

KIC 010909274

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})
010909274-01	OBS	7385.01	39.237869	148.654751	453738.2	3.500	44979.7	-1.0	1.23	6599	65.30	43.79
010909274-02	OBS	No	39.236842	155.230951	345050.7	12.000	28778.8	-1.0	1.23	6599	41.37	43.80
010909274-03	OBS	No	19.620723	148.593957	529.3	37.565	5258.6	34.9	1.23	6599	5.43	110.34
010909274-04	OBS	No	39.239282	156.324147	7594.1	10.500	1106.7	-1.0	1.23	6599	10.82	43.79
010909274-05	OBS	No	13.081122	141.266344	39.5	9.677	503.5	5.1	1.23	6599	0.89	189.45
010909274-06	OBS	No	39.238292	152.979854	2921.6	15.000	373.2	-1.0	1.23	6599	6.71	43.79
010909274-07	OBS	No	39.241582	157.475237	1576.7	15.000	251.8	-1.0	1.23	6599	4.93	43.79
010909274-08	OBS	No	39.232819	159.646855	4493.6	52.422	76.7	134.1	1.23	6599	14.89	43.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010909274-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
010909274-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010909274-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—RESIDUAL_TCE
010909274-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
010909274-06	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-07	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
010909274-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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 010909274-01

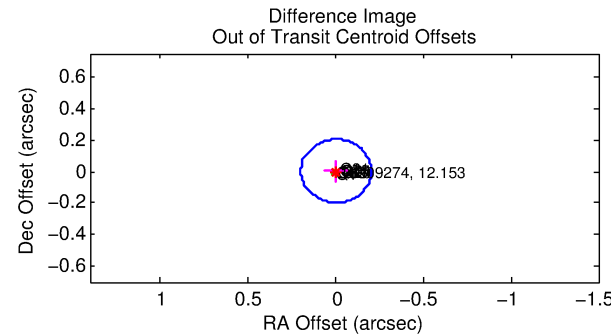
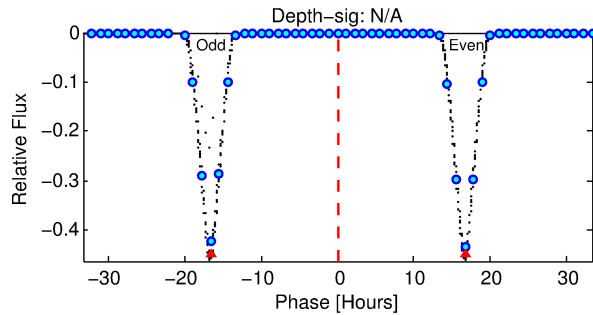
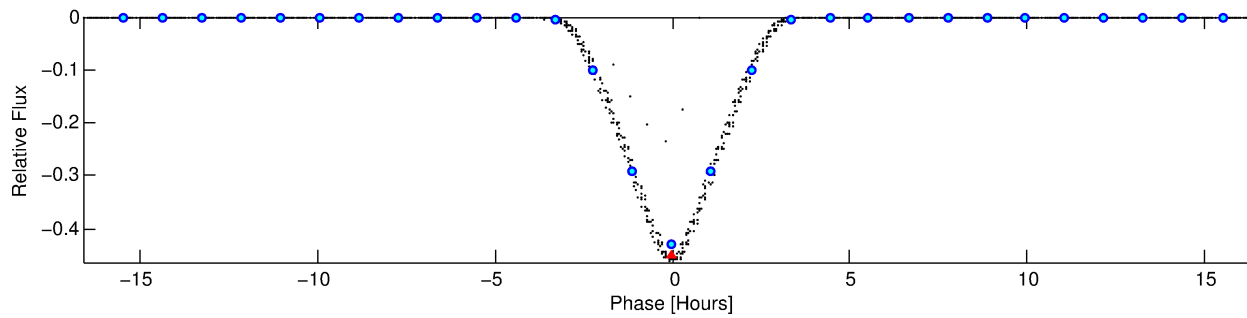
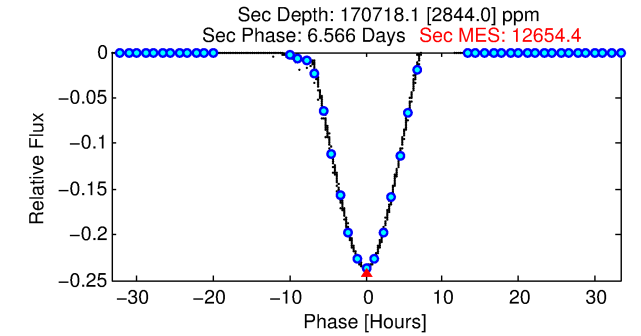
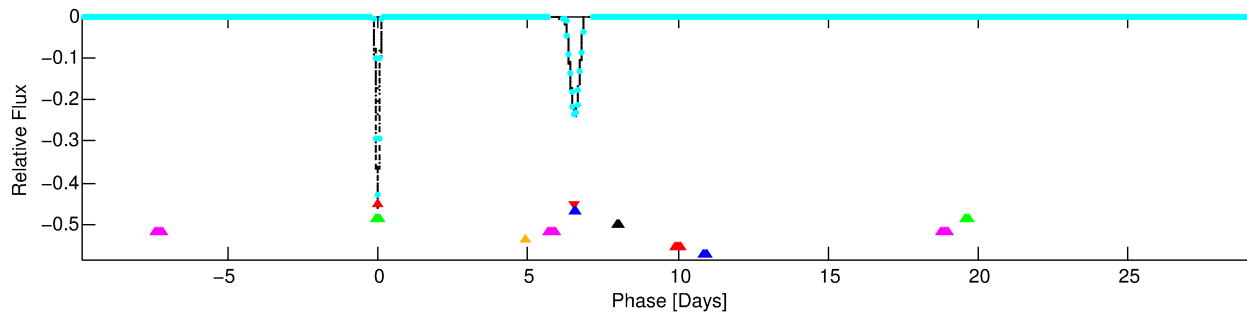
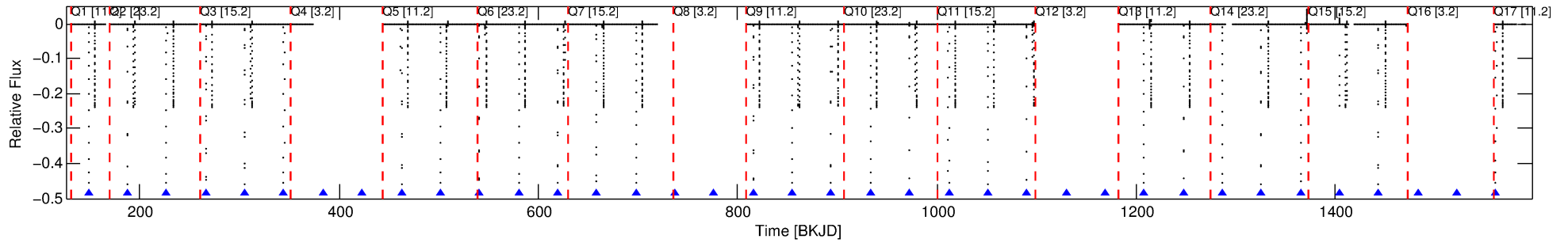
No Significant Match Found

DV One-Page Summary

KIC: 10909274 Candidate: 1 of 8 Period: 39.238 d

KOI: K07385.01 Corr: 0.759

Kp: 12.15 R*: 1.23 Rs Teff: 6599.0 K Logg: 4.35 Fe/H: -0.040



TPS TCE Results:

Period = 39.23787 d
Epoch = 148.6548 BKJD

DV fit results are unavailable

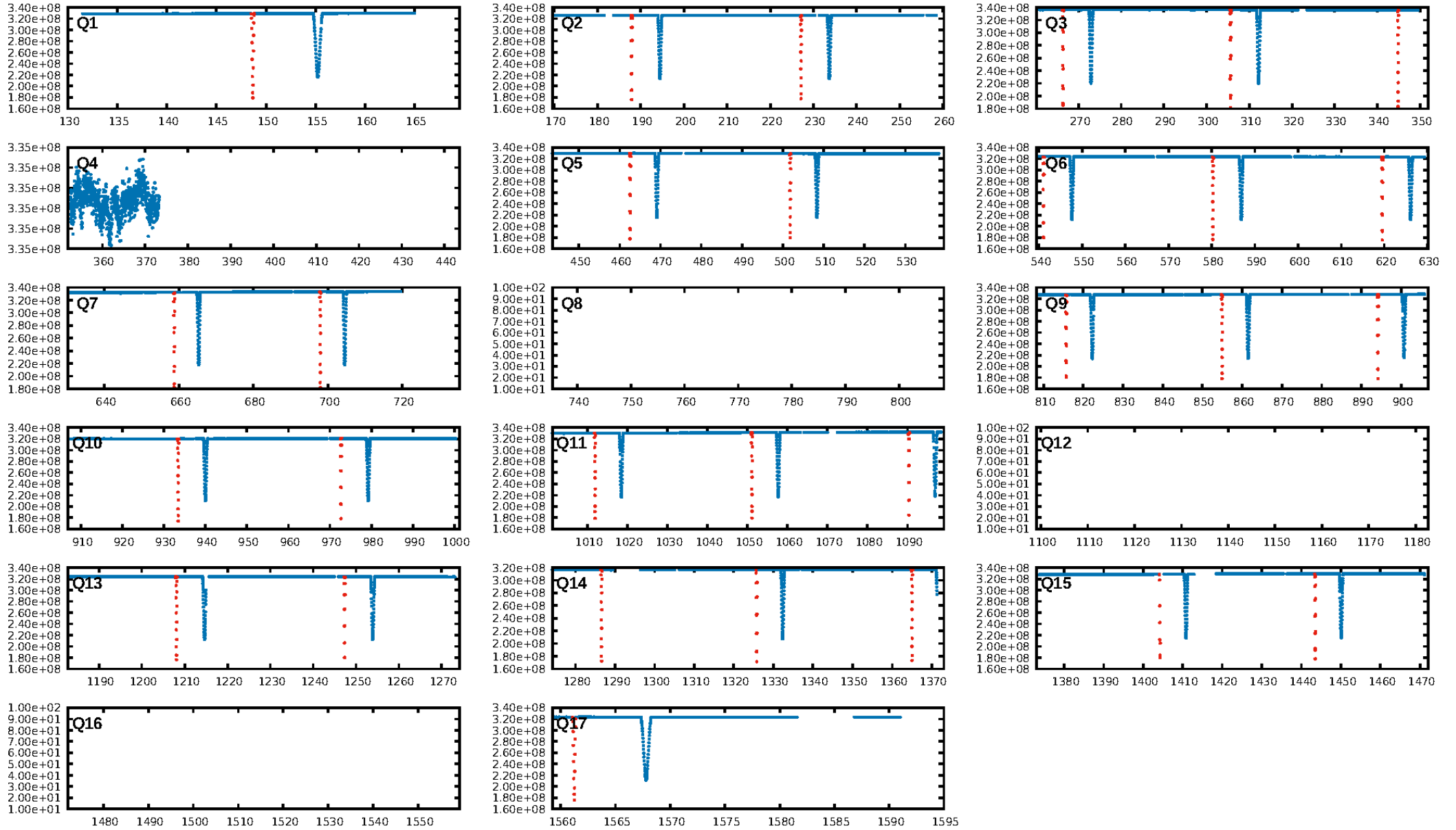
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00 σ]
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [27/27]
GhostDiagnostic-chr: 3.574
Centroid-sig: 0.0%
Centroid-so: 0.080 arcsec [335.37 σ]
OotOffset-rm: 0.006 arcsec [0.09 σ]
KicOffset-rm: 0.086 arcsec [1.28 σ]
OotOffset-st: 4/4/0/4 [12]
KicOffset-st: 4/4/0/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 0.00 [0/12]

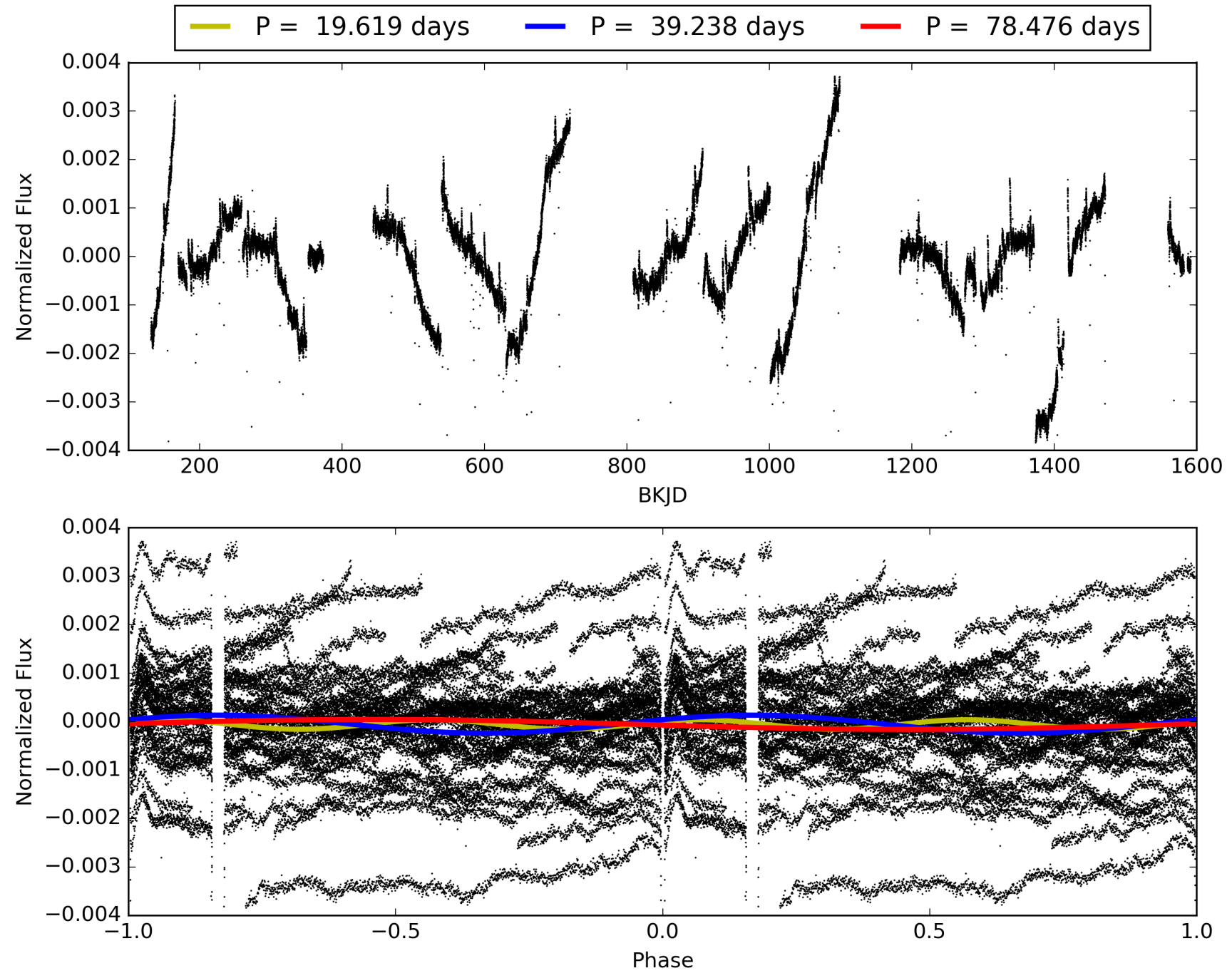
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:17:27 Z

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

TCE 010909274-01, PDC Light Curves

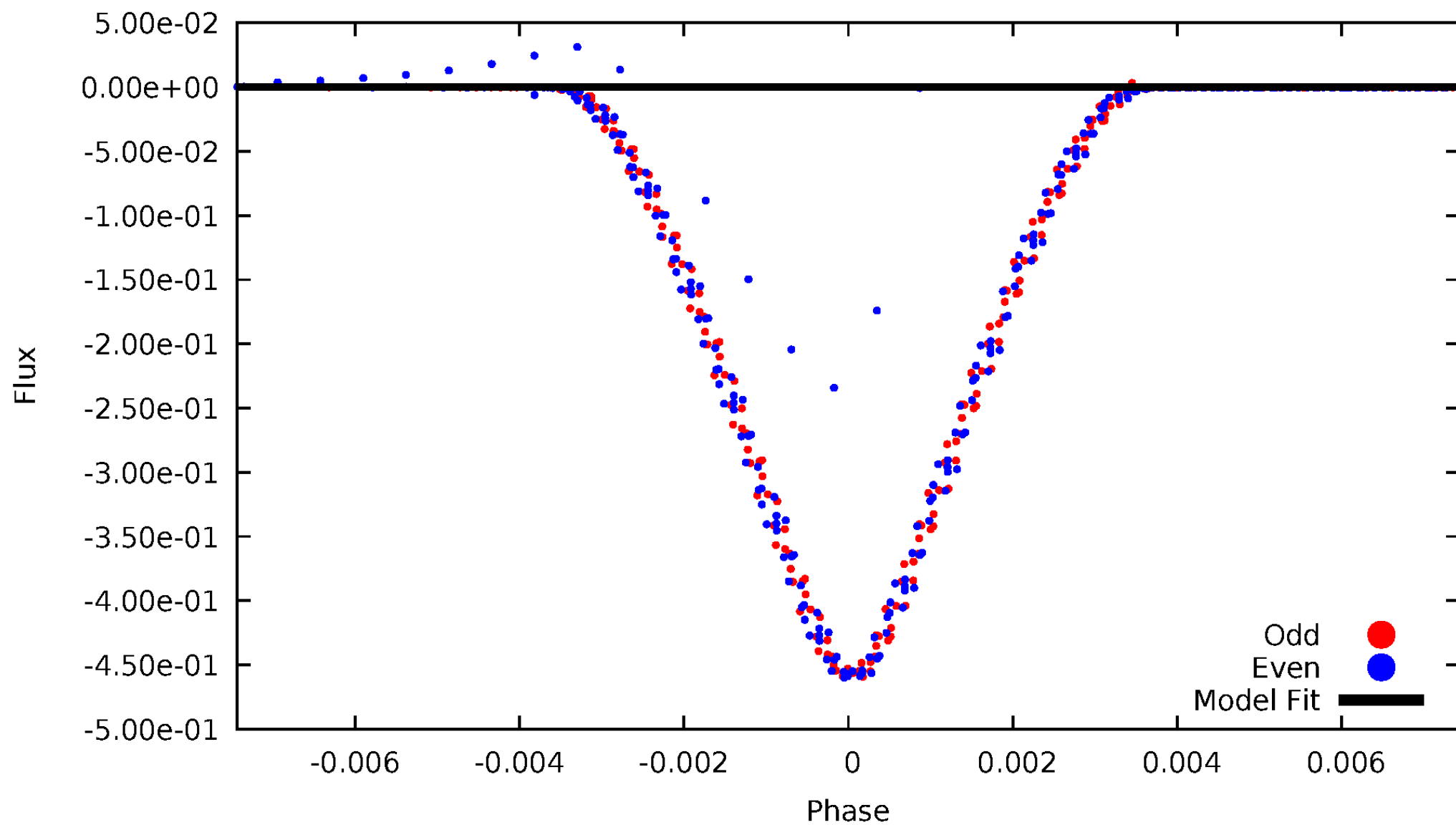


TCE 010909274-01



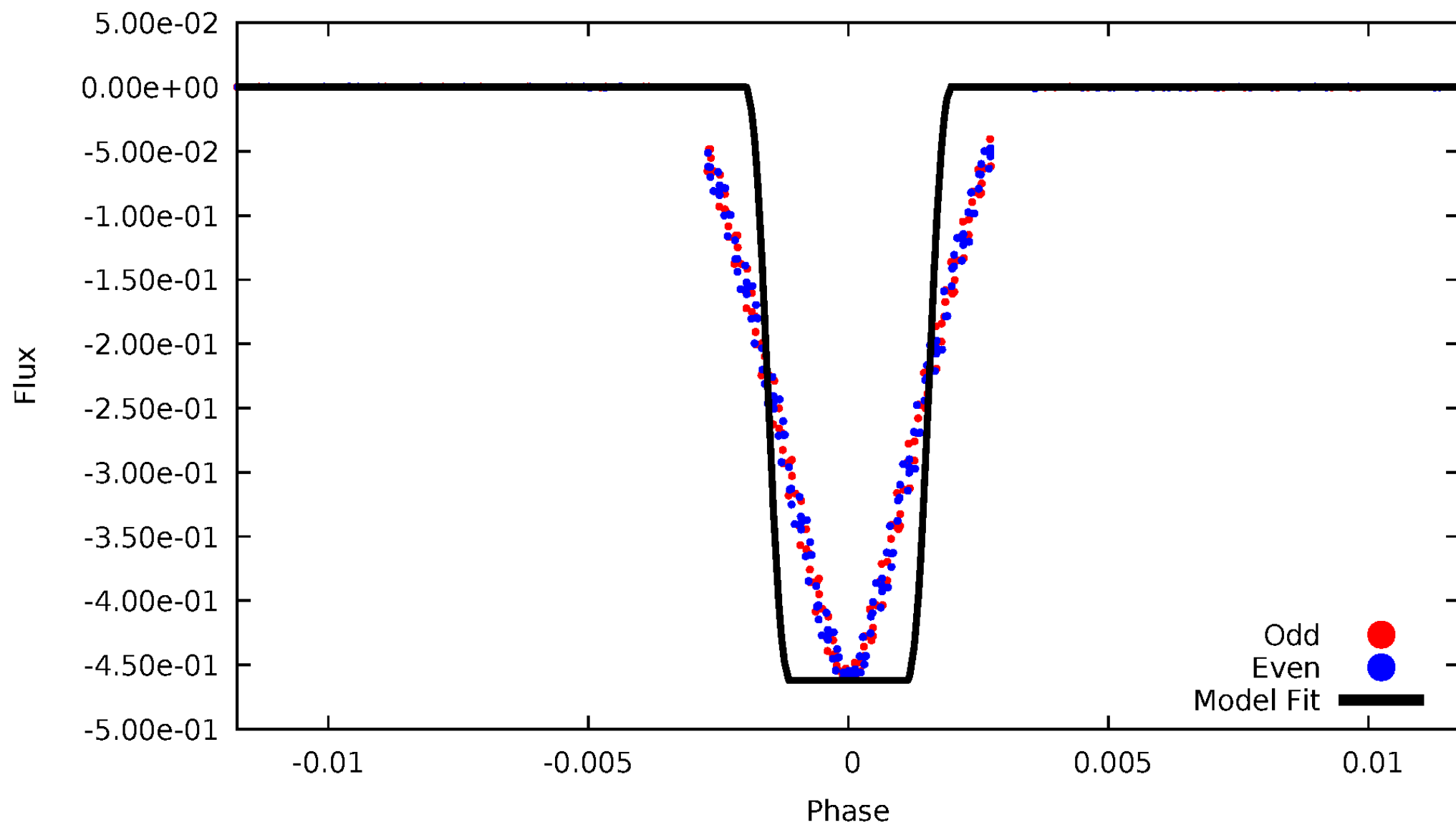
DV Odd/Even

TCE 010909274-01



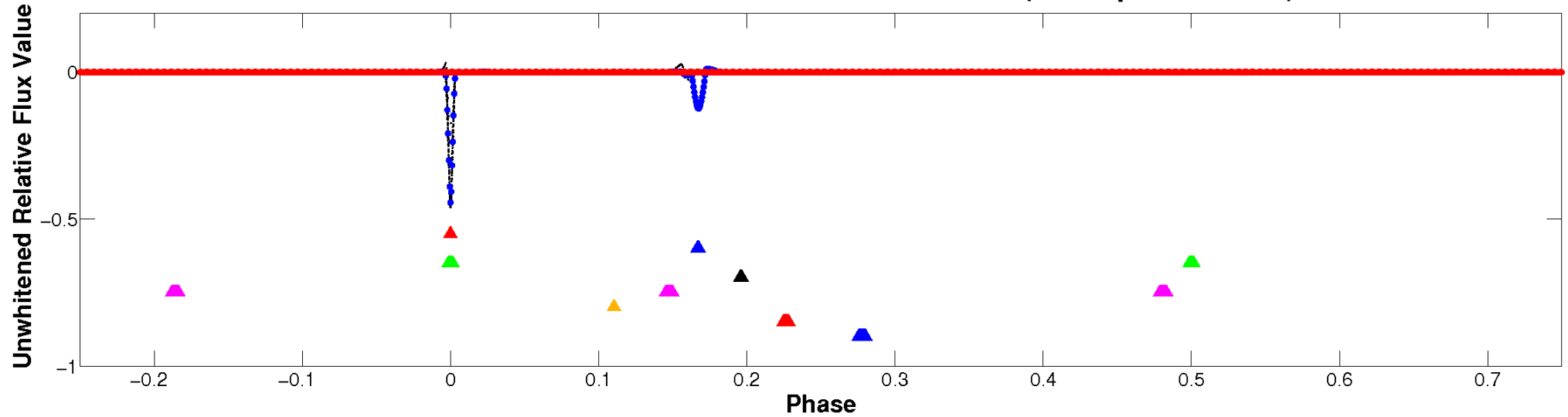
ALT Odd/Even

TCE 010909274-01

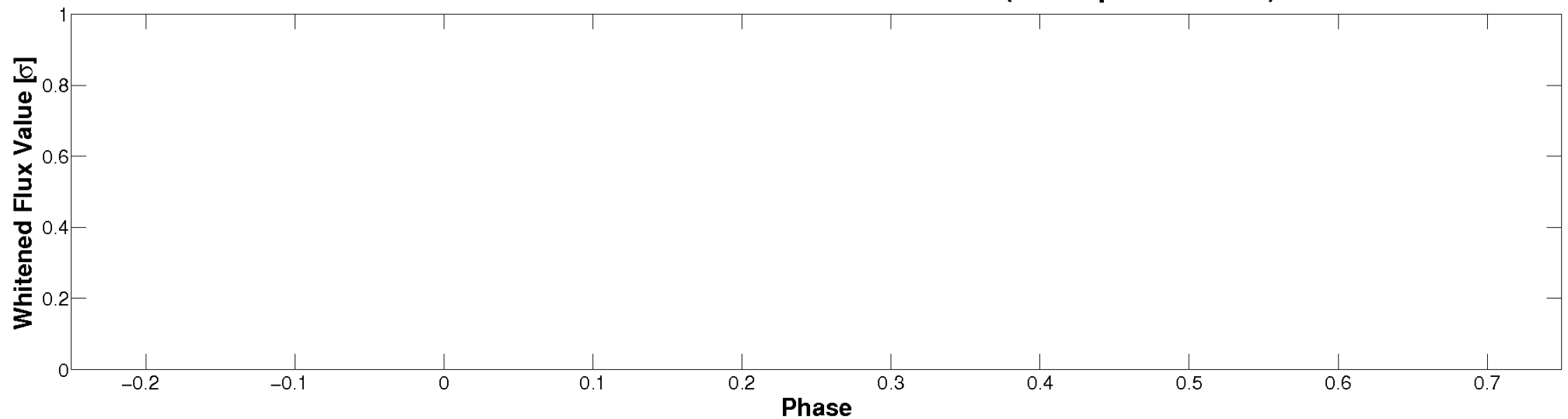


Non-Whitened Vs. Whitened Light Curve

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

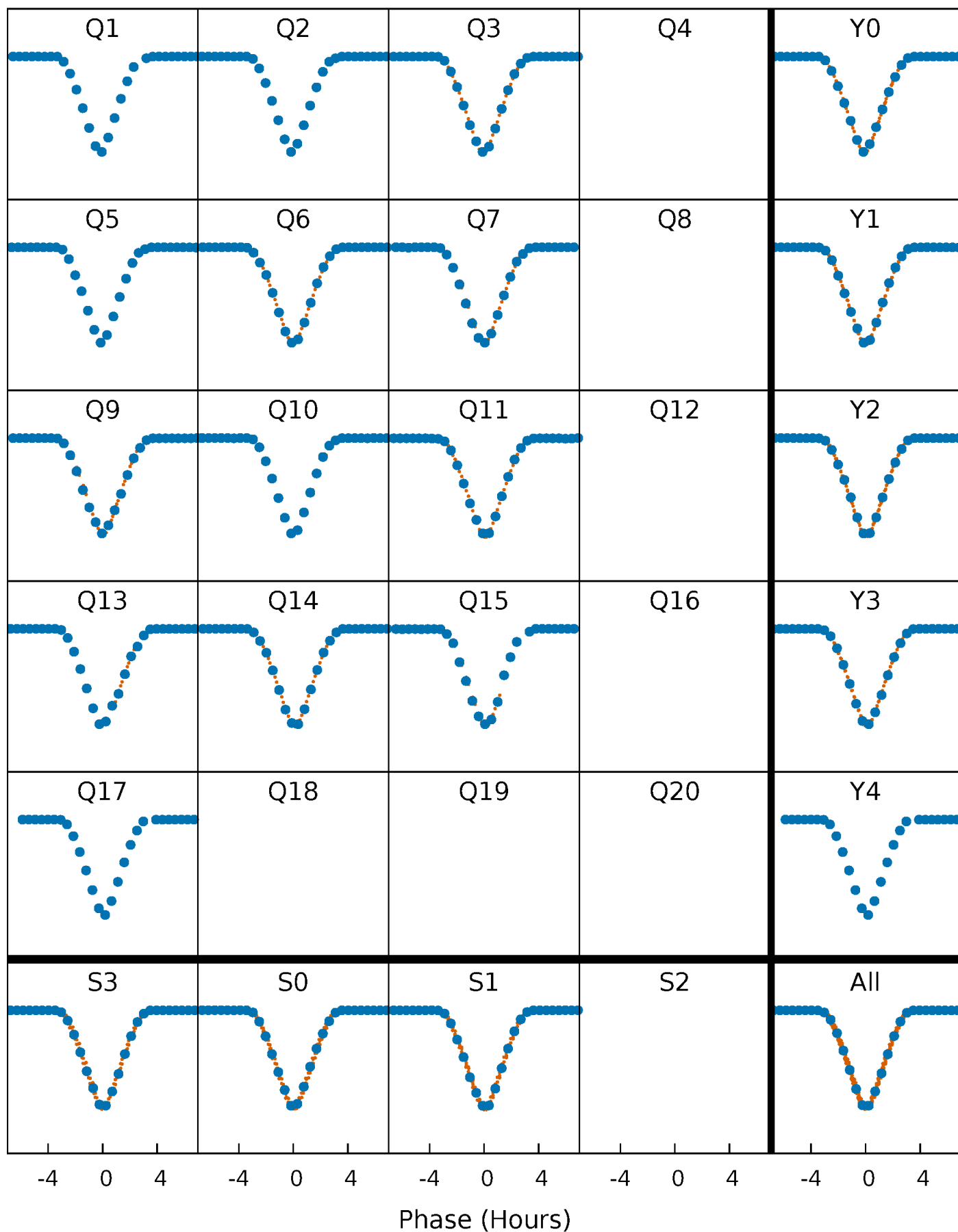


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



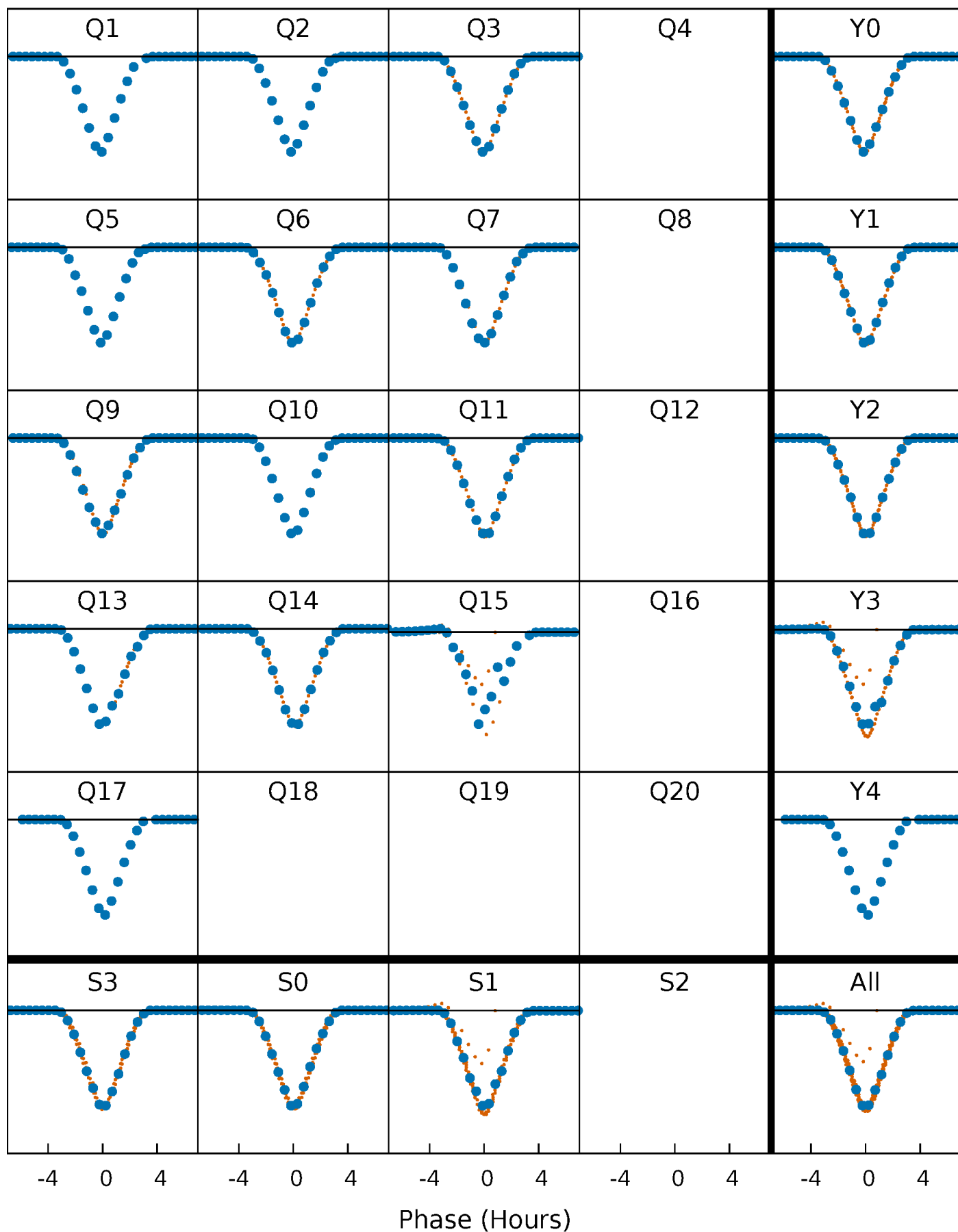
PDC Quarter-Phased Transit Curves

TCE 010909274-01 P= 39.237869 Days $T_0=148.654751$ (BKJD)



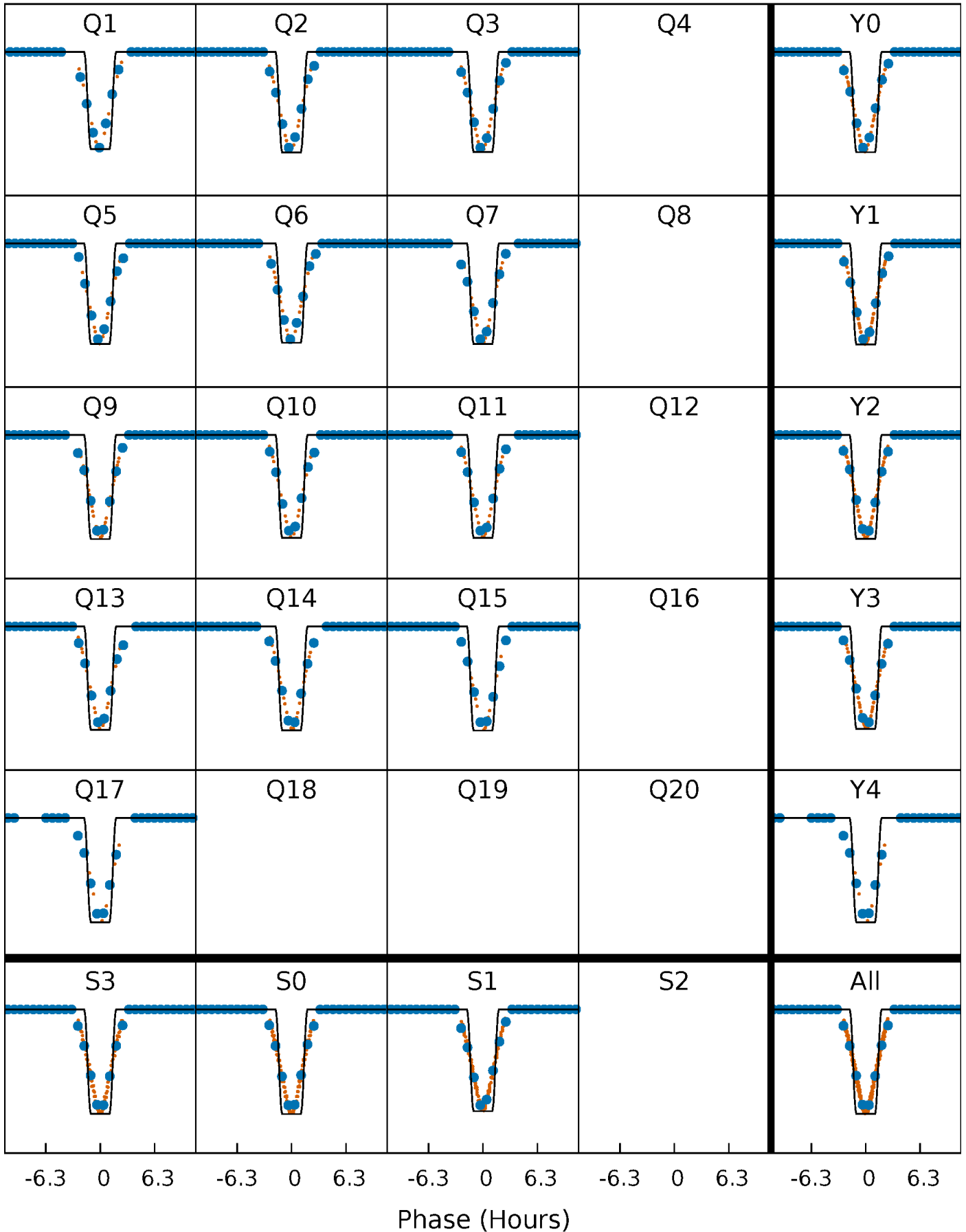
DV Quarter-Phased Transit Curves

TCE 010909274-01 P= 39.237869 Days $T_0=148.654751$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

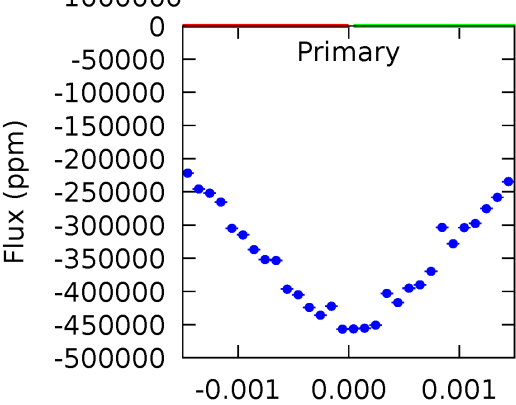
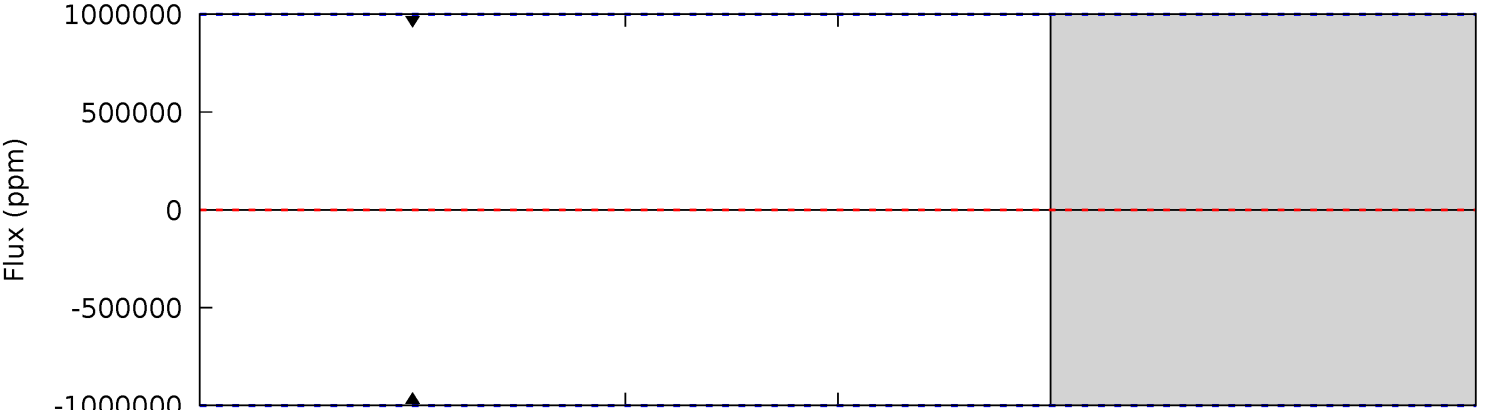
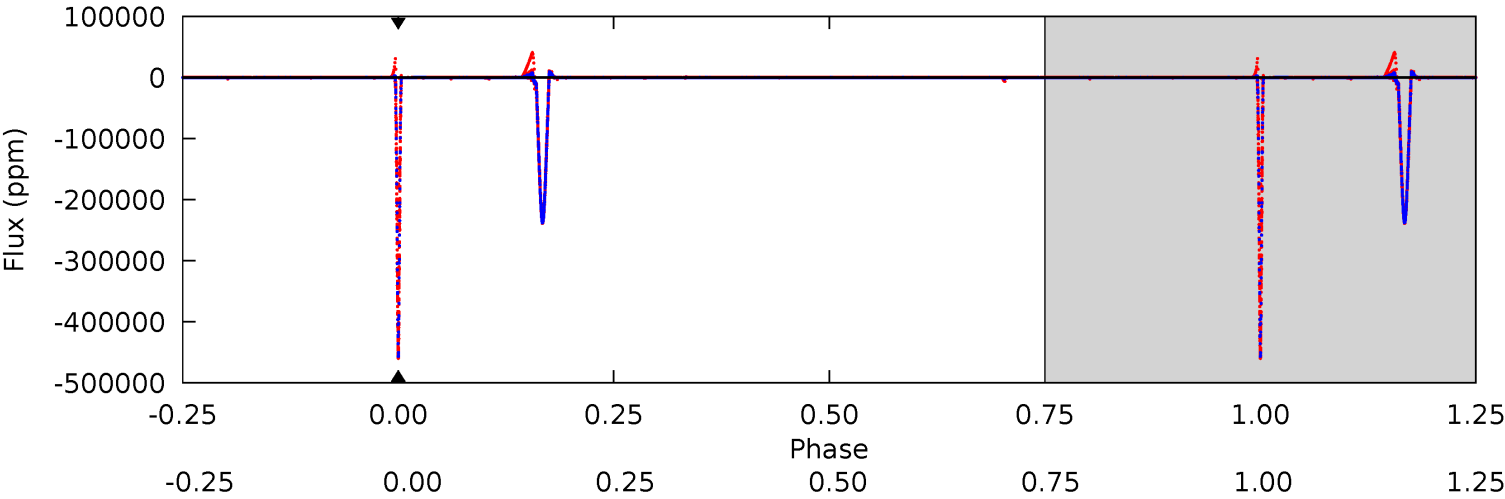
TCE 010909274-01 P= 39.237869 Days $T_0=148.656307$ (BKJD)



DV Model-Shift Uniqueness Test

010909274-01, P = 39.237869 Days, E = 109.416882 Days

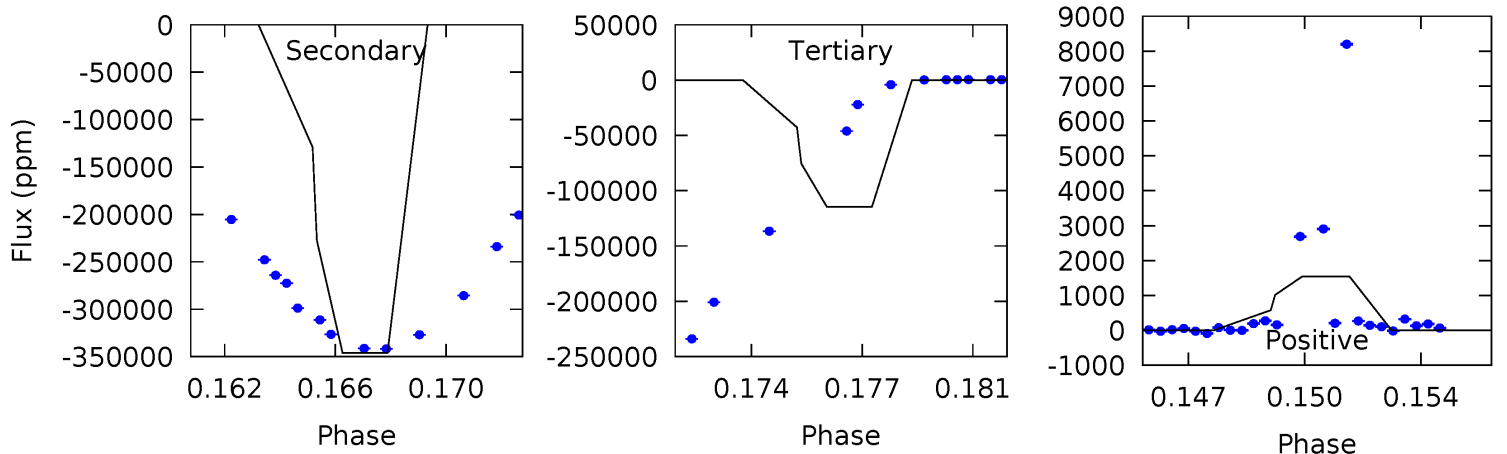
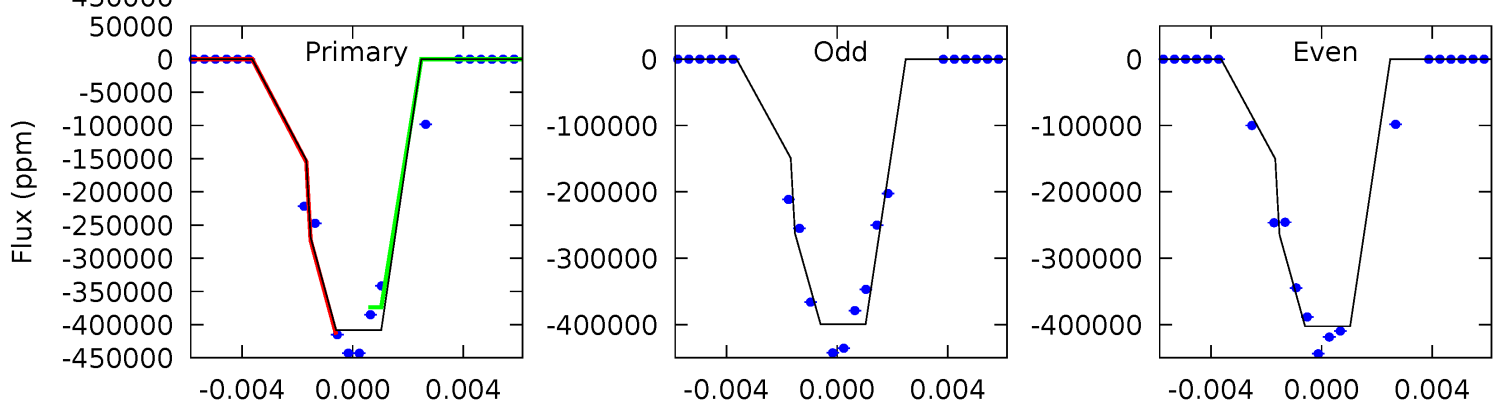
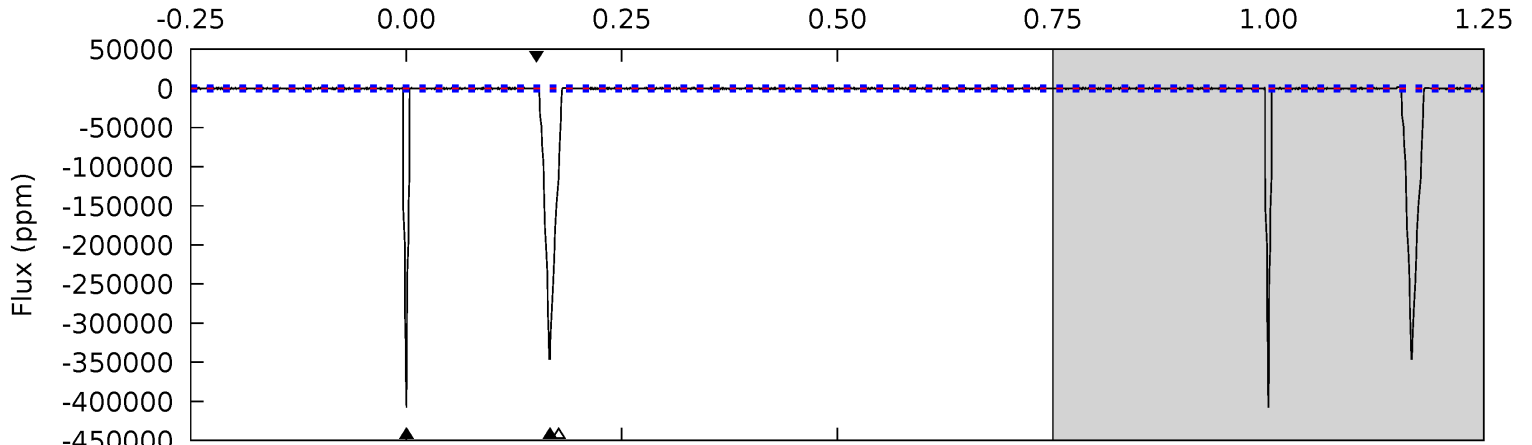
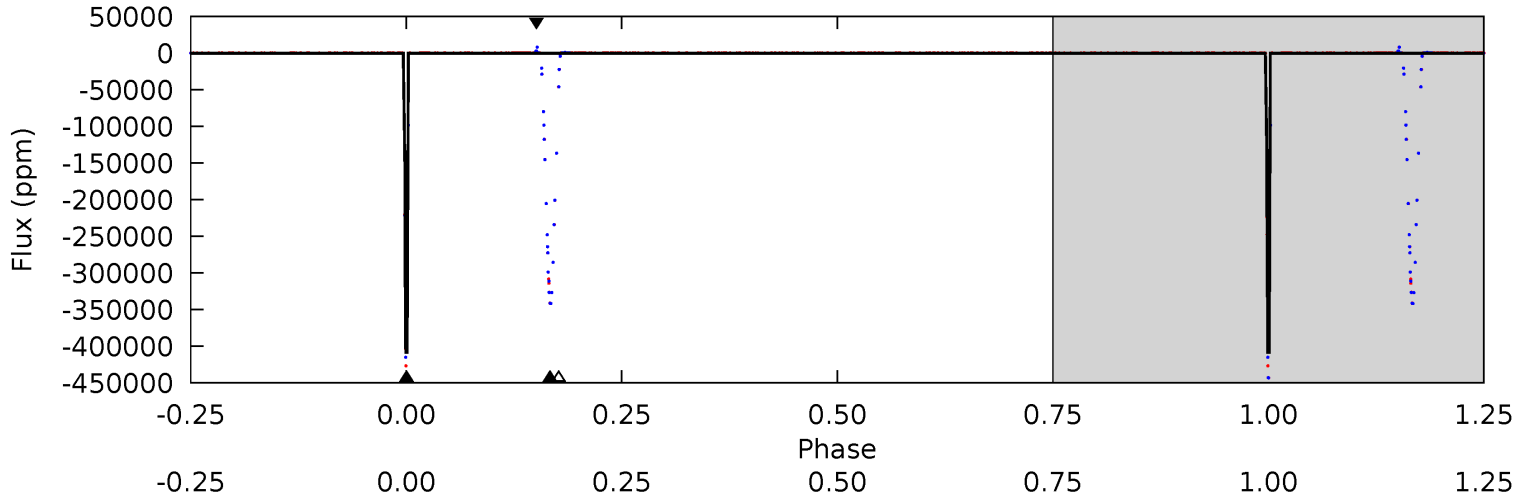
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010909274-01, P = 39.237869 Days, E = 109.418438 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
673.2	570.6	189.1	2.54	5.21	2.89	3.97	484.1	670.7	381.4	568.0	3.51	1.00	0.00	0



Stellar Parameters For KIC 010909274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6599^{+147}_{-213}	$4.350^{+0.060}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$1.234^{+0.283}_{-0.141}$	$1.248^{+0.144}_{-0.173}$	$0.936^{+0.246}_{-0.391}$
	+2%/-3%	+1%/-3%	+625%/-750%	+23%/-11%	+12%/-14%	+26%/-42%
Source	PHO1	FLK73	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 010909274-01 / KOI 7385.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$67.26^{+15.18}_{-15.11}$	925^{+50}_{-41}	3402^{+2264}_{-8643}	61^{+886}_{-752}
Alt.	-345918 ± 606	$93.85^{+16.78}_{-15.58}$	924^{+49}_{-40}	6806^{+624}_{-502}	1908^{+797}_{-513}

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 $A_{obs} \gg 1.0$

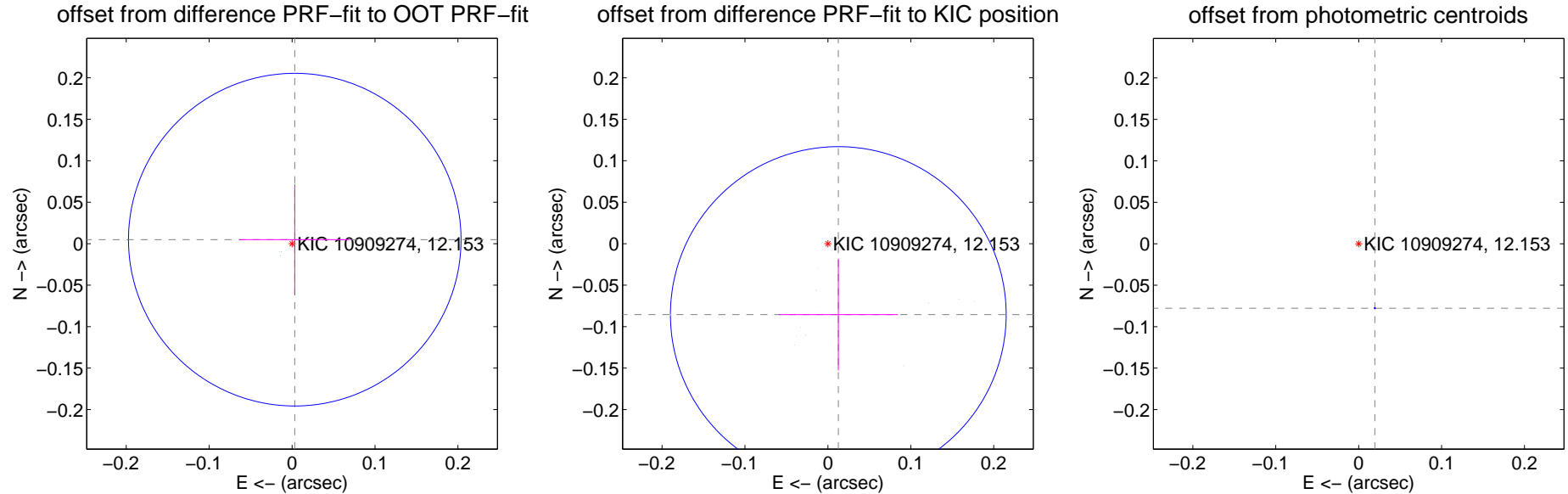
DV Centroid Data

Supplemental centroid analysis for 010909274-01. Kepler magnitude: 12.15. Transit SNR -1.00

There are 12 quarters with good PRF difference image offsets

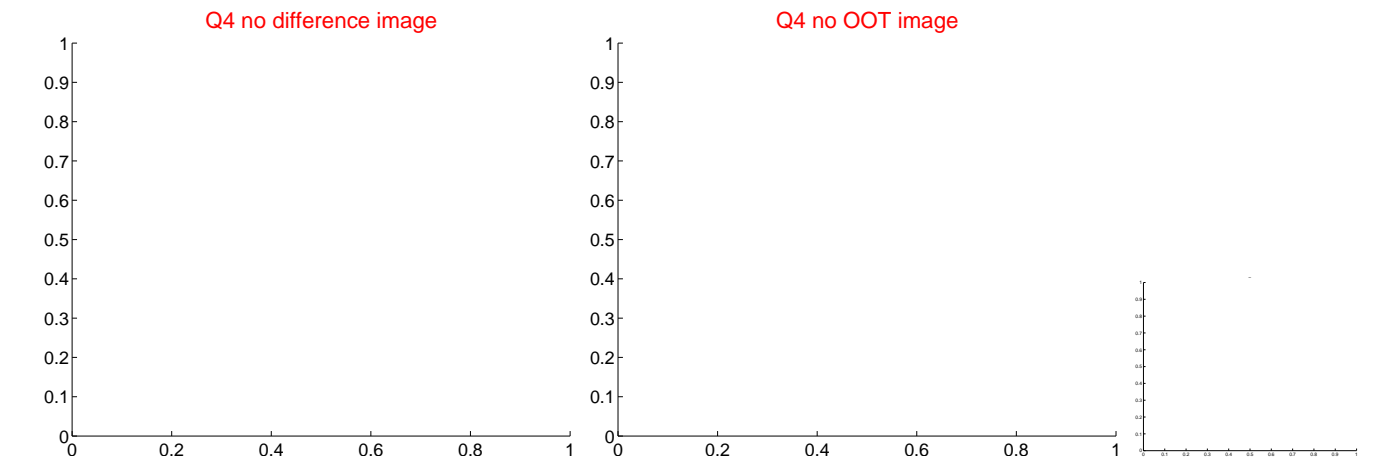
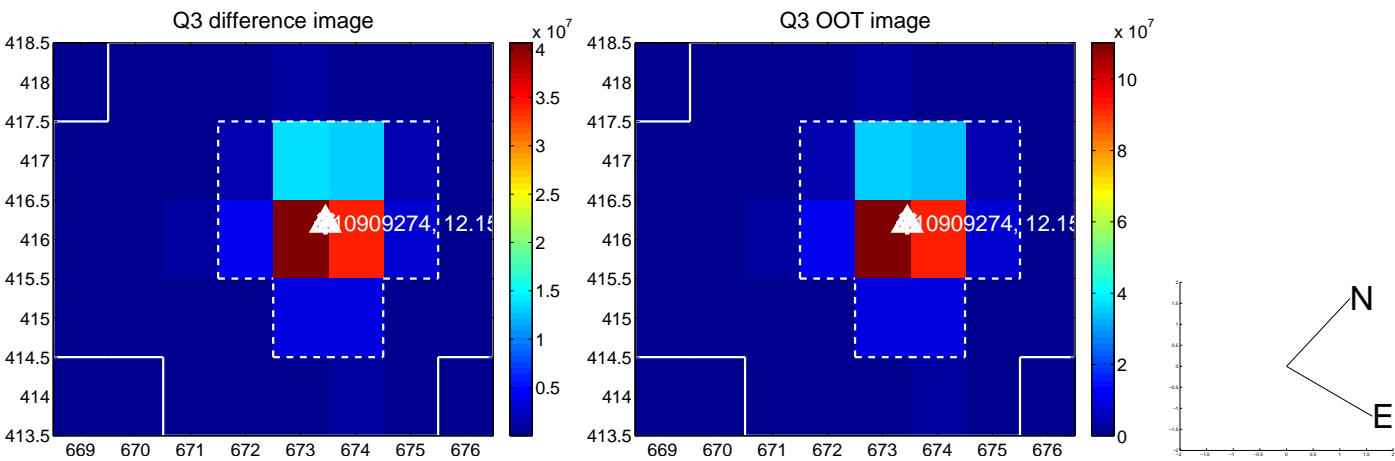
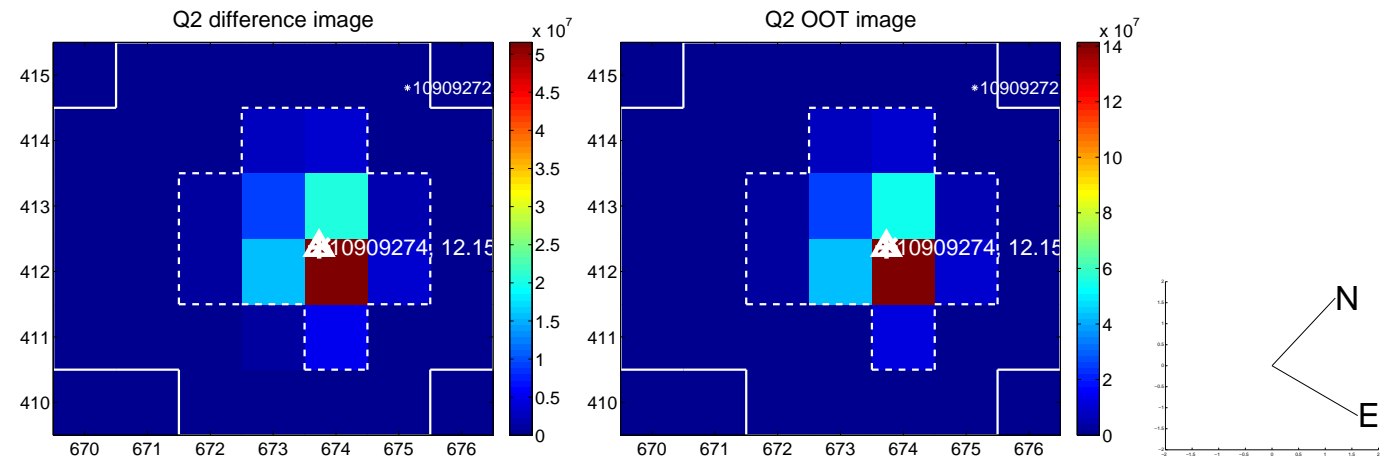
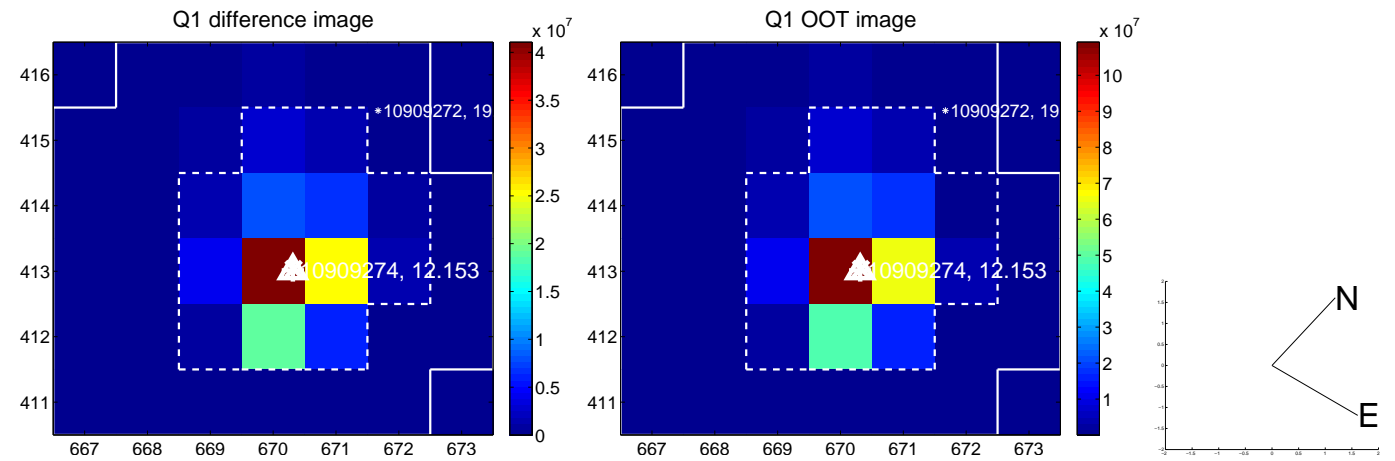
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	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	0.086 ± 0.067	1.28	-0.013 ± 0.072	-0.085 ± 0.067
photometric centroid source offset	0.08 ± 0.00	335.37	-0.02 ± 0.00	-0.08 ± 0.00

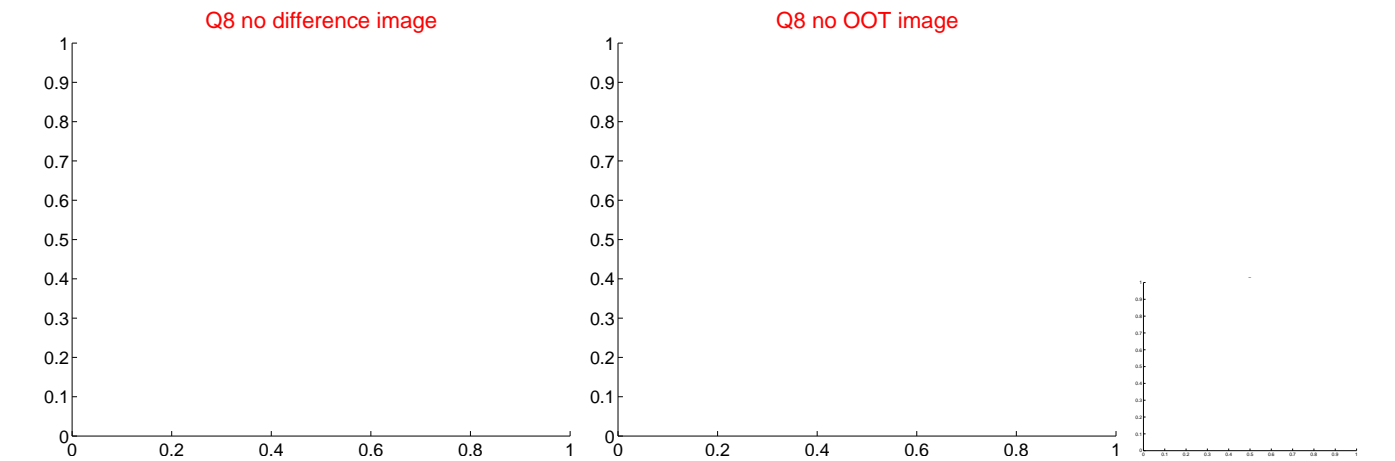
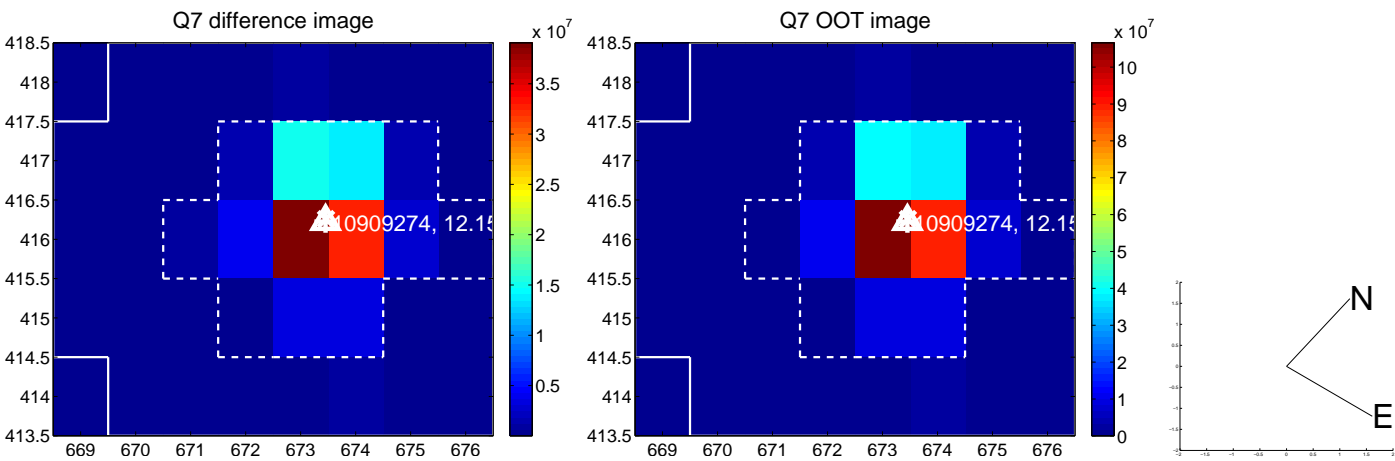
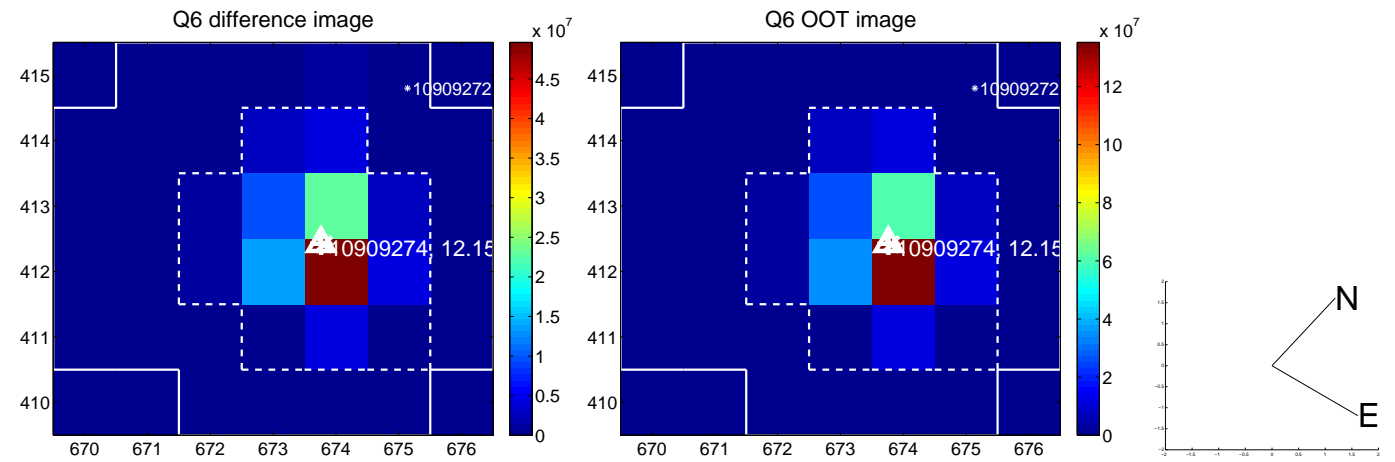
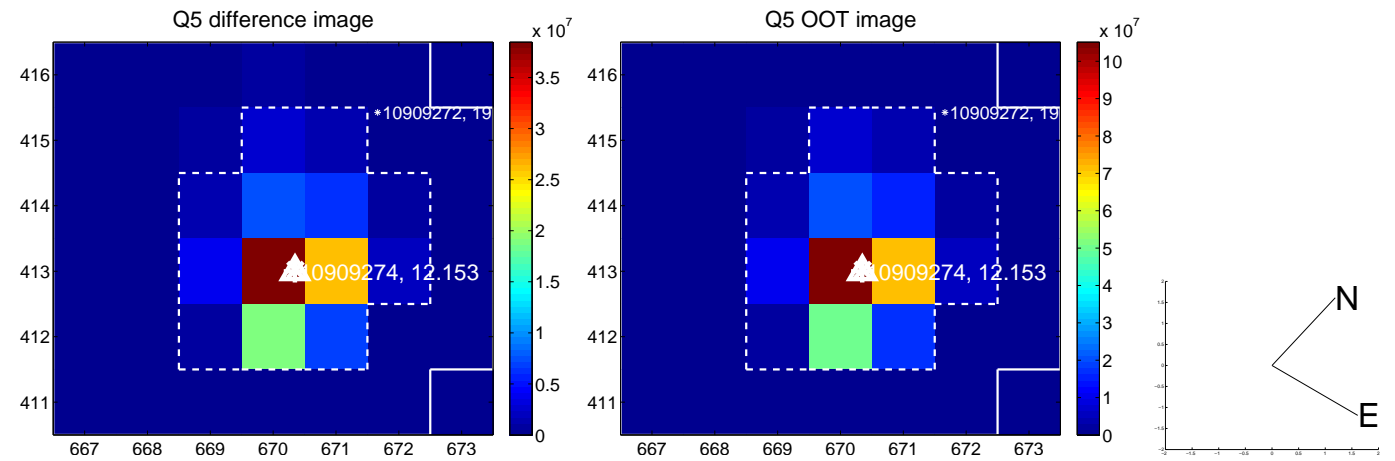


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

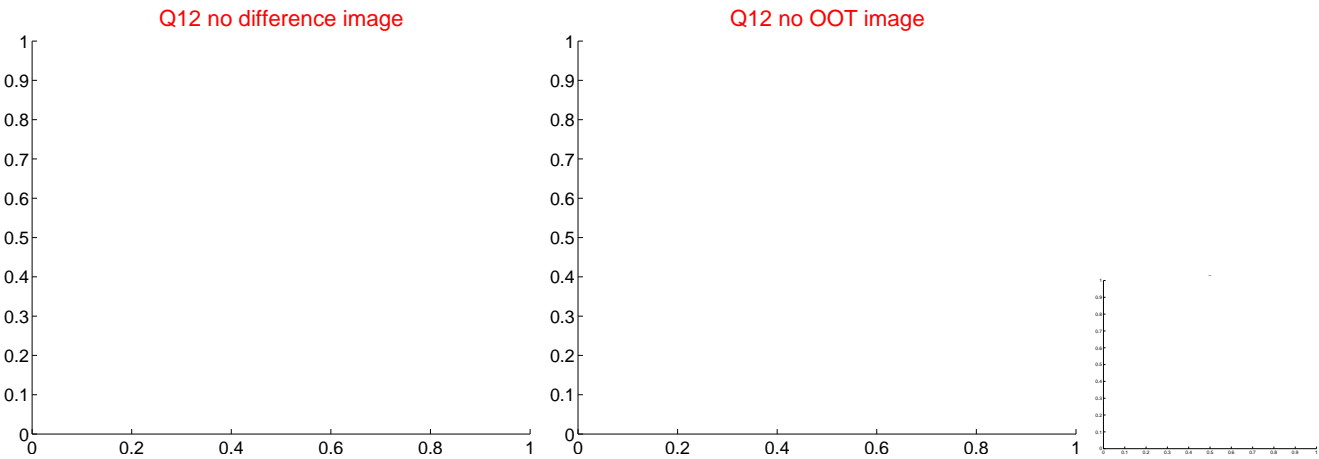
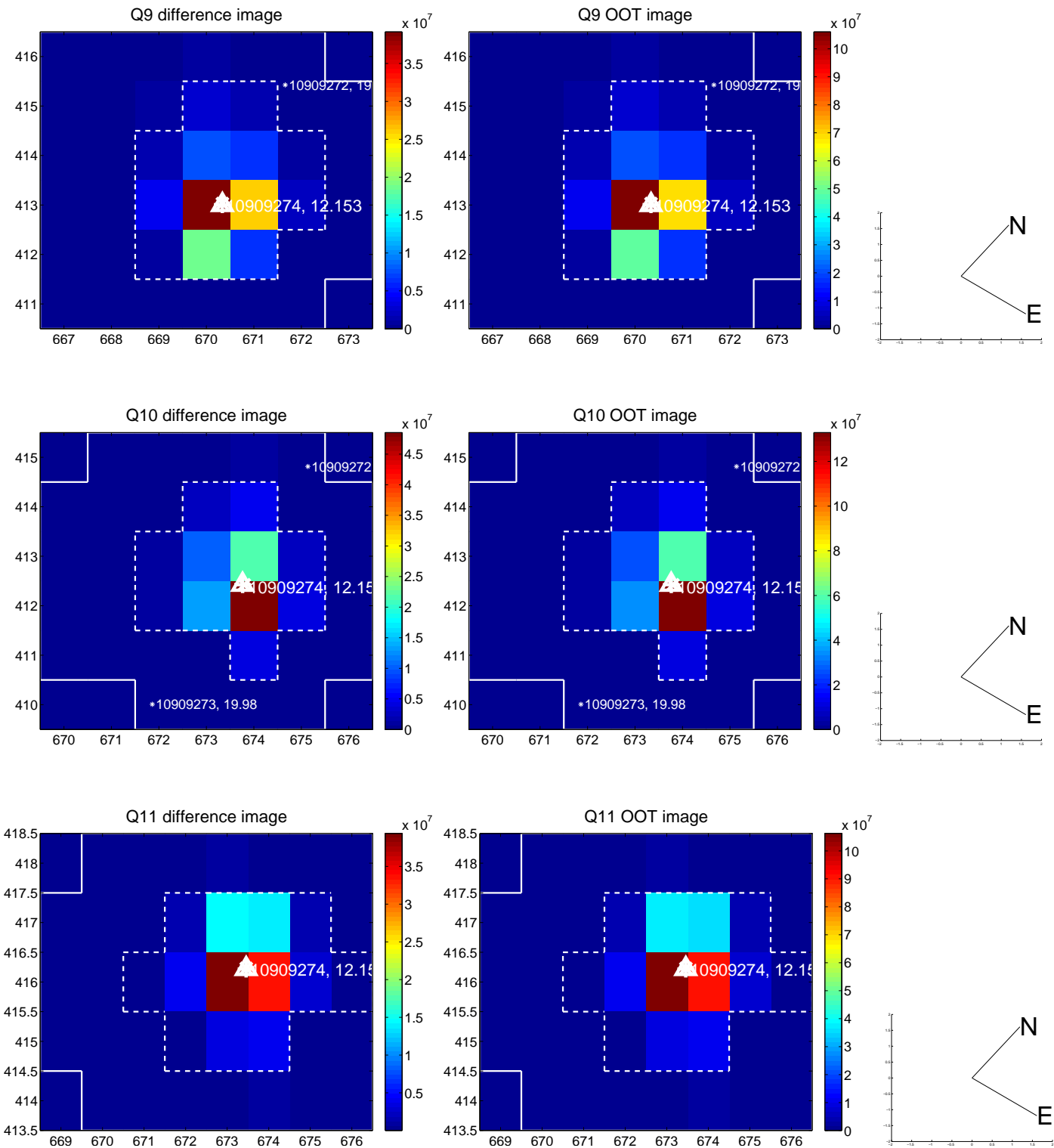
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



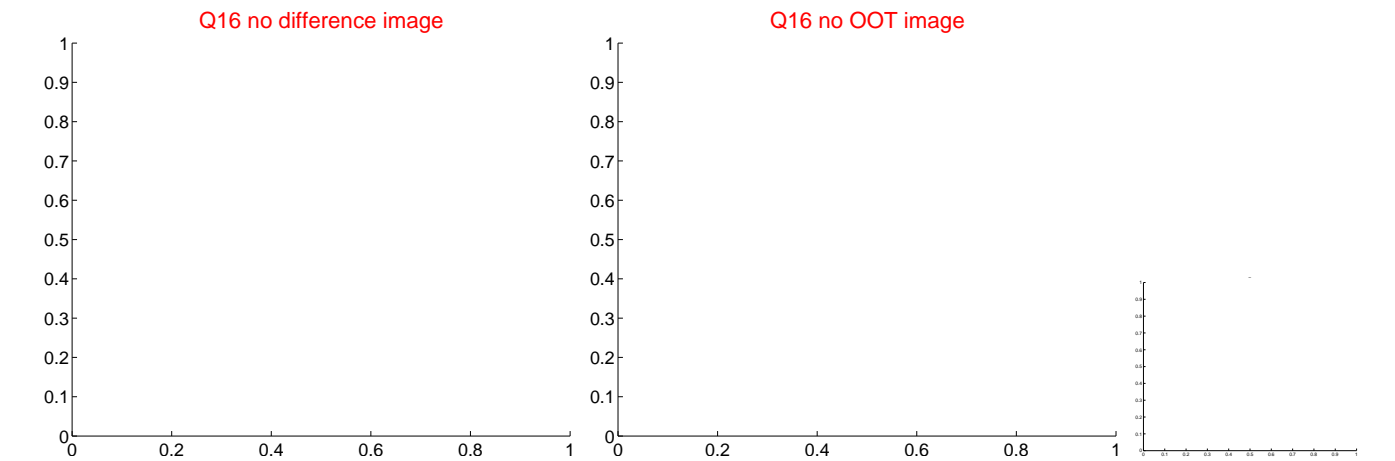
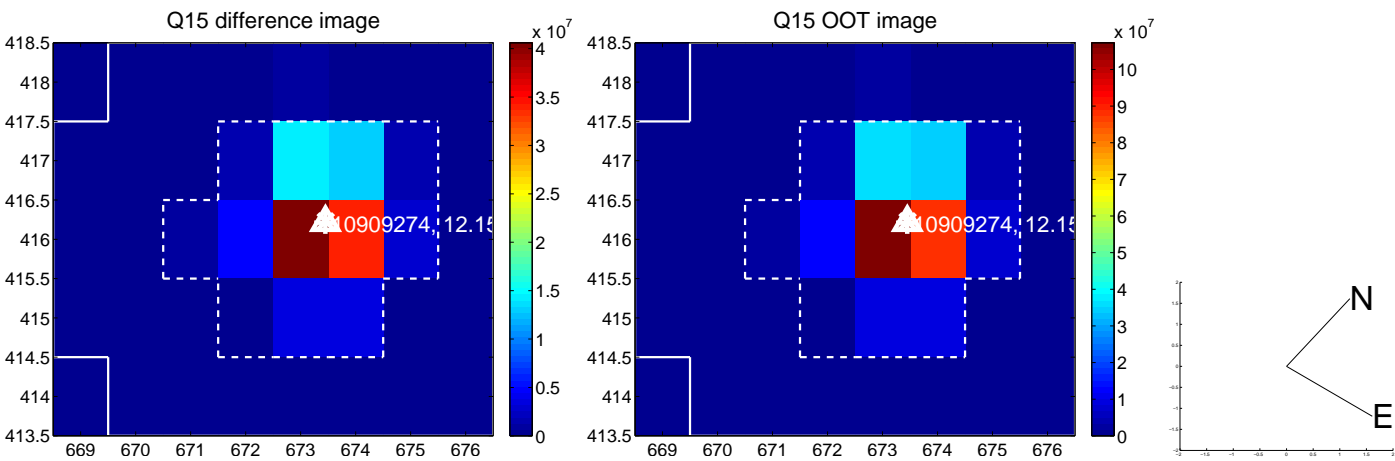
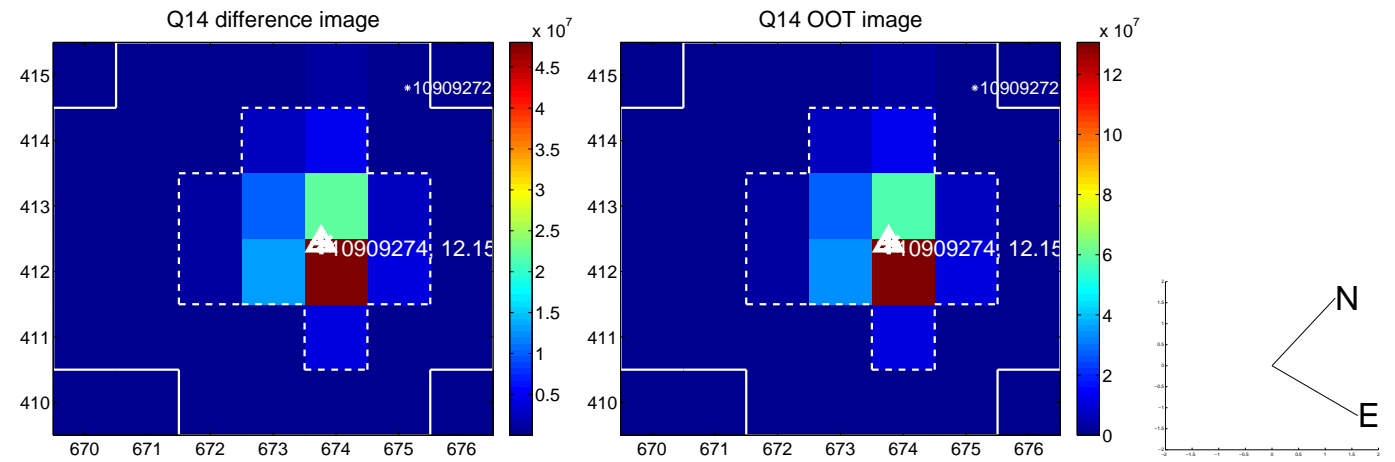
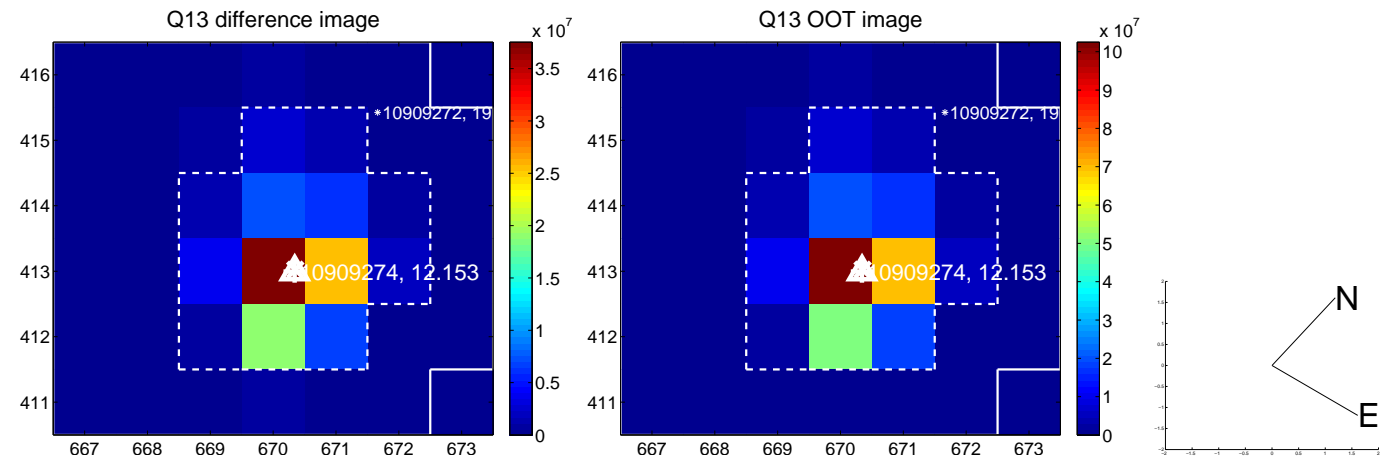
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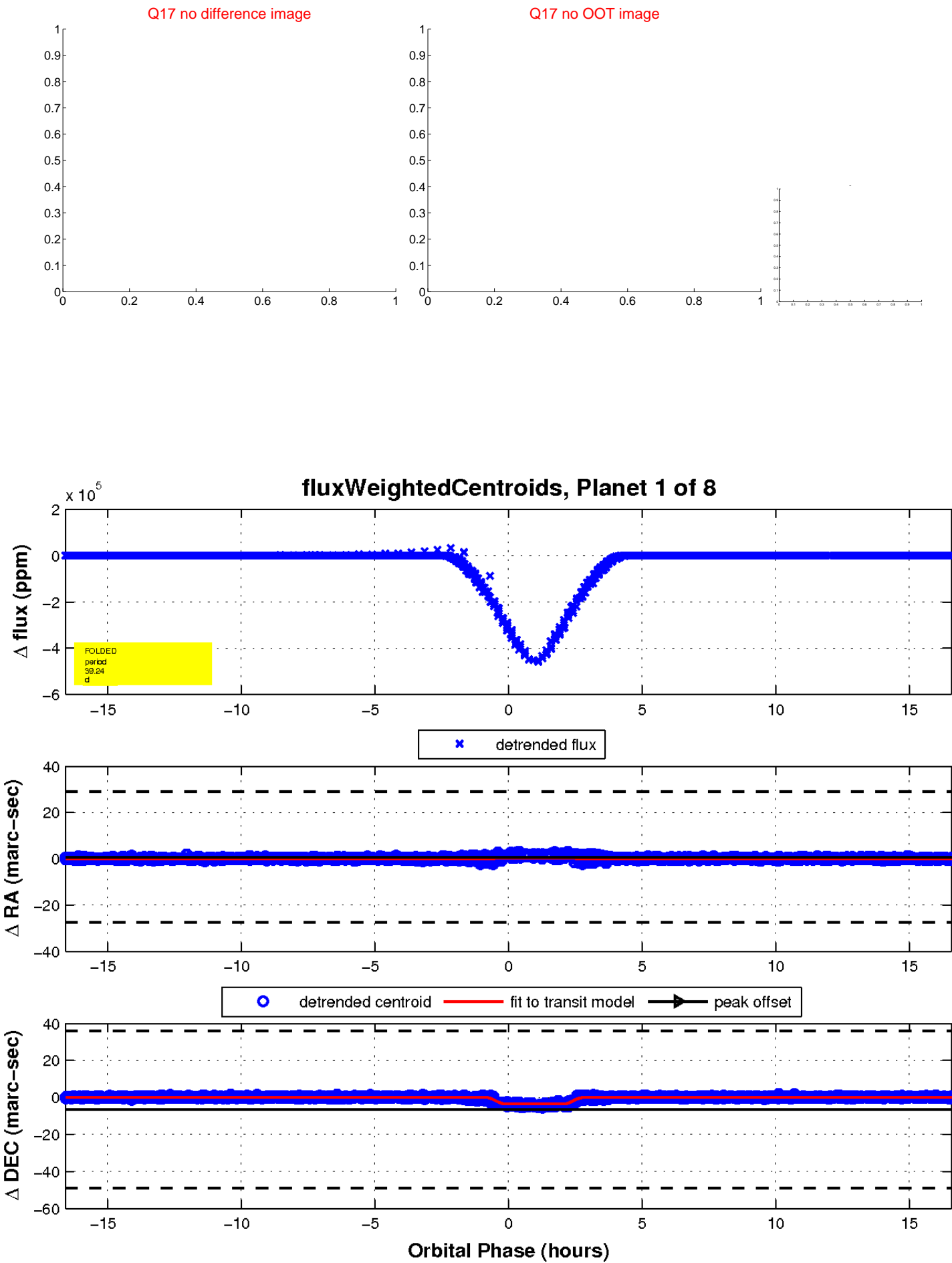
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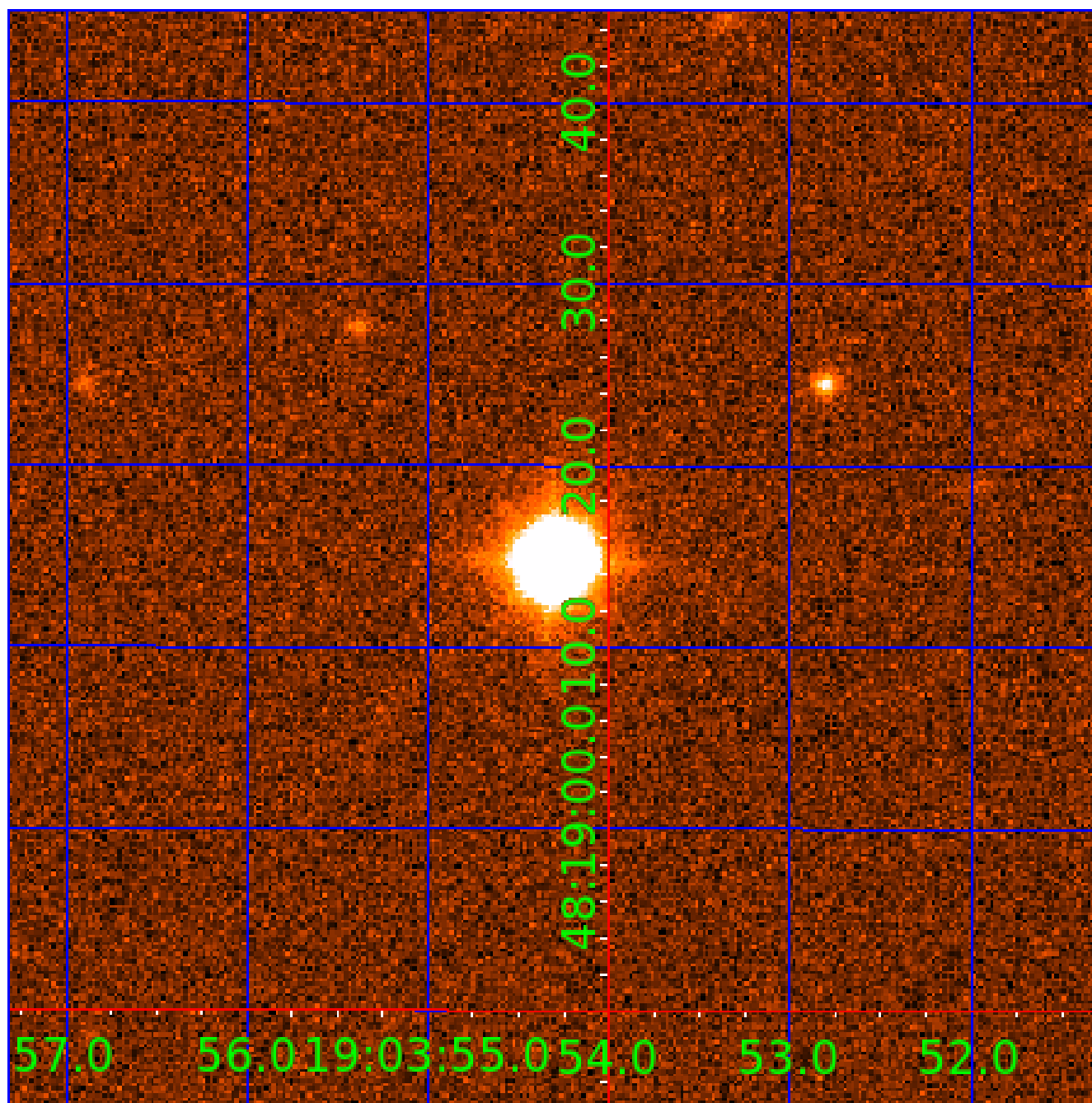


