

KIC 010685175

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})
010685175-01	OBS	7362.01	3.102003	133.714819	55.1	2.814	19.2	20.1	1.80	8709	1.51	6029.44
010685175-02	OBS	No	3.102027	134.494748	34.6	1.847	9.8	11.6	1.80	8709	1.23	6029.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010685175-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
010685175-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

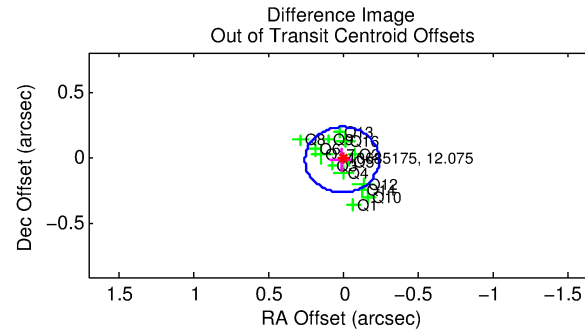
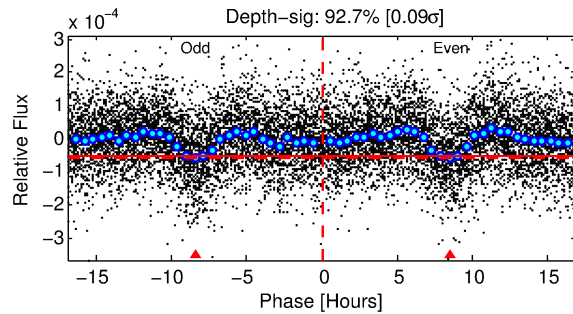
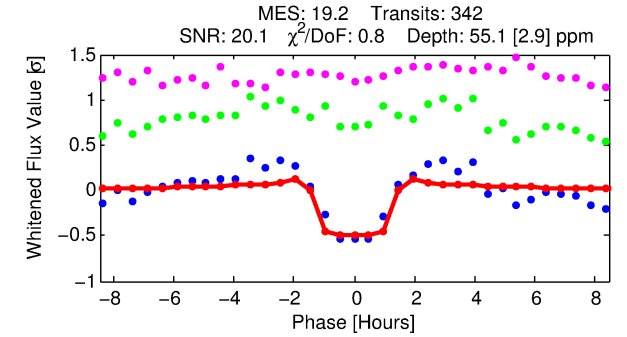
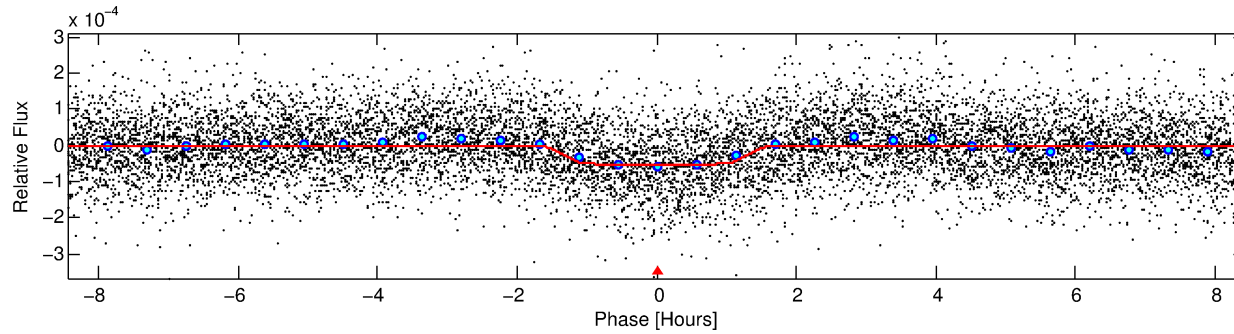
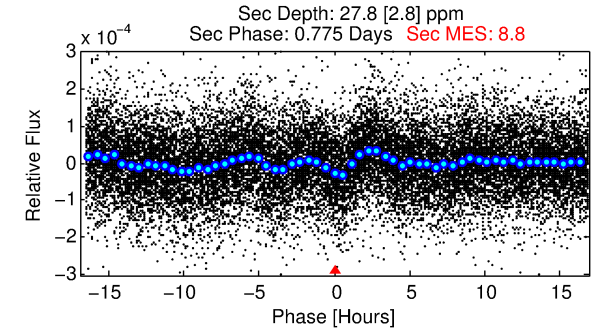
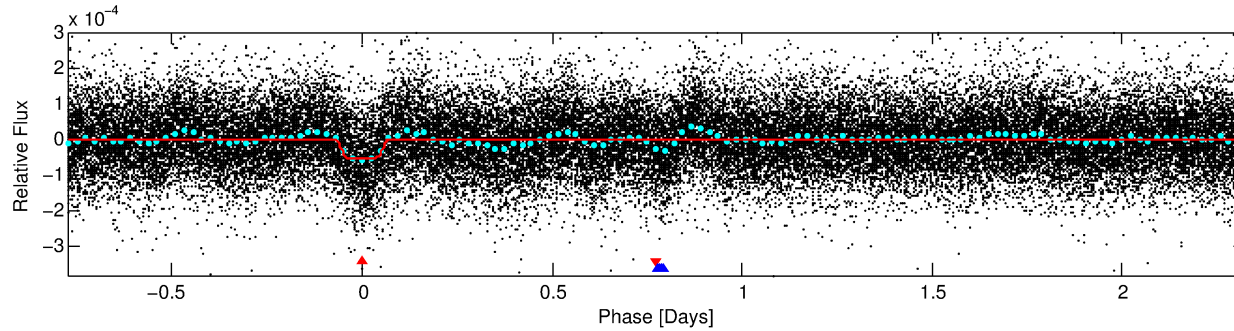
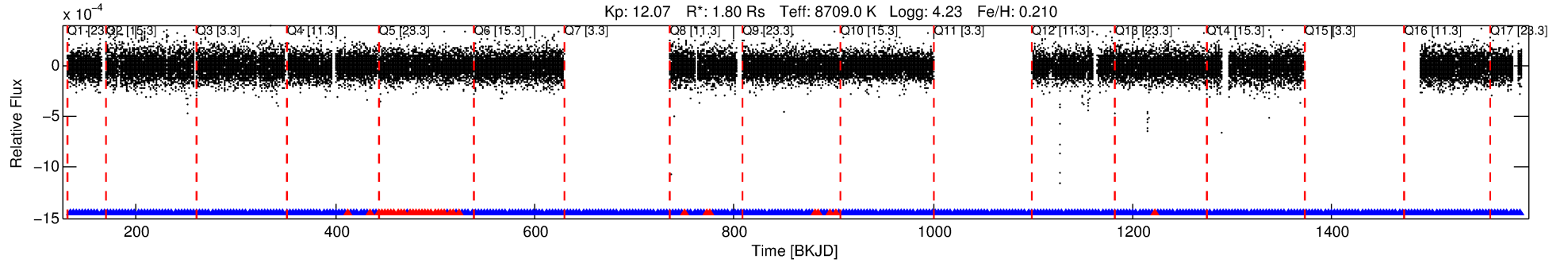
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010685175-01

No Significant Match Found

DV One-Page Summary

KIC: 10685175 Candidate: 1 of 2 Period: 3.102 d
KOI: K07362.01 Corr: 0.903



DV Fit Results:

Period = 3.10200 [0.00001] d
Epoch = 133.7148 [0.0016] BKJD
Rp/R* = 0.0077 [0.0010]
a/R* = 4.52 [3.63]
b = 0.86 [0.26]
Seff = 6029.44 [4147.00]
Teq = 2247 [386] K
Rp = 1.51 [0.73] Re
a = 0.0525 [0.0201] AU
Ag = 18.56 [11.28] [1.56σ]
Teffp = 7211 [914] K [5.00σ]

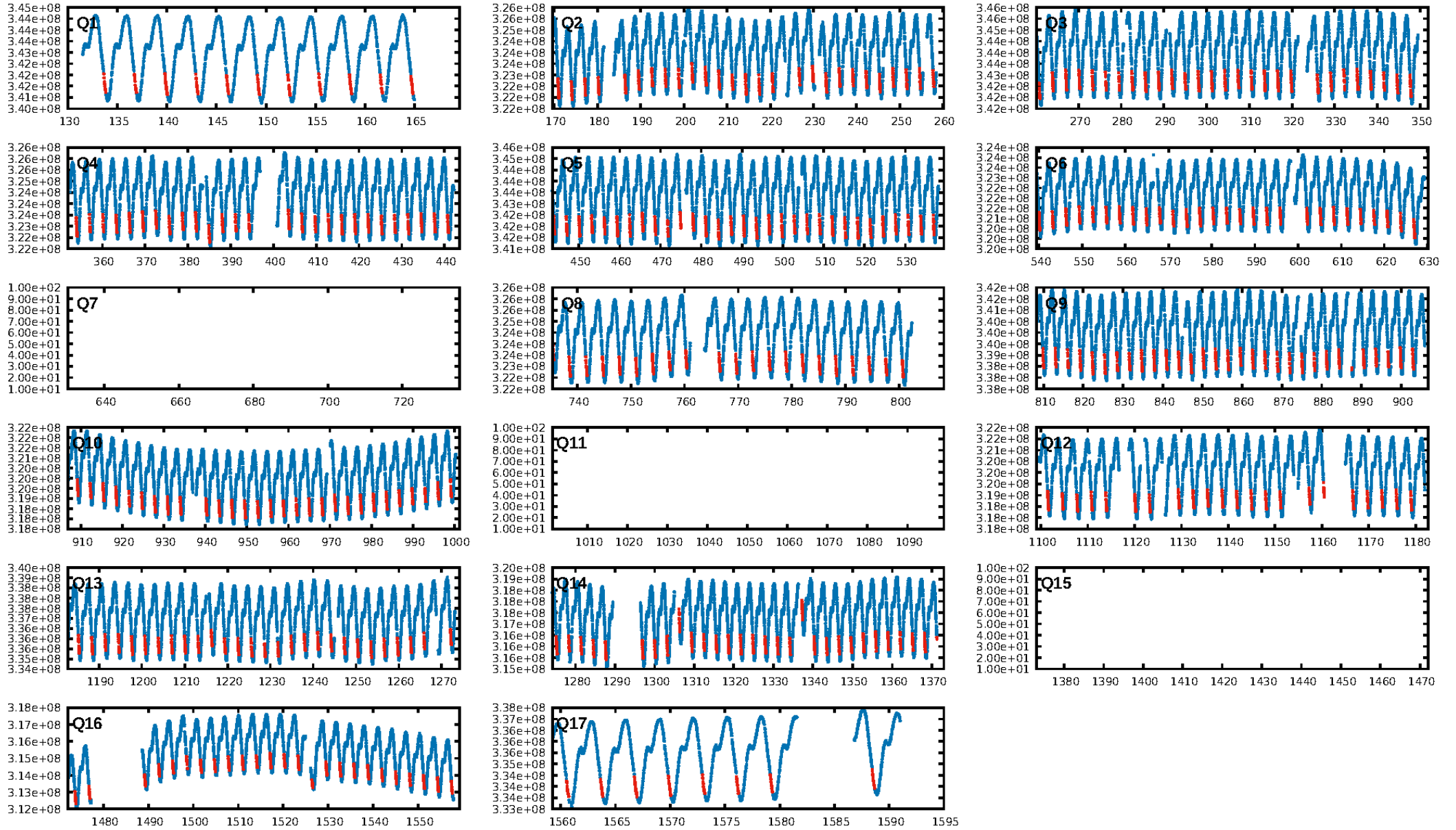
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 2.42e-72
RollingBand-fgt: 0.89 [289/323]
GhostDiagnostic-chr: 55.88
Centroid-sig: 26.0%
Centroid-so: 0.346 arcsec [0.63σ]
OotOffset-rm: 0.013 arcsec [0.16σ]
KicOffset-rm: 0.084 arcsec [1.01σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

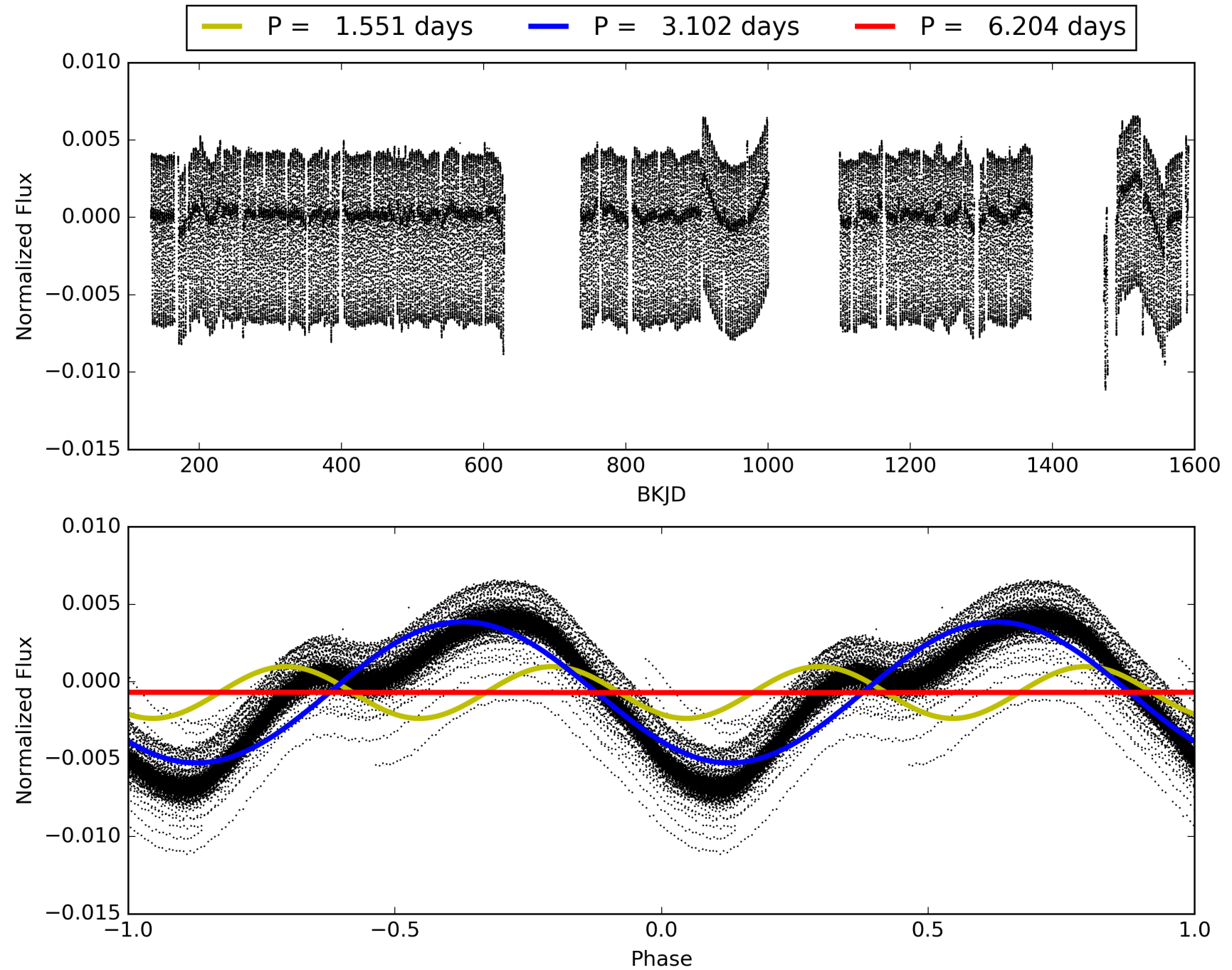
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:29:07 Z

