

KIC 009092940

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})
009092940-01	OBS	No	1.781951	131.871065	34.6	10.318	11.8	12.6	1.43	6575	0.98	3569.75
009092940-02	OBS	No	144.846819	248.414485	487.0	13.038	10.4	9.9	1.43	6575	6.07	10.14
009092940-03	OBS	No	50.961272	167.518869	182.6	6.394	9.5	9.3	1.43	6575	2.19	40.82
009092940-04	OBS	No	218.739298	203.063058	276.6	15.143	9.3	6.2	1.43	6575	2.51	5.85
009092940-05	OBS	No	45.135416	150.385762	116.4	5.916	8.8	5.5	1.43	6575	1.80	47.99
009092940-06	OBS	No	164.301407	153.974230	284.3	10.053	8.7	8.1	1.43	6575	4.71	8.57
009092940-07	OBS	No	83.498289	147.866364	219.1	3.151	9.2	7.8	1.43	6575	2.36	21.13
009092940-08	OBS	No	204.184137	131.967472	313.7	8.385	8.5	7.5	1.43	6575	4.93	6.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009092940-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
009092940-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
009092940-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009092940-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009092940-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
009092940-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_UNCERTAIN

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

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

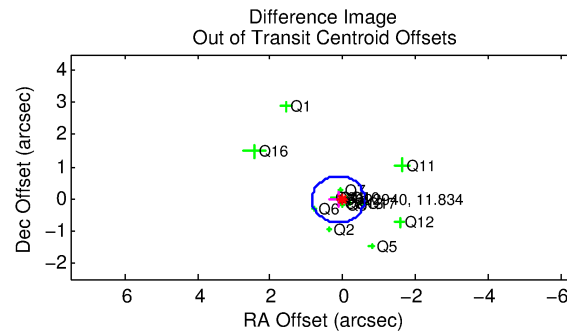
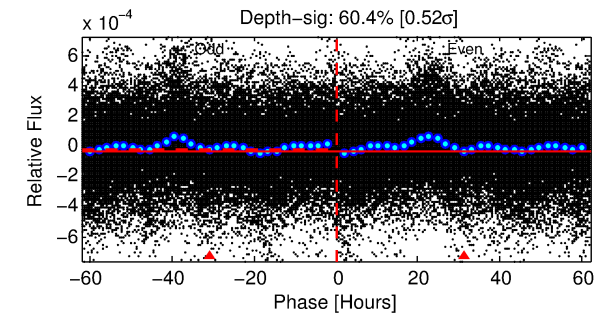
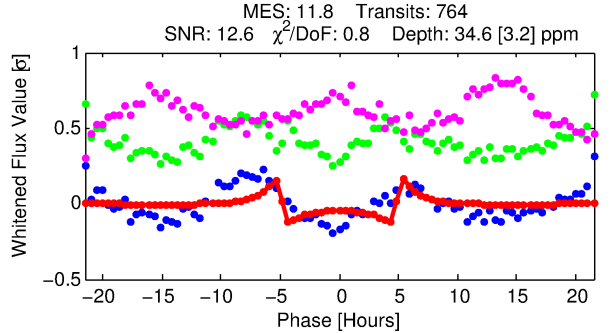
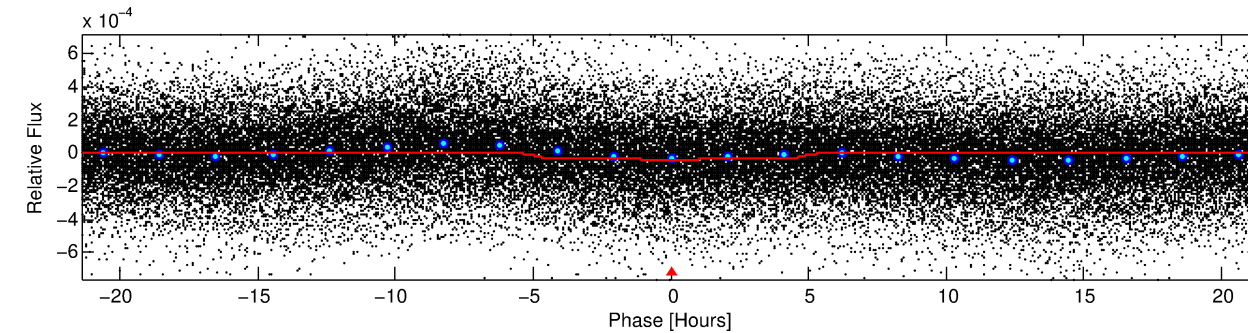
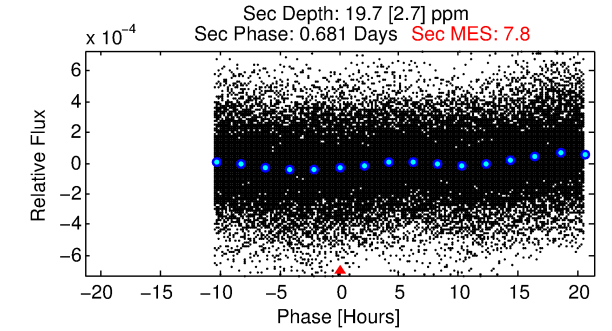
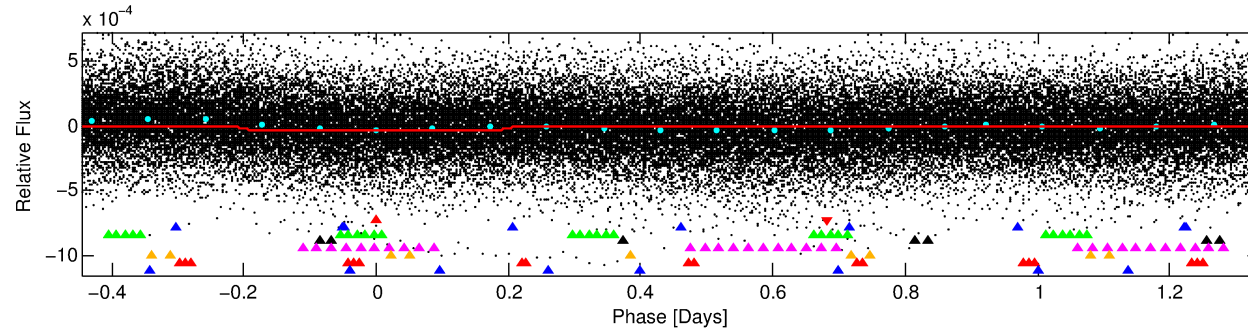
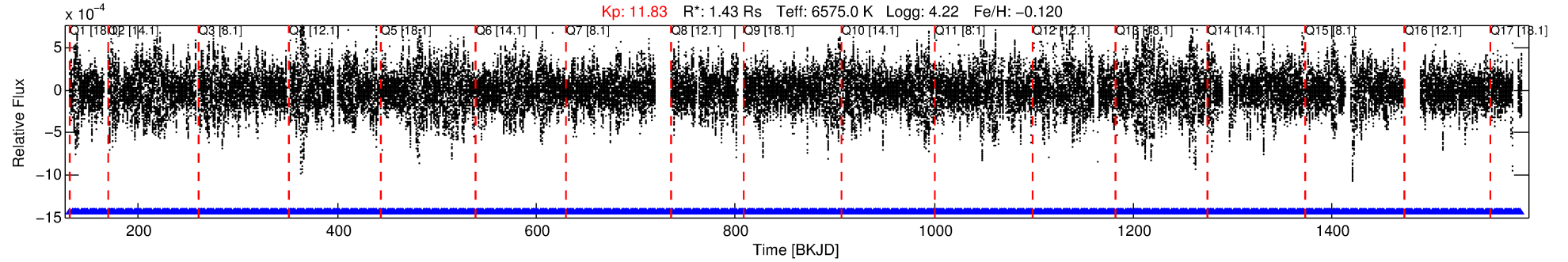
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092940-01

No Significant Match Found

DV One-Page Summary

KIC: 9092940 Candidate: 1 of 8 Period: 1.782 d



DV Fit Results:

Period = 1.78195 [0.00001] d
Epoch = 131.8711 [0.0020] BKJD
Rp/R* = 0.0063 [0.0005]
a/R* = 1.11 [0.07]
b = 0.90 [0.07]
Seff = 3569.75 [1370.89]
Teq = 1971 [189] K
Rp = 0.98 [0.31] Re
a = 0.0309 [0.0077] AU
Ag = 10.78 [4.43] [2.21σ]
Teffp = 5522 [359] K [8.76σ]

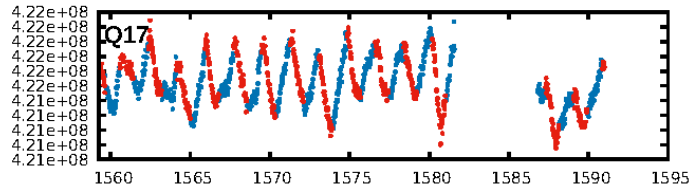
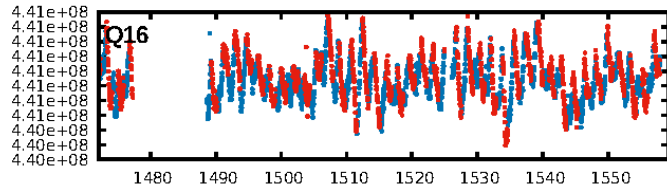
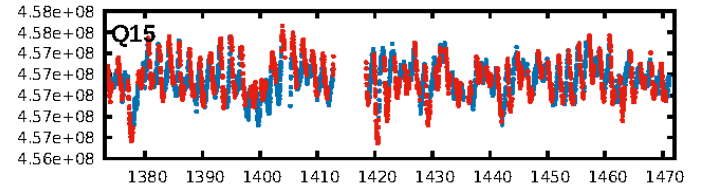
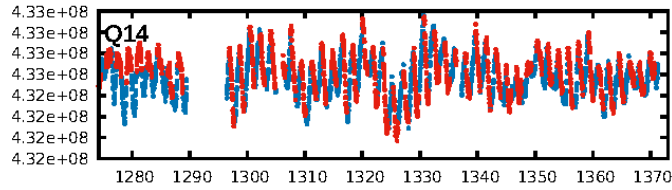
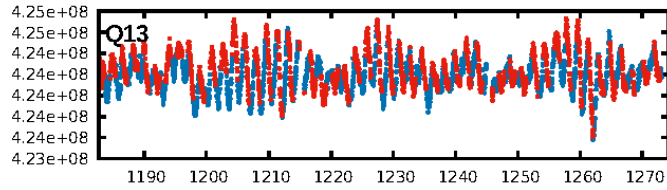
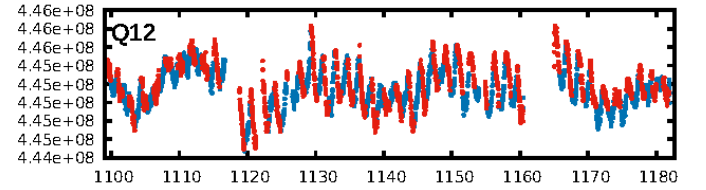
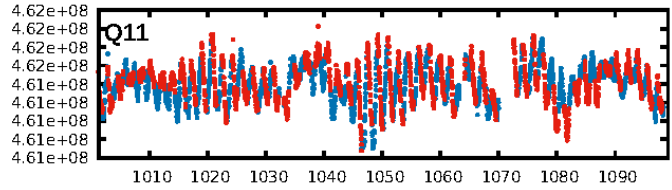
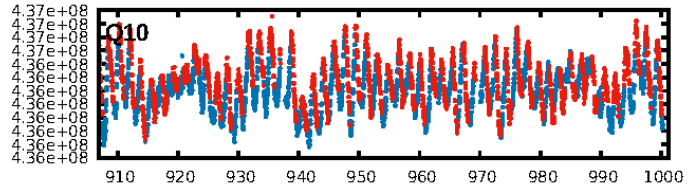
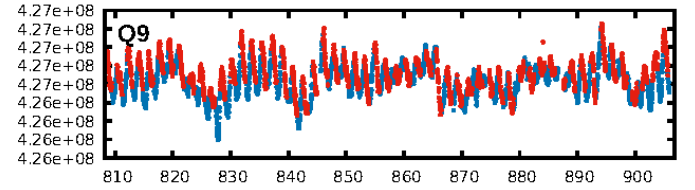
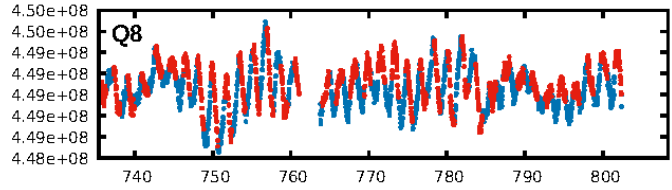
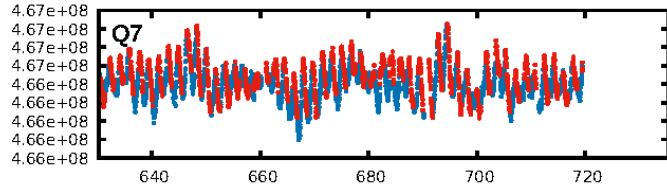
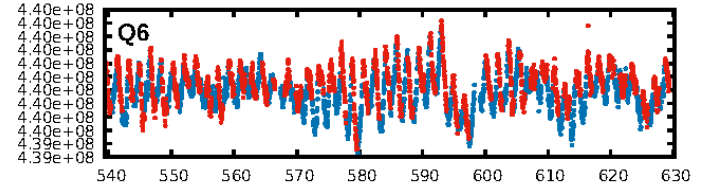
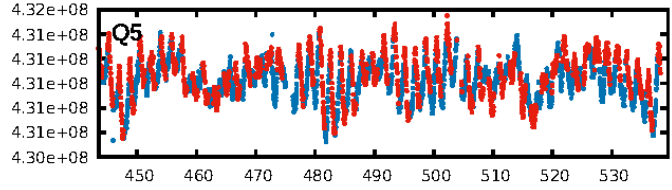
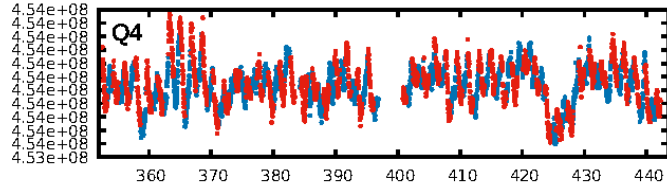
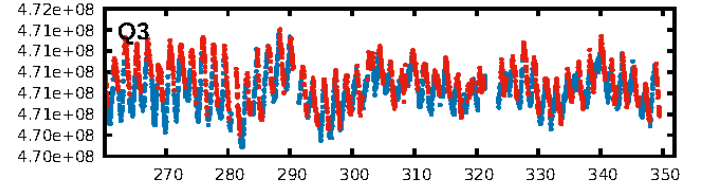
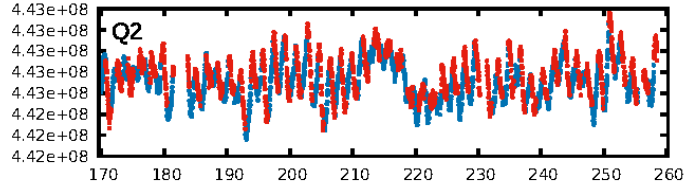
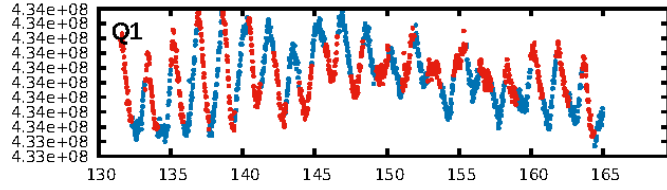
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [87.48σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.88e-15
RollingBand-fgt: 1.00 [730/730]
GhostDiagnostic-chr: -2.928
Centroid-sig: 0.0%
Centroid-so: 0.917 arcsec [2.84σ]
OotOffset-rm: 0.129 arcsec [0.53σ]
KicOffset-rm: 0.208 arcsec [0.82σ]
OotOffset-st: 3/4/3/5 [15]
KicOffset-st: 3/4/3/5 [15]
DiffImageQuality-fgm: 0.20 [3/15]
DiffImageOverlap-fno: 1.00 [17/17]

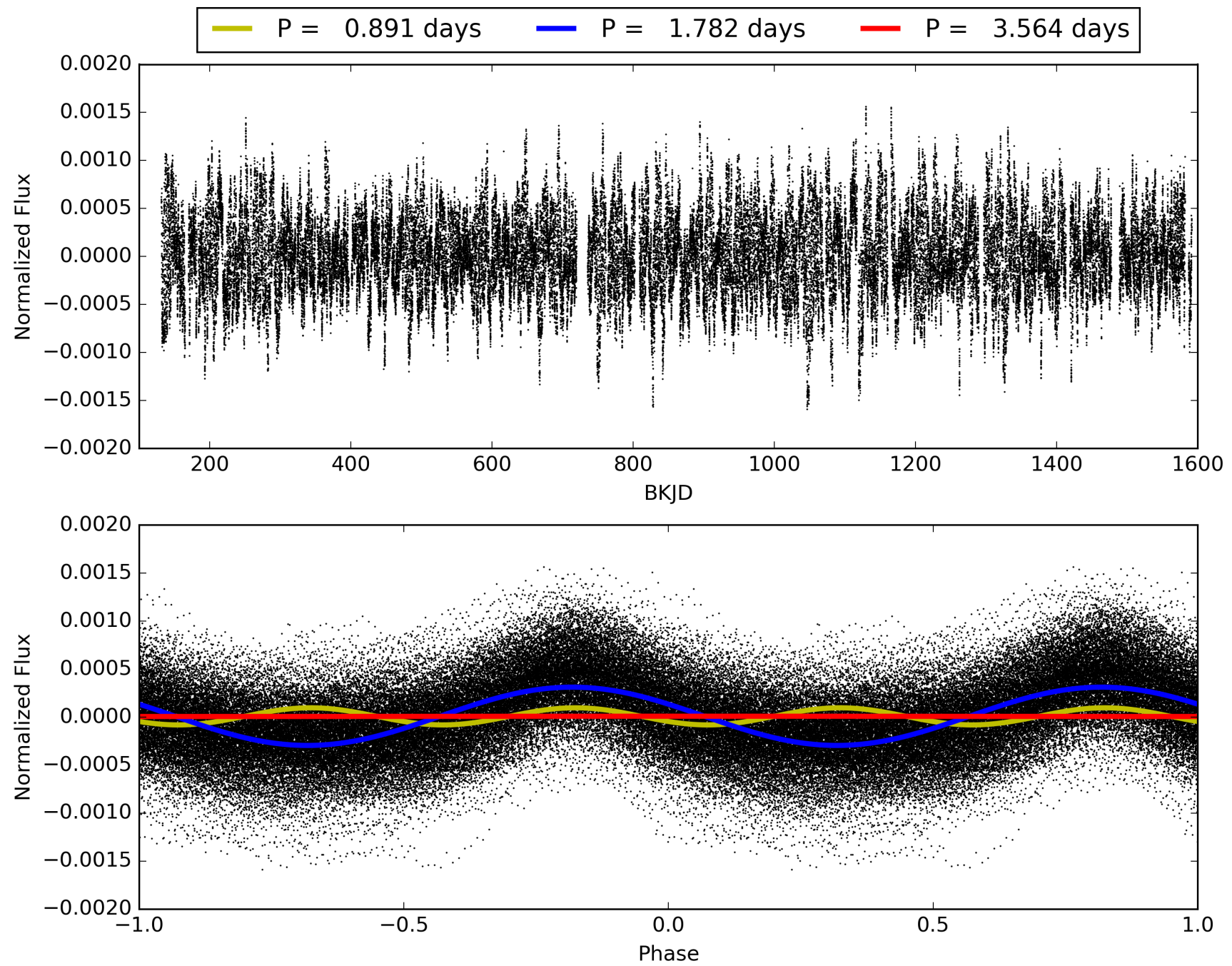
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009092940-01, PDC Light Curves

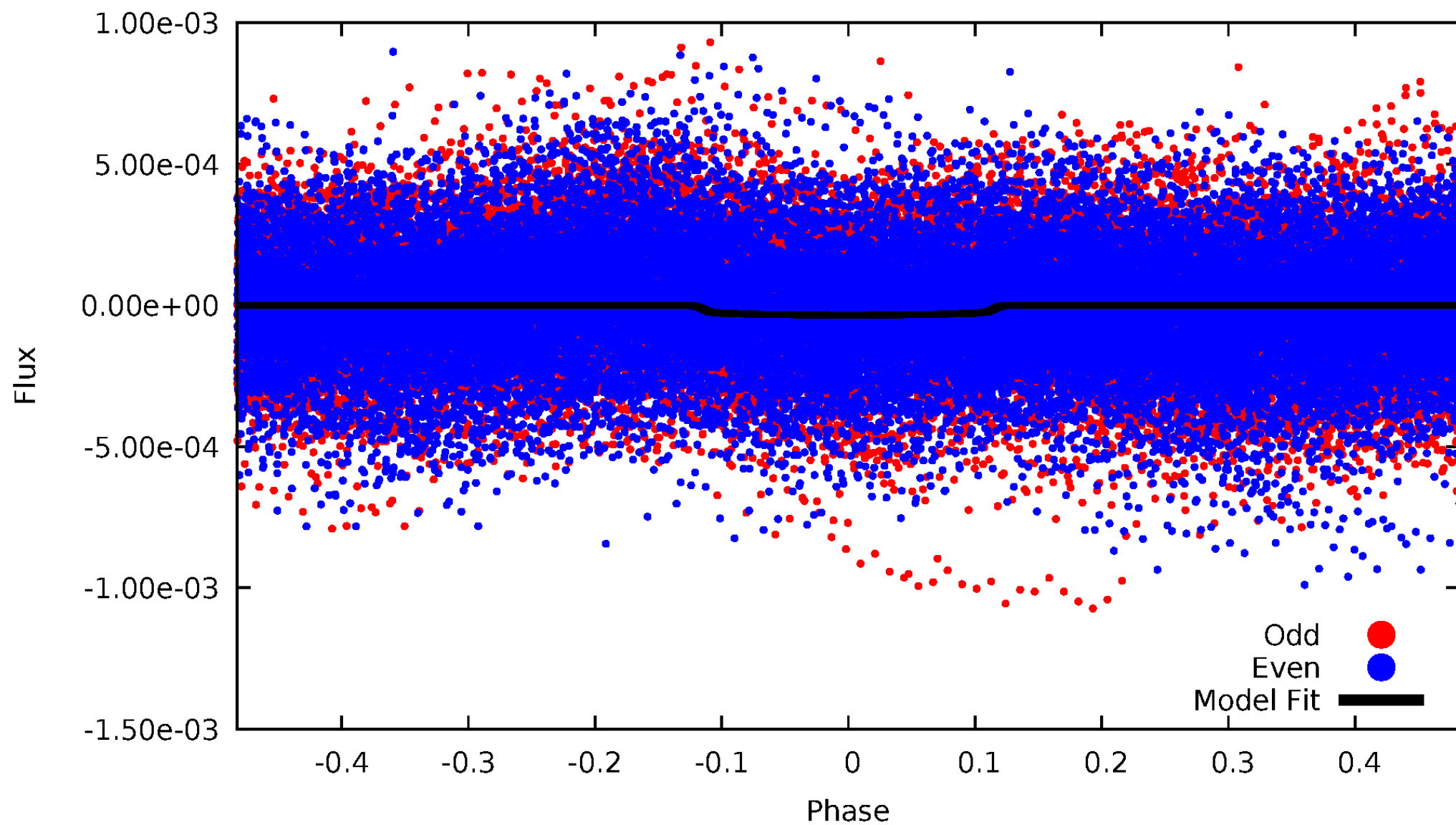


TCE 009092940-01



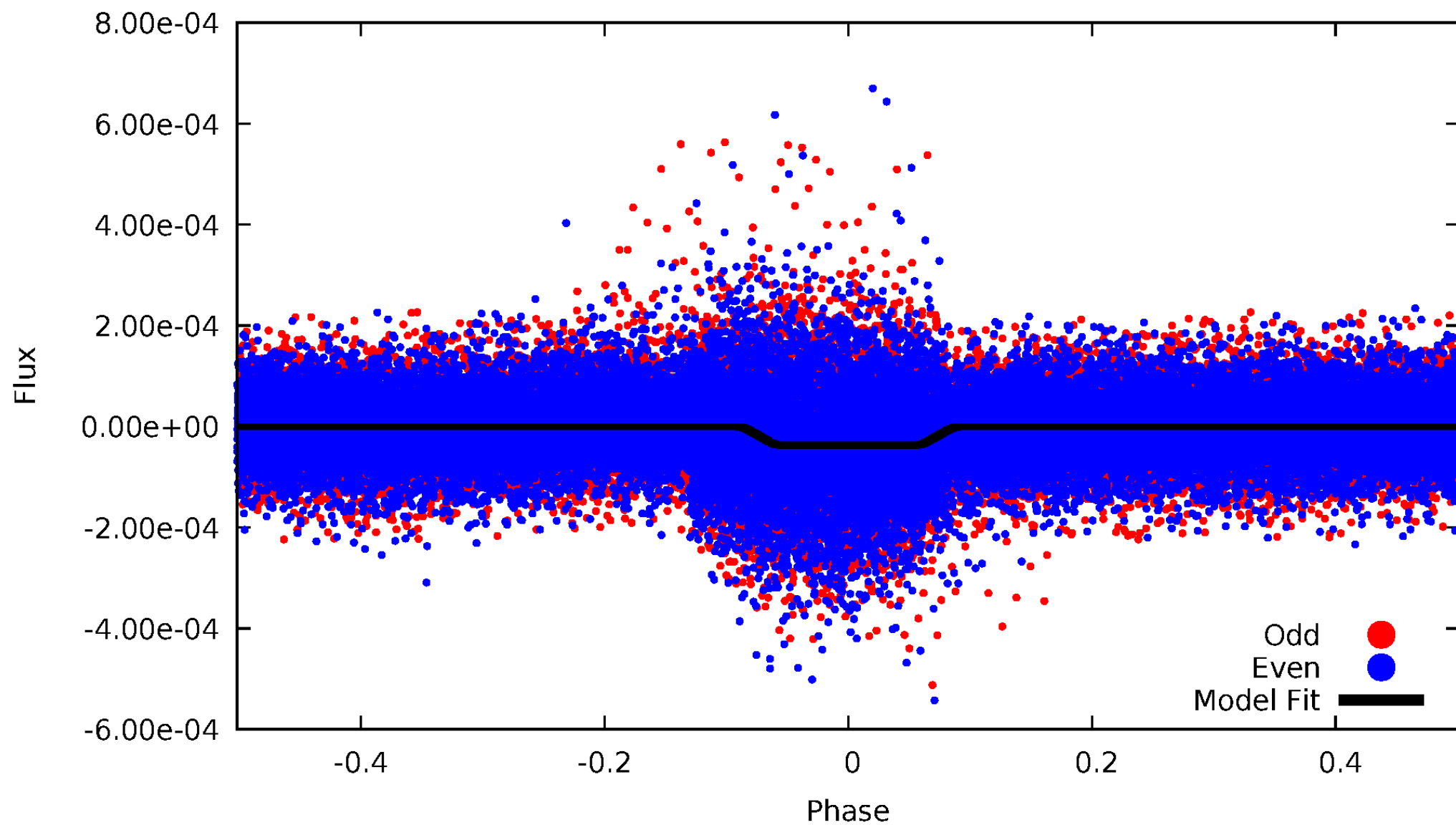
DV Odd/Even

TCE 009092940-01

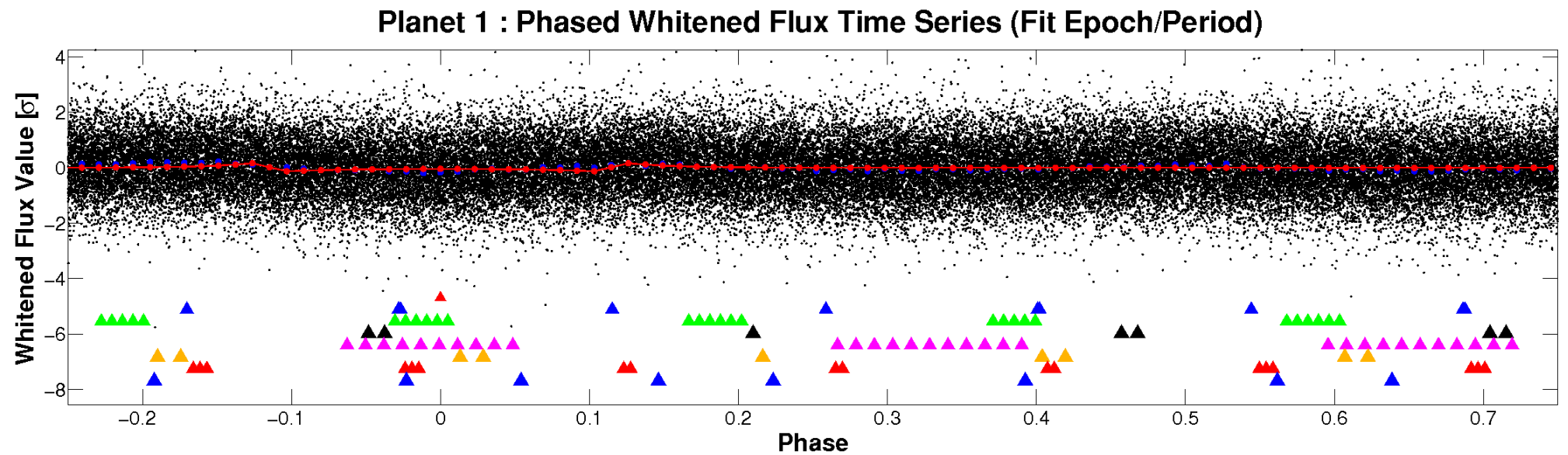
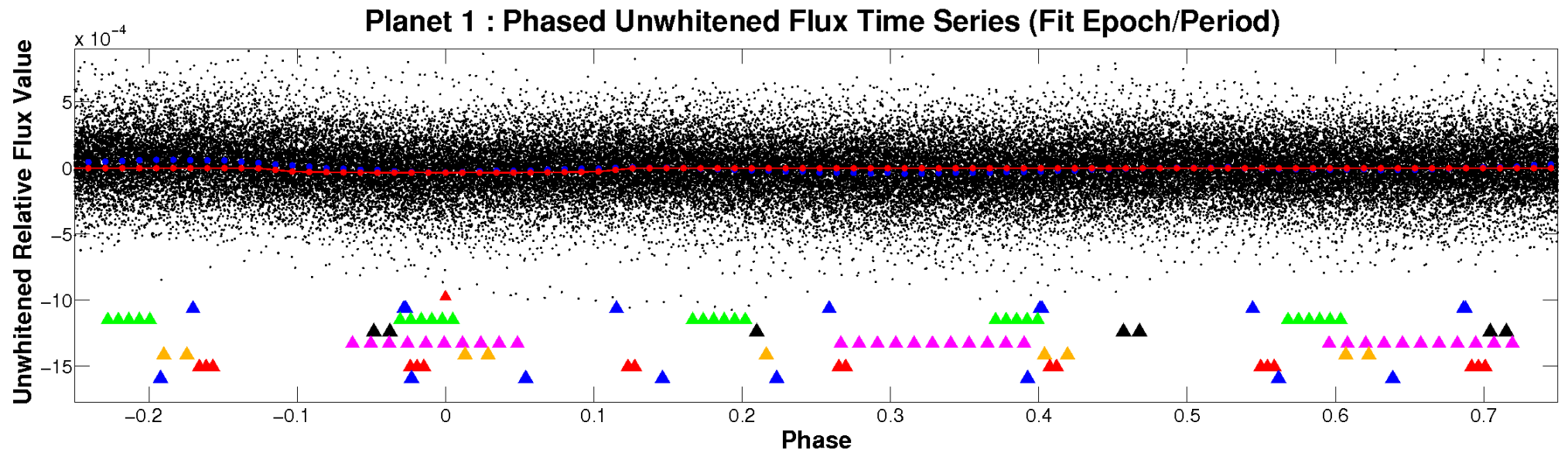


