

KIC 010480982

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})
010480982-01	OBS	0744.01	19.221387	146.109446	74000.5	4.788	2174.4	1806.1	0.95	6117	38.01	56.09
010480982-02	OBS	0744.02	2.037489	131.540577	118.2	4.184	12.0	13.0	0.95	6117	1.22	1118.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010480982-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
010480982-02	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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.

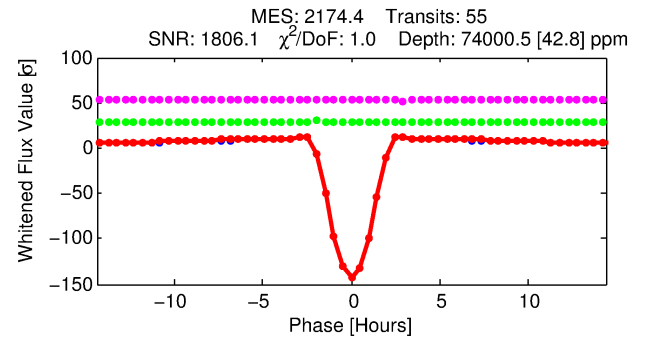
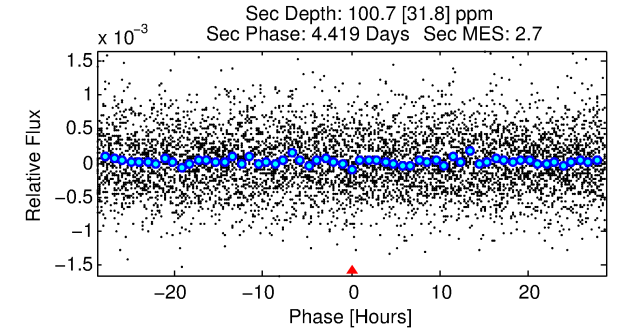
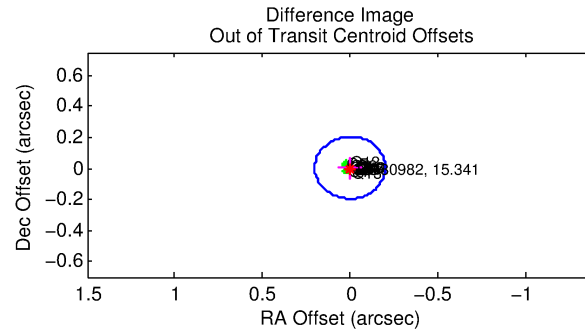
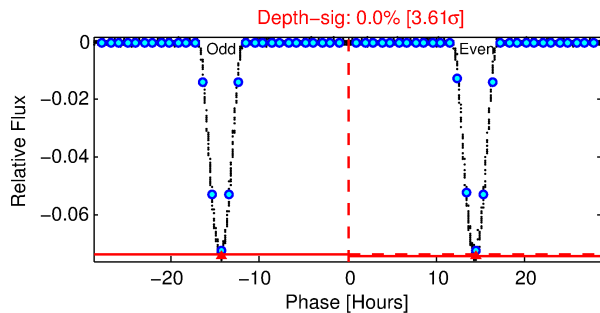
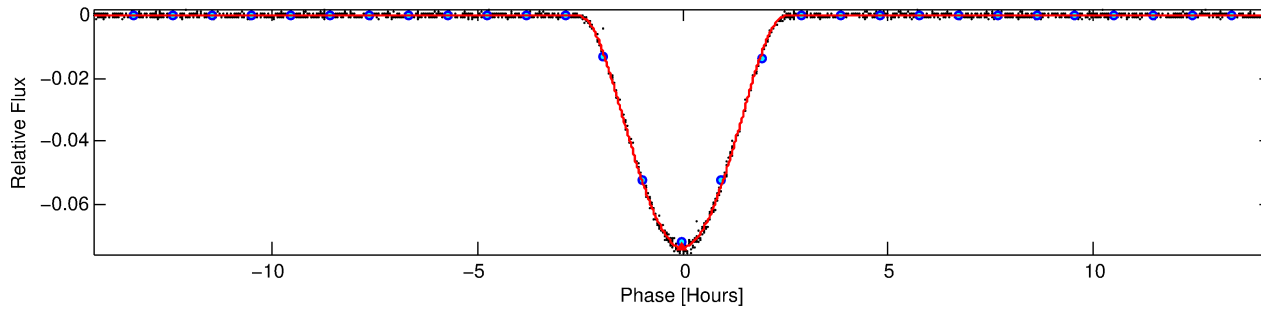
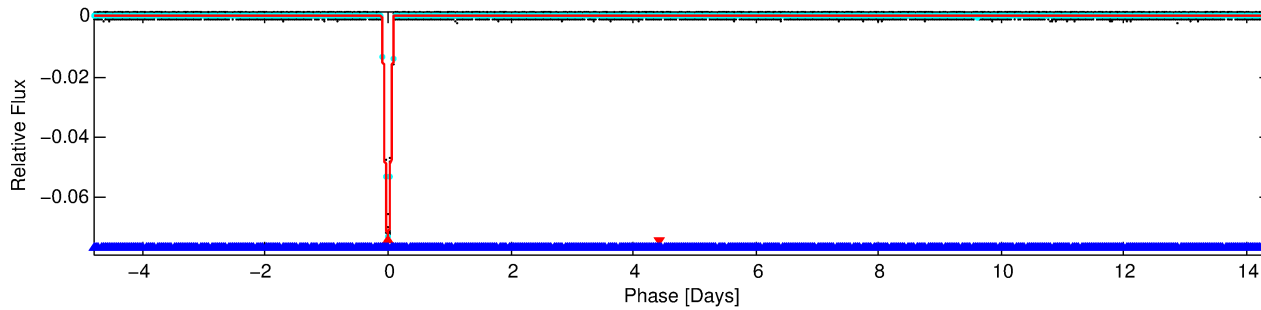
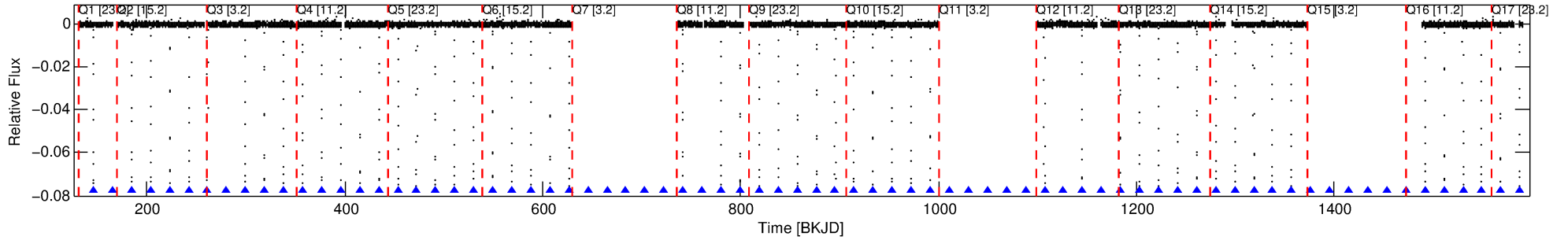
Ephemeris Match Information For 010480982-01

No Significant Match Found

DV One-Page Summary

KIC: 10480982 Candidate: 1 of 2 Period: 19.221 d
KOI: K00744.01 Corr: 0.998

Kp: 15.34 R*: 0.95 Rs Teff: 6117.0 K Logg: 4.50 Fe/H: -0.220



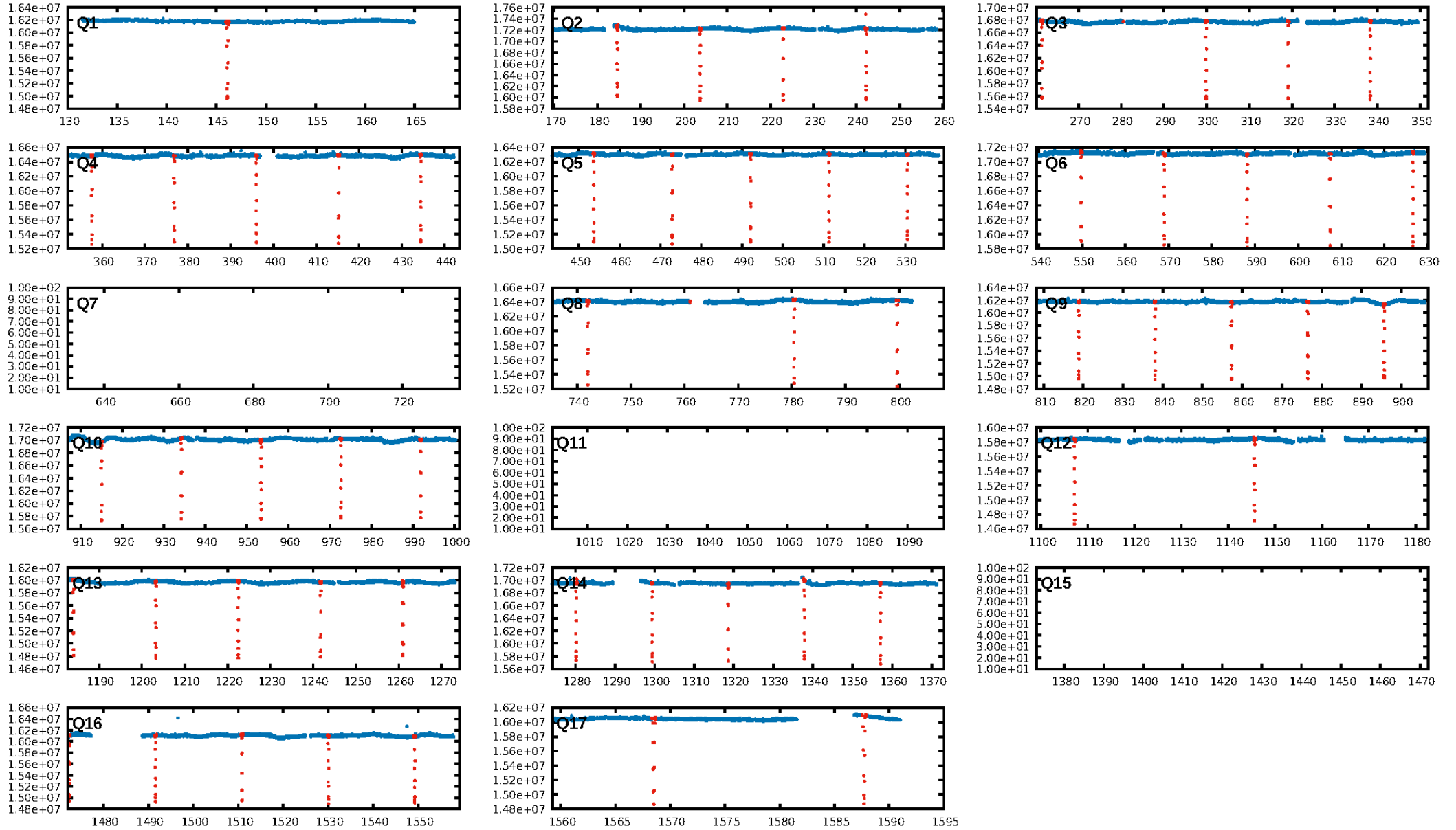
DV Fit Results:

Period = 19.22139 [0.00000] d
Epoch = 146.1094 [0.0001] BKJD
Rp/R* = 0.3678 [0.0121]
a/R* = 31.06 [0.03]
b = 0.92 [0.02]
Seff = 56.09 [22.86]
Teq = 698 [71] K
Rp = 38.01 [12.42] Re
a = 0.1416 [0.0381] AU
Ag = 0.77 [0.39] [-0.60σ]
Teffp = 1010 [88] K [2.77σ]

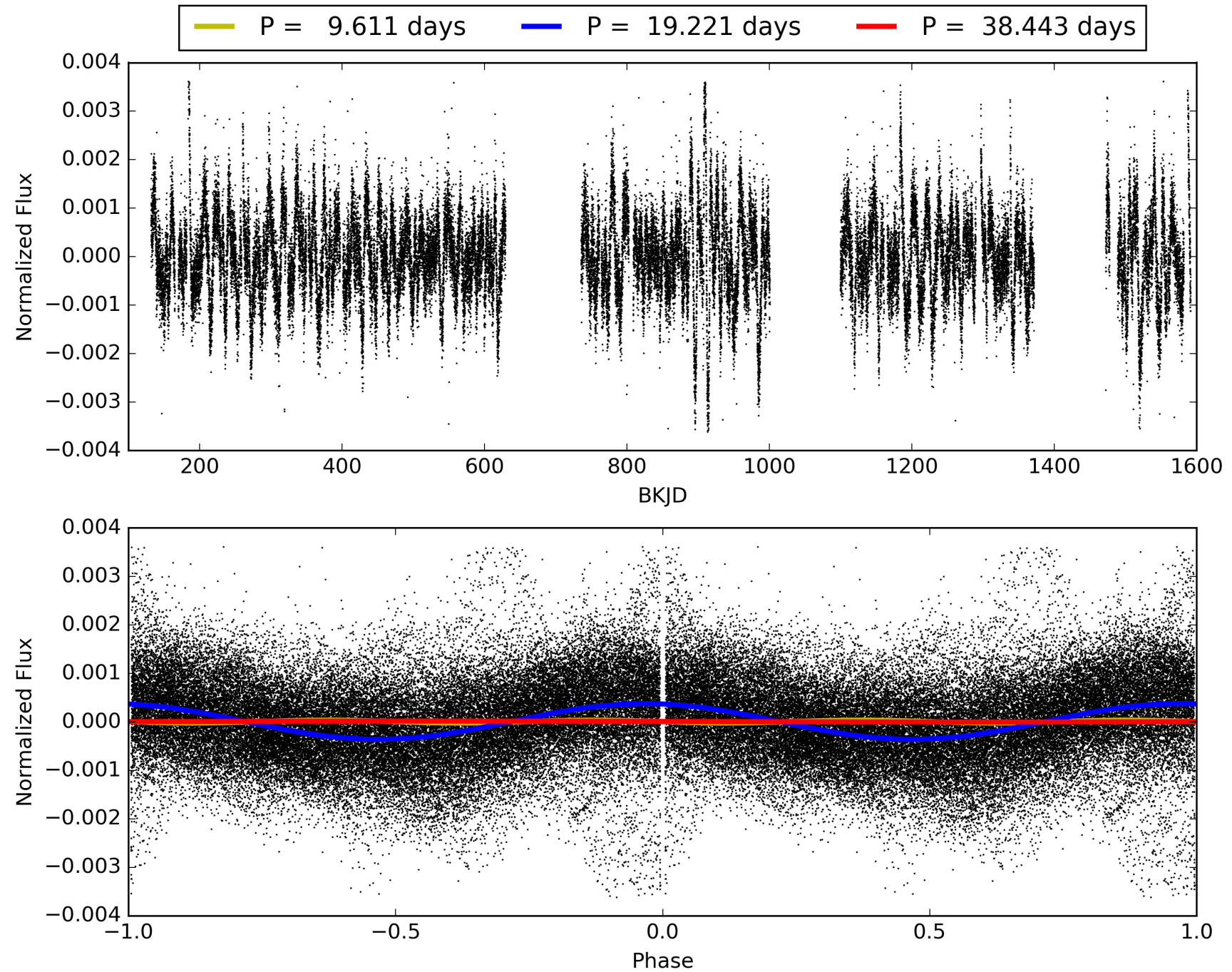
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [64.86σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [52/52]
GhostDiagnostic-chr: 4.532
Centroid-sig: 0.0%
Centroid-so: 0.294 arcsec [52.45σ]
OotOffset-rm: 0.006 arcsec [0.09σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.203 arcsec [3.03σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.93 [13/14]

