

# KIC 005983348

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005983348-01	OBS	6644.01	25.150785	150.345631	37530.1	7.679	1550.2	1445.2	1.10	6015	32.81	52.35
005983348-02	OBS	No	25.150791	137.889122	5534.3	5.218	234.7	229.3	1.10	6015	9.49	52.35
005983348-03	OBS	No	0.642359	132.029275	76.2	1.222	8.6	11.3	1.10	6015	1.14	6960.79

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005983348-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005983348-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005983348-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—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.

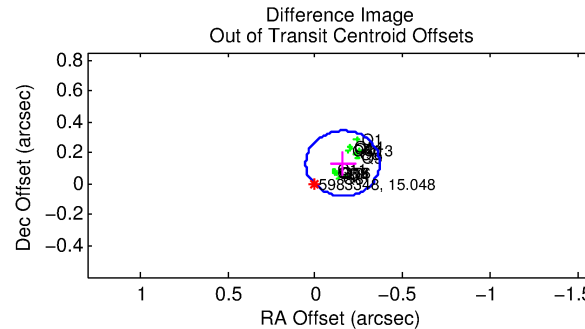
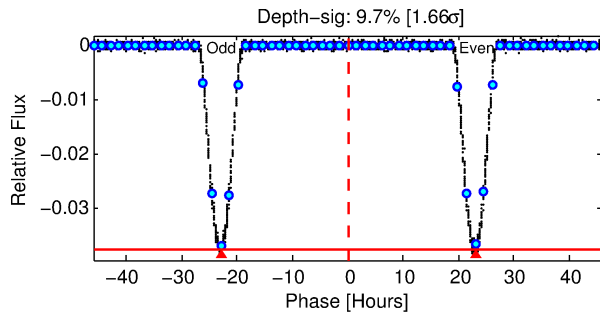
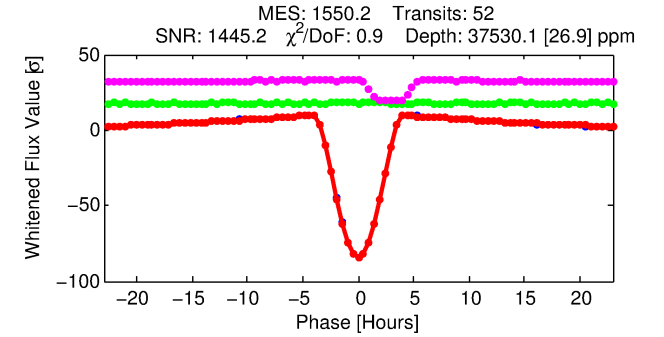
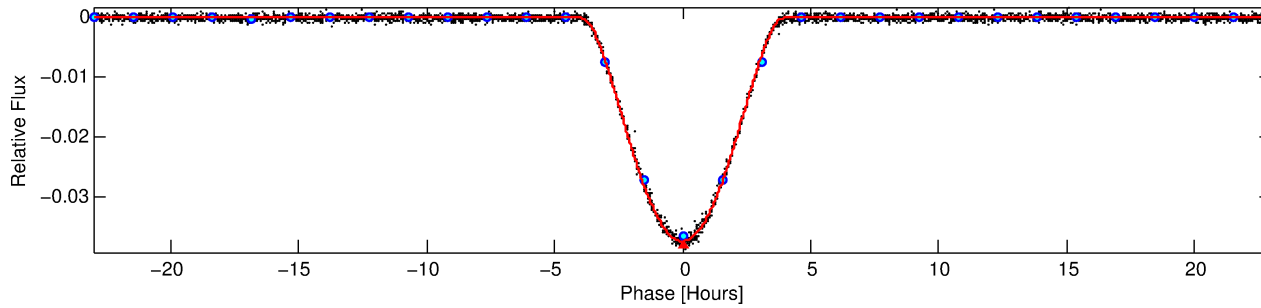
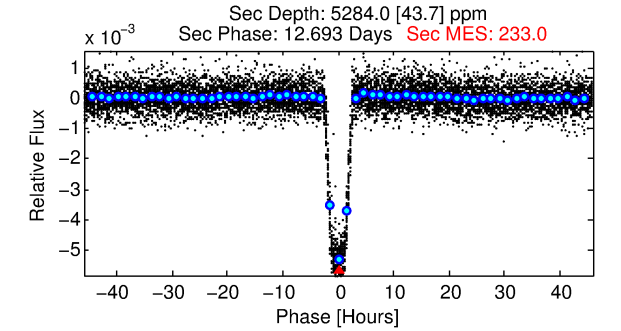
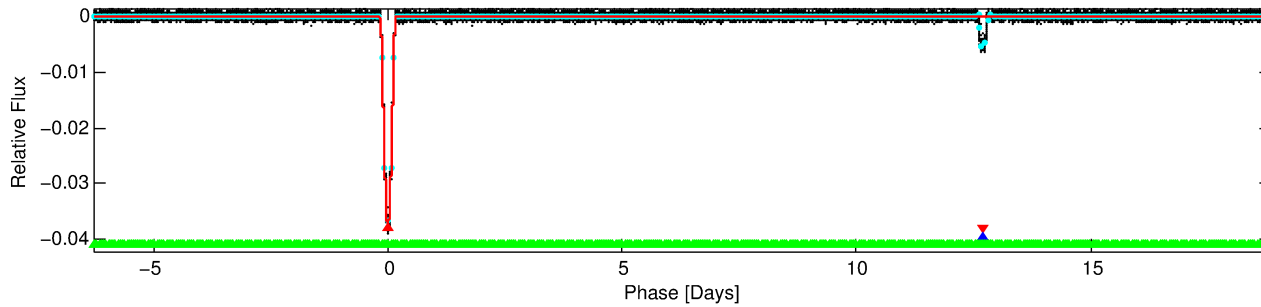
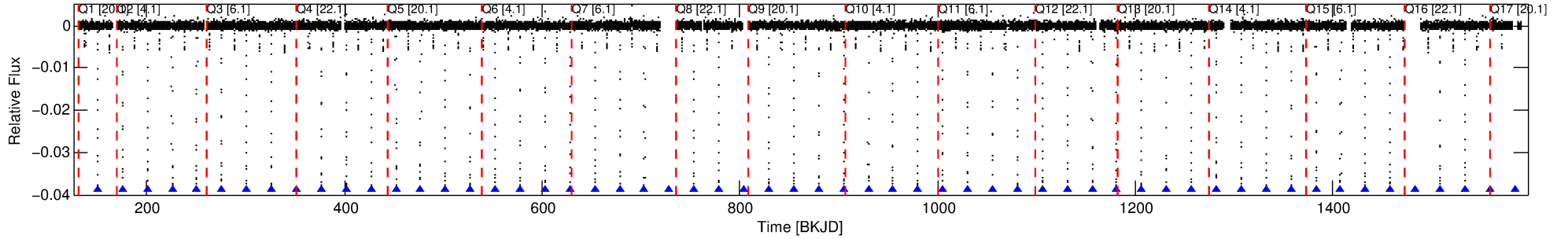
Ephemeris Match Information For 005983348-01

No Significant Match Found

# DV One-Page Summary

KIC: 5983348 Candidate: 1 of 3 Period: 25.151 d  
KOI: K06644.01 Corr: 0.998

Kp: 15.05 R\*: 1.10 Rs Teff: 6015.0 K Logg: 4.33 Fe/H: -0.280



## DV Fit Results:

Period = 25.15078 [0.00000] d  
Epoch = 150.3456 [0.0001] BKJD  
Rp/R\* = 0.2731 [0.0083]  
a/R\* = 21.14 [0.06]  
b = 0.95 [0.01]  
Seff = 52.36 [19.94]  
Teq = 686 [65] K  
Rp = 32.81 [9.59] Re  
a = 0.1648 [0.0402] AU  
Ag = 73.34 [26.35] [2.75σ]  
Teffp = 3103 [119] K [17.83σ]

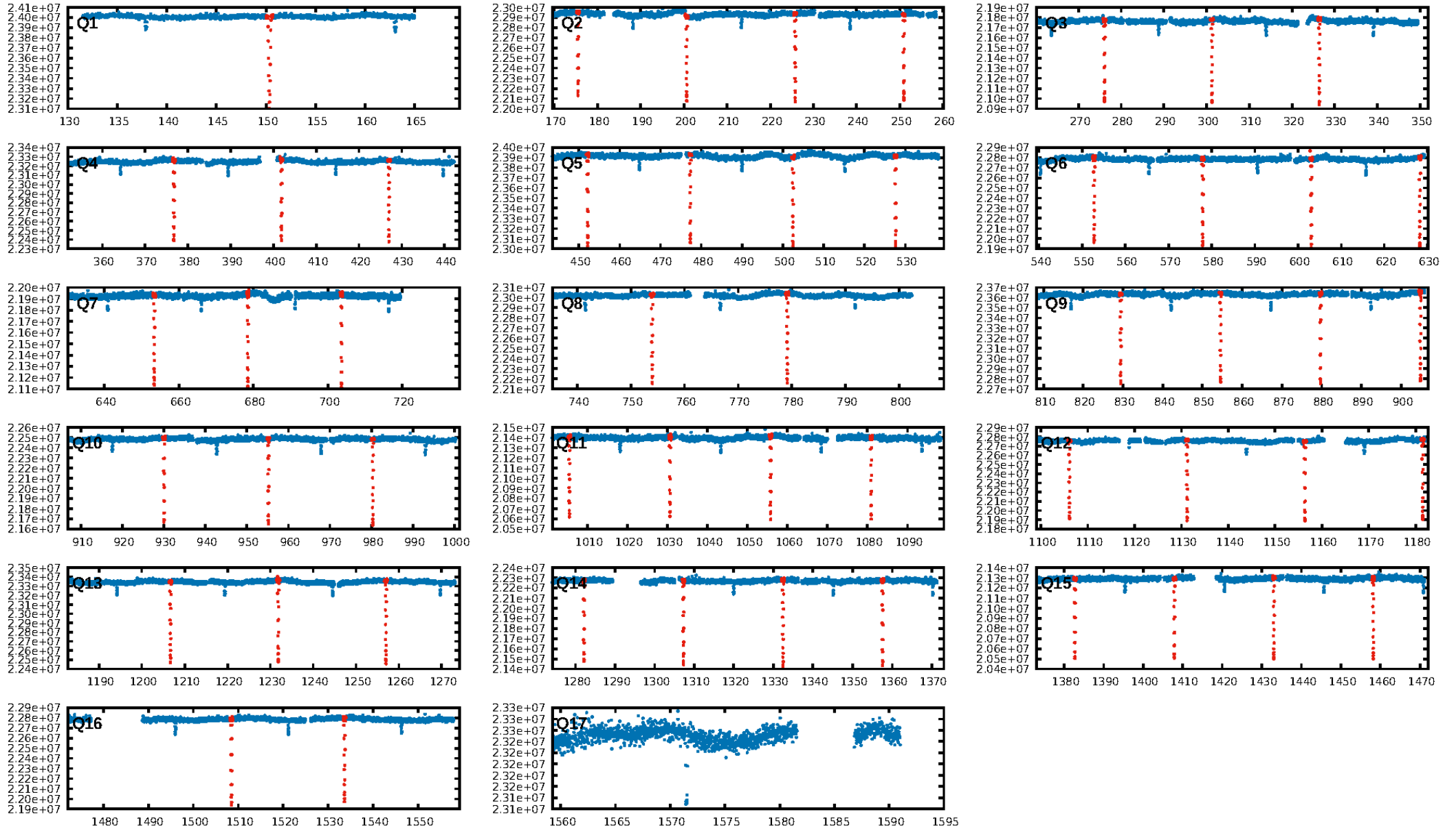
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [75.65σ]  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.8%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [51/51]  
GhostDiagnostic-chr: 7.036  
Centroid-sig: 0.0%  
Centroid-so: 0.134 arcsec [11.74σ]  
OotOffset-rm: 0.206 arcsec [2.93σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-rm: 0.157 arcsec [2.18σ]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 0.00 [0/16]

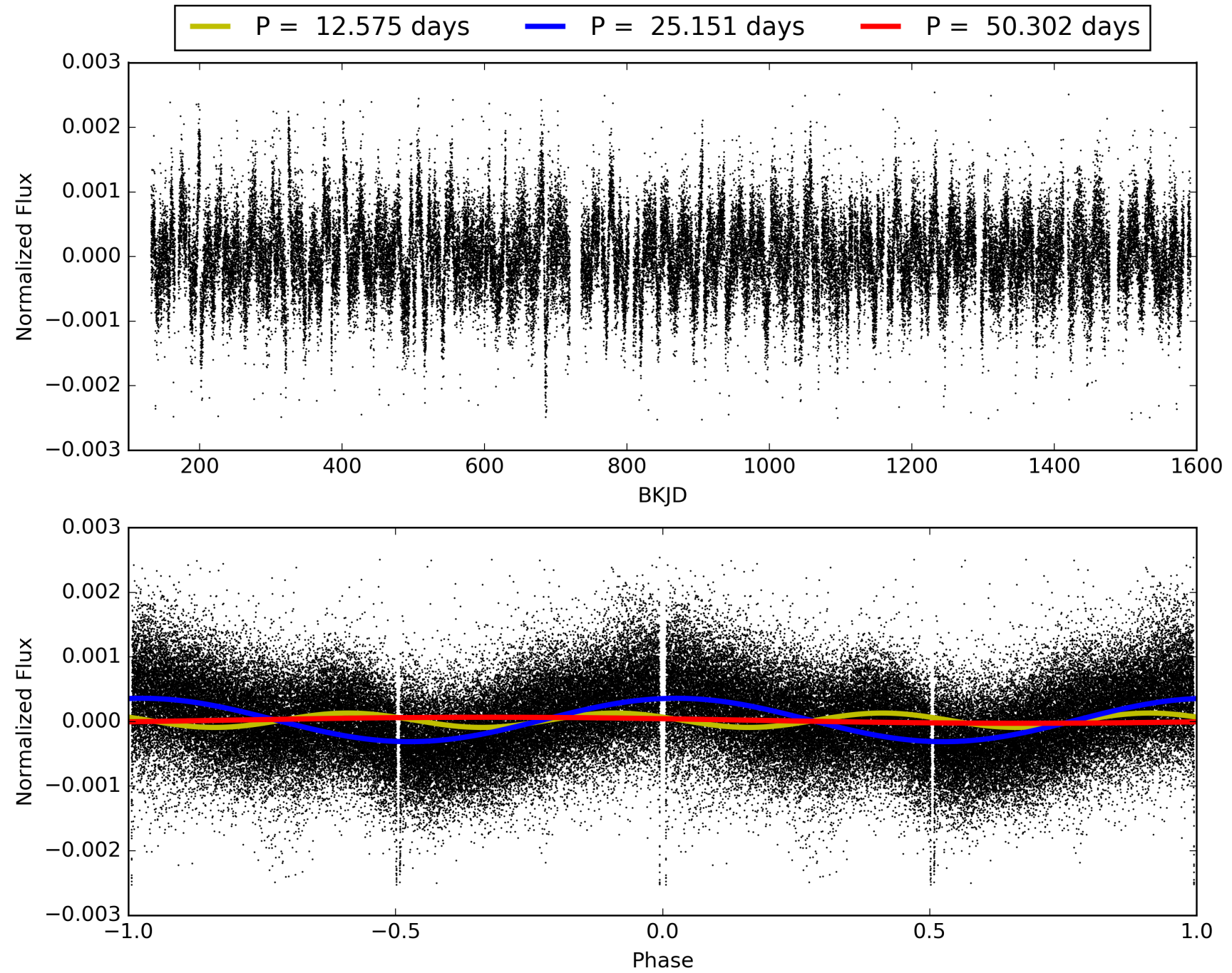
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:37:02 Z

