

KIC 008906045

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})
008906045-01	OBS	3789.01	2.347420	133.687739	500.6	6.497	25.1	20.9	1.14	5891	3.04	1206.77
008906045-02	OBS	No	381.542243	411.692744	328.8	6.581	13.6	0.4	1.14	5891	2.35	1.36
008906045-03	OBS	No	381.518026	411.155410	22604.0	21.521	13.4	11.9	1.14	5891	18.11	1.36
008906045-04	OBS	No	355.487147	426.952465	3399.0	3.780	13.3	5.3	1.14	5891	12.30	1.50
008906045-05	OBS	No	184.896707	197.818890	6454.6	9.732	12.2	8.9	1.14	5891	16.64	3.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008906045-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_KIC_POS—EPHEM_MATCH
008906045-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008906045-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
008906045-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008906045-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 008906045-01

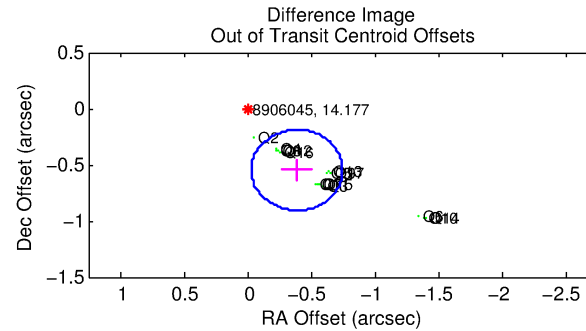
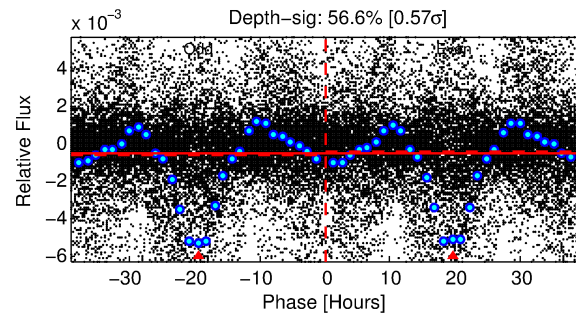
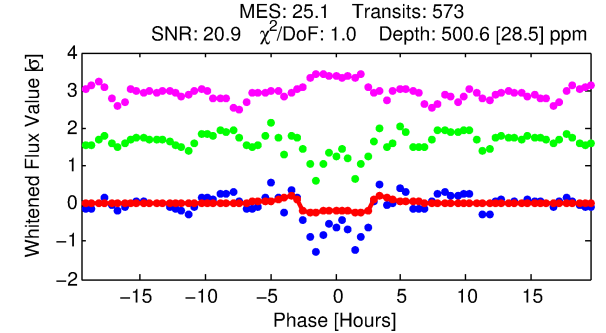
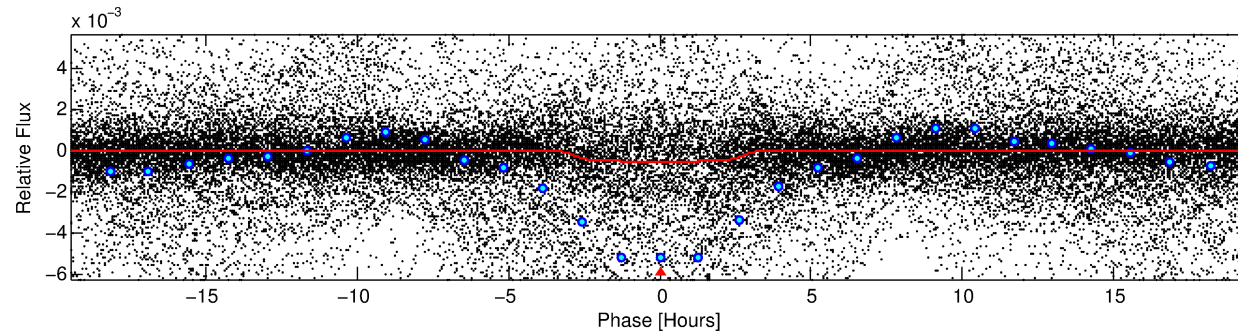
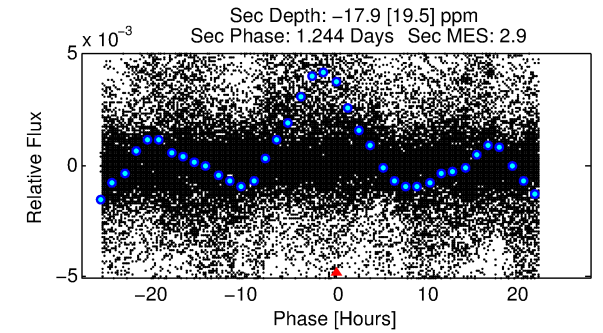
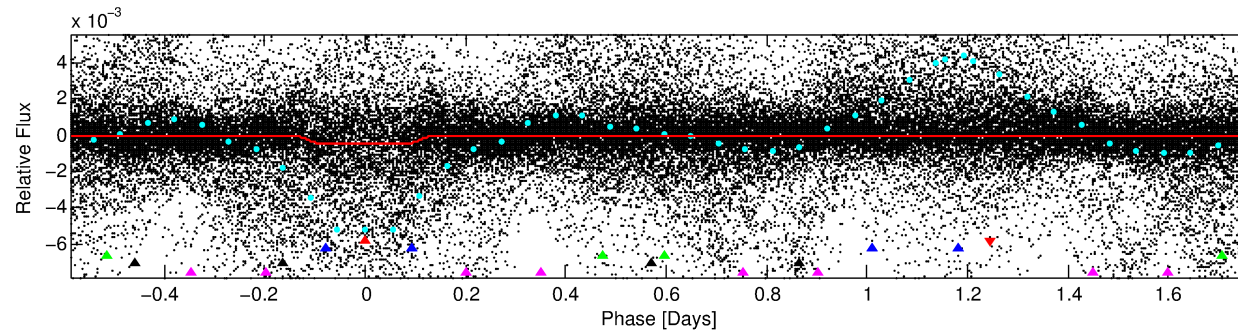
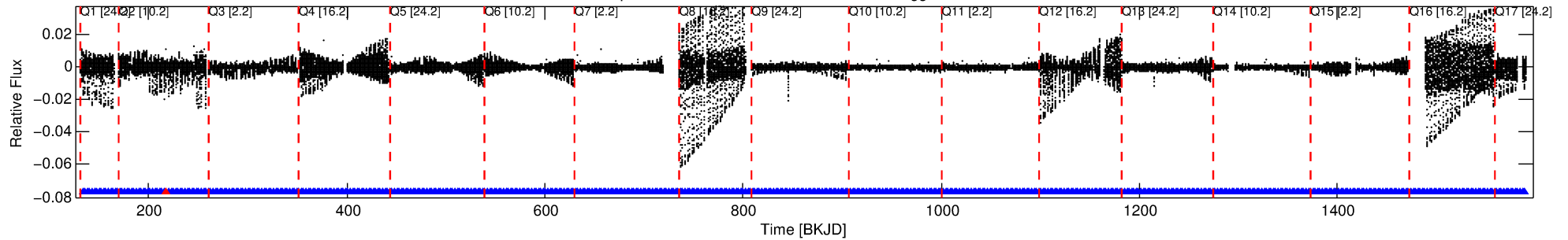
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (μ)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
008906045-01	8906045	008906039-pri	8906039	1:1	3.9	1	-1	12.62	14.17	159.88	Direct-PRF	0	1.67	0.90

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8906045 Candidate: 1 of 5 Period: 2.347 d
KOI: K03789 Corr: No Ephemeris Match

Kp: 14.18 R*: 1.14 Rs Teff: 5891.0 K Logg: 4.30 Fe/H: -0.140



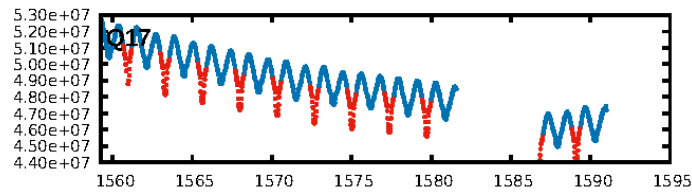
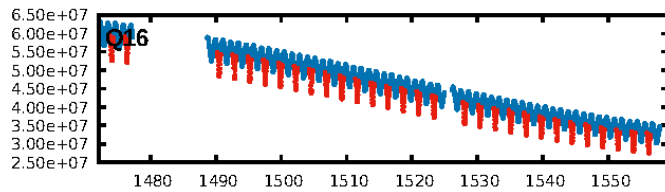
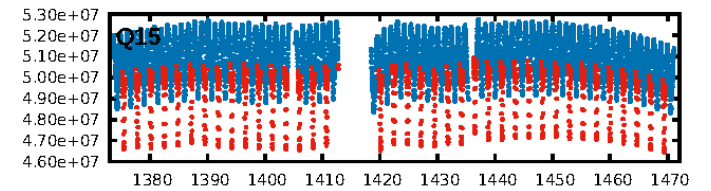
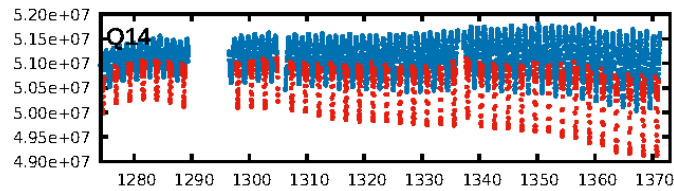
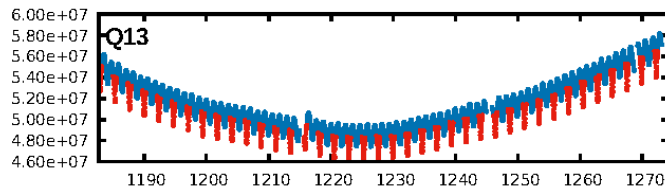
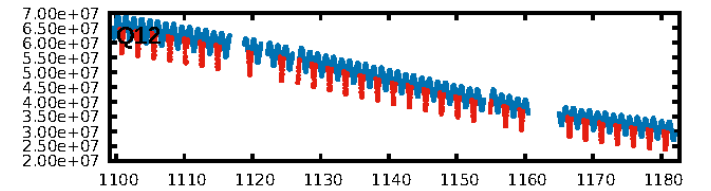
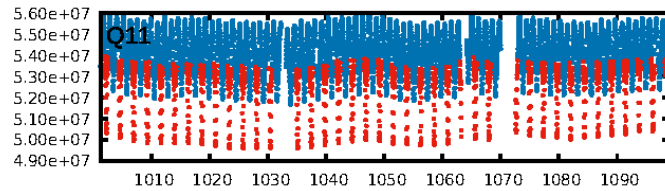
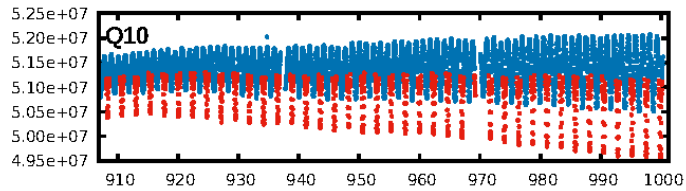
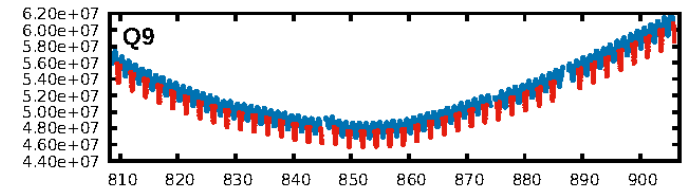
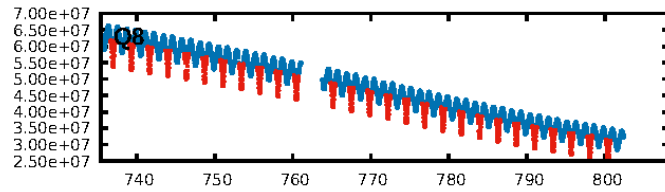
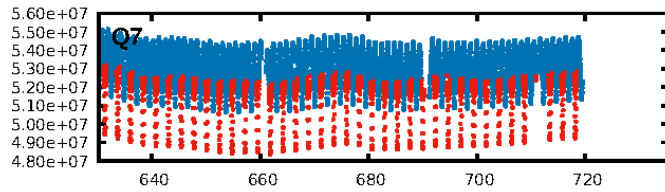
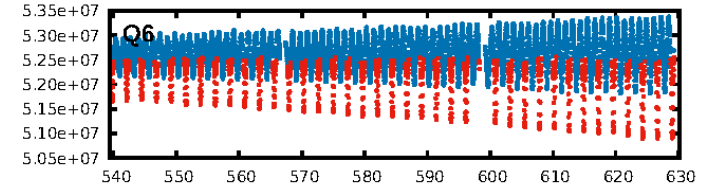
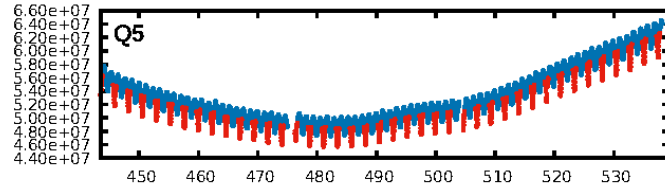
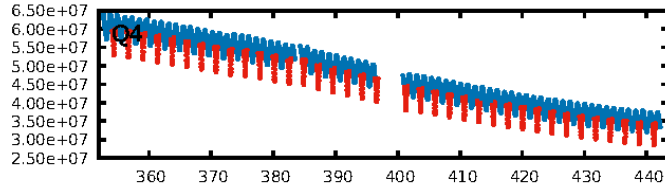
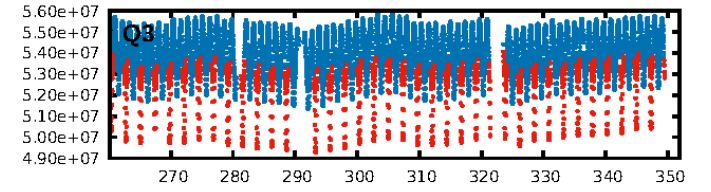
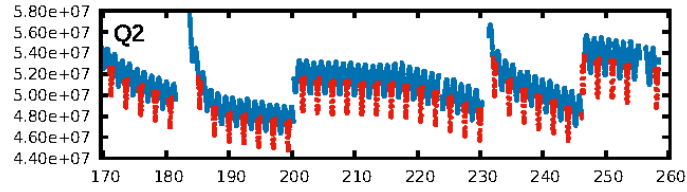
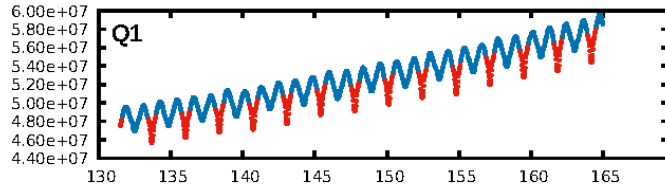
DV Fit Results:

Period = 2.34742 [0.00001] d
Epoch = 133.6877 [0.0019] BKJD
Rp/R* = 0.0245 [0.0009]
a/R* = 1.61 [0.11]
b = 0.91 [0.02]
Seff = 1206.77 [424.25]
Teff = 1503 [132] K
Rp = 3.04 [0.89] Re
a = 0.0340 [0.0080] AU
Ag = N/A
Teffp = N/A

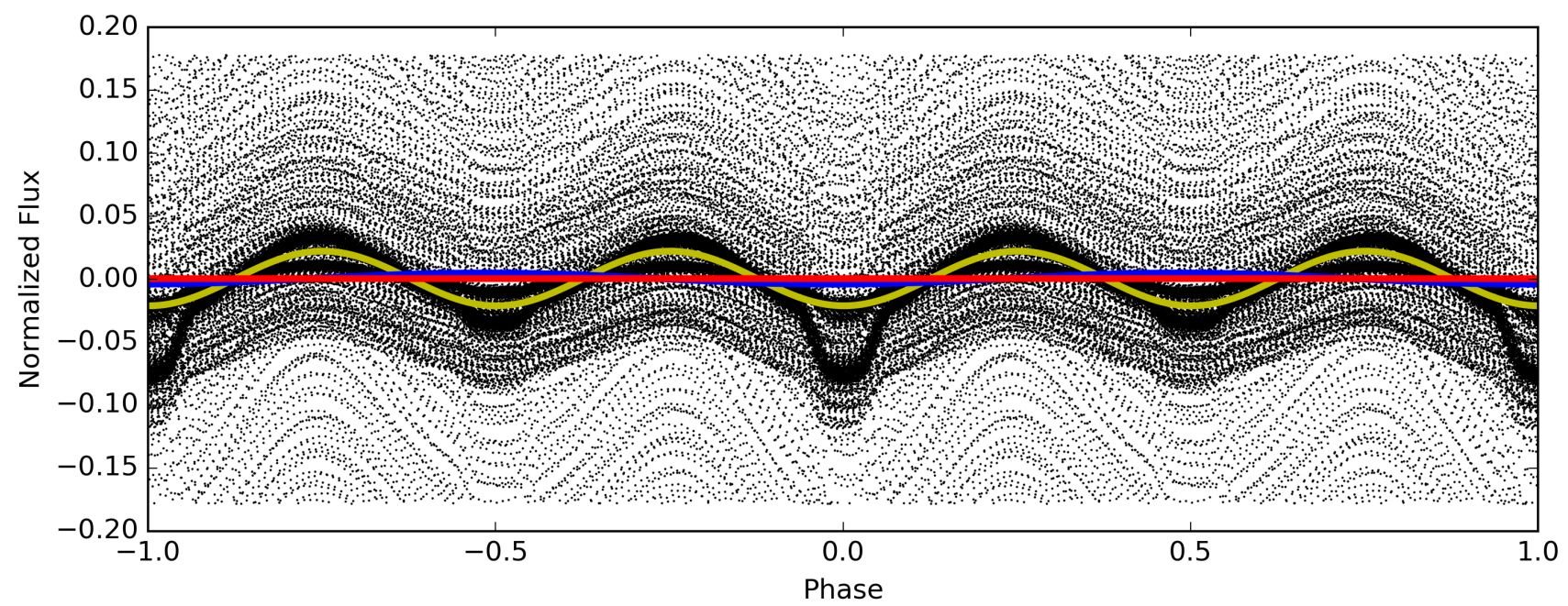
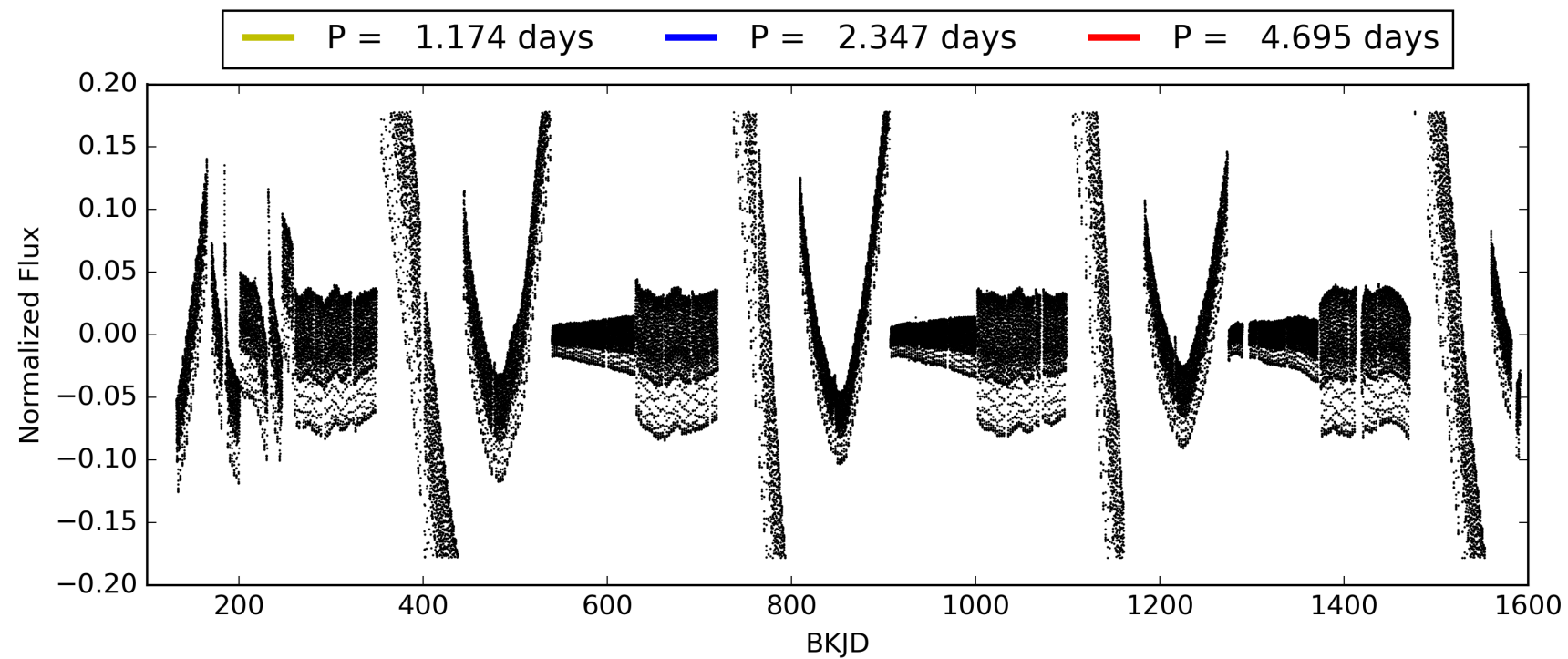
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [374.43 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [547/548]
GhostDiagnostic-chr: -1.087
Centroid-sig: 0.0%
Centroid-so: 3.746 arcsec [23.07 σ]
OotOffset-rm: 0.673 arcsec [5.63 σ]
KicOffset-rm: 3.888 arcsec [52.71 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008906045-01, PDC Light Curves

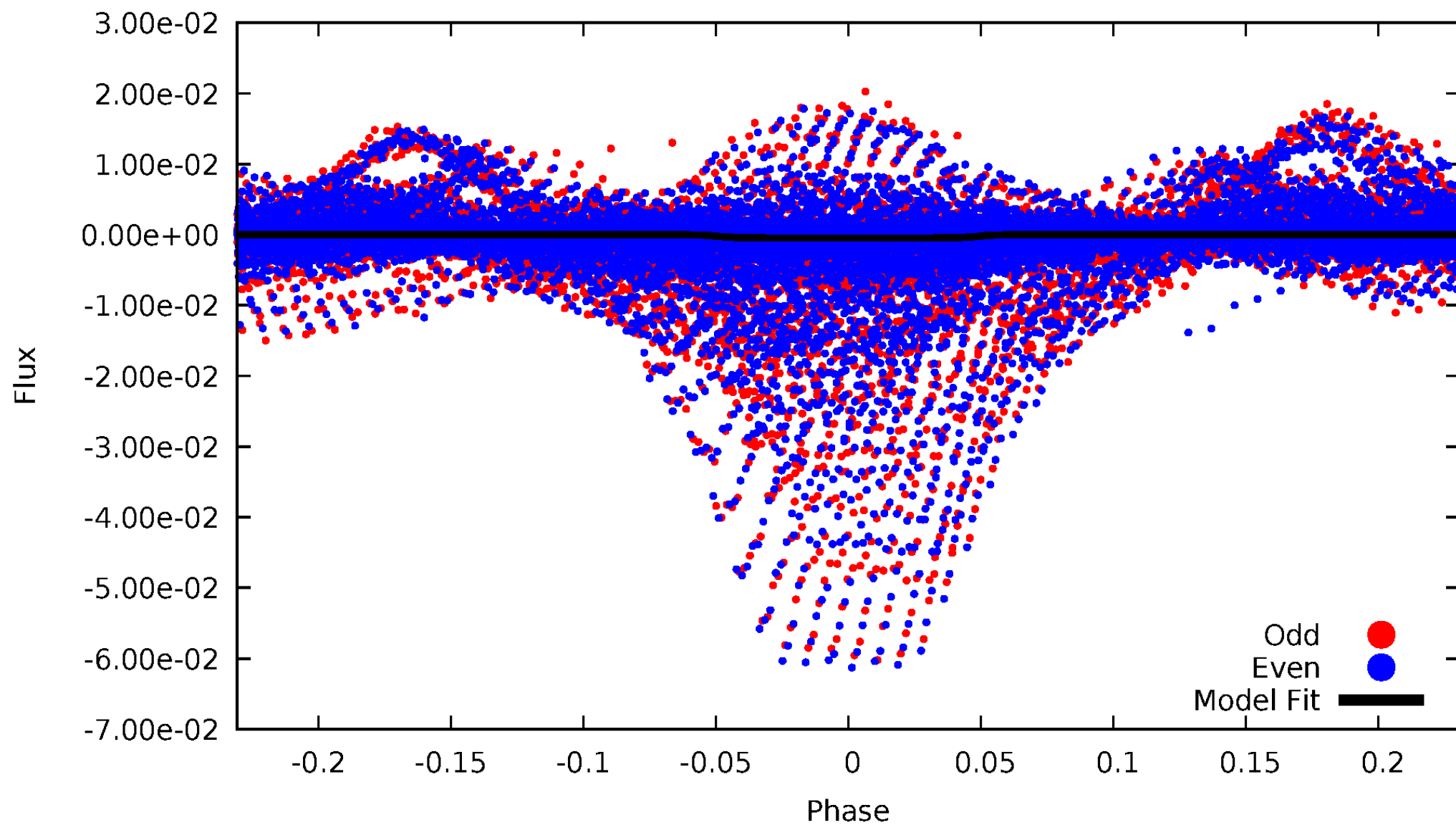


TCE 008906045-01



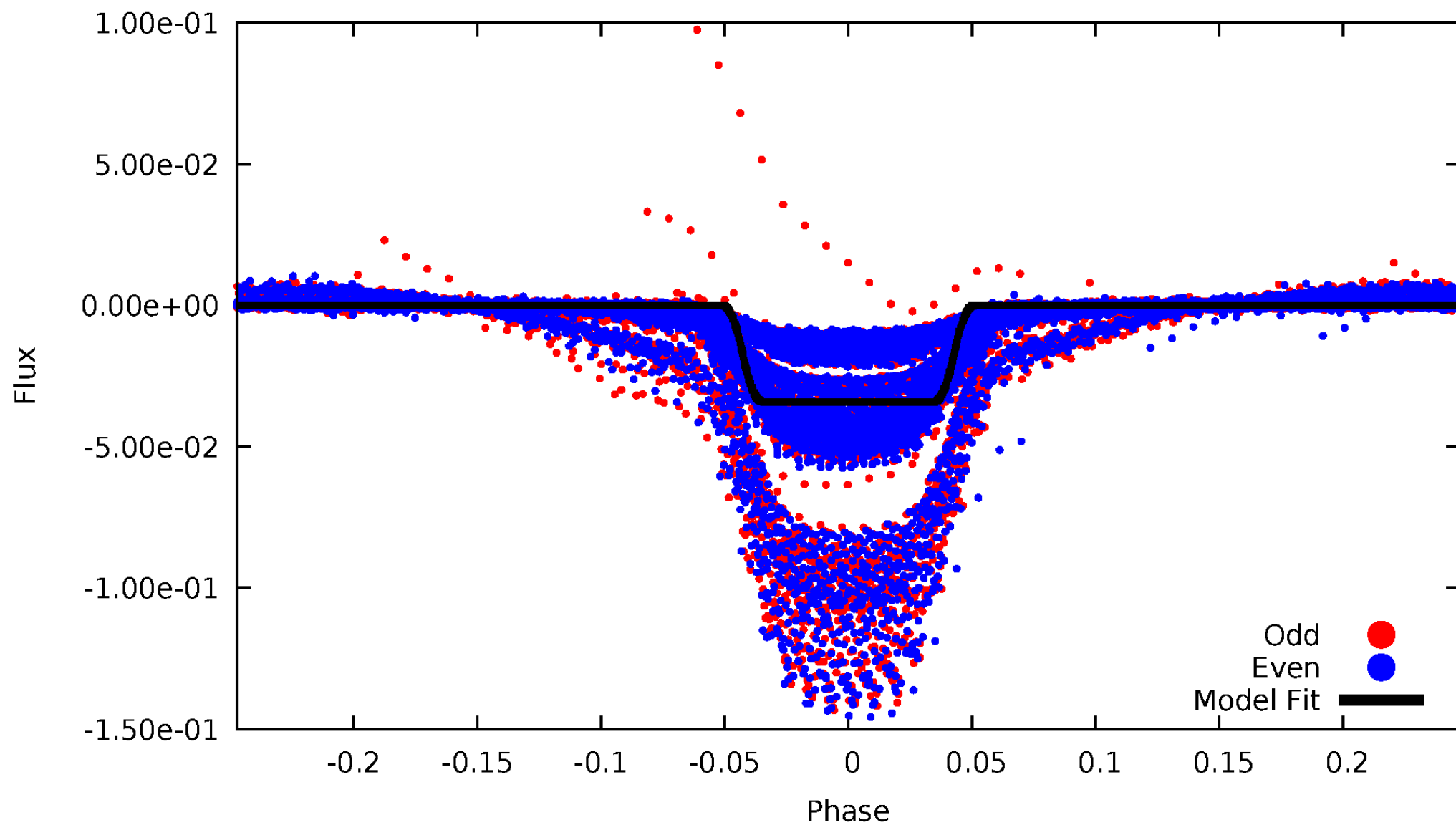
DV Odd/Even

TCE 008906045-01



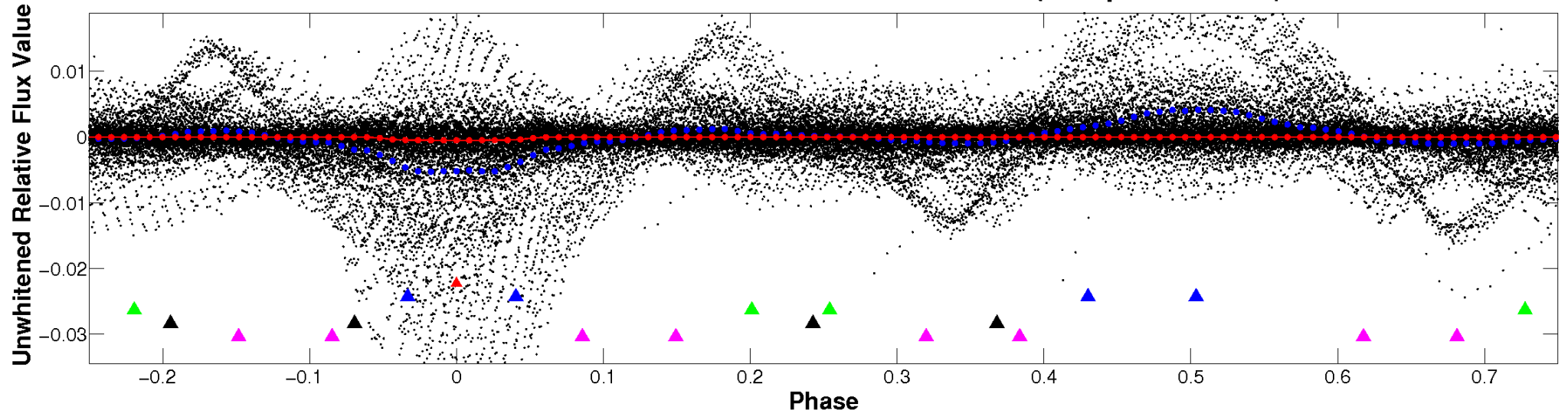
ALT Odd/Even

TCE 008906045-01

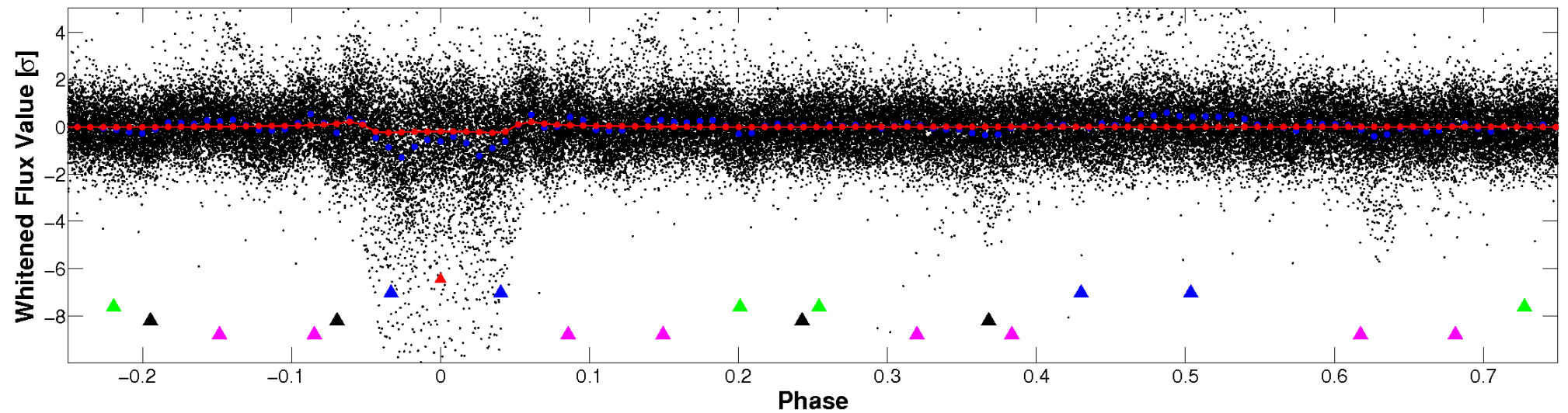


Non-Whitened Vs. Whitened Light Curve

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

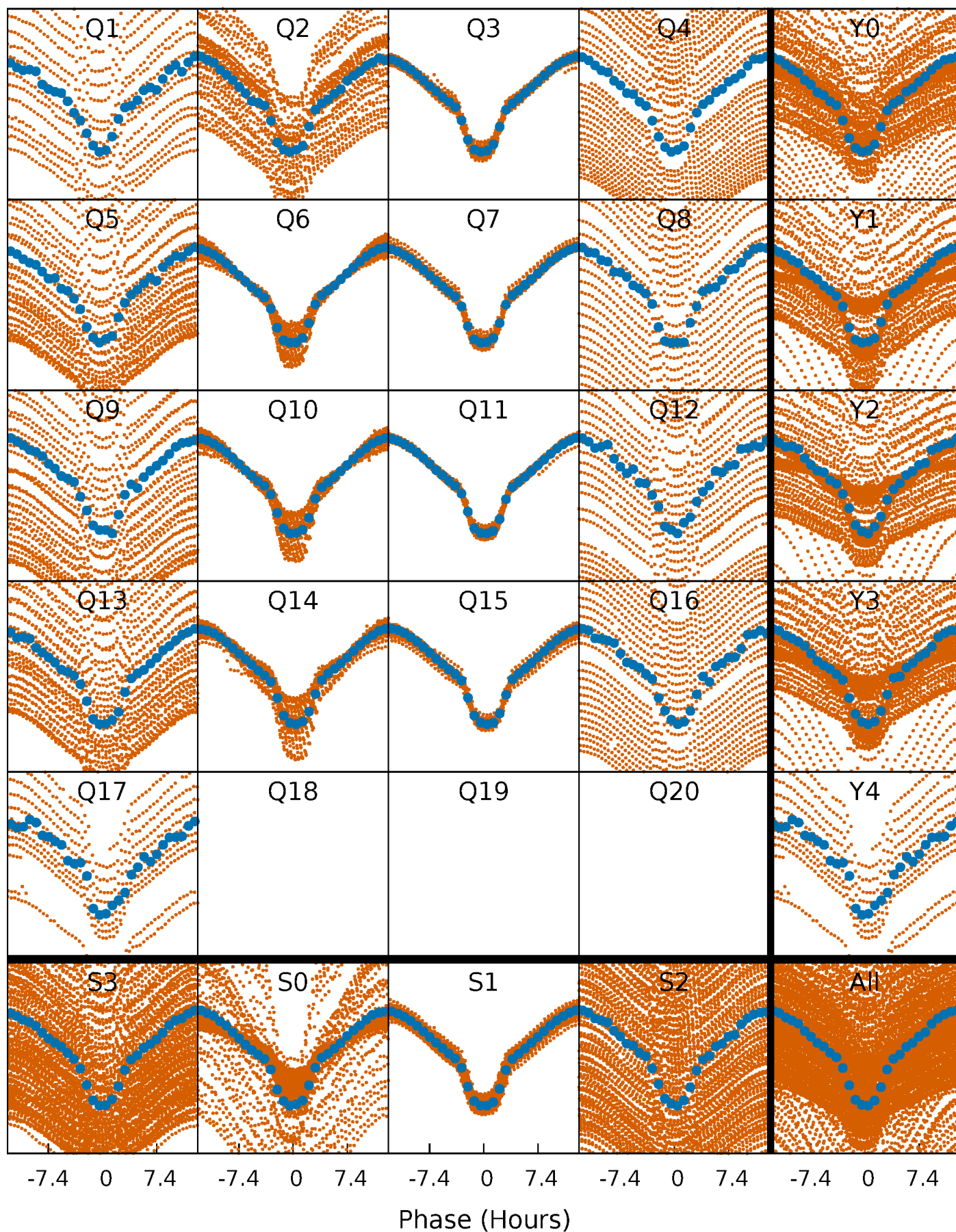


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



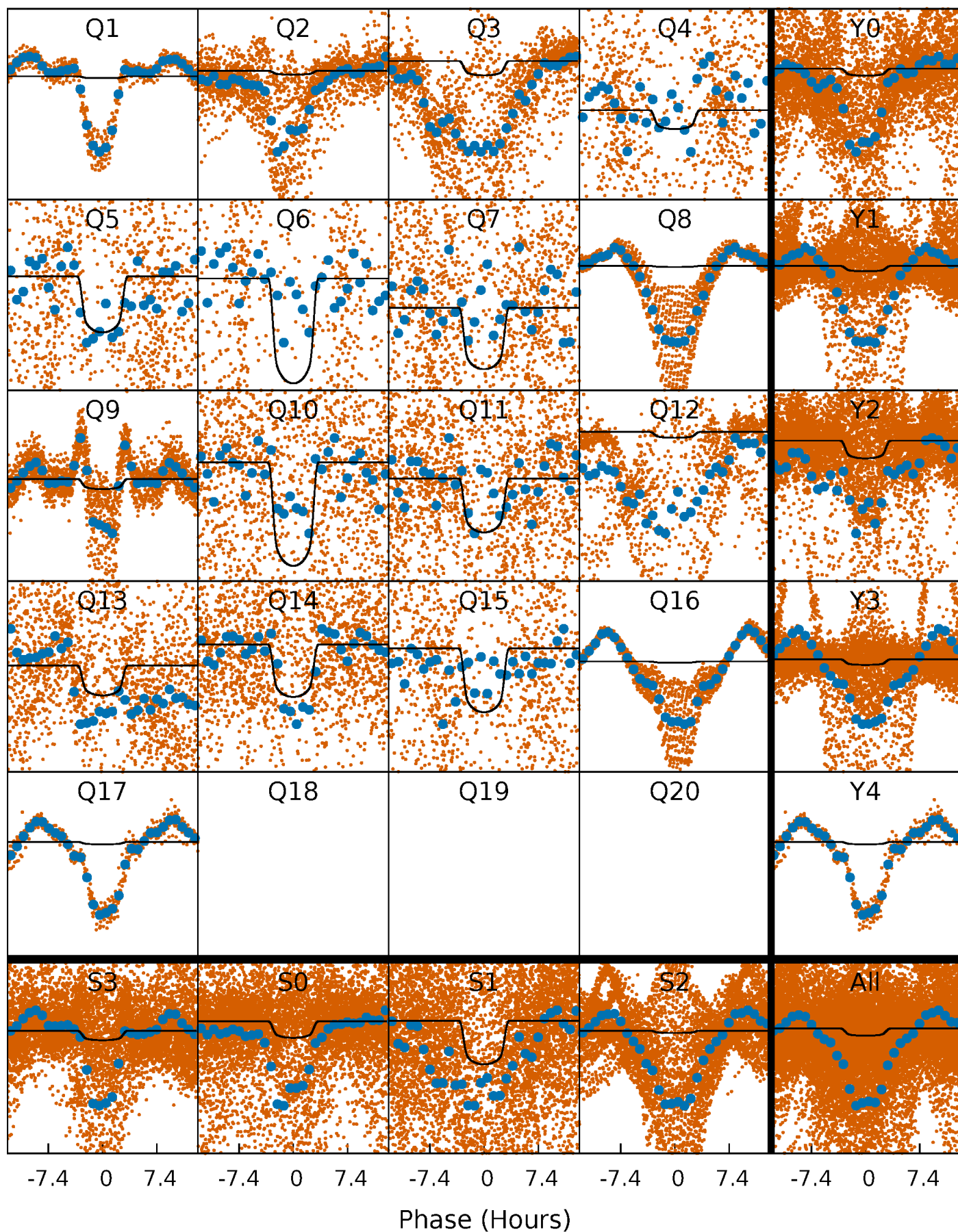
PDC Quarter-Phased Transit Curves

TCE 008906045-01 P= 2.347420 Days $T_0=133.687739$ (BKJD)



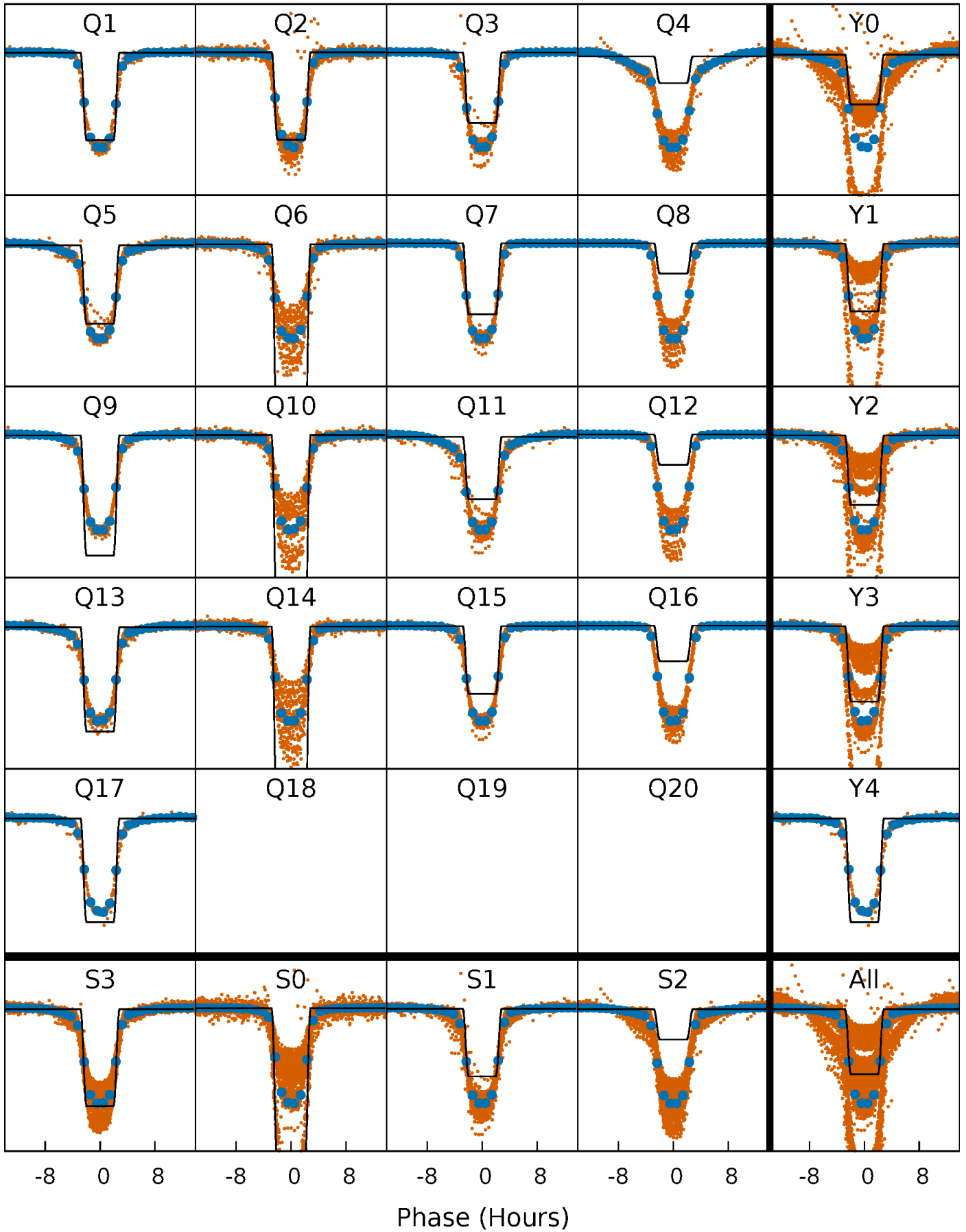
DV Quarter-Phased Transit Curves

TCE 008906045-01 P= 2.347420 Days $T_0=133.687739$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

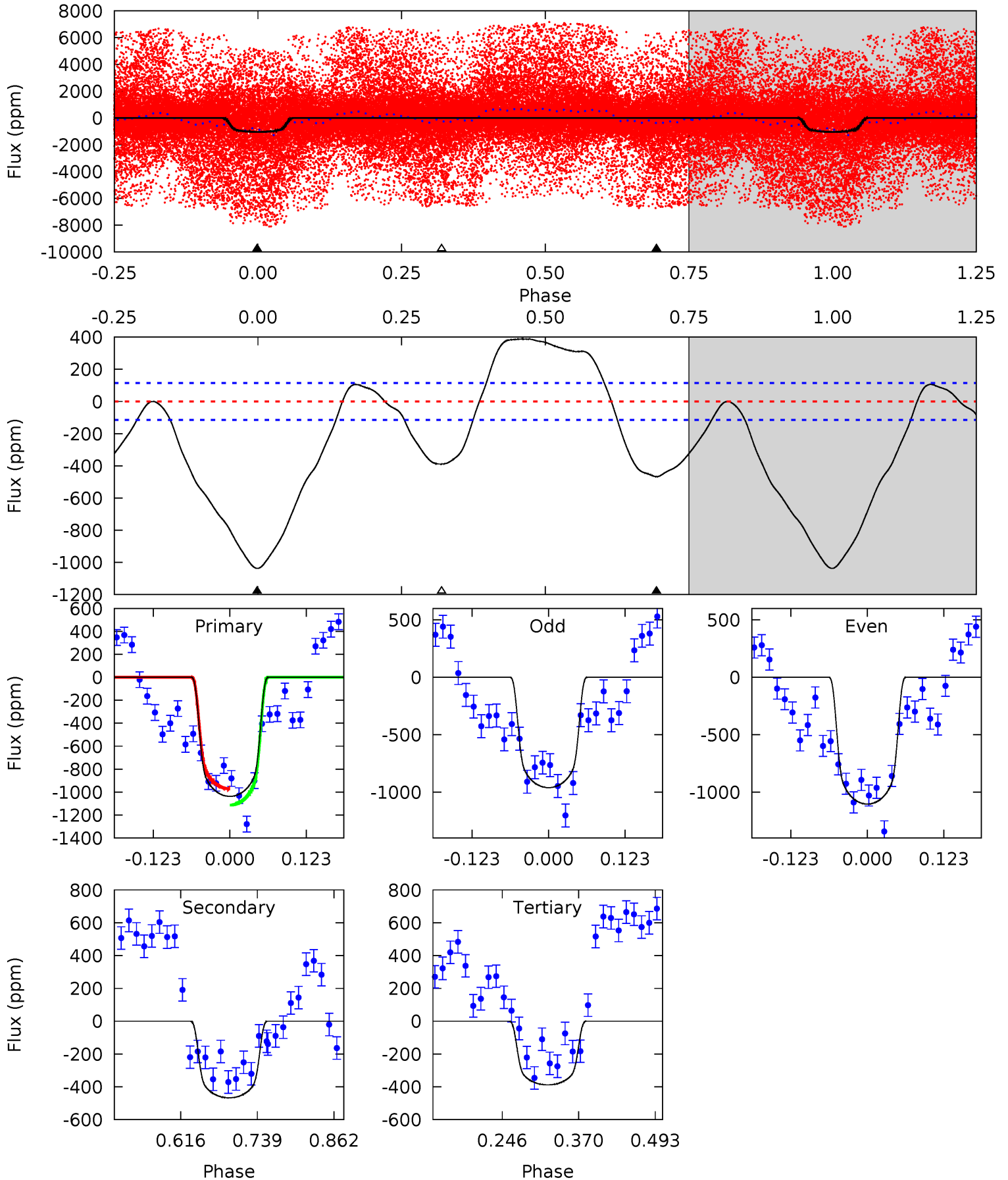
TCE 008906045-01 P= 2.347475 Days $T_0=133.672695$ (BKJD)



DV Model-Shift Uniqueness Test

008906045-01, P = 2.347420 Days, E = 131.340319 Days

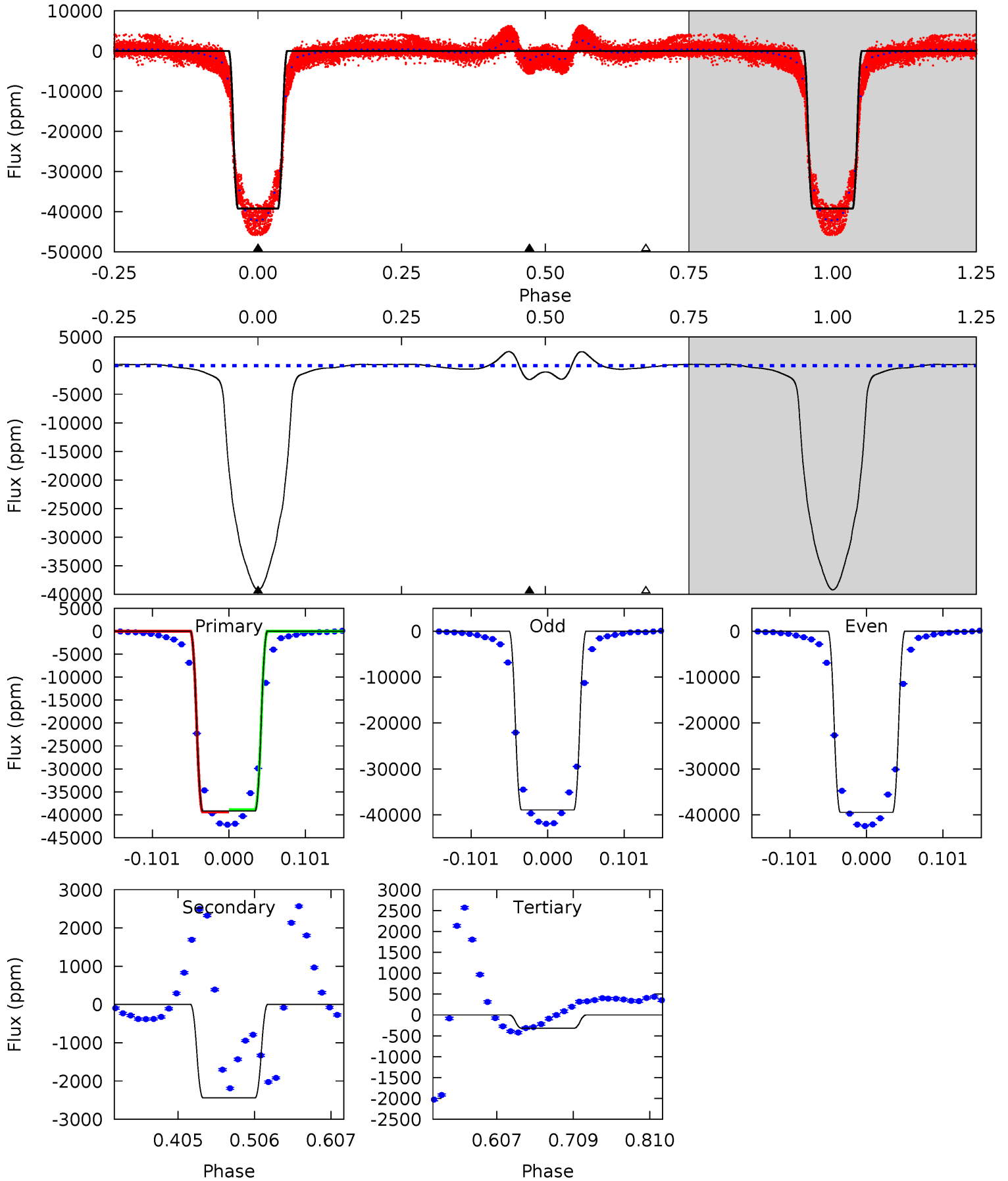
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.8	18.4	15.3	0	4.52	1.54	10.2	25.5	40.8	3.10	18.4	2.87	3.83	0.27	2.95



Alt Model-Shift Uniqueness Test

008906045-01, P = 2.347475 Days, E = 131.325220 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1775	110.4	14.4	0	4.56	1.64	17.2	1761	1775	95.9	110.4	11.8	1.18	0.06	0