ALT Odd/Even

TCE 009092940-01

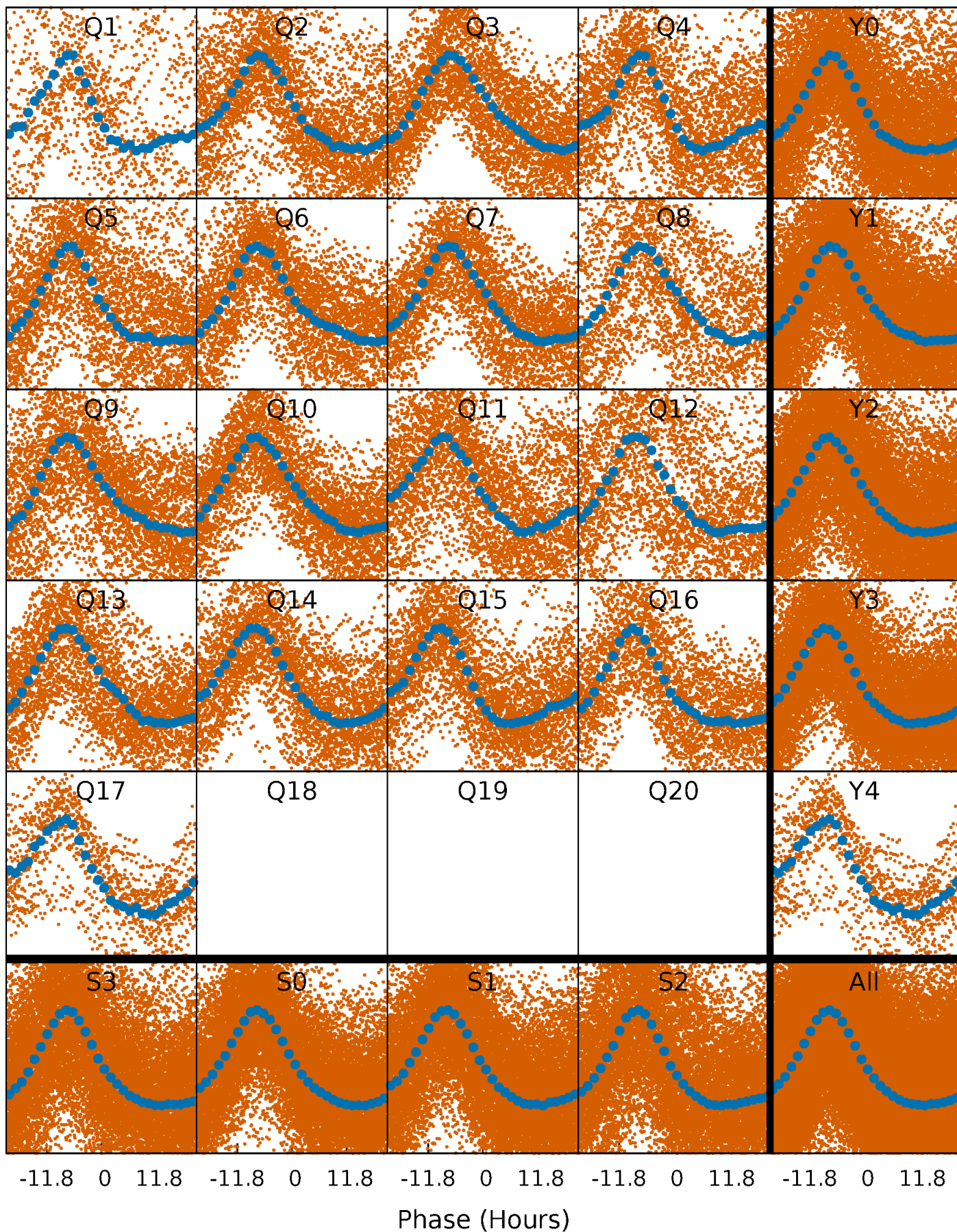


Non-Whitened Vs. Whitened Light Curve



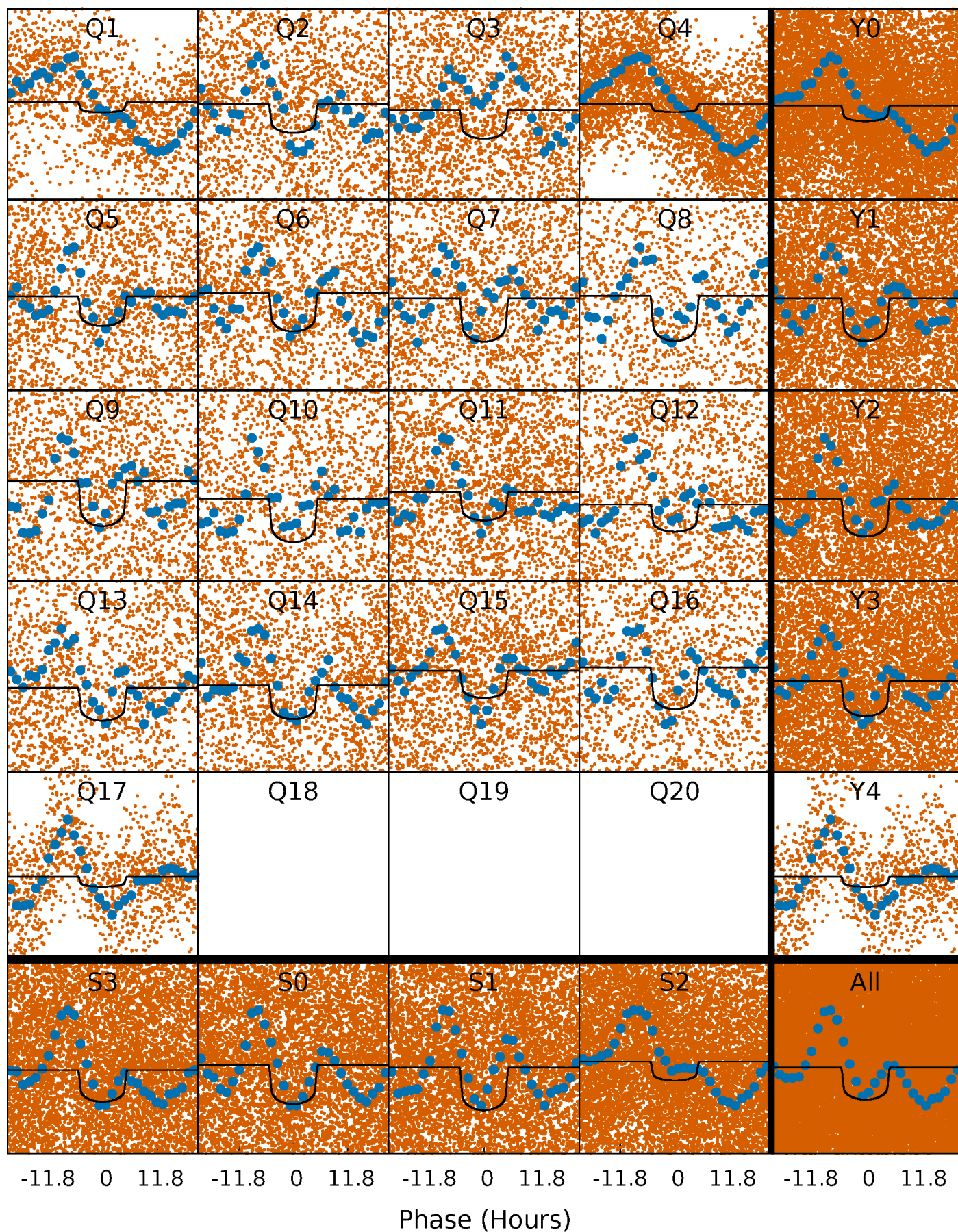
PDC Quarter-Phased Transit Curves

TCE 009092940-01 P= 1.781951 Days $T_0=131.871065$ (BKJD)



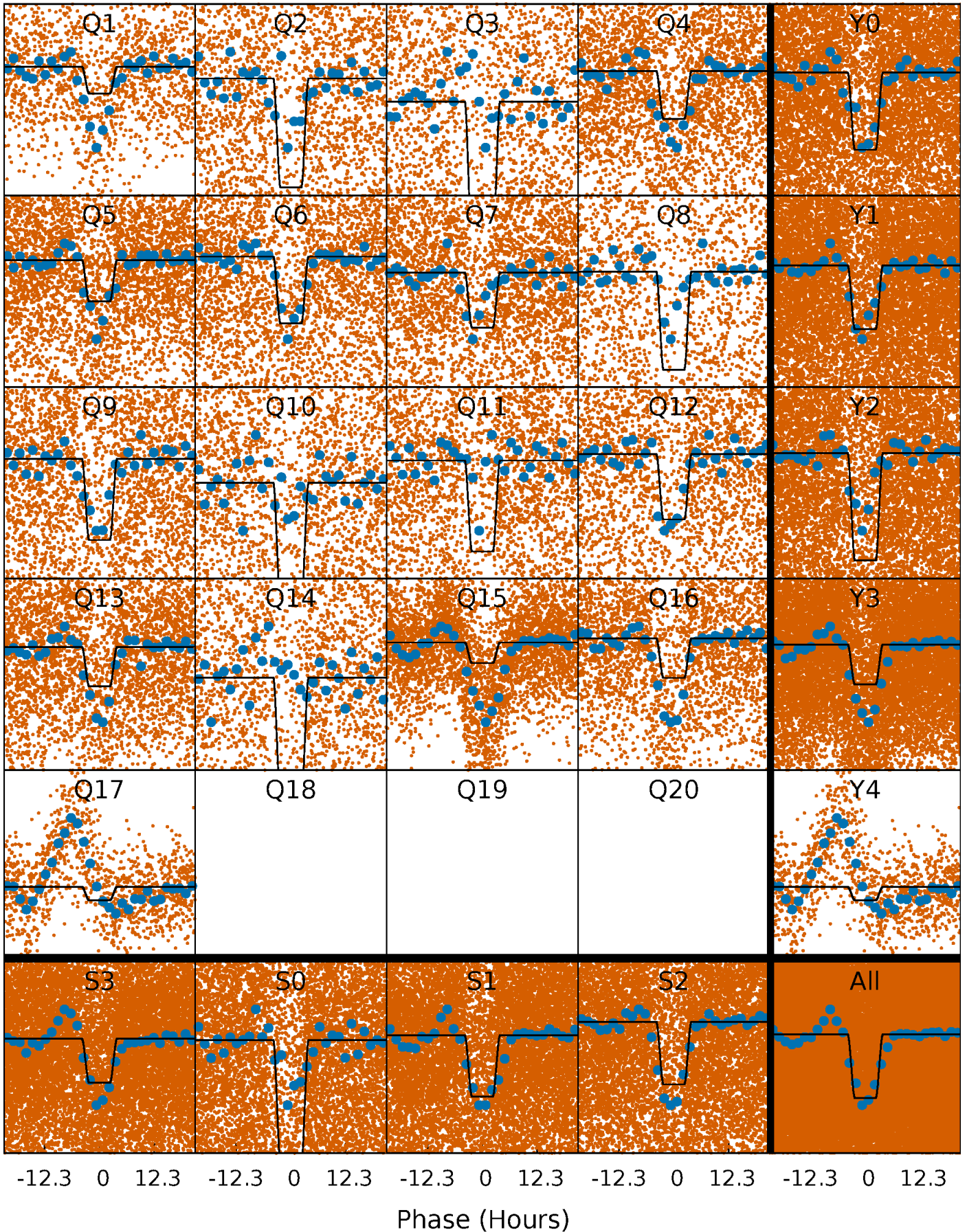
DV Quarter-Phased Transit Curves

TCE 009092940-01 P= 1.781951 Days $T_0=131.871065$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

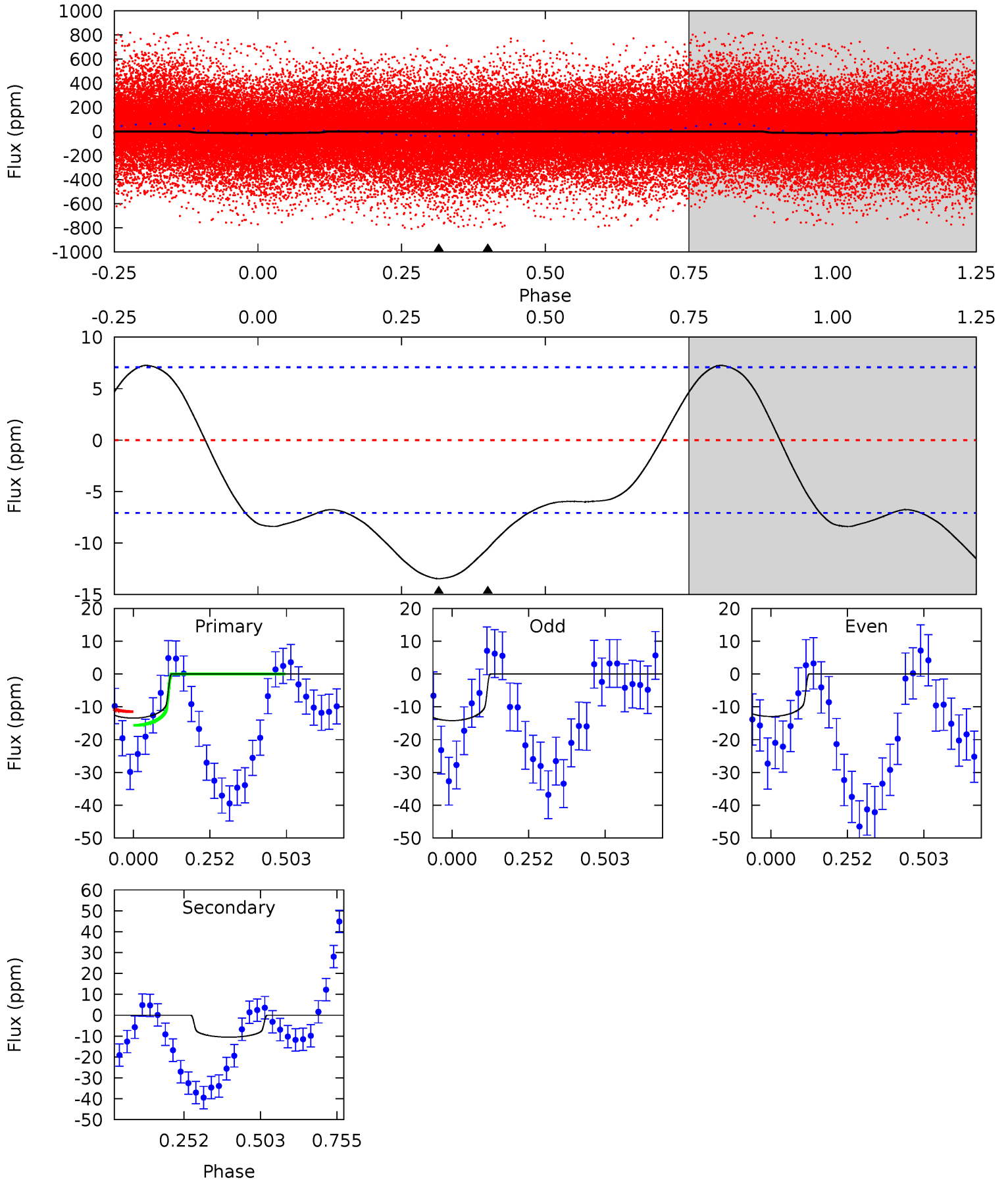
TCE 009092940-01 P= 1.781861 Days $T_0=131.885797$ (BKJD)



DV Model-Shift Uniqueness Test

009092940-01, P = 1.781951 Days, E = 130.089114 Days

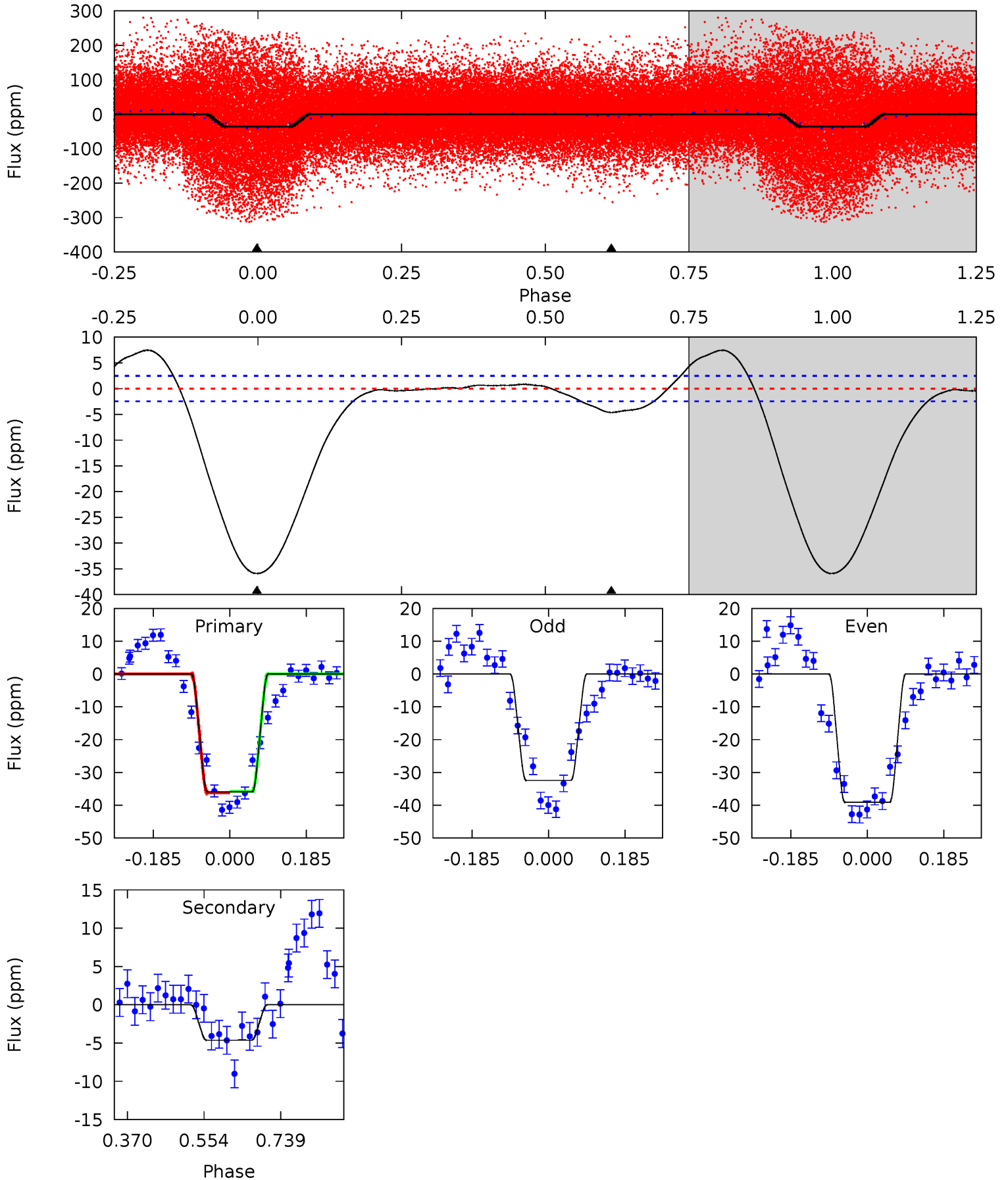
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.30	6.49	0	0	4.37	1.15	3.43	8.30	8.30	6.49	6.49	0.39	1.13	0.35	1.31



Alt Model-Shift Uniqueness Test

009092940-01, P = 1.781861 Days, E = 130.103936 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.5	8.32	0	0	4.43	1.33	3.05	64.5	64.5	8.32	8.32	5.99	0.98	0.17	0.39



Stellar Parameters For KIC 009092940

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6575^{+181}_{-250}	$4.223^{+0.136}_{-0.187}$	$-0.120^{+0.250}_{-0.300}$	$1.429^{+0.439}_{-0.293}$	$1.247^{+0.188}_{-0.188}$	$0.602^{+0.444}_{-0.293}$
	+3%/-4%	+3%/-4%	+208%/-250%	+31%/-21%	+15%/-15%	+74%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009092940-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 2	$1.00^{+0.17}_{-0.13}$	2769^{+211}_{-177}	4756^{+261}_{-256}	$5.489^{+2.179}_{-1.708}$
Alt.	-5 ± 1	$0.96^{+0.18}_{-0.14}$	2766^{+215}_{-181}	4066^{+205}_{-201}	$2.553^{+1.081}_{-0.728}$

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

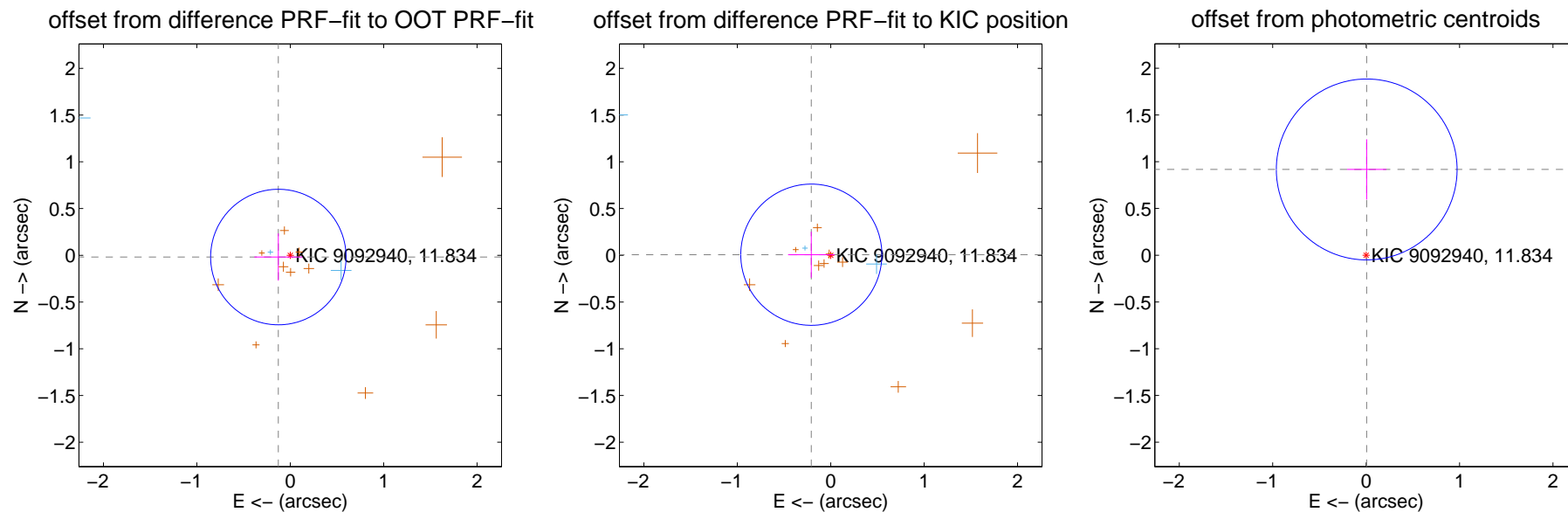
DV Centroid Data

Supplemental centroid analysis for 009092940-01. **Kepler magnitude: 11.83.** Transit SNR 12.57

There are 3 quarters with good PRF difference image offsets

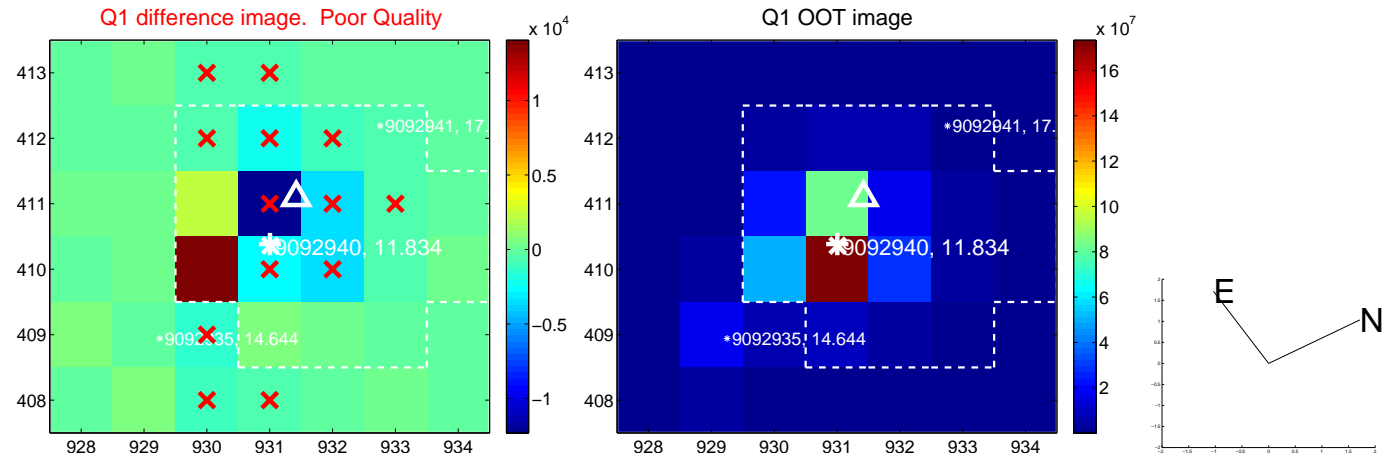
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.129 ± 0.242	0.53	0.128 ± 0.257	-0.019 ± 0.253
PRF-fit source offset from KIC position	0.208 ± 0.252	0.82	0.208 ± 0.249	0.006 ± 0.246
photometric centroid source offset	0.92 ± 0.32	2.84	-0.01 ± 0.21	0.92 ± 0.32