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010909274

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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Robovetter Results

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010909274-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010909274-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—RESIDUAL_TCE
010909274-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
010909274-06	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-07	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
010909274-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

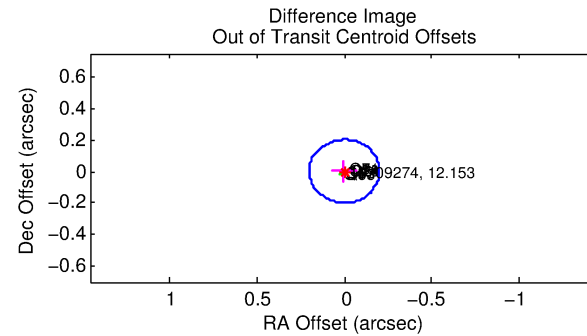
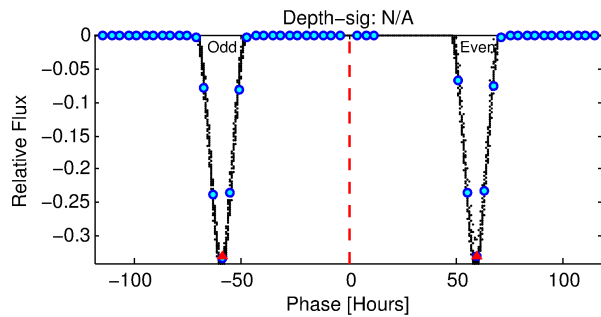
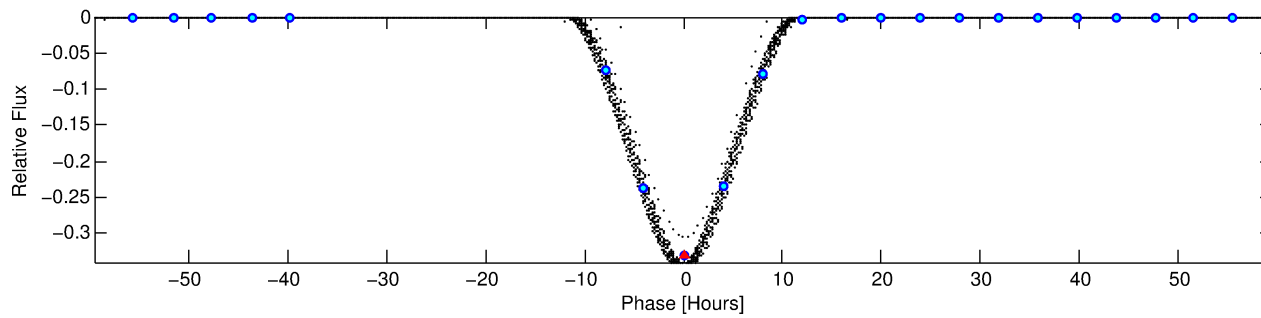
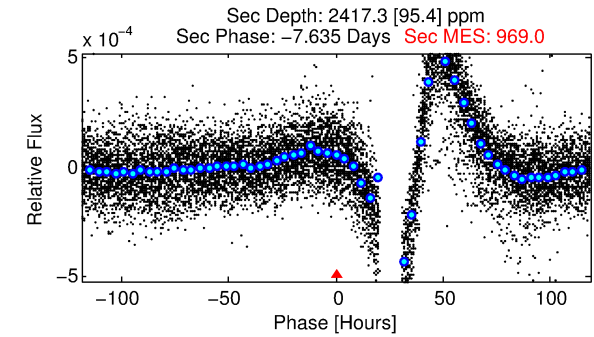
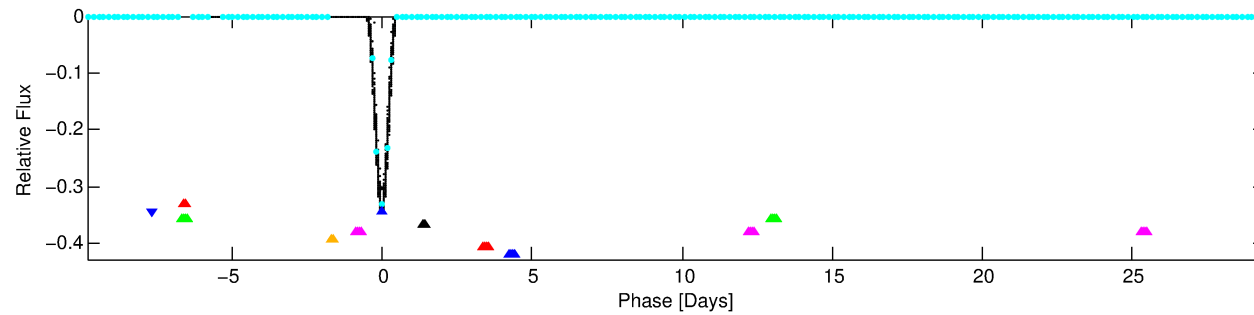
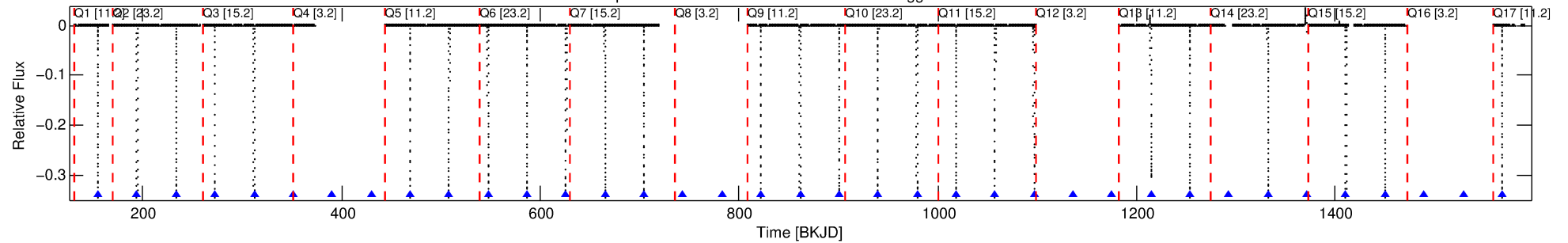
Ephemeris Match Information For 010909274-02

No Significant Match Found

DV One-Page Summary

KIC: 10909274 Candidate: 2 of 8 Period: 39.237 d
KOI: K07385 Corr: No Ephemeris Match

Kp: 12.15 R*: 1.23 Rs Teff: 6599.0 K Logg: 4.35 Fe/H: -0.040



TPS TCE Results:

Period = 39.23684 d
Epoch = 155.2310 BKJD

DV fit results are unavailable

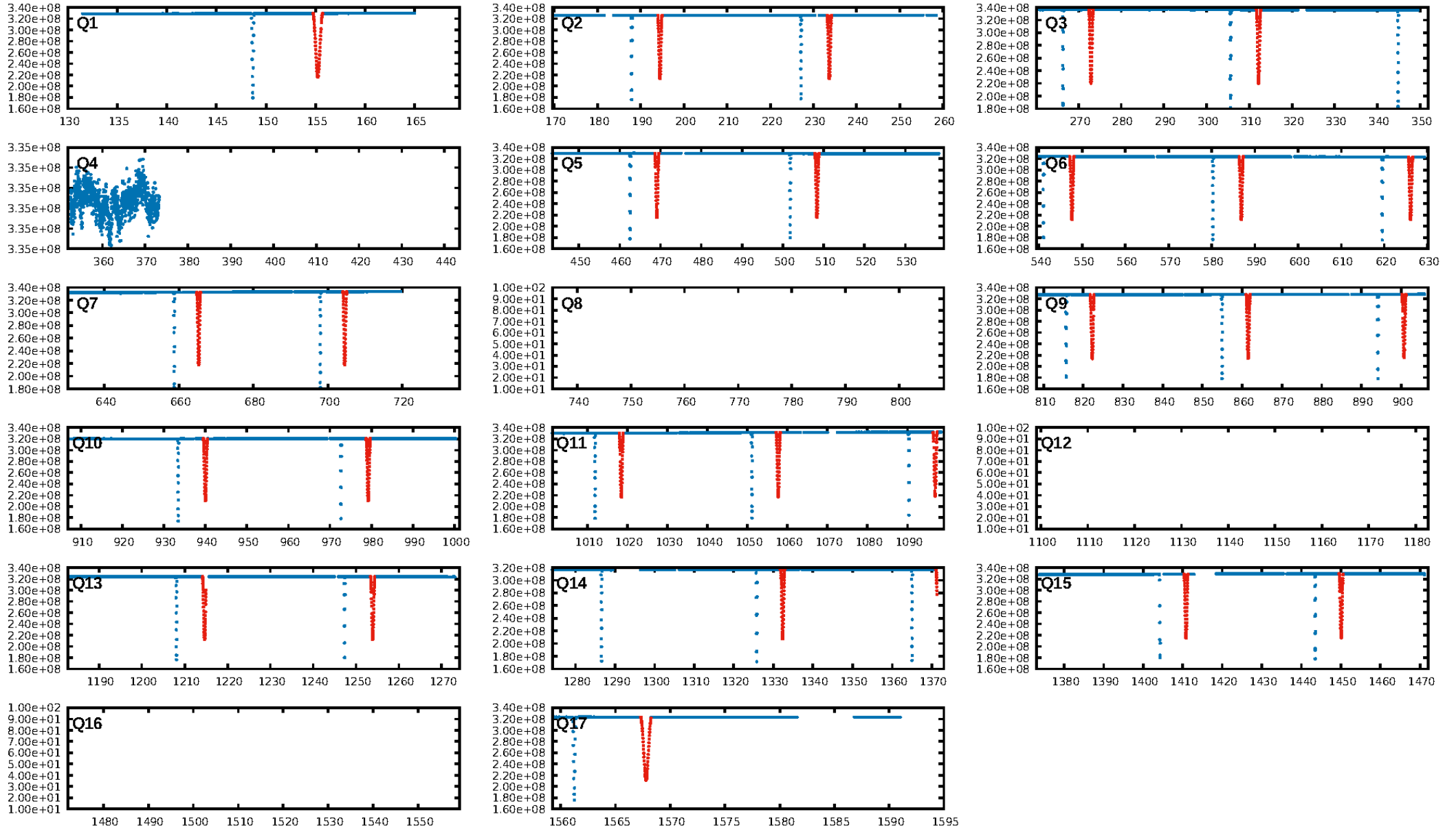
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [25/25]
GhostDiagnostic-chr: 2.045
Centroid-sig: 0.0%
Centroid-so: 0.082 arcsec [328.41σ]
OotOffset-rm: 0.003 arcsec [0.05σ]
KicOffset-rm: 0.103 arcsec [1.52σ]
OotOffset-st: 4/3/0/5 [12]
KicOffset-st: 4/3/0/5 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 0.00 [0/12]

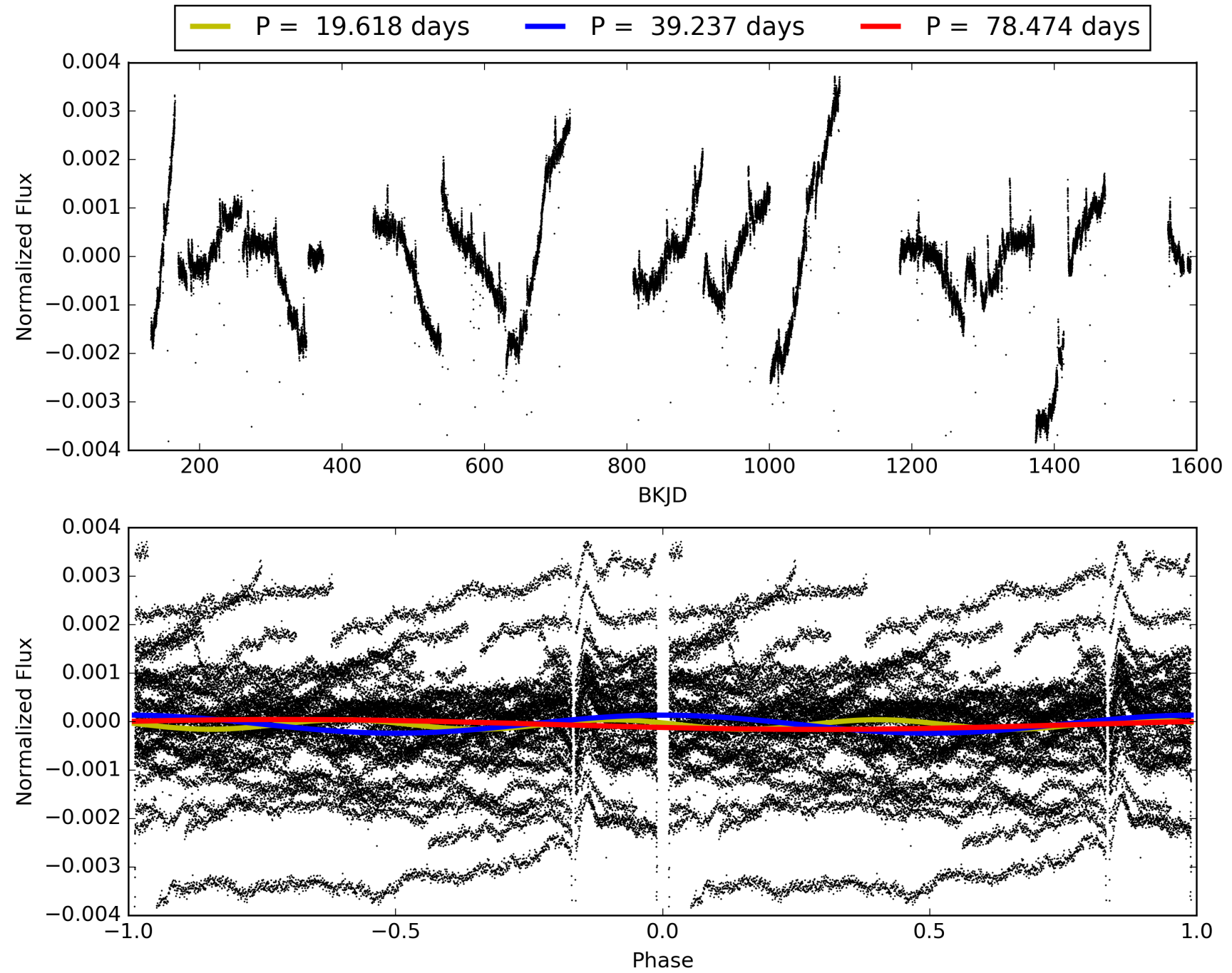
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:17:31 Z

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

TCE 010909274-02, PDC Light Curves

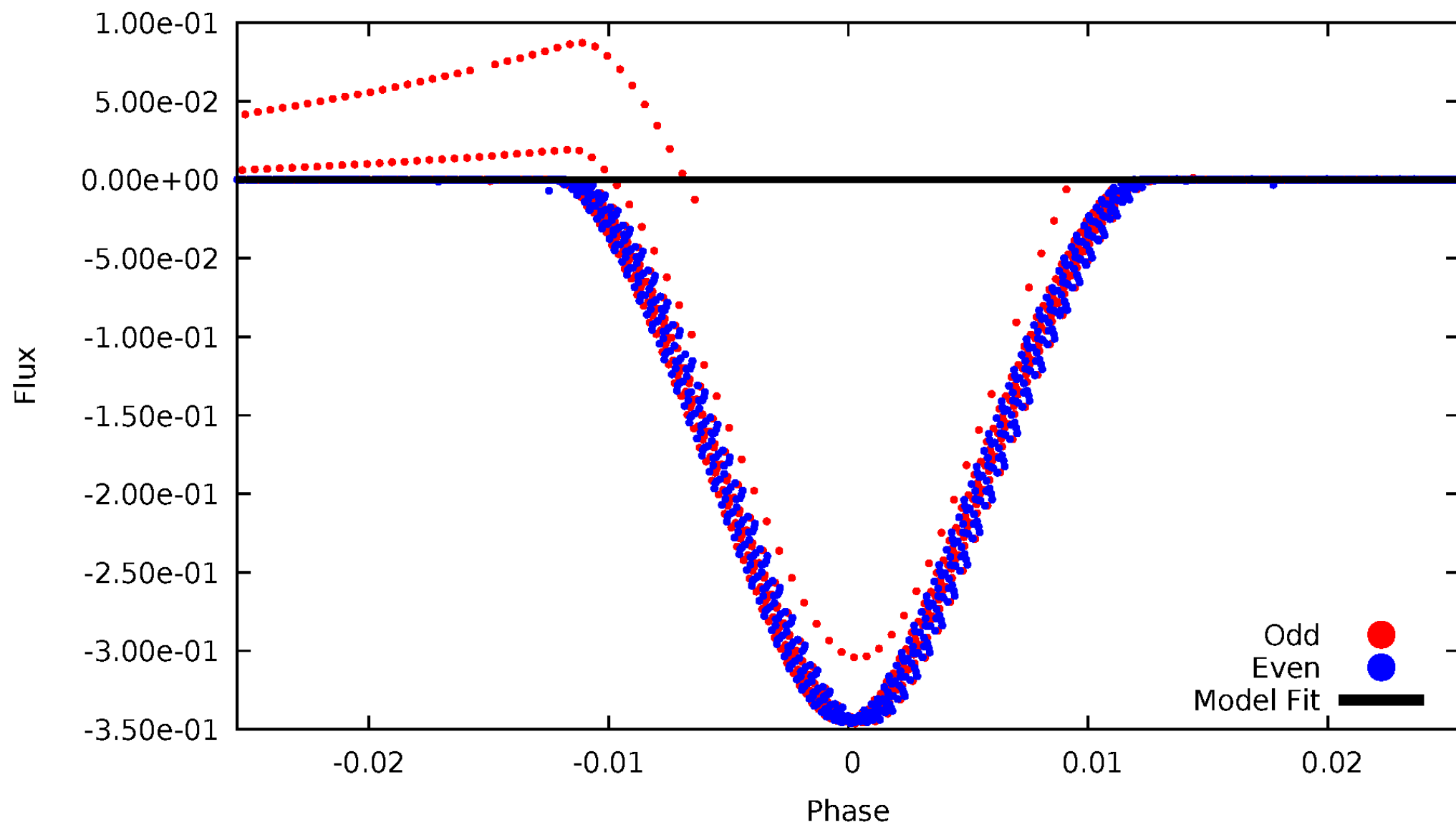


TCE 010909274-02



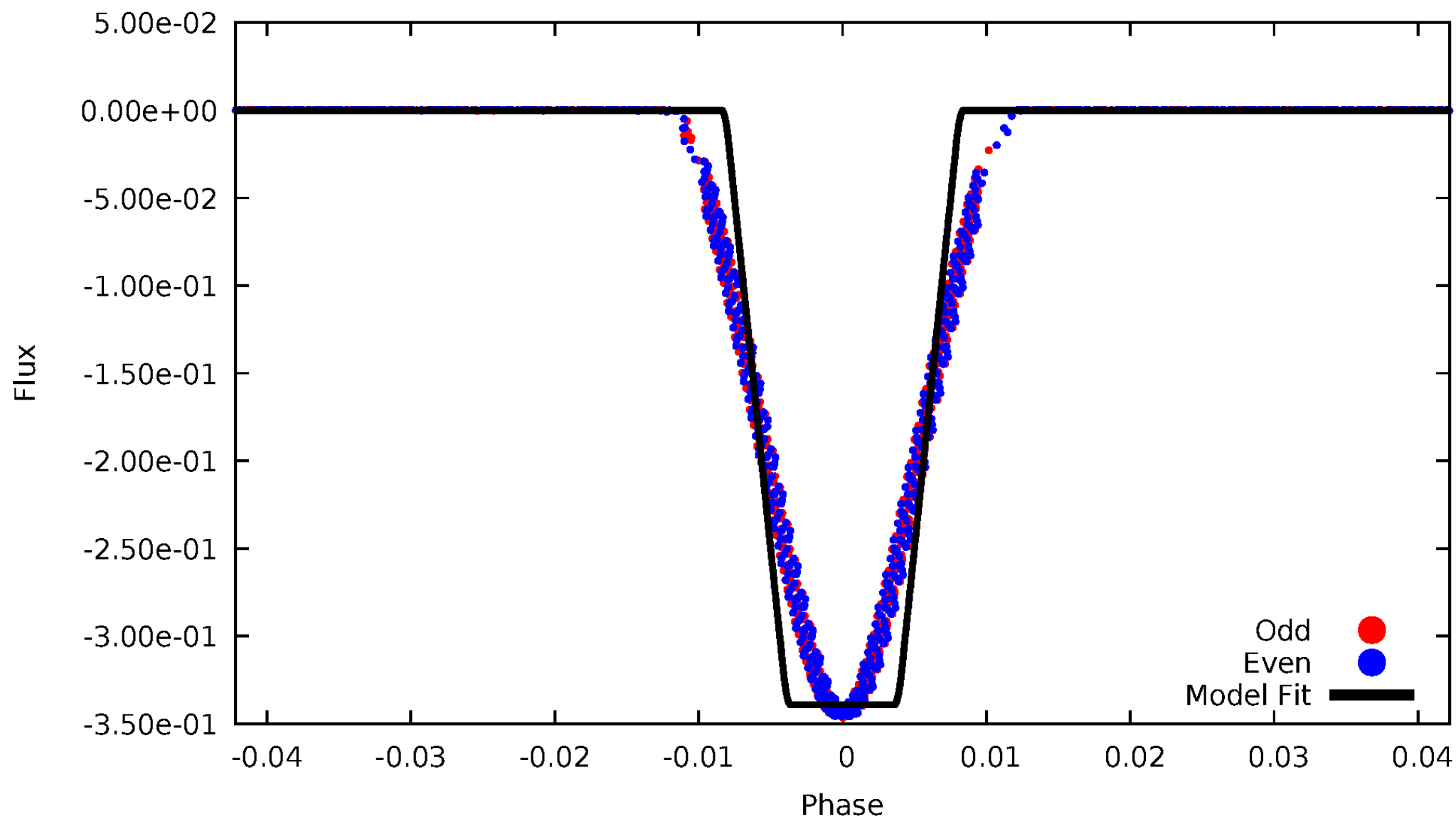
DV Odd/Even

TCE 010909274-02



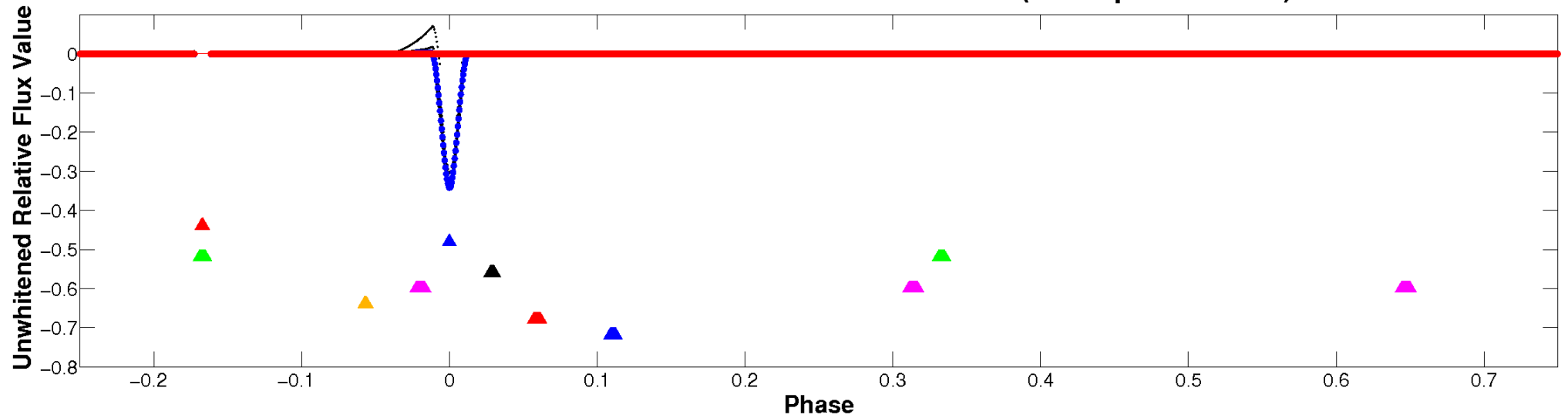
ALT Odd/Even

TCE 010909274-02

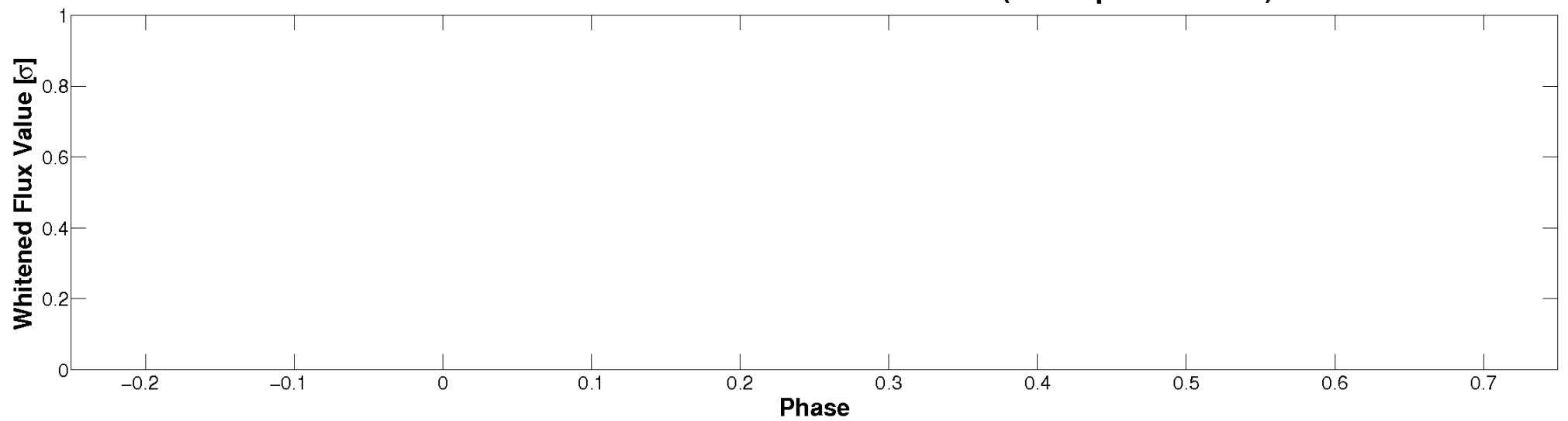


Non-Whitened Vs. Whitened Light Curve

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

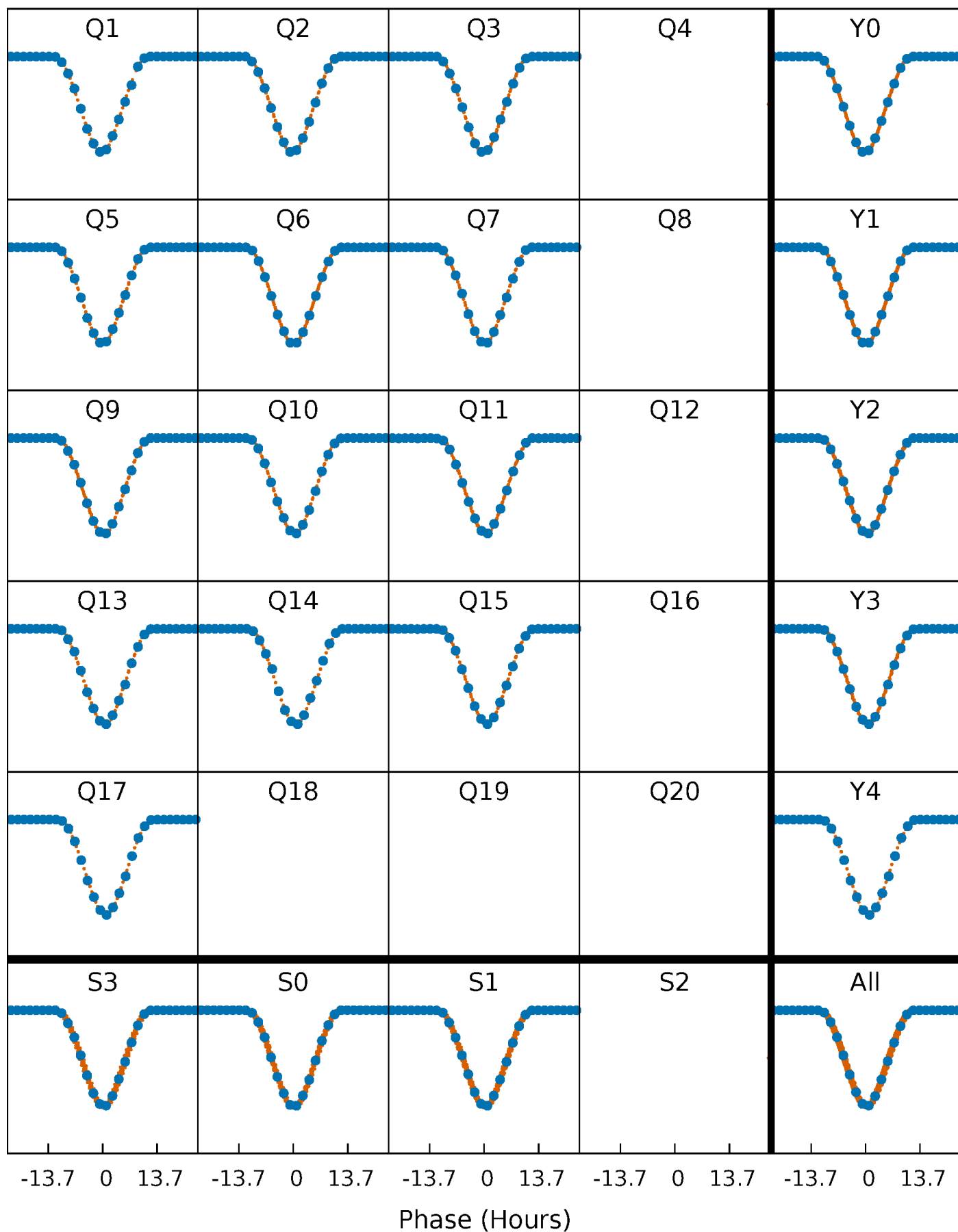


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



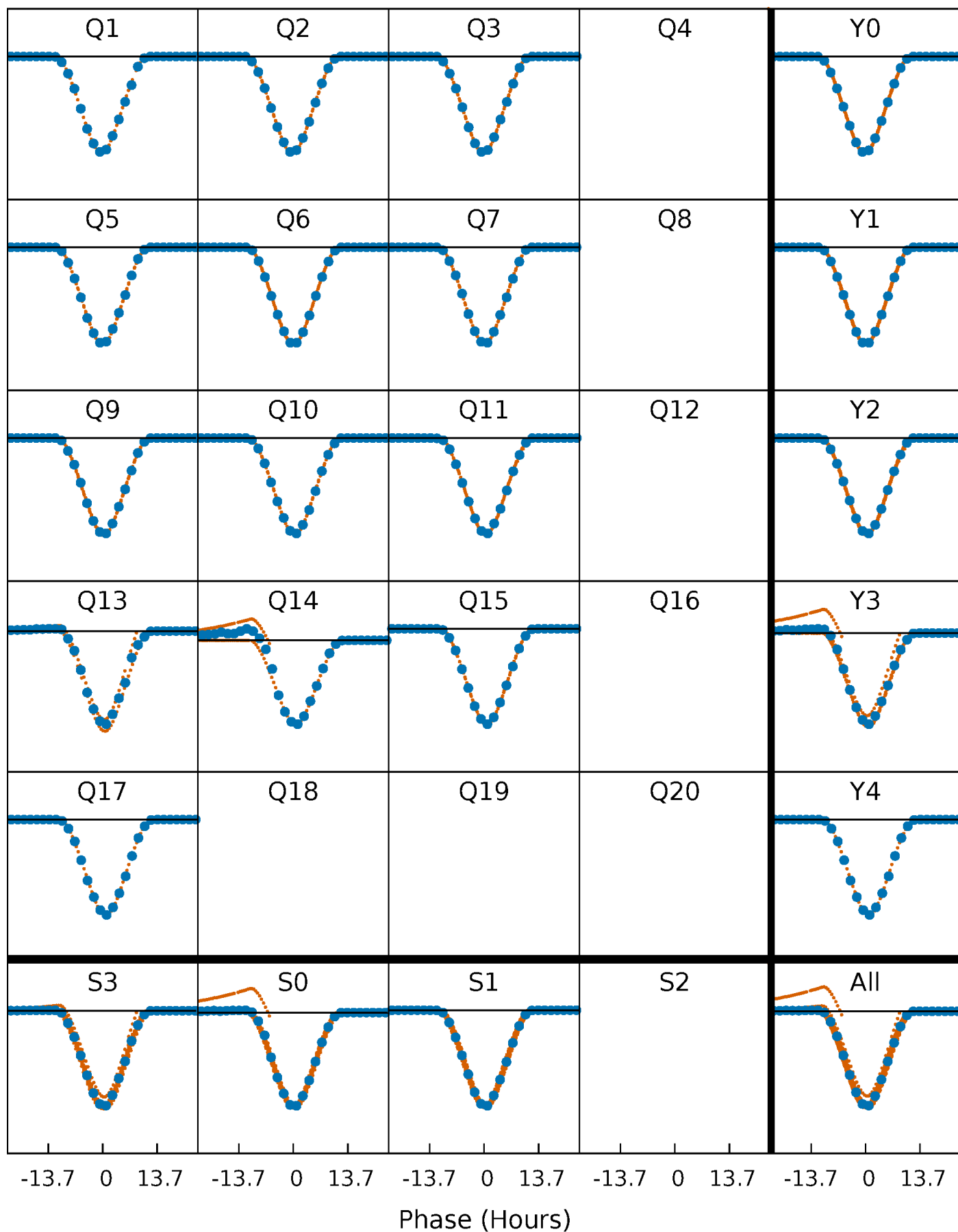
PDC Quarter-Phased Transit Curves

TCE 010909274-02 $P = 39.236842$ Days $T_0 = 155.230951$ (BKJD)



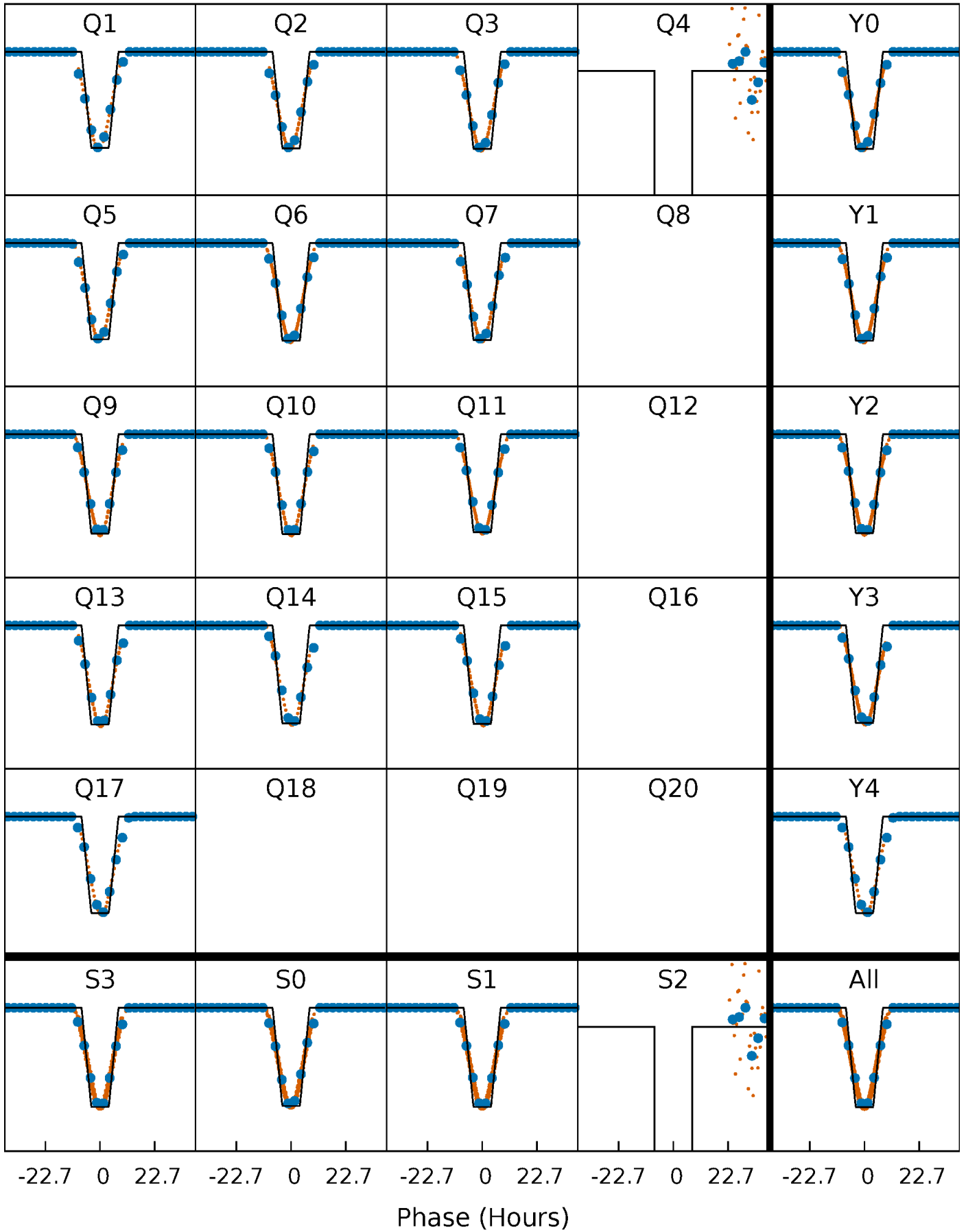
DV Quarter-Phased Transit Curves

TCE 010909274-02 P= 39.236842 Days $T_0=155.230951$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

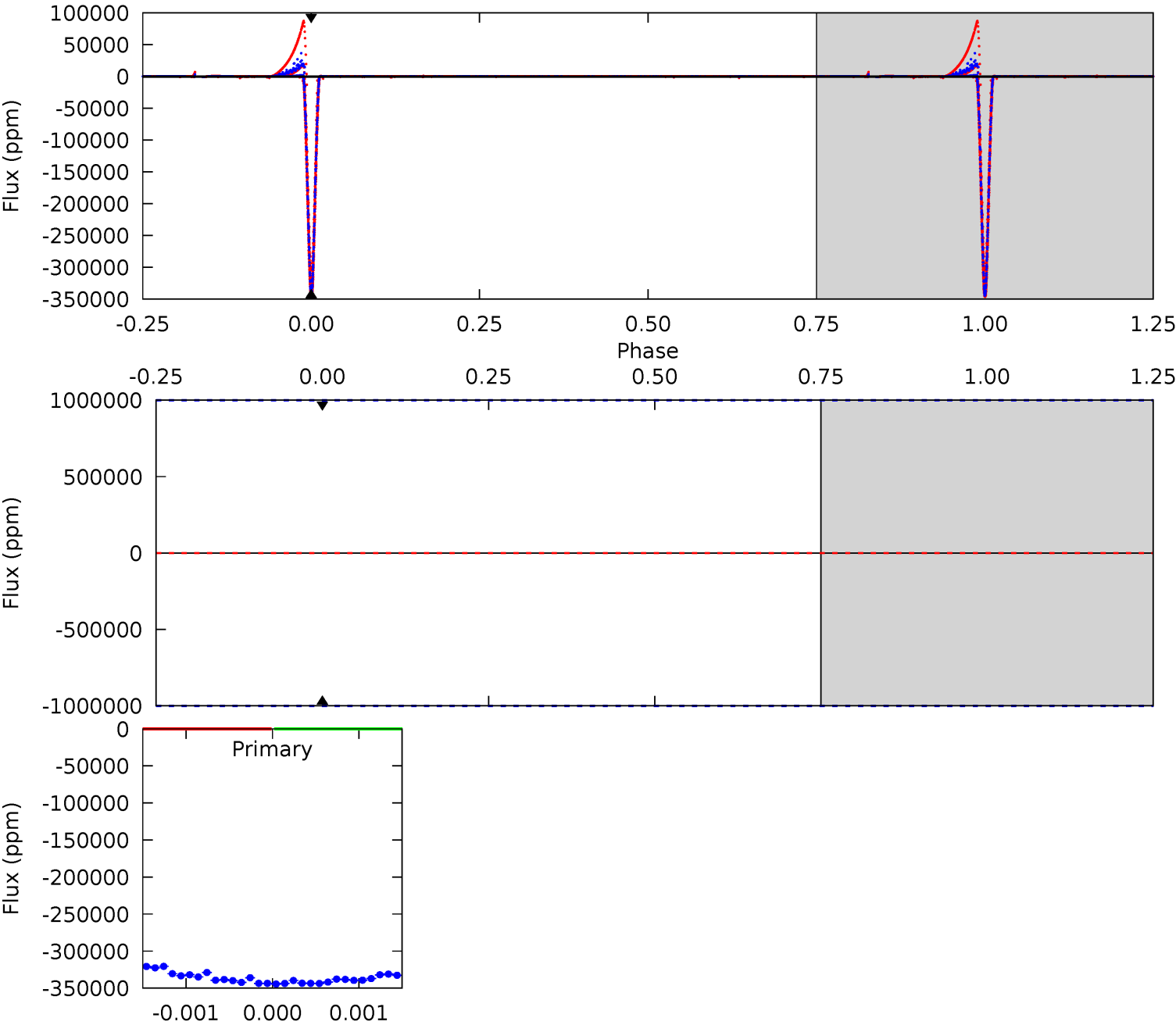
TCE 010909274-02 P= 39.236842 Days $T_0=155.240690$ (BKJD)



DV Model-Shift Uniqueness Test

010909274-02, P = 39.236842 Days, E = 115.994109 Days

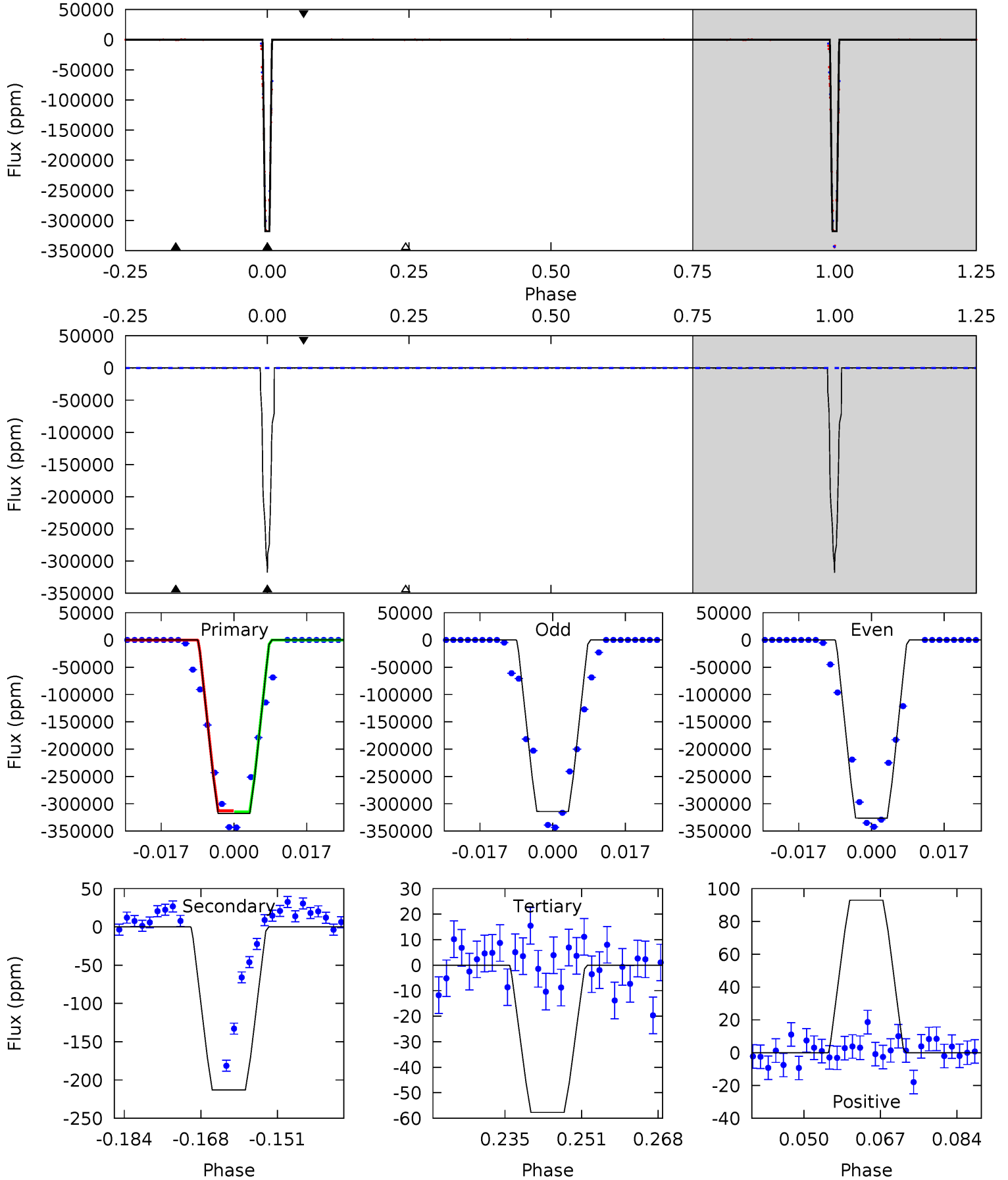
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010909274-02, P = 39.236842 Days, E = 116.003848 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24557	16.4	4.46	7.18	4.93	2.39	1.29	24552	24550	12.0	9.27	497.1	1.01	0.00	0



Stellar Parameters For KIC 010909274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6599^{+147}_{-213}	$4.350^{+0.060}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$1.234^{+0.283}_{-0.141}$	$1.248^{+0.144}_{-0.173}$	$0.936^{+0.246}_{-0.391}$
	+2%/-3%	+1%/-3%	+625%/-750%	+23%/-11%	+12%/-14%	+26%/-42%
Source	PHO1	FLK73	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 010909274-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$41.83^{+15.07}_{-14.11}$	924^{+48}_{-41}	3260^{+3864}_{-10051}	52^{+2255}_{-2123}
Alt.	-213 ± 13	$79.38^{+16.19}_{-15.01}$	926^{+44}_{-42}	1969^{+106}_{-100}	$1.079^{+0.530}_{-0.335}$

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

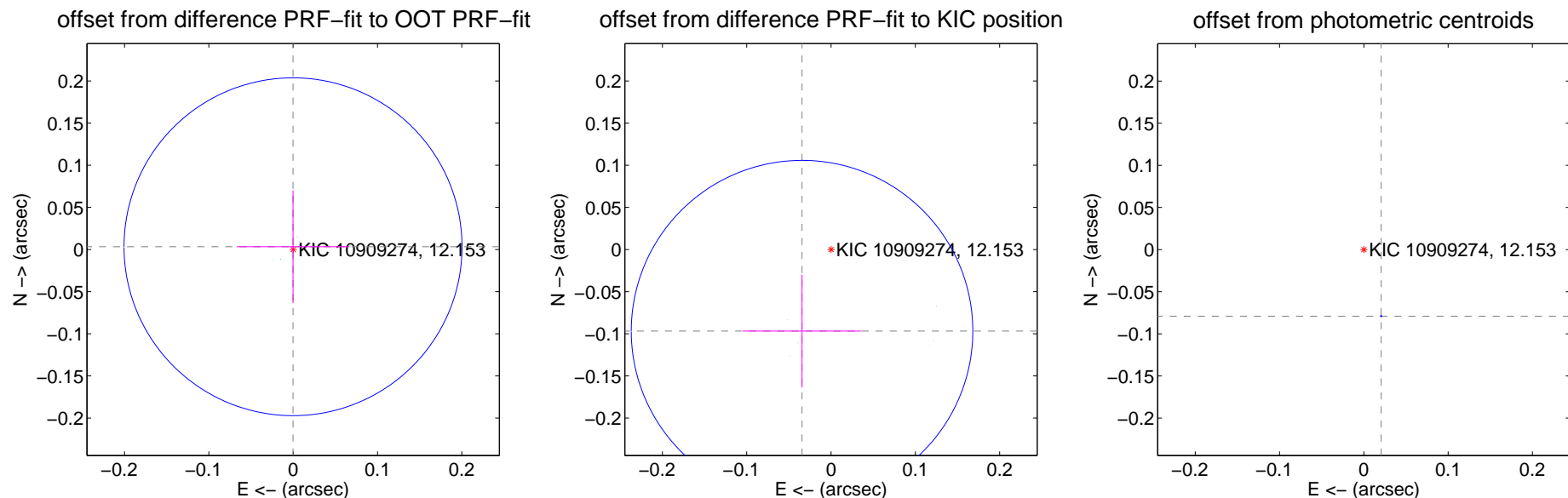
DV Centroid Data

Supplemental centroid analysis for 010909274-02. Kepler magnitude: 12.15. Transit SNR -1.00

There are 12 quarters with good PRF difference image offsets

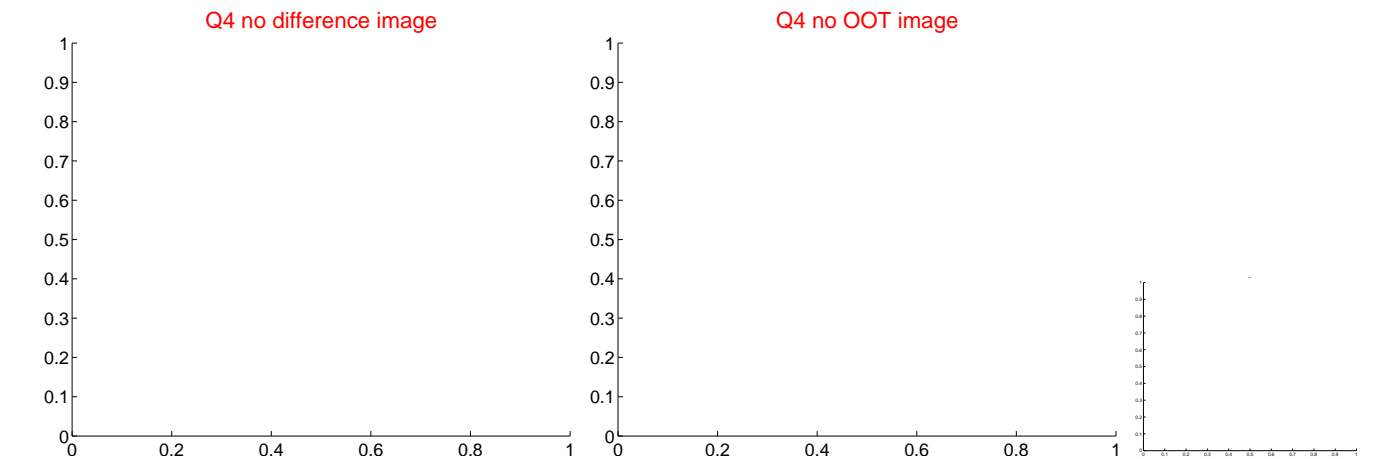
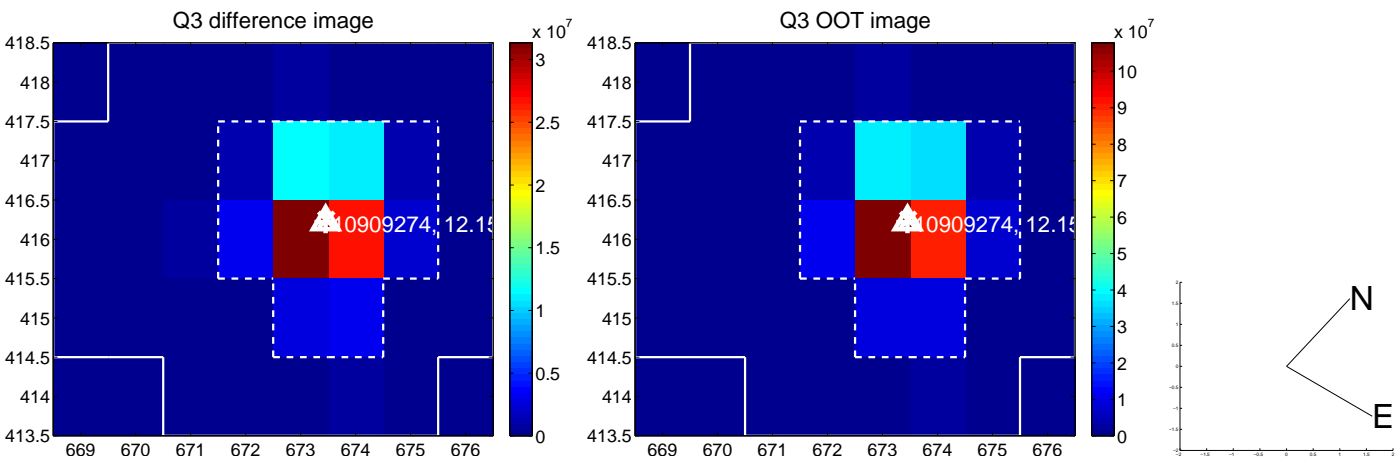
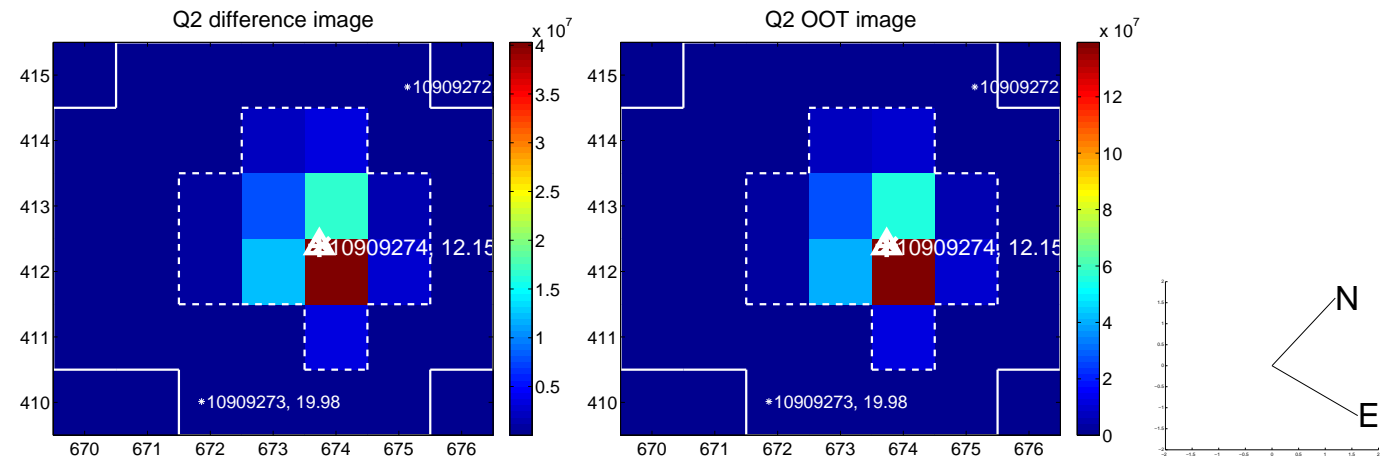
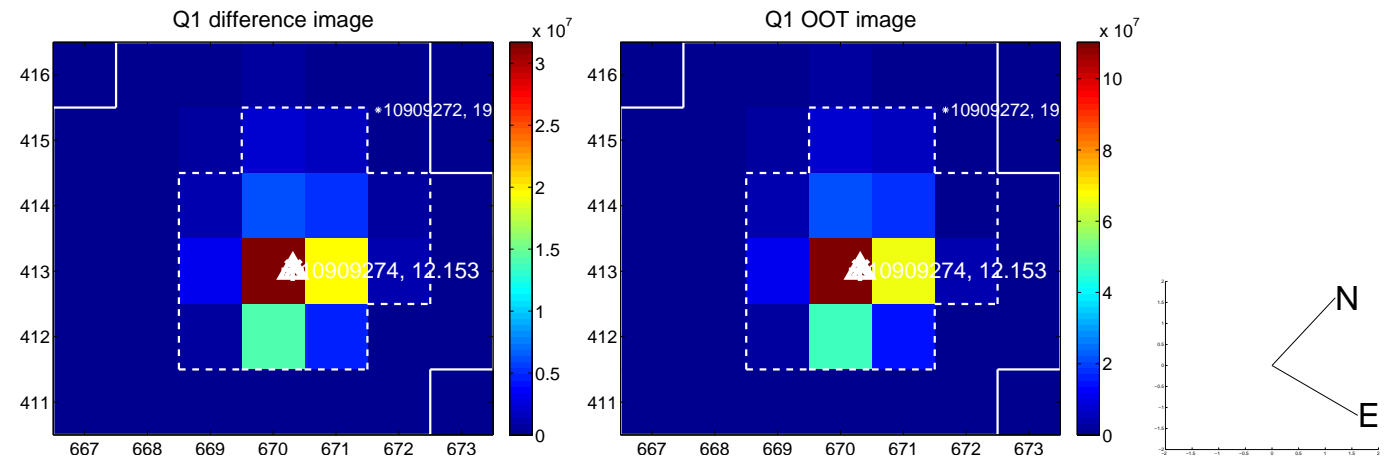
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.003 ± 0.067	0.05	0.000 ± 0.067	0.003 ± 0.067
PRF-fit source offset from KIC position	0.103 ± 0.068	1.52	0.034 ± 0.070	-0.097 ± 0.067
photometric centroid source offset	0.08 ± 0.00	328.41	-0.02 ± 0.00	-0.08 ± 0.00

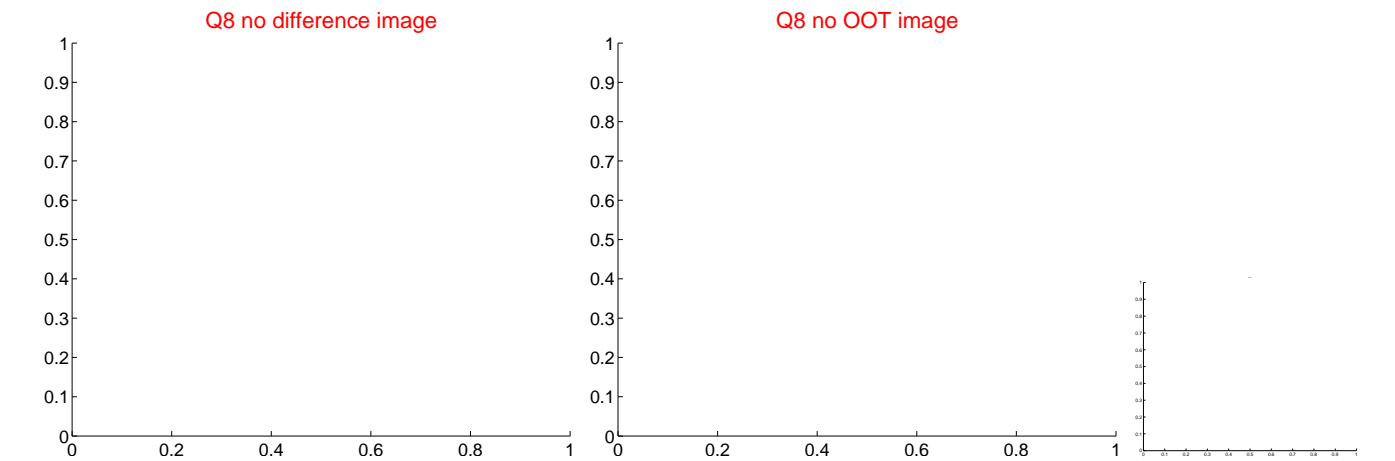
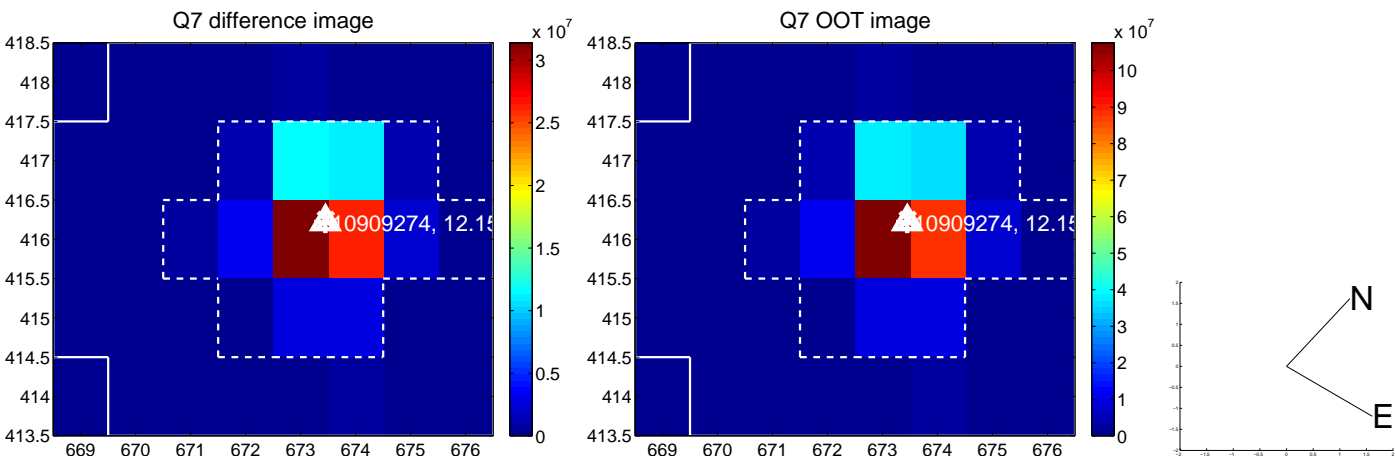
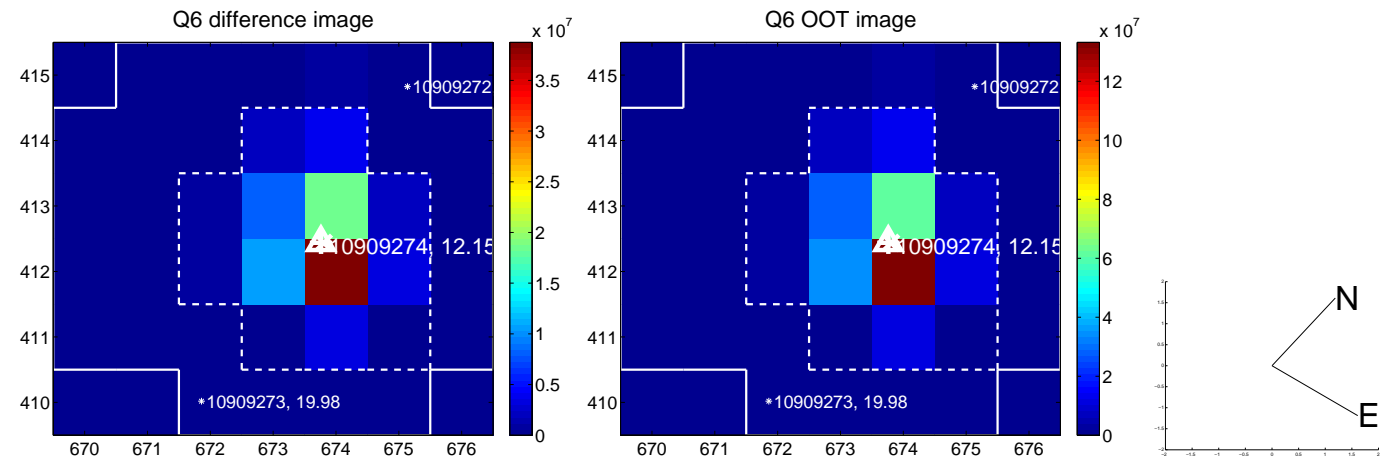
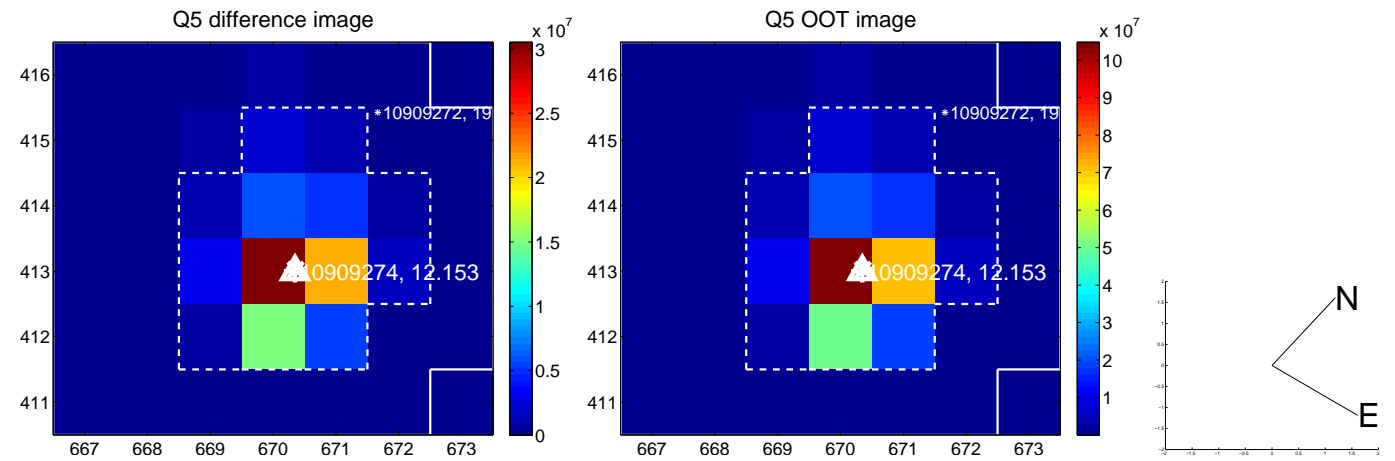


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

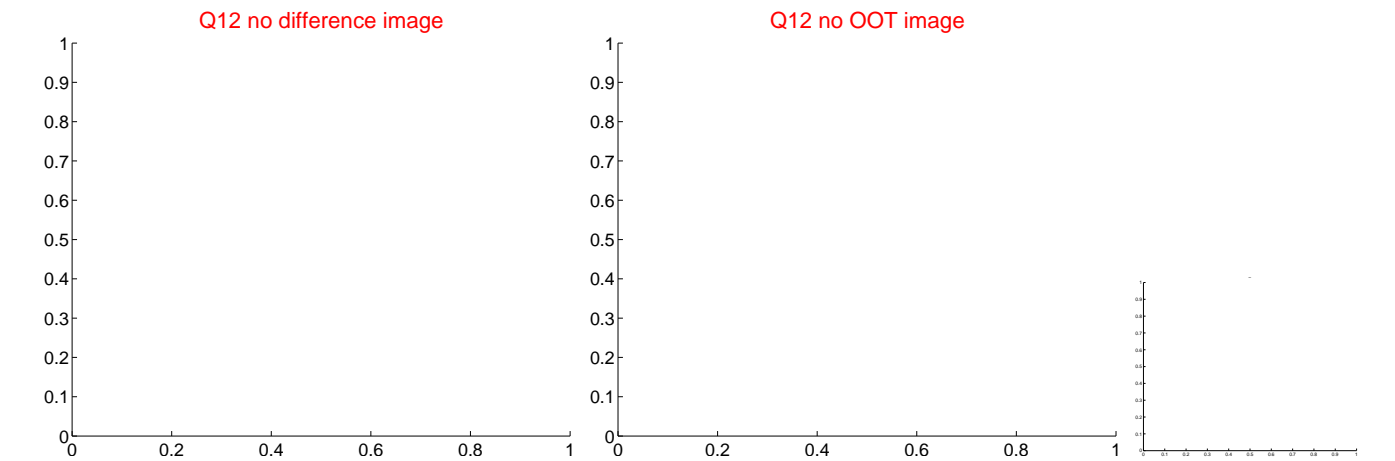
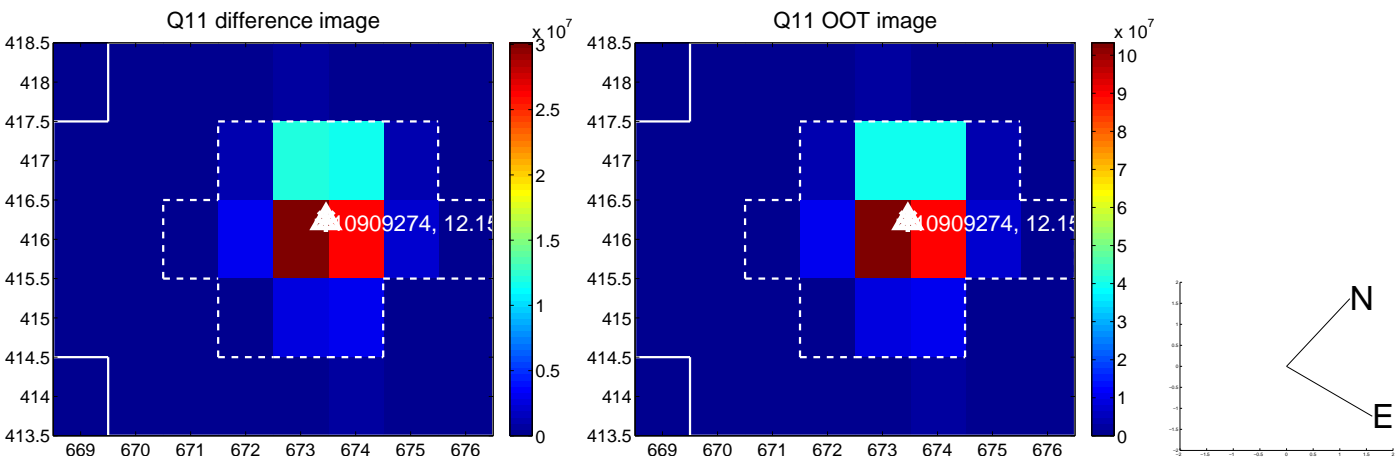
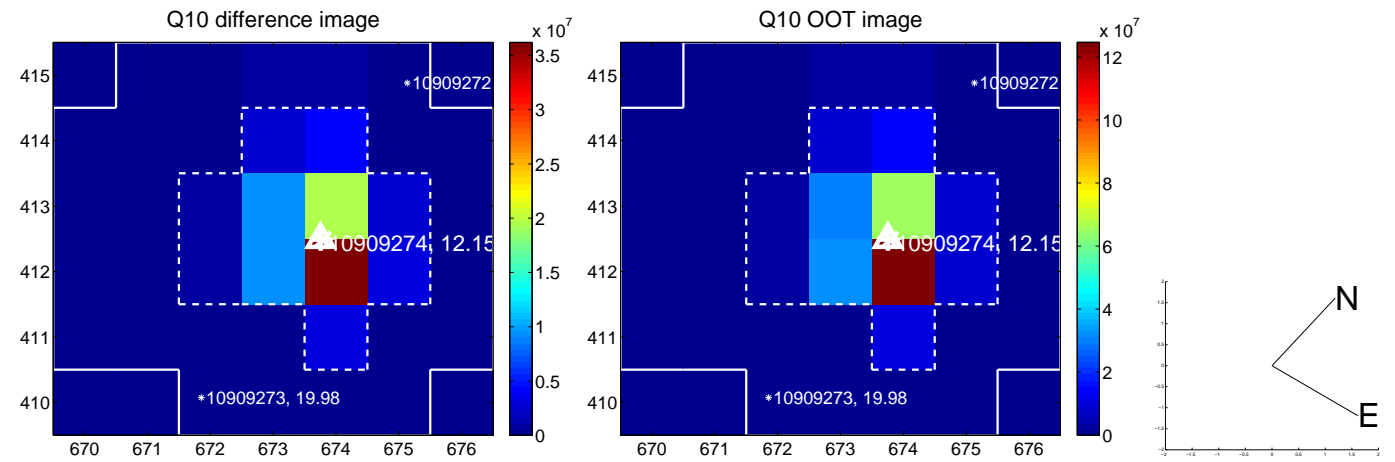
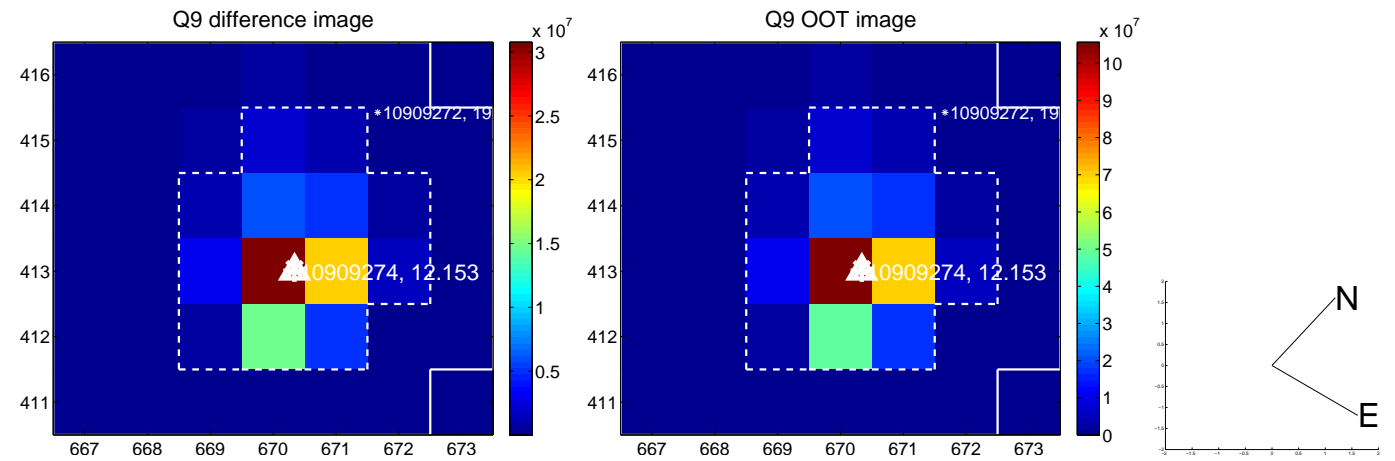
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



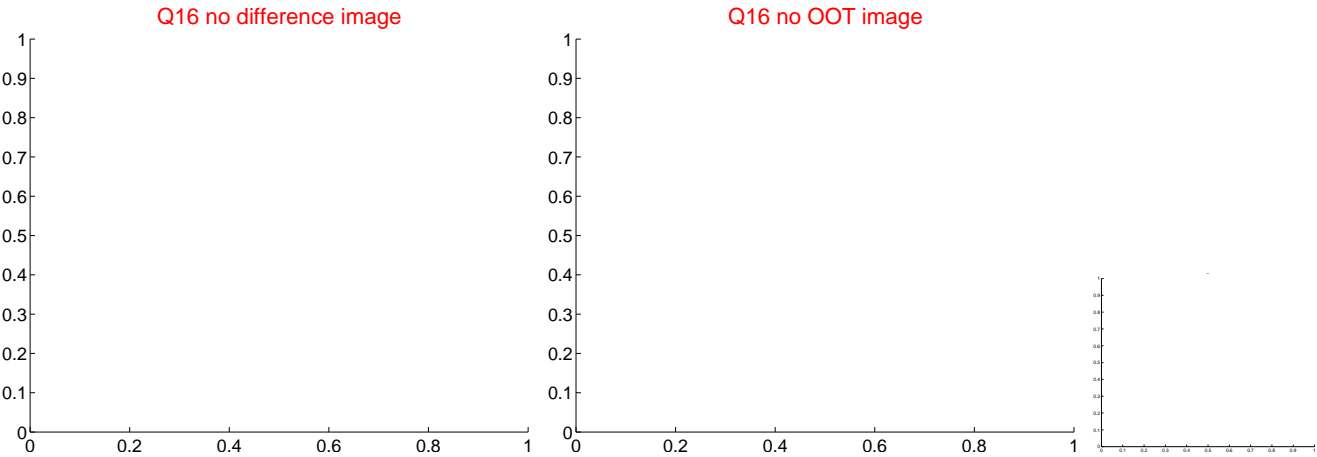
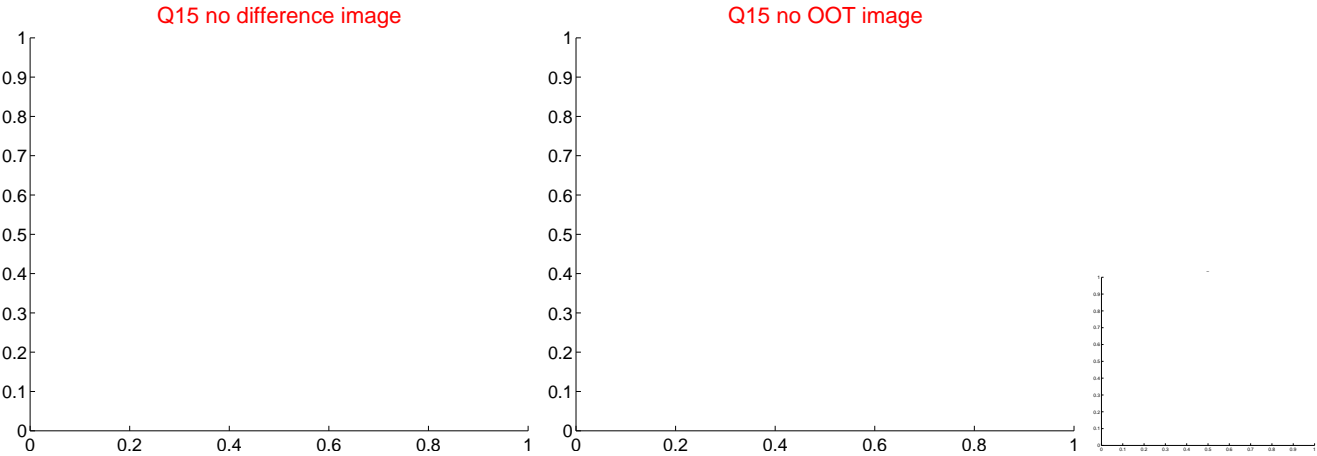
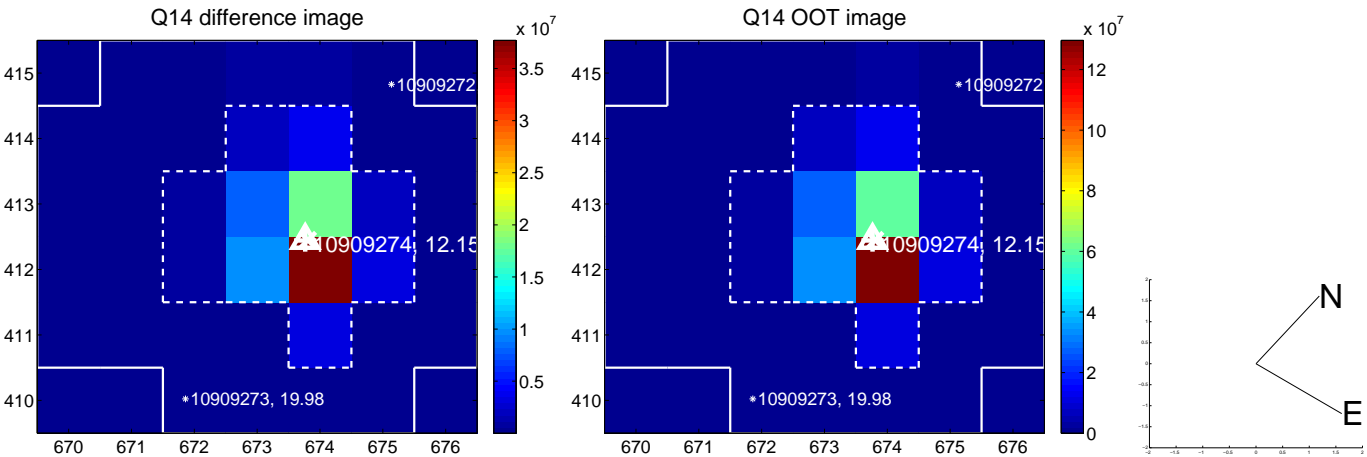
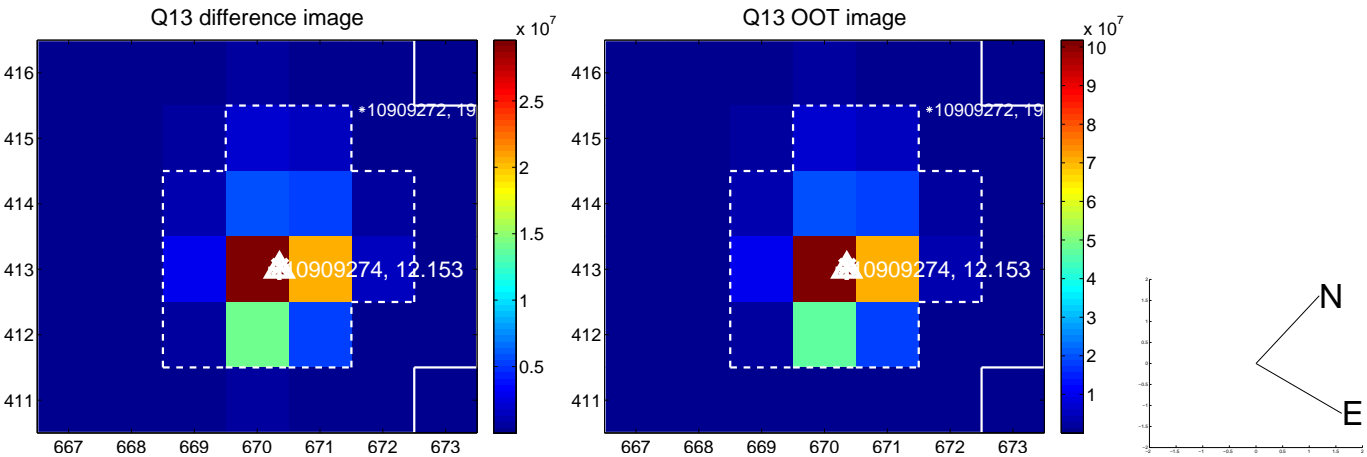
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



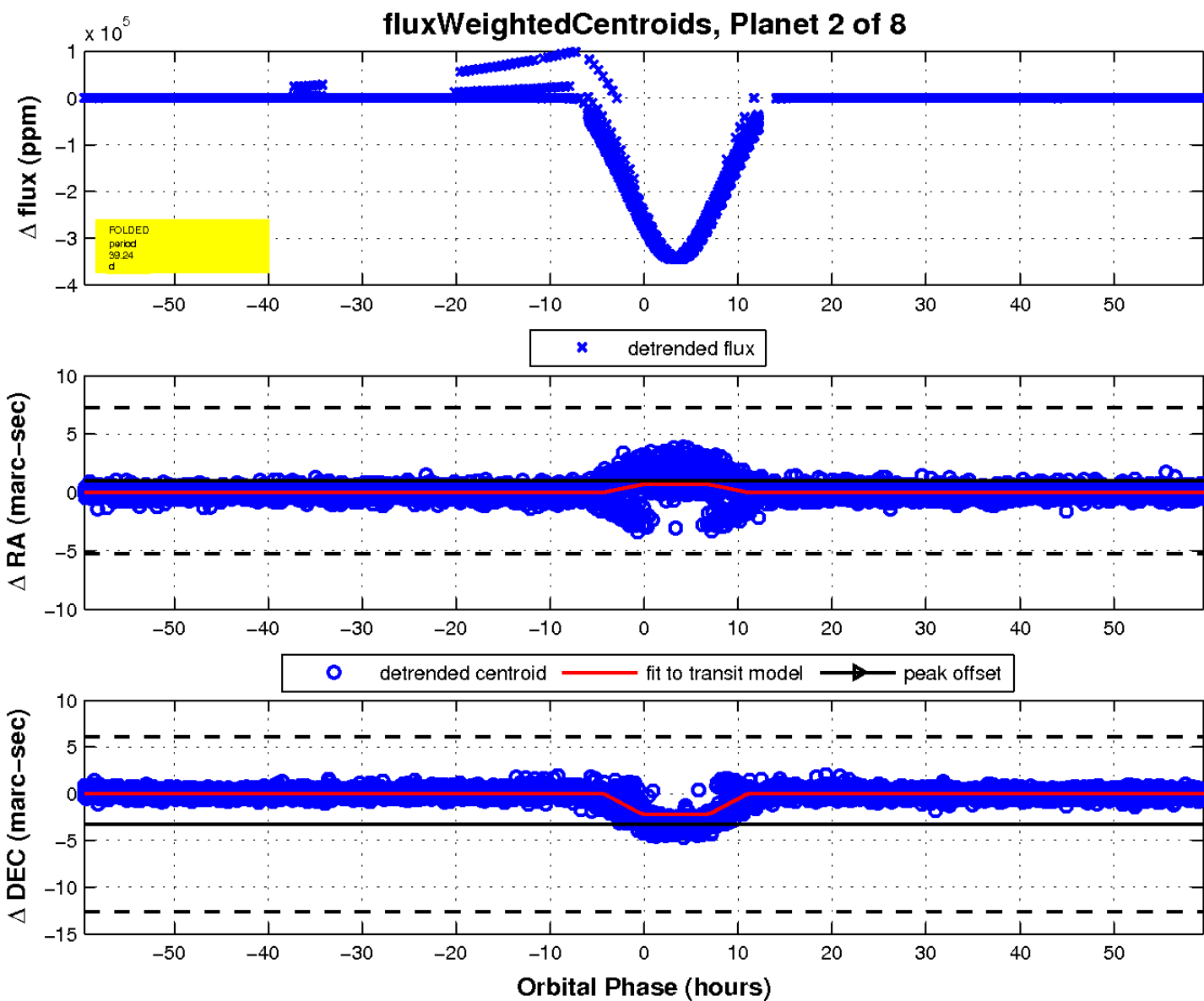
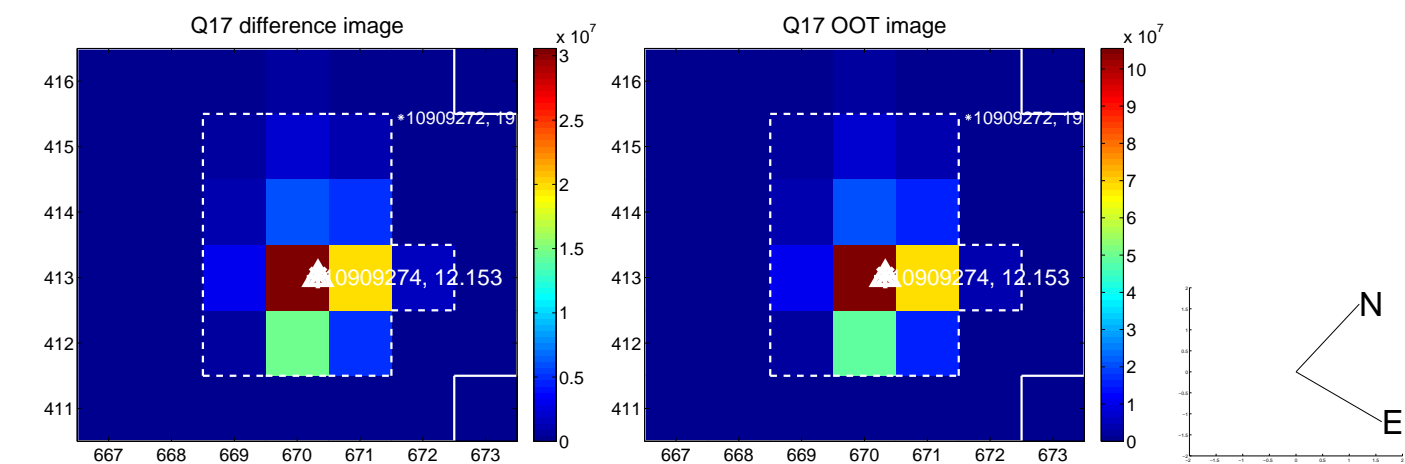
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

