

KIC 009182617

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})
009182617-01	OBS	No	0.967441	132.411713	93.2	3.579	8.4	8.5	1.99	6103	2.24	15622.90
009182617-02	OBS	No	0.967427	131.916021	66.9	4.366	11.1	6.4	1.99	6103	1.74	15623.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009182617-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009182617-02	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

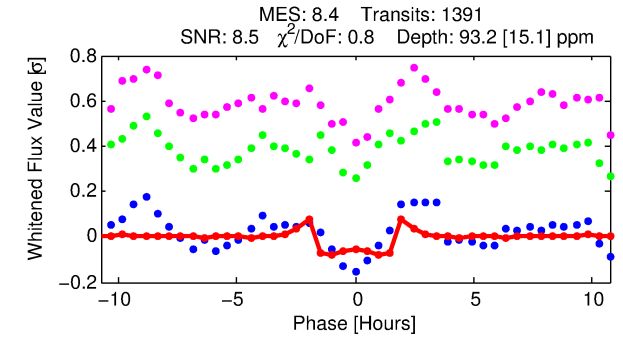
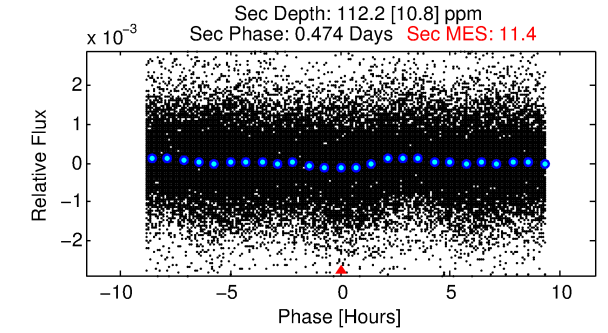
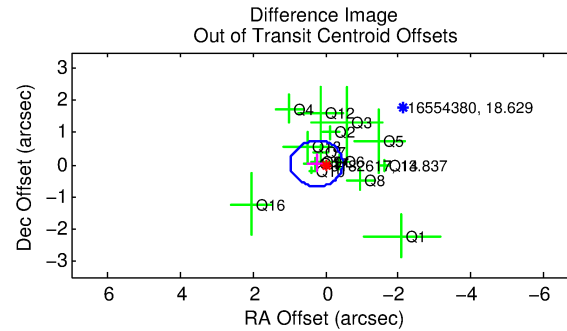
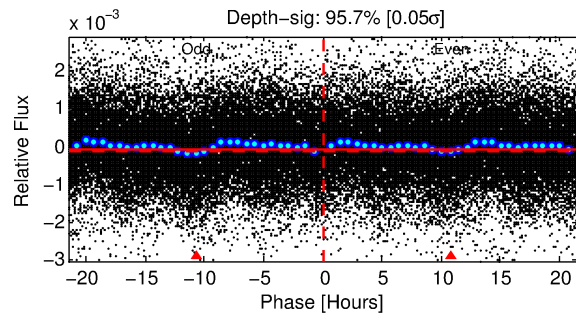
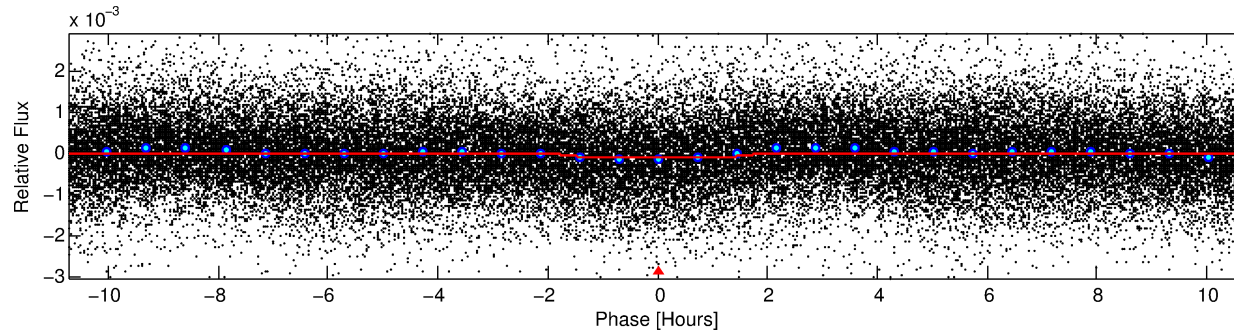
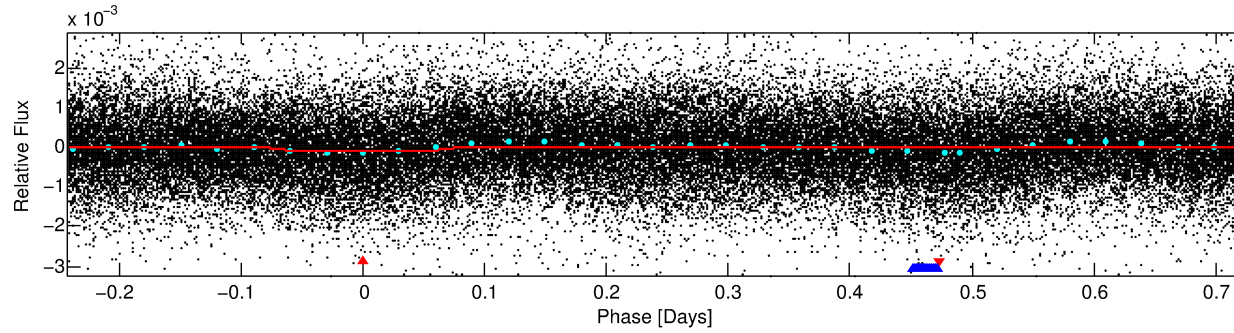
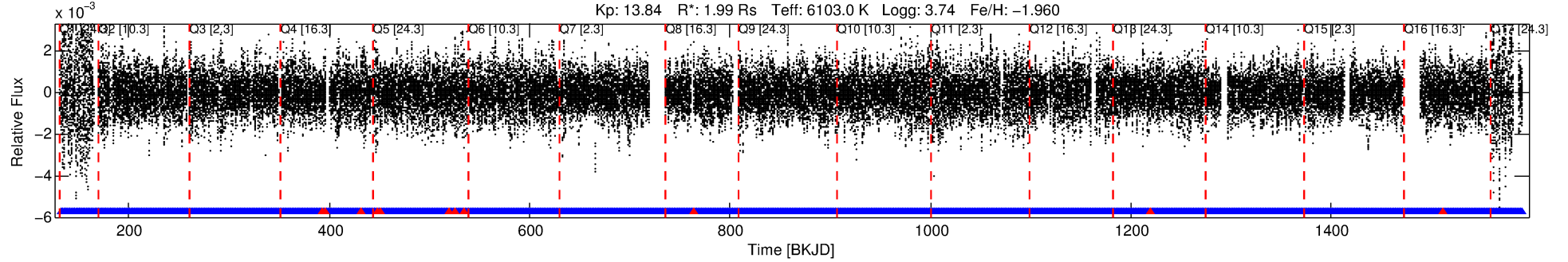
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009182617-01

No Significant Match Found

DV One-Page Summary

KIC: 9182617 Candidate: 1 of 2 Period: 0.967 d



DV Fit Results:

Period = 0.96744 [0.00001] d
Epoch = 132.4117 [0.0018] BKJD
Rp/R* = 0.0103 [0.0022]
a/R* = 1.34 [0.64]
b = 0.90 [0.23]
Seff = 15622.89 [20292.98]
Teq = 2851 [926] K
Rp = 2.24 [1.50] Re
a = 0.0178 [0.0131] AU
Ag = 3.87 [5.23] [0.55 σ]
Teffp = 6183 [787] K [2.74 σ]

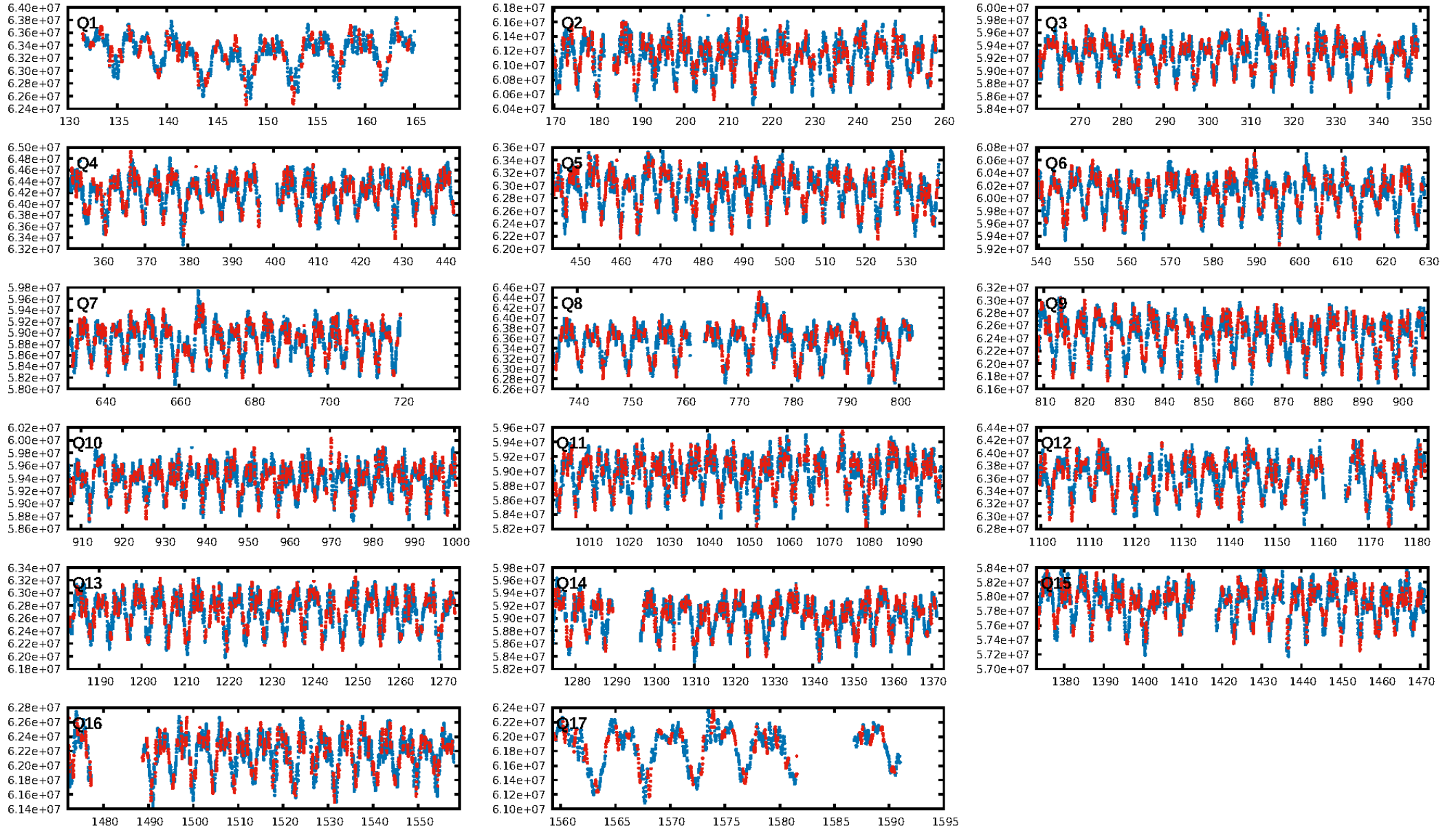
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1316/1328]
GhostDiagnostic-chr: 0.709
Centroid-sig: 11.7%
Centroid-so: 0.826 arcsec [1.90 σ]
OotOffset-rm: 0.248 arcsec [1.04 σ]
KicOffset-rm: 0.317 arcsec [1.13 σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 1.00 [17/17]

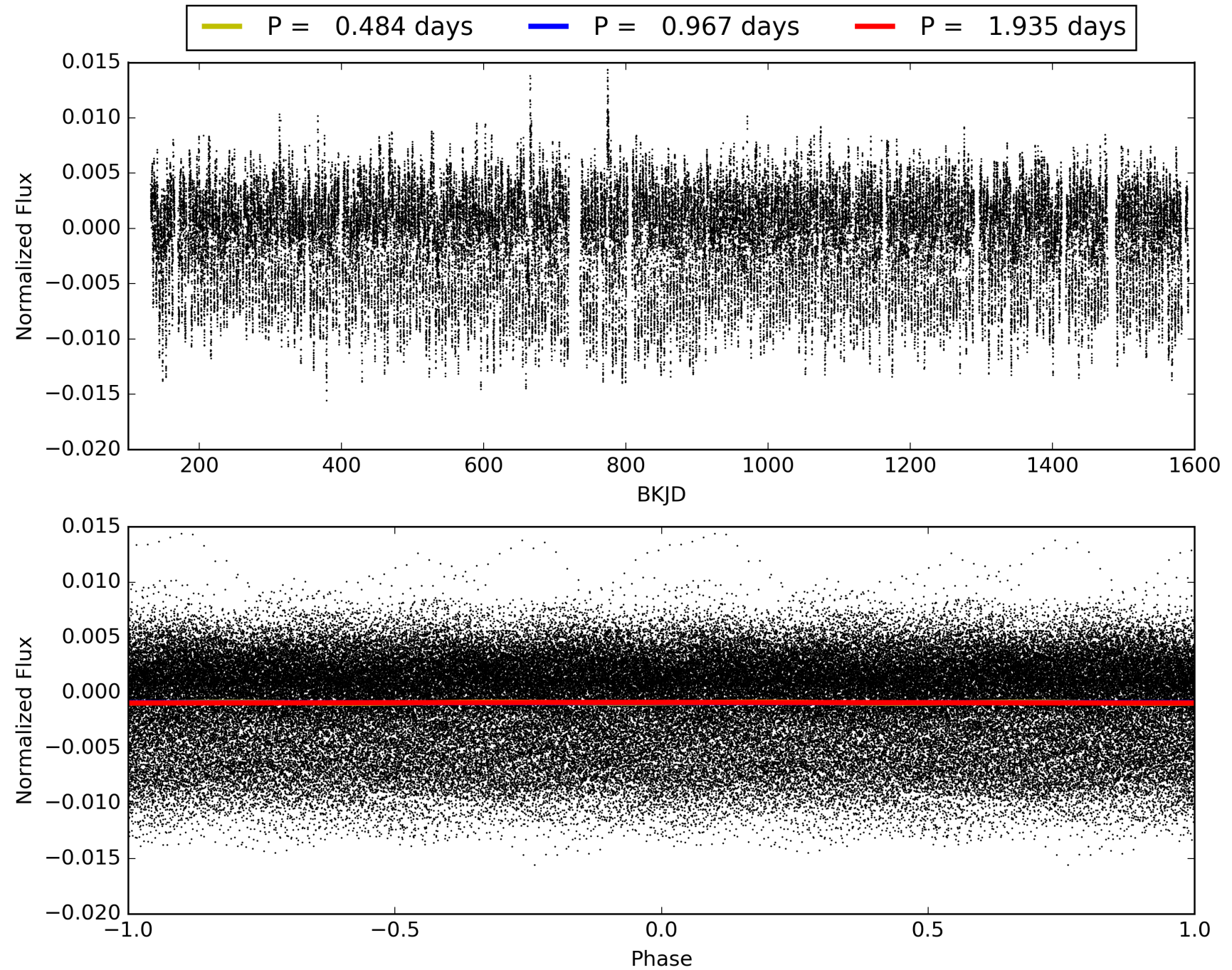
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:42:47 Z

