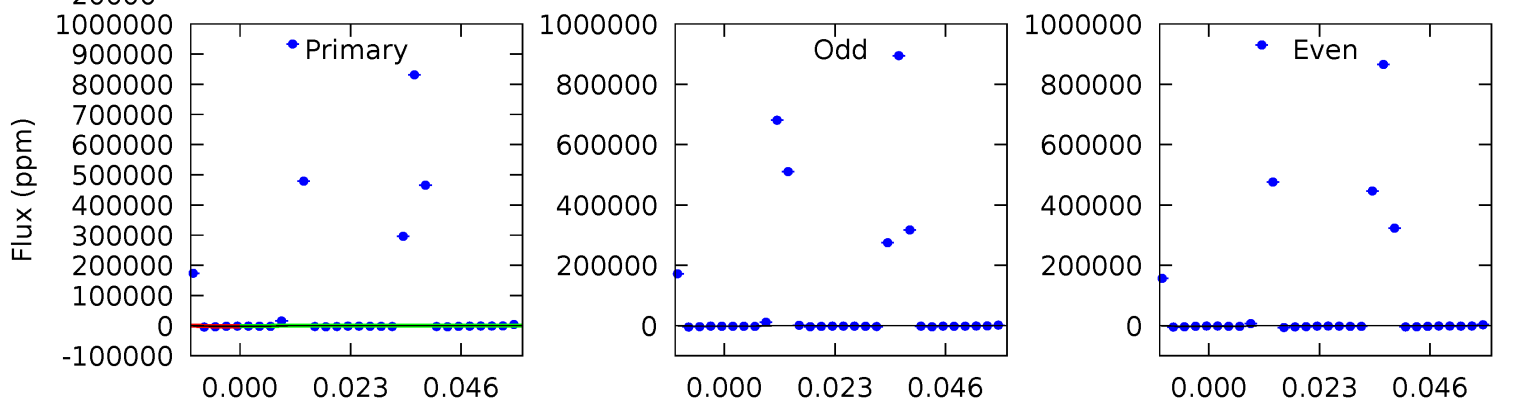
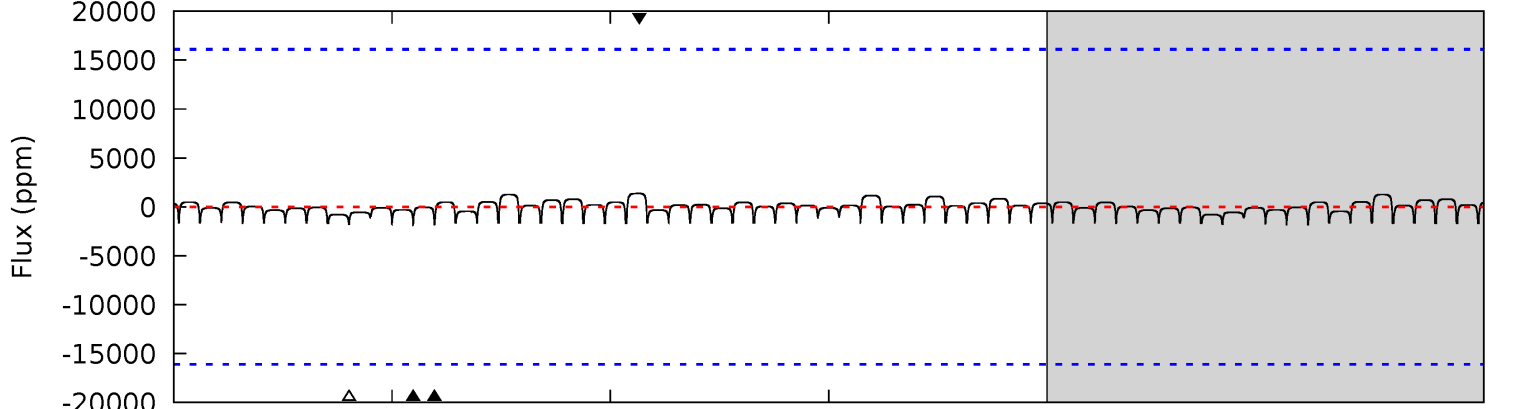
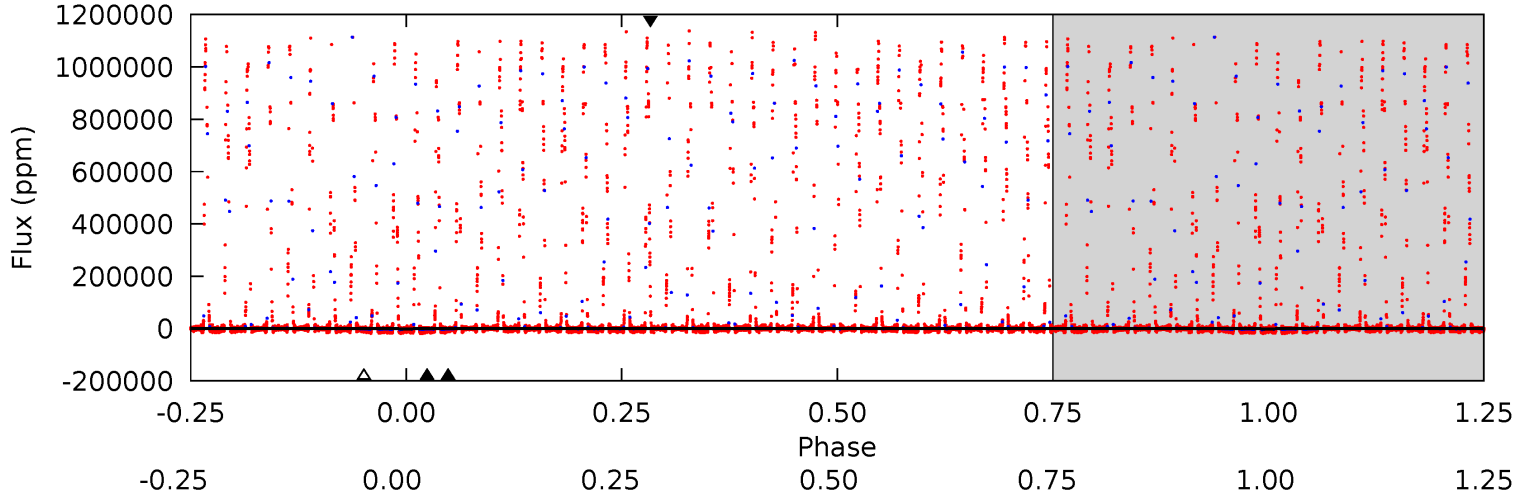
TCE 007742534-01 P= 18.716188 Days  $T_0=134.828214$  (BKJD)



# DV Model-Shift Uniqueness Test

007742534-01, P = 18.715828 Days, E = 116.066347 Days

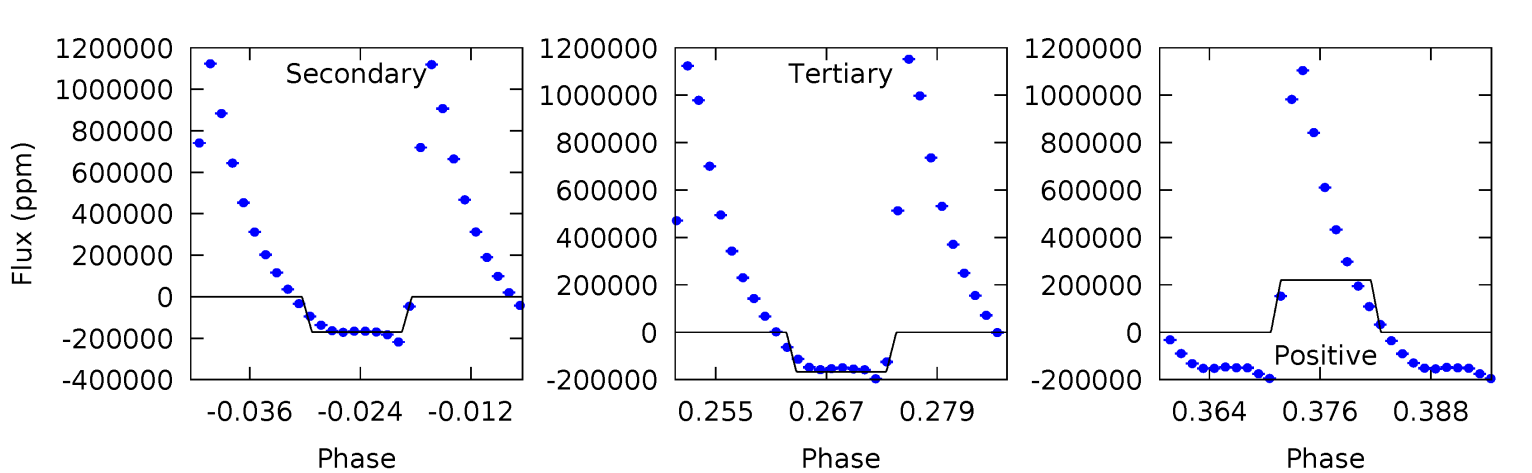
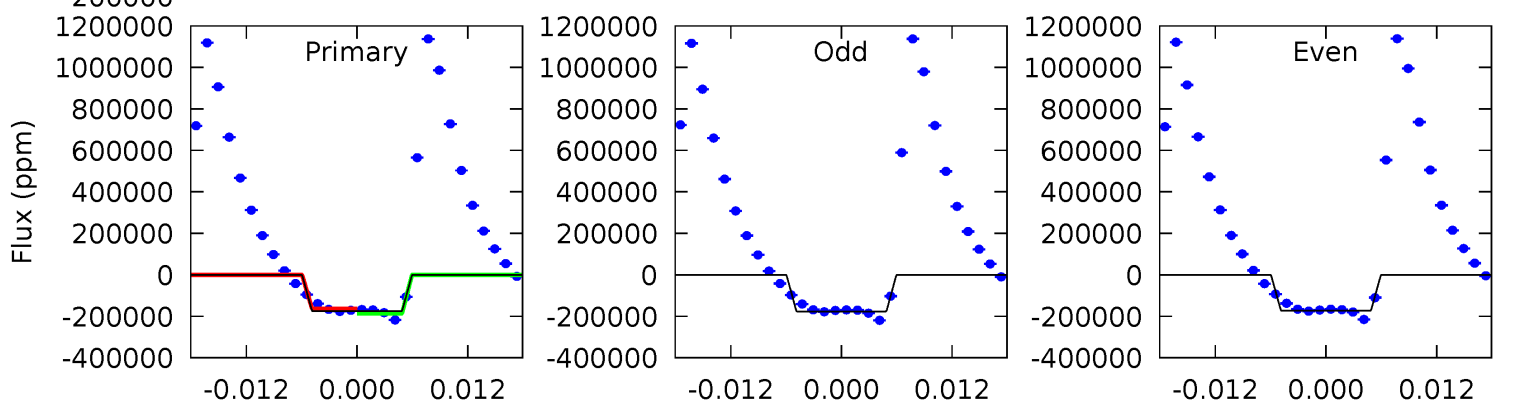
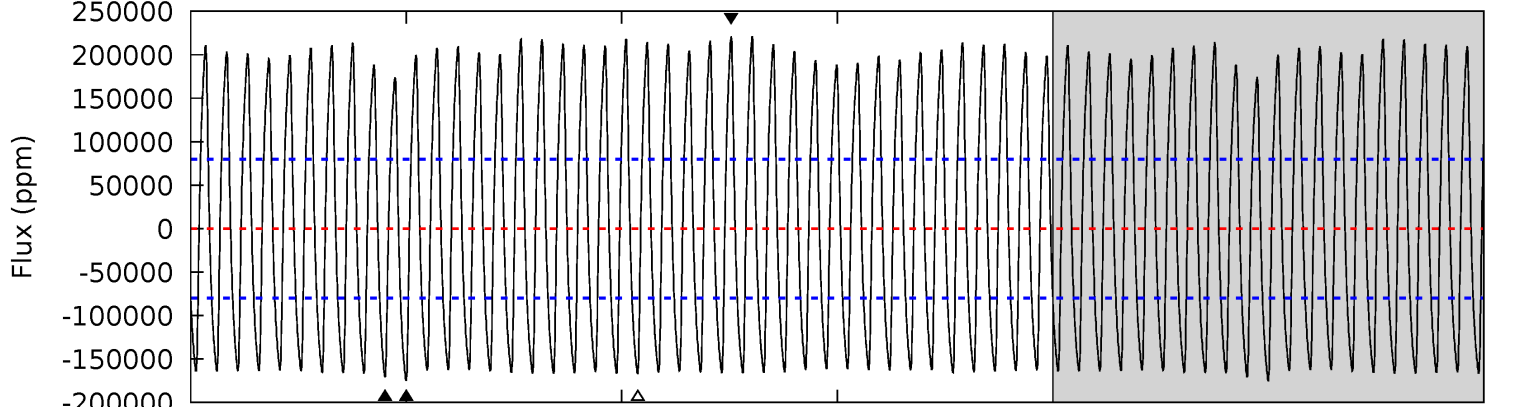
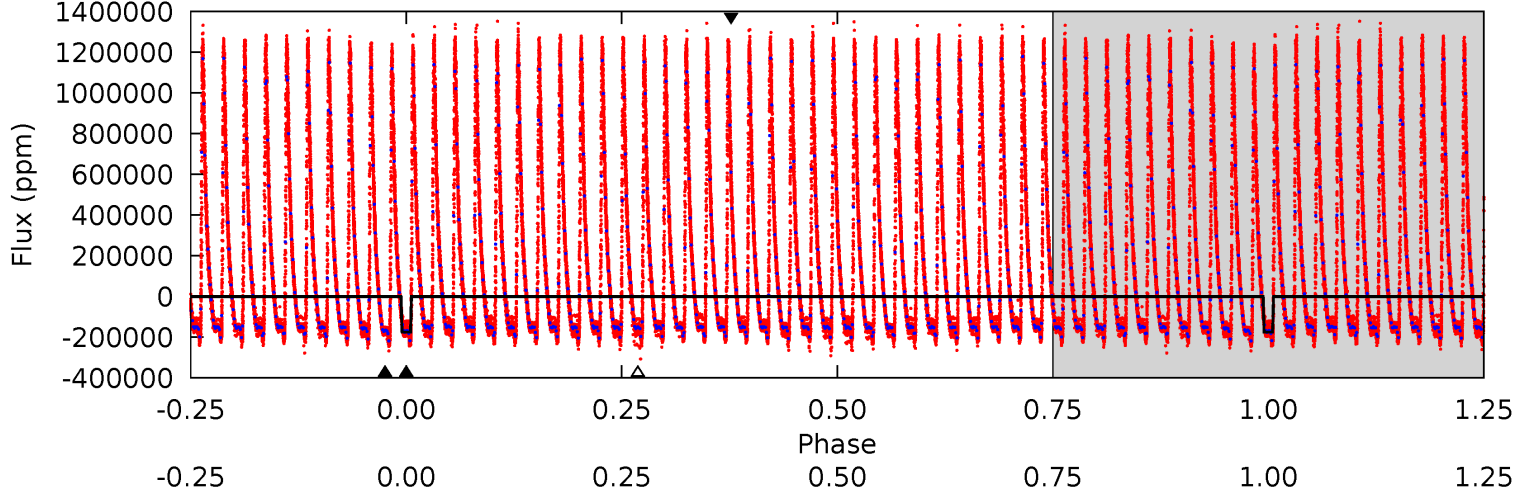
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.55	0.54	0.54	0.41	4.86	2.27	0.20	0.02	0.14	0.01	0.13	0.10	0.54	0.43	0.13



# Alt Model-Shift Uniqueness Test

007742534-01, P = 18.716188 Days, E = 116.112026 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
10.9	10.6	10.4	13.8	4.99	2.51	8.06	0.52	-2.88	0.23	-3.16	0.10	1.00	0.56	0.72



### Stellar Parameters For KIC 007742534

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8703^{+237}_{-385}$	$3.799^{+0.390}_{-0.104}$	$-0.260^{+0.350}_{-0.350}$	$2.942^{+0.726}_{-1.244}$	$1.987^{+0.408}_{-0.448}$	$0.110^{+0.384}_{-0.043}$
	+3%/-4%	+10%/-3%	+135%/-135%	+25%/-42%	+21%/-23%	+349%/-39%
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 007742534-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1802 \pm 3309$	$86.02^{+16.95}_{-18.26}$	$2128^{+159}_{-240}$	$3547^{+784}_{-6946}$	$3.742^{+9.366}_{-6.694}$
Alt.	$-170153 \pm 15982$	$128.50^{+21.96}_{-28.75}$	$2134^{+167}_{-212}$	$9162^{+616}_{-590}$	$211^{+124}_{-54}$

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



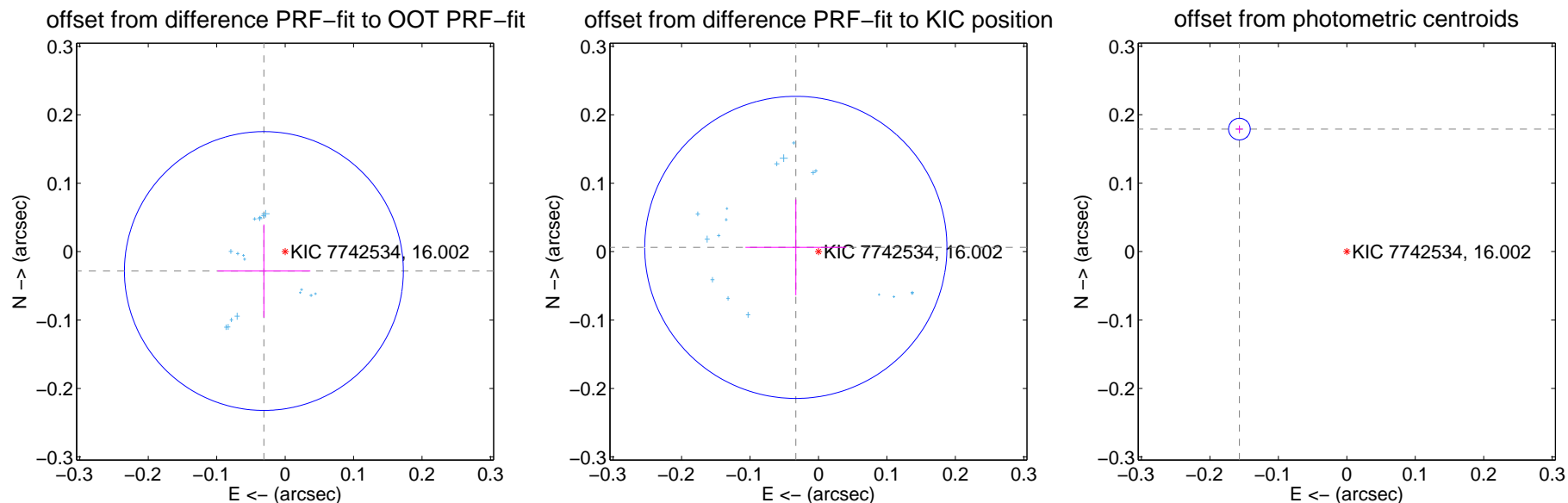
## DV Centroid Data

Supplemental centroid analysis for 007742534-01. Kepler magnitude: 16.00. Transit SNR 278.33