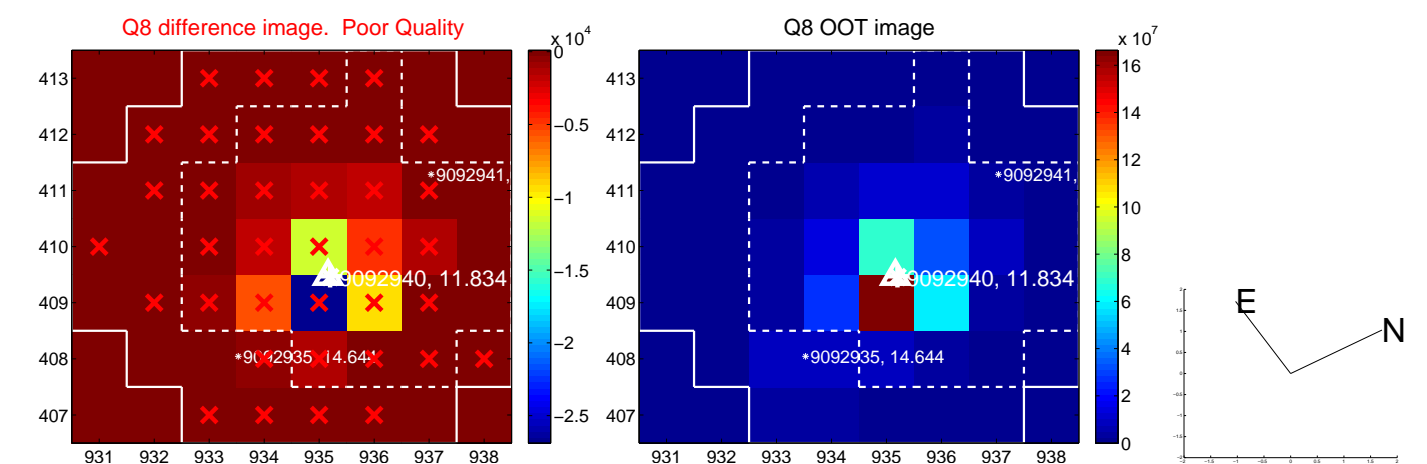
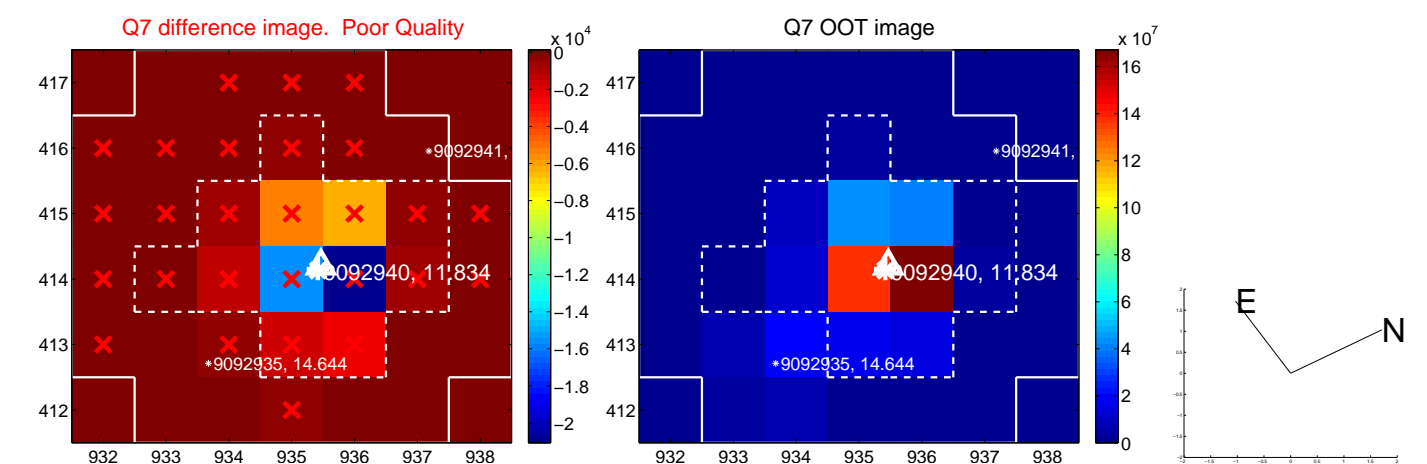
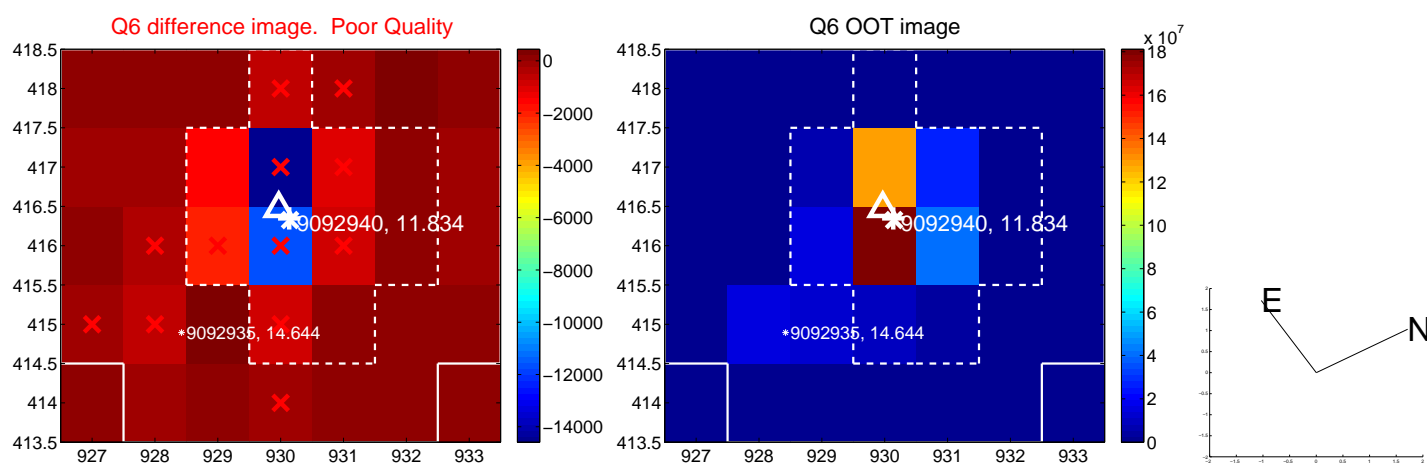
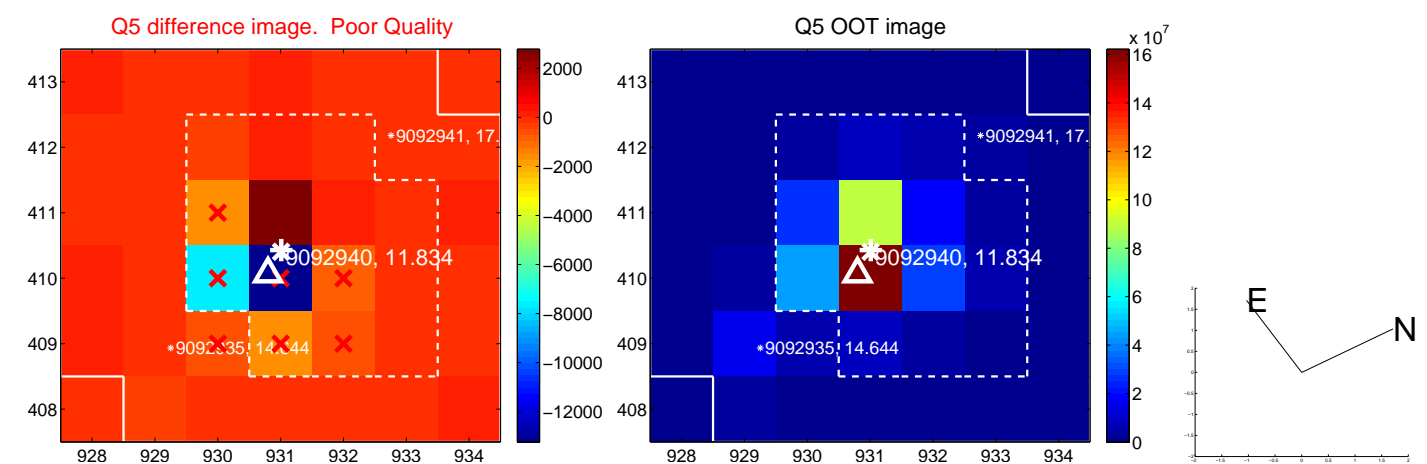


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

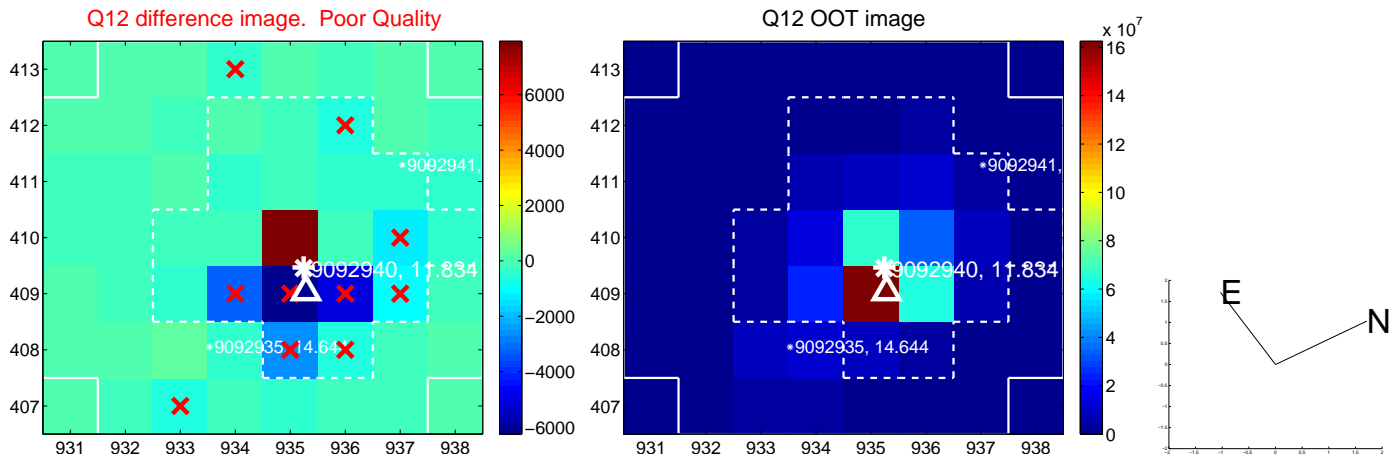
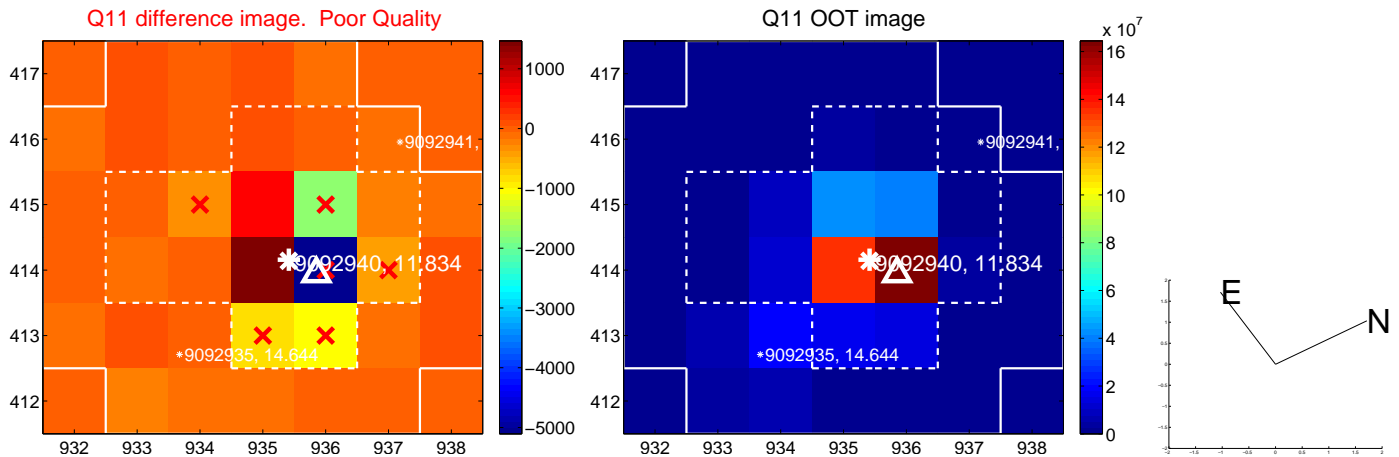
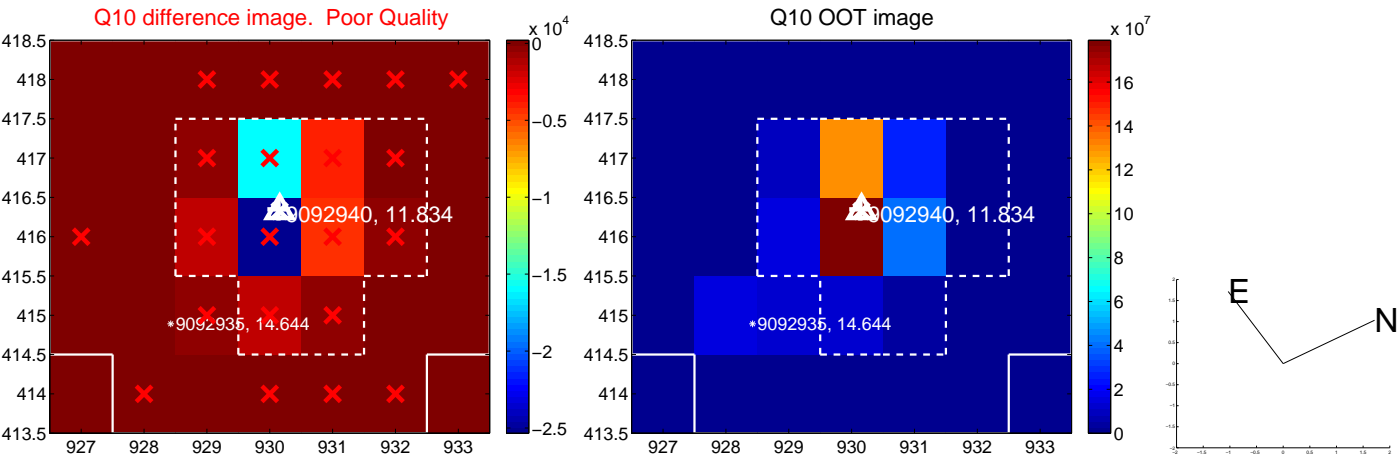
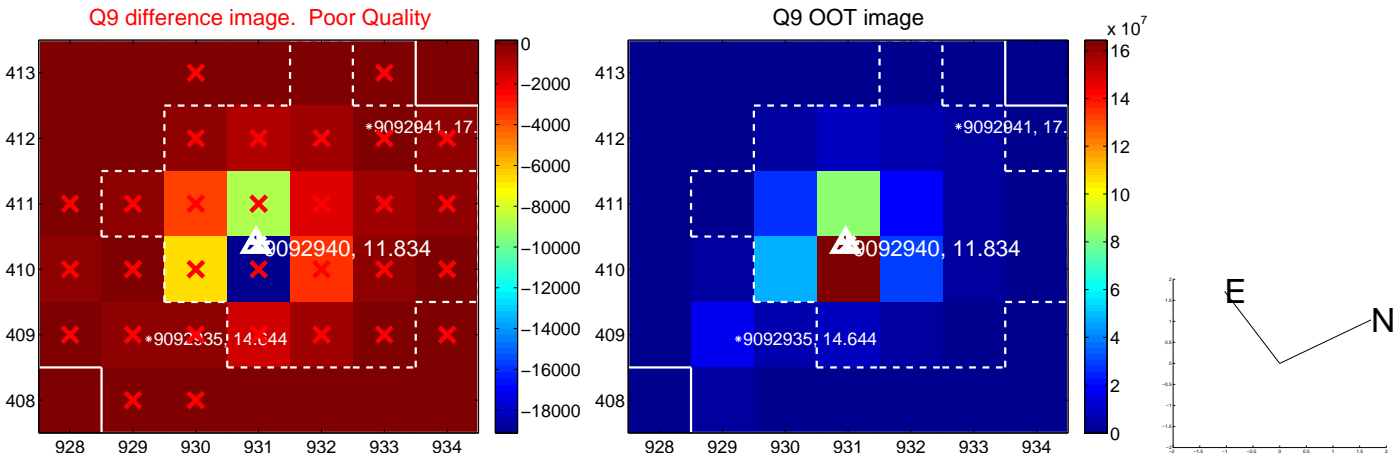
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



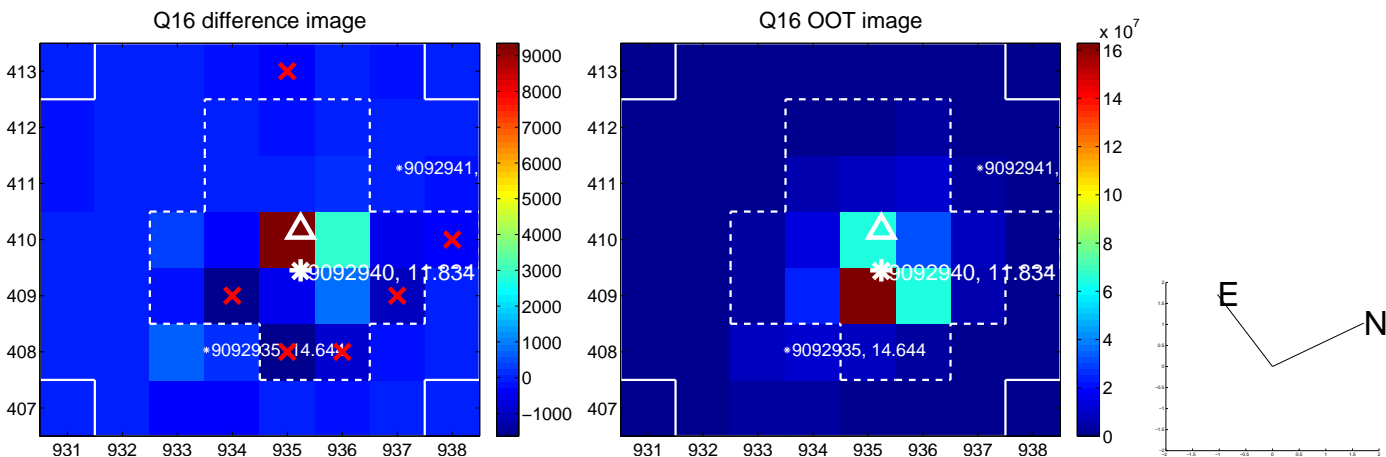
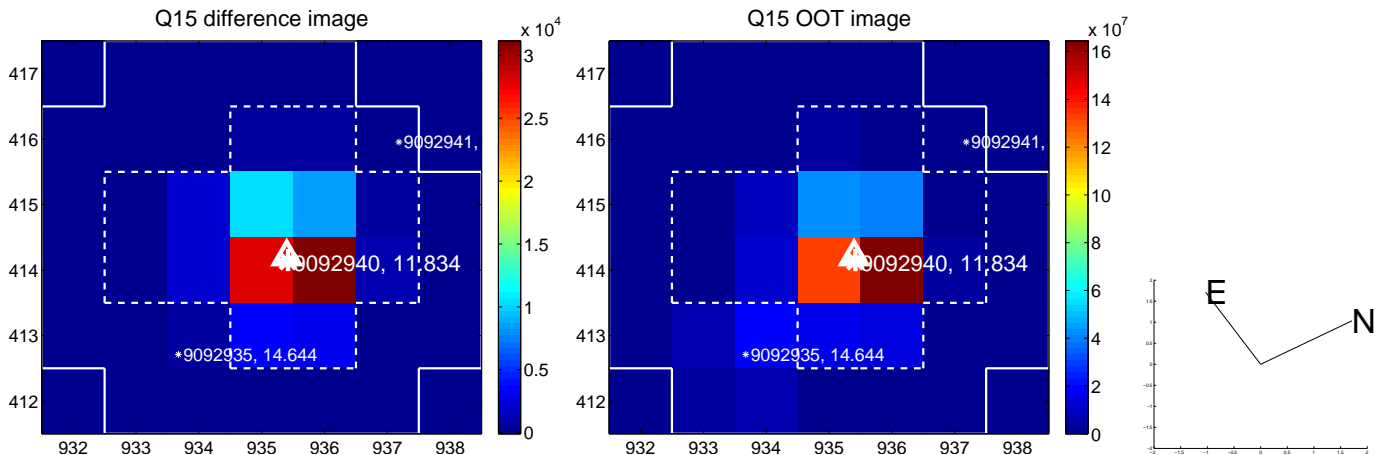
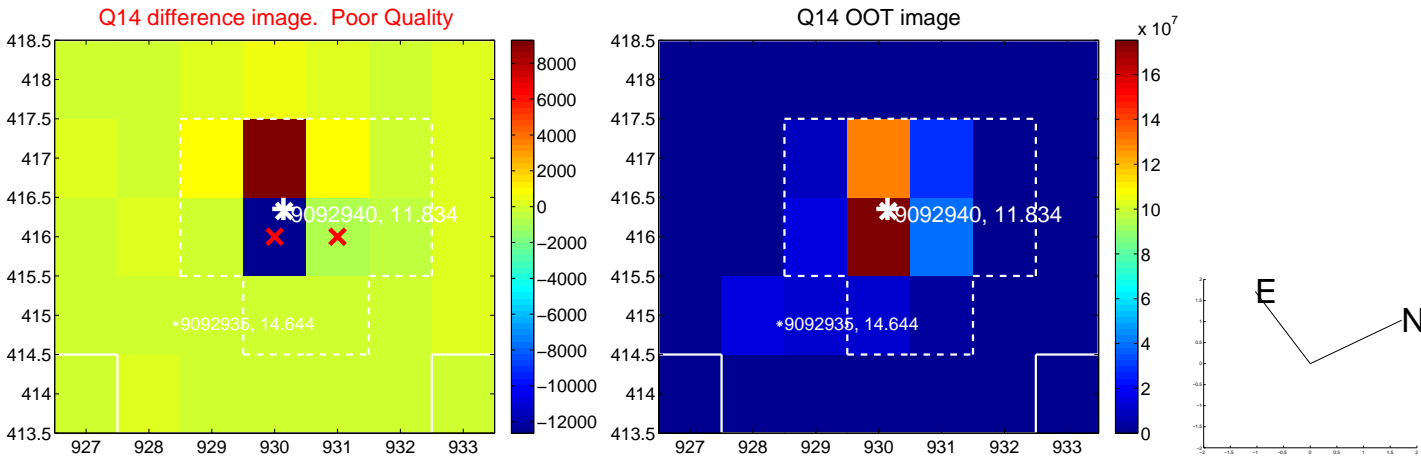
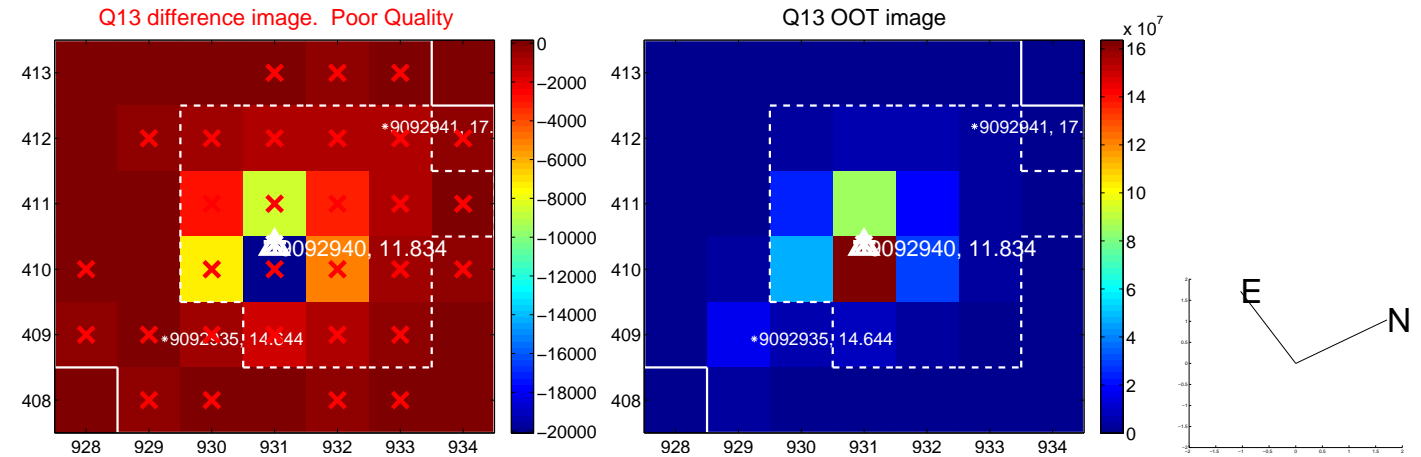
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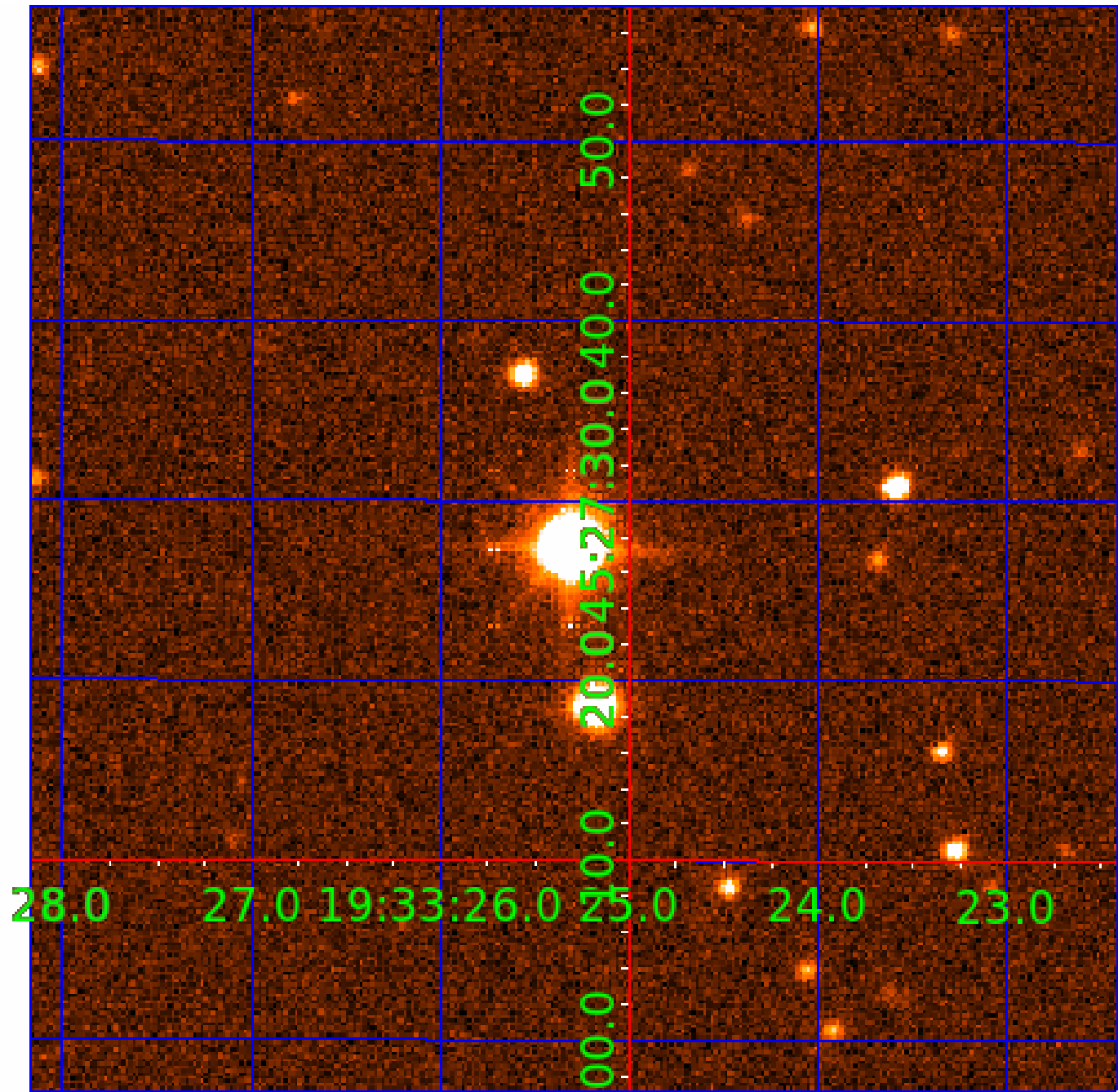


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009092940

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009092940-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009092940-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009092940-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
009092940-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_UNCERTAIN

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

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

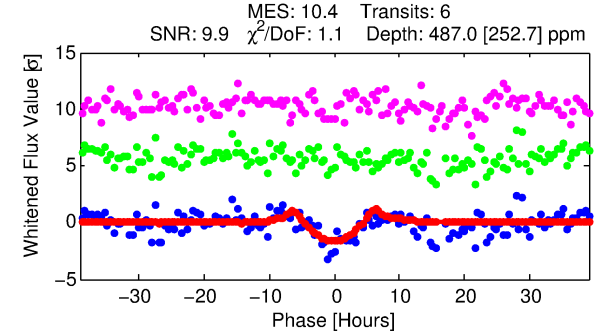
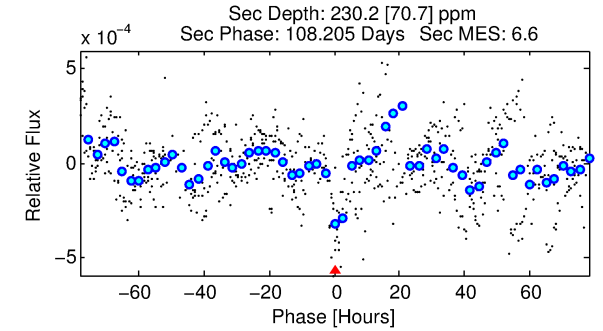
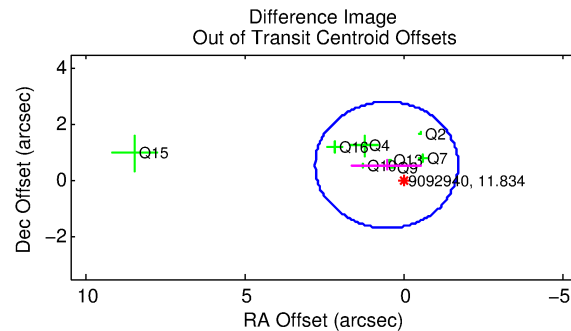
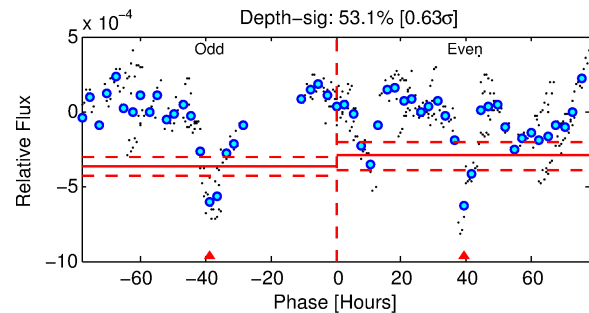
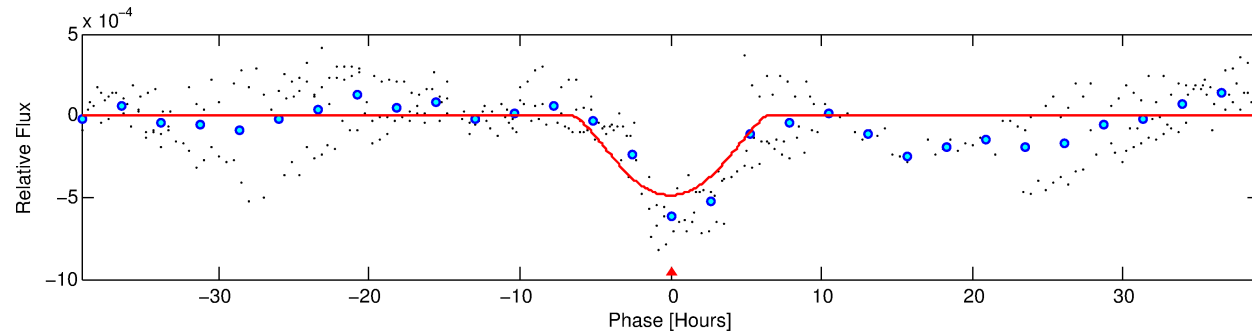
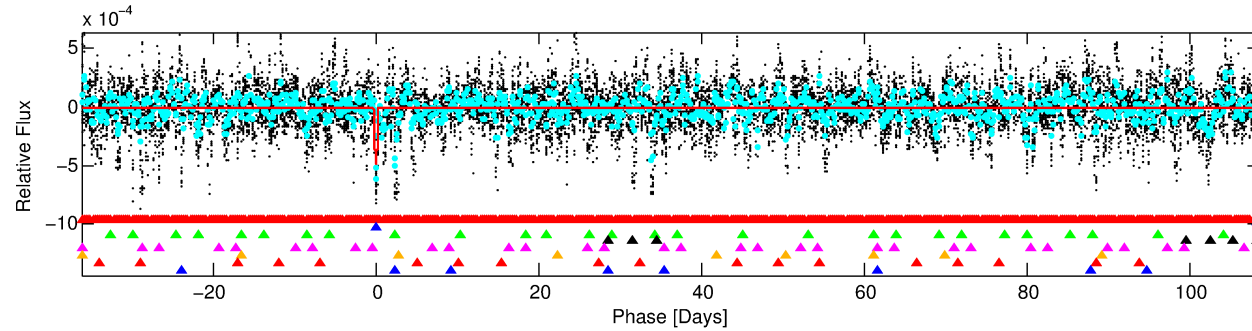
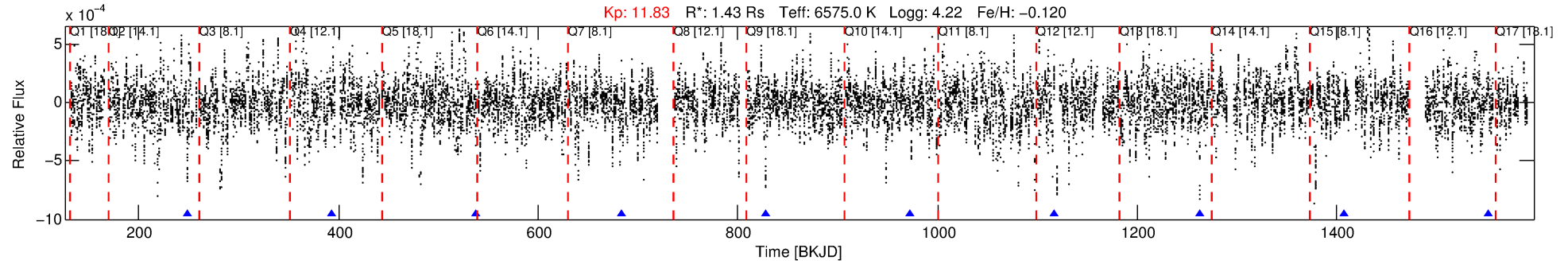
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092940-02

