

KIC 004662336

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})
004662336-01	OBS	No	2.968697	132.469724	519.6	9.257	10.5	10.9	2.54	7452	7.46	7462.93
004662336-02	OBS	No	2.968576	133.124303	578.0	6.204	8.4	9.2	2.54	7452	11.61	7463.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004662336-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004662336-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

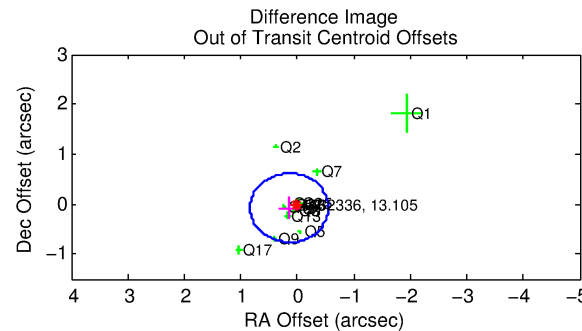
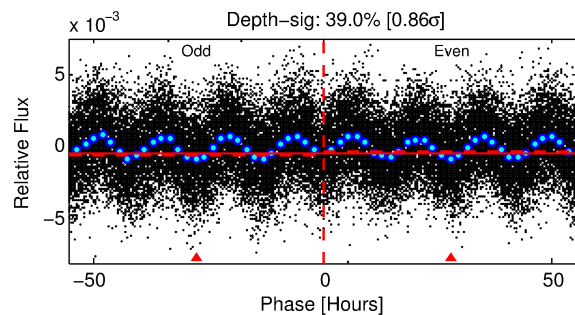
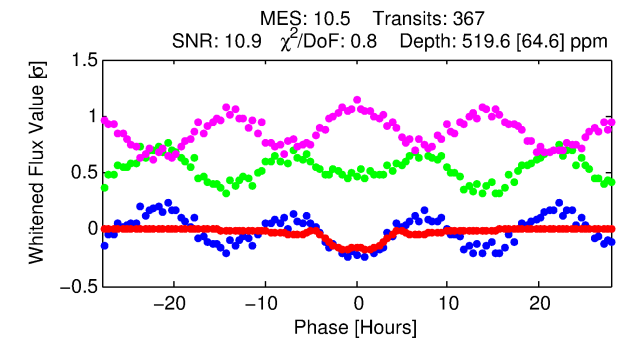
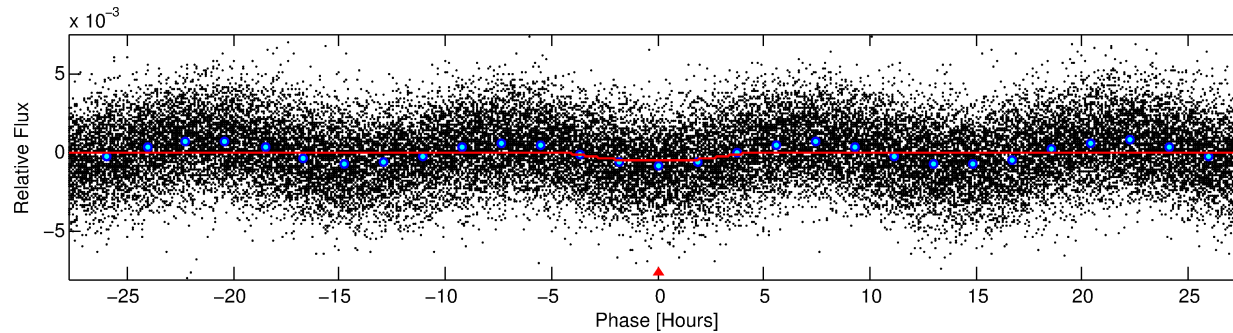
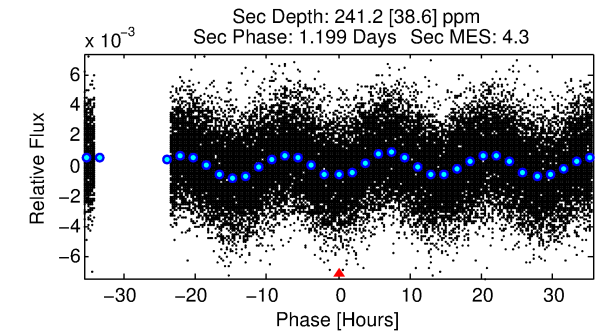
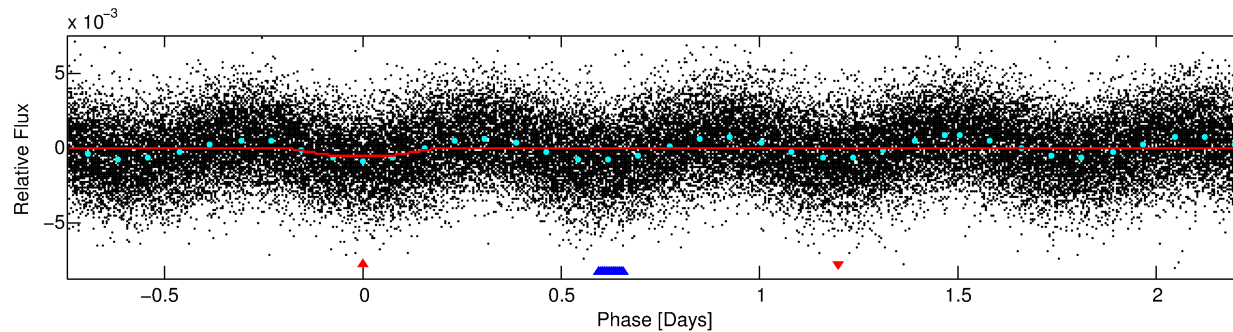
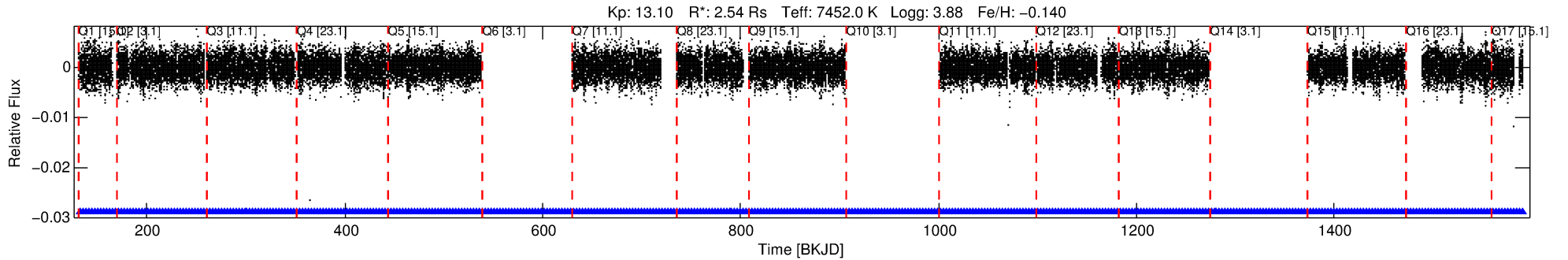
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004662336-01

No Significant Match Found

DV One-Page Summary

KIC: 4662336 Candidate: 1 of 2 Period: 2.969 d



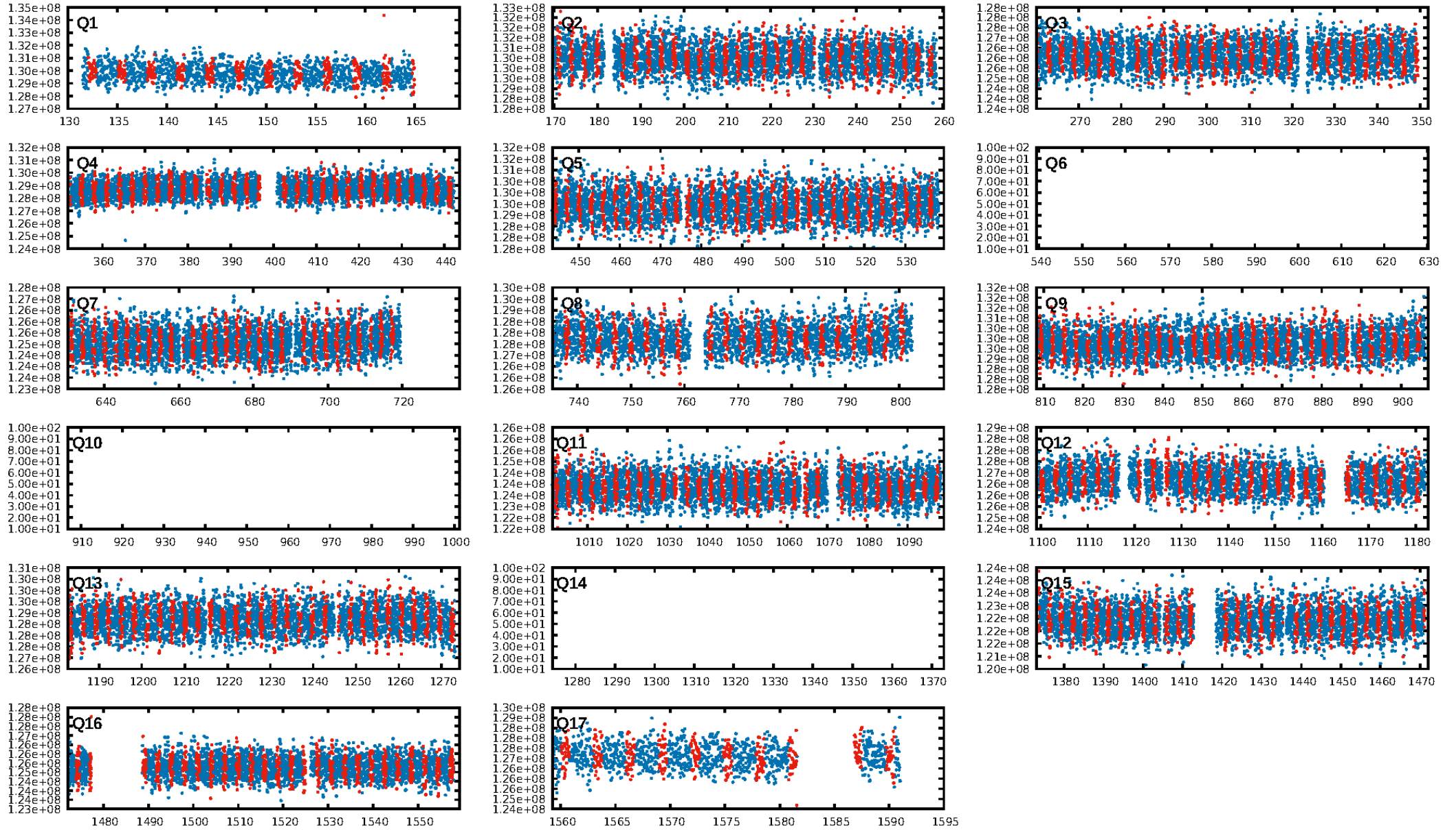
DV Fit Results:

Period = 2.96870 [0.00006] d
Epoch = 132.4697 [0.0166] BKJD
Rp/R* = 0.0269 [0.0021]
a/R* = 1.28 [0.06]
b = 0.97 [0.01]
Seff = 7462.93 [4400.73]
Teq = 2370 [349] K
Rp = 7.46 [2.88] Re
a = 0.0489 [0.0175] AU
Ag = 5.72 [3.48] [1.36 σ]
Teffp = 5666 [394] K [6.26 σ]

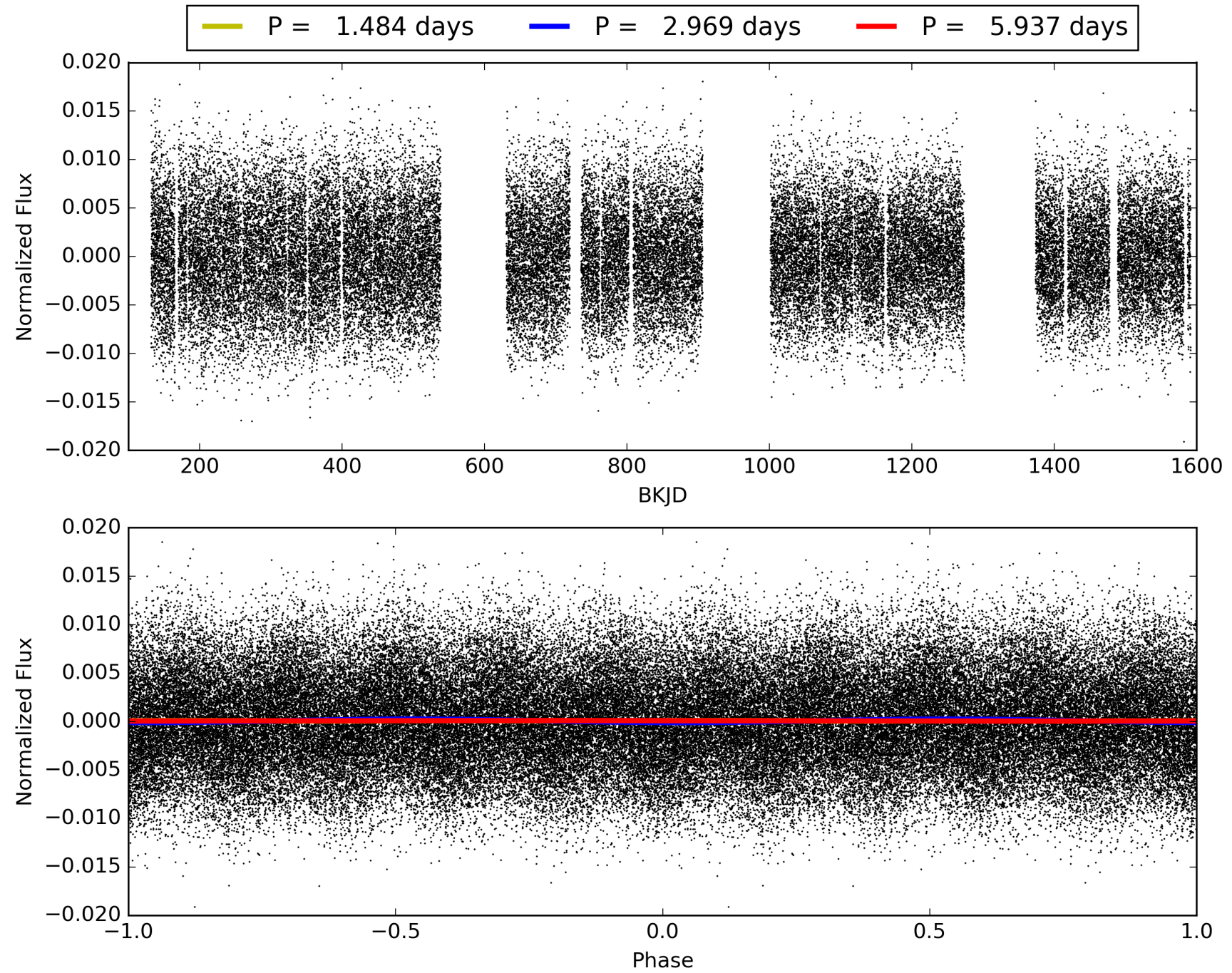
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.82e-26
RollingBand-fgt: 1.00 [345/345]
GhostDiagnostic-chr: 1.317
Centroid-sig: 0.0%
Centroid-so: 0.142 arcsec [1.48 σ]
OotOffset-rm: 0.162 arcsec [0.70 σ]
KicOffset-rm: 0.165 arcsec [1.42 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 004662336-01, PDC Light Curves

