

KIC 009171801

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})
009171801-01	OBS	0933.01	3.187098	133.398290	1029.8	2.788	29.9	34.9	0.81	5450	5.18	321.10
009171801-02	OBS	No	3.187085	131.801124	232.8	2.101	7.9	8.8	0.81	5450	1.50	321.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009171801-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
009171801-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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 009171801-01

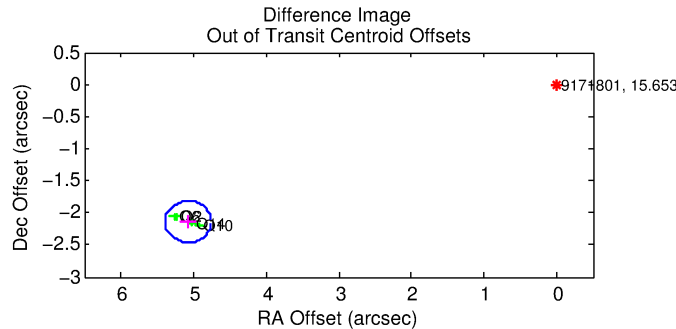
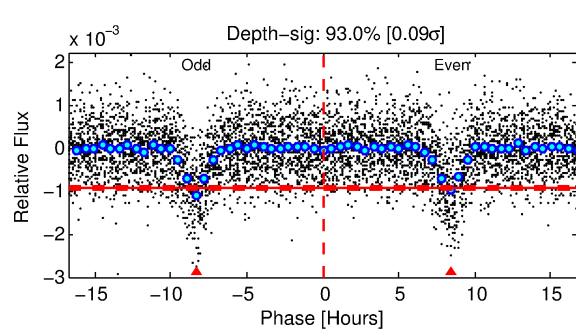
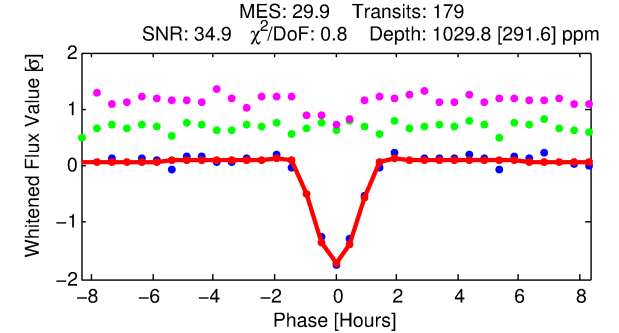
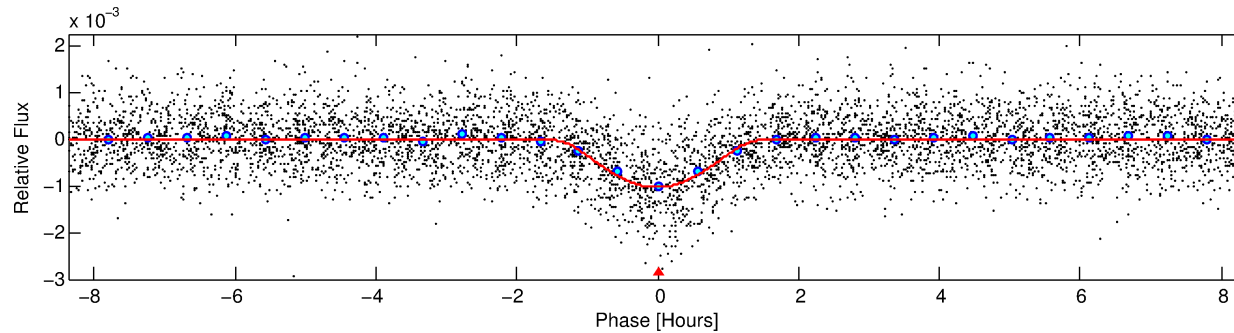
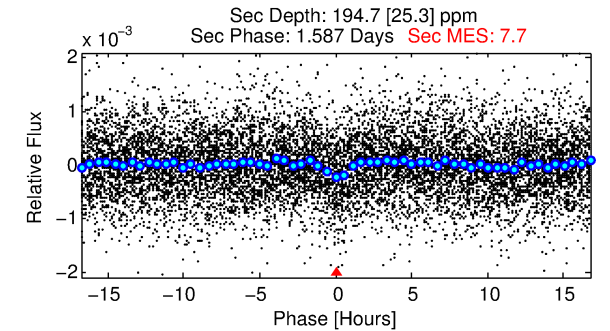
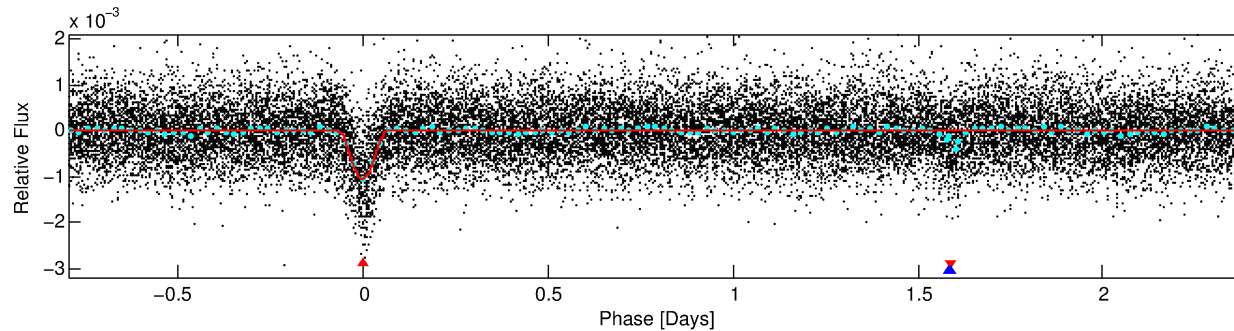
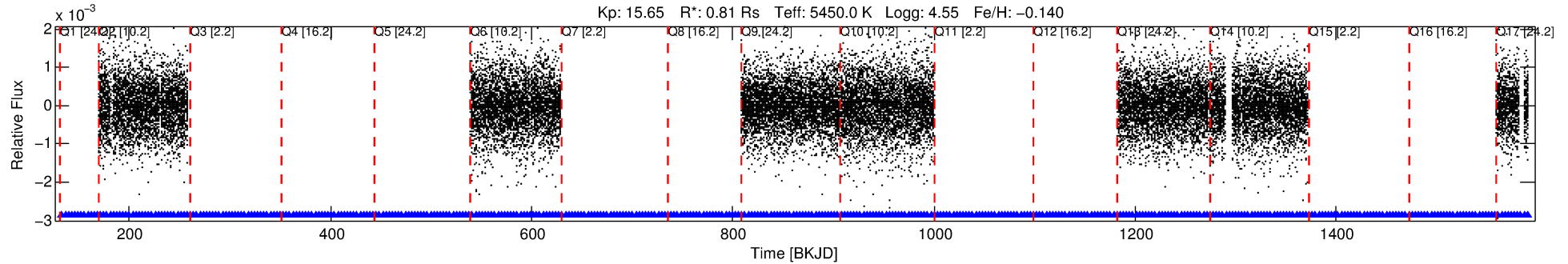
No Significant Match Found

DV One-Page Summary

KIC: 9171801 Candidate: 1 of 2 Period: 3.187 d

KOI: K00933.01 Corr: 0.920

Kp: 15.65 R*: 0.81 Rs Teff: 5450.0 K Logg: 4.55 Fe/H: -0.140



DV Fit Results:

Period = 3.18710 [0.00001] d
Epoch = 133.3983 [0.0016] BKJD
Rp/R* = 0.0585 [0.0834]
a/R* = 3.20 [0.94]
b = 1.00 [0.11]
Seff = 321.10 [93.10]
Teff = 1079 [78] K
Rp = 5.18 [7.47] Re
a = 0.0402 [0.0071] AU
Ag = 6.46 [18.52] [0.29σ]
Teffp = 2661 [1901] K [0.83σ]

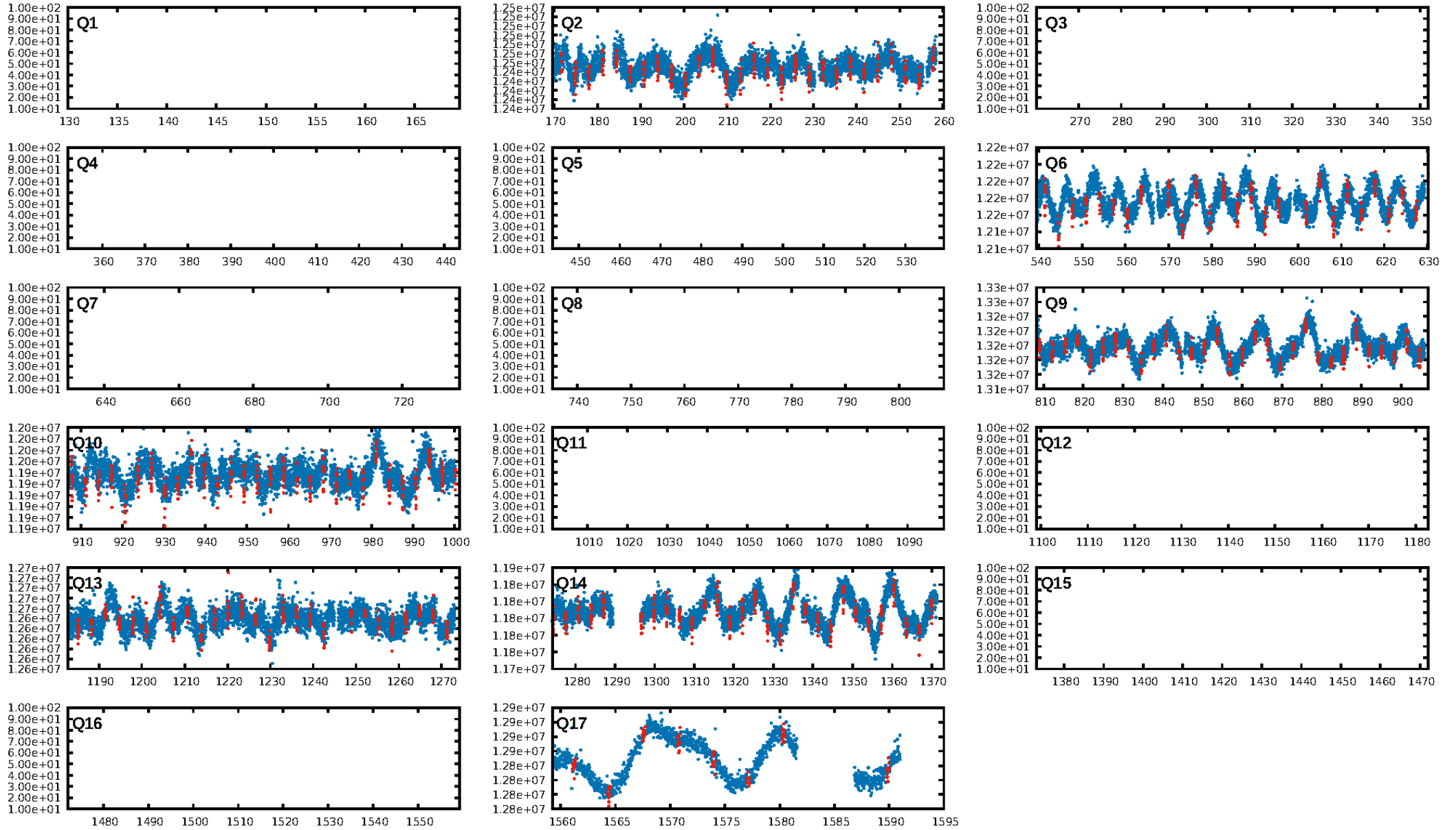
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 2.16e-192
RollingBand-fgt: 1.00 [171/171]
GhostDiagnostic-chr: -0.2483
Centroid-sig: N/A
Centroid-so: 49.470 arcsec [150.74σ]
OotOffset-rm: 5.502 arcsec [51.48σ]
KicOffset-rm: 5.703 arcsec [47.98σ]
OotOffset-st: 4/0/0/0 [4]
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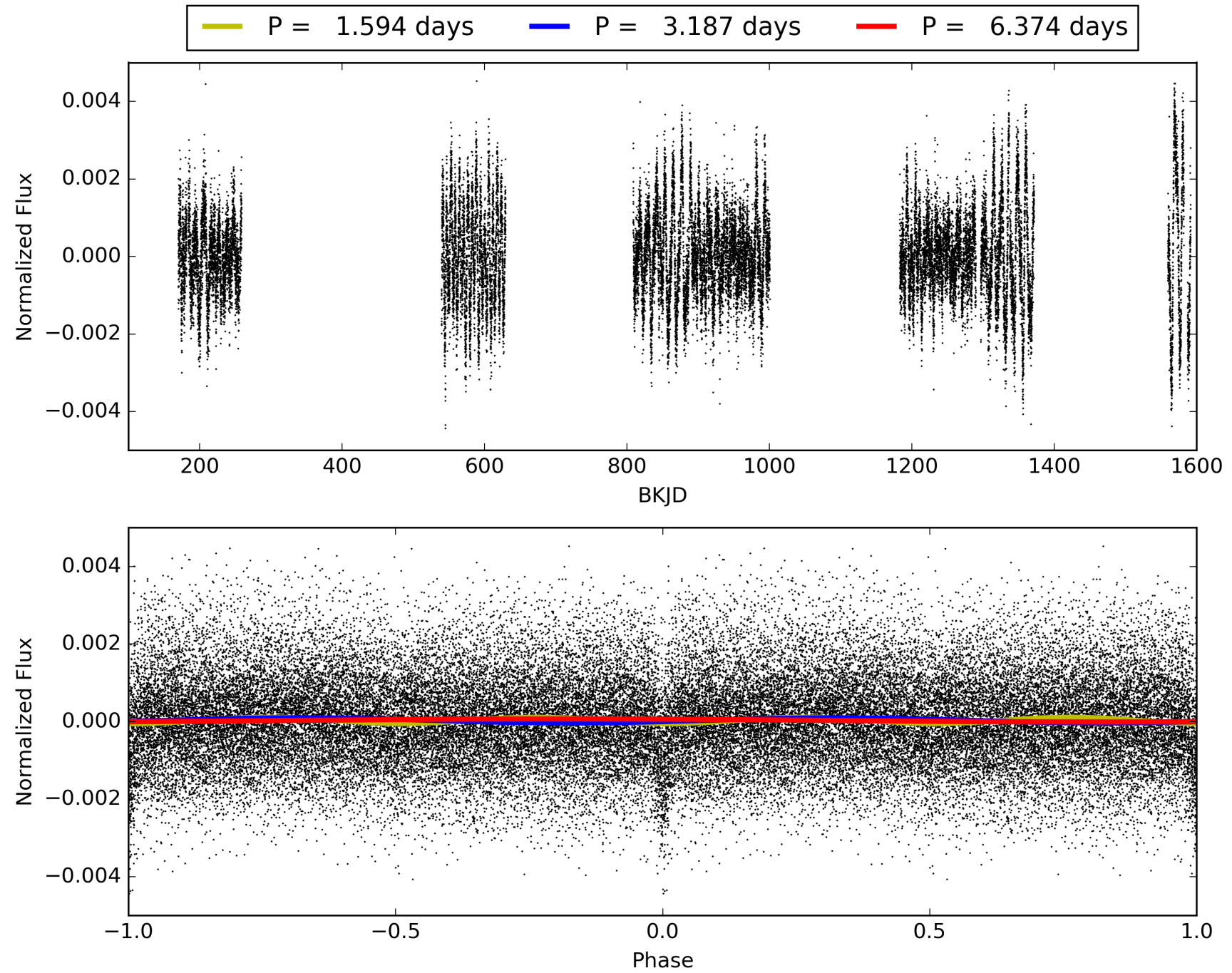
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009171801-01, PDC Light Curves