There are 17 quarters with good PRF difference image offsets

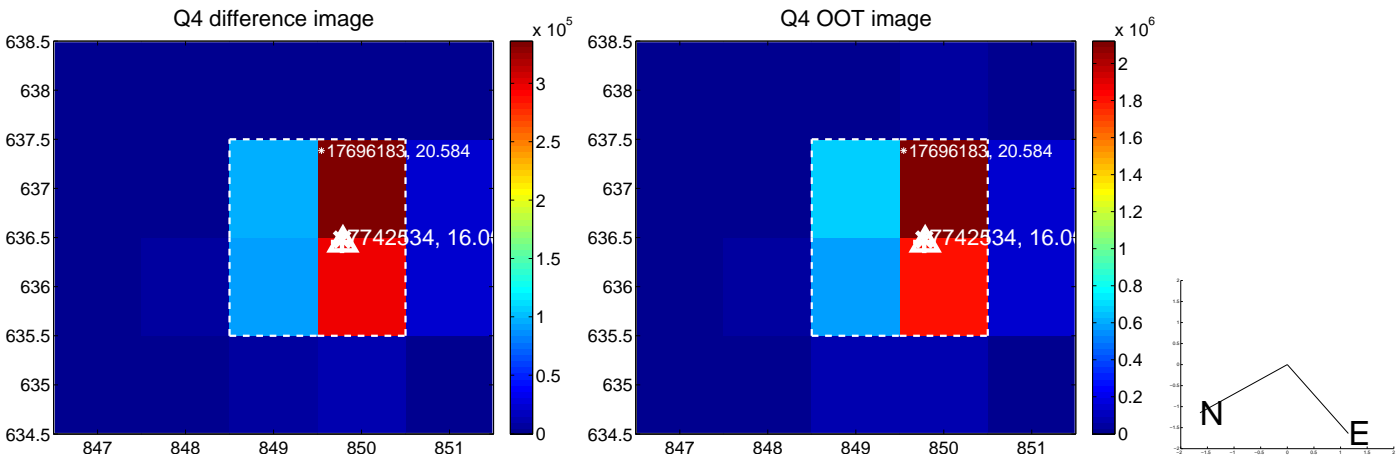
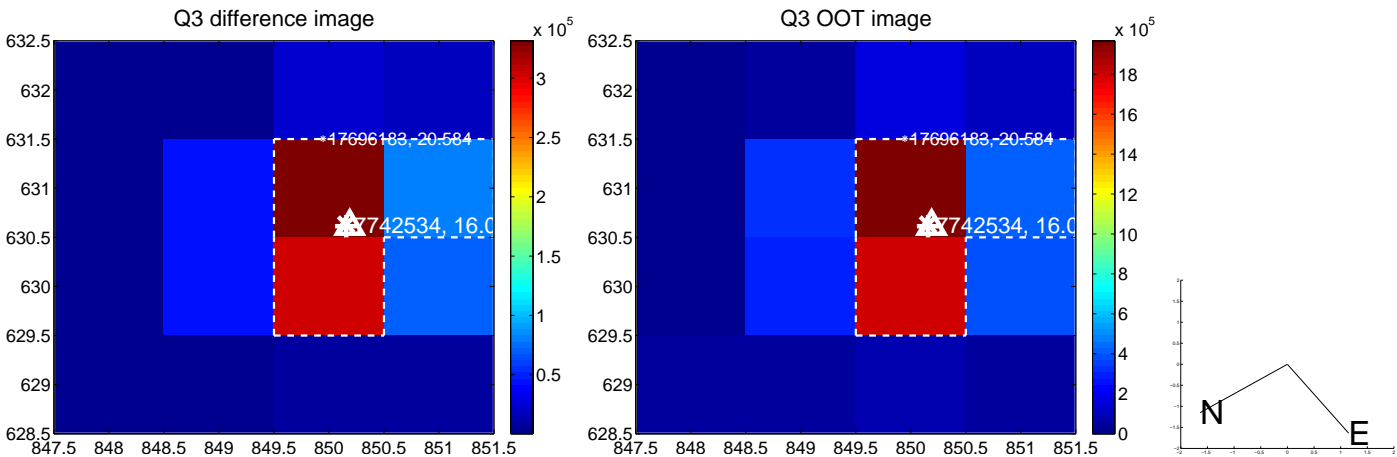
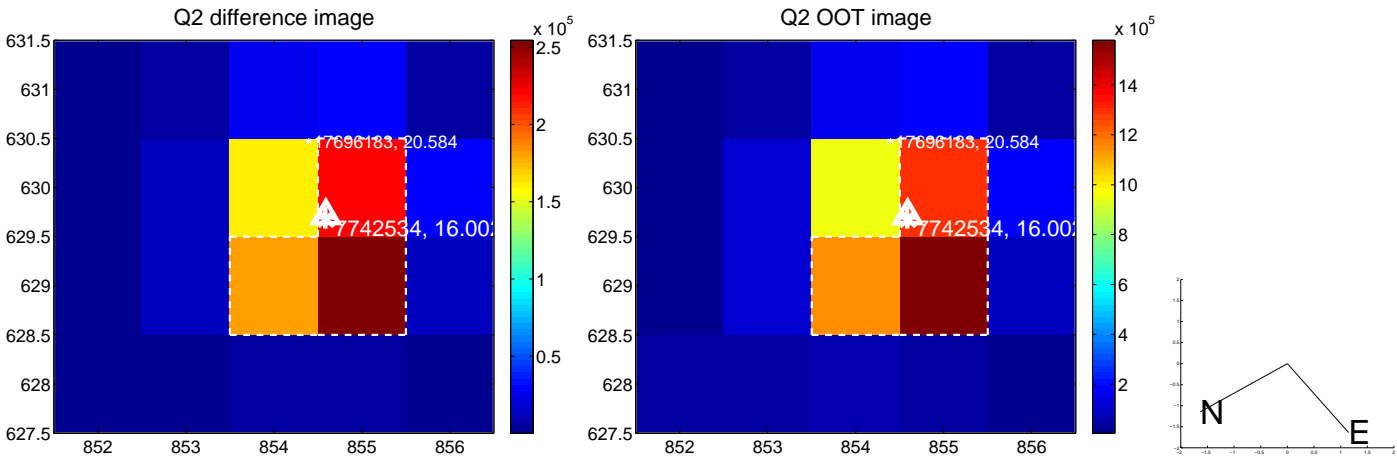
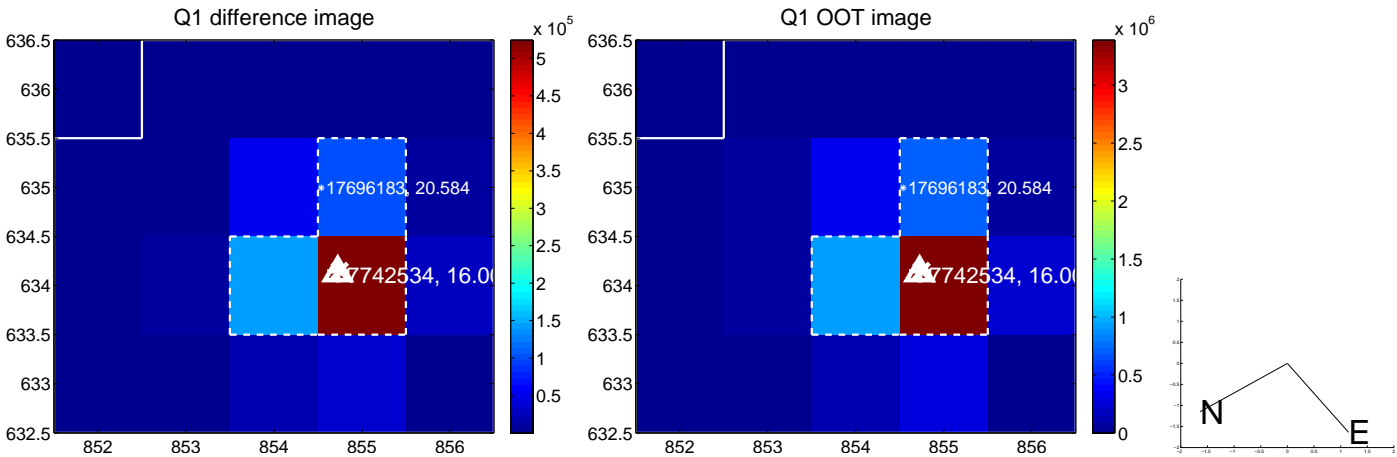
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.042 \pm 0.068$	0.62	$0.031 \pm 0.068$	$-0.028 \pm 0.068$
PRF-fit source offset from KIC position	$0.034 \pm 0.074$	0.46	$0.033 \pm 0.074$	$0.006 \pm 0.070$
photometric centroid source offset	$0.24 \pm 0.01$	45.14	$0.16 \pm 0.01$	$0.18 \pm 0.01$

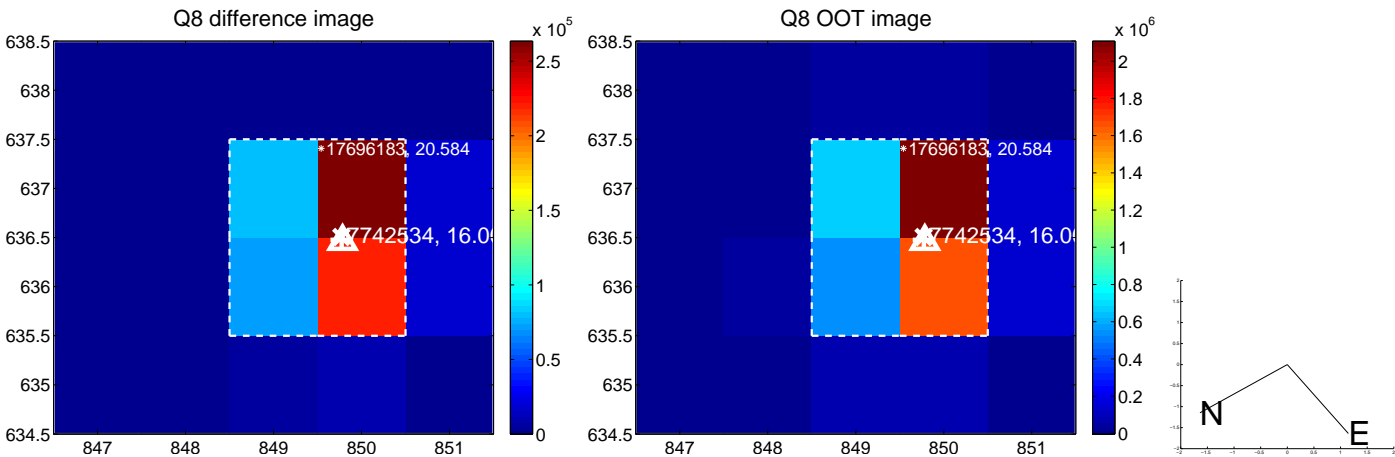
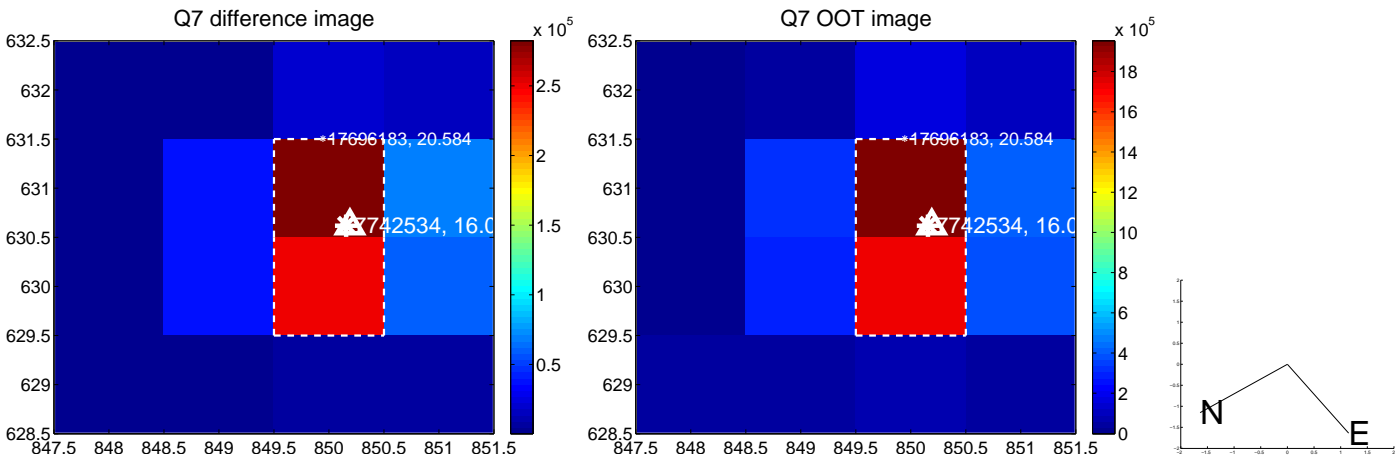
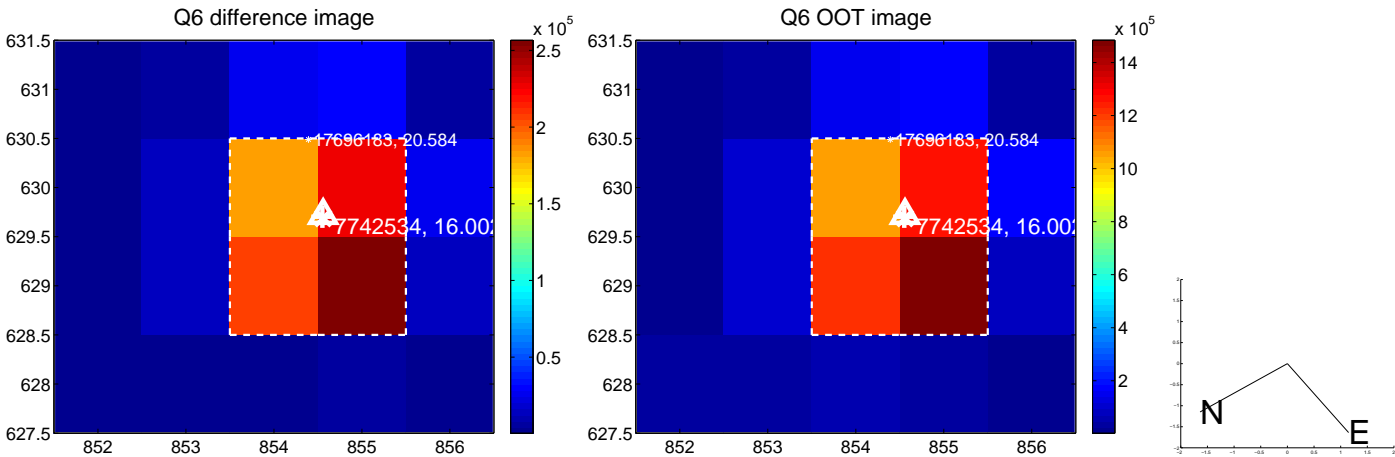
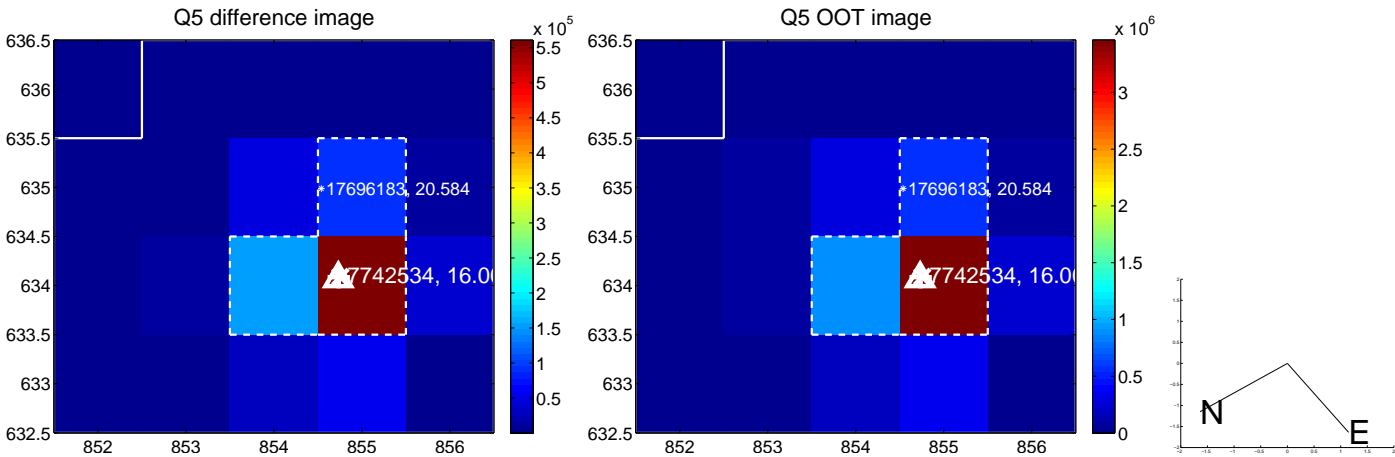