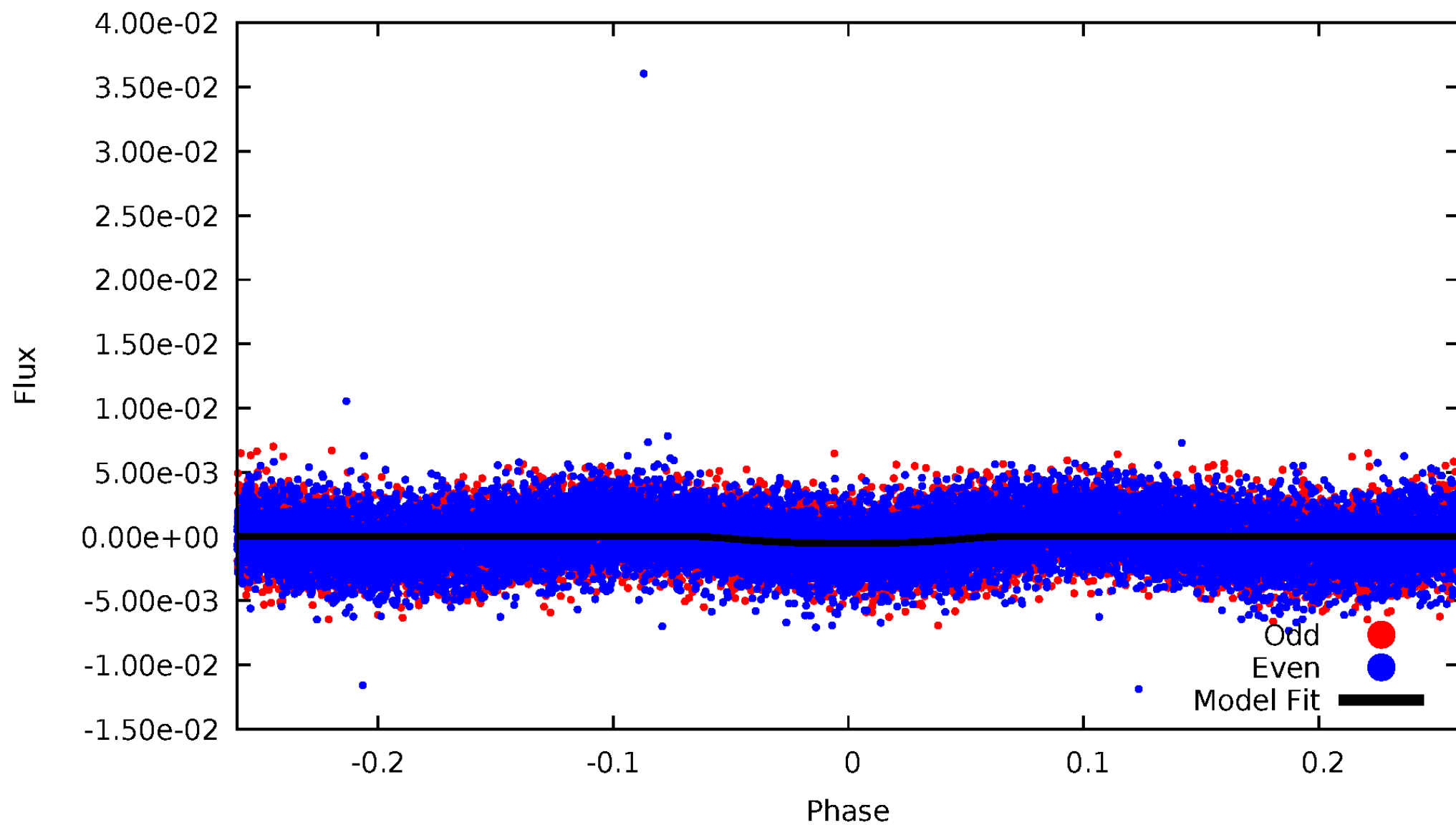


TCE 004662336-01



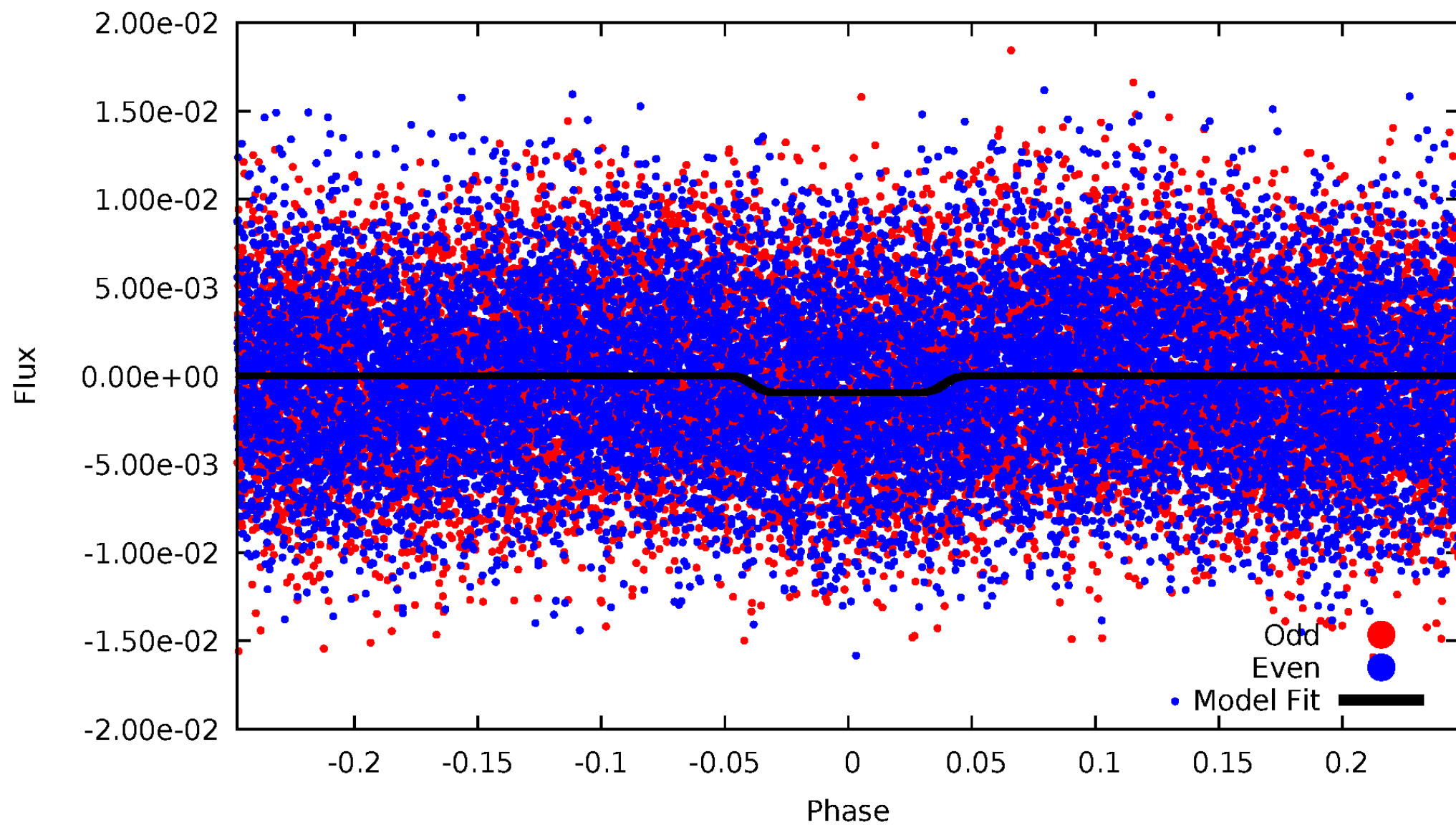
DV Odd/Even

TCE 004662336-01



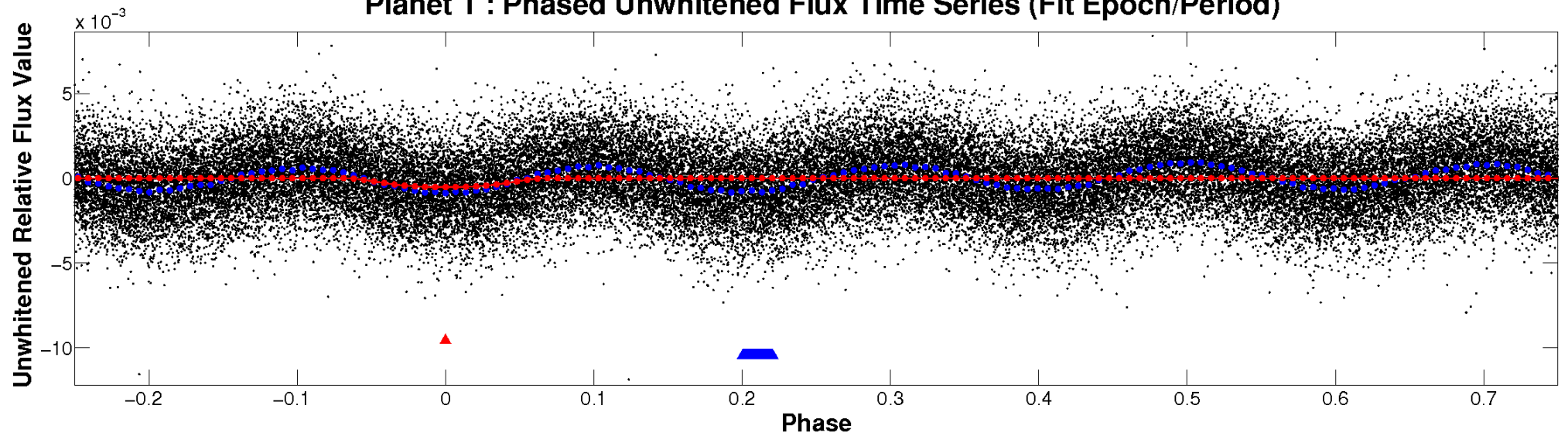
ALT Odd/Even

TCE 004662336-01

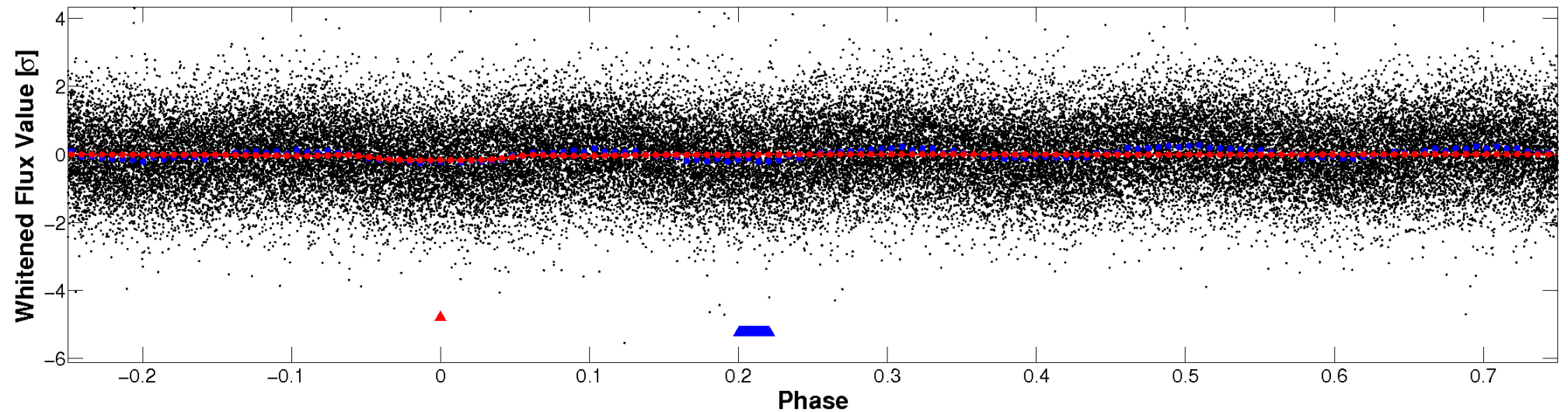


Non-Whitened Vs. Whitened Light Curve

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

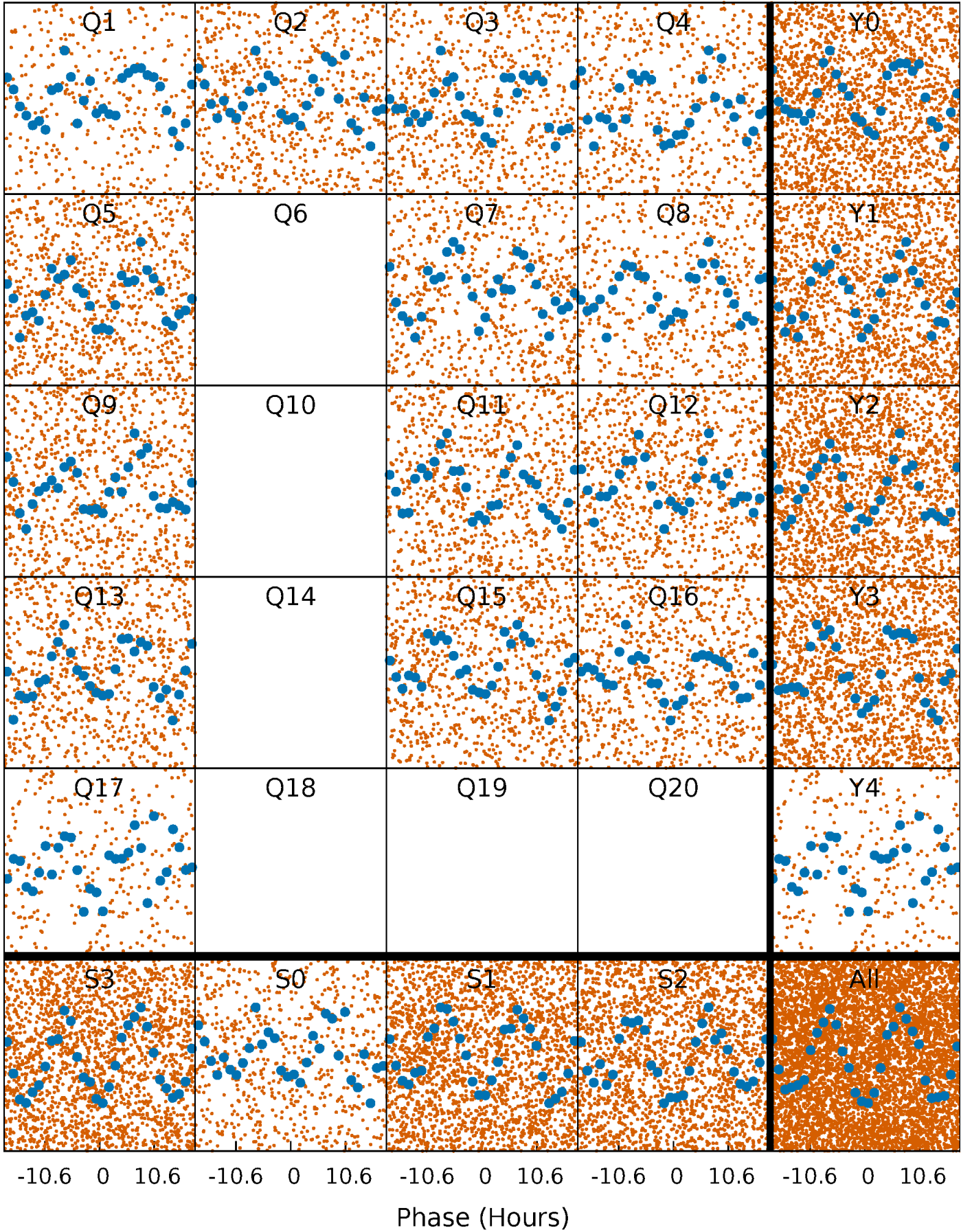


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



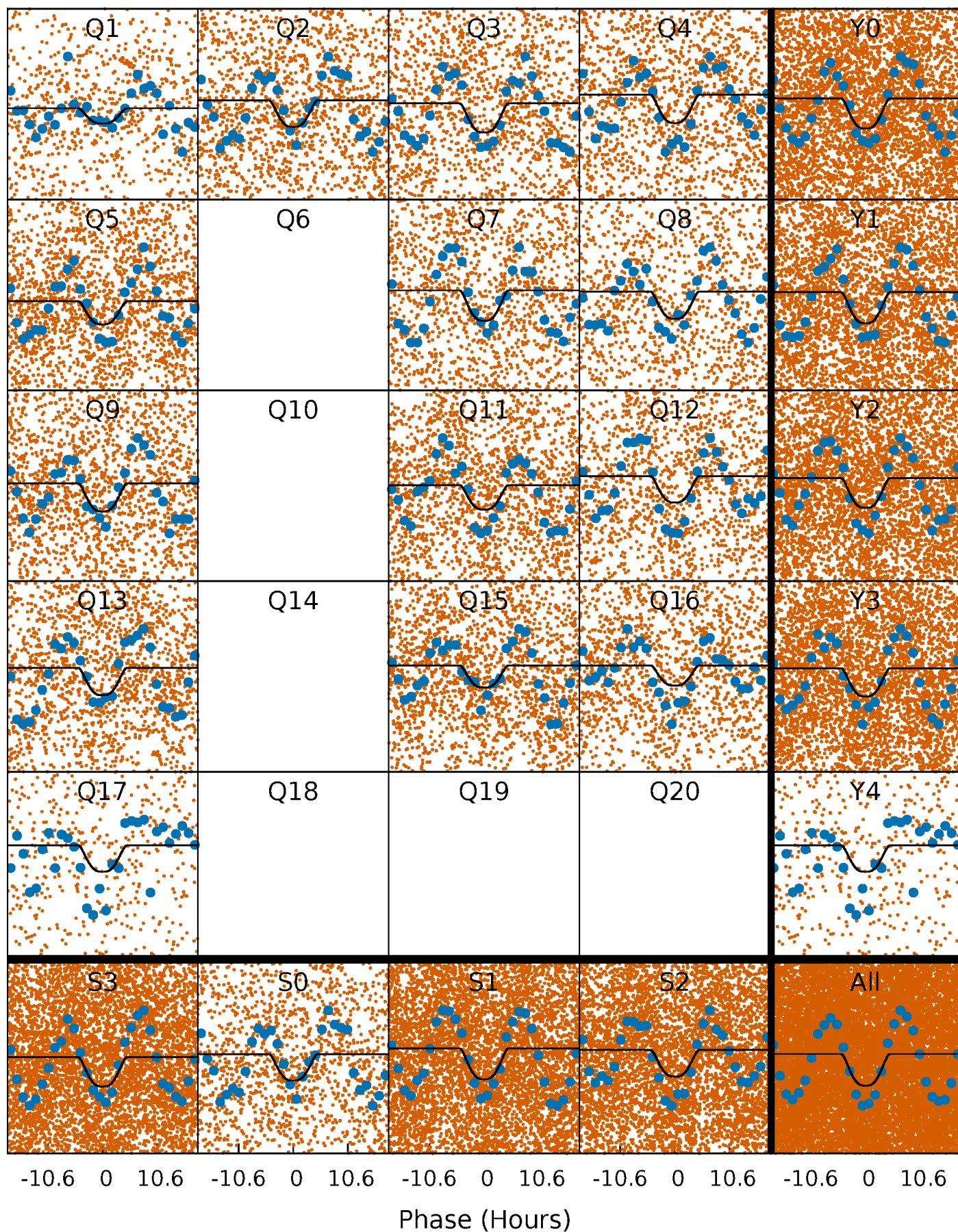
PDC Quarter-Phased Transit Curves

TCE 004662336-01 P= 2.968697 Days $T_0=132.469724$ (BKJD)



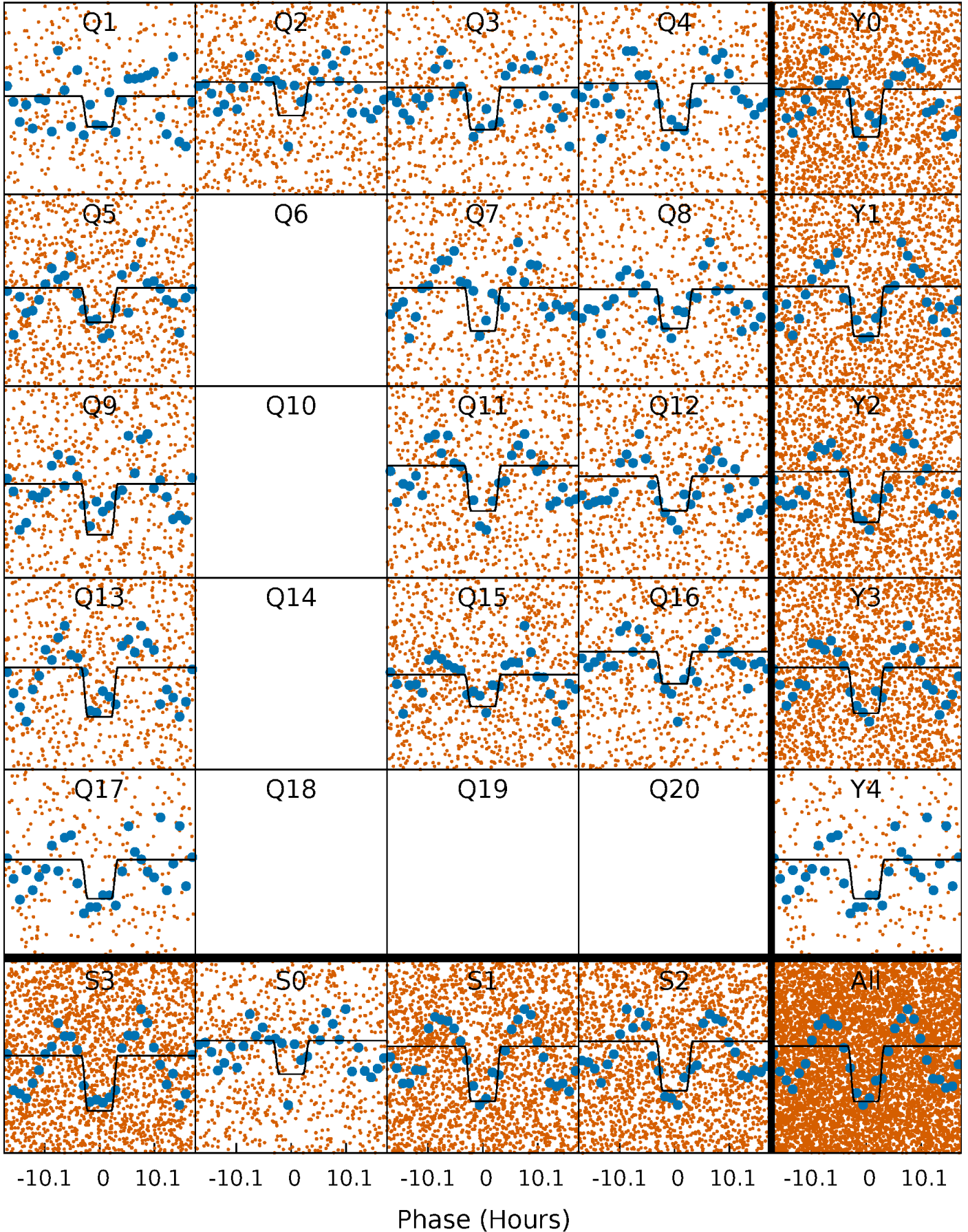
DV Quarter-Phased Transit Curves

TCE 004662336-01 P= 2.968697 Days $T_0=132.469724$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

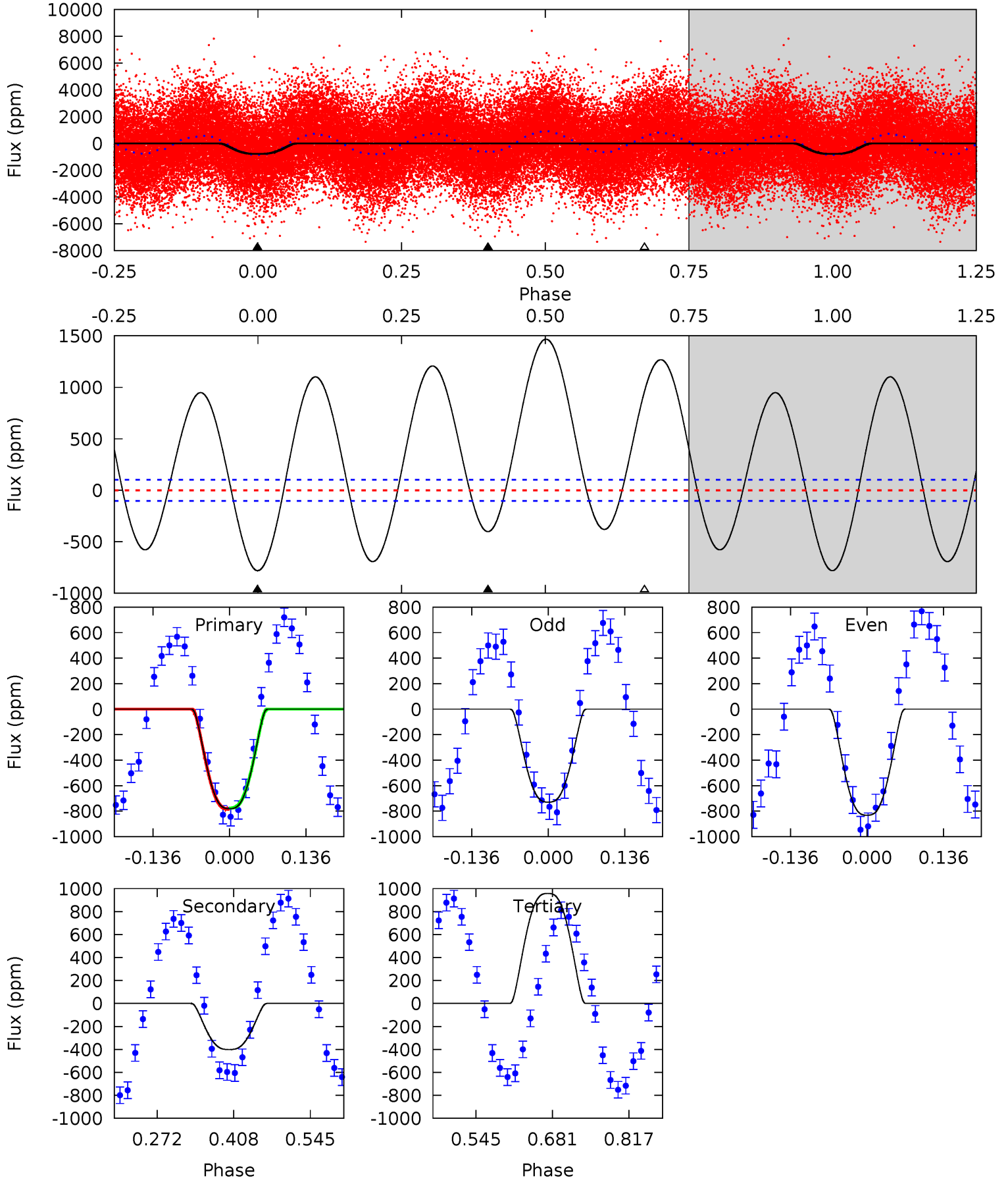
TCE 004662336-01 P= 2.968610 Days $T_0=132.486119$ (BKJD)



