

# KIC 007604328

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007604328-01	OBS	2458.02	2.936618	133.028044	282.4	1.859	17.8	19.3	0.91	5455	1.55	474.23
007604328-02	OBS	2458.01	4.354064	132.857369	270.6	2.499	14.6	16.4	0.91	5455	1.75	280.49
007604328-03	OBS	No	272.934221	273.648726	781.2	3.163	7.2	7.4	0.91	5455	2.67	1.13

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007604328-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007604328-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007604328-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

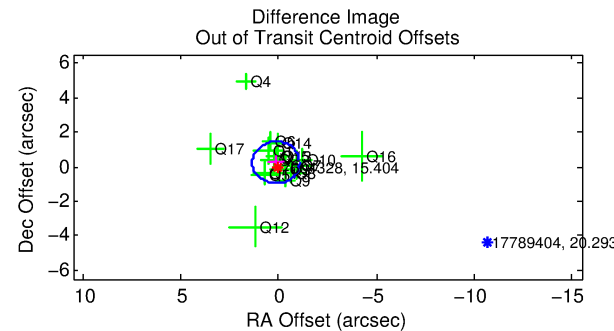
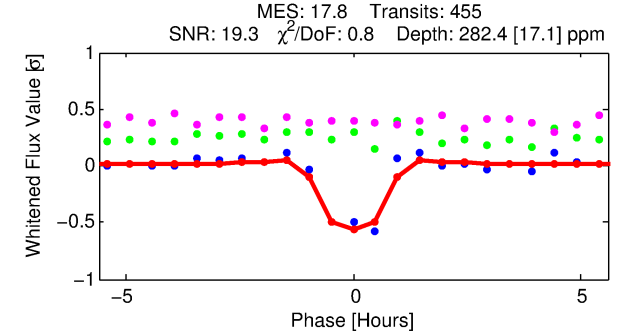
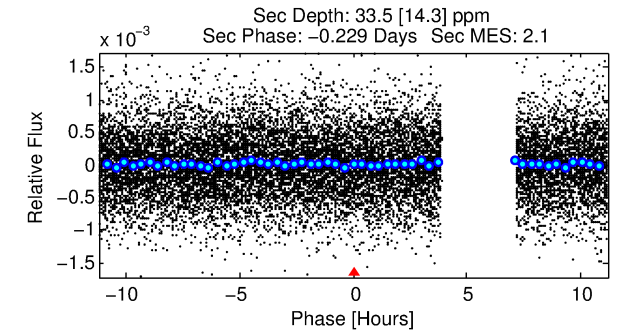
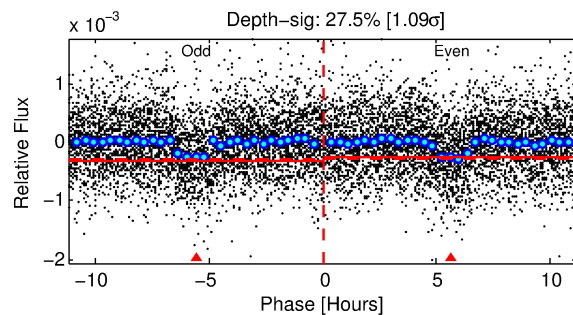
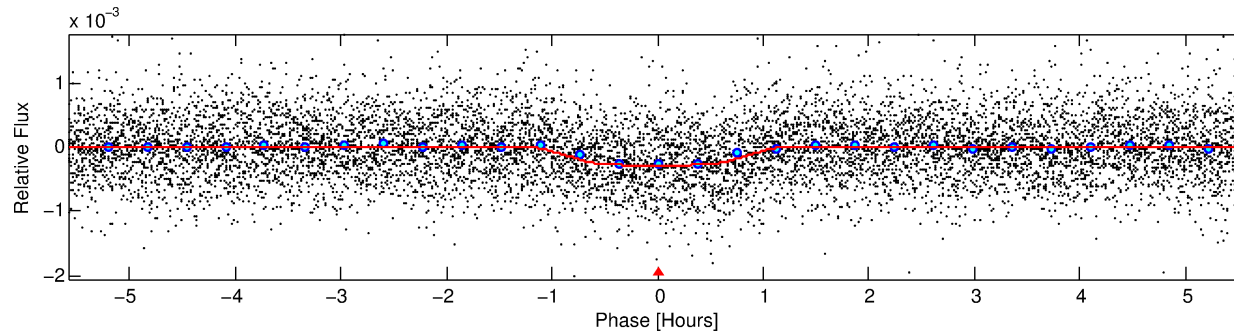
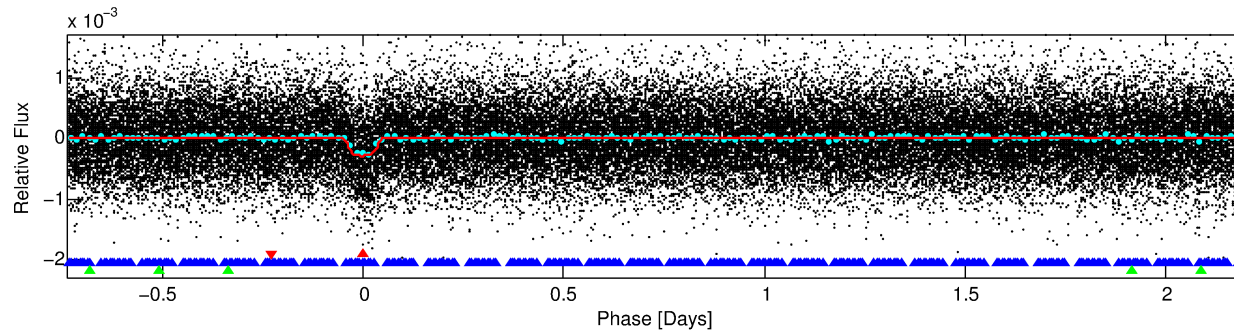
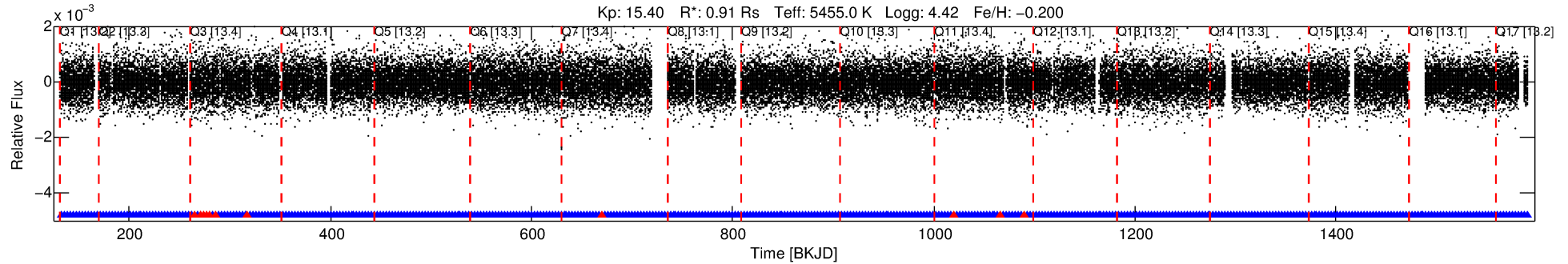
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007604328-01

No Significant Match Found

# DV One-Page Summary

KIC: 7604328 Candidate: 1 of 3 Period: 2.937 d  
KOI: K02458.02 Corr: 0.946



## DV Fit Results:

Period = 2.93662 [0.00001] d  
Epoch = 133.0280 [0.0016] BKJD  
Rp/R\* = 0.0156 [0.0079]  
a/R\* = 10.89 [22.15]  
b = 0.47 [3.44]  
Seff = 474.23 [171.57]  
Teq = 1190 [108] K  
Rp = 1.55 [0.87] Re  
a = 0.0372 [0.0081] AU  
Ag = 10.58 [12.18] [0.79 $\sigma$ ]  
Teffp = 3318 [917] K [2.30 $\sigma$ ]

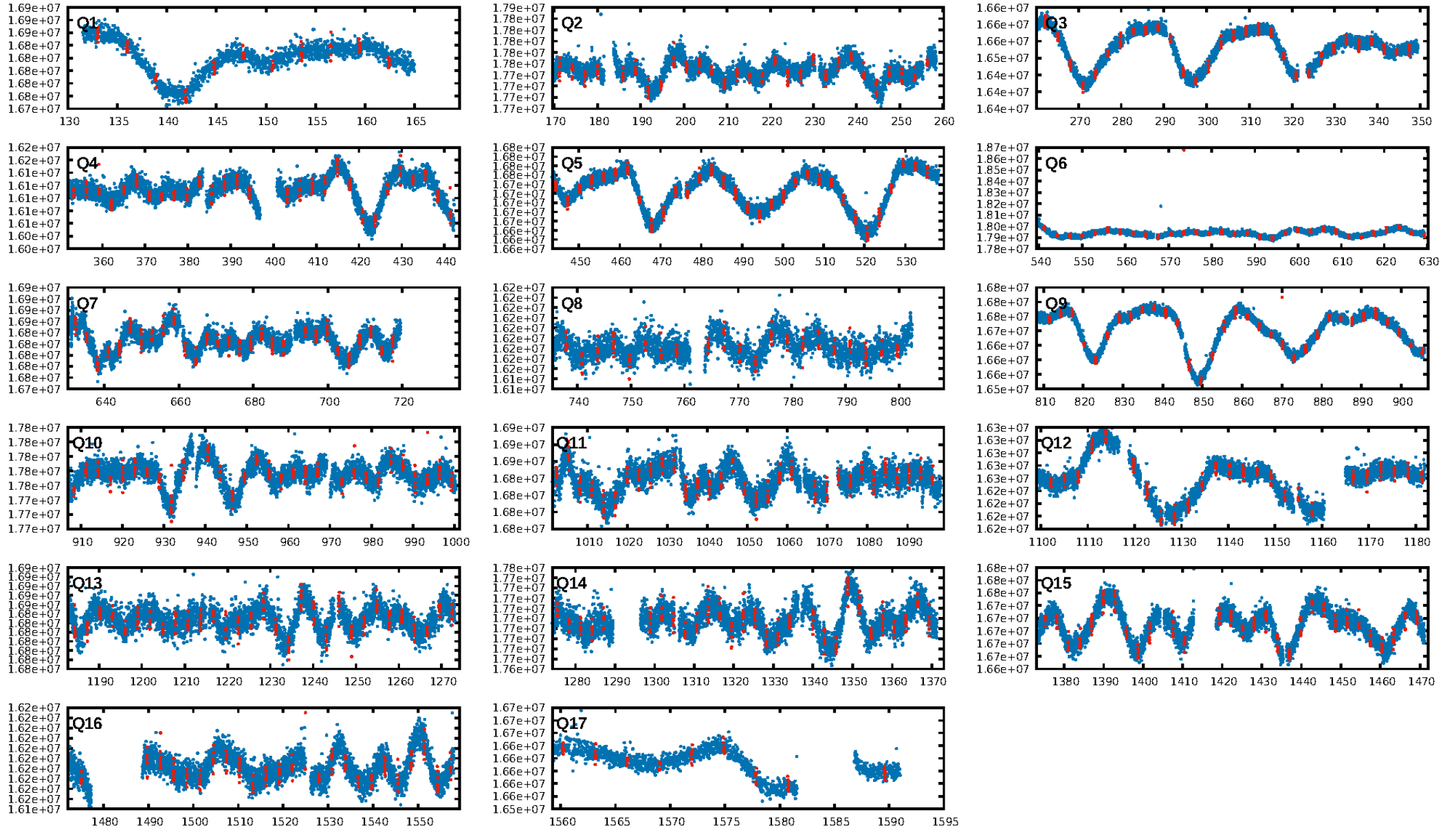
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [10.92 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.87e-68  
RollingBand-fgt: 0.97 [424/435]  
GhostDiagnostic-chr: 2.812  
Centroid-sig: 15.0%  
Centroid-so: 1.097 arcsec [1.63 $\sigma$ ]  
OotOffset-rm: 0.281 arcsec [0.70 $\sigma$ ]  
KicOffset-rm: 0.204 arcsec [0.51 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.76 [13/17]  
DiffImageOverlap-fno: 1.00 [17/17]

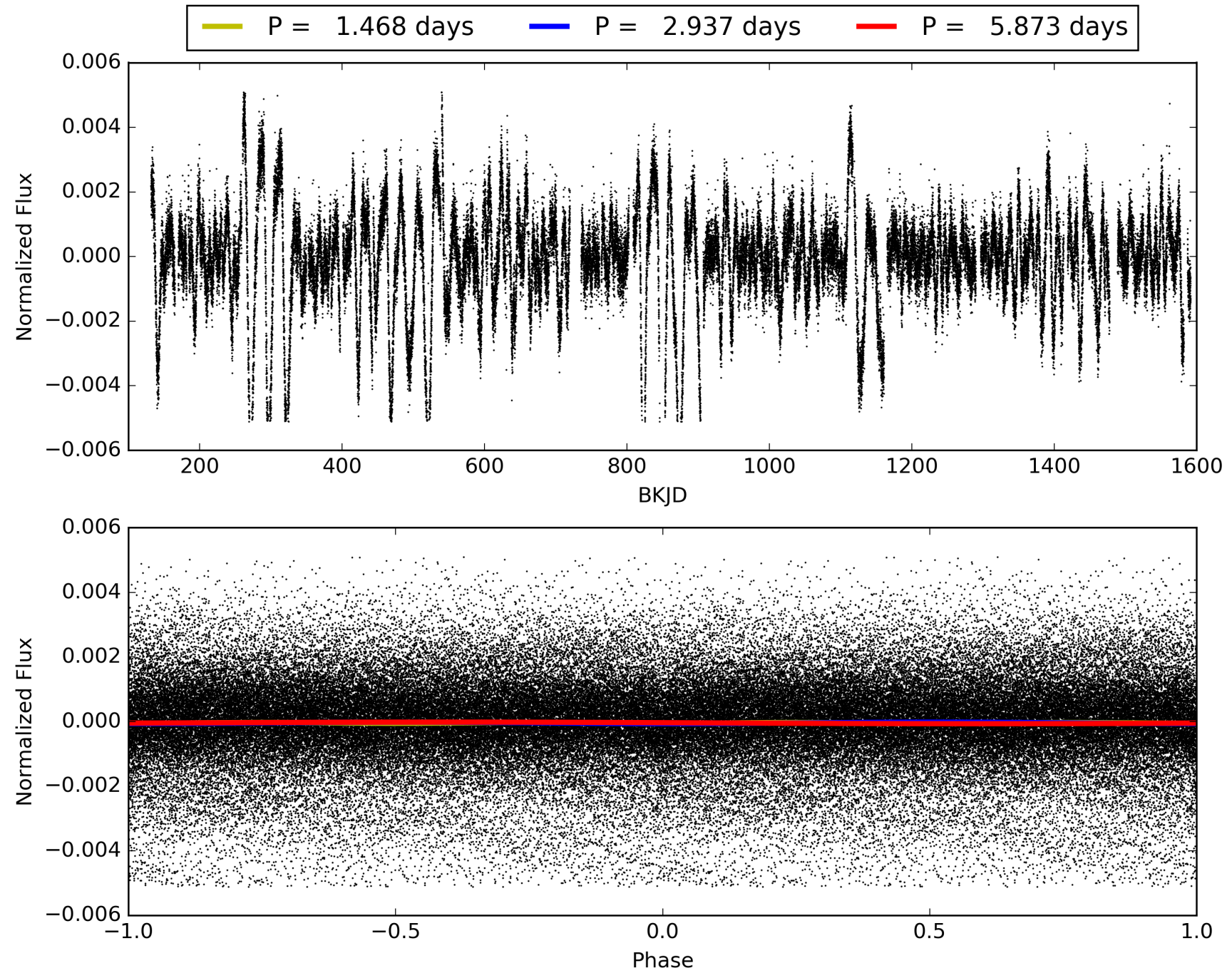
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:07:36 Z

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

# TCE 007604328-01, PDC Light Curves



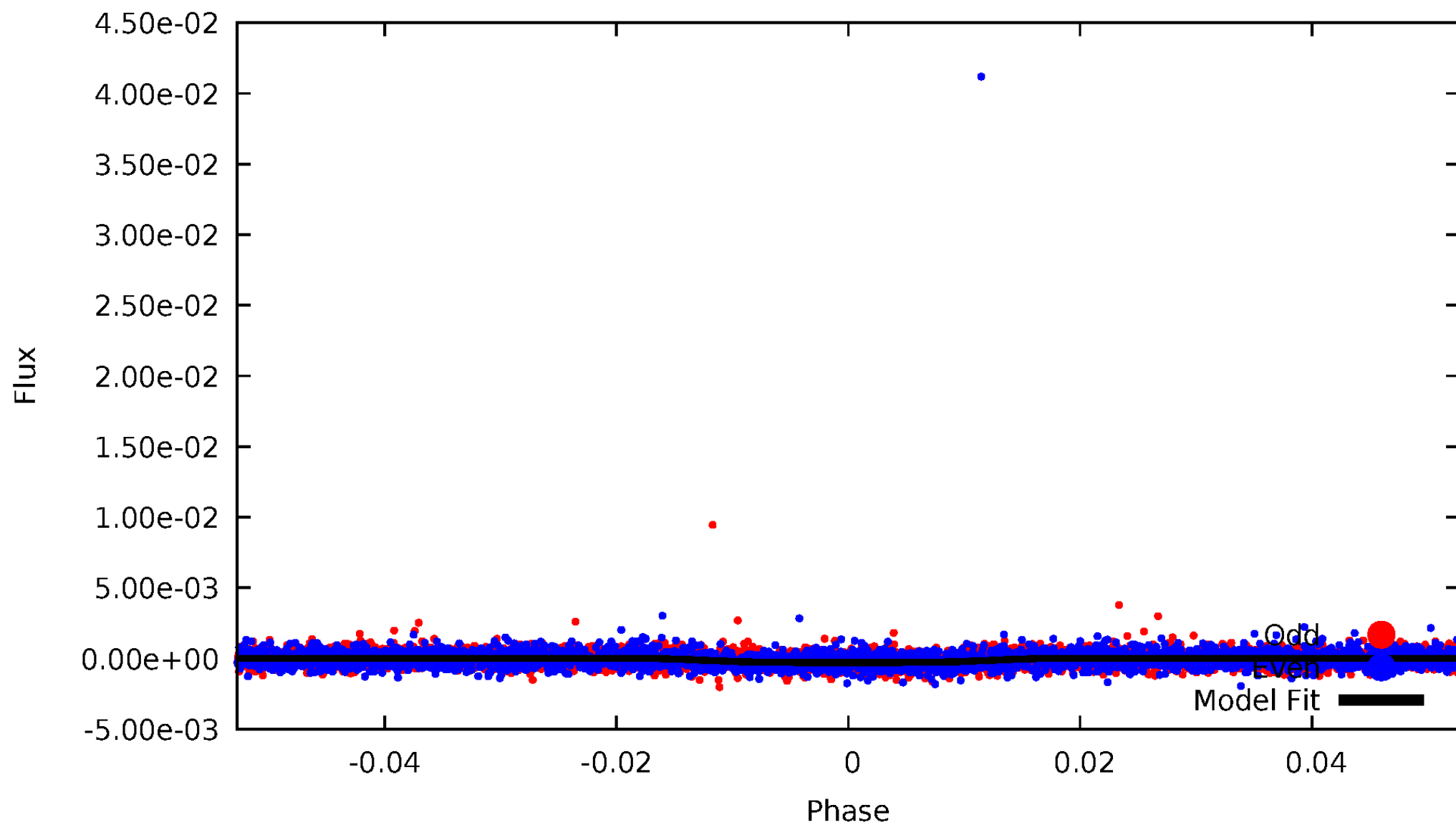
TCE 007604328-01





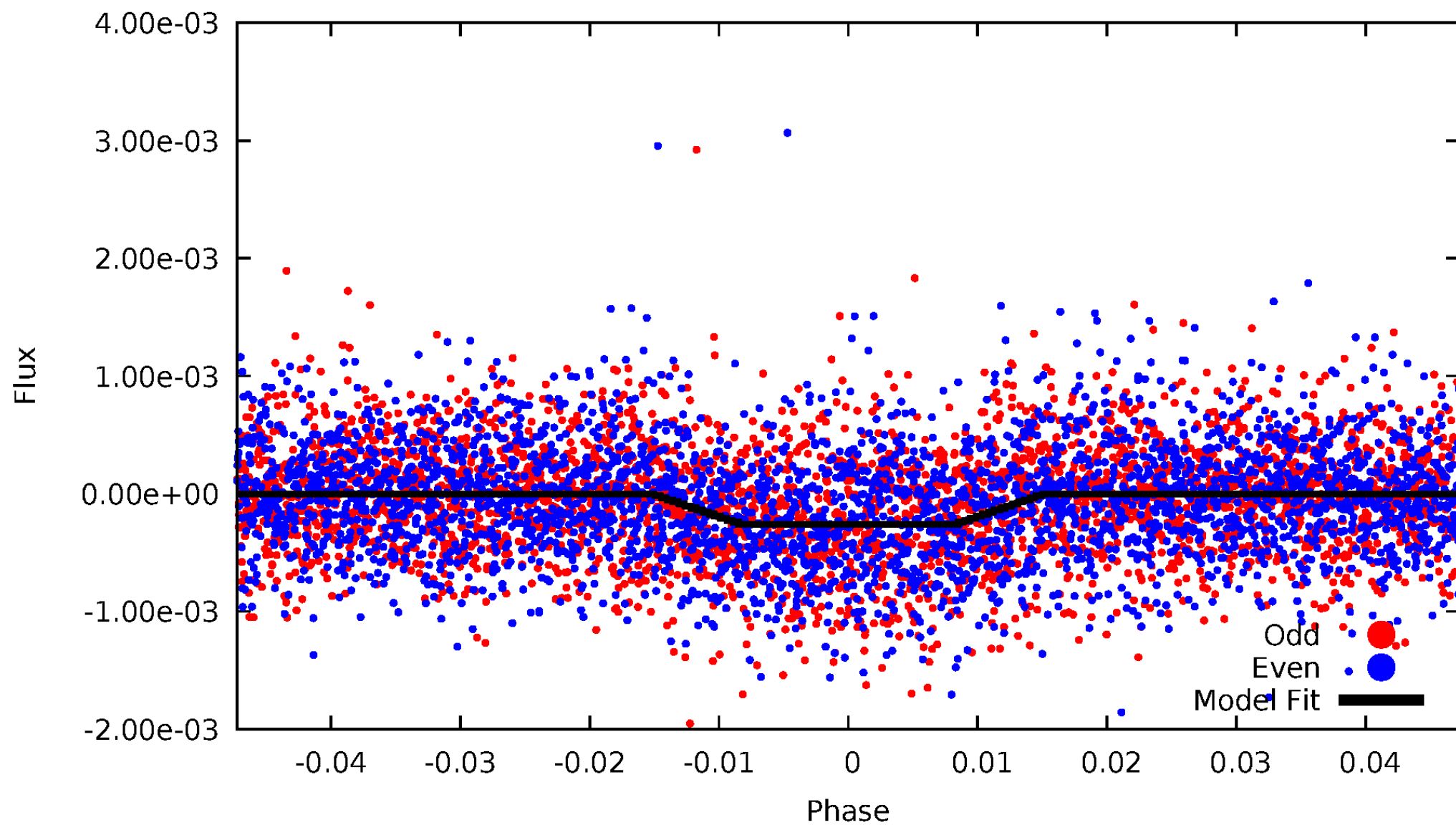
# DV Odd/Even

TCE 007604328-01



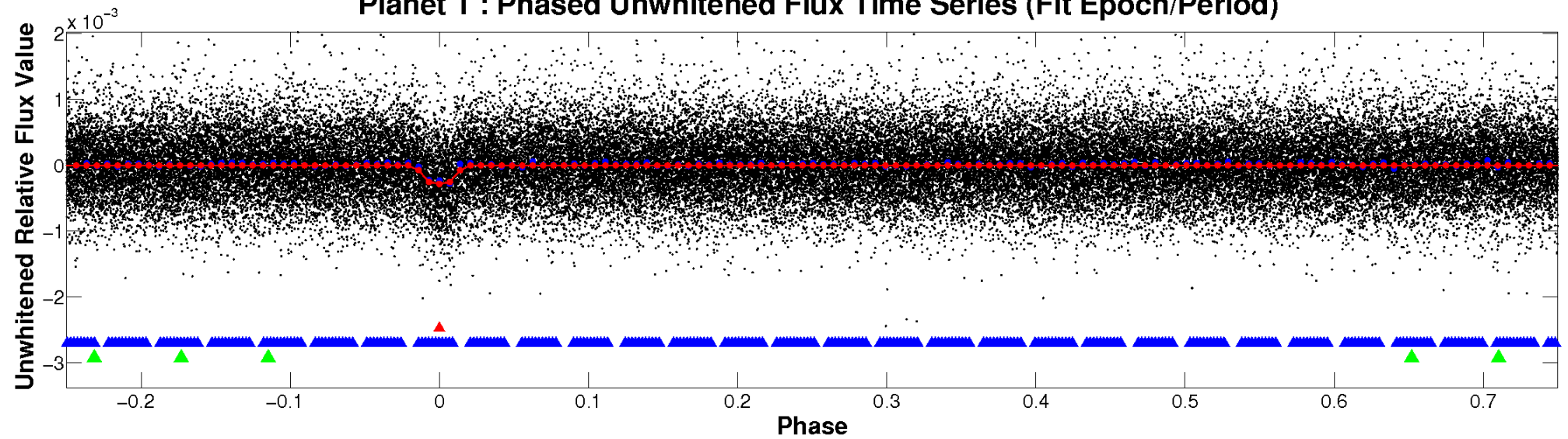
# ALT Odd/Even

TCE 007604328-01

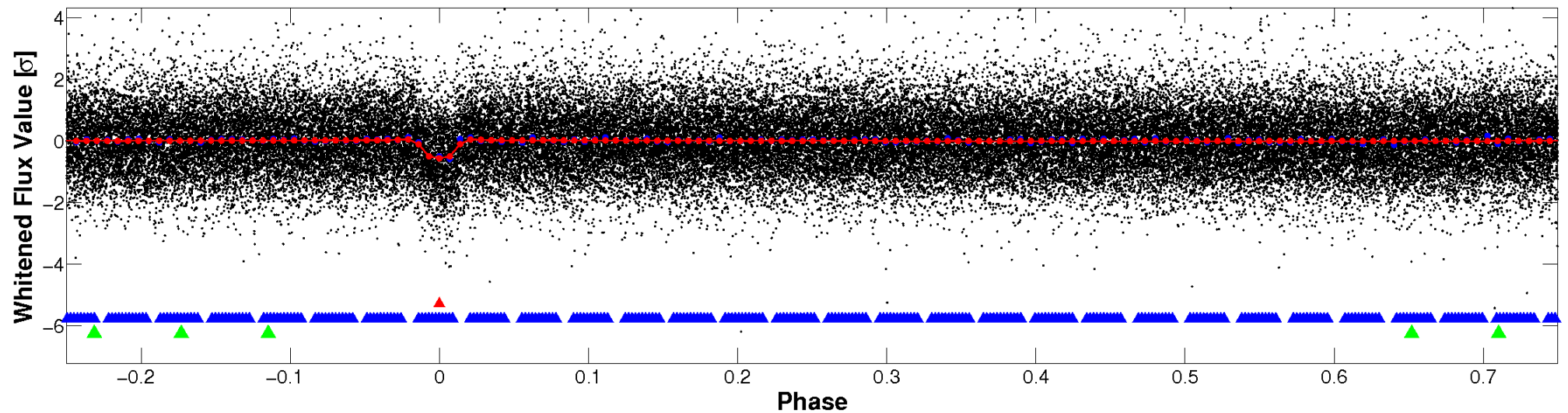


# Non-Whitened Vs. Whitened Light Curve

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

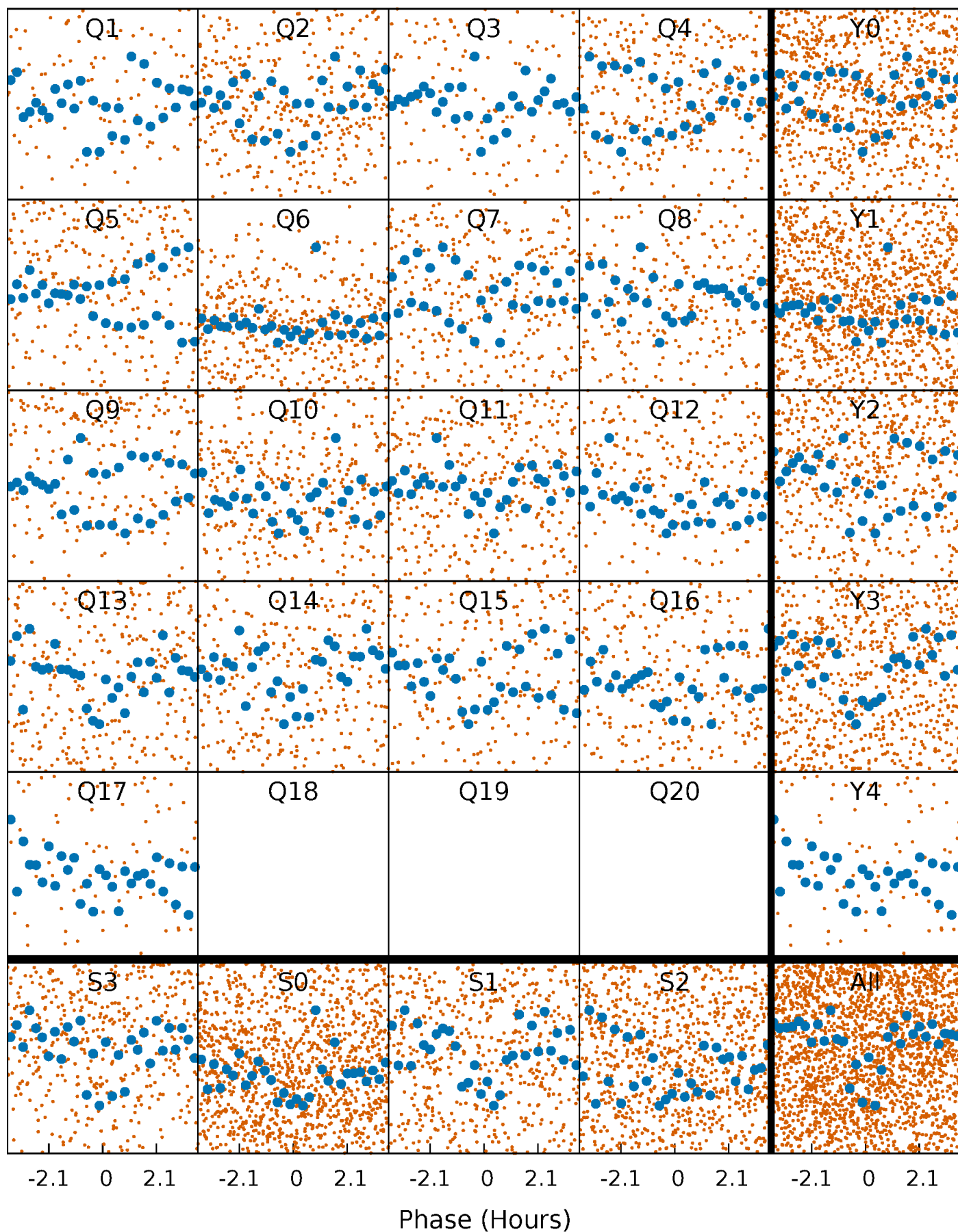


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

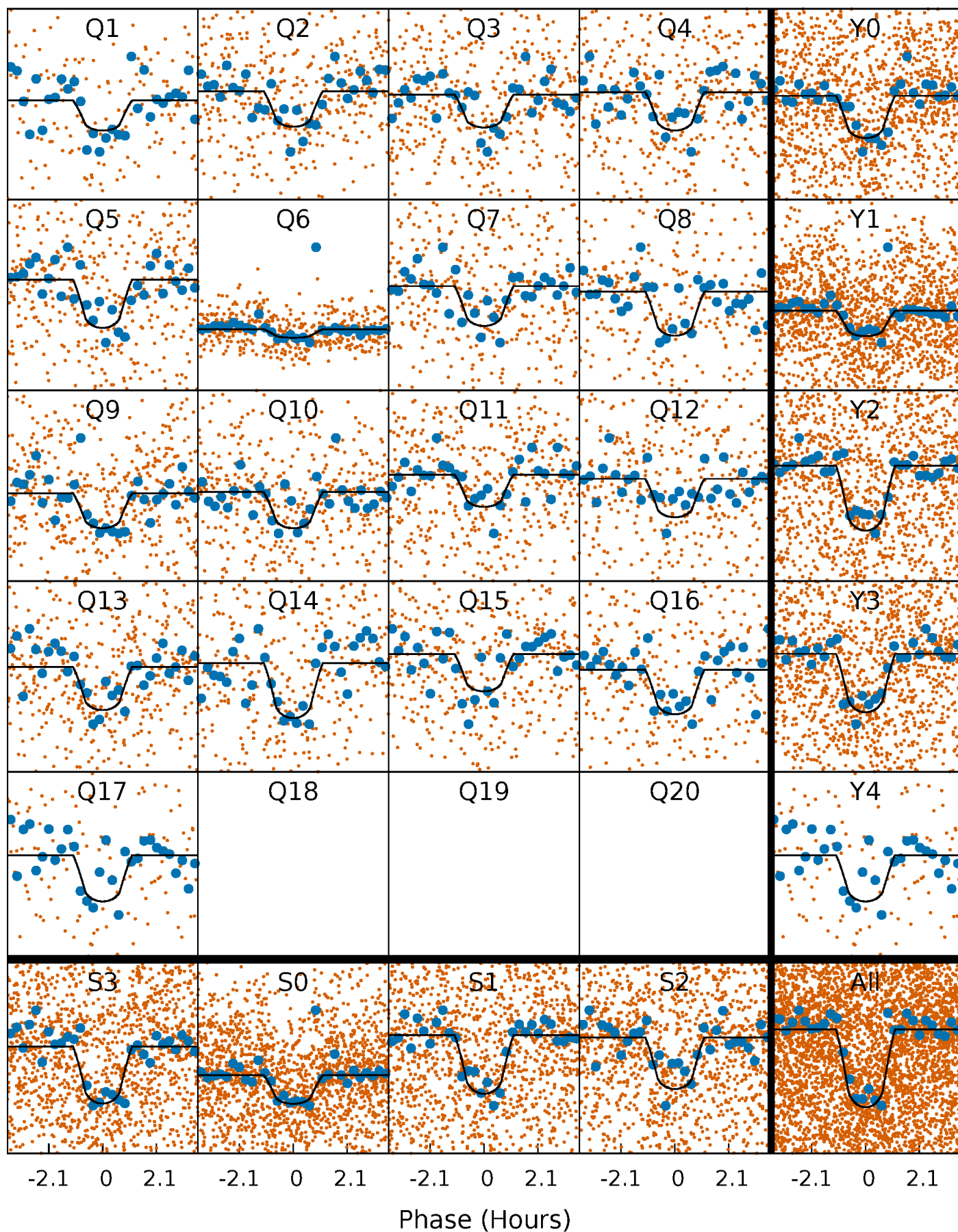
TCE 007604328-01 P= 2.936618 Days  $T_0=133.028044$  (BKJD)