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

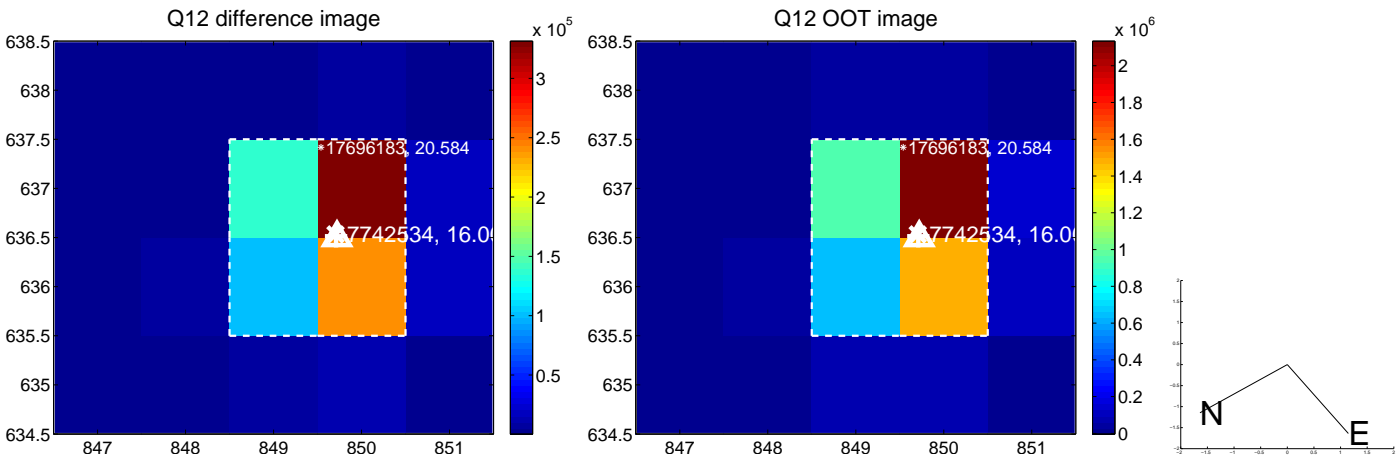
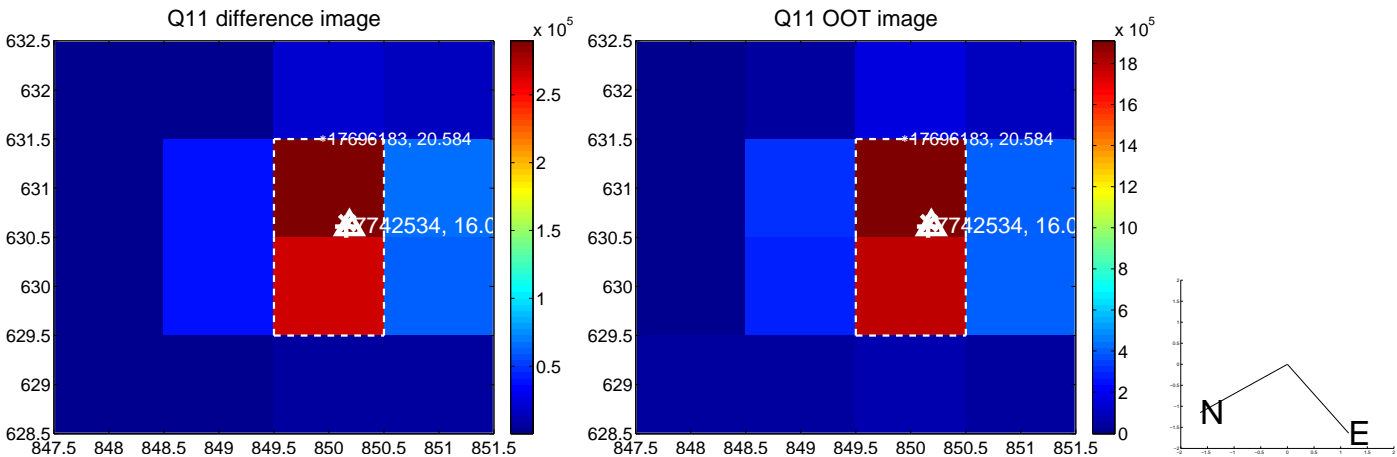
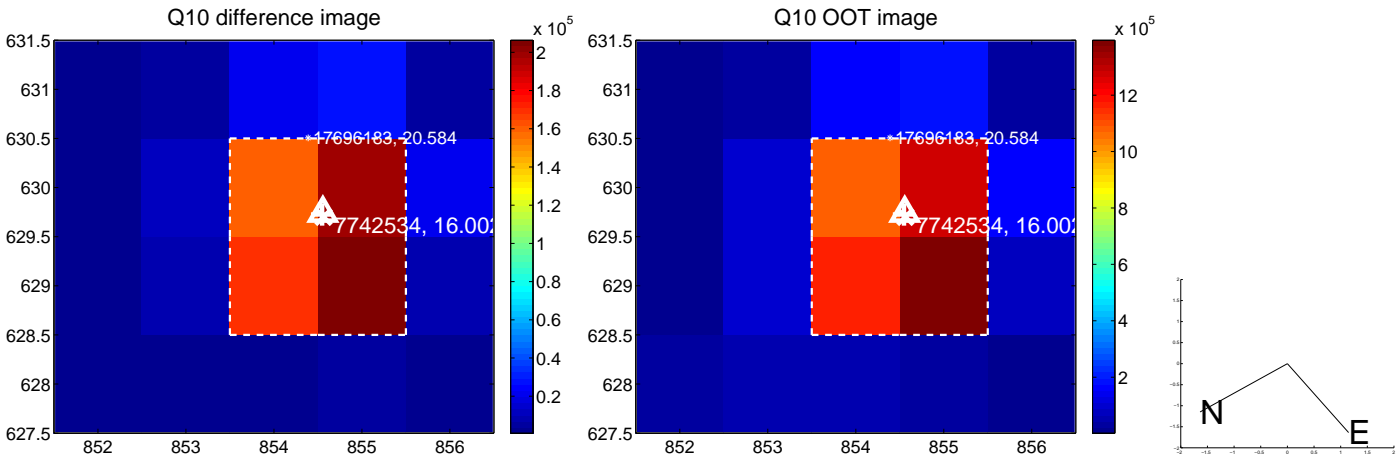
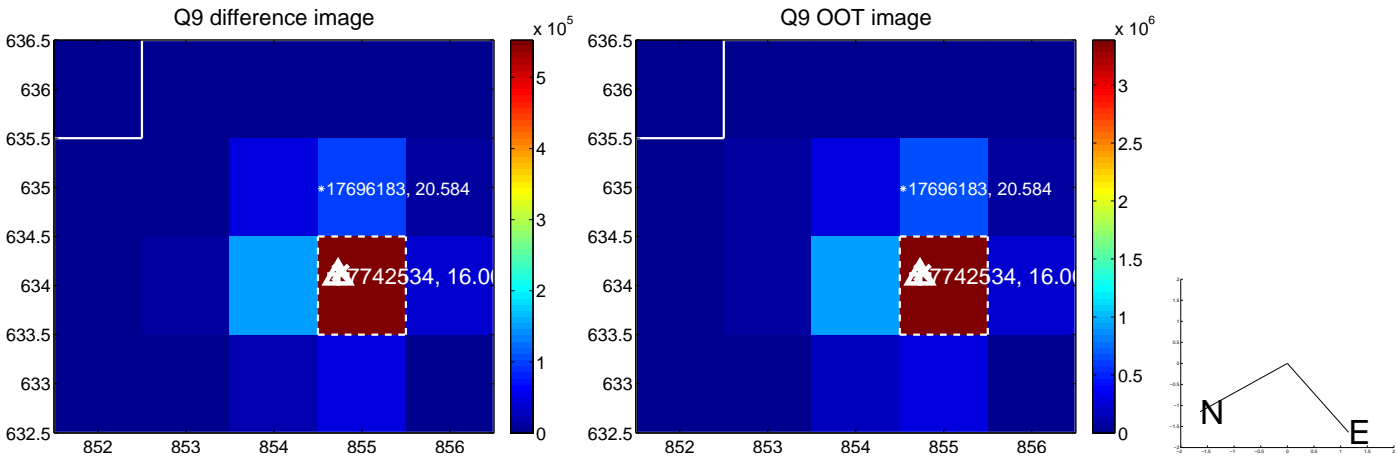
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



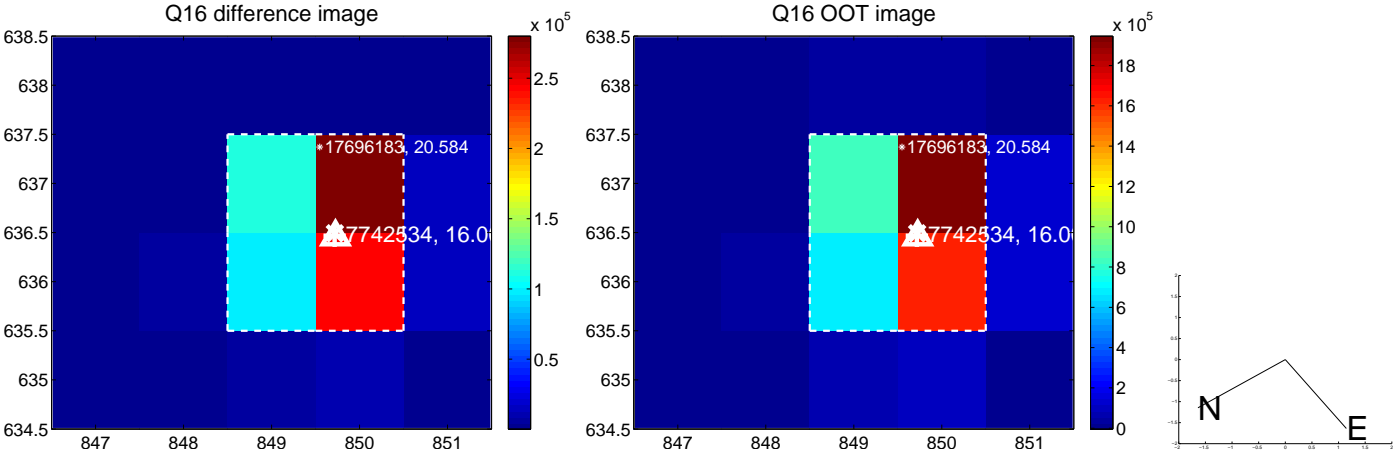
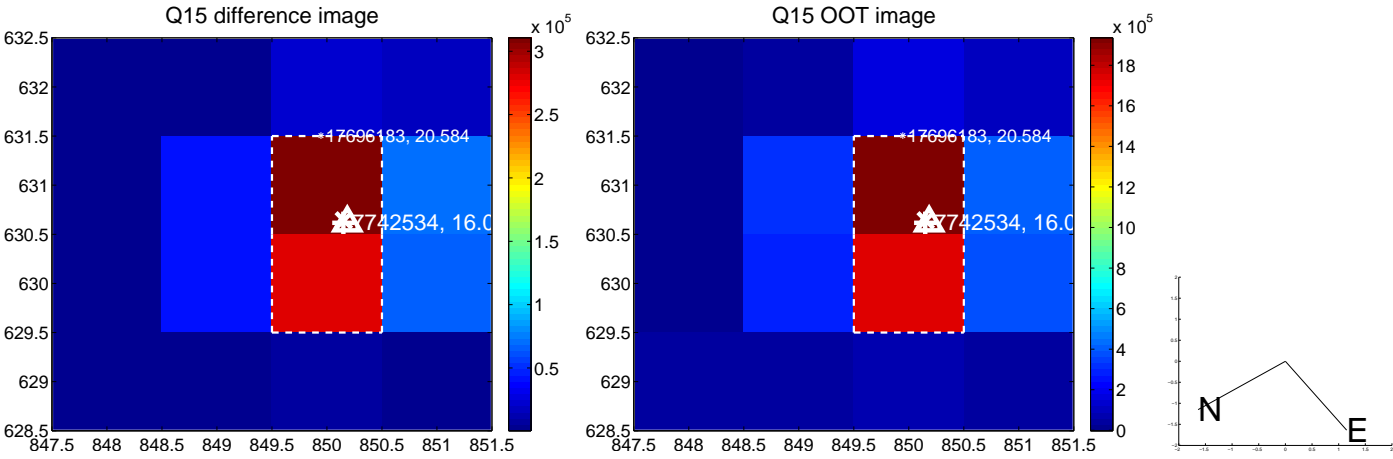
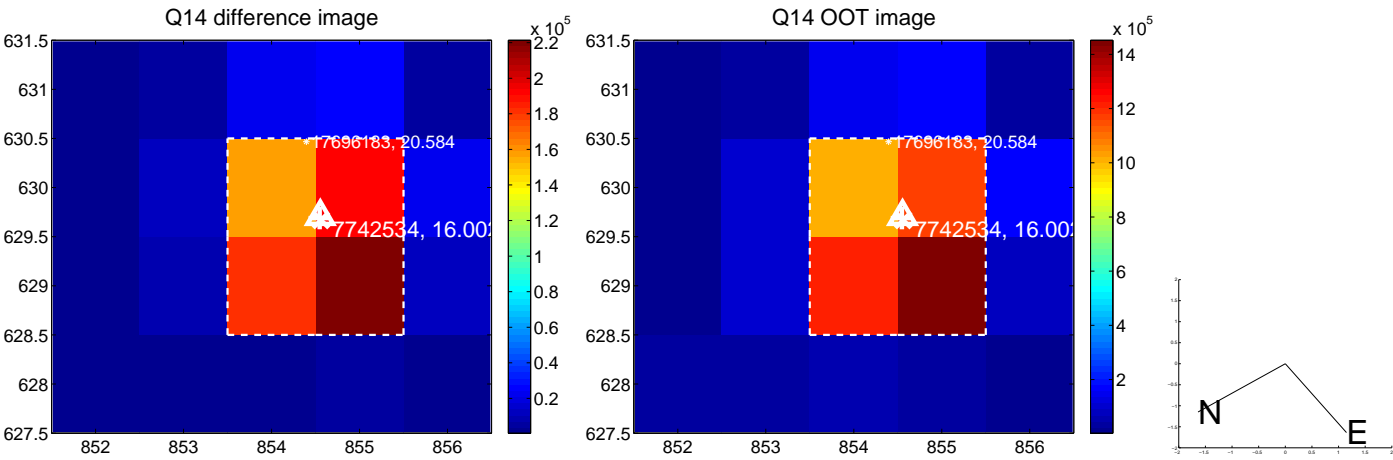
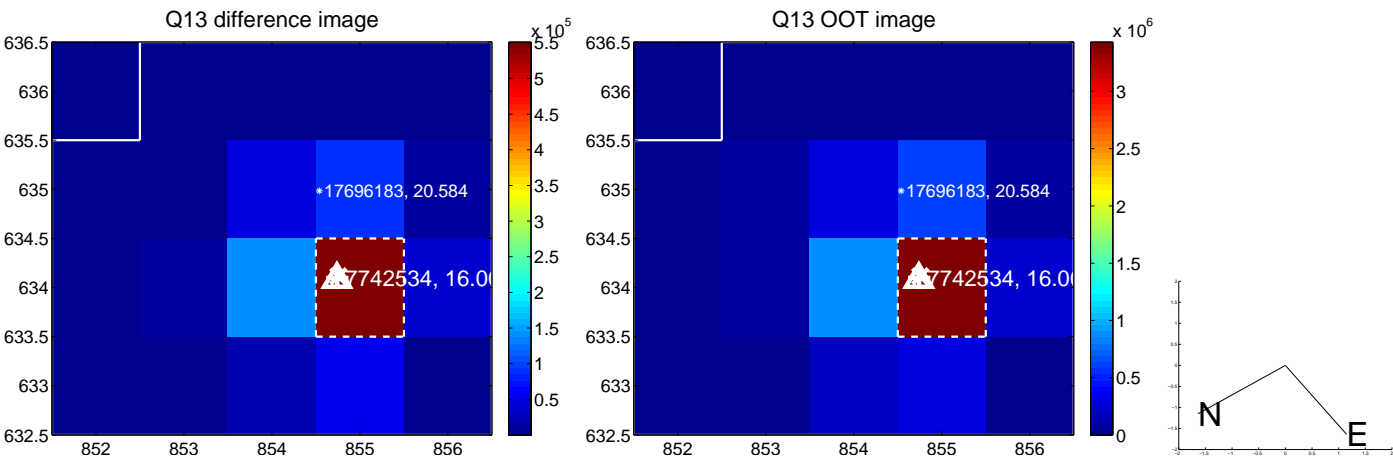
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