No Significant Match Found

DV One-Page Summary

KIC: 9092940 Candidate: 2 of 8 Period: 144.847 d



DV Fit Results:

Period = 144.84682 [0.00381] d
Epoch = 248.4145 [0.0186] BKJD
Rp/R* = 0.0389 [0.0523]
a/R* = 23.93 [7.96]
b = 1.00 [0.06]
Seff = 10.14 [3.89]
Teq = 455 [44] K
Rp = 6.07 [8.36] Re
a = 0.5808 [0.1452] AU
Ag = 1160.44 [3165.09] [0.37σ]
Teffp = 4106 [2781] K [1.31σ]

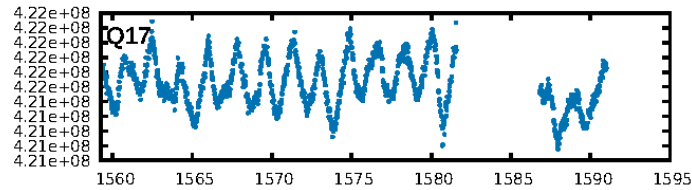
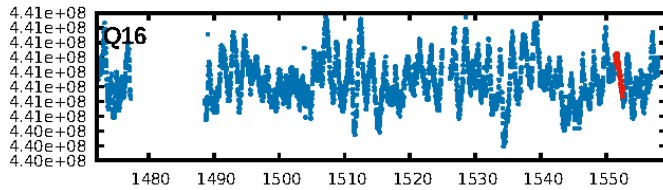
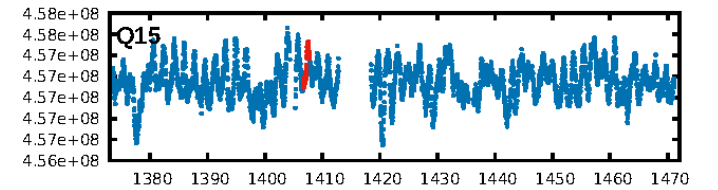
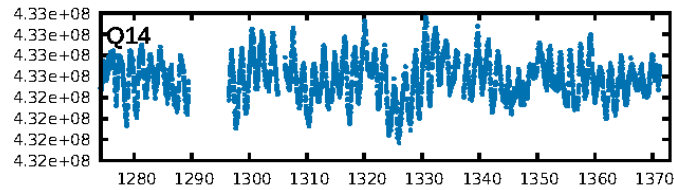
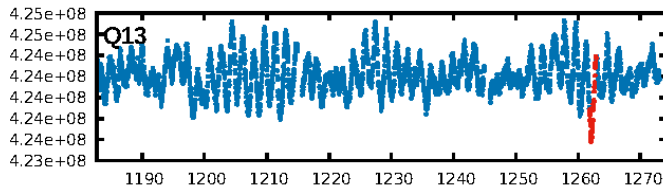
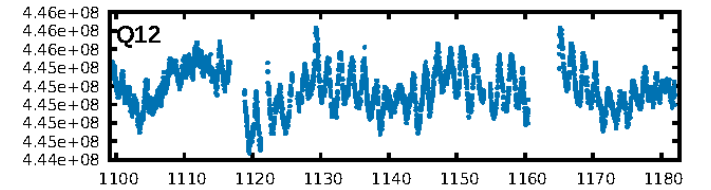
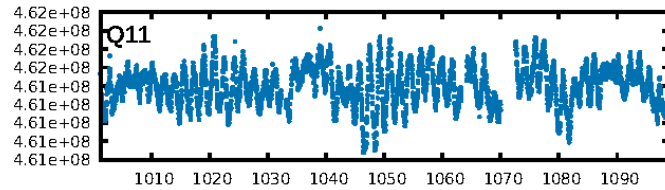
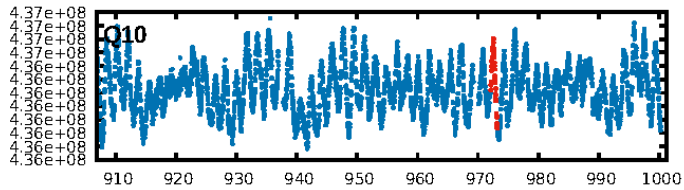
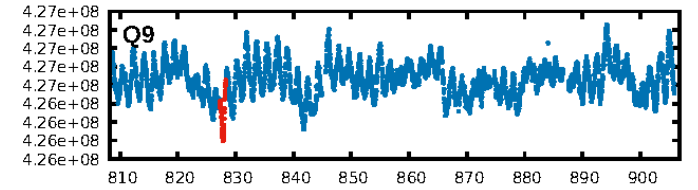
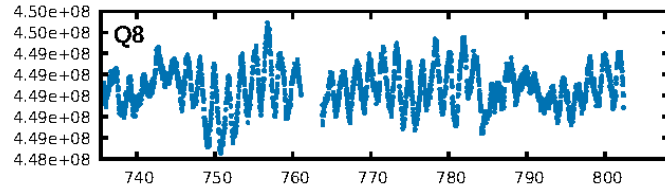
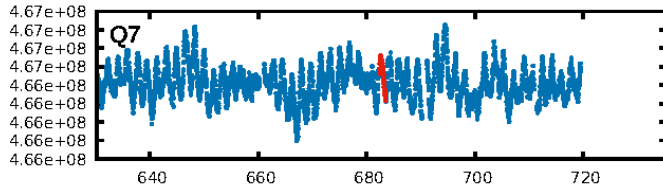
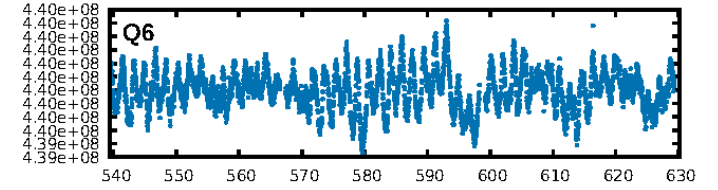
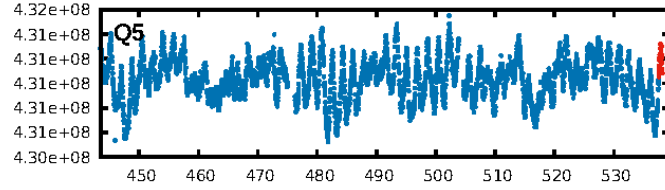
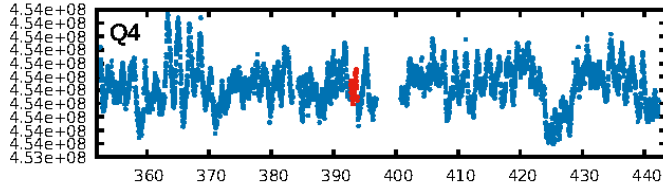
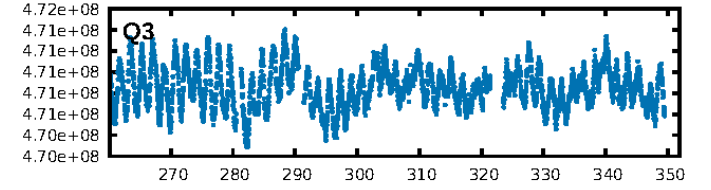
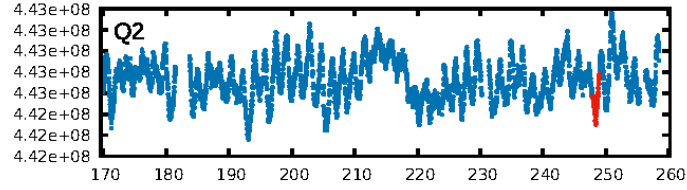
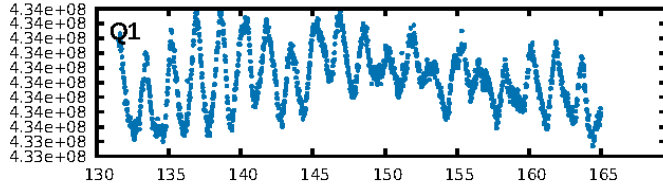
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [109.77σ]
LongPeriod-sig: 100.0% [28.36σ]
ModelChiSquare2-sig: 1.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.83e-11
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 1.161
Centroid-sig: 0.4%
Centroid-so: 0.819 arcsec [2.91σ]
OotOffset-rm: 0.787 arcsec [1.05σ]
OotOffset-st: 2/2/2 [8]
KicOffset-rm: 0.855 arcsec [1.32σ]
KicOffset-st: 2/2/2 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 0.00 [0/8]

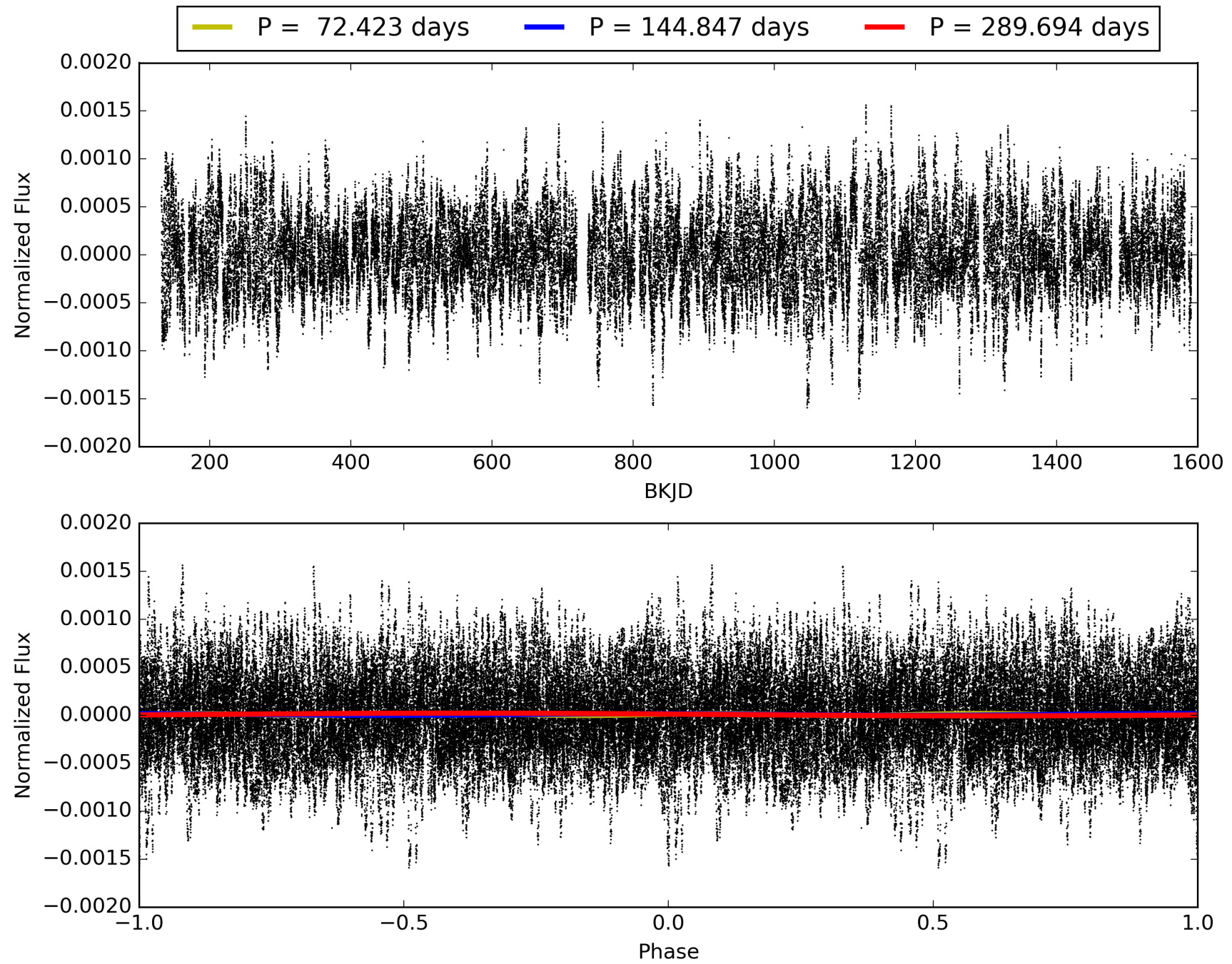
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:42:01 Z

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

TCE 009092940-02, PDC Light Curves

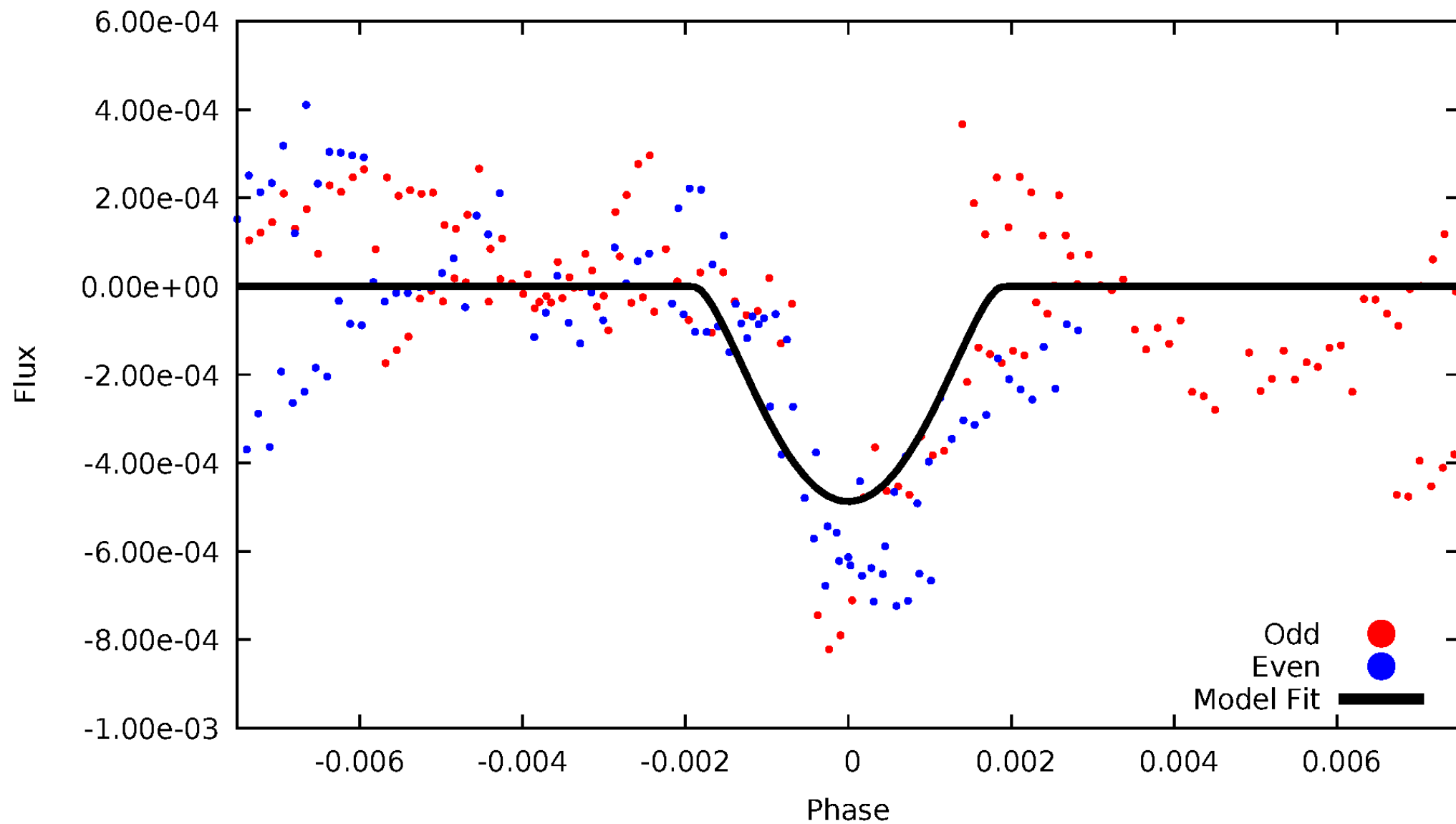


TCE 009092940-02



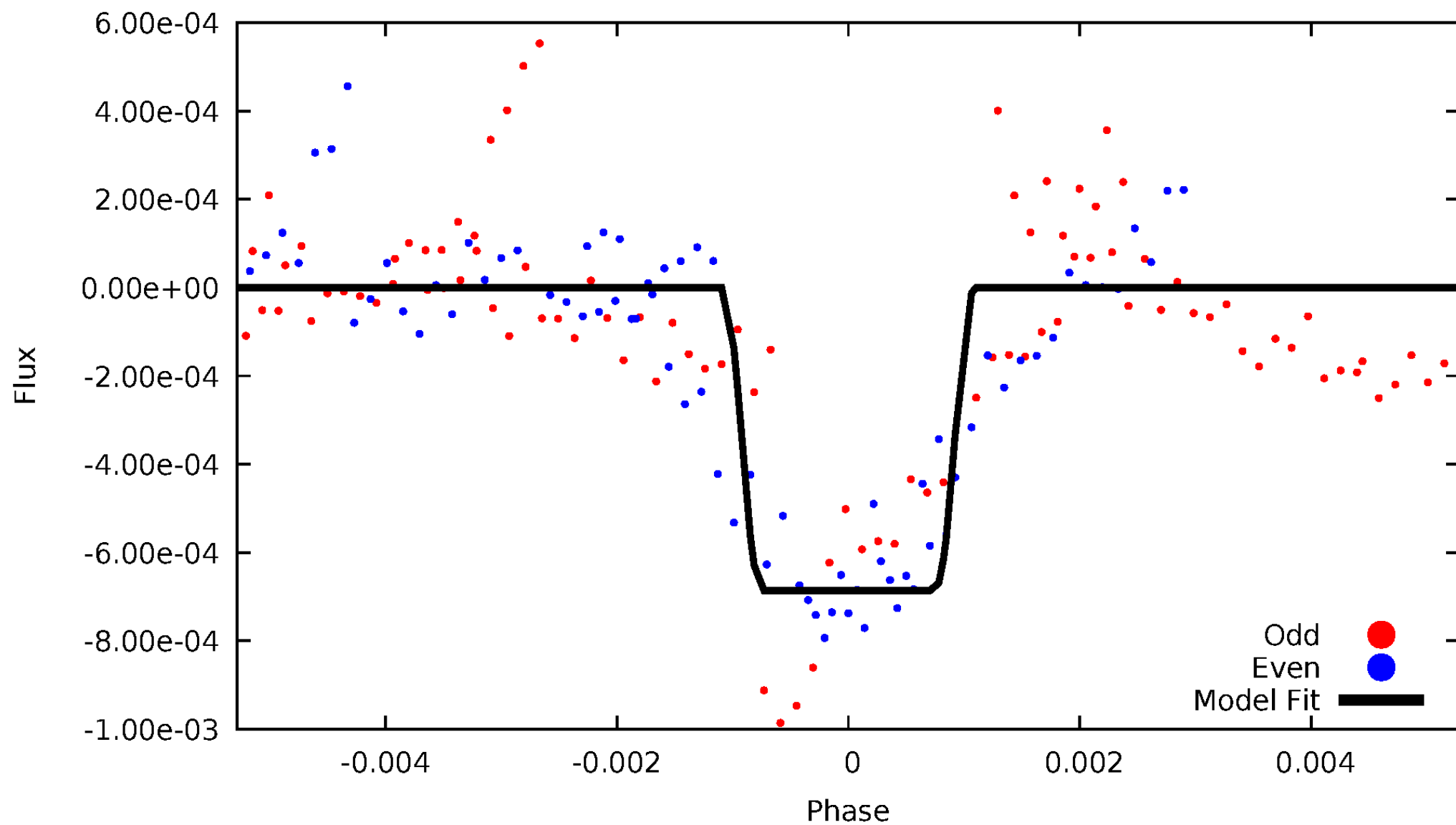
DV Odd/Even

TCE 009092940-02



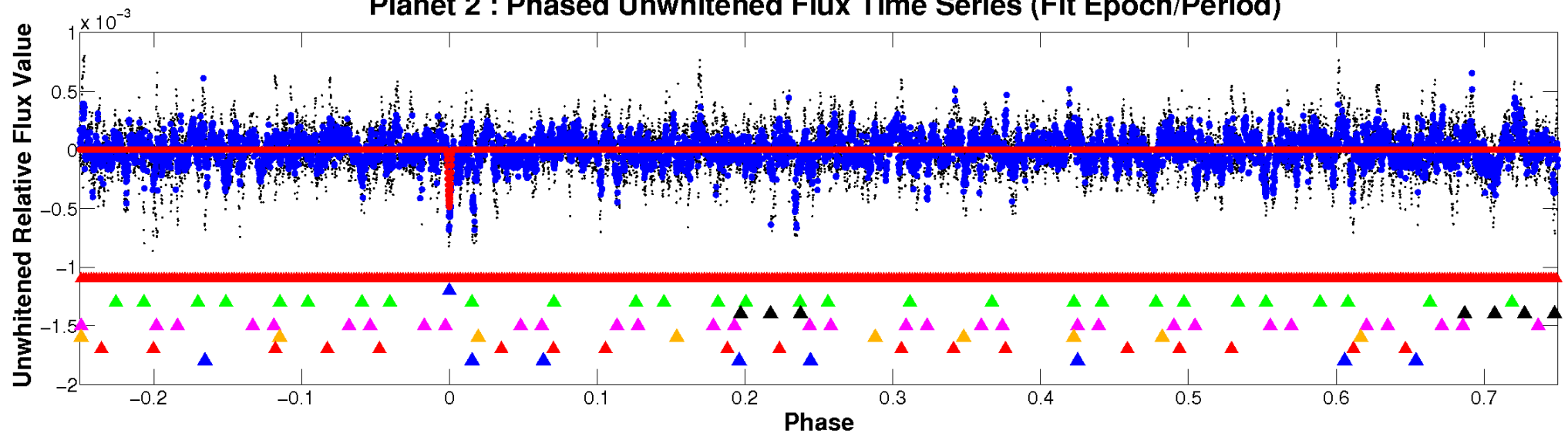
ALT Odd/Even

TCE 009092940-02

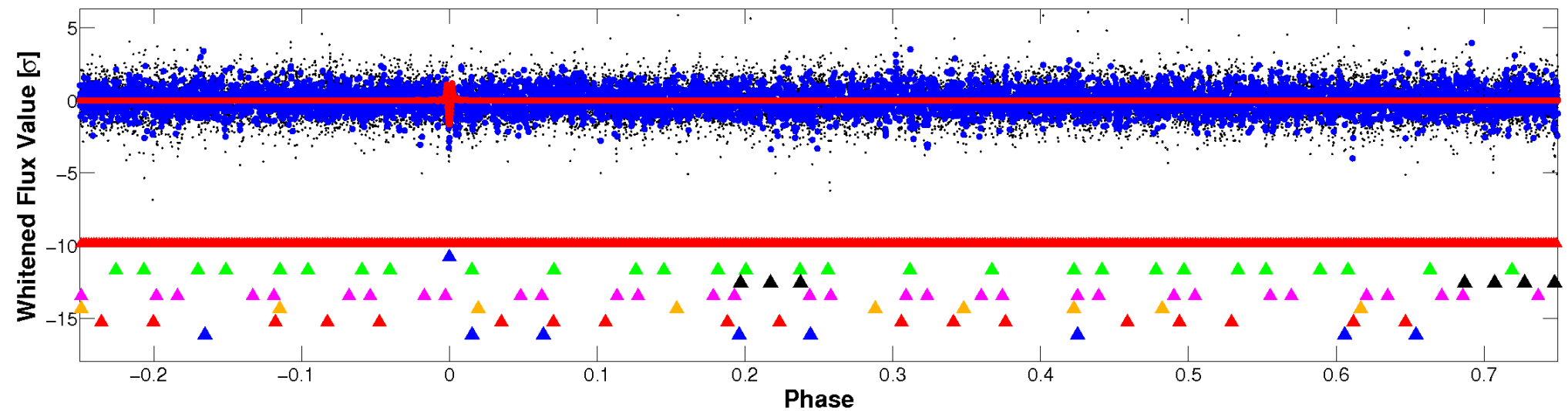


Non-Whitened Vs. Whitened Light Curve

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

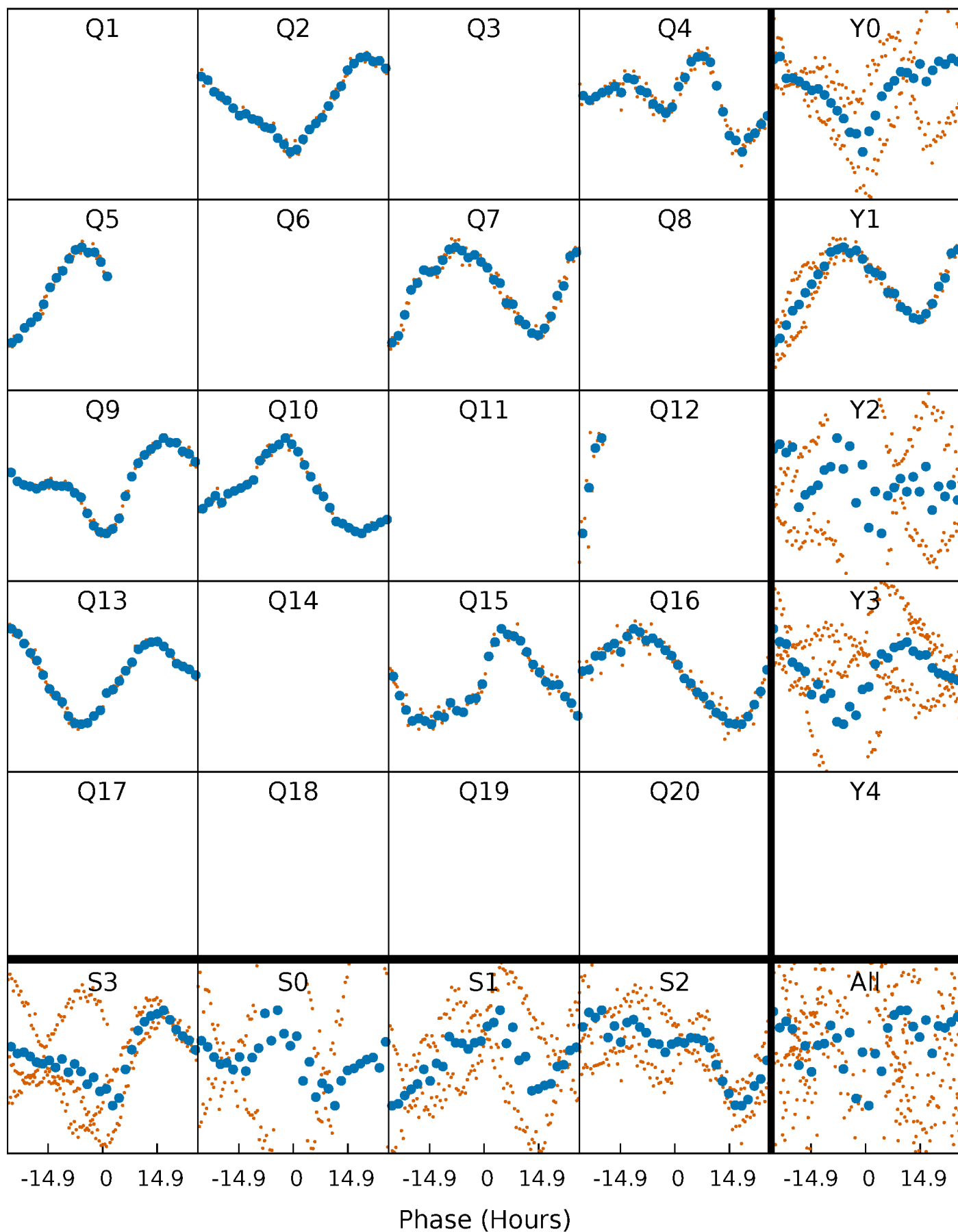


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



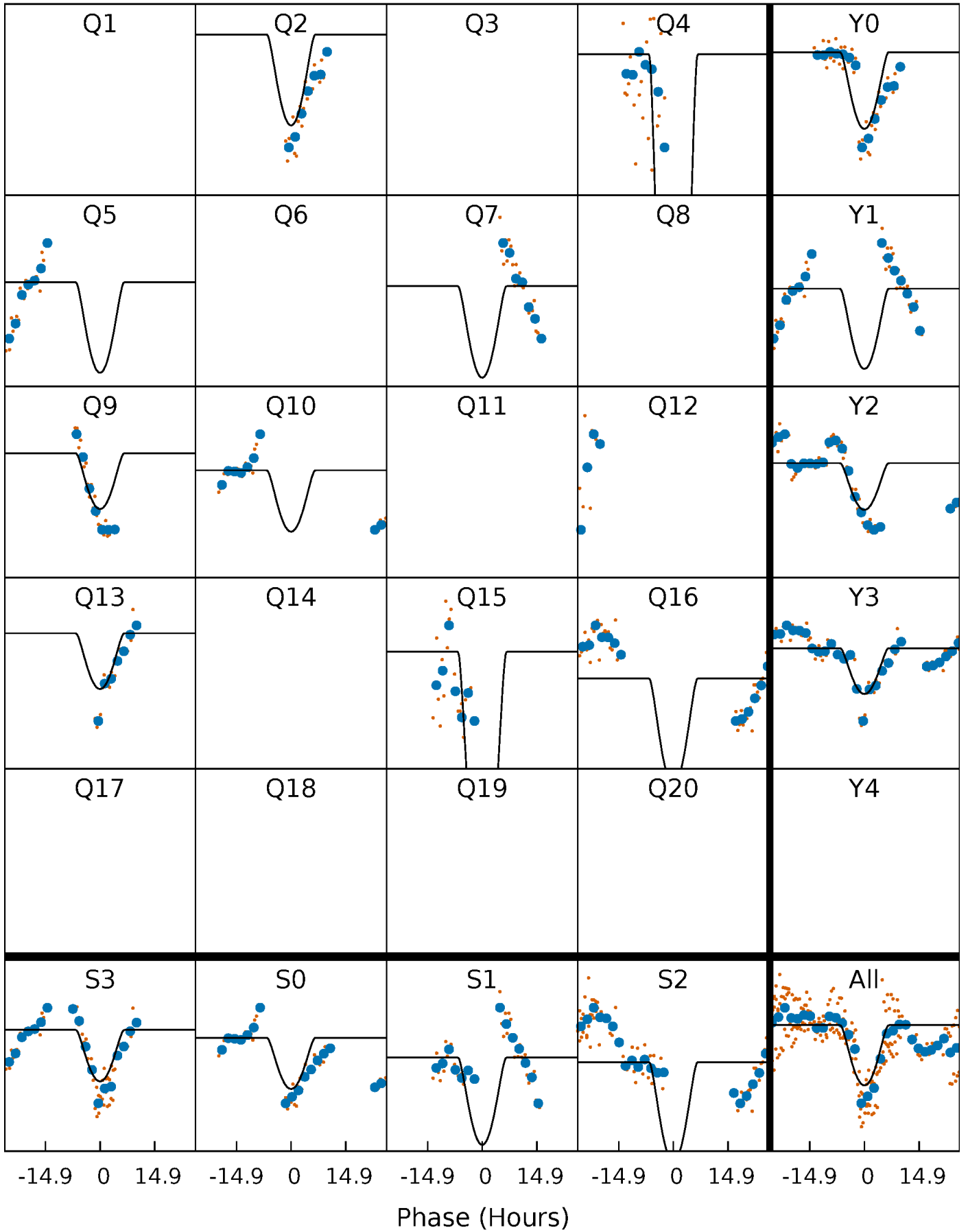
PDC Quarter-Phased Transit Curves

TCE 009092940-02 $P=144.846819$ Days $T_0=248.414485$ (BKJD)