Stellar Parameters For KIC 008906045

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5891^{+159}_{-176}	$4.305^{+0.175}_{-0.175}$	$-0.140^{+0.300}_{-0.300}$	$1.138^{+0.329}_{-0.219}$	$0.953^{+0.144}_{-0.108}$	$0.912^{+0.806}_{-0.423}$
	+3%/-3%	+4%/-4%	+214%/-214%	+29%/-19%	+15%/-11%	+88%/-46%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008906045-01 / KOI 3789.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-467 ± 25	$3.03^{+0.48}_{-0.36}$	2086^{+166}_{-127}	5547^{+186}_{-198}	33^{+9}_{-8}
Alt.	-2437 ± 22	$22.74^{+3.75}_{-2.64}$	2087^{+162}_{-132}	3459^{+62}_{-69}	$3.042^{+0.708}_{-0.753}$

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 $A_{obs} \gg 1.0$

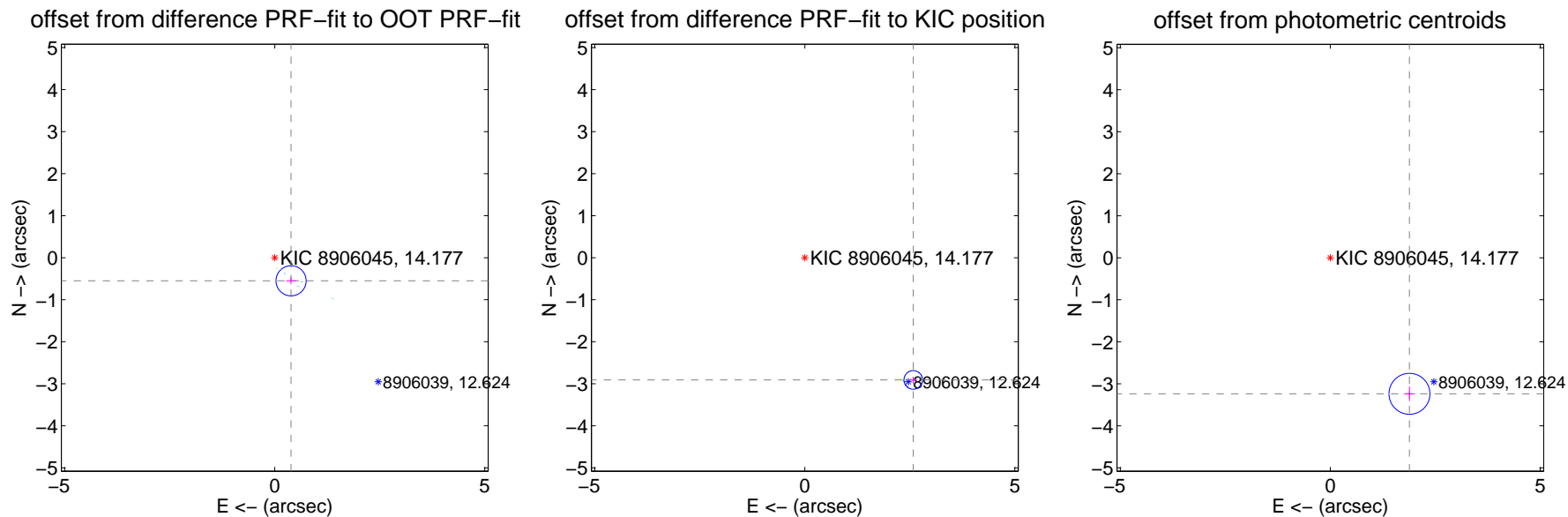
DV Centroid Data

Supplemental centroid analysis for 008906045-01. Kepler magnitude: 14.18. Transit SNR 20.87

There are 17 quarters with good PRF difference image offsets

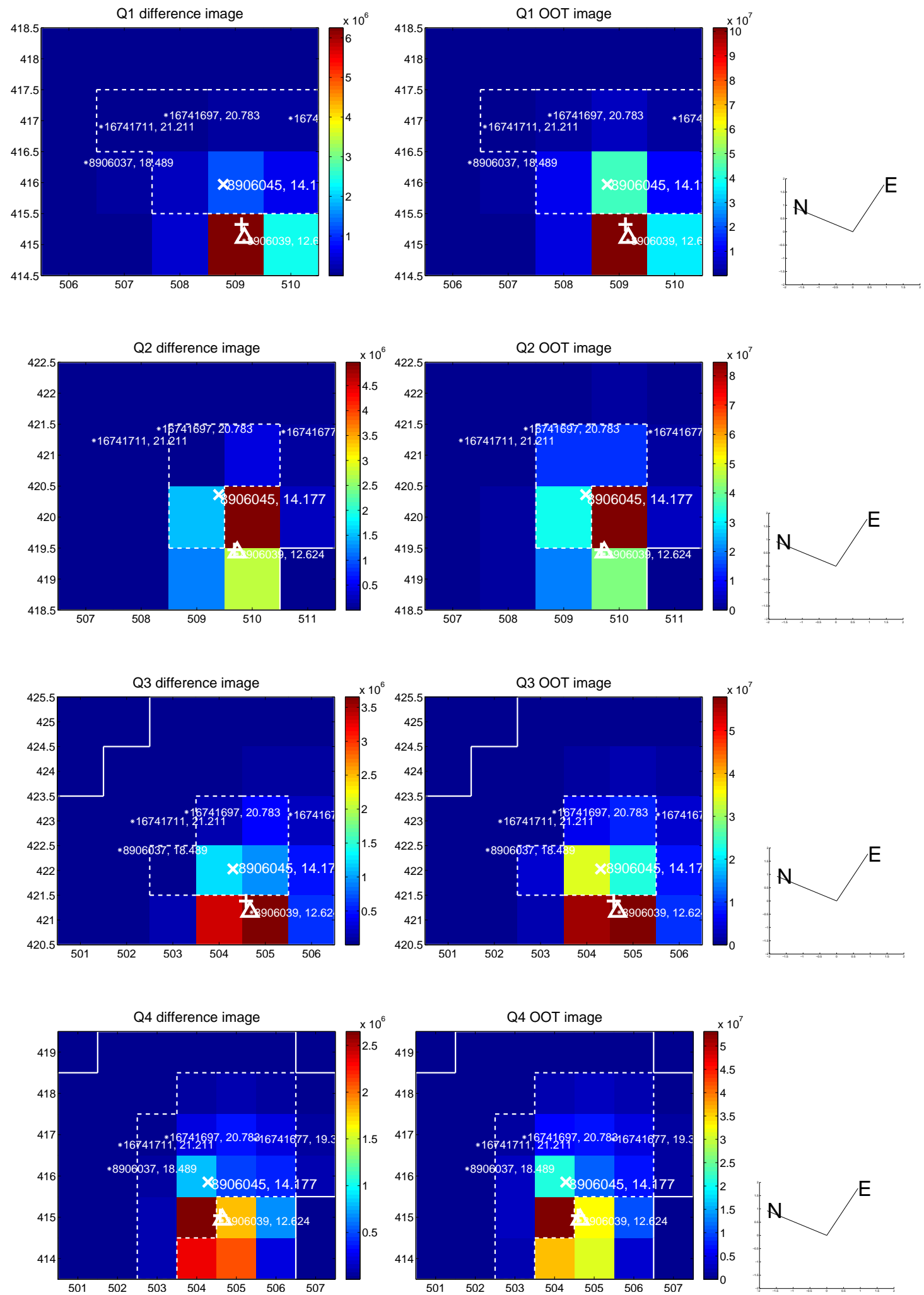
The OOT PRF centroid is offset from the target star catalog position by about 2.95 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.673 ± 0.120	5.63	-0.389 ± 0.119	-0.549 ± 0.085
PRF-fit source offset from KIC position	3.888 ± 0.074	52.71	-2.581 ± 0.080	-2.908 ± 0.068
photometric centroid source offset	3.75 ± 0.16	23.07	-1.88 ± 0.13	-3.24 ± 0.17

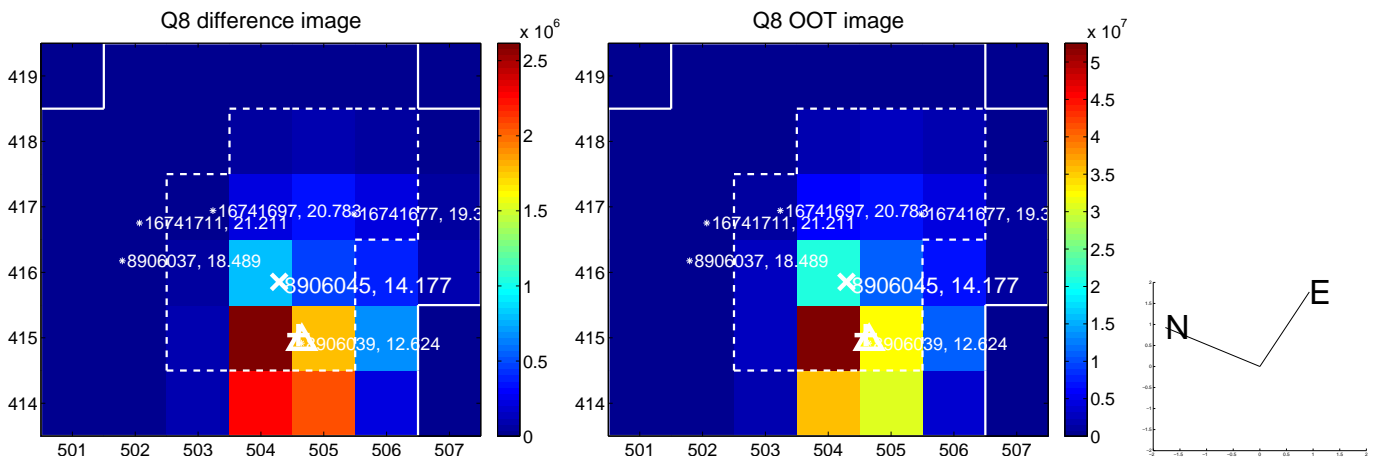
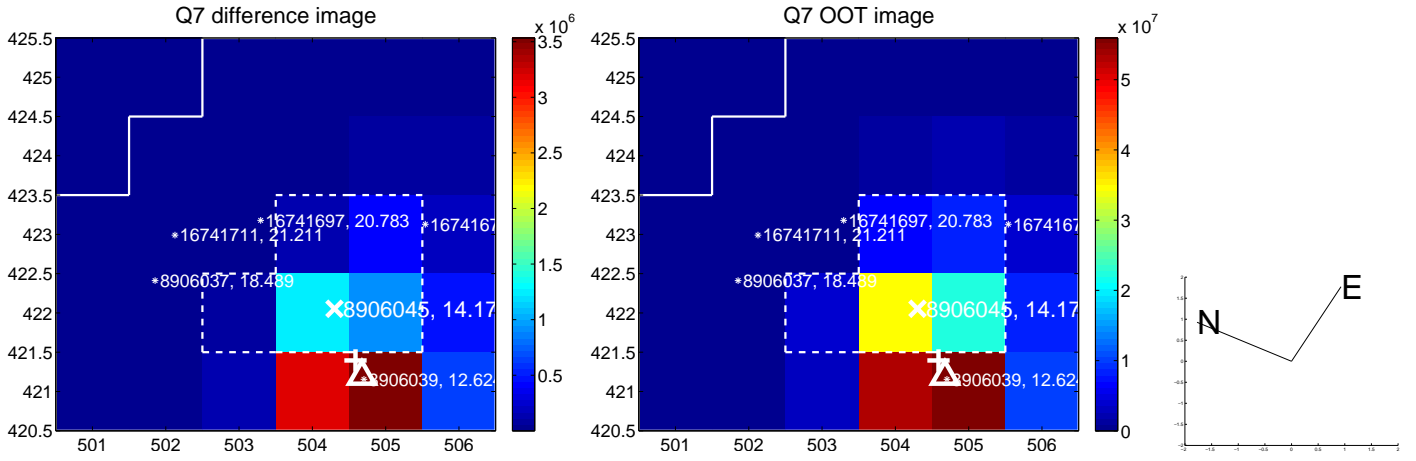
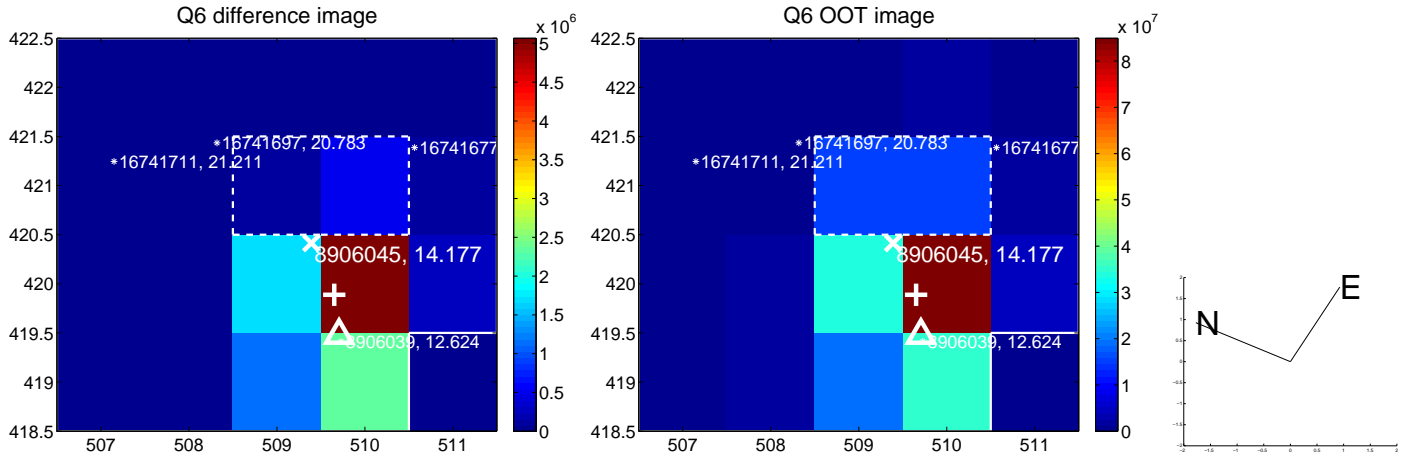
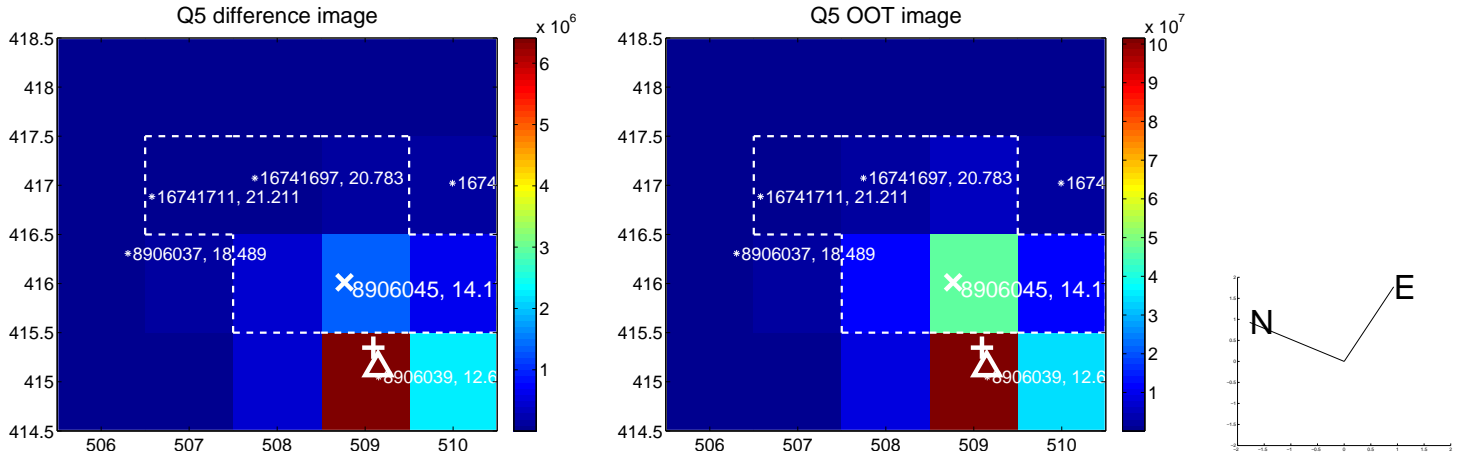


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

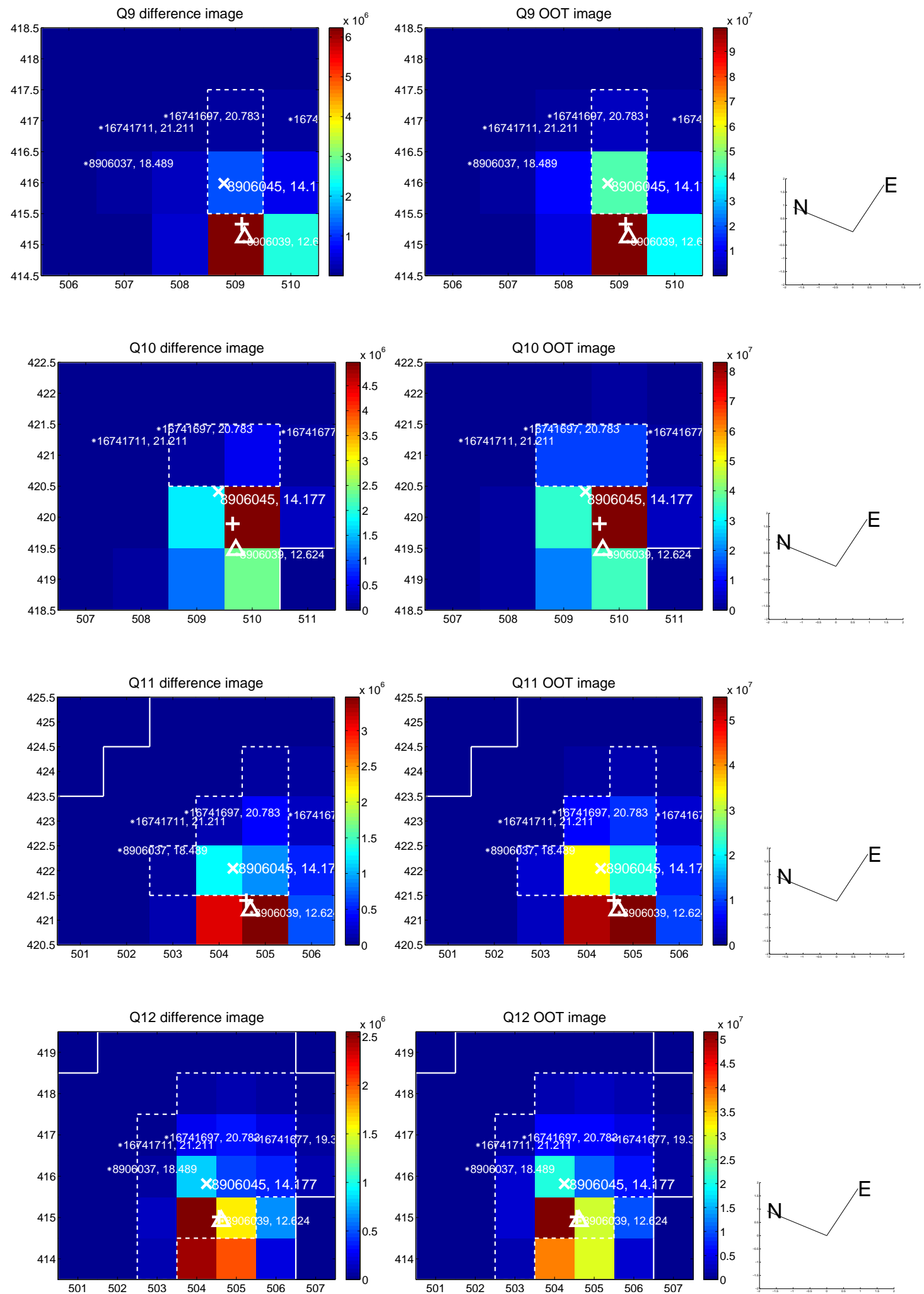
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



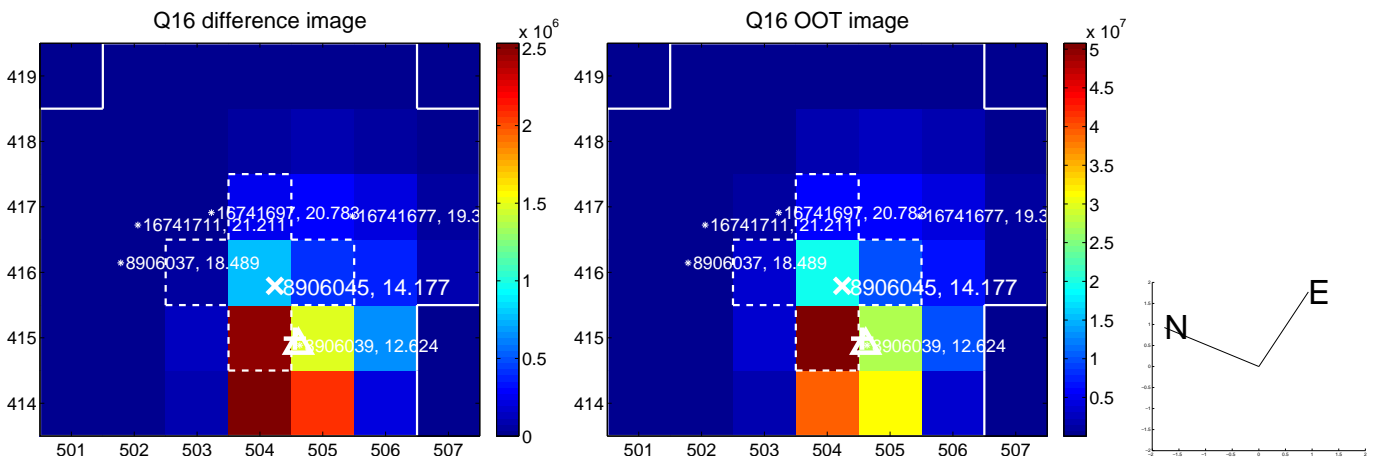
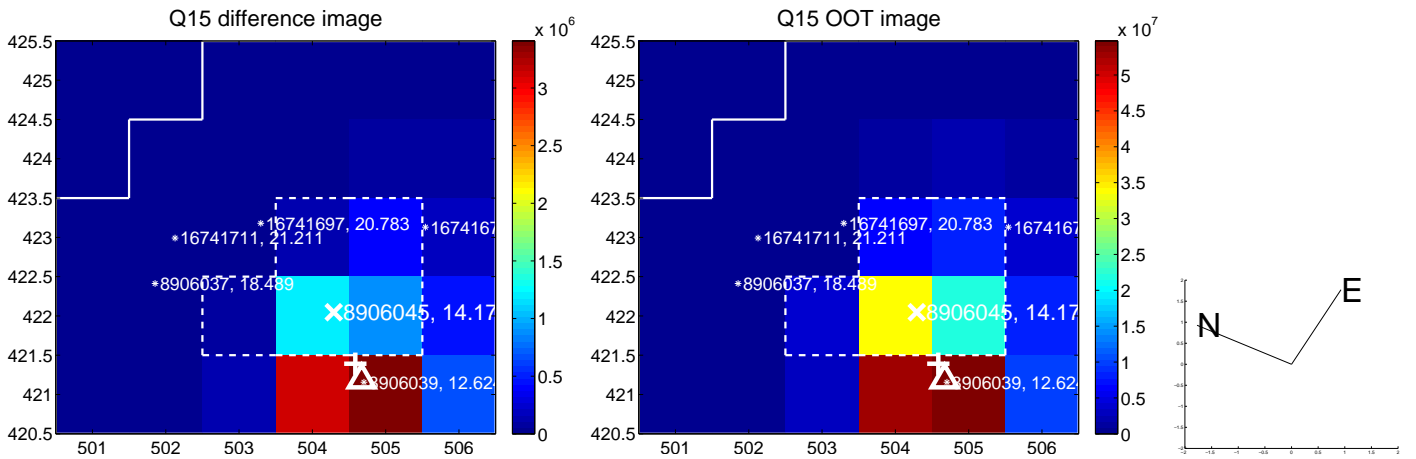
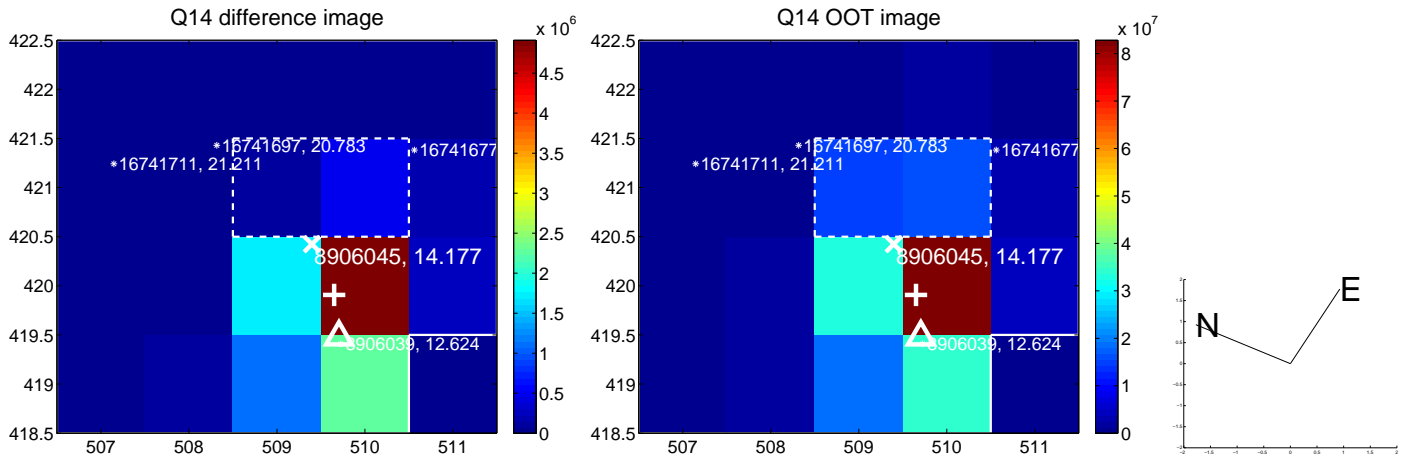
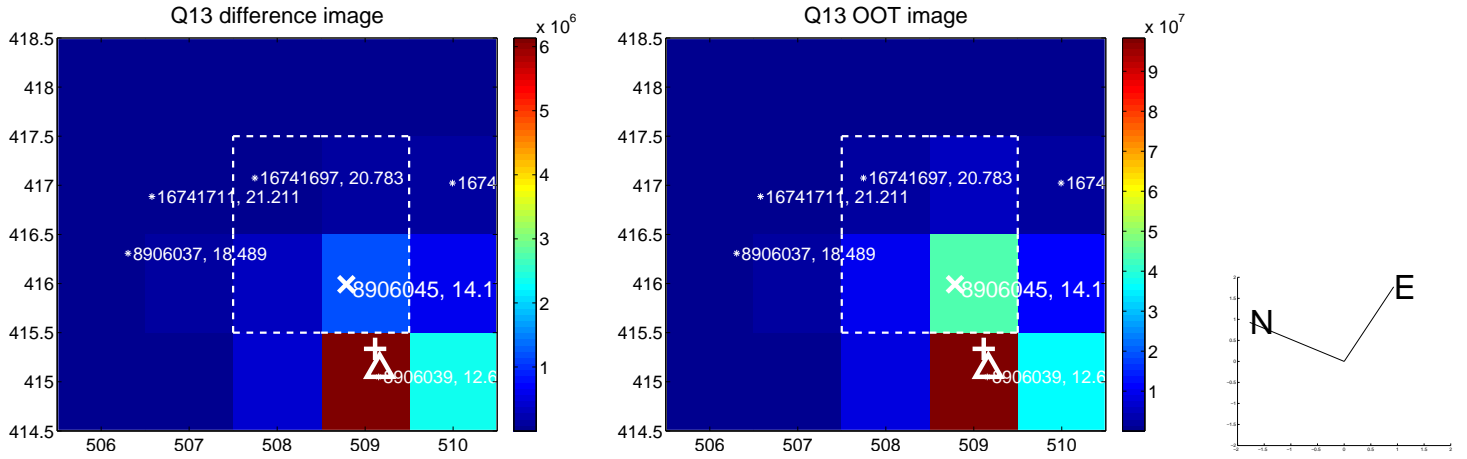
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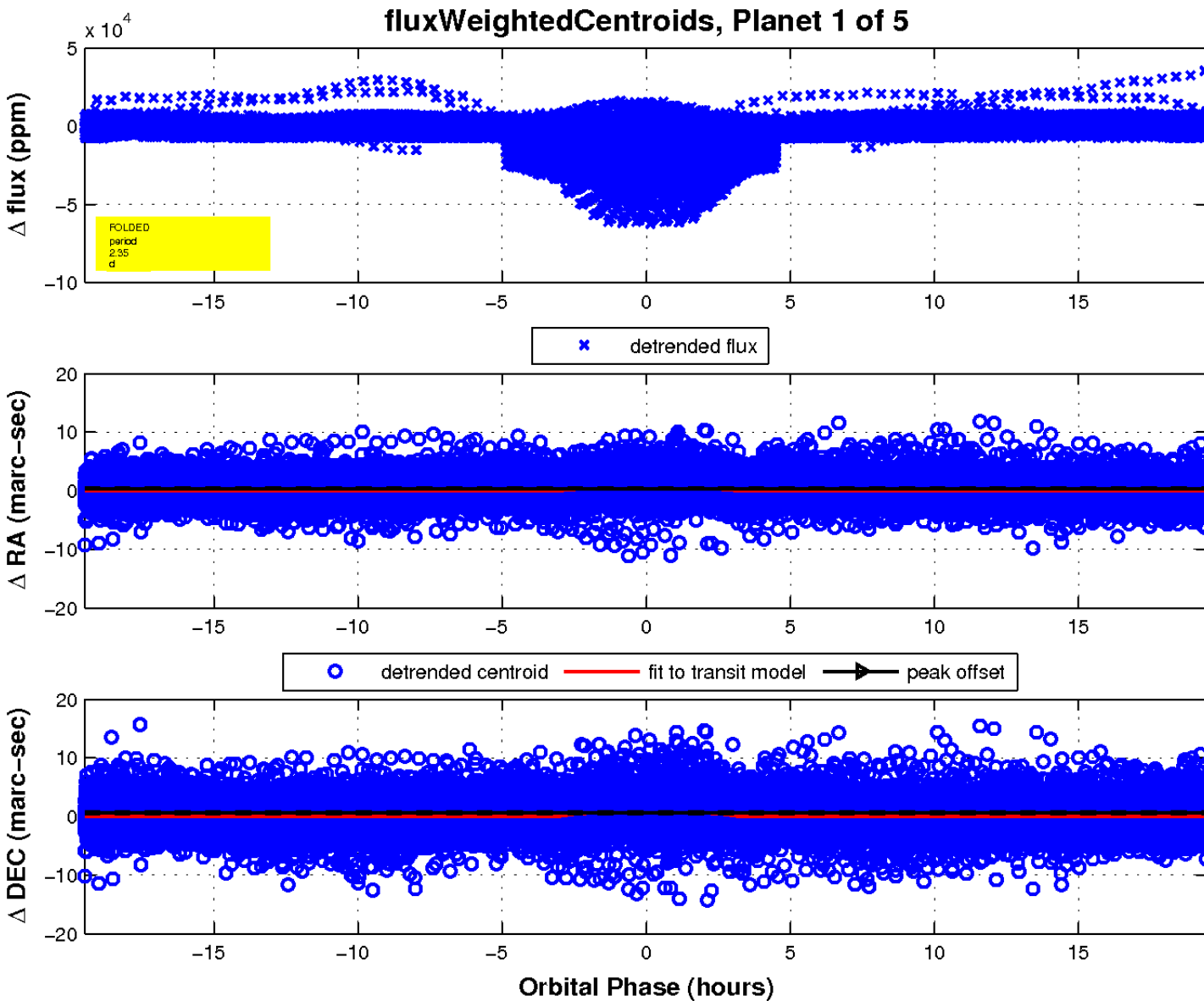
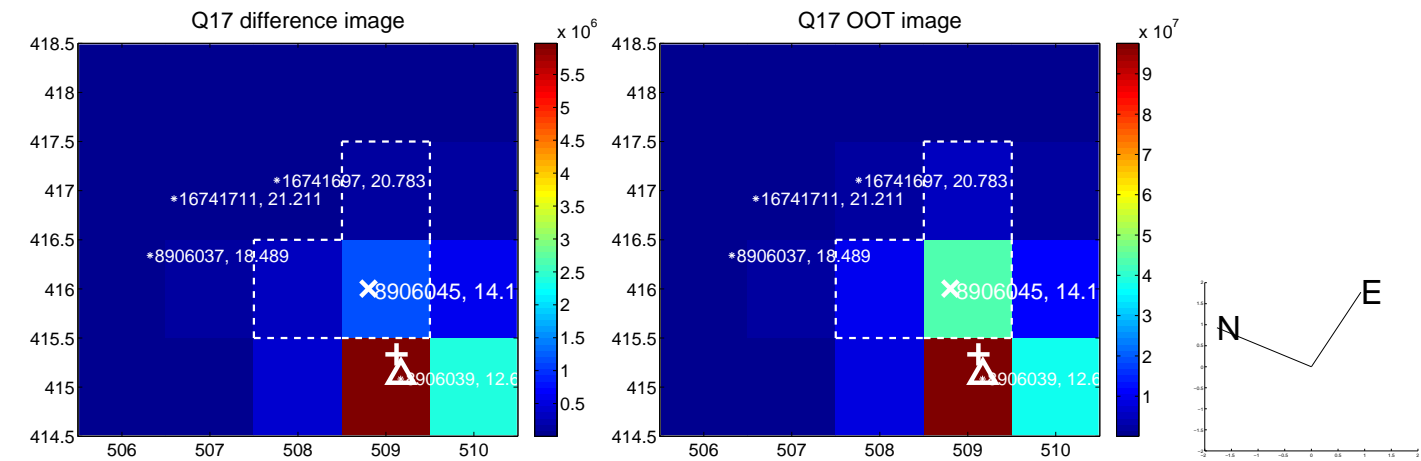
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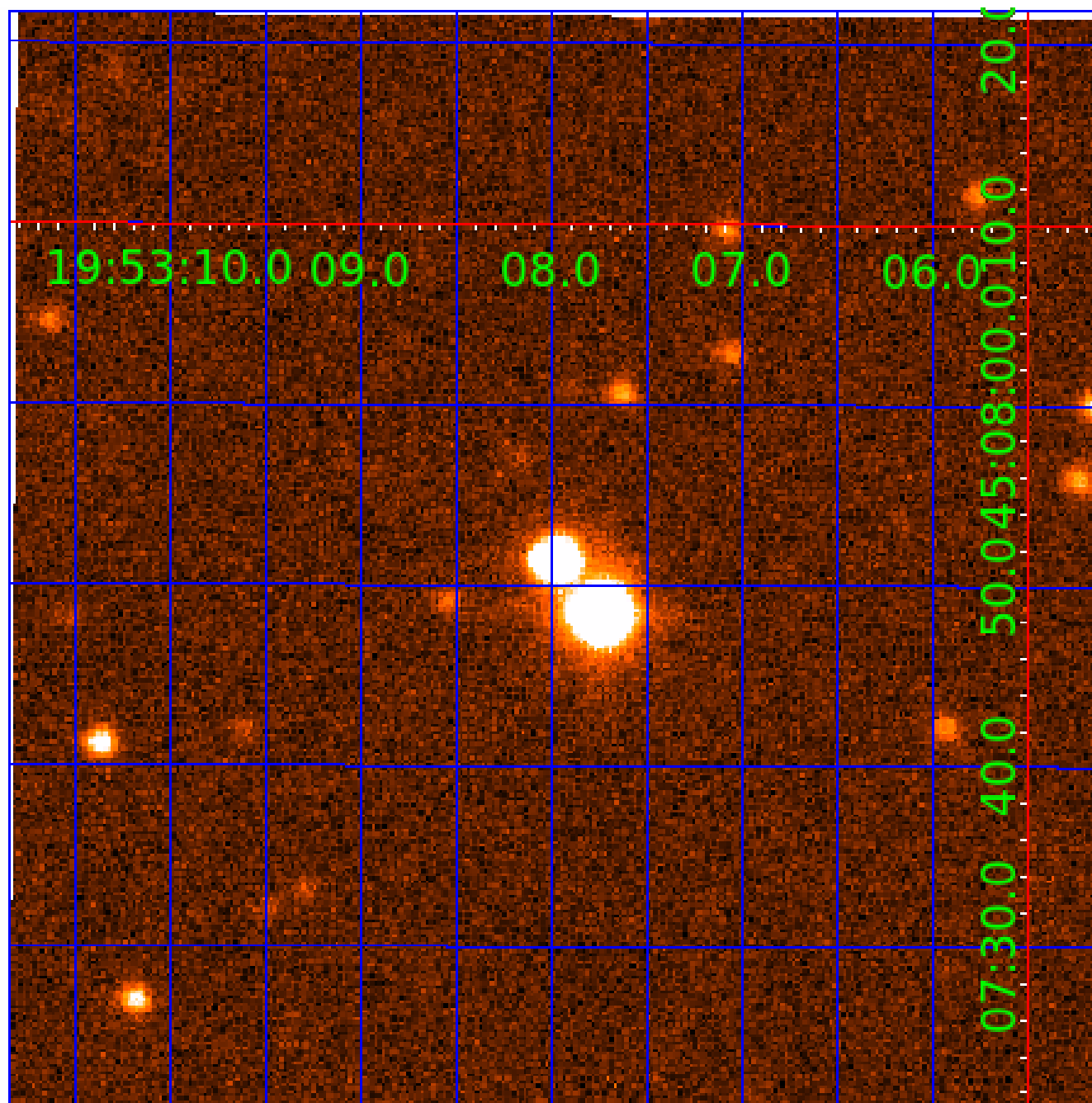


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UKIRT Image

Declination



KIC 008906045

Q1-17 DR25 TCE Parameters

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008906045-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

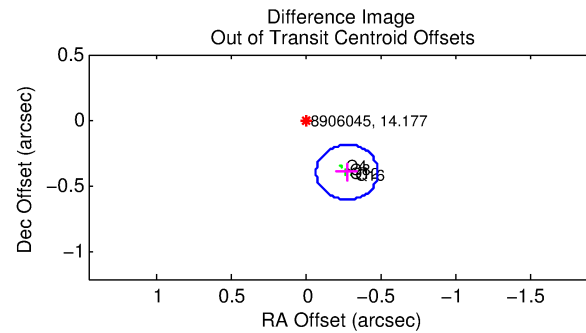
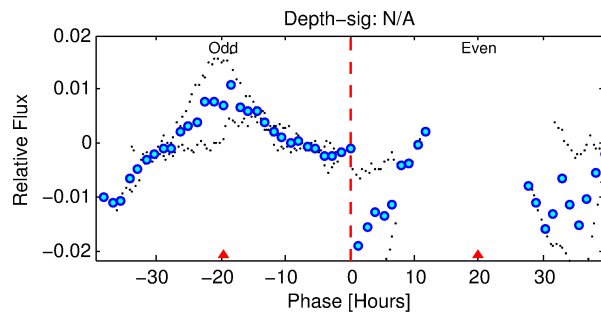
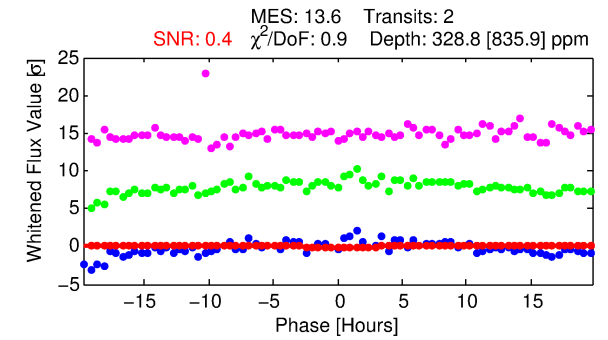
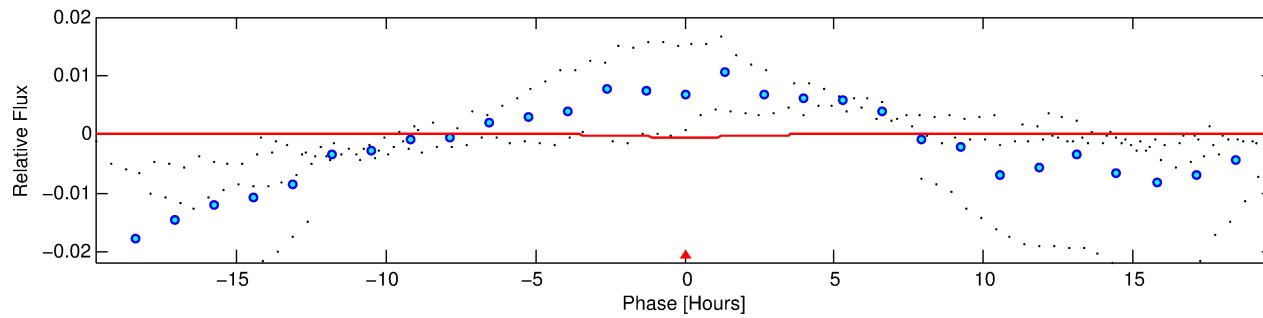
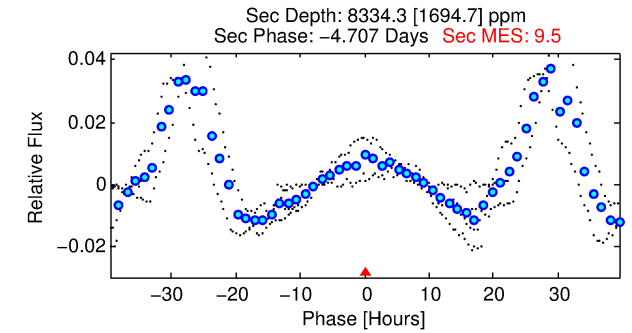
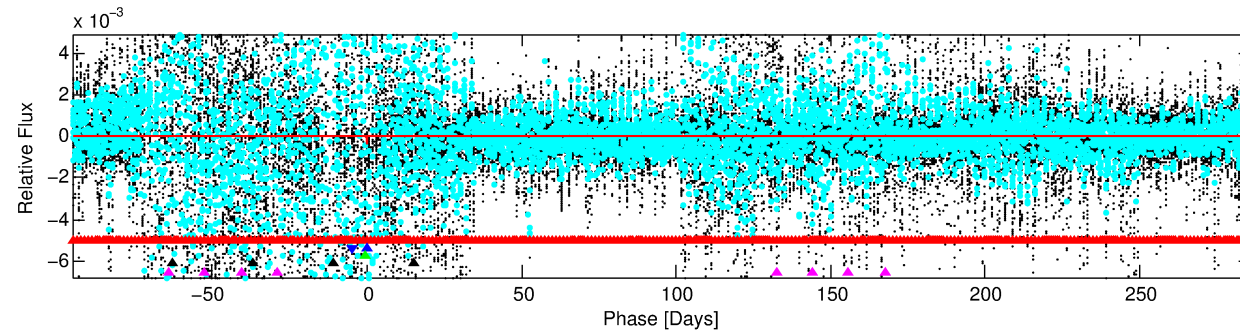
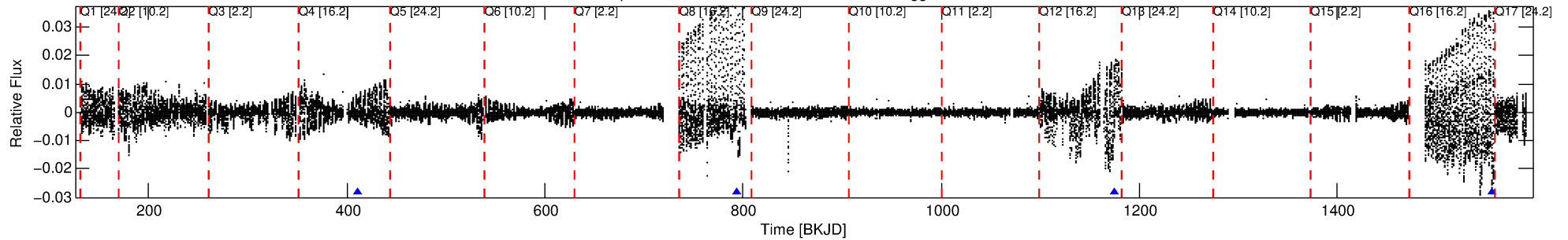
Ephemeris Match Information For 008906045-02

No Significant Match Found

DV One-Page Summary

KIC: 8906045 Candidate: 2 of 5 Period: 381.542 d
KOI: K03789 Corr: No Ephemeris Match

Kp: 14.18 R*: 1.14 Rs Teff: 5891.0 K Logg: 4.30 Fe/H: -0.140



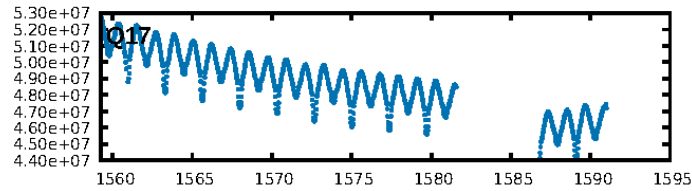
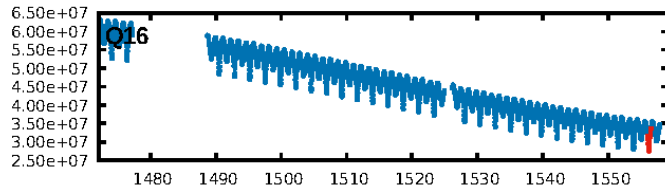
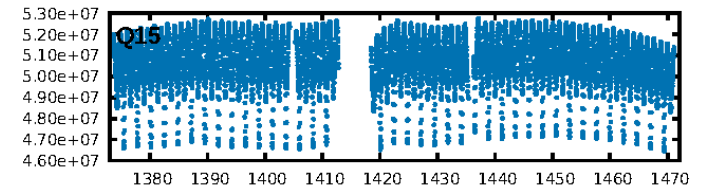
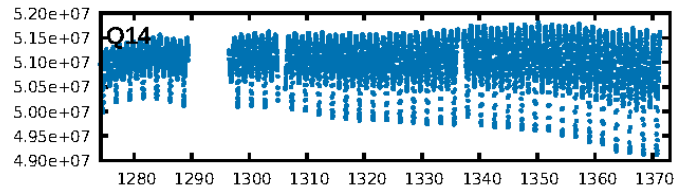
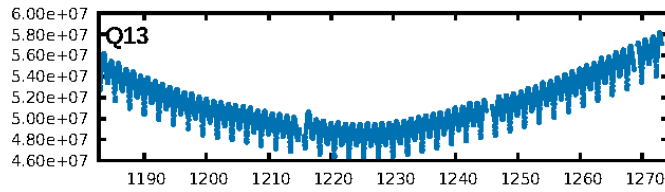
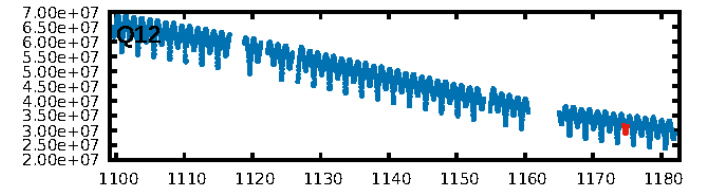
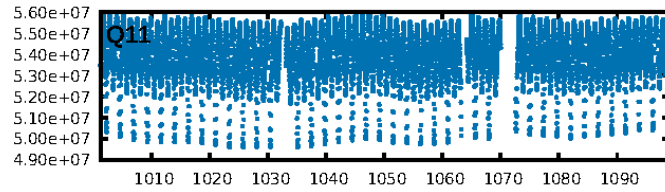
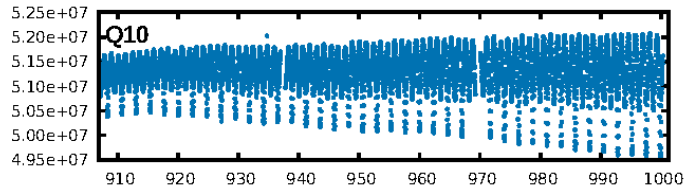
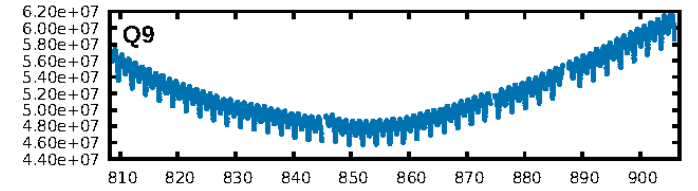
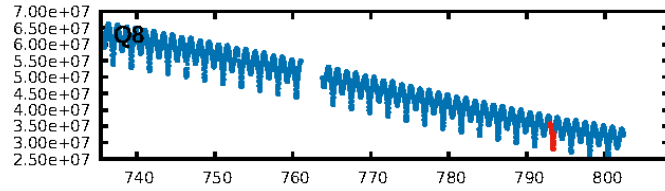
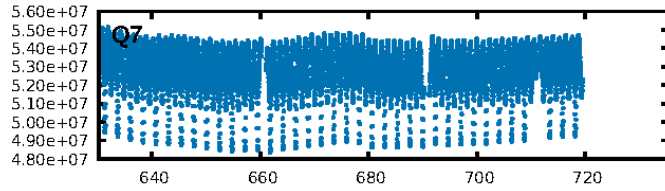
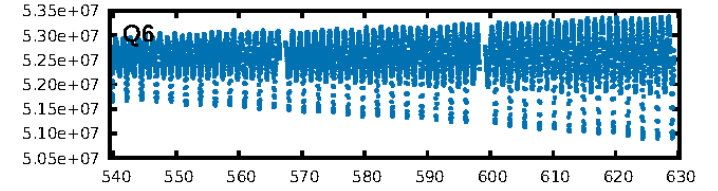
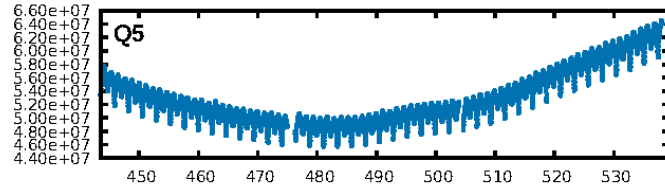
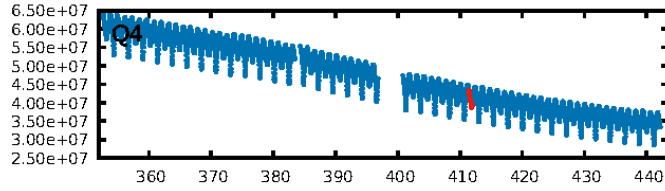
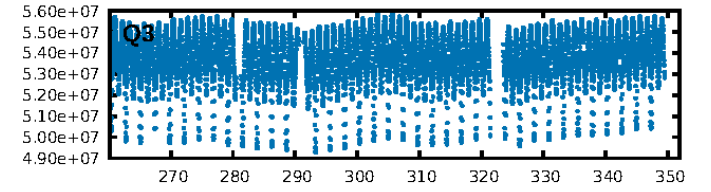
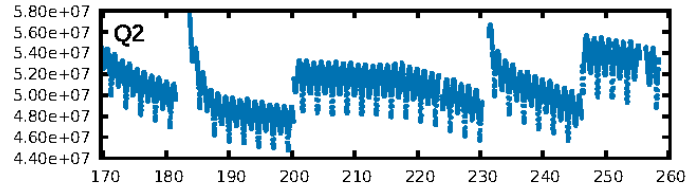
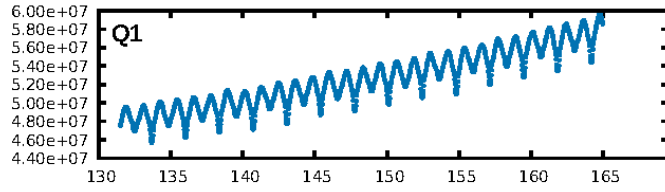
DV Fit Results:

Period = 381.54224 [0.08666] d
Epoch = 411.6927 [0.0716] BKJD
Rp/R* = 0.0189 [0.0702]
a/R* = 247.29 [3912.51]
b = 0.85 [5.05]
Seff = 1.36 [0.48]
Teq = 275 [24] K
Rp = 2.35 [8.75] Re
a = 1.0135 [0.2381] AU
Ag = 850834.88 [6316309.92] [0.13σ]
Teffp = 12932 [23980] K [0.53σ]

