

KIC 010723618

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})
010723618-01	OBS	No	0.658669	132.106389	15.2	1.428	11.6	10.3	3.27	8072	1.49	115400.14
010723618-02	OBS	No	0.658670	131.897528	11.8	2.355	9.7	9.3	3.27	8072	1.31	115399.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010723618-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
010723618-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_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.

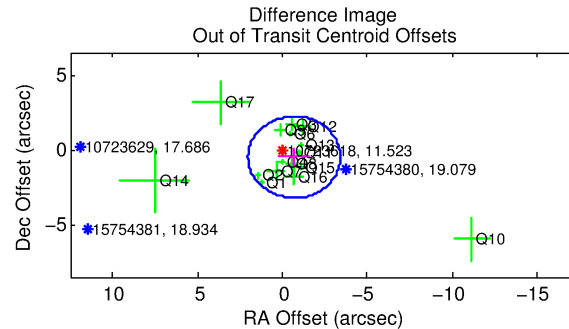
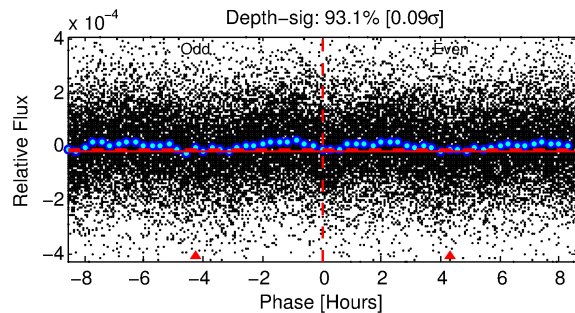
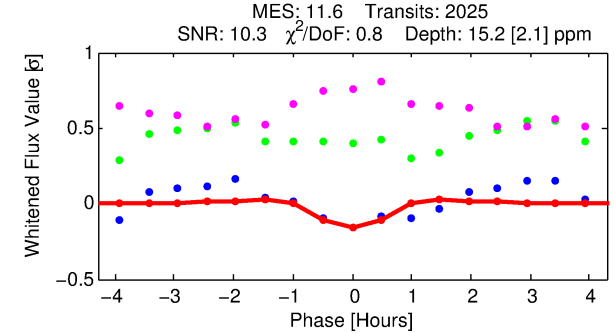
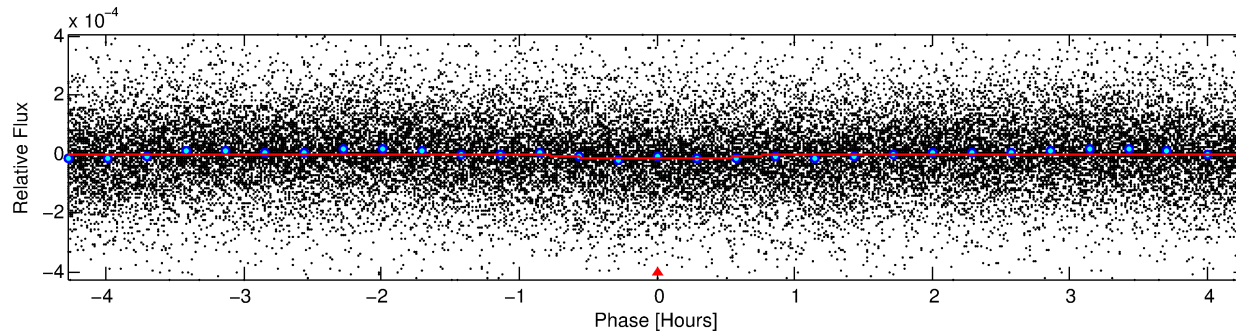
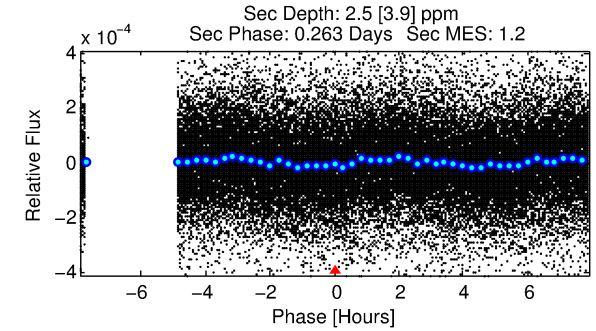
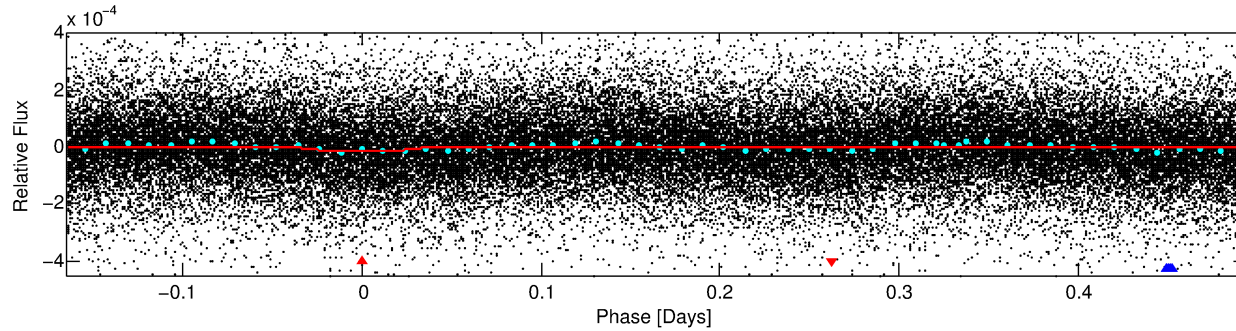
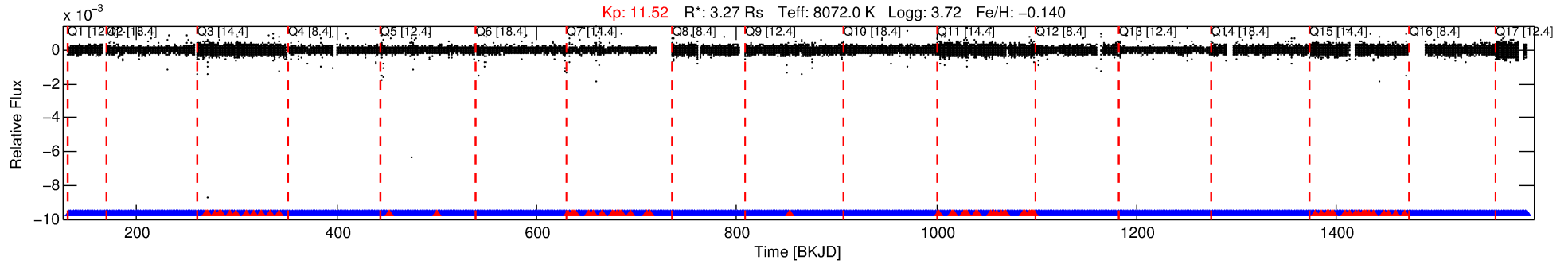
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010723618-01

No Significant Match Found

DV One-Page Summary

KIC: 10723618 Candidate: 1 of 2 Period: 0.659 d



DV Fit Results:

Period = 0.65867 [0.00001] d
Epoch = 132.1064 [0.0021] BKJD
Rp/R* = 0.0042 [0.0007]
a/R* = 1.83 [1.28]
b = 0.90 [0.22]
Seff = 115400.14 [87231.66]
Teq = 4700 [888] K
Rp = 1.49 [0.75] Re
a = 0.0188 [0.0086] AU
Ag = 0.22 [0.39] [-2.01σ]
Teffp = 4983 [1997] K [0.13σ]

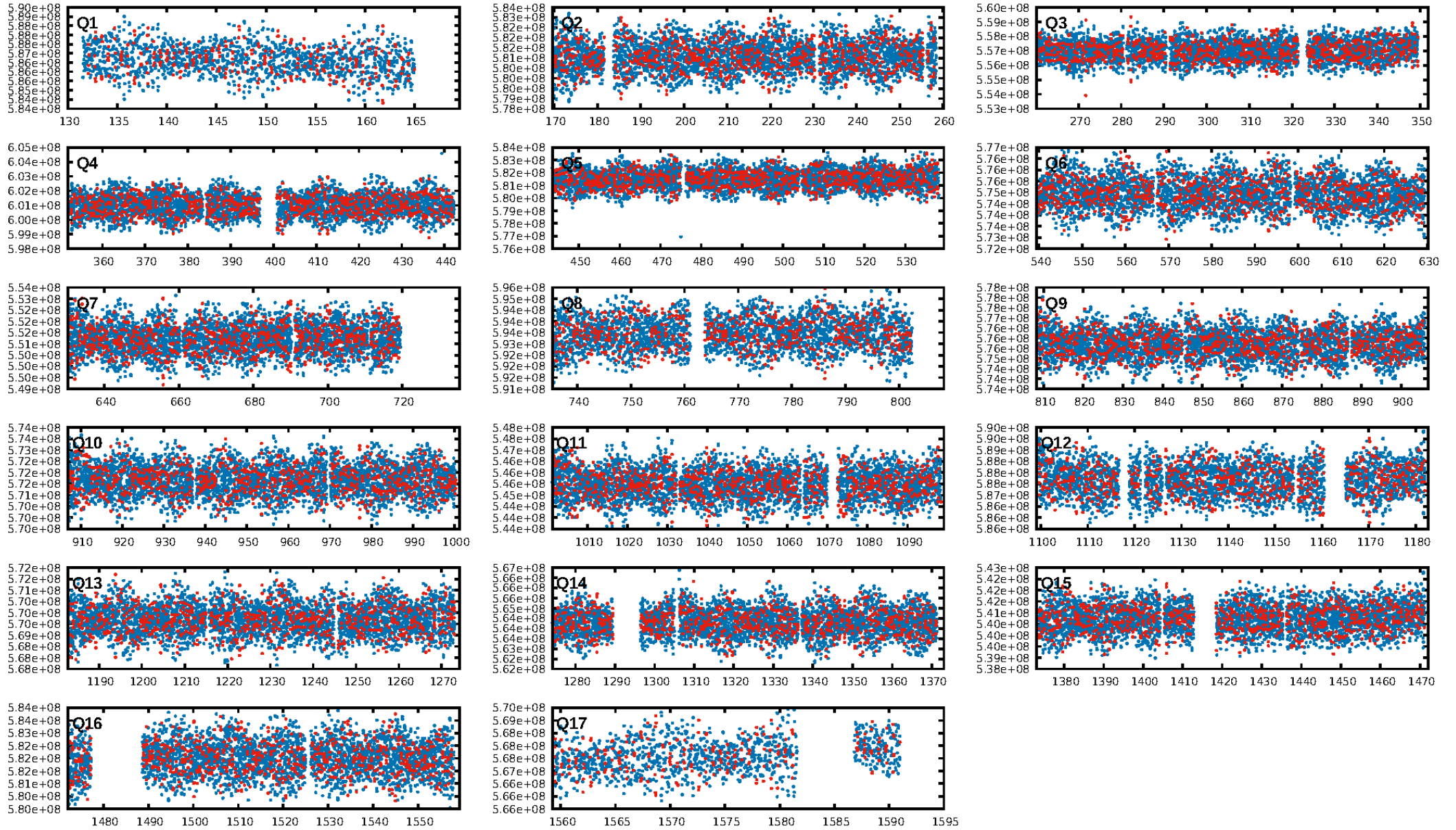
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.29e-21
RollingBand-fgt: 0.96 [1860/1935]
GhostDiagnostic-chr: 3.534
Centroid-sig: 9.3%
Centroid-so: 0.788 arcsec [1.32σ]
OotOffset-rm: 0.857 arcsec [0.95σ]
KicOffset-rm: 0.785 arcsec [0.90σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 0.00 [0/17]

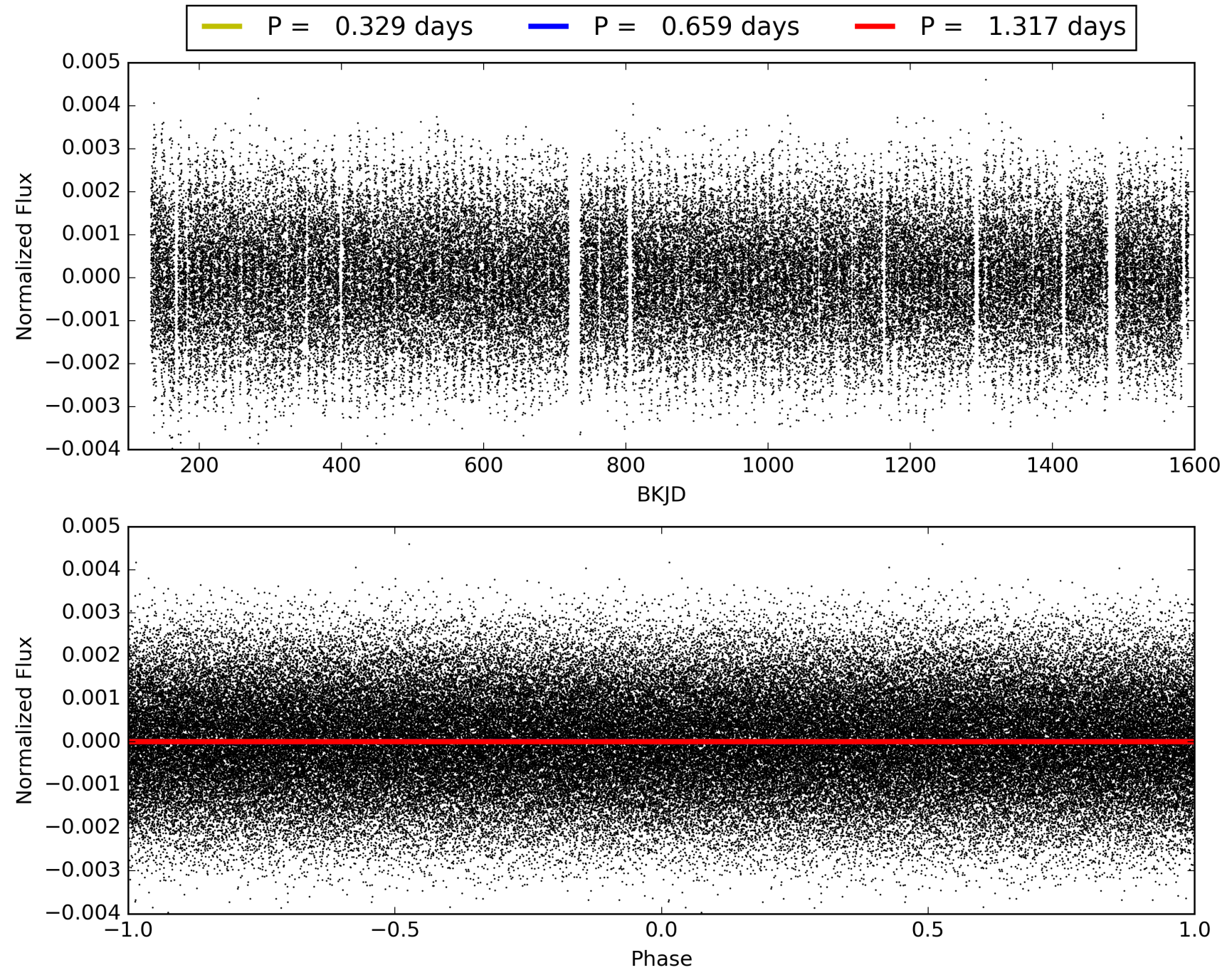
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:32:15 Z