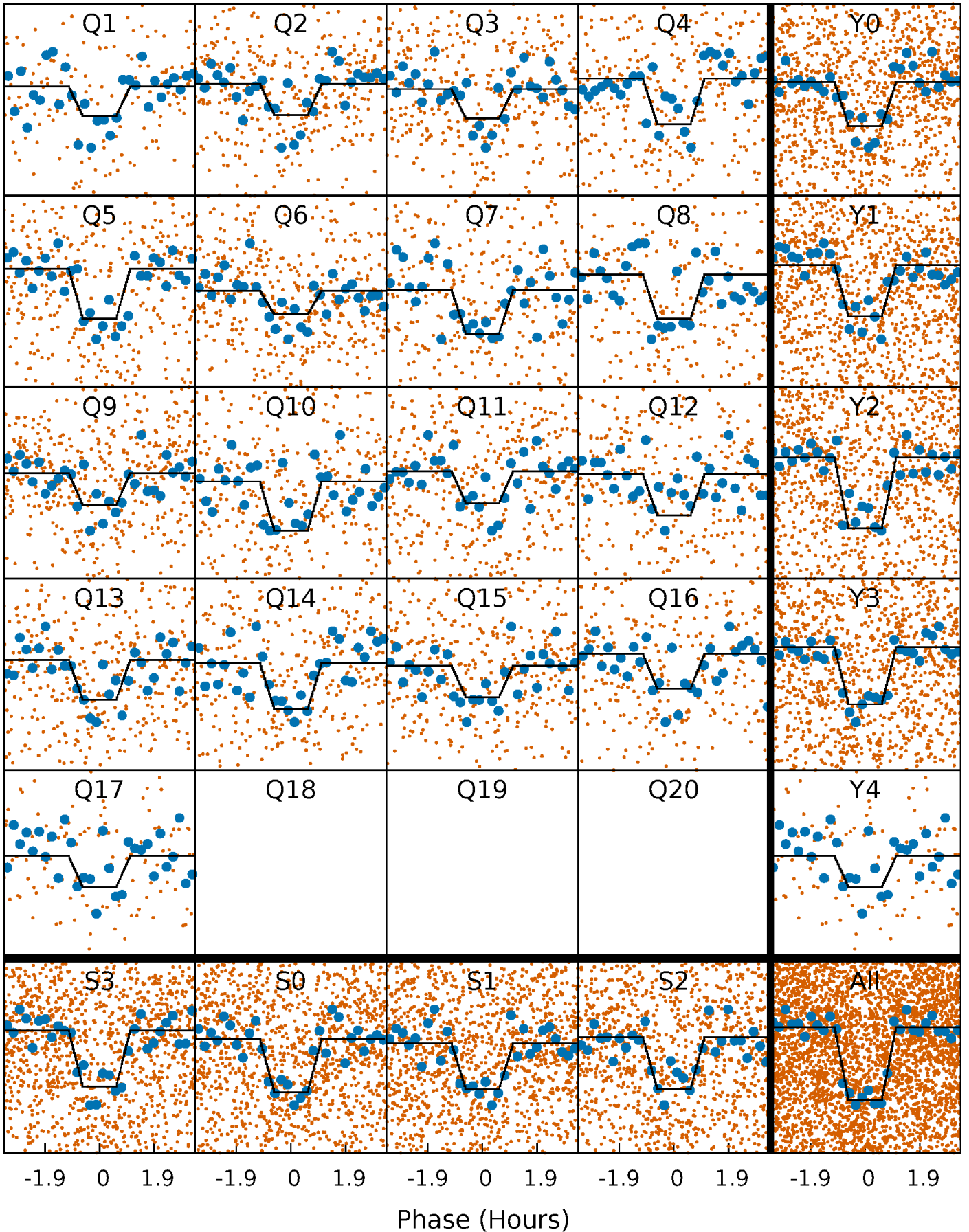
# DV Quarter-Phased Transit Curves

TCE 007604328-01 P= 2.936618 Days  $T_0=133.028044$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

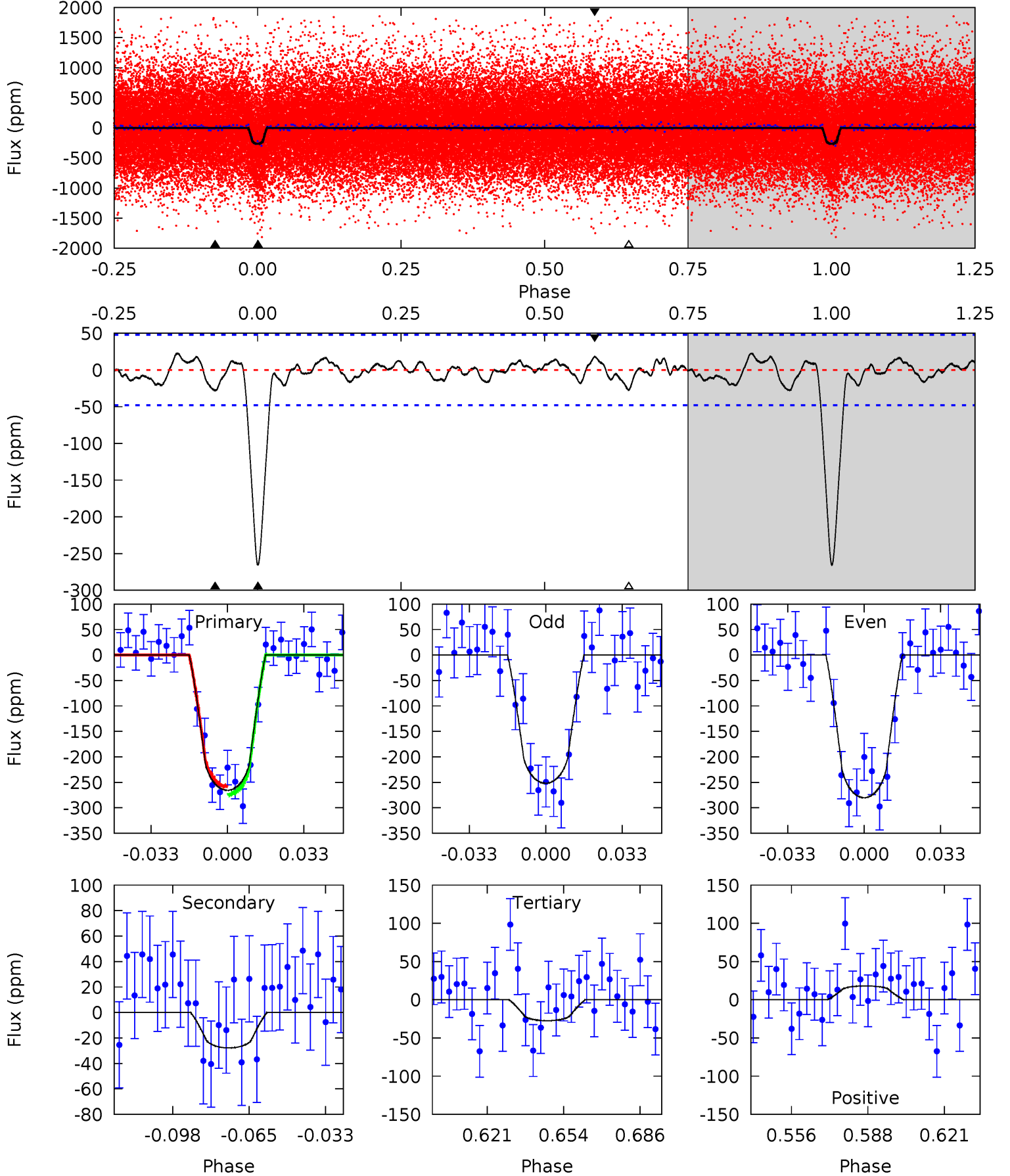
TCE 007604328-01 P= 2.936592 Days  $T_0=133.036496$  (BKJD)



# DV Model-Shift Uniqueness Test

007604328-01, P = 2.936618 Days, E = 130.091426 Days

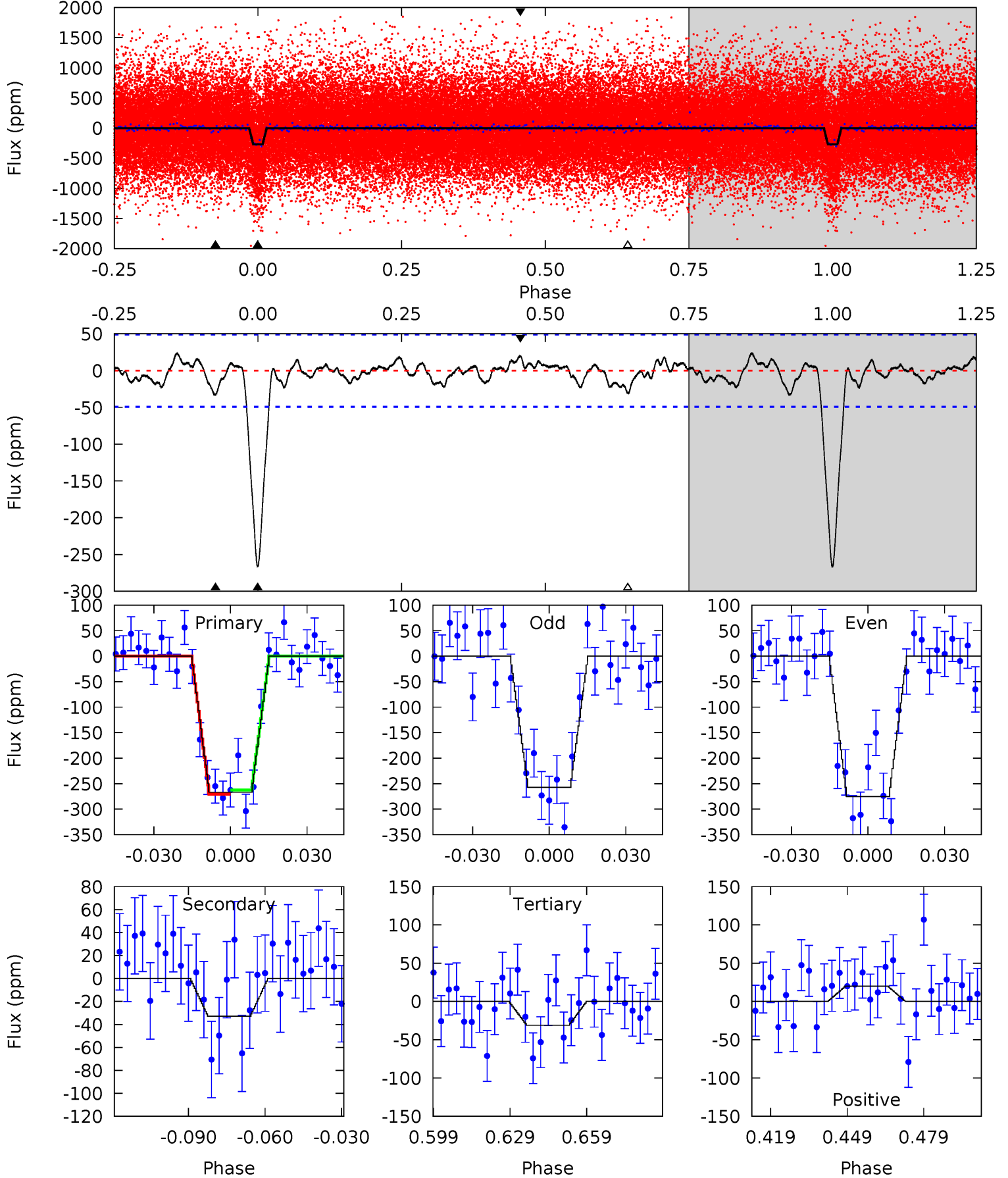
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.6	2.78	2.75	1.81	4.79	2.14	0.99	23.8	24.8	0.04	0.97	1.42	0.92	0.08	0.79



# Alt Model-Shift Uniqueness Test

007604328-01, P = 2.936592 Days, E = 130.099904 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
26.2	3.23	3.05	1.97	4.81	2.17	1.03	23.1	24.2	0.18	1.27	0.90	0.98	0.08	0.41





### Stellar Parameters For KIC 007604328

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5455^{+162}_{-162}$	$4.421^{+0.149}_{-0.198}$	$-0.200^{+0.300}_{-0.300}$	$0.909^{+0.213}_{-0.142}$	$0.795^{+0.125}_{-0.062}$	$1.492^{+0.898}_{-0.713}$
	+3%/-3%	+3%/-4%	+150%/-150%	+23%/-16%	+16%/-8%	+60%/-48%
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 007604328-01 / KOI 2458.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-28 \pm 10$	$1.58^{+0.80}_{-0.73}$	$1667^{+122}_{-95}$	$3550^{+955}_{-487}$	$8.055^{+22.794}_{-4.862}$
Alt.	$-33 \pm 10$	$1.65^{+0.89}_{-0.74}$	$1675^{+122}_{-106}$	$3620^{+872}_{-506}$	$9.132^{+21.039}_{-5.710}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

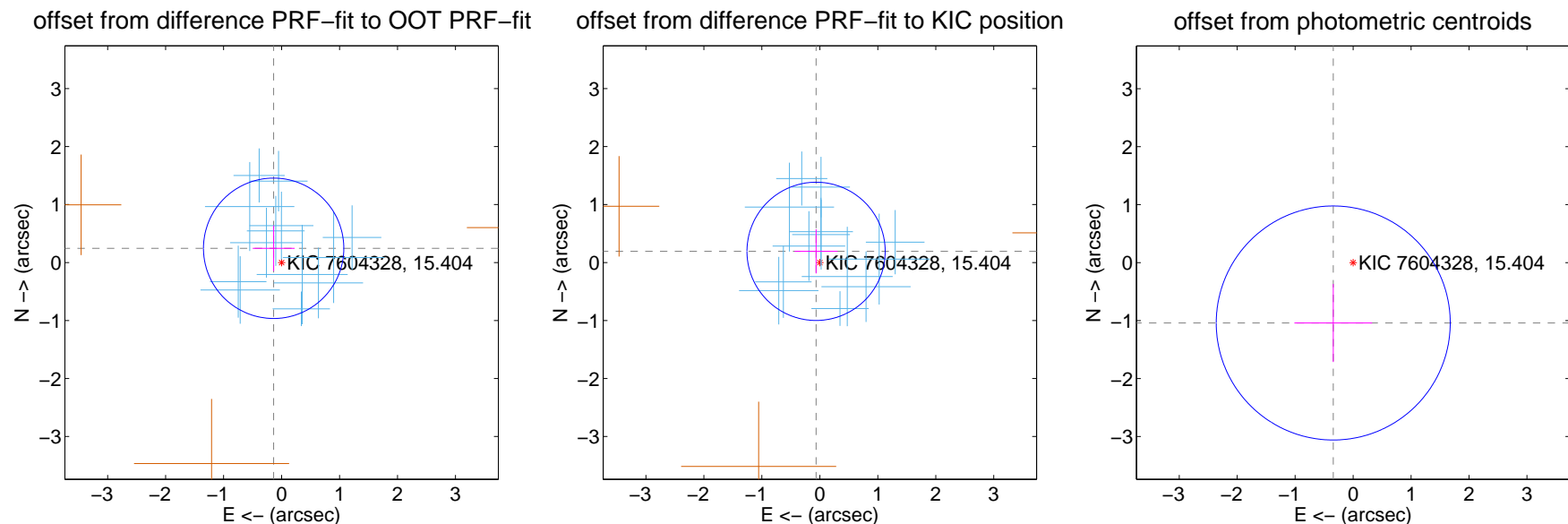
## DV Centroid Data

Supplemental centroid analysis for 007604328-01. Kepler magnitude: 15.40. Transit SNR 19.32

There are 13 quarters with good PRF difference image offsets

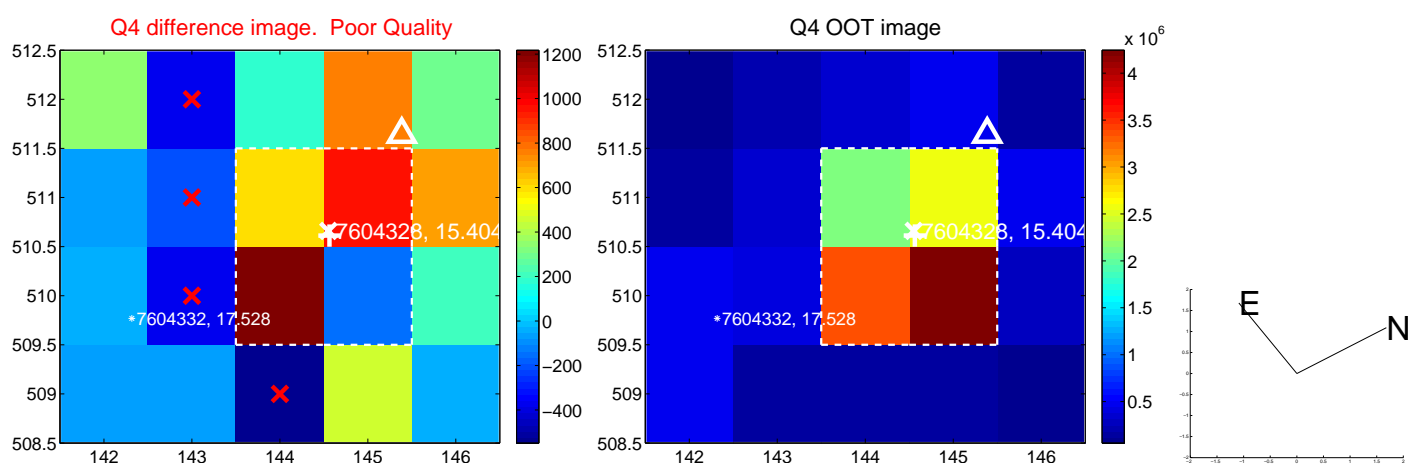
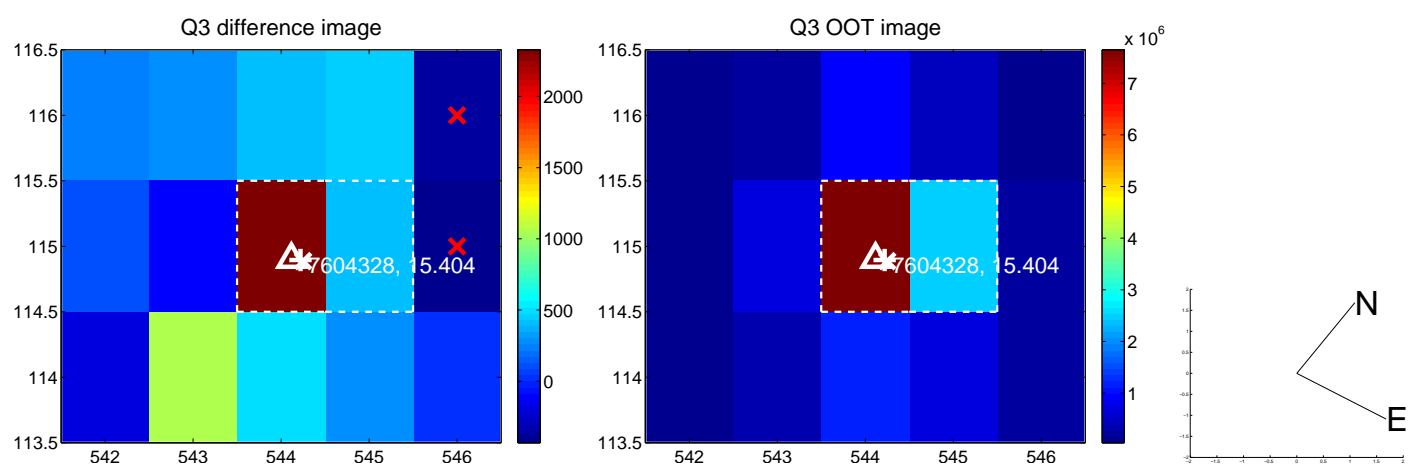
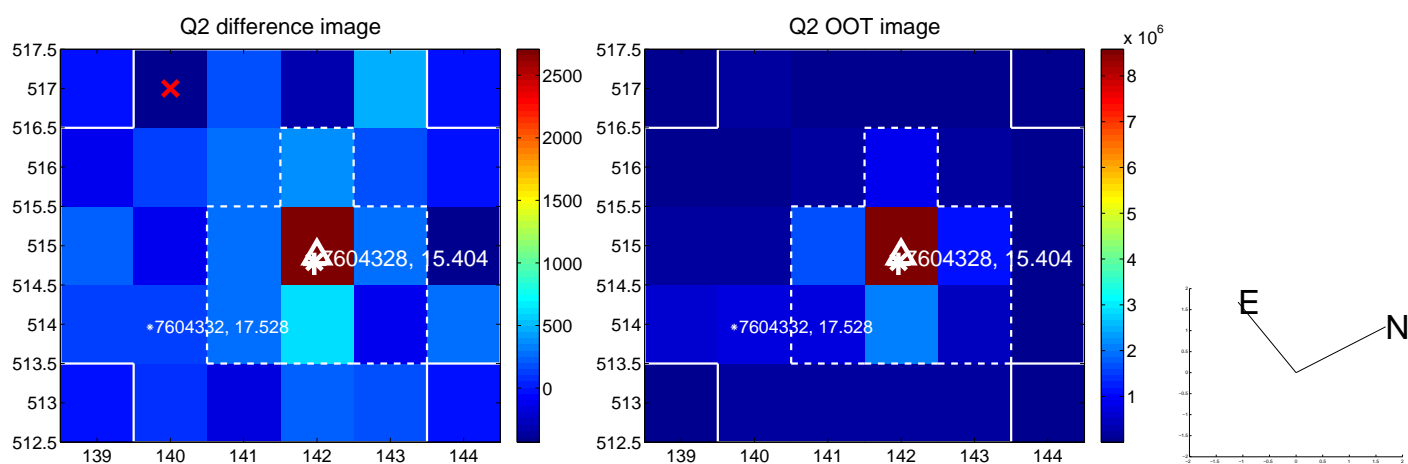
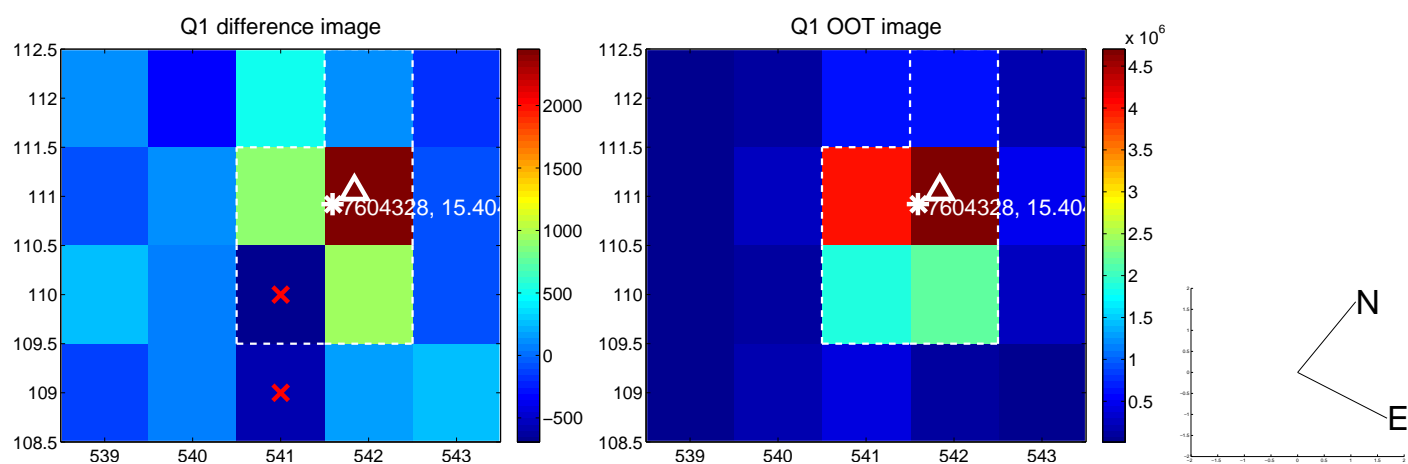
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.281 \pm 0.404$	0.70	$0.137 \pm 0.362$	$0.246 \pm 0.392$
PRF-fit source offset from KIC position	$0.204 \pm 0.397$	0.51	$0.065 \pm 0.369$	$0.193 \pm 0.381$
photometric centroid source offset	$1.10 \pm 0.67$	1.63	$0.34 \pm 0.67$	$-1.04 \pm 0.67$

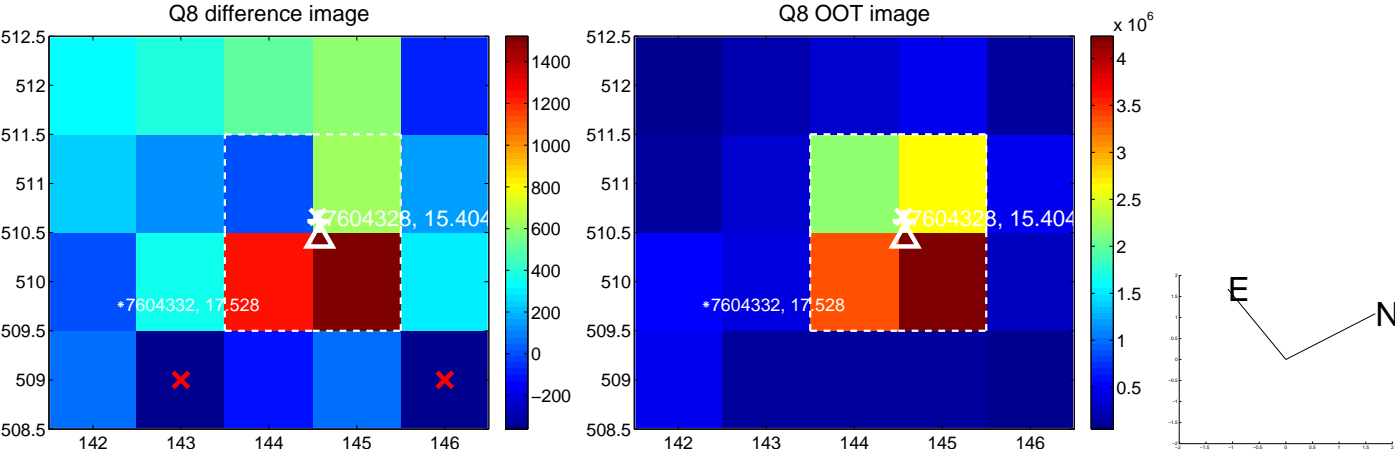
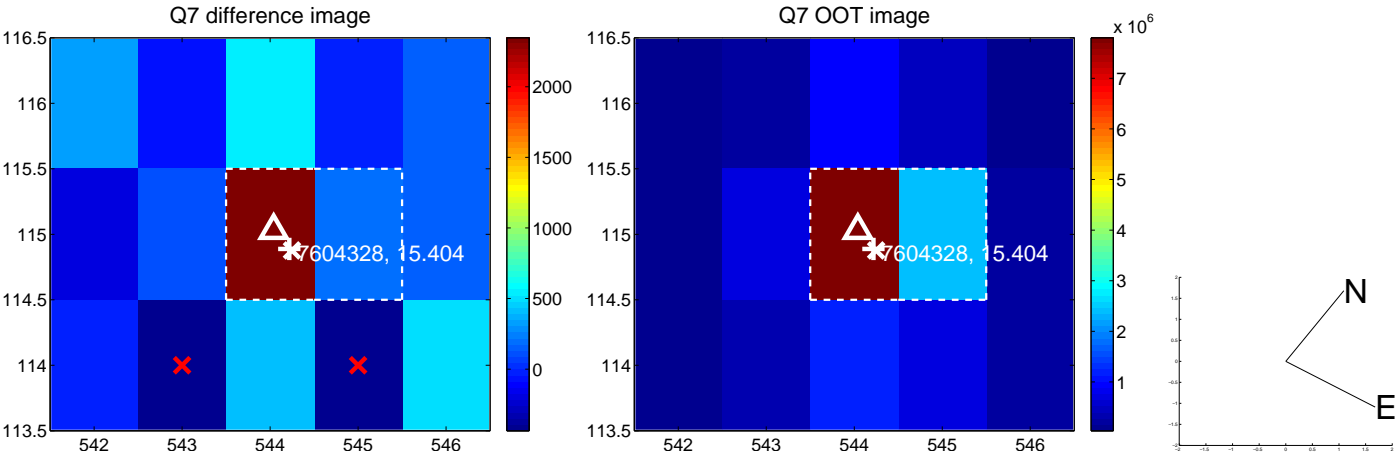
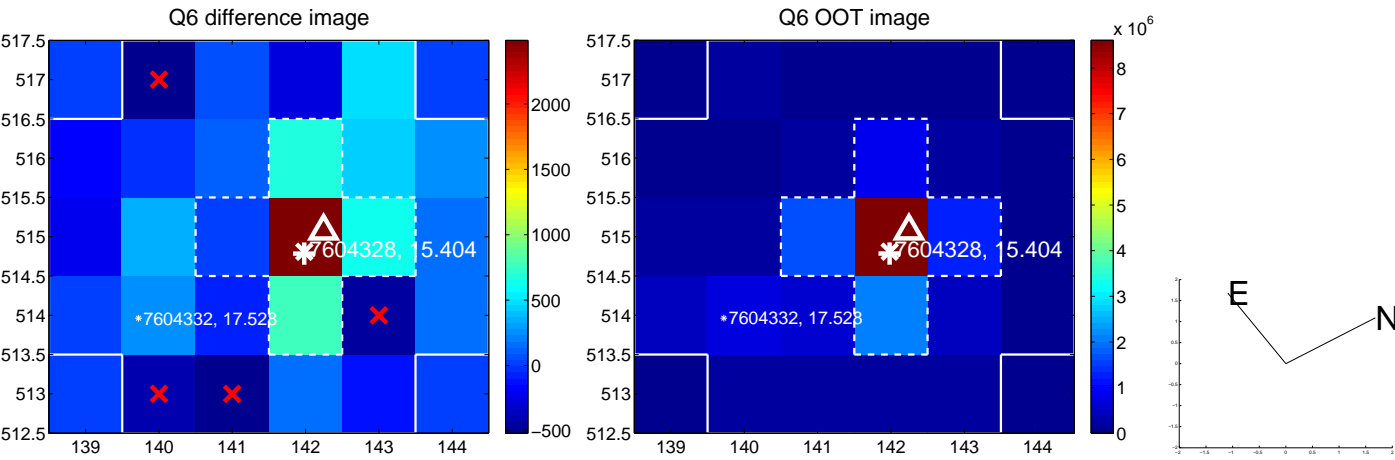
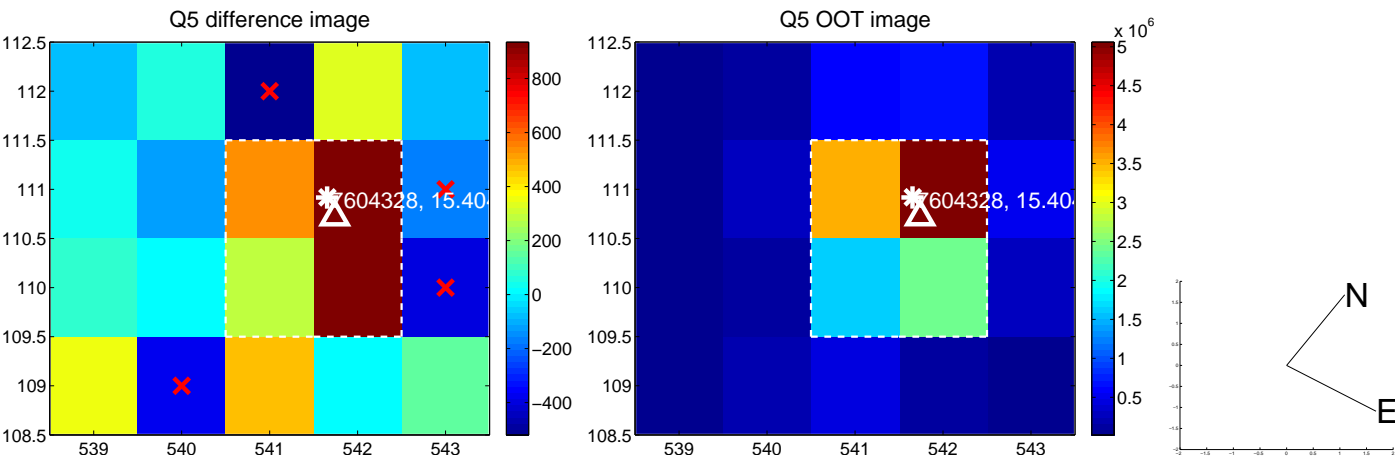