TCE 010480982-01, PDC Light Curves

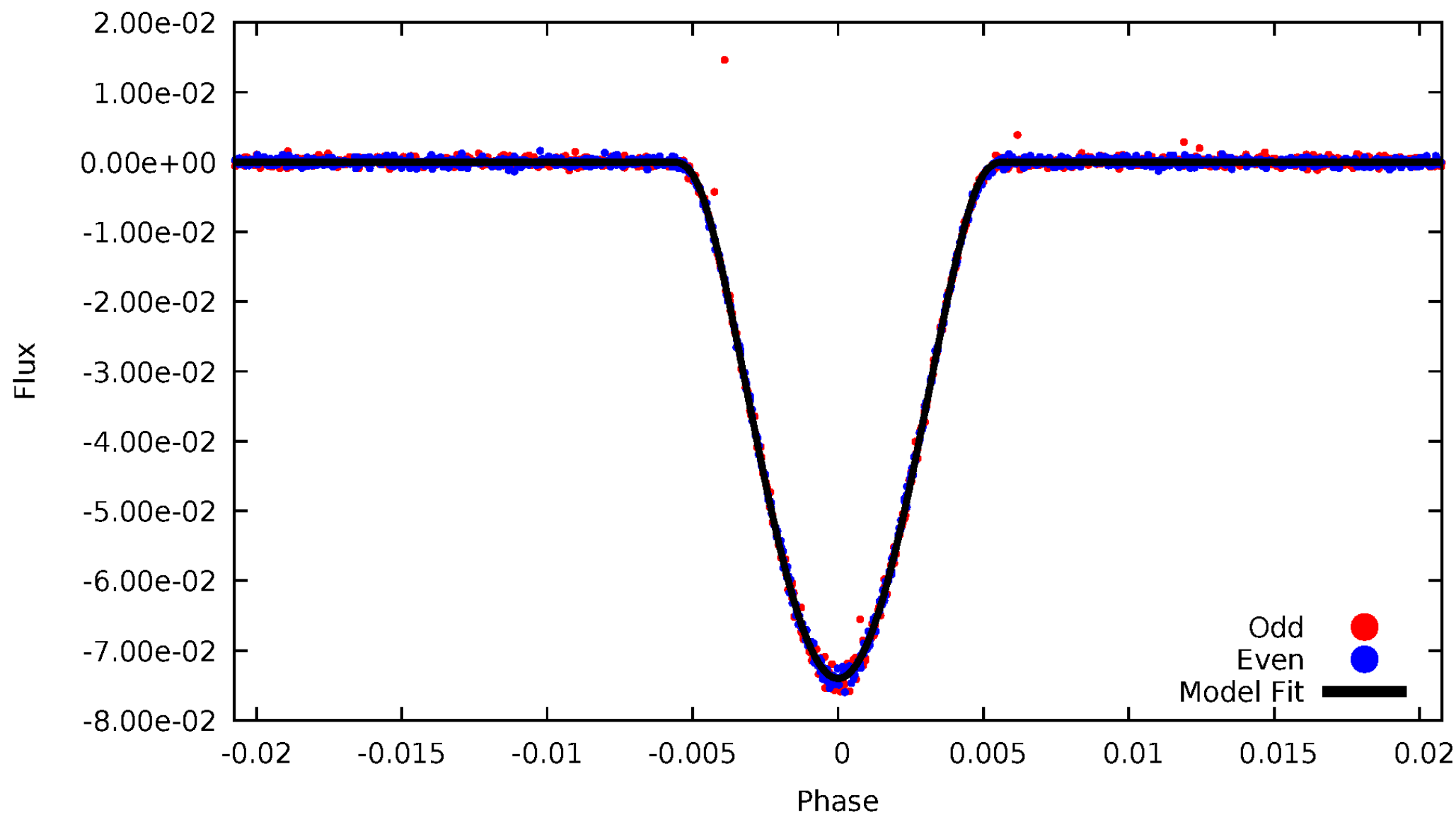


TCE 010480982-01



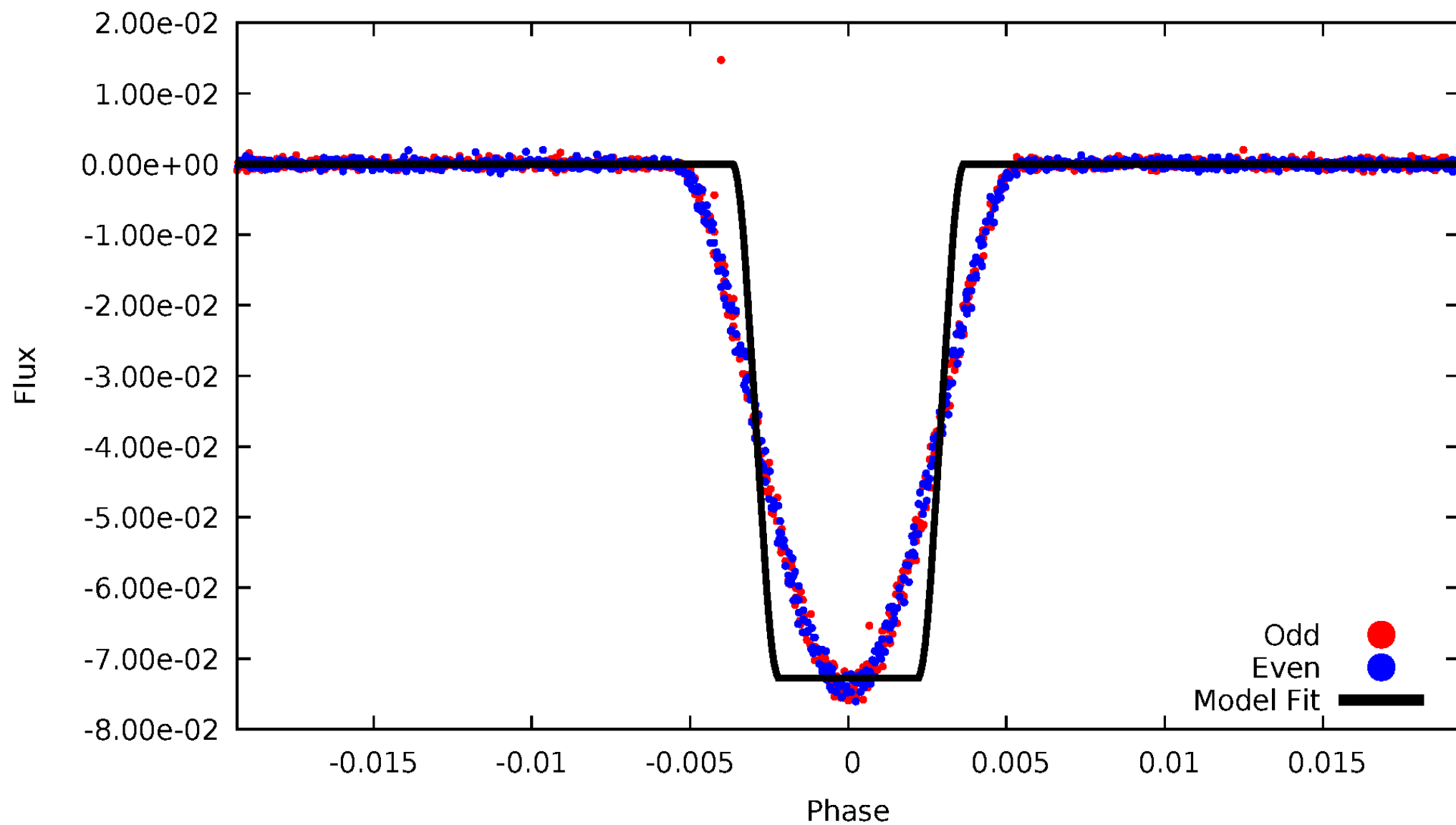
DV Odd/Even

TCE 010480982-01



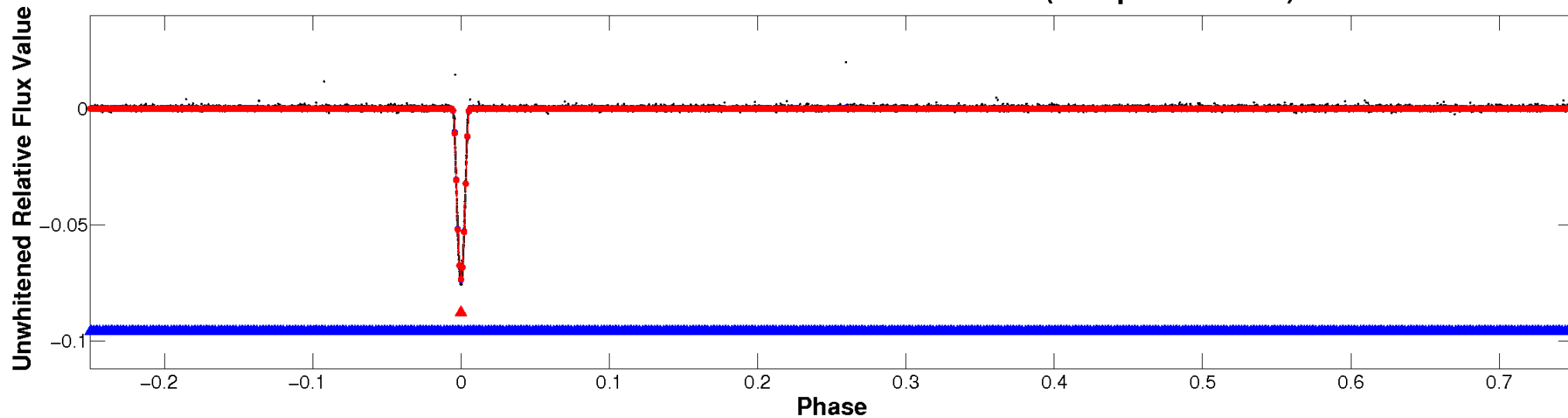
ALT Odd/Even

TCE 010480982-01

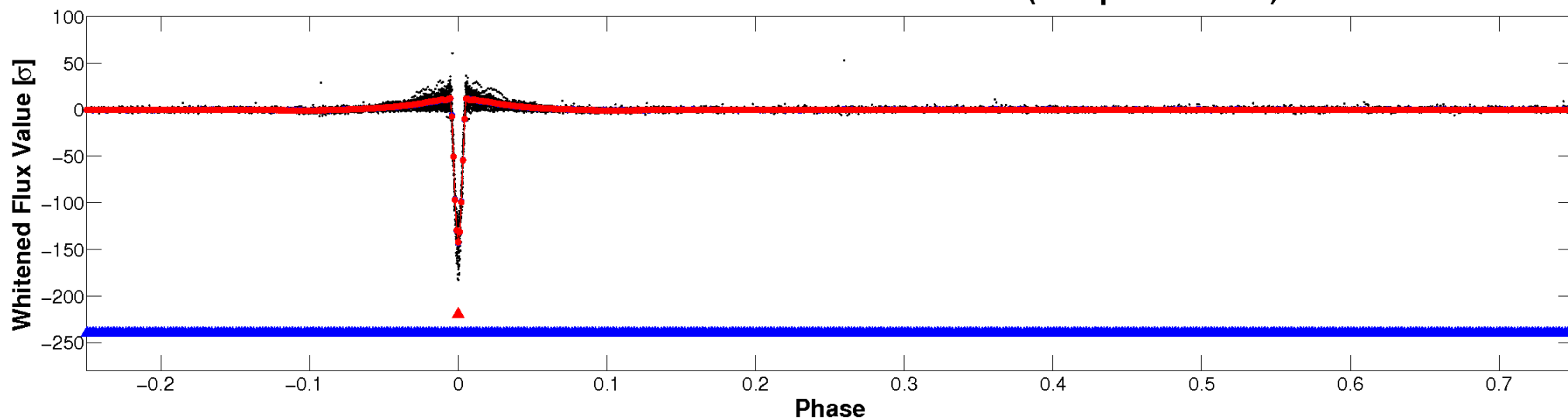


Non-Whitened Vs. Whitened Light Curve

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

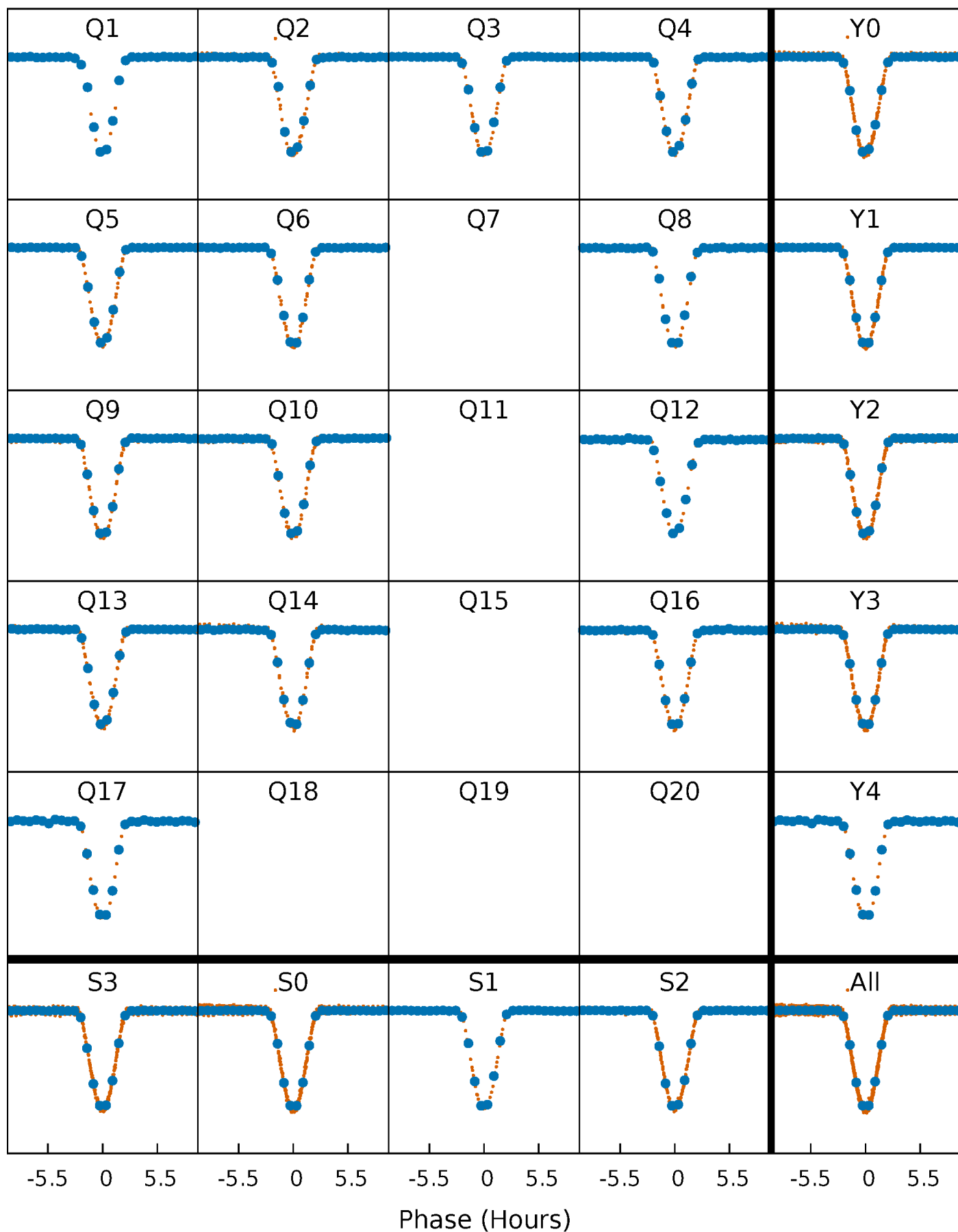


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



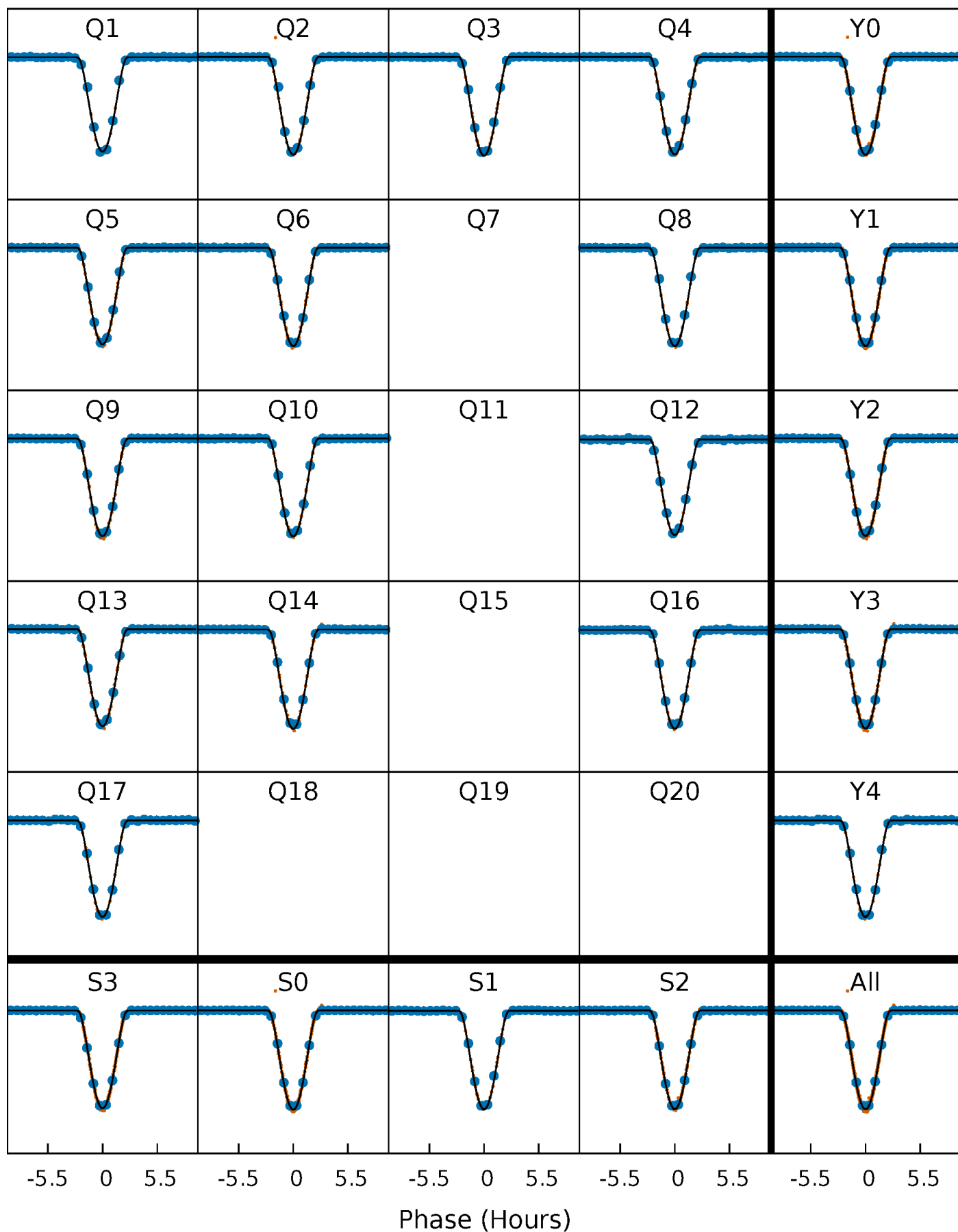
PDC Quarter-Phased Transit Curves

TCE 010480982-01 P= 19.221387 Days $T_0=146.109446$ (BKJD)



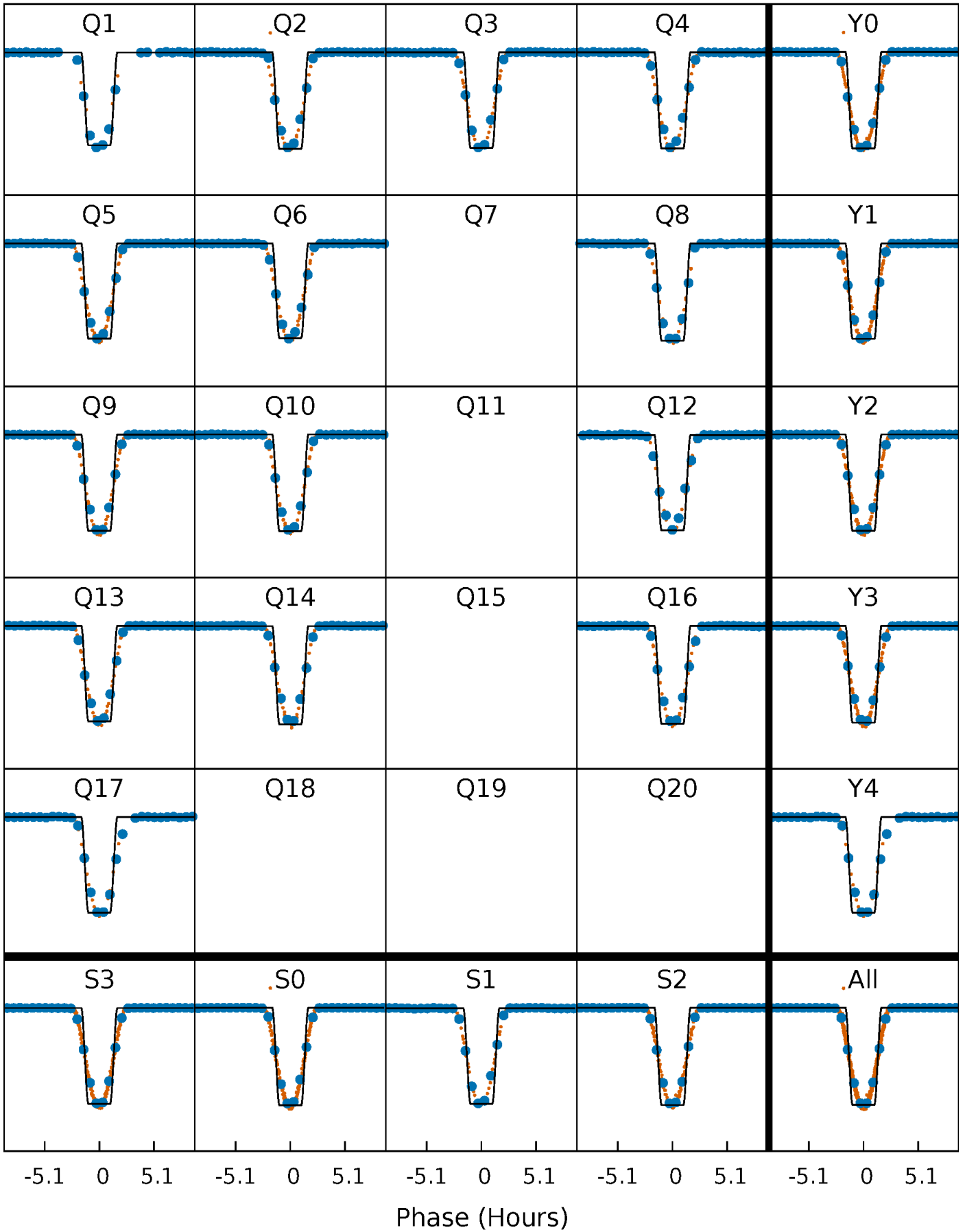
DV Quarter-Phased Transit Curves

TCE 010480982-01 P= 19.221387 Days $T_0=146.109446$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

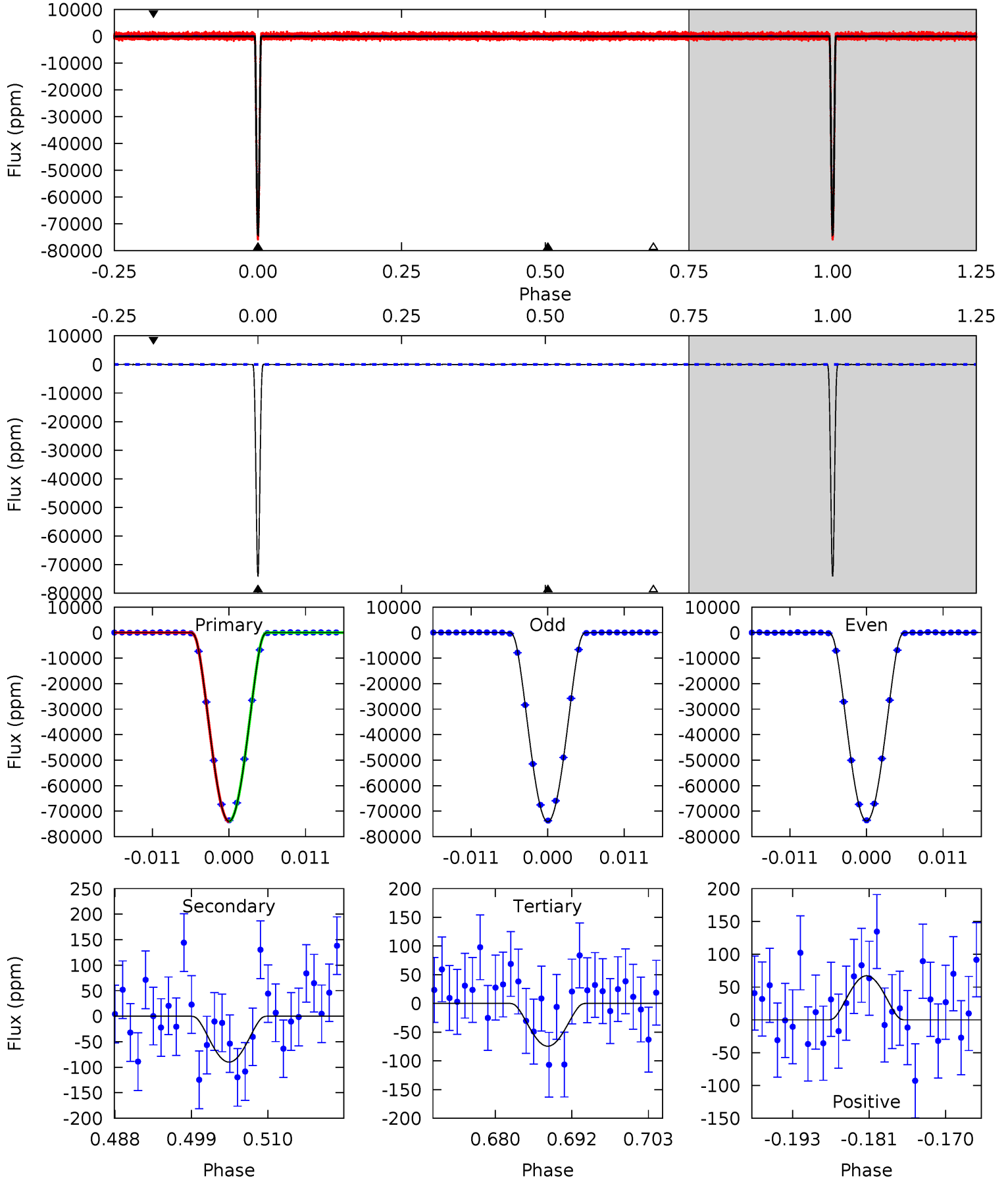
TCE 010480982-01 P= 19.221315 Days $T_0=146.112125$ (BKJD)