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

# TCE 005983348-01, PDC Light Curves

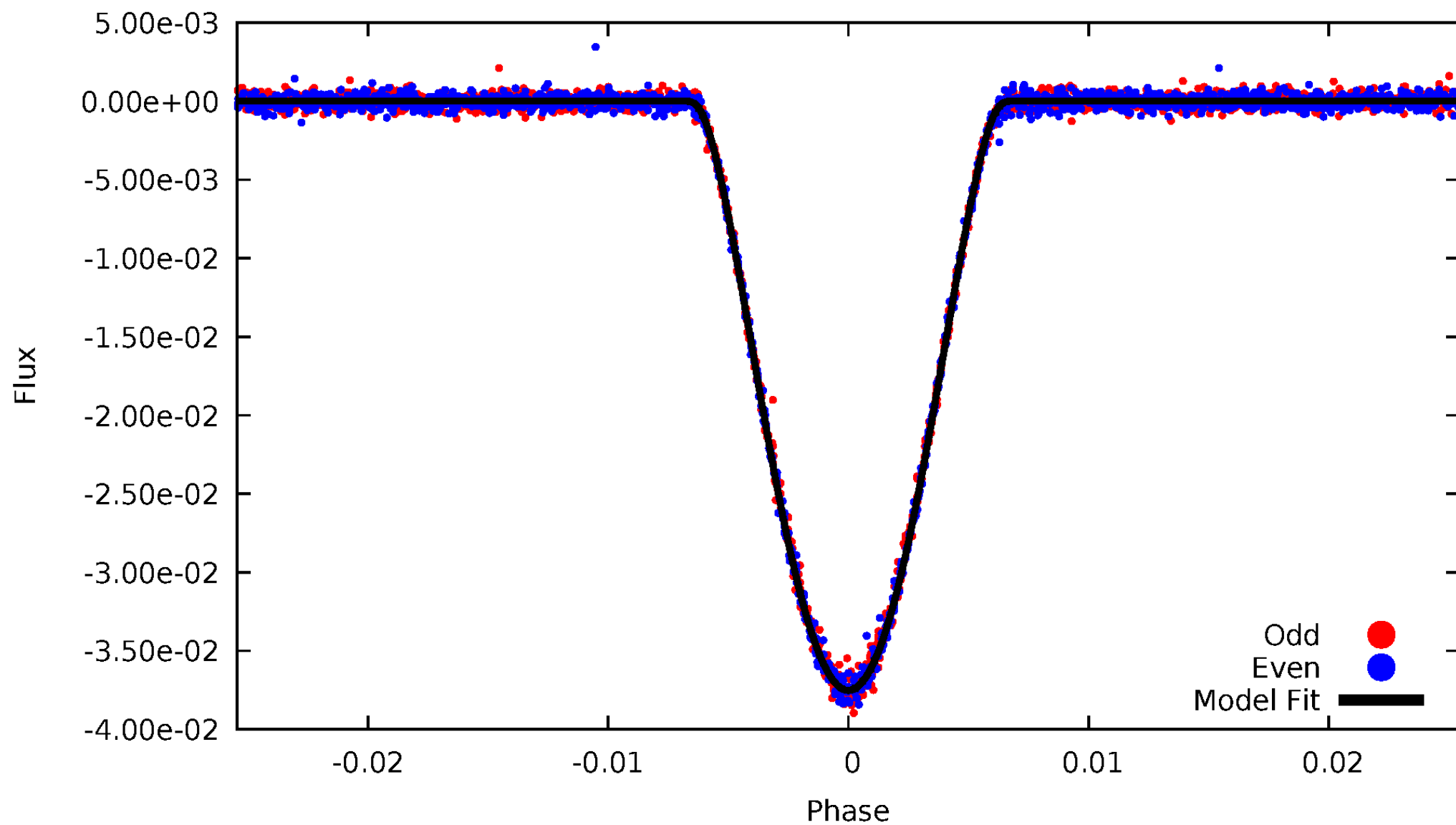


TCE 005983348-01



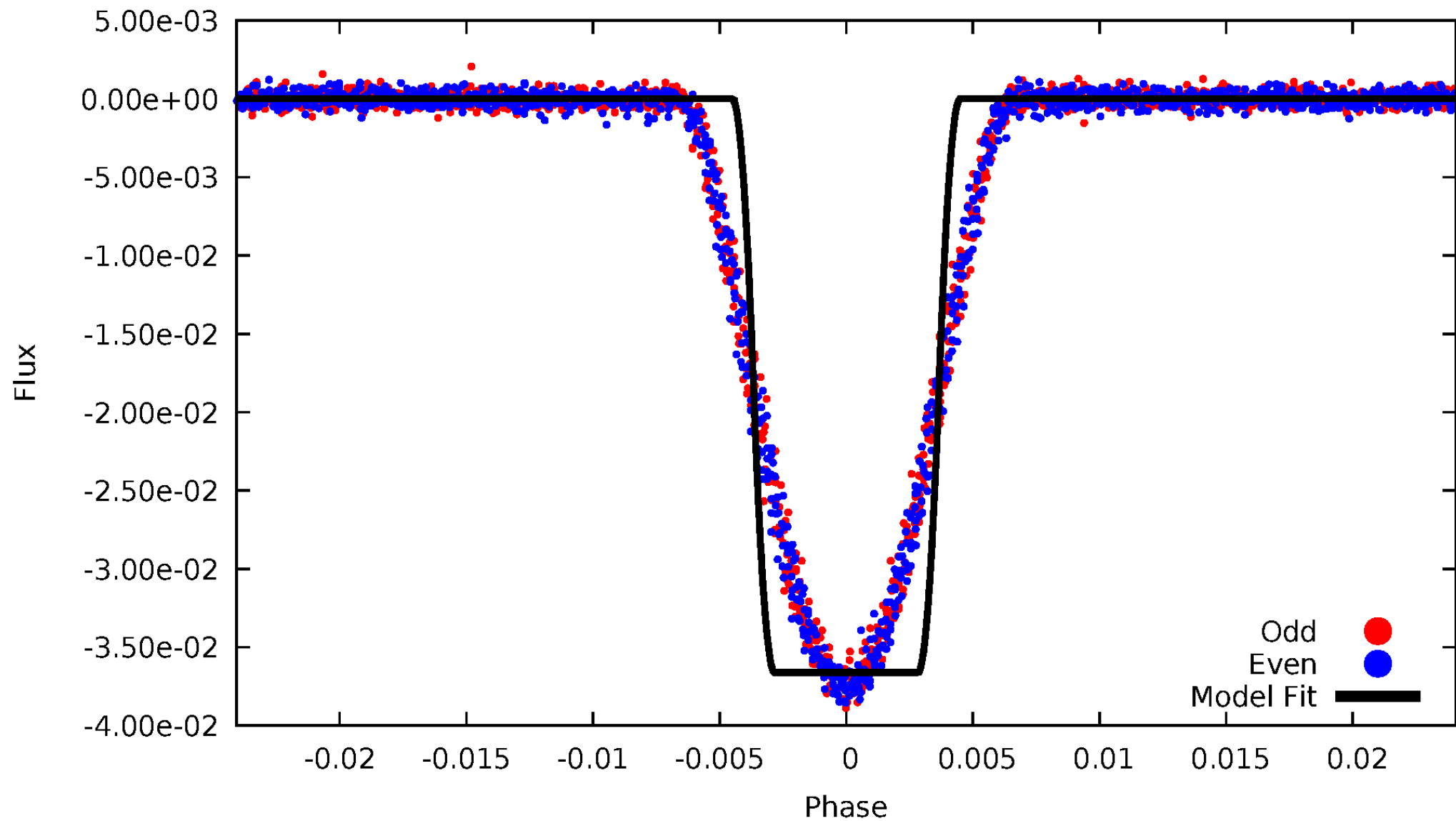
# DV Odd/Even

TCE 005983348-01



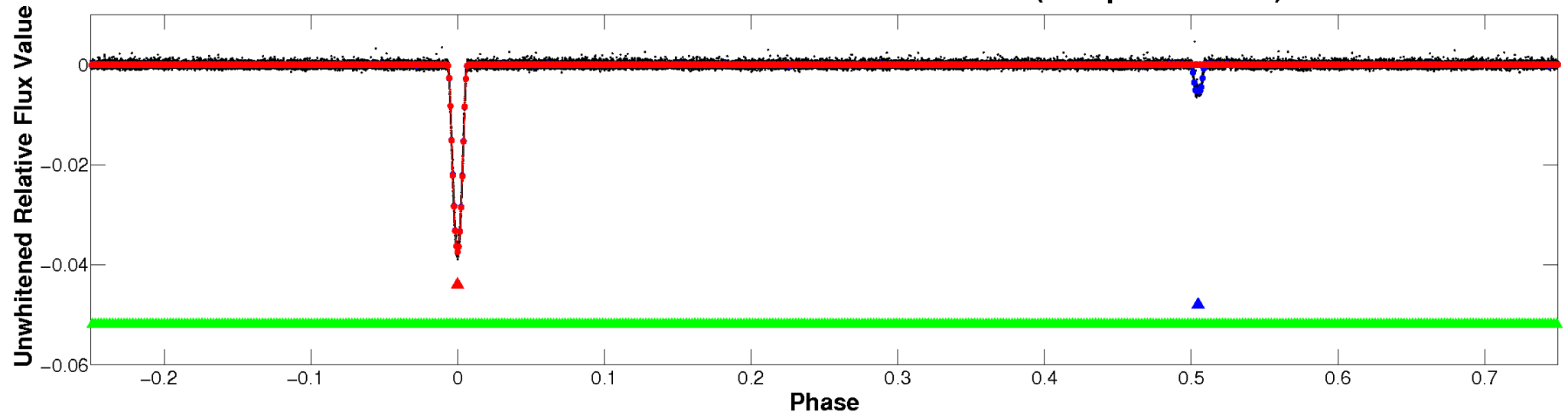
# ALT Odd/Even

TCE 005983348-01

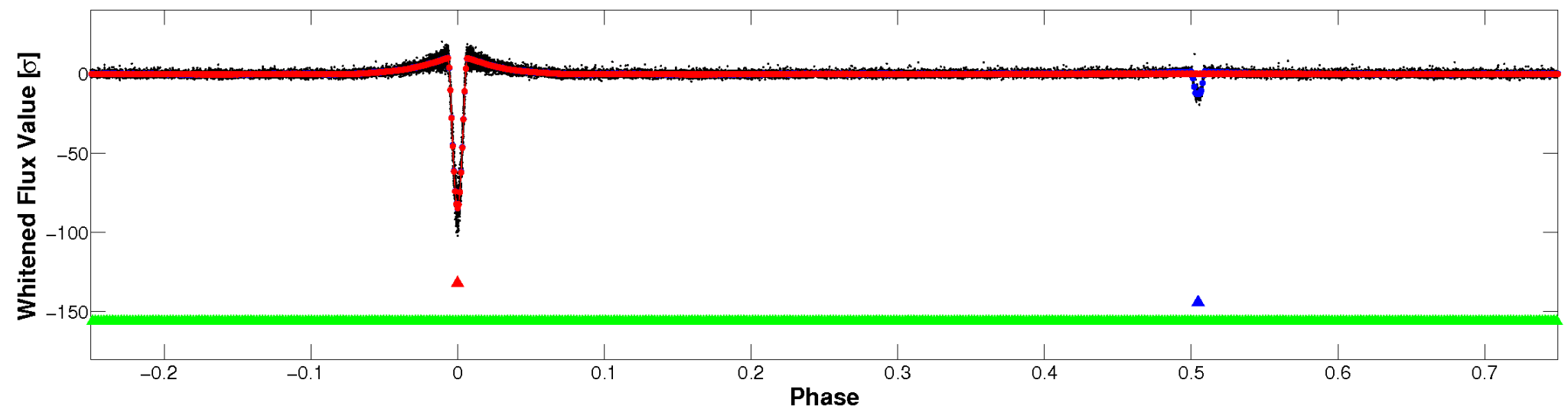


# Non-Whitened Vs. Whitened Light Curve

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

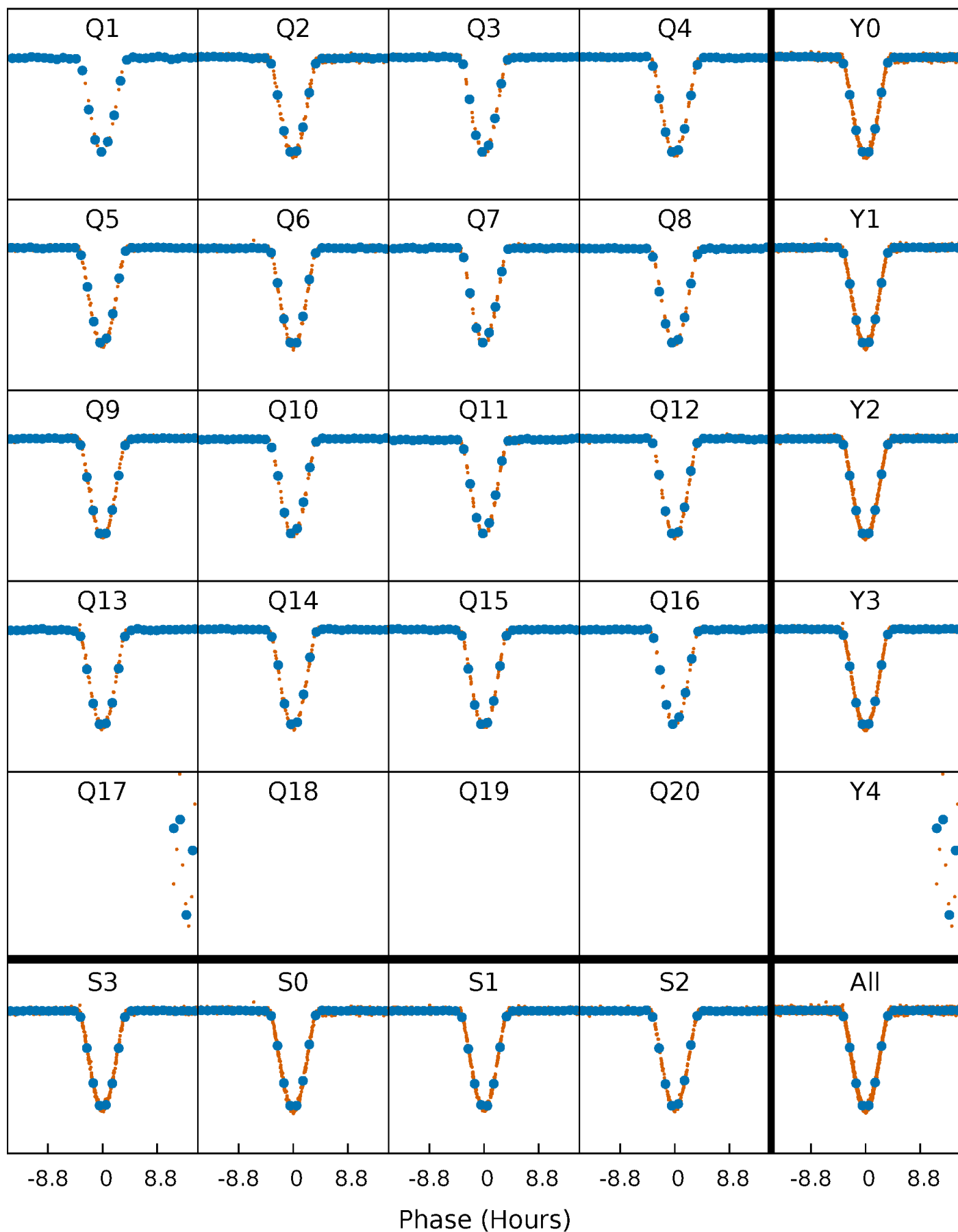


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

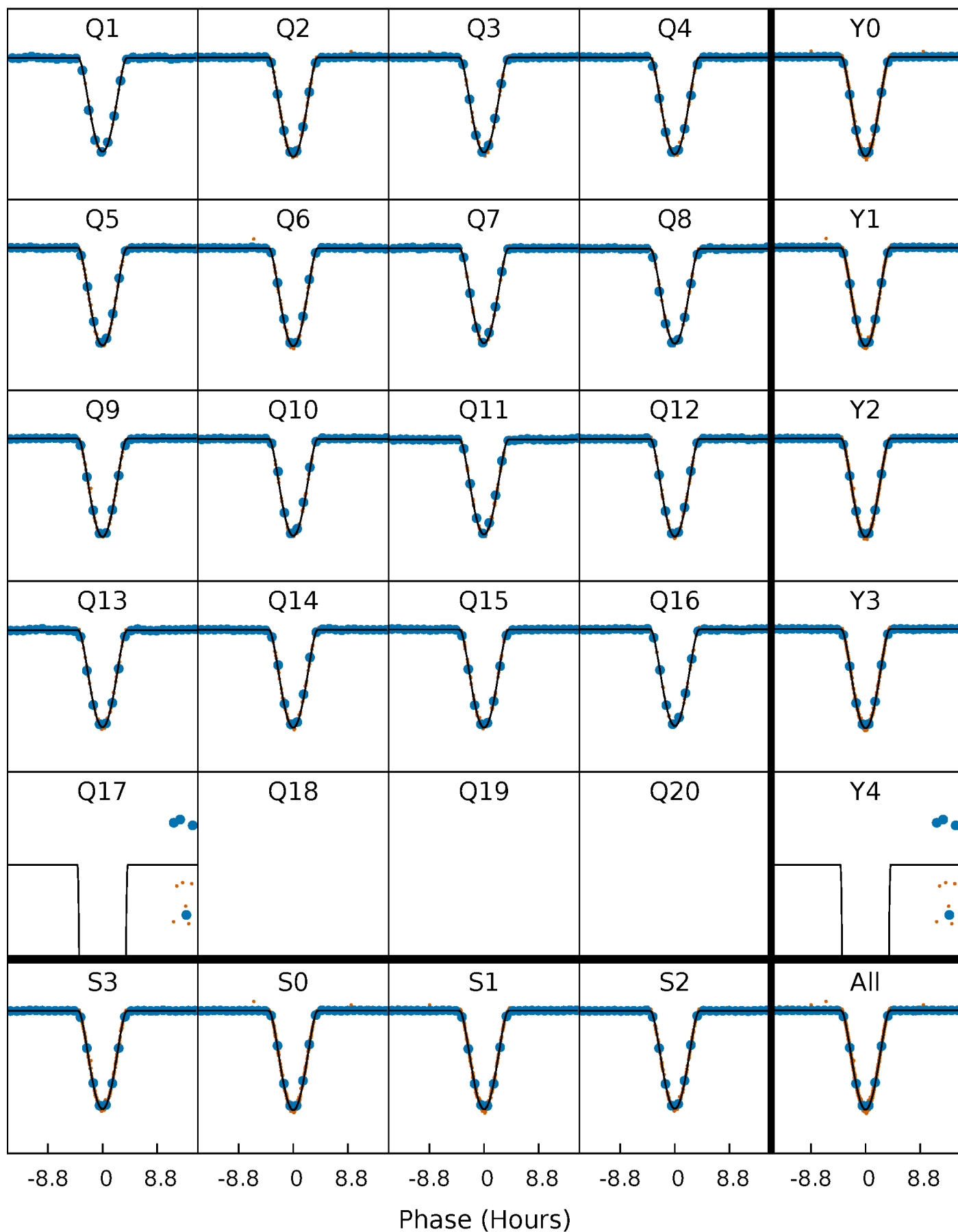
TCE 005983348-01 P= 25.150785 Days  $T_0=150.345631$  (BKJD)





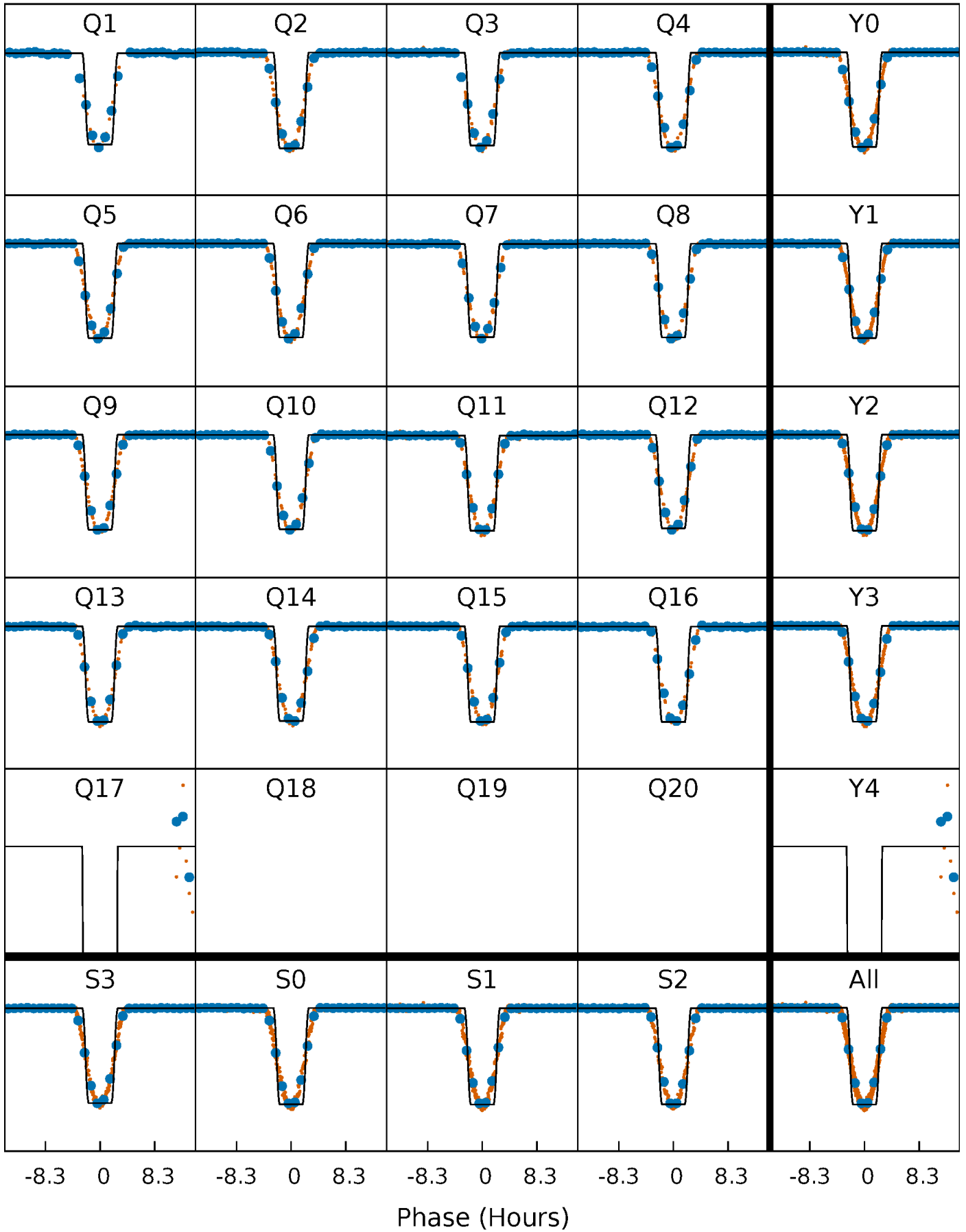
# DV Quarter-Phased Transit Curves

TCE 005983348-01 P= 25.150785 Days  $T_0=150.345631$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

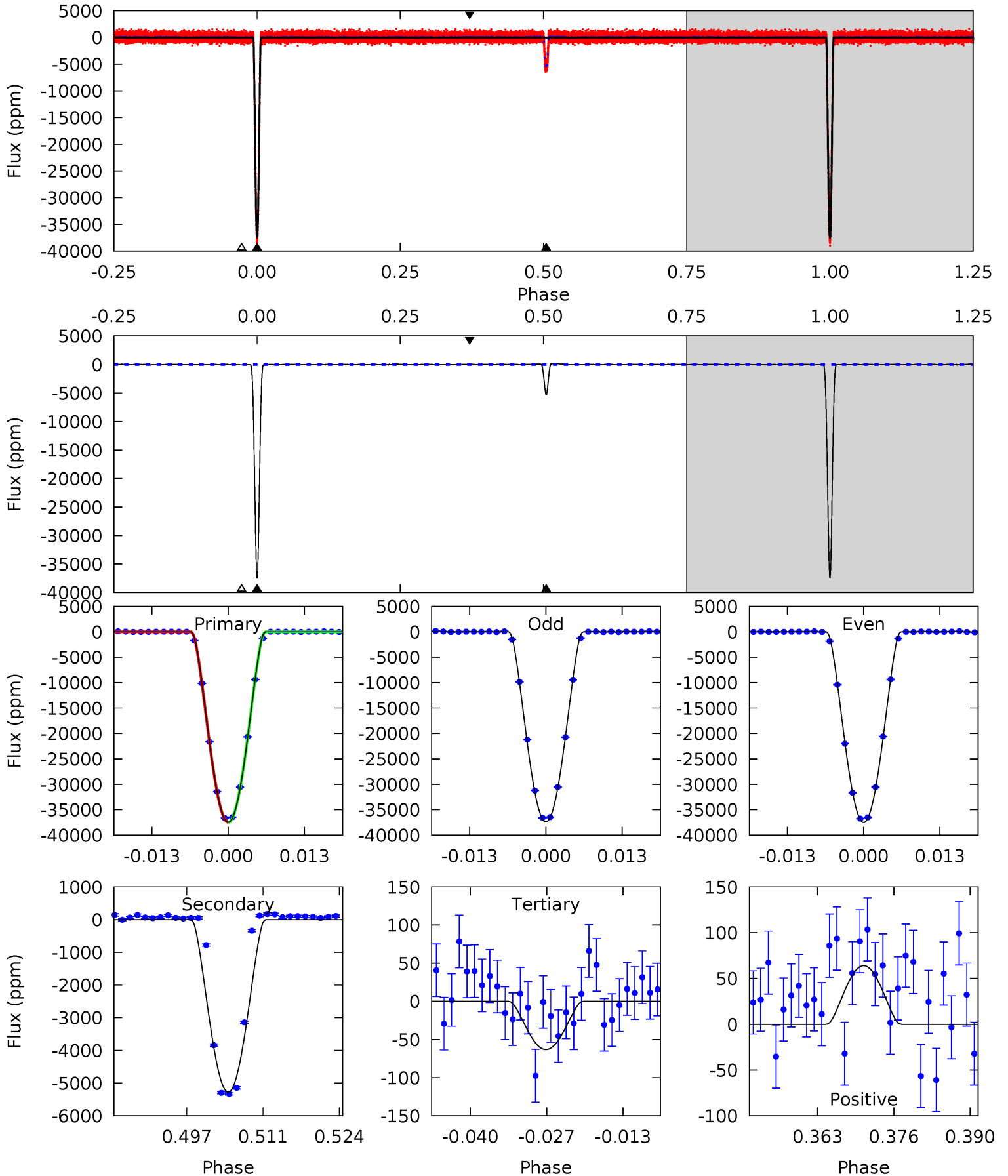
TCE 005983348-01 P= 25.150496 Days  $T_0=150.353533$  (BKJD)



# DV Model-Shift Uniqueness Test

005983348-01, P = 25.150785 Days, E = 125.194846 Days

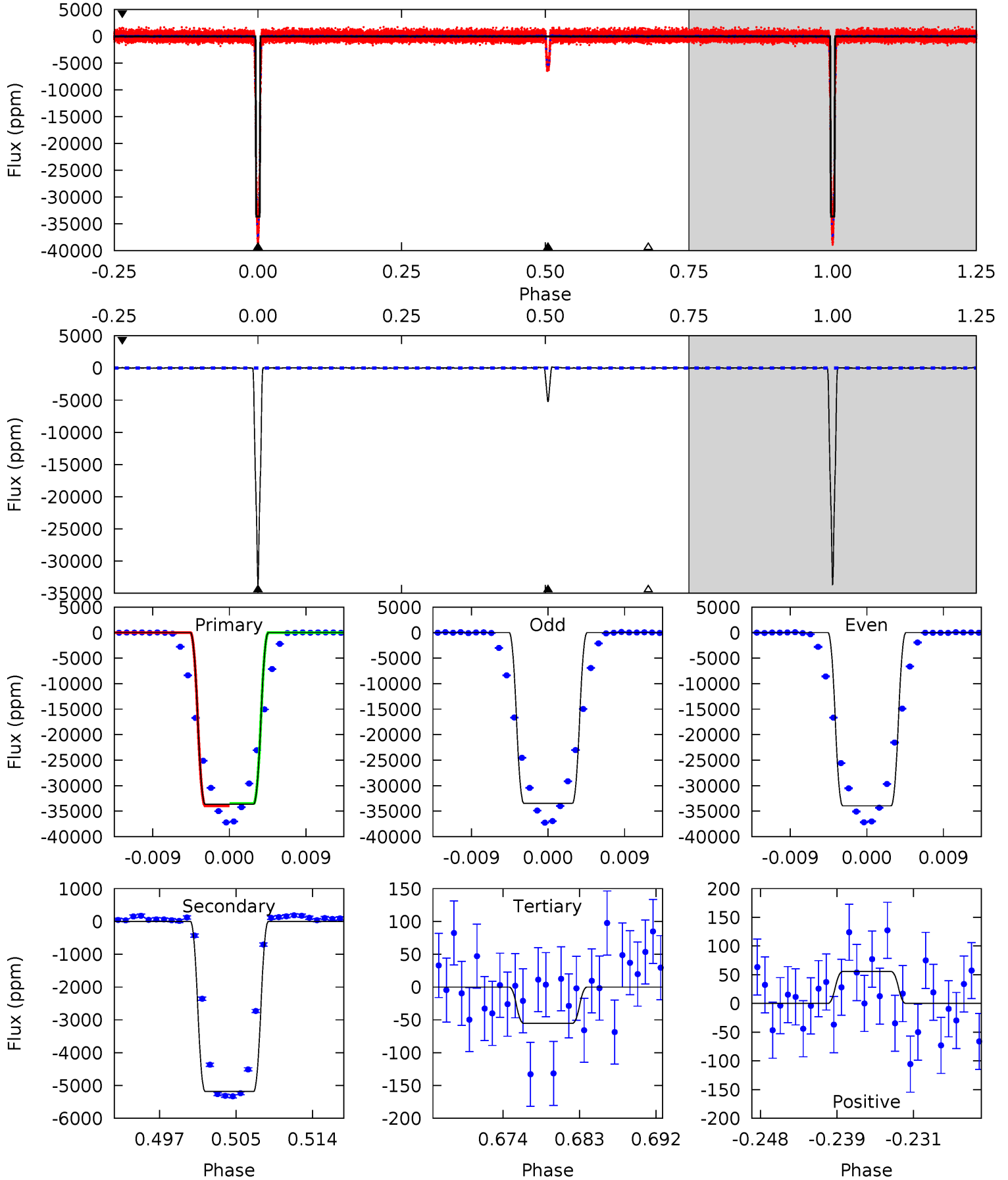
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2848	401.2	4.81	4.86	4.97	2.47	2.05	2844	2843	396.3	396.3	4.58	1.00	0.00	0.90



# Alt Model-Shift Uniqueness Test

005983348-01, P = 25.150496 Days, E = 125.203037 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
1666	256.8	2.74	2.75	5.05	2.62	1.13	1663	1663	254.1	254.0	11.8	1.00	0.00	10.9



### Stellar Parameters For KIC 005983348

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6015^{+190}_{-211}$	$4.329^{+0.175}_{-0.193}$	$-0.280^{+0.300}_{-0.300}$	$1.101^{+0.320}_{-0.213}$	$0.942^{+0.144}_{-0.096}$	$0.995^{+0.775}_{-0.506}$
	+3%/-4%	+4%/-4%	+107%/-107%	+29%/-19%	+15%/-10%	+78%/-51%
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 005983348-01 / KOI 6644.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-5276 \pm 13$	$32.90^{+5.00}_{-3.76}$	$958^{+69}_{-57}$	$3565^{+83}_{-92}$	$74^{+19}_{-17}$
Alt.	$-5184 \pm 20$	$23.08^{+3.73}_{-2.86}$	$959^{+80}_{-65}$	$4008^{+118}_{-114}$	$146^{+43}_{-37}$

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

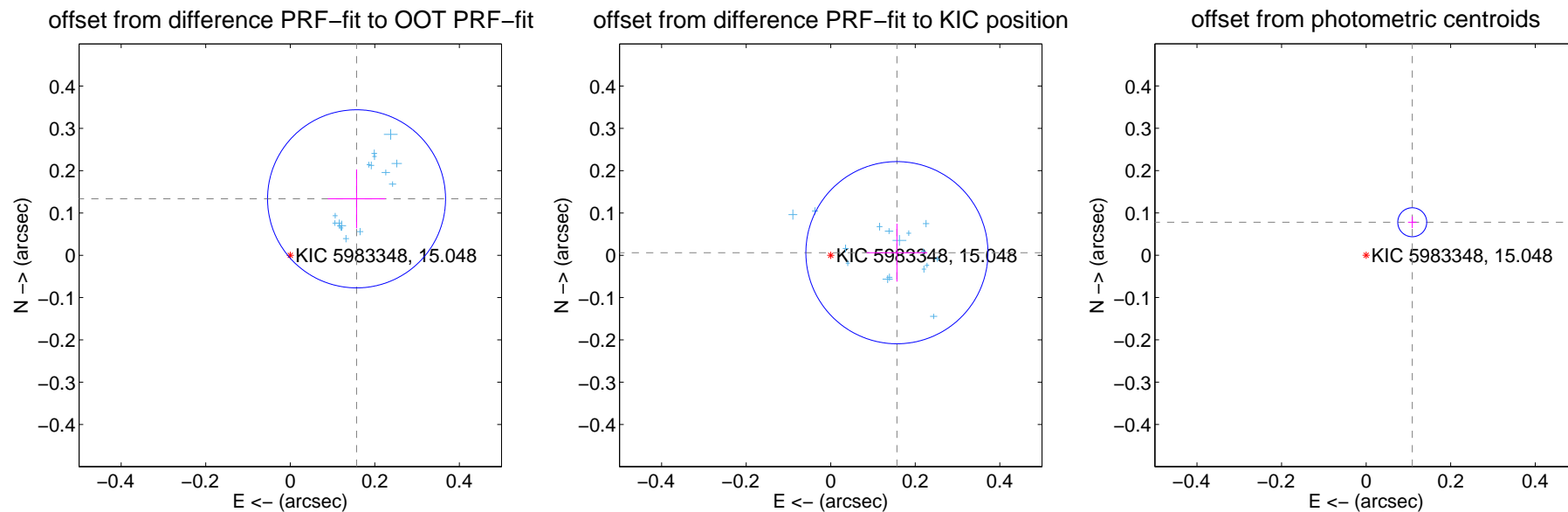
## DV Centroid Data

Supplemental centroid analysis for 005983348-01. Kepler magnitude: 15.05. Transit SNR 1445.23

There are 16 quarters with good PRF difference image offsets

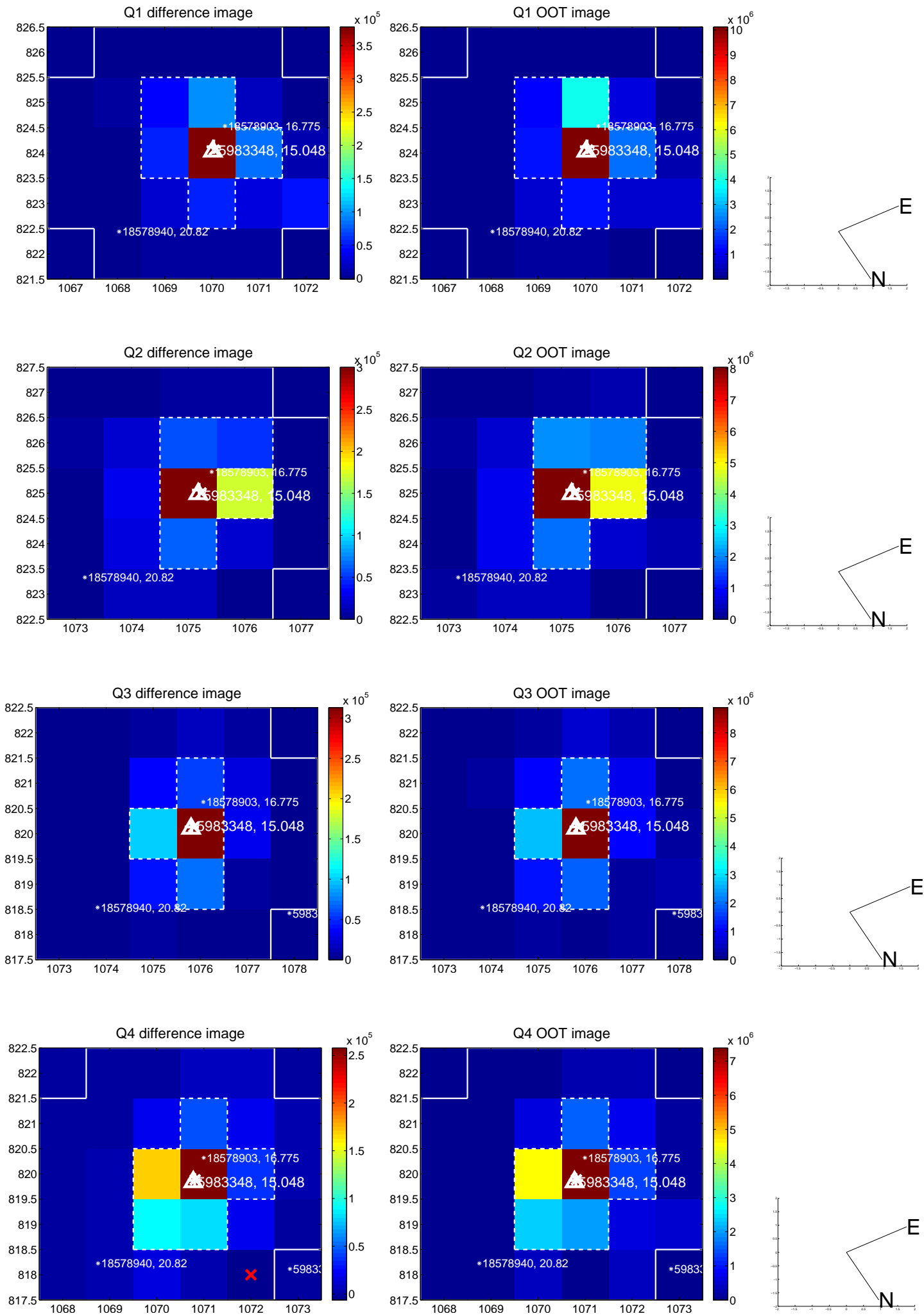
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.206 \pm 0.070$	2.93	$-0.157 \pm 0.068$	$0.133 \pm 0.070$
PRF-fit source offset from KIC position	$0.157 \pm 0.072$	2.18	$-0.157 \pm 0.072$	$0.006 \pm 0.069$
photometric centroid source offset	$0.13 \pm 0.01$	11.74	$-0.11 \pm 0.01$	$0.08 \pm 0.01$