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

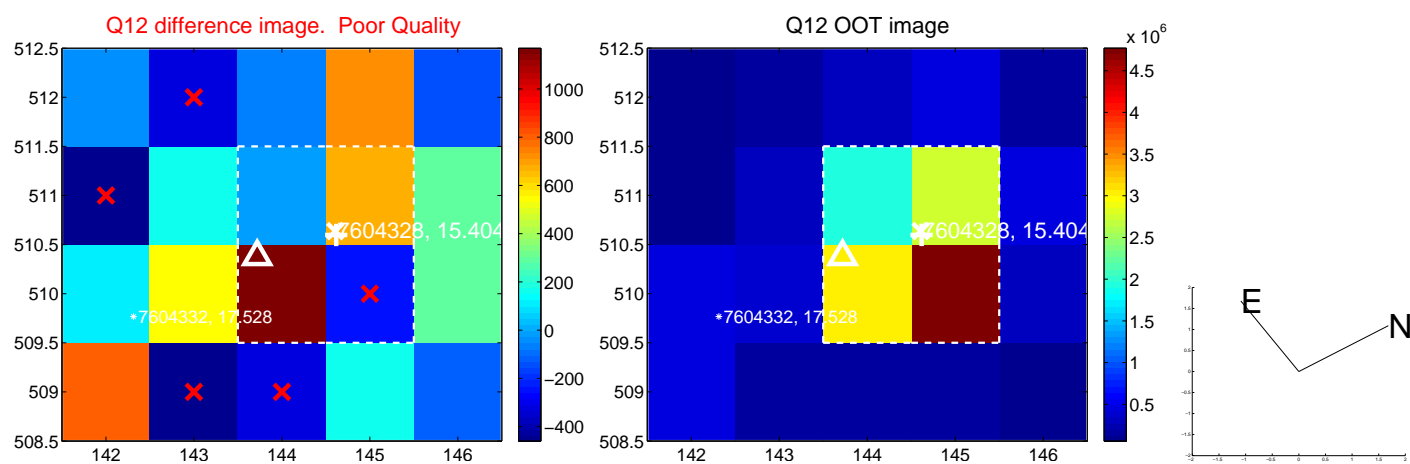
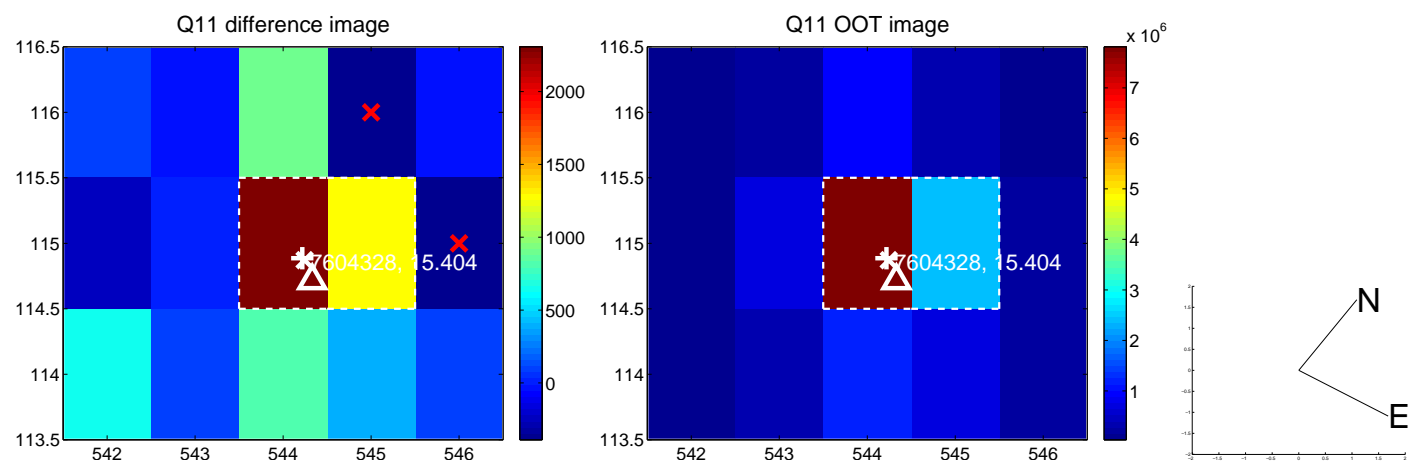
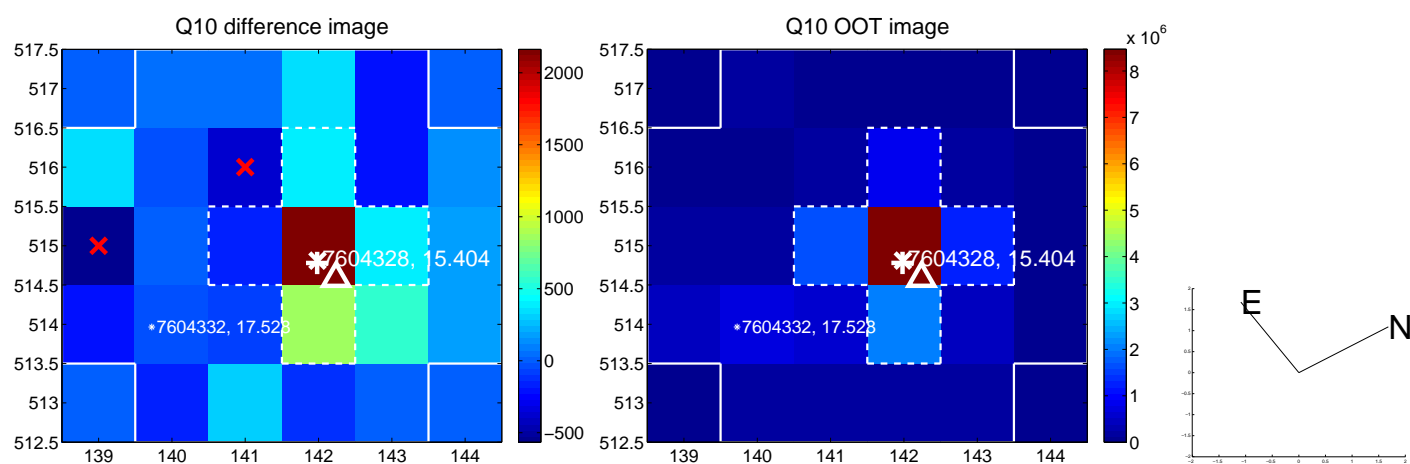
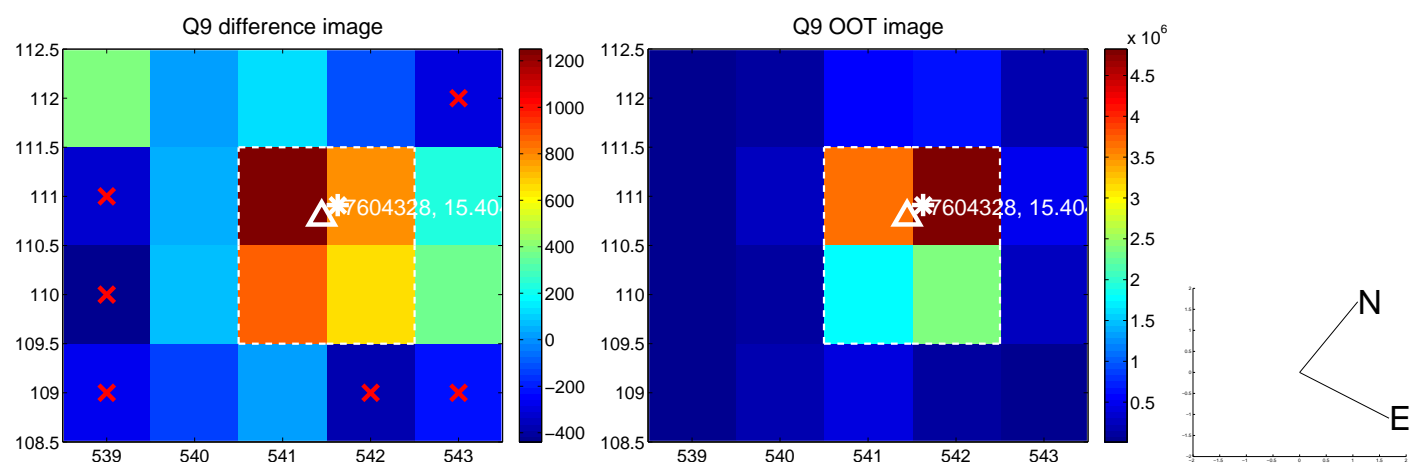


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

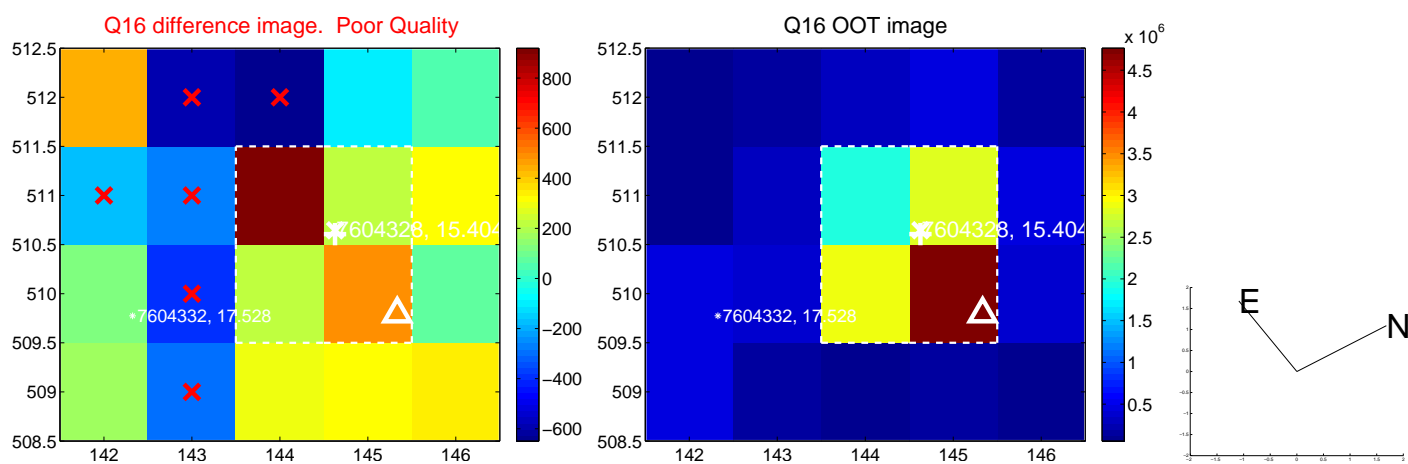
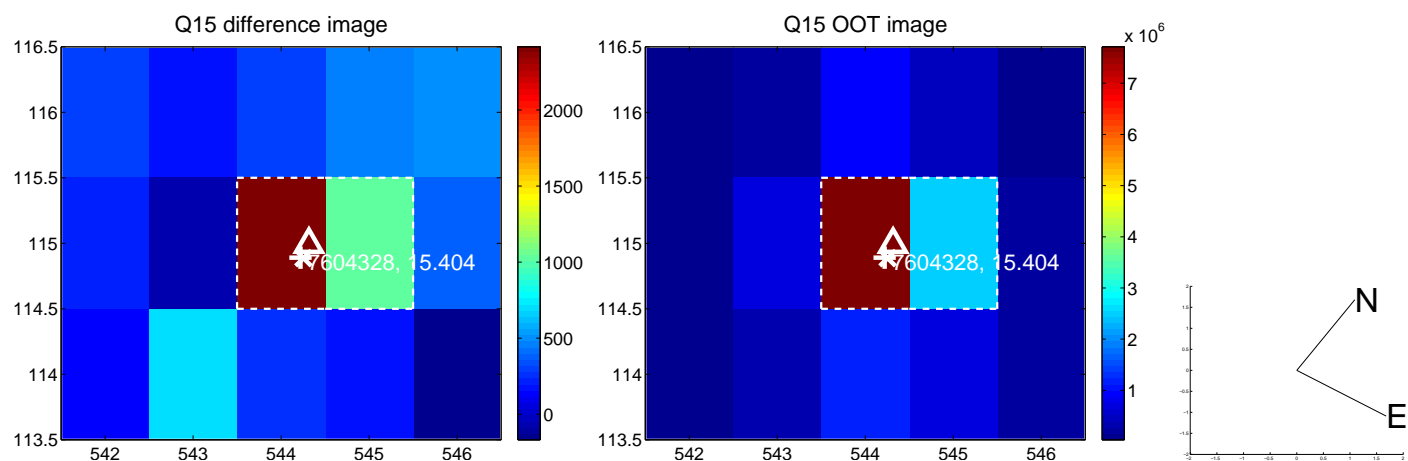
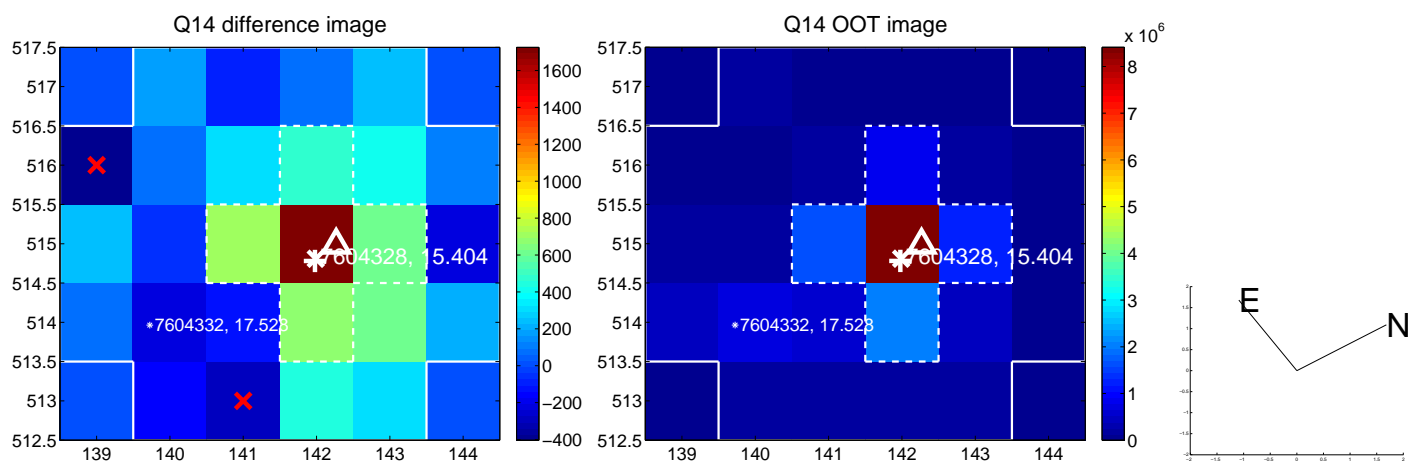
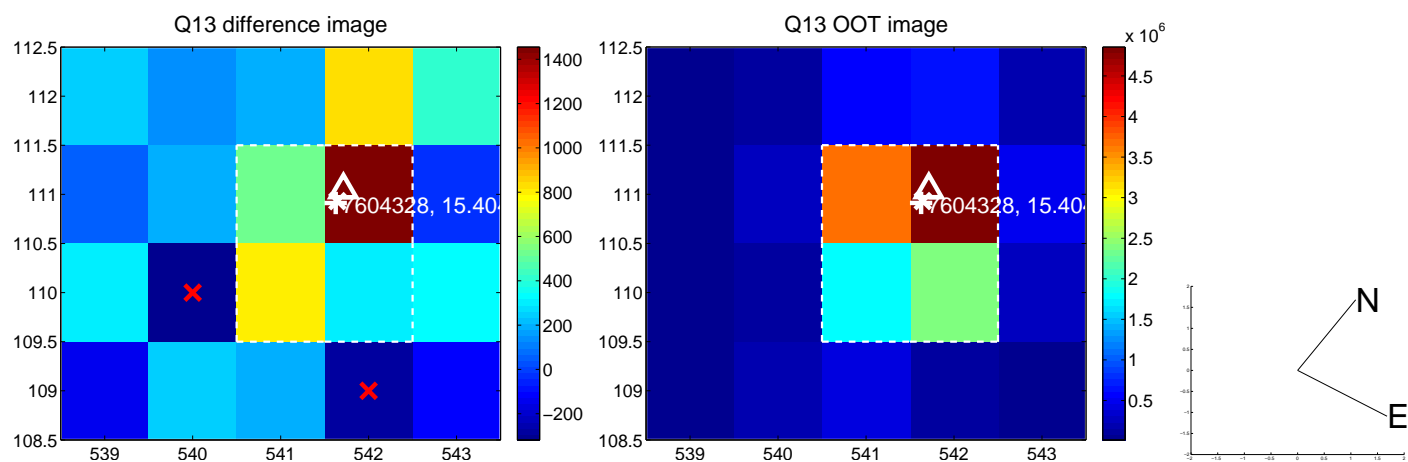




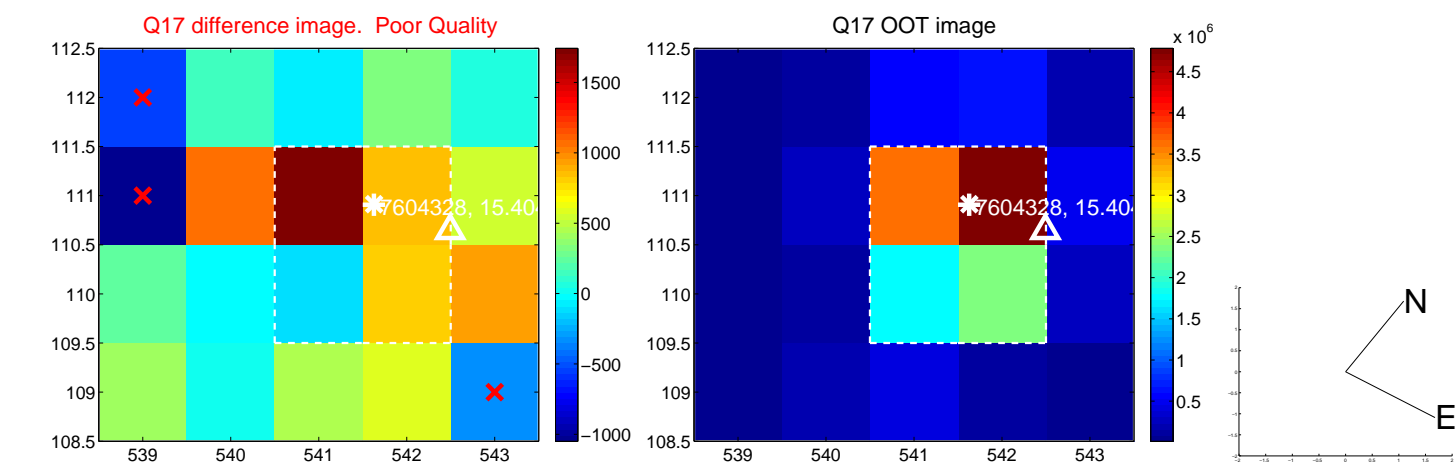
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



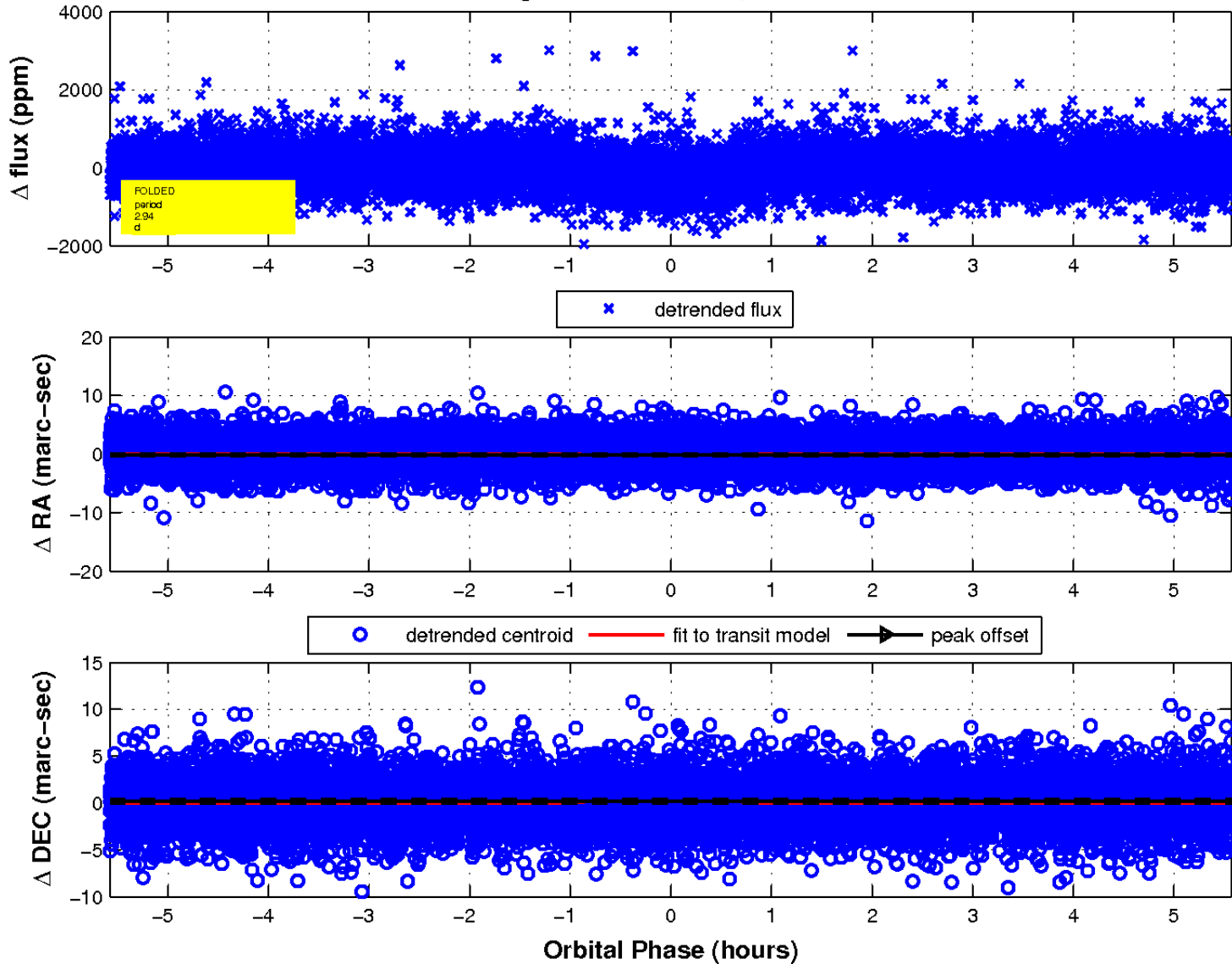
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

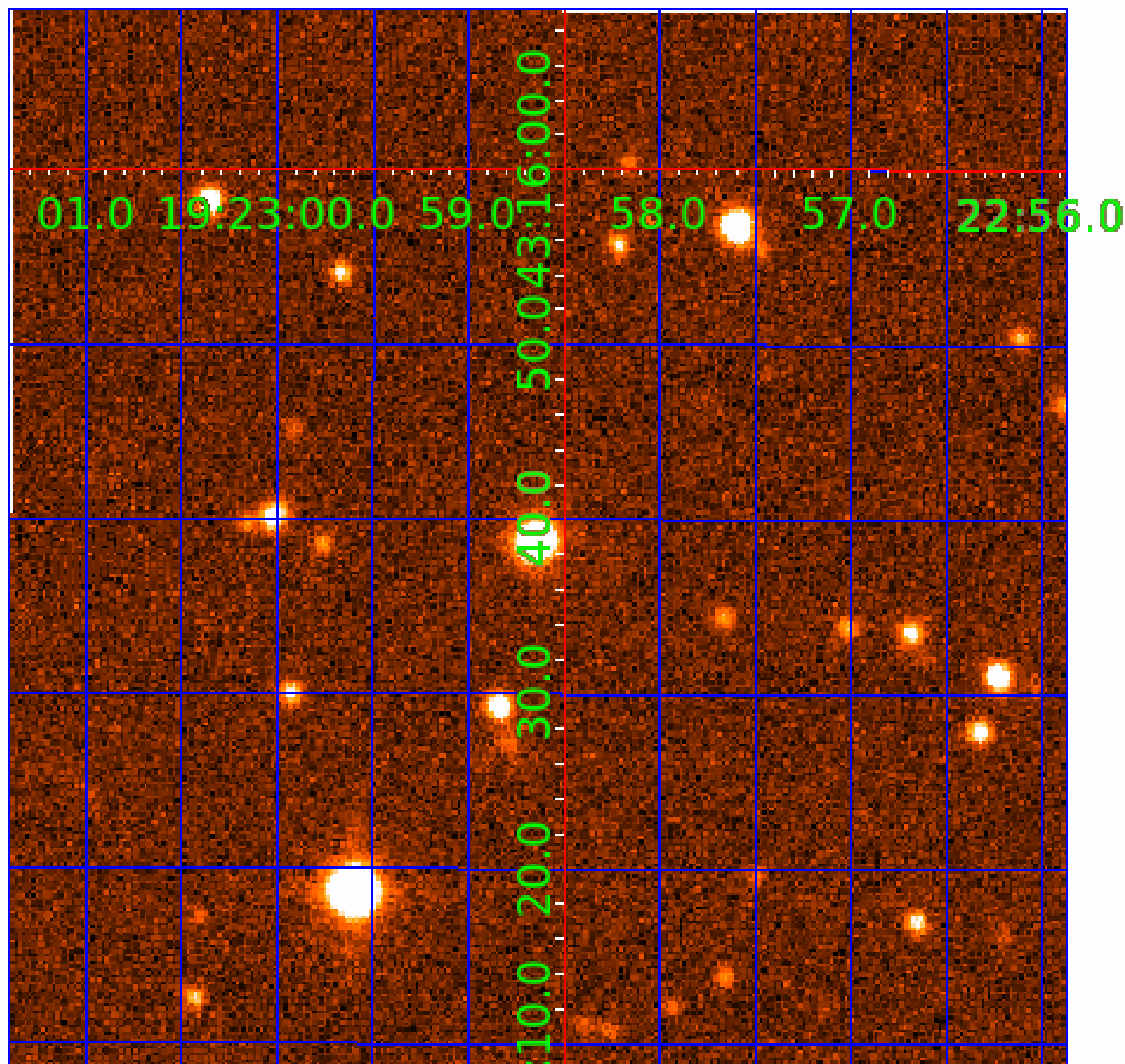


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination





# KIC 007604328

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007604328-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007604328-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007604328-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

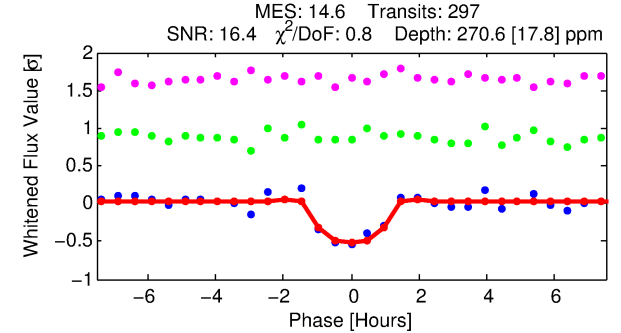
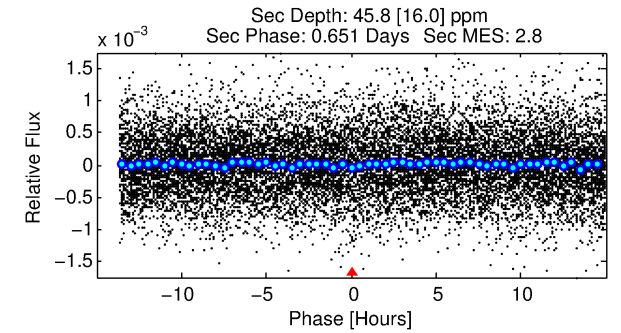
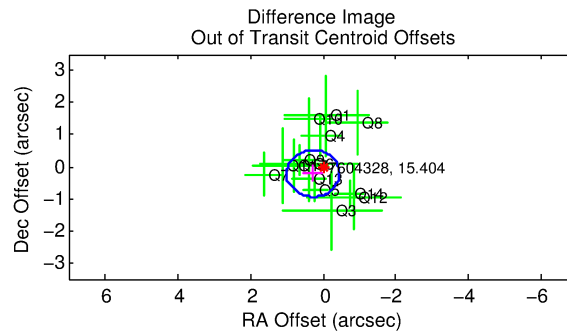
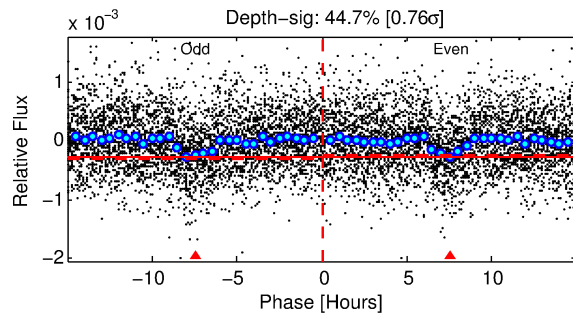
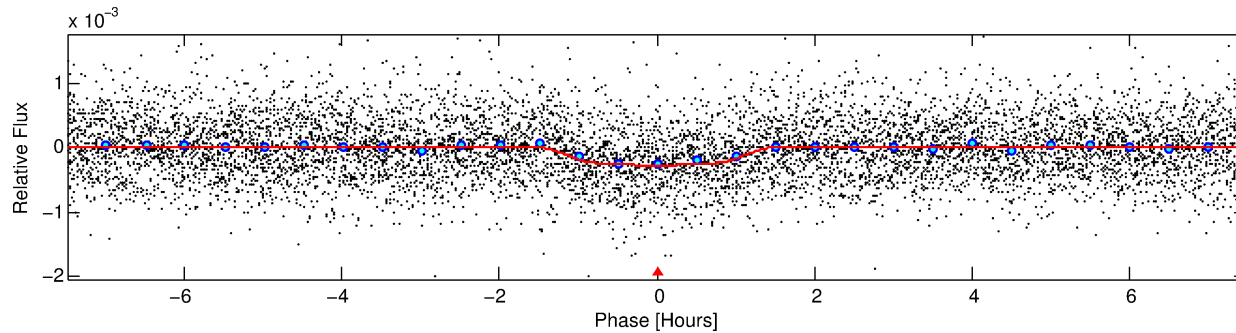
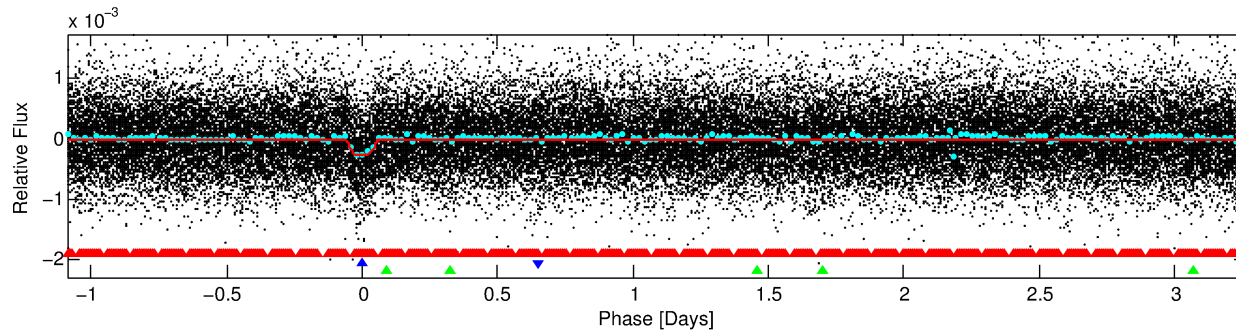
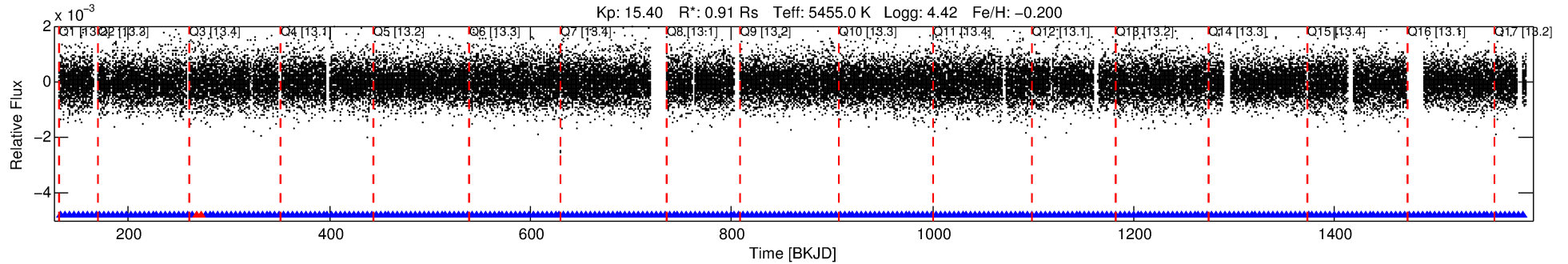
## Ephemeris Match Information For 007604328-02