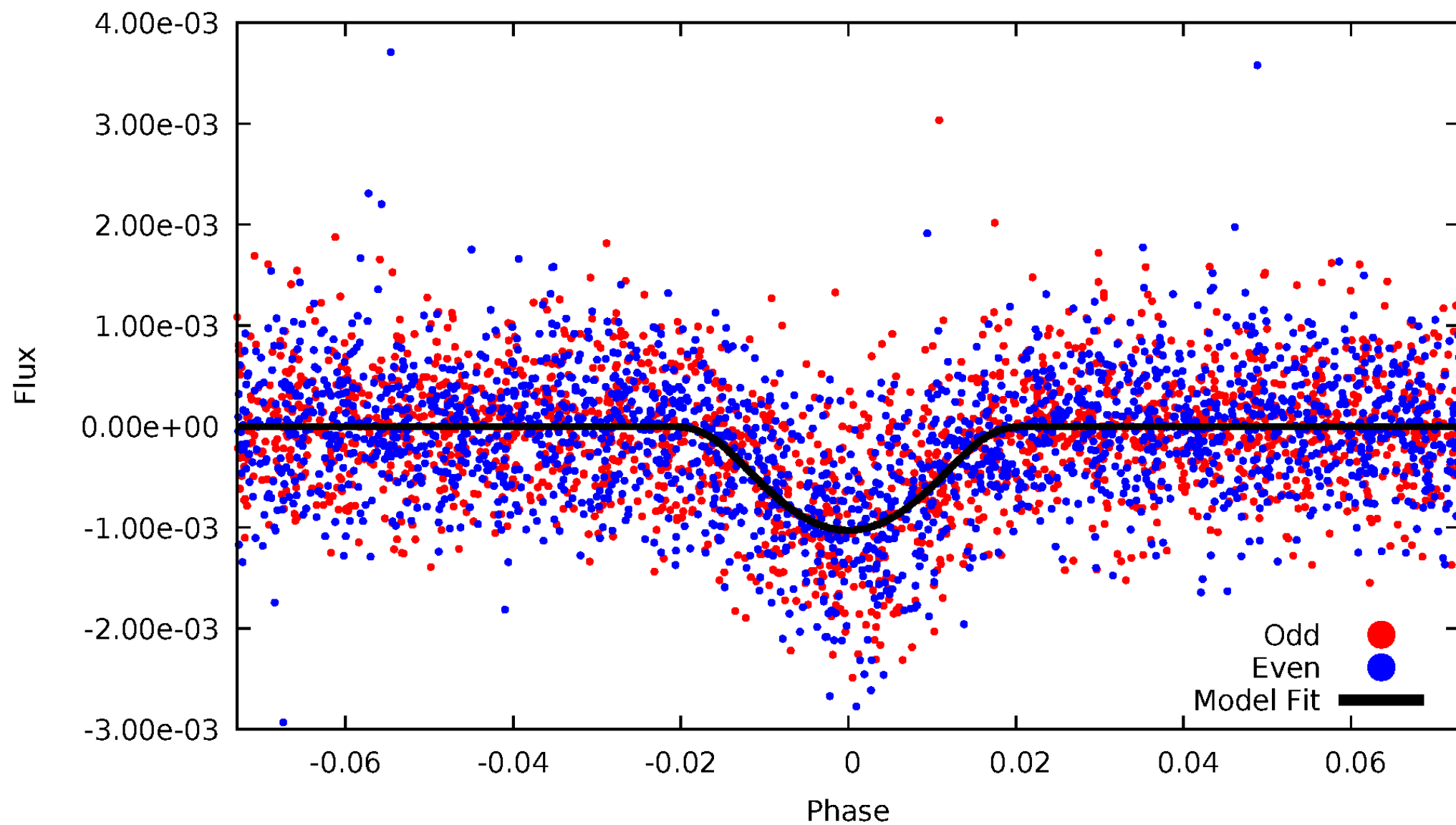


TCE 009171801-01



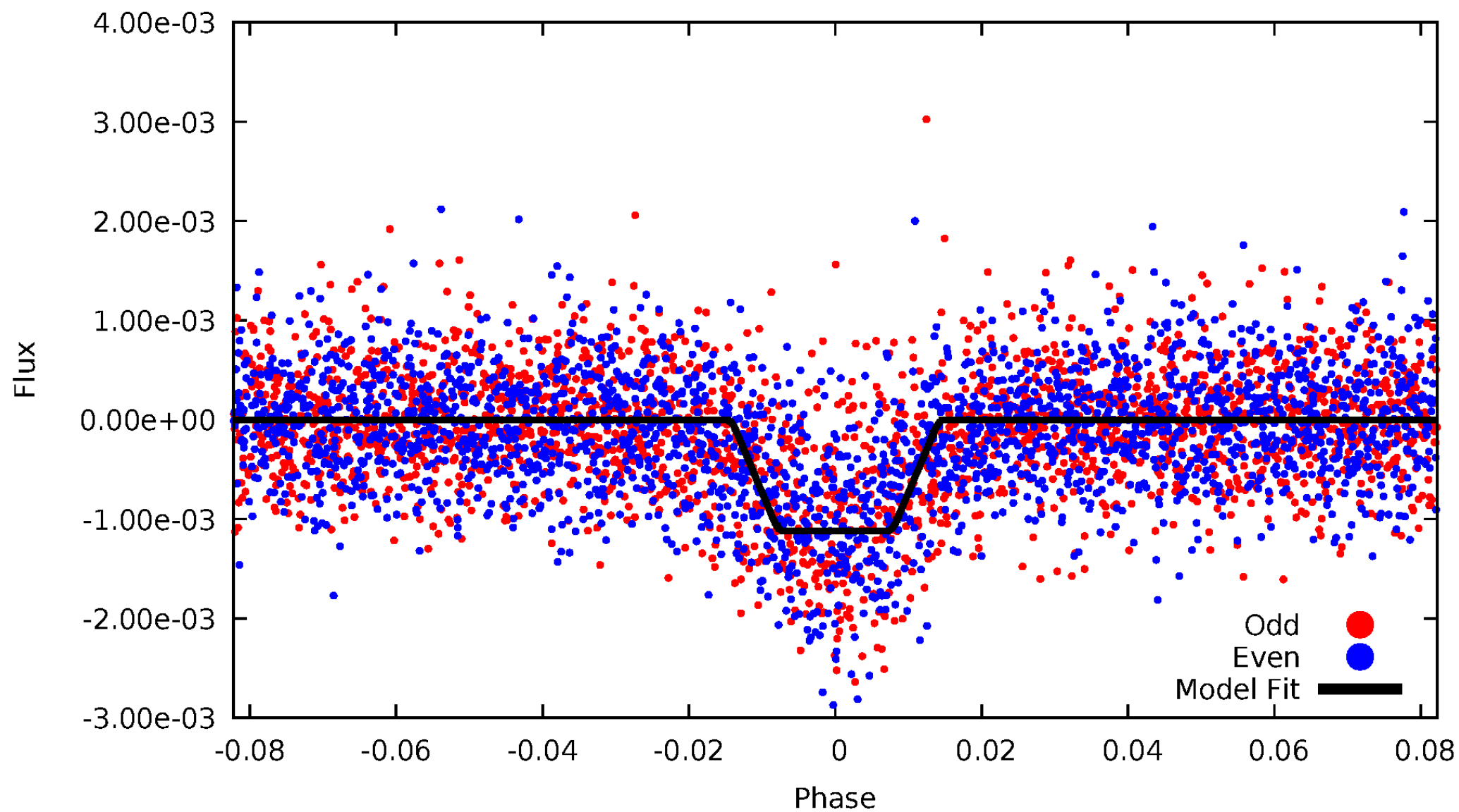
DV Odd/Even

TCE 009171801-01

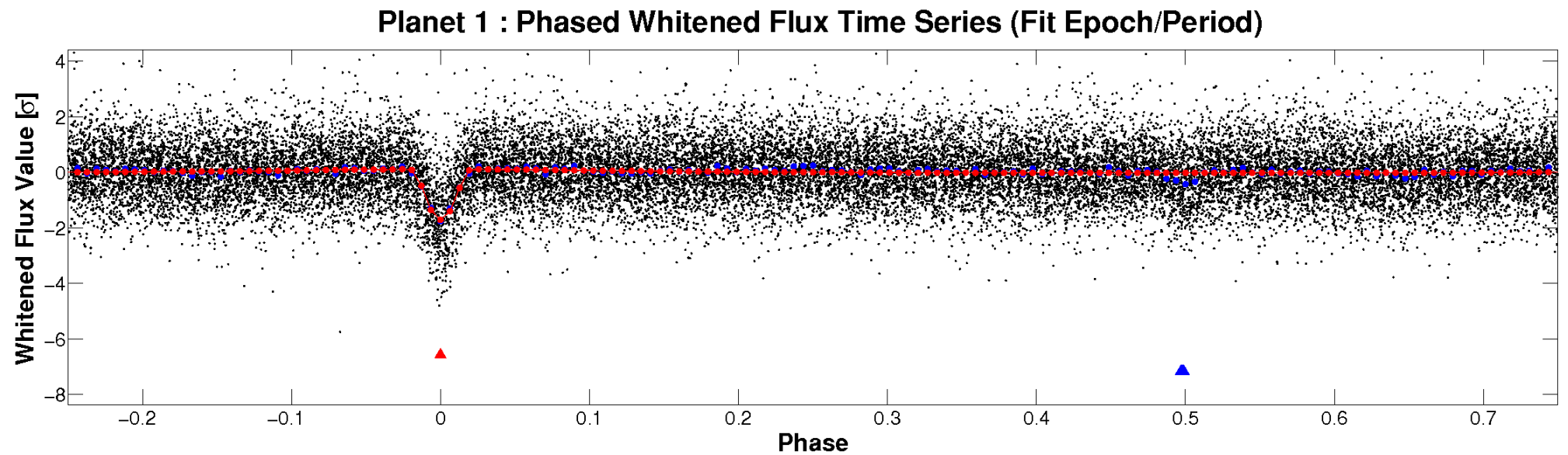
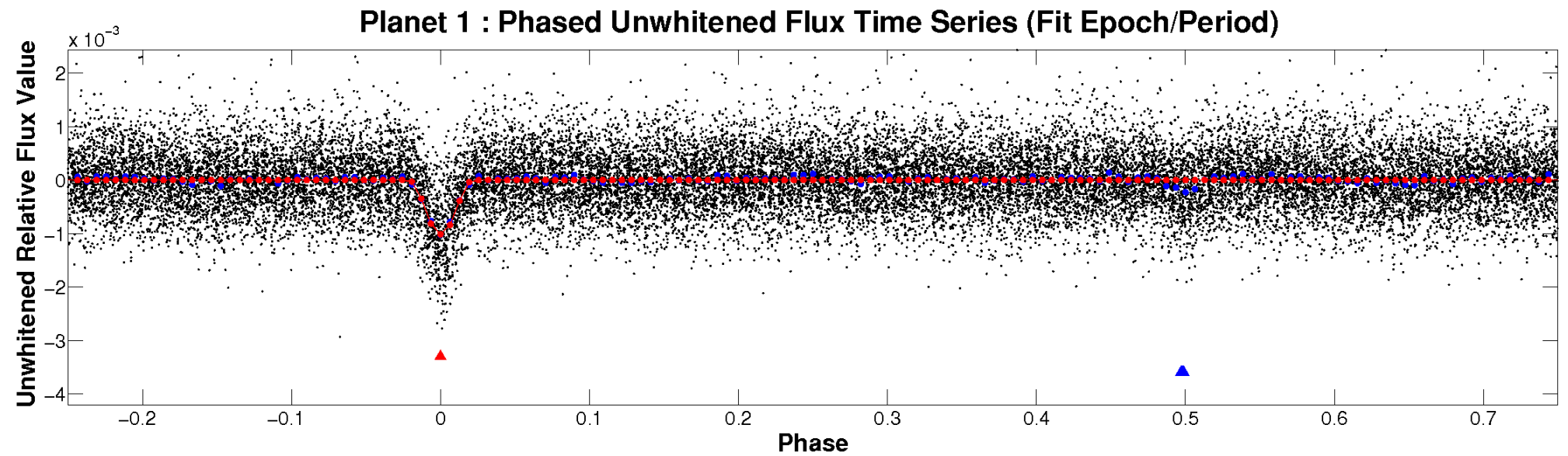


ALT Odd/Even

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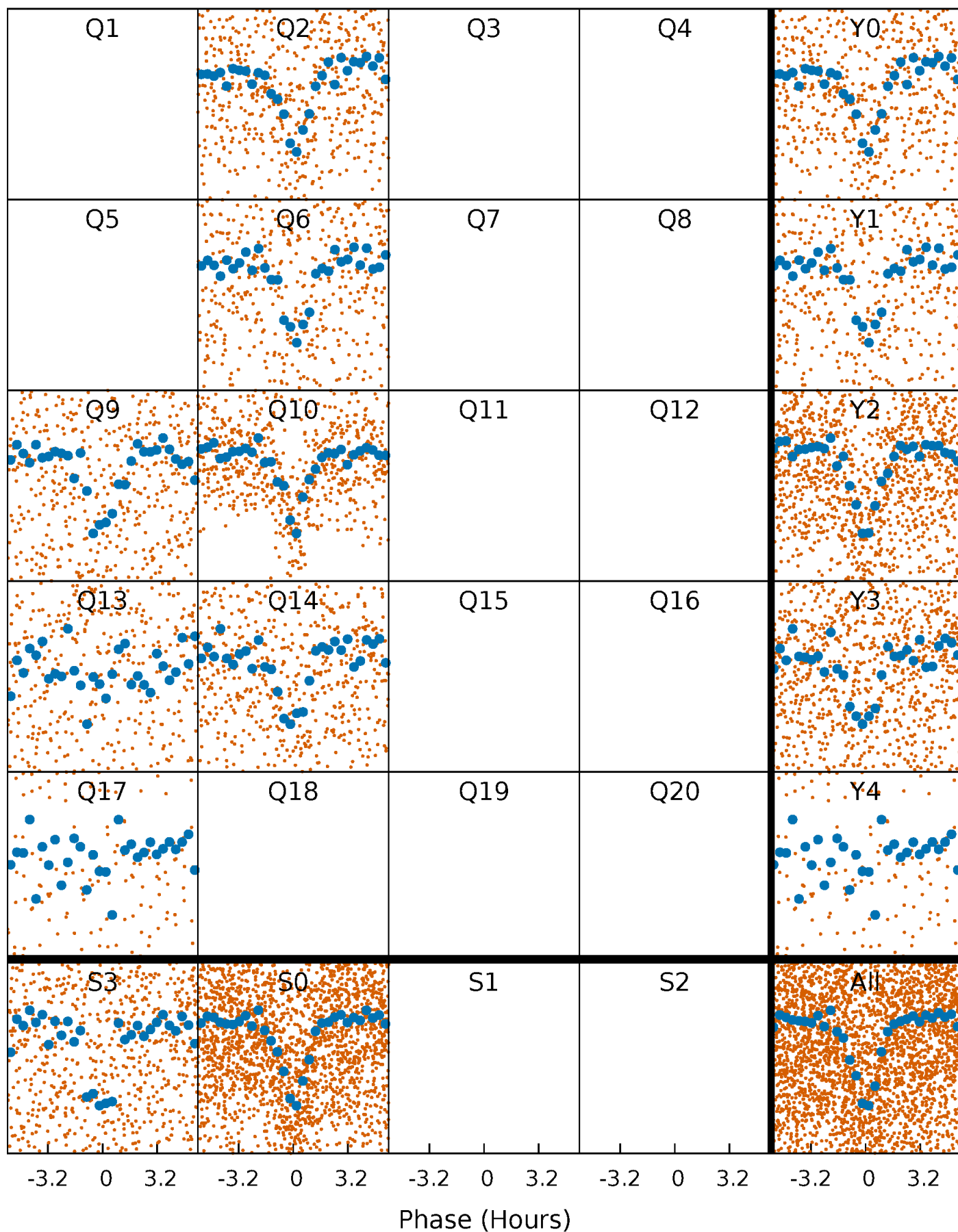


Non-Whitened Vs. Whitened Light Curve



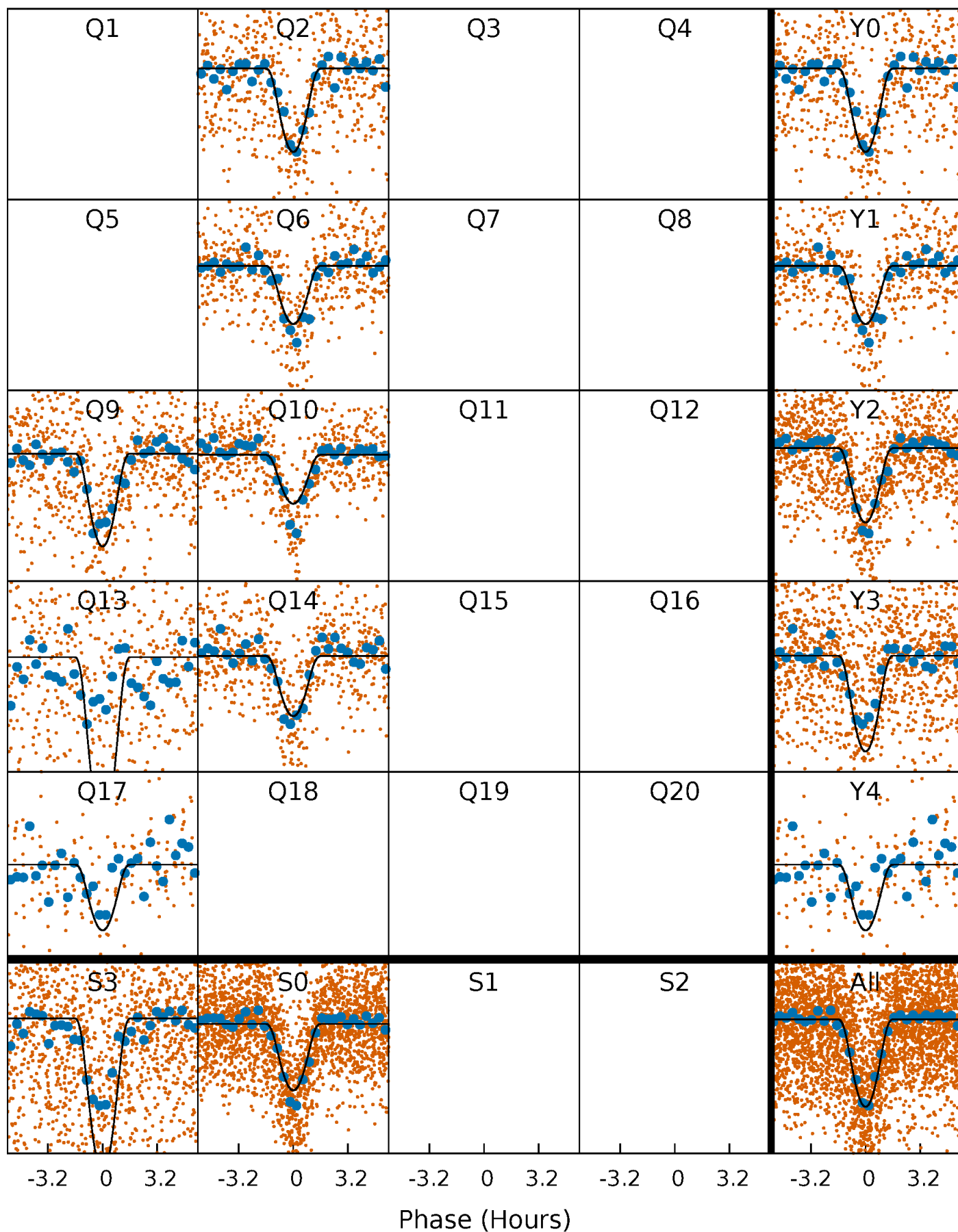
PDC Quarter-Phased Transit Curves

TCE 009171801-01 P= 3.187098 Days $T_0=133.398290$ (BKJD)



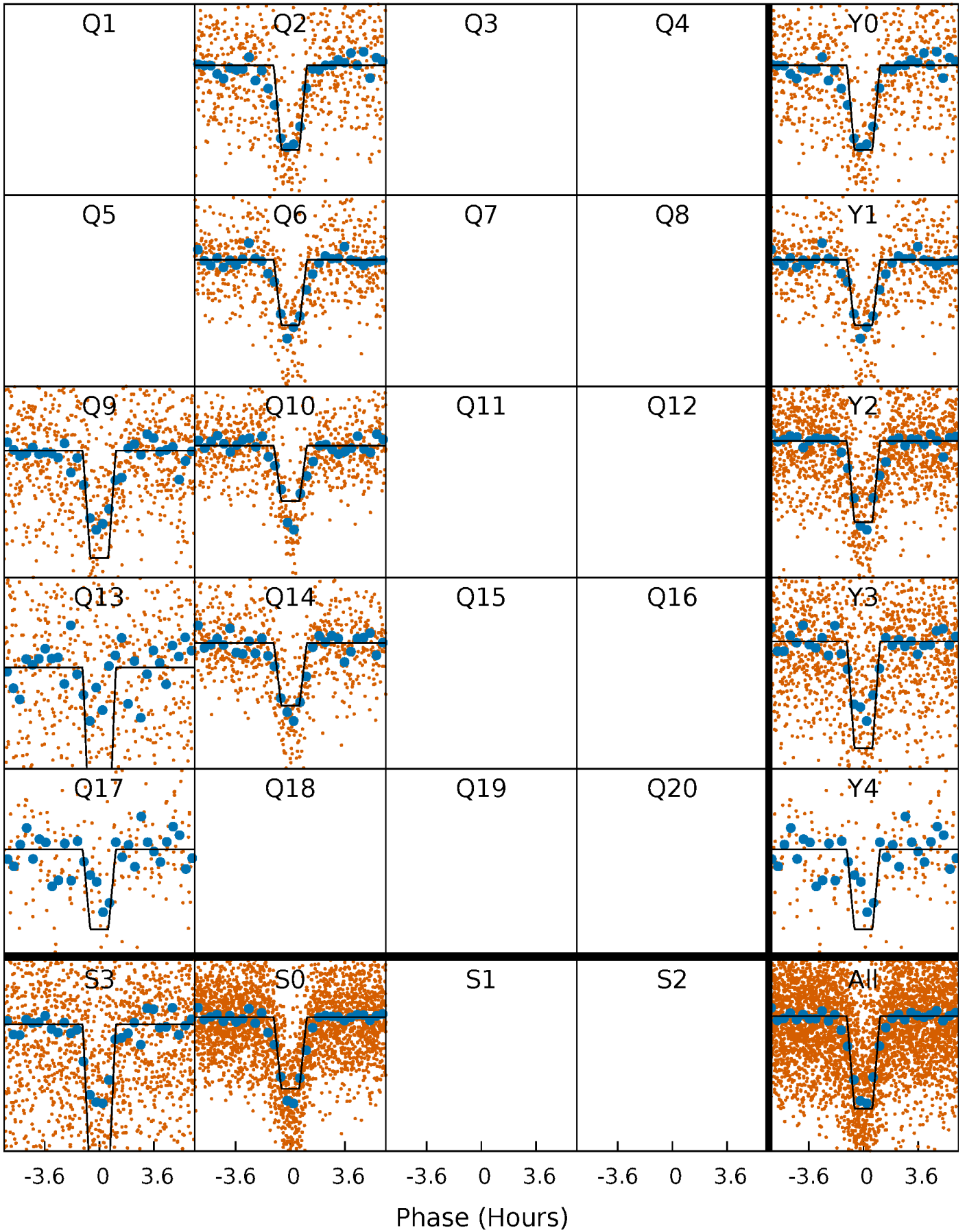
DV Quarter-Phased Transit Curves

TCE 009171801-01 P= 3.187098 Days $T_0=133.398290$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