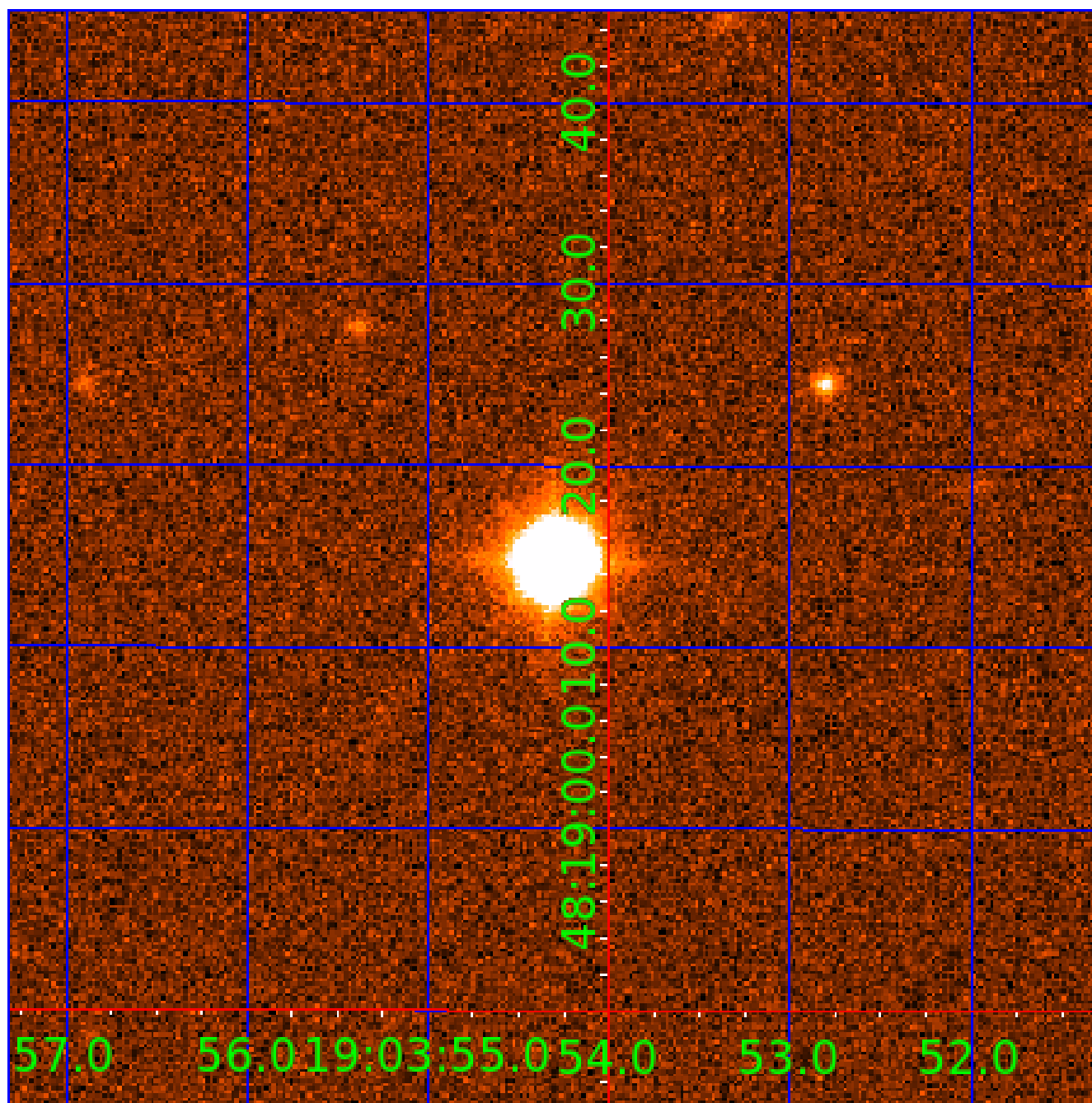


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010909274

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})
010909274-01	OBS	7385.01	39.237869	148.654751	453738.2	3.500	44979.7	-1.0	1.23	6599	65.30	43.79
010909274-02	OBS	No	39.236842	155.230951	345050.7	12.000	28778.8	-1.0	1.23	6599	41.37	43.80
010909274-03	OBS	No	19.620723	148.593957	529.3	37.565	5258.6	34.9	1.23	6599	5.43	110.34
010909274-04	OBS	No	39.239282	156.324147	7594.1	10.500	1106.7	-1.0	1.23	6599	10.82	43.79
010909274-05	OBS	No	13.081122	141.266344	39.5	9.677	503.5	5.1	1.23	6599	0.89	189.45
010909274-06	OBS	No	39.238292	152.979854	2921.6	15.000	373.2	-1.0	1.23	6599	6.71	43.79
010909274-07	OBS	No	39.241582	157.475237	1576.7	15.000	251.8	-1.0	1.23	6599	4.93	43.79
010909274-08	OBS	No	39.232819	159.646855	4493.6	52.422	76.7	134.1	1.23	6599	14.89	43.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010909274-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
010909274-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010909274-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—RESIDUAL_TCE
010909274-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
010909274-06	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-07	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
010909274-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

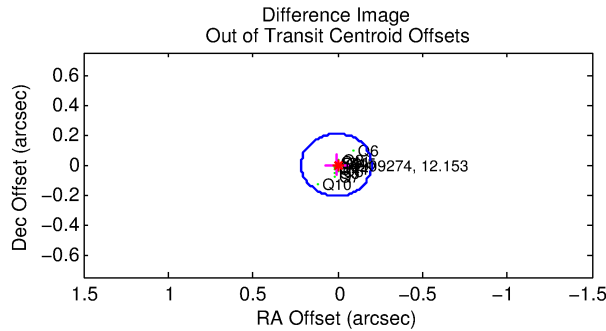
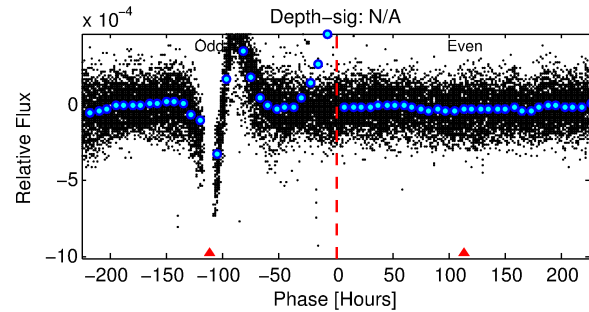
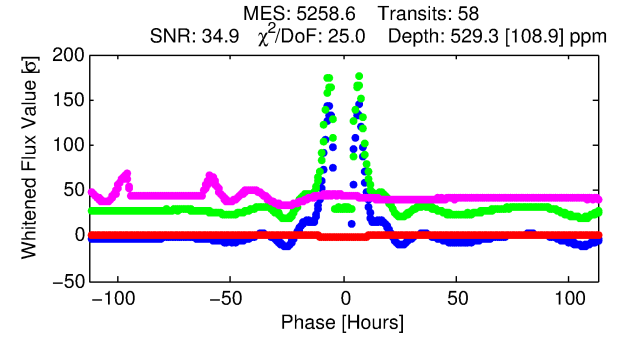
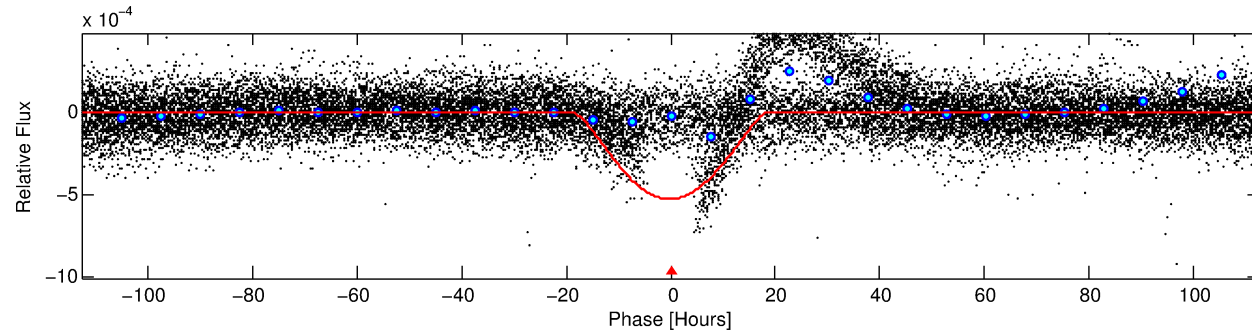
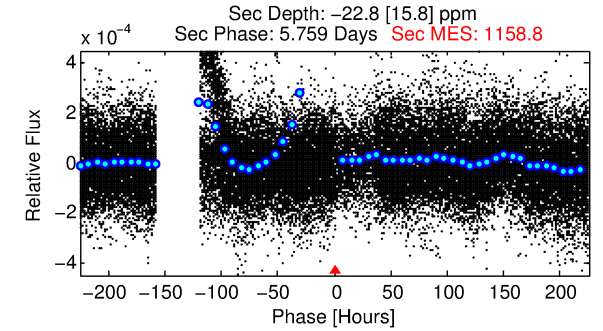
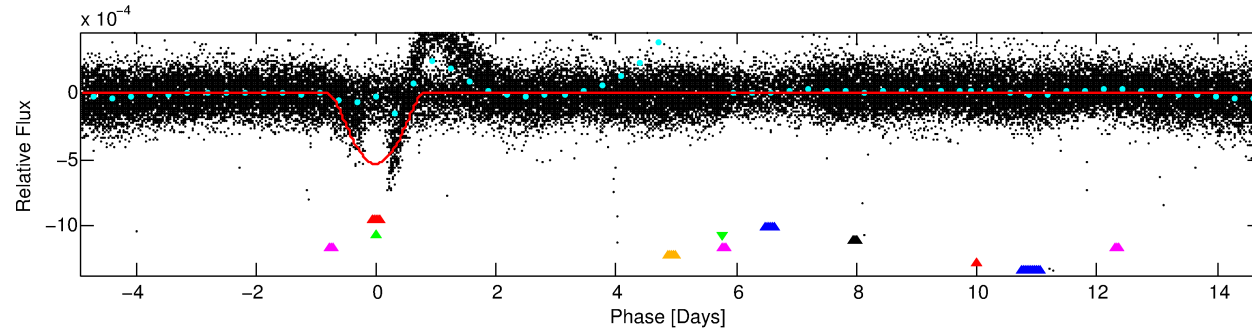
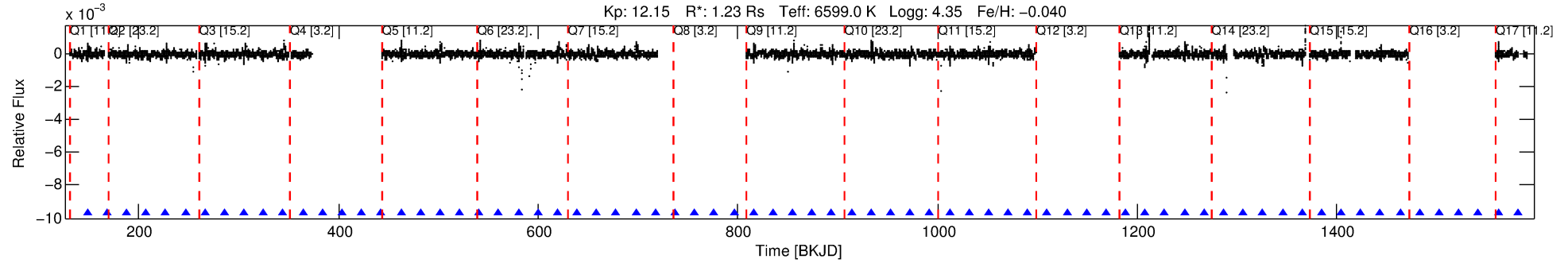
Ephemeris Match Information For 010909274-03

No Significant Match Found

DV One-Page Summary

KIC: 10909274 Candidate: 3 of 8 Period: 19.621 d

KOI: K07385 Corr: No Ephemeris Match



DV Fit Results:

Period = 19.62072 [0.00156] d
Epoch = 148.5940 [0.0605] BKJD
Rp/R* = 0.0403 [0.0572]
a/R* = 1.53 [0.24]
b = 1.00 [0.08]
Seff = 110.34 [32.40]
Teff = 826 [61] K
Rp = 5.43 [7.81] Re
a = 0.1531 [0.0286] AU
Ag = N/A
Teffp = N/A

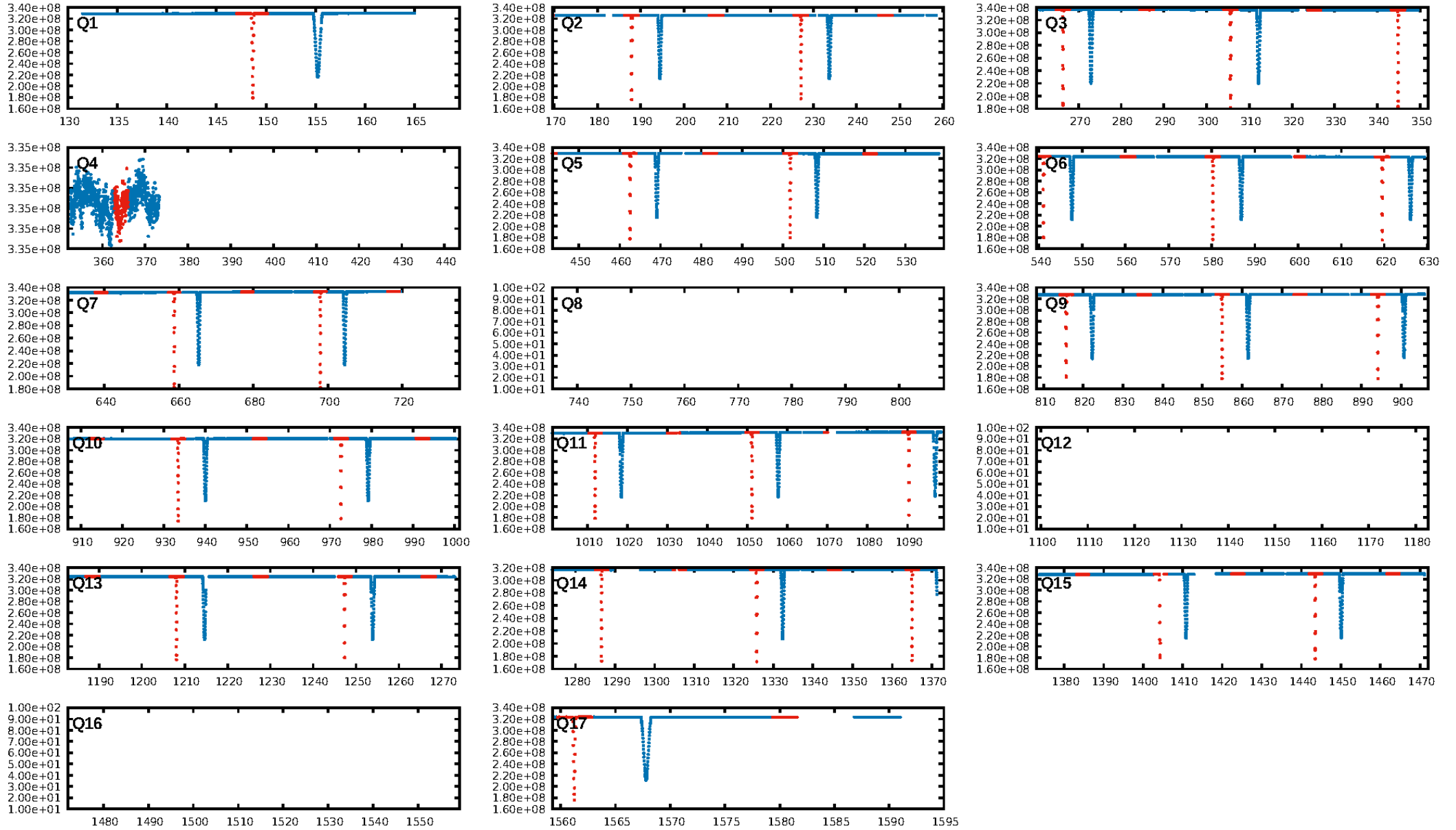
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.05 σ]
LongPeriod-sig: 100.0% [7.30 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [54/54]
GhostDiagnostic-chr: 1.05
Centroid-sig: 50.7%
Centroid-so: 0.092 arcsec [1.13 σ]
OotOffset-rm: 0.008 arcsec [0.11 σ]
KicOffset-rm: 0.087 arcsec [1.26 σ]
OotOffset-st: 4/4/0/3 [11]
KicOffset-st: 4/4/0/3 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 0.00 [0/12]

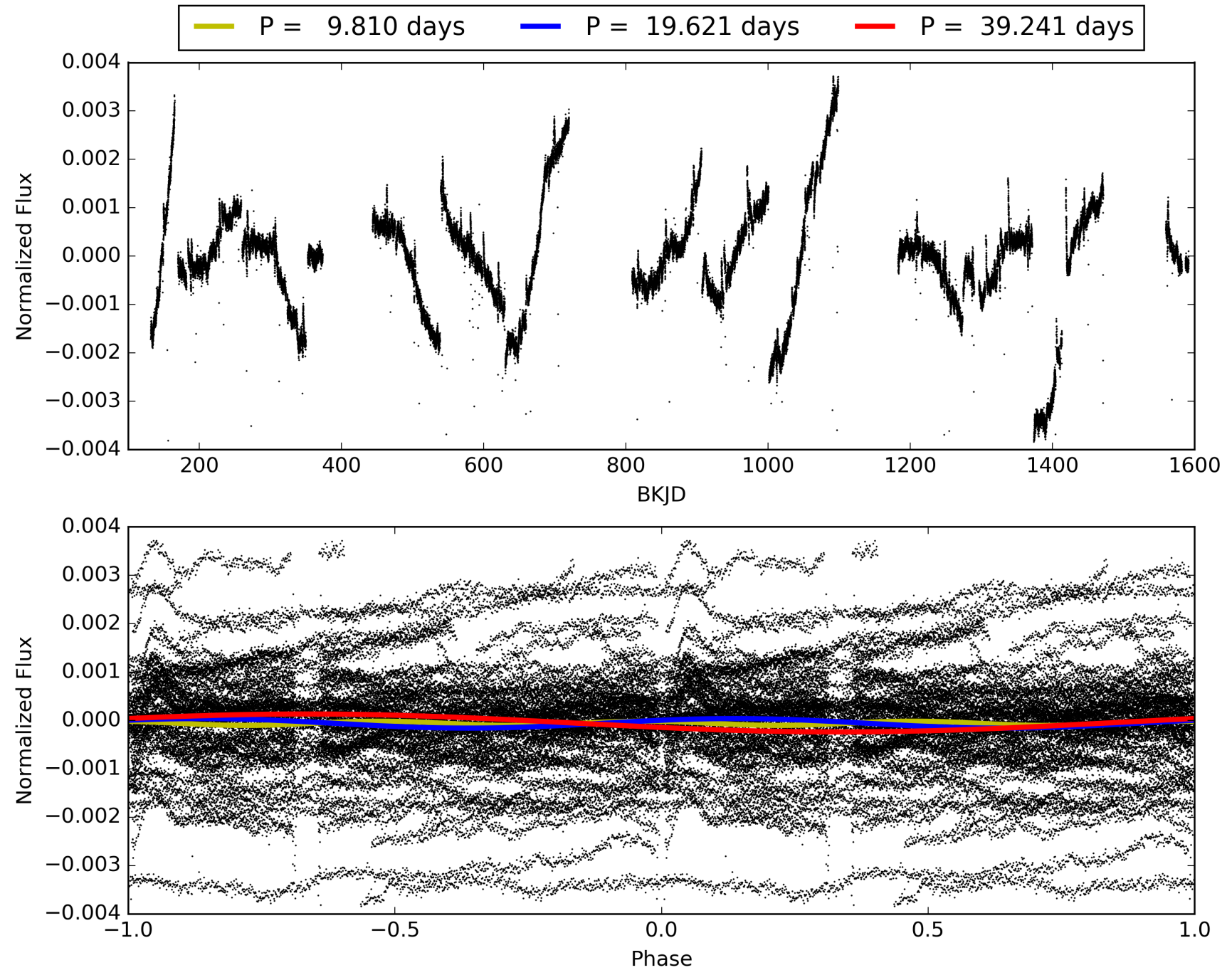
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:17:37 Z

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

TCE 010909274-03, PDC Light Curves

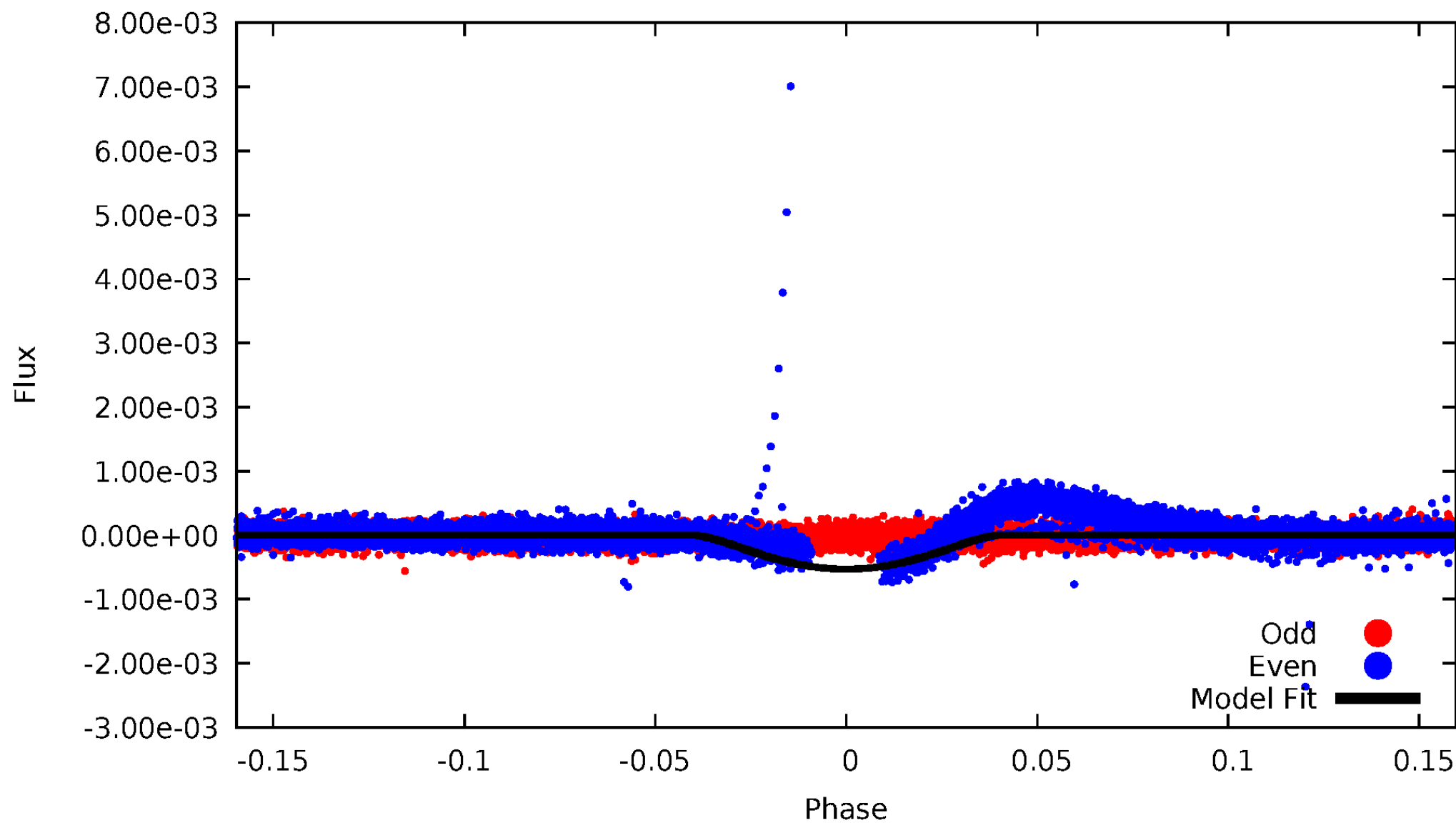


TCE 010909274-03



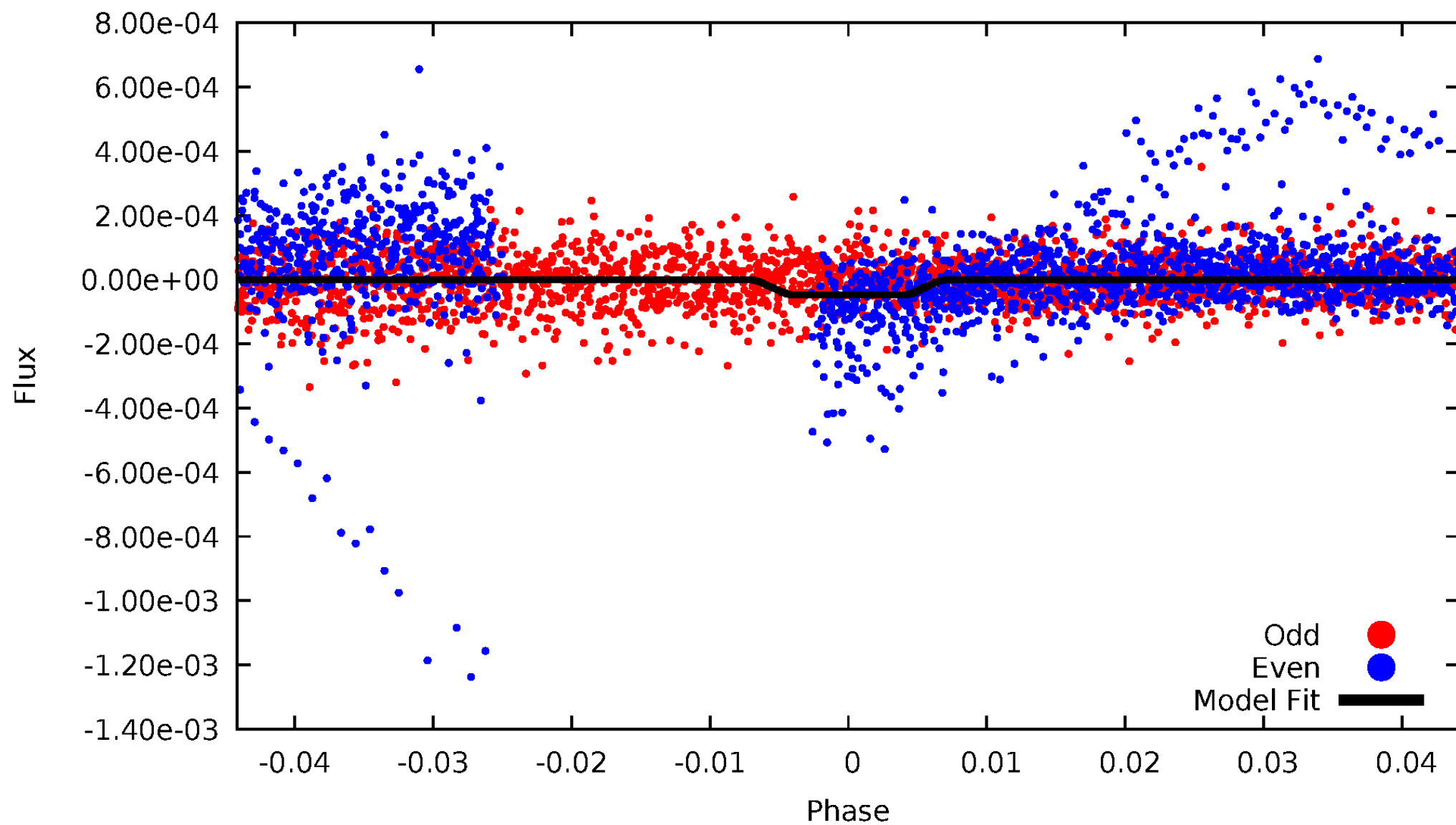
DV Odd/Even

TCE 010909274-03



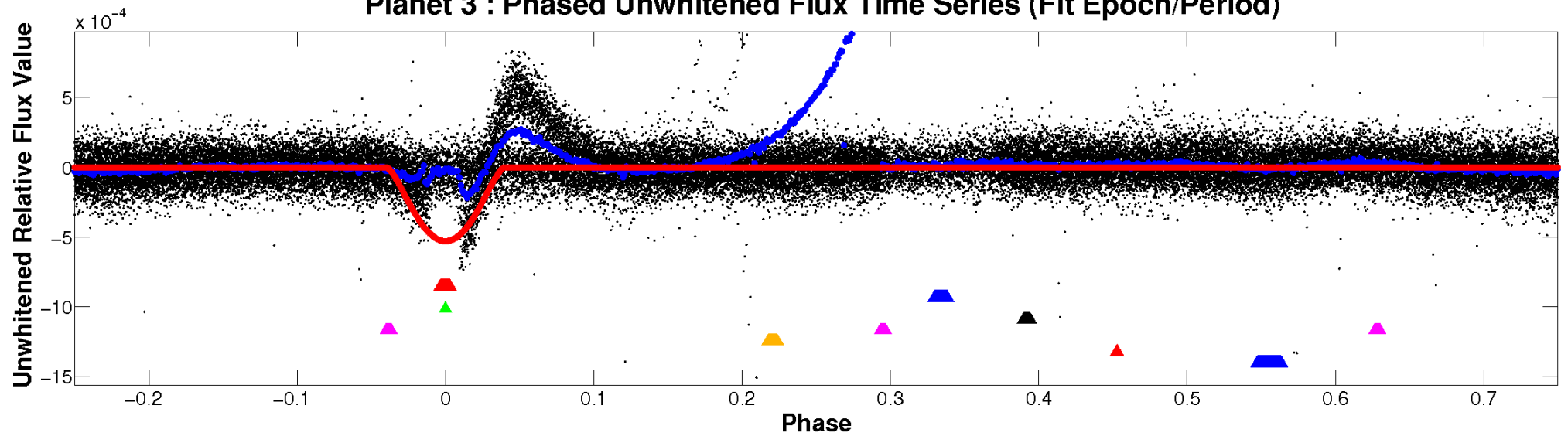
ALT Odd/Even

TCE 010909274-03

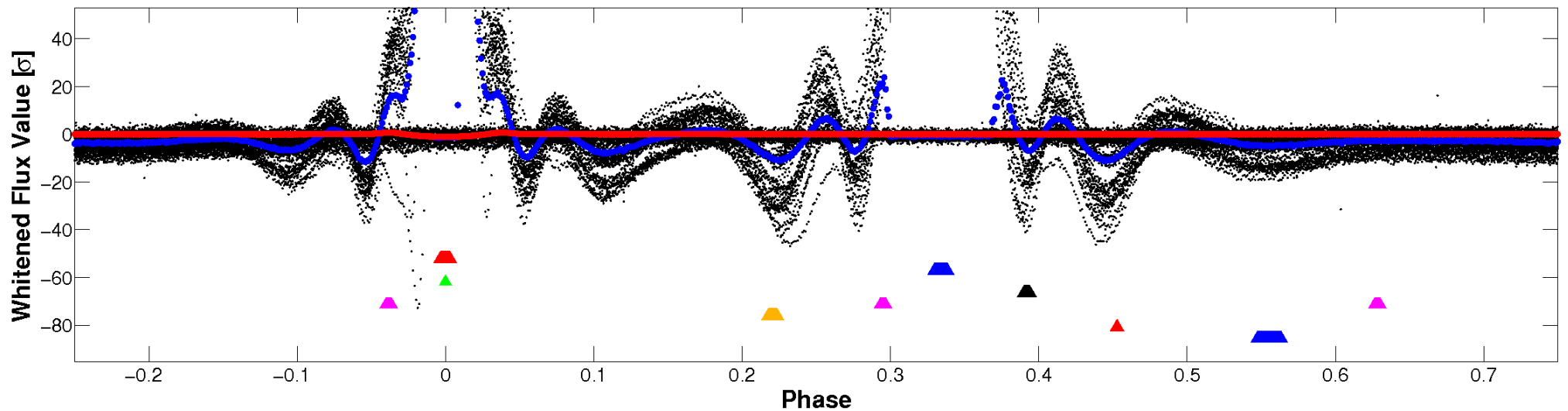


Non-Whitened Vs. Whitened Light Curve

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

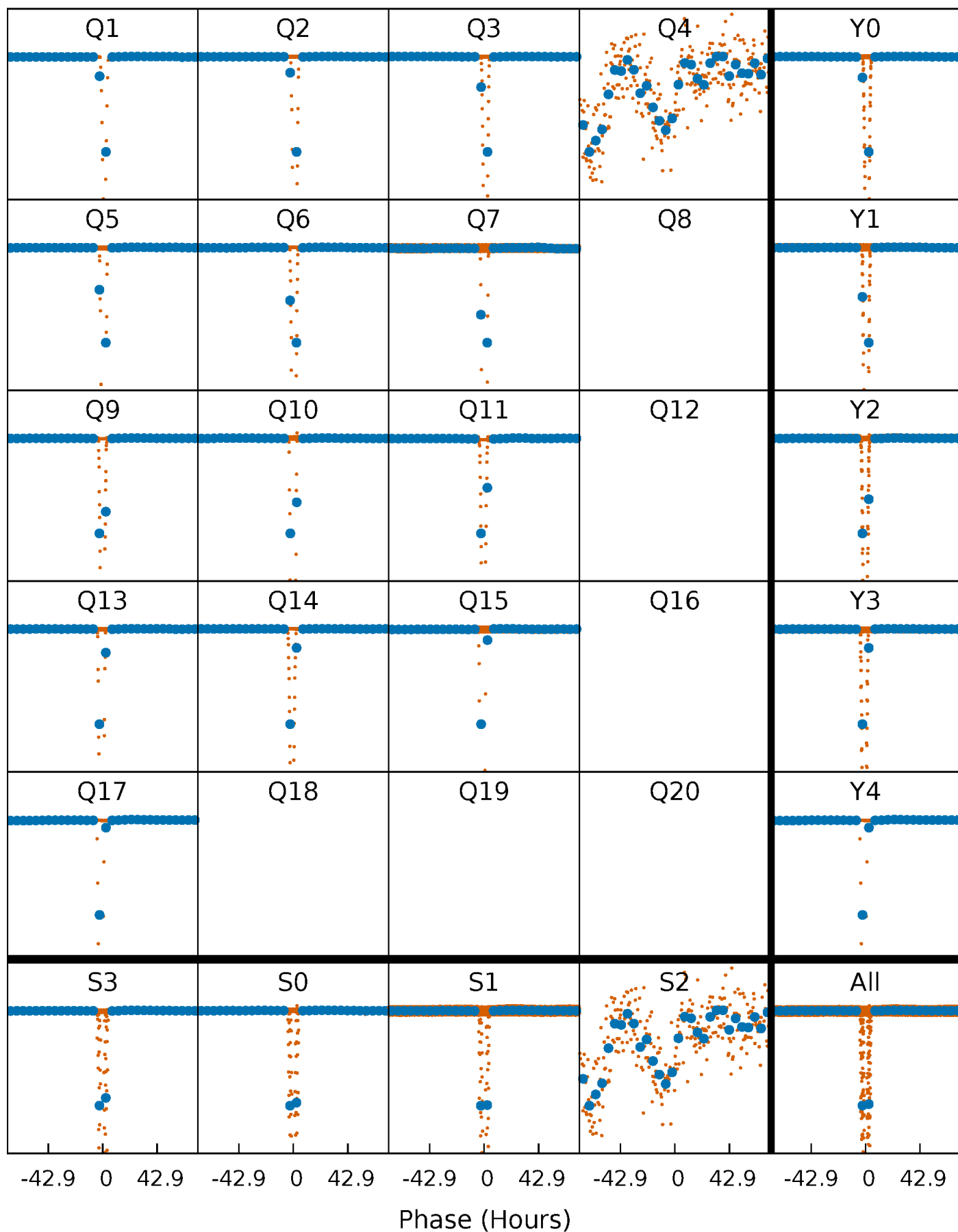


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



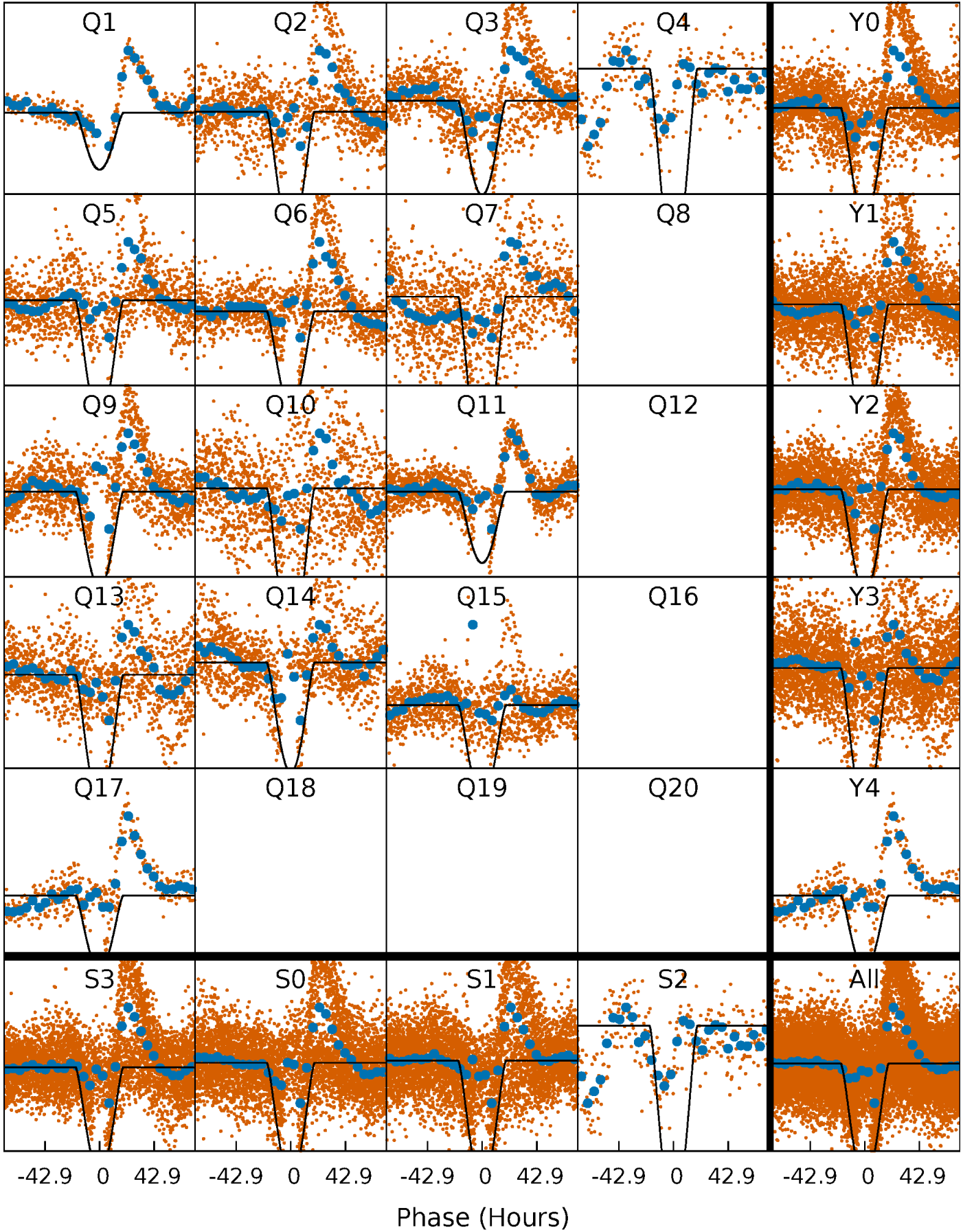
PDC Quarter-Phased Transit Curves

TCE 010909274-03 P= 19.620723 Days $T_0=148.593957$ (BKJD)



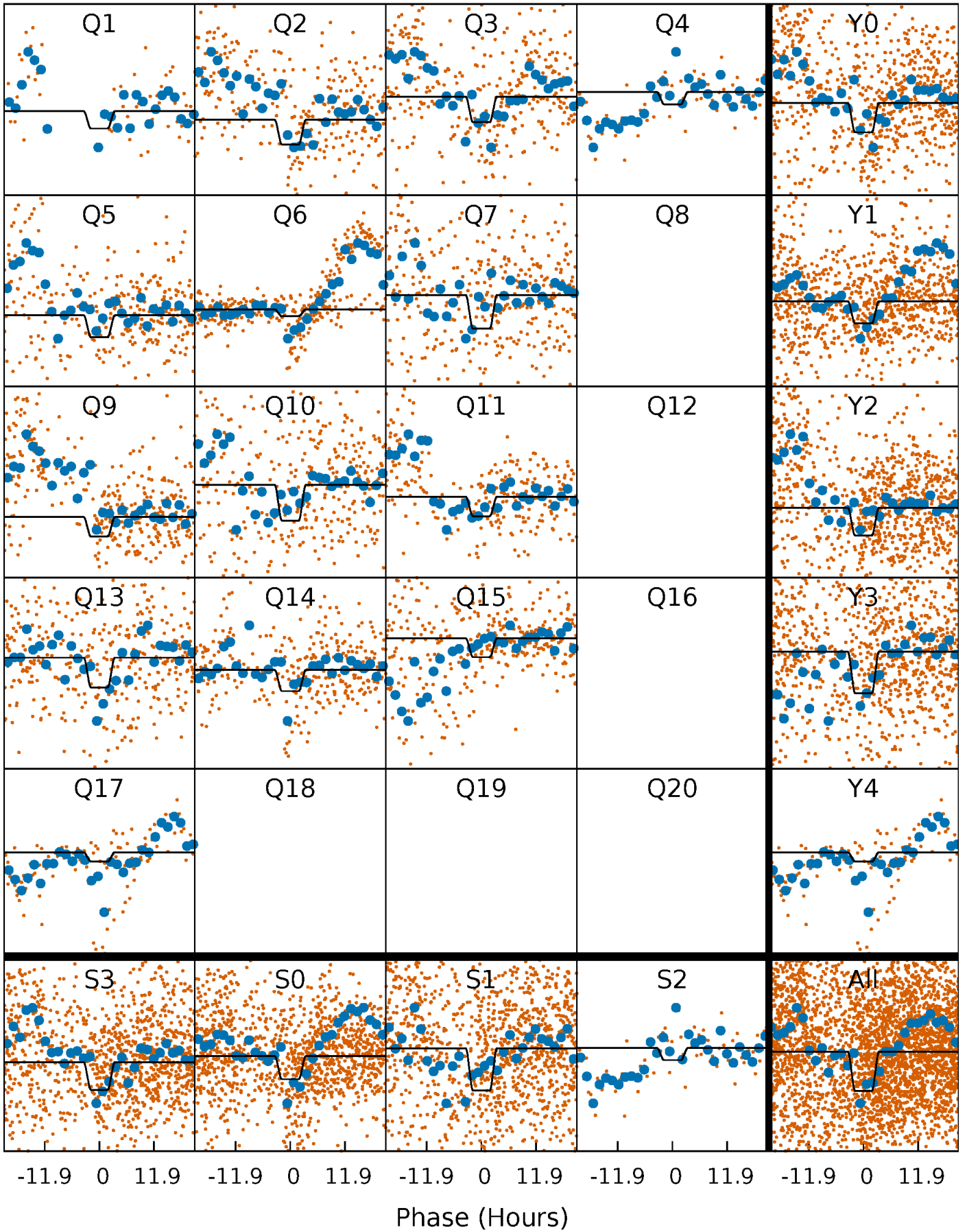
DV Quarter-Phased Transit Curves

TCE 010909274-03 P= 19.620723 Days $T_0=148.593957$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

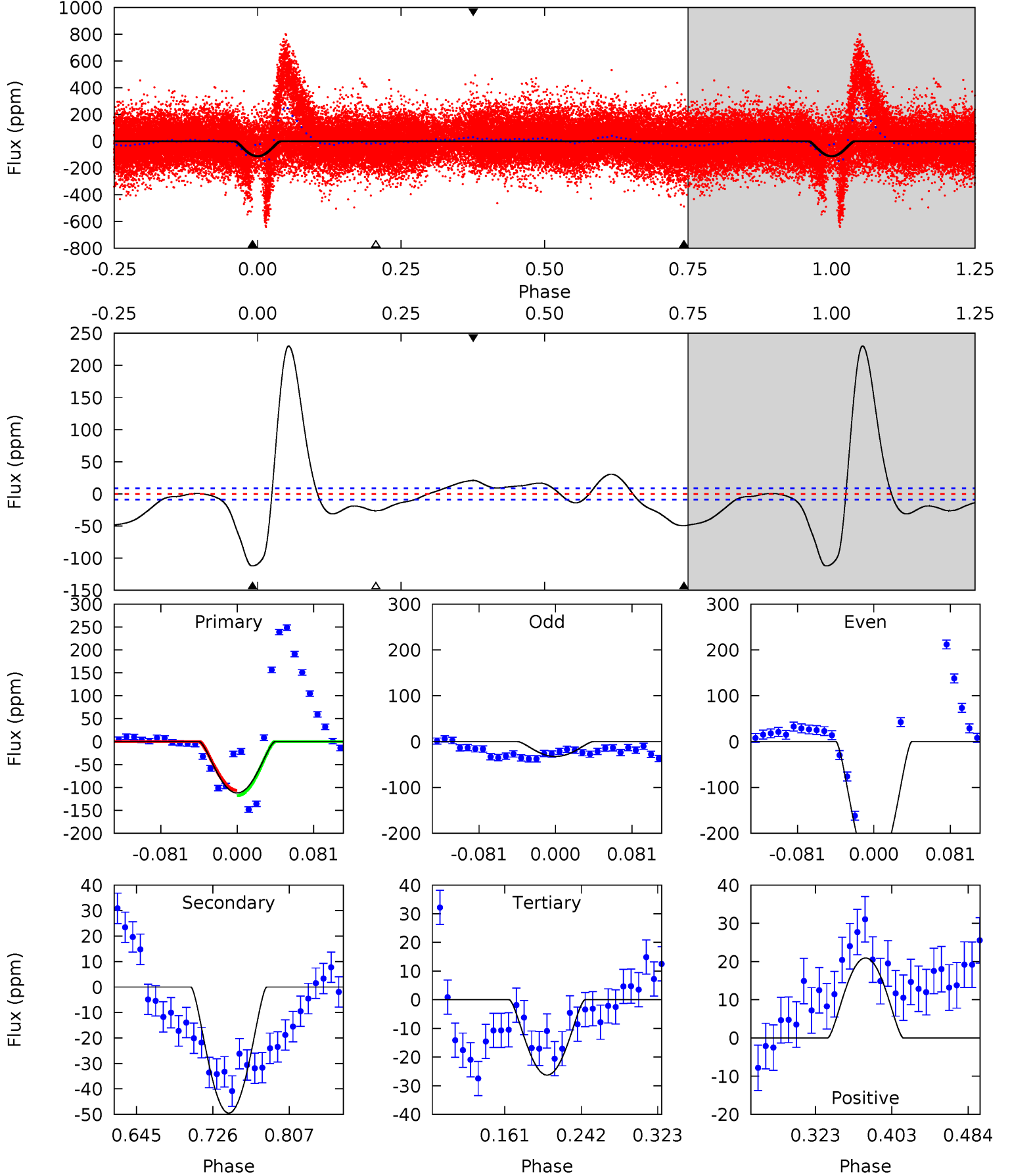
TCE 010909274-03 P= 19.619363 Days $T_0=148.910308$ (BKJD)



DV Model-Shift Uniqueness Test

010909274-03, P = 19.620723 Days, E = 128.973234 Days

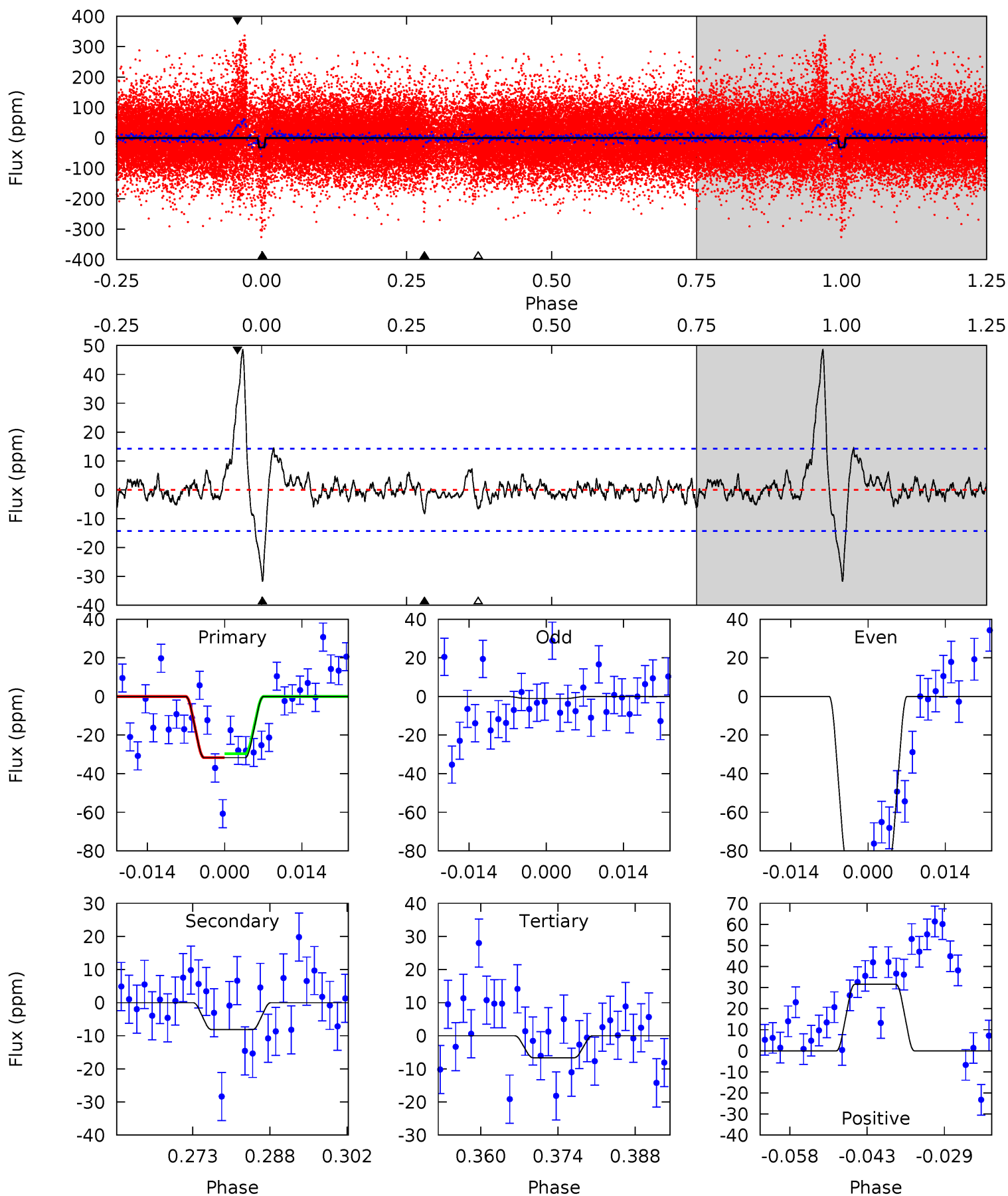
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.7	25.9	13.8	11.0	4.61	1.75	13.0	45.0	47.8	12.2	15.0	64.5	0.90	0.67	3.05



Alt Model-Shift Uniqueness Test

010909274-03, P = 19.619363 Days, E = 129.290945 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	2.83	2.31	11.0	4.96	2.45	2.17	8.72	0.05	0.52	-8.15	14.4	2.46	0.61	0.35



Stellar Parameters For KIC 010909274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6599^{+147}_{-213}	$4.350^{+0.060}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$1.234^{+0.283}_{-0.141}$	$1.248^{+0.144}_{-0.173}$	$0.936^{+0.246}_{-0.391}$
	+2%/-3%	+1%/-3%	+625%/-750%	+23%/-11%	+12%/-14%	+26%/-42%
Source	PHO1	FLK73	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 010909274-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-50 ± 2	$8.32^{+6.59}_{-5.53}$	1167^{+62}_{-54}	2939^{+1202}_{-452}	$9.139^{+70.001}_{-6.334}$
Alt.	-8 ± 3	$5.47^{+6.04}_{-3.81}$	1168^{+60}_{-50}	2554^{+1059}_{-493}	$3.410^{+33.008}_{-2.662}$

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 $A_{obs} \gg 1.0$

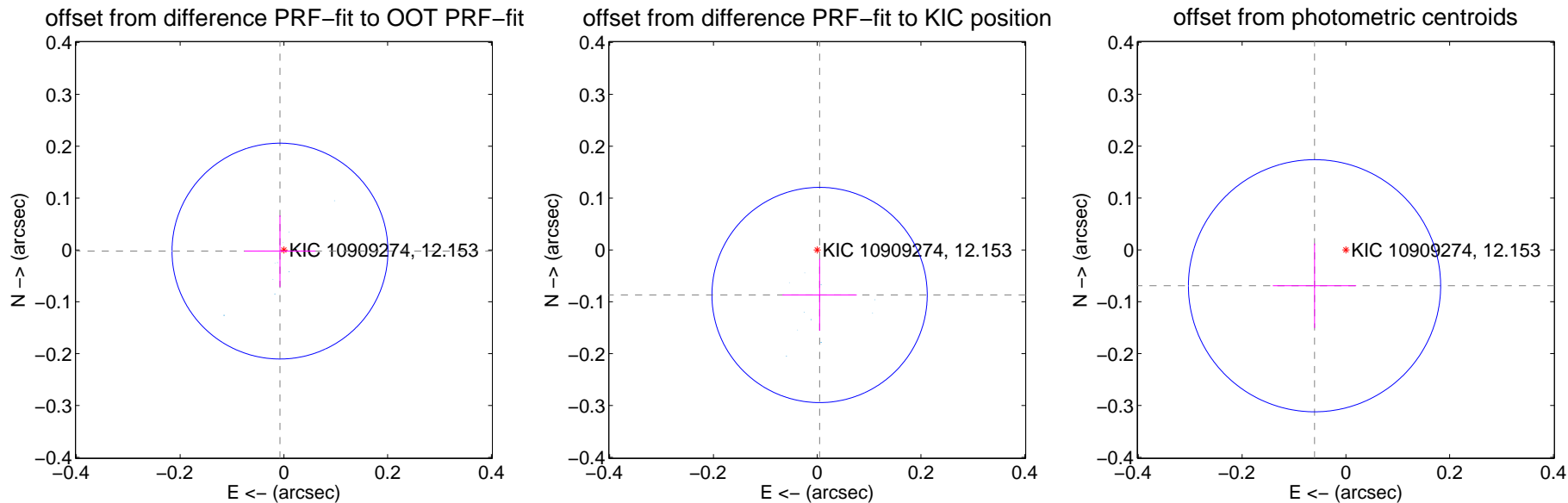
DV Centroid Data

Supplemental centroid analysis for 010909274-03. Kepler magnitude: 12.15. Transit SNR 34.87

There are 11 quarters with good PRF difference image offsets

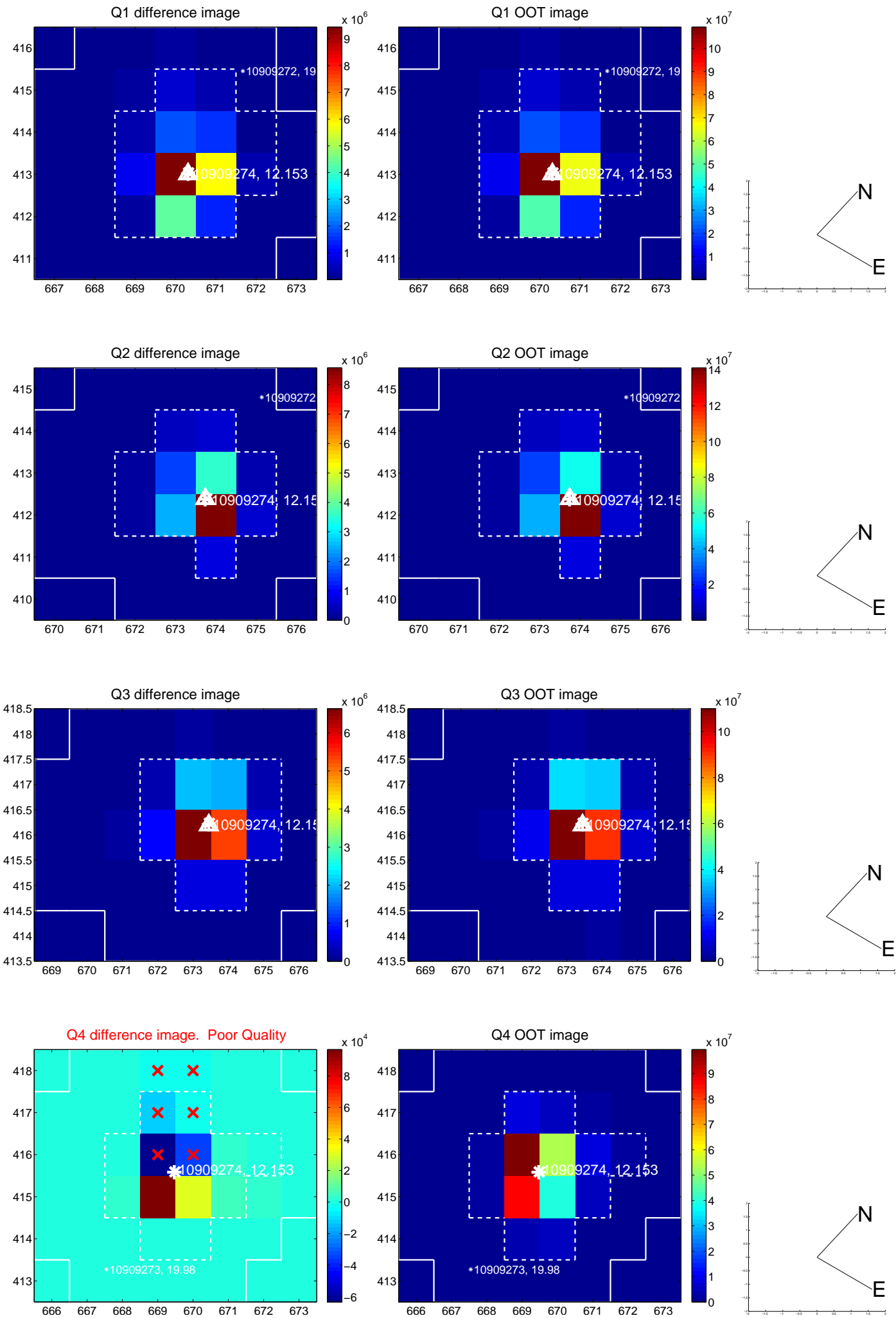
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.008 ± 0.069	0.11	0.008 ± 0.068	-0.002 ± 0.069
PRF-fit source offset from KIC position	0.087 ± 0.069	1.26	-0.005 ± 0.072	-0.087 ± 0.069
photometric centroid source offset	0.09 ± 0.08	1.13	0.06 ± 0.08	-0.07 ± 0.08

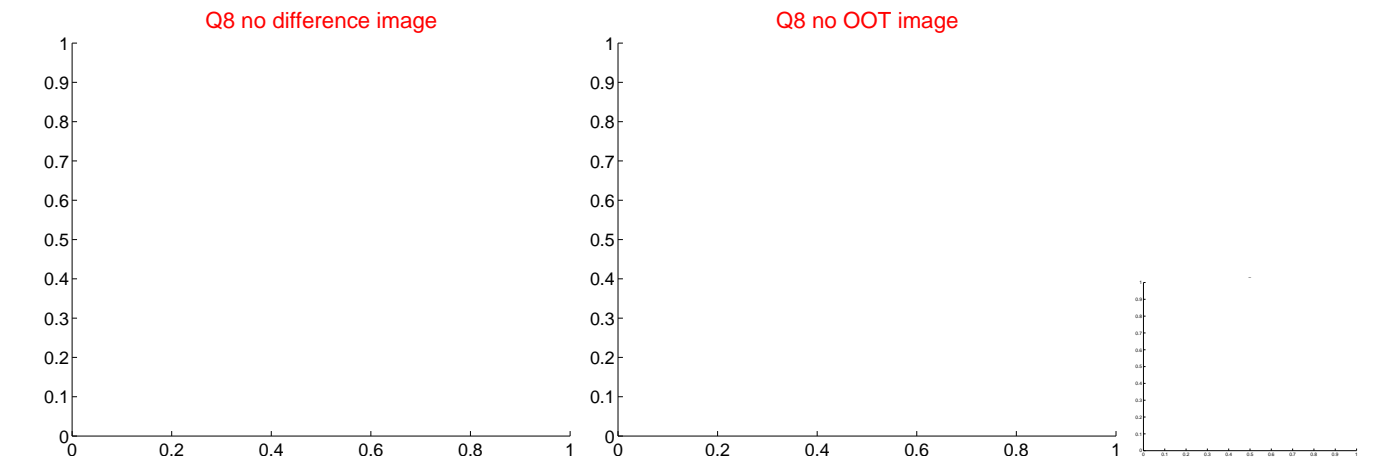
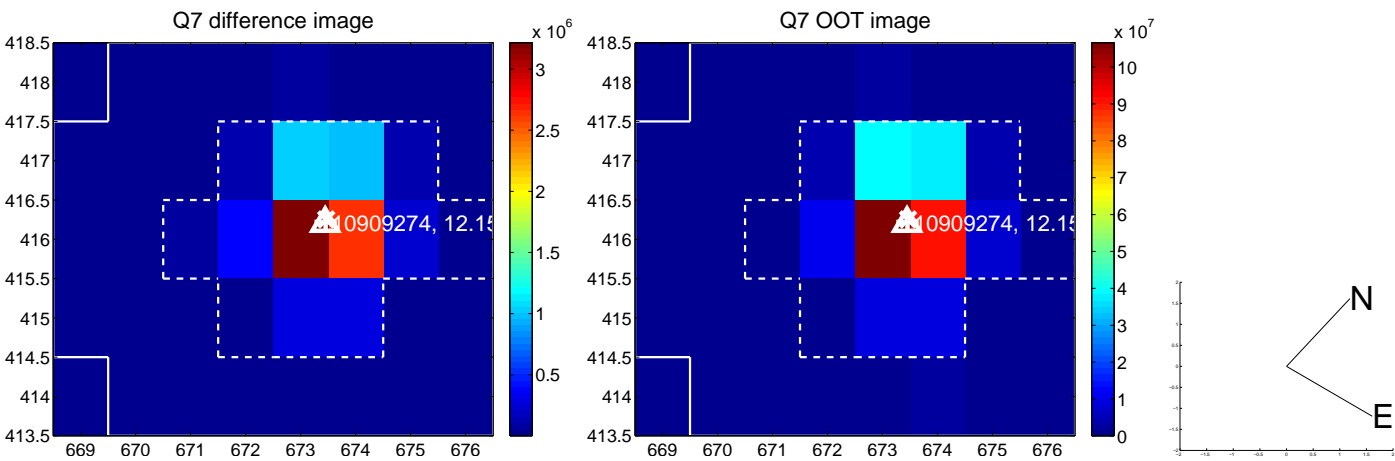
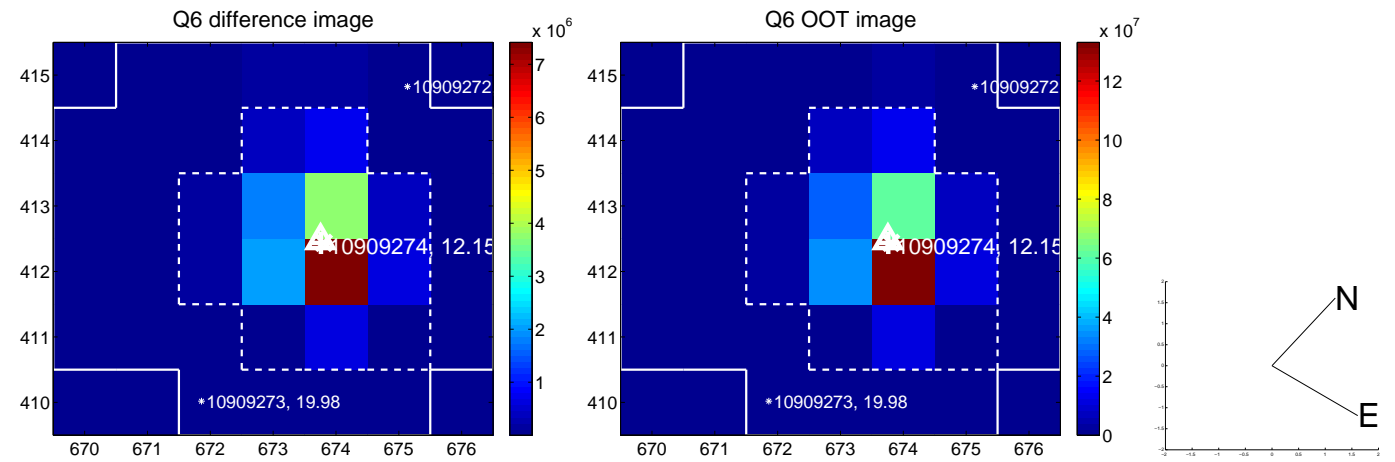
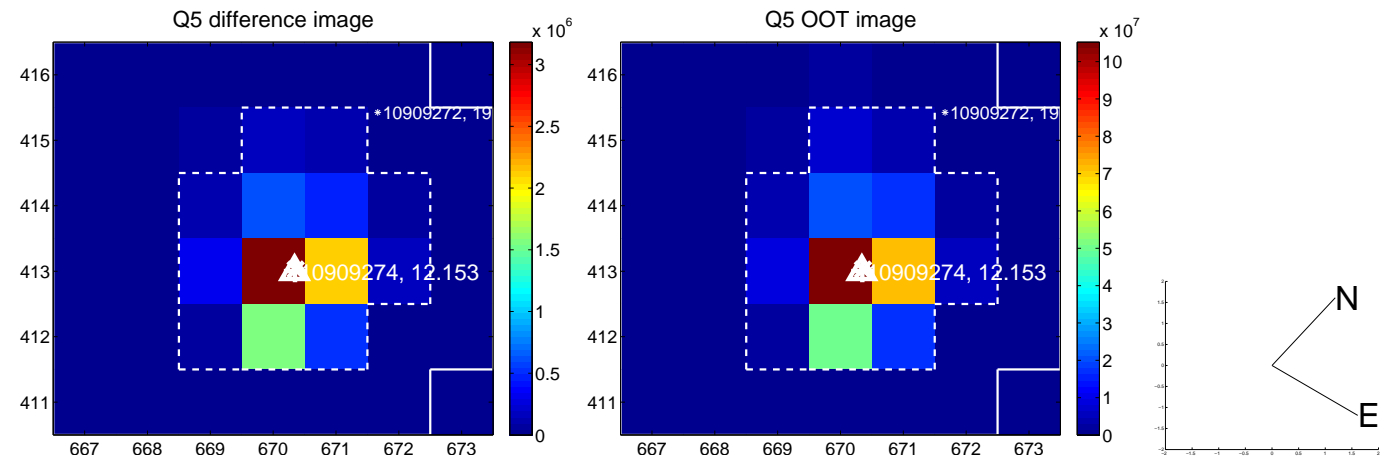


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

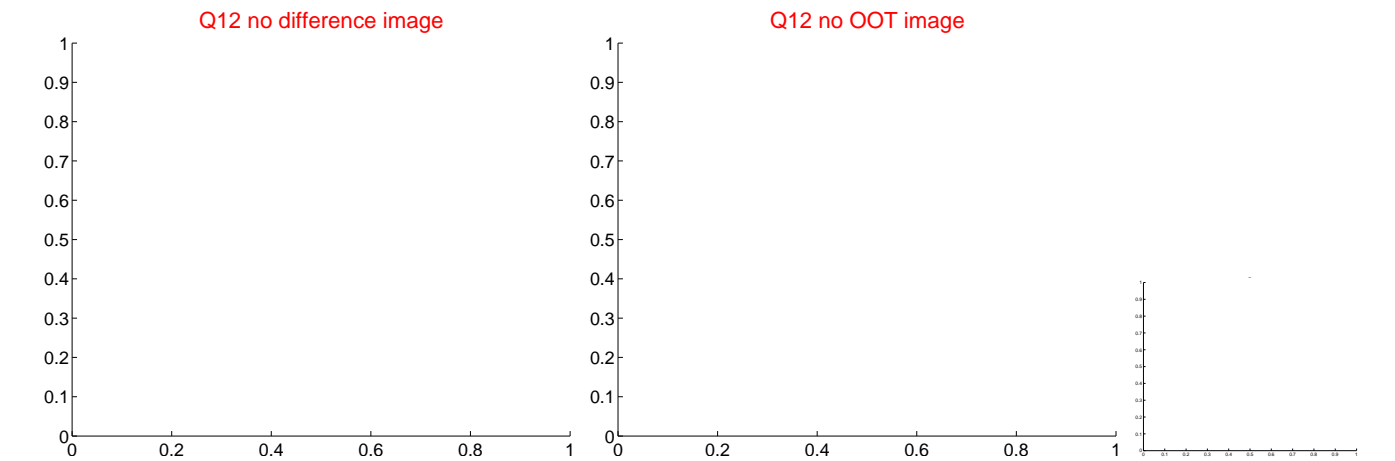
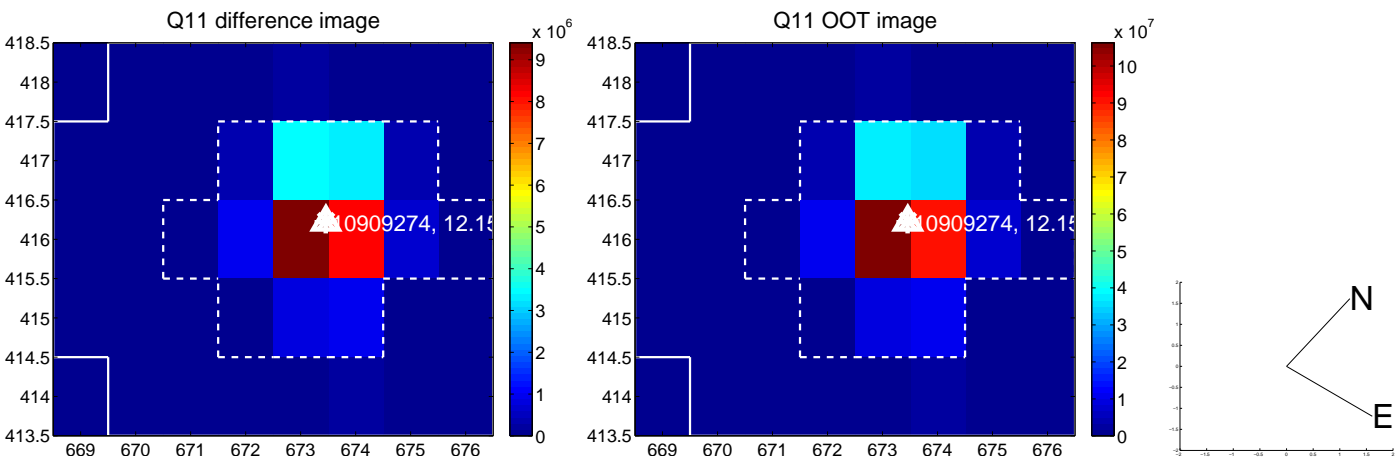
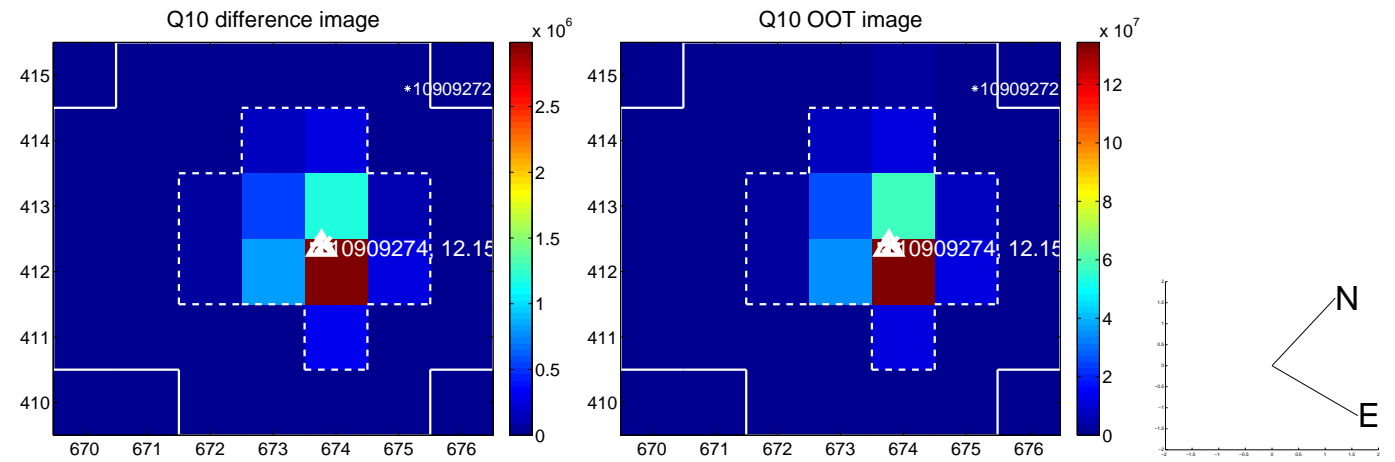
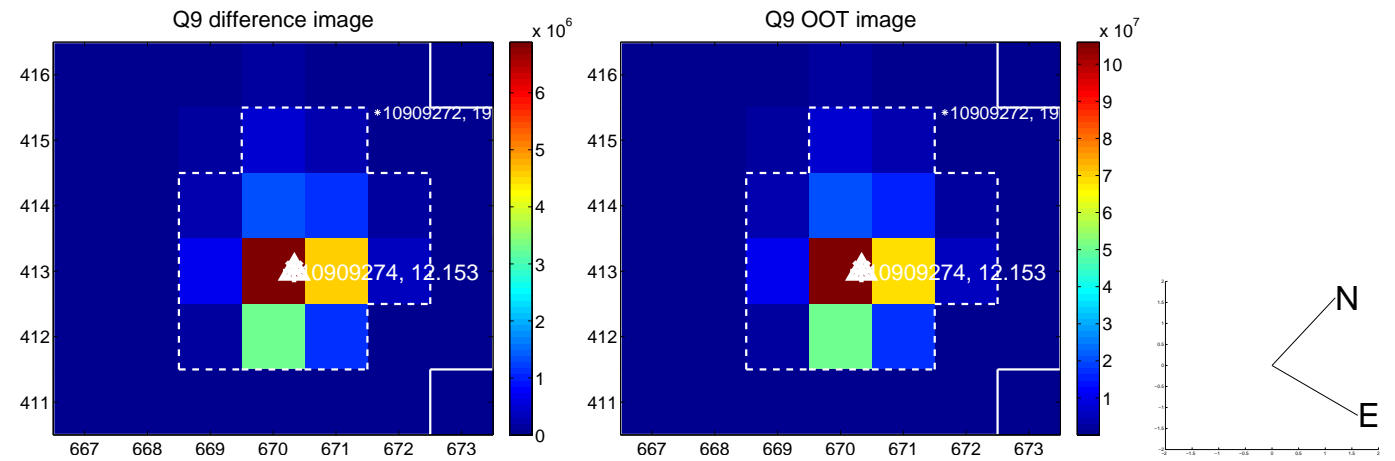
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

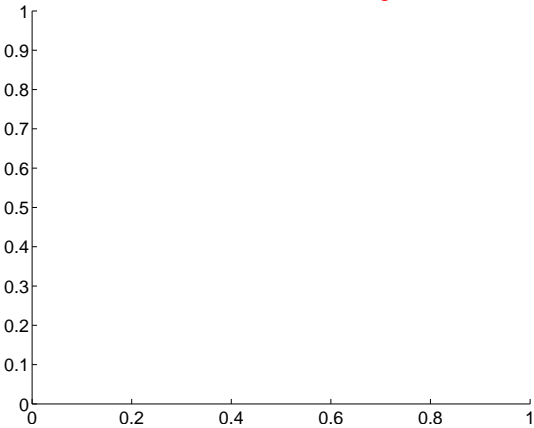


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

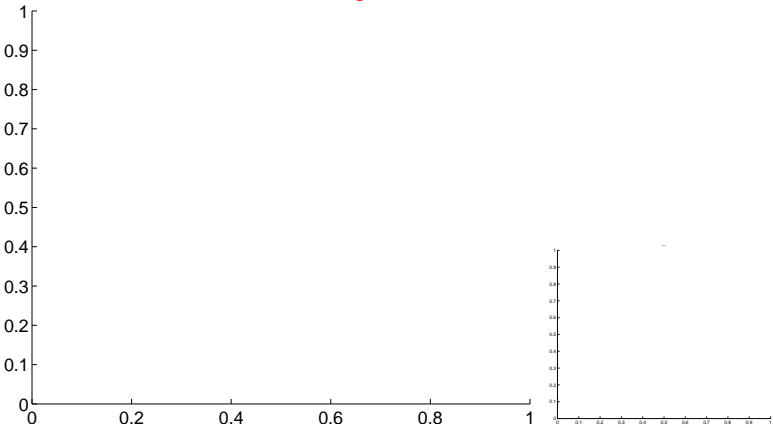


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

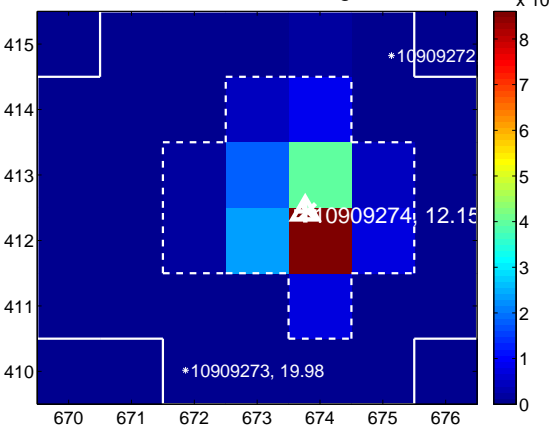
Q13 no difference image



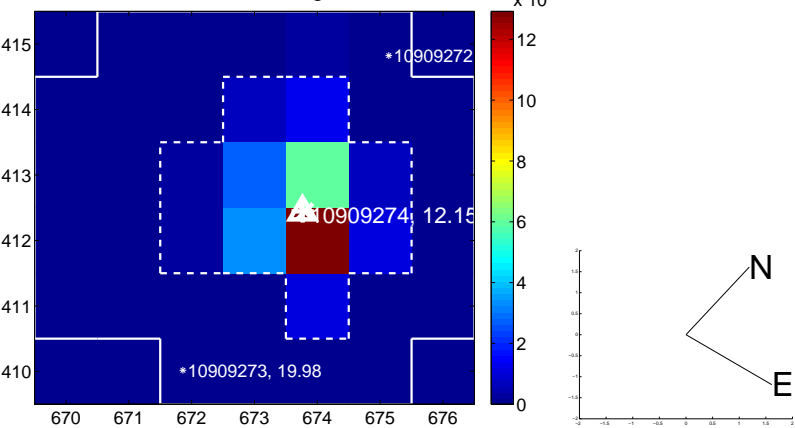
Q13 no OOT image



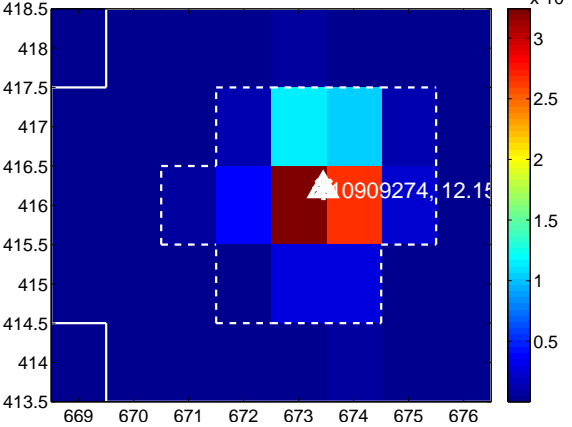
Q14 difference image



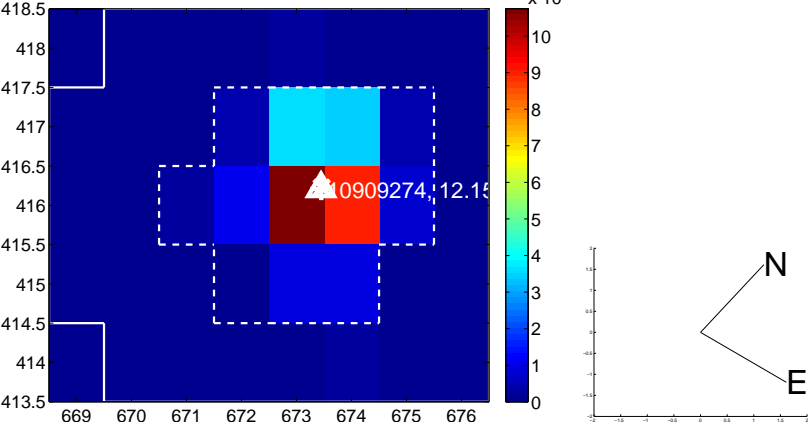
Q14 OOT image



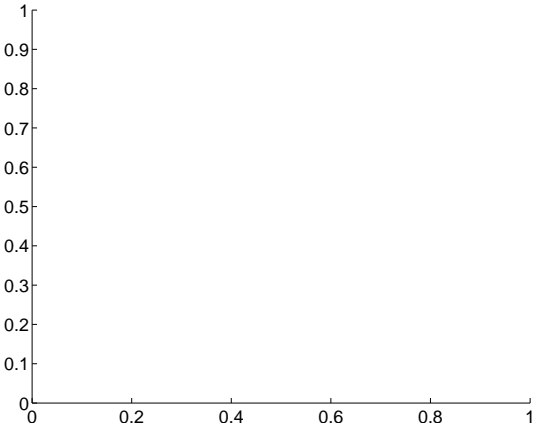
Q15 difference image



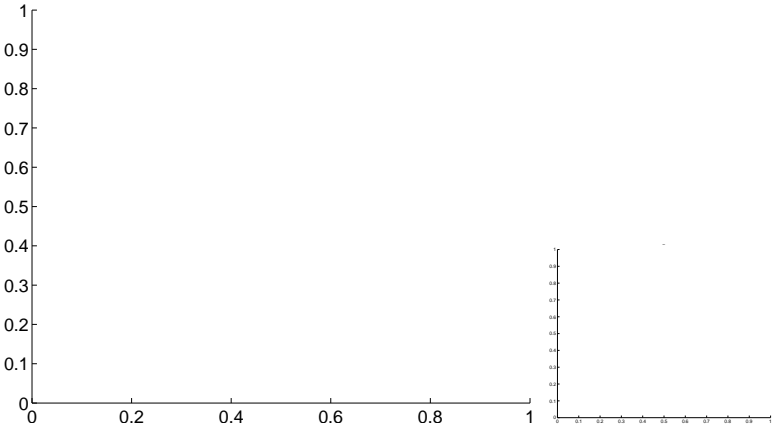
Q15 OOT image



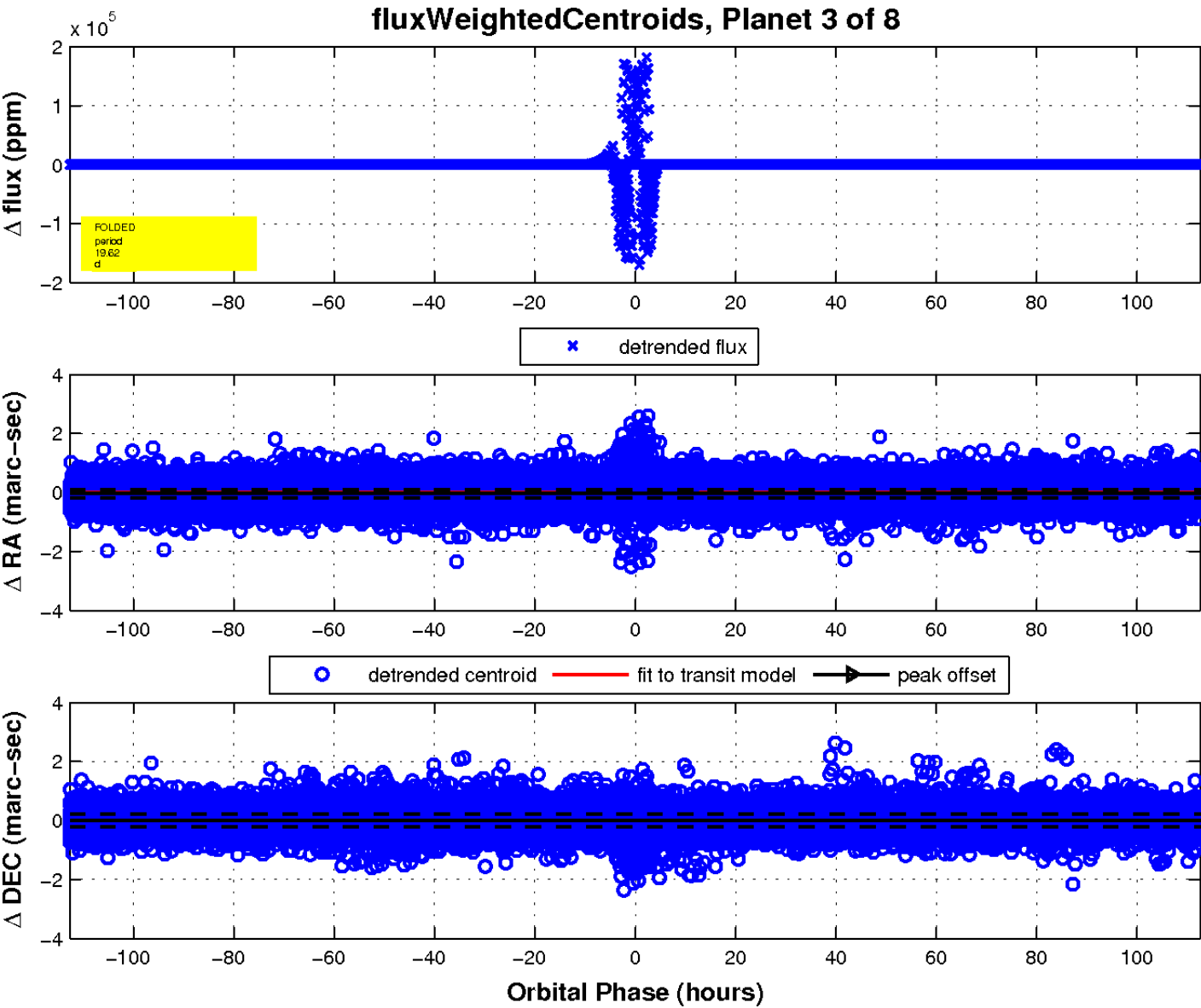
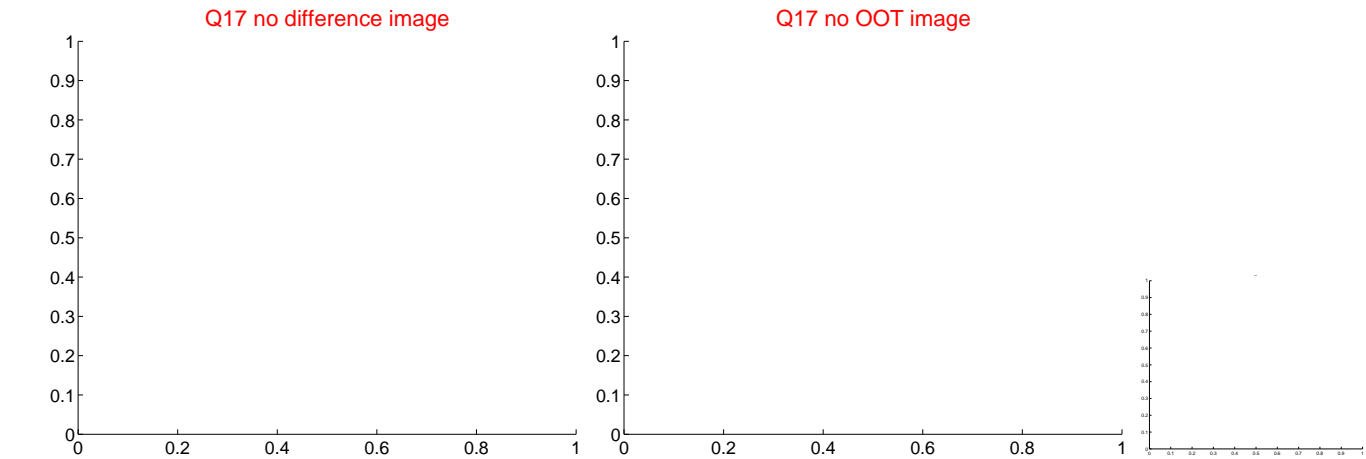
Q16 no difference image