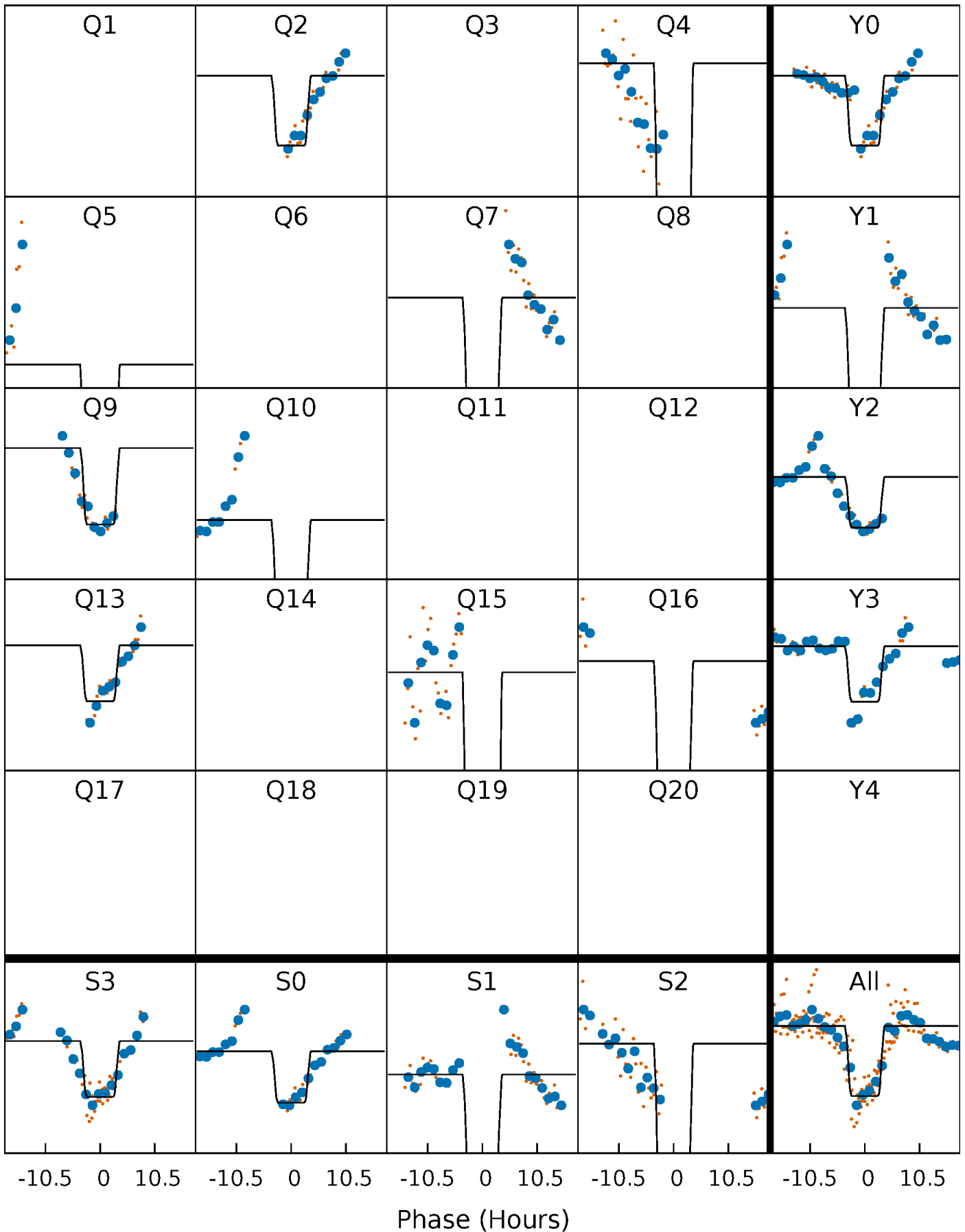
DV Quarter-Phased Transit Curves

TCE 009092940-02 P=144.846819 Days $T_0=248.414485$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

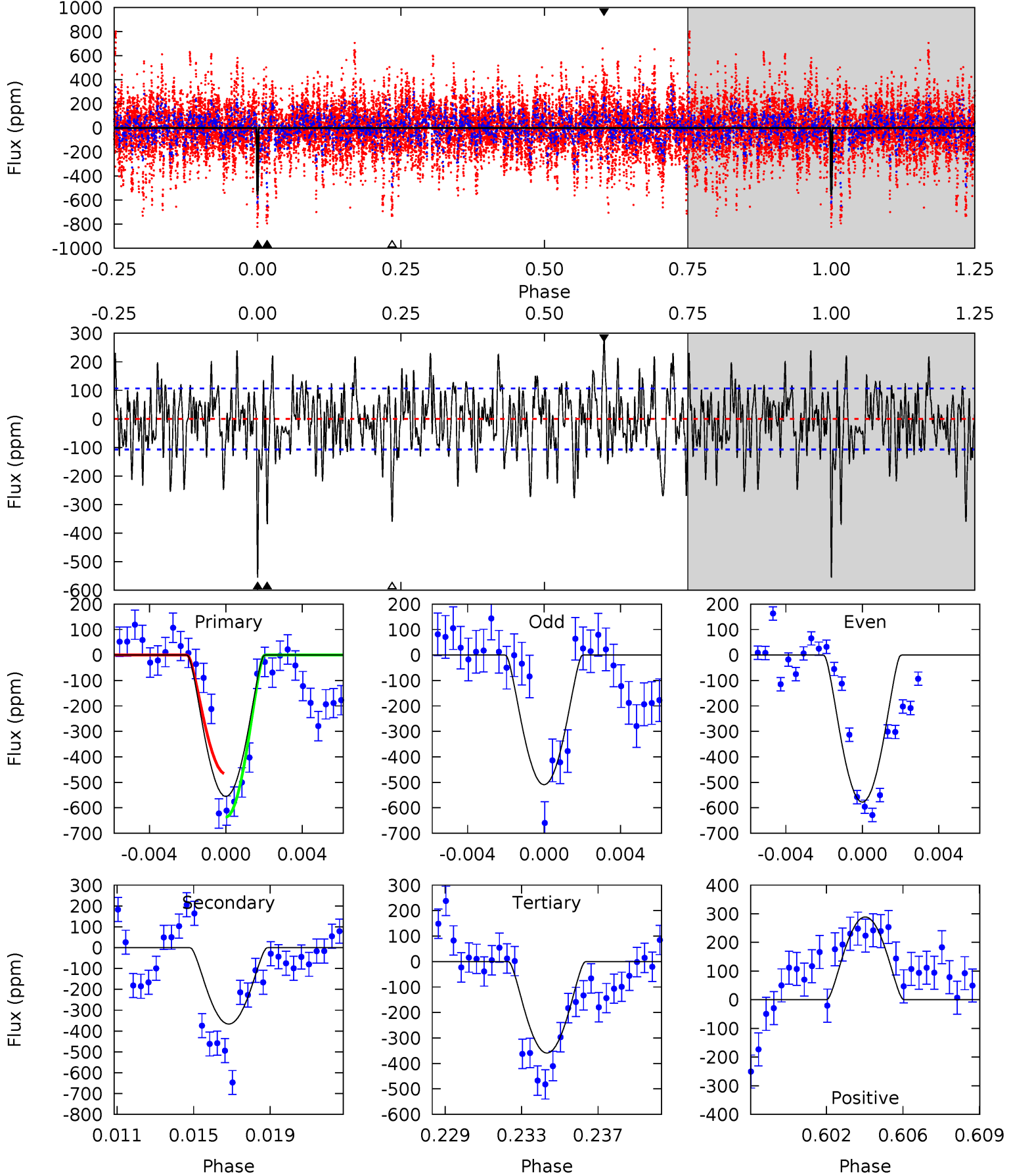
TCE 009092940-02 P=144.855688 Days $T_0=248.403402$ (BKJD)



DV Model-Shift Uniqueness Test

009092940-02, P = 144.846819 Days, E = 103.567666 Days

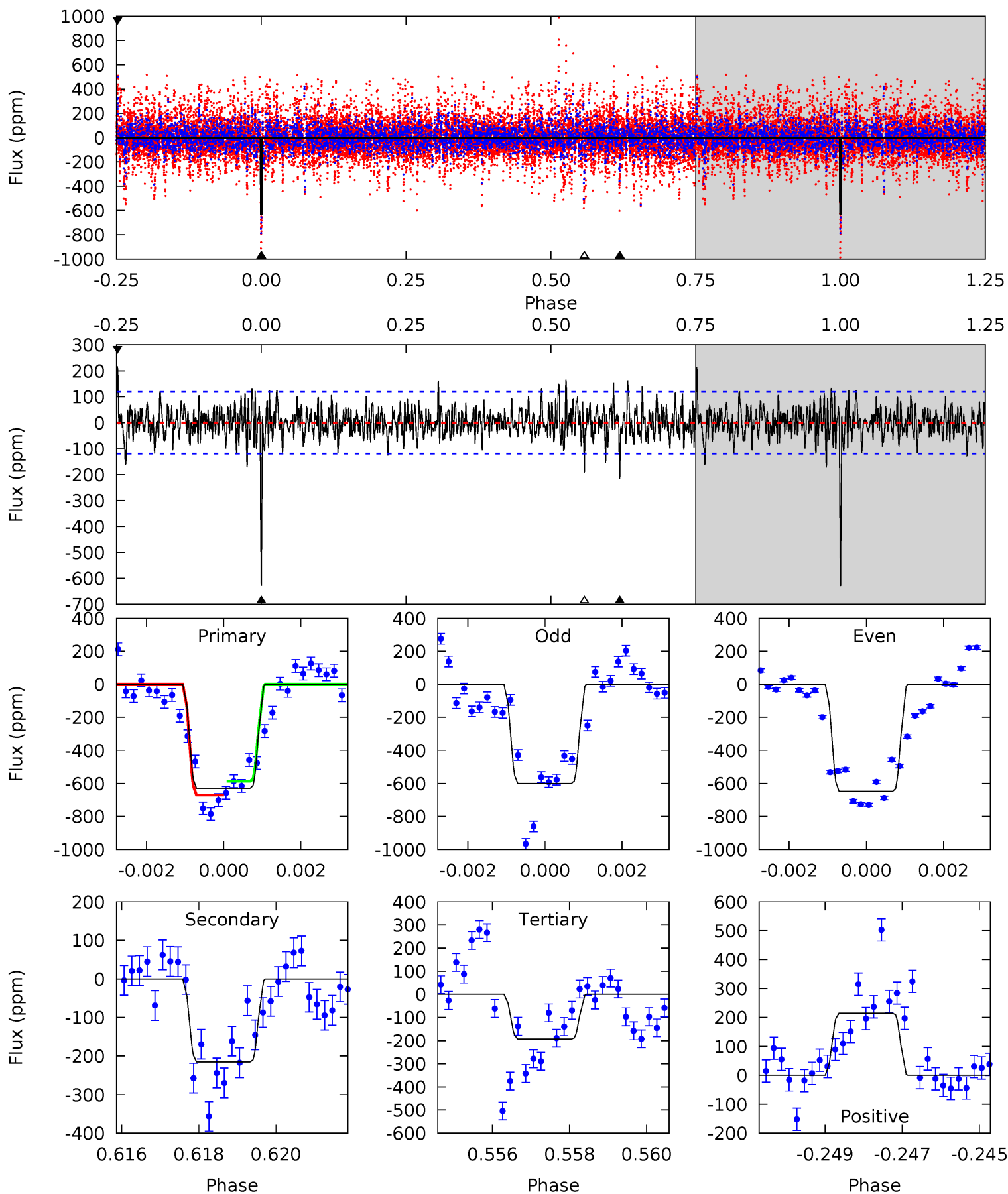
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.1	17.9	17.5	14.1	5.21	2.90	4.61	9.57	13.0	0.37	3.79	1.62	0.37	0.34	4.13



Alt Model-Shift Uniqueness Test

009092940-02, P = 144.855688 Days, E = 103.547714 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.1	9.63	8.63	9.61	5.32	3.08	2.11	19.5	18.5	1.00	0.02	0.98	0.84	0.25	1.88



Stellar Parameters For KIC 009092940

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6575^{+181}_{-250}	$4.223^{+0.136}_{-0.187}$	$-0.120^{+0.250}_{-0.300}$	$1.429^{+0.439}_{-0.293}$	$1.247^{+0.188}_{-0.188}$	$0.602^{+0.444}_{-0.293}$
	+3%/-4%	+3%/-4%	+208%/-250%	+31%/-21%	+15%/-15%	+74%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009092940-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-367 ± 21	$8.67^{+7.54}_{-6.10}$	641^{+50}_{-43}	4143^{+3186}_{-763}	904^{+9346}_{-649}
Alt.	-215 ± 22	$7.08^{+7.32}_{-4.63}$	638^{+49}_{-39}	4039^{+2330}_{-826}	780^{+6003}_{-587}

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

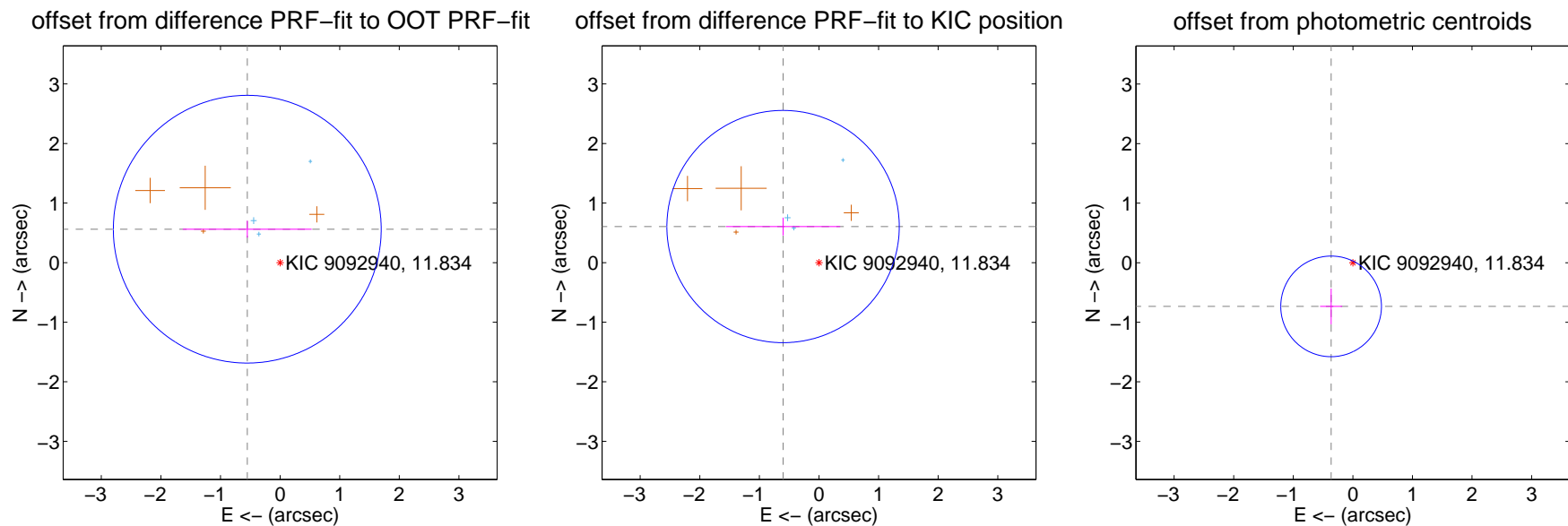
DV Centroid Data

Supplemental centroid analysis for 009092940-02. **Kepler magnitude: 11.83.** Transit SNR 9.86

There are 3 quarters with good PRF difference image offsets

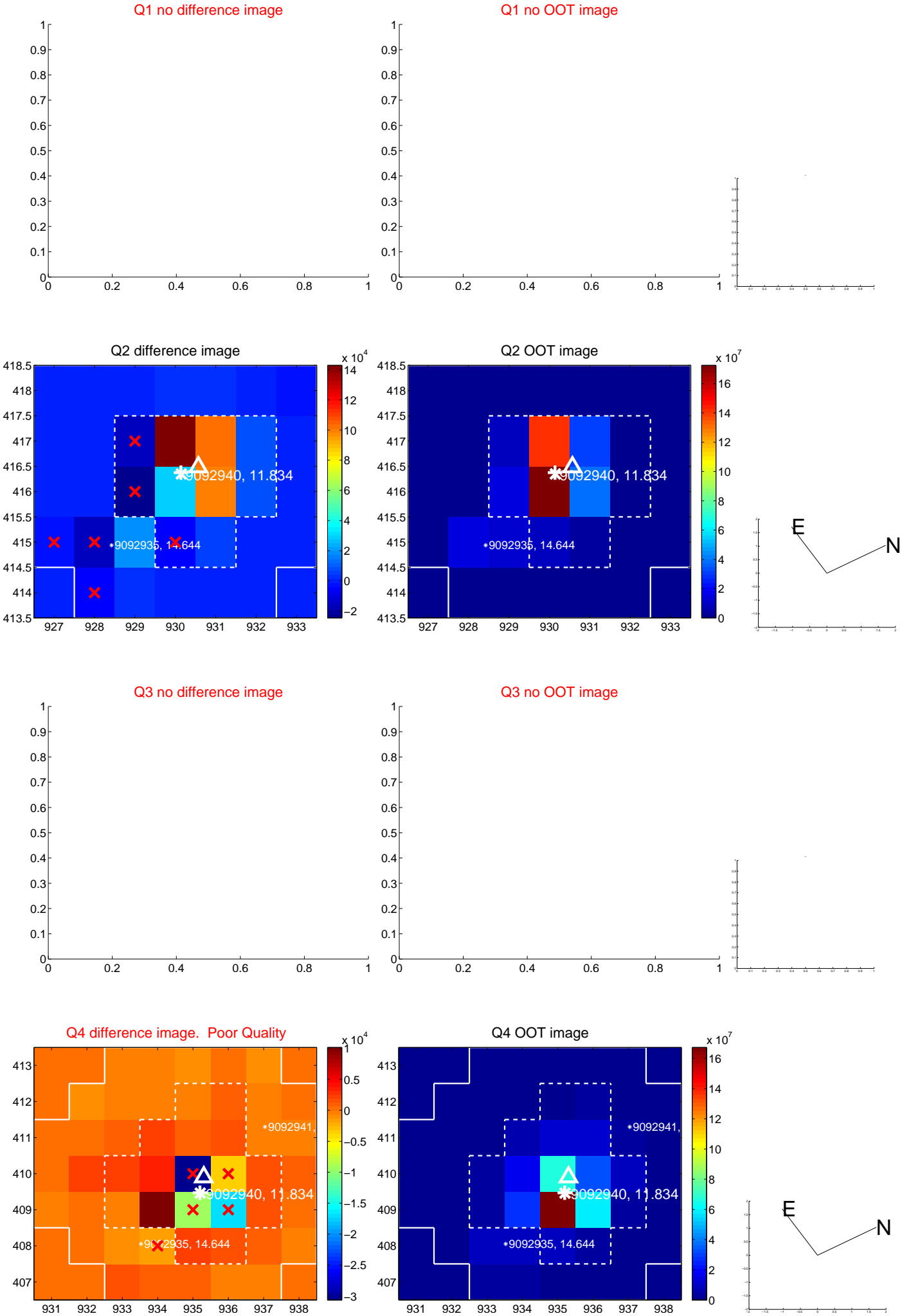
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.787 ± 0.749	1.05	0.551 ± 1.081	0.562 ± 0.142
PRF-fit source offset from KIC position	0.855 ± 0.650	1.32	0.603 ± 0.959	0.606 ± 0.149
photometric centroid source offset	0.82 ± 0.28	2.91	0.37 ± 0.19	-0.73 ± 0.30

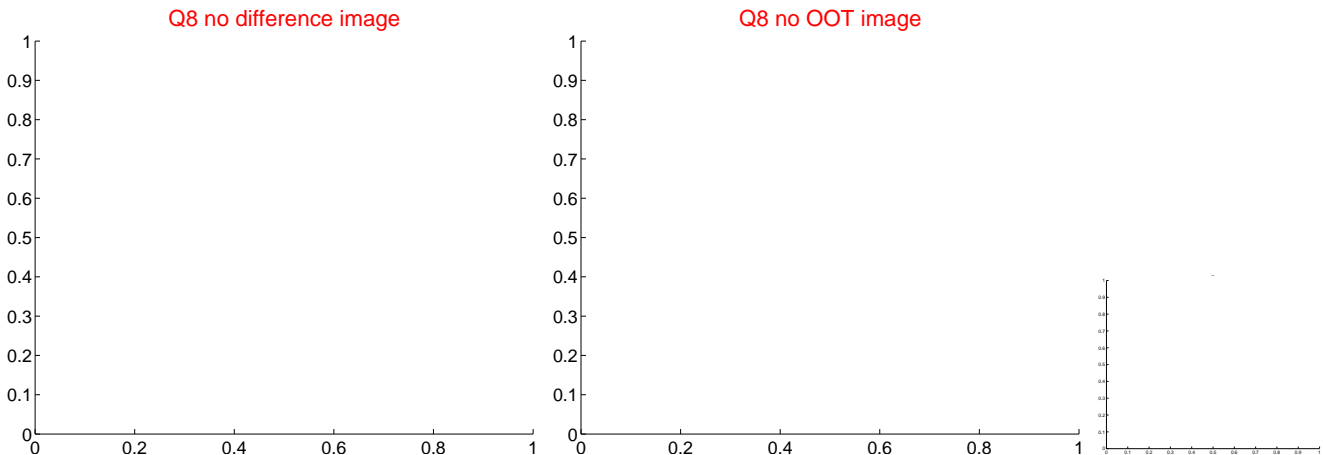
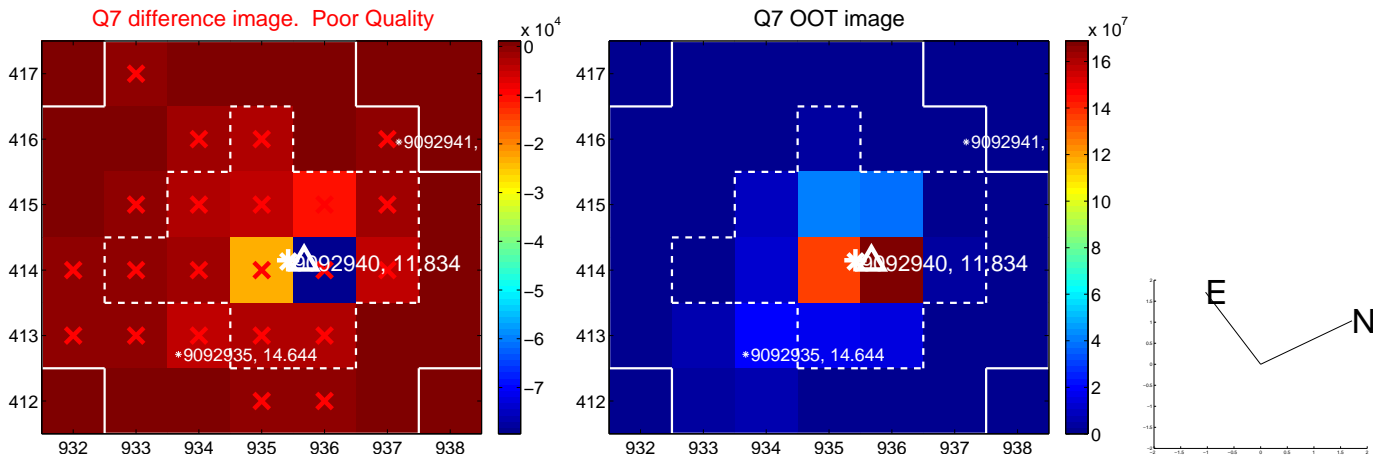
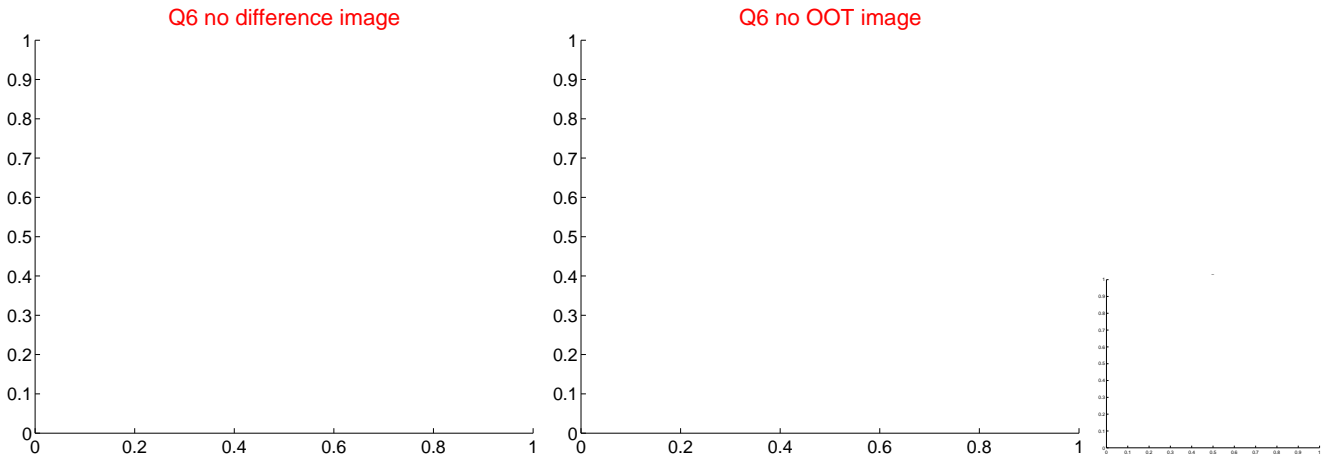
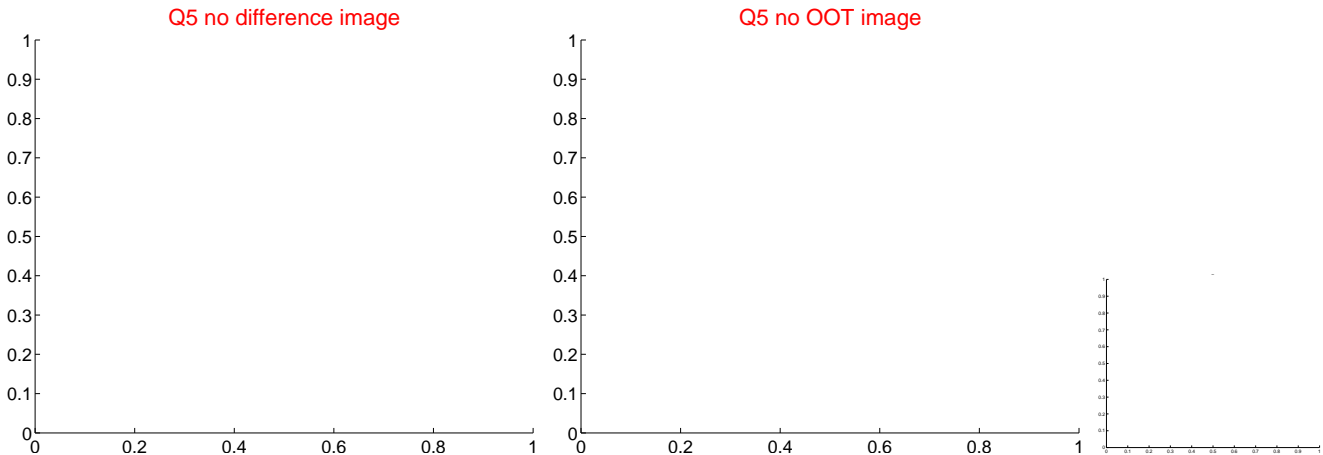