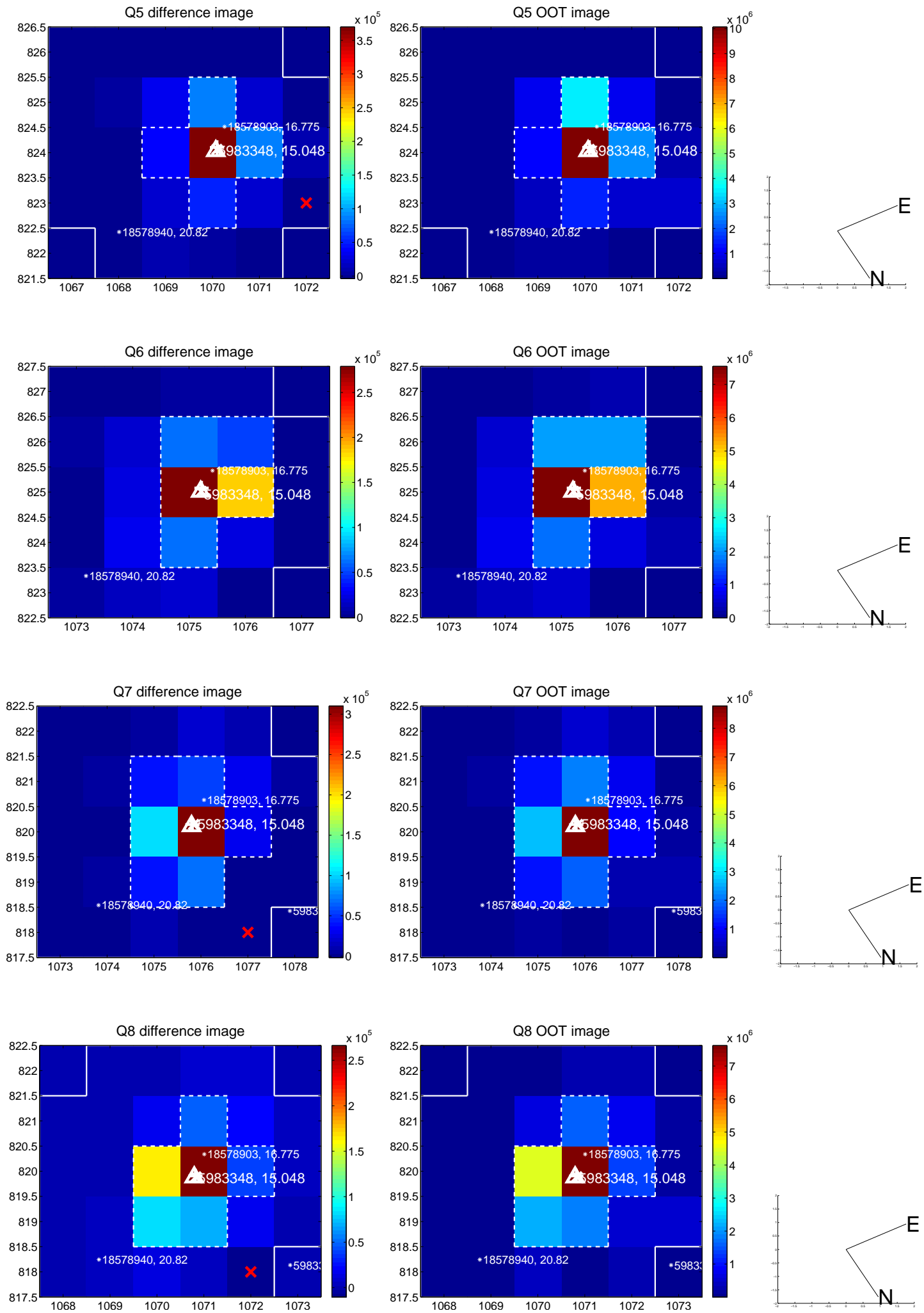


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

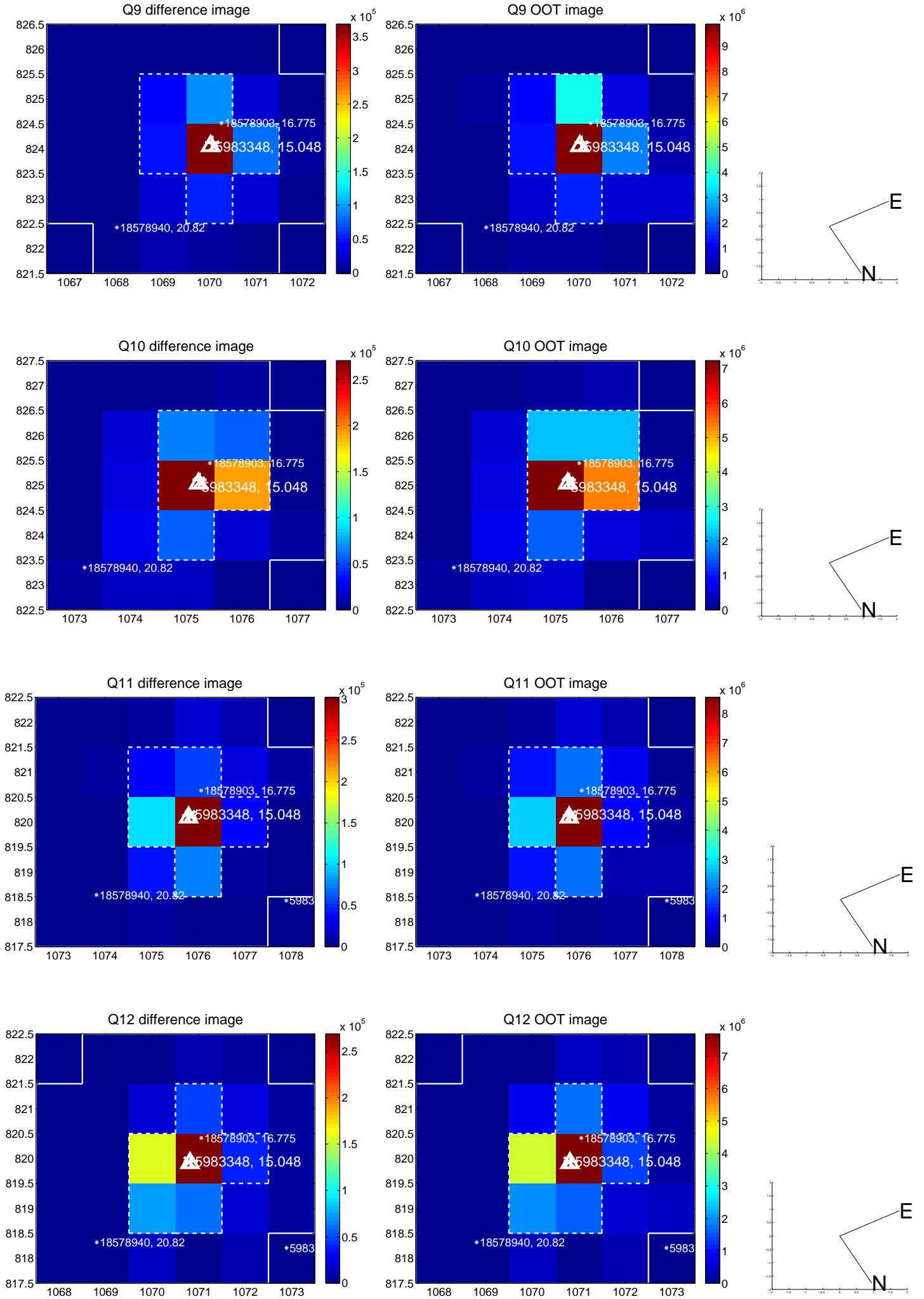


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

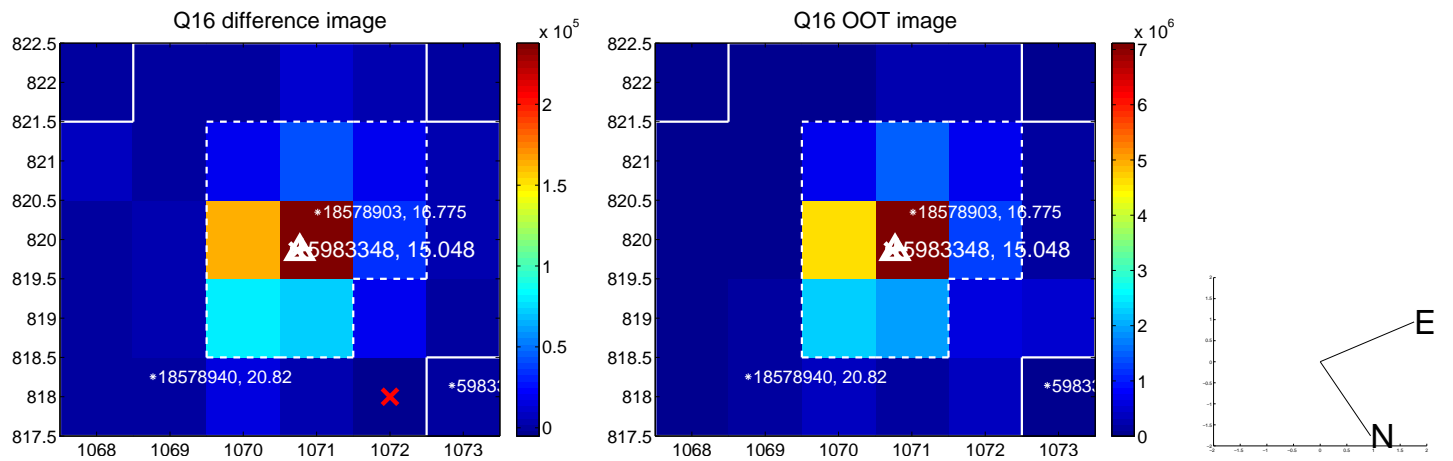
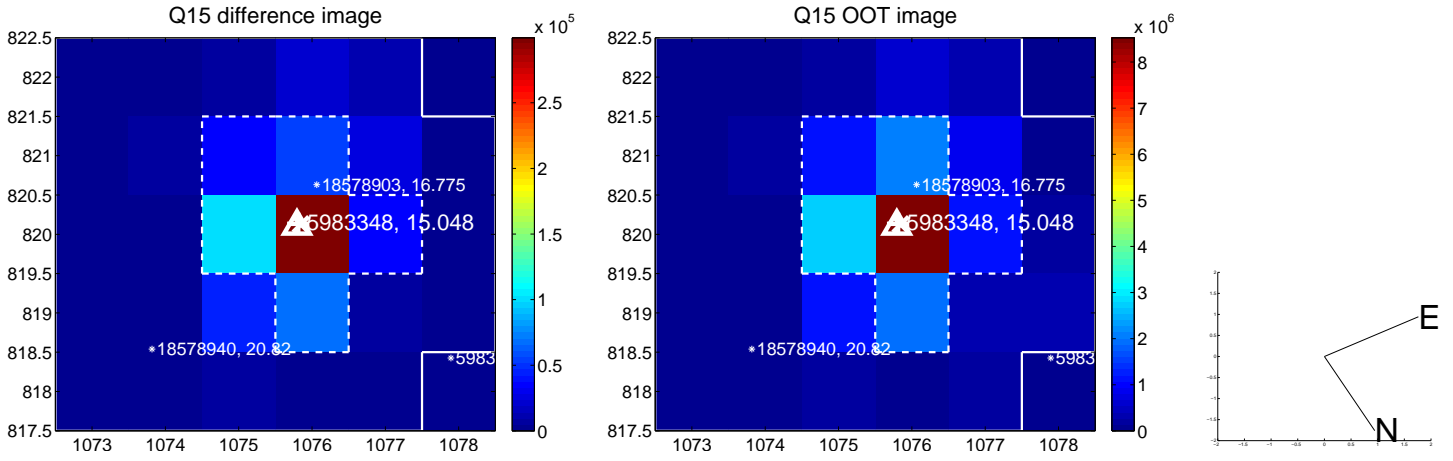
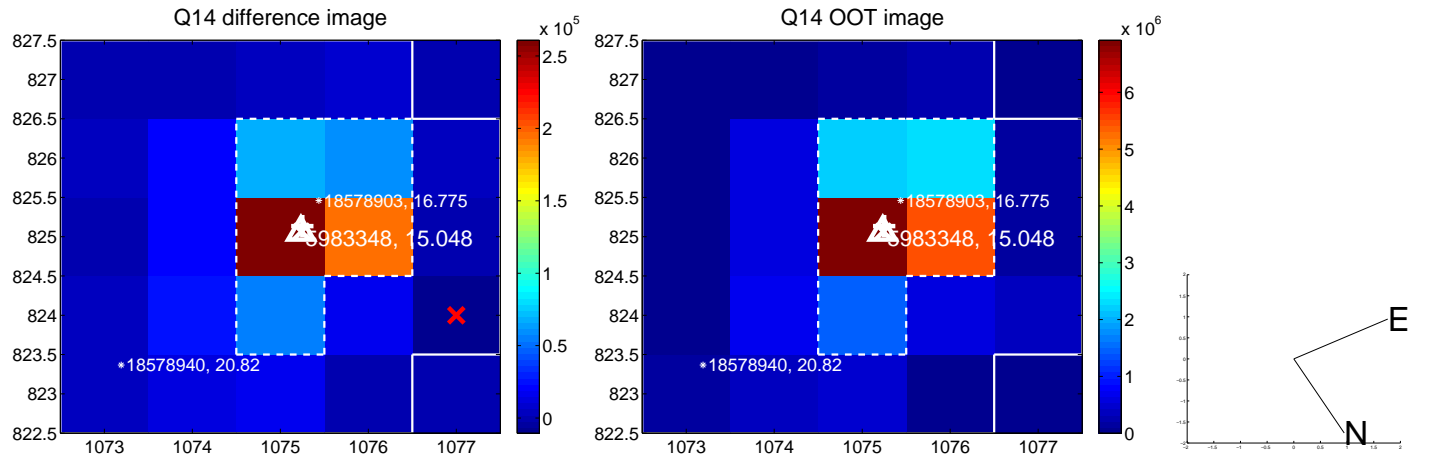
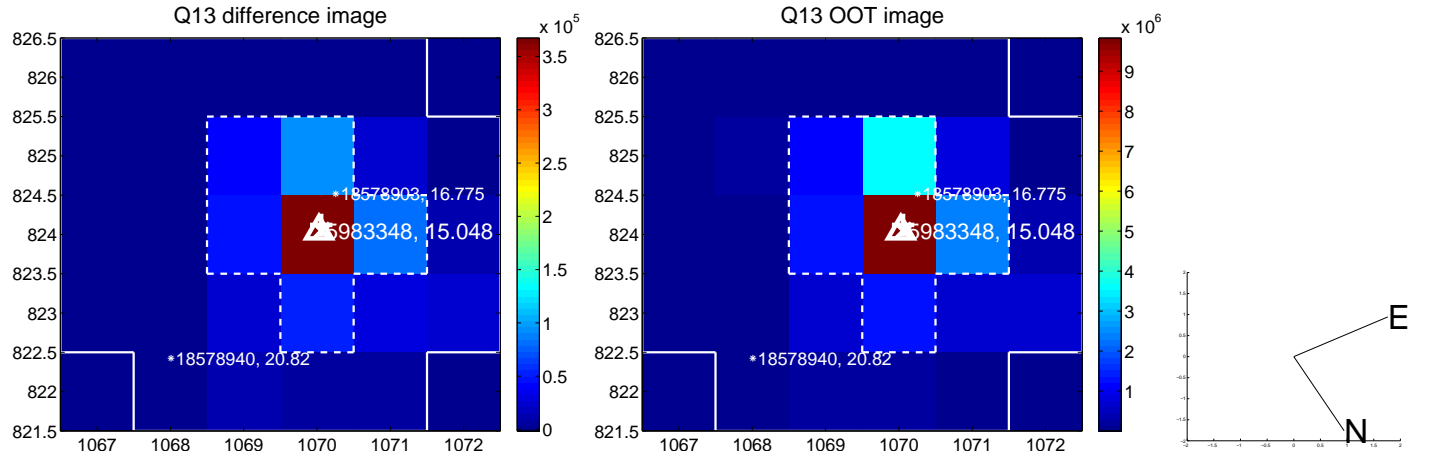




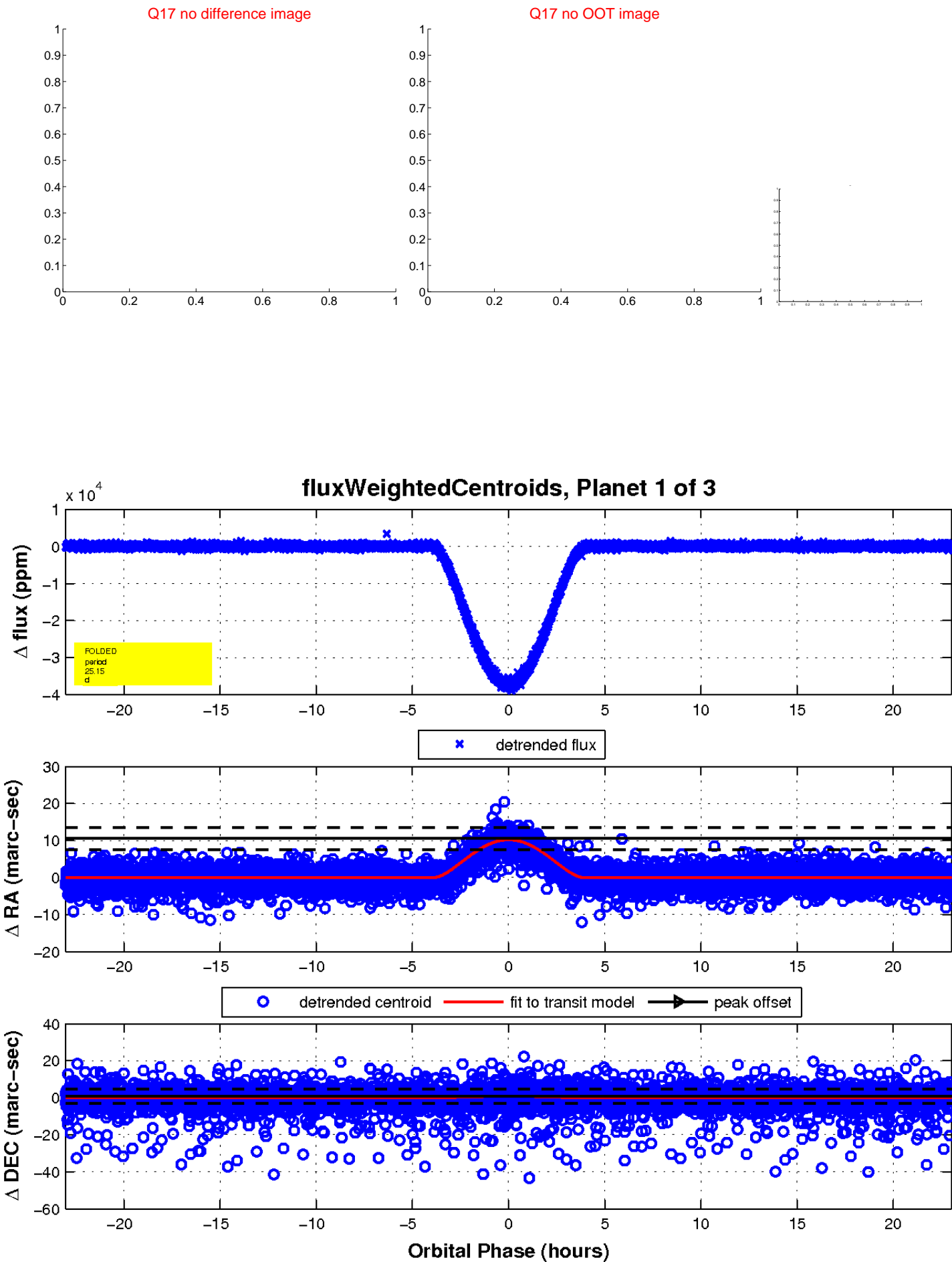
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

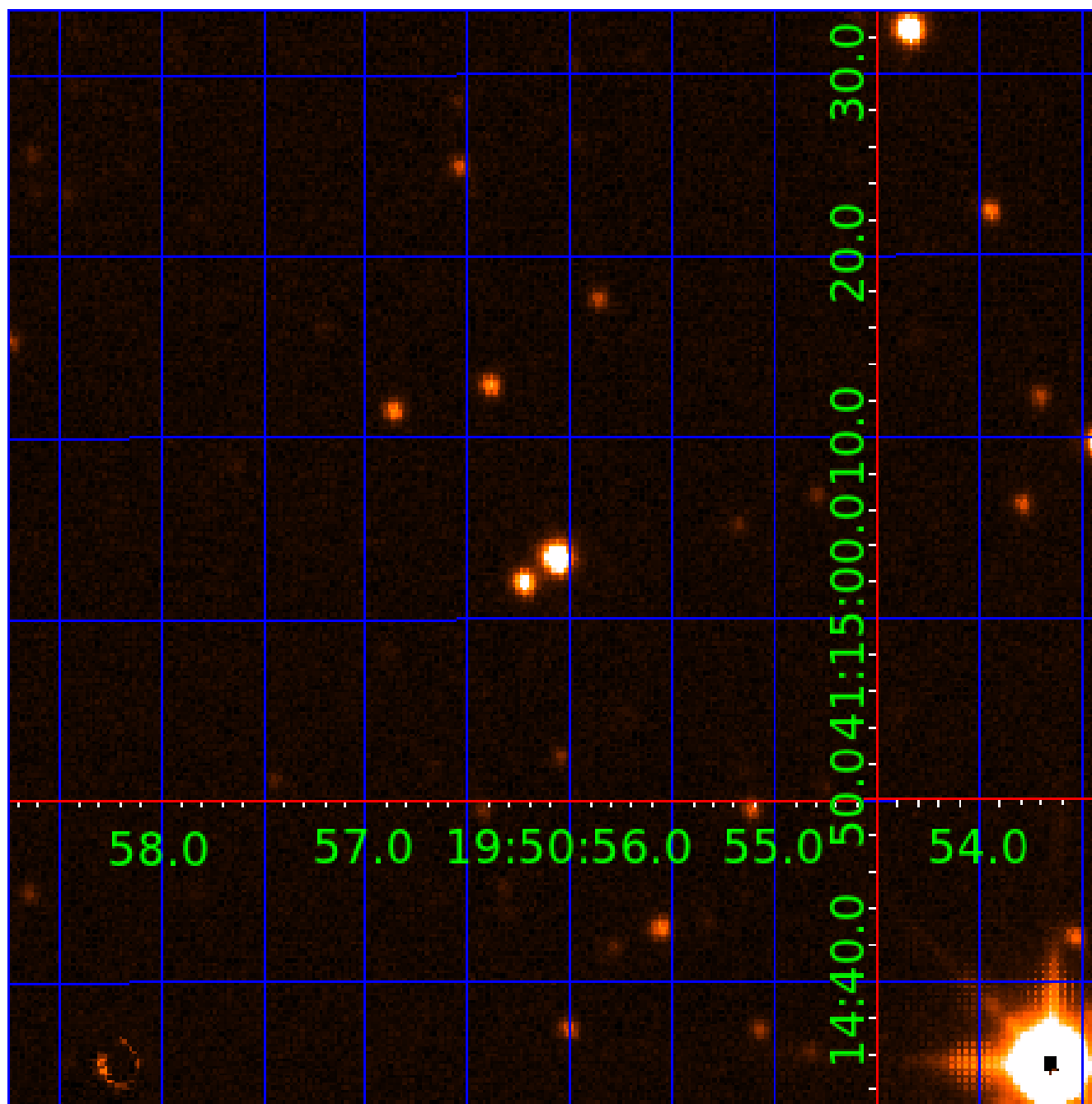


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 005983348

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005983348-01	OBS	6644.01	25.150785	150.345631	37530.1	7.679	1550.2	1445.2	1.10	6015	32.81	52.35
005983348-02	OBS	No	25.150791	137.889122	5534.3	5.218	234.7	229.3	1.10	6015	9.49	52.35
005983348-03	OBS	No	0.642359	132.029275	76.2	1.222	8.6	11.3	1.10	6015	1.14	6960.79

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005983348-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005983348-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005983348-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—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.

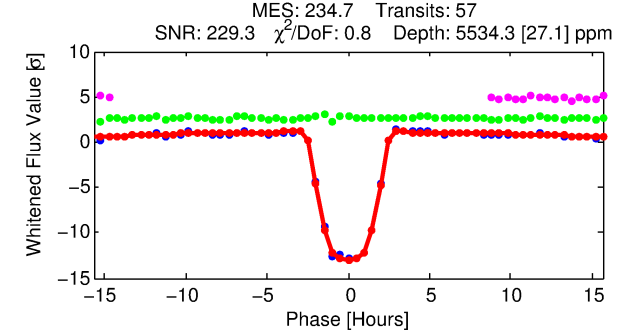
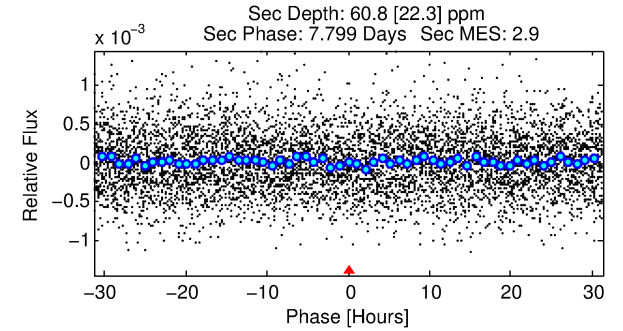
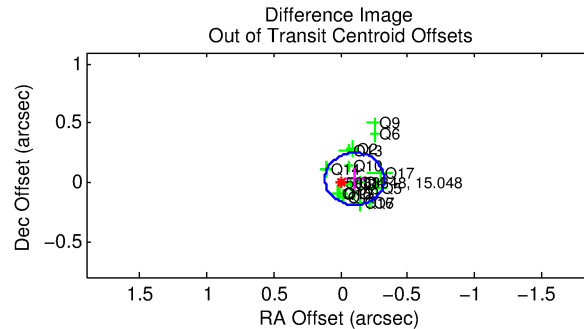
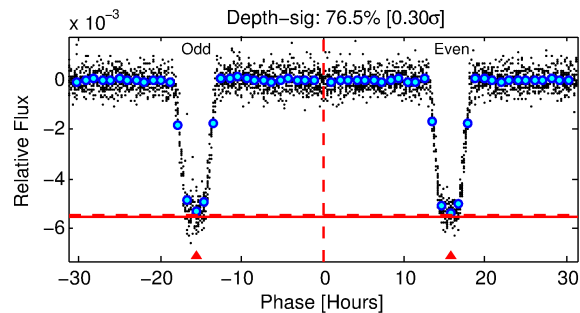
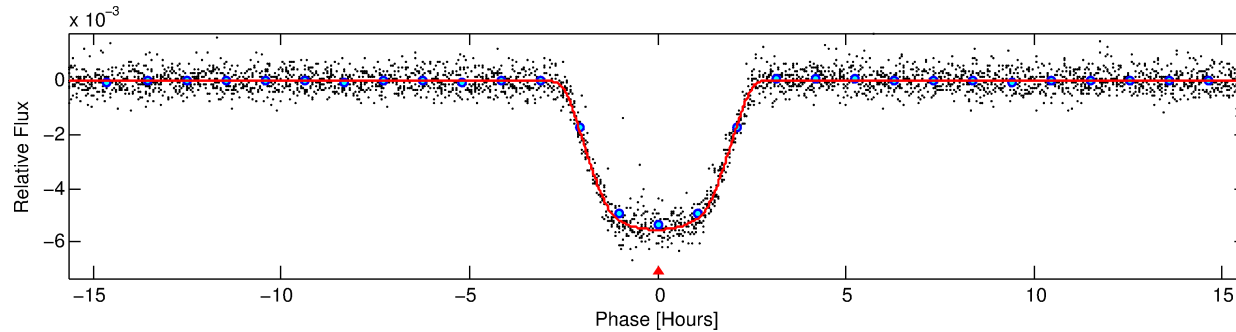
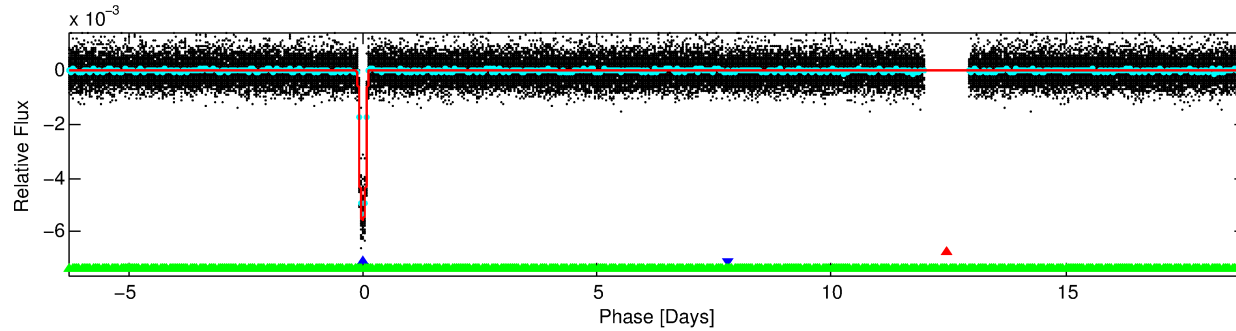
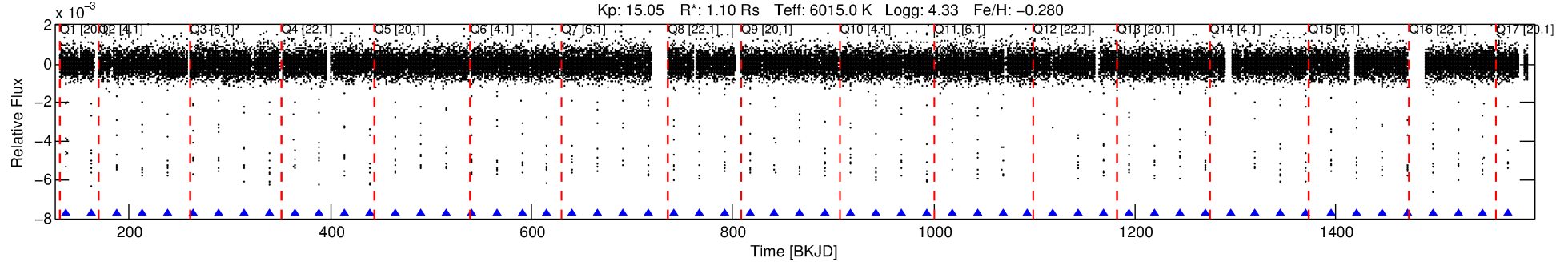
## Ephemeris Match Information For 005983348-02

No Significant Match Found

# DV One-Page Summary

KIC: 5983348 Candidate: 2 of 3 Period: 25.151 d  
KOI: K06644 Corr: No Ephemeris Match

Kp: 15.05 R\*: 1.10 Rs Teff: 6015.0 K Logg: 4.33 Fe/H: -0.280



## DV Fit Results:

Period = 25.15079 [0.00001] d  
Epoch = 137.8891 [0.0005] BKJD  
Rp/R\* = 0.0790 [0.0003]  
a/R\* = 23.29 [0.28]  
b = 0.87 [0.00]  
Seff = 52.36 [19.94]  
Teq = 686 [65] K  
Rp = 9.49 [2.76] Re  
a = 0.1648 [0.0402] AU  
Ag = 10.08 [5.14] [1.77σ]  
Teffp = 1890 [185] K [6.12σ]