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

TCE 009182617-01, PDC Light Curves

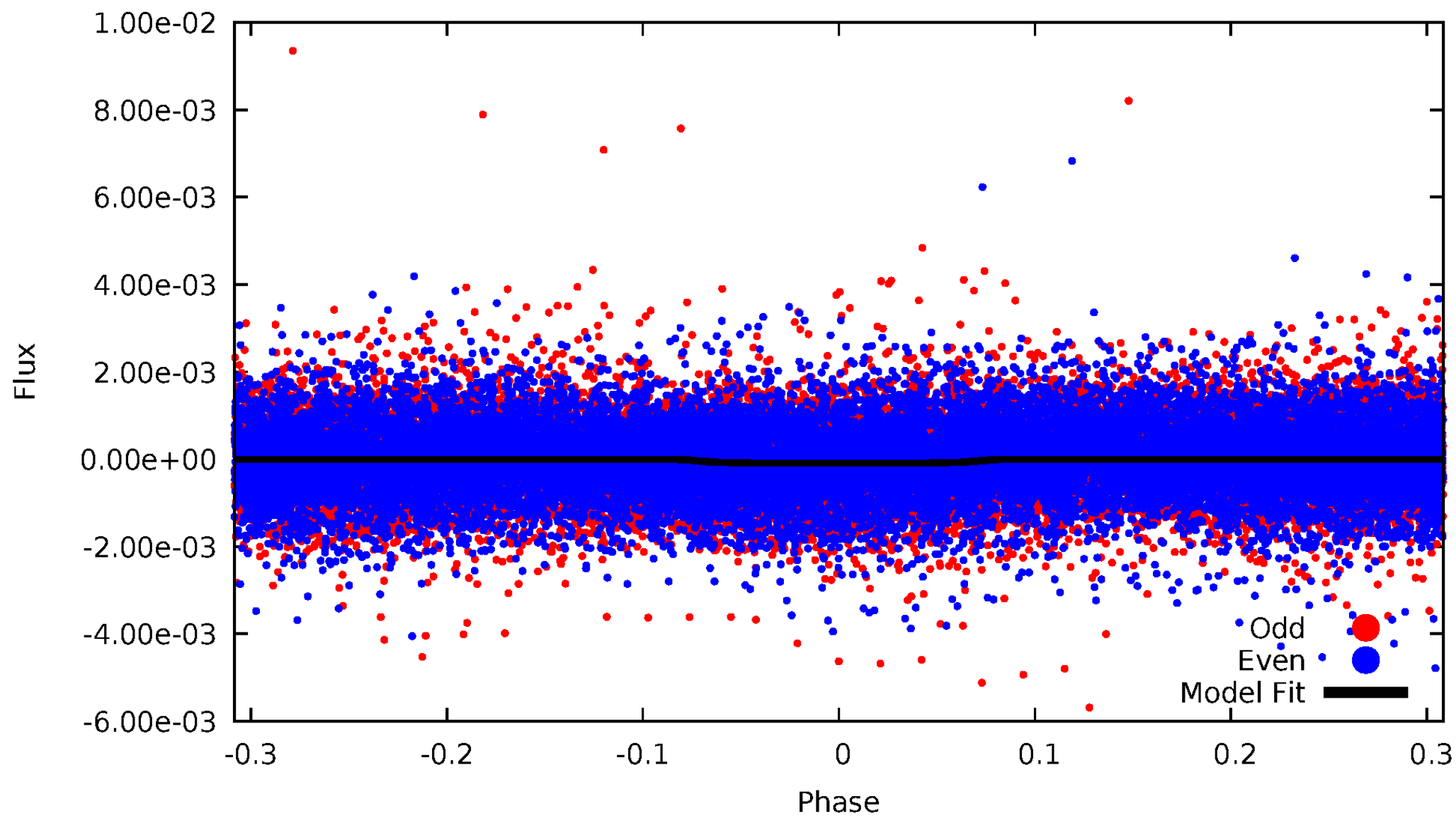


TCE 009182617-01



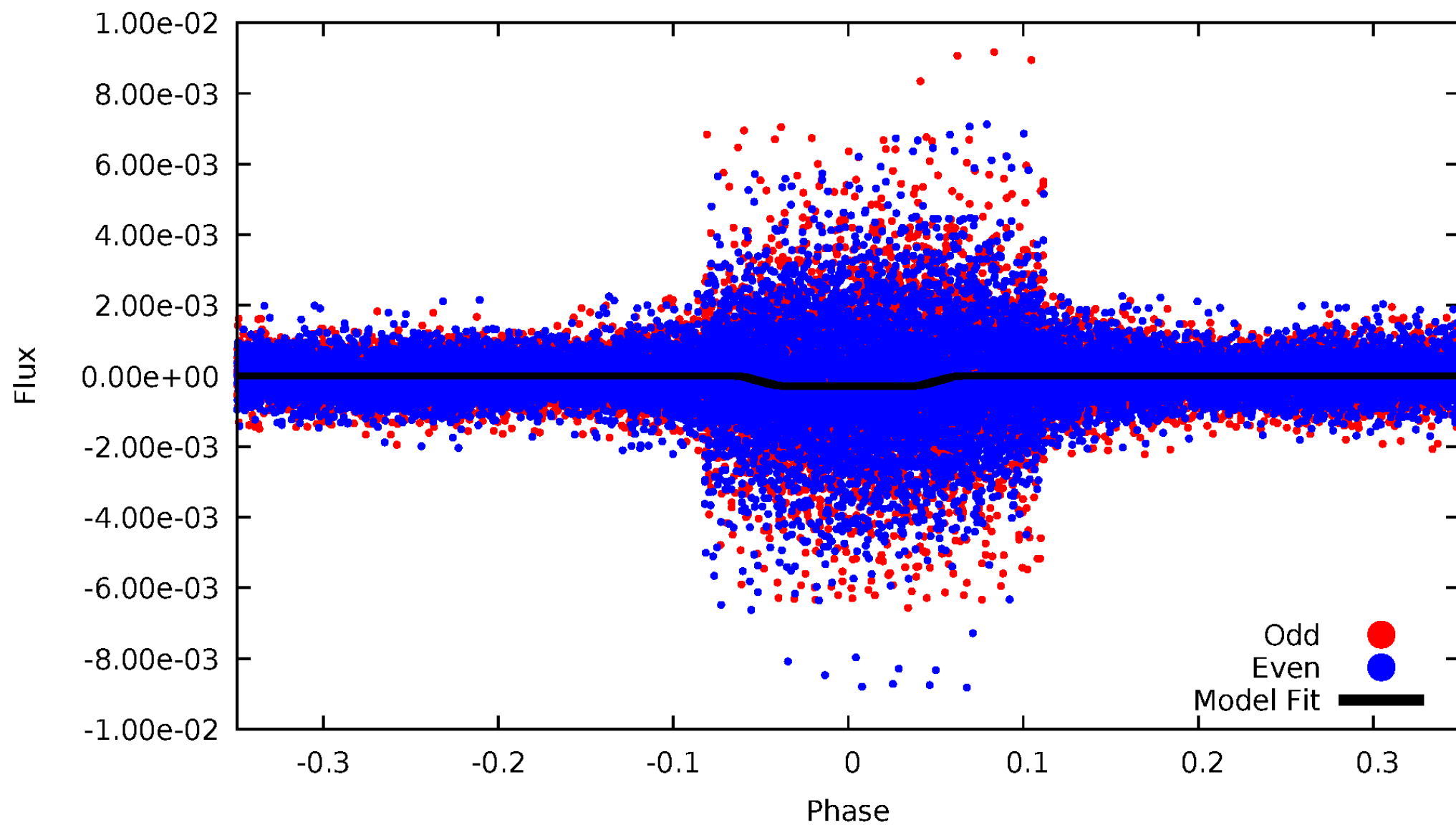
DV Odd/Even

TCE 009182617-01



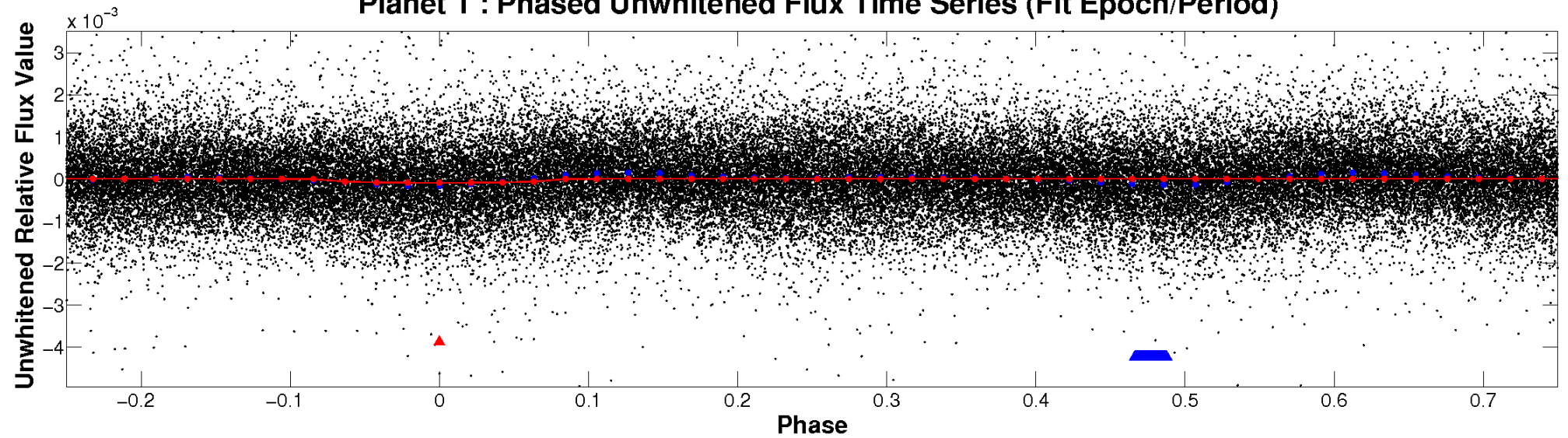
ALT Odd/Even

TCE 009182617-01

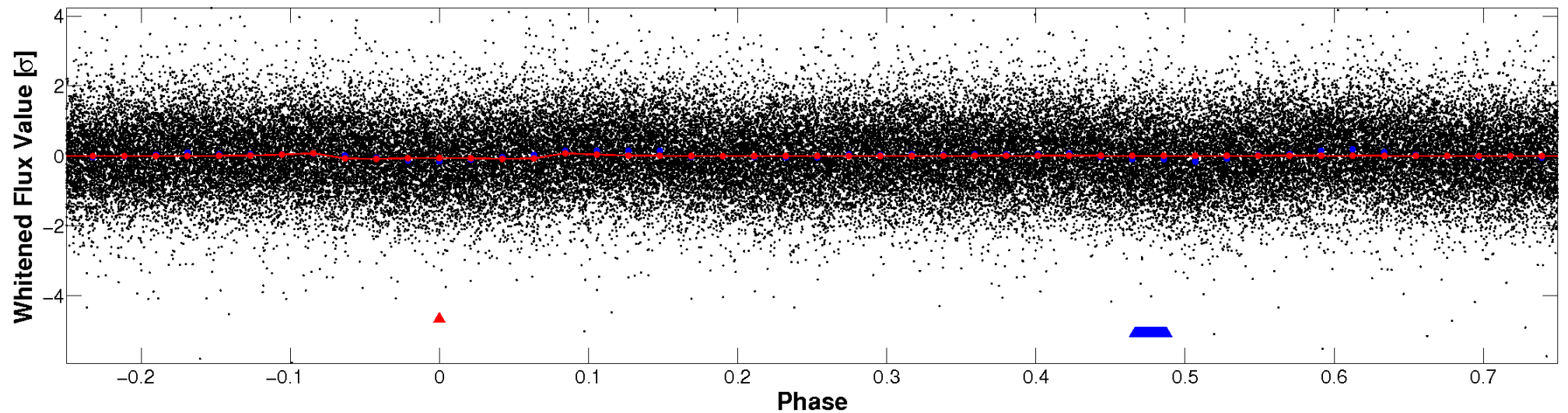


Non-Whitened Vs. Whitened Light Curve

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

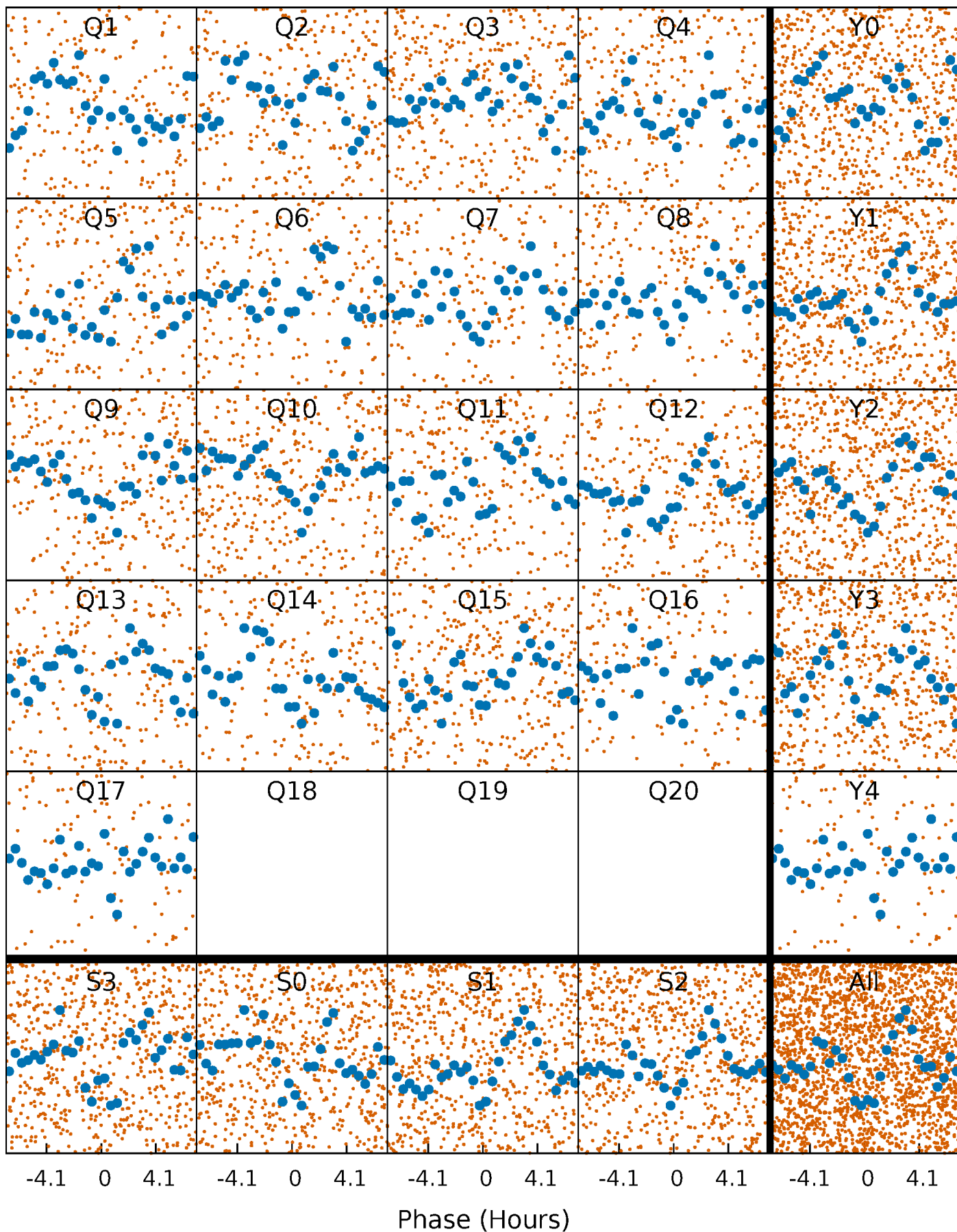


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



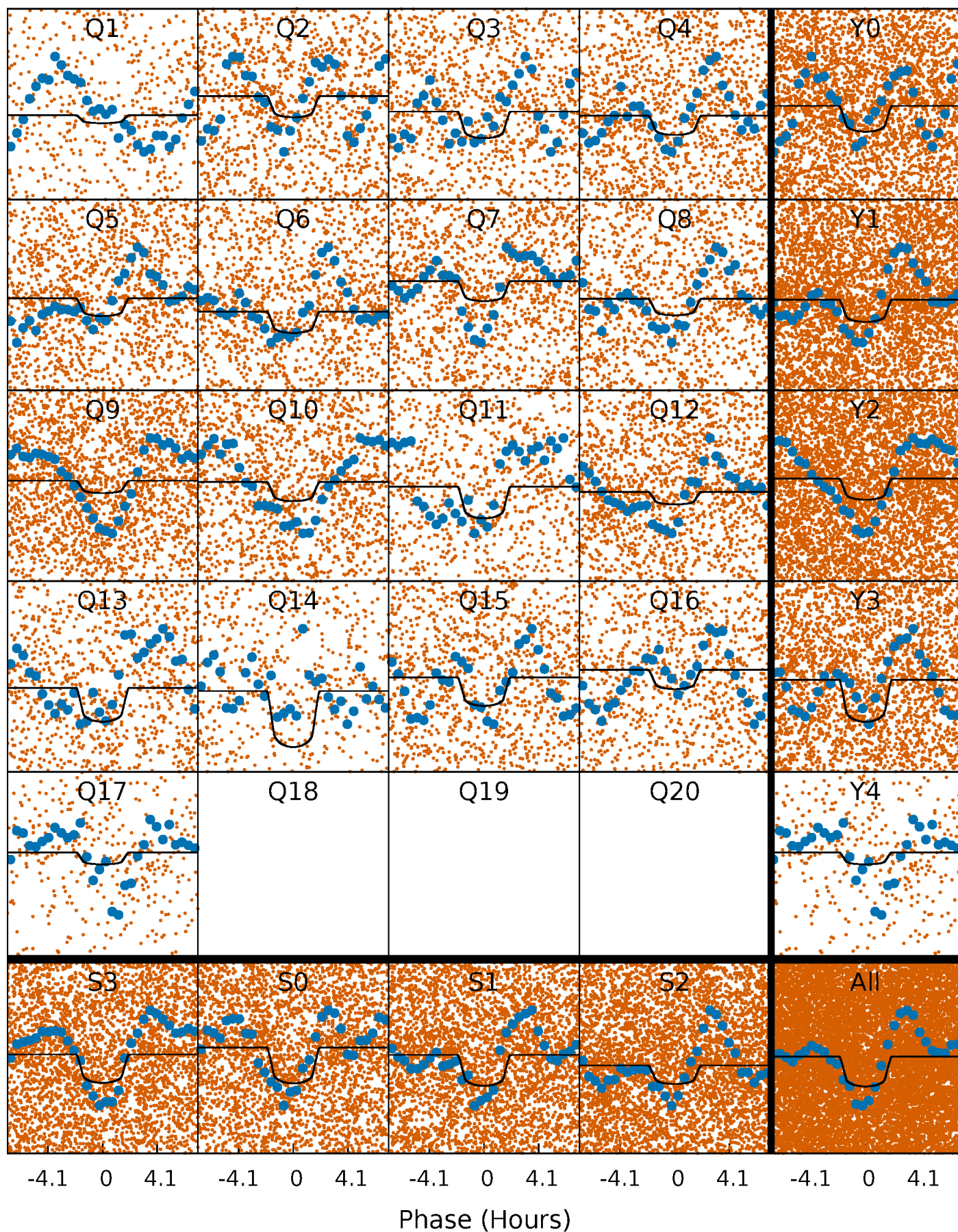
PDC Quarter-Phased Transit Curves

TCE 009182617-01 P= 0.967441 Days $T_0=132.411713$ (BKJD)



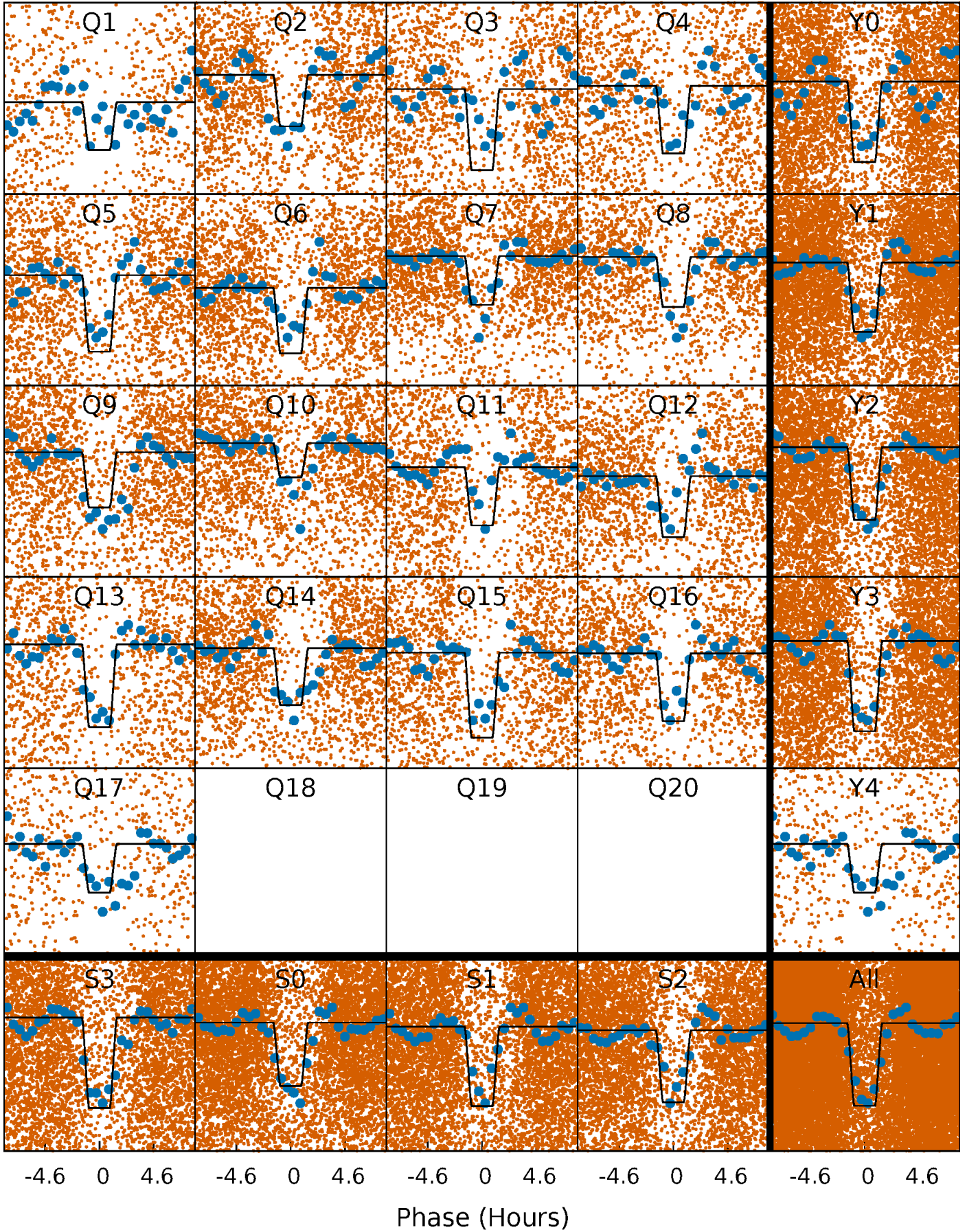
DV Quarter-Phased Transit Curves

TCE 009182617-01 P= 0.967441 Days $T_0=132.411713$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

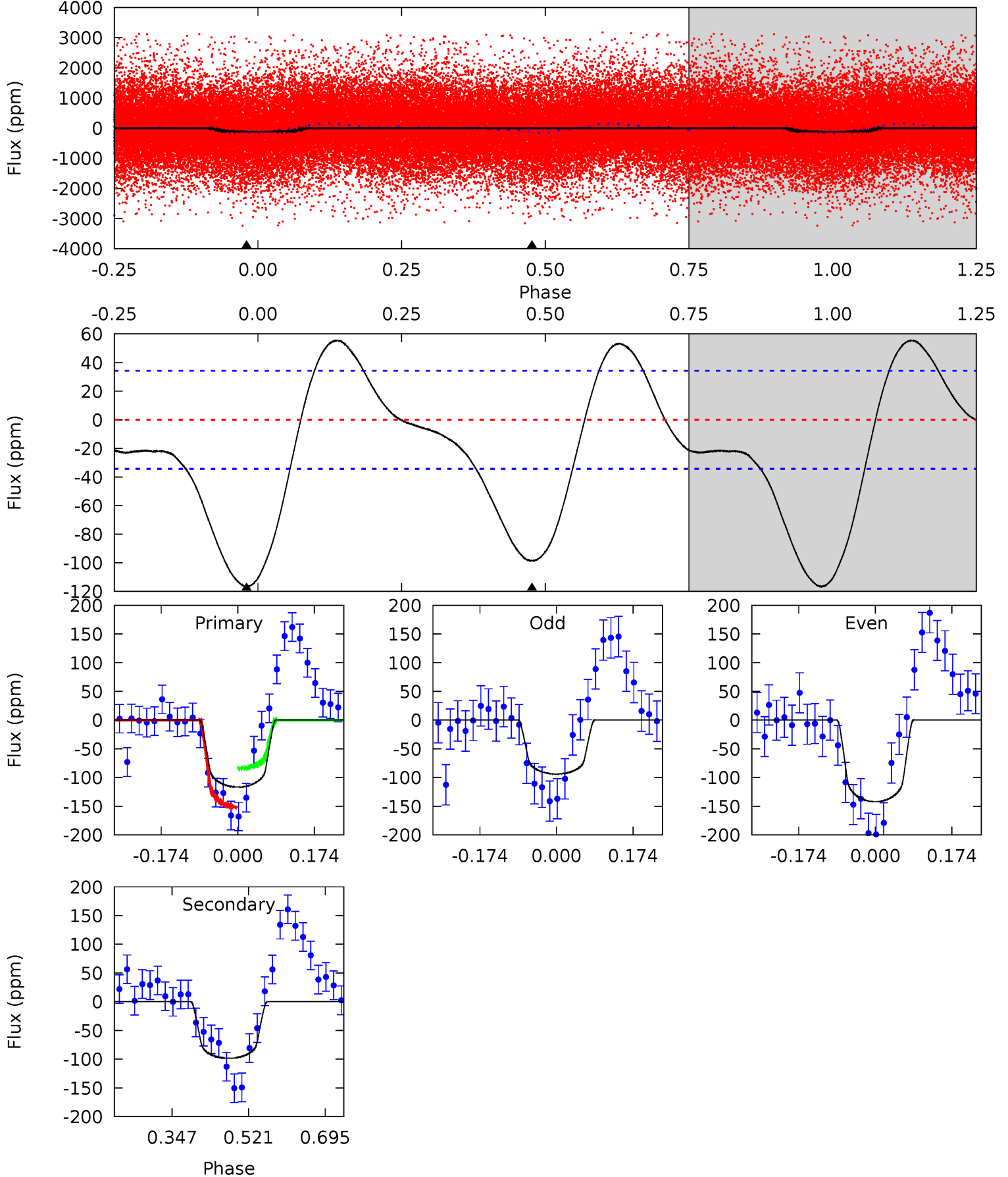
TCE 009182617-01 P= 0.967455 Days $T_0=132.396457$ (BKJD)



DV Model-Shift Uniqueness Test

009182617-01, P = 0.967441 Days, E = 131.444272 Days

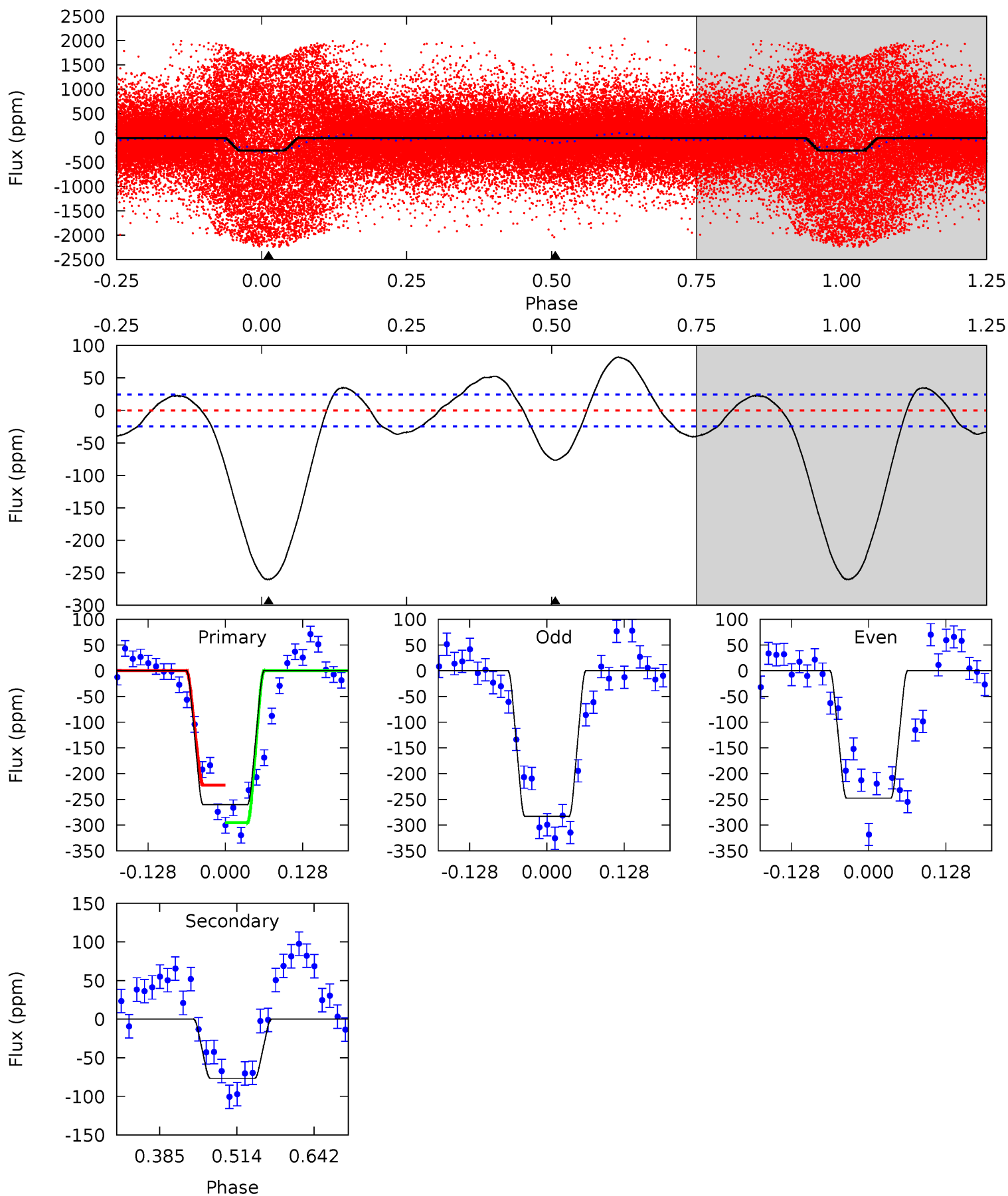
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	12.8	0	0	4.45	1.36	2.93	15.1	15.1	12.8	12.8	3.13	1.03	0.32	4.31