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

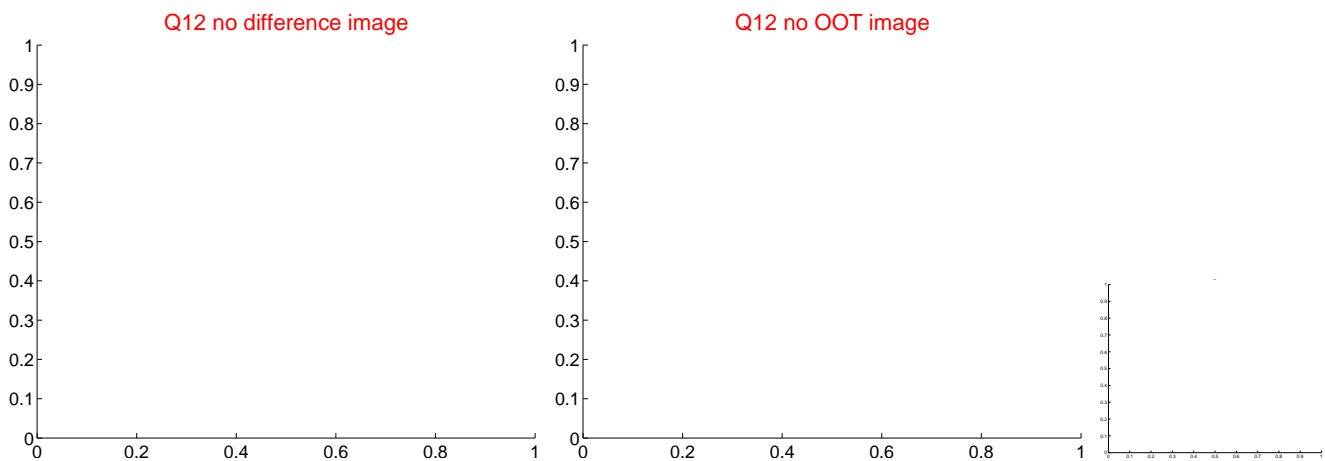
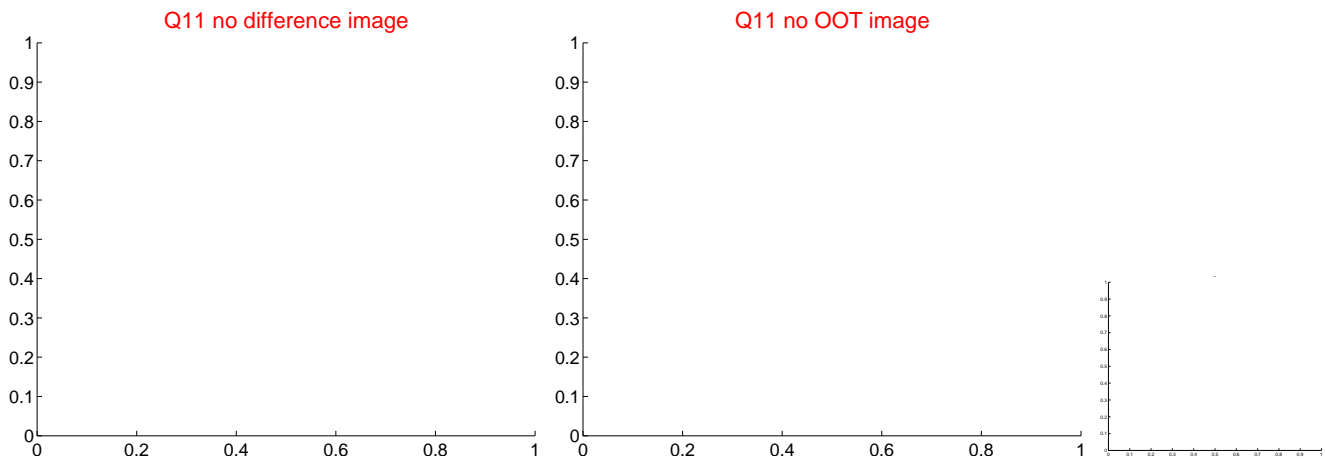
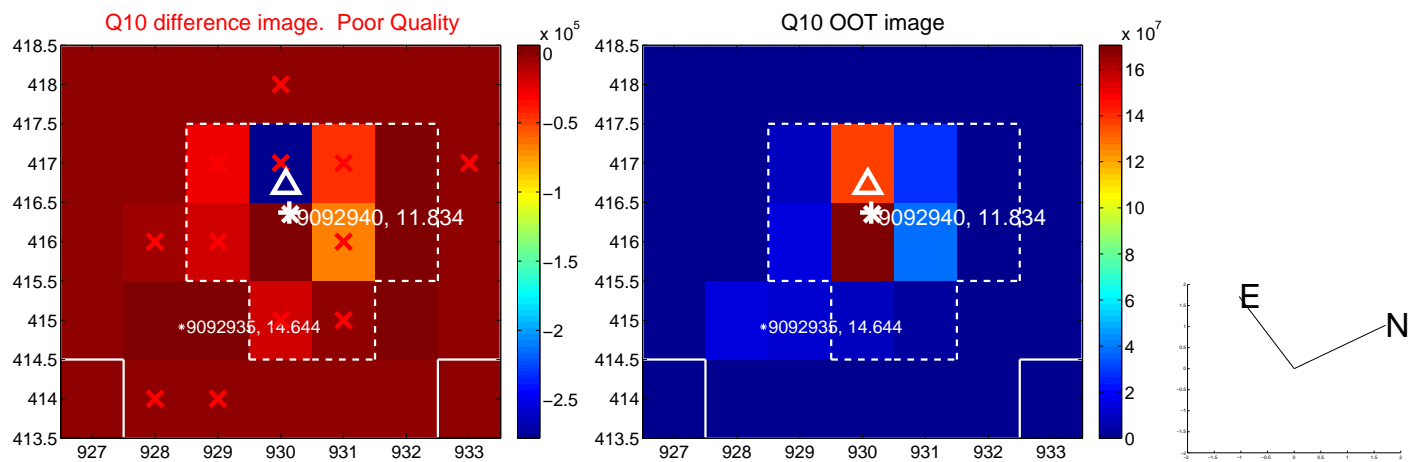
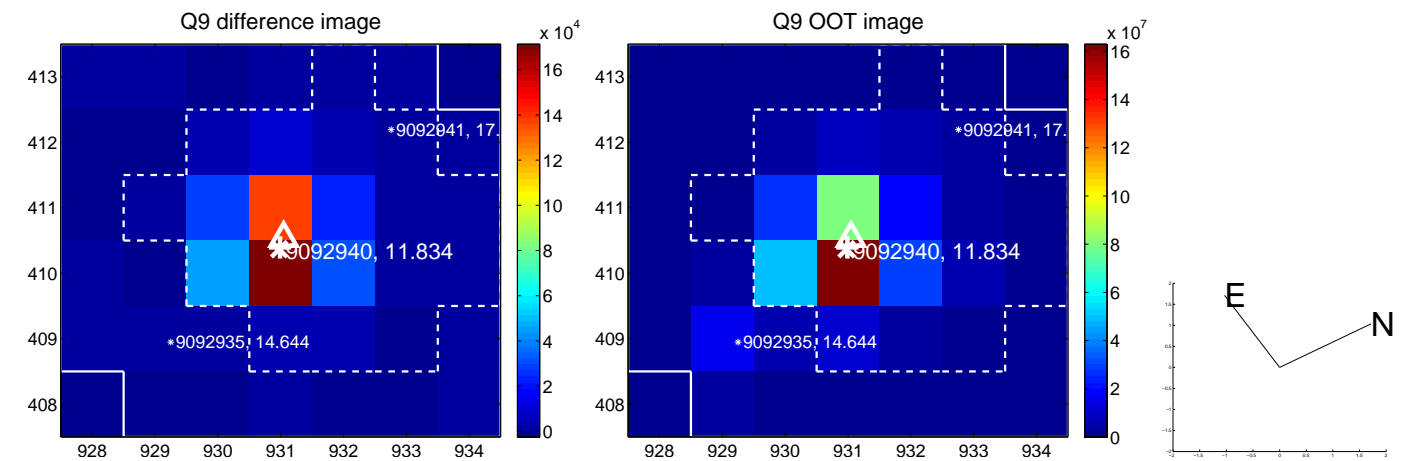
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



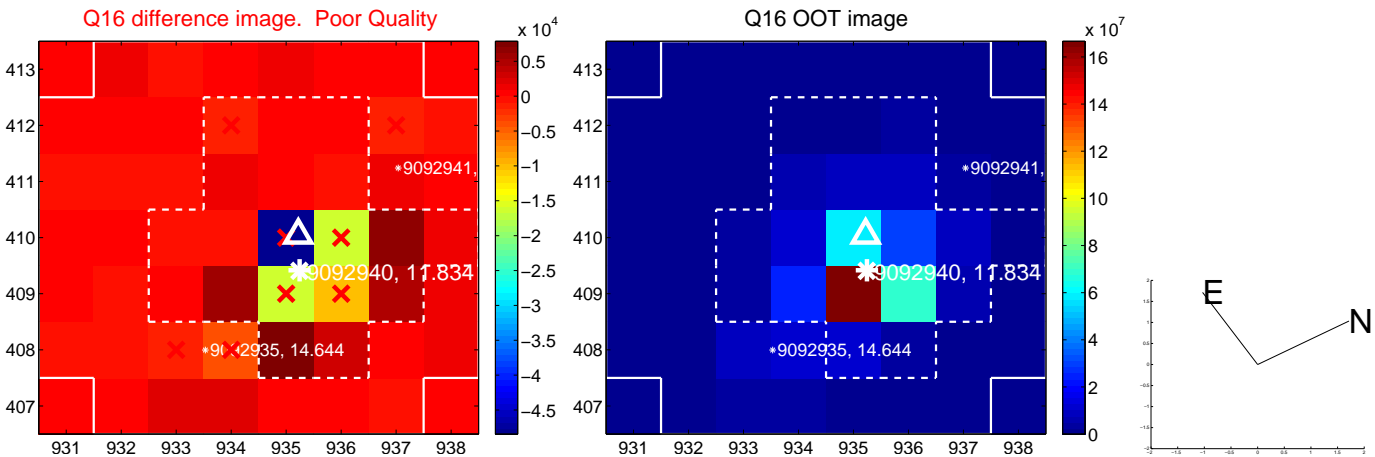
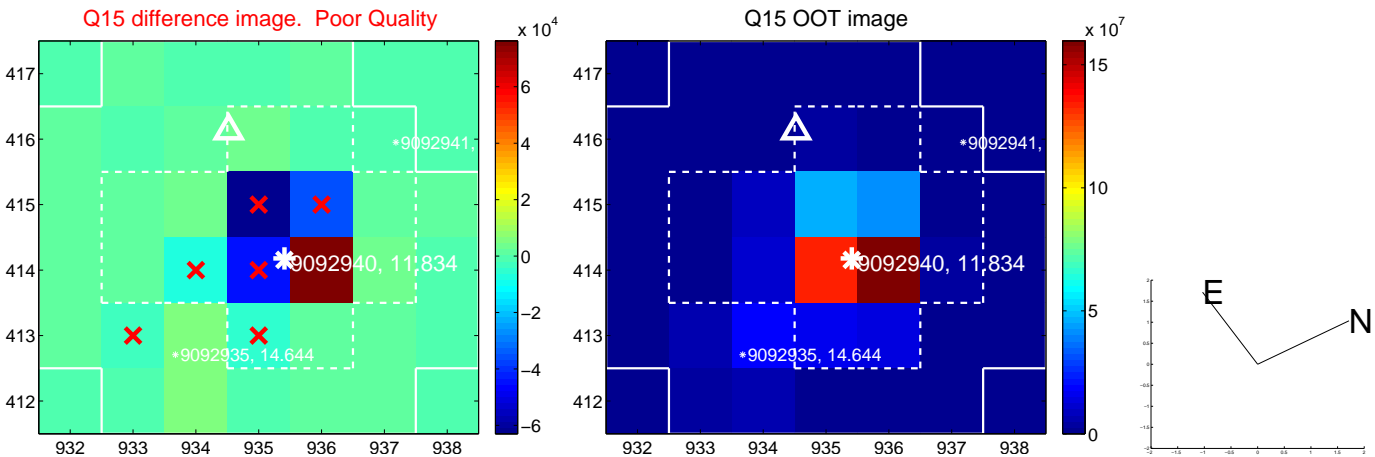
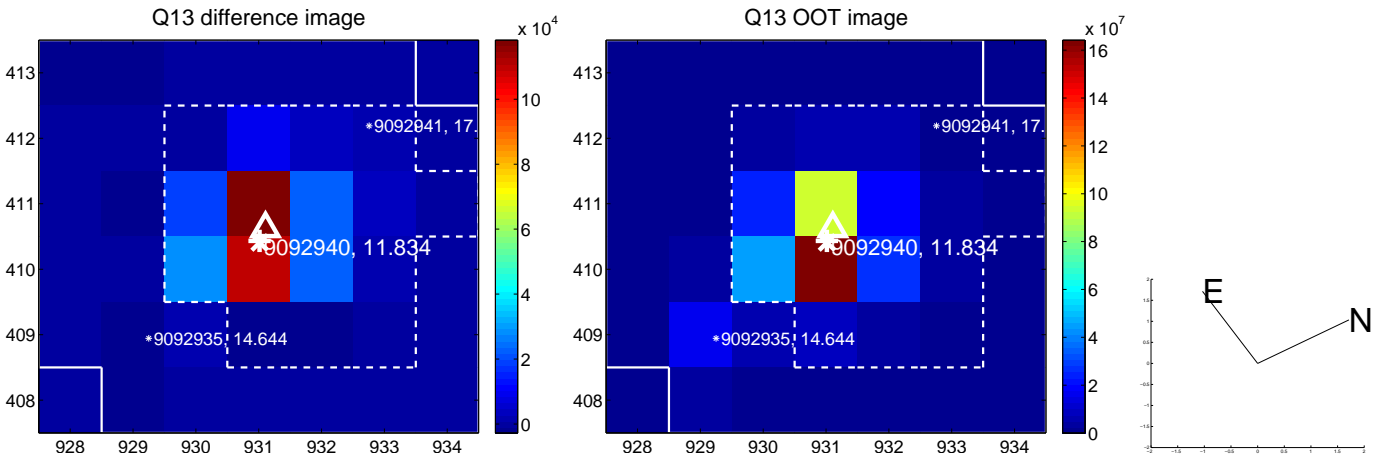
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



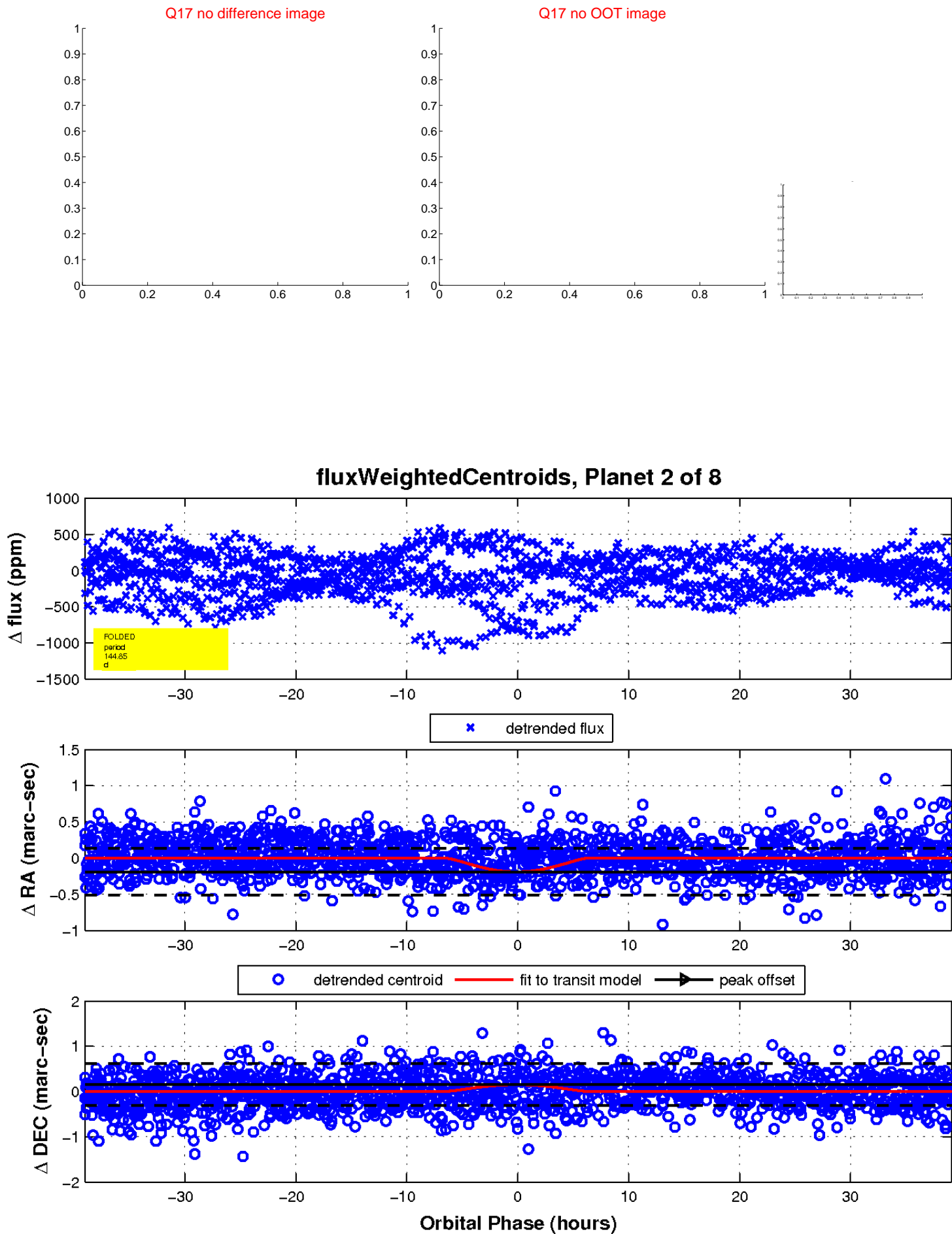
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

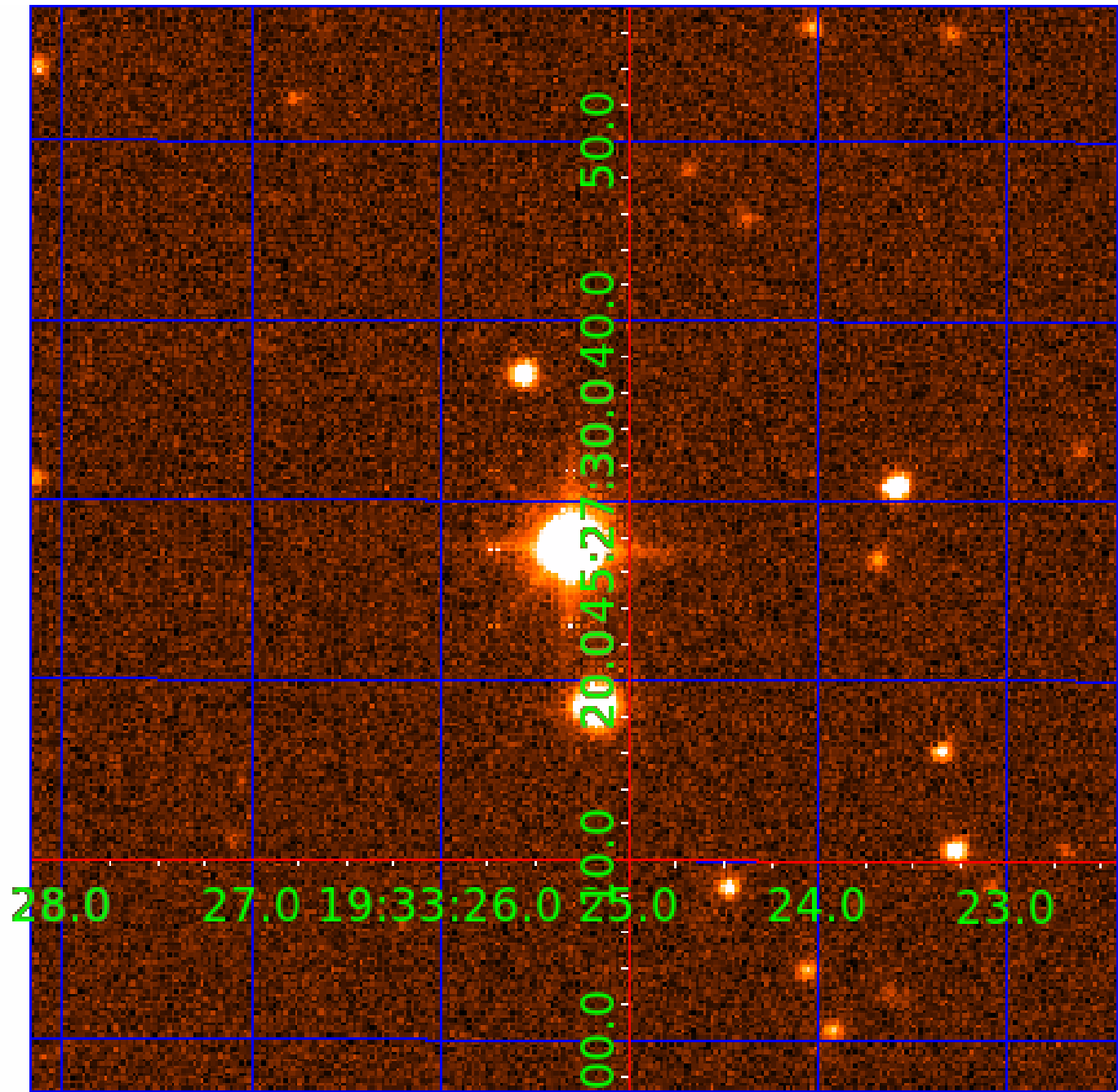


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009092940

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})
009092940-01	OBS	No	1.781951	131.871065	34.6	10.318	11.8	12.6	1.43	6575	0.98	3569.75
009092940-02	OBS	No	144.846819	248.414485	487.0	13.038	10.4	9.9	1.43	6575	6.07	10.14
009092940-03	OBS	No	50.961272	167.518869	182.6	6.394	9.5	9.3	1.43	6575	2.19	40.82
009092940-04	OBS	No	218.739298	203.063058	276.6	15.143	9.3	6.2	1.43	6575	2.51	5.85
009092940-05	OBS	No	45.135416	150.385762	116.4	5.916	8.8	5.5	1.43	6575	1.80	47.99
009092940-06	OBS	No	164.301407	153.974230	284.3	10.053	8.7	8.1	1.43	6575	4.71	8.57
009092940-07	OBS	No	83.498289	147.866364	219.1	3.151	9.2	7.8	1.43	6575	2.36	21.13
009092940-08	OBS	No	204.184137	131.967472	313.7	8.385	8.5	7.5	1.43	6575	4.93	6.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009092940-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
009092940-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
009092940-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009092940-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009092940-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
009092940-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_UNCERTAIN

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

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

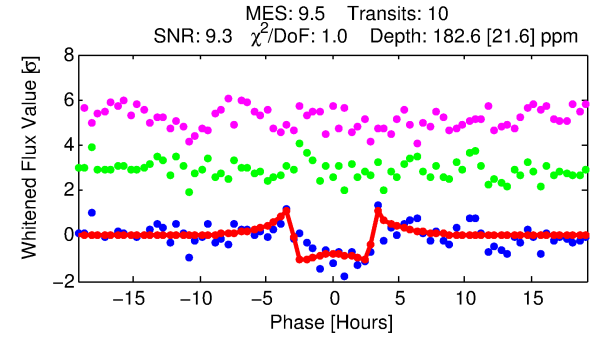
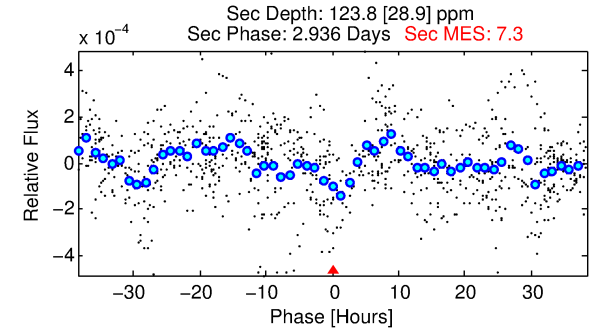
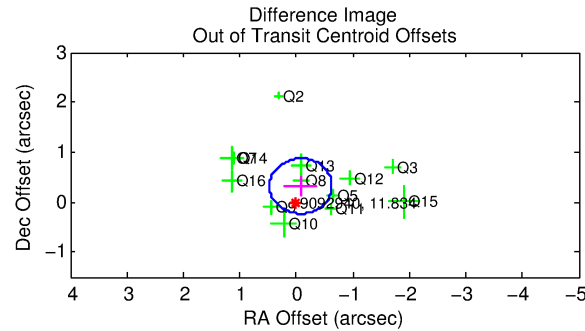
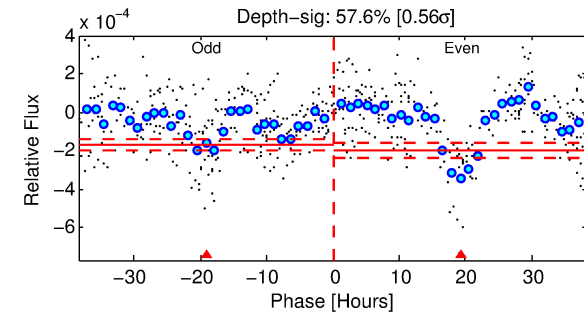
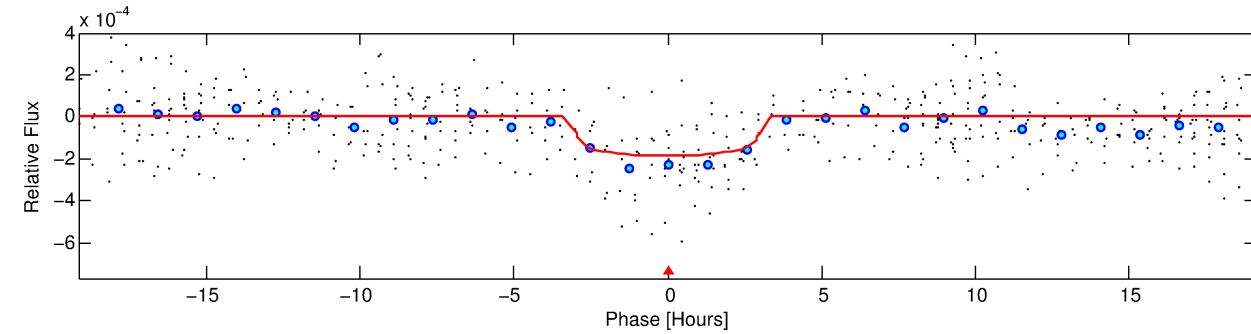
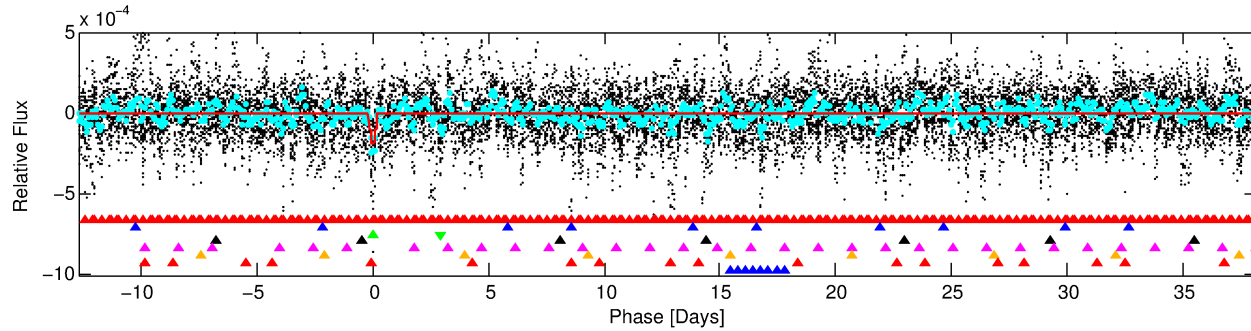
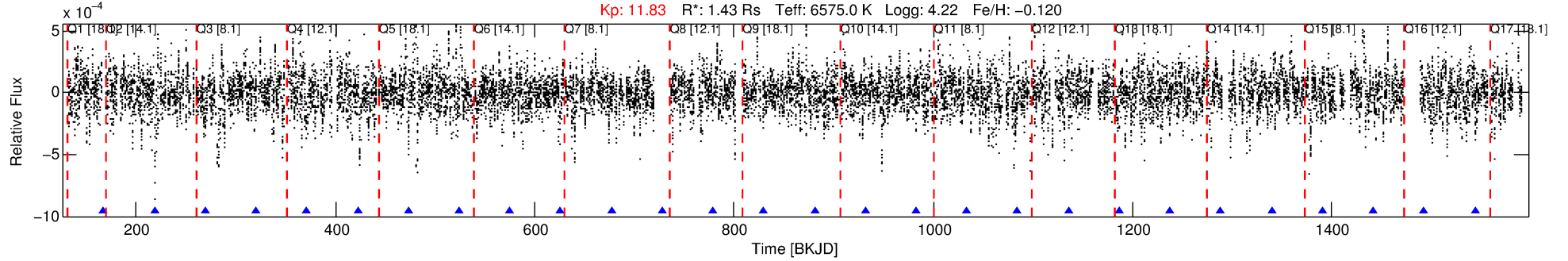
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092940-03