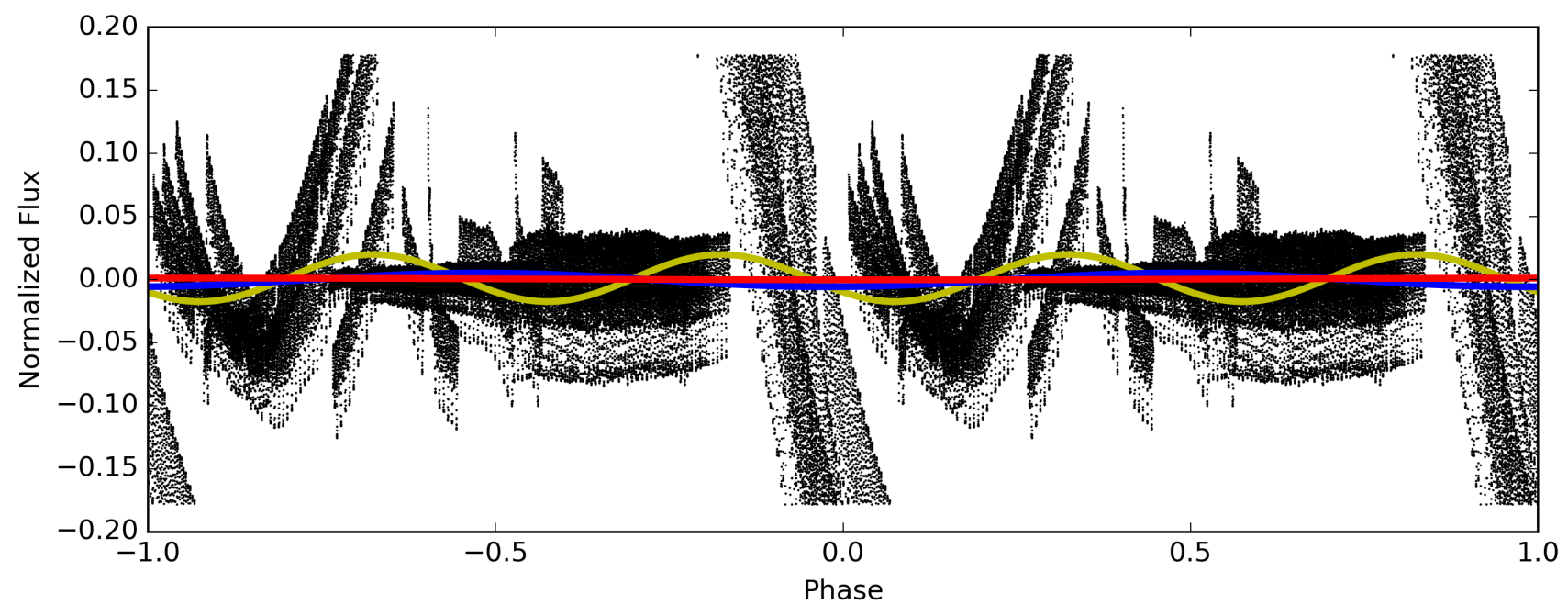
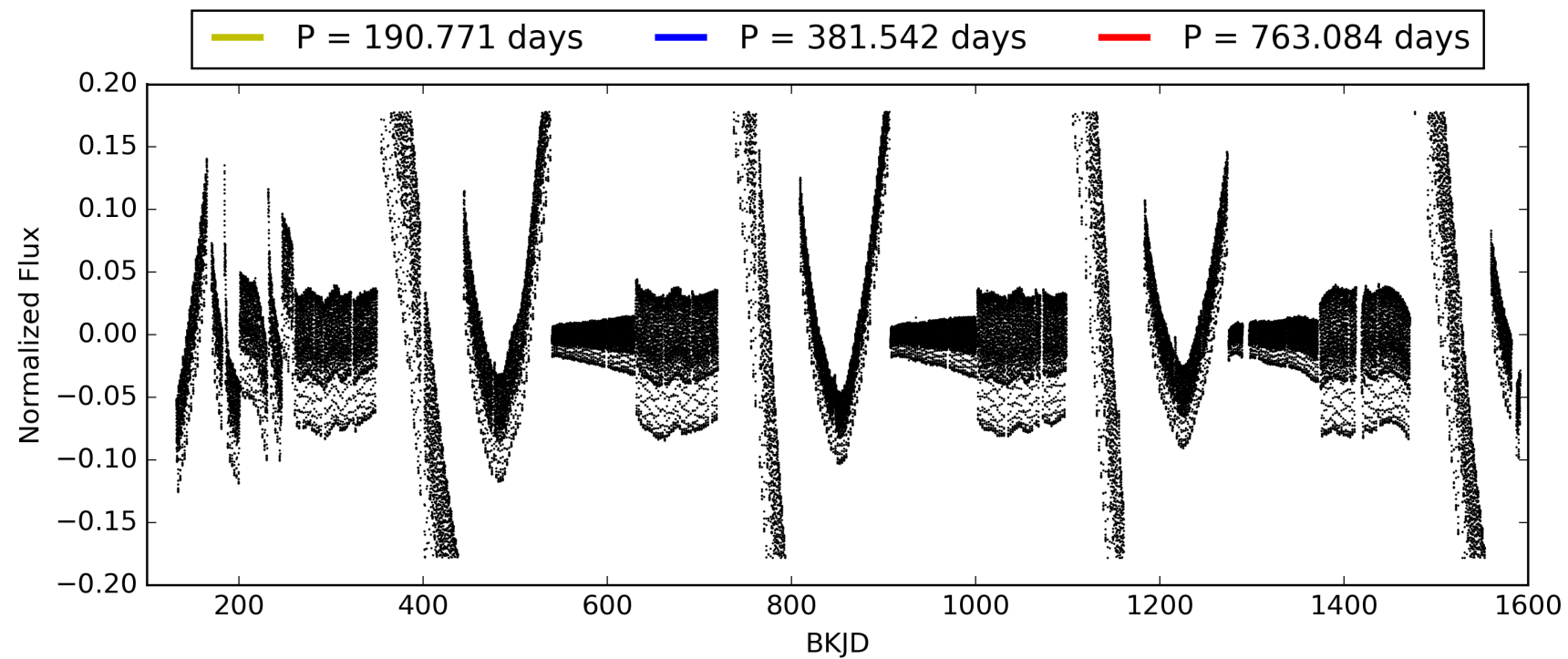
DV Diagnostic Results:

ShortPeriod-sig: 2.1% [0.03σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.2%
ModelChiSquareGof-sig: 84.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.5946
Centroid-sig: 0.8%
Centroid-so: 8.592 arcsec [2.55σ]
OotOffset-rm: 0.481 arcsec [6.98σ]
KicOffset-rm: 3.893 arcsec [56.16σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 0.00 [0/4]

TCE 008906045-02, PDC Light Curves

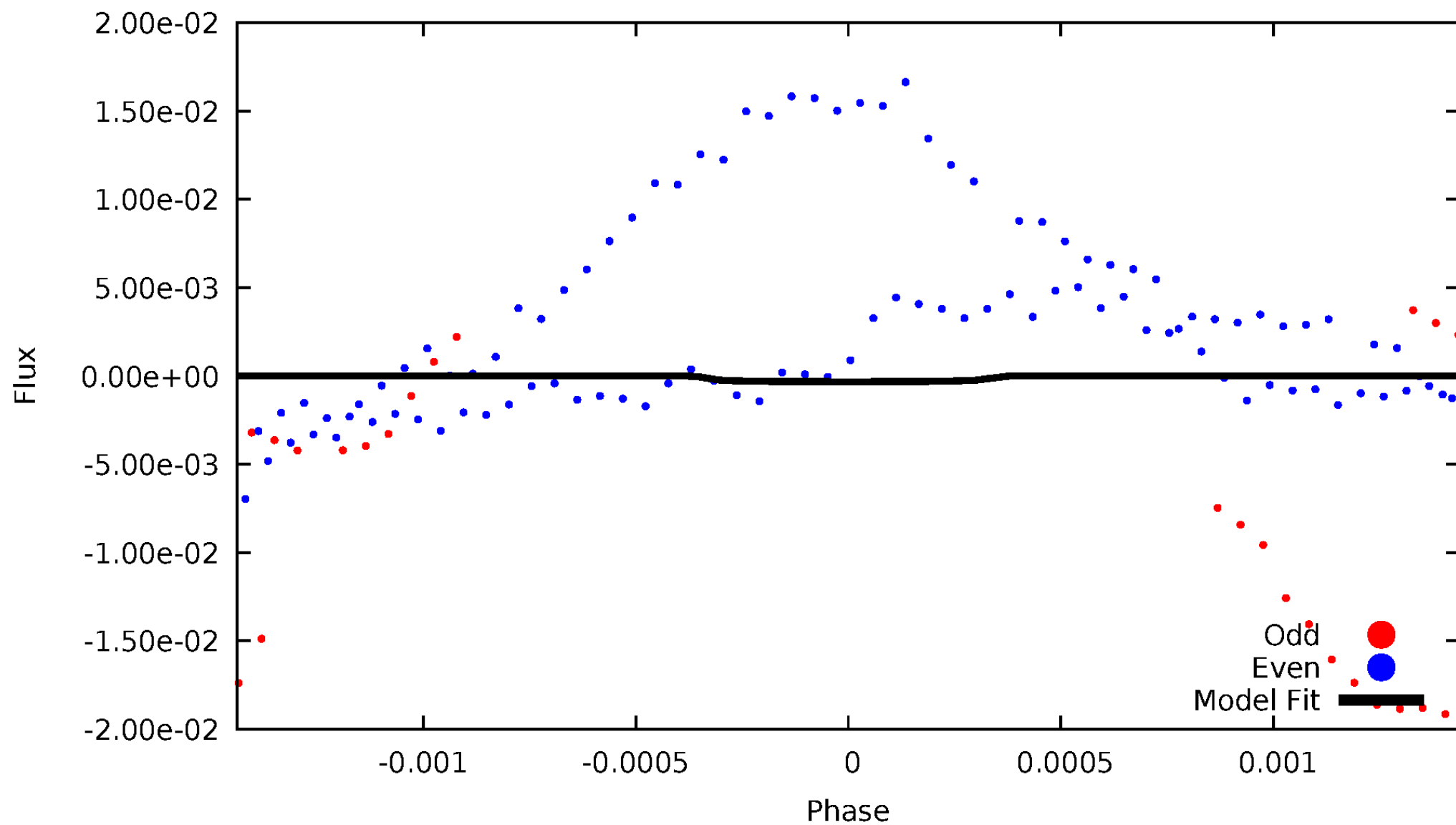


TCE 008906045-02



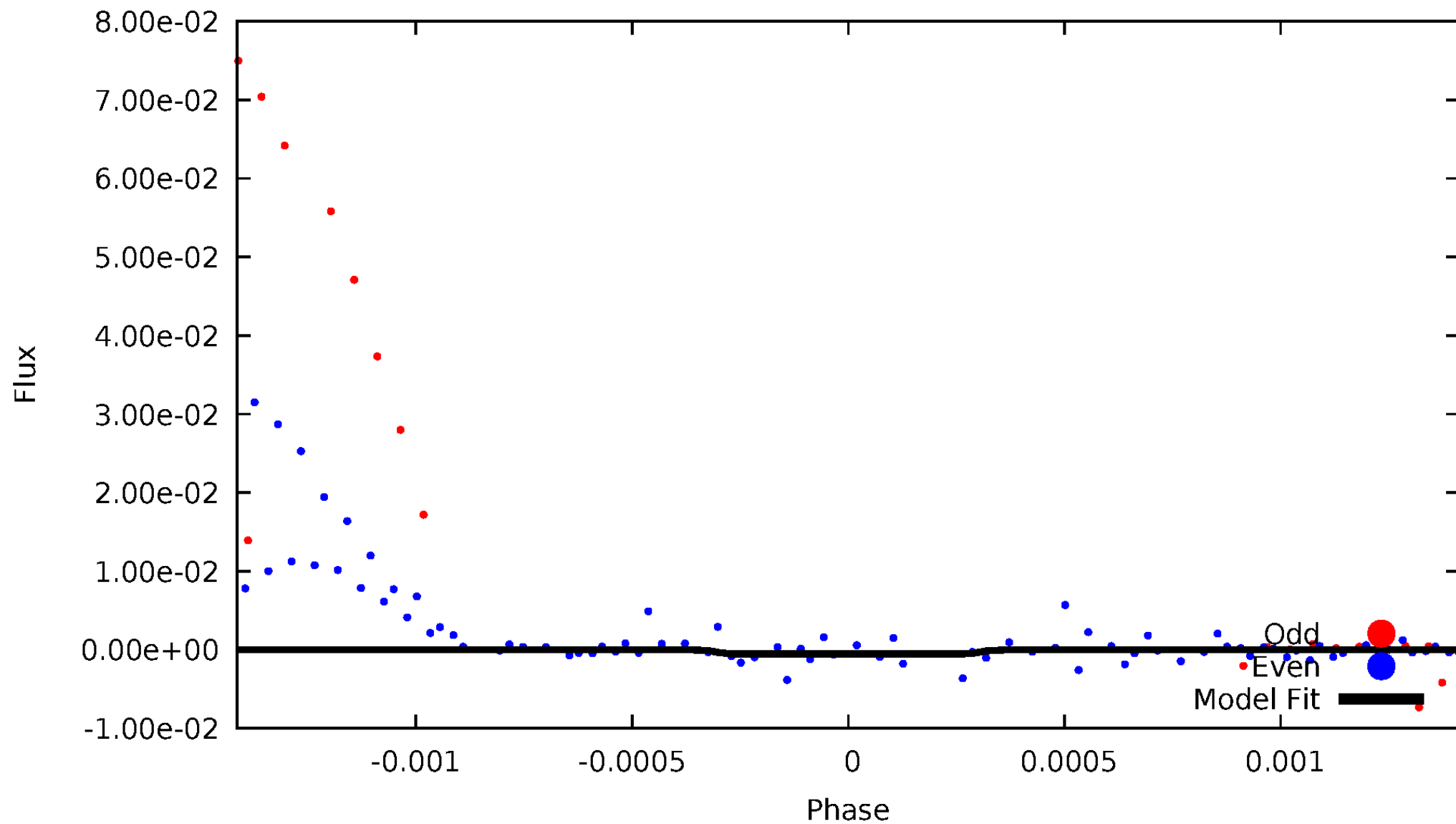
DV Odd/Even

TCE 008906045-02



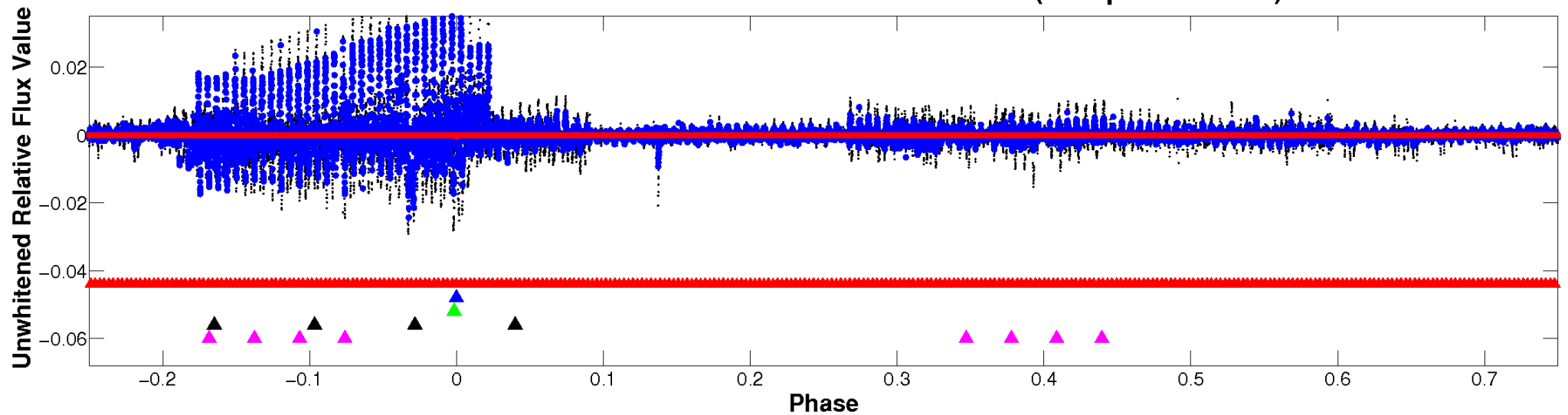
ALT Odd/Even

TCE 008906045-02

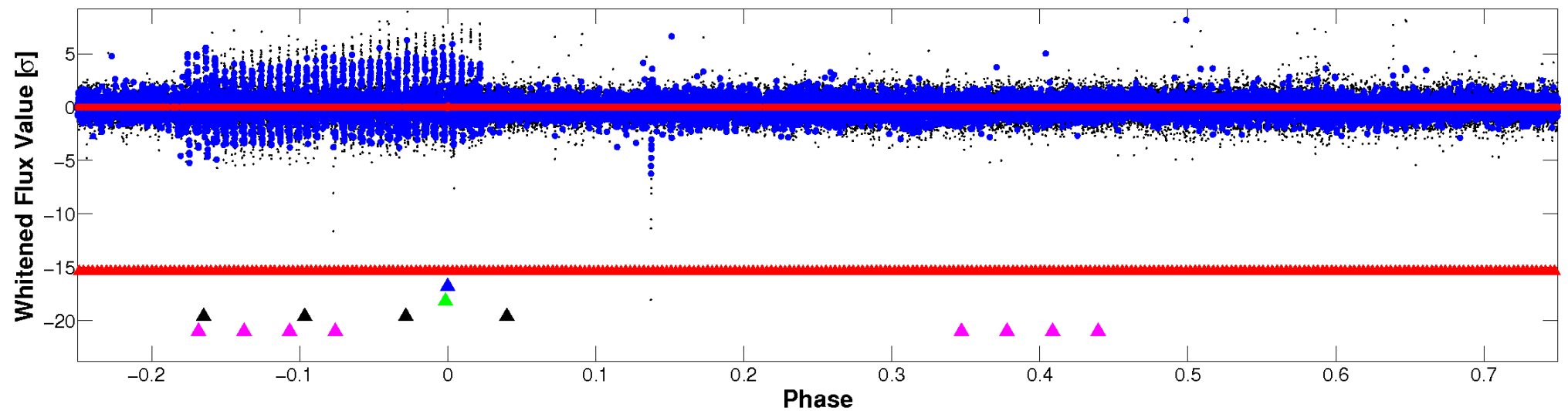


Non-Whitened Vs. Whitened Light Curve

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

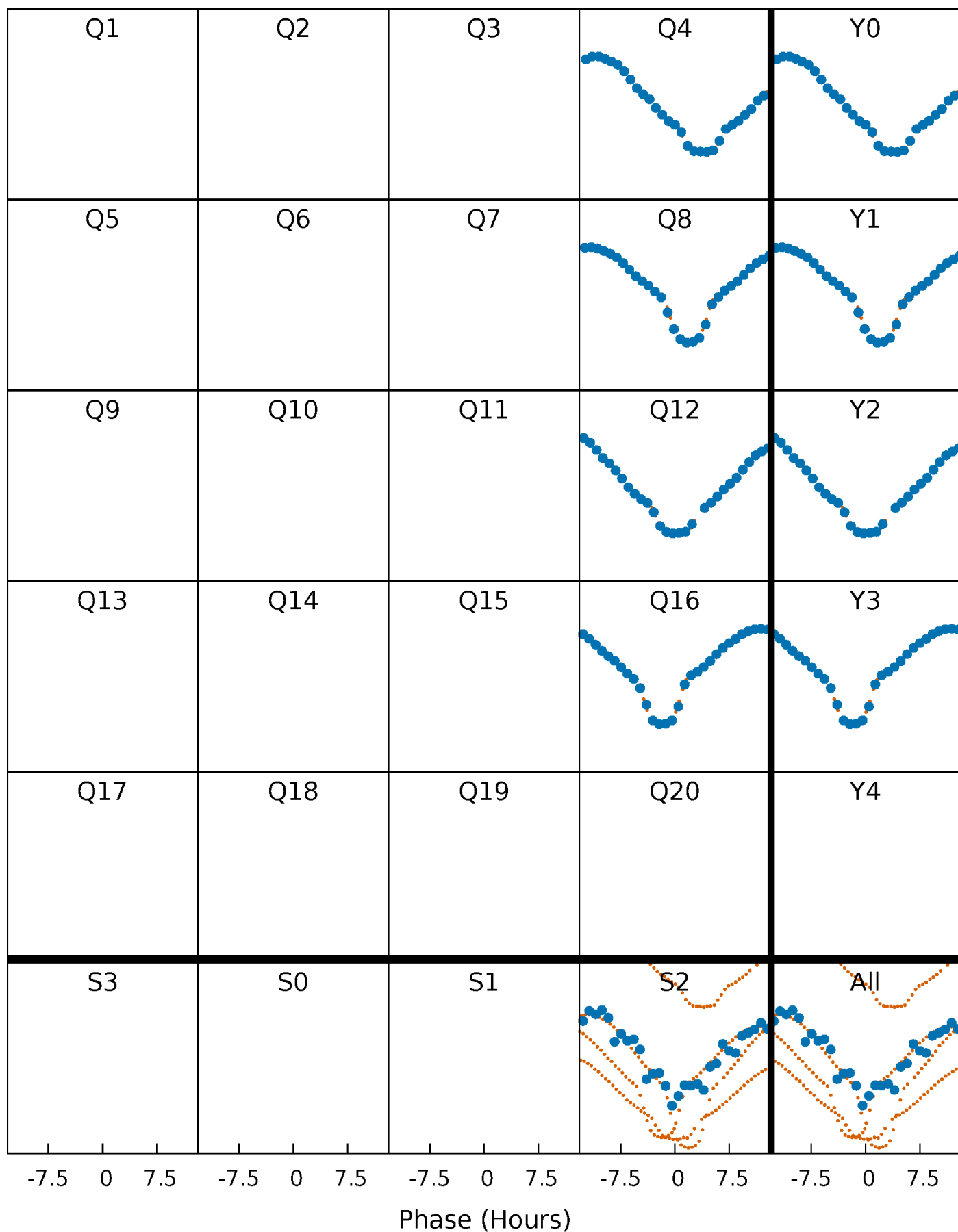


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



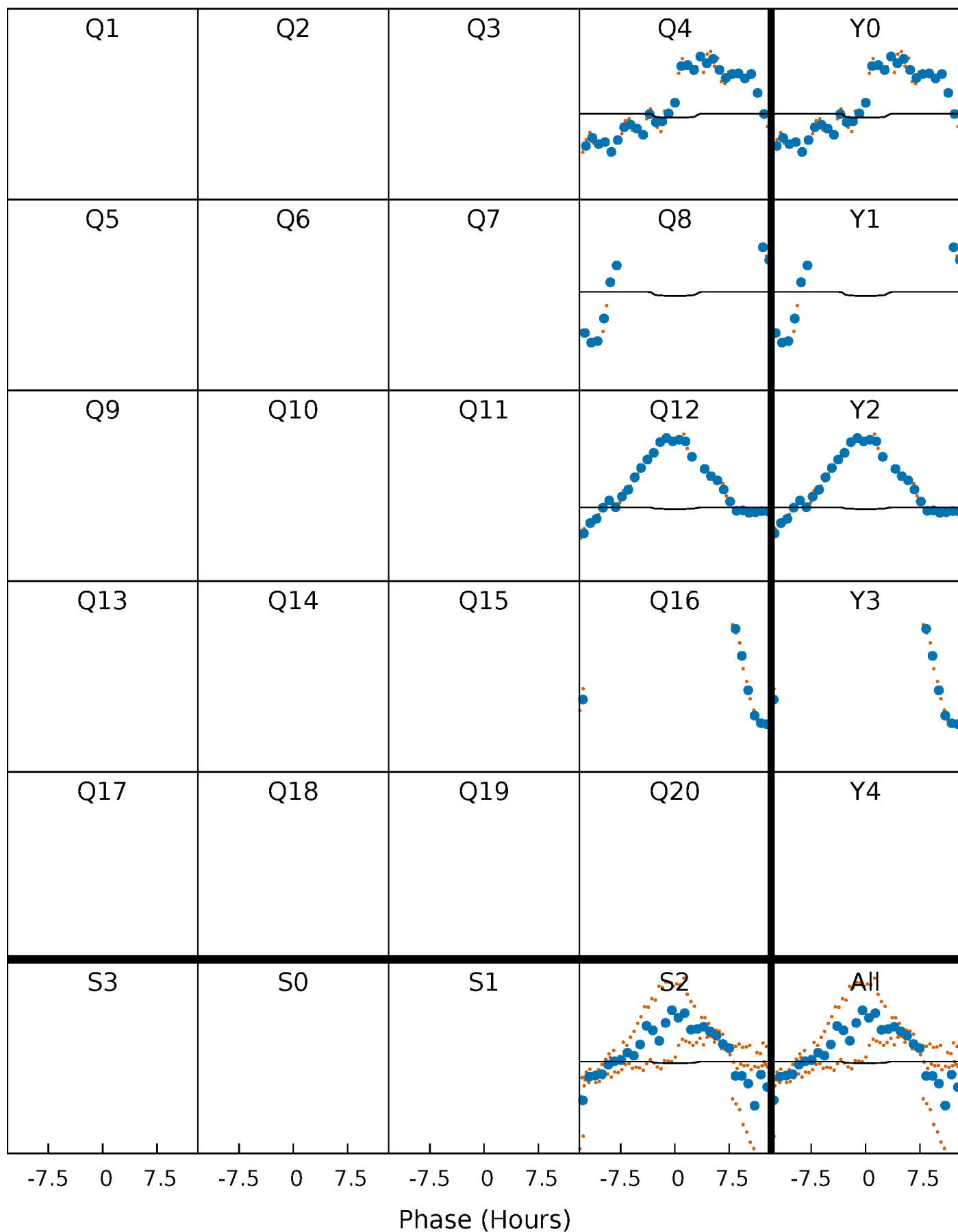
PDC Quarter-Phased Transit Curves

TCE 008906045-02 P=381.542243 Days $T_0=411.692744$ (BKJD)



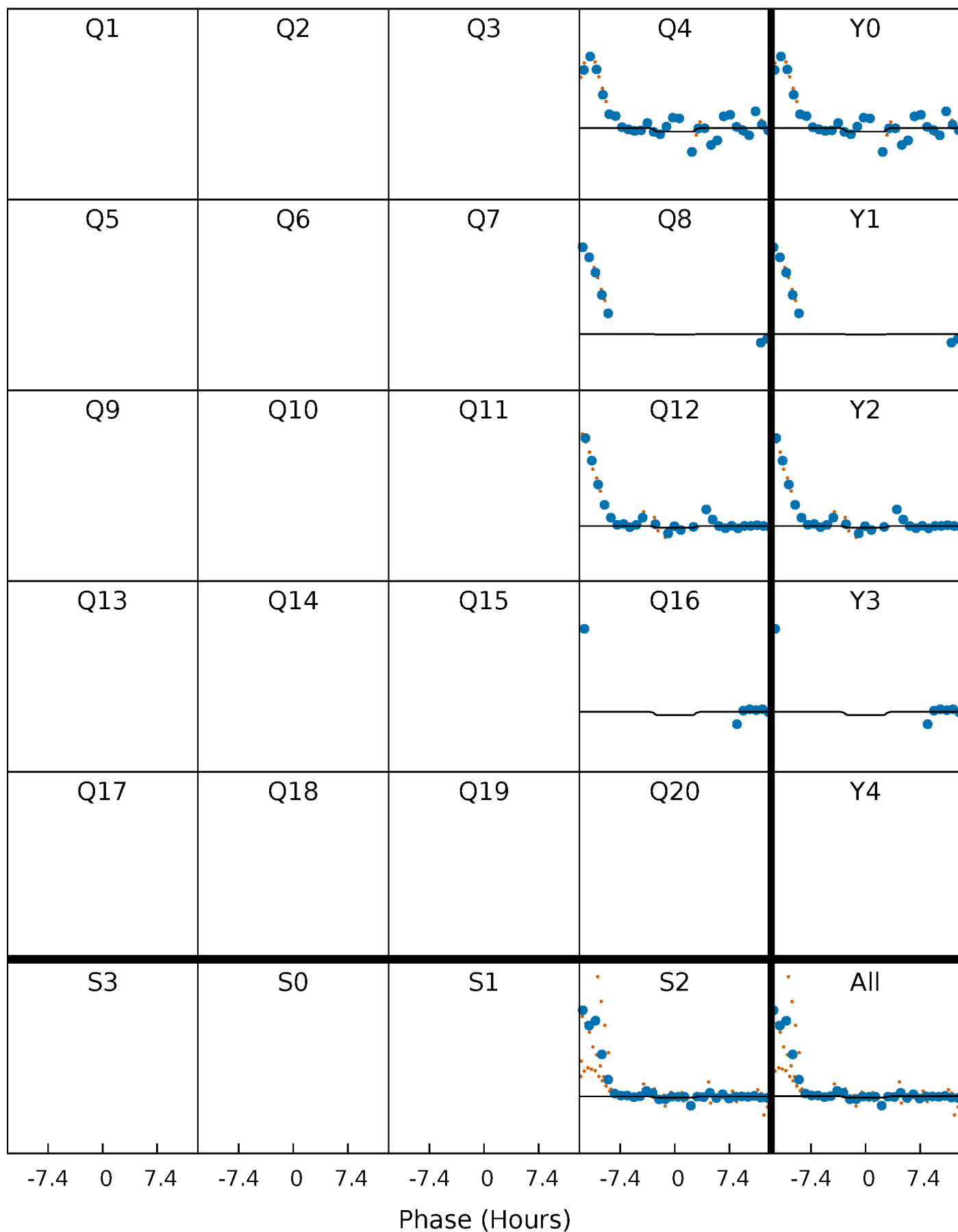
DV Quarter-Phased Transit Curves

TCE 008906045-02 P=381.542243 Days $T_0=411.692744$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

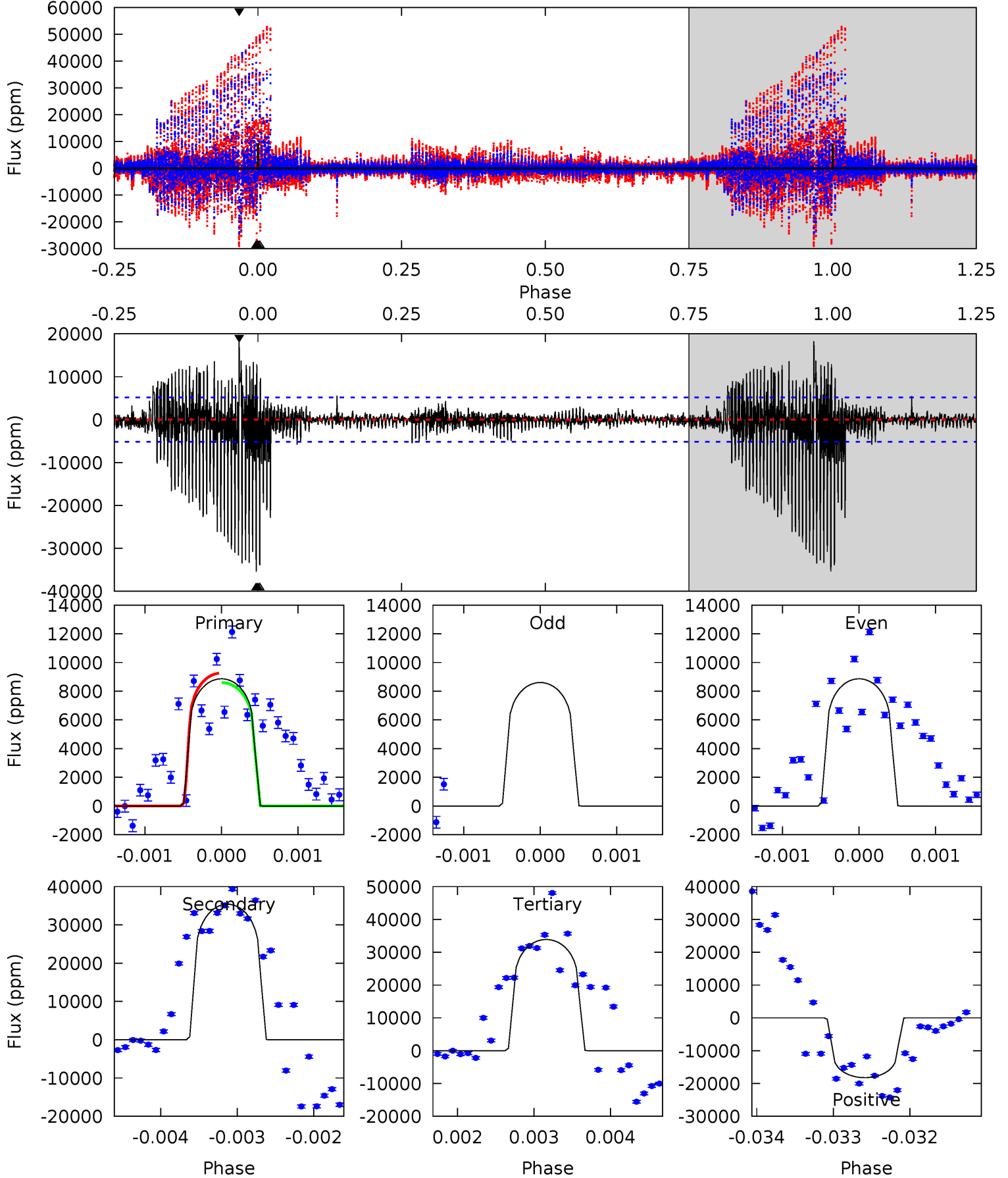
TCE 008906045-02 P=381.542243 Days $T_0=411.695814$ (BKJD)



DV Model-Shift Uniqueness Test

008906045-02, P = 381.542243 Days, E = 30.150501 Days

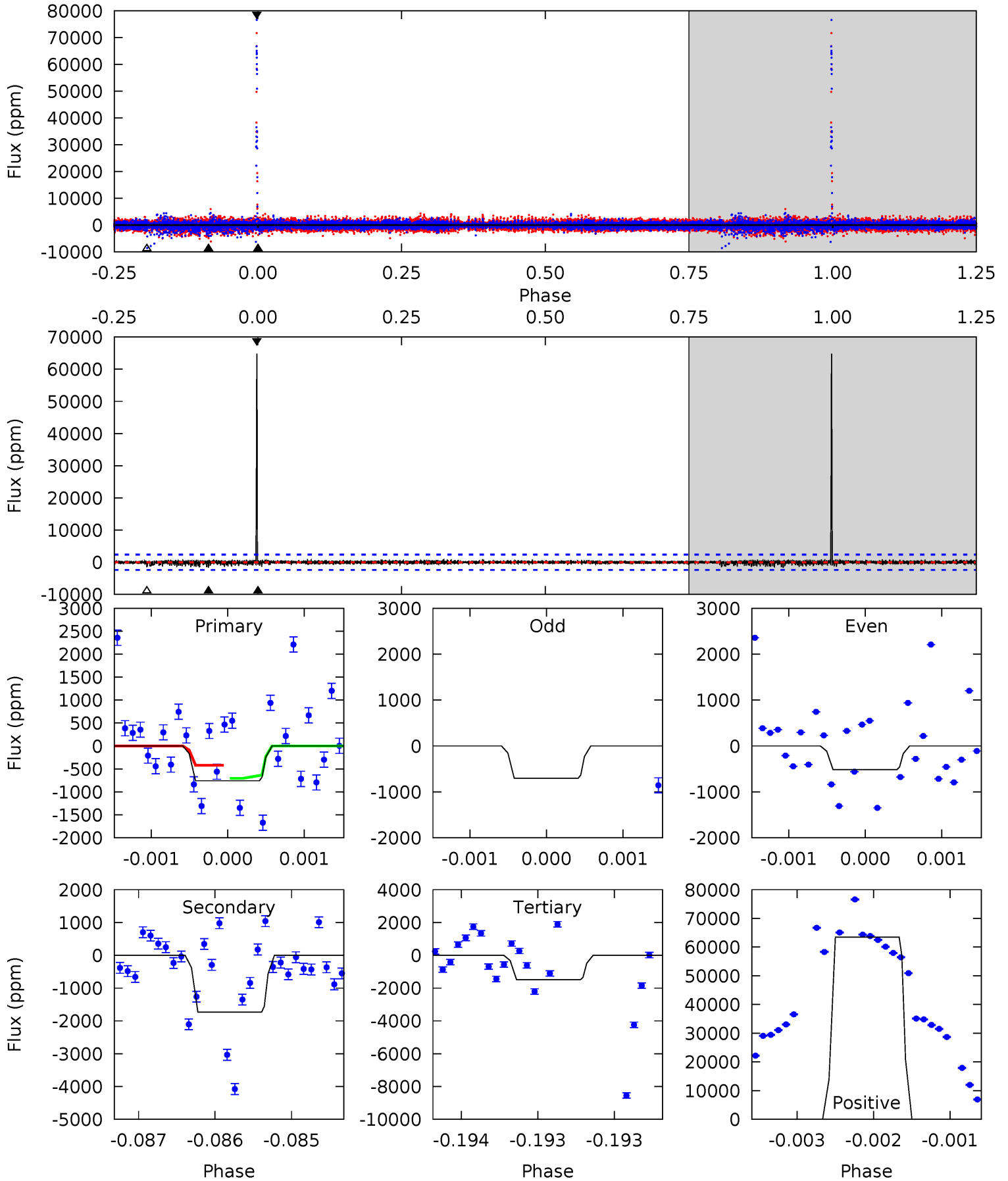
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.46	37.8	36.1	19.4	5.50	3.37	3.80	-26.7	-9.99	1.61	18.3	0.28	1.00	0.34	0.36



Alt Model-Shift Uniqueness Test

008906045-02, P = 381.542243 Days, E = 30.153571 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.77	4.05	3.48	148.5	5.53	3.41	3.10	-1.71	-146.8	0.57	-144.5	0.43	1.00	0.97	0.35



Stellar Parameters For KIC 008906045

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5891^{+159}_{-176}	$4.305^{+0.175}_{-0.175}$	$-0.140^{+0.300}_{-0.300}$	$1.138^{+0.329}_{-0.219}$	$0.953^{+0.144}_{-0.108}$	$0.912^{+0.806}_{-0.423}$
	+3%/-3%	+4%/-4%	+214%/-214%	+29%/-19%	+15%/-11%	+88%/-46%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008906045-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-35401 ± 938	$7.10^{+7.25}_{-4.95}$	384^{+27}_{-24}	12857^{+39798}_{-5087}	$419882^{+4002653}_{-319590}$
Alt.	-1729 ± 427	$7.21^{+6.42}_{-4.90}$	385^{+29}_{-26}	5095^{+4351}_{-1192}	$19510^{+163430}_{-14656}$

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

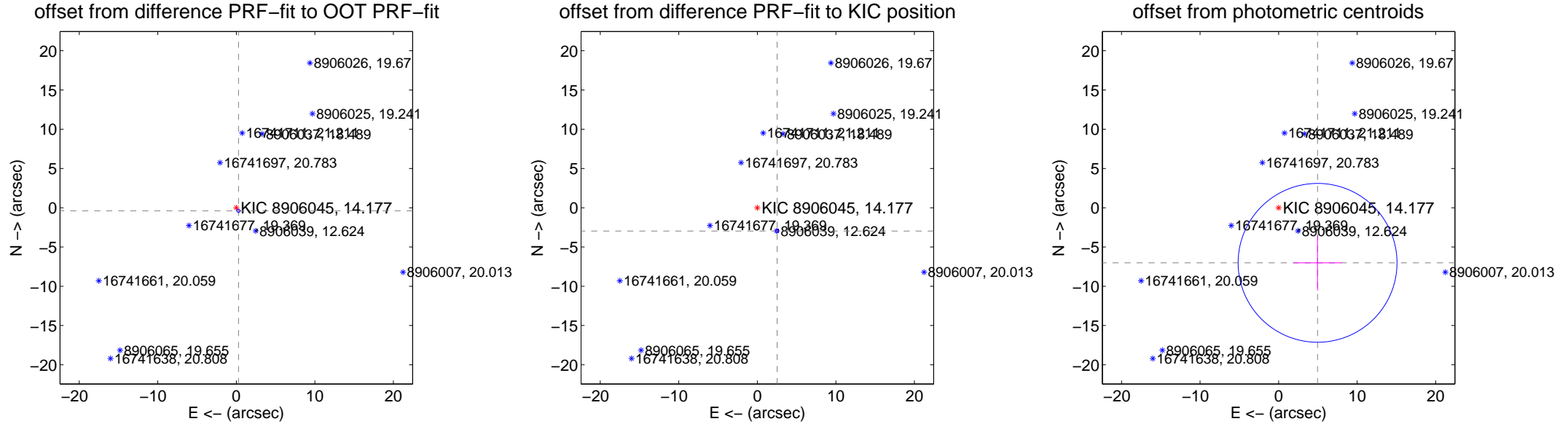
DV Centroid Data

Supplemental centroid analysis for 008906045-02. Kepler magnitude: 14.18. Transit SNR 0.44

There are 4 quarters with good PRF difference image offsets

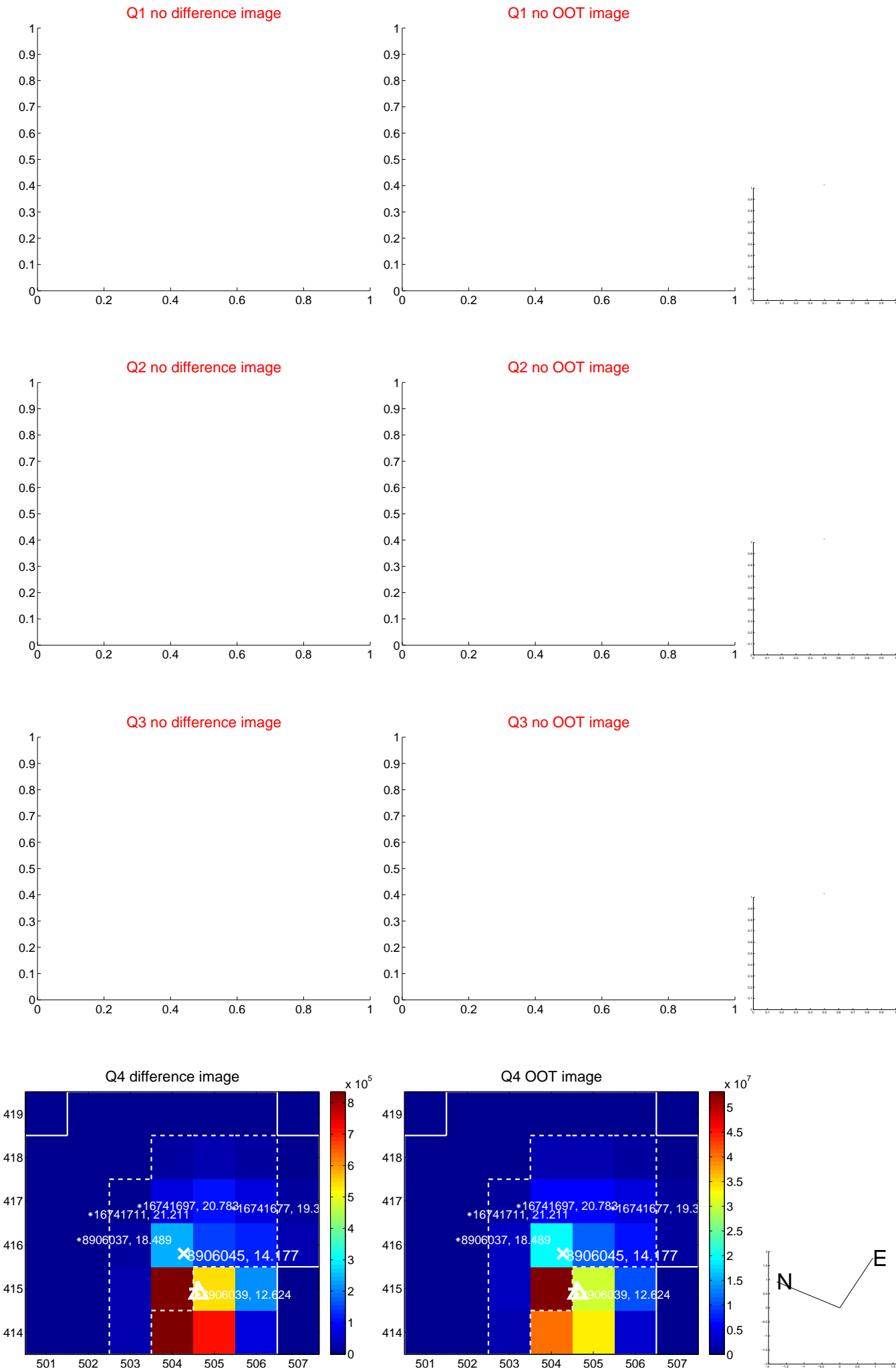
The OOT PRF centroid is offset from the target star catalog position by about 3.38 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.481 ± 0.069	6.98	-0.279 ± 0.068	-0.392 ± 0.068
PRF-fit source offset from KIC position	3.893 ± 0.069	56.16	-2.519 ± 0.070	-2.968 ± 0.069
photometric centroid source offset	8.59 ± 3.37	2.55	-4.96 ± 3.06	-7.02 ± 3.52

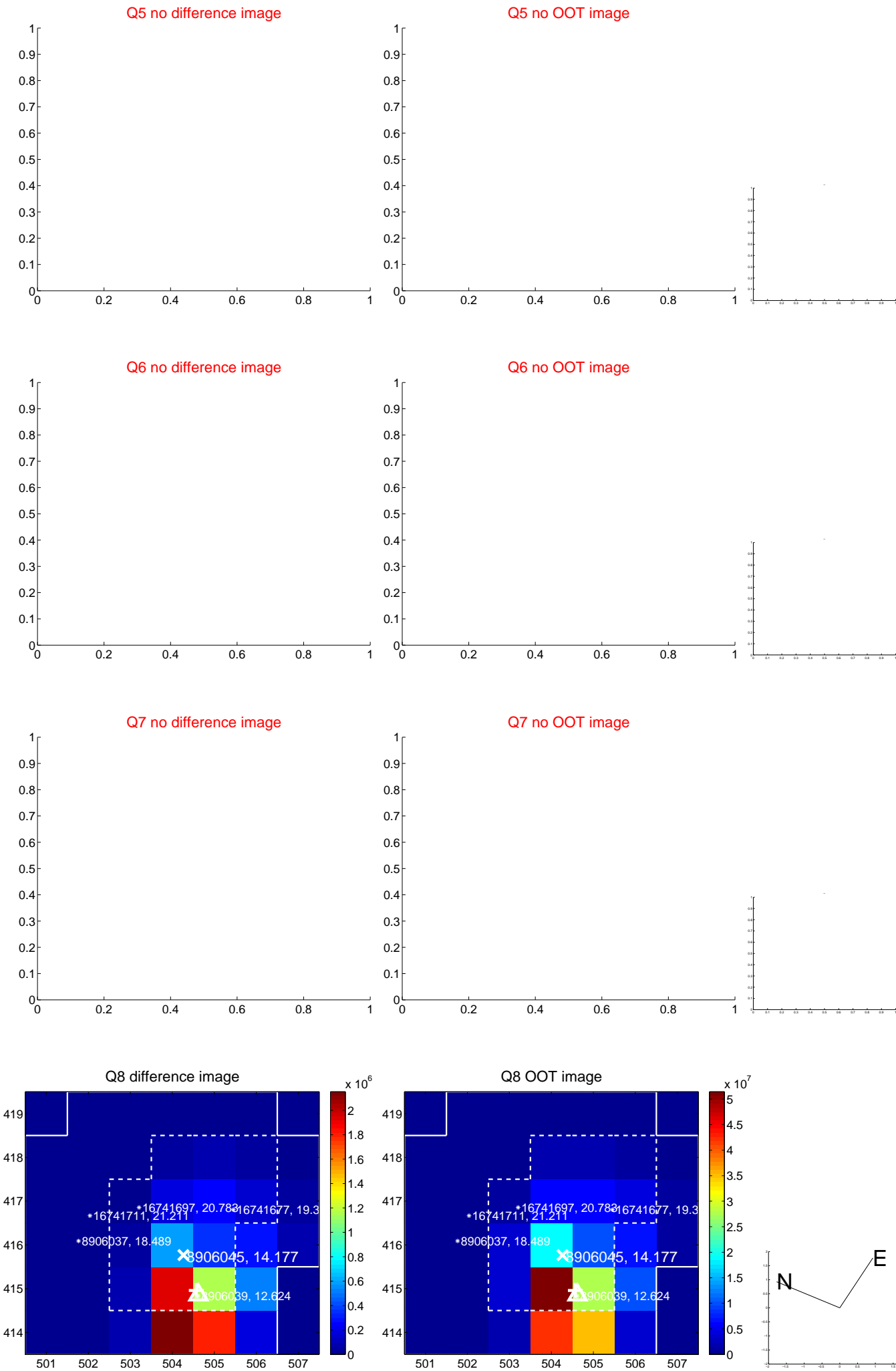


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

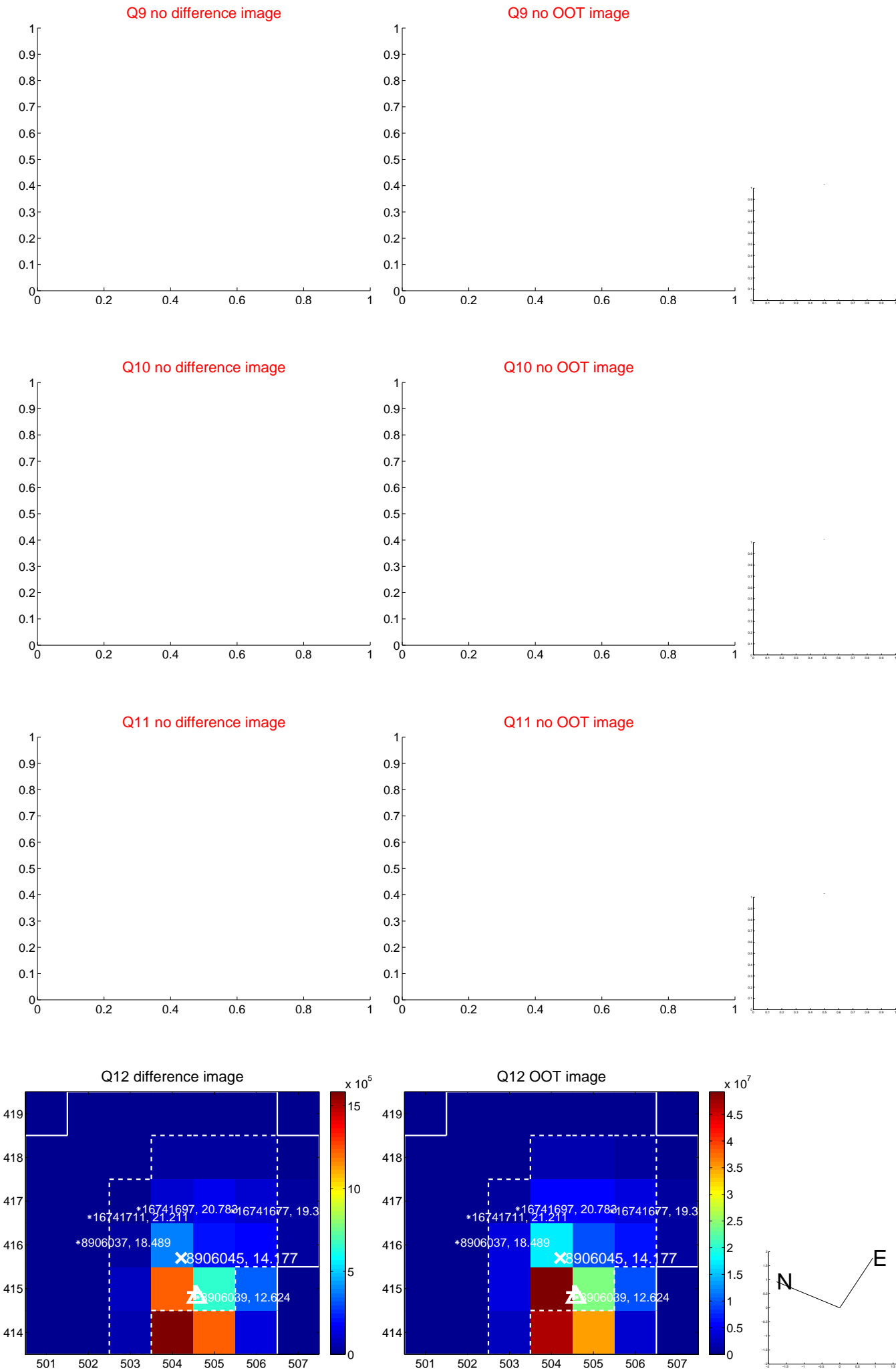
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