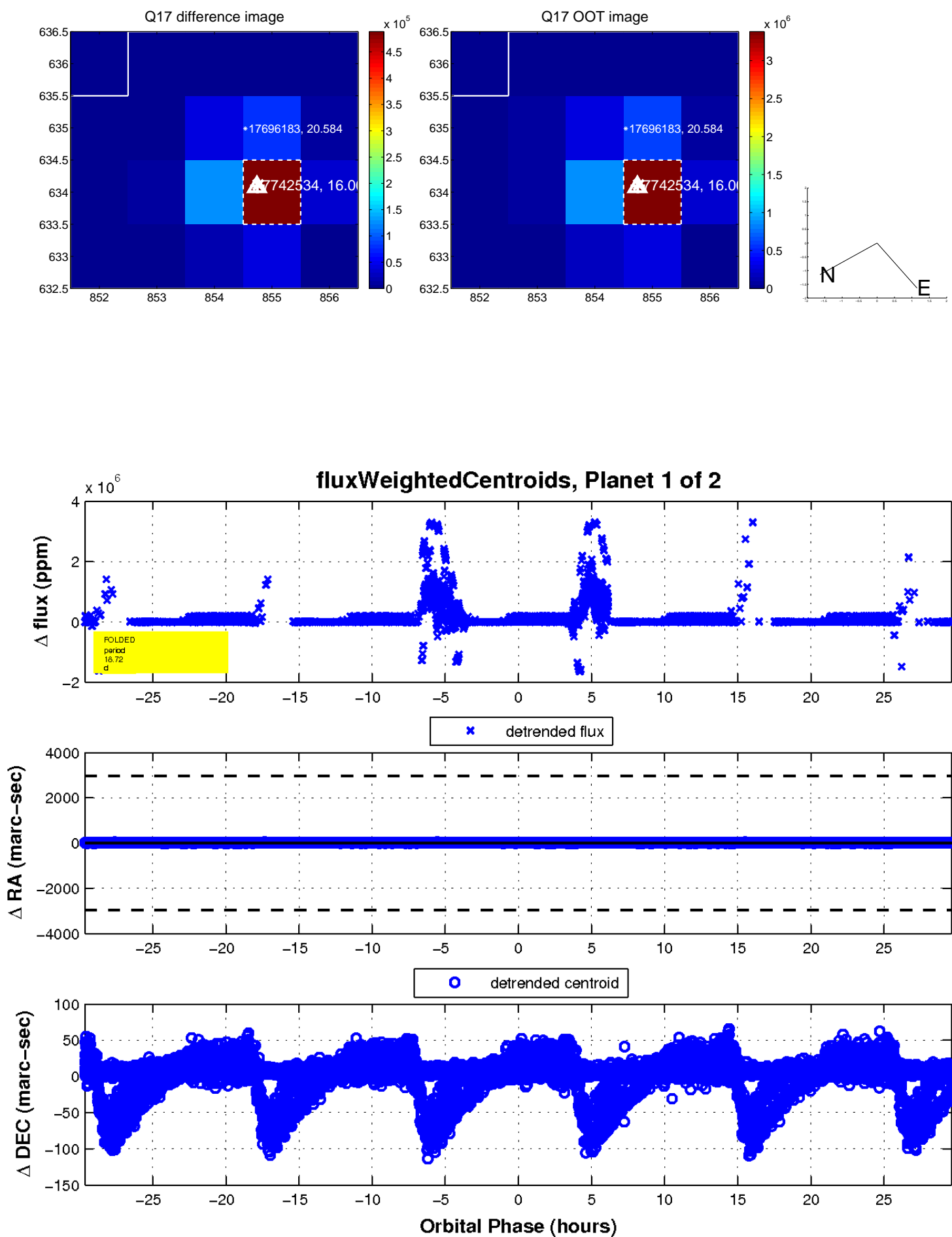


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



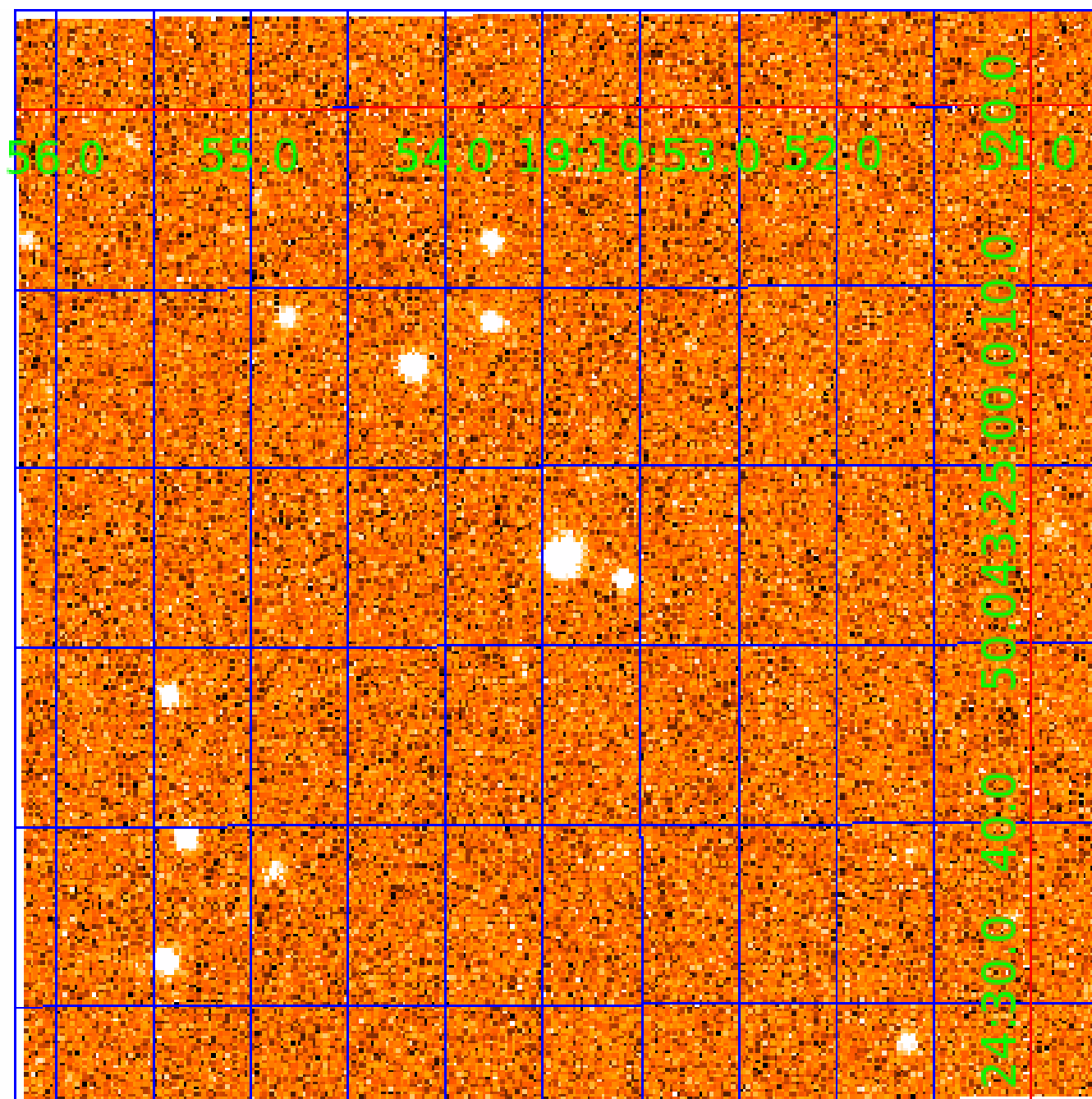


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 007742534

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007742534-01	OBS	No	18.715828	134.782175	92474.6	9.879	108.2	278.3	2.94	8703	91.21	1478.15
007742534-02	OBS	No	8.216577	131.889119	152740.8	1.500	403.4	-1.0	2.94	8703	118.38	4430.07

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007742534-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007742534-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

**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.

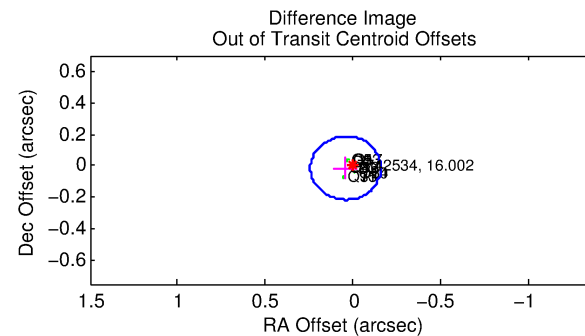
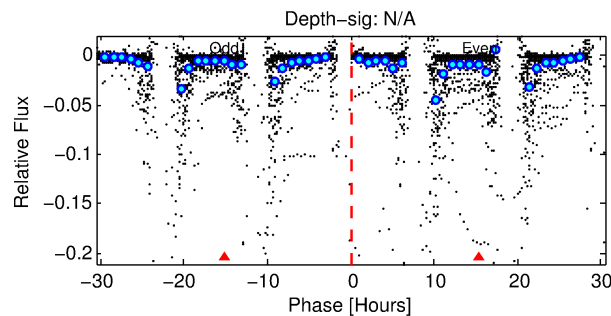
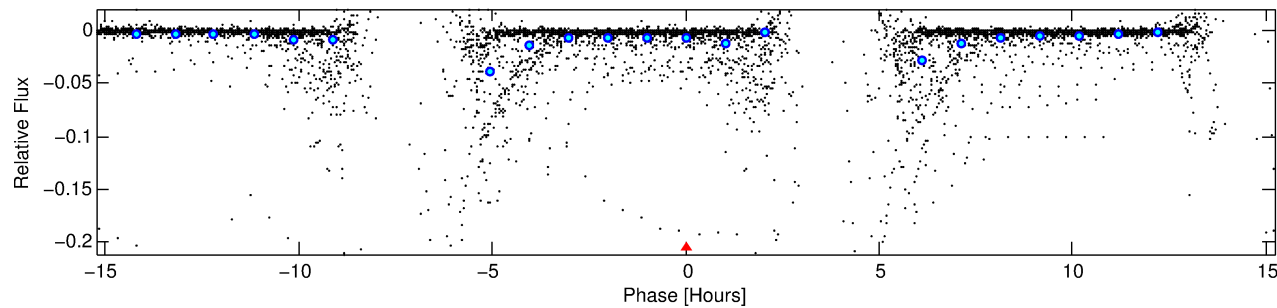
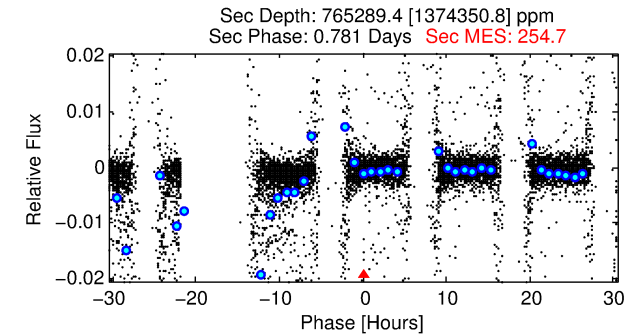
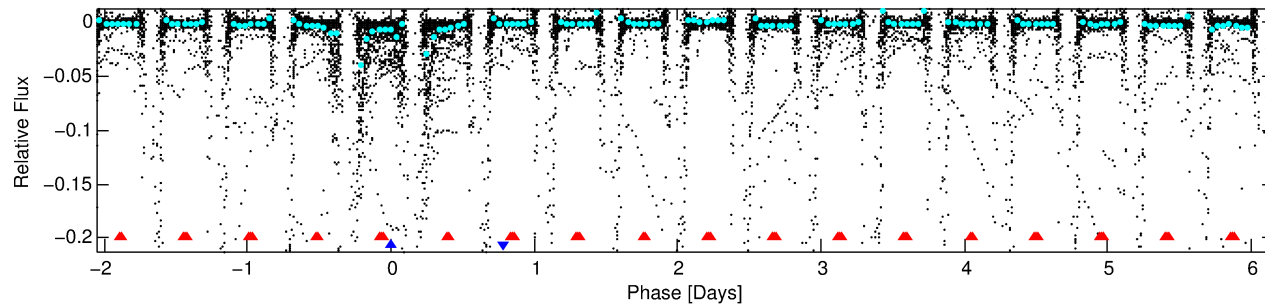
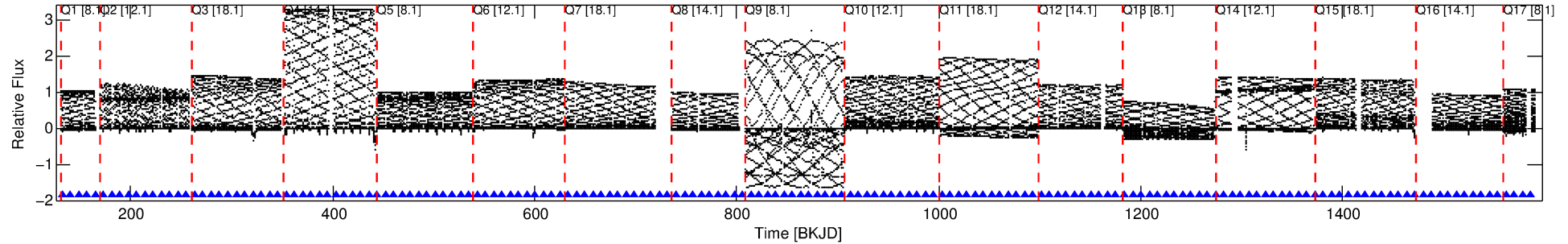
## Ephemeris Match Information For 007742534-02

No Significant Match Found

# DV One-Page Summary

KIC: 7742534 Candidate: 2 of 2 Period: 8.217 d

Kp: 16.00 R\*: 2.94 Rs Teff: 8703.0 K Logg: 3.80 Fe/H: -0.260



## TPS TCE Results:

Period = 8.21658 d  
Epoch = 131.8891 BKJD

DV fit results are unavailable

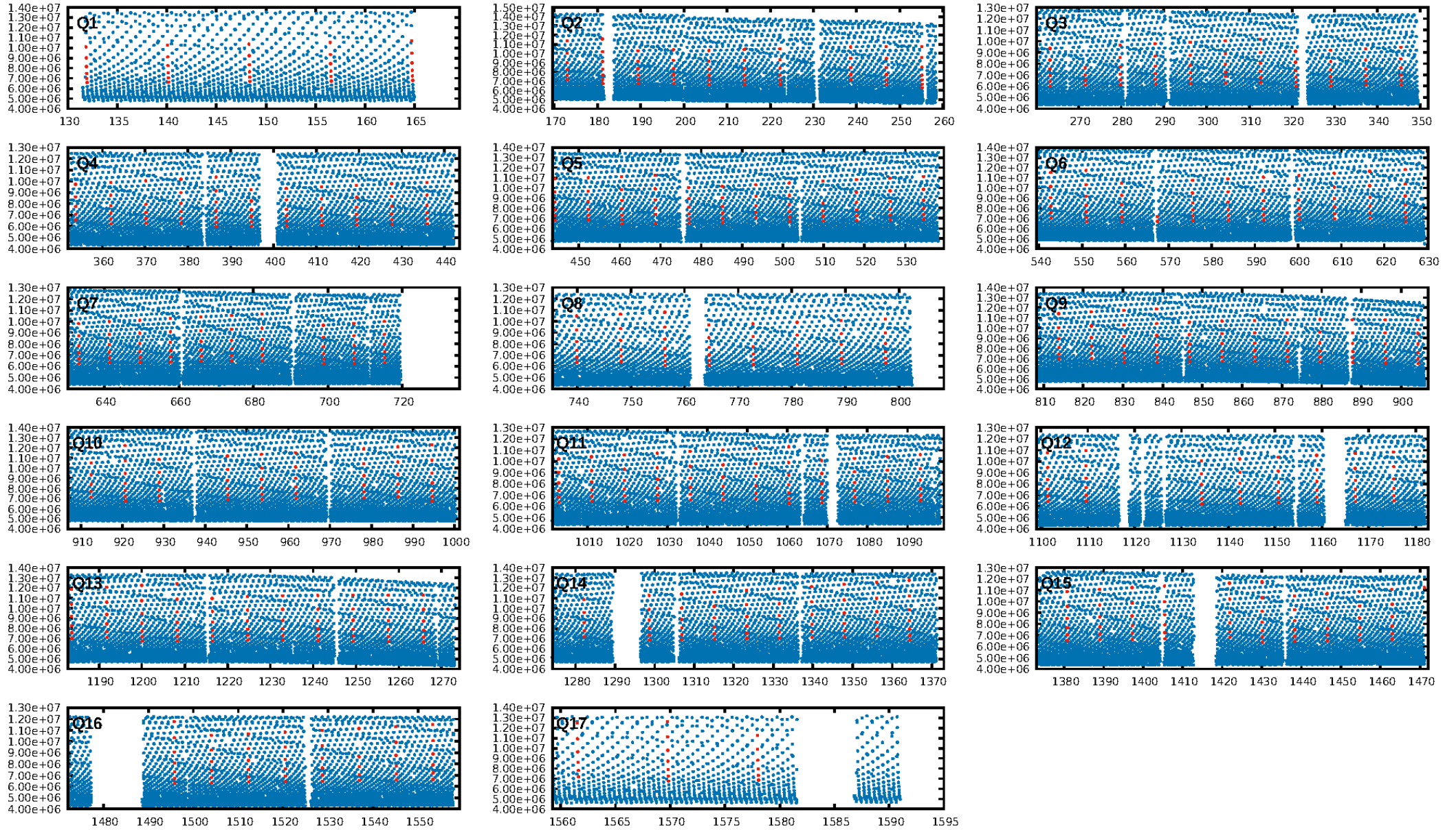
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [25.22σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [144/144]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: 0.229 arcsec [108.27σ]  
OotOffset-rm: 0.045 arcsec [0.67σ]  
KicOffset-rm: 0.061 arcsec [0.86σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:37:26 Z

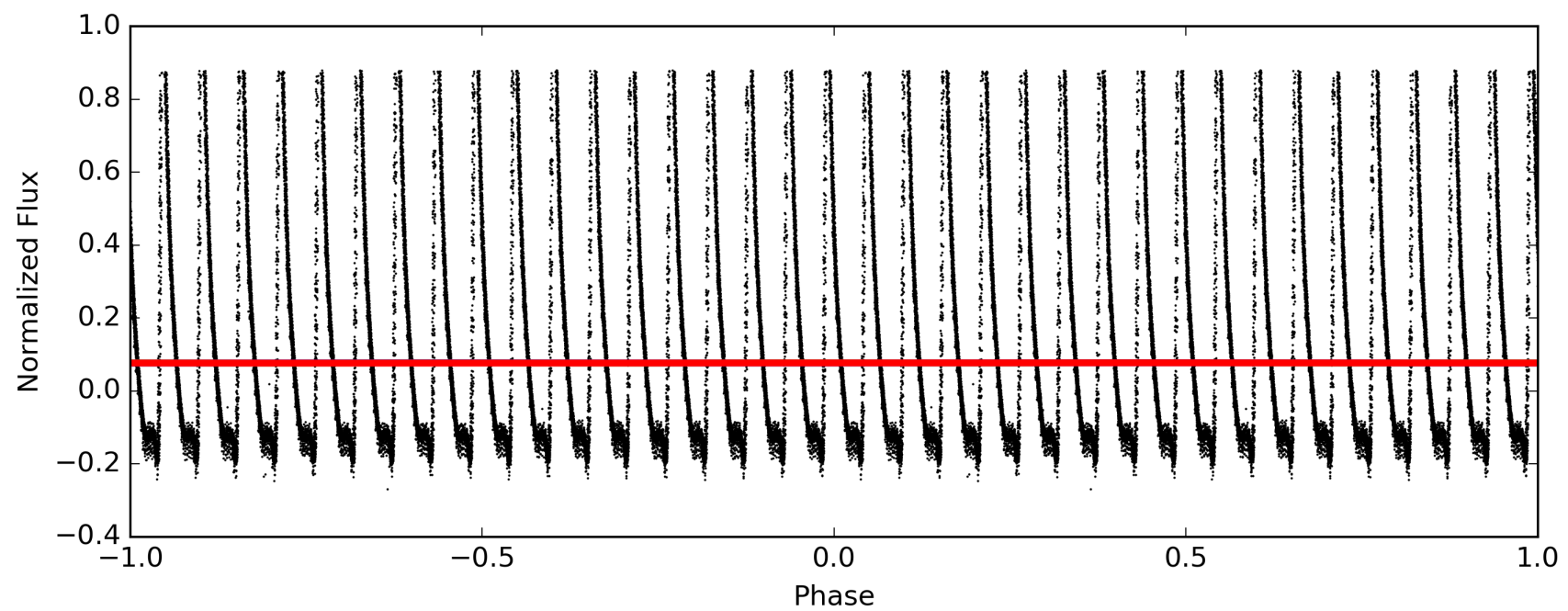
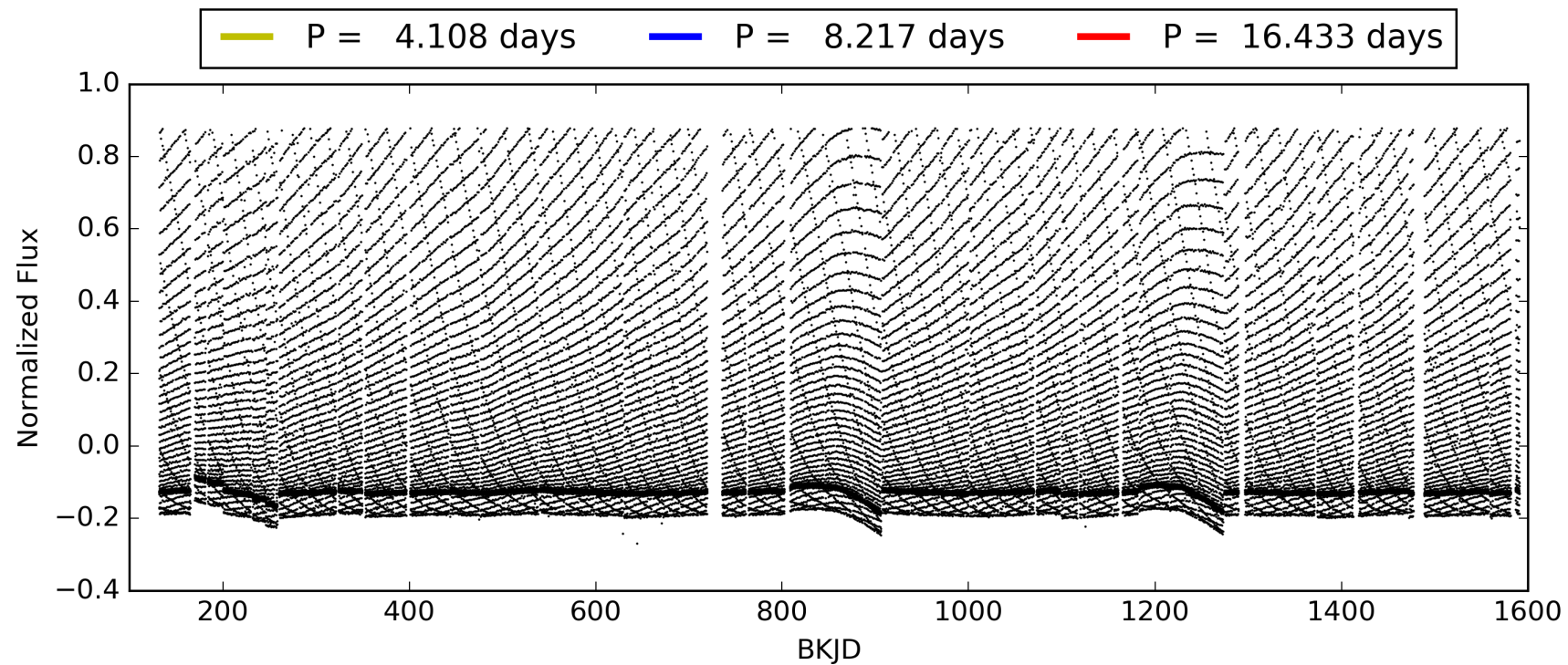
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007742534-02, PDC Light Curves