No Significant Match Found

DV One-Page Summary

KIC: 9092940 Candidate: 3 of 8 Period: 50.961 d



DV Fit Results:

Period = 50.96127 [0.00041] d
Epoch = 167.5189 [0.0077] BKJD
Rp/R* = 0.0141 [0.0034]
a/R* = 32.88 [42.87]
b = 0.86 [0.40]
Seff = 40.82 [15.68]
Teq = 645 [62] K
Rp = 2.19 [0.86] Re
a = 0.2894 [0.0724] AU
Ag = 1187.59 [763.75] [1.55 σ]
Teffp = 5850 [817] K [6.35 σ]

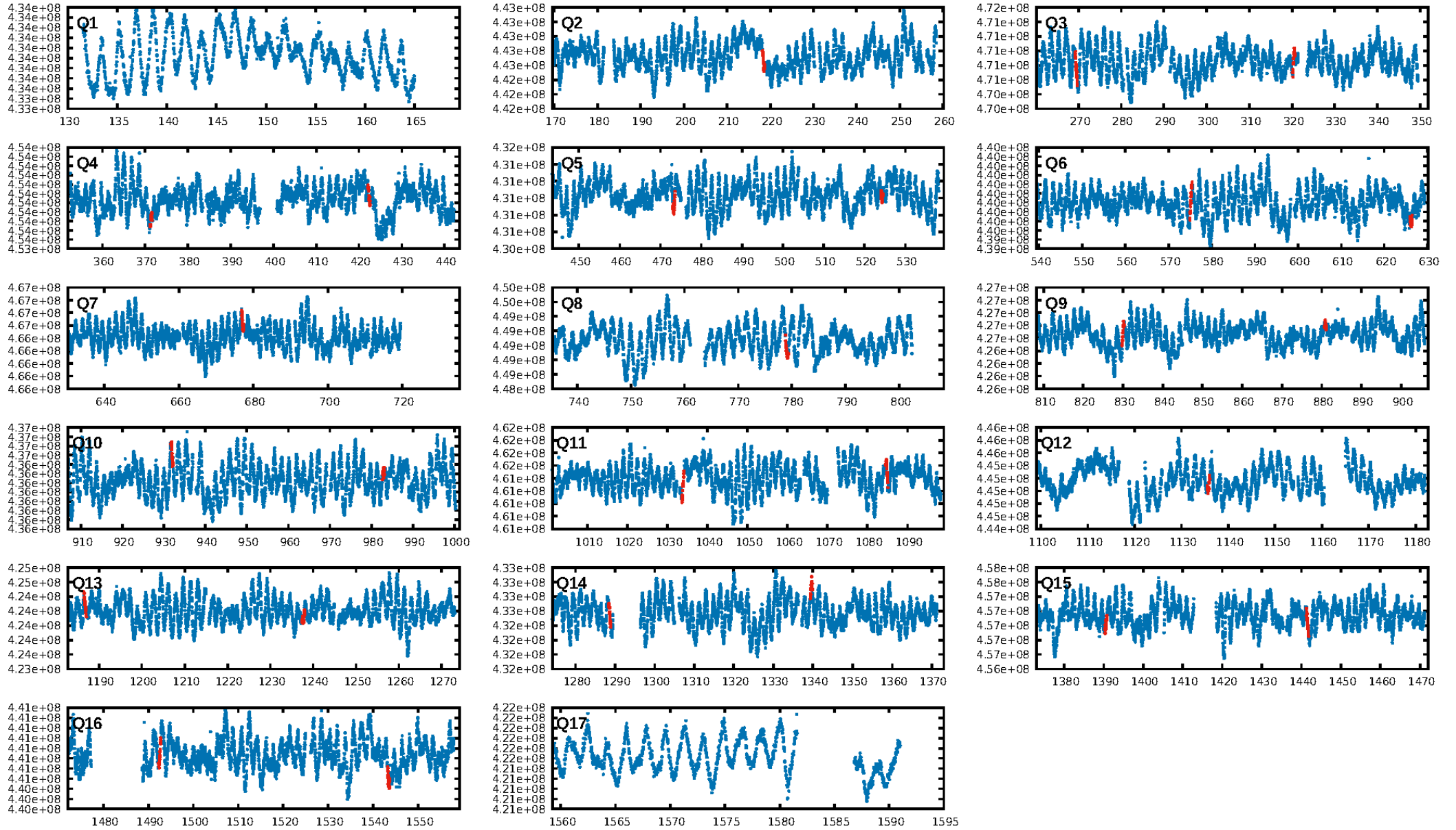
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.05 σ]
LongPeriod-sig: 100.0% [109.55 σ]
ModelChiSquare2-sig: 39.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.21e-10
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -2.371
Centroid-sig: 41.5%
Centroid-so: 0.677 arcsec [1.79 σ]
OotOffset-rm: 0.329 arcsec [1.78 σ]
KicOffset-rm: 0.358 arcsec [2.01 σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.13 [2/15]

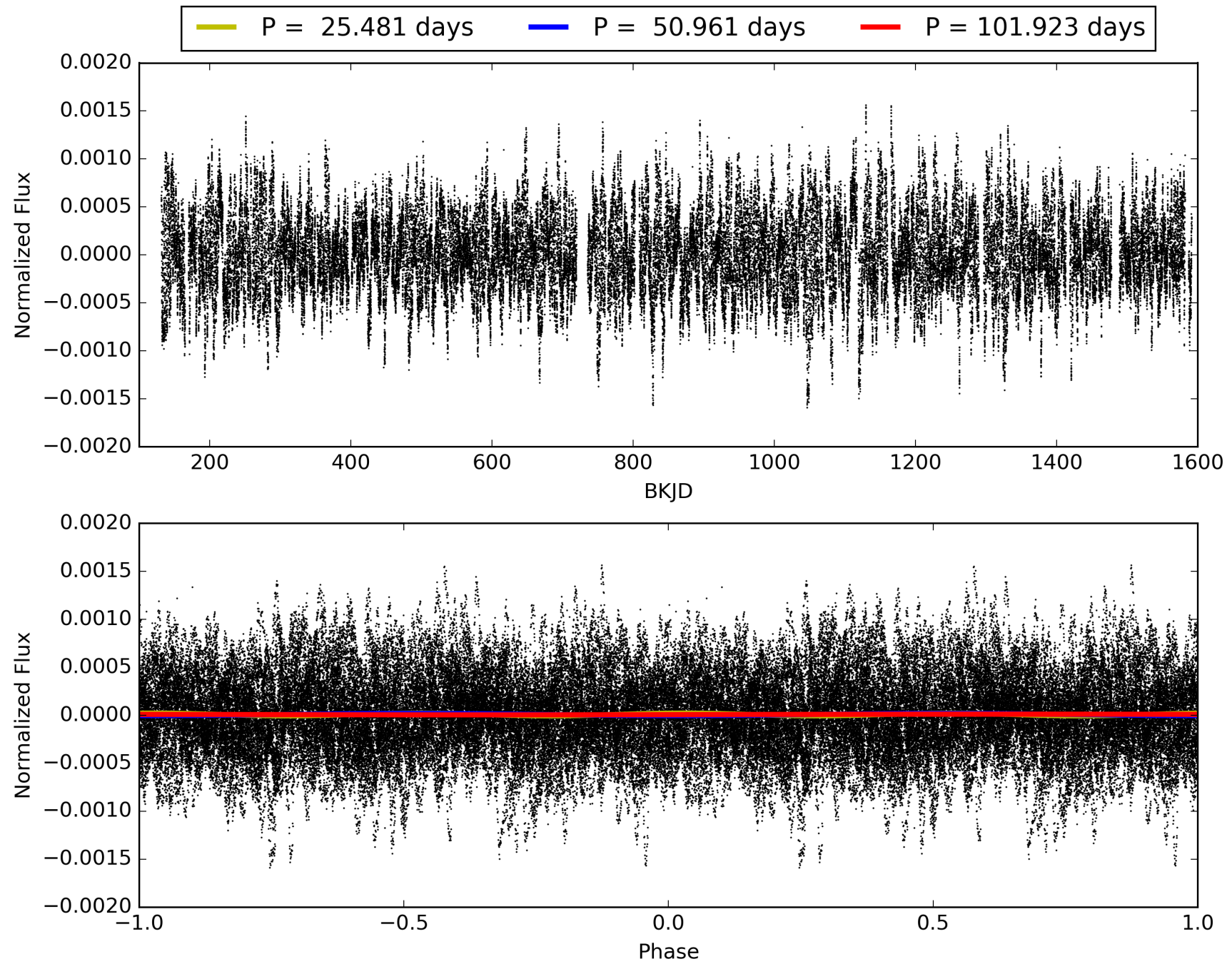
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:42:05 Z

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

TCE 009092940-03, PDC Light Curves

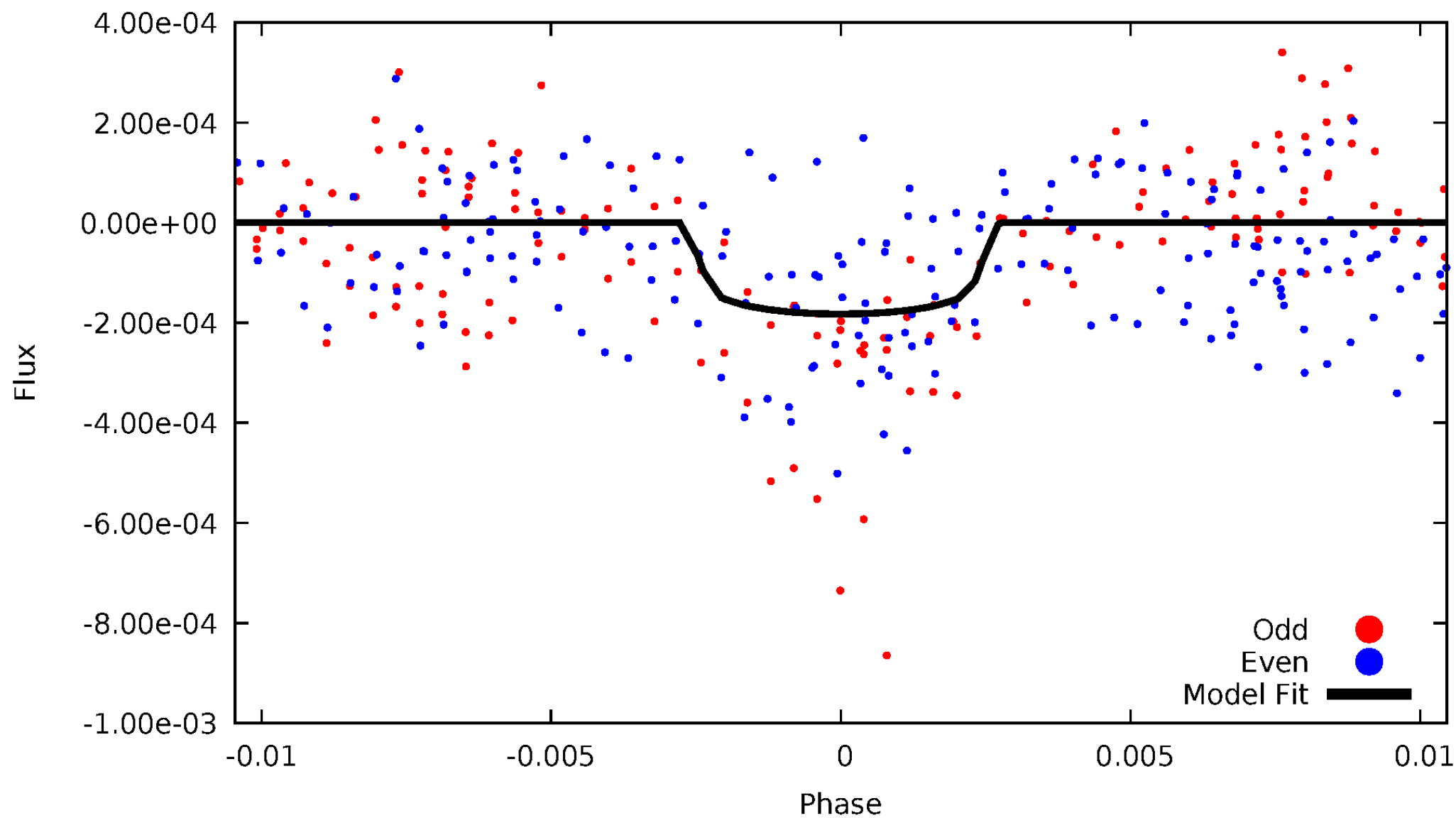


TCE 009092940-03



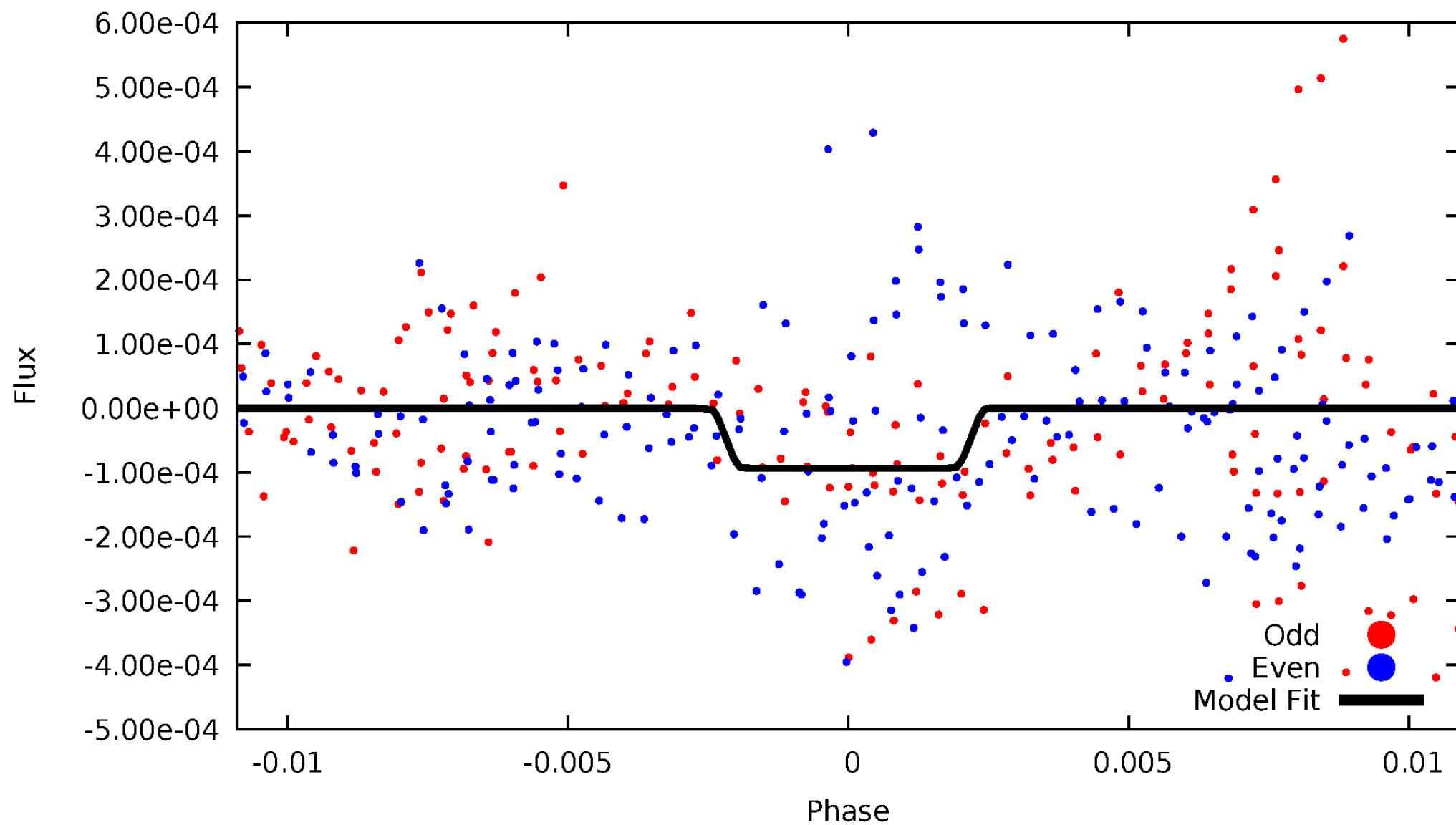
DV Odd/Even

TCE 009092940-03



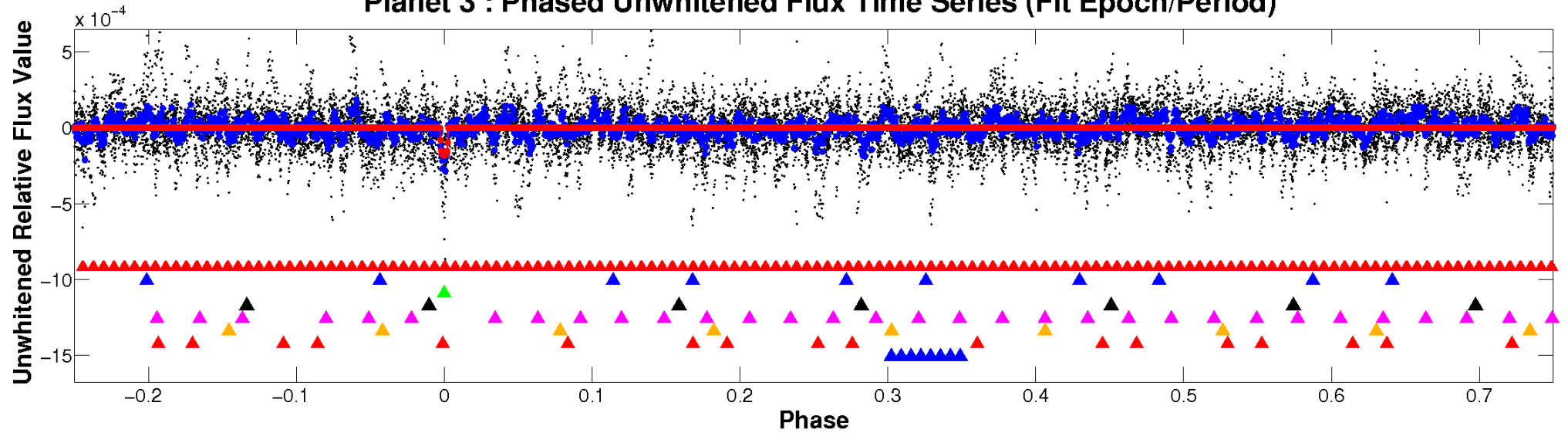
ALT Odd/Even

TCE 009092940-03

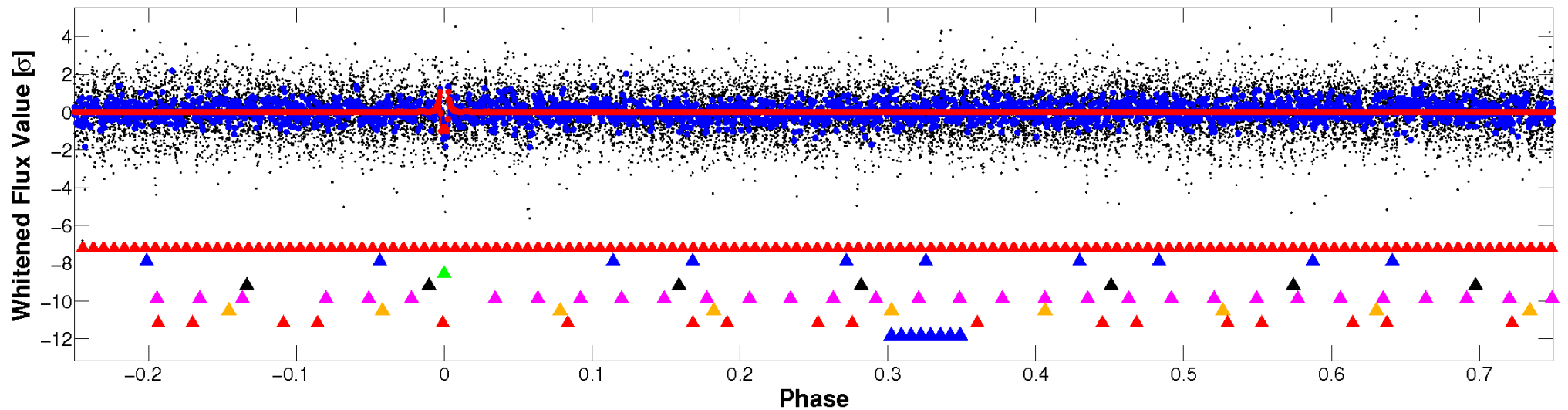


Non-Whitened Vs. Whitened Light Curve

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

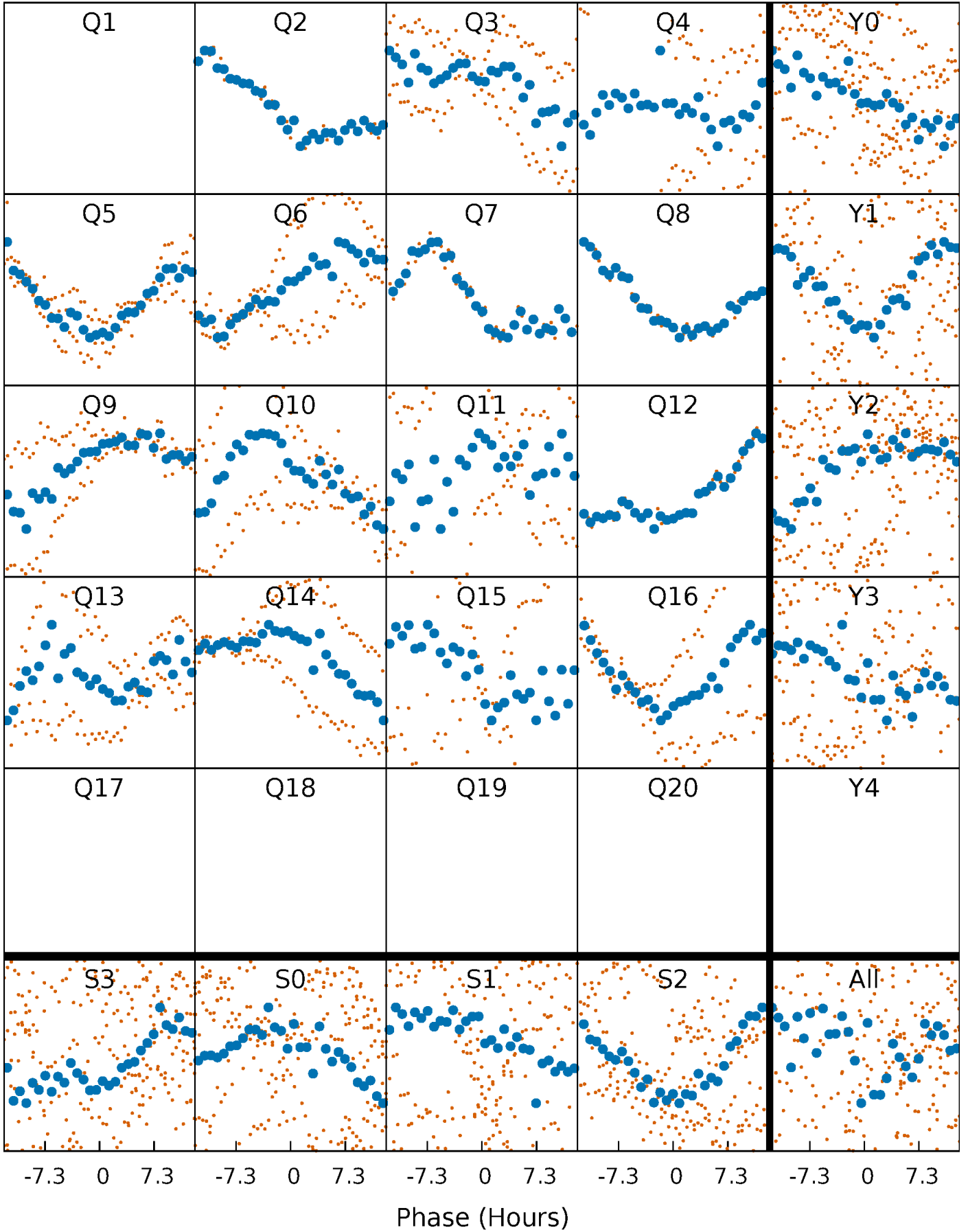


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



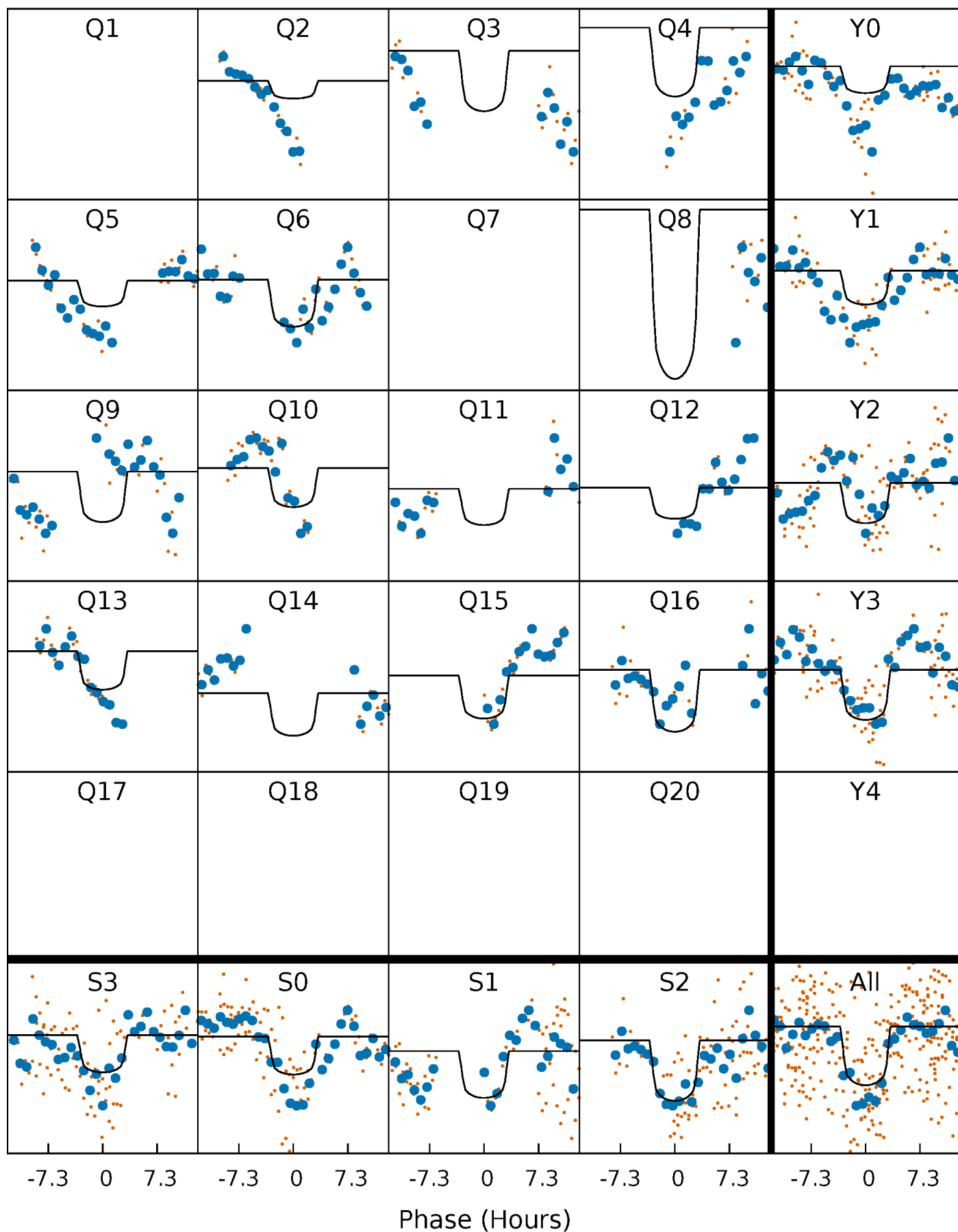
PDC Quarter-Phased Transit Curves

TCE 009092940-03 P= 50.961272 Days $T_0=167.518869$ (BKJD)