DV Model-Shift Uniqueness Test

010480982-01, P = 19.221387 Days, E = 126.888059 Days

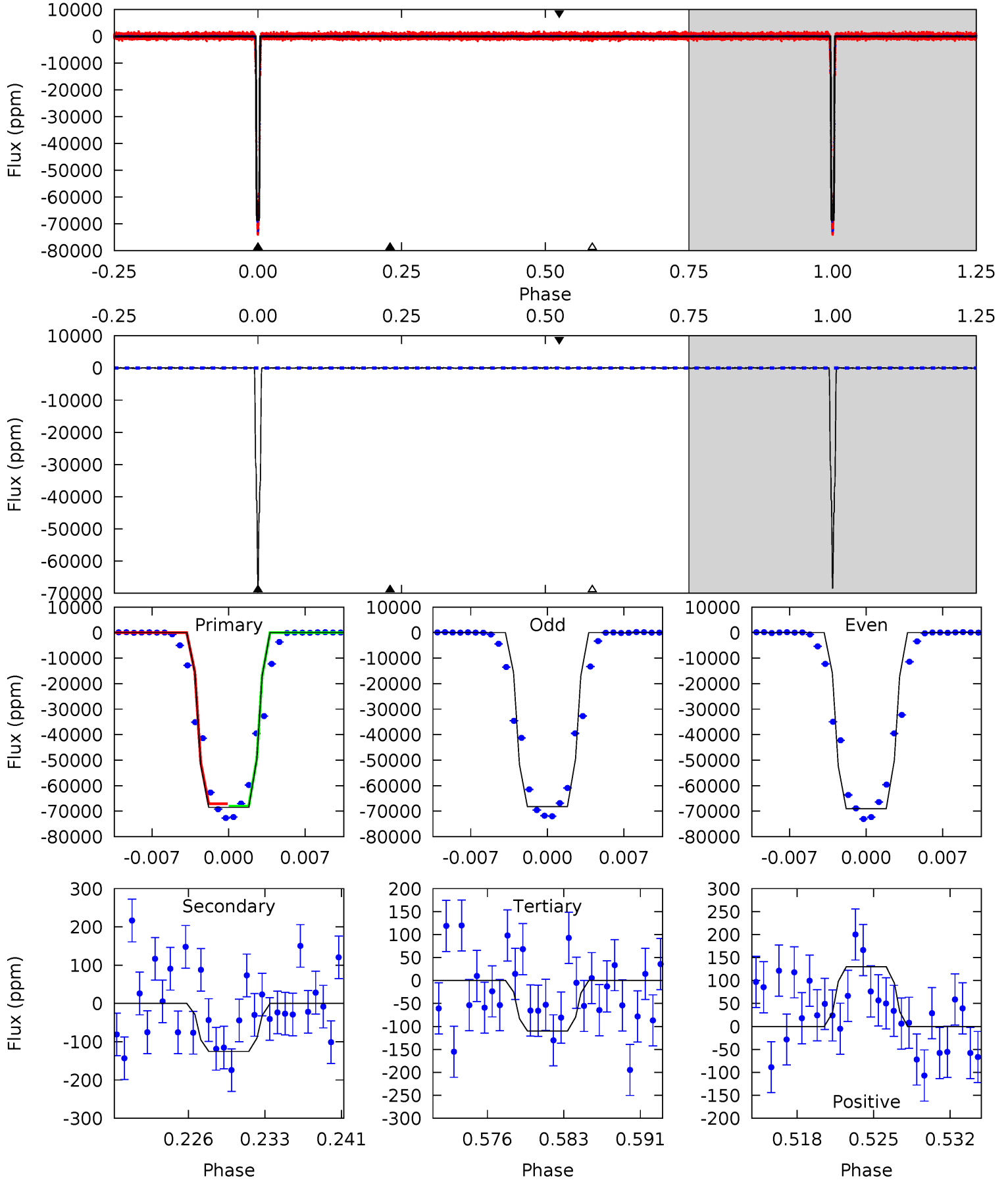
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4011	4.88	4.04	3.64	5.00	2.53	1.59	4007	4007	0.84	1.23	7.38	1.00	0.00	3.25



Alt Model-Shift Uniqueness Test

010480982-01, P = 19.221315 Days, E = 126.890810 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2094	3.83	3.37	3.96	5.09	2.68	1.08	2091	2090	0.46	-0.14	12.0	1.00	0.00	0



Stellar Parameters For KIC 010480982

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6117^{+182}_{-200}	$4.496^{+0.052}_{-0.208}$	$-0.220^{+0.250}_{-0.350}$	$0.947^{+0.308}_{-0.096}$	$1.025^{+0.139}_{-0.139}$	$1.702^{+0.374}_{-0.895}$
	+3%/-3%	+1%/-5%	+114%/-159%	+33%/-10%	+14%/-14%	+22%/-53%
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 010480982-01 / KOI 0744.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-90 ± 18	$39.12^{+6.87}_{-3.38}$	997^{+73}_{-48}	1859^{+76}_{-129}	$0.616^{+0.202}_{-0.191}$
Alt.	-125 ± 33	$28.61^{+4.60}_{-2.74}$	992^{+70}_{-47}	2145^{+83}_{-97}	$1.600^{+0.569}_{-0.550}$

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 $A_{obs} \gg 1.0$

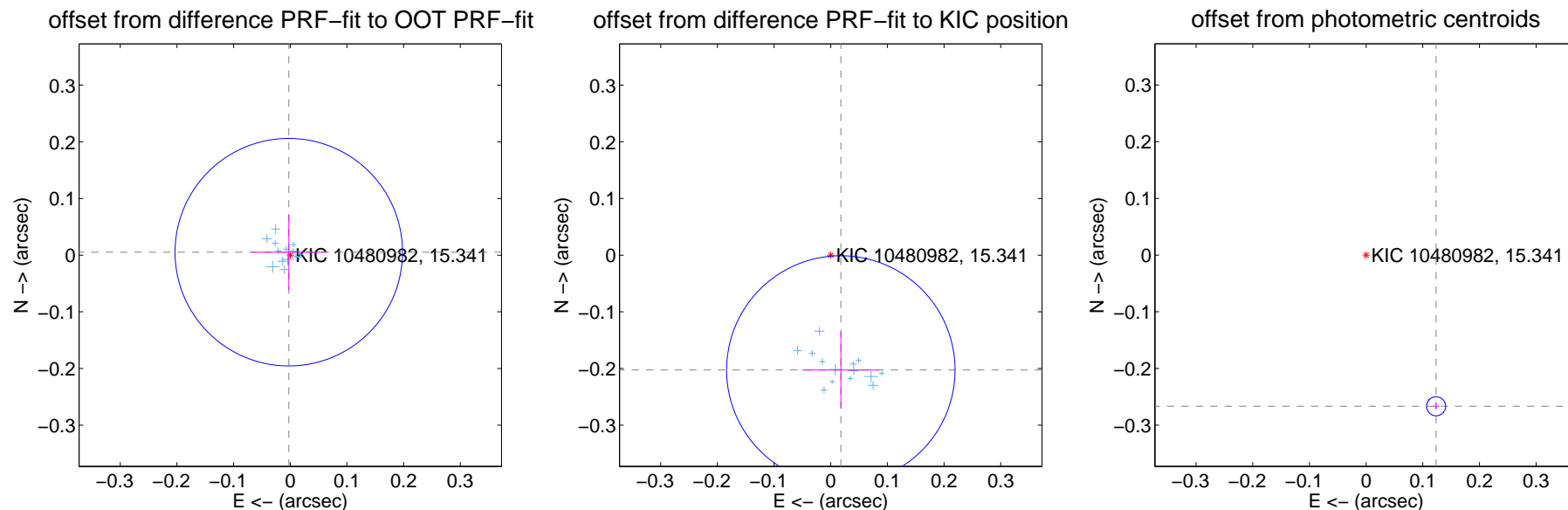
DV Centroid Data

Supplemental centroid analysis for 010480982-01. Kepler magnitude: 15.34. Transit SNR 1806.09

There are 14 quarters with good PRF difference image offsets

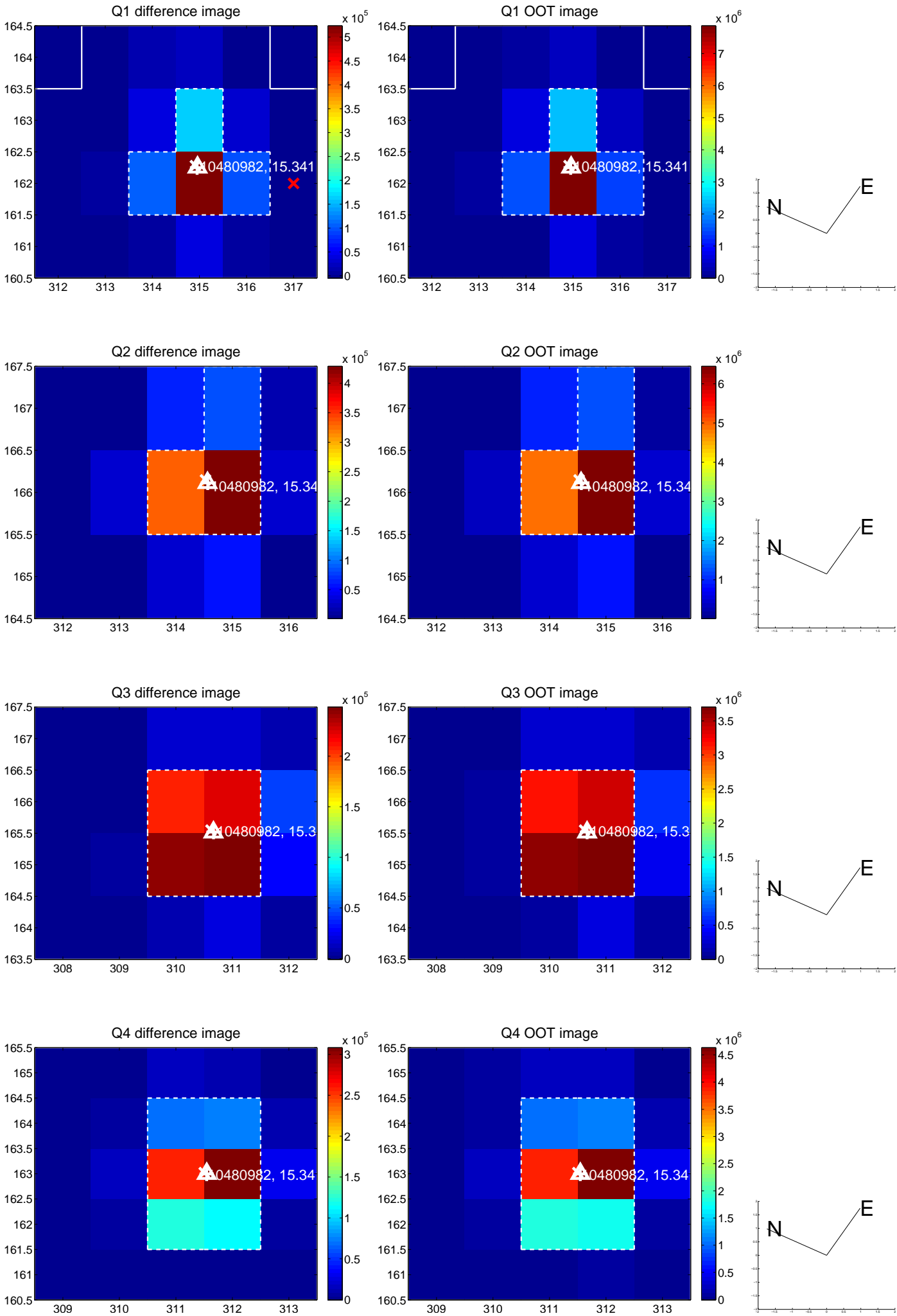
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.006 ± 0.067	0.09	0.003 ± 0.067	0.005 ± 0.067
PRF-fit source offset from KIC position	0.203 ± 0.067	3.03	-0.018 ± 0.068	-0.203 ± 0.067
photometric centroid source offset	0.29 ± 0.01	52.45	-0.12 ± 0.01	-0.27 ± 0.01

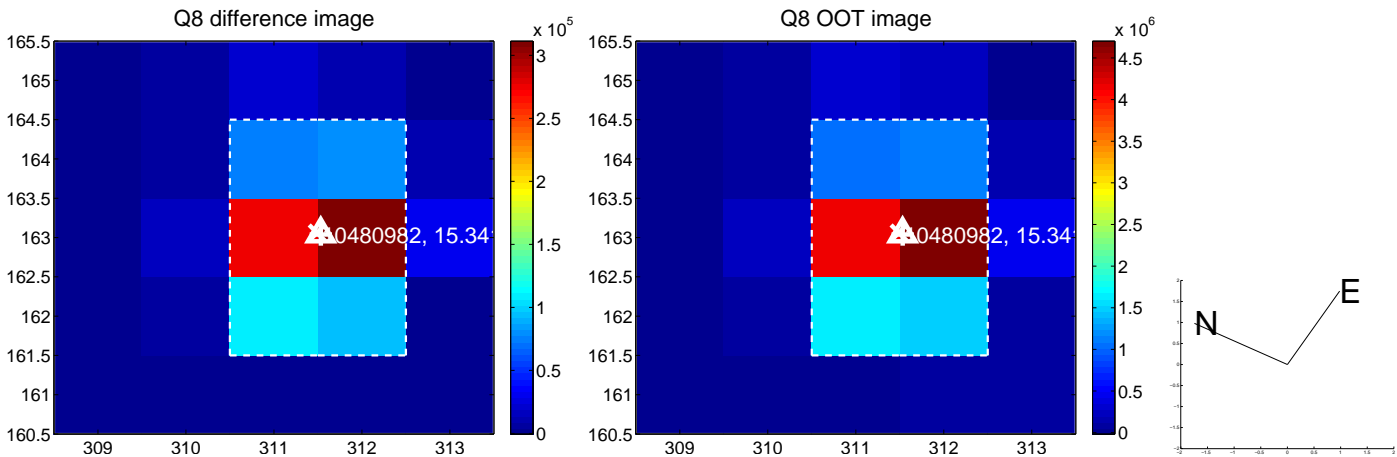
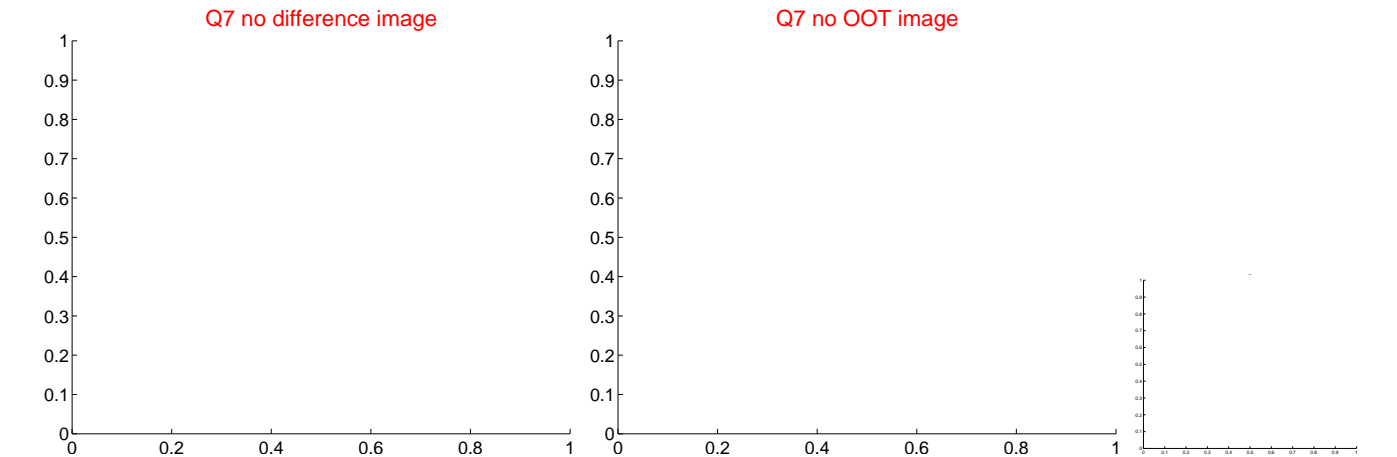
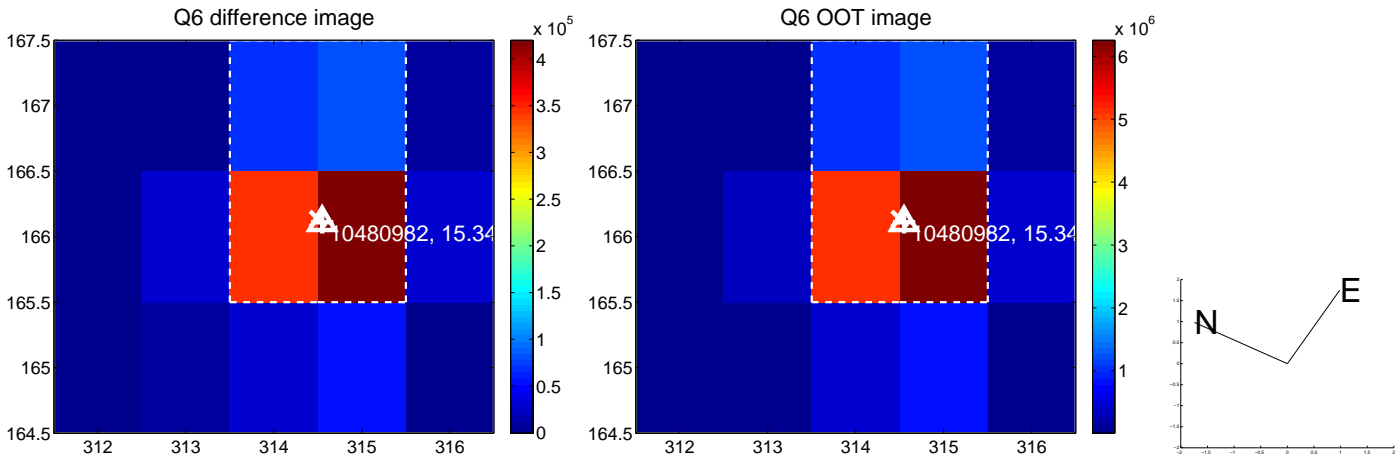
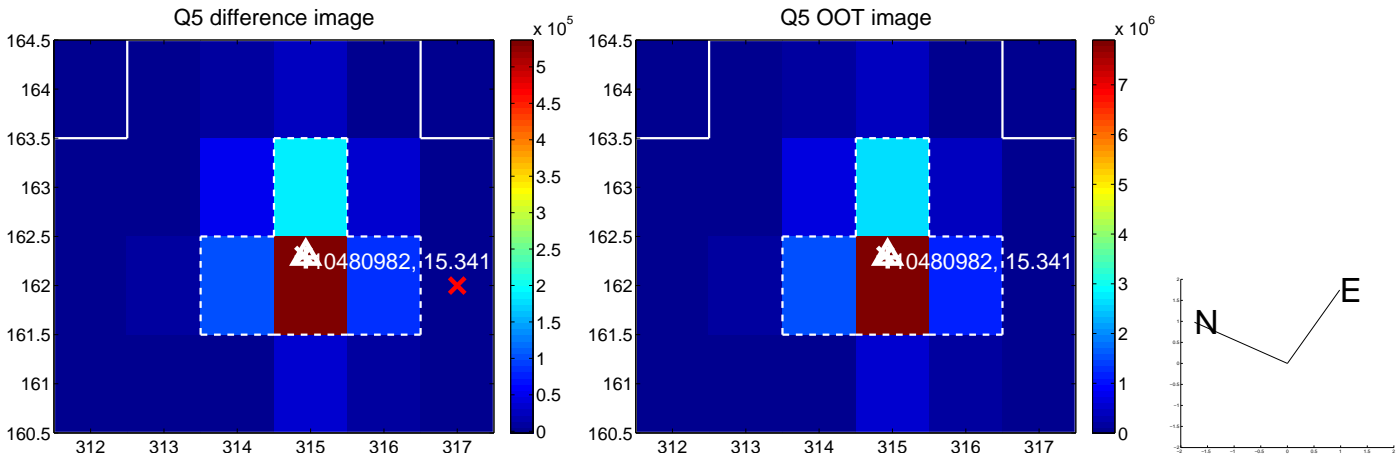