DV Model-Shift Uniqueness Test

004662336-01, P = 2.968697 Days, E = 129.501027 Days

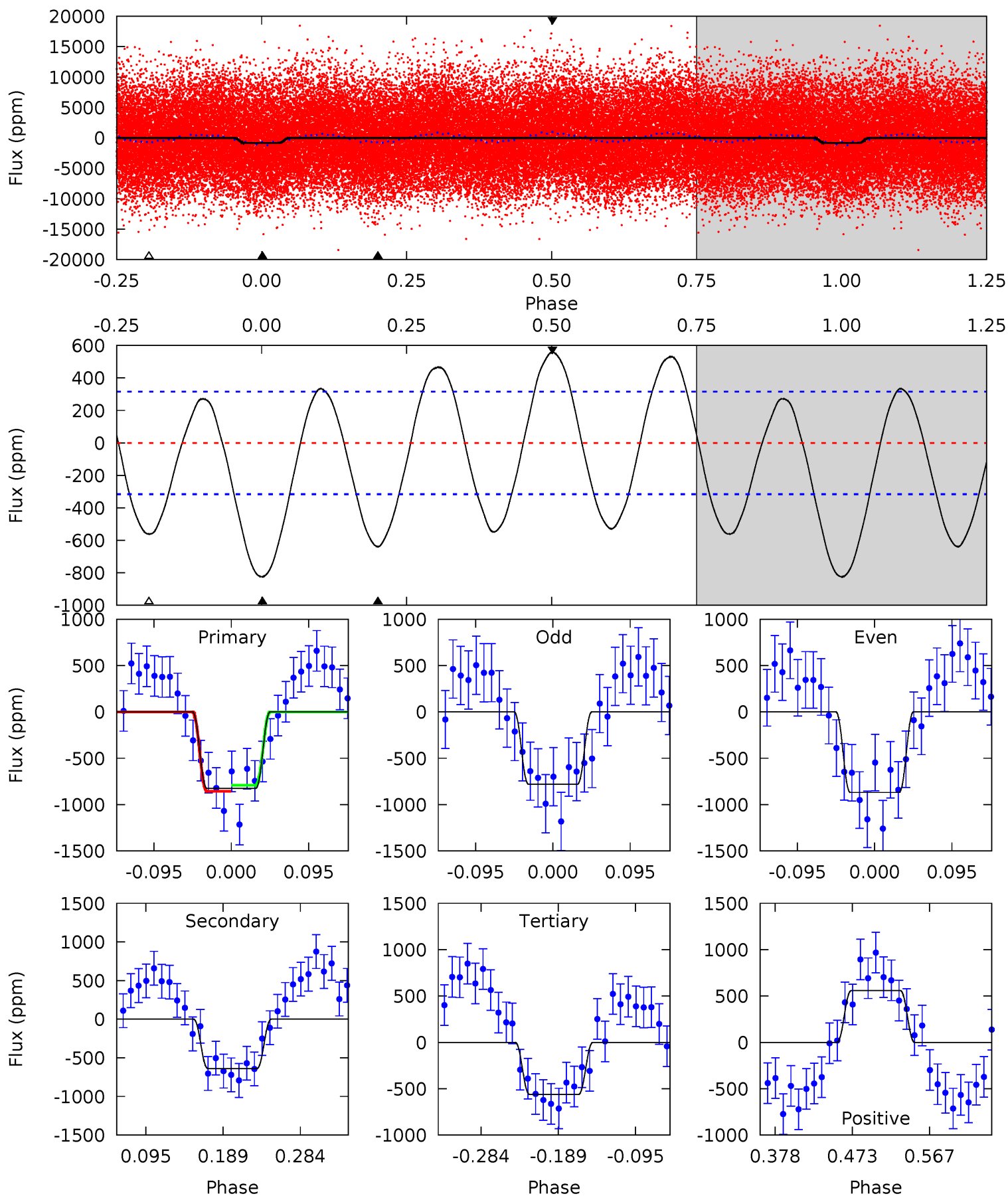
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.4	17.7	-42.2	0	4.50	1.49	25.2	76.6	34.4	59.9	17.7	2.26	1.02	0.65	0.20



Alt Model-Shift Uniqueness Test

004662336-01, P = 2.968610 Days, E = 129.517509 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	9.27	8.15	8.10	4.58	1.67	5.38	3.81	3.85	1.12	1.17	0.64	0.99	0.40	0.47



Stellar Parameters For KIC 004662336

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7452^{+232}_{-310}	$3.876^{+0.330}_{-0.110}$	$-0.140^{+0.200}_{-0.350}$	$2.544^{+0.517}_{-0.961}$	$1.774^{+0.173}_{-0.403}$	$0.152^{+0.376}_{-0.052}$
	+3%/-4%	+9%/-3%	+143%/-250%	+20%/-38%	+10%/-23%	+248%/-34%
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 004662336-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-401 ± 23	$7.12^{+1.18}_{-1.37}$	3227^{+245}_{-296}	6277^{+358}_{-311}	10^{+5}_{-3}
Alt.	-639 ± 69	$8.10^{+1.41}_{-1.58}$	3232^{+244}_{-311}	6659^{+408}_{-413}	13^{+7}_{-3}

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

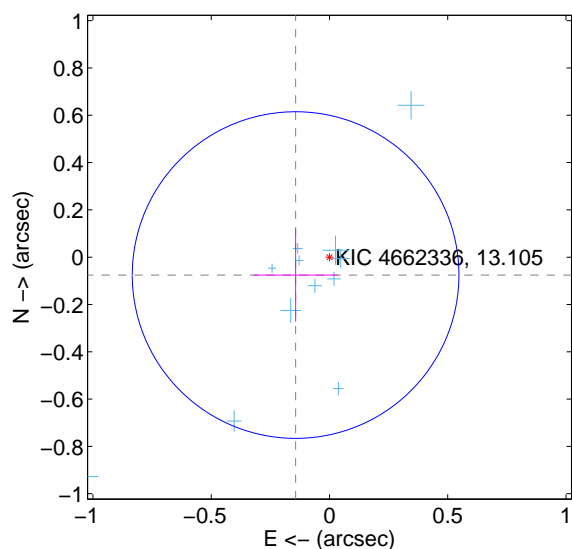
Supplemental centroid analysis for 004662336-01. Kepler magnitude: 13.11. Transit SNR 10.94

There are 14 quarters with good PRF difference image offsets

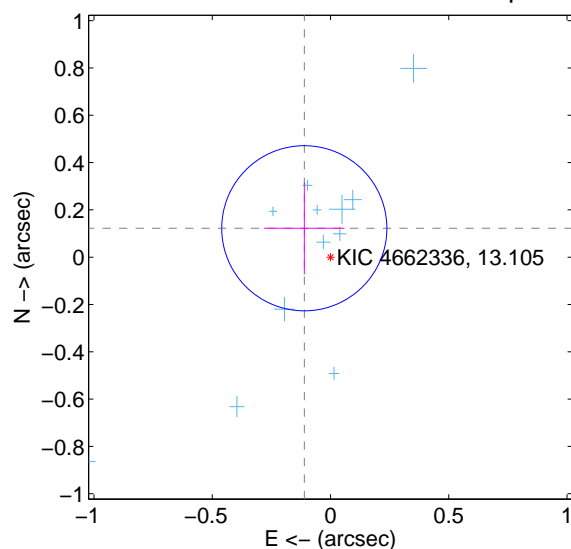
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.162 ± 0.230	0.70	0.143 ± 0.178	-0.076 ± 0.196
PRF-fit source offset from KIC position	0.165 ± 0.116	1.42	0.111 ± 0.170	0.122 ± 0.195
photometric centroid source offset	0.14 ± 0.10	1.48	0.05 ± 0.06	-0.13 ± 0.10

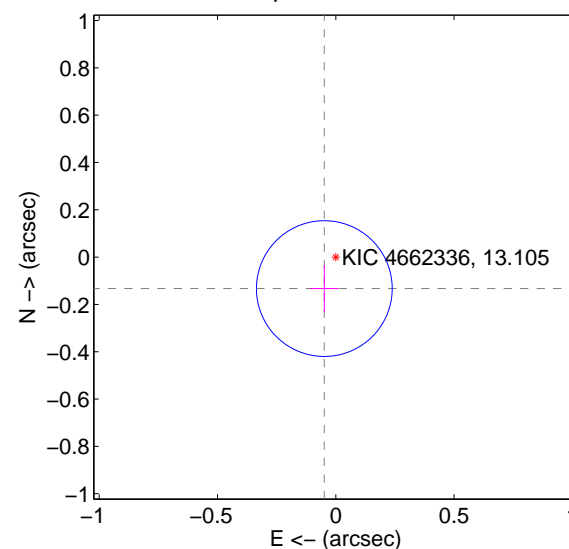
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

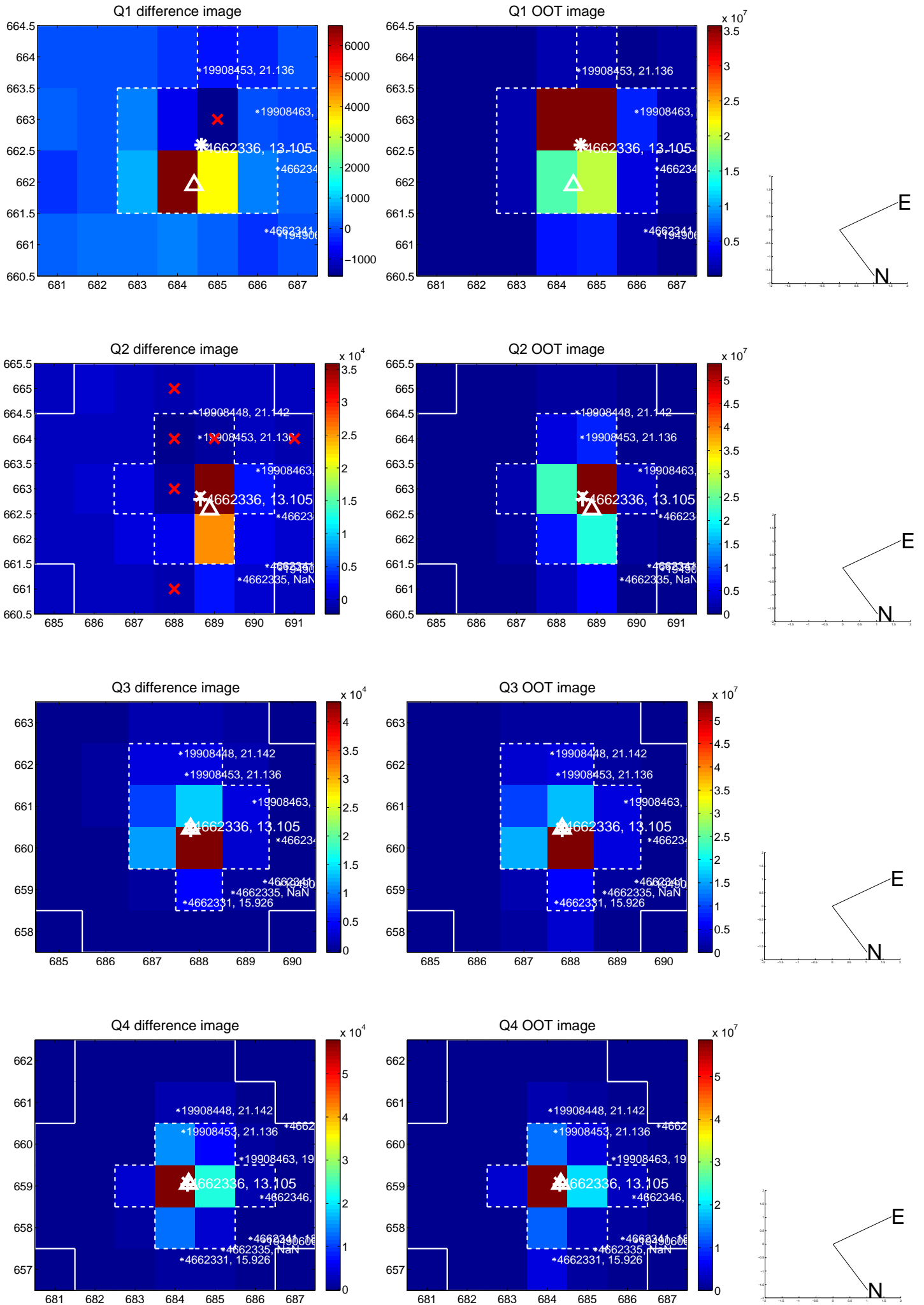


offset from photometric centroids

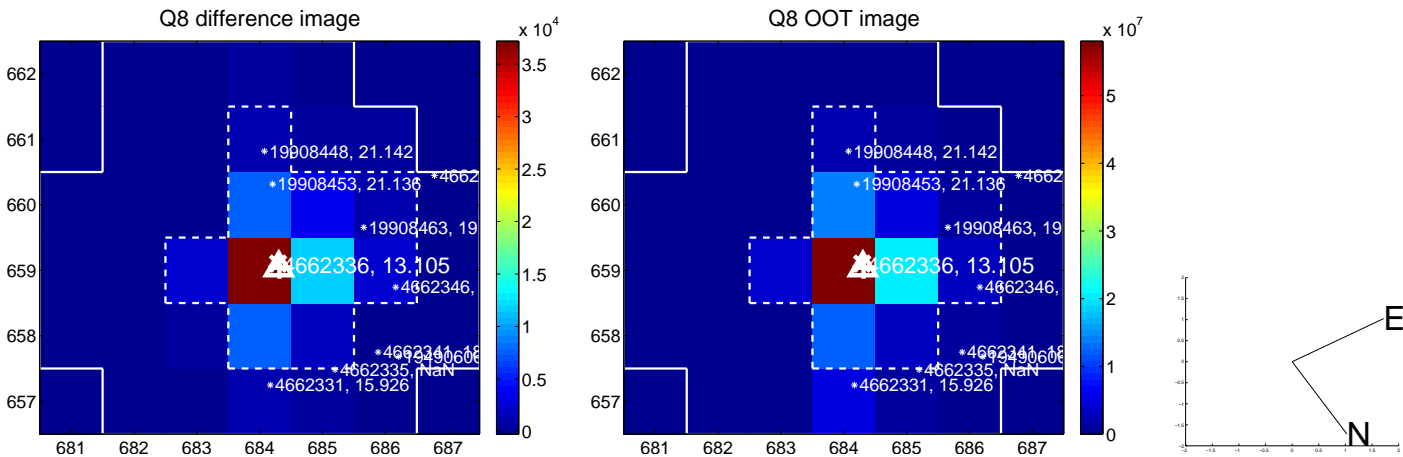
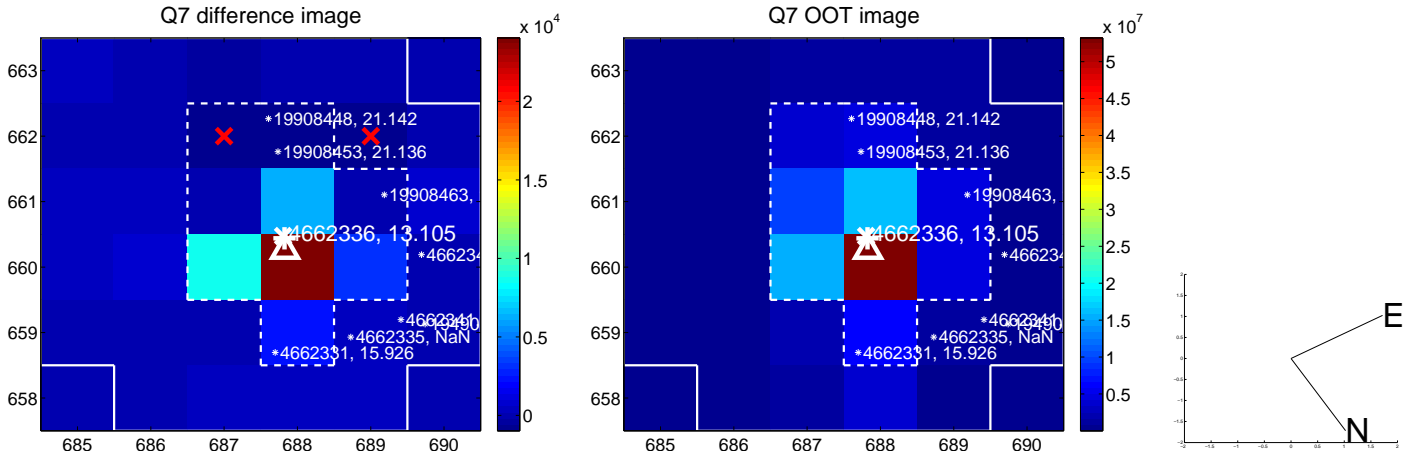
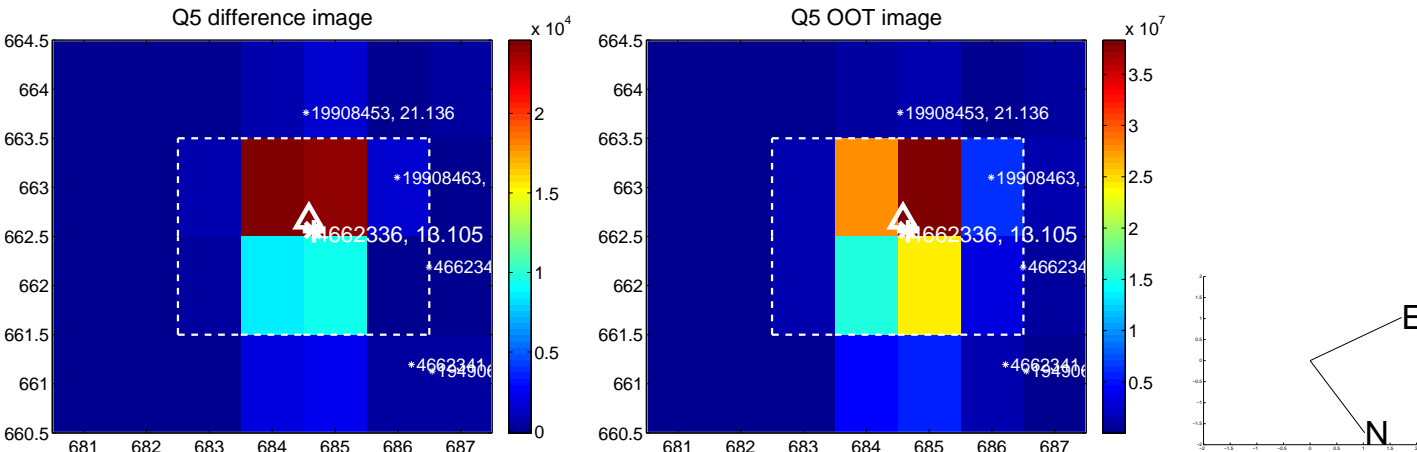