Alt Model-Shift Uniqueness Test

009182617-01, P = 0.967455 Days, E = 131.429002 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.9	14.1	0	0	4.51	1.52	5.29	47.9	47.9	14.1	14.1	3.23	0.97	0.24	6.66



Stellar Parameters For KIC 009182617

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6103^{+376}_{-308}	$3.742^{+0.784}_{-0.280}$	$-1.960^{+0.300}_{-0.050}$	$1.992^{+1.032}_{-1.261}$	$0.798^{+0.084}_{-0.084}$	$0.142^{+2.226}_{-0.091}$
	+6%/-5%	+21%/-7%	+15%/-3%	+52%/-63%	+11%/-11%	+1564%/-64%
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 009182617-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-99 ± 8	$2.06^{+0.84}_{-0.77}$	3882^{+566}_{-716}	5886^{+893}_{-656}	$4.144^{+6.306}_{-2.144}$
Alt.	-77 ± 5	$3.43^{+1.21}_{-1.16}$	3909^{+558}_{-735}	4302^{+442}_{-430}	$1.127^{+1.443}_{-0.504}$

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

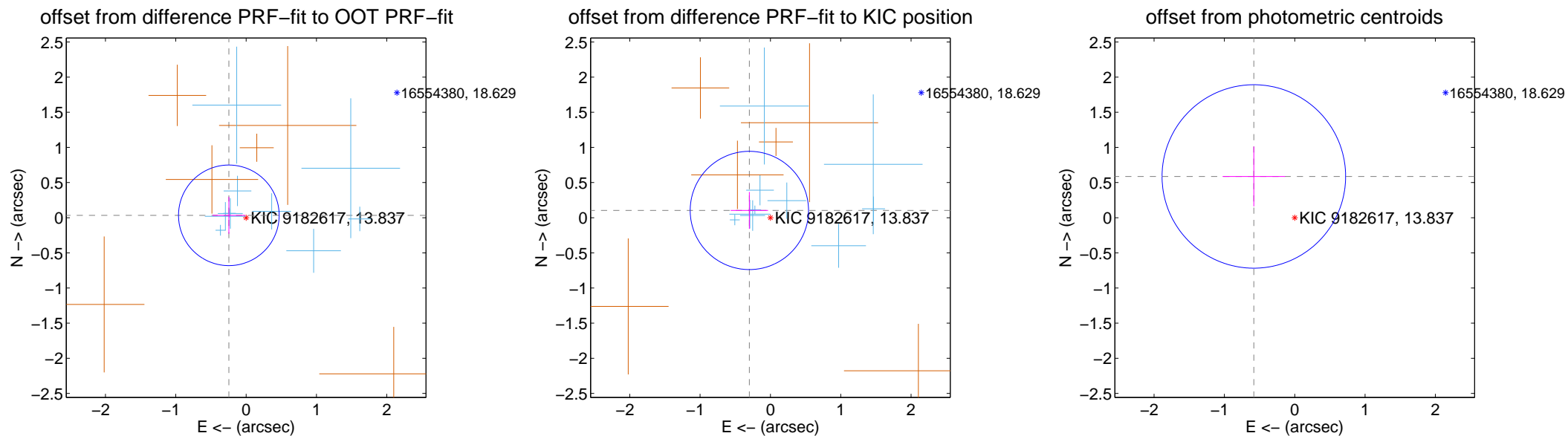
DV Centroid Data

Supplemental centroid analysis for 009182617-01. Kepler magnitude: 13.84. Transit SNR 8.47

There are 10 quarters with good PRF difference image offsets

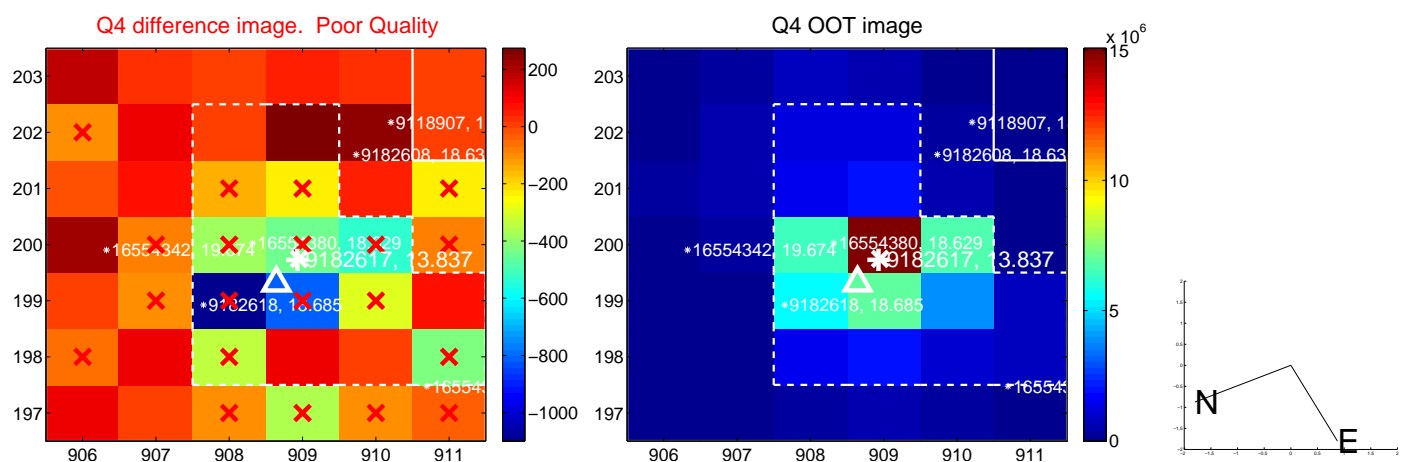
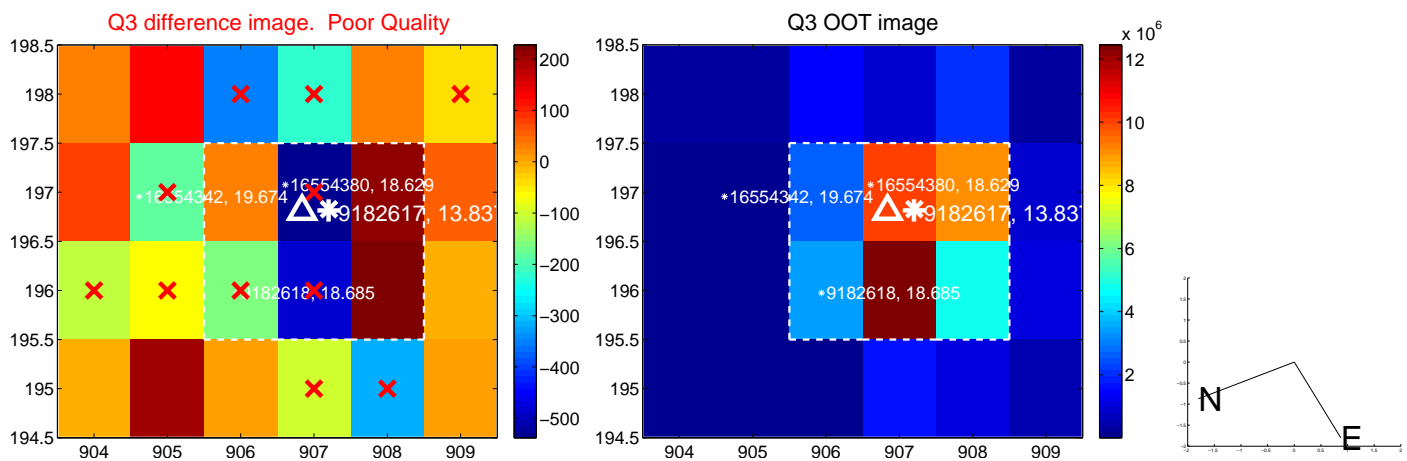
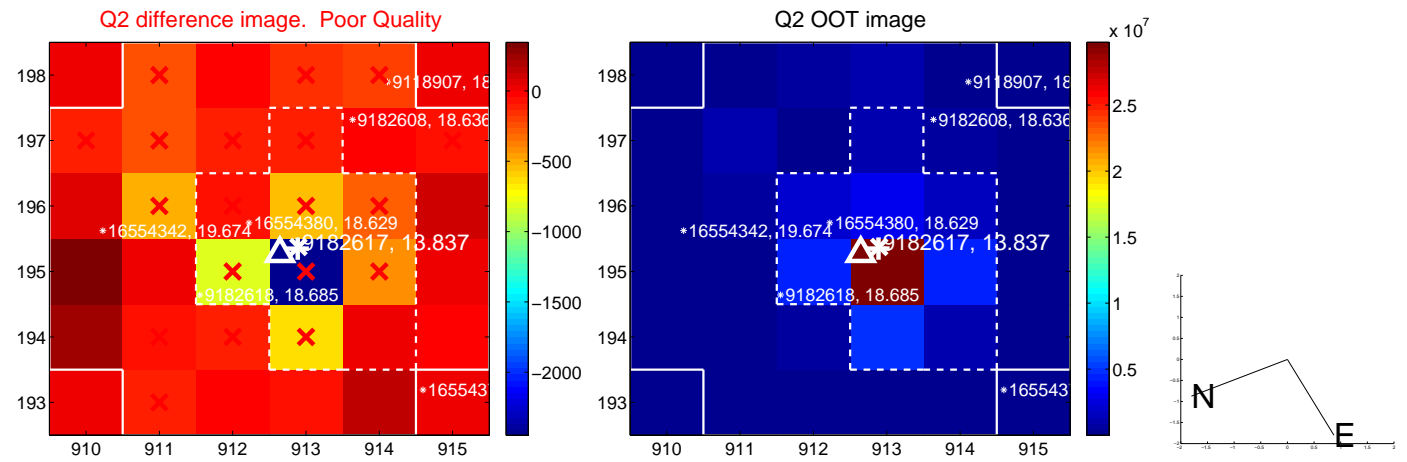
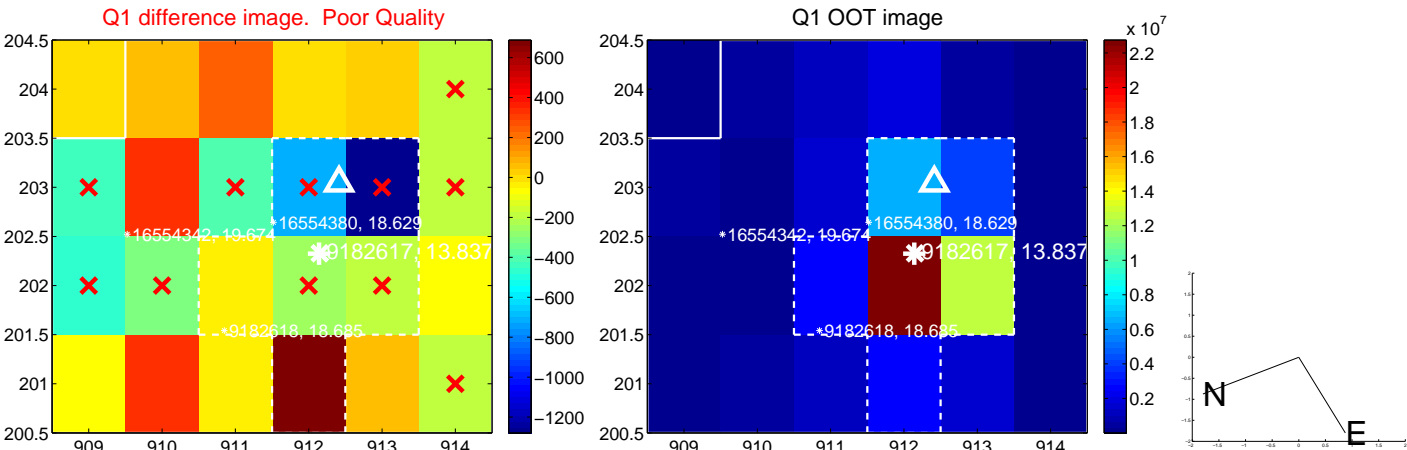
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.248 ± 0.239	1.04	0.246 ± 0.232	0.034 ± 0.262
PRF-fit source offset from KIC position	0.317 ± 0.280	1.13	0.299 ± 0.266	0.103 ± 0.263
photometric centroid source offset	0.83 ± 0.44	1.90	0.58 ± 0.44	0.59 ± 0.43

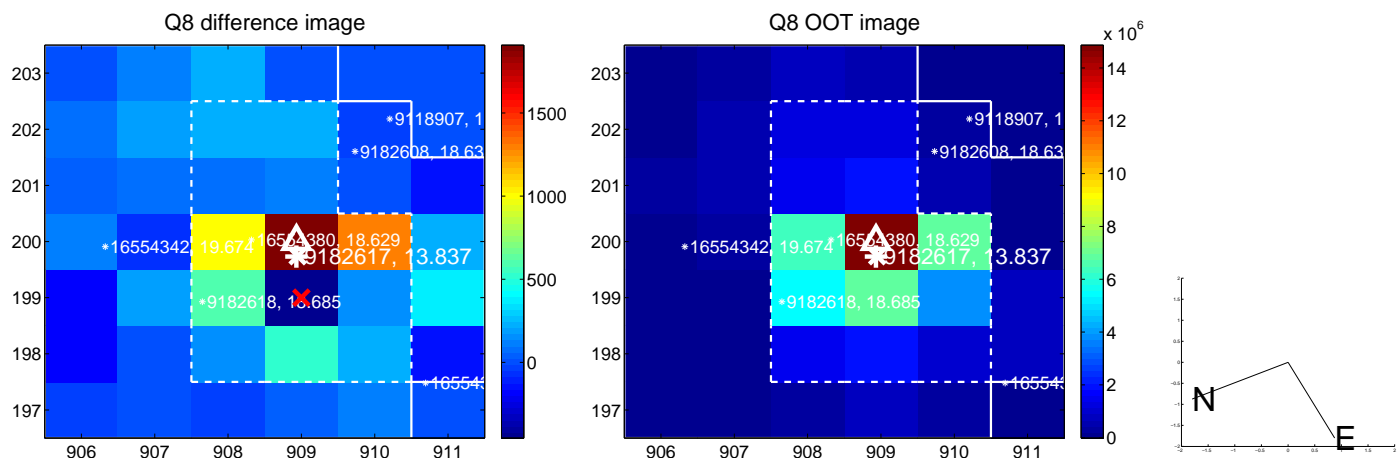
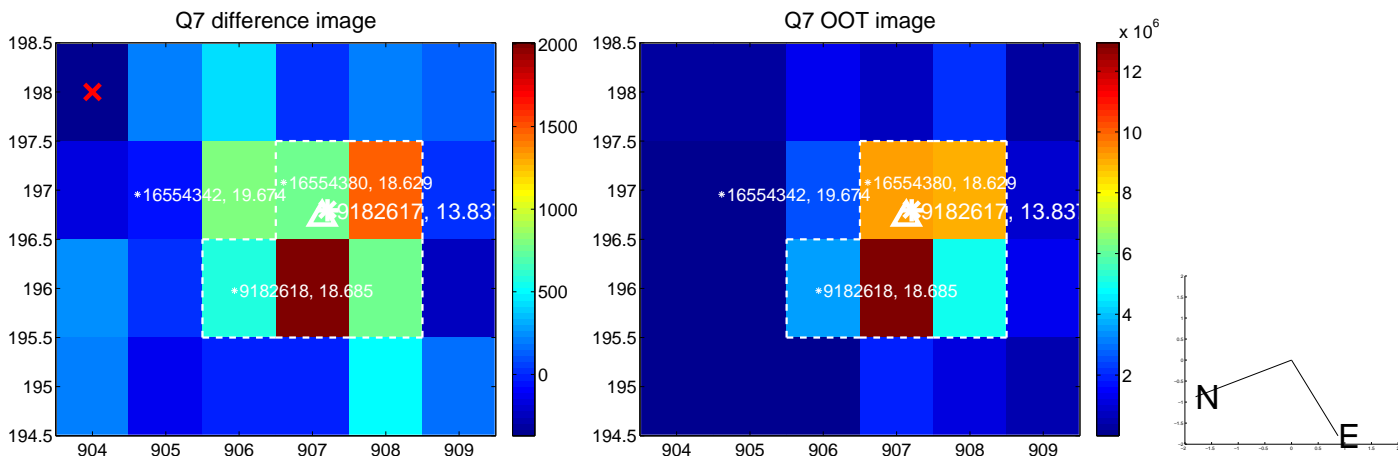
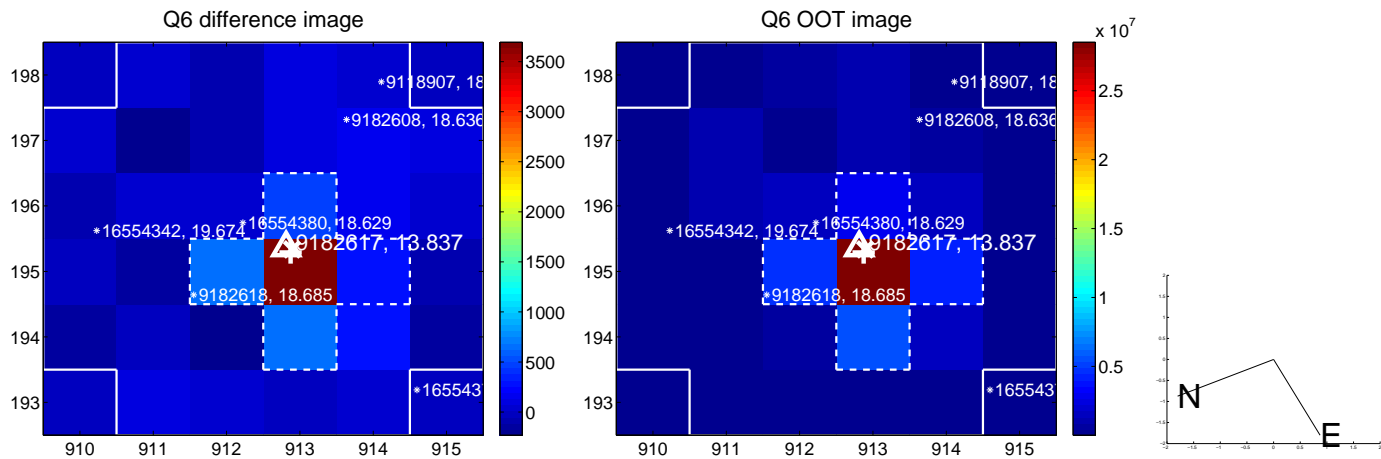
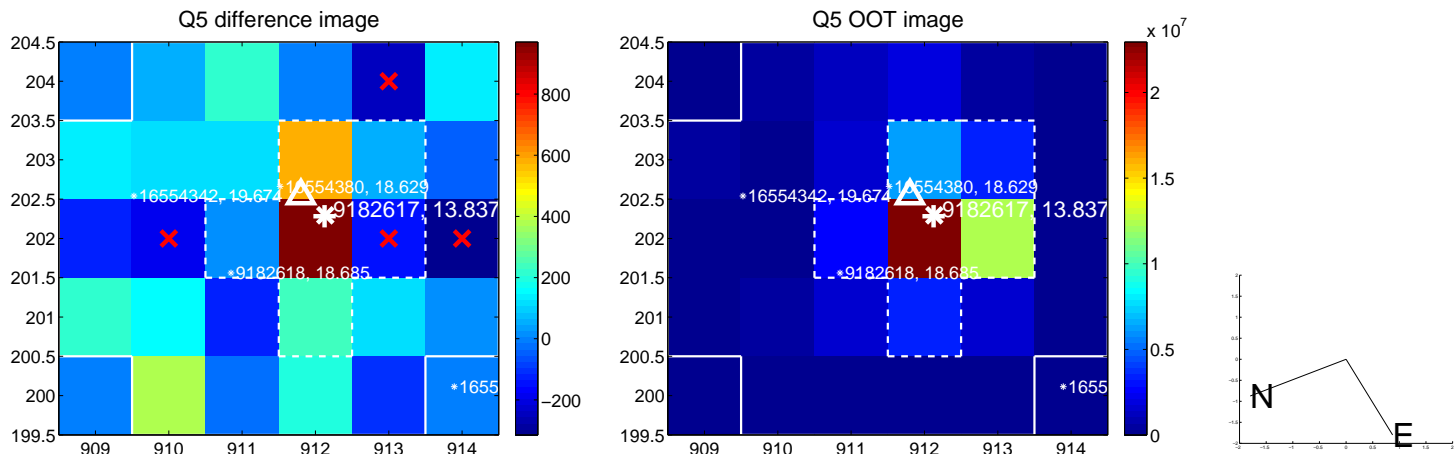