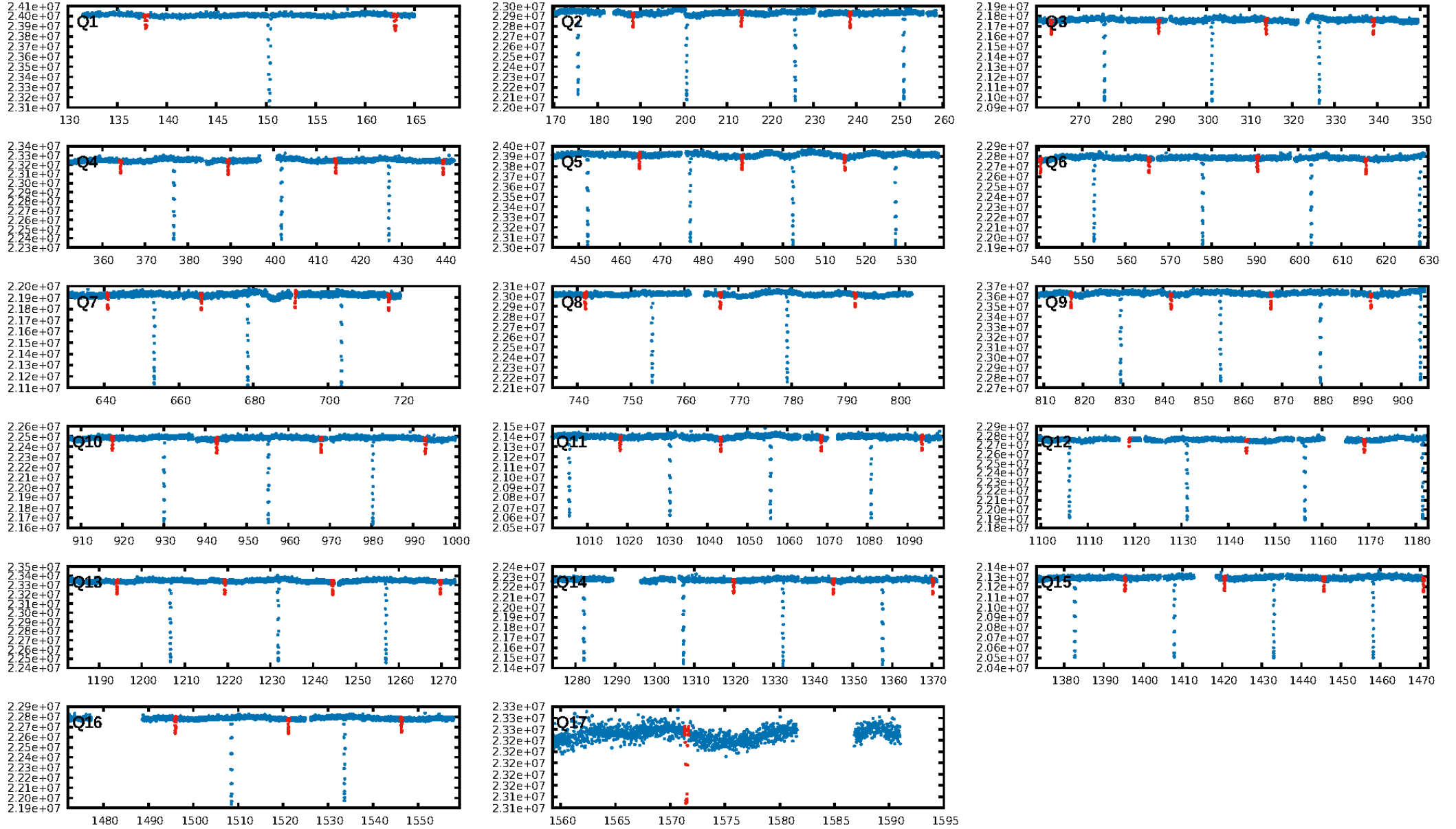
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [54/54]  
GhostDiagnostic-chr: 7.724  
Centroid-sig: 0.0%  
Centroid-so: 0.043 arcsec [0.59σ]  
OotOffset-rm: 0.108 arcsec [1.46σ]  
KicOffset-rm: 0.126 arcsec [1.67σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:37:08 Z

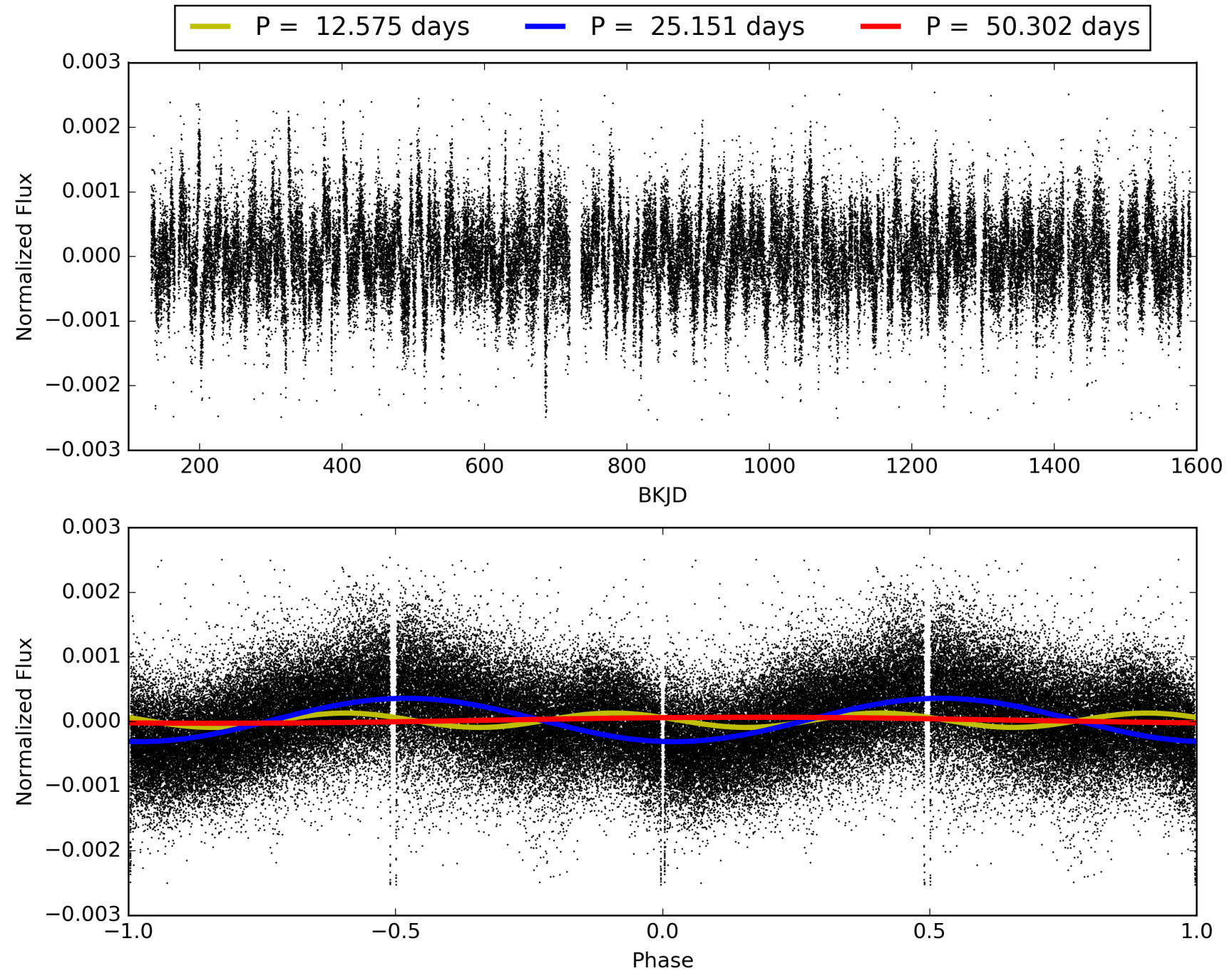
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005983348-02, PDC Light Curves





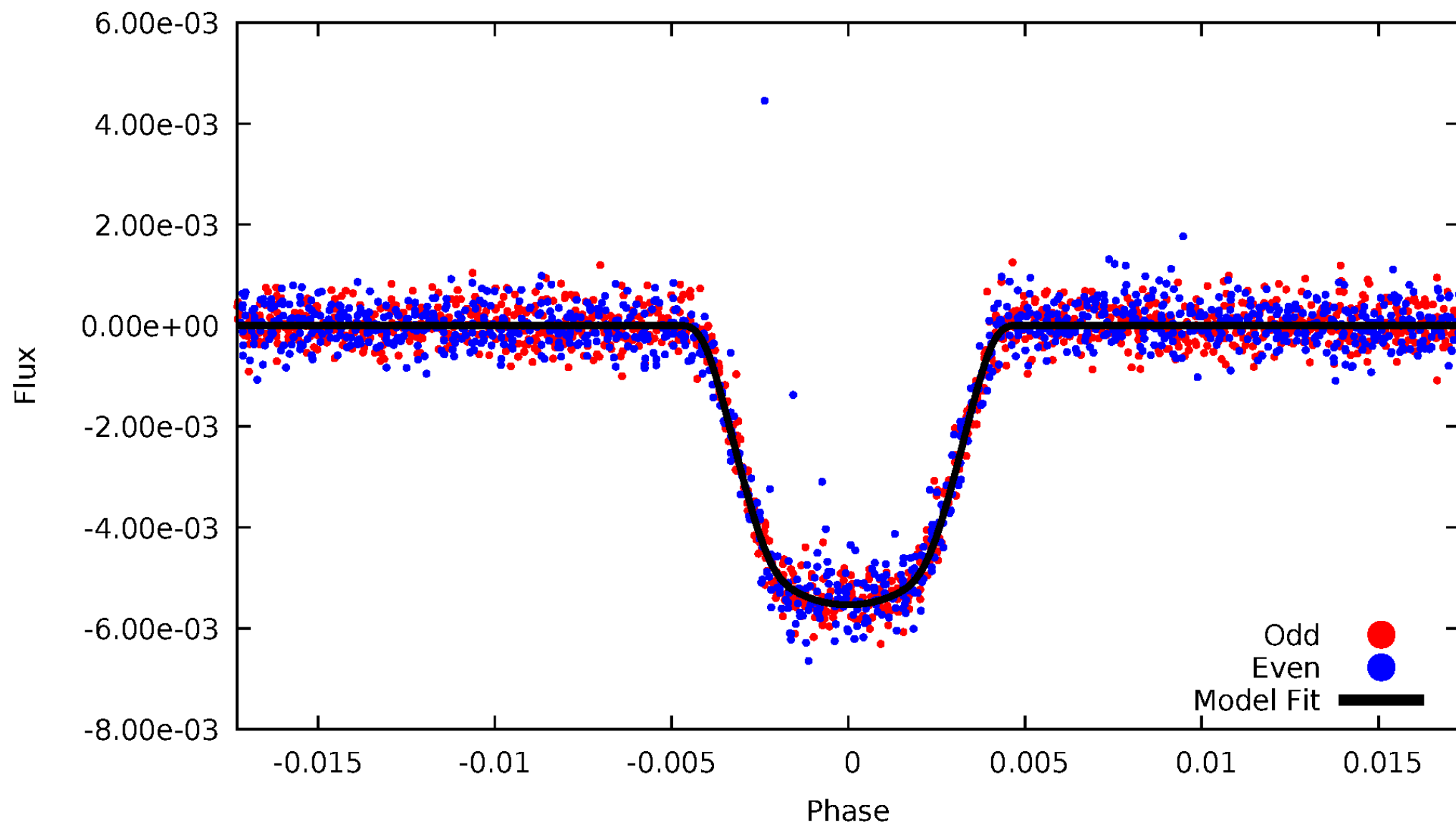
TCE 005983348-02





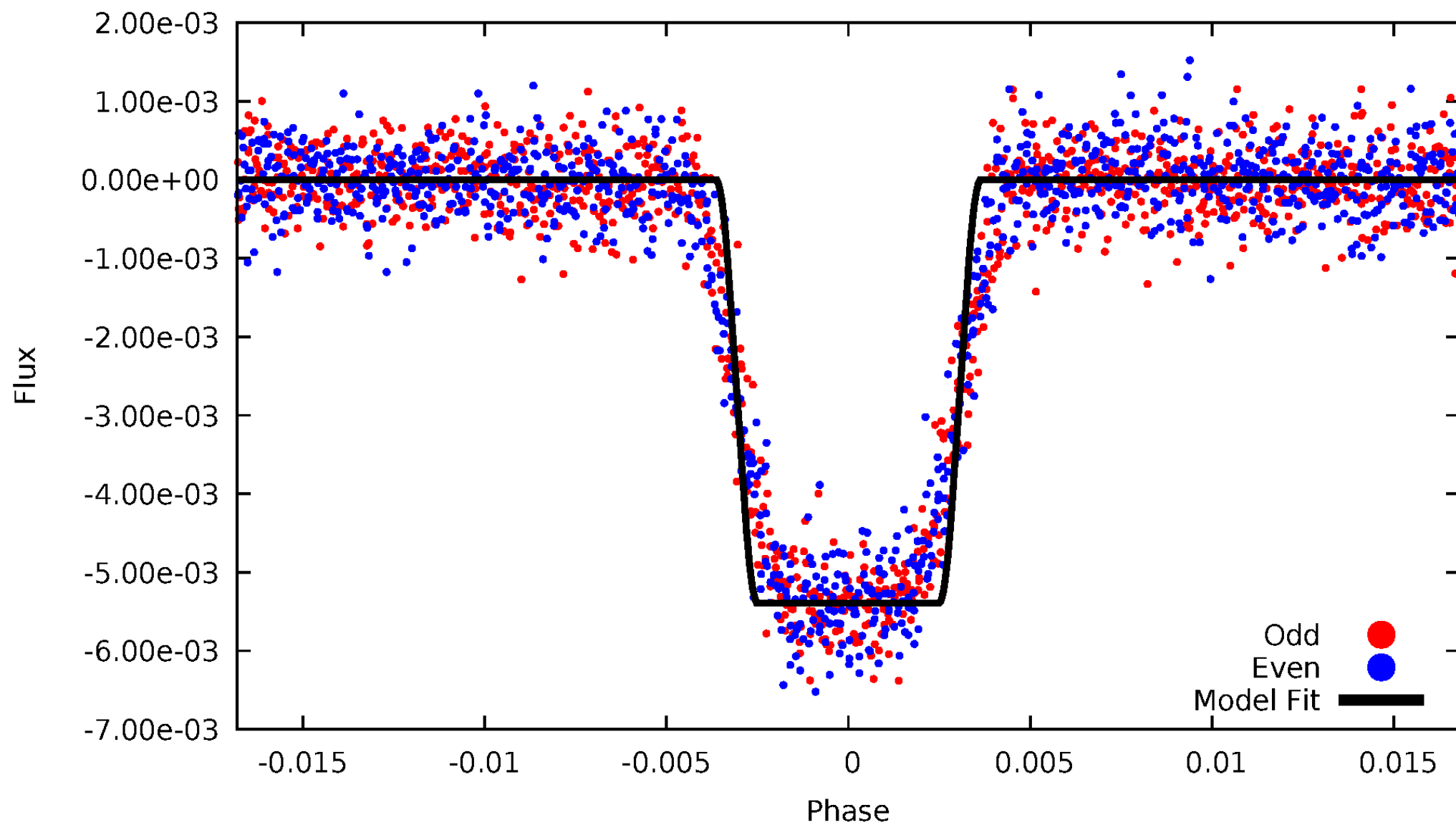
# DV Odd/Even

TCE 005983348-02



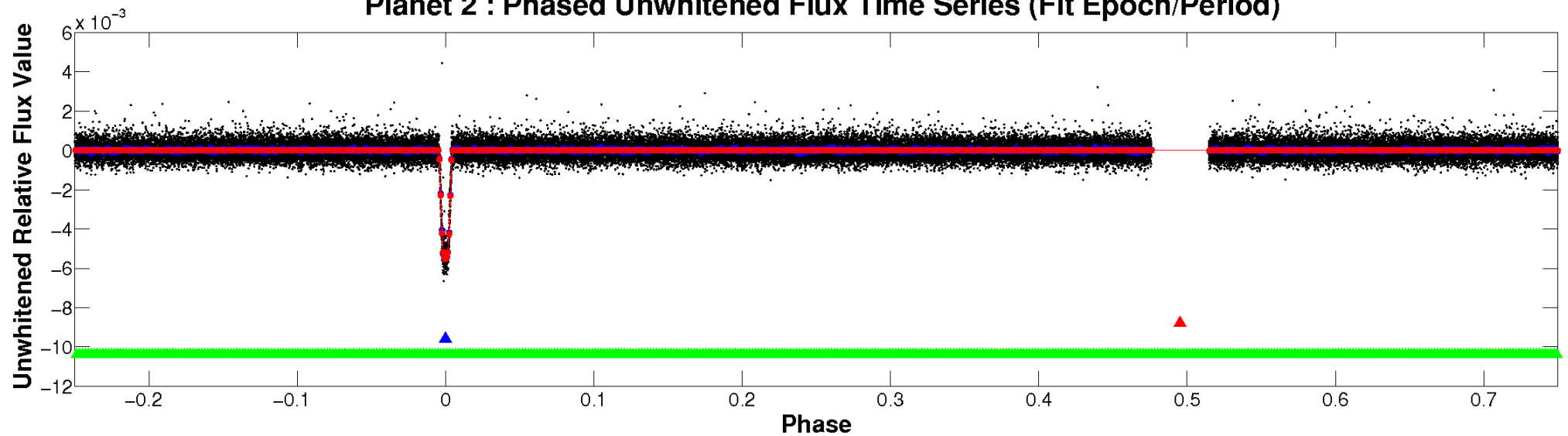
# ALT Odd/Even

TCE 005983348-02

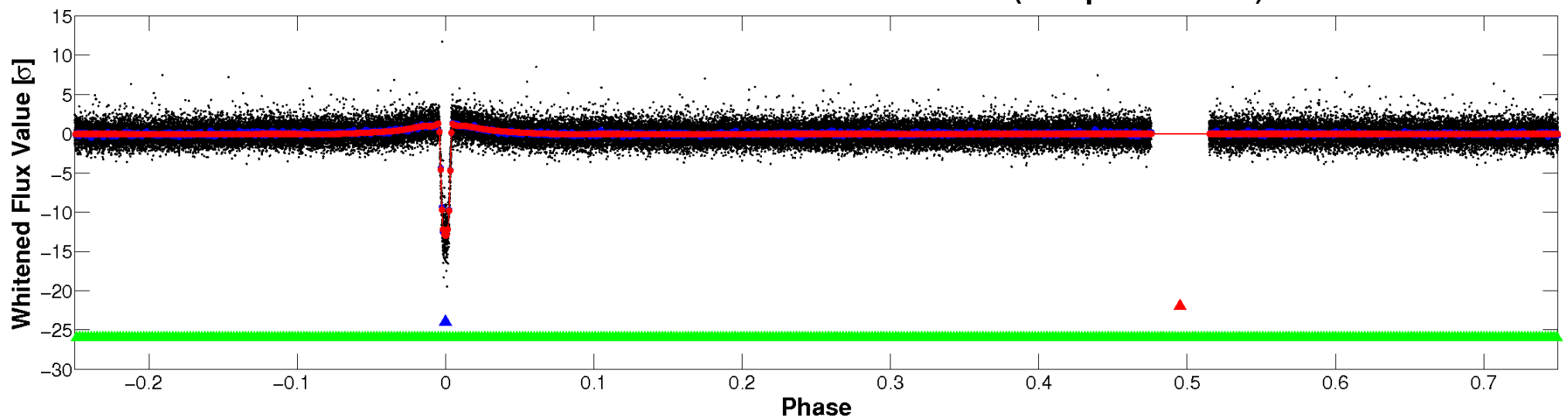


# Non-Whitened Vs. Whitened Light Curve

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

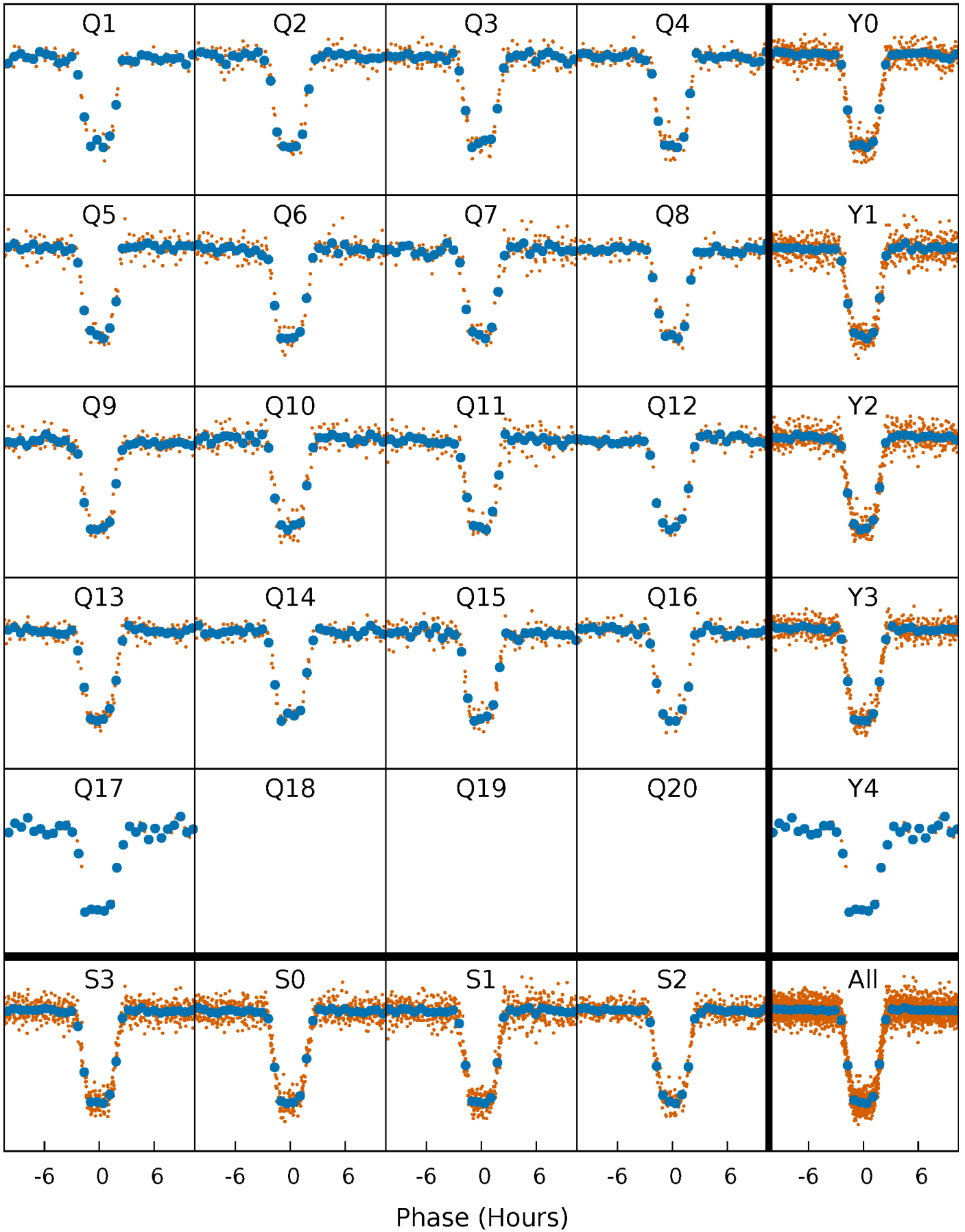


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



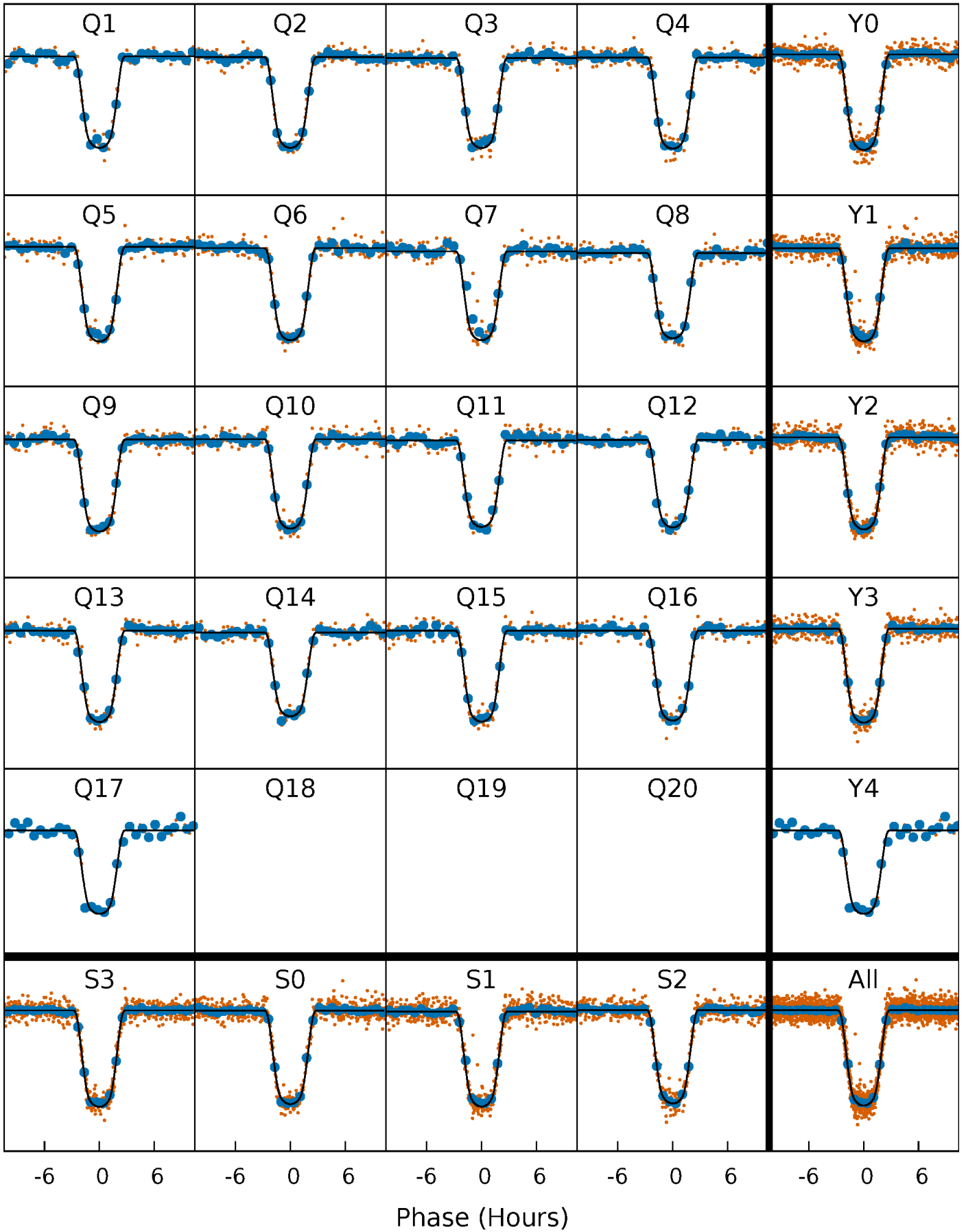
# PDC Quarter-Phased Transit Curves

TCE 005983348-02   P= 25.150791 Days    $T_0=137.889122$  (BKJD)