No Significant Match Found

# DV One-Page Summary

KIC: 7604328 Candidate: 2 of 3 Period: 4.354 d  
KOI: K02458.01 Corr: 0.961

Kp: 15.40 R\*: 0.91 Rs Teff: 5455.0 K Logg: 4.42 Fe/H: -0.200



## DV Fit Results:

Period = 4.35406 [0.00002] d  
Epoch = 132.8574 [0.0025] BKJD  
Rp/R\* = 0.0176 [0.0081]  
a/R\* = 6.99 [13.77]  
b = 0.87 [0.55]  
Seff = 280.49 [101.48]  
Teq = 1044 [94] K  
Rp = 1.75 [0.90] Re  
a = 0.0483 [0.0105] AU  
Ag = 19.25 [20.06] [0.91σ]  
Teffp = 3380 [838] K [2.77σ]

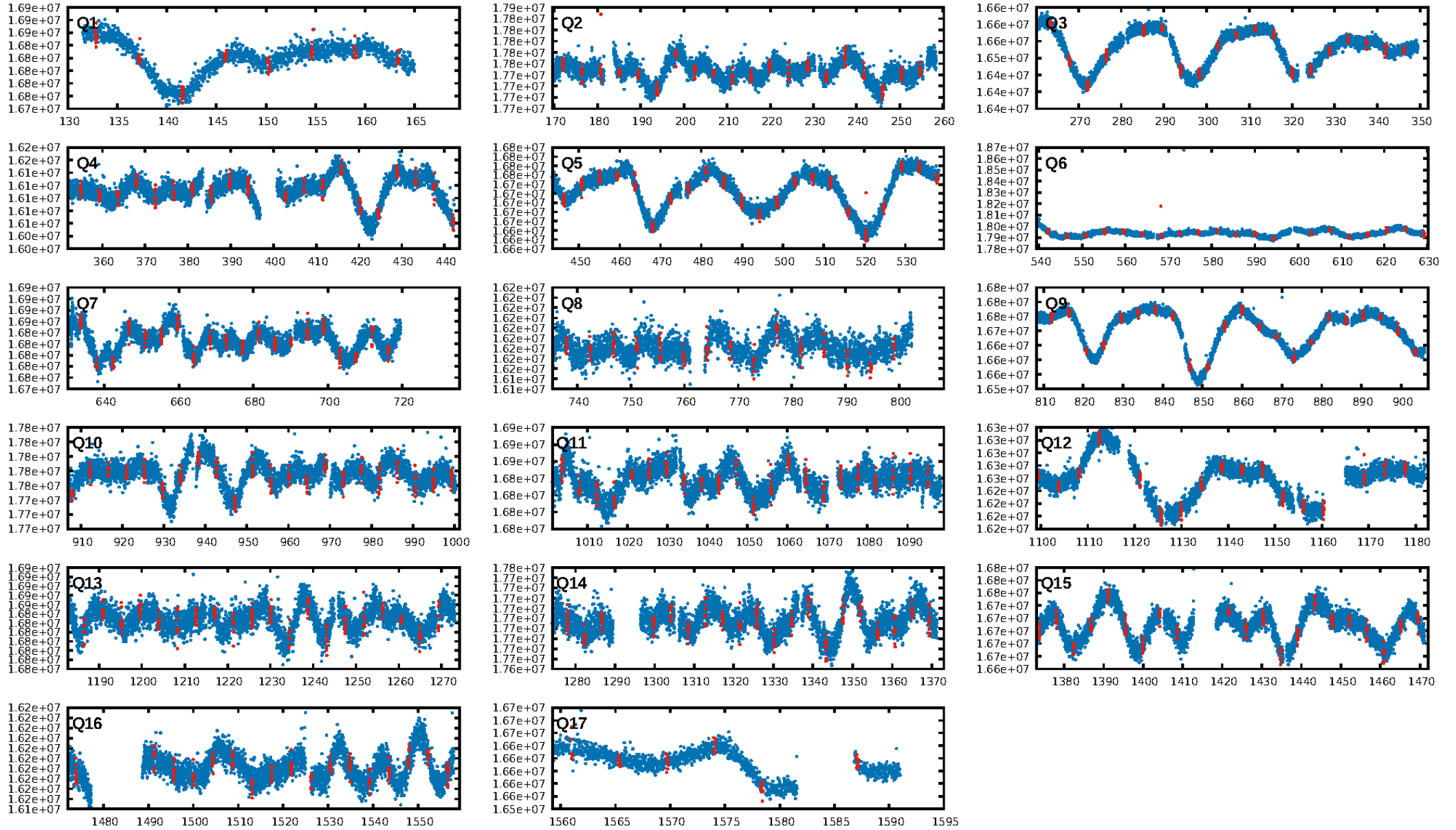
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.92σ]  
LongPeriod-sig: 100.0% [1599.04σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.95e-46  
RollingBand-fgt: 0.99 [281/283]  
GhostDiagnostic-chr: 3.136  
Centroid-sig: 3.9%  
Centroid-so: 1.433 arcsec [1.93σ]  
OotOffset-rm: 0.354 arcsec [1.46σ]  
KicOffset-rm: 0.338 arcsec [1.40σ]  
OotOffset-st: 3/3/3/5 [14]  
KicOffset-st: 3/3/3/5 [14]  
DiffImageQuality-fgm: 0.86 [12/14]  
DiffImageOverlap-fno: 1.00 [17/17]

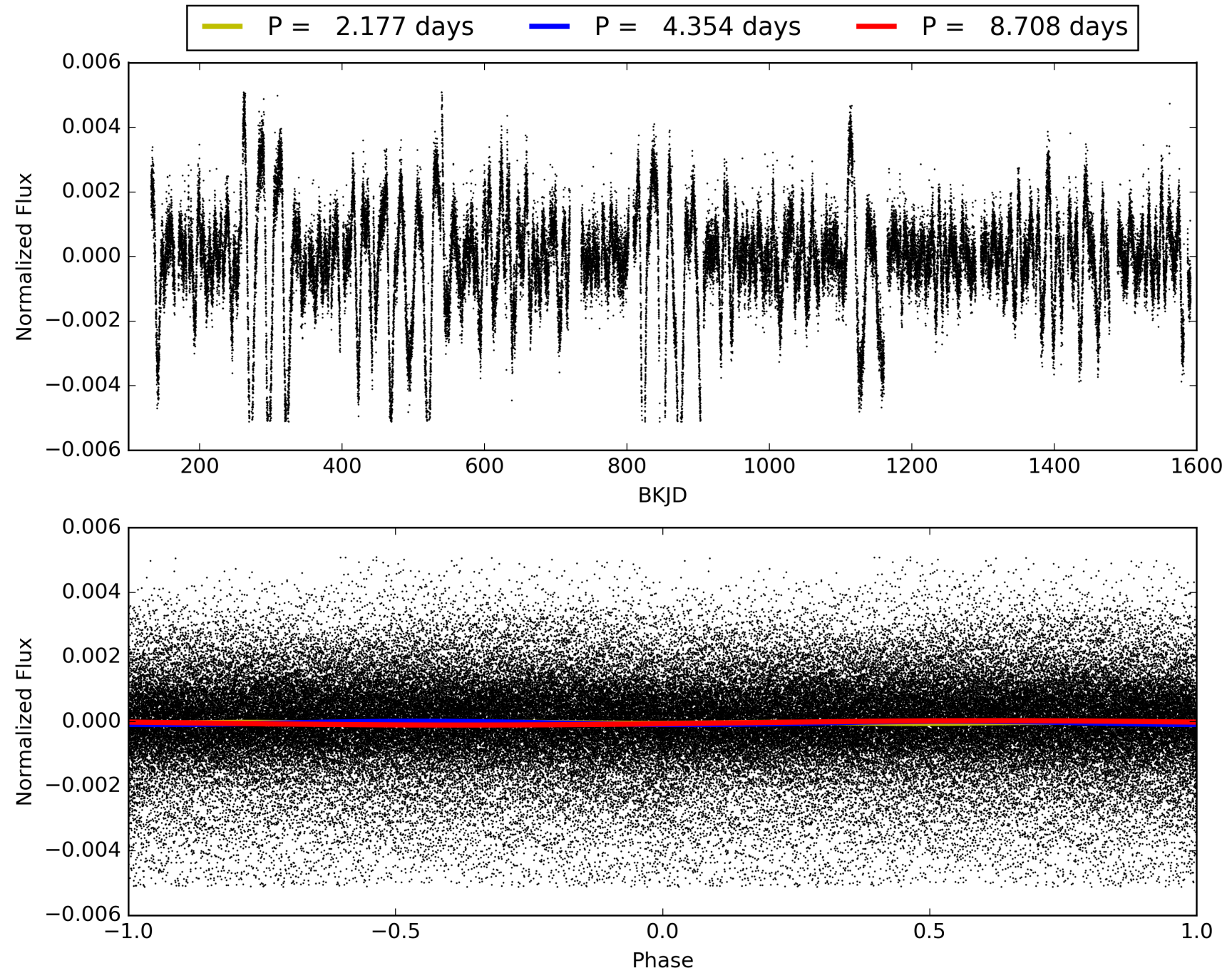
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:07:43 Z

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

# TCE 007604328-02, PDC Light Curves

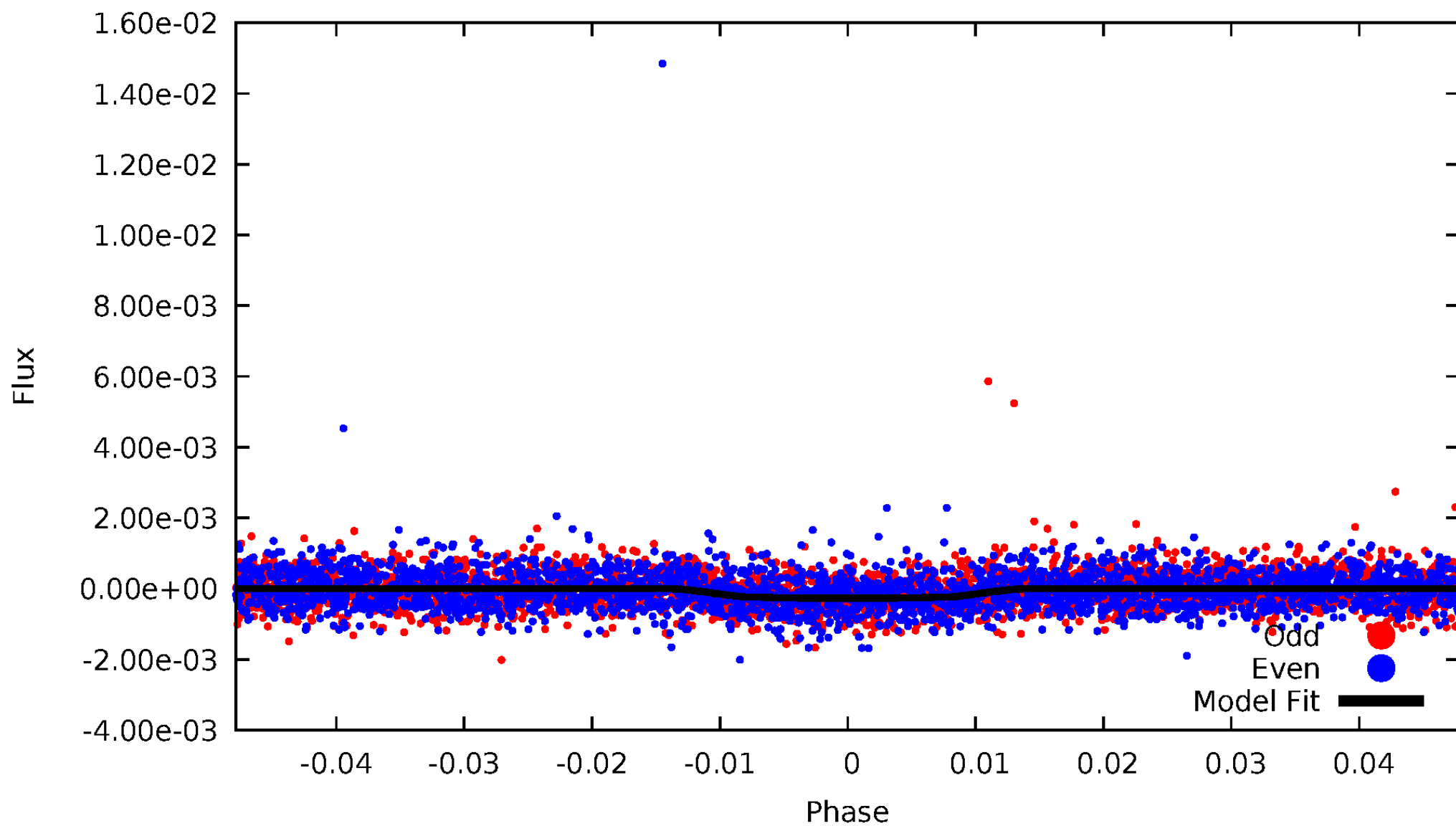


TCE 007604328-02



# DV Odd/Even

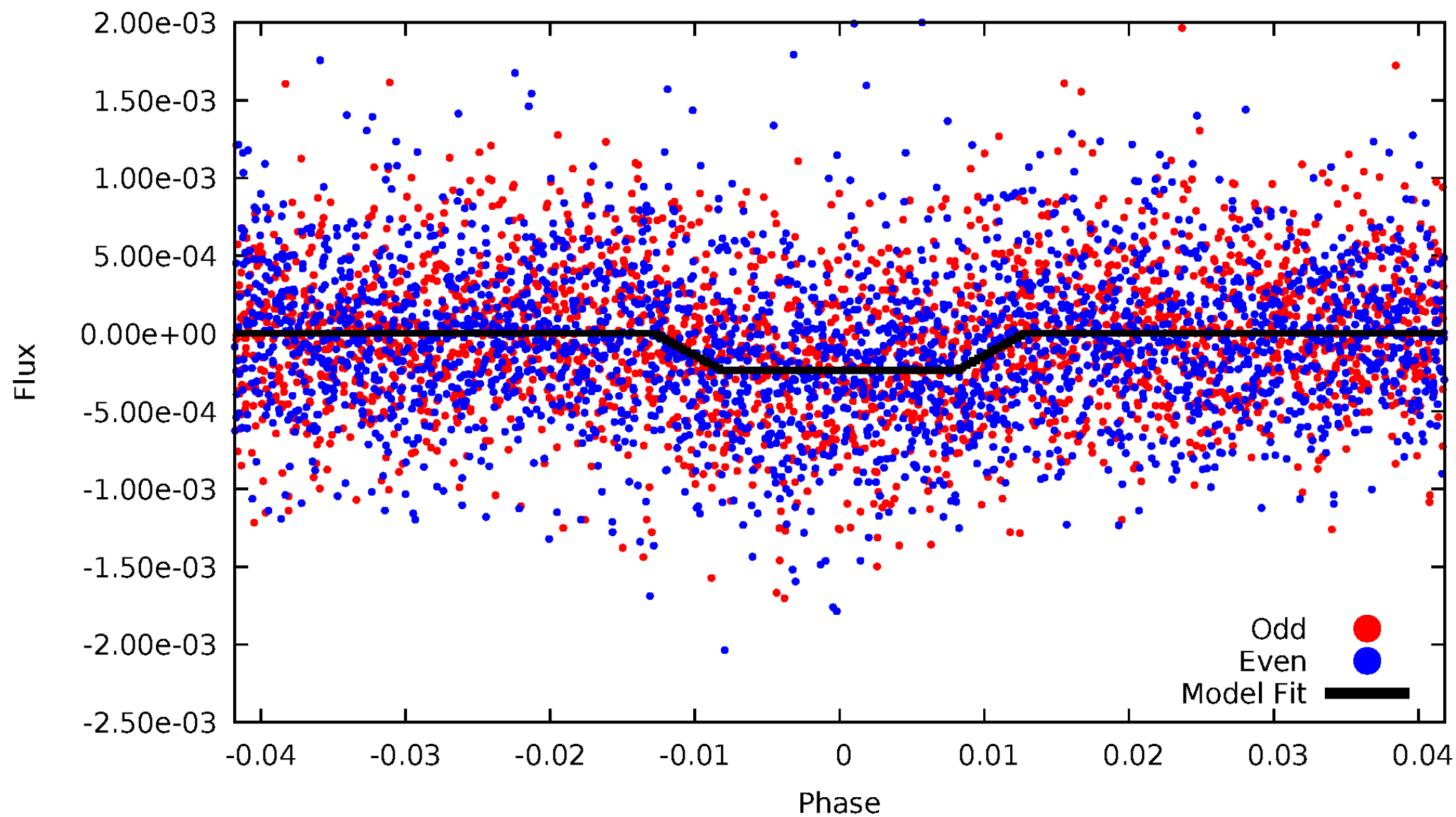
TCE 007604328-02





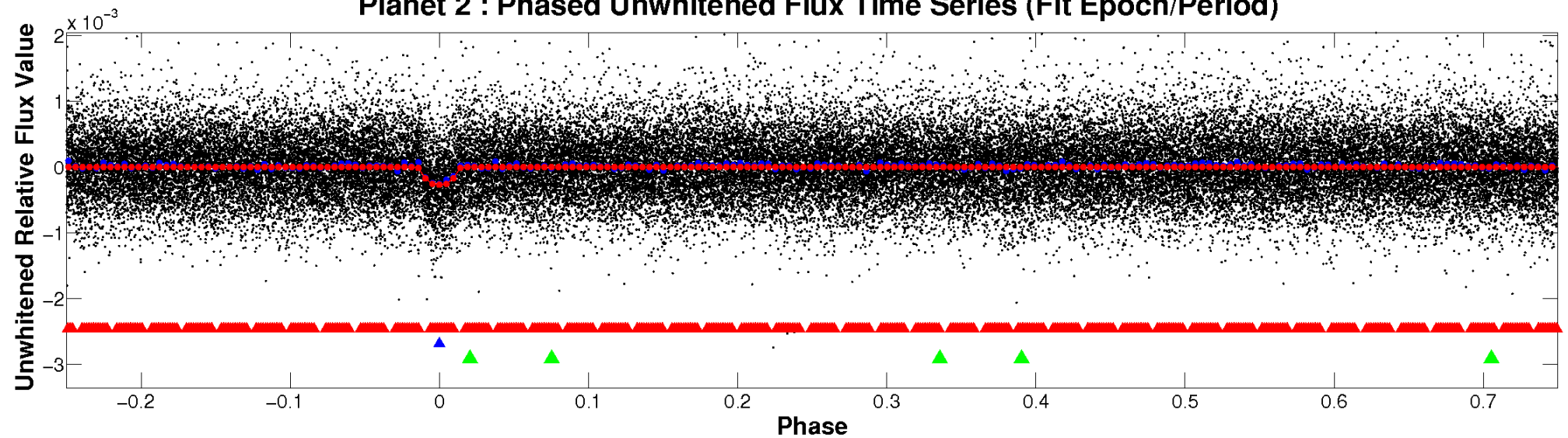
# ALT Odd/Even

TCE 007604328-02

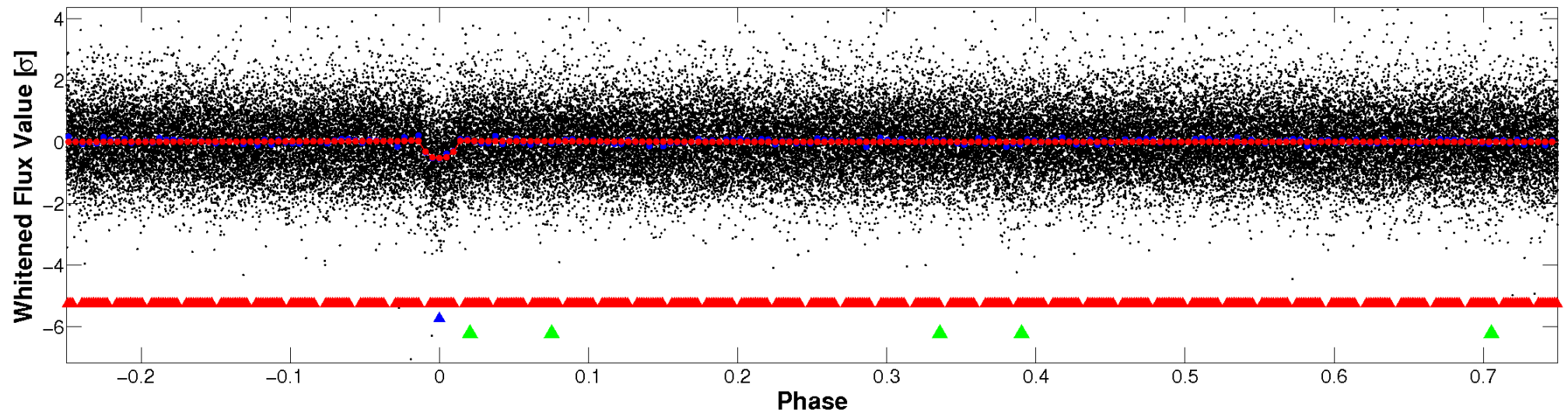


# Non-Whitened Vs. Whitened Light Curve

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



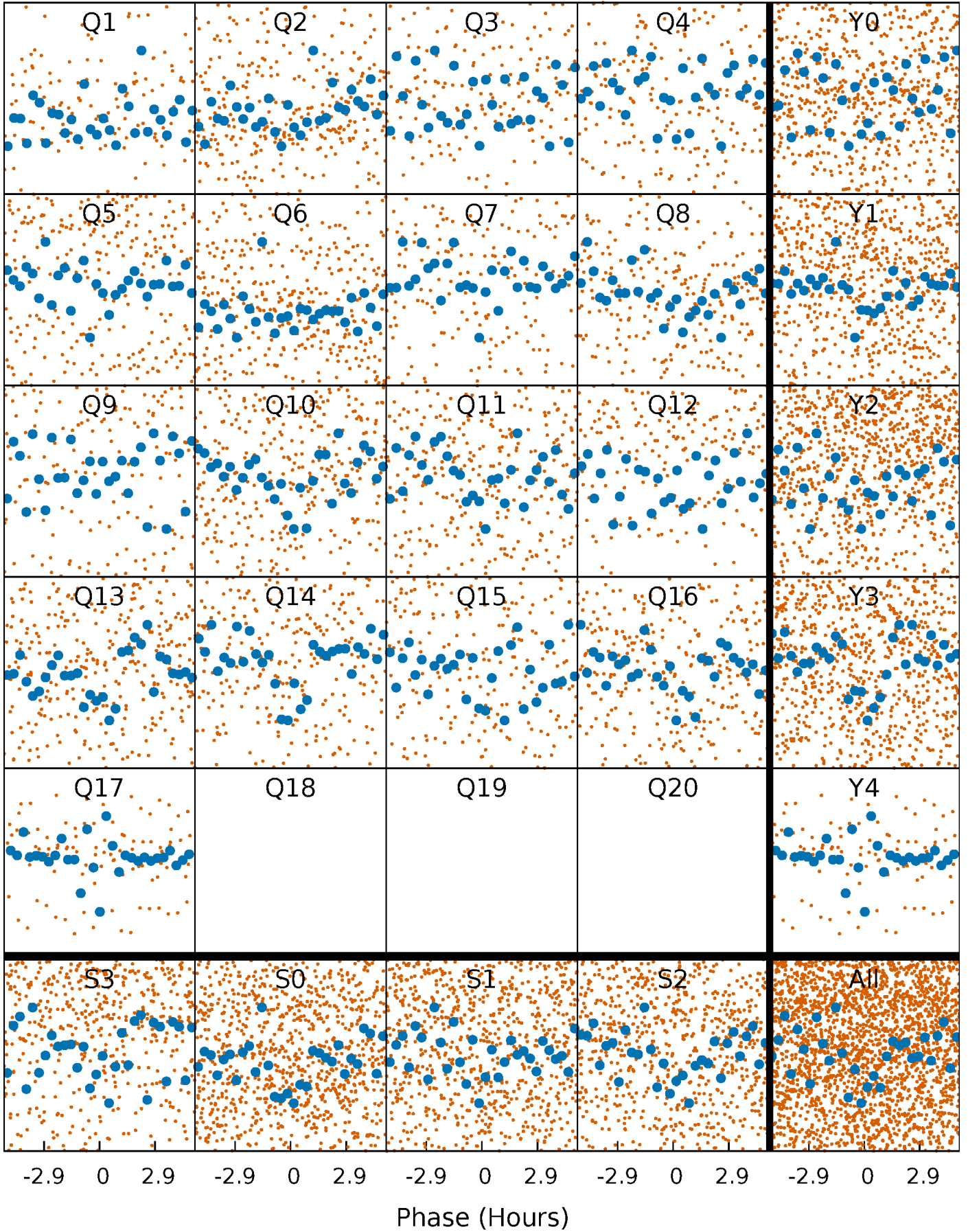
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





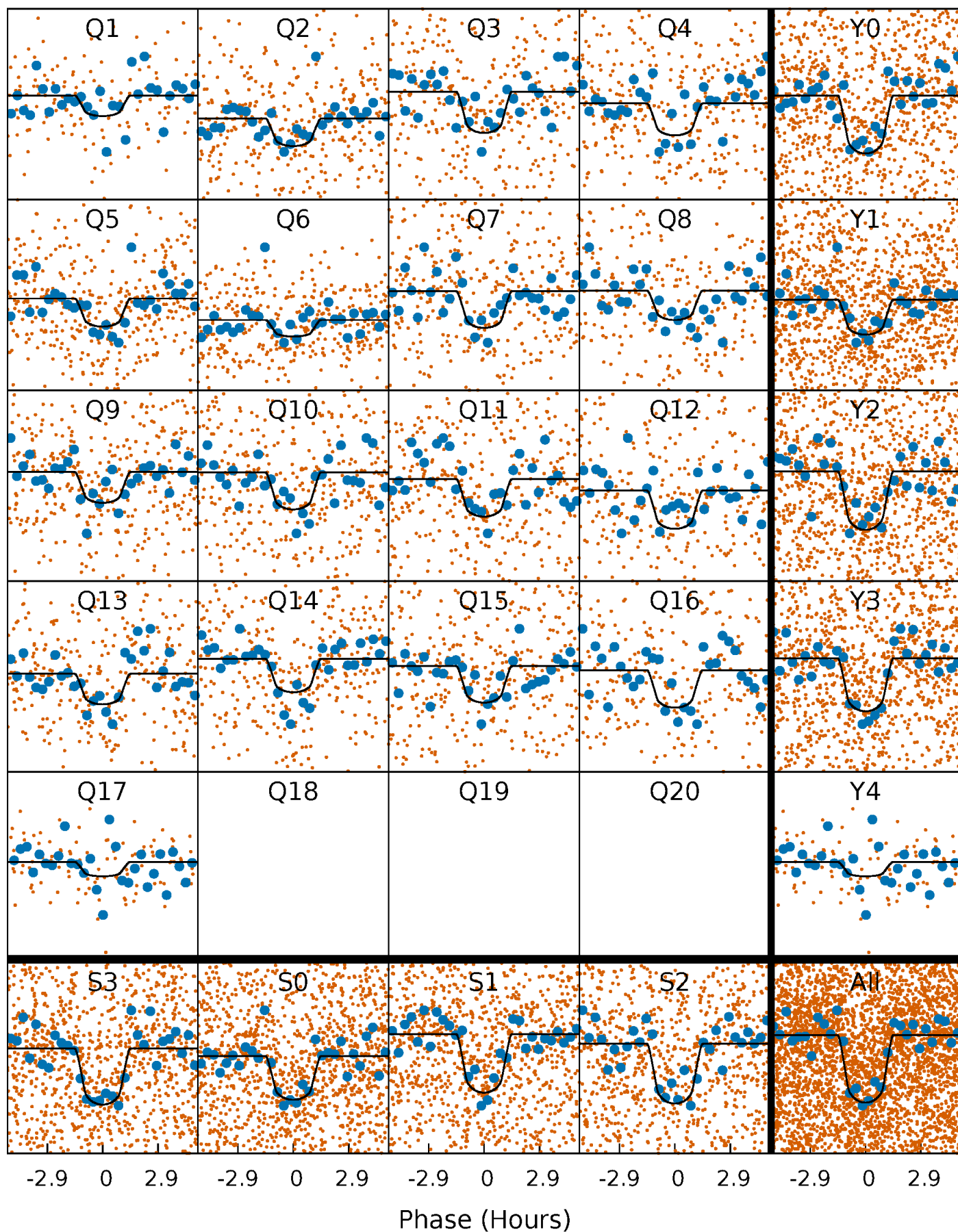
# PDC Quarter-Phased Transit Curves

TCE 007604328-02   P= 4.354064 Days    $T_0=132.857369$  (BKJD)



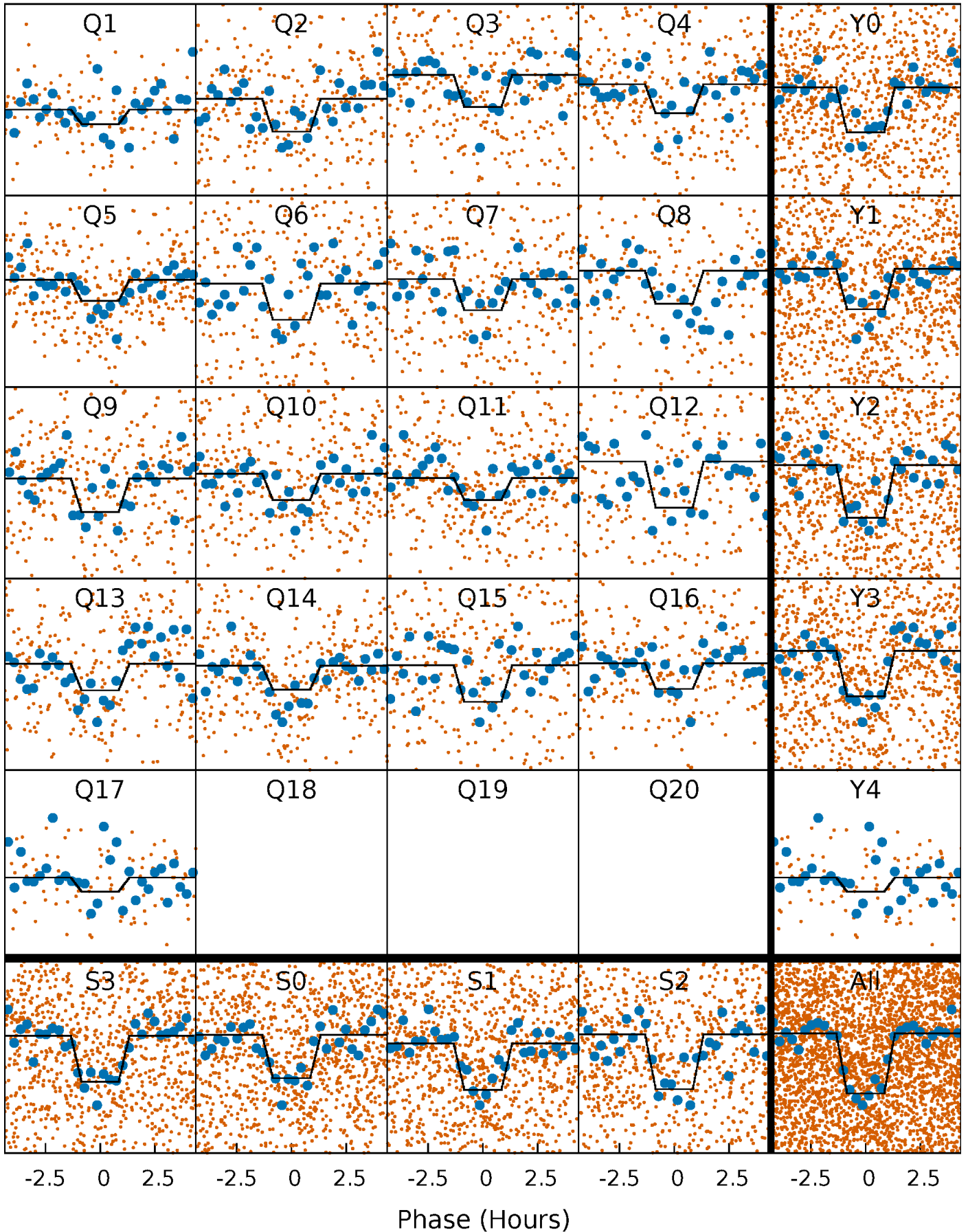
# DV Quarter-Phased Transit Curves

TCE 007604328-02 P= 4.354064 Days  $T_0=132.857369$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

