

KIC 004933476

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})
004933476-01	OBS	No	340.027188	337.979549	984.5	5.263	13.6	6.1	0.93	5650	2.94	1.02
004933476-02	OBS	6122.01	2.572423	133.157314	157.9	1.724	12.7	13.8	0.93	5650	1.37	690.30
004933476-03	OBS	No	415.549845	357.191772	1088.6	4.257	13.8	6.6	0.93	5650	3.12	0.79
004933476-05	OBS	No	186.647172	174.069568	1313.2	6.401	11.1	7.8	0.93	5650	3.68	2.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004933476-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004933476-02	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
004933476-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004933476-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

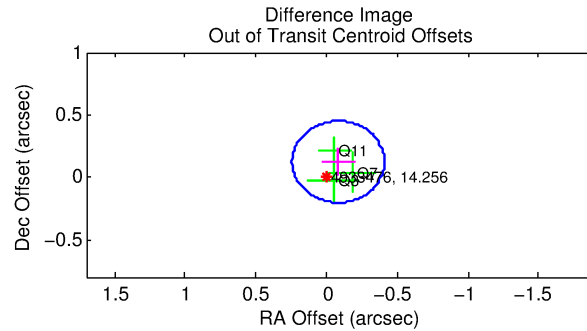
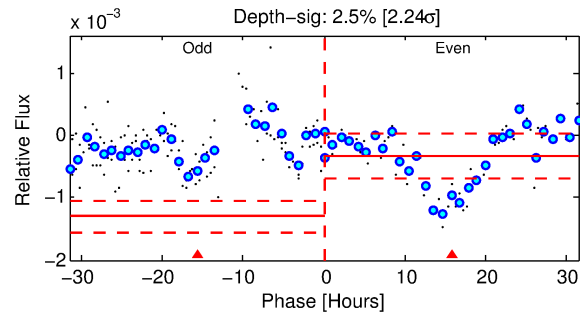
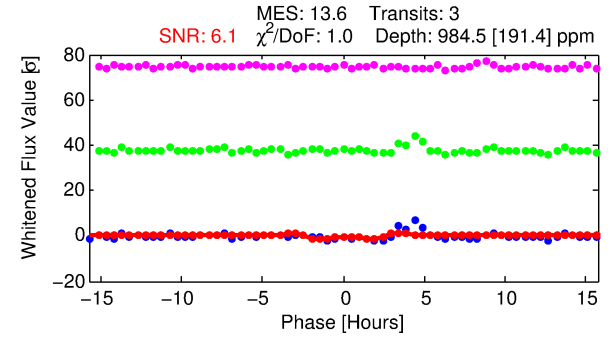
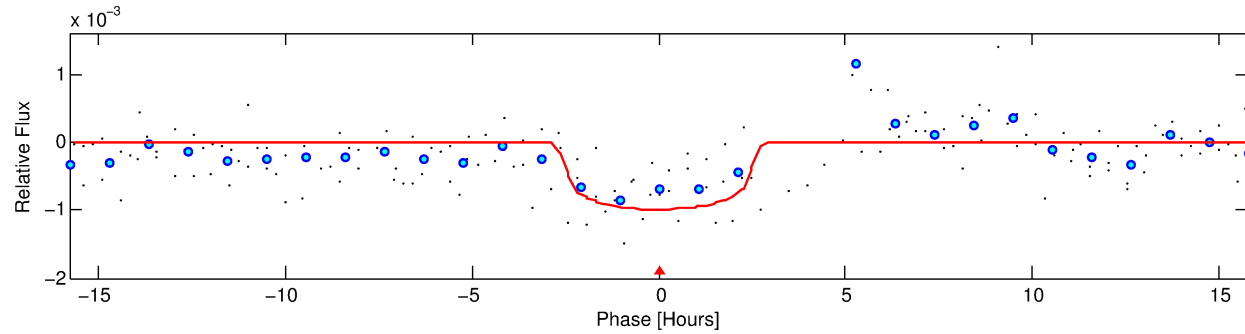
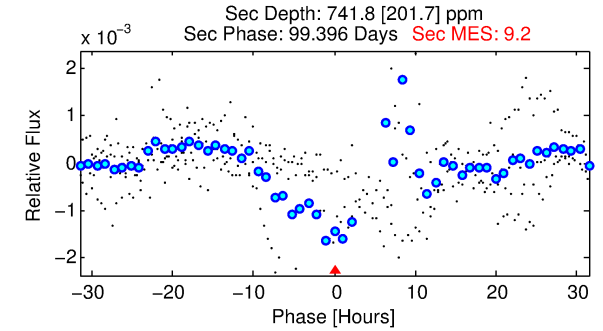
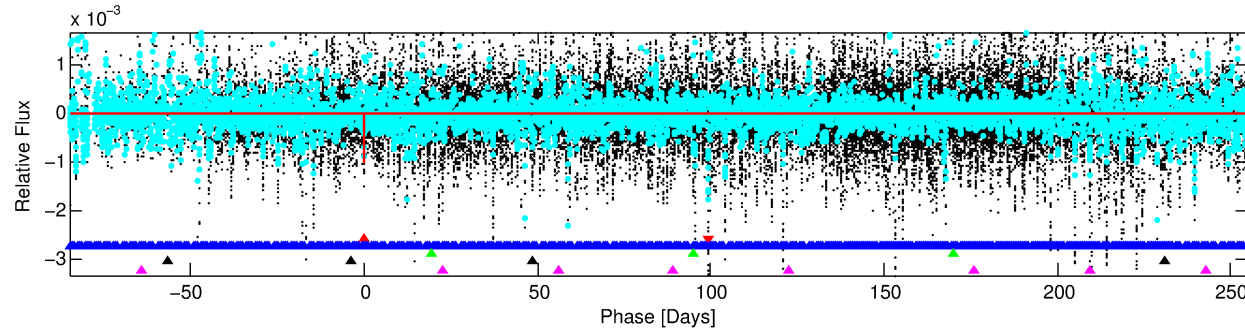
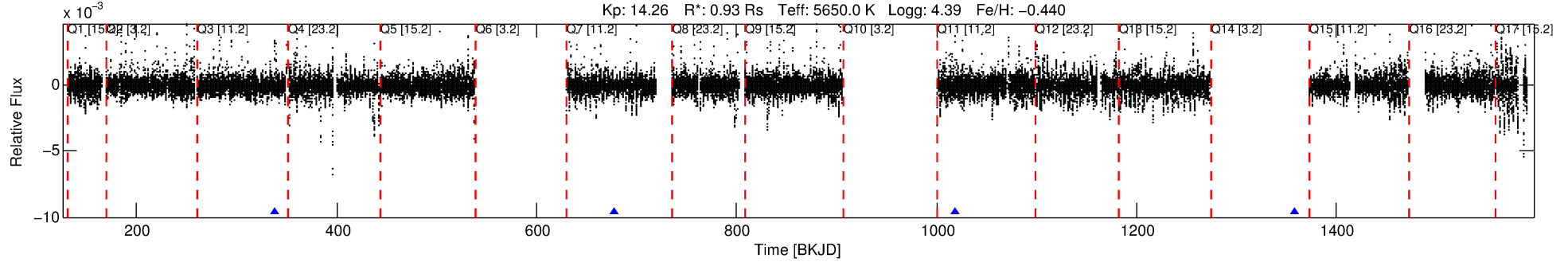
Ephemeris Match Information For 004933476-01

No Significant Match Found

DV One-Page Summary

KIC: 4933476 Candidate: 1 of 5 Period: 340.027 d
KOI: K06122 Corr: No Ephemeris Match

Kp: 14.26 R*: 0.93 Rs Teff: 5650.0 K Logg: 4.39 Fe/H: -0.440



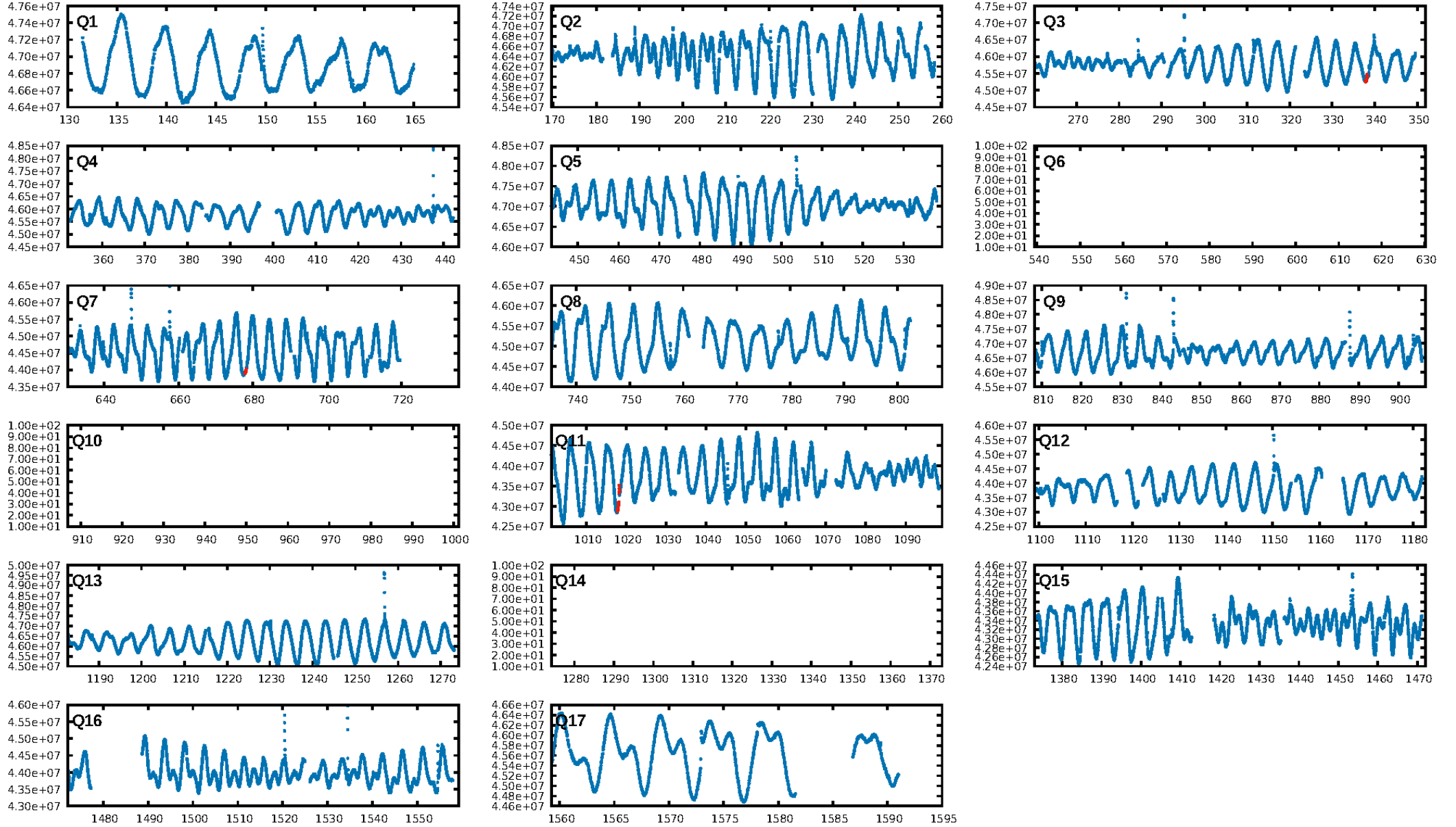
DV Fit Results:

Period = 340.02719 [0.00704] d
Epoch = 337.9795 [0.0088] BKJD
Rp/R* = 0.0291 [0.0408]
a/R* = 463.36 [2890.36]
b = 0.42 [12.27]
Seff = 1.03 [0.39]
Teq = 257 [24] K
Rp = 2.94 [4.20] Re
a = 0.8739 [0.2094] AU
Ag = 35937.46 [101978.87] [0.35σ]
Teffp = 5462 [3847] K [1.35σ]

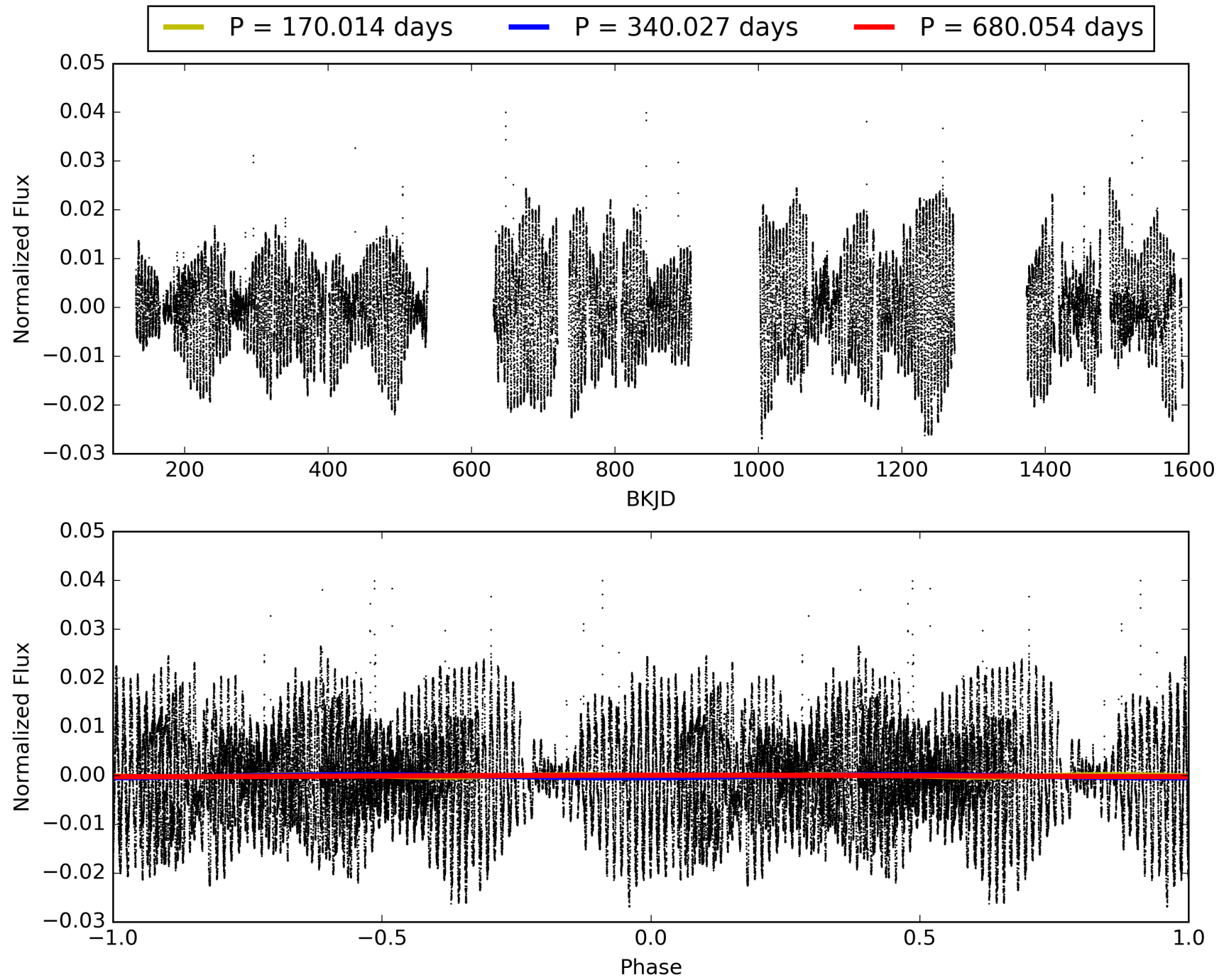
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [444.24σ]
LongPeriod-sig: 100.0% [183.83σ]
ModelChiSquare2-sig: 28.9%
ModelChiSquareGof-sig: 97.7%
Bootstrap-pfa: 2.28e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5669
Centroid-sig: 93.7%
Centroid-so: 0.163 arcsec [0.22σ]
OotOffset-rm: 0.148 arcsec [1.36σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-rm: 0.178 arcsec [1.66σ]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [2/3]

TCE 004933476-01, PDC Light Curves

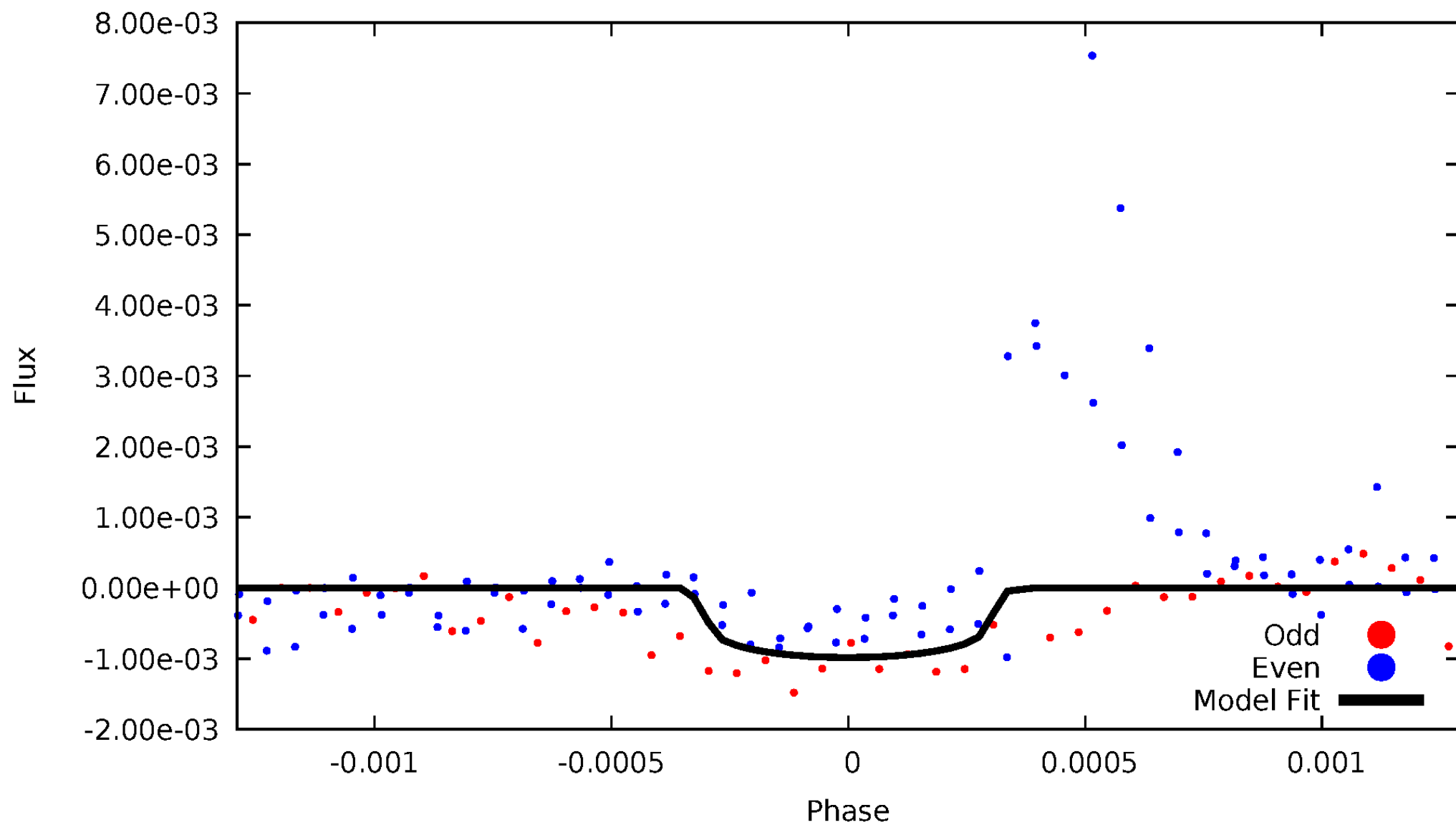


TCE 004933476-01



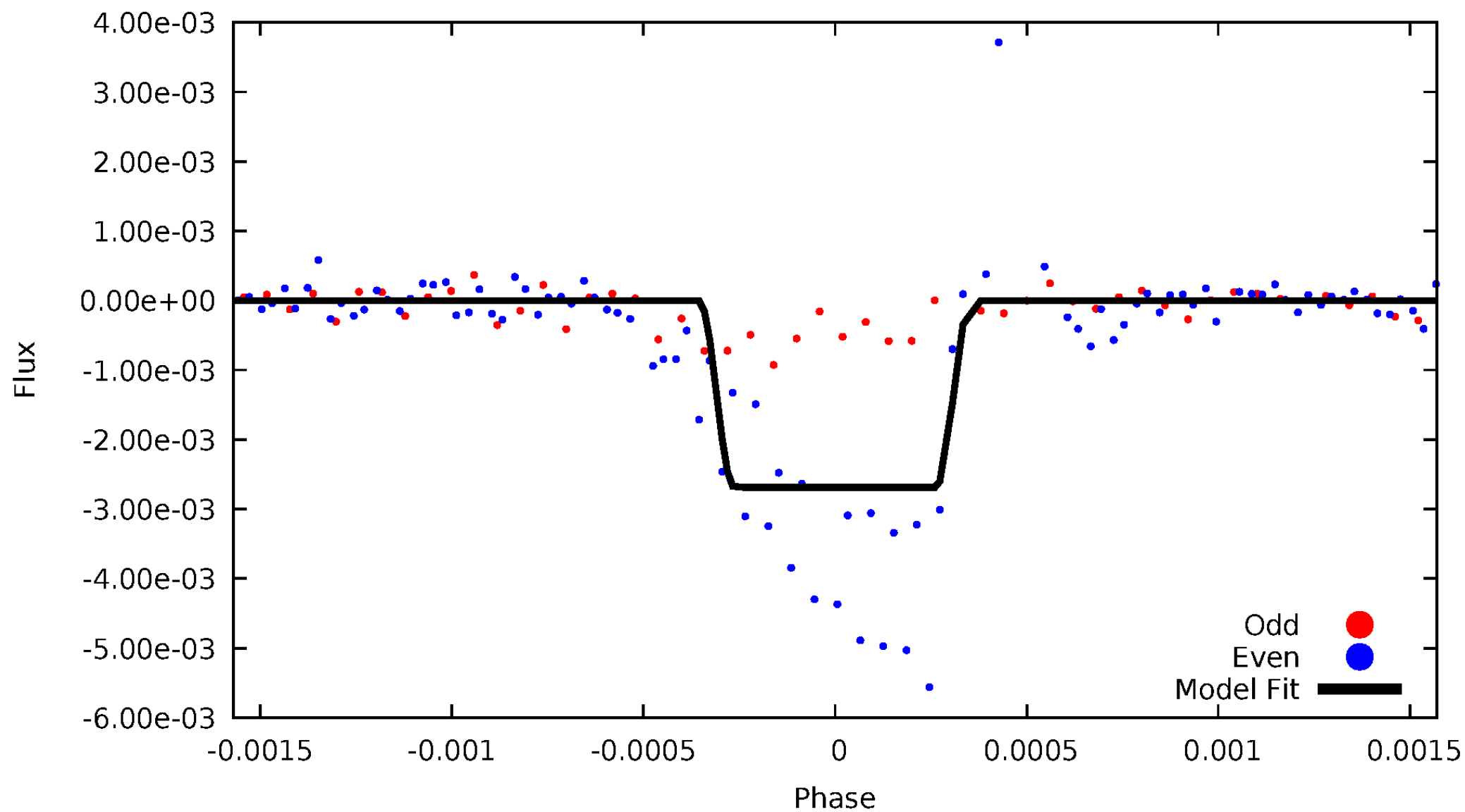
DV Odd/Even

TCE 004933476-01



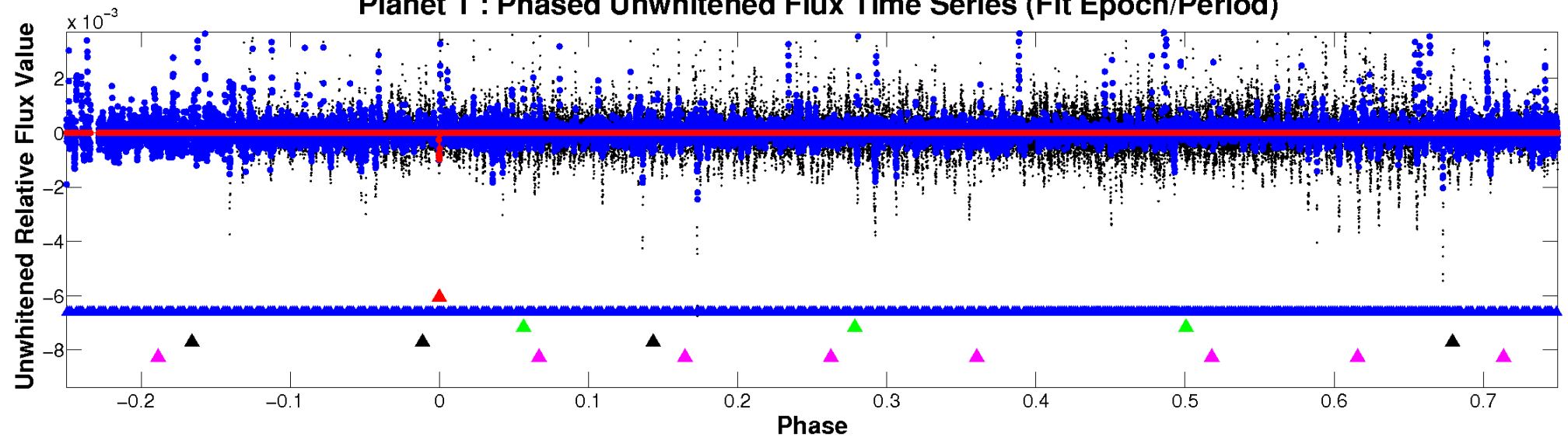
ALT Odd/Even

TCE 004933476-01

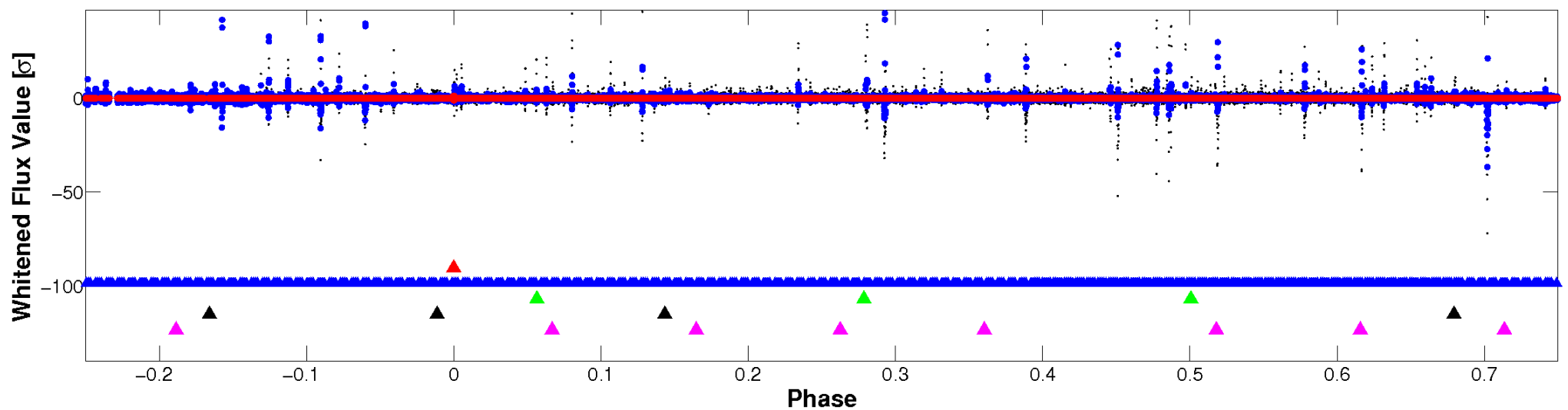


Non-Whitened Vs. Whitened Light Curve

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

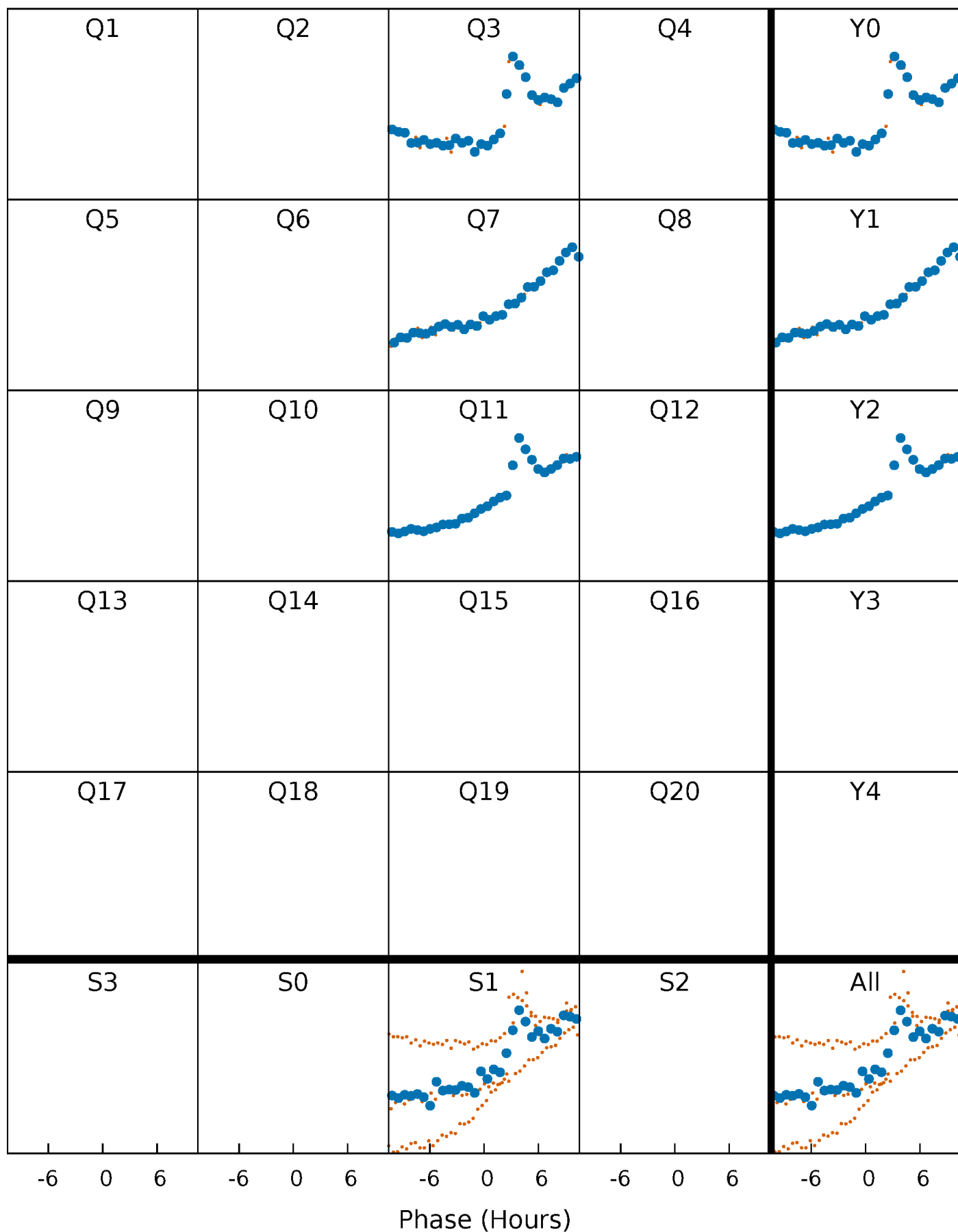


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



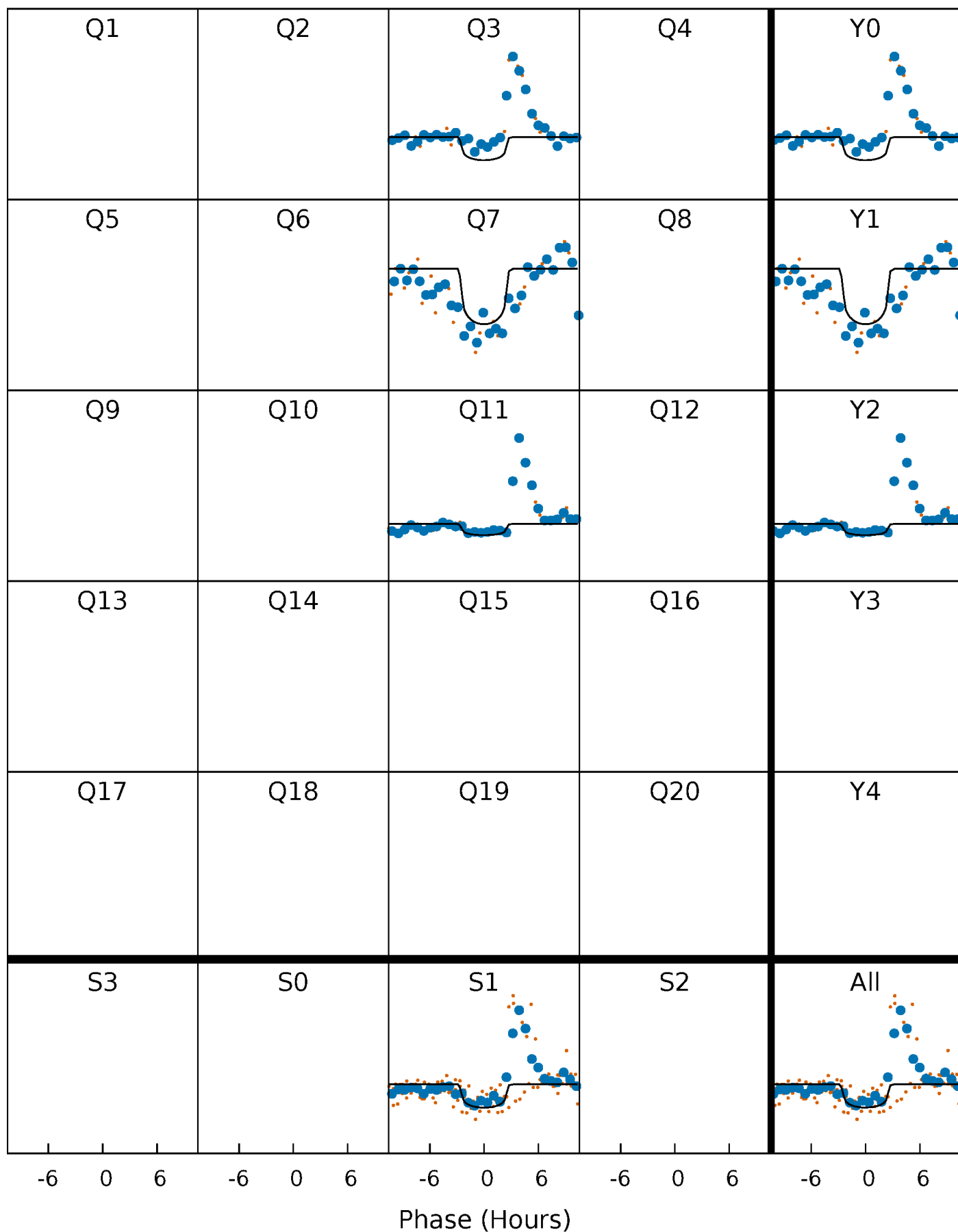
PDC Quarter-Phased Transit Curves

TCE 004933476-01 P=340.027188 Days $T_0=337.979549$ (BKJD)



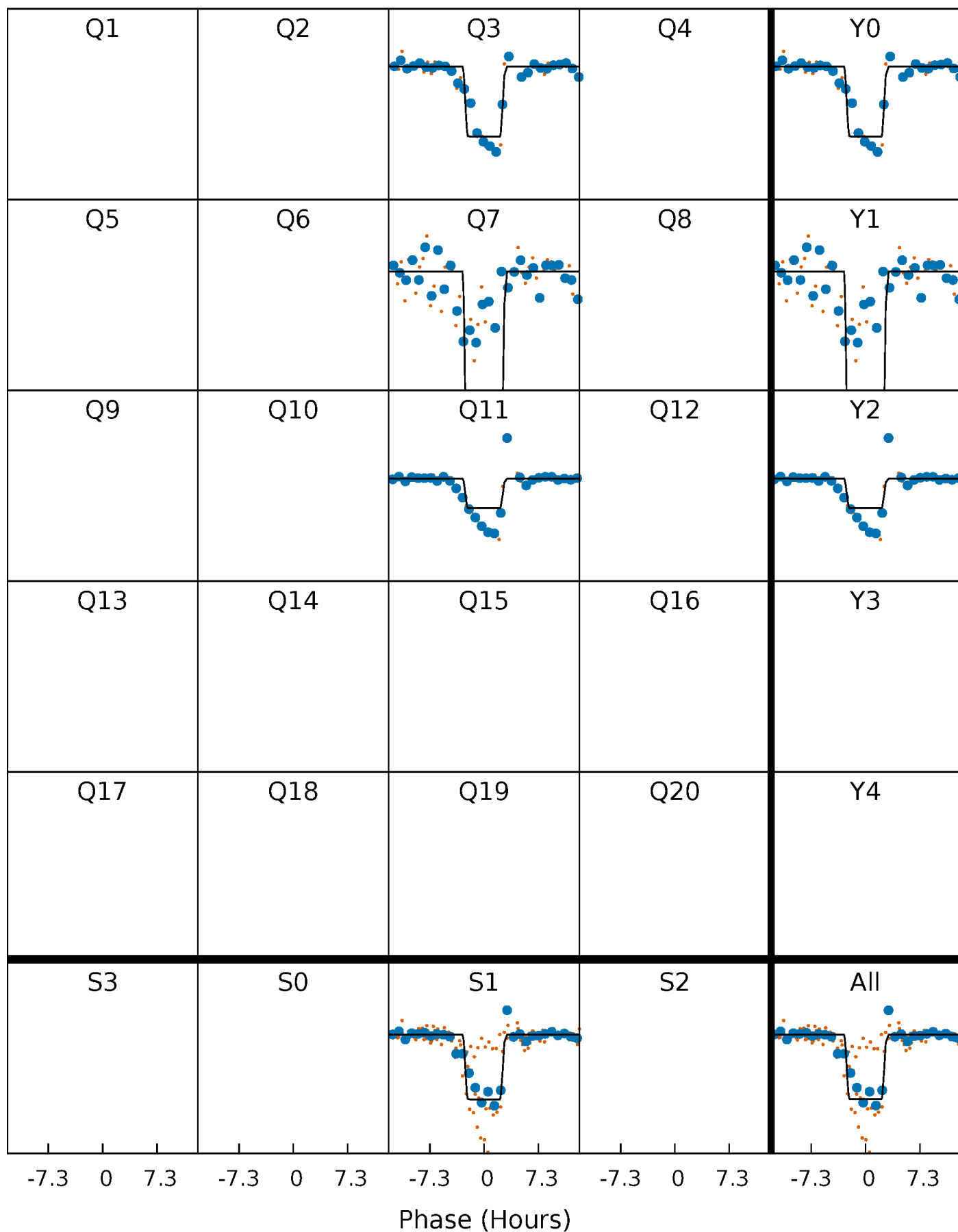
DV Quarter-Phased Transit Curves

TCE 004933476-01 P=340.027188 Days $T_0=337.979549$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

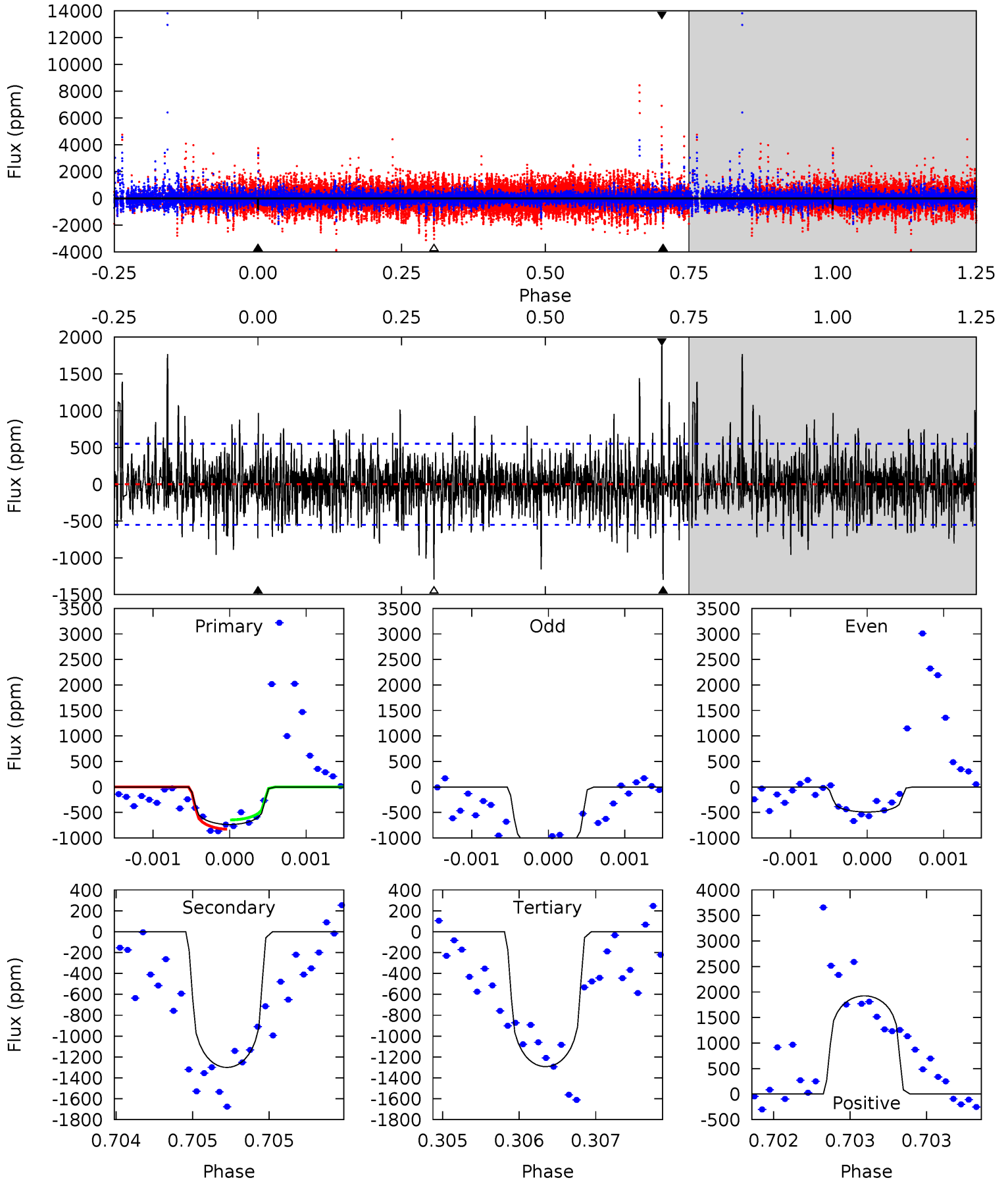
TCE 004933476-01 P=340.041683 Days $T_0=337.980590$ (BKJD)