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

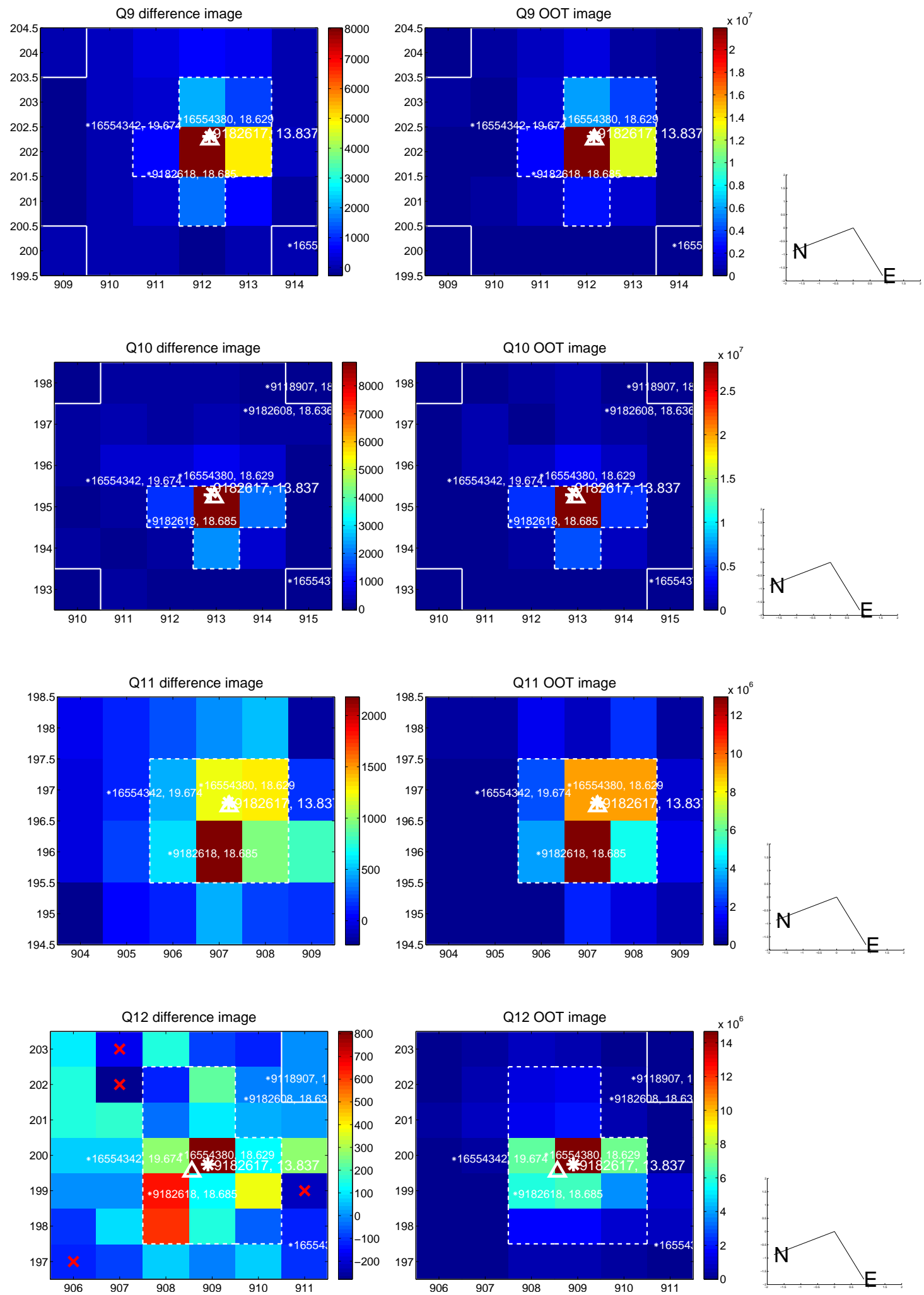
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



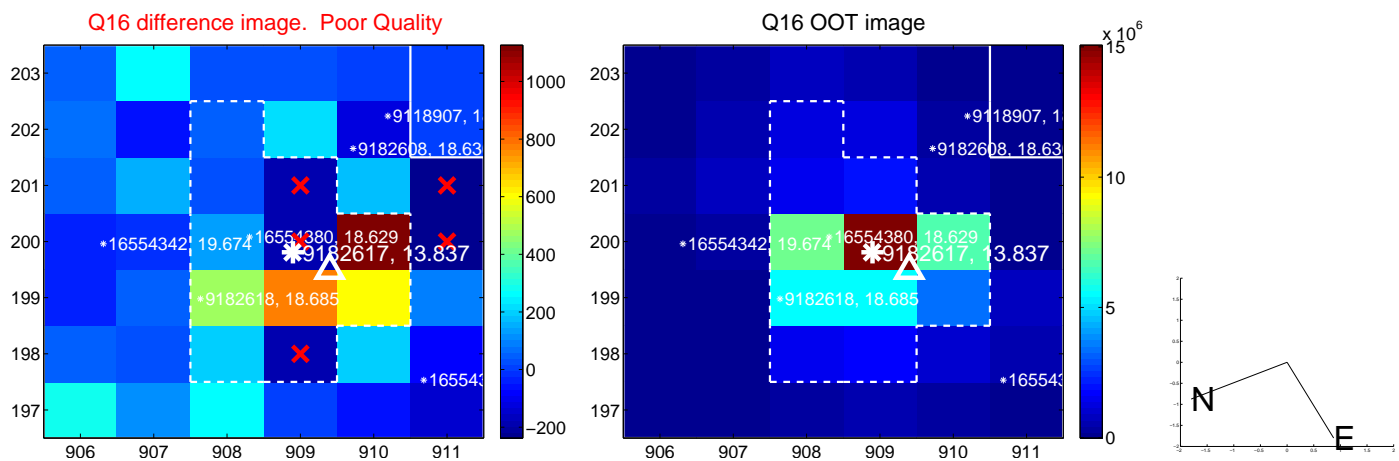
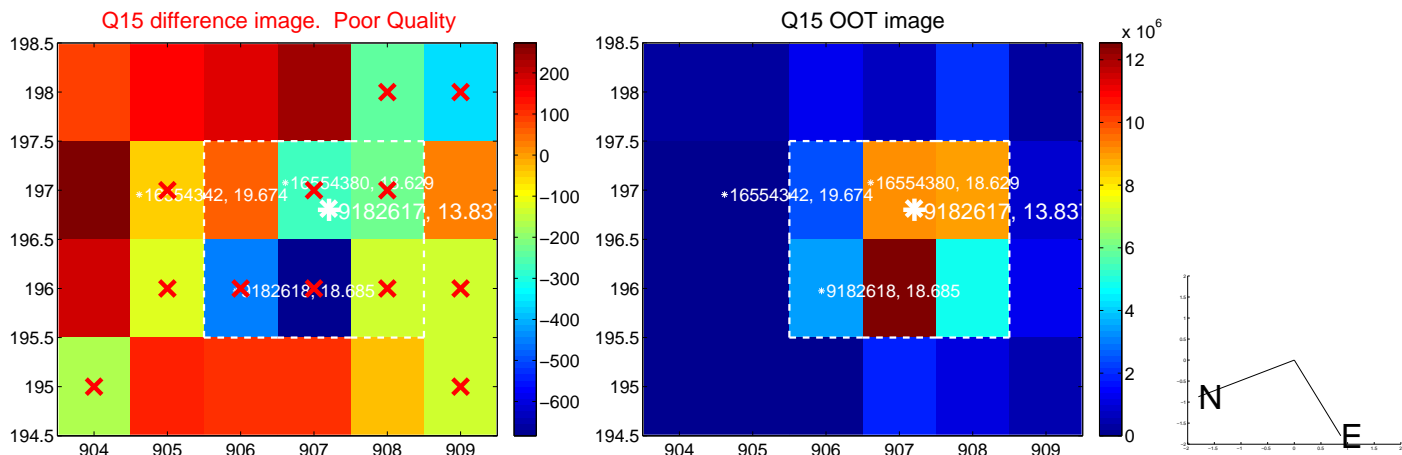
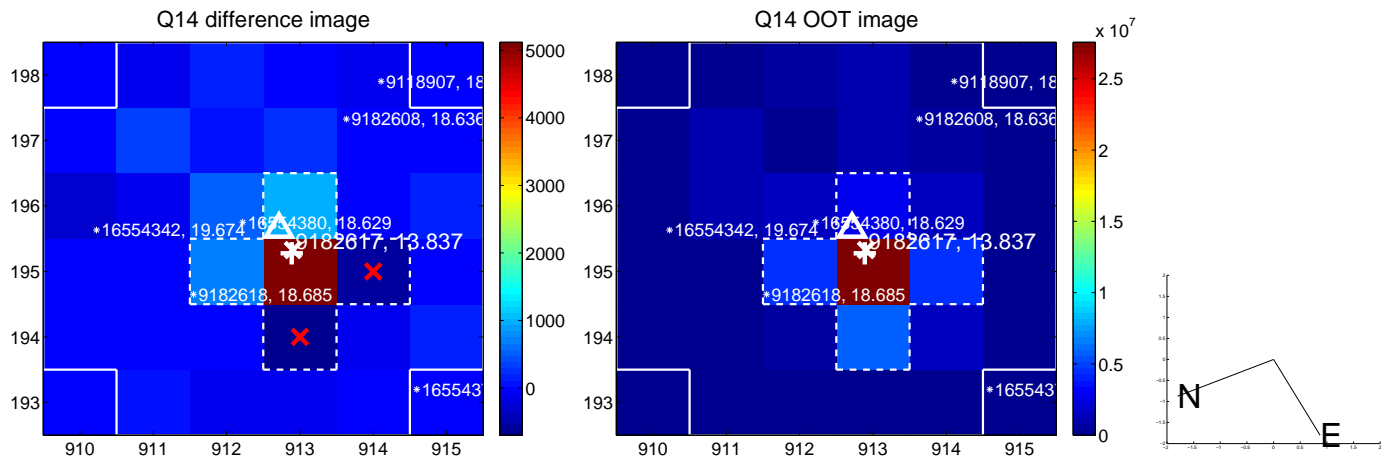
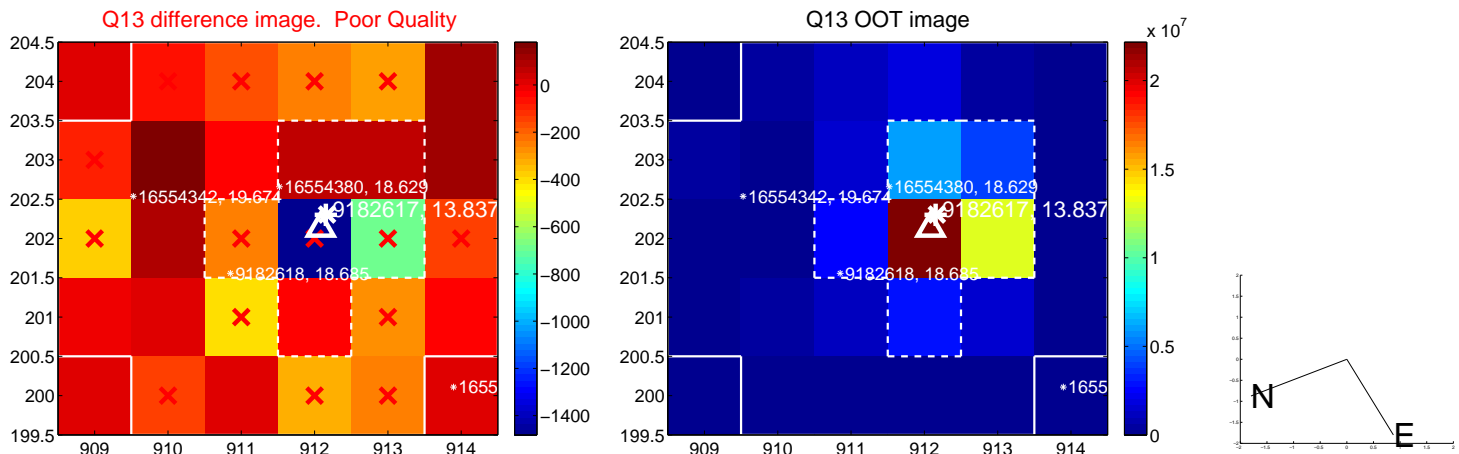
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



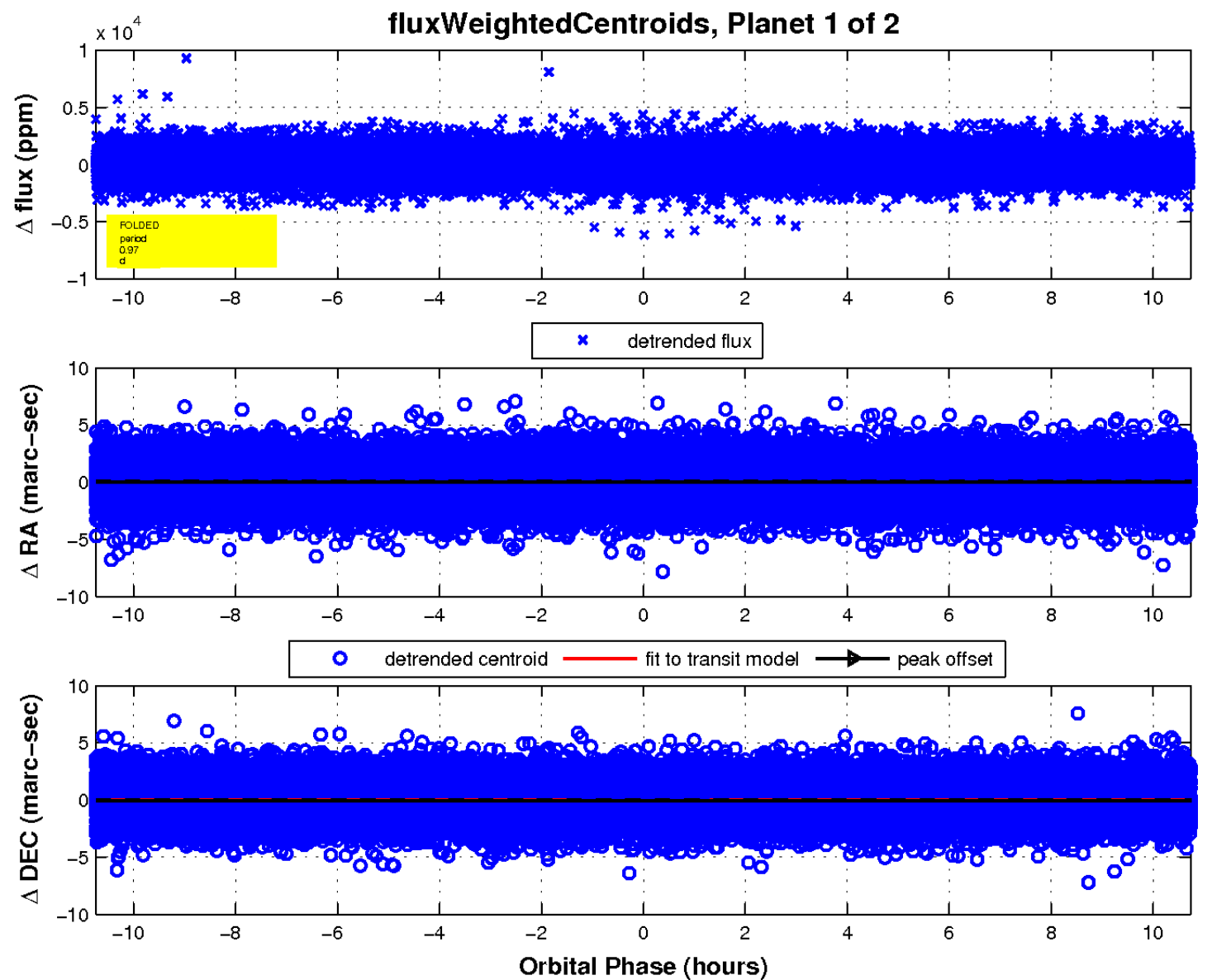
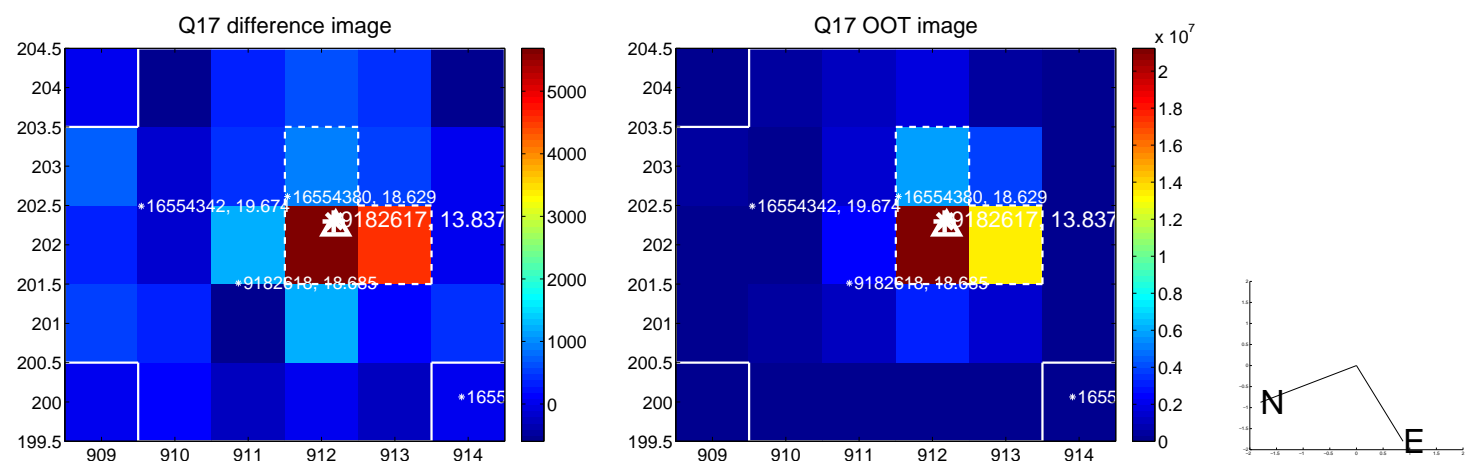
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

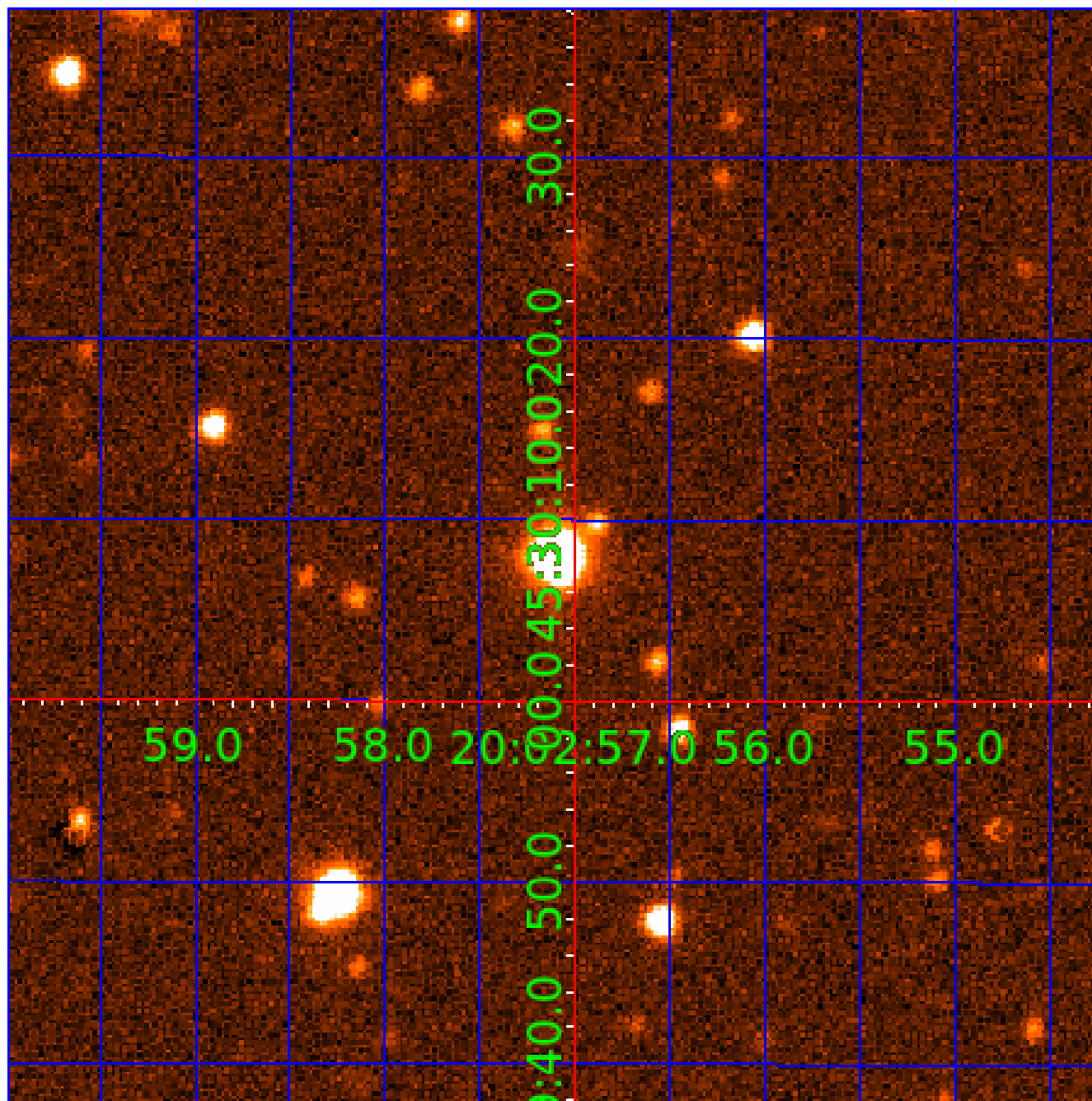


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009182617

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})
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Robovetter Results

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009182617-02	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