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

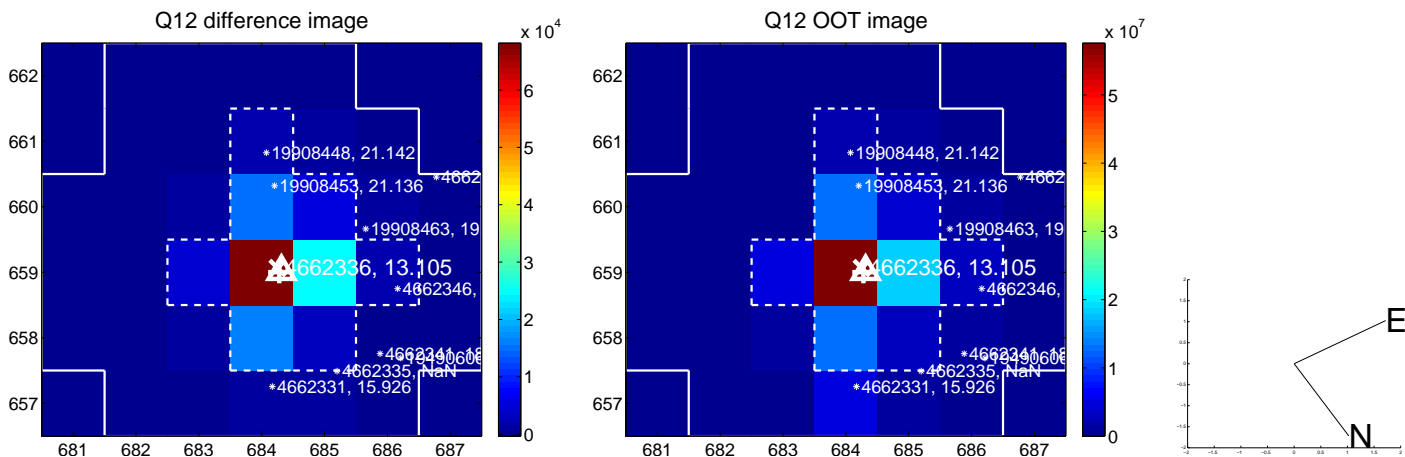
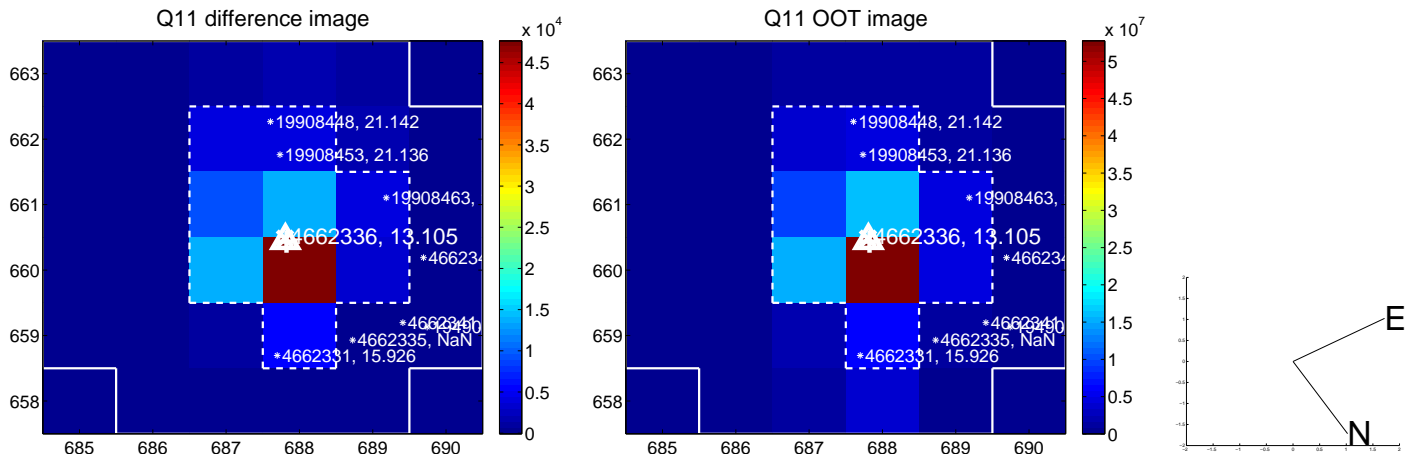
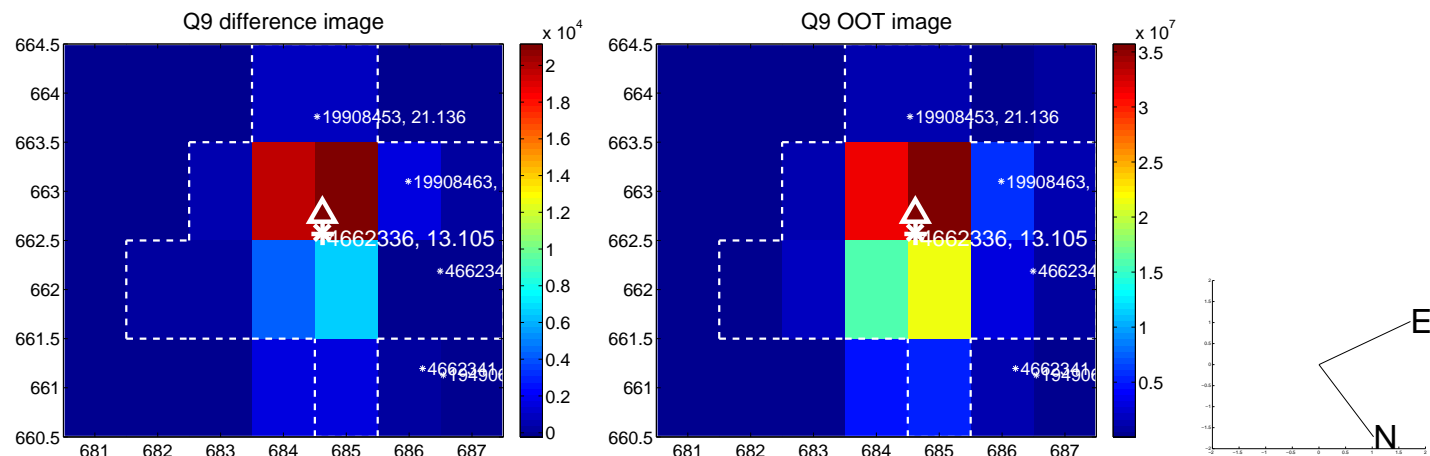
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



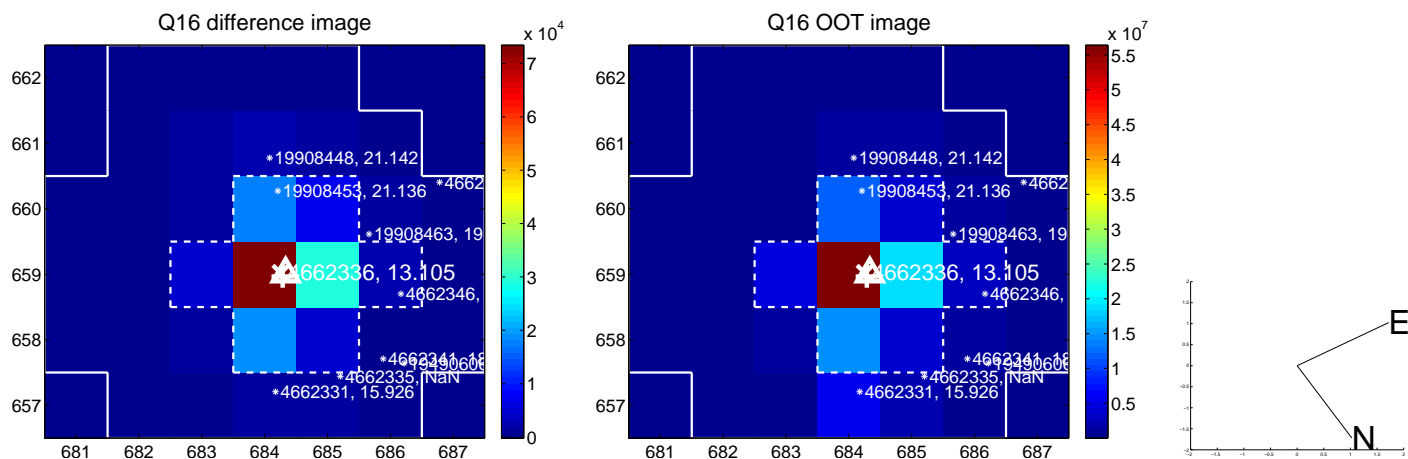
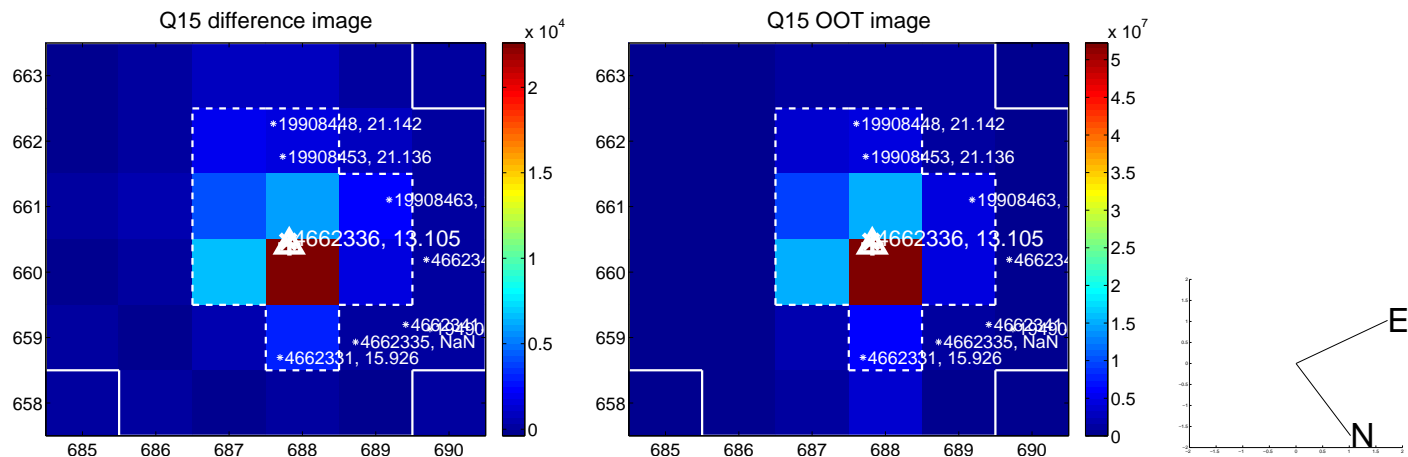
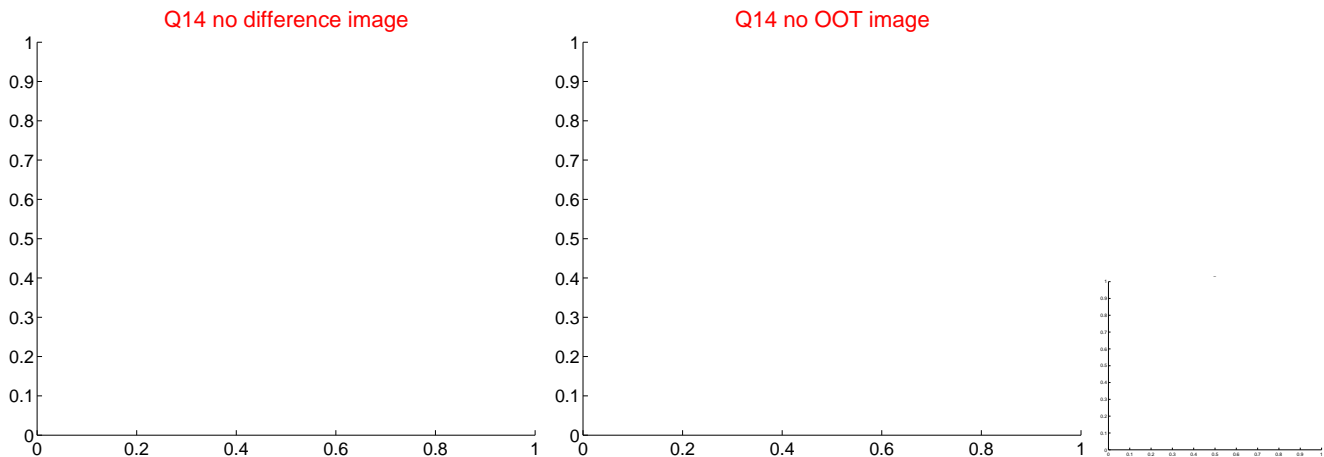
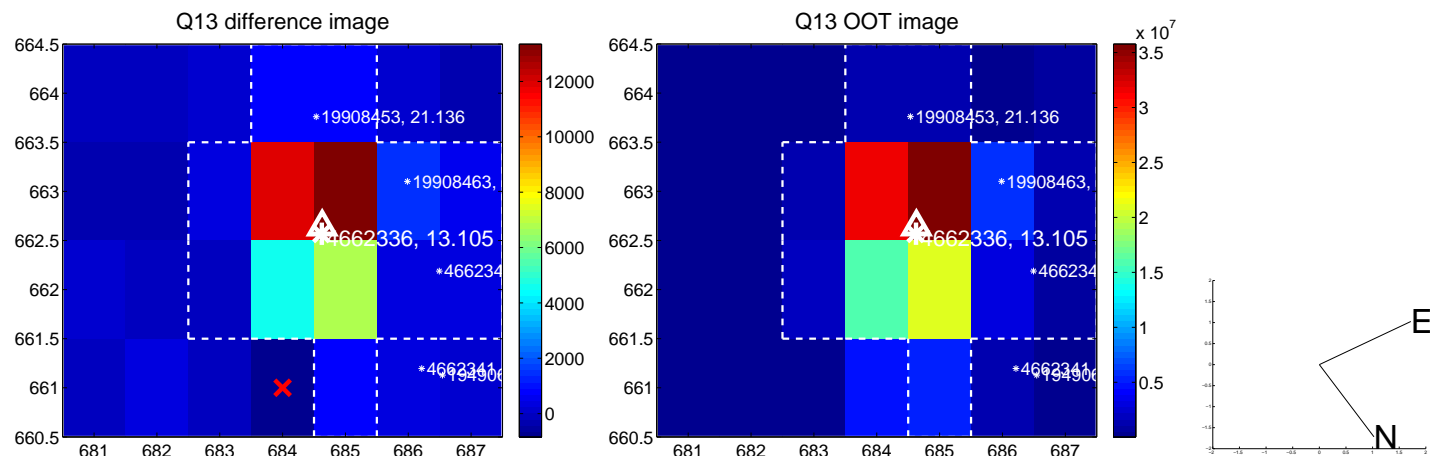
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



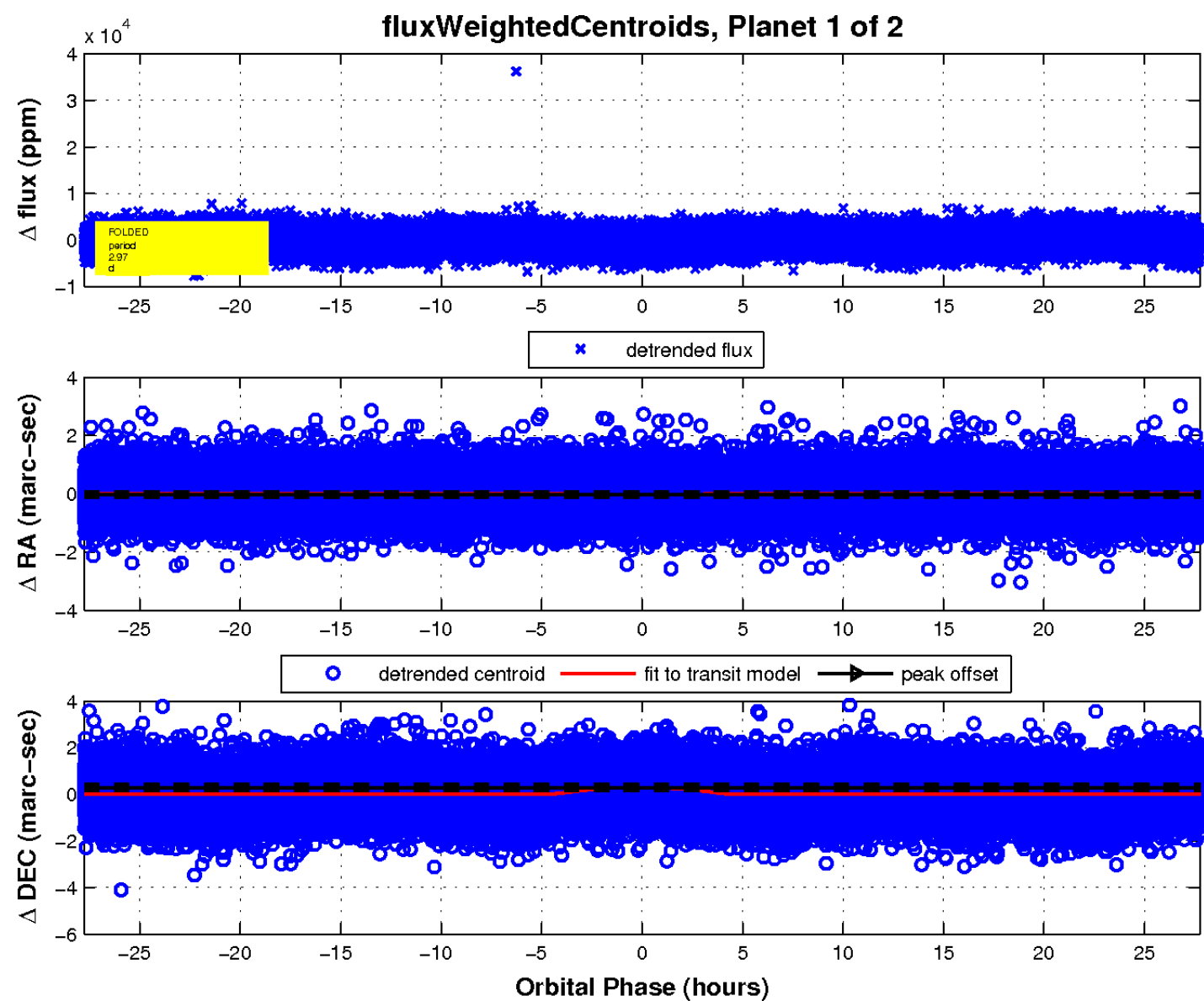
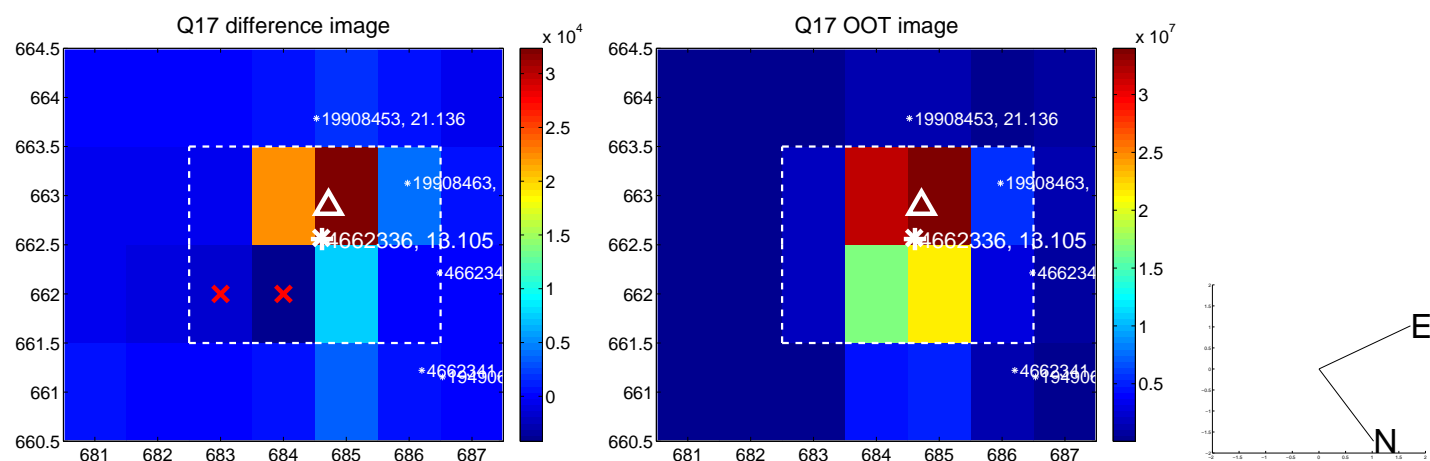
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