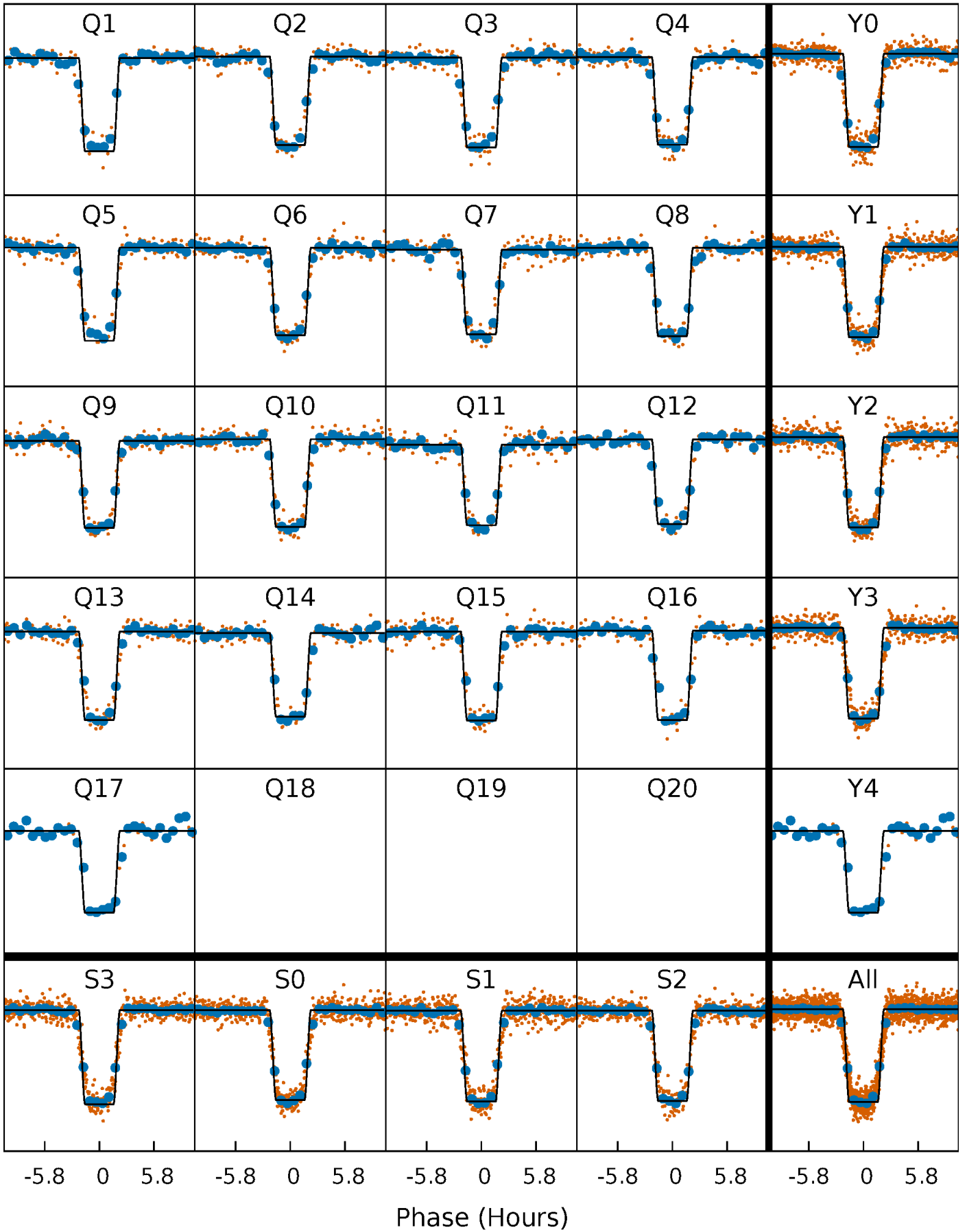
# DV Quarter-Phased Transit Curves

TCE 005983348-02   P= 25.150791 Days    $T_0=137.889122$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

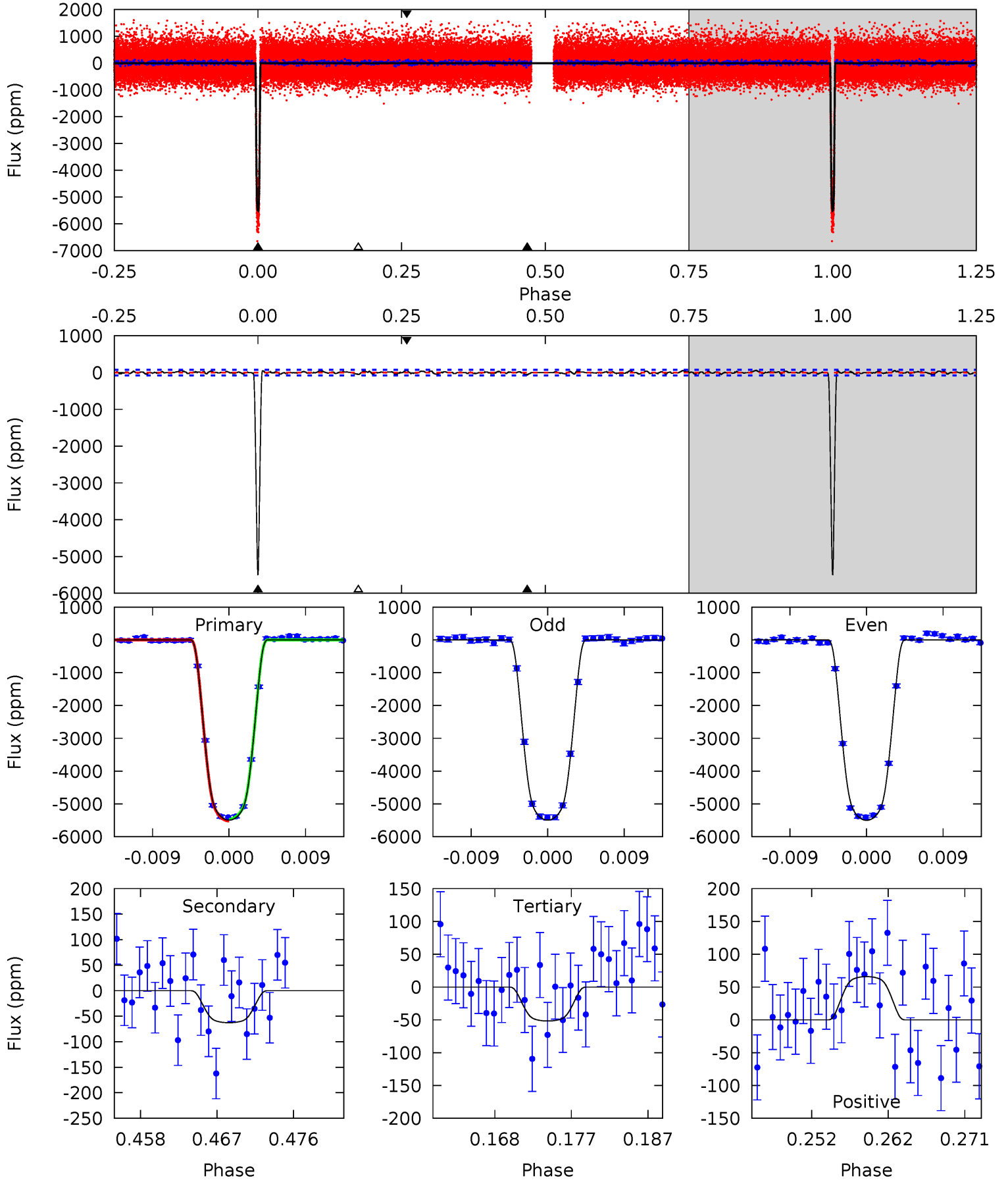
TCE 005983348-02 P= 25.150580 Days  $T_0=137.894913$  (BKJD)



# DV Model-Shift Uniqueness Test

005983348-02, P = 25.150791 Days, E = 112.738331 Days

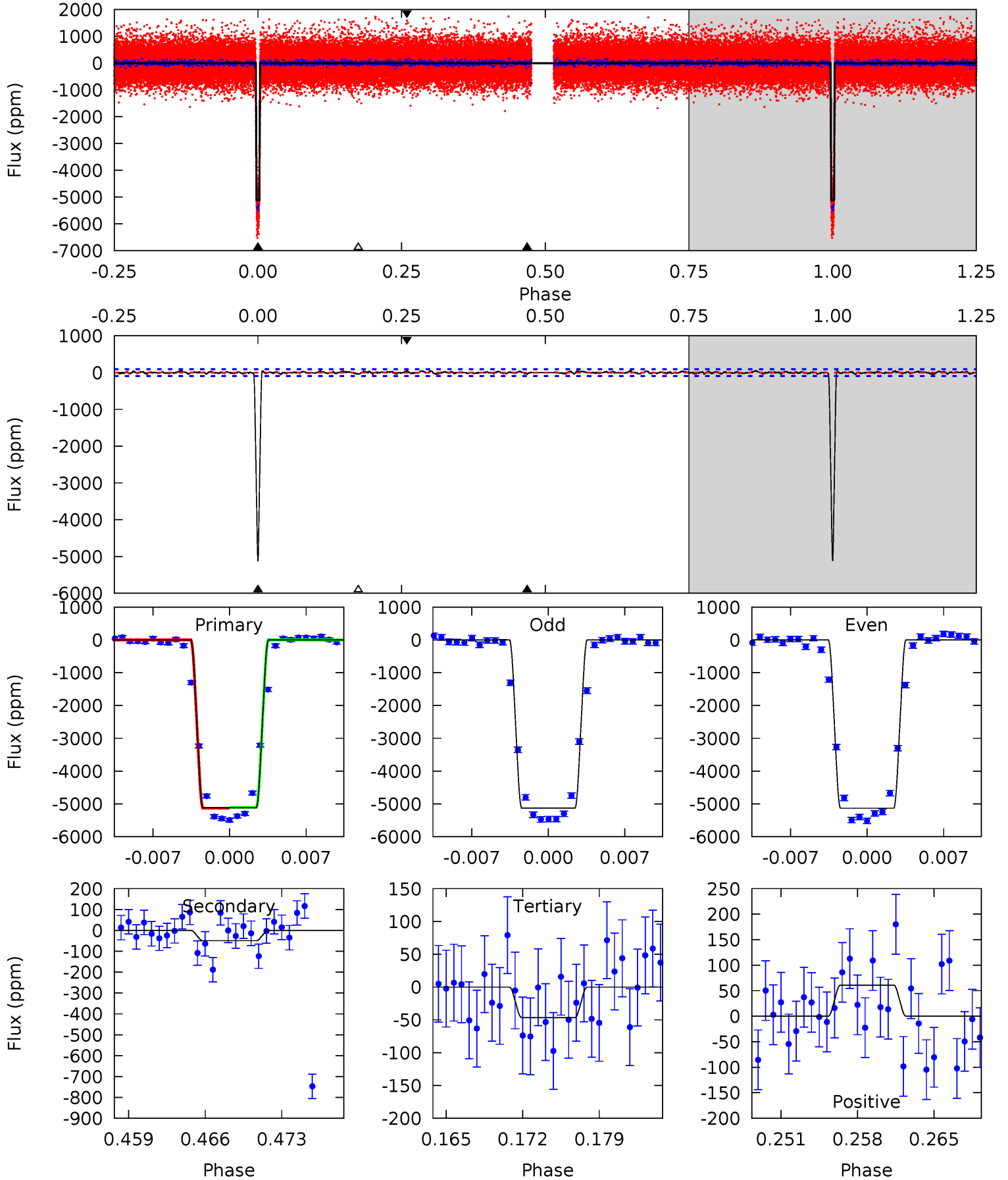
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
362.5	4.14	3.41	4.35	5.04	2.60	1.30	359.1	358.2	0.72	-0.21	0.23	0.99	0.01	1.67



# Alt Model-Shift Uniqueness Test

005983348-02, P = 25.150580 Days, E = 112.744333 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
274.7	2.67	2.50	3.27	5.09	2.69	0.94	272.2	271.5	0.16	-0.61	0.12	1.00	0.01	0.87





### Stellar Parameters For KIC 005983348

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6015^{+190}_{-211}$	$4.329^{+0.175}_{-0.193}$	$-0.280^{+0.300}_{-0.300}$	$1.101^{+0.320}_{-0.213}$	$0.942^{+0.144}_{-0.096}$	$0.995^{+0.775}_{-0.506}$
	+3%/-4%	+4%/-4%	+107%/-107%	+29%/-19%	+15%/-10%	+78%/-51%
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 005983348-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-63 \pm 15$	$9.50^{+1.47}_{-1.07}$	$956^{+72}_{-67}$	$2677^{+98}_{-114}$	$10^{+5}_{-3}$
Alt.	$-50 \pm 19$	$8.79^{+1.26}_{-0.96}$	$954^{+74}_{-59}$	$2636^{+129}_{-157}$	$9.102^{+4.969}_{-3.743}$

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

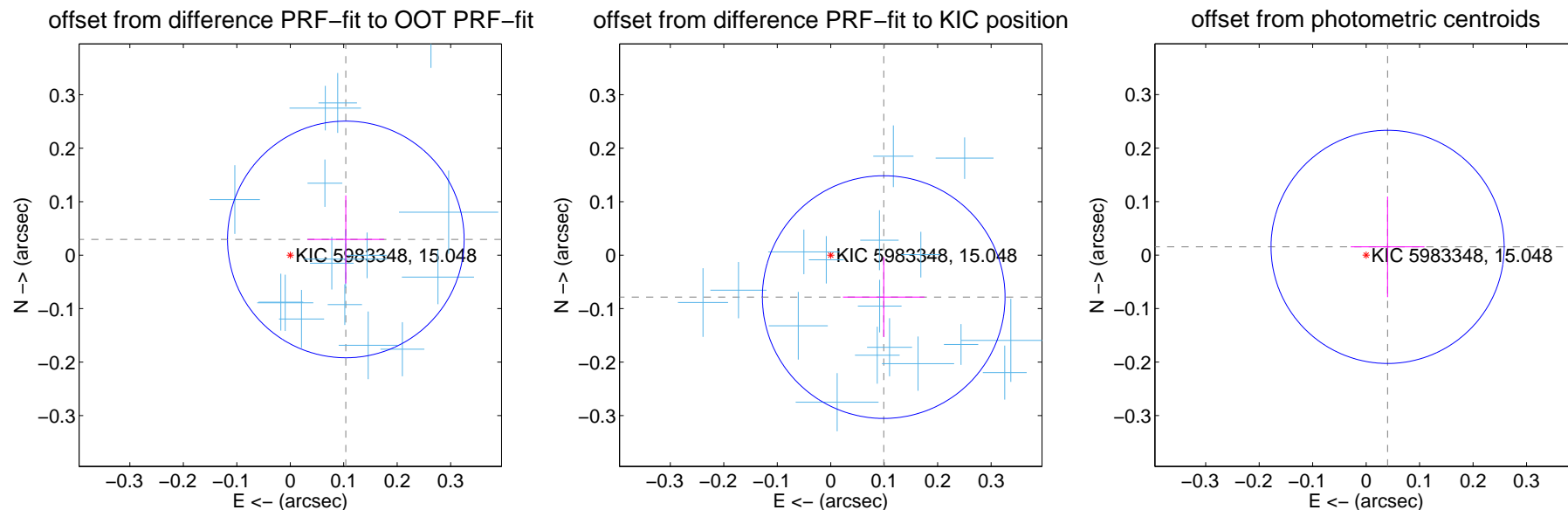
## DV Centroid Data

Supplemental centroid analysis for 005983348-02. Kepler magnitude: 15.05. Transit SNR 229.29

There are 17 quarters with good PRF difference image offsets

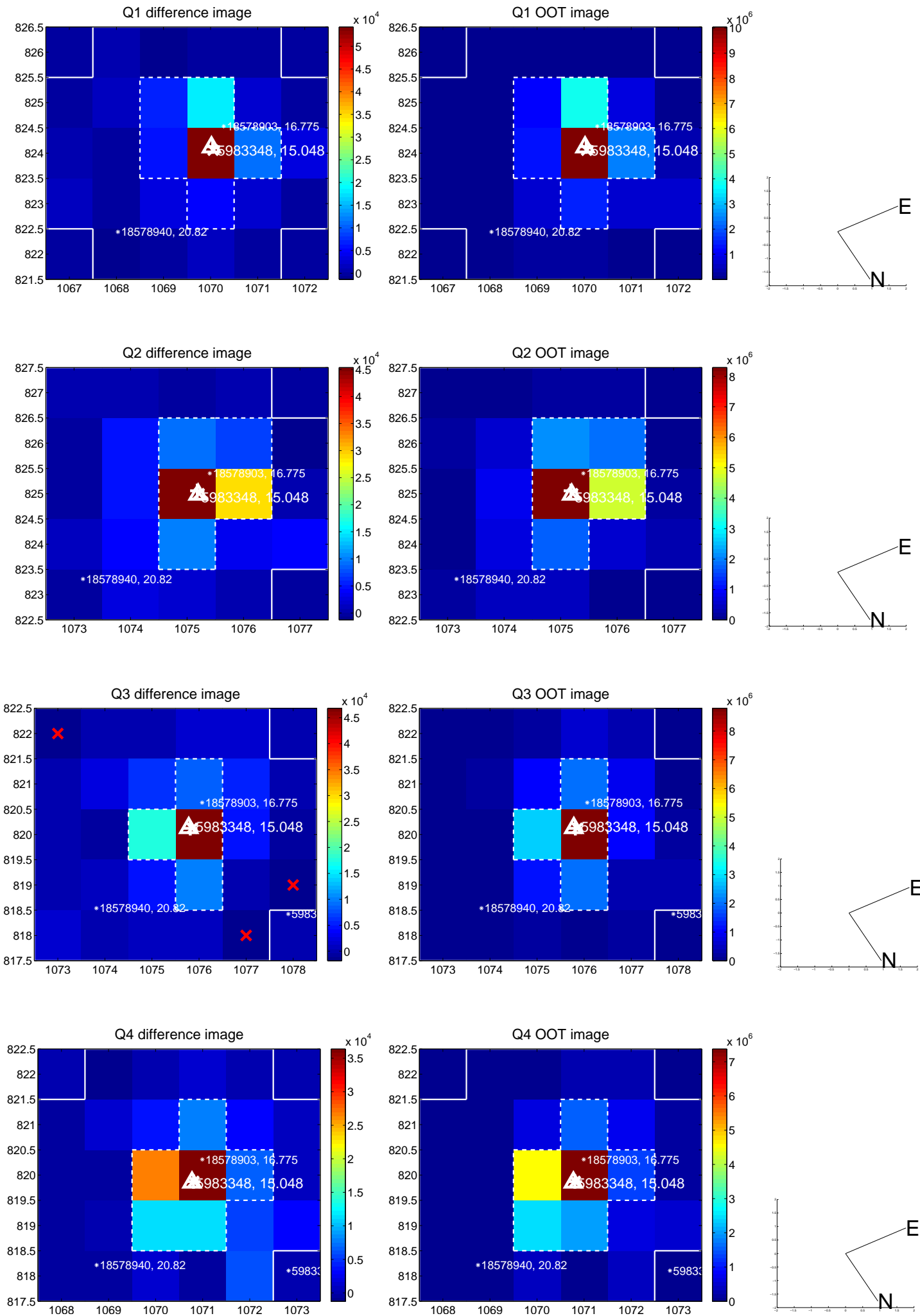
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.108 \pm 0.074$	1.46	$-0.104 \pm 0.072$	$0.029 \pm 0.082$
PRF-fit source offset from KIC position	$0.126 \pm 0.076$	1.67	$-0.099 \pm 0.076$	$-0.078 \pm 0.075$
photometric centroid source offset	$0.04 \pm 0.07$	0.59	$-0.04 \pm 0.07$	$0.02 \pm 0.09$

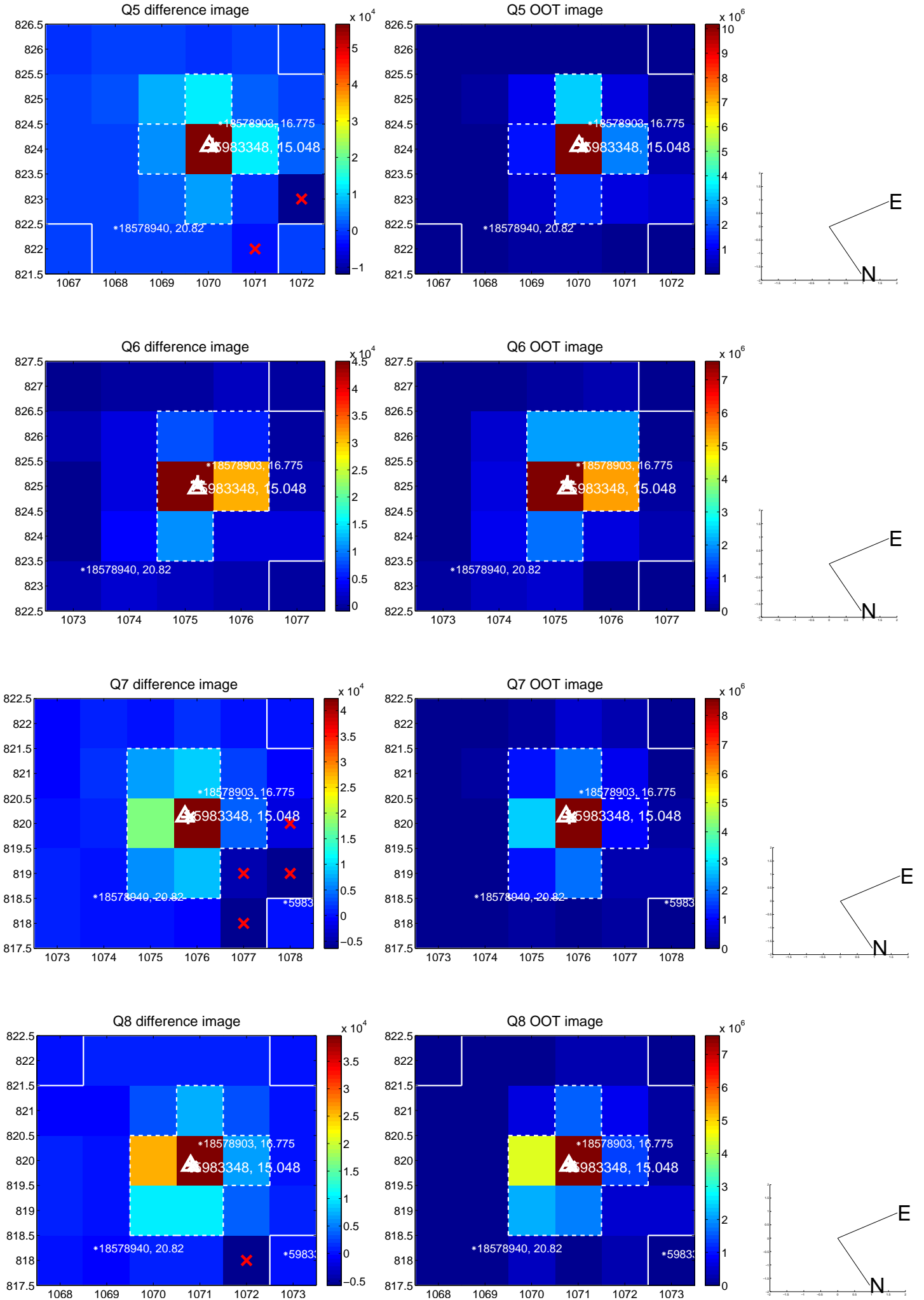


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

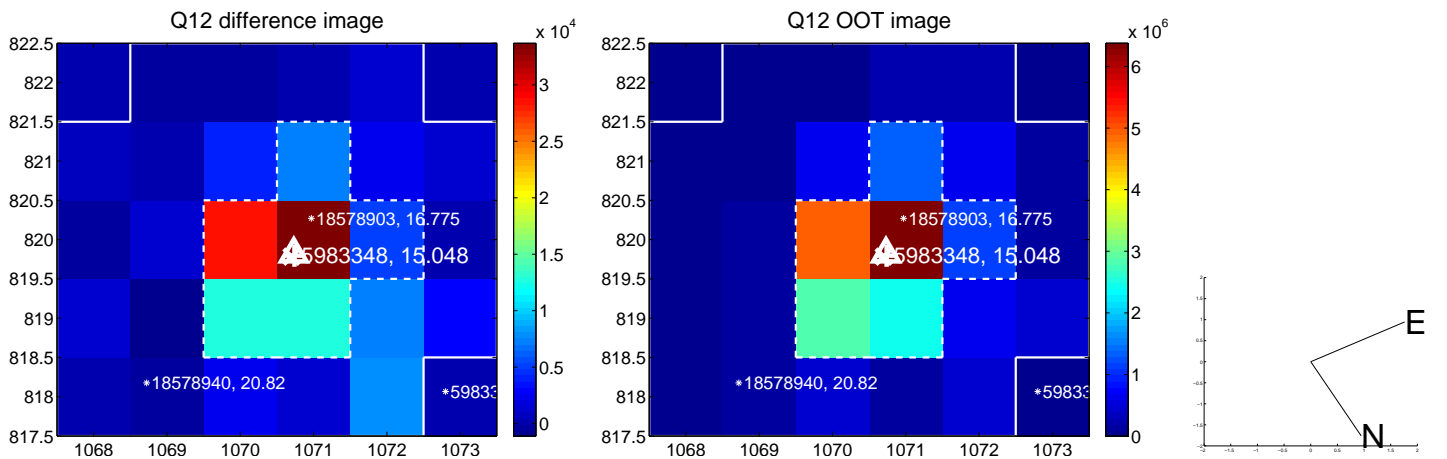
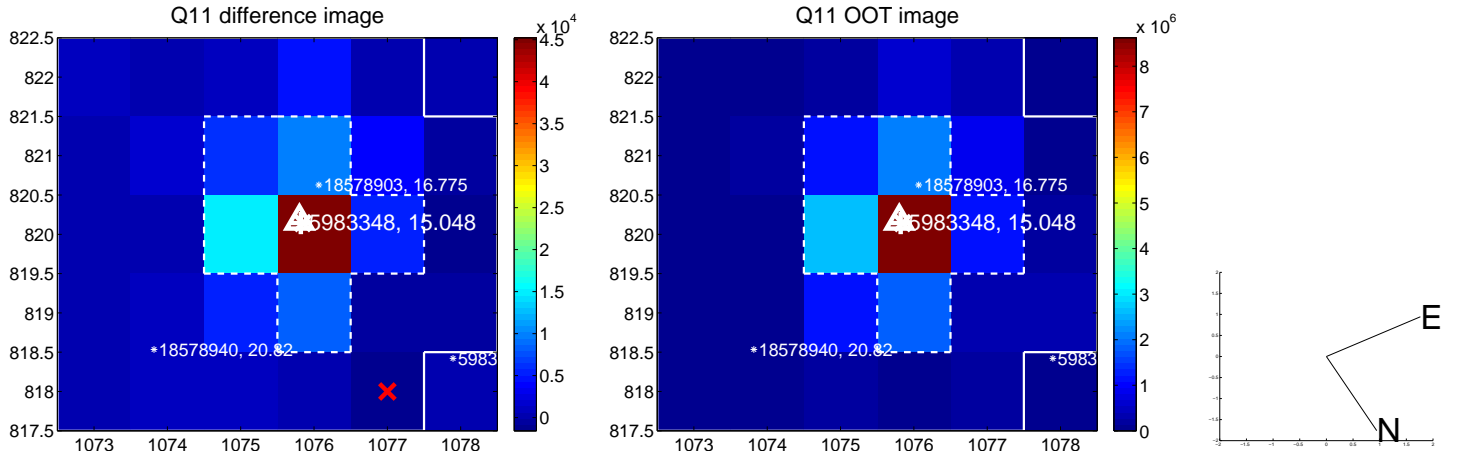
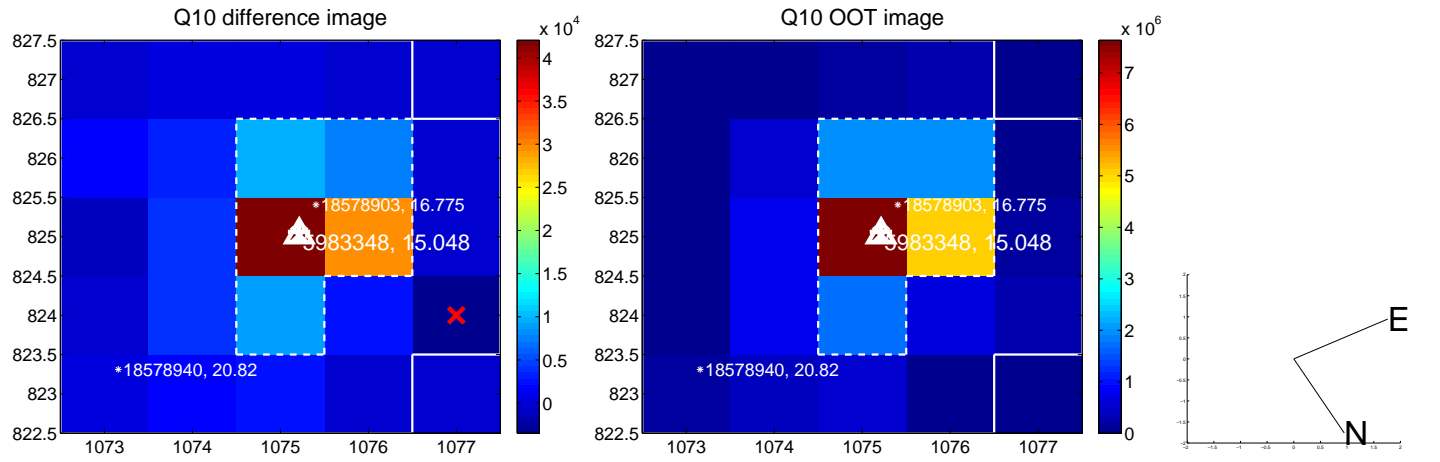
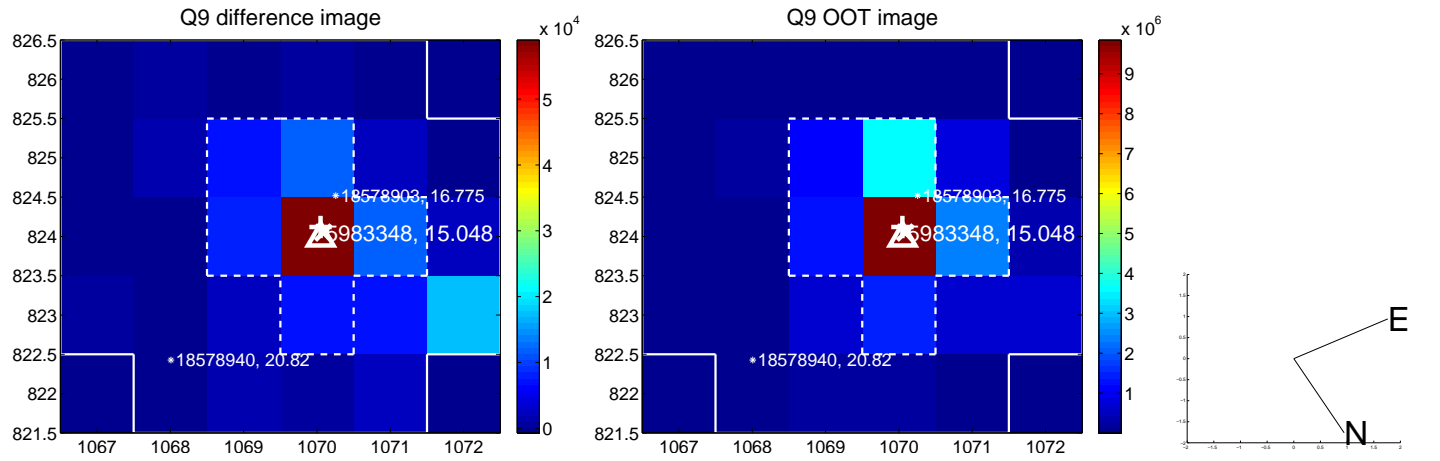
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