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

TCE 010723618-01, PDC Light Curves

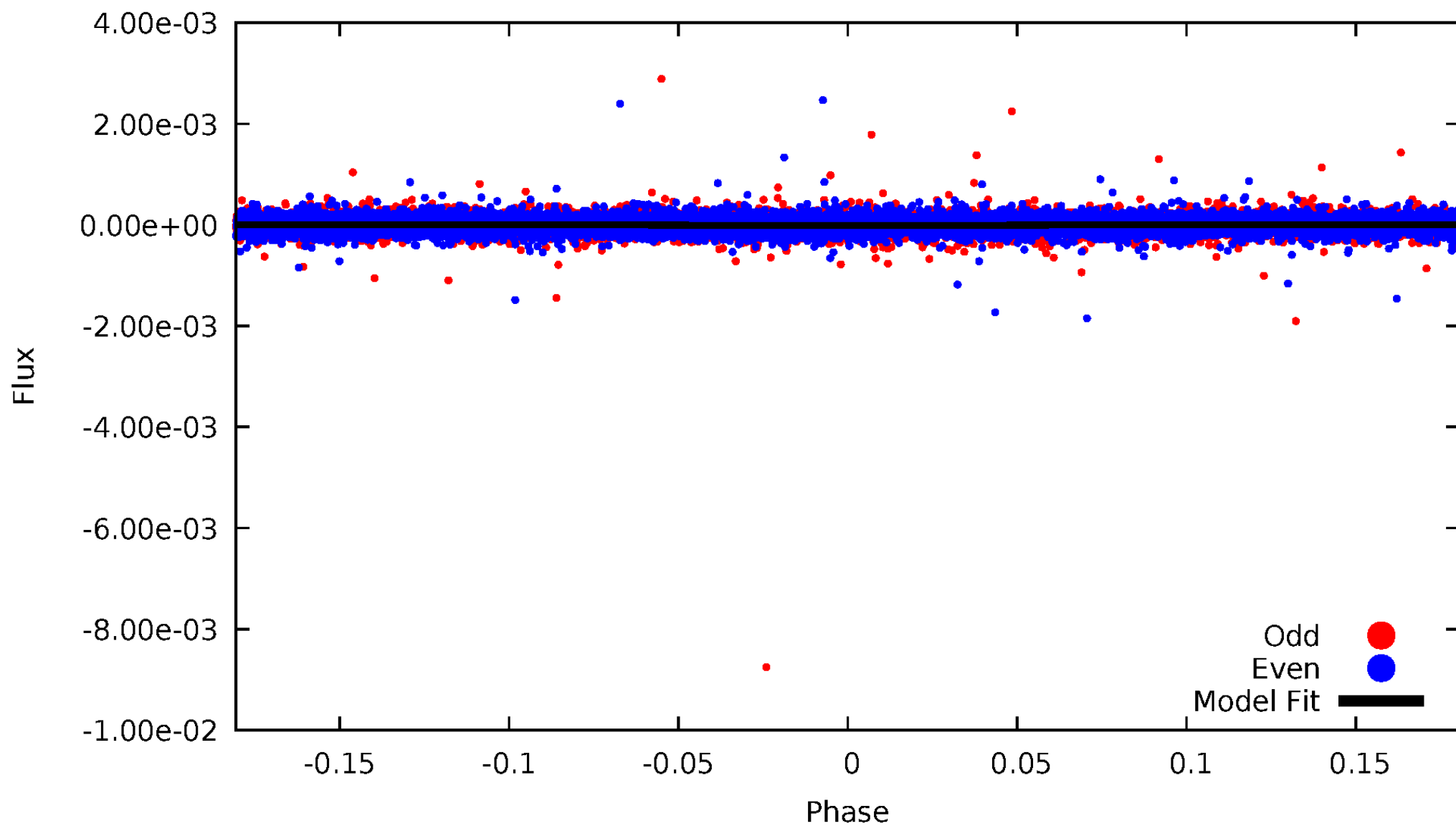


TCE 010723618-01



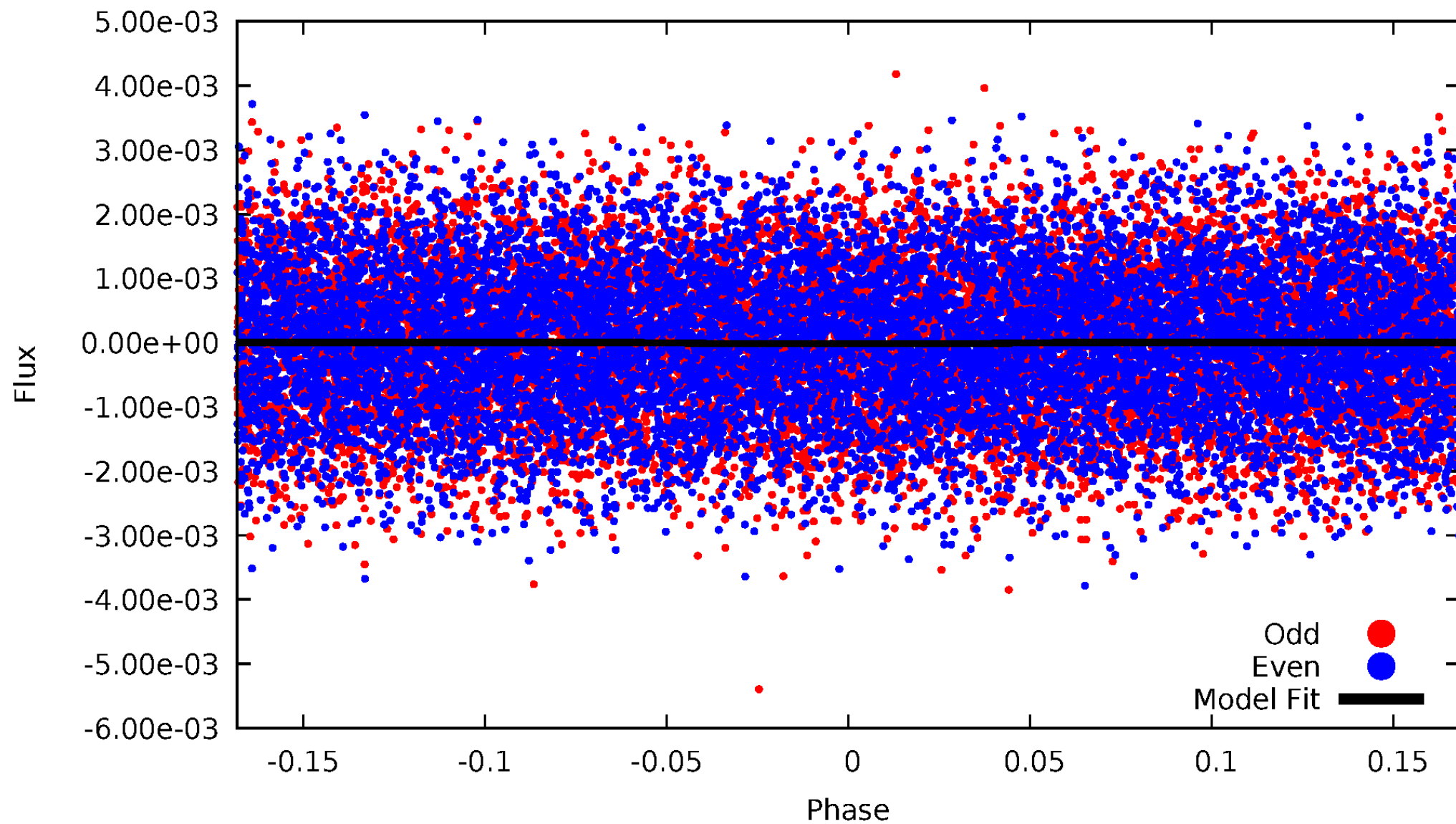
DV Odd/Even

TCE 010723618-01



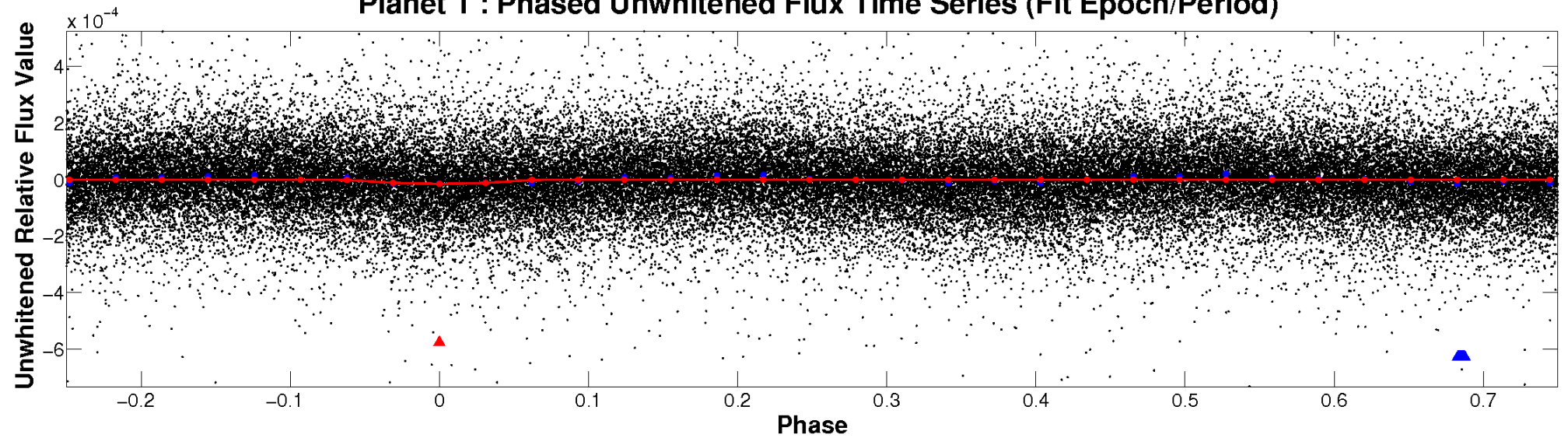
ALT Odd/Even

TCE 010723618-01

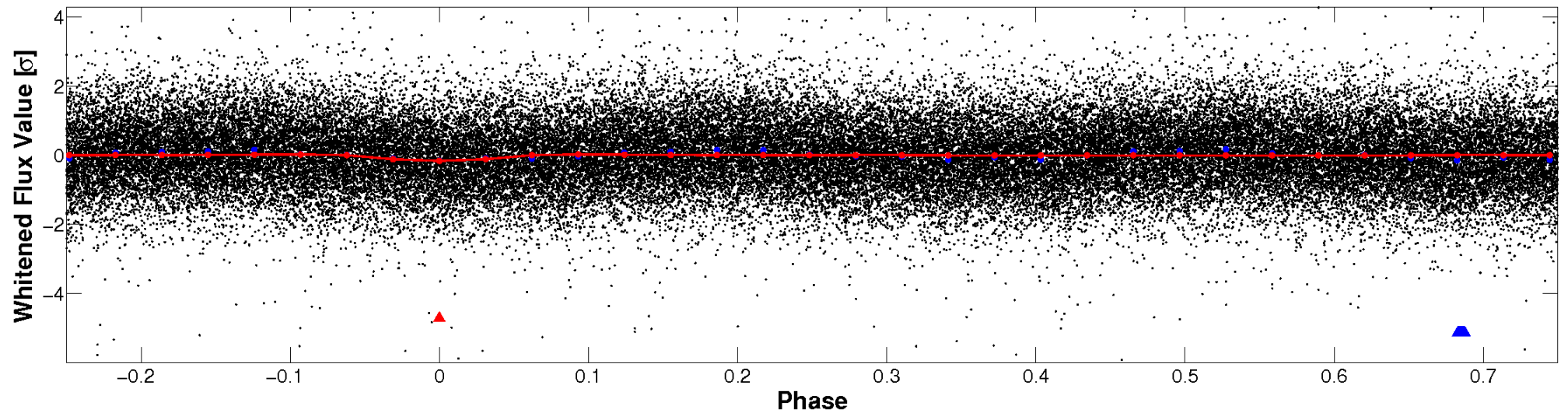


Non-Whitened Vs. Whitened Light Curve

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

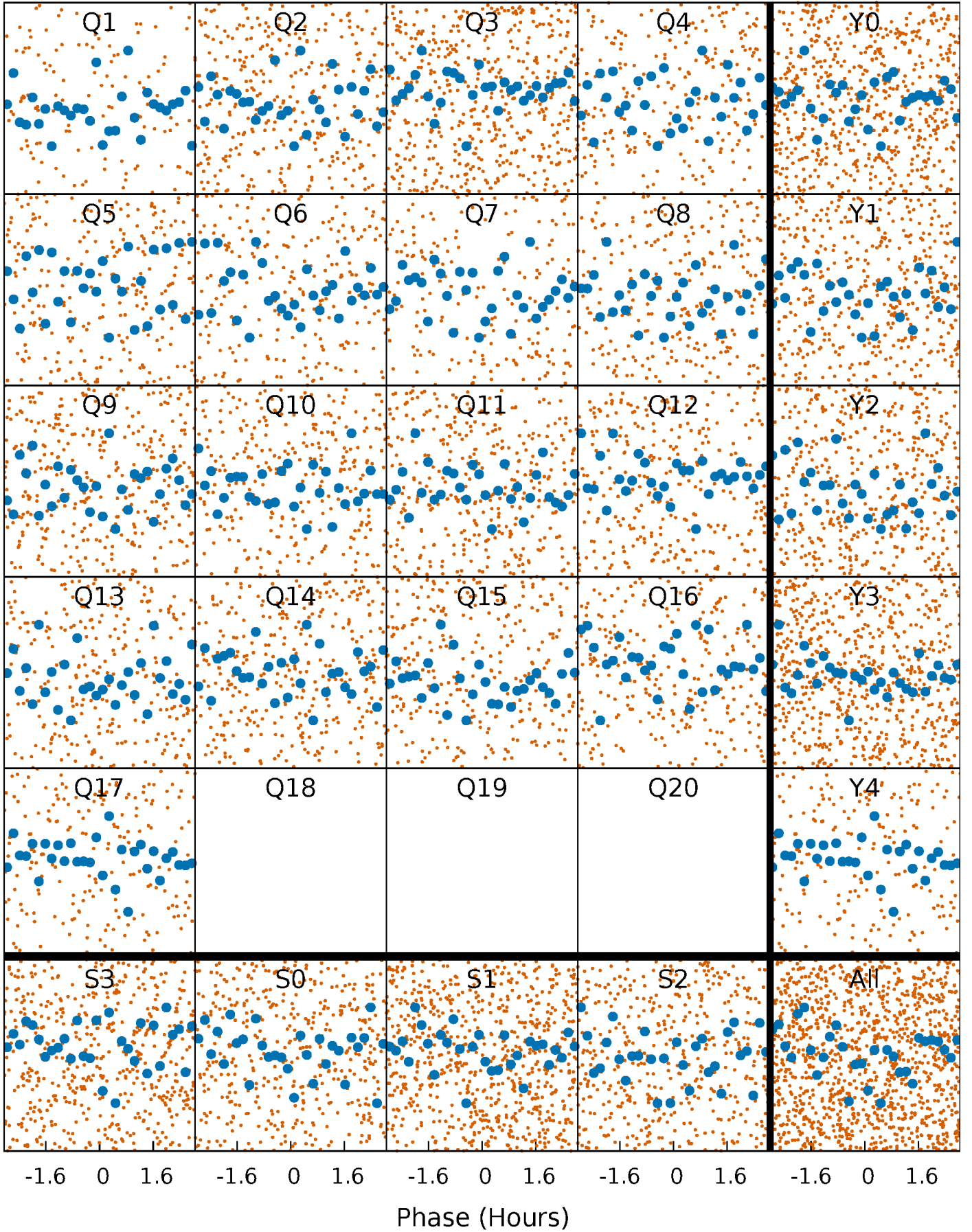


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



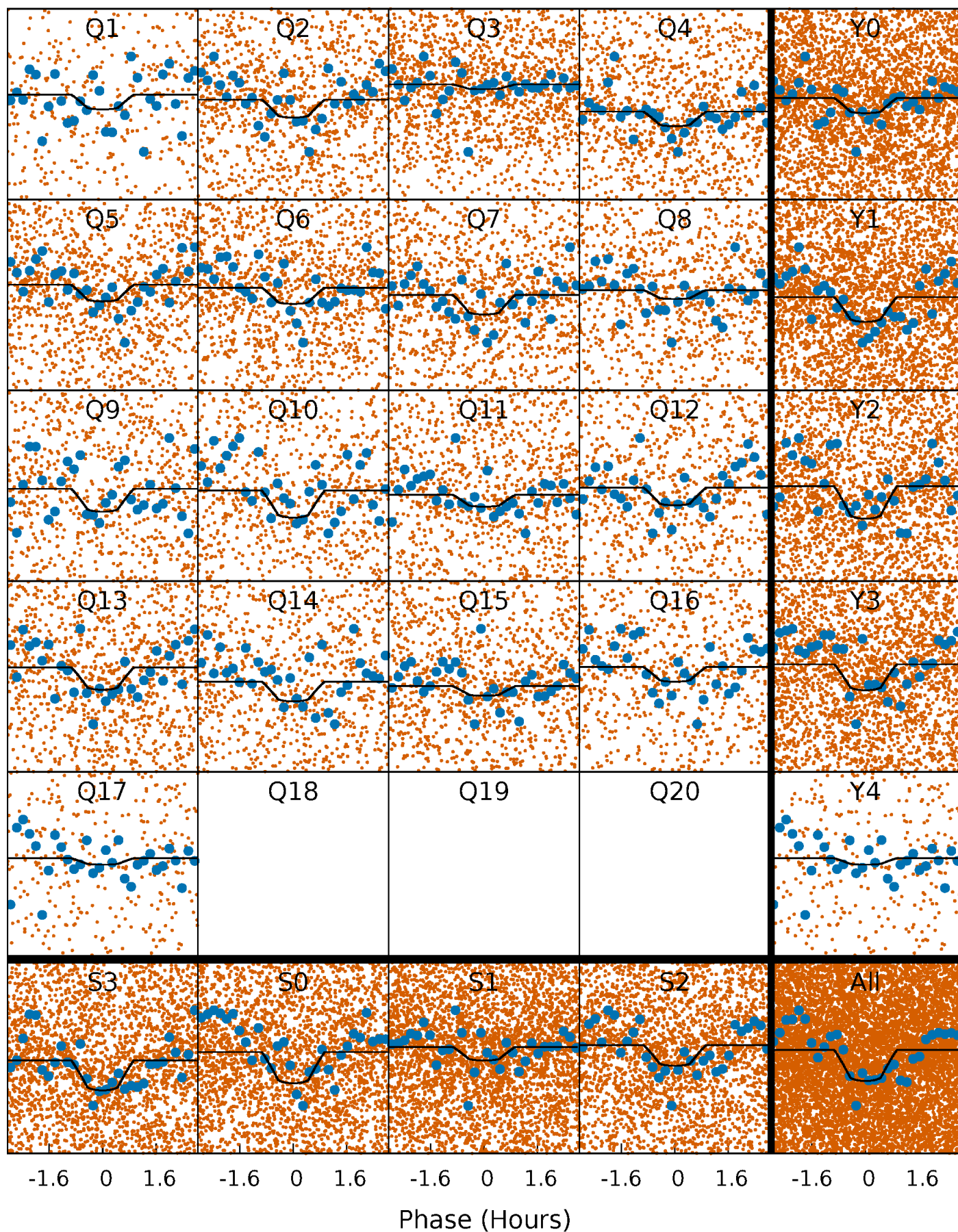
PDC Quarter-Phased Transit Curves

TCE 010723618-01 P= 0.658669 Days $T_0=132.106389$ (BKJD)



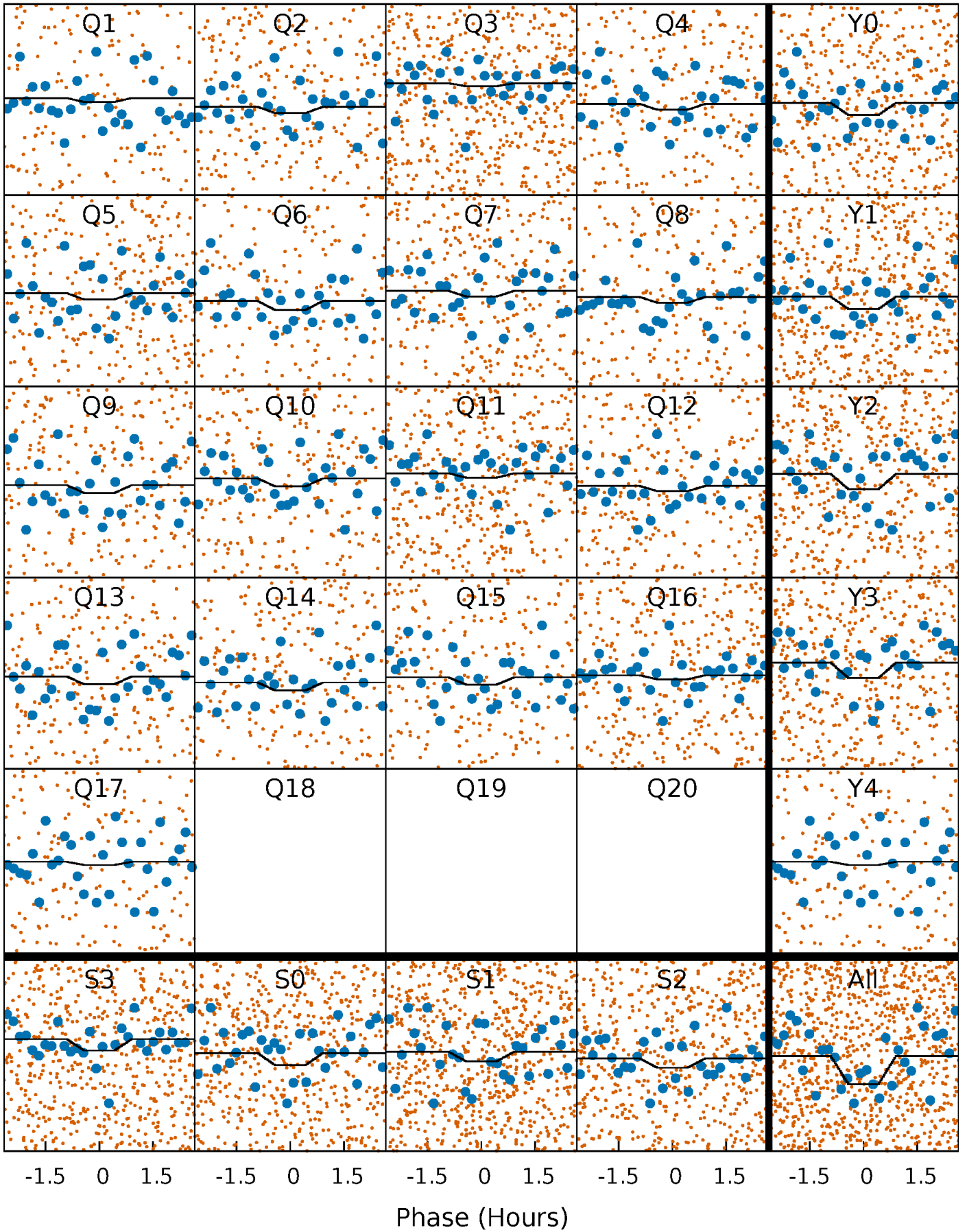
DV Quarter-Phased Transit Curves

TCE 010723618-01 P= 0.658669 Days $T_0=132.106389$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

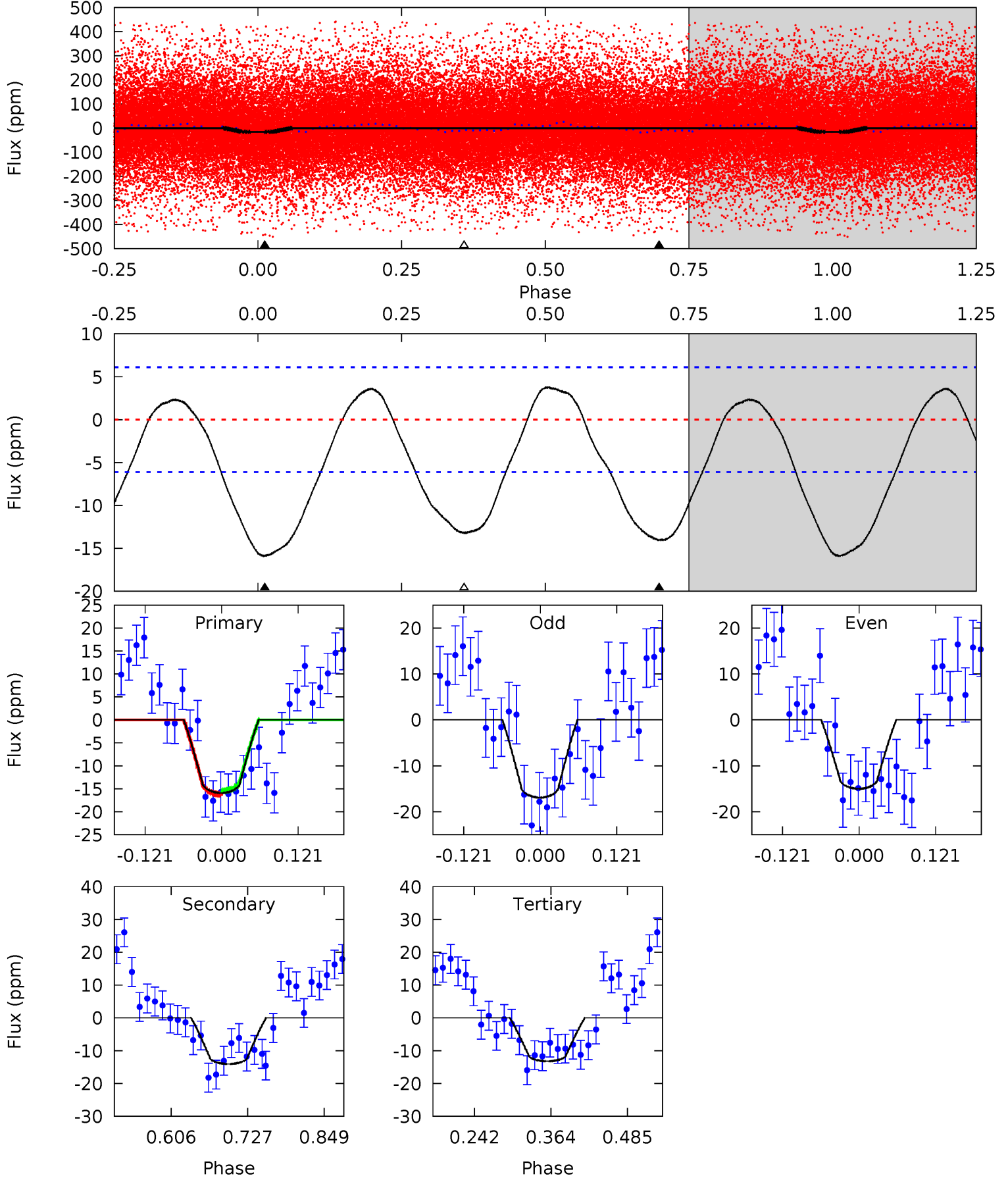
TCE 010723618-01 P= 0.658686 Days $T_0=132.103037$ (BKJD)