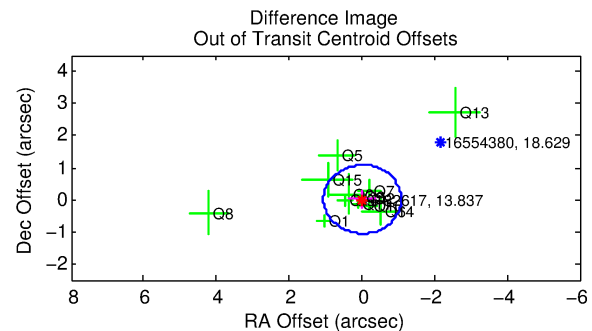
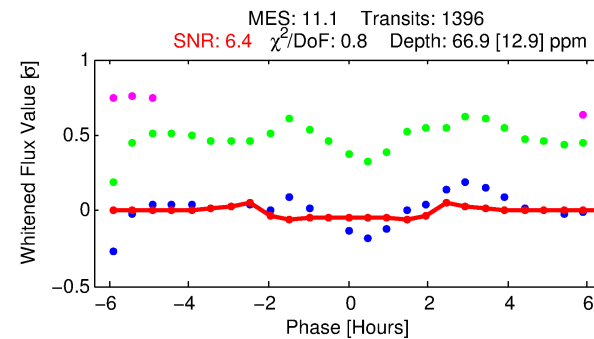
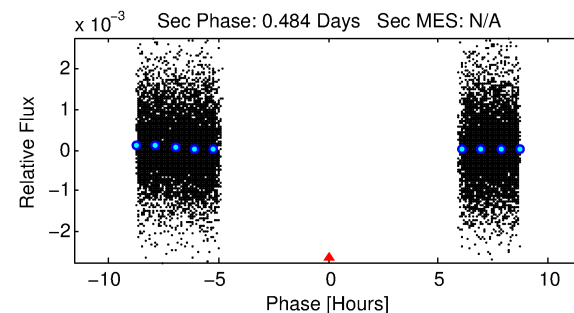
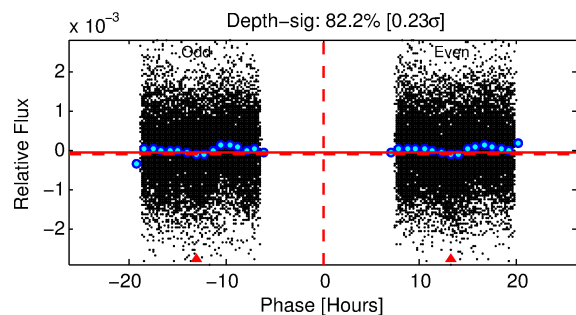
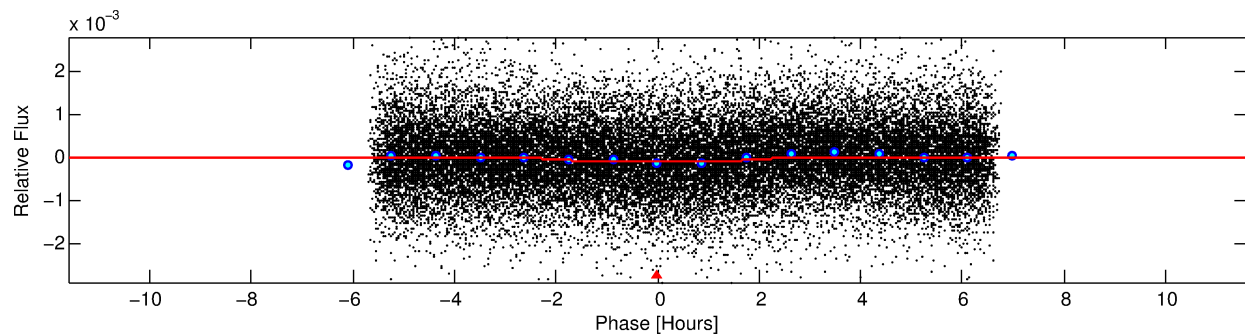
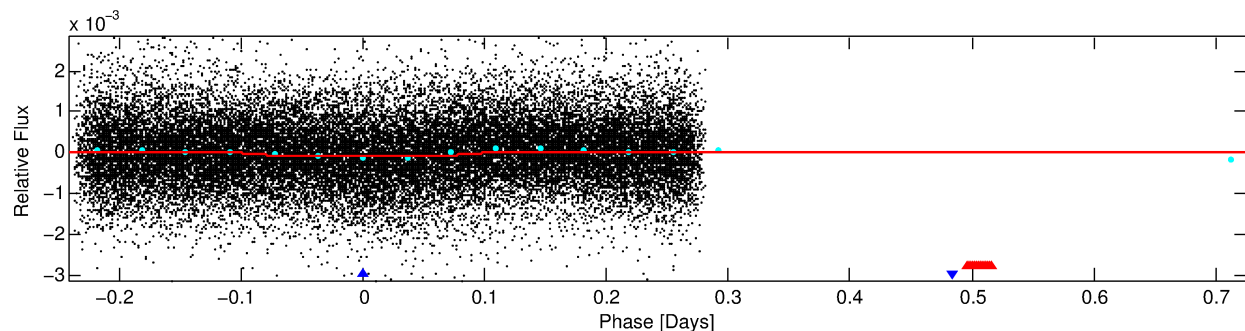
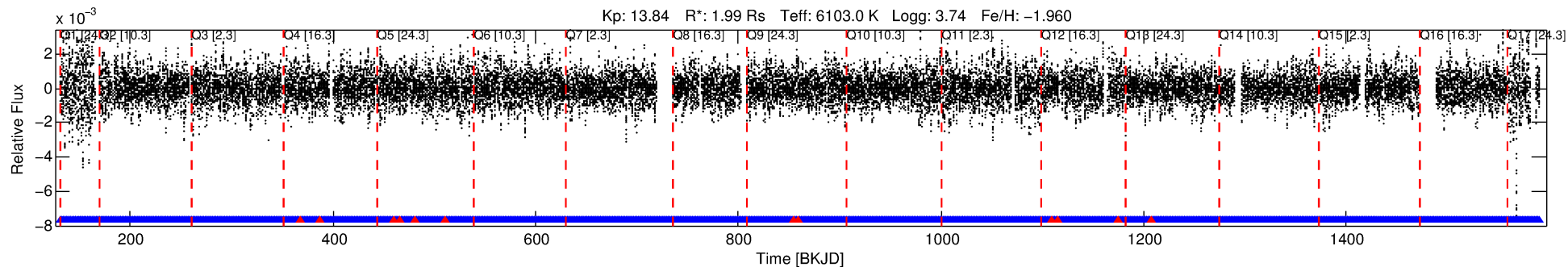
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009182617-02

No Significant Match Found

DV One-Page Summary

KIC: 9182617 Candidate: 2 of 2 Period: 0.967 d



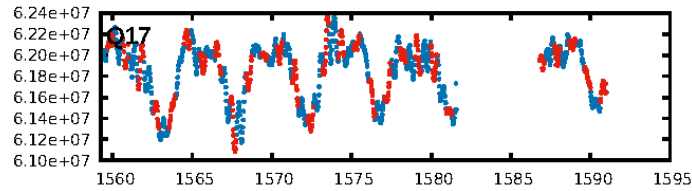
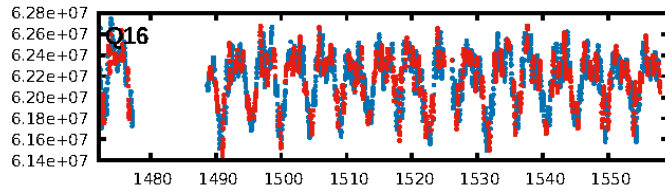
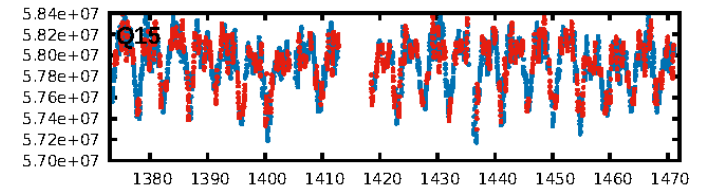
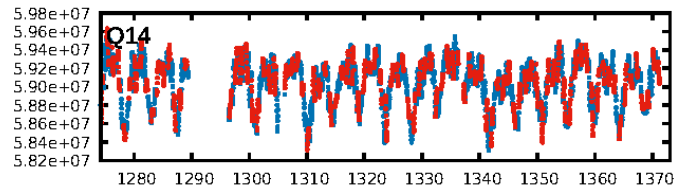
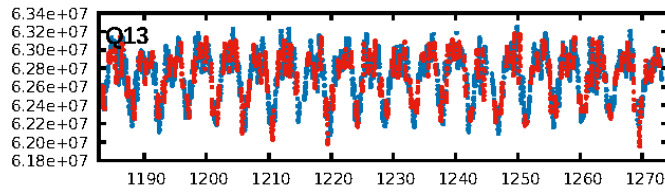
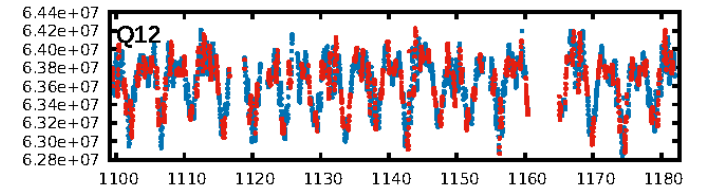
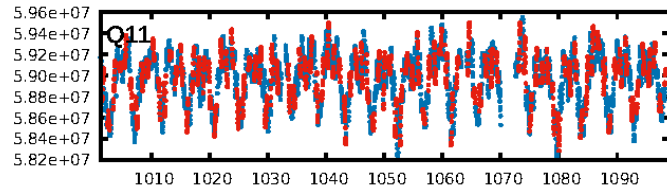
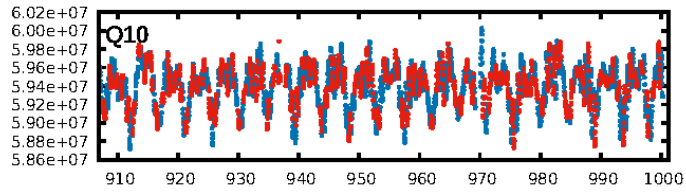
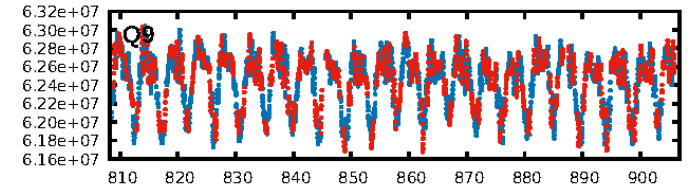
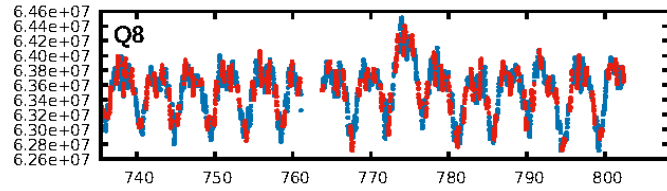
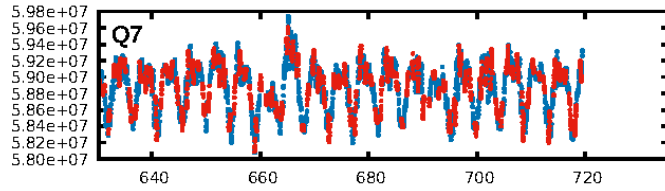
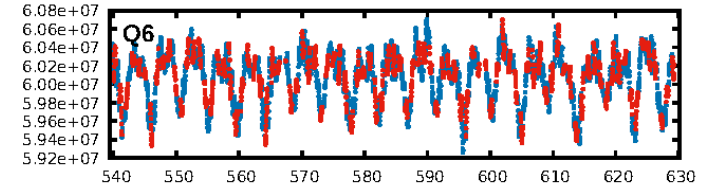
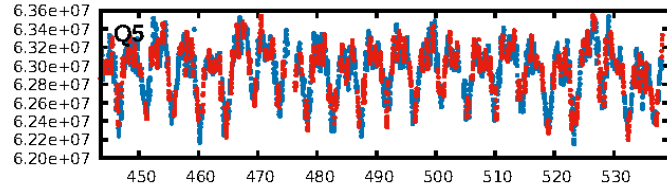
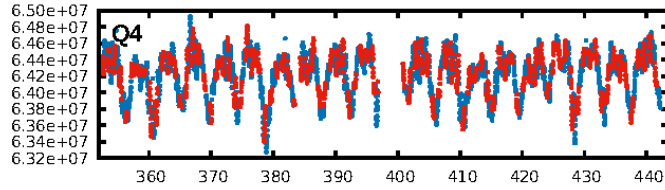
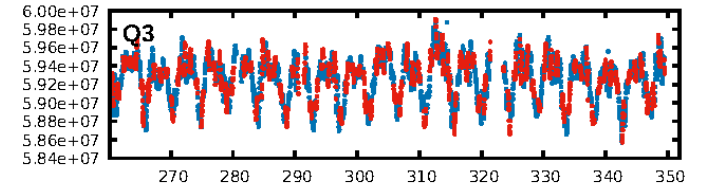
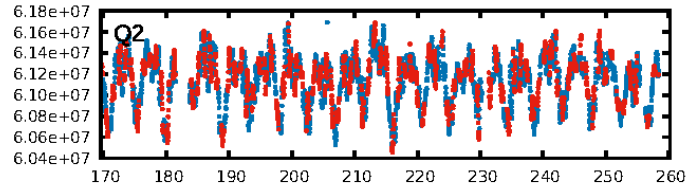
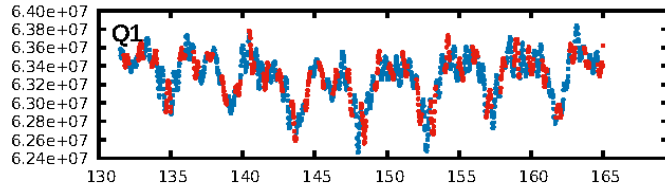
DV Fit Results:

Period = 0.96743 [0.00002] d
Epoch = 131.9160 [0.0029] BKJD
Rp/R* = 0.0080 [0.0033]
a/R* = 1.48 [1.80]
b = 0.70 [1.67]
Seff = 15623.19 [20293.36]
Teq = 2851 [926] K
Rp = 1.74 [1.31] Re
a = 0.0178 [0.0131] AU

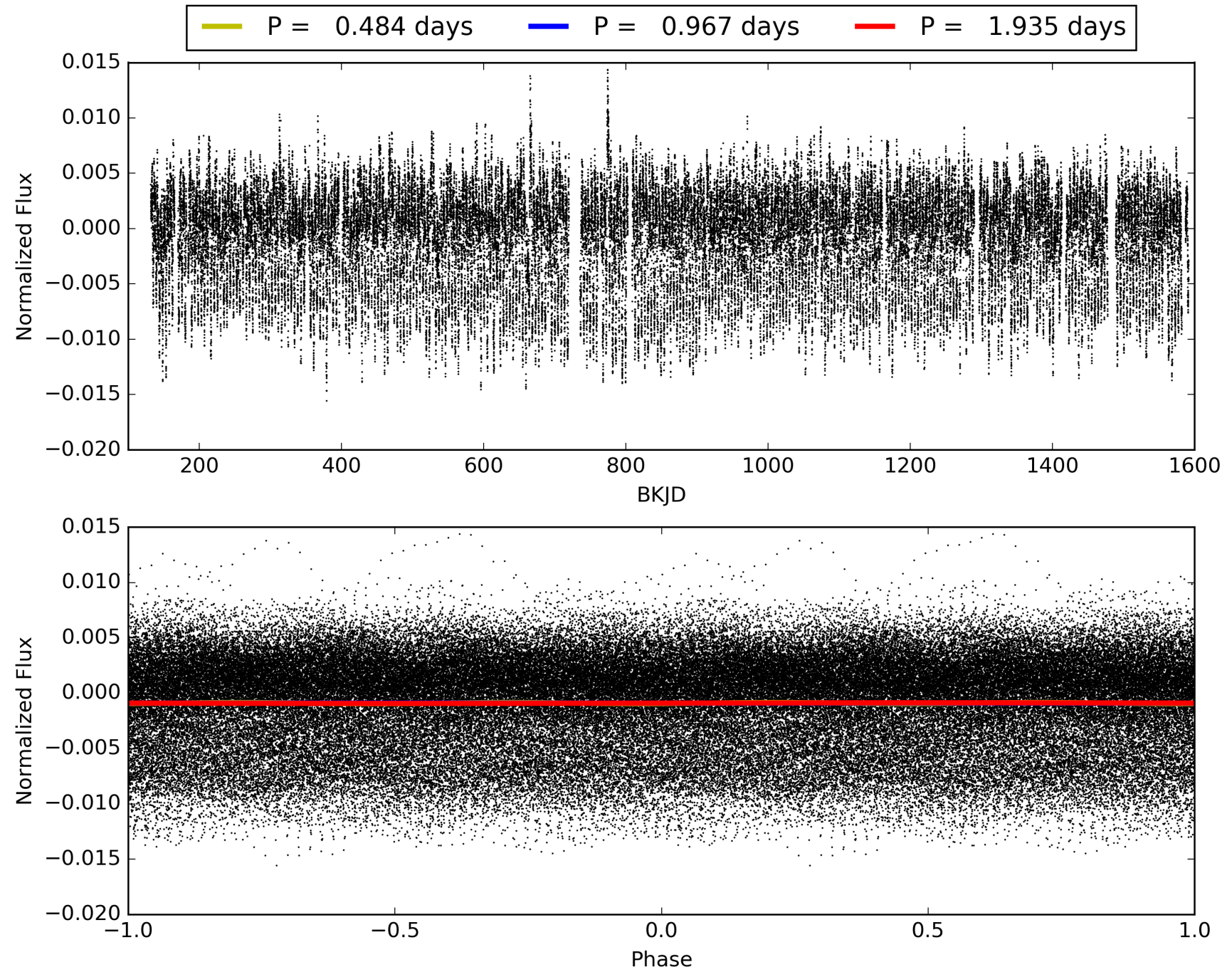
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1321/1333]
GhostDiagnostic-chr: 1.42
Centroid-sig: 9.5%
Centroid-so: 0.627 arcsec [1.18σ]
OotOffset-rm: 0.018 arcsec [0.05σ]
KicOffset-rm: 0.067 arcsec [0.34σ]
OotOffset-st: 4/4/2/4 [14]
KicOffset-st: 4/4/2/4 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.12 [2/17]