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

TCE 010685175-01, PDC Light Curves

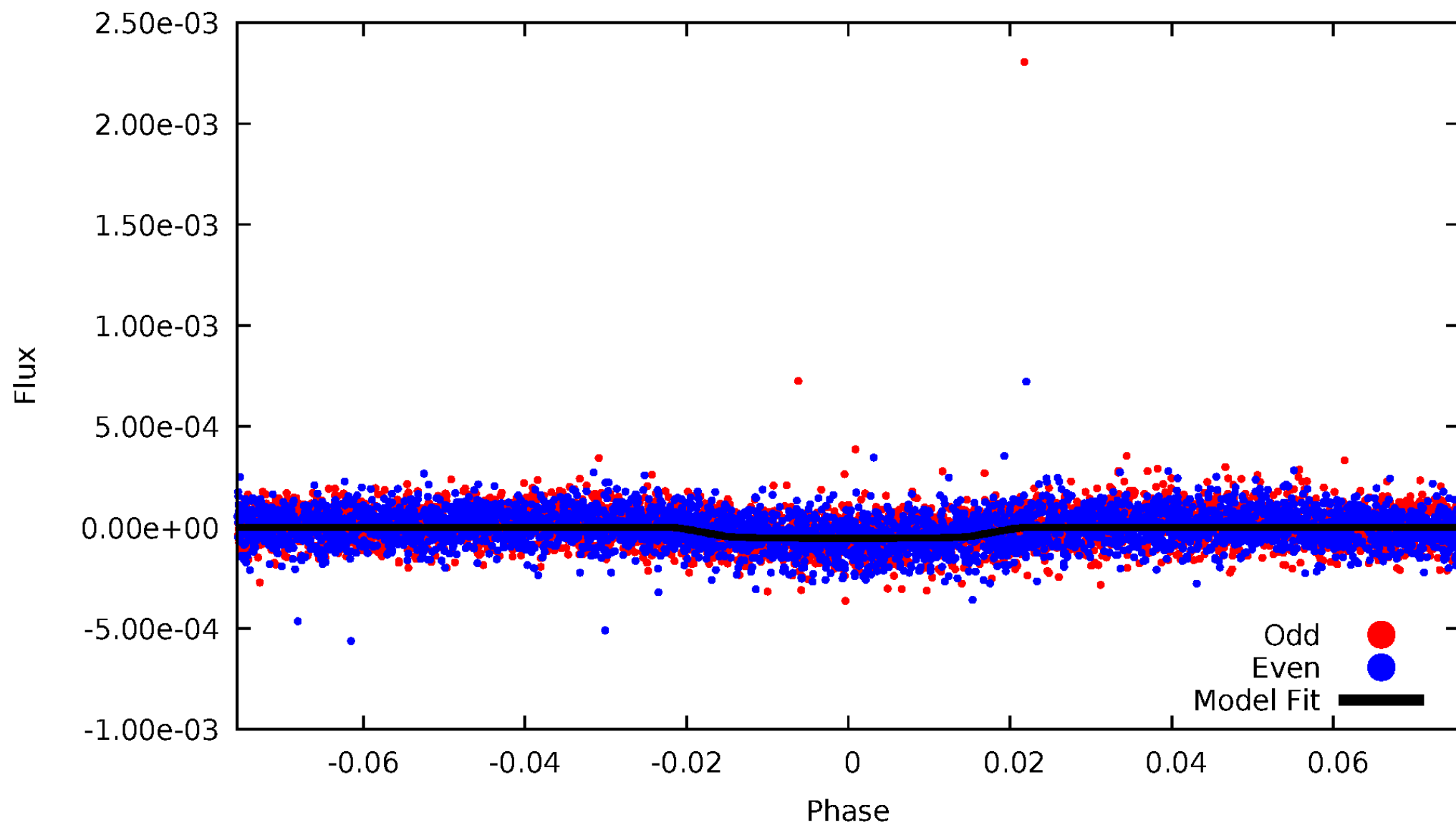


TCE 010685175-01



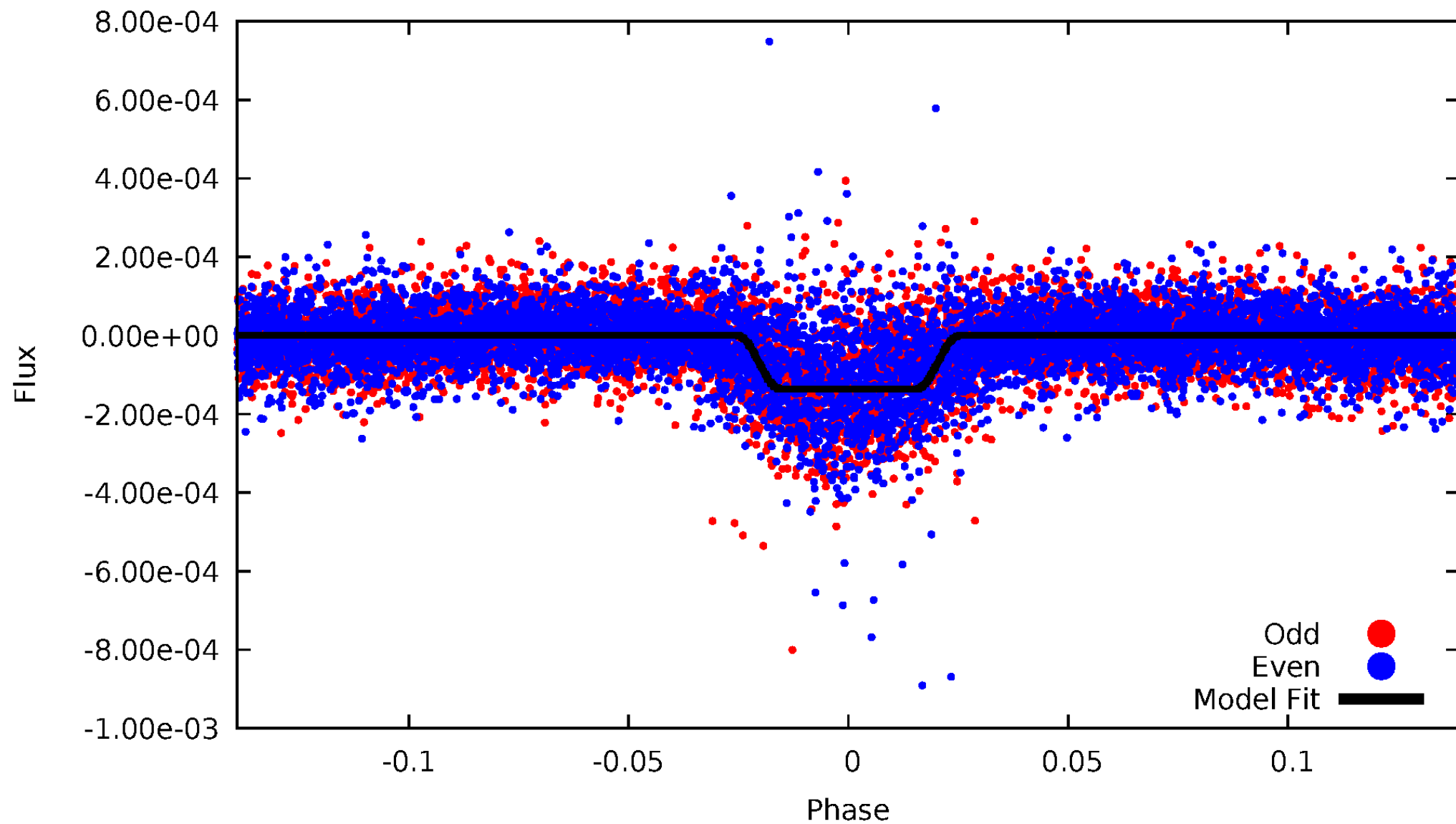
DV Odd/Even

TCE 010685175-01



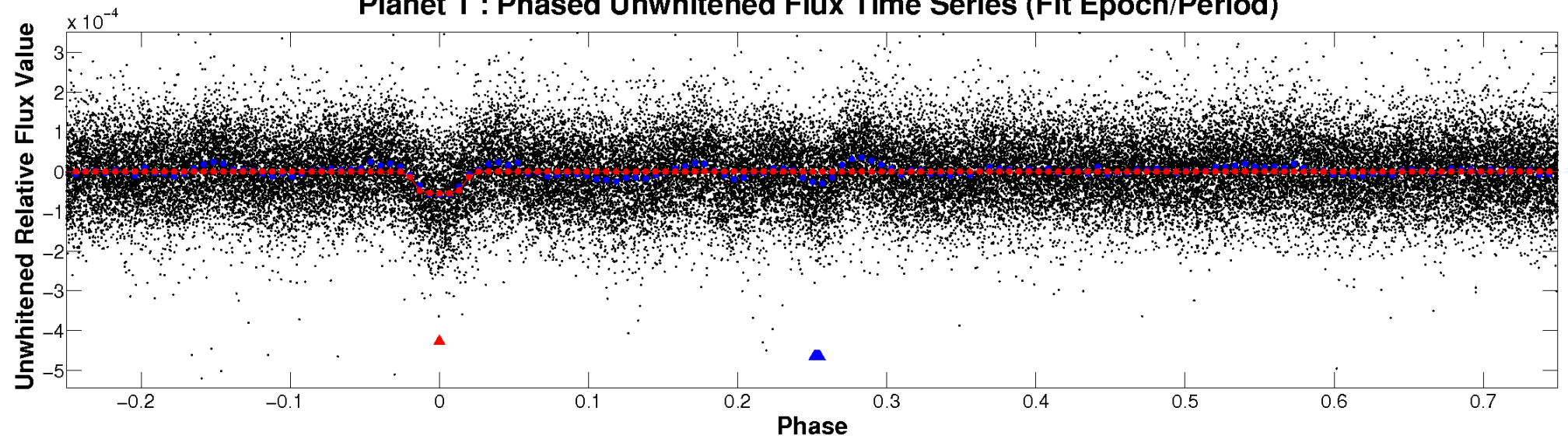
ALT Odd/Even

TCE 010685175-01

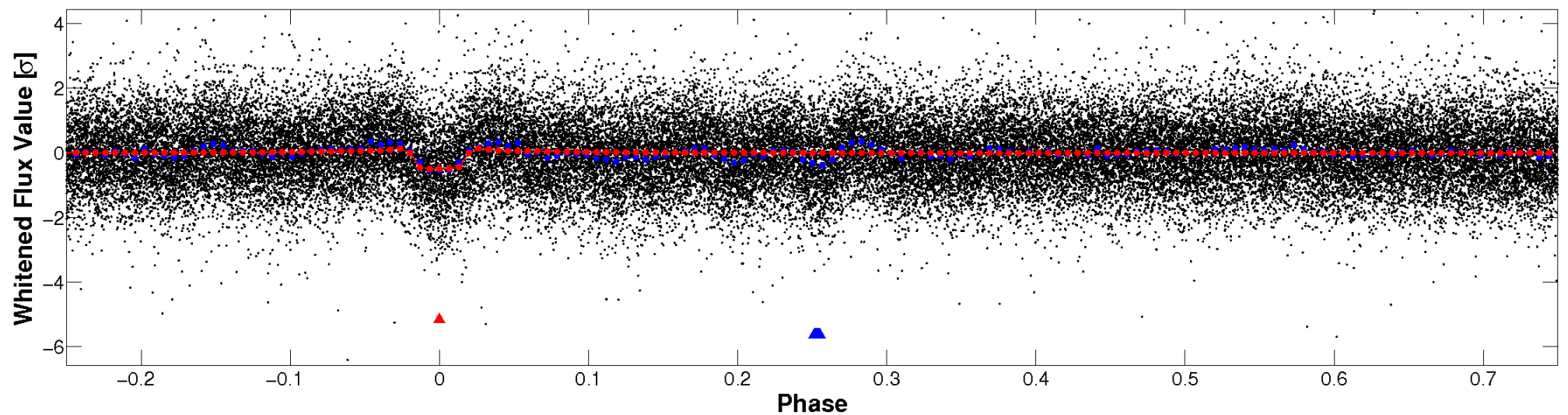


Non-Whitened Vs. Whitened Light Curve

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

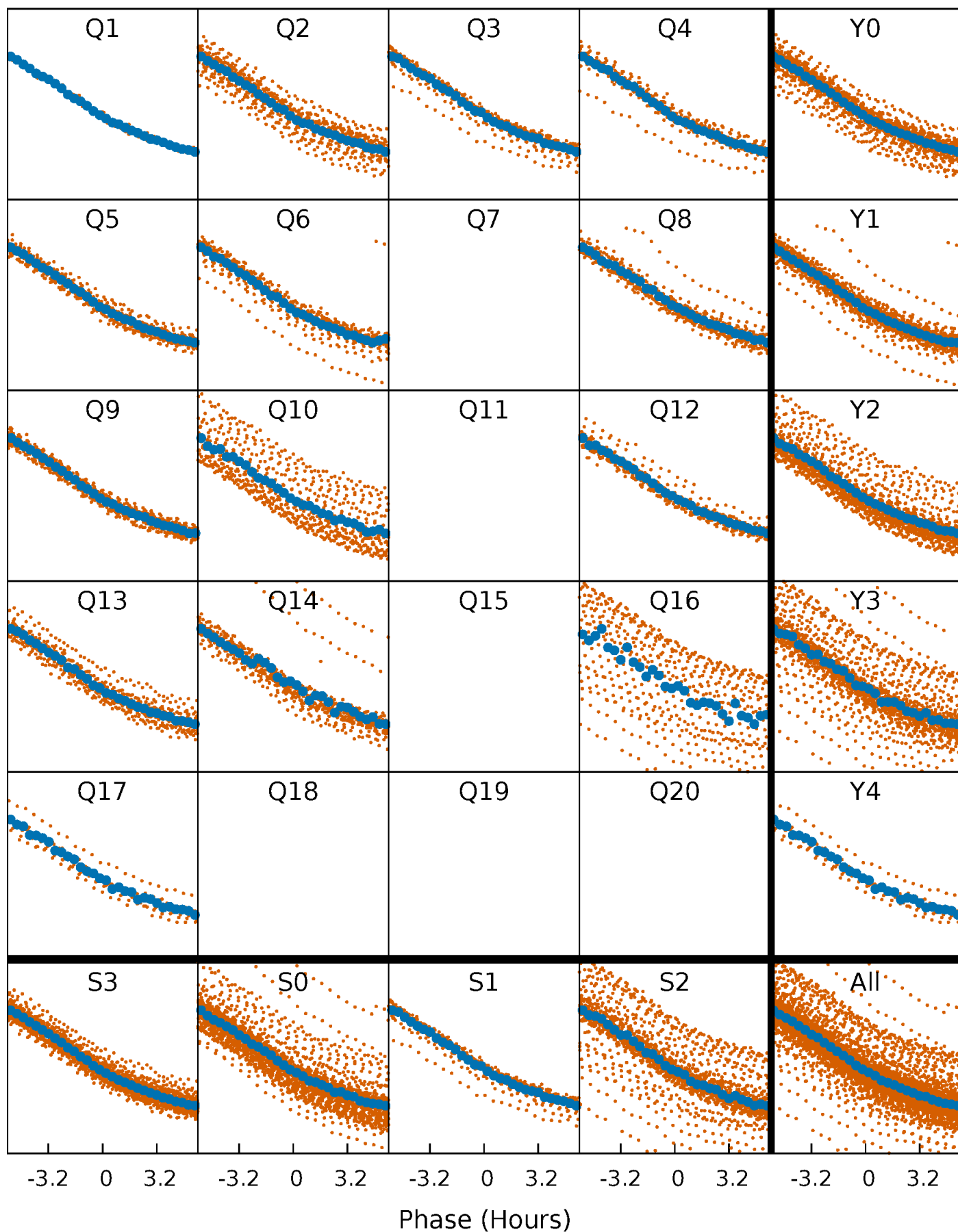


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



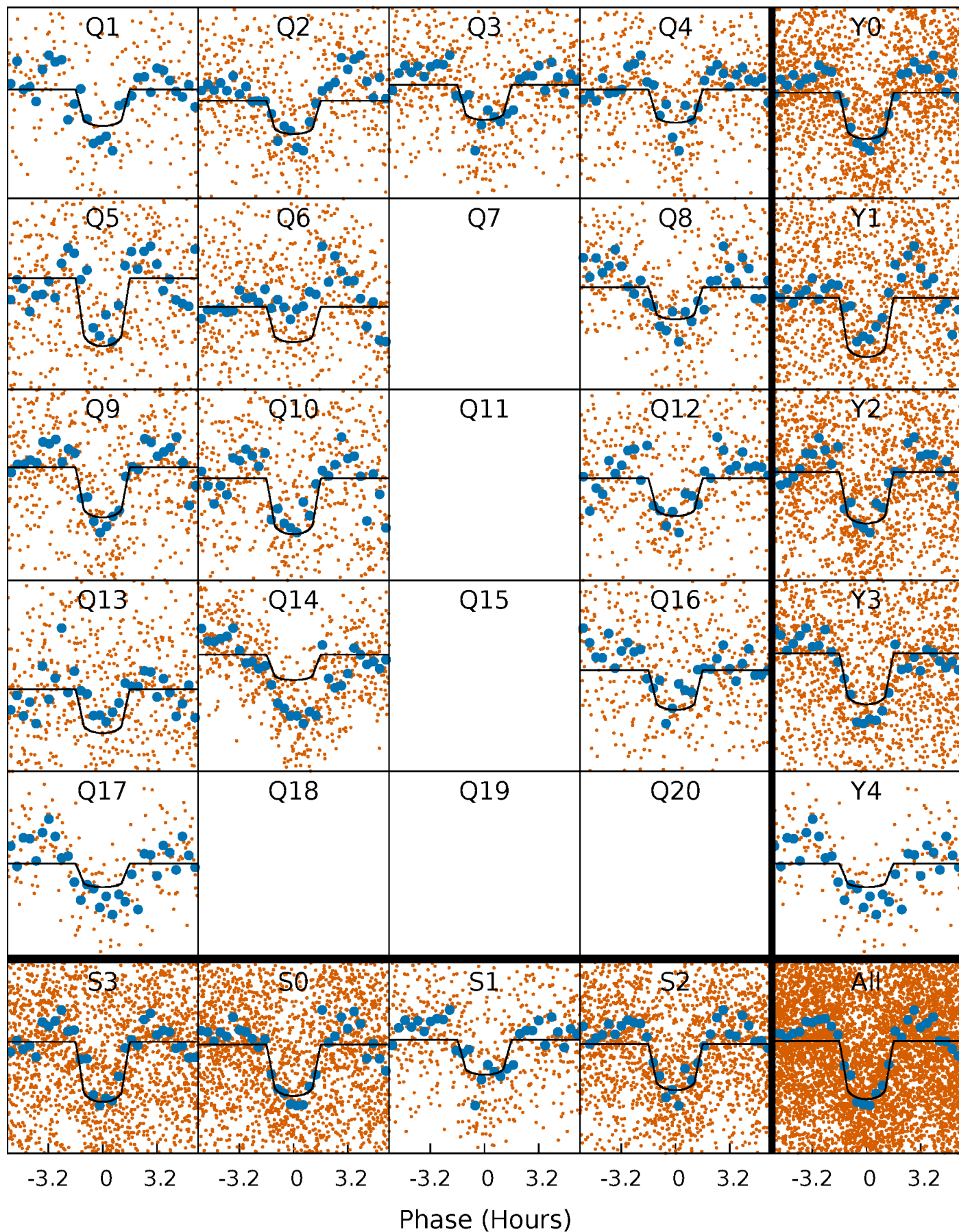
PDC Quarter-Phased Transit Curves

TCE 010685175-01 P= 3.102003 Days $T_0=133.714819$ (BKJD)



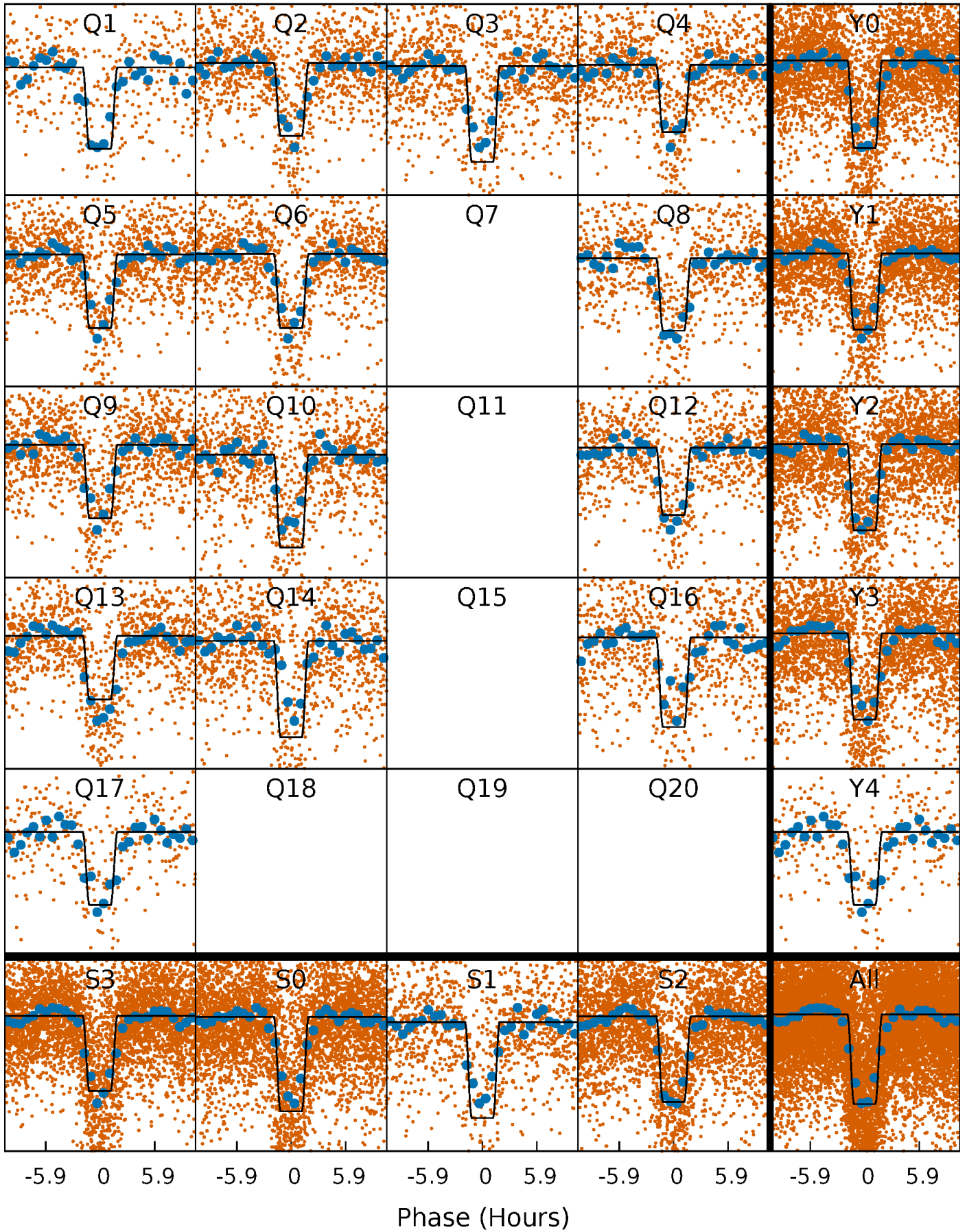
DV Quarter-Phased Transit Curves

TCE 010685175-01 P= 3.102003 Days $T_0=133.714819$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

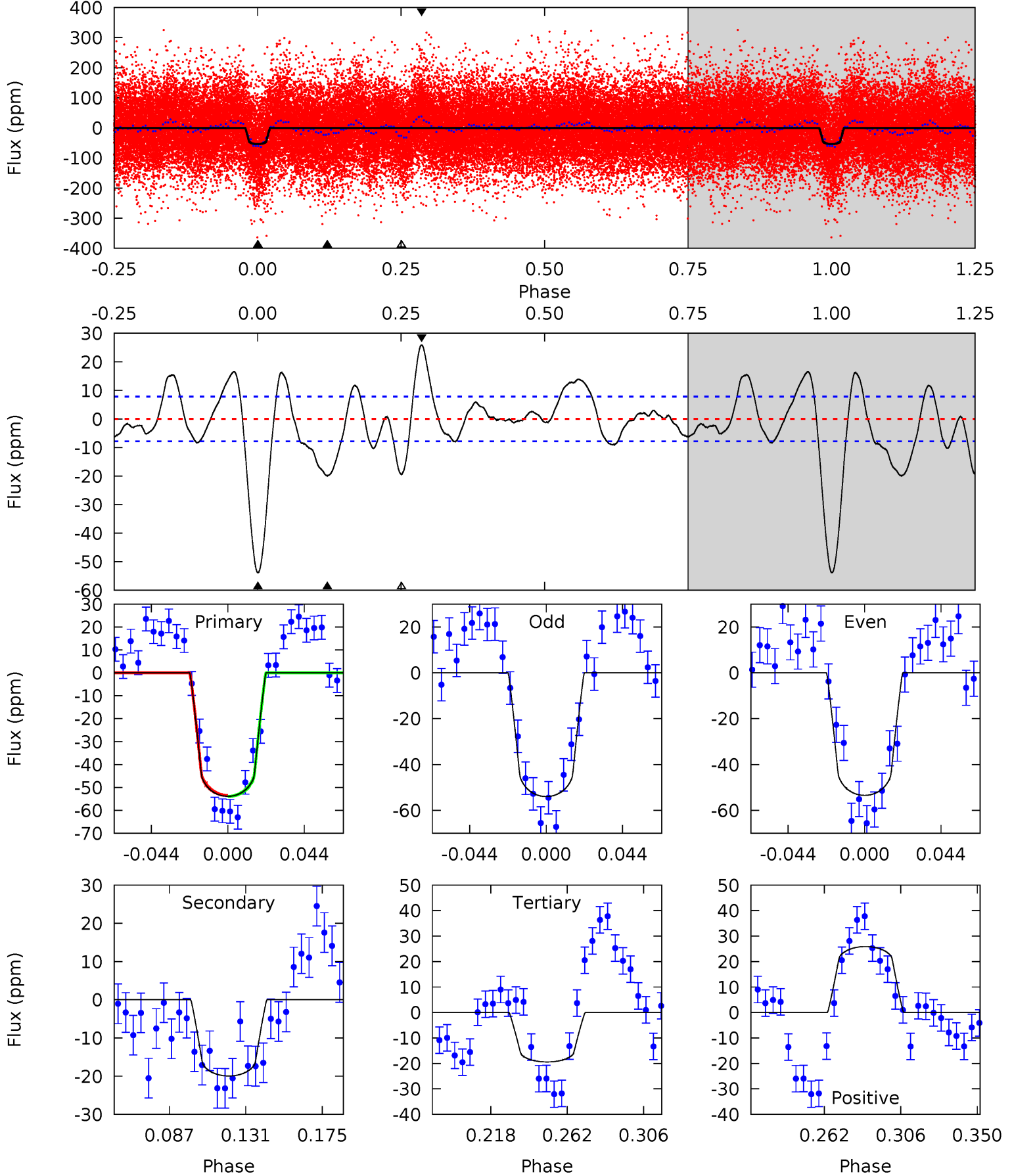
TCE 010685175-01 P= 3.101994 Days $T_0=133.722690$ (BKJD)