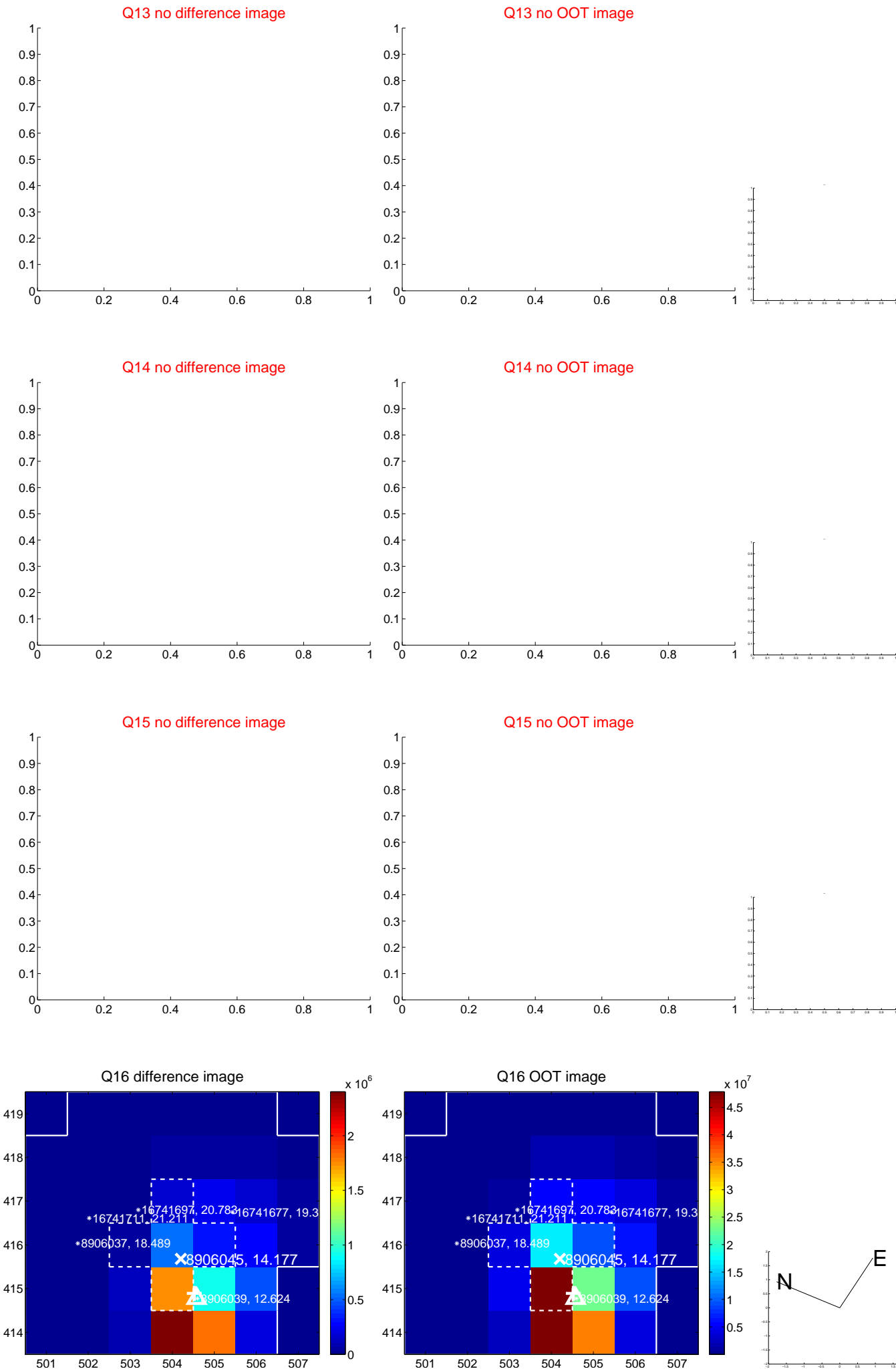
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



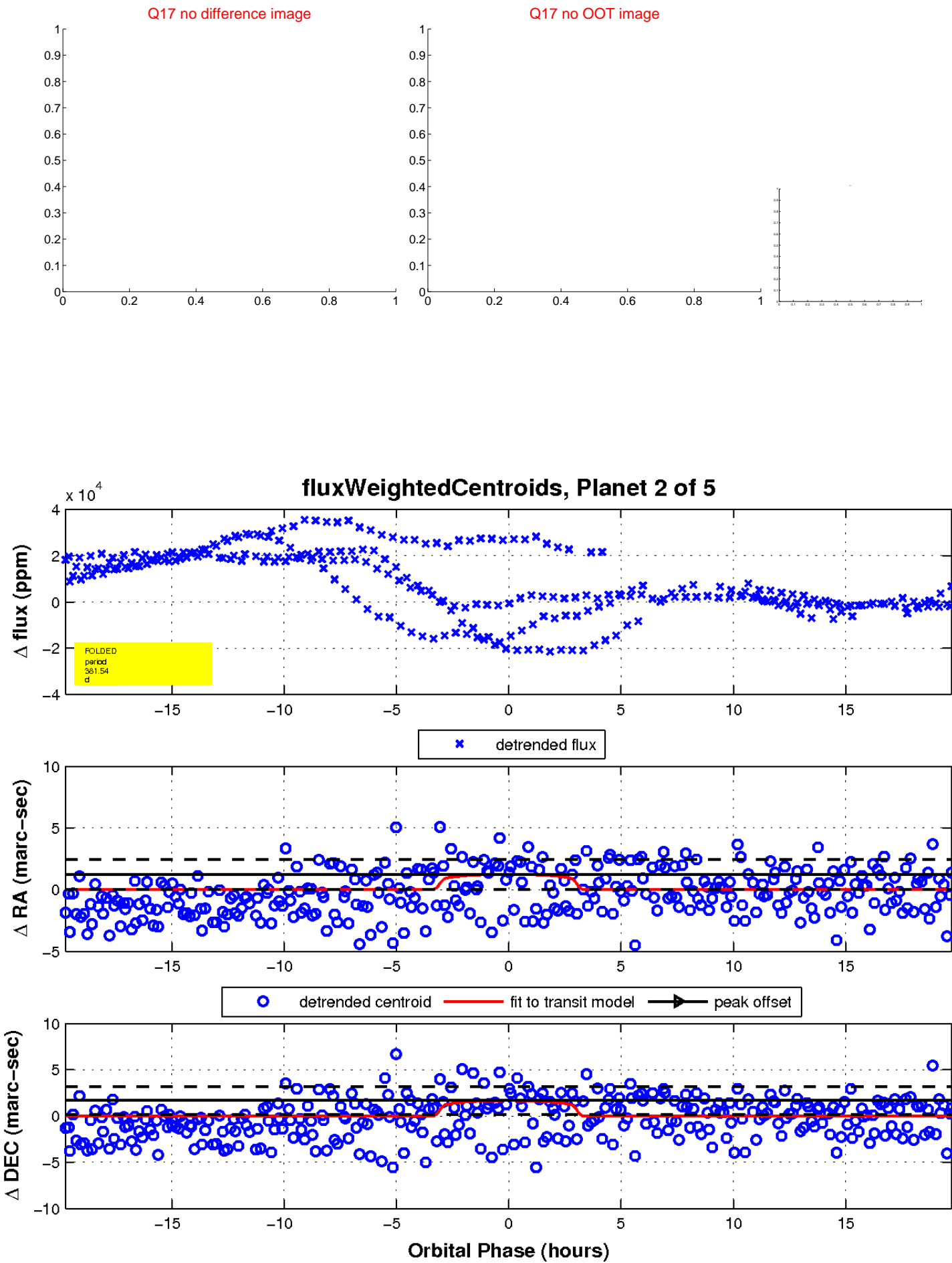
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

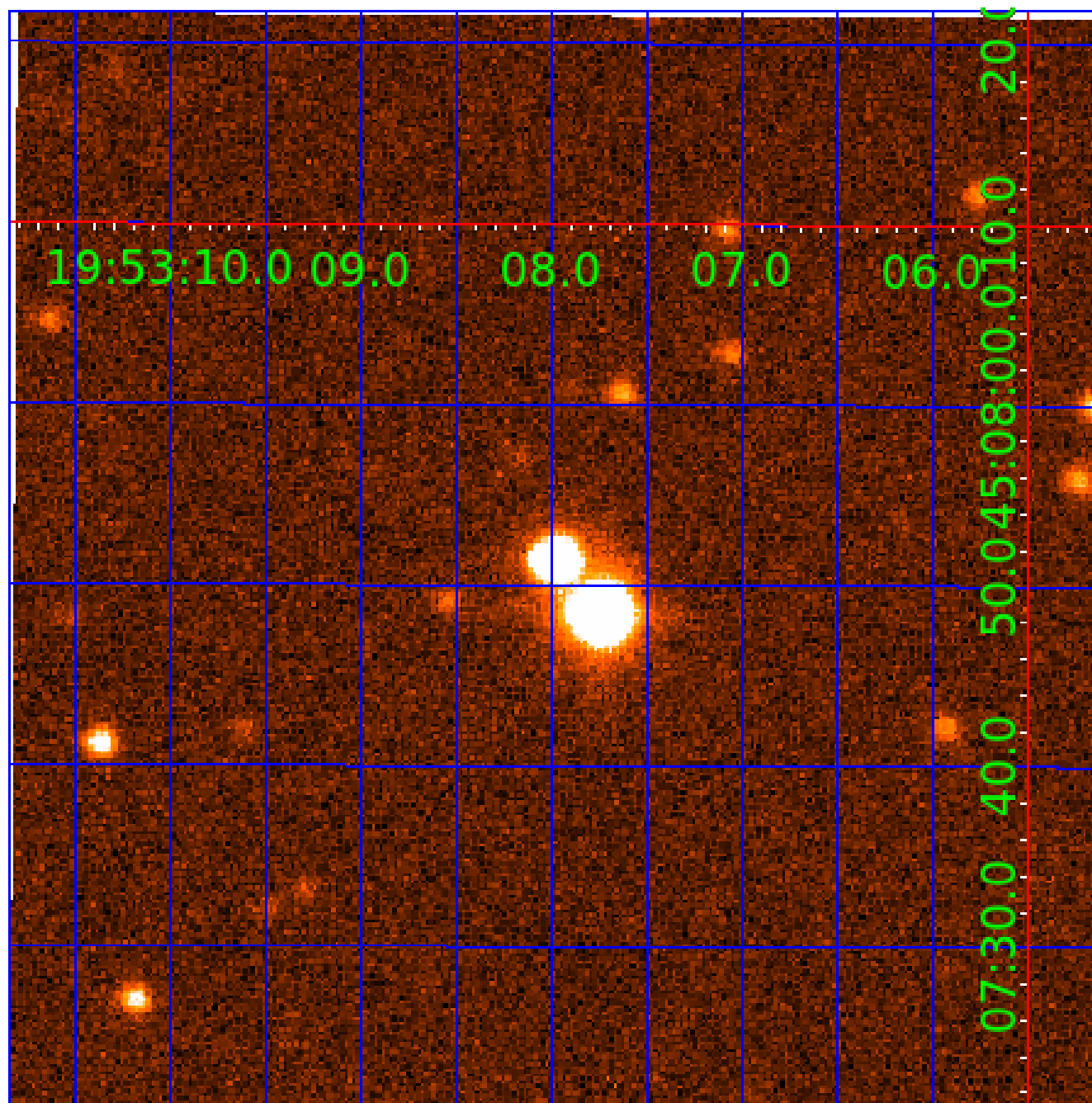


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008906045

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})
008906045-01	OBS	3789.01	2.347420	133.687739	500.6	6.497	25.1	20.9	1.14	5891	3.04	1206.77
008906045-02	OBS	No	381.542243	411.692744	328.8	6.581	13.6	0.4	1.14	5891	2.35	1.36
008906045-03	OBS	No	381.518026	411.155410	22604.0	21.521	13.4	11.9	1.14	5891	18.11	1.36
008906045-04	OBS	No	355.487147	426.952465	3399.0	3.780	13.3	5.3	1.14	5891	12.30	1.50
008906045-05	OBS	No	184.896707	197.818890	6454.6	9.732	12.2	8.9	1.14	5891	16.64	3.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008906045-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_KIC_POS—EPHEM_MATCH
008906045-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008906045-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
008906045-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008906045-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

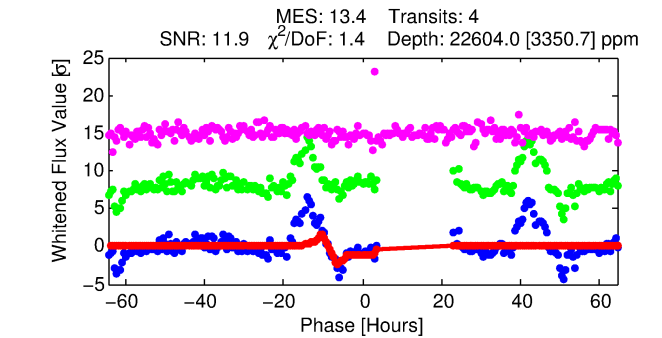
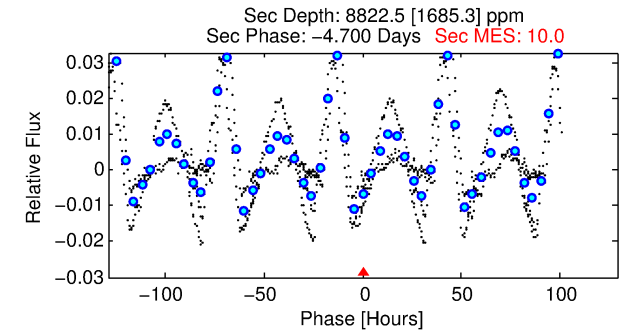
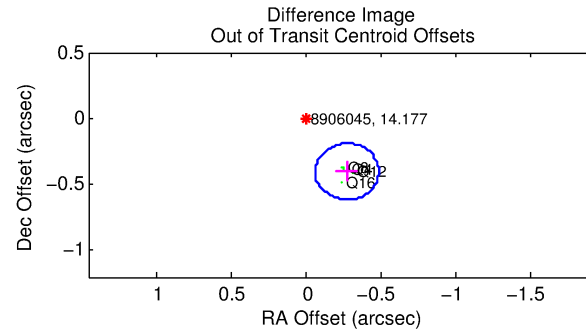
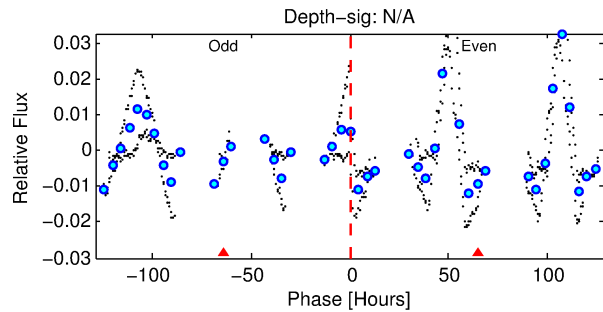
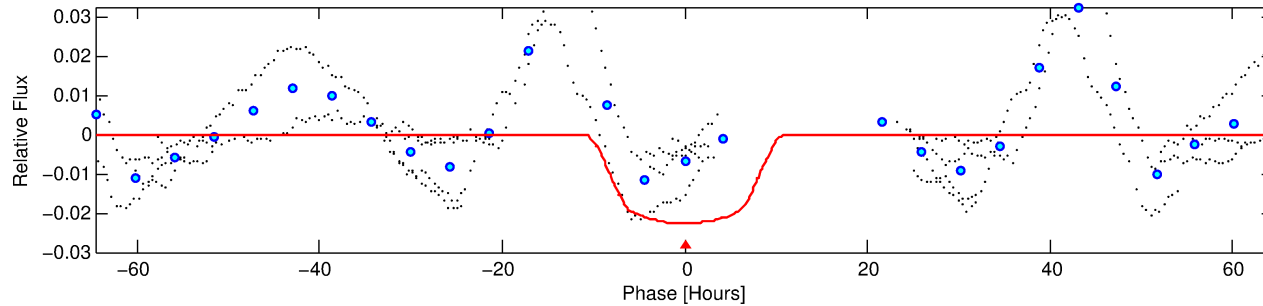
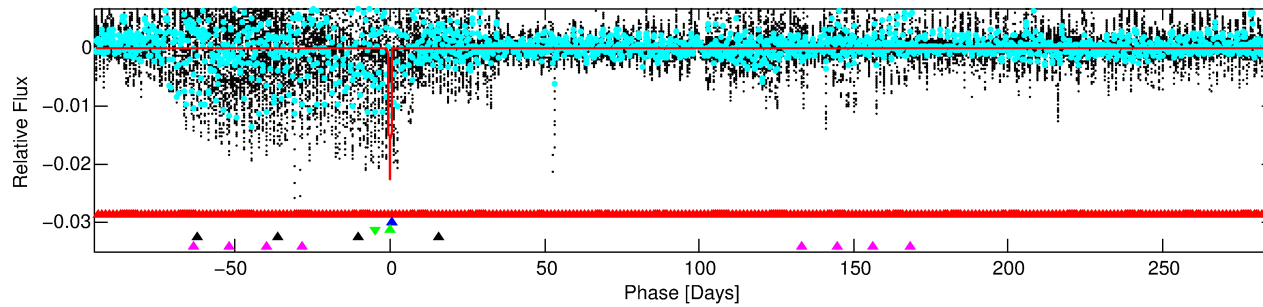
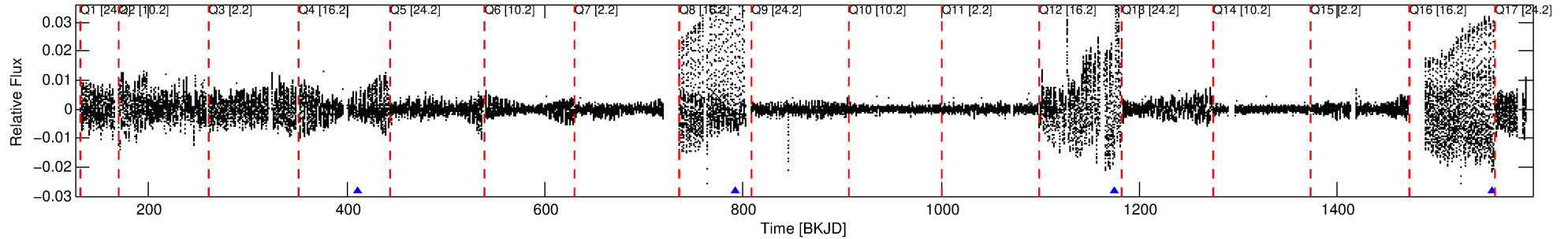
Ephemeris Match Information For 008906045-03

No Significant Match Found

DV One-Page Summary

KIC: 8906045 Candidate: 3 of 5 Period: 381.518 d
KOI: K03789 Corr: No Ephemeris Match

Kp: 14.18 R*: 1.14 Rs Teff: 5891.0 K Logg: 4.30 Fe/H: -0.140



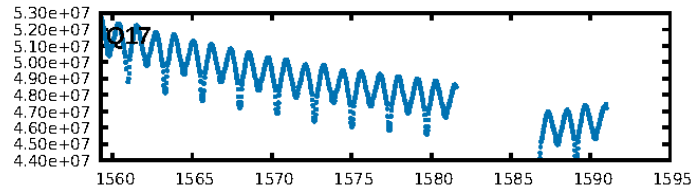
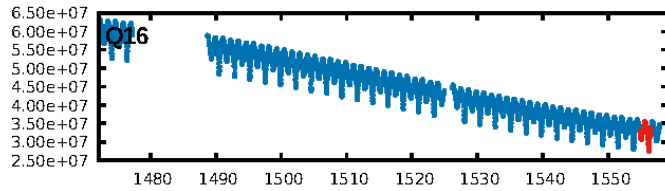
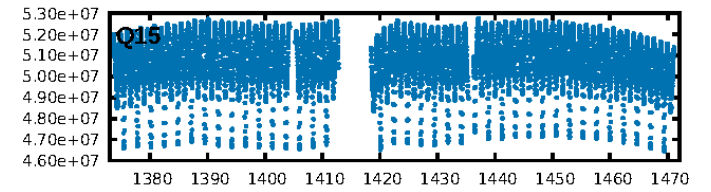
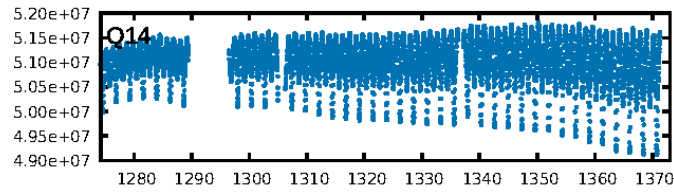
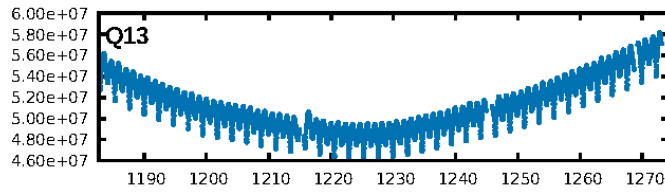
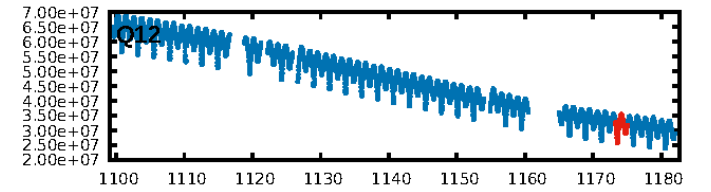
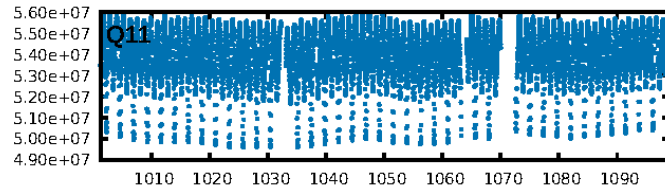
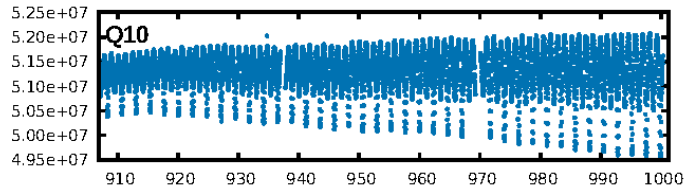
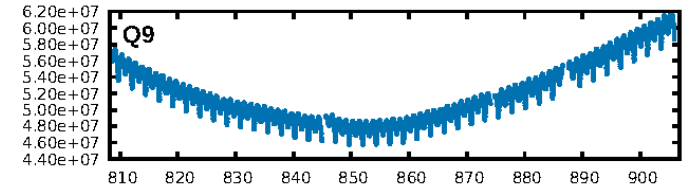
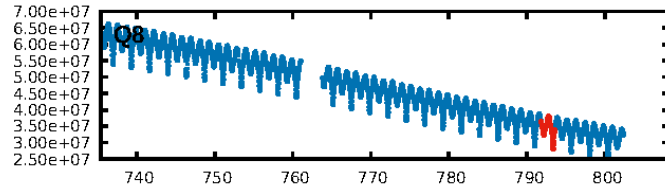
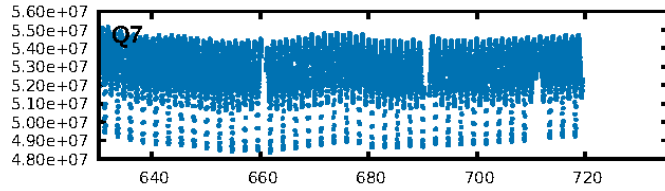
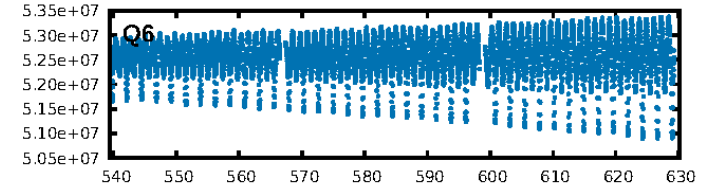
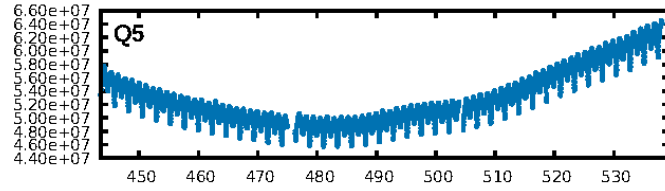
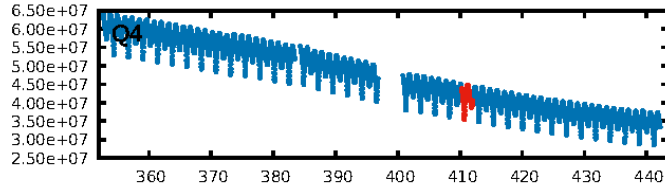
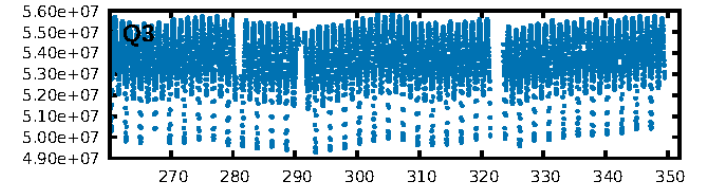
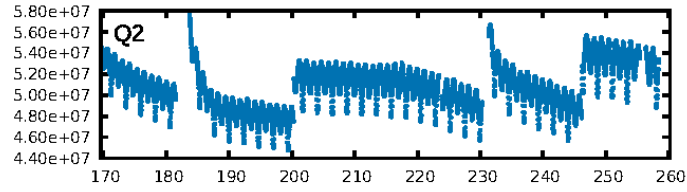
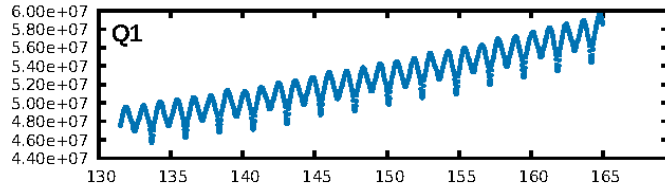
DV Fit Results:

Period = 381.51803 [0.01240] d
Epoch = 411.1554 [0.0634] BKJD
Rp/R* = 0.1459 [0.0096]
a/R* = 127.24 [14.85]
b = 0.66 [0.11]
Seff = 1.36 [0.48]
Teq = 275 [24] K
Rp = 18.12 [5.37] Re
a = 1.0134 [0.2381] AU
Ag = 15191.04 [6137.96] [2.47σ]
Teff = 4727 [309] K [14.38σ]

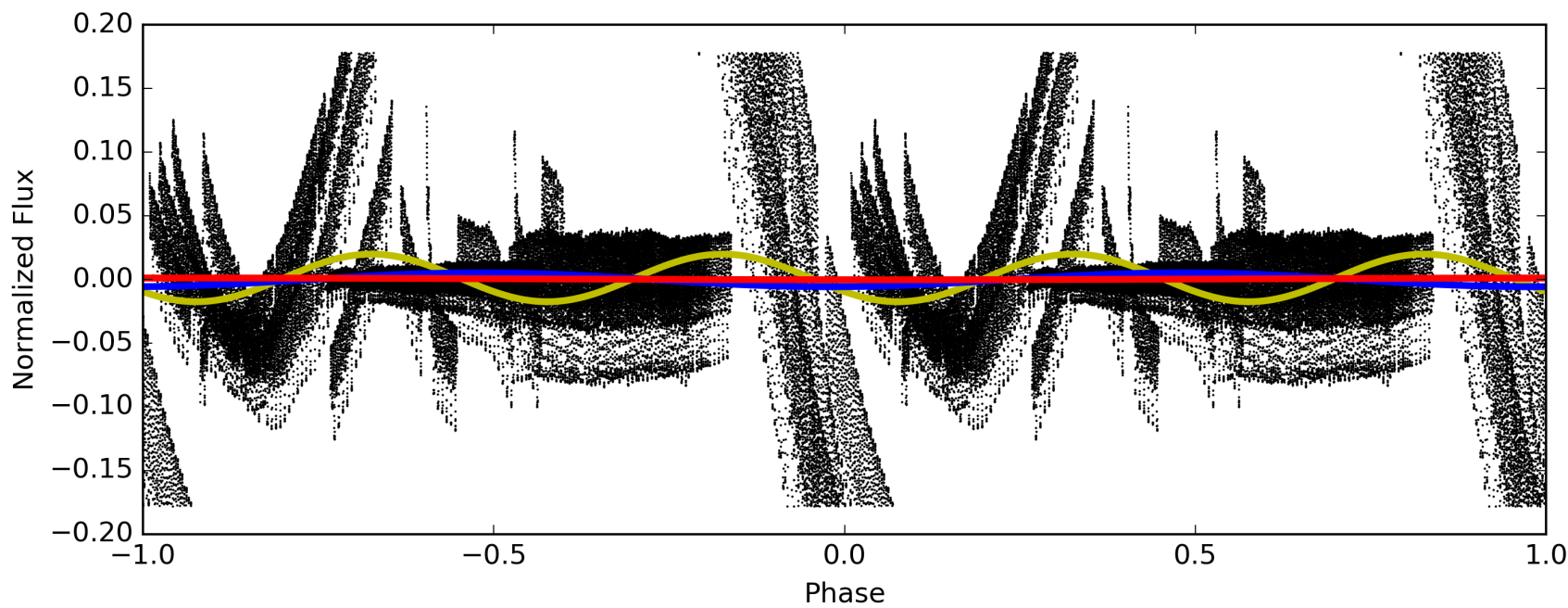
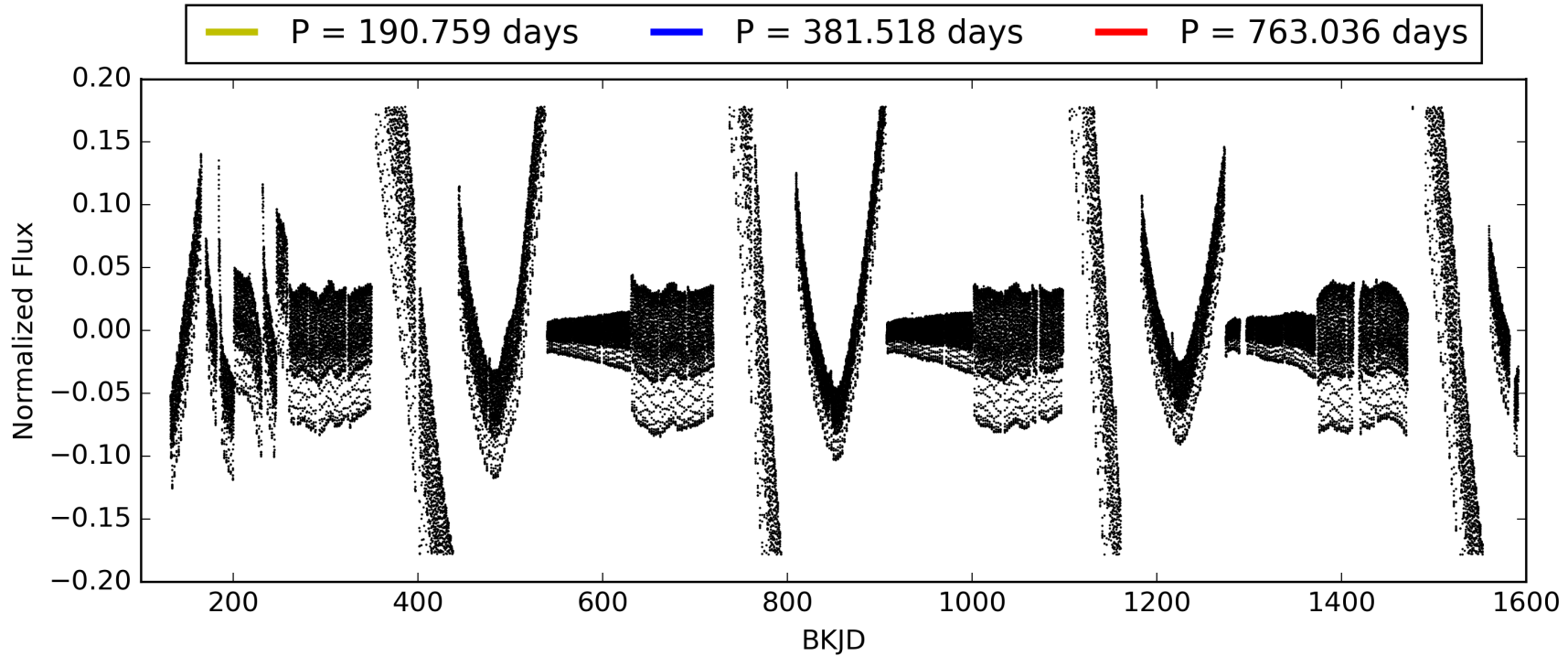
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.59σ]
LongPeriod-sig: 2.1% [0.03σ]
ModelChiSquare2-sig: 1.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.2102
Centroid-sig: 50.4%
Centroid-so: 2.329 arcsec [42.23σ]
OotOffset-rm: 0.489 arcsec [6.90σ]
KicOffset-rm: 3.905 arcsec [53.54σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.00 [0/4]

TCE 008906045-03, PDC Light Curves

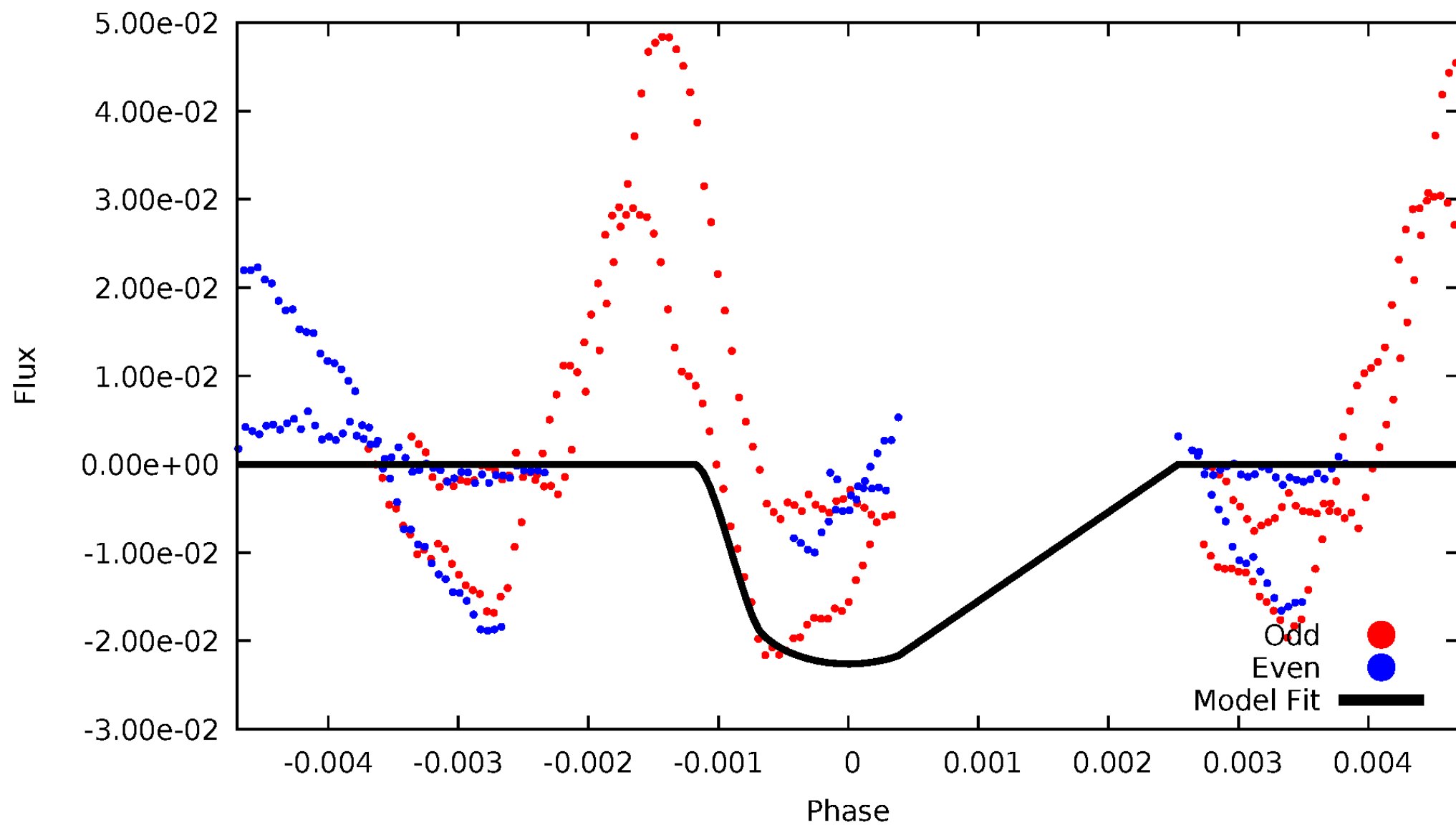


TCE 008906045-03



DV Odd/Even

TCE 008906045-03

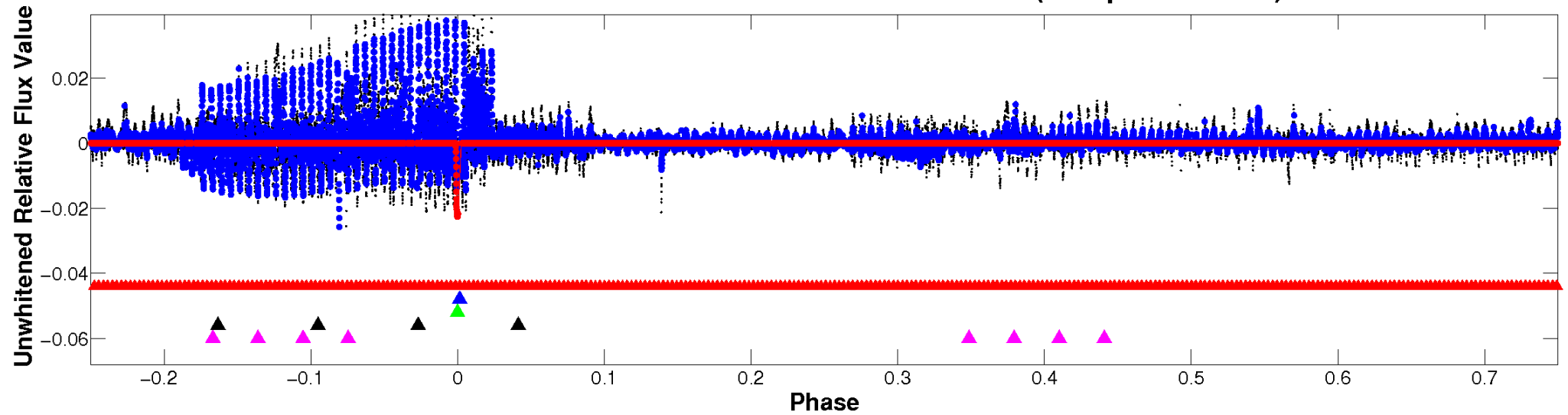


ALT Odd/Even

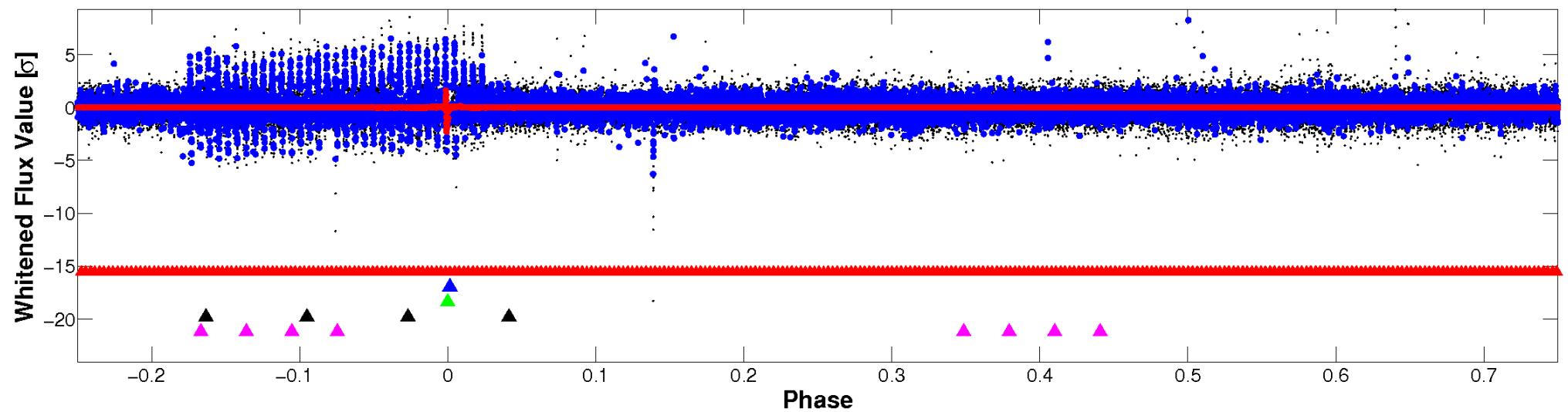
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

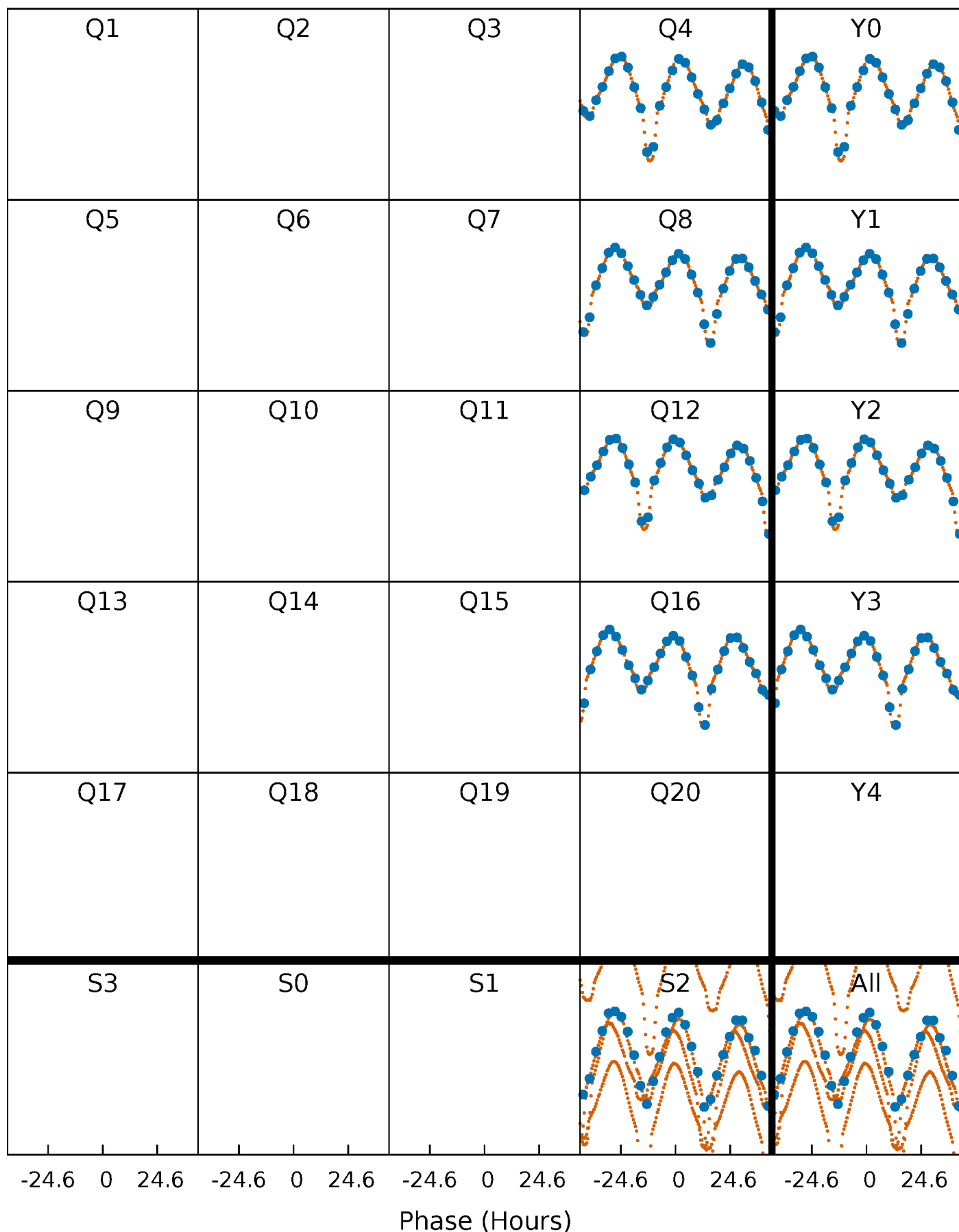


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



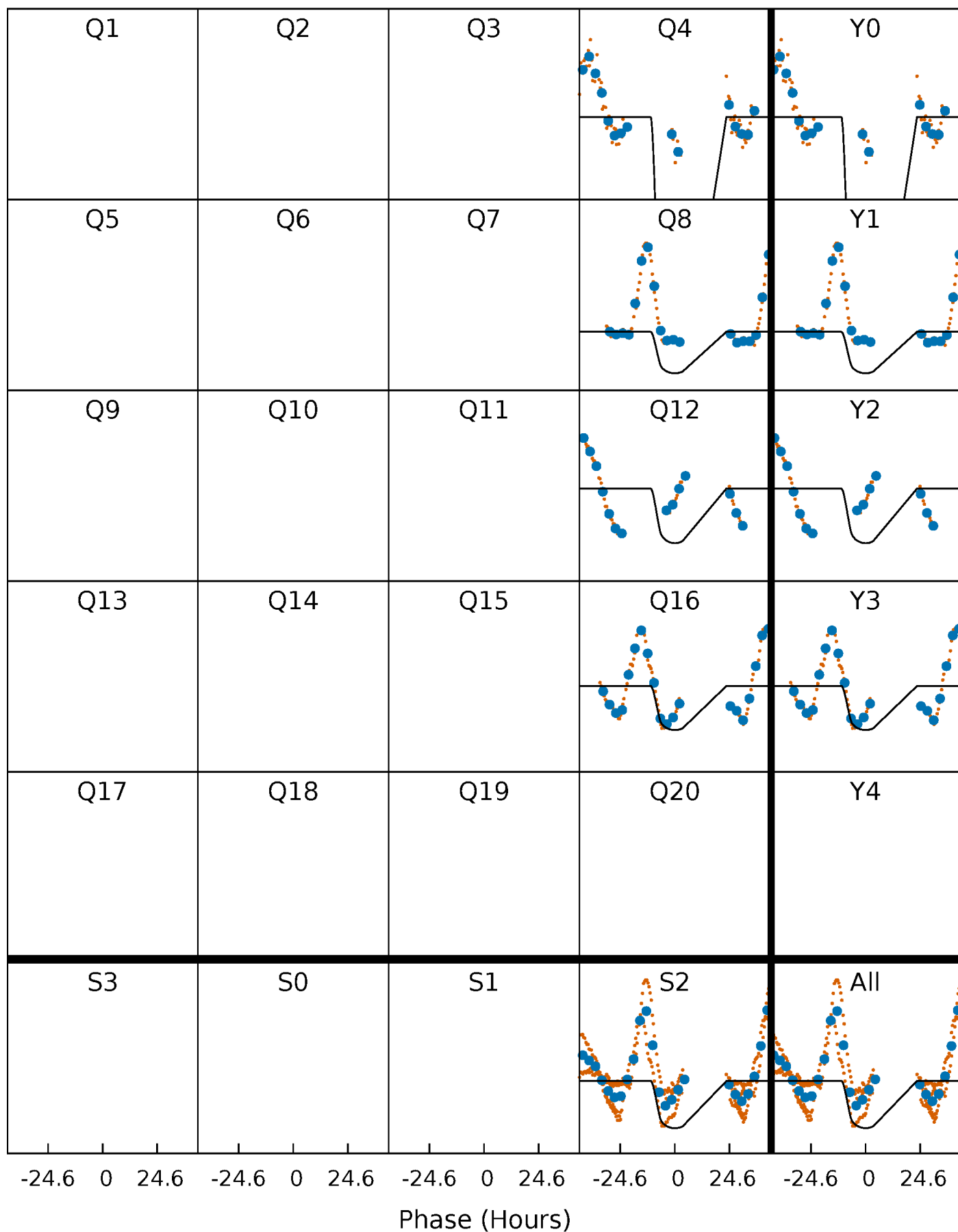
PDC Quarter-Phased Transit Curves

TCE 008906045-03 P=381.518026 Days $T_0=411.155410$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008906045-03 P=381.518026 Days $T_0=411.155410$ (BKJD)

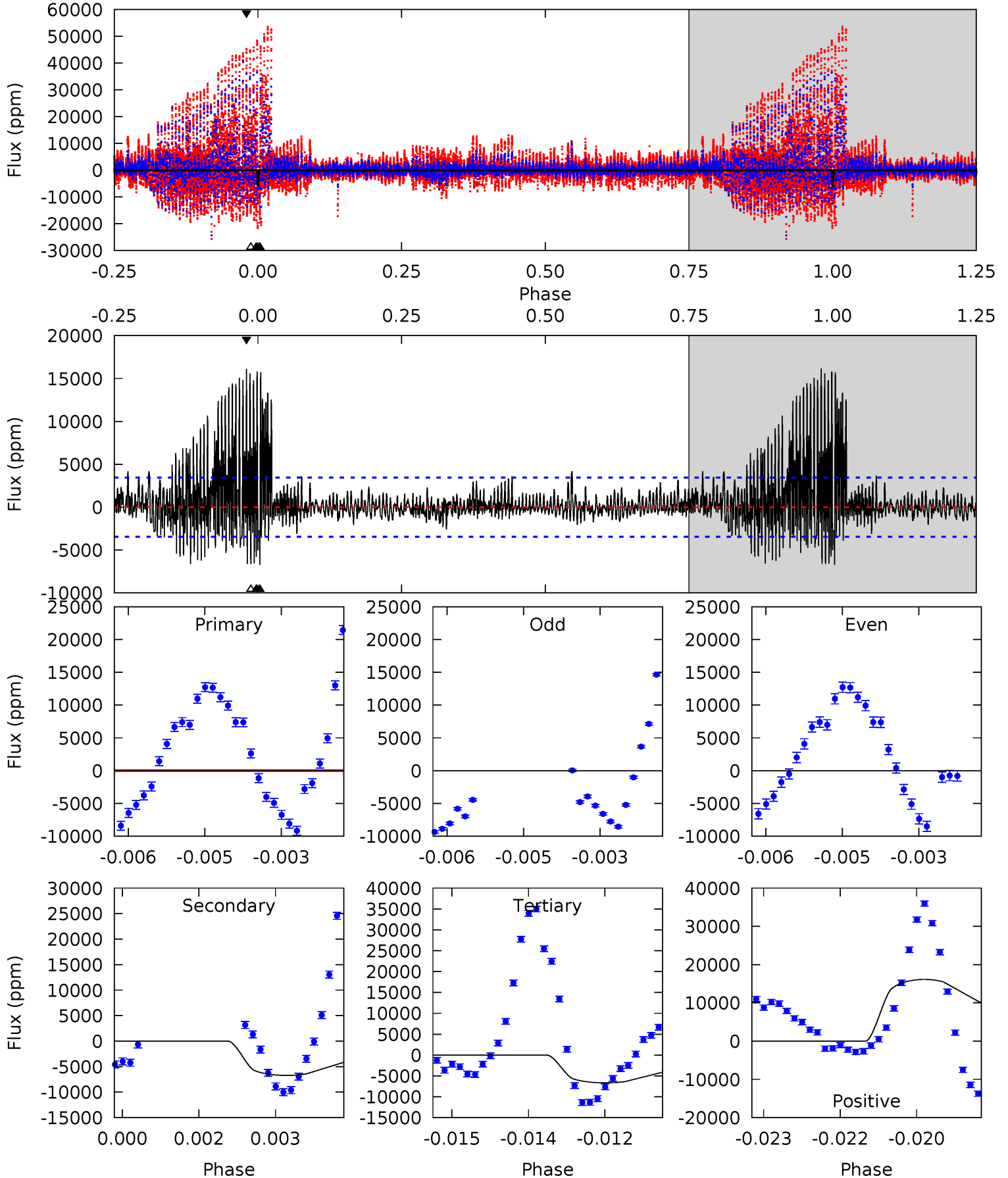


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008906045-03, P = 381.518026 Days, E = 29.637384 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.94	10.4	10.3	25.0	5.37	3.17	3.55	-1.40	-16.1	0.10	-14.6	5.32	1.98	0.71	4.73



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008906045

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5891^{+159}_{-176}	$4.305^{+0.175}_{-0.175}$	$-0.140^{+0.300}_{-0.300}$	$1.138^{+0.329}_{-0.219}$	$0.953^{+0.144}_{-0.108}$	$0.912^{+0.806}_{-0.423}$
	+3%/-3%	+4%/-4%	+214%/-214%	+29%/-19%	+15%/-11%	+88%/-46%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008906045-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-6719±644	$18.23^{+3.00}_{-2.52}$	385^{+27}_{-25}	4588^{+182}_{-186}	11540^{+3967}_{-3030}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

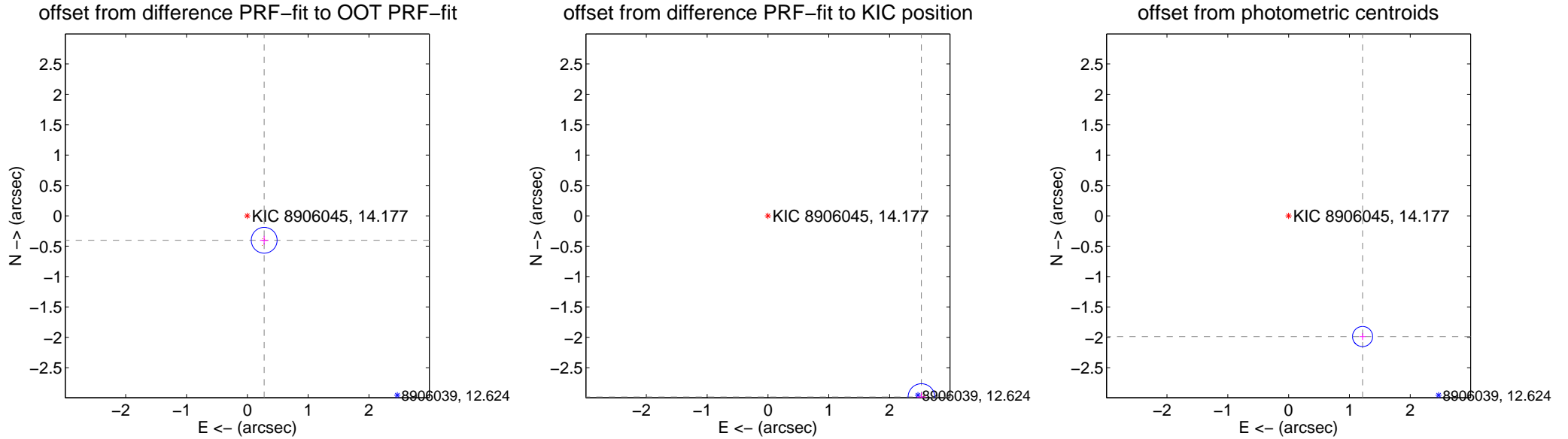
DV Centroid Data

Supplemental centroid analysis for 008906045-03. Kepler magnitude: 14.18. Transit SNR 11.86