Q16 no OOT image

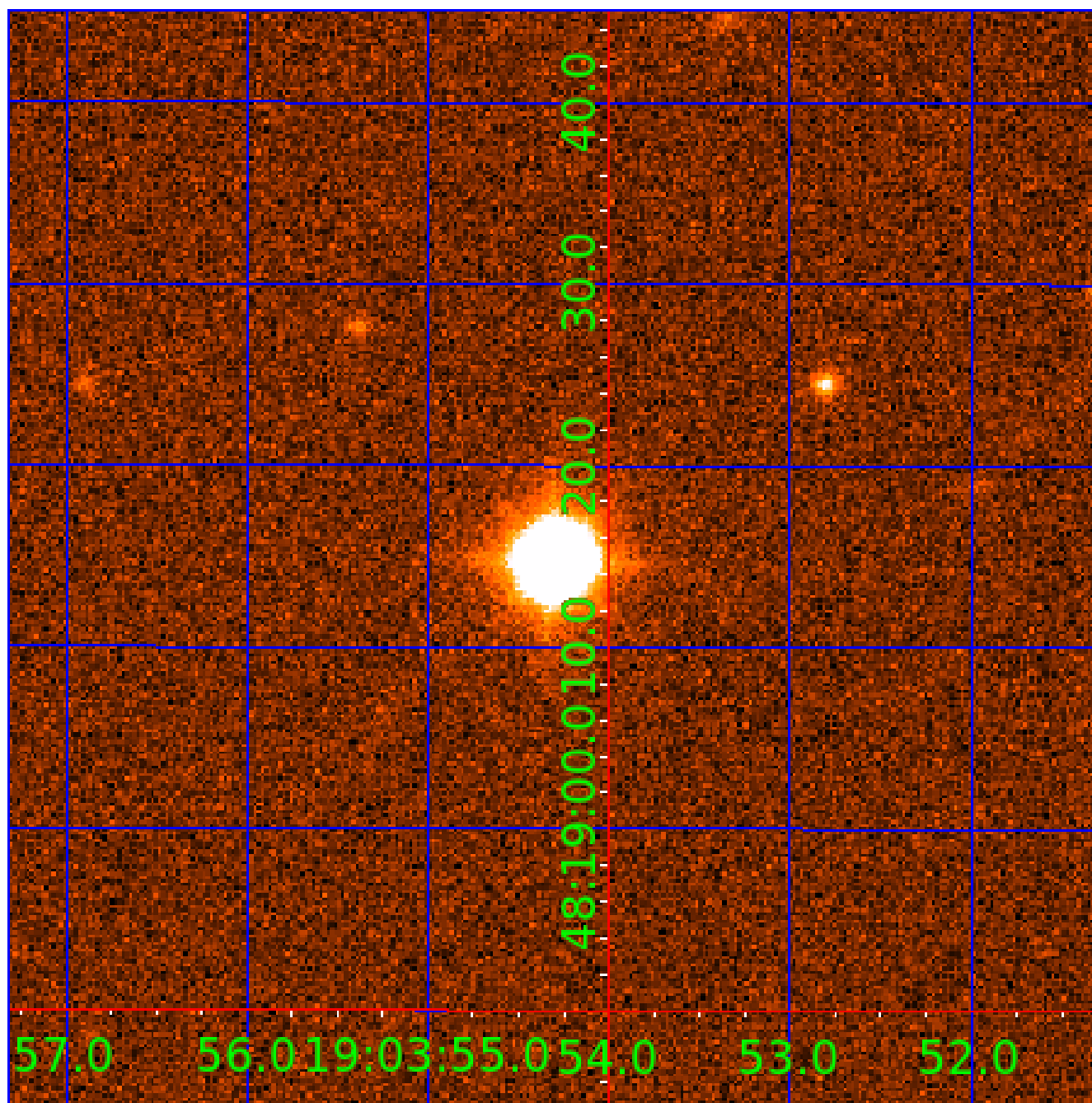


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010909274

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})
010909274-01	OBS	7385.01	39.237869	148.654751	453738.2	3.500	44979.7	-1.0	1.23	6599	65.30	43.79
010909274-02	OBS	No	39.236842	155.230951	345050.7	12.000	28778.8	-1.0	1.23	6599	41.37	43.80
010909274-03	OBS	No	19.620723	148.593957	529.3	37.565	5258.6	34.9	1.23	6599	5.43	110.34
010909274-04	OBS	No	39.239282	156.324147	7594.1	10.500	1106.7	-1.0	1.23	6599	10.82	43.79
010909274-05	OBS	No	13.081122	141.266344	39.5	9.677	503.5	5.1	1.23	6599	0.89	189.45
010909274-06	OBS	No	39.238292	152.979854	2921.6	15.000	373.2	-1.0	1.23	6599	6.71	43.79
010909274-07	OBS	No	39.241582	157.475237	1576.7	15.000	251.8	-1.0	1.23	6599	4.93	43.79
010909274-08	OBS	No	39.232819	159.646855	4493.6	52.422	76.7	134.1	1.23	6599	14.89	43.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010909274-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
010909274-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010909274-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—RESIDUAL_TCE
010909274-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
010909274-06	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-07	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
010909274-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

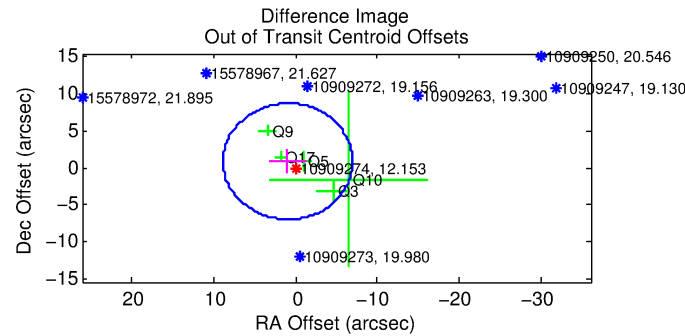
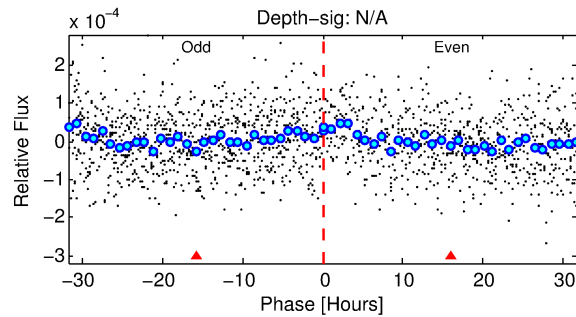
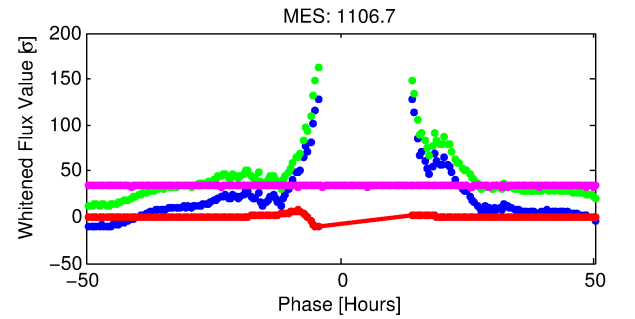
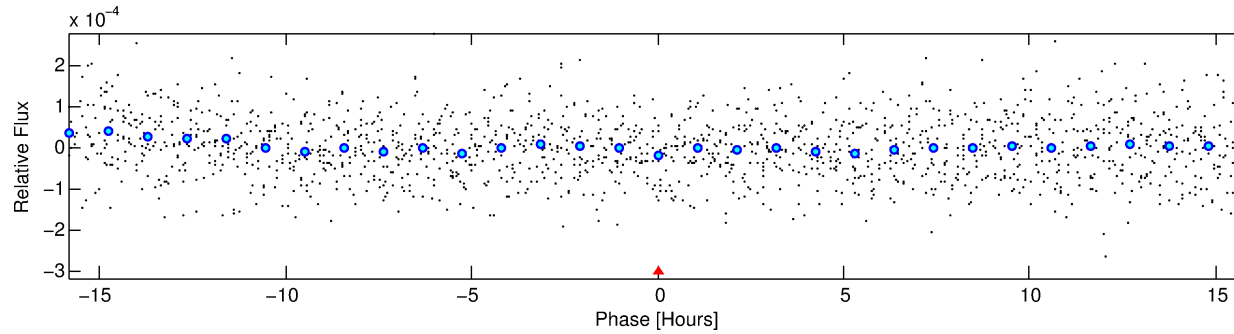
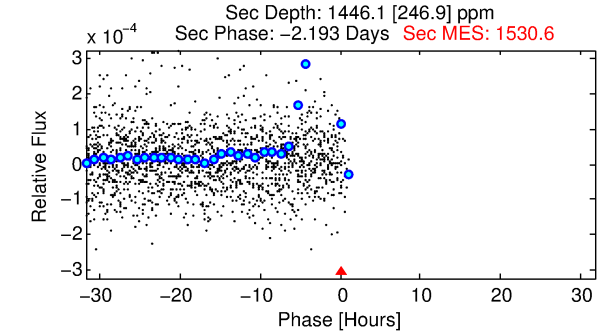
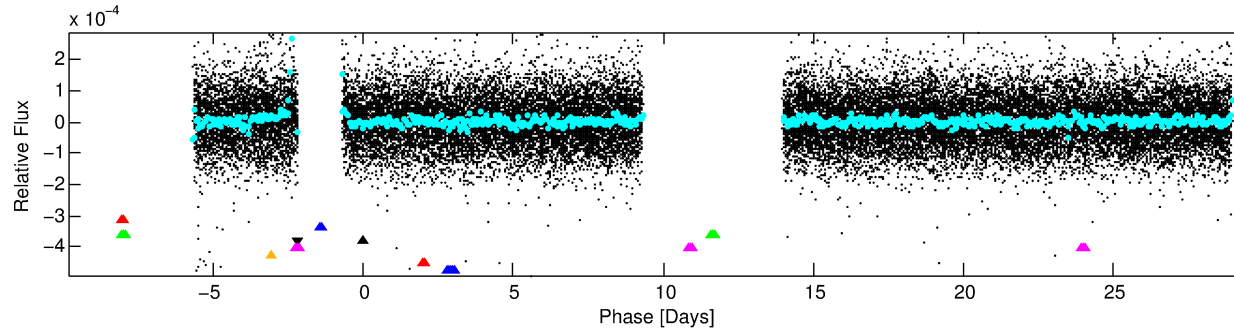
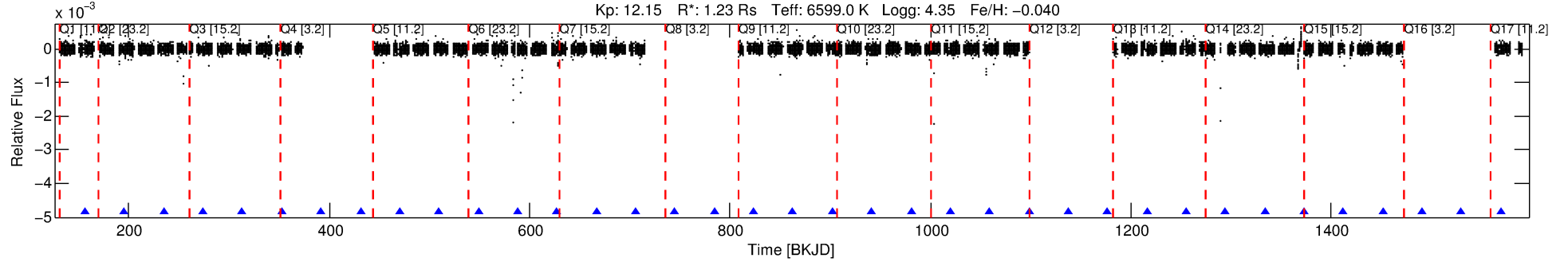
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010909274-04

No Significant Match Found

DV One-Page Summary

KIC: 10909274 Candidate: 4 of 8 Period: 39.239 d
KOI: K07385 Corr: No Ephemeris Match



TPS TCE Results:

Period = 39.23928 d
Epoch = 156.3241 BKJD

DV fit results are unavailable

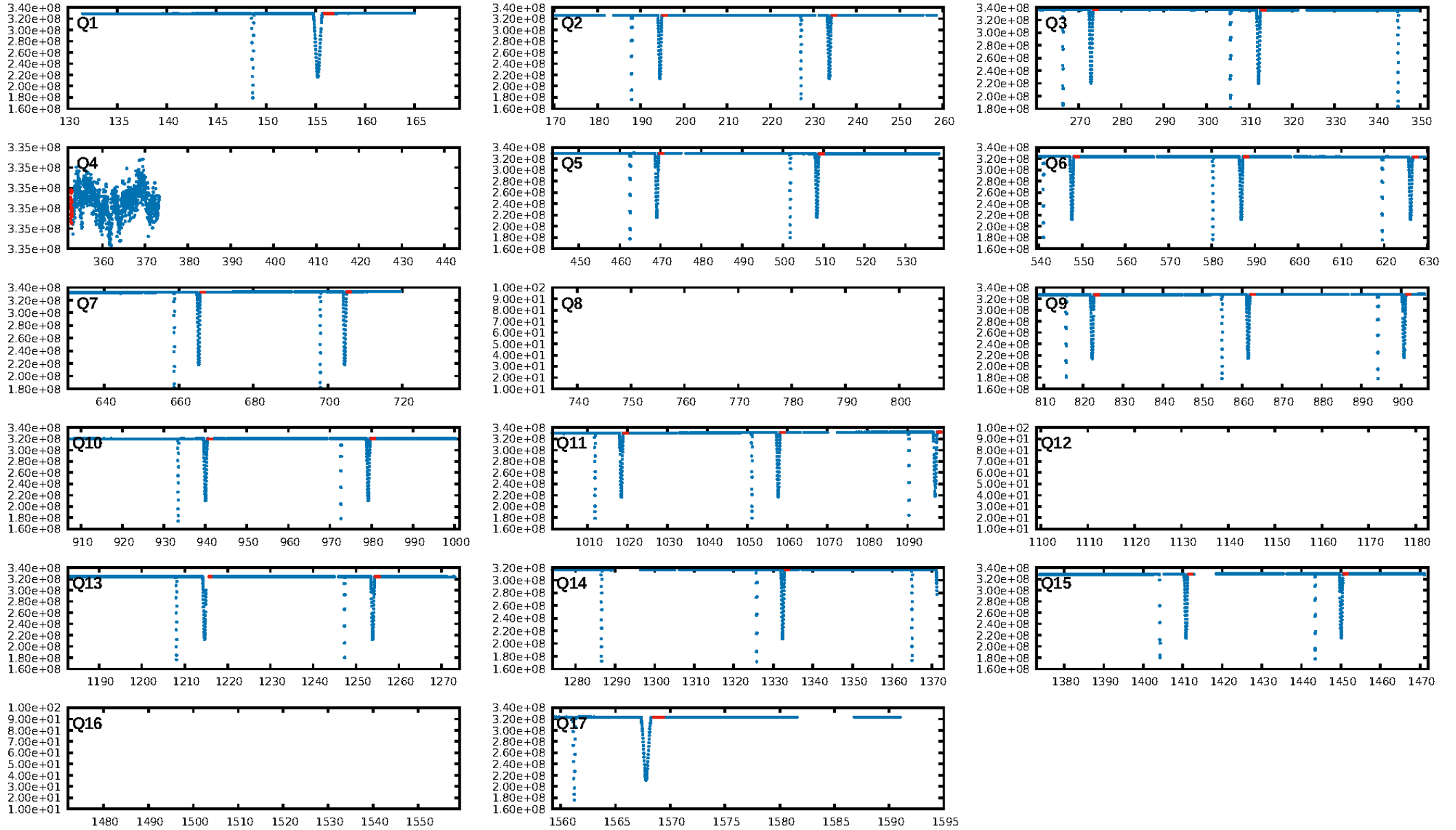
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [24/24]
GhostDiagnostic-chr: 7.15
Centroid-sig: 16.8%
Centroid-so: 3.485 arcsec [1.53σ]
OotOffset-rm: 1.279 arcsec [0.49σ]
KicOffset-rm: 1.251 arcsec [0.58σ]
OotOffset-st: 1/1/0/3 [5]
KicOffset-st: 1/1/0/3 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 1.00 [13/13]

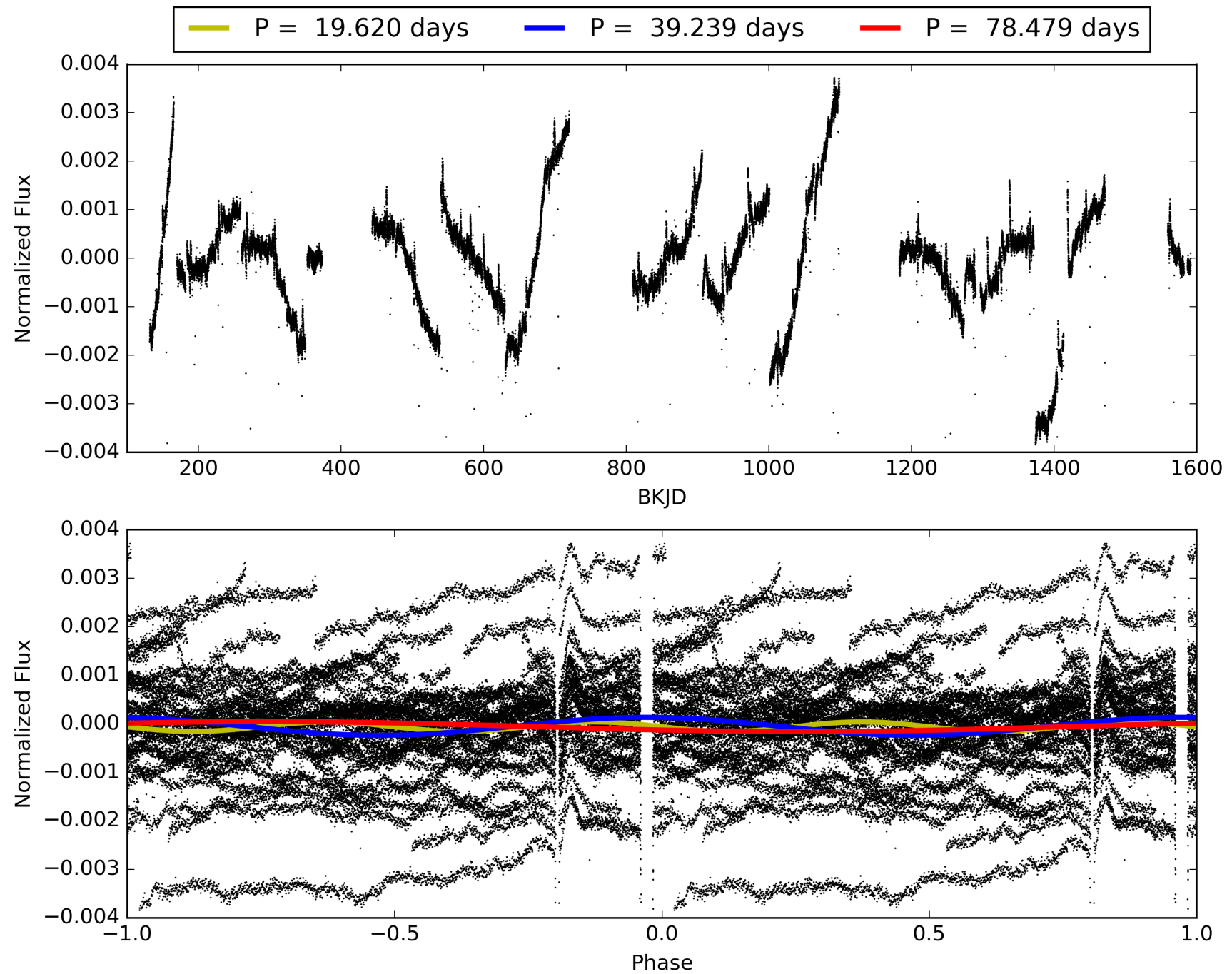
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:17:44 Z

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

TCE 010909274-04, PDC Light Curves

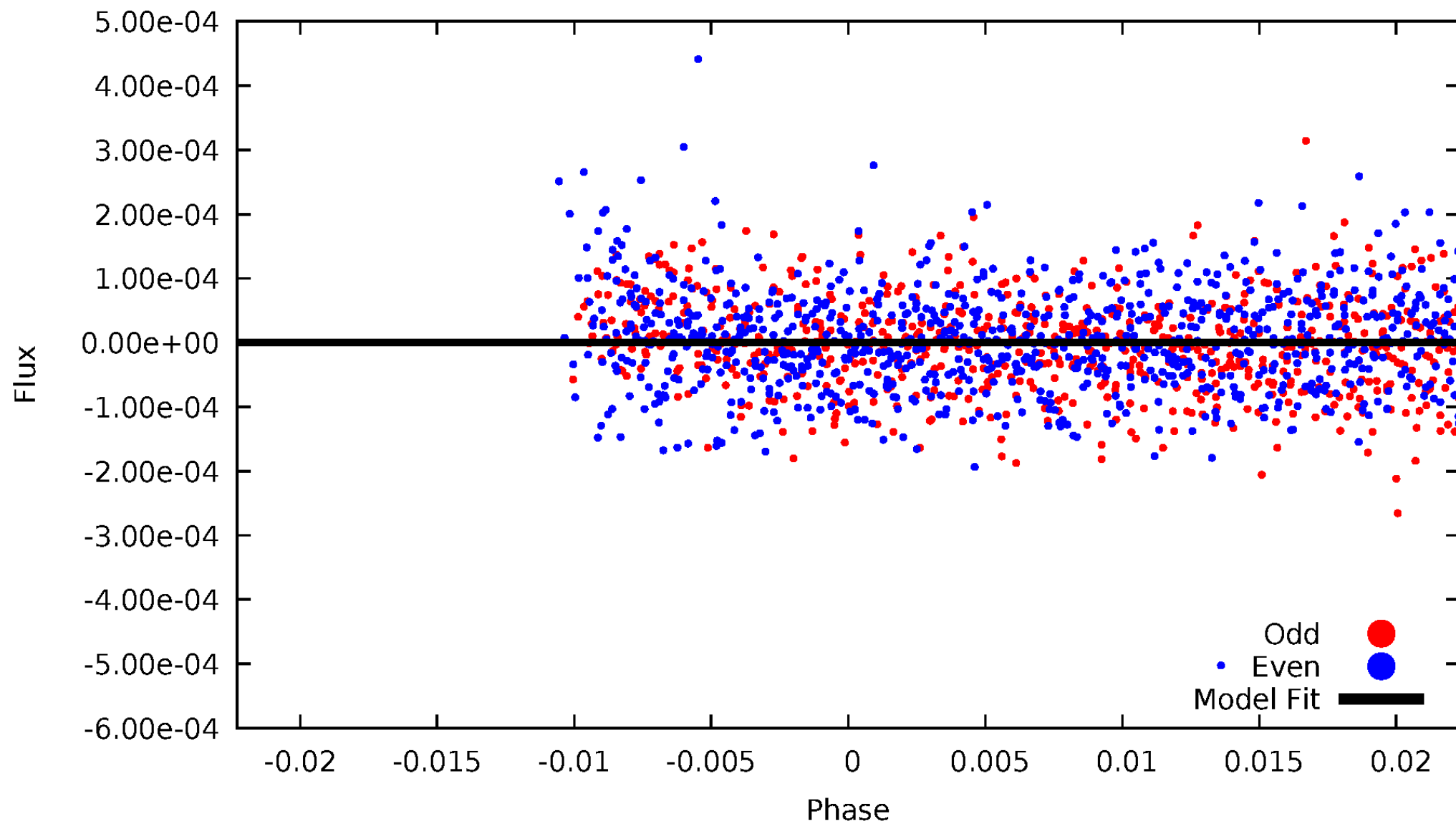


TCE 010909274-04



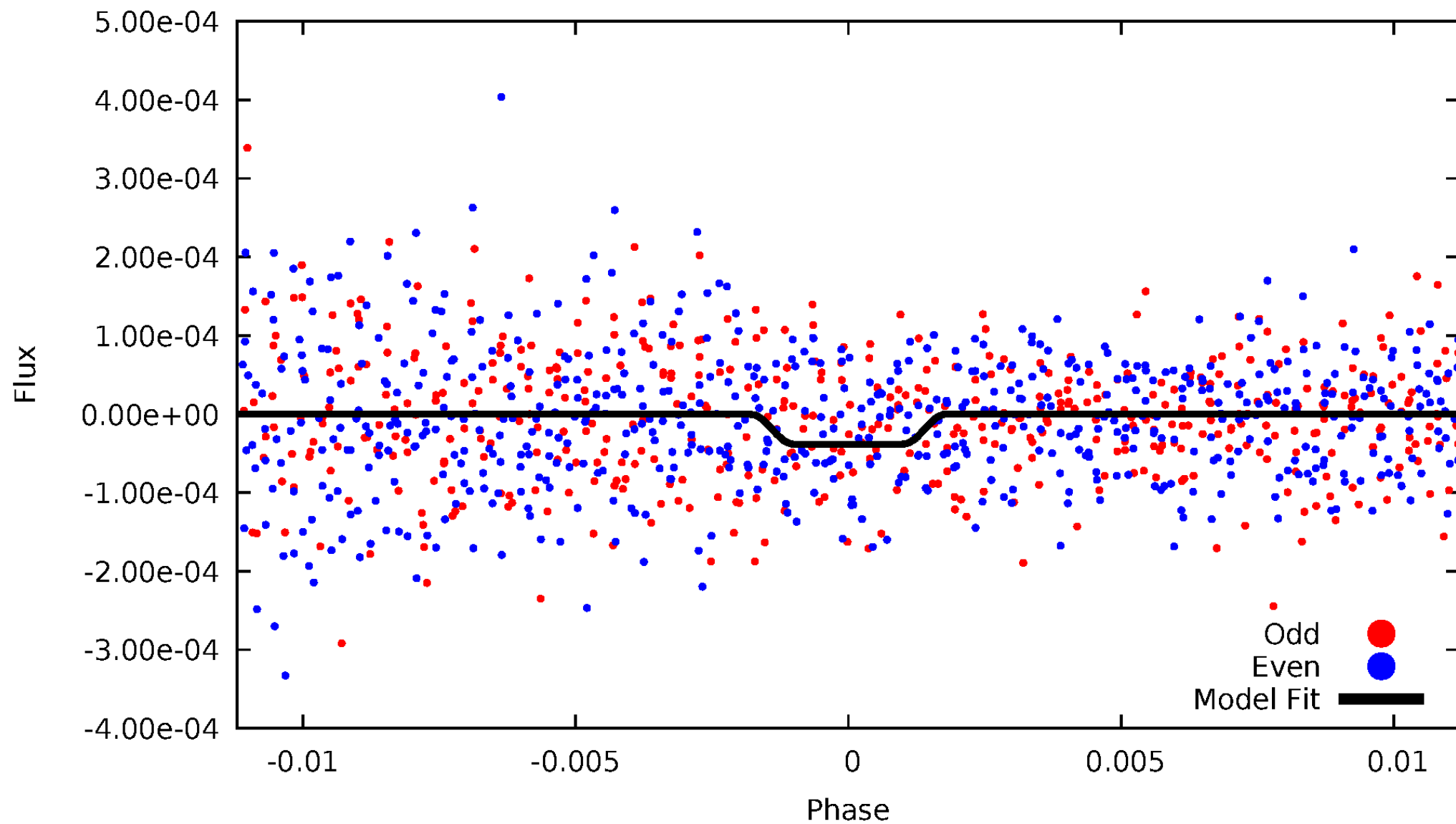
DV Odd/Even

TCE 010909274-04



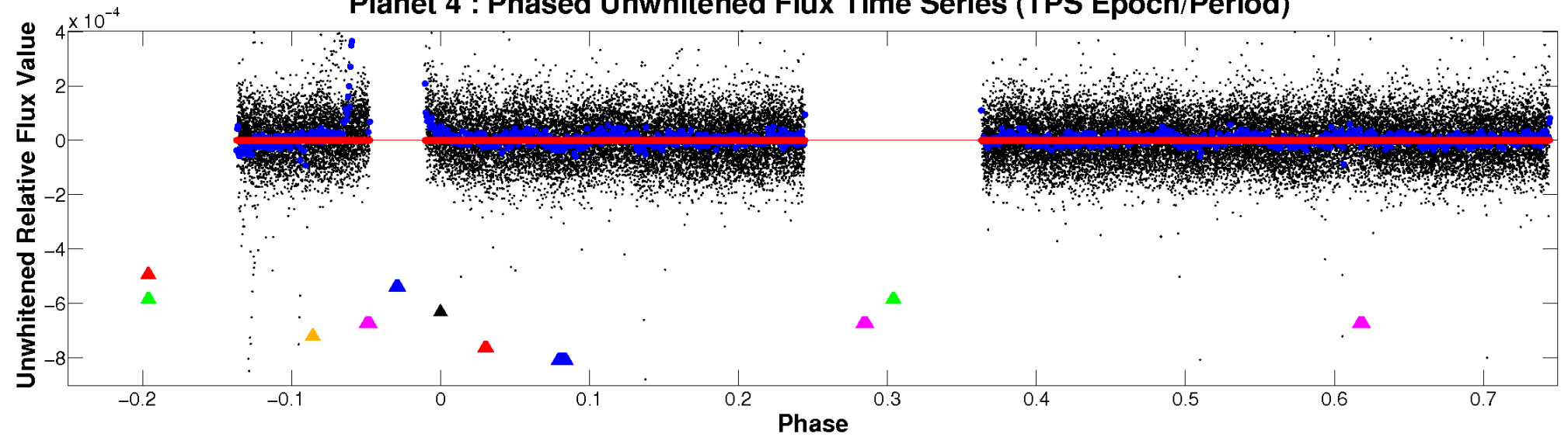
ALT Odd/Even

TCE 010909274-04

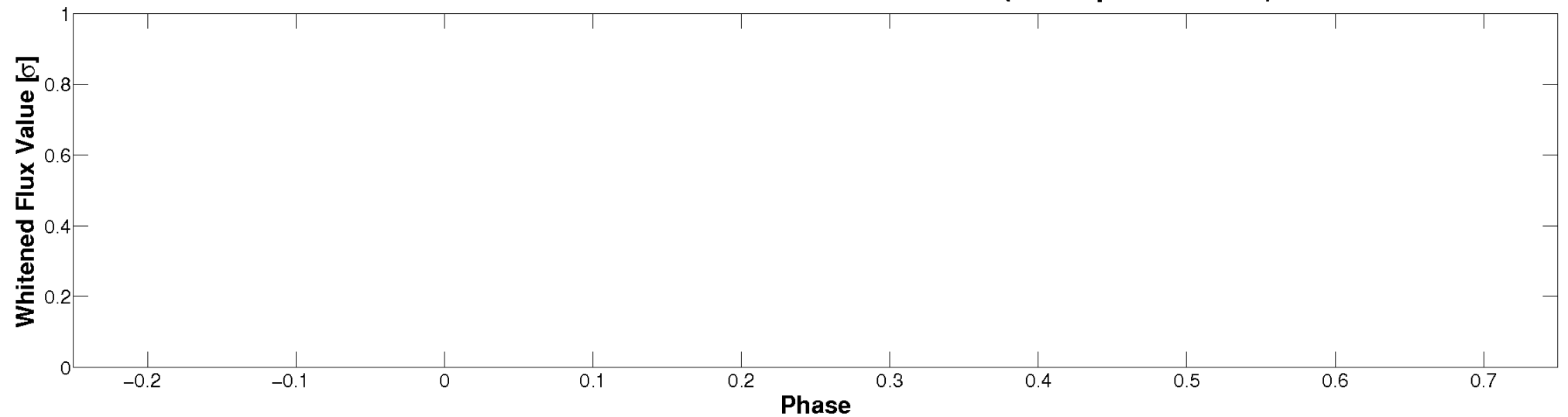


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

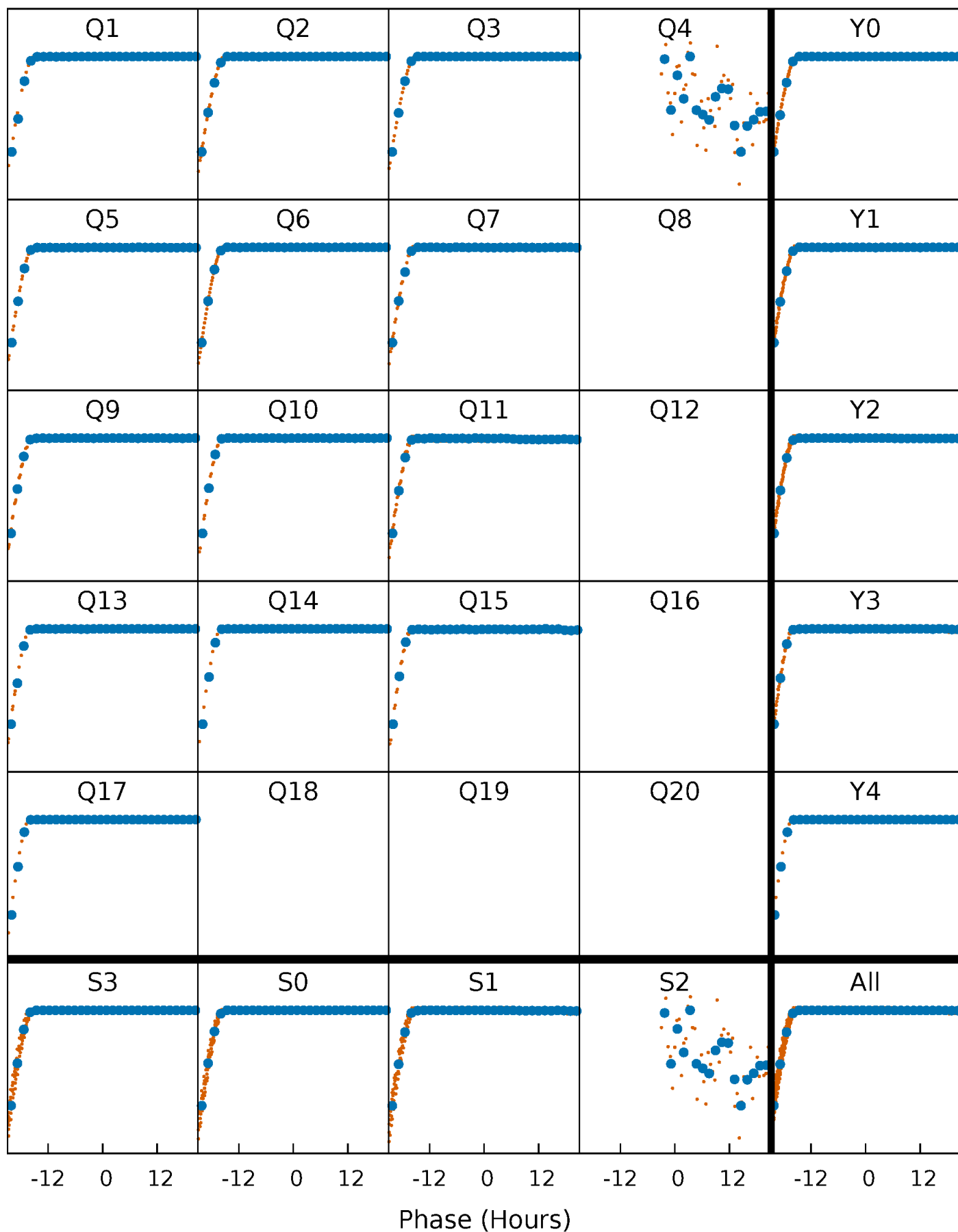


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



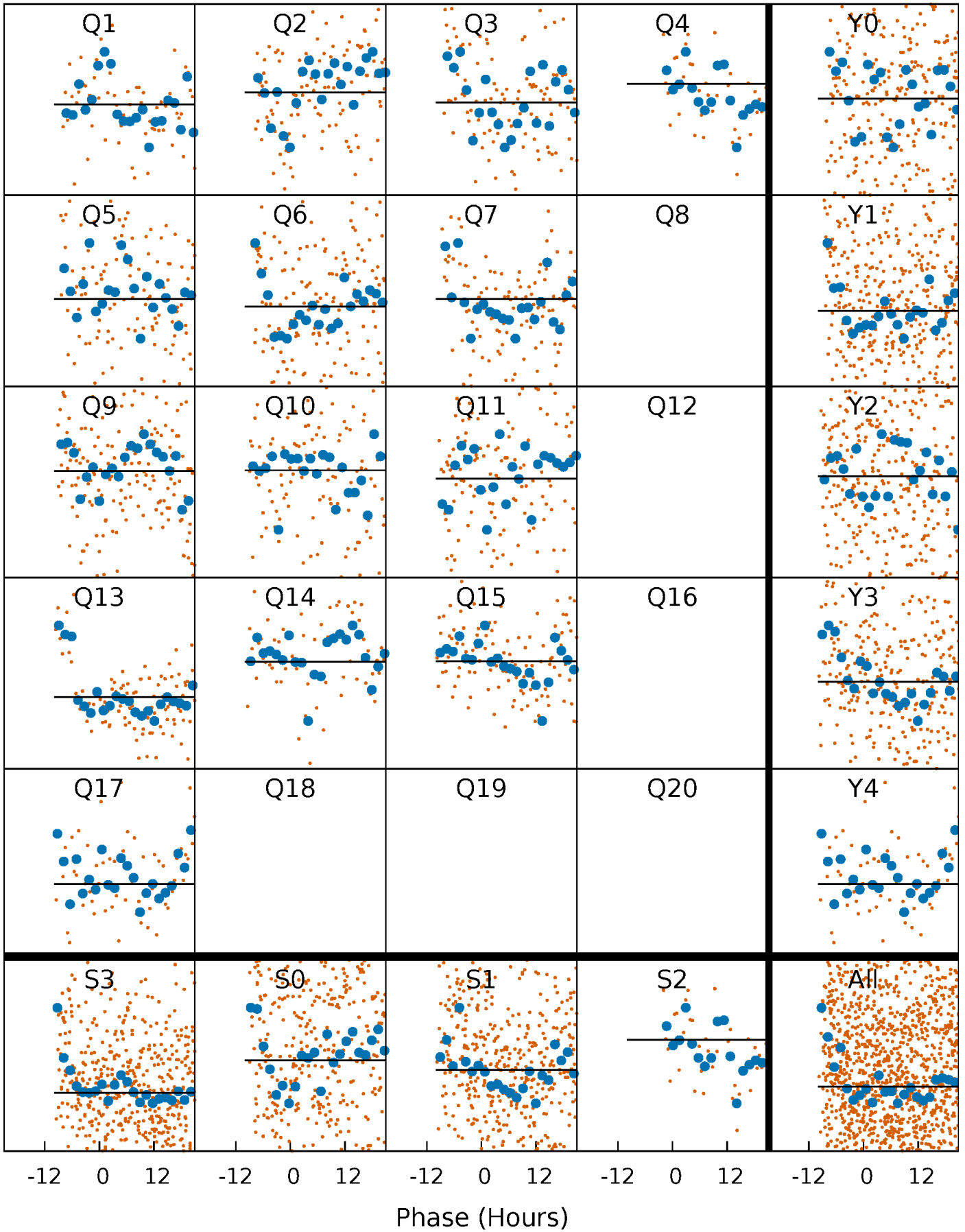
PDC Quarter-Phased Transit Curves

TCE 010909274-04 $P = 39.239282$ Days $T_0 = 156.324147$ (BKJD)



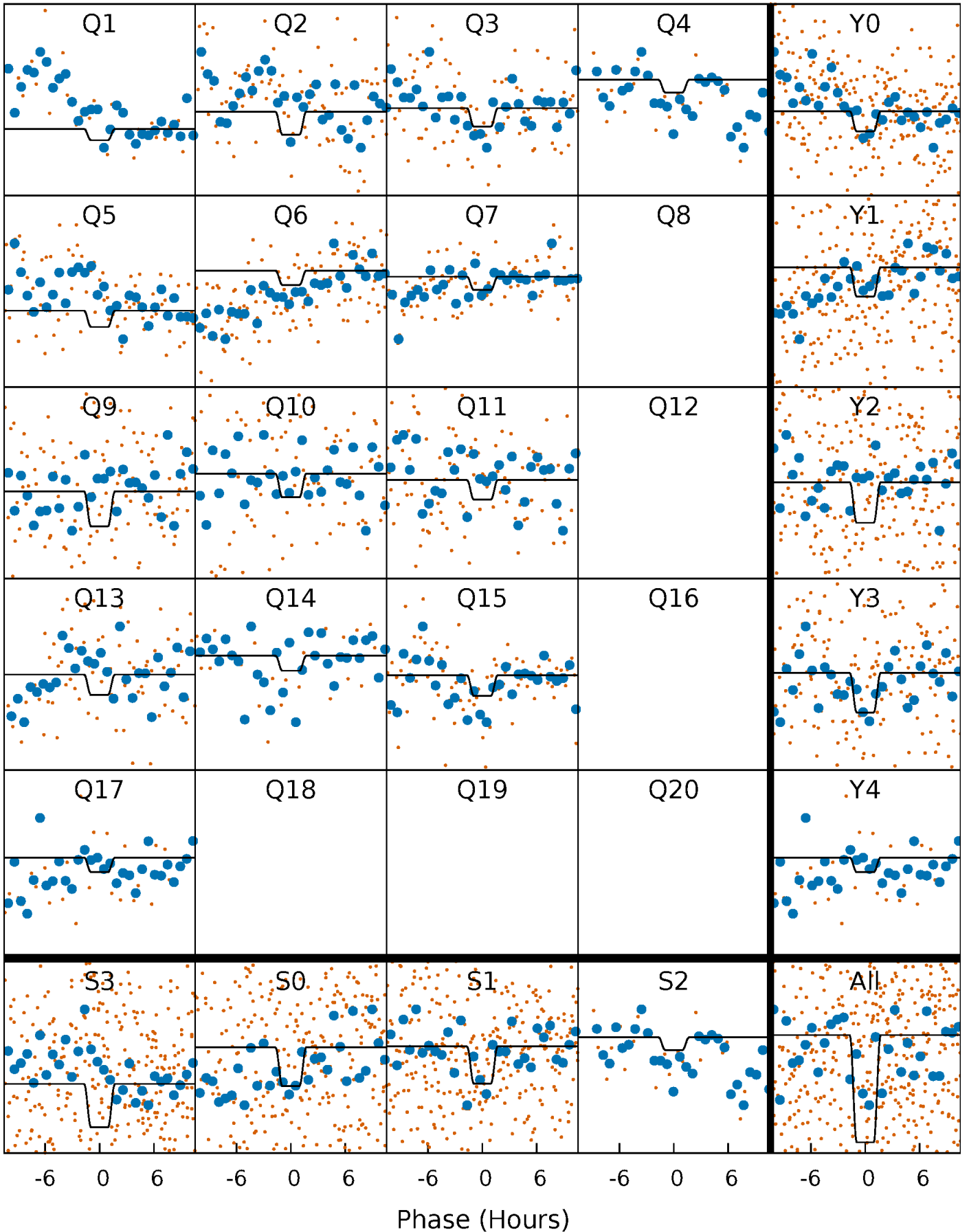
DV Quarter-Phased Transit Curves

TCE 010909274-04 $P = 39.239282$ Days $T_0 = 156.324147$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

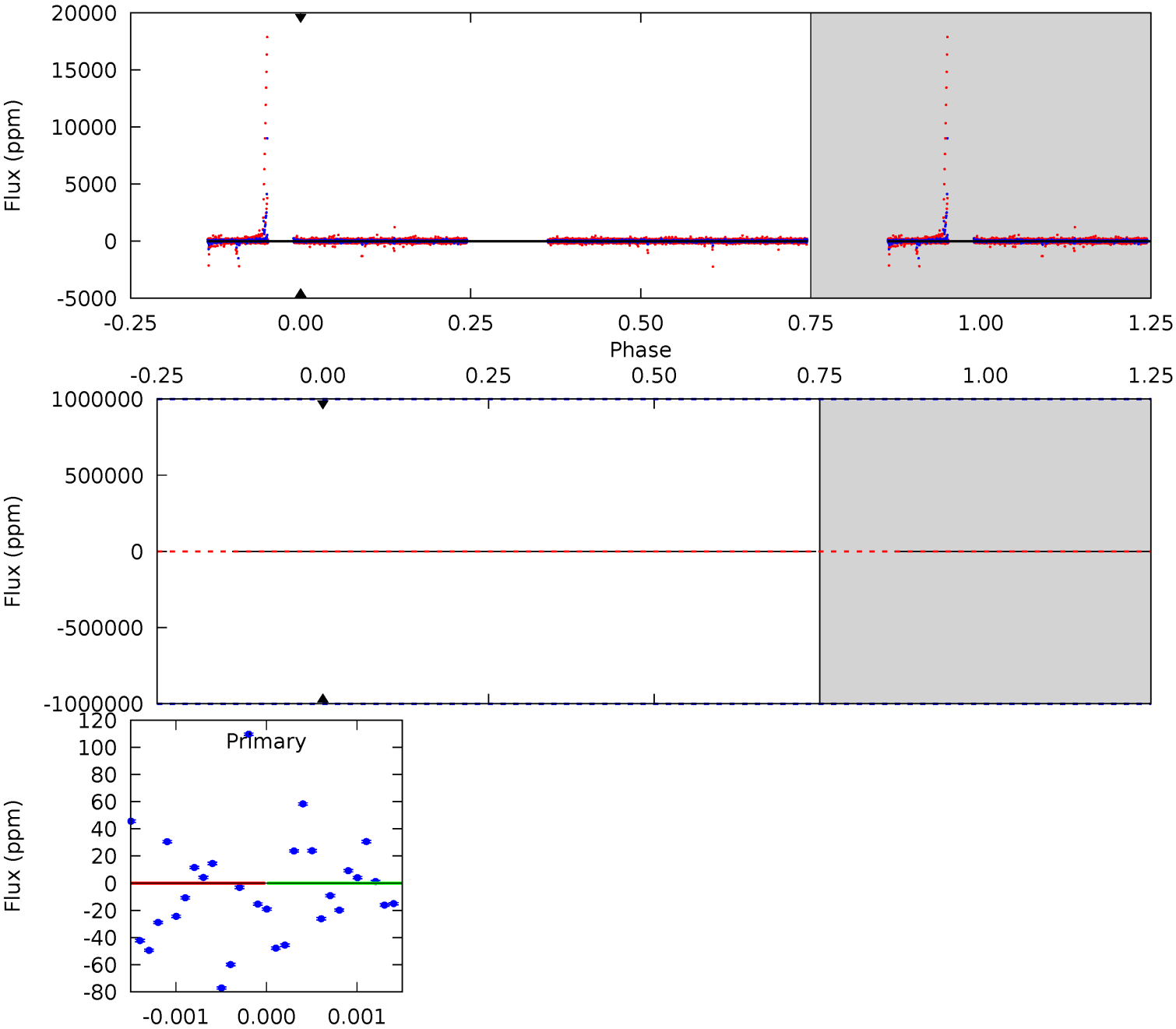
TCE 010909274-04 P= 39.239282 Days $T_0=156.610224$ (BKJD)



DV Model-Shift Uniqueness Test

010909274-04, P = 39.239282 Days, E = 117.084865 Days

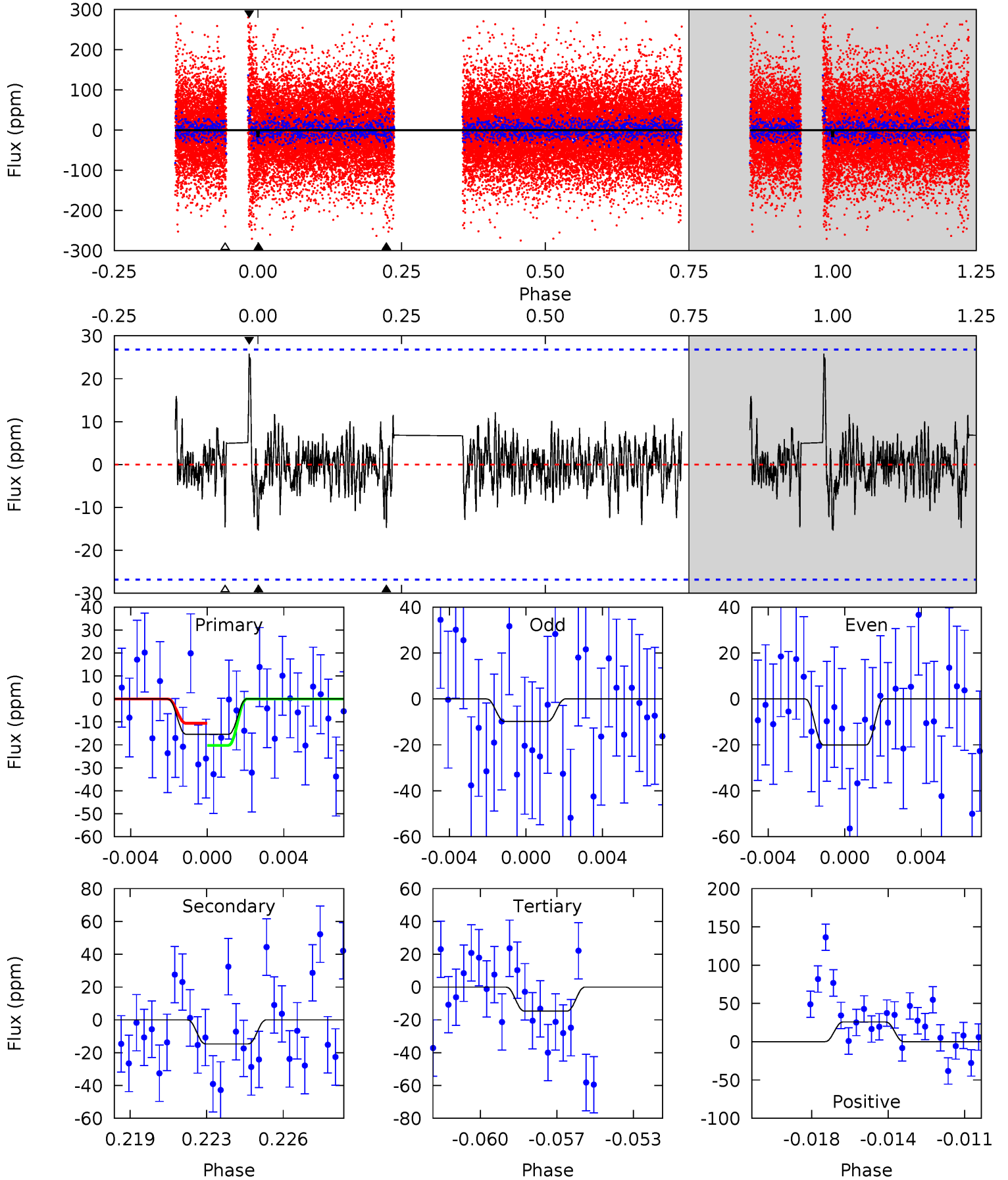
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010909274-04, P = 39.239282 Days, E = 117.370942 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.00	2.86	2.85	5.04	5.22	2.92	0.88	0.14	-2.04	0.00	-2.18	1.00	2.14	0.63	0.94



Stellar Parameters For KIC 010909274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6599^{+147}_{-213}	$4.350^{+0.060}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$1.234^{+0.283}_{-0.141}$	$1.248^{+0.144}_{-0.173}$	$0.936^{+0.246}_{-0.391}$
	+2%/-3%	+1%/-3%	+625%/-750%	+23%/-11%	+12%/-14%	+26%/-42%
Source	PHO1	FLK73	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 010909274-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$14.50^{+12.45}_{-9.24}$	923^{+53}_{-39}	-4274^{+21465}_{-13333}	$-259.185^{+22298.910}_{-21619.976}$
Alt.	-15 ± 5	$9.90^{+9.56}_{-6.63}$	926^{+45}_{-41}	2367^{+821}_{-386}	$4.504^{+36.705}_{-3.400}$

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

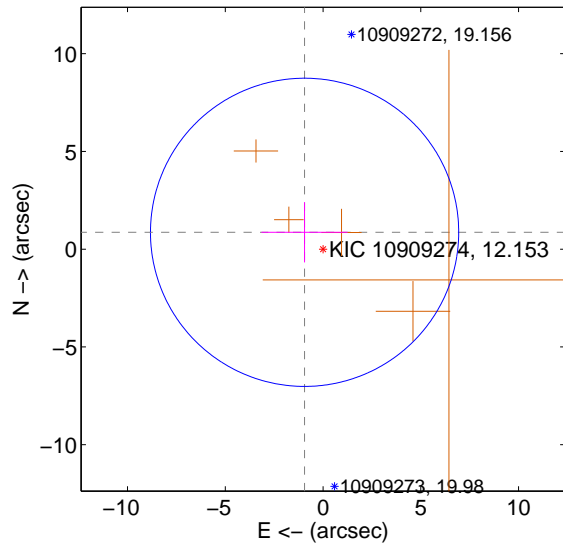
Supplemental centroid analysis for 010909274-04. Kepler magnitude: 12.15. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

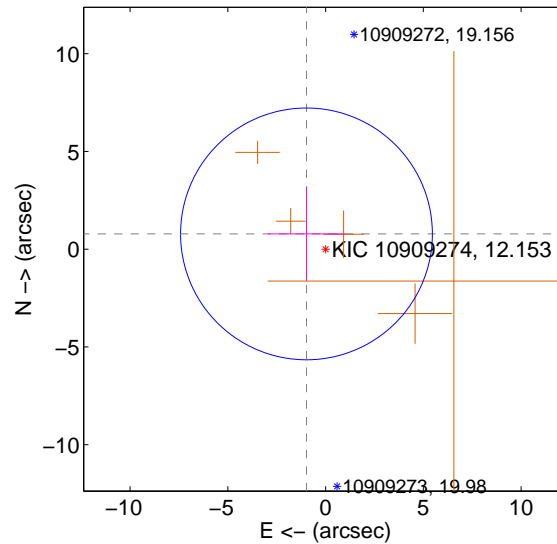
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.279 ± 2.627	0.49	0.944 ± 2.202	0.862 ± 1.540
PRF-fit source offset from KIC position	1.251 ± 2.146	0.58	0.977 ± 1.972	0.781 ± 2.393
photometric centroid source offset	3.49 ± 2.28	1.53	-3.42 ± 2.28	0.68 ± 2.22

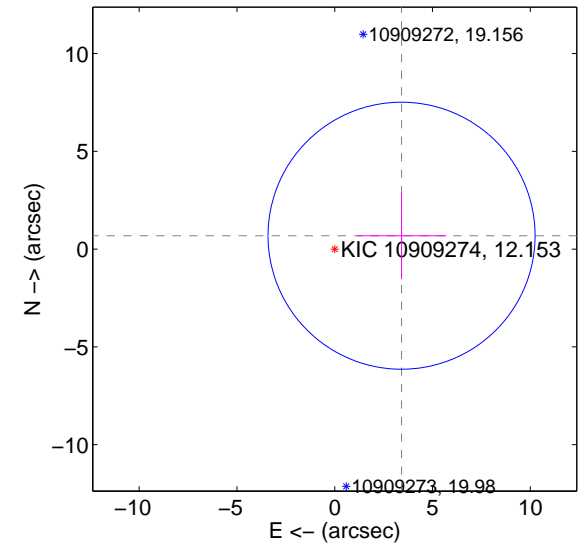
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

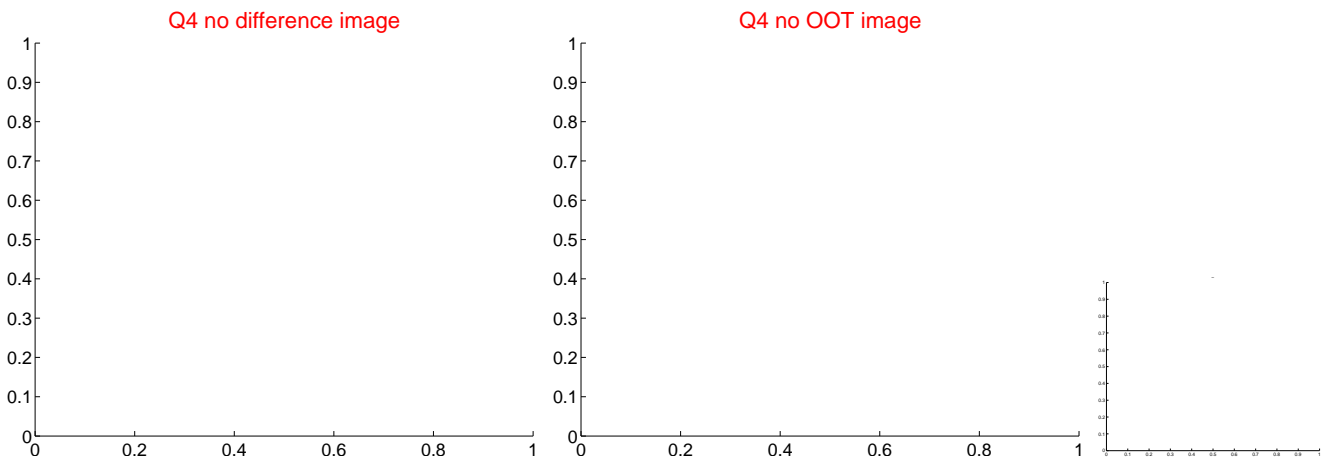
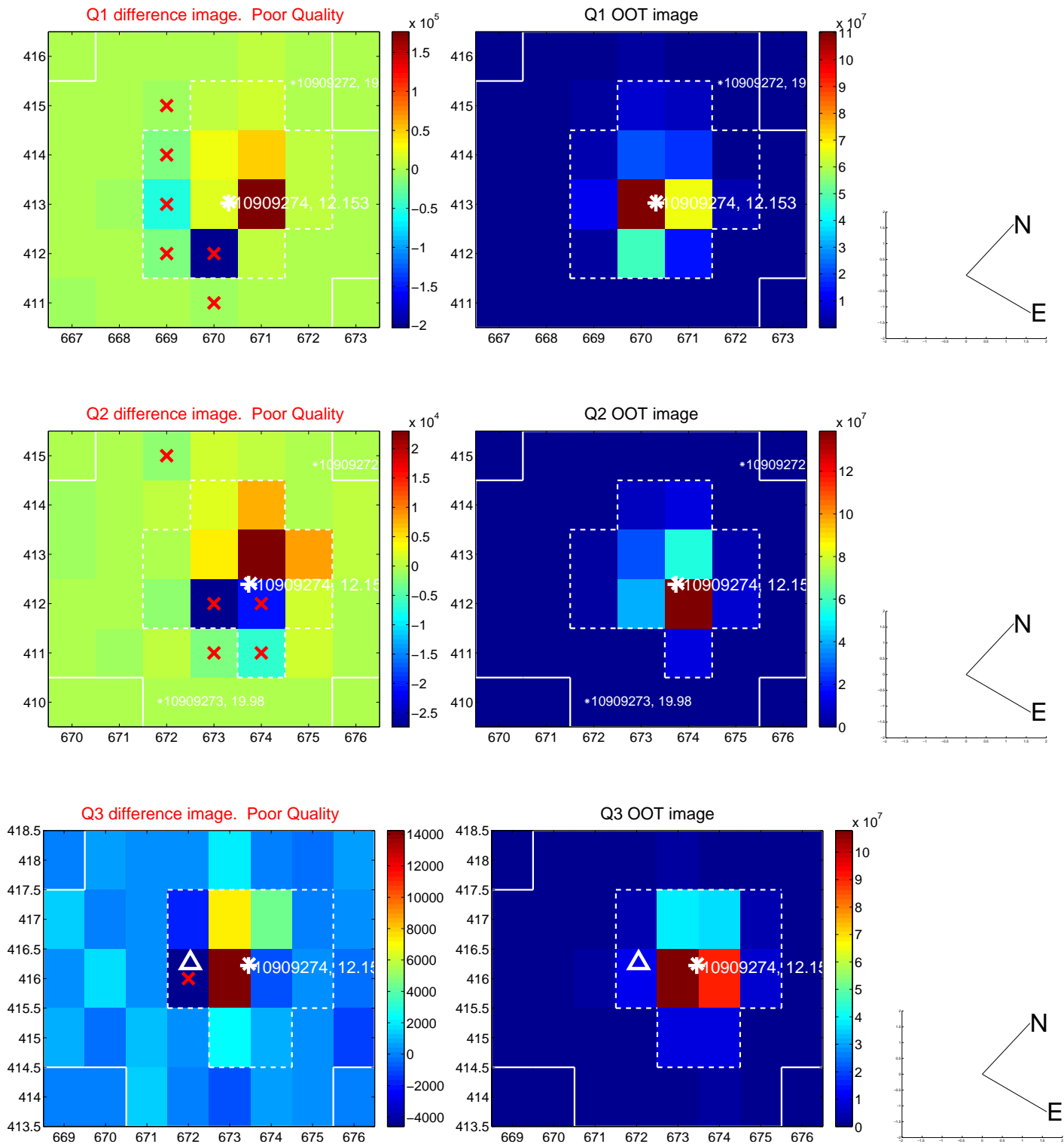


offset from photometric centroids

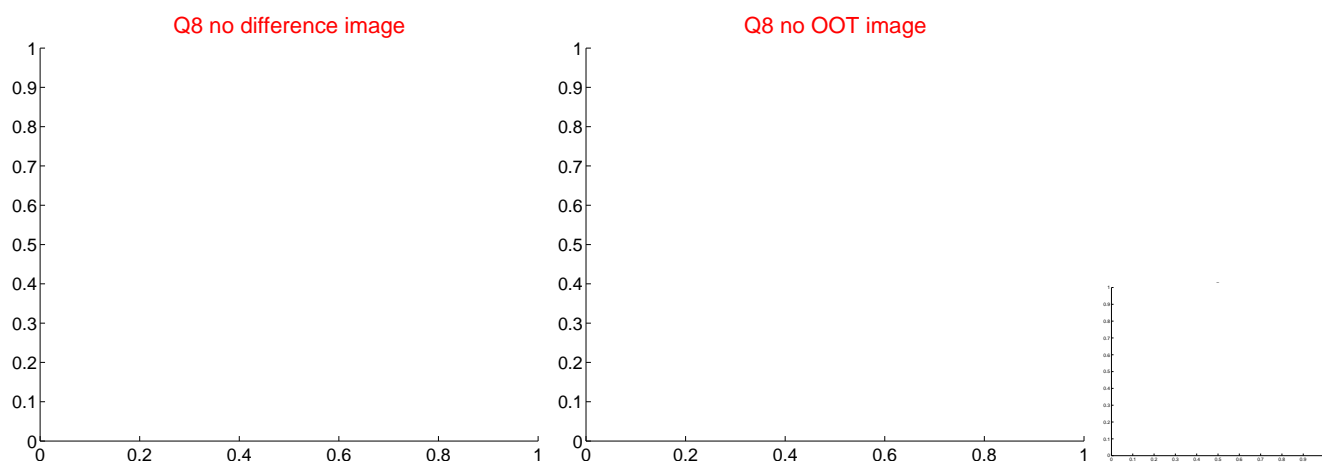
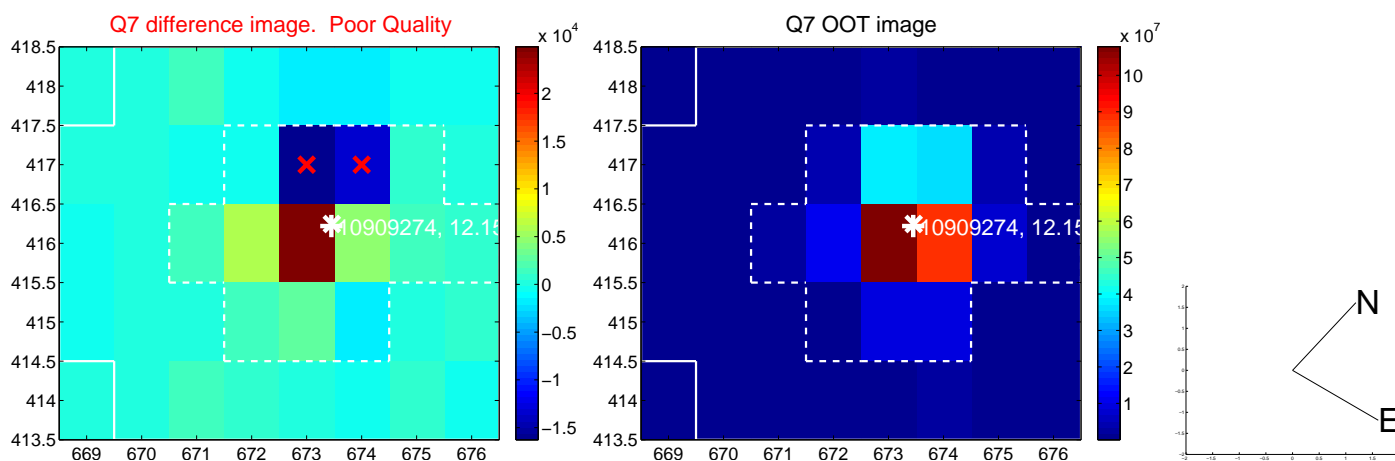
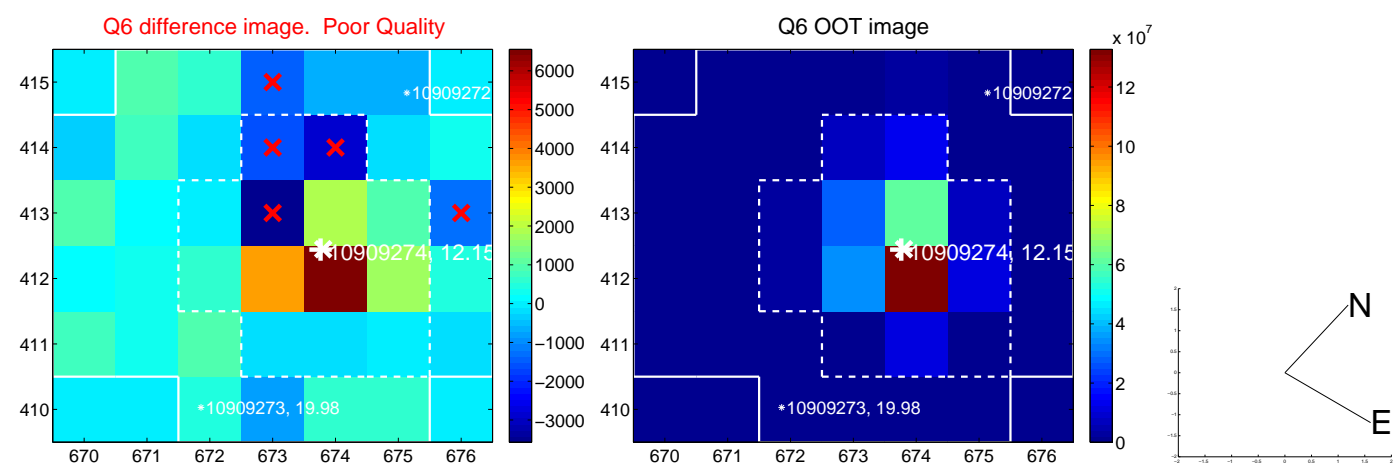
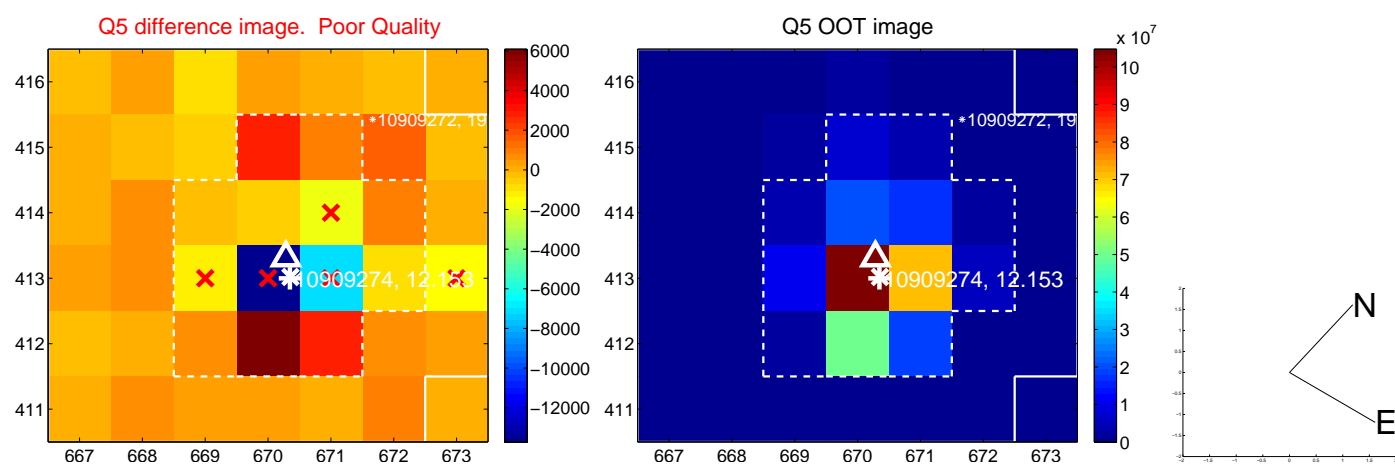


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

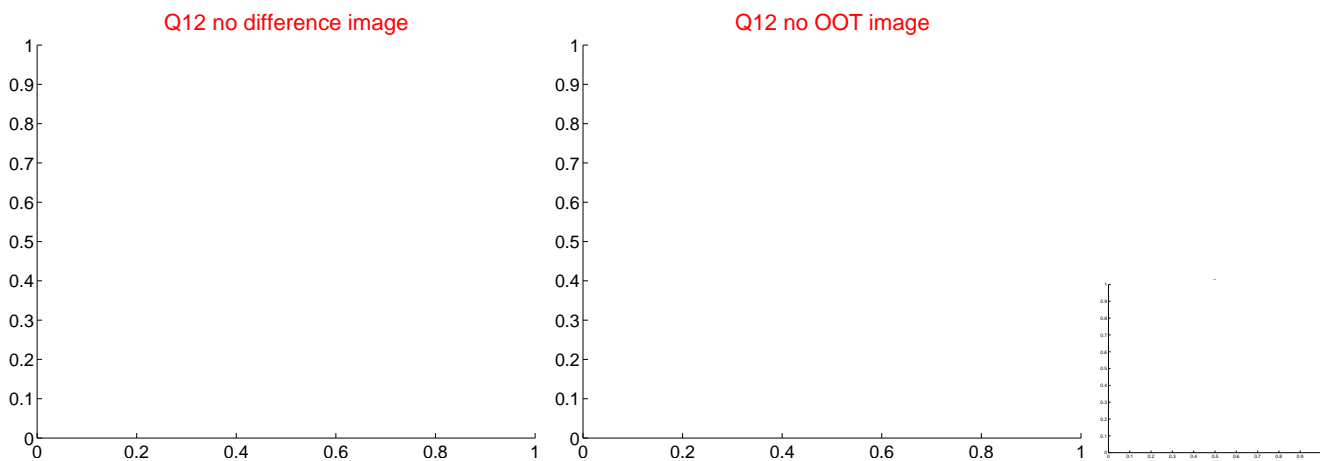
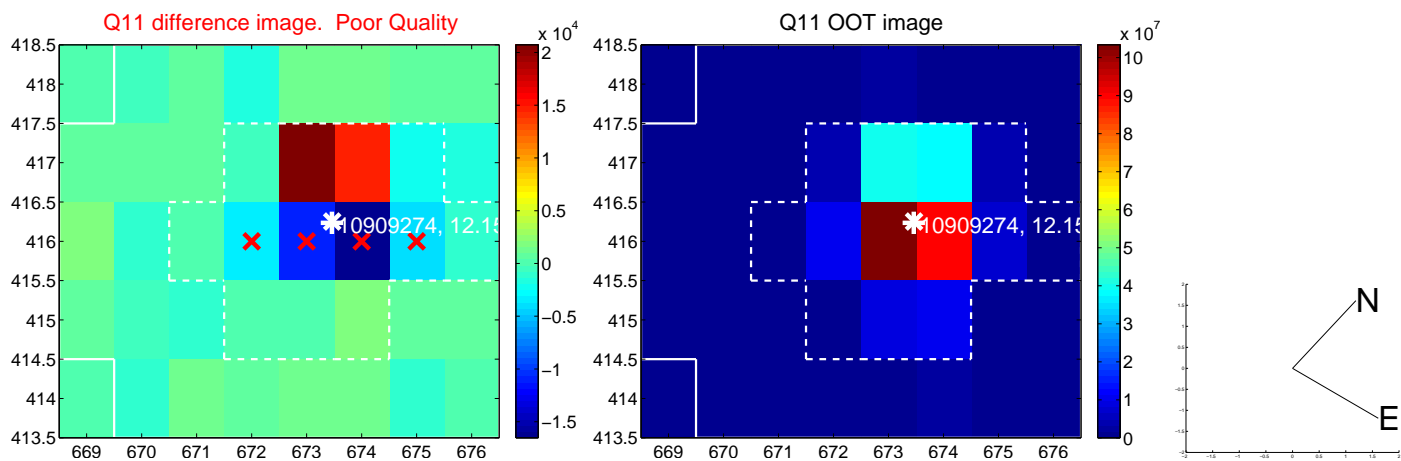
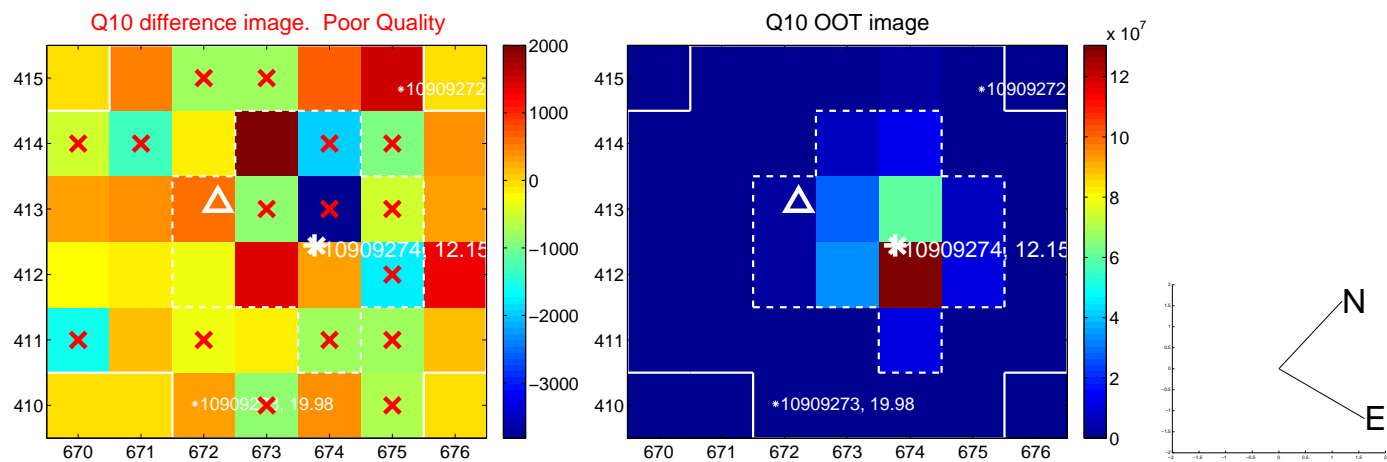
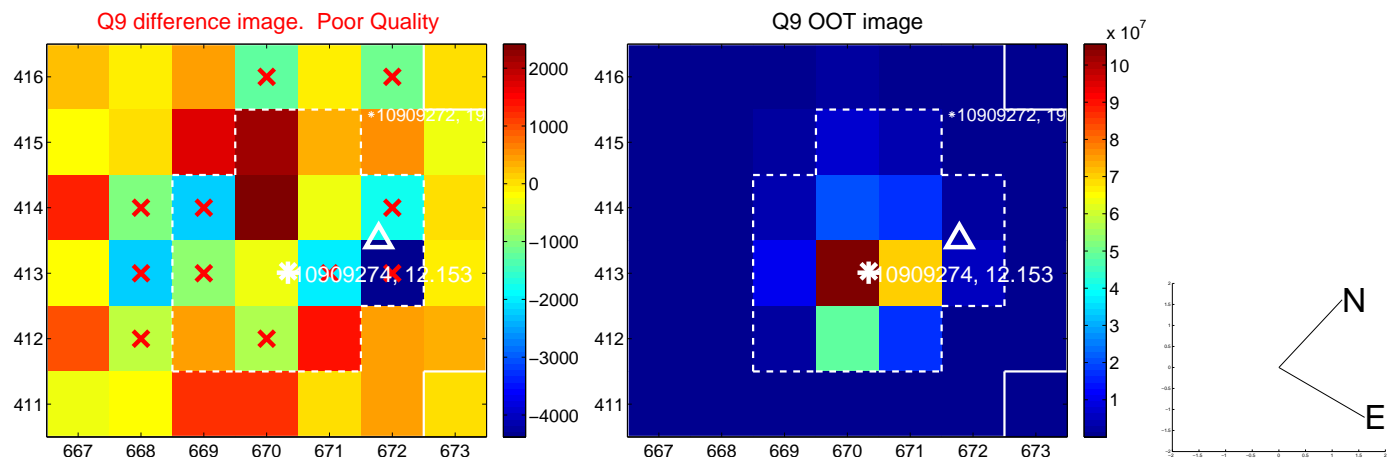
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



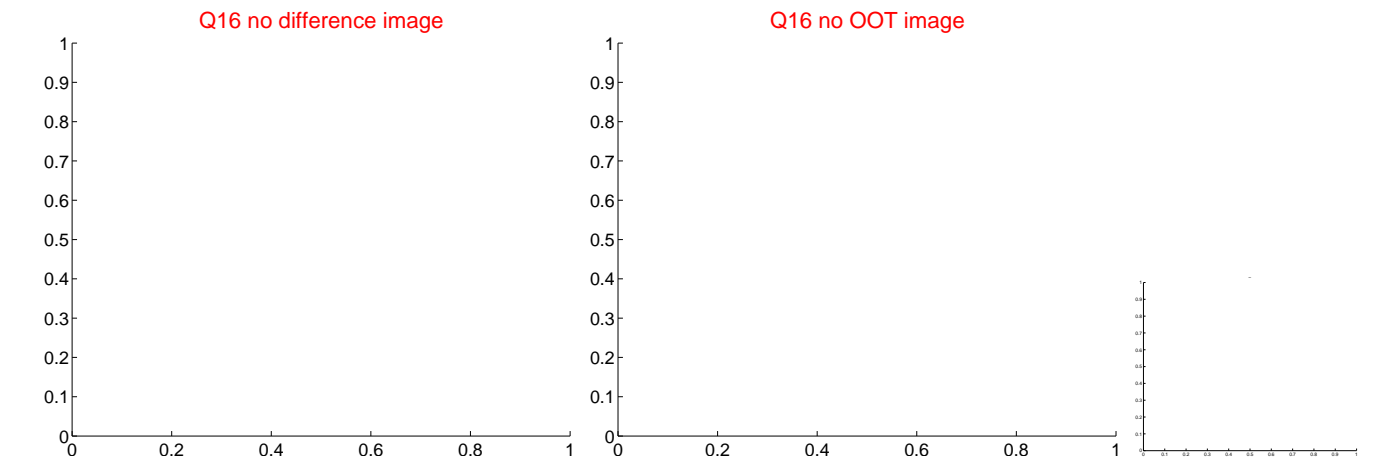
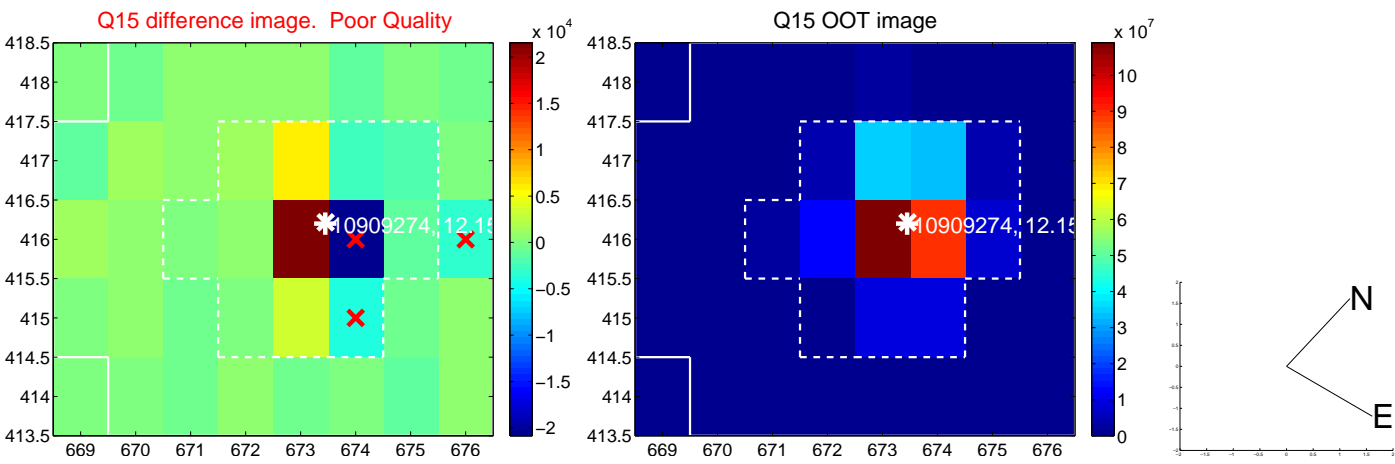
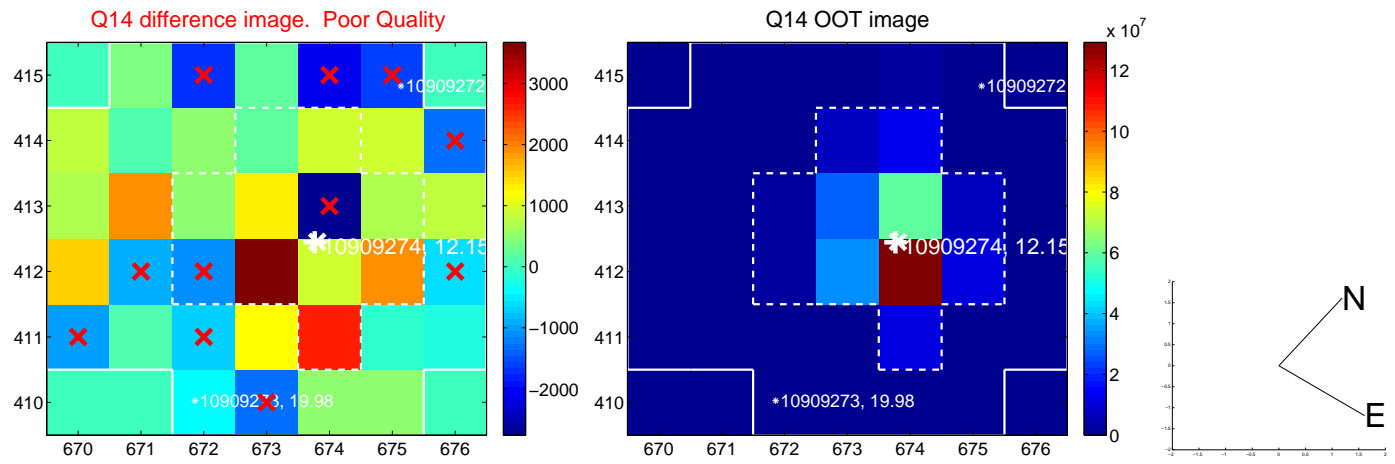
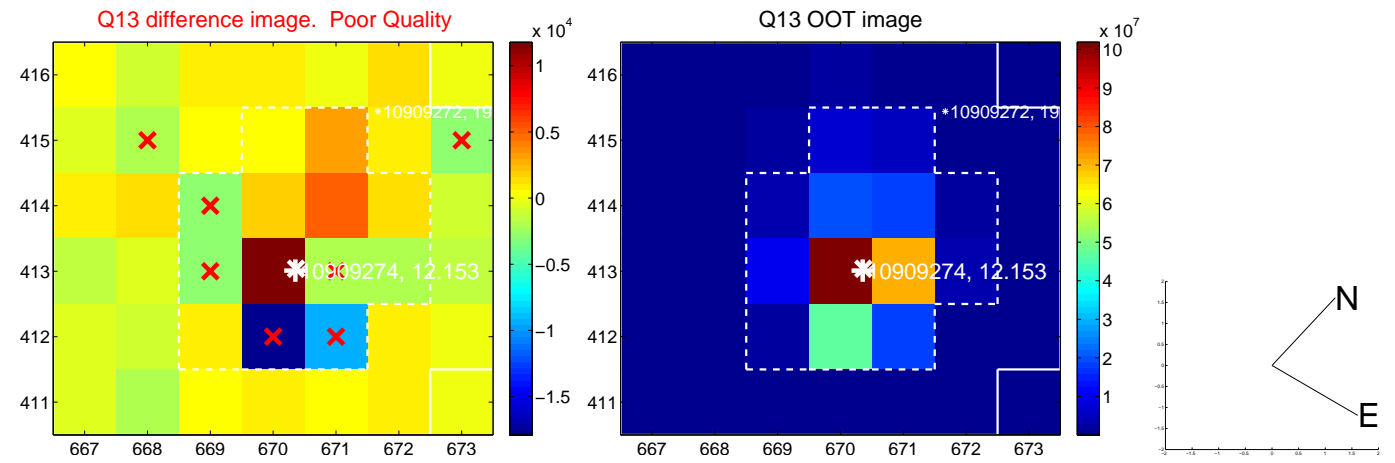
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



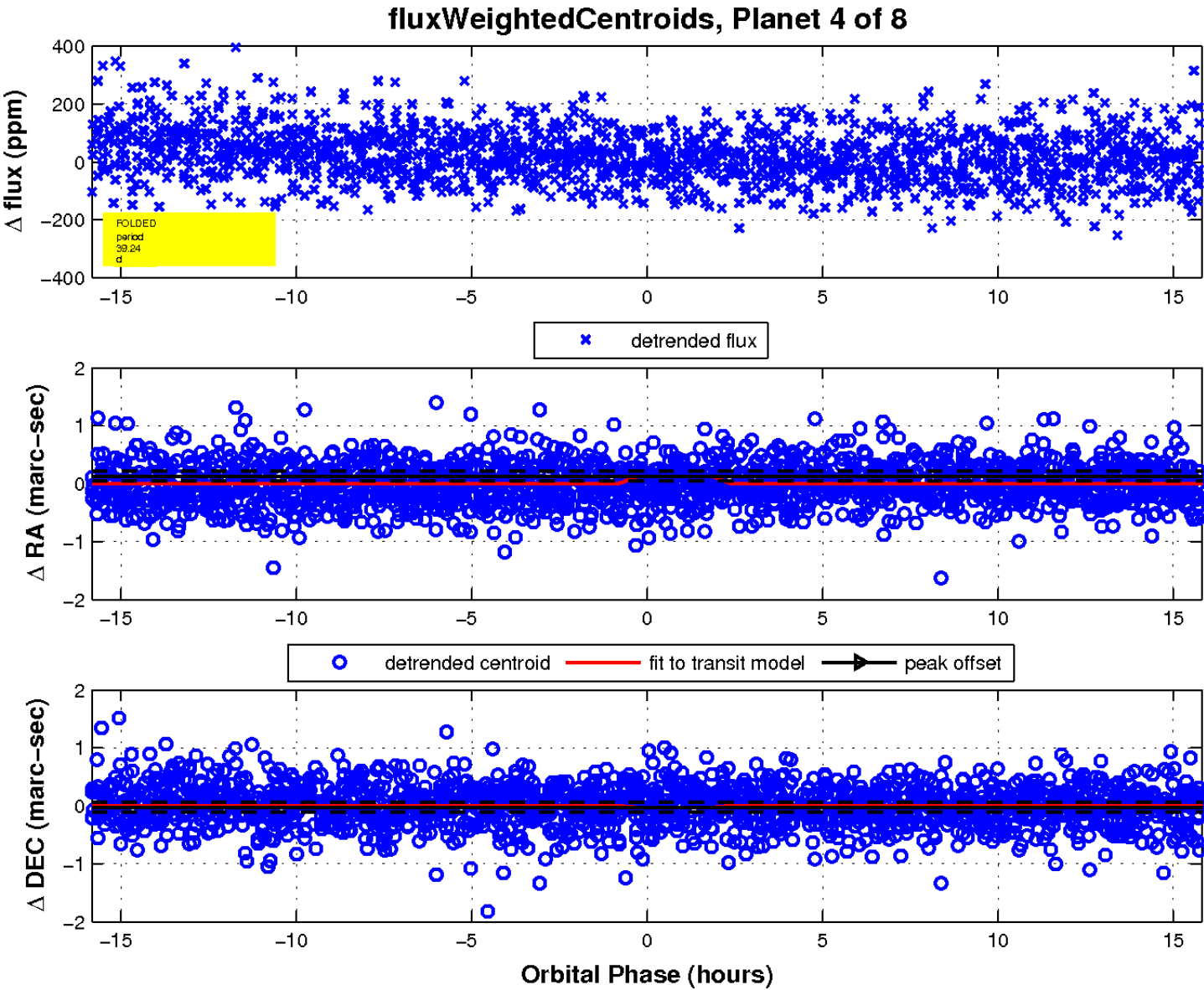
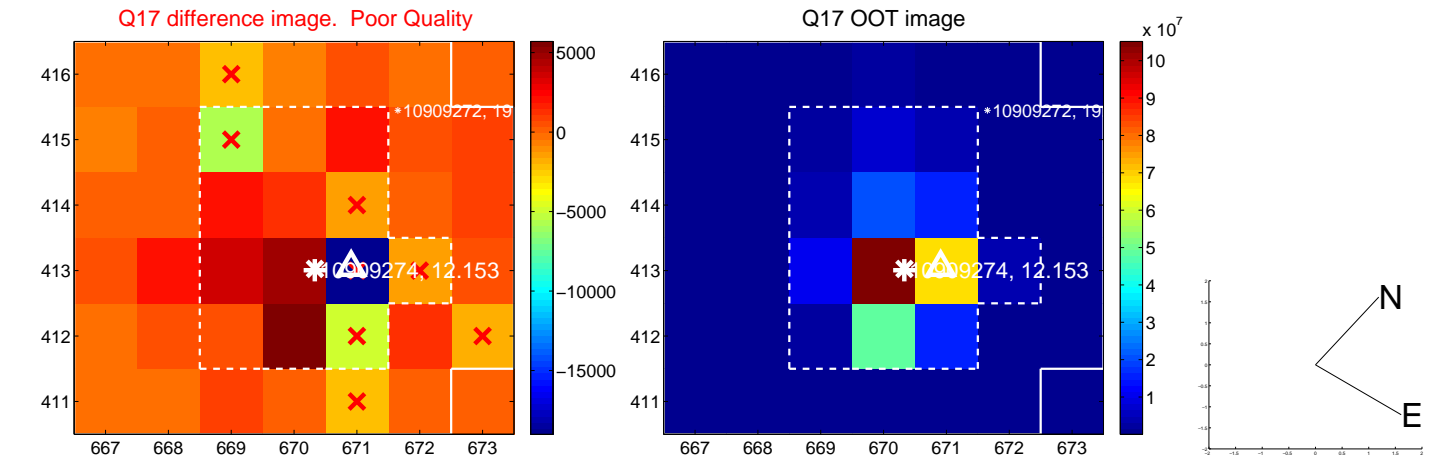
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