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

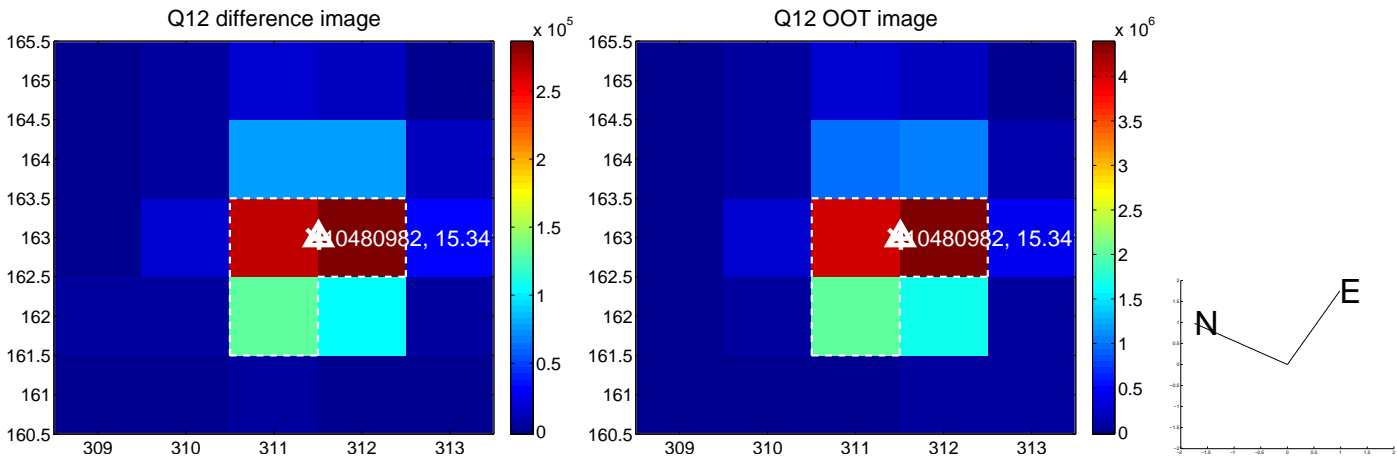
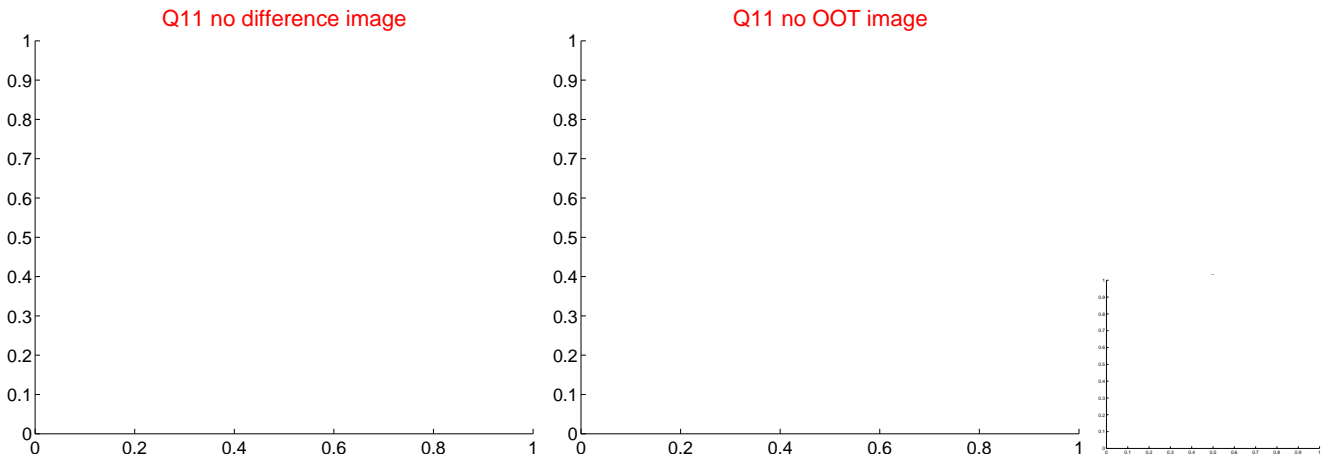
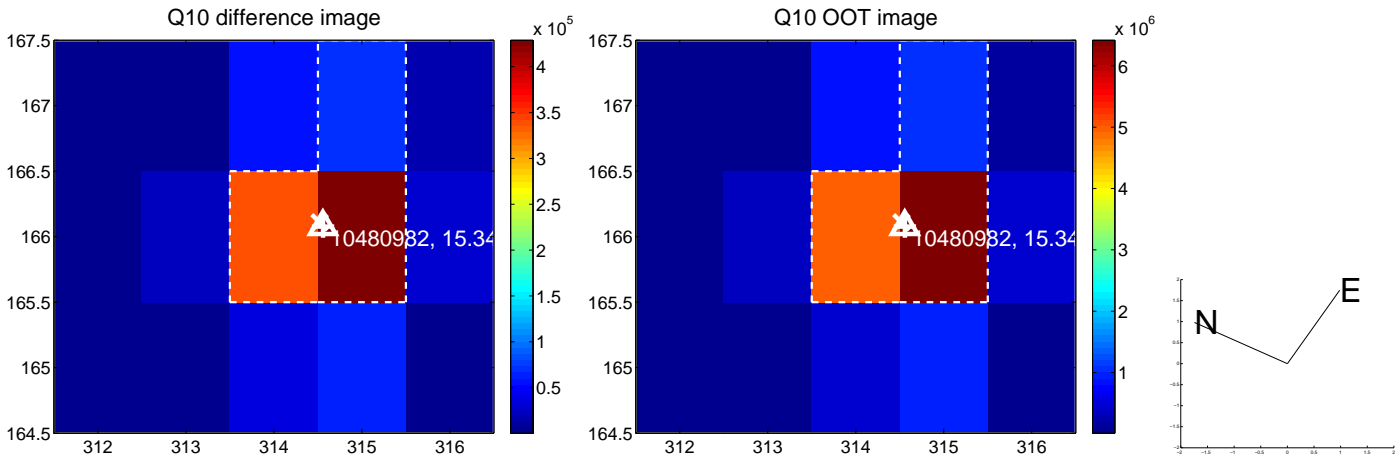
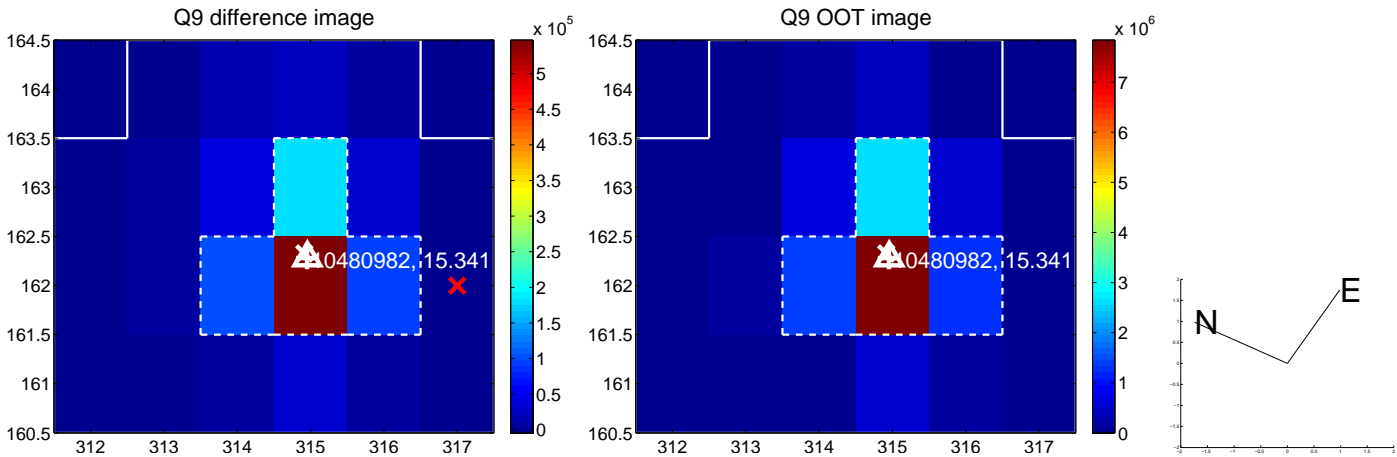
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



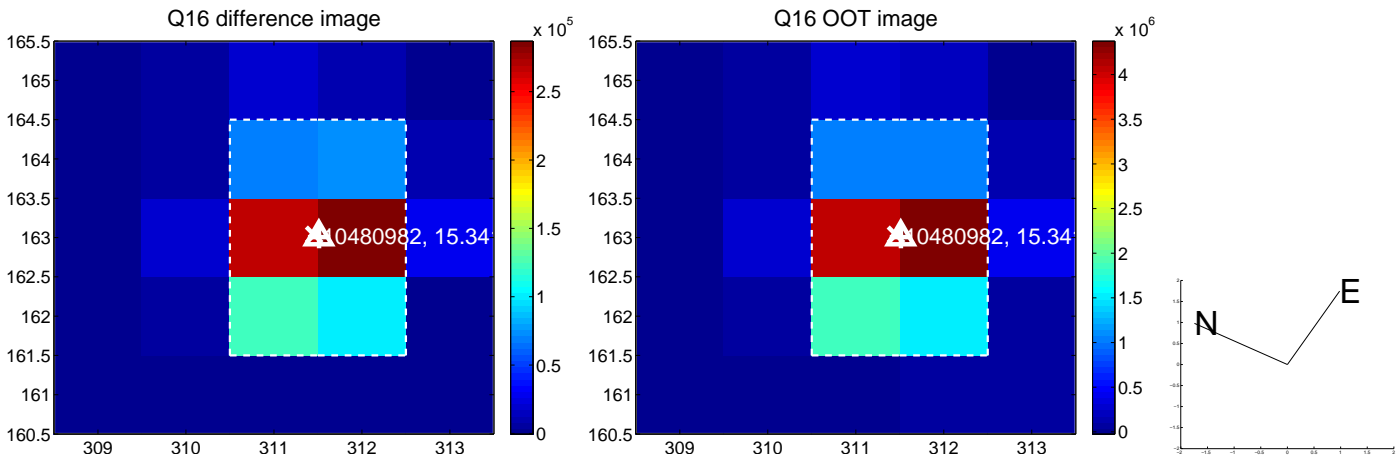
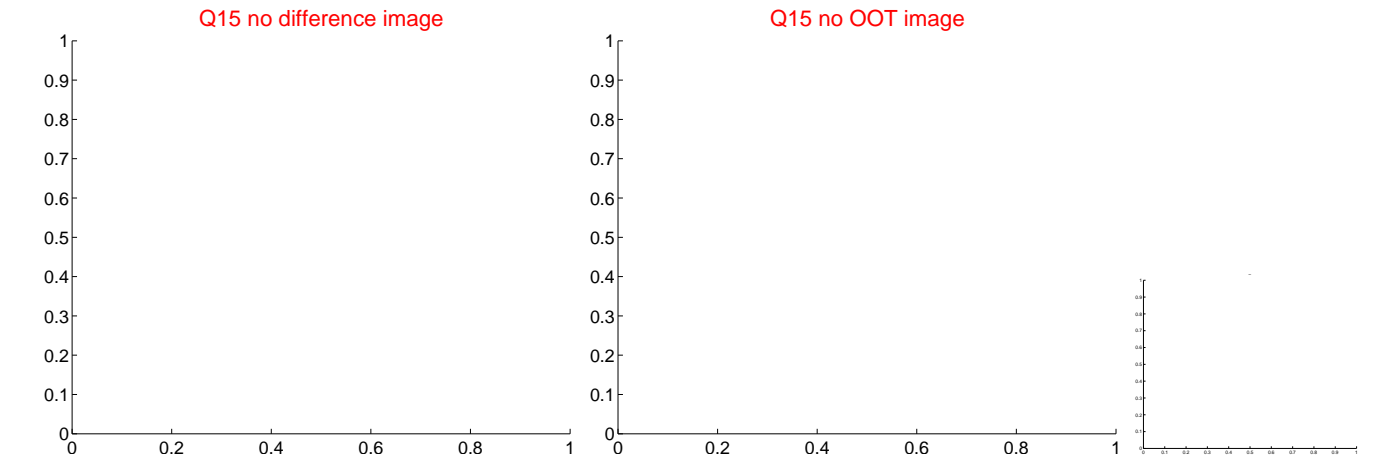
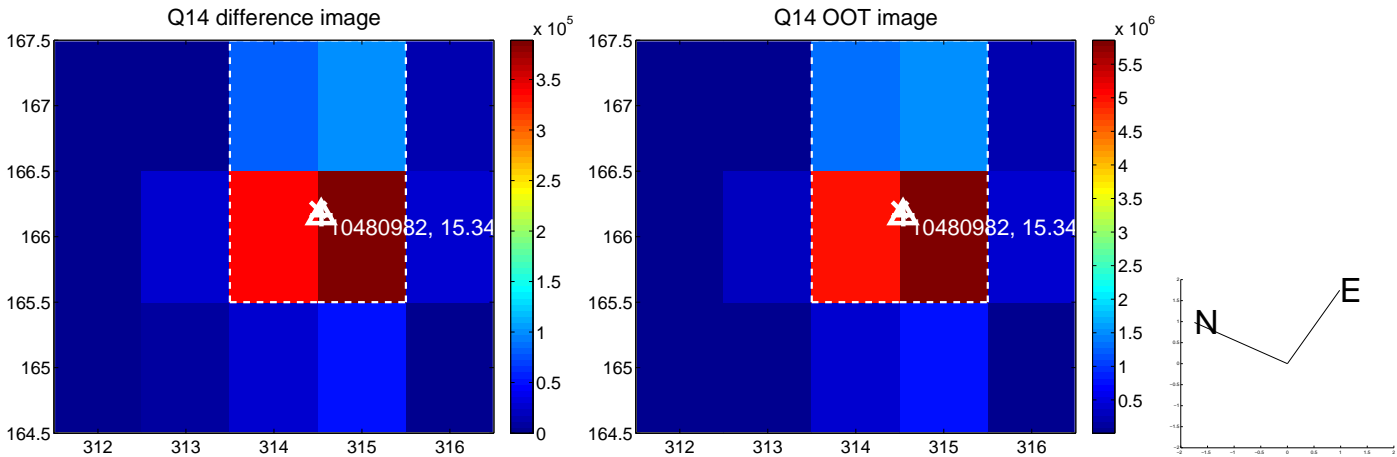
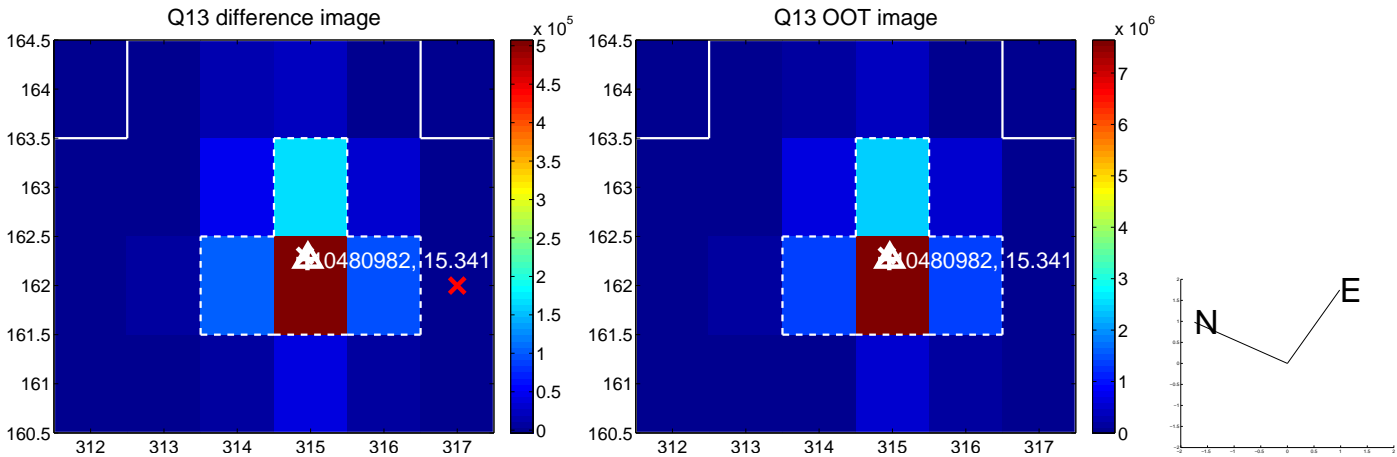
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



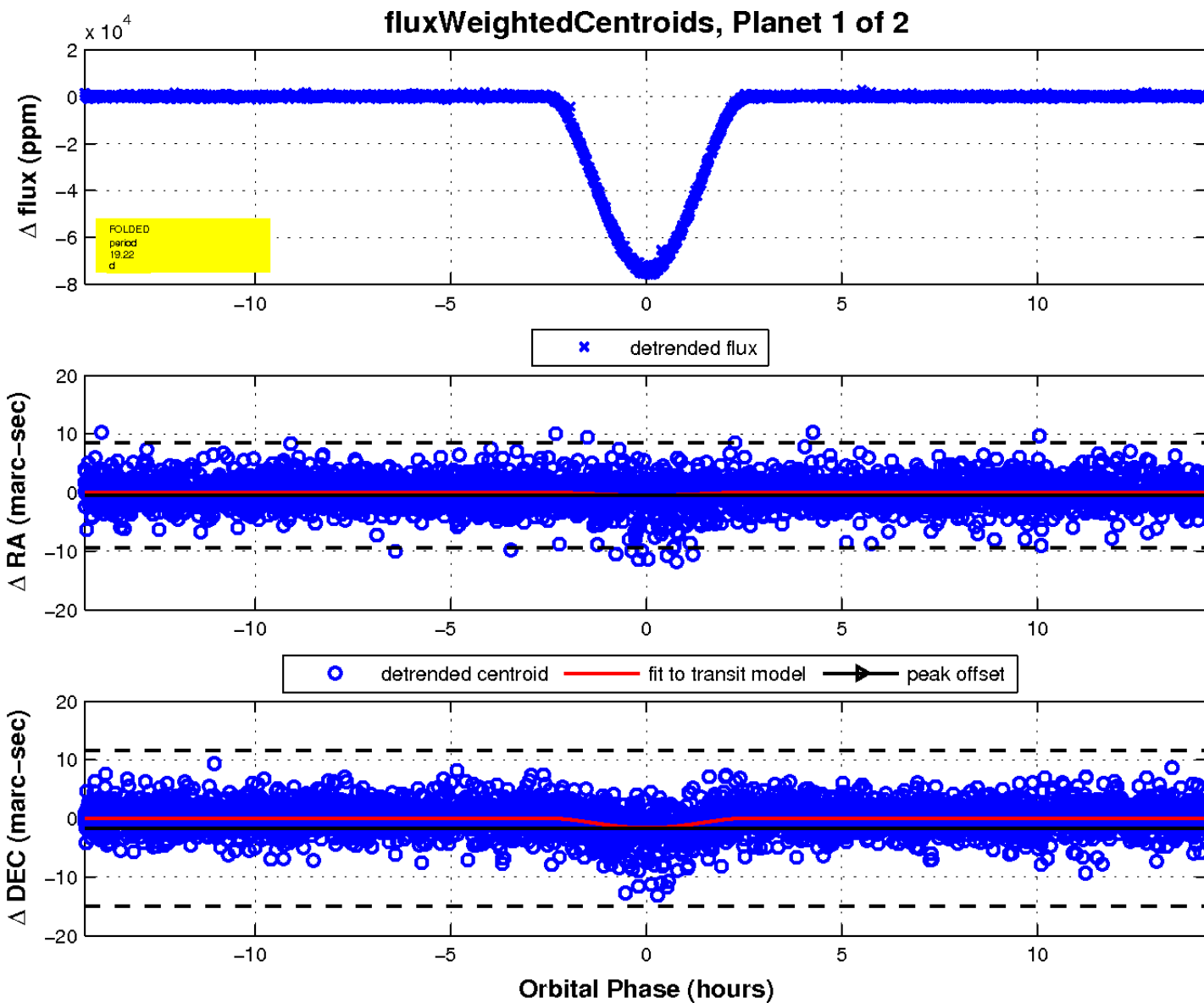
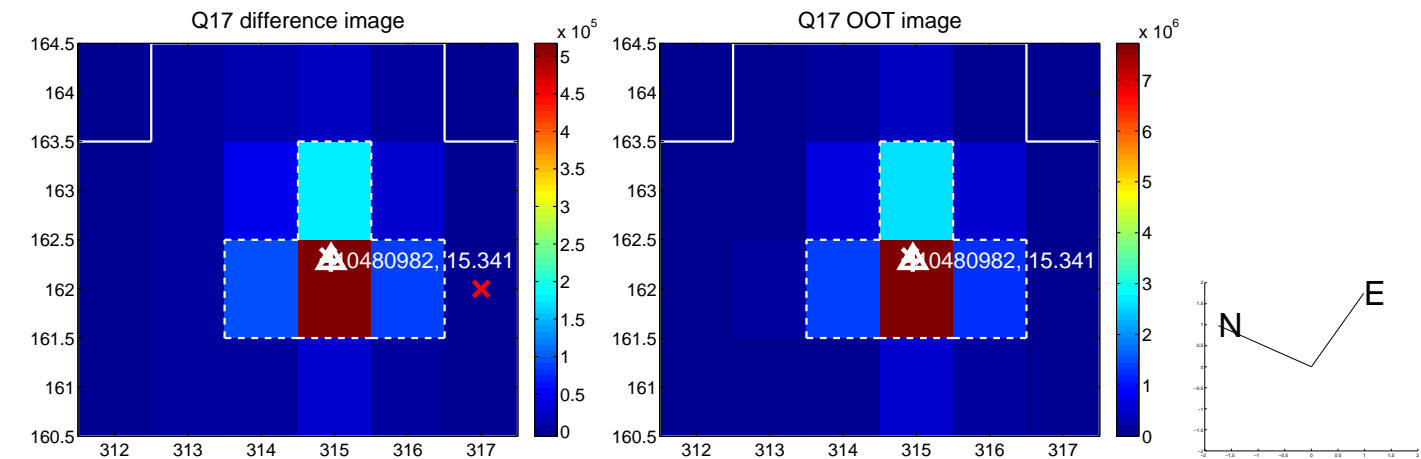
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