DV Model-Shift Uniqueness Test

010723618-01, P = 0.658669 Days, E = 131.447720 Days

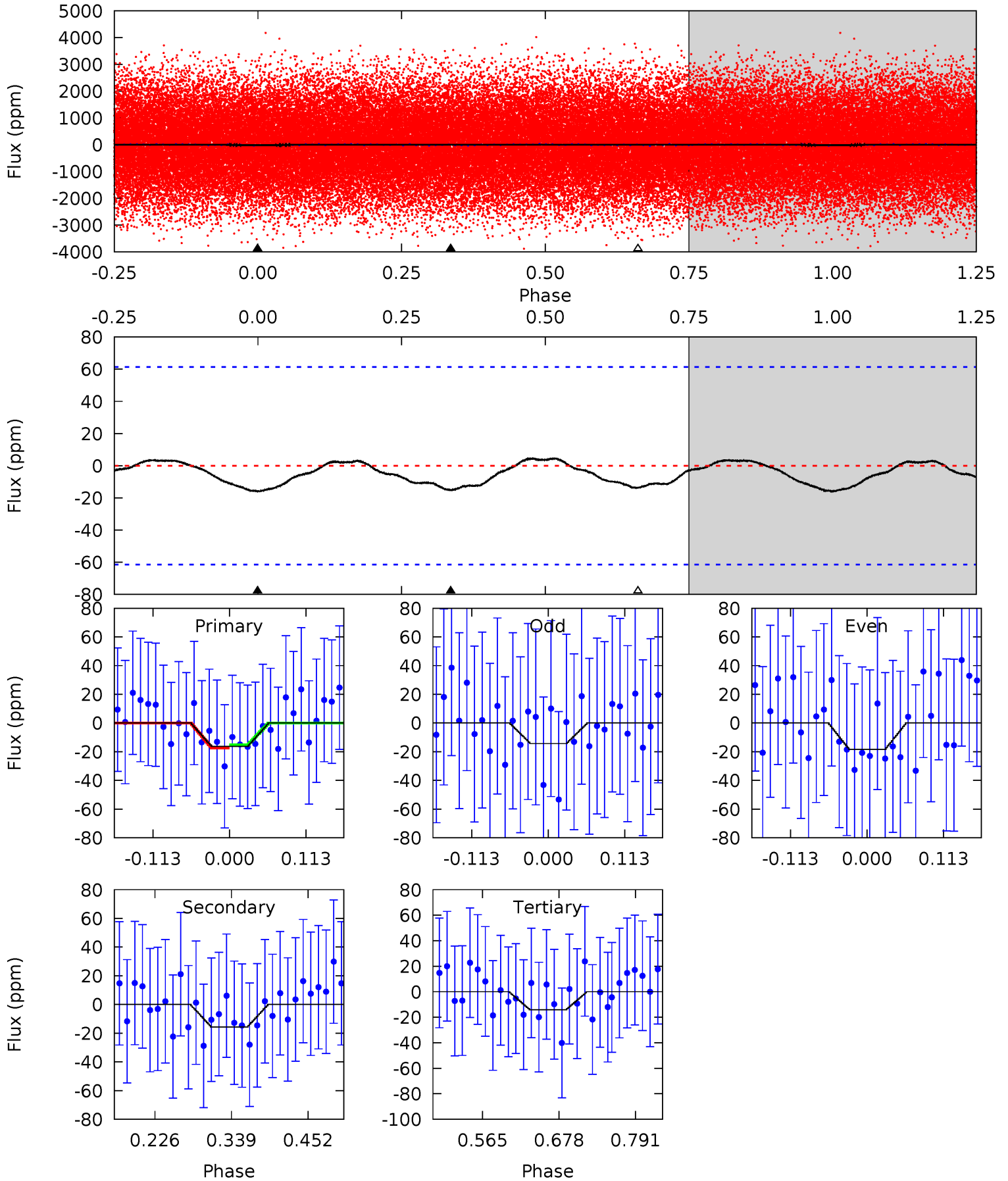
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	10.4	9.79	0	4.52	1.55	4.38	1.99	11.8	0.62	10.4	0.71	0.98	0.19	0



Alt Model-Shift Uniqueness Test

010723618-01, P = 0.658686 Days, E = 131.444351 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.21	1.15	1.05	0	4.54	1.59	0.43	0.16	1.21	0.11	1.15	0.15	1.07	0.23	0.08



Stellar Parameters For KIC 010723618

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8072^{+223}_{-363}	$3.717^{+0.432}_{-0.081}$	$-0.140^{+0.200}_{-0.350}$	$3.269^{+0.772}_{-1.545}$	$2.031^{+0.337}_{-0.505}$	$0.082^{+0.350}_{-0.028}$
	+3%/-4%	+12%/-2%	+143%/-250%	+24%/-47%	+17%/-25%	+427%/-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 010723618-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-14 ± 1	$1.34^{+0.36}_{-0.38}$	6247^{+517}_{-674}	7045^{+1143}_{-850}	$1.515^{+1.307}_{-0.562}$
Alt.	-16 ± 14	$1.35^{+0.37}_{-0.34}$	6279^{+499}_{-720}	7299^{+2137}_{-11507}	$1.662^{+2.014}_{-1.465}$

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

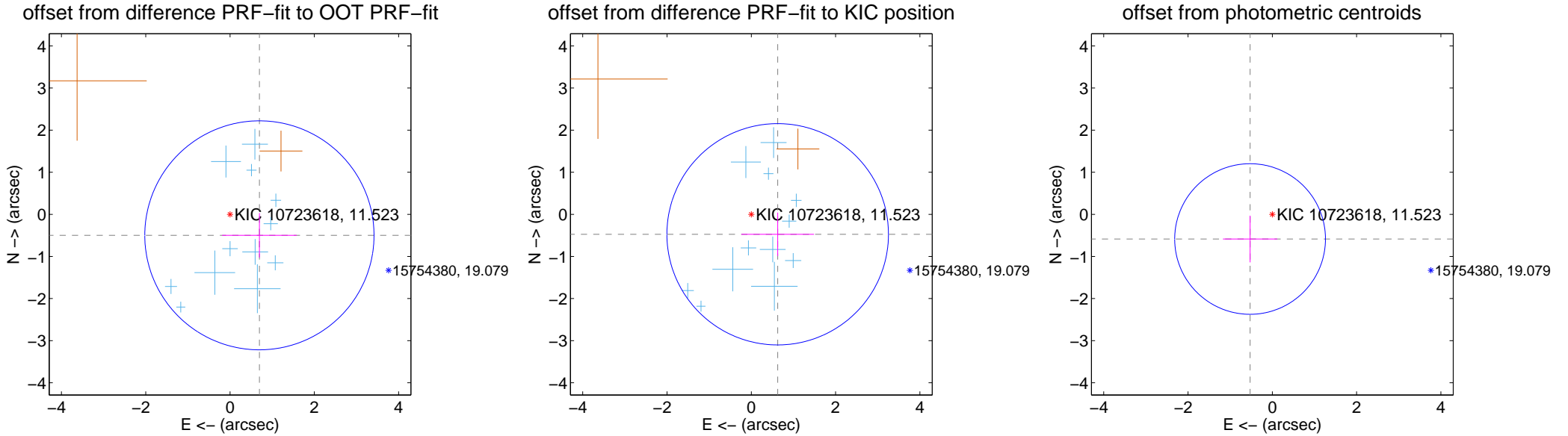
DV Centroid Data

Supplemental centroid analysis for 010723618-01. **Kepler magnitude: 11.52.** Transit SNR 10.33

There are 12 quarters with good PRF difference image offsets

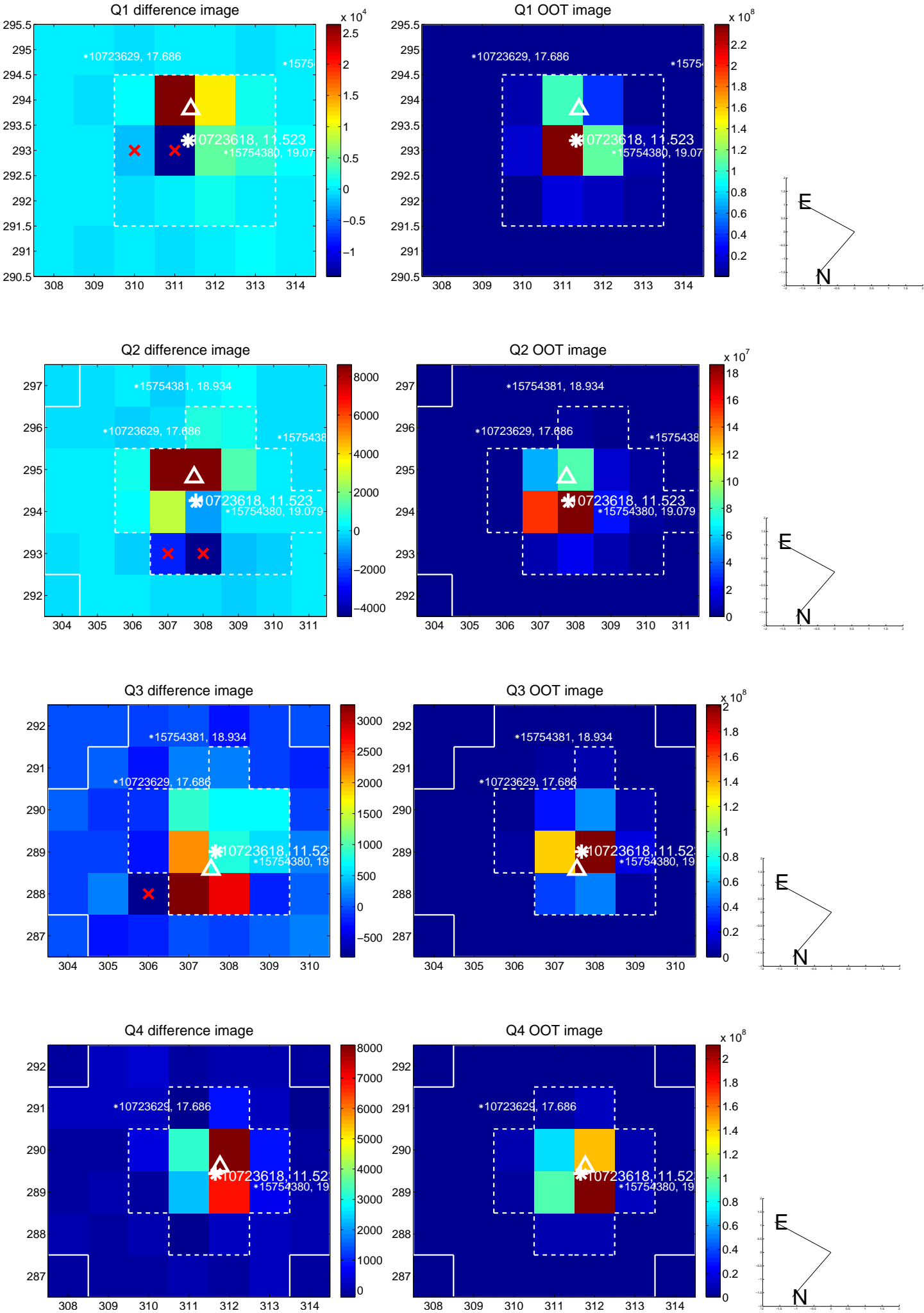
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.857 ± 0.906	0.95	-0.697 ± 0.883	-0.498 ± 0.527
PRF-fit source offset from KIC position	0.785 ± 0.876	0.90	-0.626 ± 0.863	-0.473 ± 0.514
photometric centroid source offset	0.79 ± 0.60	1.32	0.53 ± 0.64	-0.59 ± 0.55

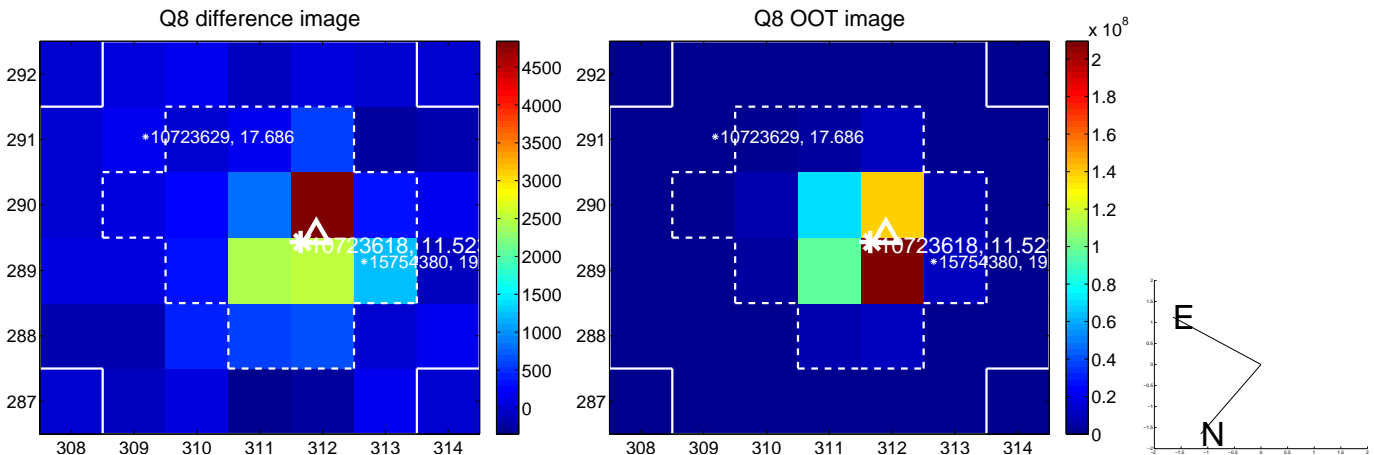
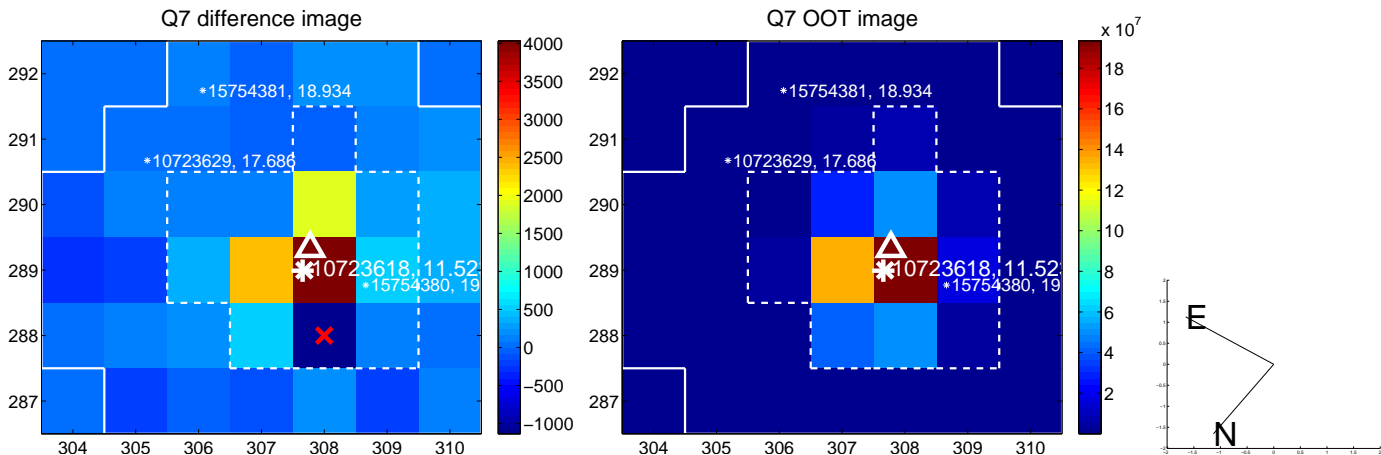
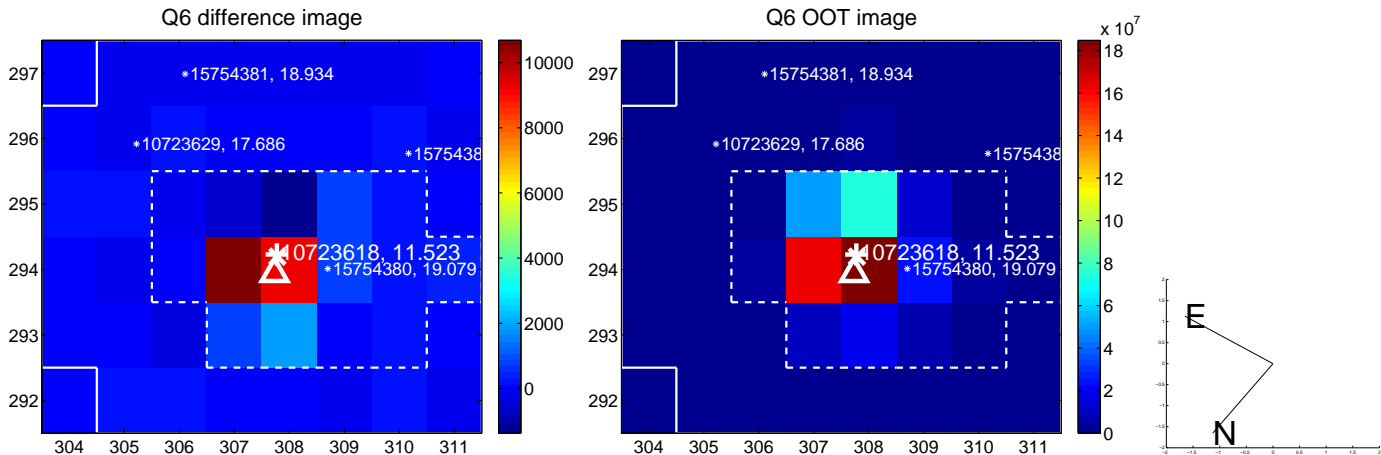
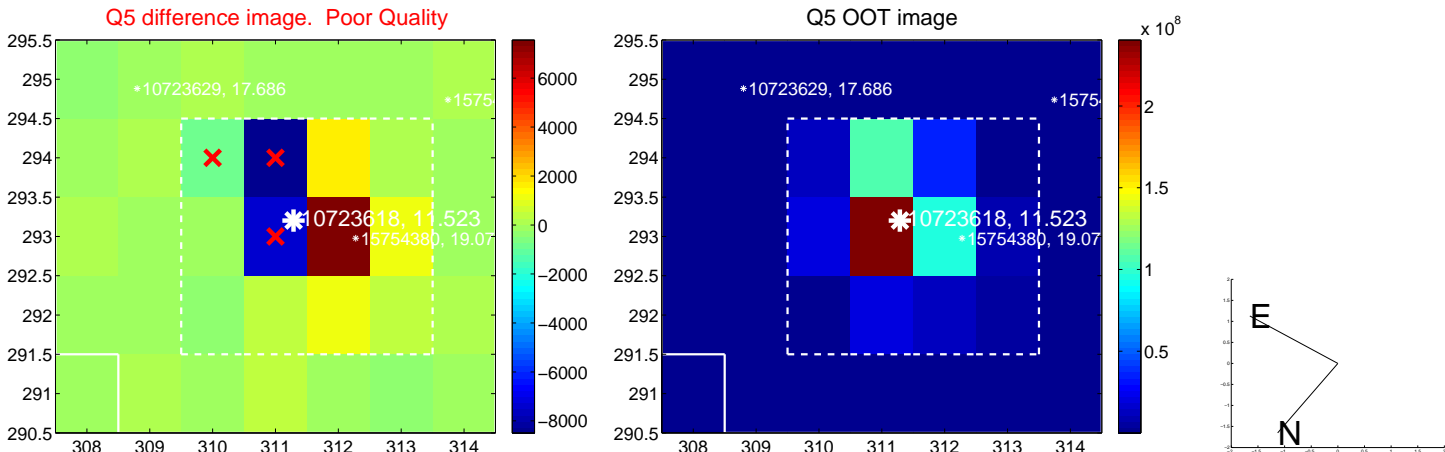


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

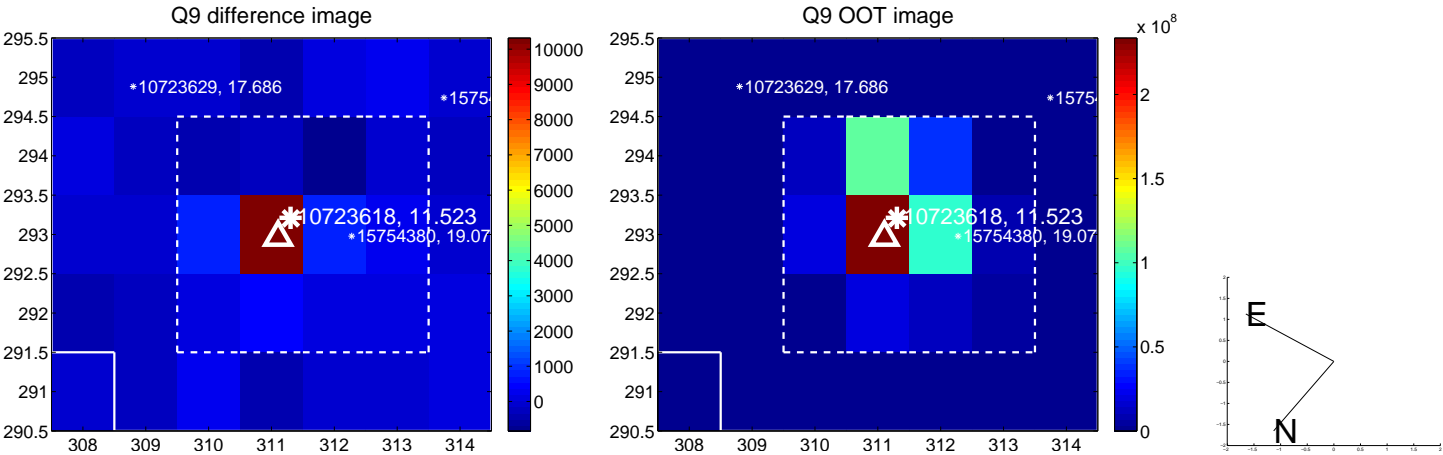
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



