

KIC 006466939

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})
006466939-01	OBS	6717.01	1.142953	131.897990	435557.3	3.431	20847.1	9864.8	0.61	5058	45.91	662.79
006466939-02	OBS	No	321.324830	234.199073	2440.7	3.840	14.6	6.7	0.61	5058	3.11	0.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006466939-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED
006466939-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—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.

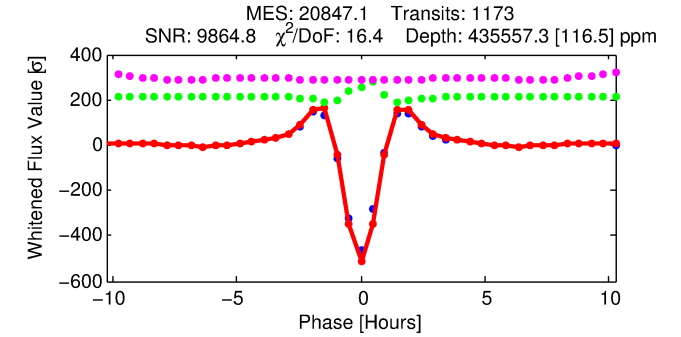
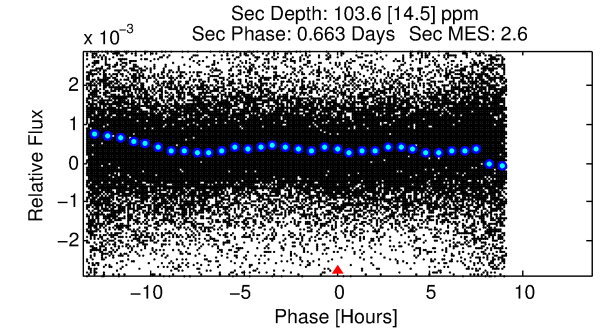
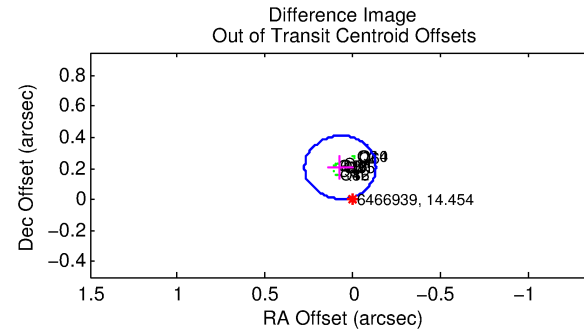
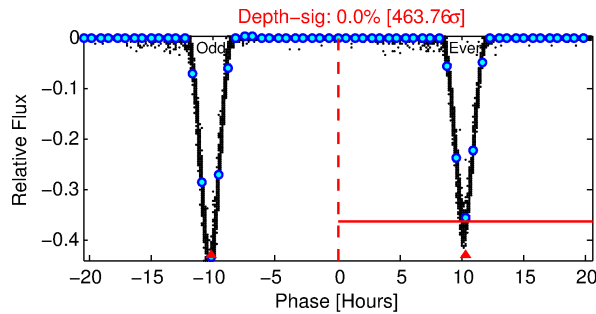
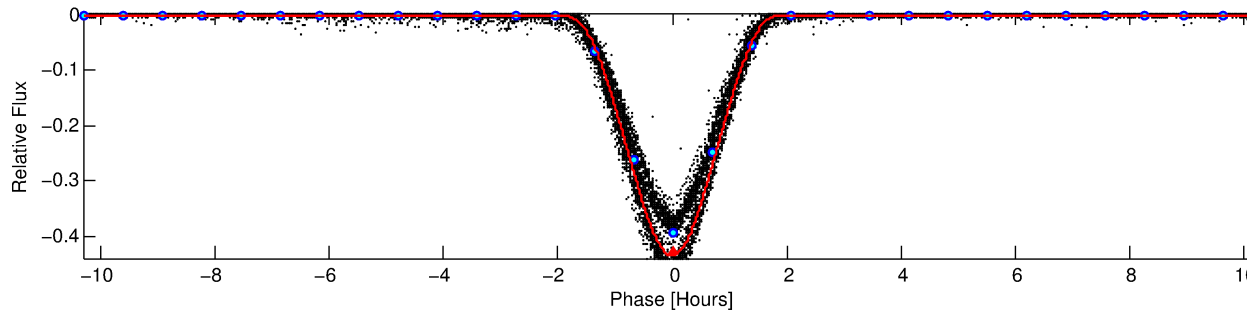
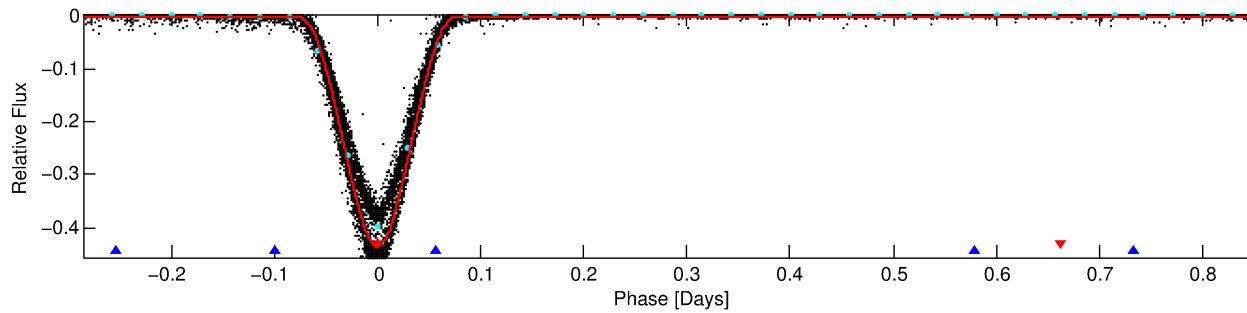
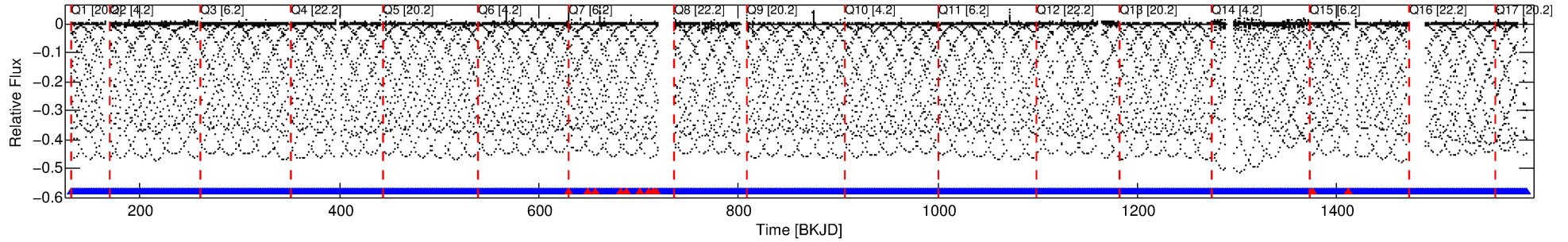
Ephemeris Match Information For 006466939-01

No Significant Match Found

DV One-Page Summary

KIC: 6466939 Candidate: 1 of 2 Period: 1.143 d
KOI: K06717.01 Corr: 0.985

Kp: 14.45 R*: 0.61 Rs Teff: 5058.0 K Logg: 4.65 Fe/H: -0.980



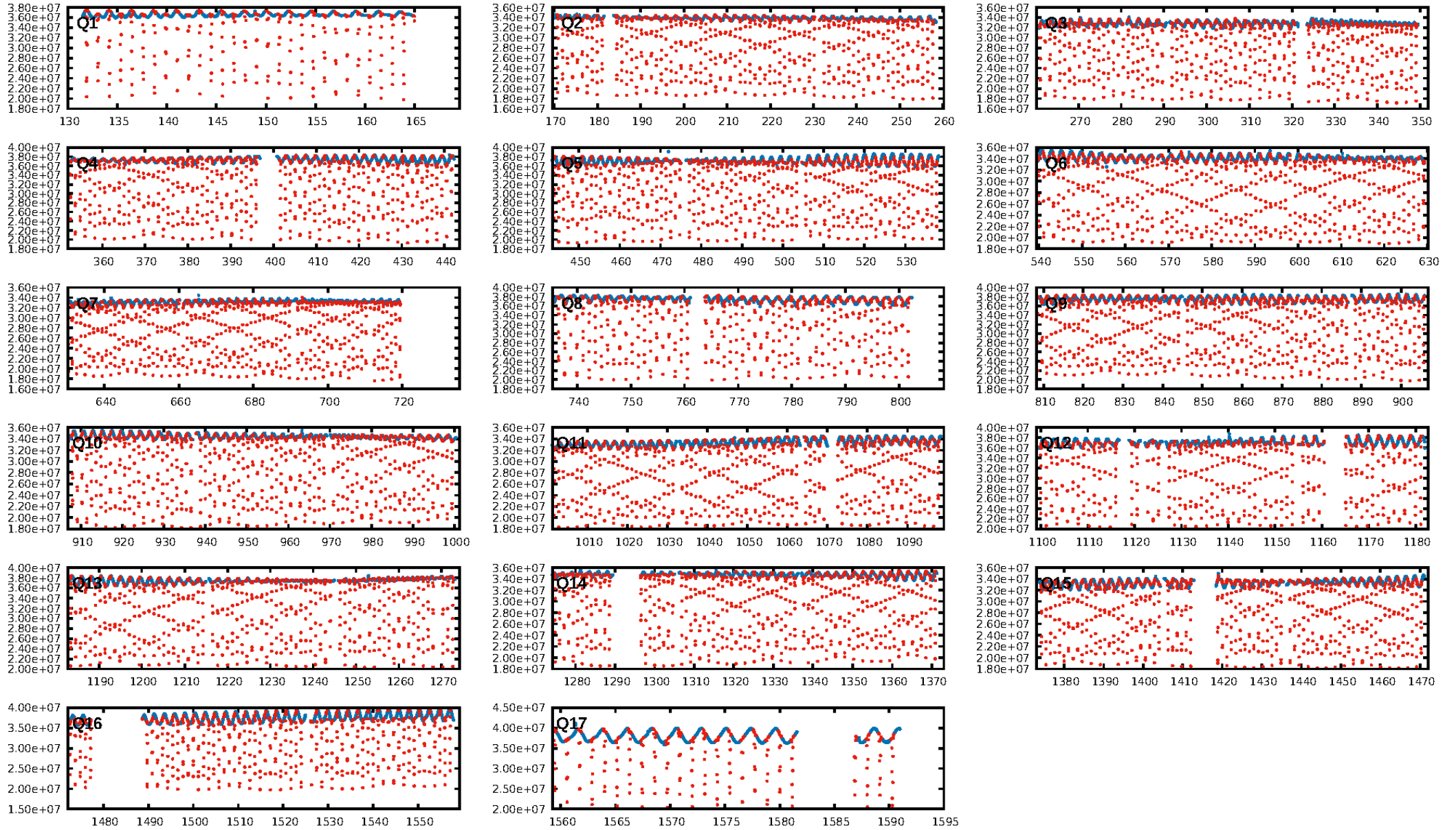
DV Fit Results:

Period = 1.14295 [0.00000] d
Epoch = 131.8980 [0.0000] BKJD
Rp/R* = 0.6920 [0.0027]
a/R* = 4.25 [0.01]
b = 0.50 [0.01]
Seff = 662.79 [105.63]
Teff = 1294 [52] K
Rp = 45.91 [3.55] Re
a = 0.0181 [0.0012] AU
Ag = 0.01 [0.00] [-638.91σ]
Teffp = 613 [28] K [-11.58σ]

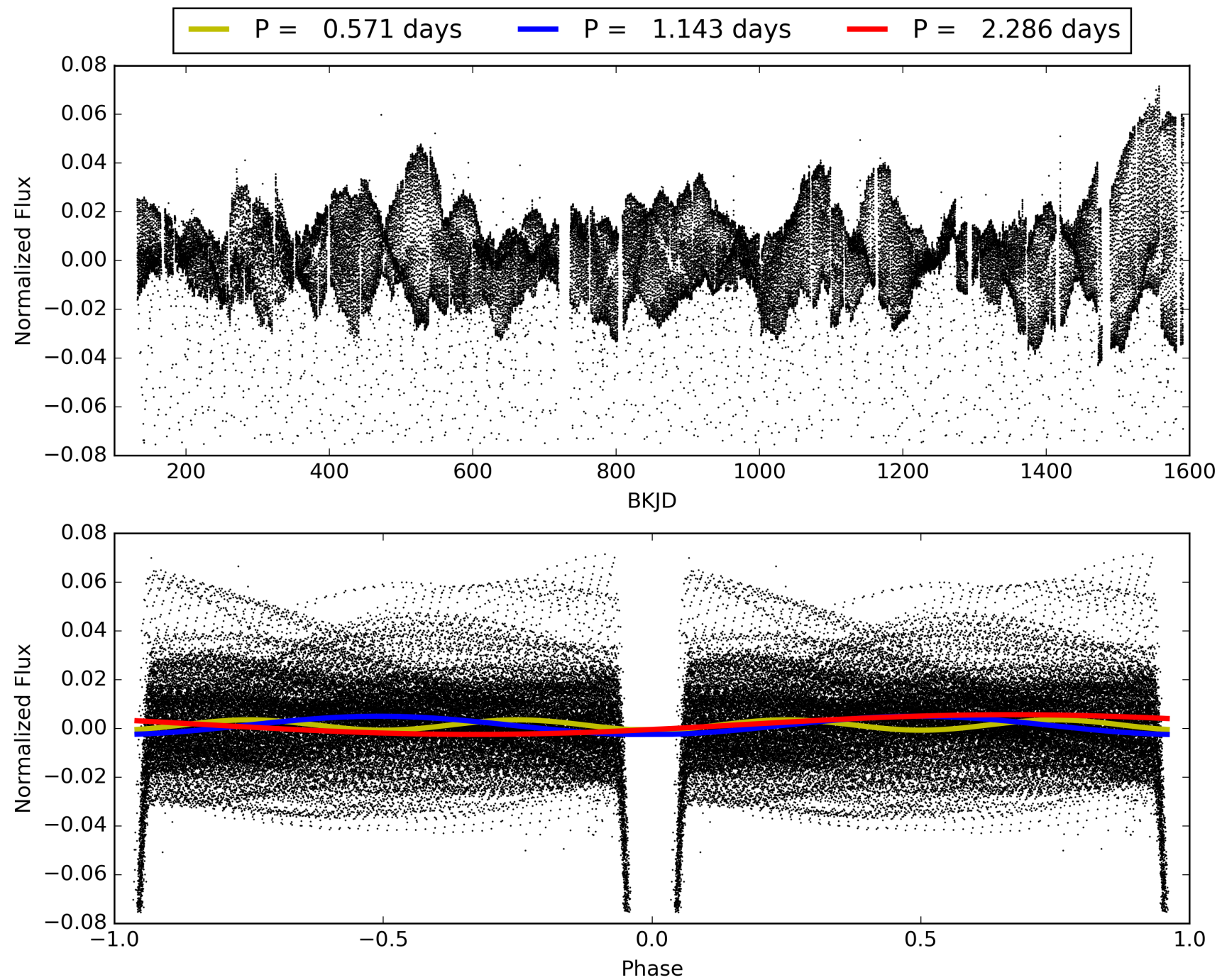
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1492.16σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [1108/1119]
GhostDiagnostic-chr: 1.08
Centroid-sig: N/A
Centroid-so: 0.252 arcsec [647.81σ]
OotOffset-rm: 0.220 arcsec [3.24σ]
KicOffset-rm: 0.070 arcsec [1.04σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006466939-01, PDC Light Curves