DV Model-Shift Uniqueness Test

004933476-01, P = 340.027188 Days, E = 337.979549 Days

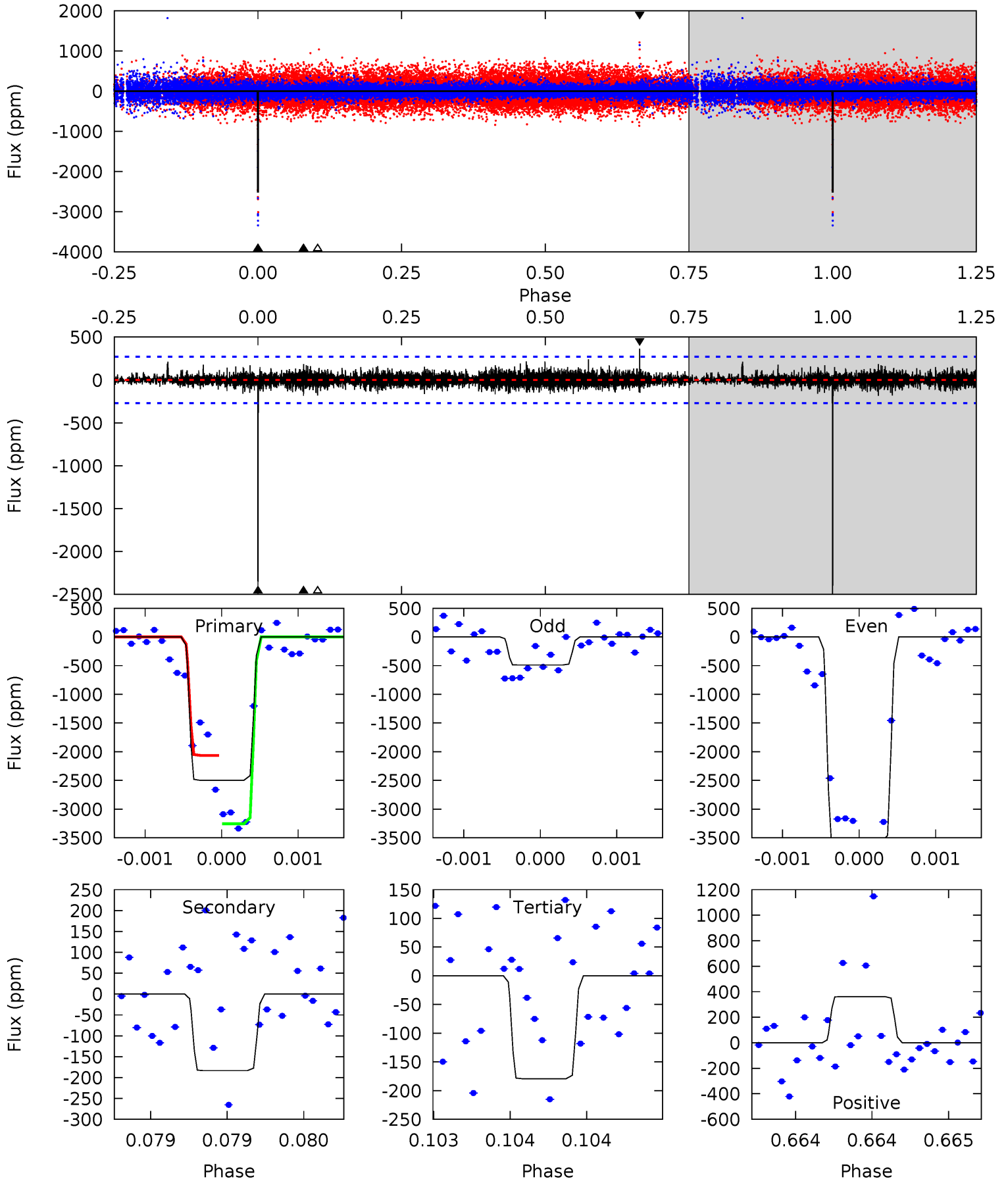
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.37	13.0	12.9	19.3	5.52	3.41	2.67	-5.58	-11.9	0.08	-6.26	2.06	1.04	0.60	0.91



Alt Model-Shift Uniqueness Test

004933476-01, P = 340.041683 Days, E = 337.980590 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.9	3.73	3.65	7.37	5.51	3.38	0.89	47.2	43.5	0.08	-3.64	38.8	0.93	0.13	12.6



Stellar Parameters For KIC 004933476

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5650^{+169}_{-152}	$4.391^{+0.167}_{-0.204}$	$-0.440^{+0.300}_{-0.300}$	$0.926^{+0.252}_{-0.168}$	$0.770^{+0.124}_{-0.044}$	$1.365^{+1.134}_{-0.724}$
	+3%/-3%	+4%/-5%	+68%/-68%	+27%/-18%	+16%/-6%	+83%/-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 004933476-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1300 ± 100	$4.53^{+3.42}_{-2.89}$	361^{+29}_{-22}	5194^{+3741}_{-1036}	$27820^{+169693}_{-18963}$
Alt.	-183 ± 49	$6.09^{+3.91}_{-3.76}$	361^{+29}_{-24}	3277^{+1325}_{-449}	2095^{+12226}_{-1361}

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 $A_{obs} \gg 1.0$

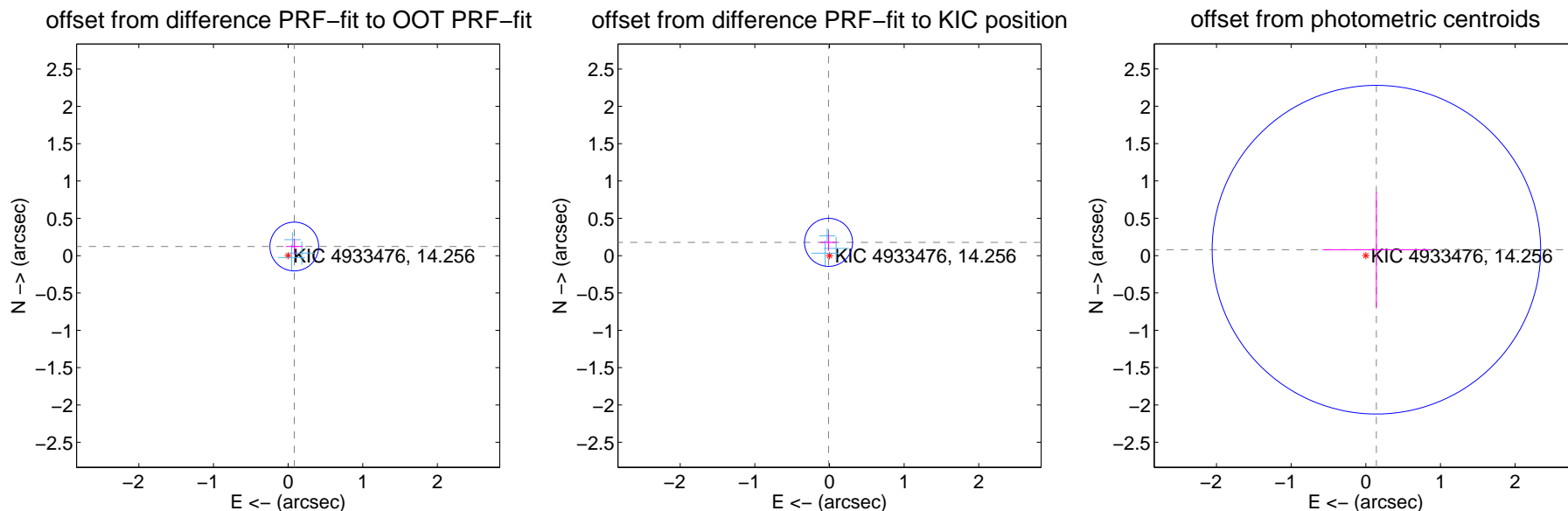
DV Centroid Data

Supplemental centroid analysis for 004933476-01. Kepler magnitude: 14.26. Transit SNR 6.06

There are 3 quarters with good PRF difference image offsets

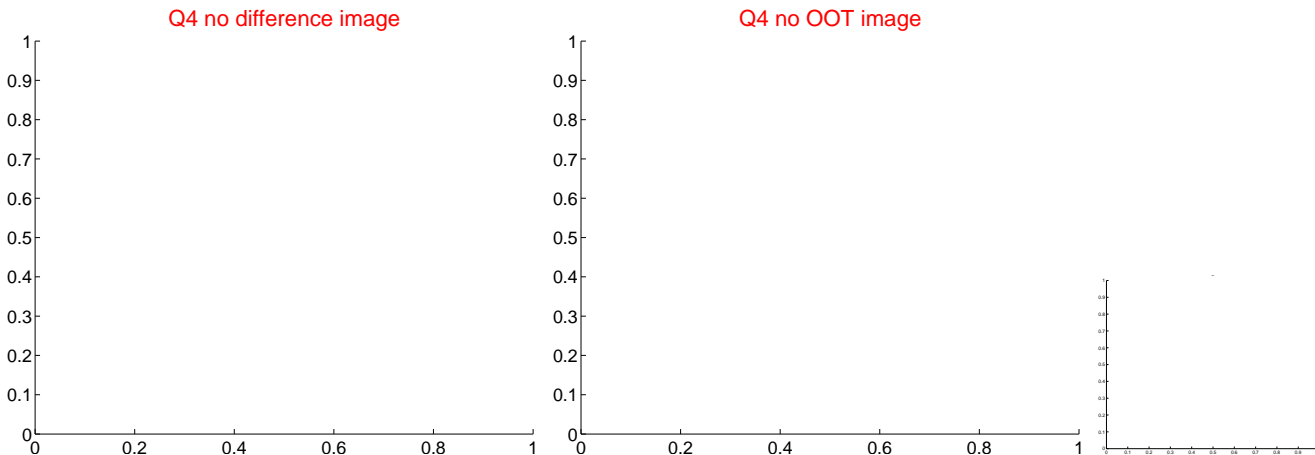
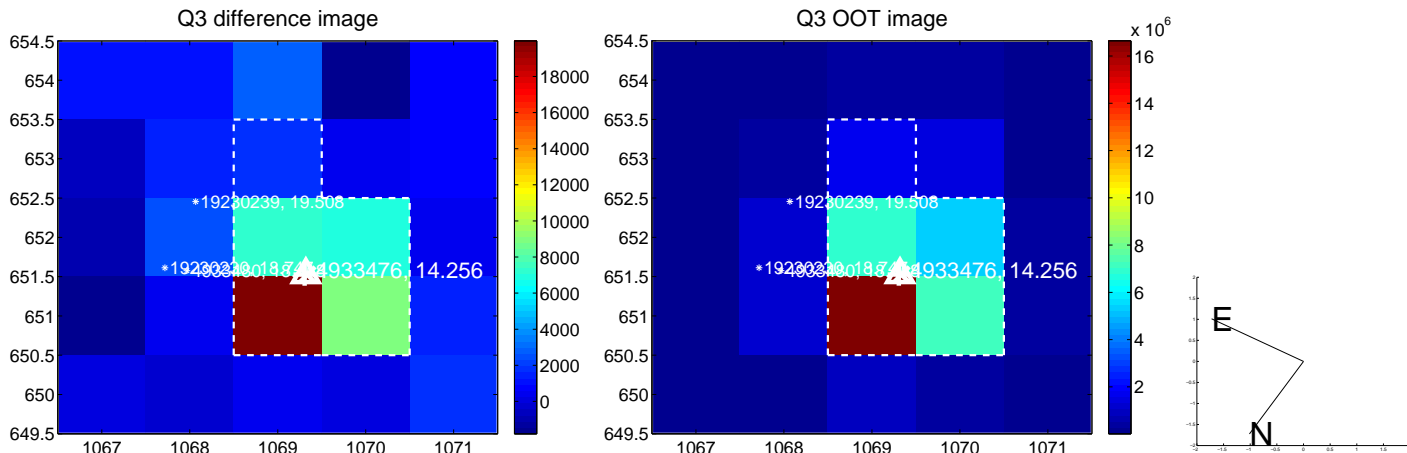
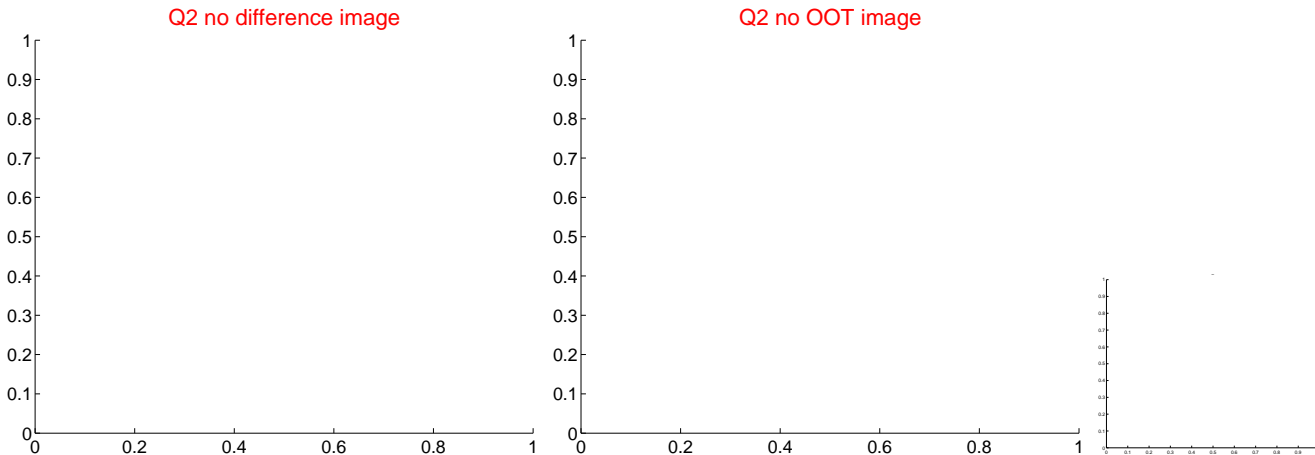
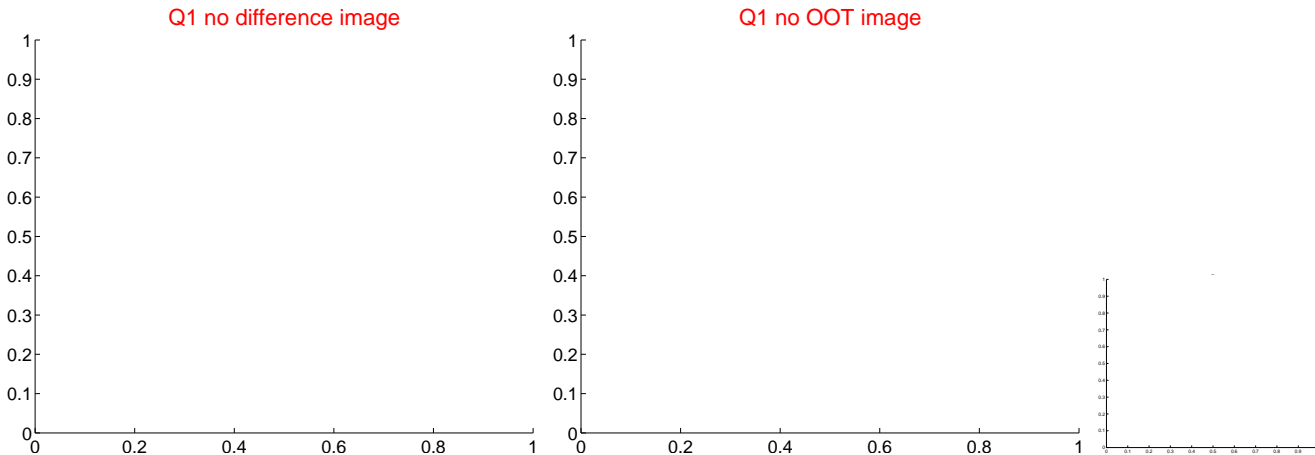
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.148 ± 0.109	1.36	-0.083 ± 0.112	0.122 ± 0.107
PRF-fit source offset from KIC position	0.178 ± 0.107	1.66	0.013 ± 0.112	0.178 ± 0.107
photometric centroid source offset	0.16 ± 0.73	0.22	-0.14 ± 0.72	0.08 ± 0.77

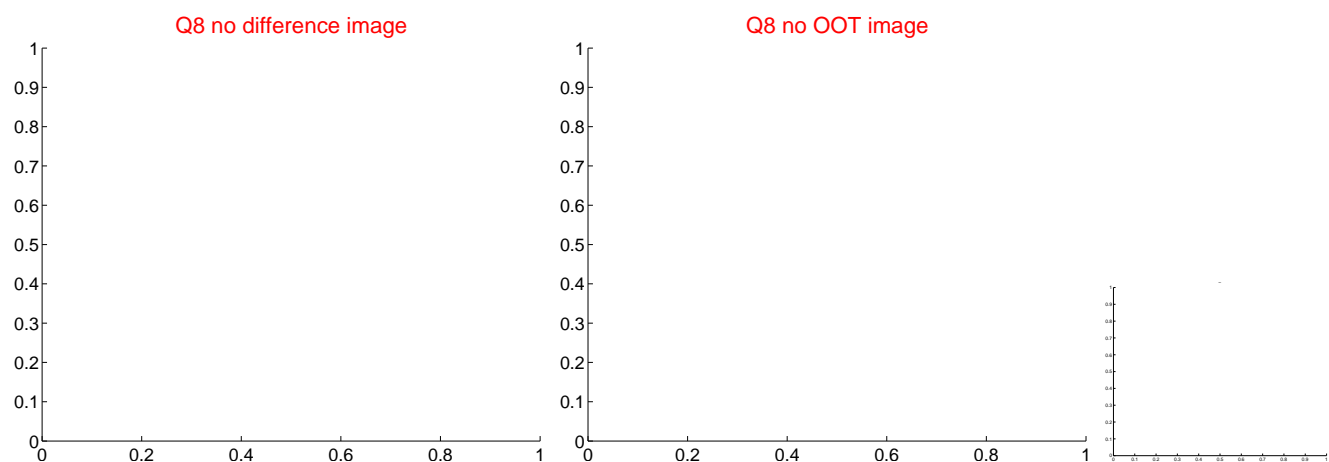
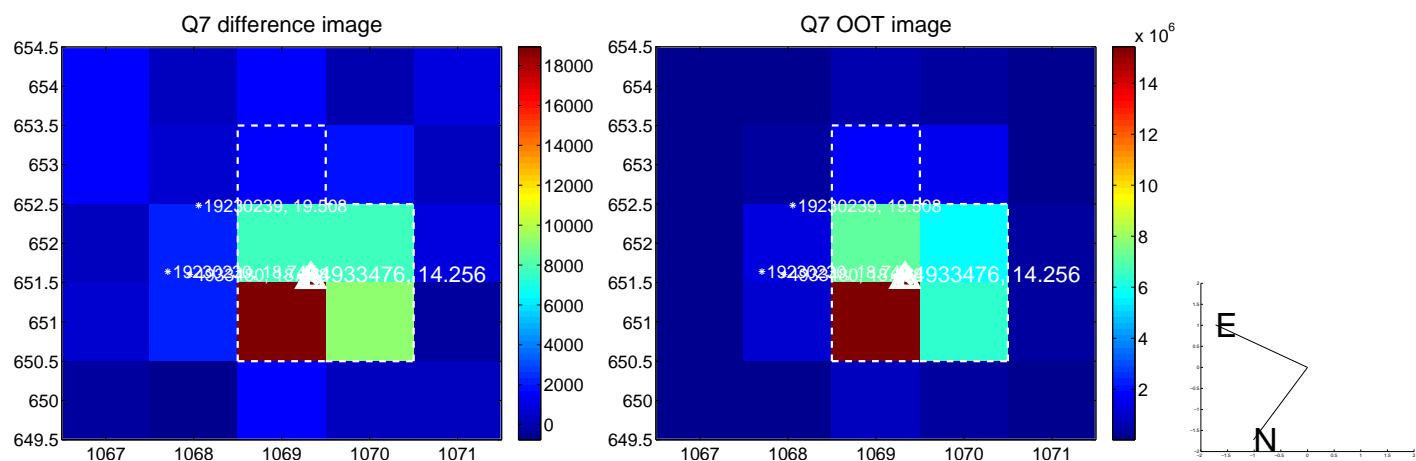
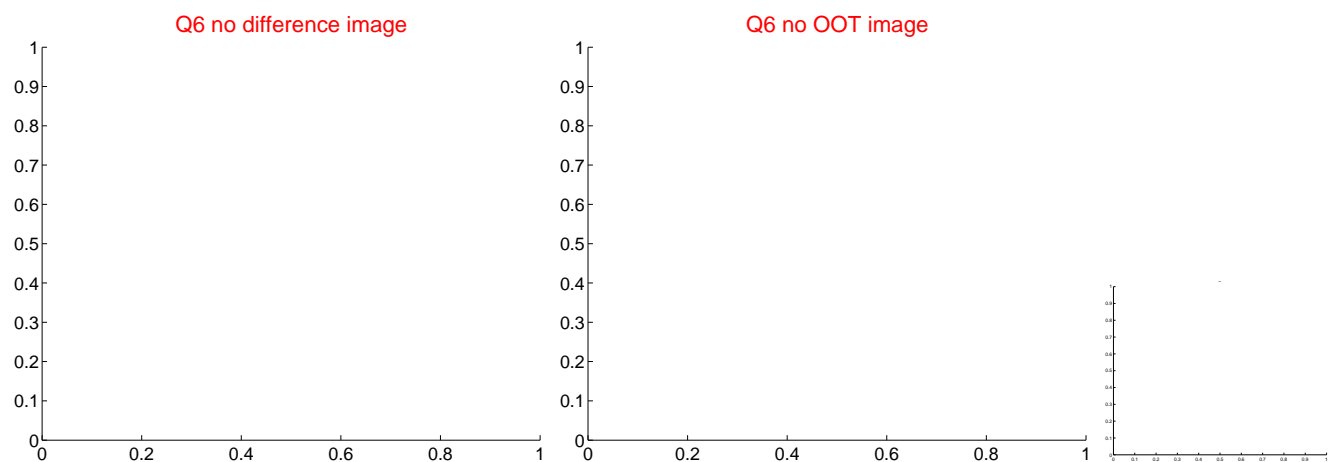
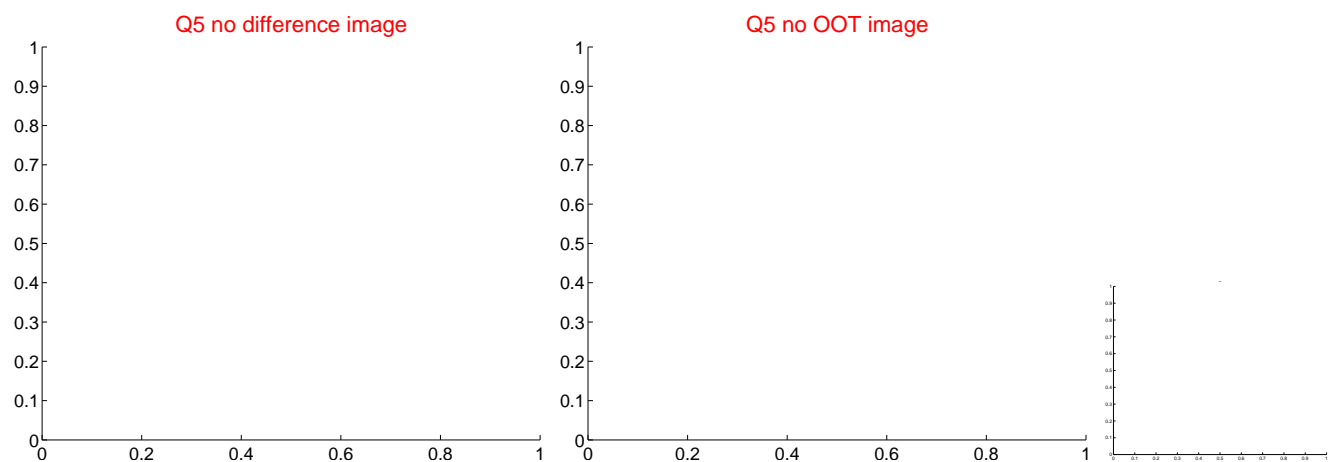


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

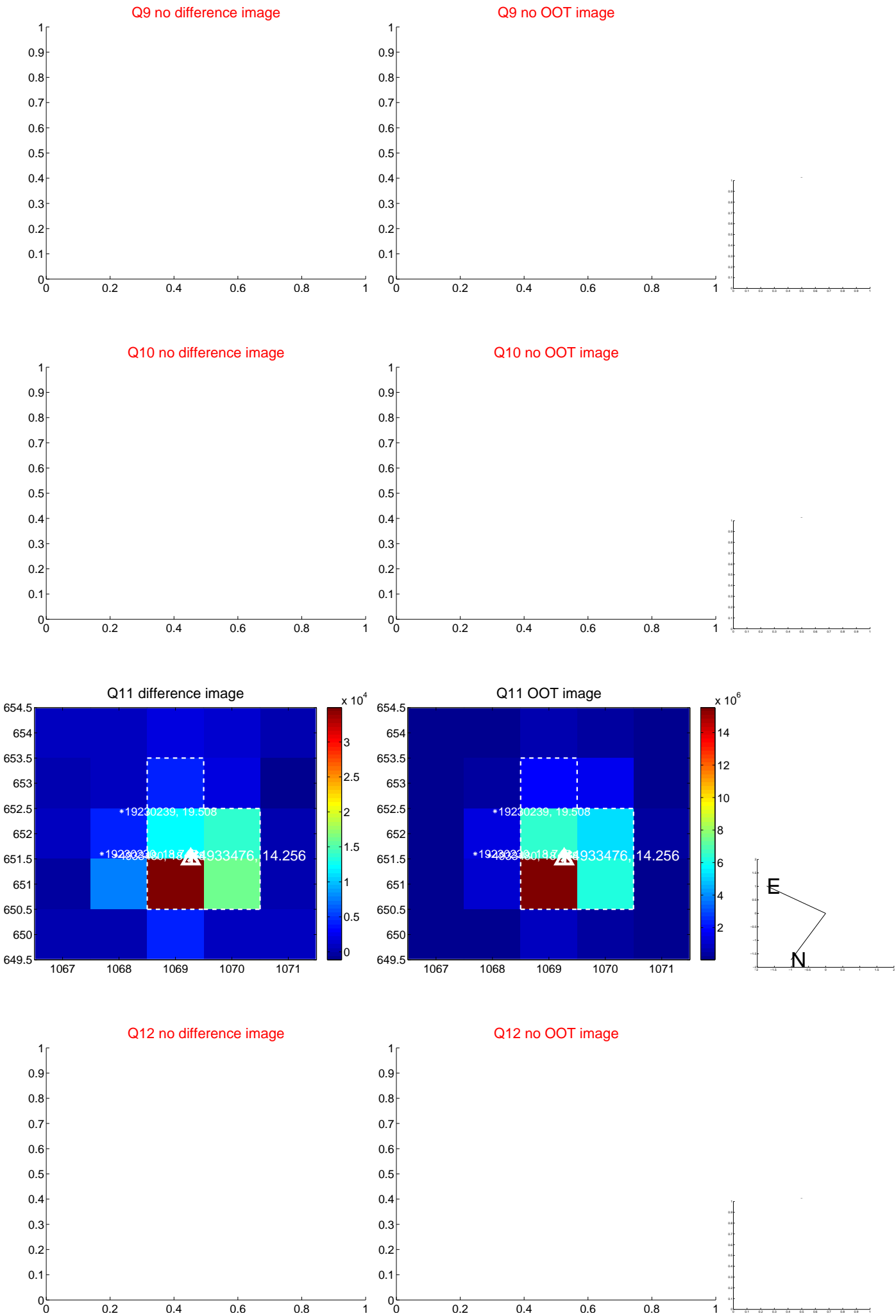
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



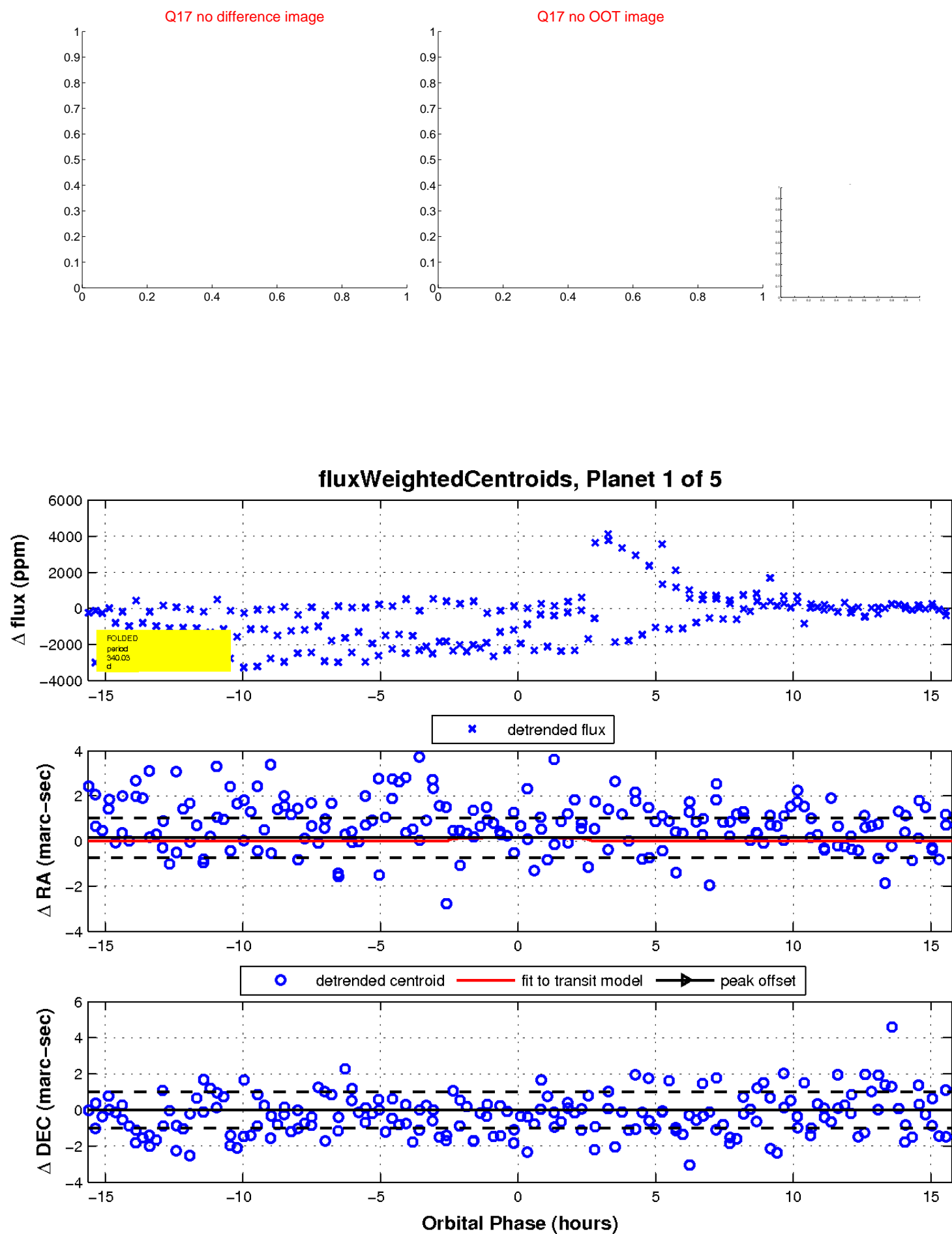
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



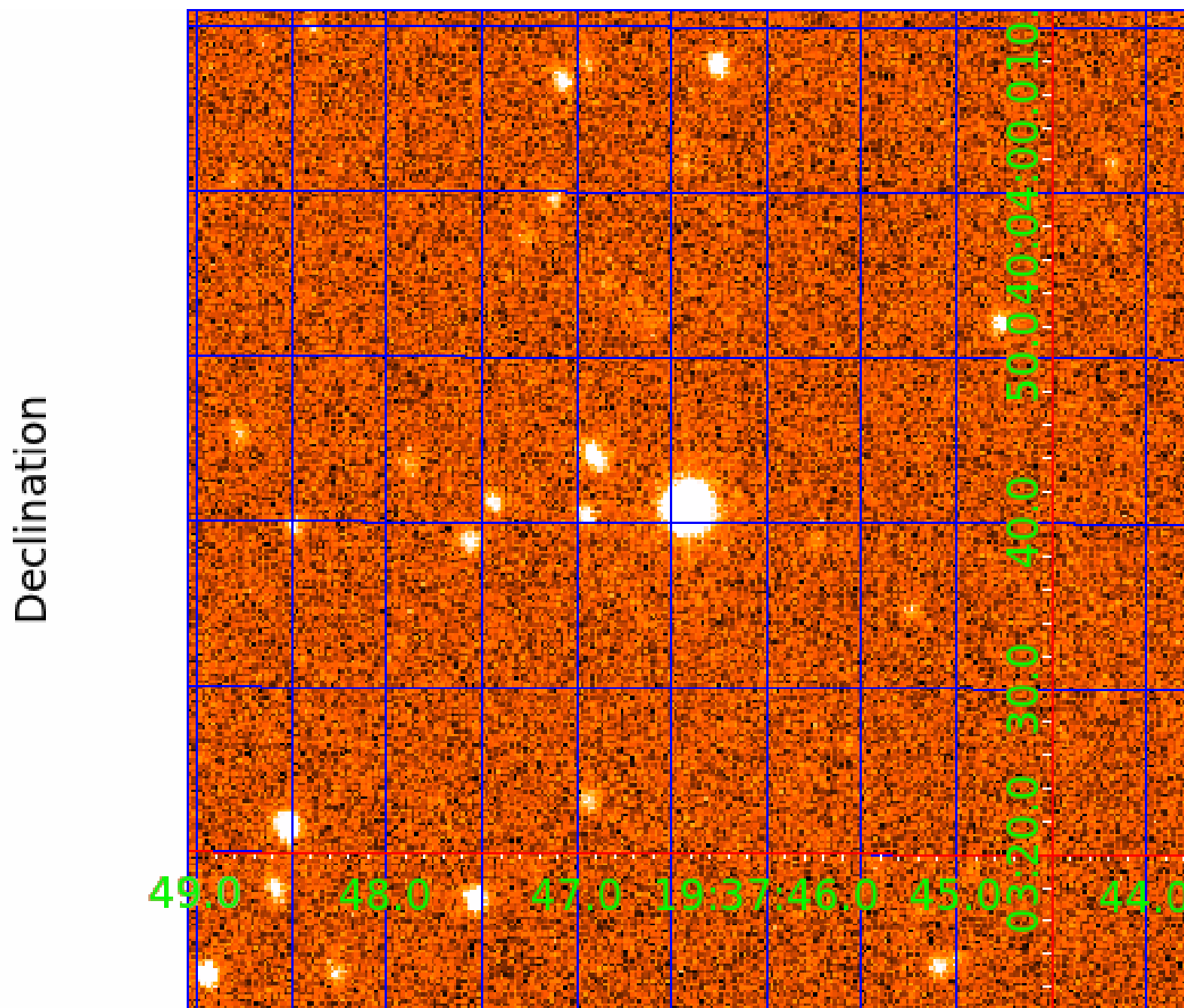
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image



KIC 004933476

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})
004933476-01	OBS	No	340.027188	337.979549	984.5	5.263	13.6	6.1	0.93	5650	2.94	1.02
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004933476-03	OBS	No	415.549845	357.191772	1088.6	4.257	13.8	6.6	0.93	5650	3.12	0.79
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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004933476-02	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
004933476-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004933476-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

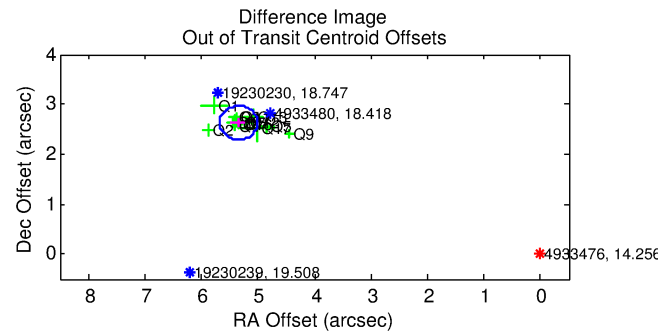
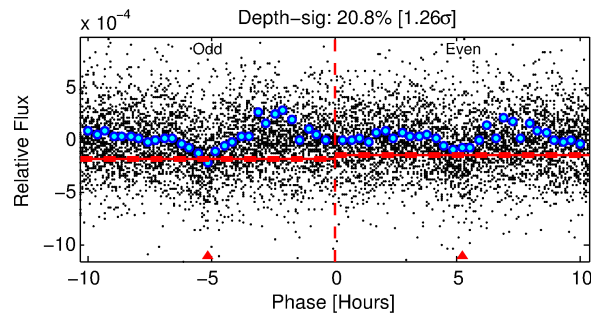
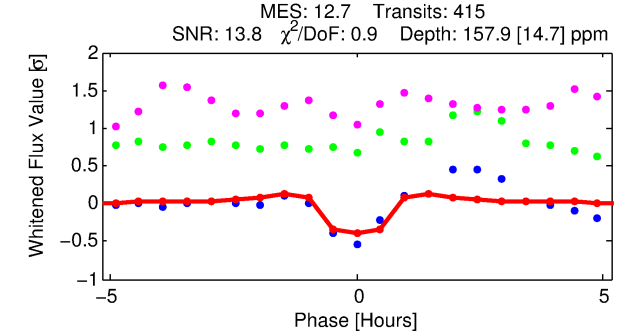
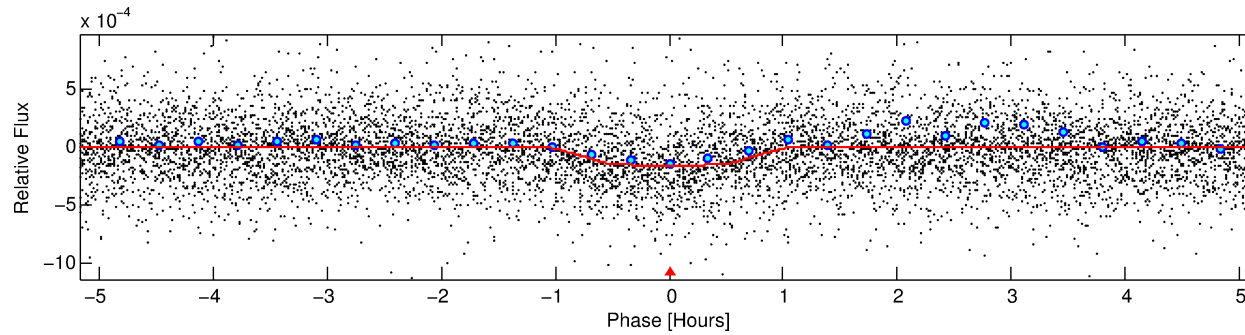
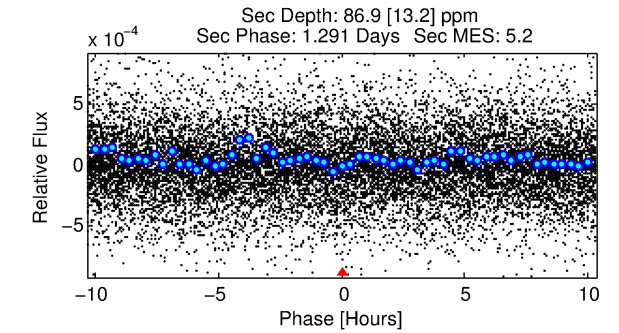
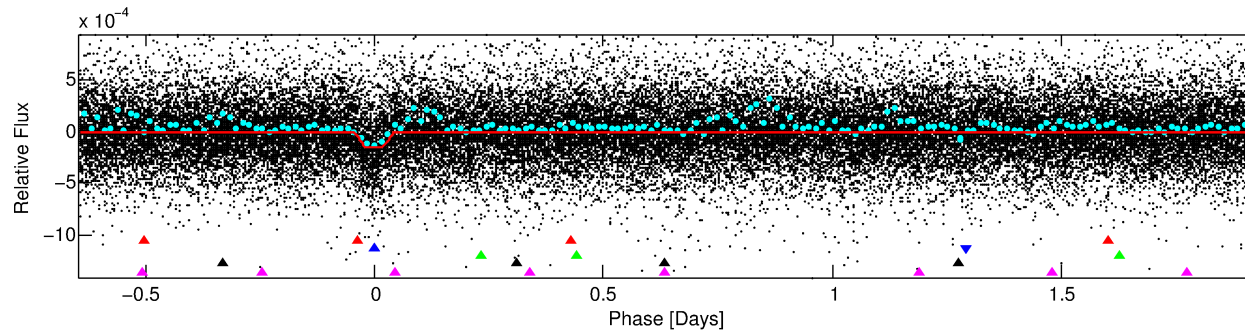
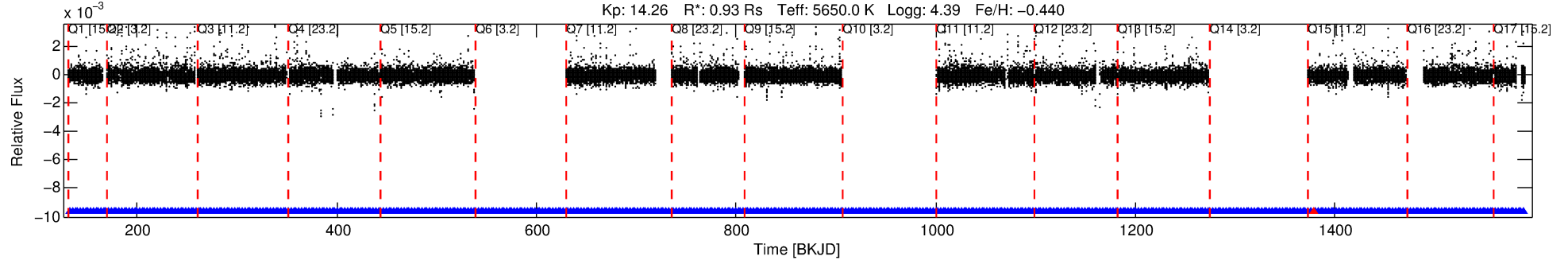
Ephemeris Match Information For 004933476-02