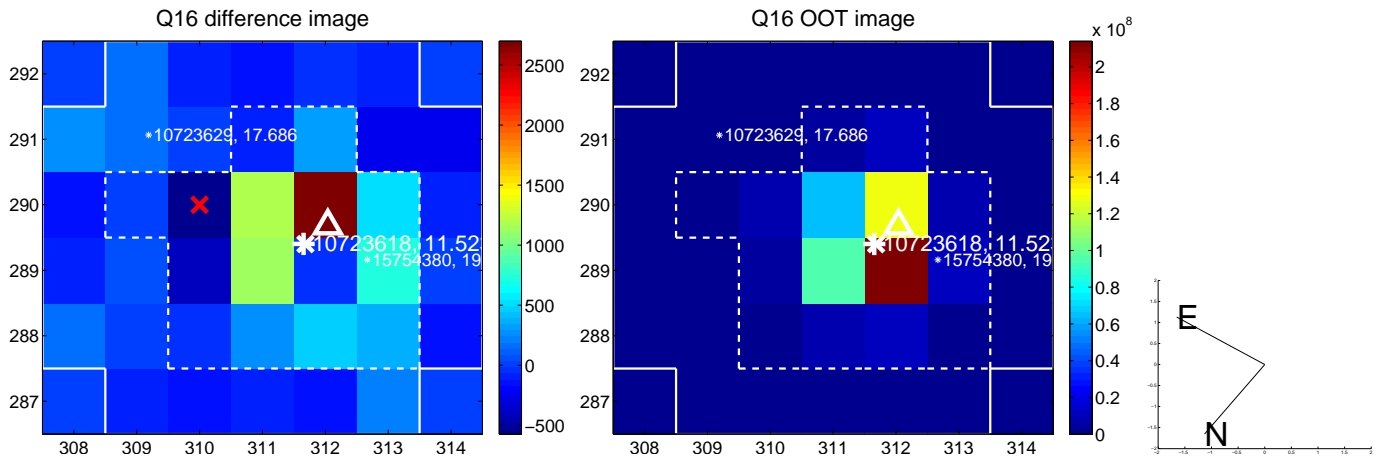
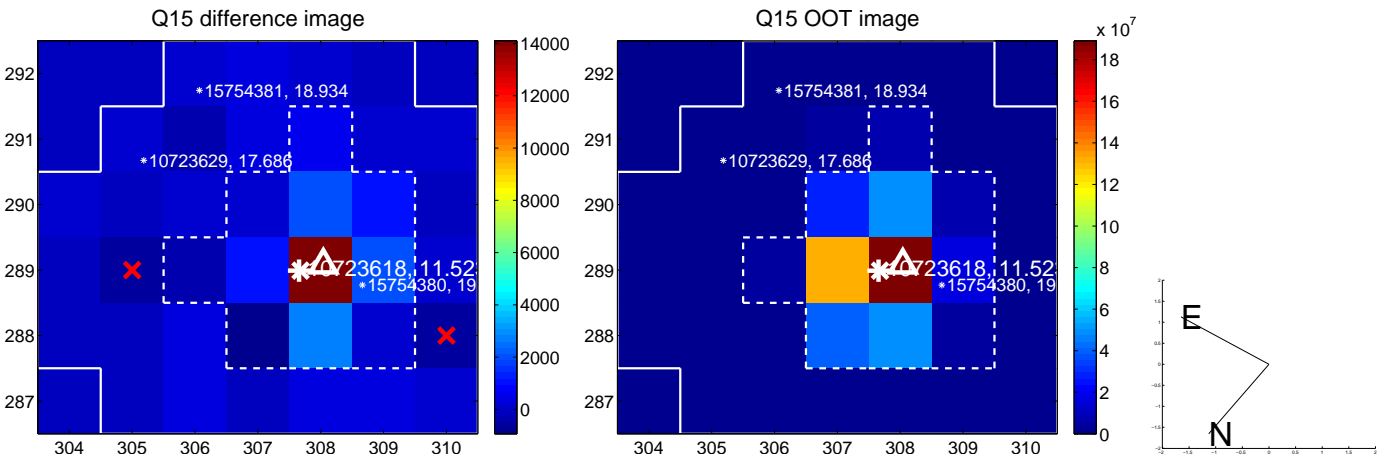
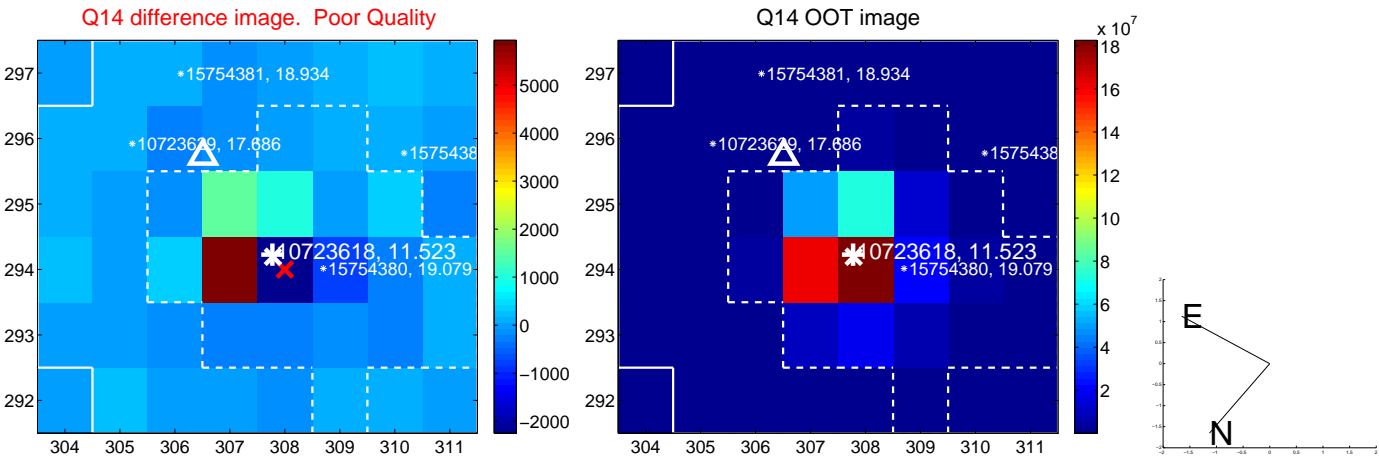
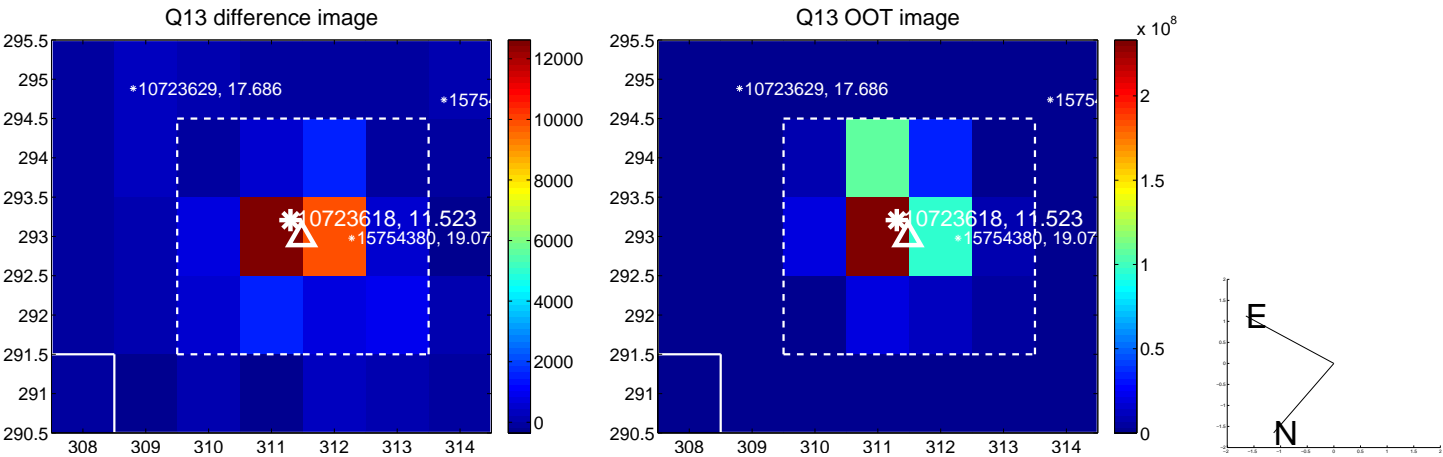
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



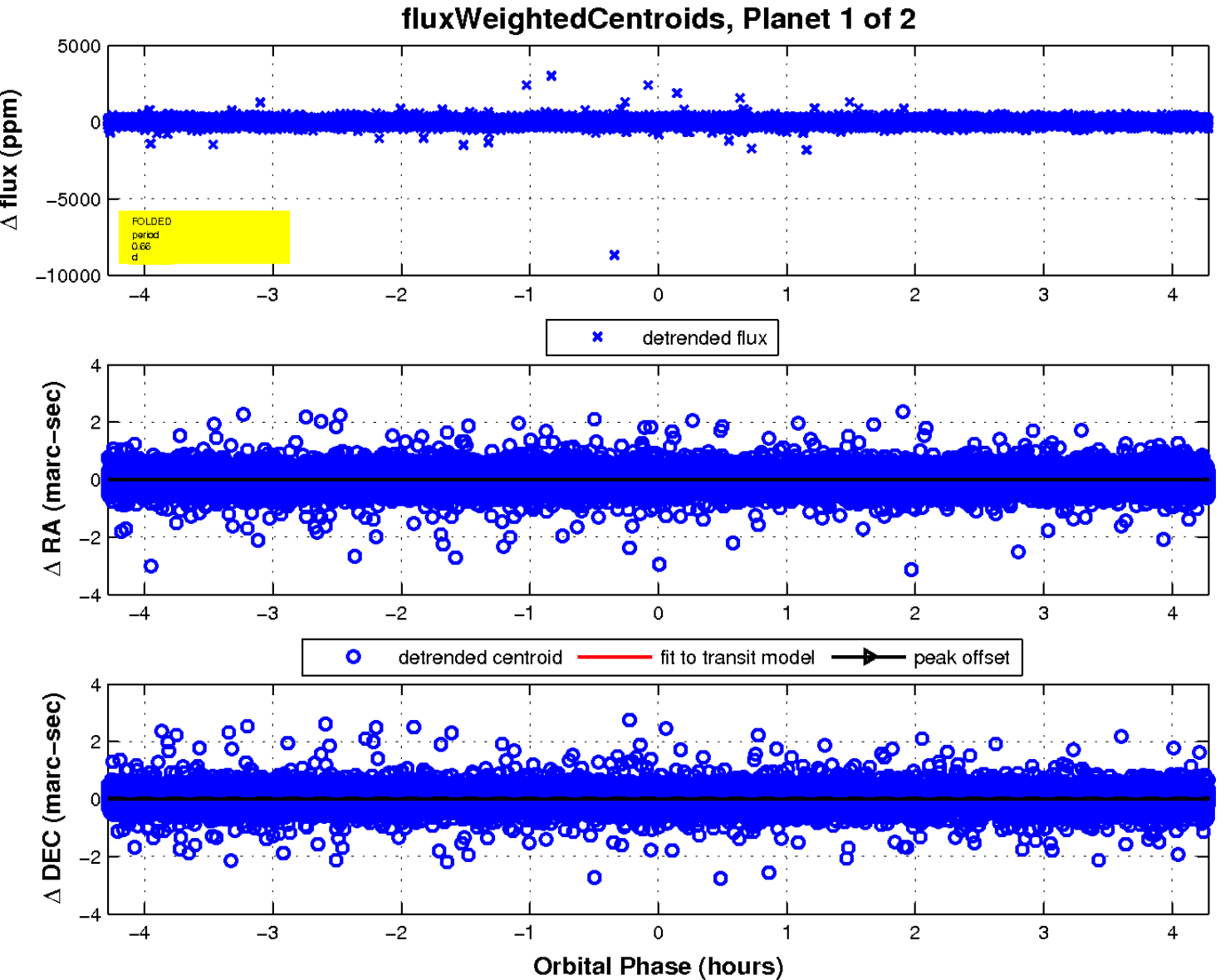
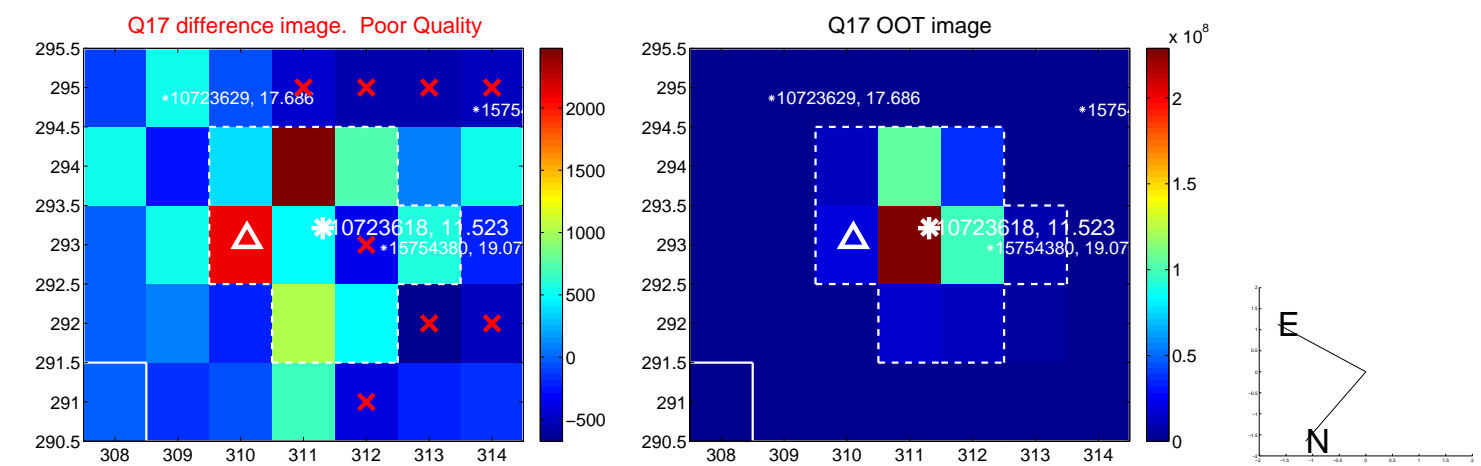
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



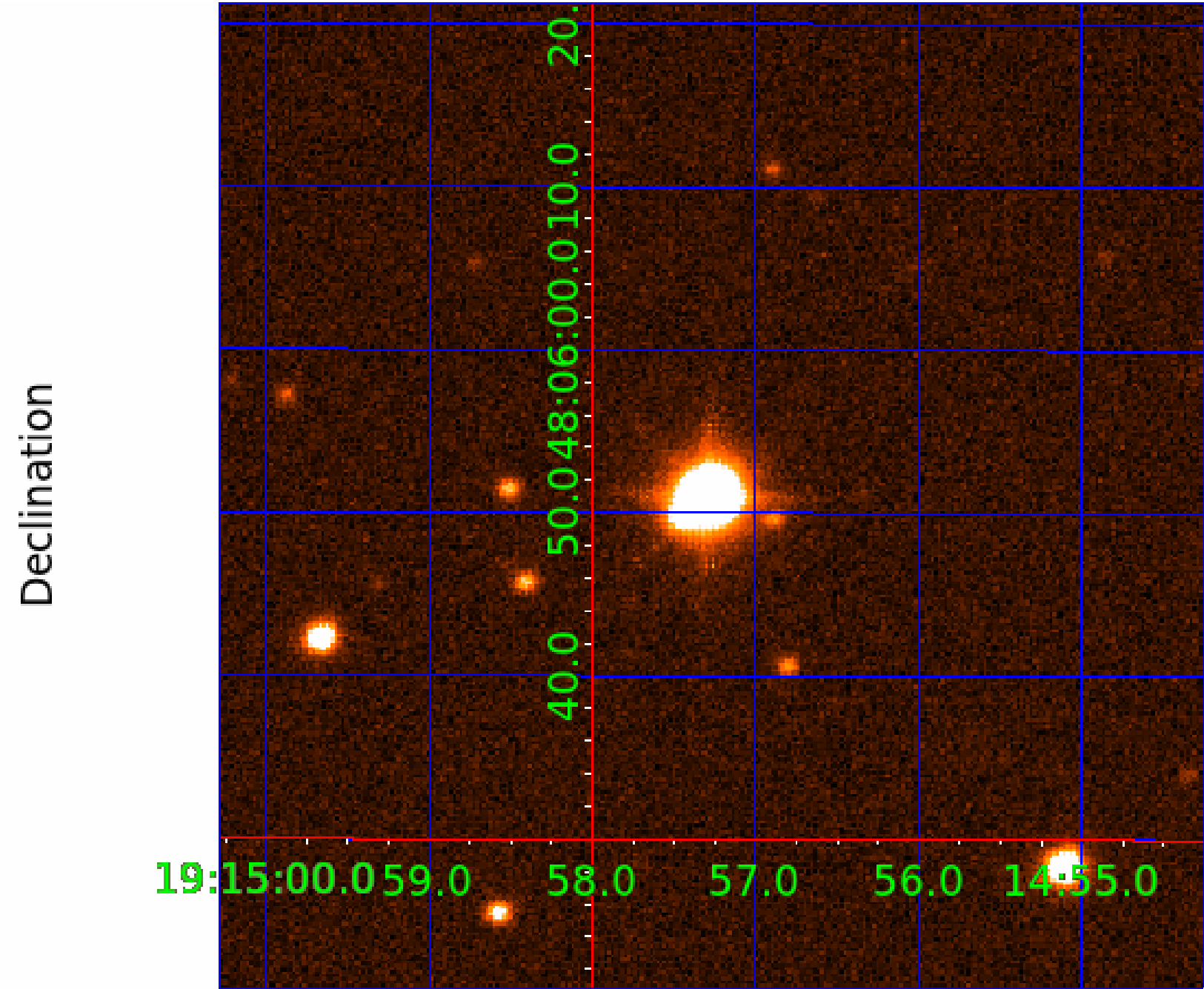
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010723618

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})
010723618-01	OBS	No	0.658669	132.106389	15.2	1.428	11.6	10.3	3.27	8072	1.49	115400.14
010723618-02	OBS	No	0.658670	131.897528	11.8	2.355	9.7	9.3	3.27	8072	1.31	115399.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010723618-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
010723618-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_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.

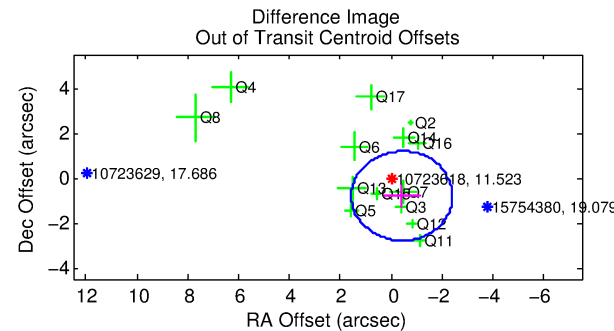
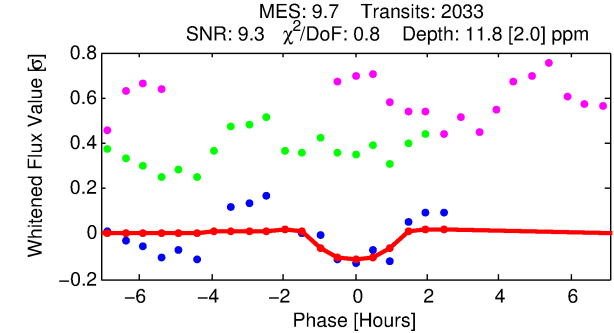
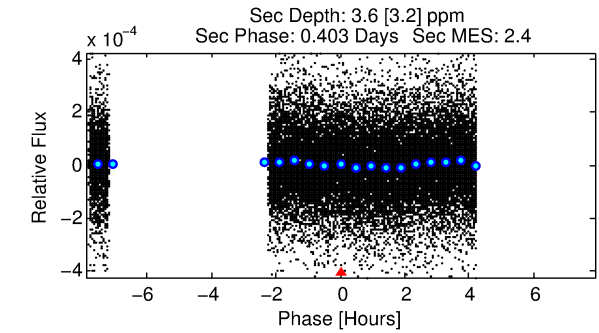
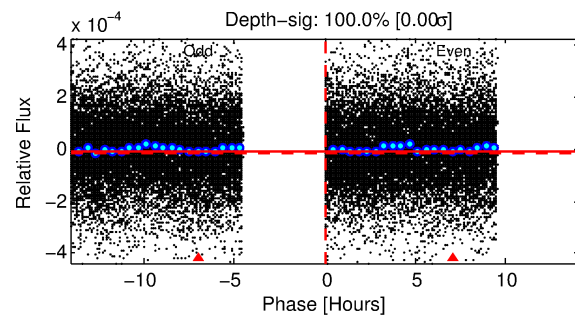
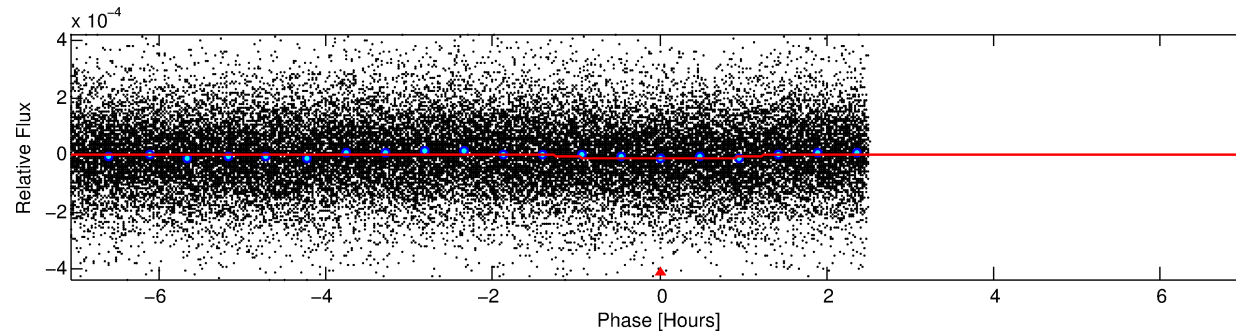
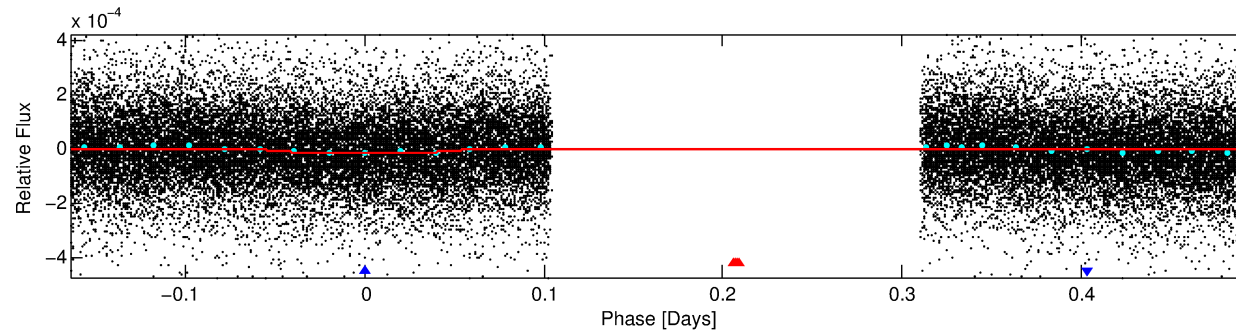
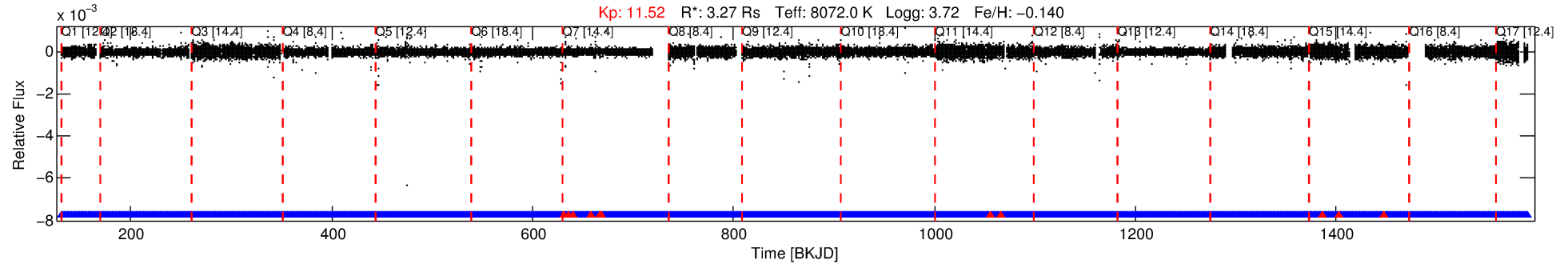
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010723618-02