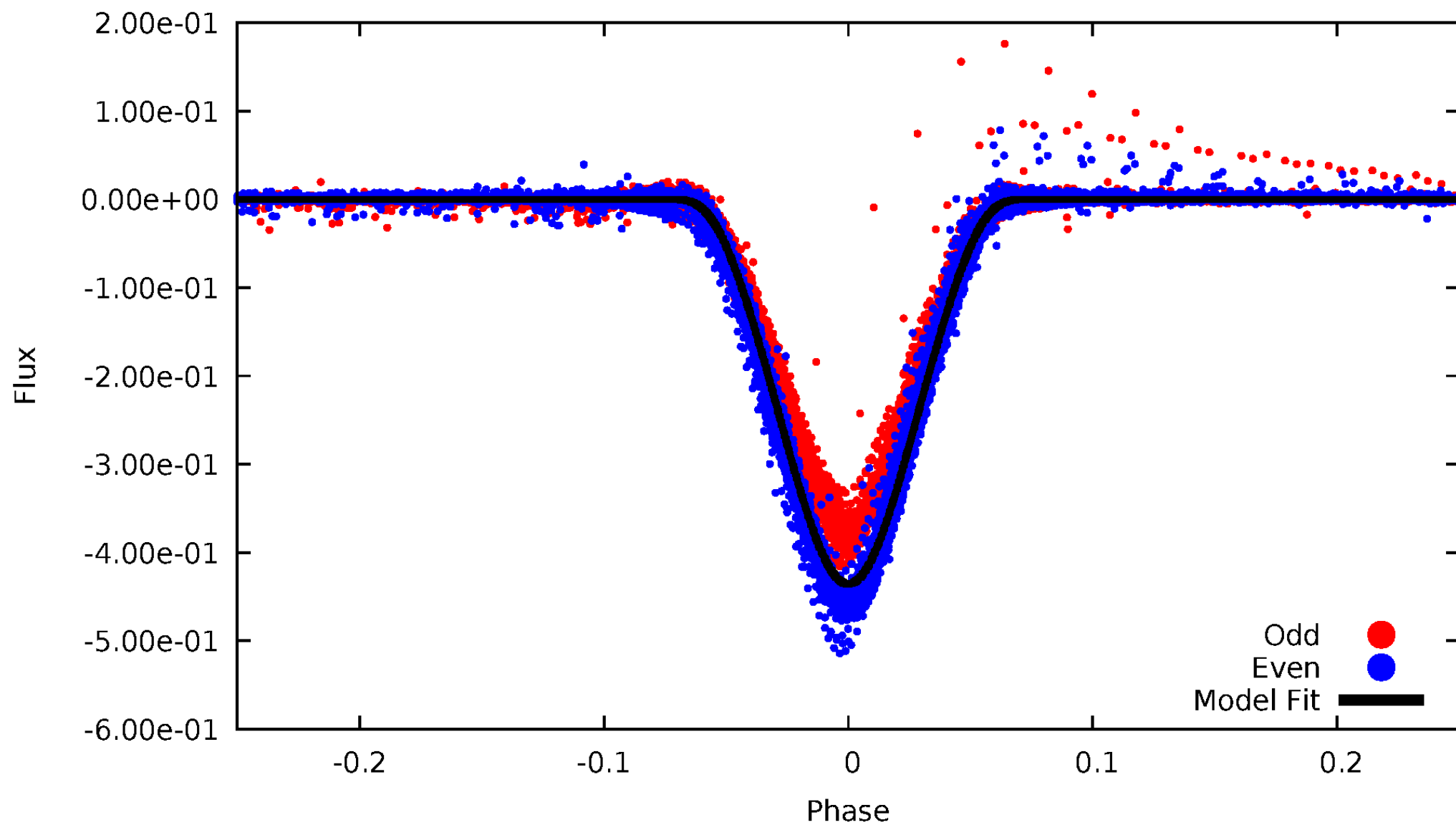


TCE 006466939-01



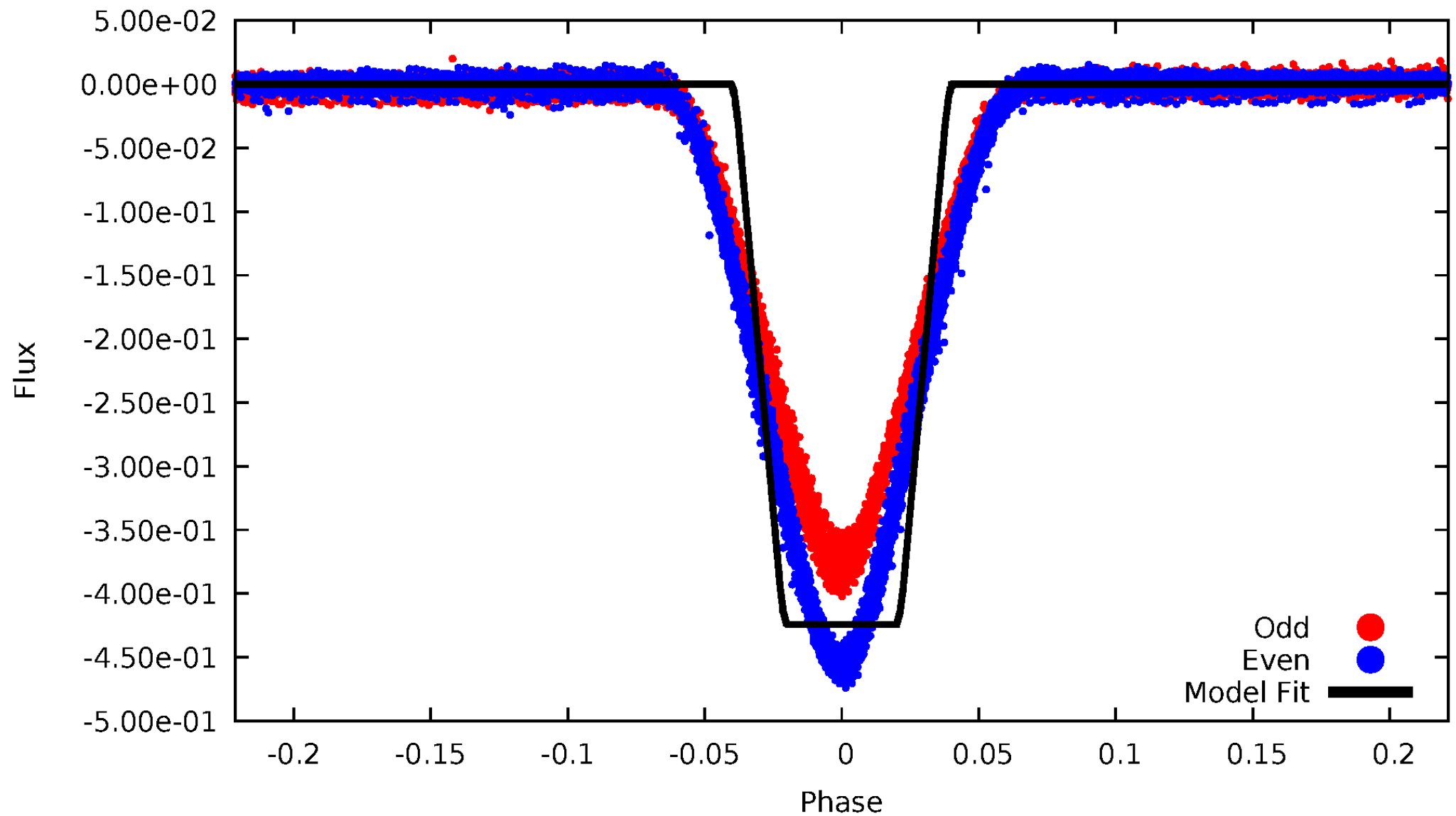
DV Odd/Even

TCE 006466939-01



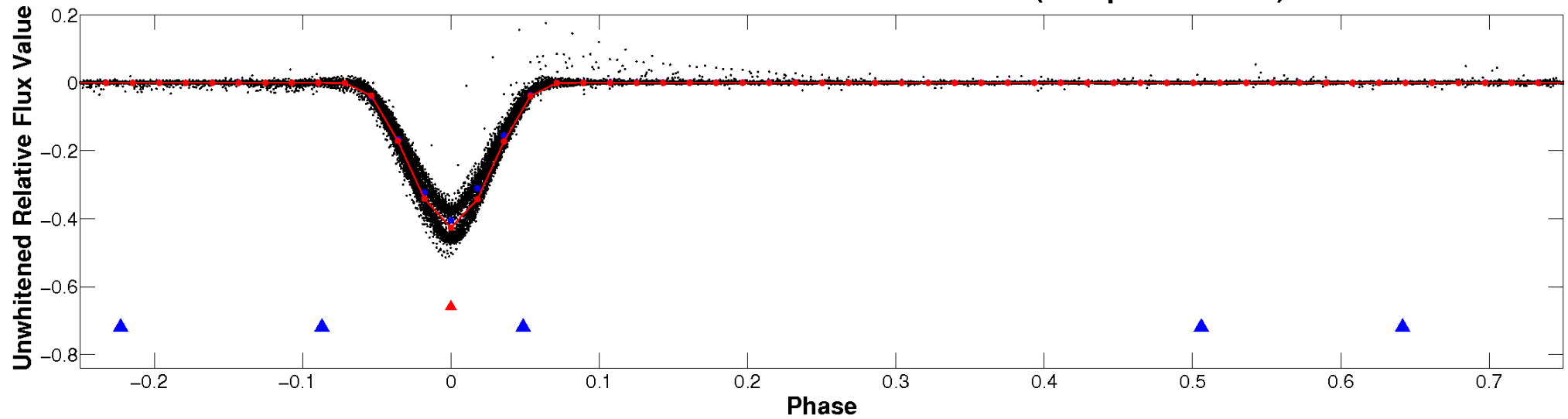
ALT Odd/Even

TCE 006466939-01

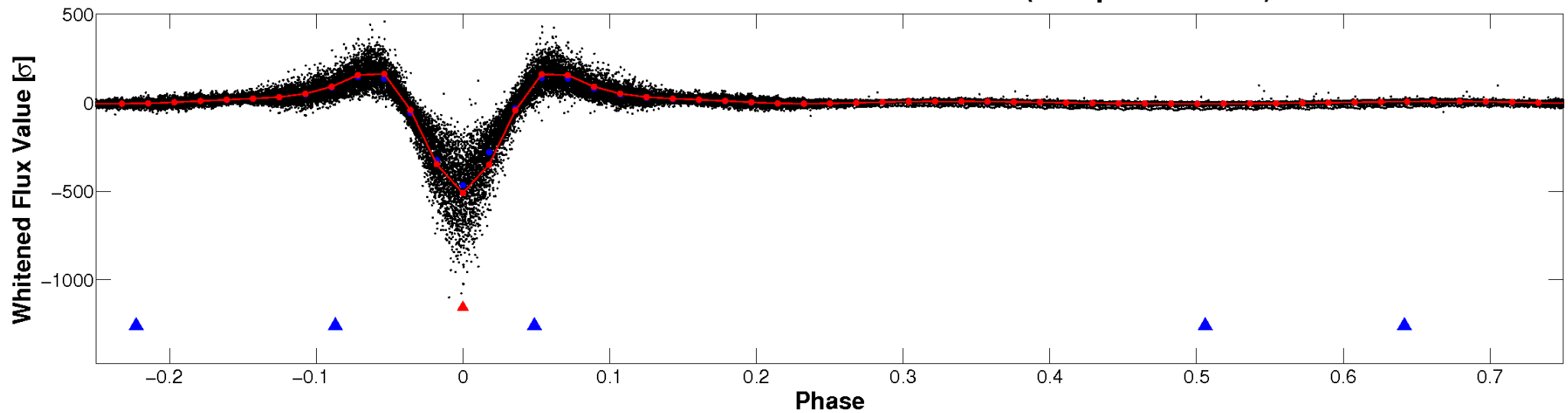


Non-Whitened Vs. Whitened Light Curve

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

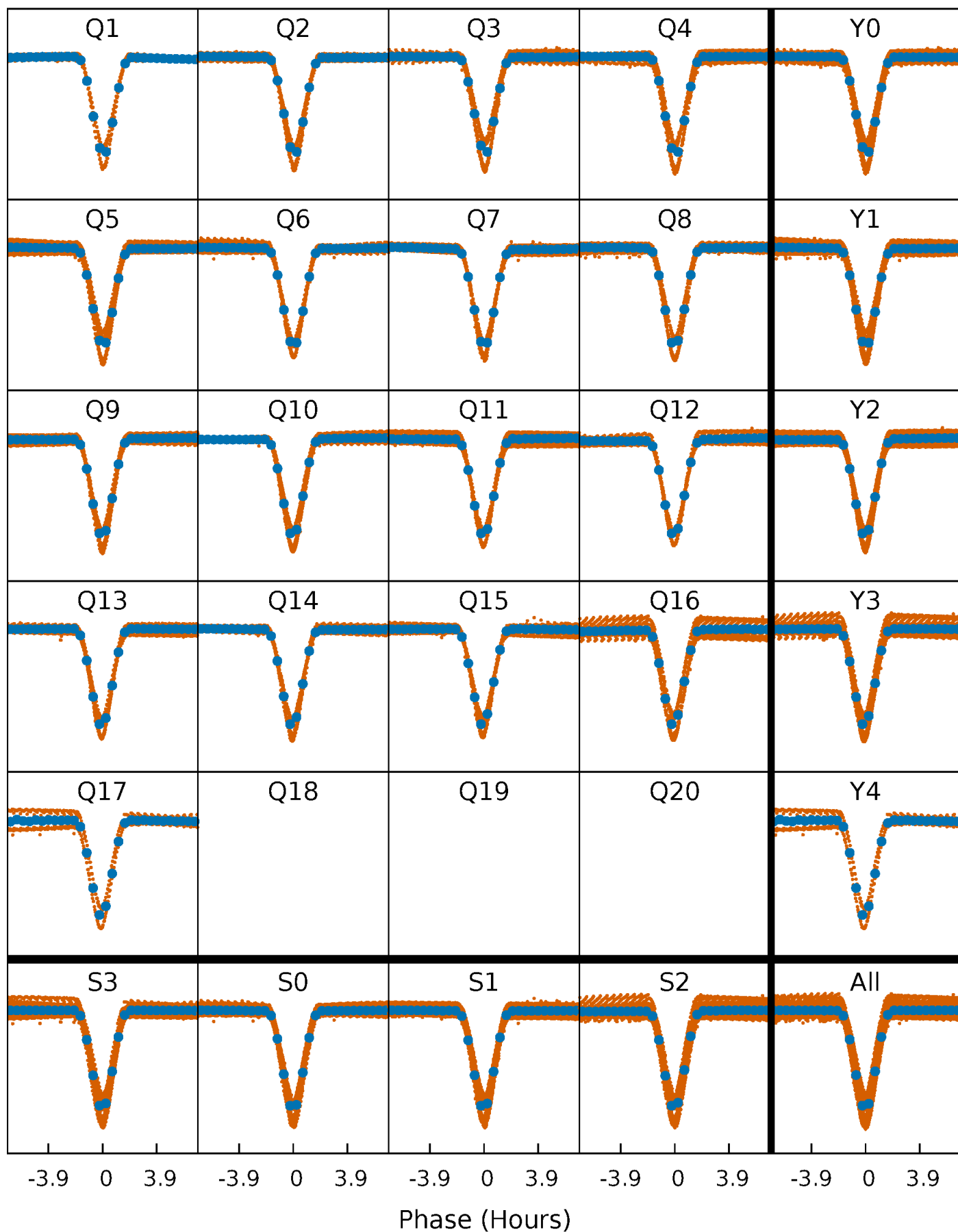


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



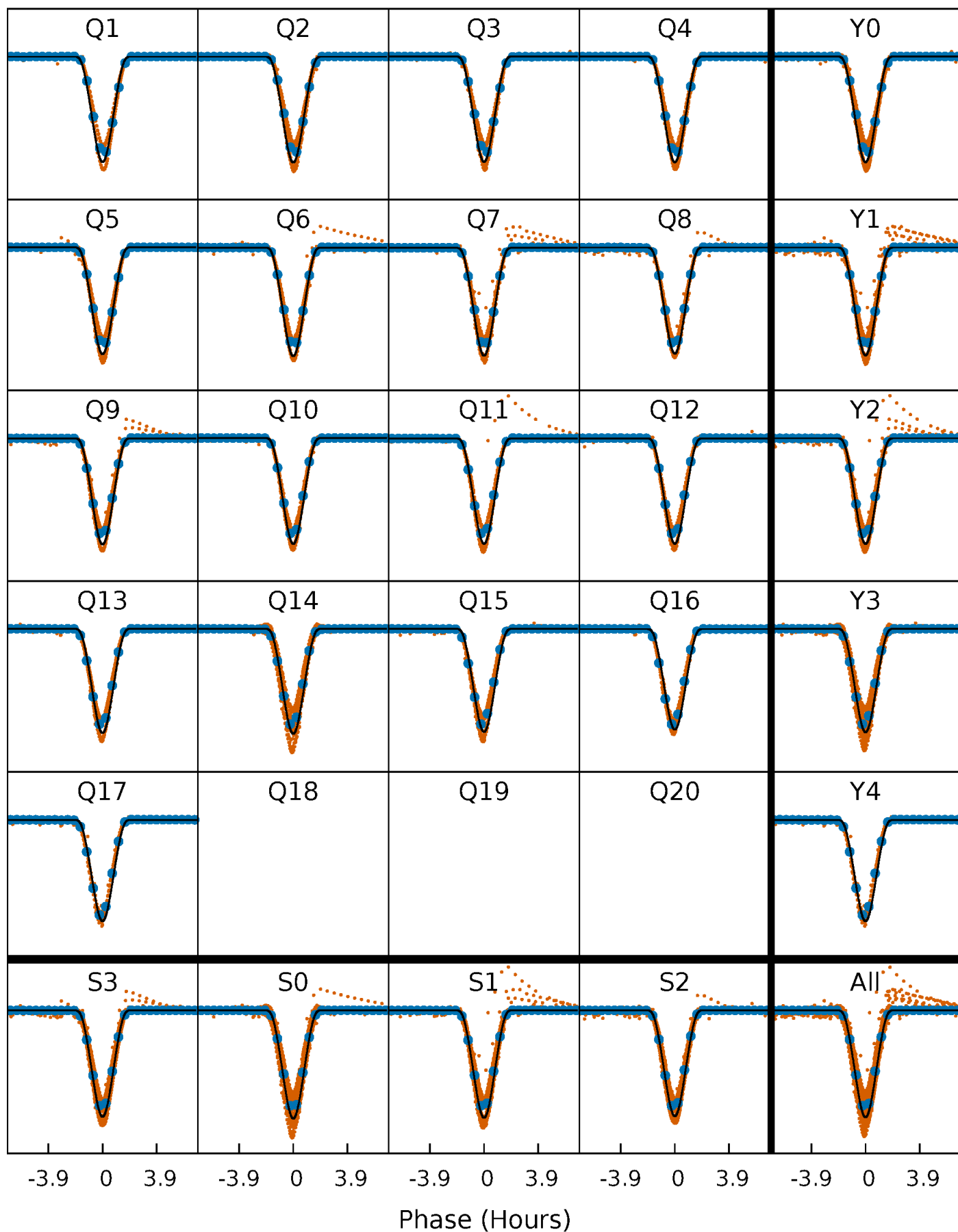
PDC Quarter-Phased Transit Curves

TCE 006466939-01 P= 1.142953 Days $T_0=131.897990$ (BKJD)