No Significant Match Found

DV One-Page Summary

KIC: 4933476 Candidate: 2 of 5 Period: 2.572 d
KOI: K06122 Corr: No Ephemeris Match

Kp: 14.26 R*: 0.93 Rs Teff: 5650.0 K Logg: 4.39 Fe/H: -0.440



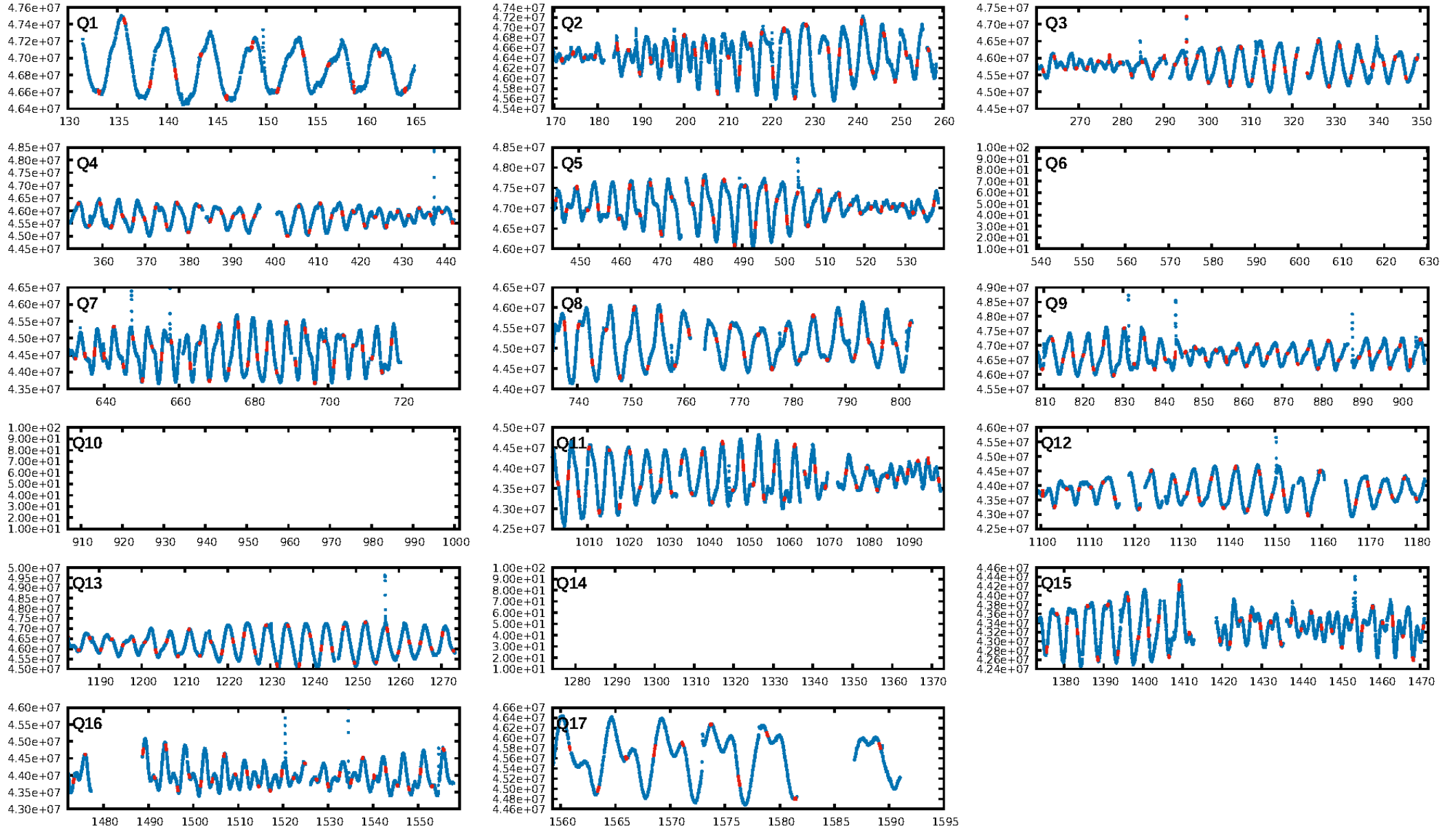
DV Fit Results:

Period = 2.57242 [0.00001] d
Epoch = 133.1573 [0.0016] BKJD
Rp/R* = 0.0136 [0.0062]
a/R* = 5.59 [12.00]
b = 0.89 [0.52]
Seff = 690.30 [263.13]
Teq = 1307 [125] K
Rp = 1.37 [0.73] Re
a = 0.0337 [0.0081] AU
Ag = 28.83 [28.83] [0.97σ]
Teffp = 4683 [1100] K [3.05σ]

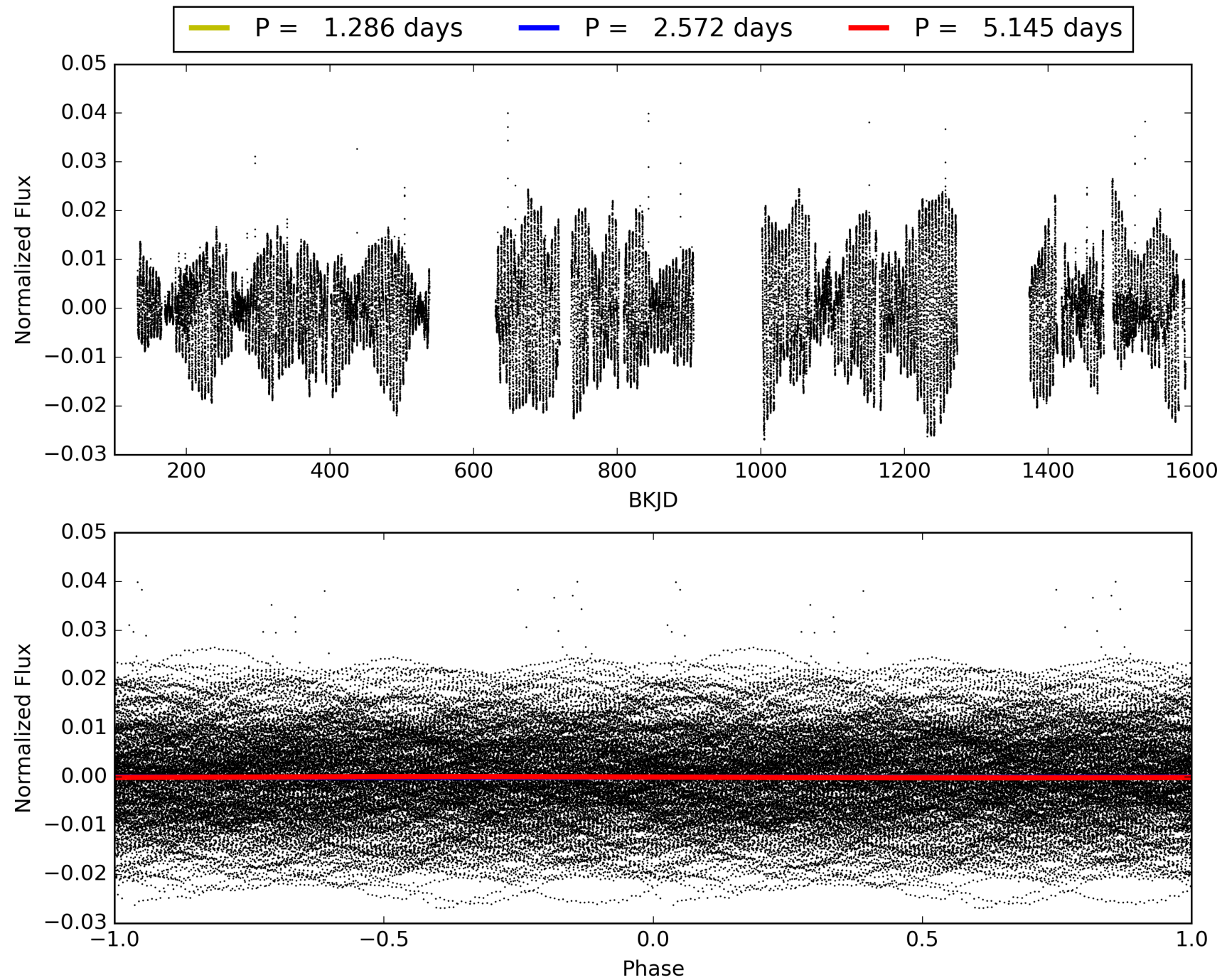
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [666.46σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.52e-29
RollingBand-fgt: 1.00 [391/392]
GhostDiagnostic-chr: 0.06137
Centroid-sig: 0.0%
Centroid-so: 12.455 arcsec [19.57σ]
OotOffset-rm: 5.958 arcsec [52.88σ]
KicOffset-rm: 6.079 arcsec [50.63σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004933476-02, PDC Light Curves

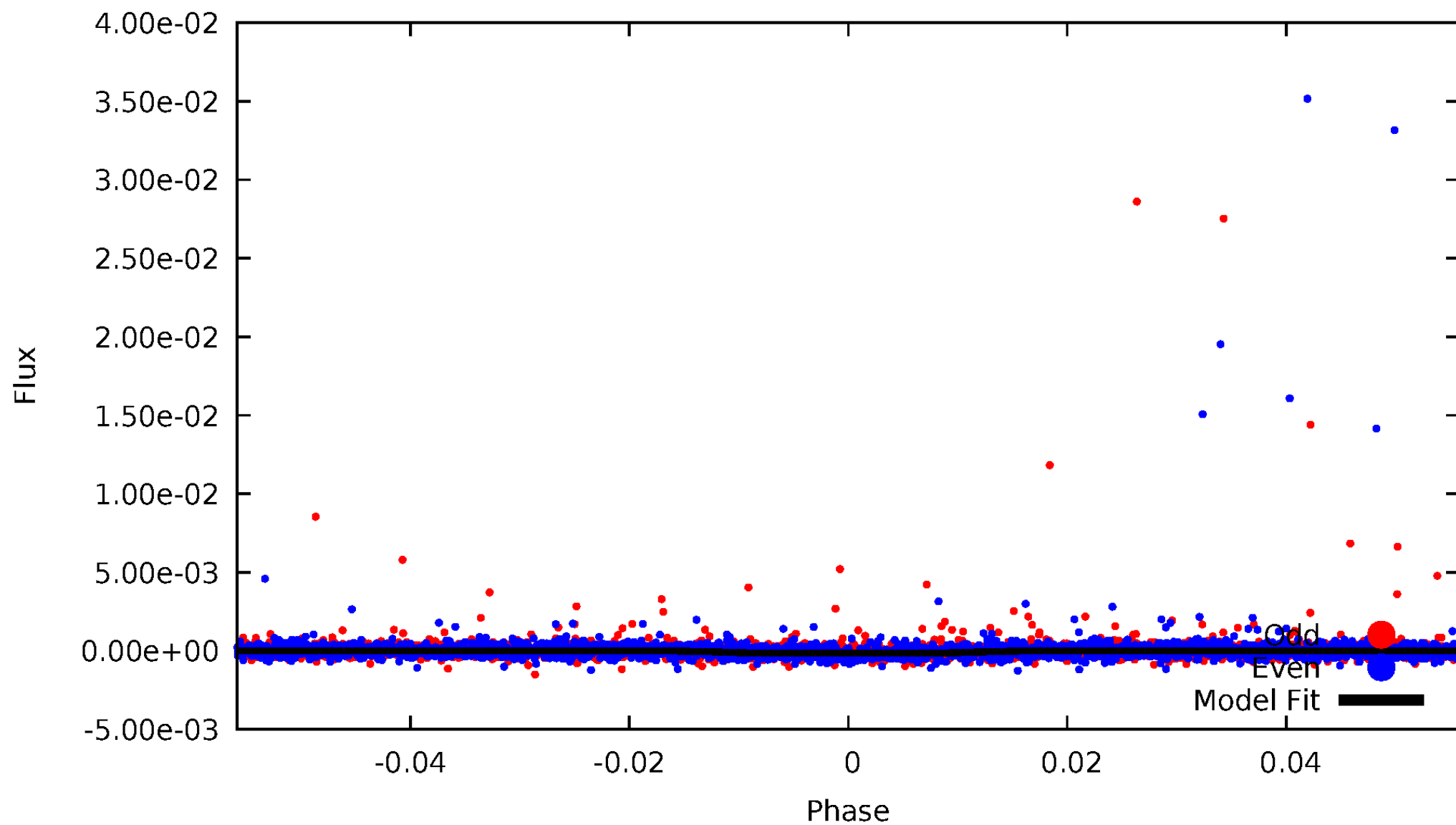


TCE 004933476-02



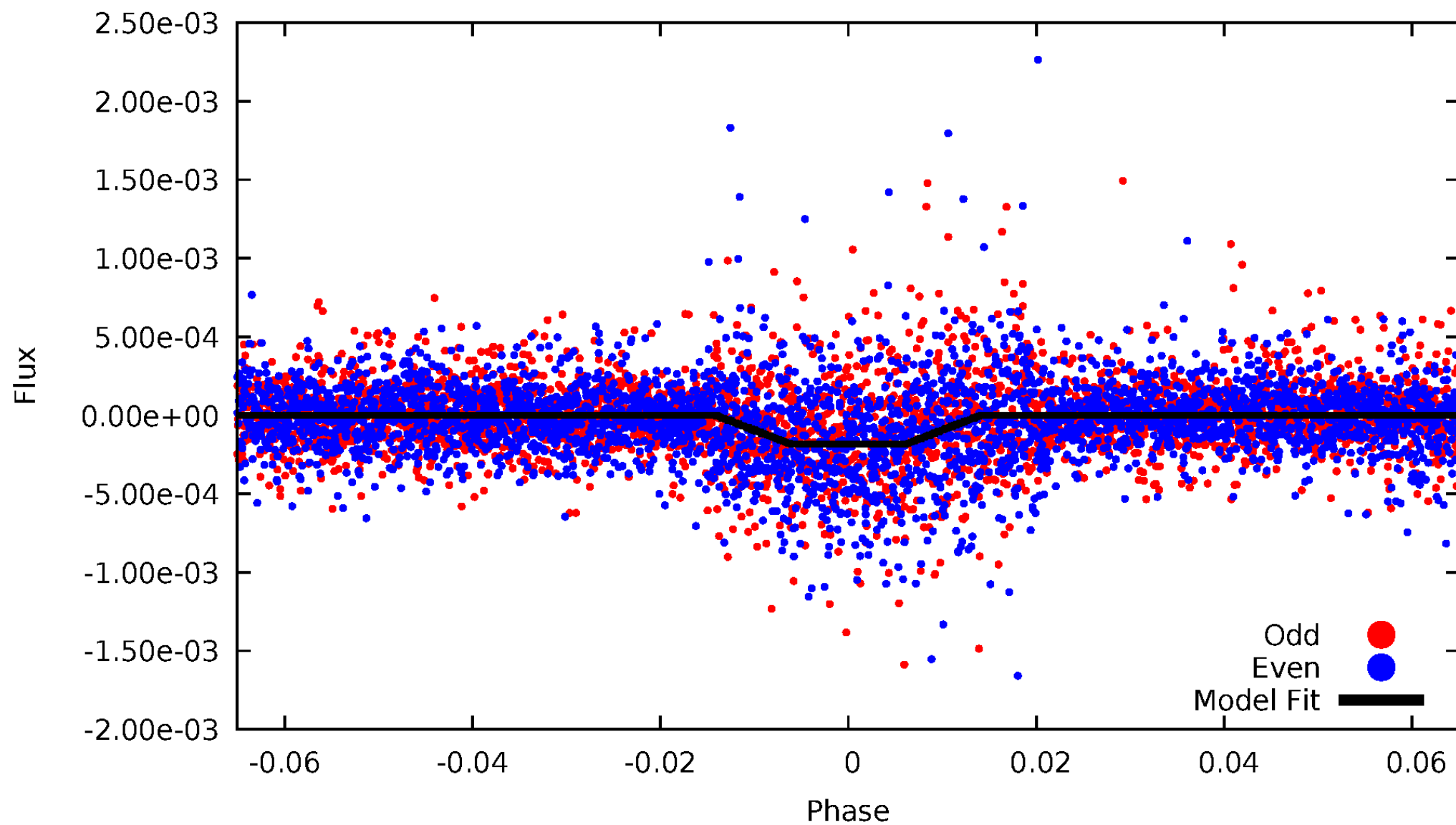
DV Odd/Even

TCE 004933476-02



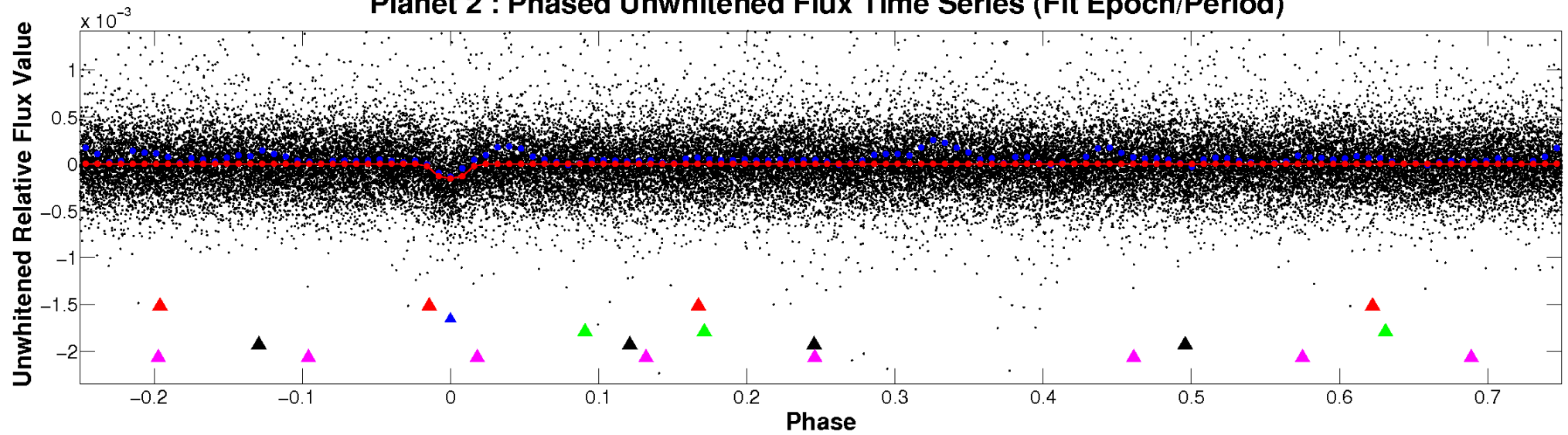
ALT Odd/Even

TCE 004933476-02

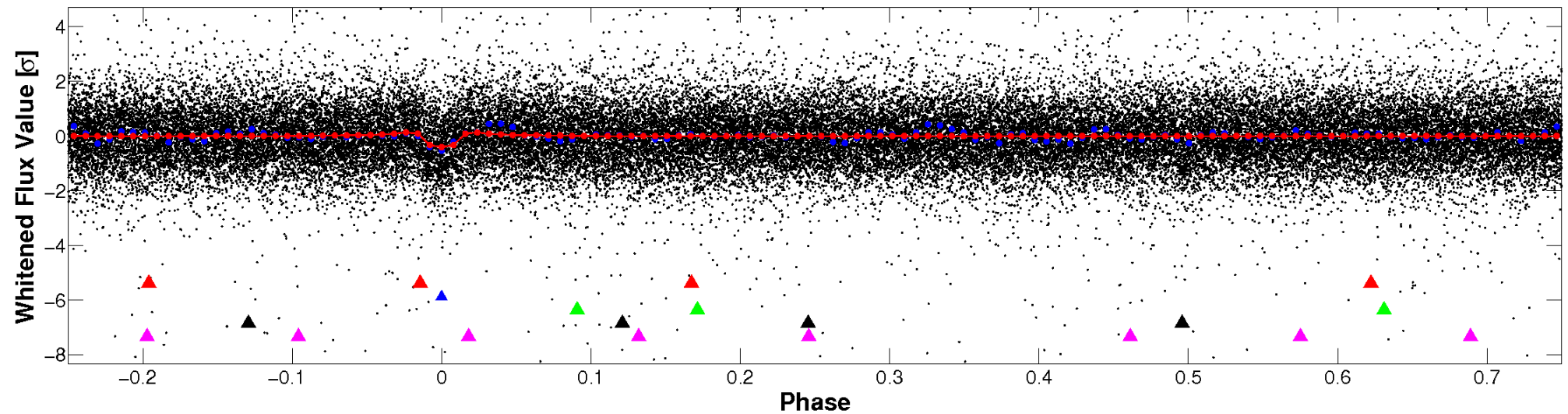


Non-Whitened Vs. Whitened Light Curve

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

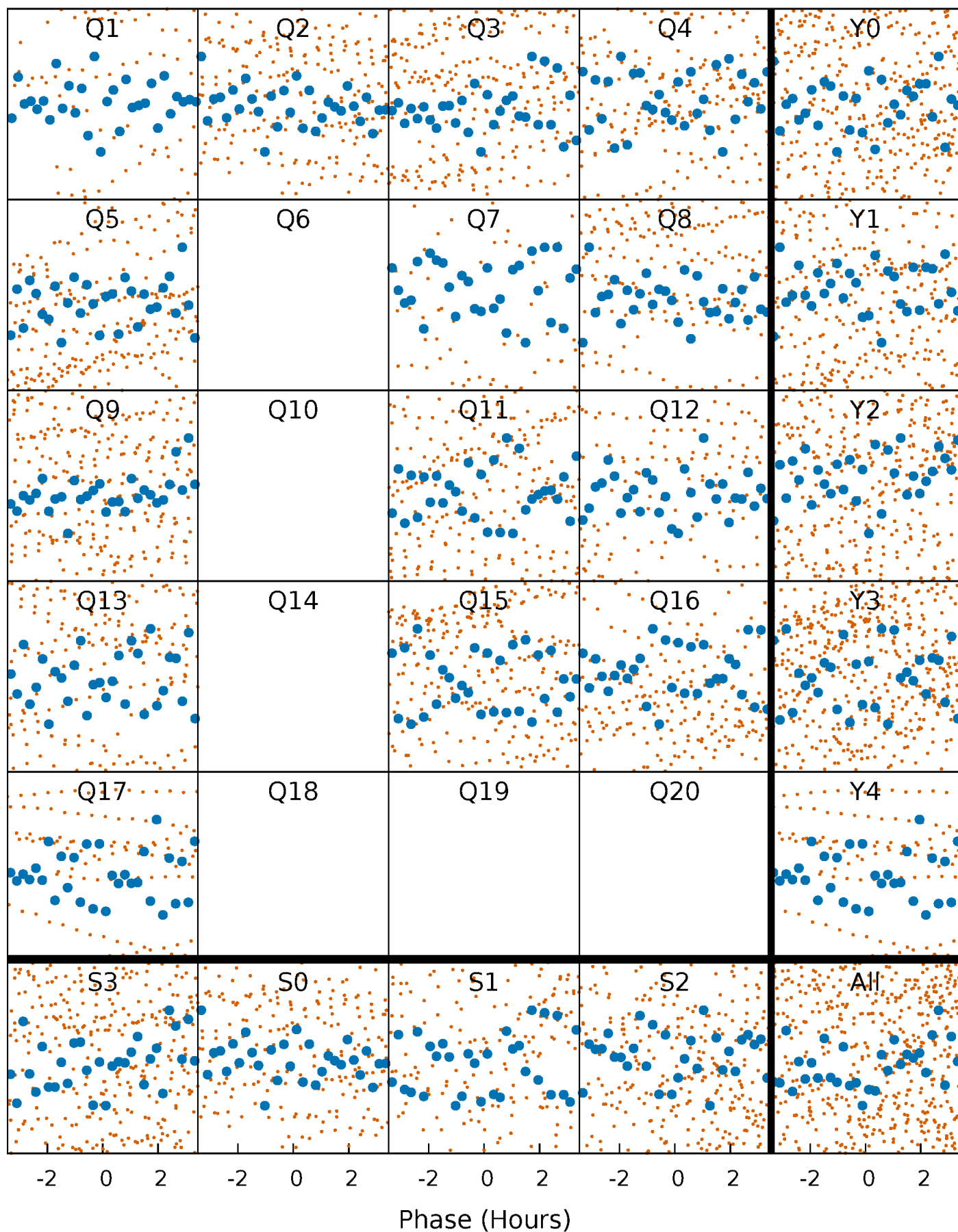


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



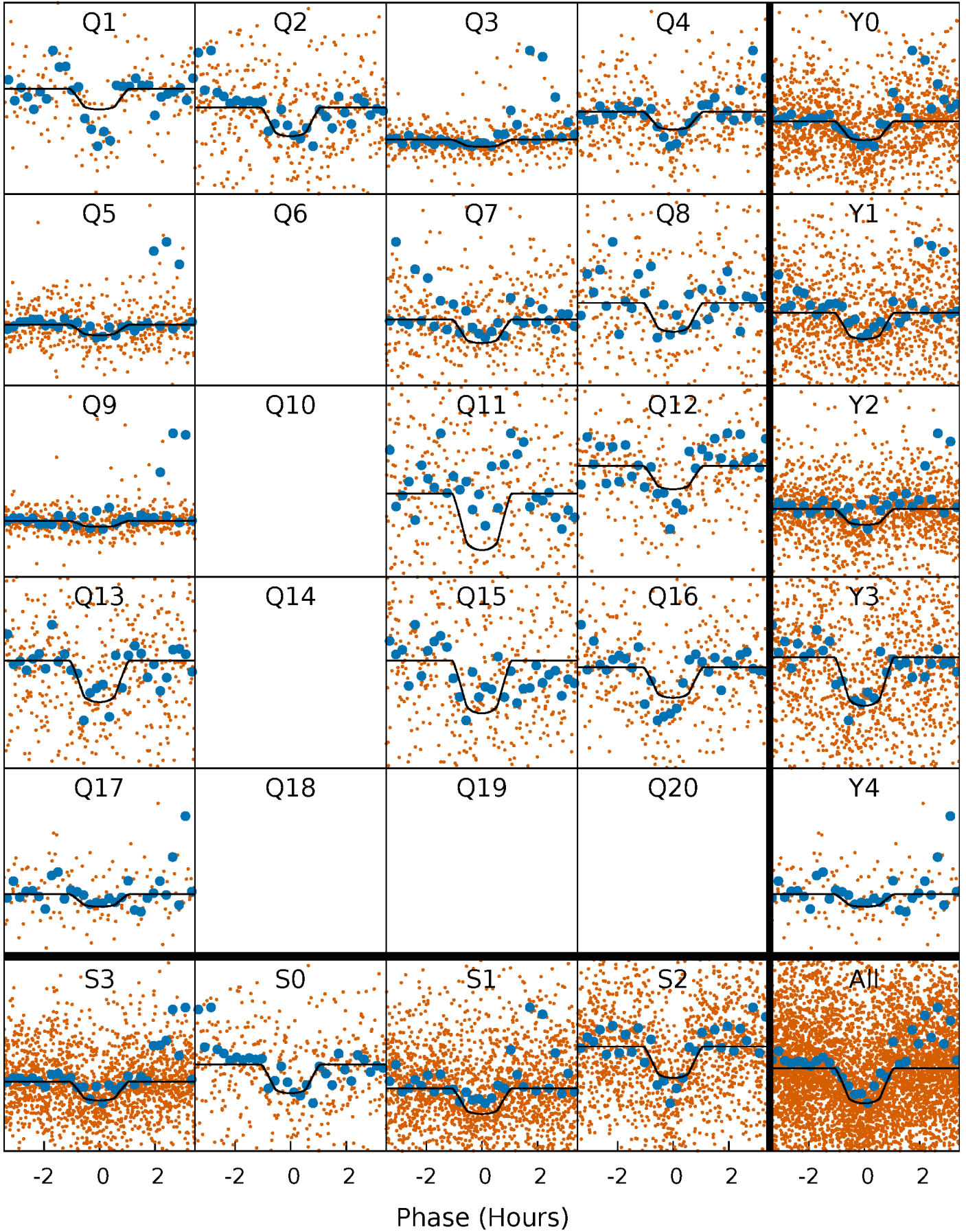
PDC Quarter-Phased Transit Curves

TCE 004933476-02 P= 2.572423 Days $T_0=133.157314$ (BKJD)



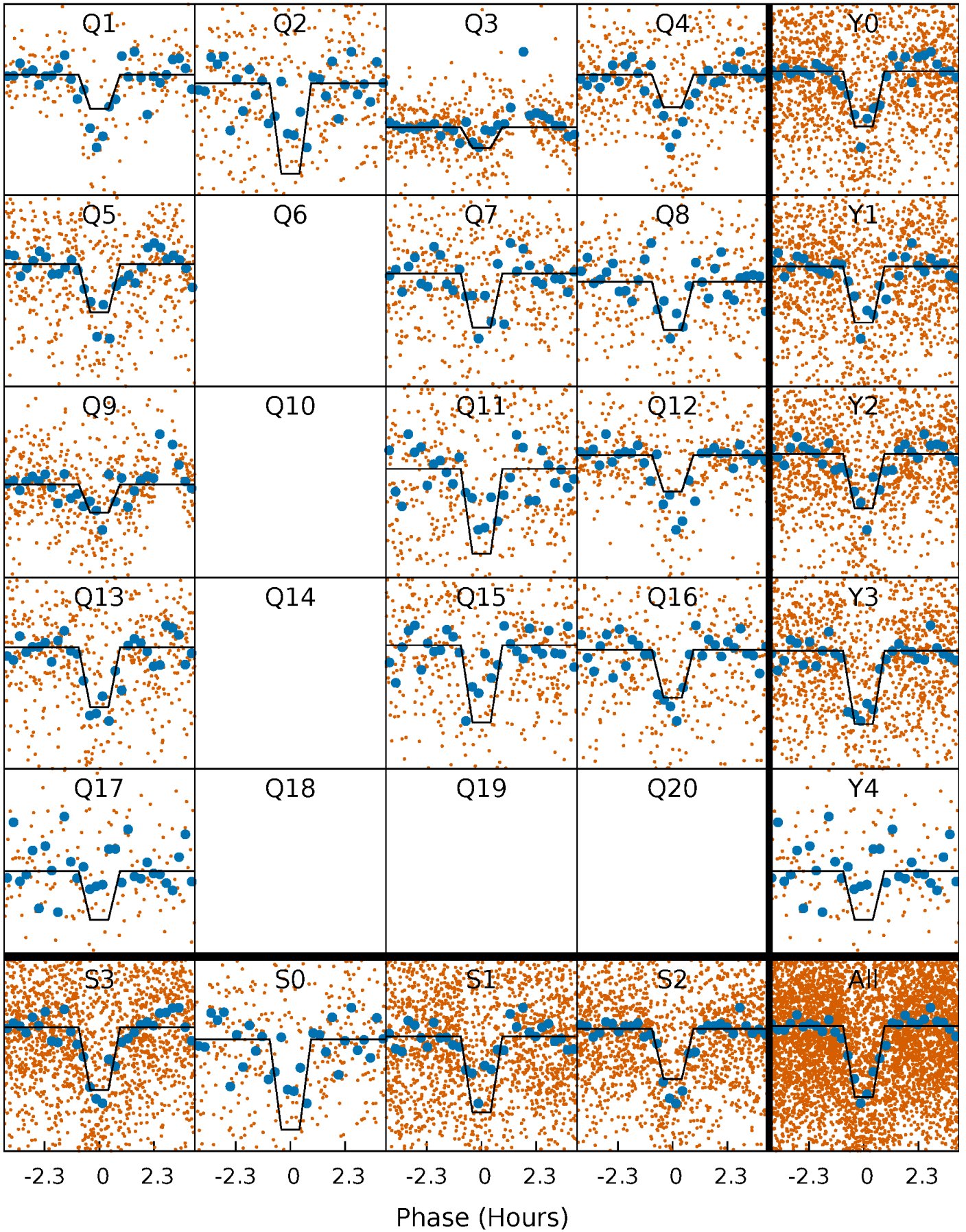
DV Quarter-Phased Transit Curves

TCE 004933476-02 P= 2.572423 Days $T_0=133.157314$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

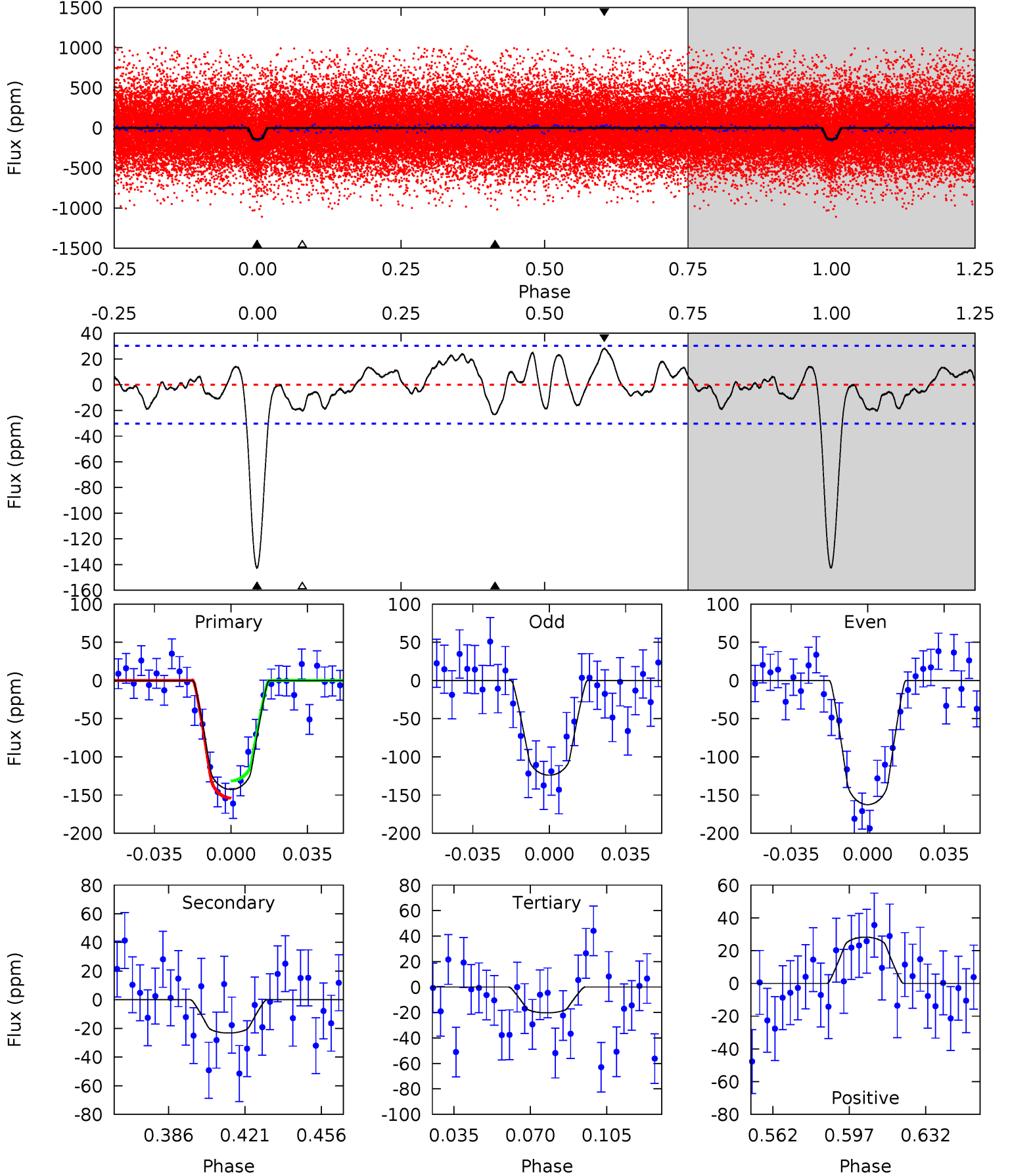
TCE 004933476-02 P= 2.572400 Days $T_0=133.159805$ (BKJD)



DV Model-Shift Uniqueness Test

004933476-02, P = 2.572423 Days, E = 130.584891 Days

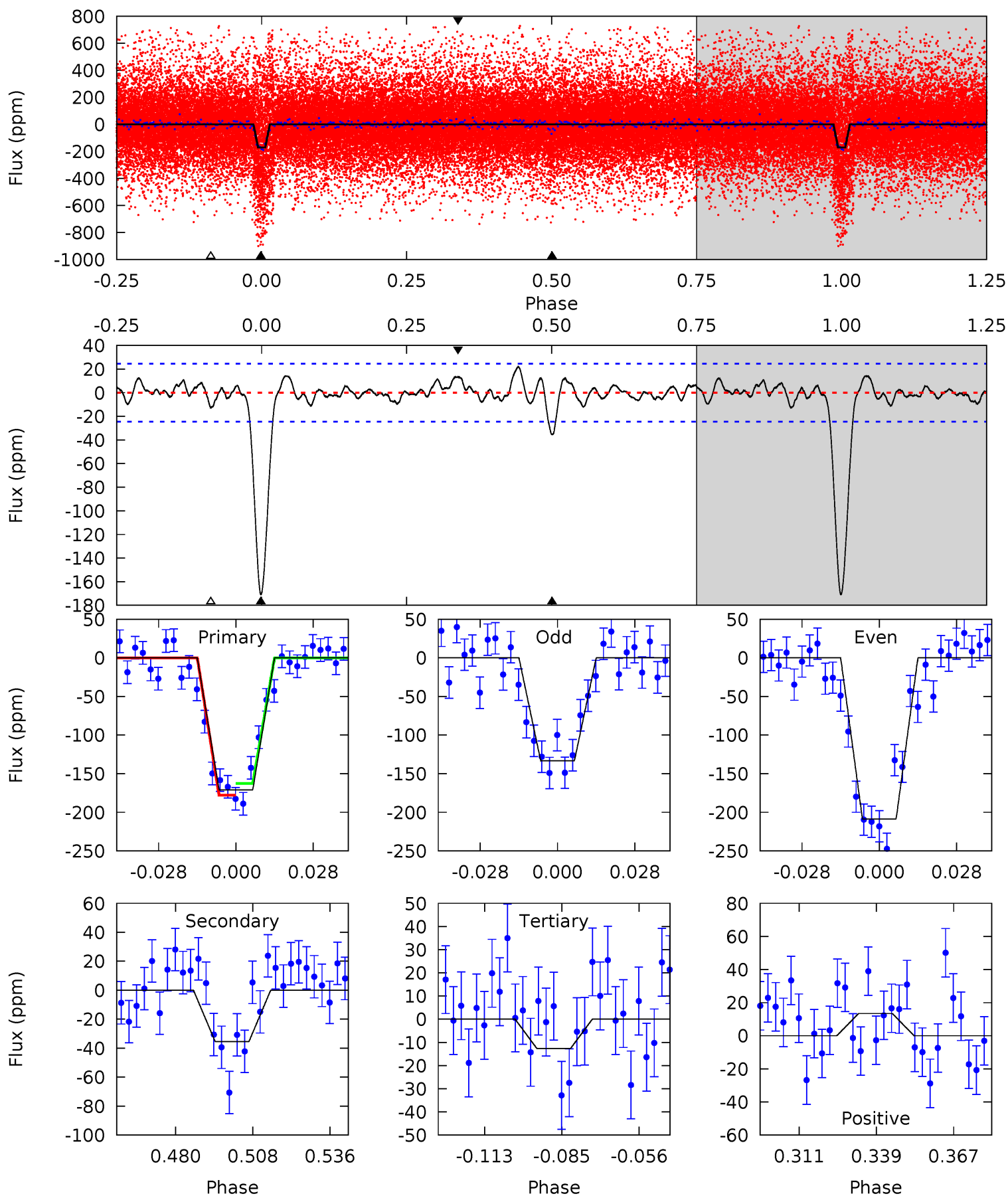
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.5	3.66	3.20	4.45	4.78	2.11	1.81	19.3	18.0	0.46	-0.79	3.05	0.72	0.17	1.78