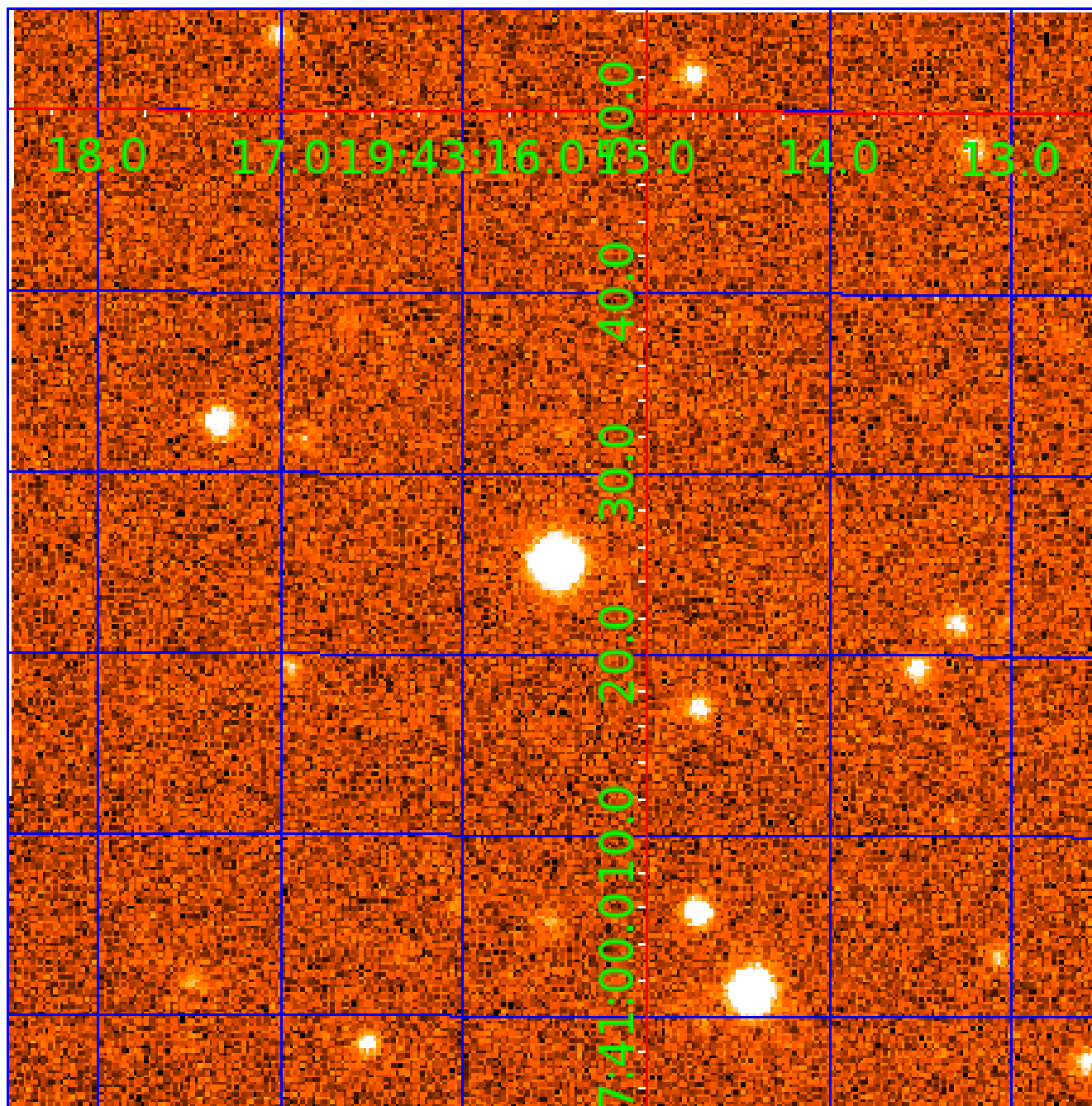


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010480982

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})
010480982-01	OBS	0744.01	19.221387	146.109446	74000.5	4.788	2174.4	1806.1	0.95	6117	38.01	56.09
010480982-02	OBS	0744.02	2.037489	131.540577	118.2	4.184	12.0	13.0	0.95	6117	1.22	1118.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010480982-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
010480982-02	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 010480982-02

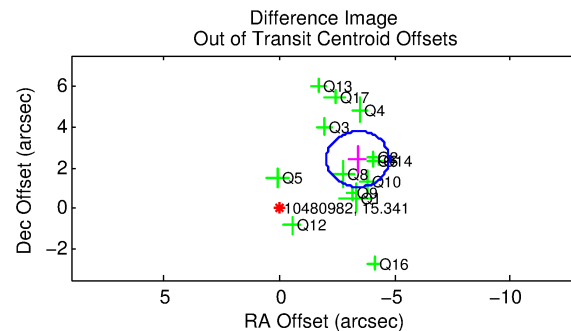
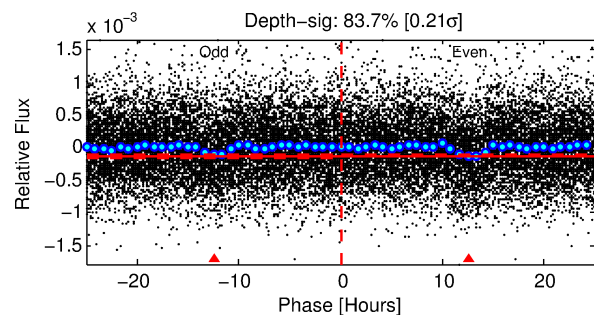
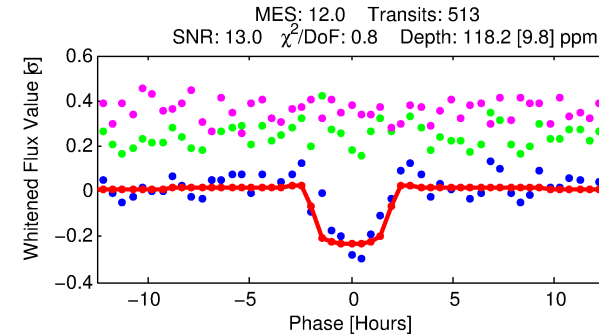
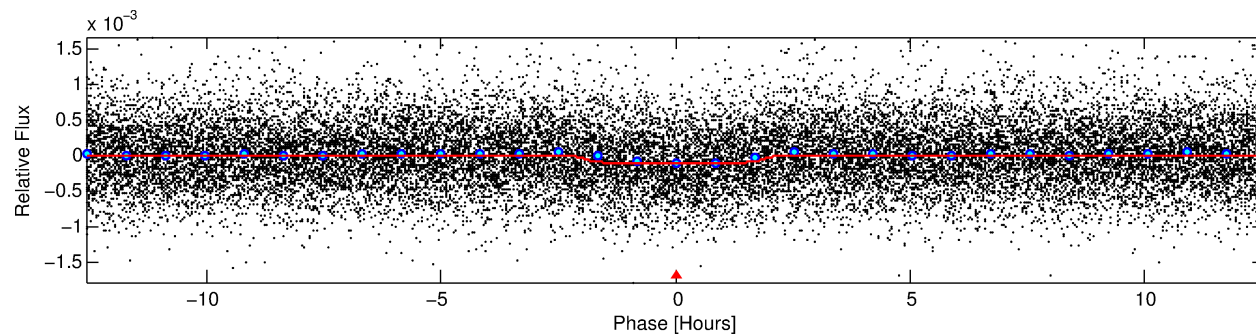
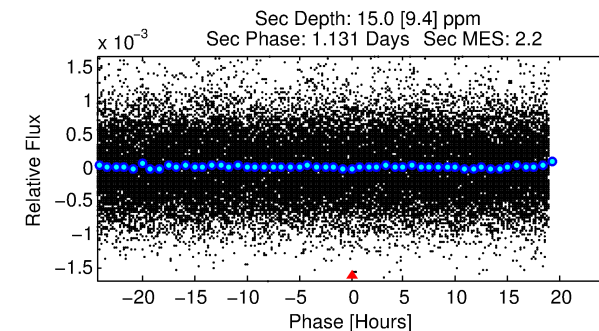
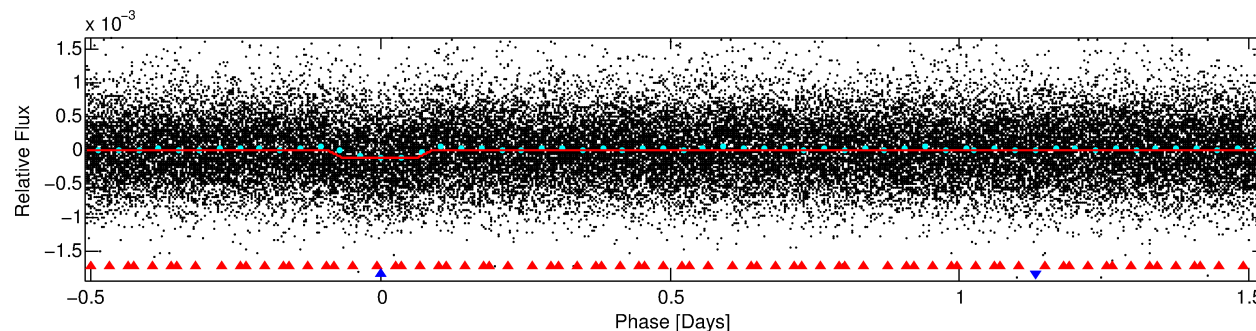
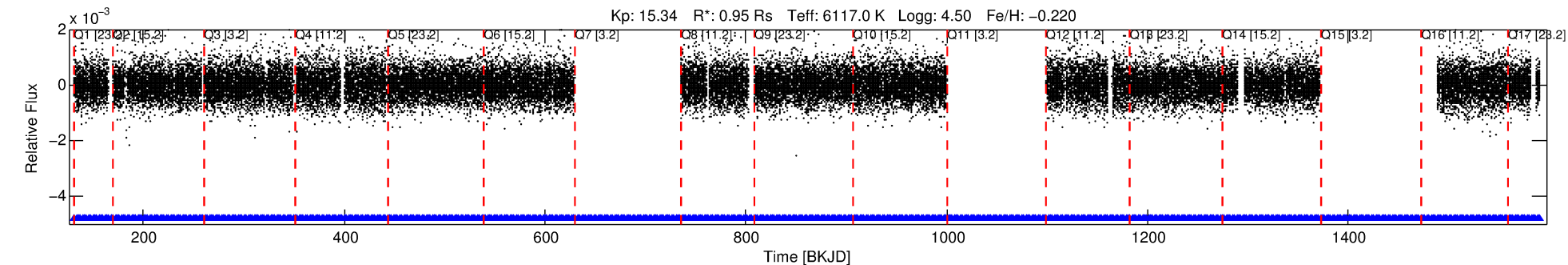
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010480982-02	10480982	5797.01	10480952	1:1	74.0	14	-12	12.22	15.34	2794.60	Direct-PRF	0	1.23	0.65

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10480982 Candidate: 2 of 2 Period: 2.037 d

KOI: K00744.02 Corr: 0.827



DV Fit Results:

Period = 2.03749 [0.00001] d
Epoch = 131.5406 [0.0037] BKJD
Rp/R* = 0.0118 [0.0033]
a/R* = 1.91 [2.08]
b = 0.91 [0.29]
Seff = 1118.12 [455.64]
Teff = 1475 [150] K
Rp = 1.22 [0.52] Re
a = 0.0317 [0.0085] AU
Ag = 5.59 [5.18] [0.89σ]
Teffp = 3505 [747] K [2.66σ]

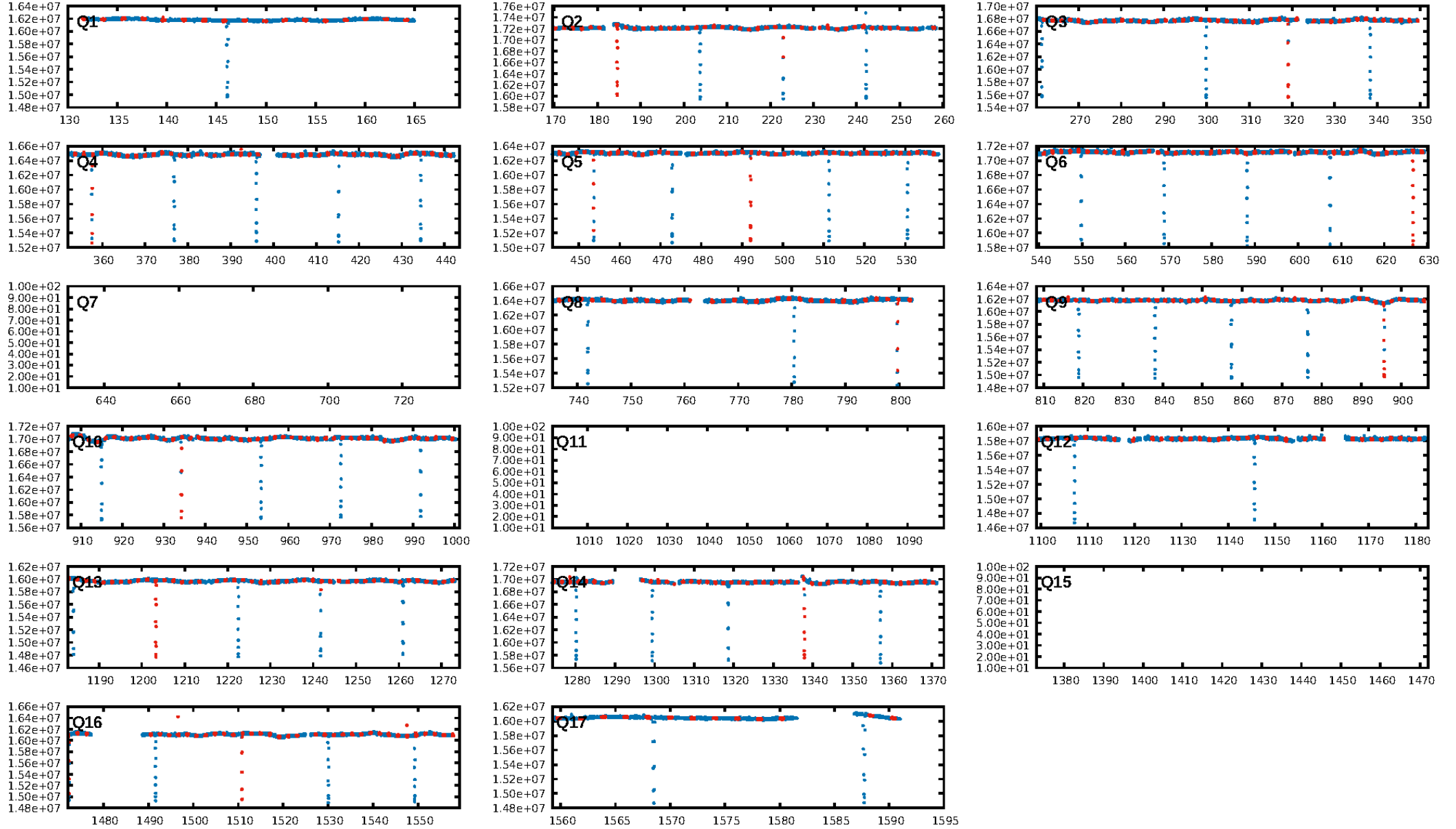
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [64.86σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.25e-32
RollingBand-fgt: 1.00 [483/483]
GhostDiagnostic-chr: 0.1339
Centroid-sig: 0.0%
Centroid-so: 3.017 arcsec [3.41σ]
OotOffset-rm: 4.168 arcsec [9.19σ]
KicOffset-rm: 4.089 arcsec [9.21σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 1.00 [14/14]

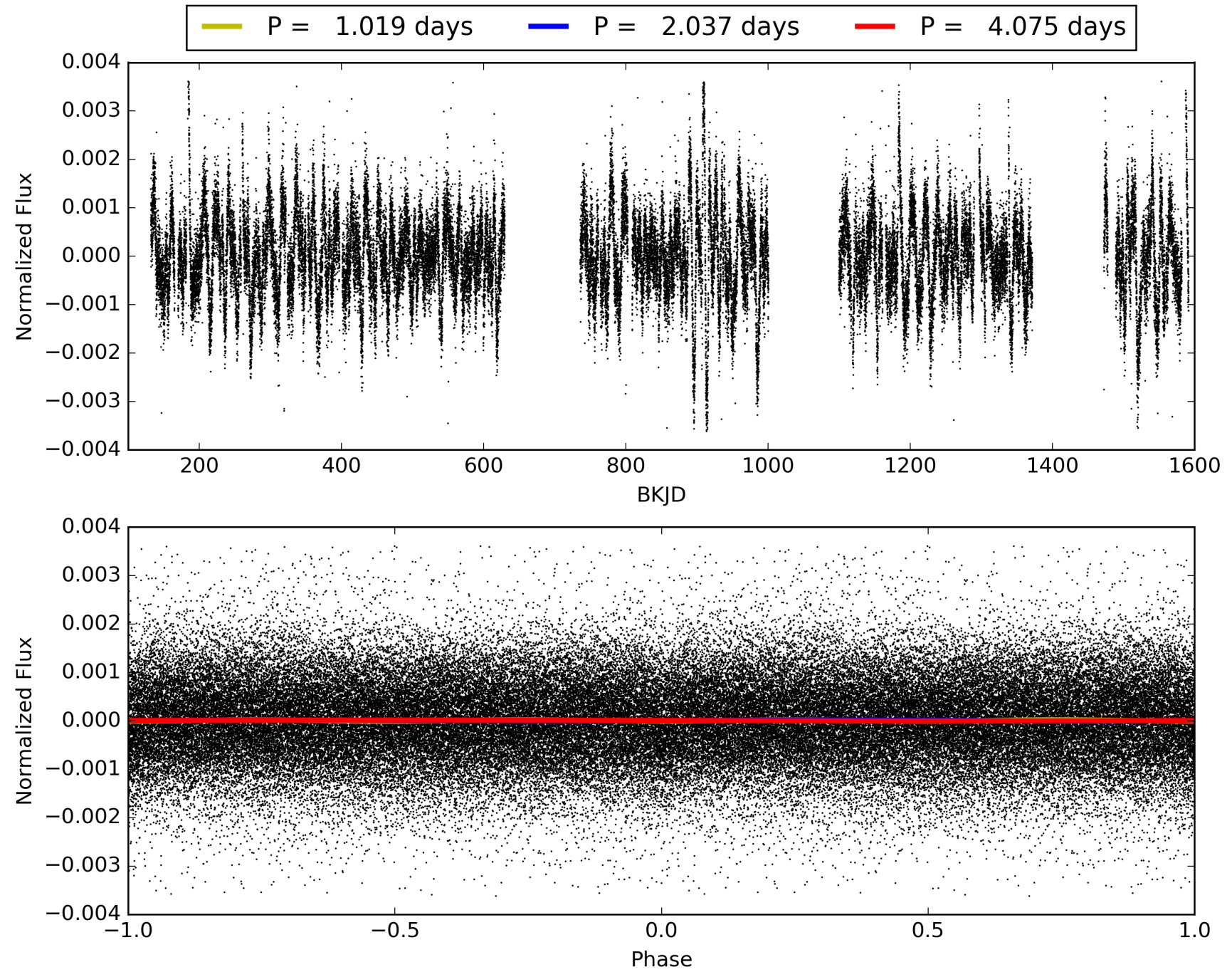
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:21:09 Z