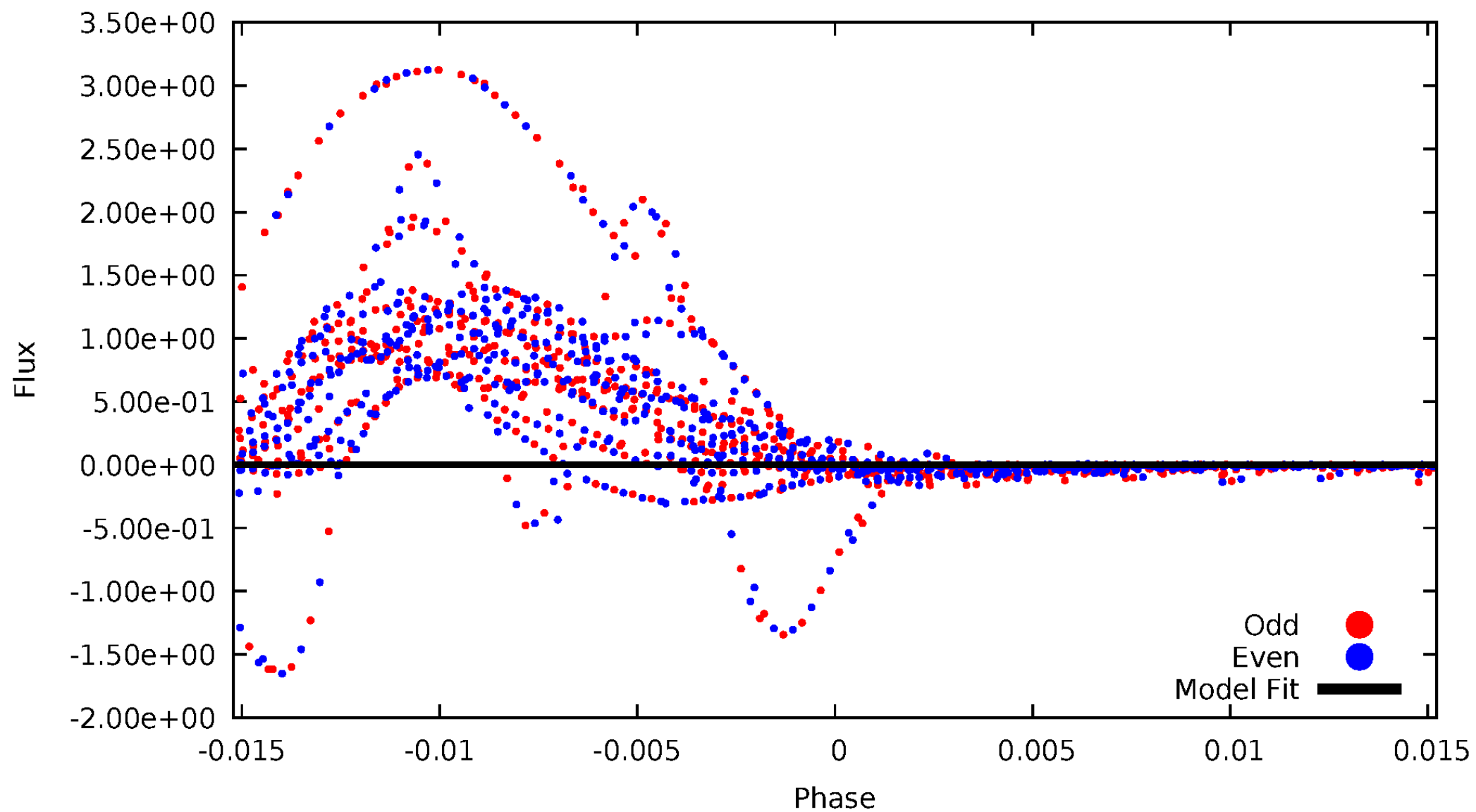


TCE 007742534-02



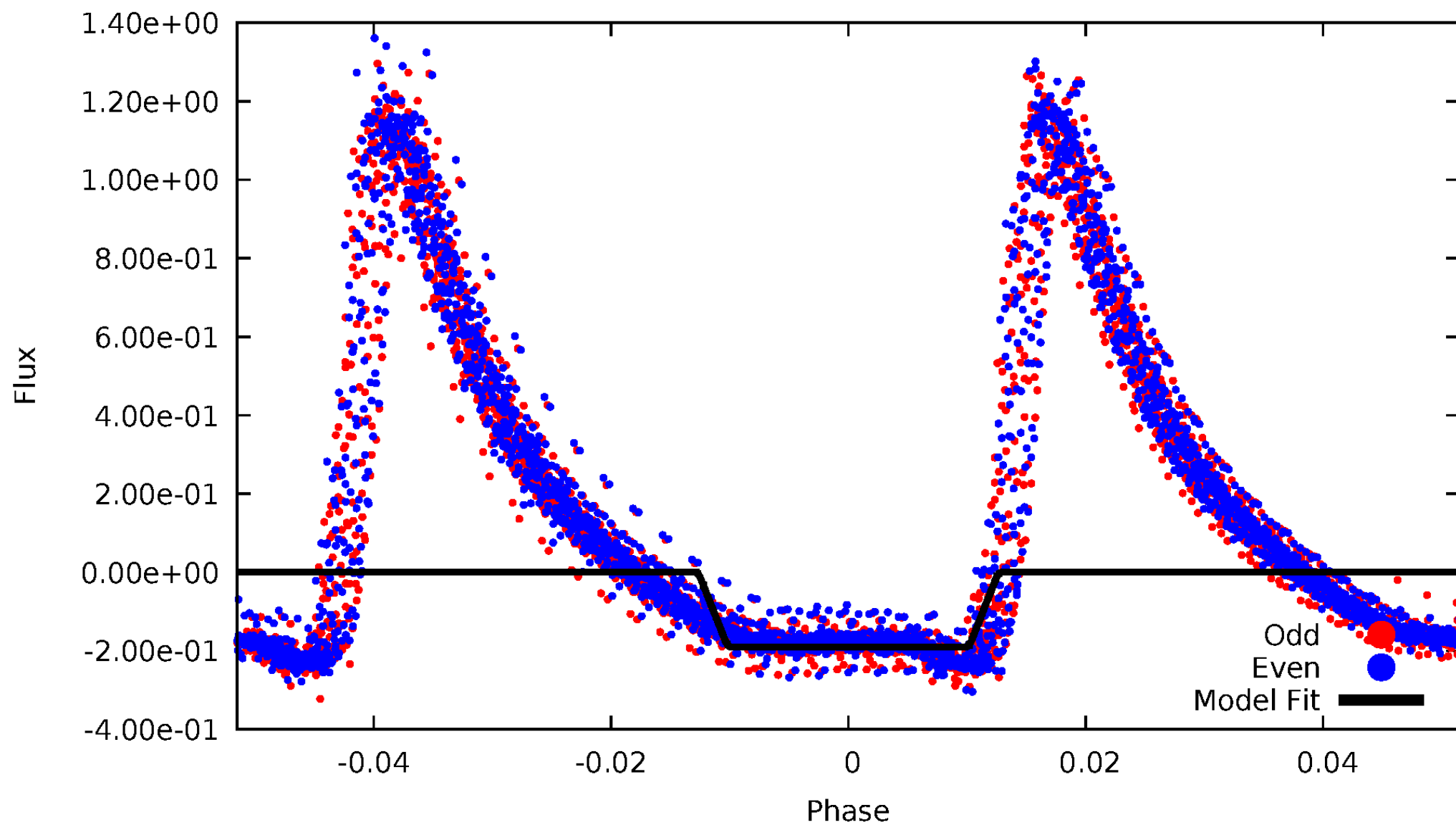
DV Odd/Even

TCE 007742534-02



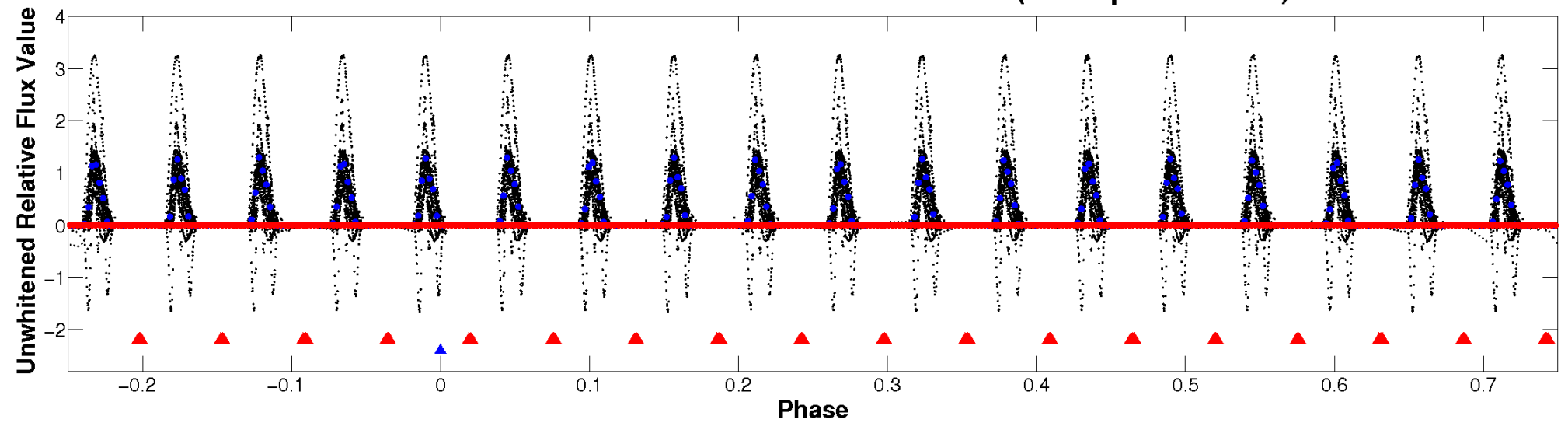
# ALT Odd/Even

TCE 007742534-02

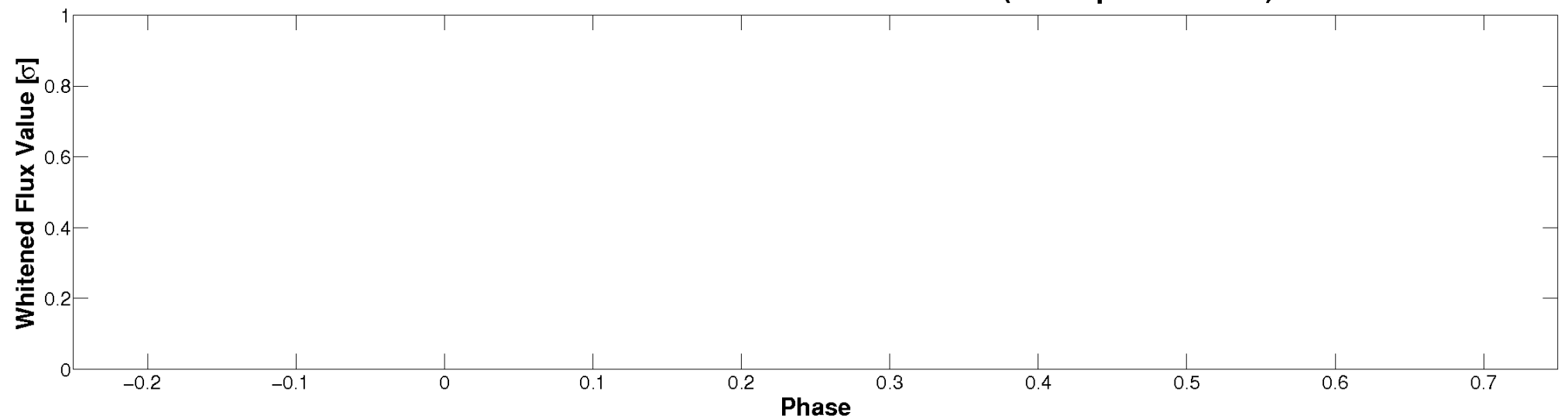


# Non-Whitened Vs. Whitened Light Curve

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

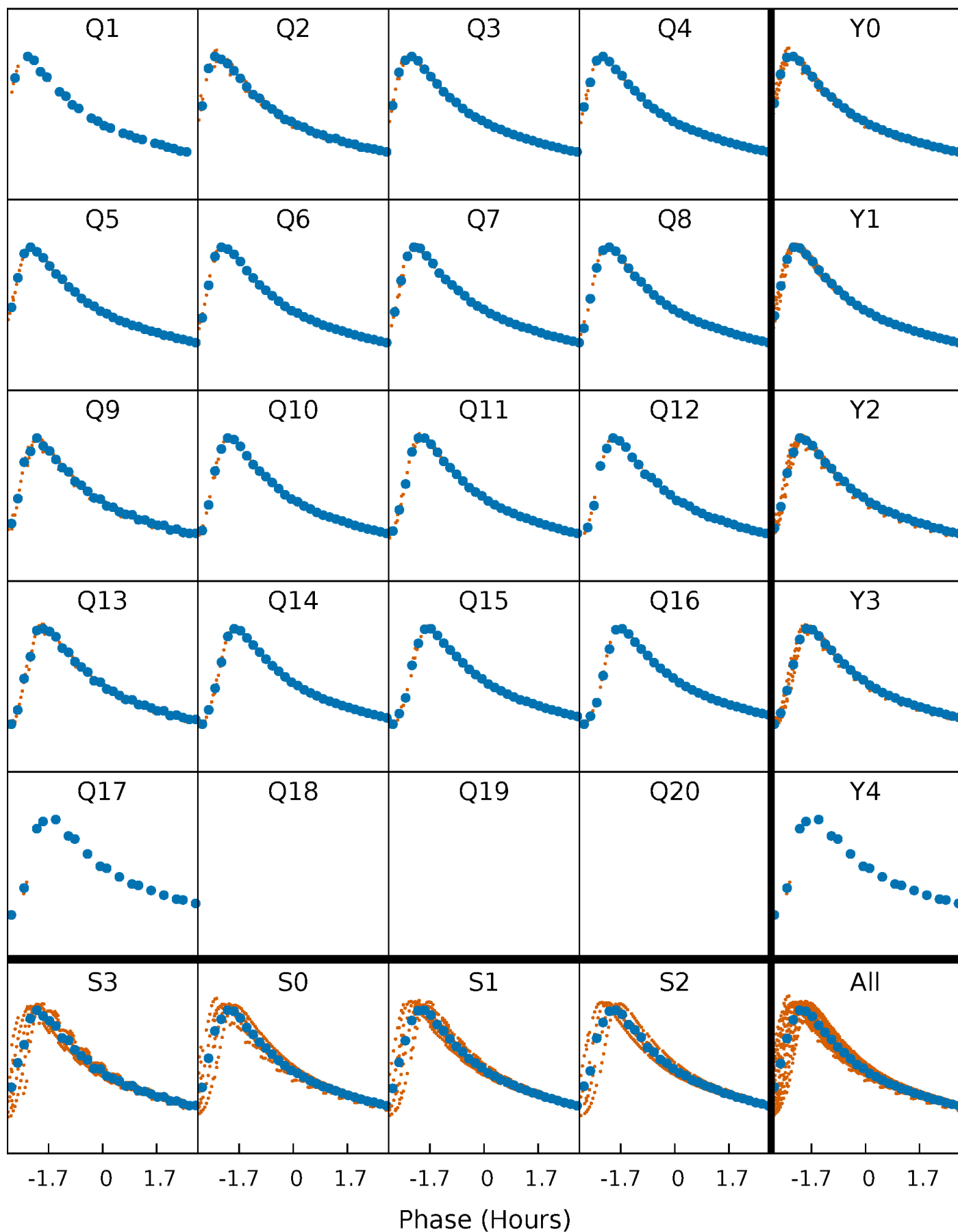


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

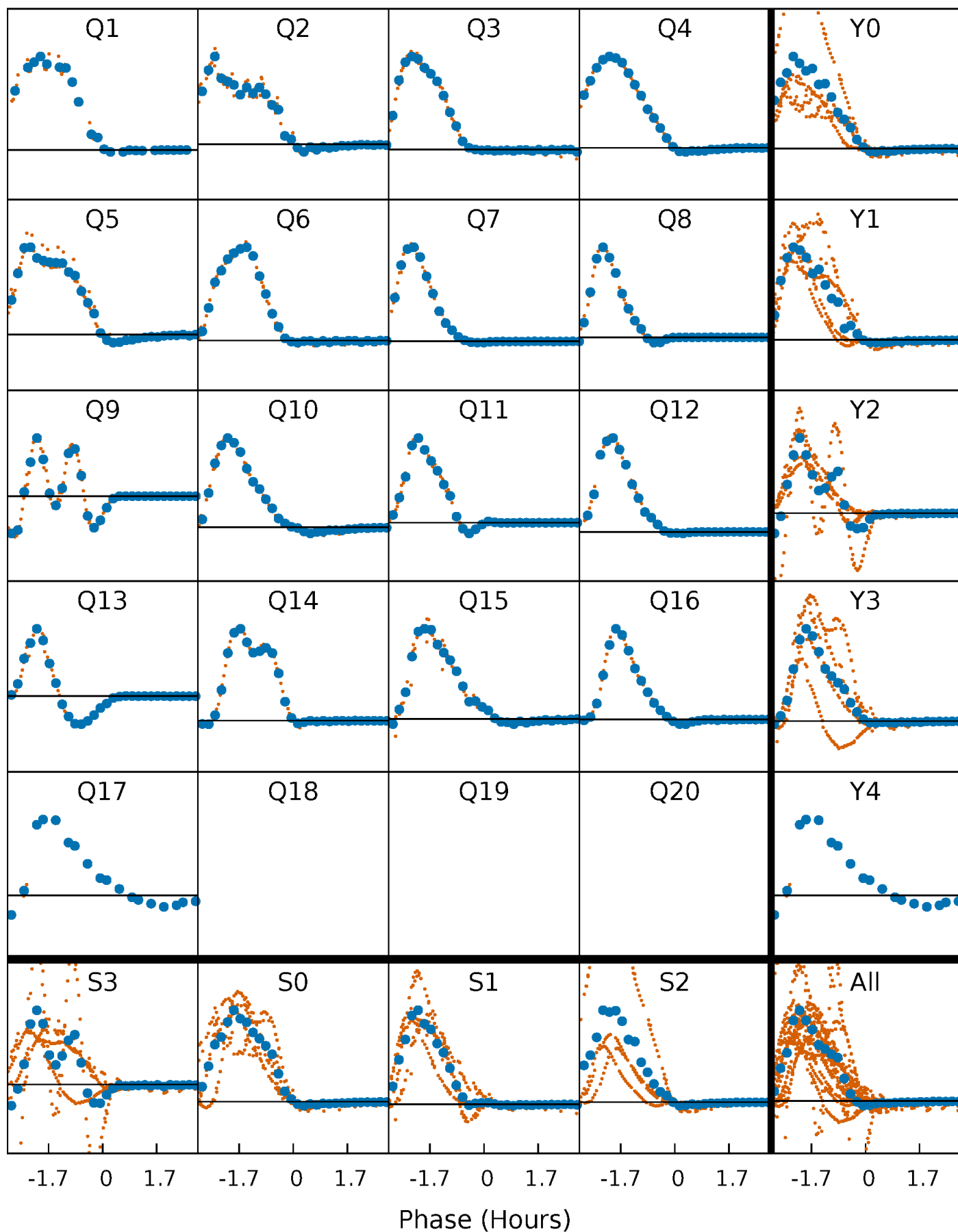
TCE 007742534-02   P= 8.216577 Days    $T_0=131.889119$  (BKJD)





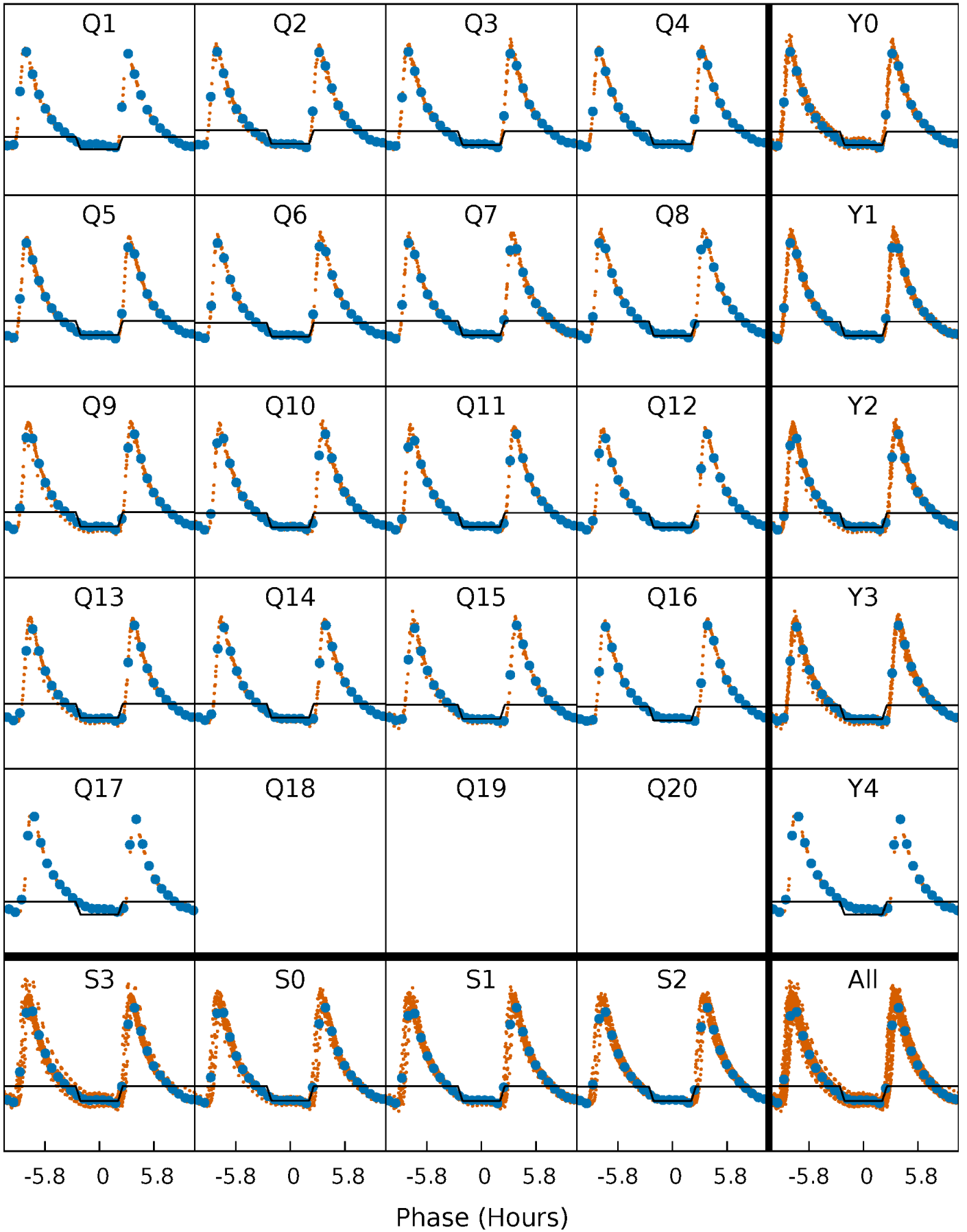
# DV Quarter-Phased Transit Curves

TCE 007742534-02   P= 8.216577 Days    $T_0=131.889119$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

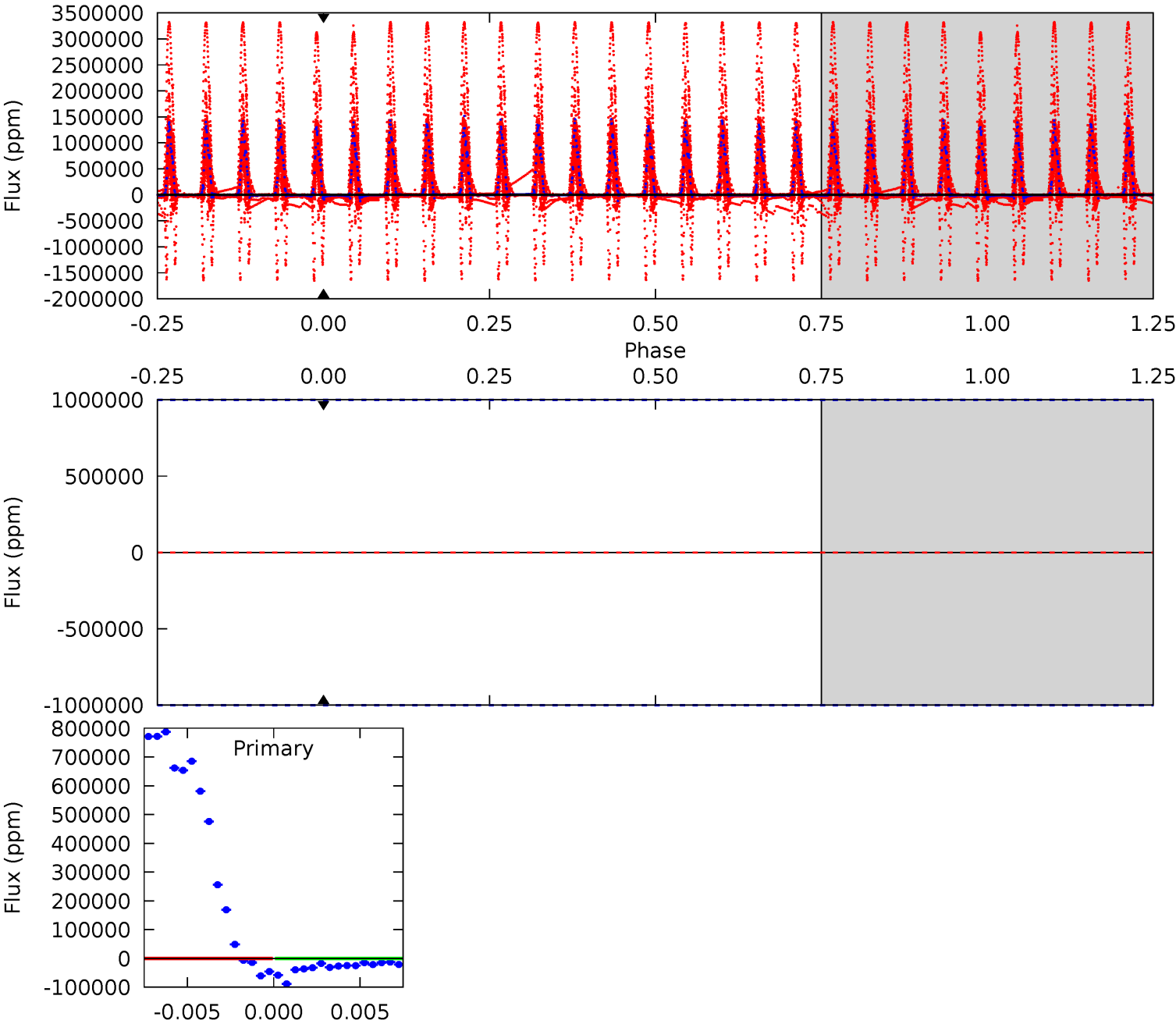
TCE 007742534-02   P= 8.216577 Days    $T_0=132.118673$  (BKJD)



# DV Model-Shift Uniqueness Test

007742534-02, P = 8.216577 Days, E = 123.672542 Days

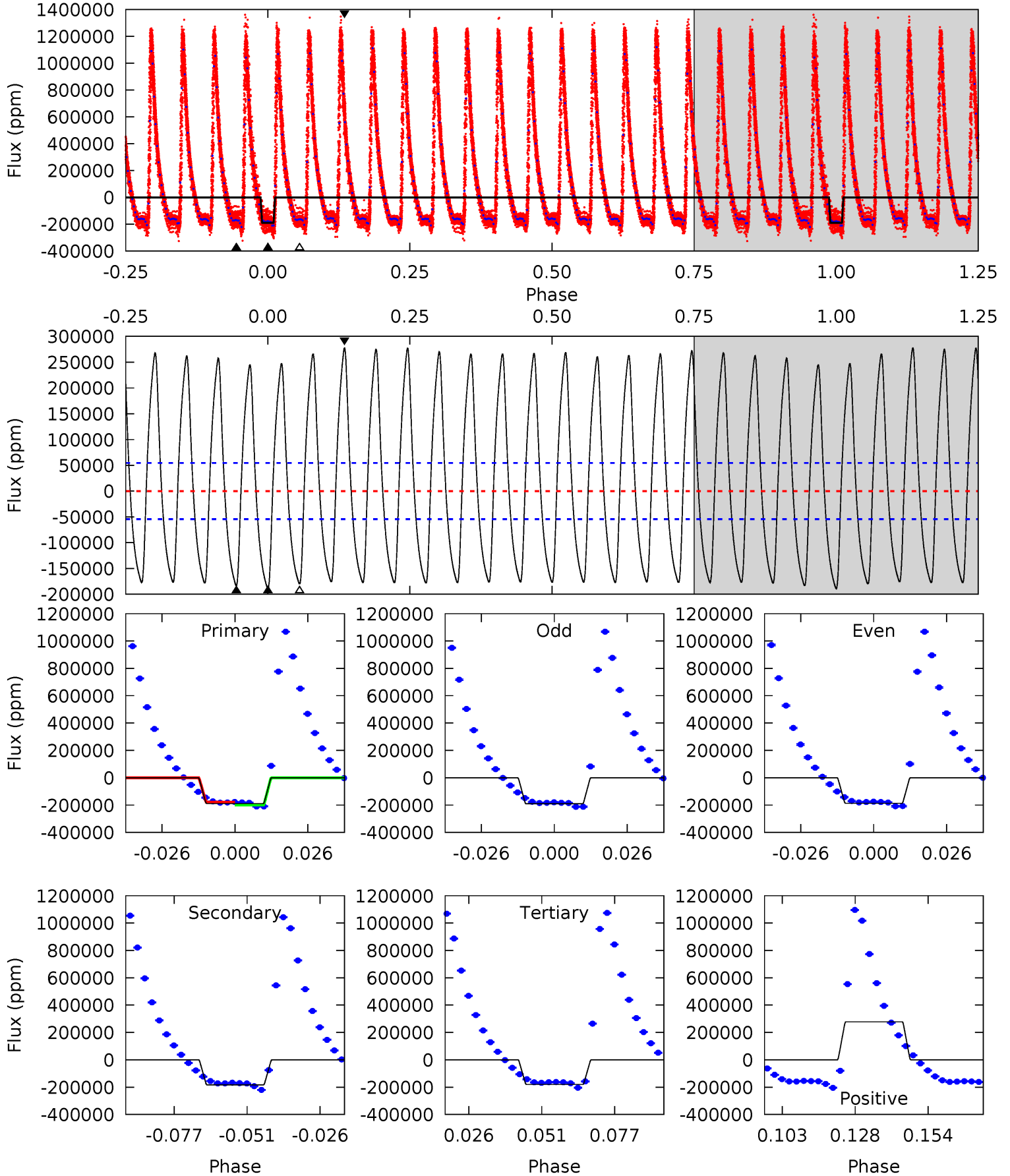
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