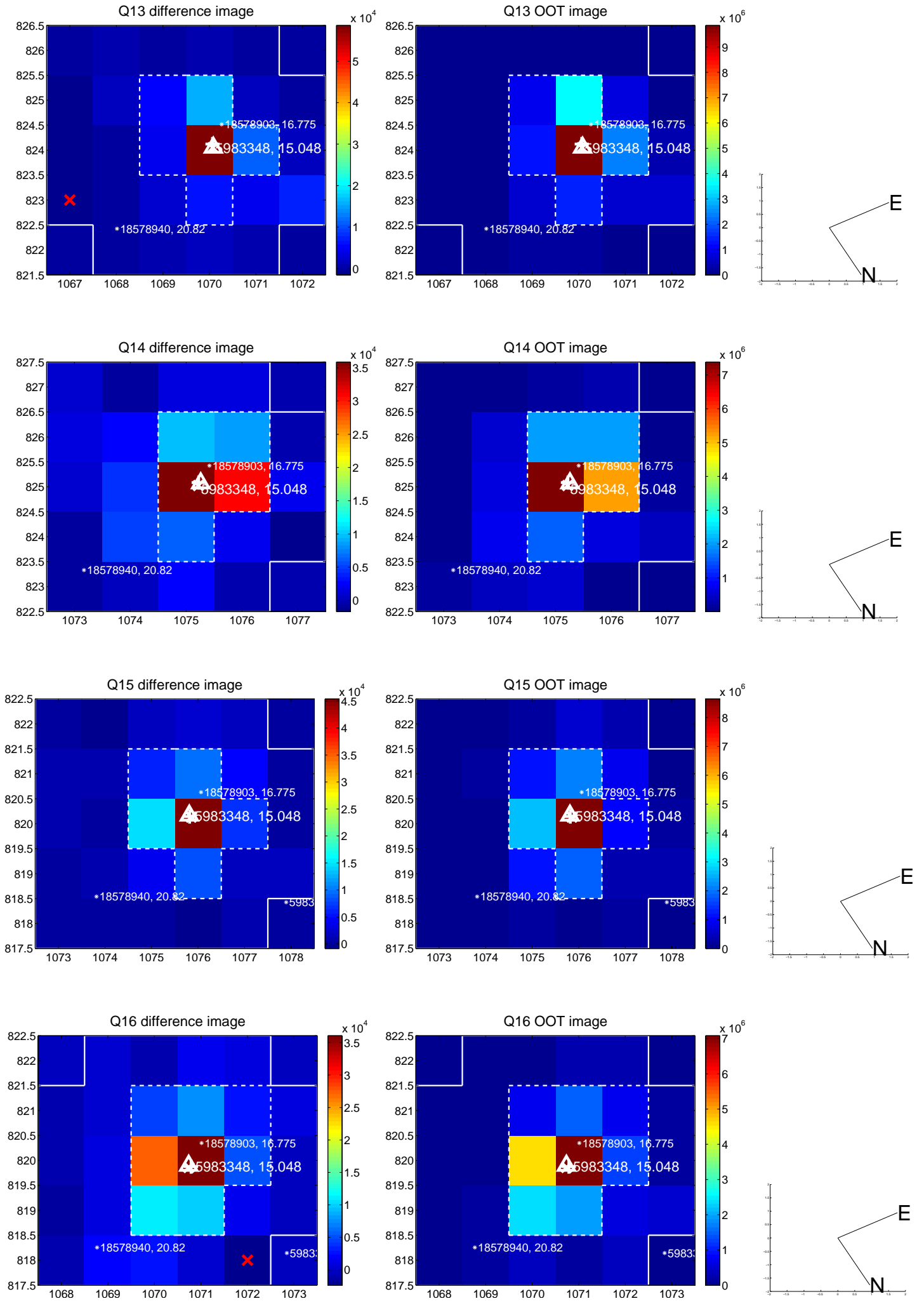
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



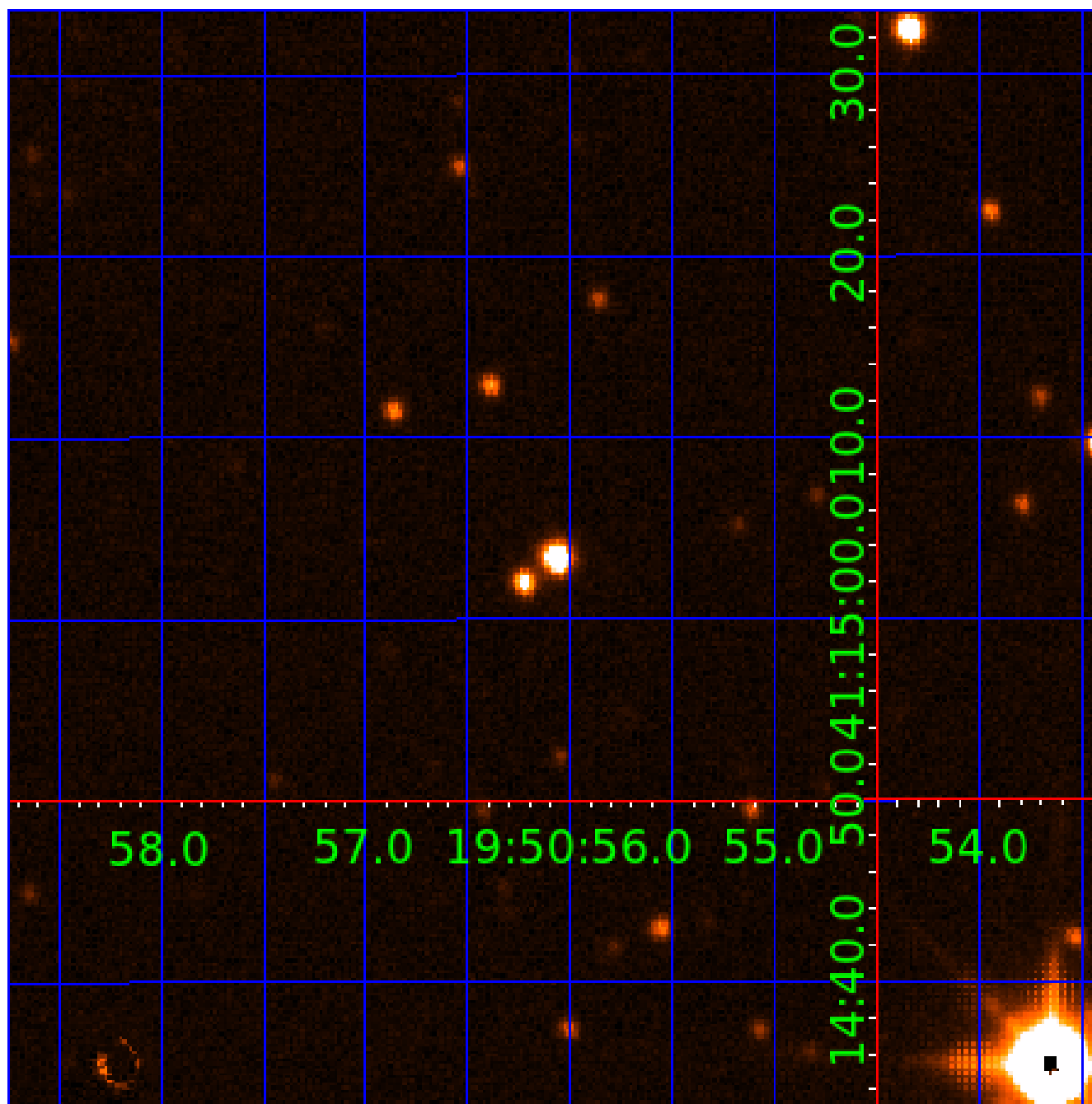
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





# UKIRT Image

Declination





# KIC 005983348

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005983348-01	OBS	6644.01	25.150785	150.345631	37530.1	7.679	1550.2	1445.2	1.10	6015	32.81	52.35
005983348-02	OBS	No	25.150791	137.889122	5534.3	5.218	234.7	229.3	1.10	6015	9.49	52.35
005983348-03	OBS	No	0.642359	132.029275	76.2	1.222	8.6	11.3	1.10	6015	1.14	6960.79

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005983348-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005983348-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005983348-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—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.

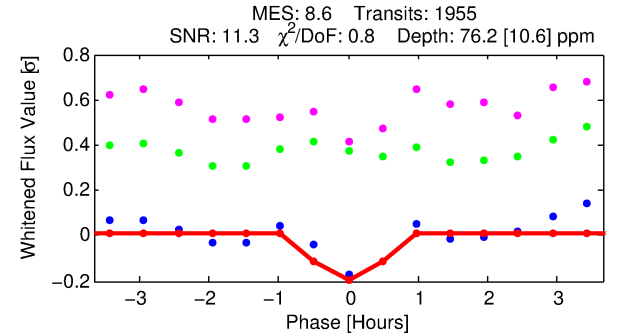
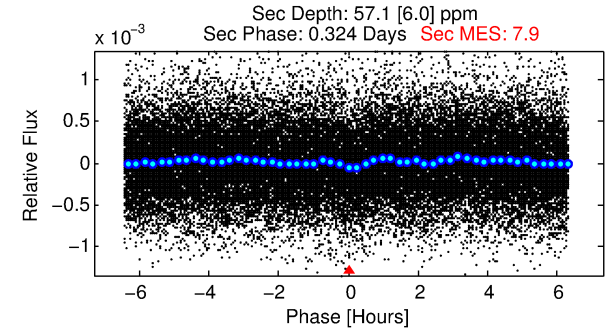
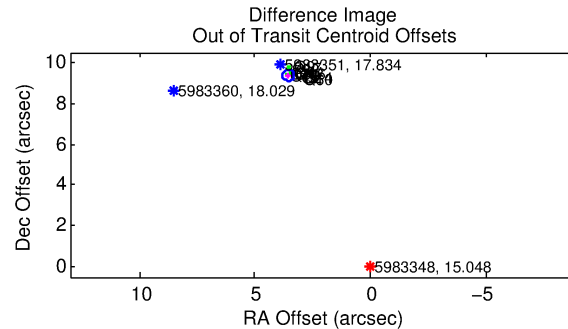
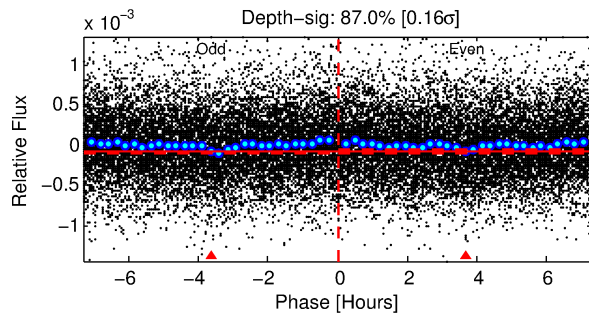
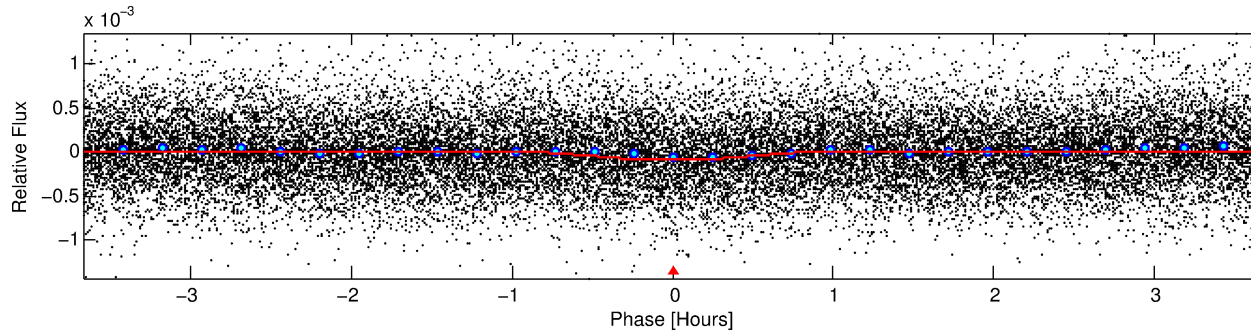
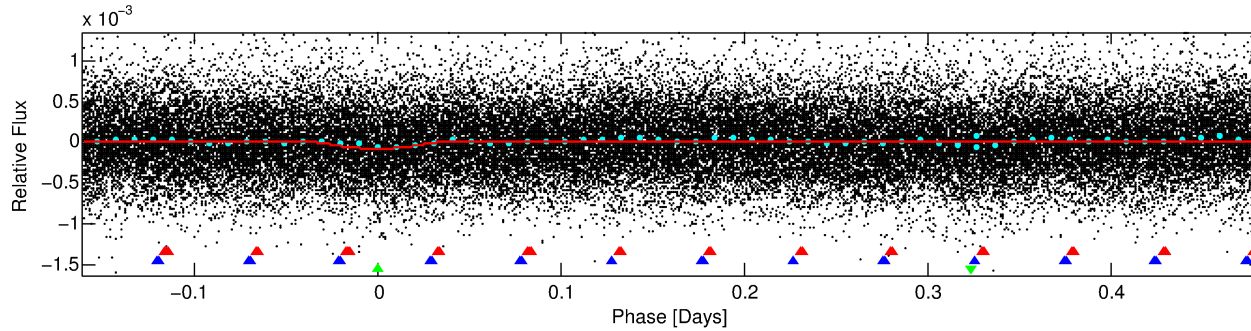
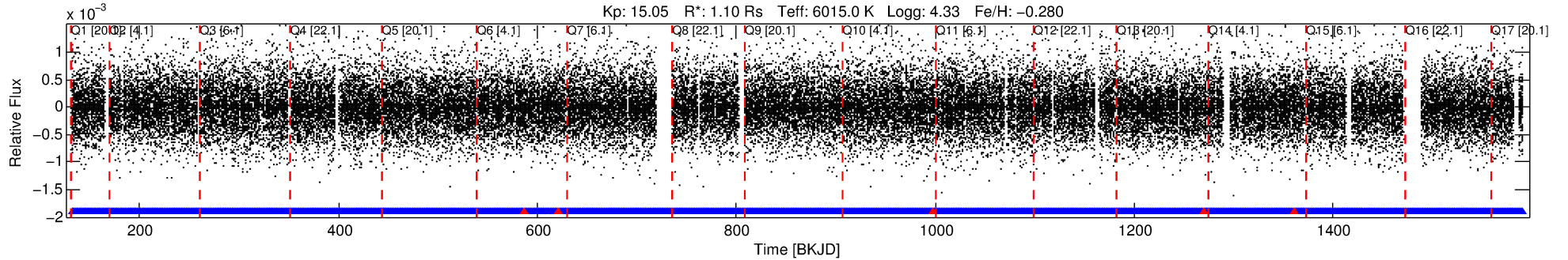
## Ephemeris Match Information For 005983348-03

No Significant Match Found

# DV One-Page Summary

KIC: 5983348 Candidate: 3 of 3 Period: 0.642 d  
KOI: K06644 Corr: No Ephemeris Match

Kp: 15.05 R\*: 1.10 Rs Teff: 6015.0 K Logg: 4.33 Fe/H: -0.280



## DV Fit Results:

Period = 0.64236 [0.00001] d  
Epoch = 132.0293 [0.0017] BKJD  
Rp/R\* = 0.0095 [0.0056]  
a/R\* = 2.02 [4.75]  
b = 0.91 [0.63]  
Seff = 6960.79 [2650.65]  
Teff = 2329 [222] K  
Rp = 1.14 [0.75] Re  
a = 0.0143 [0.0035] AU  
Ag = 4.92 [6.08] [0.65σ]  
Teff = 5363 [1598] K [1.88σ]

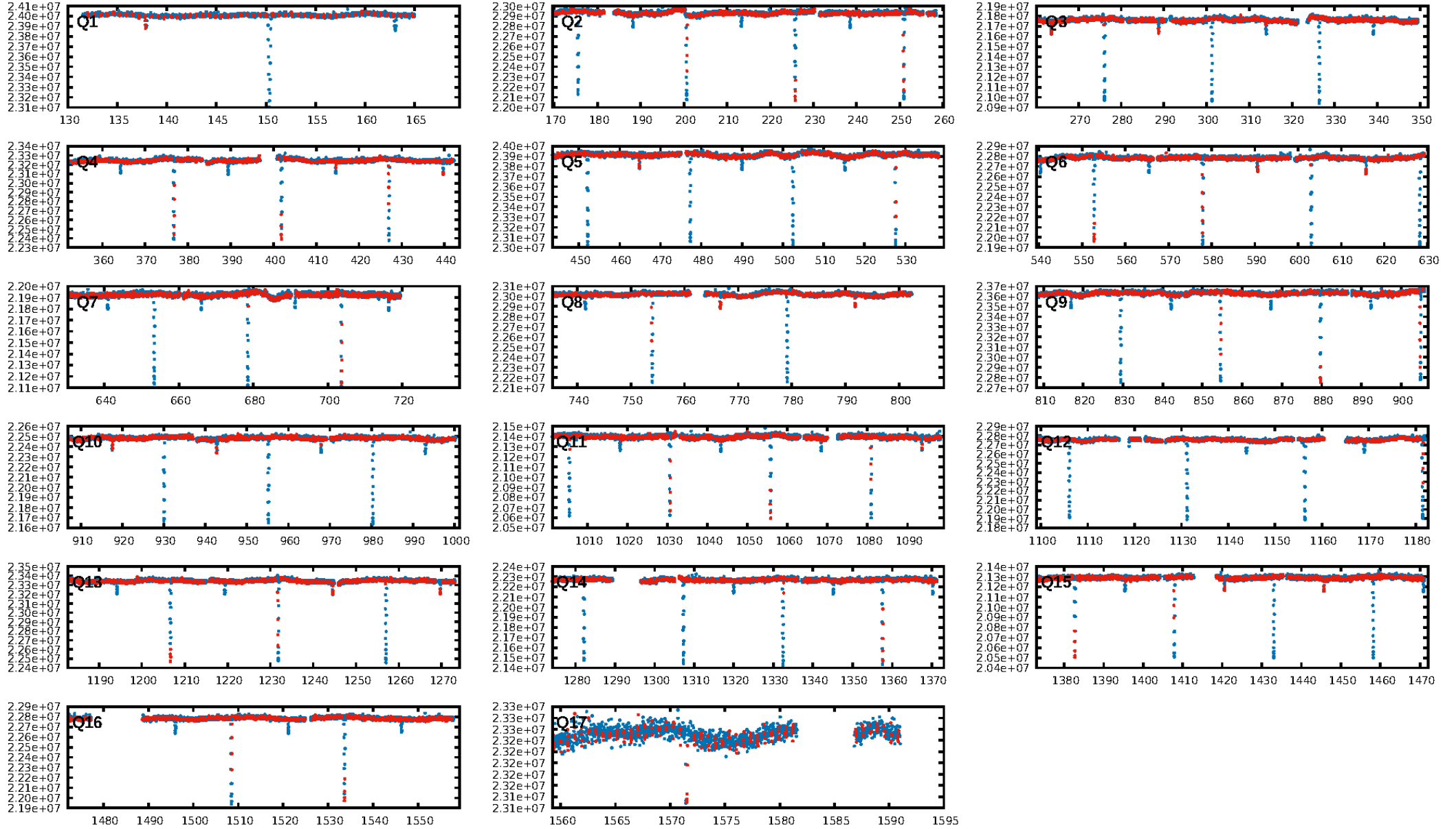
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [75.65σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.17e-19  
RollingBand-fgt: 1.00 [1861/1866]  
GhostDiagnostic-chr: -0.2613  
Centroid-sig: 0.0%  
Centroid-so: 72.973 arcsec [35.97σ]  
OotOffset-rm: 10.043 arcsec [111.99σ]  
KicOffset-rm: 9.963 arcsec [106.35σ]  
OotOffset-st: 4/4/4/2 [14]  
KicOffset-st: 4/4/4/2 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [17/17]

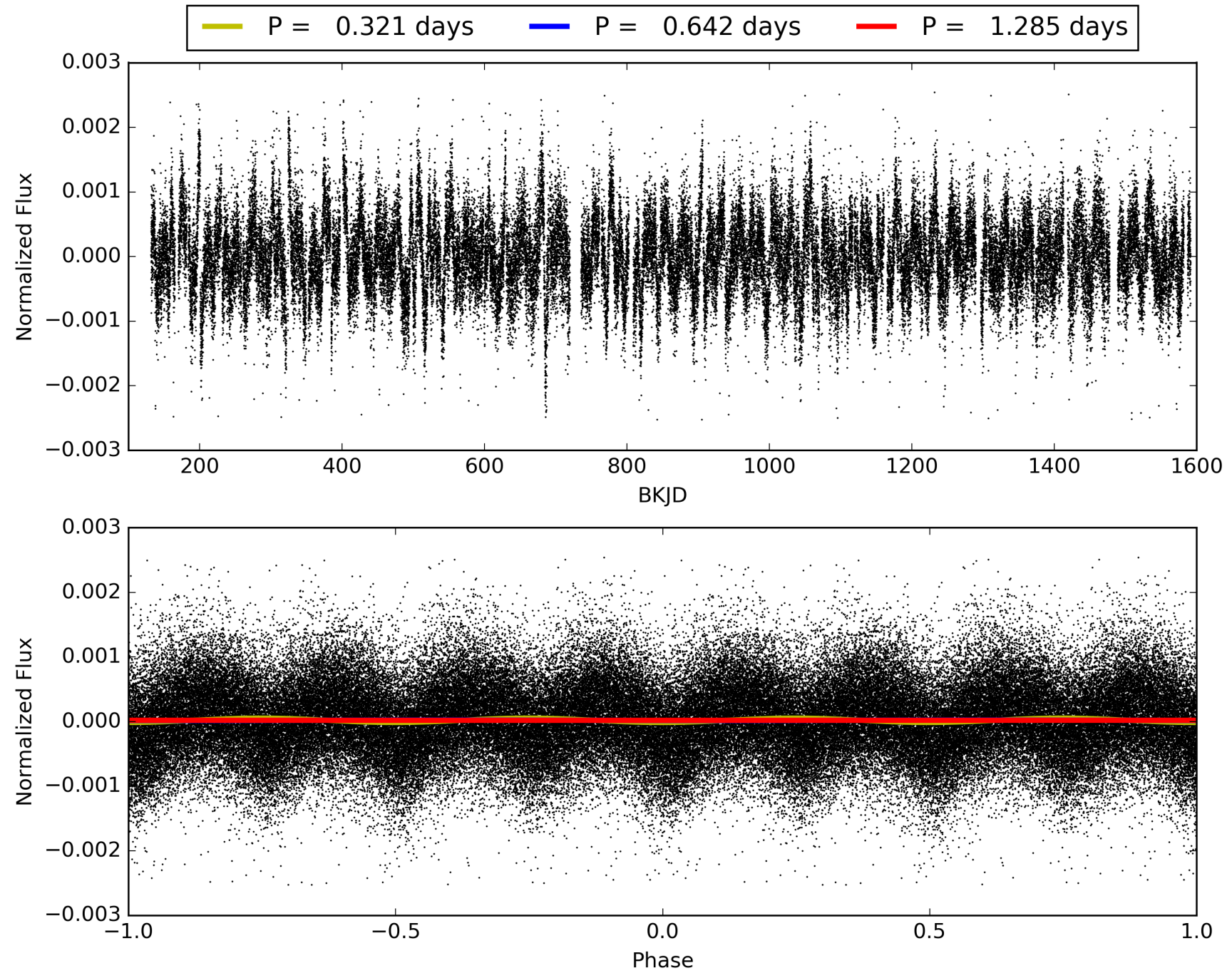
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:37:15 Z