DV Model-Shift Uniqueness Test

010685175-01, P = 3.102003 Days, E = 130.612816 Days

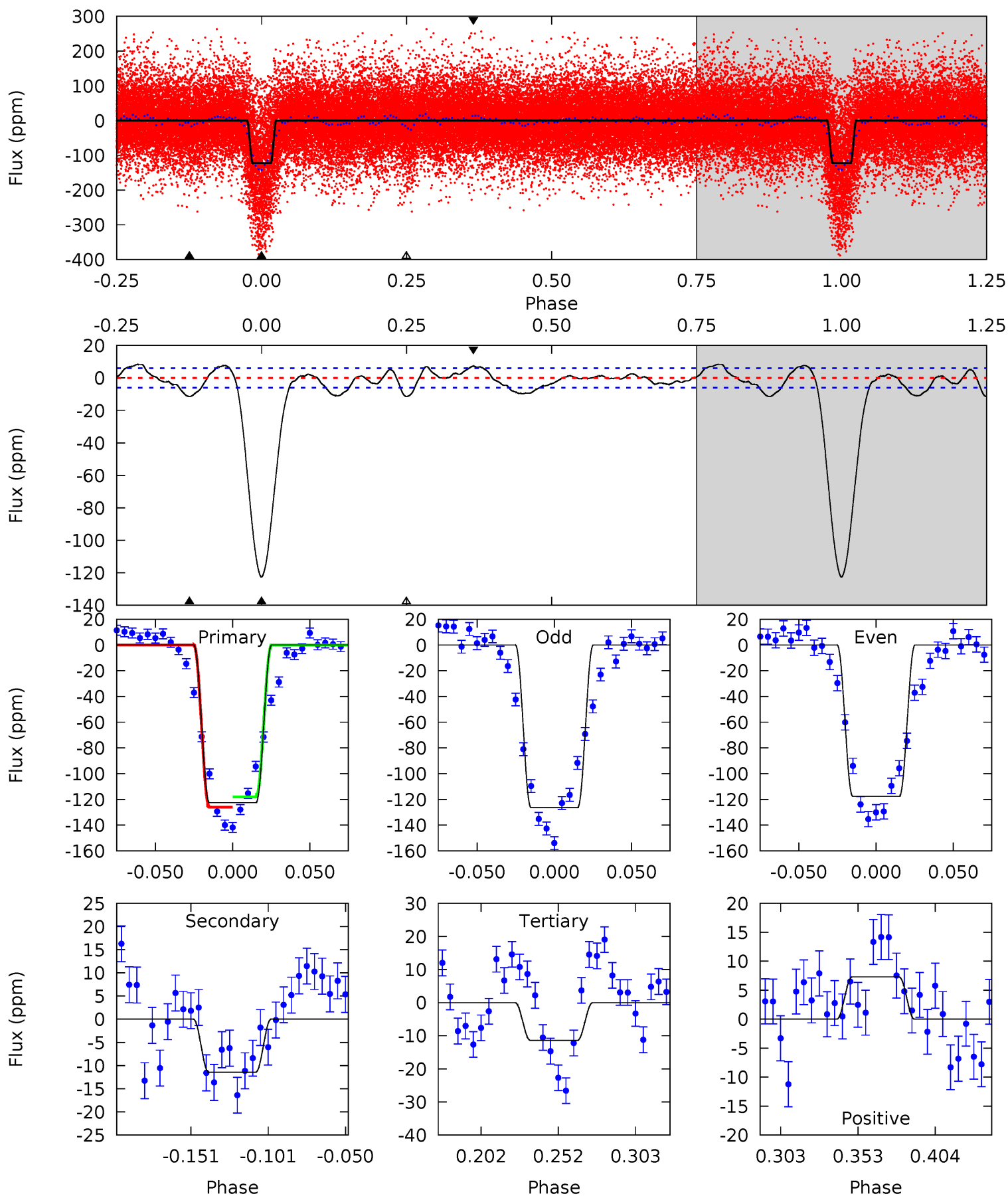
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.6	12.0	11.7	15.6	4.74	2.02	4.71	20.8	16.9	0.32	-3.59	0.16	1.02	0.32	0.12



Alt Model-Shift Uniqueness Test

010685175-01, P = 3.101994 Days, E = 130.620696 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
95.3	8.91	8.89	5.67	4.71	1.96	3.68	86.4	89.7	0.02	3.24	3.41	1.04	0.06	3.08



Stellar Parameters For KIC 010685175

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8709^{+462}_{-925}	$4.232^{+0.032}_{-0.288}$	$0.210^{+0.150}_{-0.150}$	$1.797^{+0.840}_{-0.148}$	$2.012^{+0.447}_{-0.275}$	$0.488^{+0.094}_{-0.317}$
	+5%/-11%	+1%/-7%	+71%/-71%	+47%/-8%	+22%/-14%	+19%/-65%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010685175-01 / KOI 7362.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-20 ± 2	$1.65^{+0.40}_{-0.28}$	3248^{+366}_{-332}	6222^{+578}_{-553}	11^{+4}_{-4}
Alt.	-11 ± 1	$2.48^{+0.62}_{-0.34}$	3253^{+369}_{-345}	4472^{+282}_{-299}	$2.756^{+0.861}_{-0.889}$

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

DV Centroid Data

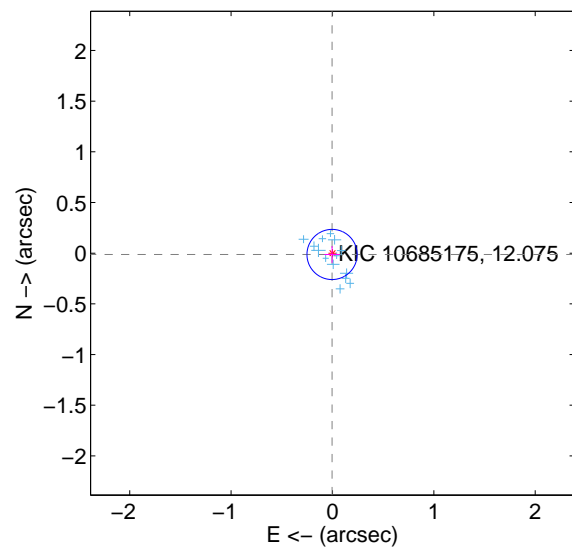
Supplemental centroid analysis for 010685175-01. Kepler magnitude: 12.07. Transit SNR 20.13

There are 14 quarters with good PRF difference image offsets

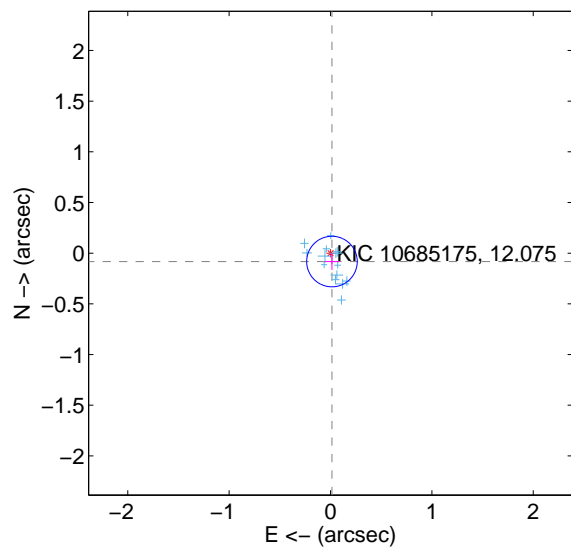
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.013 ± 0.082	0.16	0.004 ± 0.076	-0.013 ± 0.083
PRF-fit source offset from KIC position	0.084 ± 0.083	1.01	-0.014 ± 0.073	-0.083 ± 0.082
photometric centroid source offset	0.35 ± 0.55	0.63	0.22 ± 0.55	0.27 ± 0.54

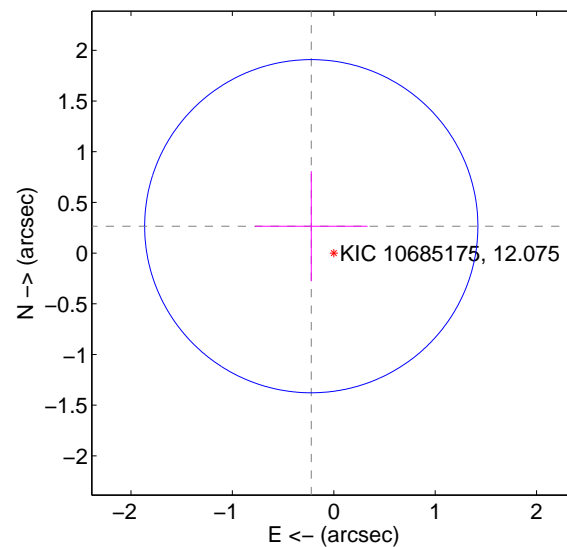
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

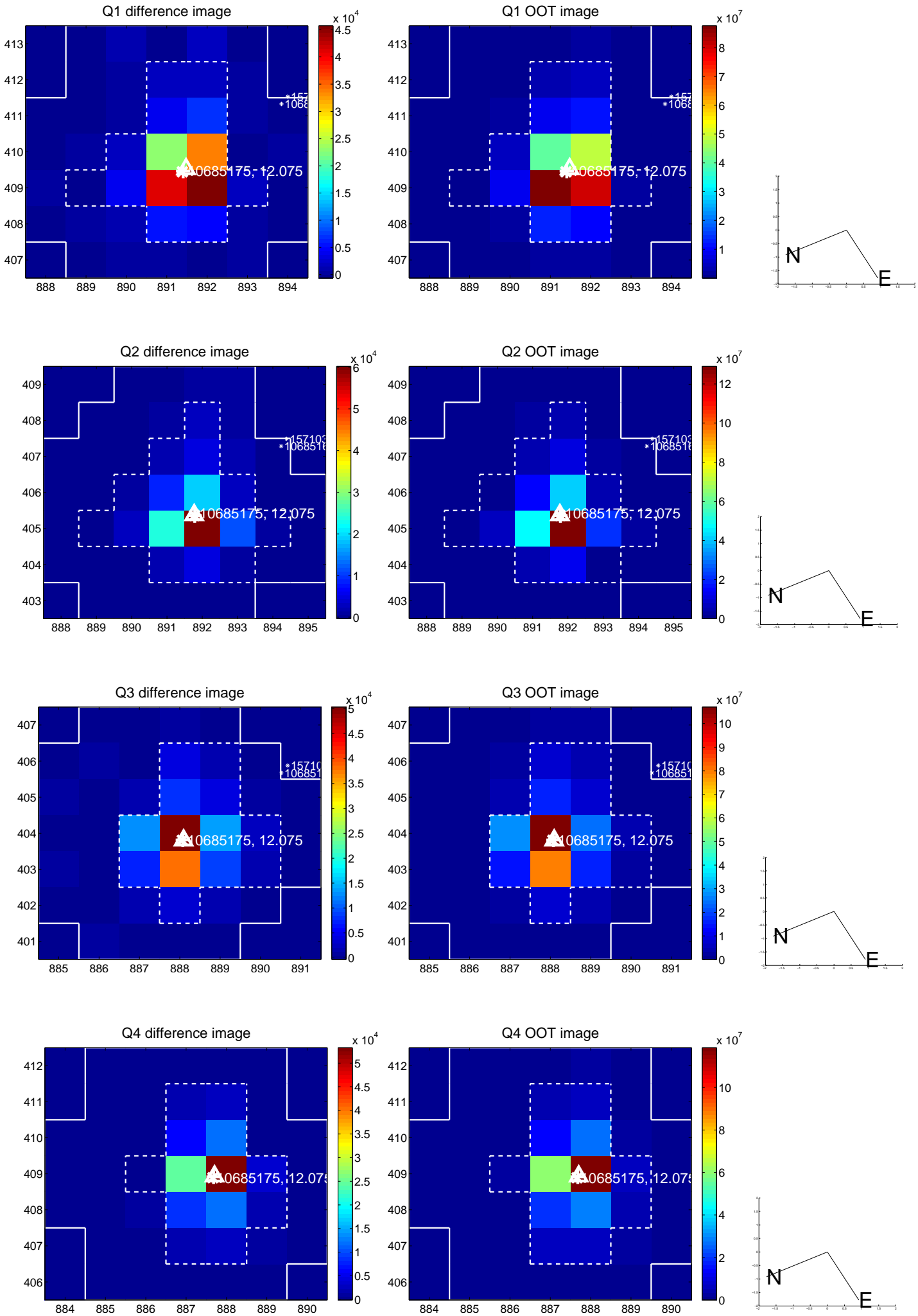


offset from photometric centroids

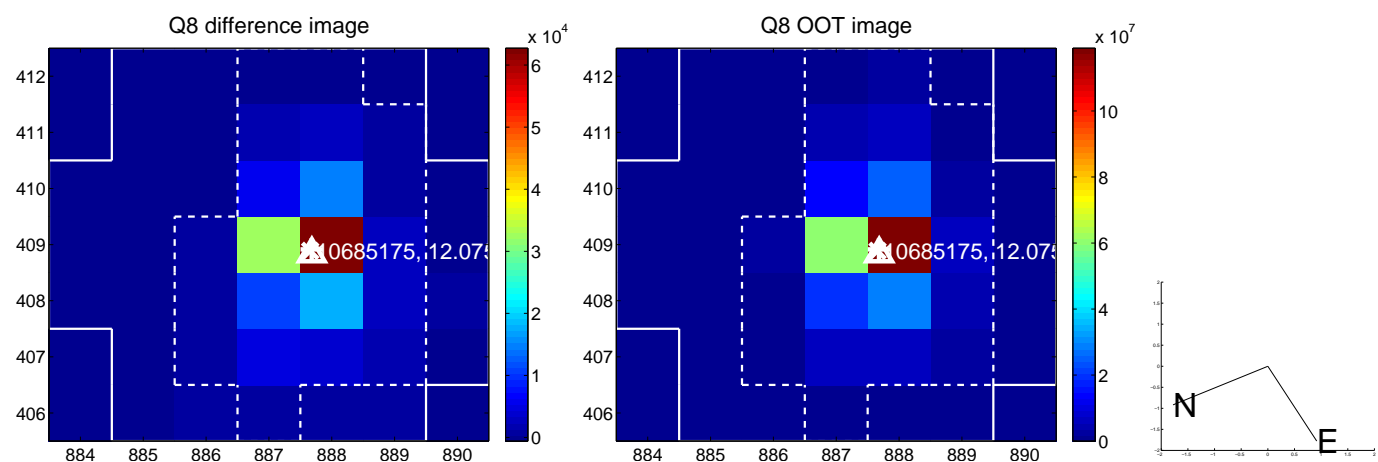
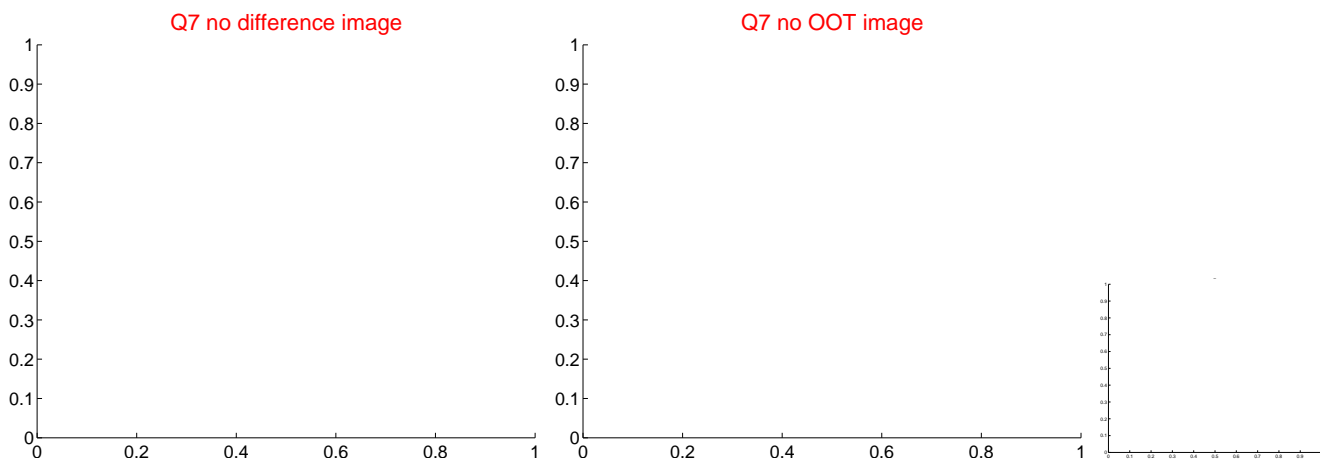
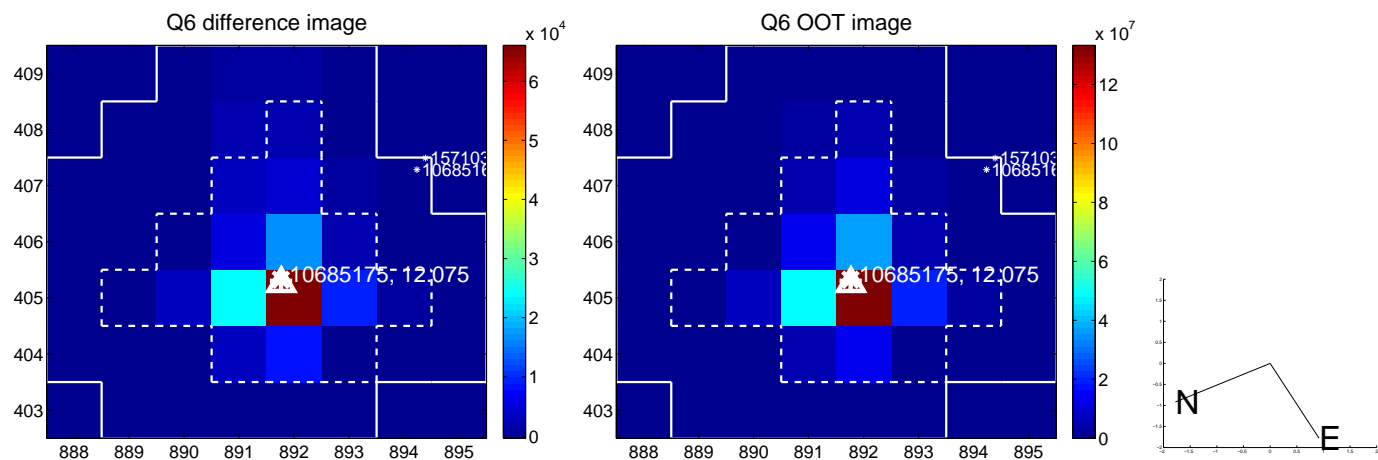
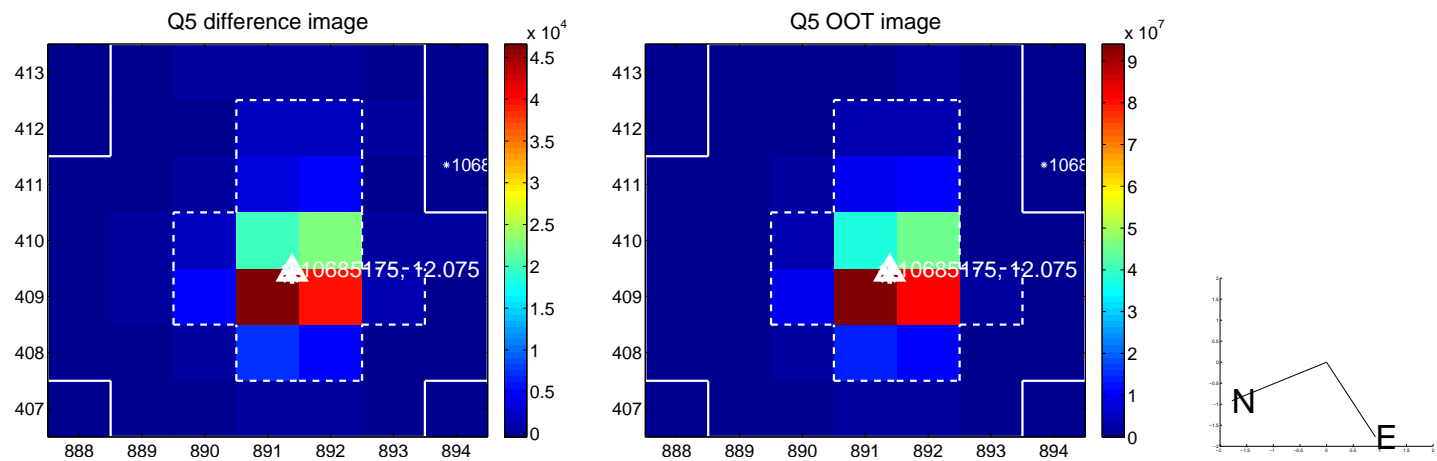