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

TCE 010480982-02, PDC Light Curves

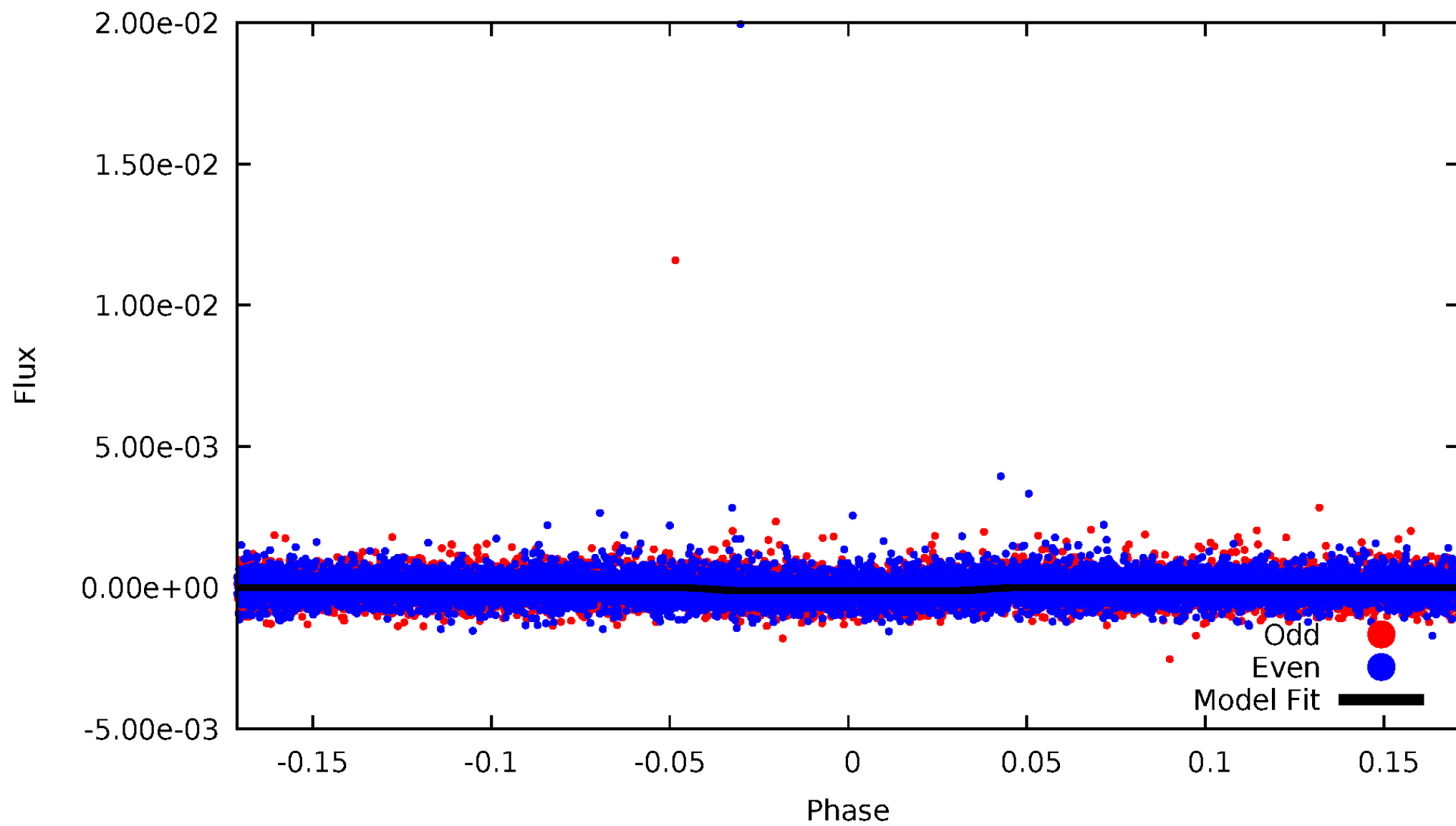


TCE 010480982-02



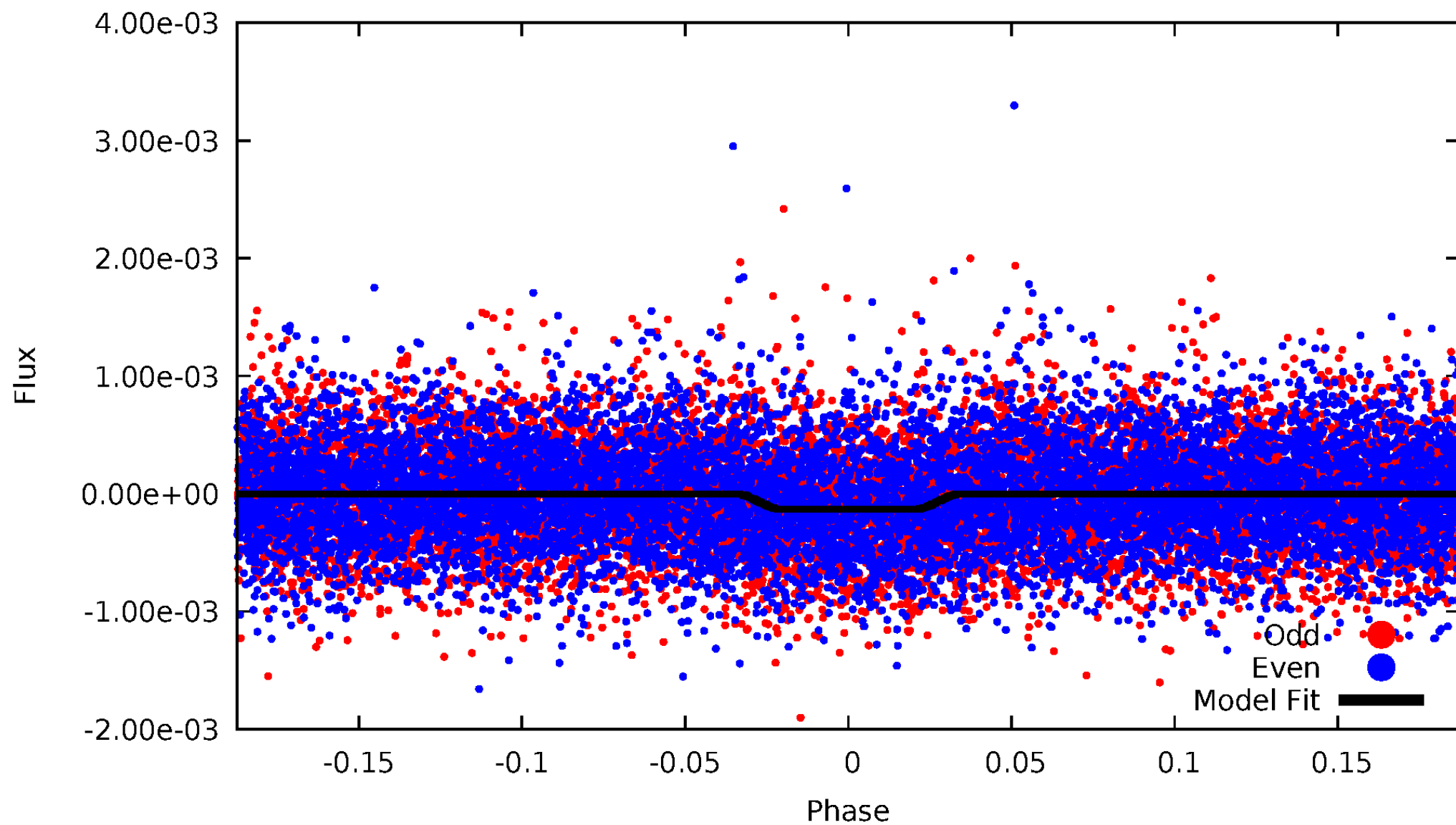
DV Odd/Even

TCE 010480982-02



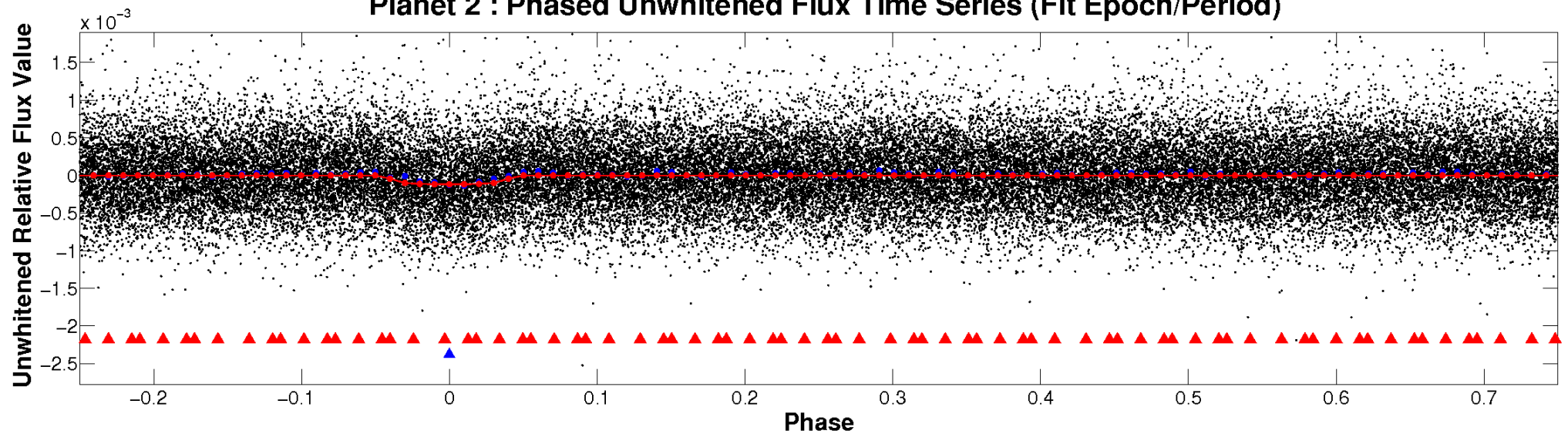
ALT Odd/Even

TCE 010480982-02

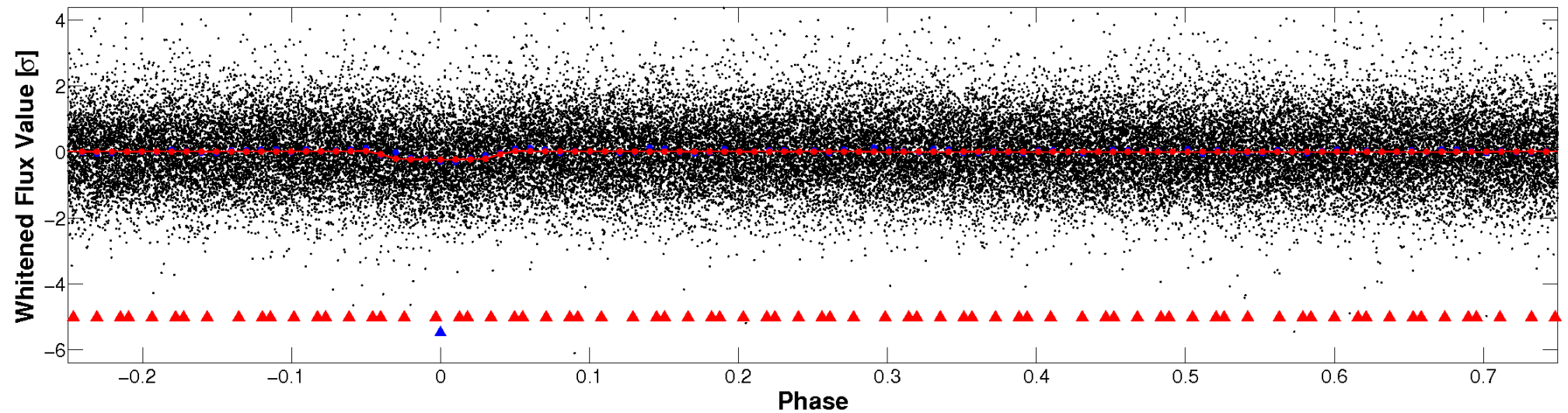


Non-Whitened Vs. Whitened Light Curve

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

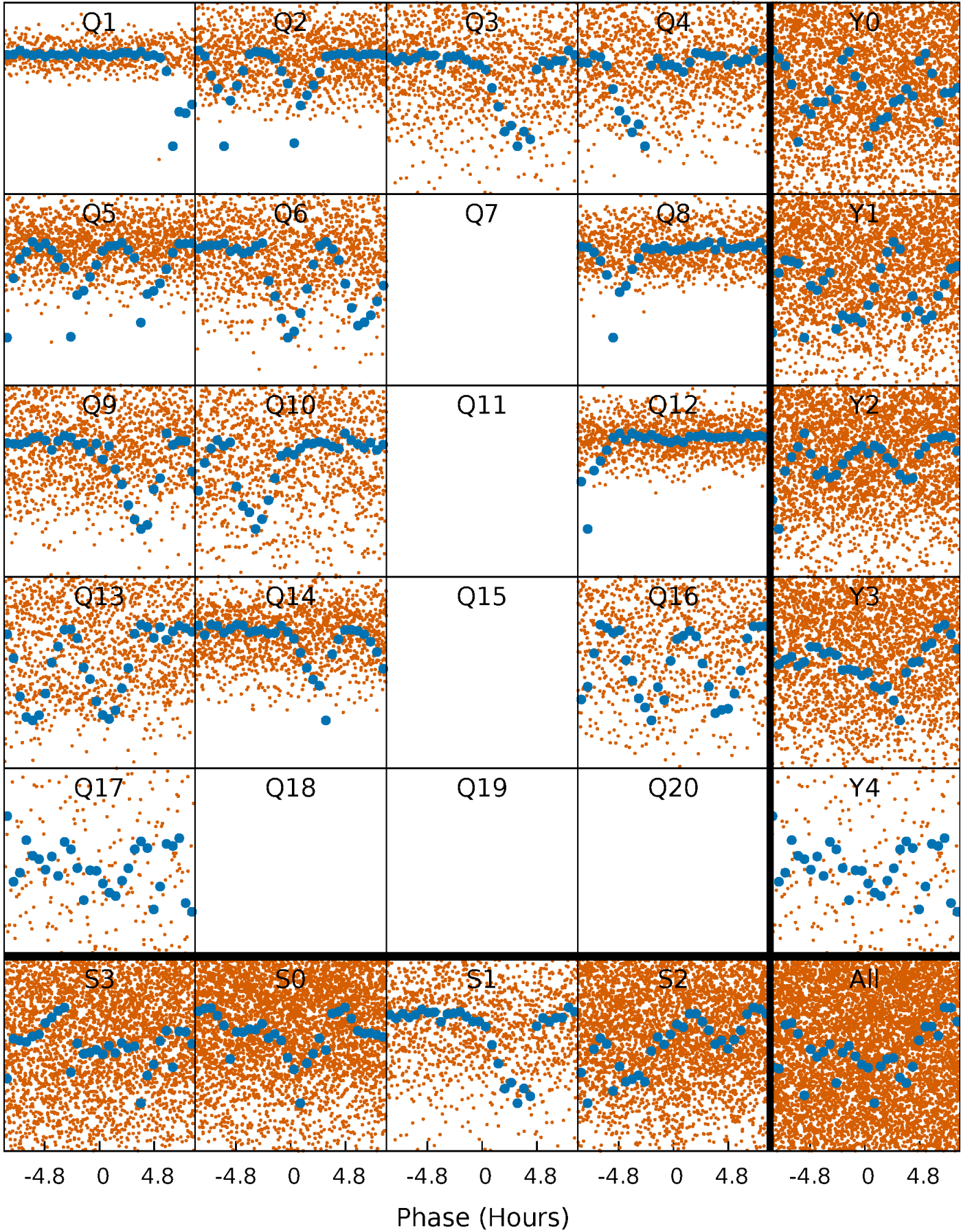


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



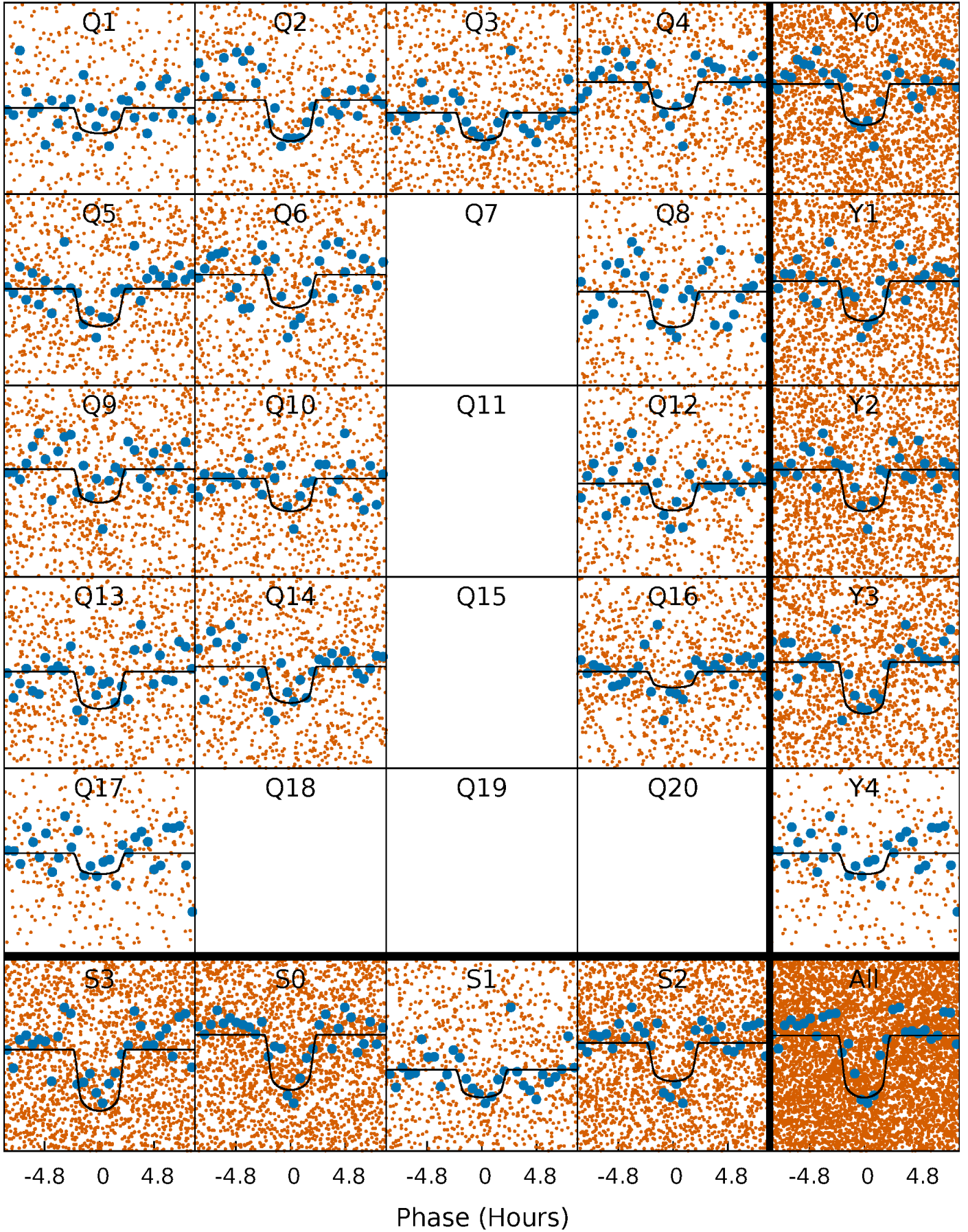
PDC Quarter-Phased Transit Curves

TCE 010480982-02 P= 2.037489 Days $T_0=131.540577$ (BKJD)



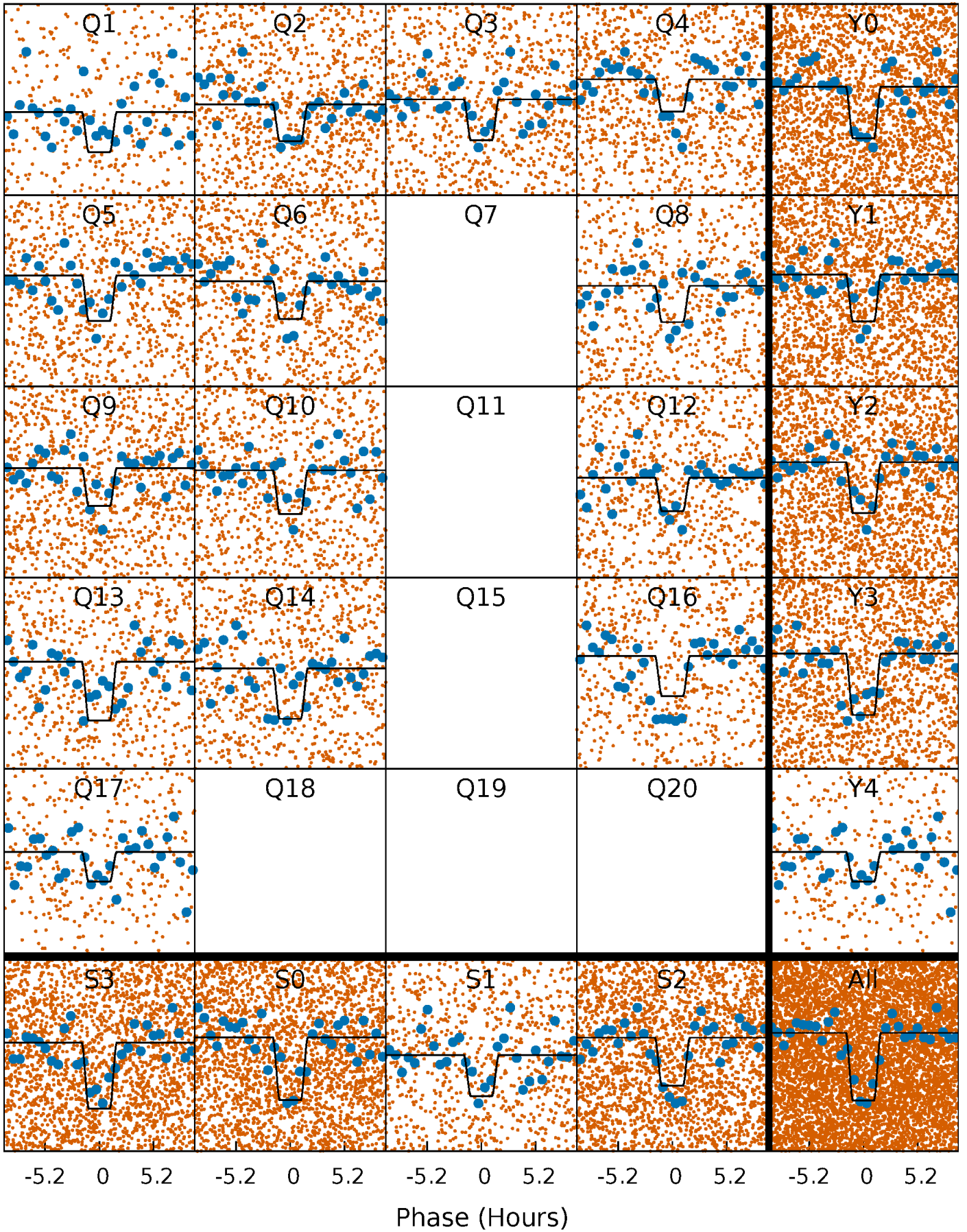
DV Quarter-Phased Transit Curves

TCE 010480982-02 P= 2.037489 Days $T_0=131.540577$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