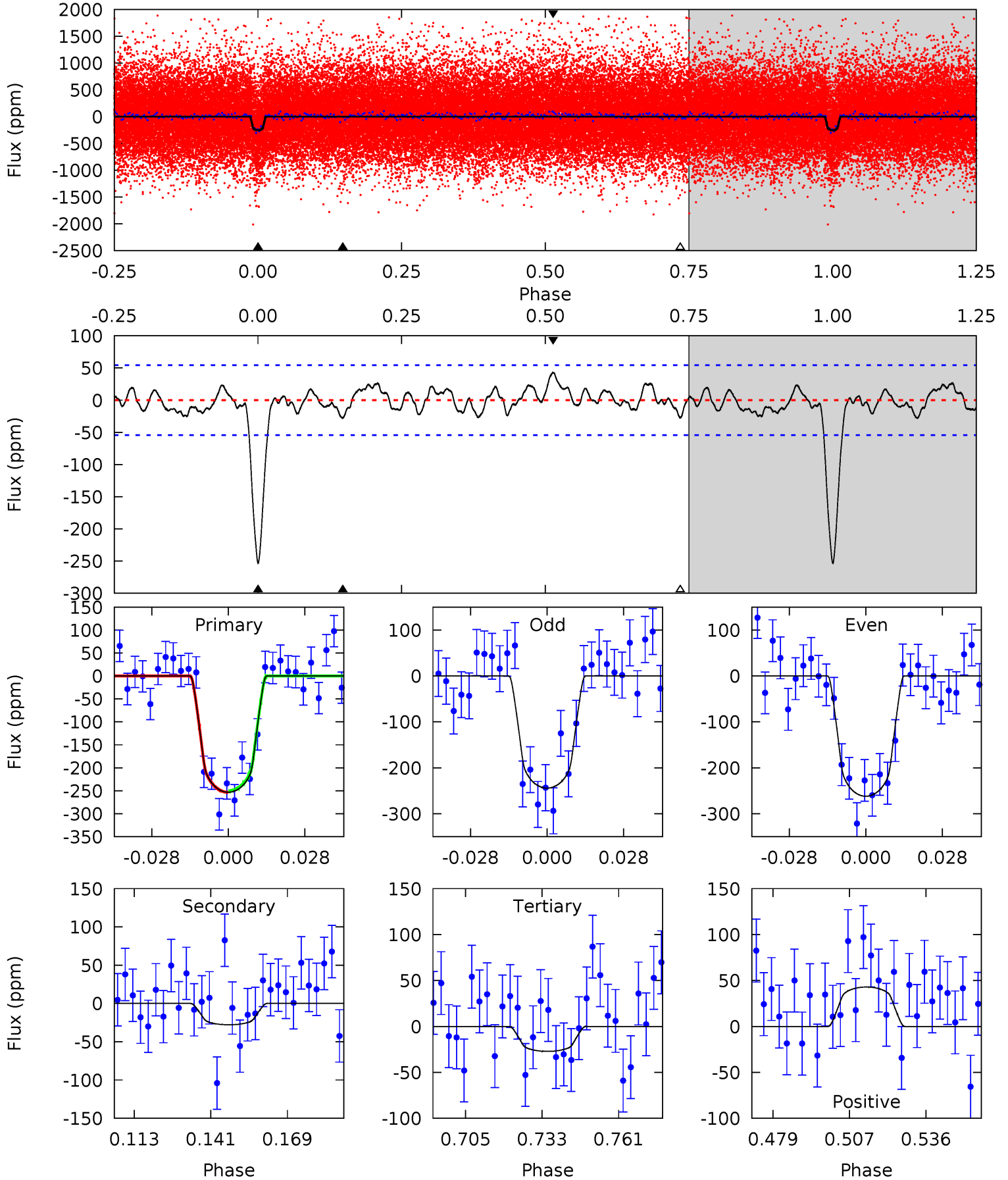
TCE 007604328-02   P= 4.354107 Days    $T_0=132.852308$  (BKJD)



# DV Model-Shift Uniqueness Test

007604328-02, P = 4.354064 Days, E = 128.503305 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
22.5	2.48	2.41	3.81	4.82	2.19	1.26	20.1	18.7	0.06	-1.34	0.79	0.96	0.14	0.15

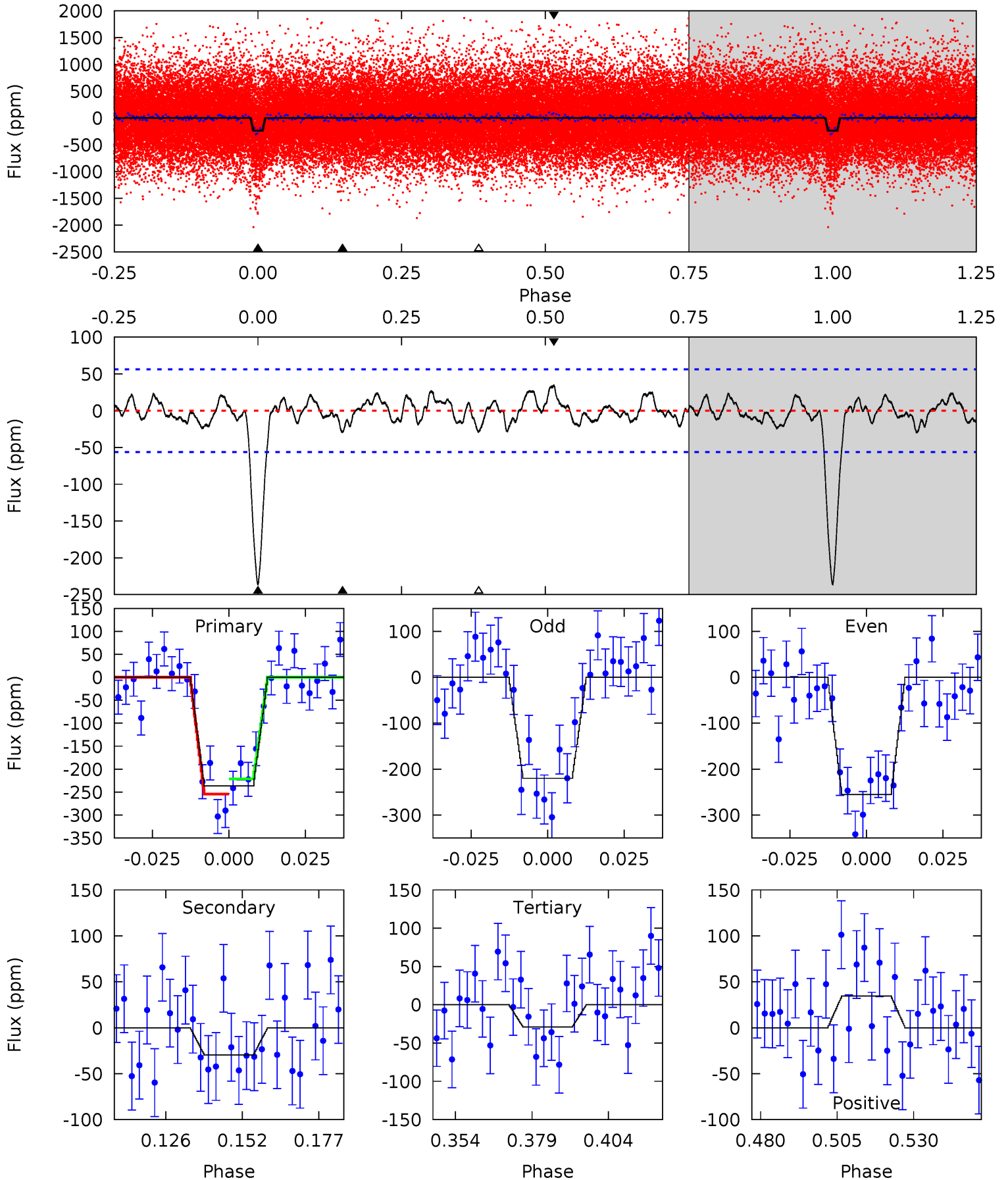




# Alt Model-Shift Uniqueness Test

007604328-02, P = 4.354107 Days, E = 128.498201 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
20.4	2.55	2.51	2.97	4.85	2.24	1.11	17.8	17.4	0.04	-0.42	1.53	1.04	0.13	1.42



### Stellar Parameters For KIC 007604328

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5455^{+162}_{-162}$	$4.421^{+0.149}_{-0.198}$	$-0.200^{+0.300}_{-0.300}$	$0.909^{+0.213}_{-0.142}$	$0.795^{+0.125}_{-0.062}$	$1.492^{+0.898}_{-0.713}$
	+3%/-3%	+3%/-4%	+150%/-150%	+23%/-16%	+16%/-8%	+60%/-48%
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 007604328-02 / KOI 2458.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-28 \pm 11$	$1.81^{+0.94}_{-0.81}$	$1468^{+111}_{-85}$	$3416^{+719}_{-458}$	$11^{+23}_{-7}$
Alt.	$-30 \pm 12$	$1.63^{+0.89}_{-0.80}$	$1463^{+104}_{-80}$	$3520^{+966}_{-468}$	$13^{+41}_{-8}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming A=0.3)

$A_{obs}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

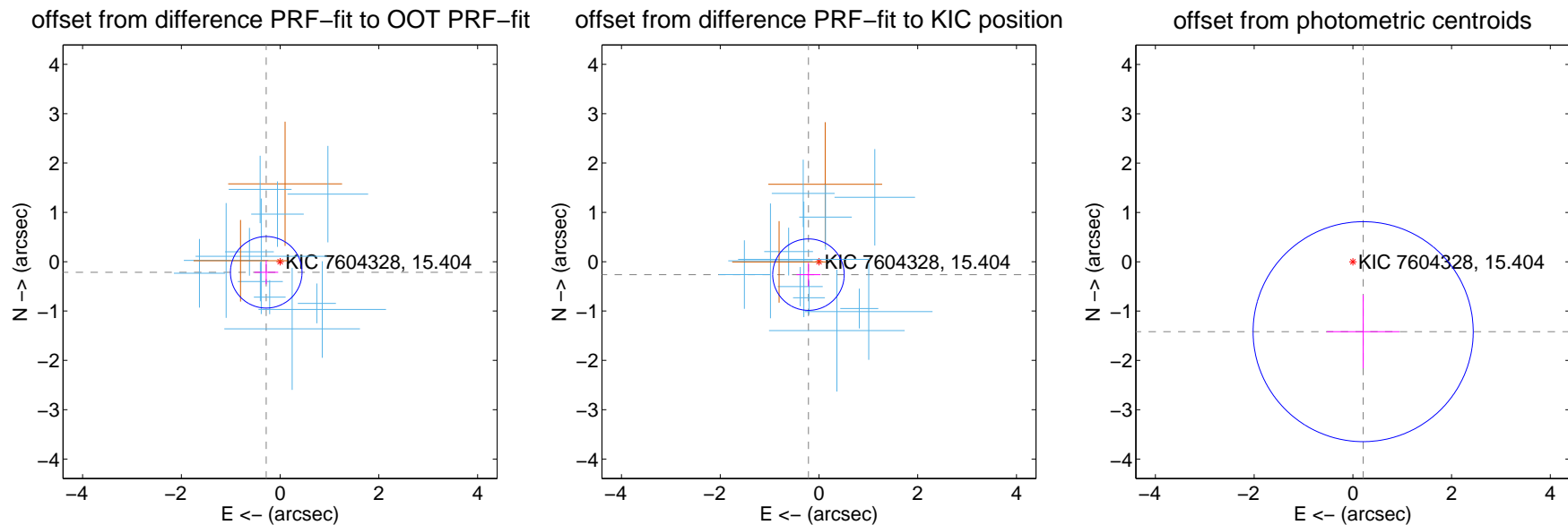
## DV Centroid Data

Supplemental centroid analysis for 007604328-02. Kepler magnitude: 15.40. Transit SNR 16.41

There are 12 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

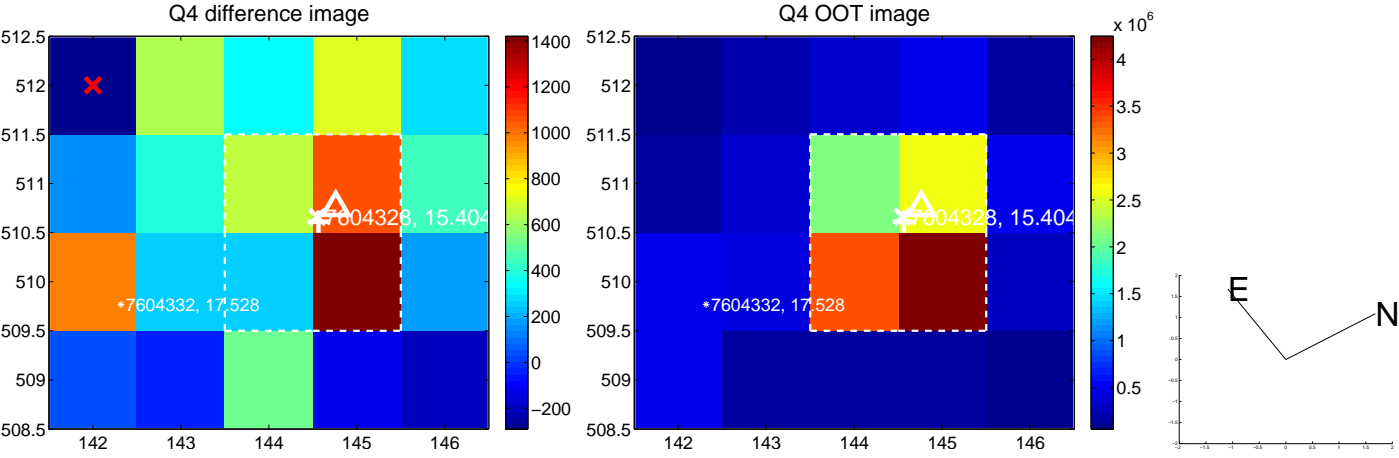
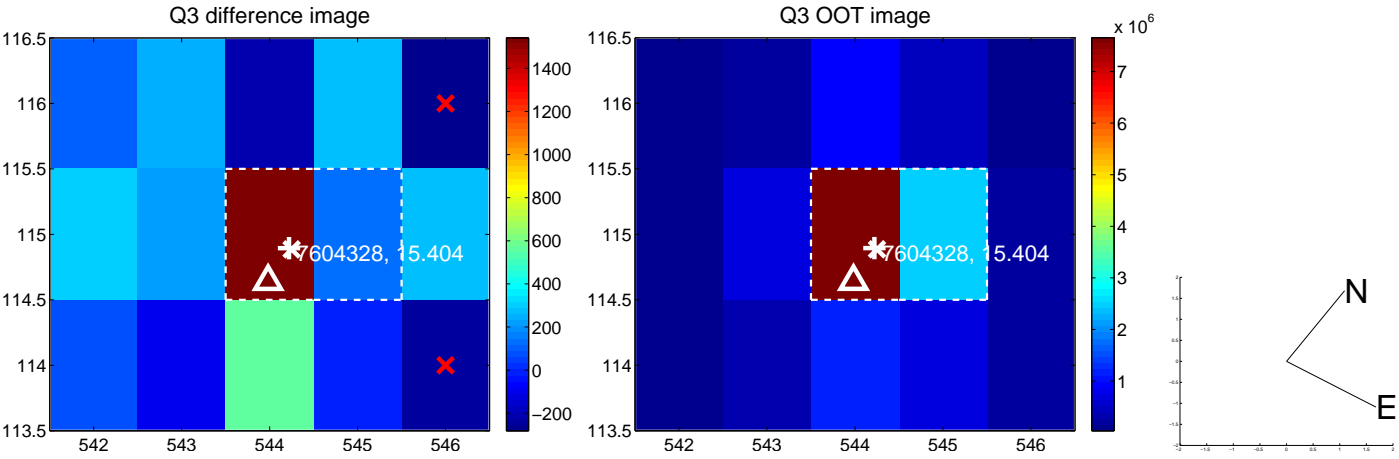
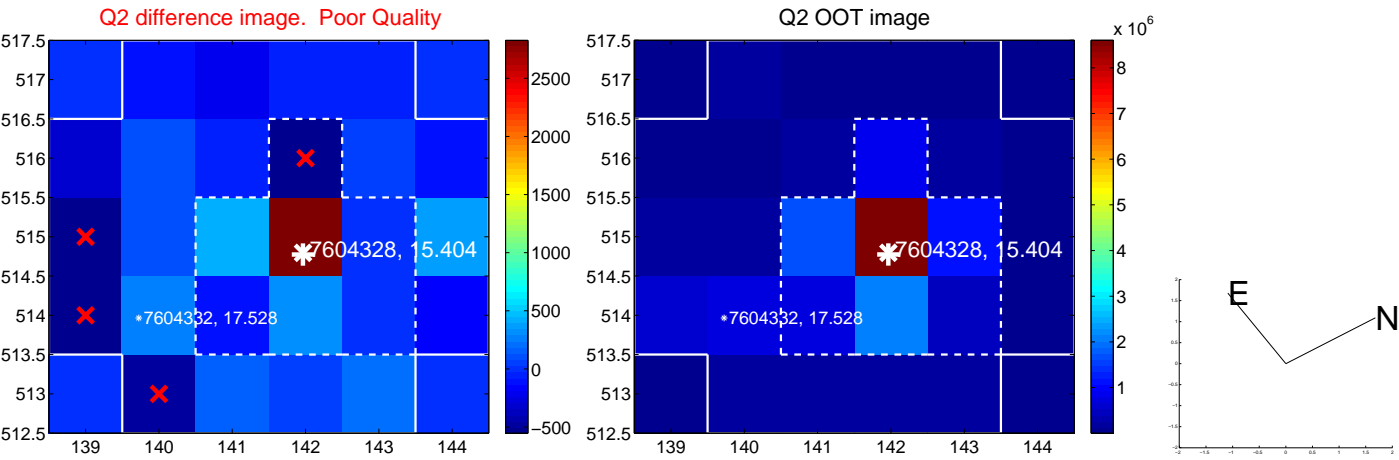
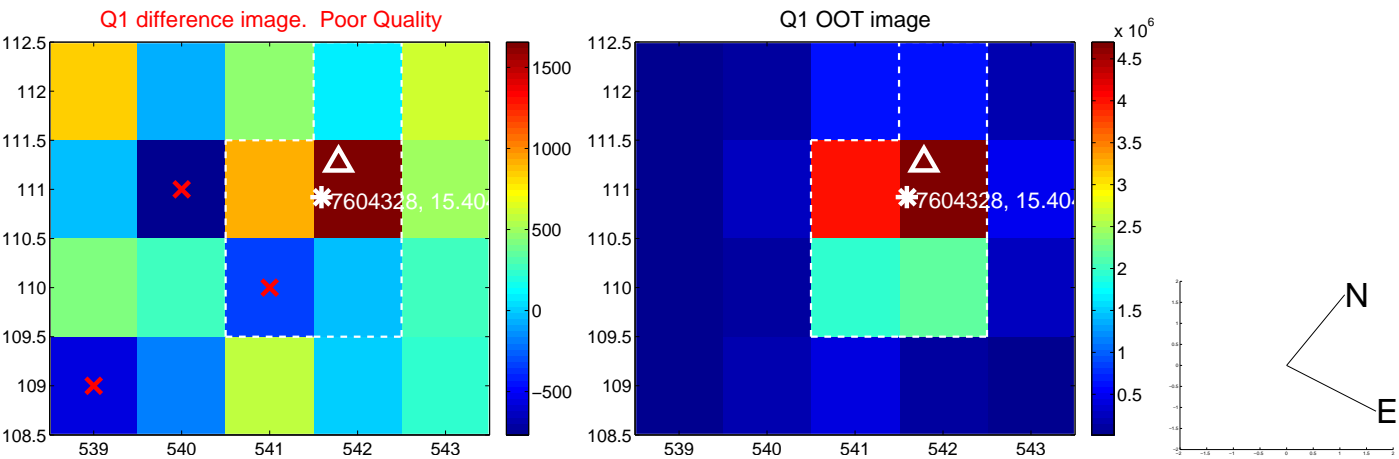
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.354 \pm 0.242$	1.46	$0.281 \pm 0.242$	$-0.215 \pm 0.241$
PRF-fit source offset from KIC position	$0.338 \pm 0.241$	1.40	$0.213 \pm 0.242$	$-0.263 \pm 0.241$
photometric centroid source offset	$1.43 \pm 0.74$	1.93	$-0.21 \pm 0.74$	$-1.42 \pm 0.74$



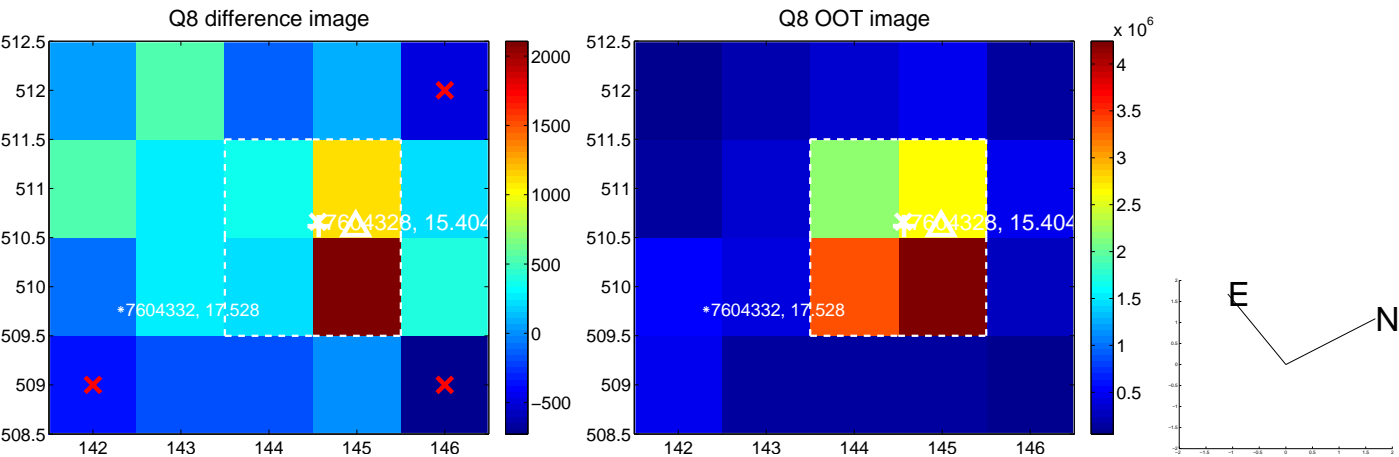
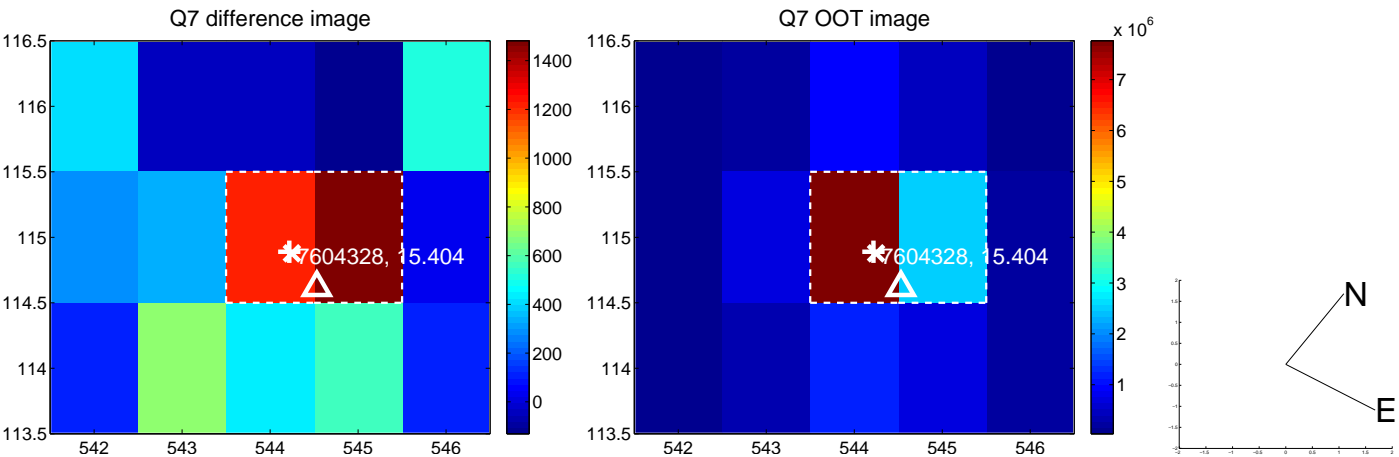
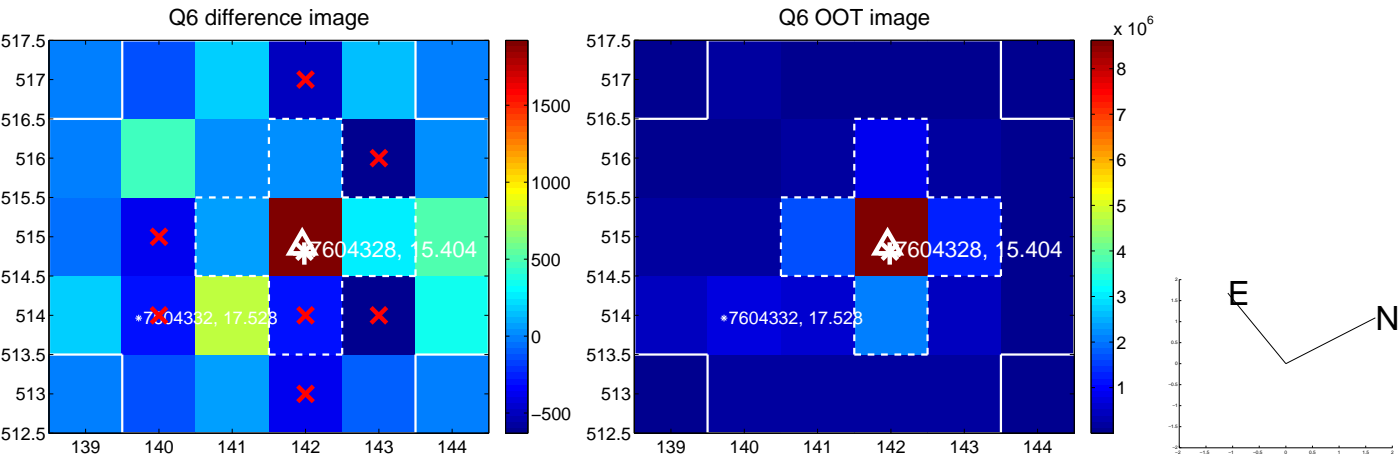
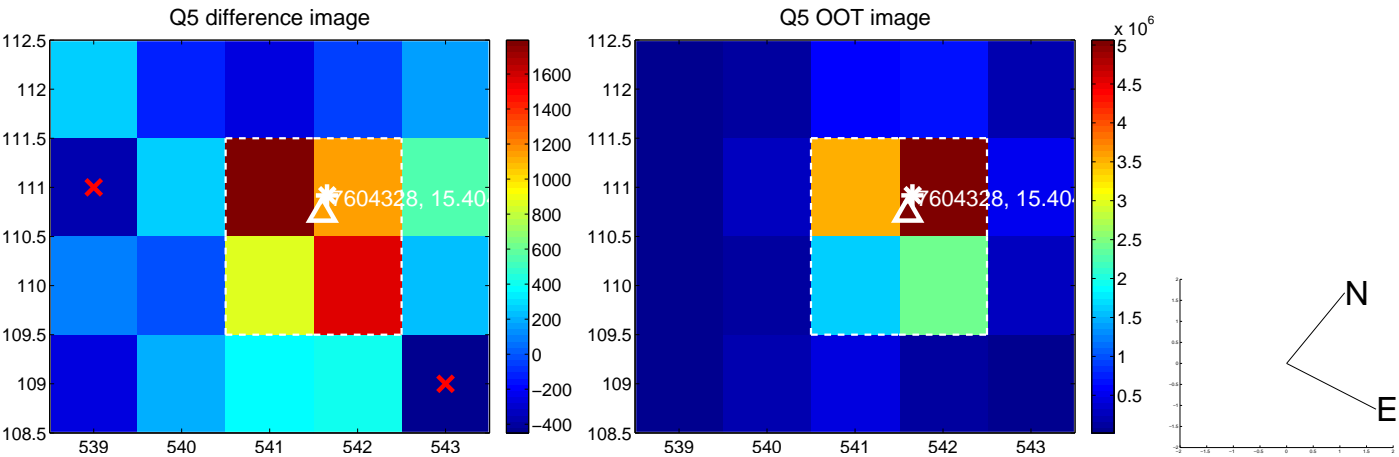
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



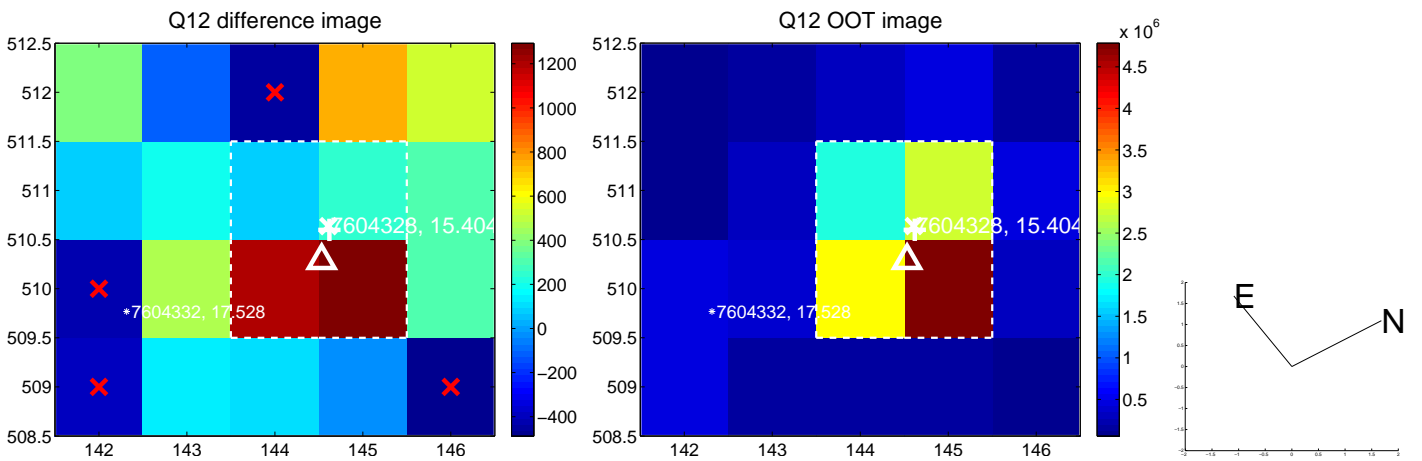
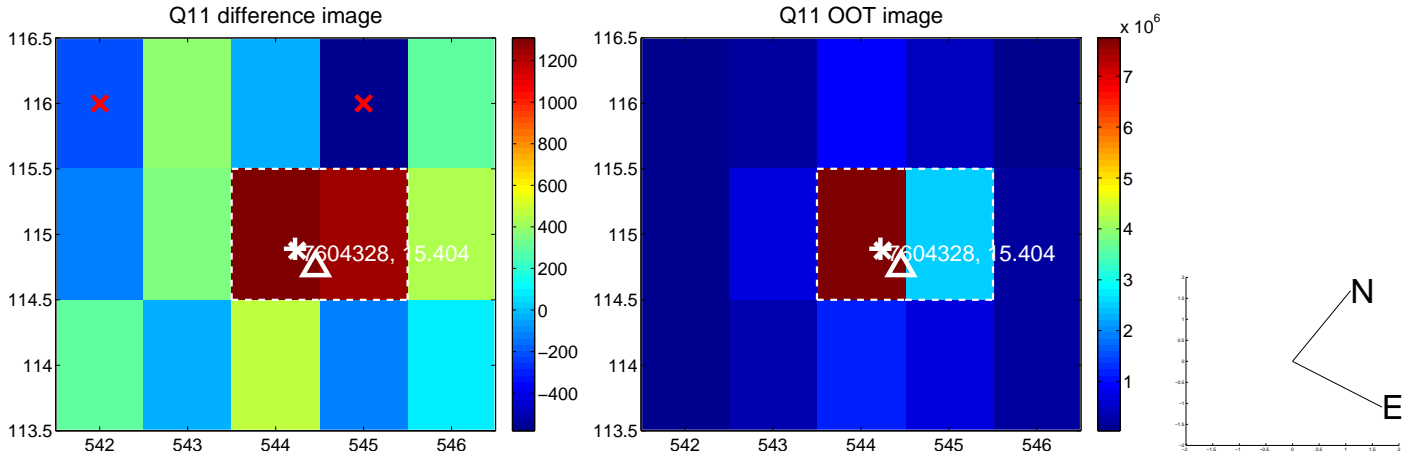
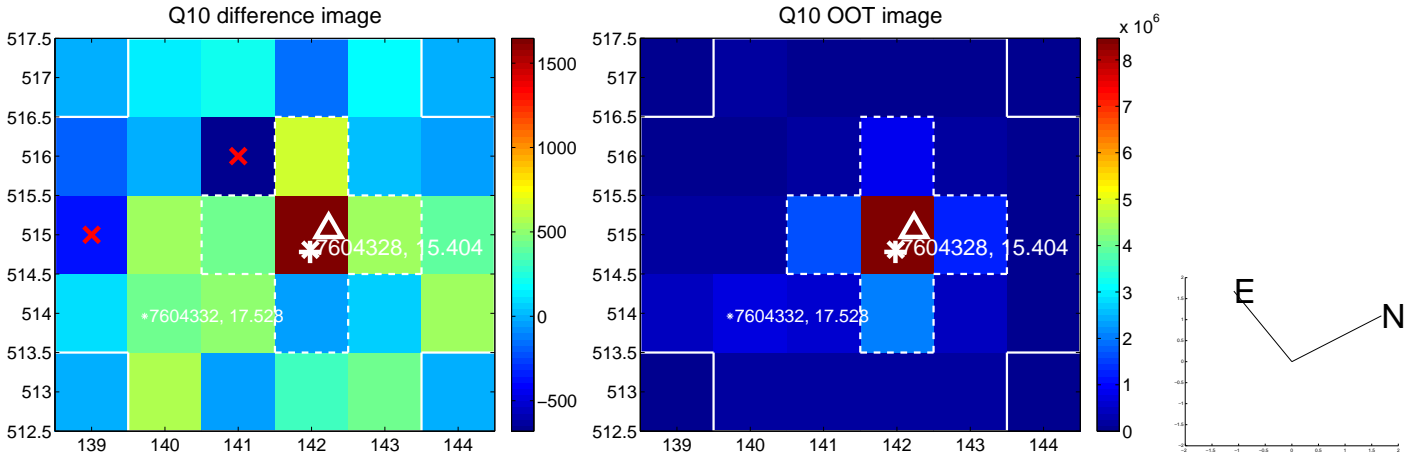
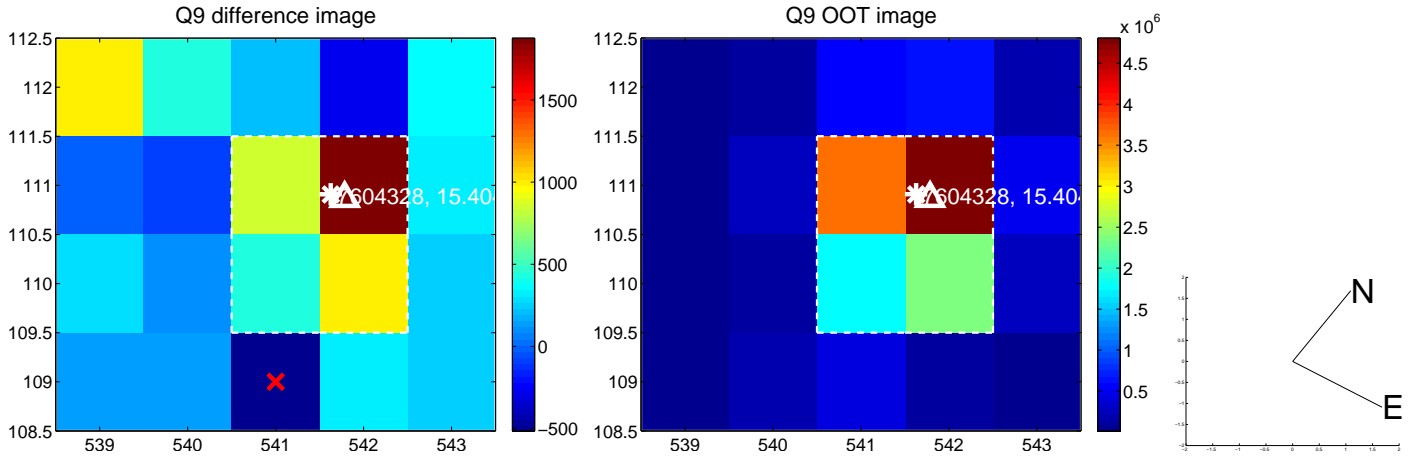
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