Alt Model-Shift Uniqueness Test

004933476-02, P = 2.572400 Days, E = 130.587405 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.5	6.96	2.48	2.64	4.82	2.19	1.13	31.1	30.9	4.48	4.33	7.40	1.03	0.11	1.50



Stellar Parameters For KIC 004933476

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5650^{+169}_{-152}	$4.391^{+0.167}_{-0.204}$	$-0.440^{+0.300}_{-0.300}$	$0.926^{+0.252}_{-0.168}$	$0.770^{+0.124}_{-0.044}$	$1.365^{+1.134}_{-0.724}$
	+3%/-3%	+4%/-5%	+68%/-68%	+27%/-18%	+16%/-6%	+83%/-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 004933476-02 / KOI 6122.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-23 ± 6	$1.41^{+0.69}_{-0.68}$	1843^{+142}_{-118}	3730^{+1079}_{-507}	$7.223^{+22.368}_{-4.240}$
Alt.	-35 ± 5	$1.39^{+0.62}_{-0.65}$	1828^{+137}_{-107}	4045^{+1053}_{-522}	12^{+30}_{-7}

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

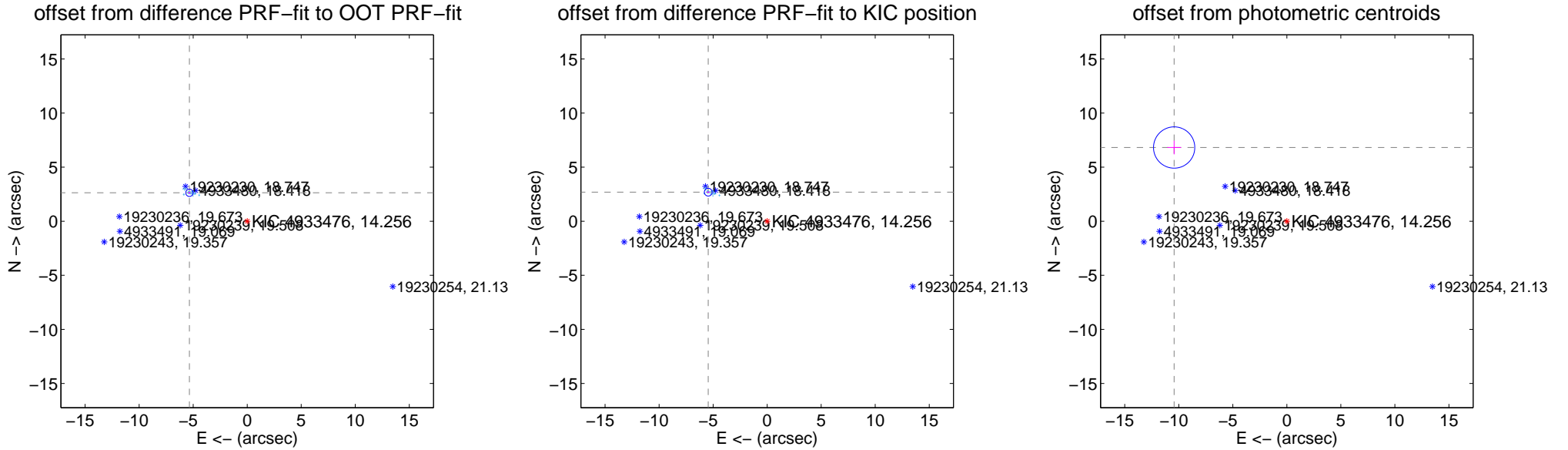
DV Centroid Data

Supplemental centroid analysis for 004933476-02. Kepler magnitude: 14.26. Transit SNR 13.77

There are 13 quarters with good PRF difference image offsets

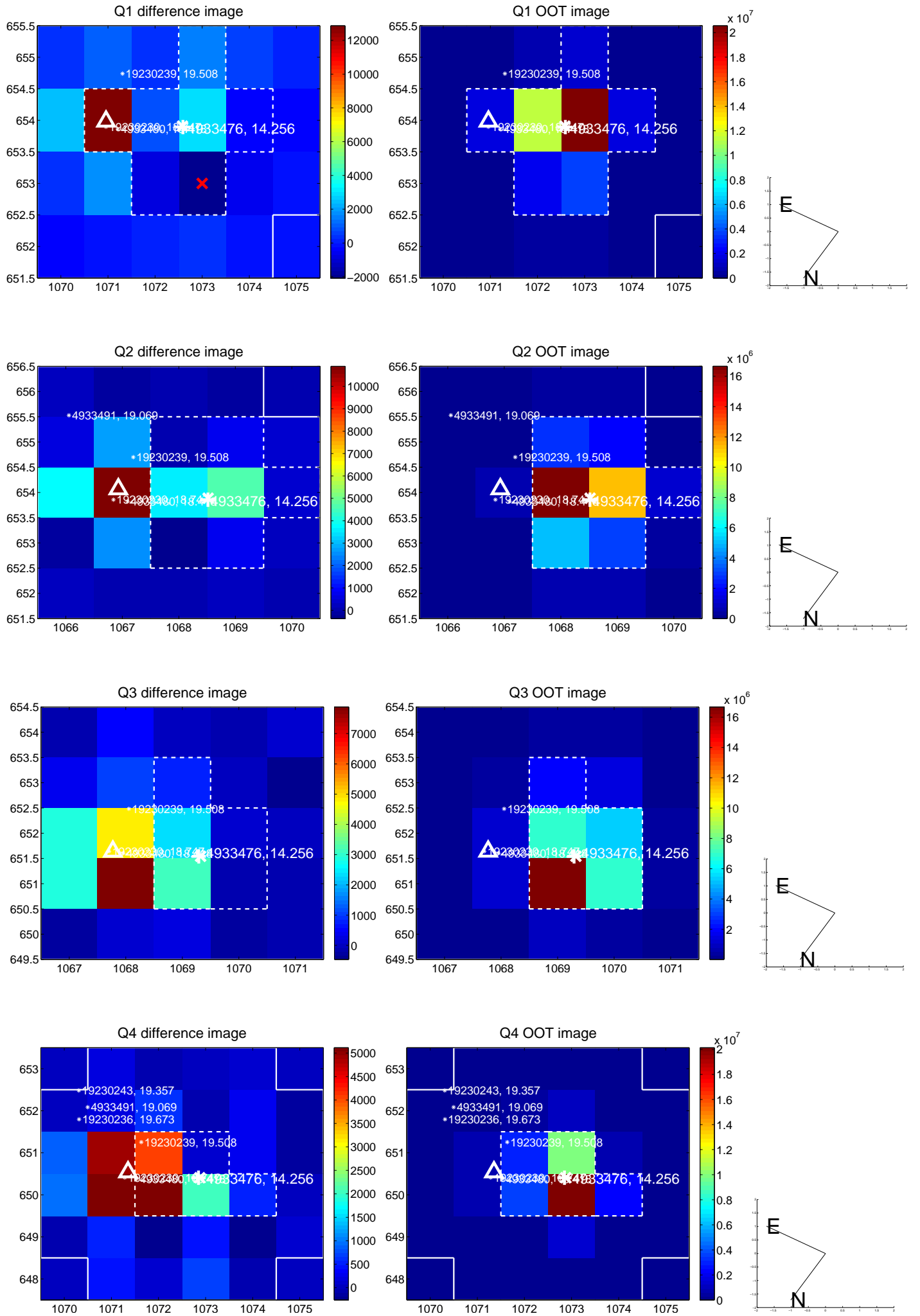
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.958 \pm 0.113	52.88	5.347 \pm 0.114	2.627 \pm 0.078
PRF-fit source offset from KIC position	6.079 \pm 0.120	50.63	5.453 \pm 0.120	2.686 \pm 0.076
photometric centroid source offset	12.45 \pm 0.64	19.57	10.43 \pm 0.64	6.81 \pm 0.63

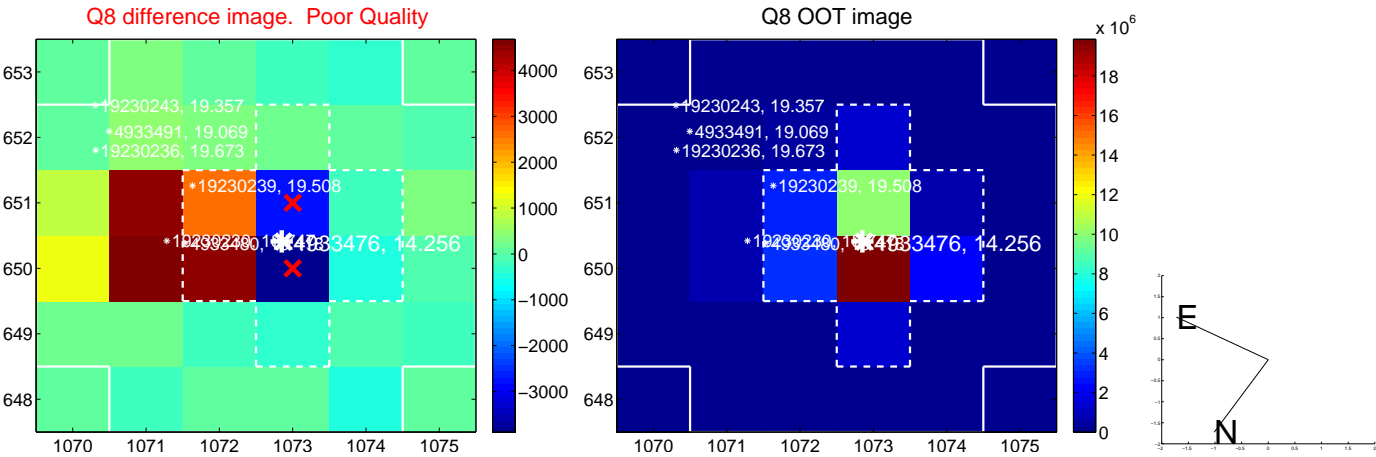
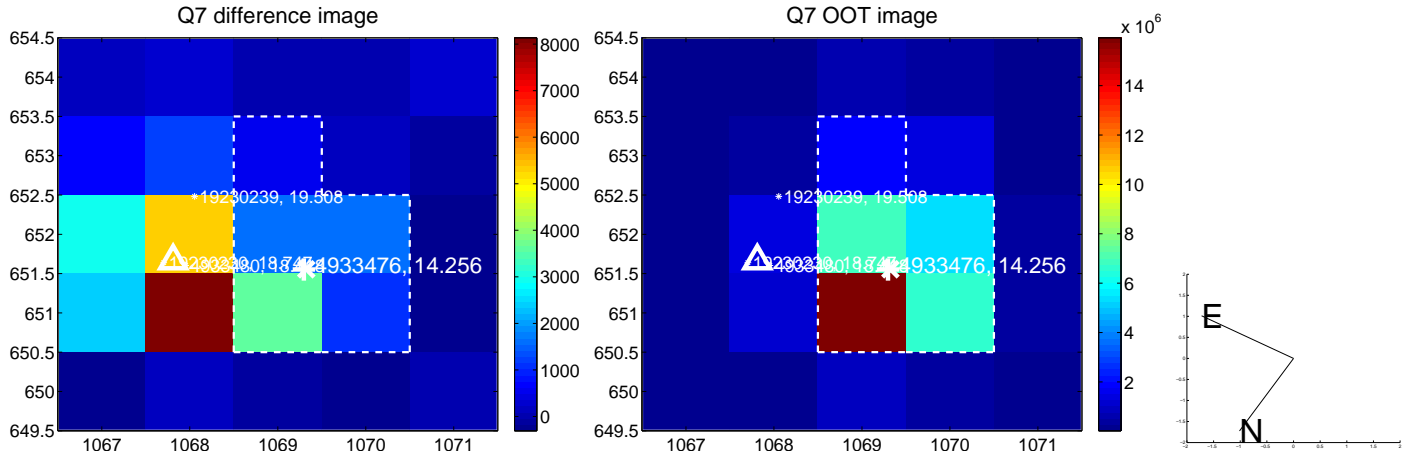
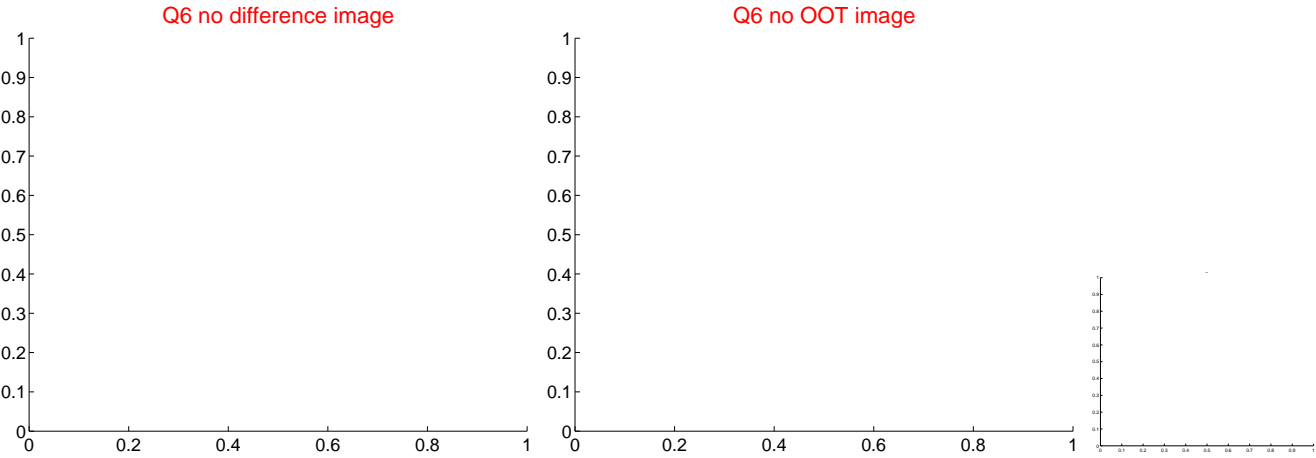
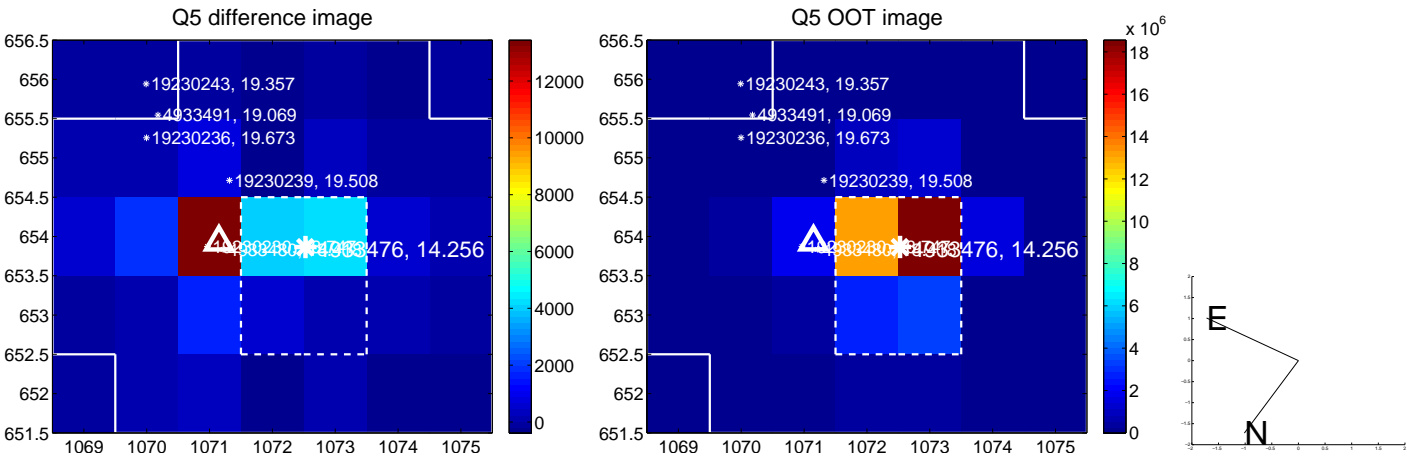


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

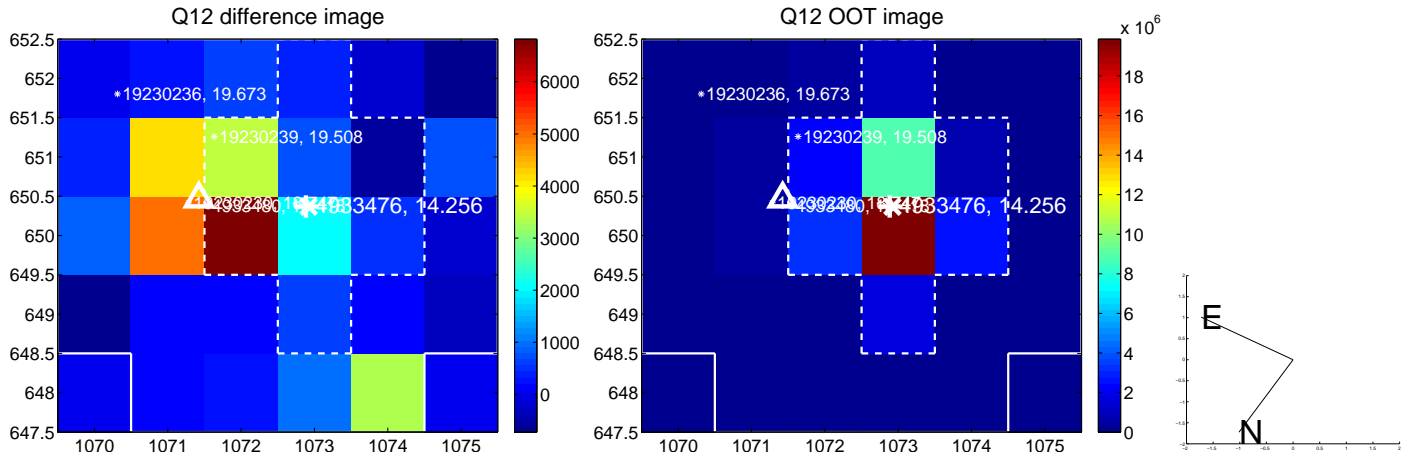
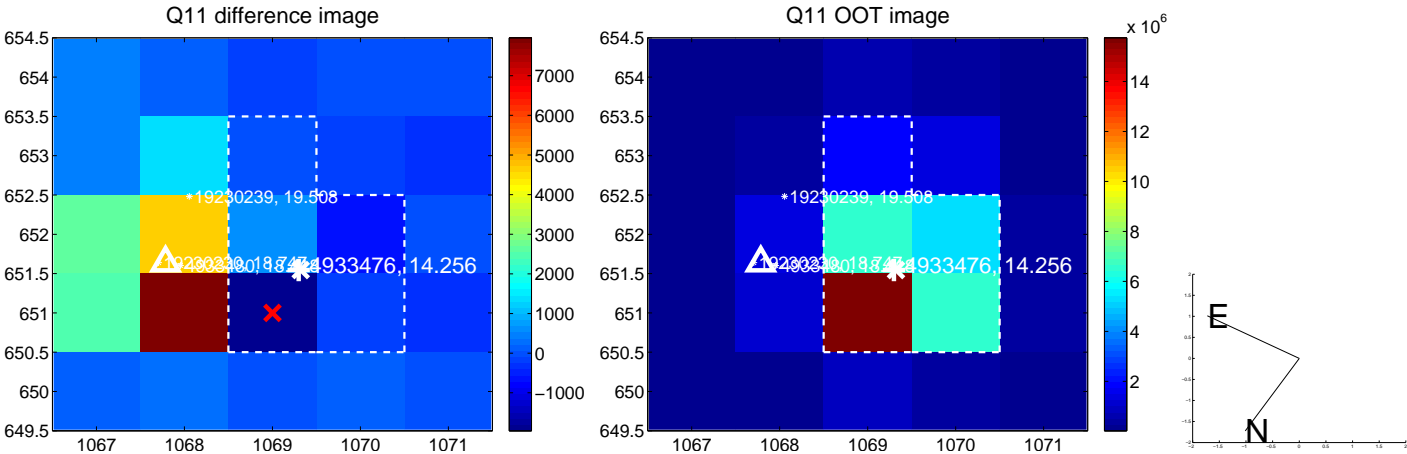
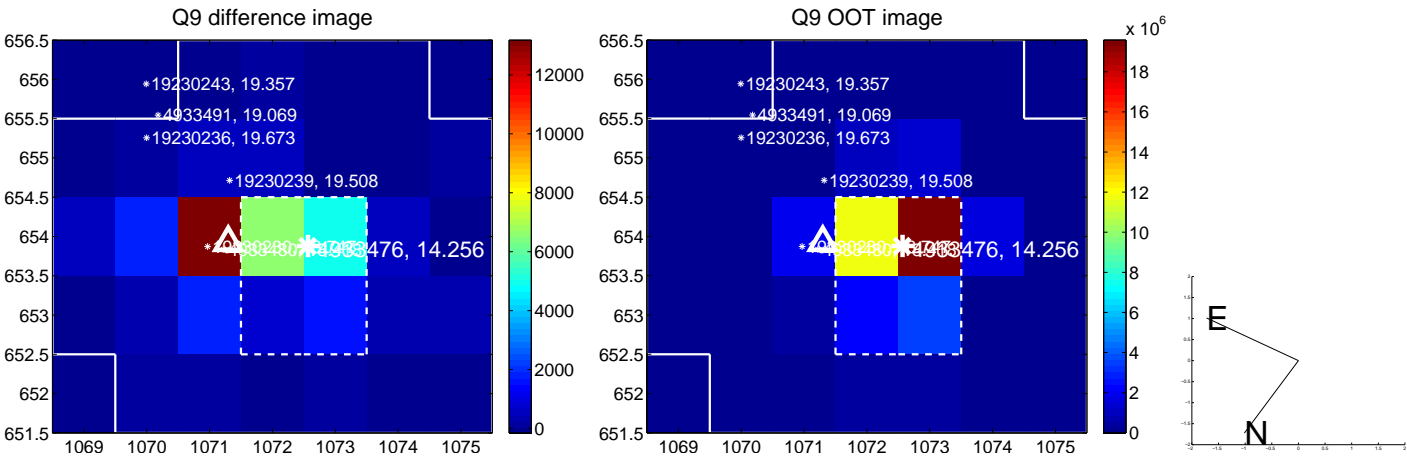
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



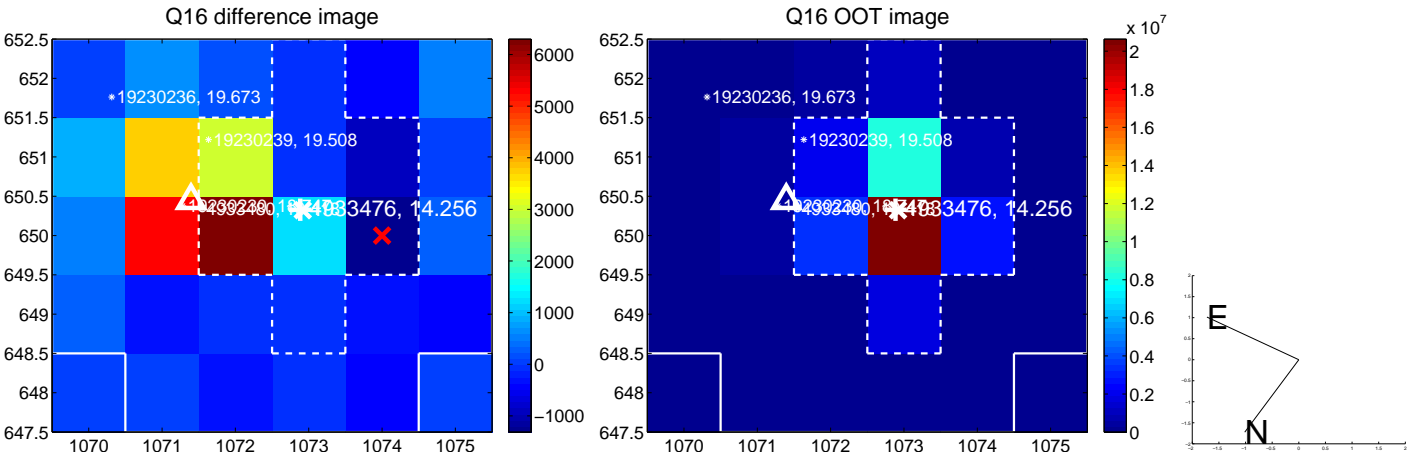
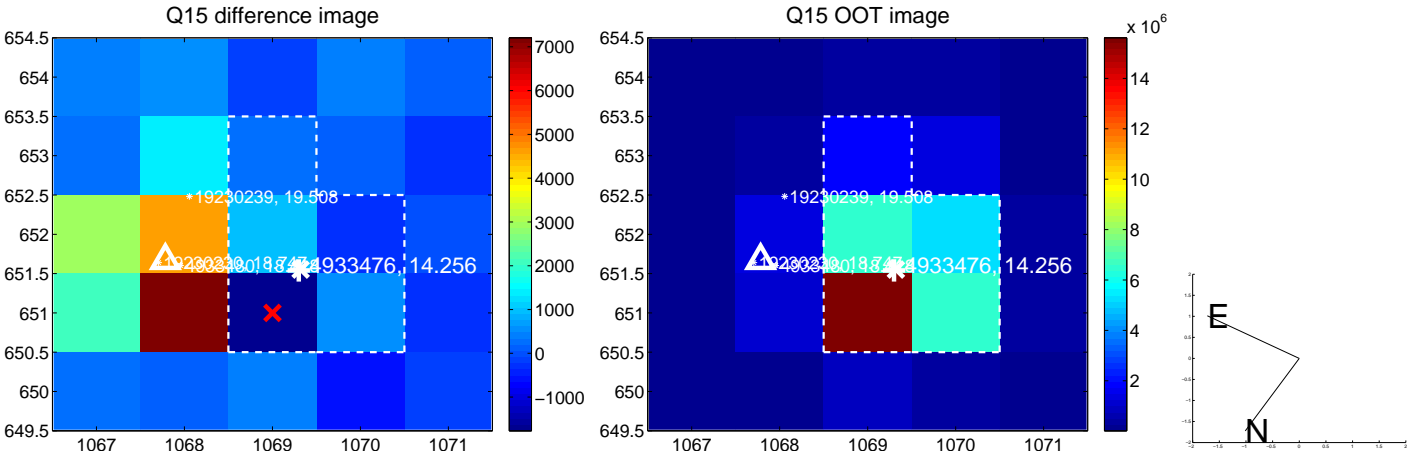
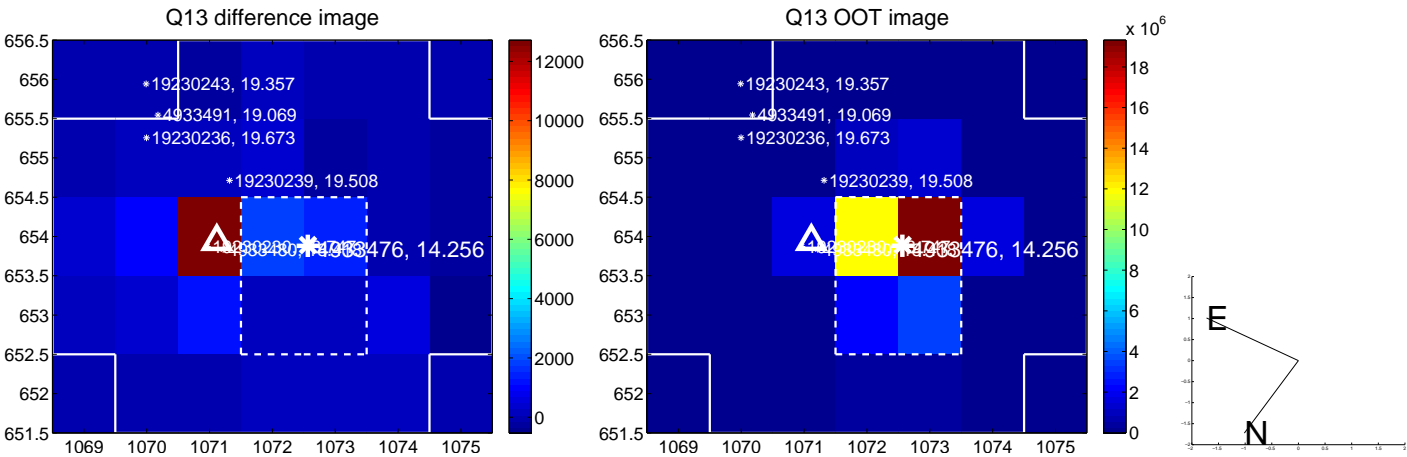
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



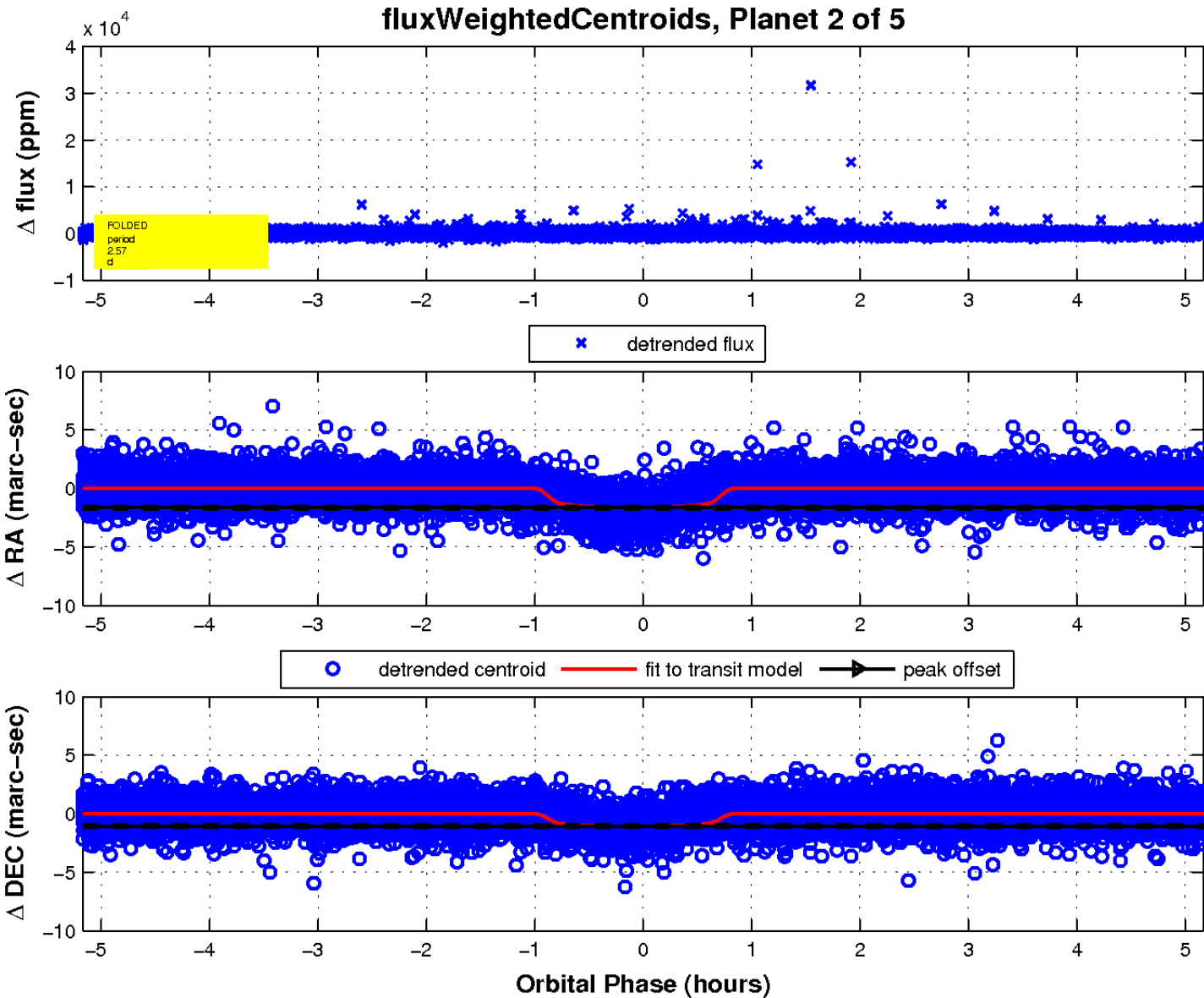
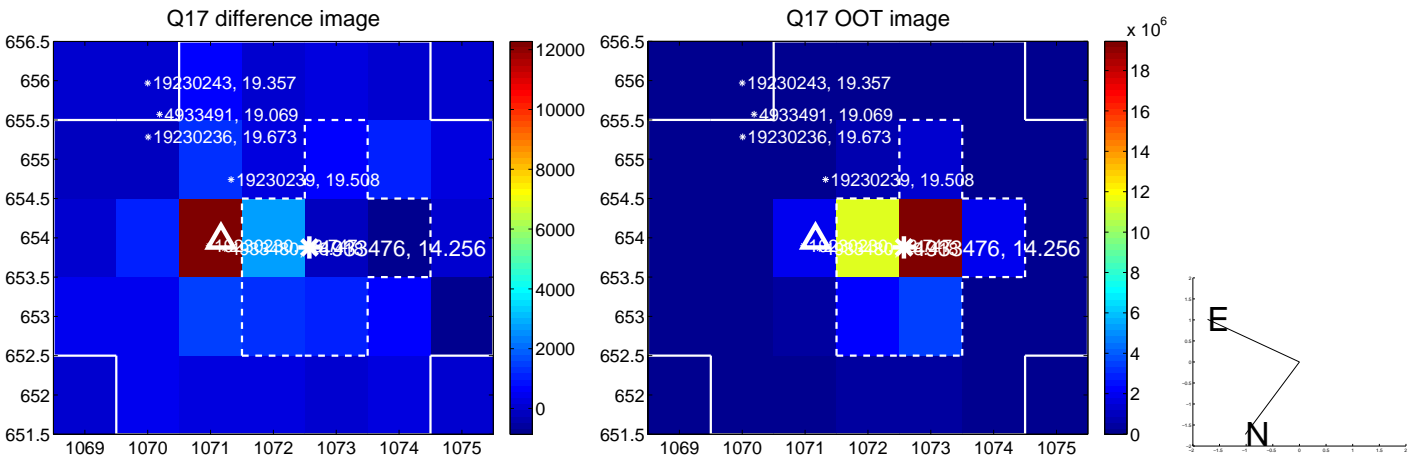
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



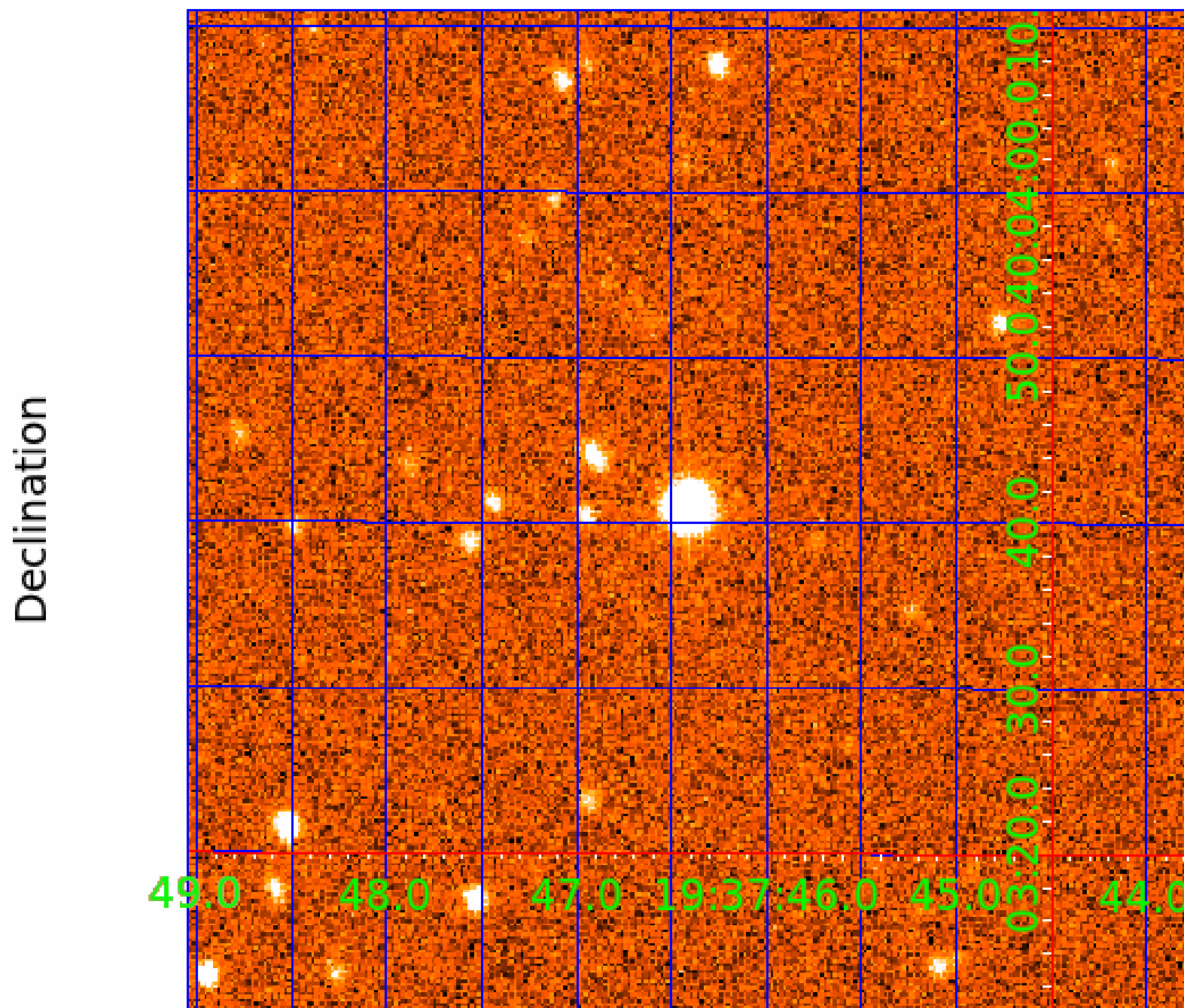
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004933476

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})
004933476-01	OBS	No	340.027188	337.979549	984.5	5.263	13.6	6.1	0.93	5650	2.94	1.02
004933476-02	OBS	6122.01	2.572423	133.157314	157.9	1.724	12.7	13.8	0.93	5650	1.37	690.30
004933476-03	OBS	No	415.549845	357.191772	1088.6	4.257	13.8	6.6	0.93	5650	3.12	0.79
004933476-05	OBS	No	186.647172	174.069568	1313.2	6.401	11.1	7.8	0.93	5650	3.68	2.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004933476-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004933476-02	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
004933476-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004933476-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