007742534-02, P = 8.216577 Days, E = 123.902096 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
16.8	16.3	16.0	24.6	4.84	2.23	13.7	0.81	-7.86	0.30	-8.37	0.19	0.99	0.59	0.95



### Stellar Parameters For KIC 007742534

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8703^{+237}_{-385}$	$3.799^{+0.390}_{-0.104}$	$-0.260^{+0.350}_{-0.350}$	$2.942^{+0.726}_{-1.244}$	$1.987^{+0.408}_{-0.448}$	$0.110^{+0.384}_{-0.043}$
	+3%/-4%	+10%/-3%	+135%/-135%	+25%/-42%	+21%/-23%	+349%/-39%
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 007742534-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$109.46^{+41.46}_{-35.55}$	$2810^{+208}_{-309}$	$-2931^{+11280}_{-4914}$	$-0.156^{+58.729}_{-48.487}$
Alt.	$-183299 \pm 11272$	$126.85^{+41.94}_{-36.22}$	$2808^{+197}_{-309}$	$9181^{+2105}_{-1246}$	$78^{+69}_{-33}$

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

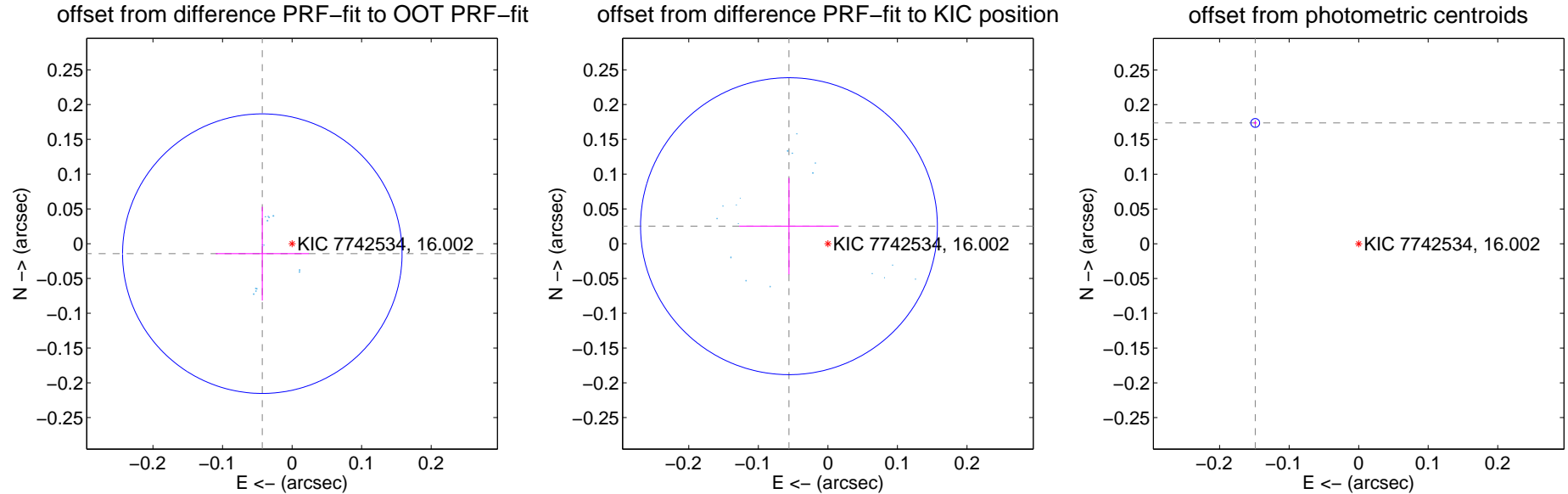
## DV Centroid Data

Supplemental centroid analysis for 007742534-02. Kepler magnitude: 16.00. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