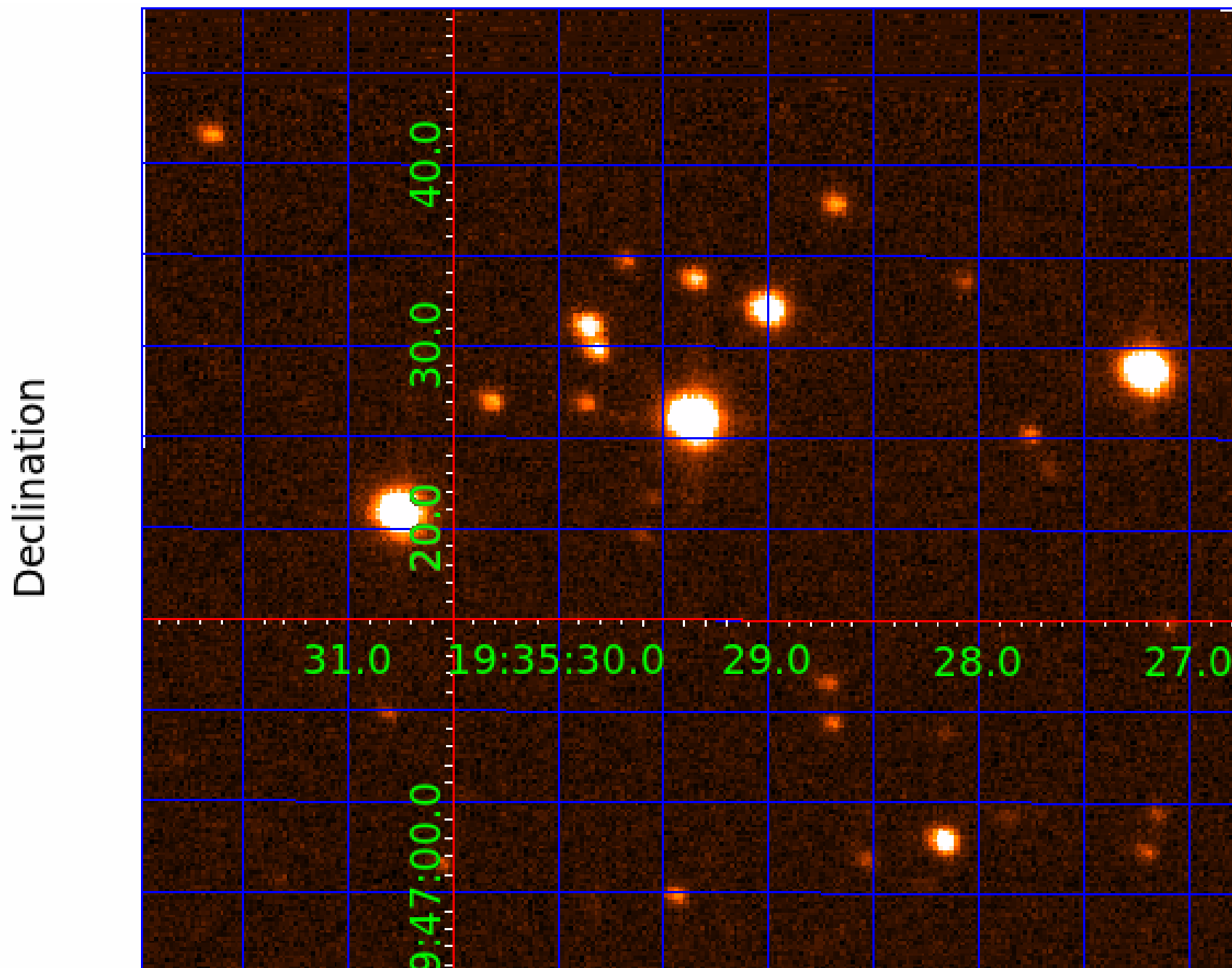
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004662336

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})
004662336-01	OBS	No	2.968697	132.469724	519.6	9.257	10.5	10.9	2.54	7452	7.46	7462.93
004662336-02	OBS	No	2.968576	133.124303	578.0	6.204	8.4	9.2	2.54	7452	11.61	7463.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004662336-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004662336-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

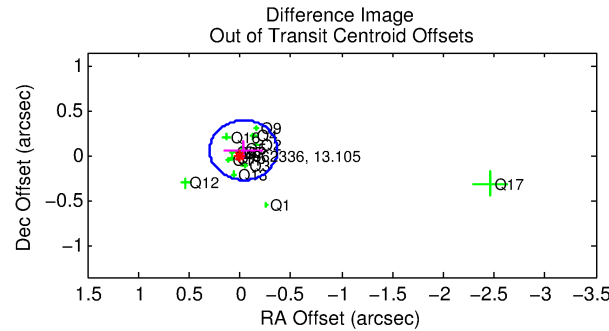
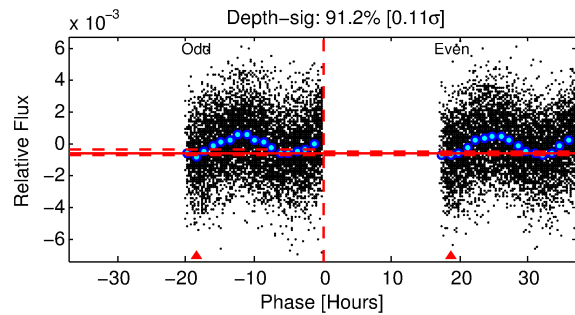
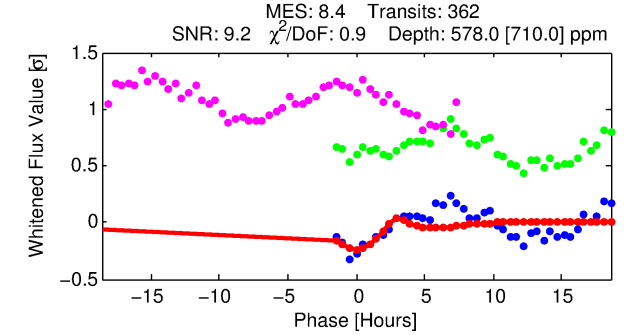
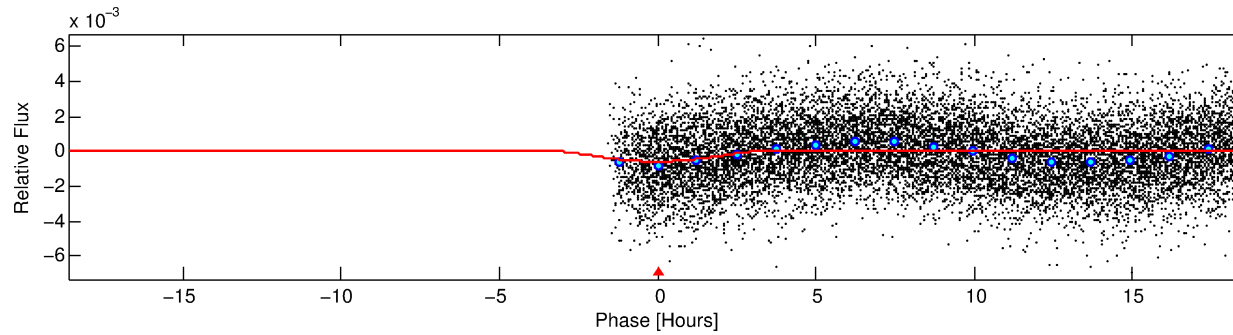
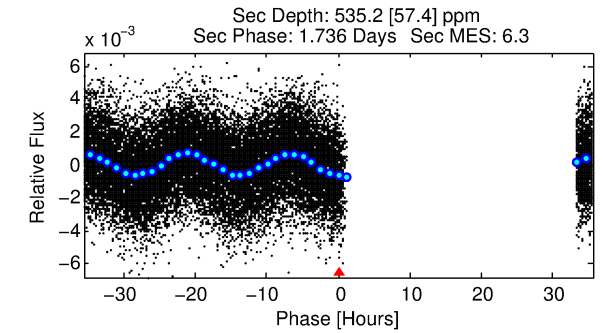
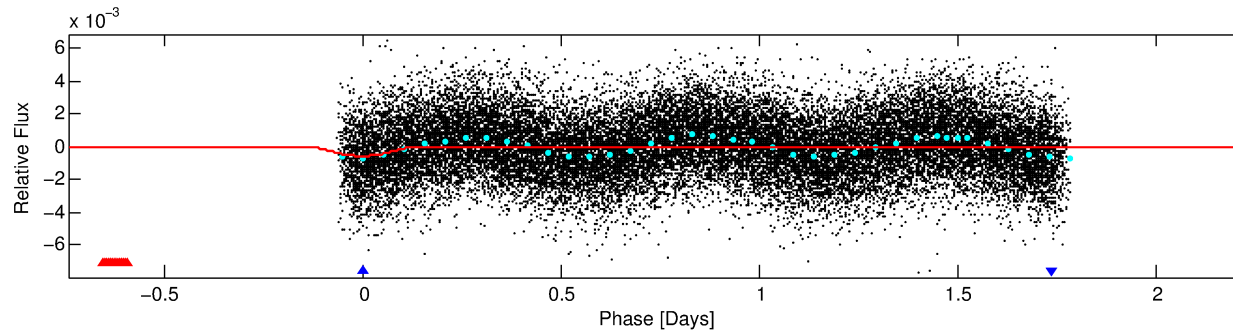
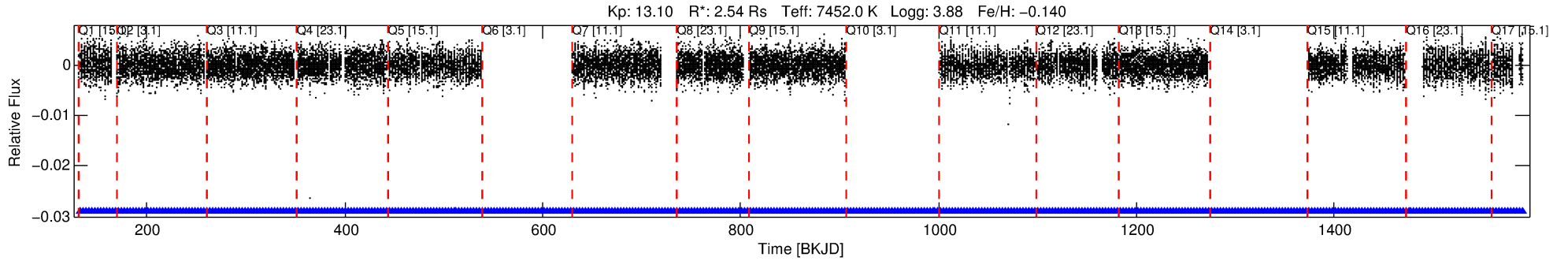
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004662336-02

No Significant Match Found

DV One-Page Summary

KIC: 4662336 Candidate: 2 of 2 Period: 2.969 d



DV Fit Results:

Period = 2.96858 [0.00005] d
Epoch = 133.1243 [0.0167] BKJD
Rp/R* = 0.0418 [0.1189]
a/R* = 1.47 [0.47]
b = 1.00 [0.14]
Seff = 7463.33 [4400.97]
Teff = 2370 [349] K
Rp = 11.61 [33.29] Re
a = 0.0489 [0.0175] AU
Ag = 5.24 [29.94] [0.14σ]
Teffp = 5544 [7887] K [0.40σ]

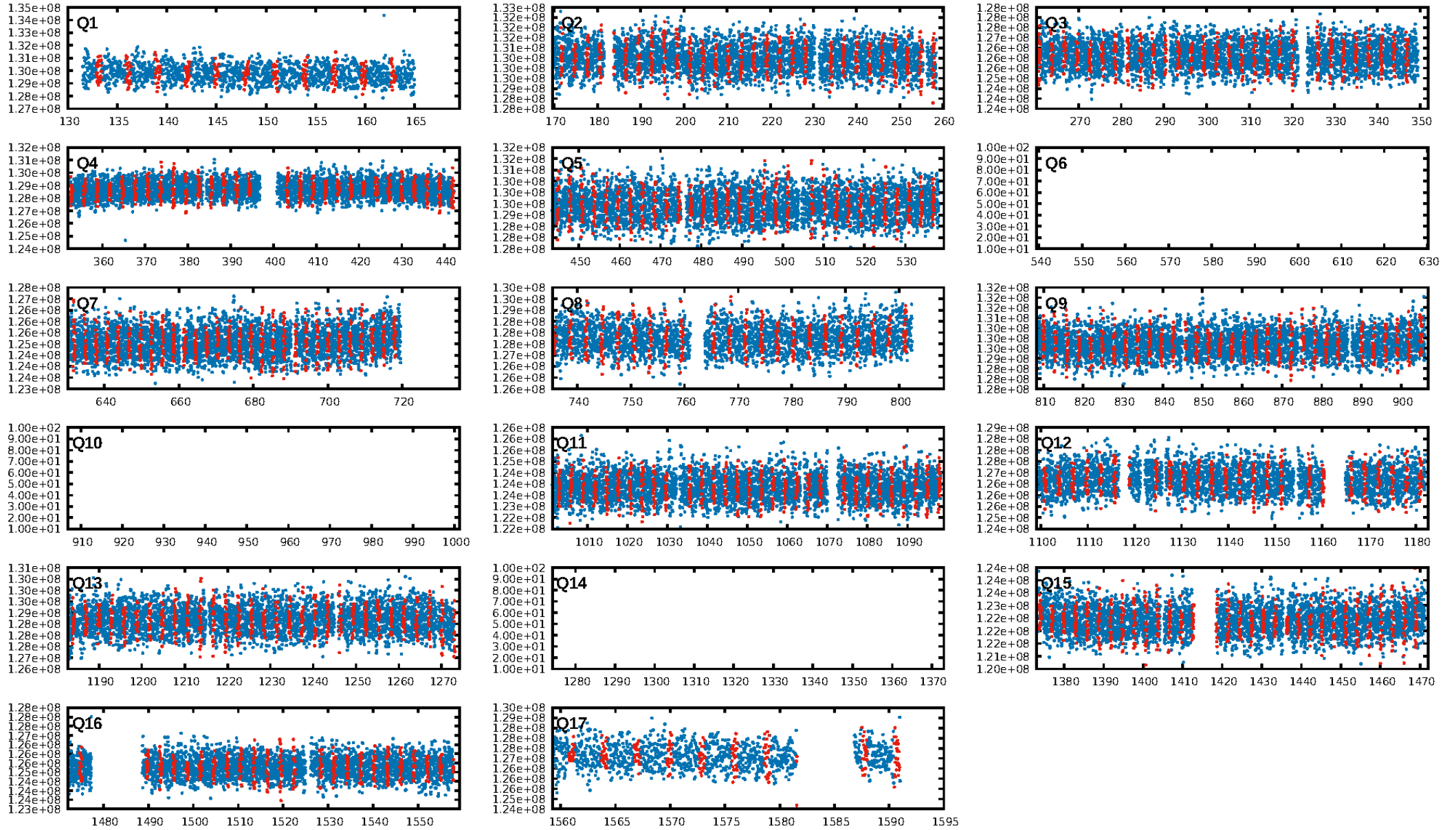
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.93e-20
RollingBand-fgt: 1.00 [342/342]
GhostDiagnostic-chr: 1.695
Centroid-sig: 0.0%
Centroid-so: 0.176 arcsec [2.12σ]
OotOffset-rm: 0.071 arcsec [0.64σ]
KicOffset-rm: 0.219 arcsec [2.23σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

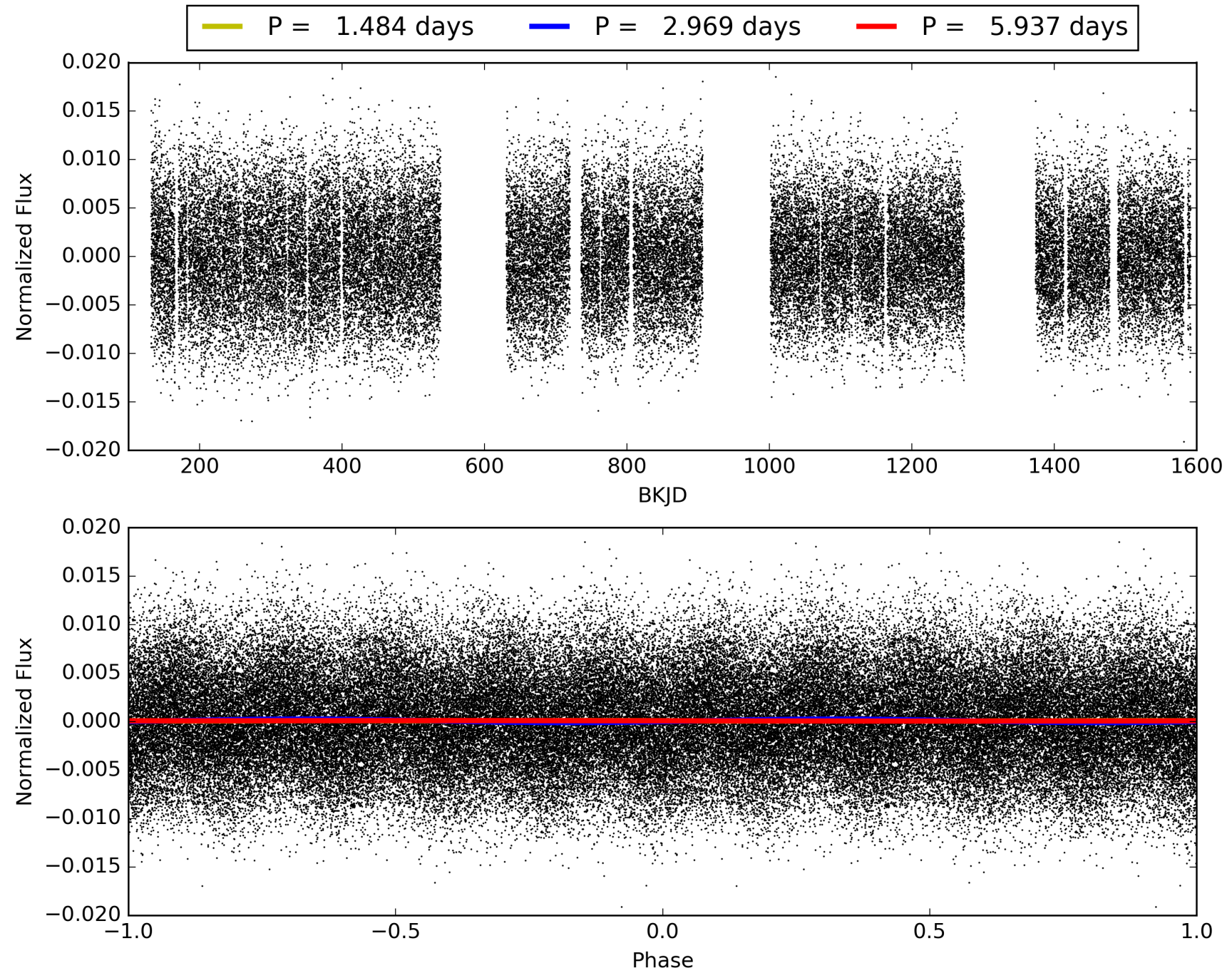
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:32:45 Z