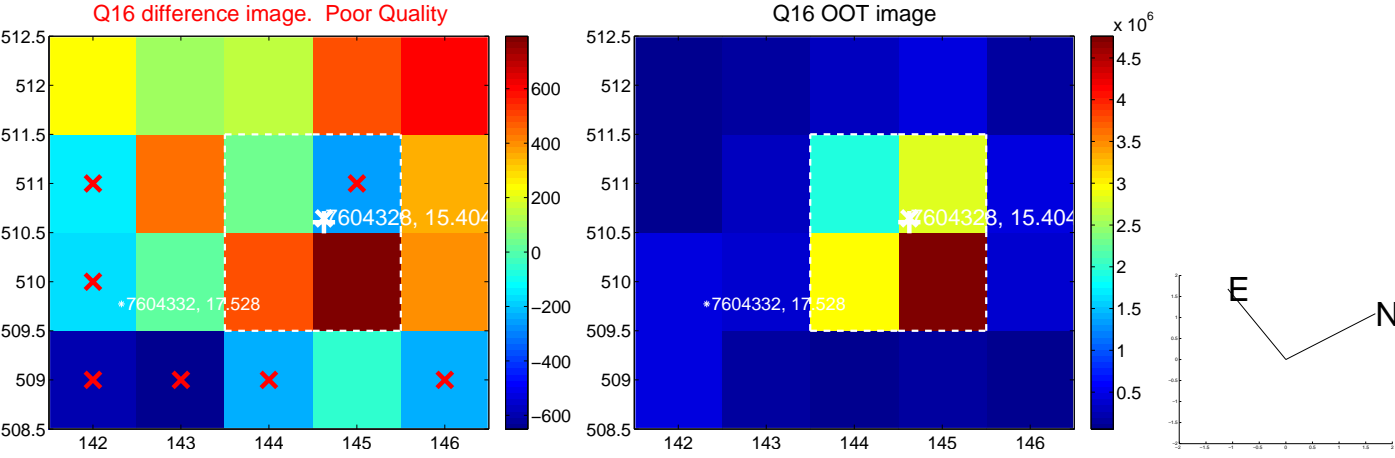
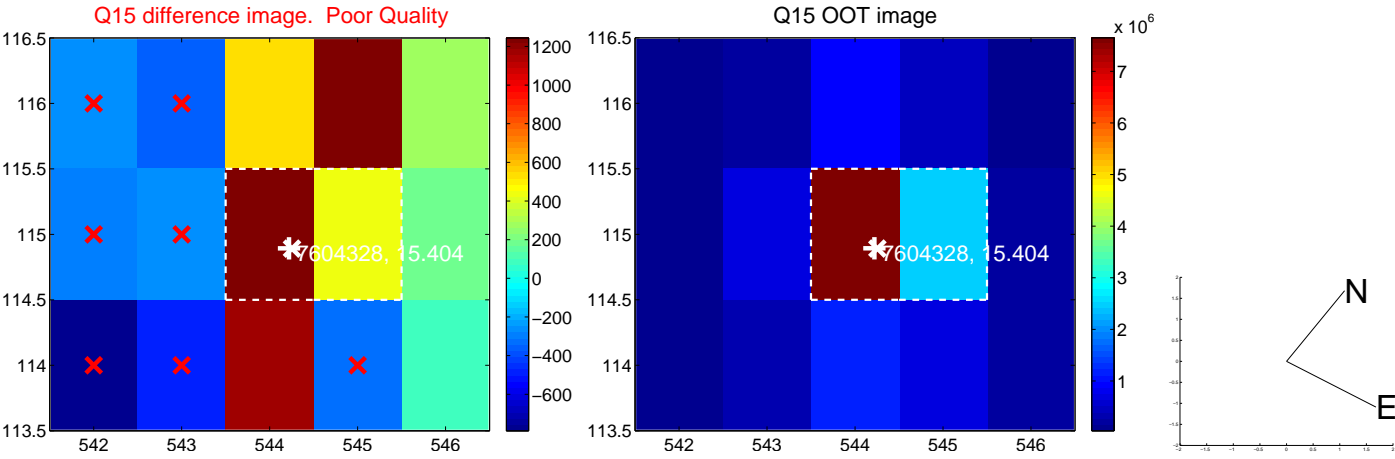
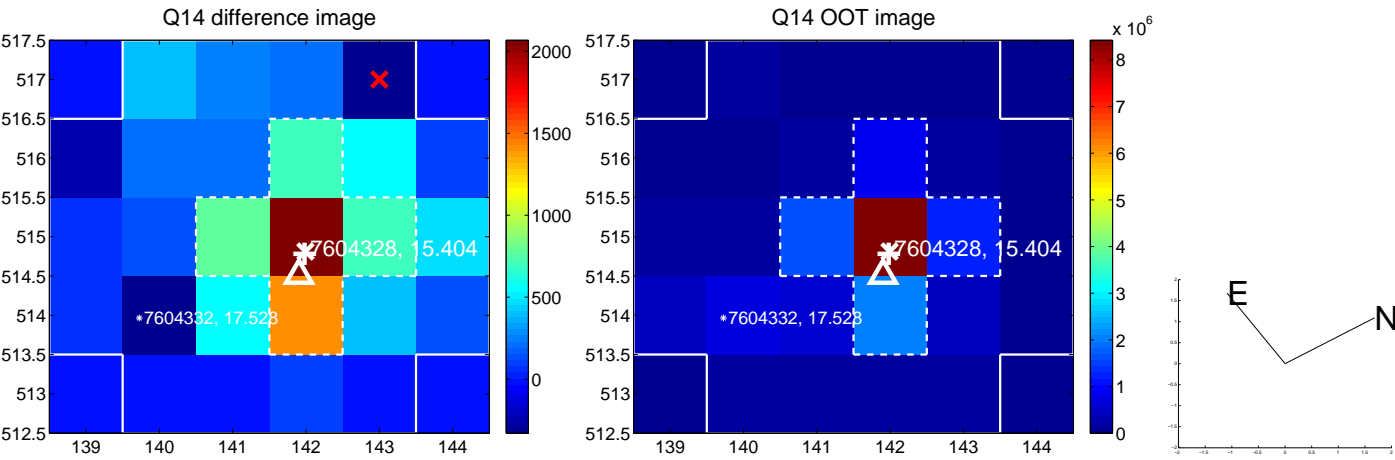
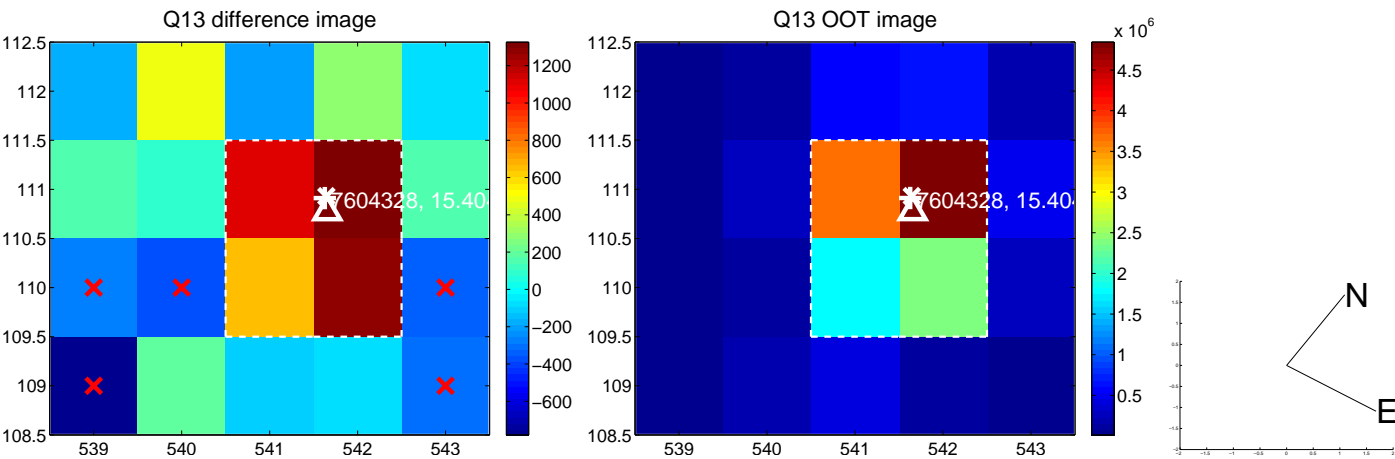
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



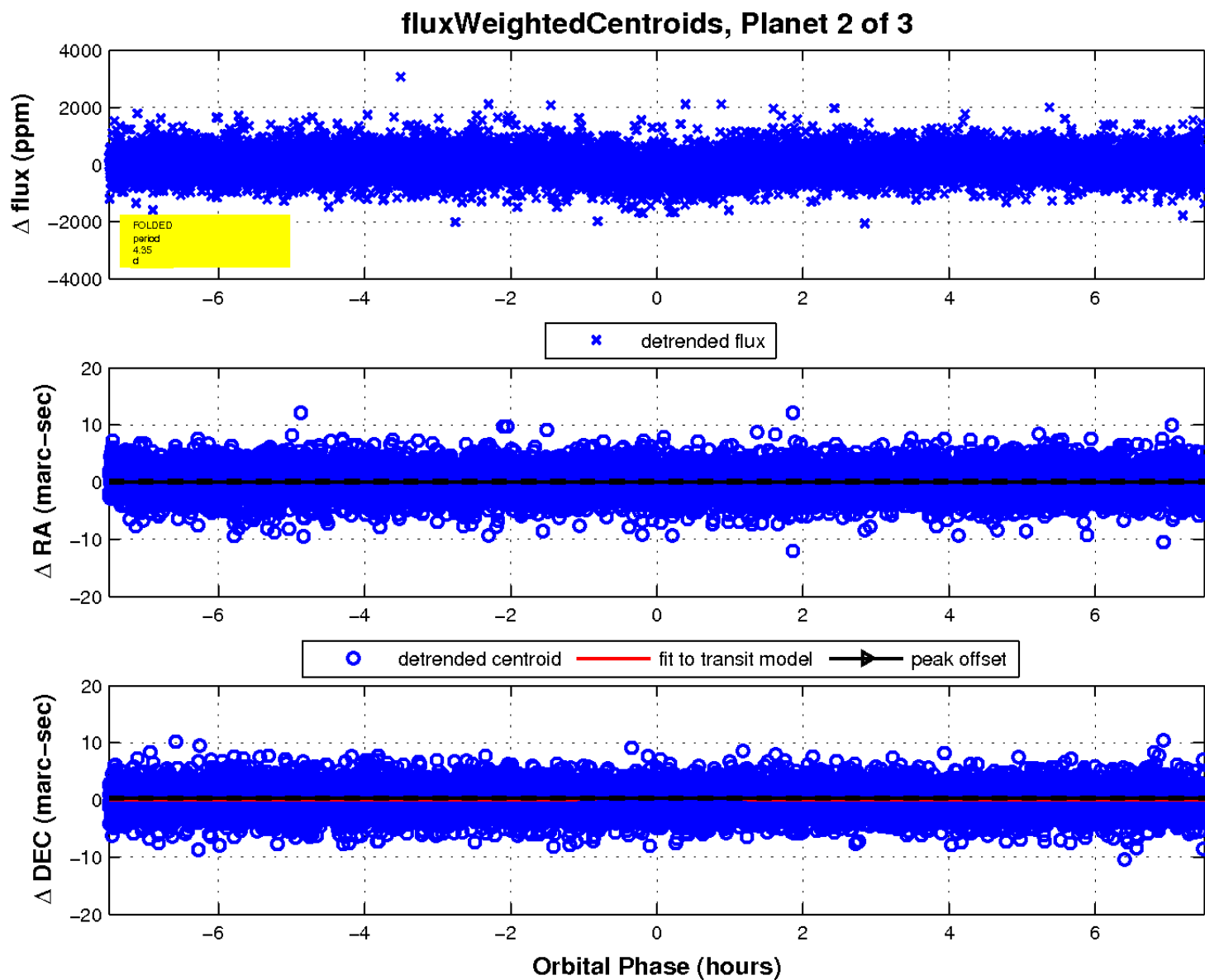
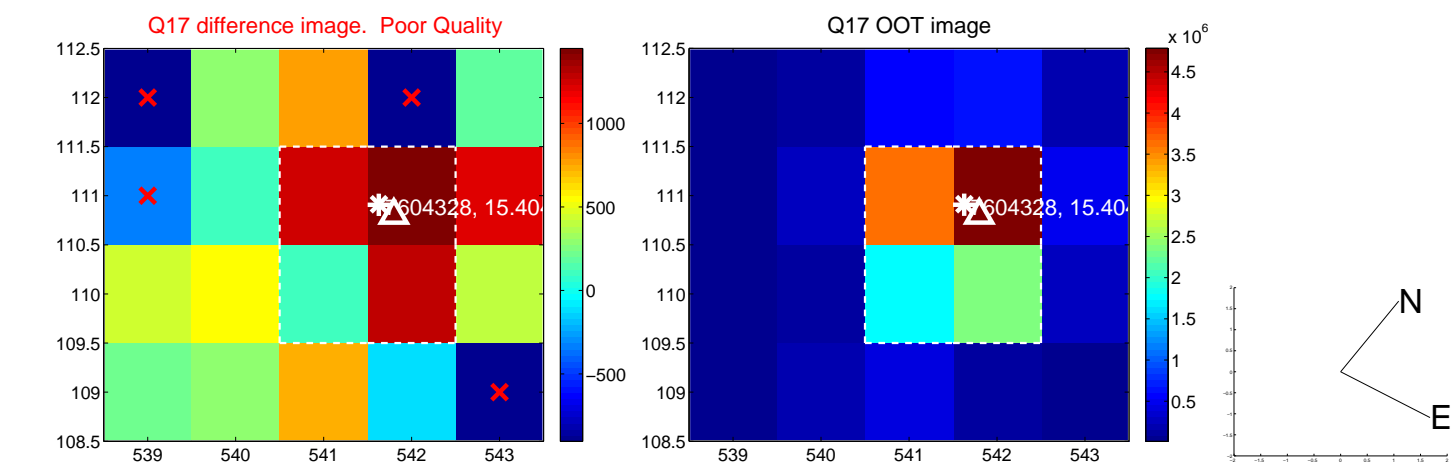
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

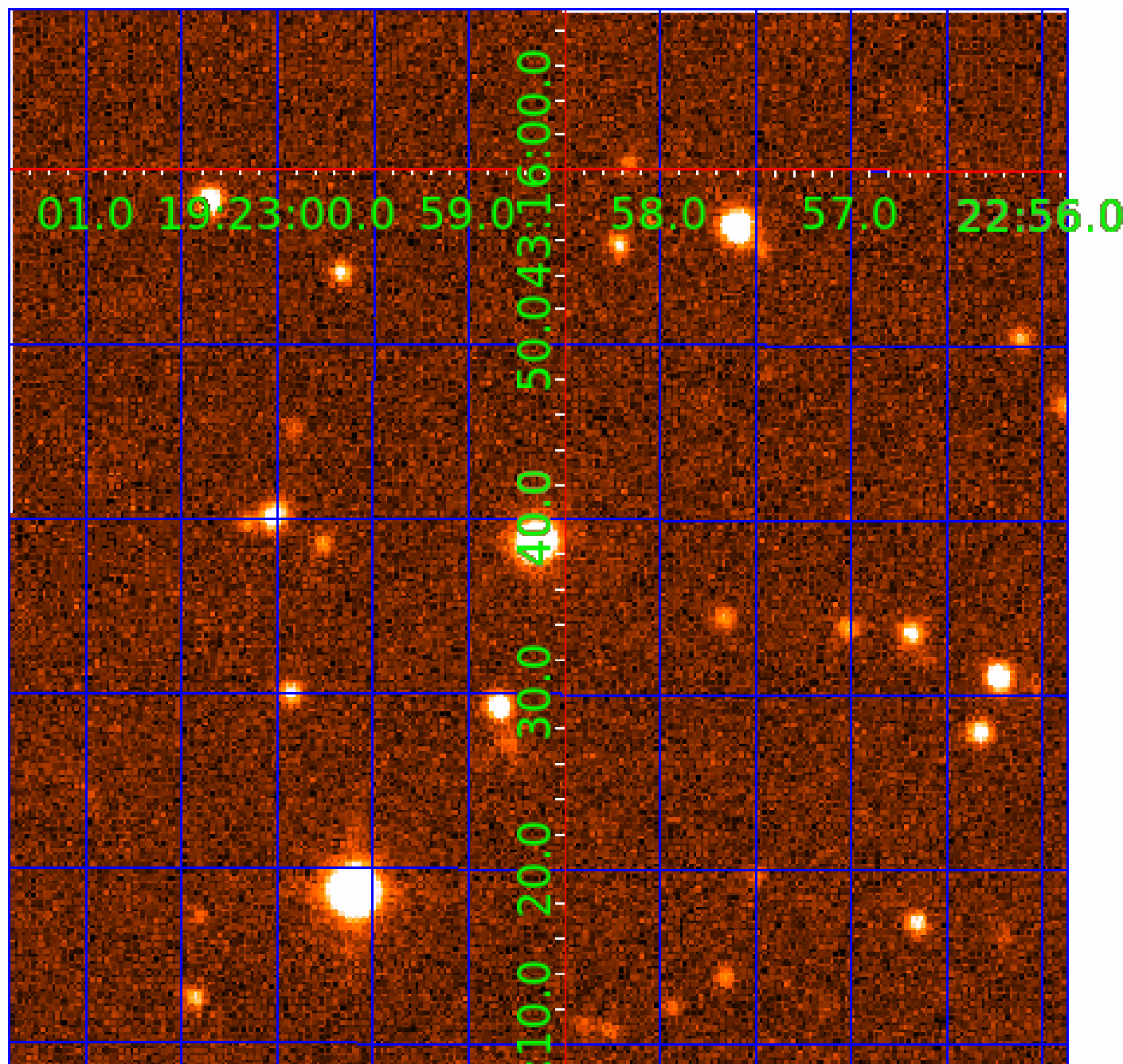


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007604328

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007604328-01	OBS	2458.02	2.936618	133.028044	282.4	1.859	17.8	19.3	0.91	5455	1.55	474.23
007604328-02	OBS	2458.01	4.354064	132.857369	270.6	2.499	14.6	16.4	0.91	5455	1.75	280.49
007604328-03	OBS	No	272.934221	273.648726	781.2	3.163	7.2	7.4	0.91	5455	2.67	1.13

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007604328-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007604328-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007604328-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

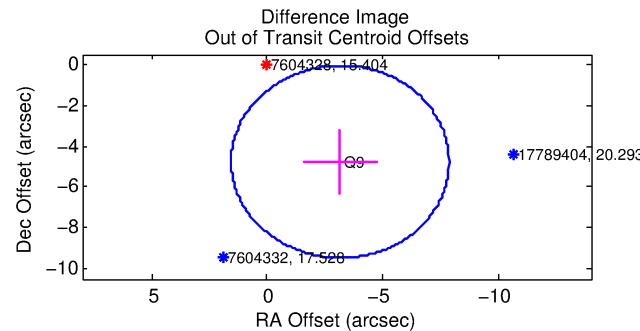
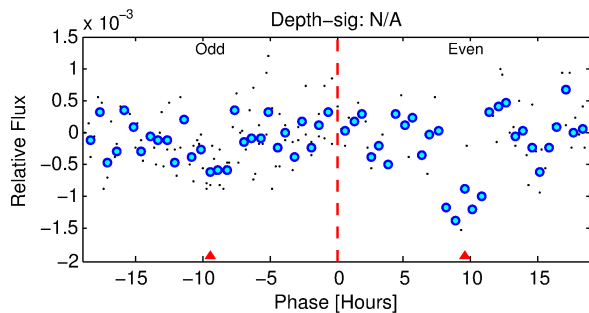
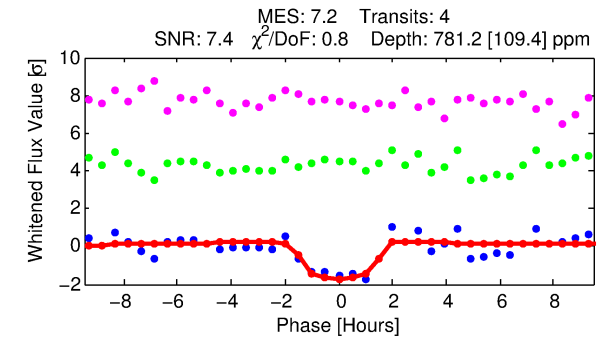
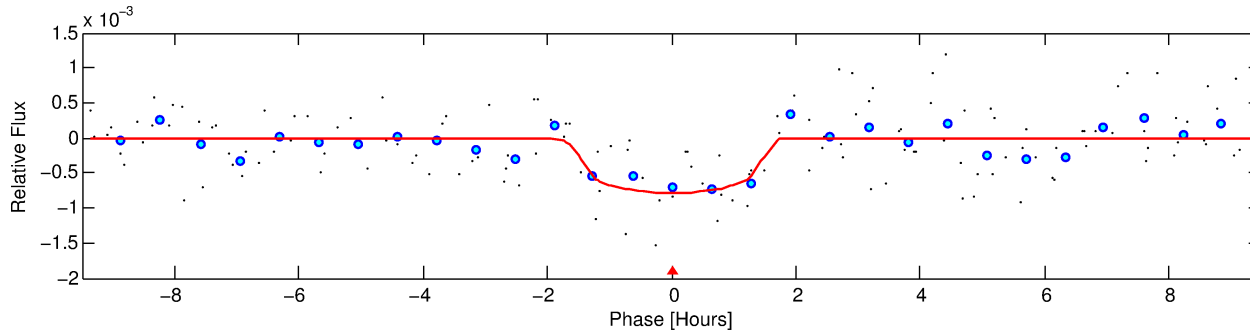
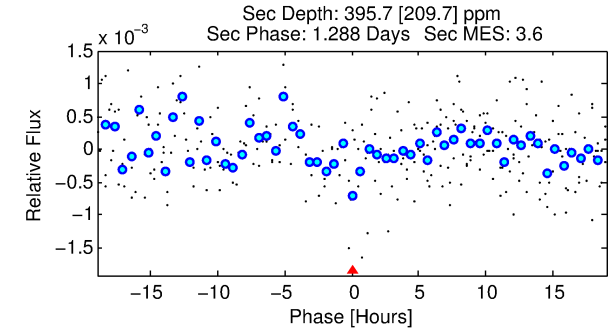
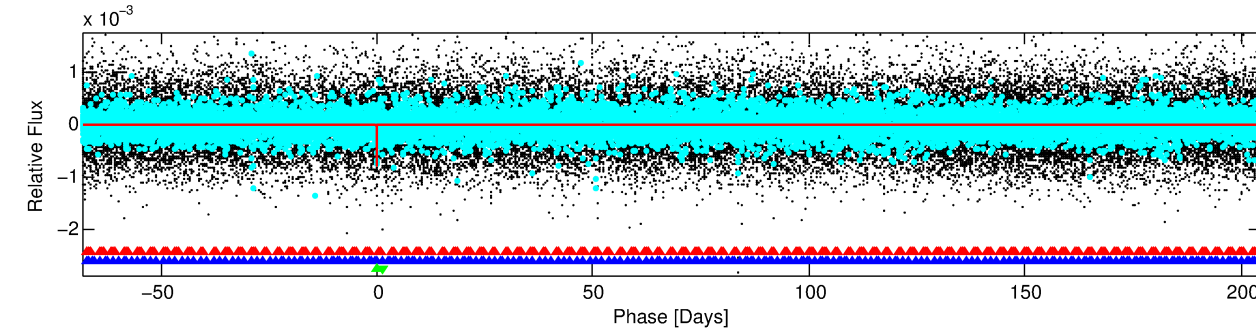
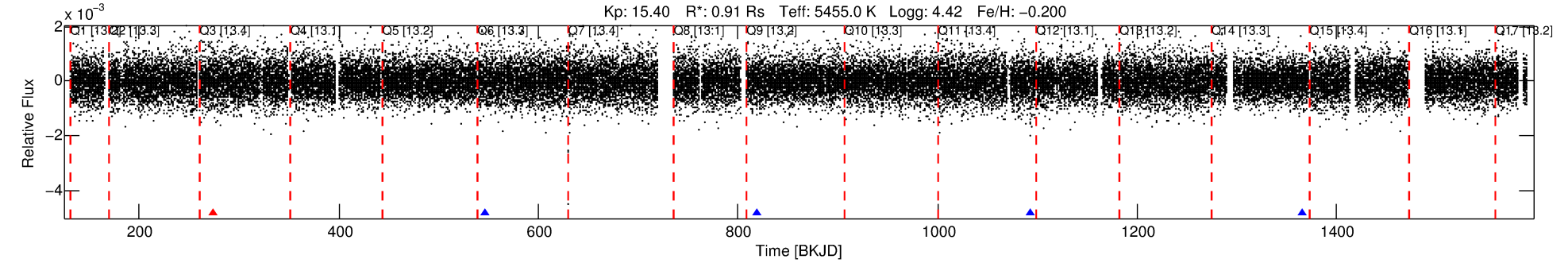
## Ephemeris Match Information For 007604328-03

No Significant Match Found



# DV One-Page Summary

KIC: 7604328 Candidate: 3 of 3 Period: 272.934 d  
KOI: K02458 Corr: No Ephemeris Match



## DV Fit Results:

Period = 272.93422 [0.00348] d  
Epoch = 273.6487 [0.0086] BKJD  
Rp/R\* = 0.0270 [0.0508]  
a/R\* = 521.73 [3963.40]  
b = 0.65 [6.75]  
Seff = 1.13 [0.41]  
Teq = 263 [24] K  
Rp = 2.68 [5.08] Re  
a = 0.7629 [0.1663] AU  
Ag = 17699.20 [67655.93] [0.26σ]  
Teffp = 4685 [4461] K [0.99σ]

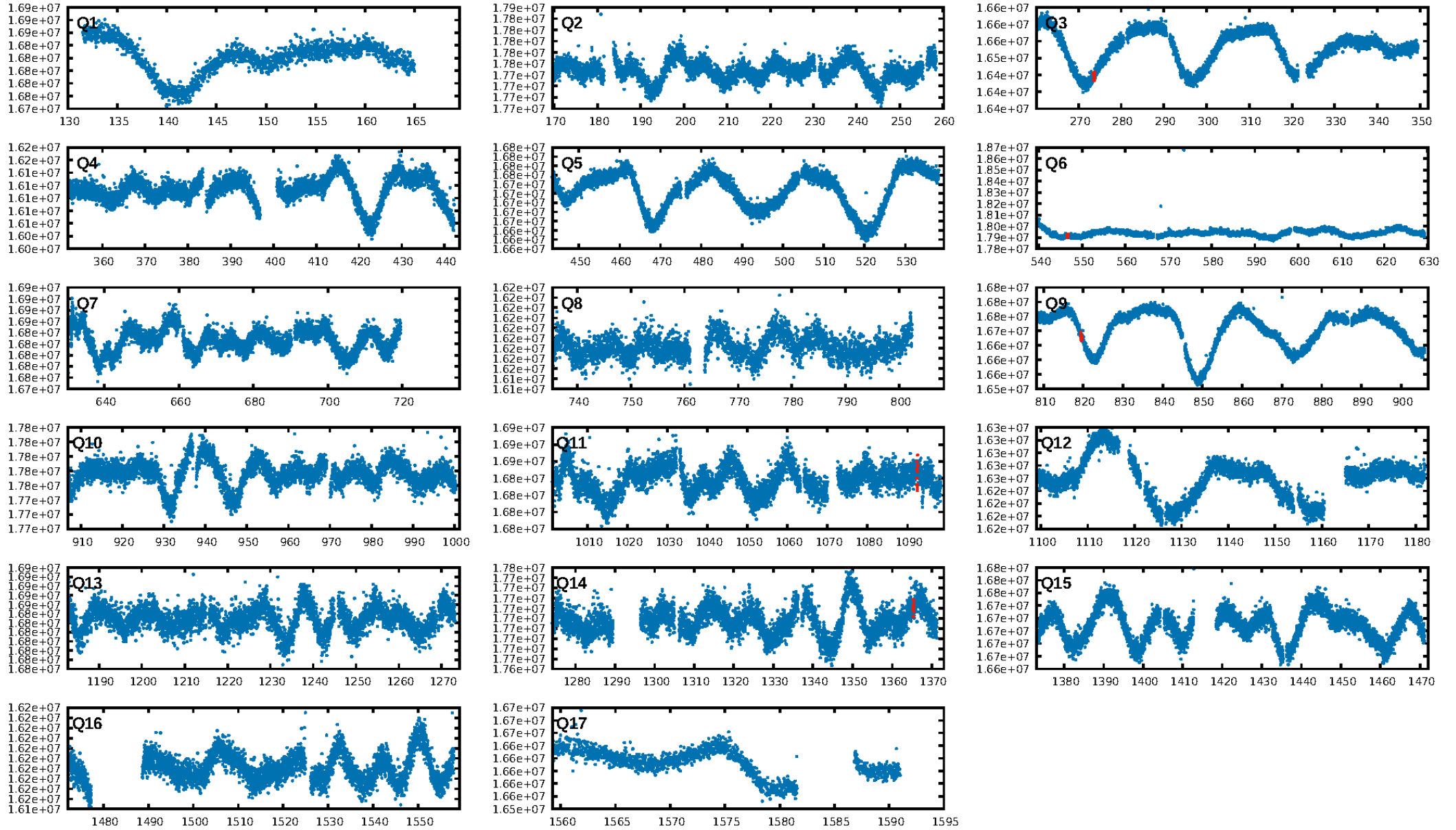
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1599.04σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 24.3%  
ModelChiSquareGof-sig: 98.6%  
Bootstrap-pfa: 1.19e-09  
RollingBand-fgt: 0.75 [3/4]  
GhostDiagnostic-chr: 12.19  
Centroid-sig: 64.5%  
Centroid-so: 1.552 arcsec [0.80σ]  
OotOffset-rm: 5.708 arcsec [3.64σ]  
KicOffset-rm: 5.705 arcsec [3.63σ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 0.40 [2/5]