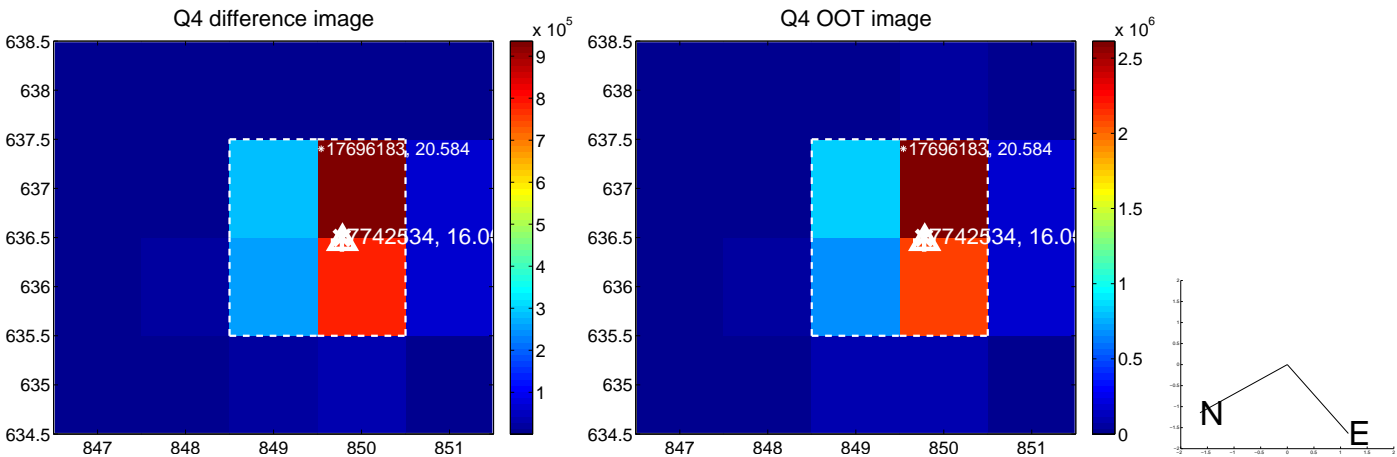
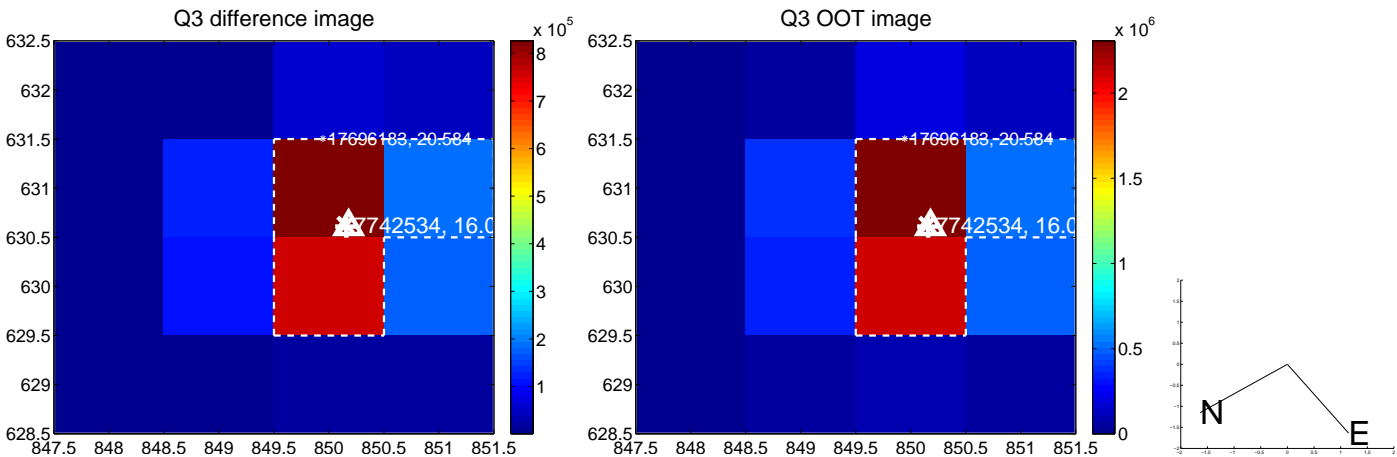
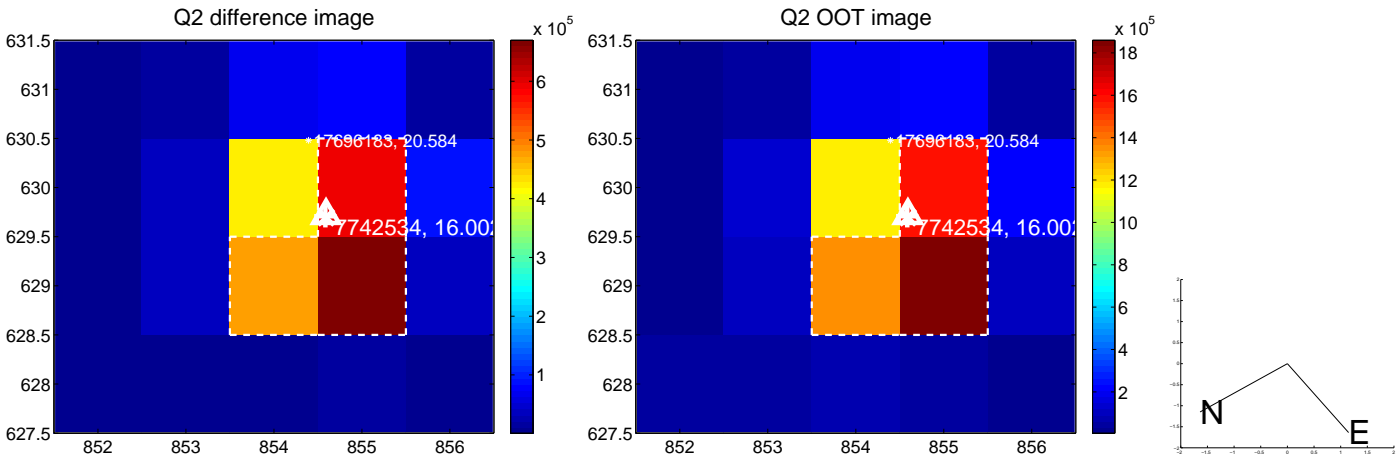
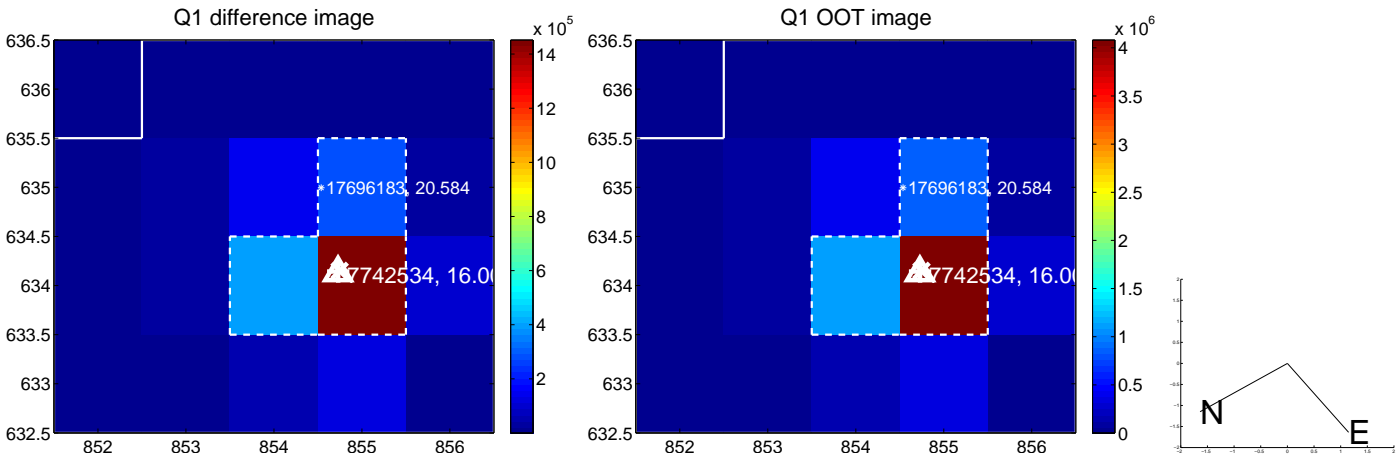
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.045 \pm 0.067$	0.67	$0.043 \pm 0.067$	$-0.014 \pm 0.067$
PRF-fit source offset from KIC position	$0.061 \pm 0.071$	0.86	$0.056 \pm 0.072$	$0.025 \pm 0.069$
photometric centroid source offset	$0.23 \pm 0.00$	108.27	$0.15 \pm 0.00$	$0.17 \pm 0.00$



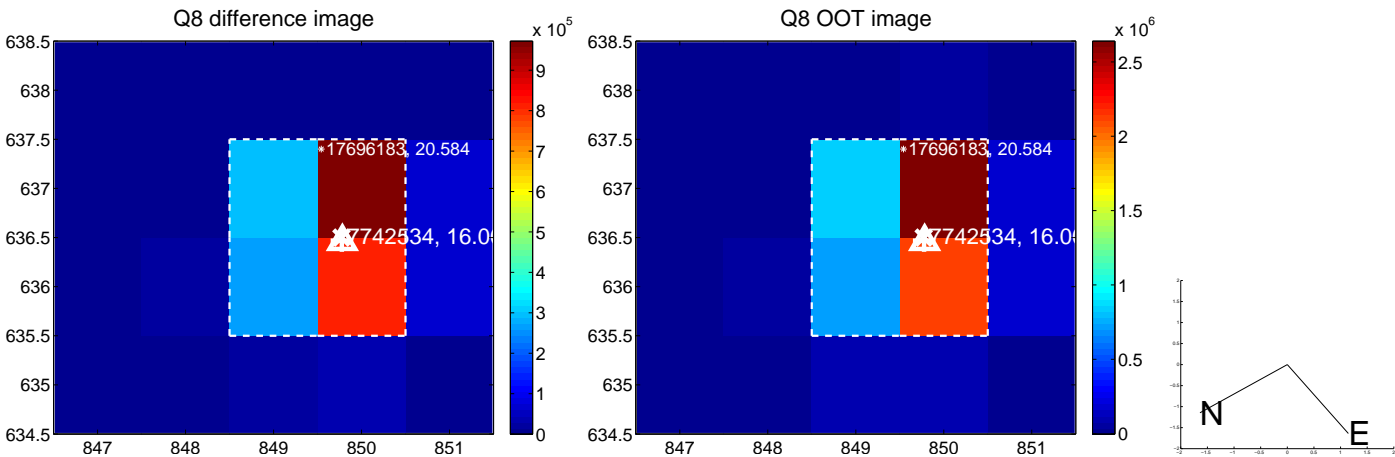
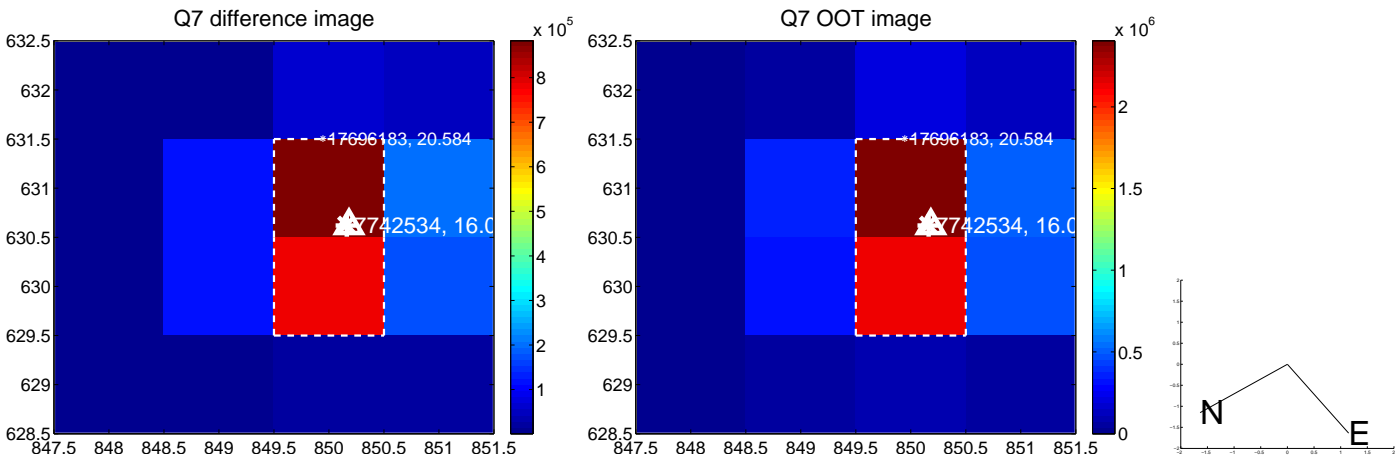
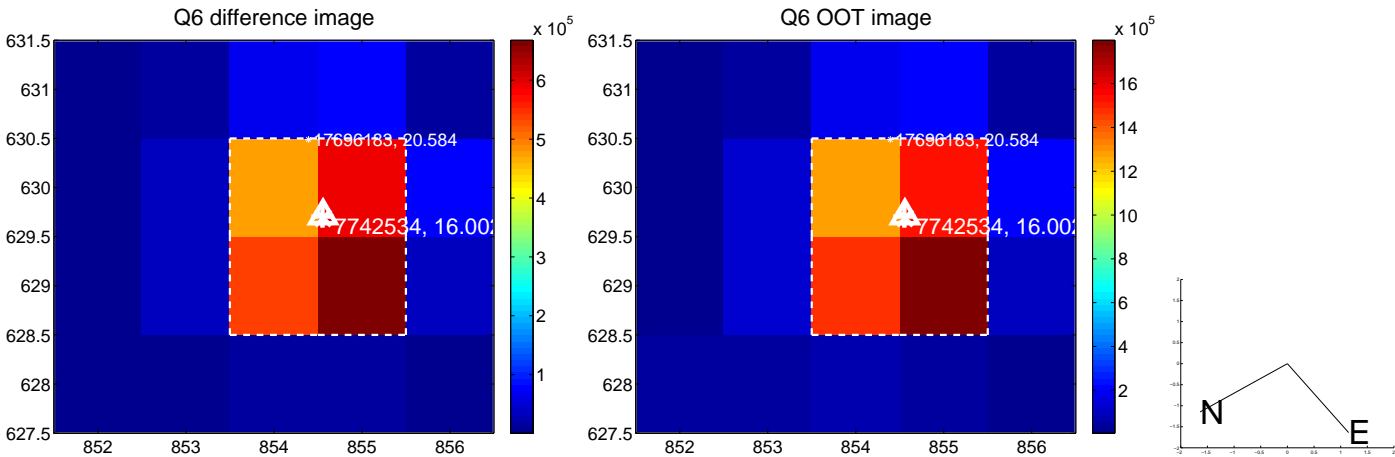
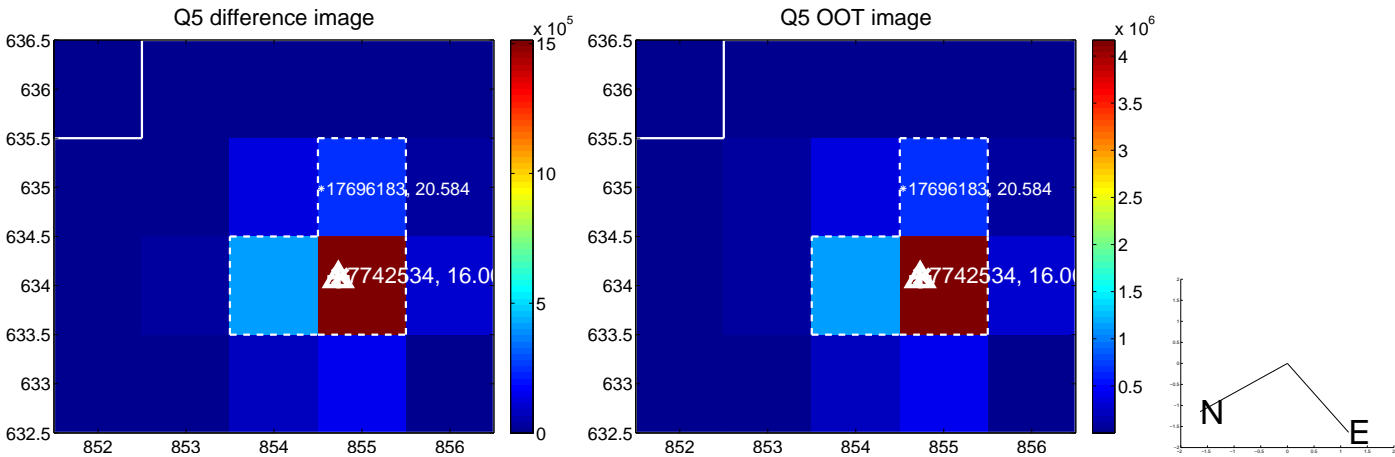
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