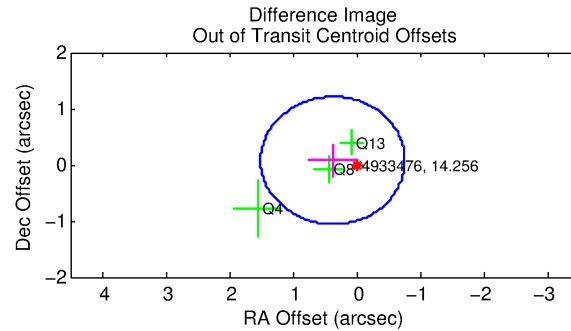
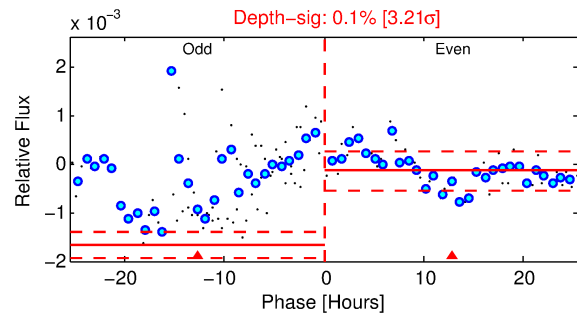
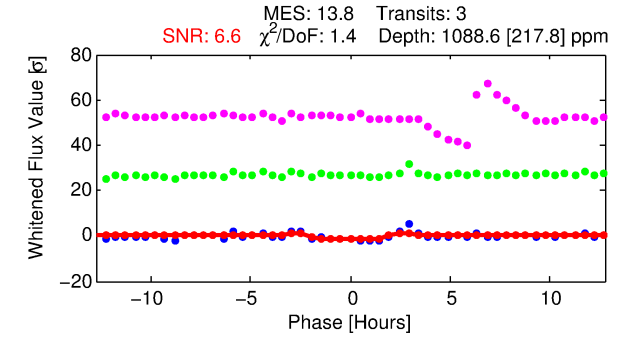
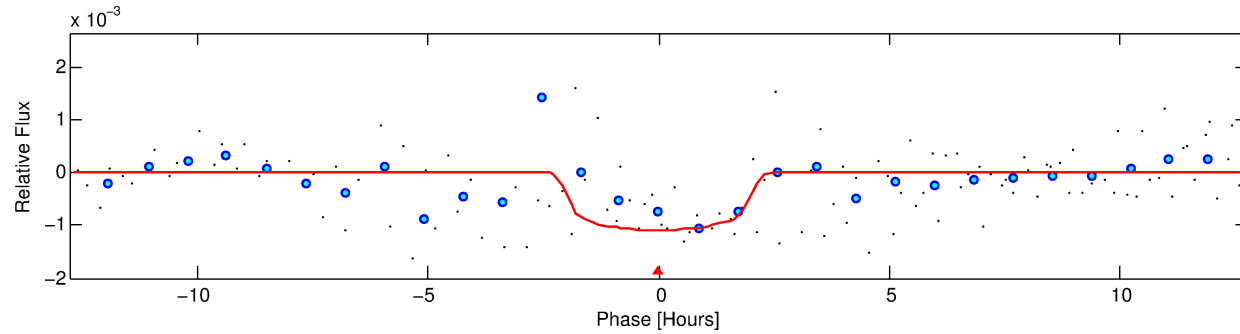
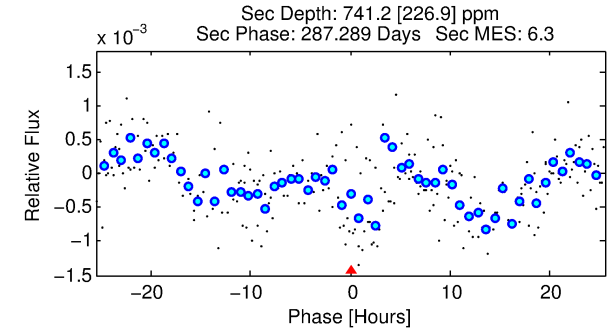
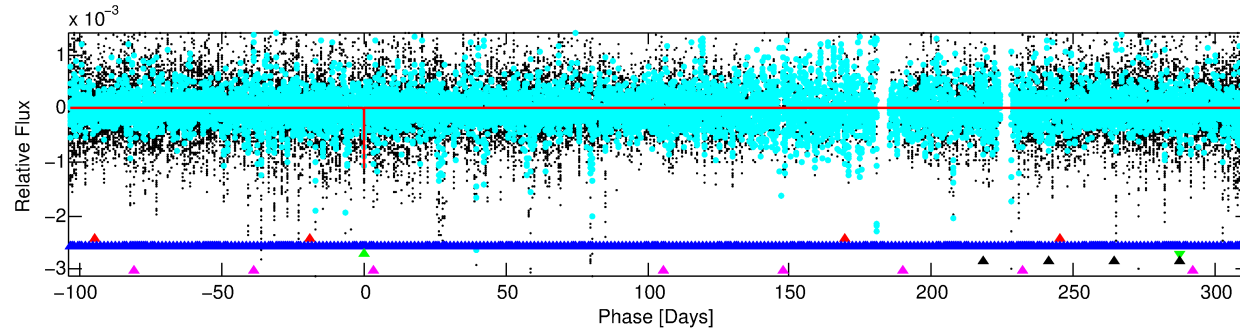
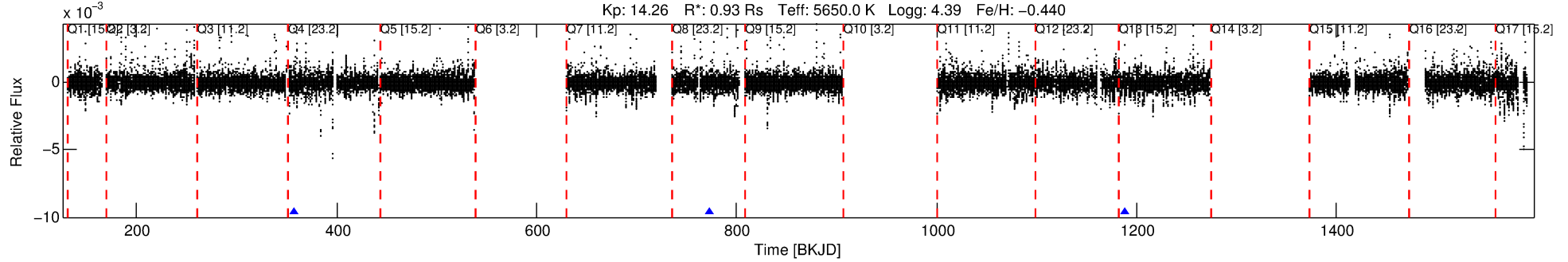
Ephemeris Match Information For 004933476-03

No Significant Match Found

DV One-Page Summary

KIC: 4933476 Candidate: 3 of 5 Period: 415.550 d
KOI: K06122 Corr: No Ephemeris Match

Kp: 14.26 R*: 0.93 Rs Teff: 5650.0 K Logg: 4.39 Fe/H: -0.440



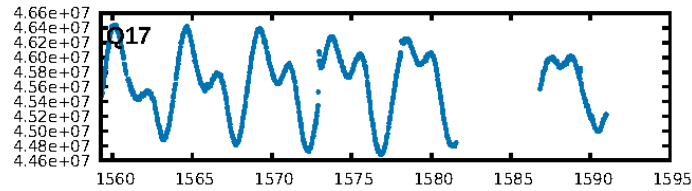
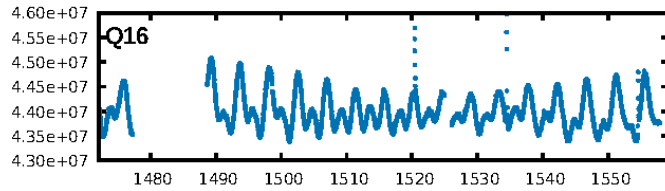
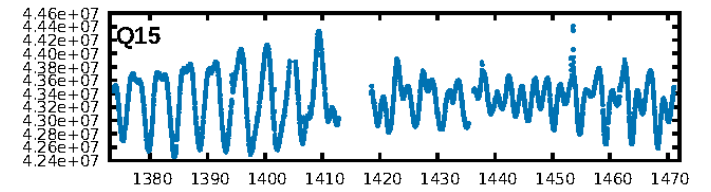
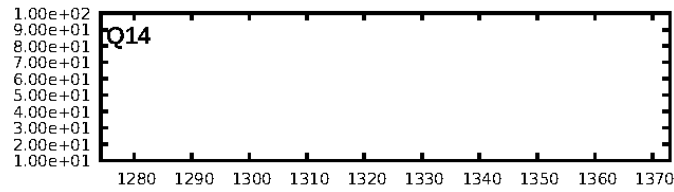
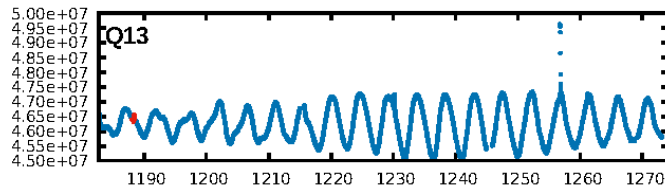
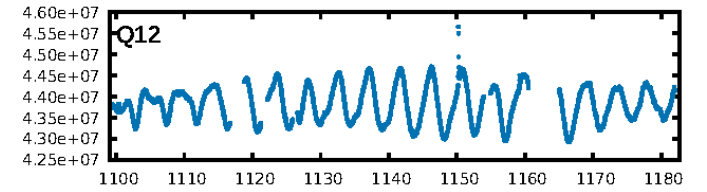
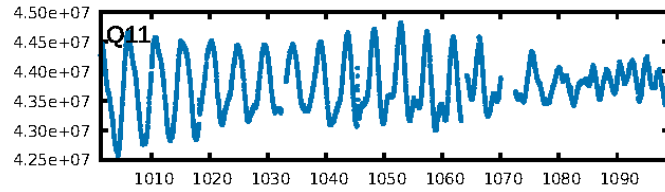
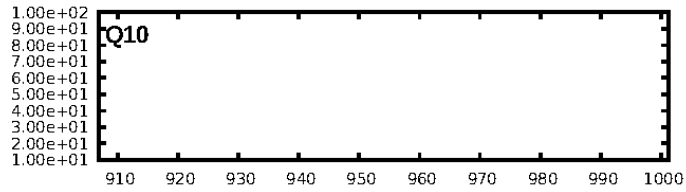
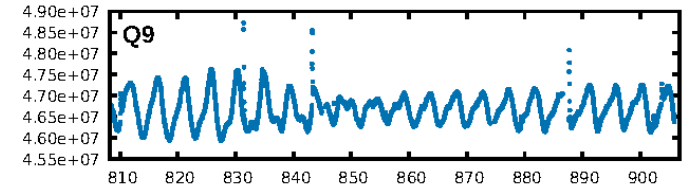
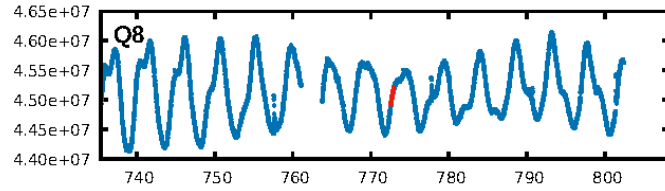
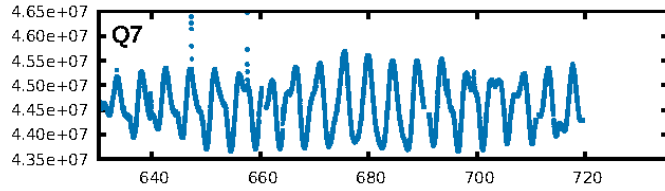
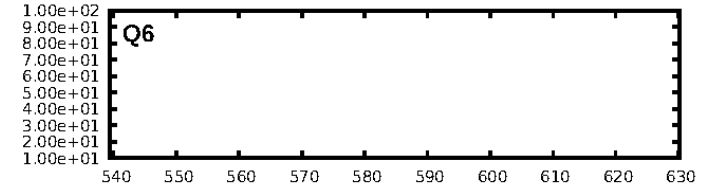
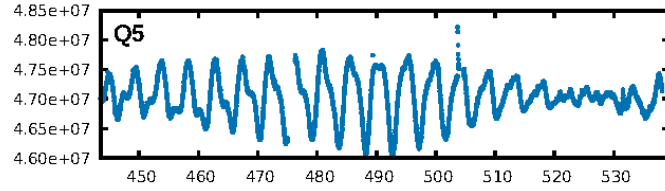
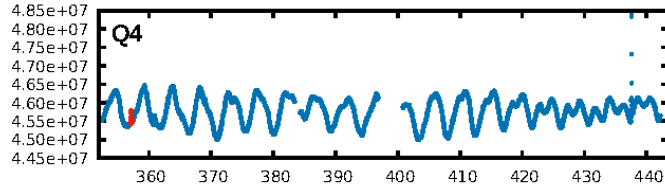
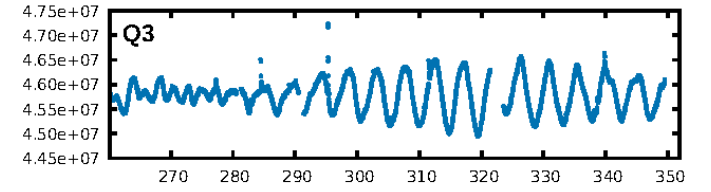
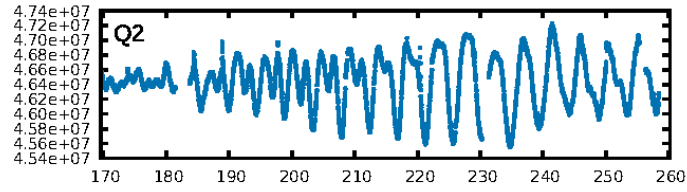
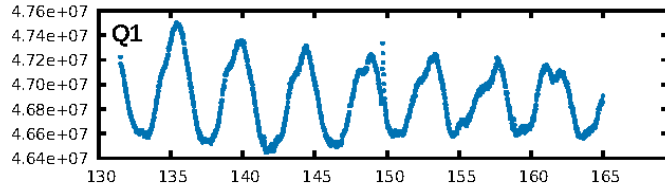
DV Fit Results:

Period = 415.54984 [0.00604] d
Epoch = 357.1918 [0.0097] BKJD
Rp/R* = 0.0309 [0.0461]
a/R* = 679.18 [4515.02]
b = 0.48 [10.65]
Seff = 0.78 [0.30]
Teq = 240 [23] K
Rp = 3.12 [4.74] Re
a = 0.9989 [0.2394] AU
Ag = 41763.06 [126234.57] [0.33σ]
Teffp = 5304 [3983] K [1.27σ]

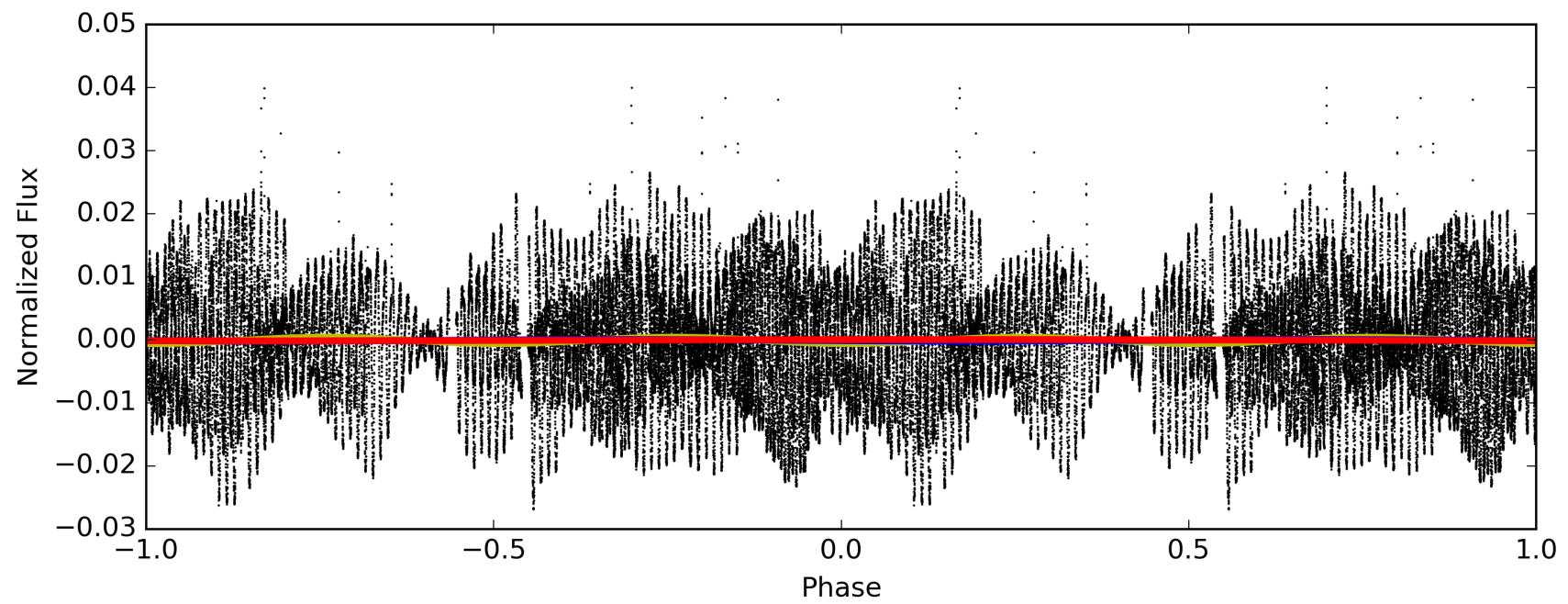
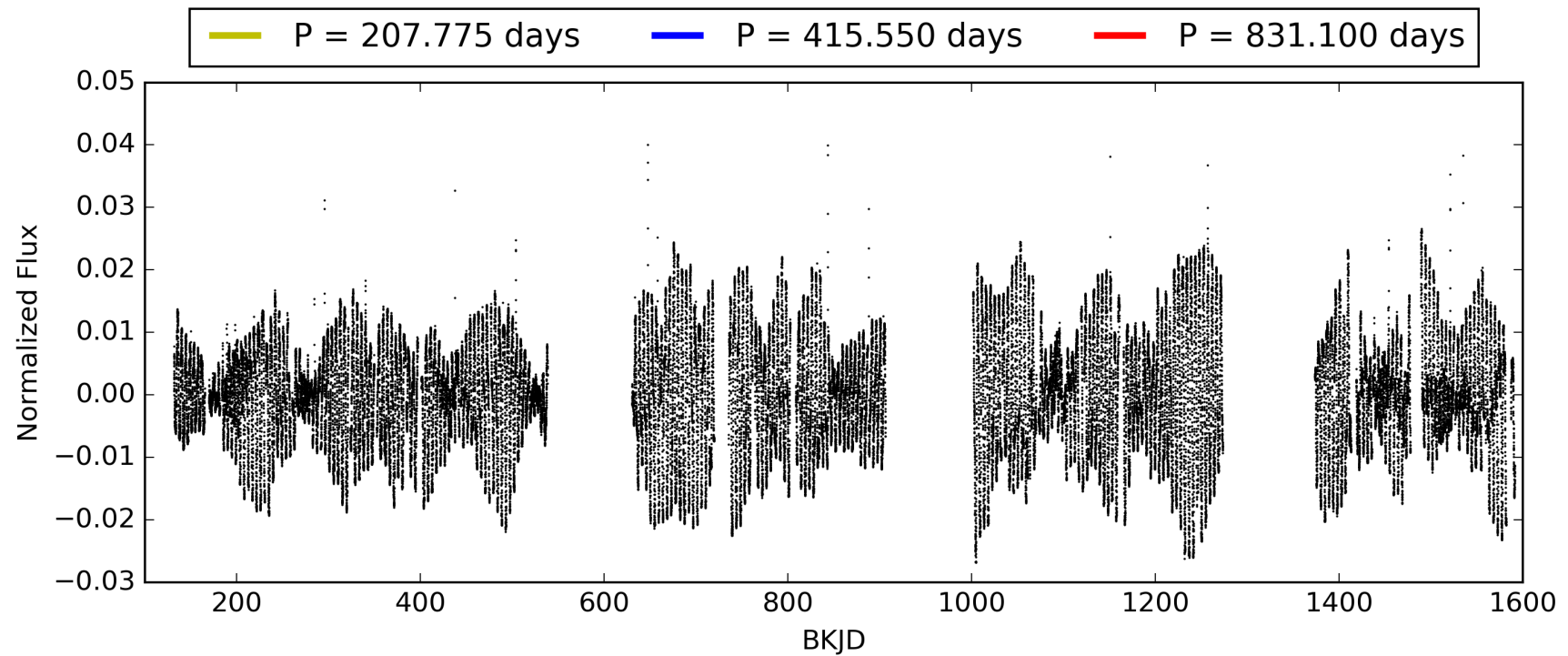
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [89.79σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 31.5%
Bootstrap-pfa: 1.05e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.02281
Centroid-sig: 61.0%
Centroid-so: 0.434 arcsec [0.56σ]
OotOffset-rm: 0.380 arcsec [1.01σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-rm: 0.431 arcsec [1.12σ]
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.67 [2/3]

TCE 004933476-03, PDC Light Curves

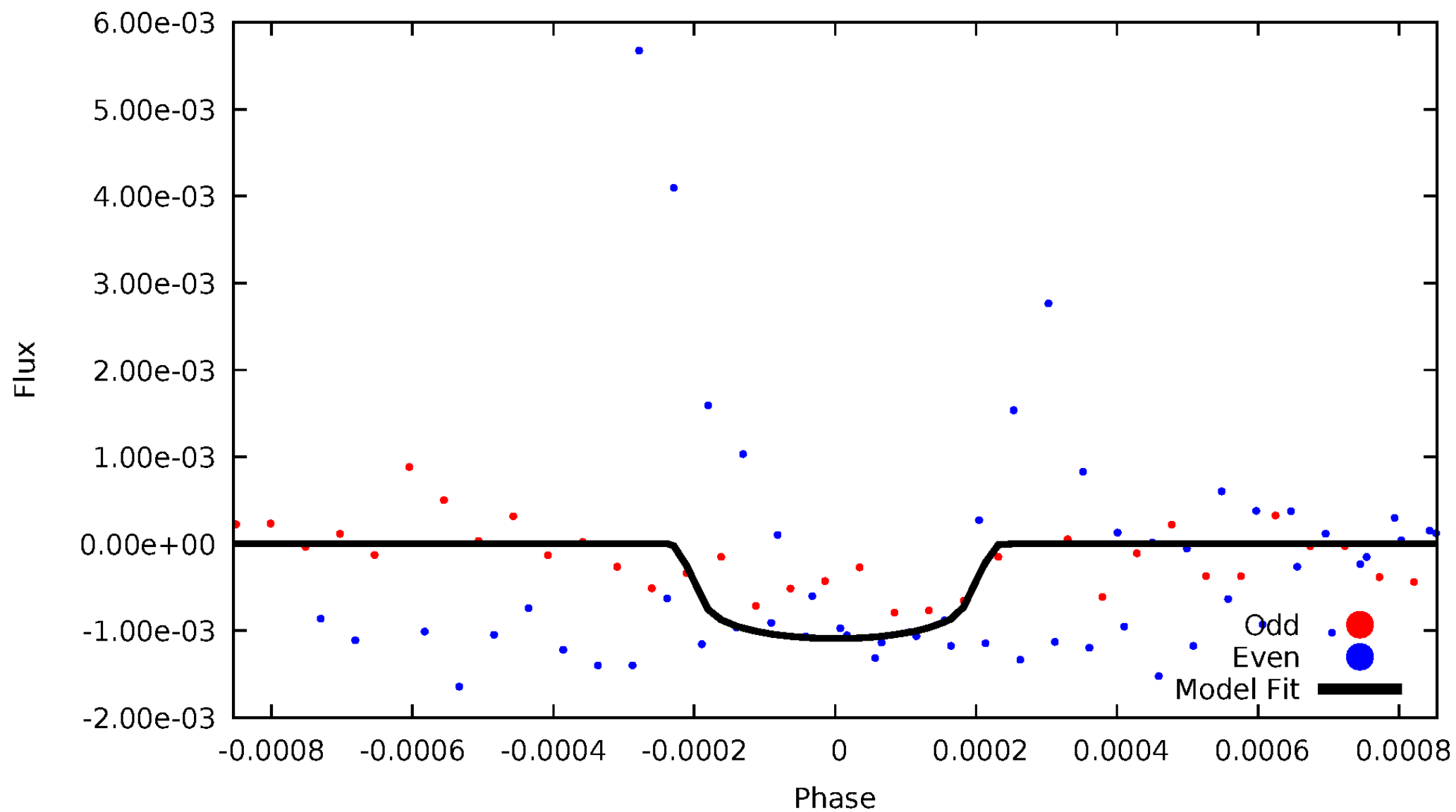


TCE 004933476-03



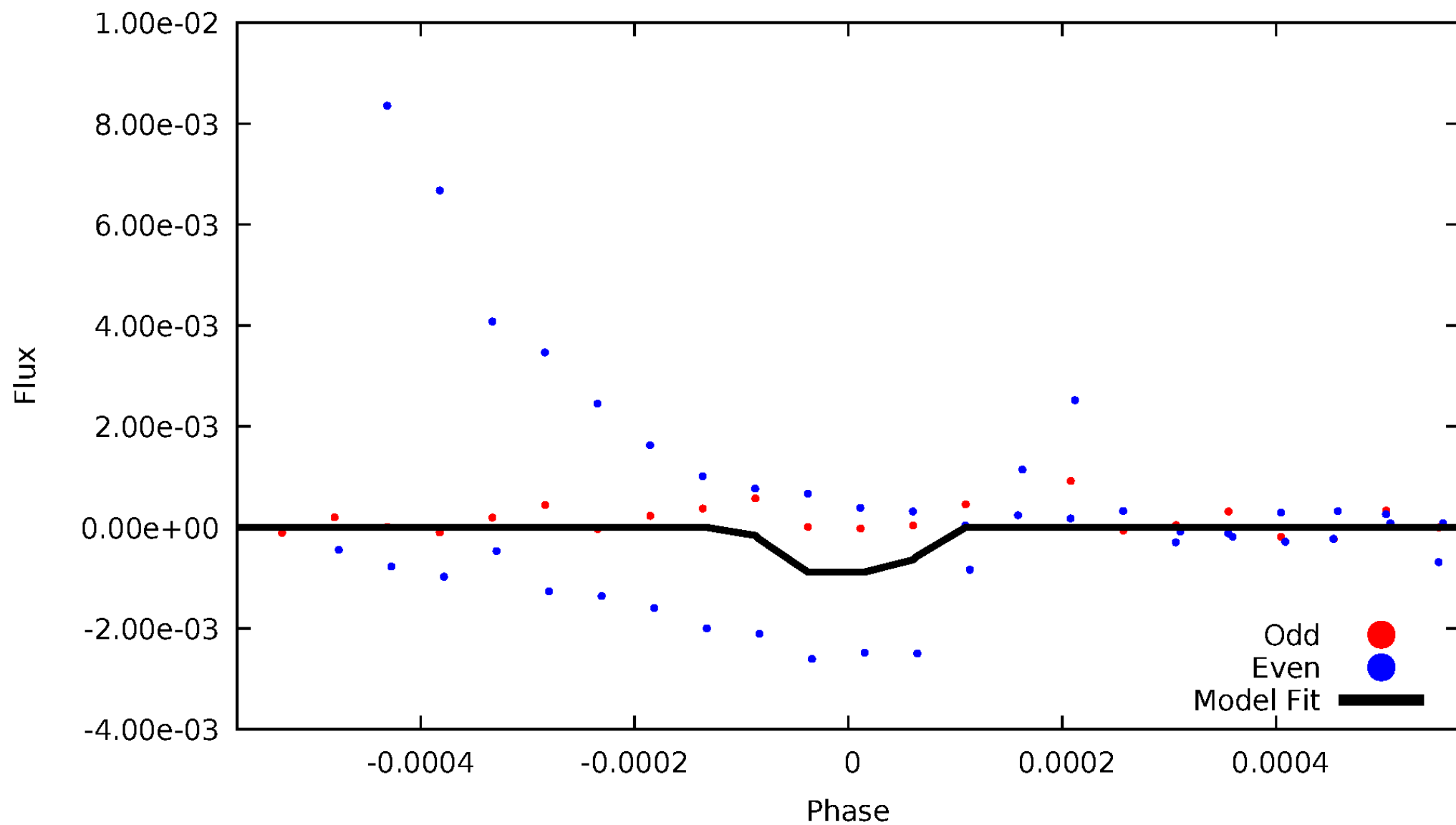
DV Odd/Even

TCE 004933476-03



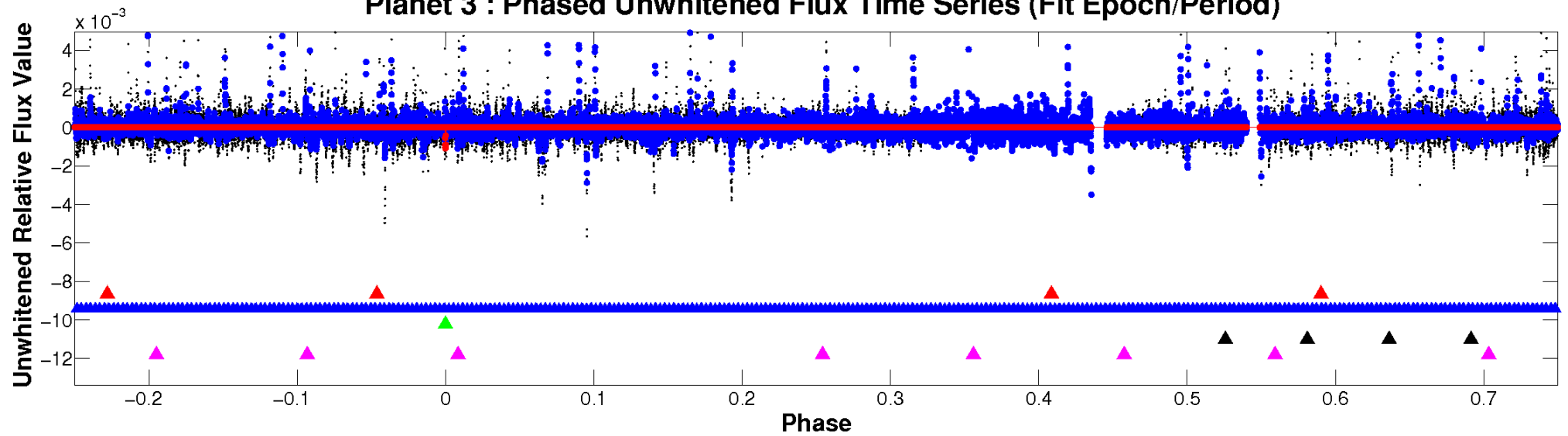
ALT Odd/Even

TCE 004933476-03

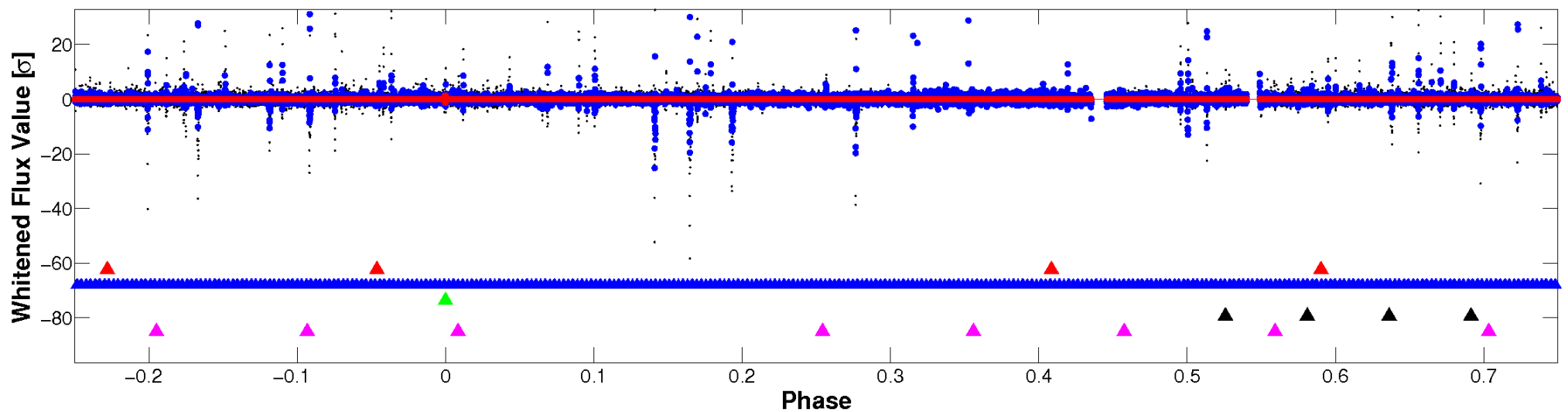


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

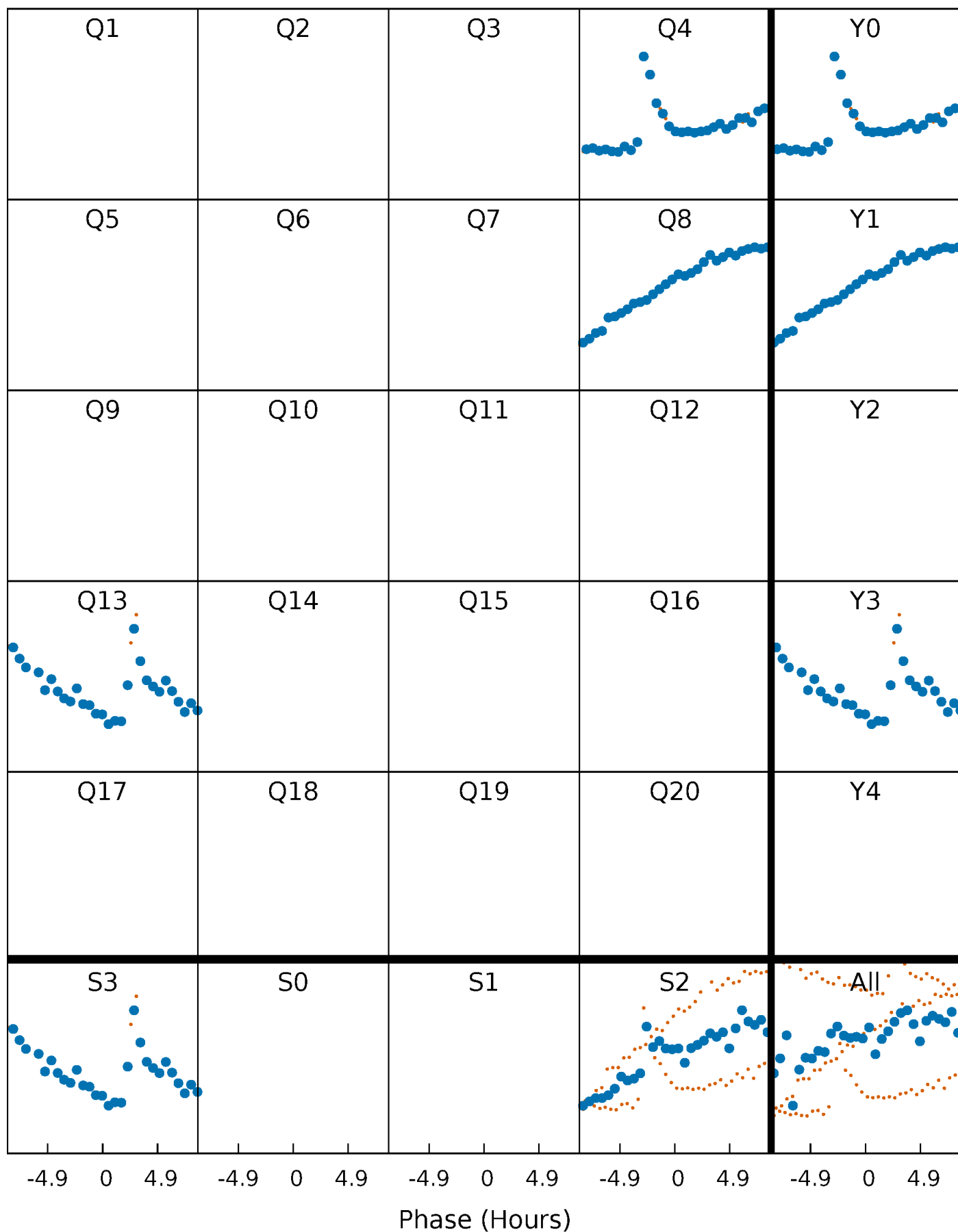


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



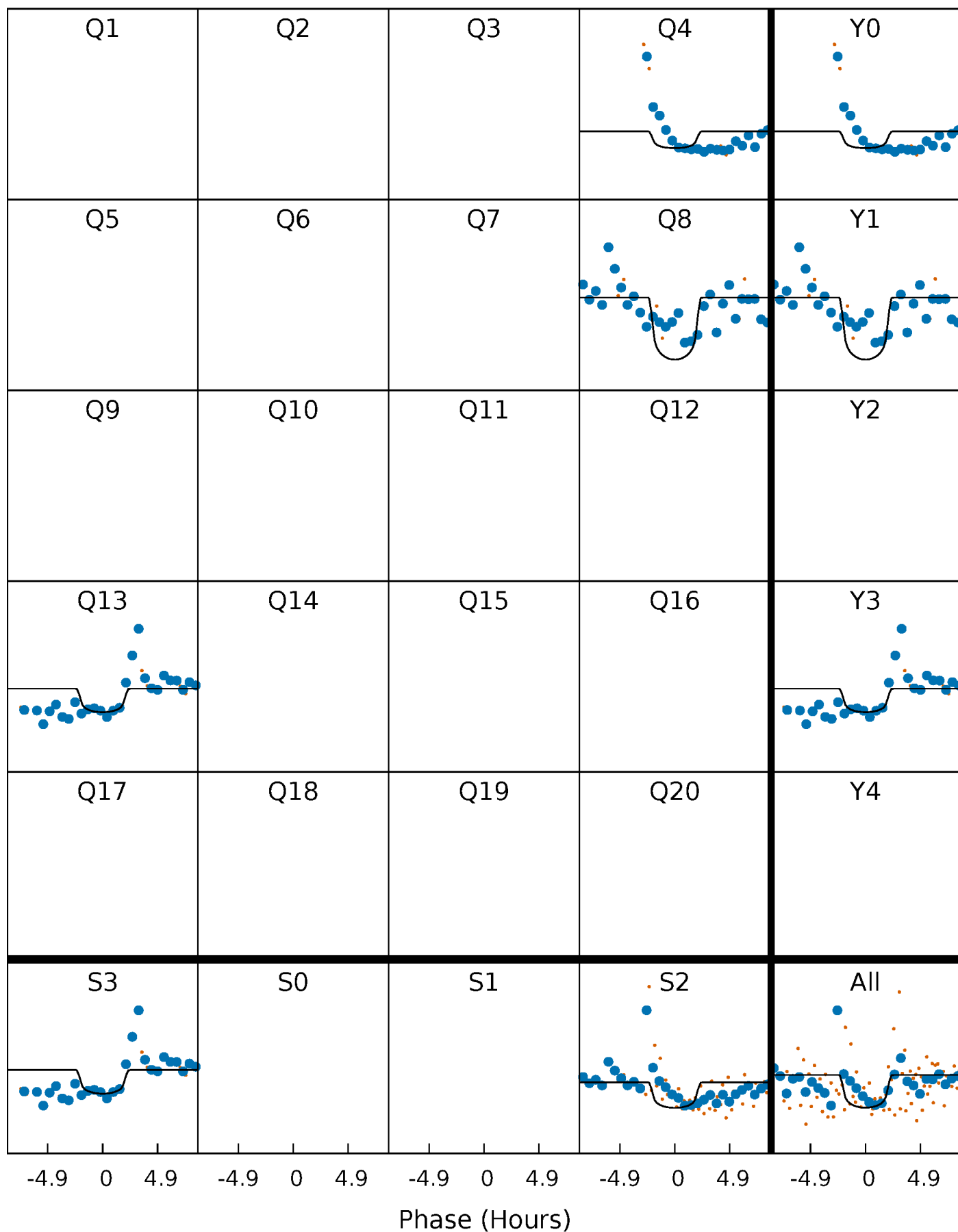
PDC Quarter-Phased Transit Curves

TCE 004933476-03 $P=415.549845$ Days $T_0=357.191772$ (BKJD)