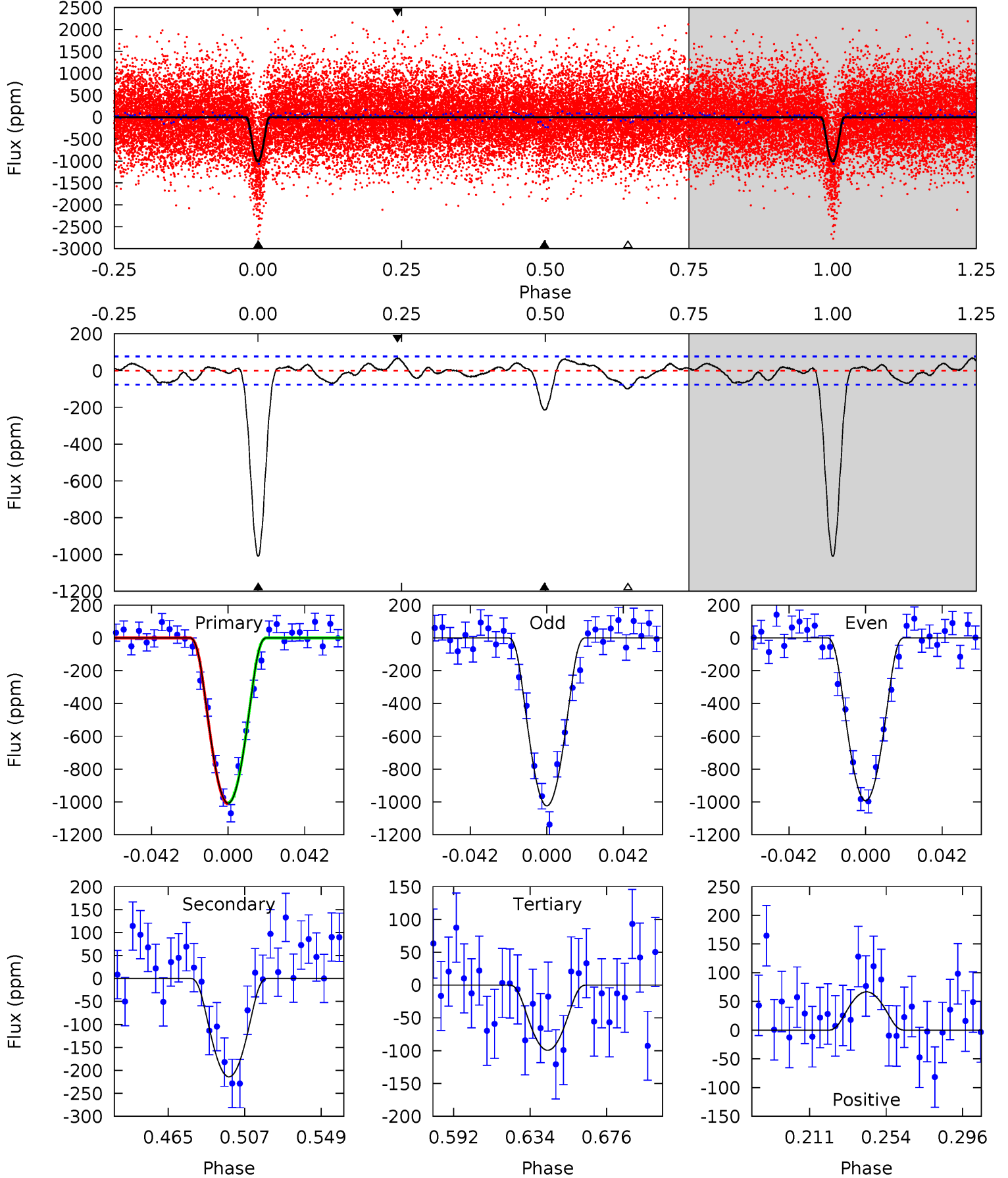
TCE 009171801-01 P= 3.187055 Days $T_0=133.407843$ (BKJD)



DV Model-Shift Uniqueness Test

009171801-01, P = 3.187098 Days, E = 133.398290 Days

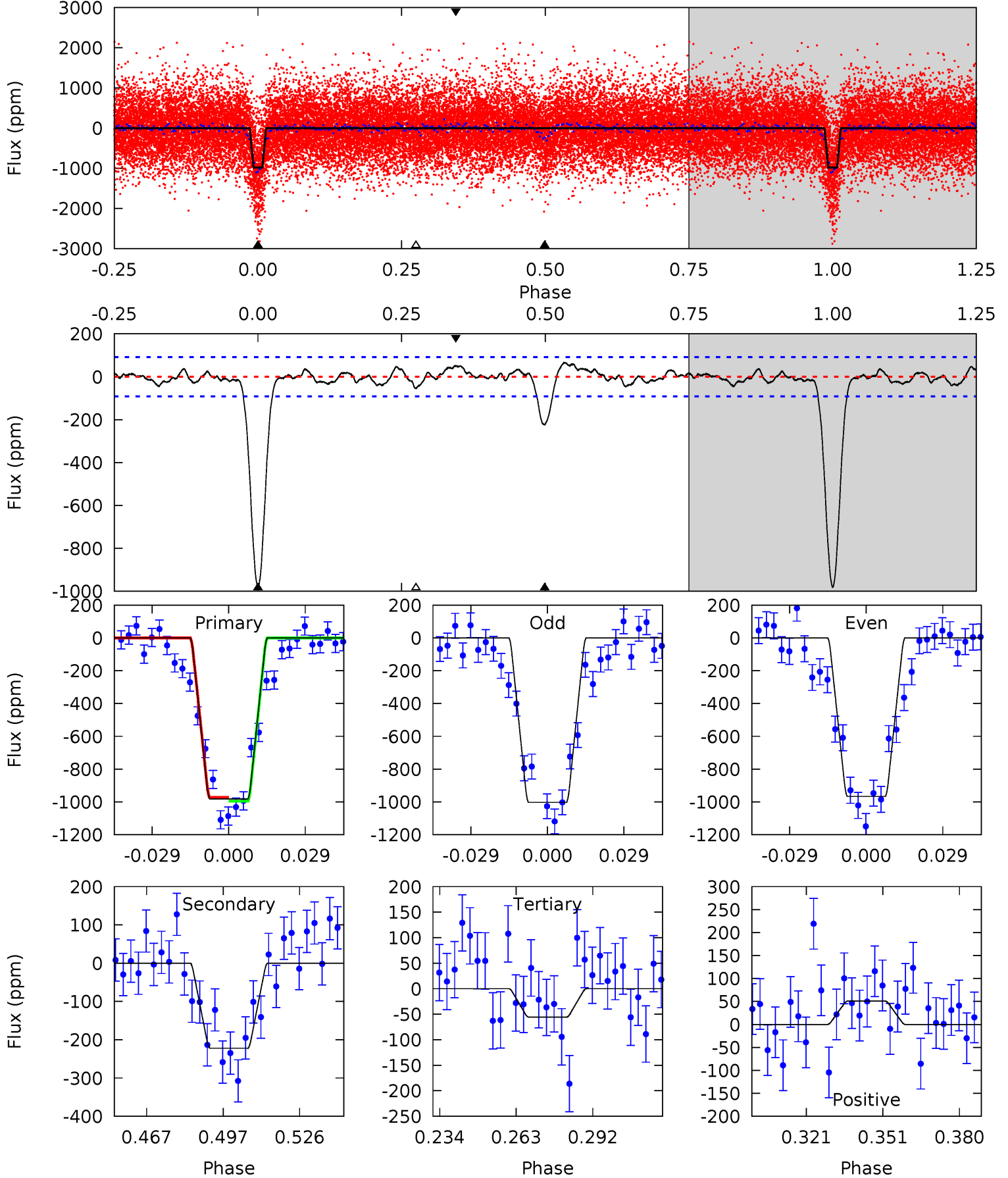
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.4	13.2	6.15	4.13	4.74	2.03	2.07	56.2	58.2	7.09	9.12	0.98	0.96	0.06	0.20



Alt Model-Shift Uniqueness Test

009171801-01, P = 3.187055 Days, E = 133.407843 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.5	11.7	2.93	2.66	4.82	2.18	1.22	48.5	48.8	8.72	8.99	0.96	0.97	0.06	0.60



Stellar Parameters For KIC 009171801

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5450^{+197}_{-180}	$4.552^{+0.045}_{-0.135}$	$-0.140^{+0.300}_{-0.300}$	$0.811^{+0.173}_{-0.080}$	$0.857^{+0.091}_{-0.091}$	$2.260^{+0.549}_{-0.904}$
	+4%/-3%	+1%/-3%	+214%/-214%	+21%/-10%	+11%/-11%	+24%/-40%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009171801-01 / KOI 0933.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-214 ± 16	$8.37^{+6.54}_{-5.69}$	1535^{+88}_{-65}	2844^{+1238}_{-480}	$2.724^{+23.949}_{-1.884}$
Alt.	-222 ± 19	$6.34^{+6.26}_{-4.37}$	1537^{+89}_{-70}	3097^{+1550}_{-565}	$4.870^{+46.004}_{-3.618}$

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 $A_{\text{obs}} \gg 1.0$

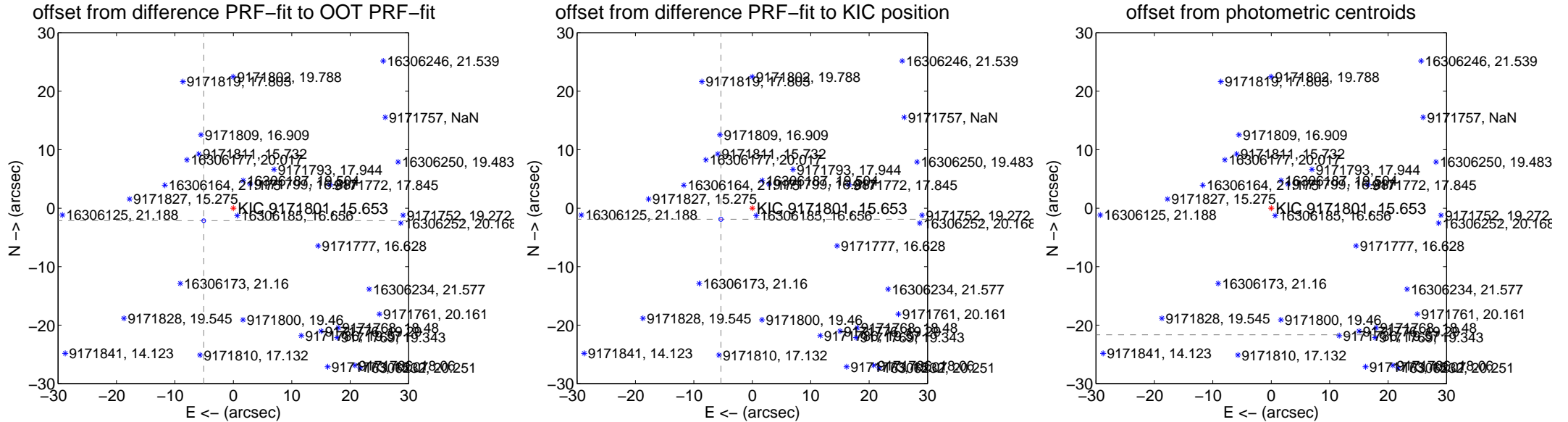
DV Centroid Data

Supplemental centroid analysis for 009171801-01. Kepler magnitude: 15.65. Transit SNR 34.89

There are 4 quarters with good PRF difference image offsets

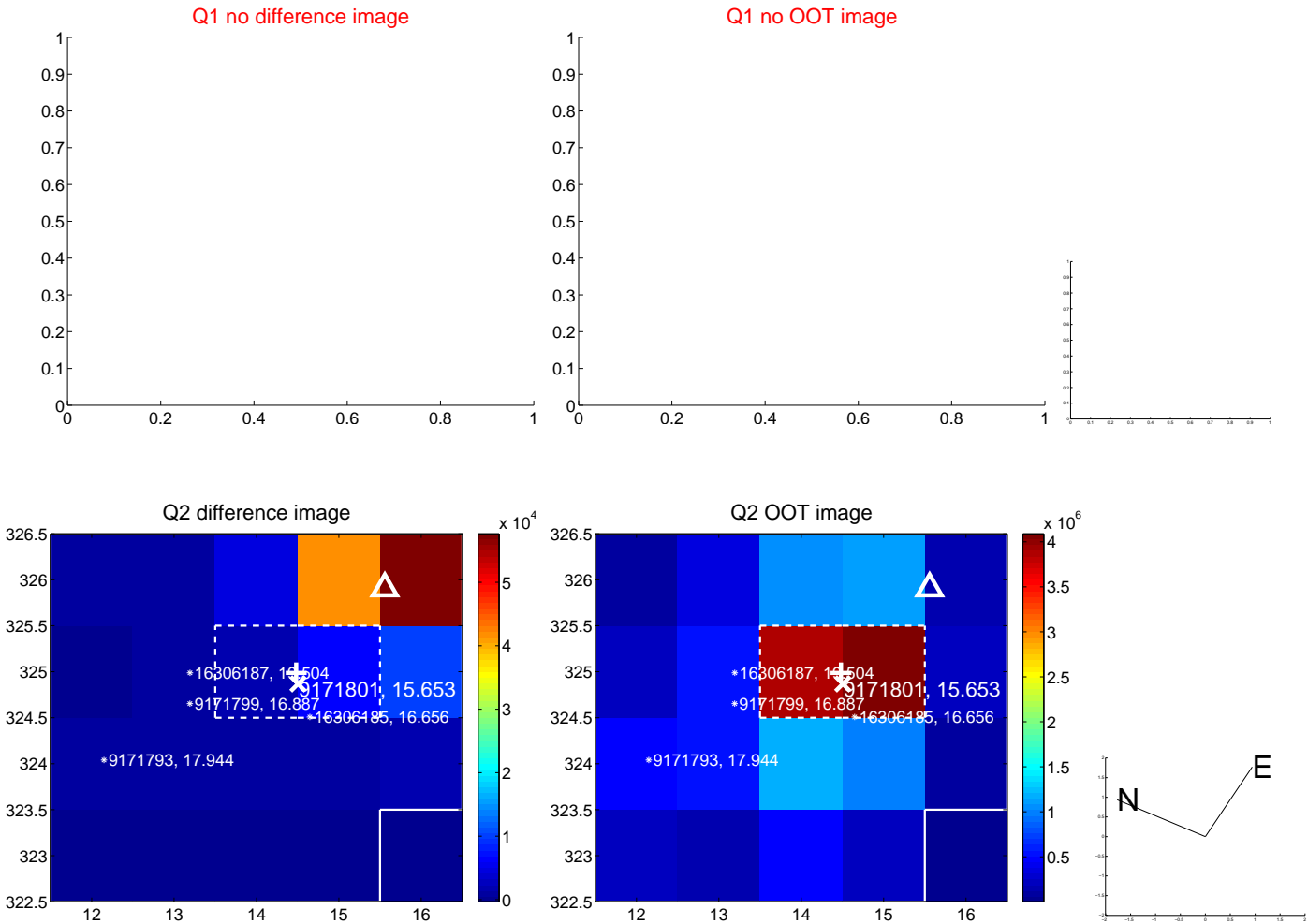
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.502 ± 0.107	51.48	5.069 ± 0.111	-2.140 ± 0.076
PRF-fit source offset from KIC position	5.703 ± 0.119	47.98	5.378 ± 0.122	-1.897 ± 0.084
photometric centroid source offset	49.47 ± 0.33	150.74	44.49 ± 0.33	-21.65 ± 0.34



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



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

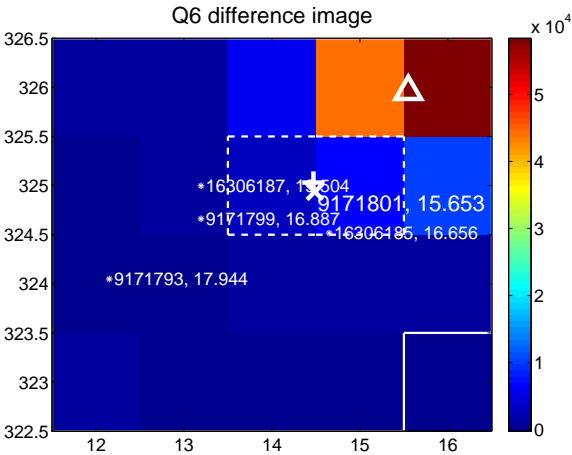
Q5 no difference image



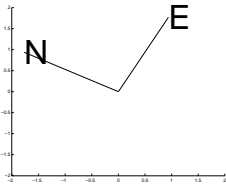
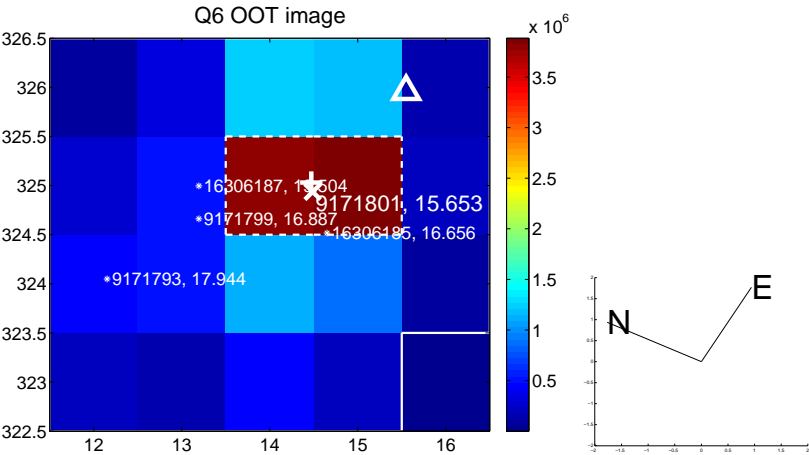
Q5 no OOT image