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

# TCE 005983348-03, PDC Light Curves

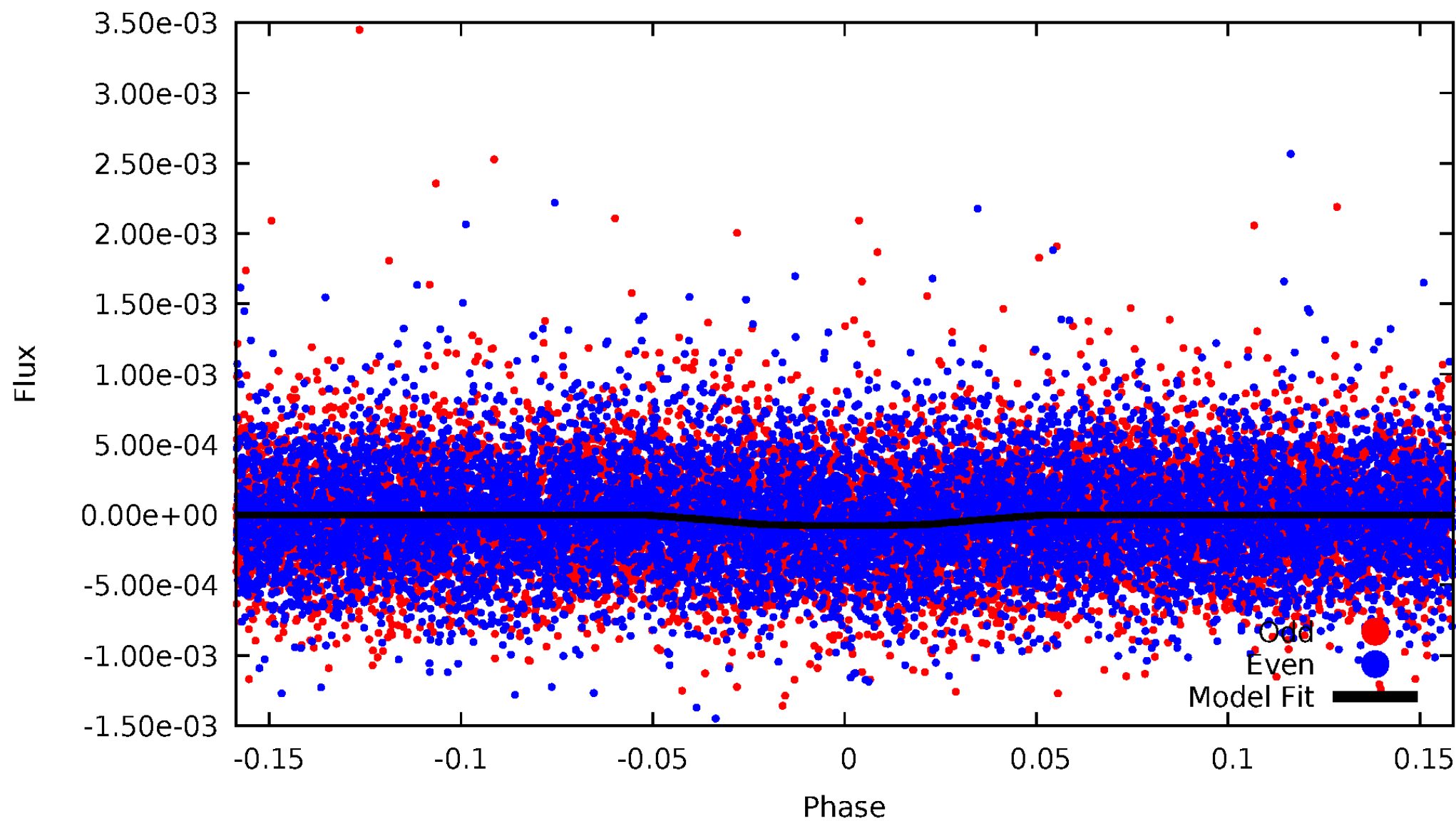


TCE 005983348-03



# DV Odd/Even

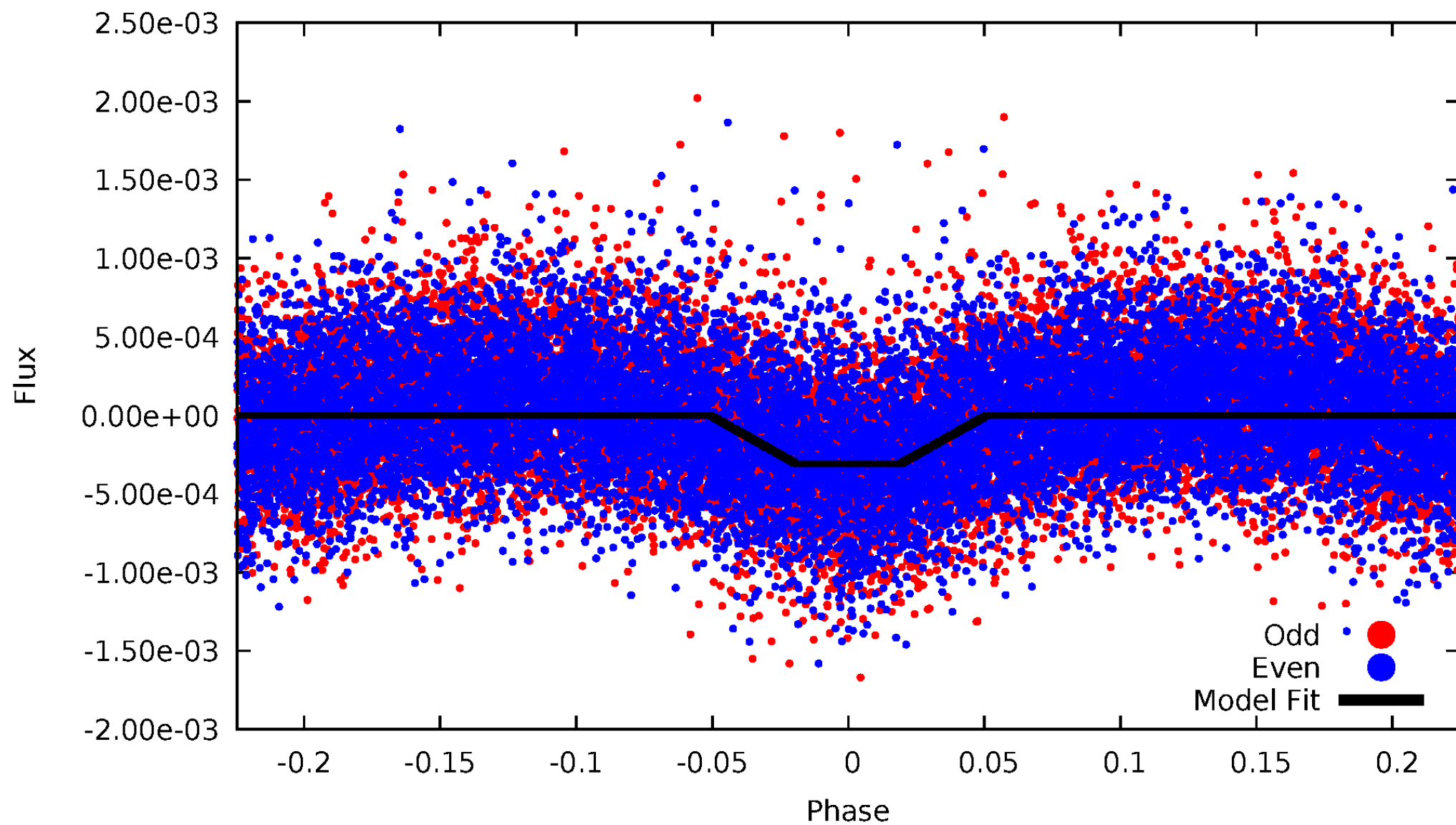
TCE 005983348-03





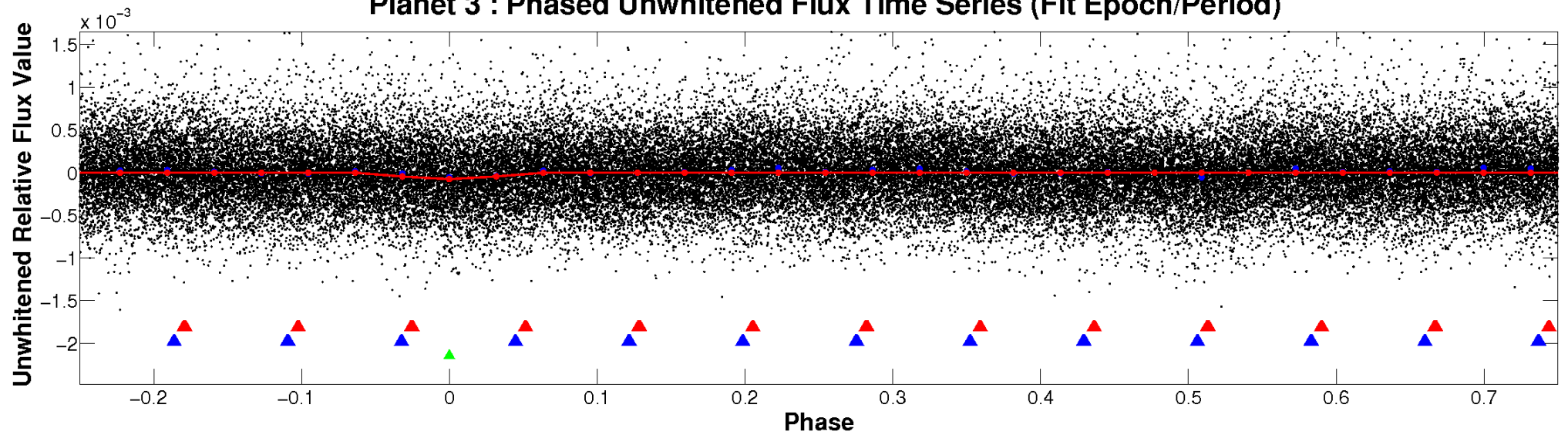
# ALT Odd/Even

TCE 005983348-03

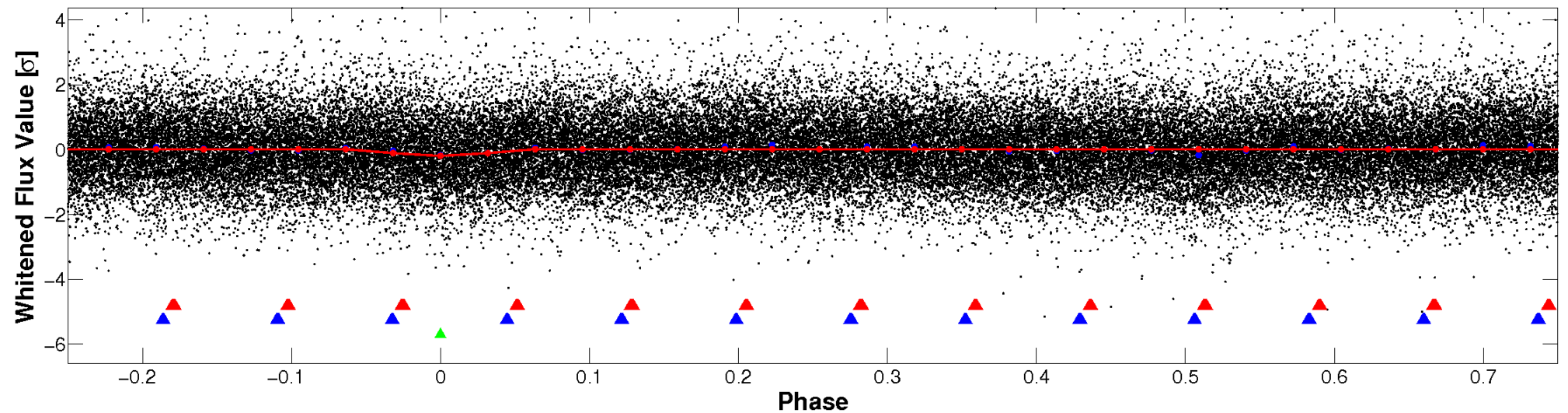


# Non-Whitened Vs. Whitened Light Curve

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

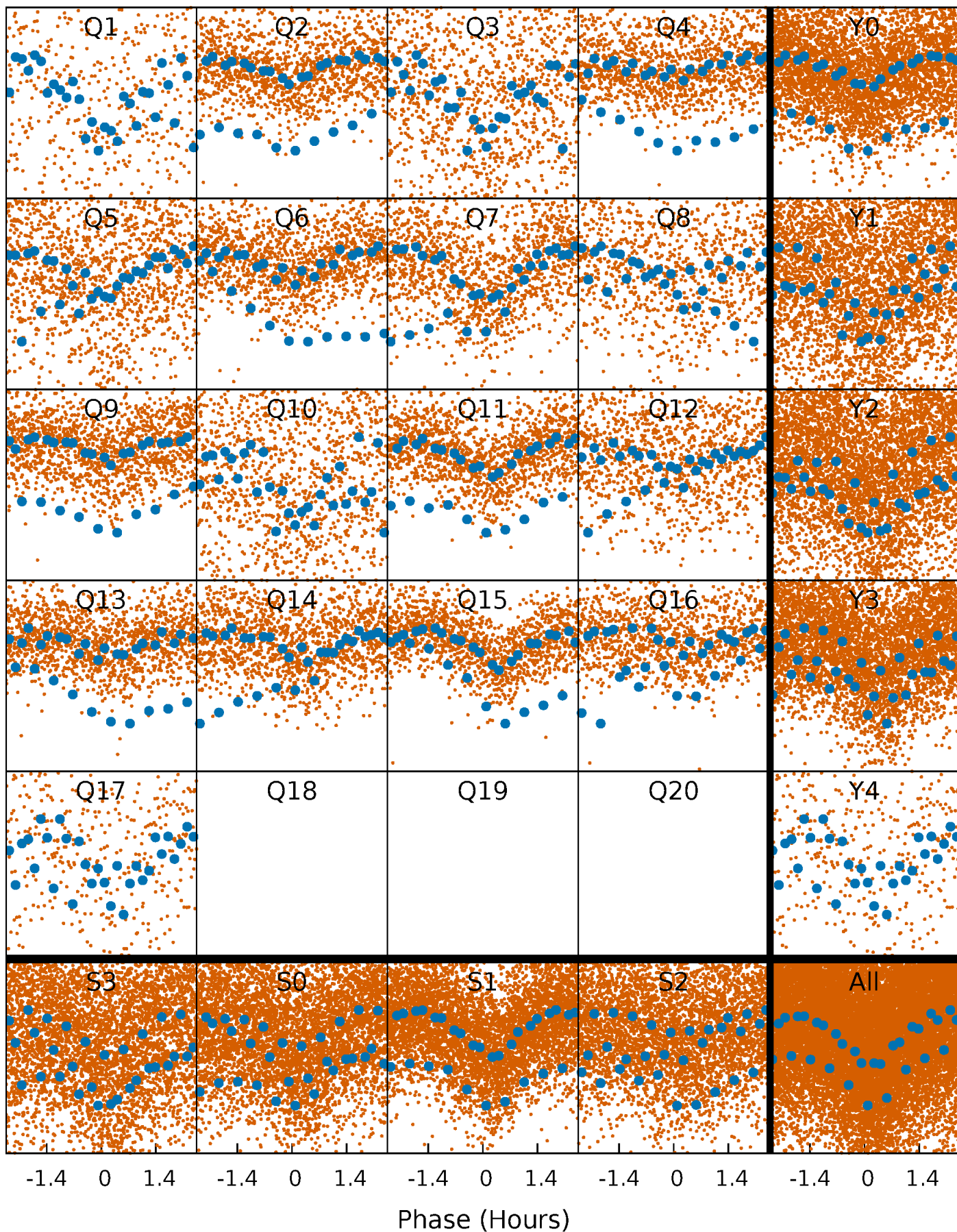


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

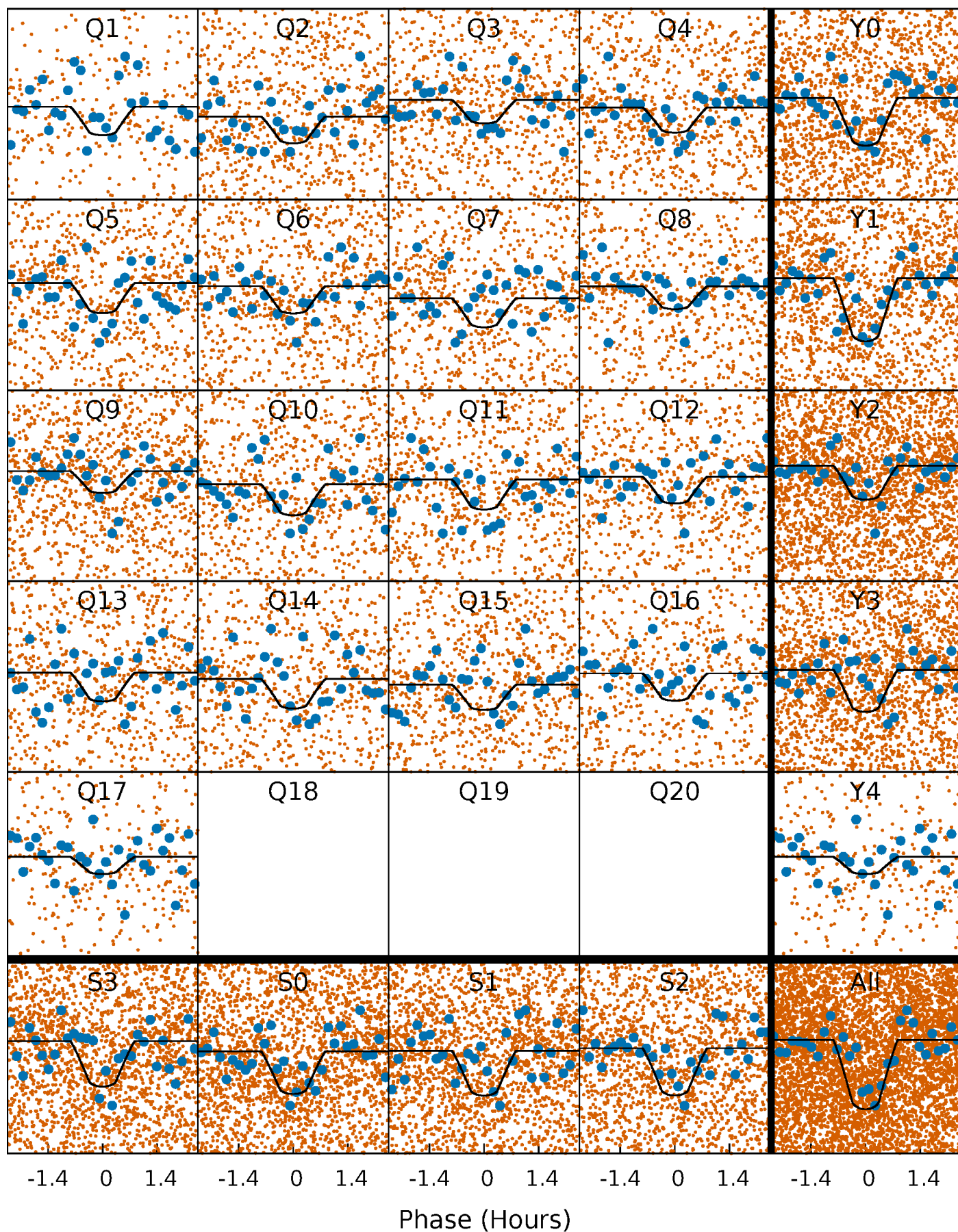
TCE 005983348-03   P= 0.642359 Days    $T_0=132.029276$  (BKJD)





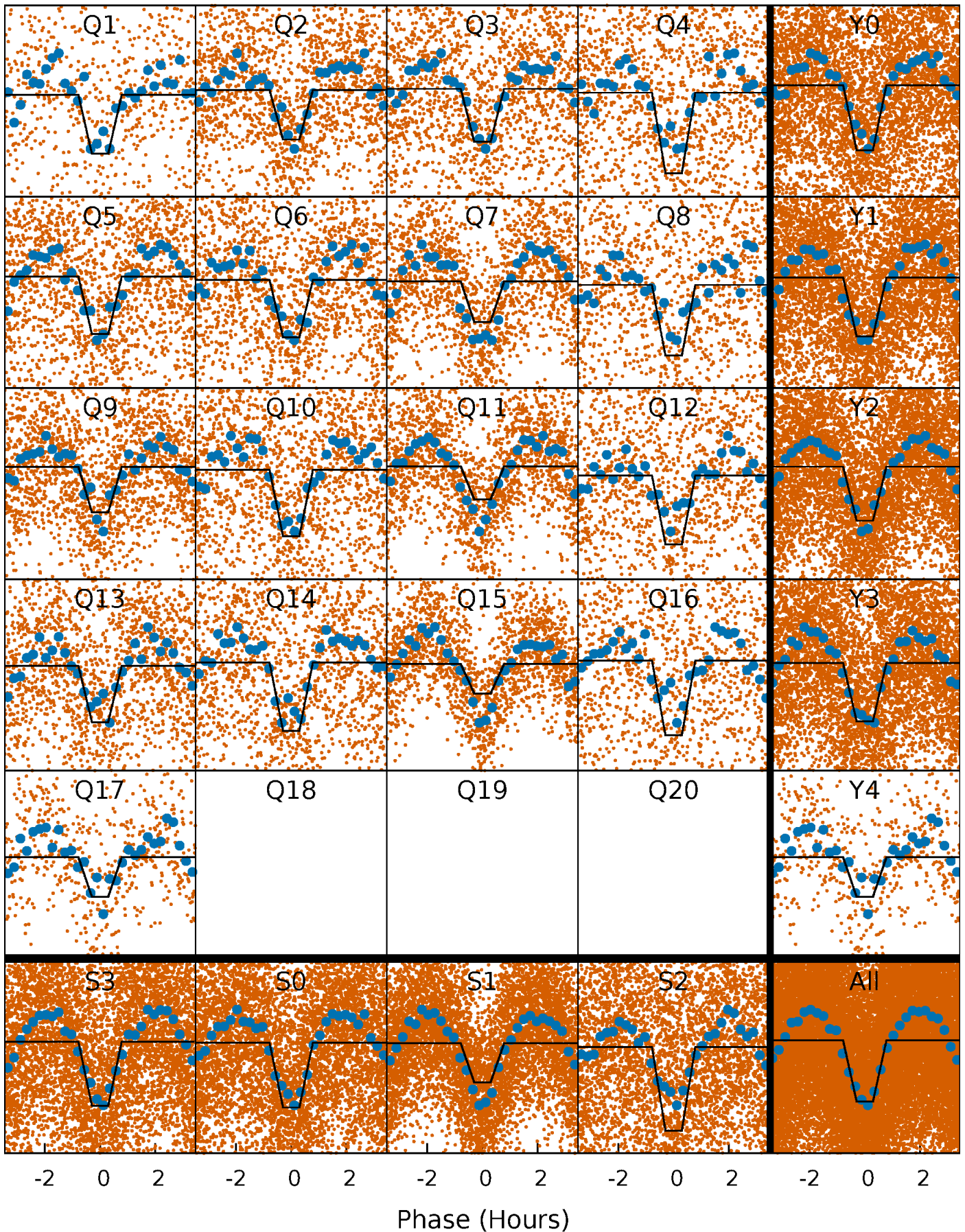
# DV Quarter-Phased Transit Curves

TCE 005983348-03   P= 0.642359 Days    $T_0=132.029276$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005983348-03 P= 0.642370 Days  $T_0=132.023218$  (BKJD)

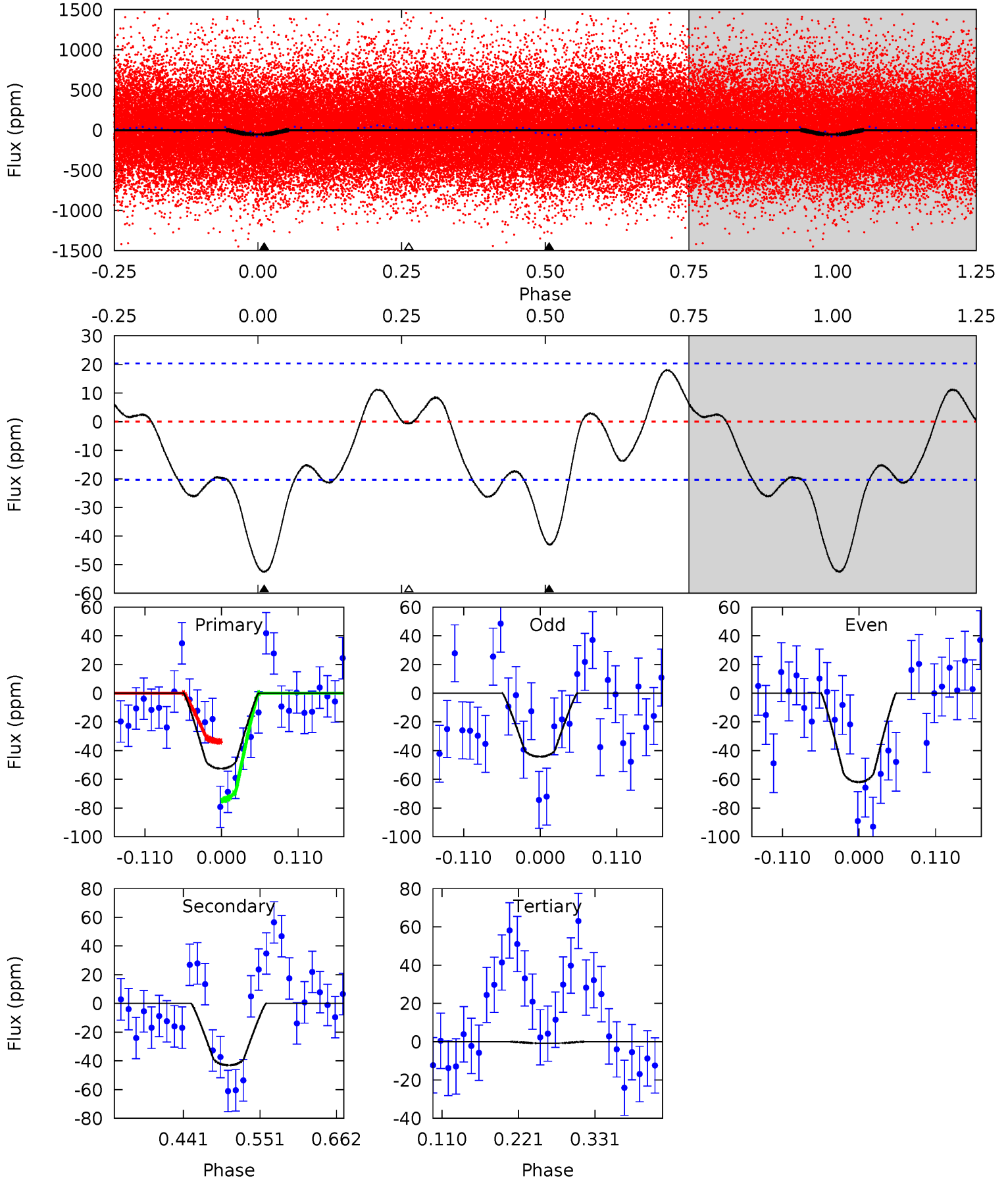




# DV Model-Shift Uniqueness Test

005983348-03, P = 0.642359 Days, E = 131.386917 Days

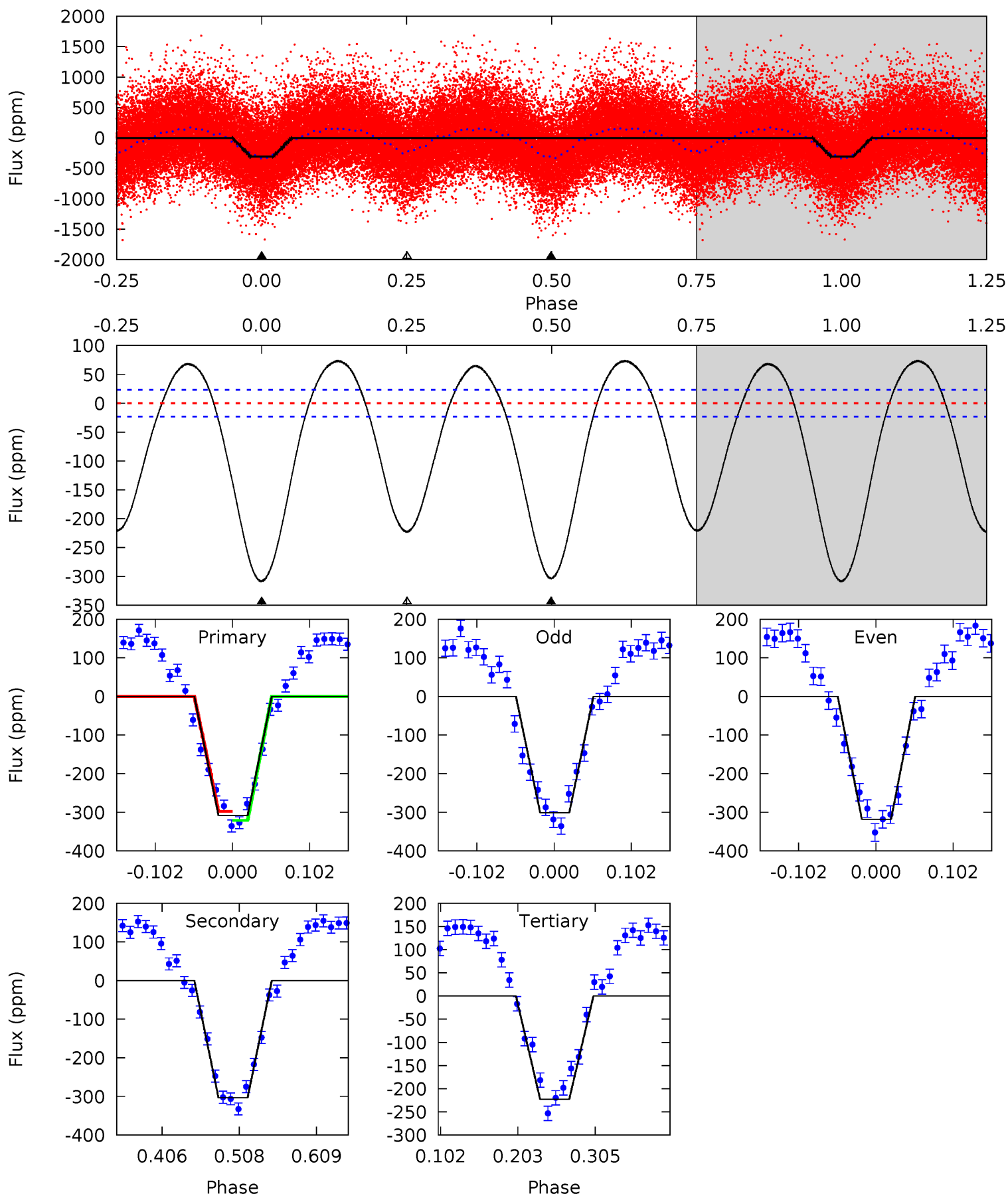
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	9.62	0.17	0	4.54	1.60	2.72	11.6	11.7	9.45	9.62	1.98	0.88	0.26	4.57



# Alt Model-Shift Uniqueness Test

005983348-03, P = 0.642370 Days, E = 131.380848 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
60.8	59.8	43.9	0	4.56	1.64	20.5	16.9	60.8	15.9	59.8	1.71	0.99	0.19	2.30



### Stellar Parameters For KIC 005983348

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6015^{+190}_{-211}$	$4.329^{+0.175}_{-0.193}$	$-0.280^{+0.300}_{-0.300}$	$1.101^{+0.320}_{-0.213}$	$0.942^{+0.144}_{-0.096}$	$0.995^{+0.775}_{-0.506}$
	+3%/-4%	+4%/-4%	+107%/-107%	+29%/-19%	+15%/-10%	+78%/-51%
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 005983348-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-43 \pm 4$	$1.19^{+0.70}_{-0.63}$	$3260^{+267}_{-206}$	$4959^{+2288}_{-952}$	$3.500^{+13.062}_{-2.168}$
Alt.	$-303 \pm 5$	$2.12^{+0.83}_{-0.71}$	$3261^{+255}_{-227}$	$5933^{+1316}_{-813}$	$7.628^{+9.570}_{-3.543}$