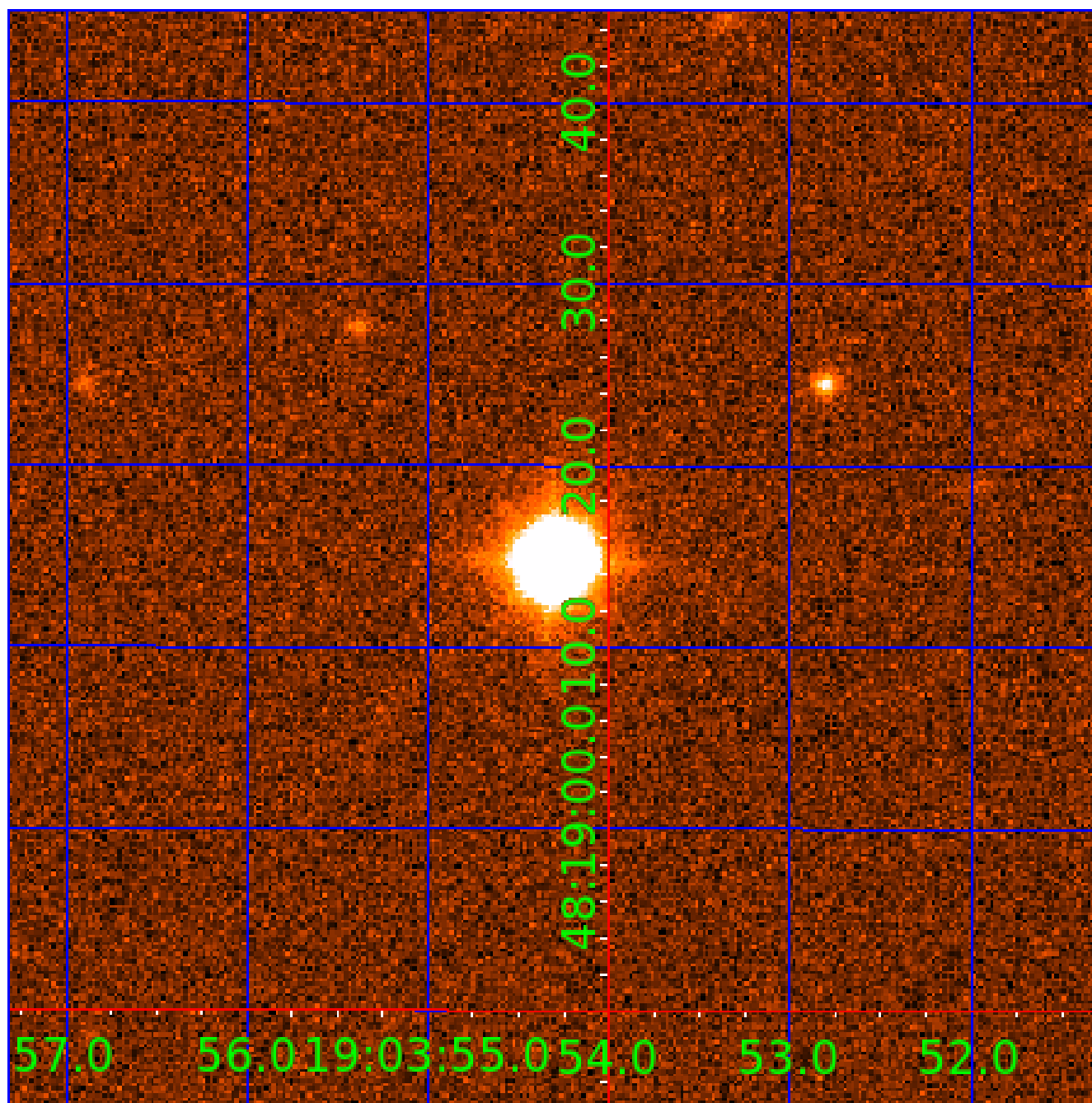


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010909274

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})
010909274-01	OBS	7385.01	39.237869	148.654751	453738.2	3.500	44979.7	-1.0	1.23	6599	65.30	43.79
010909274-02	OBS	No	39.236842	155.230951	345050.7	12.000	28778.8	-1.0	1.23	6599	41.37	43.80
010909274-03	OBS	No	19.620723	148.593957	529.3	37.565	5258.6	34.9	1.23	6599	5.43	110.34
010909274-04	OBS	No	39.239282	156.324147	7594.1	10.500	1106.7	-1.0	1.23	6599	10.82	43.79
010909274-05	OBS	No	13.081122	141.266344	39.5	9.677	503.5	5.1	1.23	6599	0.89	189.45
010909274-06	OBS	No	39.238292	152.979854	2921.6	15.000	373.2	-1.0	1.23	6599	6.71	43.79
010909274-07	OBS	No	39.241582	157.475237	1576.7	15.000	251.8	-1.0	1.23	6599	4.93	43.79
010909274-08	OBS	No	39.232819	159.646855	4493.6	52.422	76.7	134.1	1.23	6599	14.89	43.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010909274-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
010909274-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010909274-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—RESIDUAL_TCE
010909274-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
010909274-06	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-07	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
010909274-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

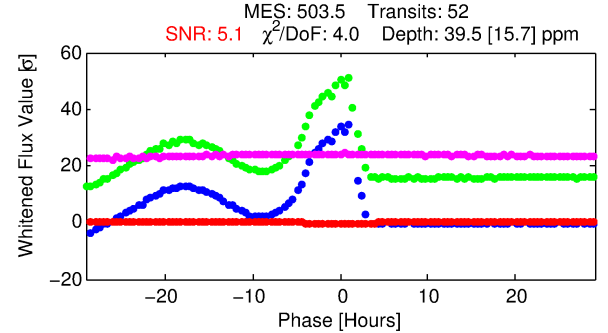
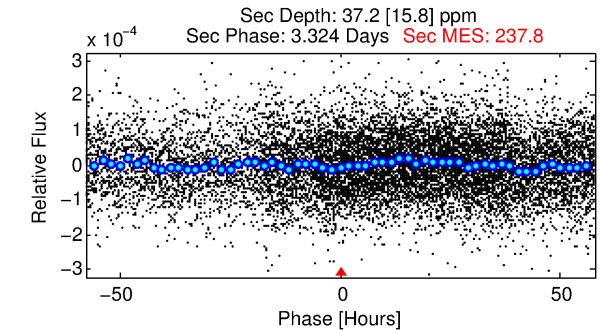
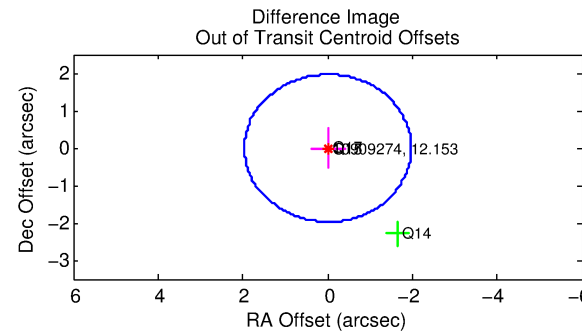
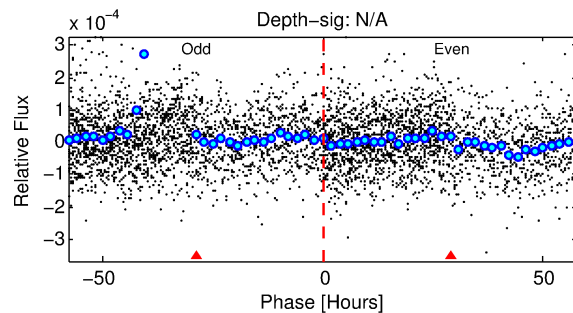
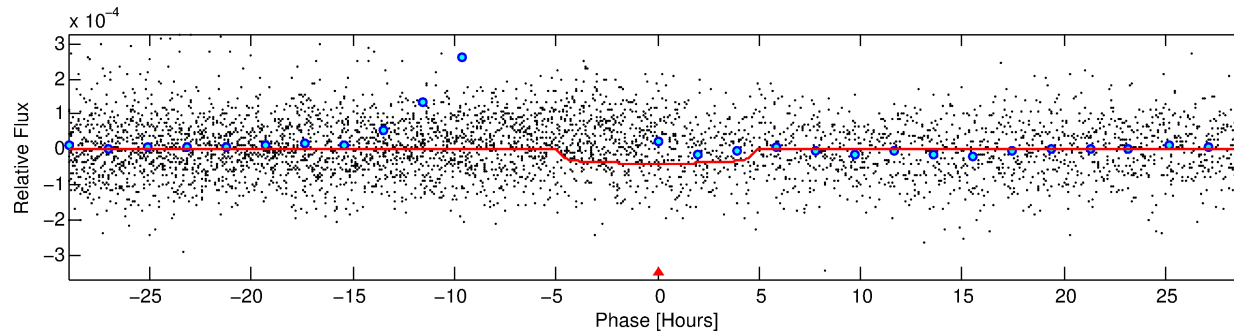
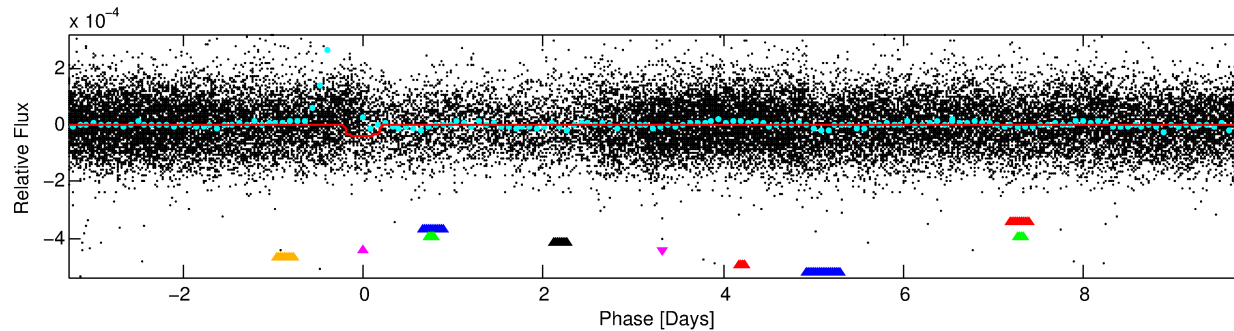
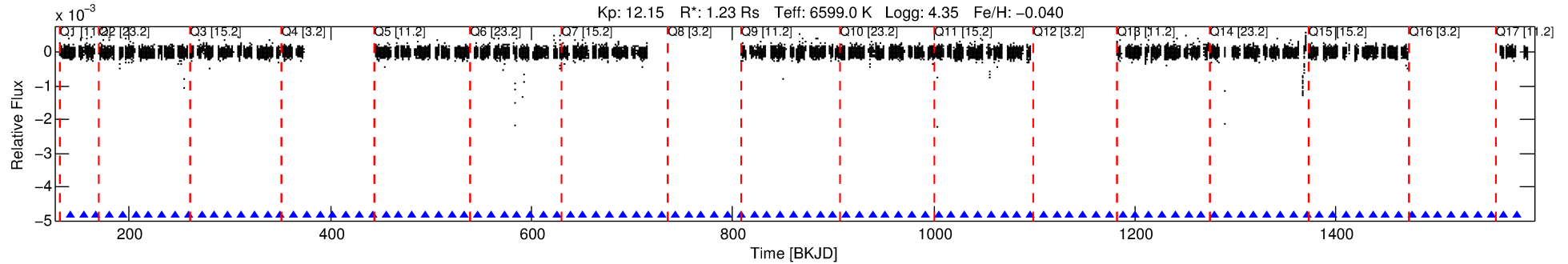
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010909274-05

No Significant Match Found

DV One-Page Summary

KIC: 10909274 Candidate: 5 of 8 Period: 13.081 d
KOI: K07385 Corr: No Ephemeris Match



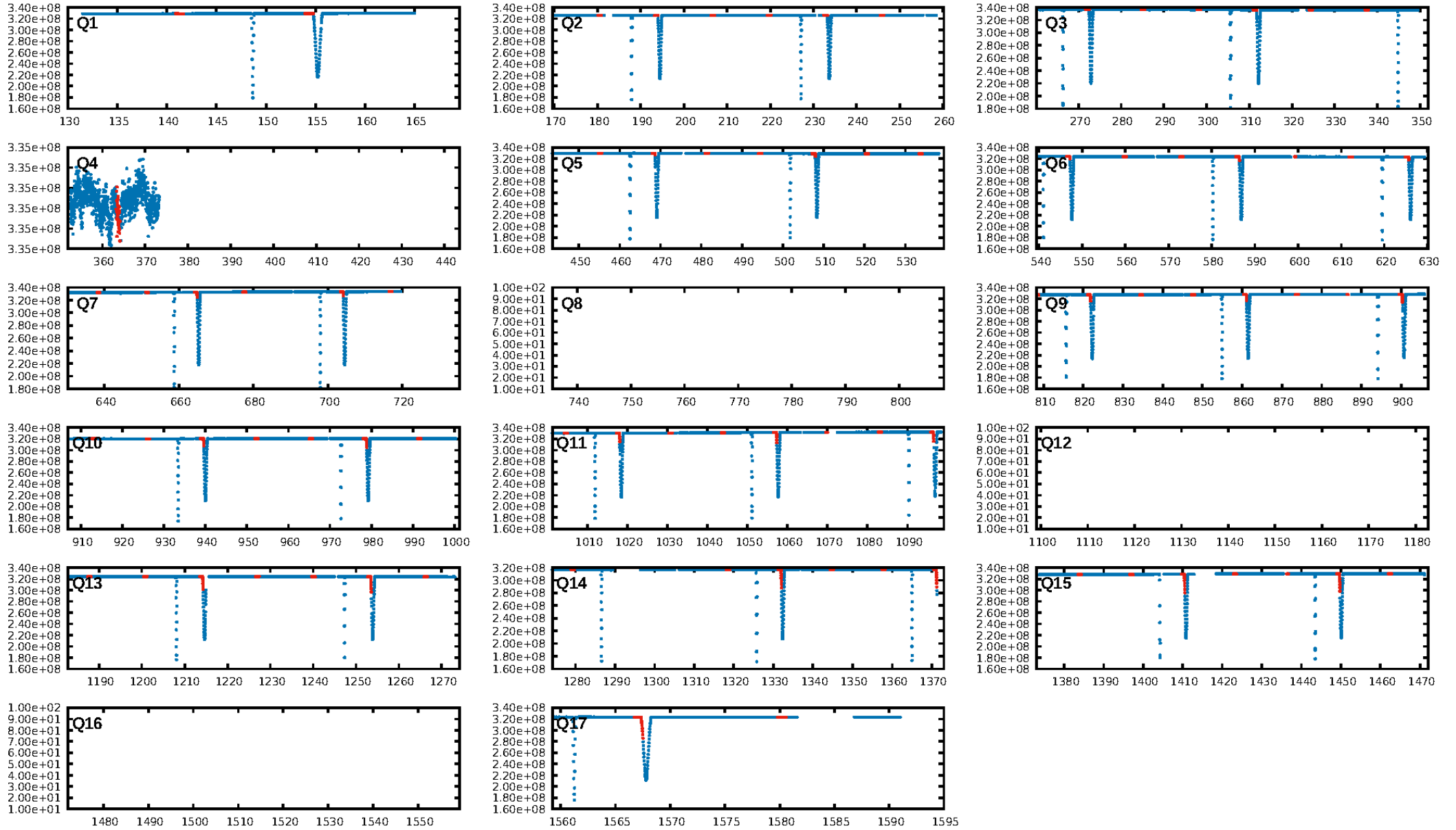
DV Fit Results:

Period = 13.08112 [0.00057] d
Epoch = 141.2663 [0.0328] BKJD
Rp/R* = 0.0066 [0.0045]
a/R* = 5.27 [18.53]
b = 0.87 [1.01]
Seff = 189.45 [55.63]
Teq = 946 [69] K
Rp = 0.89 [0.64] Re
a = 0.1169 [0.0218] AU
Ag = 354.46 [512.49] [0.69σ]
Teffp = 6346 [2265] K [2.38σ]

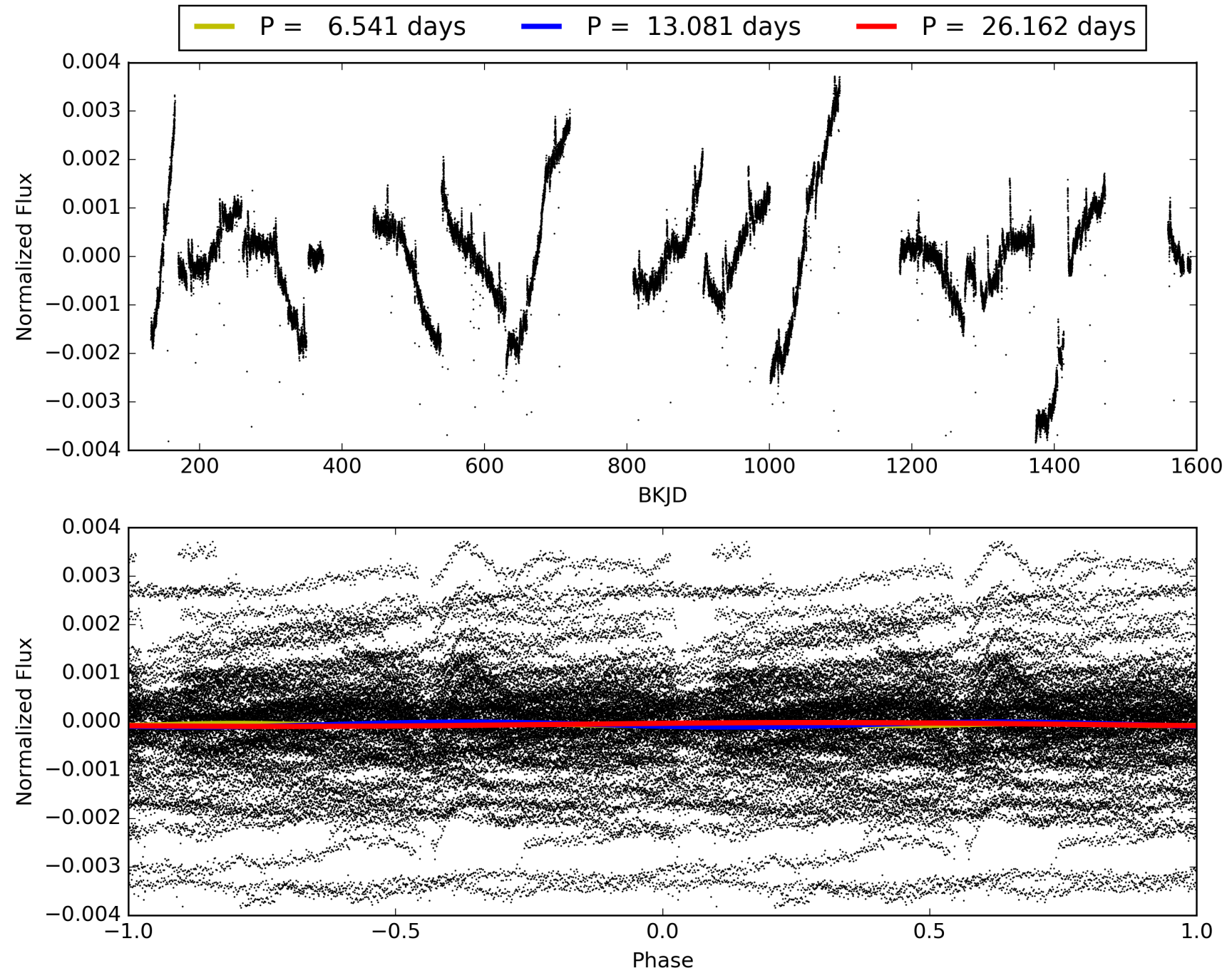
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.05σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [49/49]
GhostDiagnostic-chr: -0.8112
Centroid-sig: 80.3%
Centroid-so: 0.537 arcsec [0.58σ]
OotOffset-rm: 0.009 arcsec [0.01σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.086 arcsec [0.14σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.85 [11/13]

TCE 010909274-05, PDC Light Curves

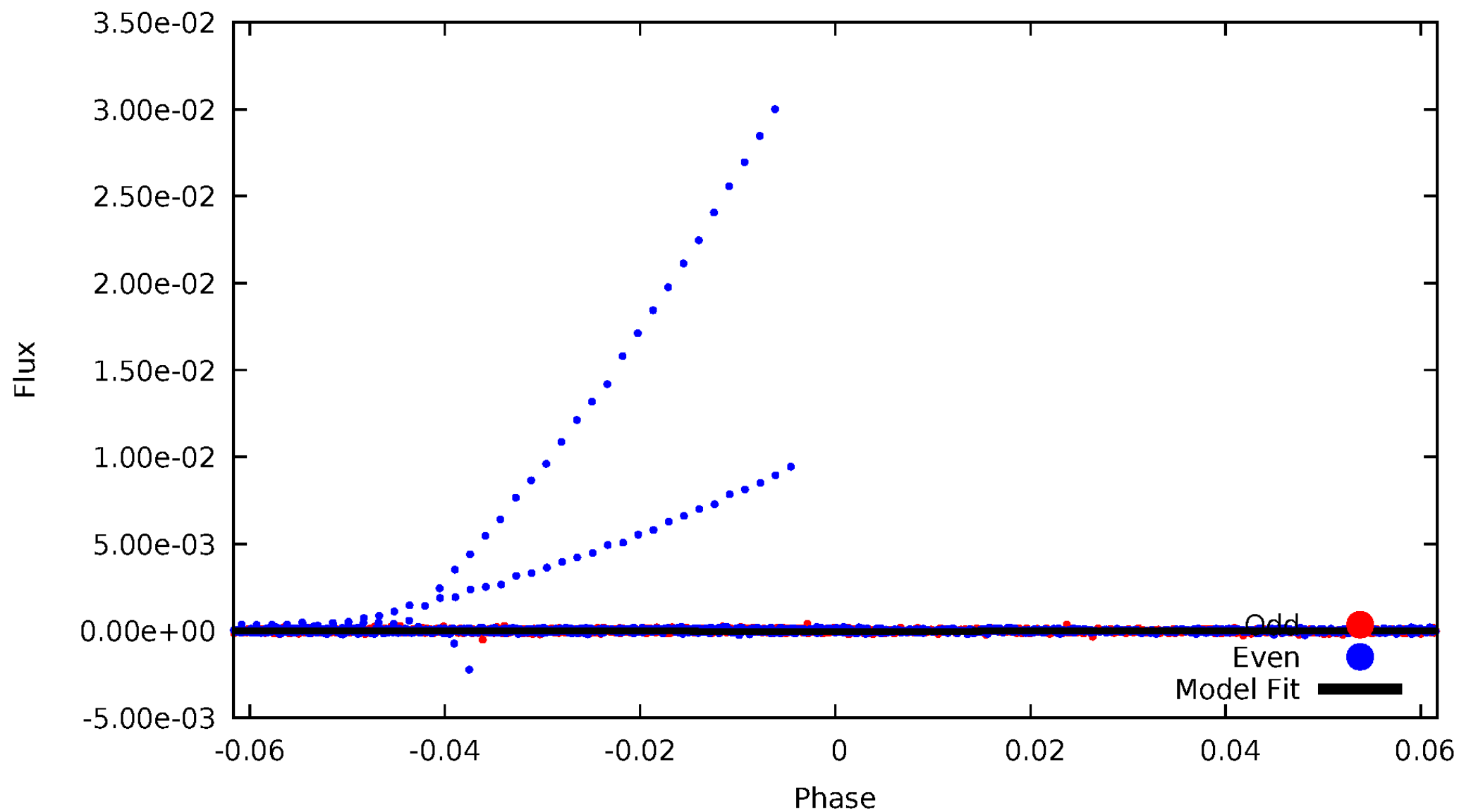


TCE 010909274-05



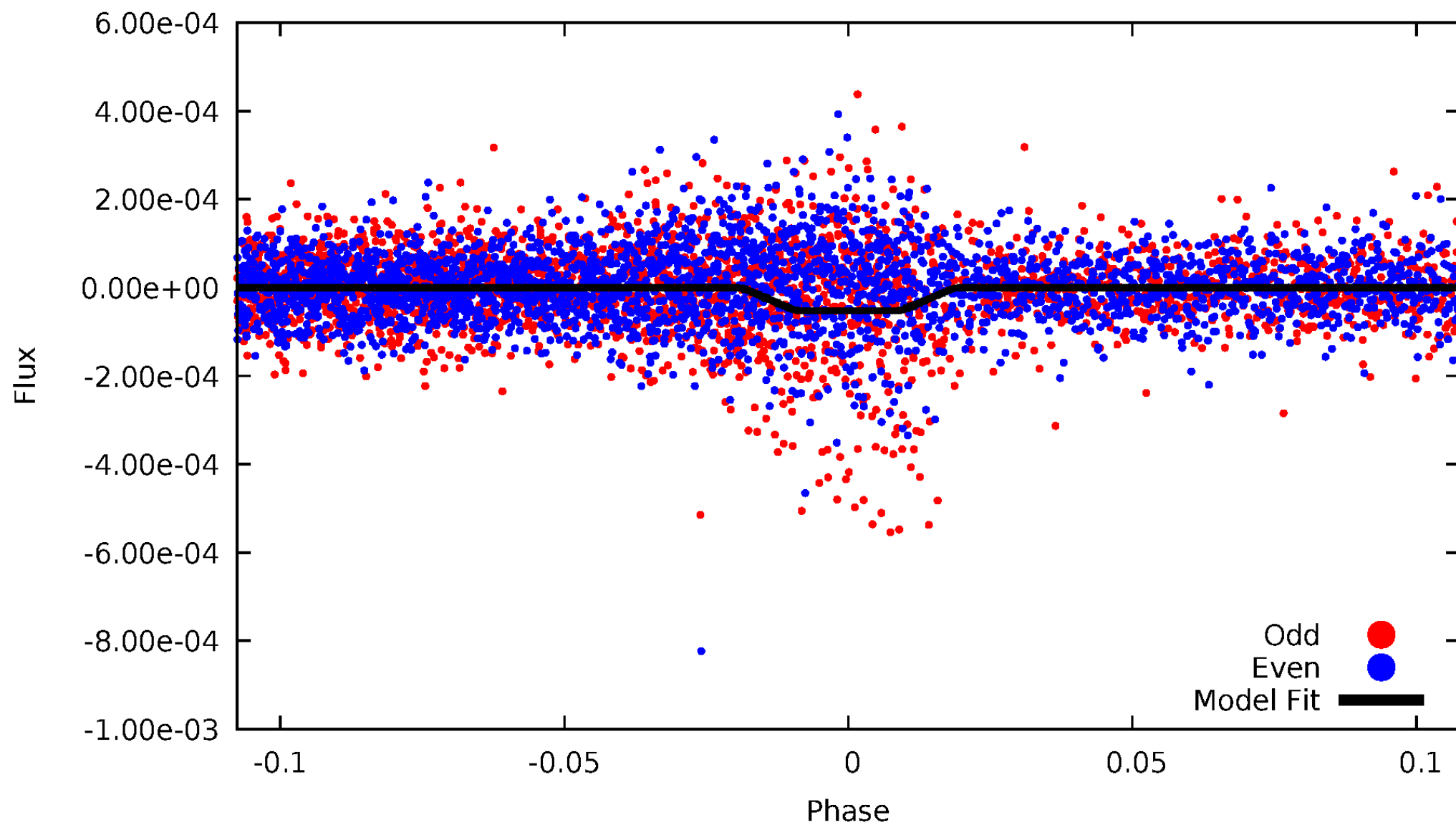
DV Odd/Even

TCE 010909274-05



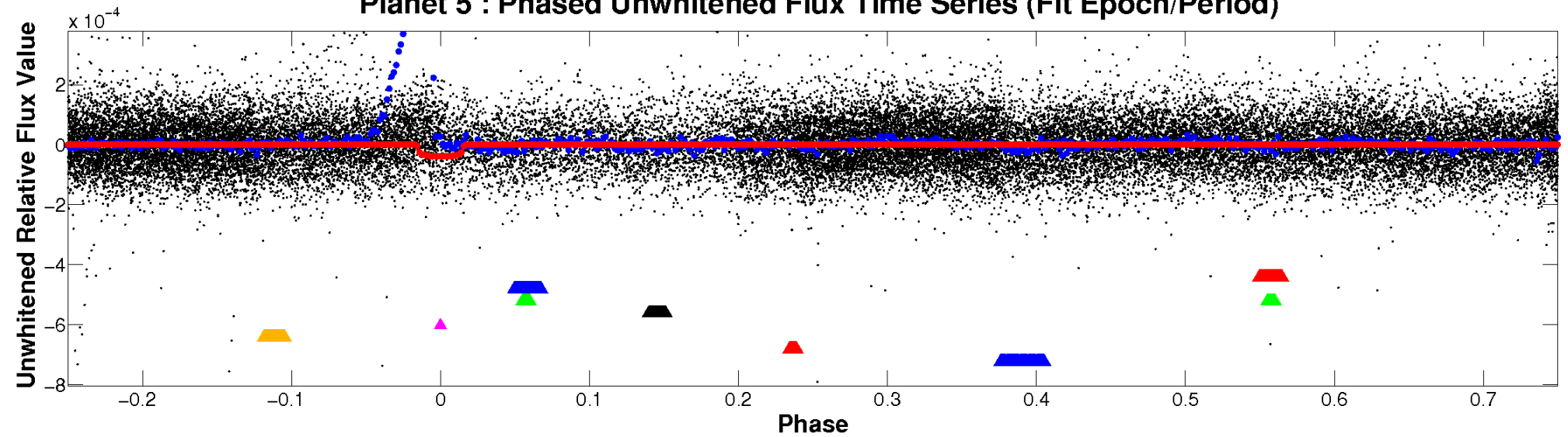
ALT Odd/Even

TCE 010909274-05

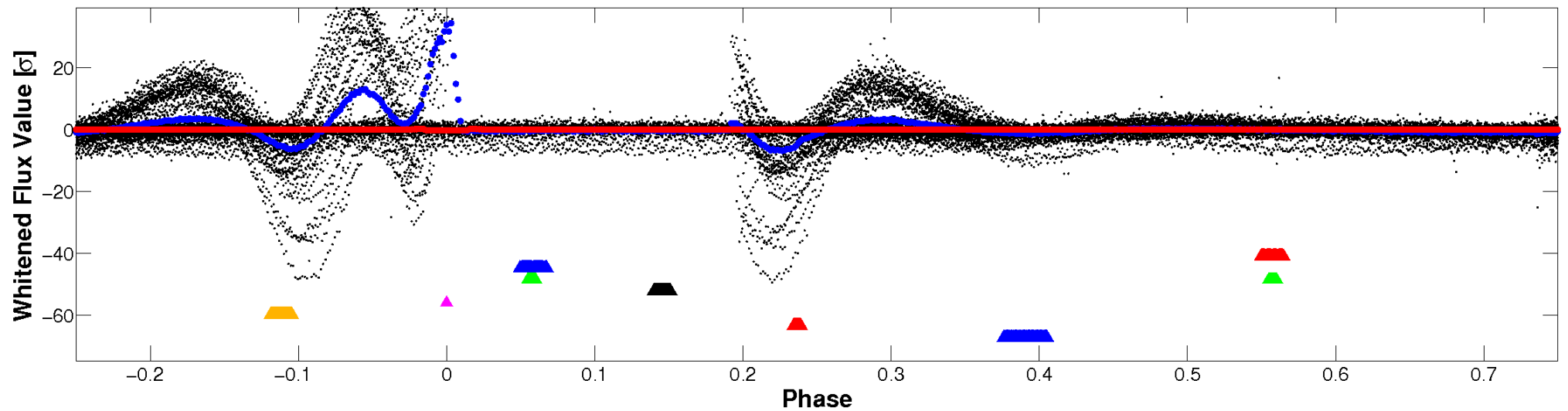


Non-Whitened Vs. Whitened Light Curve

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

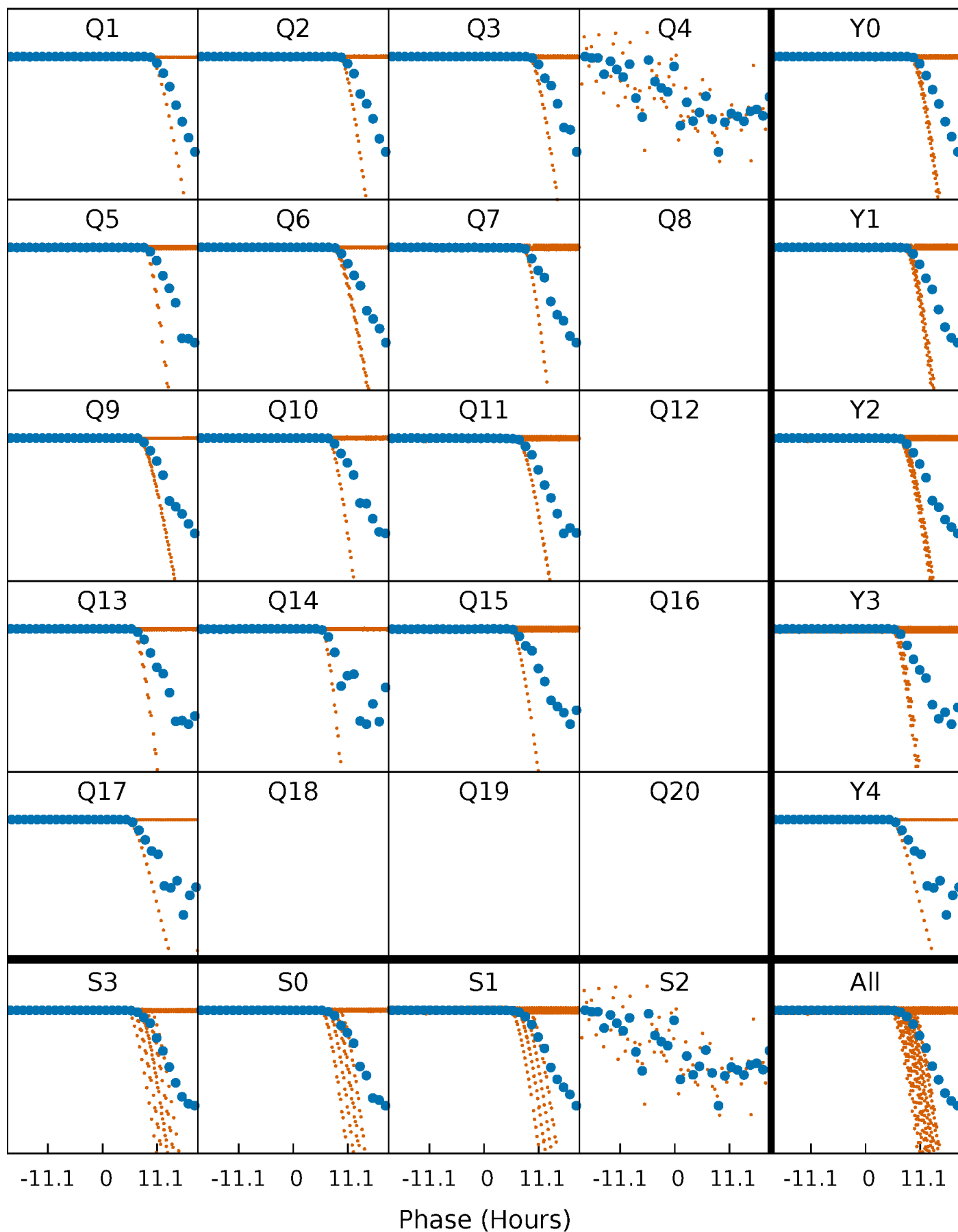


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



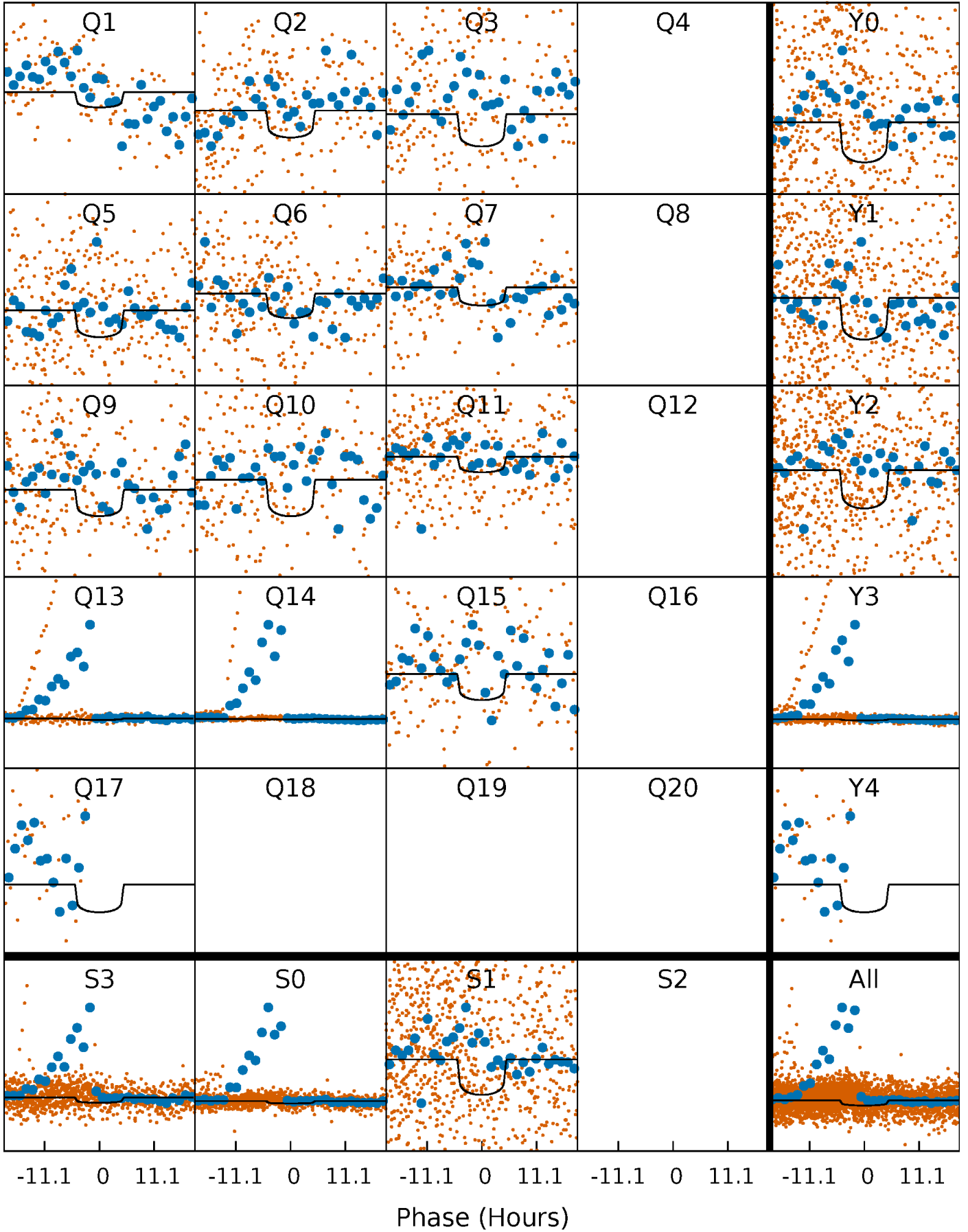
PDC Quarter-Phased Transit Curves

TCE 010909274-05 $P = 13.081122$ Days $T_0 = 141.266344$ (BKJD)



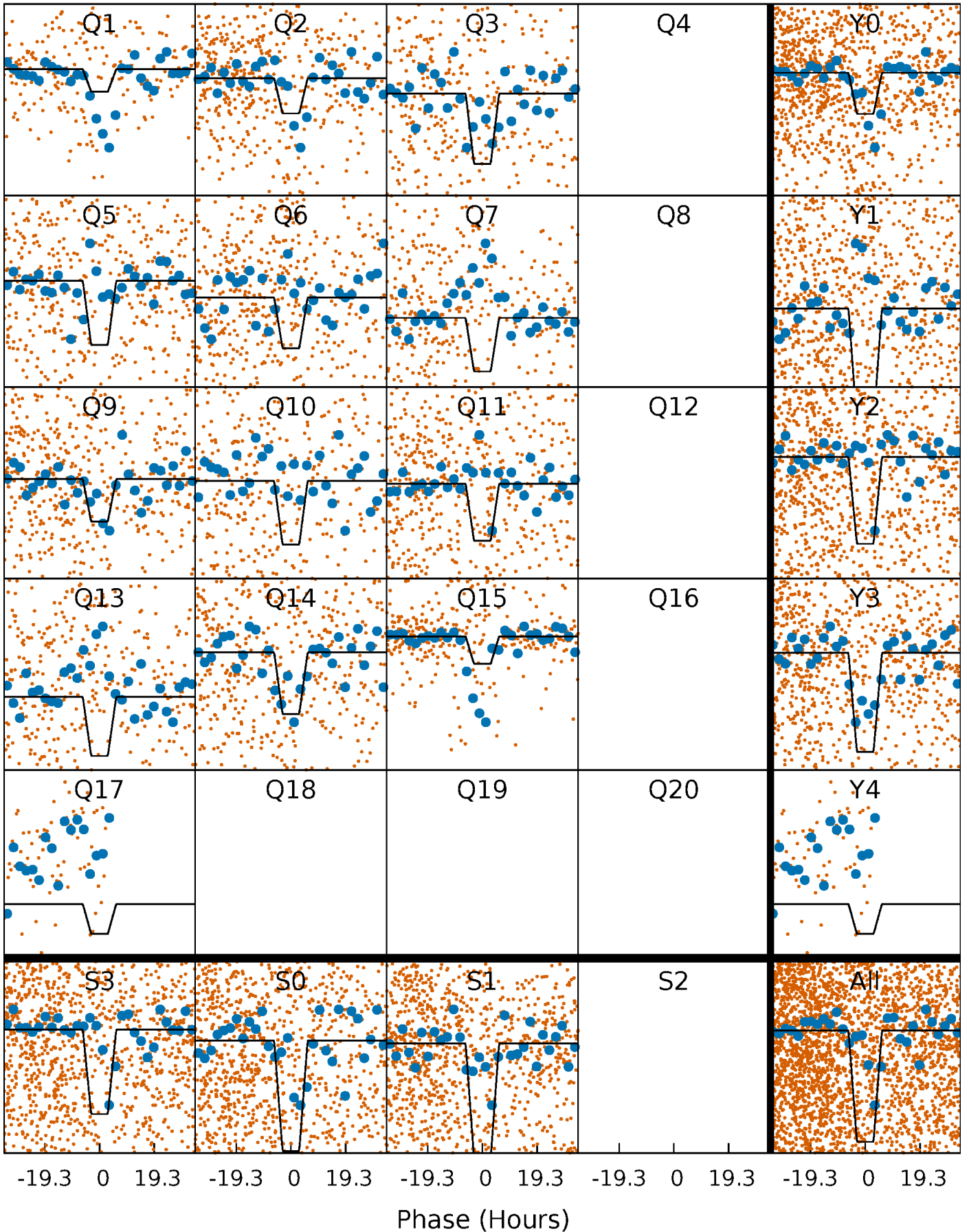
DV Quarter-Phased Transit Curves

TCE 010909274-05 $P = 13.081122$ Days $T_0 = 141.266344$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

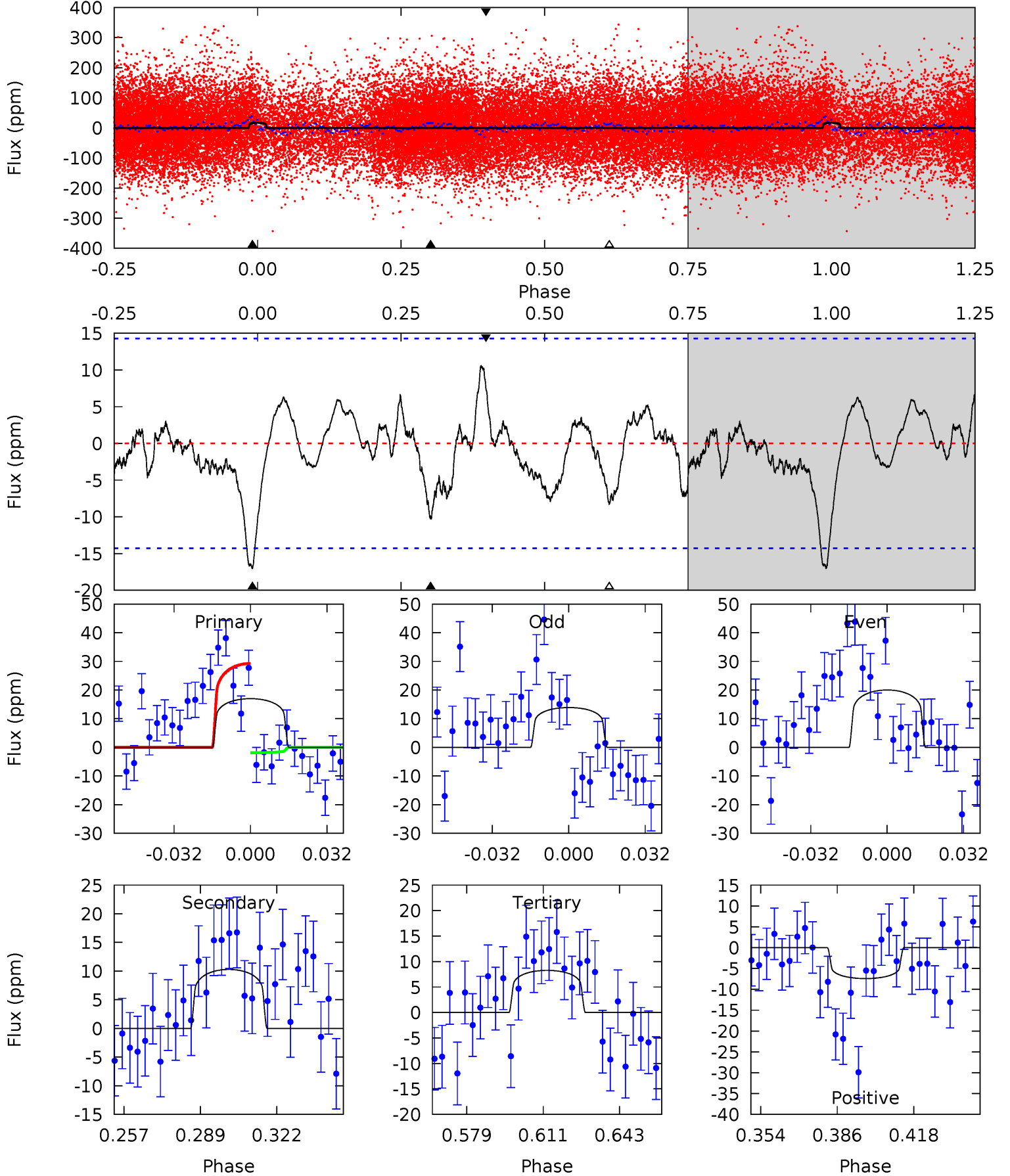
TCE 010909274-05 $P = 13.079906$ Days $T_0 = 141.174281$ (BKJD)



DV Model-Shift Uniqueness Test

010909274-05, P = 13.081122 Days, E = 128.185222 Days

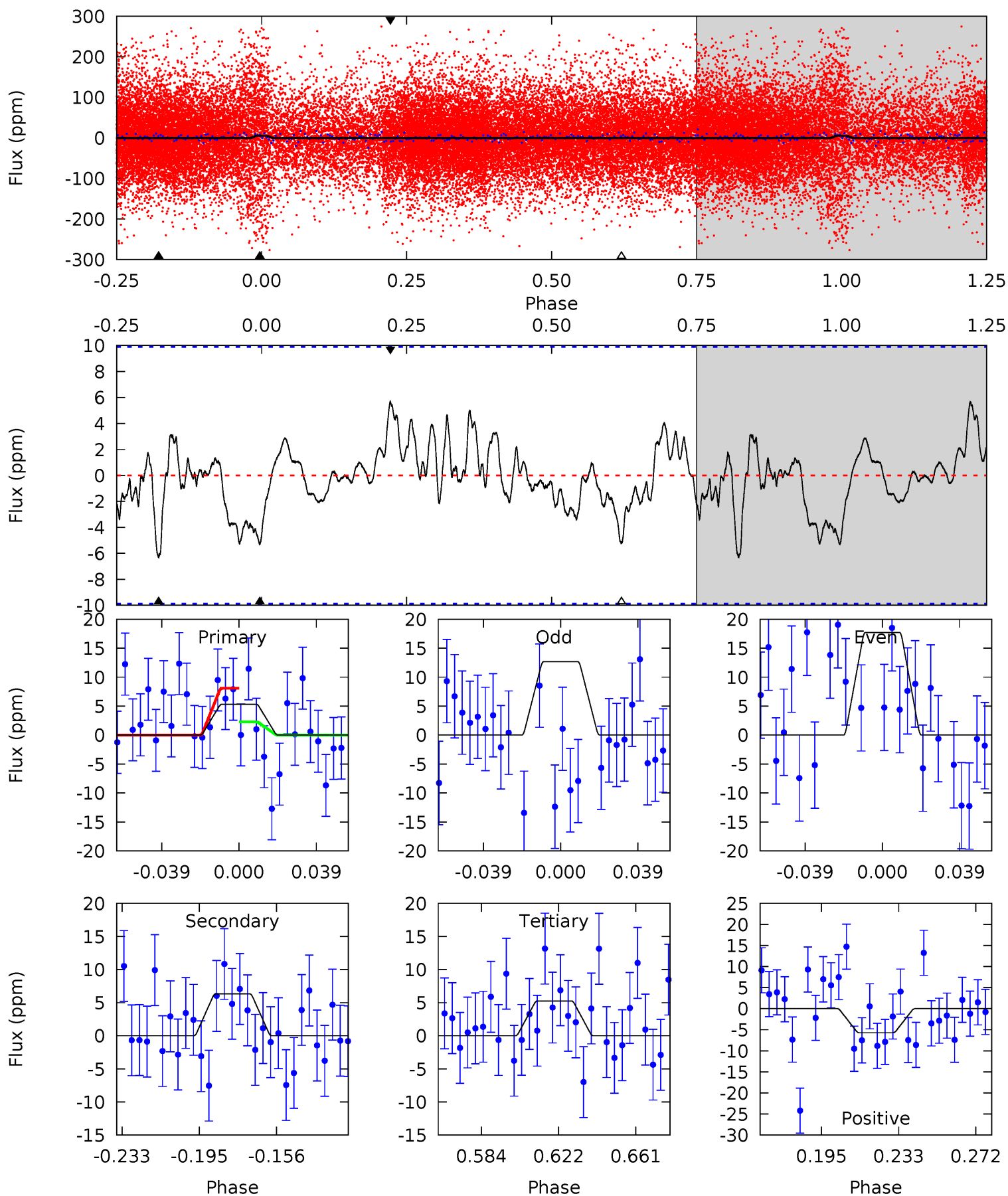
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.70	3.45	2.78	2.49	4.80	2.14	1.14	2.93	3.21	0.68	0.96	1.03	31.0	0.38	4.48



Alt Model-Shift Uniqueness Test

010909274-05, P = 13.079906 Days, E = 128.094375 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.56	3.04	2.53	2.74	4.76	2.07	1.01	0.03	-0.18	0.51	0.30	1.22	-6.49	0.47	1.37



Stellar Parameters For KIC 010909274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6599^{+147}_{-213}	$4.350^{+0.060}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$1.234^{+0.283}_{-0.141}$	$1.248^{+0.144}_{-0.173}$	$0.936^{+0.246}_{-0.391}$
	+2%/-3%	+1%/-3%	+625%/-750%	+23%/-11%	+12%/-14%	+26%/-42%
Source	PHO1	FLK73	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 010909274-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 3	$0.95^{+0.61}_{-0.55}$	1339^{+67}_{-60}	4621^{+2178}_{-790}	79^{+349}_{-50}
Alt.	-6 ± 2	$1.06^{+0.62}_{-0.59}$	1331^{+78}_{-52}	4075^{+1594}_{-653}	42^{+172}_{-27}

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

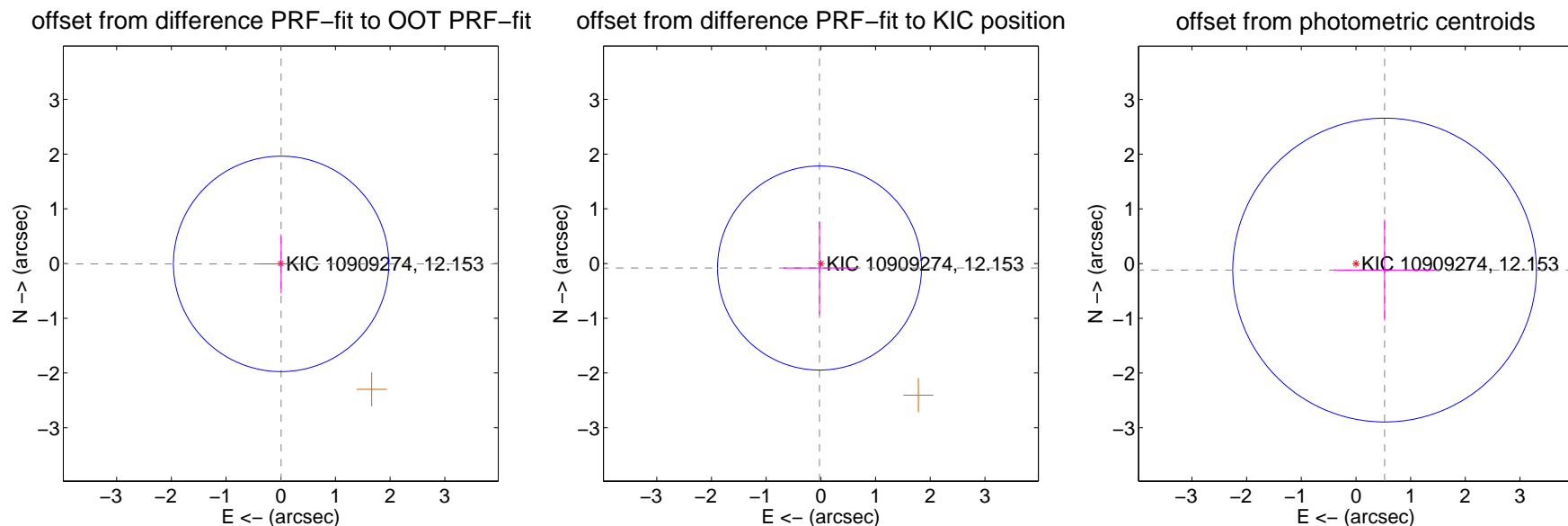
DV Centroid Data

Supplemental centroid analysis for 010909274-05. Kepler magnitude: 12.15. Transit SNR 5.15

There are 0 quarters with good PRF difference image offsets

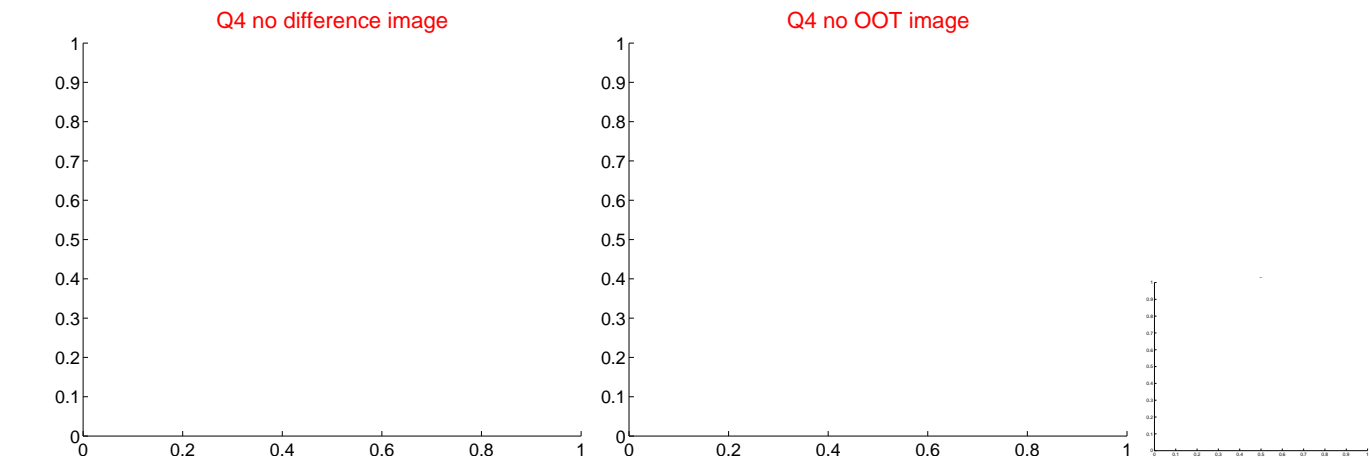
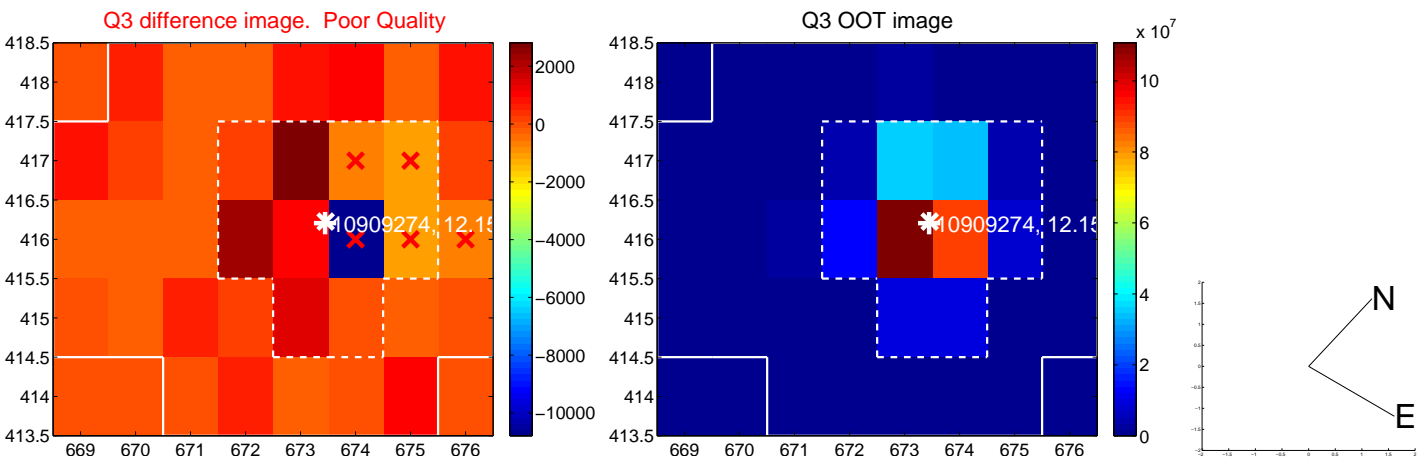
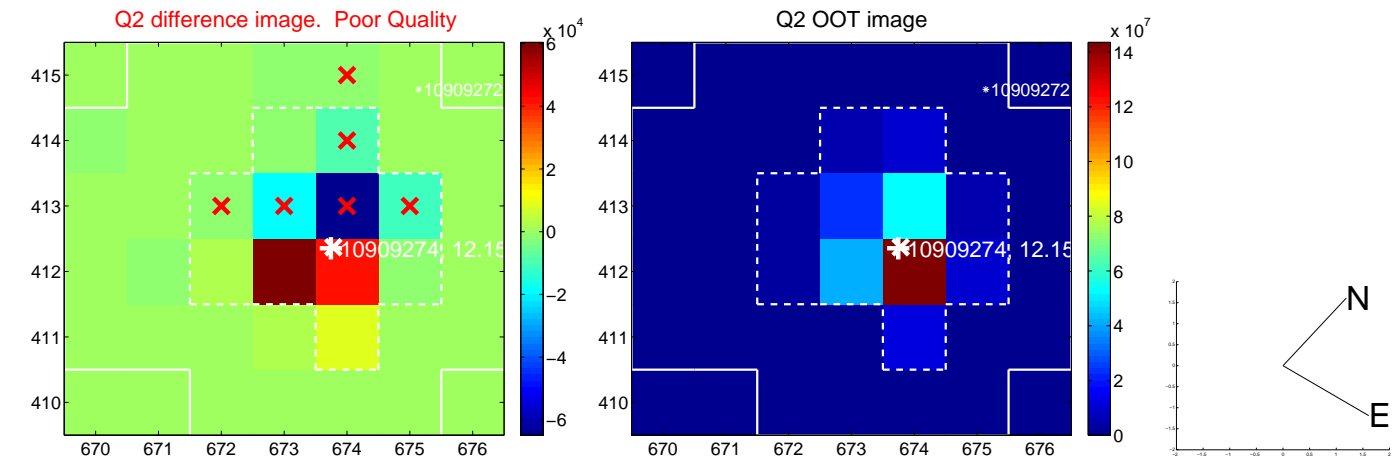
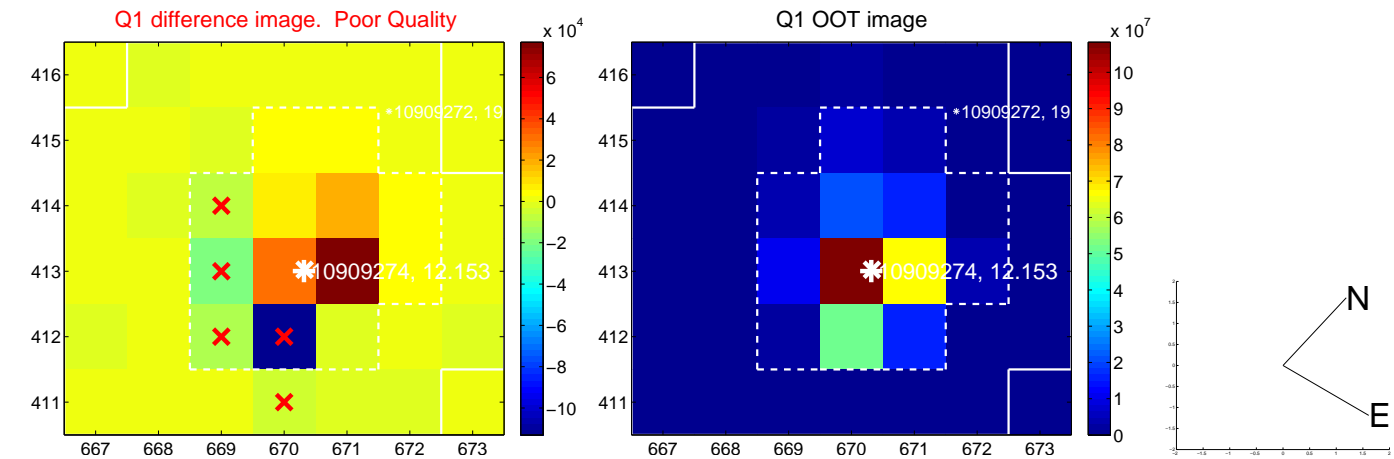
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.009 ± 0.656	0.01	-0.006 ± 0.396	-0.006 ± 0.539
PRF-fit source offset from KIC position	0.086 ± 0.621	0.14	0.025 ± 0.662	-0.082 ± 0.848
photometric centroid source offset	0.54 ± 0.93	0.58	-0.52 ± 0.93	-0.12 ± 0.92

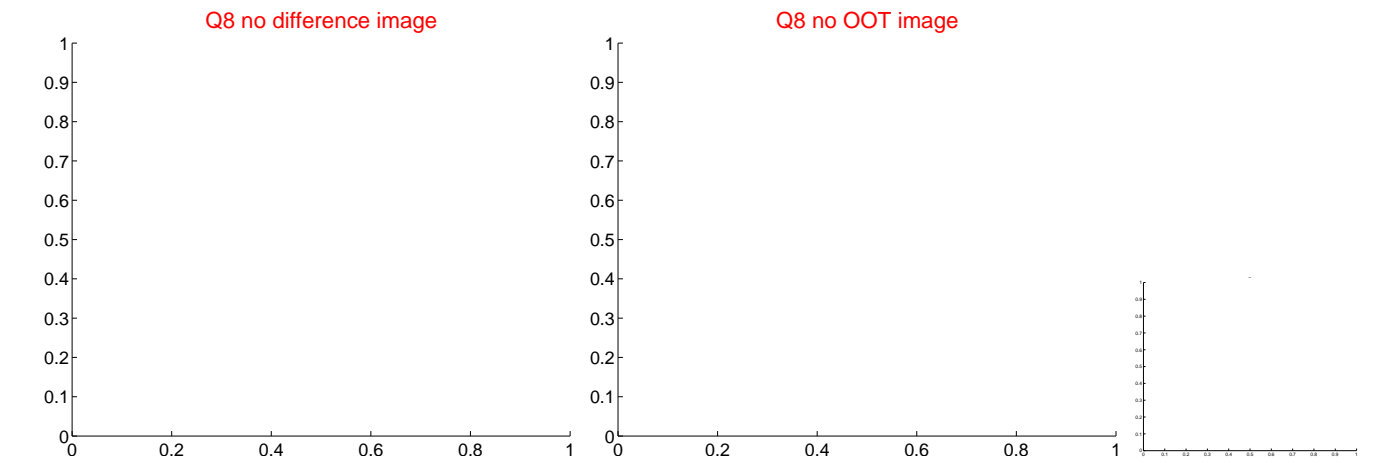
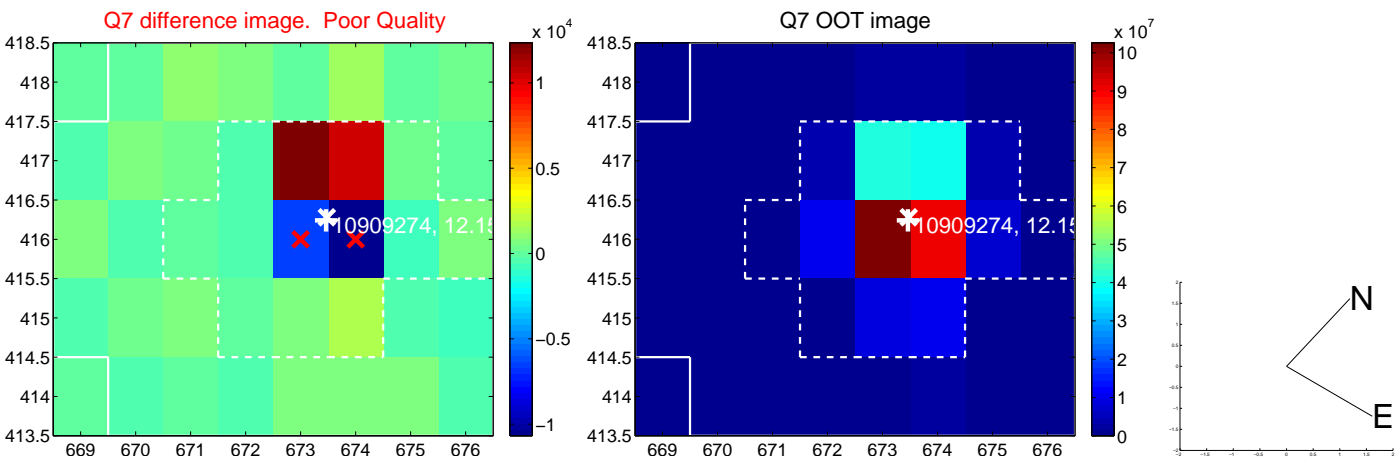
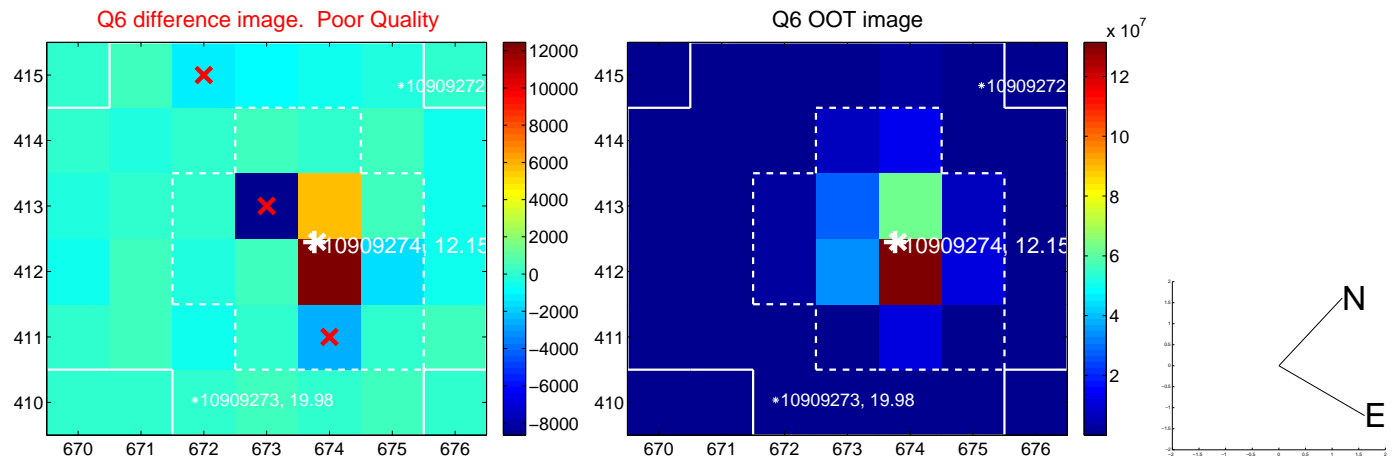
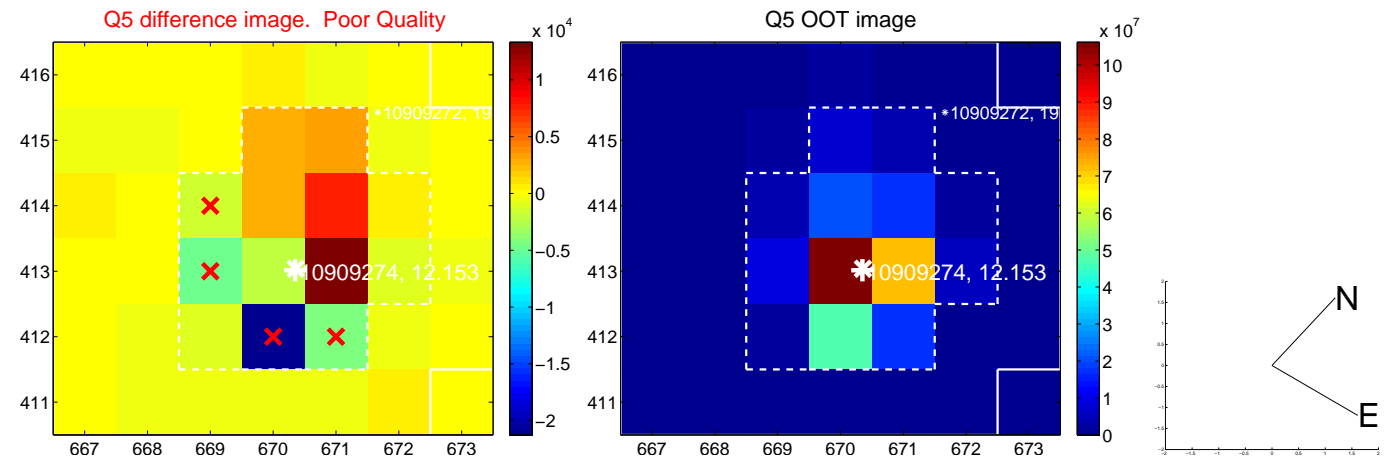


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

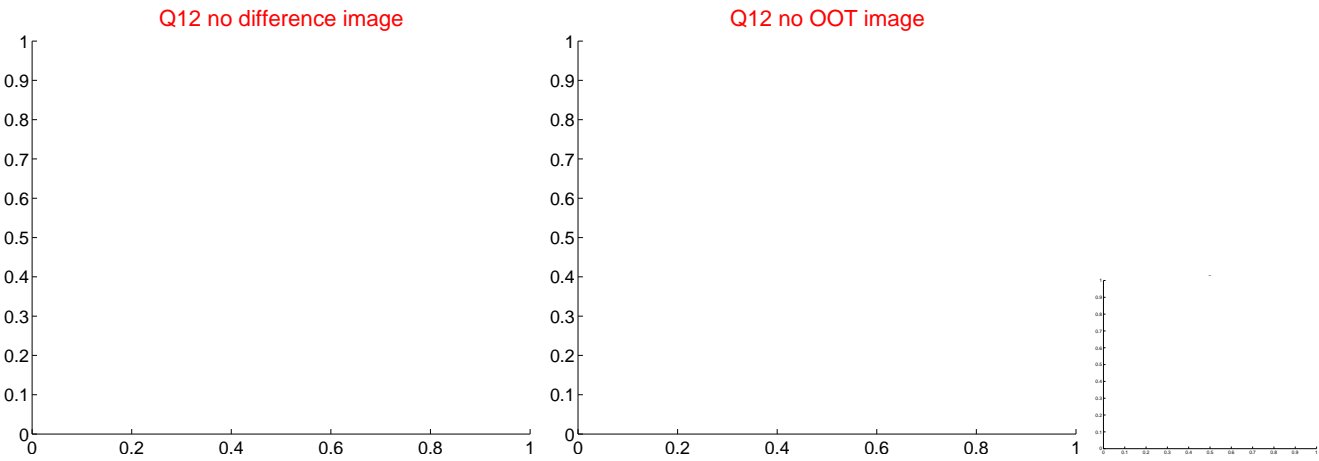
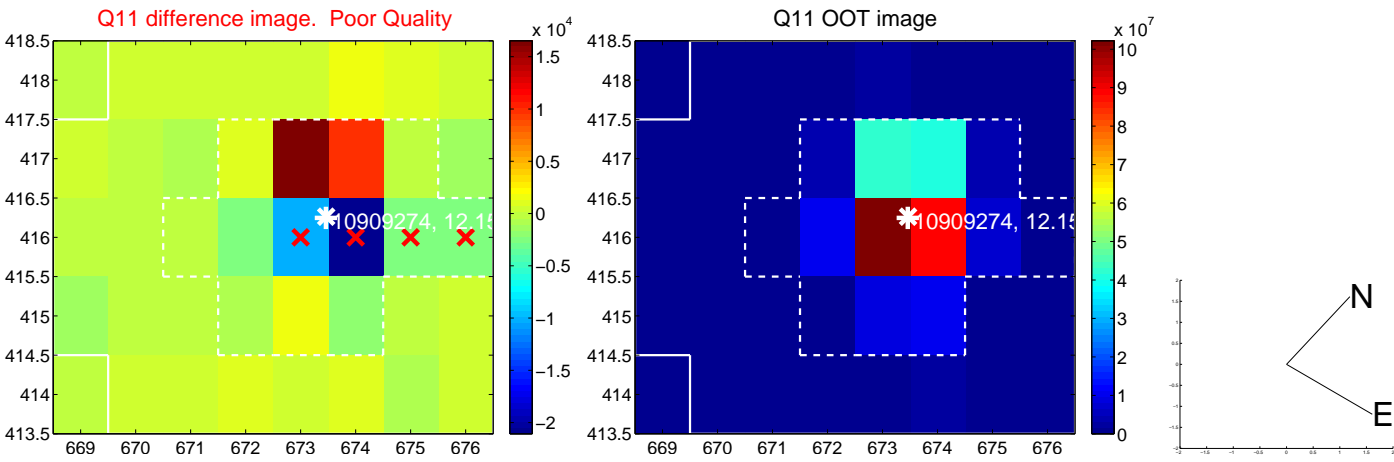
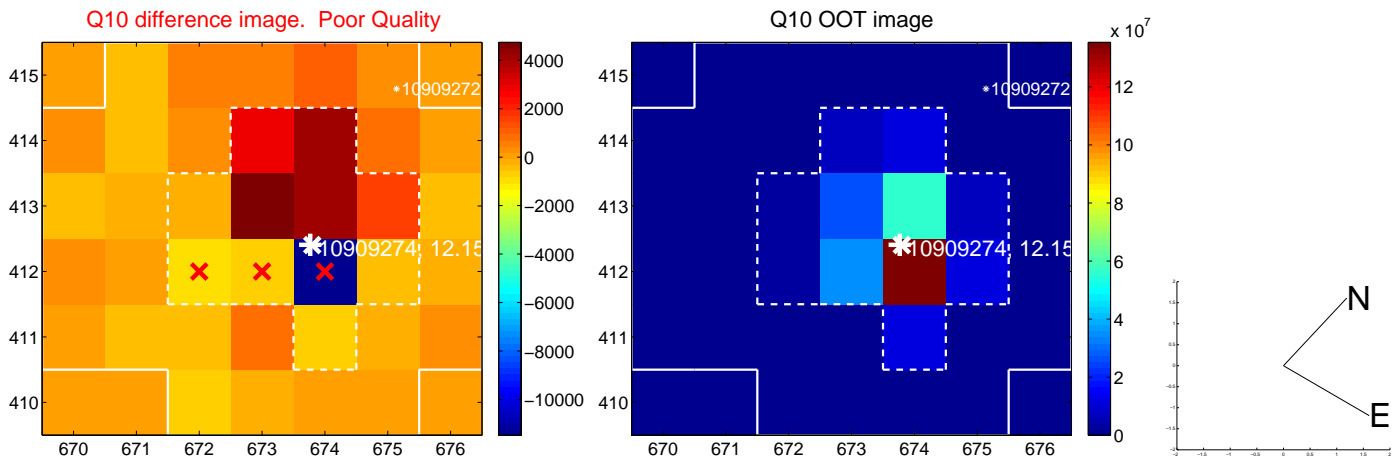
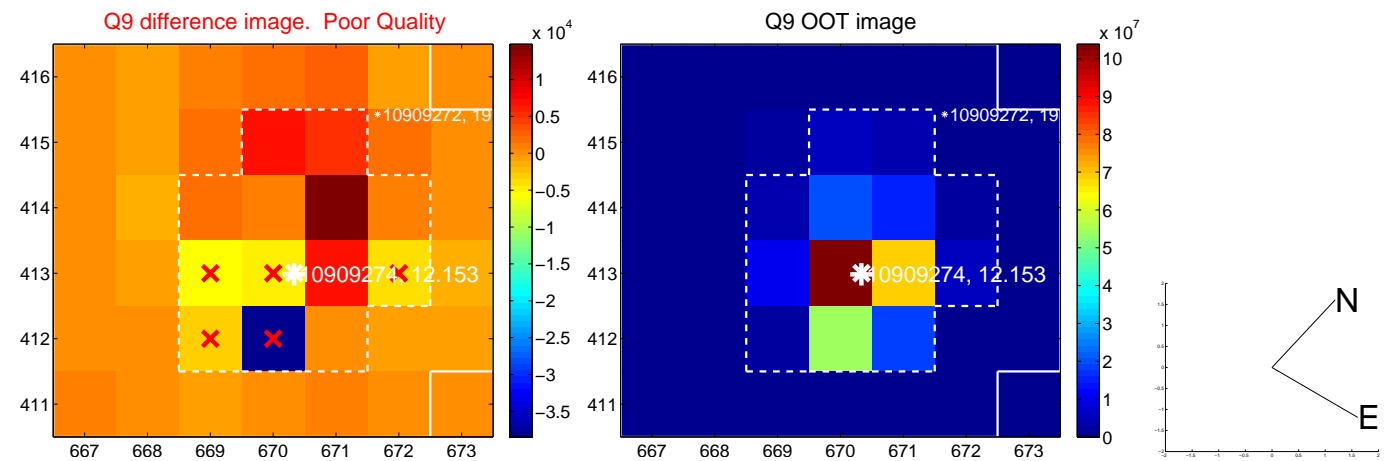
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



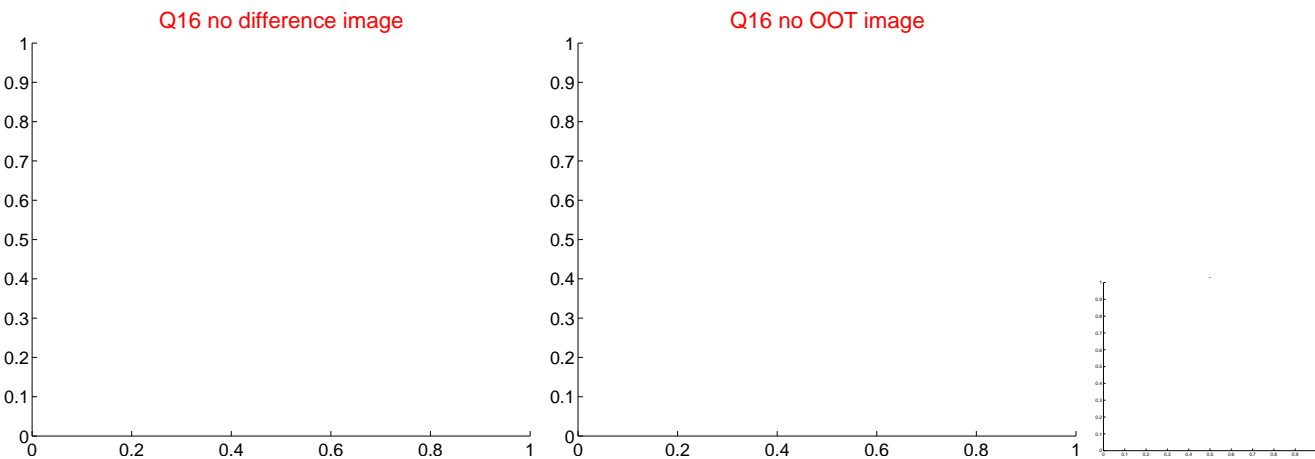
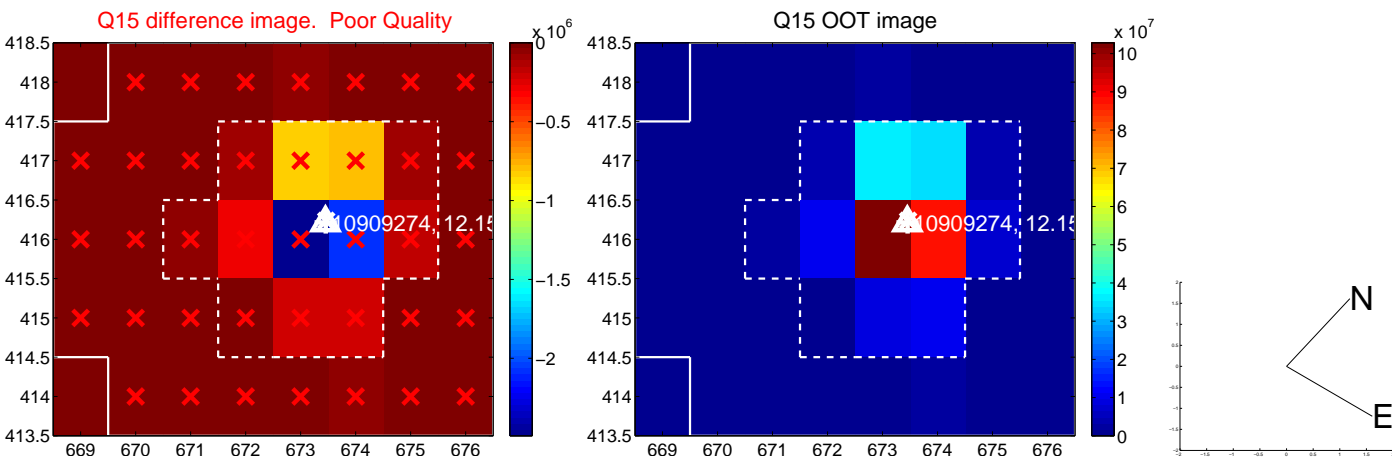
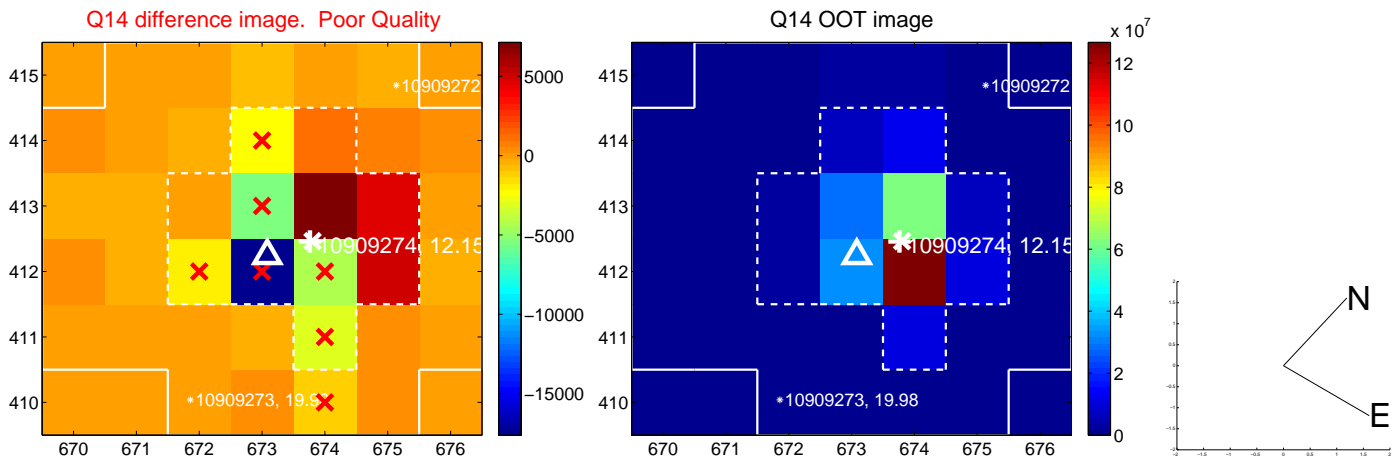
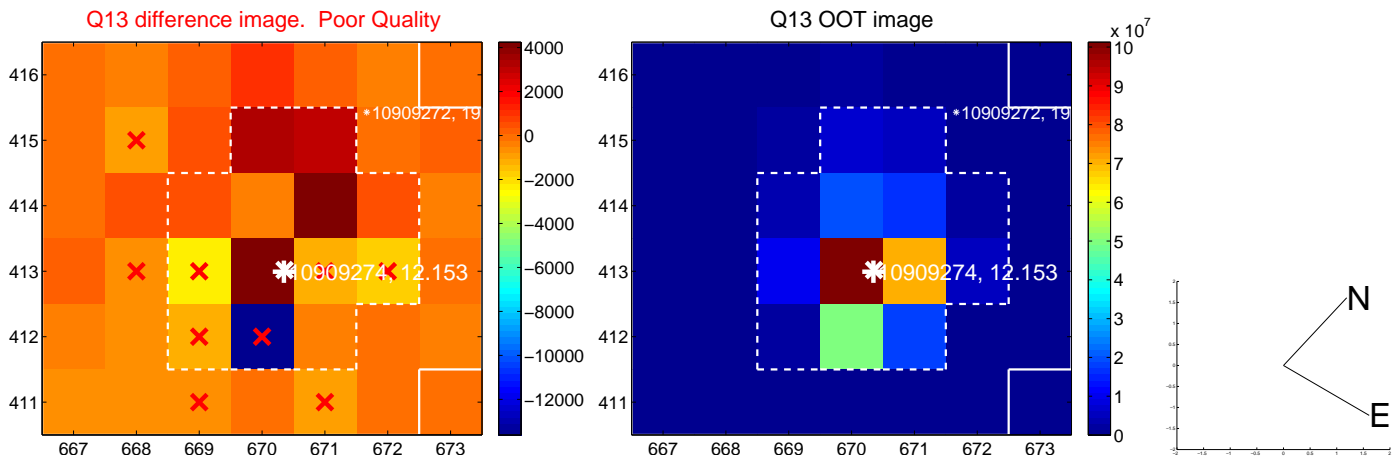
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