There are 0 quarters with good PRF difference image offsets

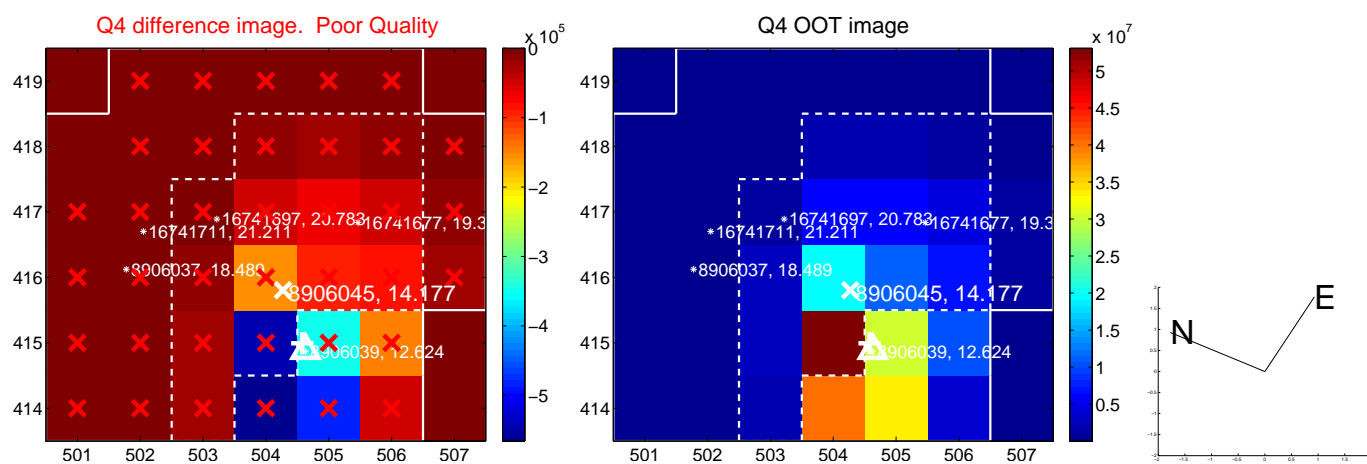
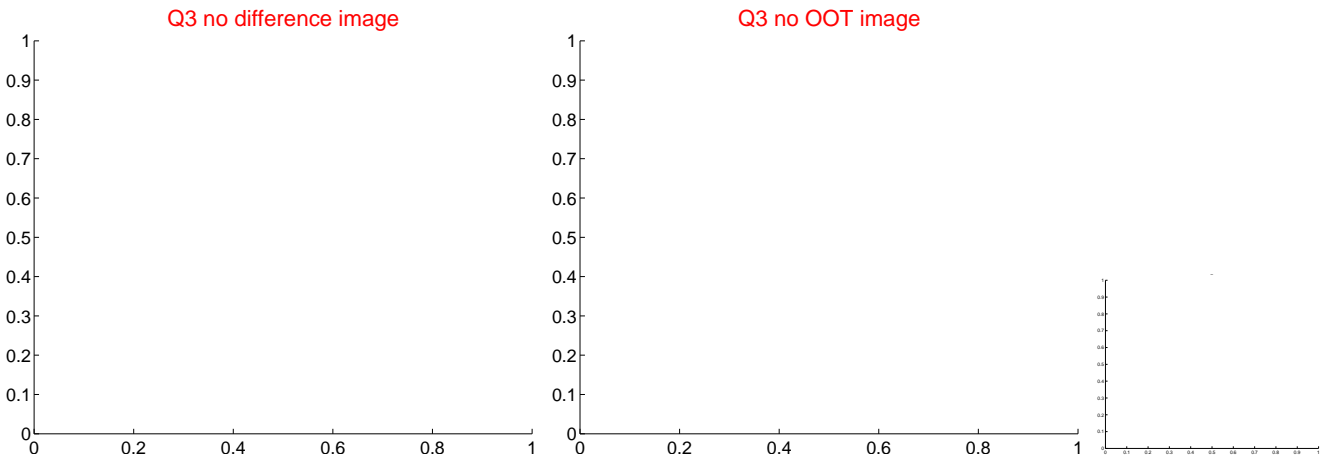
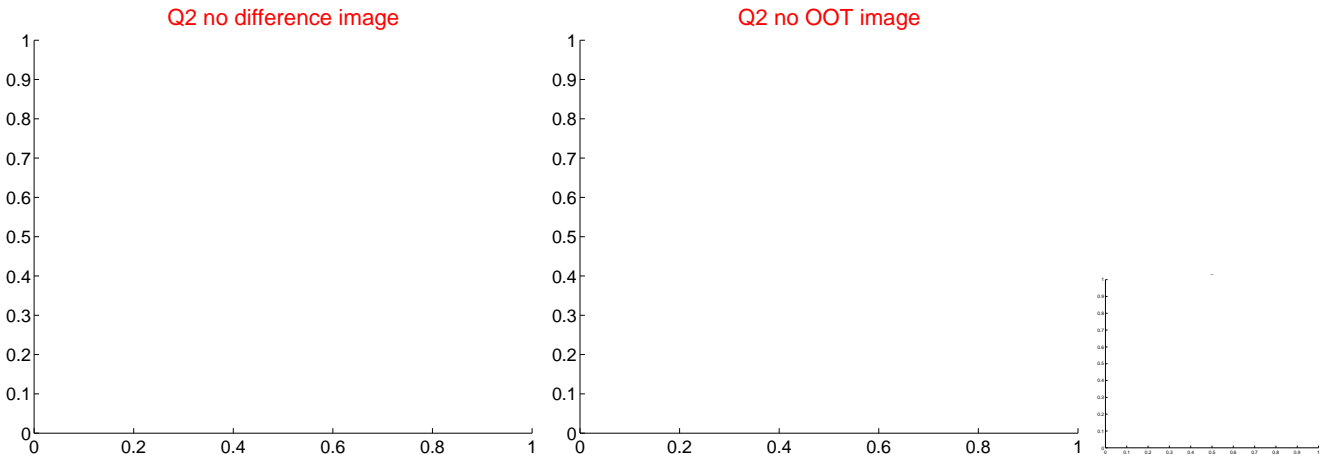
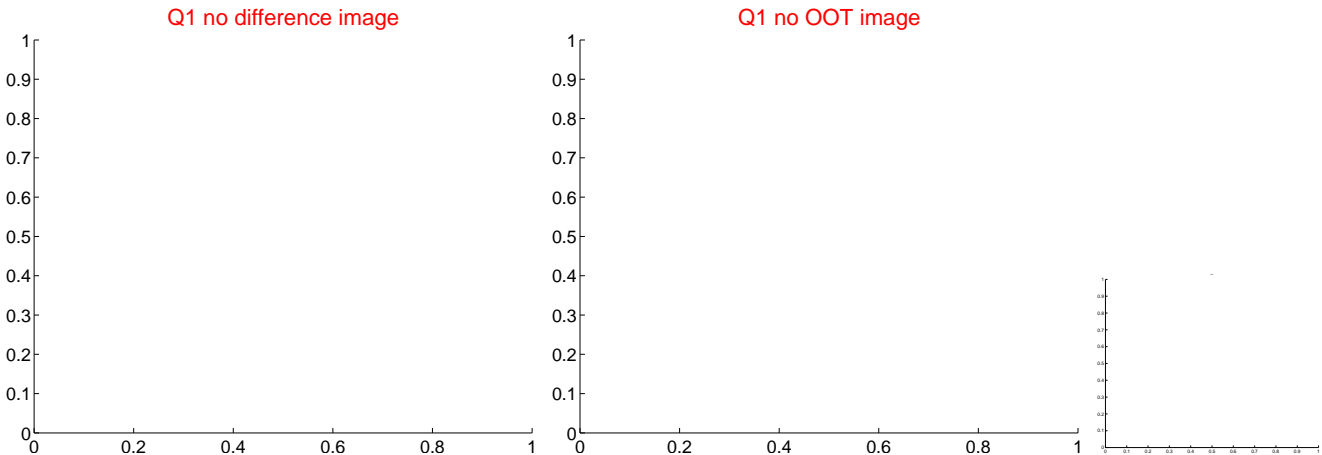
The OOT PRF centroid is offset from the target star catalog position by about 3.38 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.489 ± 0.071	6.90	-0.277 ± 0.069	-0.402 ± 0.072
PRF-fit source offset from KIC position	3.905 ± 0.073	53.54	-2.523 ± 0.073	-2.982 ± 0.073
photometric centroid source offset	2.33 ± 0.06	42.23	-1.22 ± 0.05	-1.99 ± 0.06

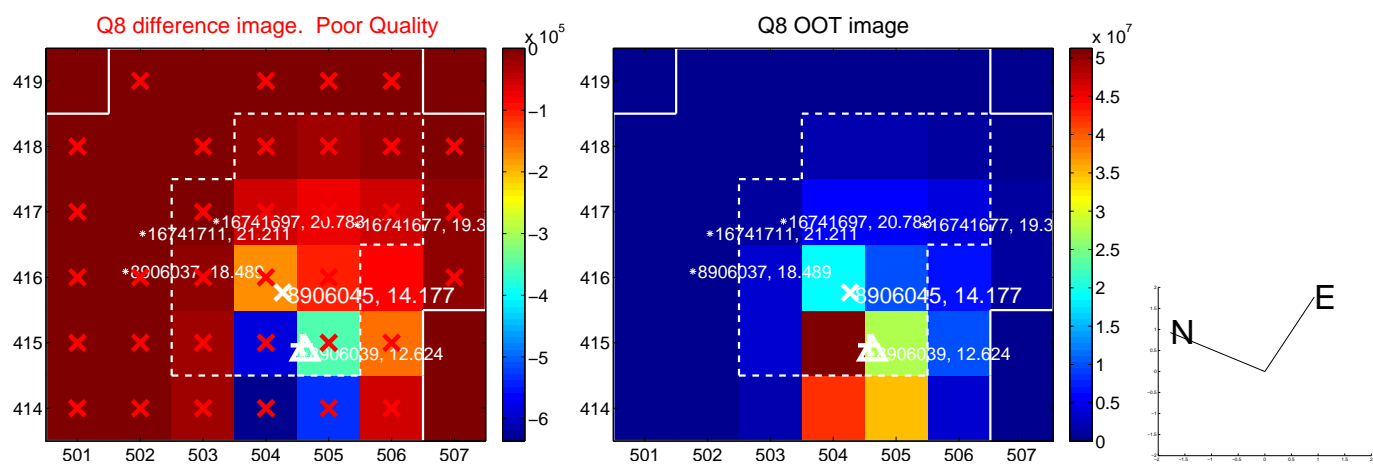
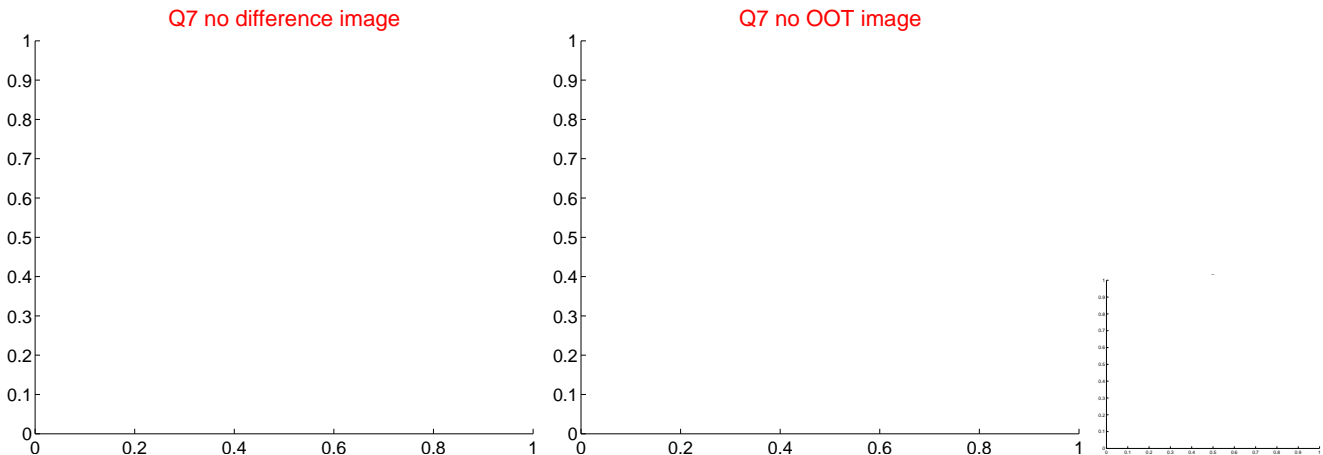
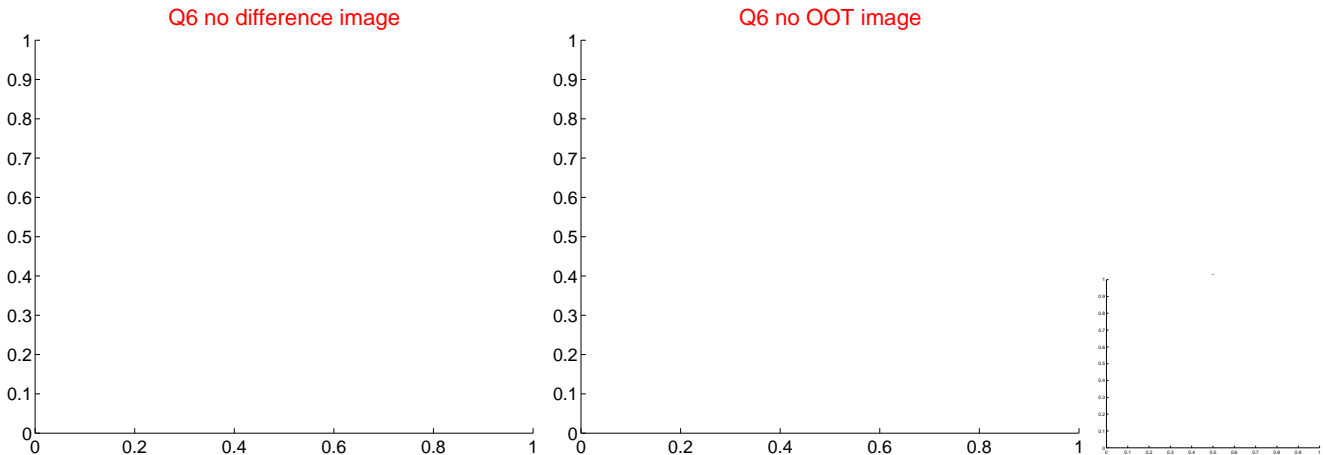
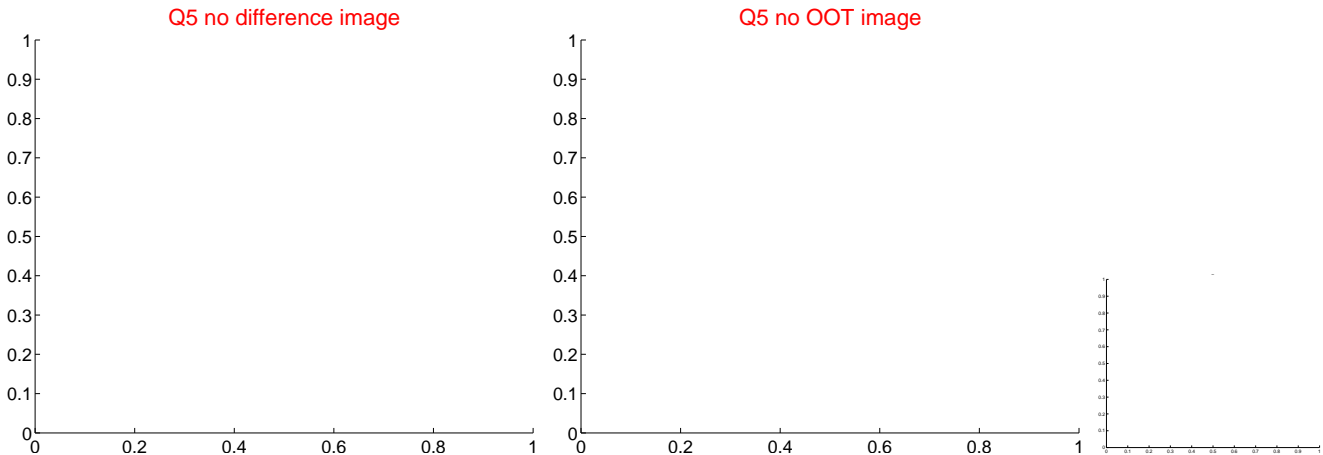


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

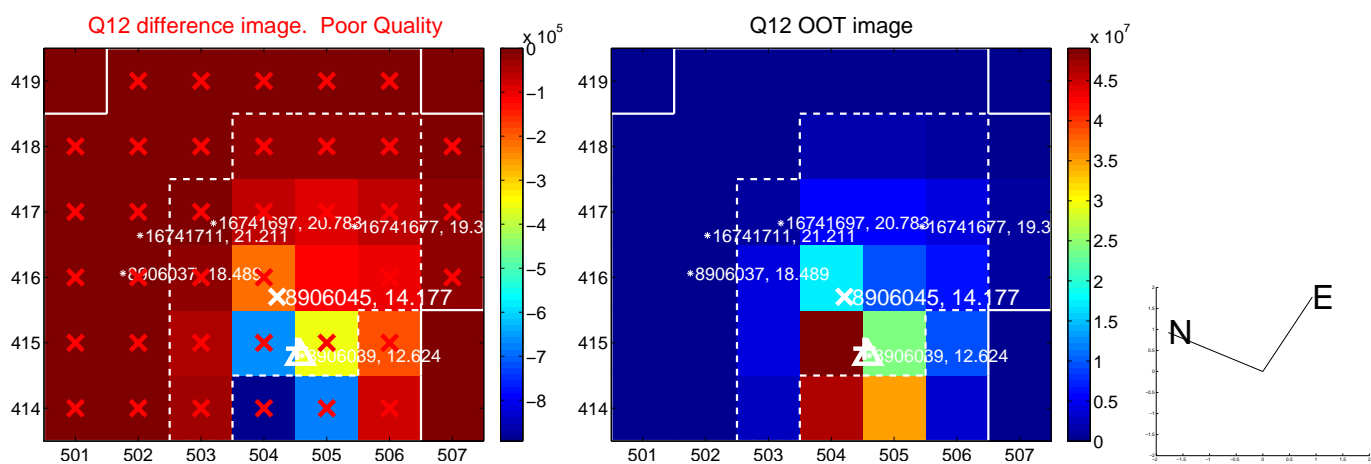
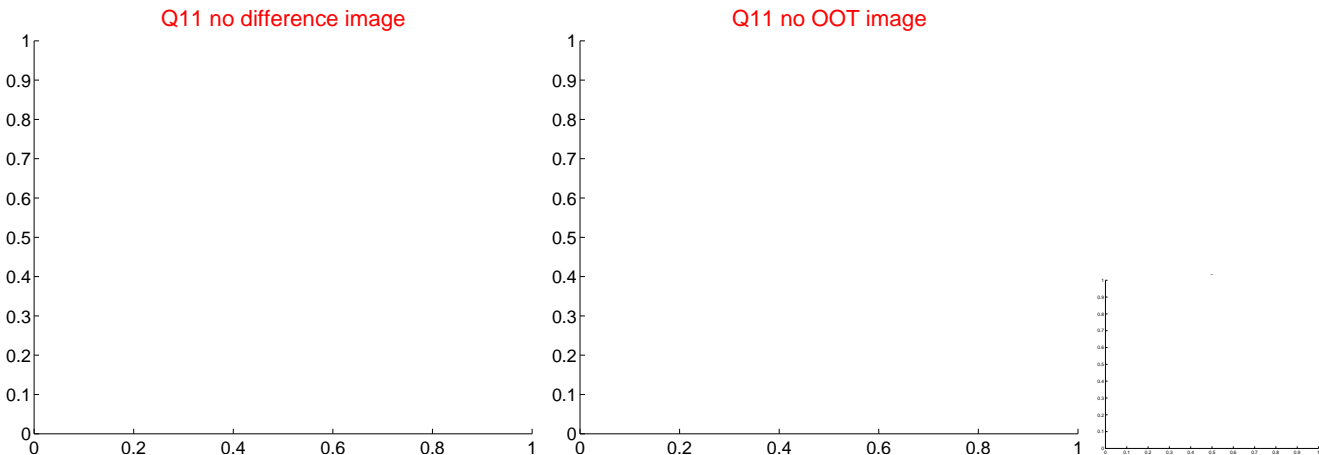
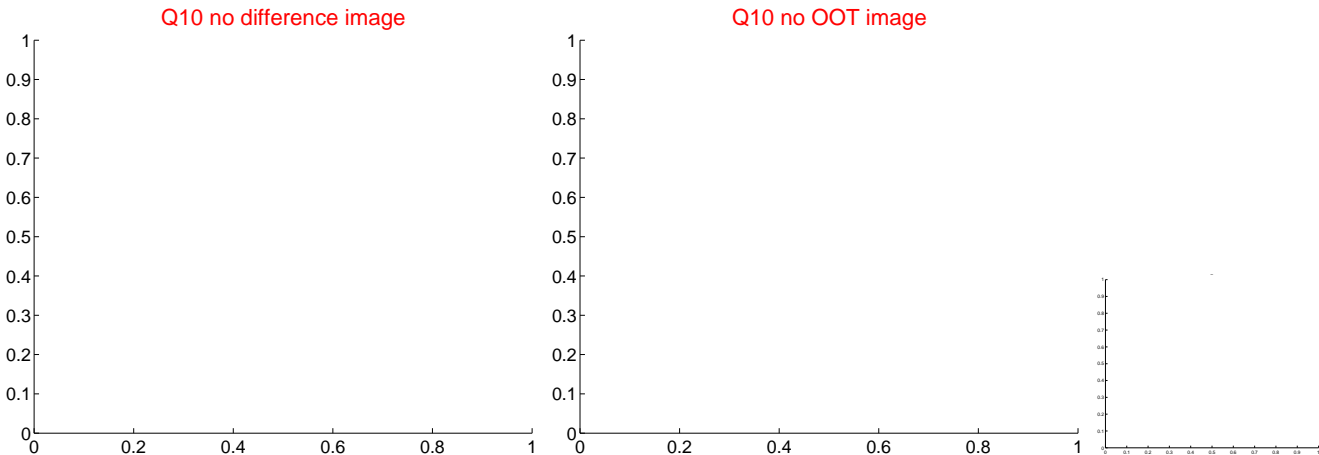
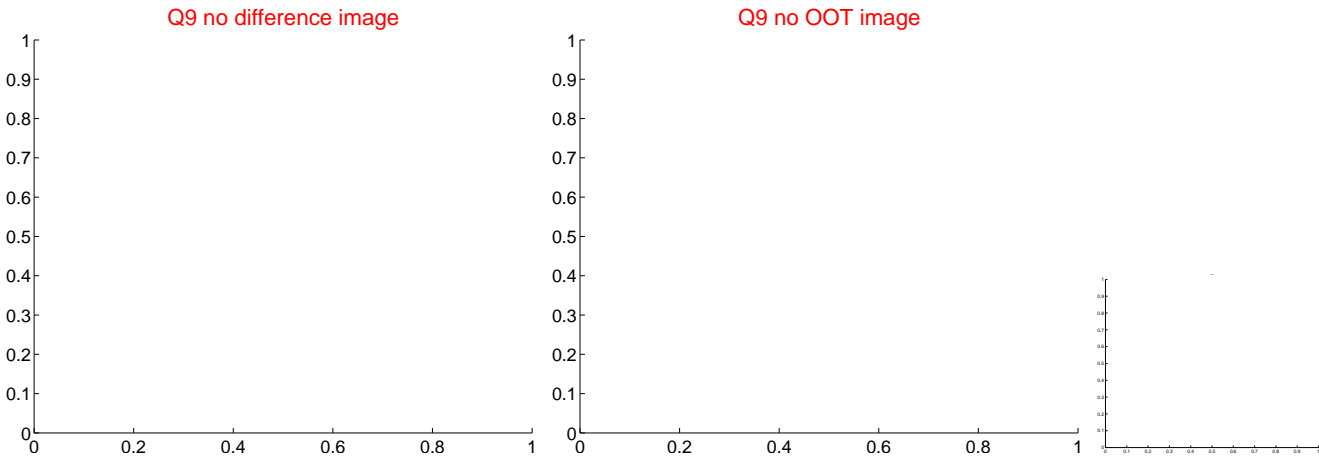
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



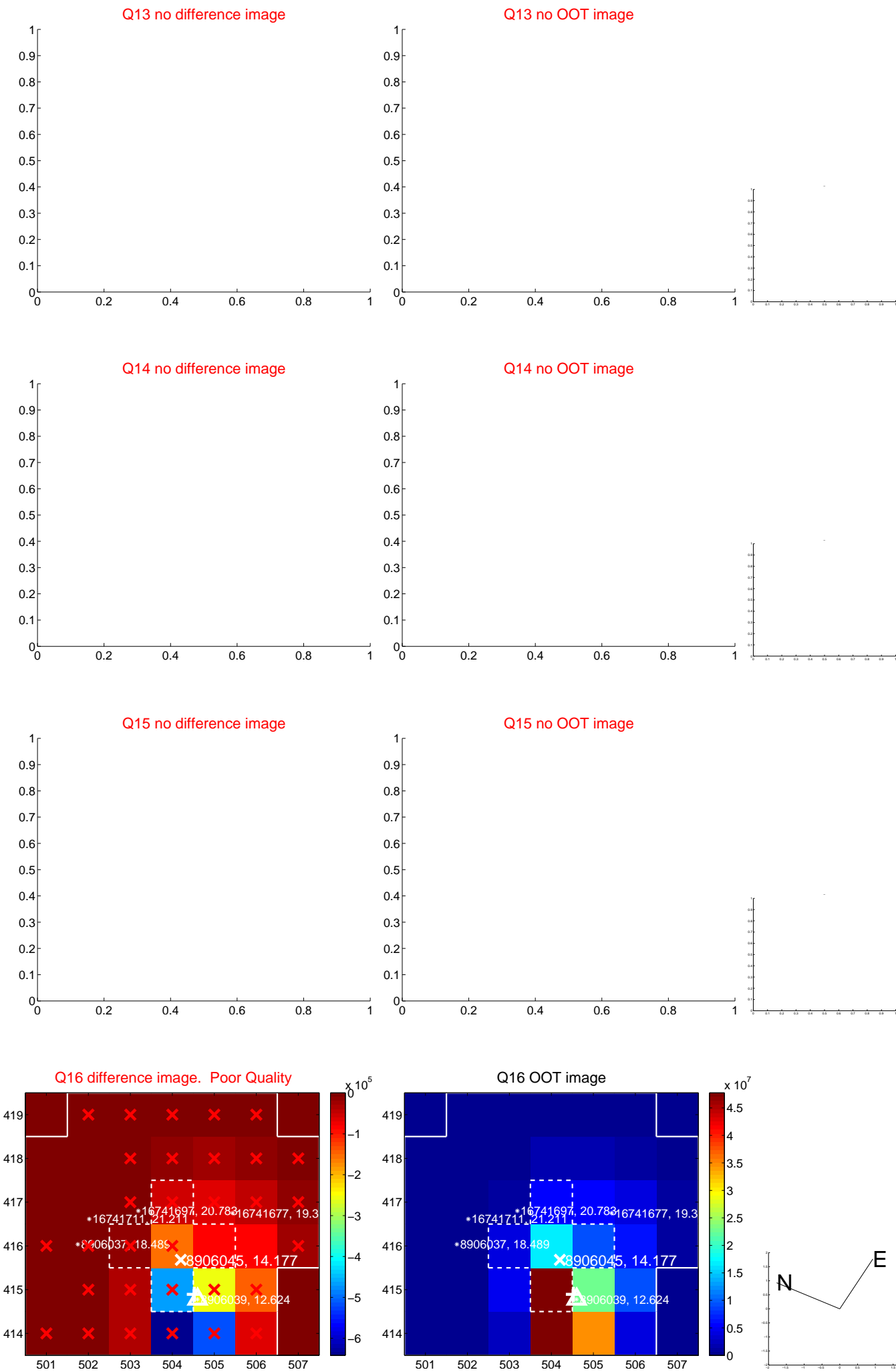
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



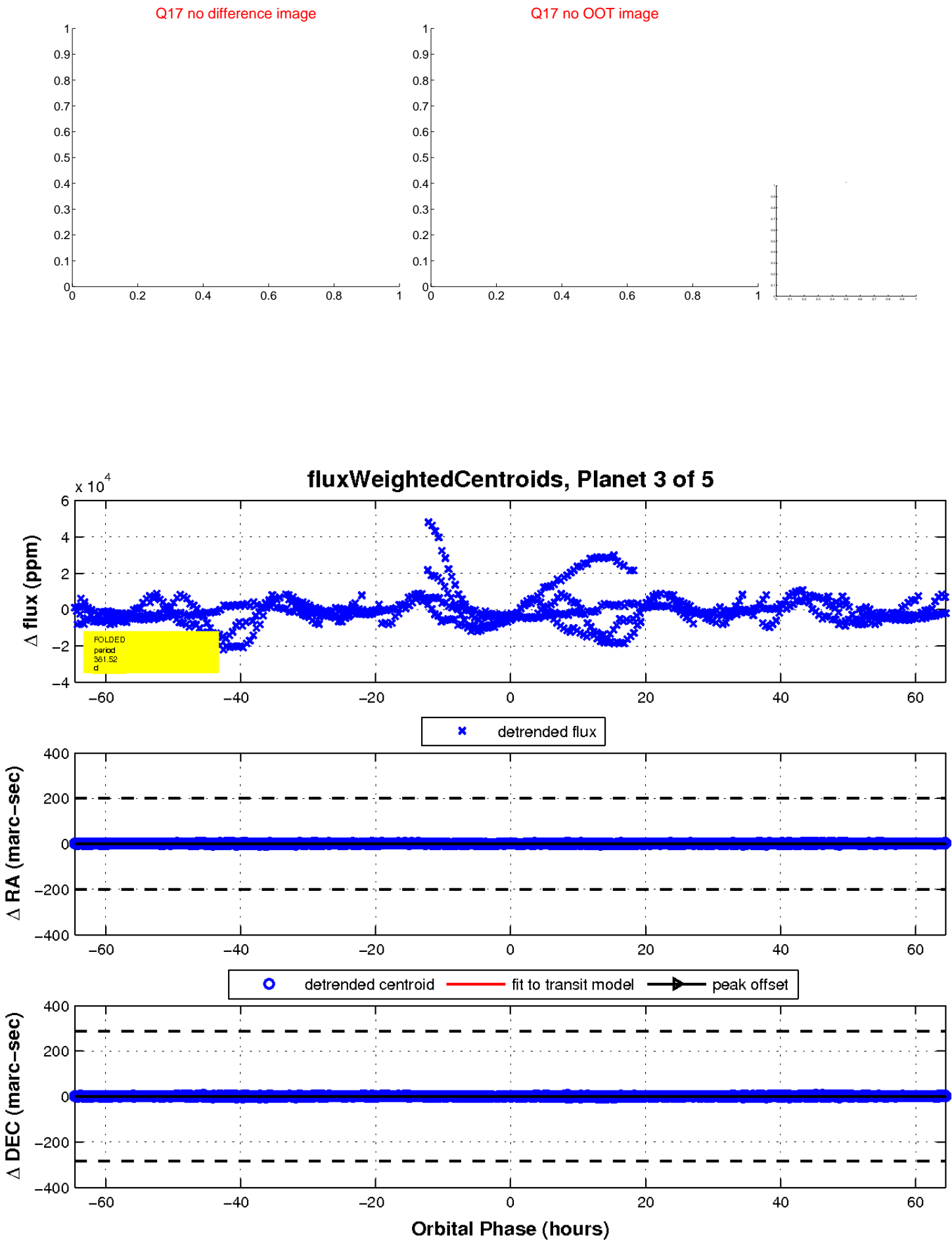
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

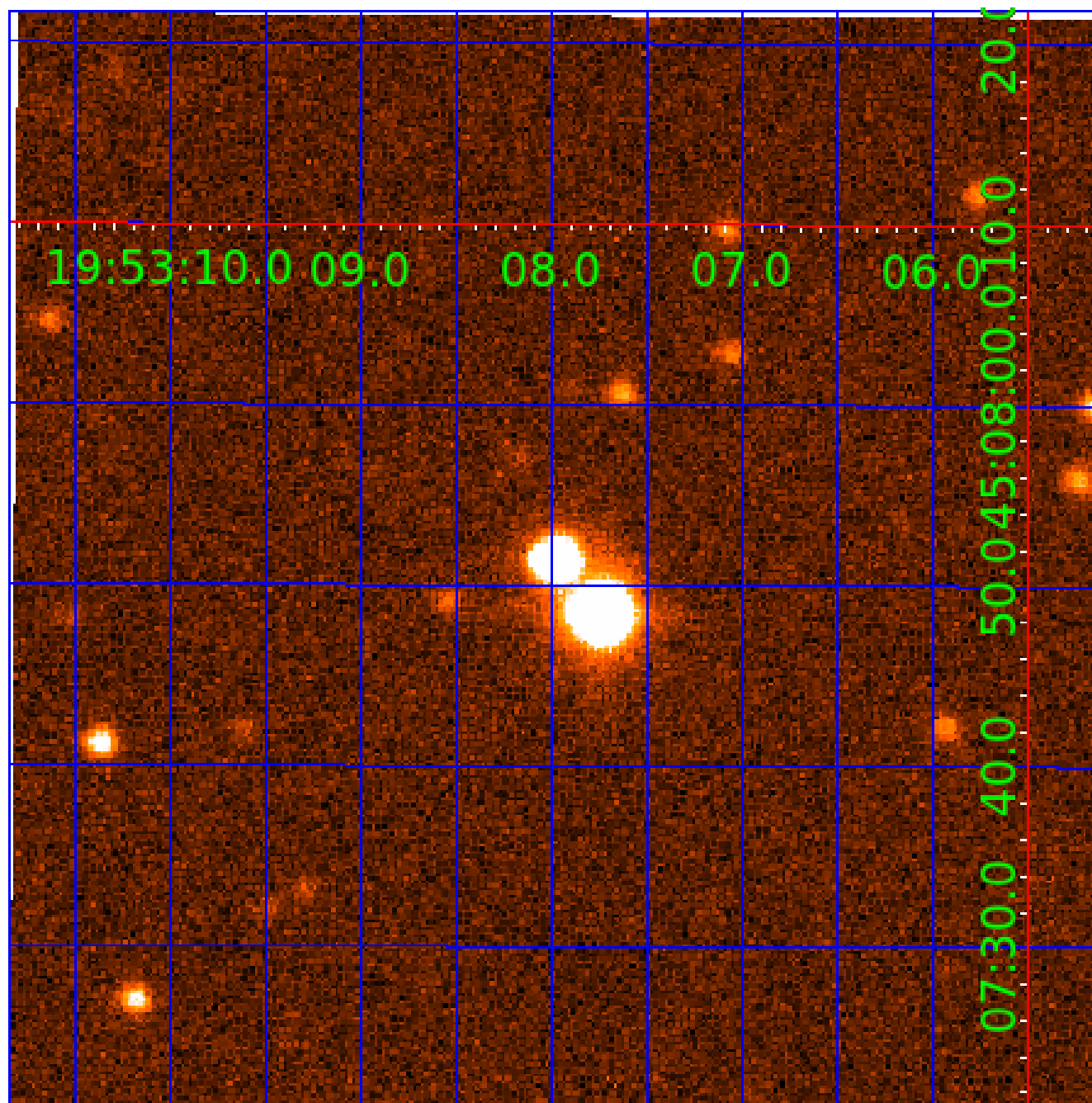


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008906045

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})
008906045-01	OBS	3789.01	2.347420	133.687739	500.6	6.497	25.1	20.9	1.14	5891	3.04	1206.77
008906045-02	OBS	No	381.542243	411.692744	328.8	6.581	13.6	0.4	1.14	5891	2.35	1.36
008906045-03	OBS	No	381.518026	411.155410	22604.0	21.521	13.4	11.9	1.14	5891	18.11	1.36
008906045-04	OBS	No	355.487147	426.952465	3399.0	3.780	13.3	5.3	1.14	5891	12.30	1.50
008906045-05	OBS	No	184.896707	197.818890	6454.6	9.732	12.2	8.9	1.14	5891	16.64	3.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008906045-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_KIC_POS—EPHEM_MATCH
008906045-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008906045-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
008906045-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008906045-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

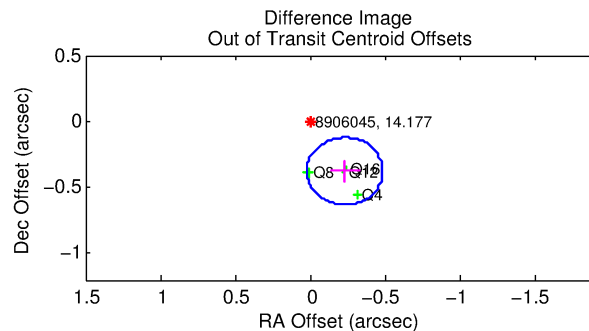
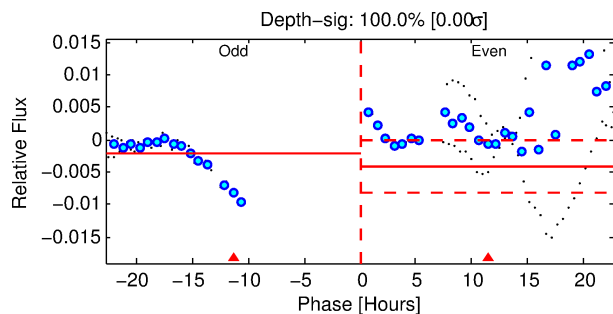
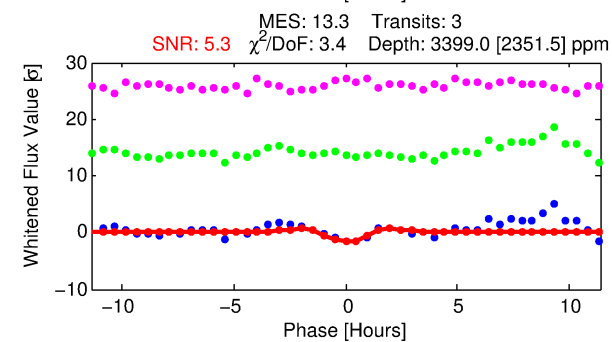
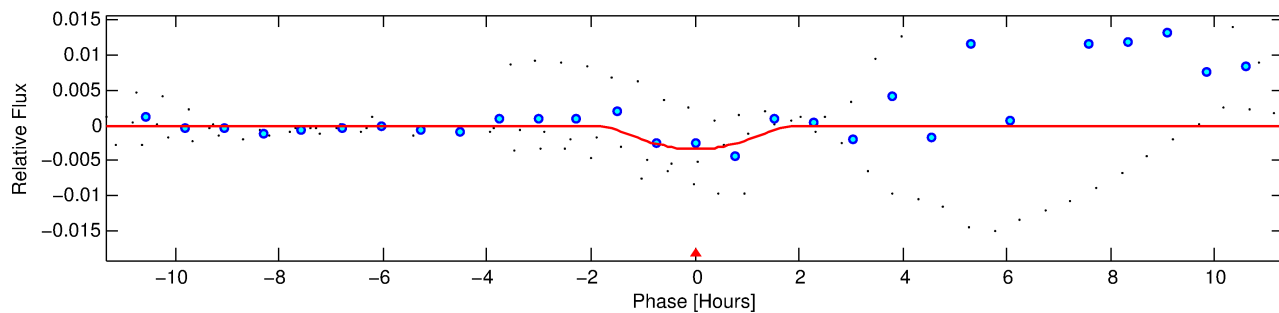
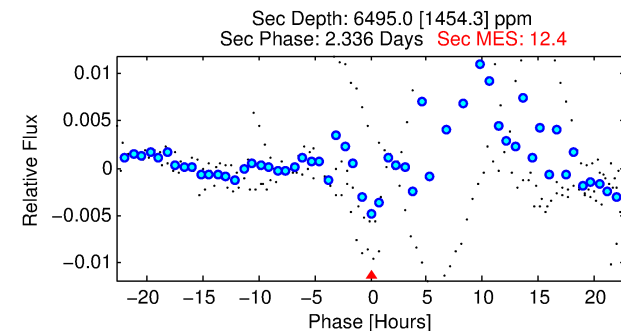
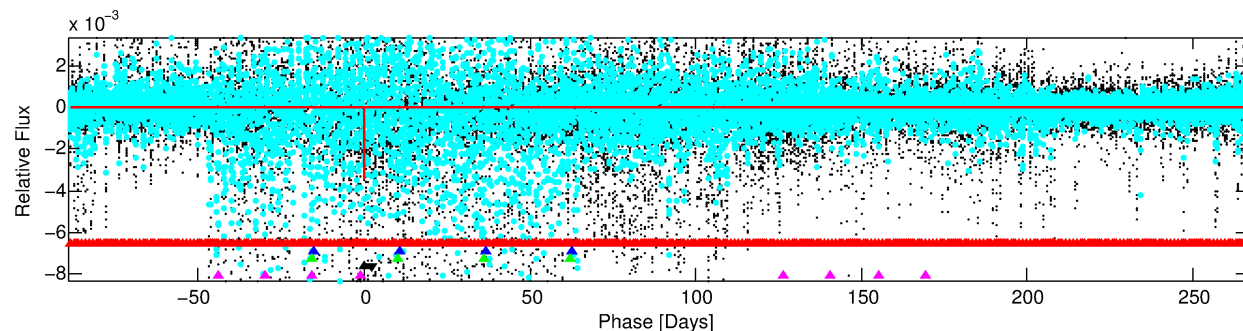
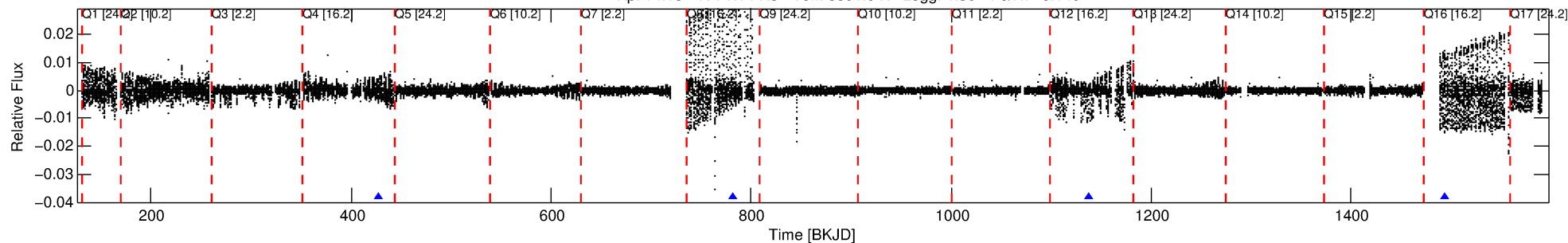
Ephemeris Match Information For 008906045-04

No Significant Match Found

DV One-Page Summary

KIC: 8906045 Candidate: 4 of 5 Period: 355.487 d
KOI: K03789 Corr: No Ephemeris Match

Kp: 14.18 R*: 1.14 Rs Teff: 5891.0 K Logg: 4.30 Fe/H: -0.140



DV Fit Results:

Period = 355.48715 [0.01311] d
Epoch = 426.9525 [0.0313] BKJD
Rp/R* = 0.0991 [0.9198]
a/R* = 328.88 [628.48]
b = 1.00 [1.35]
Seff = 1.50 [0.53]
Teq = 282 [25] K
Rp = 12.31 [114.27] Re
a = 0.9668 [0.2271] AU
Ag = 22057.95 [409583.14] [0.05σ]
Teffp = 5313 [24659] K [0.20σ]

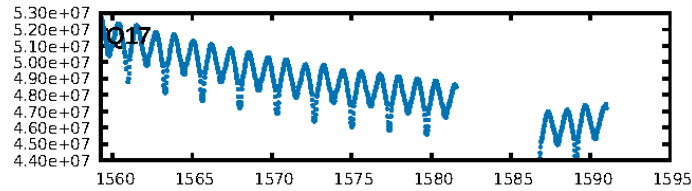
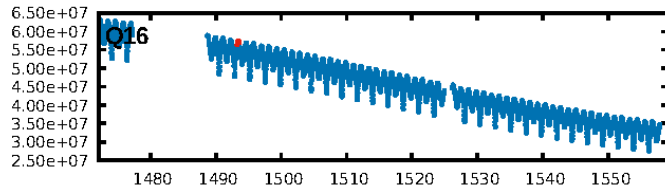
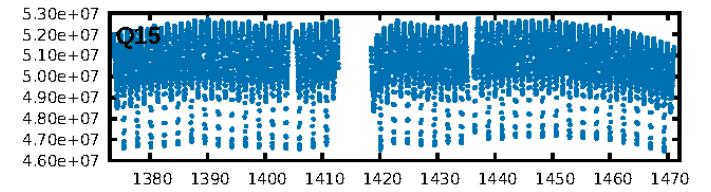
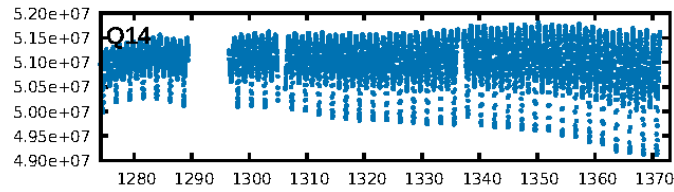
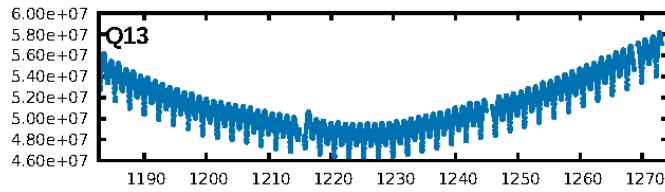
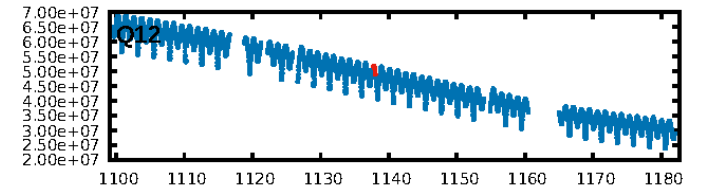
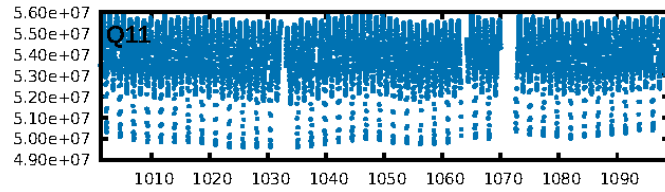
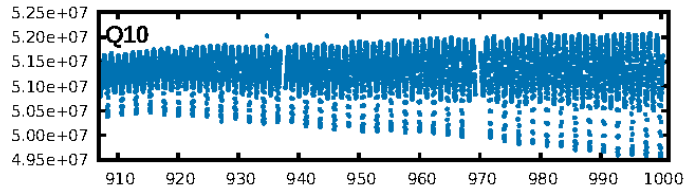
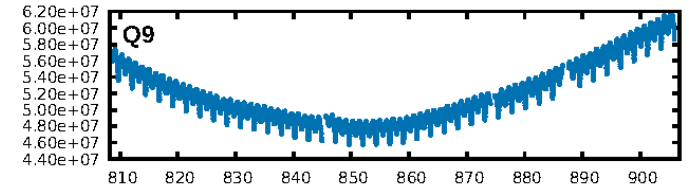
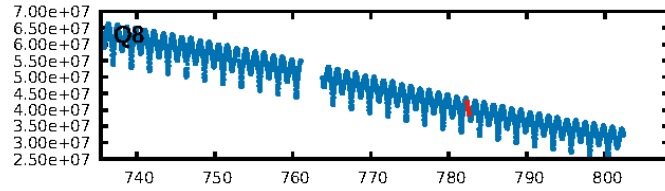
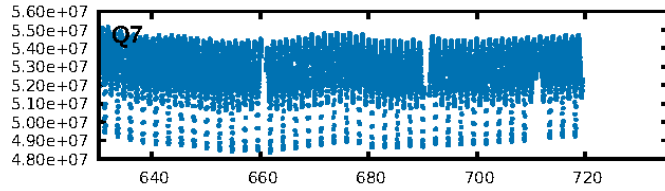
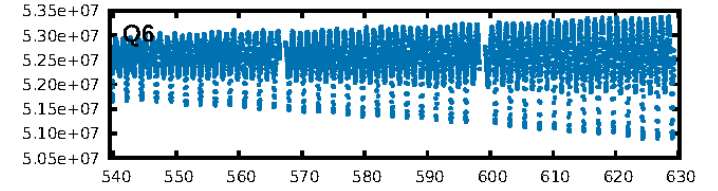
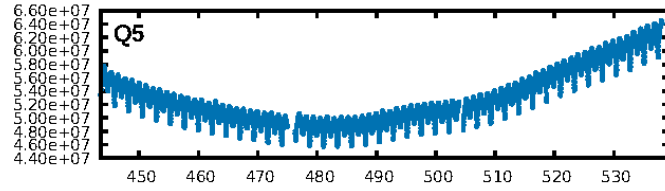
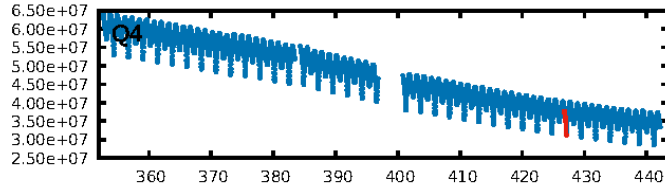
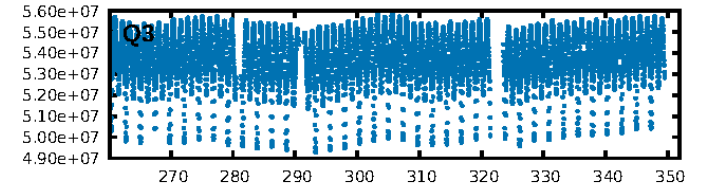
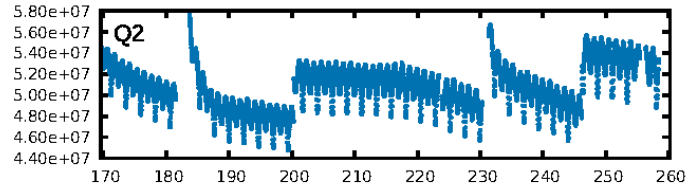
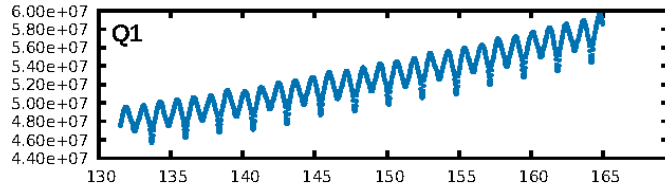
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [392.15σ]
LongPeriod-sig: 100.0% [28.59σ]
ModelChiSquare2-sig: 4.8%
ModelChiSquareGof-sig: 4.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.329
Centroid-sig: 76.4%
Centroid-so: 2.168 arcsec [5.11σ]
OotOffset-rm: 0.442 arcsec [5.21σ]
KicOffset-rm: 3.886 arcsec [46.30σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.50 [2/4]