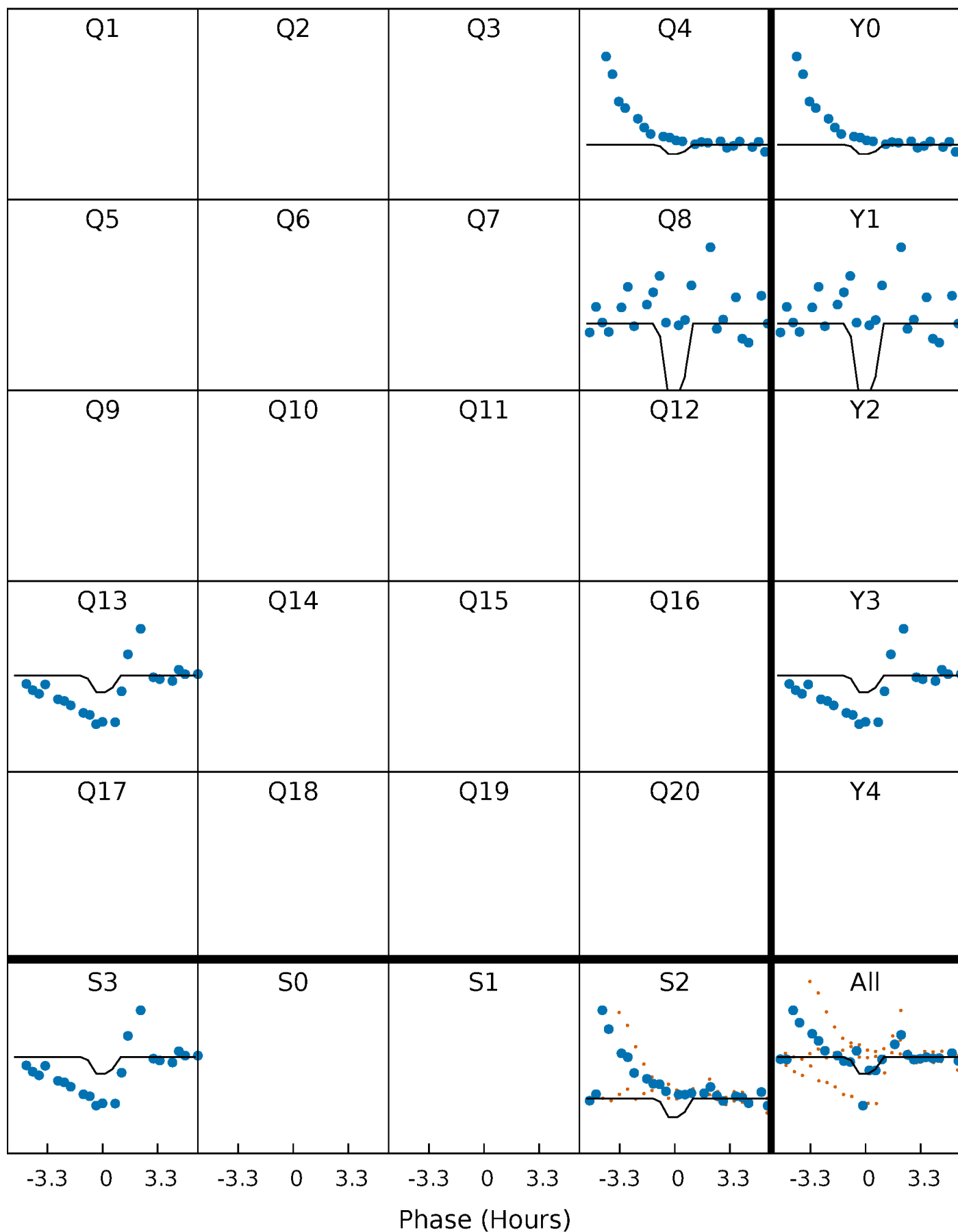
DV Quarter-Phased Transit Curves

TCE 004933476-03 $P=415.549845$ Days $T_0=357.191772$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

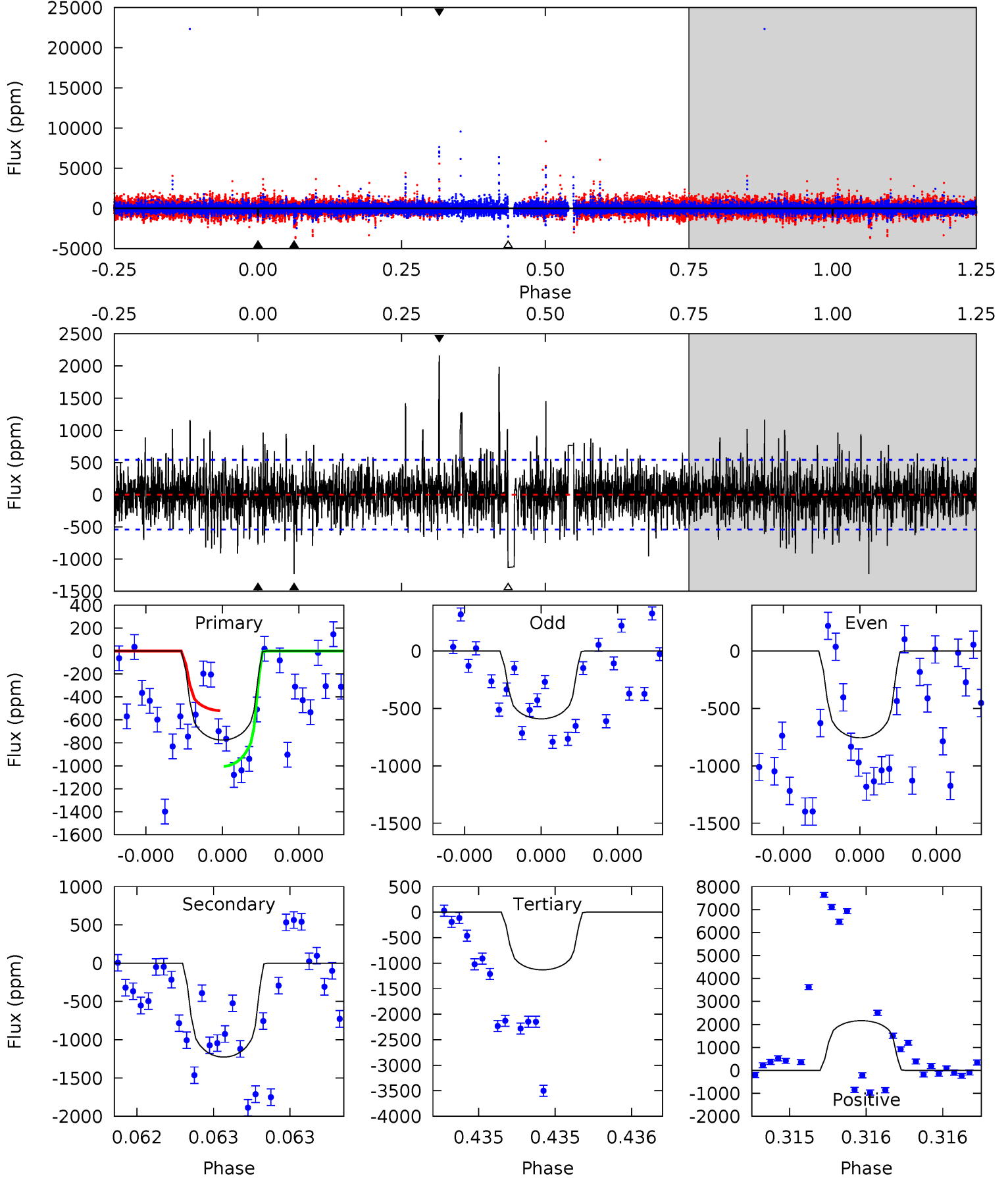
TCE 004933476-03 P=415.536876 Days $T_0=357.255352$ (BKJD)



DV Model-Shift Uniqueness Test

004933476-03, P = 415.549845 Days, E = 357.191772 Days

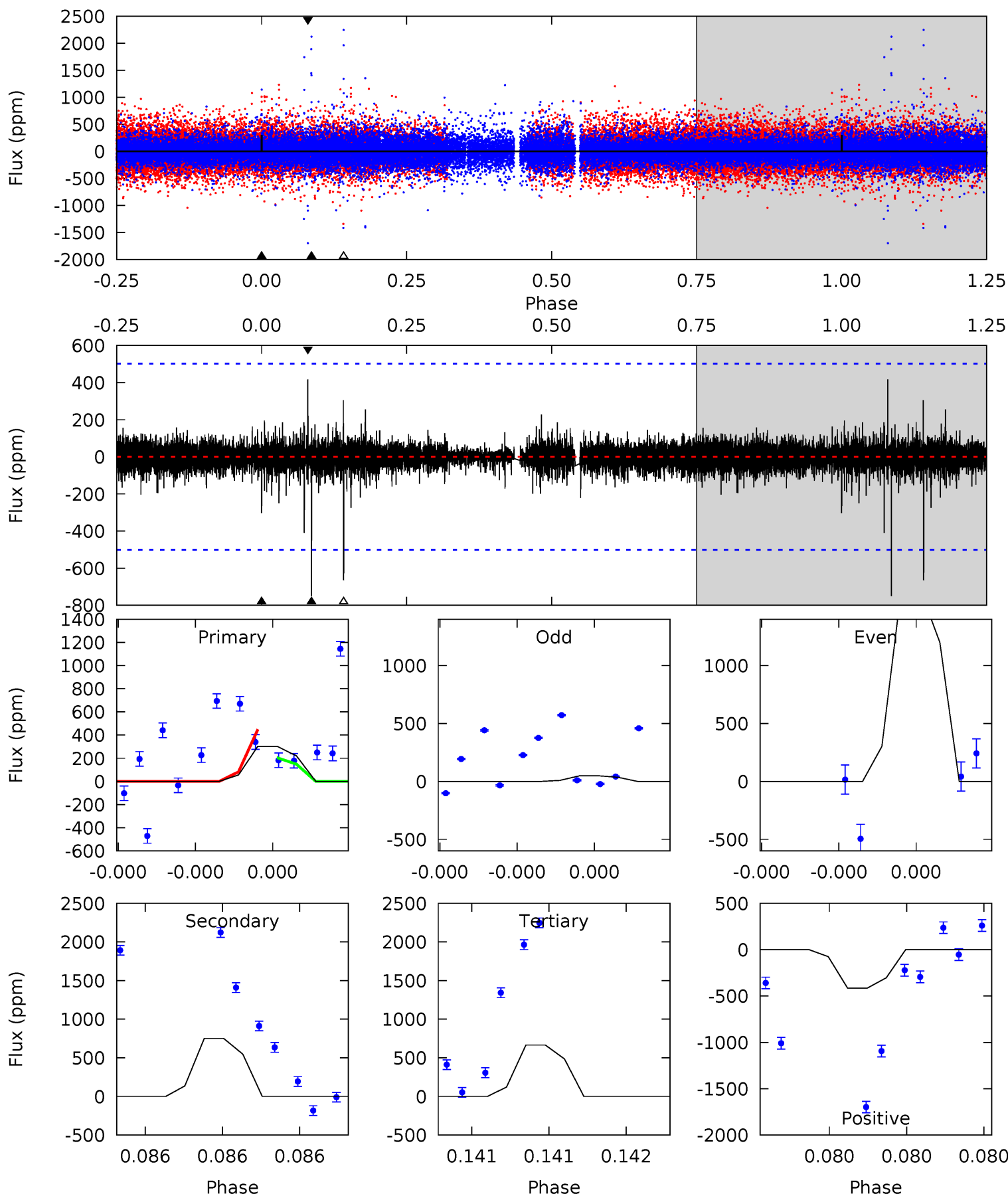
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.00	12.7	11.7	22.3	5.59	3.51	2.57	-3.66	-14.3	0.99	-9.66	0.45	1.18	0.64	2.51



Alt Model-Shift Uniqueness Test

004933476-03, P = 415.536876 Days, E = 357.255352 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.46	8.58	7.61	4.76	5.73	3.72	0.48	-4.14	-1.30	0.98	3.82	9.58	-15.9	0.36	0



Stellar Parameters For KIC 004933476

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5650^{+169}_{-152}	$4.391^{+0.167}_{-0.204}$	$-0.440^{+0.300}_{-0.300}$	$0.926^{+0.252}_{-0.168}$	$0.770^{+0.124}_{-0.044}$	$1.365^{+1.134}_{-0.724}$
	+3%/-3%	+4%/-5%	+68%/-68%	+27%/-18%	+16%/-6%	+83%/-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 004933476-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1226 ± 97	$4.69^{+4.11}_{-3.11}$	337^{+25}_{-20}	4985^{+3760}_{-1025}	$31011^{+237387}_{-21891}$
Alt.	-750 ± 87	$4.62^{+4.29}_{-2.97}$	337^{+28}_{-20}	4588^{+3012}_{-960}	$19968^{+135644}_{-14722}$

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 $A_{obs} \gg 1.0$

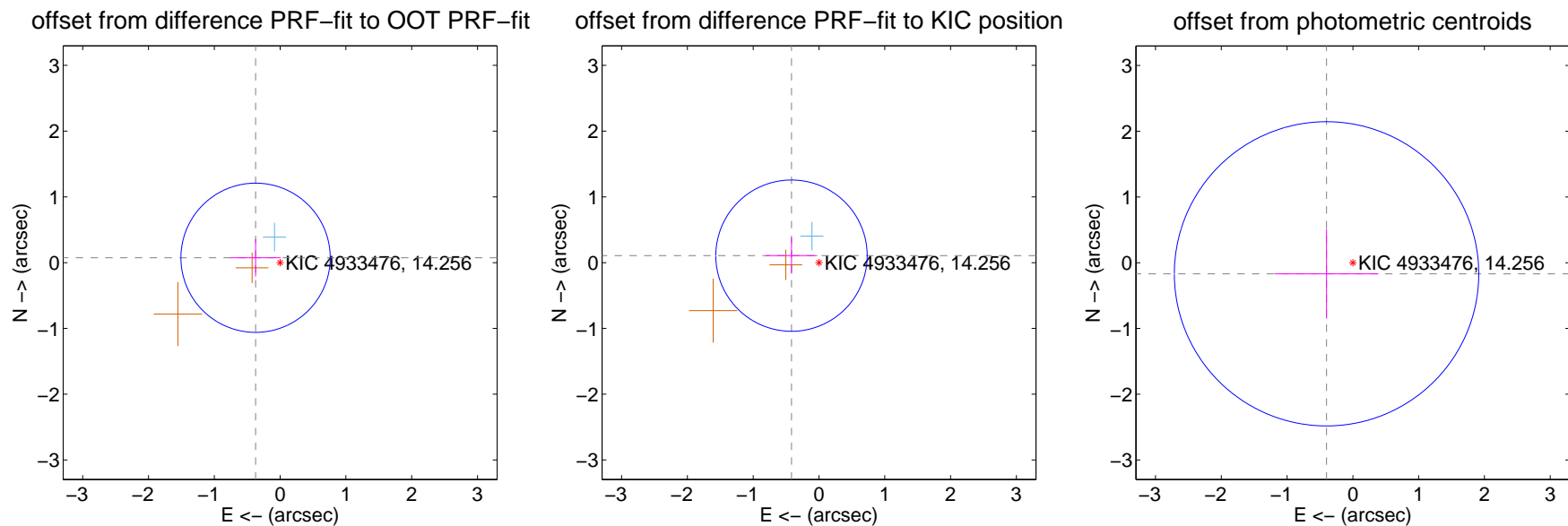
DV Centroid Data

Supplemental centroid analysis for 004933476-03. Kepler magnitude: 14.26. Transit SNR 6.55

There are 1 quarters with good PRF difference image offsets

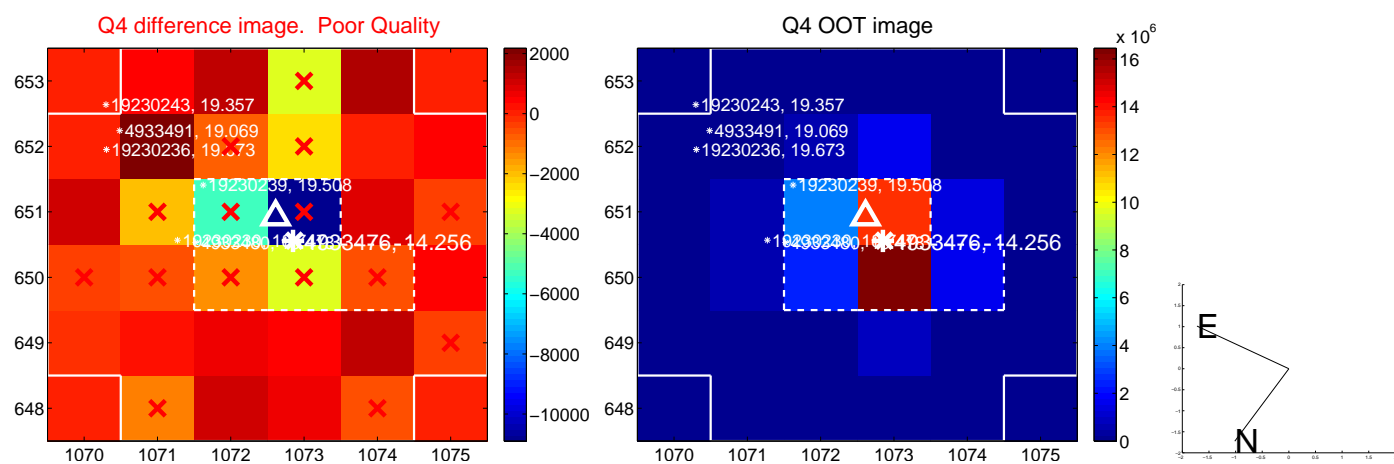
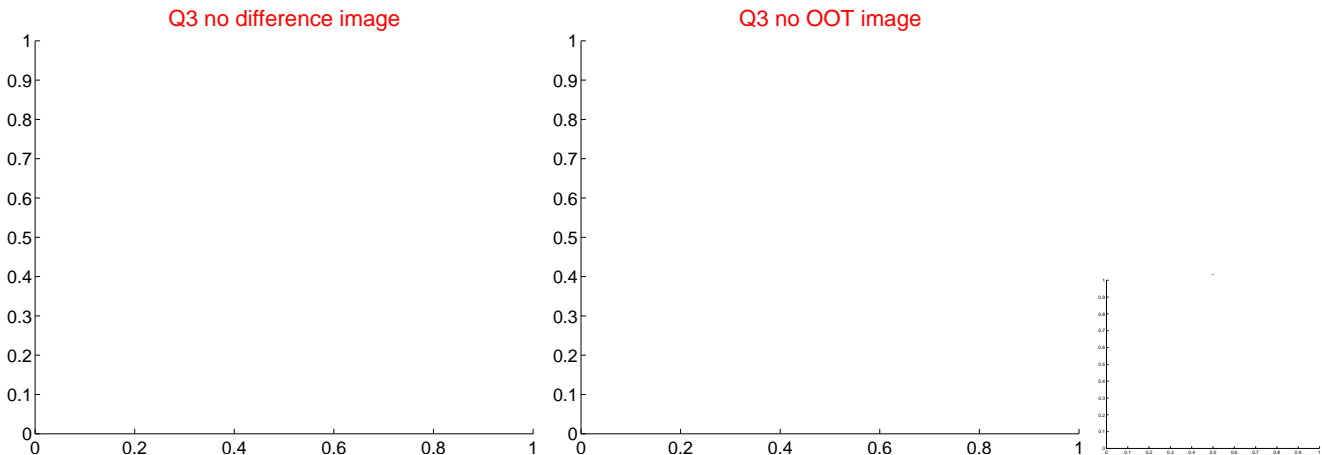
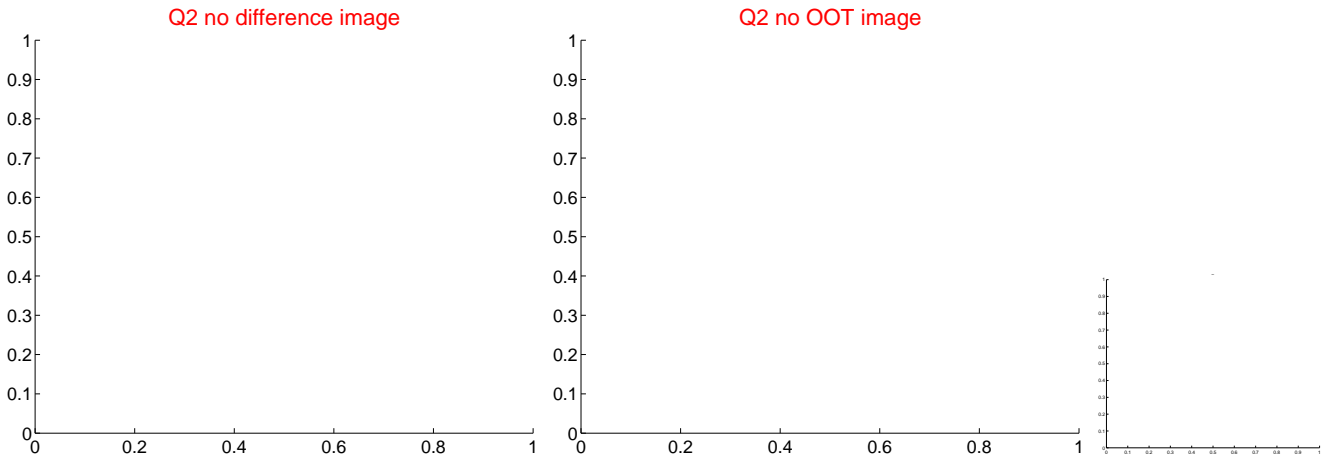
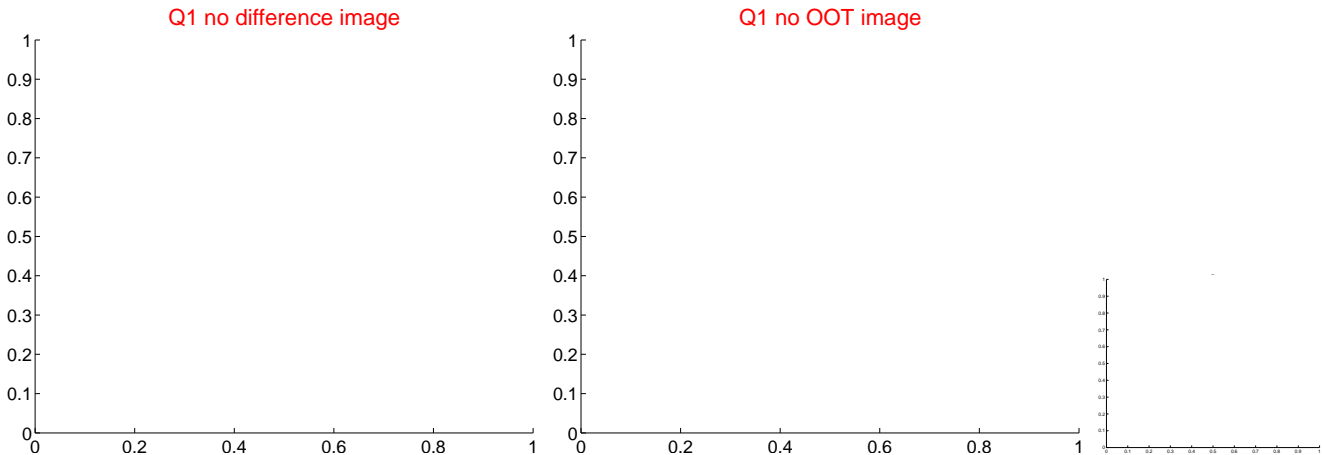
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.380 ± 0.378	1.01	0.373 ± 0.381	0.074 ± 0.286
PRF-fit source offset from KIC position	0.431 ± 0.383	1.12	0.418 ± 0.389	0.106 ± 0.274
photometric centroid source offset	0.43 ± 0.77	0.56	0.40 ± 0.79	-0.17 ± 0.68

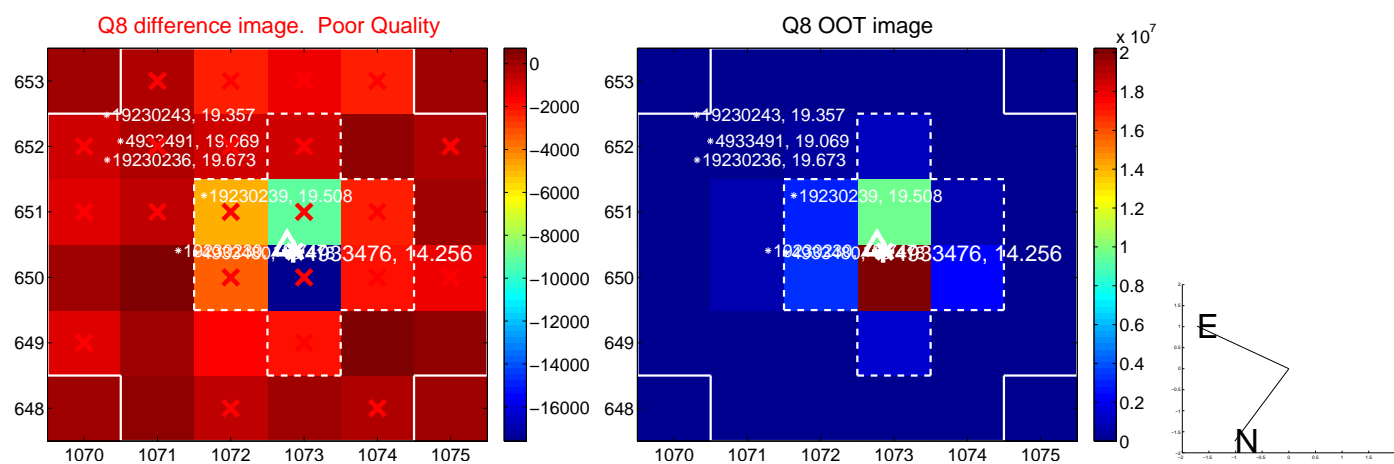
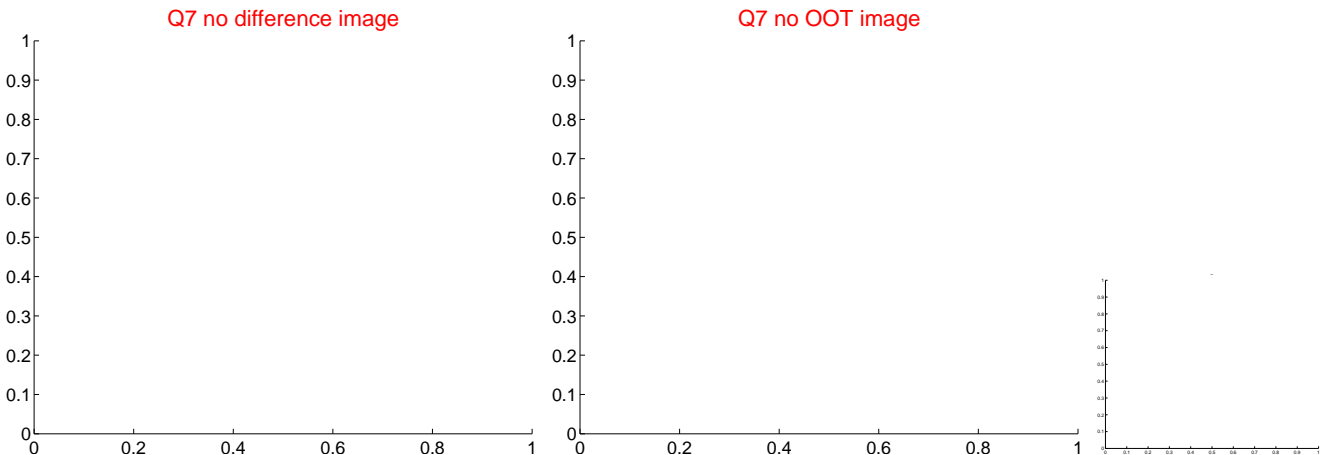
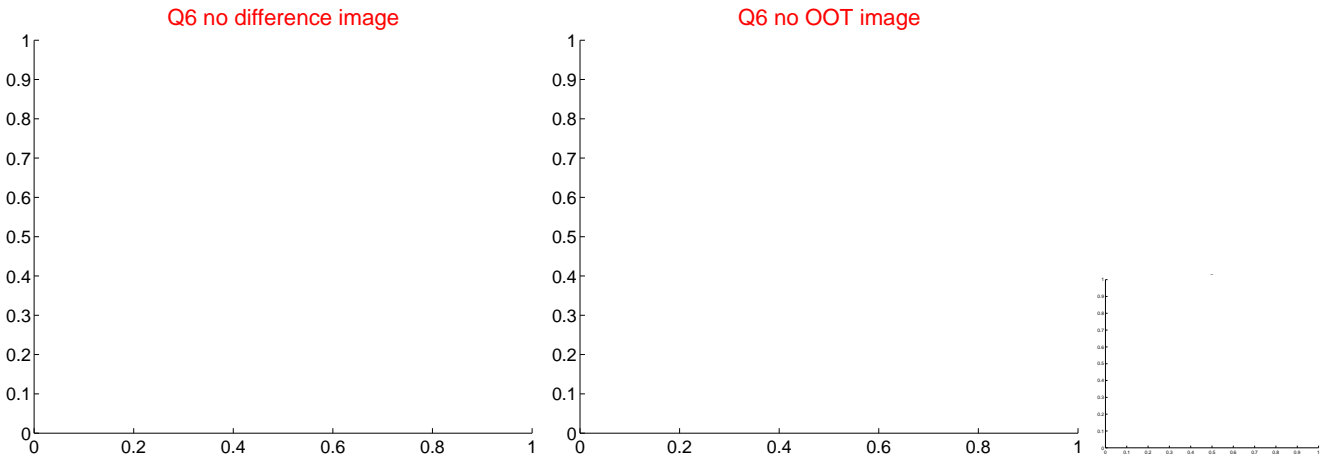
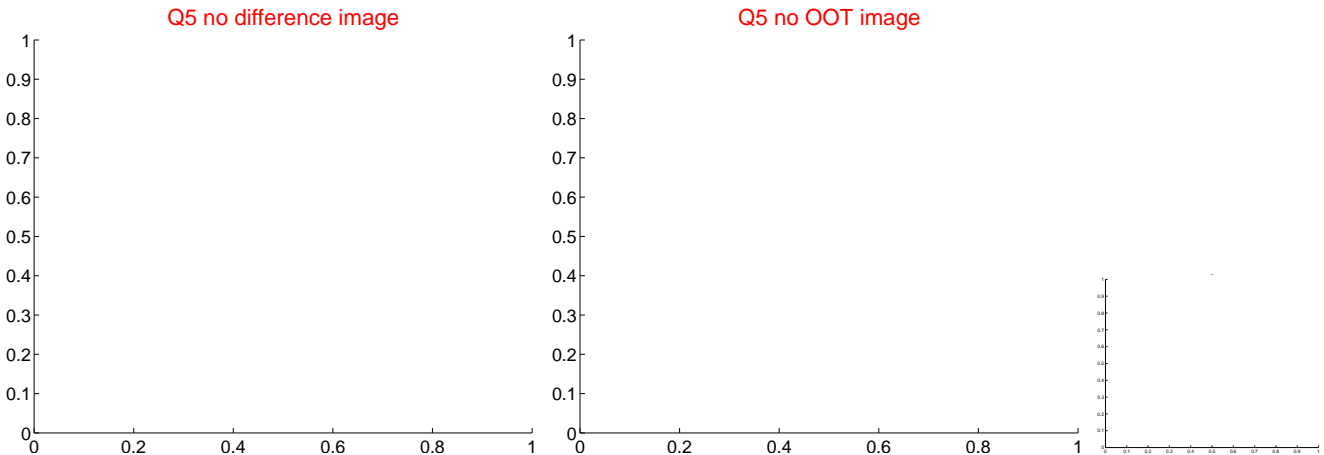


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

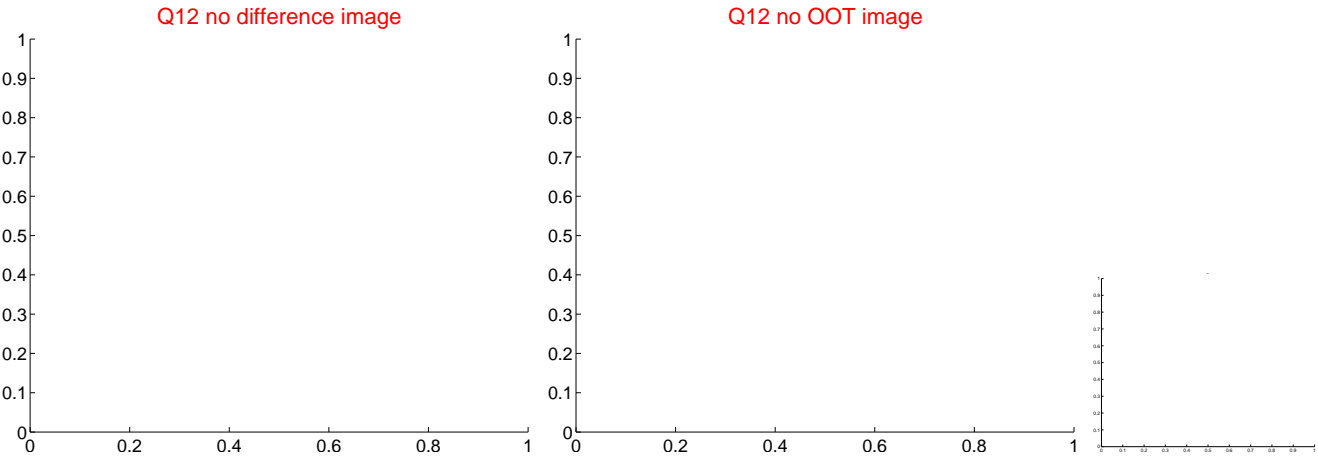
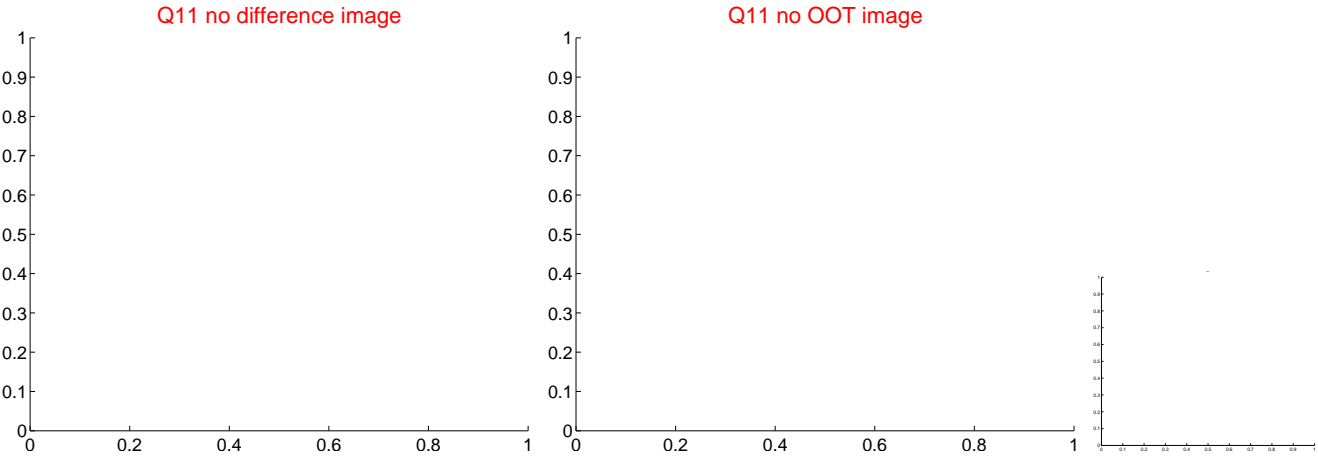
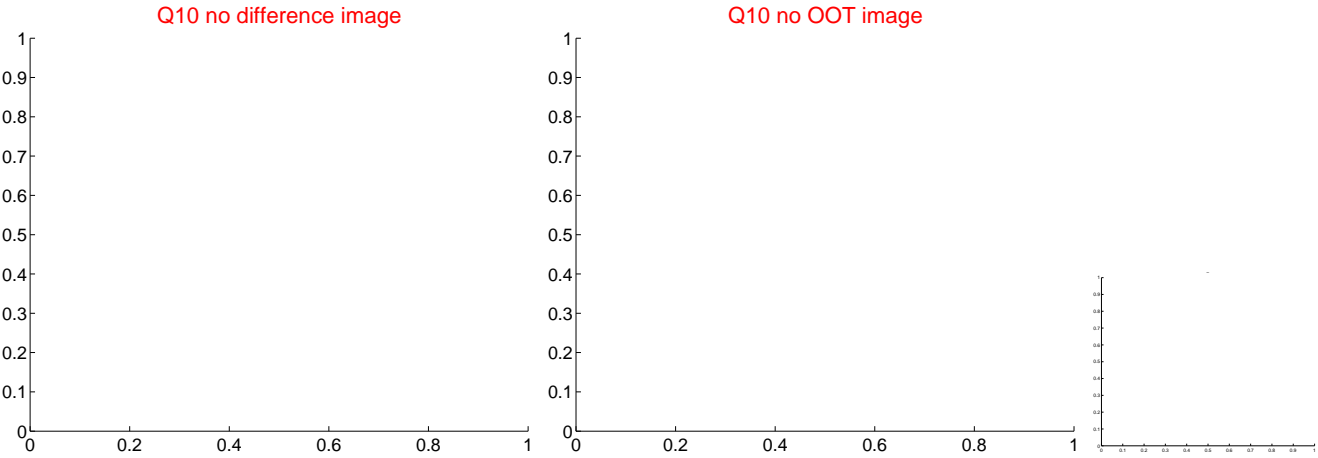
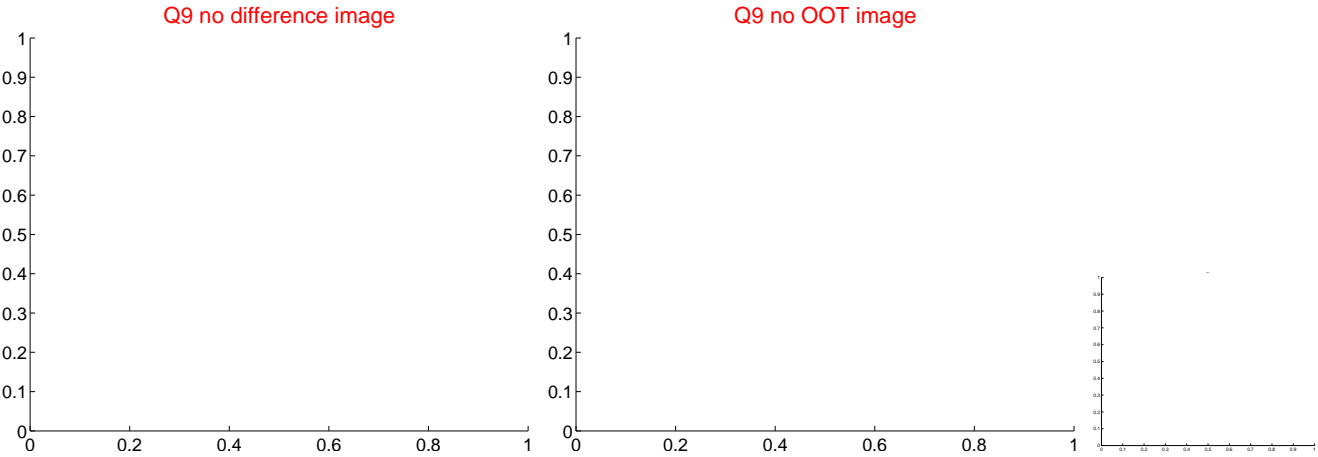
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