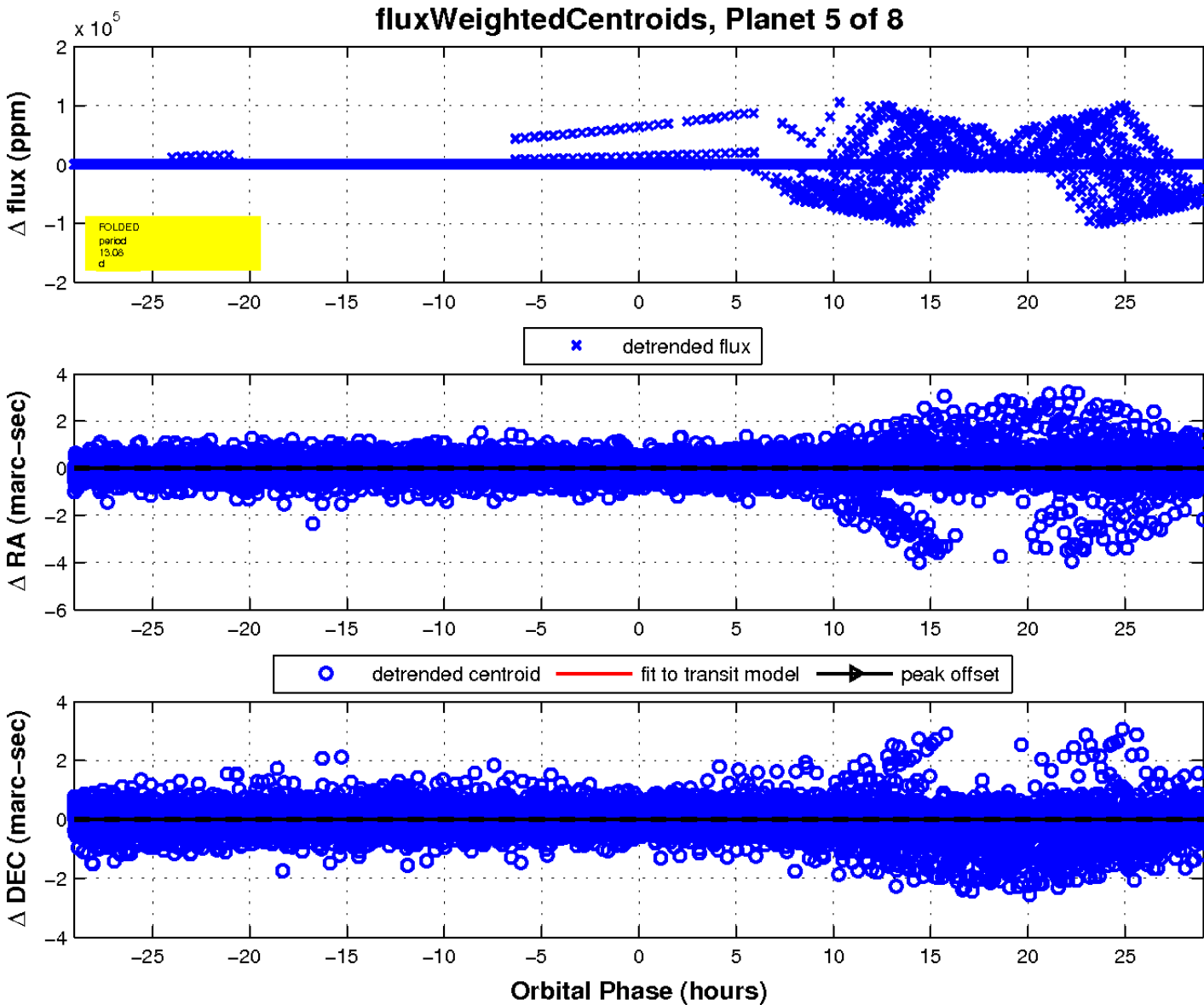
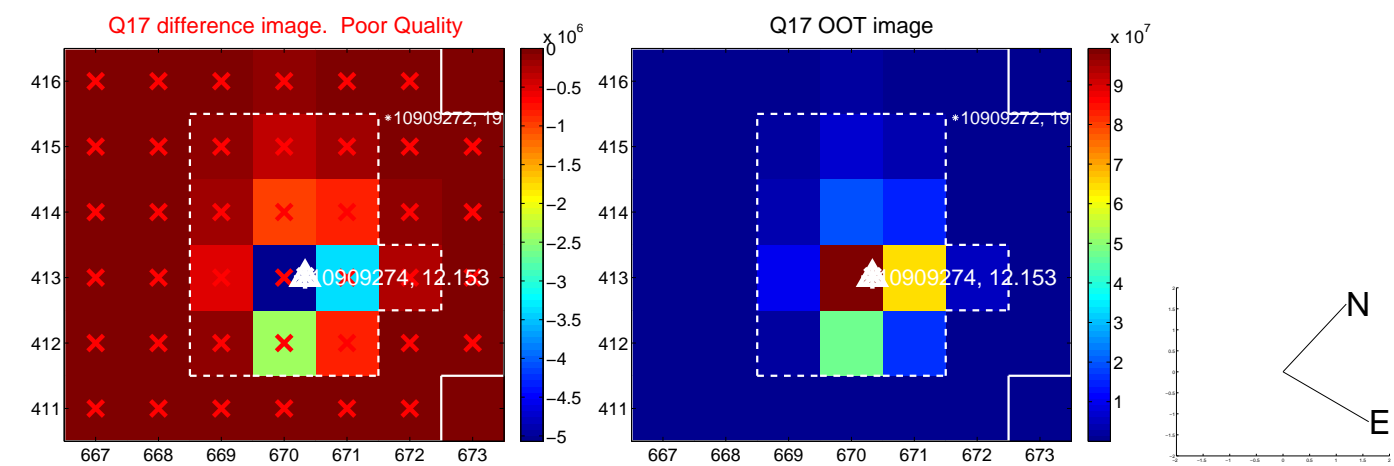
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

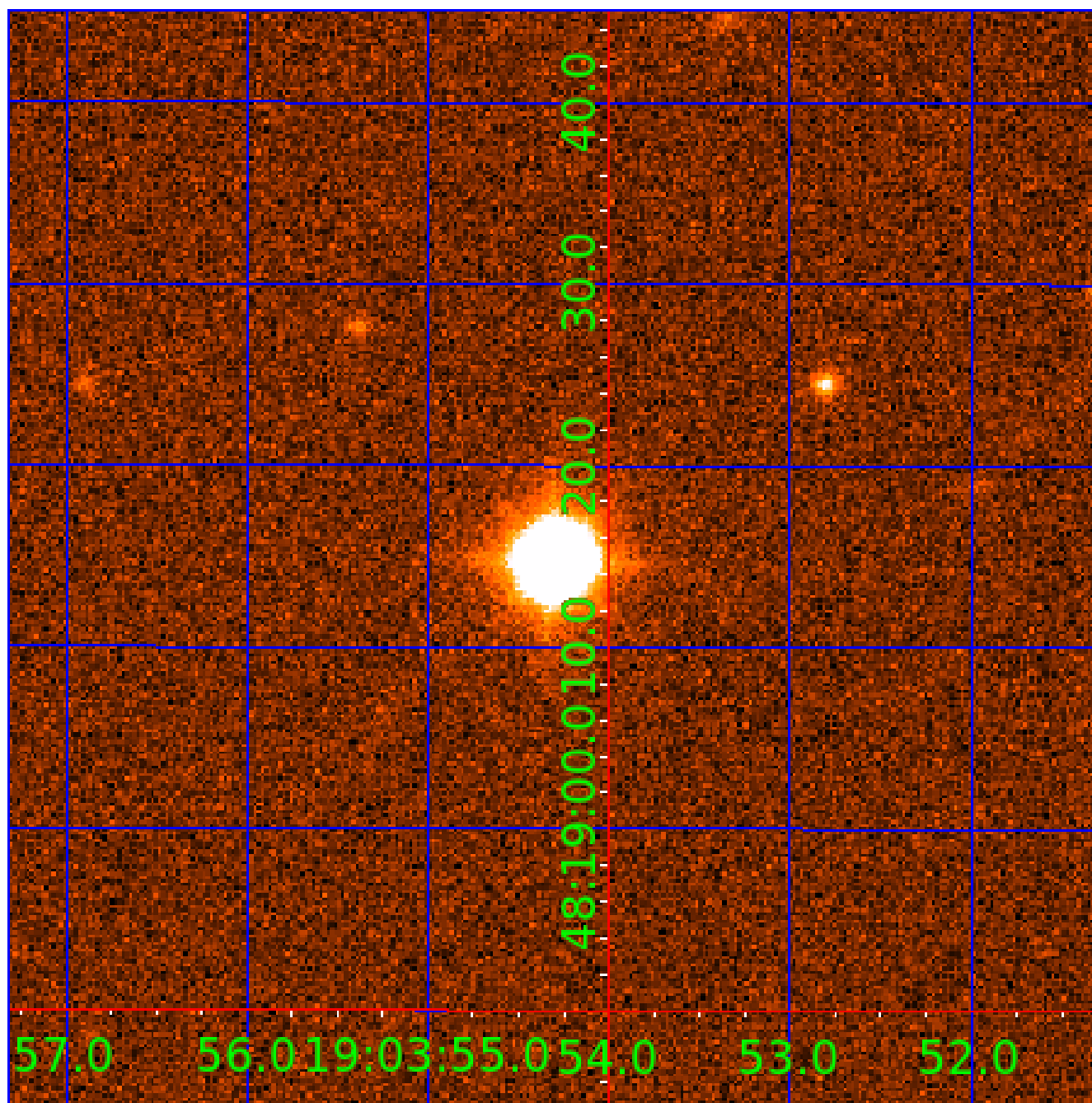


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010909274

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})
010909274-01	OBS	7385.01	39.237869	148.654751	453738.2	3.500	44979.7	-1.0	1.23	6599	65.30	43.79
010909274-02	OBS	No	39.236842	155.230951	345050.7	12.000	28778.8	-1.0	1.23	6599	41.37	43.80
010909274-03	OBS	No	19.620723	148.593957	529.3	37.565	5258.6	34.9	1.23	6599	5.43	110.34
010909274-04	OBS	No	39.239282	156.324147	7594.1	10.500	1106.7	-1.0	1.23	6599	10.82	43.79
010909274-05	OBS	No	13.081122	141.266344	39.5	9.677	503.5	5.1	1.23	6599	0.89	189.45
010909274-06	OBS	No	39.238292	152.979854	2921.6	15.000	373.2	-1.0	1.23	6599	6.71	43.79
010909274-07	OBS	No	39.241582	157.475237	1576.7	15.000	251.8	-1.0	1.23	6599	4.93	43.79
010909274-08	OBS	No	39.232819	159.646855	4493.6	52.422	76.7	134.1	1.23	6599	14.89	43.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010909274-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
010909274-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010909274-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—RESIDUAL_TCE
010909274-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
010909274-06	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-07	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
010909274-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

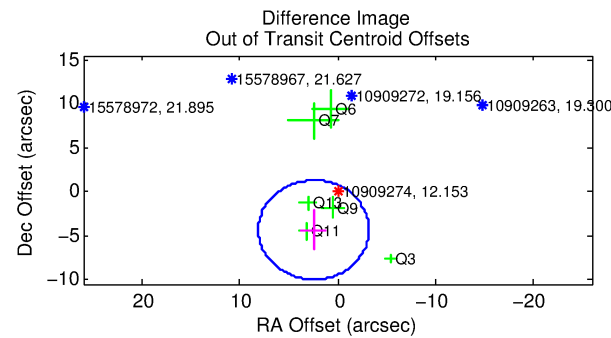
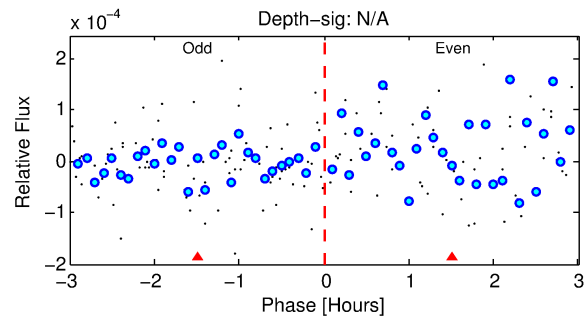
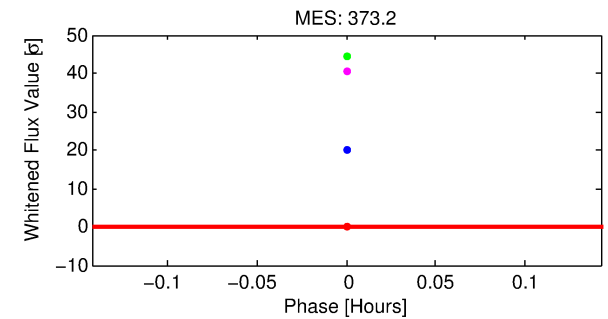
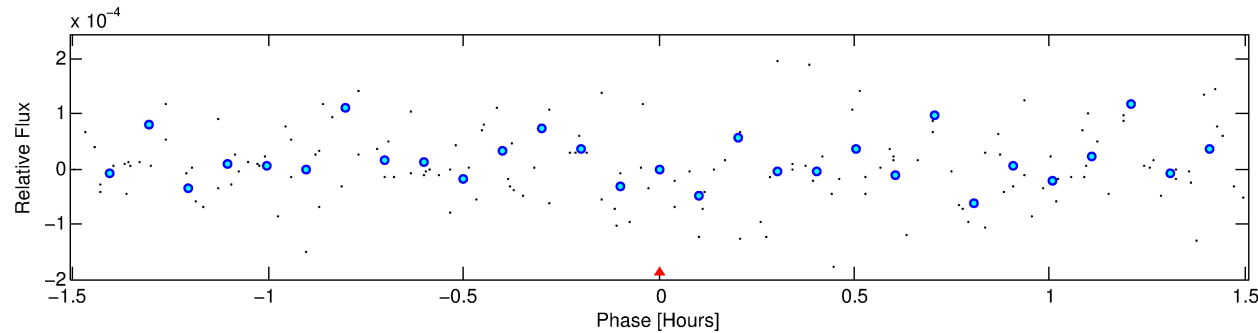
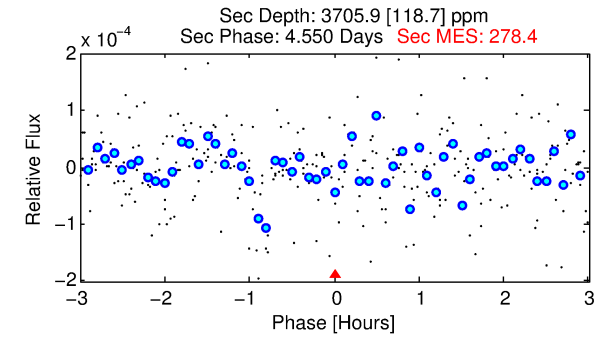
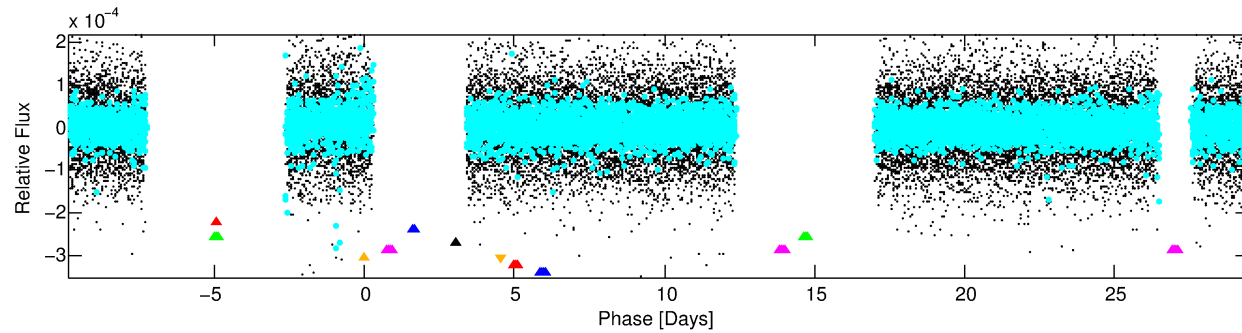
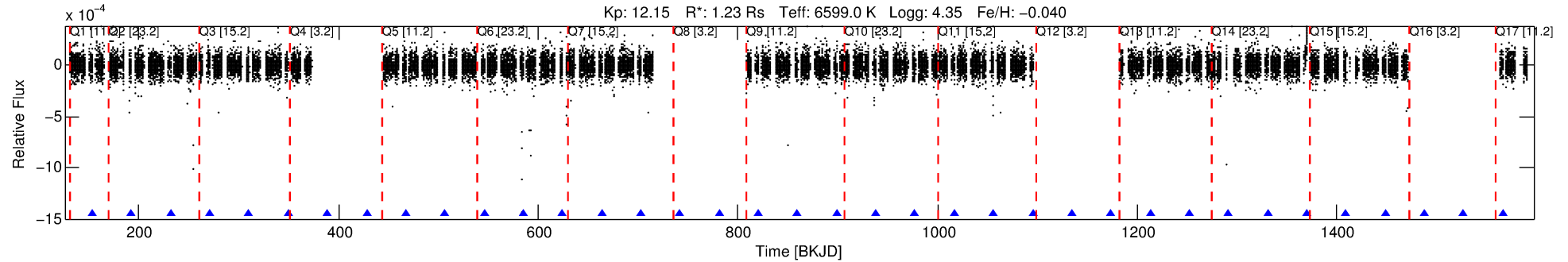
Ephemeris Match Information For 010909274-06

No Significant Match Found

DV One-Page Summary

KIC: 10909274 Candidate: 6 of 8 Period: 39.238 d

KOI: K07385 Corr: No Ephemeris Match



TPS TCE Results:

Period = 39.23829 d

Epoch = 152.9799 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]

LongPeriod-sig: 0.1% [0.00σ]

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: 0.00e+00

RollingBand-fgt: 1.00 [25/25]

GhostDiagnostic-chr: 5.635

Centroid-sig: 28.9%

Centroid-so: 20.386 arcsec [1.19σ]

OotOffset-rm: 4.988 arcsec [2.65σ]

KicOffset-rm: 5.072 arcsec [2.78σ]

OotOffset-st: 1/3/0/2 [6]

KicOffset-st: 1/3/0/2 [6]

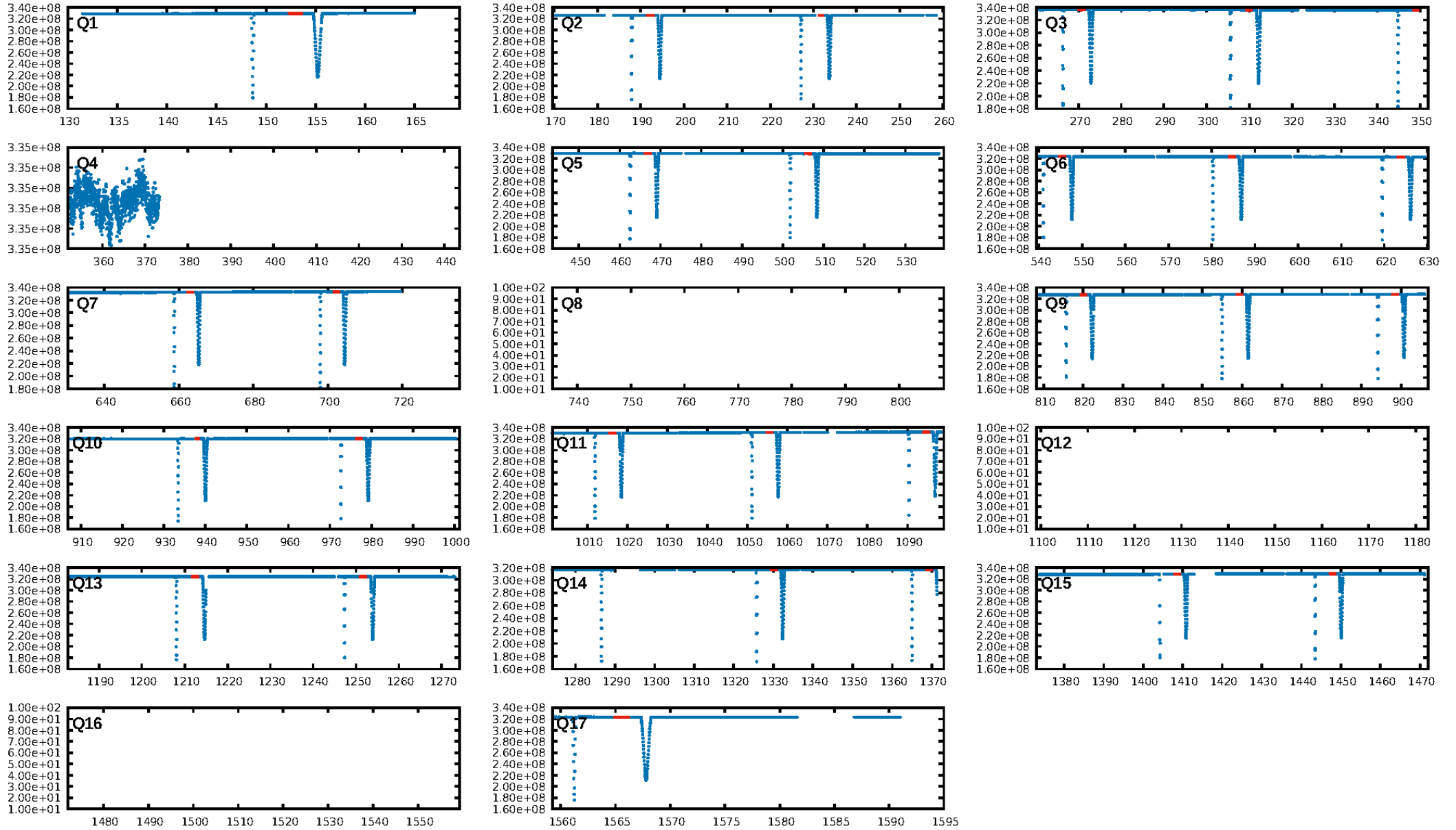
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DiffImageOverlap-fno: 1.00 [11/11]

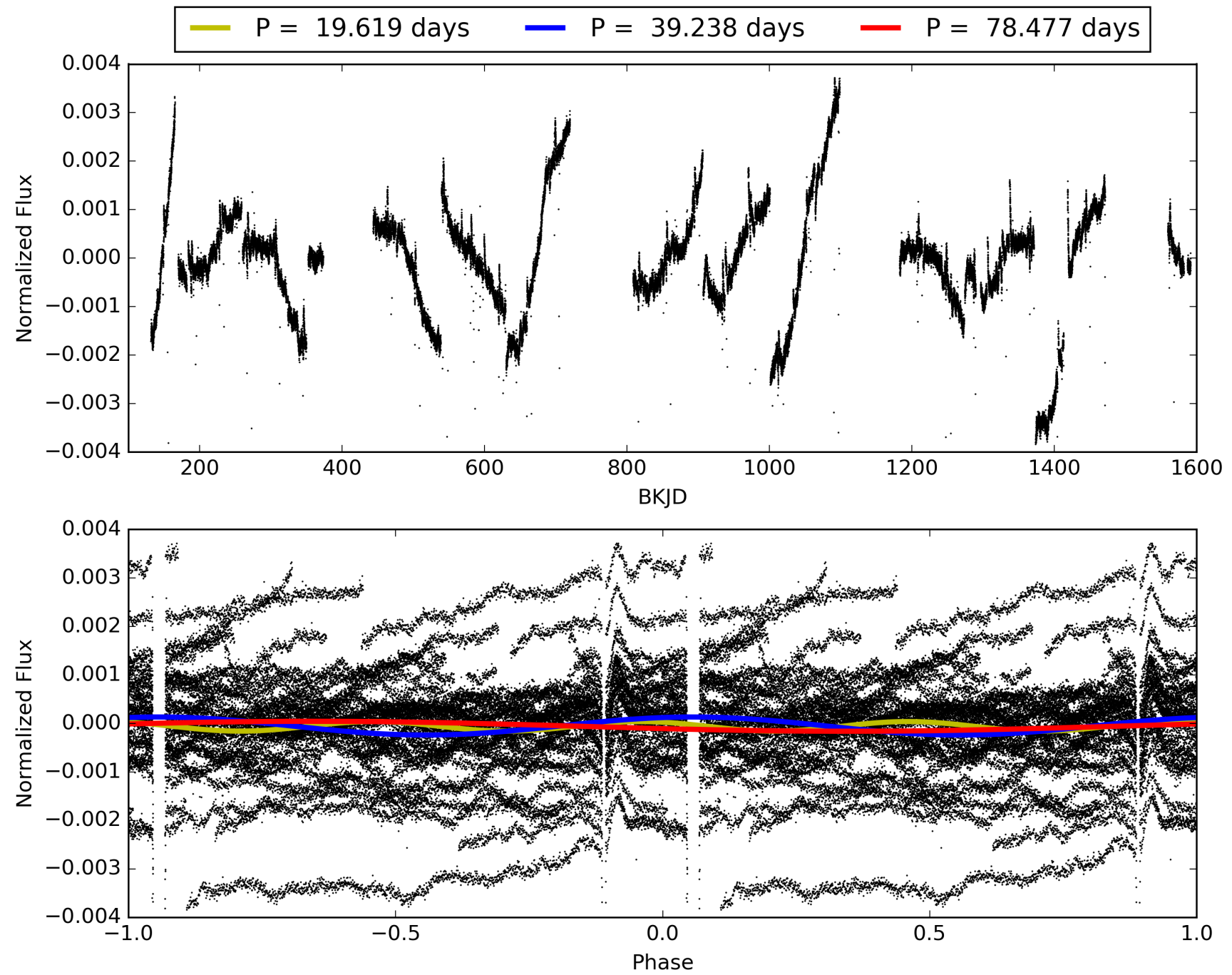
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:17:58 Z

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

TCE 010909274-06, PDC Light Curves

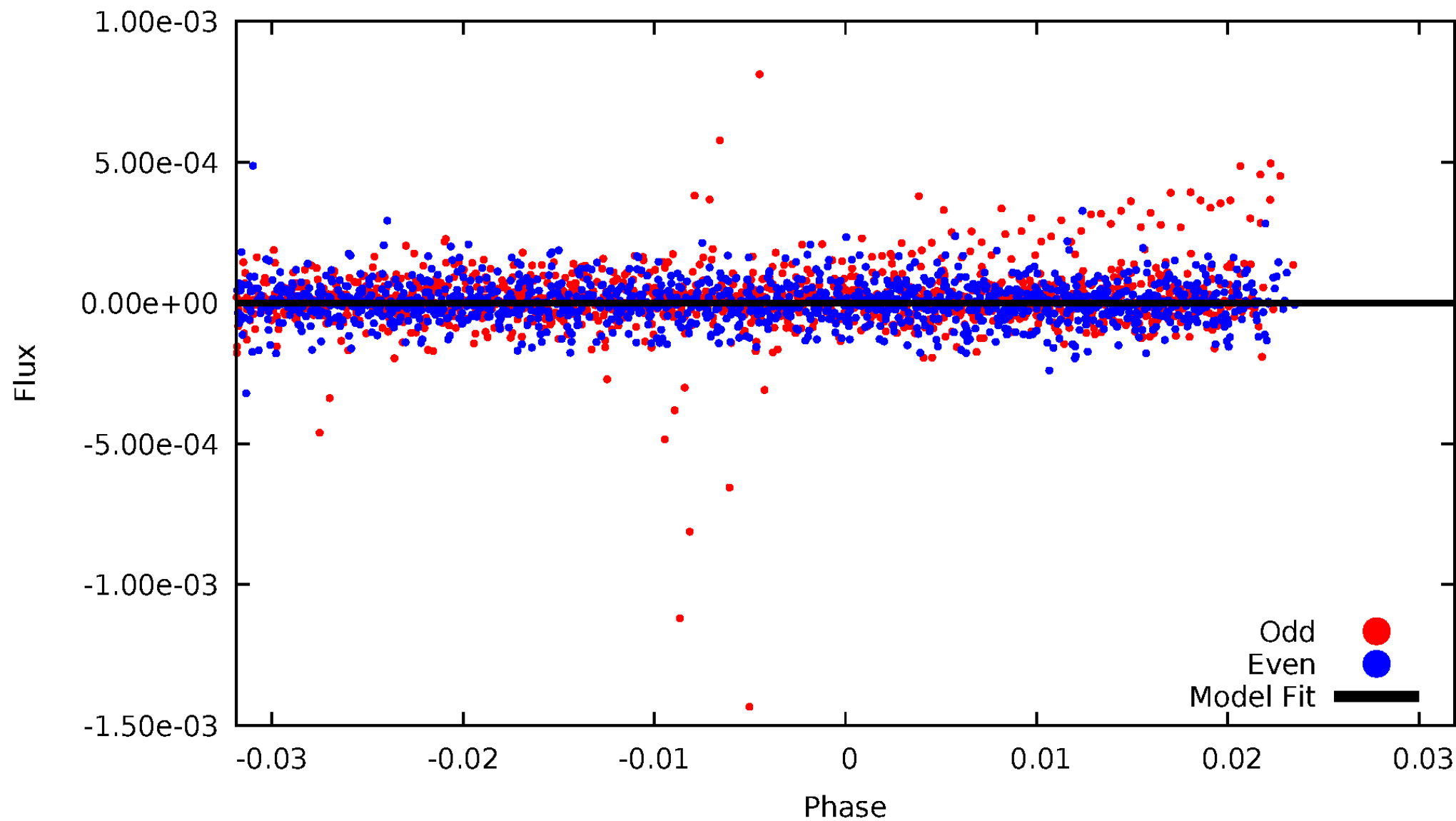


TCE 010909274-06



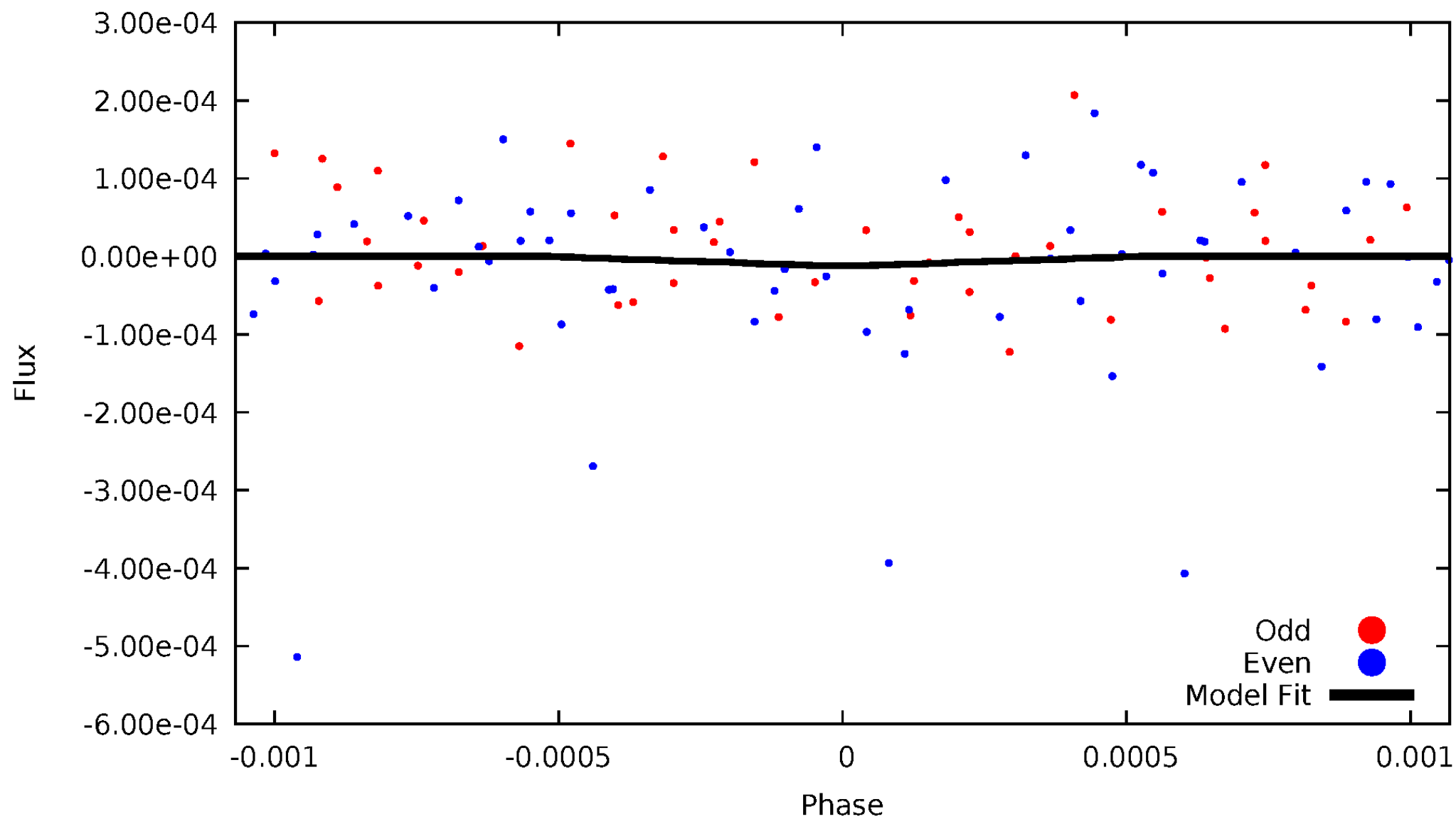
DV Odd/Even

TCE 010909274-06



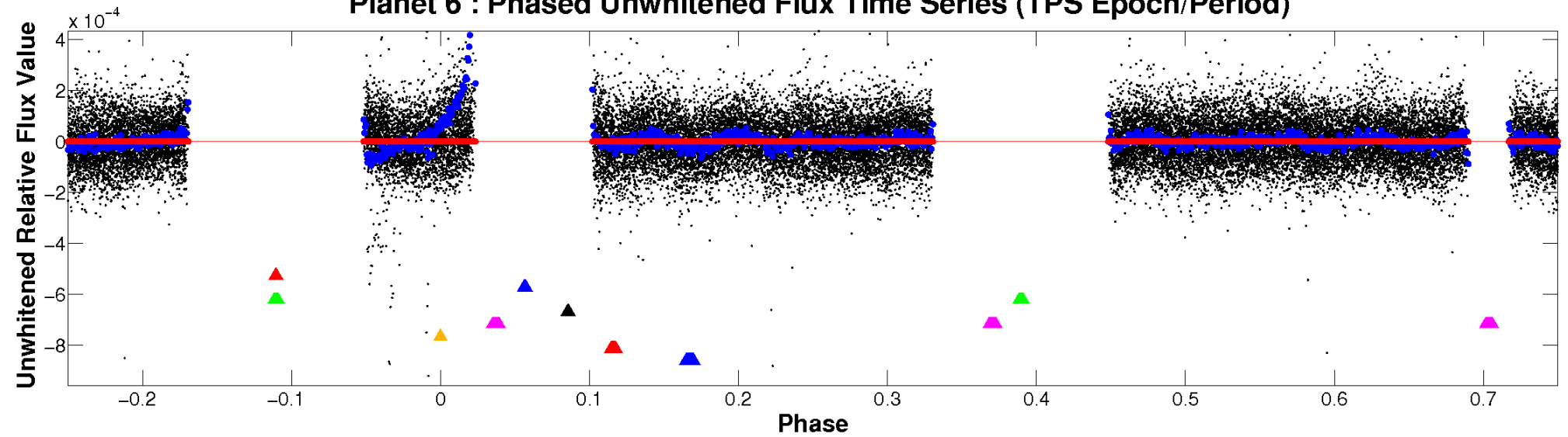
ALT Odd/Even

TCE 010909274-06

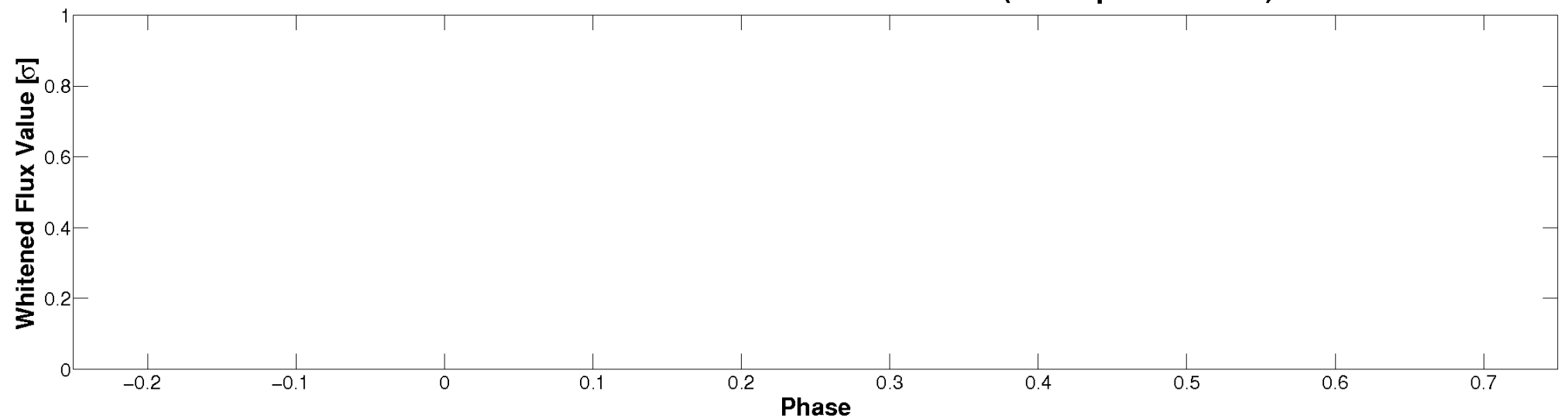


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)



Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



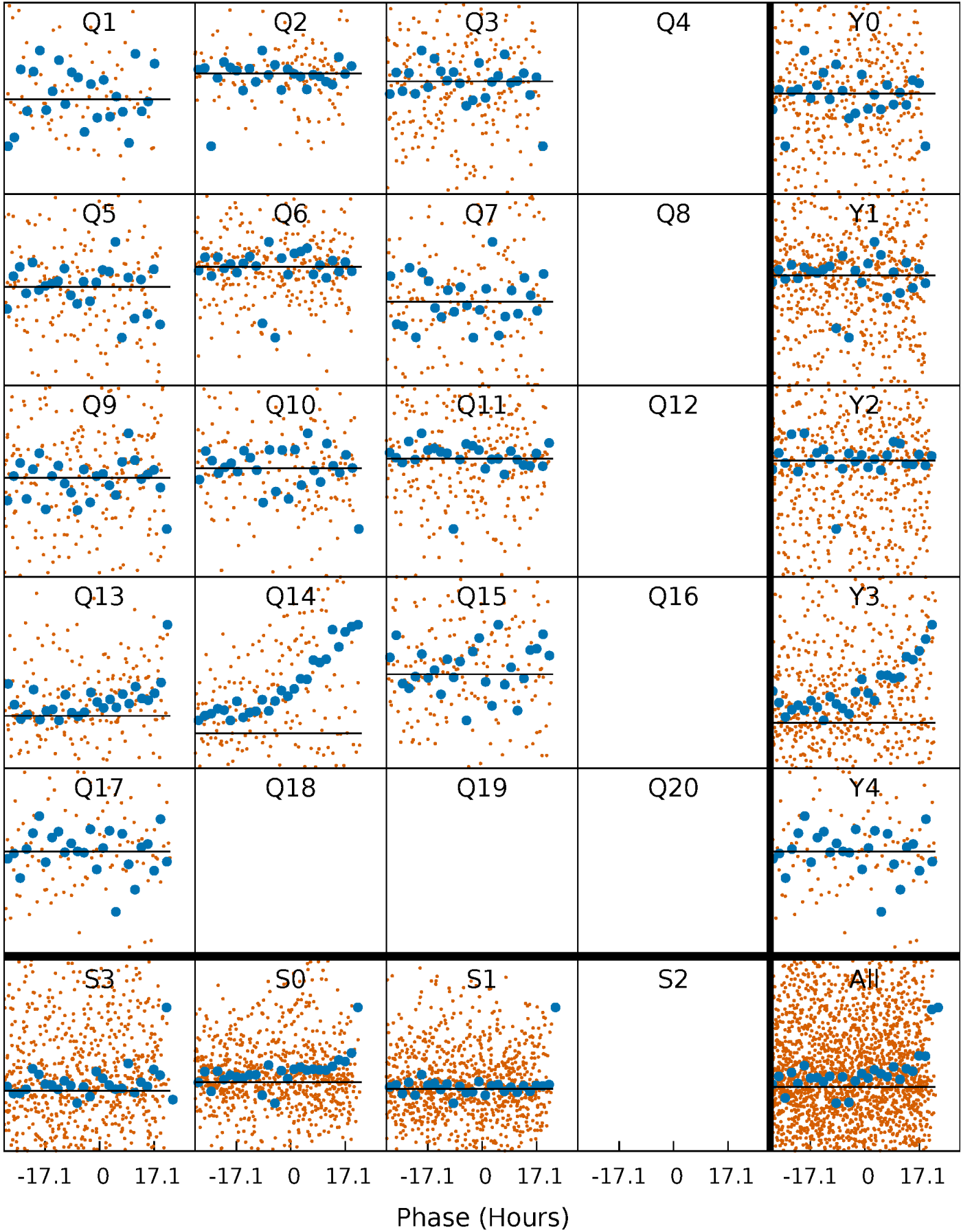
PDC Quarter-Phased Transit Curves

TCE 010909274-06 P= 39.238292 Days $T_0=152.979854$ (BKJD)



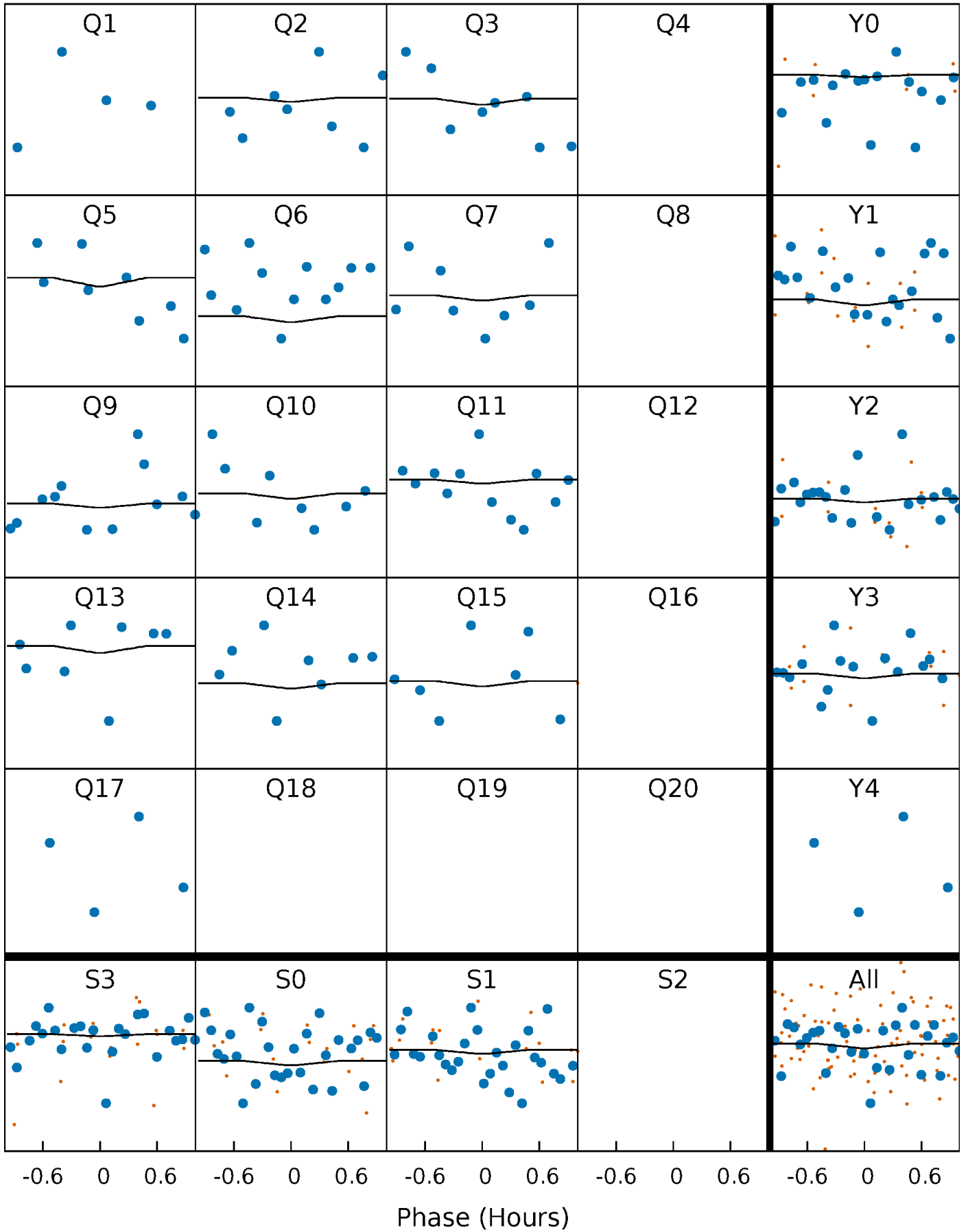
DV Quarter-Phased Transit Curves

TCE 010909274-06 P= 39.238292 Days $T_0=152.979854$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

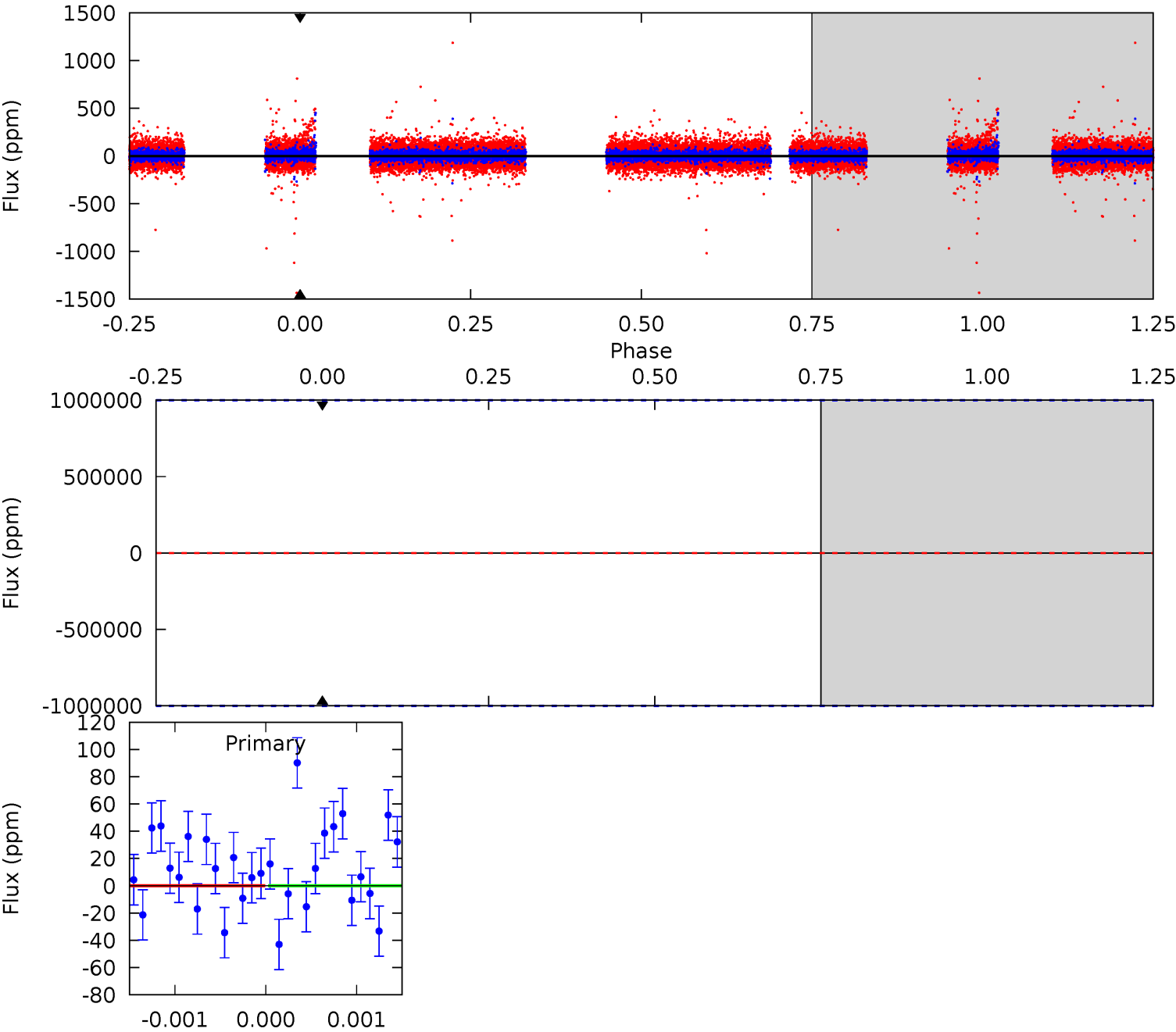
TCE 010909274-06 $P = 39.238292$ Days $T_0 = 153.578147$ (BKJD)



DV Model-Shift Uniqueness Test

010909274-06, P = 39.238292 Days, E = 113.741562 Days

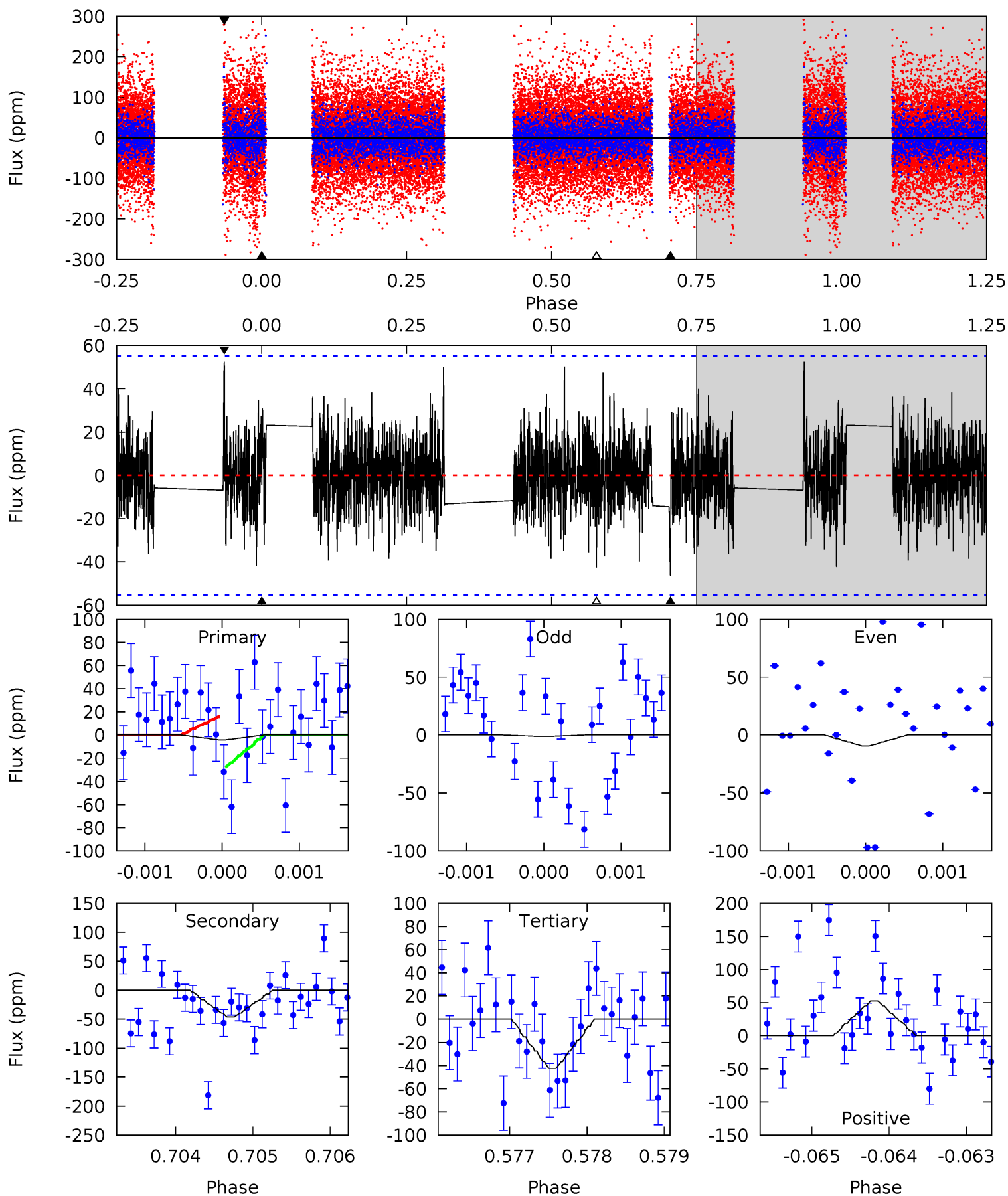
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010909274-06, P = 39.238292 Days, E = 114.339855 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.42	4.57	4.20	5.18	5.46	3.30	1.29	-3.78	-4.76	0.37	-0.61	0.41	0.57	0.53	0.59



Stellar Parameters For KIC 010909274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6599^{+147}_{-213}	$4.350^{+0.060}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$1.234^{+0.283}_{-0.141}$	$1.248^{+0.144}_{-0.173}$	$0.936^{+0.246}_{-0.391}$
	+2%/-3%	+1%/-3%	+625%/-750%	+23%/-11%	+12%/-14%	+26%/-42%
Source	PHO1	FLK73	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 010909274-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$12.62^{+12.49}_{-8.47}$	927^{+49}_{-42}	-4603^{+28670}_{-13692}	$-323.037^{+37856.813}_{-28599.204}$
Alt.	-46 ± 10	$8.82^{+10.46}_{-6.09}$	926^{+45}_{-40}	2841^{+1248}_{-523}	18^{+179}_{-14}

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

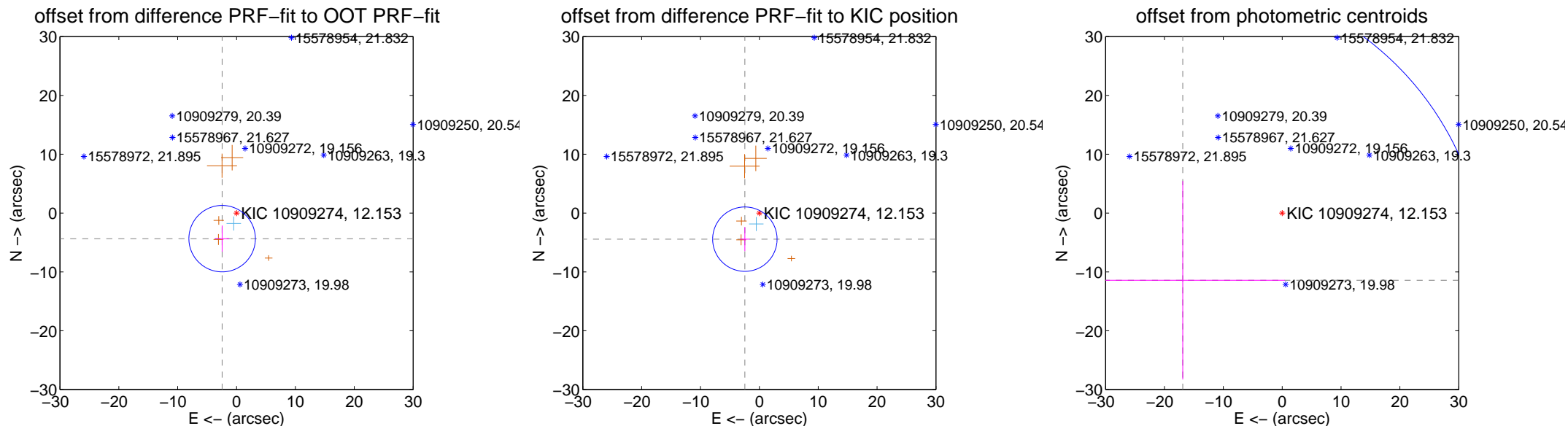
DV Centroid Data

Supplemental centroid analysis for 010909274-06. Kepler magnitude: 12.15. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

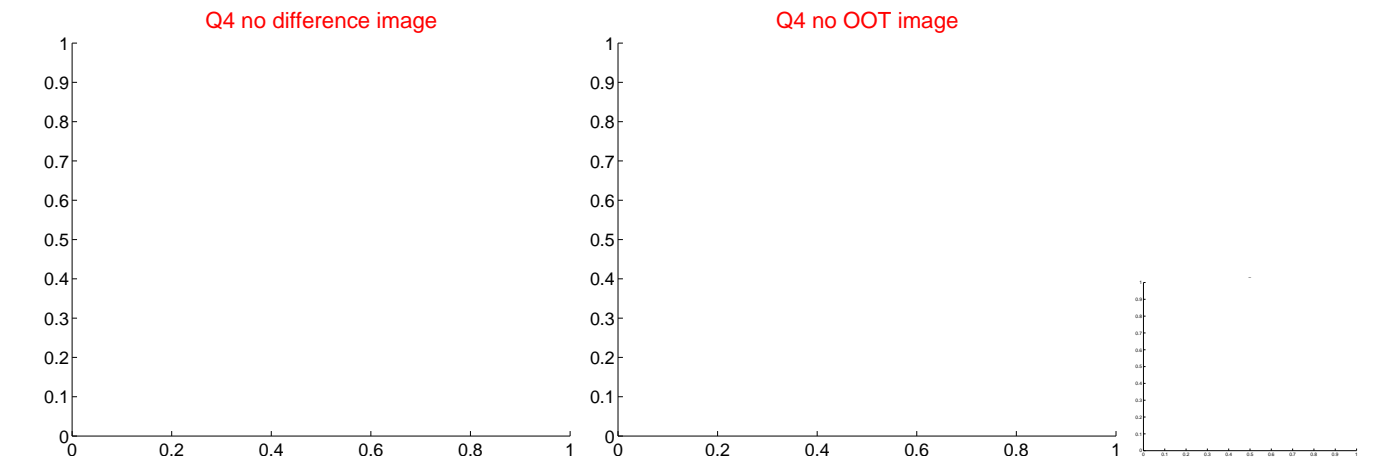
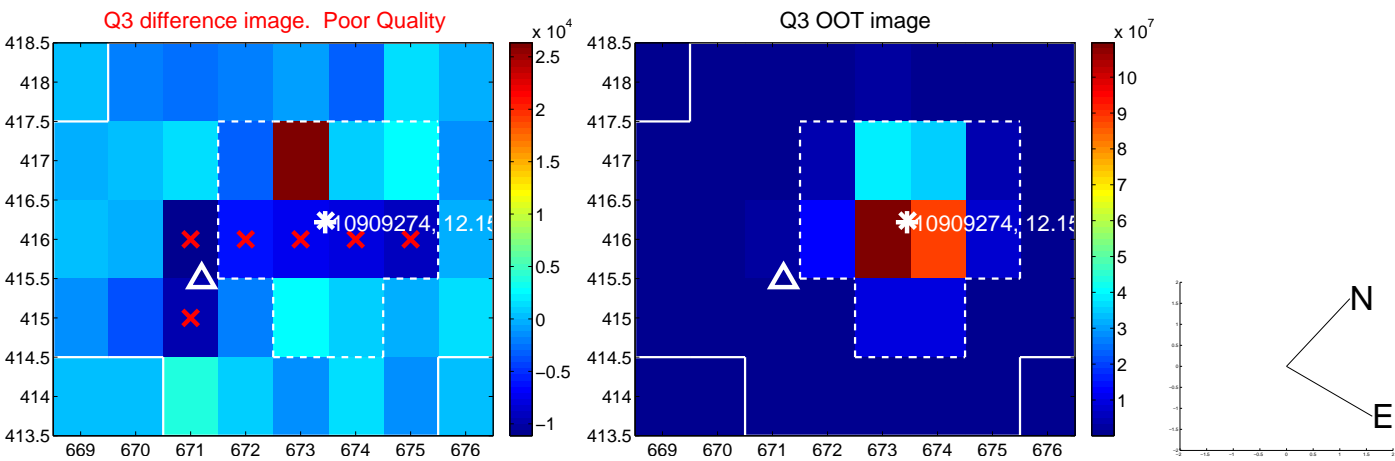
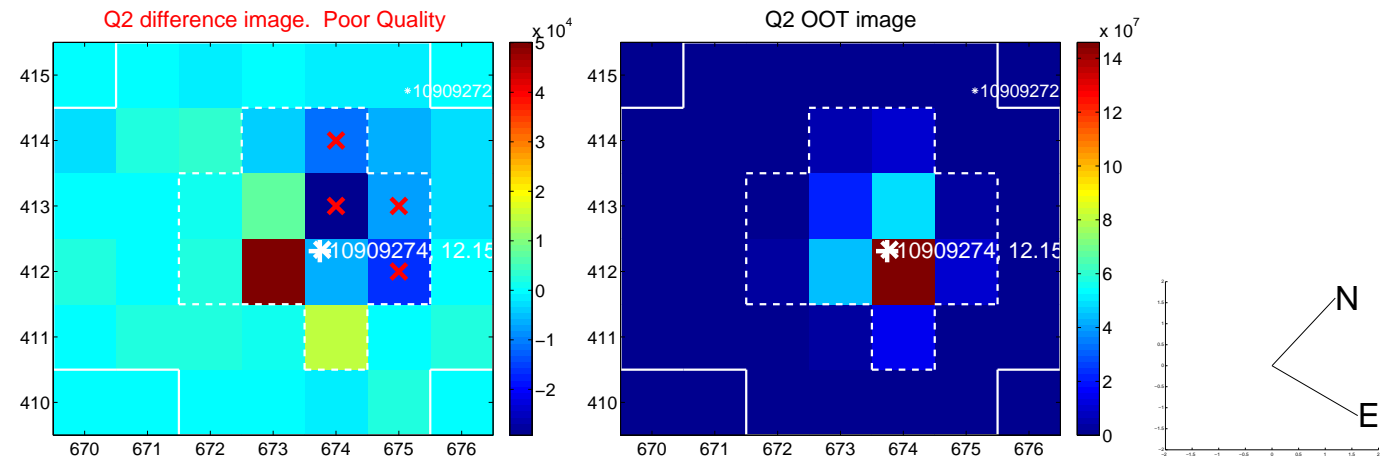
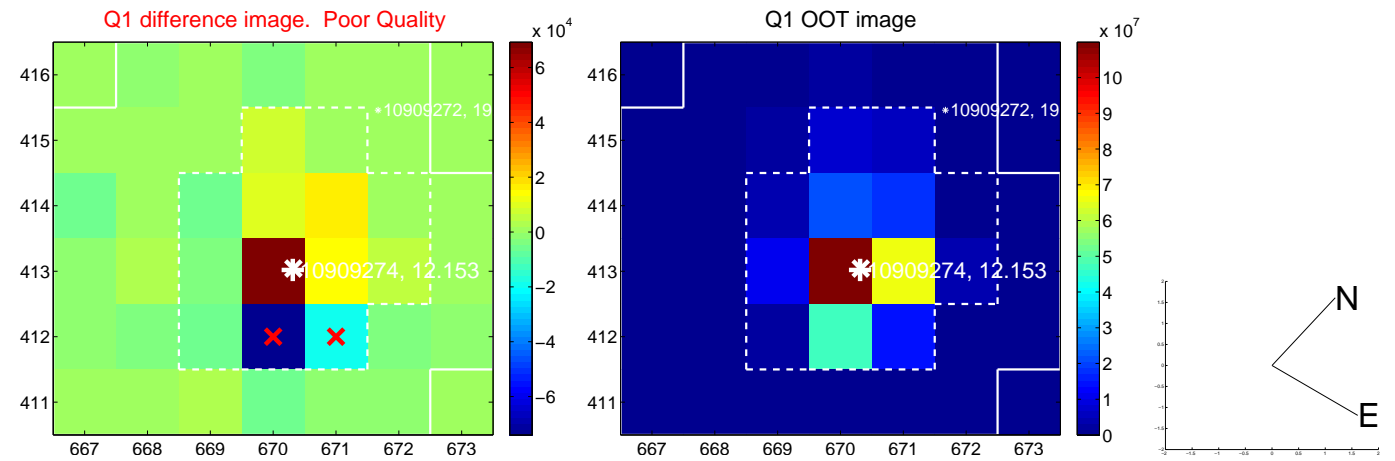
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.988 ± 1.882	2.65	2.448 ± 1.221	-4.346 ± 2.228
PRF-fit source offset from KIC position	5.072 ± 1.824	2.78	2.462 ± 0.820	-4.434 ± 2.036
photometric centroid source offset	20.39 ± 17.18	1.19	16.89 ± 17.32	-11.42 ± 16.86

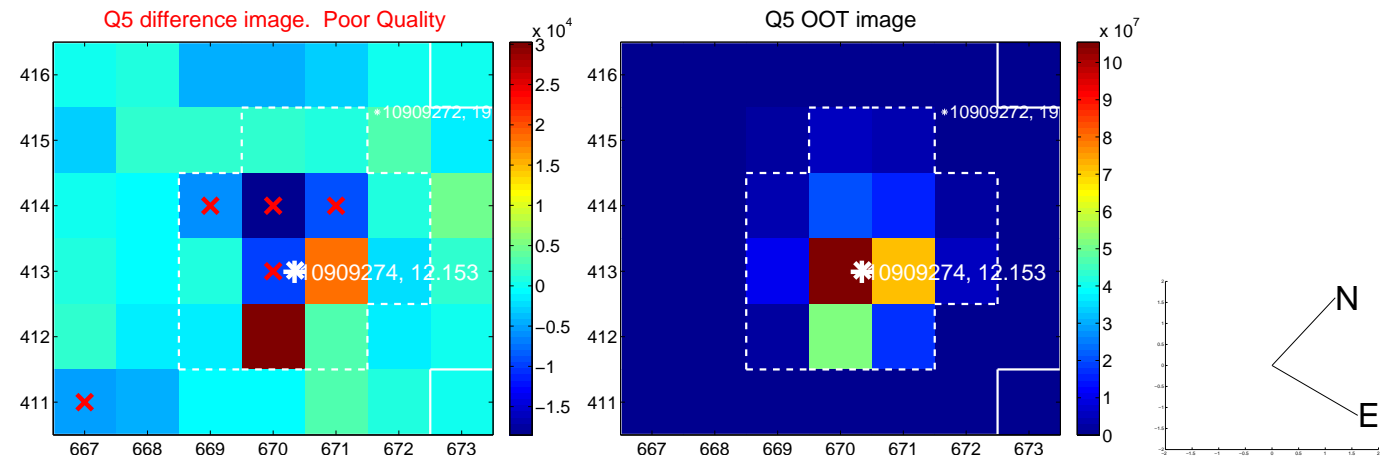


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

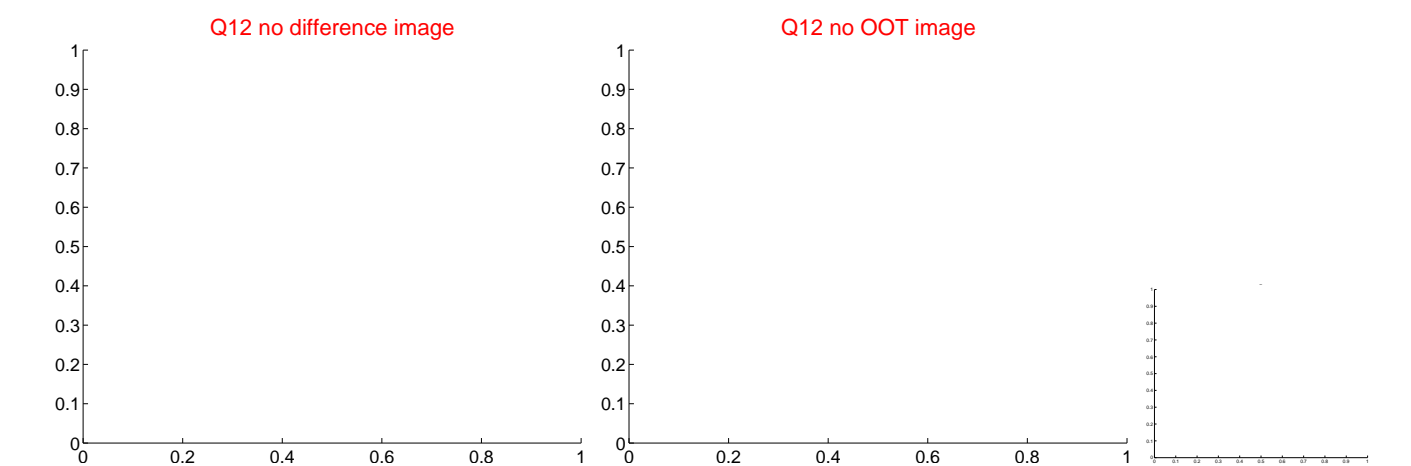
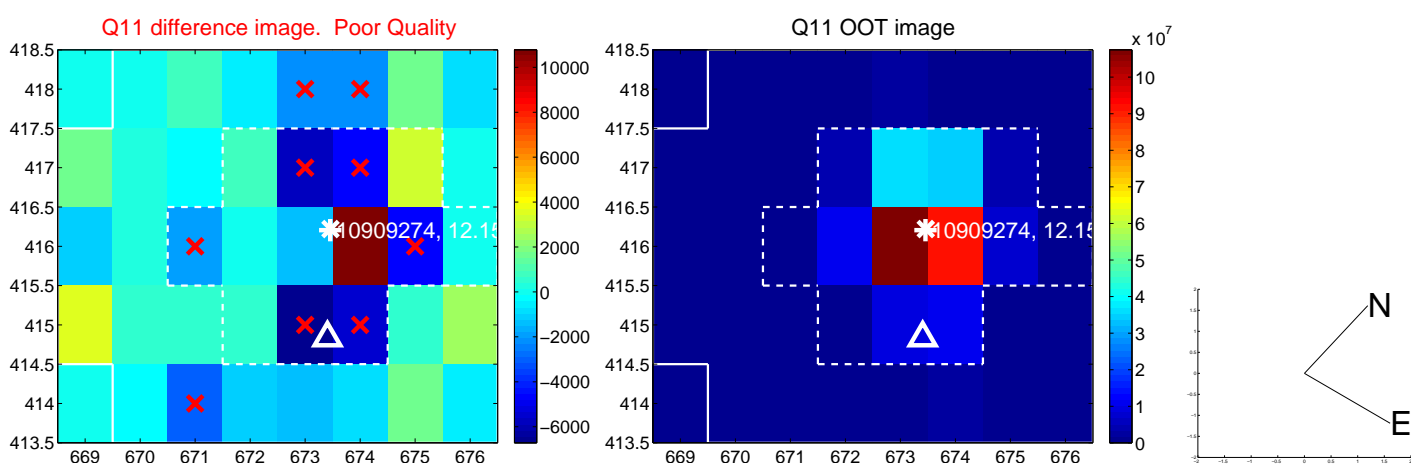
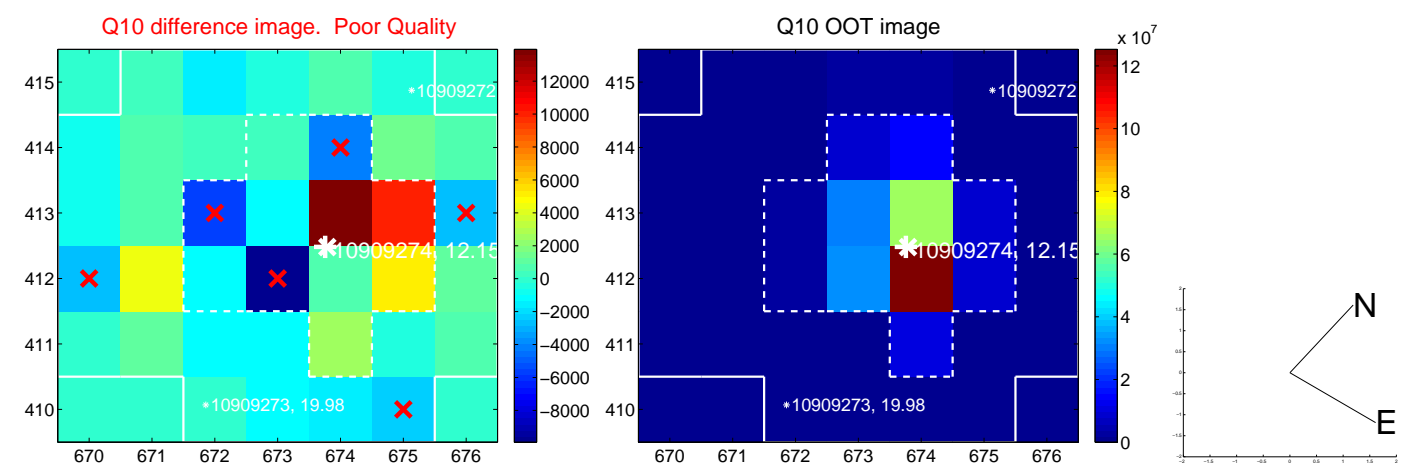
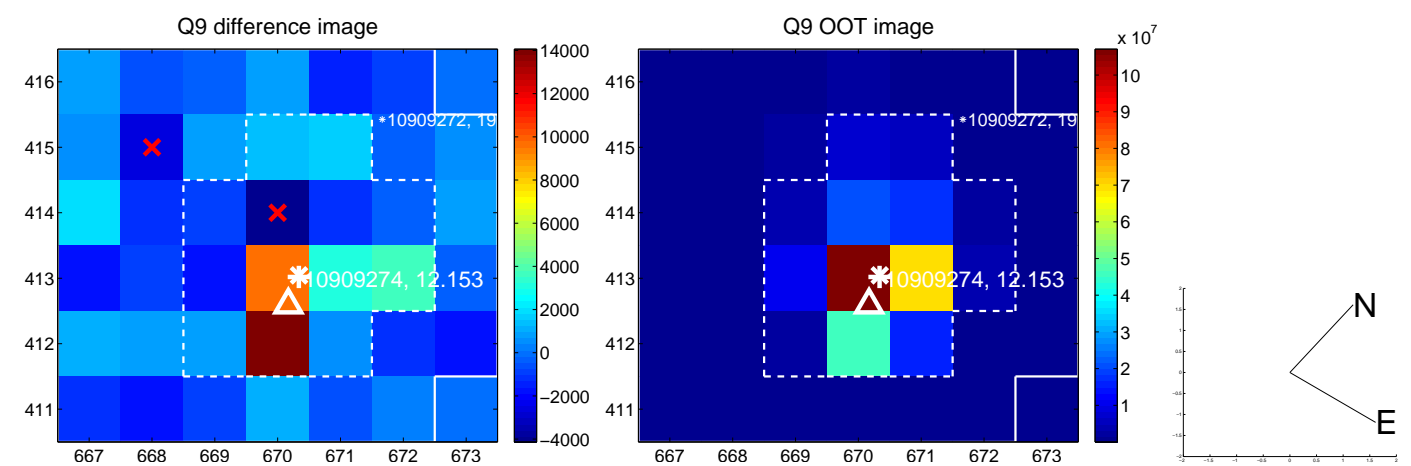
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



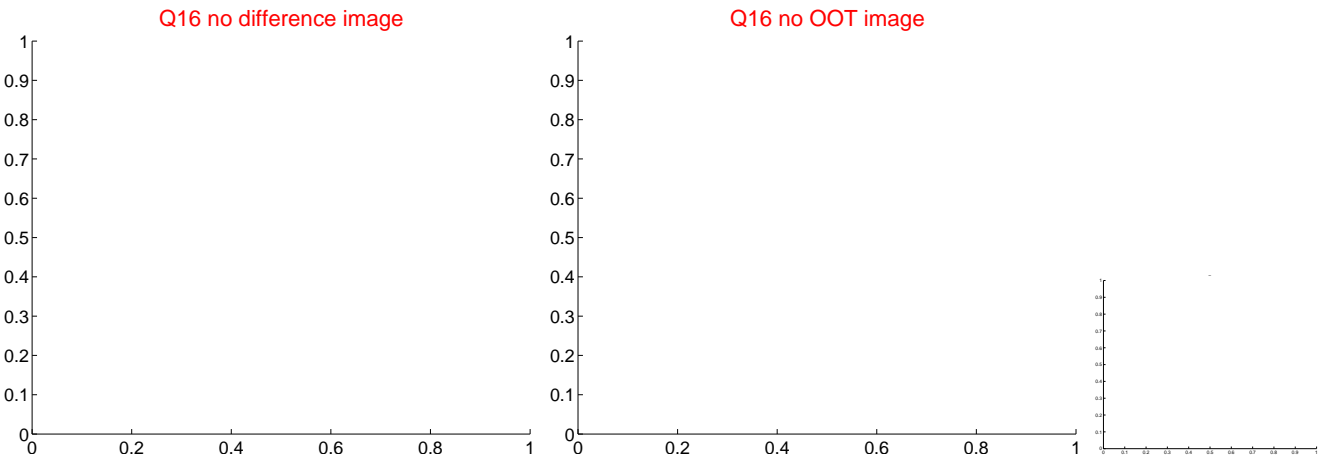
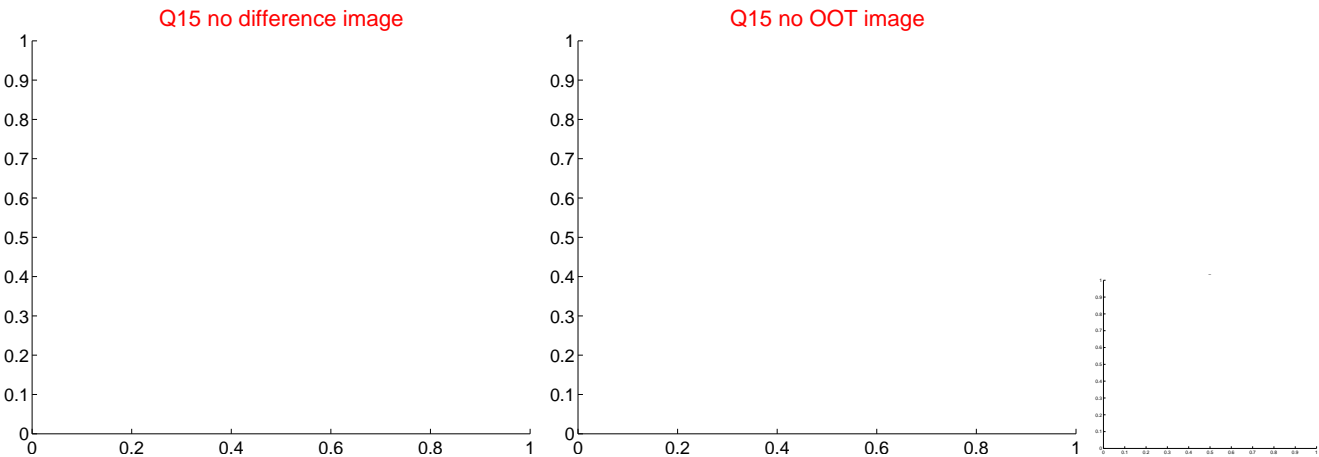
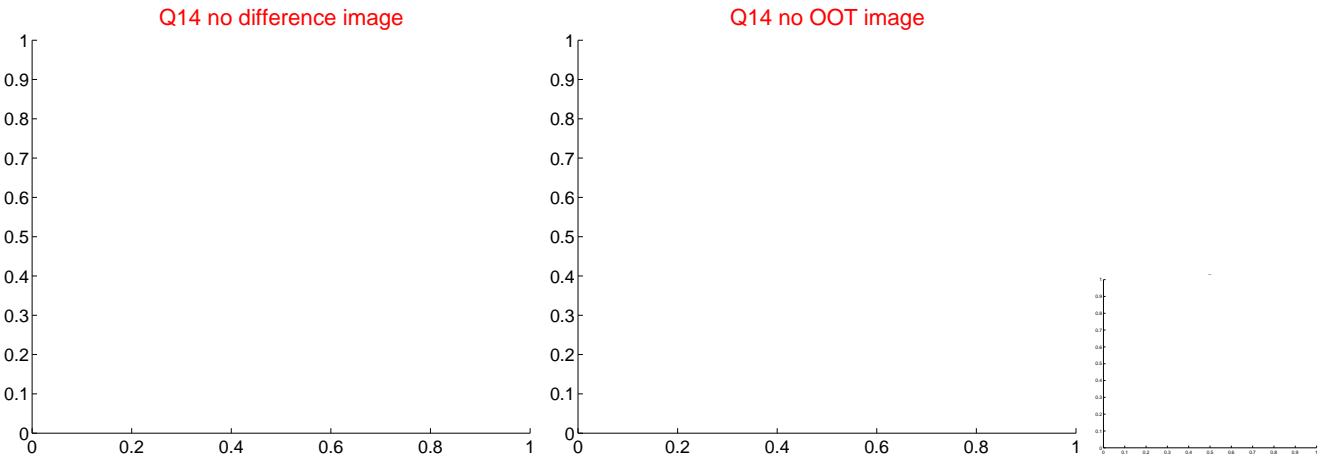
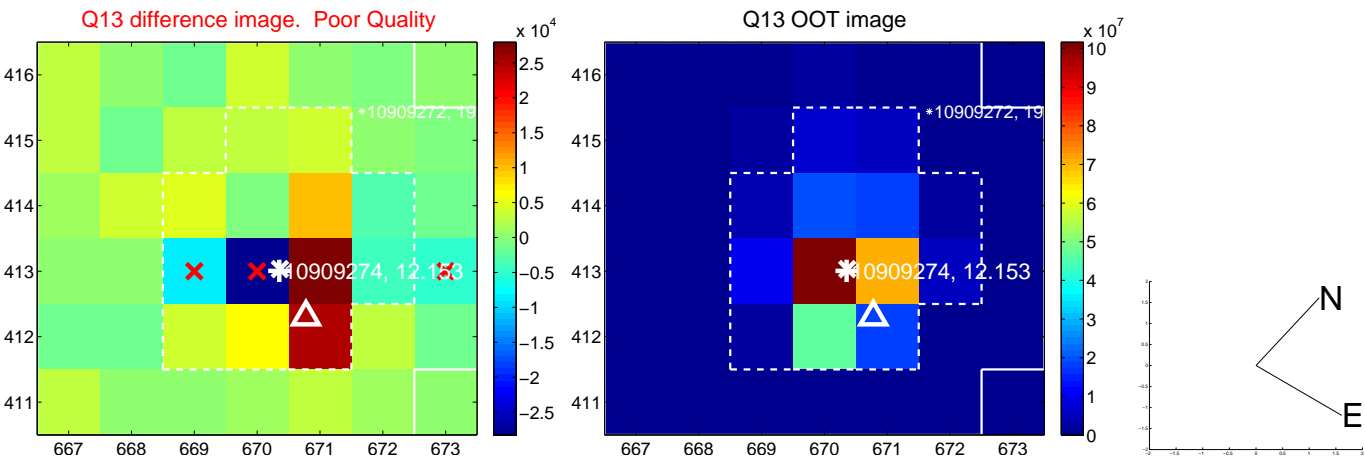
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



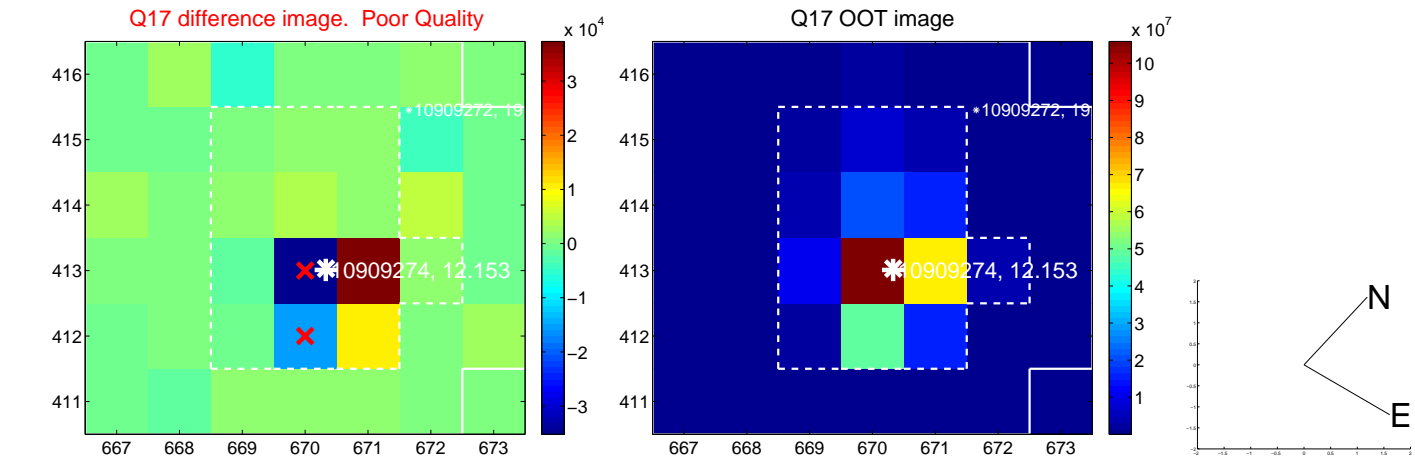
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



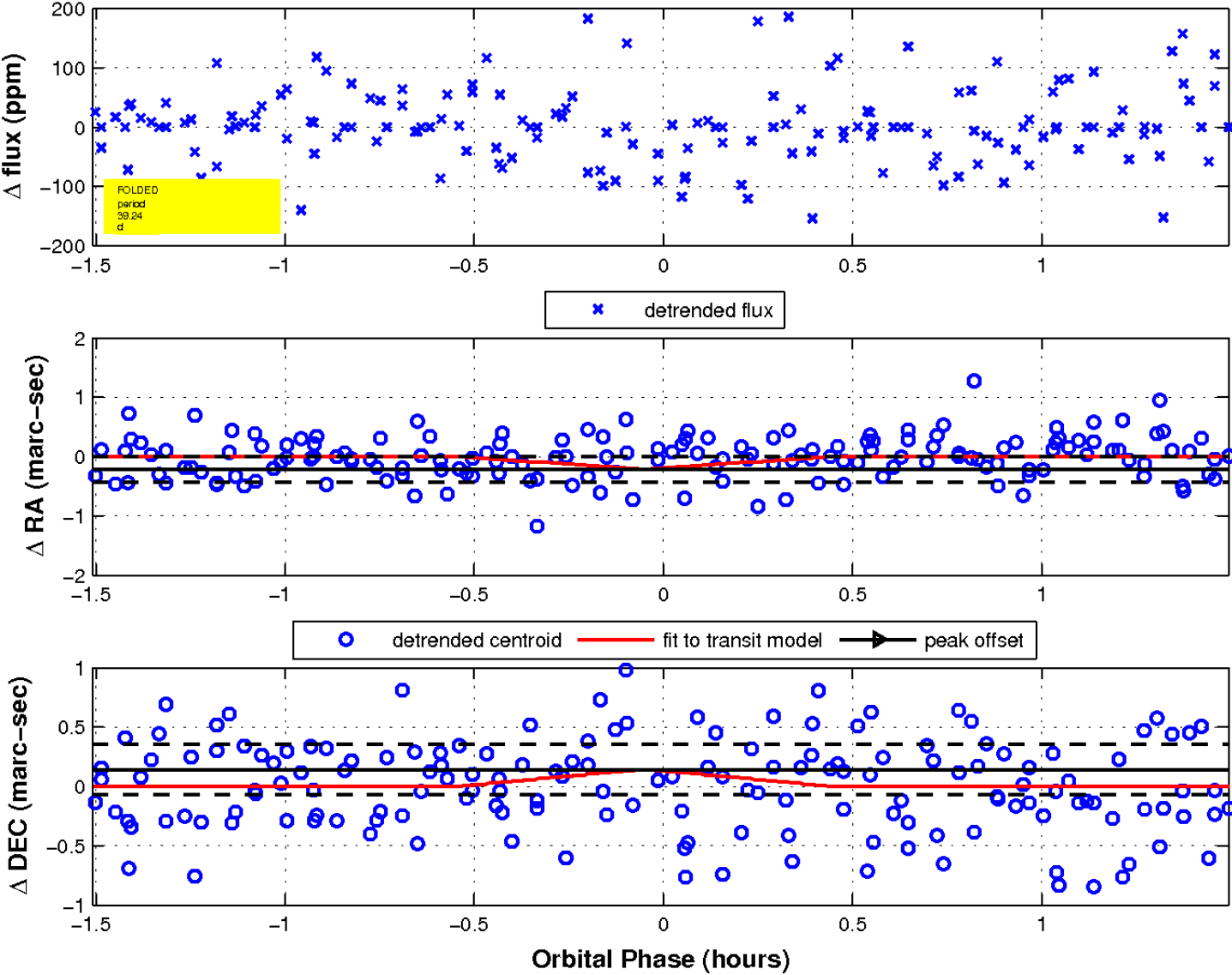
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