Q6 difference image



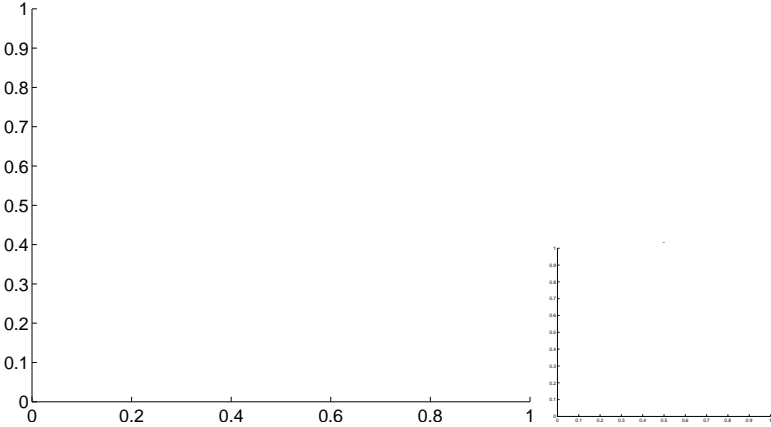
Q6 OOT image



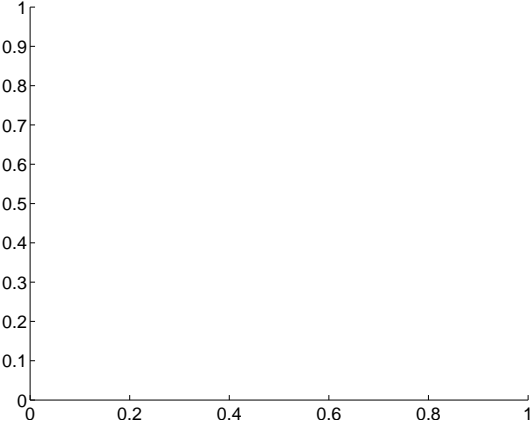
Q7 no difference image



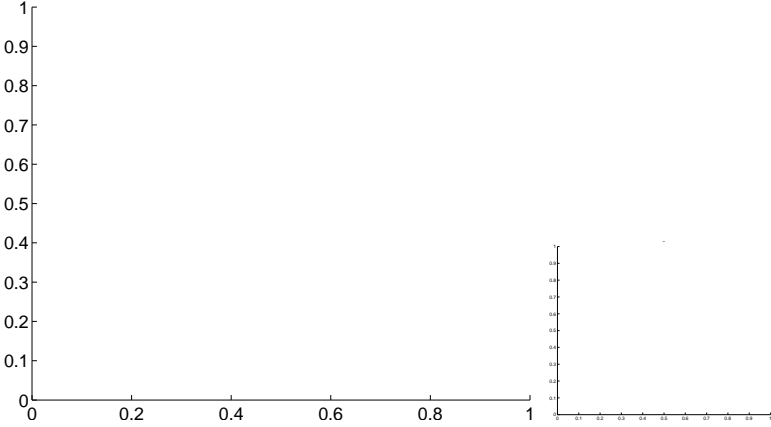
Q7 no OOT image



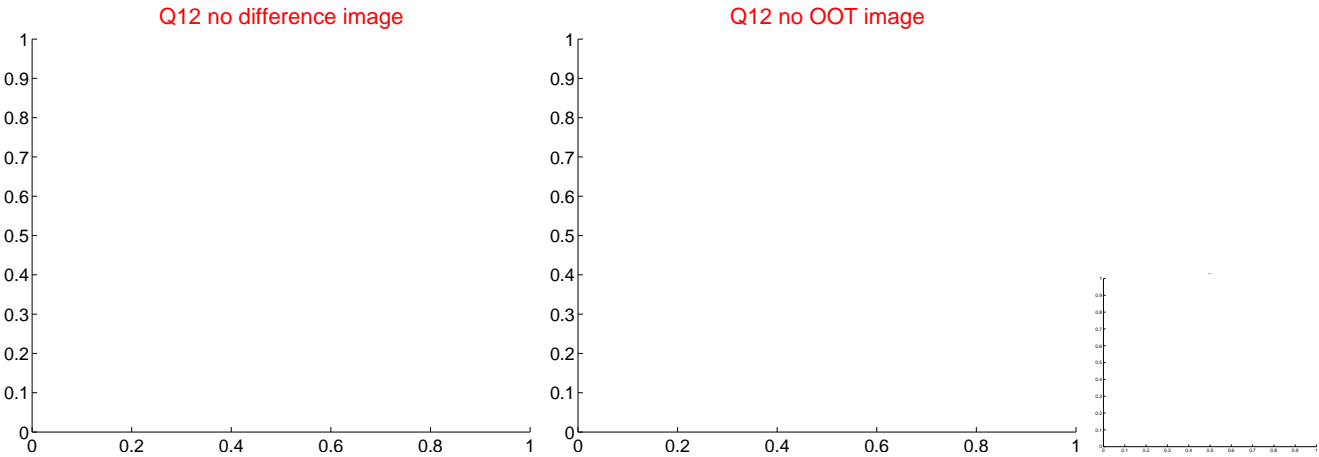
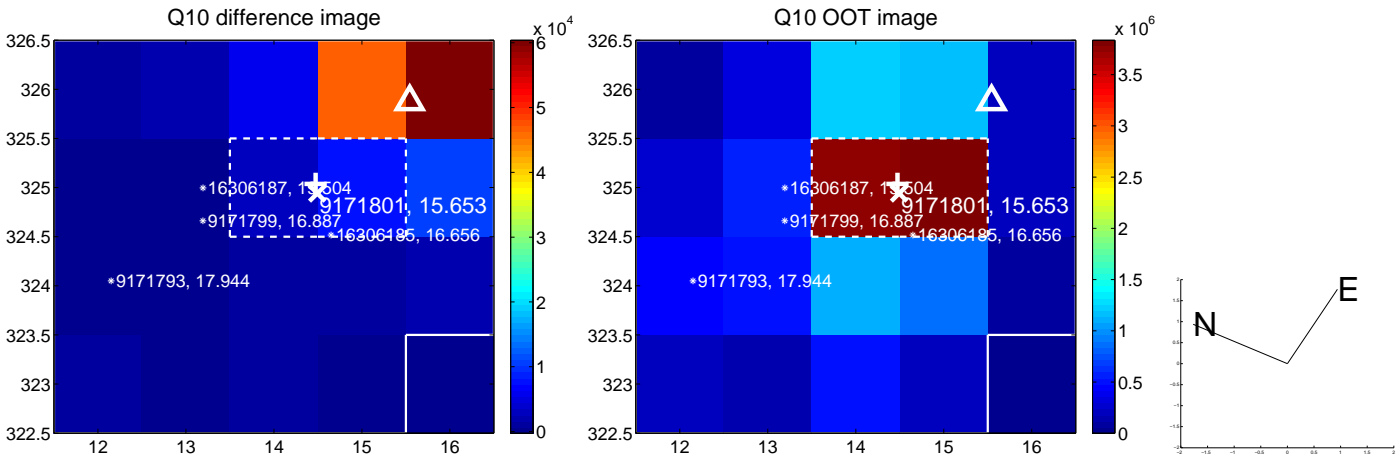
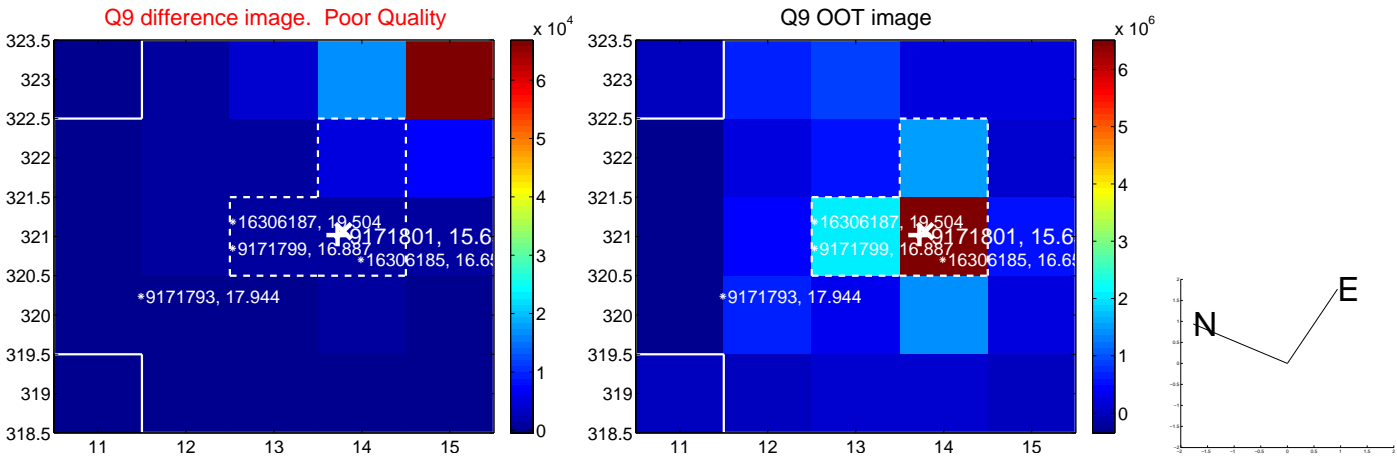
Q8 no difference image



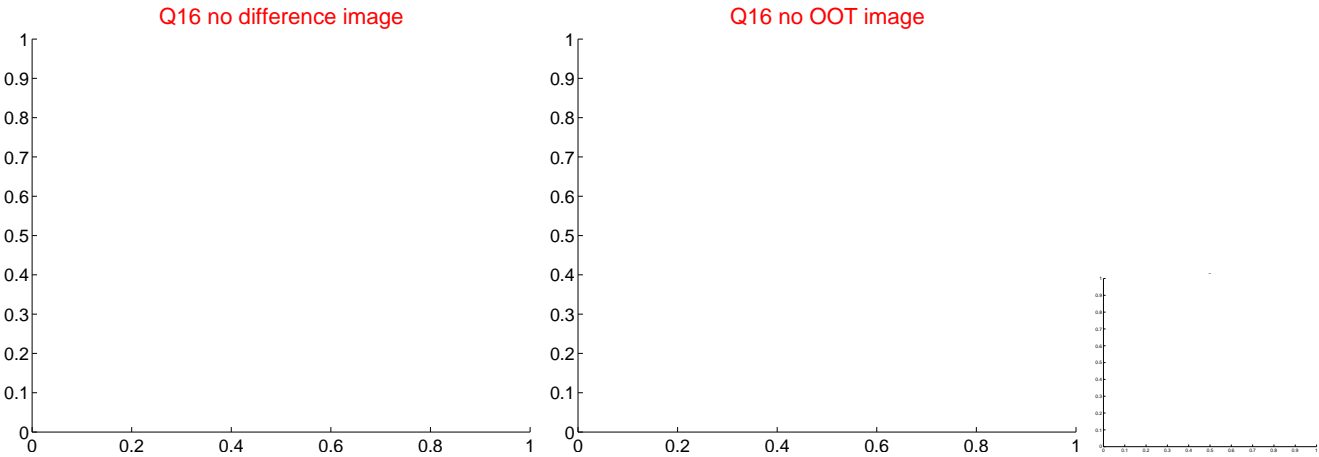
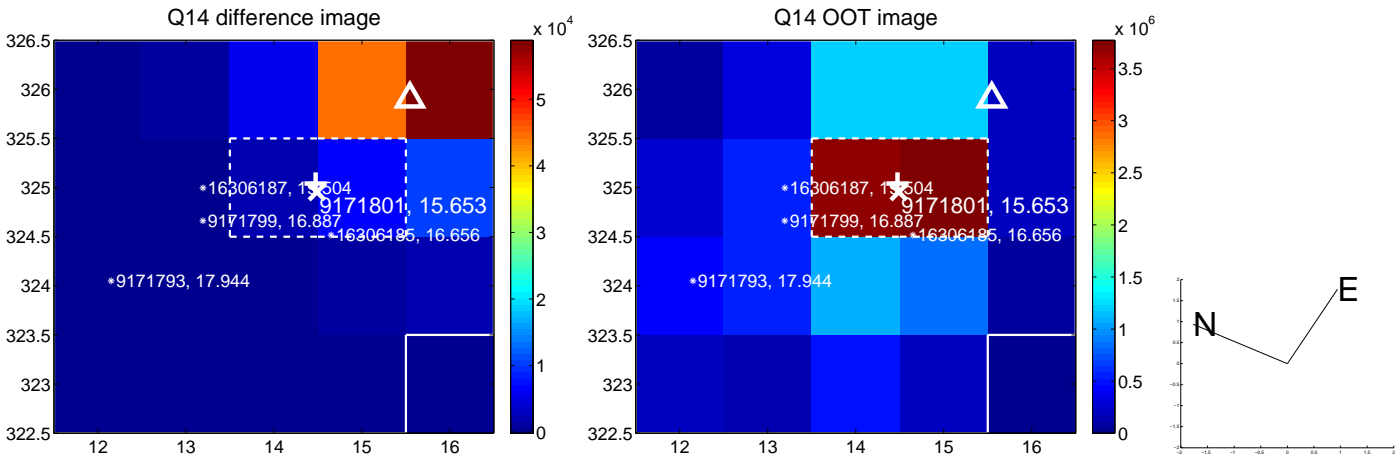
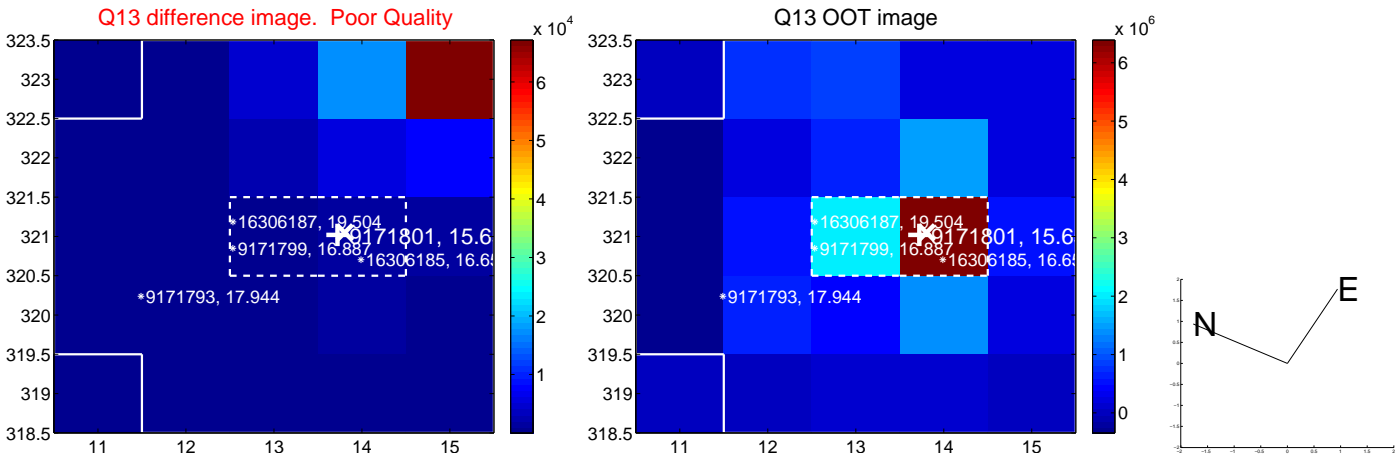
Q8 no OOT image



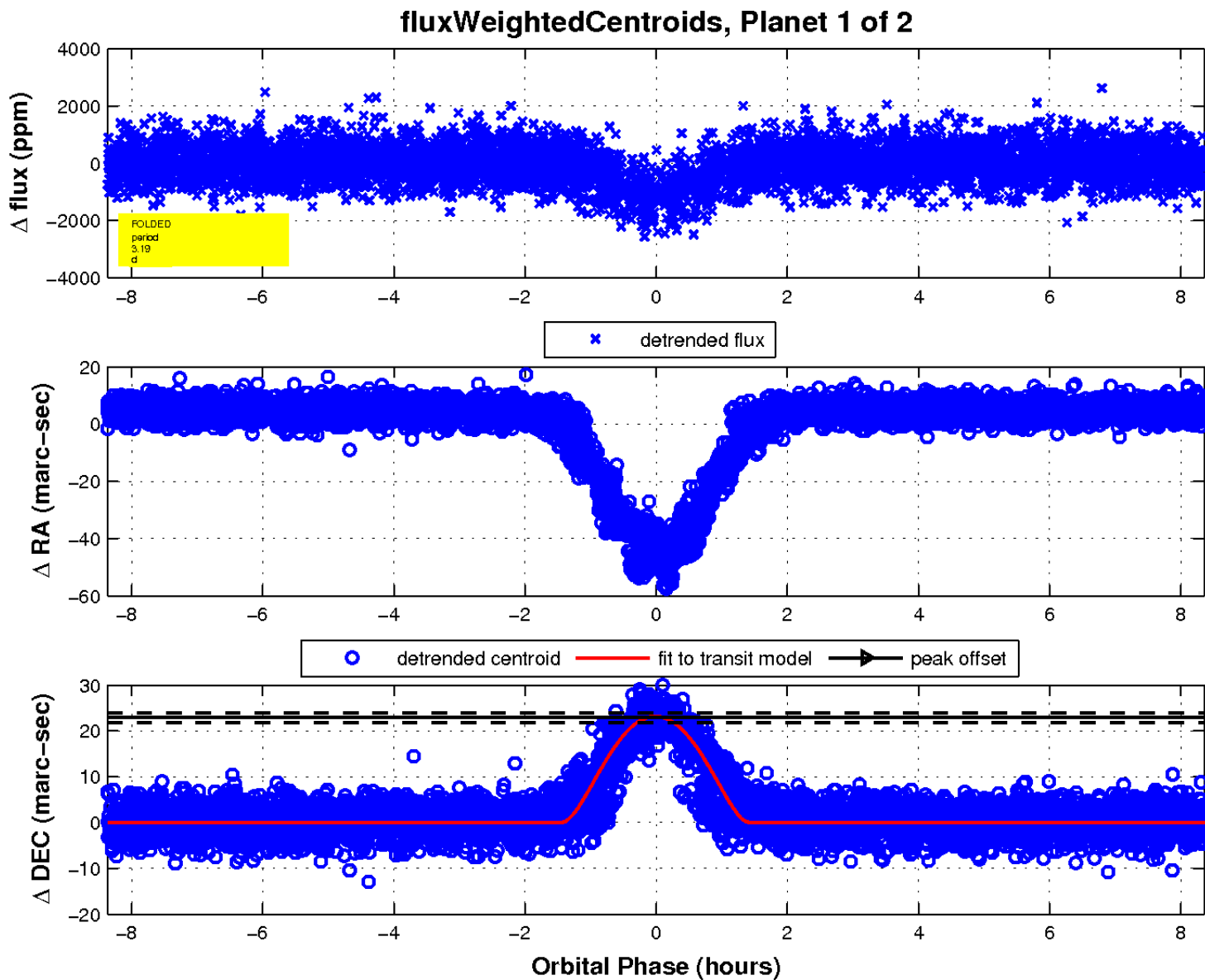
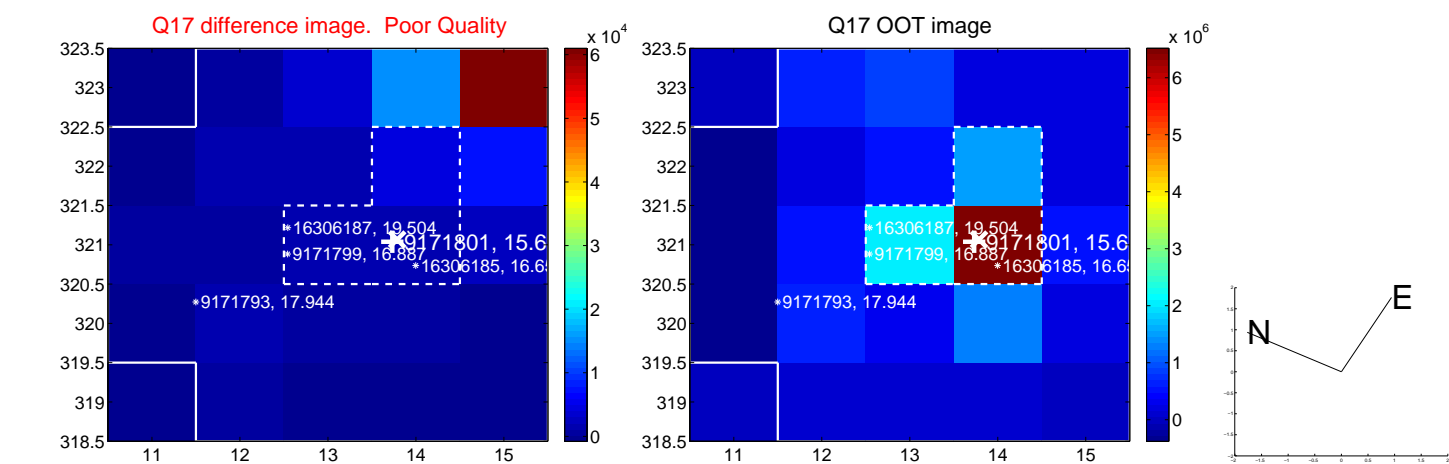
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

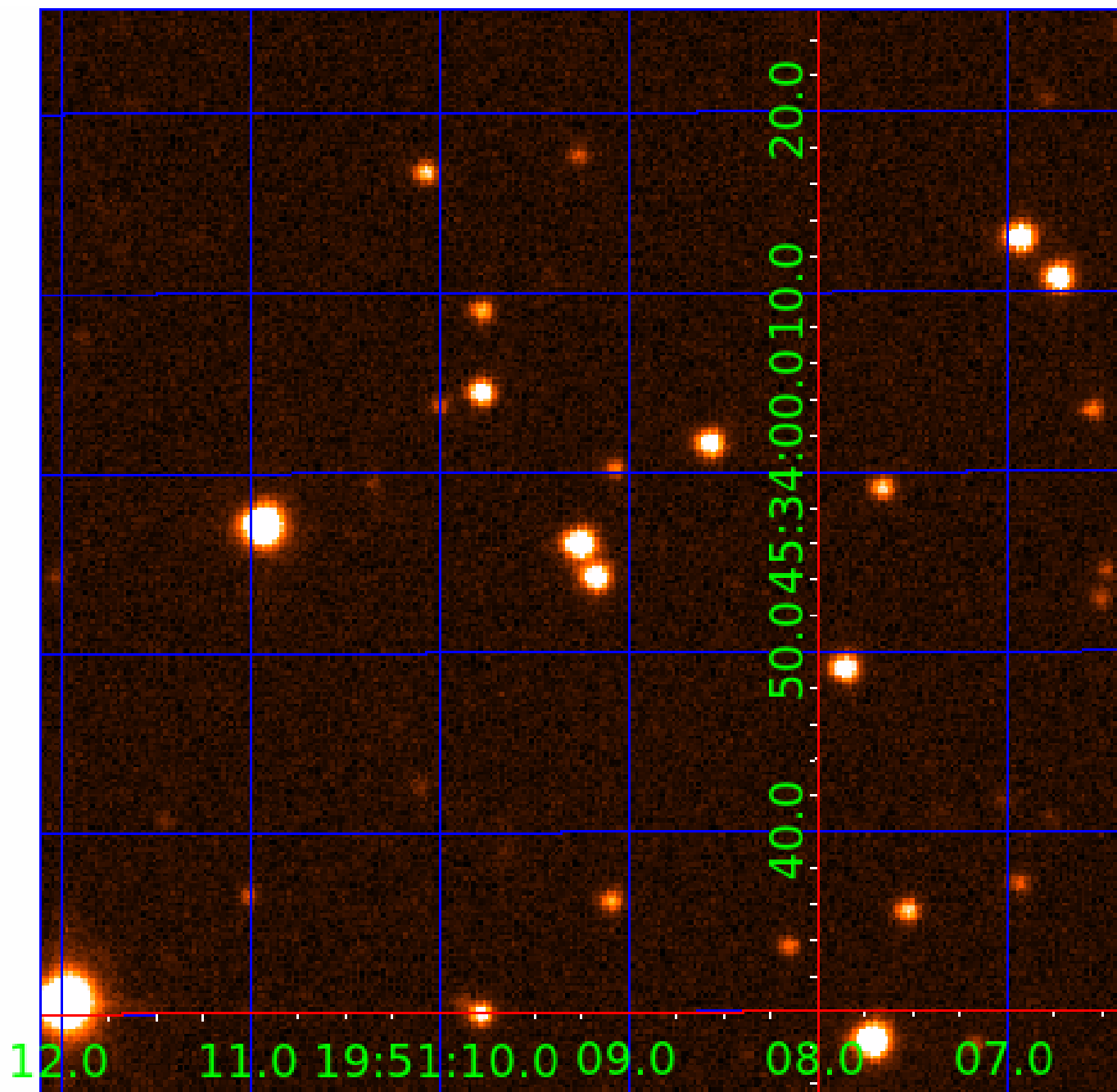


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009171801

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})
009171801-01	OBS	0933.01	3.187098	133.398290	1029.8	2.788	29.9	34.9	0.81	5450	5.18	321.10
009171801-02	OBS	No	3.187085	131.801124	232.8	2.101	7.9	8.8	0.81	5450	1.50	321.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009171801-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
009171801-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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.