TCE 009182617-02, PDC Light Curves

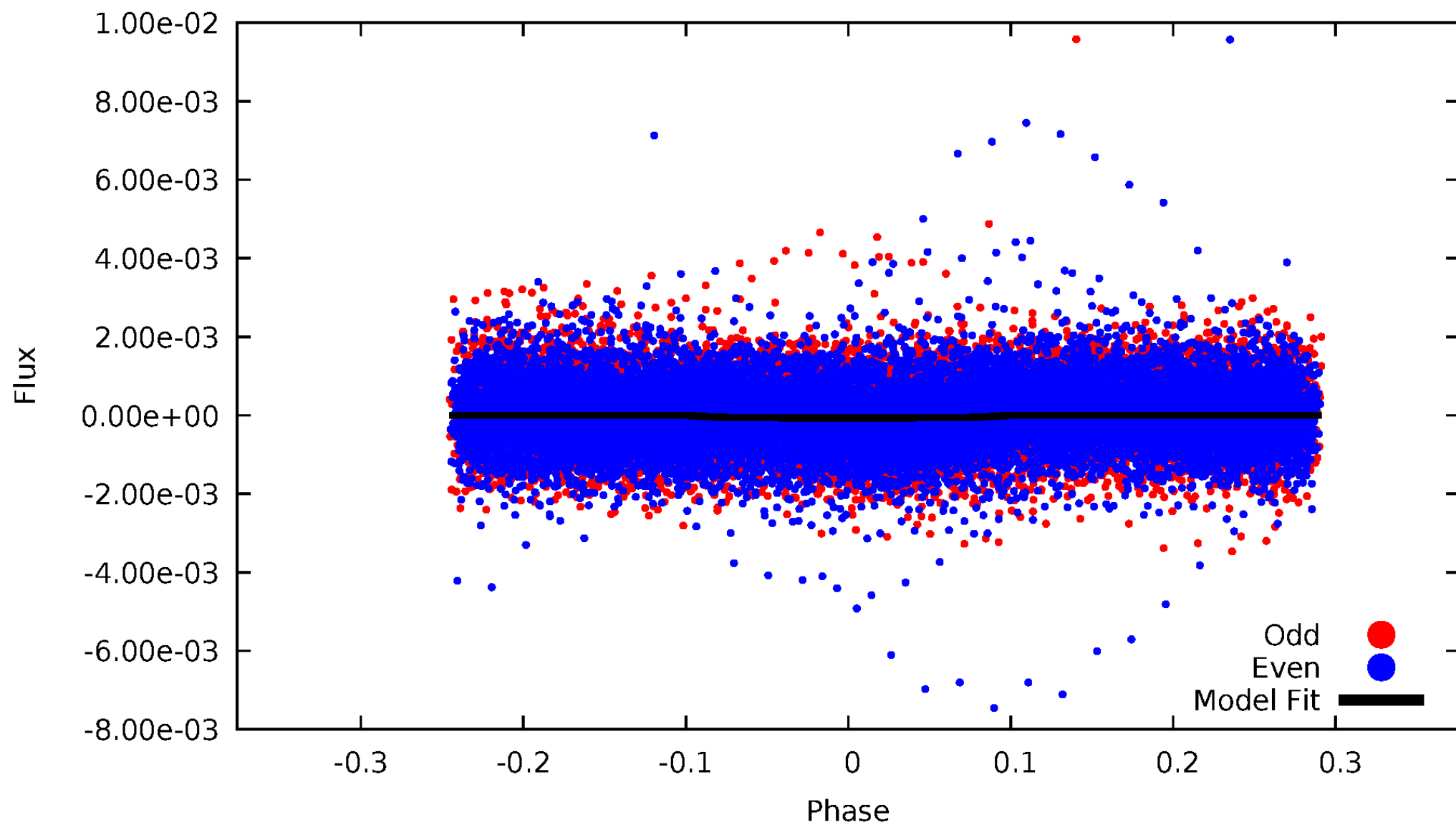


TCE 009182617-02



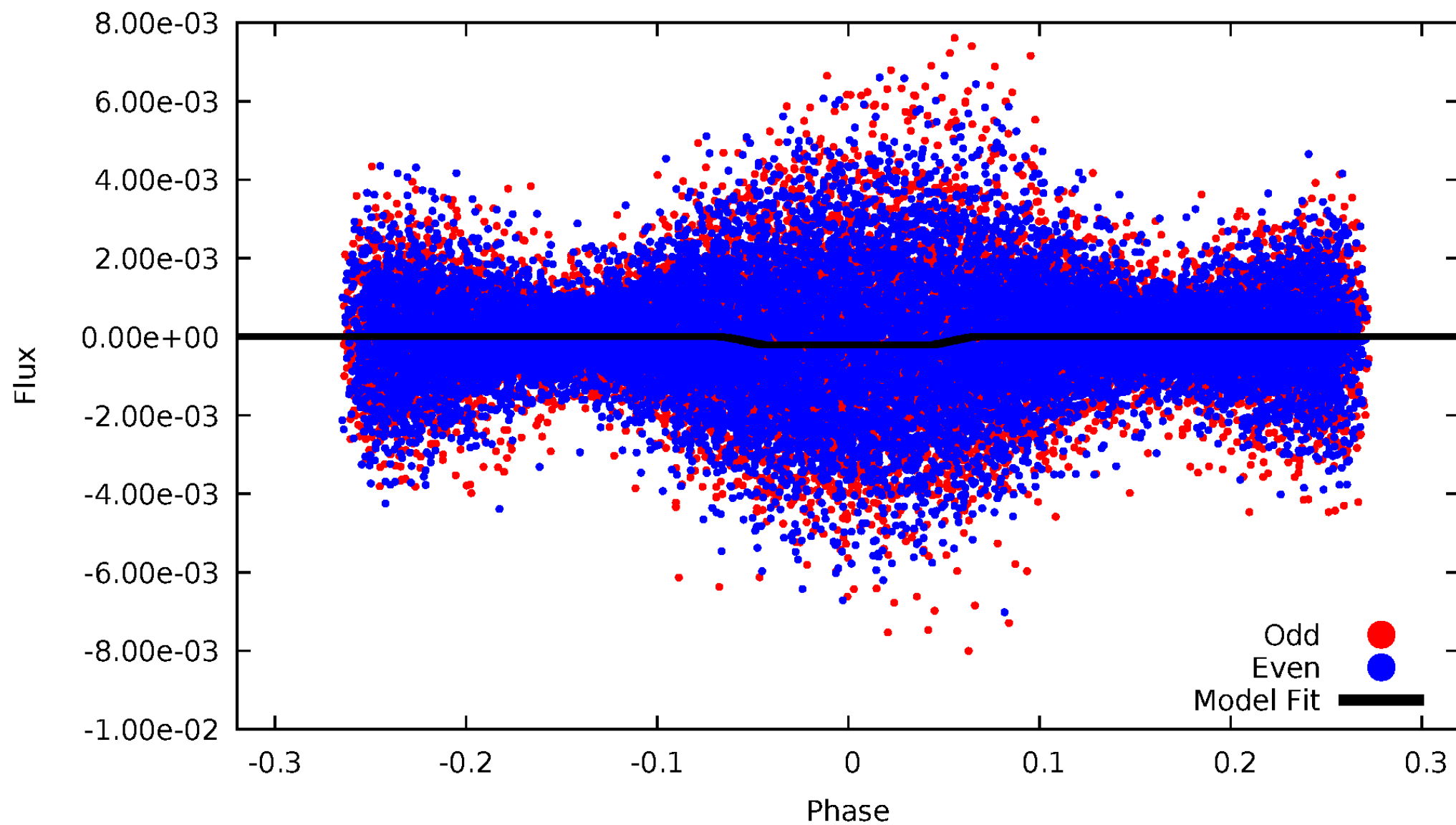
DV Odd/Even

TCE 009182617-02



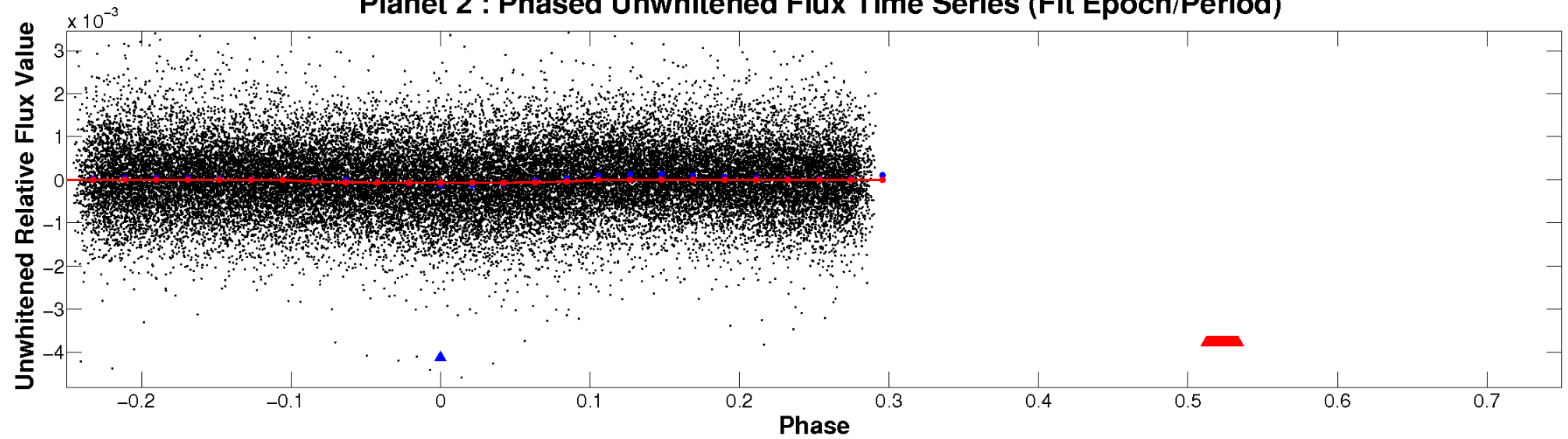
ALT Odd/Even

TCE 009182617-02

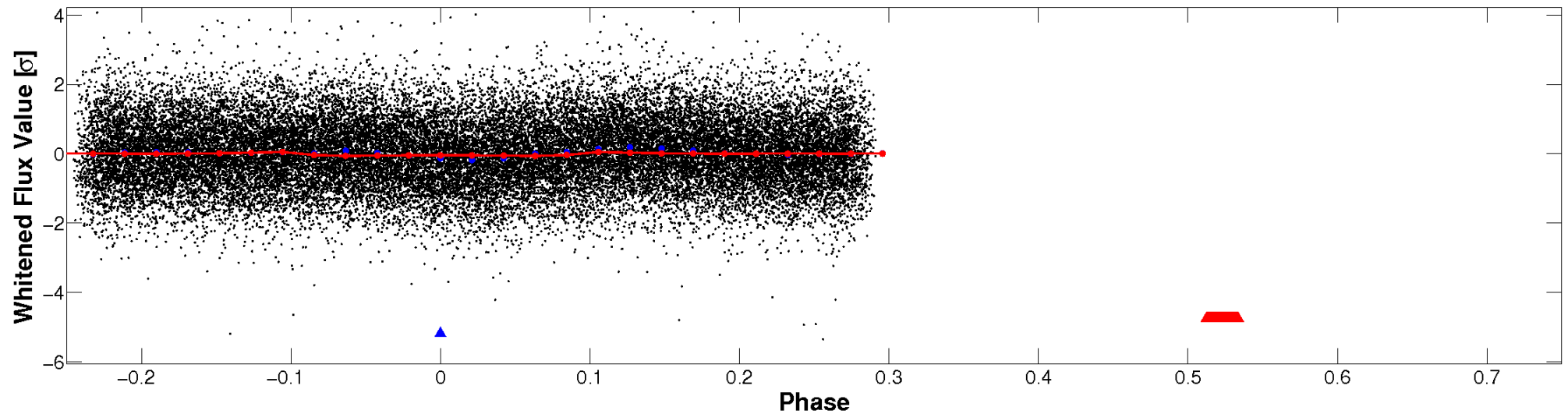


Non-Whitened Vs. Whitened Light Curve

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

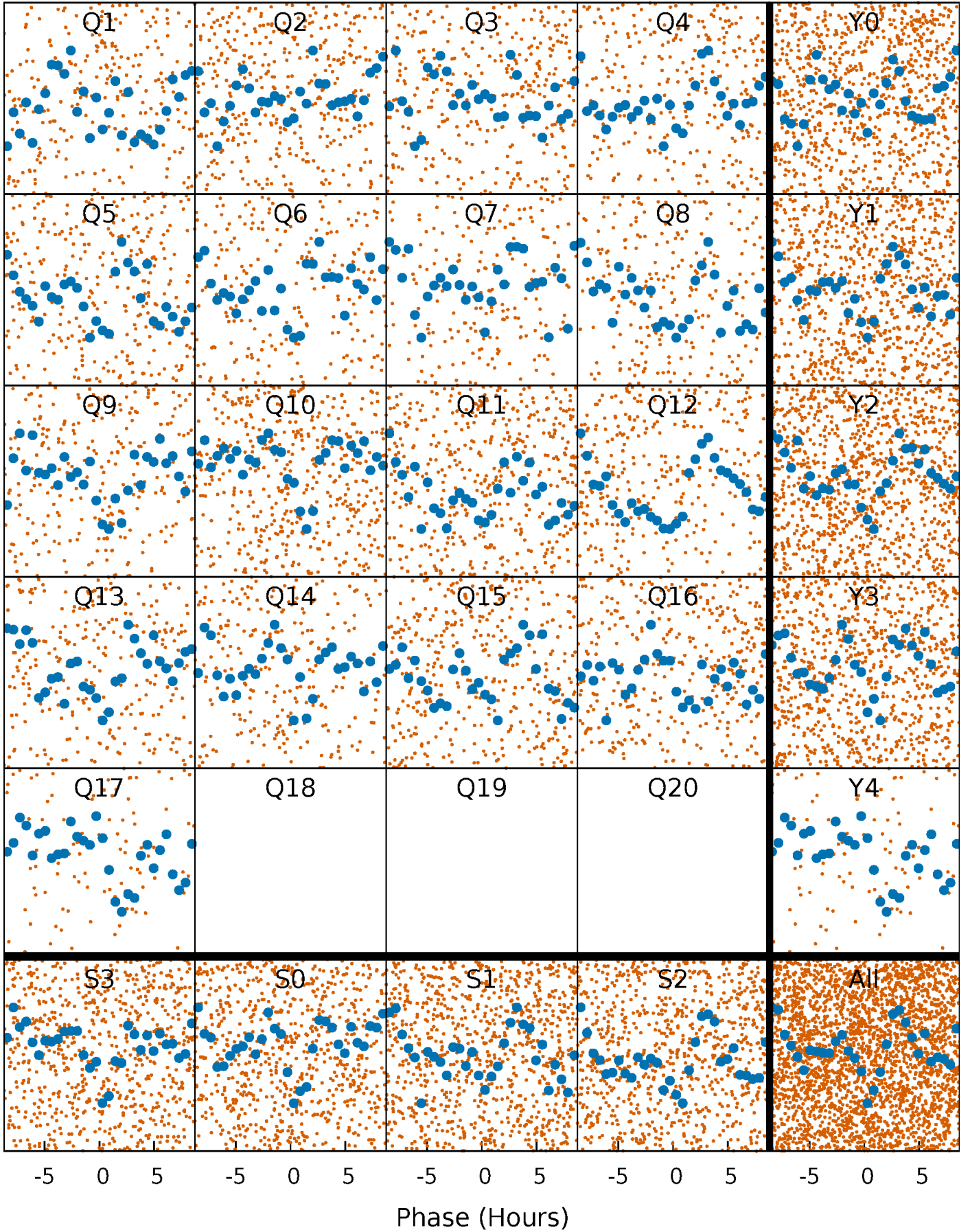


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



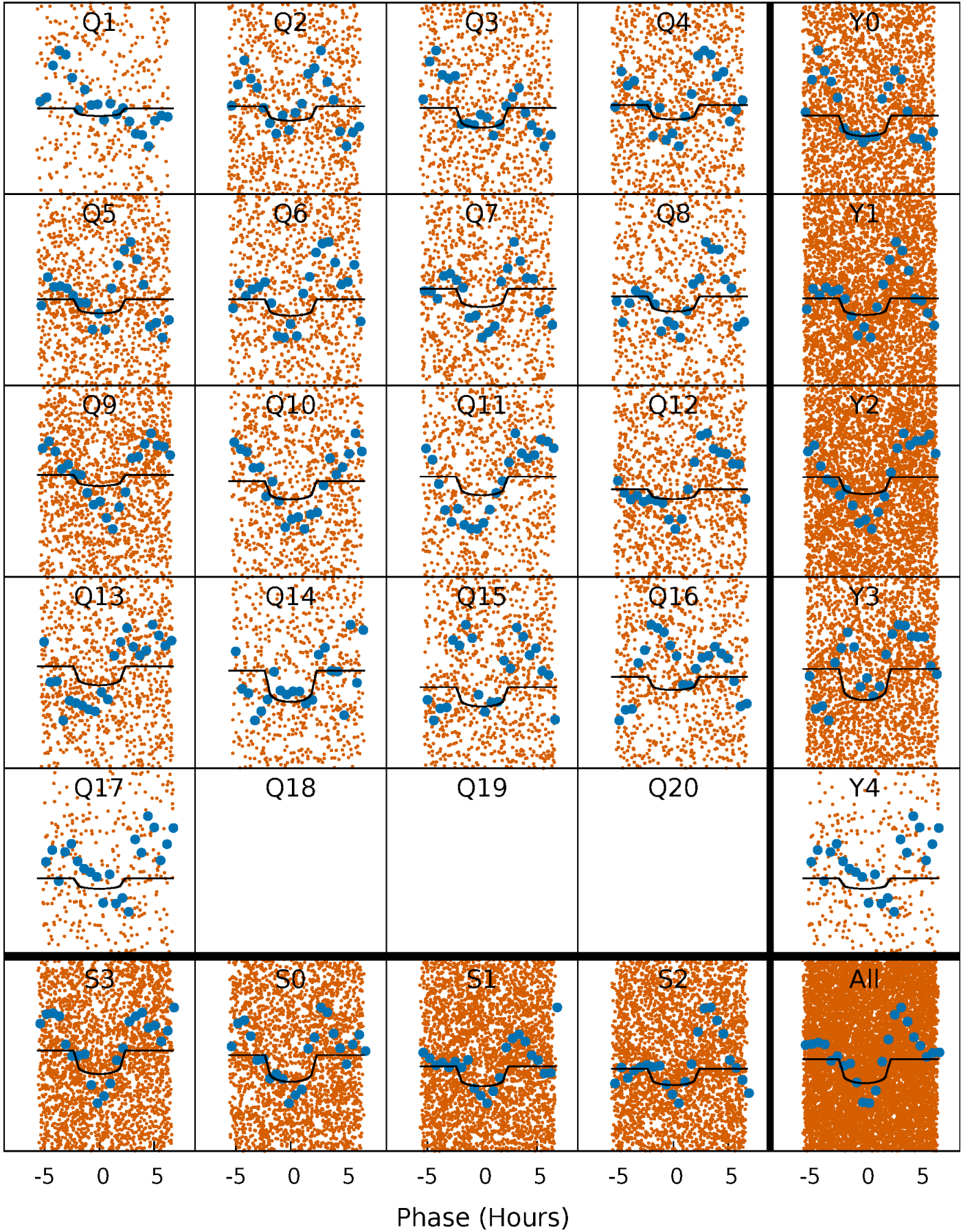
PDC Quarter-Phased Transit Curves

TCE 009182617-02 P= 0.967427 Days $T_0=131.916021$ (BKJD)



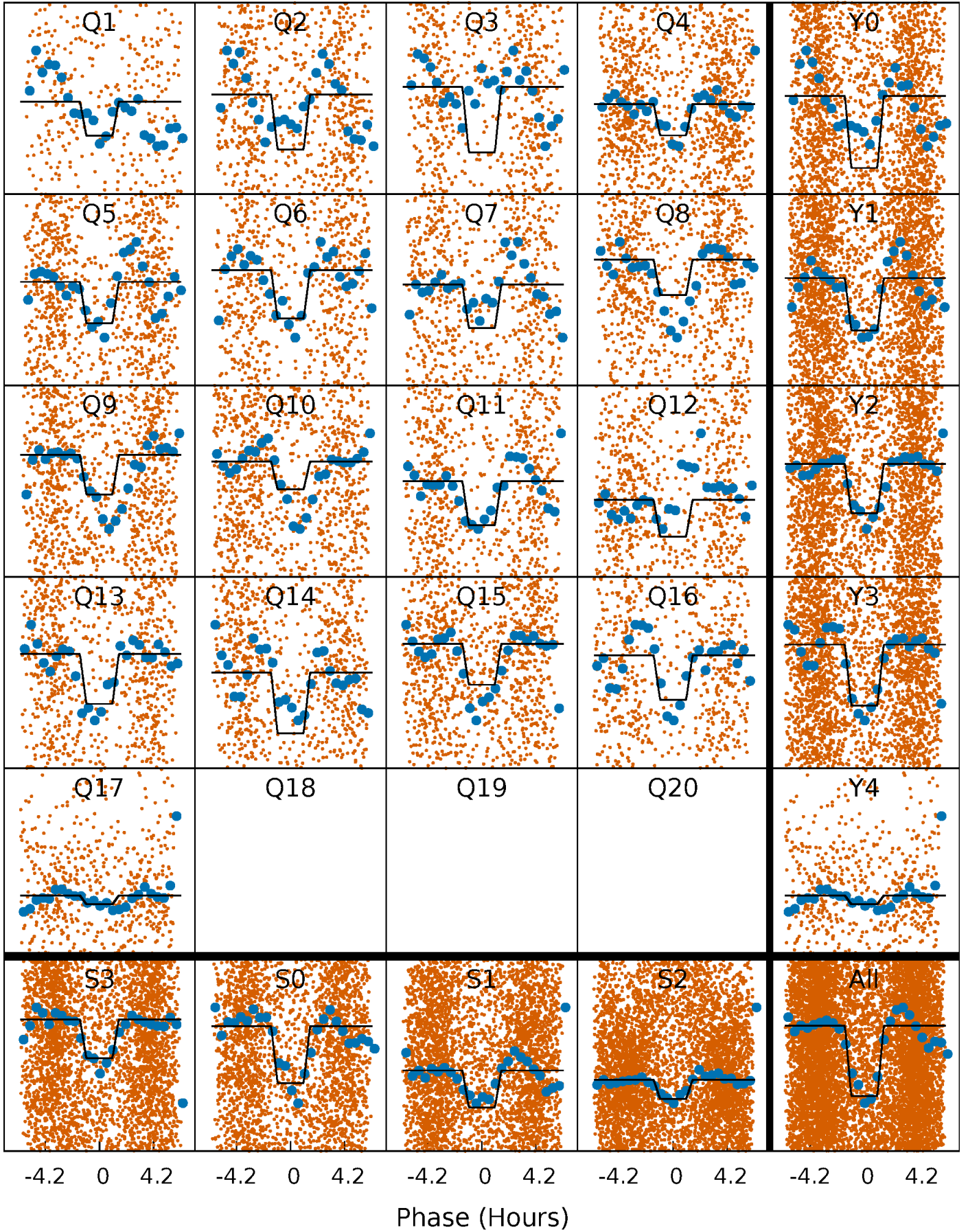
DV Quarter-Phased Transit Curves

TCE 009182617-02 P= 0.967427 Days $T_0=131.916021$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

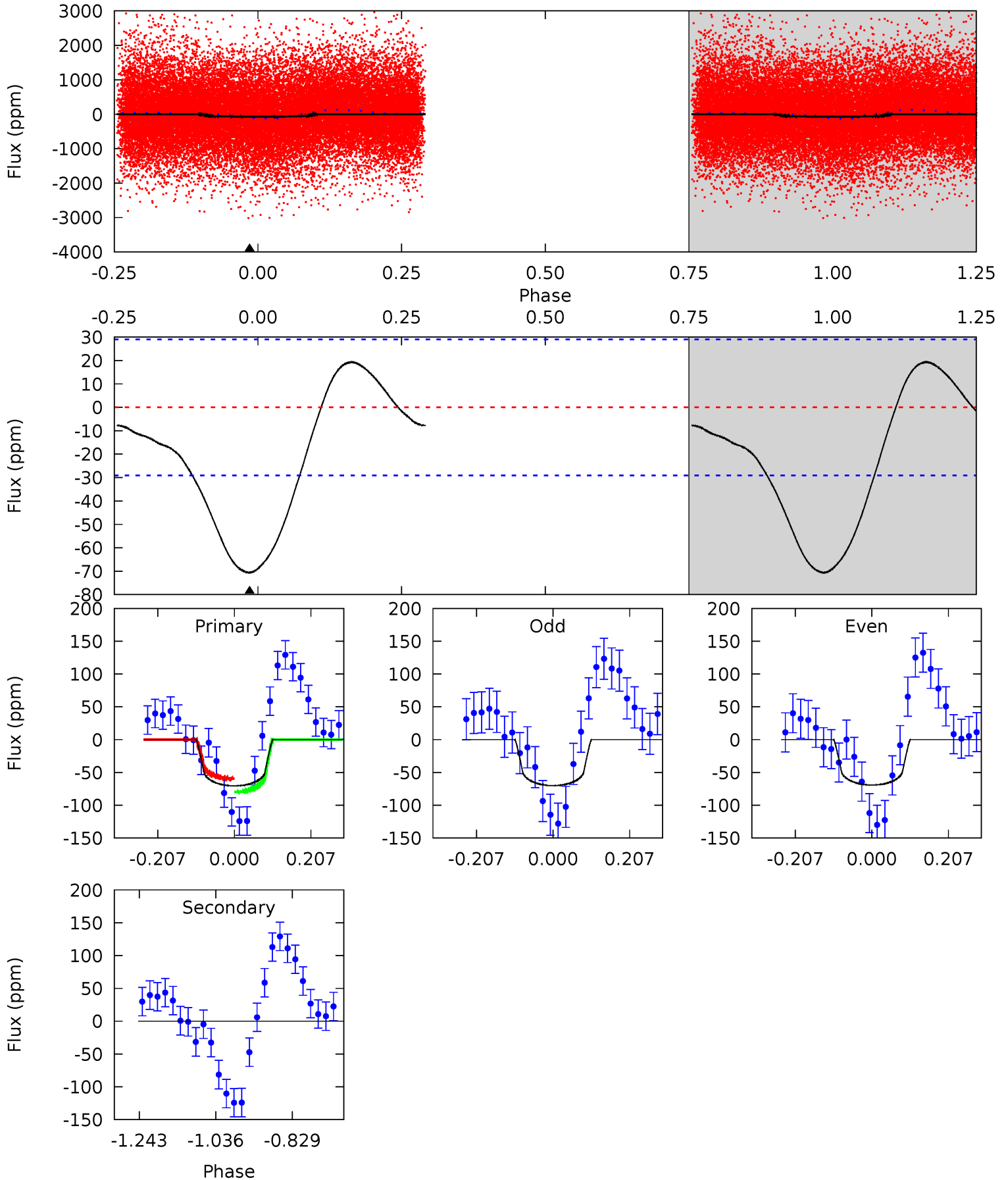
TCE 009182617-02 P= 0.967455 Days $T_0=131.914037$ (BKJD)



DV Model-Shift Uniqueness Test

009182617-02, P = 0.967427 Days, E = 130.948594 Days

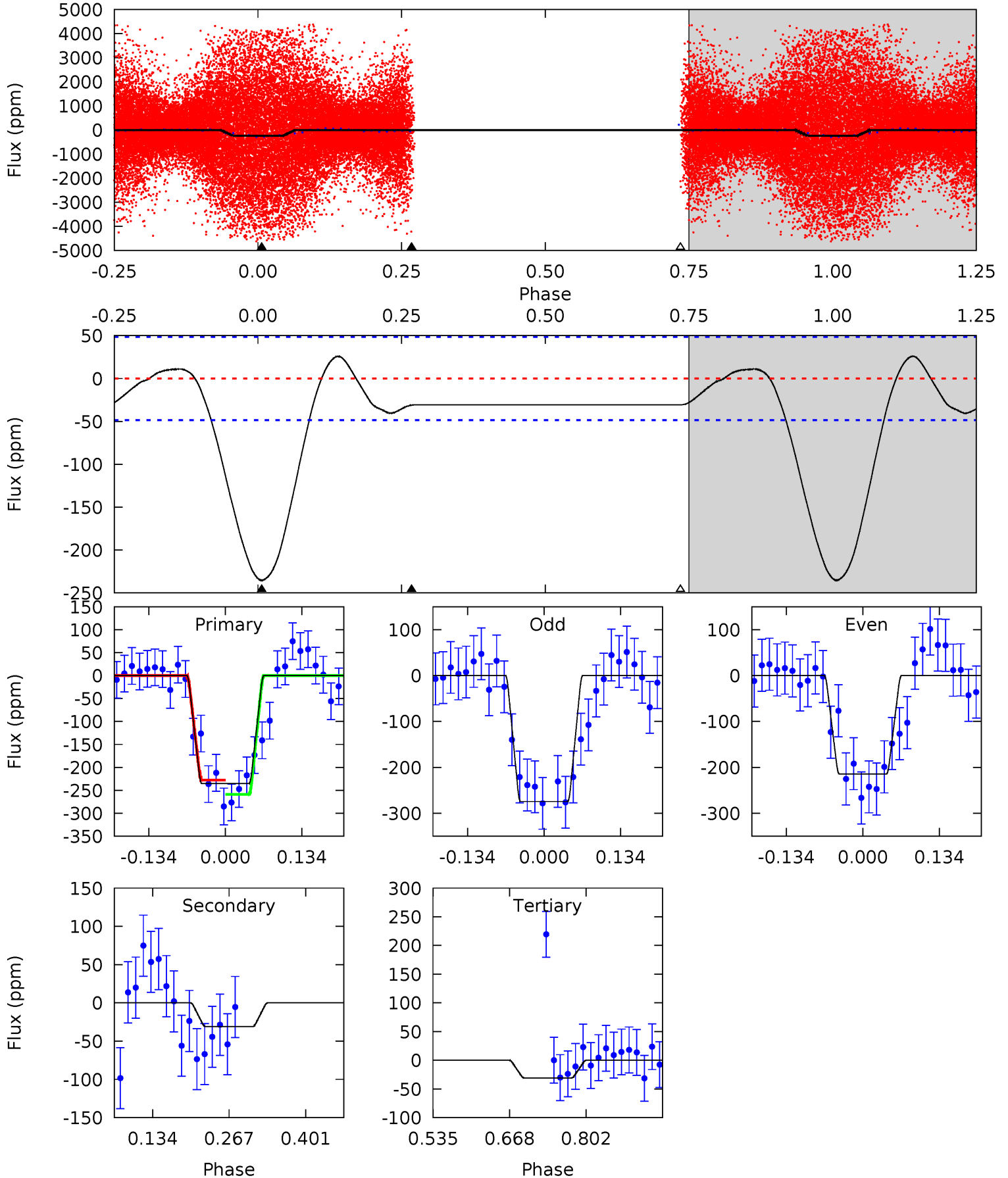
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	0	0	0	4.41	1.26	1.16	10.7	10.7	0	0	0.07	1.03	0.22	1.49