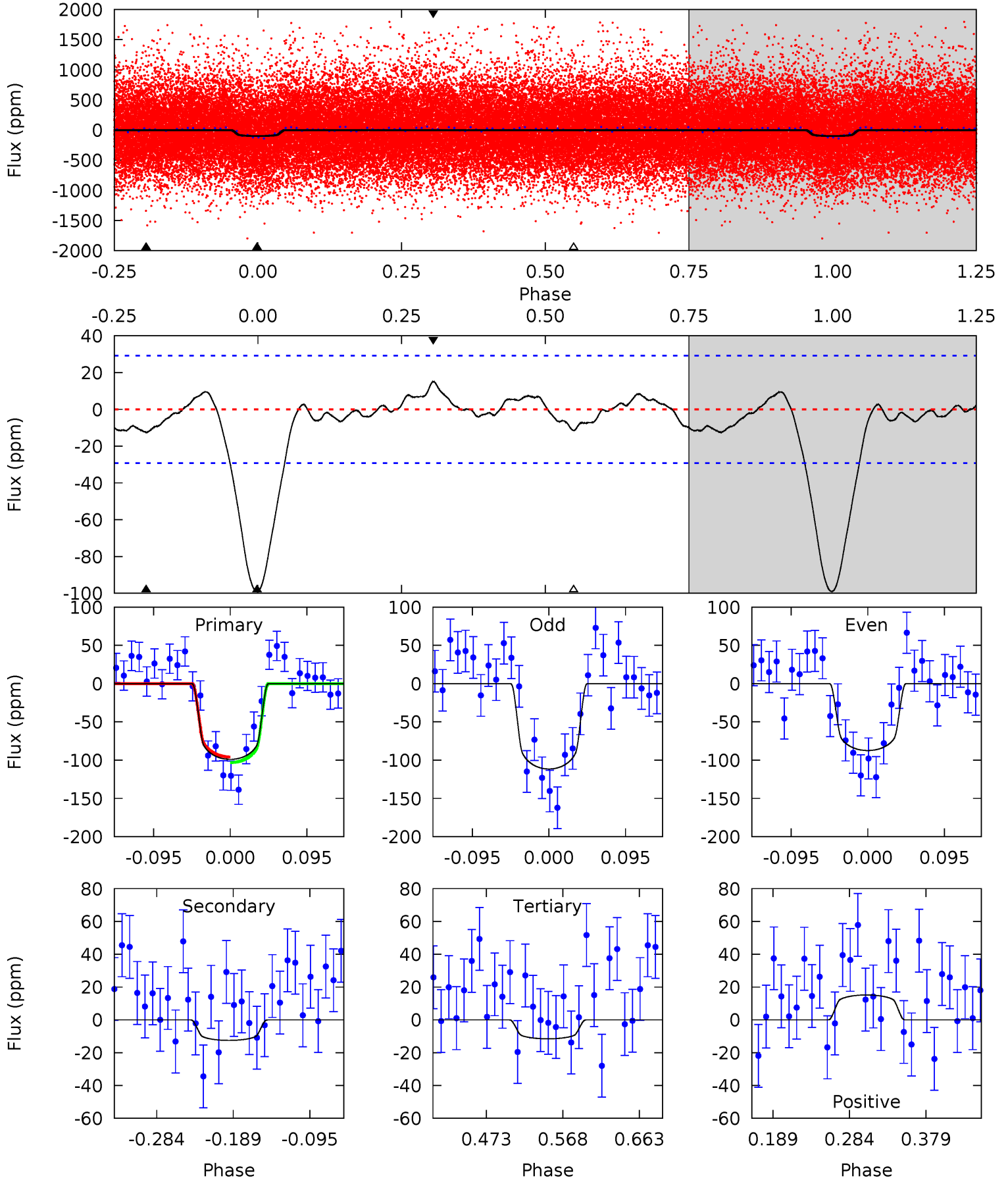
TCE 010480982-02 P= 2.037470 Days $T_0=131.546430$ (BKJD)



DV Model-Shift Uniqueness Test

010480982-02, P = 2.037489 Days, E = 129.503088 Days

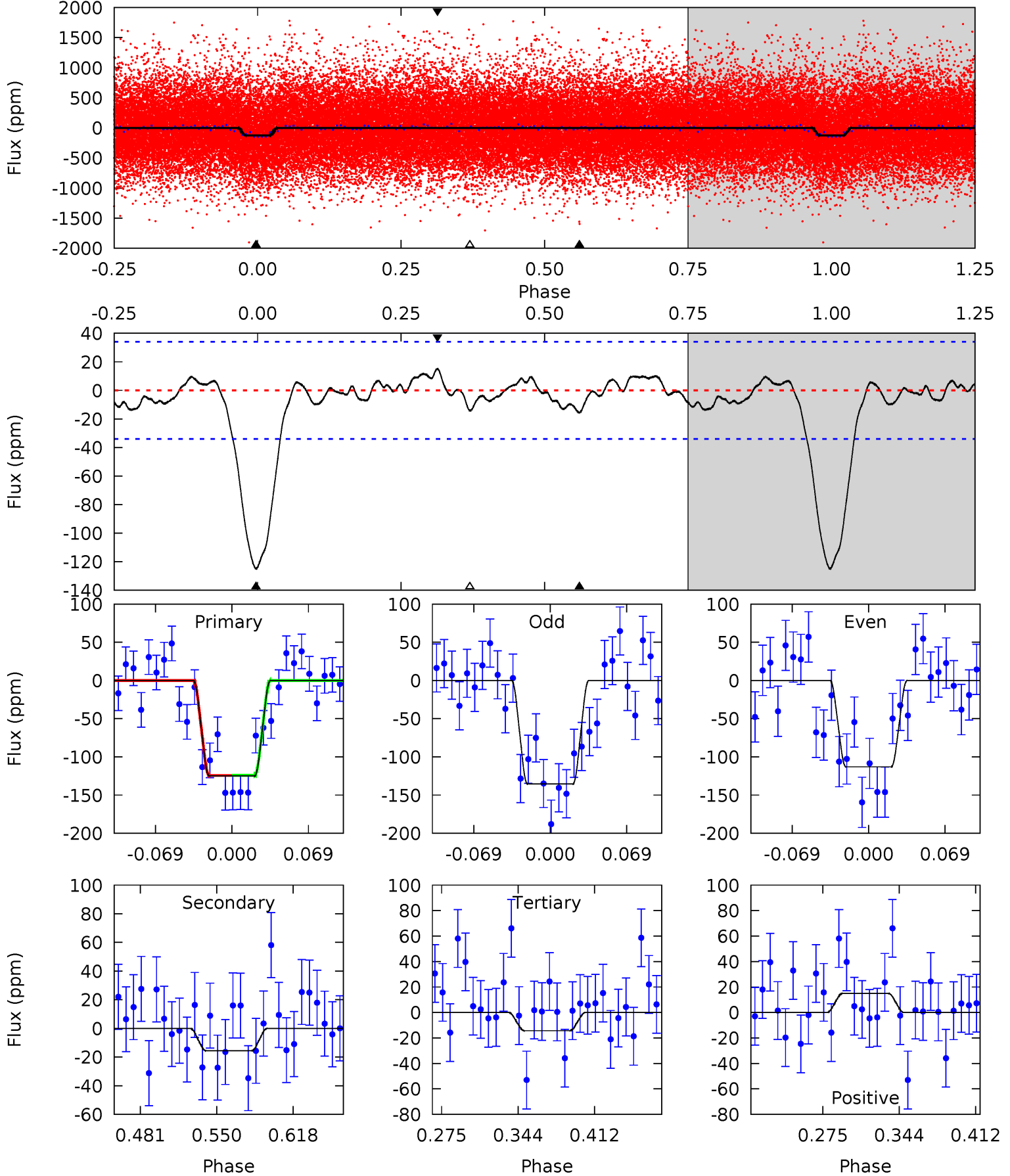
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	1.96	1.81	2.37	4.58	1.67	0.87	13.7	13.1	0.15	-0.42	1.90	0.96	0.13	0.57



Alt Model-Shift Uniqueness Test

010480982-02, P = 2.037470 Days, E = 129.508960 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	2.13	1.95	2.05	4.64	1.82	0.92	15.1	15.0	0.18	0.08	1.54	1.11	0.11	0.01



Stellar Parameters For KIC 010480982

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6117^{+182}_{-200}	$4.496^{+0.052}_{-0.208}$	$-0.220^{+0.250}_{-0.350}$	$0.947^{+0.308}_{-0.096}$	$1.025^{+0.139}_{-0.139}$	$1.702^{+0.374}_{-0.895}$
	+3%/-3%	+1%/-5%	+114%/-159%	+33%/-10%	+14%/-14%	+22%/-53%
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 010480982-02 / KOI 0744.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 6	$1.28^{+0.40}_{-0.37}$	2103^{+158}_{-107}	3690^{+548}_{-492}	$4.032^{+4.912}_{-2.255}$
Alt.	-16 ± 7	$1.23^{+0.41}_{-0.36}$	2105^{+159}_{-98}	3865^{+641}_{-502}	$5.473^{+6.594}_{-3.244}$

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

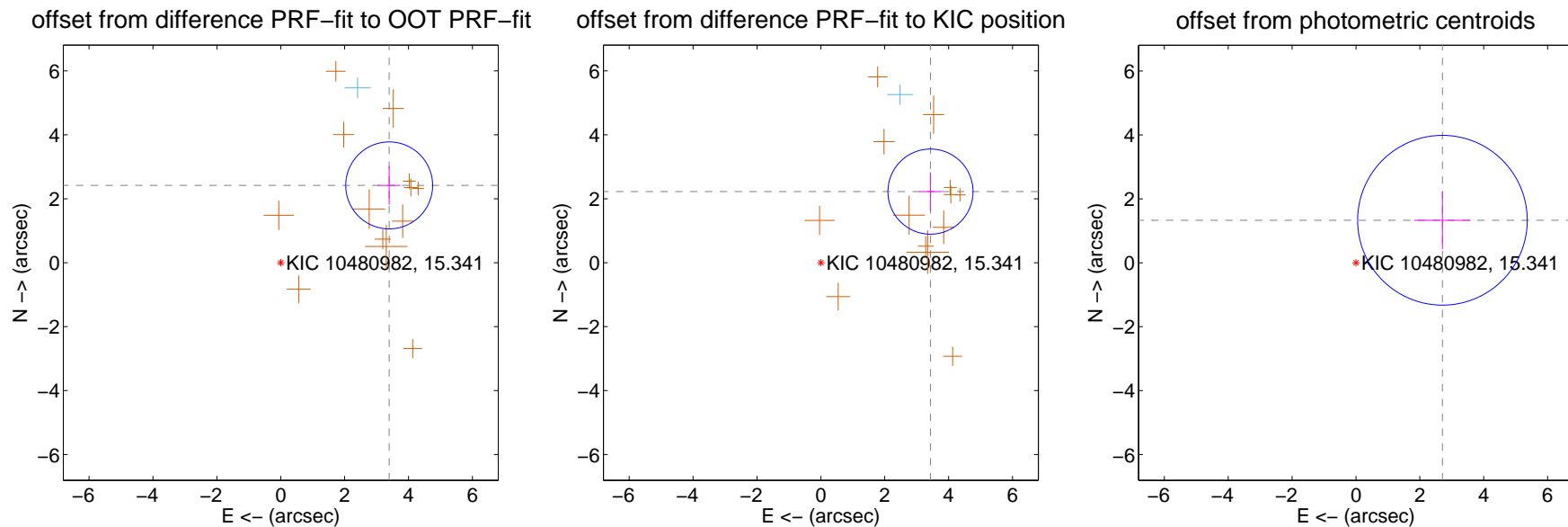
DV Centroid Data

Supplemental centroid analysis for 010480982-02. Kepler magnitude: 15.34. Transit SNR 13.03

There are 1 quarters with good PRF difference image offsets

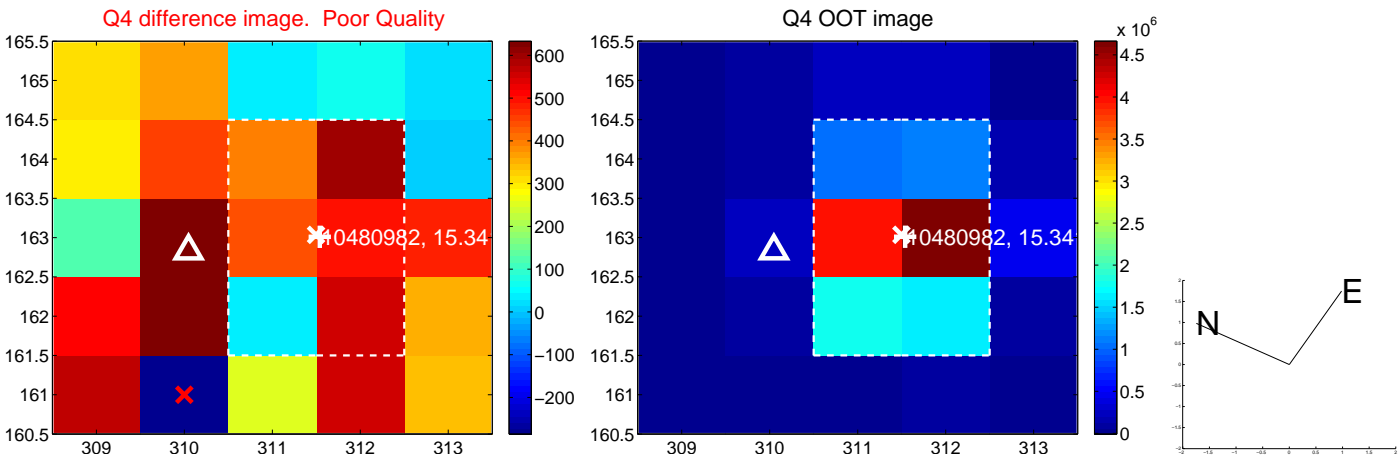
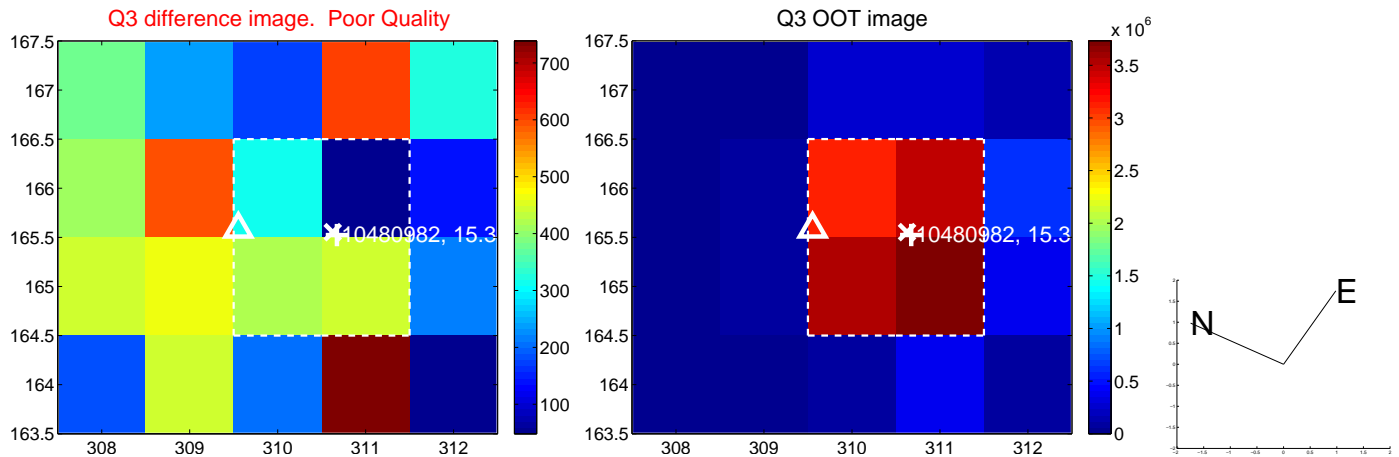
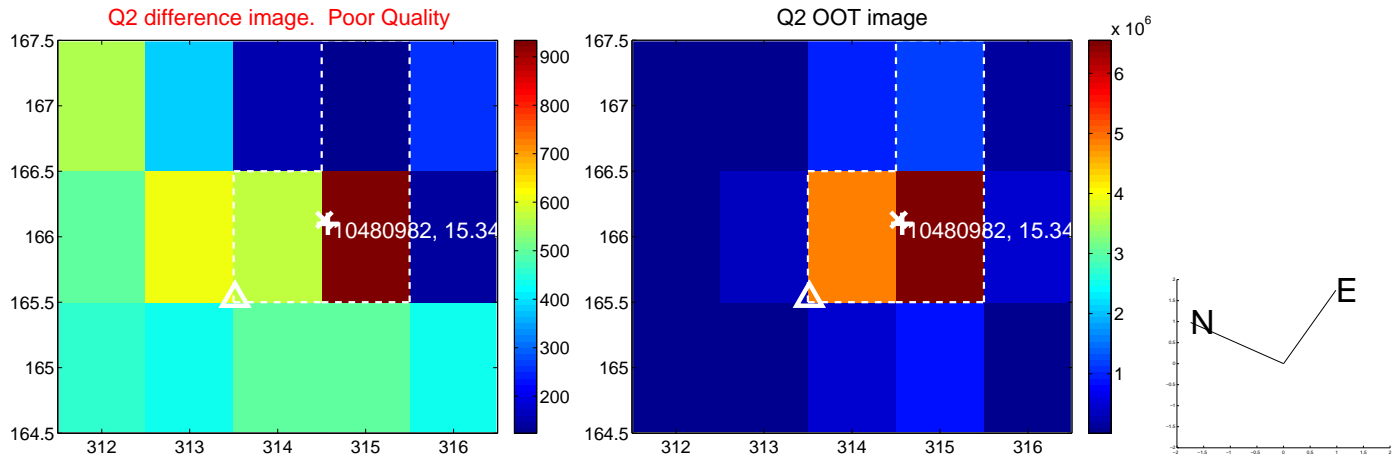
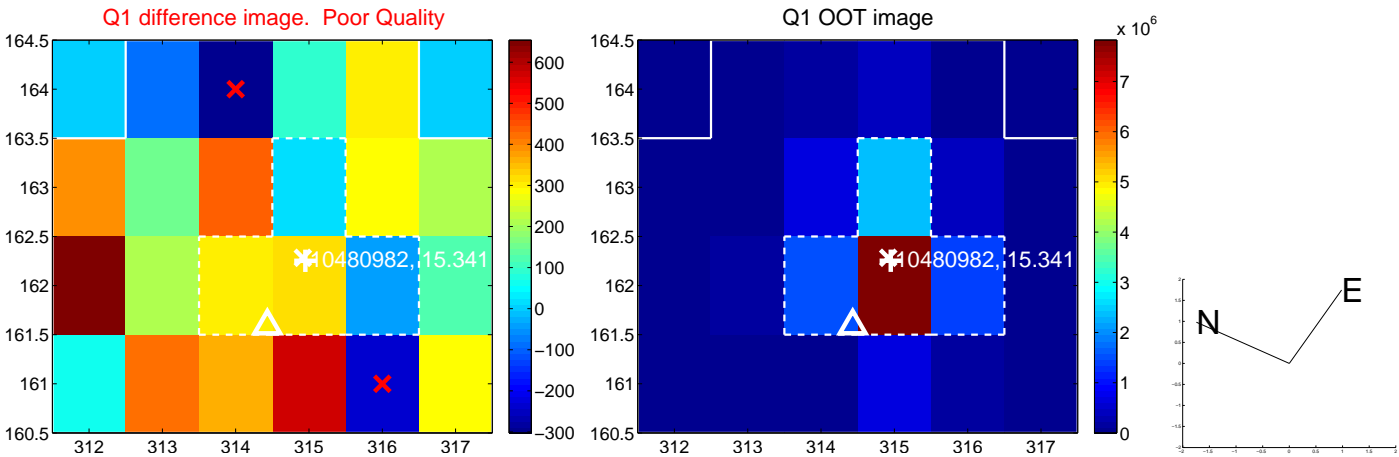
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.168 ± 0.453	9.19	-3.395 ± 0.353	2.418 ± 0.604
PRF-fit source offset from KIC position	4.089 ± 0.444	9.21	-3.432 ± 0.356	2.224 ± 0.604
photometric centroid source offset	3.02 ± 0.89	3.41	-2.71 ± 0.88	1.33 ± 0.91