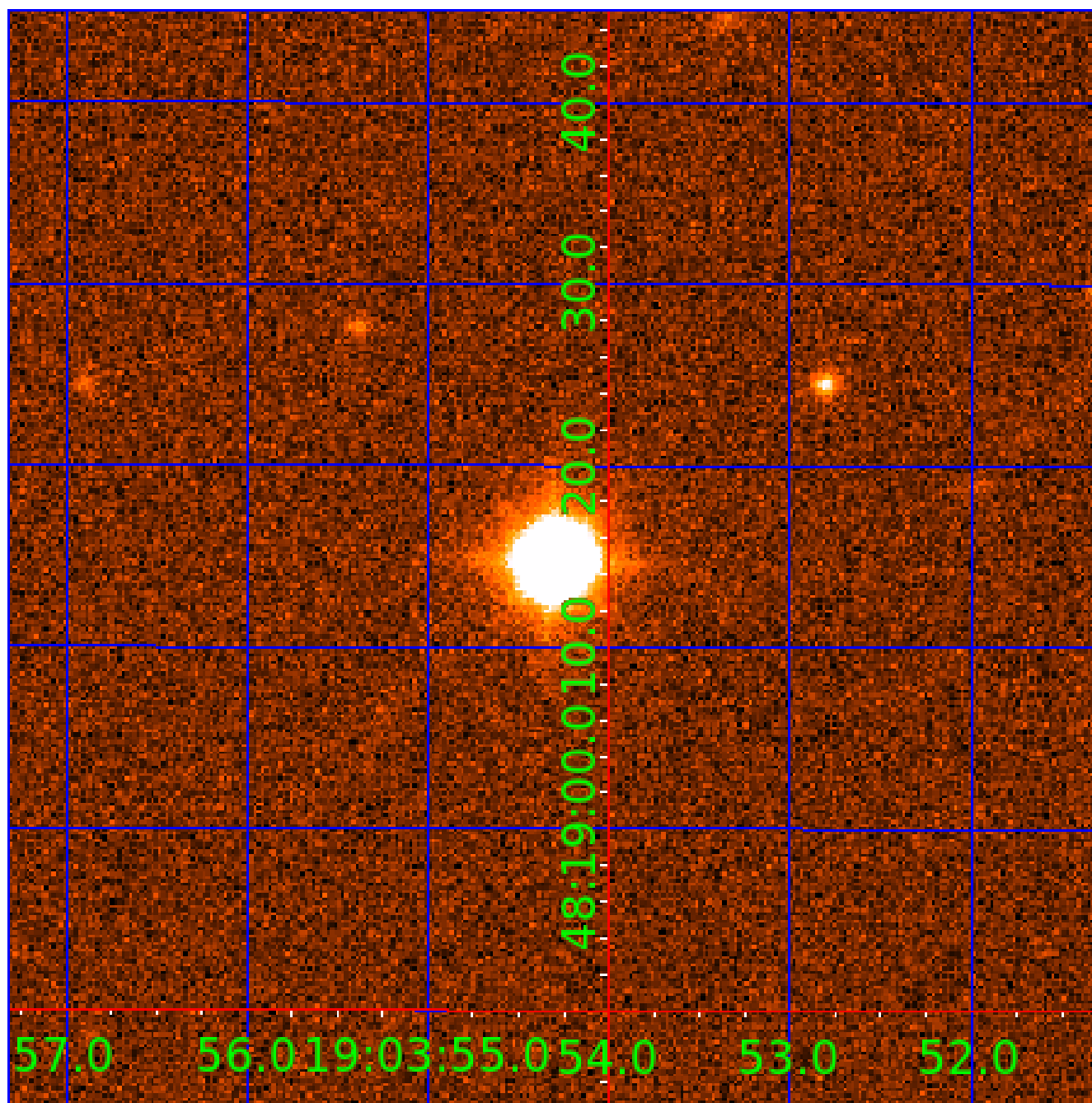


fluxWeightedCentroids, Planet 6 of 8



UKIRT Image

Declination



KIC 010909274

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})
010909274-01	OBS	7385.01	39.237869	148.654751	453738.2	3.500	44979.7	-1.0	1.23	6599	65.30	43.79
010909274-02	OBS	No	39.236842	155.230951	345050.7	12.000	28778.8	-1.0	1.23	6599	41.37	43.80
010909274-03	OBS	No	19.620723	148.593957	529.3	37.565	5258.6	34.9	1.23	6599	5.43	110.34
010909274-04	OBS	No	39.239282	156.324147	7594.1	10.500	1106.7	-1.0	1.23	6599	10.82	43.79
010909274-05	OBS	No	13.081122	141.266344	39.5	9.677	503.5	5.1	1.23	6599	0.89	189.45
010909274-06	OBS	No	39.238292	152.979854	2921.6	15.000	373.2	-1.0	1.23	6599	6.71	43.79
010909274-07	OBS	No	39.241582	157.475237	1576.7	15.000	251.8	-1.0	1.23	6599	4.93	43.79
010909274-08	OBS	No	39.232819	159.646855	4493.6	52.422	76.7	134.1	1.23	6599	14.89	43.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010909274-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
010909274-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010909274-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—RESIDUAL_TCE
010909274-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
010909274-06	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-07	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
010909274-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

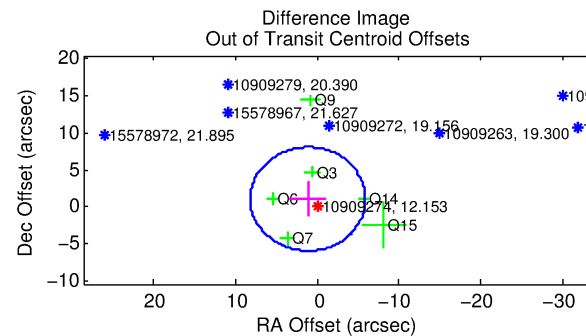
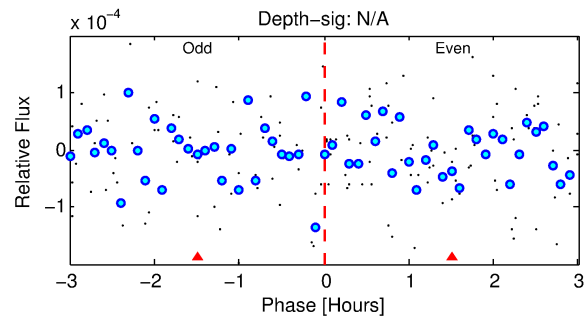
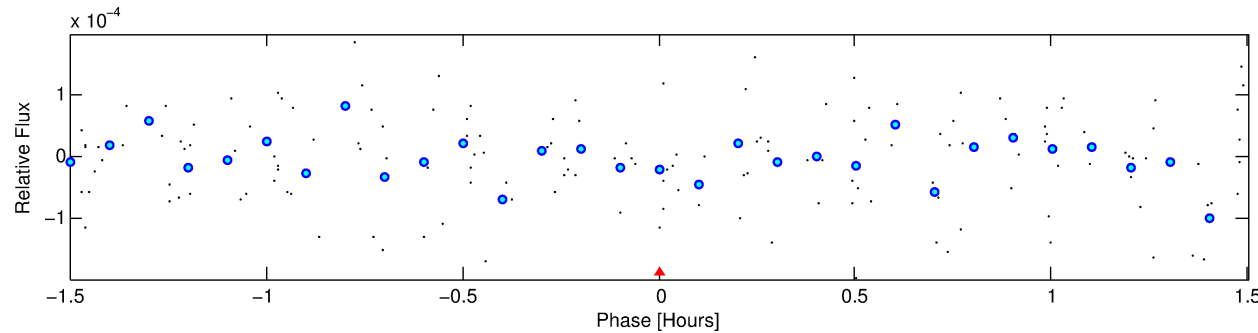
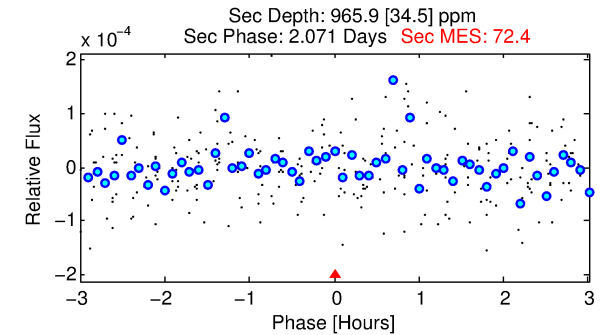
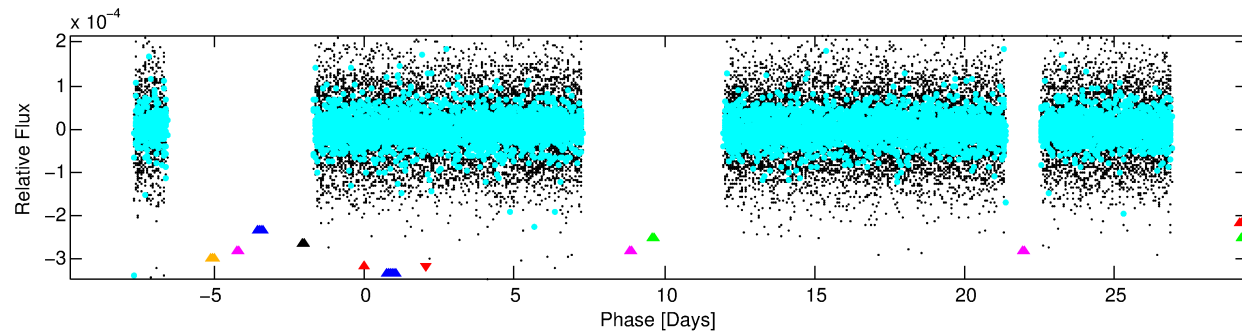
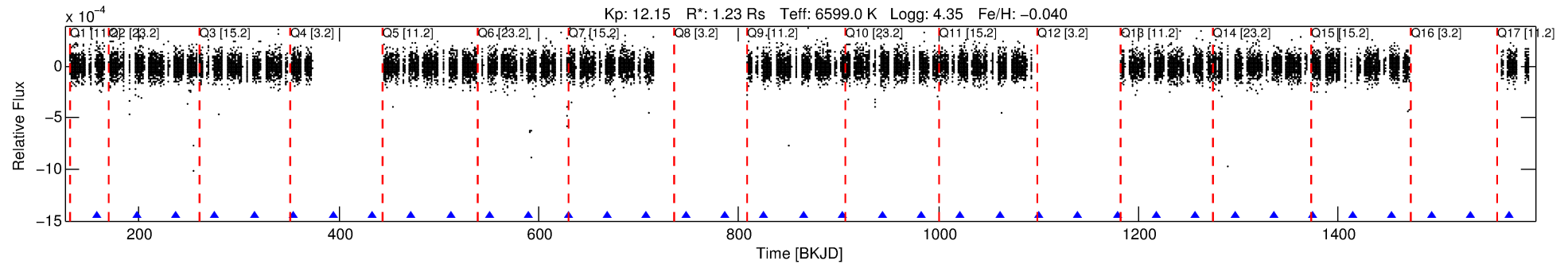
Ephemeris Match Information For 010909274-07

No Significant Match Found

DV One-Page Summary

KIC: 10909274 Candidate: 7 of 8 Period: 39.242 d

KOI: K07385 Corr: No Ephemeris Match



TPS TCE Results:

Period = 39.24158 d

Epoch = 157.4752 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]

LongPeriod-sig: N/A

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: 0.00e+00

RollingBand-fgt: 1.00 [23/23]

GhostDiagnostic-chr: -0.1636

Centroid-sig: 90.6%

Centroid-so: 3.593 arcsec [0.21σ]

OotOffset-rm: 1.543 arcsec [0.66σ]

KicOffset-rm: 1.449 arcsec [0.49σ]

OotOffset-st: 2/3/0/1 [6]

KicOffset-st: 2/3/0/1 [6]

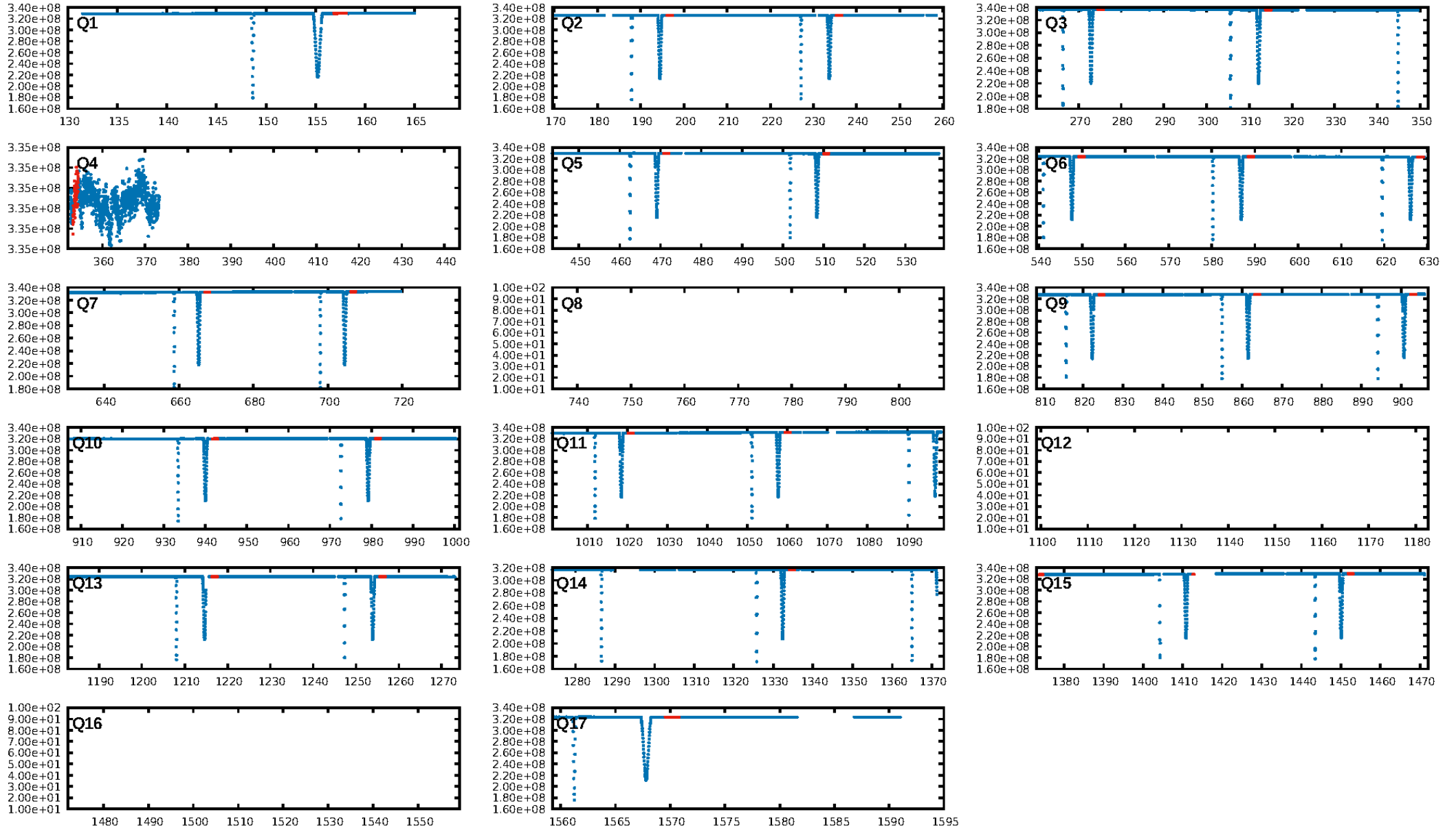
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DiffImageOverlap-fno: 0.00 [0/12]

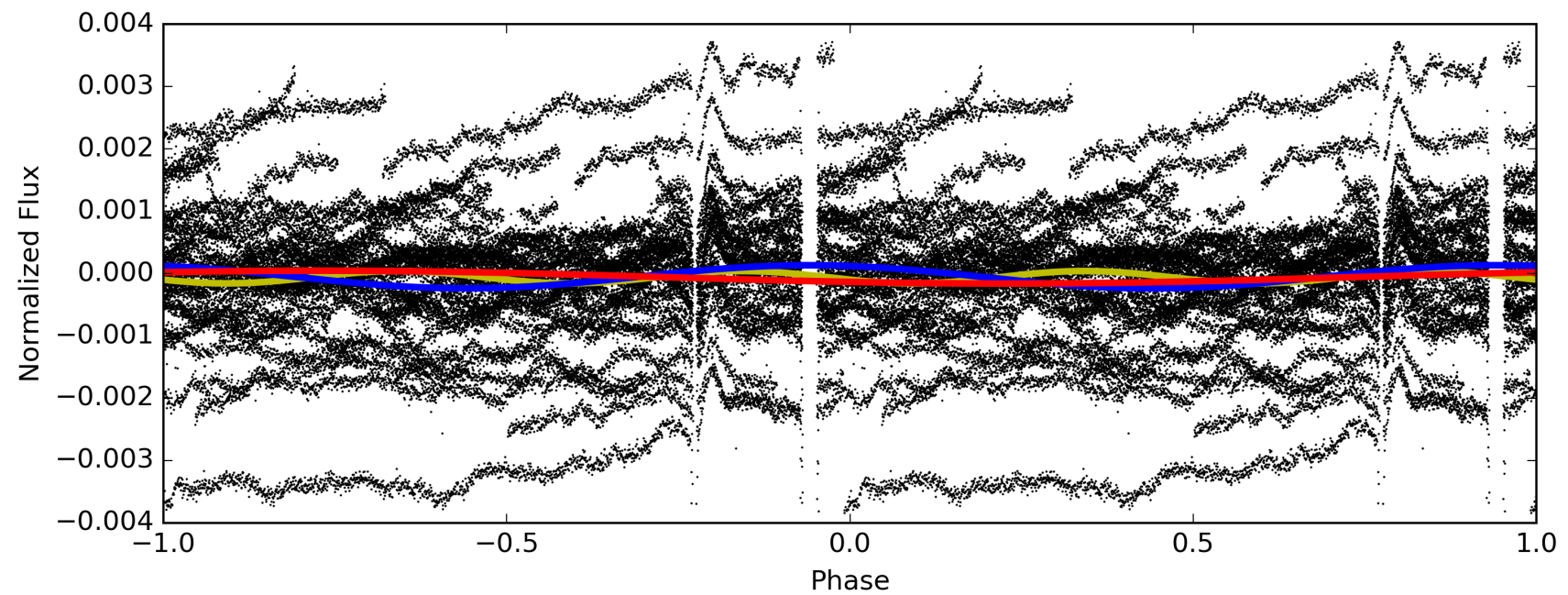
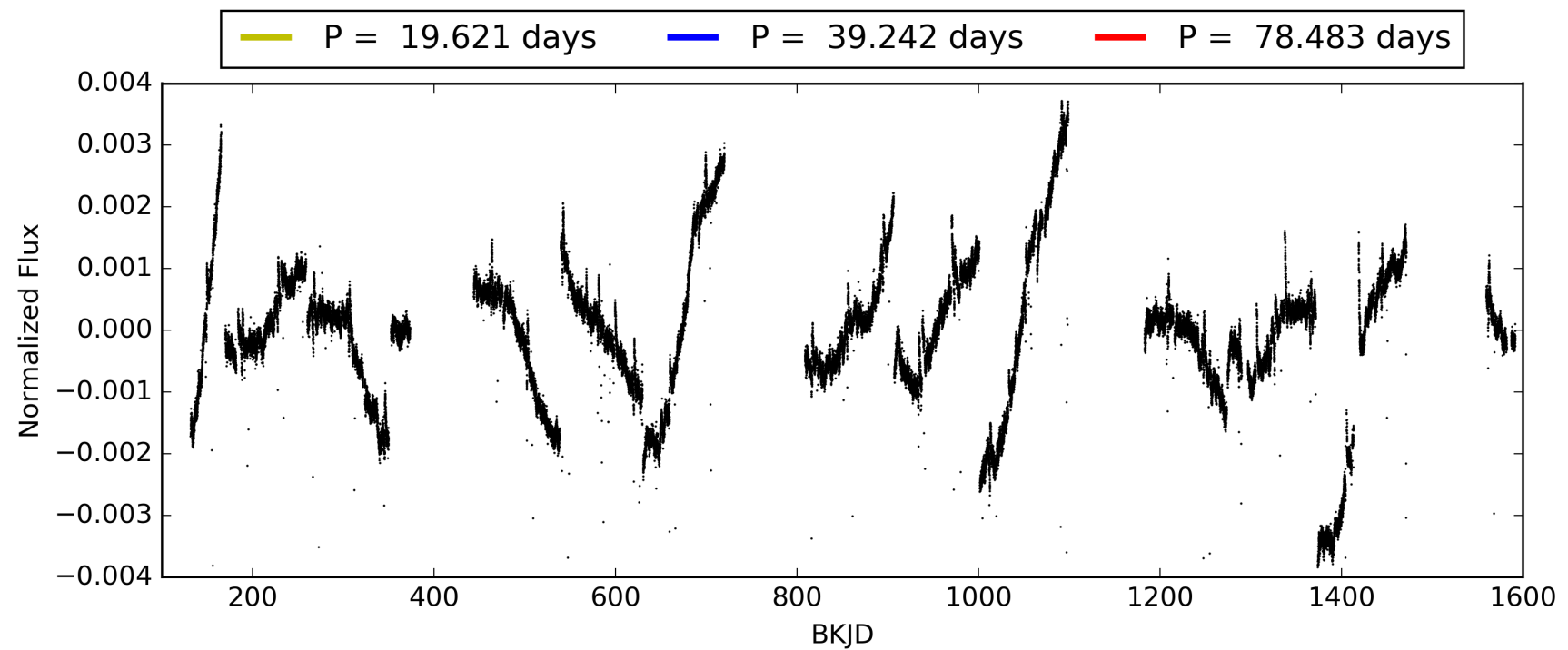
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:18:06 Z

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

TCE 010909274-07, PDC Light Curves

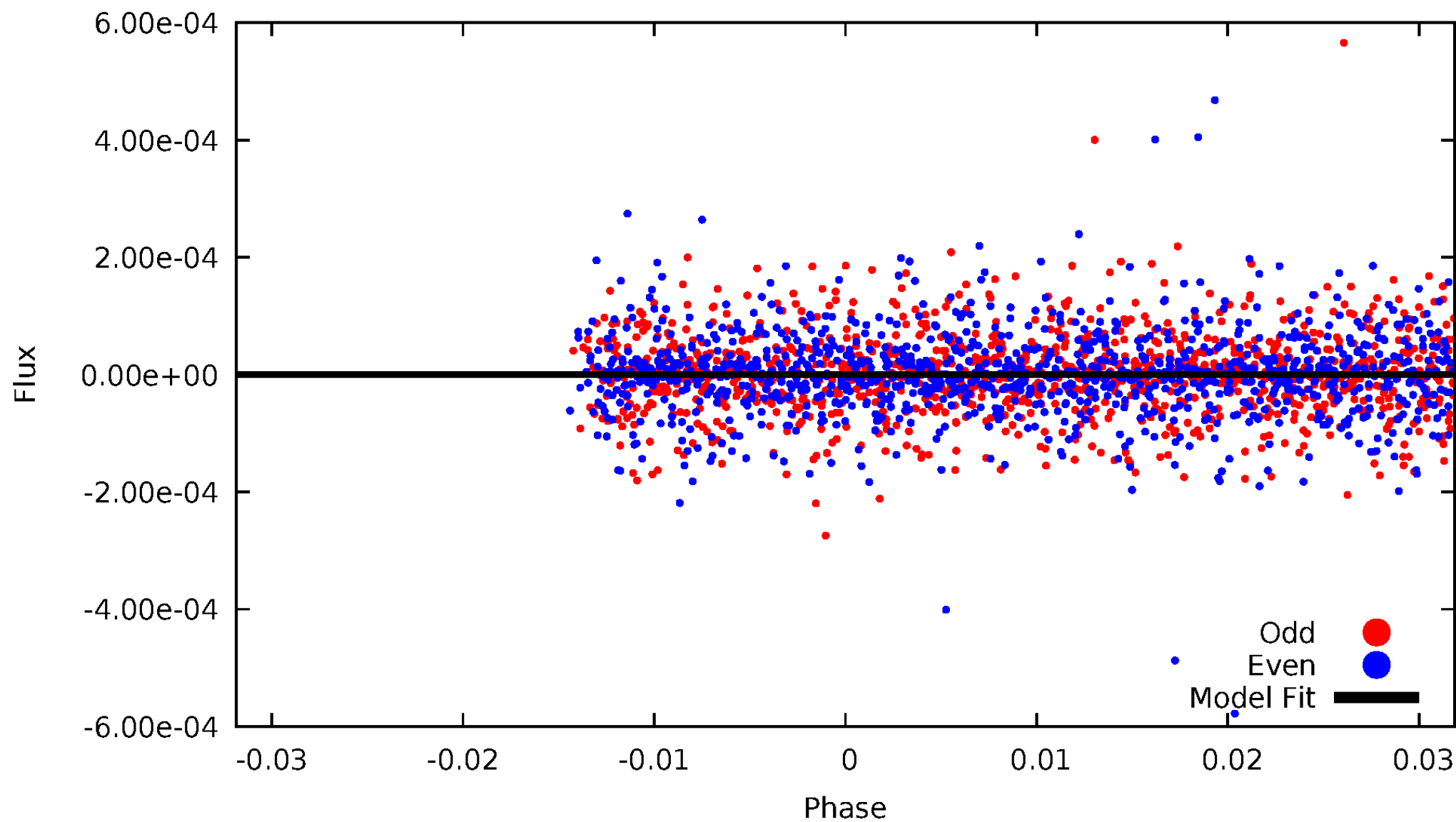


TCE 010909274-07



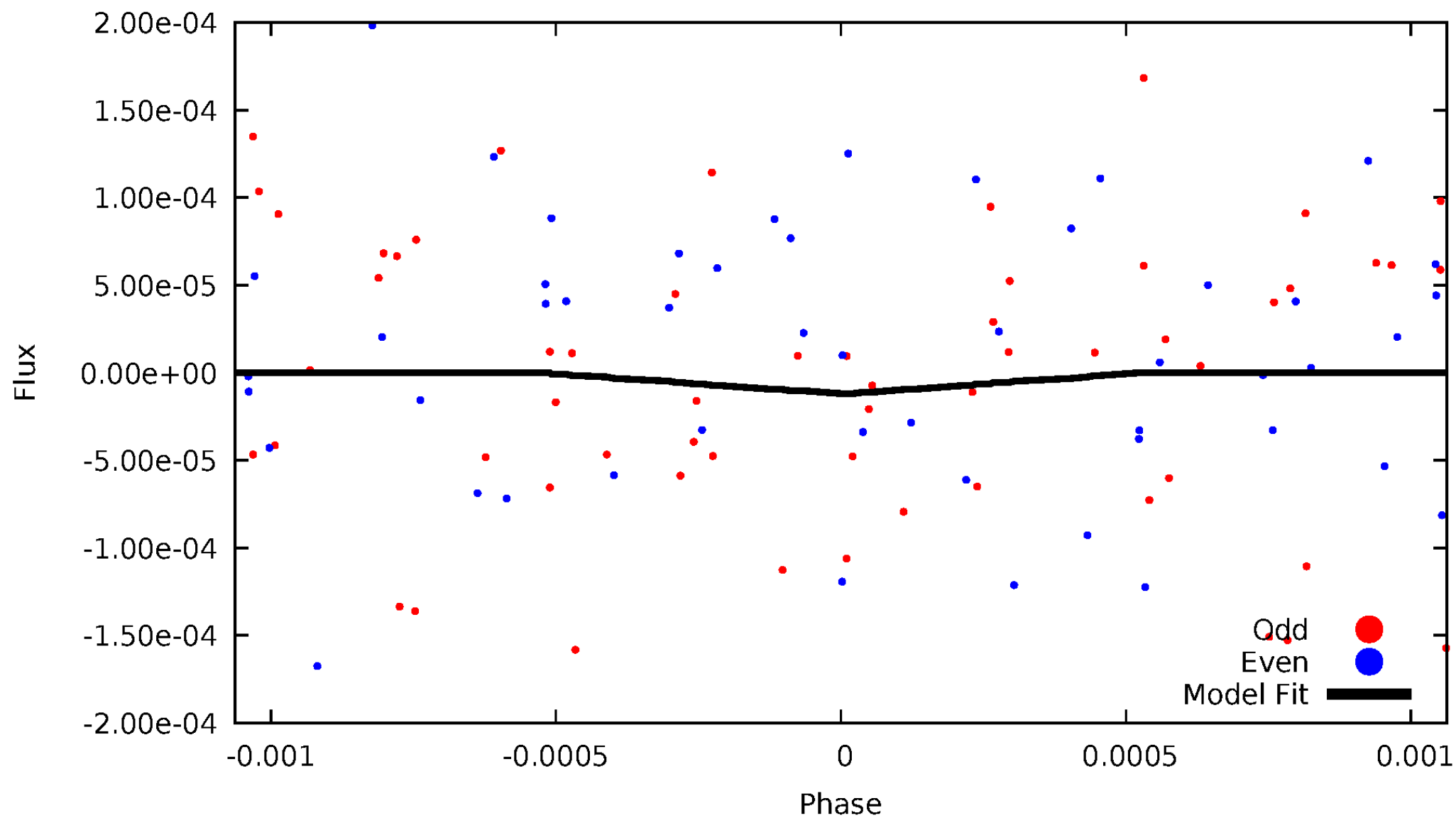
DV Odd/Even

TCE 010909274-07



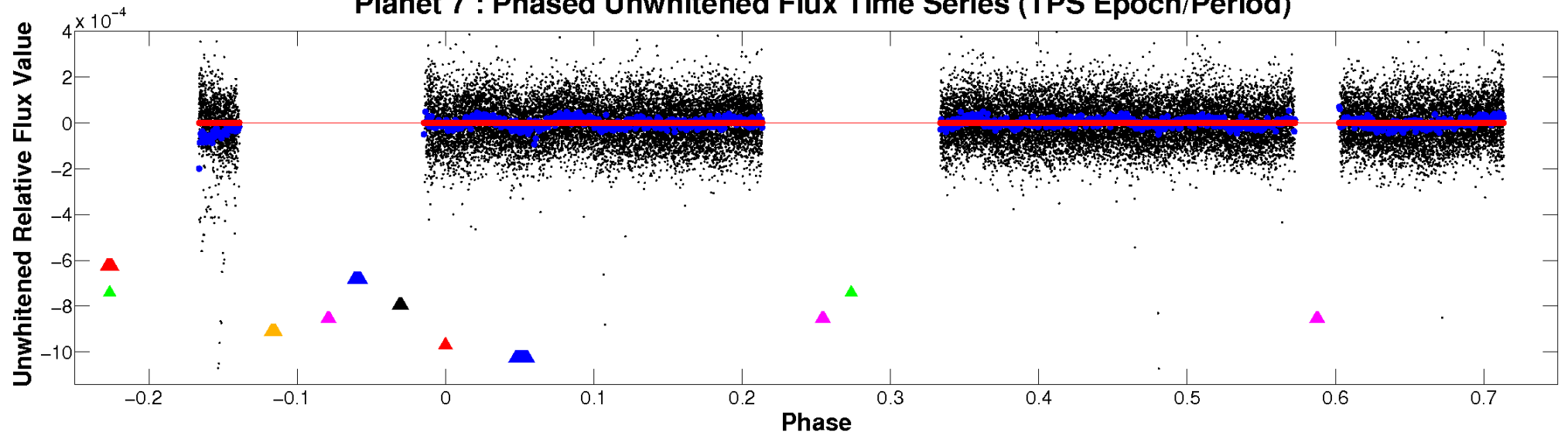
ALT Odd/Even

TCE 010909274-07

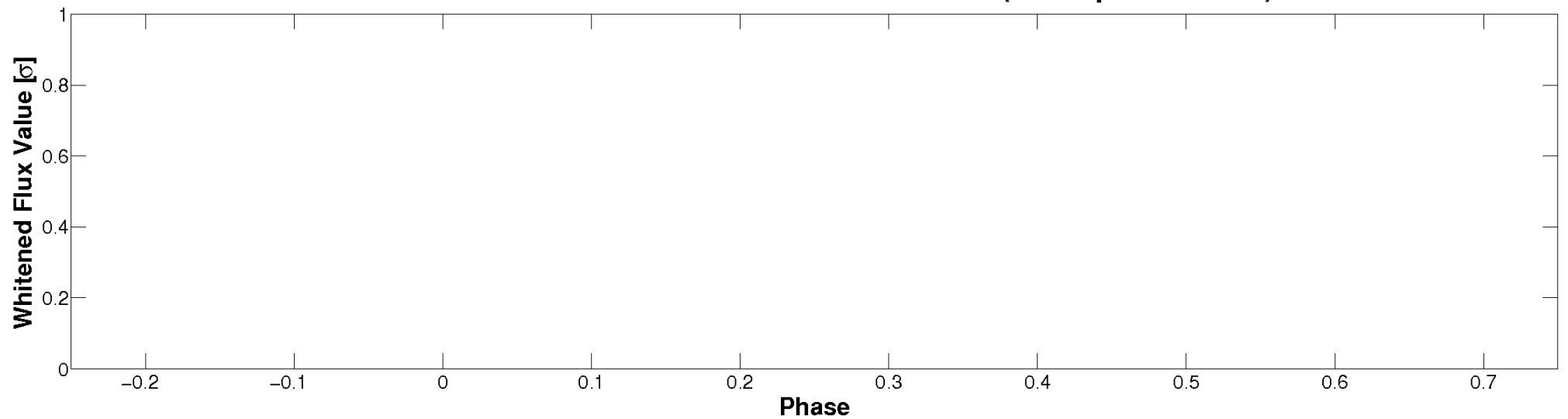


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

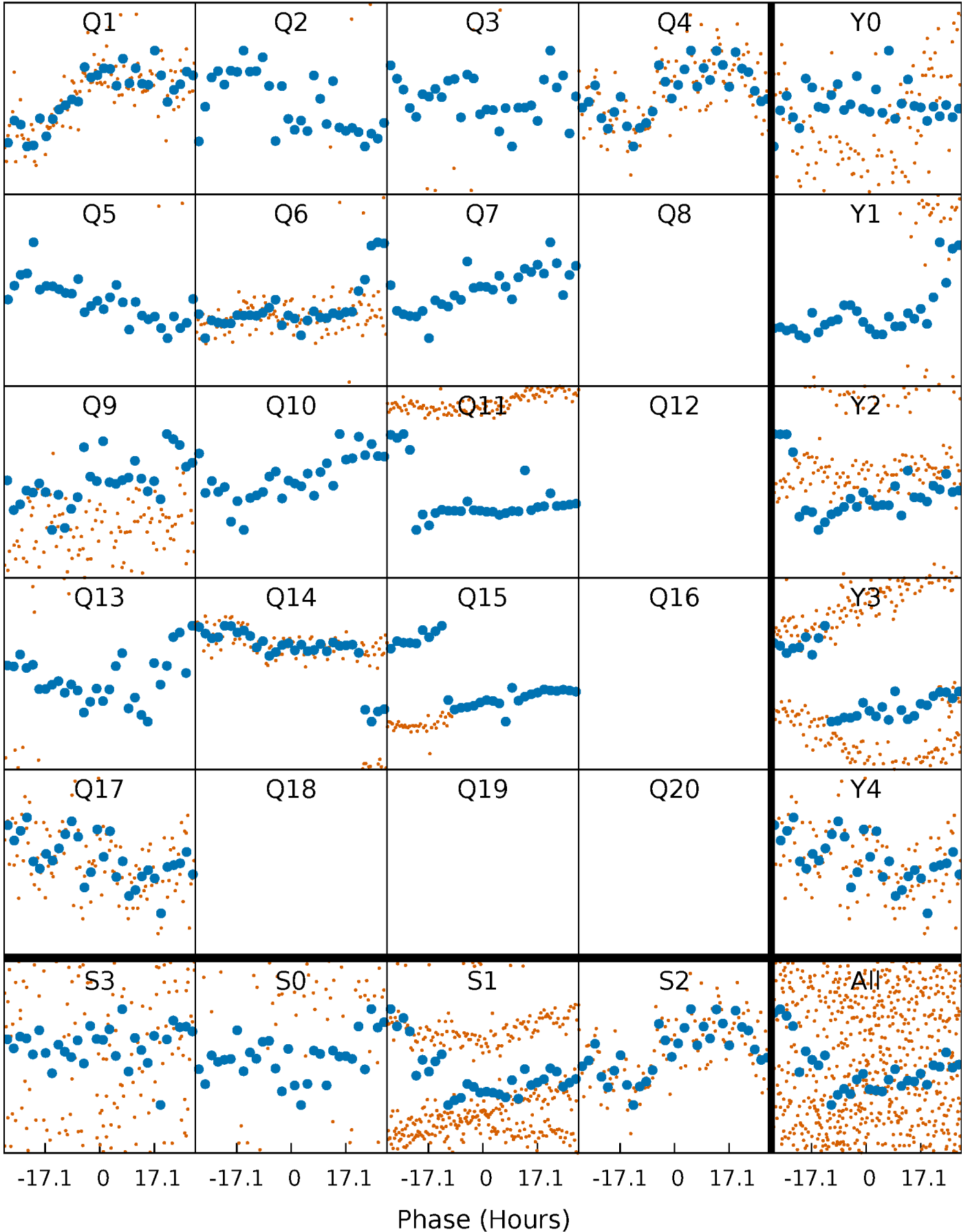


Planet 7 : Phased Whitened Flux Time Series (TPS Epoch/Period)



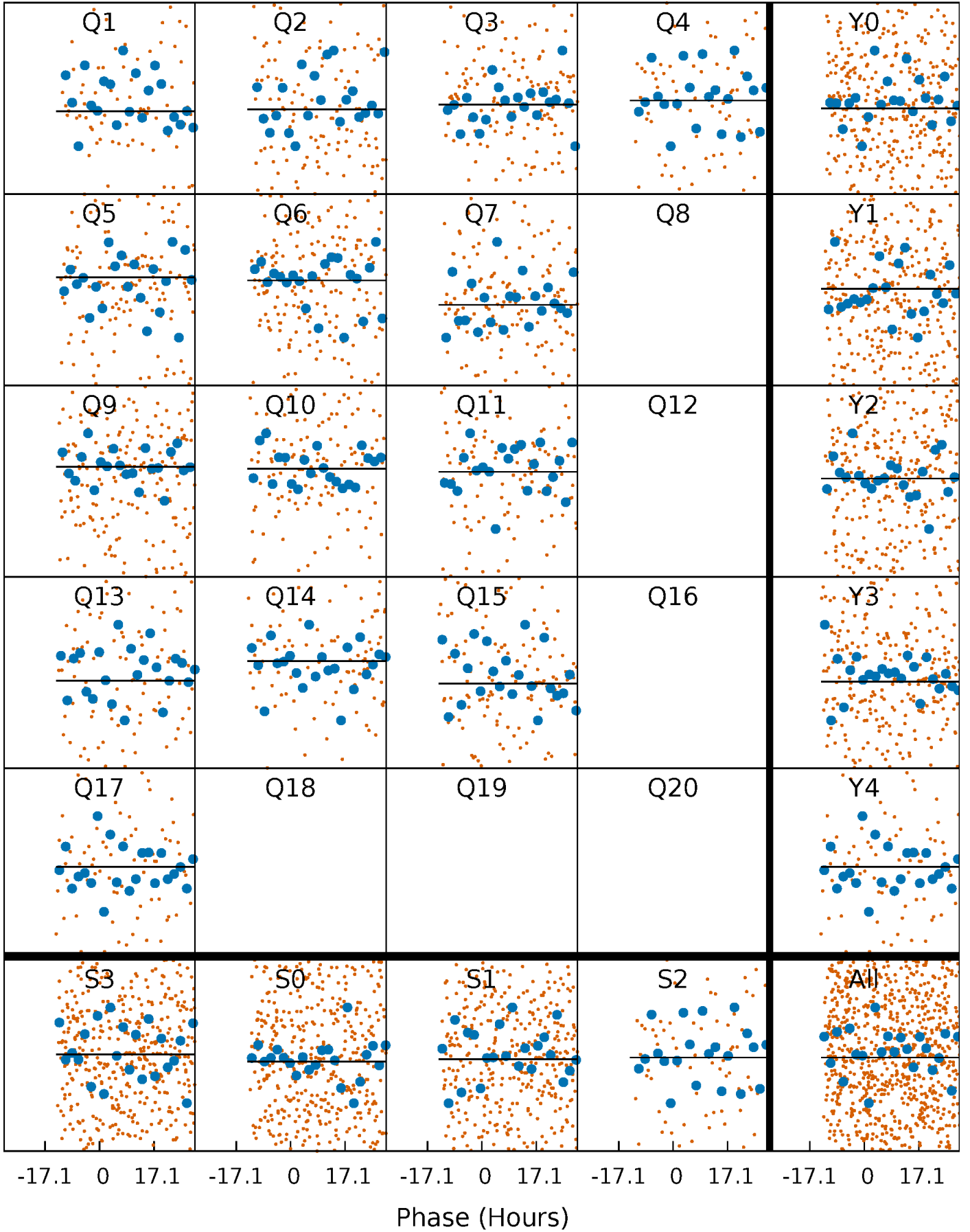
PDC Quarter-Phased Transit Curves

TCE 010909274-07 $P = 39.241582$ Days $T_0 = 157.475237$ (BKJD)



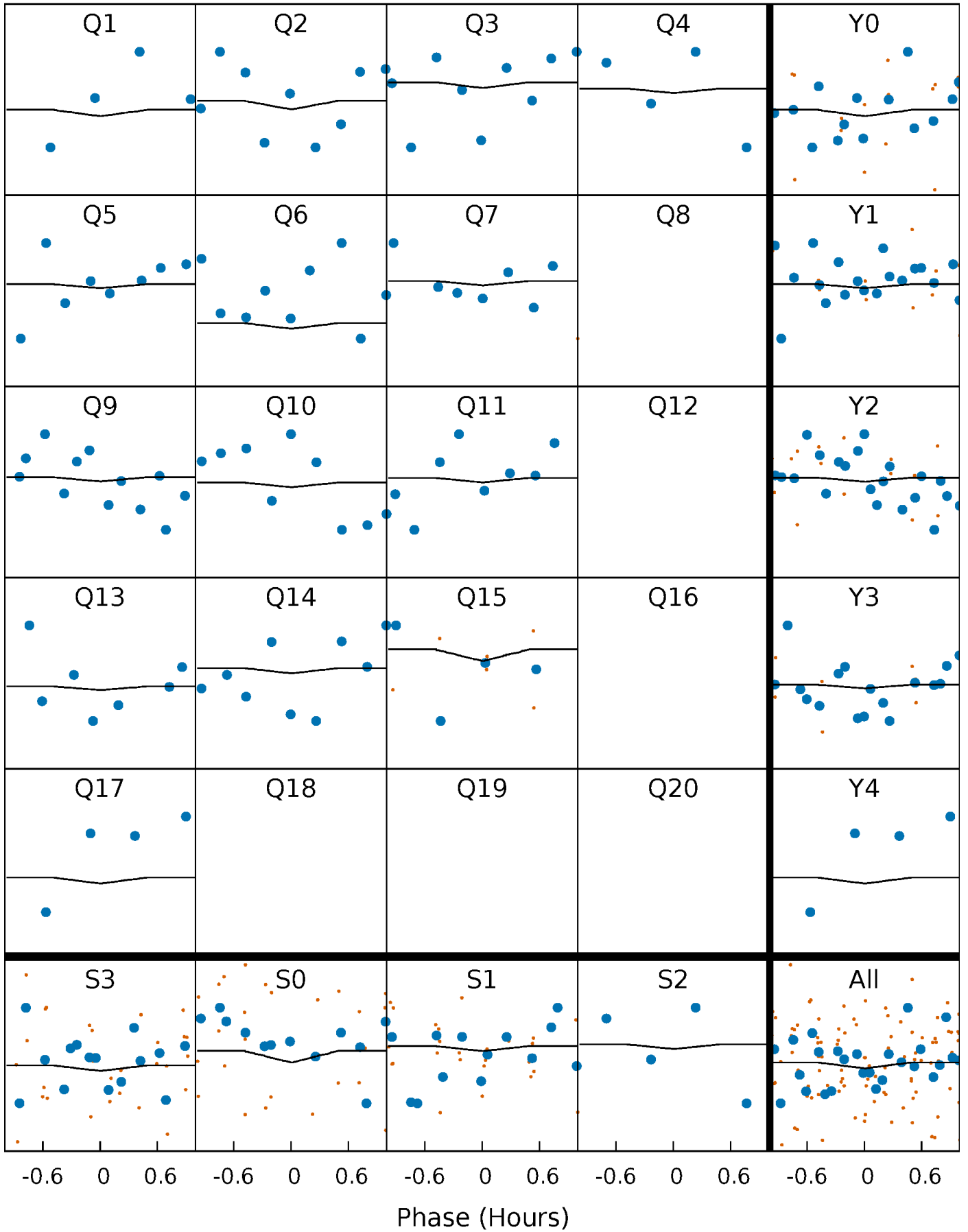
DV Quarter-Phased Transit Curves

TCE 010909274-07 $P = 39.241582$ Days $T_0 = 157.475237$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

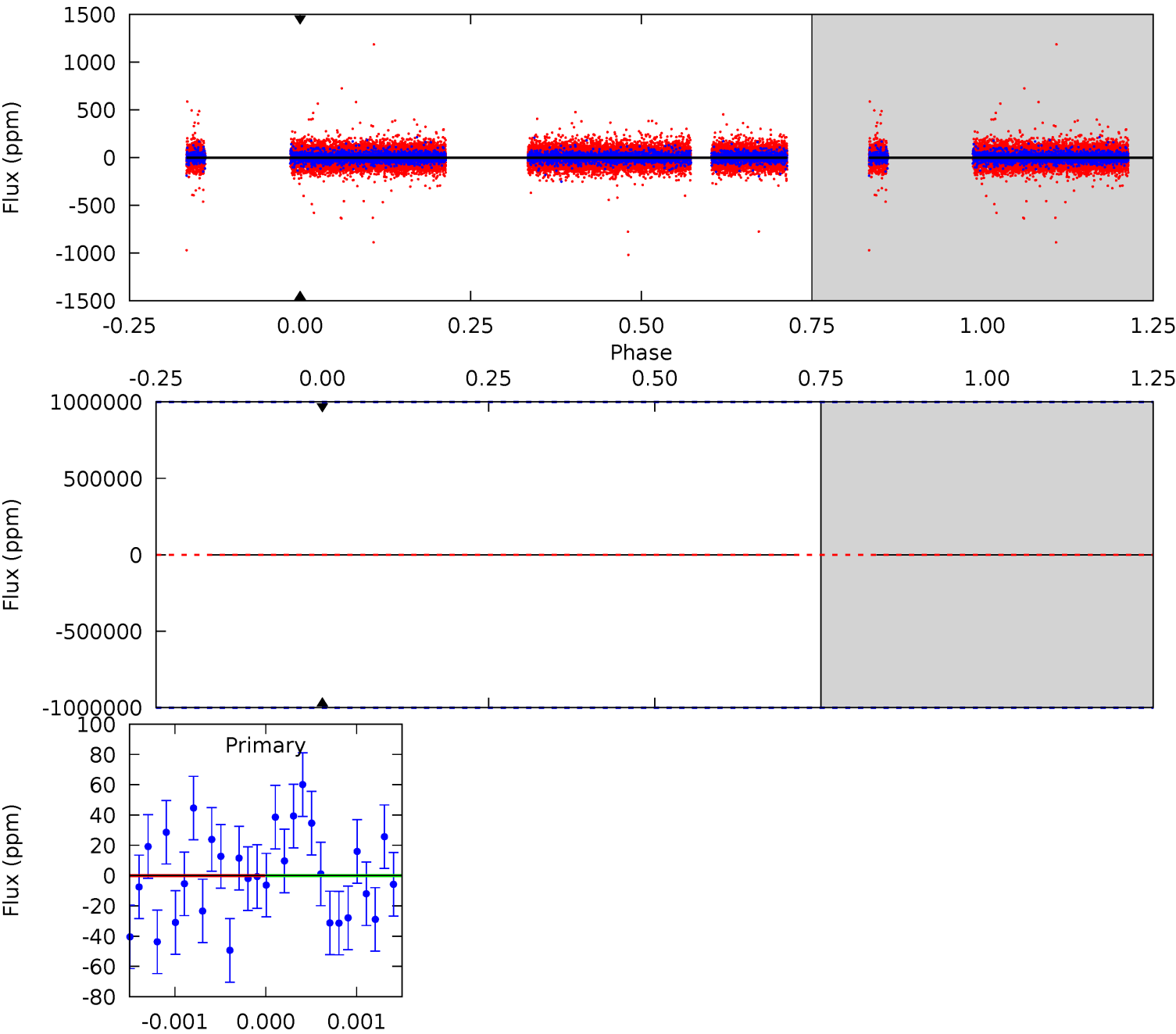
TCE 010909274-07 $P = 39.241582$ Days $T_0 = 158.590272$ (BKJD)



DV Model-Shift Uniqueness Test

010909274-07, P = 39.241582 Days, E = 118.233655 Days

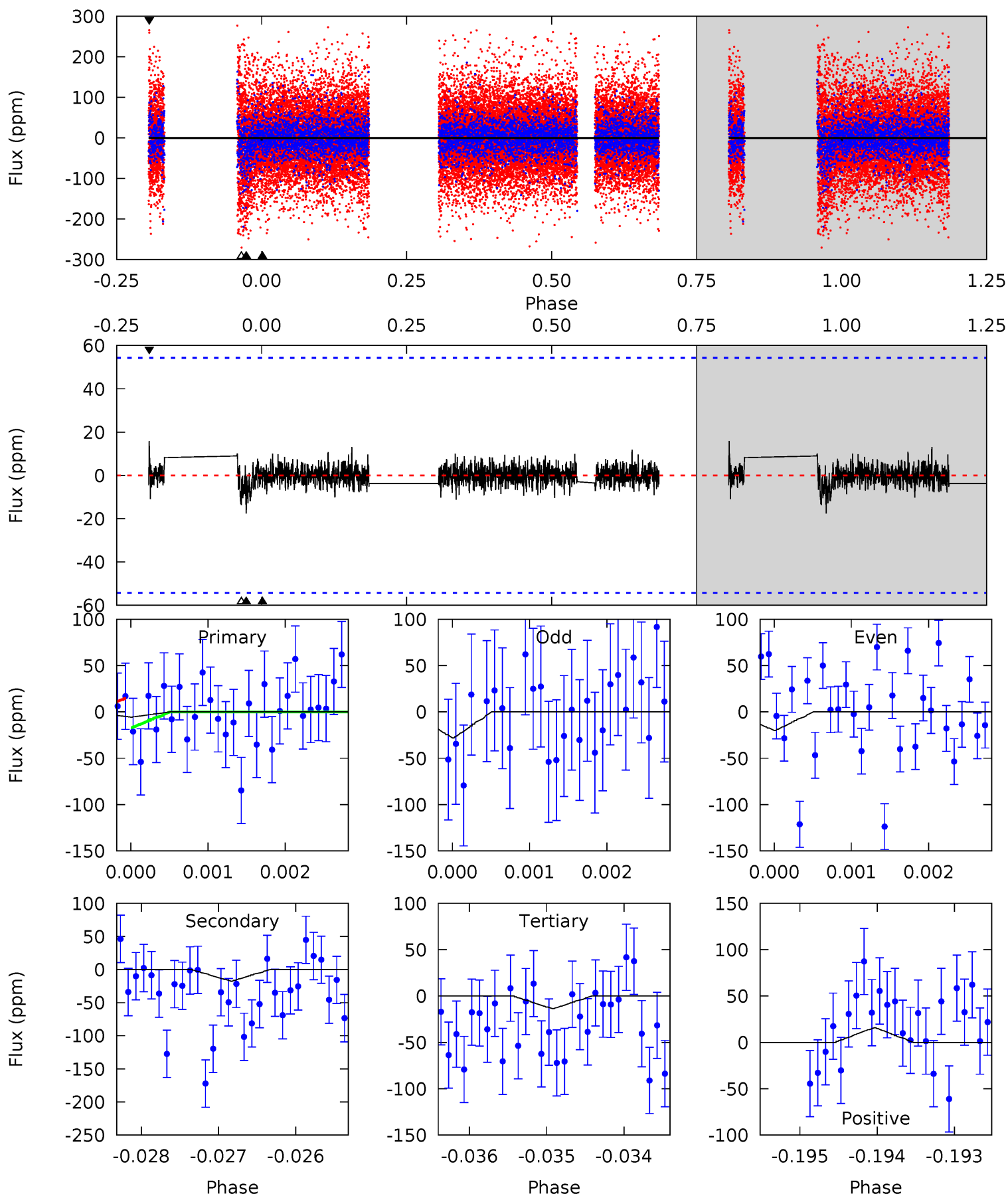
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010909274-07, $P = 39.241582$ Days, $E = 119.348690$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.57	1.76	1.37	1.59	5.45	3.28	0.35	-0.81	-1.02	0.39	0.18	0.41	-1.84	0.47	0.13



Stellar Parameters For KIC 010909274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6599^{+147}_{-213}	$4.350^{+0.060}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$1.234^{+0.283}_{-0.141}$	$1.248^{+0.144}_{-0.173}$	$0.936^{+0.246}_{-0.391}$
	+2%/-3%	+1%/-3%	+625%/-750%	+23%/-11%	+12%/-14%	+26%/-42%
Source	PHO1	FLK73	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 010909274-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$11.32^{+11.28}_{-7.64}$	925^{+49}_{-41}	-5468^{+28712}_{-23941}	$-680.772^{+39195.898}_{-53725.782}$
Alt.	-18 ± 10	$9.59^{+10.52}_{-6.57}$	925^{+49}_{-38}	2402^{+932}_{-476}	$5.086^{+51.549}_{-4.176}$

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 $A_{obs} \gg 1.0$

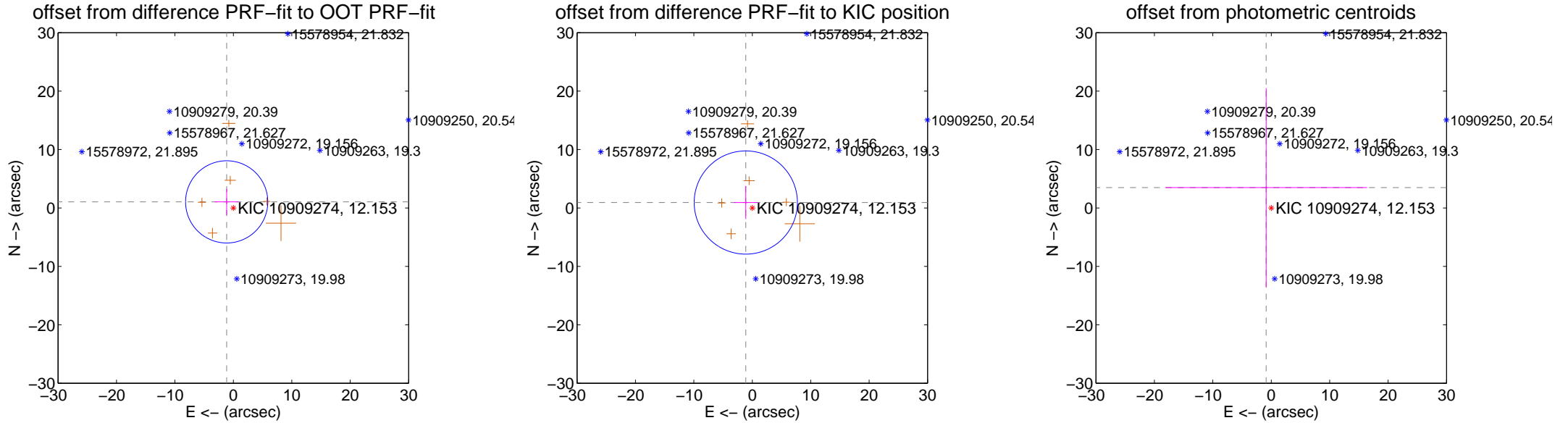
DV Centroid Data

Supplemental centroid analysis for 010909274-07. Kepler magnitude: 12.15. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

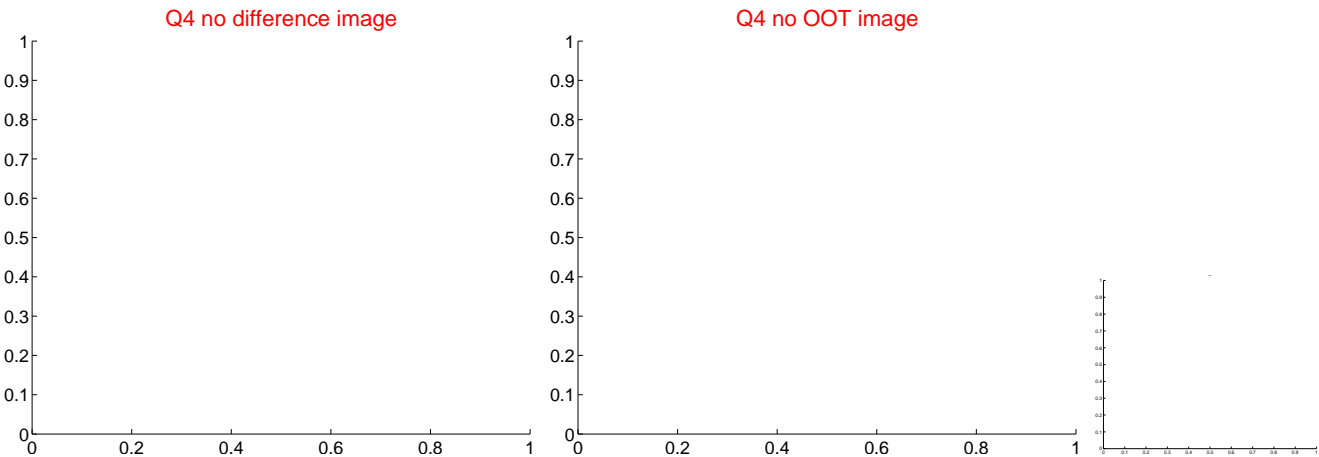
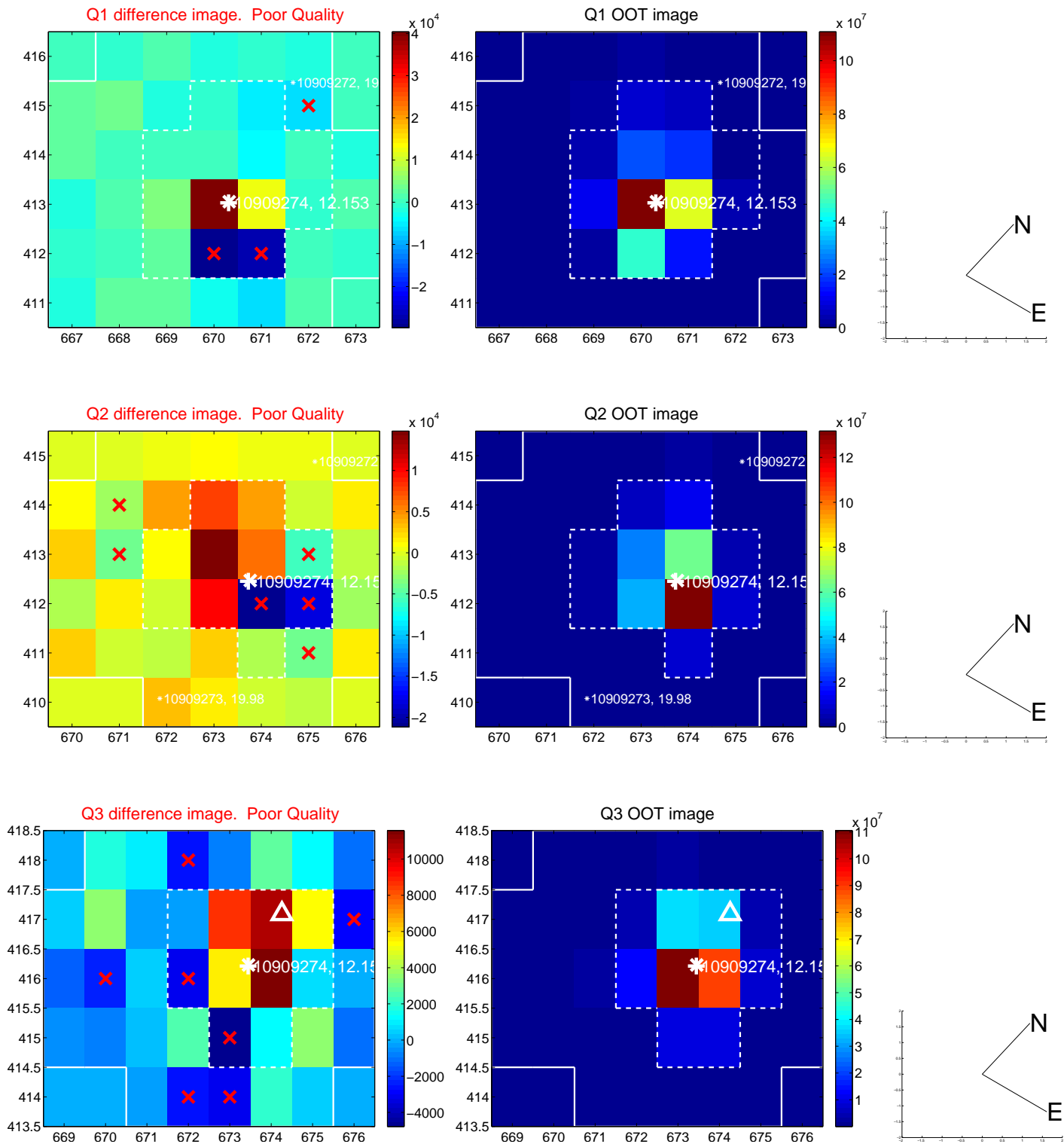
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.543 ± 2.346	0.66	1.142 ± 2.061	1.039 ± 2.234
PRF-fit source offset from KIC position	1.449 ± 2.944	0.49	1.112 ± 2.066	0.928 ± 2.827
photometric centroid source offset	3.59 ± 17.04	0.21	0.87 ± 17.28	3.49 ± 17.03

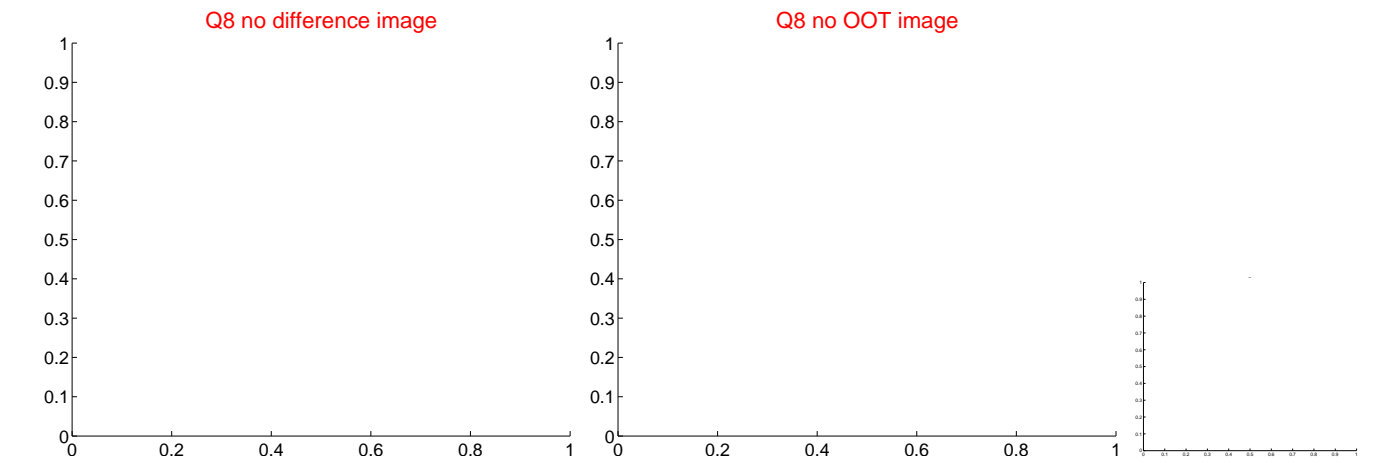
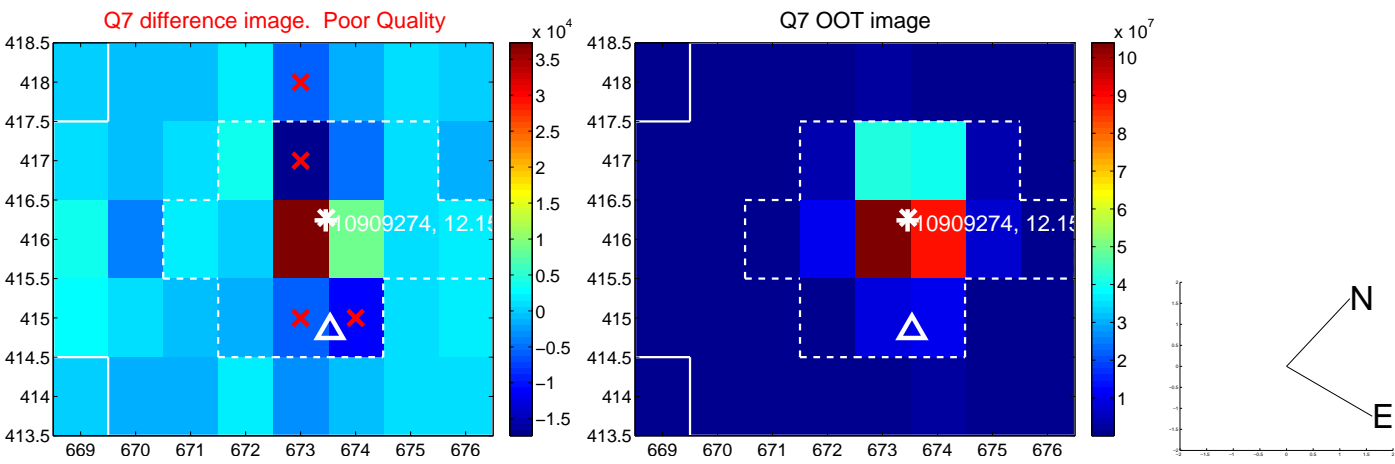
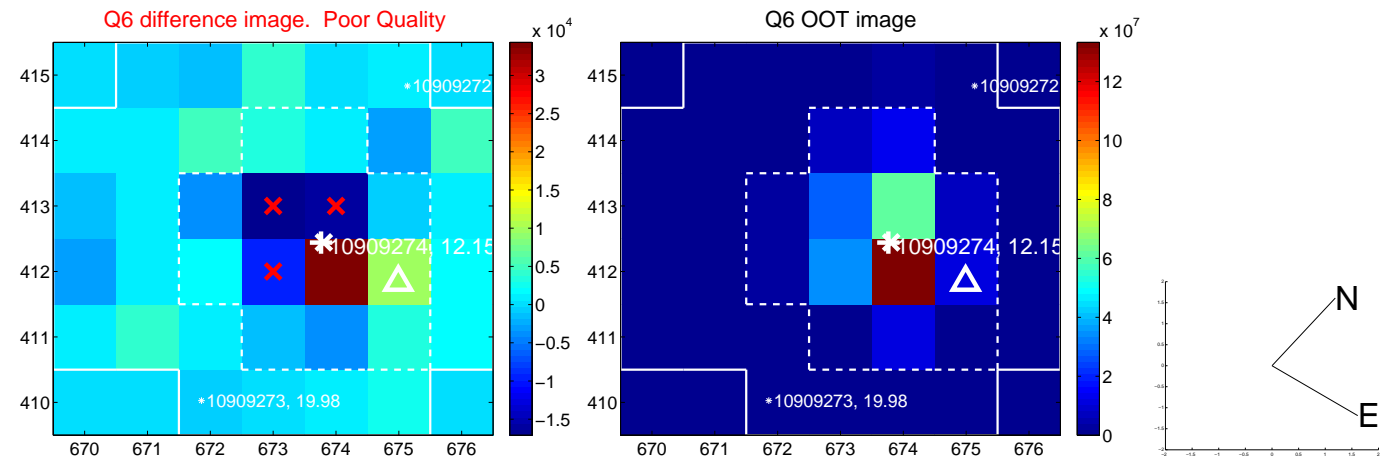
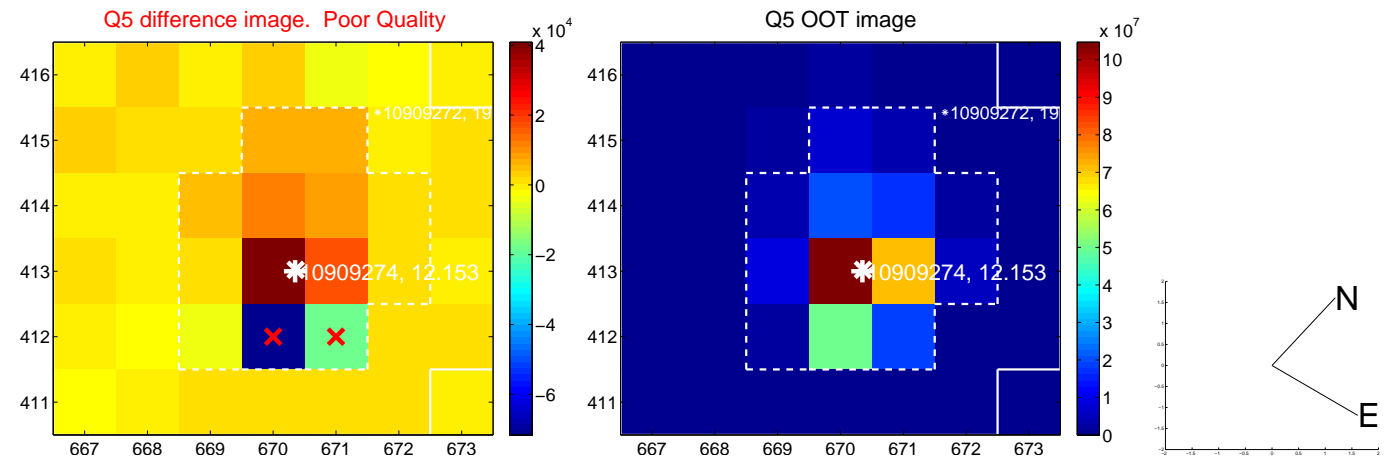


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

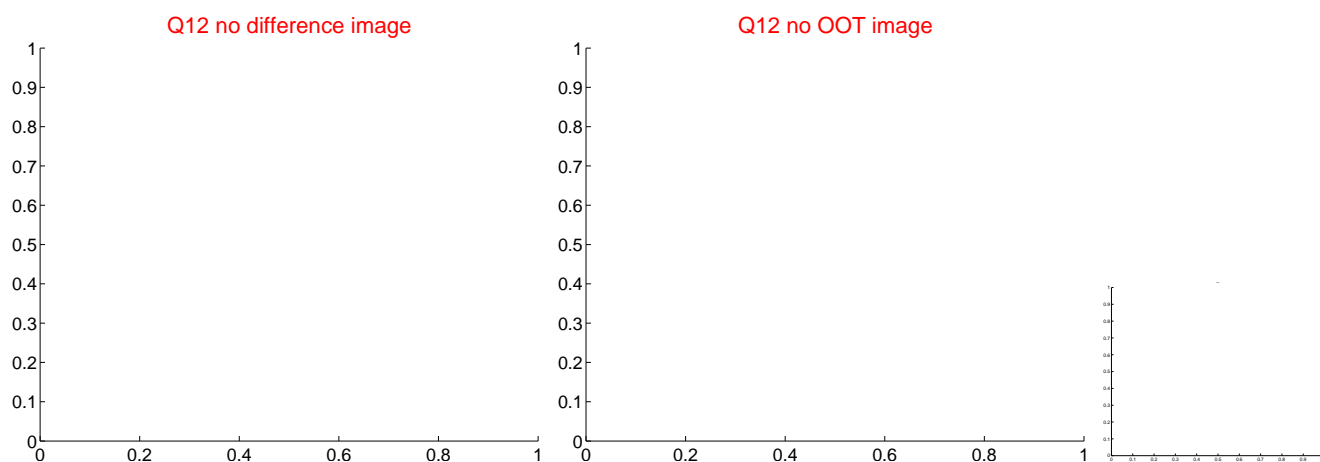
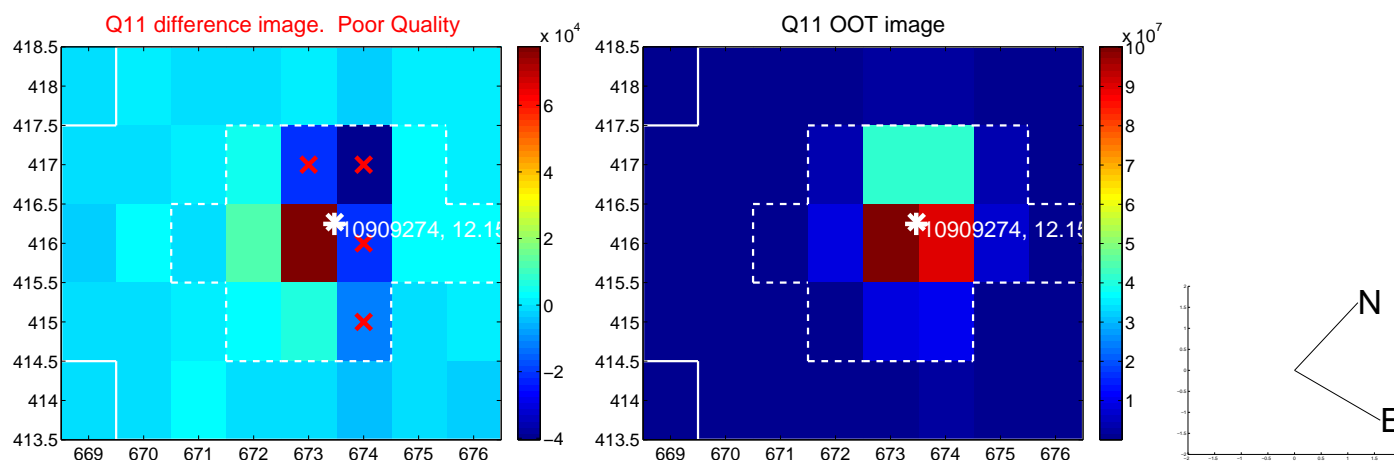
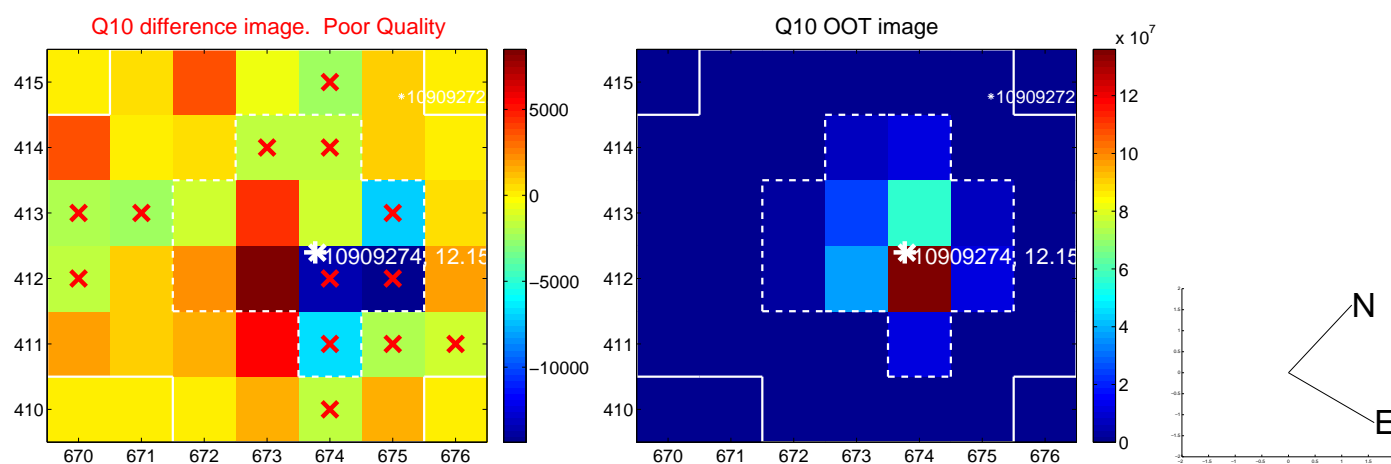
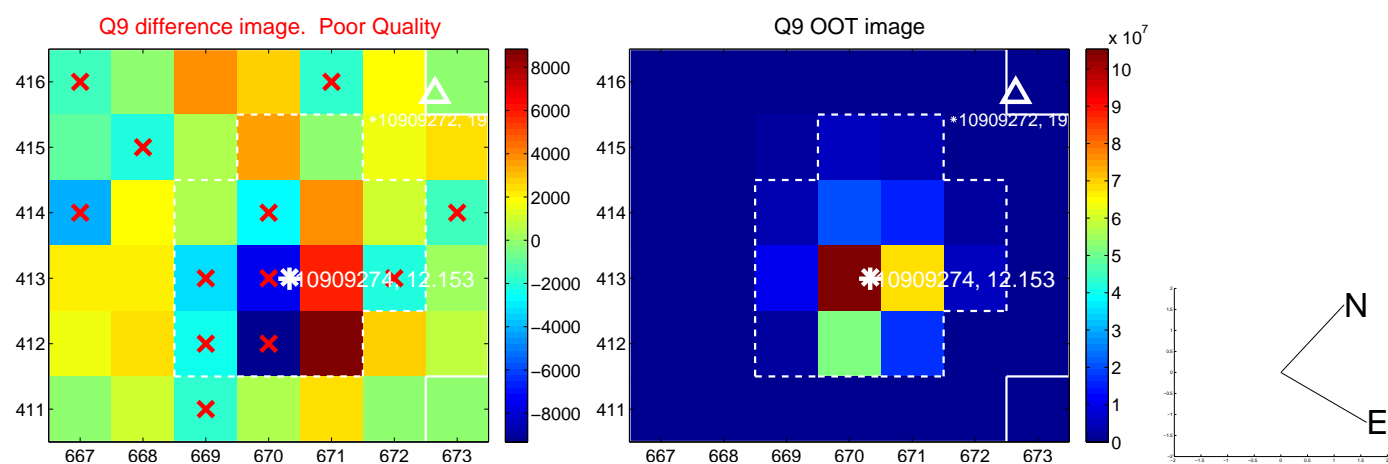
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

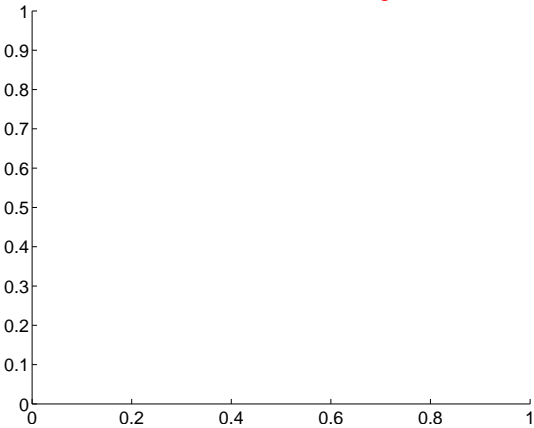


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

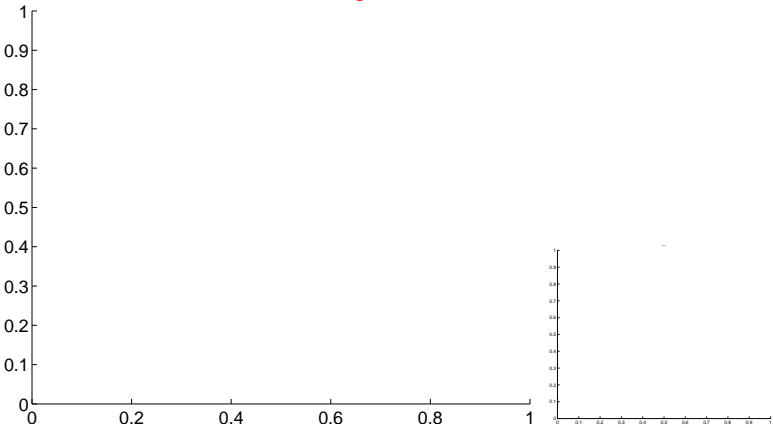


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

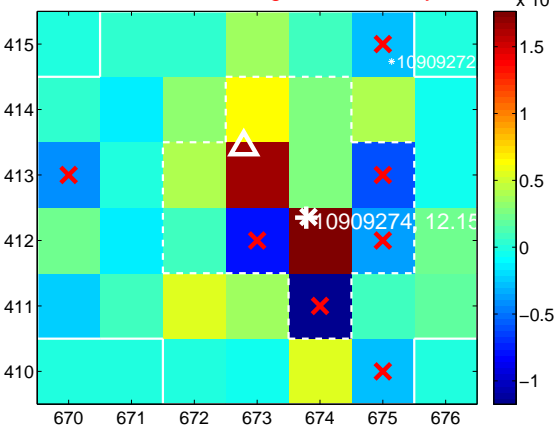
Q13 no difference image



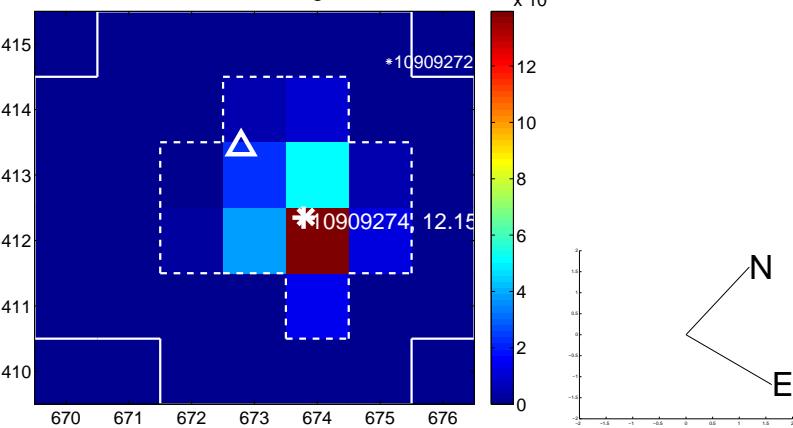
Q13 no OOT image



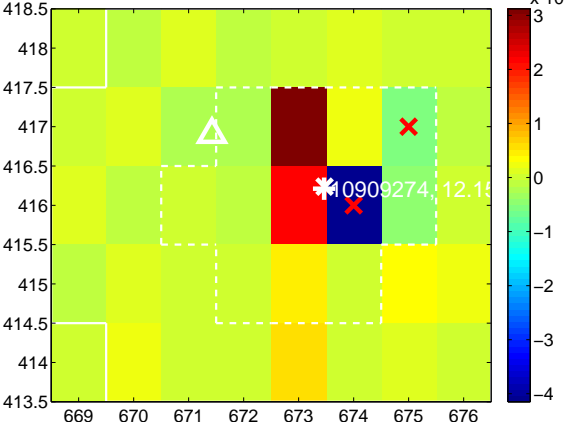
Q14 difference image. Poor Quality



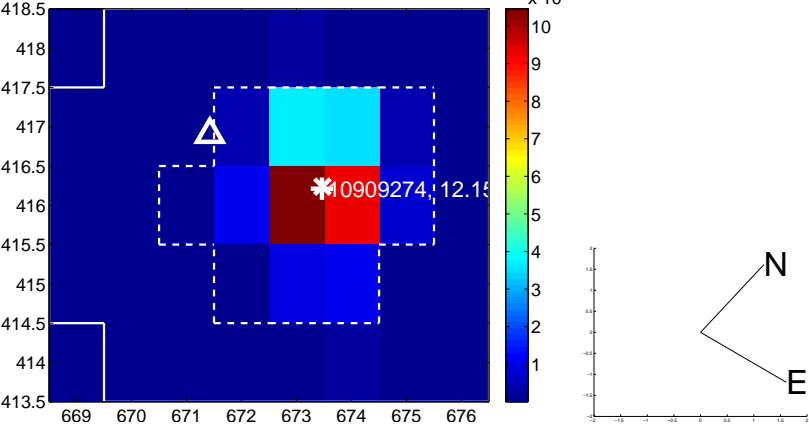
Q14 OOT image



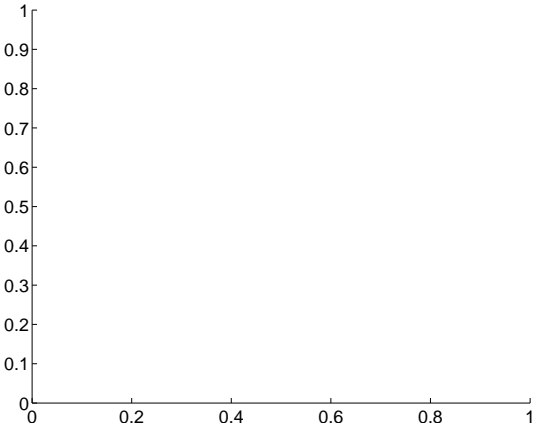
Q15 difference image. Poor Quality



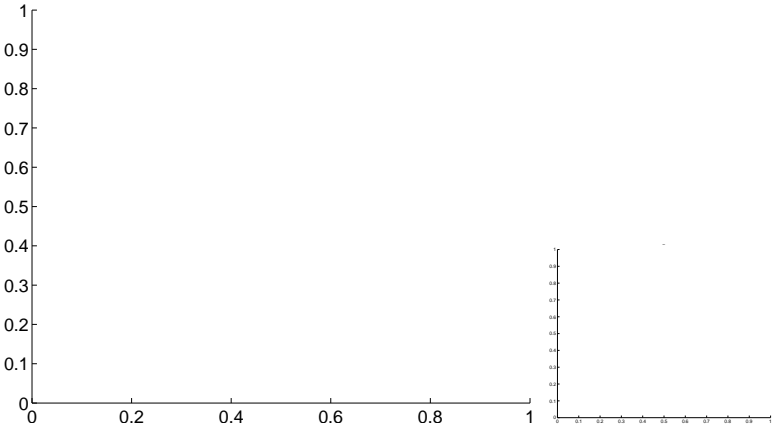
Q15 OOT image



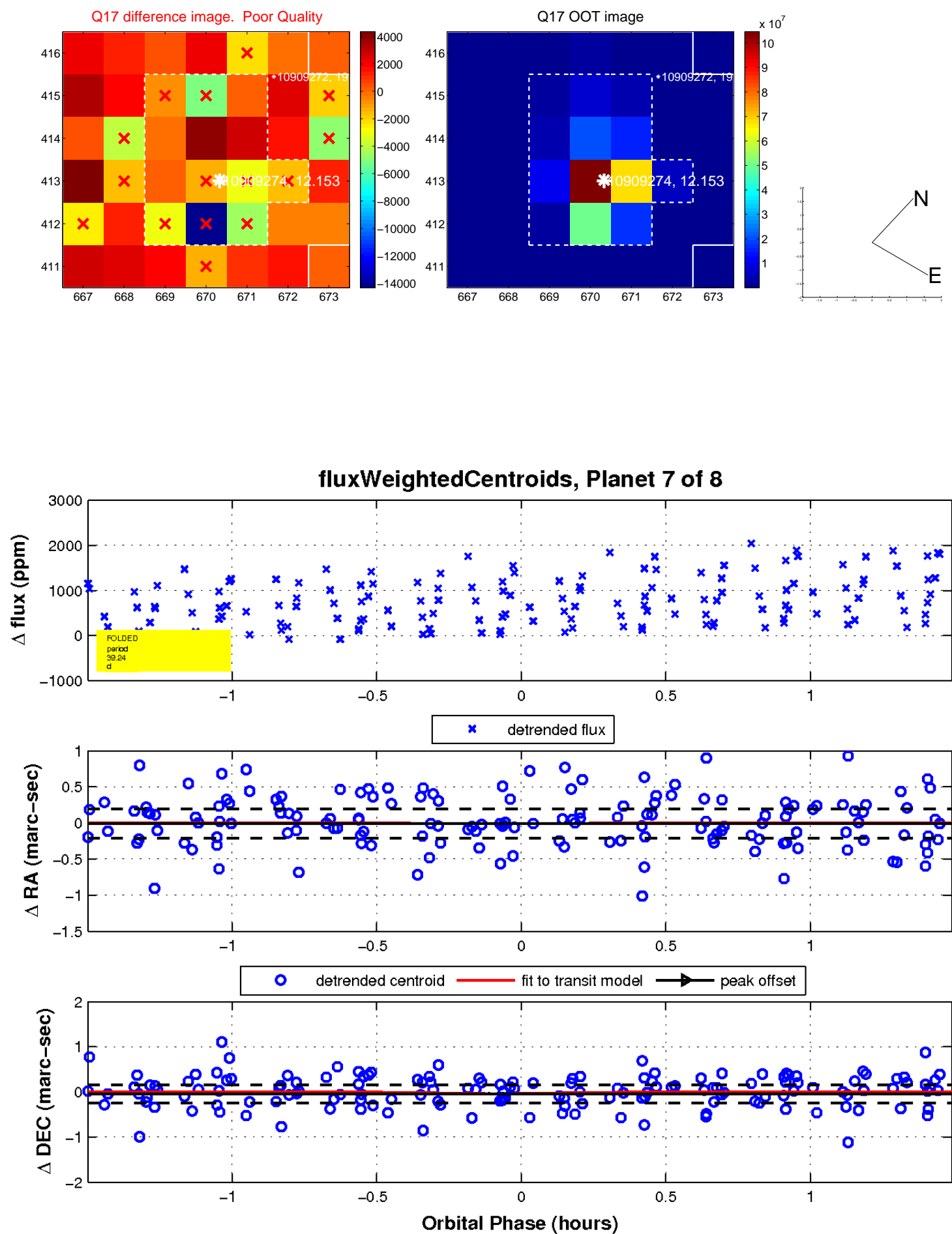
Q16 no difference image



Q16 no OOT image

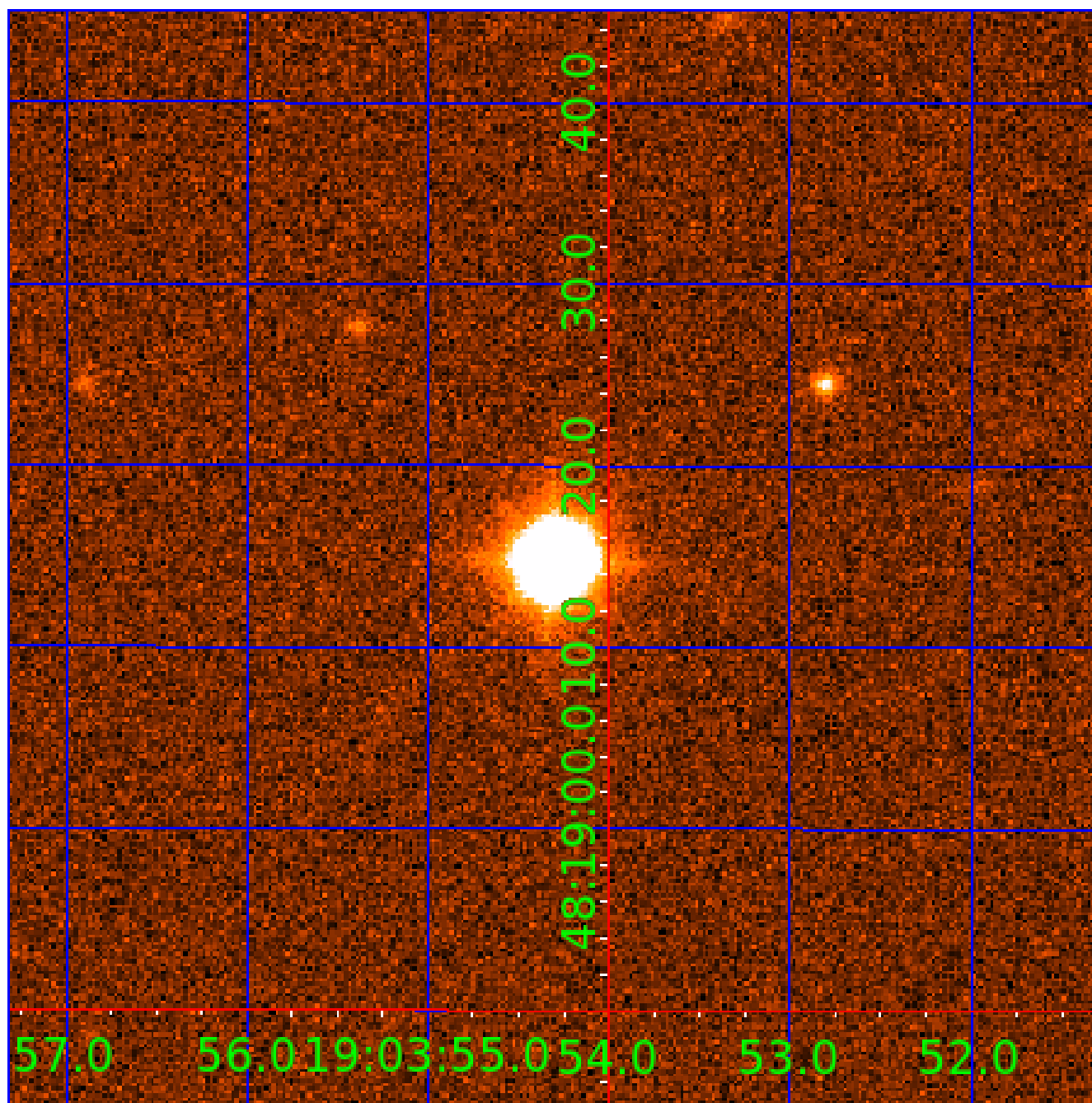


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010909274

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})
010909274-01	OBS	7385.01	39.237869	148.654751	453738.2	3.500	44979.7	-1.0	1.23	6599	65.30	43.79
010909274-02	OBS	No	39.236842	155.230951	345050.7	12.000	28778.8	-1.0	1.23	6599	41.37	43.80
010909274-03	OBS	No	19.620723	148.593957	529.3	37.565	5258.6	34.9	1.23	6599	5.43	110.34
010909274-04	OBS	No	39.239282	156.324147	7594.1	10.500	1106.7	-1.0	1.23	6599	10.82	43.79
010909274-05	OBS	No	13.081122	141.266344	39.5	9.677	503.5	5.1	1.23	6599	0.89	189.45
010909274-06	OBS	No	39.238292	152.979854	2921.6	15.000	373.2	-1.0	1.23	6599	6.71	43.79
010909274-07	OBS	No	39.241582	157.475237	1576.7	15.000	251.8	-1.0	1.23	6599	4.93	43.79
010909274-08	OBS	No	39.232819	159.646855	4493.6	52.422	76.7	134.1	1.23	6599	14.89	43.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010909274-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
010909274-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010909274-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—RESIDUAL_TCE
010909274-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
010909274-06	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010909274-07	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
010909274-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