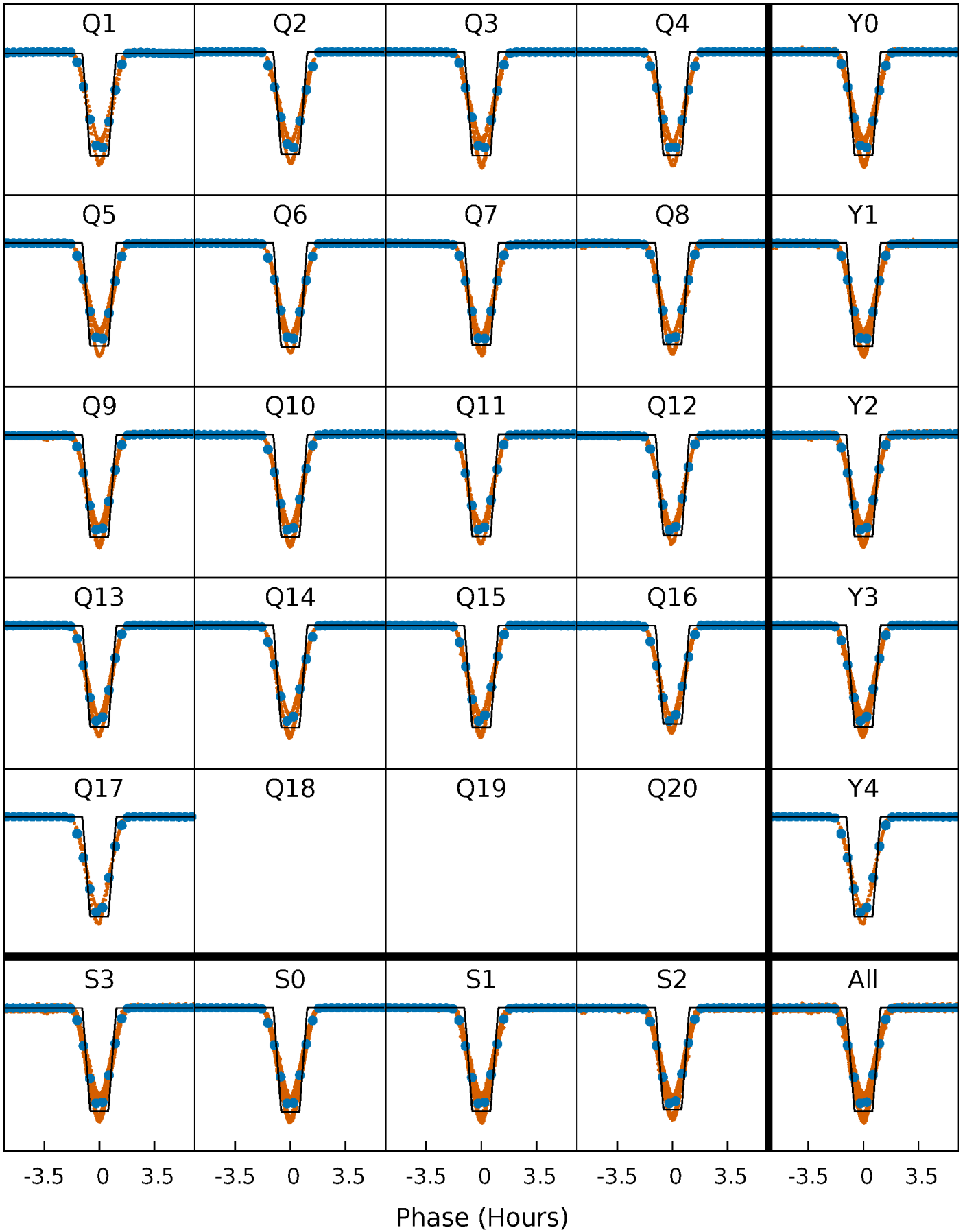
DV Quarter-Phased Transit Curves

TCE 006466939-01 P= 1.142953 Days $T_0=131.897990$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

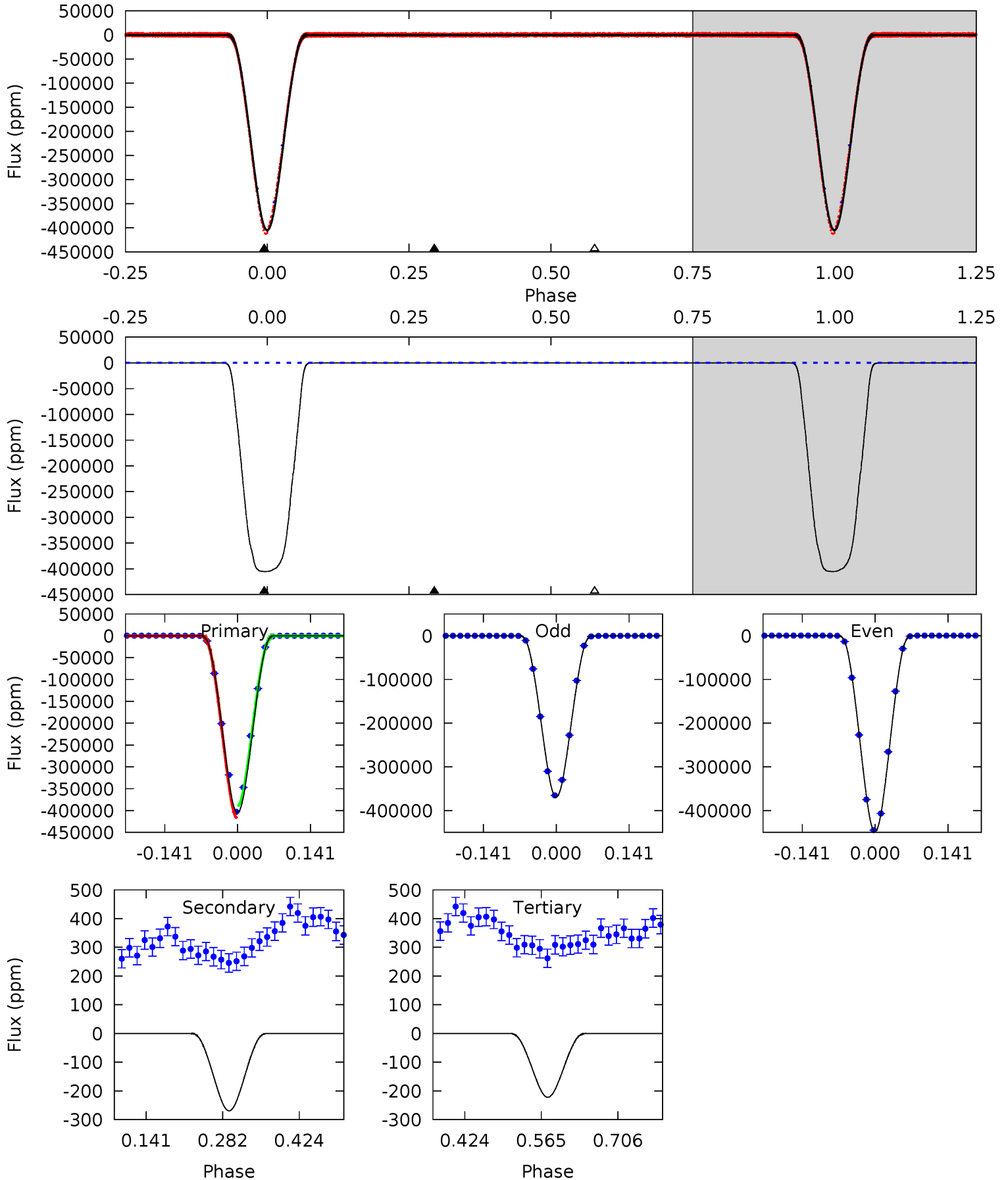
TCE 006466939-01 P= 1.142950 Days $T_0=131.899359$ (BKJD)



DV Model-Shift Uniqueness Test

006466939-01, P = 1.142953 Days, E = 130.755037 Days

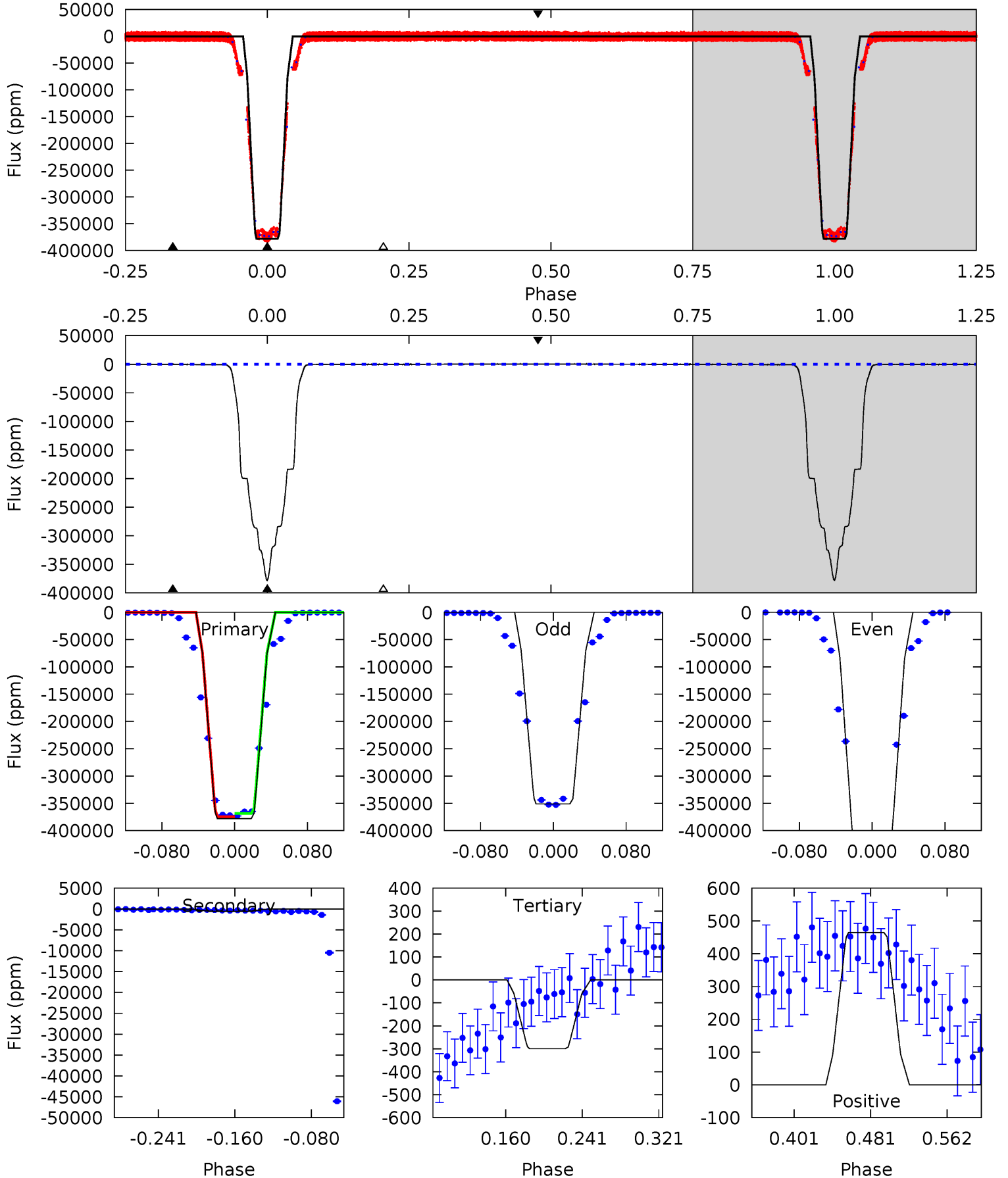
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18945	12.6	10.4	0	4.49	1.47	4.64	18934	18945	2.20	12.6	1944	1.00	0.00	0



Alt Model-Shift Uniqueness Test

006466939-01, P = 1.142950 Days, E = 130.756409 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4361	6.60	3.46	5.35	4.61	1.75	3.05	4358	4356	3.14	1.25	458.9	0.98	0.00	0



Stellar Parameters For KIC 006466939

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5058^{+151}_{-151}	$4.651^{+0.060}_{-0.035}$	$-0.980^{+0.300}_{-0.300}$	$0.608^{+0.047}_{-0.042}$	$0.603^{+0.055}_{-0.022}$	$3.787^{+0.847}_{-0.517}$
	+3%/-3%	+1%/-1%	+31%/-31%	+8%/-7%	+9%/-4%	+22%/-14%
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 006466939-01 / KOI 6717.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-269 ± 21	$45.63^{+2.14}_{-1.76}$	1798^{+60}_{-63}	-2332^{+42}_{-42}	$0.024^{+0.003}_{-0.003}$
Alt.	-572 ± 87	$43.08^{+1.94}_{-1.64}$	1803^{+63}_{-63}	-2301^{+43}_{-47}	$0.056^{+0.009}_{-0.009}$

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 $A_{obs} \gg 1.0$

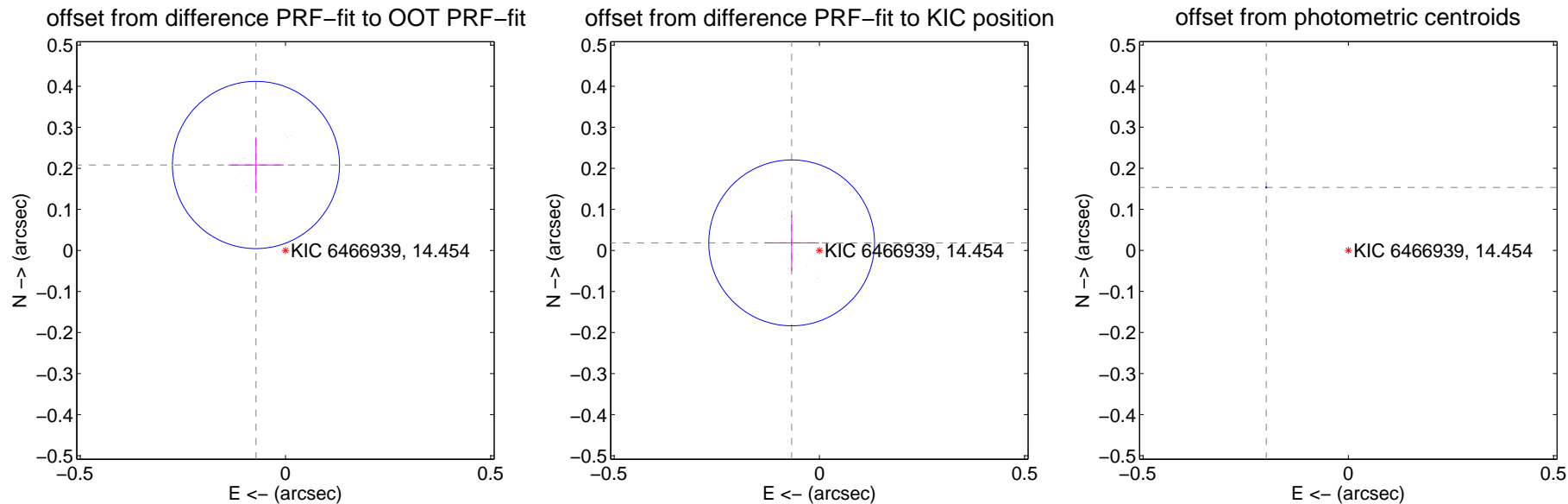
DV Centroid Data

Supplemental centroid analysis for 006466939-01. Kepler magnitude: 14.45. Transit SNR 9864.78

There are 17 quarters with good PRF difference image offsets

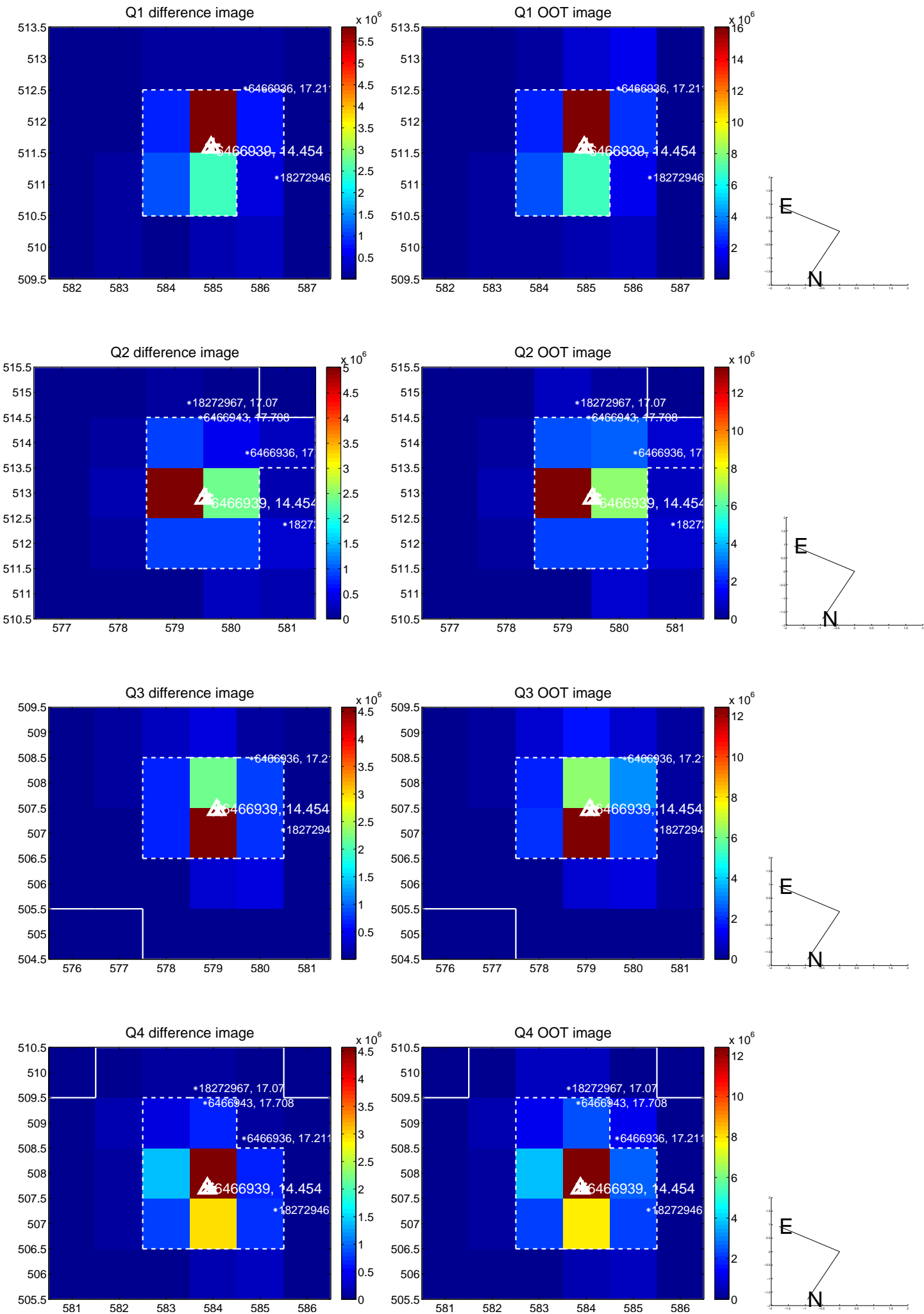
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.220 ± 0.068	3.24	0.072 ± 0.068	0.208 ± 0.068
PRF-fit source offset from KIC position	0.070 ± 0.067	1.04	0.068 ± 0.067	0.018 ± 0.068
photometric centroid source offset	0.25 ± 0.00	647.81	0.20 ± 0.00	0.15 ± 0.00