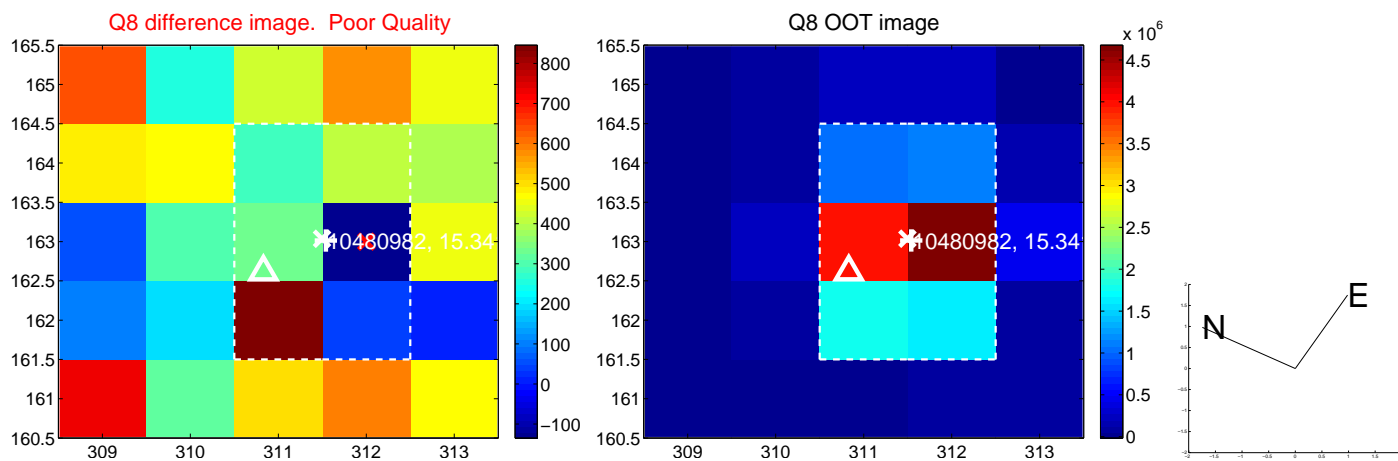
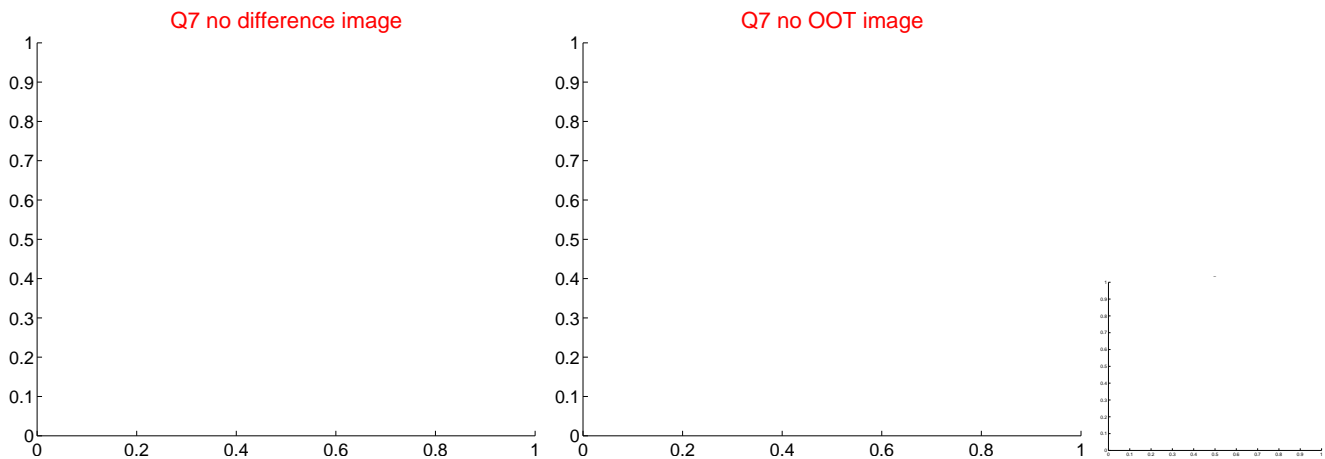
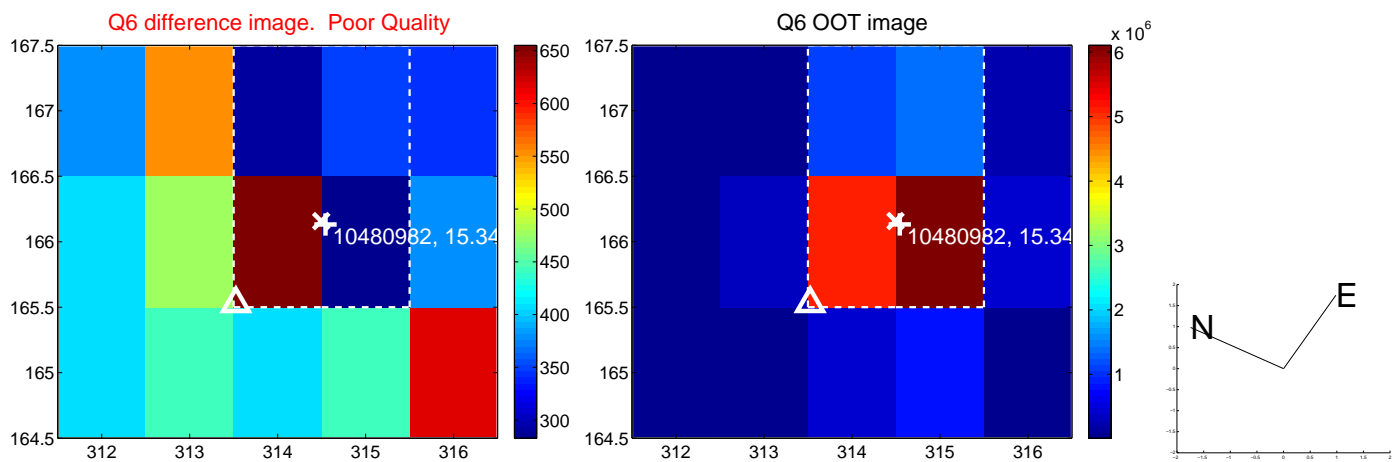
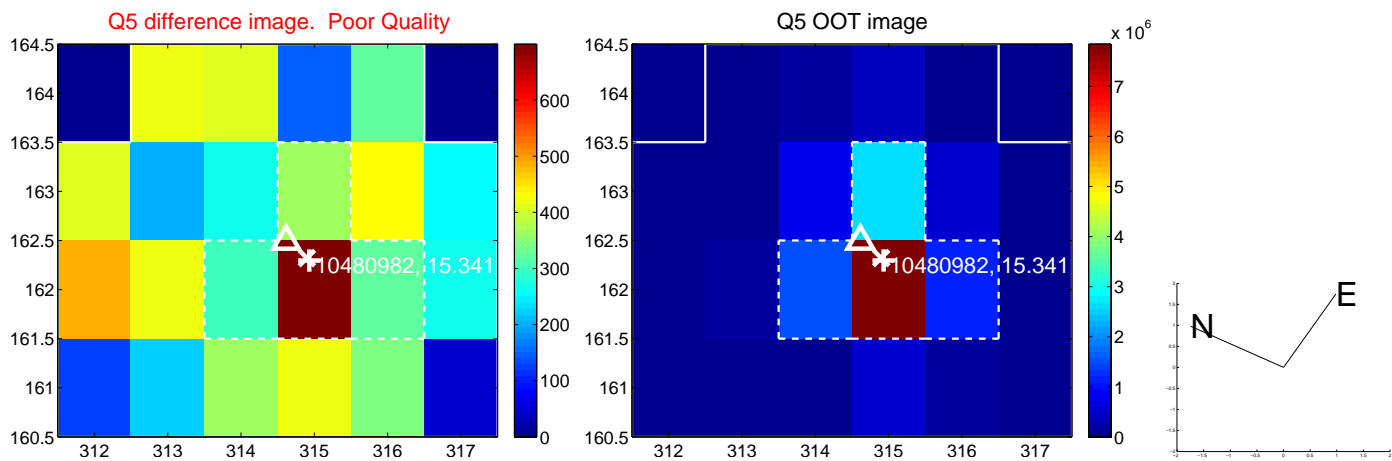


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

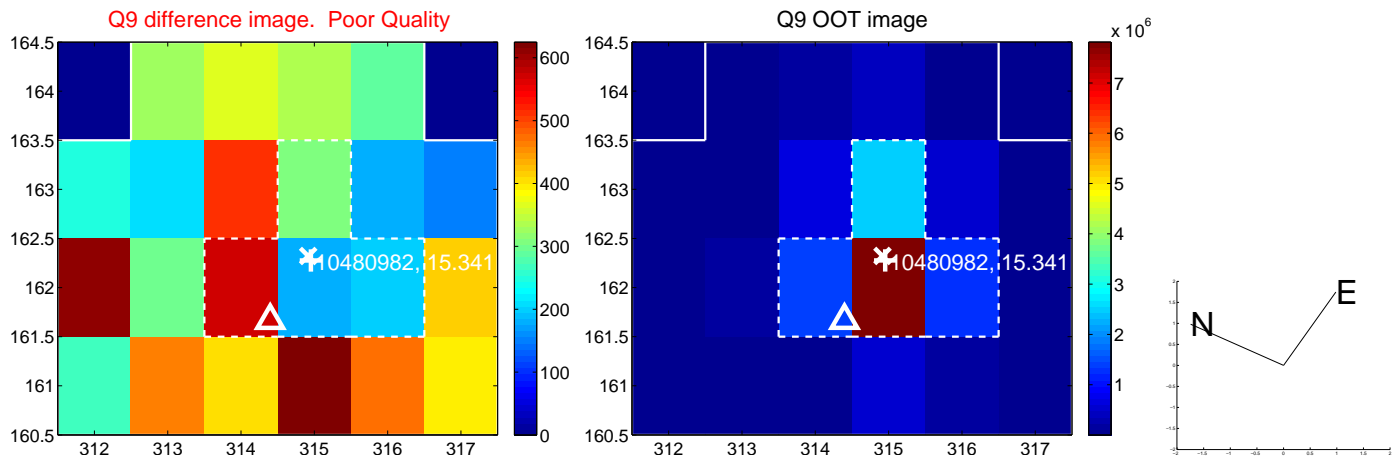
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



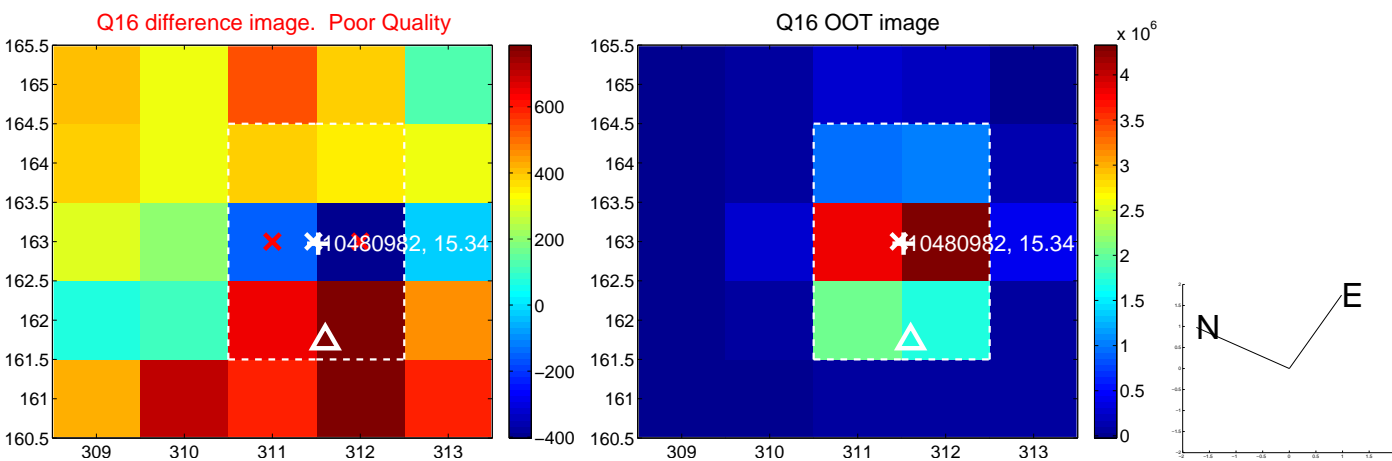
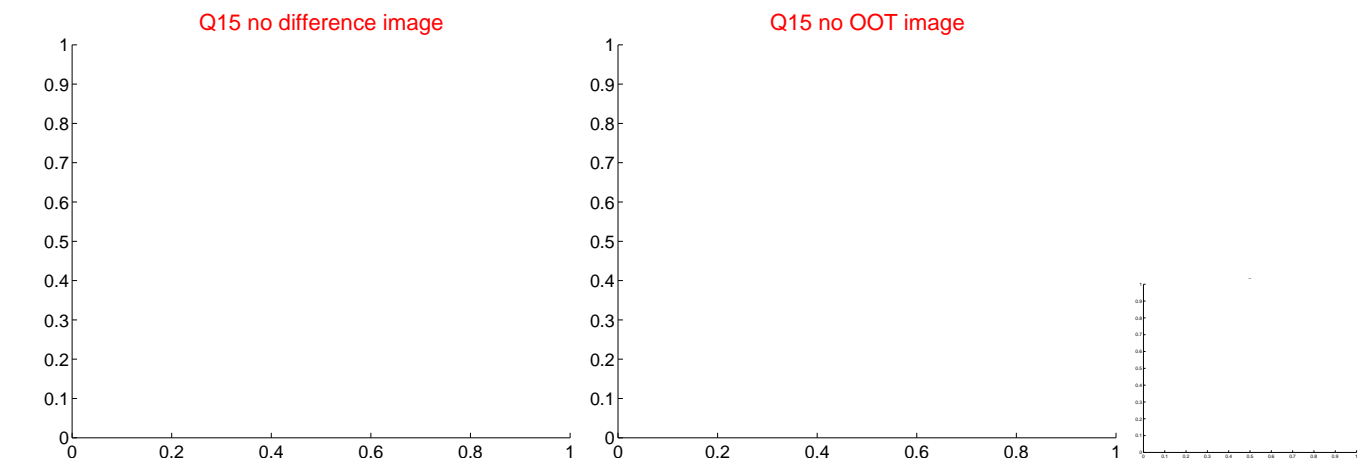
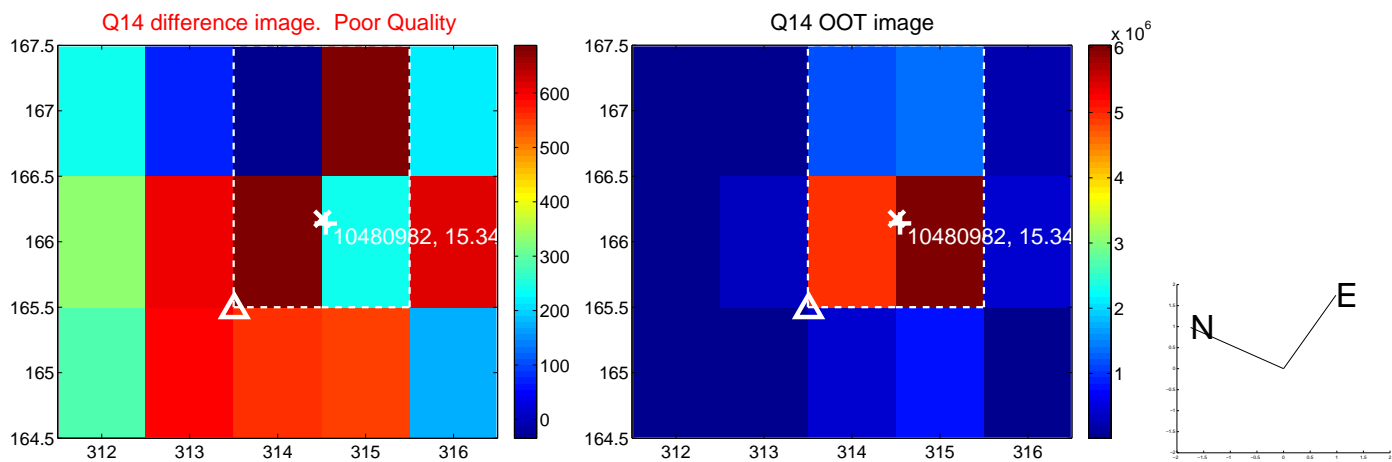
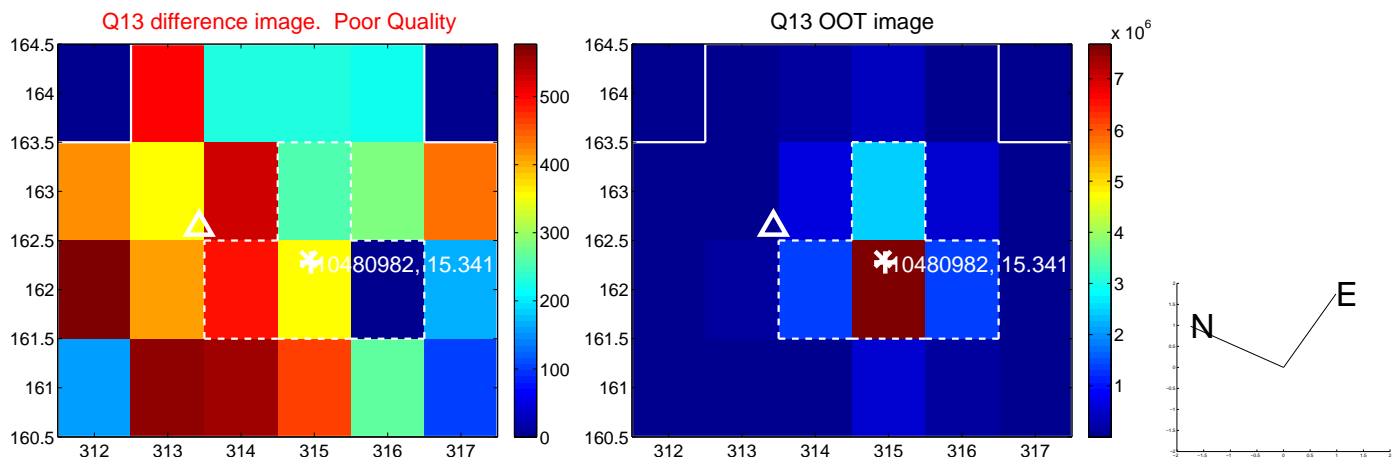
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



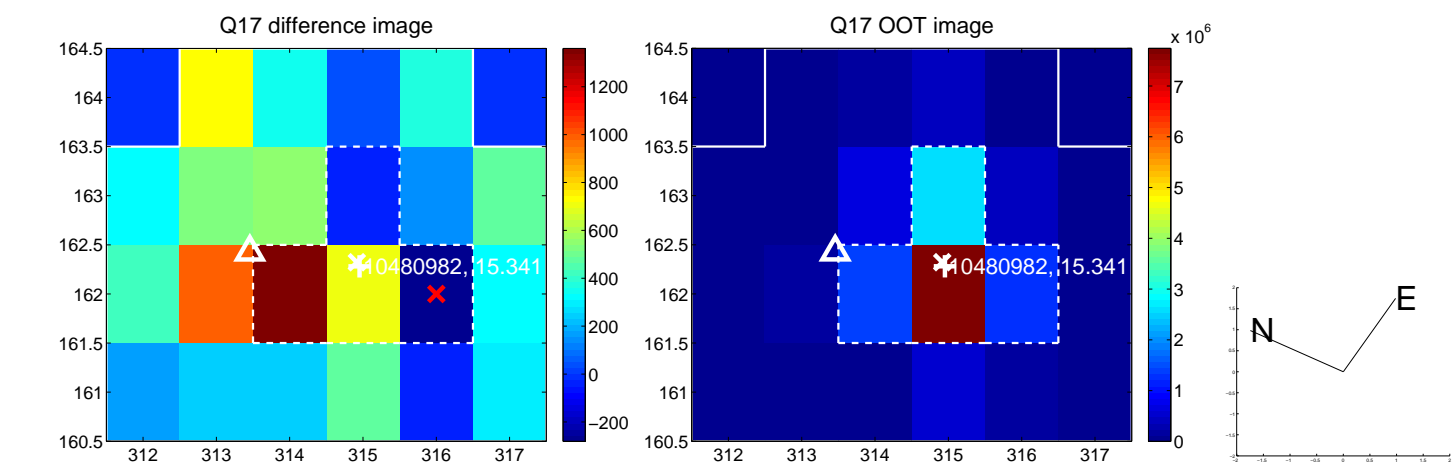
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



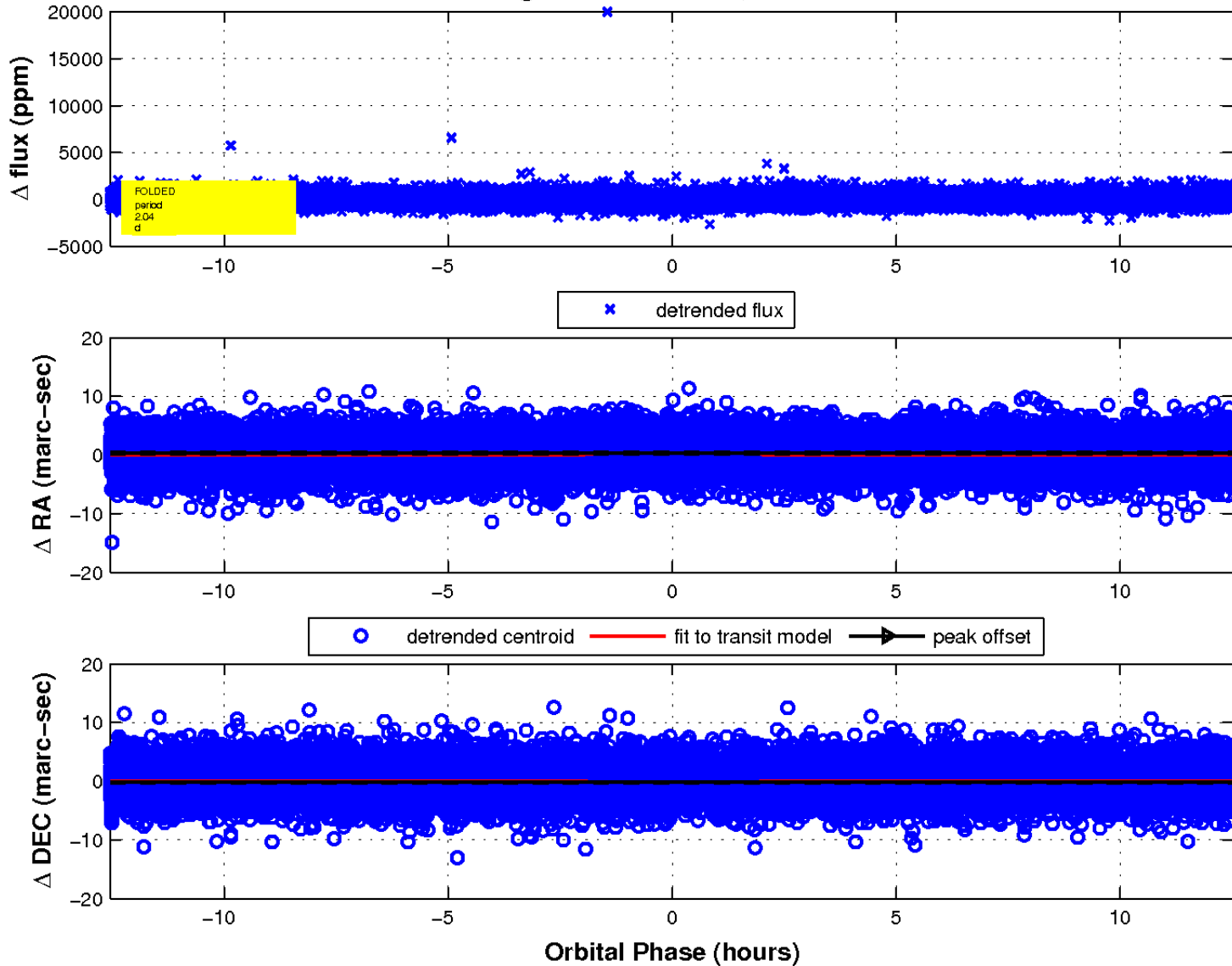
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