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

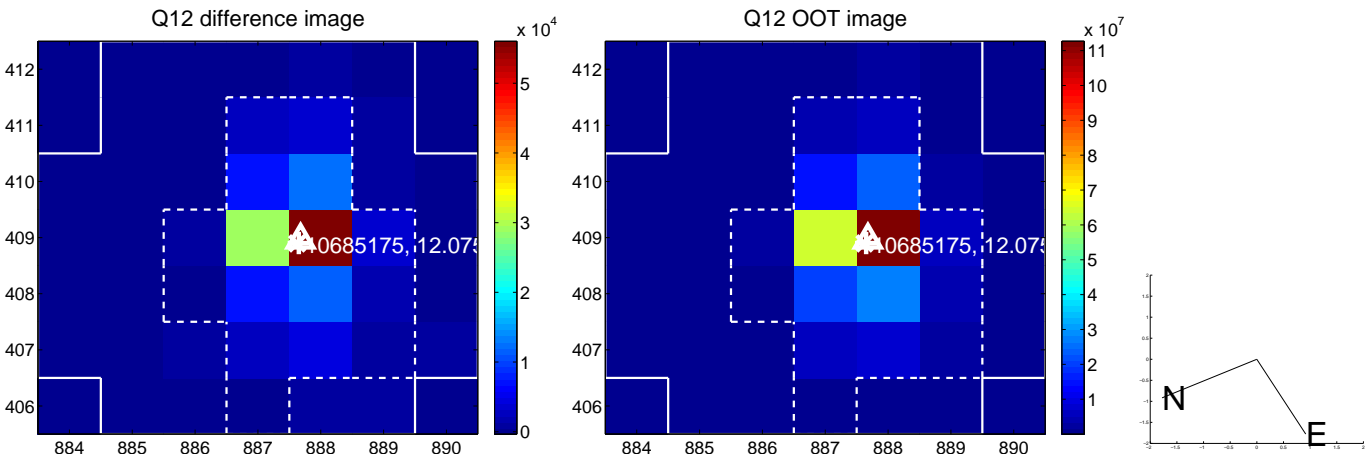
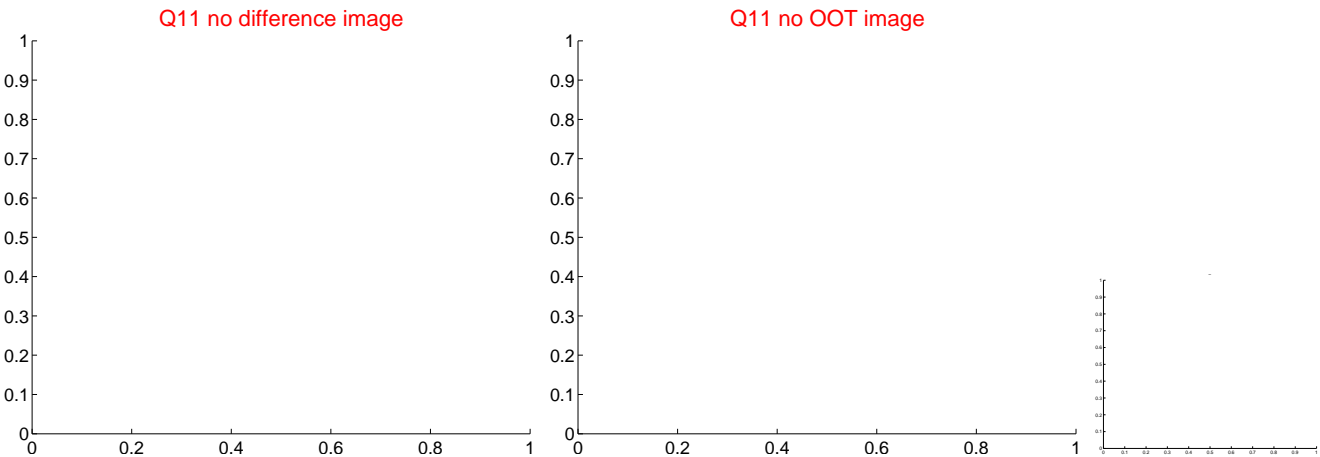
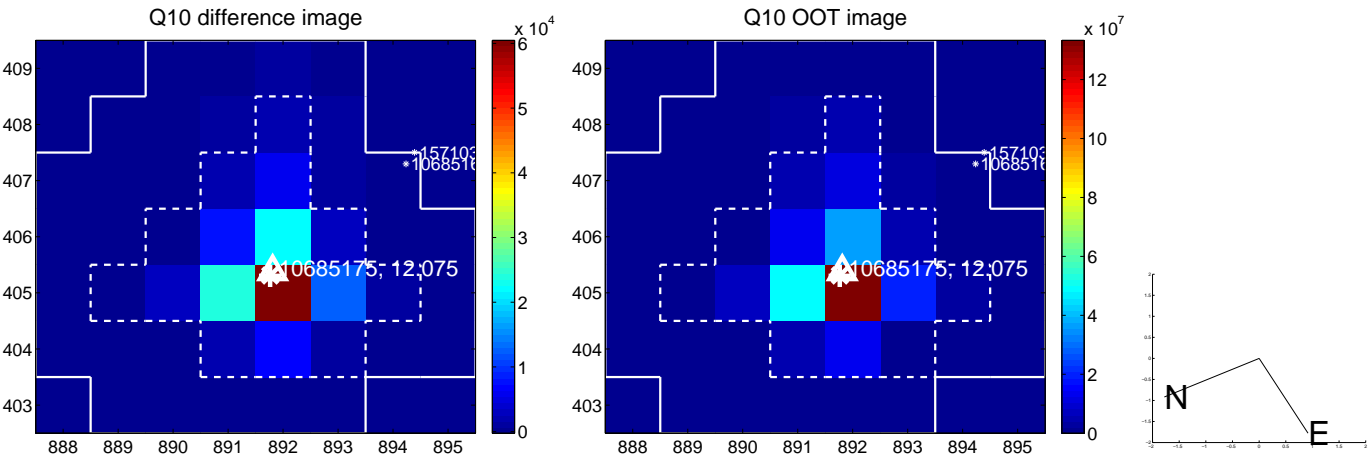
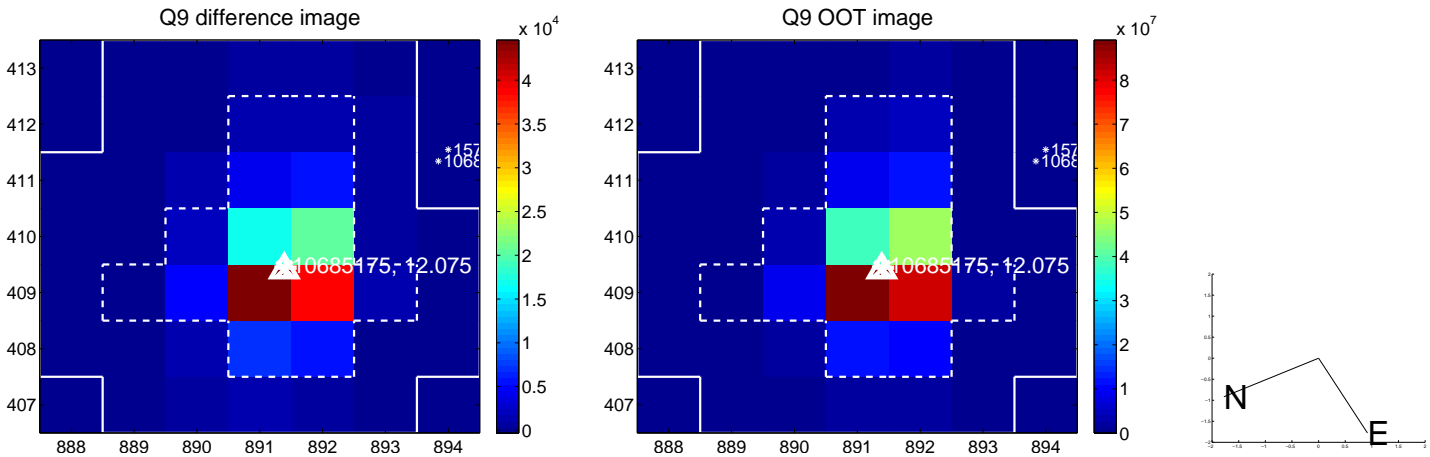
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



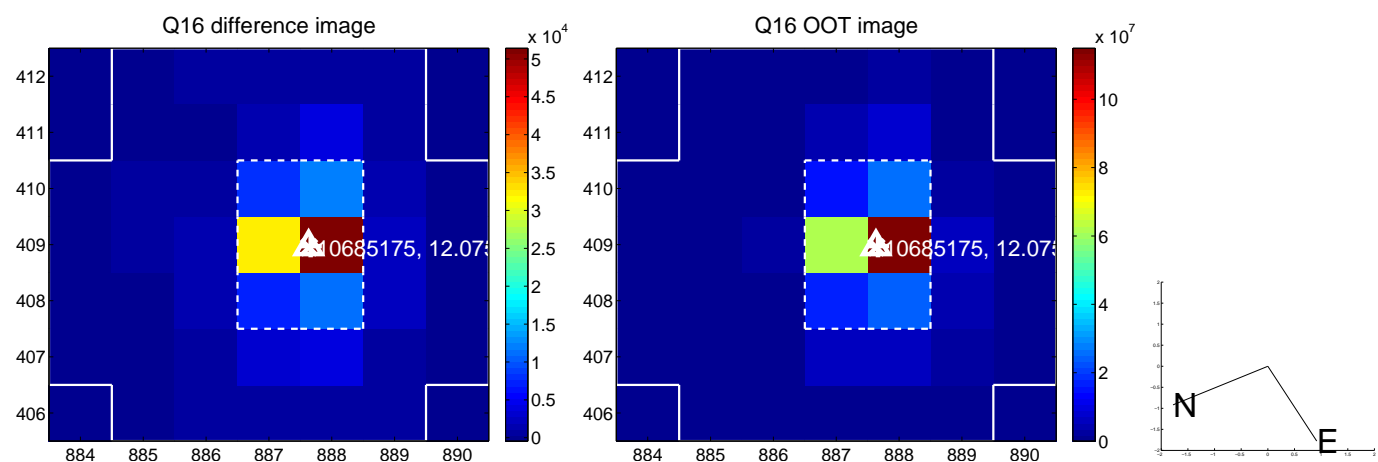
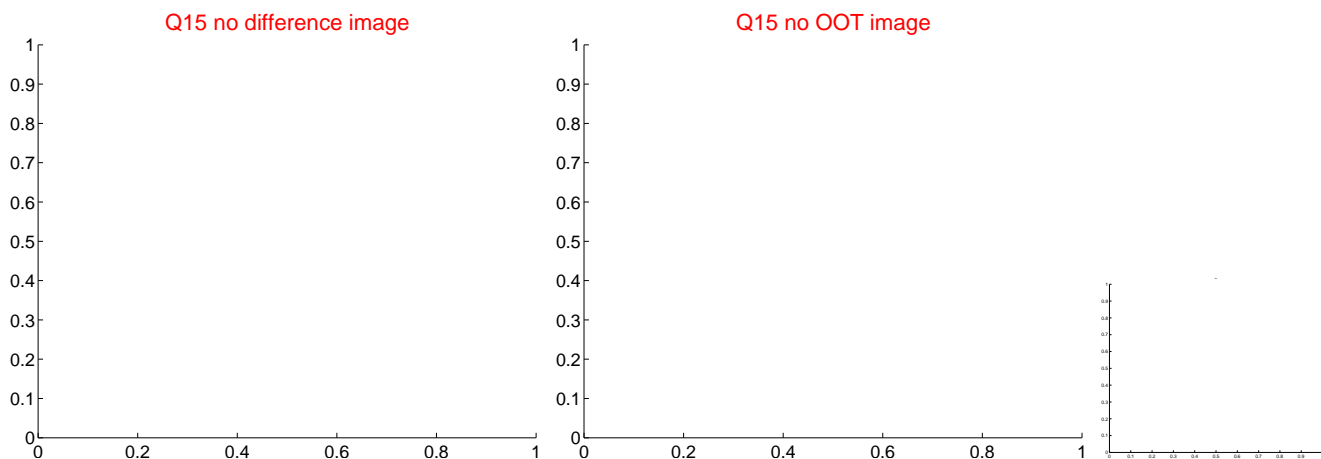
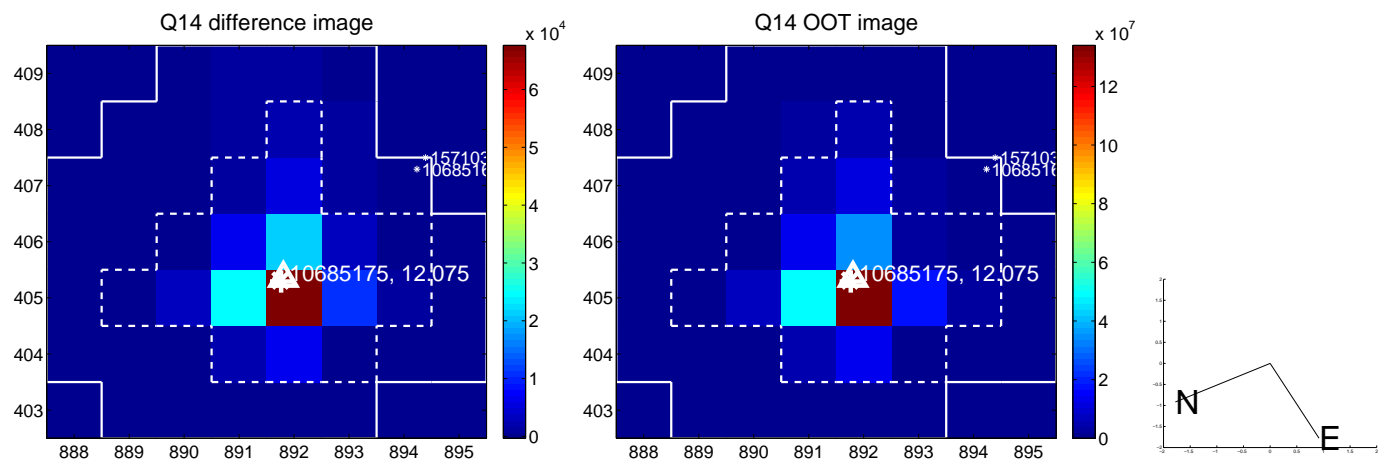
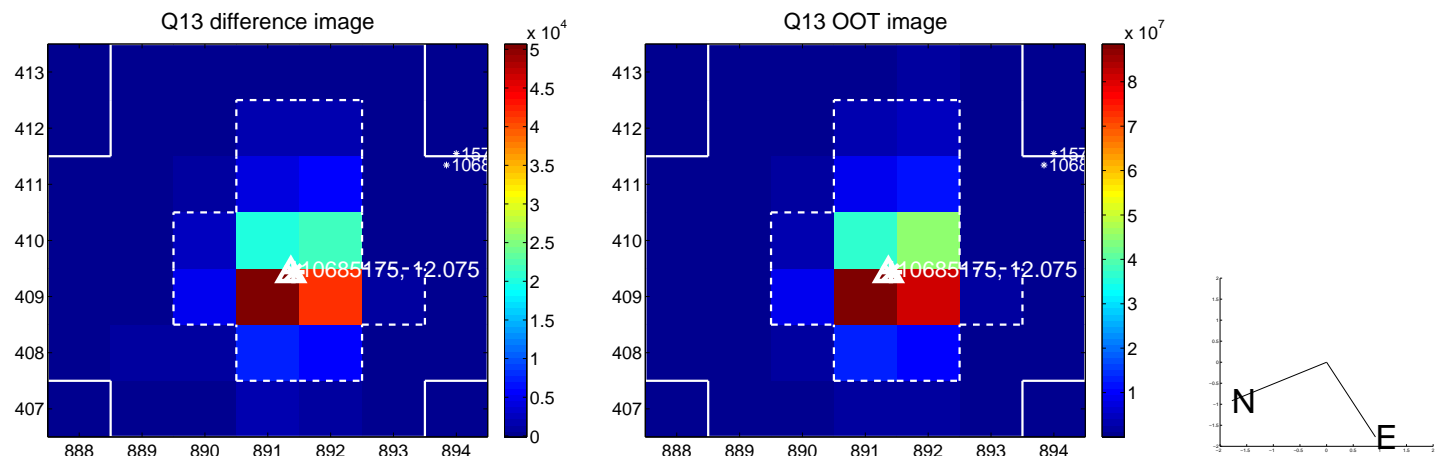
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



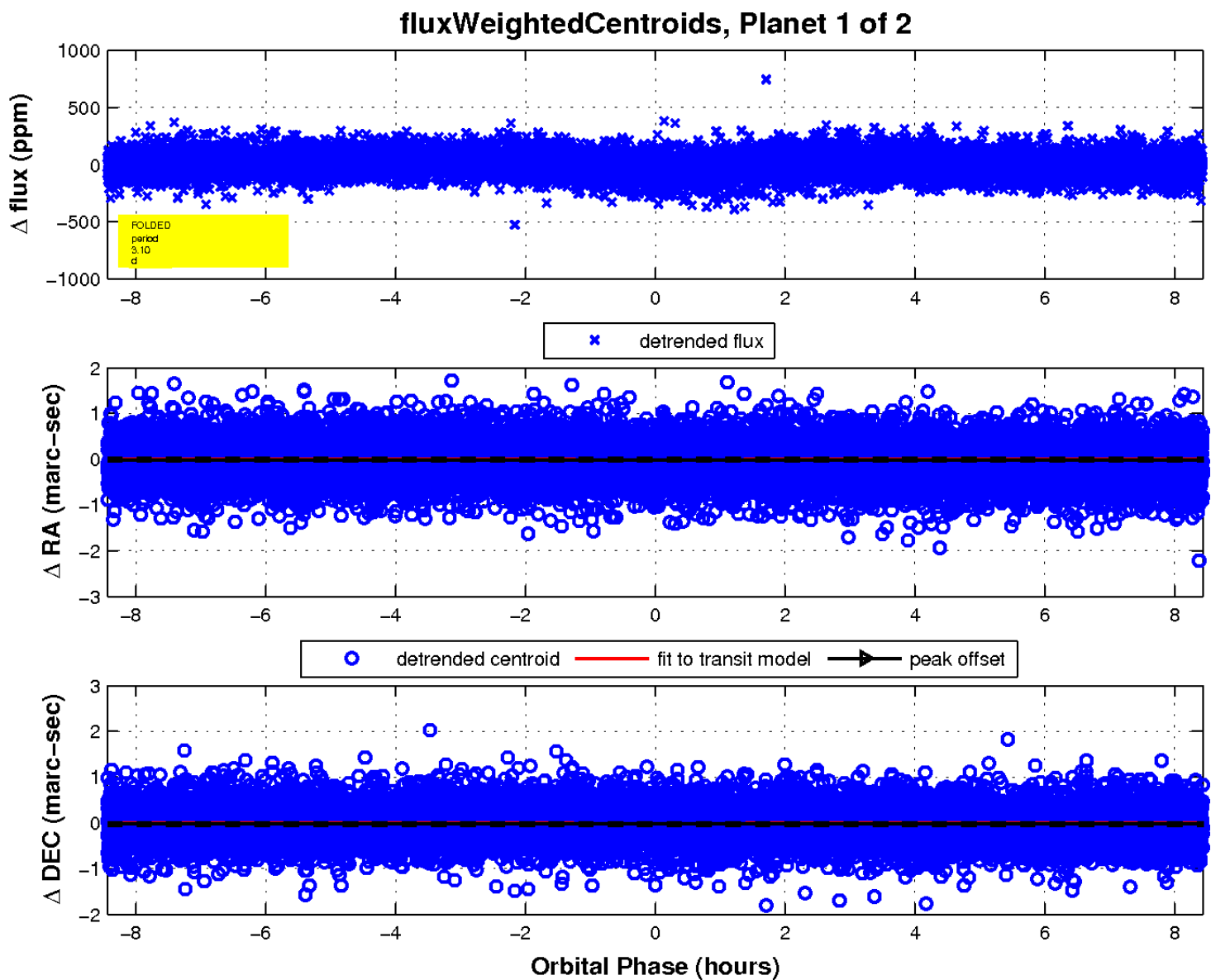
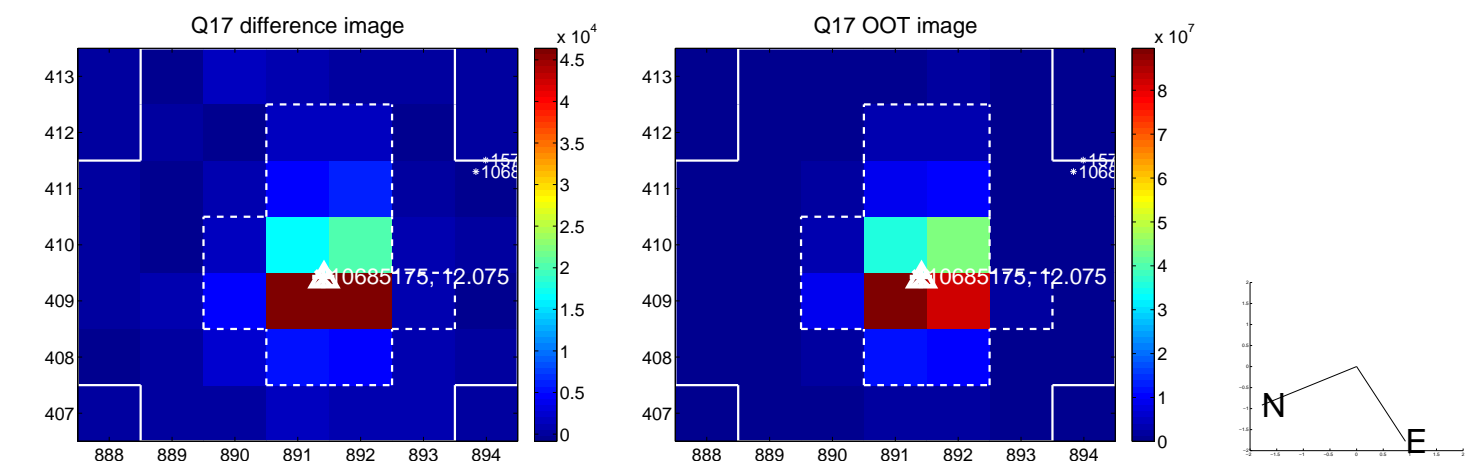
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