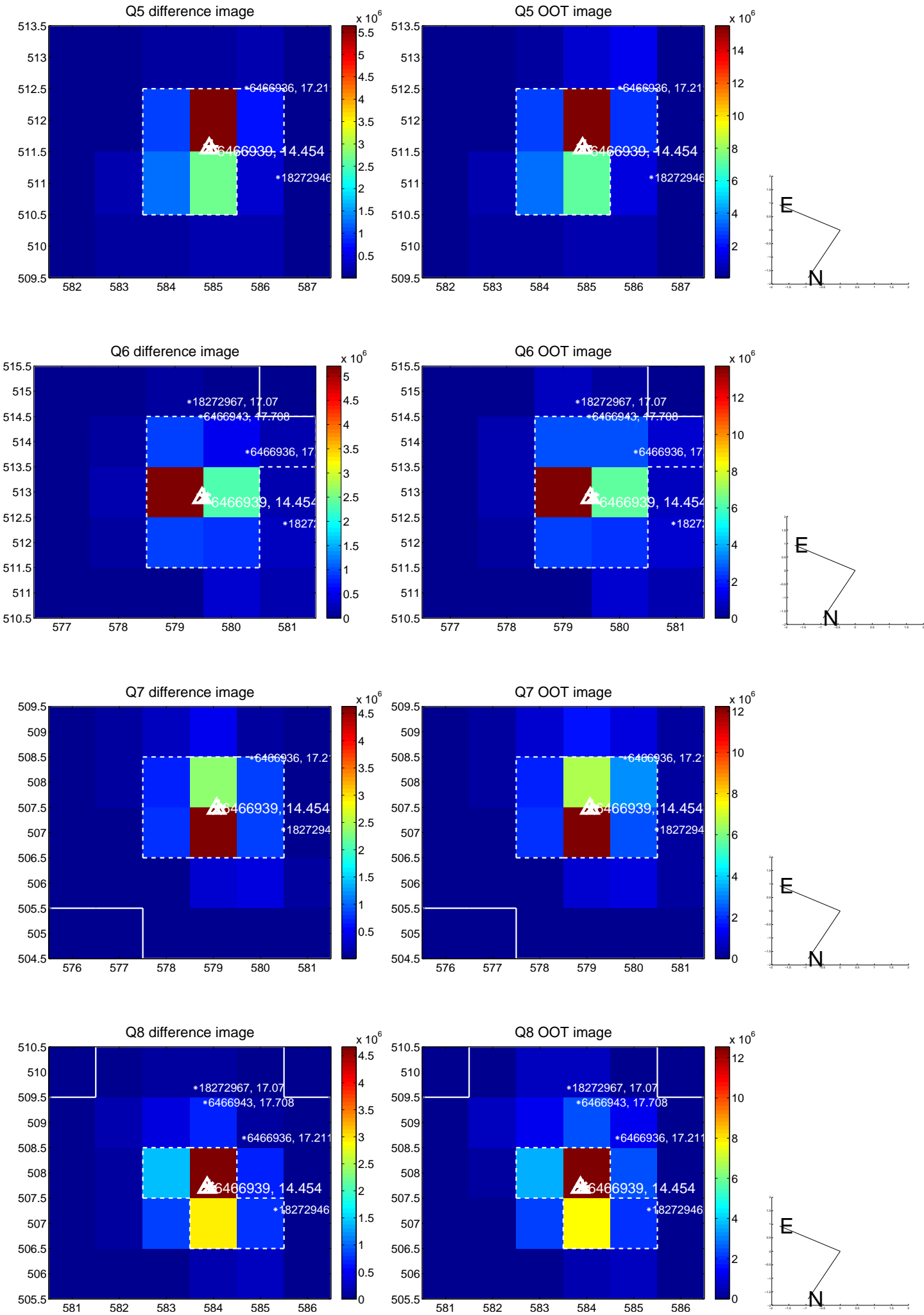


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

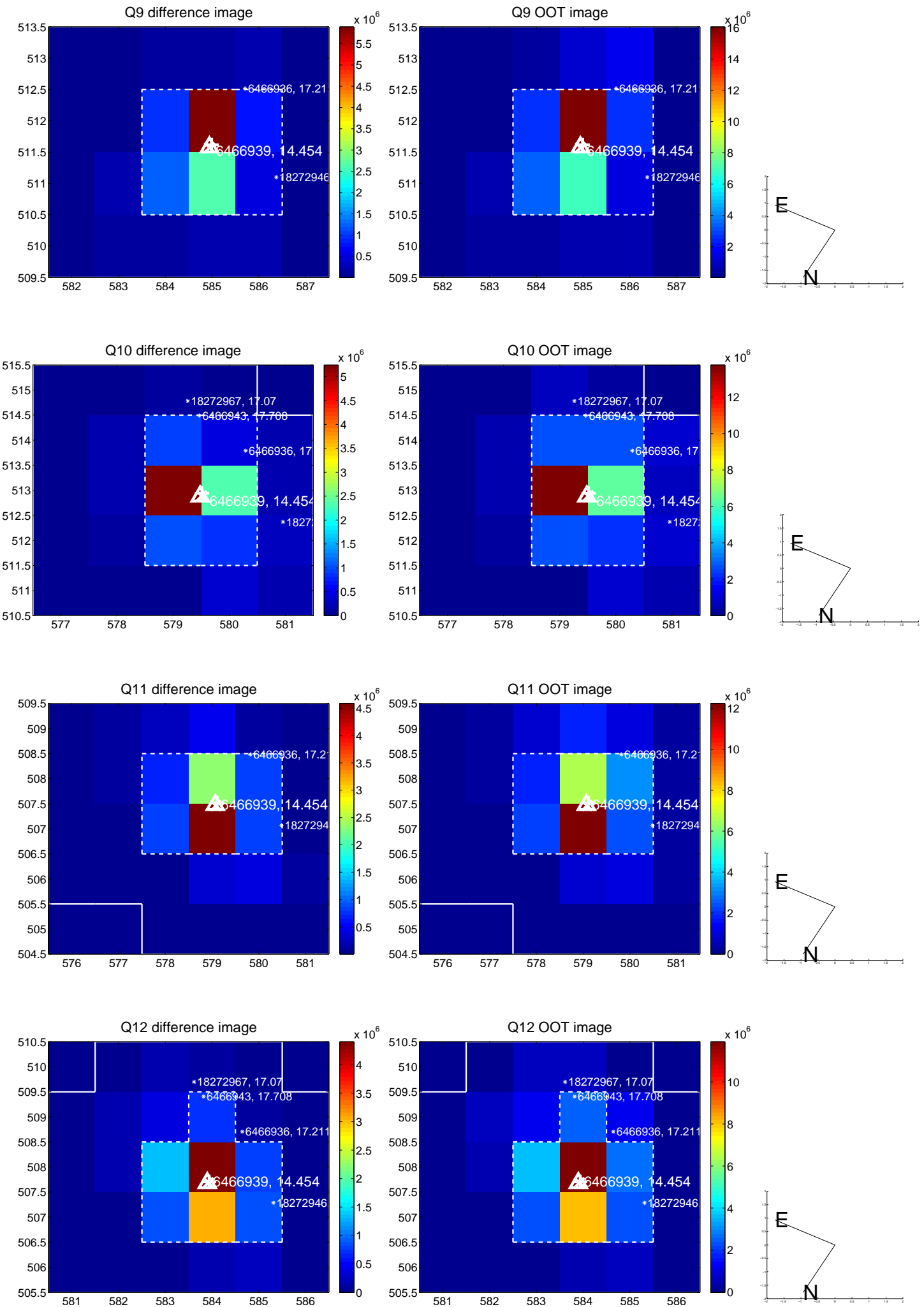
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



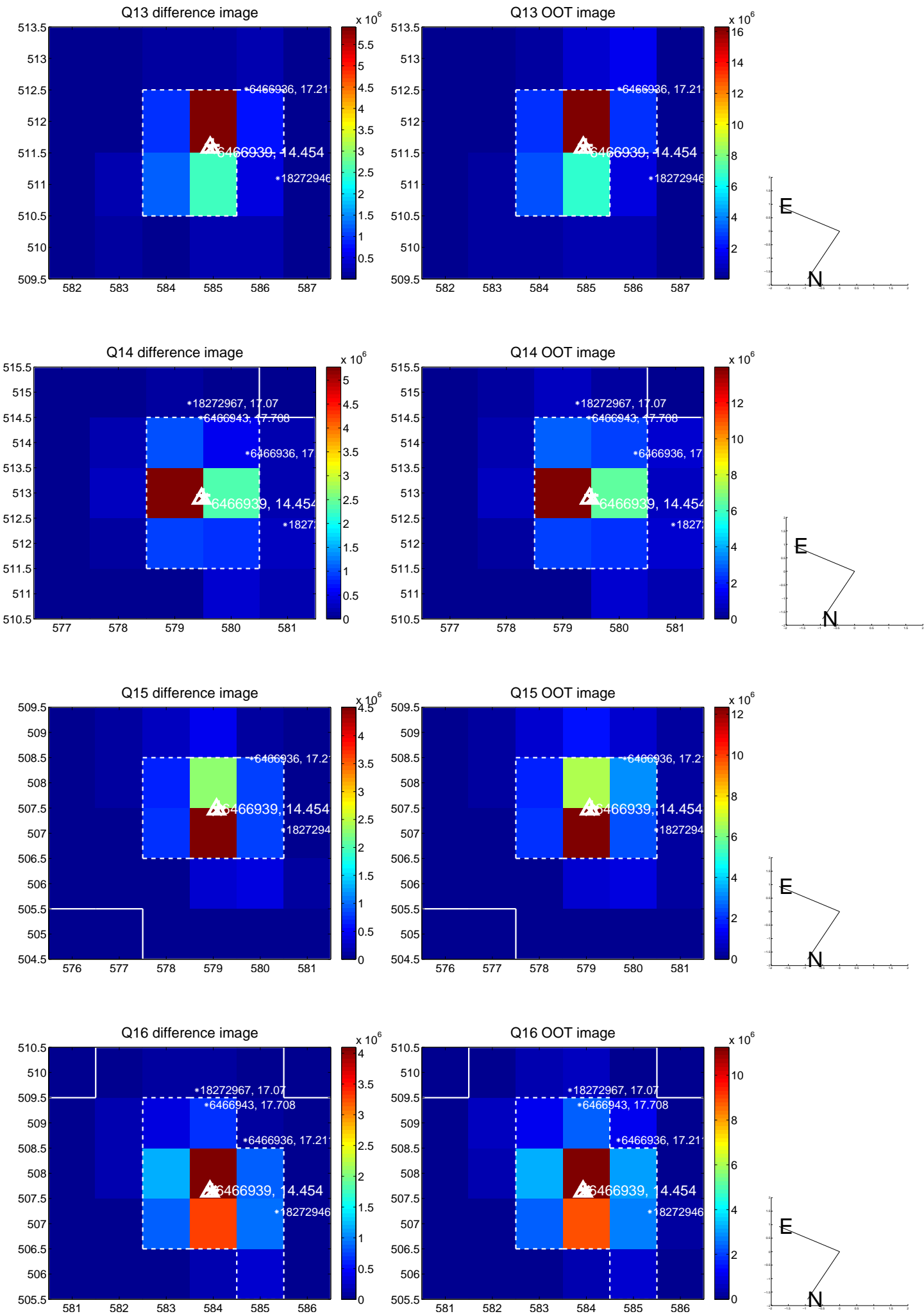
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



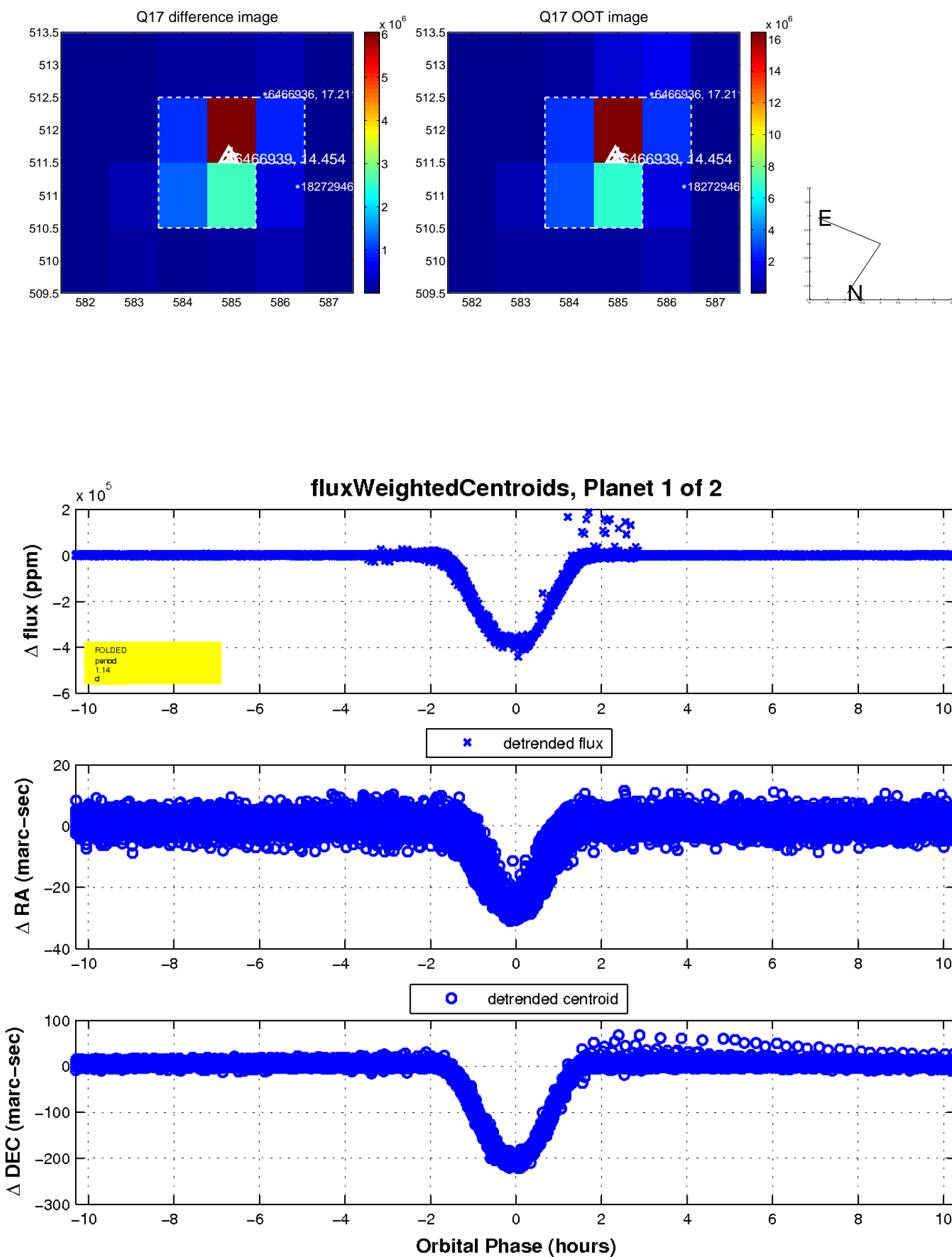
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

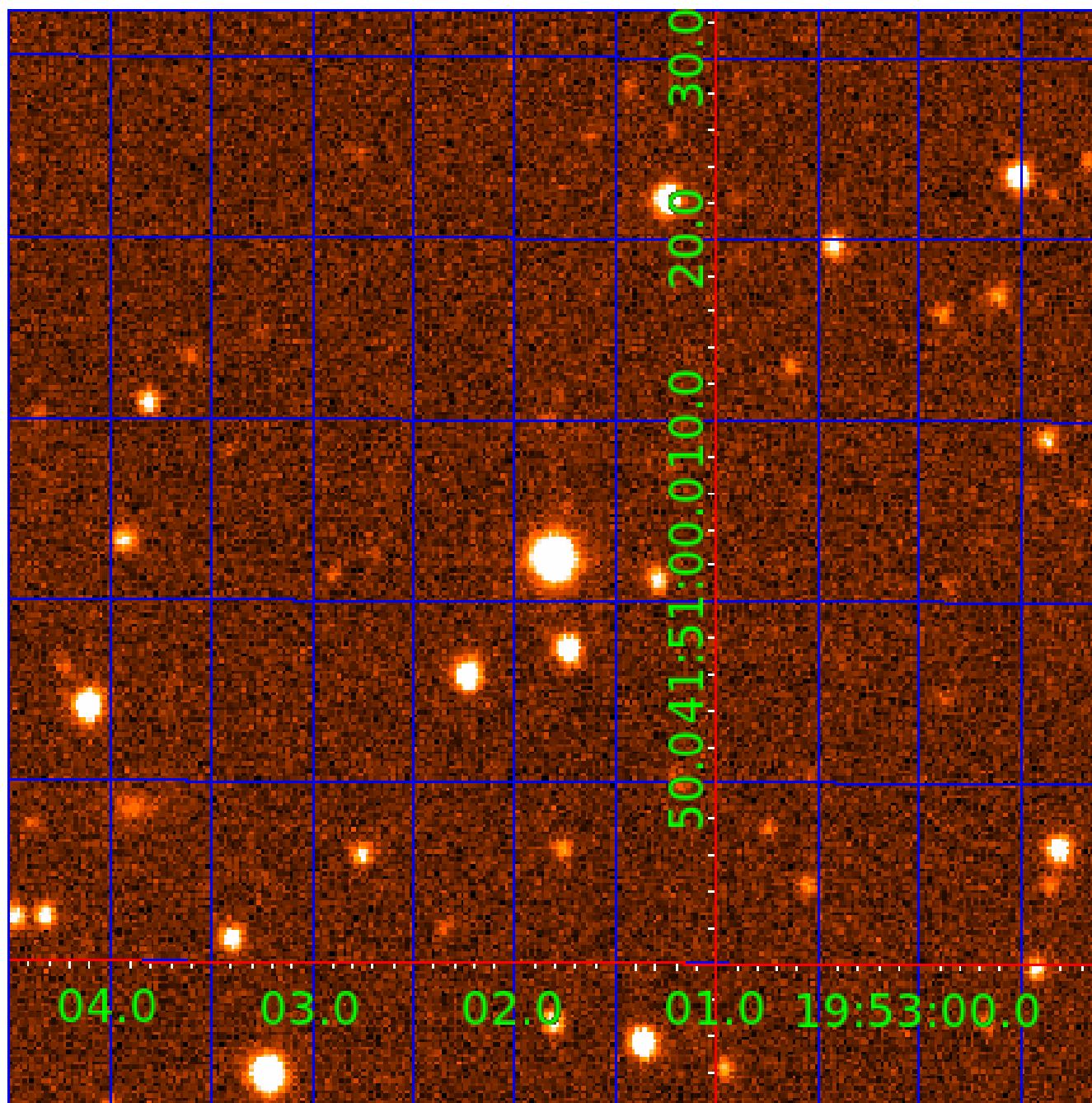


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006466939

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})
006466939-01	OBS	6717.01	1.142953	131.897990	435557.3	3.431	20847.1	9864.8	0.61	5058	45.91	662.79
006466939-02	OBS	No	321.324830	234.199073	2440.7	3.840	14.6	6.7	0.61	5058	3.11	0.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006466939-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED
006466939-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—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.