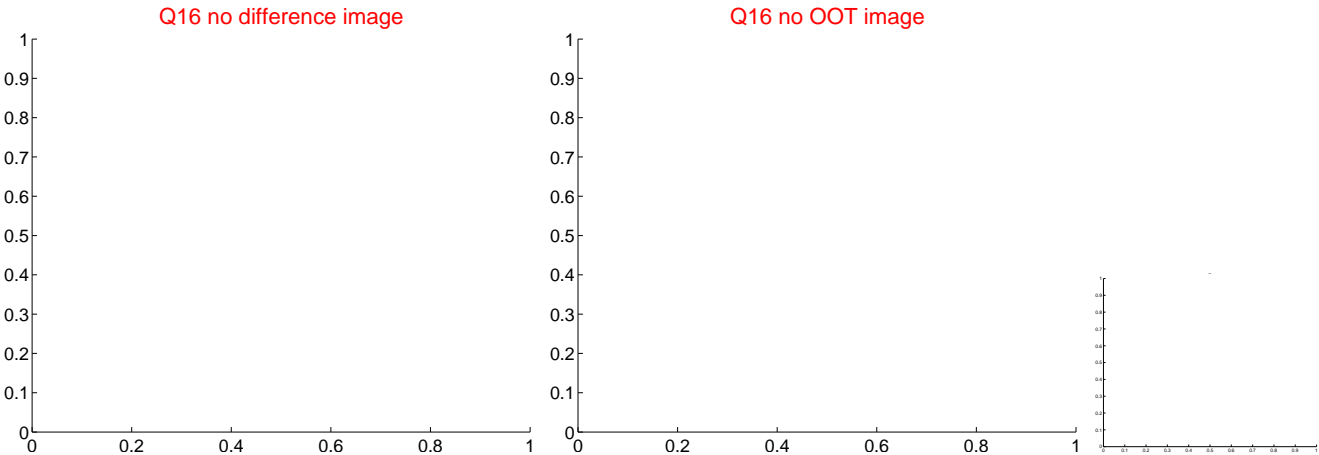
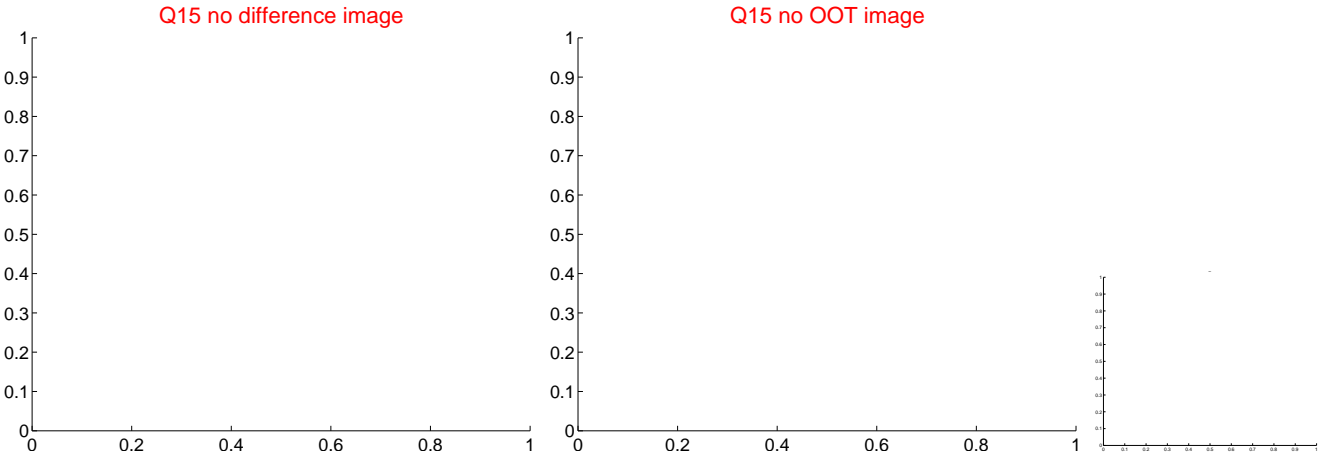
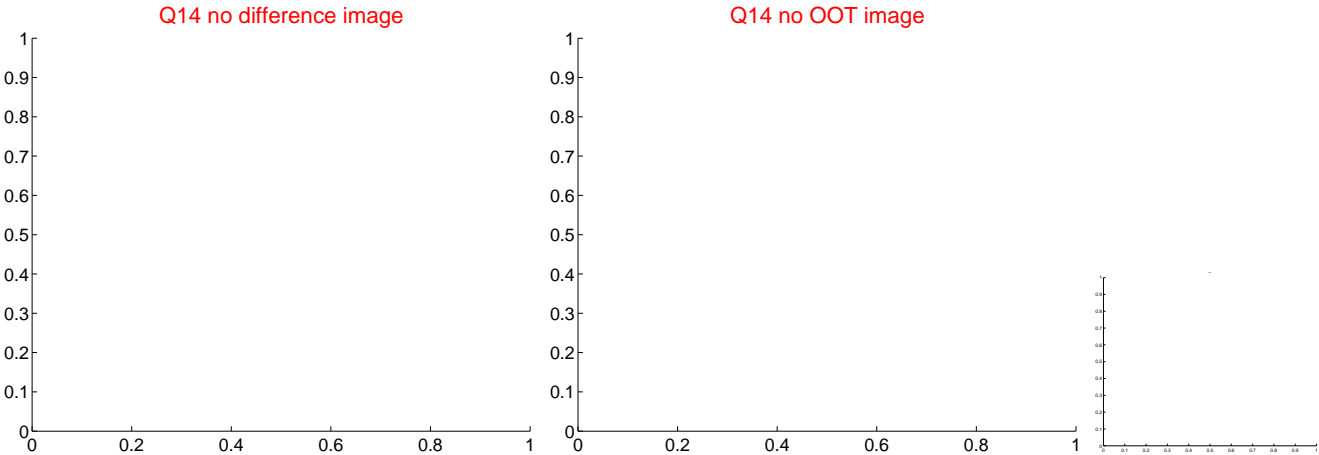
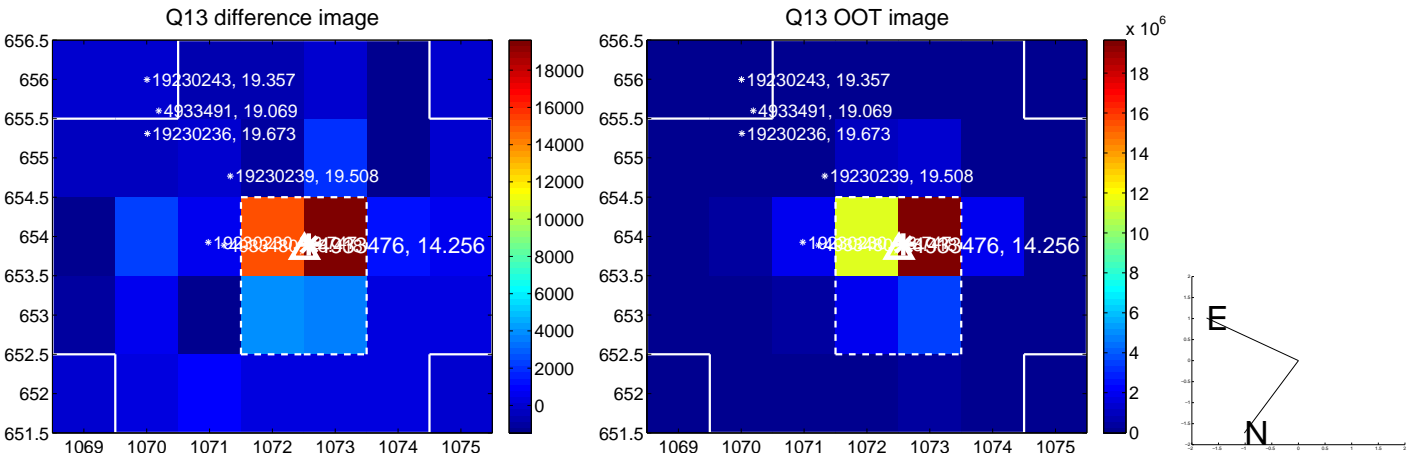
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



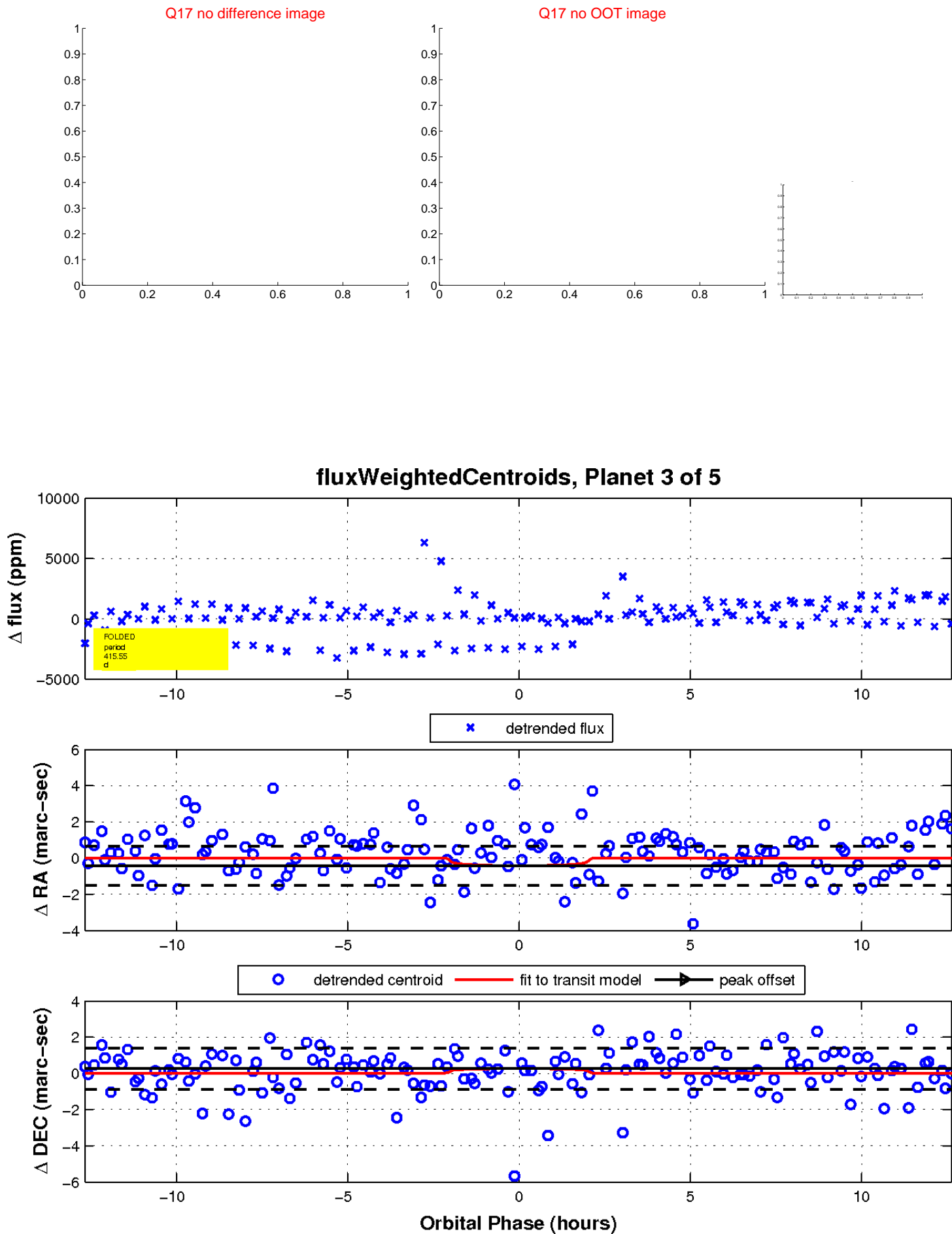
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



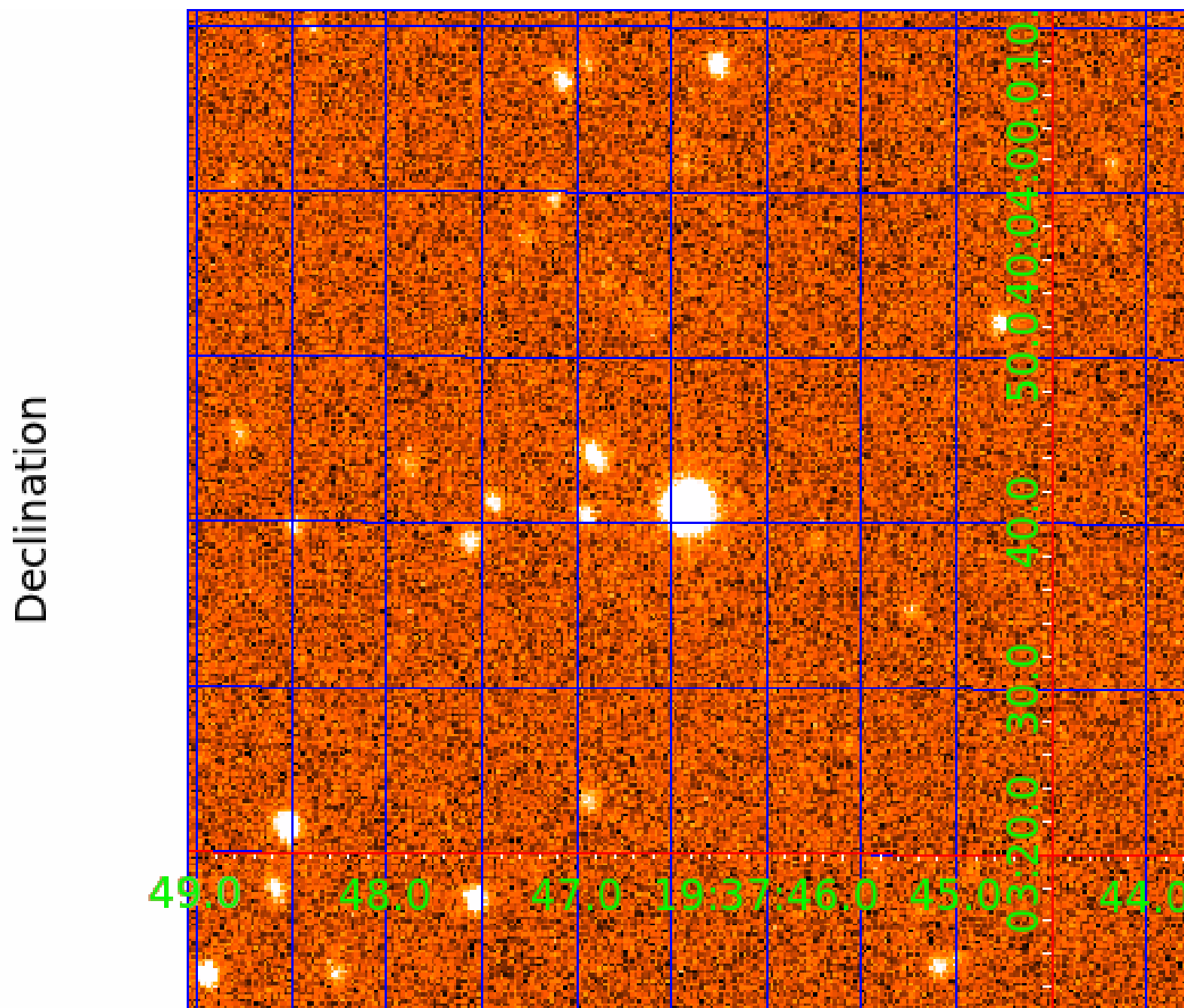
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004933476

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})
004933476-01	OBS	No	340.027188	337.979549	984.5	5.263	13.6	6.1	0.93	5650	2.94	1.02
004933476-02	OBS	6122.01	2.572423	133.157314	157.9	1.724	12.7	13.8	0.93	5650	1.37	690.30
004933476-03	OBS	No	415.549845	357.191772	1088.6	4.257	13.8	6.6	0.93	5650	3.12	0.79
004933476-05	OBS	No	186.647172	174.069568	1313.2	6.401	11.1	7.8	0.93	5650	3.68	2.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004933476-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004933476-02	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
004933476-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004933476-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

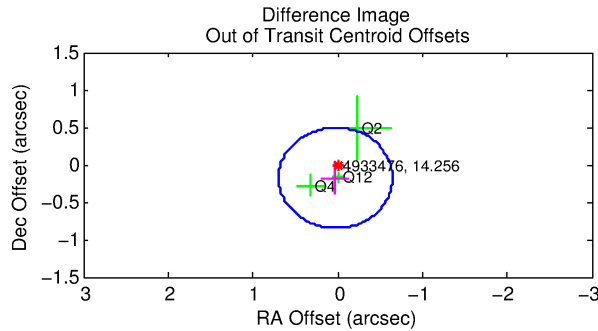
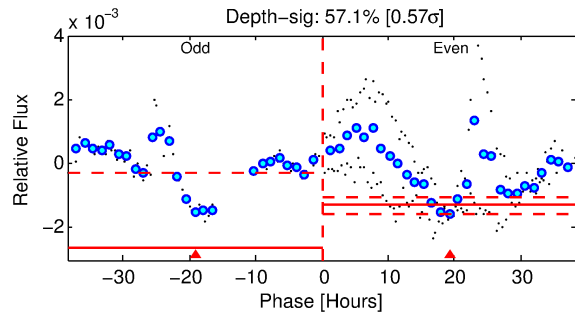
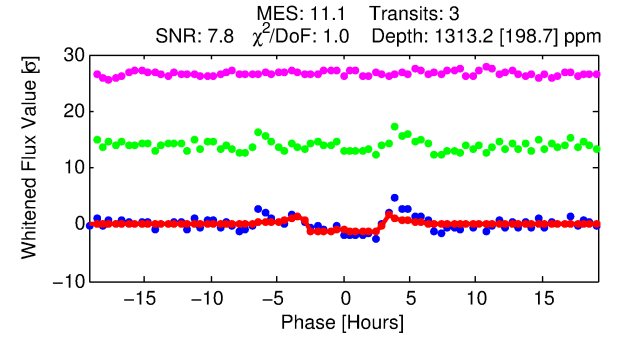
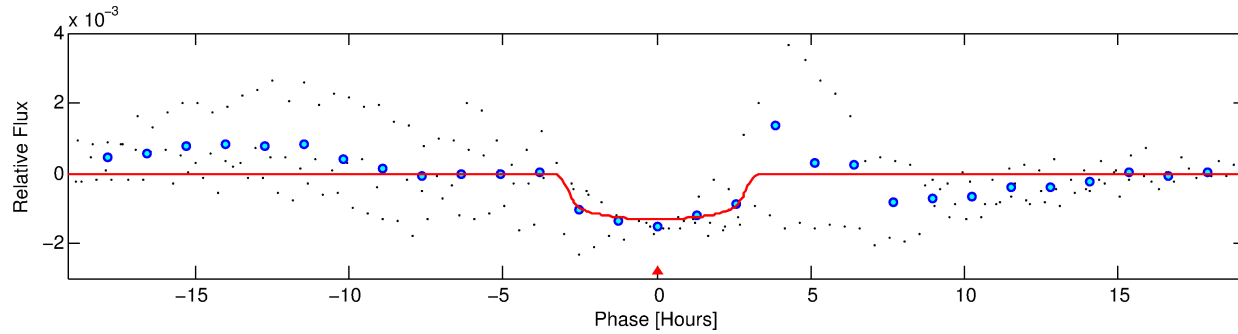
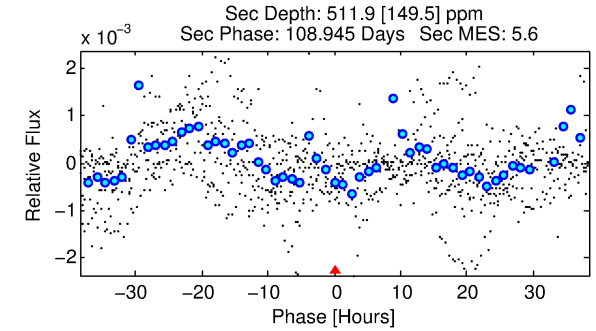
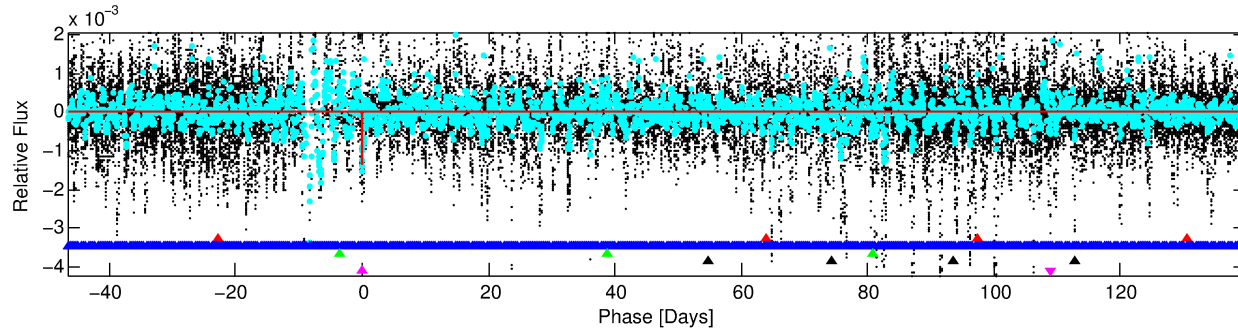
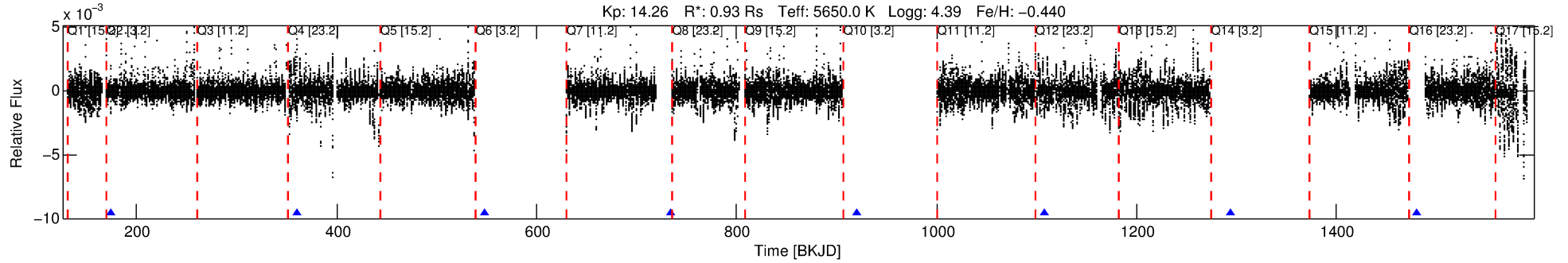
Ephemeris Match Information For 004933476-05

No Significant Match Found

DV One-Page Summary

KIC: 4933476 Candidate: 5 of 5 Period: 186.647 d
KOI: K06122 Corr: No Ephemeris Match

Kp: 14.26 R*: 0.93 Rs Teff: 5650.0 K Logg: 4.39 Fe/H: -0.440



DV Fit Results:

Period = 186.64717 [0.00195] d
Epoch = 174.0696 [0.0059] BKJD
Rp/R* = 0.0365 [0.0053]
a/R* = 152.81 [72.47]
b = 0.78 [0.24]
Seff = 2.28 [0.87]
Teq = 313 [30] K
Rp = 3.68 [1.13] Re
a = 0.5858 [0.1404] AU
Ag = 7124.92 [3900.64] [1.83σ]
Teffp = 4451 [476] K [8.67σ]

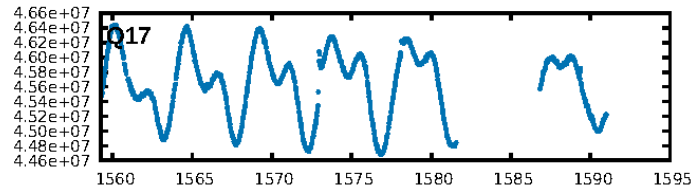
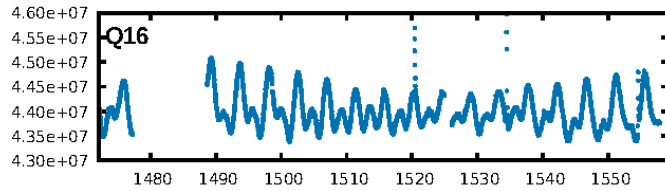
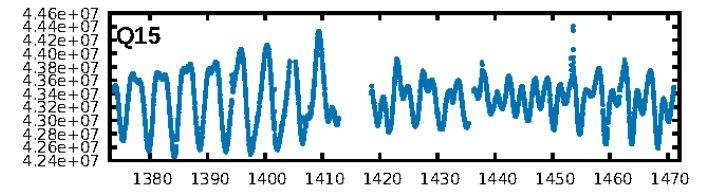
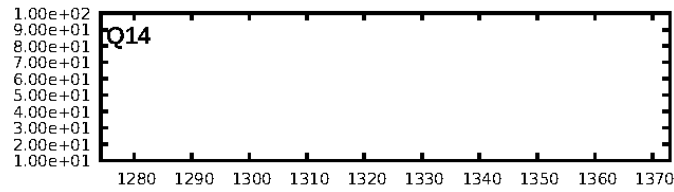
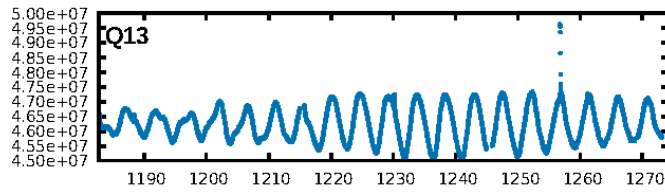
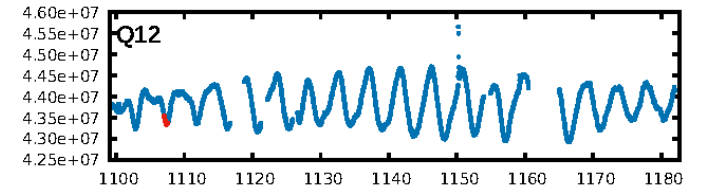
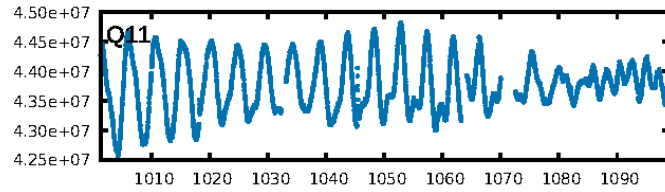
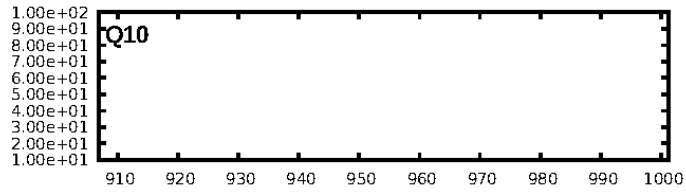
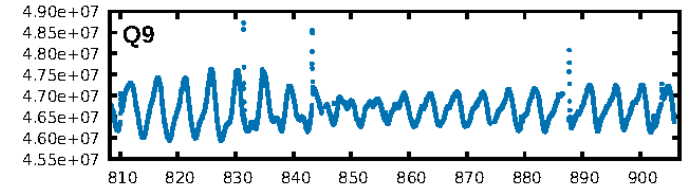
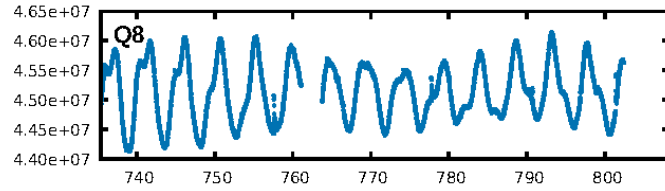
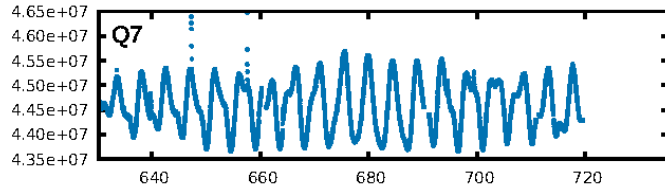
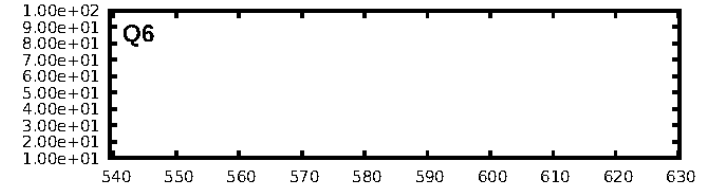
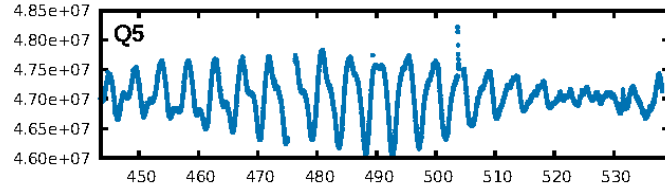
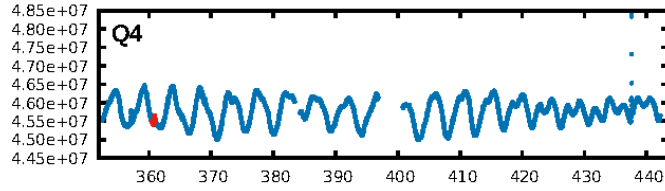
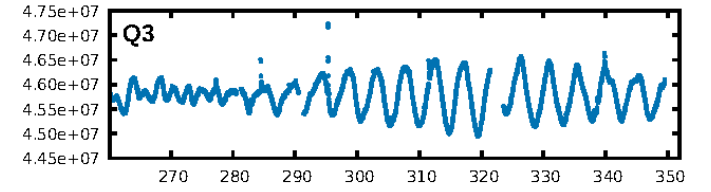
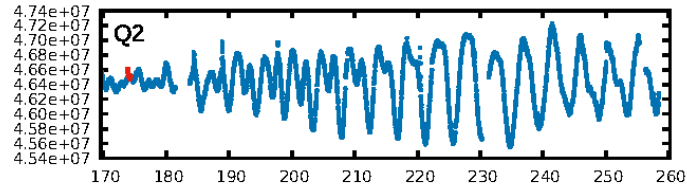
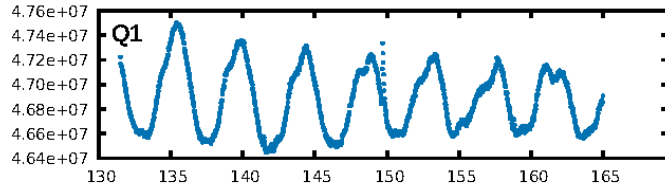
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [666.46σ]
LongPeriod-sig: 100.0% [444.24σ]
ModelChiSquare2-sig: 4.5%
ModelChiSquareGof-sig: 92.2%
Bootstrap-pfa: 5.11e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.389
Centroid-sig: 26.4%
Centroid-so: 0.666 arcsec [1.10σ]
OotOffset-rm: 0.179 arcsec [0.80σ]
KicOffset-rm: 0.139 arcsec [0.74σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

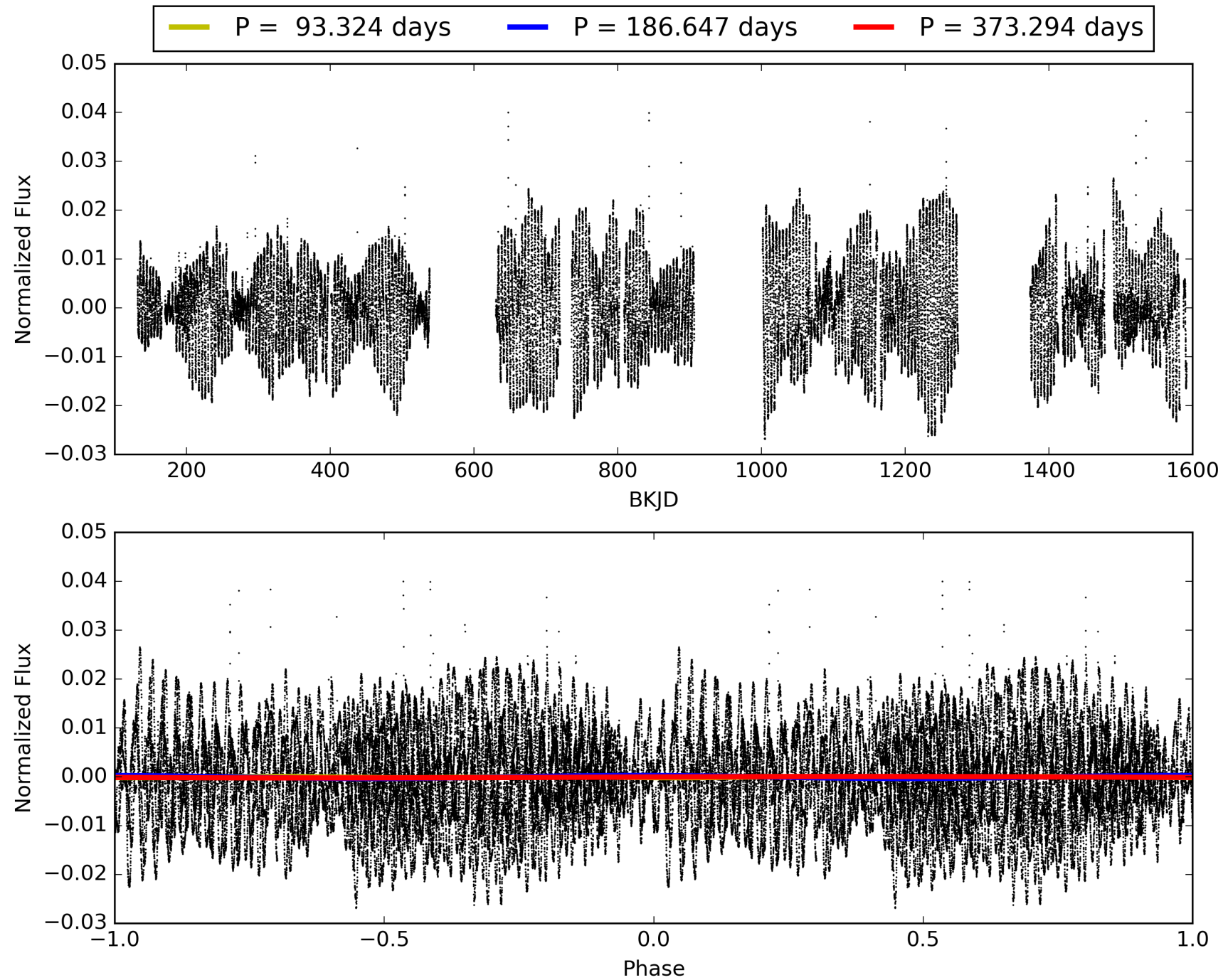
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:09:39 Z