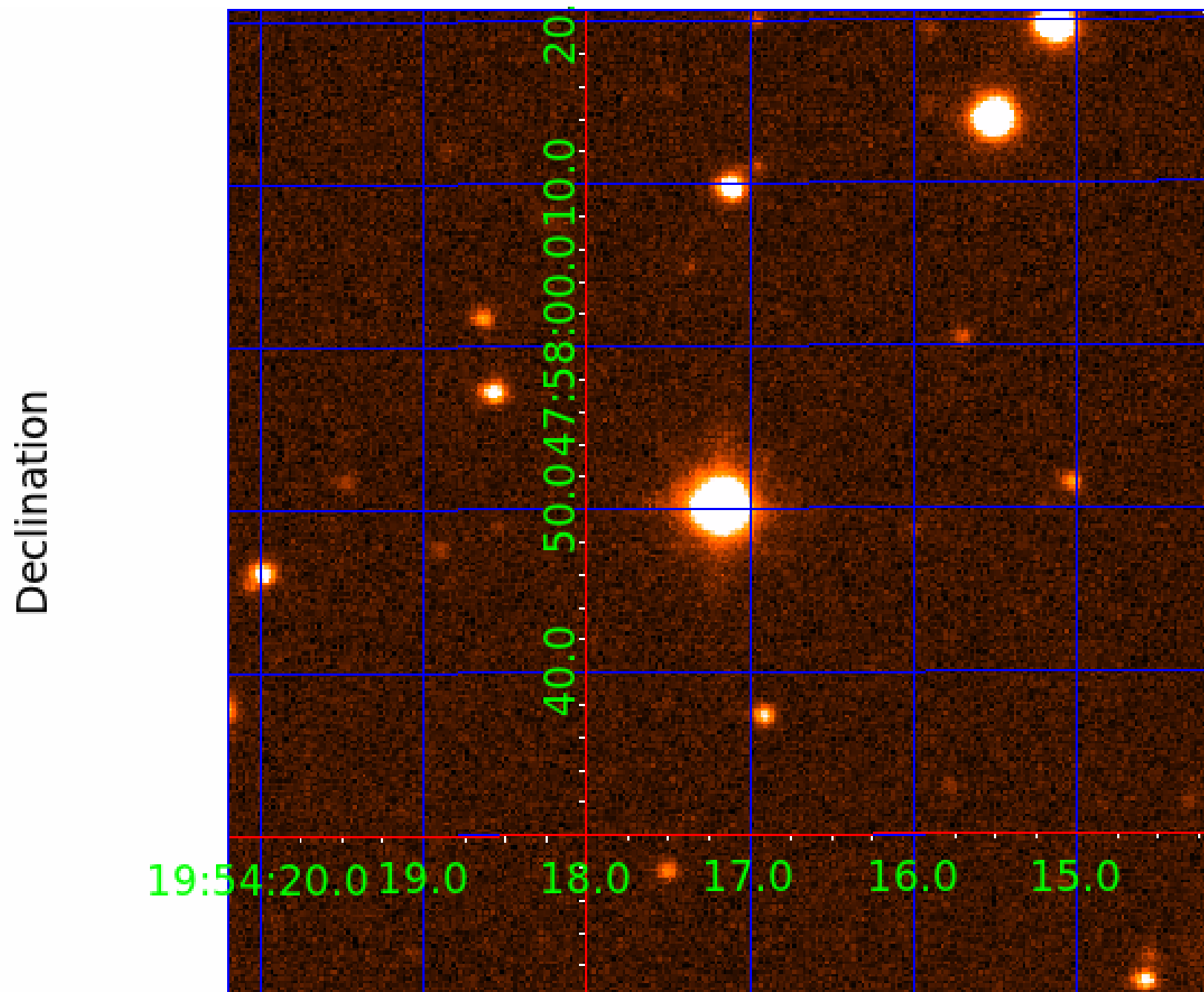
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010685175

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})
010685175-01	OBS	7362.01	3.102003	133.714819	55.1	2.814	19.2	20.1	1.80	8709	1.51	6029.44
010685175-02	OBS	No	3.102027	134.494748	34.6	1.847	9.8	11.6	1.80	8709	1.23	6029.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010685175-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
010685175-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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 for comment definitions.

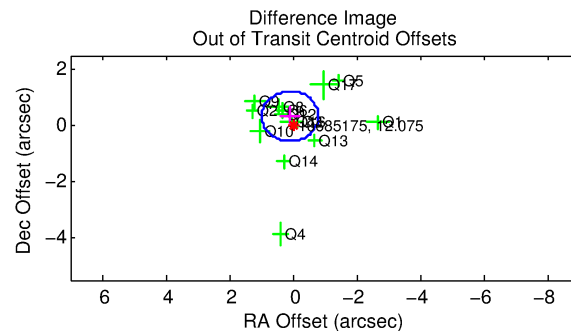
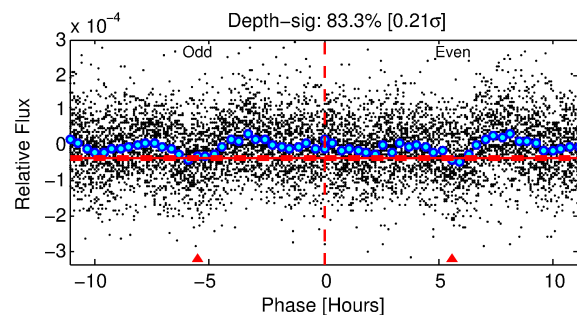
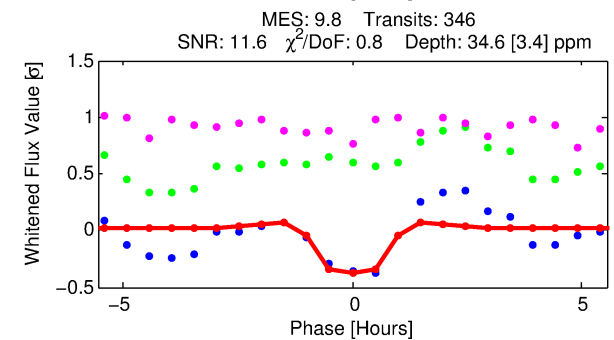
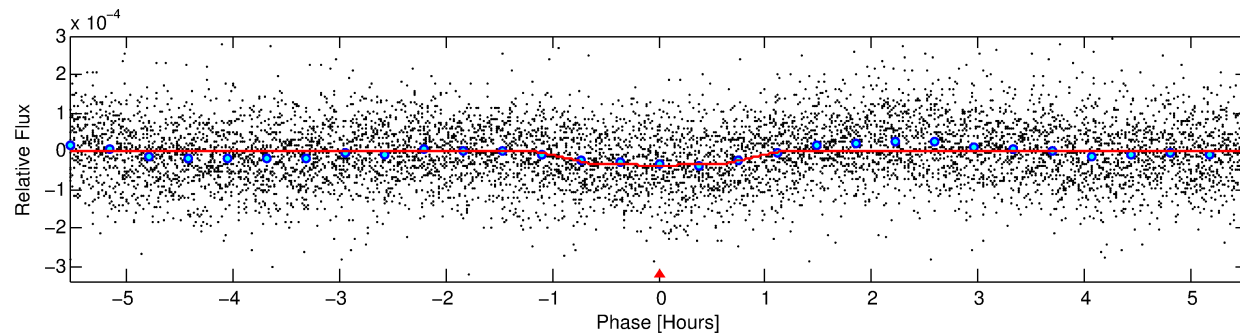
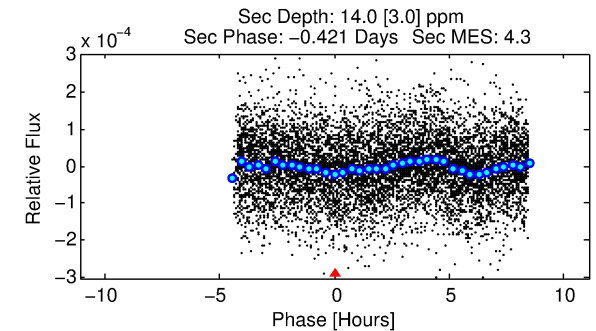
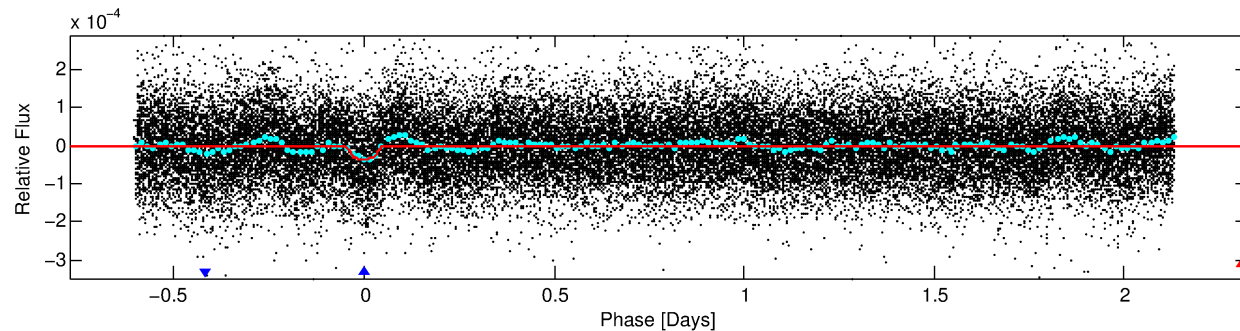
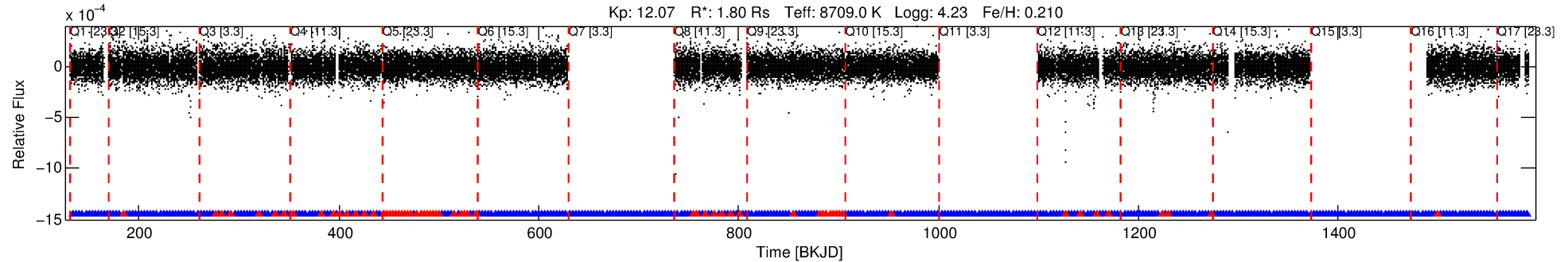
Ephemeris Match Information For 010685175-02

No Significant Match Found

DV One-Page Summary

KIC: 10685175 Candidate: 2 of 2 Period: 3.102 d
KOI: K07362 Corr: No Ephemeris Match

Kp: 12.07 R*: 1.80 Rs Teff: 8709.0 K Logg: 4.23 Fe/H: 0.210



DV Fit Results:

Period = 3.10203 [0.00001] d
Epoch = 134.4947 [0.0023] BKJD
Rp/R* = 0.0062 [0.0016]
a/R* = 5.83 [9.83]
b = 0.90 [0.37]
Seff = 6029.37 [4146.96]
Teff = 2247 [386] K
Rp = 1.23 [0.65] Re
a = 0.0525 [0.0201] AU
Ag = 14.13 [10.95] [1.20σ]
Teffp = 6735 [1177] K [3.62σ]

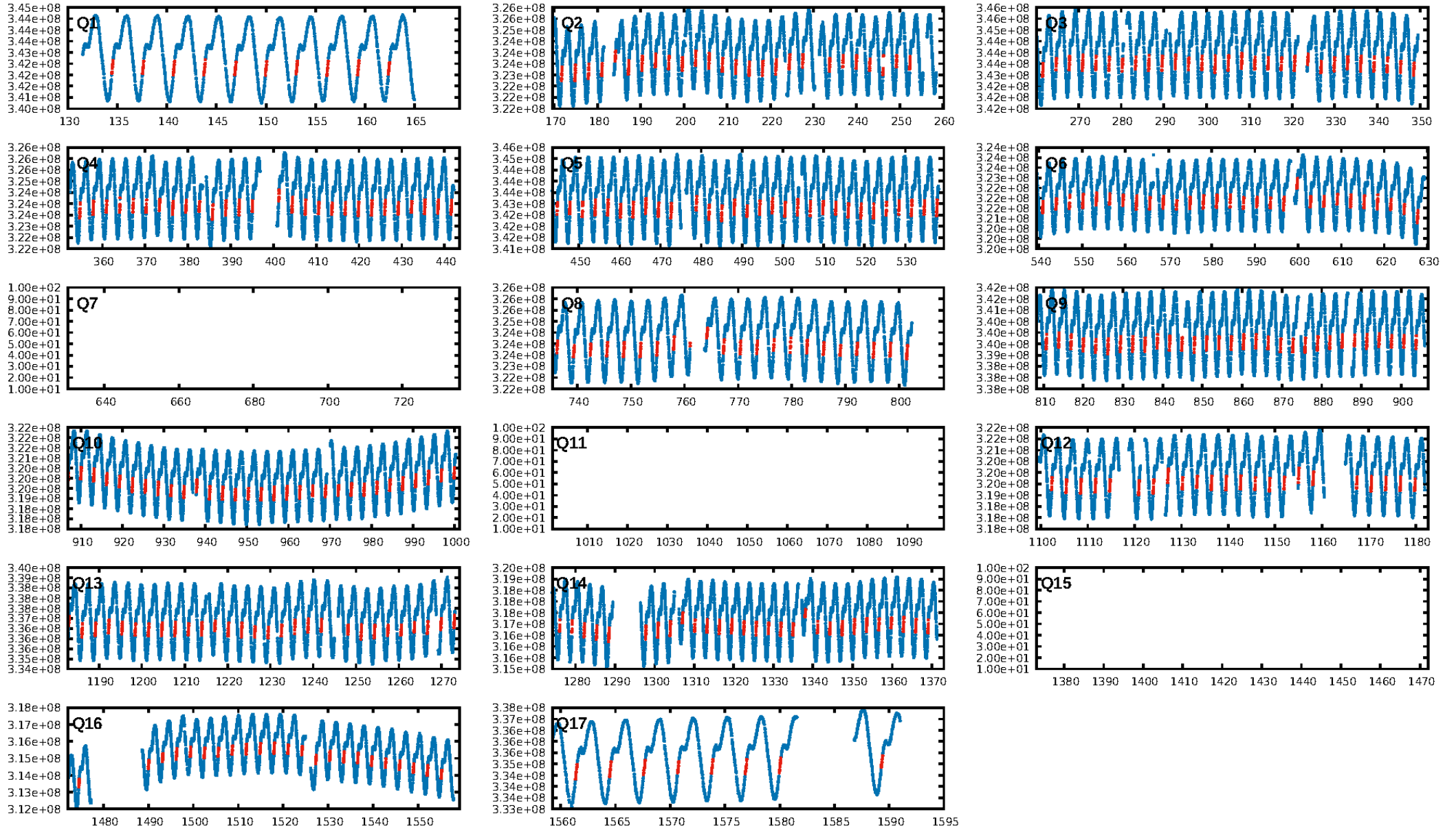
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.97e-21
RollingBand-fgt: 0.81 [265/328]
GhostDiagnostic-chr: 0.5395
Centroid-sig: 77.4%
Centroid-so: 0.549 arcsec [0.53σ]
OotOffset-rm: 0.343 arcsec [1.15σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.250 arcsec [0.76σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

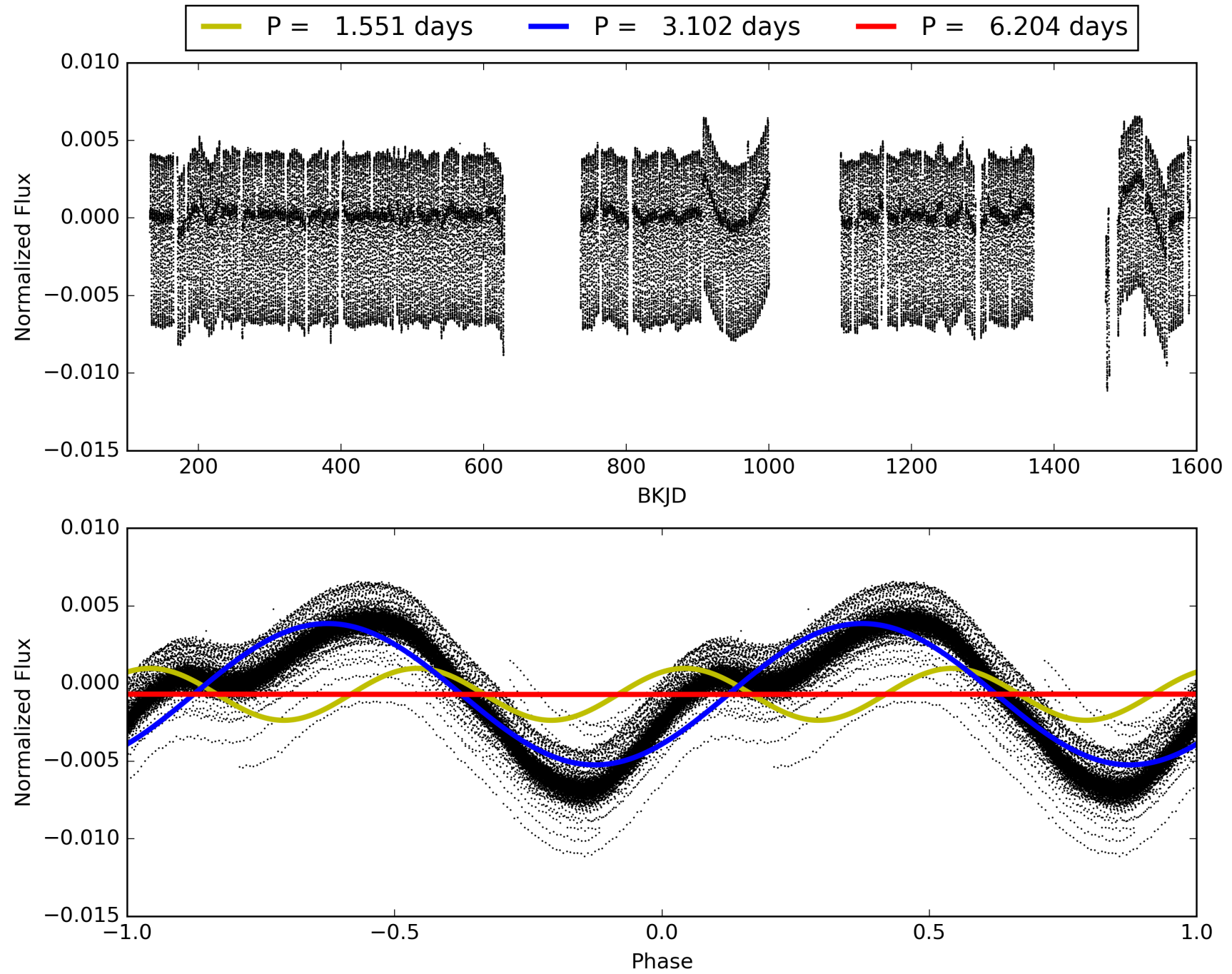
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:29:14 Z