No Significant Match Found

DV One-Page Summary

KIC: 10723618 Candidate: 2 of 2 Period: 0.659 d



DV Fit Results:

Period = 0.65867 [0.00002] d
Epoch = 131.8975 [0.0032] BKJD
Rp/R* = 0.0037 [0.0010]
a/R* = 1.33 [1.01]
b = 0.90 [0.37]
Seff = 115399.81 [87231.42]
Teq = 4700 [888] K
Rp = 1.31 [0.72] Re
a = 0.0188 [0.0086] AU
Ag = 0.41 [0.52] [-1.14σ]
Teffp = 5803 [1549] K [0.62σ]

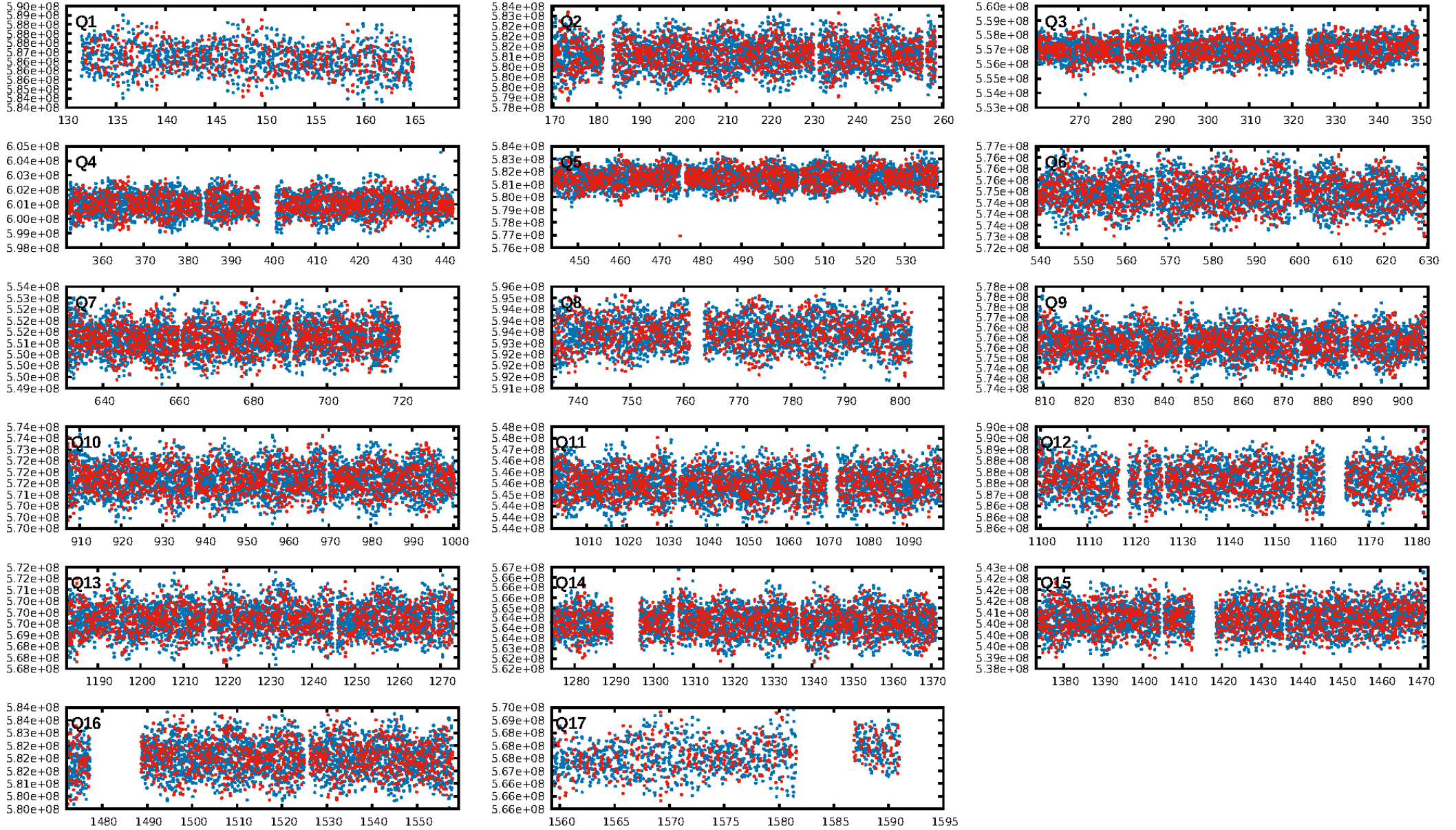
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.02e-15
RollingBand-fgt: 0.99 [1929/1940]
GhostDiagnostic-chr: -21.96
Centroid-sig: 23.4%
Centroid-so: 0.476 arcsec [0.85σ]
OotOffset-rm: 0.908 arcsec [1.37σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-rm: 0.838 arcsec [1.11σ]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.00 [0/17]

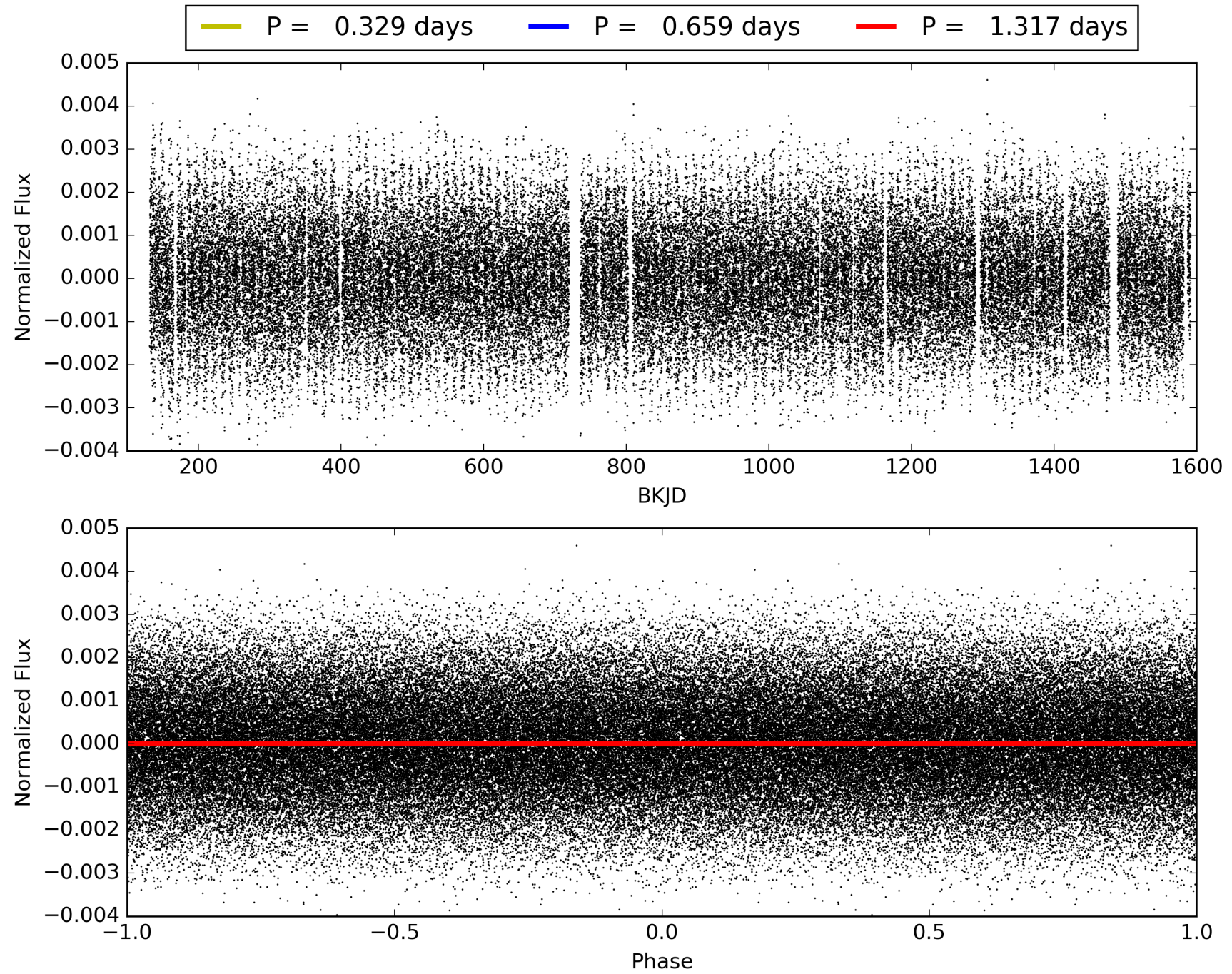
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:32:26 Z