Alt Model-Shift Uniqueness Test

009182617-02, P = 0.967455 Days, E = 130.946582 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	2.88	2.85	0	4.50	1.50	1.21	19.0	21.9	0.03	2.88	2.79	1.04	0.10	1.52



Stellar Parameters For KIC 009182617

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6103^{+376}_{-308}	$3.742^{+0.784}_{-0.280}$	$-1.960^{+0.300}_{-0.050}$	$1.992^{+1.032}_{-1.261}$	$0.798^{+0.084}_{-0.084}$	$0.142^{+2.226}_{-0.091}$
	+6%/-5%	+21%/-7%	+15%/-3%	+52%/-63%	+11%/-11%	+1564%/-64%
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 009182617-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 7	$1.55^{+0.92}_{-0.79}$	3883^{+588}_{-788}	-3641^{+7000}_{-822}	$-0.014^{+0.598}_{-0.713}$
Alt.	-31 ± 11	$2.89^{+1.18}_{-1.07}$	3910^{+566}_{-716}	3598^{+738}_{-6025}	$0.627^{+0.949}_{-0.344}$

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

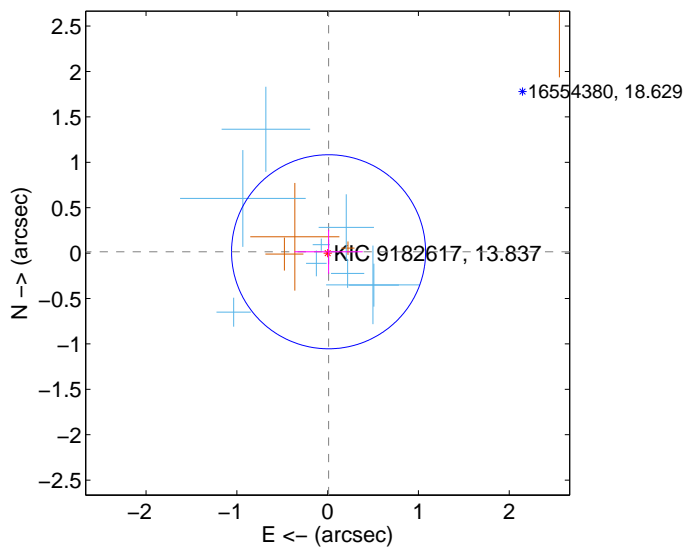
Supplemental centroid analysis for 009182617-02. Kepler magnitude: 13.84. Transit SNR 6.38

There are 9 quarters with good PRF difference image offsets

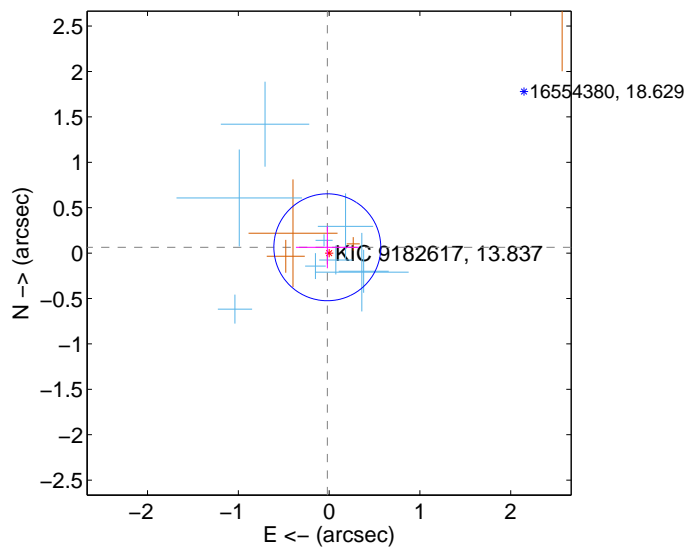
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.018 ± 0.356	0.05	-0.010 ± 0.376	0.015 ± 0.242
PRF-fit source offset from KIC position	0.067 ± 0.196	0.34	0.020 ± 0.345	0.064 ± 0.232
photometric centroid source offset	0.63 ± 0.53	1.18	0.11 ± 0.56	0.62 ± 0.53

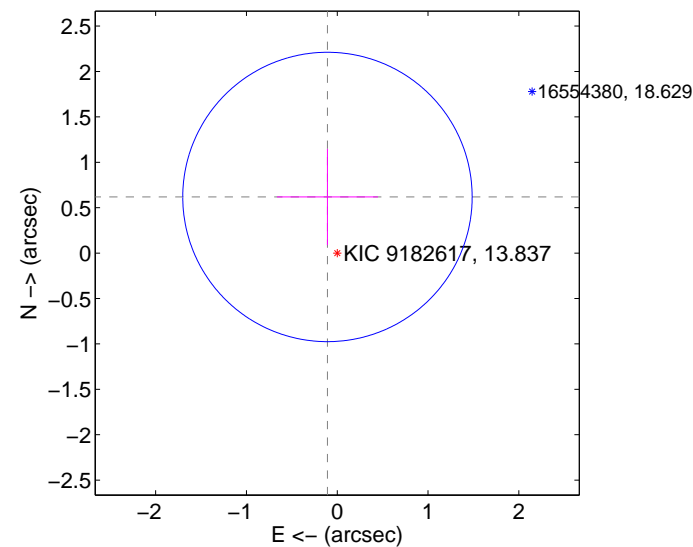
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

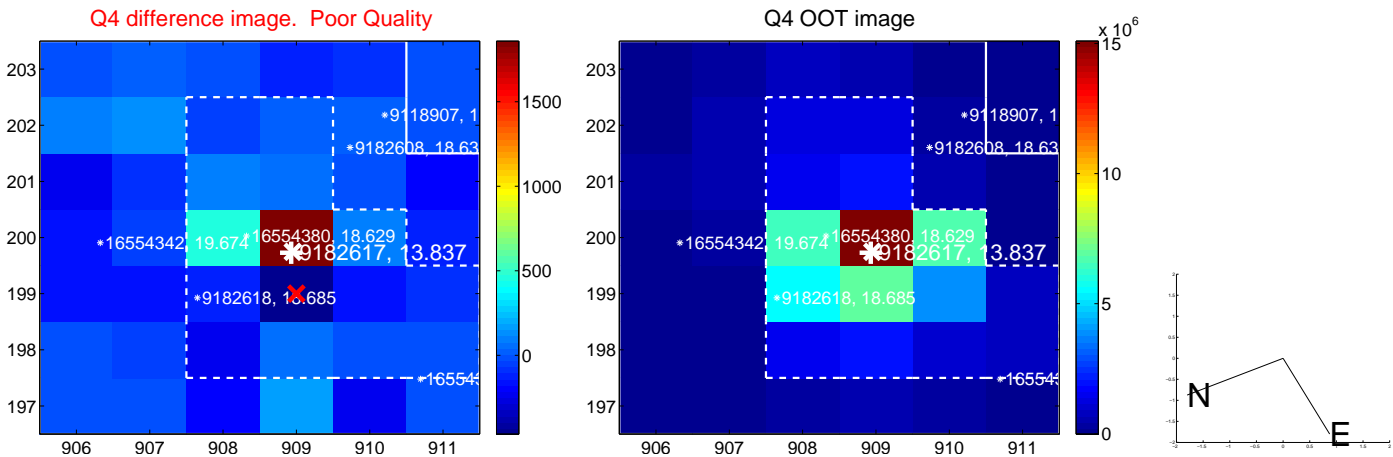
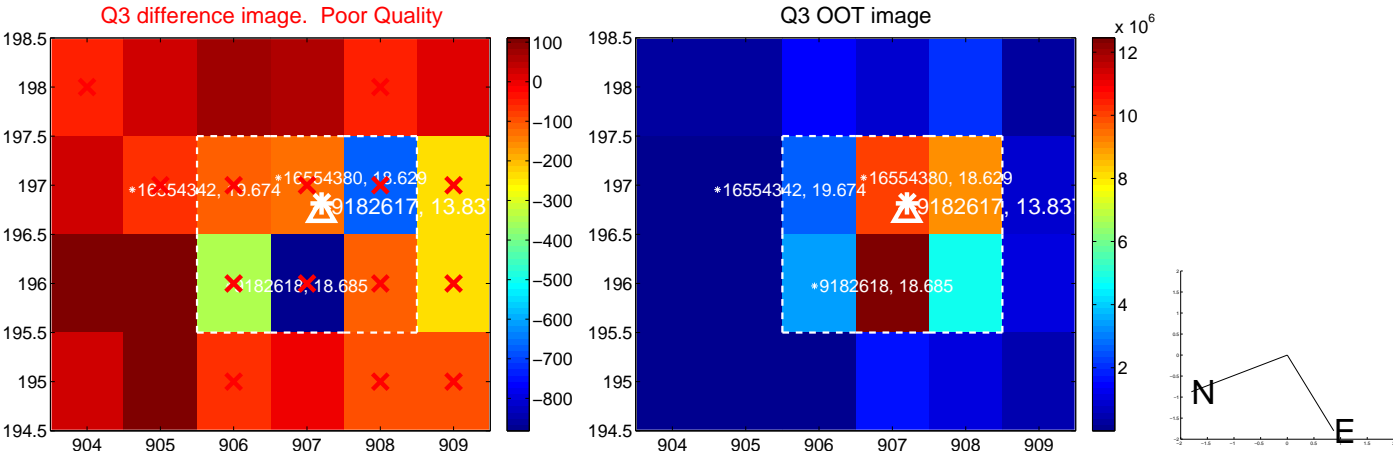
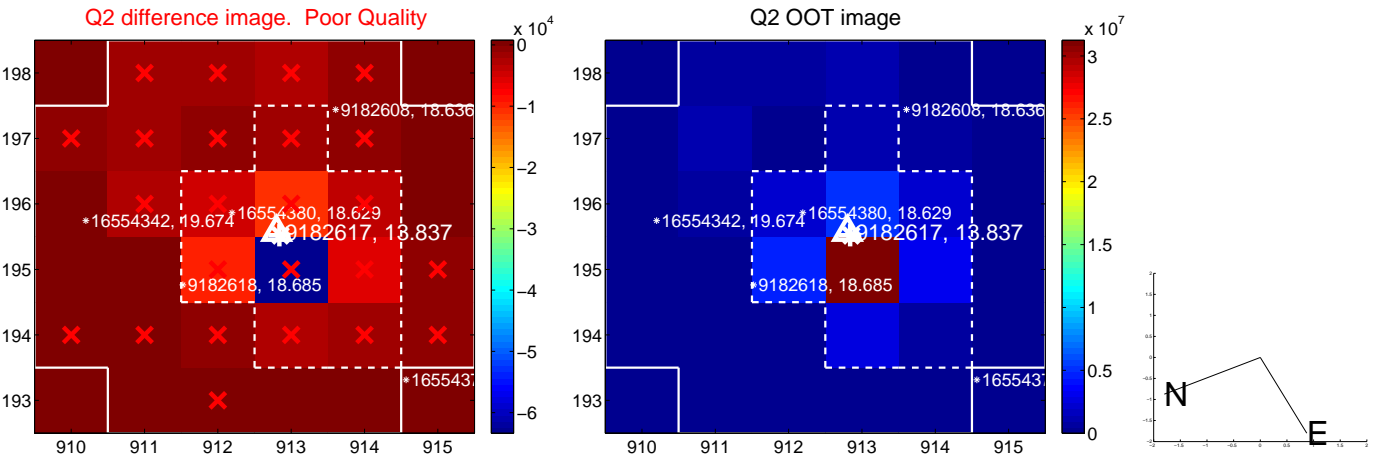
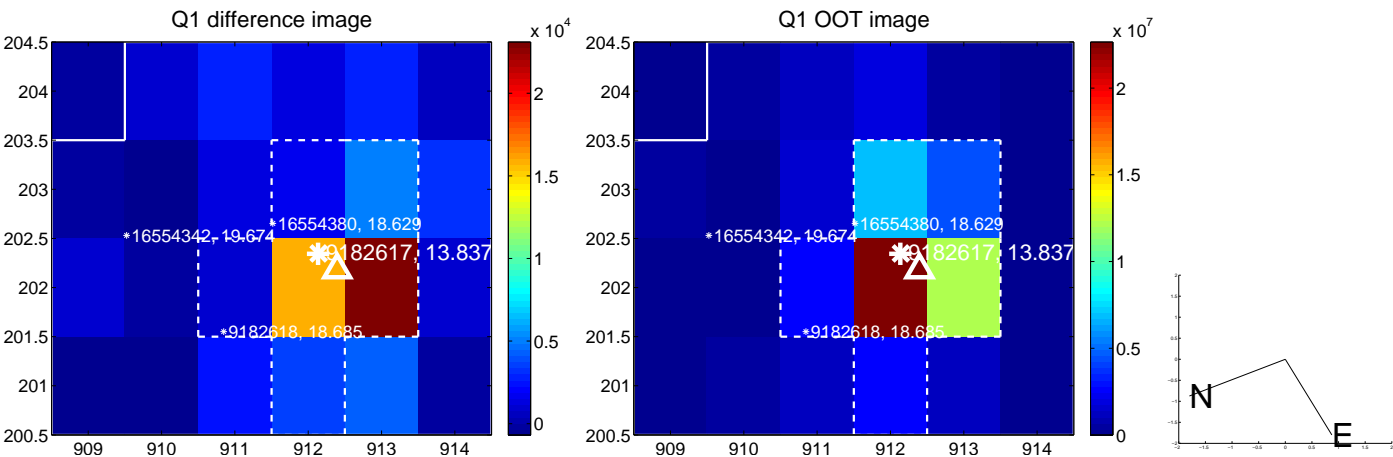


offset from photometric centroids

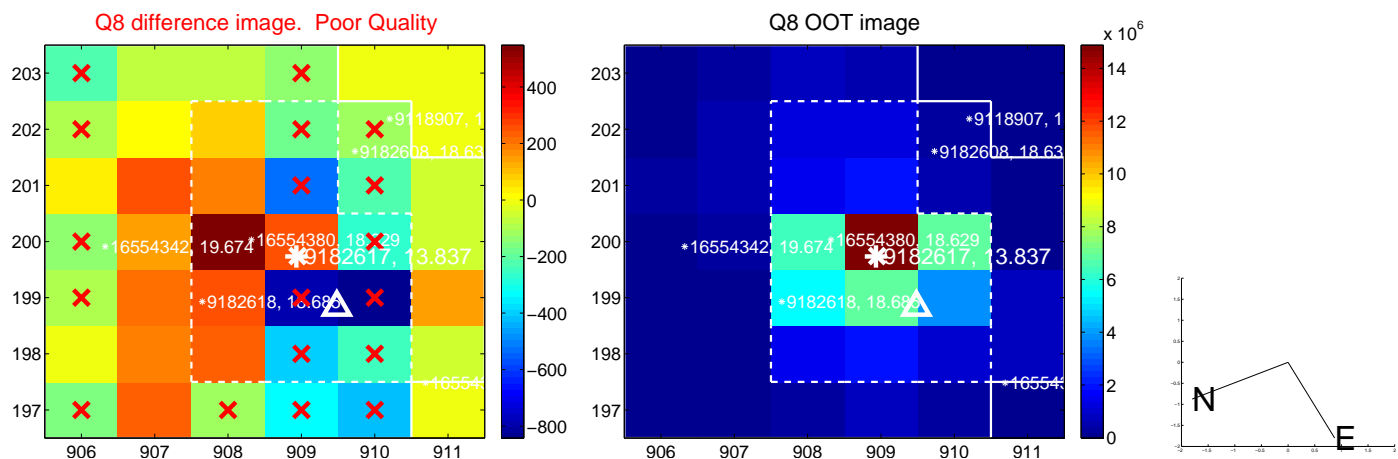
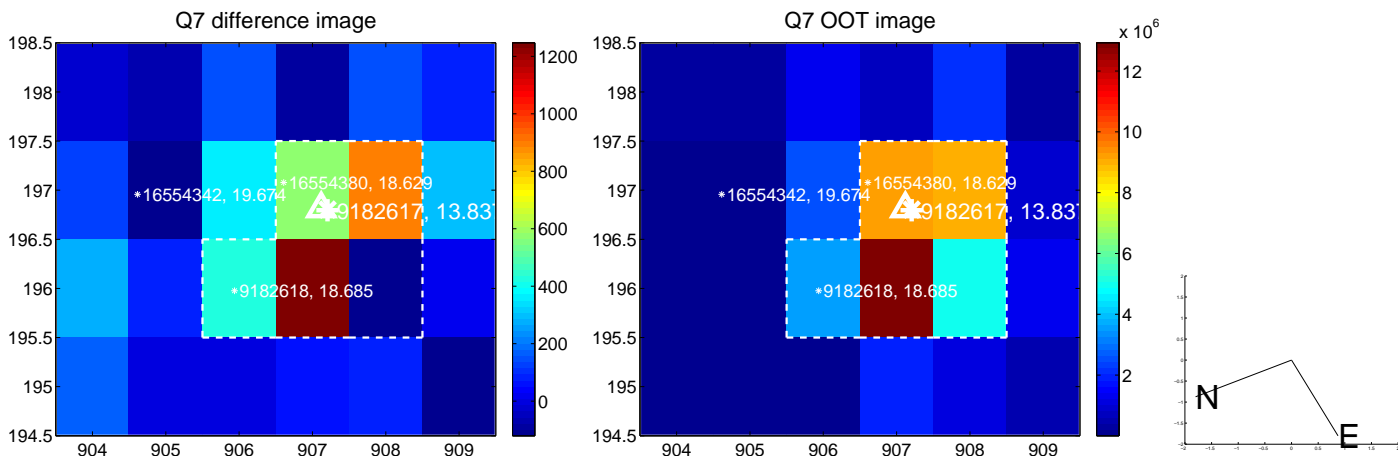
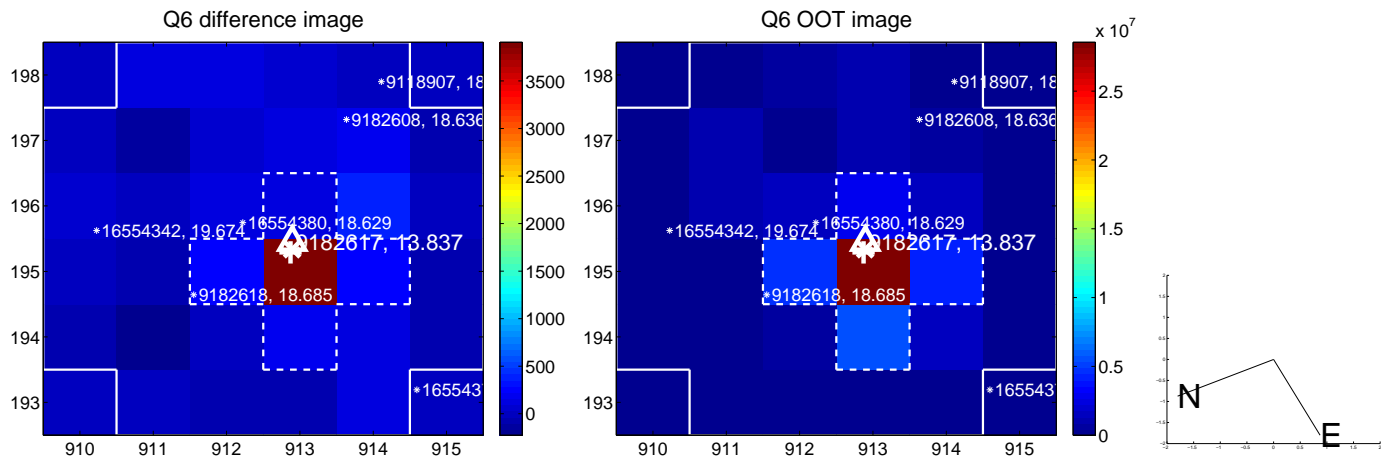
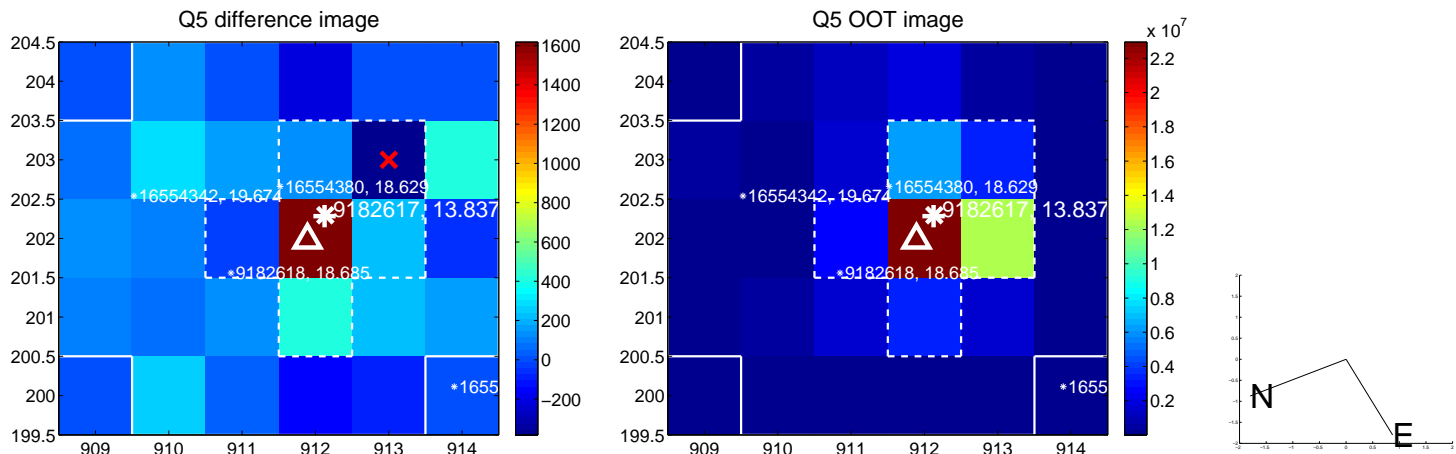