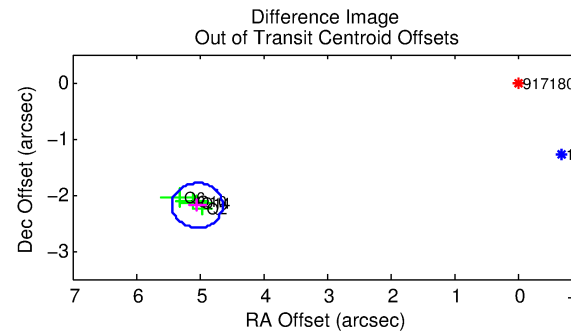
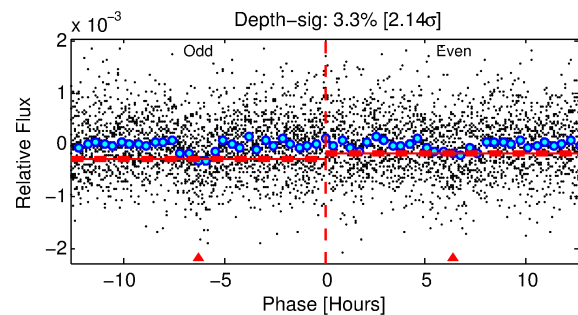
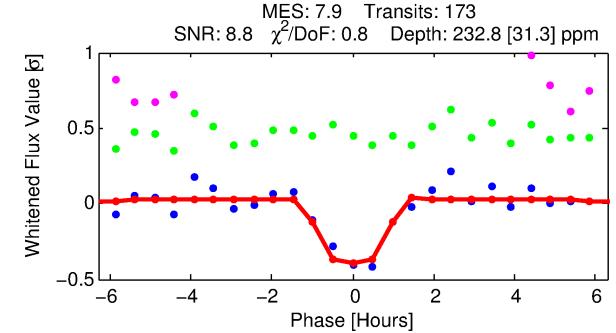
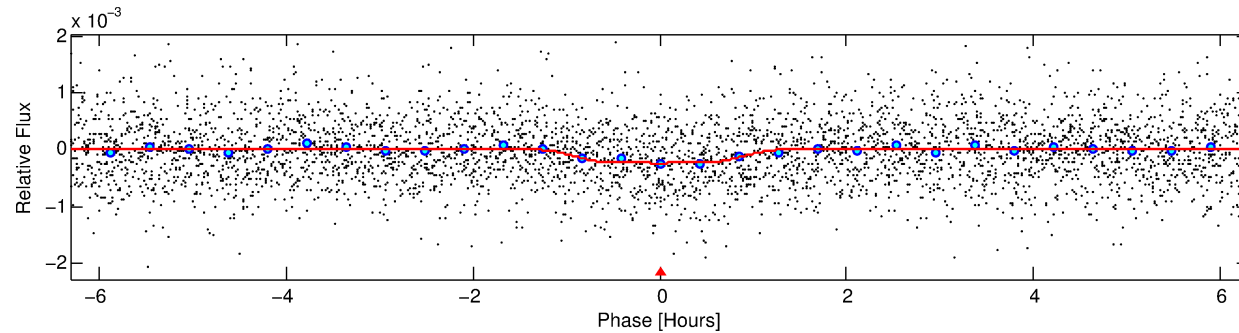
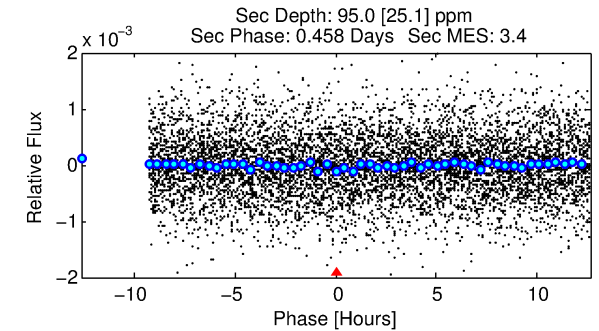
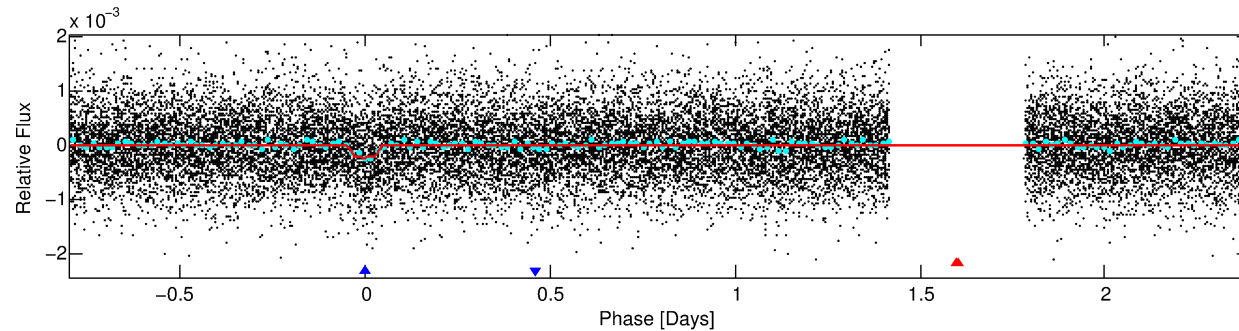
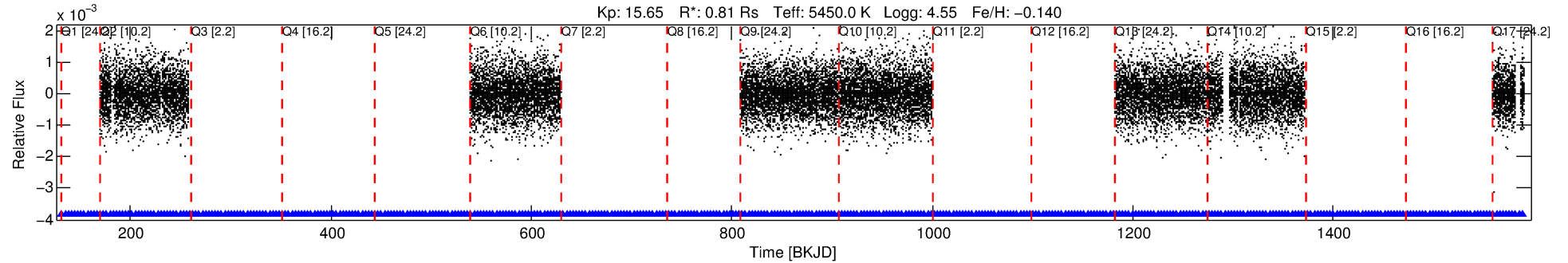
Ephemeris Match Information For 009171801-02

No Significant Match Found

DV One-Page Summary

KIC: 9171801 Candidate: 2 of 2 Period: 3.187 d
KOI: K00933 Corr: No Ephemeris Match

Kp: 15.65 R*: 0.81 Rs Teff: 5450.0 K Logg: 4.55 Fe/H: -0.140



DV Fit Results:

Period = 3.18709 [0.00002] d
Epoch = 131.8011 [0.0040] BKJD
Rp/R* = 0.0169 [0.0128]
a/R* = 5.43 [17.78]
b = 0.91 [0.69]
Seff = 321.10 [93.10]
Teq = 1079 [78] K
Rp = 1.50 [1.18] Re
a = 0.0402 [0.0071] AU
Ag = 37.87 [59.02] [0.62σ]
Teff = 4140 [1599] K [1.91σ]

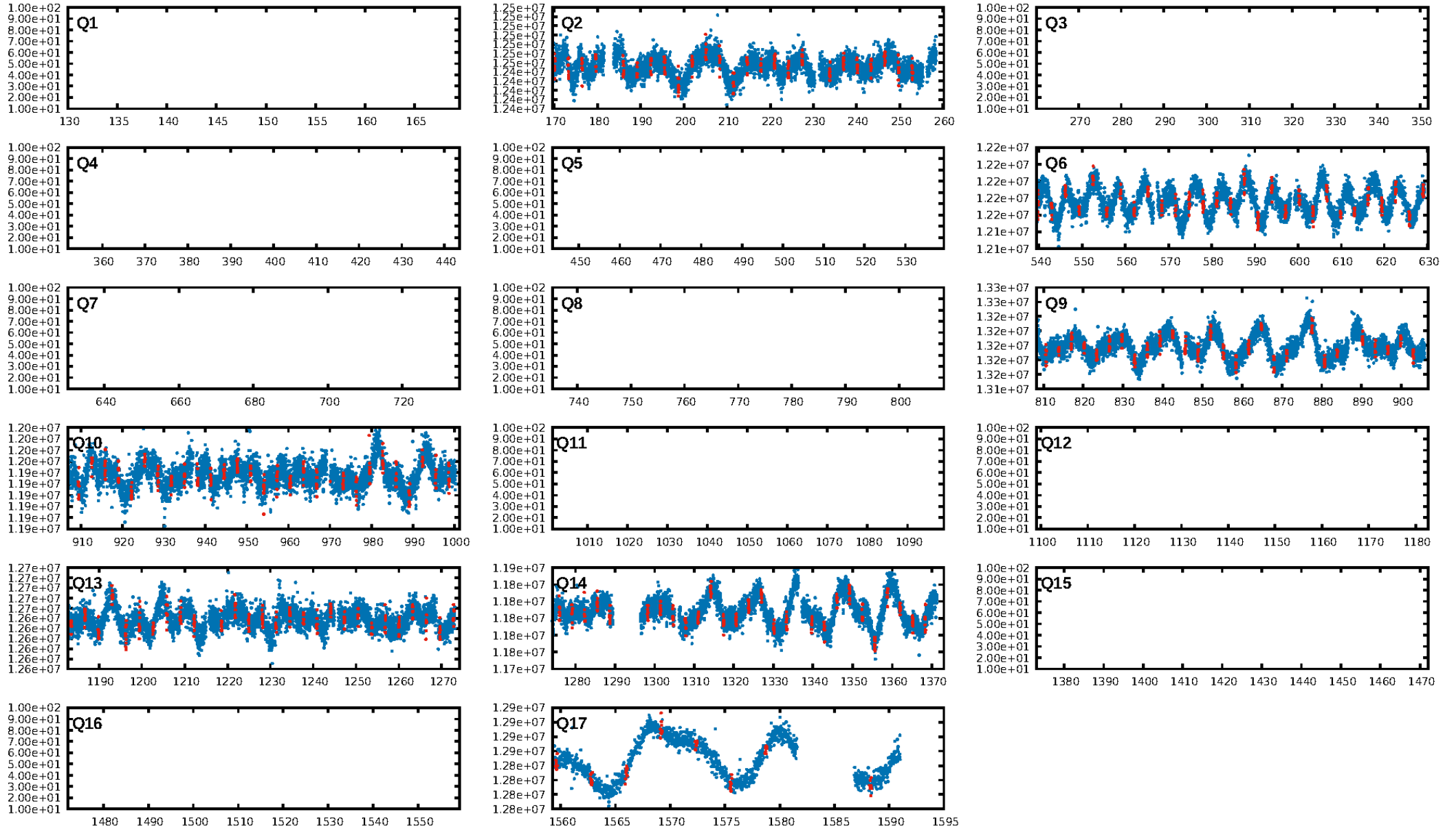
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 99.1%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 1.07e-15
RollingBand-fgt: 1.00 [165/165]
GhostDiagnostic-chr: -0.09692
Centroid-sig: N/A
Centroid-so: 21.820 arcsec [15.81σ]
OotOffset-rm: 5.492 arcsec [41.36σ]
KicOffset-rm: 5.709 arcsec [42.43σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [7/7]

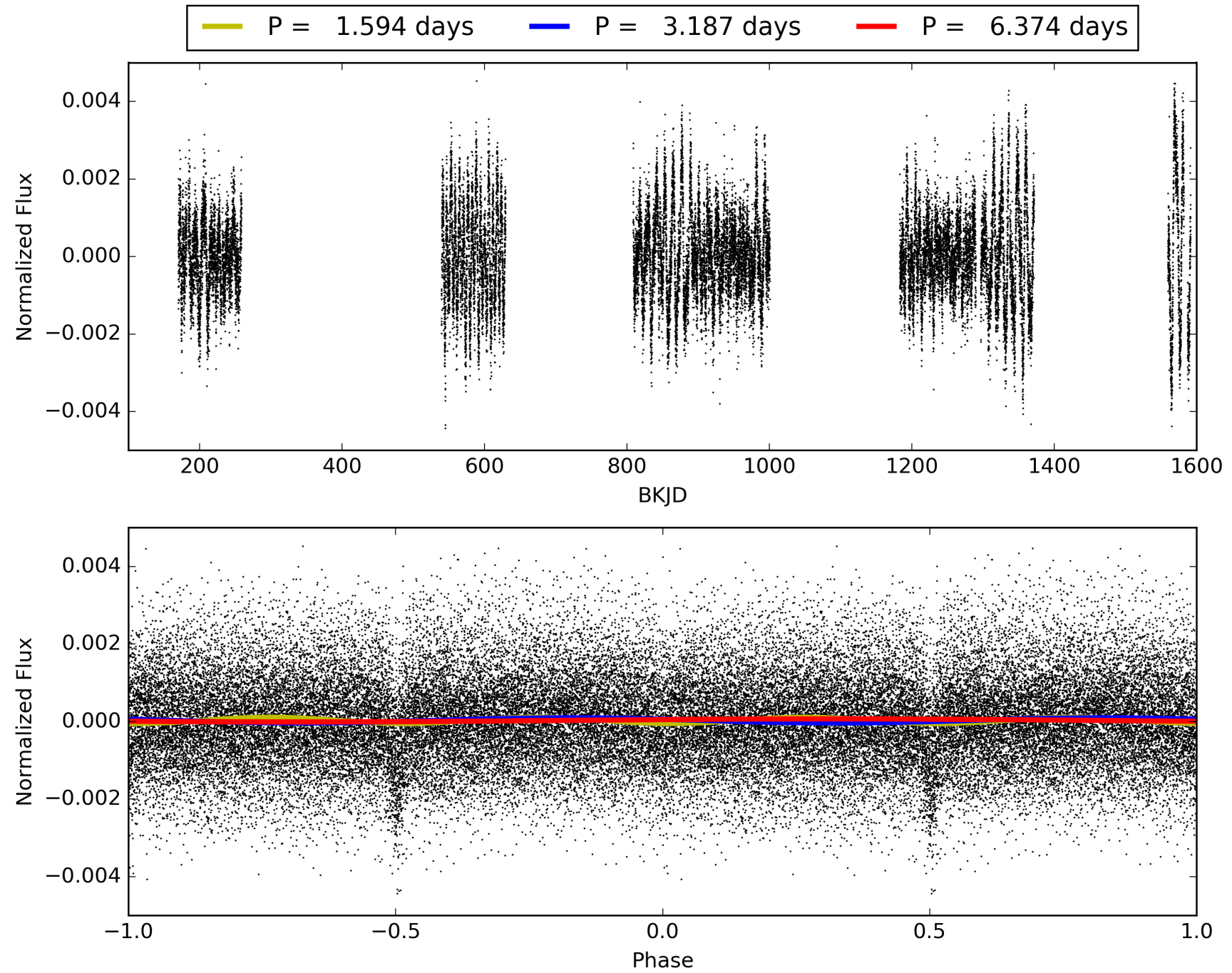
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:40:22 Z