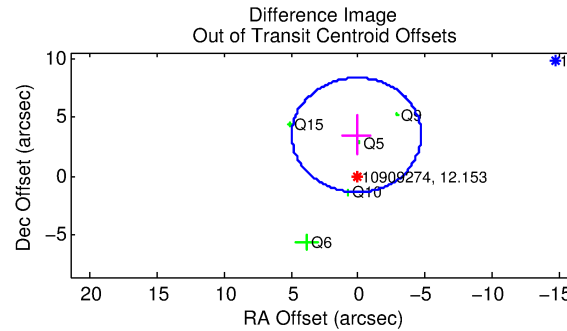
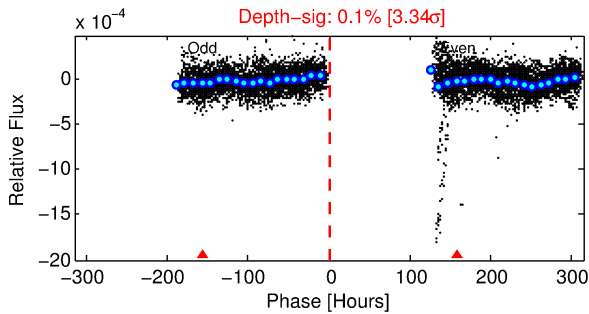
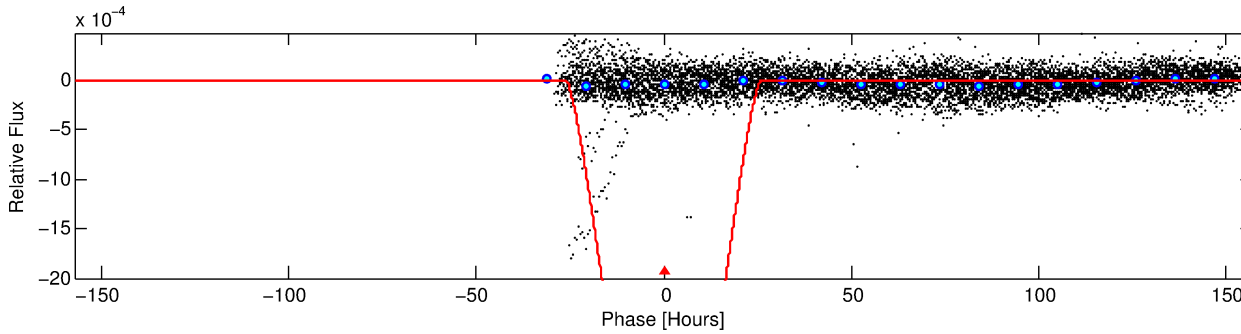
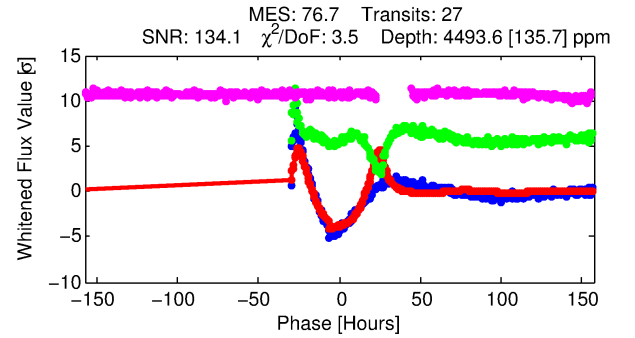
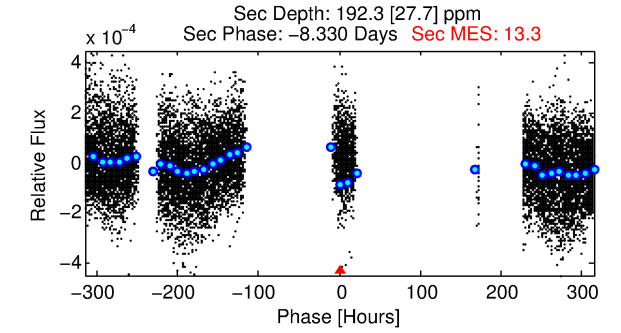
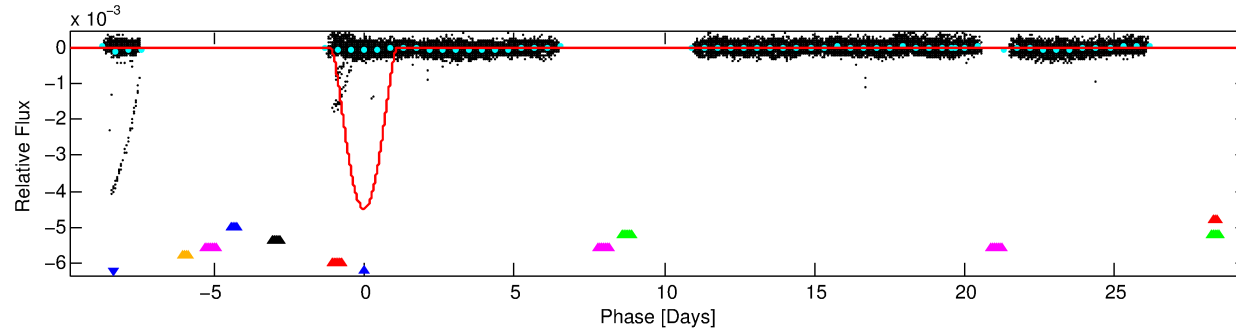
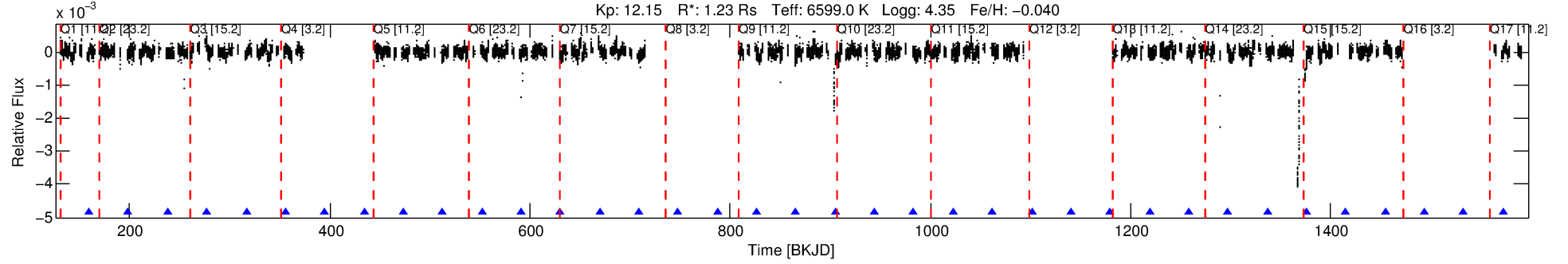
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010909274-08

No Significant Match Found

DV One-Page Summary

KIC: 10909274 Candidate: 8 of 8 Period: 39.233 d
KOI: K07385 Corr: No Ephemeris Match



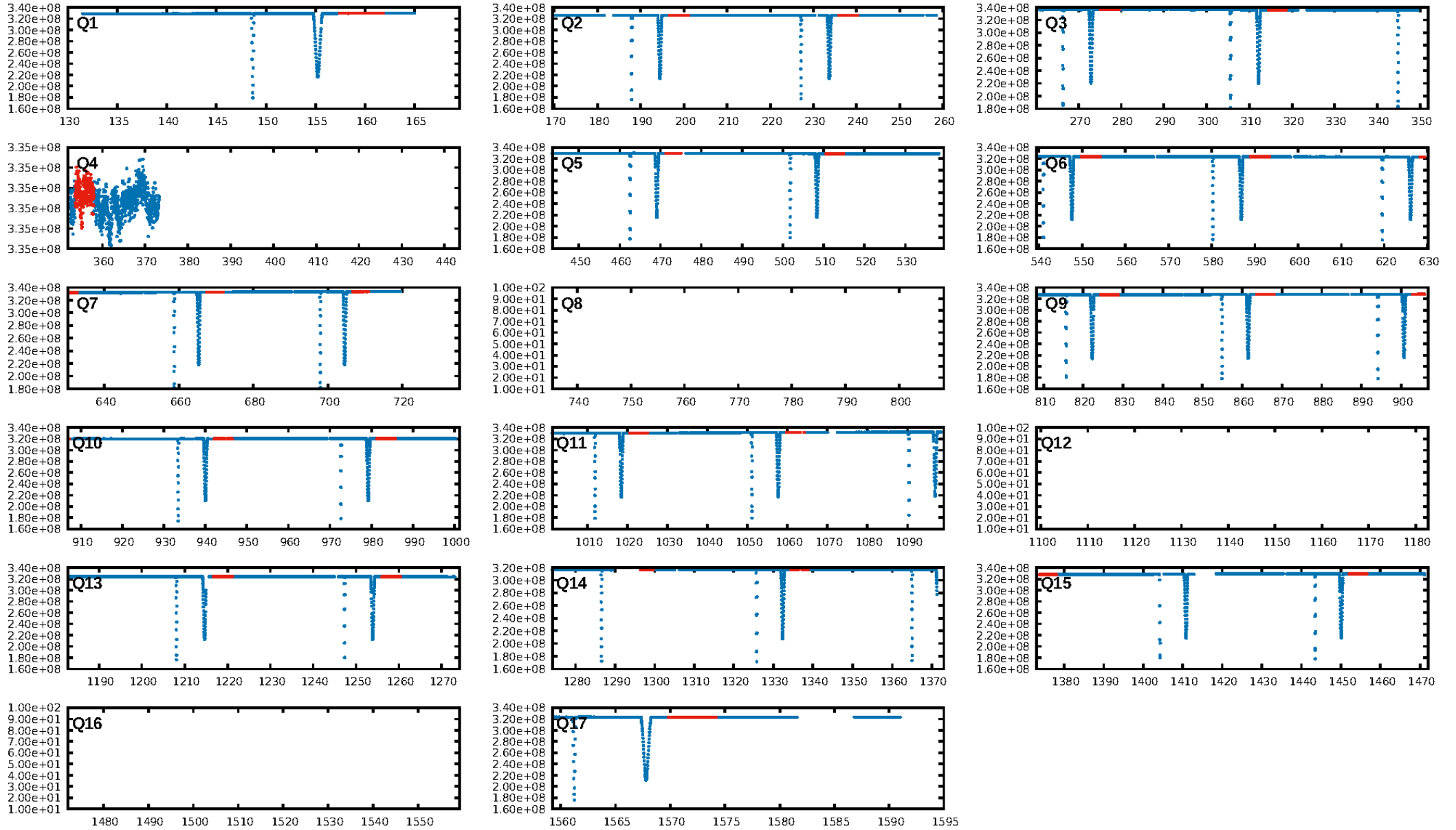
DV Fit Results:

Period = 39.23282 [0.00054] d
Epoch = 159.6469 [0.0172] BKJD
Rp/R* = 0.1106 [0.0137]
a/R* = 2.95 [0.06]
b = 1.00 [0.02]
Seff = 43.80 [12.86]
Teff = 656 [48] K
Rp = 14.89 [3.88] Re
a = 0.2430 [0.0454] AU
Ag = 28.19 [10.98] [2.48 σ]
Teffp = 2337 [184] K [8.85 σ]

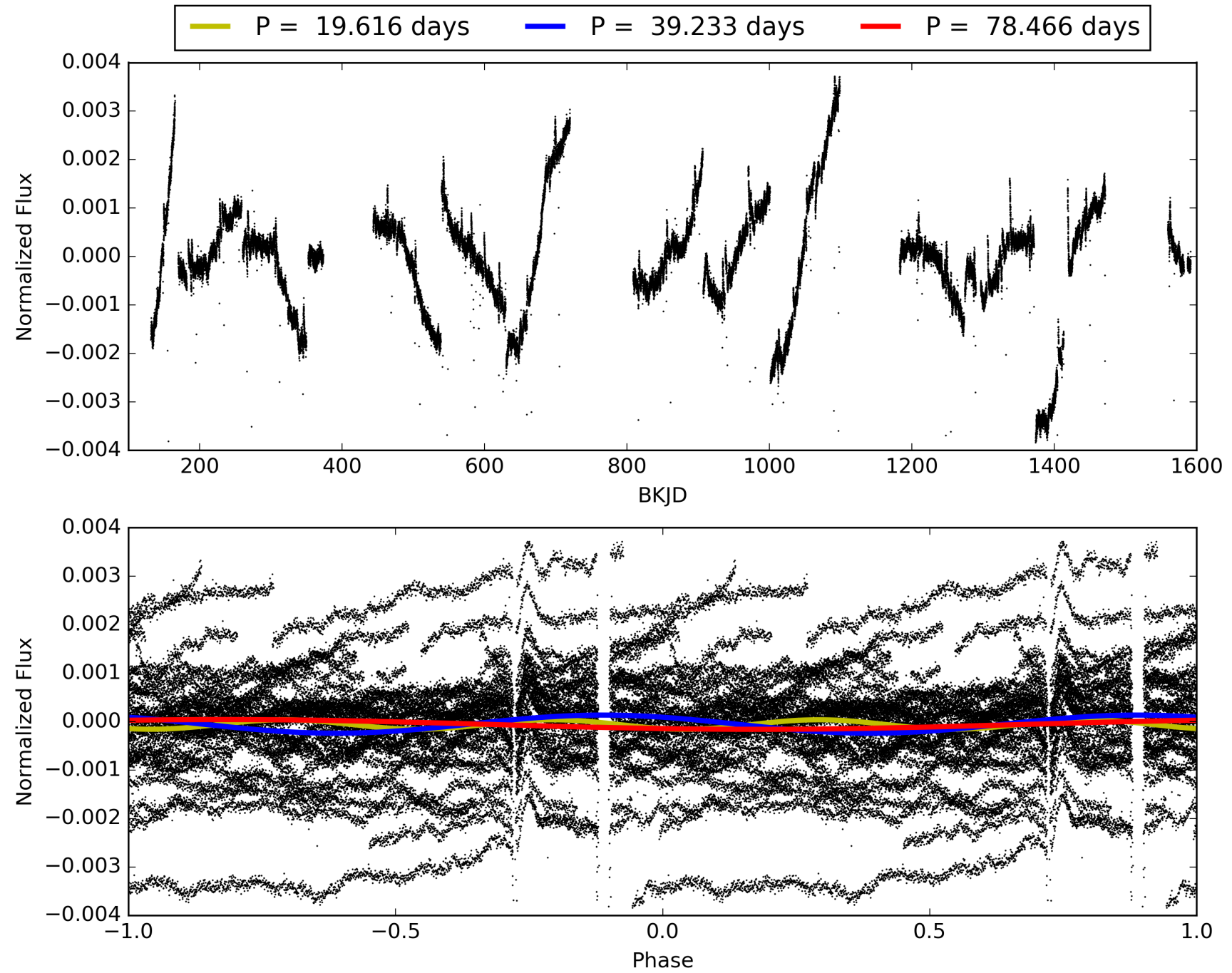
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.30 σ]
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [24/24]
GhostDiagnostic-chr: 1.779
Centroid-sig: 12.7%
Centroid-so: 0.098 arcsec [8.66 σ]
OotOffset-rm: 3.507 arcsec [2.18 σ]
KicOffset-rm: 3.428 arcsec [1.83 σ]
OotOffset-st: 2/1/0/2 [5]
KicOffset-st: 2/1/0/2 [5]
DiffImageQuality-fgm: 0.20 [1/5]
DiffImageOverlap-fno: 0.00 [0/11]

TCE 010909274-08, PDC Light Curves

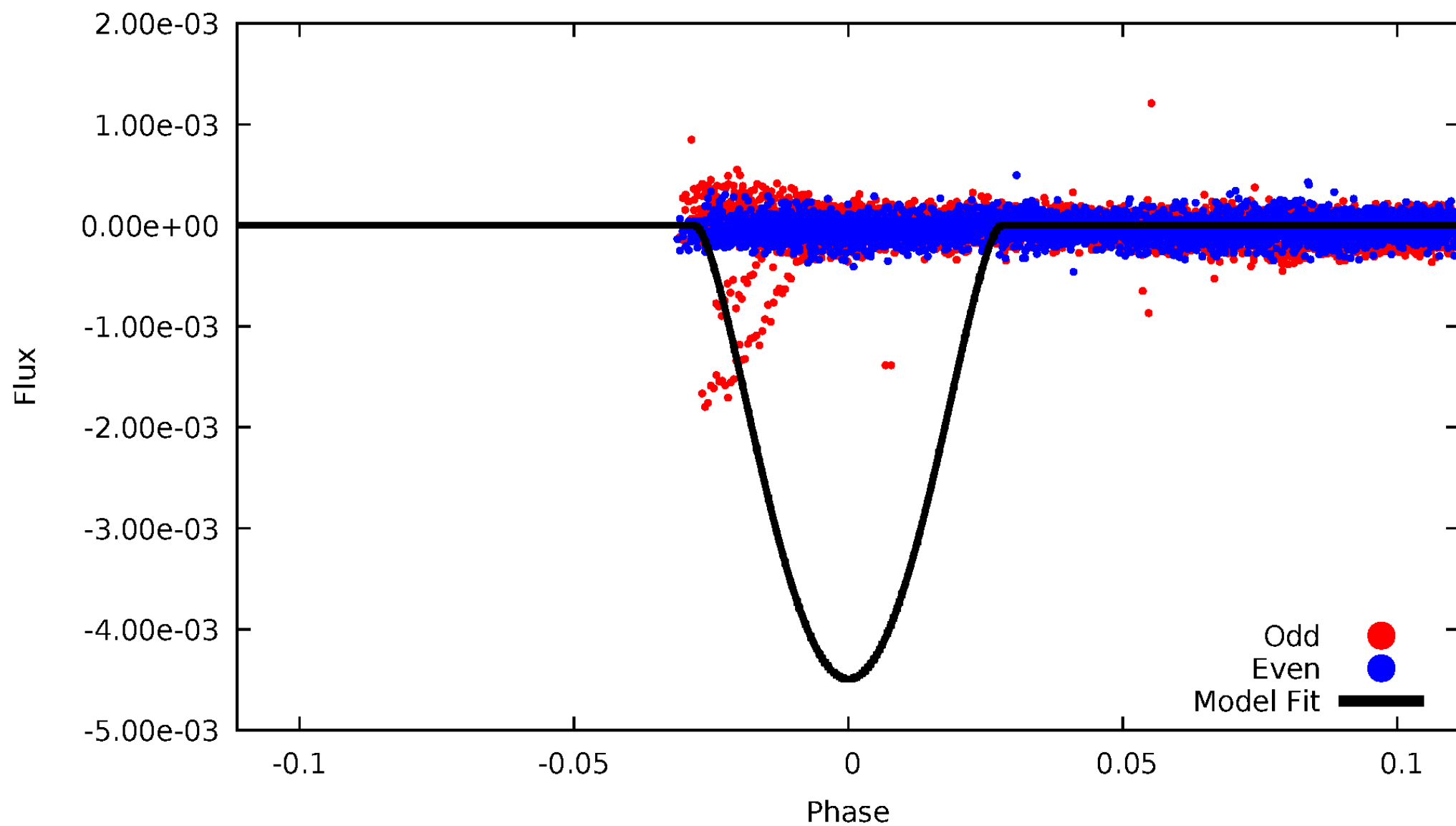


TCE 010909274-08



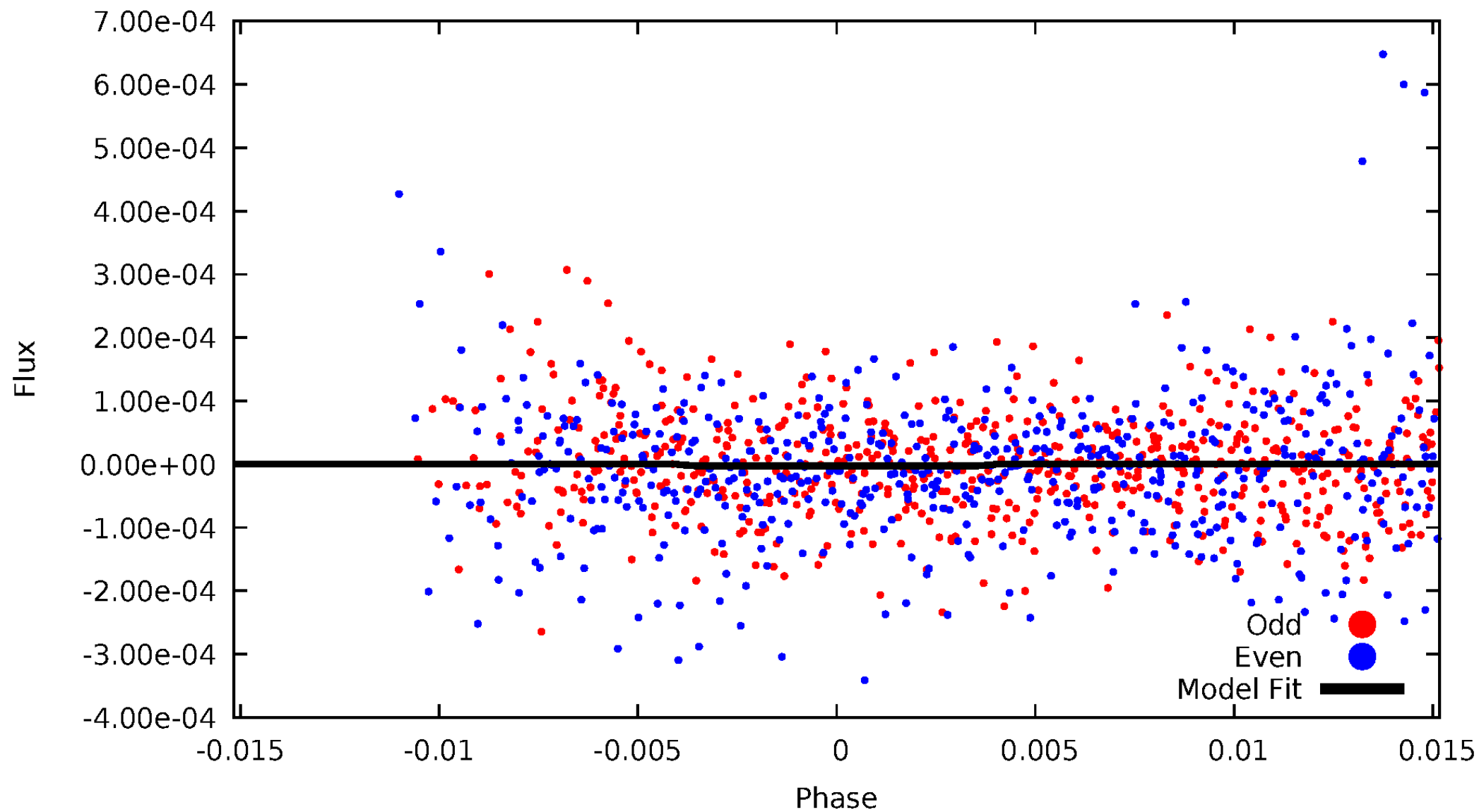
DV Odd/Even

TCE 010909274-08



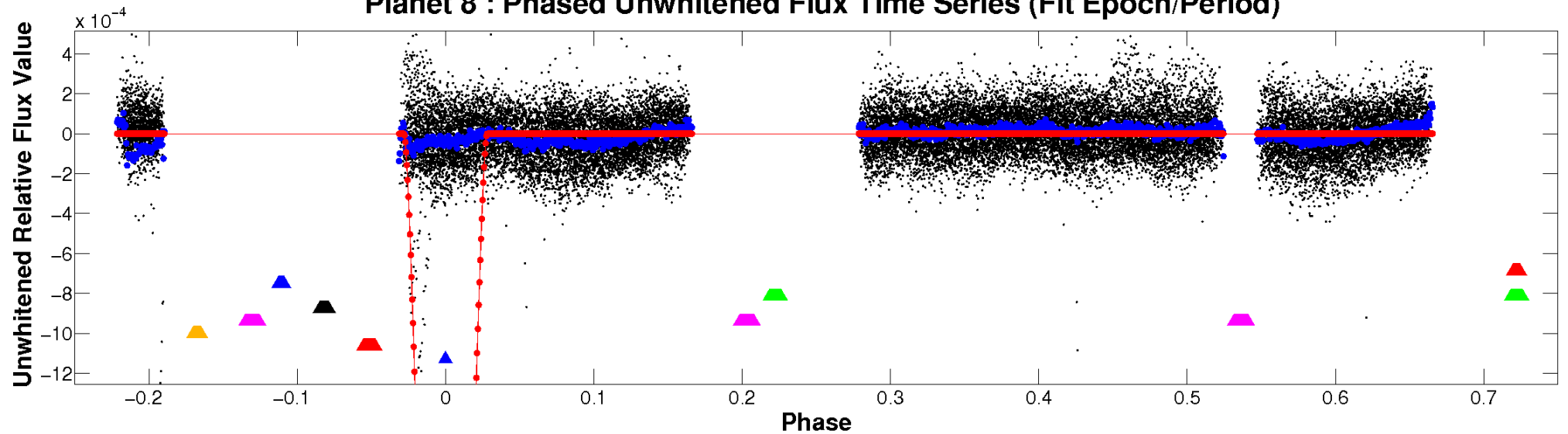
ALT Odd/Even

TCE 010909274-08

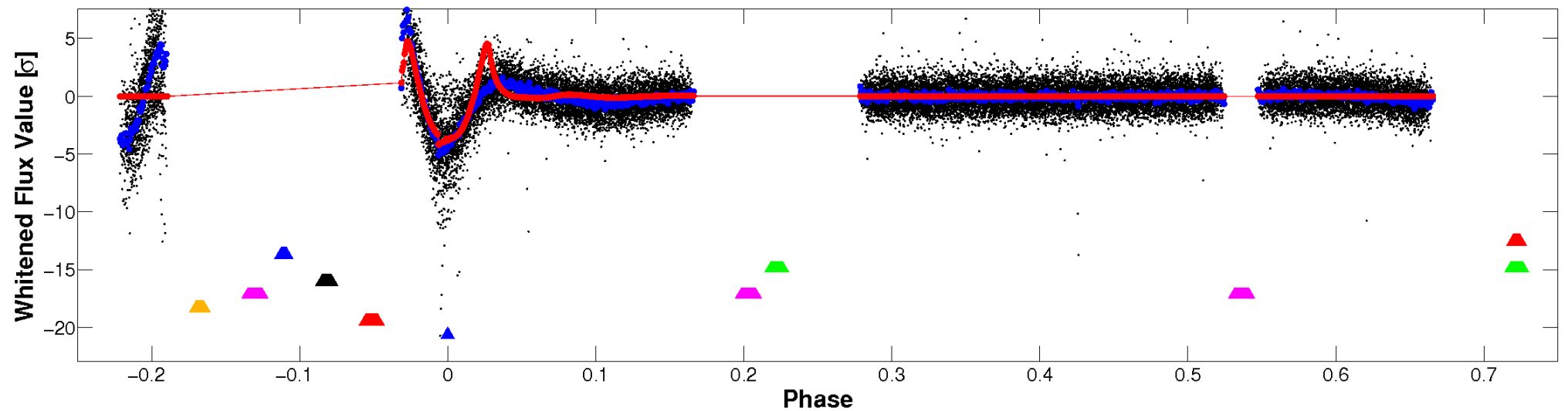


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

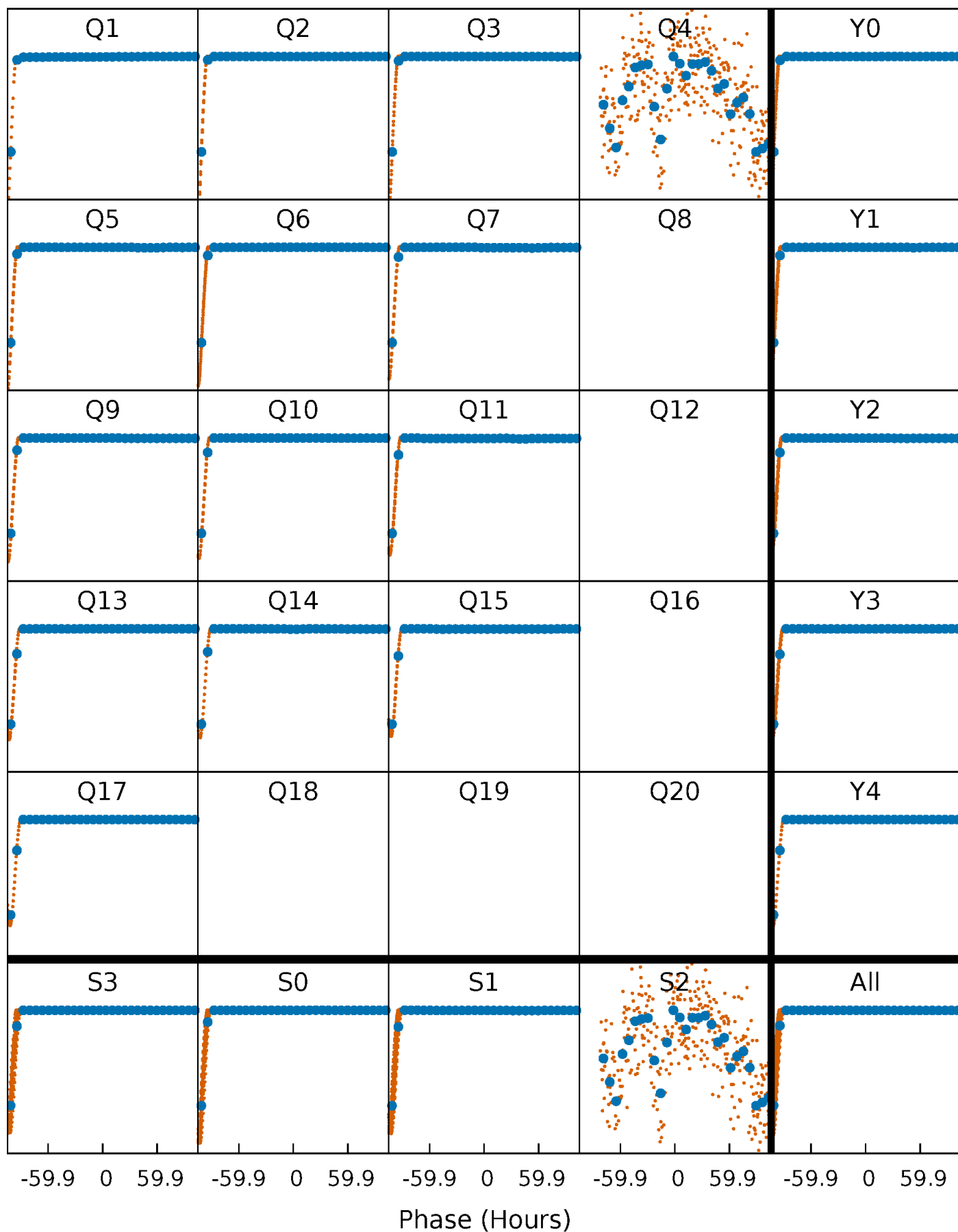


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



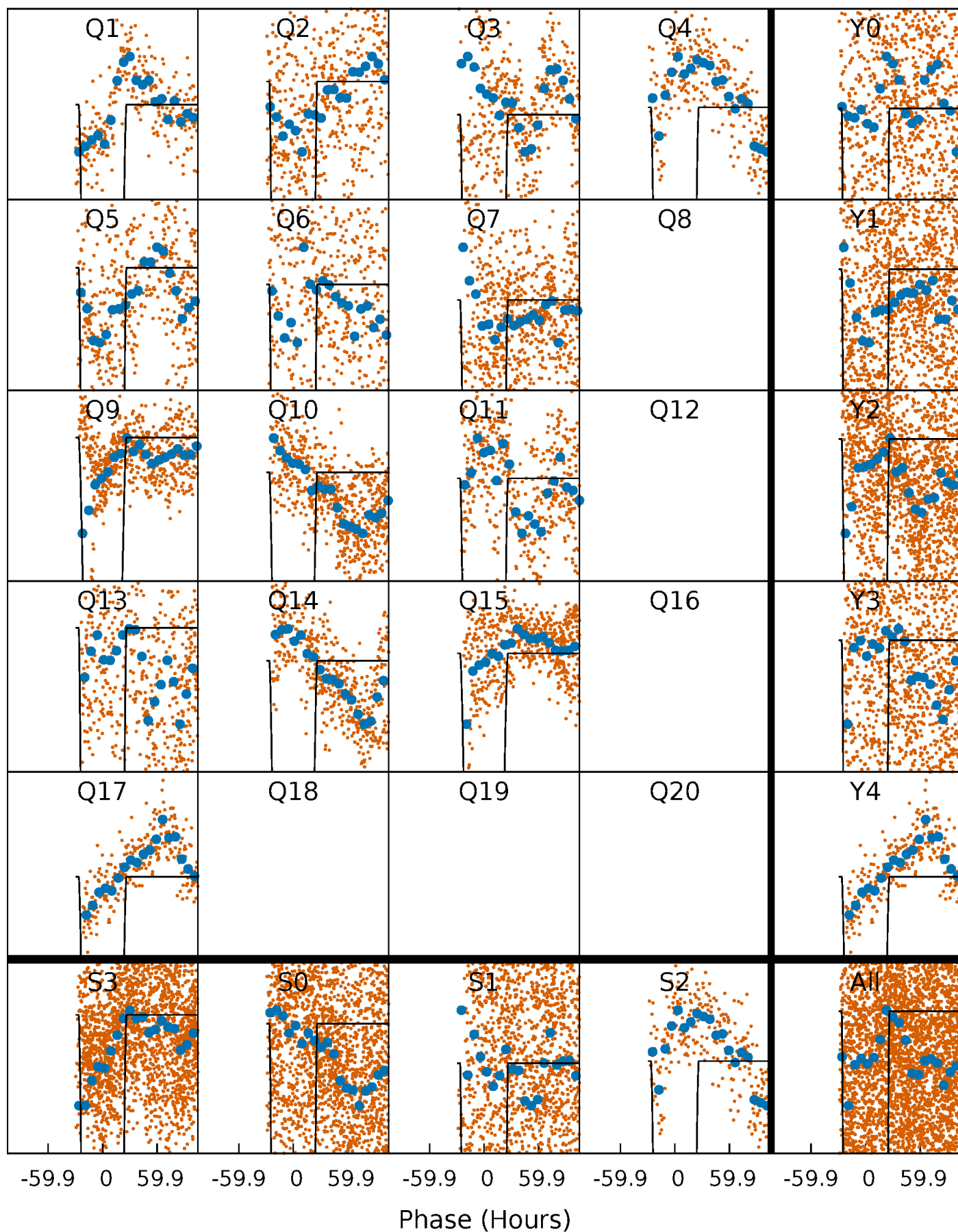
PDC Quarter-Phased Transit Curves

TCE 010909274-08 P= 39.232819 Days $T_0=159.646855$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010909274-08 P= 39.232819 Days $T_0=159.646855$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

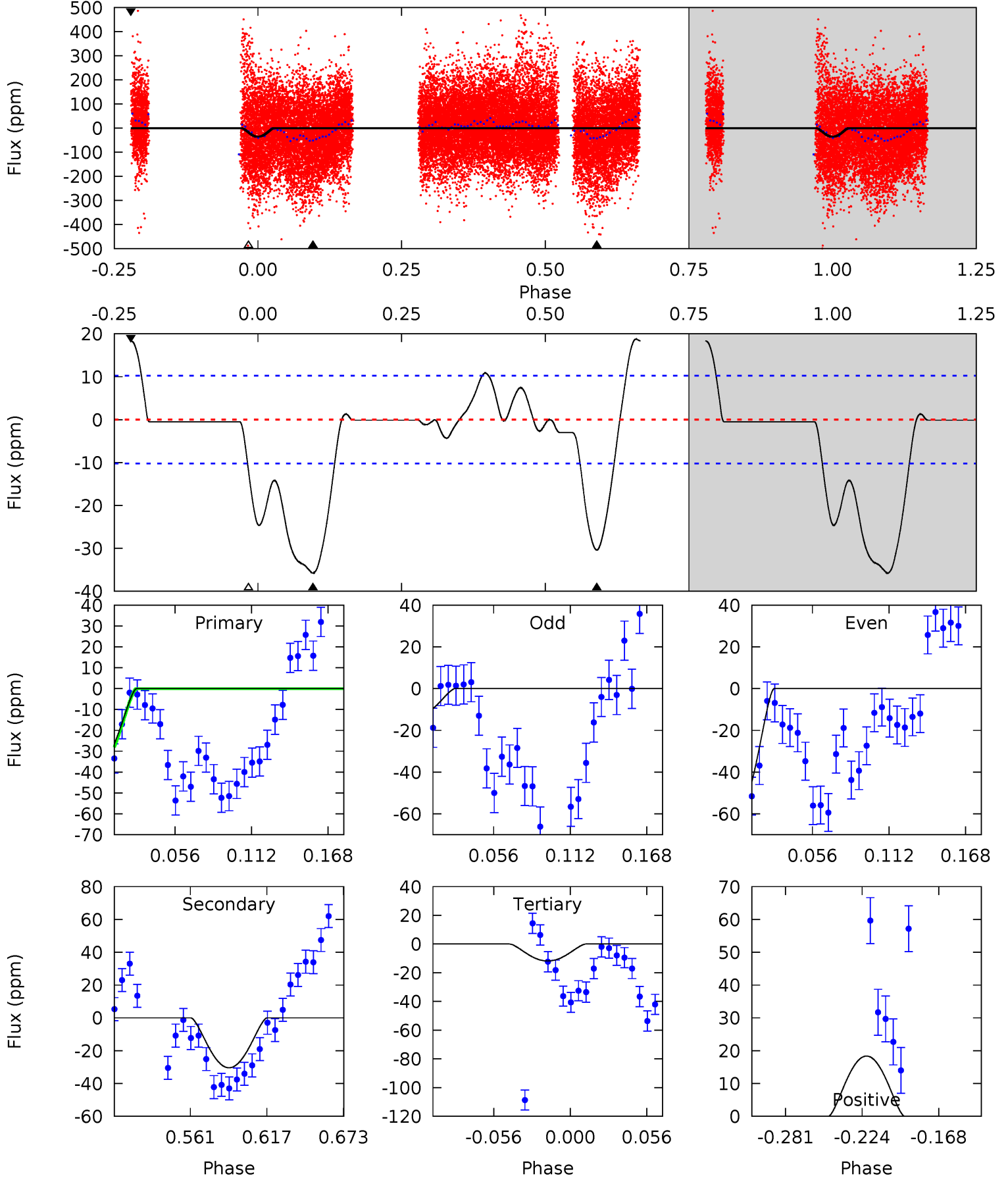
TCE 010909274-08 P= 39.235003 Days $T_0=158.856076$ (BKJD)



DV Model-Shift Uniqueness Test

010909274-08, P = 39.232819 Days, E = 120.414036 Days

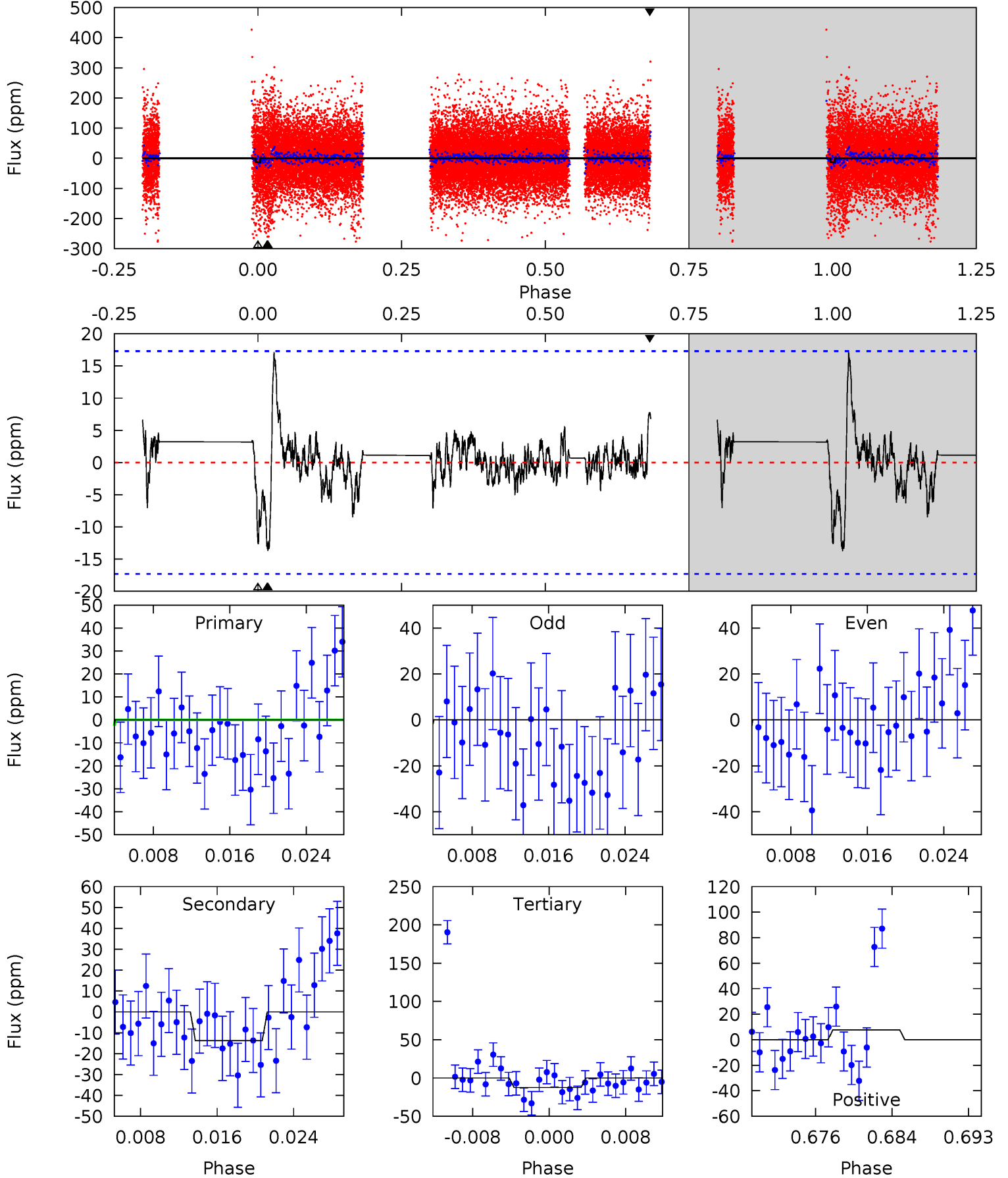
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	13.9	5.41	8.41	4.68	1.91	4.46	11.0	7.97	8.53	5.53	10.9	0.92	0.34	1.10



Alt Model-Shift Uniqueness Test

010909274-08, P = 39.235003 Days, E = 119.621073 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.83	4.02	3.64	2.28	5.07	2.65	0.94	0.20	1.55	0.39	1.74	1.17	5.48	0.56	0.01



Stellar Parameters For KIC 010909274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6599^{+147}_{-213}	$4.350^{+0.060}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$1.234^{+0.283}_{-0.141}$	$1.248^{+0.144}_{-0.173}$	$0.936^{+0.246}_{-0.391}$
	+2%/-3%	+1%/-3%	+625%/-750%	+23%/-11%	+12%/-14%	+26%/-42%
Source	PHO1	FLK73	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 010909274-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-30 ± 2	$15.22^{+2.56}_{-2.31}$	926^{+48}_{-43}	2345^{+89}_{-77}	$4.166^{+1.691}_{-1.051}$
Alt.	-14 ± 3	$1.34^{+1.40}_{-0.89}$	926^{+49}_{-42}	4267^{+2794}_{-902}	232^{+1902}_{-175}

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

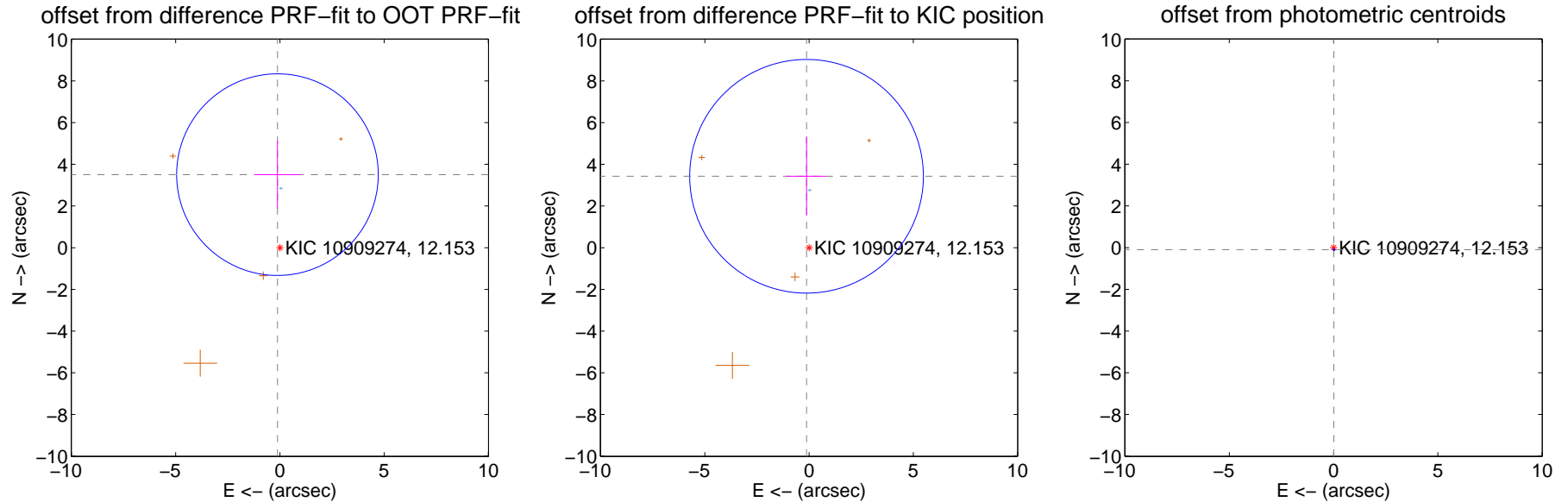
DV Centroid Data

Supplemental centroid analysis for 010909274-08. Kepler magnitude: 12.15. Transit SNR 134.06

There are 1 quarters with good PRF difference image offsets

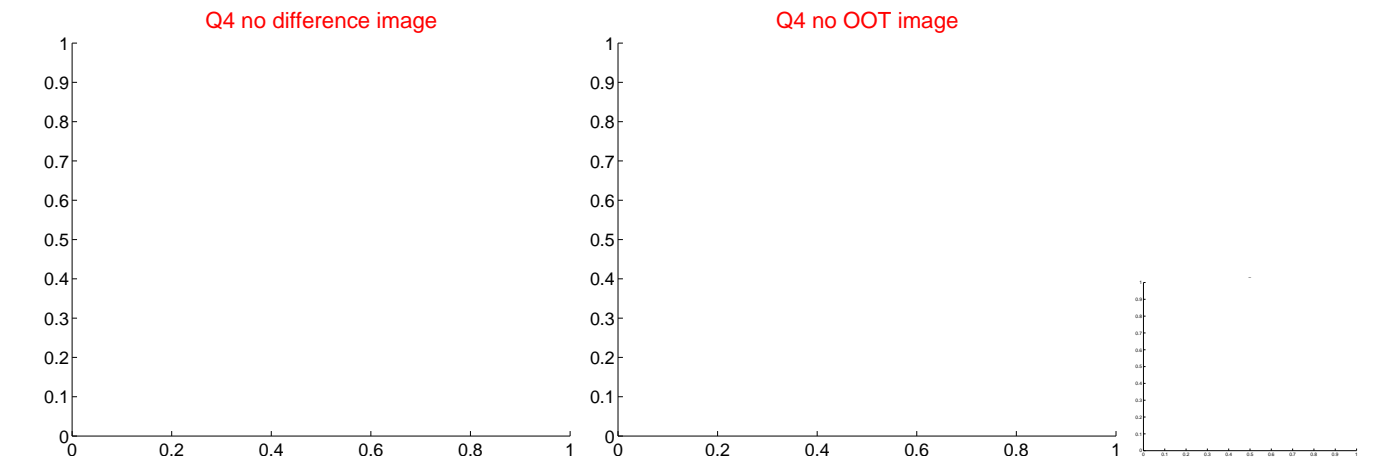
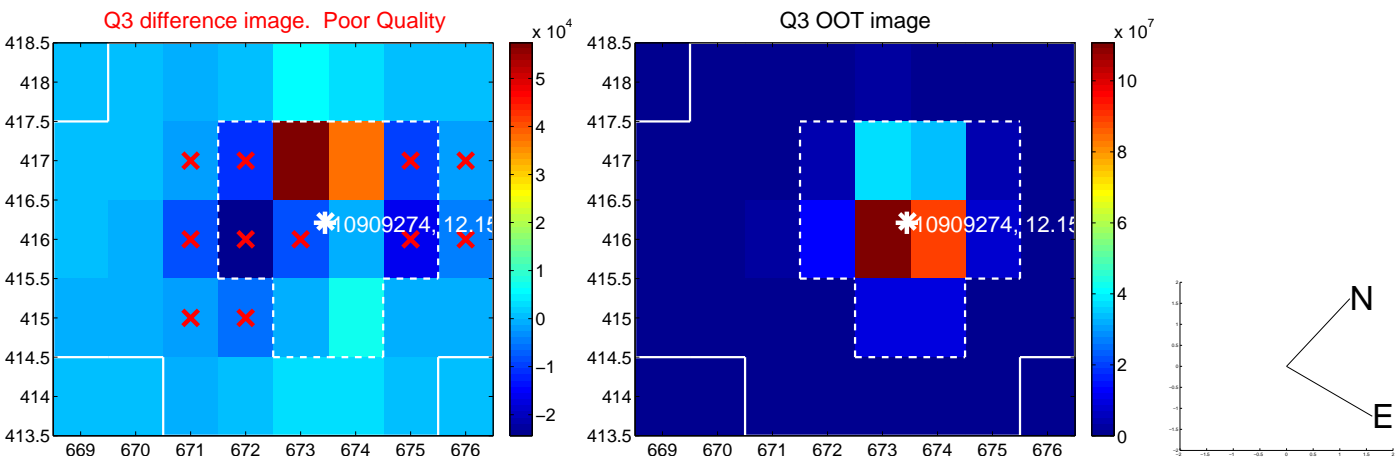
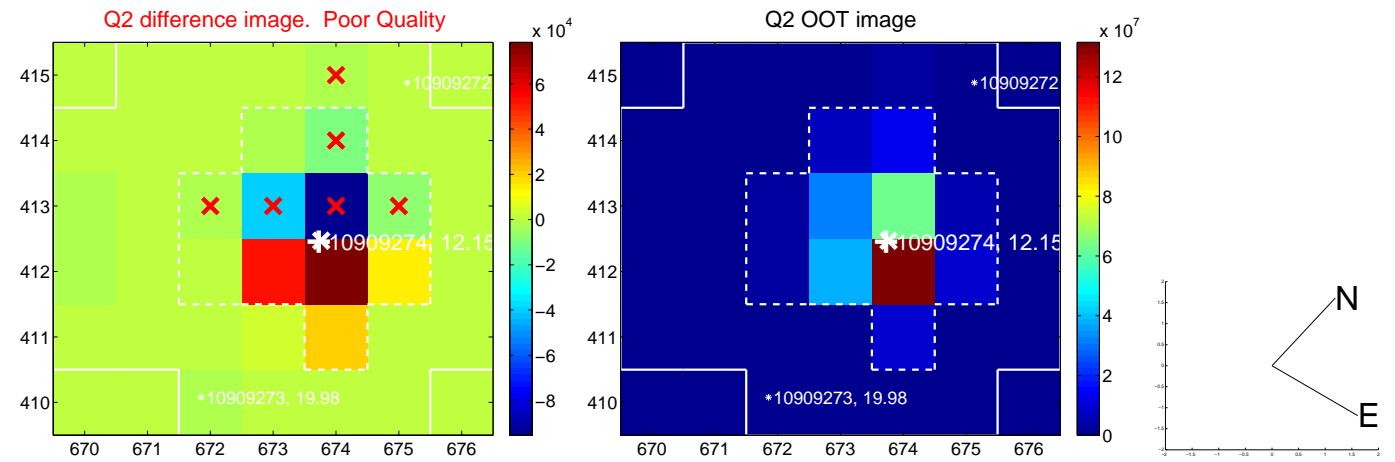
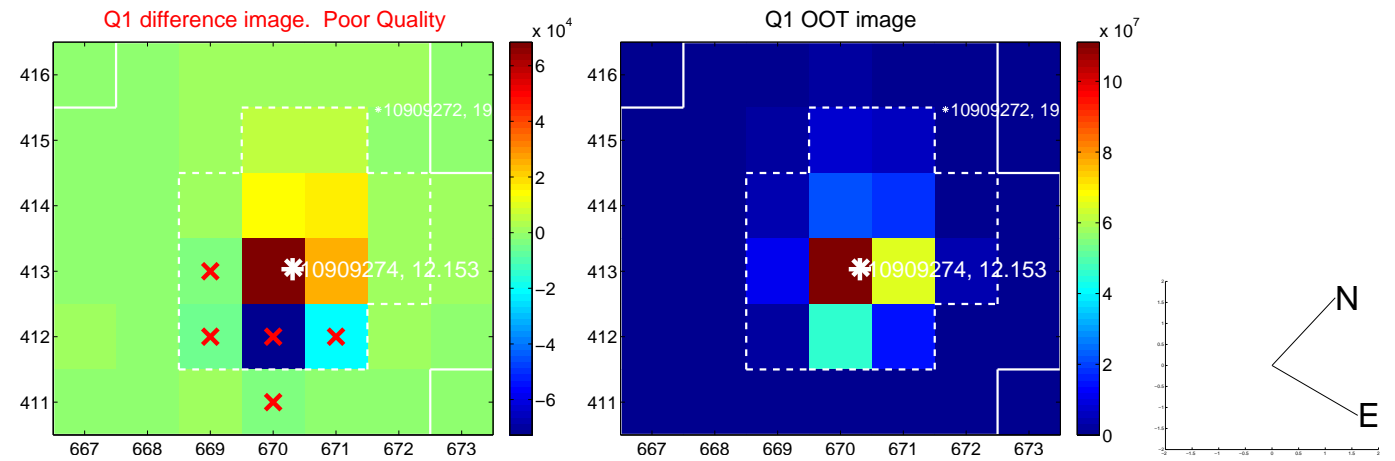
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.507 ± 1.612	2.18	0.118 ± 1.091	3.505 ± 1.621
PRF-fit source offset from KIC position	3.428 ± 1.868	1.83	0.123 ± 0.948	3.426 ± 1.885
photometric centroid source offset	0.10 ± 0.01	8.66	-0.01 ± 0.01	-0.10 ± 0.01

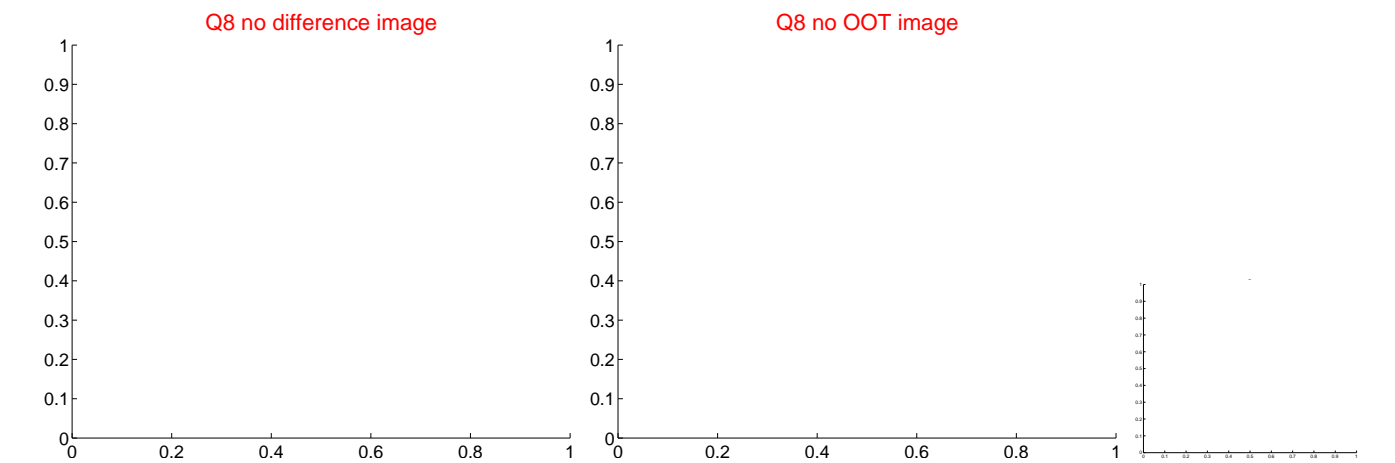
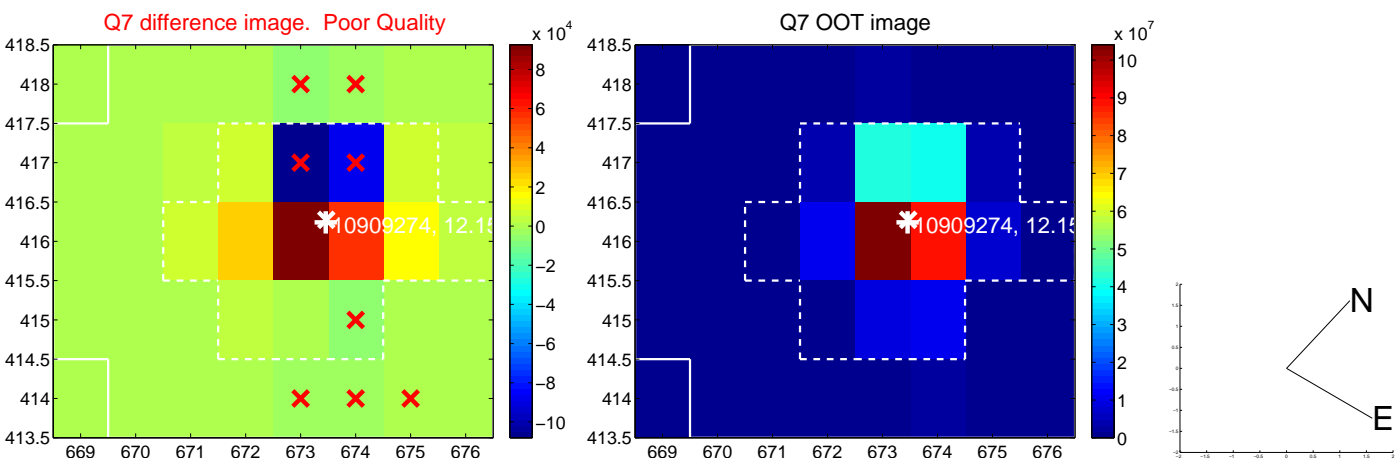
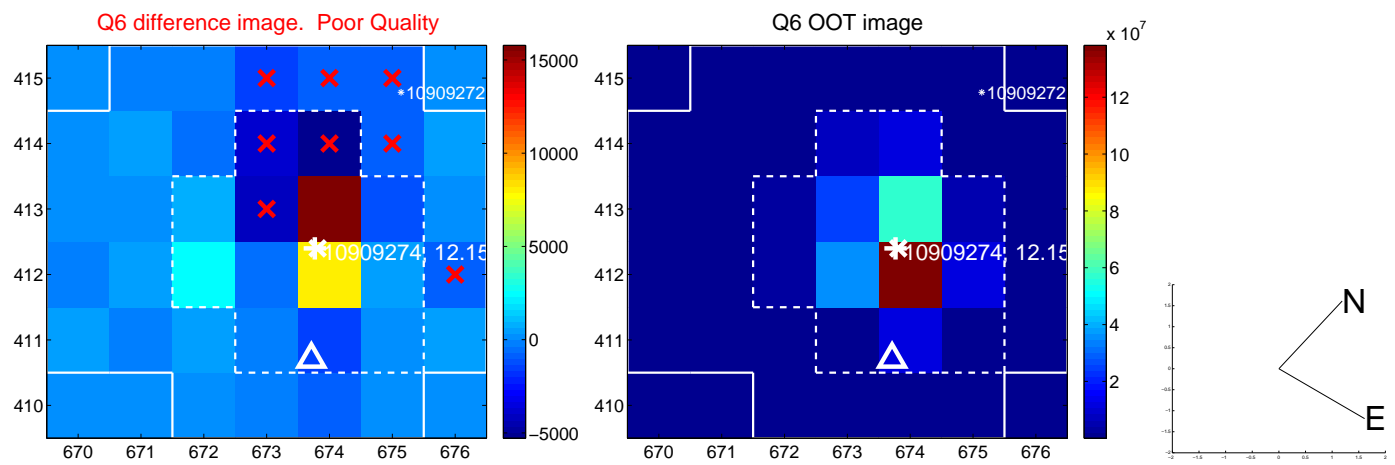
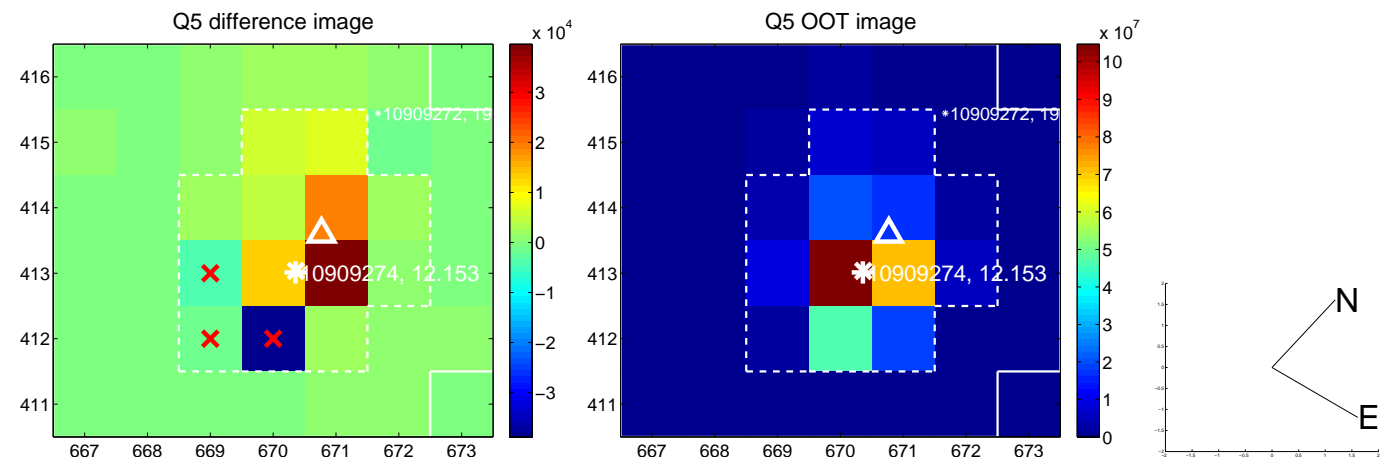


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

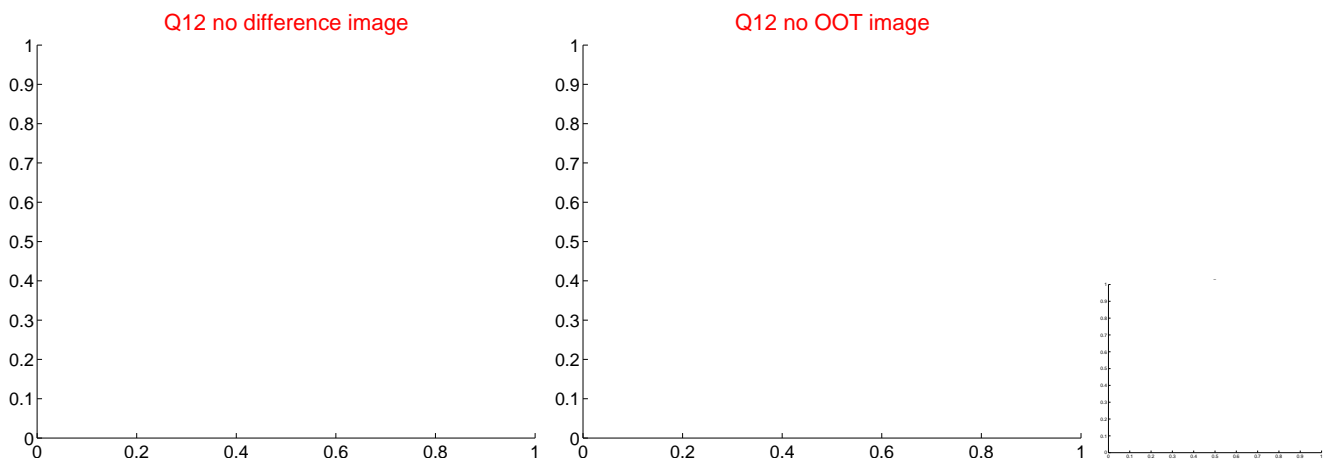
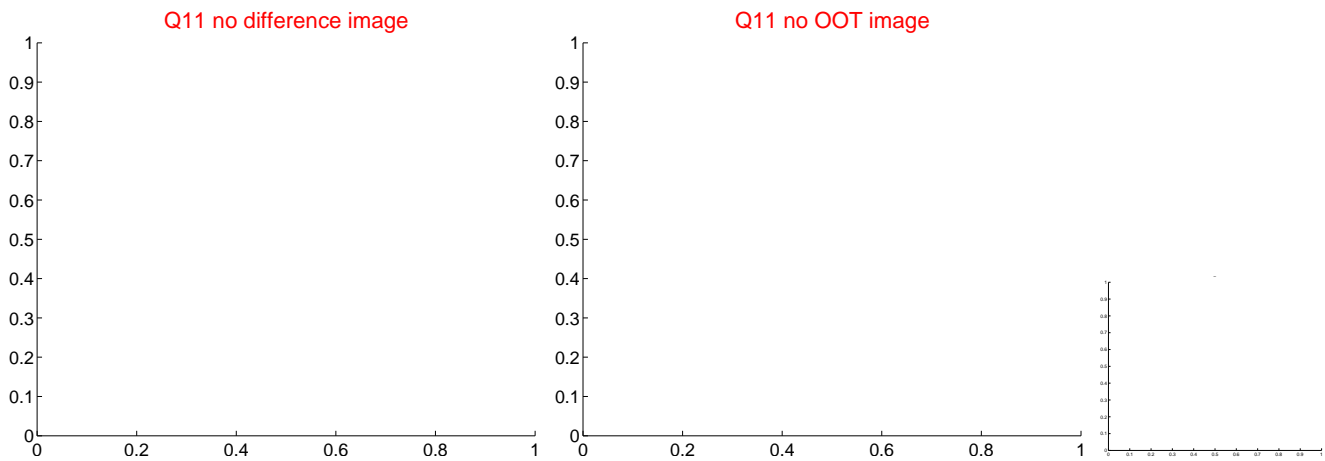
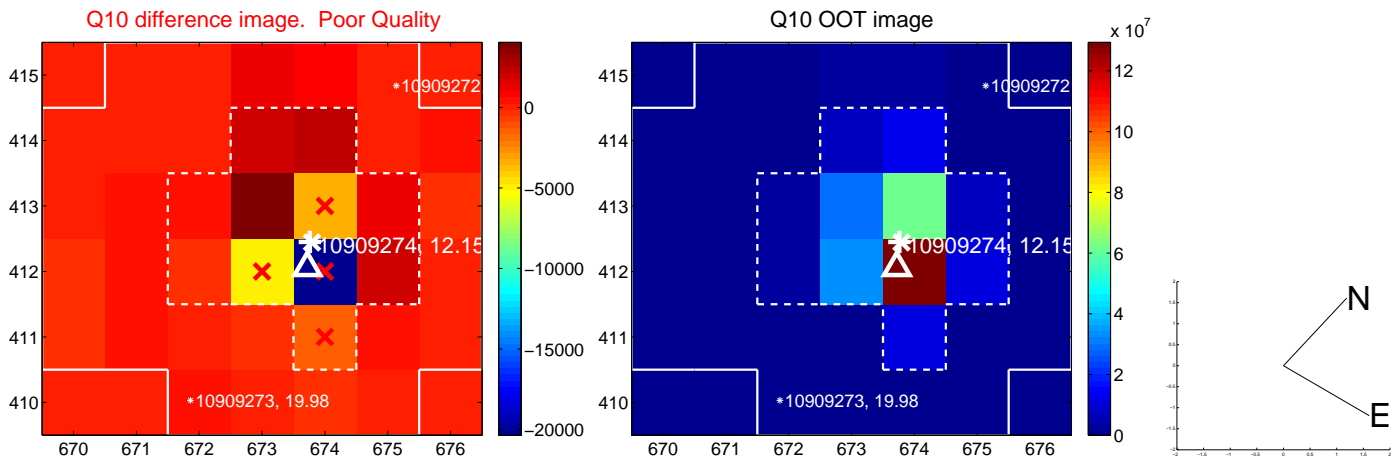
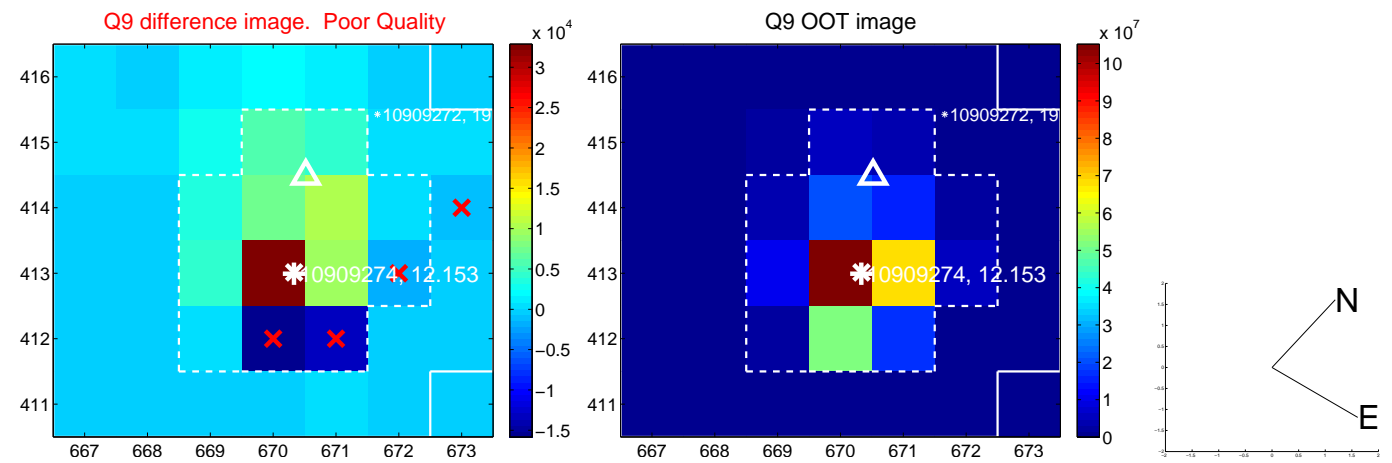
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



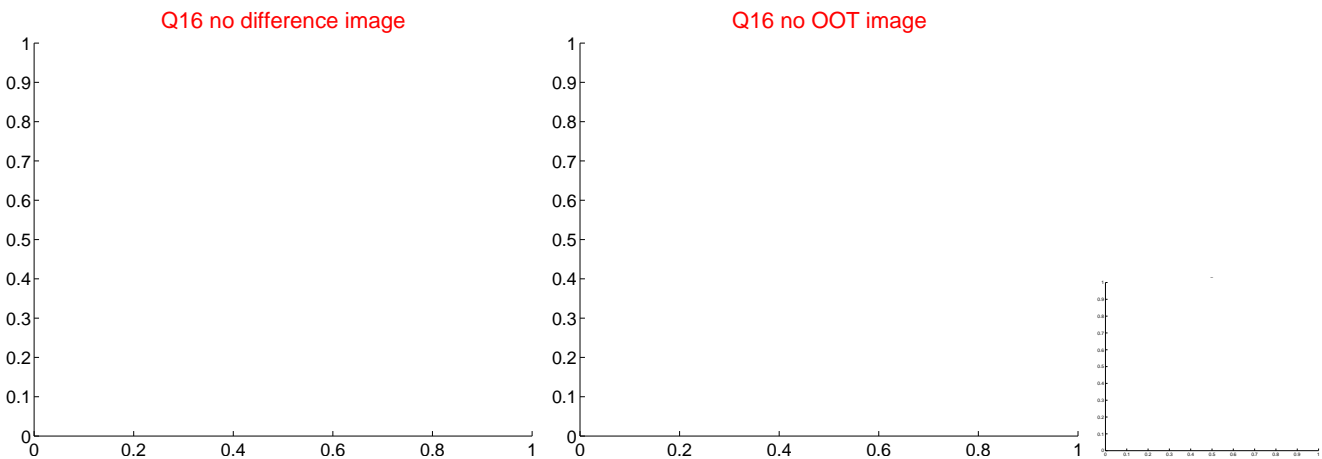
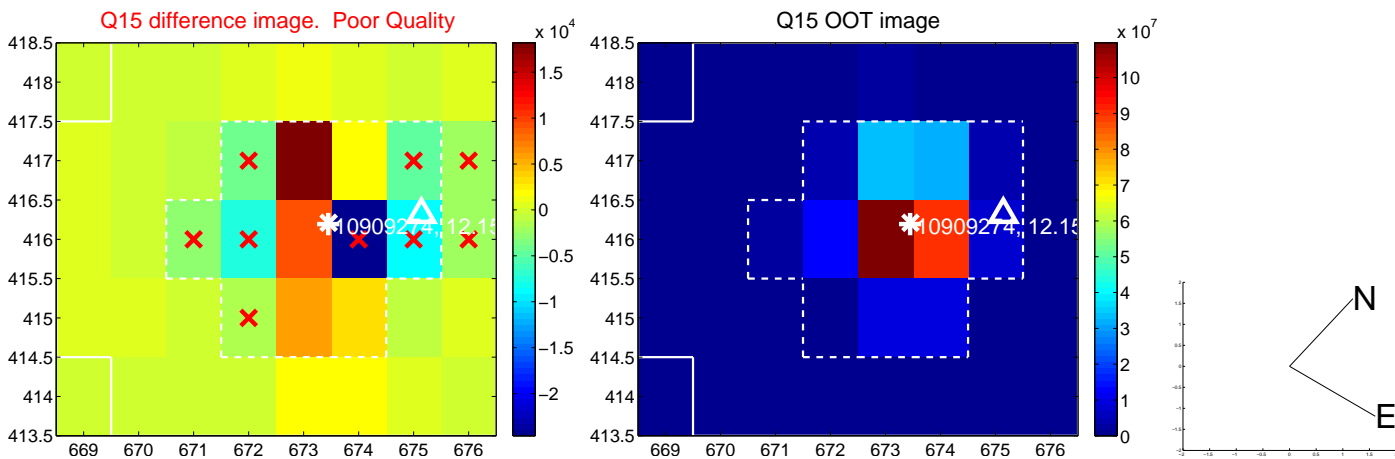
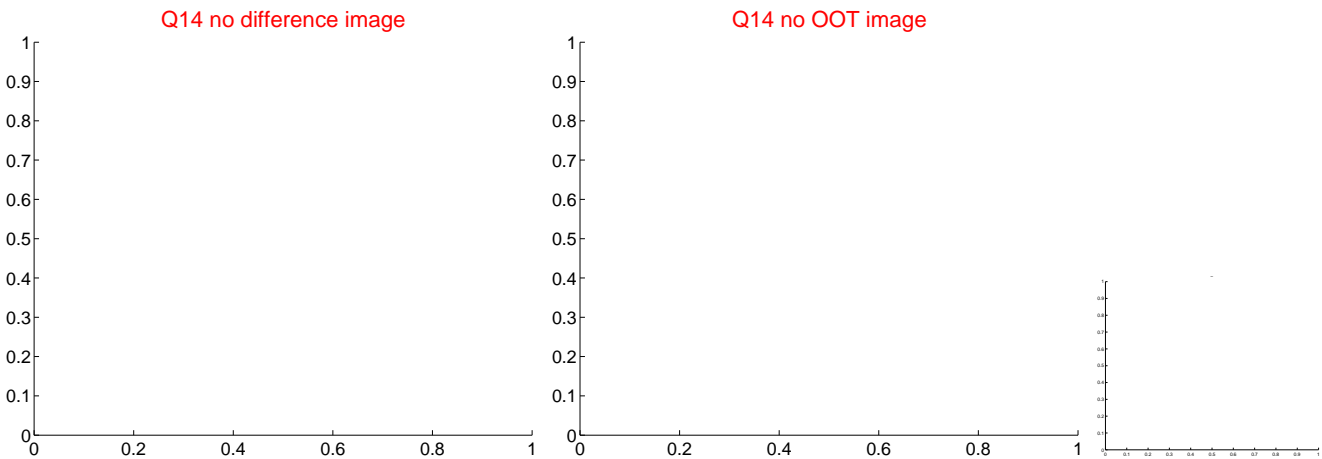
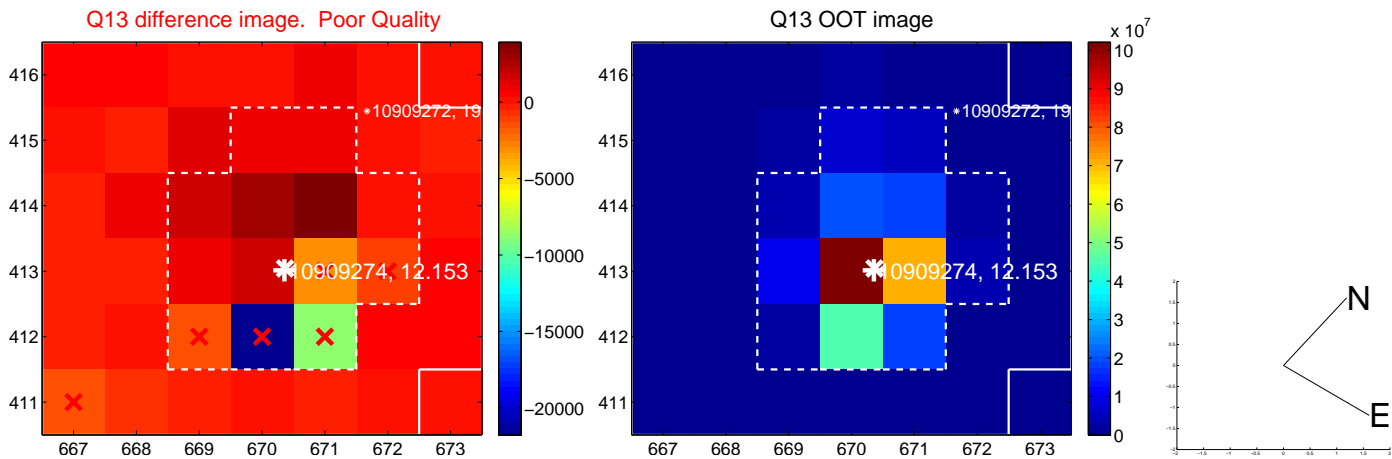
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



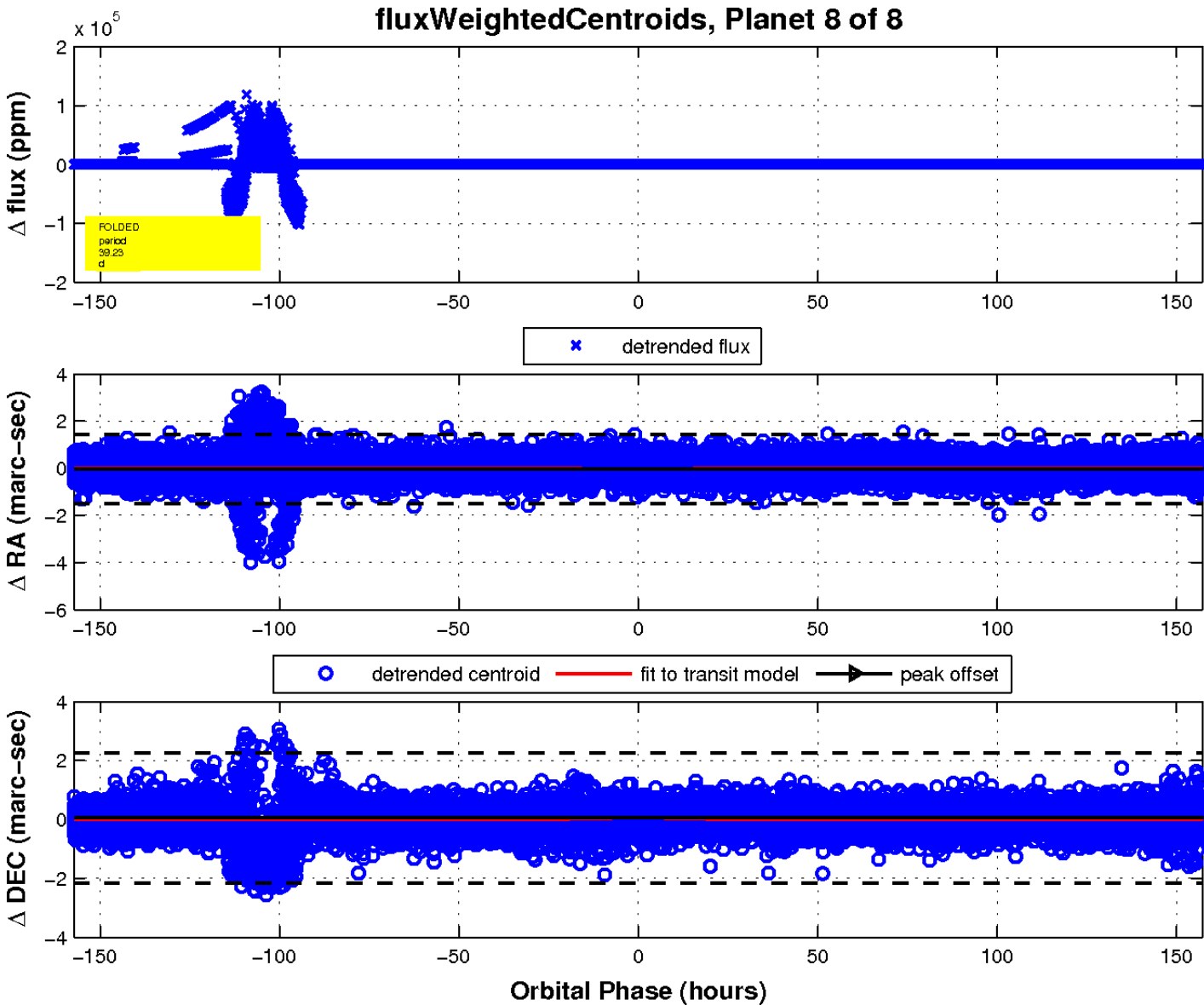
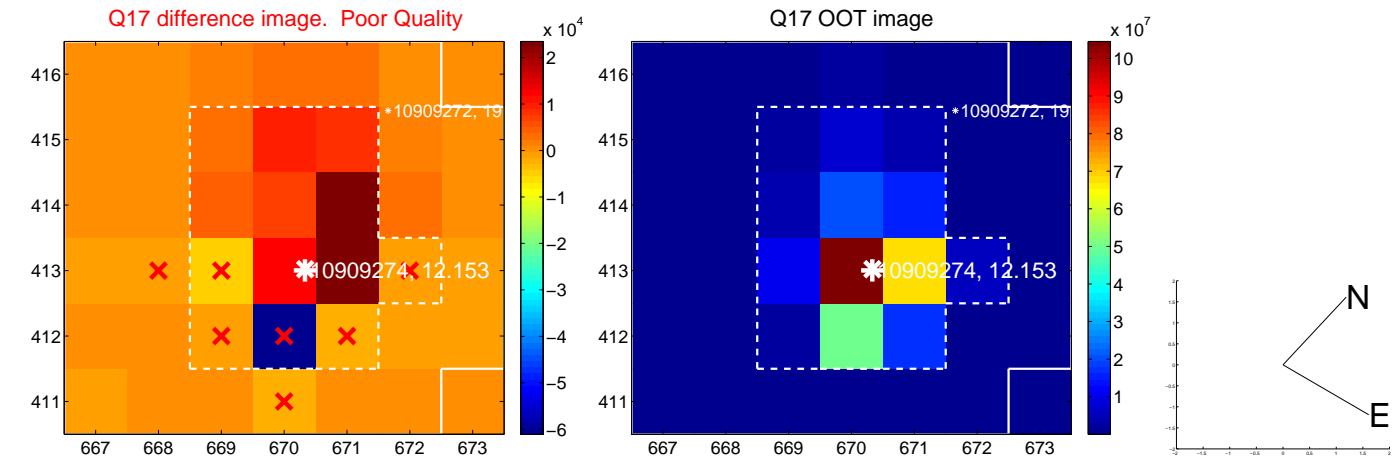
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