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

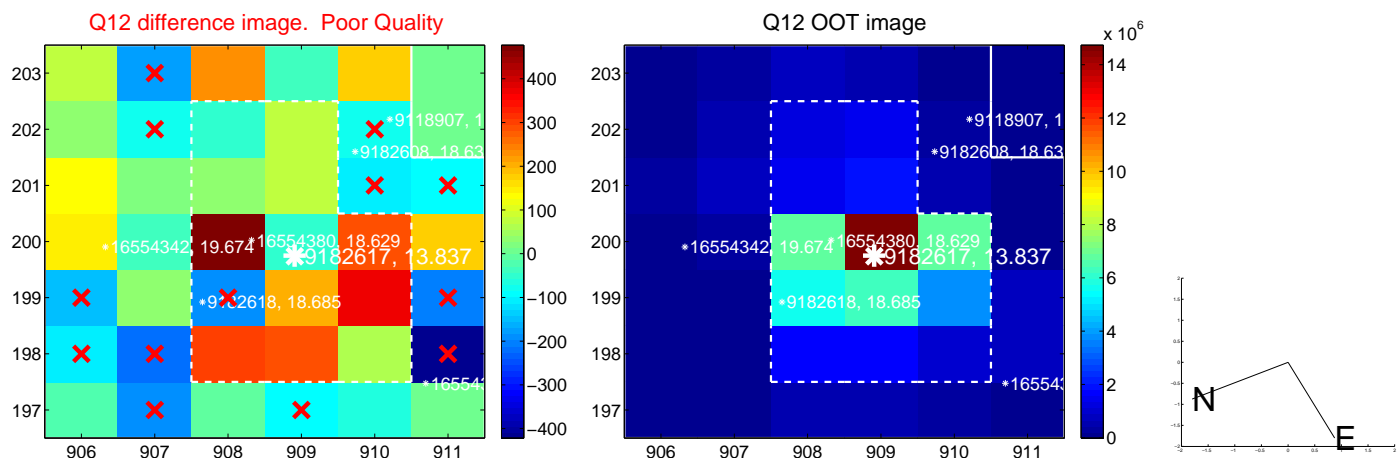
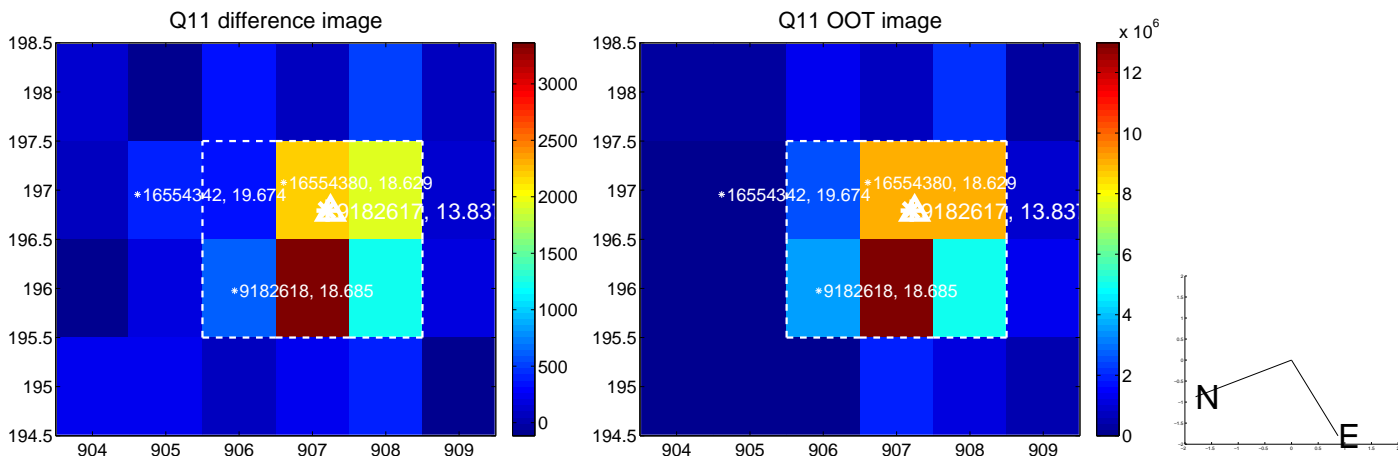
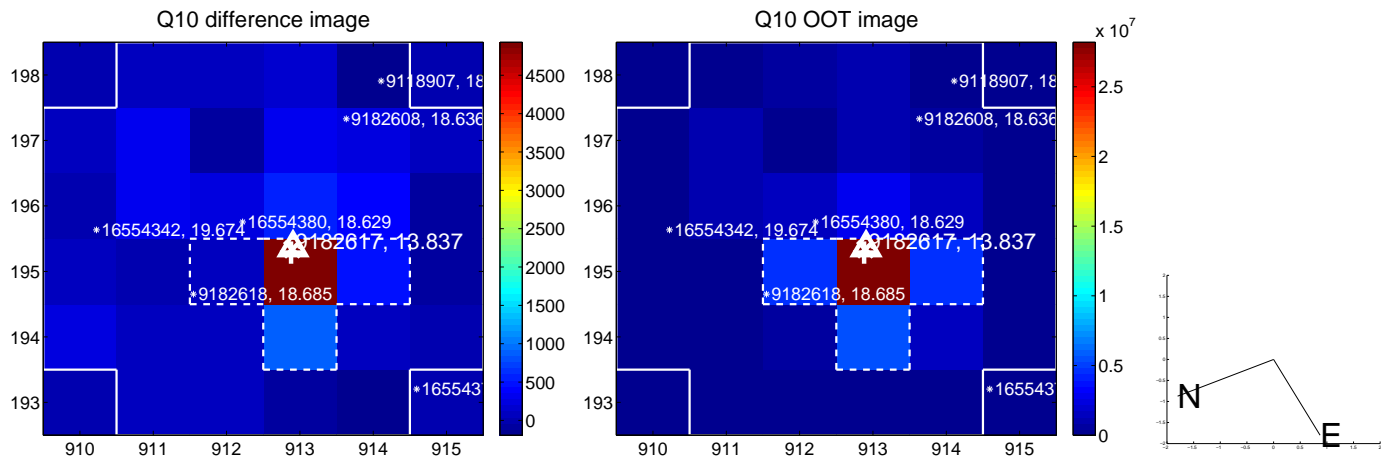
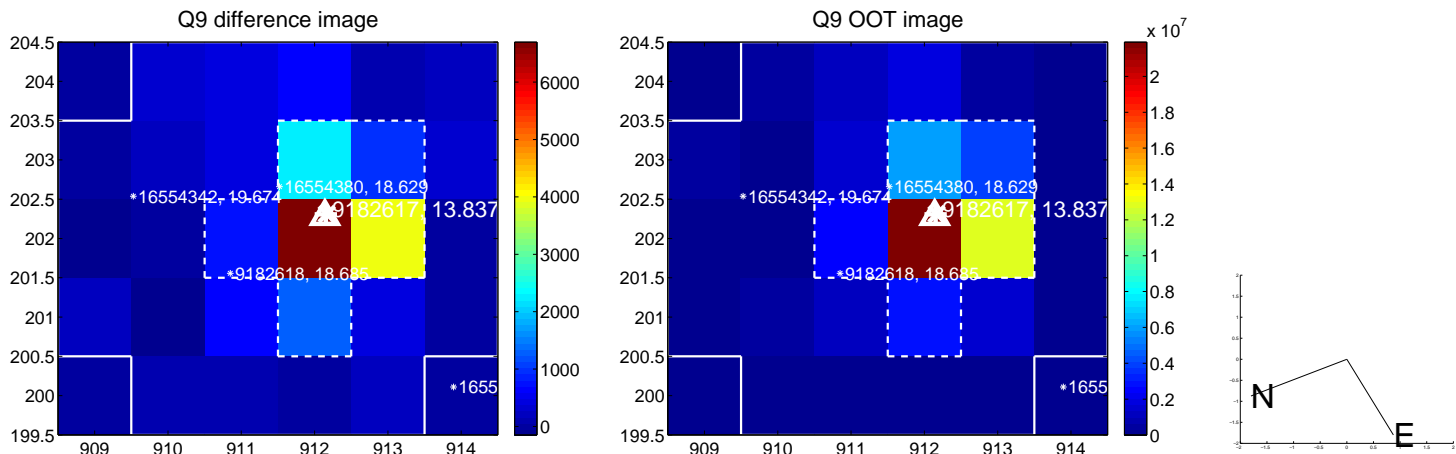
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



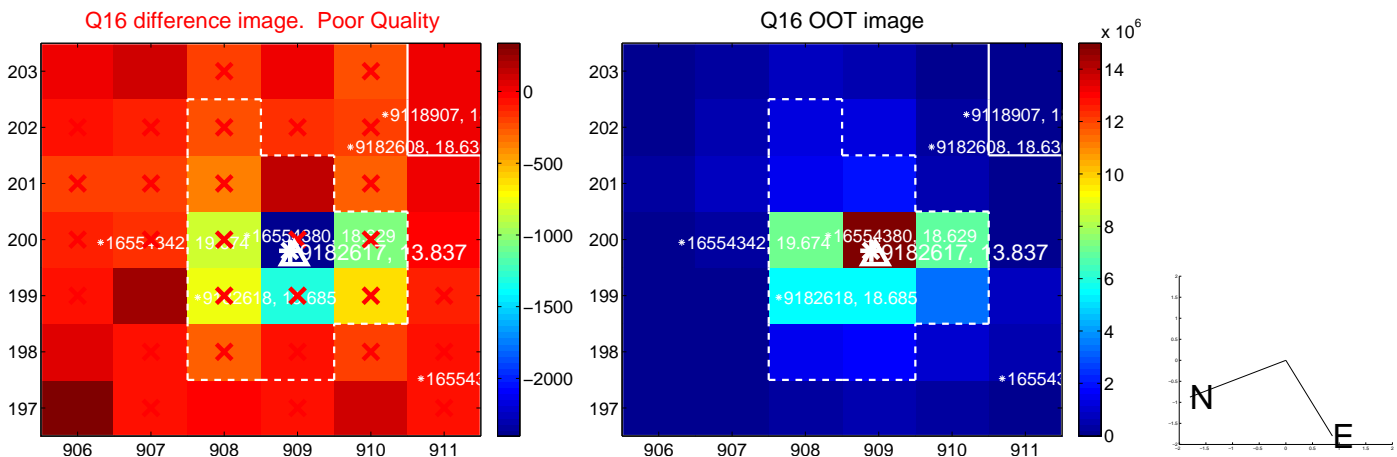
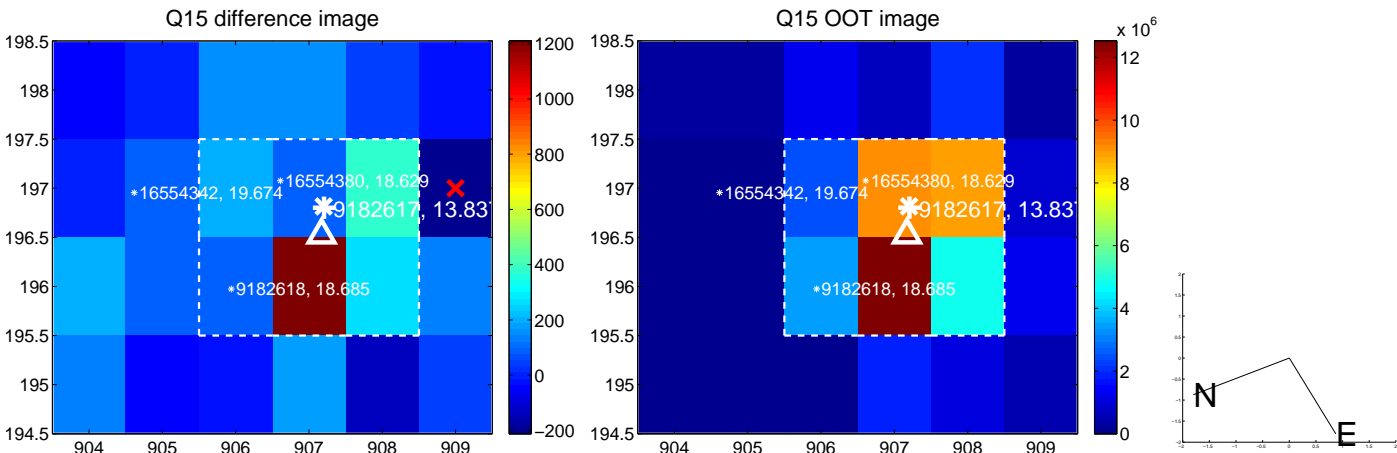
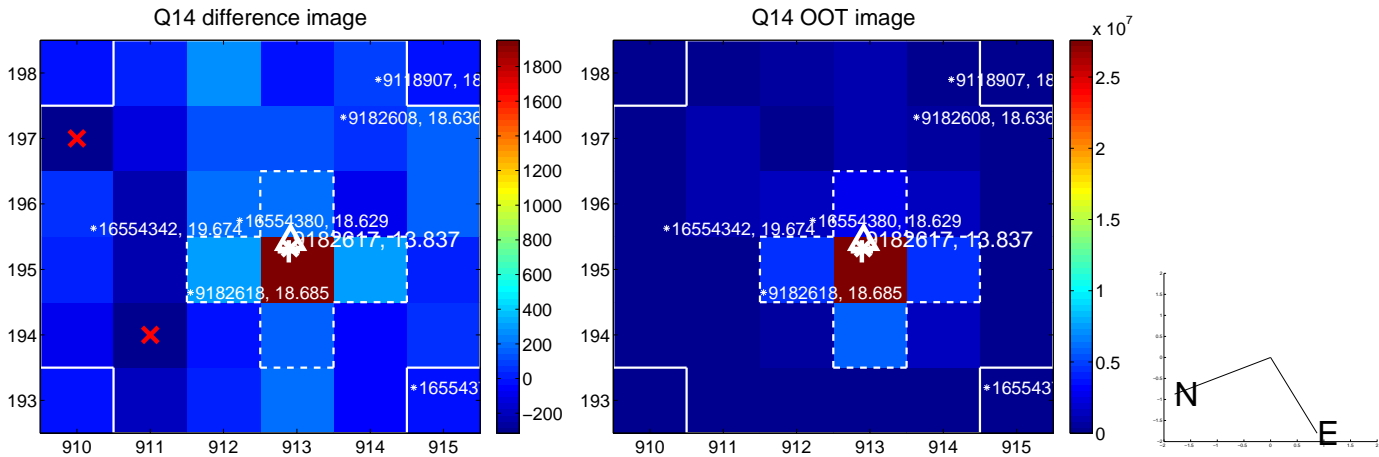
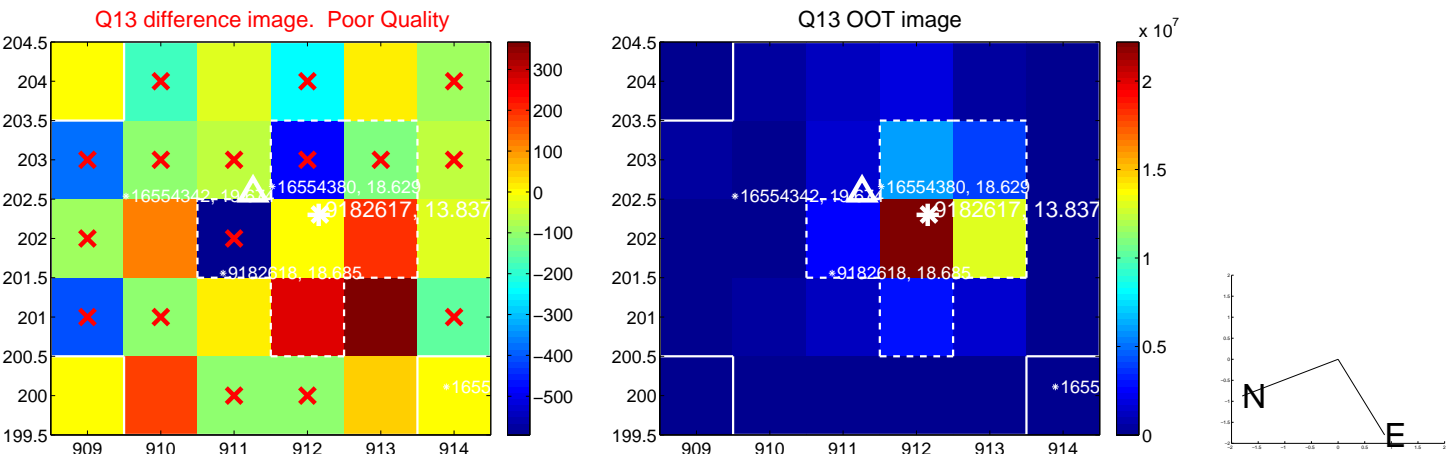
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



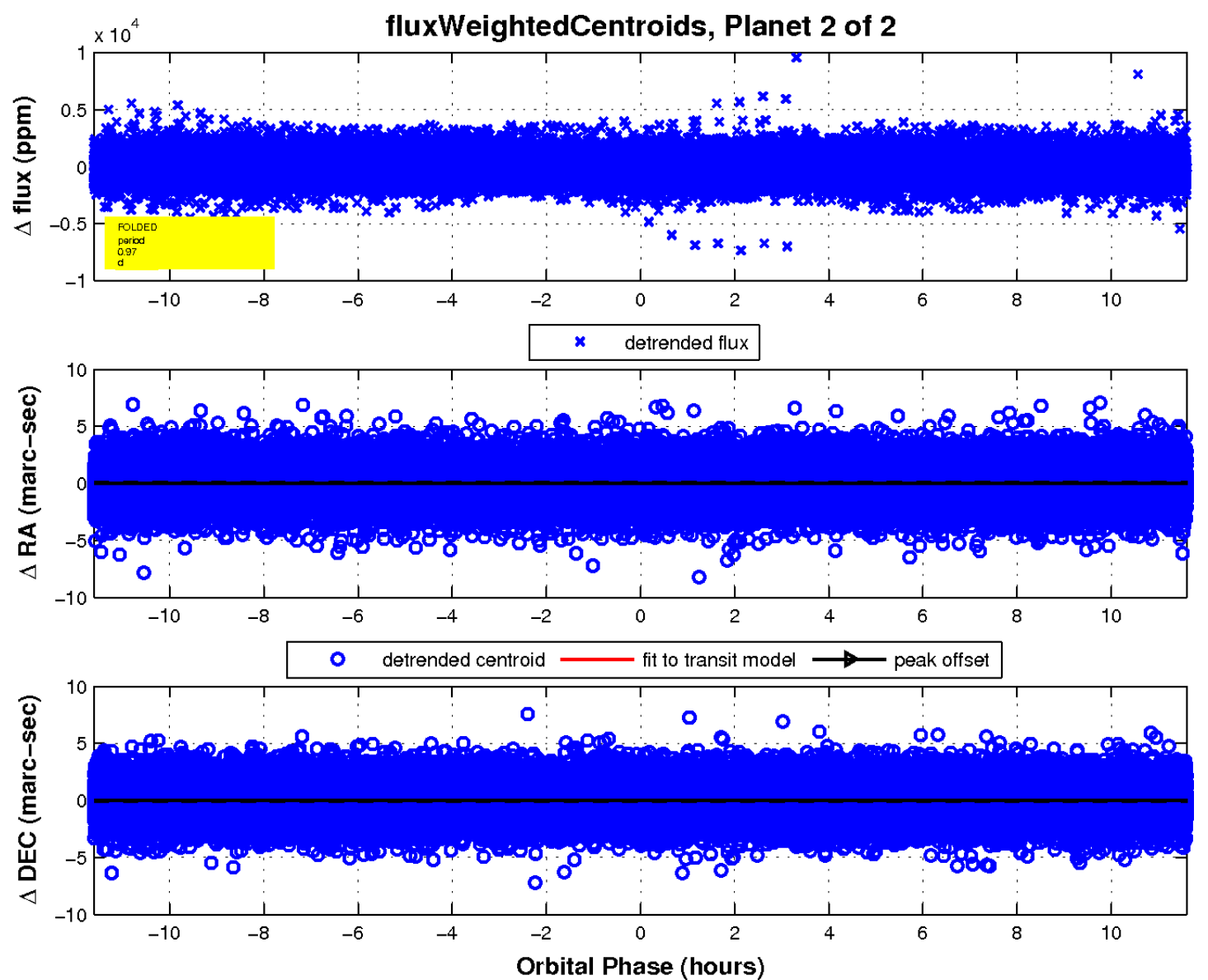
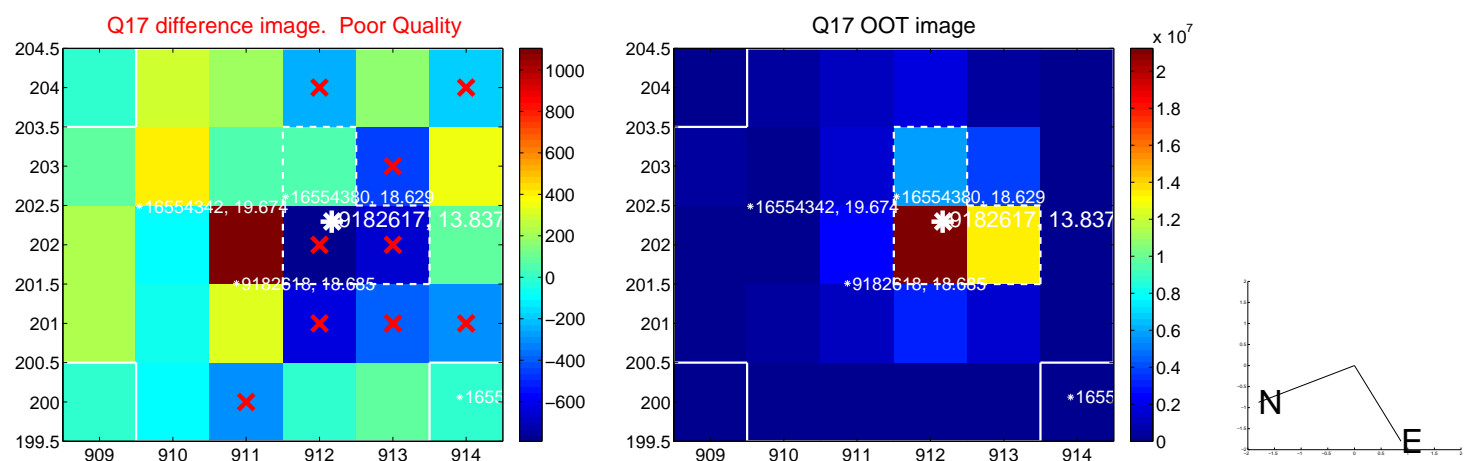
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Declination