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

TCE 009171801-02, PDC Light Curves

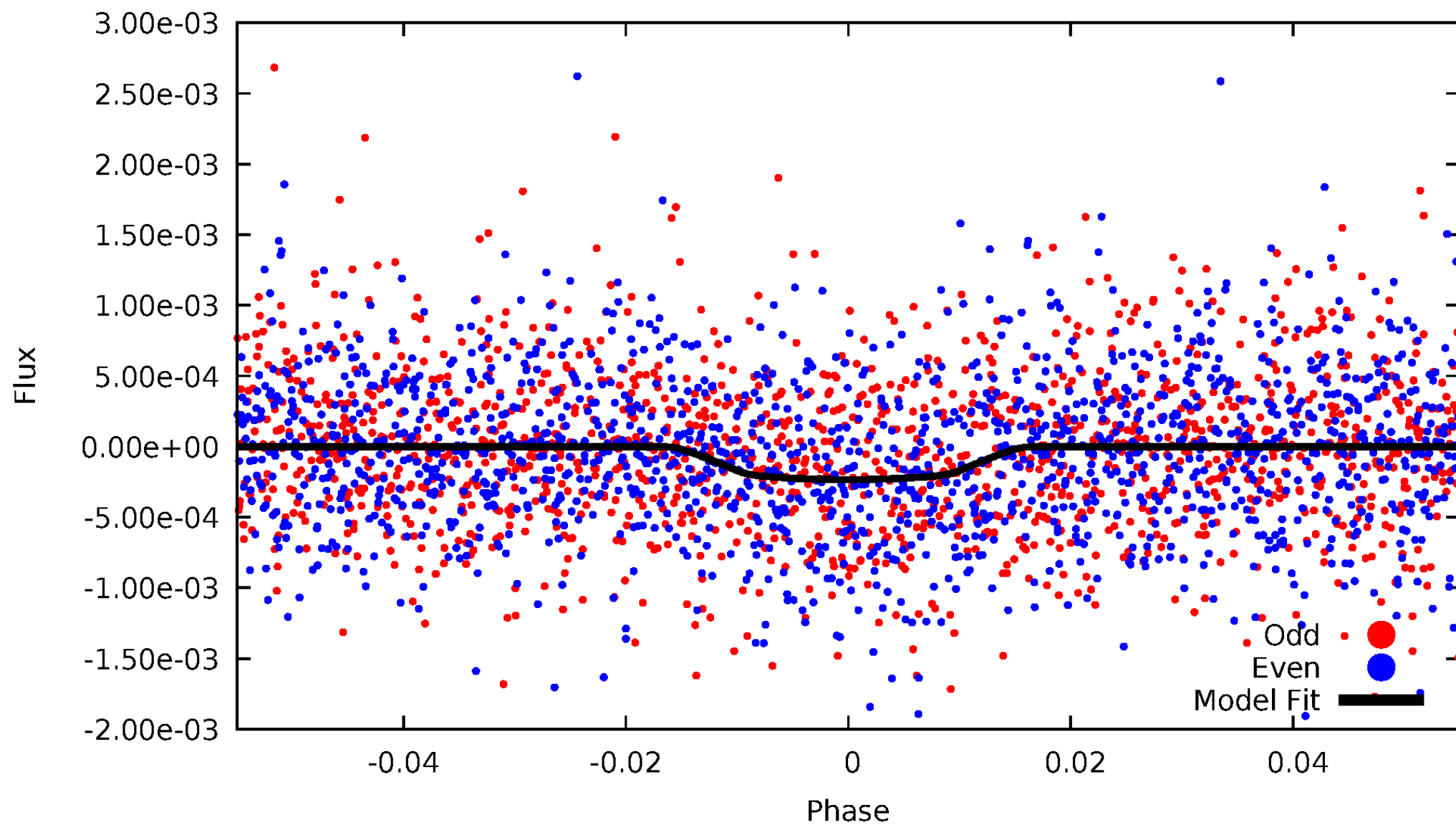


TCE 009171801-02



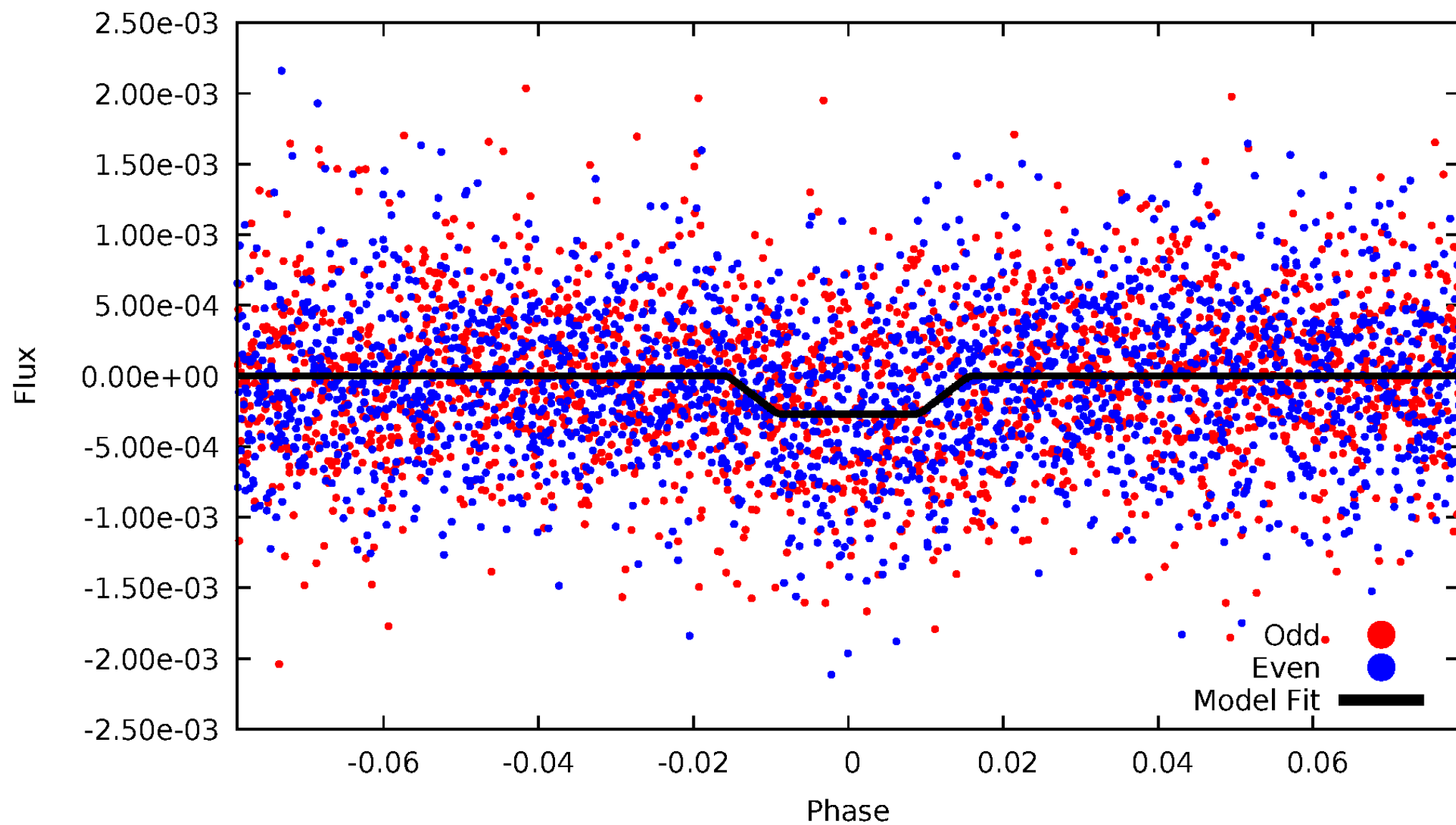
DV Odd/Even

TCE 009171801-02



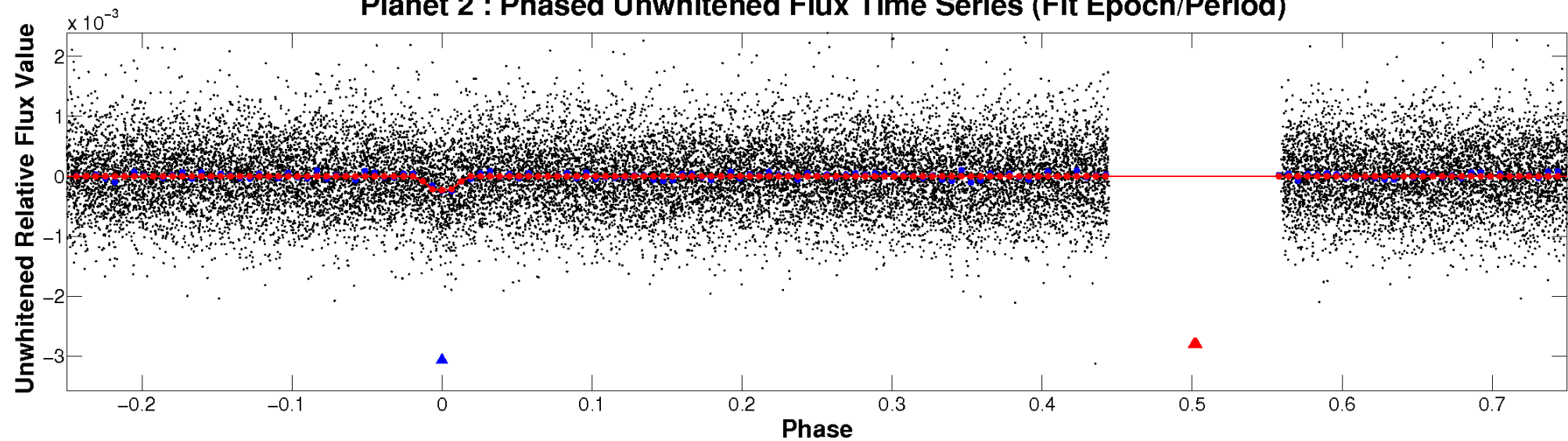
ALT Odd/Even

TCE 009171801-02

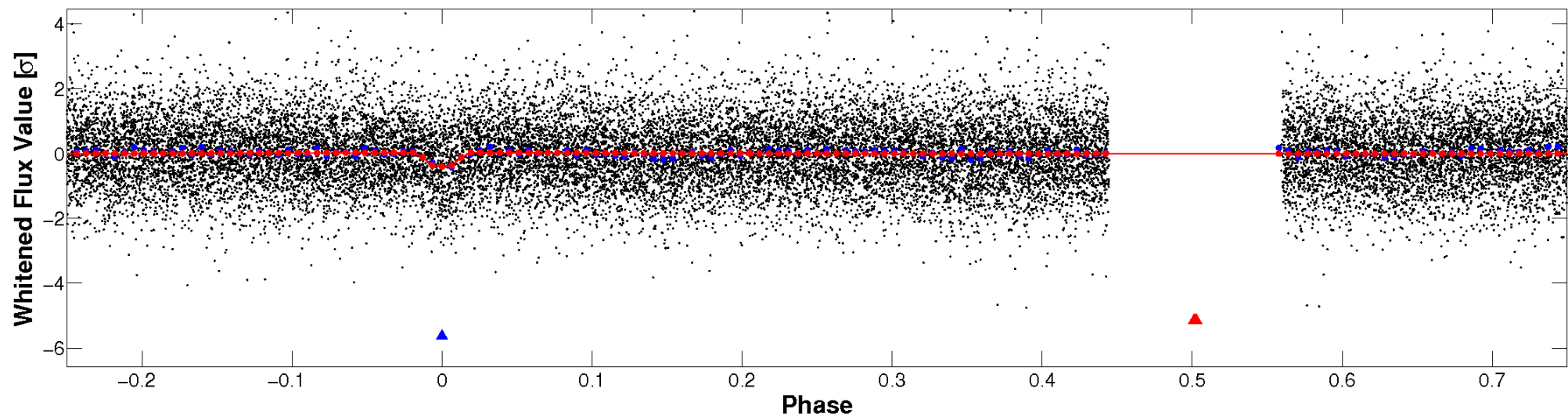


Non-Whitened Vs. Whitened Light Curve

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

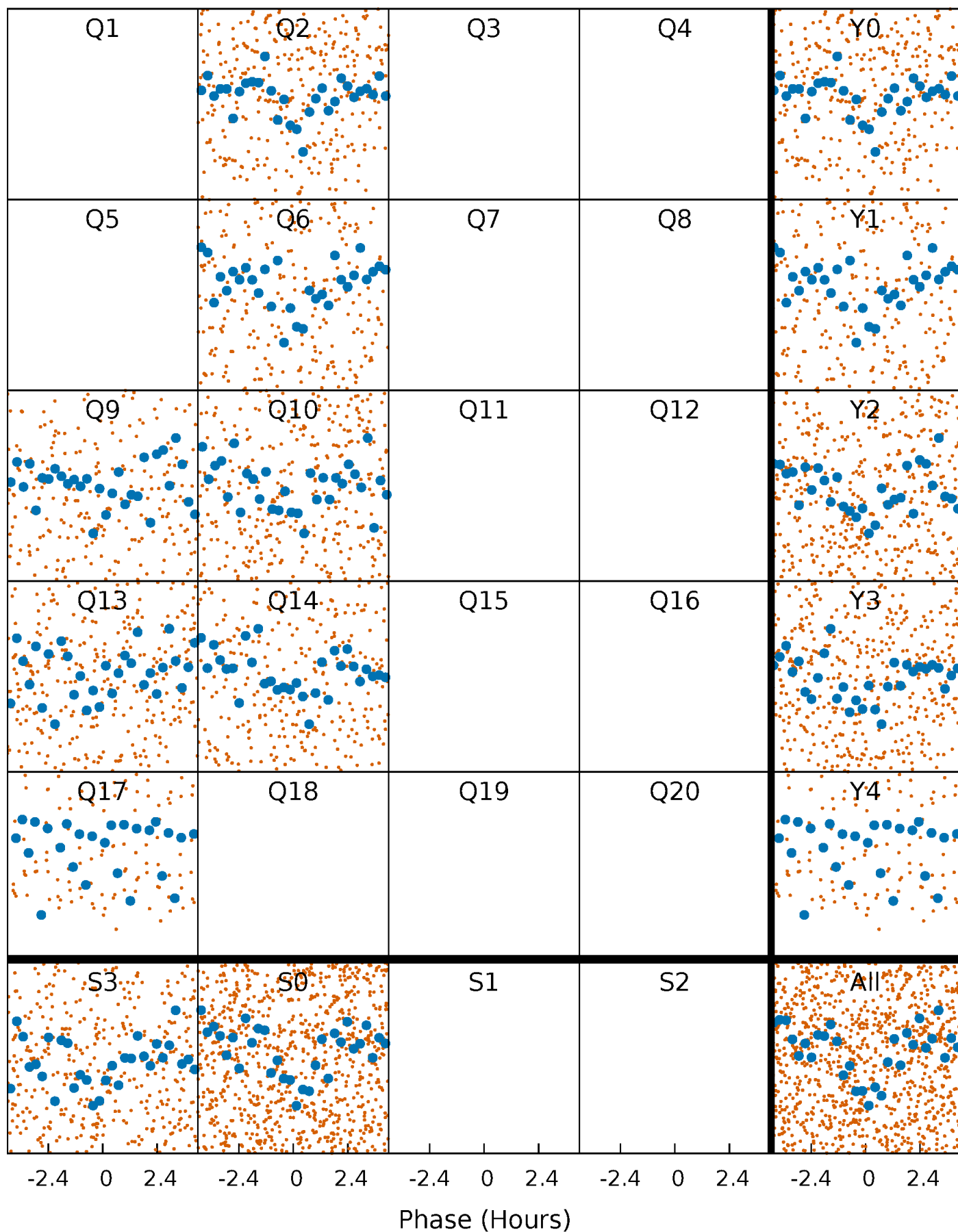


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



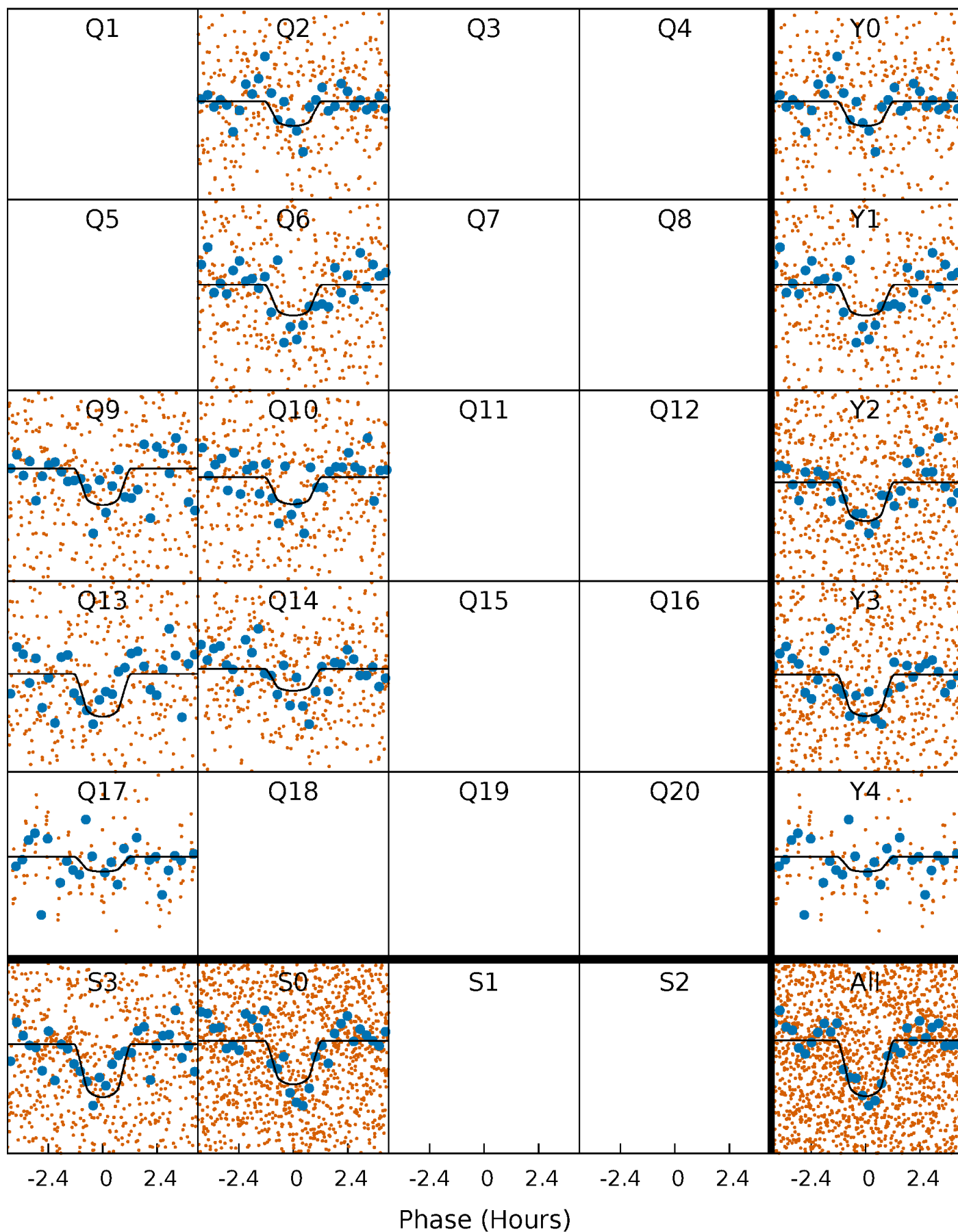
PDC Quarter-Phased Transit Curves

TCE 009171801-02 $P = 3.187085$ Days $T_0 = 131.801124$ (BKJD)



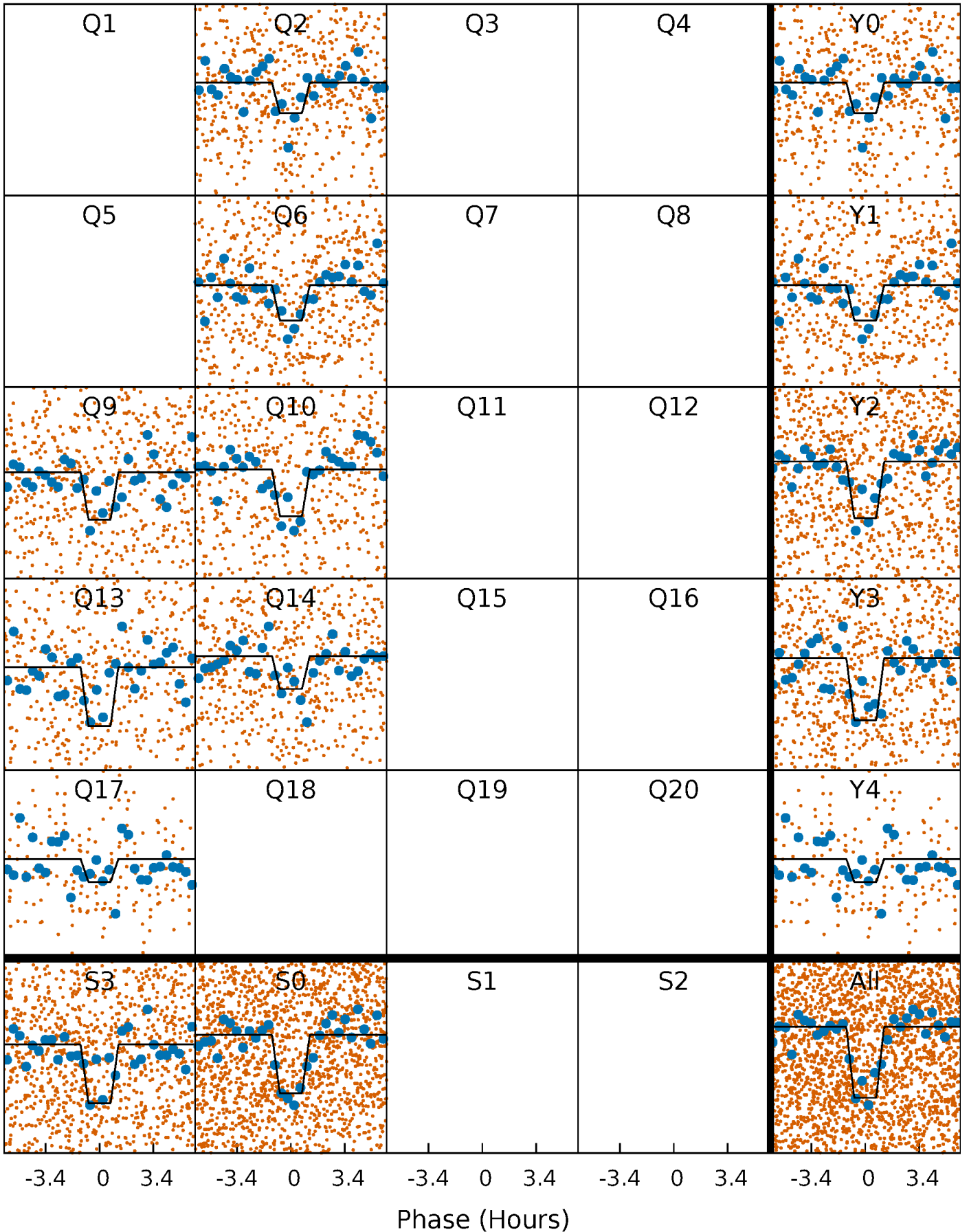
DV Quarter-Phased Transit Curves

TCE 009171801-02 P= 3.187085 Days $T_0=131.801124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