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

TCE 004662336-02, PDC Light Curves

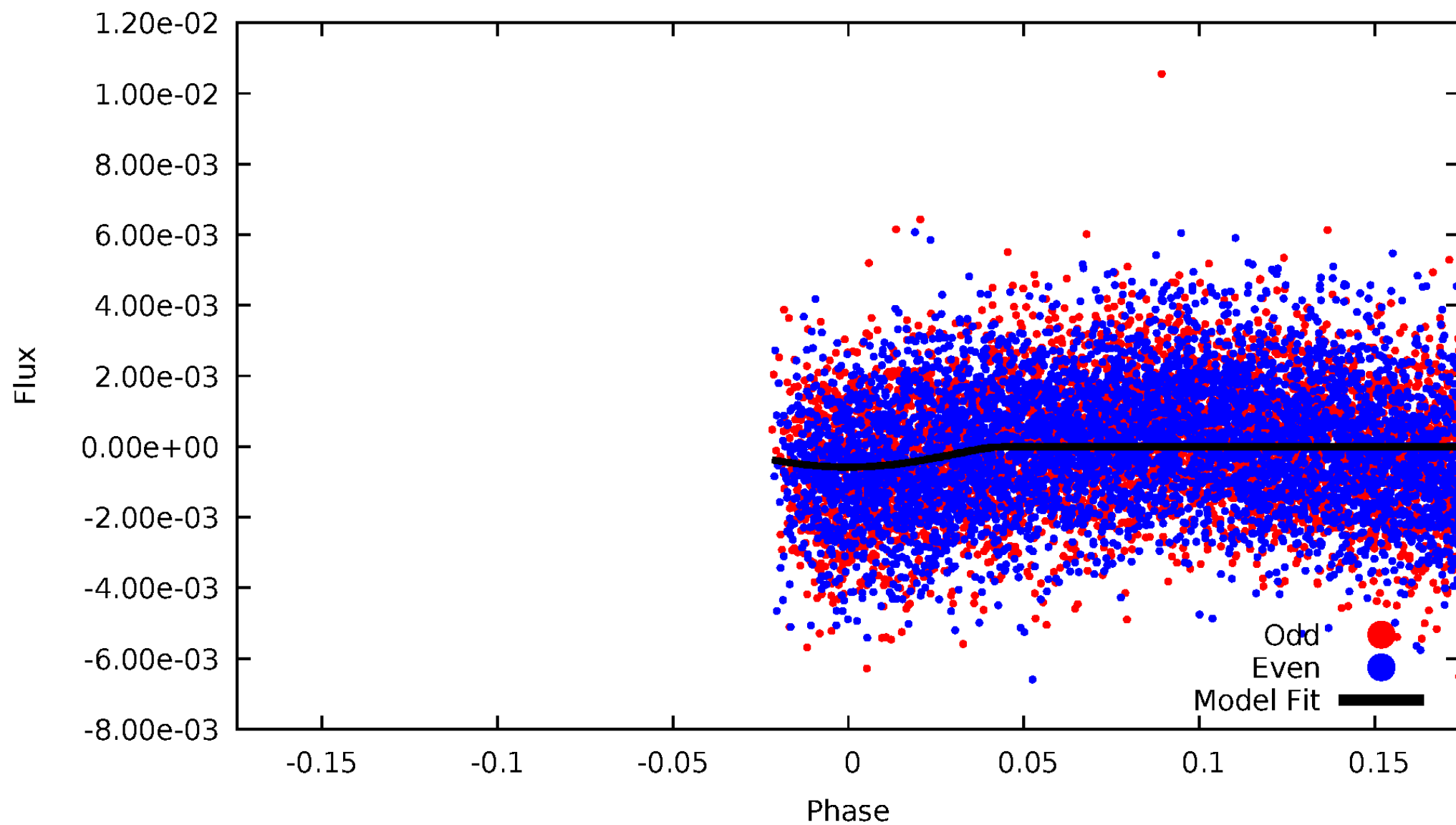


TCE 004662336-02



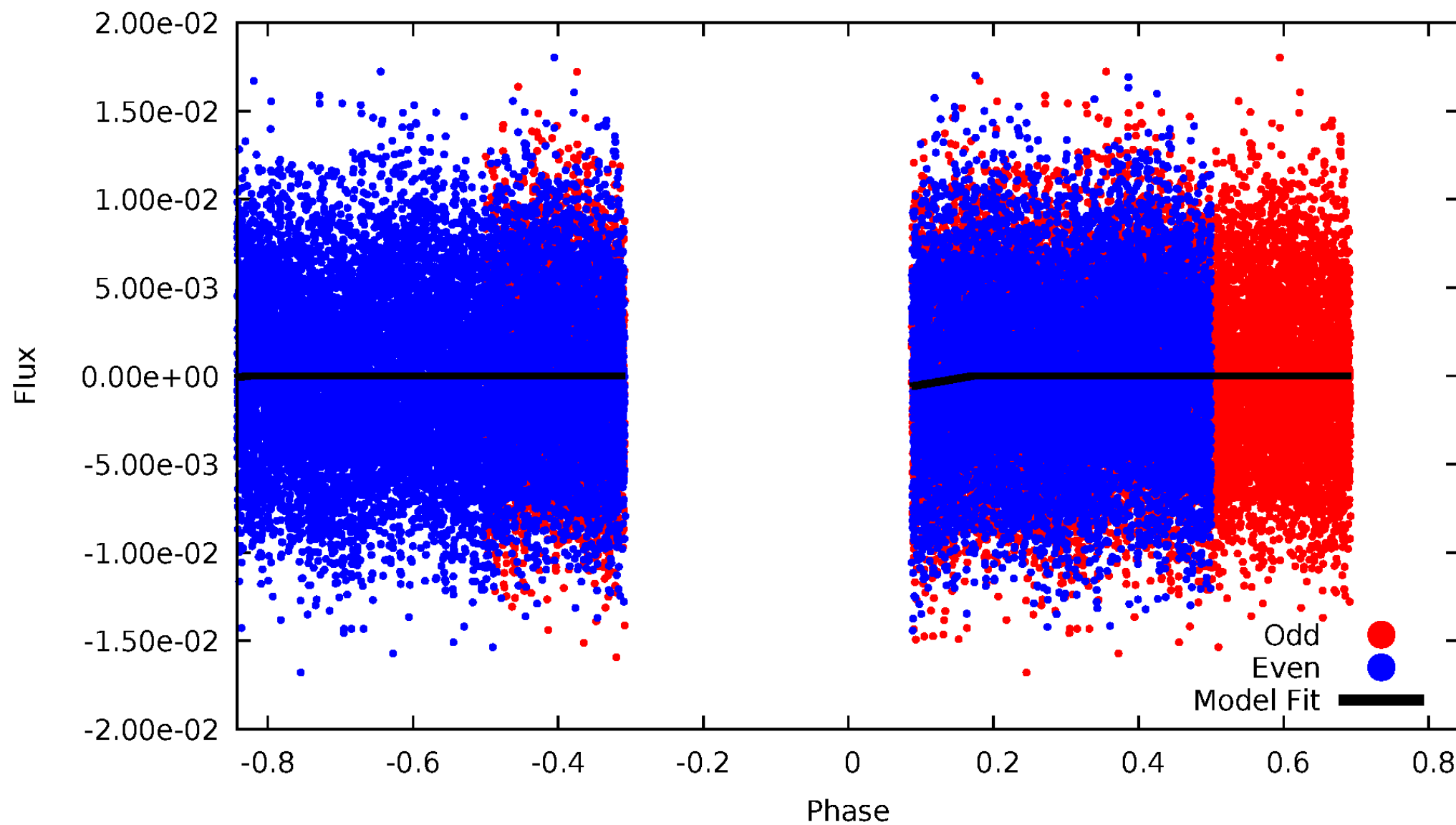
DV Odd/Even

TCE 004662336-02



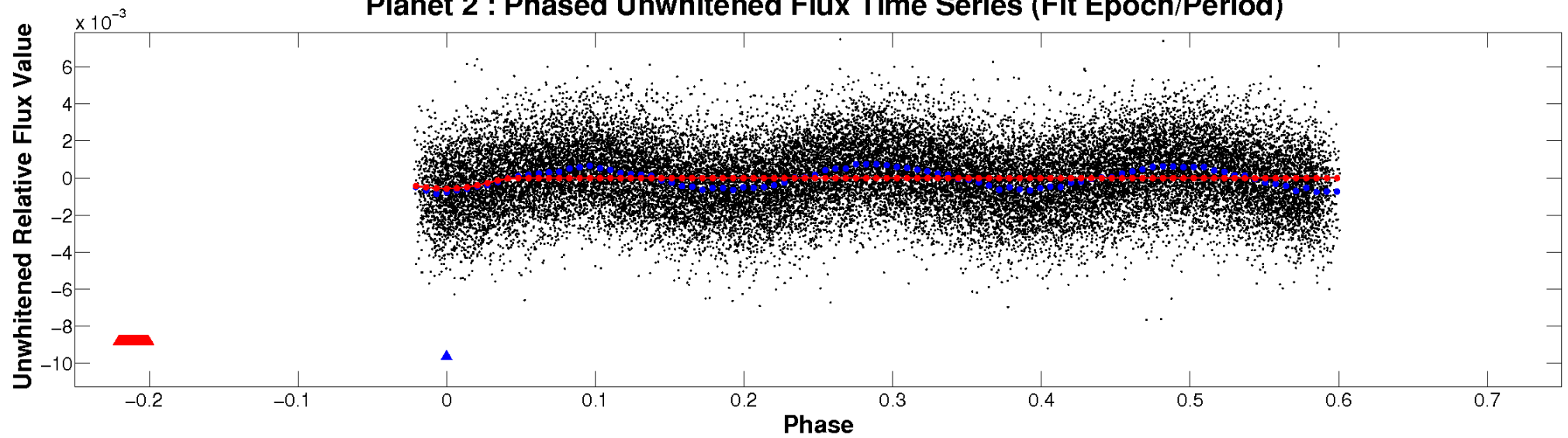
ALT Odd/Even

TCE 004662336-02

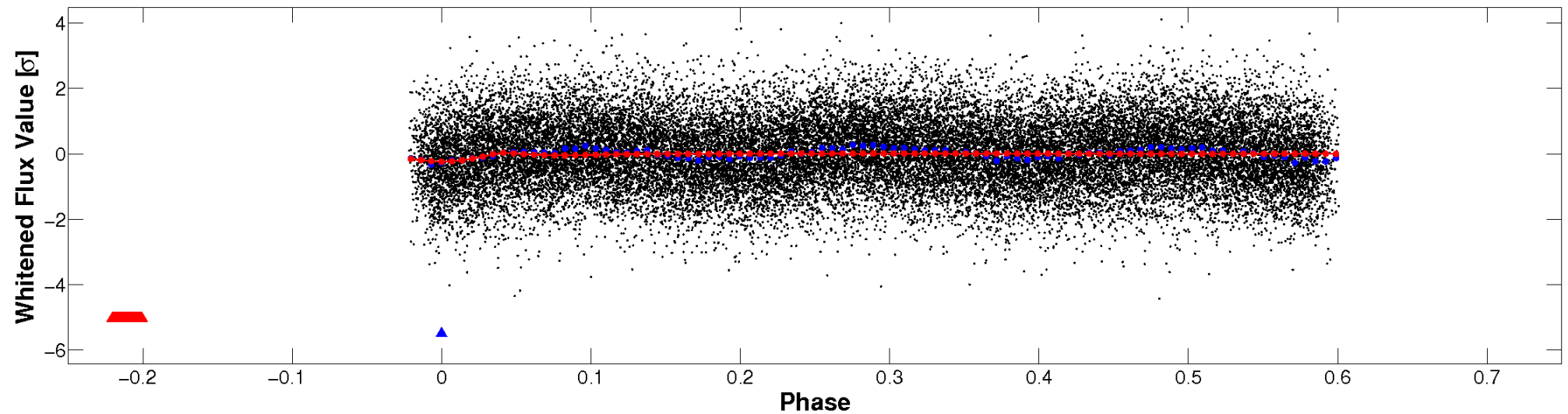


Non-Whitened Vs. Whitened Light Curve

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

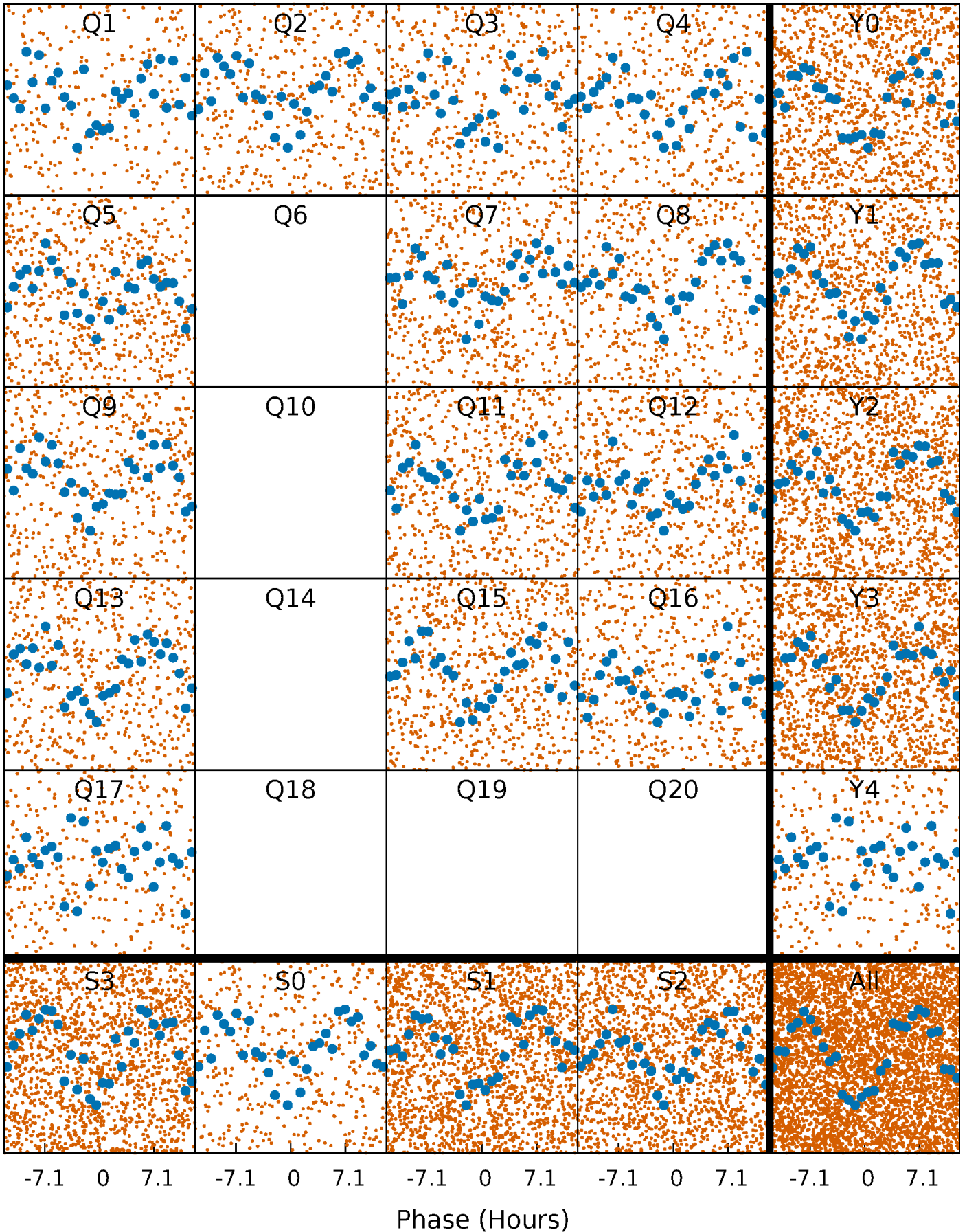


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



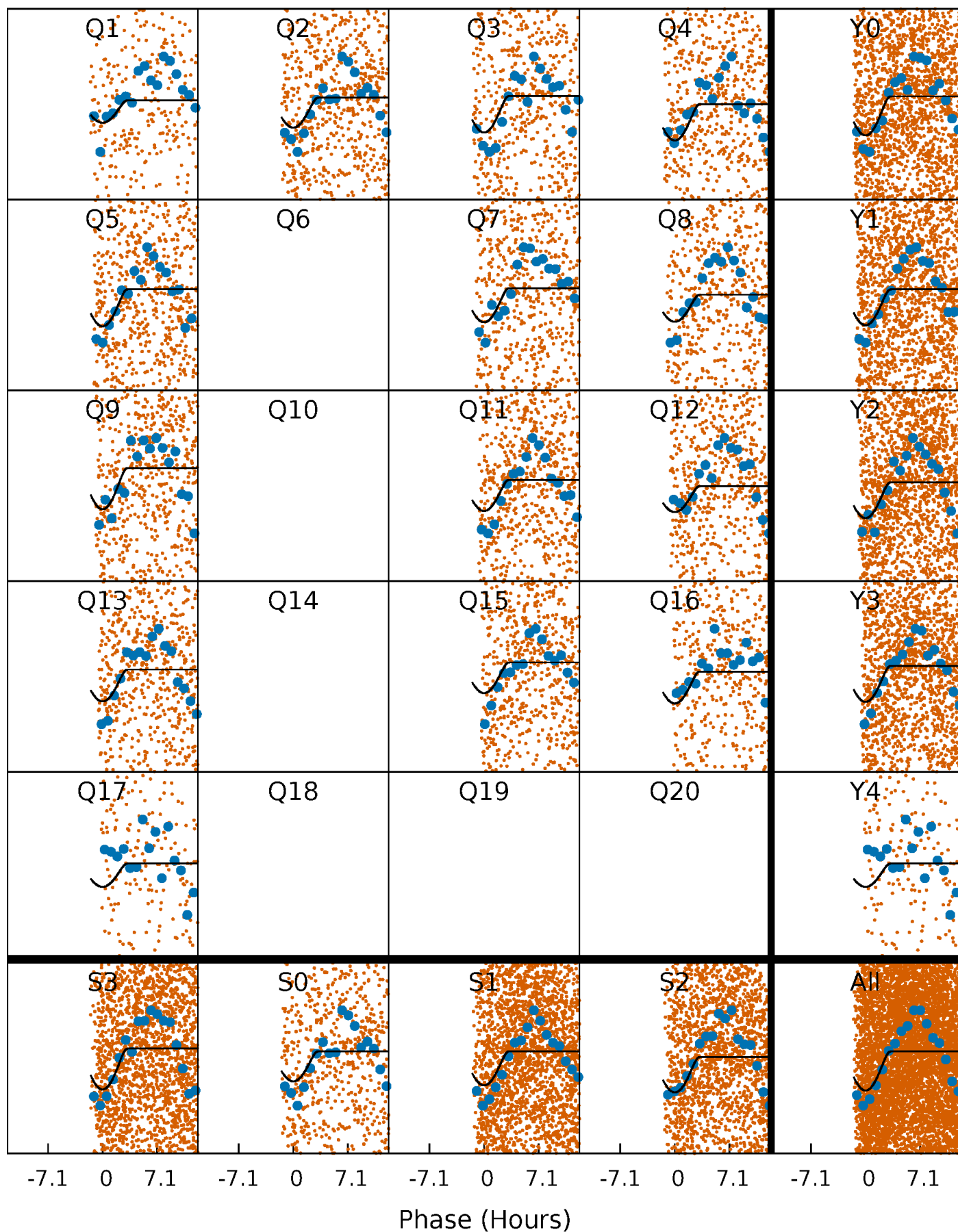
PDC Quarter-Phased Transit Curves

TCE 004662336-02 P= 2.968576 Days $T_0=133.124303$ (BKJD)



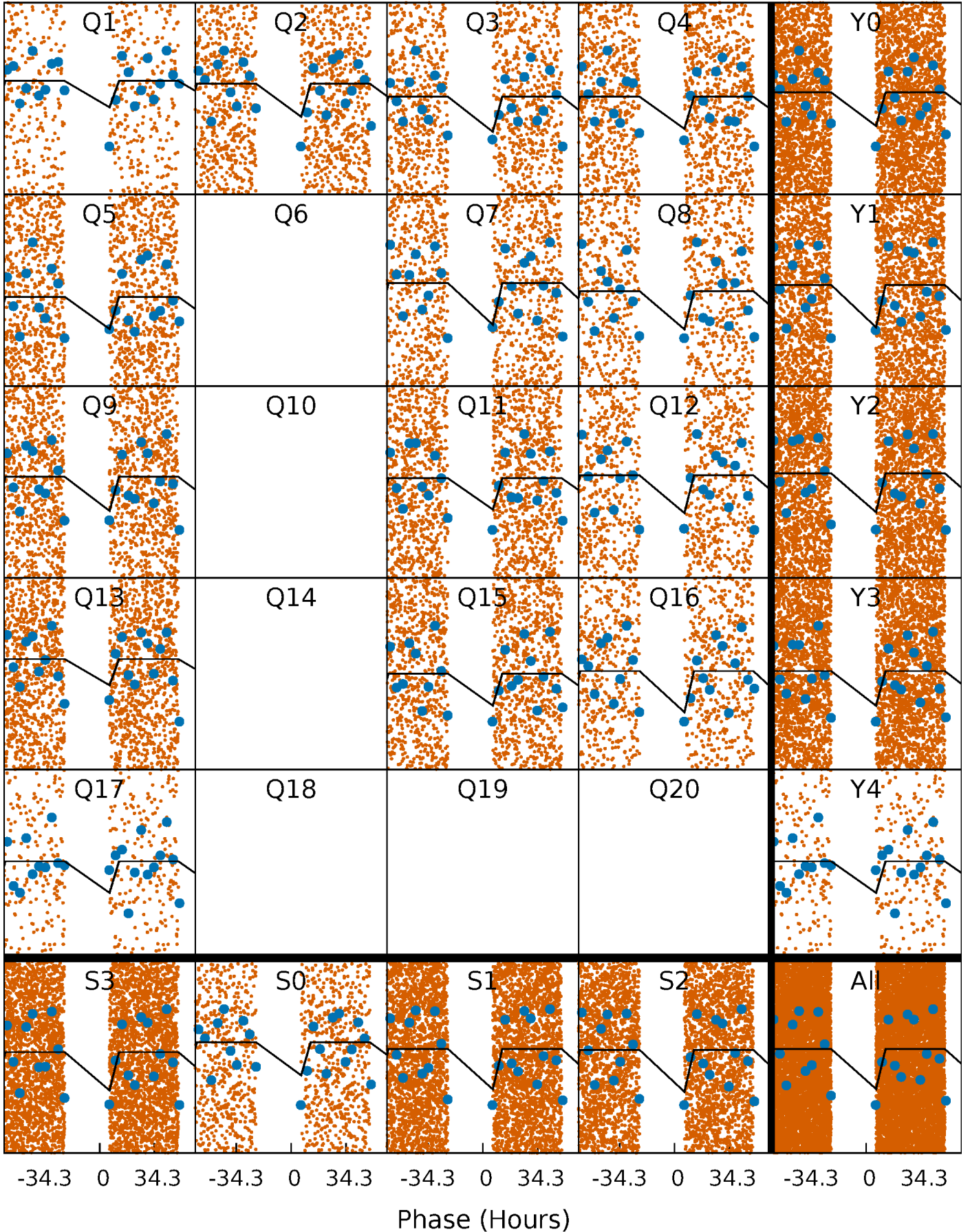
DV Quarter-Phased Transit Curves

TCE 004662336-02 P= 2.968576 Days $T_0=133.124303$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