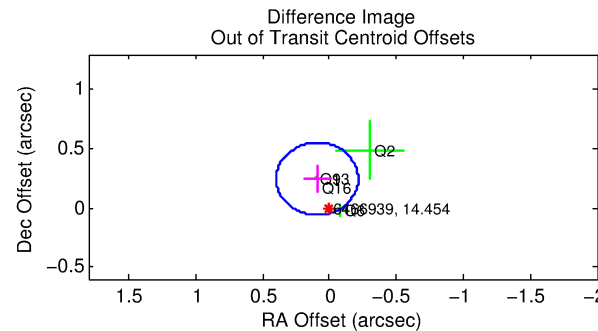
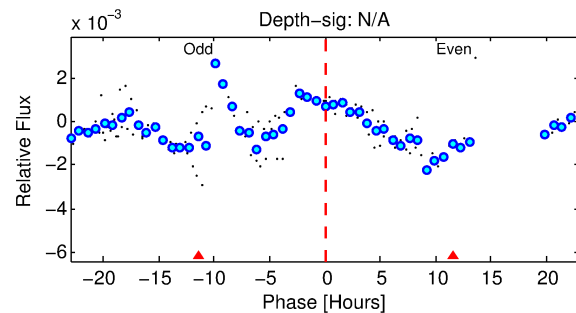
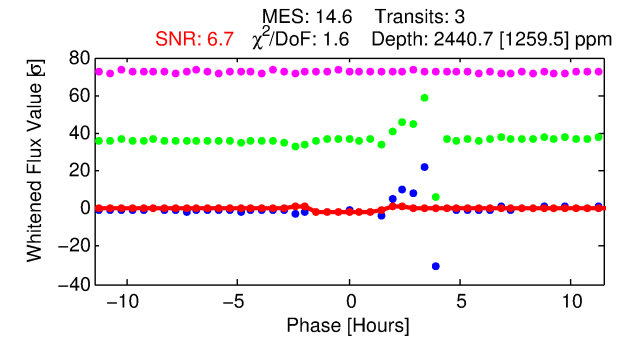
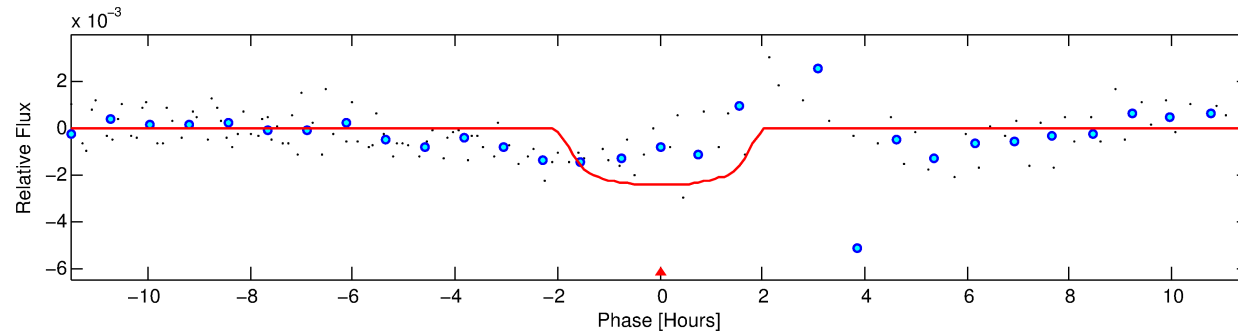
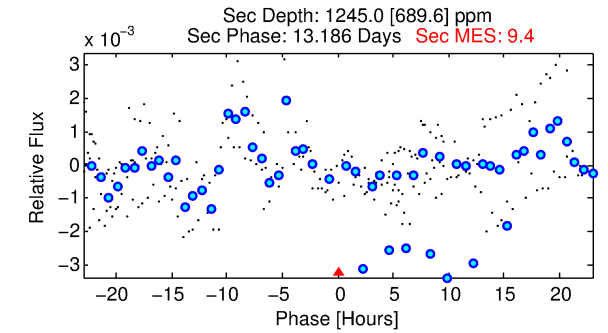
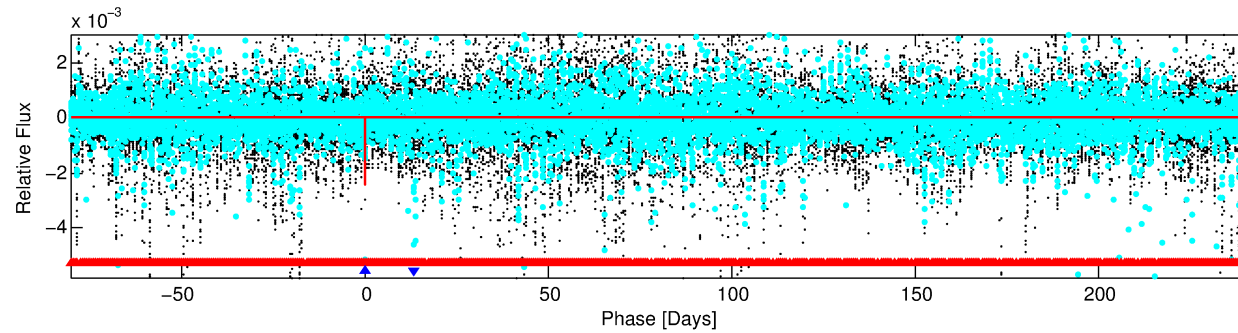
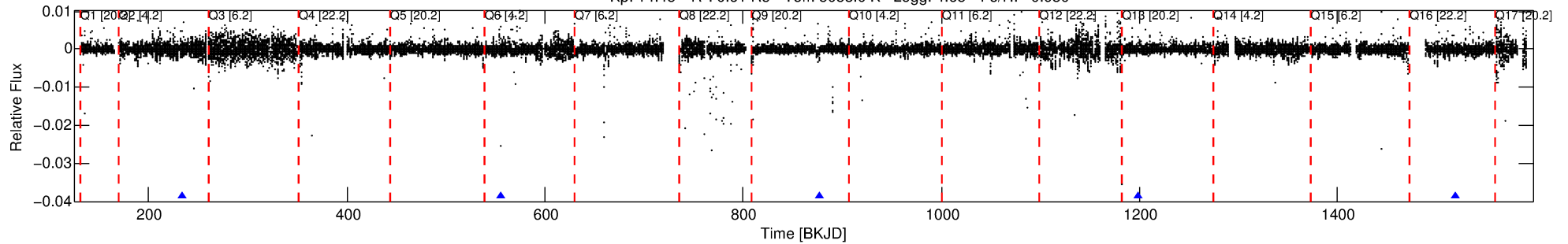
Ephemeris Match Information For 006466939-02

No Significant Match Found

DV One-Page Summary

KIC: 6466939 Candidate: 2 of 2 Period: 321.325 d
KOI: K06717 Corr: No Ephemeris Match

Kp: 14.45 R*: 0.61 Rs Teff: 5058.0 K Logg: 4.65 Fe/H: -0.980



DV Fit Results:

Period = 321.32483 [0.01809] d
Epoch = 234.1991 [0.0205] BKJD
Rp/R* = 0.0469 [0.1087]
a/R* = 553.88 [5038.84]
b = 0.59 [10.28]
Seff = 0.36 [0.06]
Teq = 197 [8] K
Rp = 3.11 [7.22] Re
a = 0.7761 [0.0536] AU
Ag = 42690.24 [199540.57] [0.21σ]
Teffp = 4389 [5129] K [0.82σ]

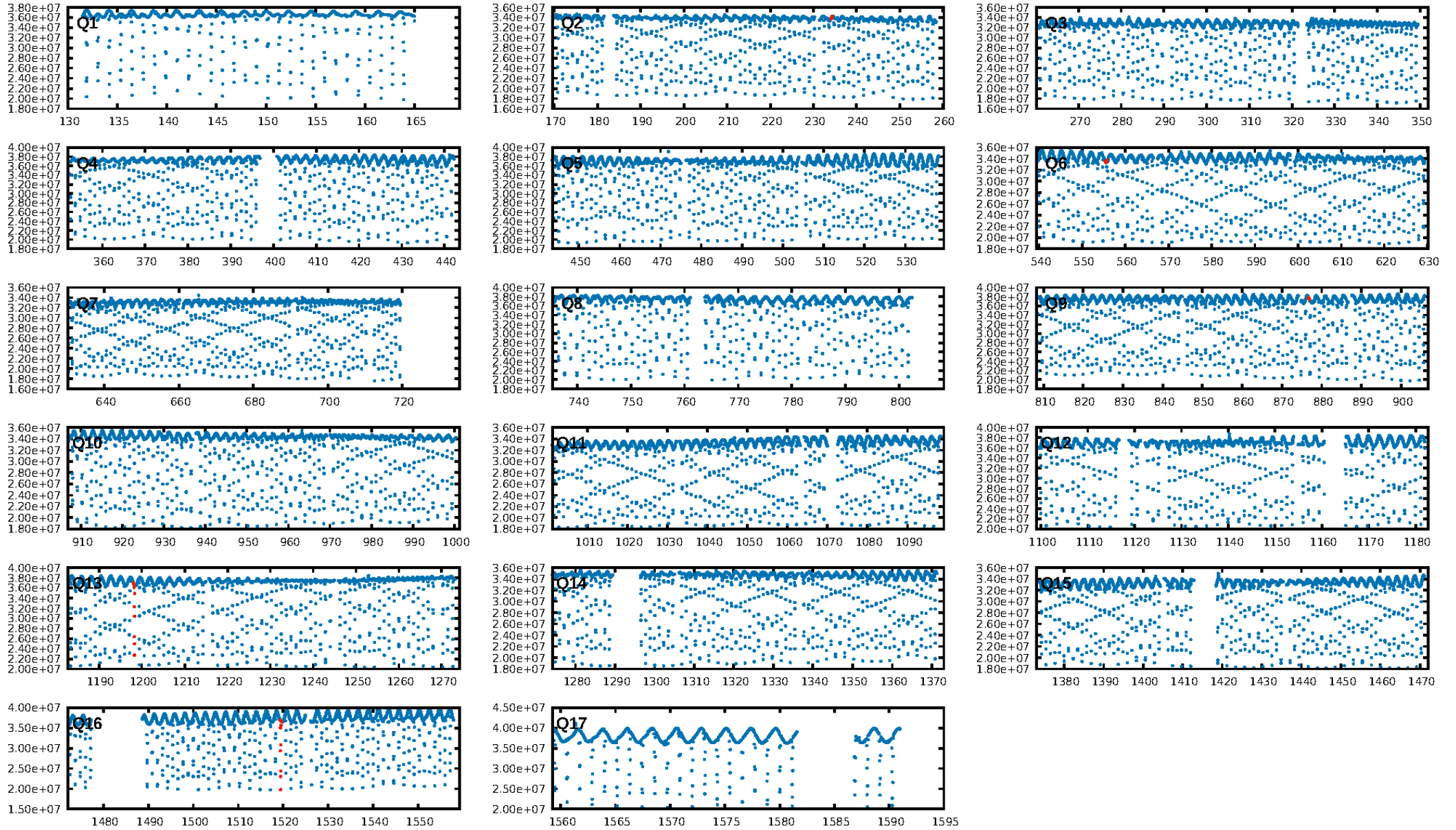
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1492.16σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 34.0%
Bootstrap-pfa: 2.34e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2207
Centroid-sig: N/A
Centroid-so: 0.719 arcsec [1.20σ]
OotOffset-rm: 0.263 arcsec [2.57σ]
KicOffset-rm: 0.041 arcsec [0.42σ]
OotOffset-st: 2/0/1/2 [5]
KicOffset-st: 2/0/1/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.20 [1/5]

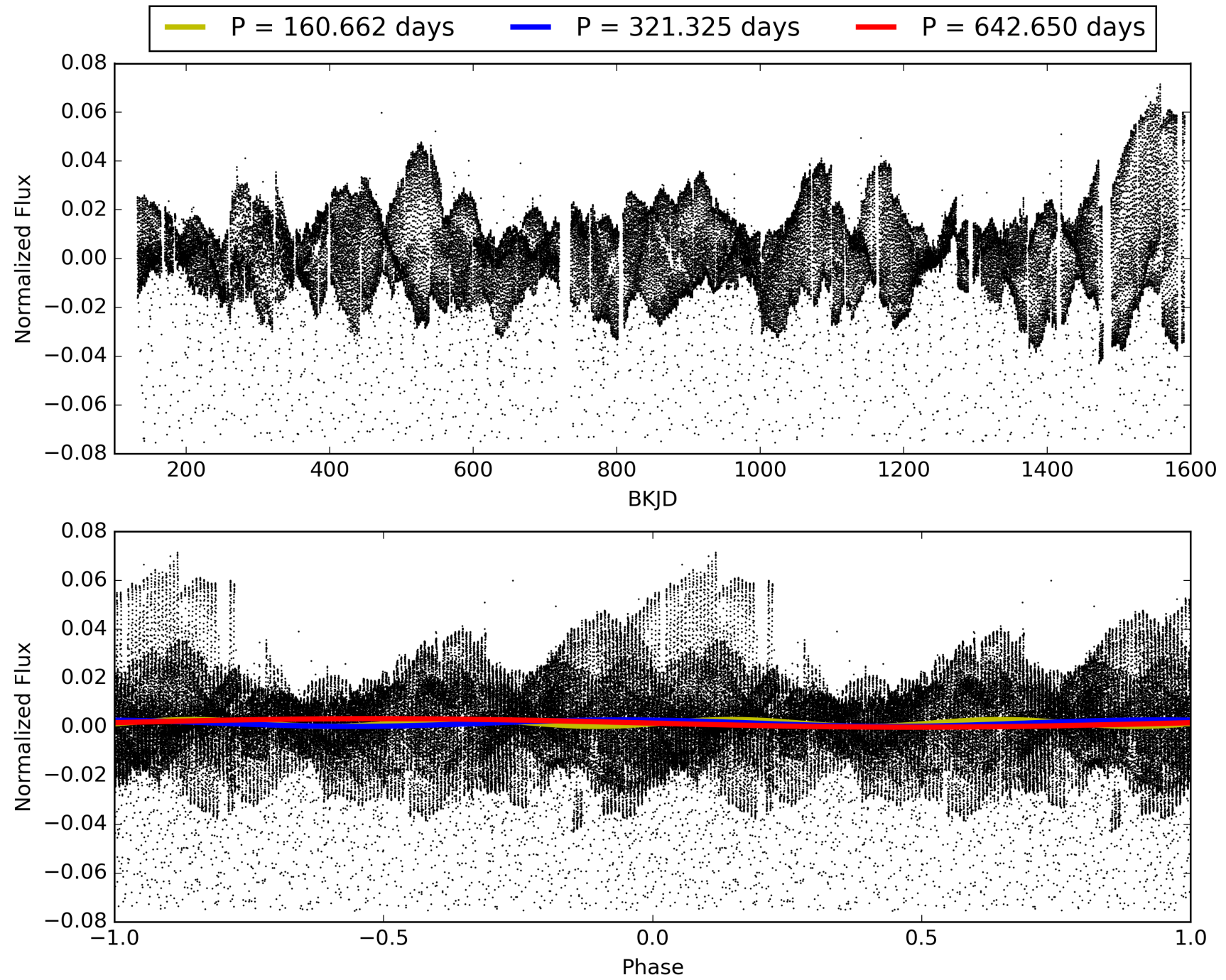
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:45:10 Z