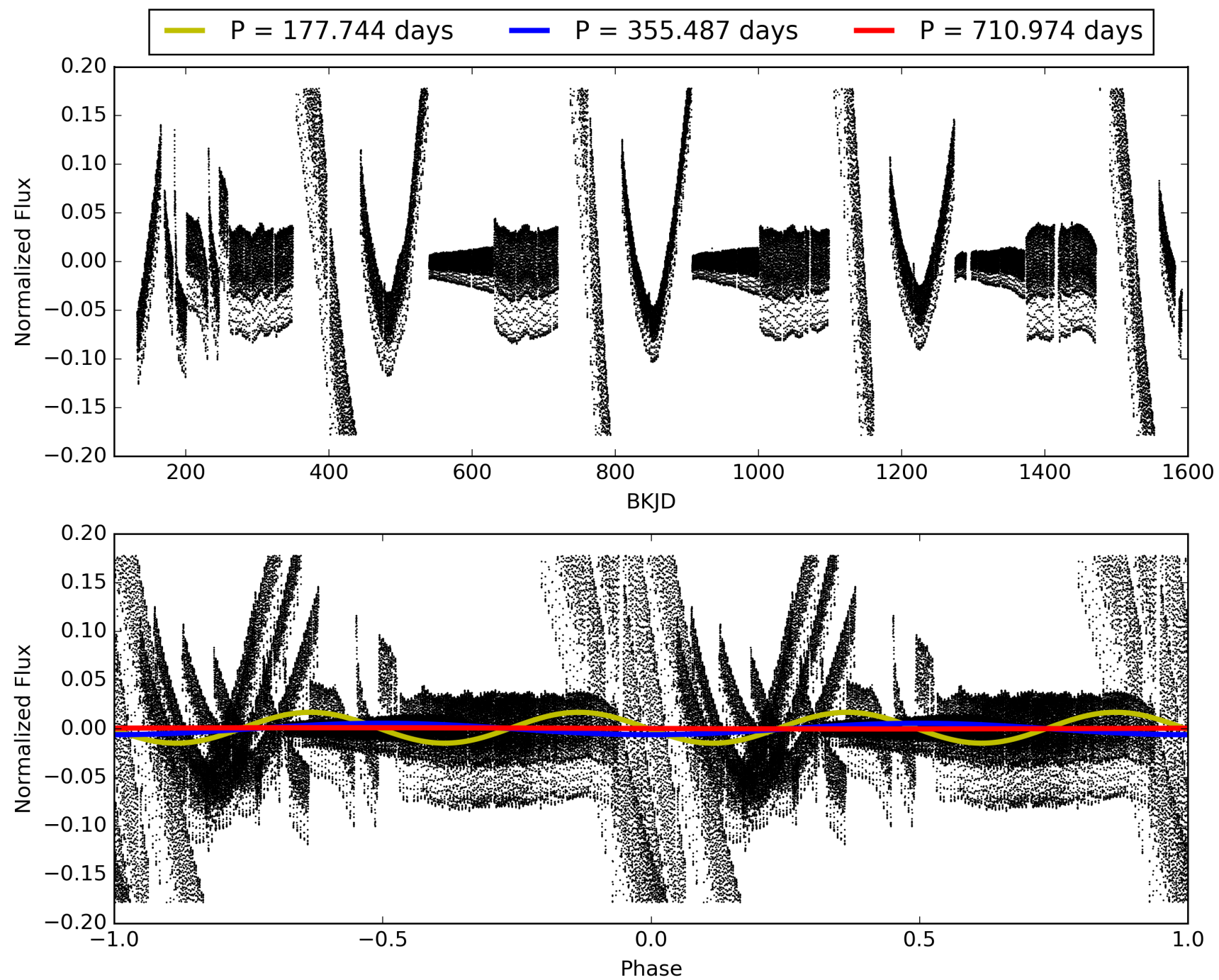
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:32:06 Z

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

TCE 008906045-04, PDC Light Curves

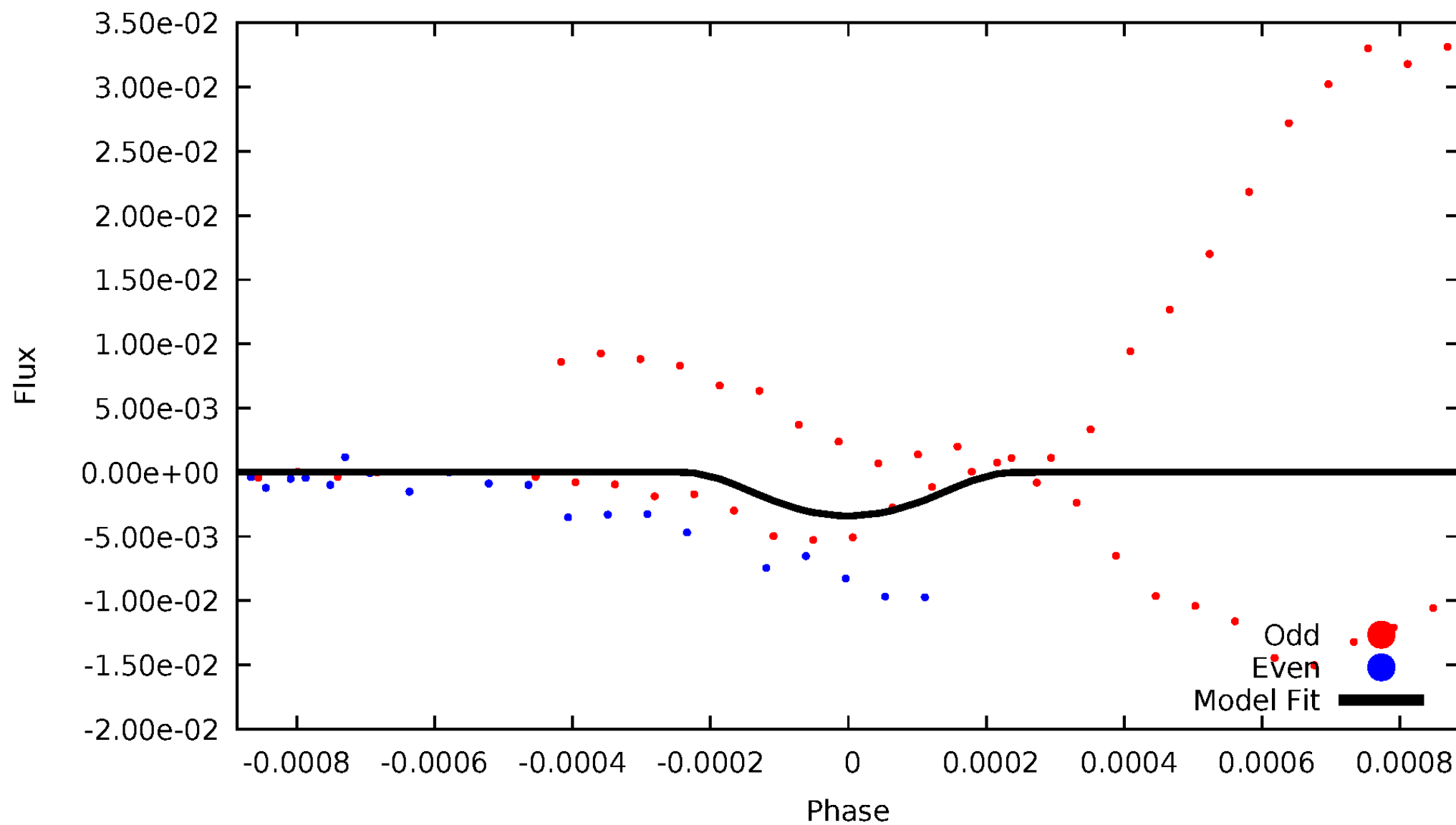


TCE 008906045-04



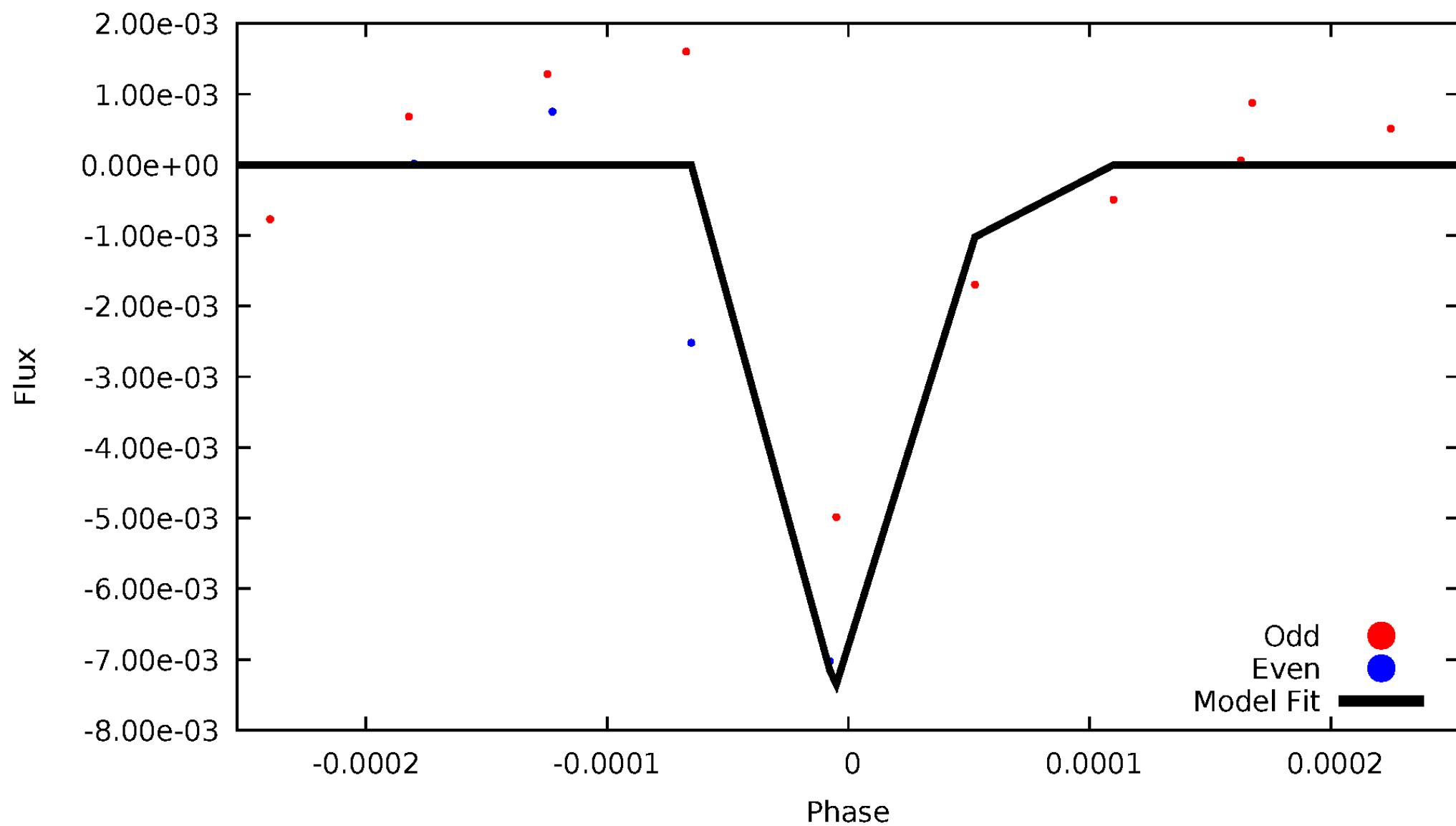
DV Odd/Even

TCE 008906045-04



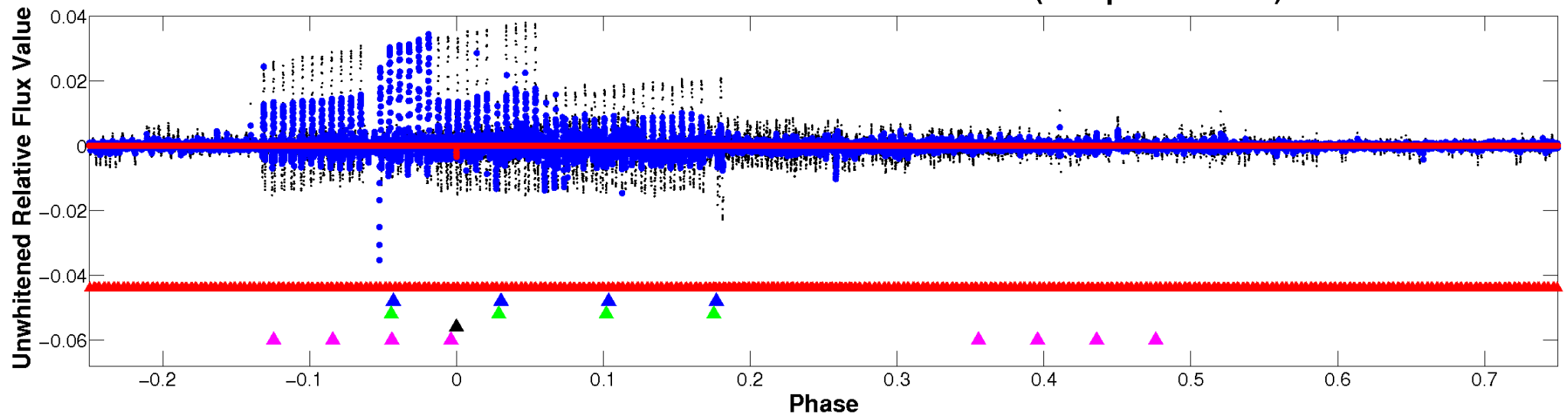
ALT Odd/Even

TCE 008906045-04

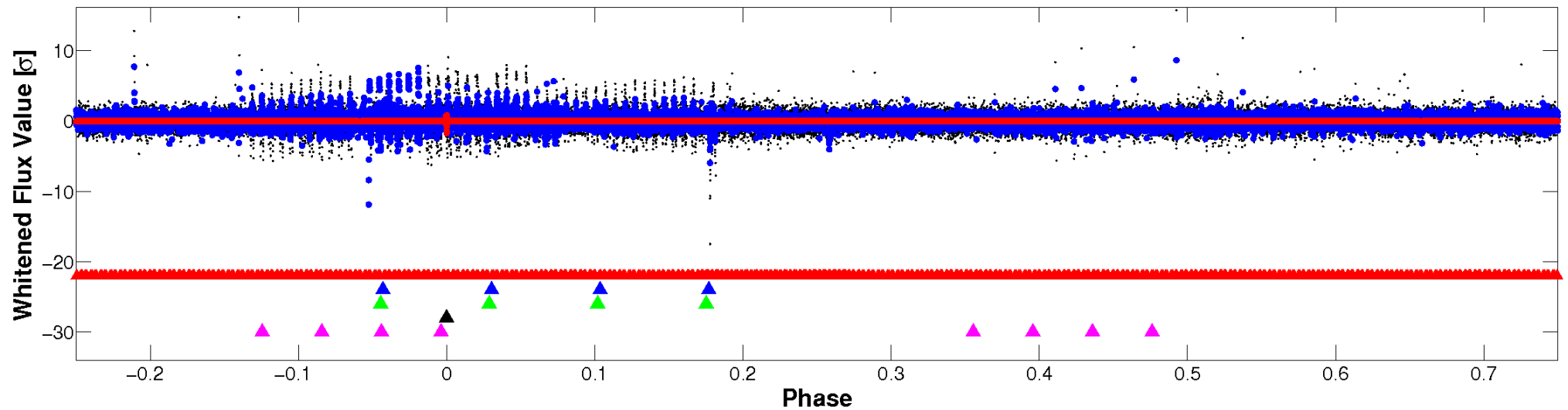


Non-Whitened Vs. Whitened Light Curve

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

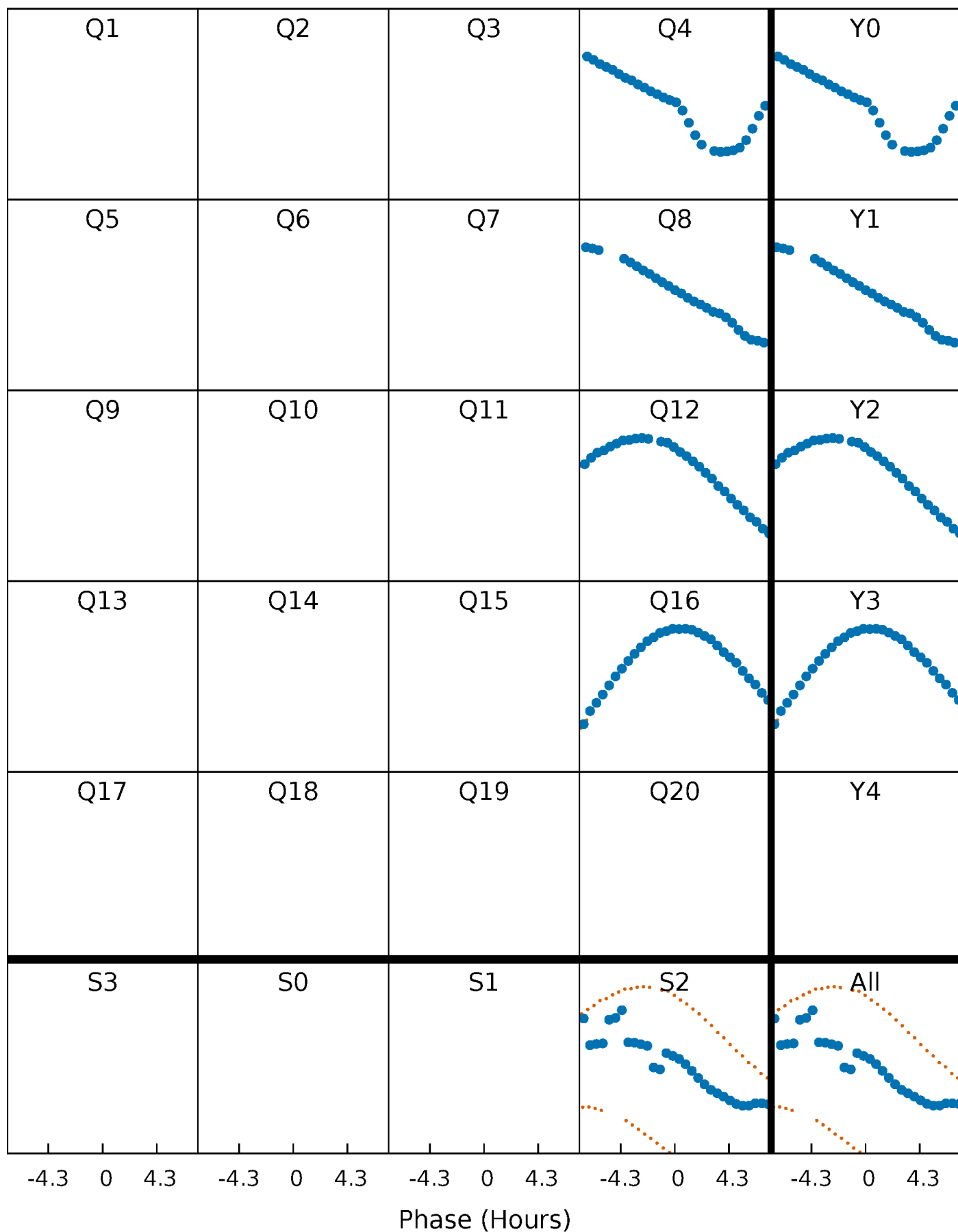


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



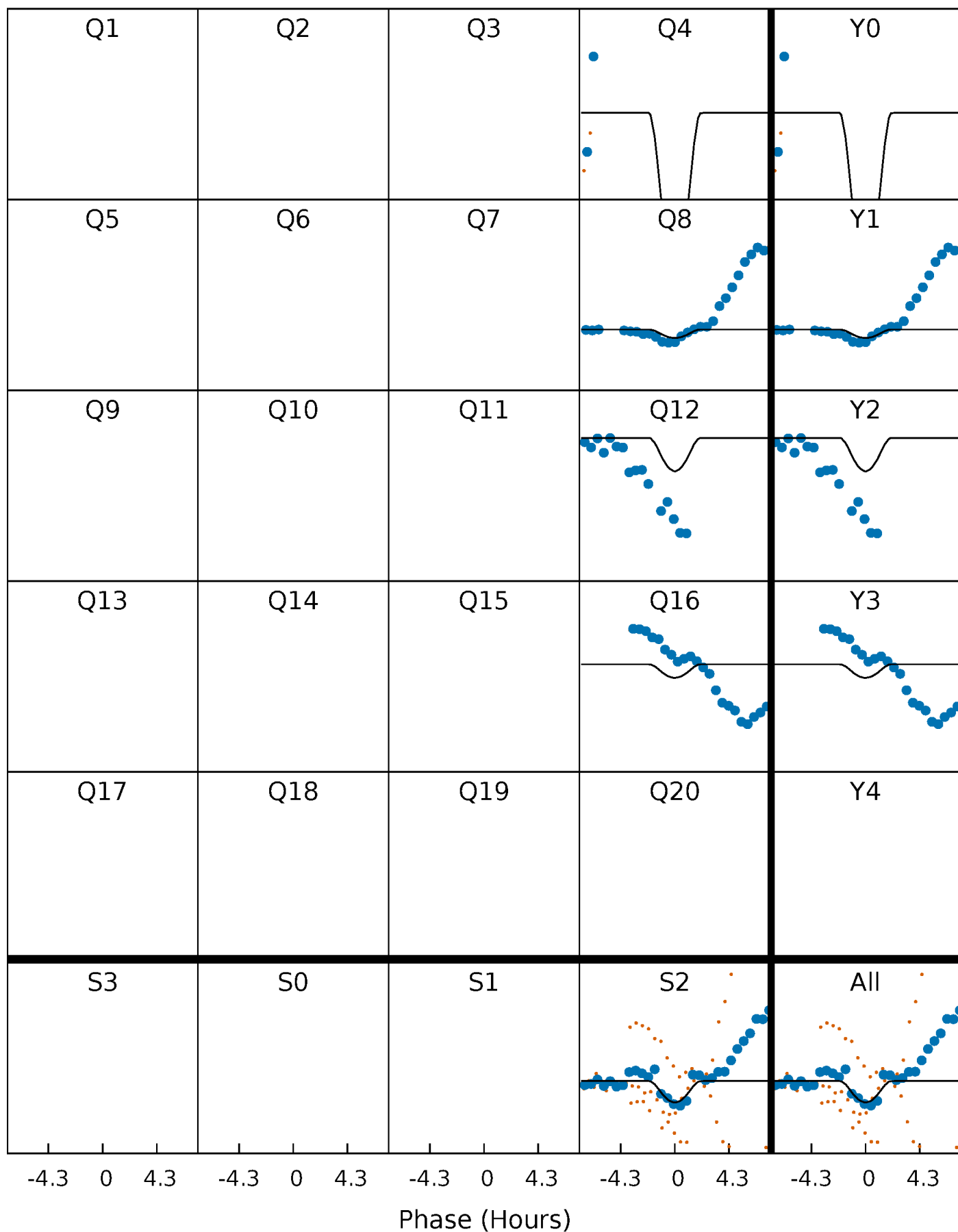
PDC Quarter-Phased Transit Curves

TCE 008906045-04 P=355.487147 Days $T_0=426.952465$ (BKJD)



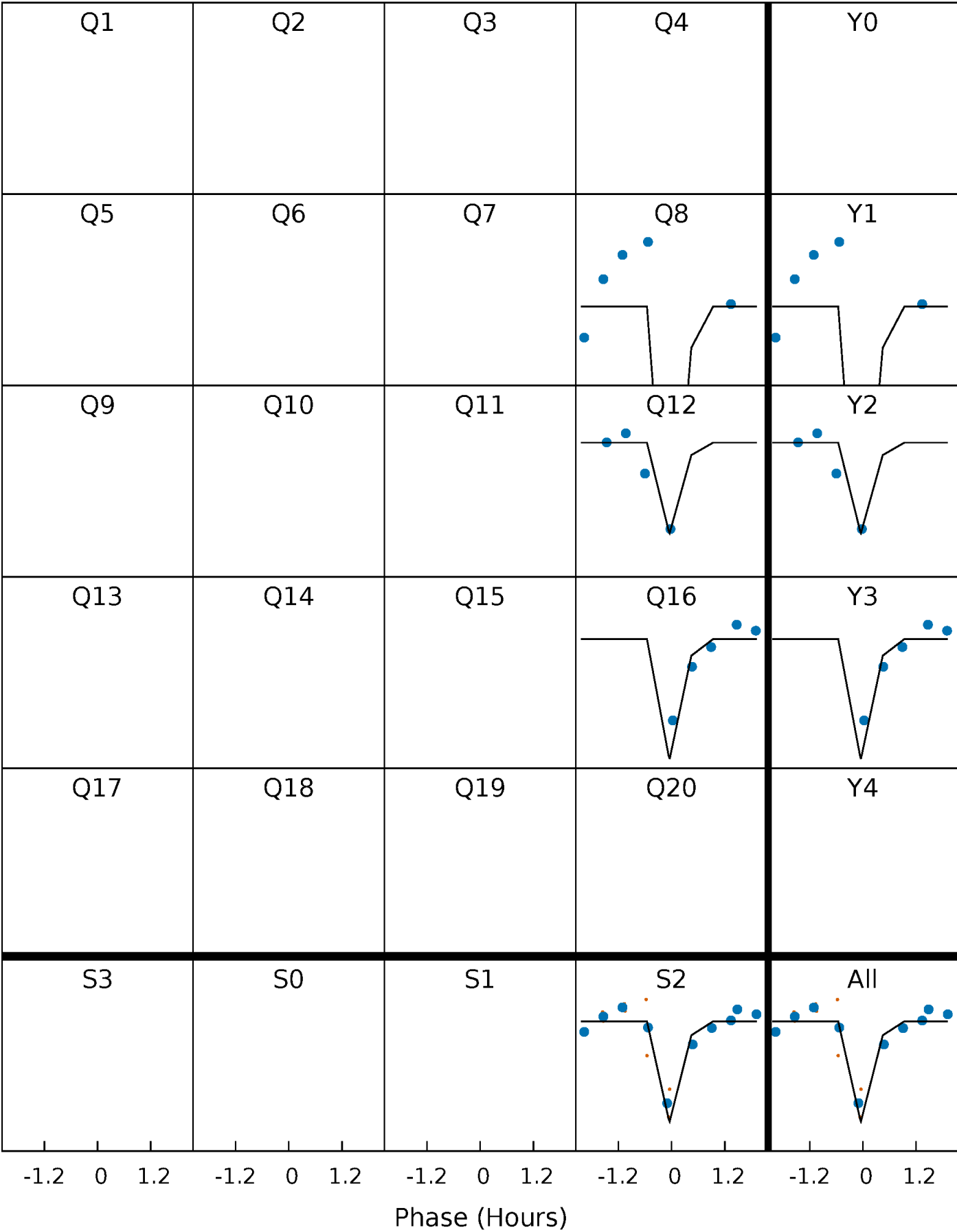
DV Quarter-Phased Transit Curves

TCE 008906045-04 P=355.487147 Days $T_0=426.952465$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

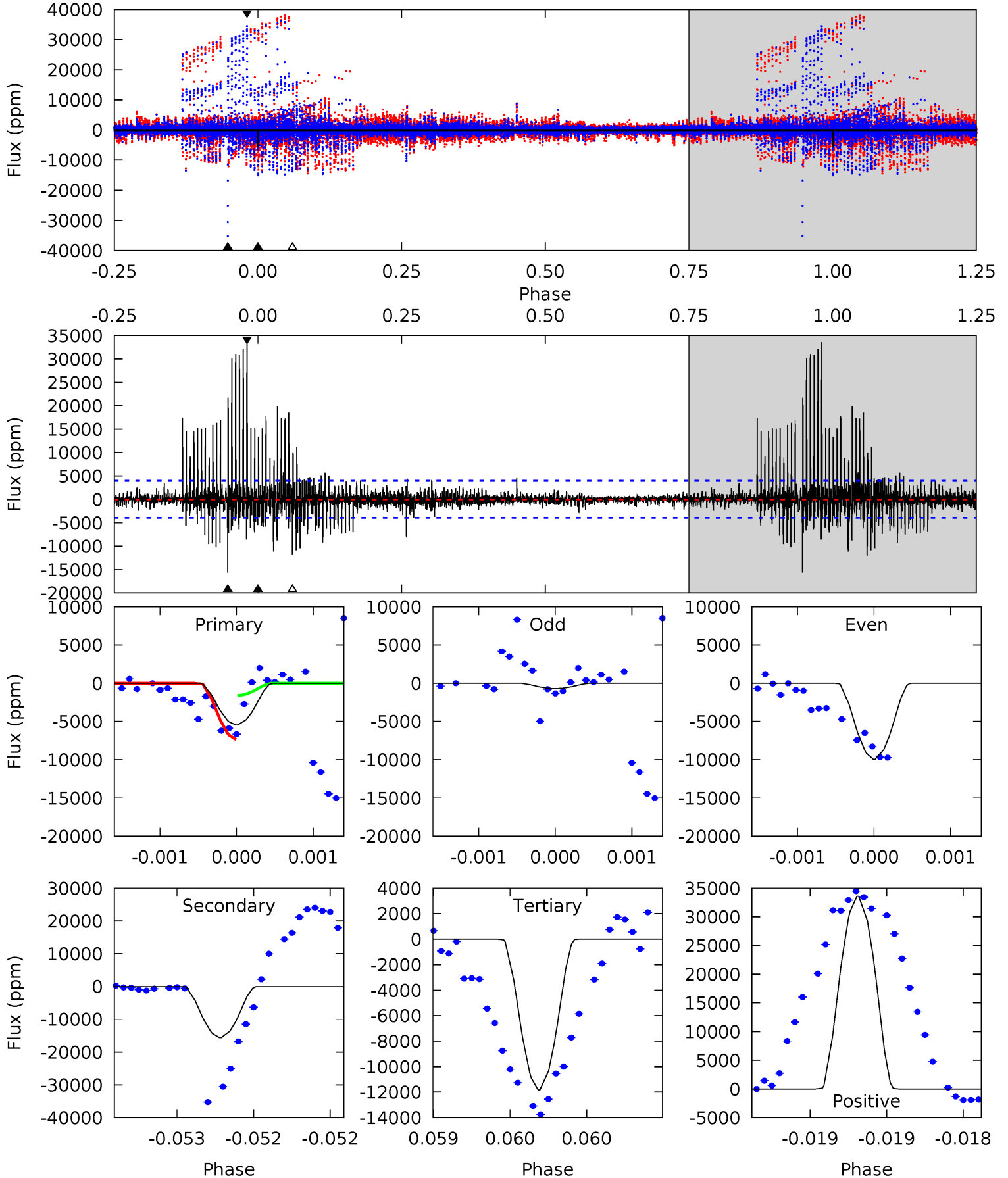
TCE 008906045-04 P=355.360042 Days $T_0=427.228383$ (BKJD)



DV Model-Shift Uniqueness Test

008906045-04, P = 355.487147 Days, E = 71.465318 Days

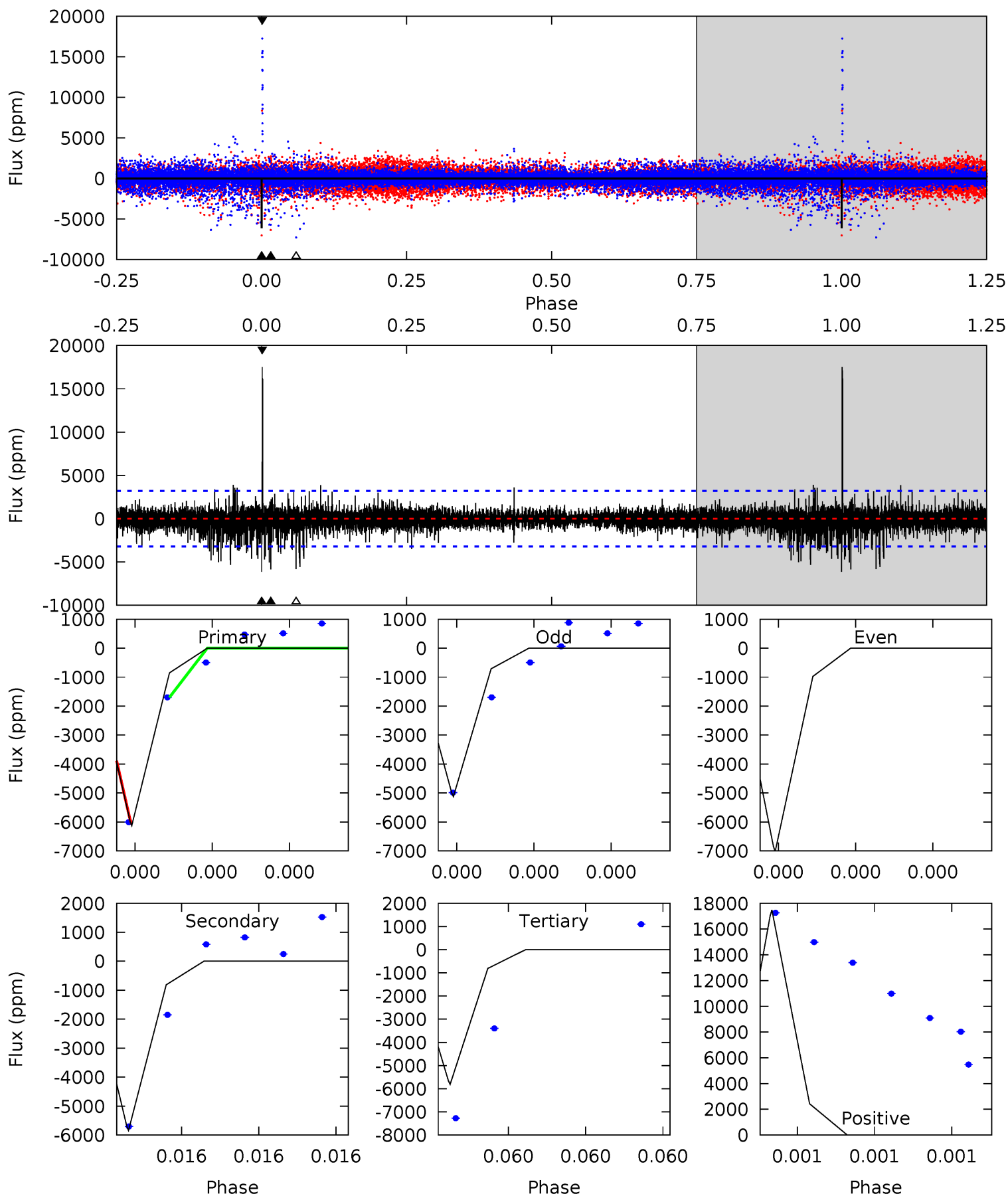
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.72	22.0	16.7	47.4	5.57	3.48	2.81	-8.99	-39.7	5.33	-25.4	7.61	0.77	0.68	4.07



Alt Model-Shift Uniqueness Test

008906045-04, P = 355.360042 Days, E = 71.868341 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	10.6	10.5	31.7	5.82	3.85	1.08	0.58	-20.6	0.06	-21.1	1.38	1.00	0.74	4.01



Stellar Parameters For KIC 008906045

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5891^{+159}_{-176}	$4.305^{+0.175}_{-0.175}$	$-0.140^{+0.300}_{-0.300}$	$1.138^{+0.329}_{-0.219}$	$0.953^{+0.144}_{-0.108}$	$0.912^{+0.806}_{-0.423}$
	+3%/-3%	+4%/-4%	+214%/-214%	+29%/-19%	+15%/-11%	+88%/-46%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008906045-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-15615 ± 708	$80.51^{+81.64}_{-55.85}$	393^{+28}_{-25}	3227^{+1499}_{-591}	1304^{+12261}_{-992}
Alt.	-5845 ± 553	$84.92^{+89.53}_{-59.76}$	394^{+27}_{-25}	2734^{+1218}_{-440}	418^{+4471}_{-320}

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 $A_{obs} \gg 1.0$

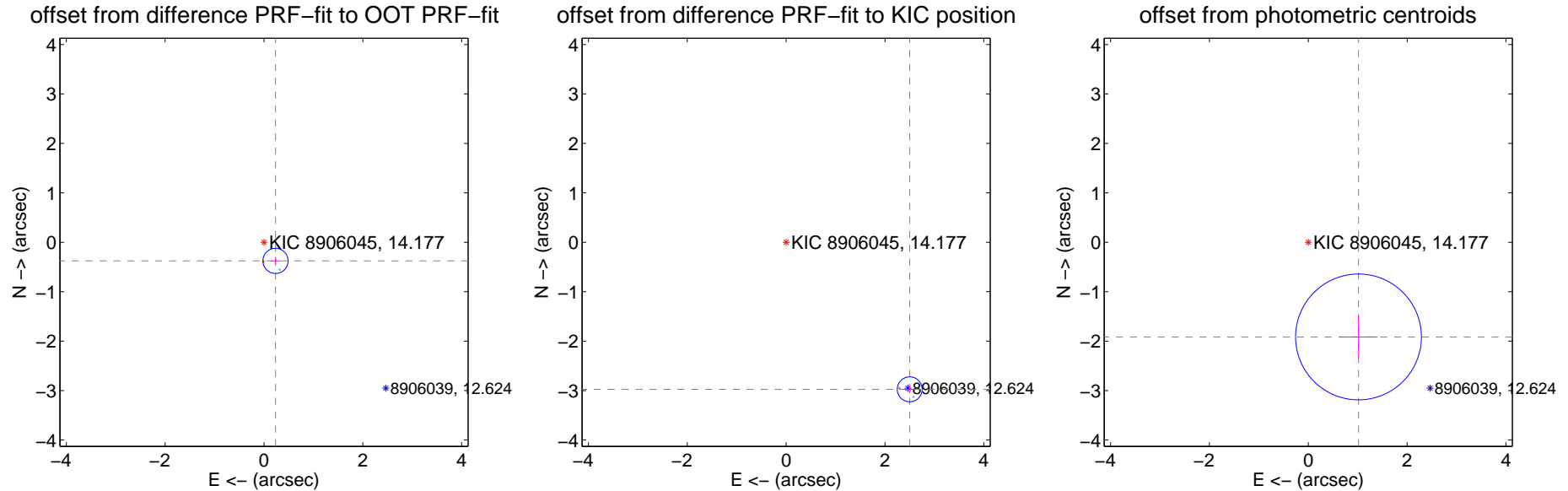
DV Centroid Data

Supplemental centroid analysis for 008906045-04. Kepler magnitude: 14.18. Transit SNR 5.33

There are 1 quarters with good PRF difference image offsets

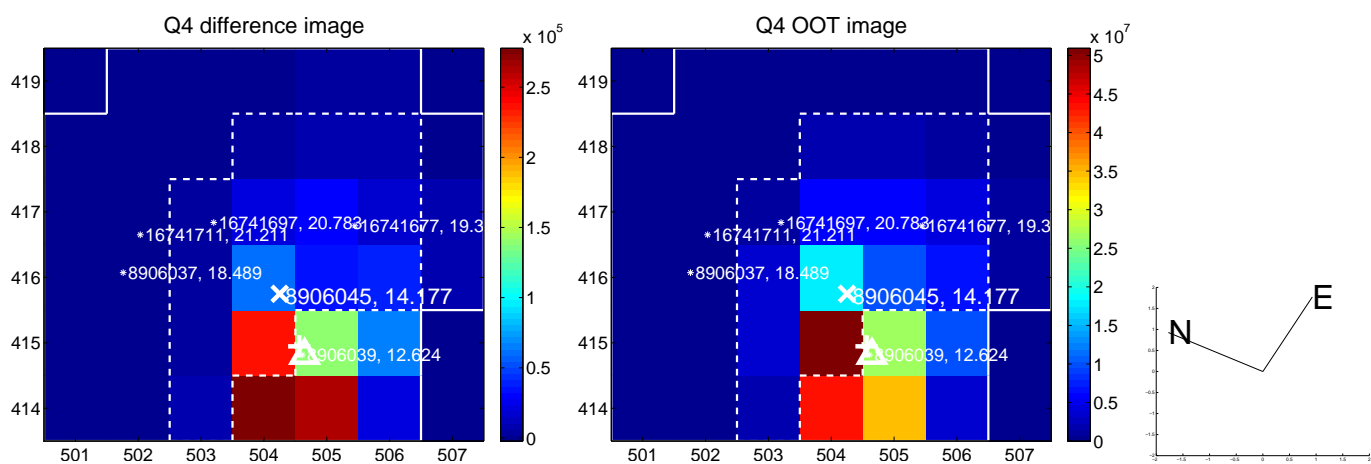
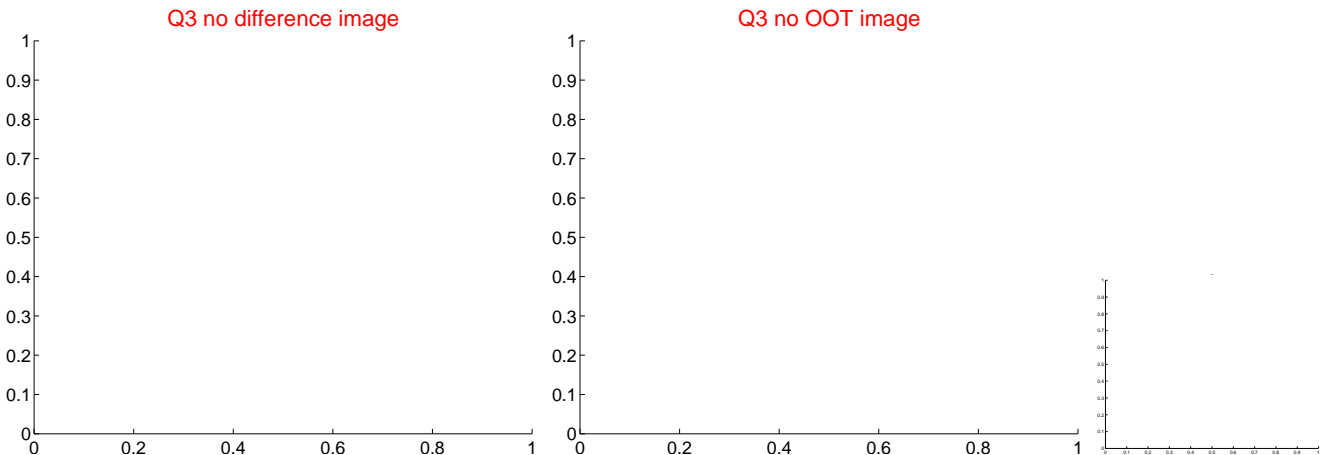
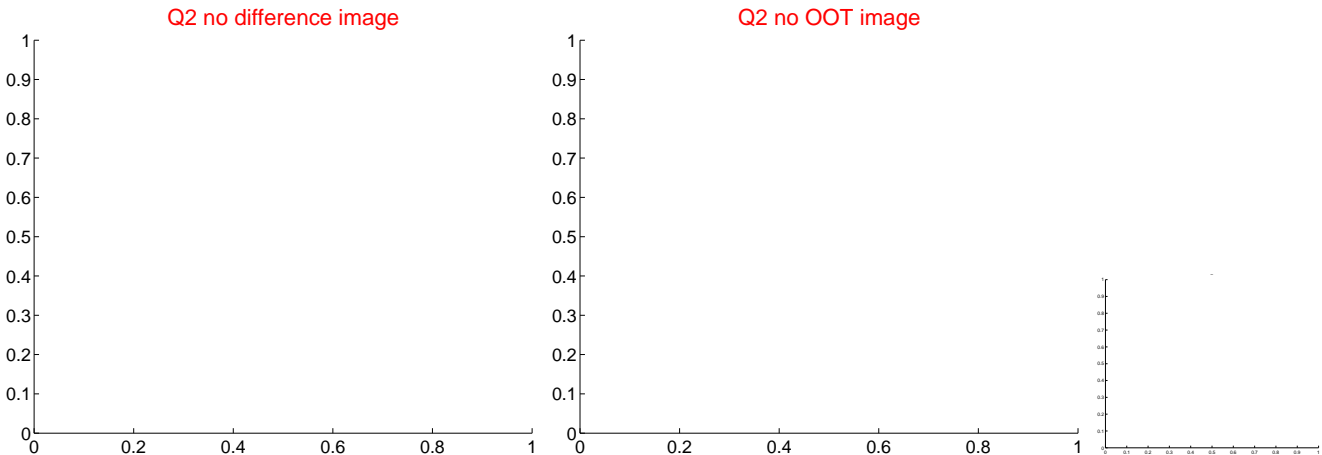
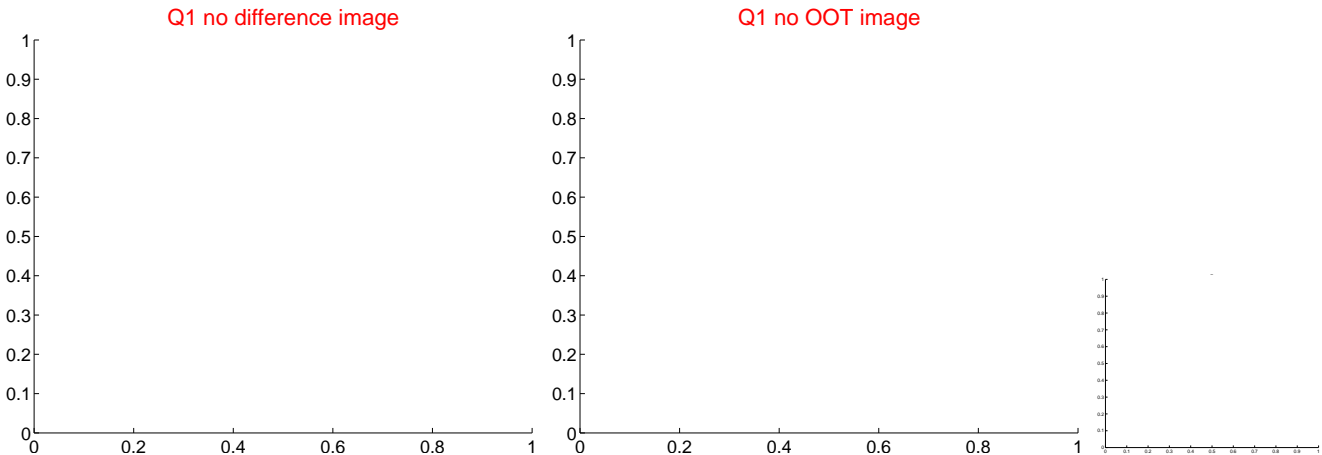
The OOT PRF centroid is offset from the target star catalog position by about 3.47 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.442 ± 0.085	5.21	-0.233 ± 0.092	-0.376 ± 0.074
PRF-fit source offset from KIC position	3.886 ± 0.084	46.30	-2.501 ± 0.085	-2.975 ± 0.073
photometric centroid source offset	2.17 ± 0.42	5.11	-1.02 ± 0.38	-1.92 ± 0.44

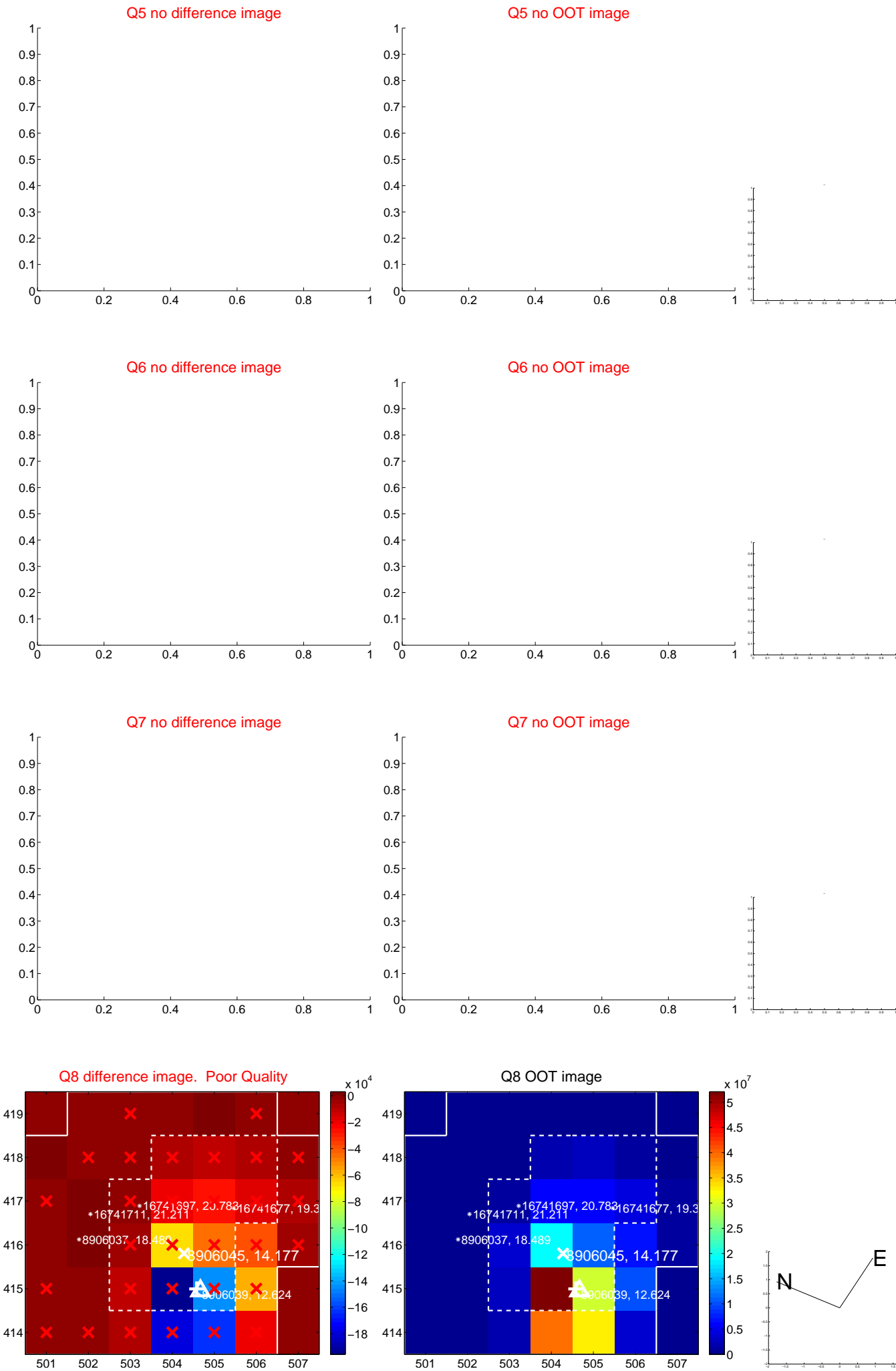


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

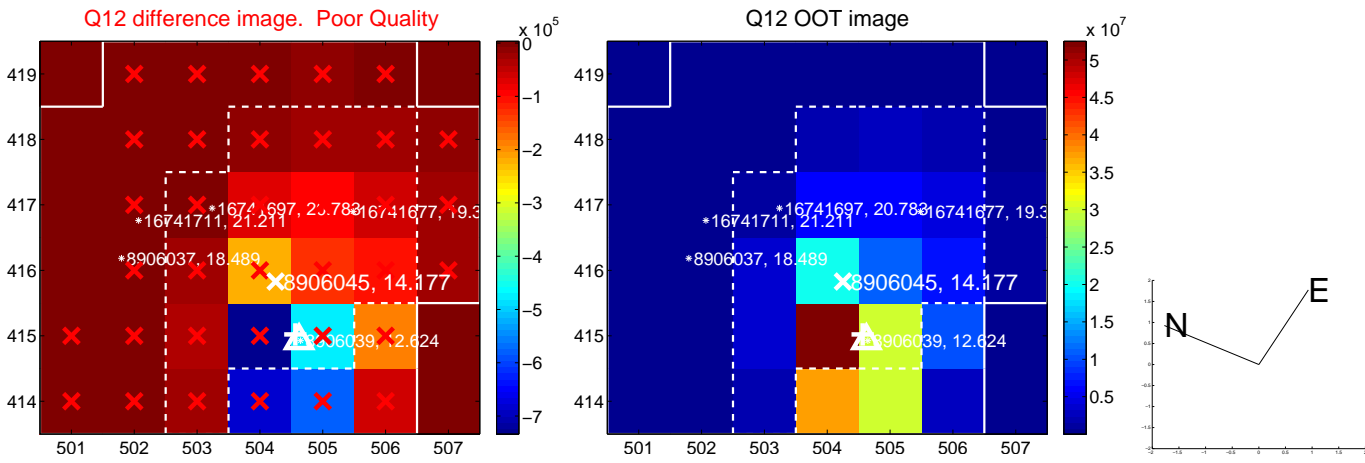
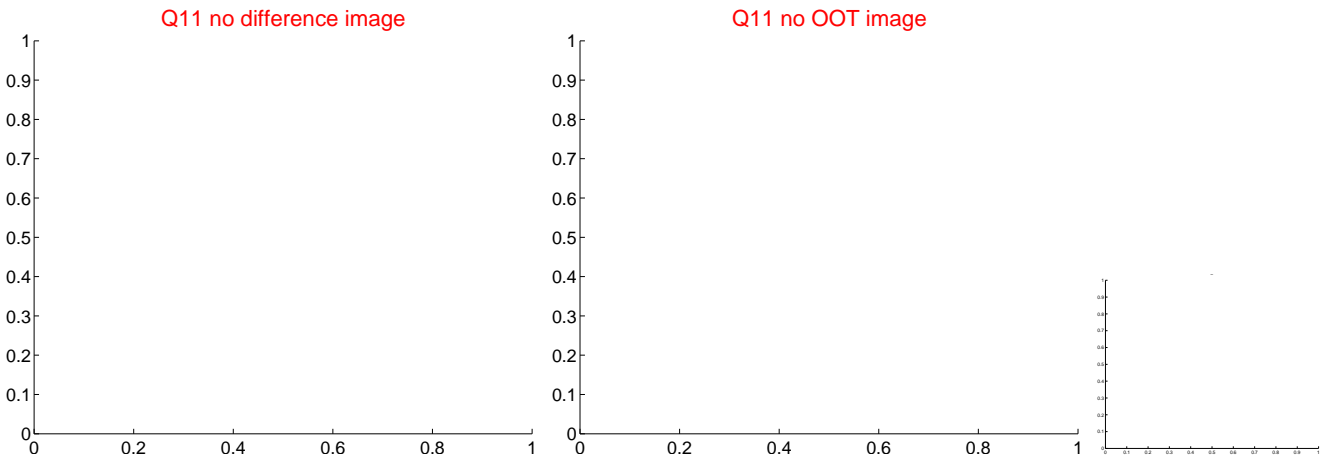
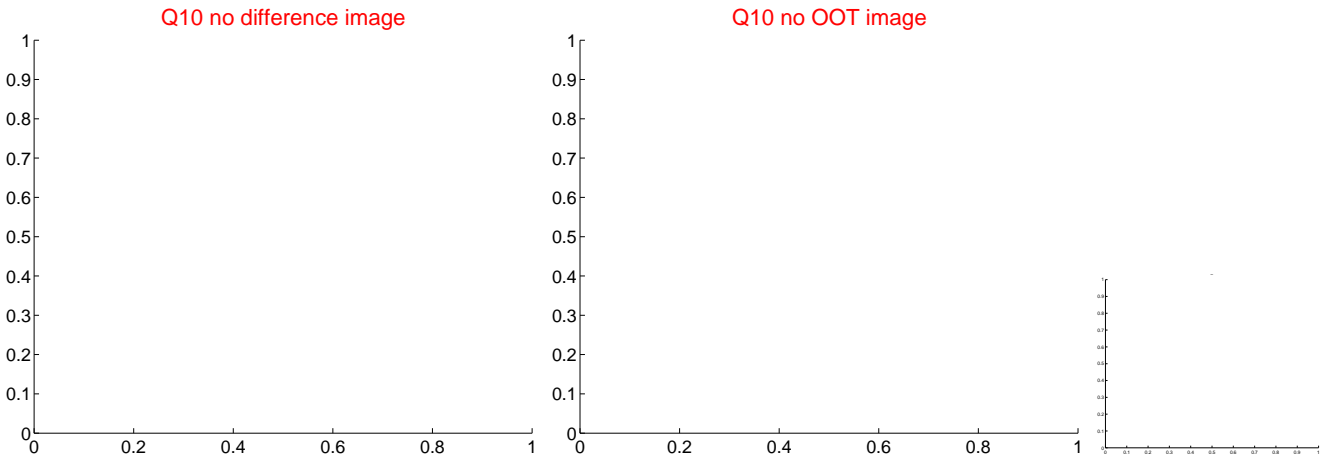
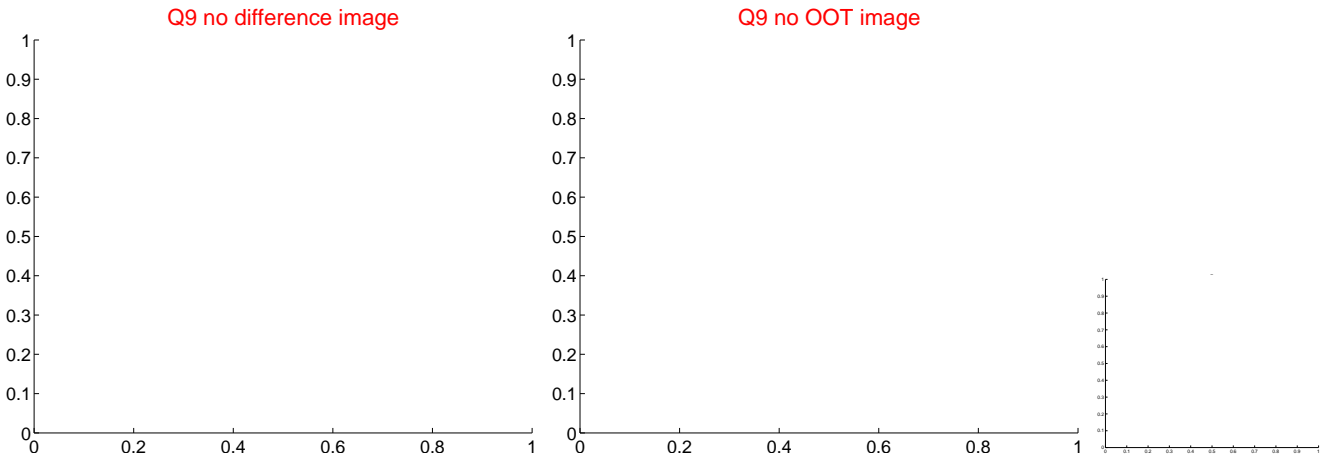
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