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

TCE 010723618-02, PDC Light Curves

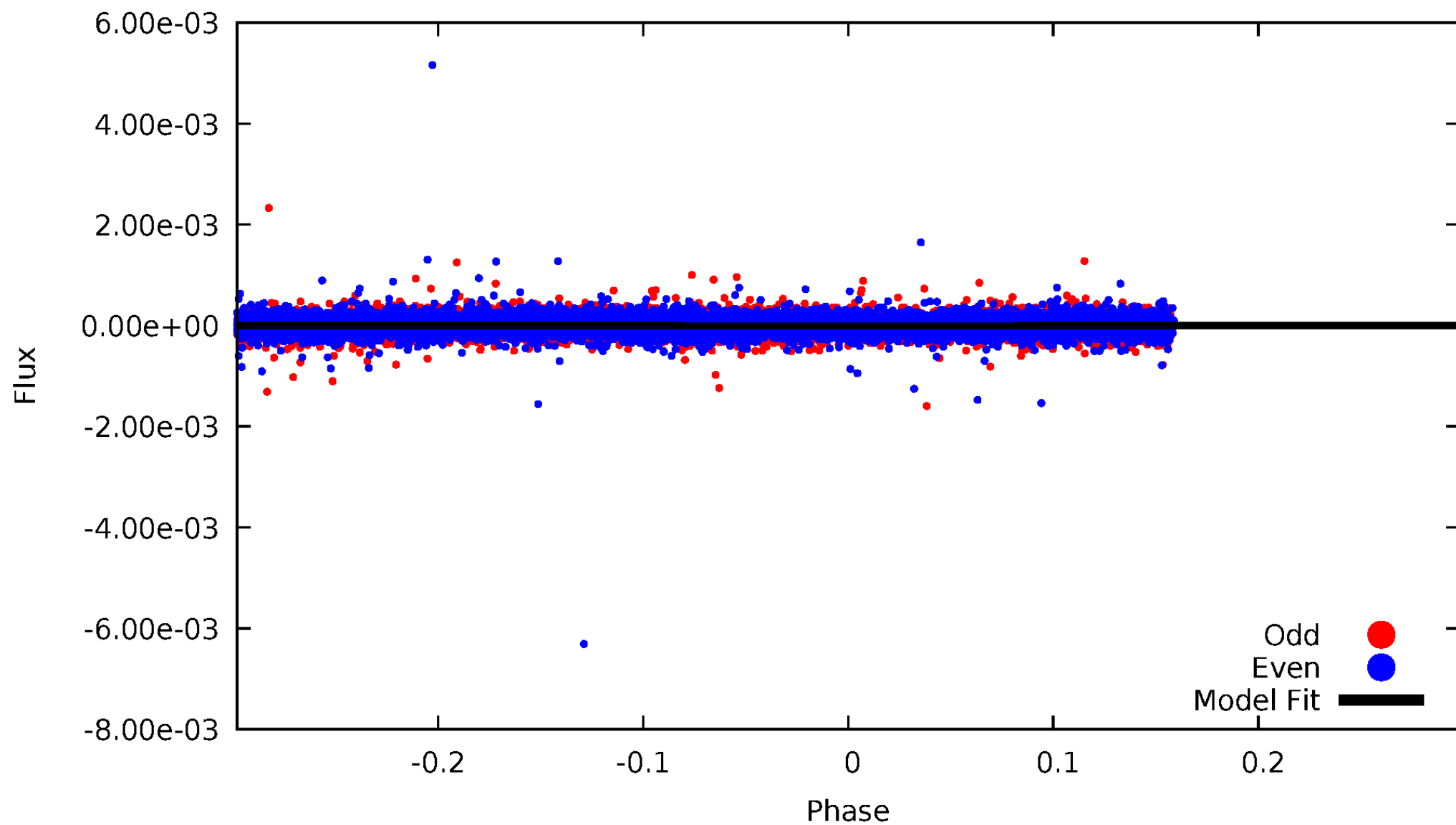


TCE 010723618-02



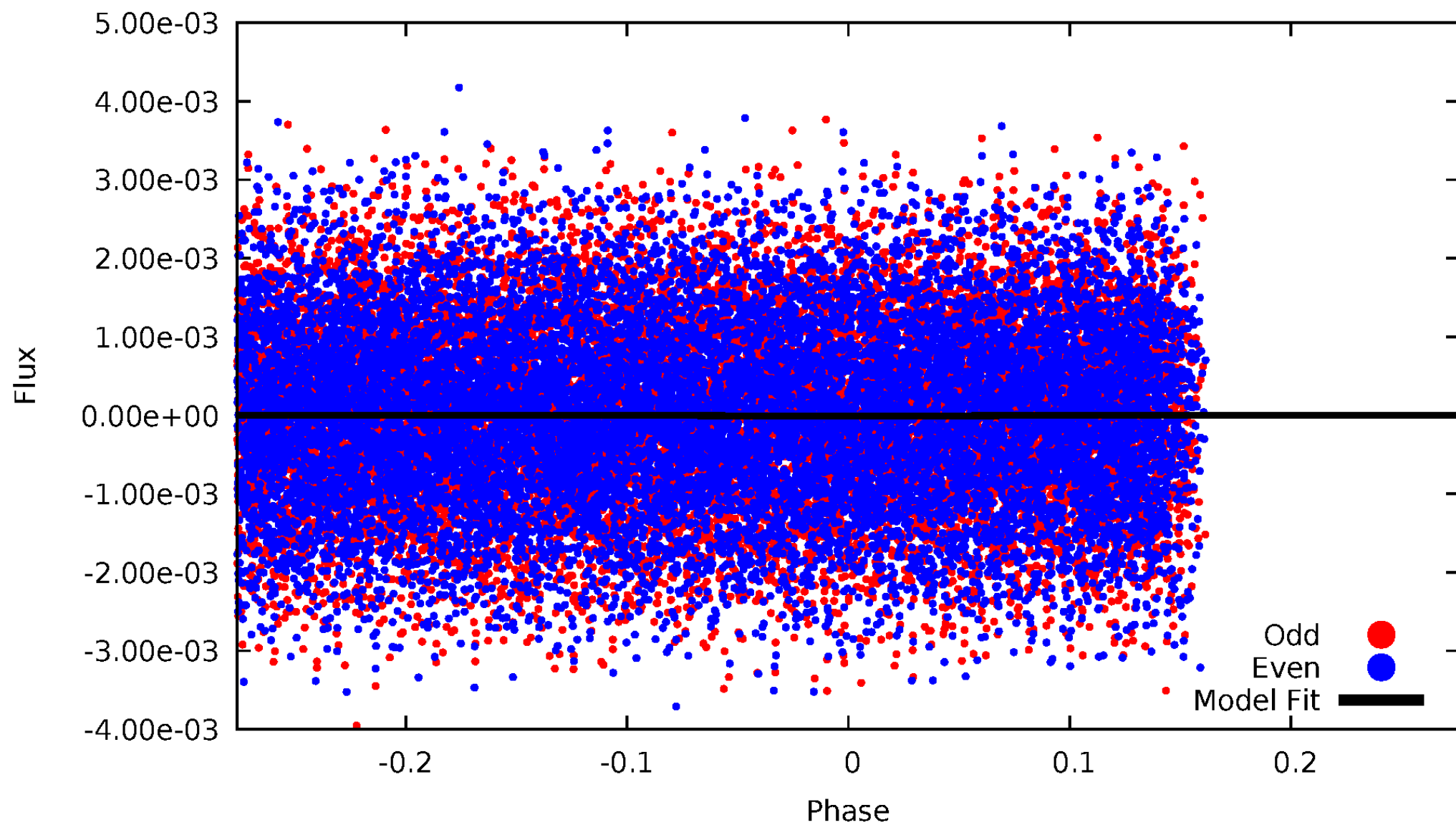
DV Odd/Even

TCE 010723618-02



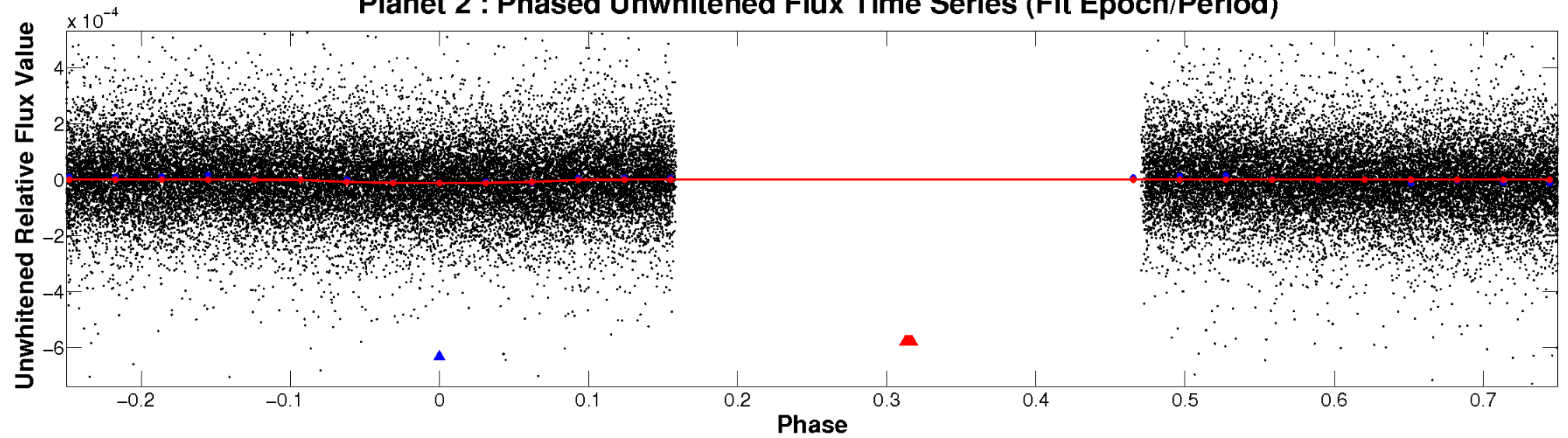
ALT Odd/Even

TCE 010723618-02

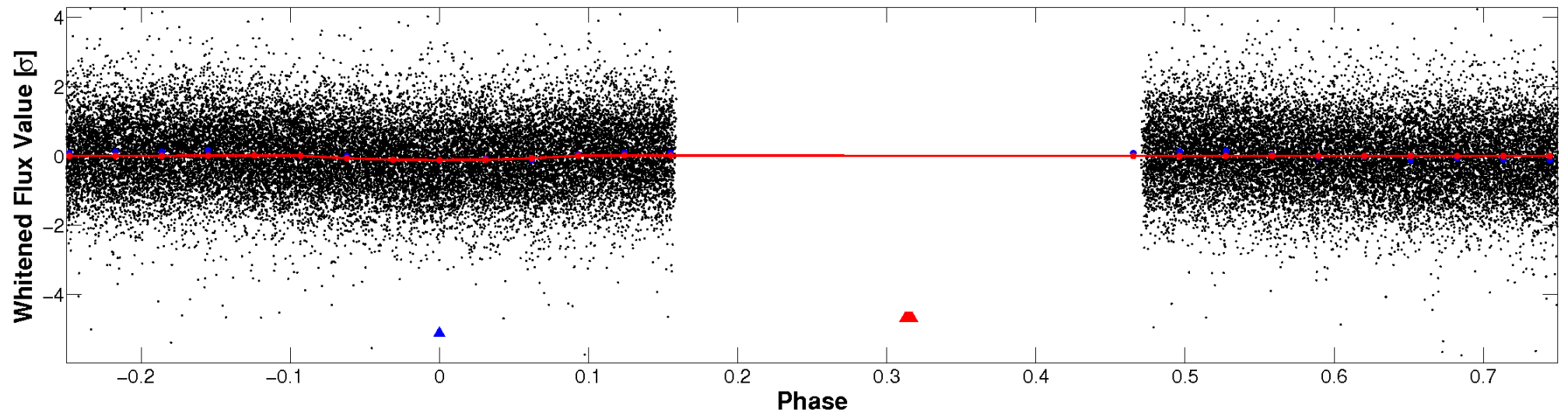


Non-Whitened Vs. Whitened Light Curve

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

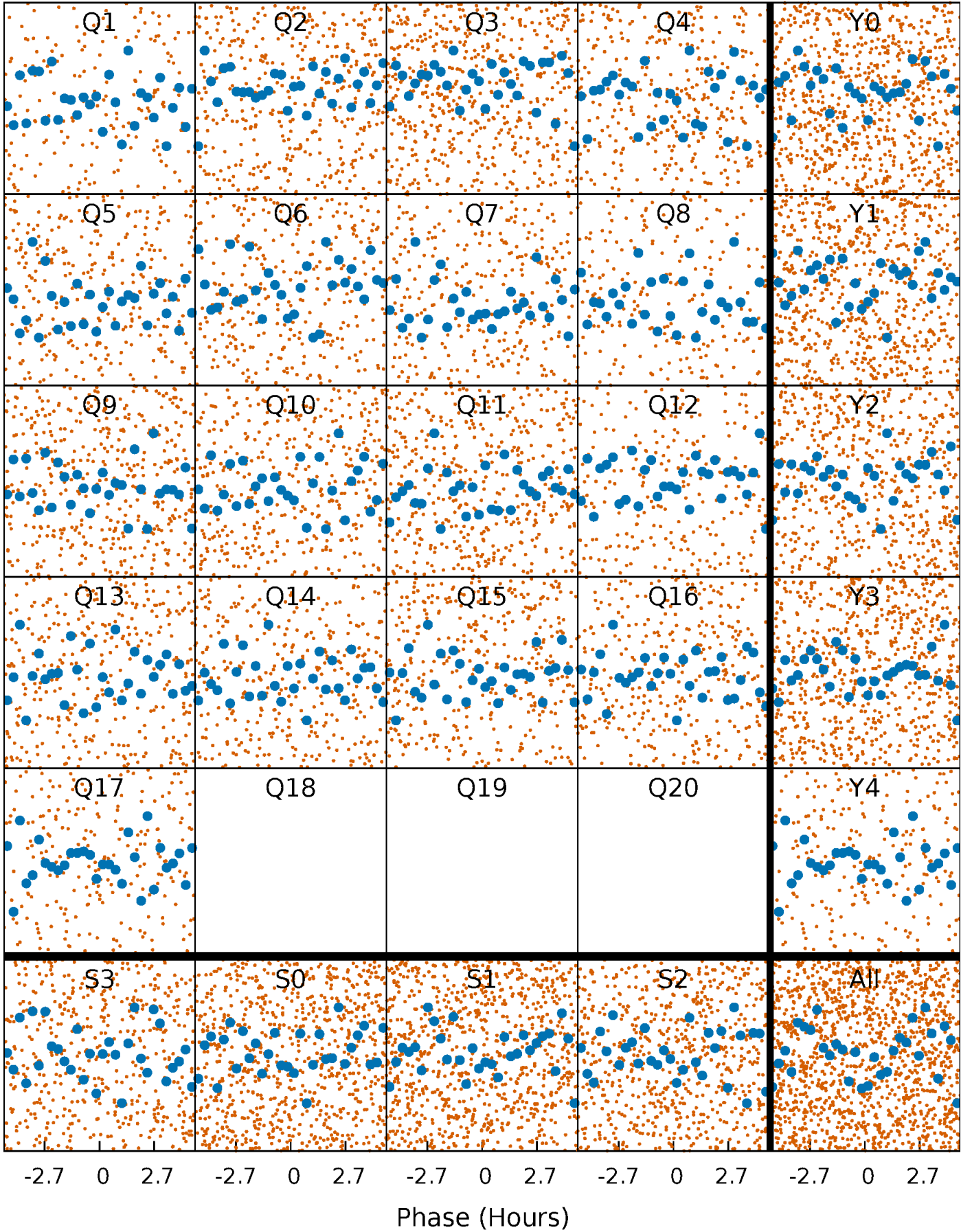


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



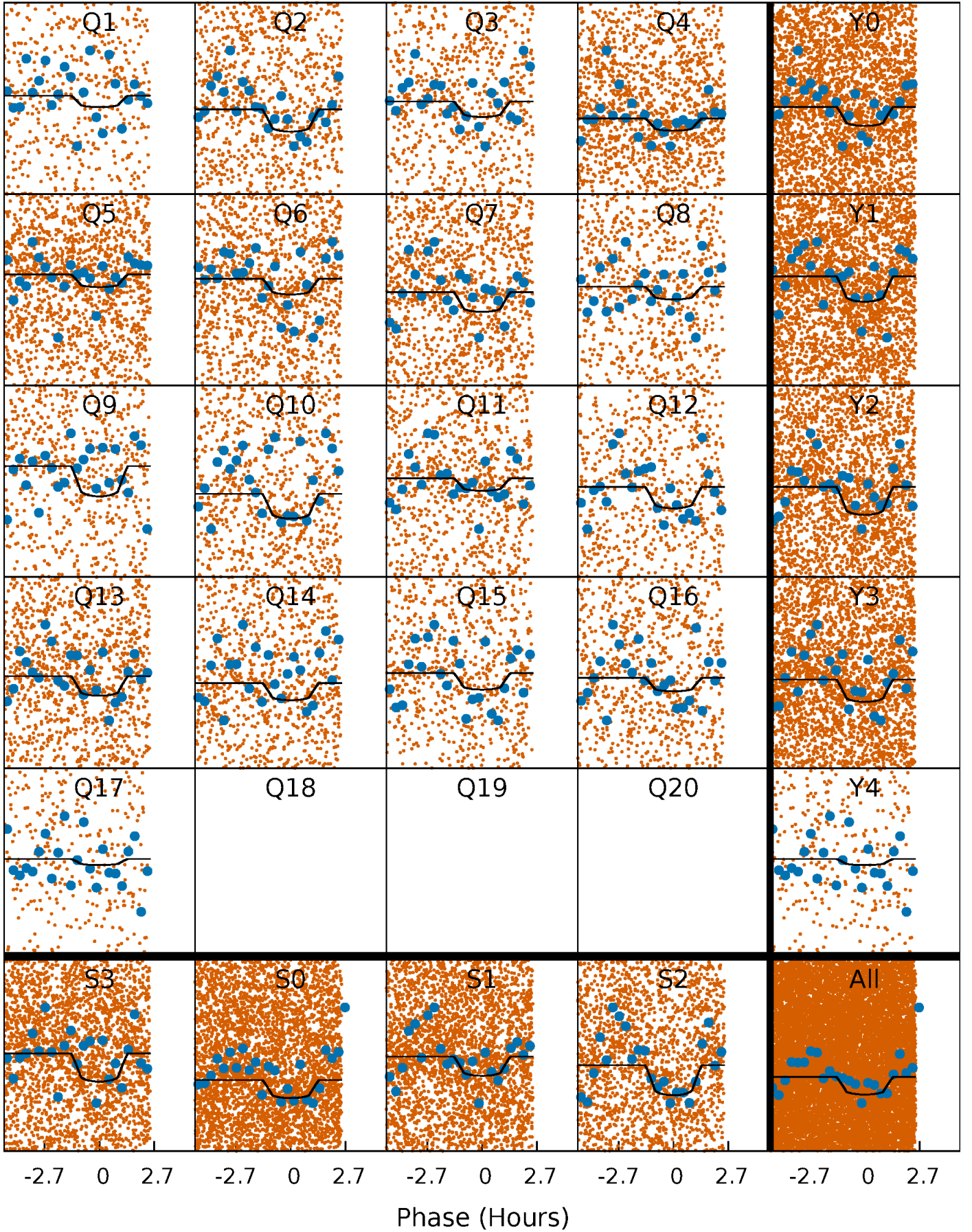
PDC Quarter-Phased Transit Curves

TCE 010723618-02 P= 0.658670 Days $T_0=131.897528$ (BKJD)



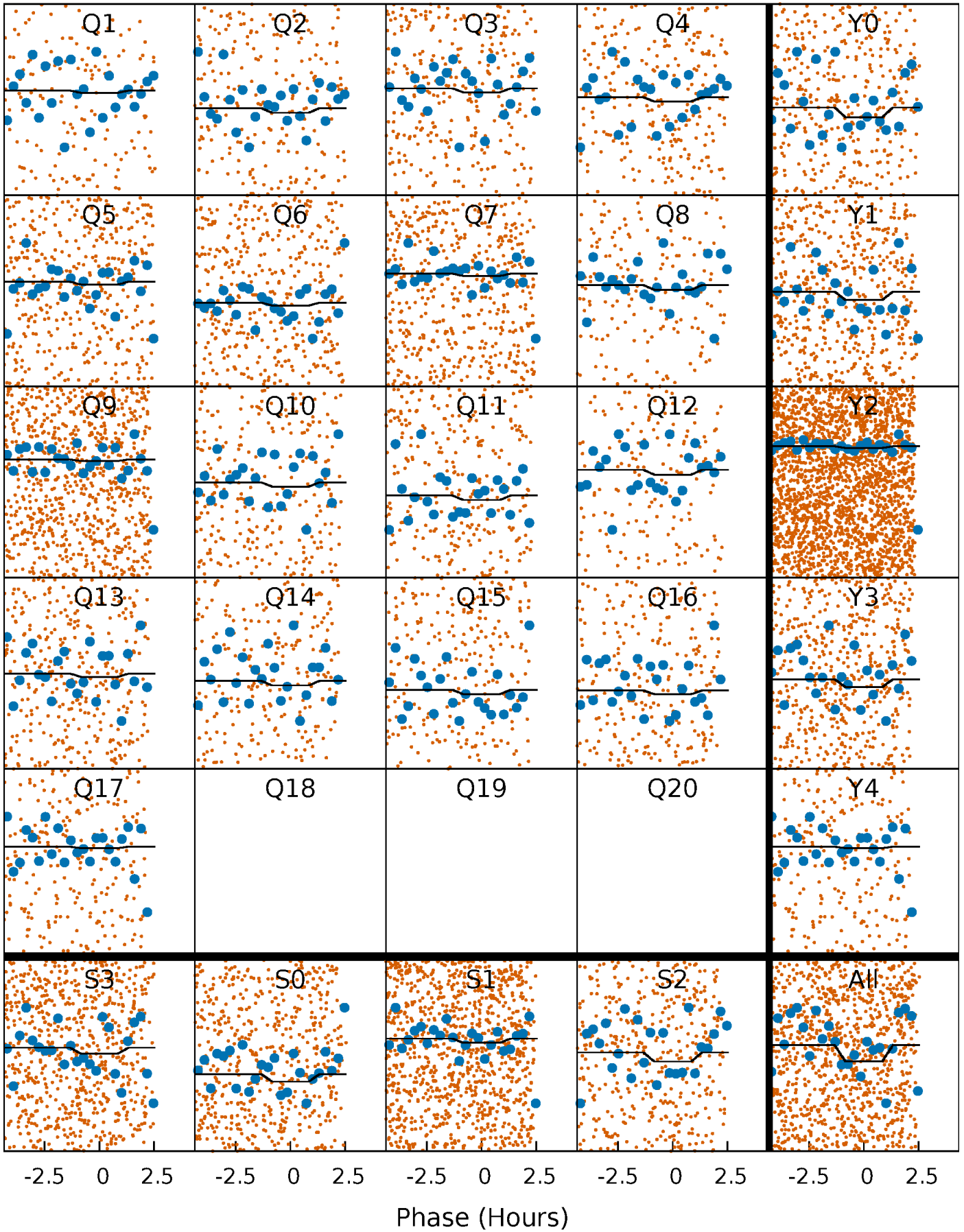
DV Quarter-Phased Transit Curves

TCE 010723618-02 P= 0.658670 Days $T_0=131.897528$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

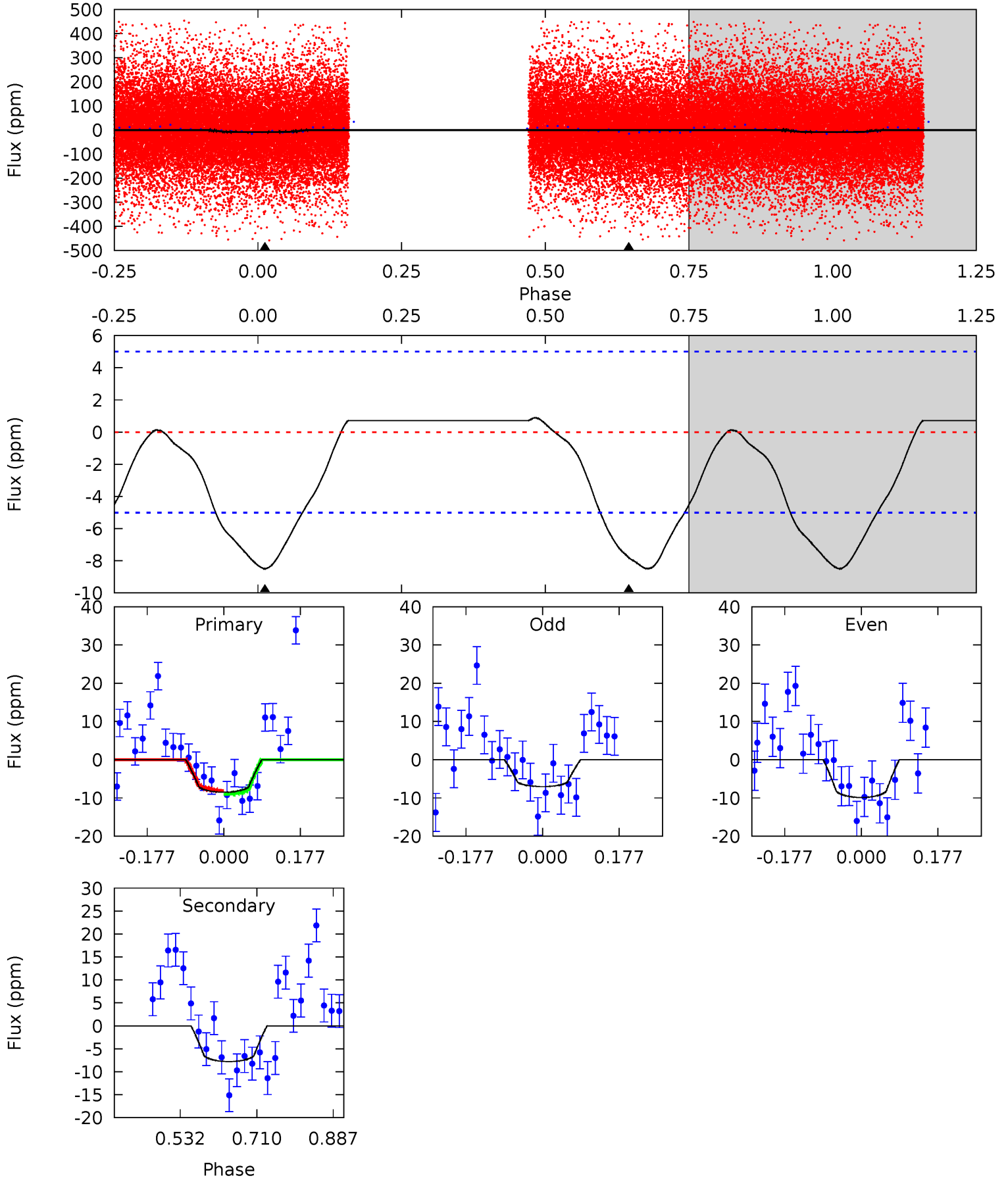
TCE 010723618-02 P= 0.658677 Days $T_0=131.895538$ (BKJD)



DV Model-Shift Uniqueness Test

010723618-02, P = 0.658670 Days, E = 131.238858 Days

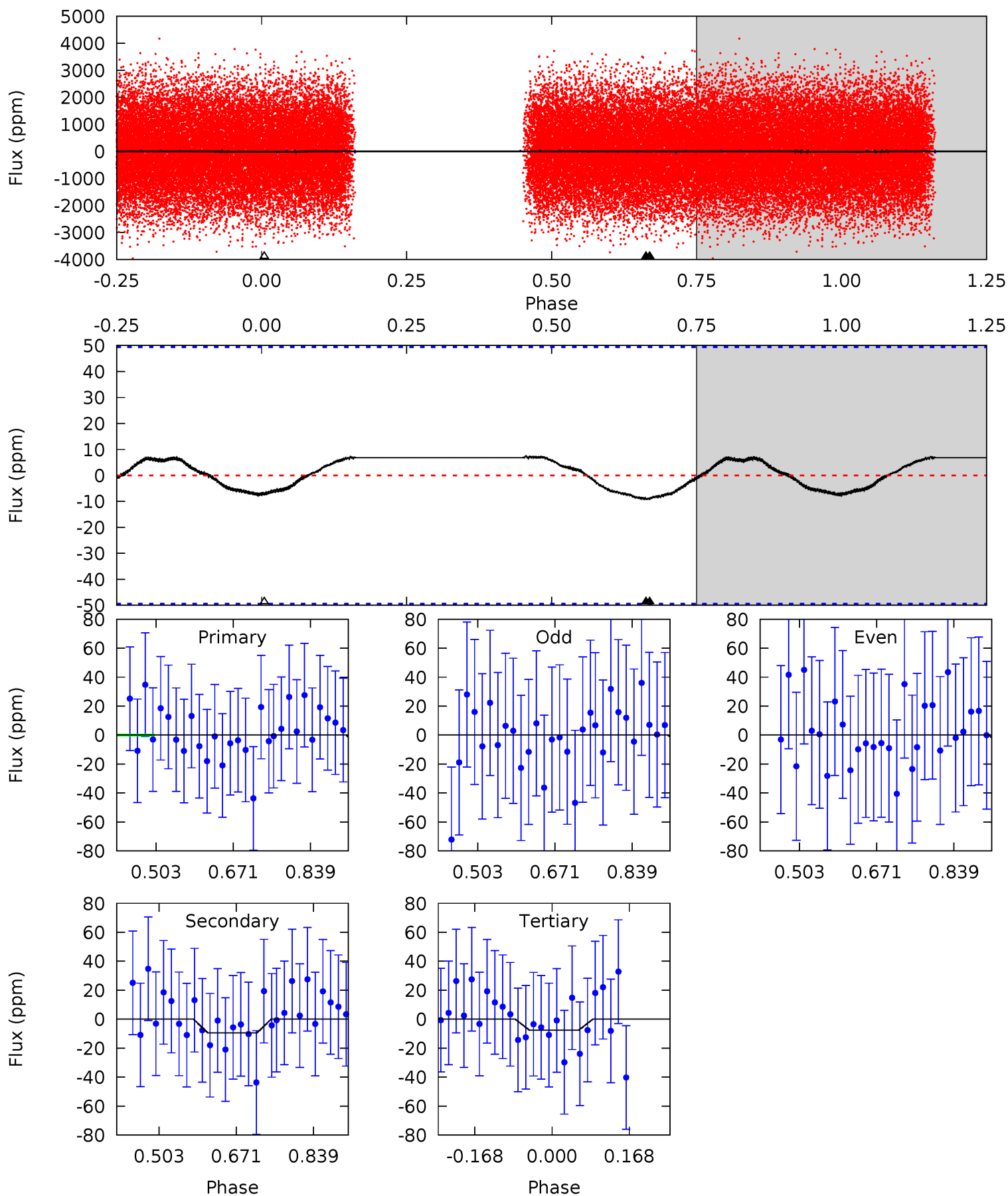
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.54	6.92	0	0	4.44	1.35	0.43	7.54	7.54	6.92	6.92	1.27	0.91	0.09	0.46



Alt Model-Shift Uniqueness Test

010723618-02, P = 0.658677 Days, E = 131.236861 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.85	0.85	0.69	0	4.46	1.38	0.45	0.16	0.85	0.16	0.85	0.24	0.63	0.44	0.47