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

TCE 006466939-02, PDC Light Curves

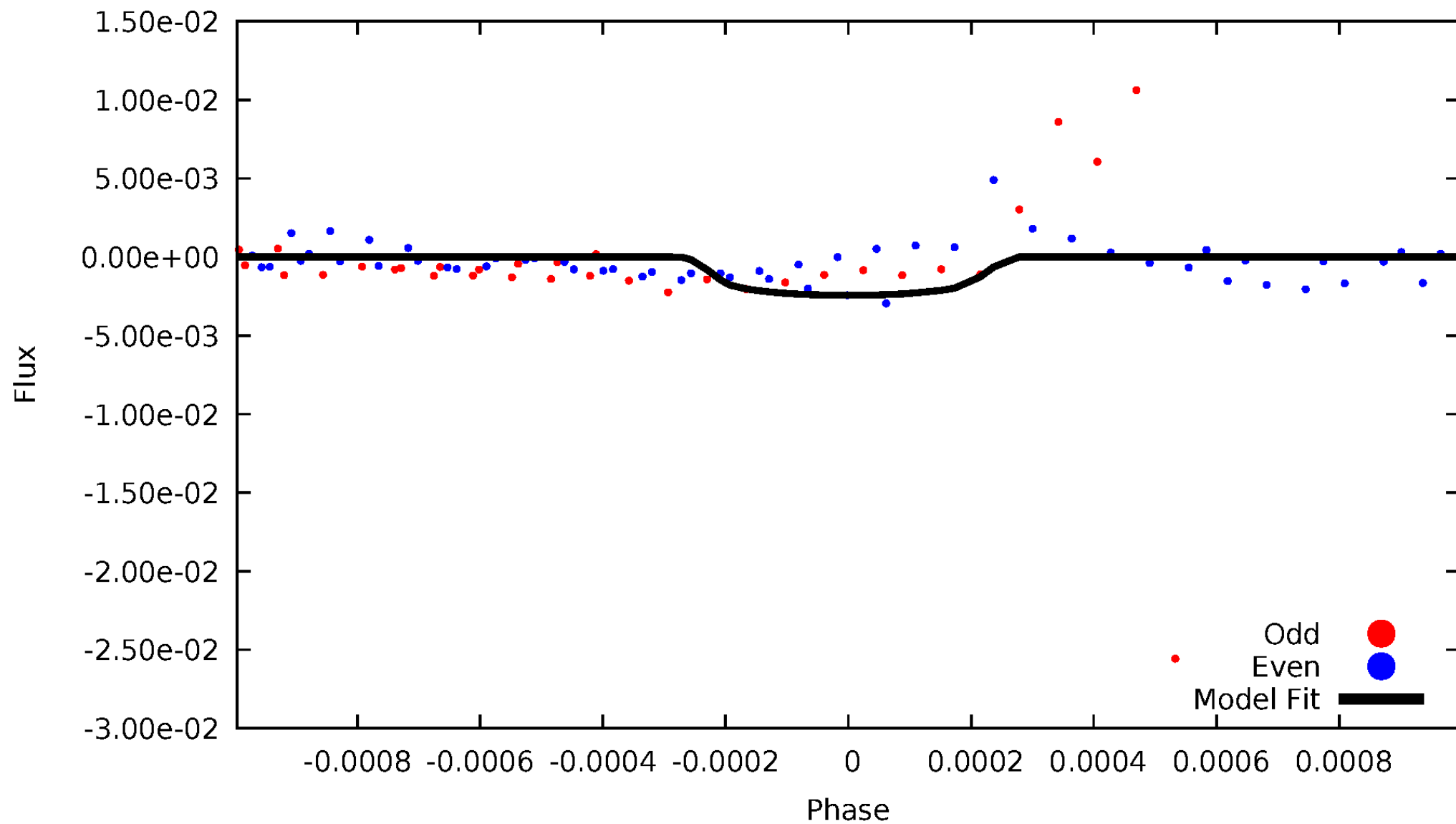


TCE 006466939-02



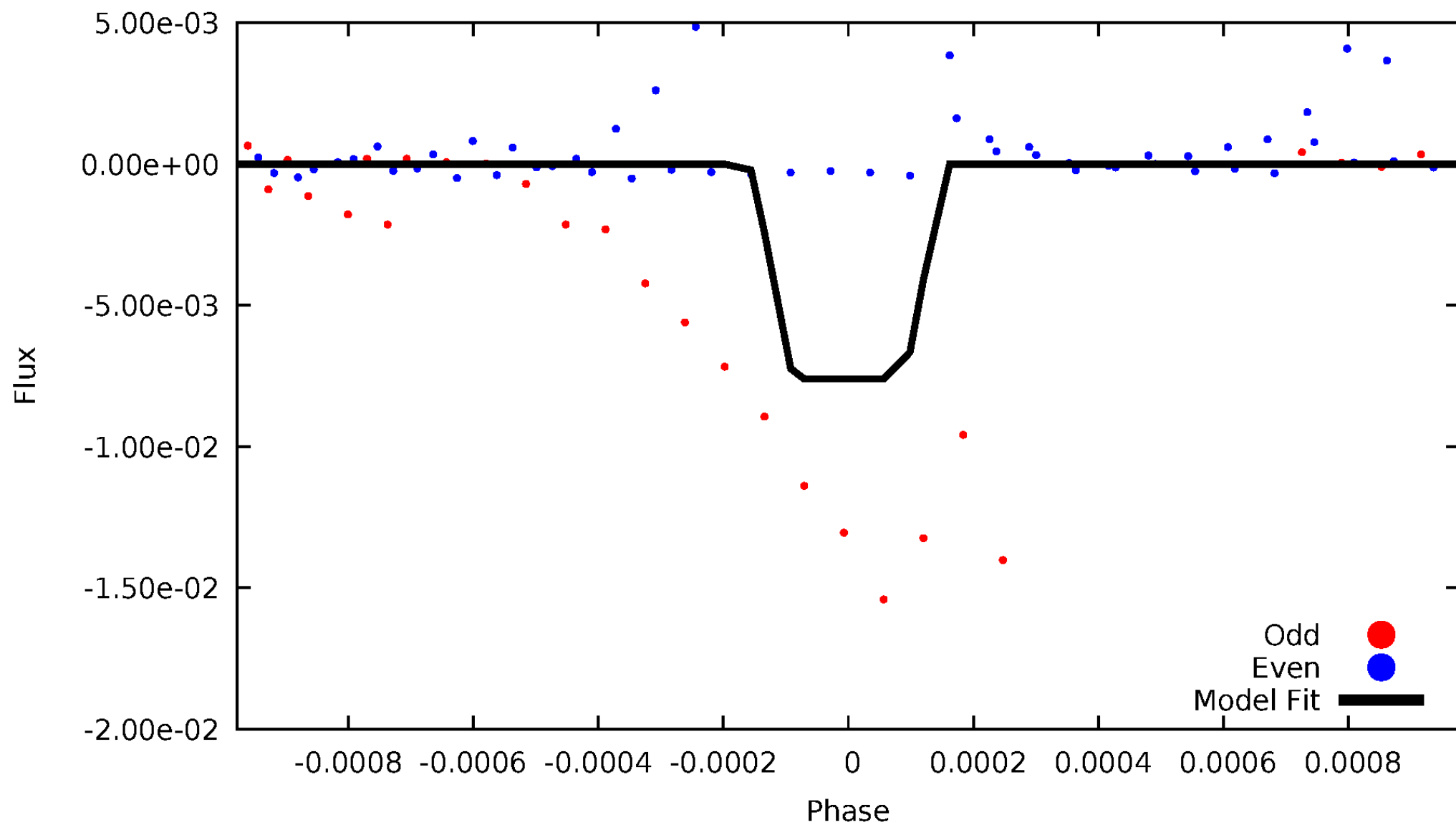
DV Odd/Even

TCE 006466939-02



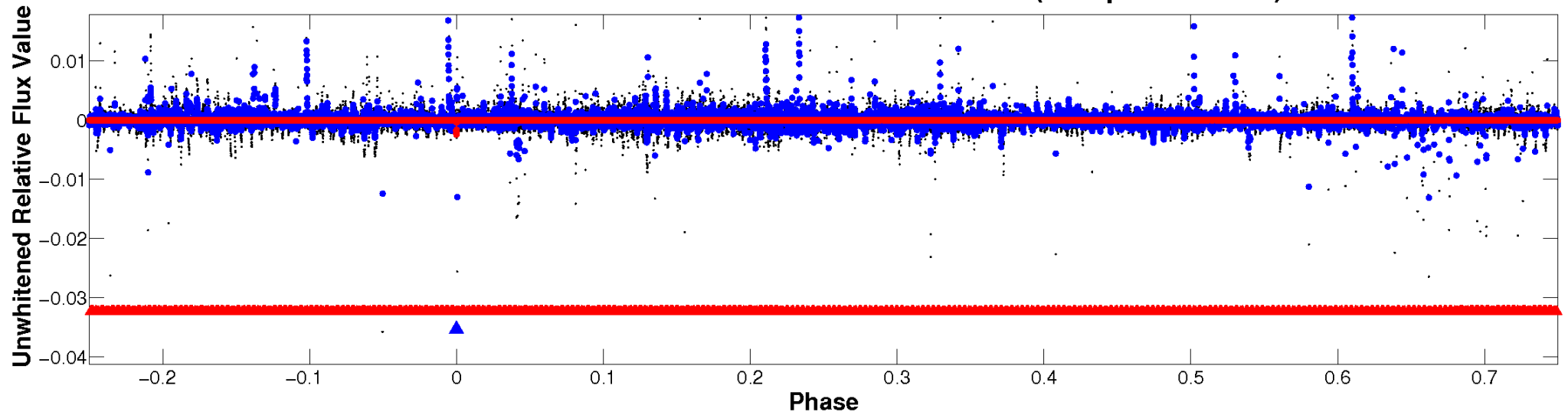
ALT Odd/Even

TCE 006466939-02

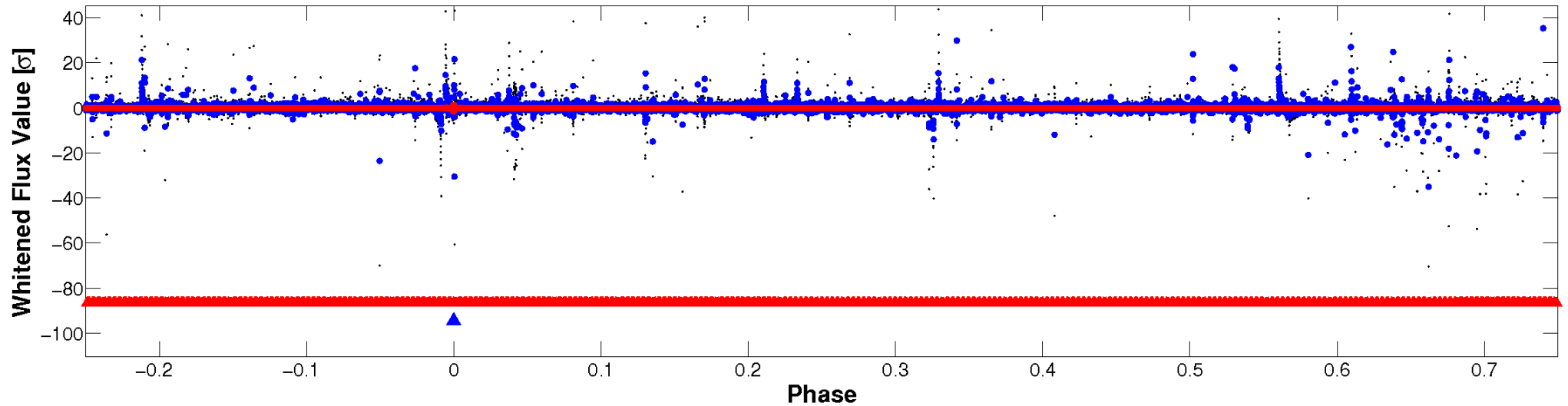


Non-Whitened Vs. Whitened Light Curve

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

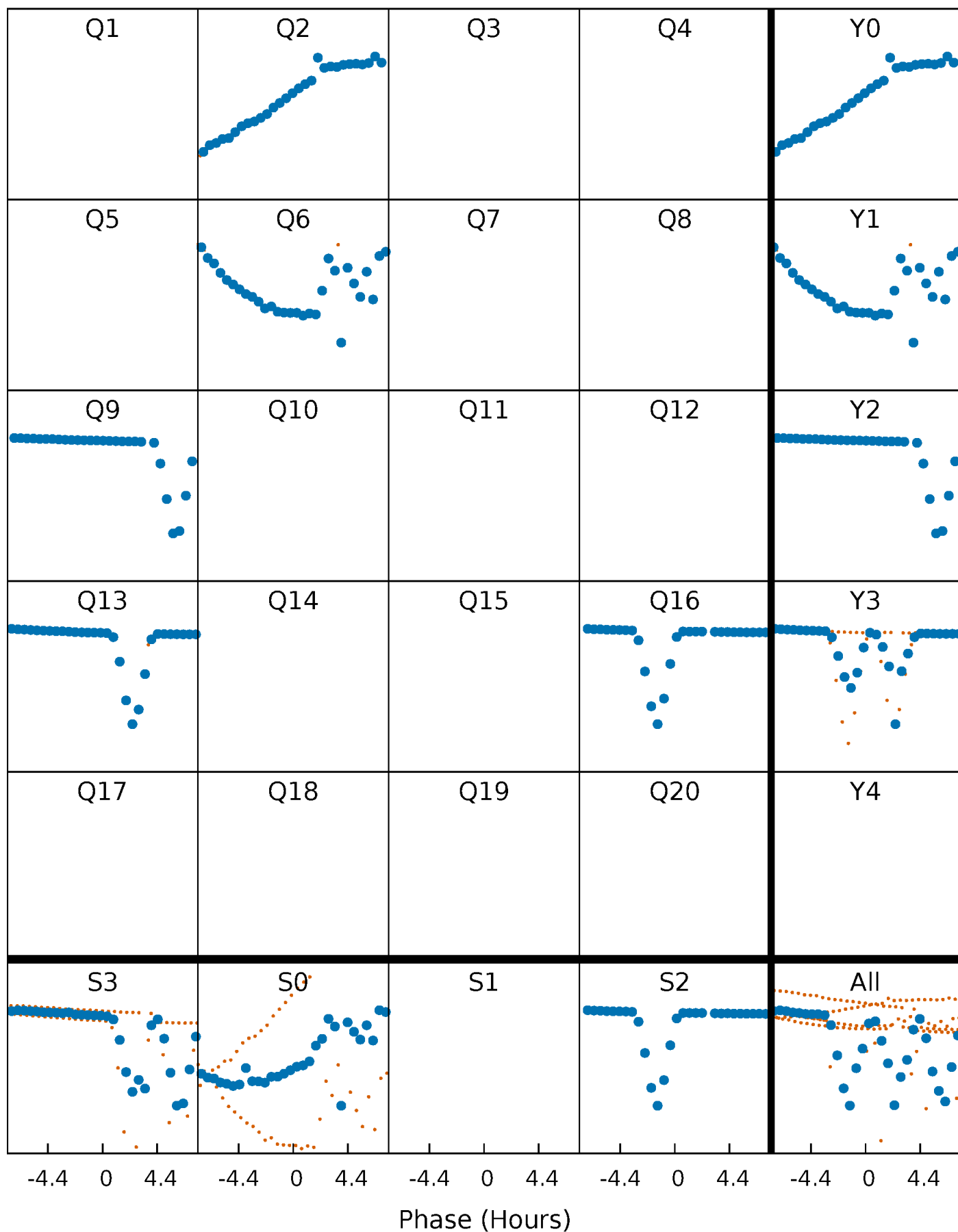


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



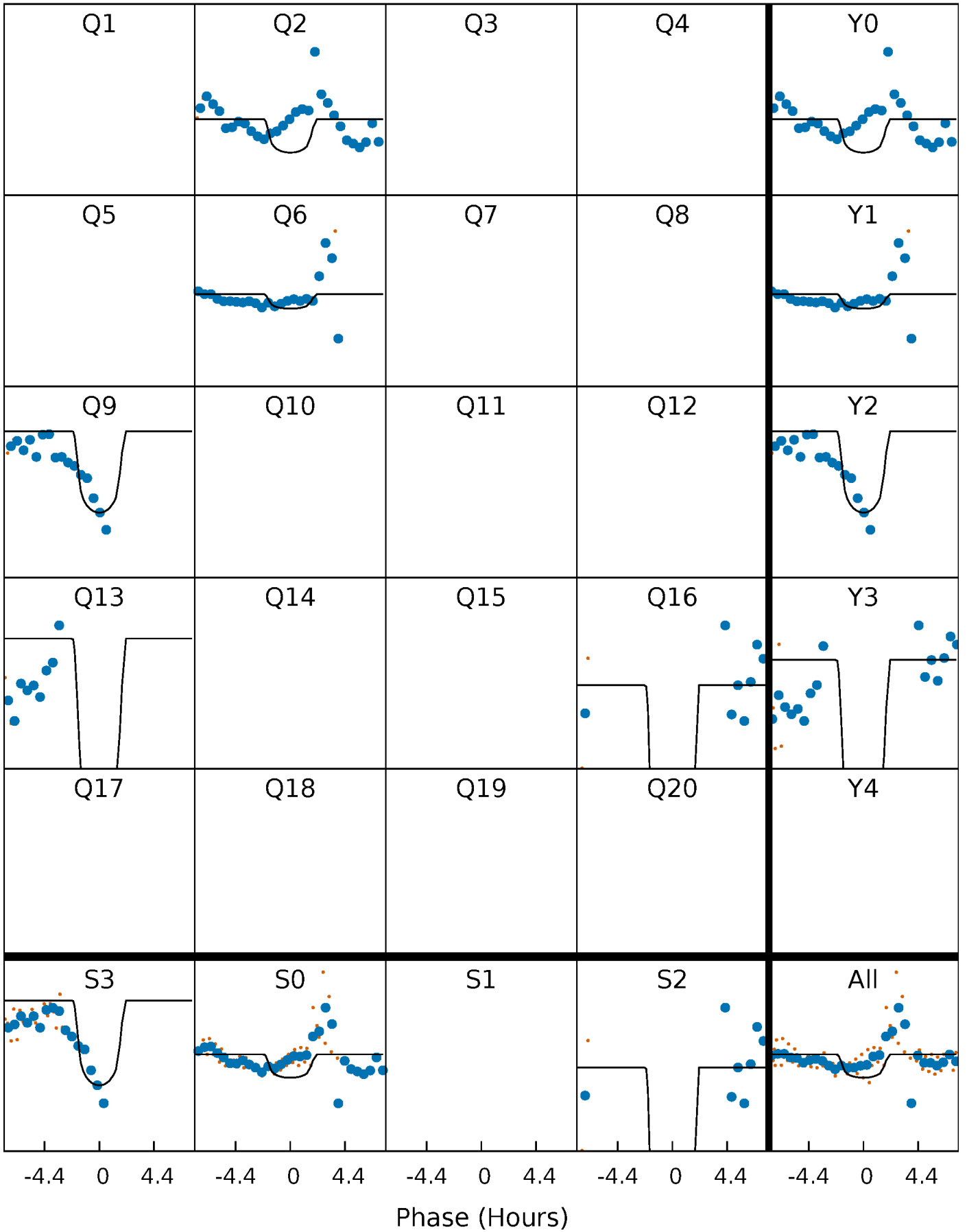
PDC Quarter-Phased Transit Curves

TCE 006466939-02 P=321.324830 Days $T_0=234.199073$ (BKJD)