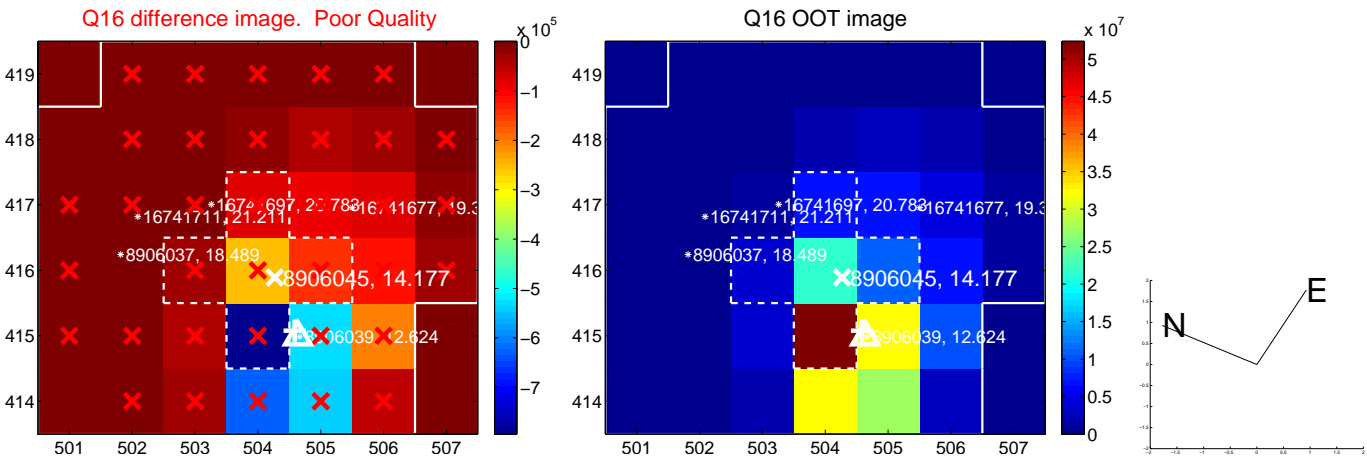
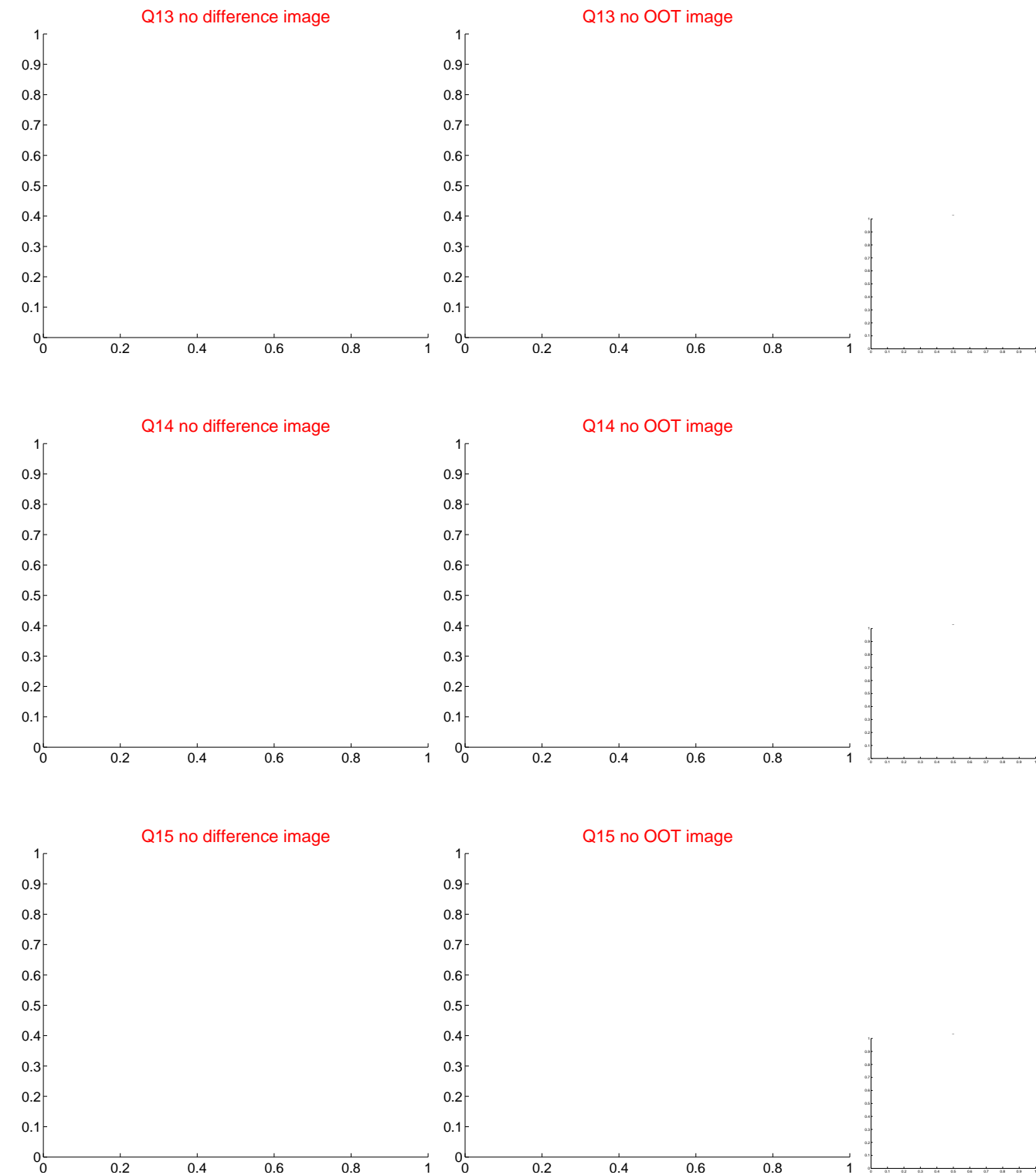
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



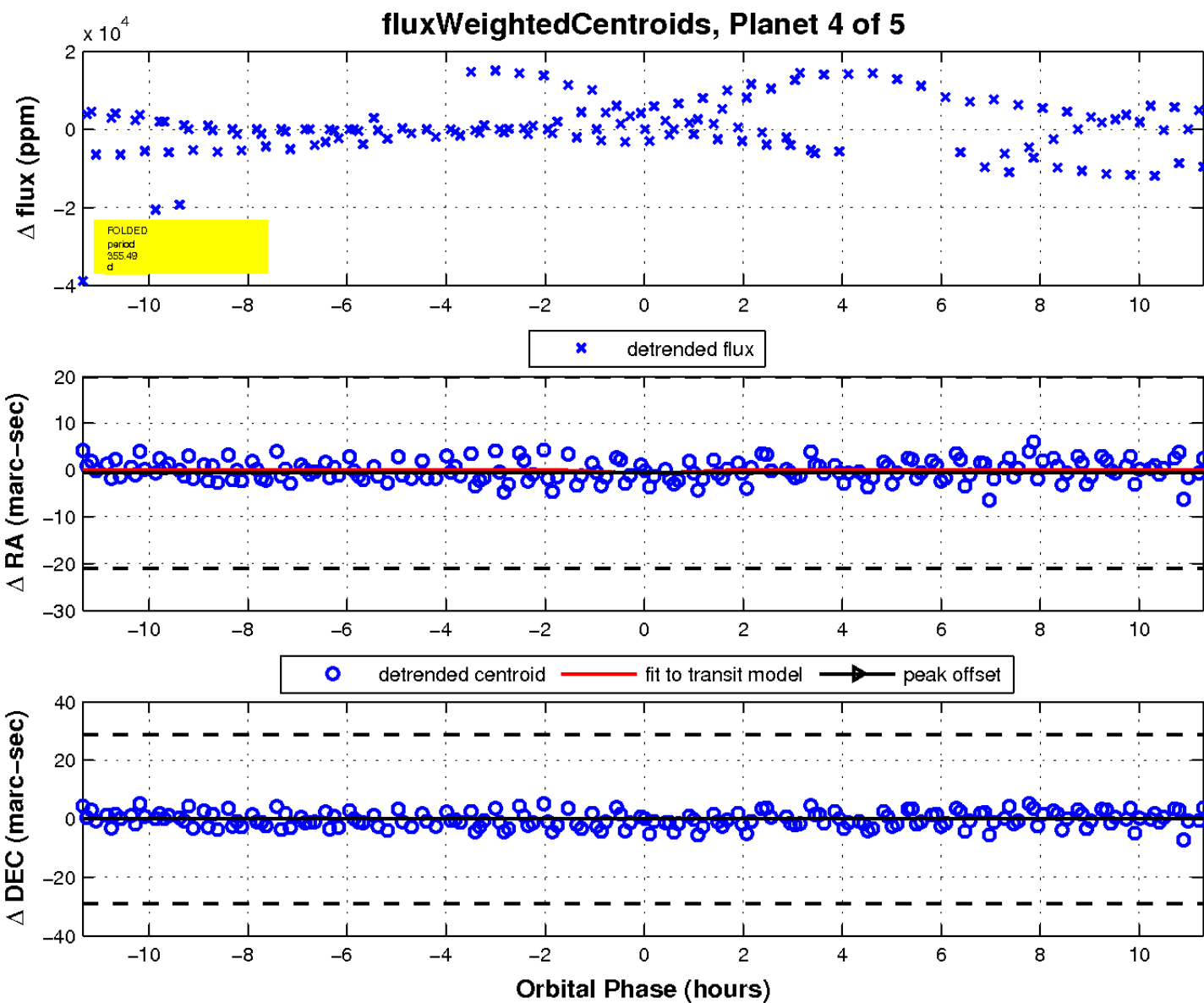
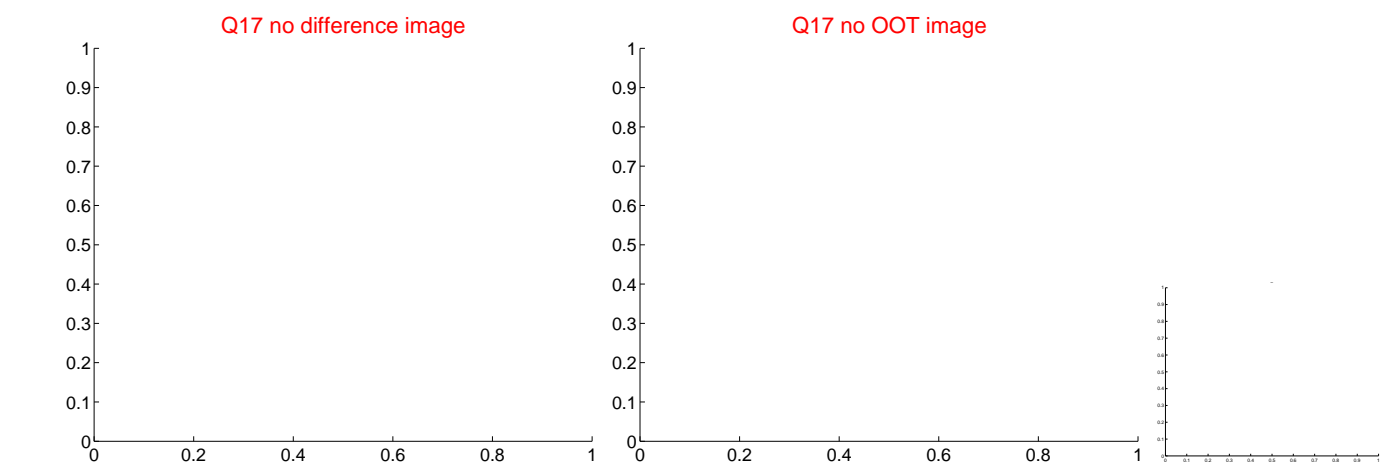
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

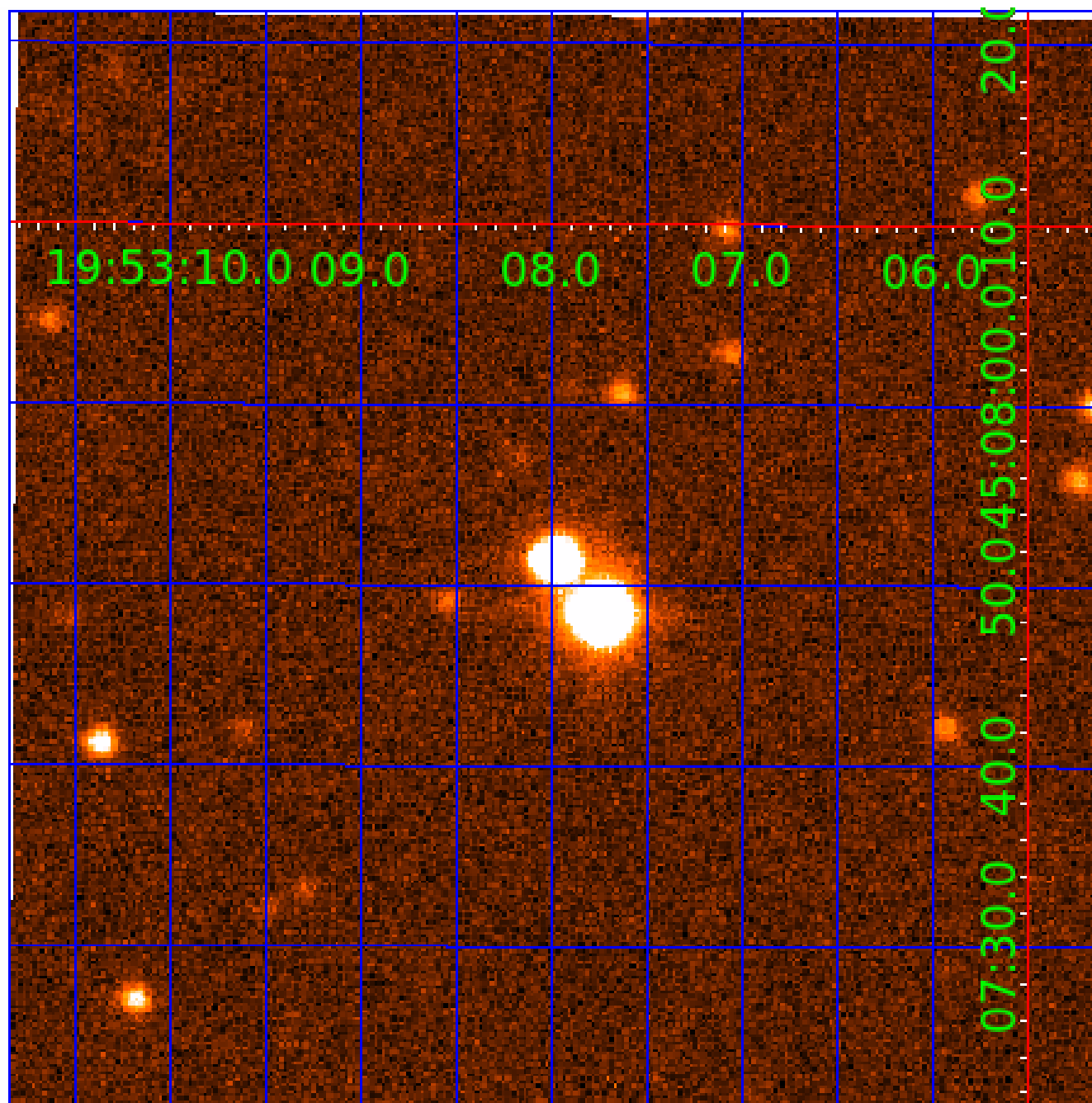


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008906045

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})
008906045-01	OBS	3789.01	2.347420	133.687739	500.6	6.497	25.1	20.9	1.14	5891	3.04	1206.77
008906045-02	OBS	No	381.542243	411.692744	328.8	6.581	13.6	0.4	1.14	5891	2.35	1.36
008906045-03	OBS	No	381.518026	411.155410	22604.0	21.521	13.4	11.9	1.14	5891	18.11	1.36
008906045-04	OBS	No	355.487147	426.952465	3399.0	3.780	13.3	5.3	1.14	5891	12.30	1.50
008906045-05	OBS	No	184.896707	197.818890	6454.6	9.732	12.2	8.9	1.14	5891	16.64	3.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008906045-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_KIC_POS—EPHEM_MATCH
008906045-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008906045-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
008906045-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008906045-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

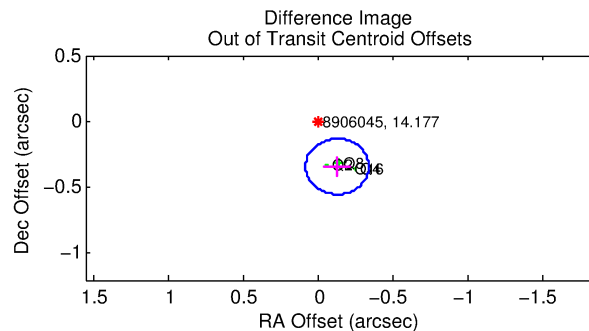
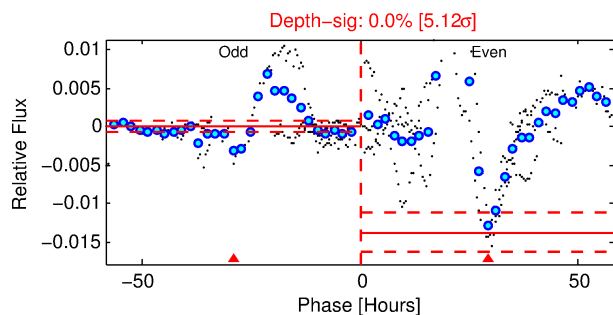
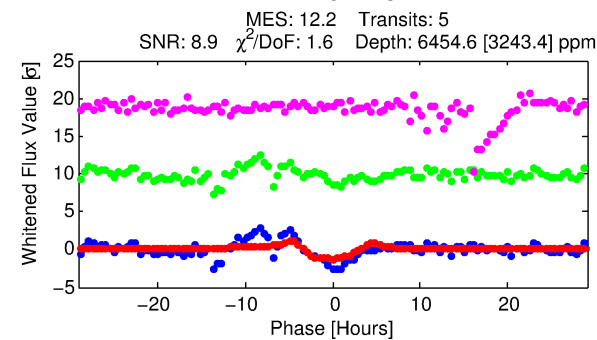
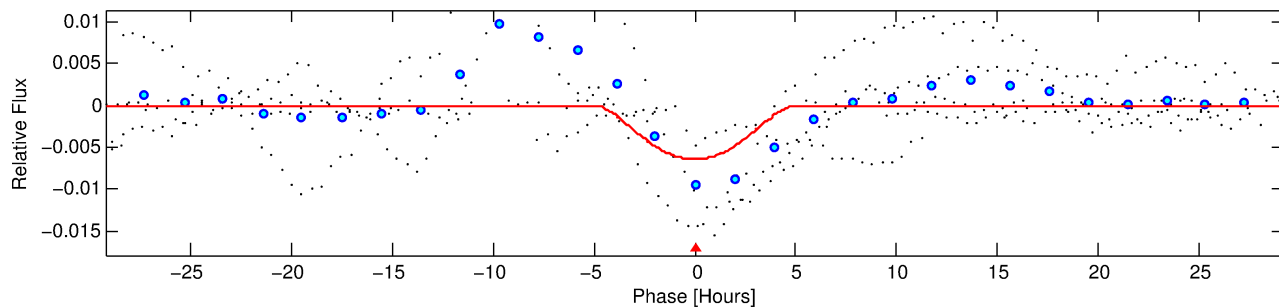
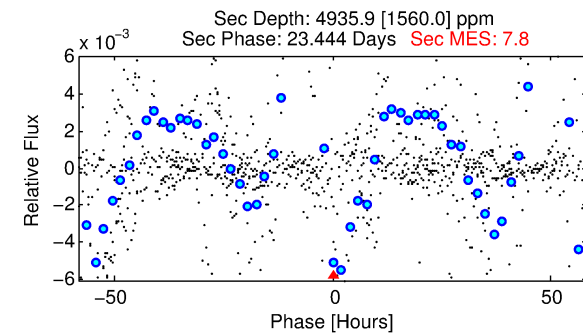
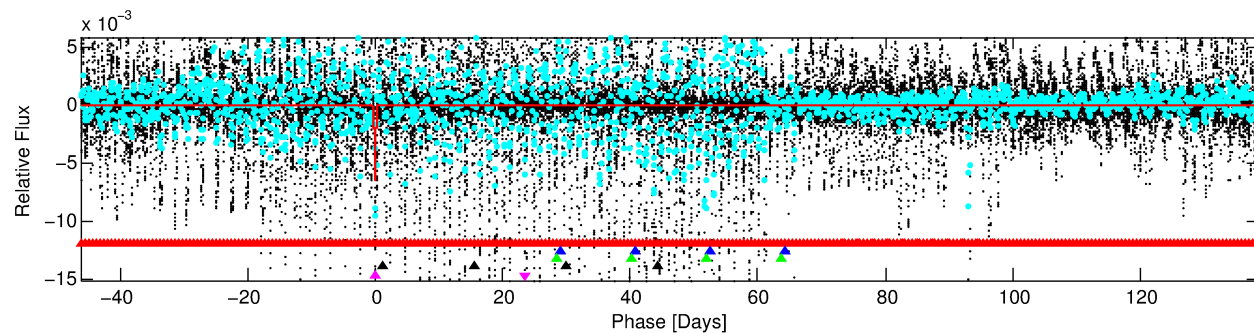
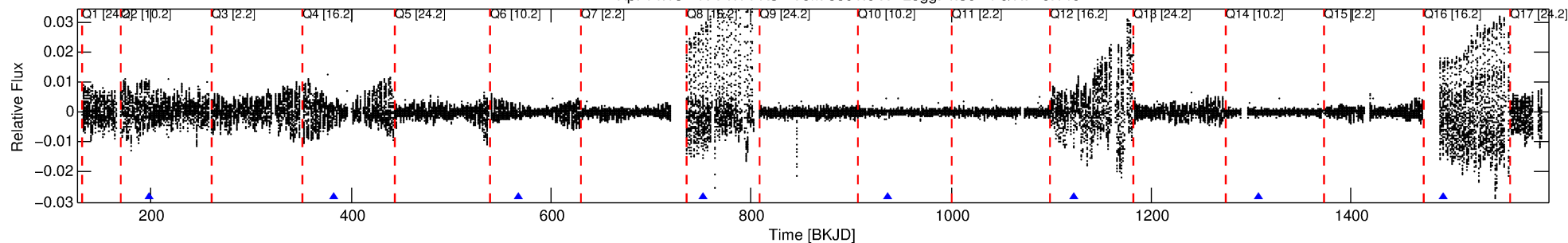
Ephemeris Match Information For 008906045-05

No Significant Match Found

DV One-Page Summary

KIC: 8906045 Candidate: 5 of 5 Period: 184.897 d
KOI: K03789 Corr: No Ephemeris Match

Kp: 14.18 R*: 1.14 Rs Teff: 5891.0 K Logg: 4.30 Fe/H: -0.140



DV Fit Results:

Period = 184.89671 [0.00451] d
Epoch = 197.8189 [0.0185] BKJD
Rp/R* = 0.1340 [0.3371]
a/R* = 77.62 [30.96]
b = 1.00 [0.43]
Seff = 3.57 [1.26]
Teq = 351 [31] K
Rp = 16.64 [42.14] Re
a = 0.6253 [0.1469] AU
Ag = 3836.52 [19390.94] [0.20σ]
Teffp = 4266 [5381] K [0.73σ]

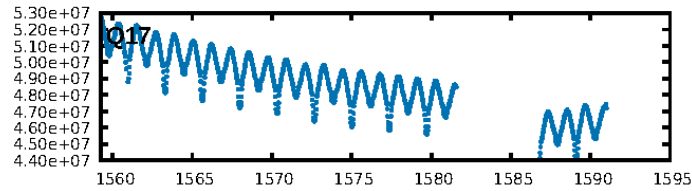
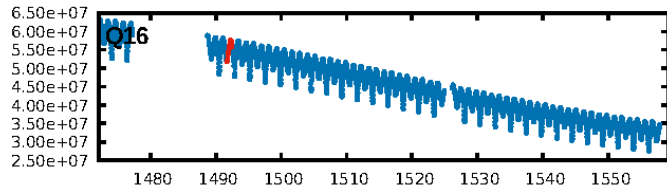
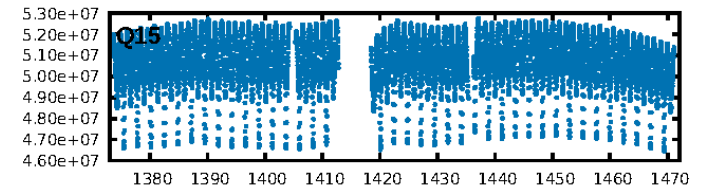
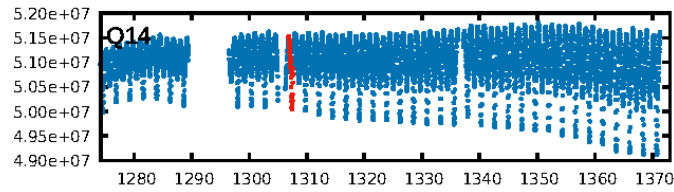
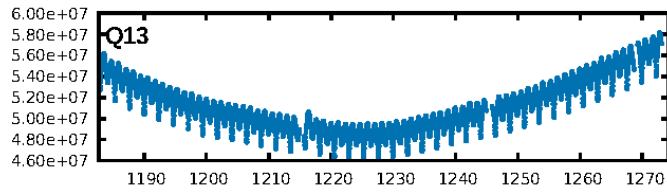
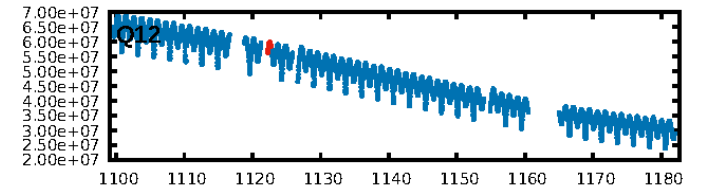
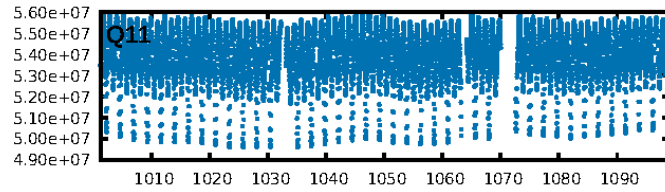
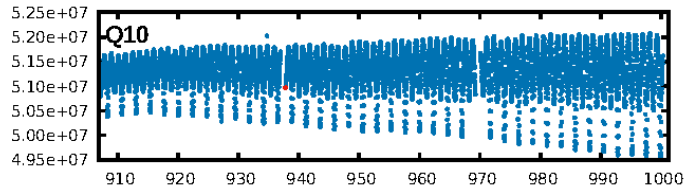
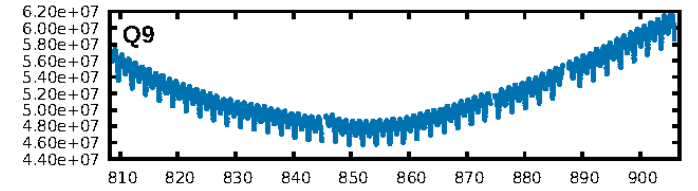
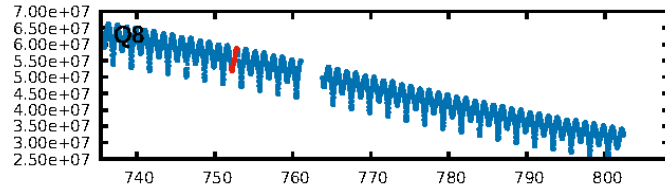
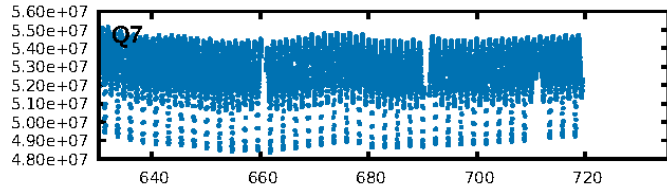
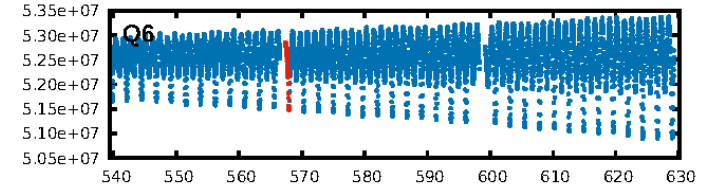
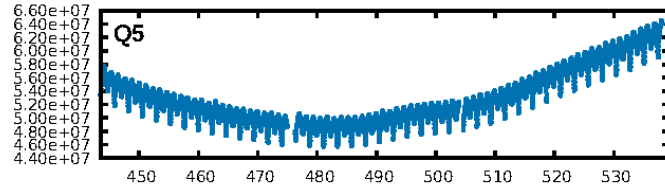
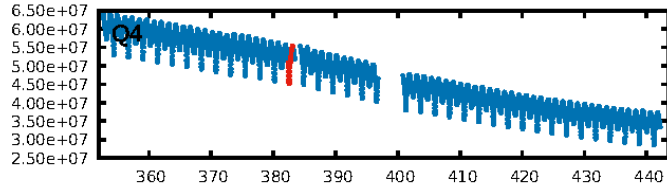
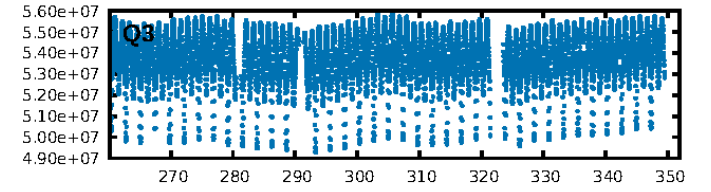
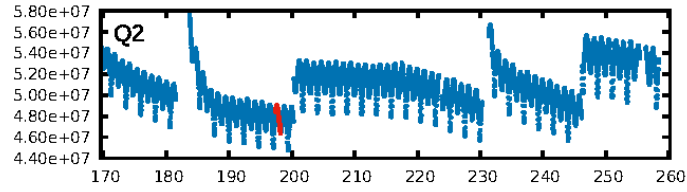
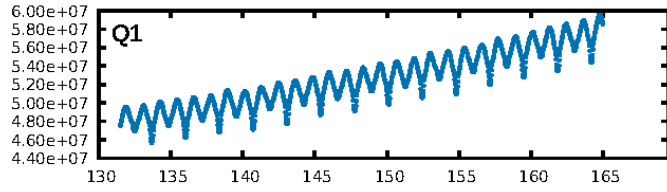
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [374.43σ]
LongPeriod-sig: 100.0% [392.15σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 94.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 2.301
Centroid-sig: 4.5%
Centroid-so: 2.075 arcsec [14.71σ]
OotOffset-rm: 0.366 arcsec [5.24σ]
KicOffset-rm: 3.930 arcsec [49.47σ]
OotOffset-st: 1/0/3/0 [4]
KicOffset-st: 1/0/3/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.25 [1/4]

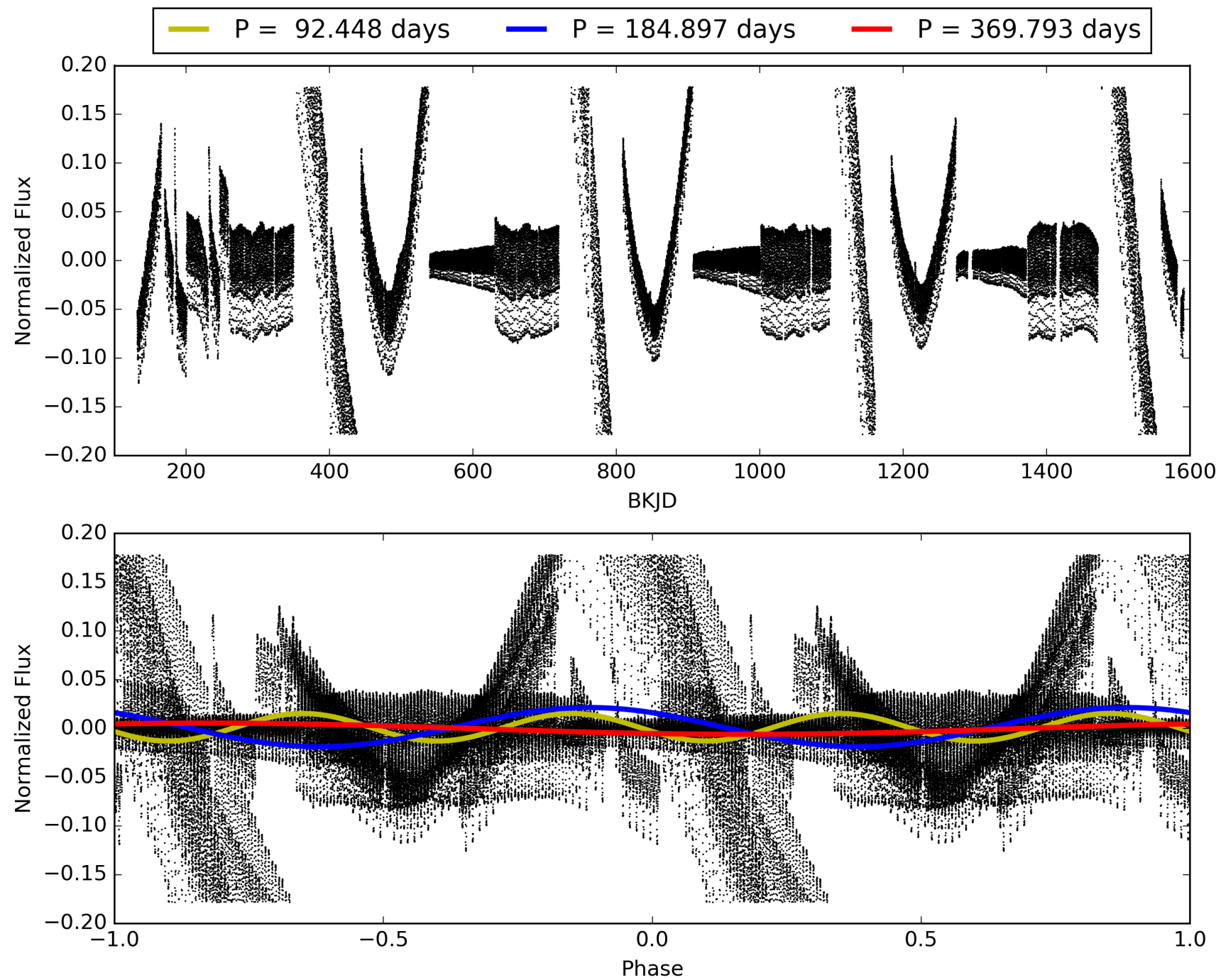
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:32:12 Z

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

TCE 008906045-05, PDC Light Curves

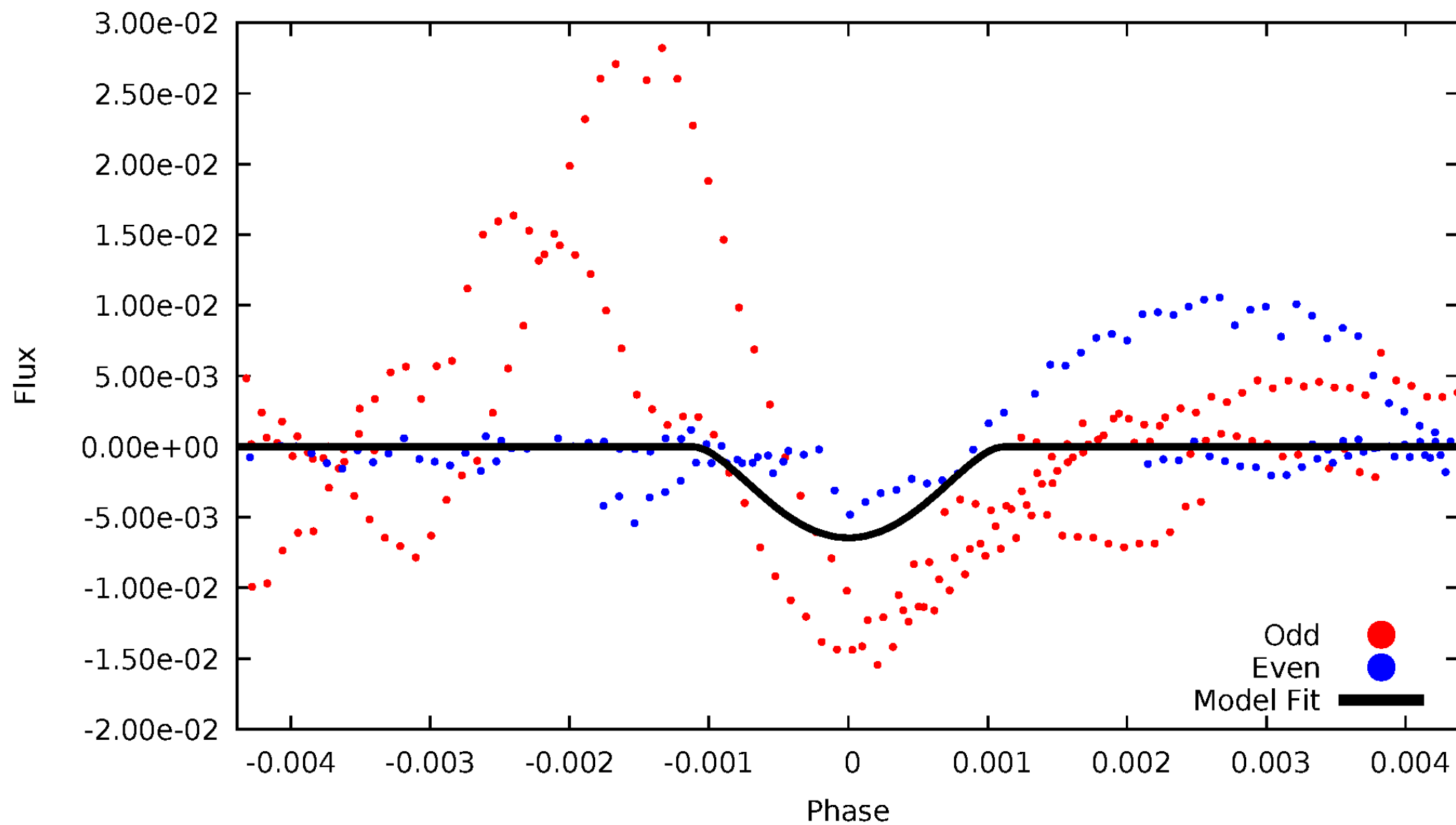


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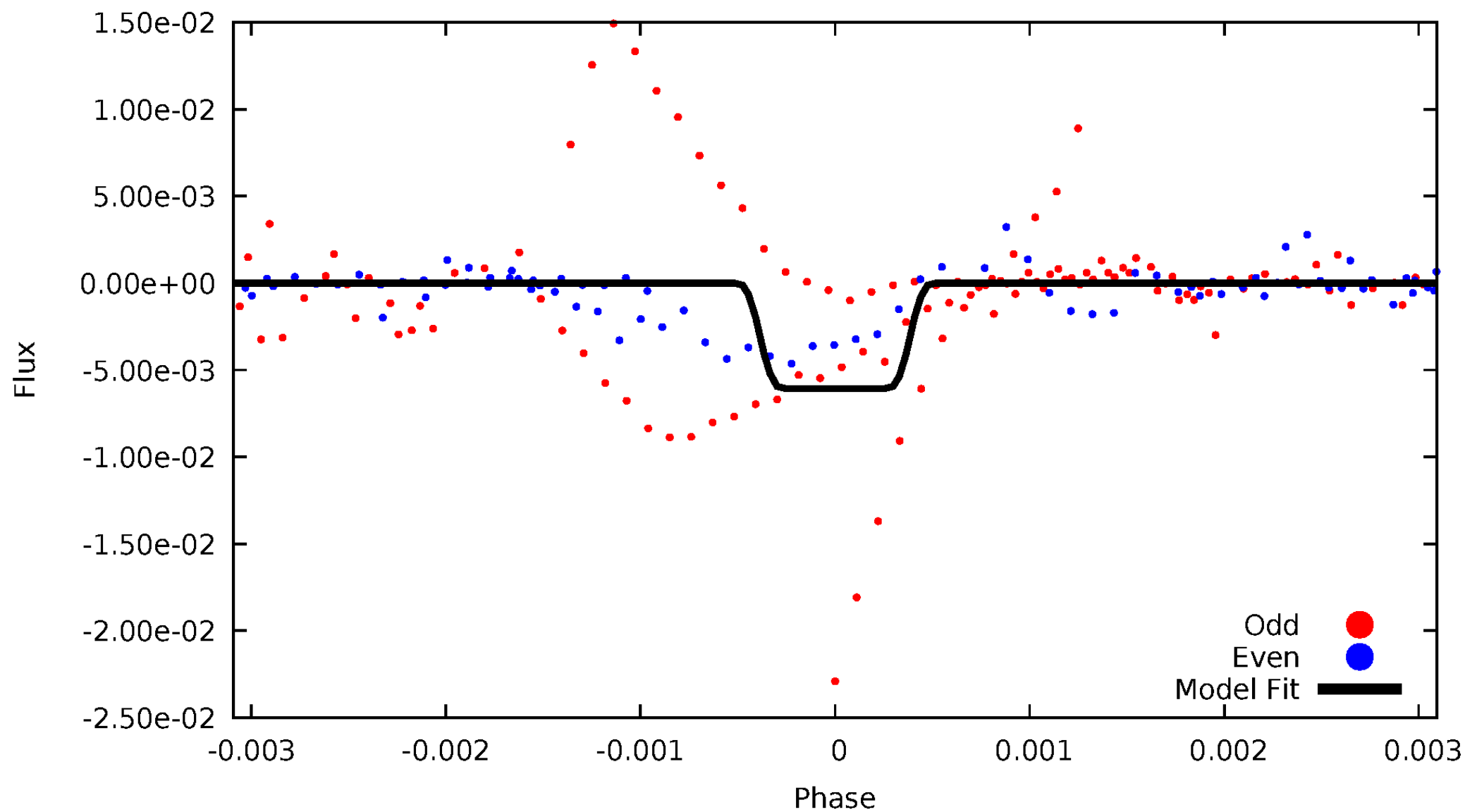
DV Odd/Even

TCE 008906045-05



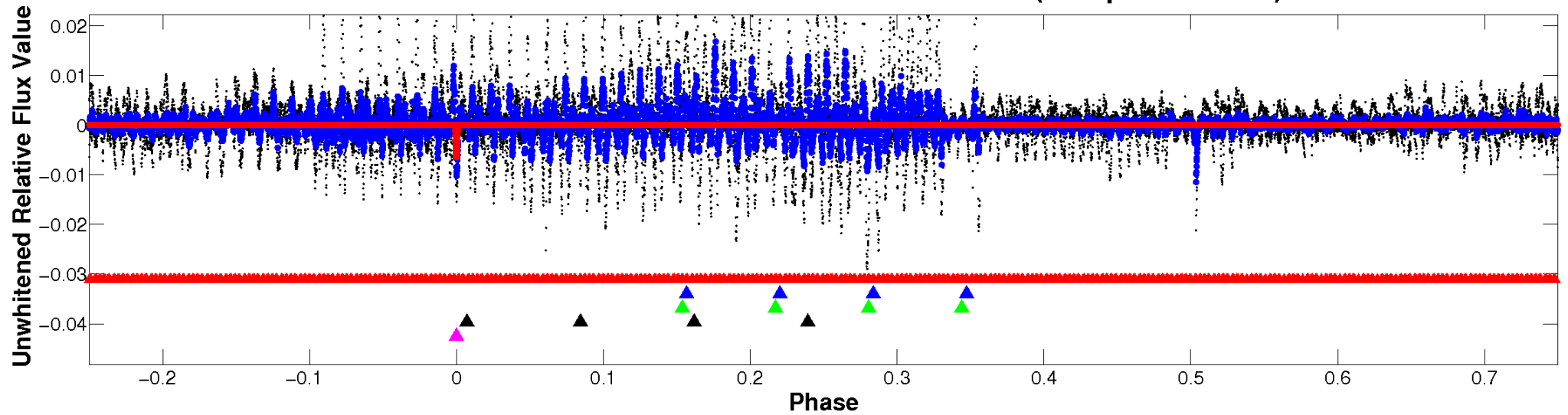
ALT Odd/Even

TCE 008906045-05

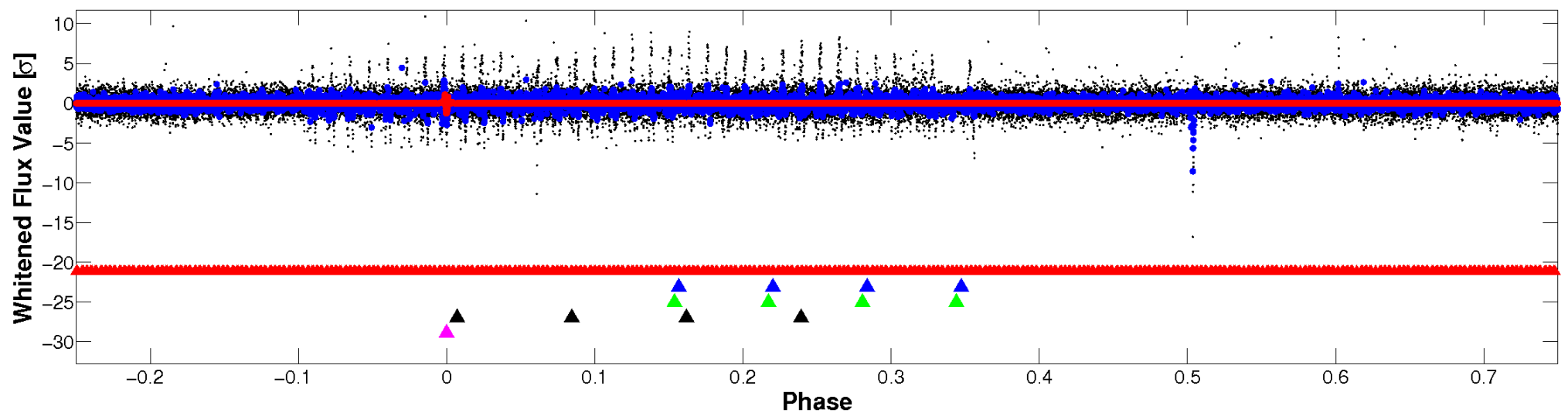


Non-Whitened Vs. Whitened Light Curve

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

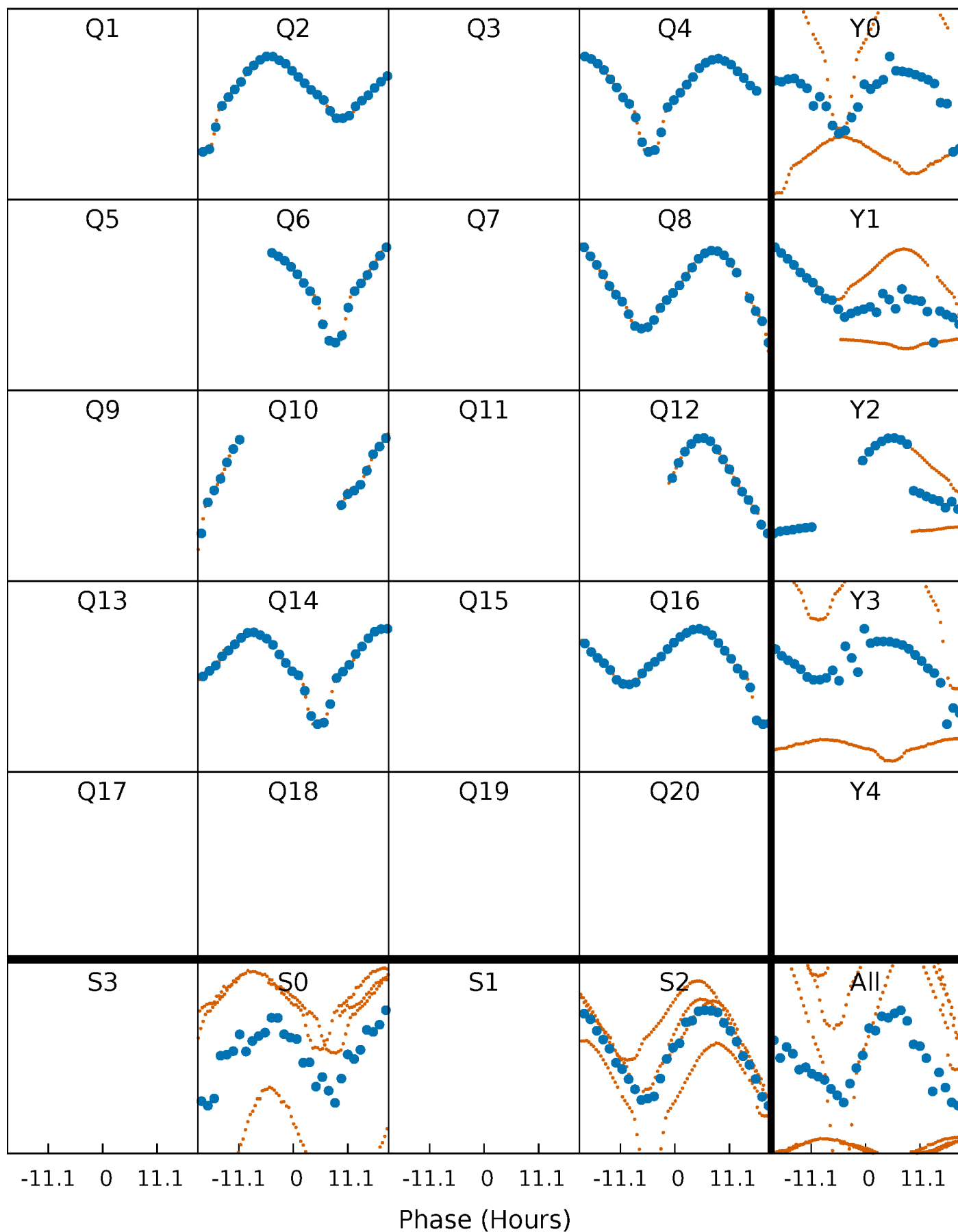


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



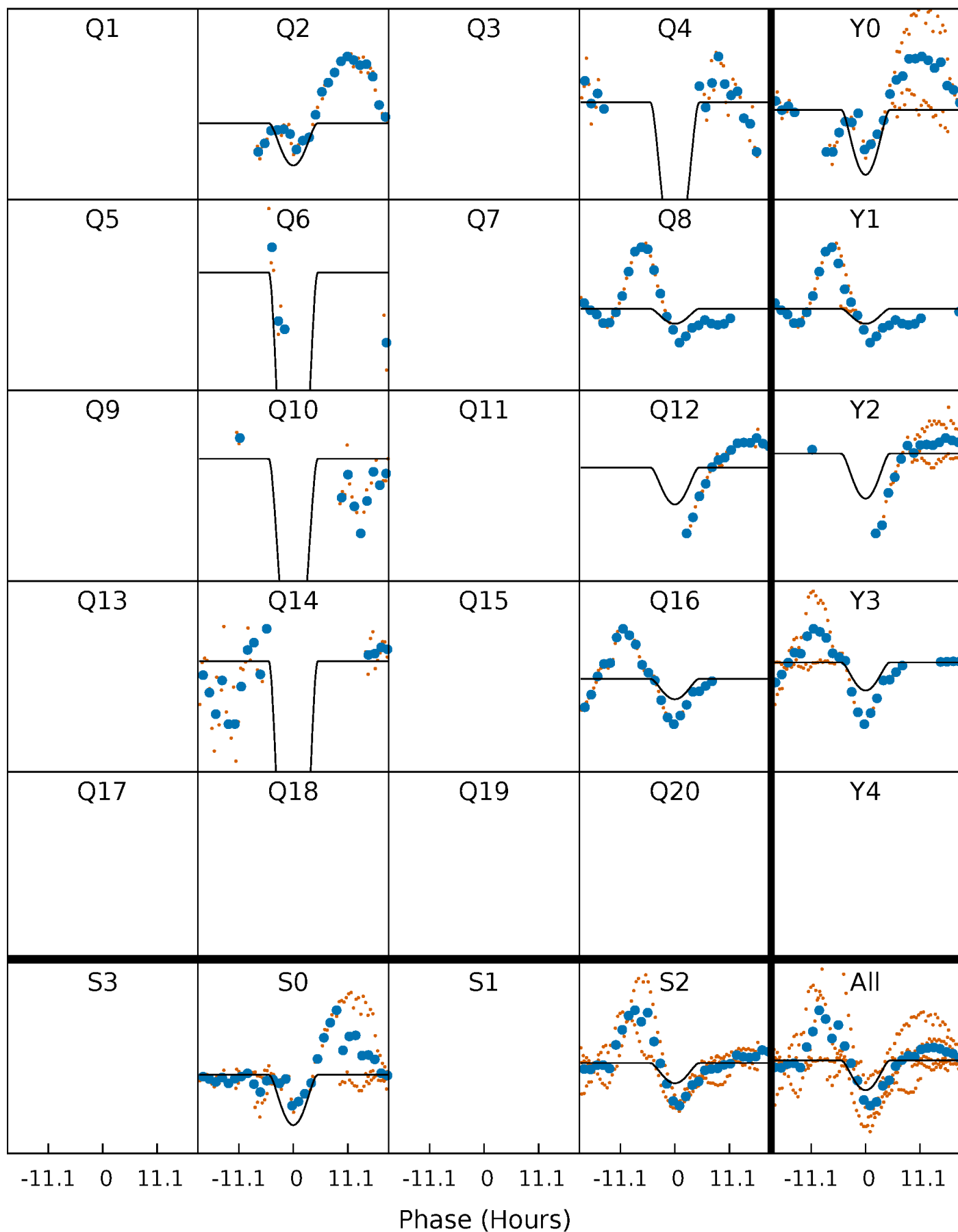
PDC Quarter-Phased Transit Curves

TCE 008906045-05 P=184.896707 Days $T_0=197.818891$ (BKJD)