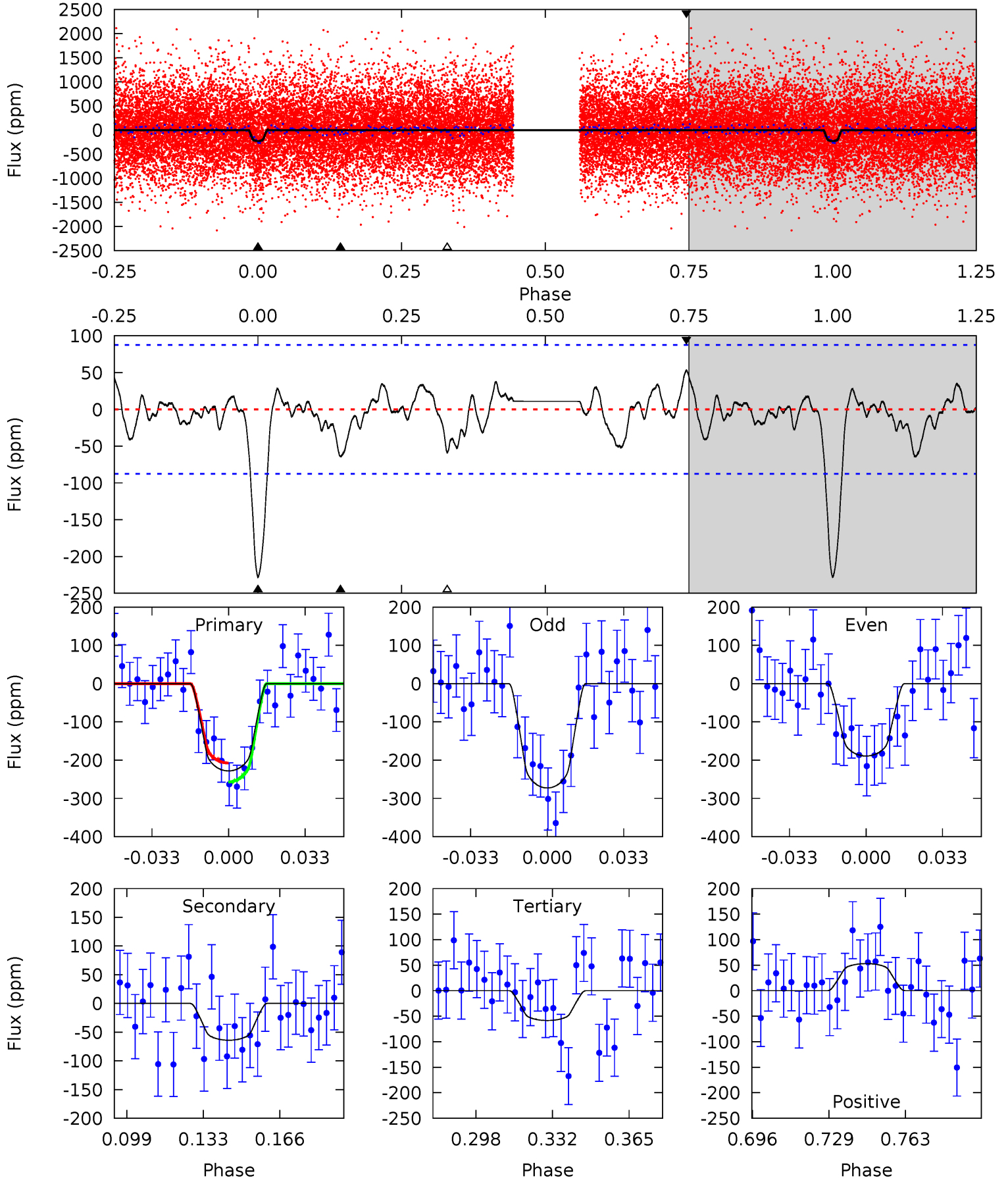
TCE 009171801-02 P= 3.187033 Days $T_0=131.815042$ (BKJD)



DV Model-Shift Uniqueness Test

009171801-02, P = 3.187085 Days, E = 131.801124 Days

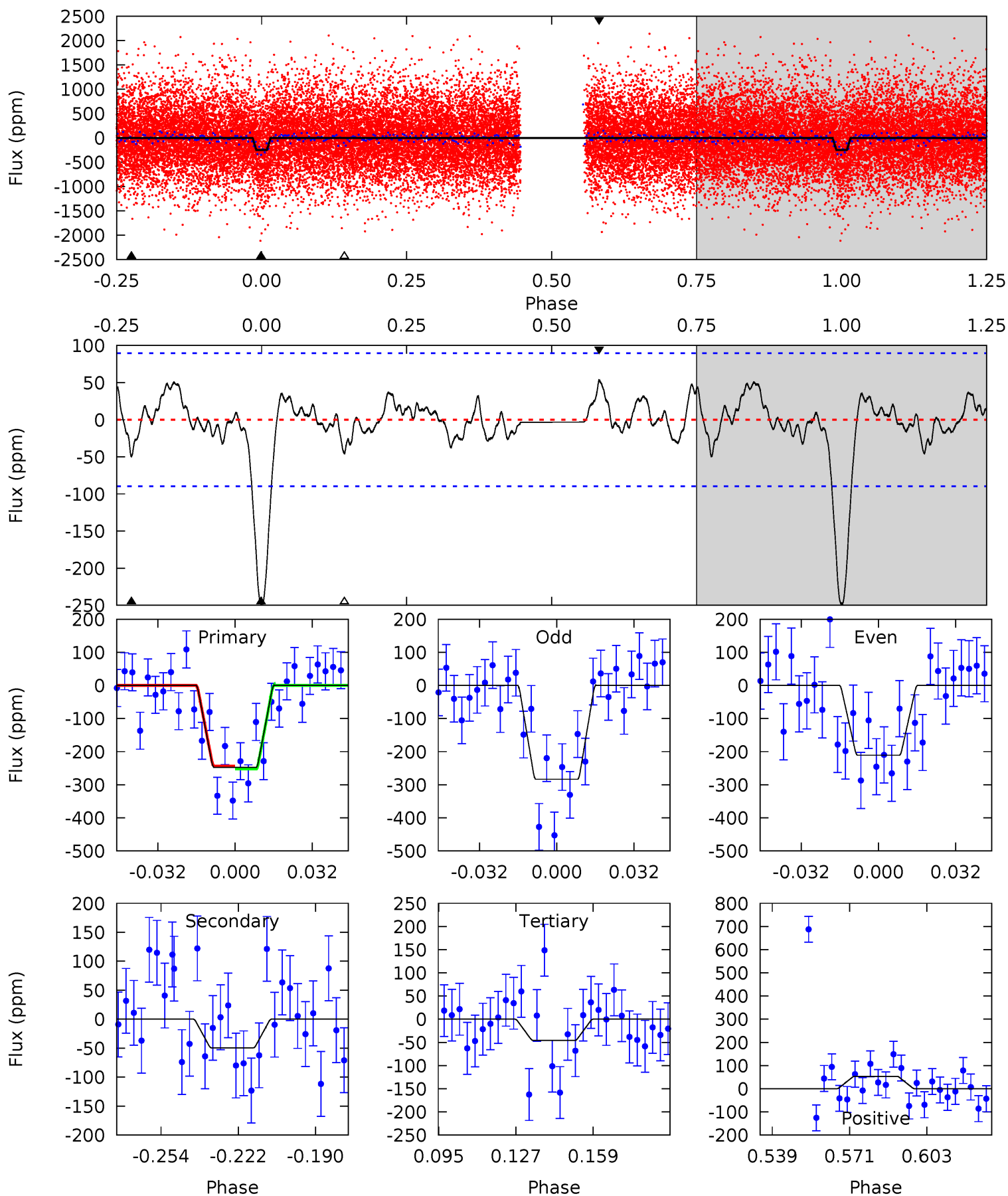
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	3.50	3.20	2.90	4.79	2.13	1.16	9.28	9.58	0.31	0.60	2.29	1.00	0.19	1.36



Alt Model-Shift Uniqueness Test

009171801-02, P = 3.187033 Days, E = 131.815042 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	2.64	2.45	2.87	4.80	2.15	1.10	10.8	10.4	0.19	-0.22	1.95	1.13	0.18	0.25



Stellar Parameters For KIC 009171801

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5450^{+197}_{-180}	$4.552^{+0.045}_{-0.135}$	$-0.140^{+0.300}_{-0.300}$	$0.811^{+0.173}_{-0.080}$	$0.857^{+0.091}_{-0.091}$	$2.260^{+0.549}_{-0.904}$
	+4%/-3%	+1%/-3%	+214%/-214%	+21%/-10%	+11%/-11%	+24%/-40%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009171801-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-64 ± 18	$1.68^{+1.08}_{-0.96}$	1539^{+81}_{-79}	3901^{+1661}_{-653}	20^{+96}_{-13}
Alt.	-49 ± 19	$1.64^{+1.11}_{-0.93}$	1534^{+89}_{-71}	3775^{+1346}_{-637}	16^{+64}_{-11}

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 $A_{obs} \gg 1.0$

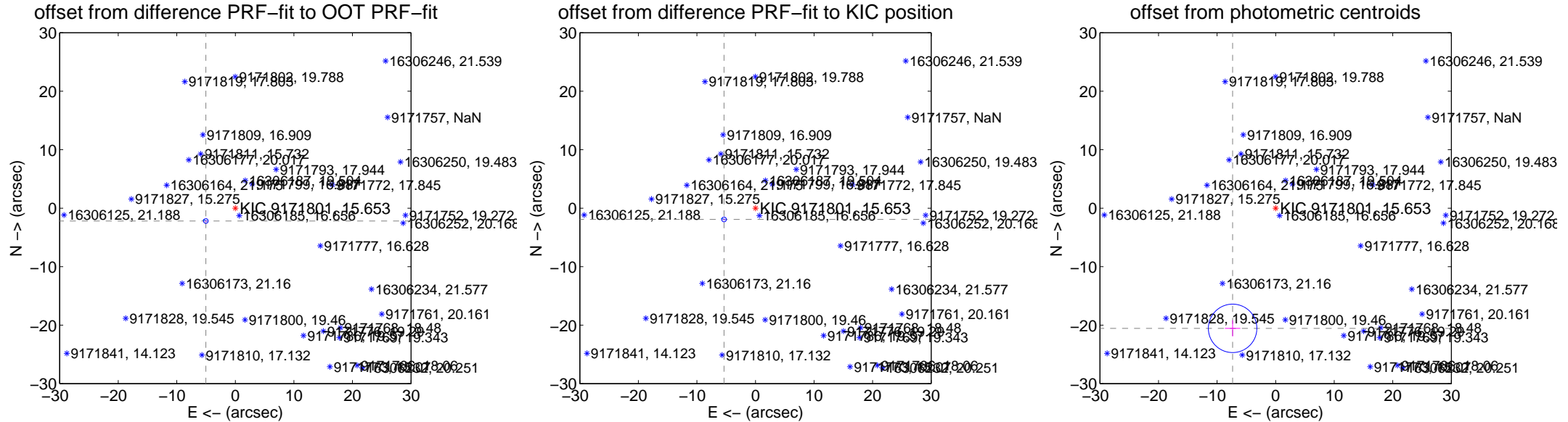
DV Centroid Data

Supplemental centroid analysis for 009171801-02. Kepler magnitude: 15.65. Transit SNR 8.82

There are 4 quarters with good PRF difference image offsets

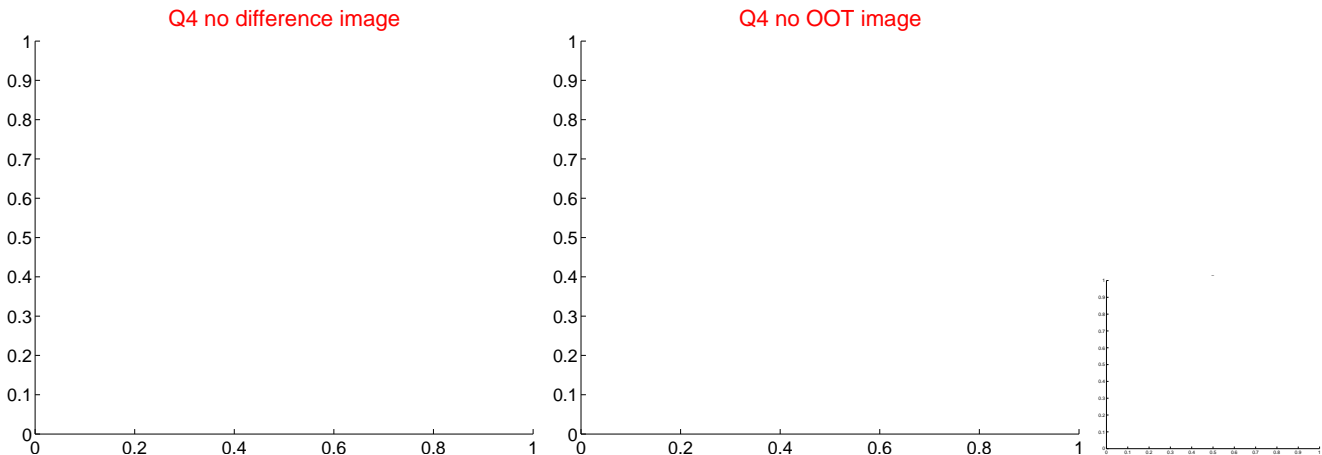
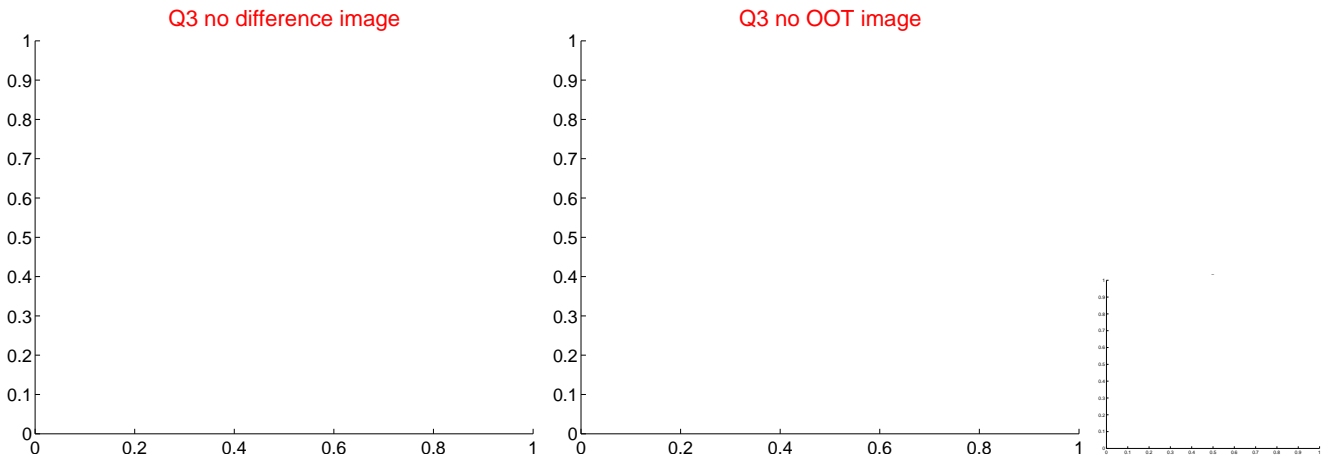
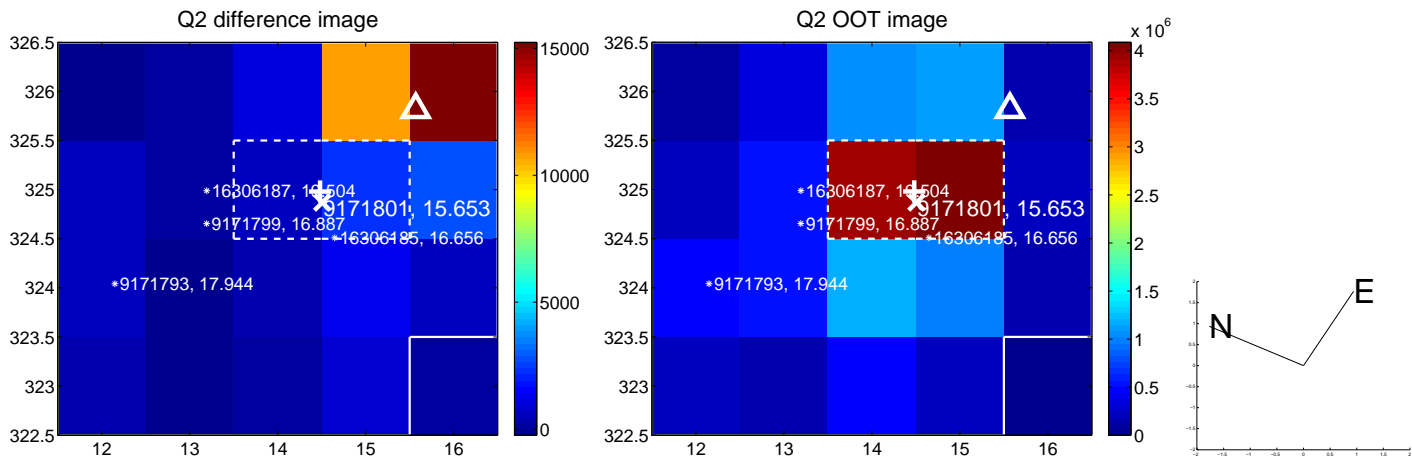
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.492 \pm 0.133	41.36	5.036 \pm 0.139	-2.191 \pm 0.095
PRF-fit source offset from KIC position	5.709 \pm 0.135	42.43	5.375 \pm 0.139	-1.924 \pm 0.095
photometric centroid source offset	21.82 \pm 1.38	15.81	7.35 \pm 1.32	-20.55 \pm 1.39