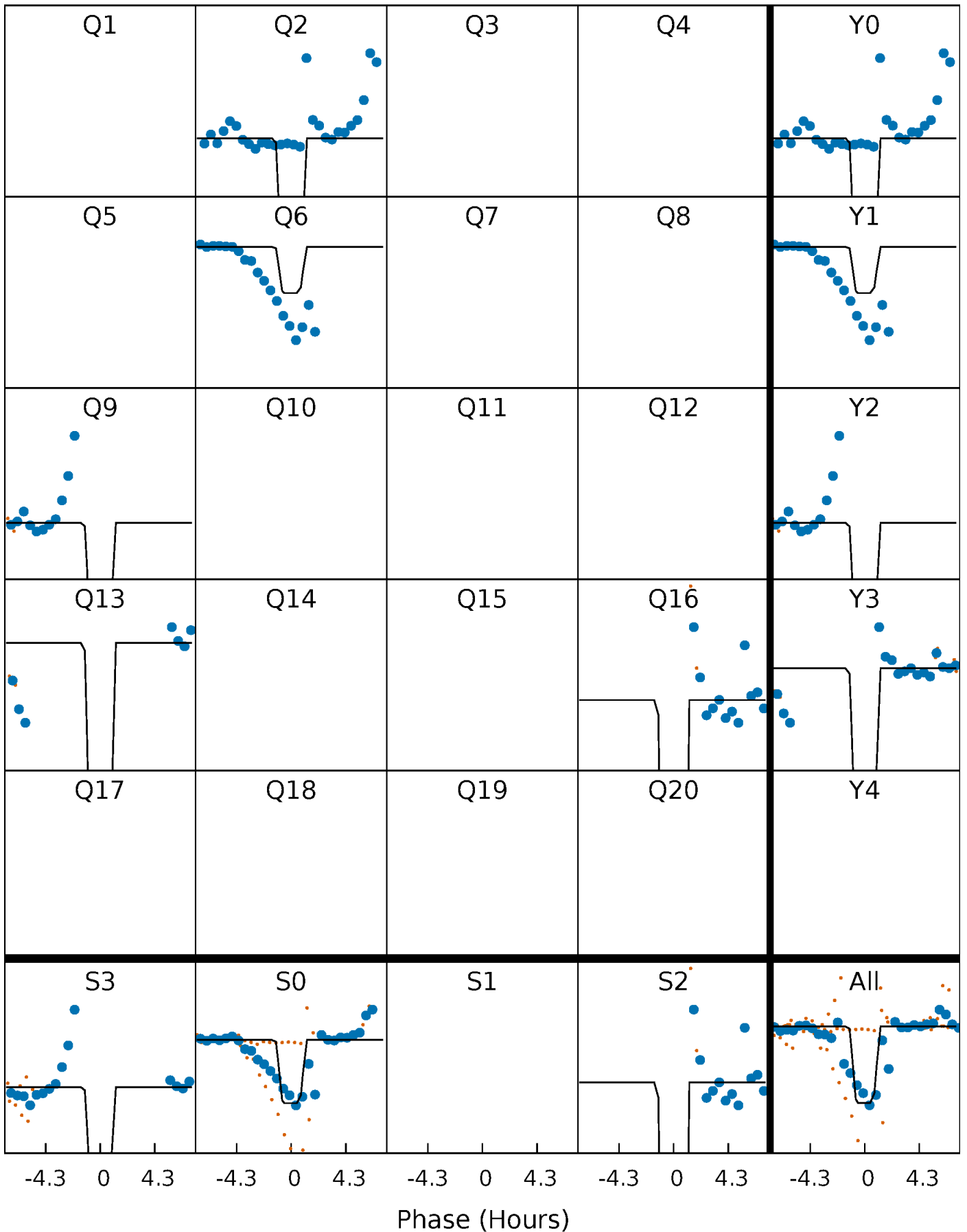
DV Quarter-Phased Transit Curves

TCE 006466939-02 P=321.324830 Days $T_0=234.199073$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

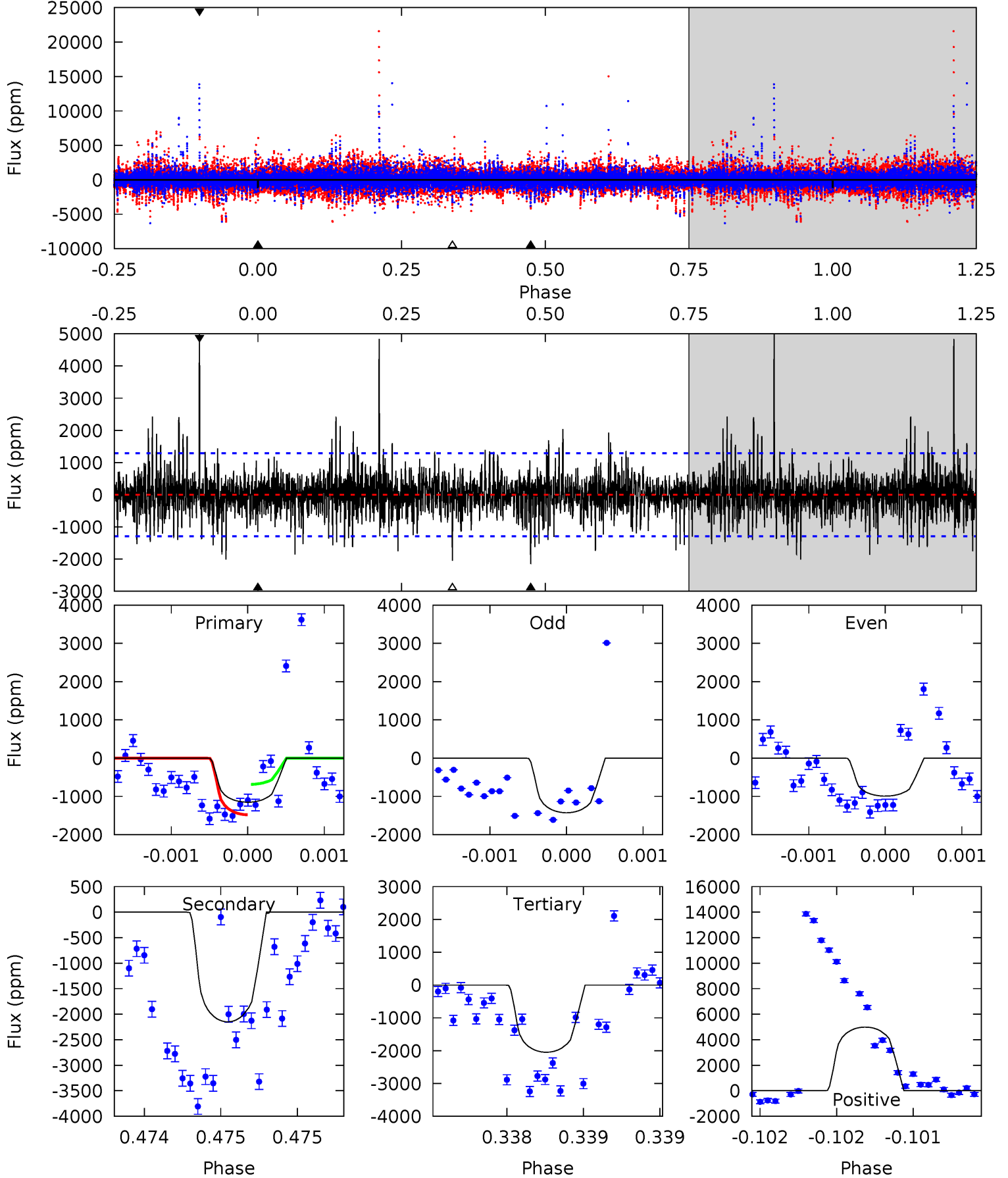
TCE 006466939-02 P=321.351787 Days $T_0=234.223030$ (BKJD)



DV Model-Shift Uniqueness Test

006466939-02, P = 321.324830 Days, E = 234.199073 Days

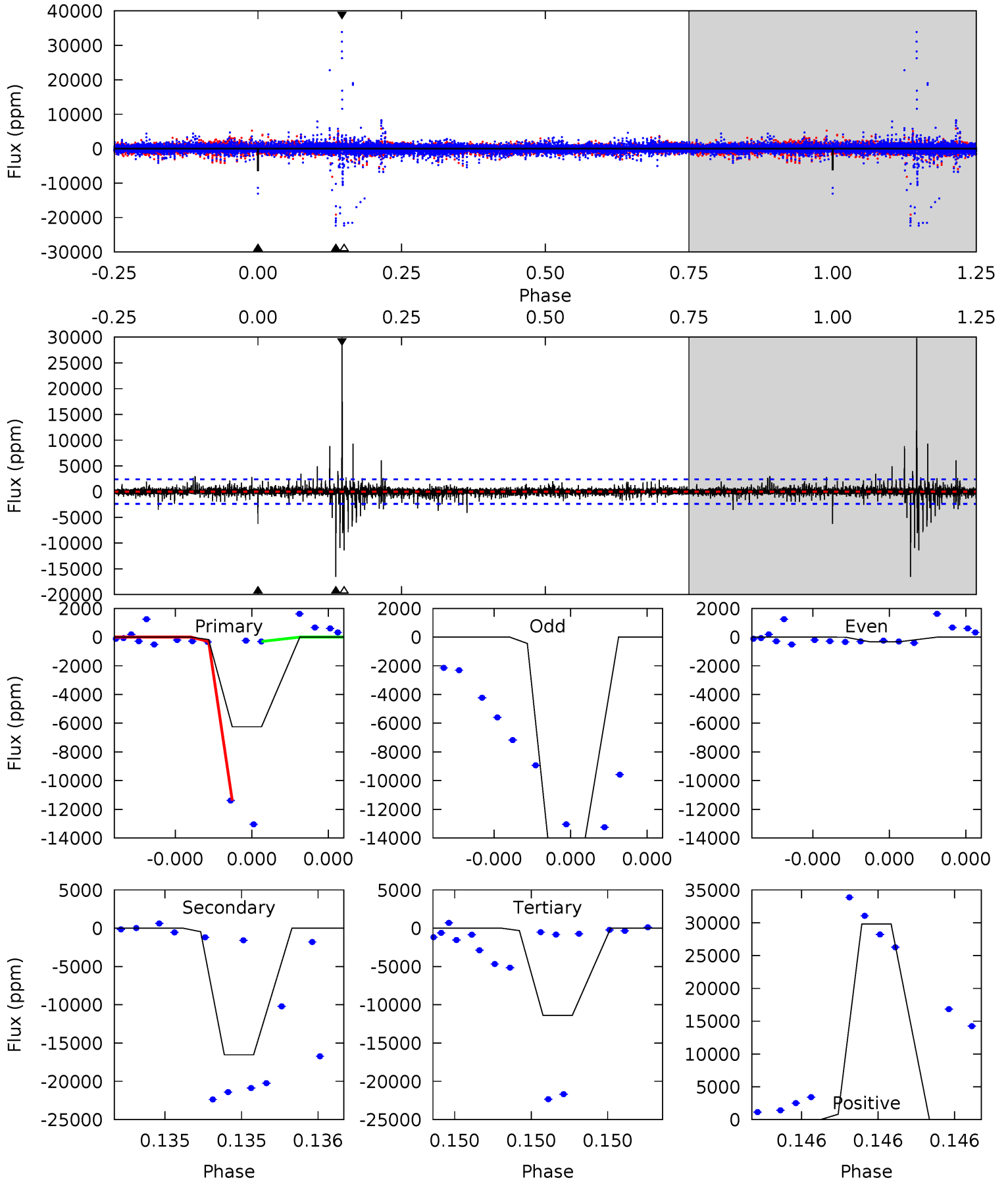
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.96	9.27	8.83	21.5	5.56	3.45	2.05	-3.87	-16.6	0.44	-12.3	0.77	0.81	0.70	1.66



Alt Model-Shift Uniqueness Test

006466939-02, P = 321.351787 Days, E = 234.223030 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	39.5	27.2	71.3	5.68	3.64	1.40	-12.3	-56.3	12.3	-31.8	14.7	1.00	0.64	0



Stellar Parameters For KIC 006466939

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5058^{+151}_{-151}	$4.651^{+0.060}_{-0.035}$	$-0.980^{+0.300}_{-0.300}$	$0.608^{+0.047}_{-0.042}$	$0.603^{+0.055}_{-0.022}$	$3.787^{+0.847}_{-0.517}$
	+3%/-3%	+1%/-1%	+31%/-31%	+8%/-7%	+9%/-4%	+22%/-14%
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 006466939-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2150 ± 232	$6.23^{+6.20}_{-4.35}$	275^{+9}_{-10}	3853^{+2539}_{-754}	$18563^{+188370}_{-13987}$
Alt.	-16535 ± 418	$7.88^{+6.01}_{-4.95}$	275^{+9}_{-9}	5254^{+3720}_{-1059}	$91605^{+552147}_{-61832}$

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

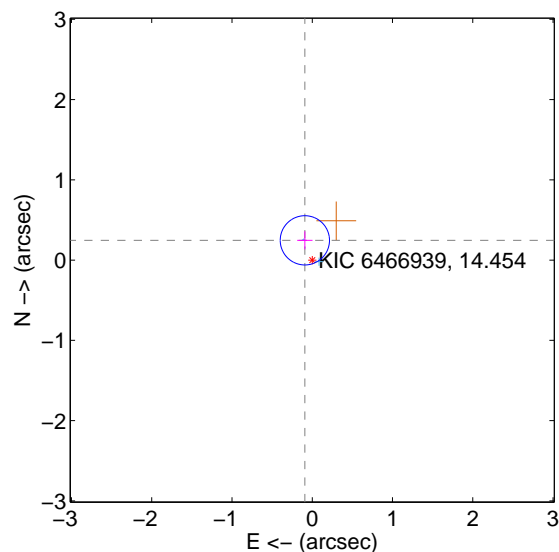
Supplemental centroid analysis for 006466939-02. Kepler magnitude: 14.45. Transit SNR 6.67

There are 3 quarters with good PRF difference image offsets

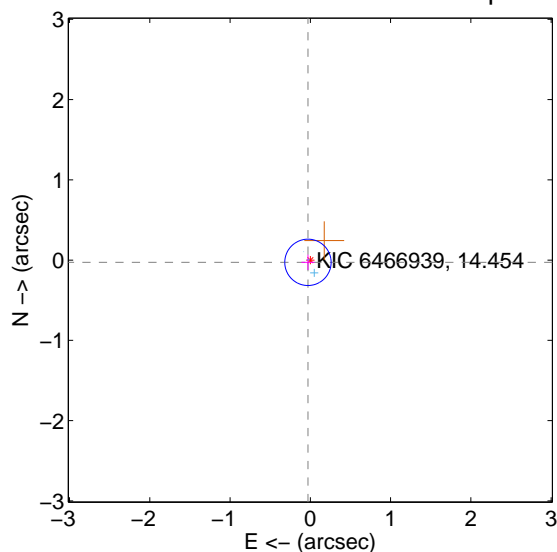
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.263 ± 0.102	2.57	0.092 ± 0.096	0.246 ± 0.113
PRF-fit source offset from KIC position	0.041 ± 0.096	0.42	0.030 ± 0.081	-0.028 ± 0.095
photometric centroid source offset	0.72 ± 0.60	1.20	-0.28 ± 0.36	0.66 ± 0.63

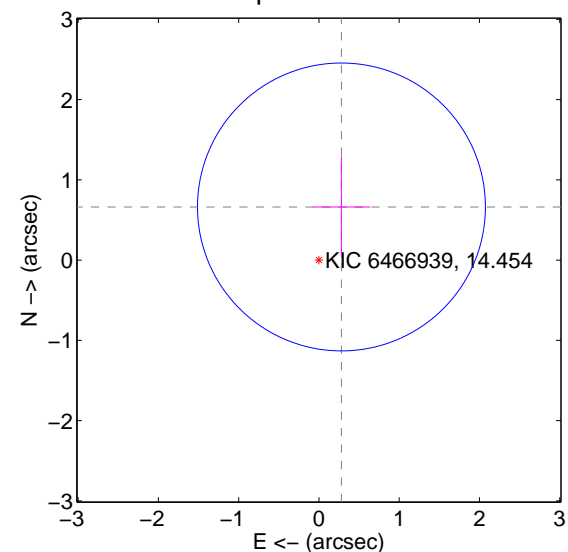
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