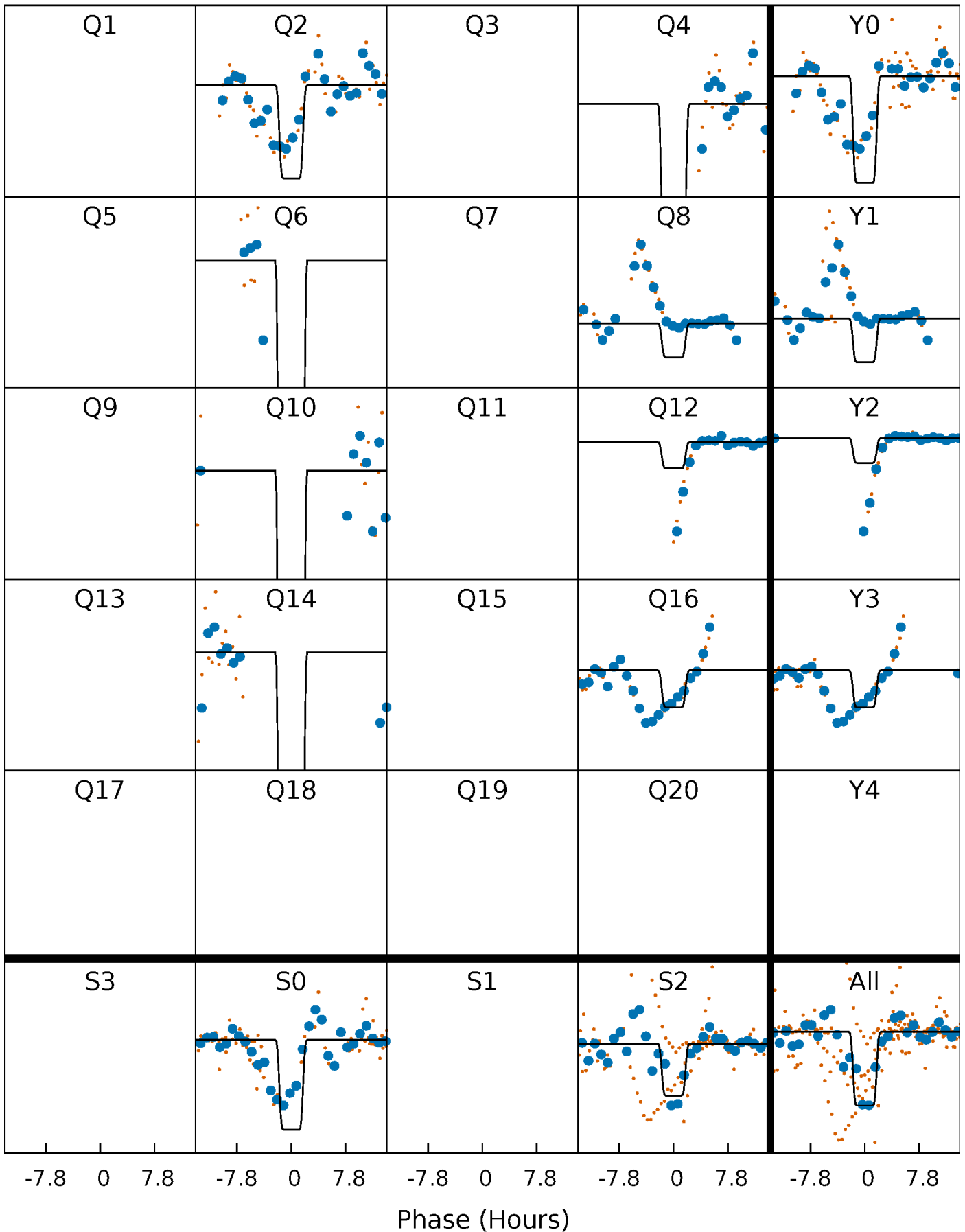
DV Quarter-Phased Transit Curves

TCE 008906045-05 P=184.896707 Days $T_0=197.818891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

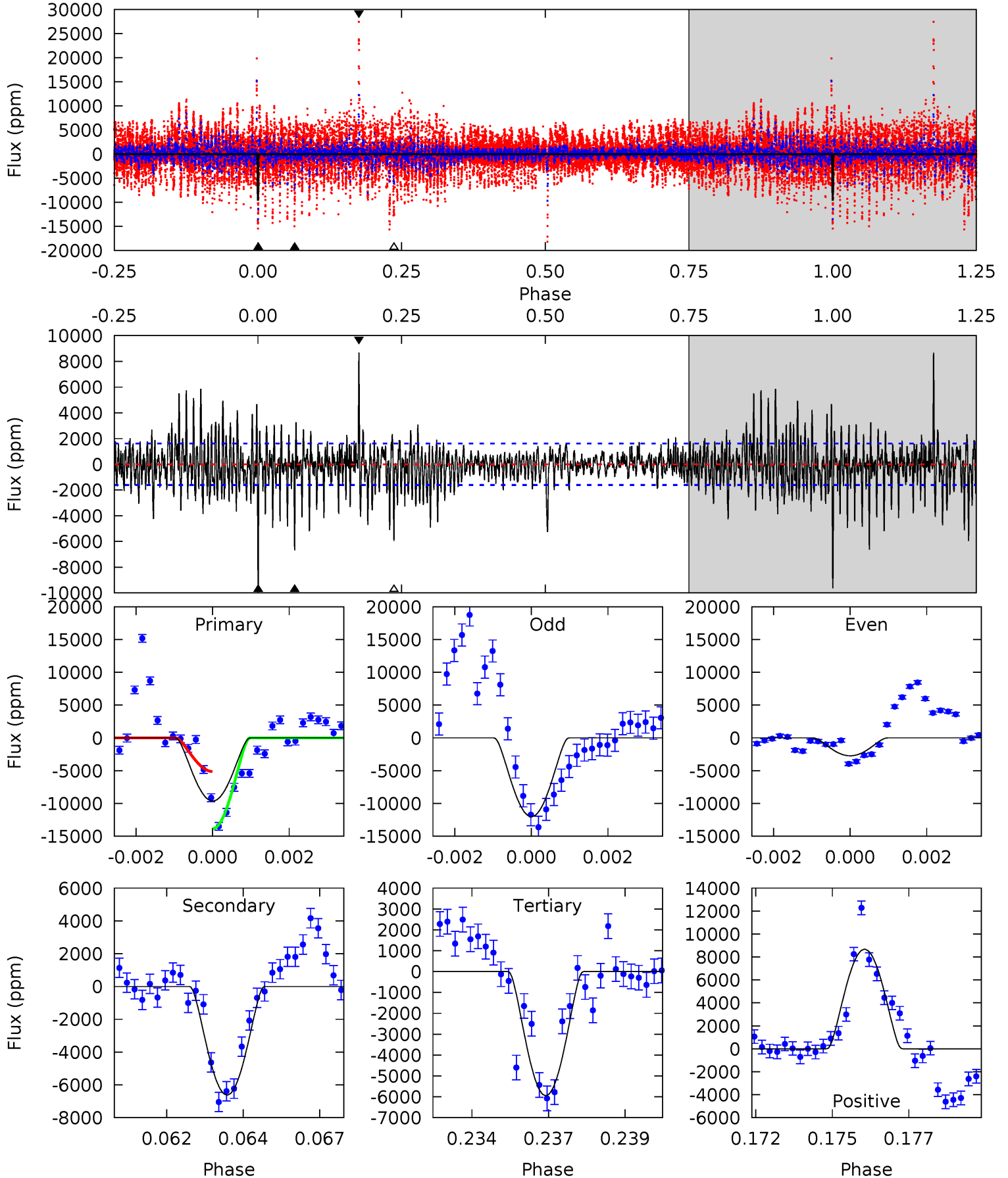
TCE 008906045-05 $P=184.890318$ Days $T_0=197.923992$ (BKJD)



DV Model-Shift Uniqueness Test

008906045-05, P = 184.896707 Days, E = 12.922184 Days

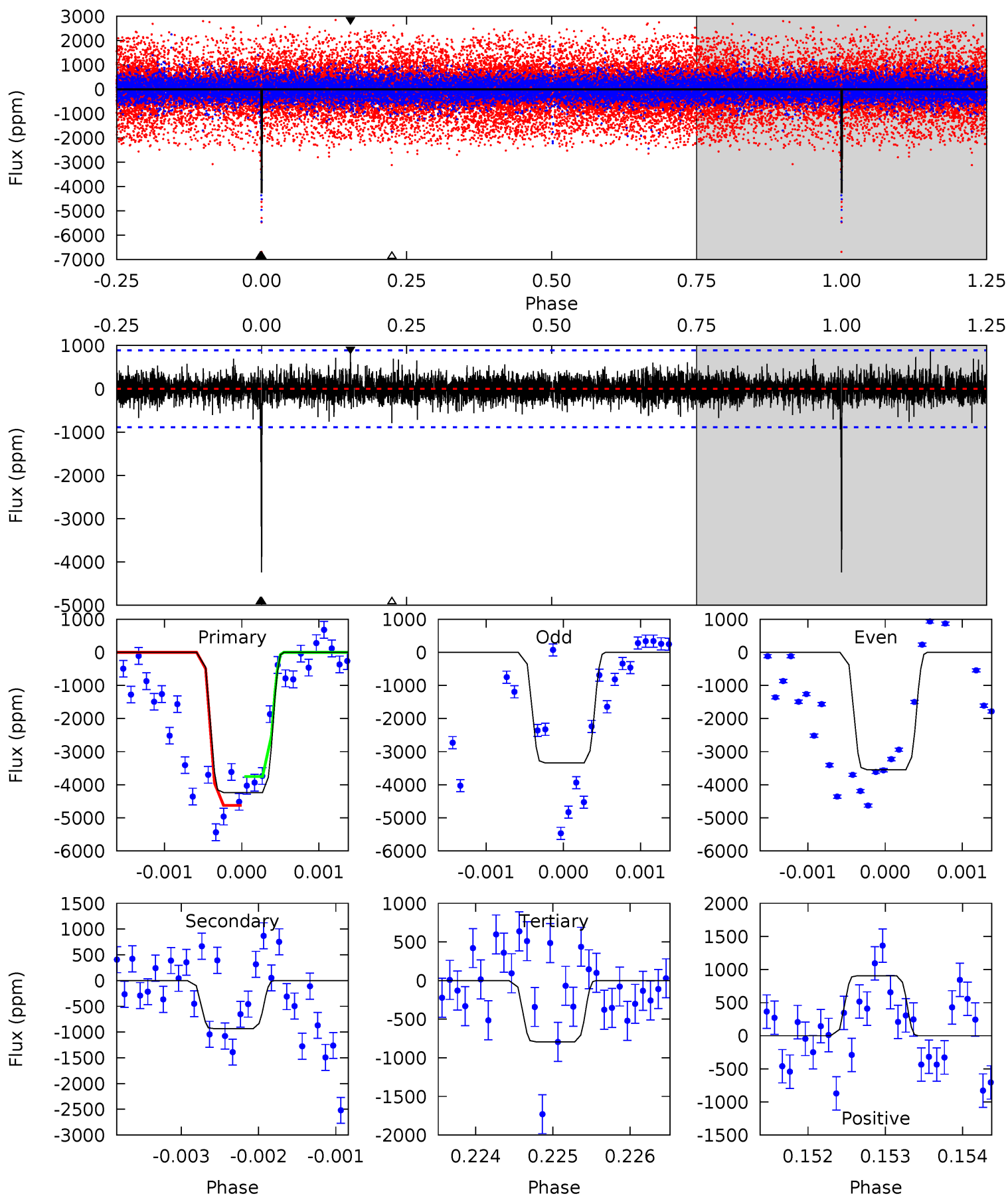
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.7	21.8	19.6	28.5	5.30	3.05	4.20	12.1	3.17	2.22	-6.74	8.93	0.99	0.47	14.2



Alt Model-Shift Uniqueness Test

008906045-05, P = 184.890318 Days, E = 13.033674 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.1	5.76	4.89	5.59	5.46	3.30	1.10	21.2	20.5	0.87	0.17	0.59	1.45	0.18	2.56



Stellar Parameters For KIC 008906045

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5891^{+159}_{-176}	$4.305^{+0.175}_{-0.175}$	$-0.140^{+0.300}_{-0.300}$	$1.138^{+0.329}_{-0.219}$	$0.953^{+0.144}_{-0.108}$	$0.912^{+0.806}_{-0.423}$
	+3%/-3%	+4%/-4%	+214%/-214%	+29%/-19%	+15%/-11%	+88%/-46%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008906045-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-6620 ± 304	$35.98^{+31.08}_{-24.55}$	490^{+37}_{-30}	3572^{+1832}_{-597}	1085^{+9235}_{-768}
Alt.	-934 ± 162	$33.84^{+35.54}_{-23.31}$	488^{+39}_{-31}	2731^{+1094}_{-417}	168^{+1573}_{-125}

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

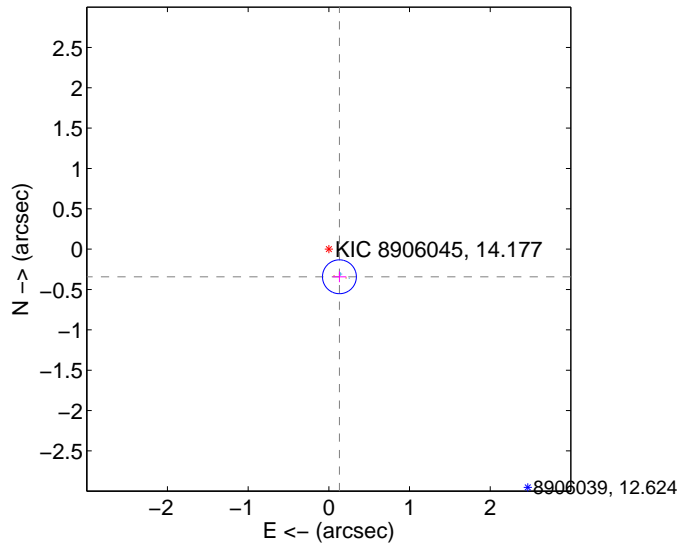
Supplemental centroid analysis for 008906045-05. Kepler magnitude: 14.18. Transit SNR 8.93

There are 2 quarters with good PRF difference image offsets

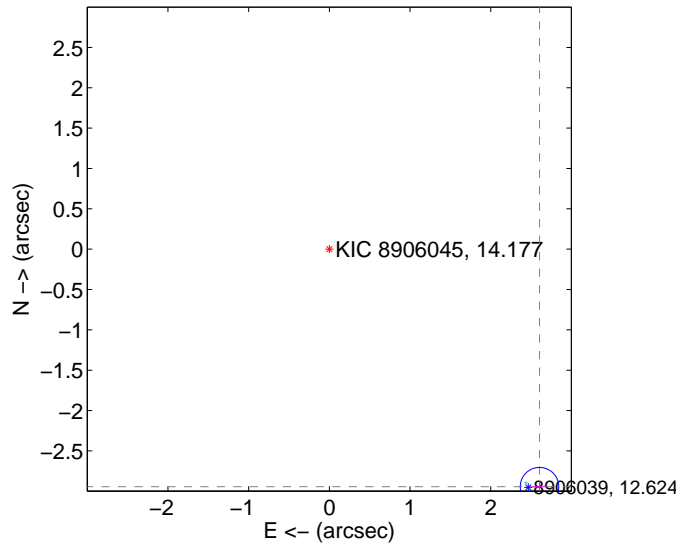
The OOT PRF centroid is offset from the target star catalog position by about 3.46 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.366 ± 0.070	5.24	-0.131 ± 0.085	-0.342 ± 0.067
PRF-fit source offset from KIC position	3.930 ± 0.079	49.47	-2.604 ± 0.087	-2.943 ± 0.069
photometric centroid source offset	2.08 ± 0.14	14.71	-1.11 ± 0.10	-1.76 ± 0.15

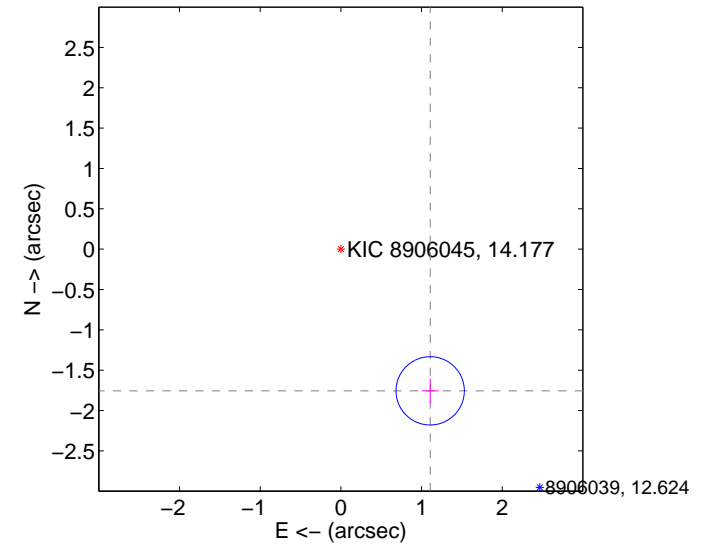
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

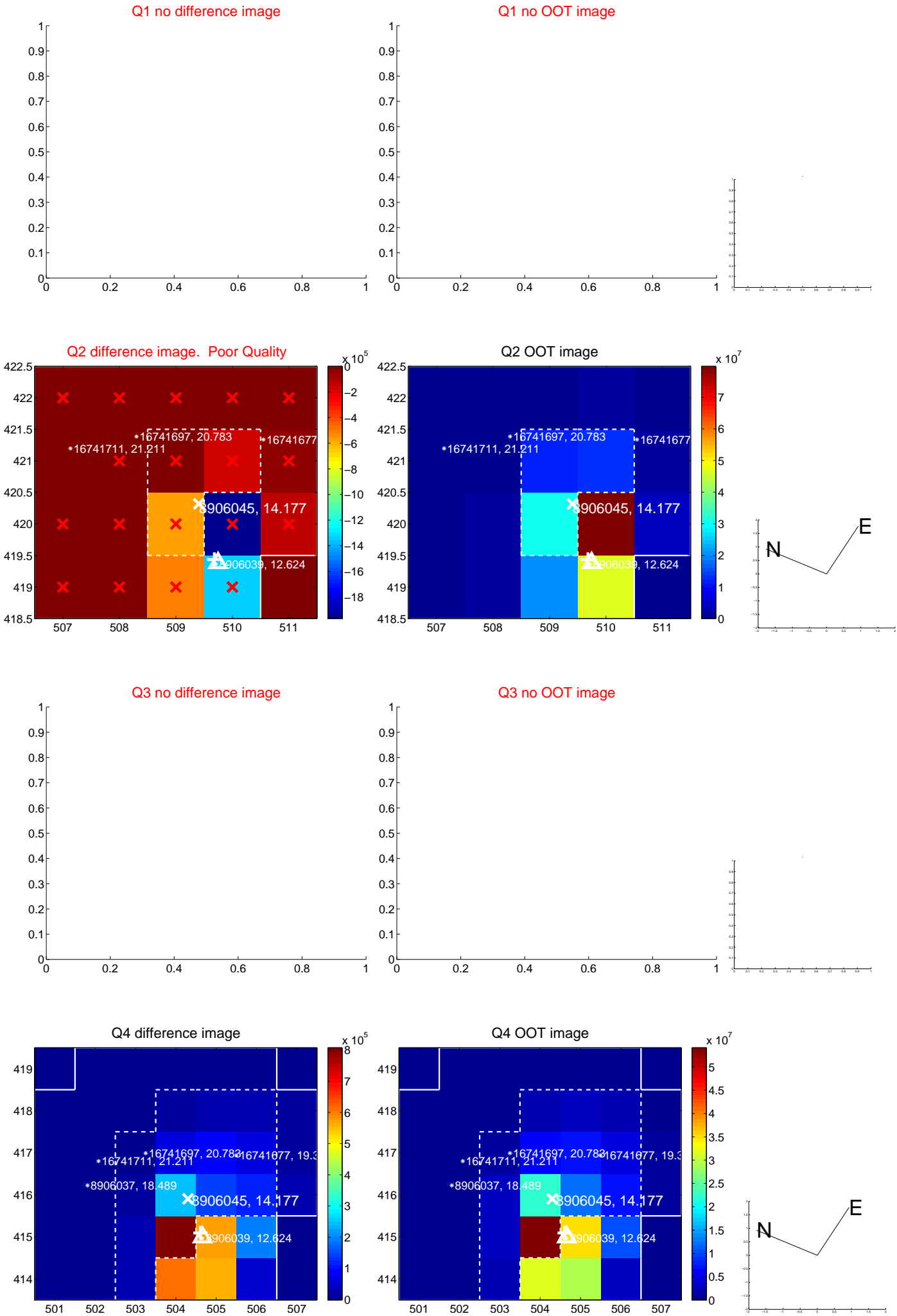


offset from photometric centroids

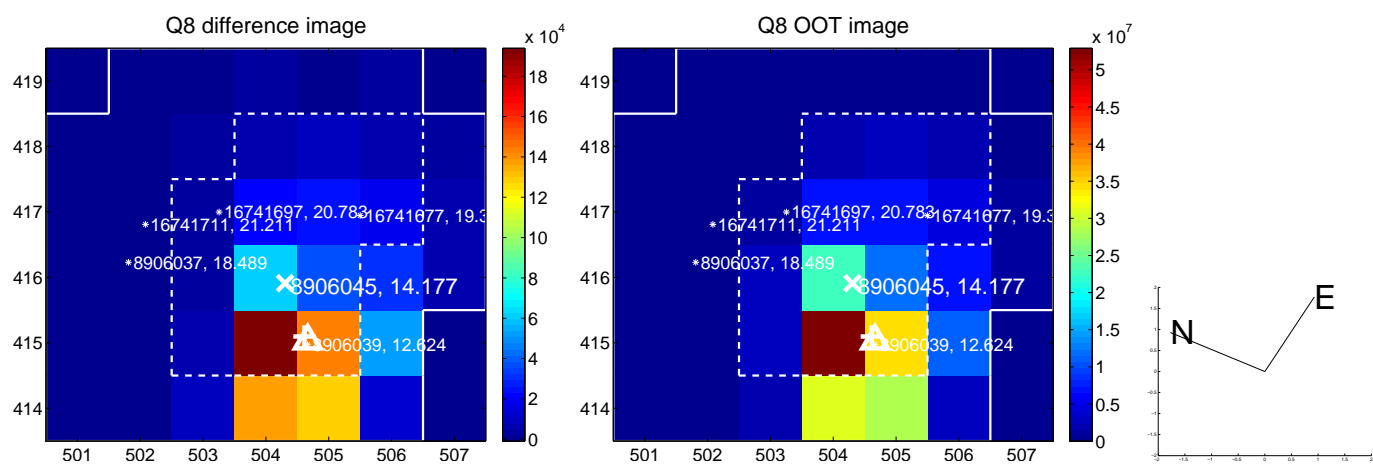
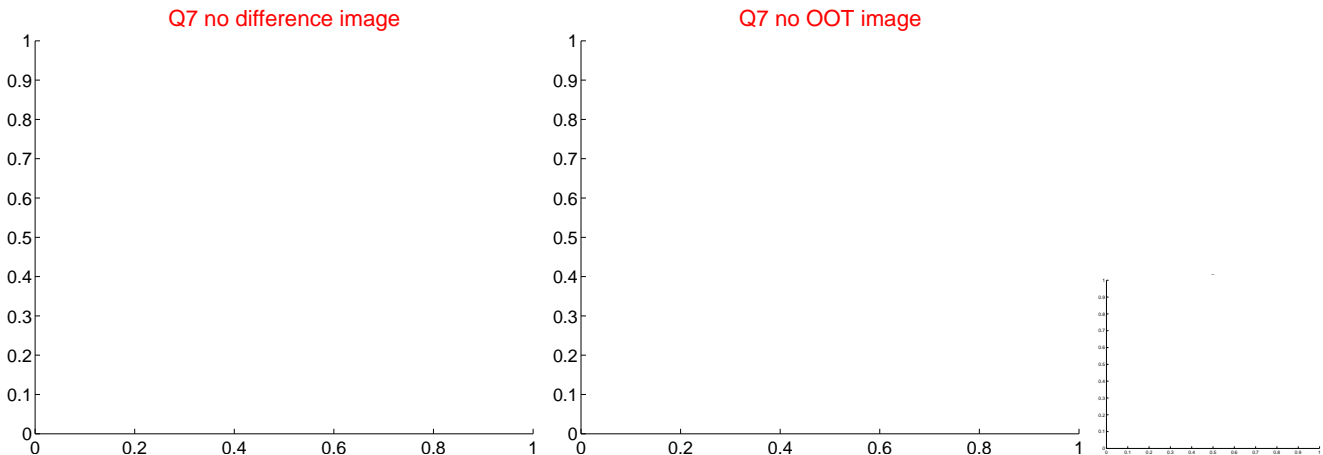
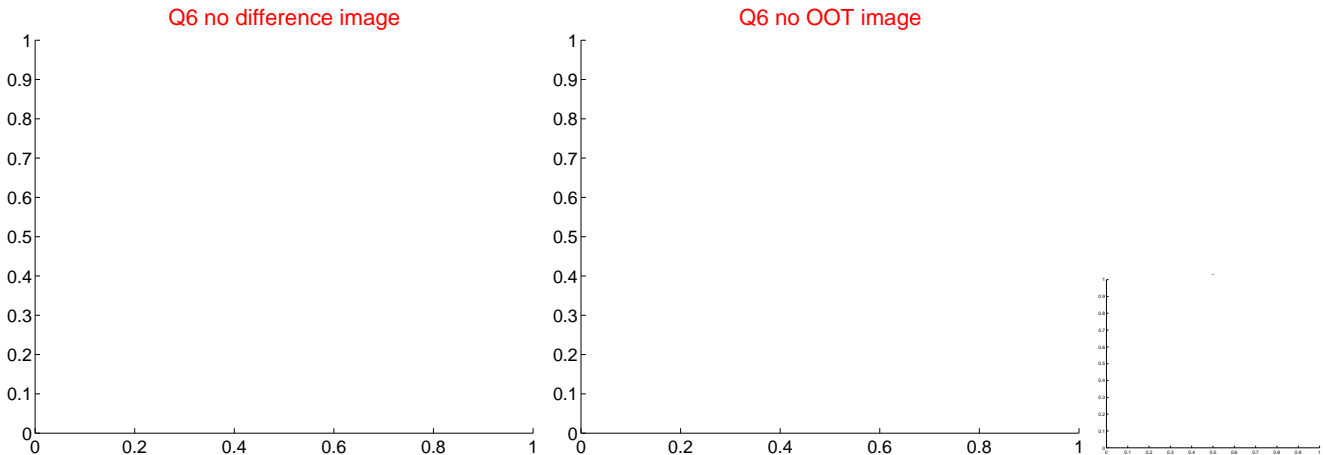
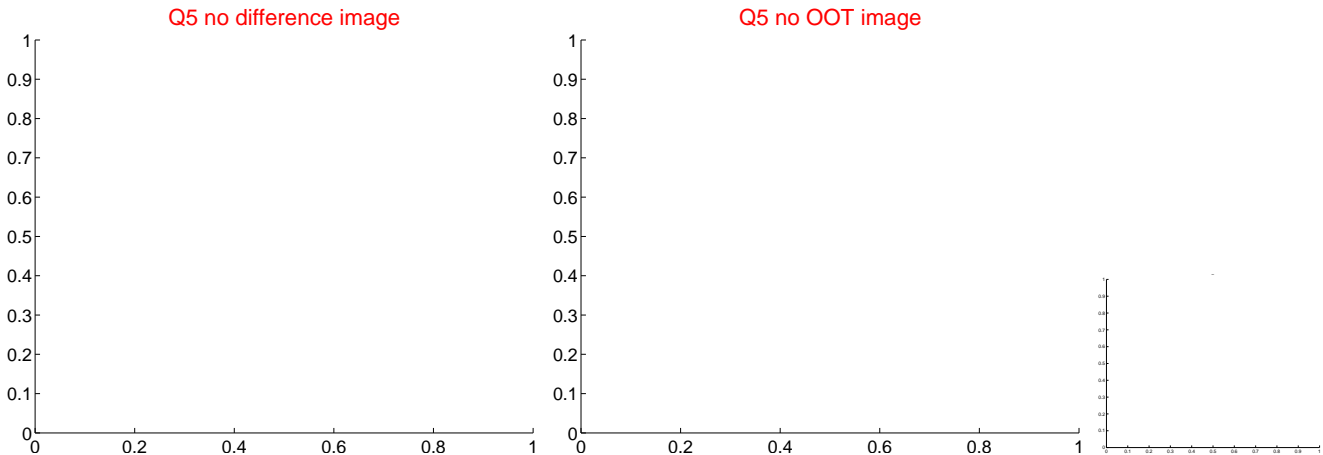


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

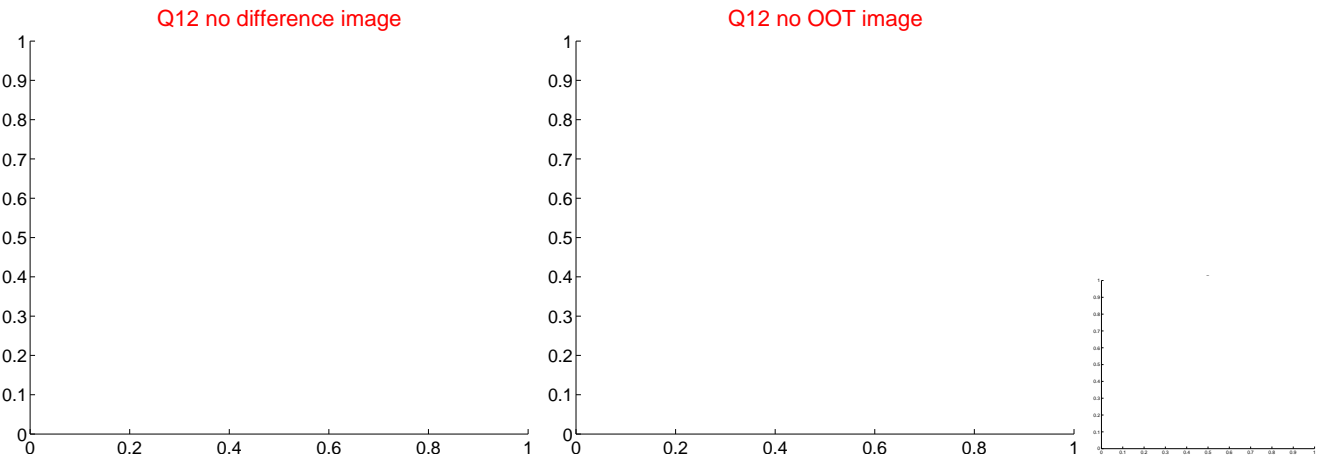
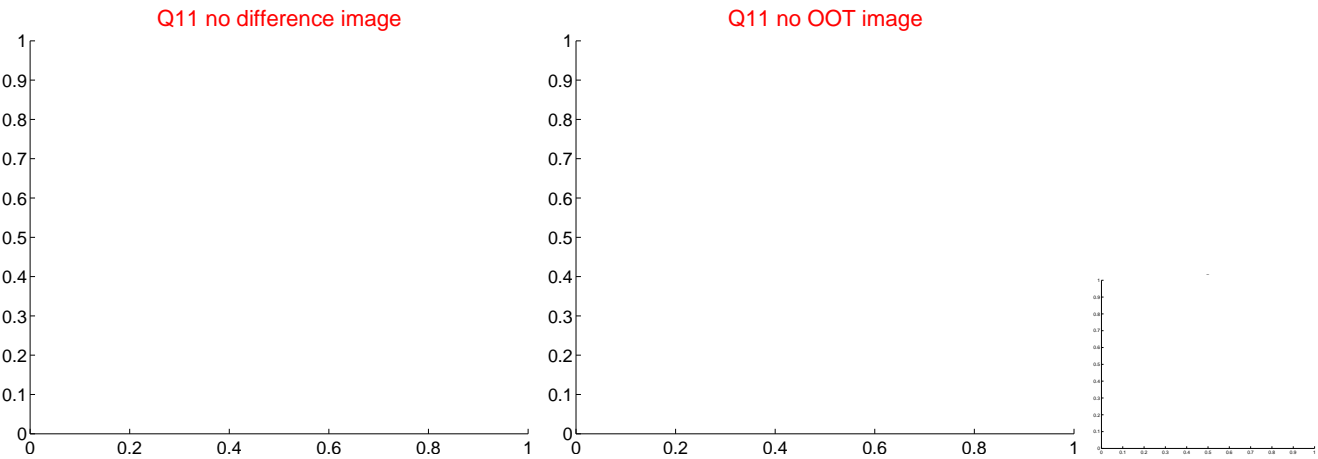
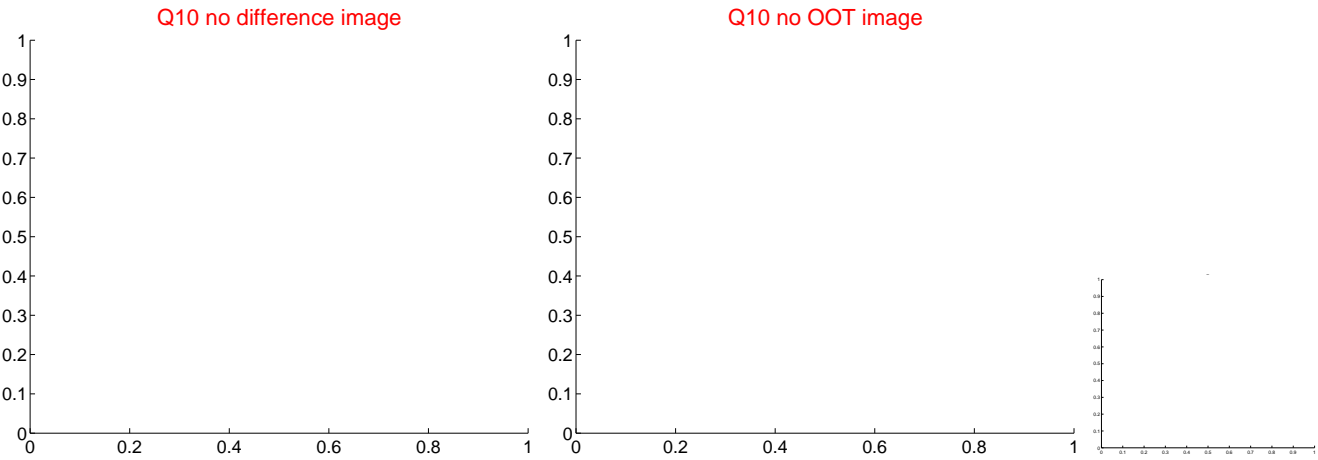
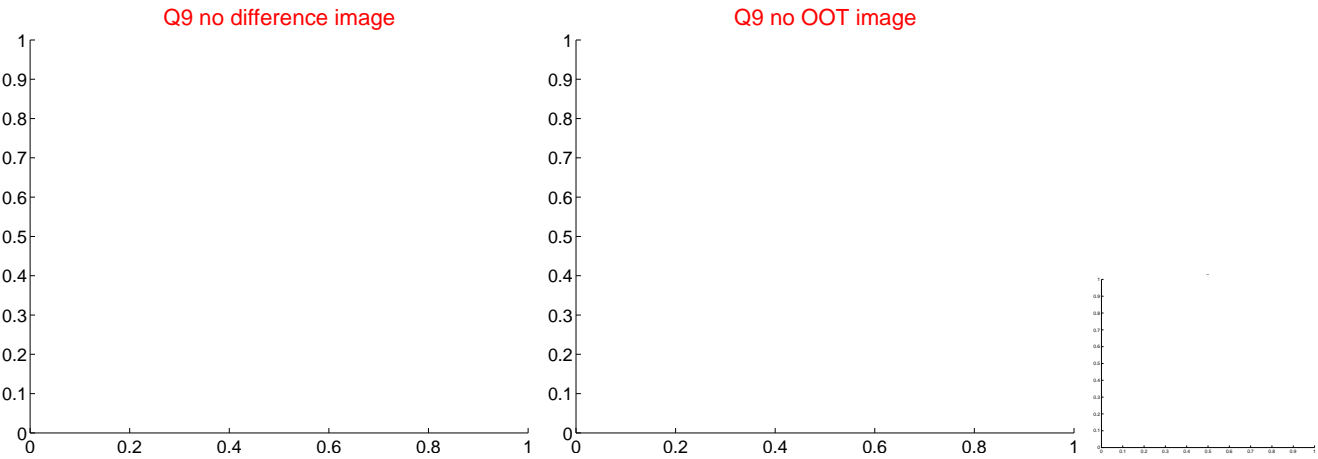
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



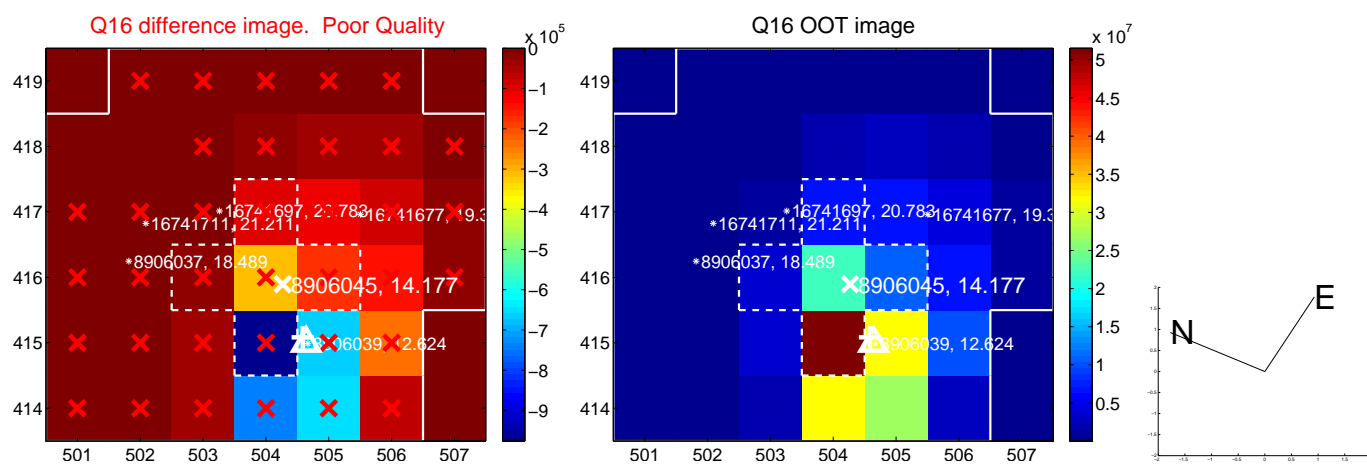
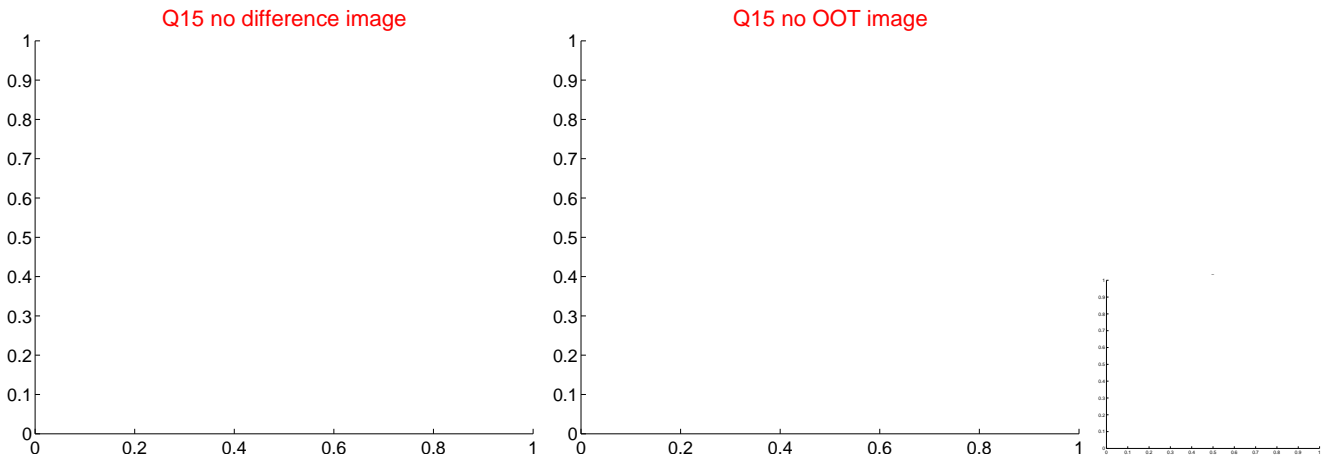
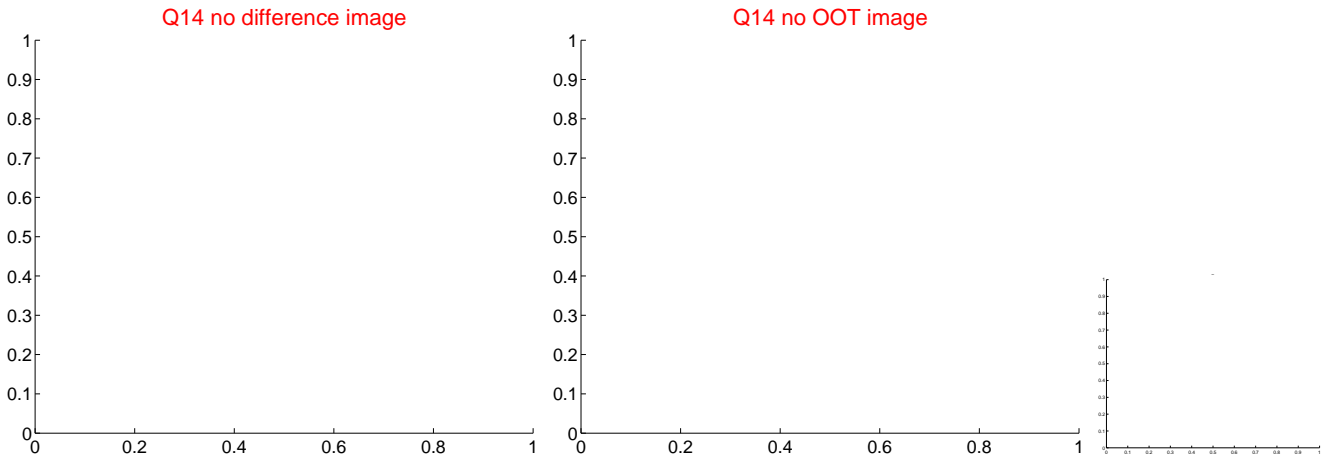
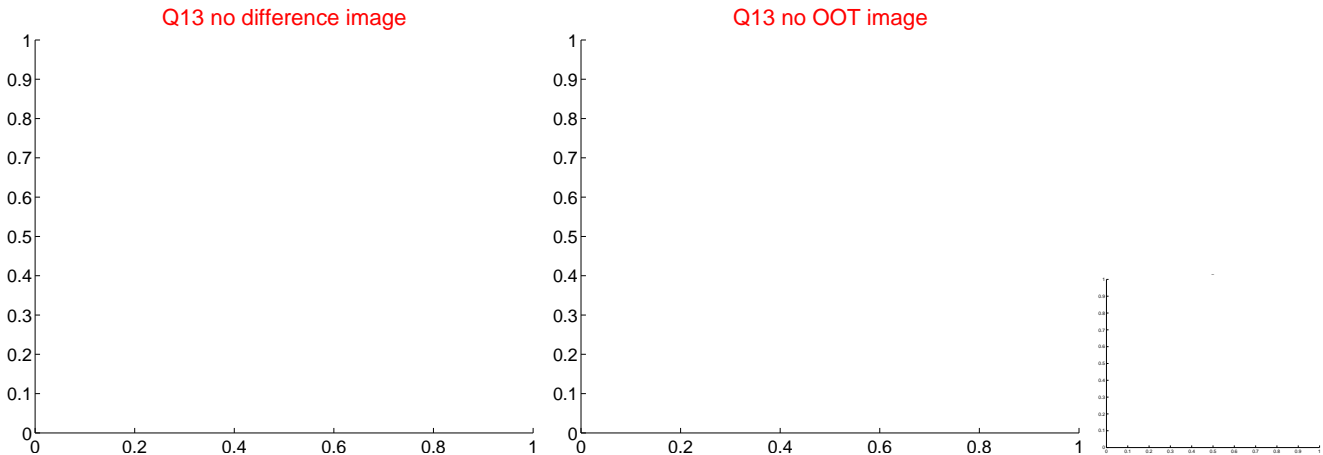
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



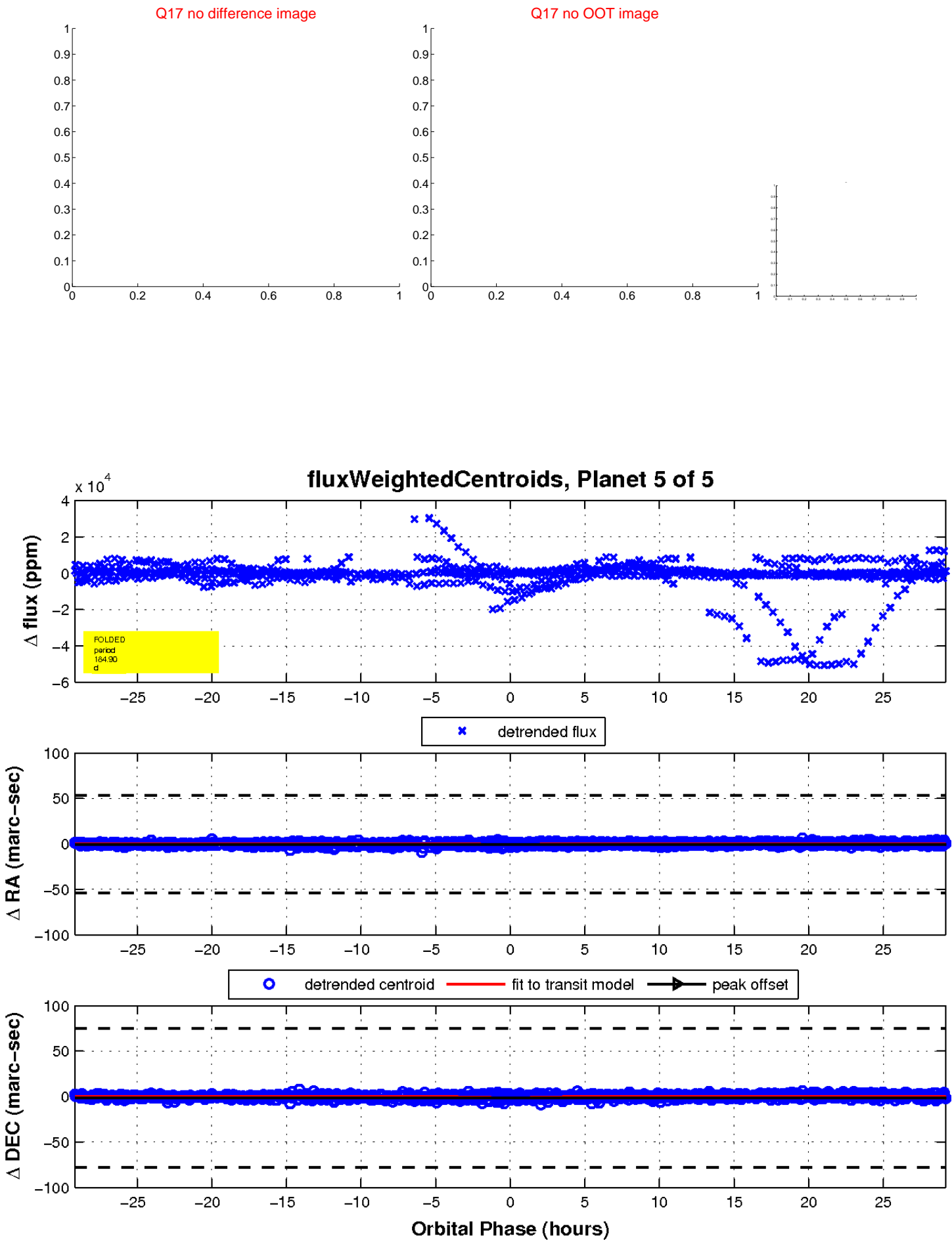
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