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

TCE 010685175-02, PDC Light Curves

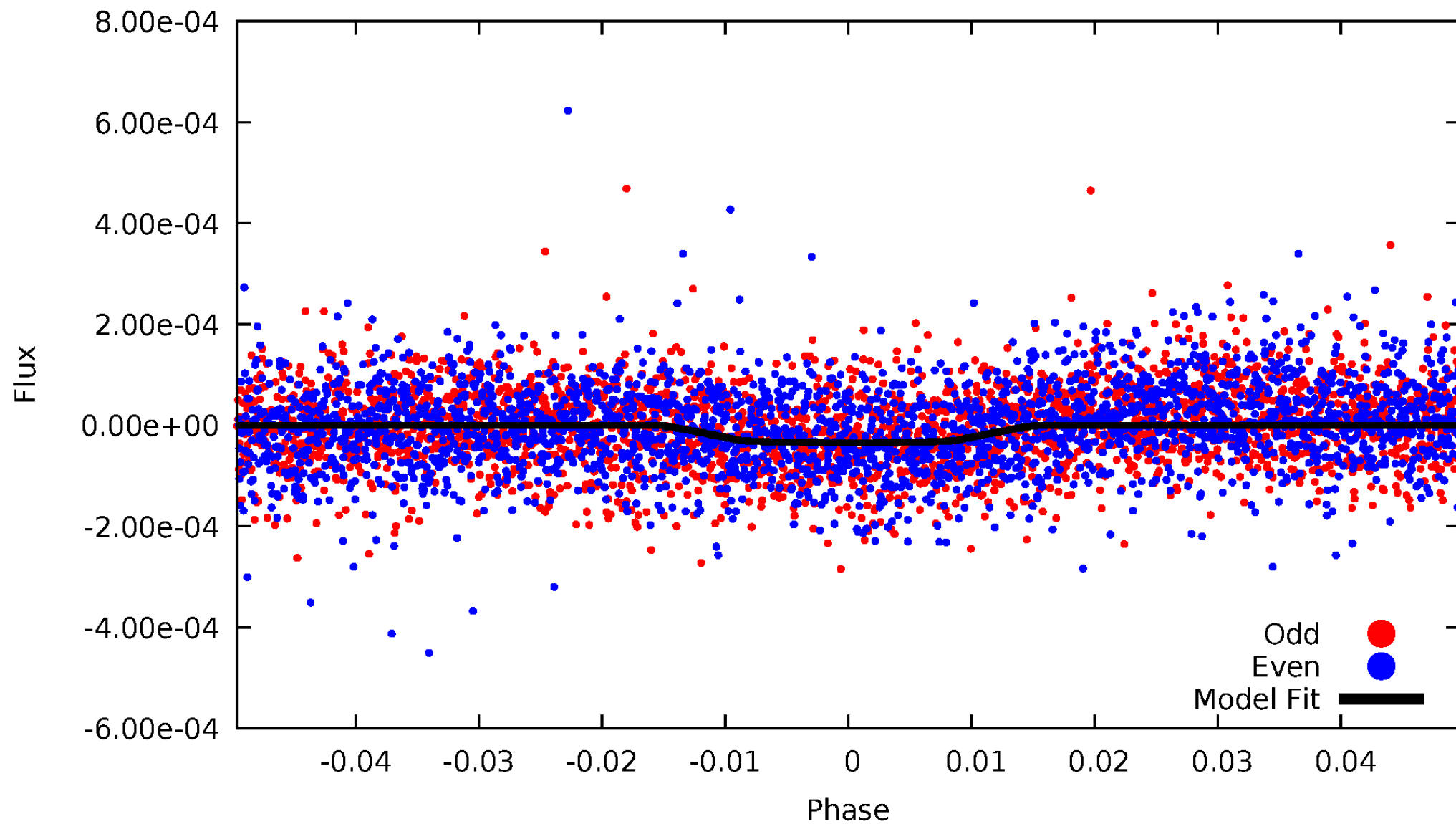


TCE 010685175-02



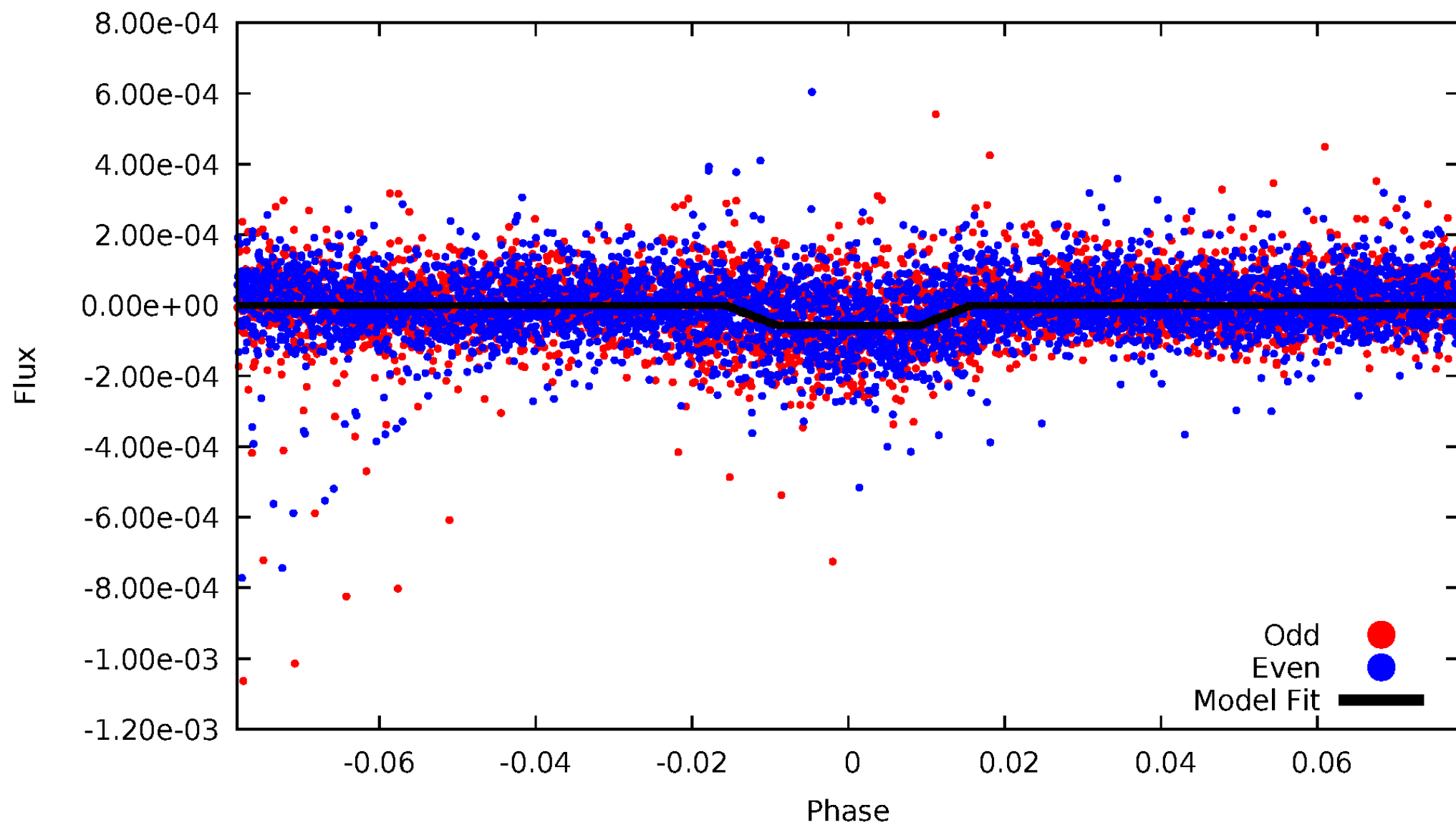
DV Odd/Even

TCE 010685175-02



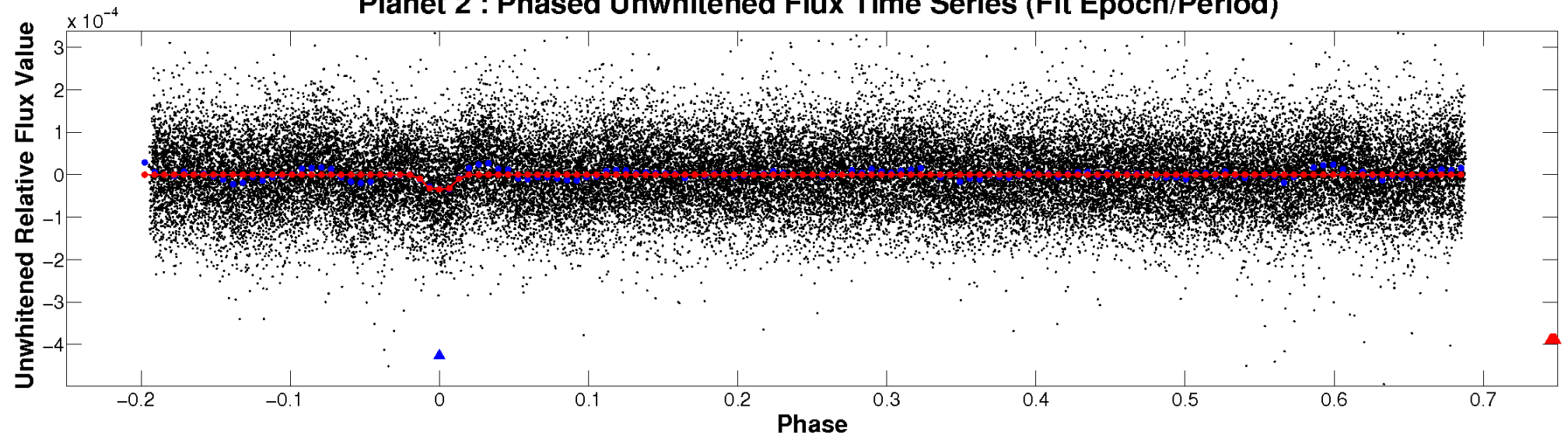
ALT Odd/Even

TCE 010685175-02

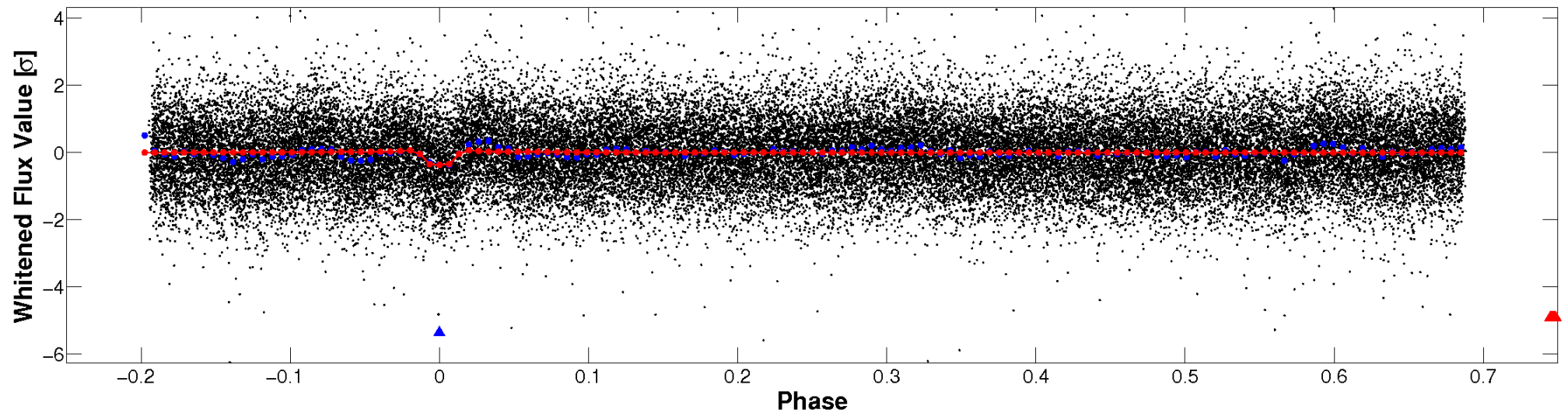


Non-Whitened Vs. Whitened Light Curve

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

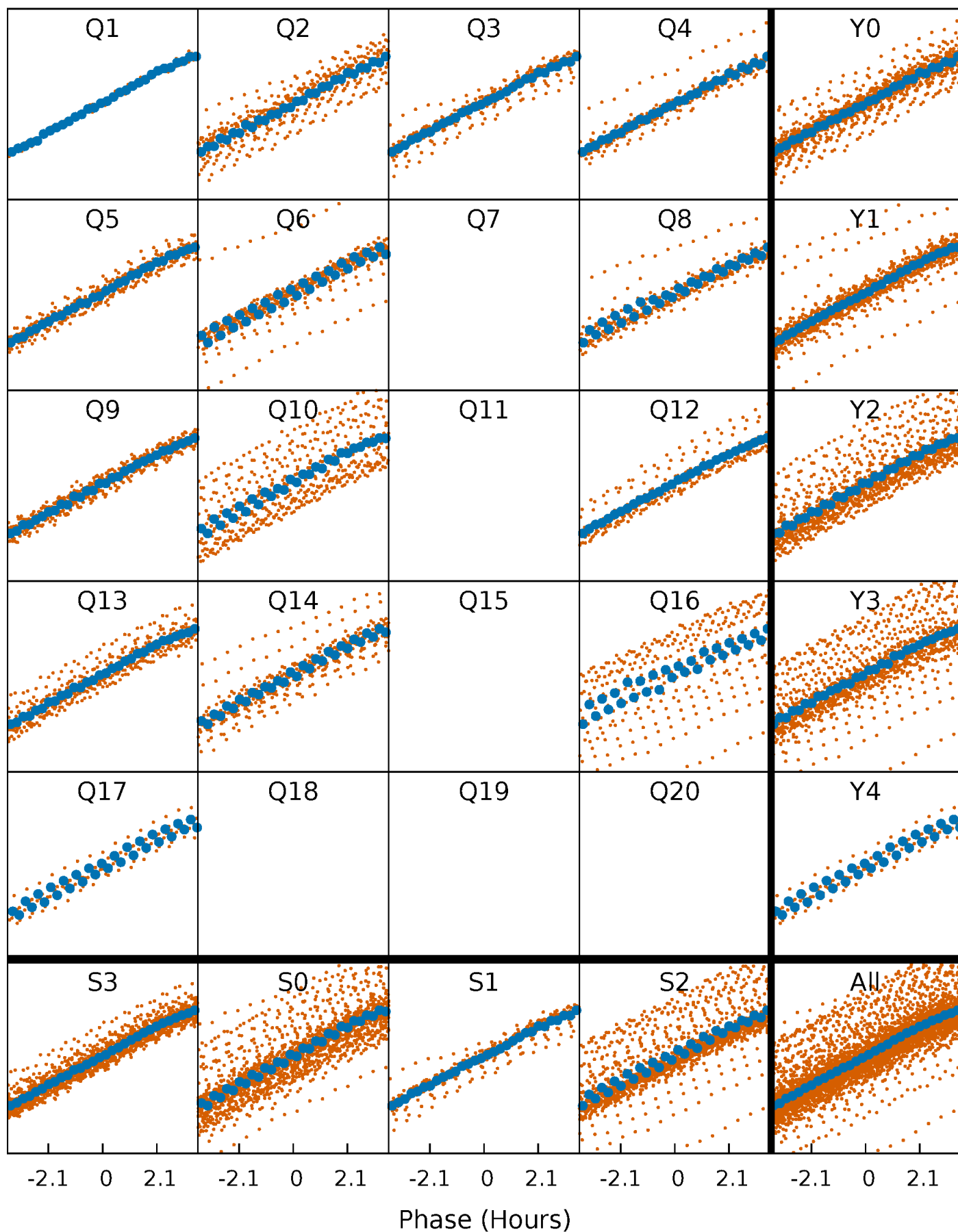


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



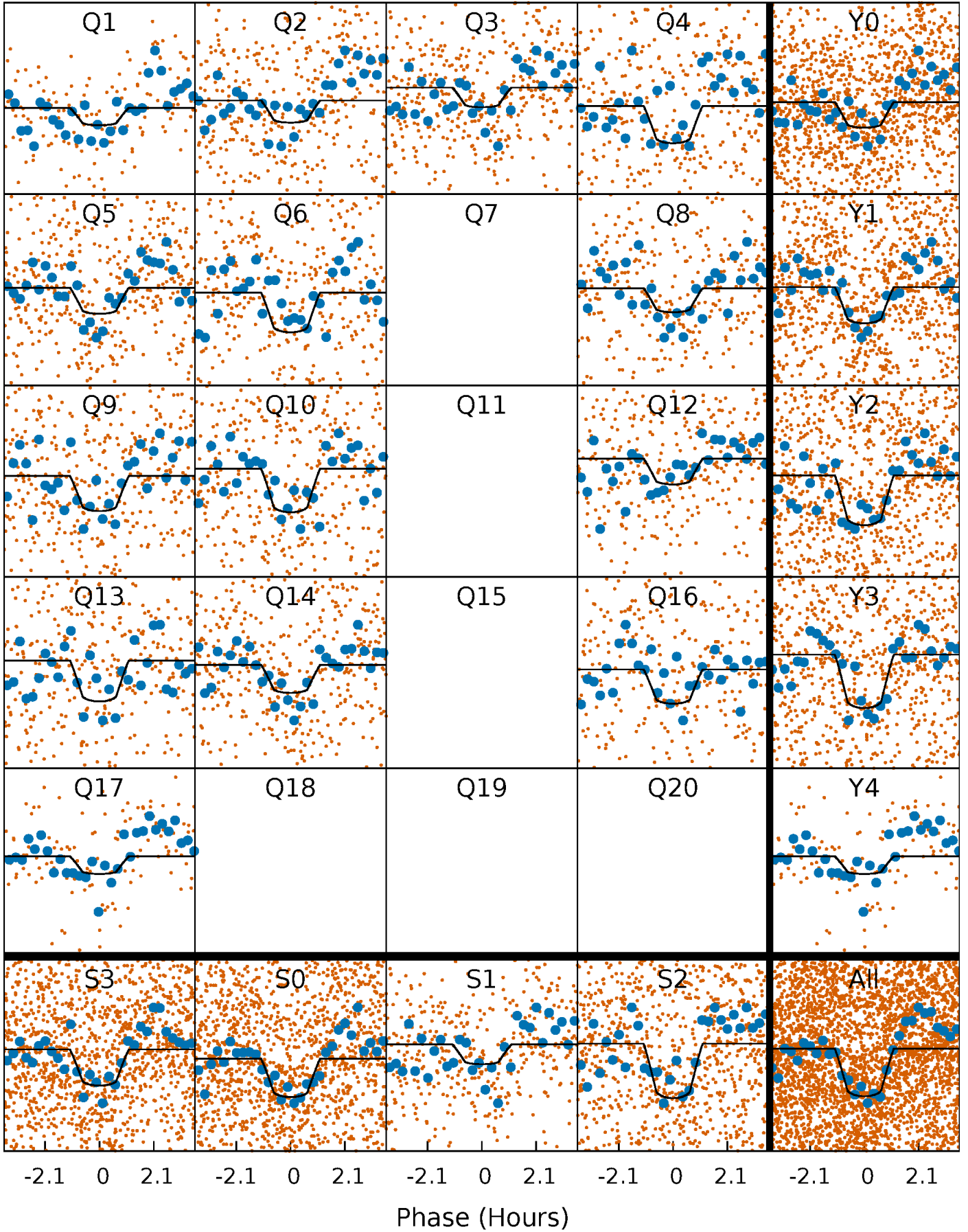
PDC Quarter-Phased Transit Curves

TCE 010685175-02 P= 3.102027 Days $T_0=134.494748$ (BKJD)



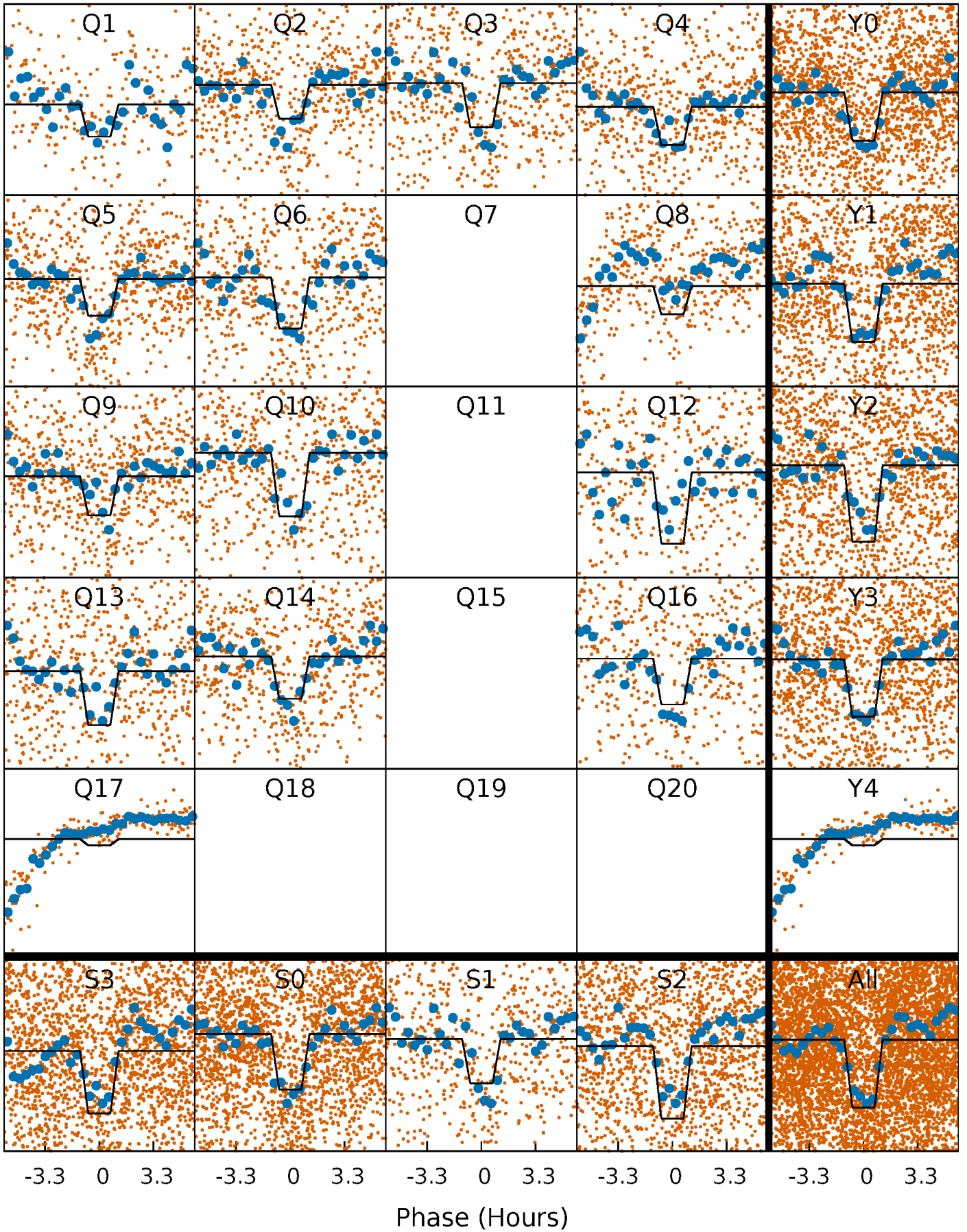
DV Quarter-Phased Transit Curves

TCE 010685175-02 P= 3.102027 Days $T_0=134.494748$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