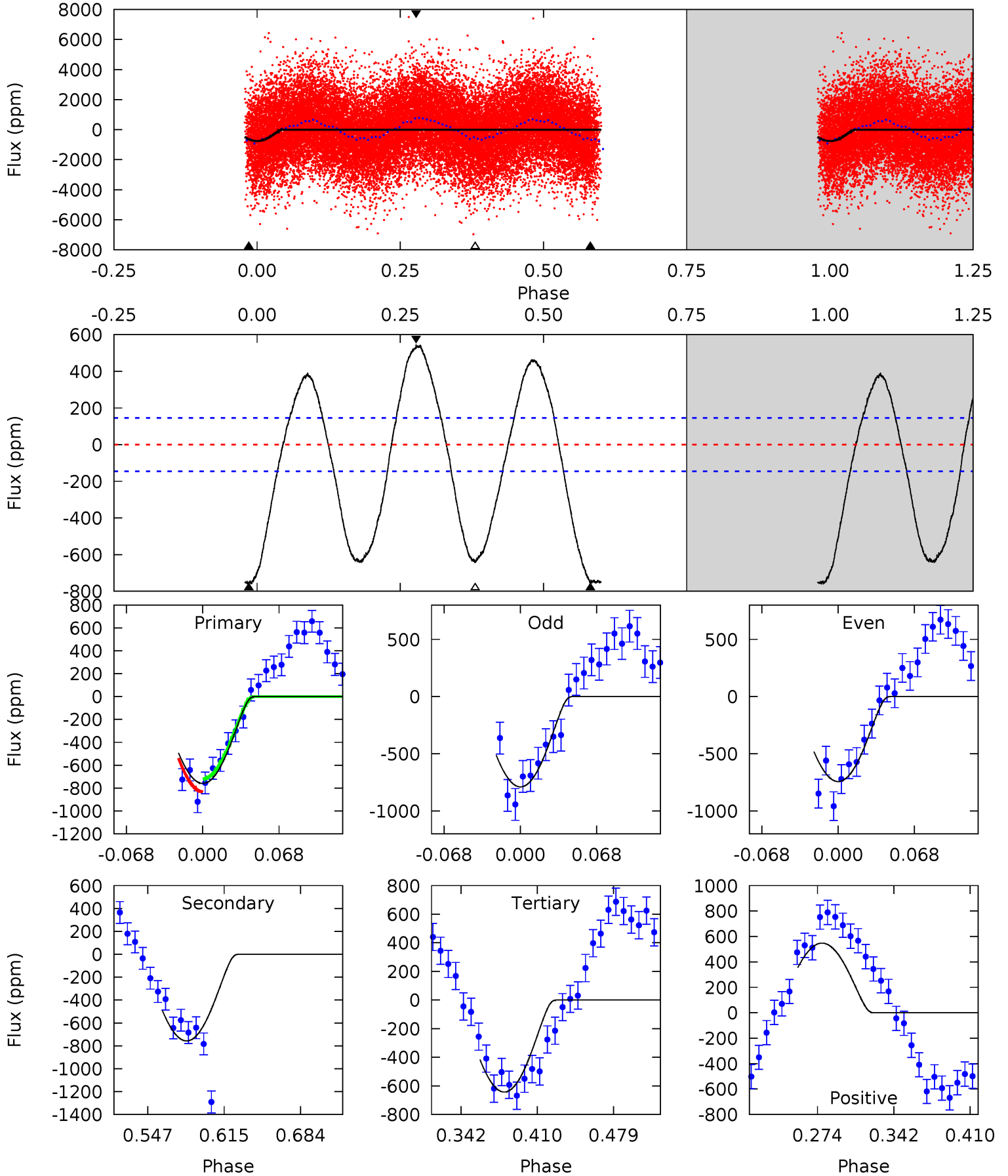
TCE 004662336-02 P= 2.968684 Days $T_0=132.800179$ (BKJD)



DV Model-Shift Uniqueness Test

004662336-02, P = 2.968576 Days, E = 130.155727 Days

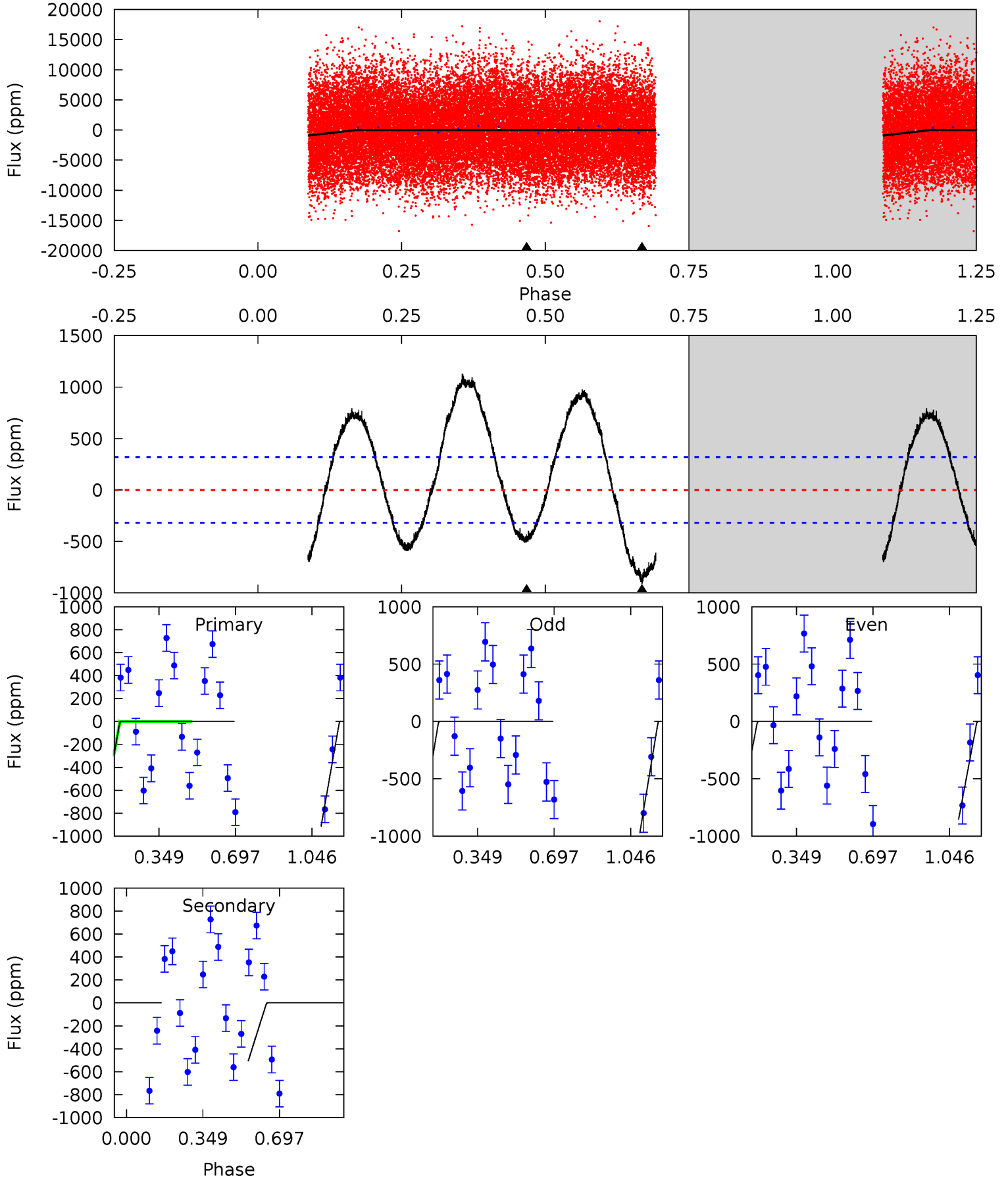
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.2	24.1	20.5	17.4	4.64	1.82	12.3	3.72	6.75	3.63	6.66	0.74	0.91	0.42	1.41



Alt Model-Shift Uniqueness Test

004662336-02, P = 2.968684 Days, E = 129.831495 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	6.80	0	0	4.30	0.94	5.39	12.3	12.3	6.80	6.80	0.80	0.73	0.55	0



Stellar Parameters For KIC 004662336

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7452^{+232}_{-310}	$3.876^{+0.330}_{-0.110}$	$-0.140^{+0.200}_{-0.350}$	$2.544^{+0.517}_{-0.961}$	$1.774^{+0.173}_{-0.403}$	$0.152^{+0.376}_{-0.052}$
	+3%/-4%	+9%/-3%	+143%/-250%	+20%/-38%	+10%/-23%	+248%/-34%
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 004662336-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-757 ± 31	$25.77^{+24.70}_{-17.28}$	3228^{+237}_{-307}	3934^{+2670}_{-1267}	$1.520^{+12.343}_{-1.130}$
Alt.	-507 ± 74	$24.76^{+24.77}_{-17.32}$	3231^{+246}_{-324}	3661^{+2596}_{-6044}	$1.099^{+10.634}_{-0.832}$

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

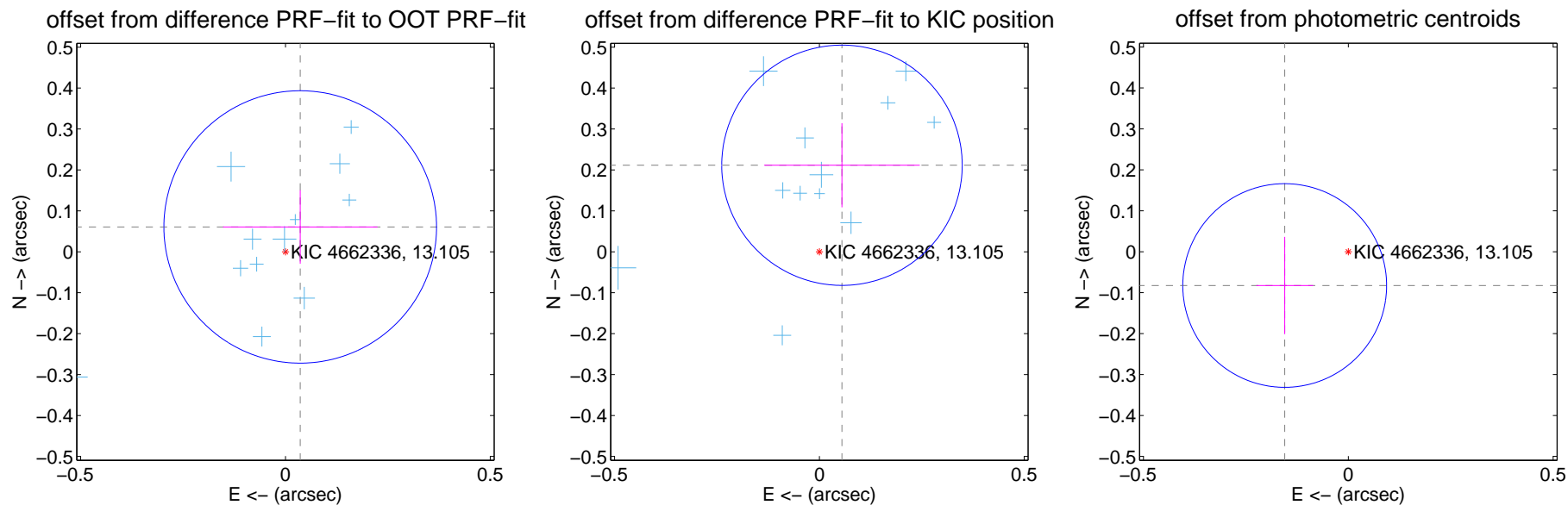
DV Centroid Data

Supplemental centroid analysis for 004662336-02. Kepler magnitude: 13.11. Transit SNR 9.16

There are 14 quarters with good PRF difference image offsets

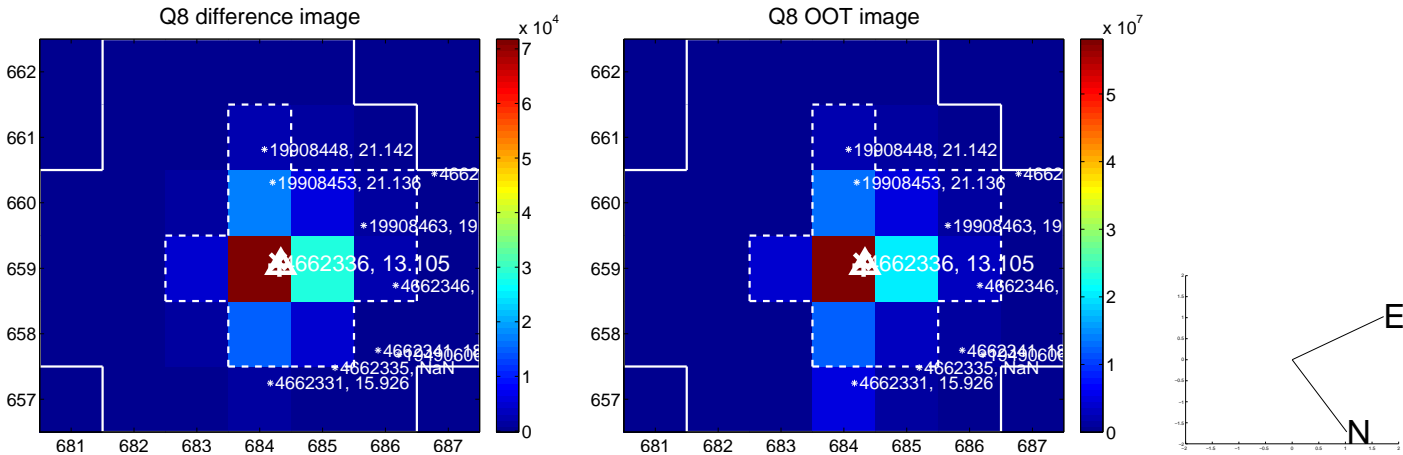
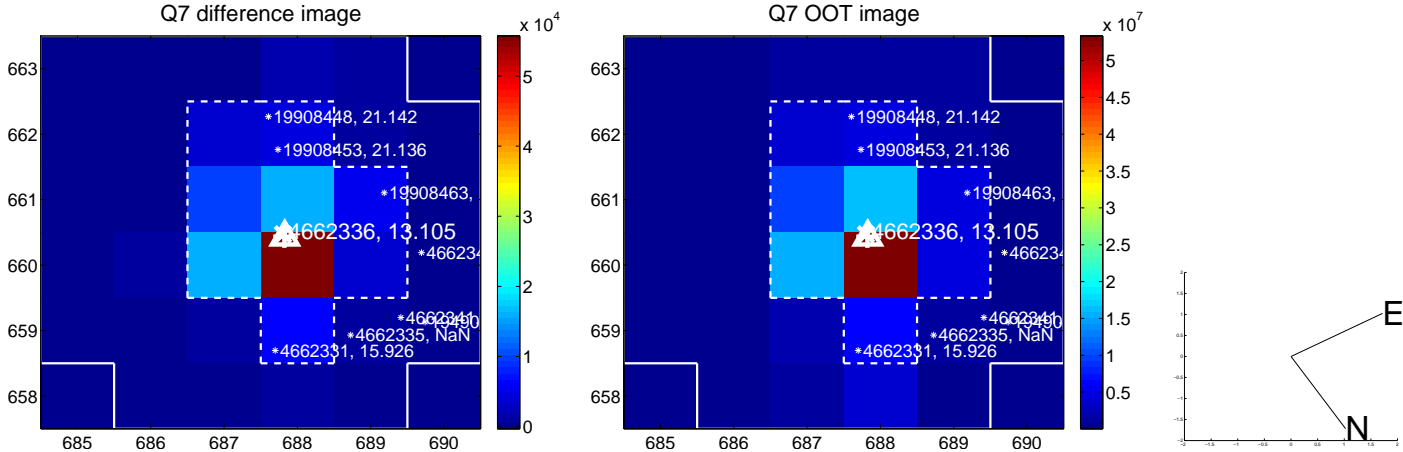
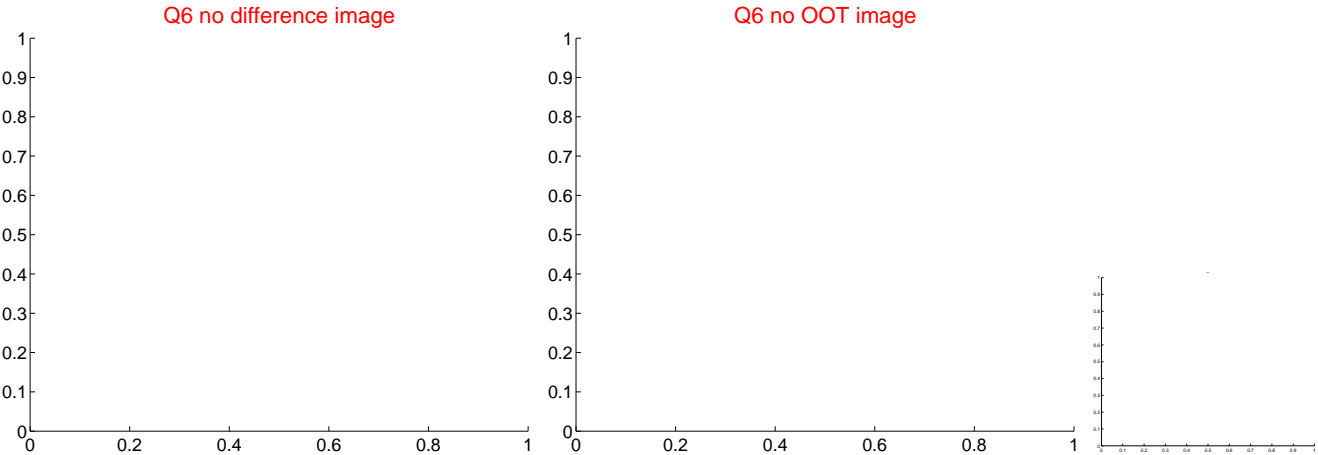
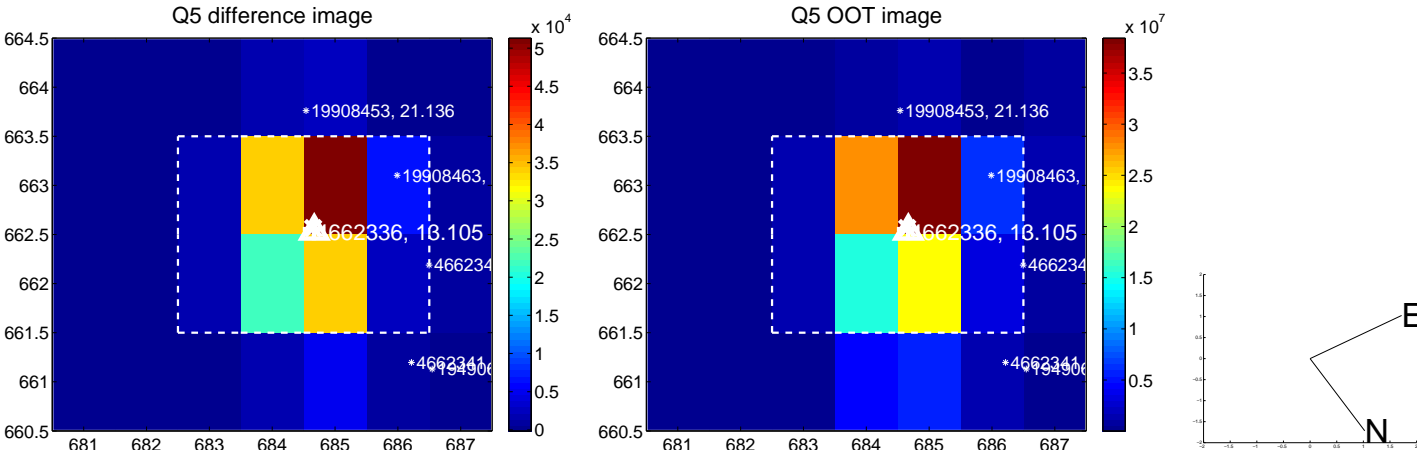
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.071 ± 0.111	0.64	-0.036 ± 0.188	0.061 ± 0.090
PRF-fit source offset from KIC position	0.219 ± 0.098	2.23	-0.055 ± 0.190	0.211 ± 0.103
photometric centroid source offset	0.18 ± 0.08	2.12	0.16 ± 0.07	-0.08 ± 0.12