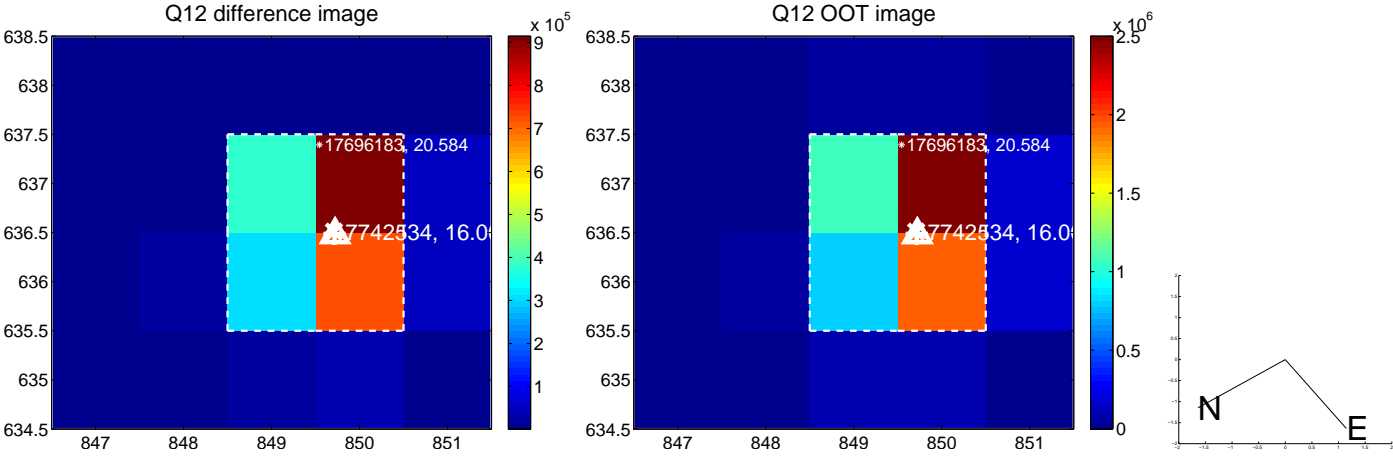
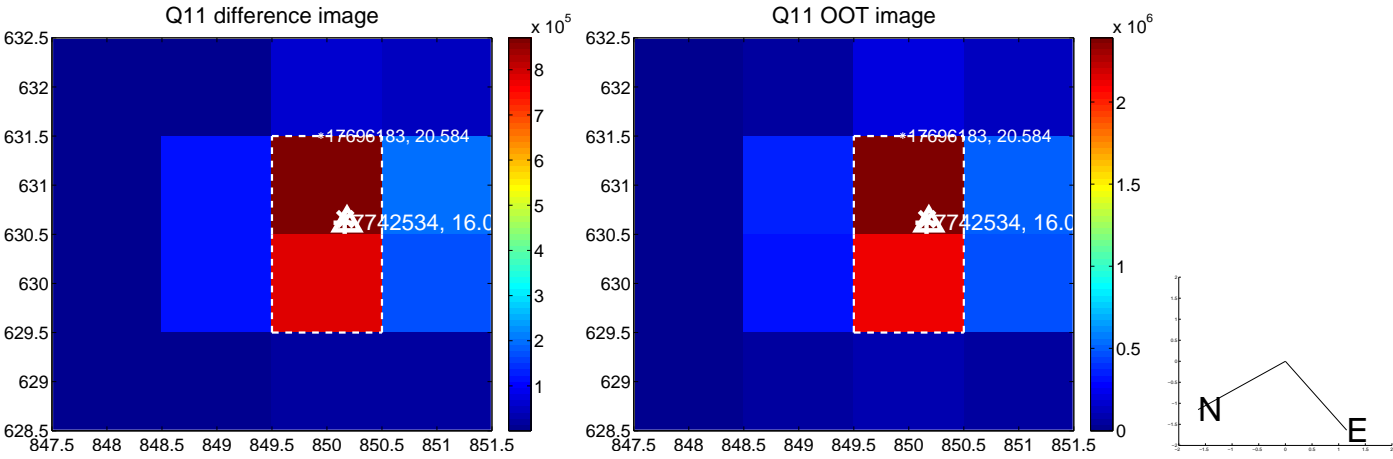
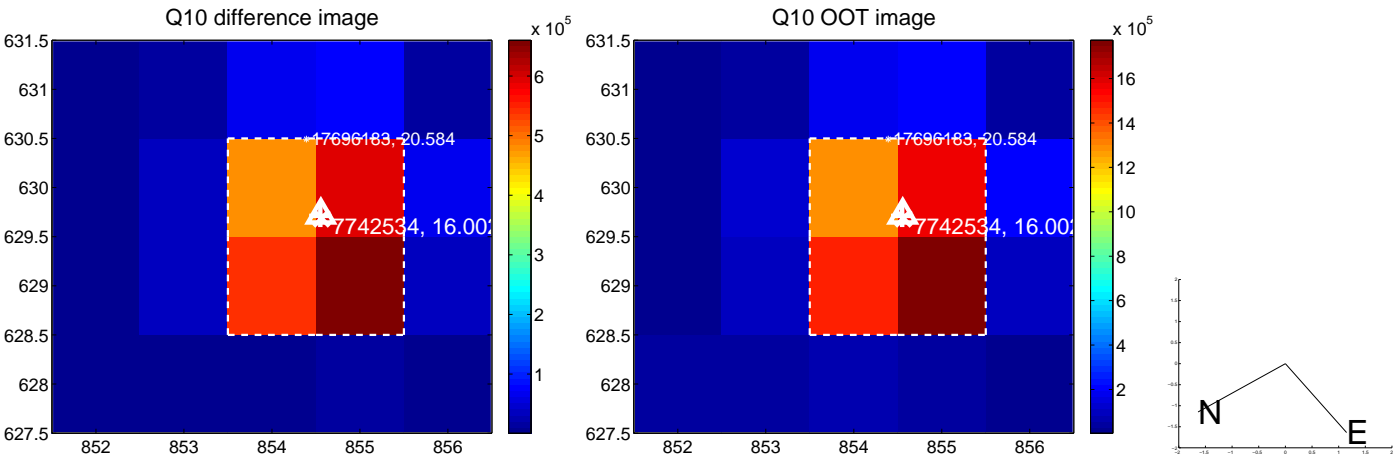
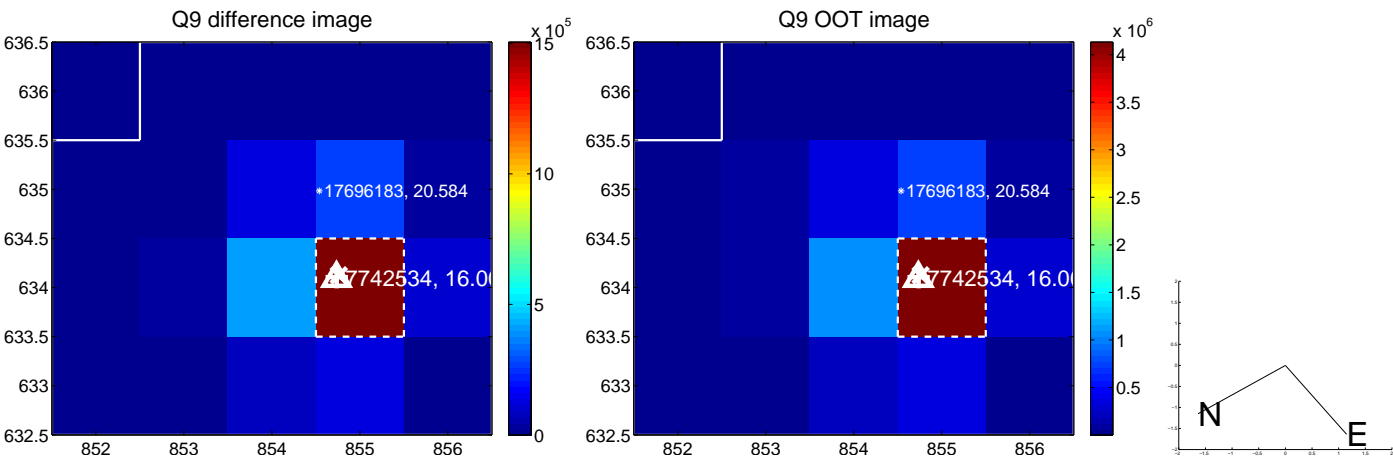




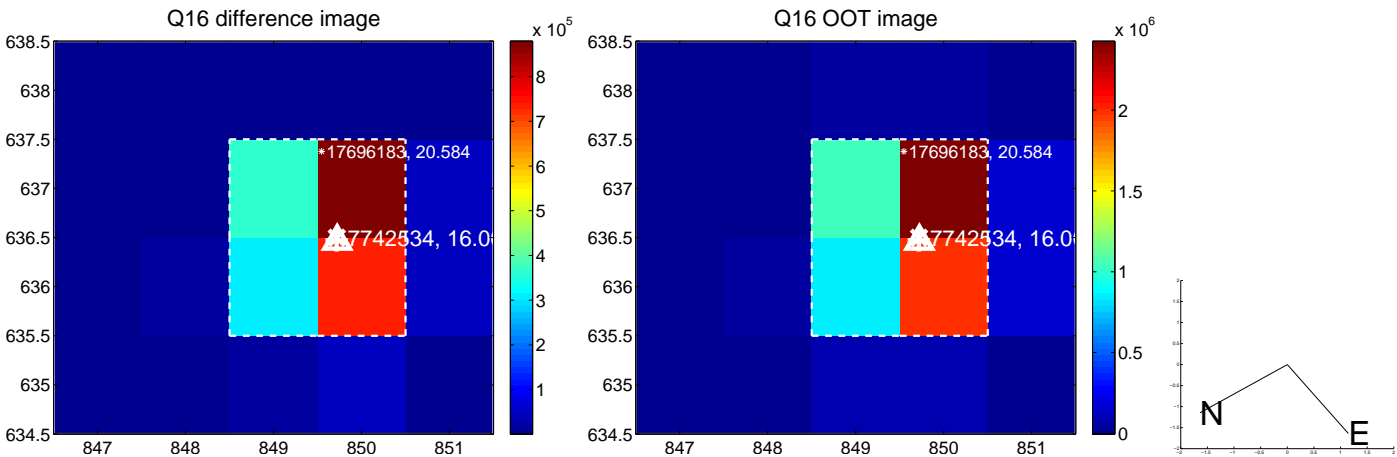
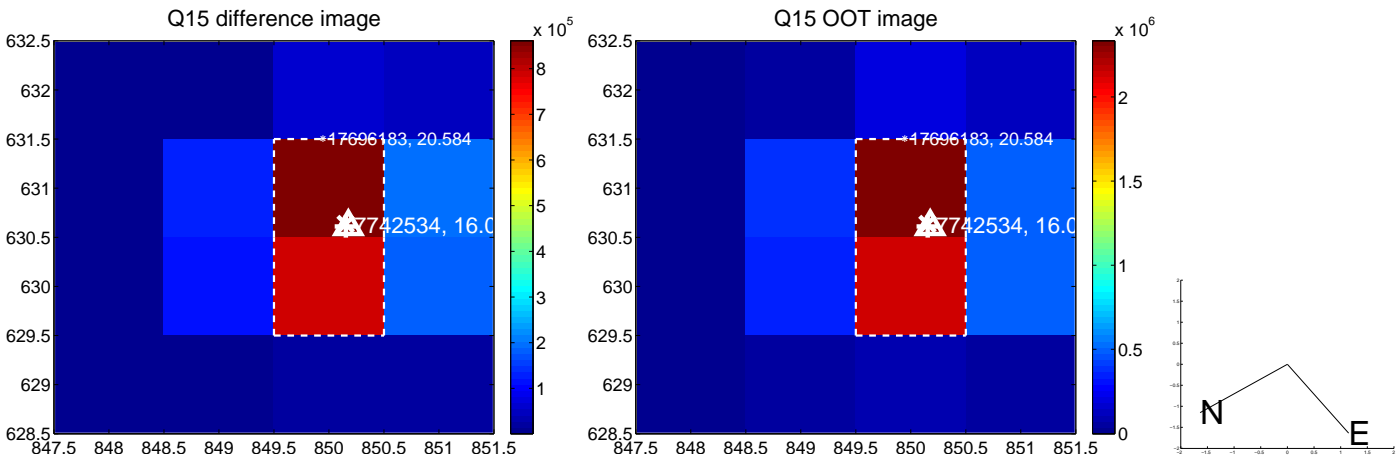
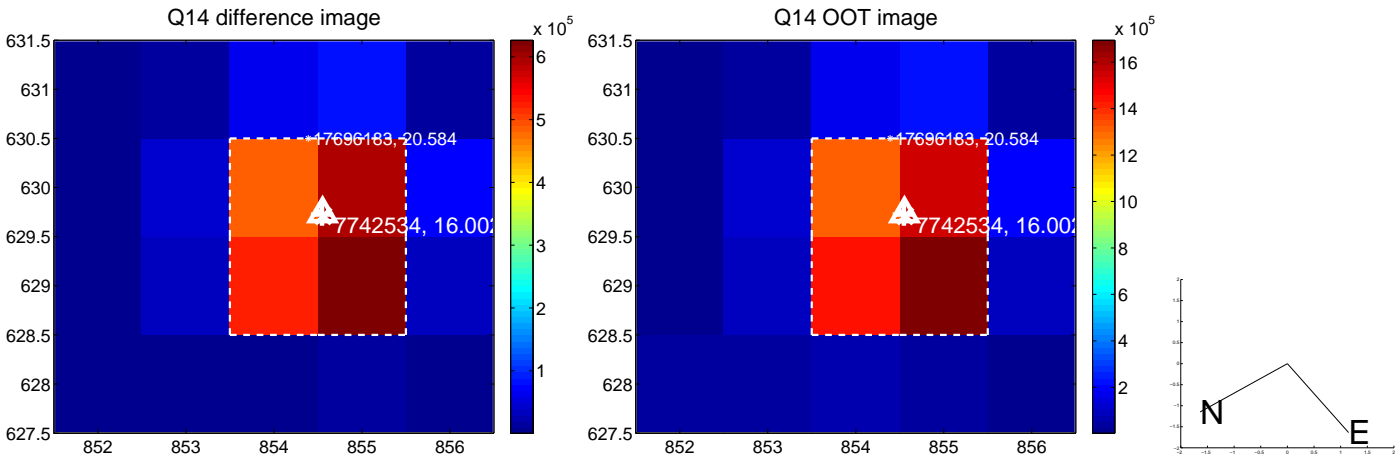
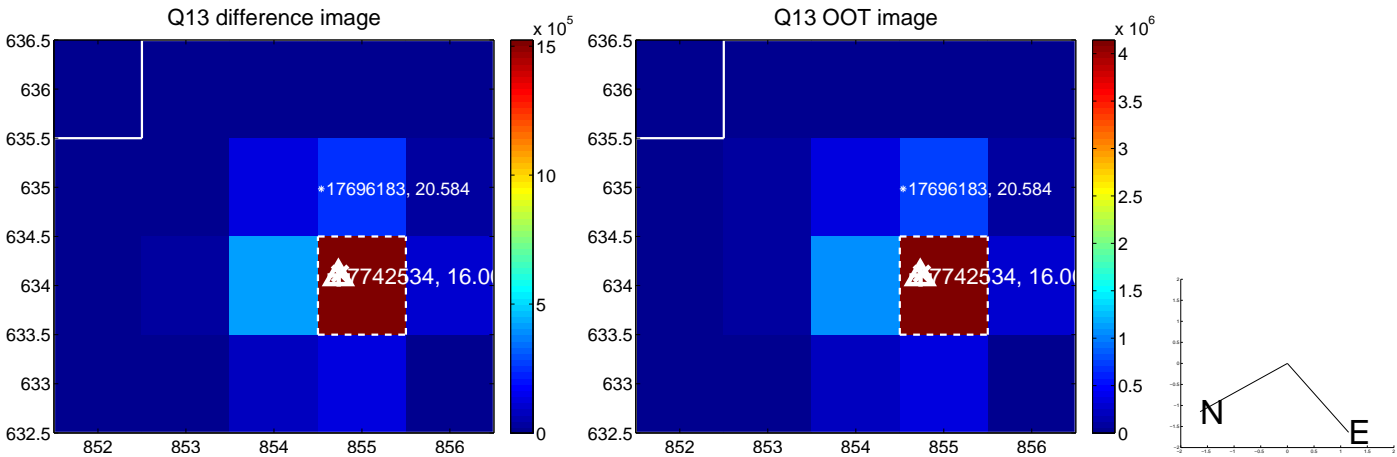
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



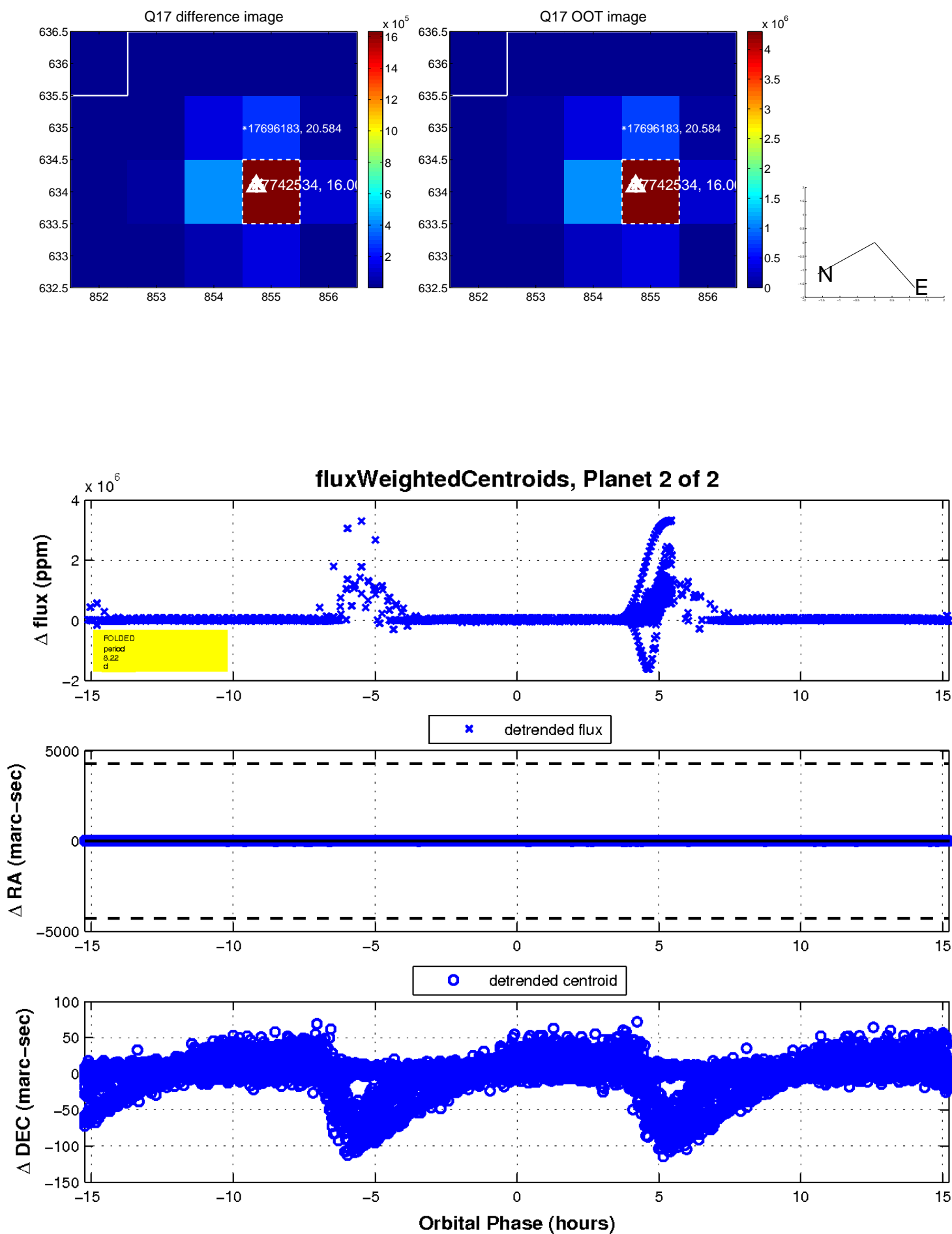
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