Stellar Parameters For KIC 010723618

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8072^{+223}_{-363}	$3.717^{+0.432}_{-0.081}$	$-0.140^{+0.200}_{-0.350}$	$3.269^{+0.772}_{-1.545}$	$2.031^{+0.337}_{-0.505}$	$0.082^{+0.350}_{-0.028}$
	+3%/-4%	+12%/-2%	+143%/-250%	+24%/-47%	+17%/-25%	+427%/-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 010723618-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 1	$1.15^{+0.45}_{-0.43}$	6232^{+517}_{-706}	6326^{+1797}_{-1235}	$1.124^{+1.551}_{-0.540}$
Alt.	-9 ± 11	$0.99^{+0.38}_{-0.40}$	6281^{+517}_{-791}	7394^{+4466}_{-12894}	$1.734^{+4.519}_{-1.915}$

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

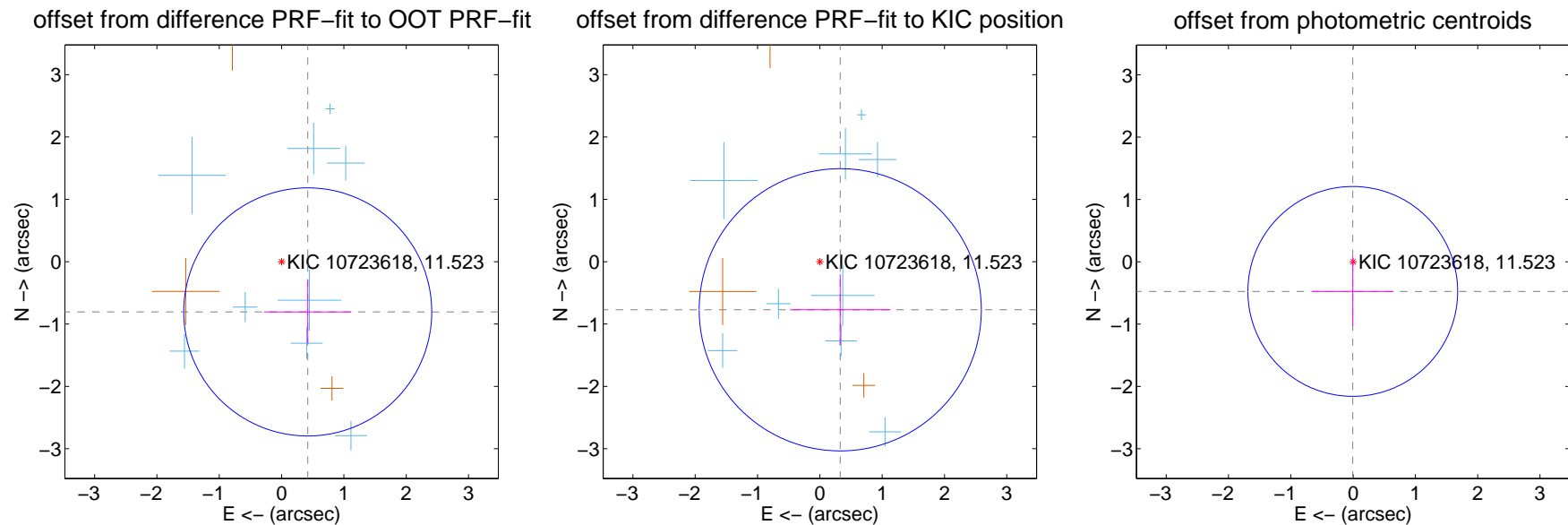
DV Centroid Data

Supplemental centroid analysis for 010723618-02. **Kepler magnitude: 11.52.** Transit SNR 9.32

There are 9 quarters with good PRF difference image offsets

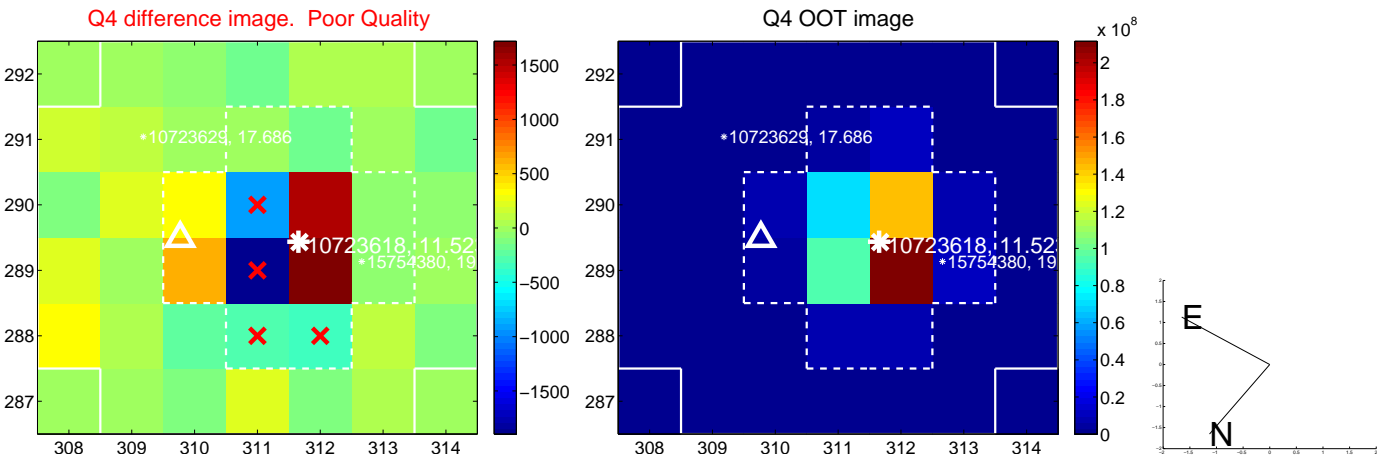
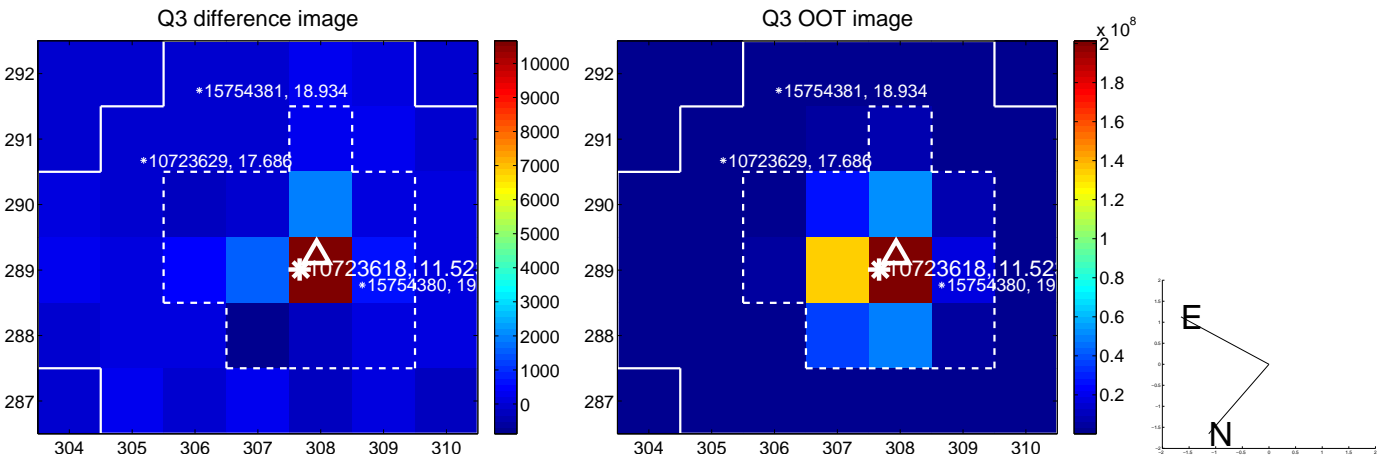
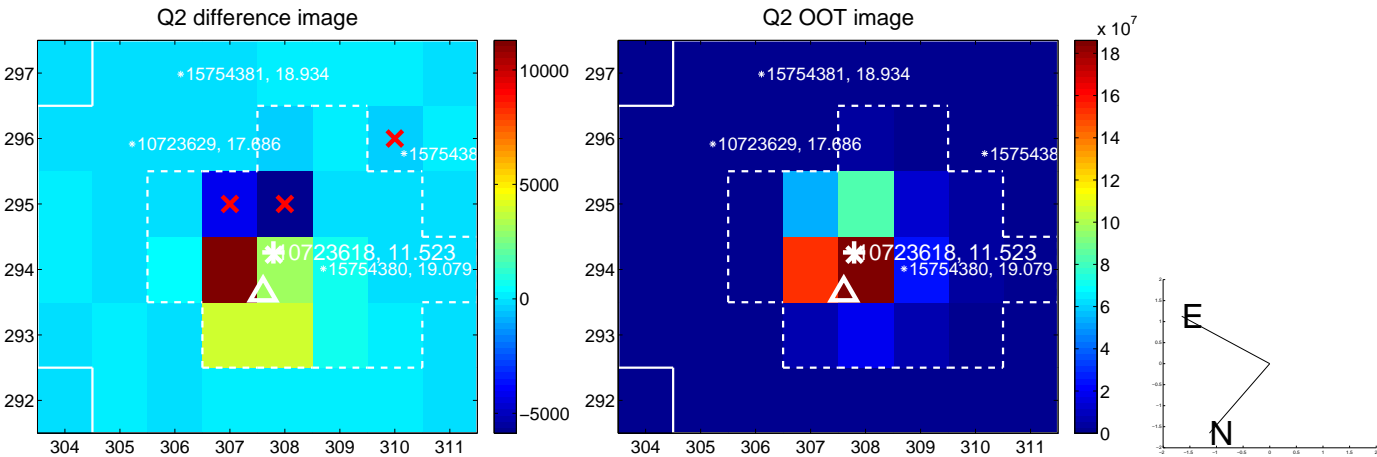
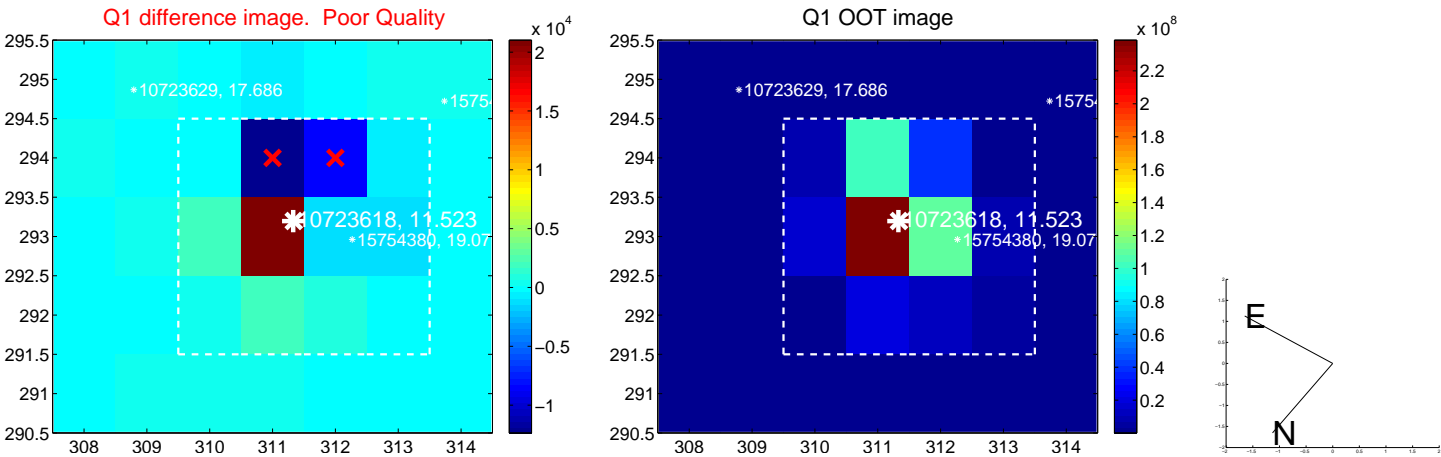
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.908 ± 0.663	1.37	-0.420 ± 0.700	-0.805 ± 0.506
PRF-fit source offset from KIC position	0.838 ± 0.754	1.11	-0.327 ± 0.807	-0.772 ± 0.566
photometric centroid source offset	0.48 ± 0.56	0.85	0.01 ± 0.65	-0.48 ± 0.56

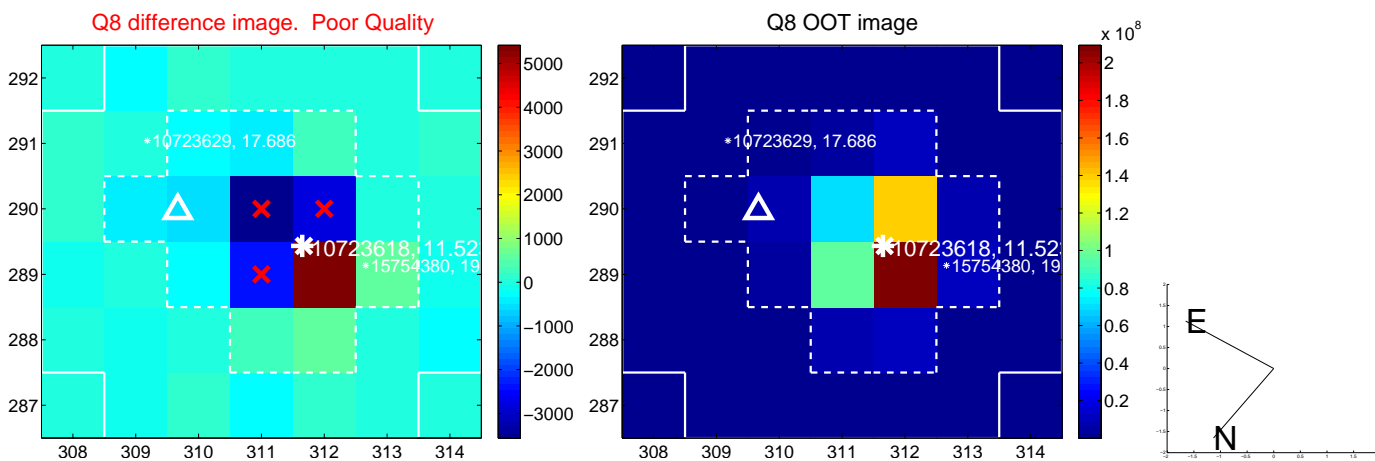
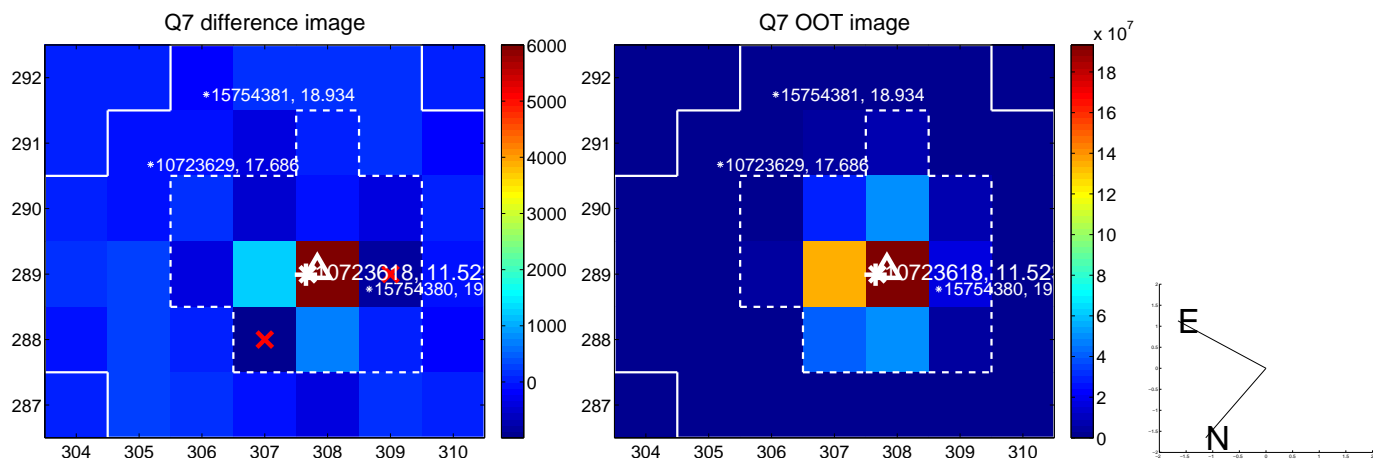
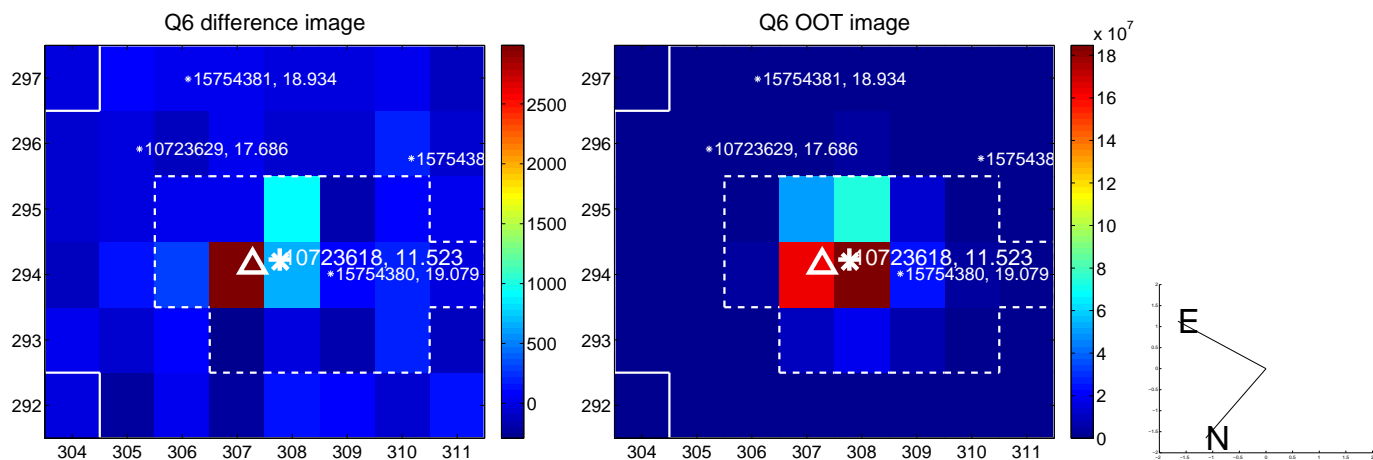
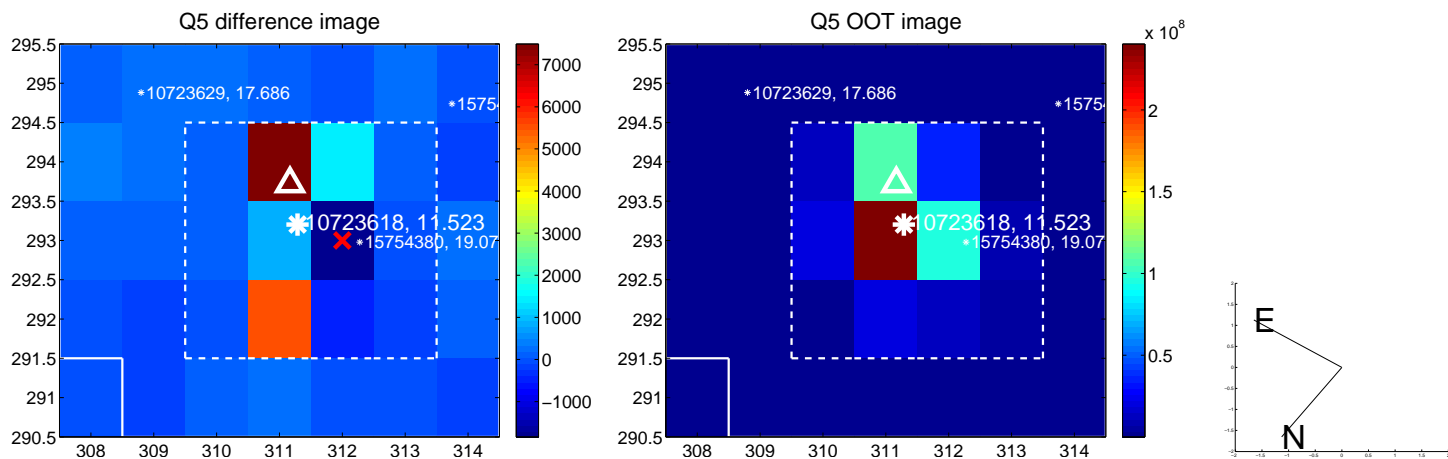