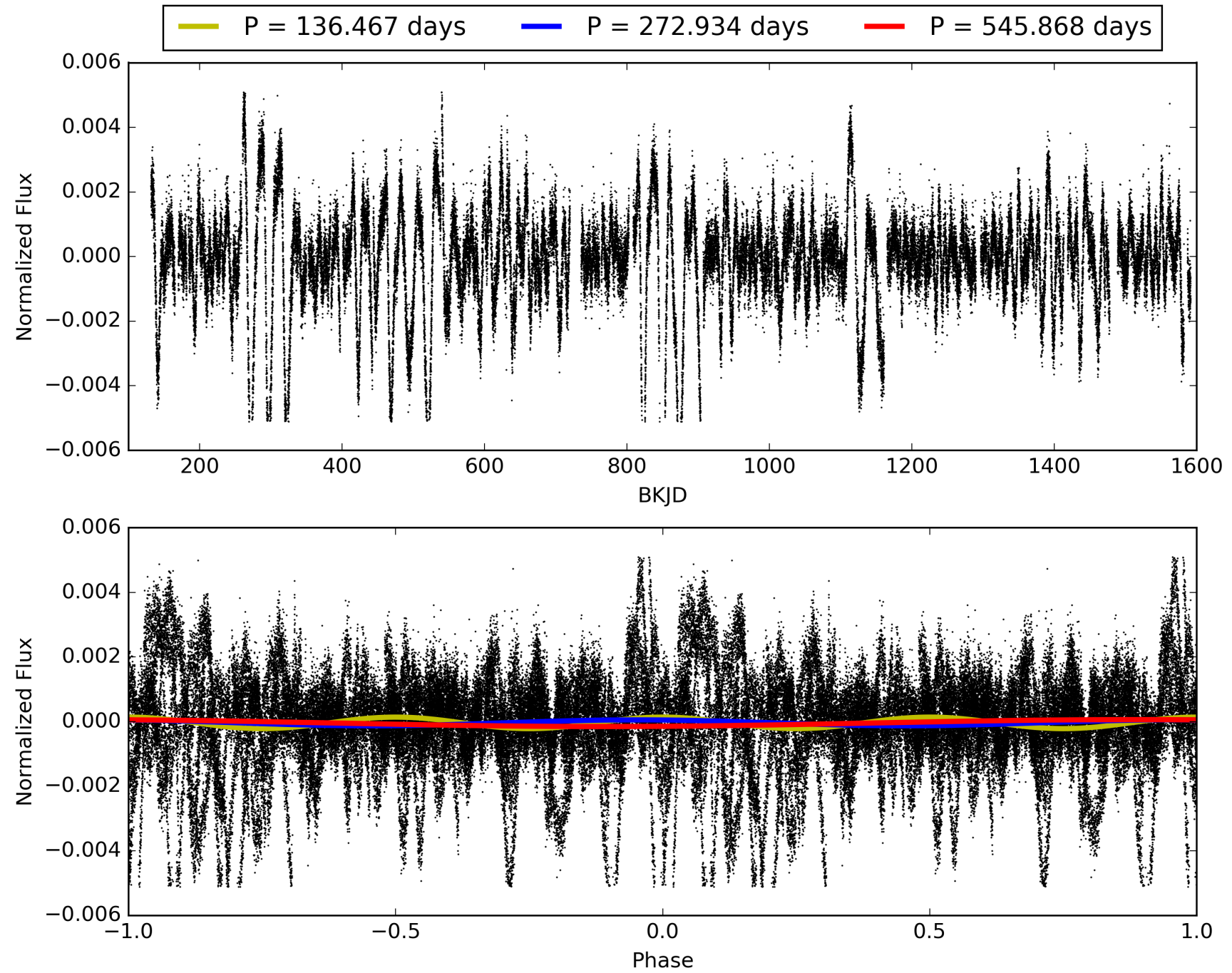
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:07:57 Z

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

# TCE 007604328-03, PDC Light Curves

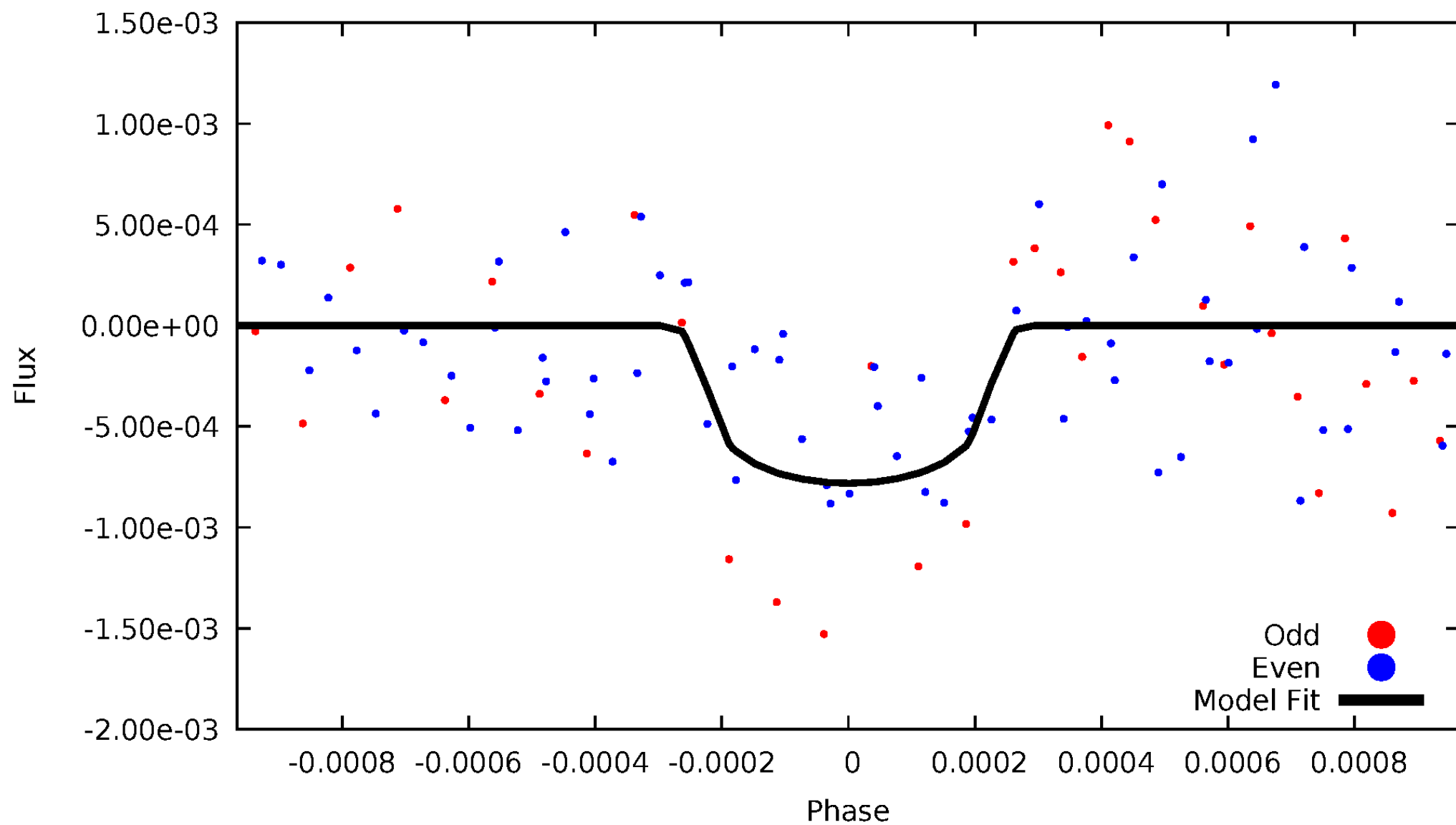


TCE 007604328-03



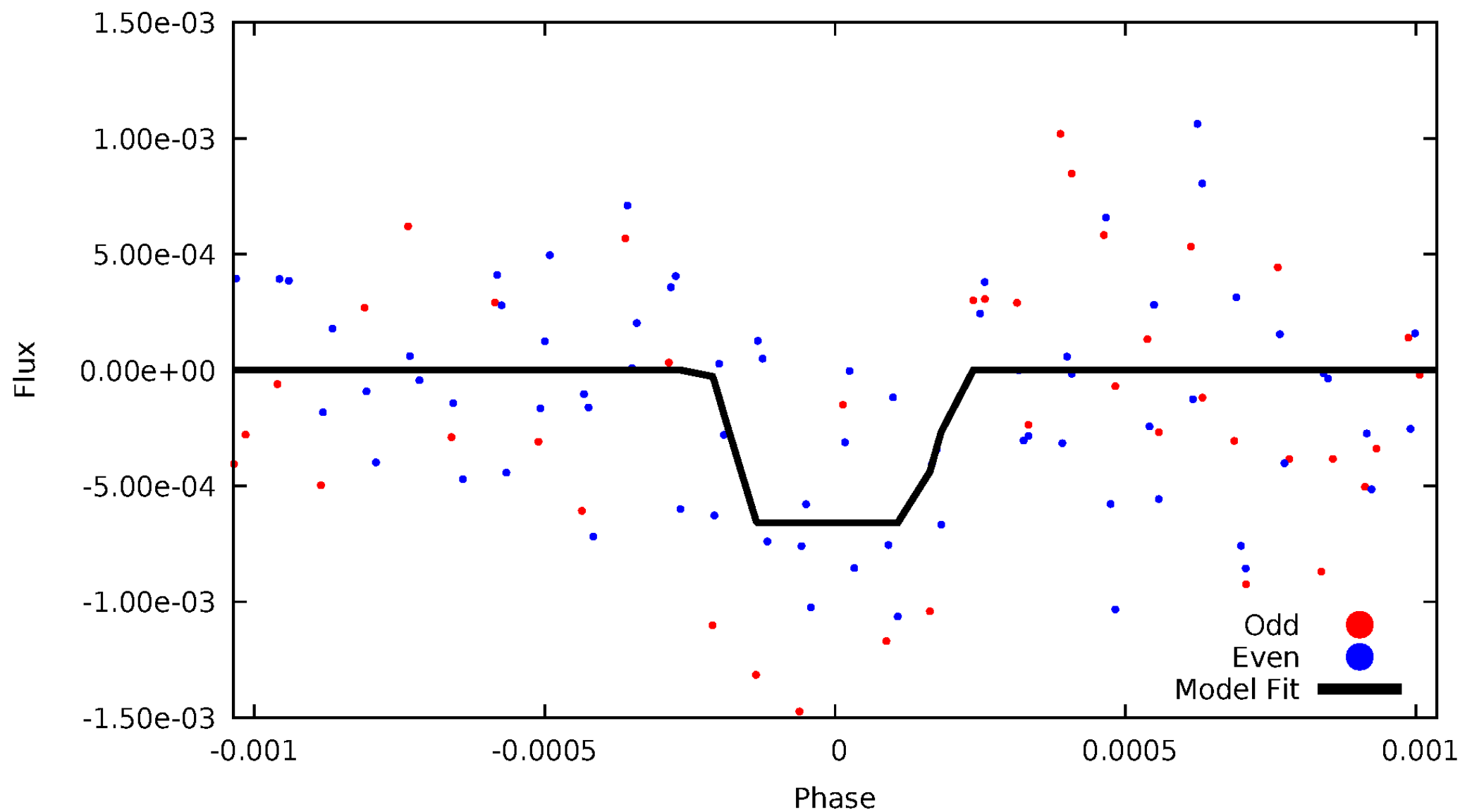
# DV Odd/Even

TCE 007604328-03



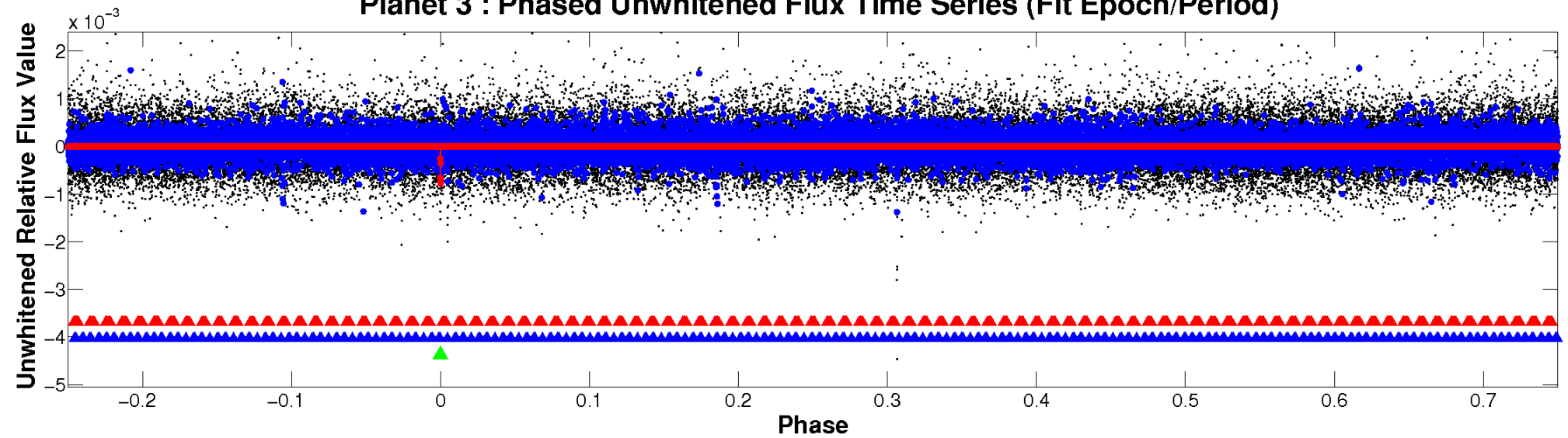
# ALT Odd/Even

TCE 007604328-03

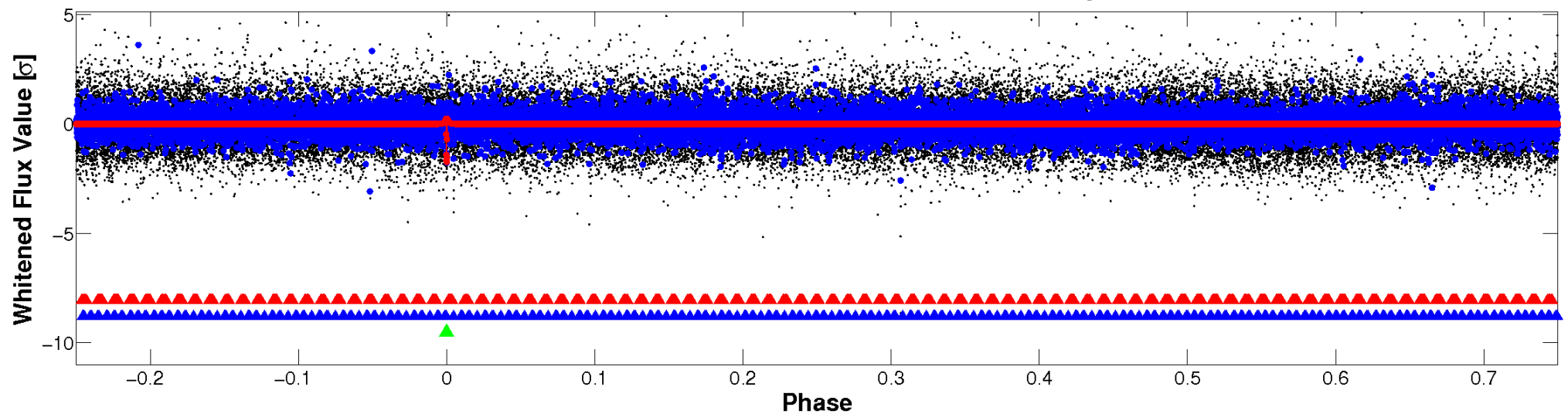


# Non-Whitened Vs. Whitened Light Curve

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



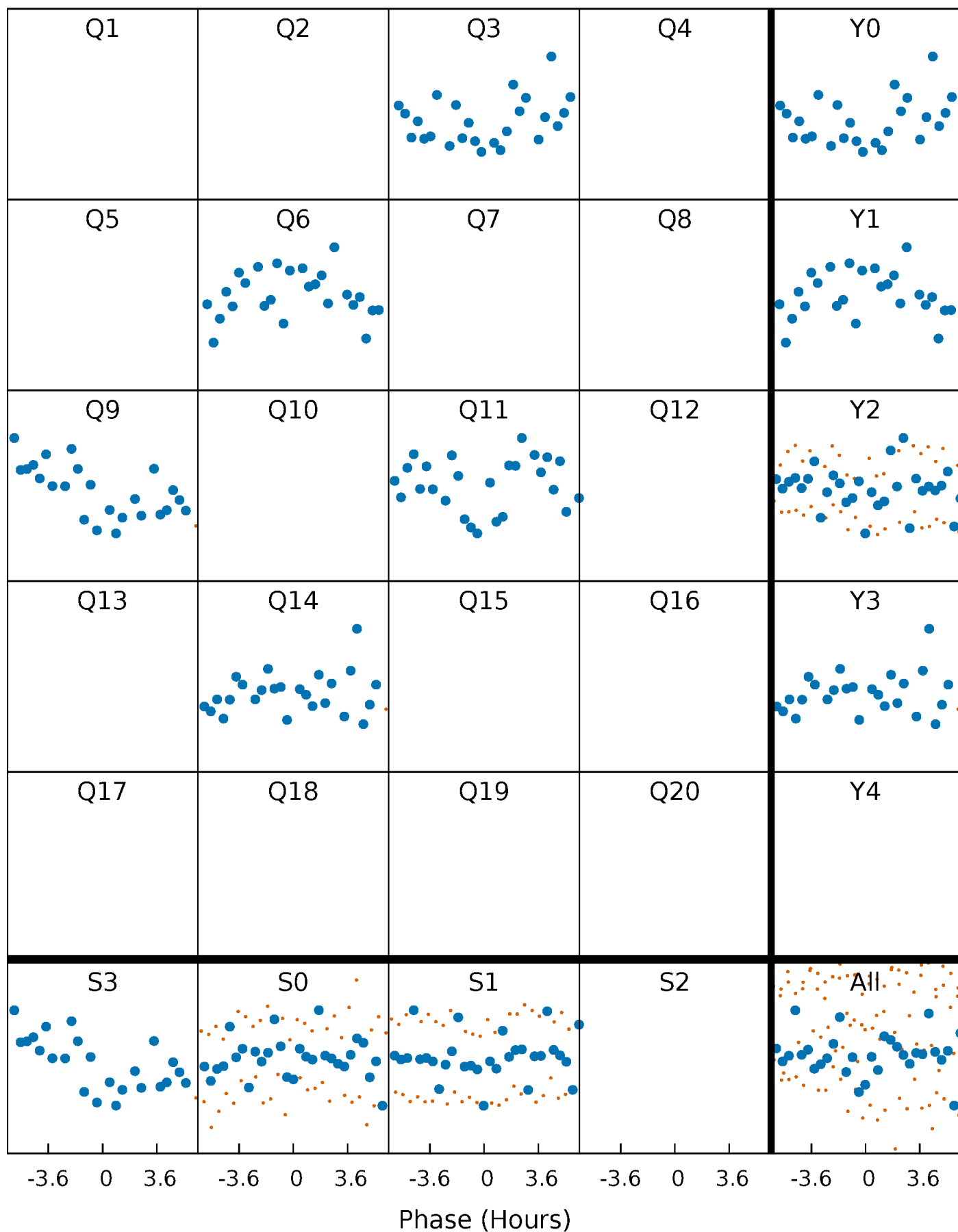
Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





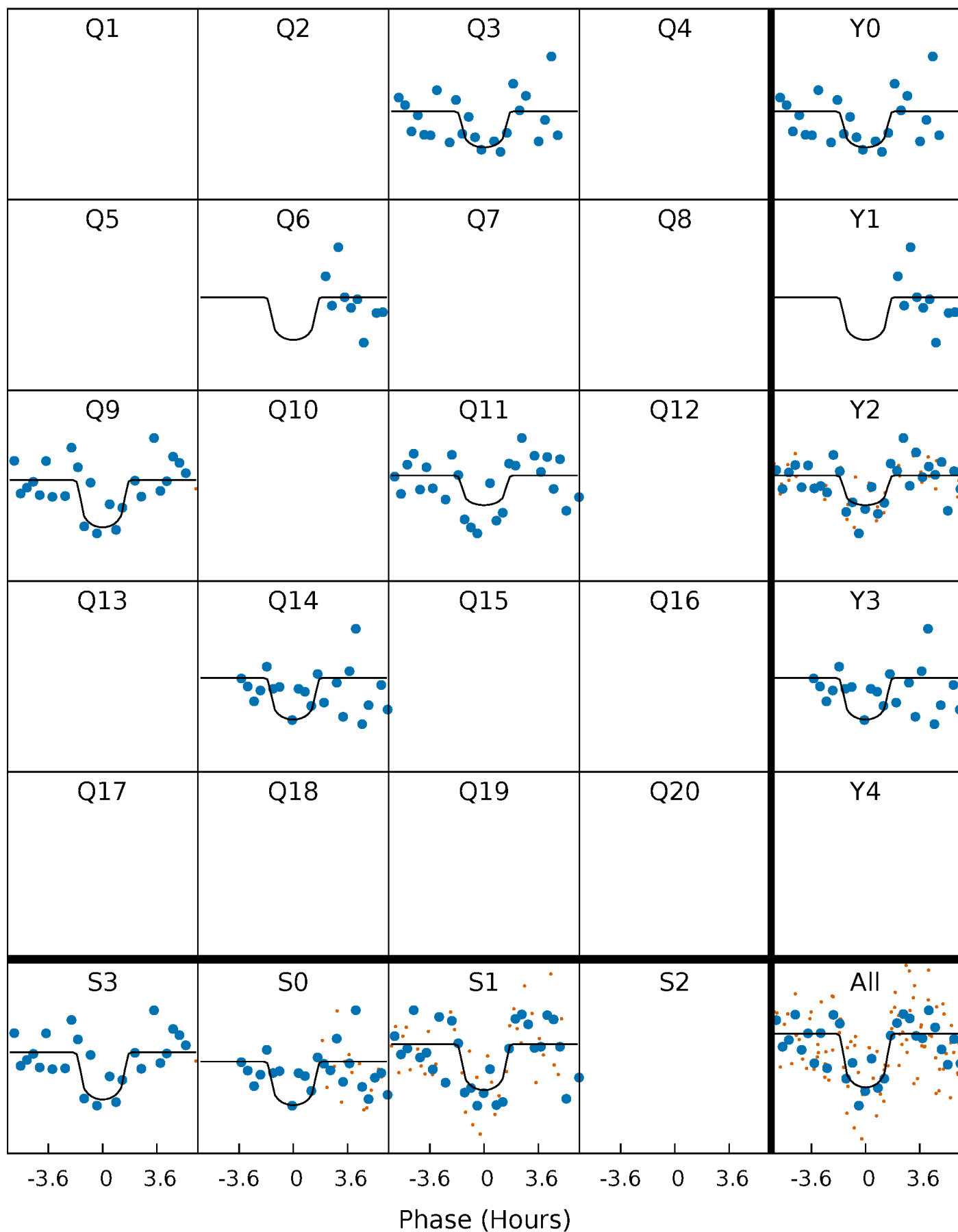
# PDC Quarter-Phased Transit Curves

TCE 007604328-03     $P=272.934221$  Days     $T_0=273.648726$  (BKJD)



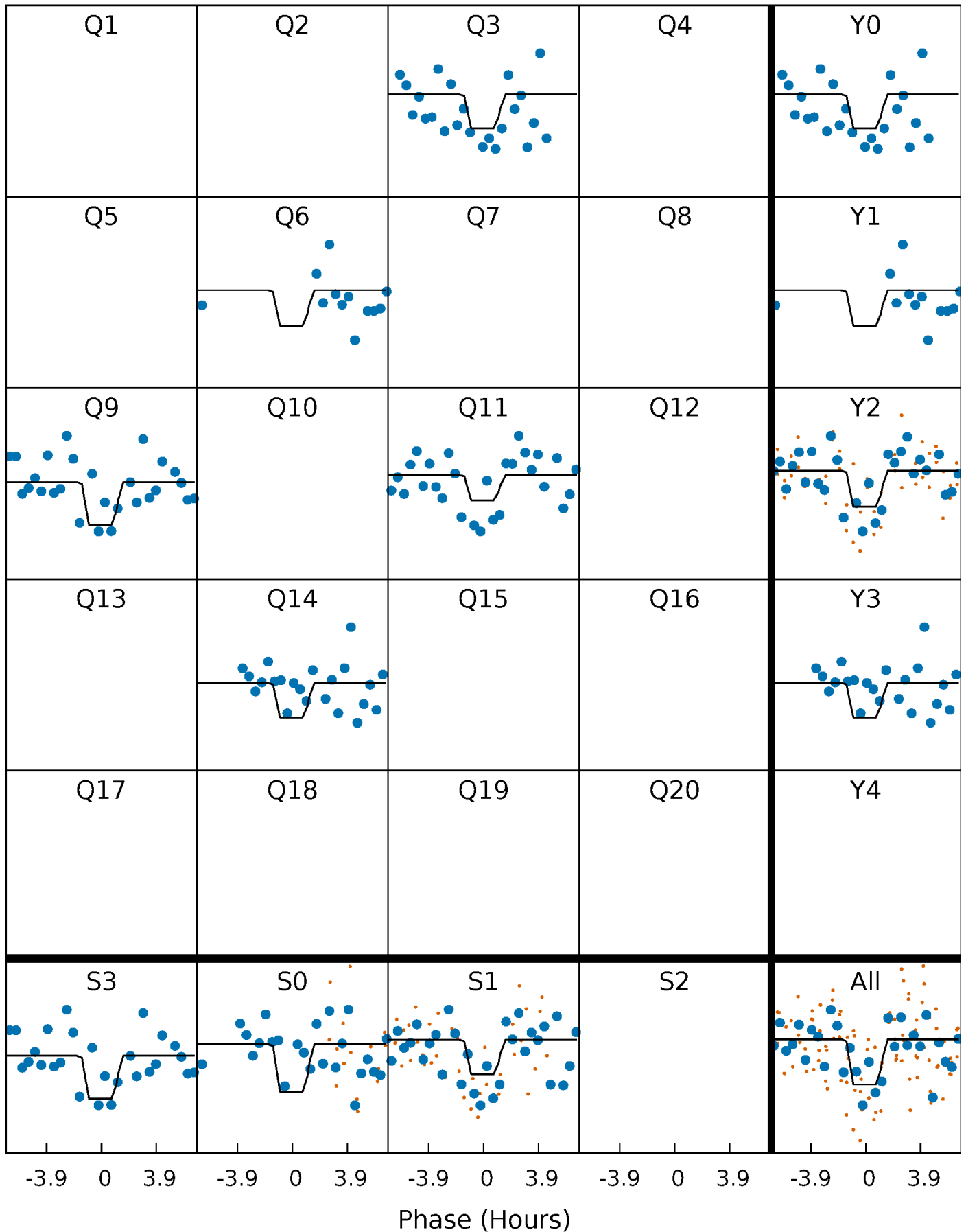
# DV Quarter-Phased Transit Curves

TCE 007604328-03     $P=272.934221$  Days     $T_0=273.648726$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

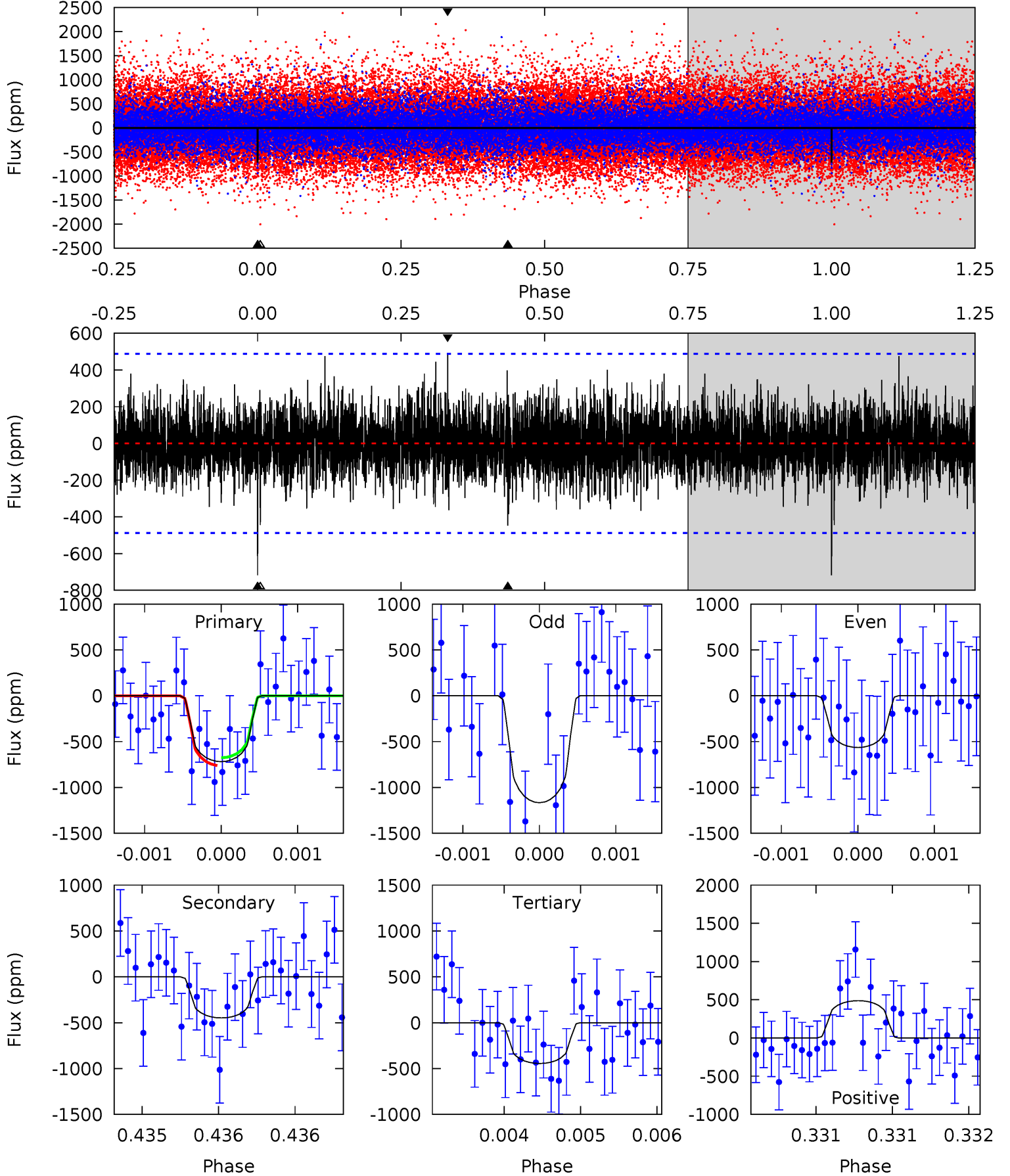
TCE 007604328-03 P=272.932331 Days  $T_0=273.660598$  (BKJD)



# DV Model-Shift Uniqueness Test

007604328-03, P = 272.934221 Days, E = 0.714505 Days

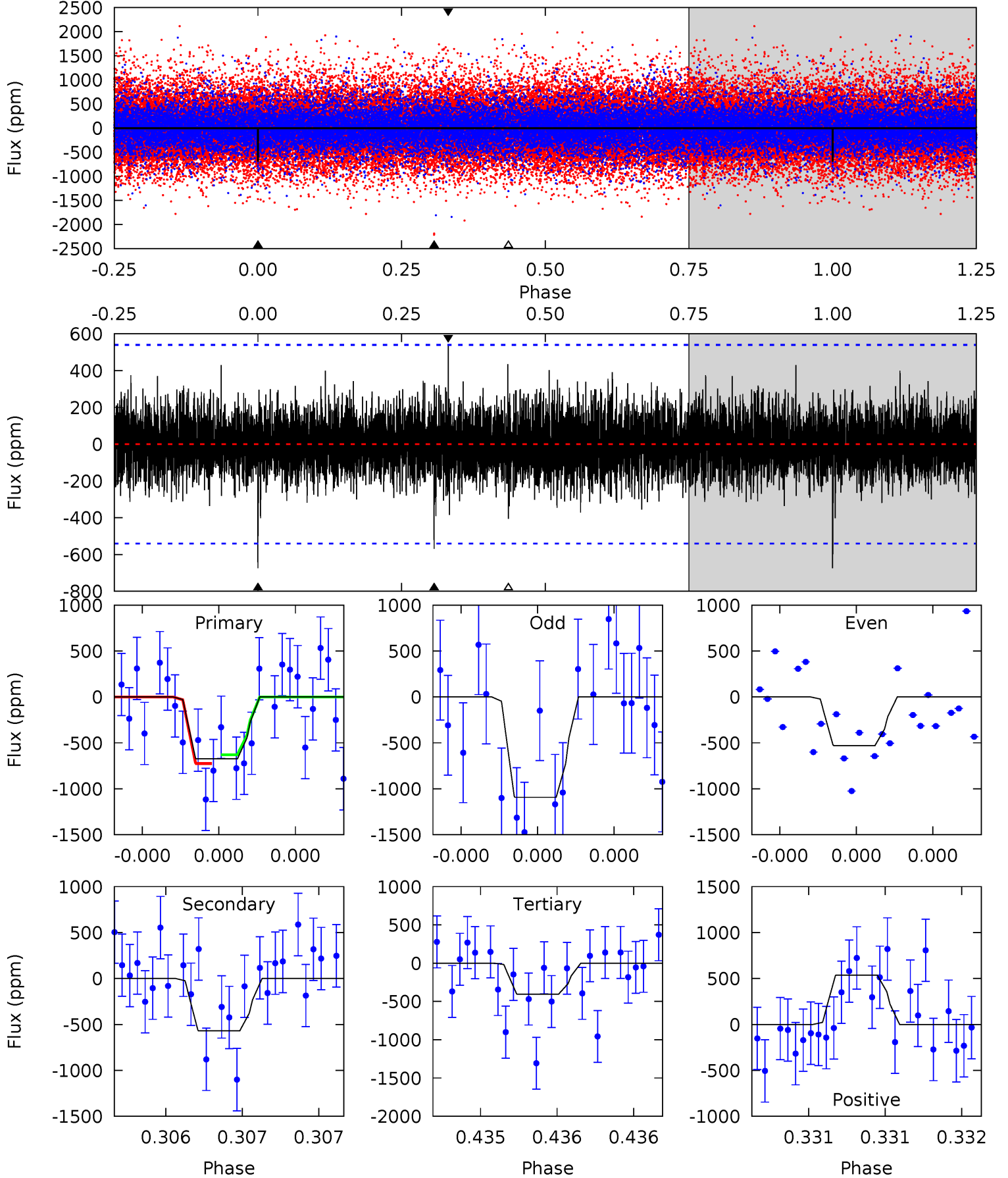
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.18	5.10	5.07	5.55	5.56	3.45	1.30	3.11	2.62	0.04	-0.45	2.97	1.10	0.40	0.48