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

TCE 004933476-05, PDC Light Curves

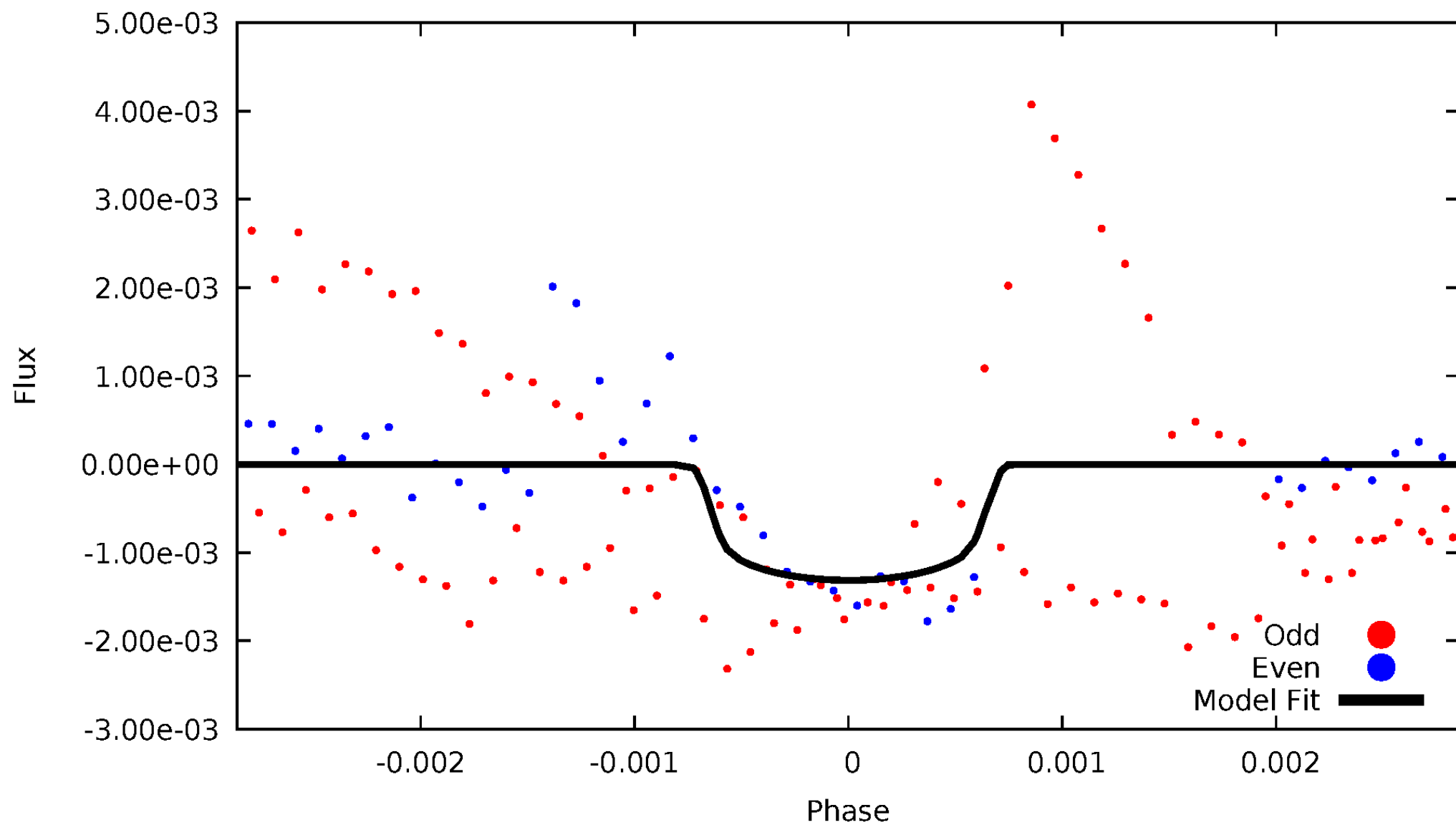


TCE 004933476-05



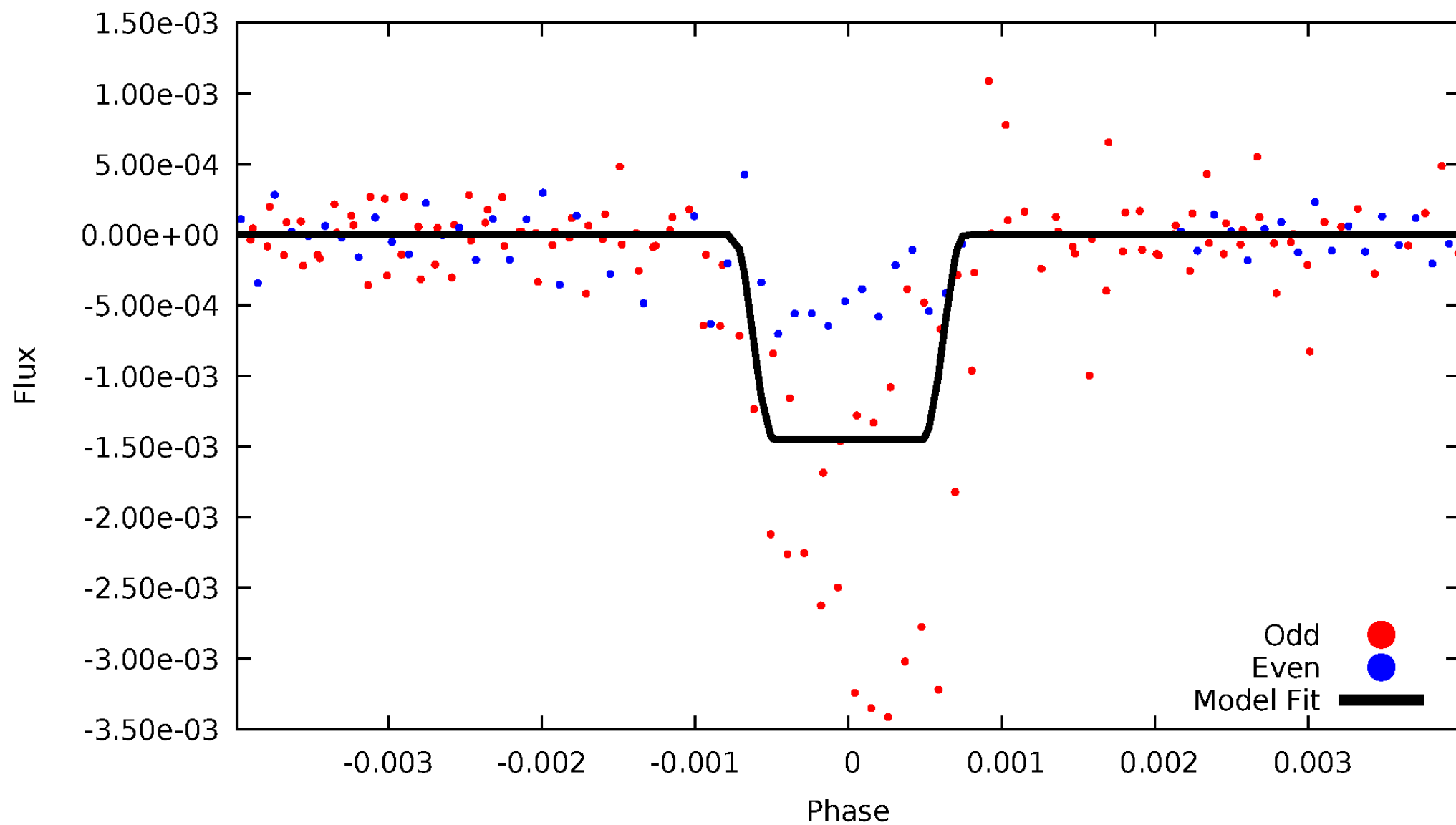
DV Odd/Even

TCE 004933476-05



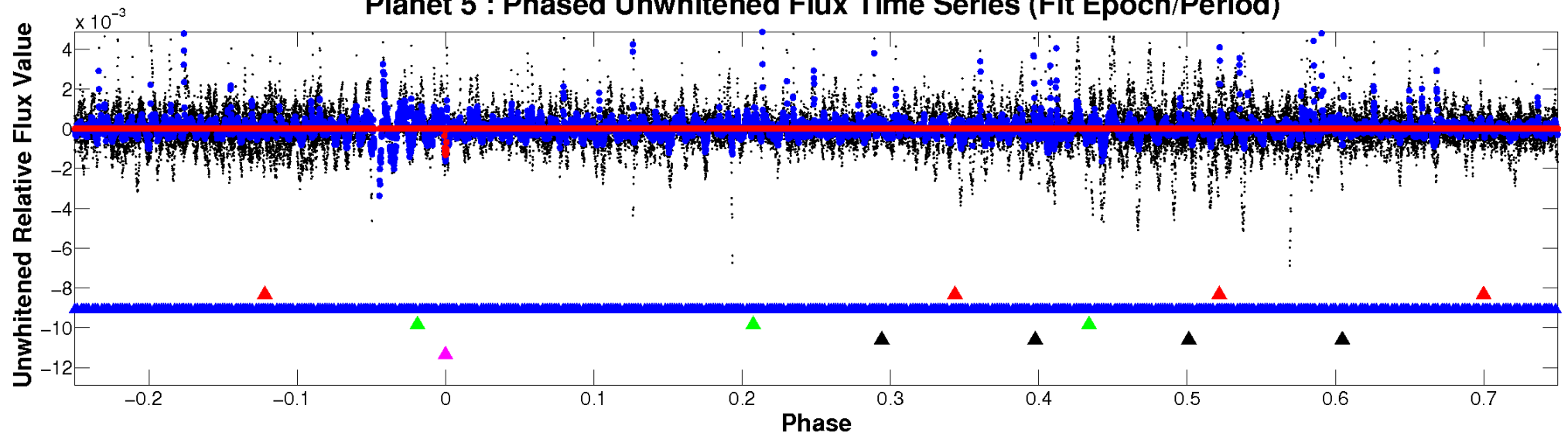
ALT Odd/Even

TCE 004933476-05

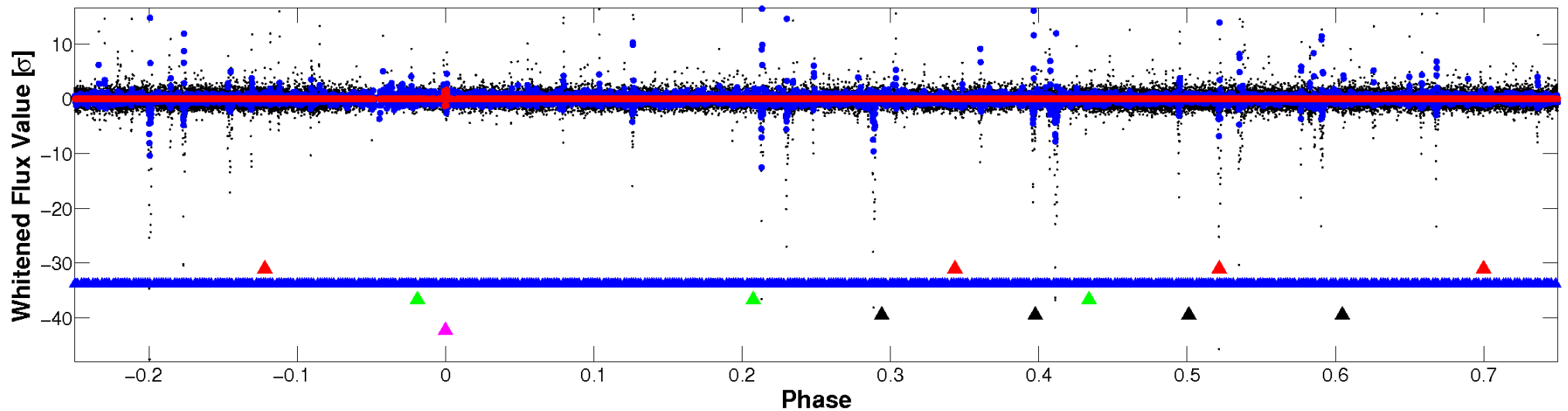


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

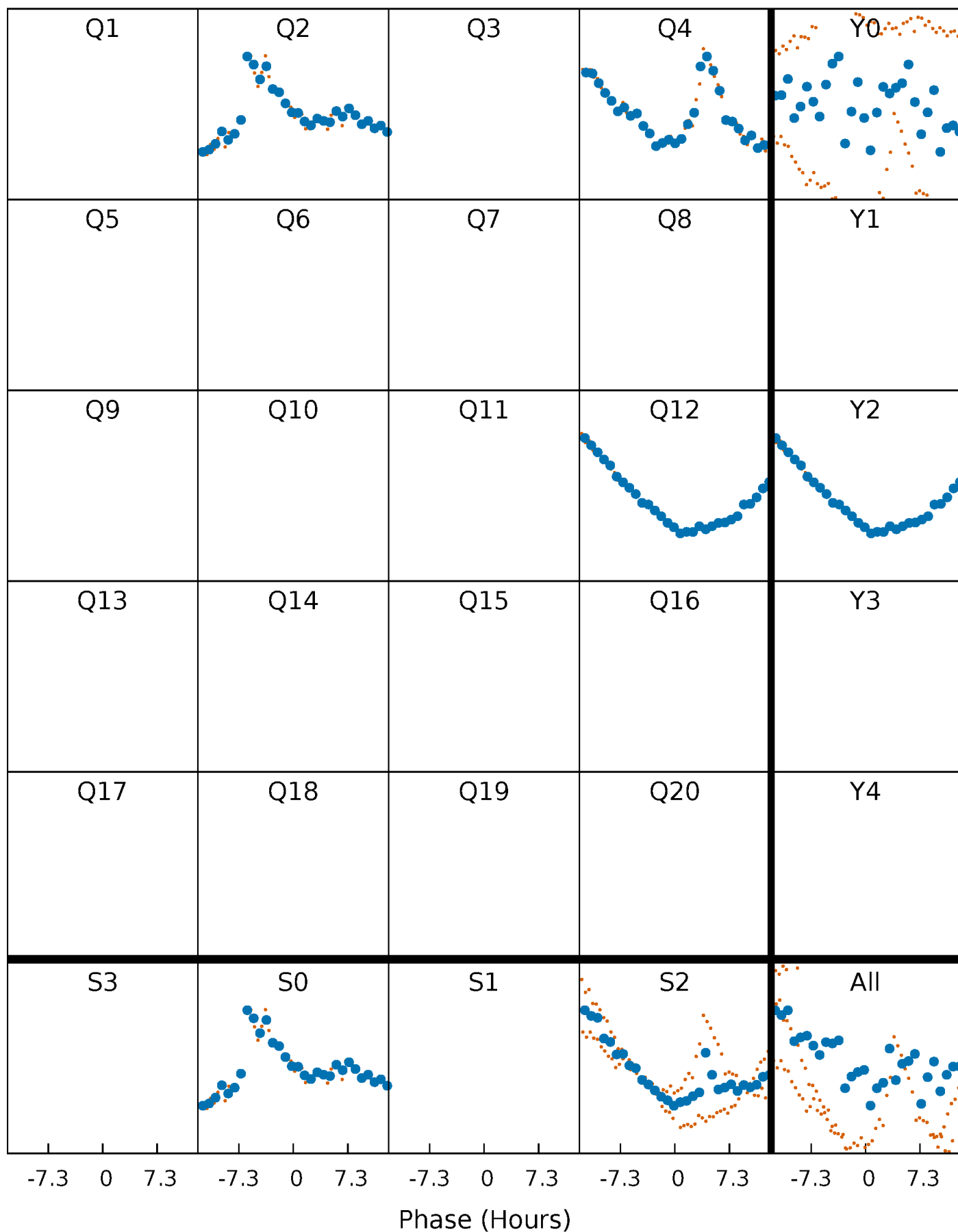


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



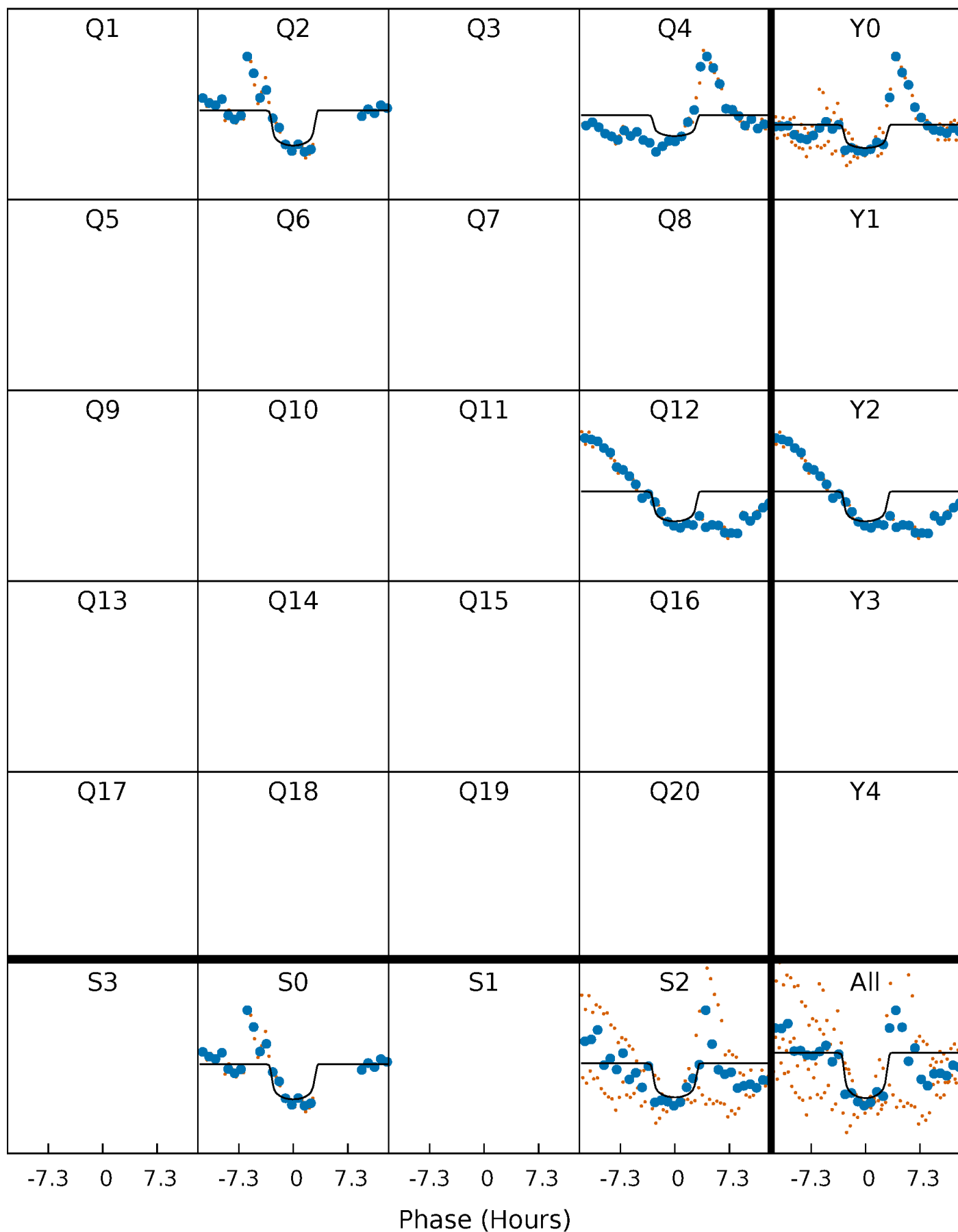
PDC Quarter-Phased Transit Curves

TCE 004933476-05 $P=186.647172$ Days $T_0=174.069568$ (BKJD)



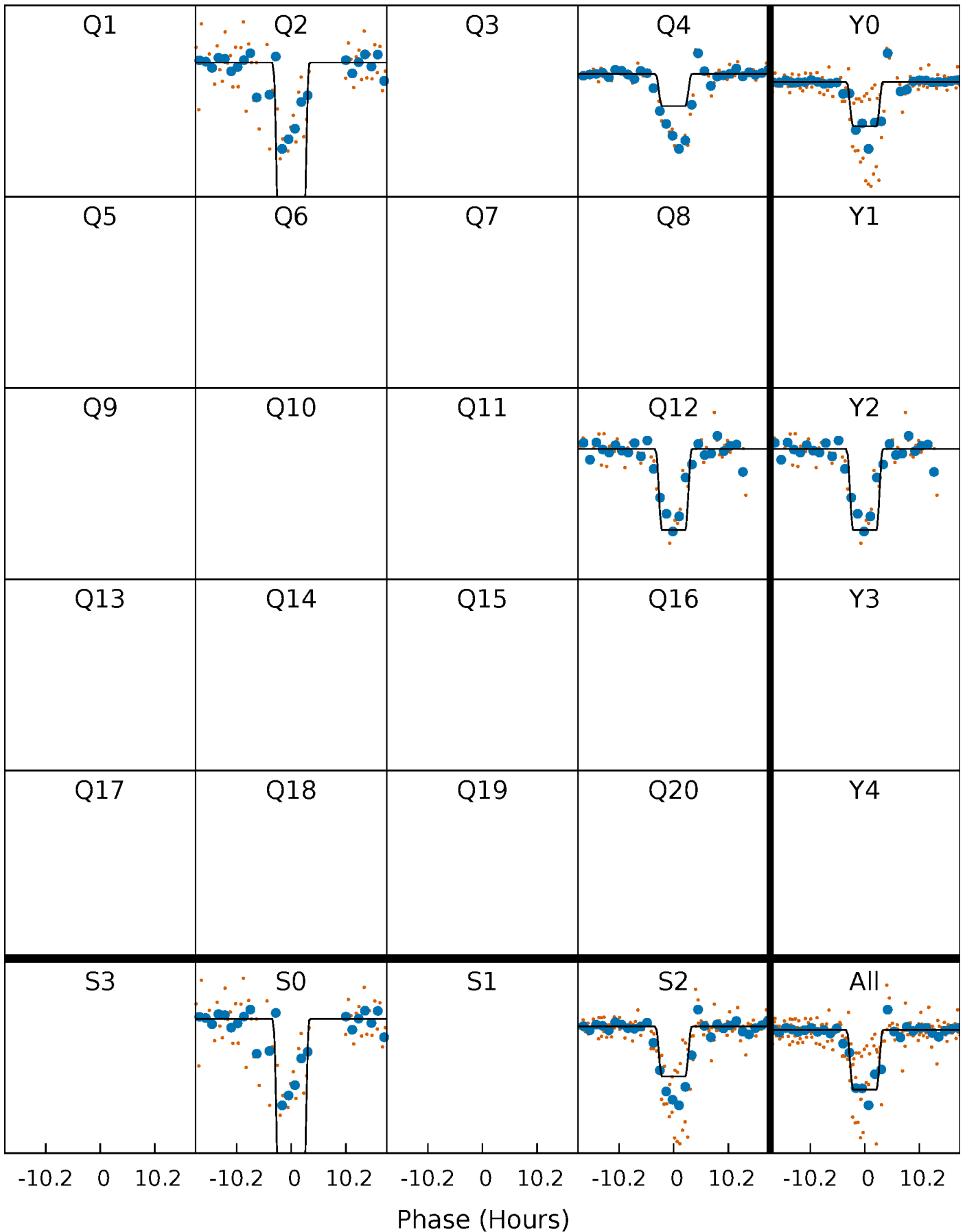
DV Quarter-Phased Transit Curves

TCE 004933476-05 $P=186.647172$ Days $T_0=174.069568$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

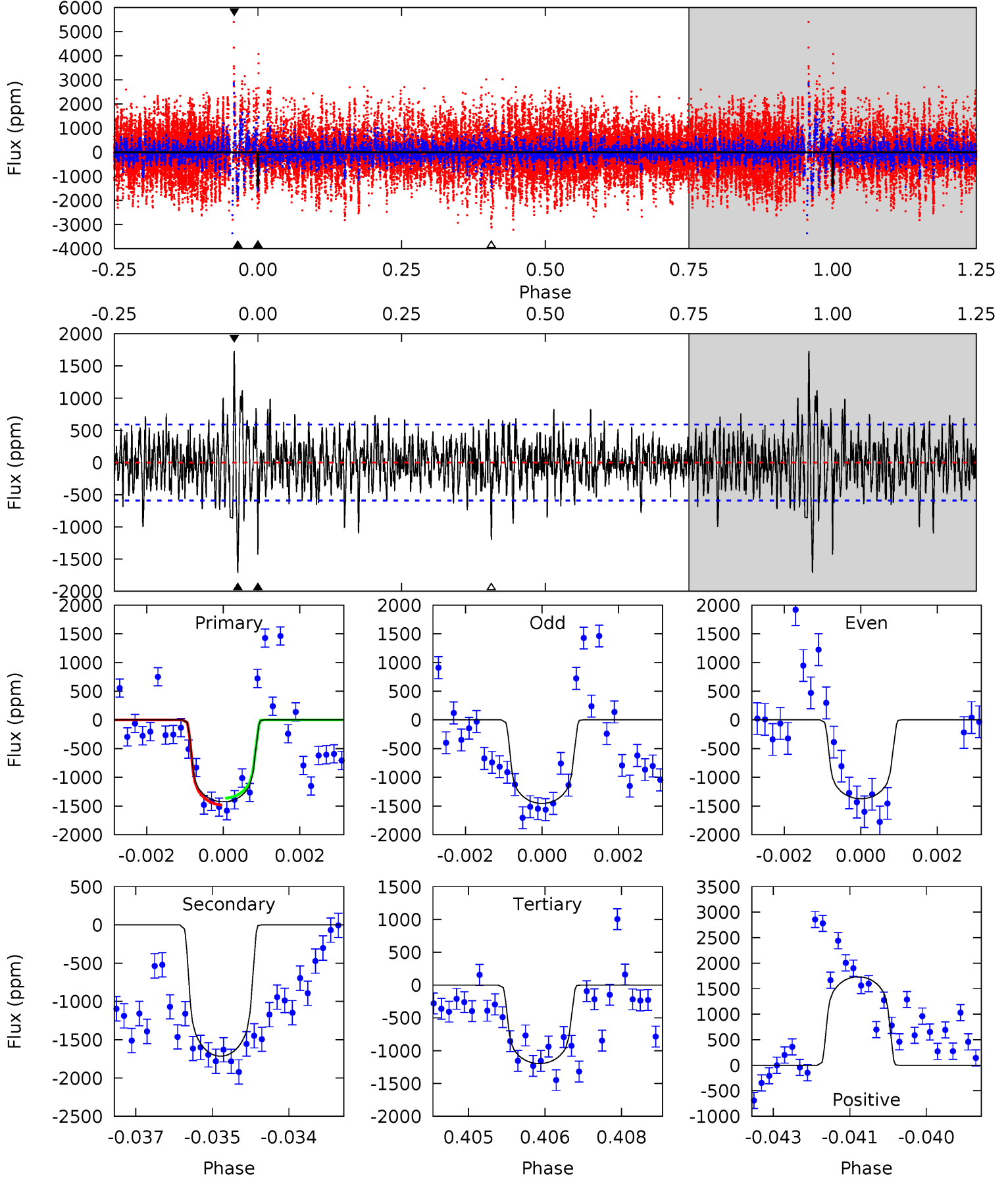
TCE 004933476-05 $P=186.665318$ Days $T_0=174.040251$ (BKJD)



DV Model-Shift Uniqueness Test

004933476-05, P = 186.647172 Days, E = 174.069568 Days

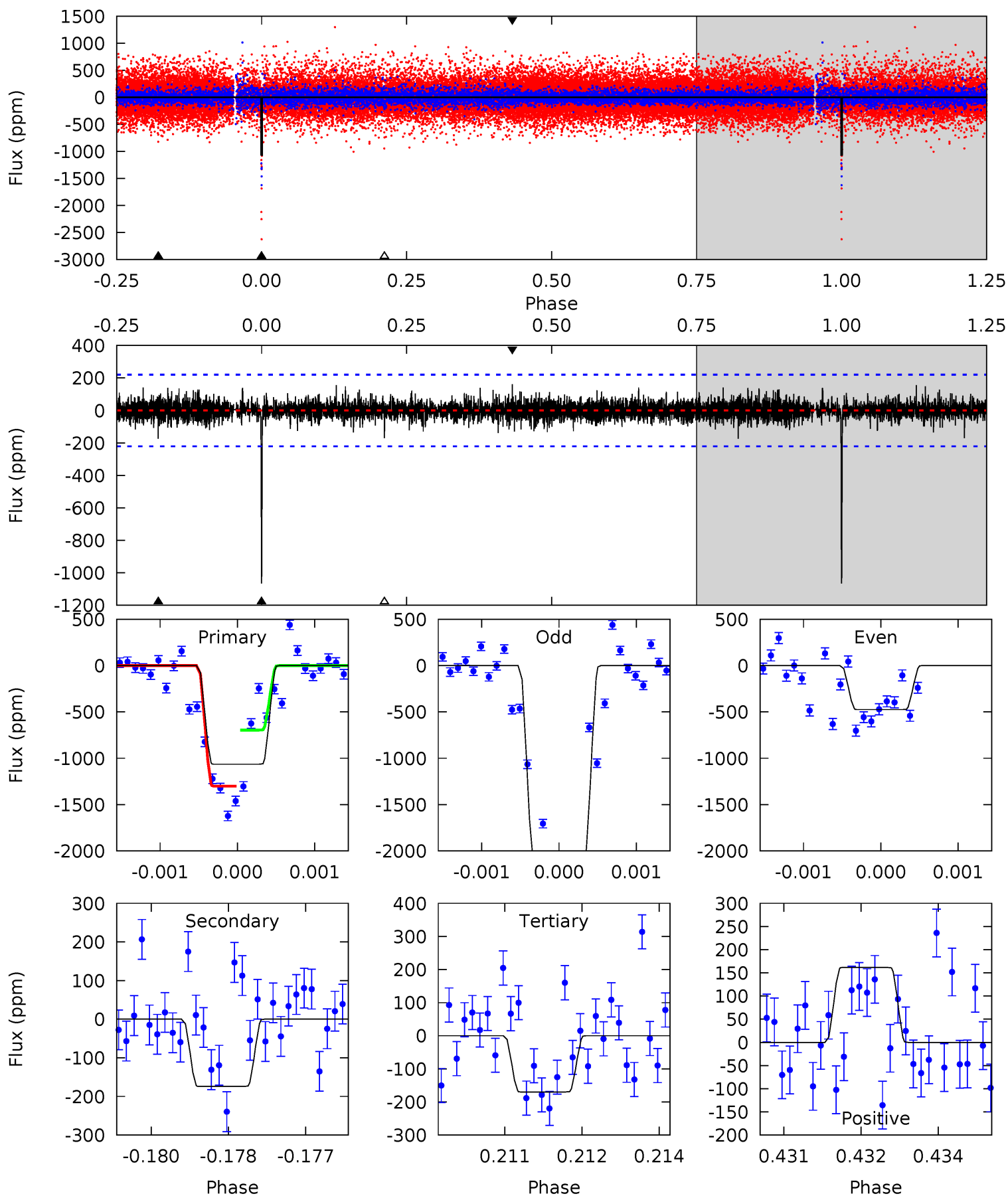
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	15.6	10.9	15.8	5.37	3.17	2.62	2.10	-2.78	4.71	-0.17	0.33	0.99	0.50	0.54



Alt Model-Shift Uniqueness Test

004933476-05, P = 186.665318 Days, E = 174.040251 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.9	4.24	4.13	3.93	5.38	3.18	0.87	21.8	22.0	0.11	0.30	22.2	1.34	0.13	7.50



Stellar Parameters For KIC 004933476

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5650^{+169}_{-152}	$4.391^{+0.167}_{-0.204}$	$-0.440^{+0.300}_{-0.300}$	$0.926^{+0.252}_{-0.168}$	$0.770^{+0.124}_{-0.044}$	$1.365^{+1.134}_{-0.724}$
	+3%/-3%	+4%/-5%	+68%/-68%	+27%/-18%	+16%/-6%	+83%/-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 004933476-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1715 ± 110	$3.71^{+0.78}_{-0.68}$	440^{+32}_{-26}	6044^{+545}_{-429}	24072^{+12096}_{-7774}
Alt.	-174 ± 41	$3.86^{+0.91}_{-0.61}$	439^{+35}_{-29}	3726^{+266}_{-235}	2199^{+1216}_{-863}

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 $A_{obs} \gg 1.0$

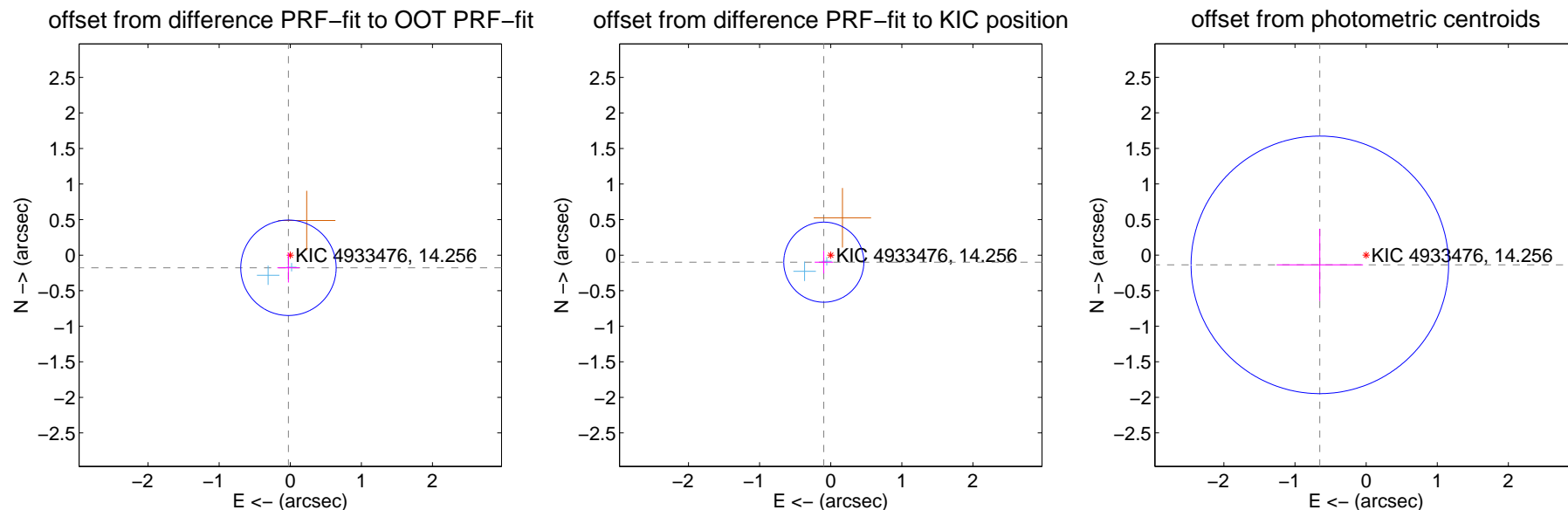
DV Centroid Data

Supplemental centroid analysis for 004933476-05. Kepler magnitude: 14.26. Transit SNR 7.79

There are 2 quarters with good PRF difference image offsets

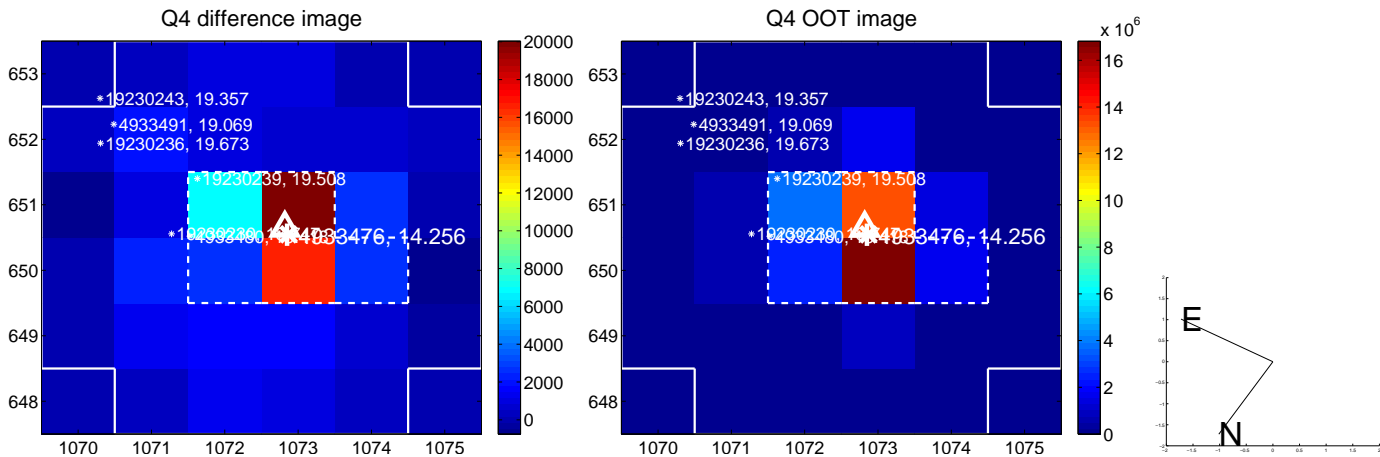
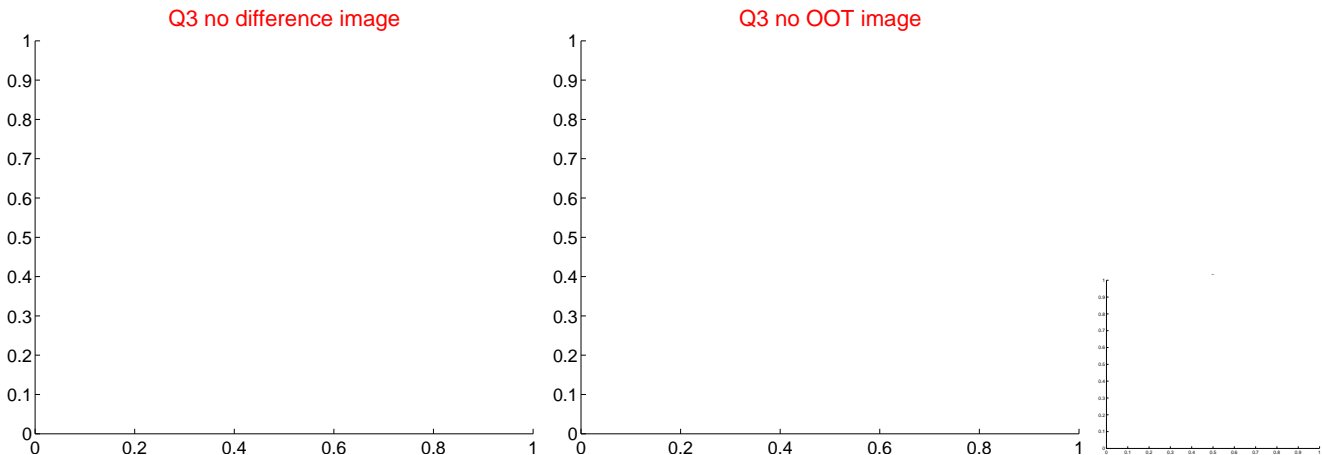
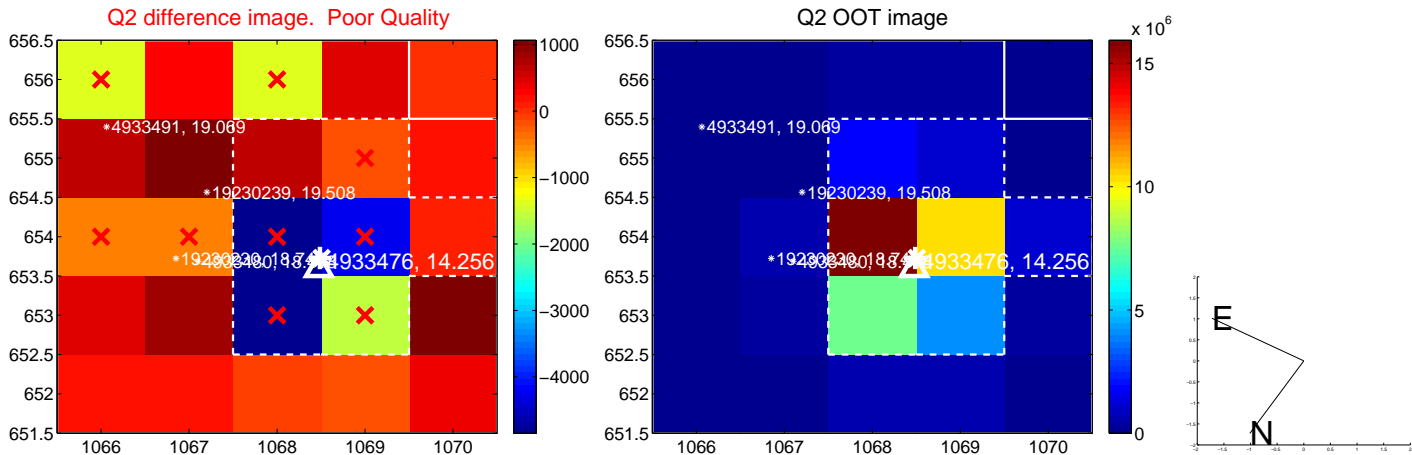
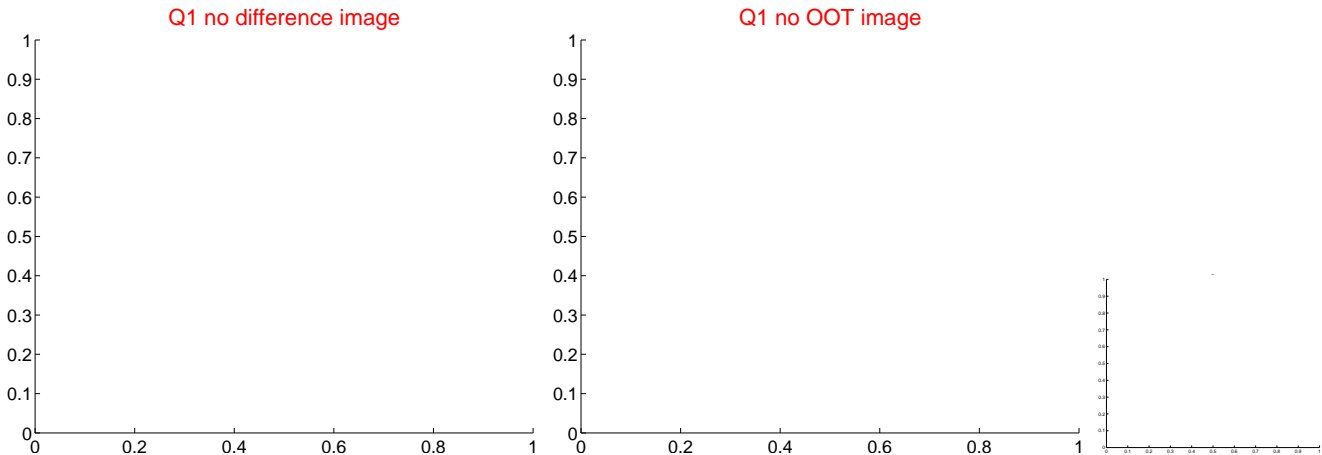
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.179 ± 0.224	0.80	0.025 ± 0.156	-0.177 ± 0.208
PRF-fit source offset from KIC position	0.139 ± 0.188	0.74	0.097 ± 0.129	-0.099 ± 0.159
photometric centroid source offset	0.67 ± 0.60	1.10	0.65 ± 0.61	-0.14 ± 0.51



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.

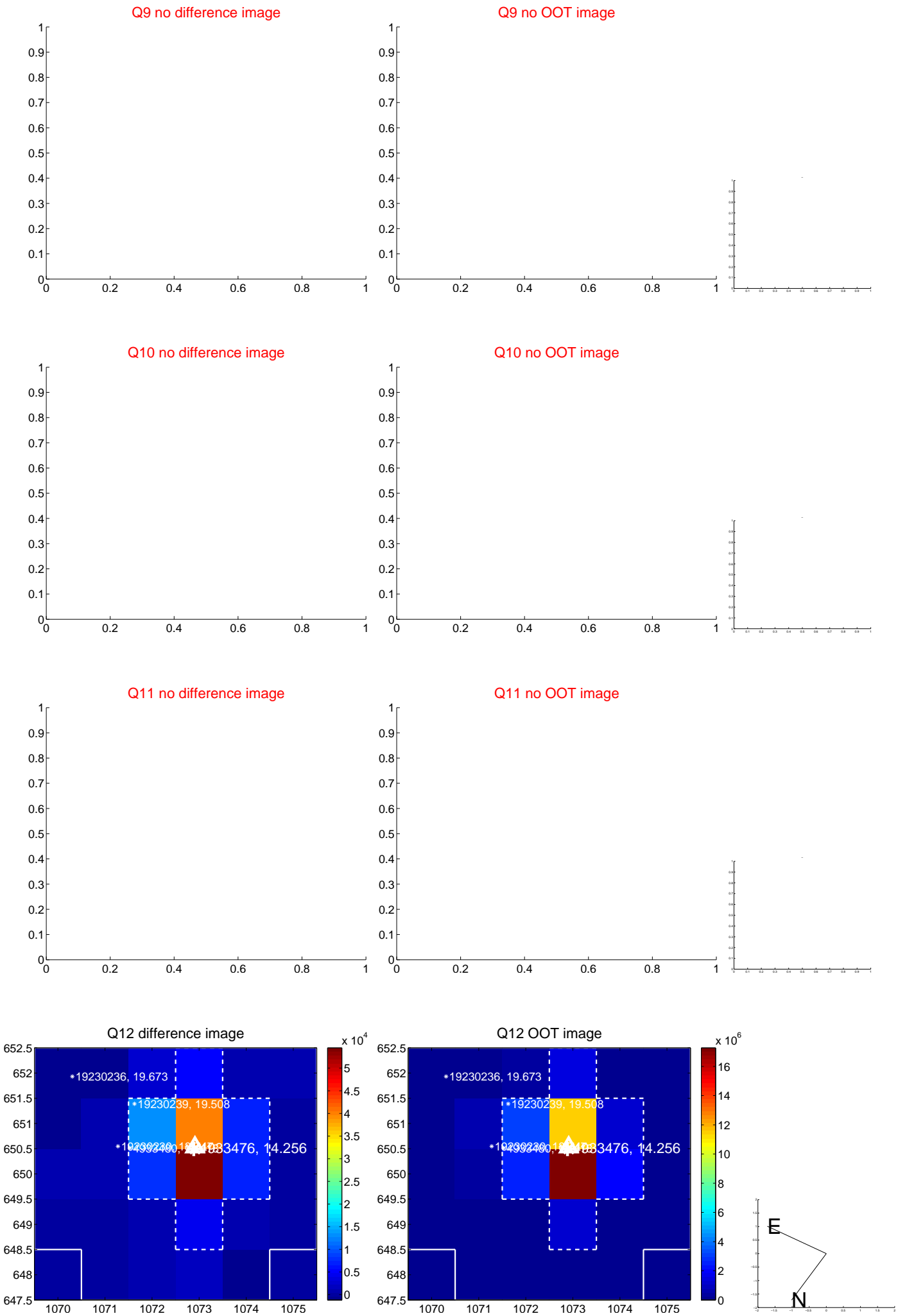
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



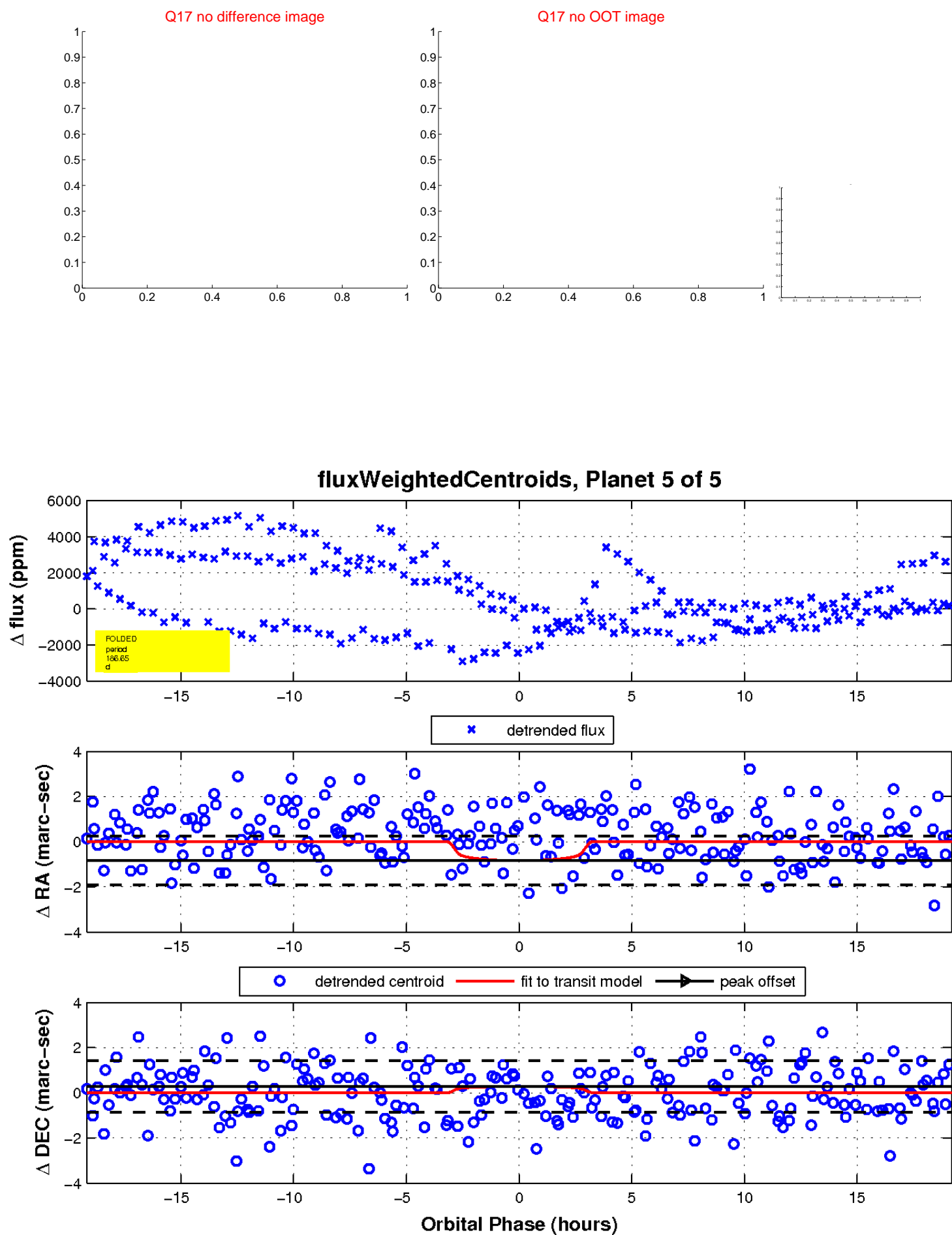
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