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

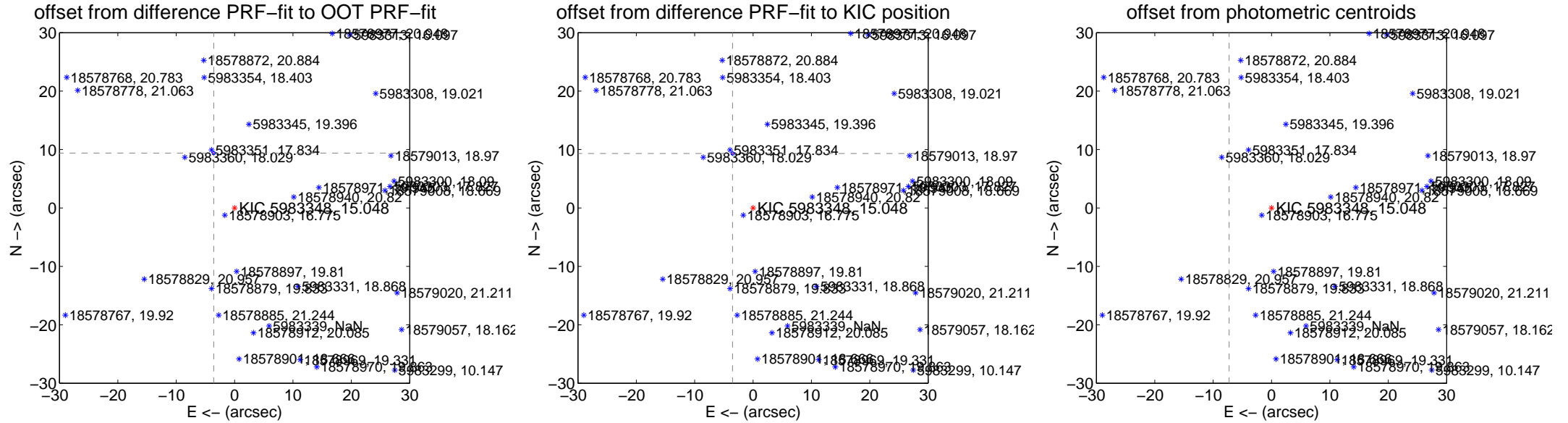
## DV Centroid Data

Supplemental centroid analysis for 005983348-03. Kepler magnitude: 15.05. Transit SNR 11.30

There are 14 quarters with good PRF difference image offsets

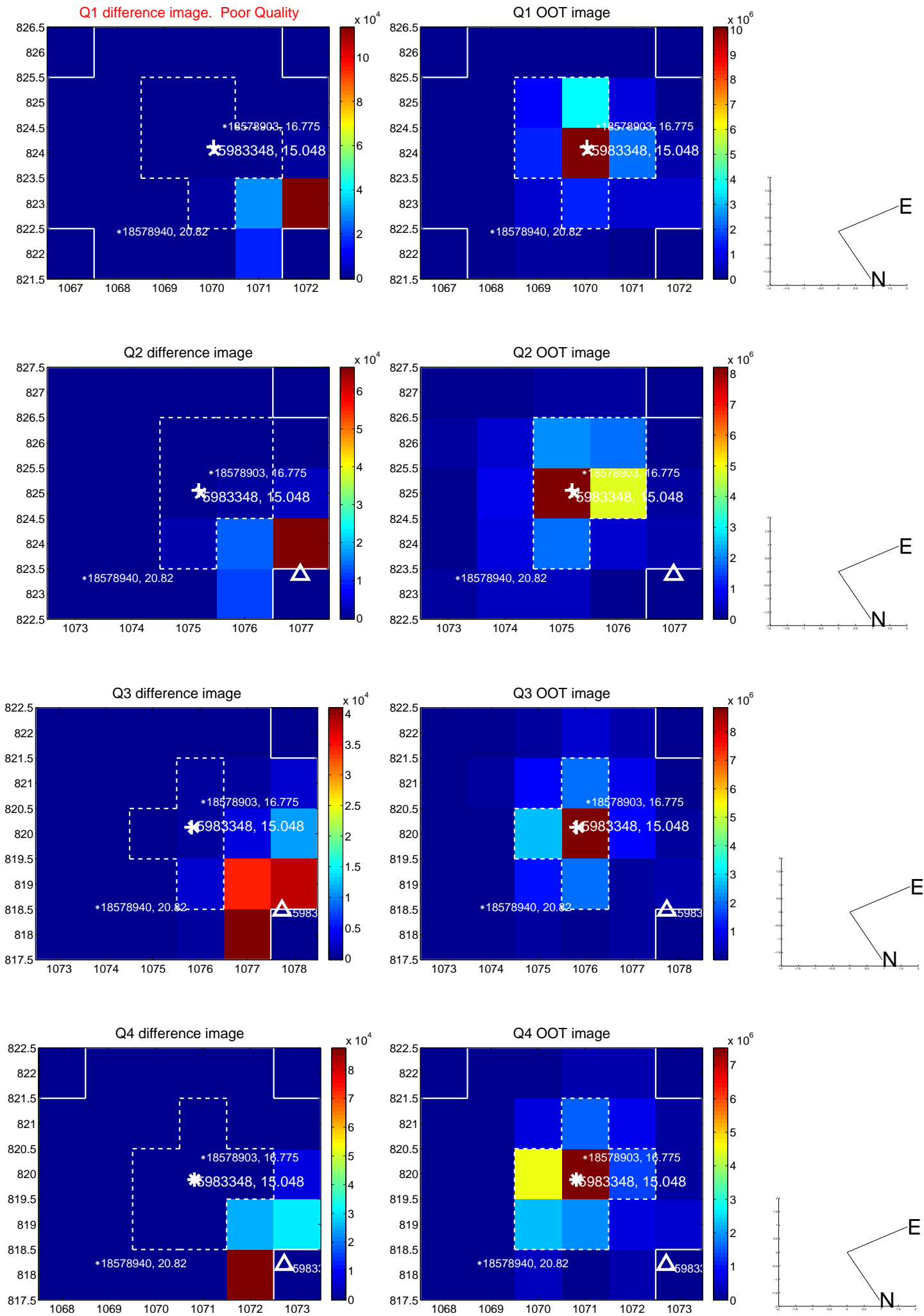
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>10.043 <math>\pm</math> 0.090</b>	<b>111.99</b>	3.574 $\pm$ 0.089	9.386 $\pm$ 0.082
PRF-fit source offset from KIC position	<b>9.963 <math>\pm</math> 0.094</b>	<b>106.35</b>	3.511 $\pm$ 0.079	9.324 $\pm$ 0.087
photometric centroid source offset	<b>72.97 <math>\pm</math> 2.03</b>	<b>35.97</b>	7.27 $\pm$ 1.45	72.61 $\pm$ 2.03

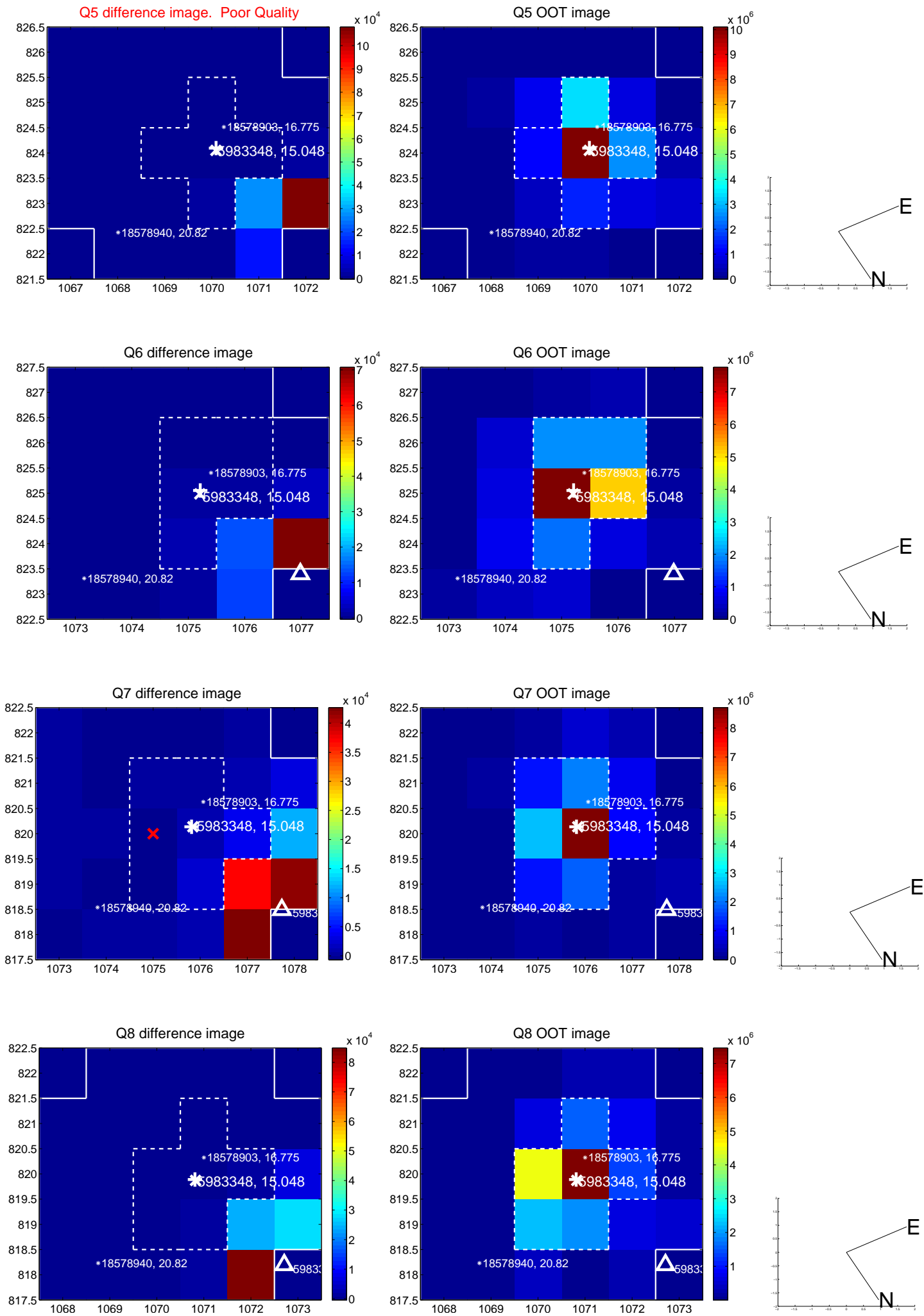


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

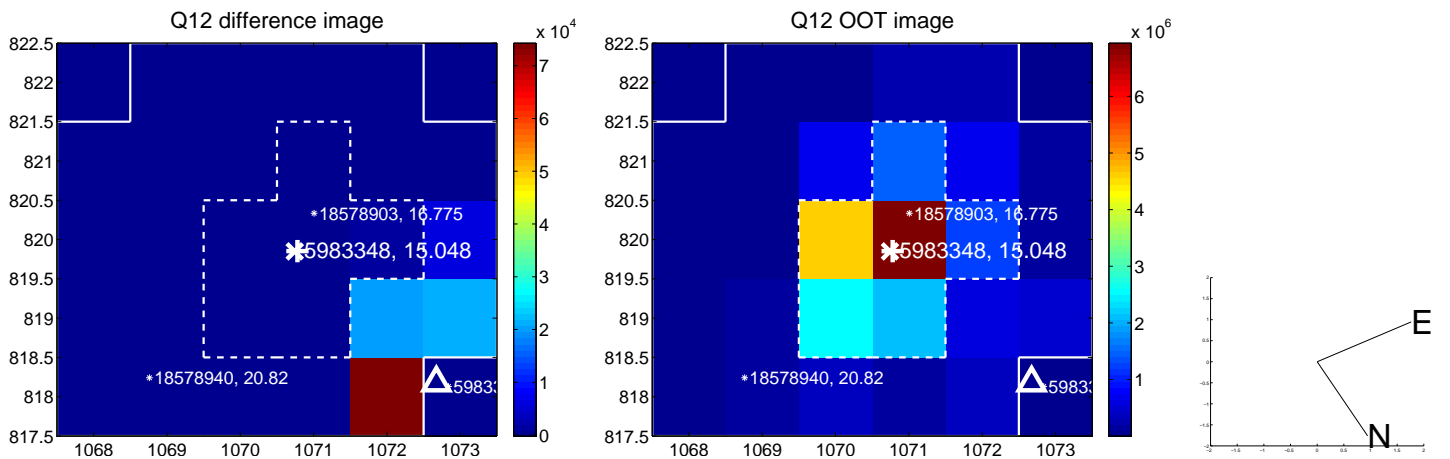
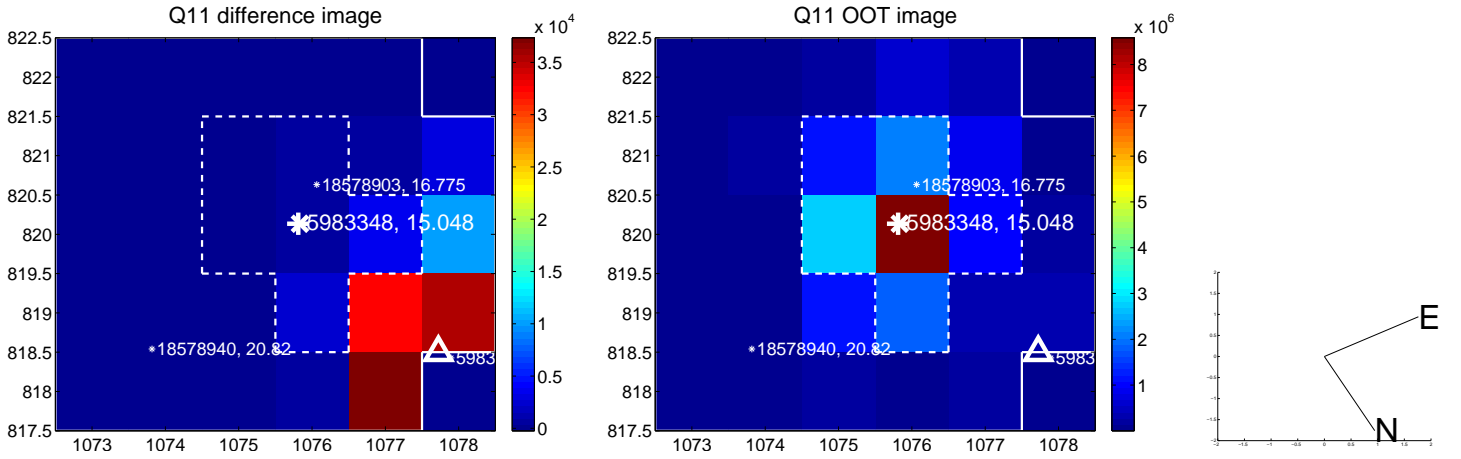
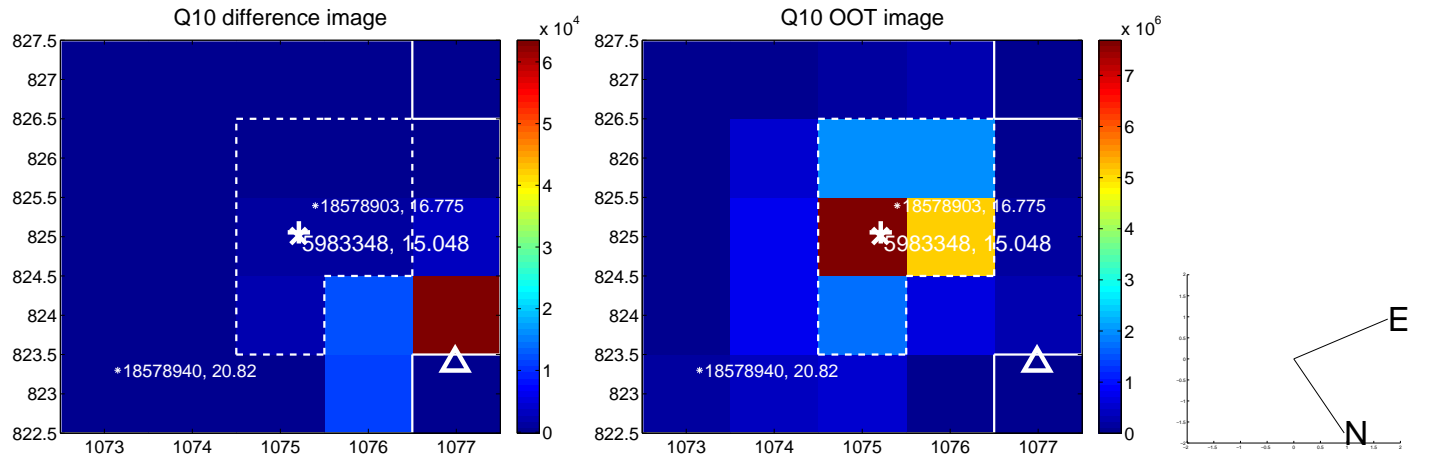
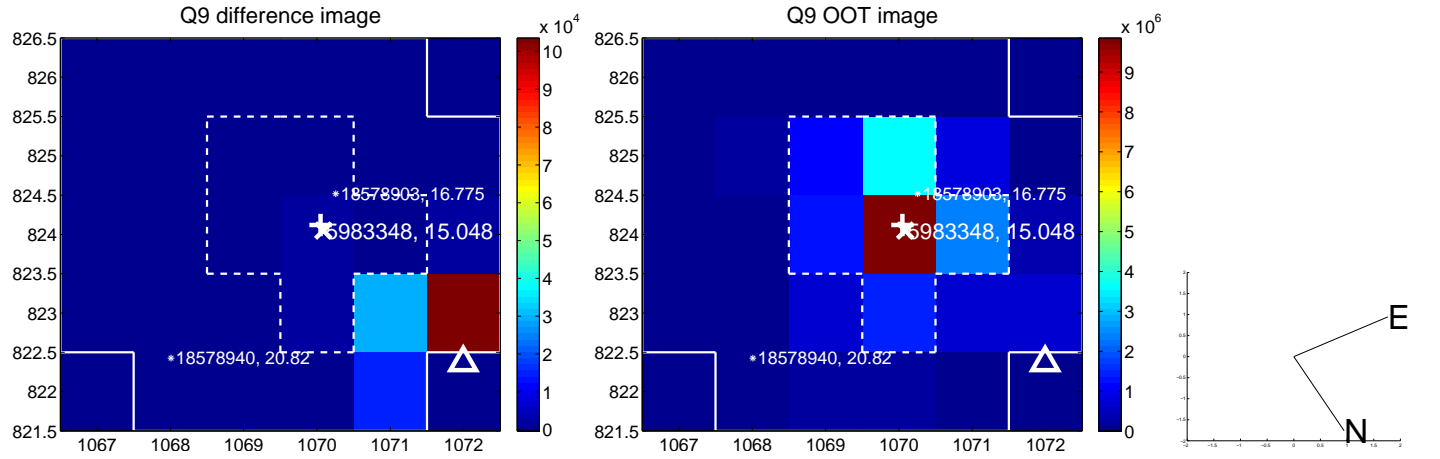


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

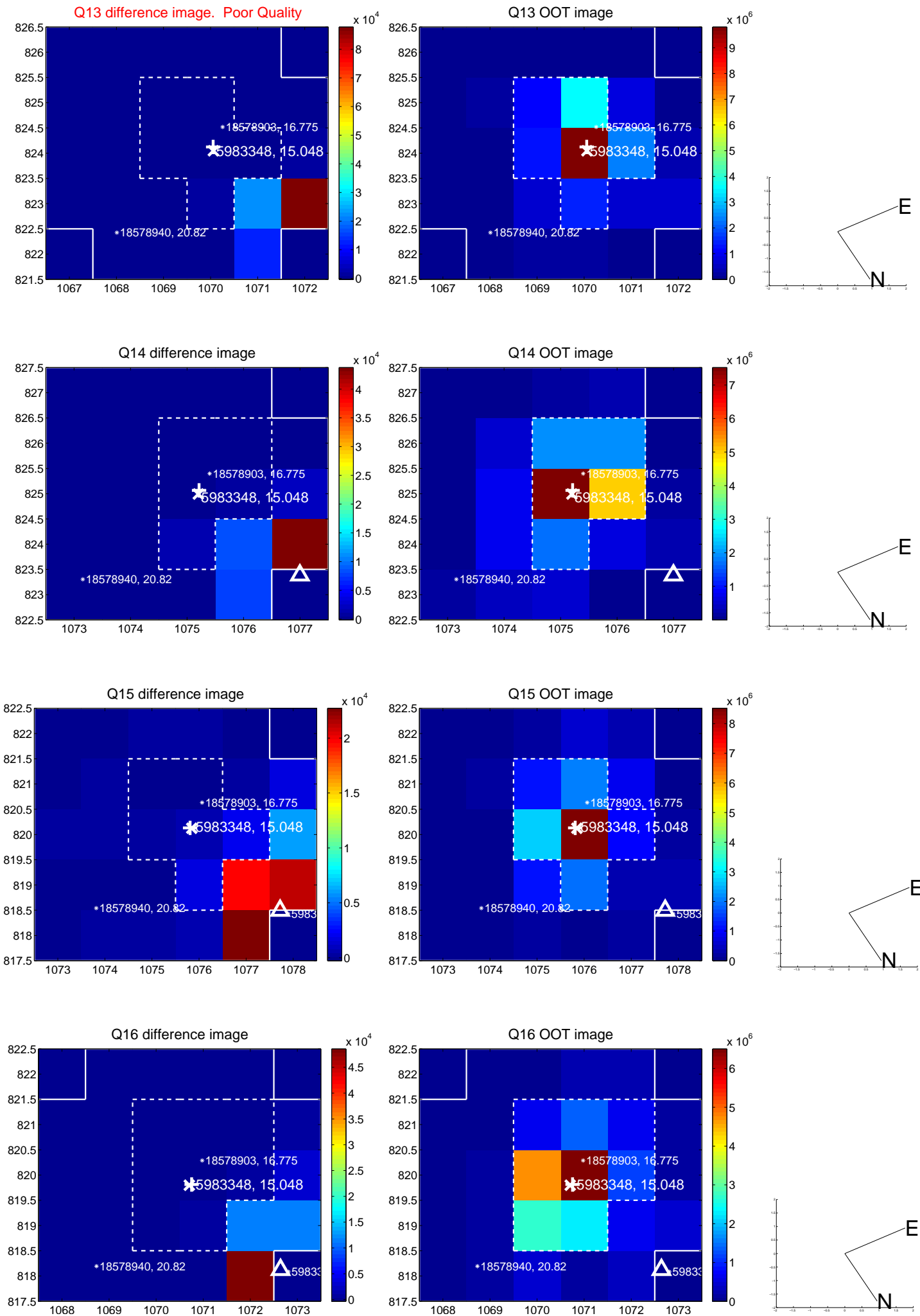




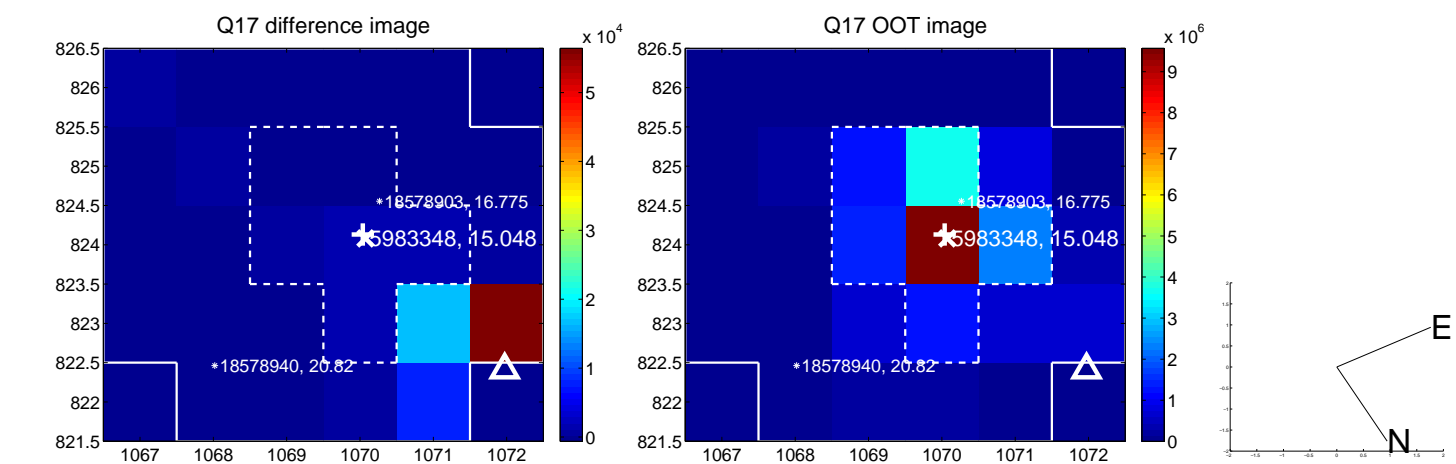
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



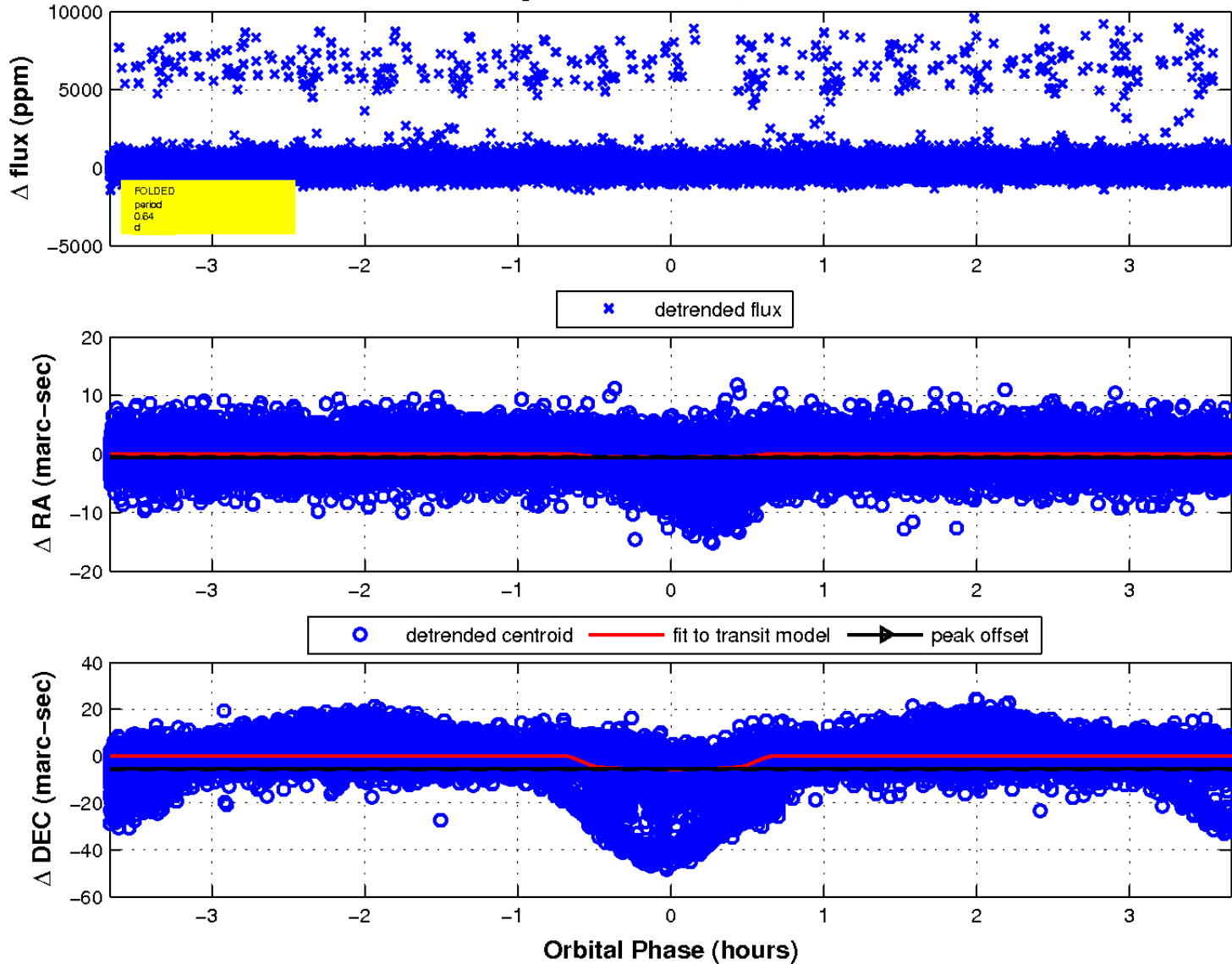
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



# UKIRT Image

Declination