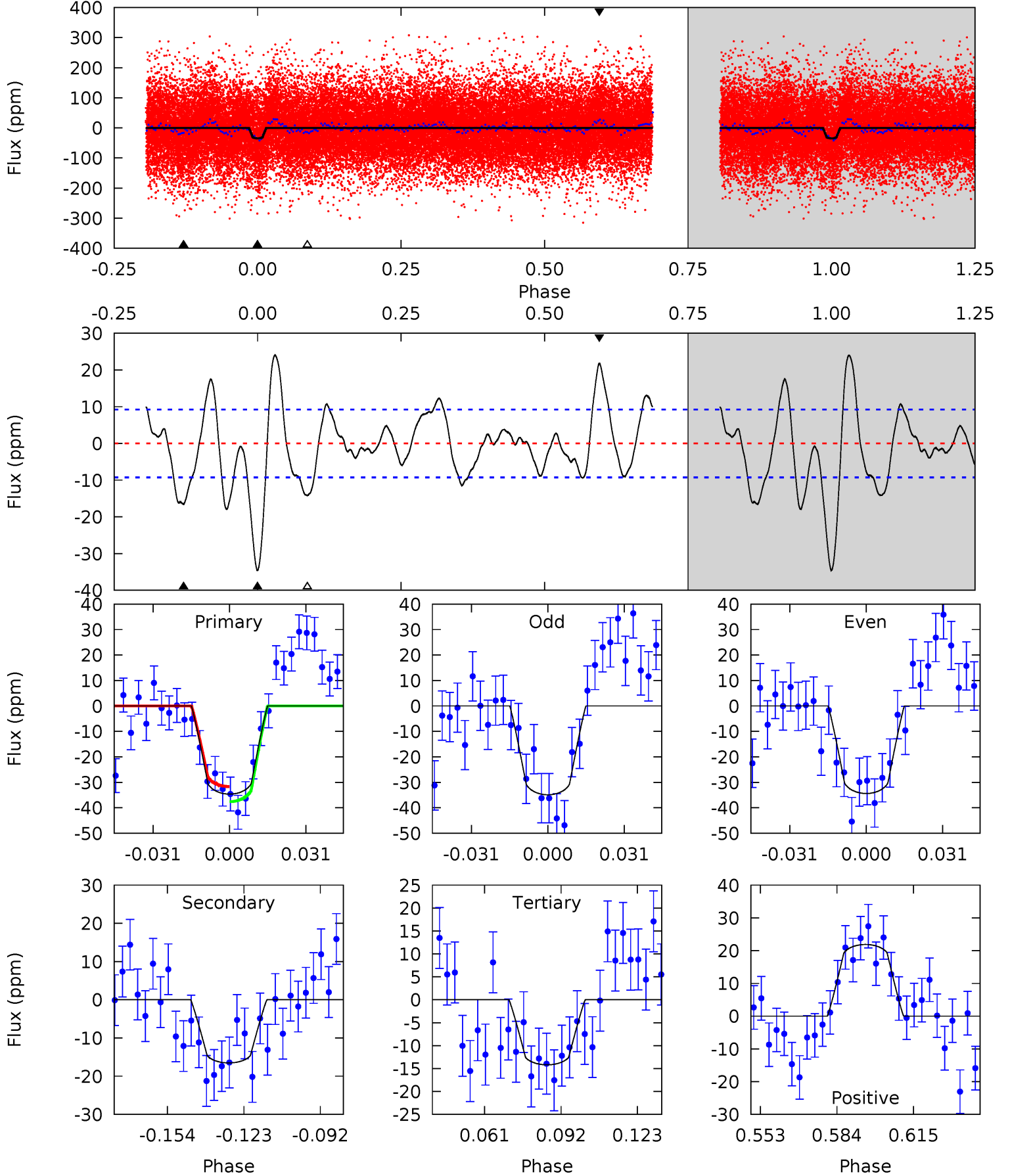
TCE 010685175-02 P= 3.102015 Days $T_0=134.500616$ (BKJD)



DV Model-Shift Uniqueness Test

010685175-02, P = 3.102027 Days, E = 131.392721 Days

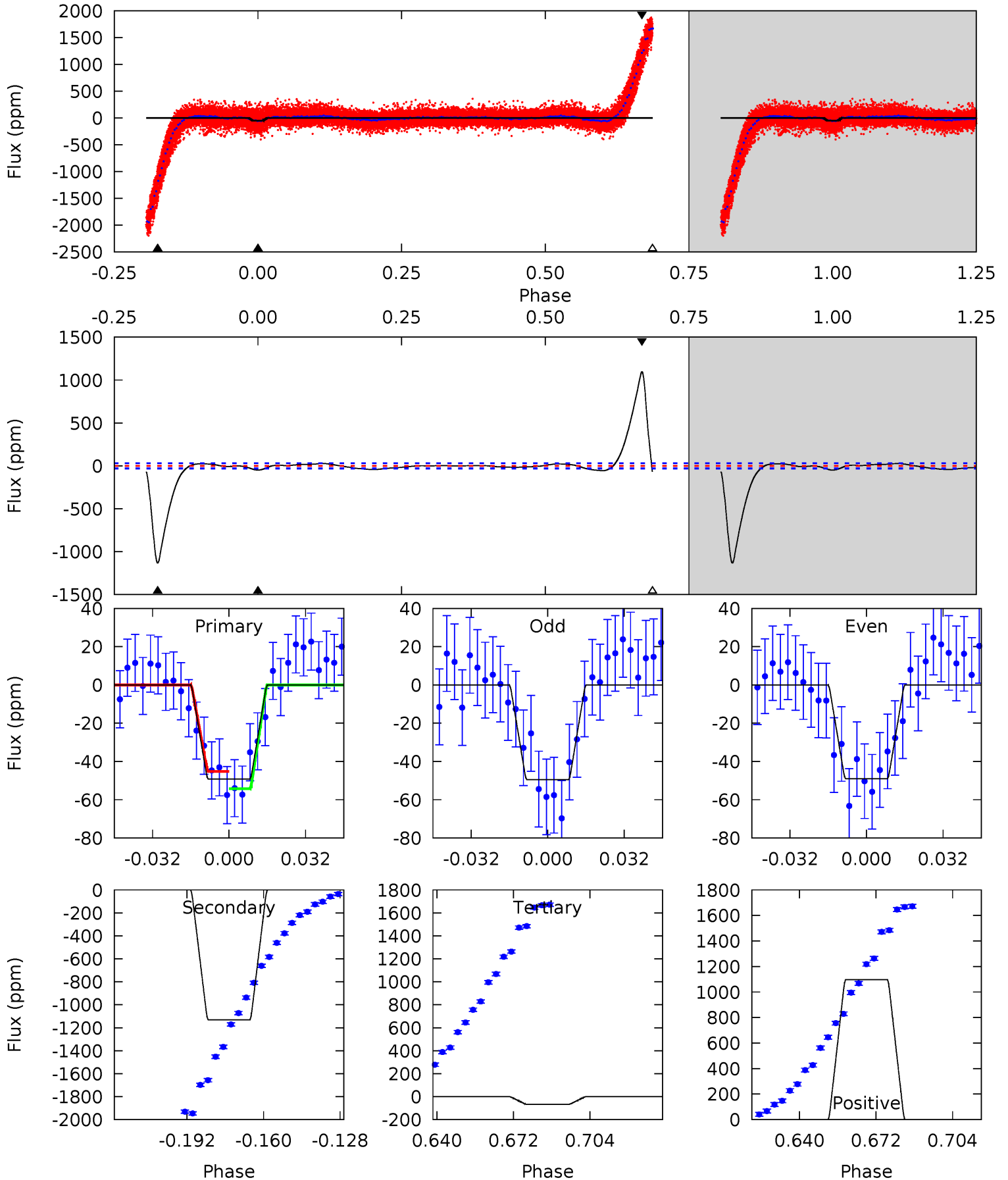
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	8.60	7.38	11.4	4.81	2.16	4.12	10.6	6.63	1.22	-2.78	0.13	0.99	0.41	1.53



Alt Model-Shift Uniqueness Test

010685175-02, P = 3.102015 Days, E = 131.398601 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.66	176.2	10.5	171.1	4.80	2.14	25.8	-2.89	-163.4	165.7	5.16	0.04	0.98	0.49	0.61



Stellar Parameters For KIC 010685175

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8709^{+462}_{-925}	$4.232^{+0.032}_{-0.288}$	$0.210^{+0.150}_{-0.150}$	$1.797^{+0.840}_{-0.148}$	$2.012^{+0.447}_{-0.275}$	$0.488^{+0.094}_{-0.317}$
	+5%/-11%	+1%/-7%	+71%/-71%	+47%/-8%	+22%/-14%	+19%/-65%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010685175-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 2	$1.31^{+0.49}_{-0.38}$	3239^{+343}_{-335}	6620^{+1341}_{-905}	14^{+13}_{-6}
Alt.	-1131 ± 6	$1.60^{+0.53}_{-0.36}$	3251^{+326}_{-314}	38769^{+16463}_{-11131}	665^{+402}_{-278}

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

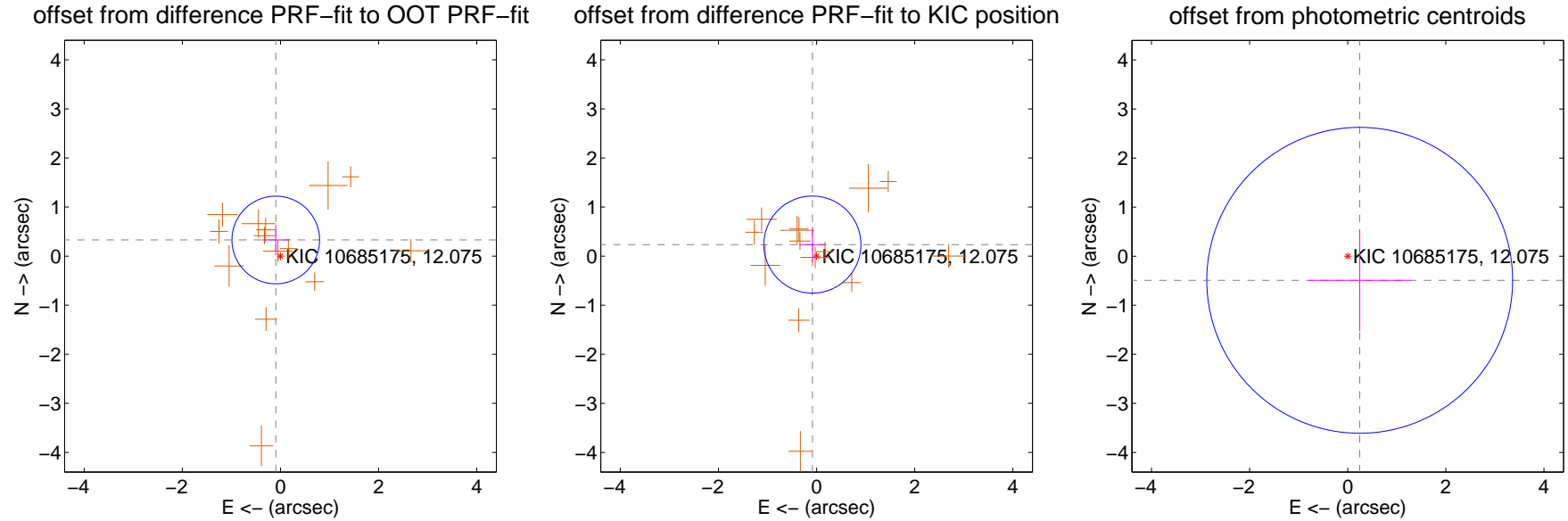
DV Centroid Data

Supplemental centroid analysis for 010685175-02. Kepler magnitude: 12.07. Transit SNR 11.63

There are 0 quarters with good PRF difference image offsets

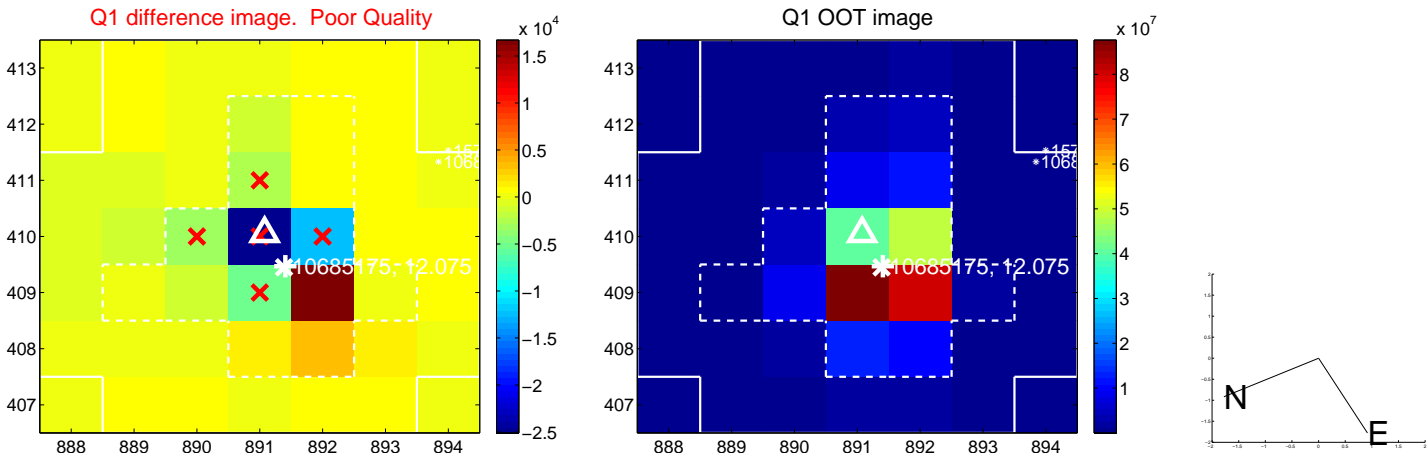
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.343 ± 0.298	1.15	0.096 ± 0.279	0.329 ± 0.311
PRF-fit source offset from KIC position	0.250 ± 0.330	0.76	0.085 ± 0.267	0.235 ± 0.363
photometric centroid source offset	0.55 ± 1.04	0.53	-0.24 ± 1.05	-0.49 ± 1.04

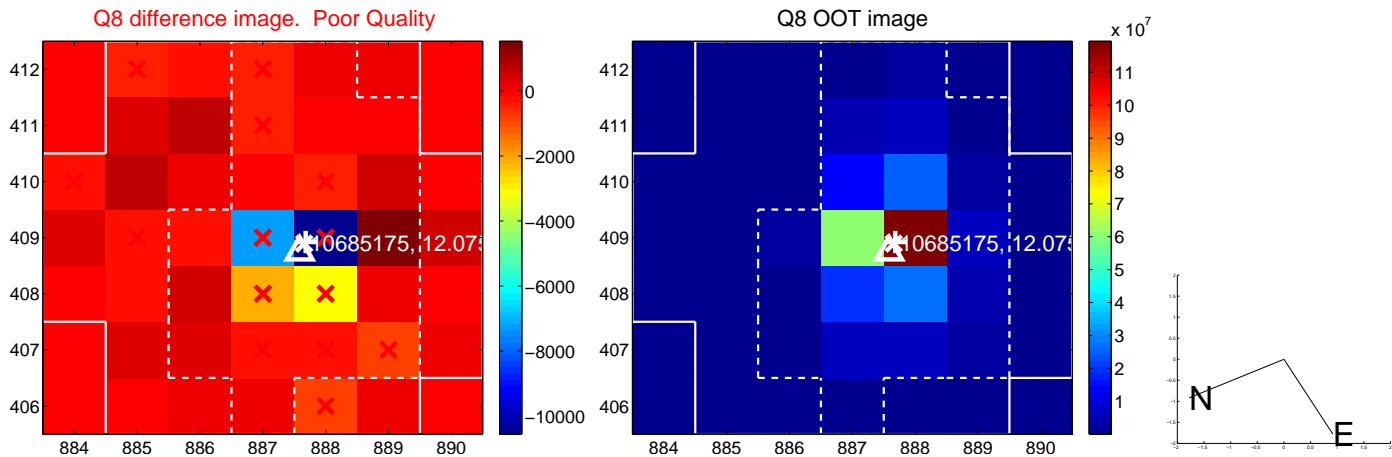
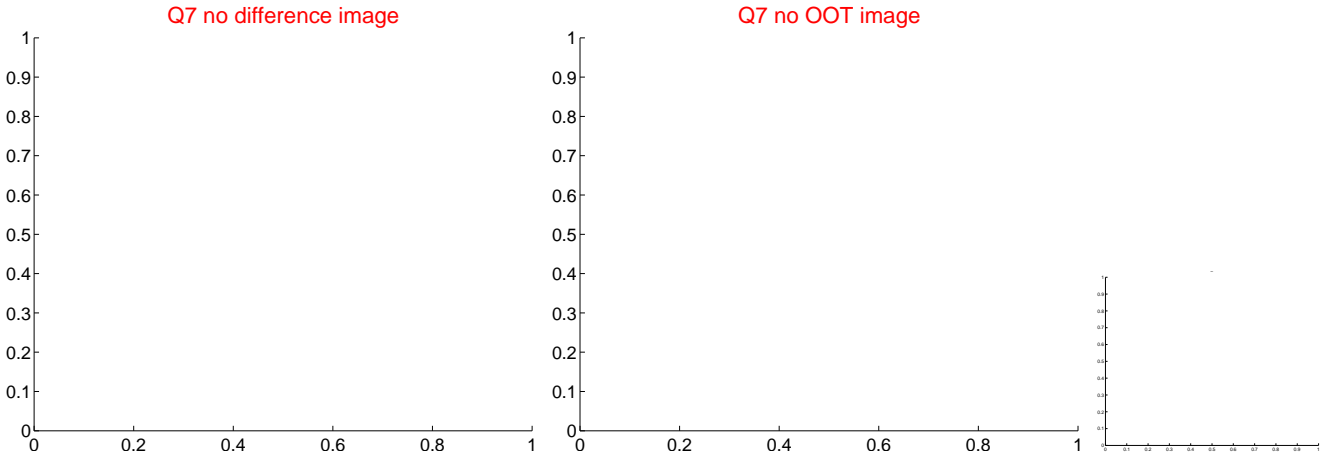
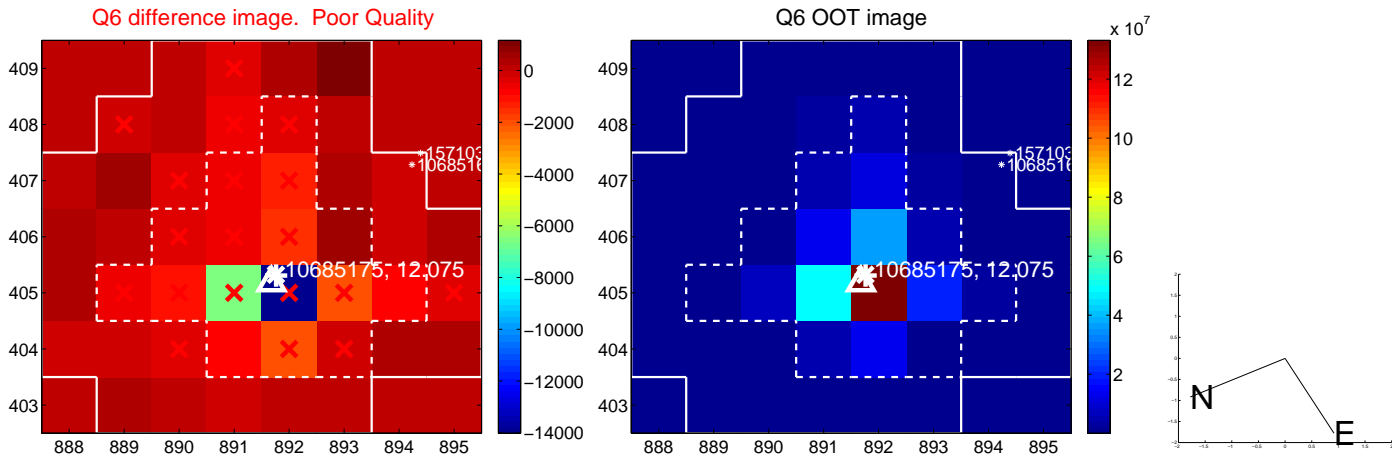
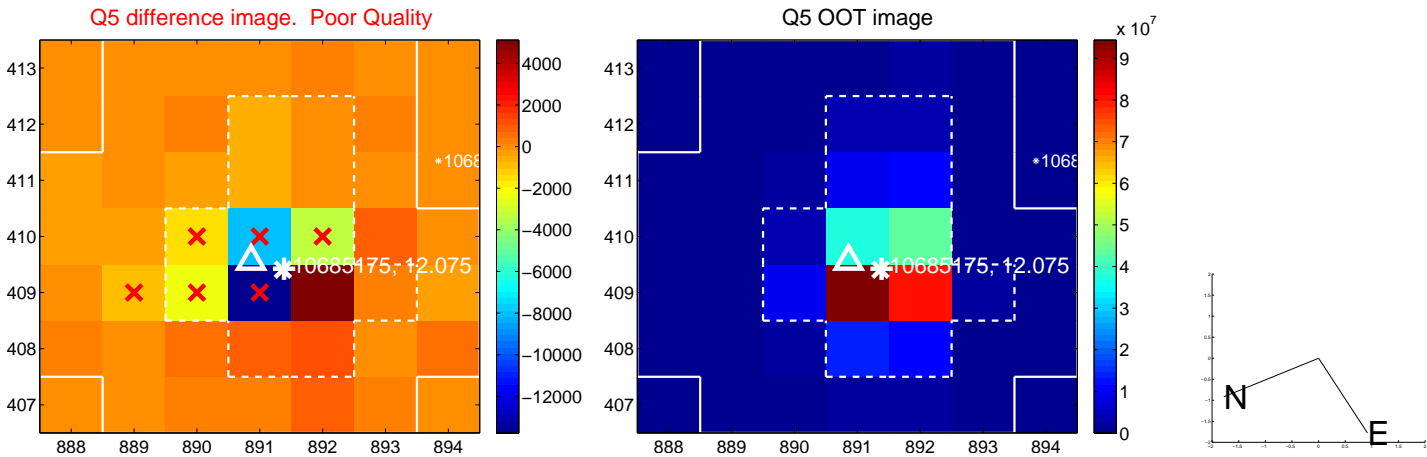