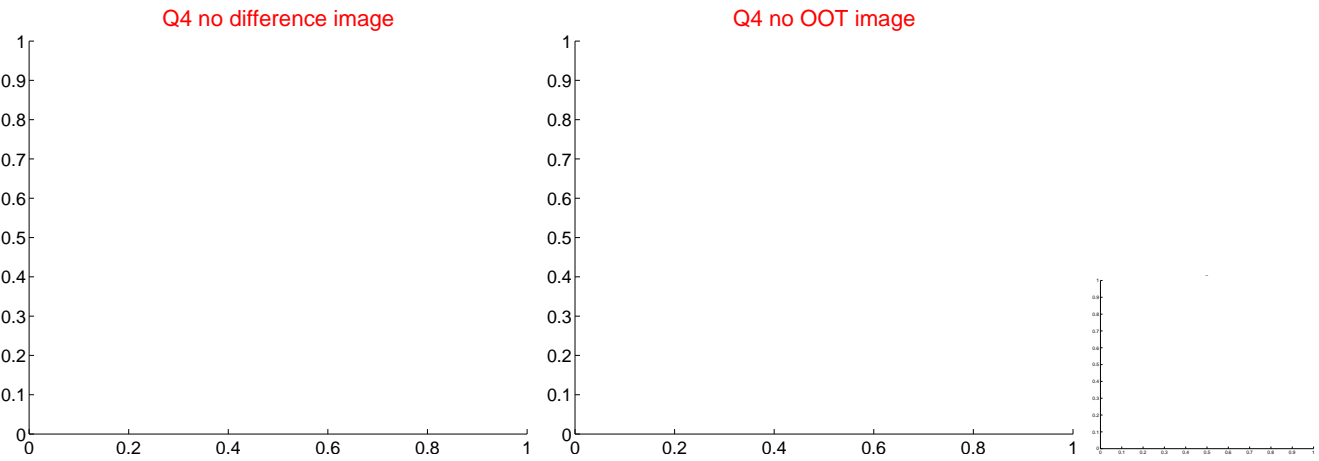
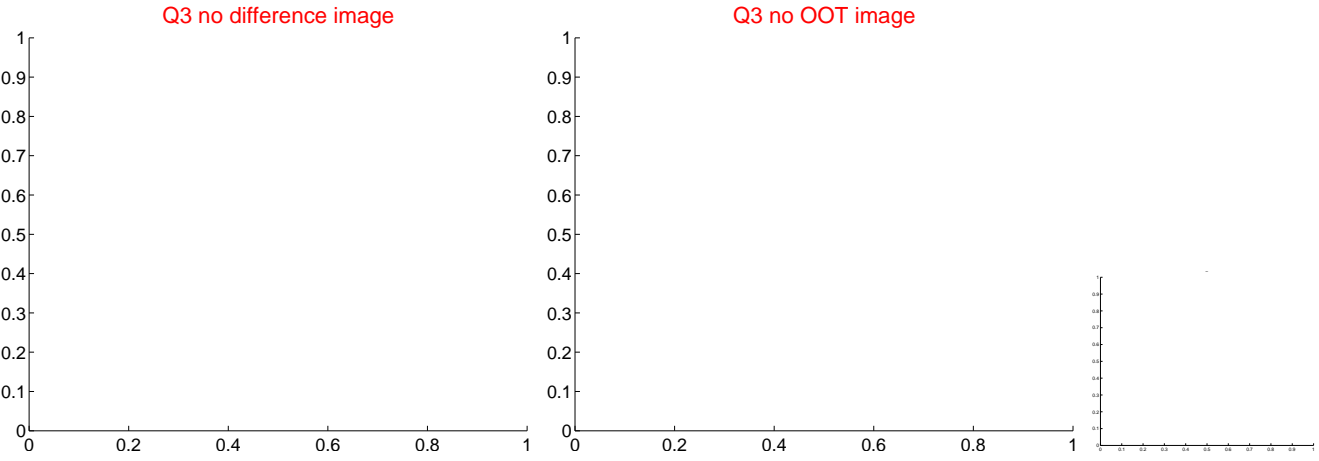
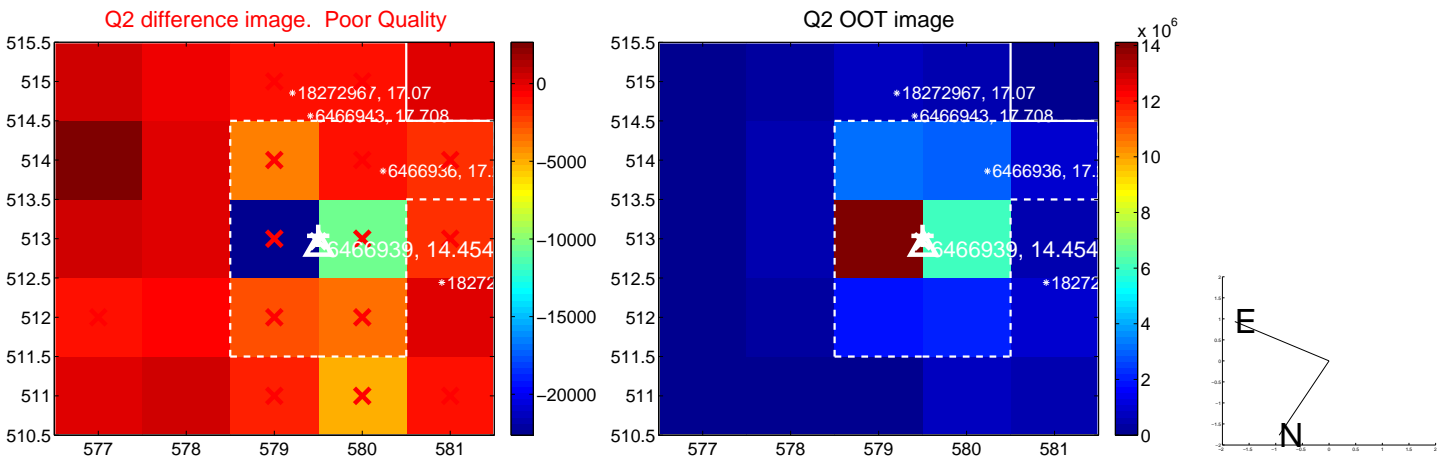
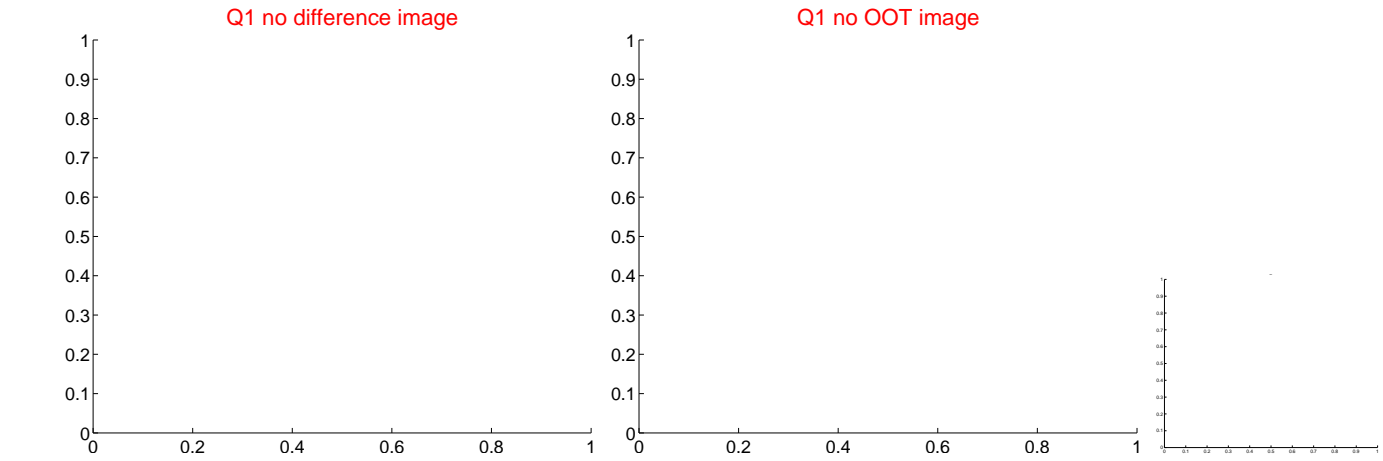


offset from photometric centroids



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 ×: 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.

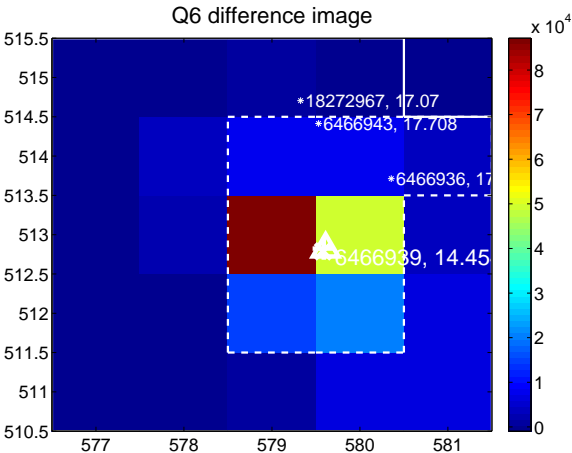
Q5 no difference image



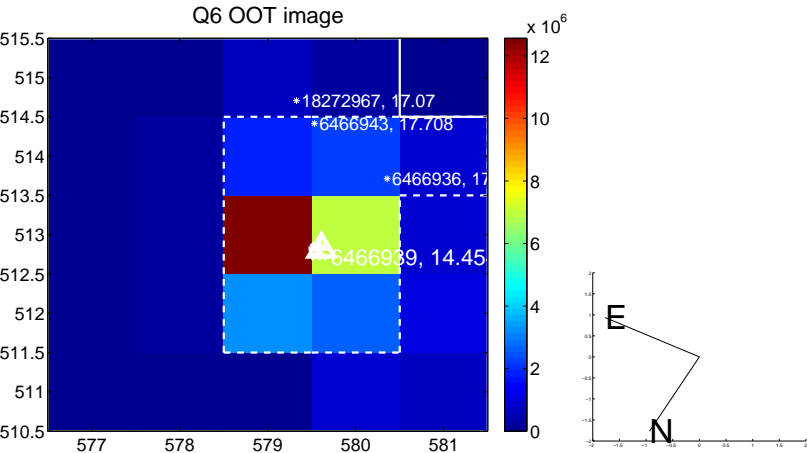
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



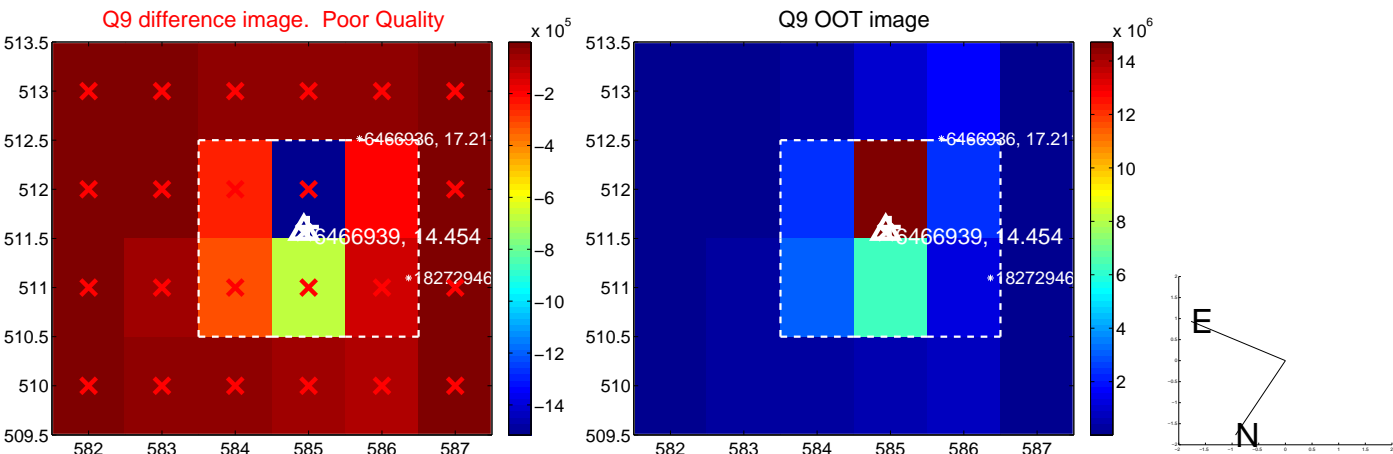
Q8 no difference image



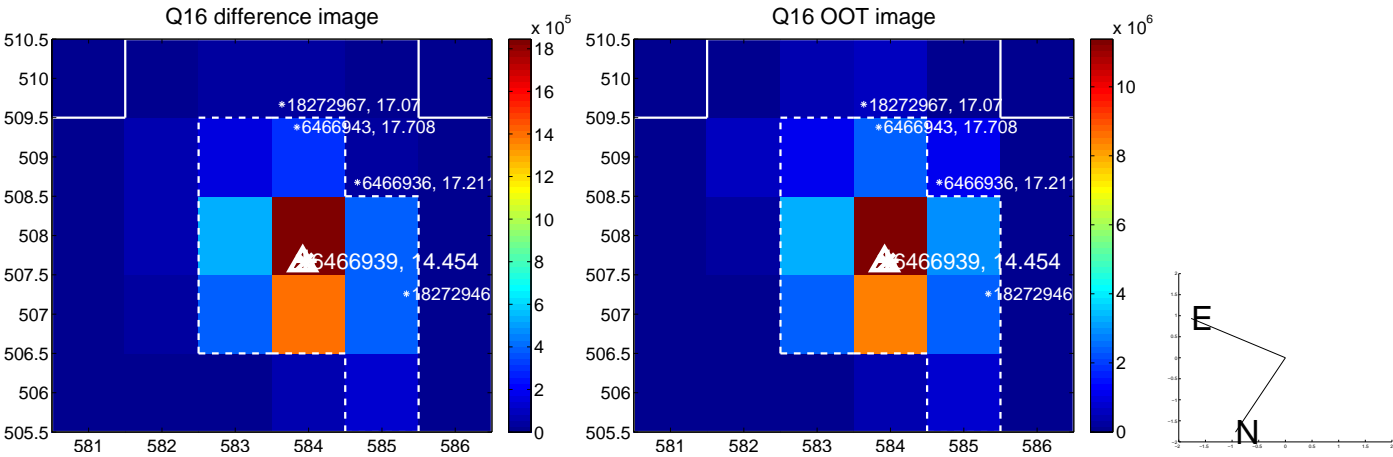
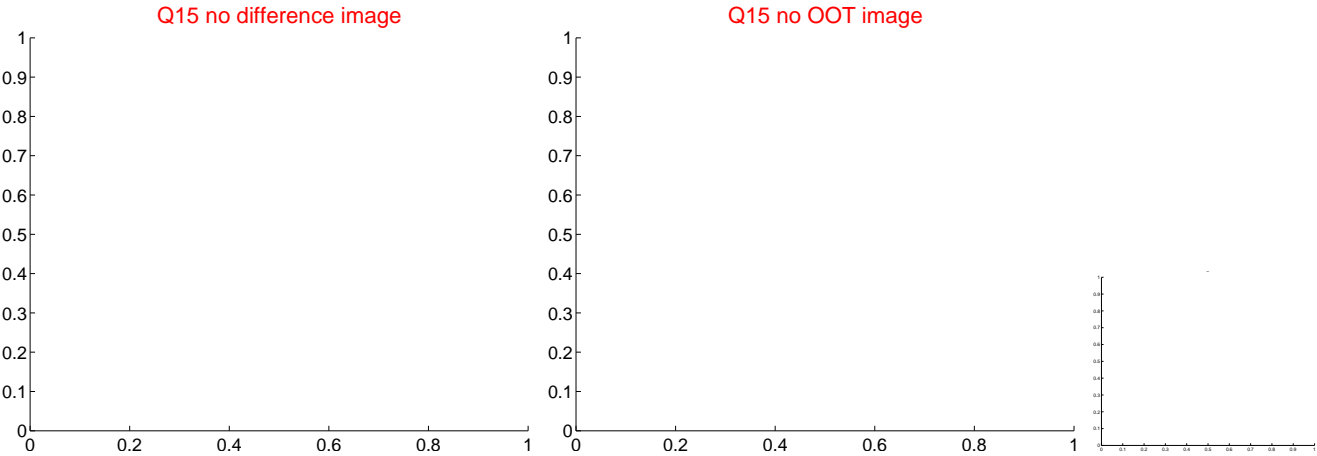
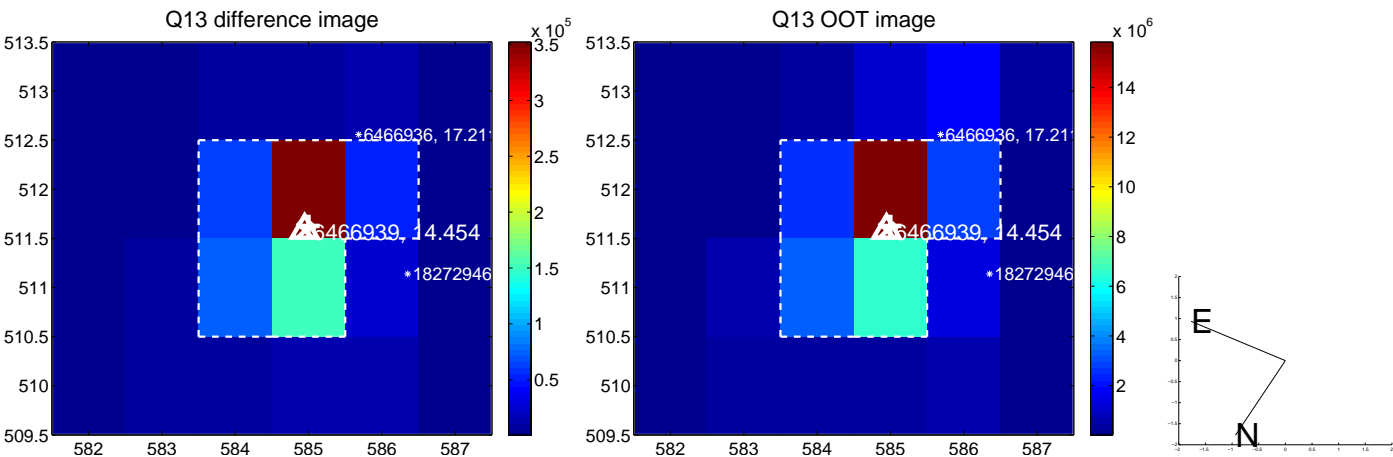
Q8 no OOT image



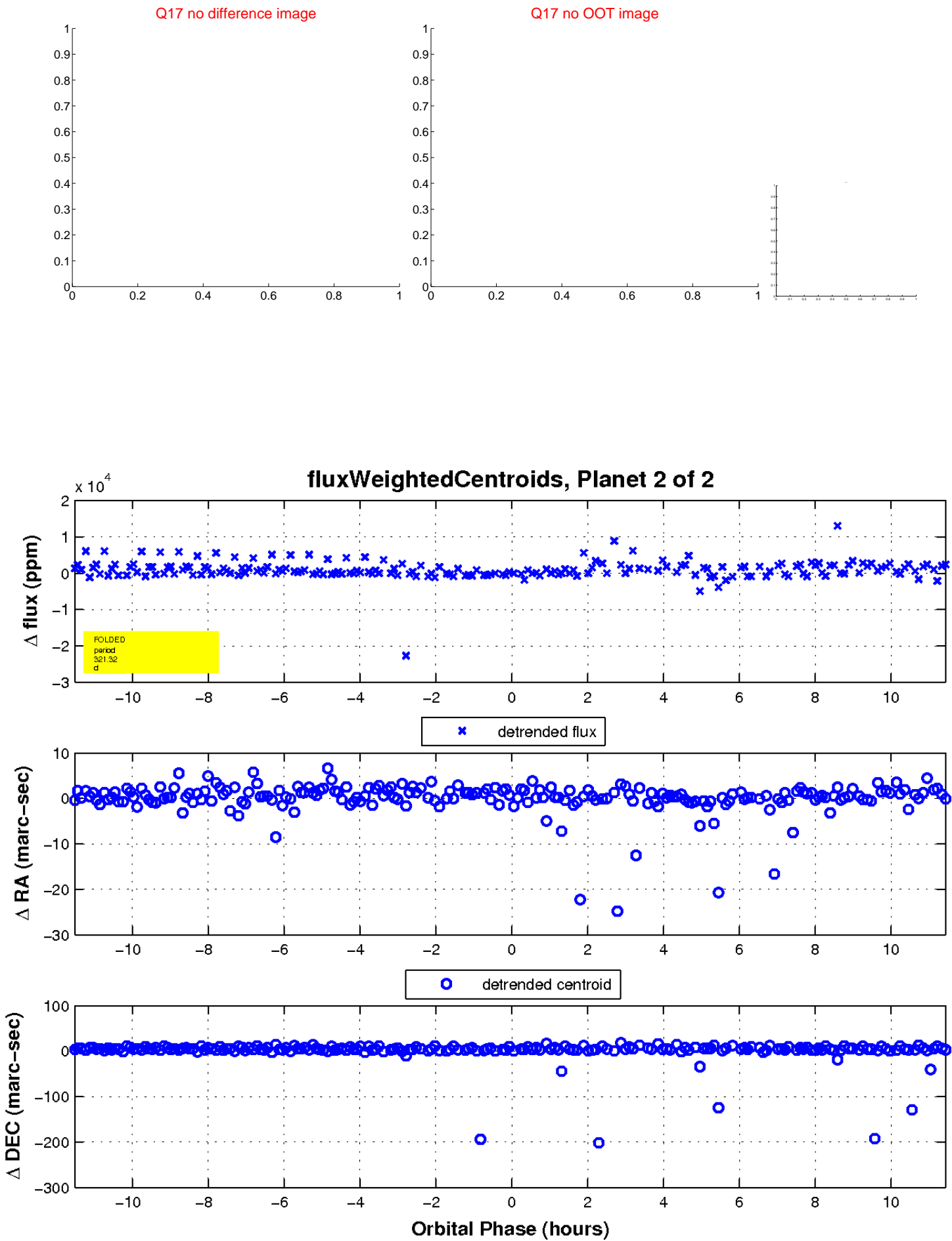
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