# Alt Model-Shift Uniqueness Test

007604328-03, P = 272.932331 Days, E = 0.728267 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
6.97	5.90	4.20	5.56	5.59	3.51	1.13	2.77	1.41	1.70	0.33	2.44	0.96	0.44	0.50



### Stellar Parameters For KIC 007604328

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5455^{+162}_{-162}$	$4.421^{+0.149}_{-0.198}$	$-0.200^{+0.300}_{-0.300}$	$0.909^{+0.213}_{-0.142}$	$0.795^{+0.125}_{-0.062}$	$1.492^{+0.898}_{-0.713}$
	+3%/-3%	+3%/-4%	+150%/-150%	+23%/-16%	+16%/-8%	+60%/-48%
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 007604328-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-448 \pm 88$	$4.43^{+4.21}_{-2.82}$	$369^{+24}_{-22}$	$4056^{+2200}_{-788}$	$7478^{+44334}_{-5528}$
Alt.	$-570 \pm 97$	$4.46^{+4.26}_{-2.99}$	$367^{+24}_{-21}$	$4207^{+2689}_{-854}$	$9530^{+76705}_{-7195}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$



## DV Centroid Data

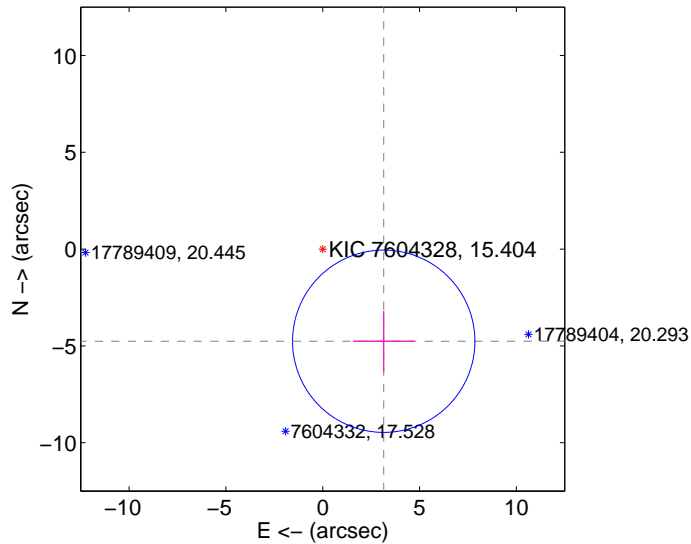
Supplemental centroid analysis for 007604328-03. Kepler magnitude: 15.40. Transit SNR 7.37

There are 0 quarters with good PRF difference image offsets

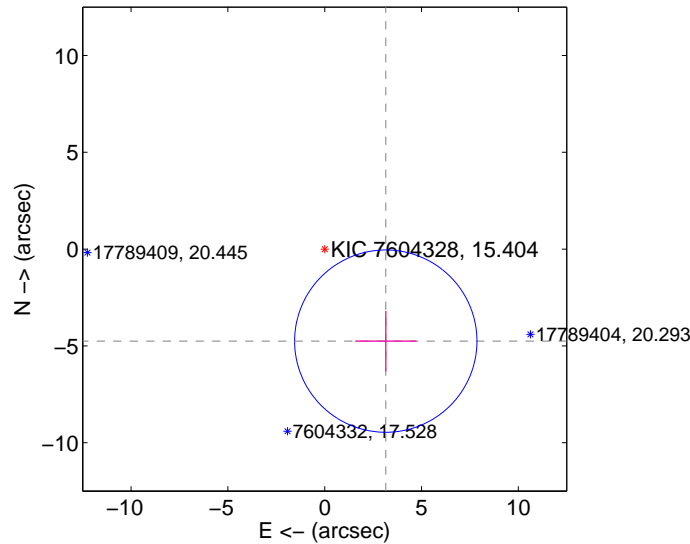
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.708 \pm 1.570$	3.64	$-3.152 \pm 1.582$	$-4.759 \pm 1.564$
PRF-fit source offset from KIC position	$5.705 \pm 1.570$	3.63	$-3.156 \pm 1.582$	$-4.753 \pm 1.564$
photometric centroid source offset	$1.55 \pm 1.93$	0.80	$-1.47 \pm 1.94$	$-0.50 \pm 1.89$

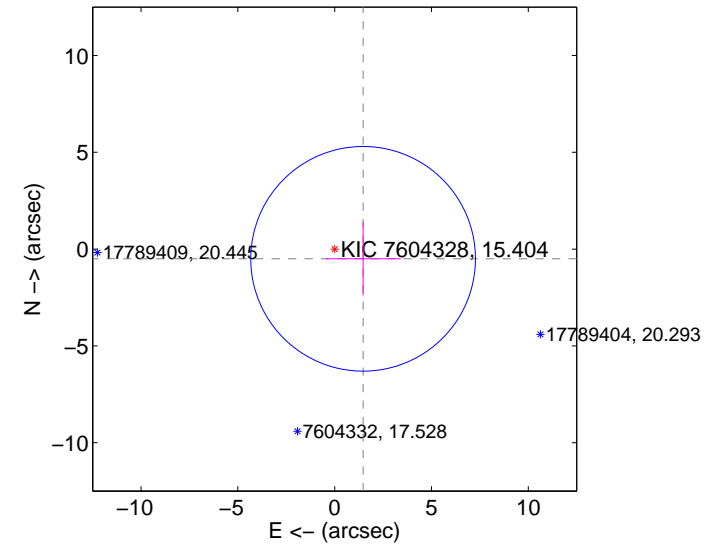
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

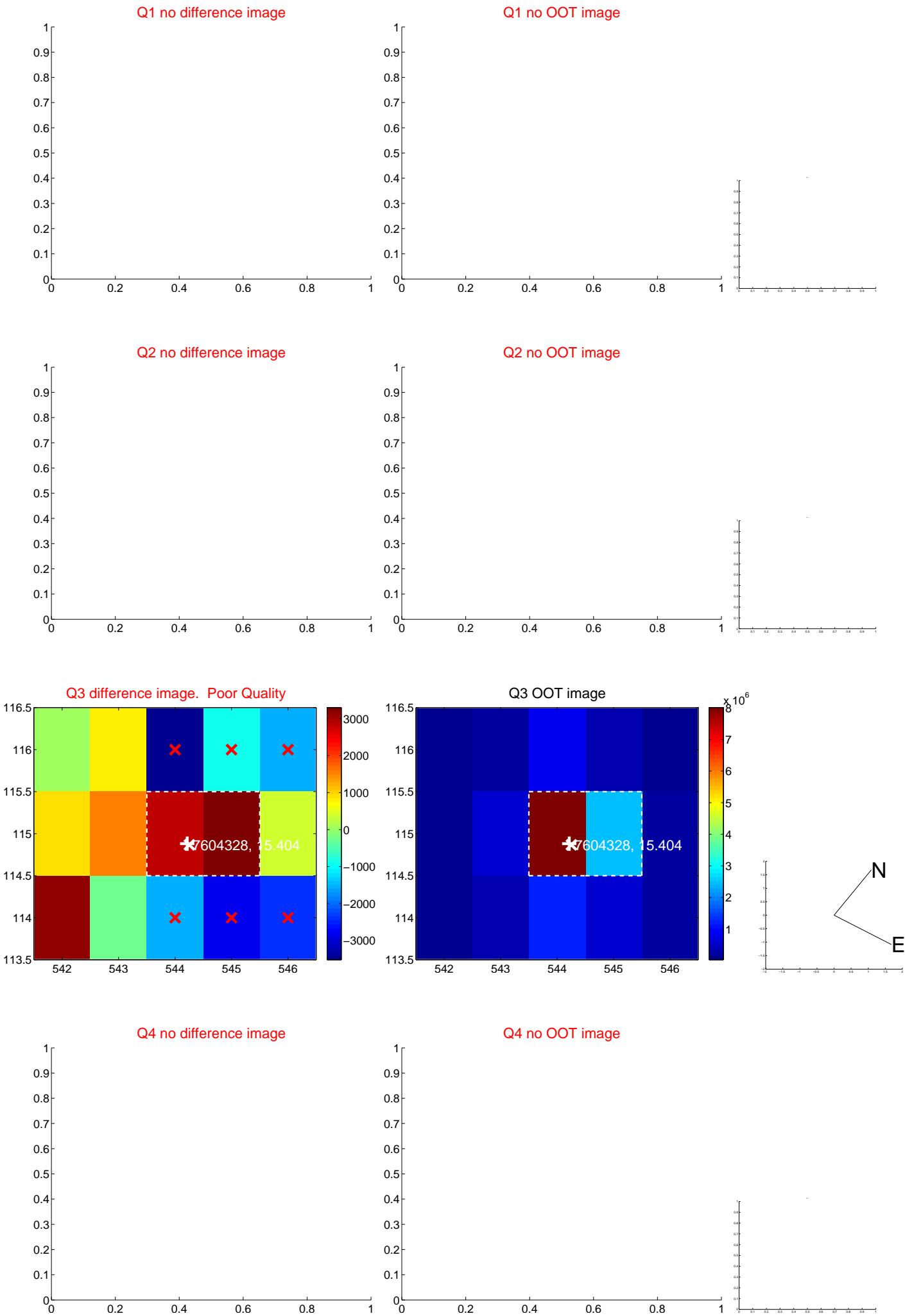


offset from photometric centroids

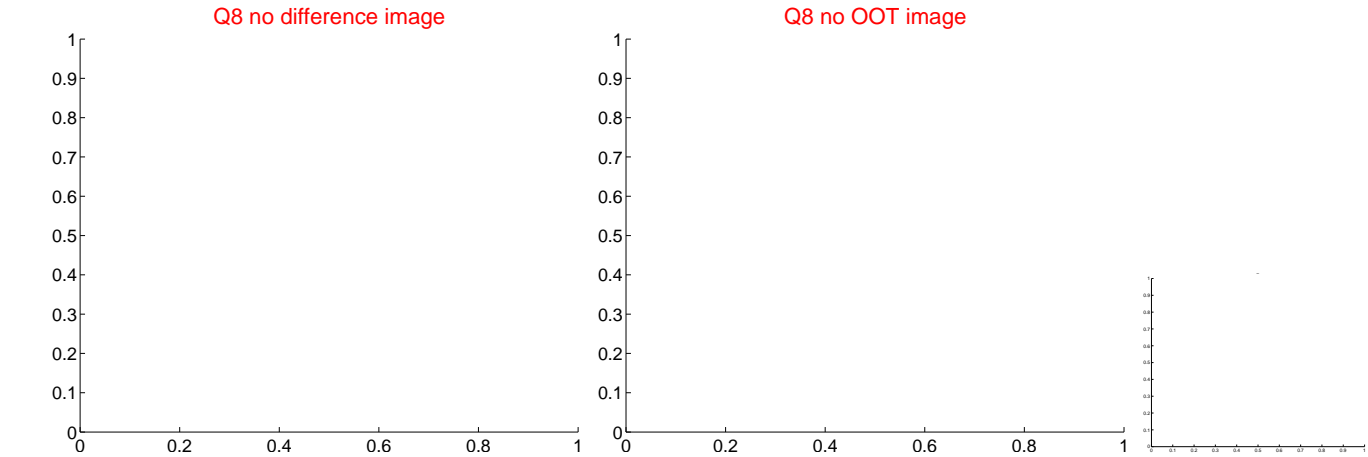
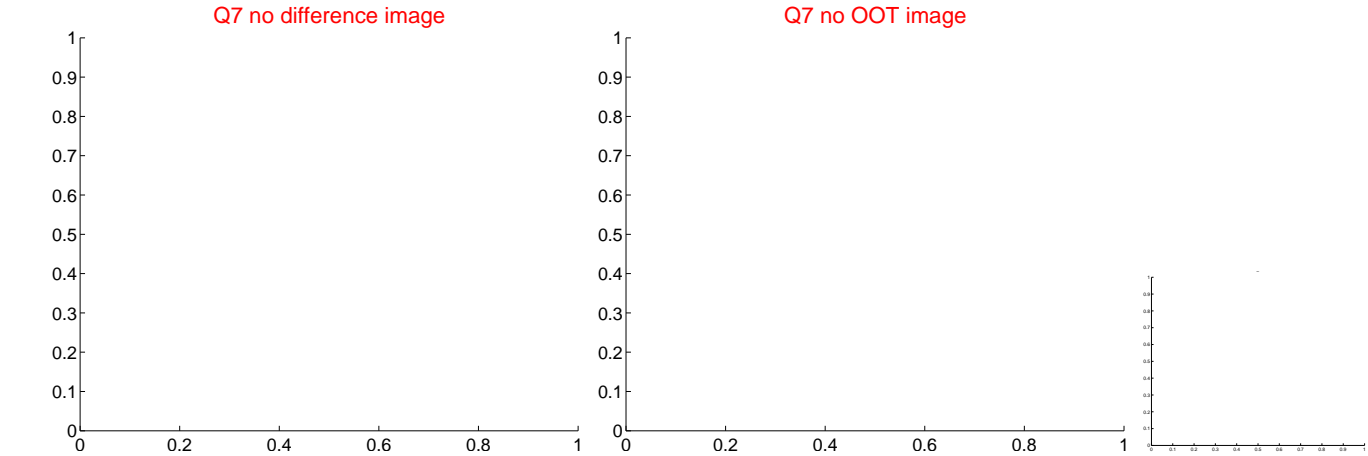
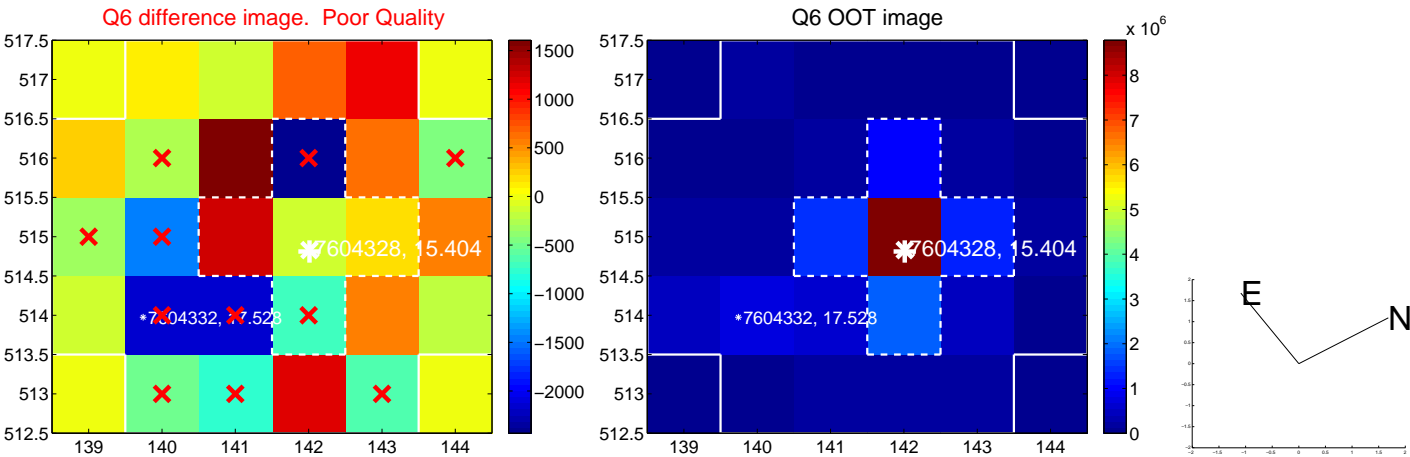
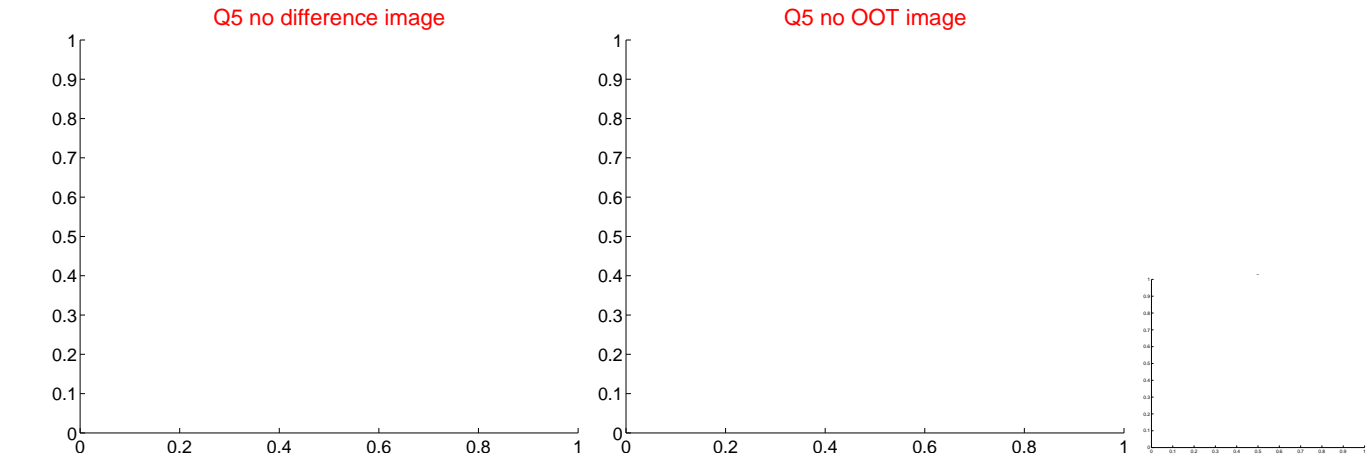


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

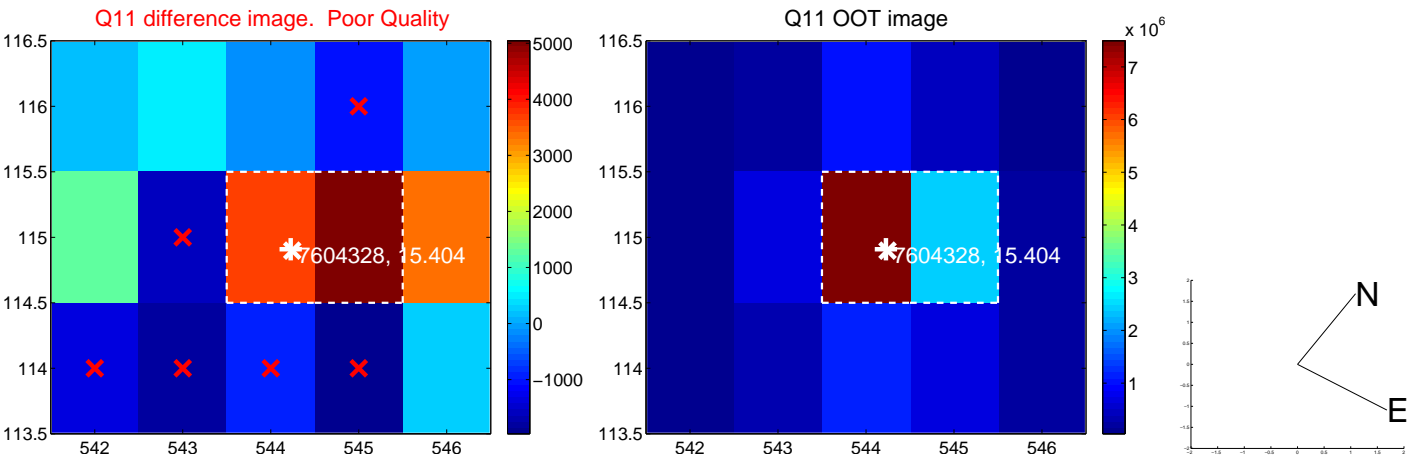
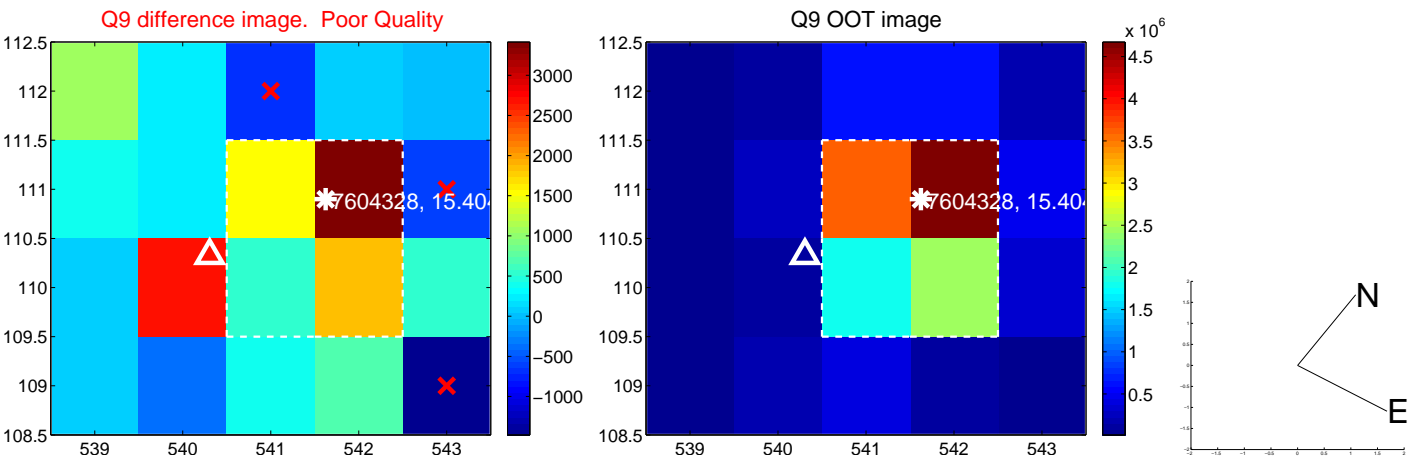
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



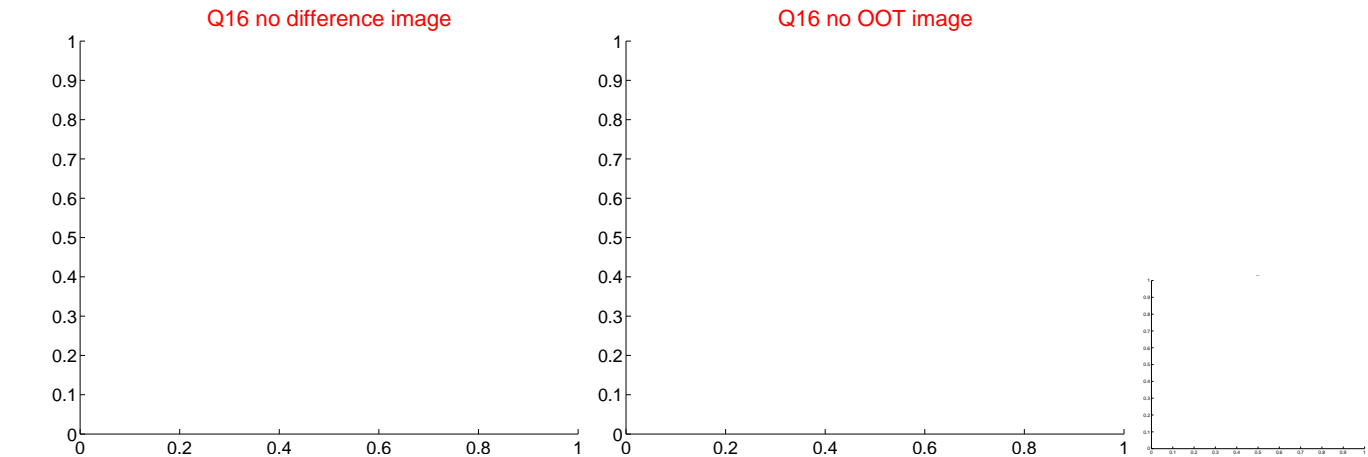
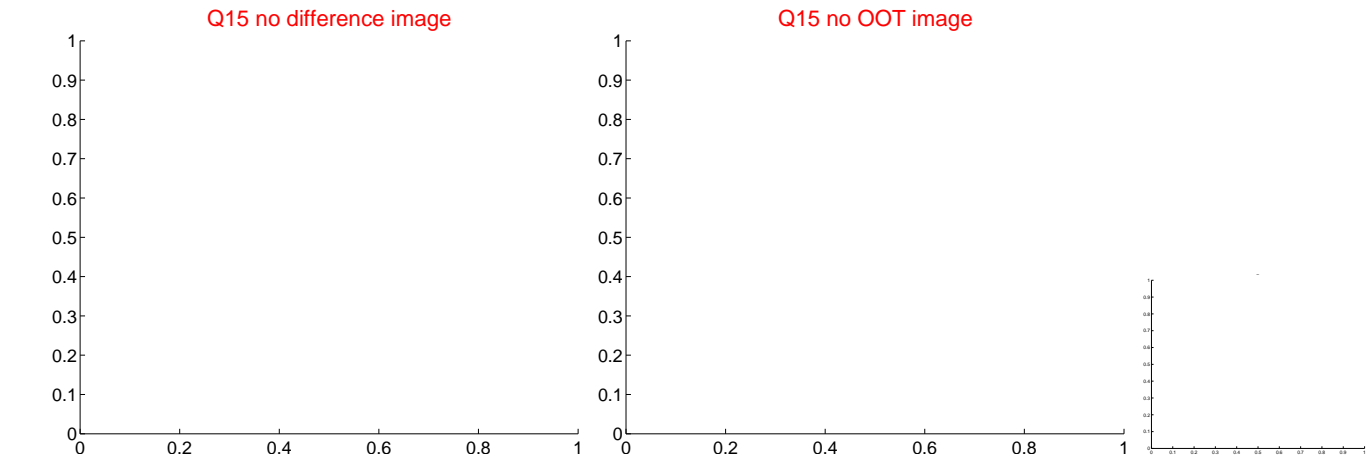
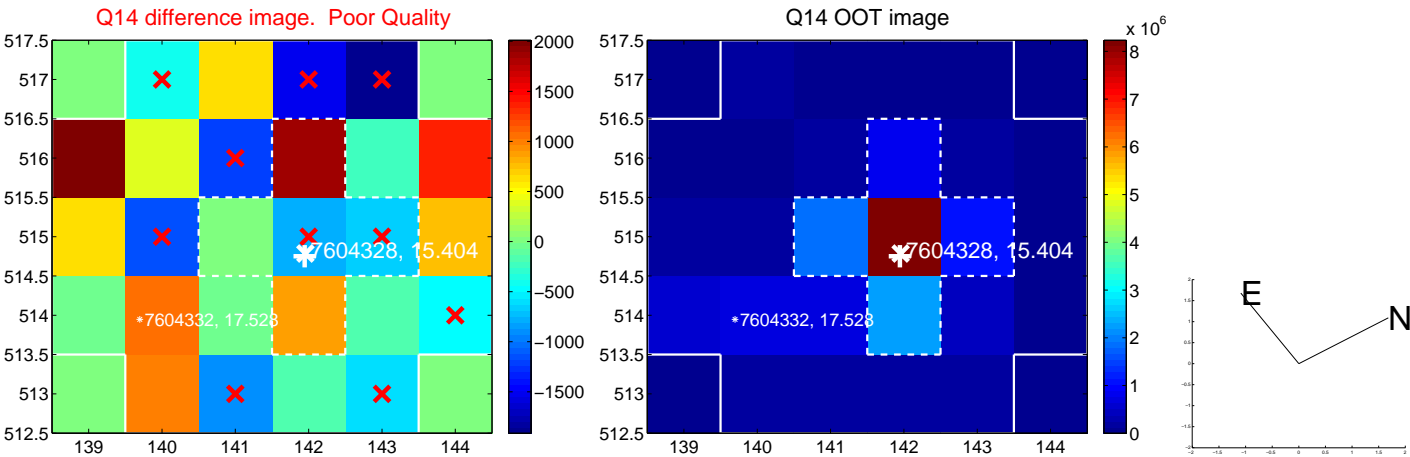
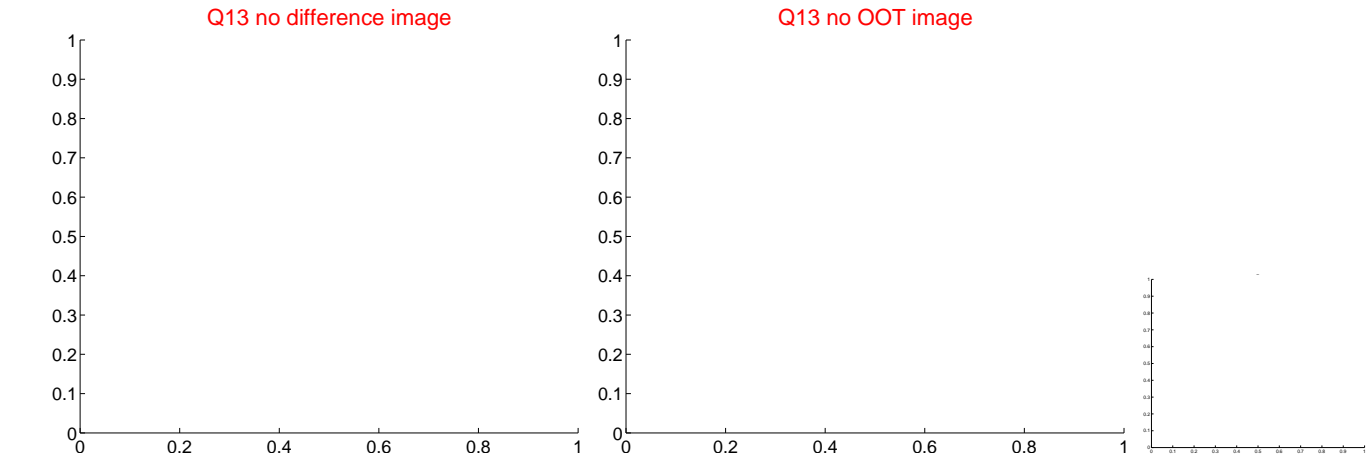
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



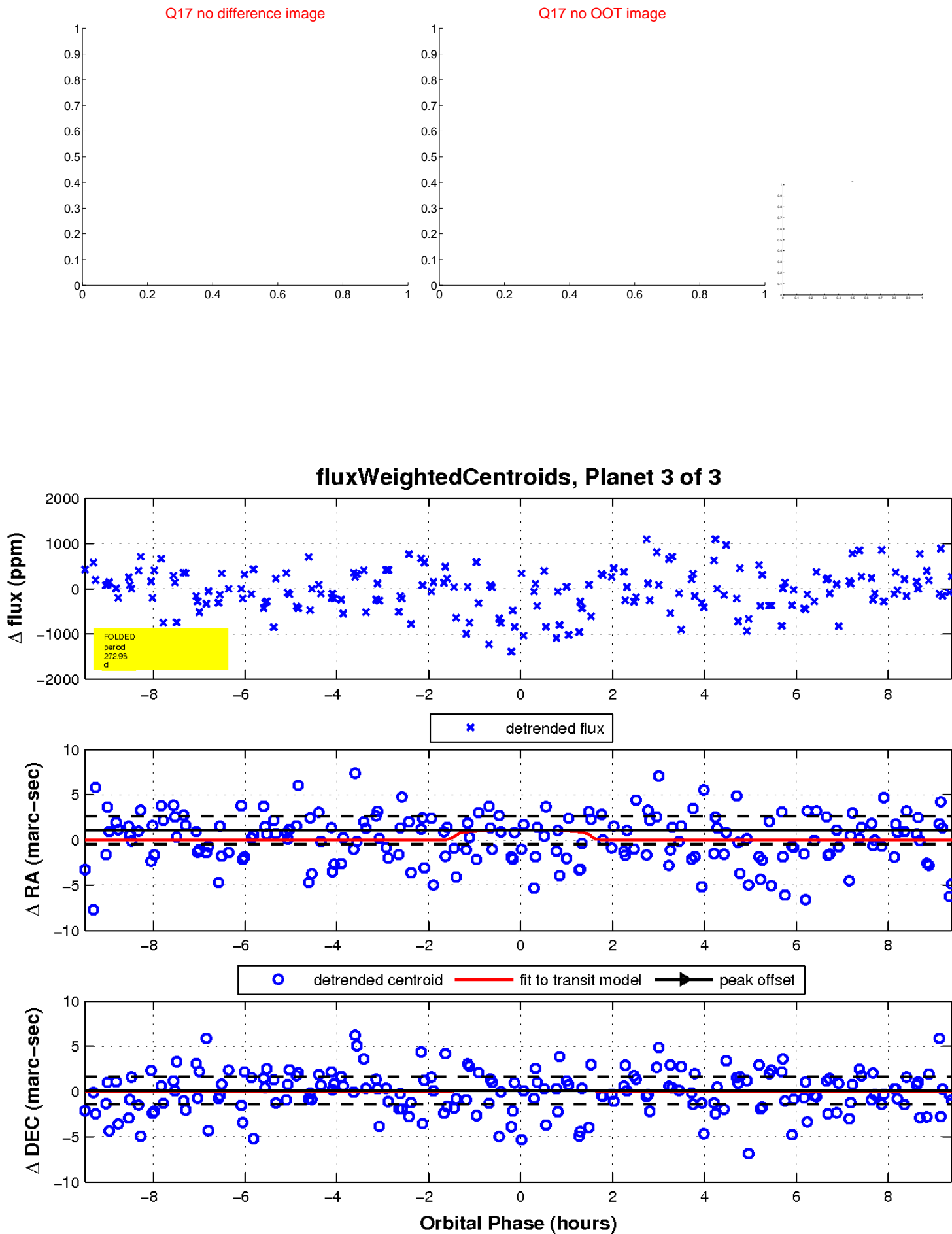
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.





UKIRT Image

Declination