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

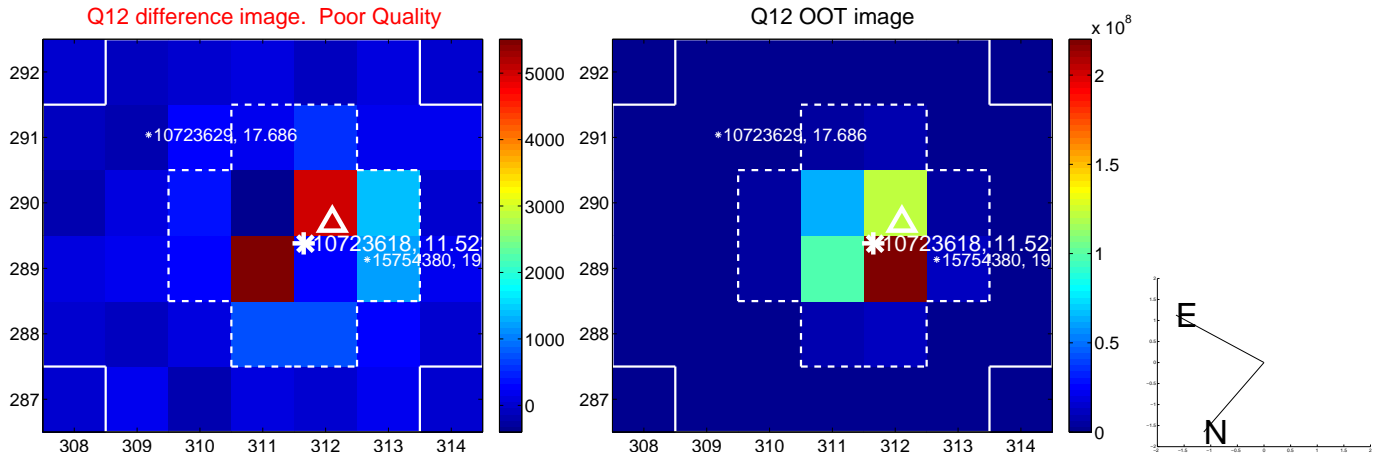
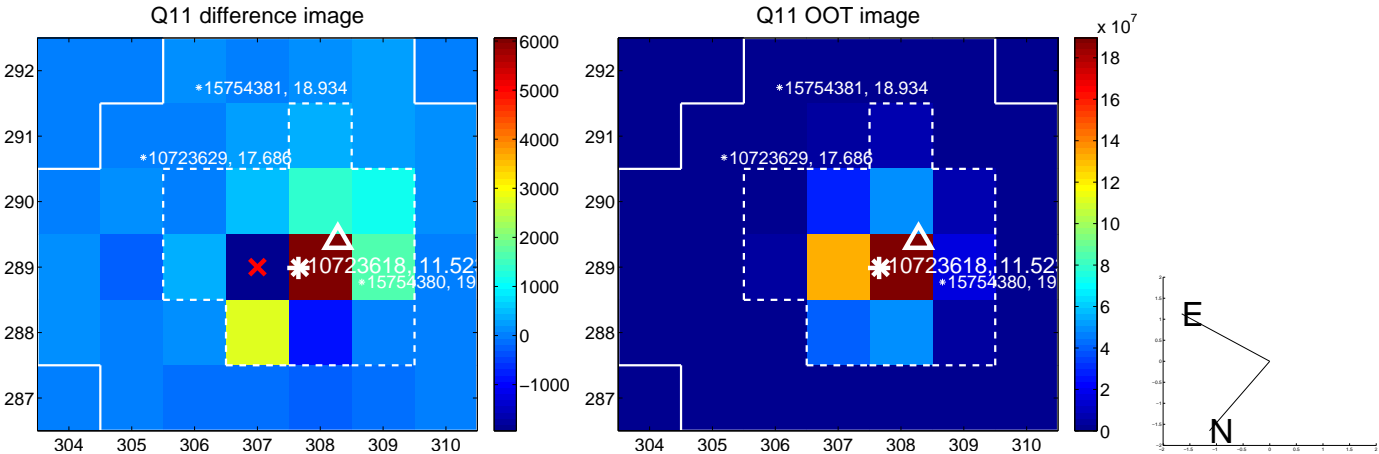
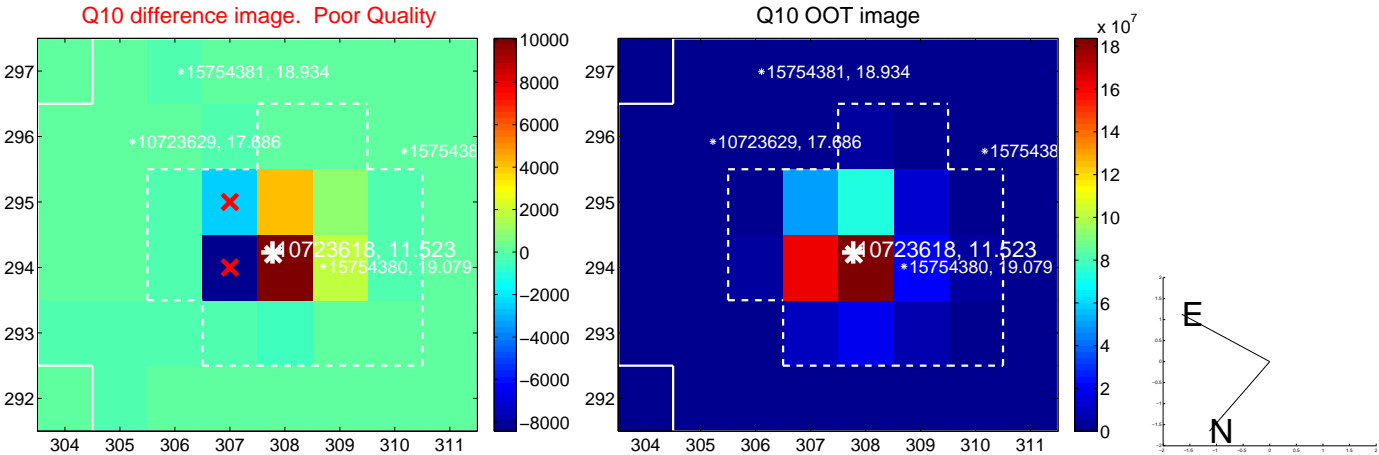
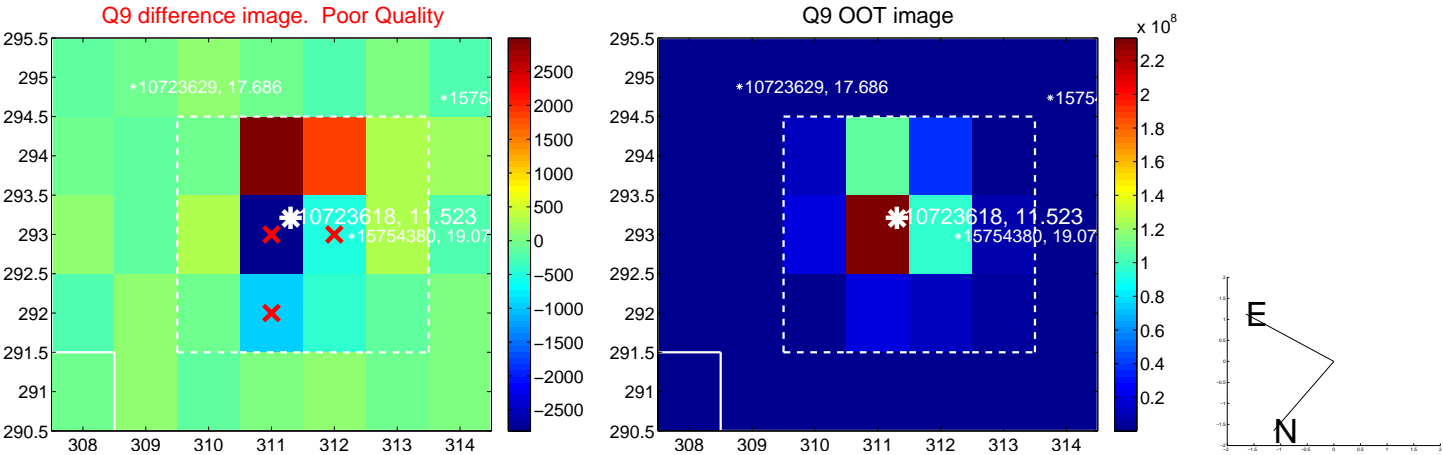
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



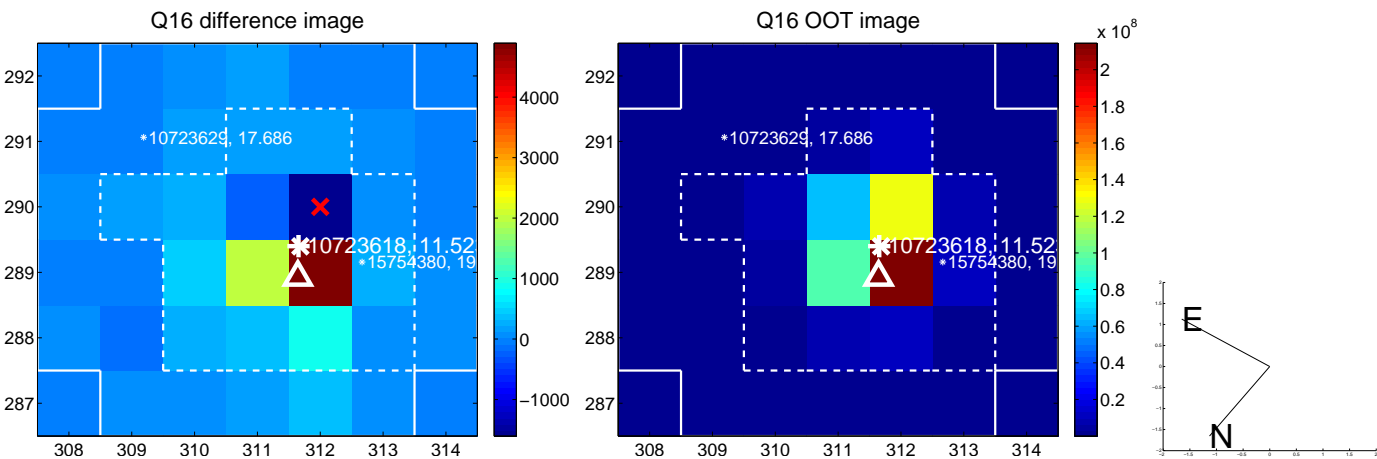
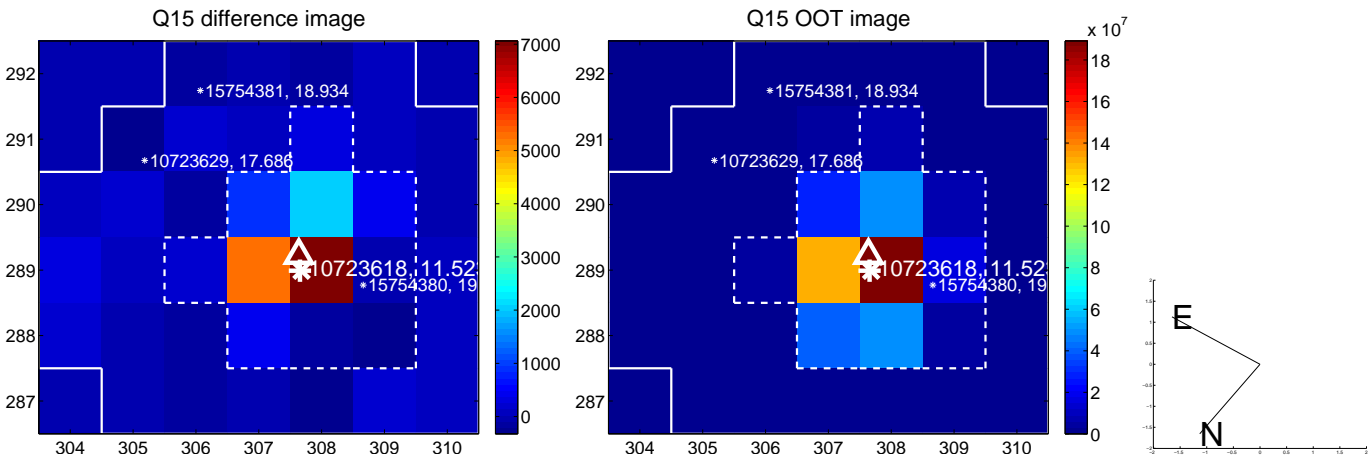
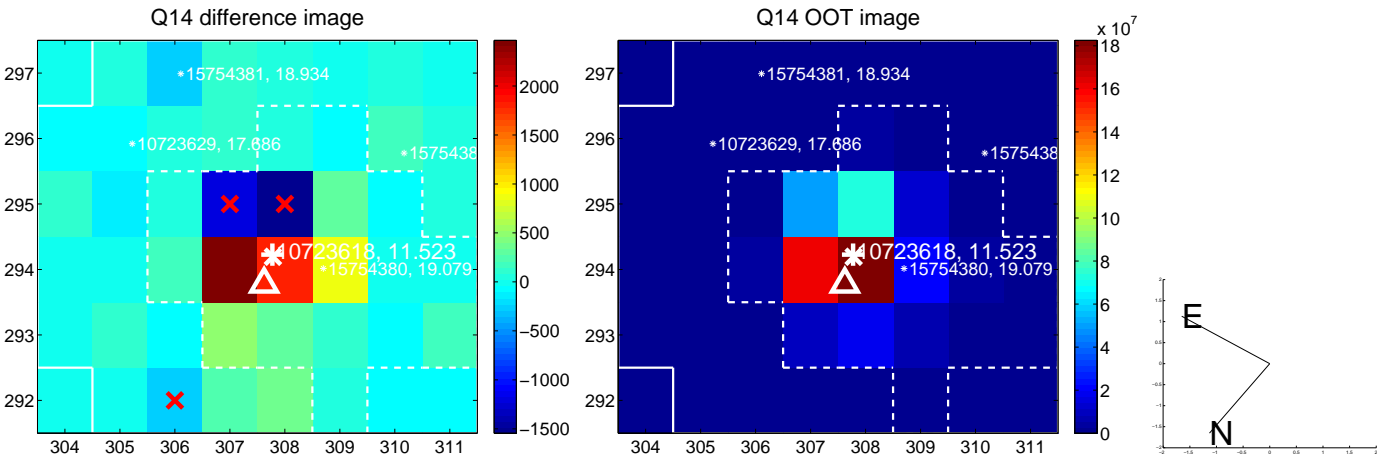
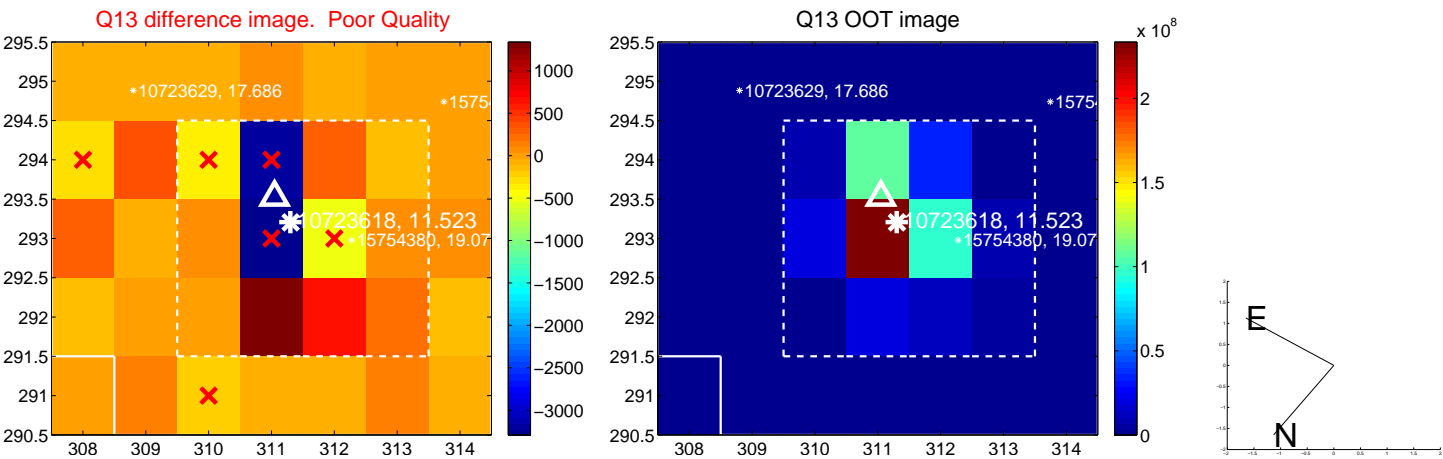
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



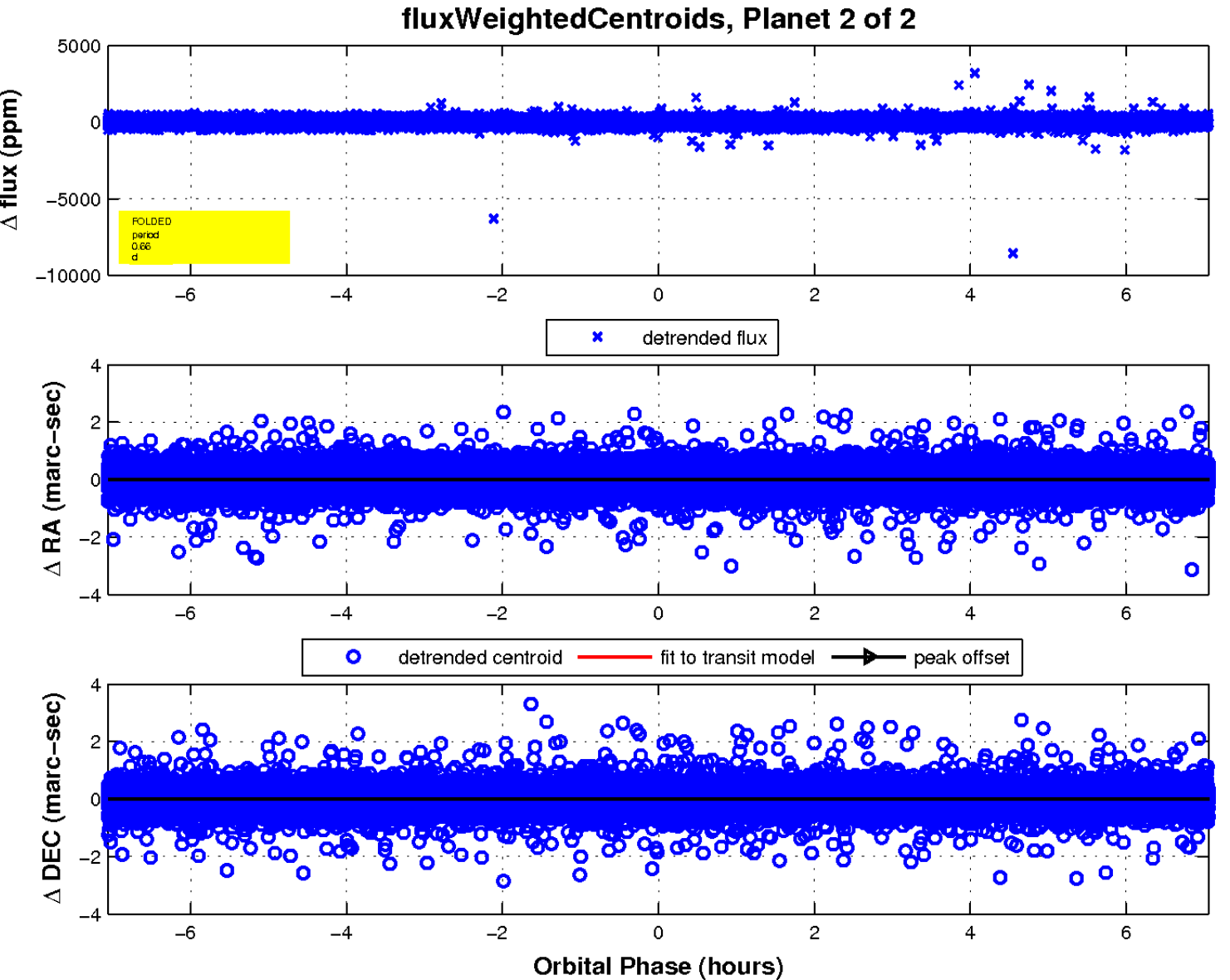
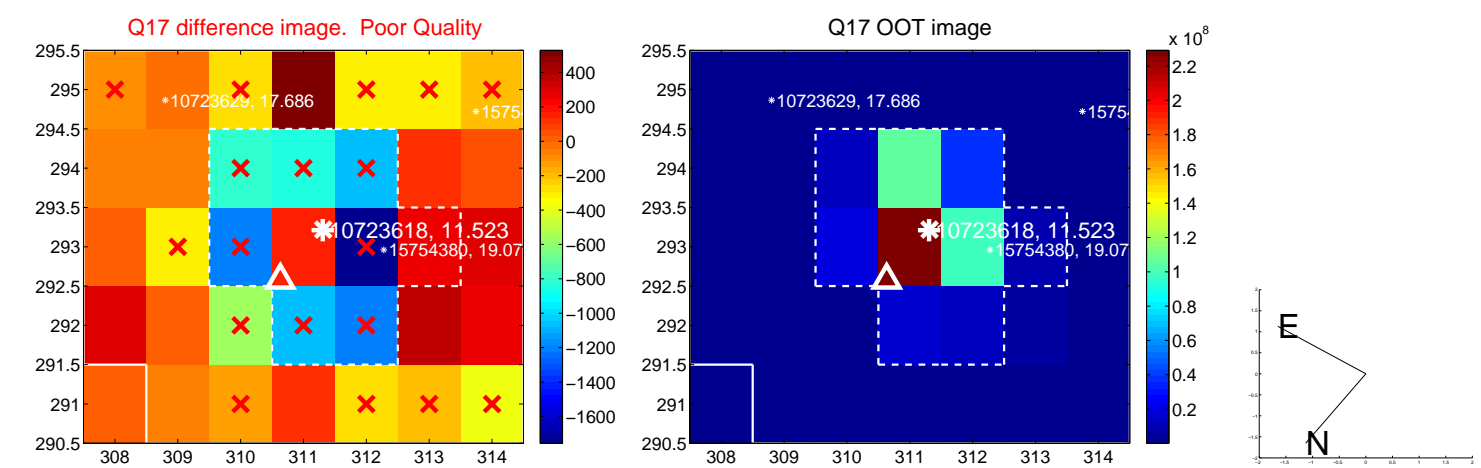
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



This astronomical image shows a field of stars against a dark background. A prominent, bright star is located near the center, surrounded by a cluster of smaller, dimmer stars. The image is overlaid with a grid of blue lines. The horizontal axis (Right Ascension) is labeled at the bottom in green, ranging from 15:00.059.0 on the left to 14:55.0 on the right. The vertical axis (Declination) is labeled on the left in green, ranging from 40.0 at the bottom to 20.0 at the top. The central star is positioned at approximately RA 14:57.5 and Dec 48.0.

Declination