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

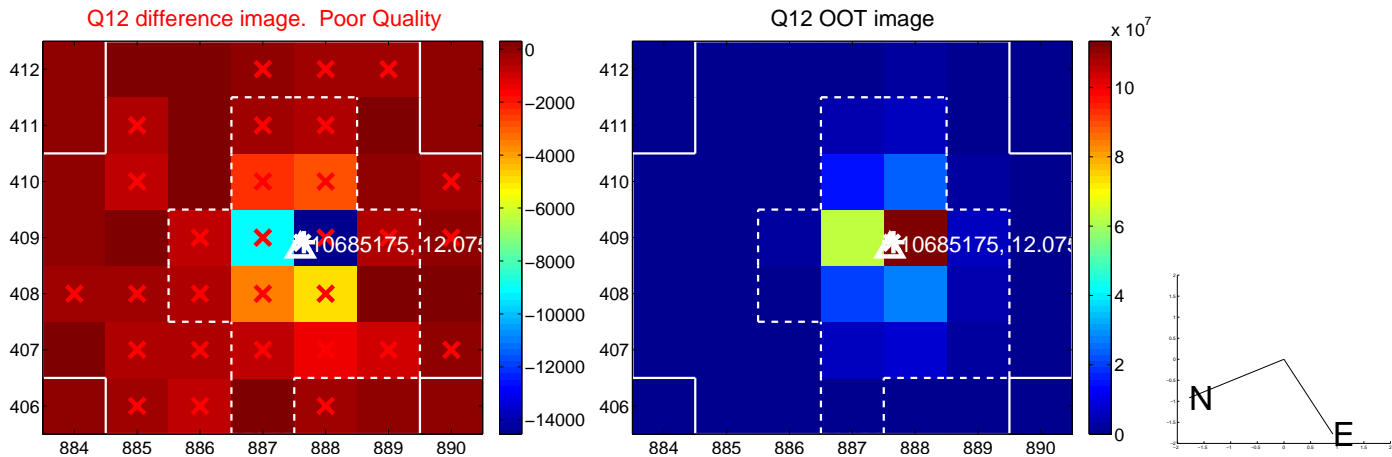
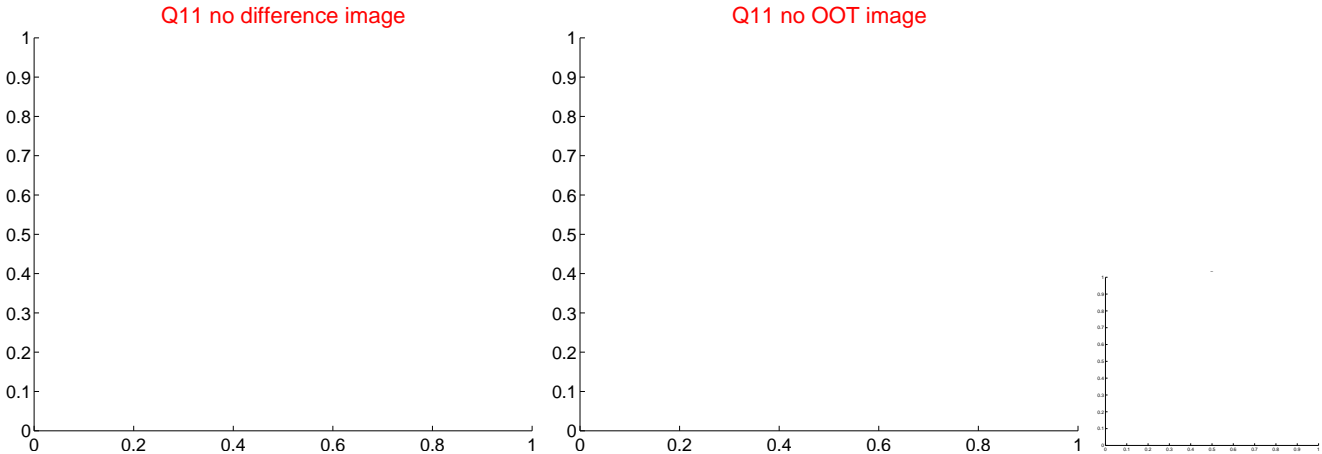
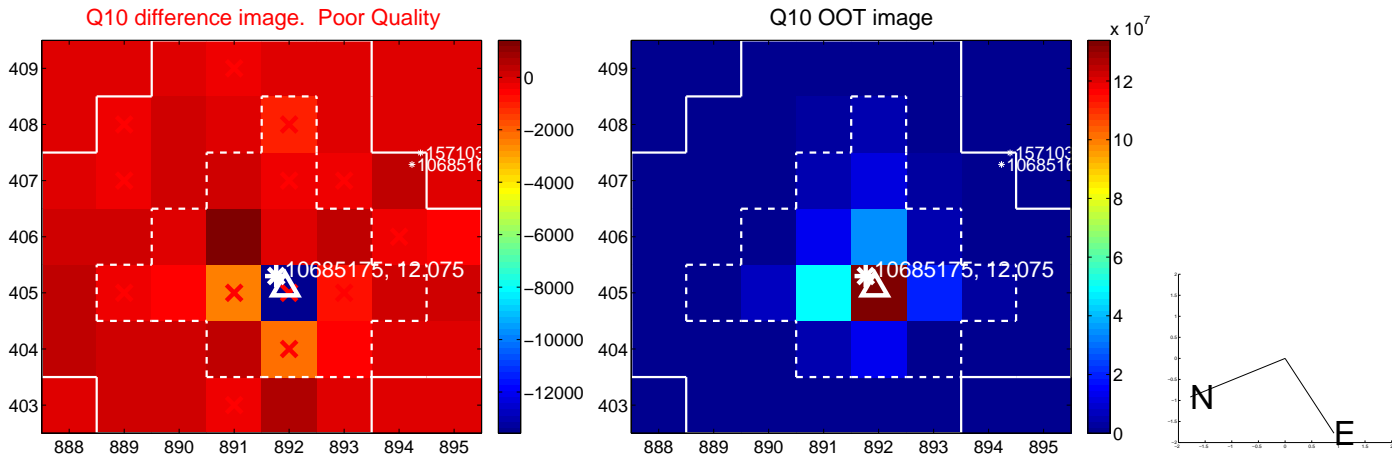
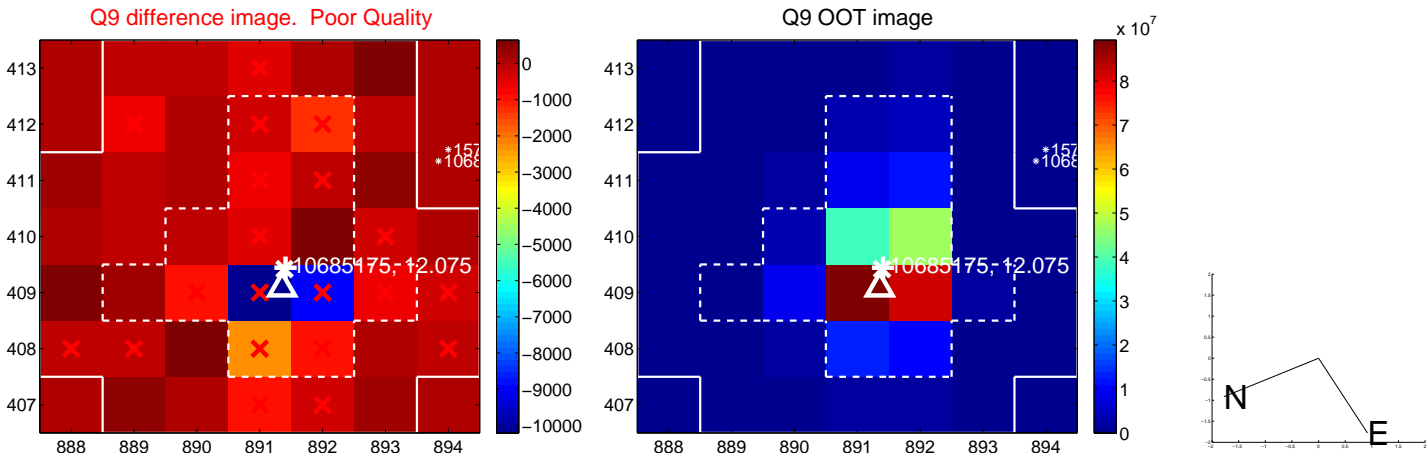
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



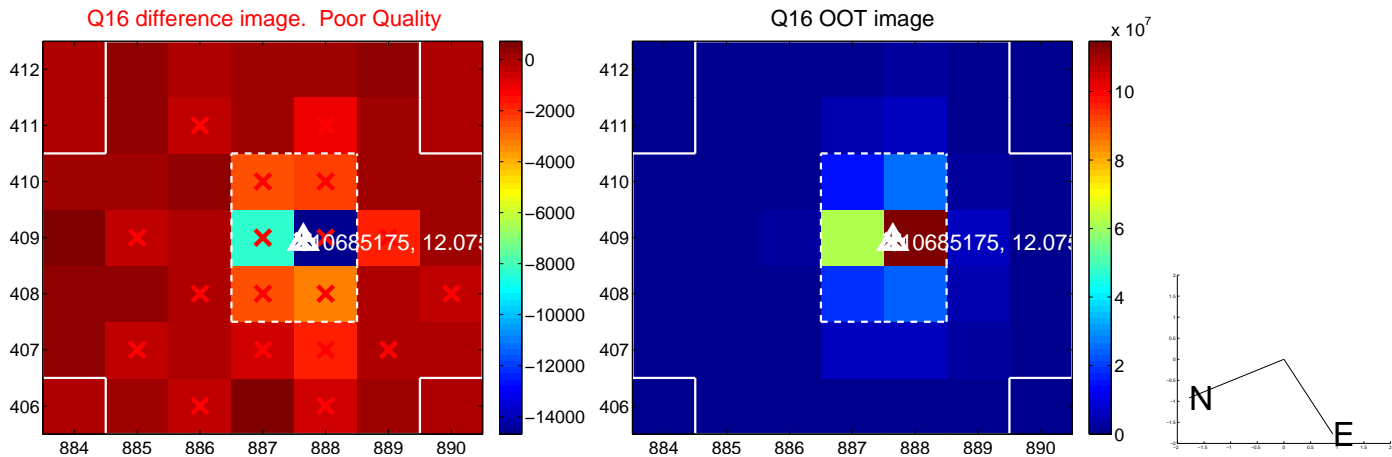
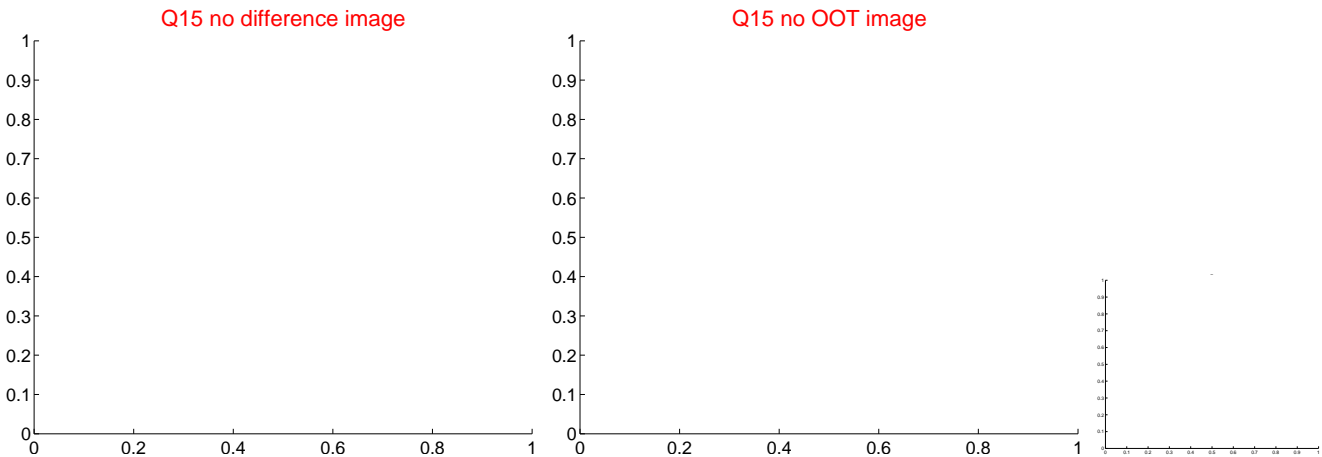
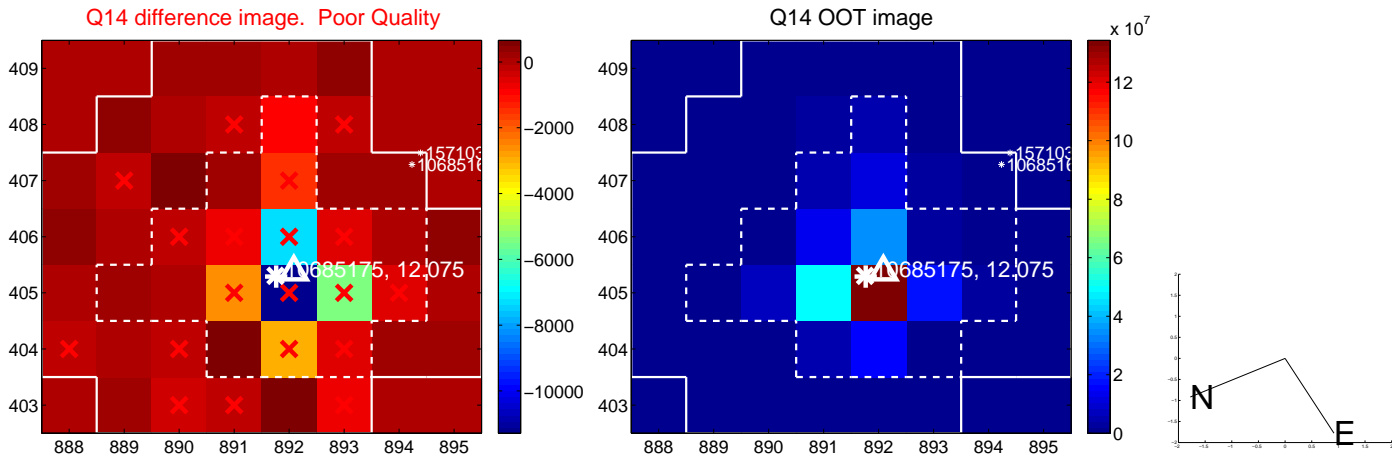
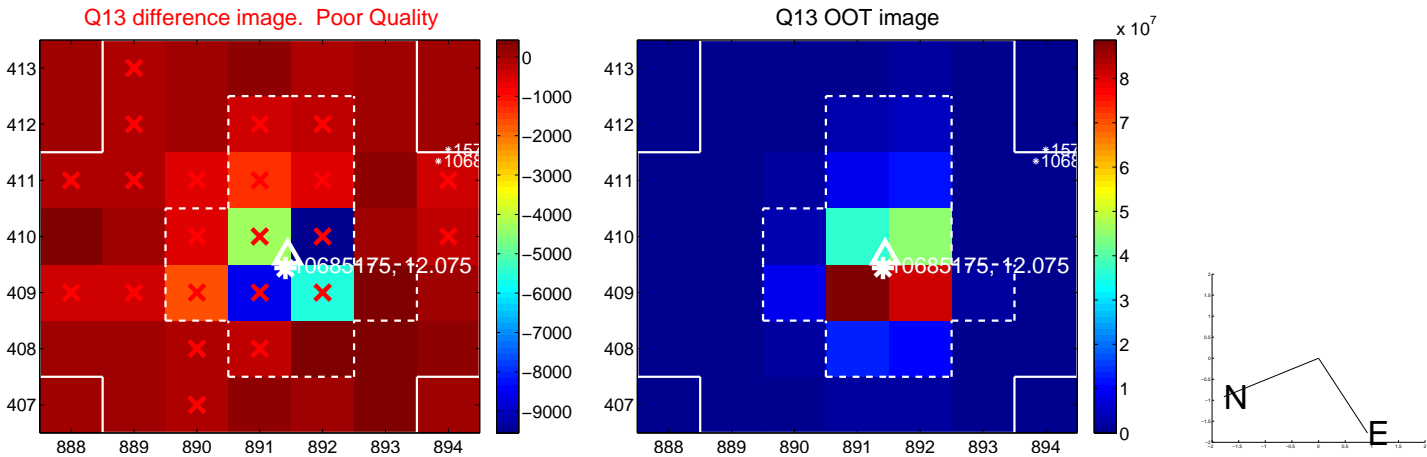
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



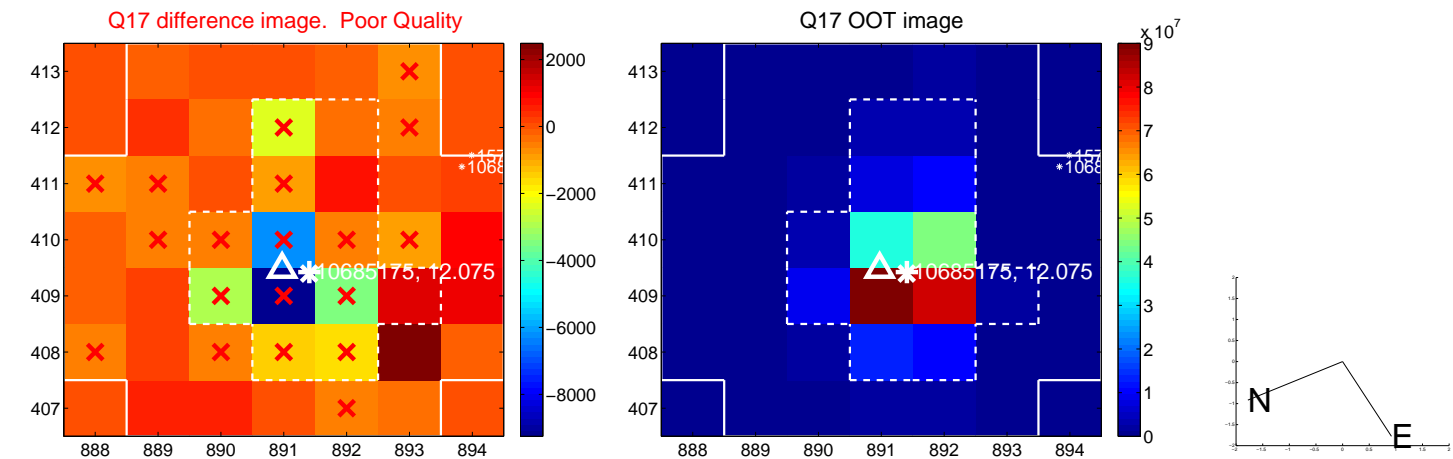
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



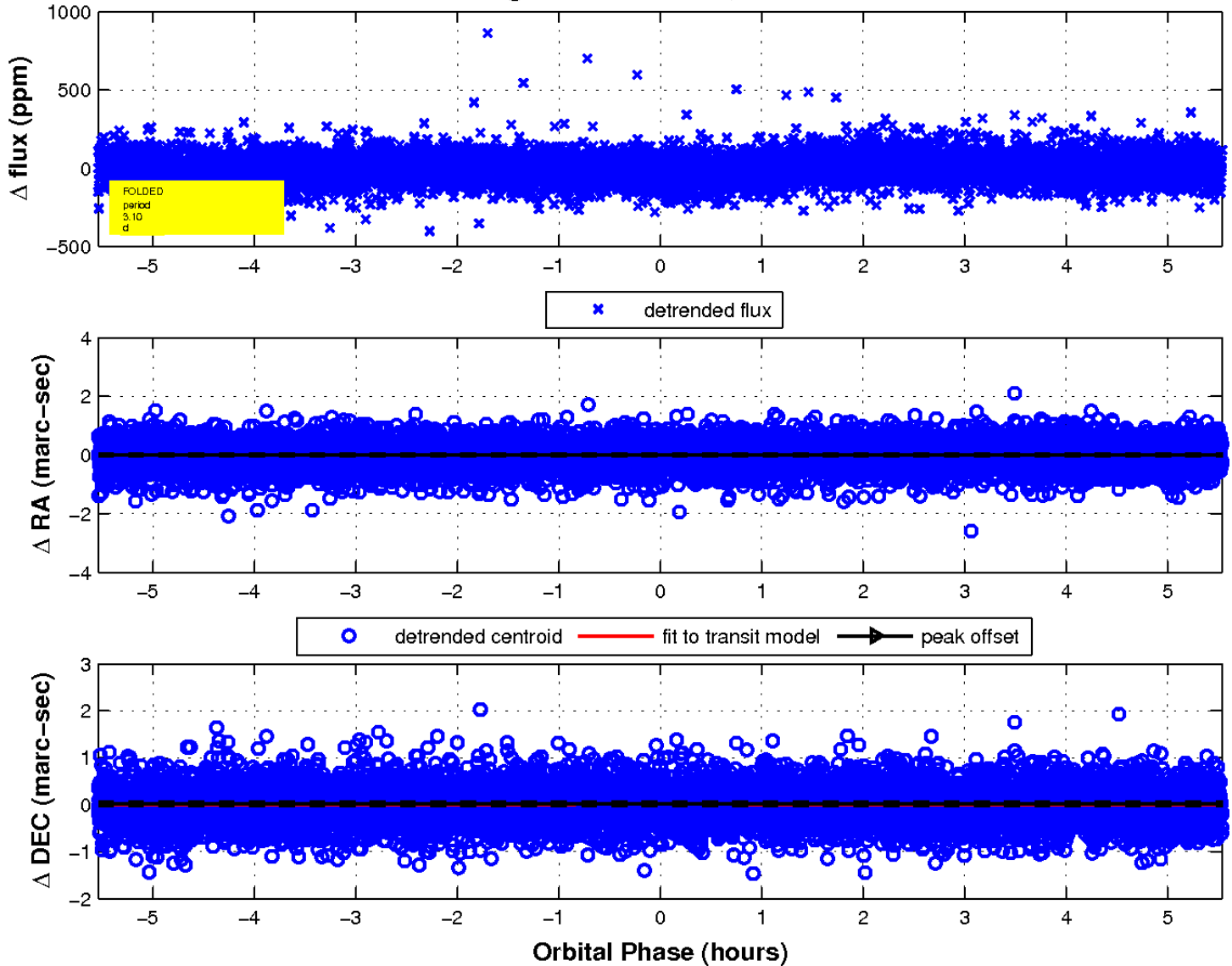
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