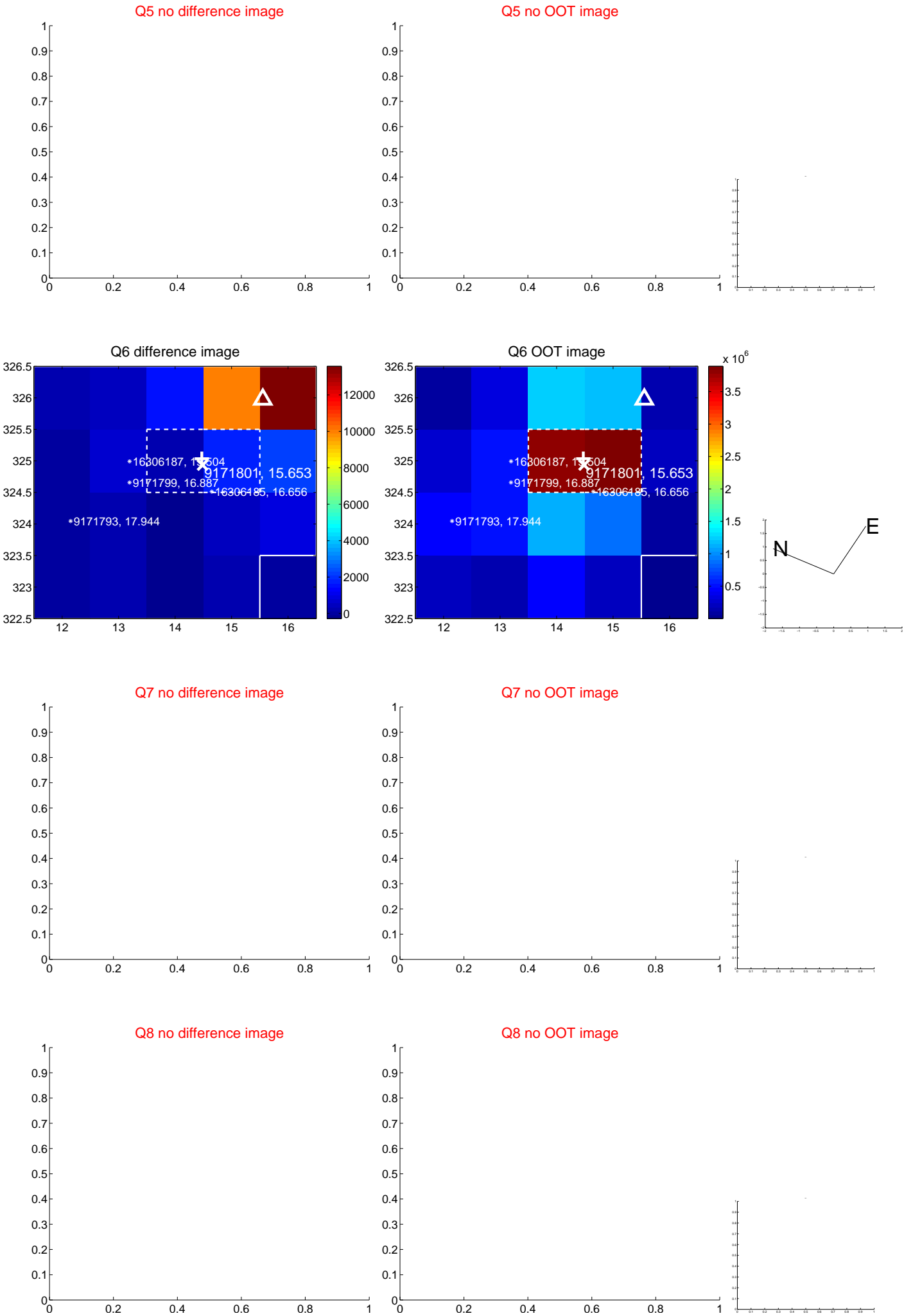


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

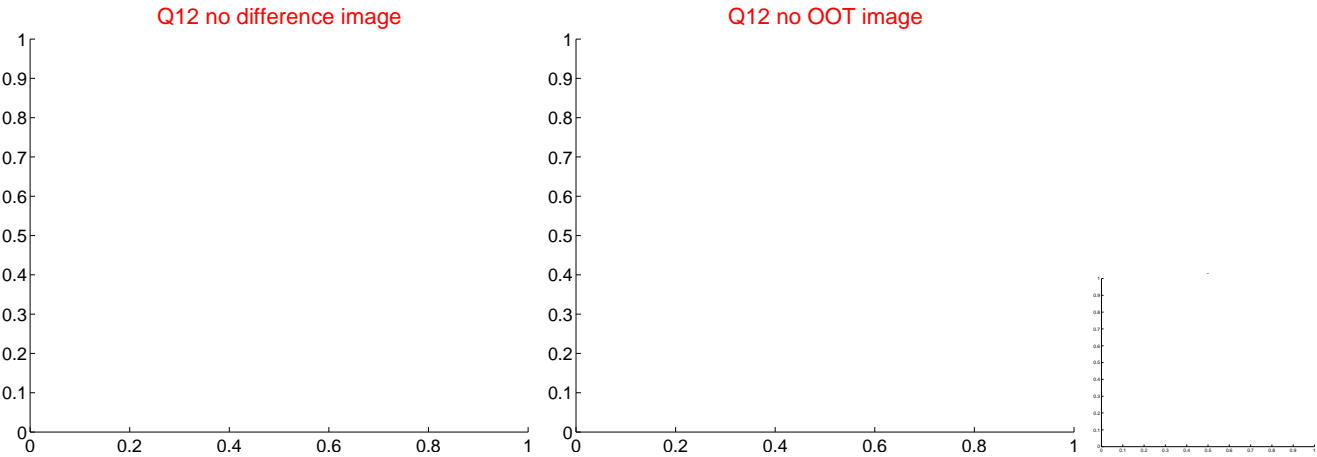
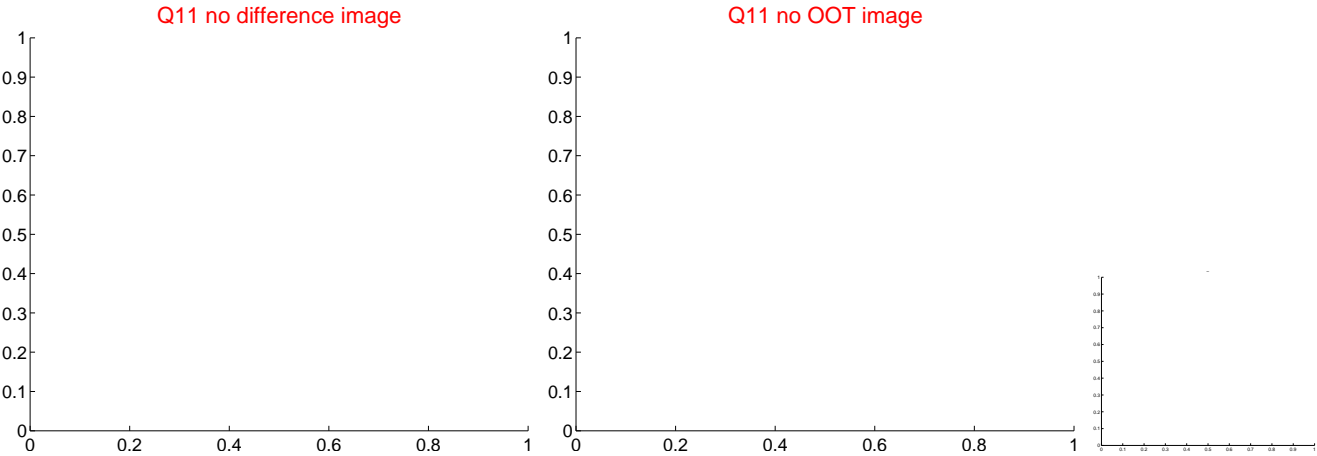
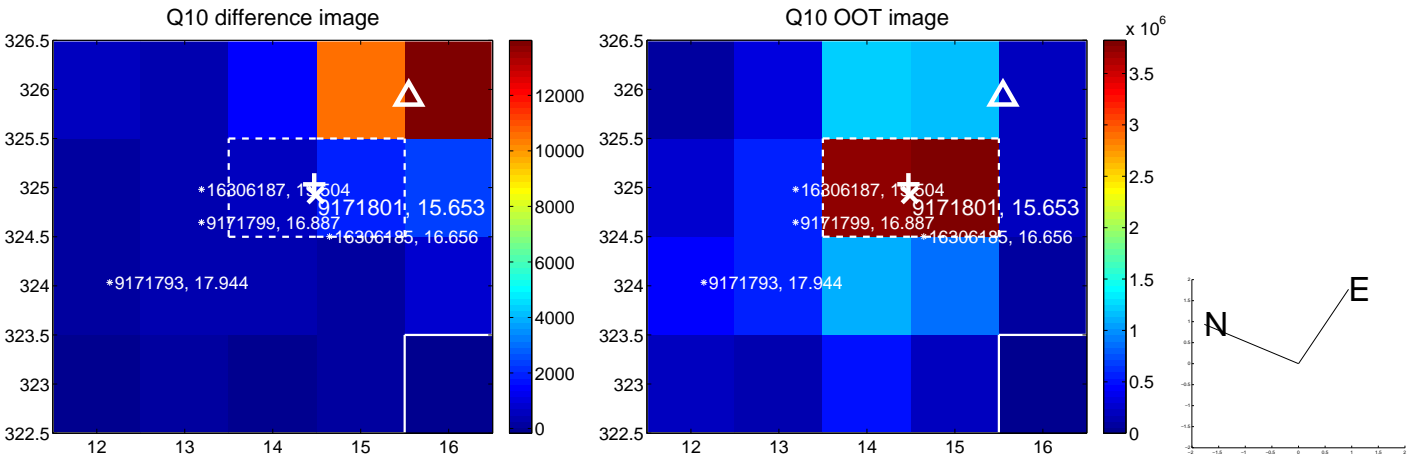
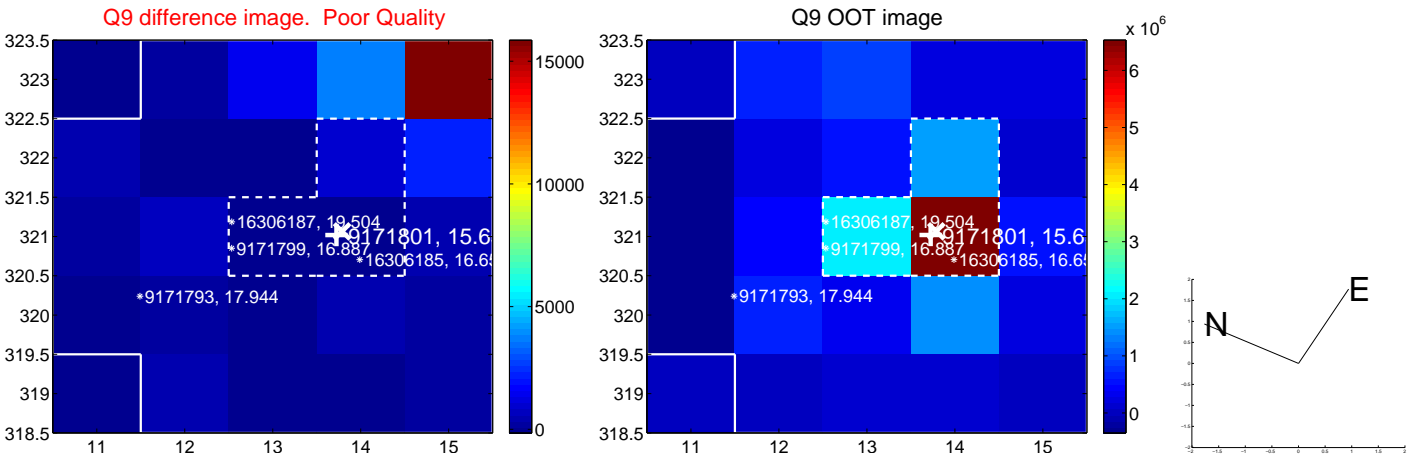
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



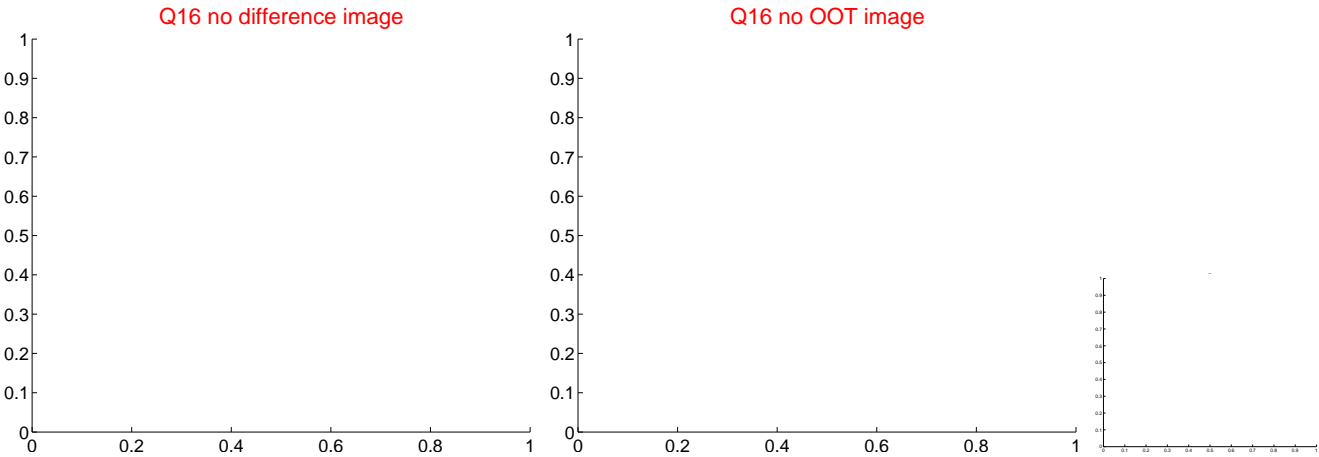
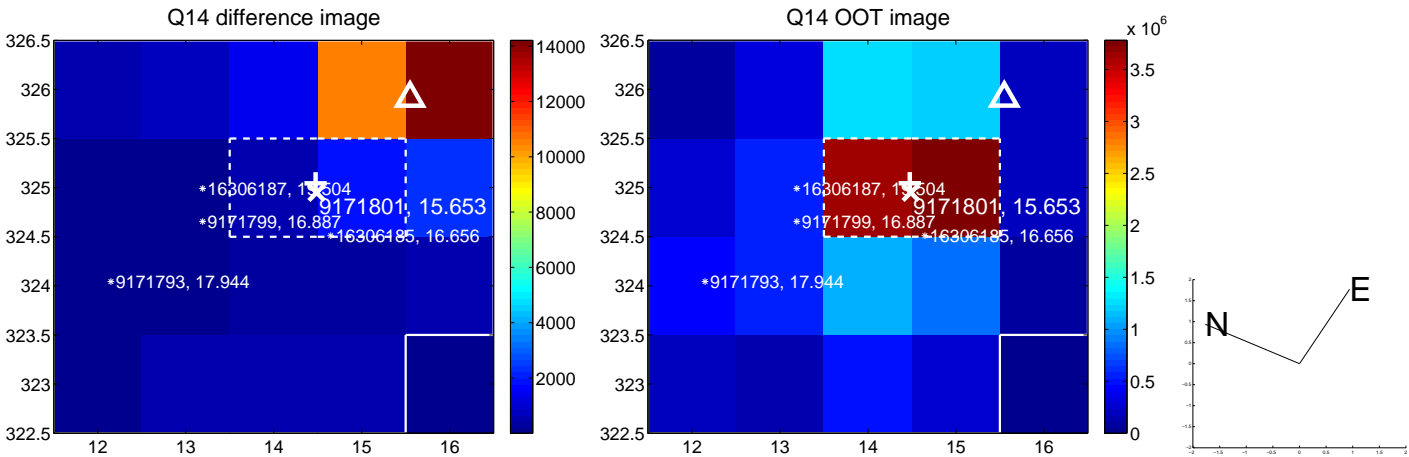
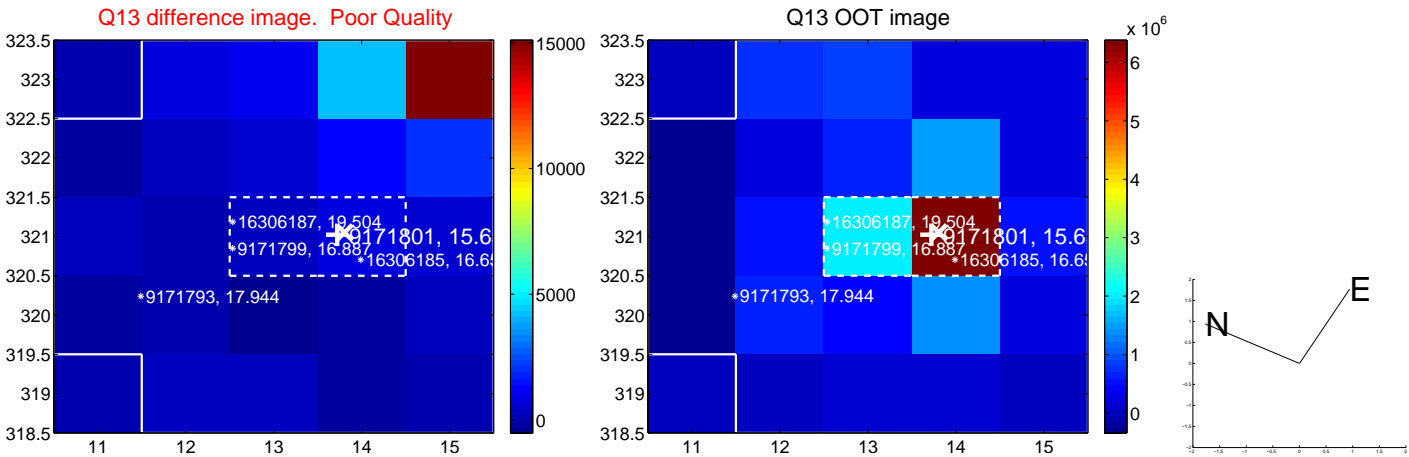
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



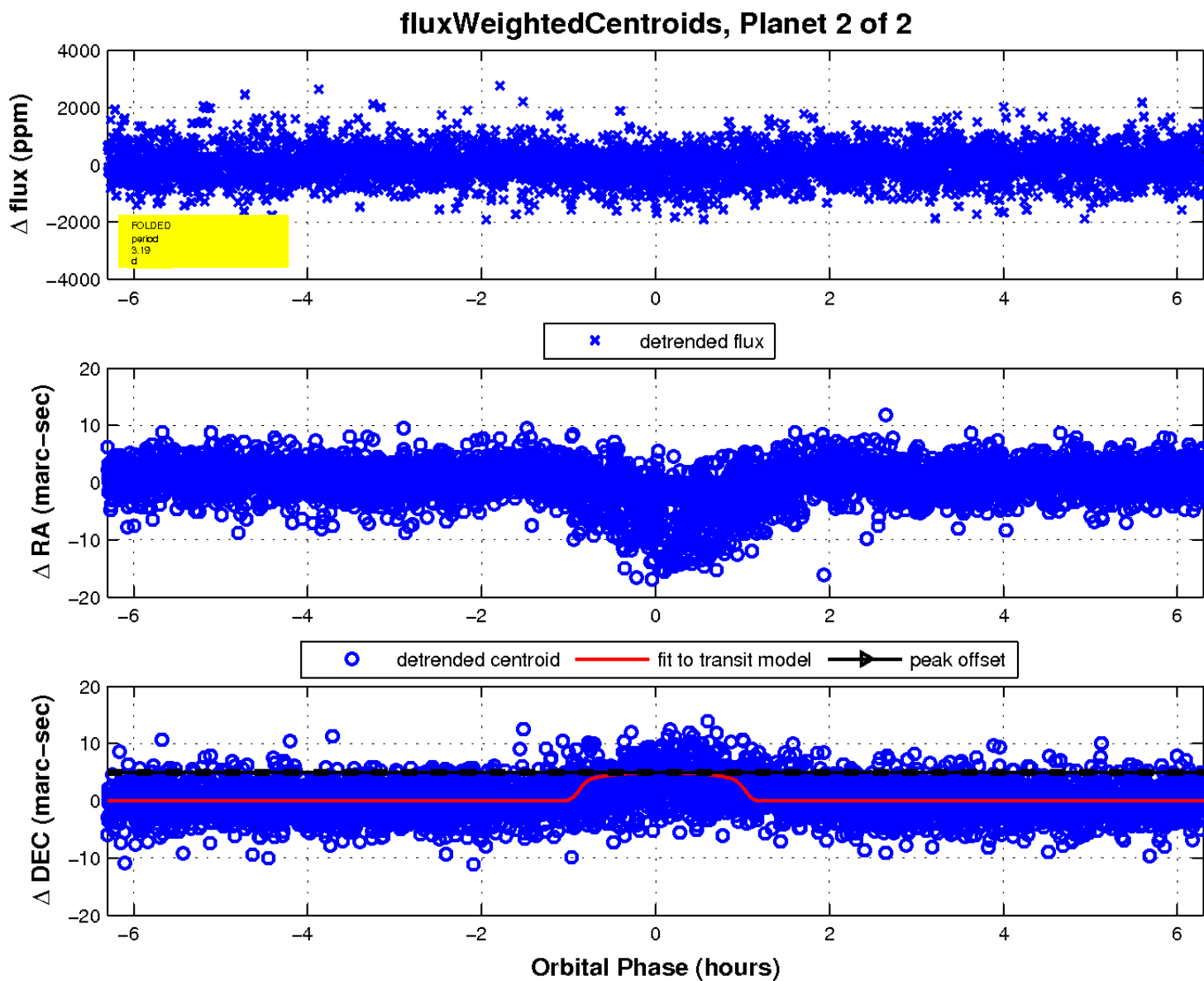
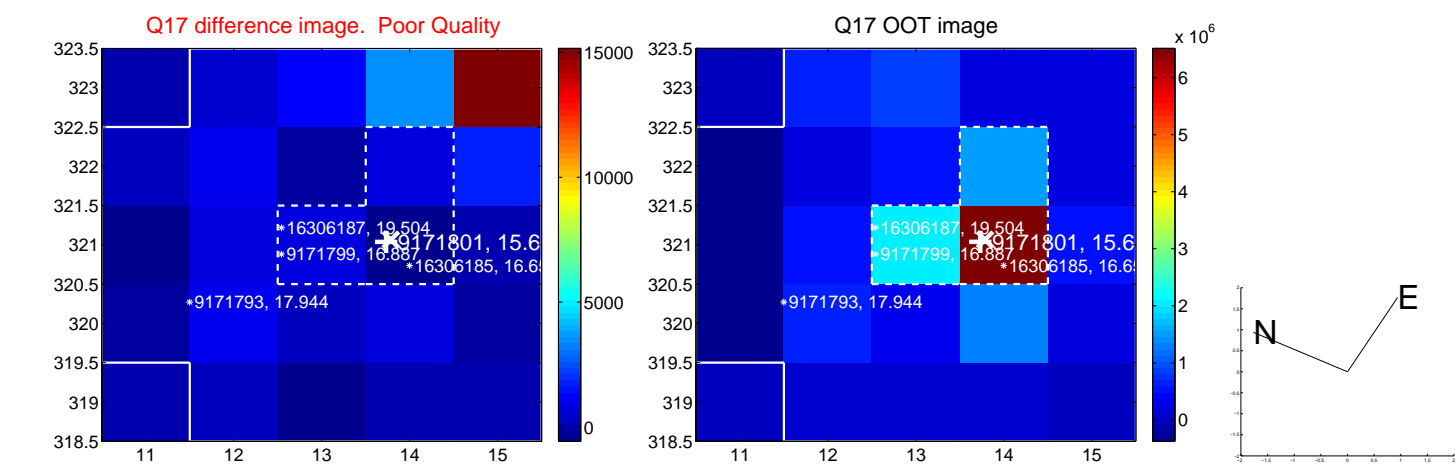
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