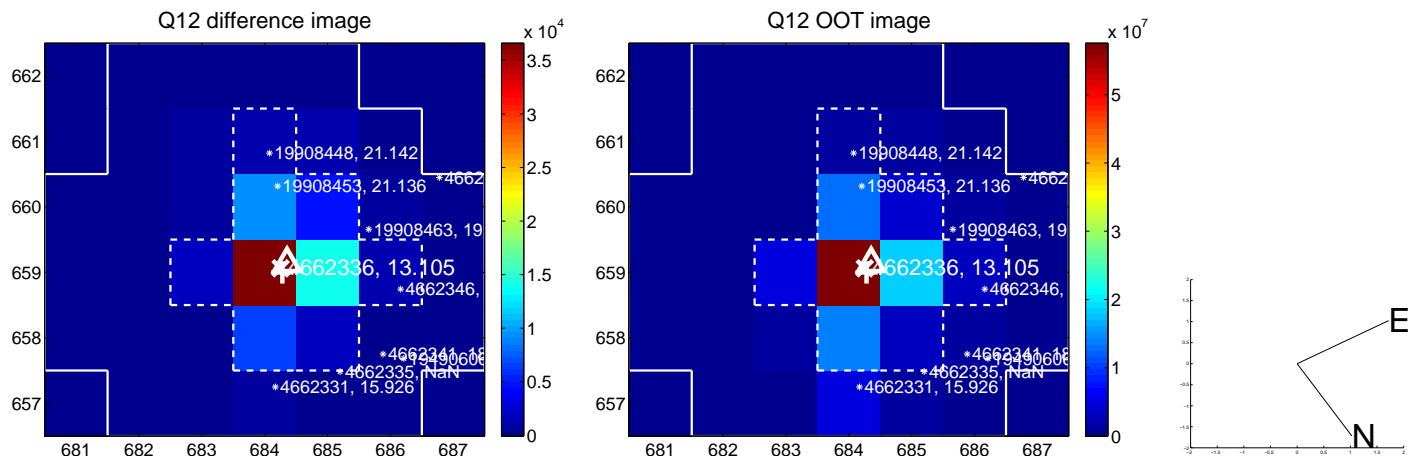
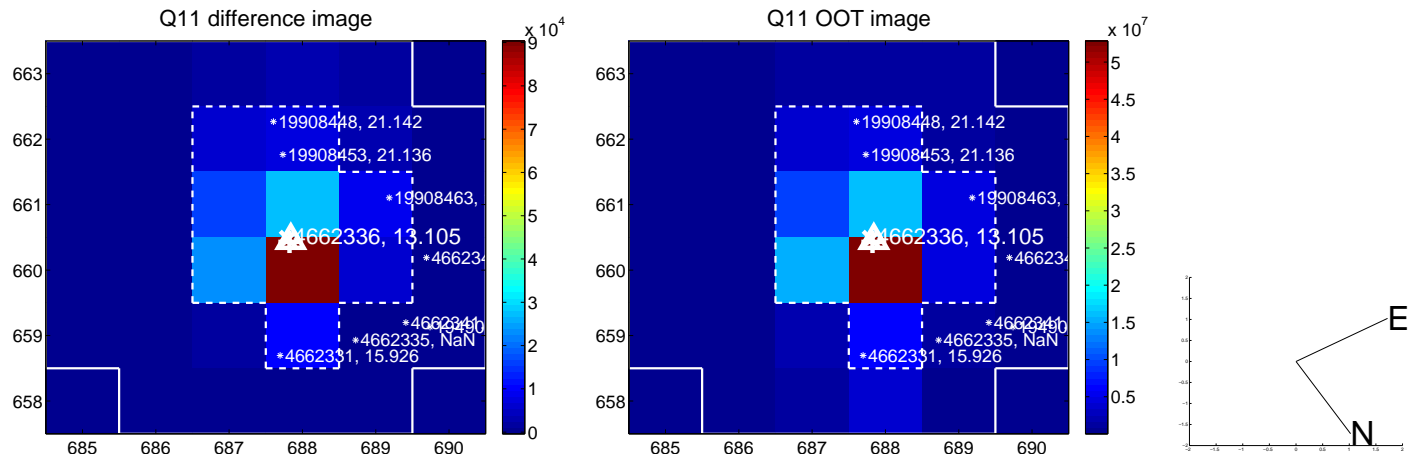
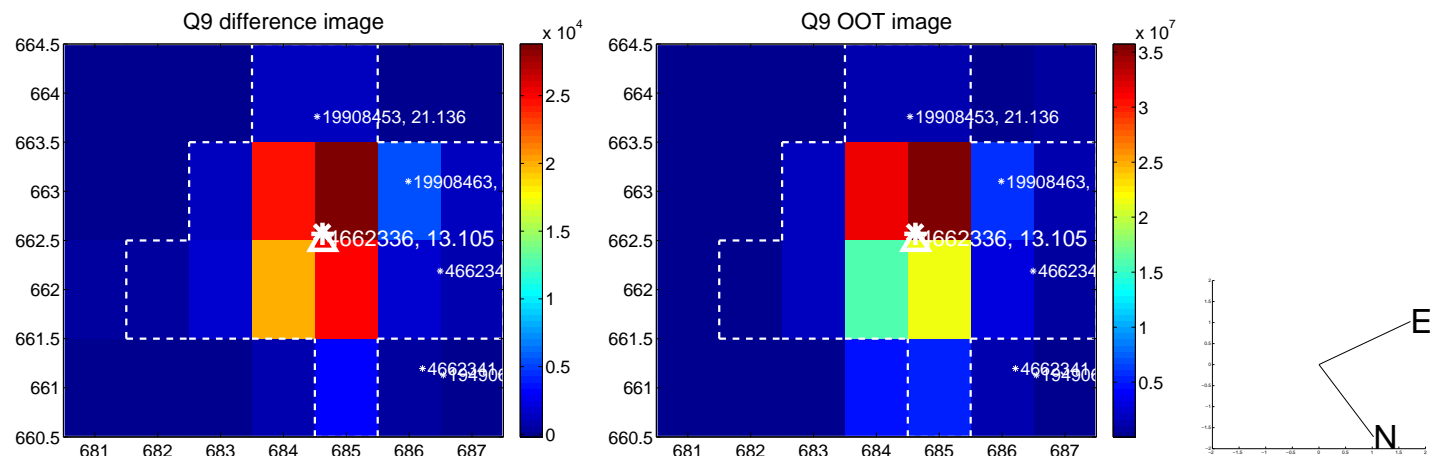


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

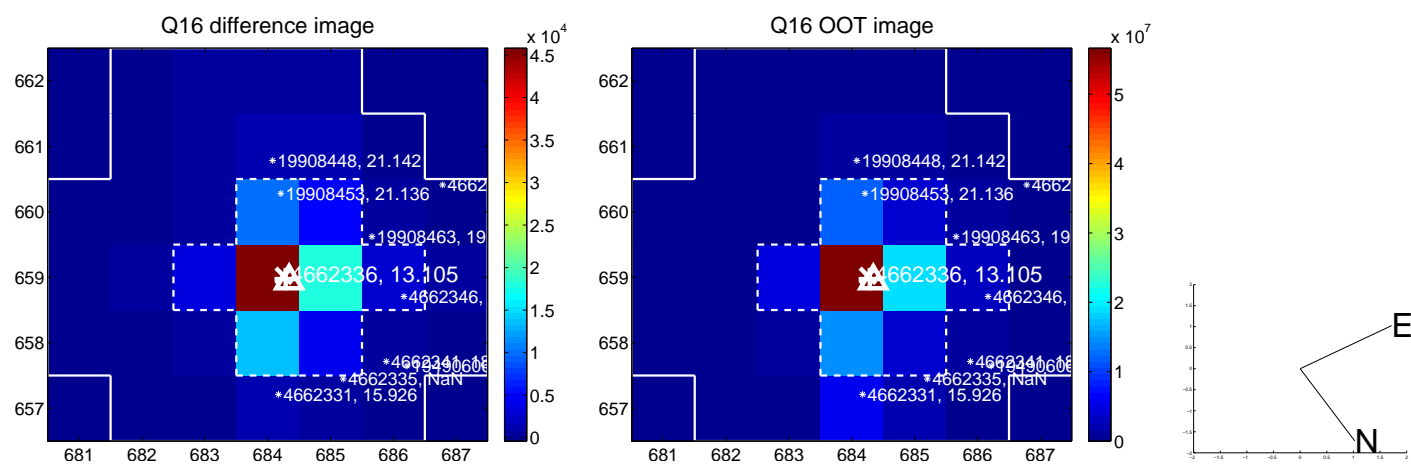
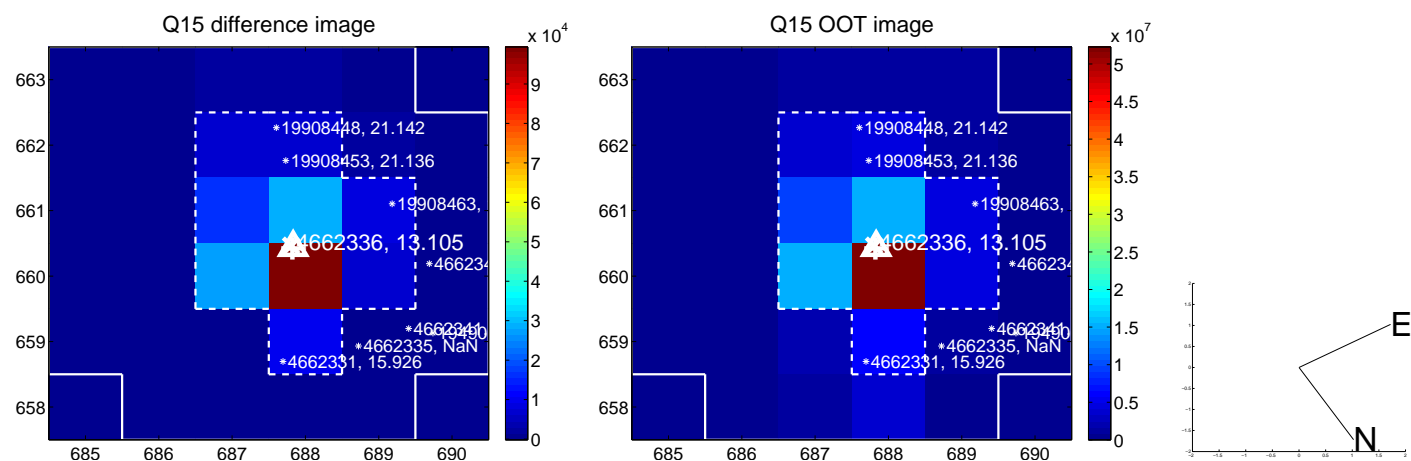
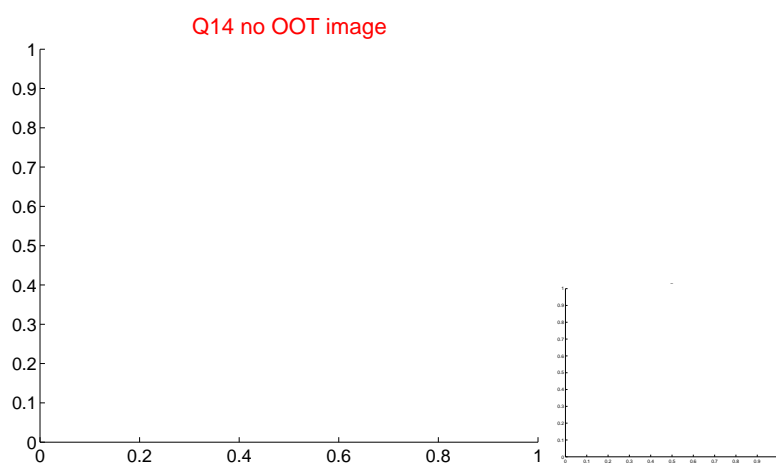
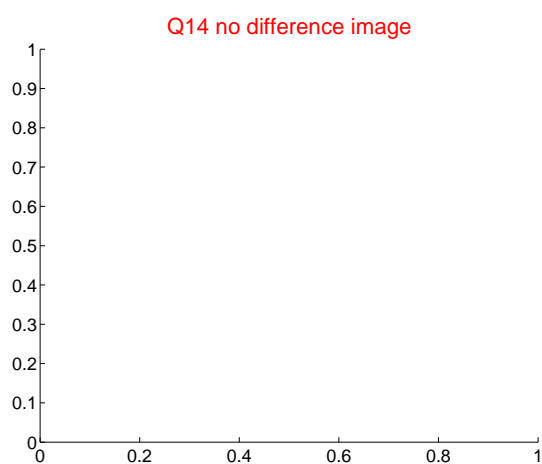
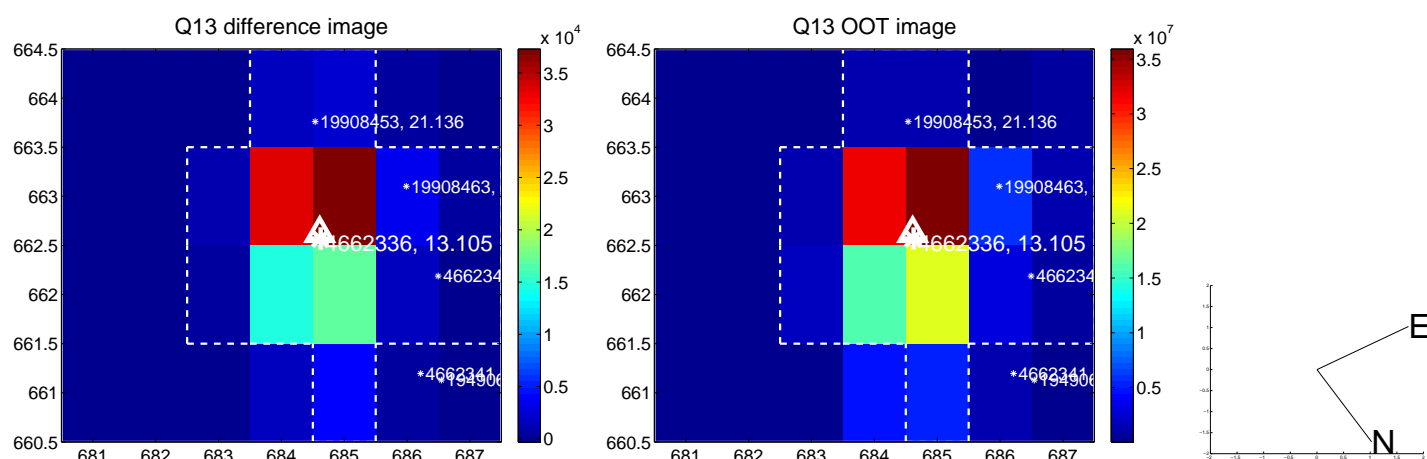
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



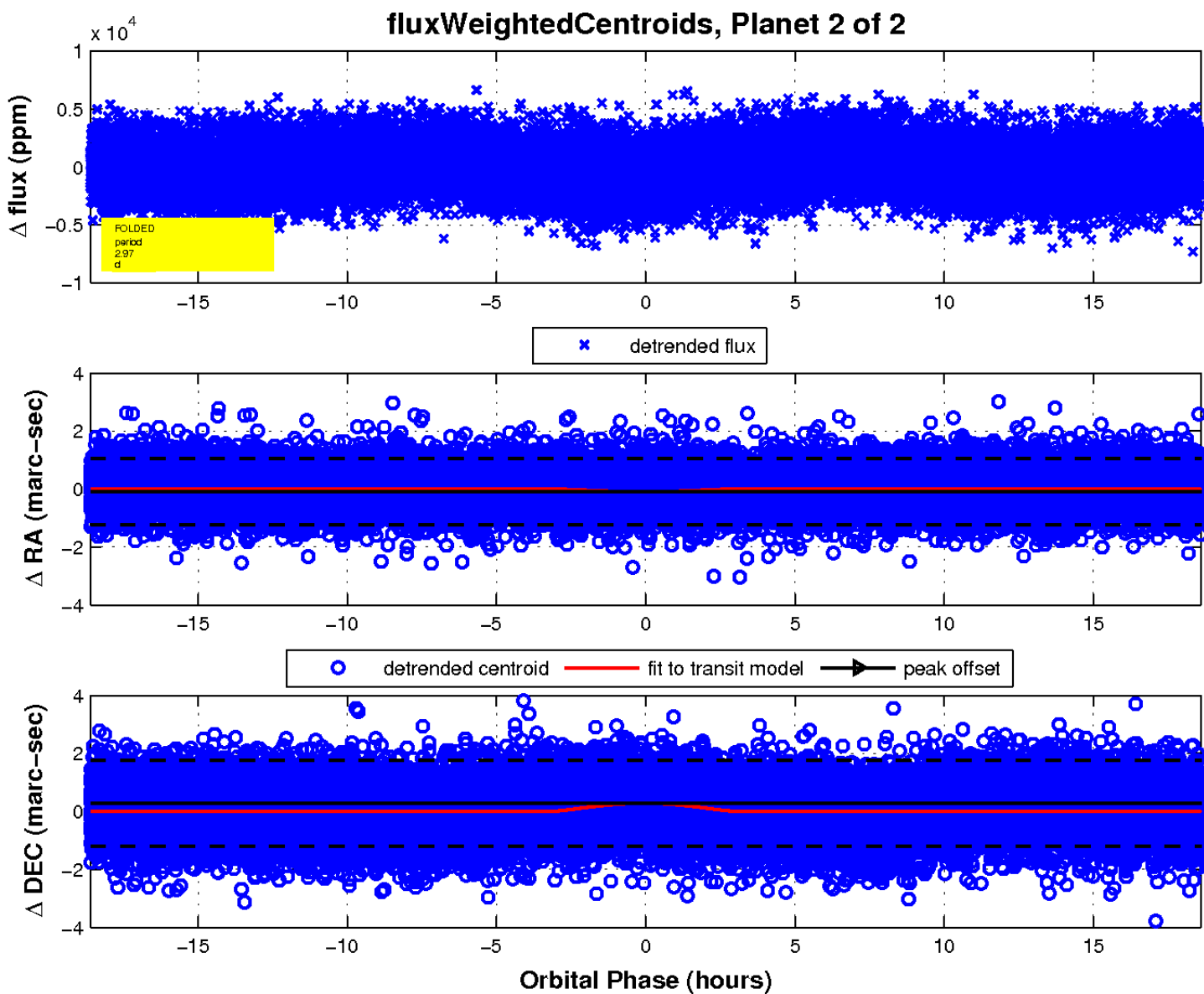
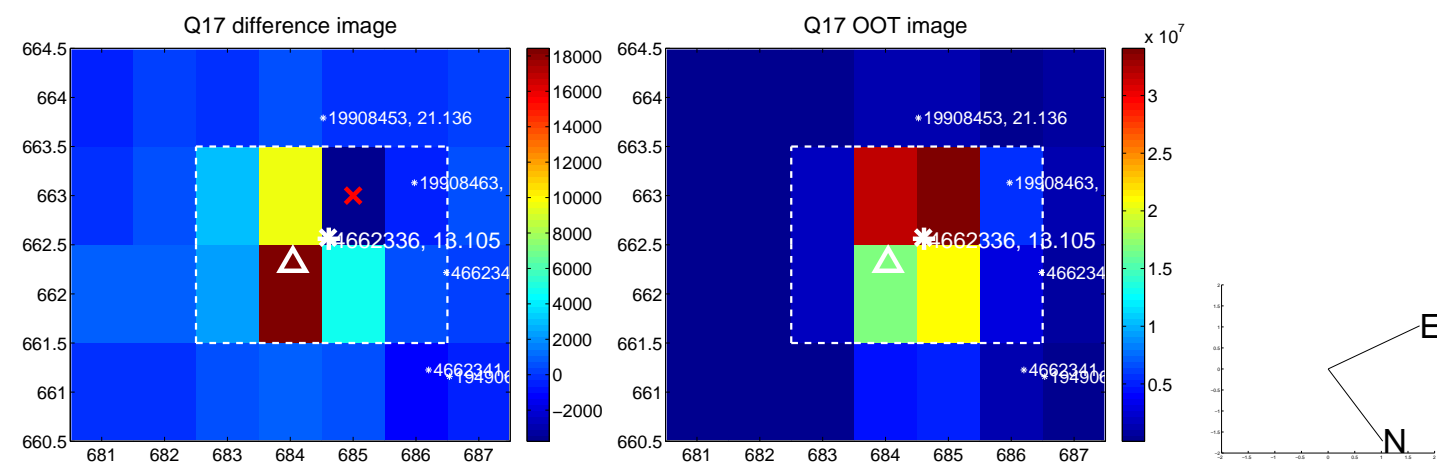
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