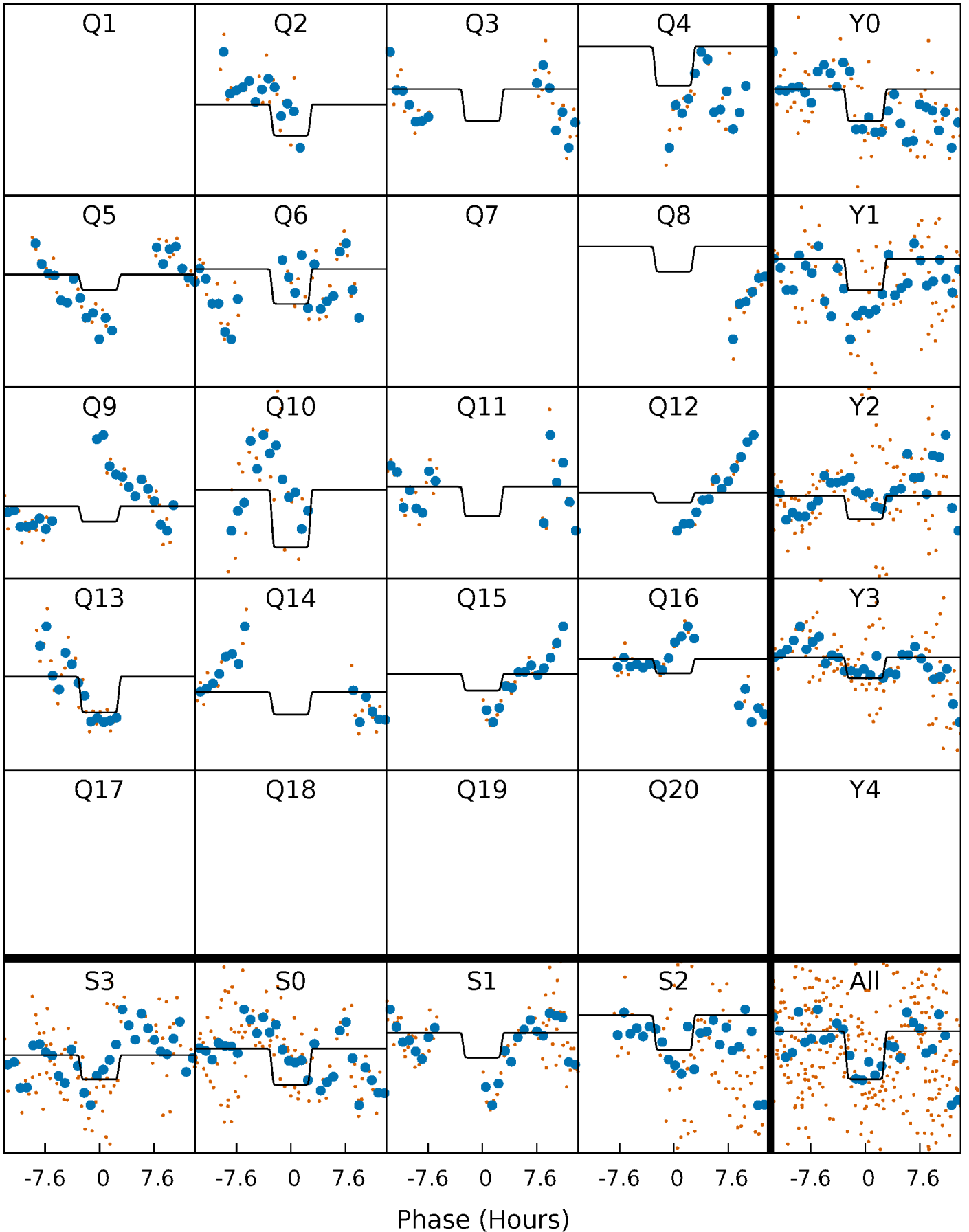
DV Quarter-Phased Transit Curves

TCE 009092940-03 P= 50.961272 Days $T_0=167.518869$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

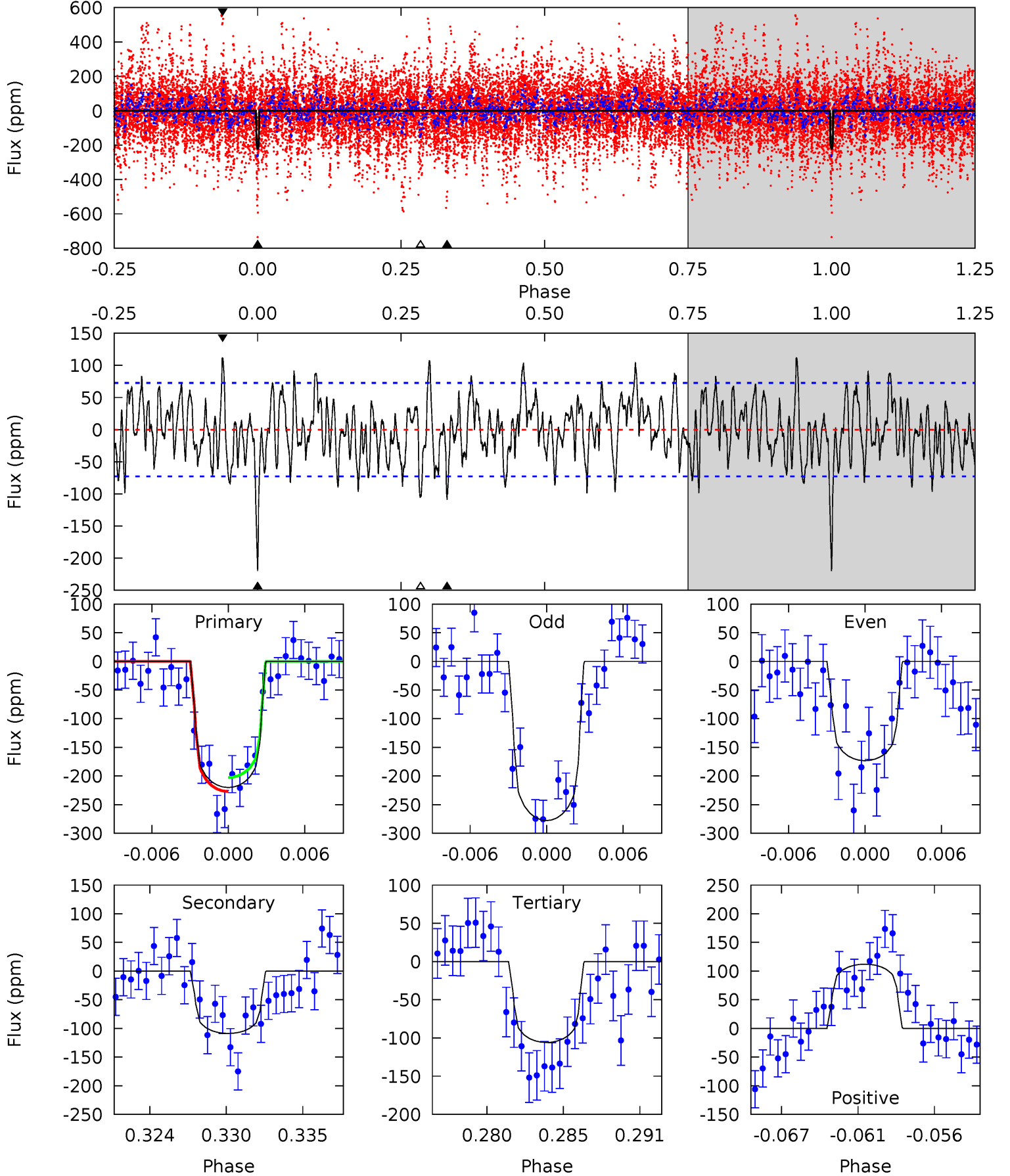
TCE 009092940-03 P= 50.961097 Days $T_0=167.518538$ (BKJD)



DV Model-Shift Uniqueness Test

009092940-03, P = 50.961272 Days, E = 116.557597 Days

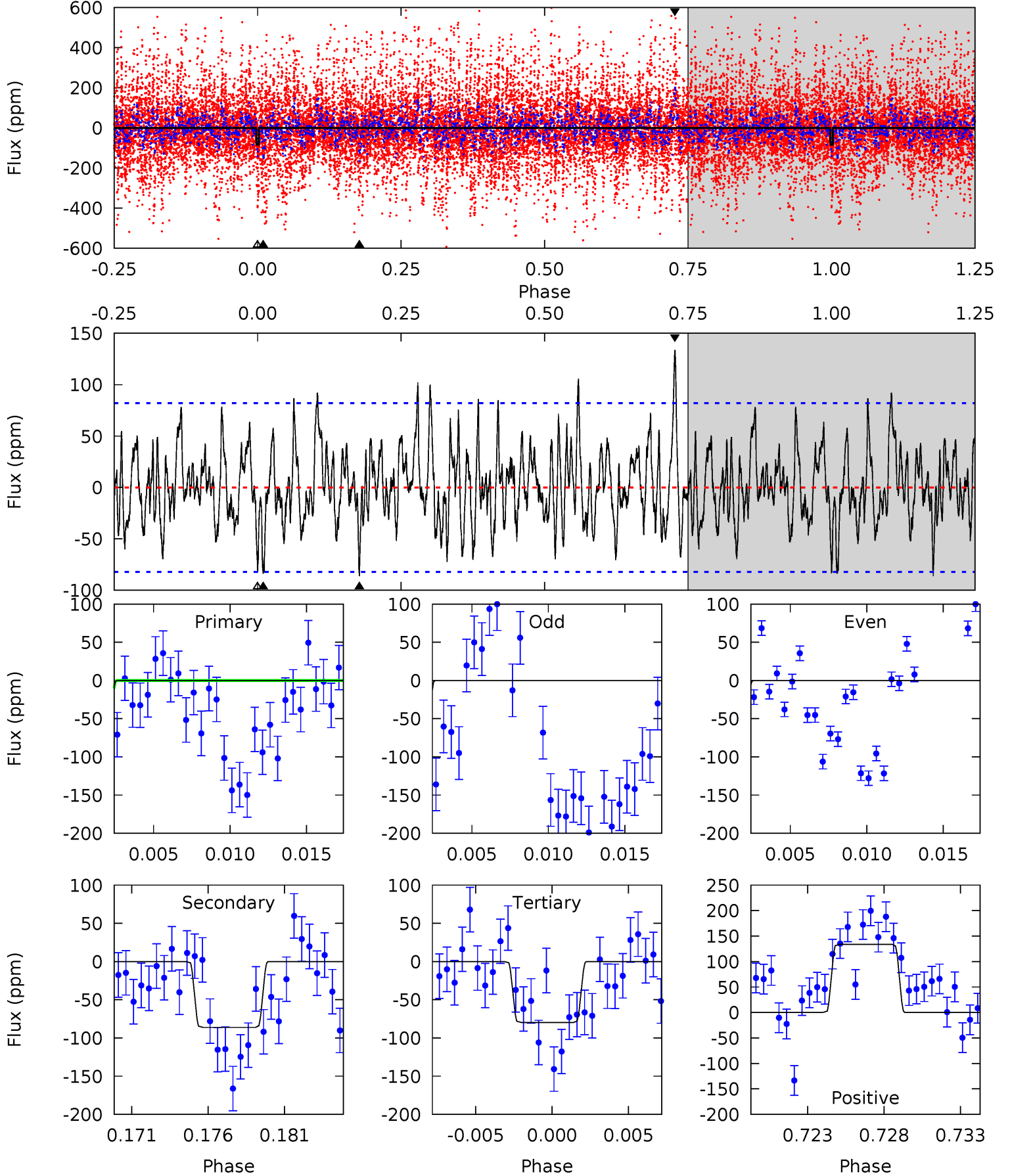
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	7.68	7.47	7.91	5.14	2.77	2.82	8.06	7.62	0.21	-0.24	3.56	1.06	0.34	0.86



Alt Model-Shift Uniqueness Test

009092940-03, P = 50.961097 Days, E = 116.557441 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.28	5.41	5.01	8.40	5.16	2.81	2.09	0.27	-3.13	0.41	-2.99	1.69	1.15	0.61	0.14



Stellar Parameters For KIC 009092940

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6575^{+181}_{-250}	$4.223^{+0.136}_{-0.187}$	$-0.120^{+0.250}_{-0.300}$	$1.429^{+0.439}_{-0.293}$	$1.247^{+0.188}_{-0.188}$	$0.602^{+0.444}_{-0.293}$
	+3%/-4%	+3%/-4%	+208%/-250%	+31%/-21%	+15%/-15%	+74%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009092940-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-109 ± 14	$2.20^{+0.66}_{-0.58}$	901^{+65}_{-56}	5660^{+807}_{-587}	1036^{+829}_{-434}
Alt.	-86 ± 16	$1.52^{+0.62}_{-0.50}$	905^{+70}_{-55}	6437^{+1720}_{-971}	1734^{+2219}_{-944}

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

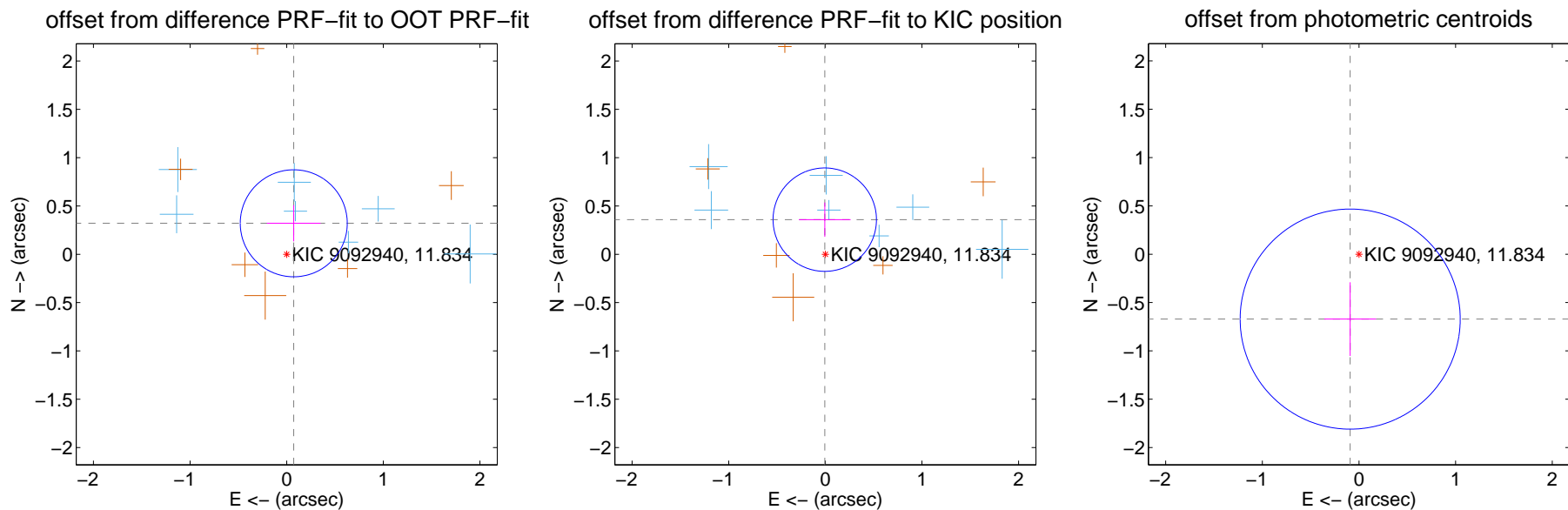
DV Centroid Data

Supplemental centroid analysis for 009092940-03. **Kepler magnitude: 11.83.** Transit SNR 9.29

There are 7 quarters with good PRF difference image offsets

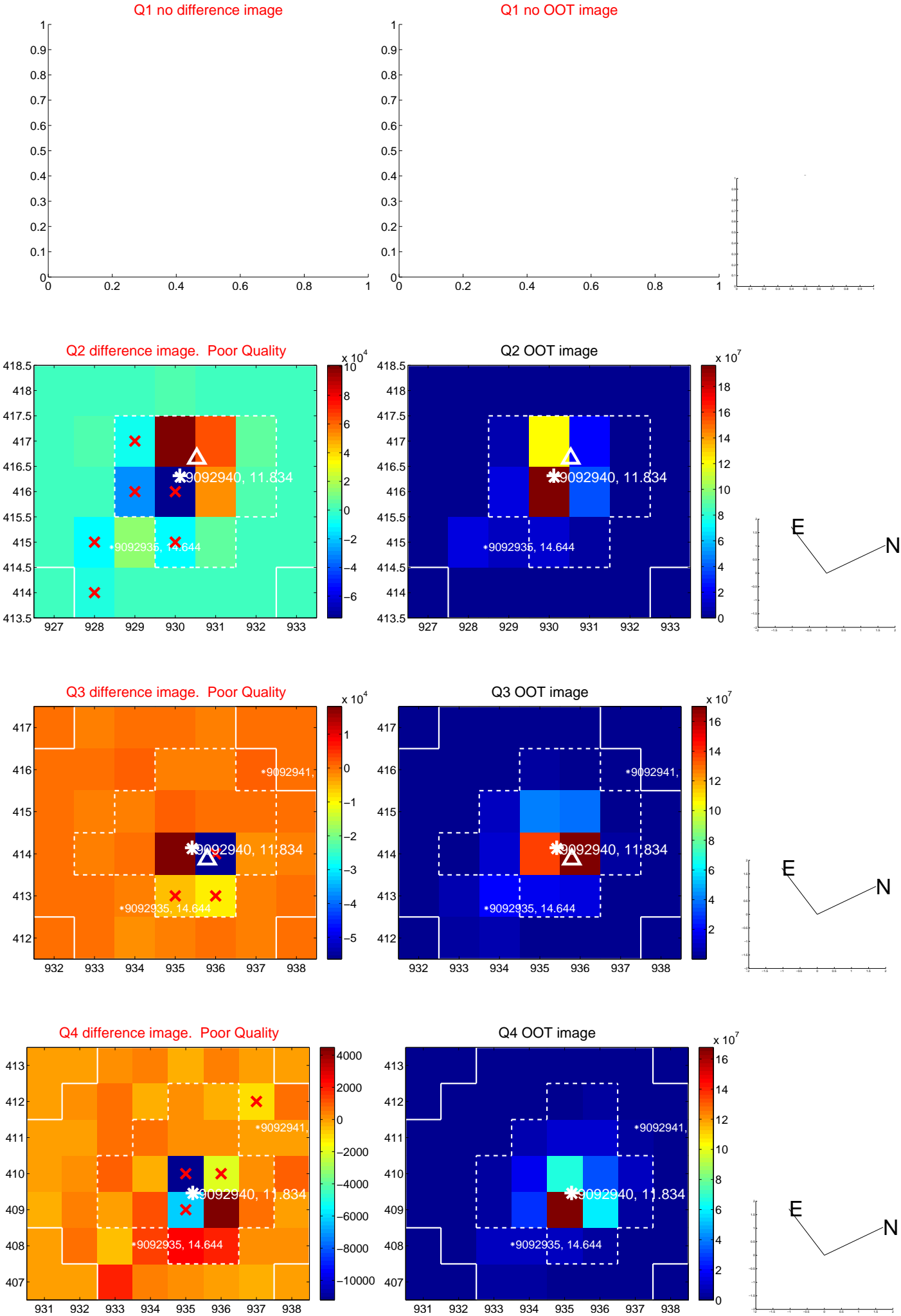
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.329 ± 0.185	1.78	-0.073 ± 0.277	0.321 ± 0.187
PRF-fit source offset from KIC position	0.358 ± 0.178	2.01	0.006 ± 0.267	0.358 ± 0.177
photometric centroid source offset	0.68 ± 0.38	1.79	0.09 ± 0.27	-0.67 ± 0.38

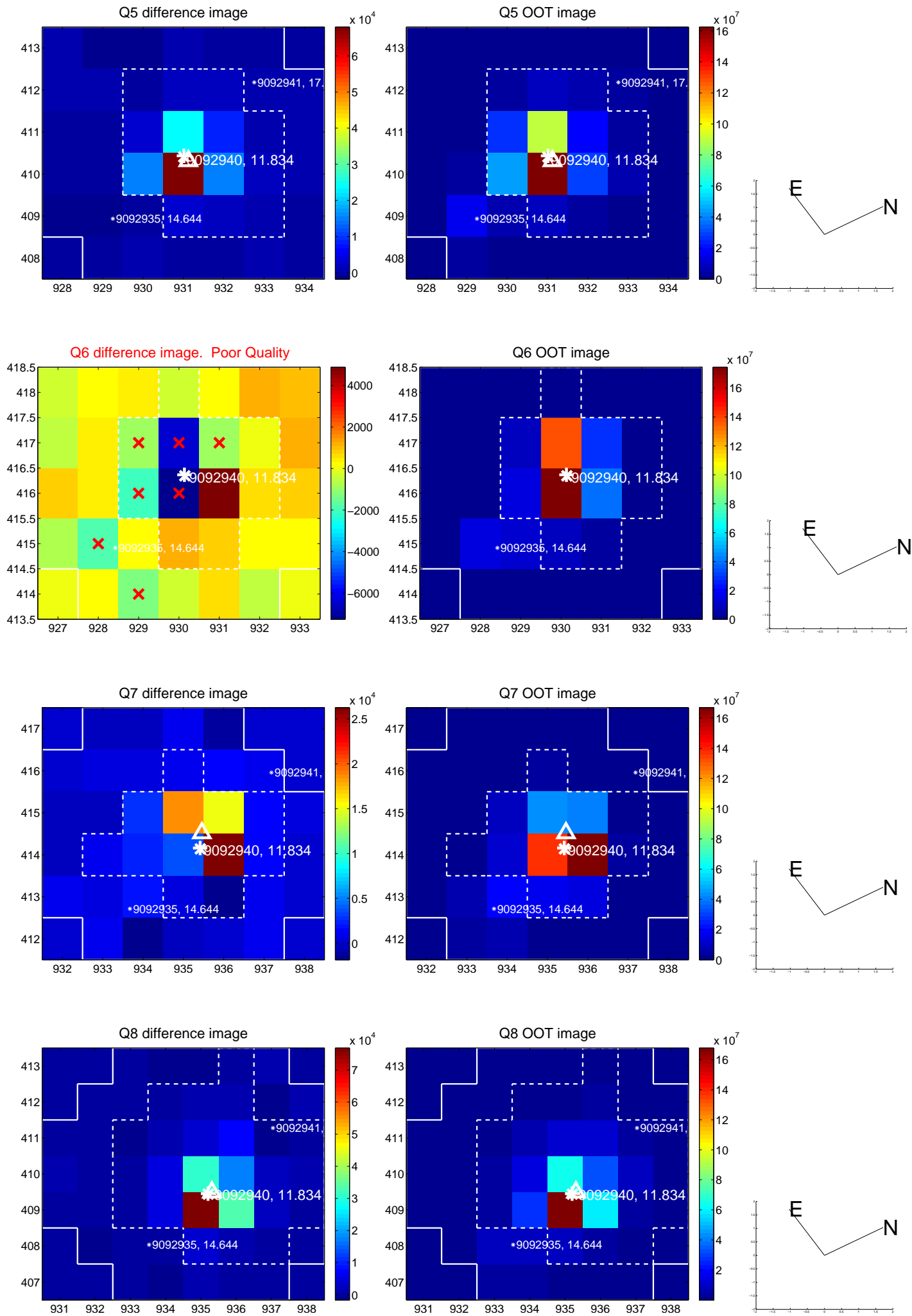


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

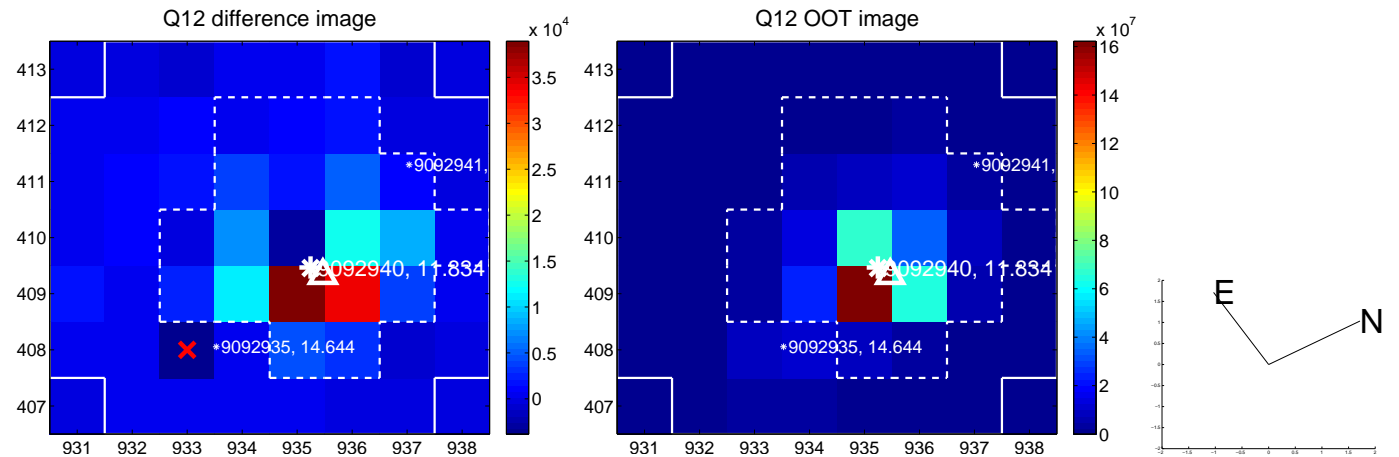
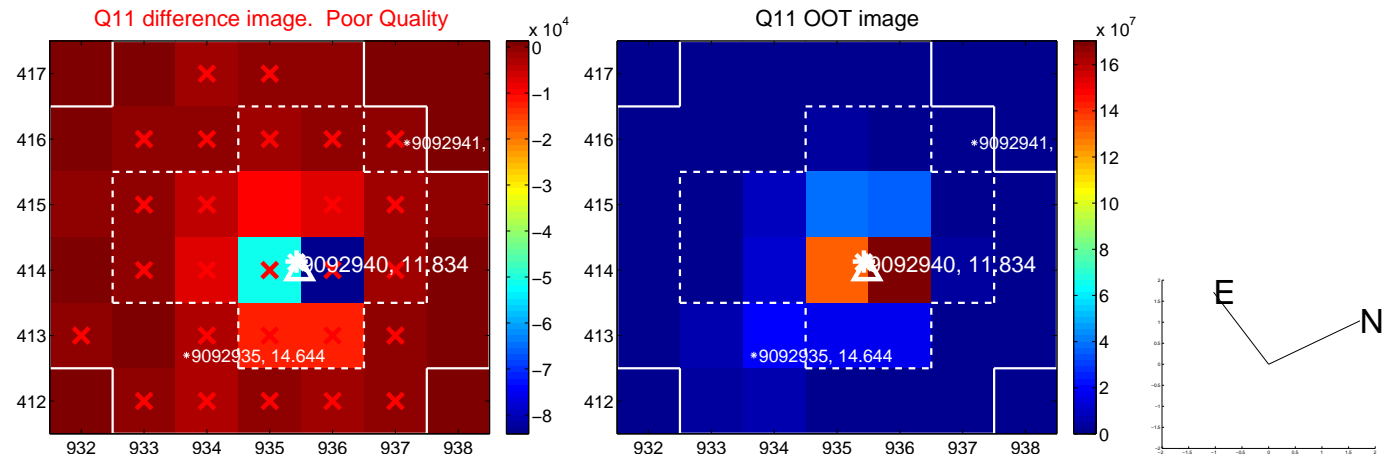
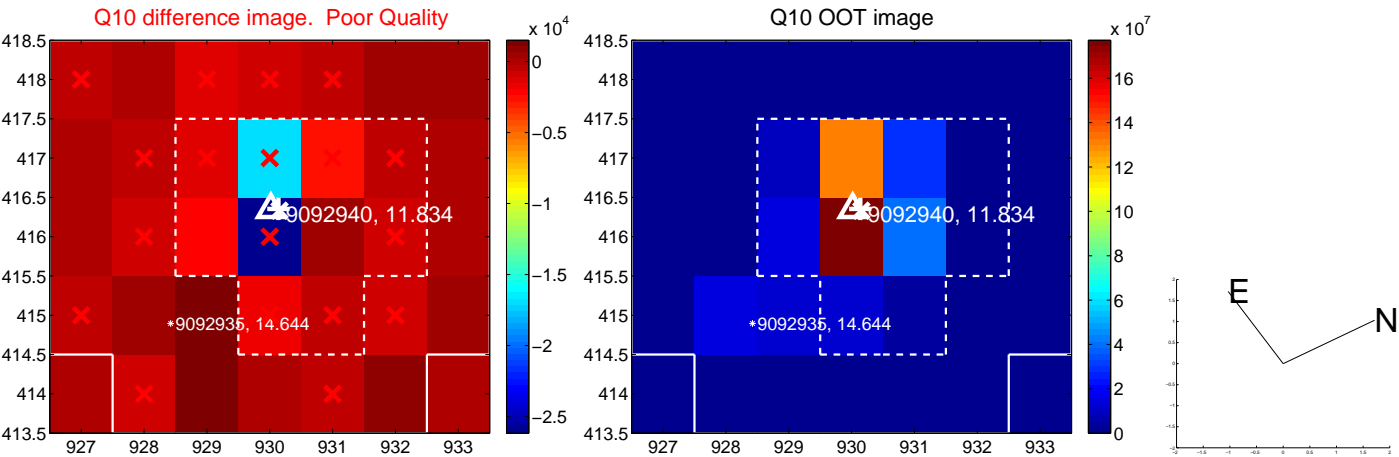
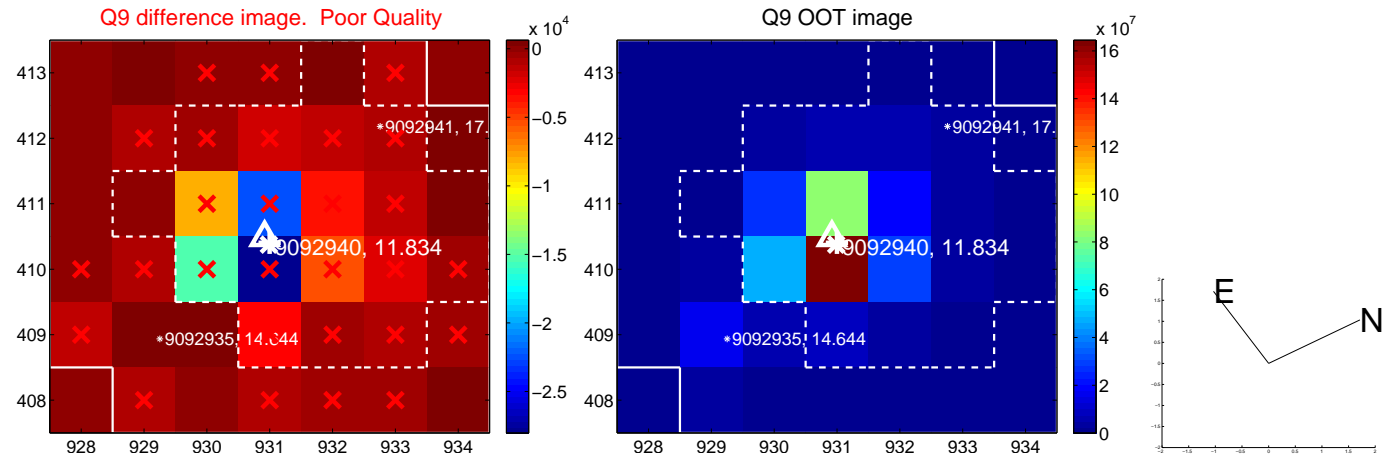
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



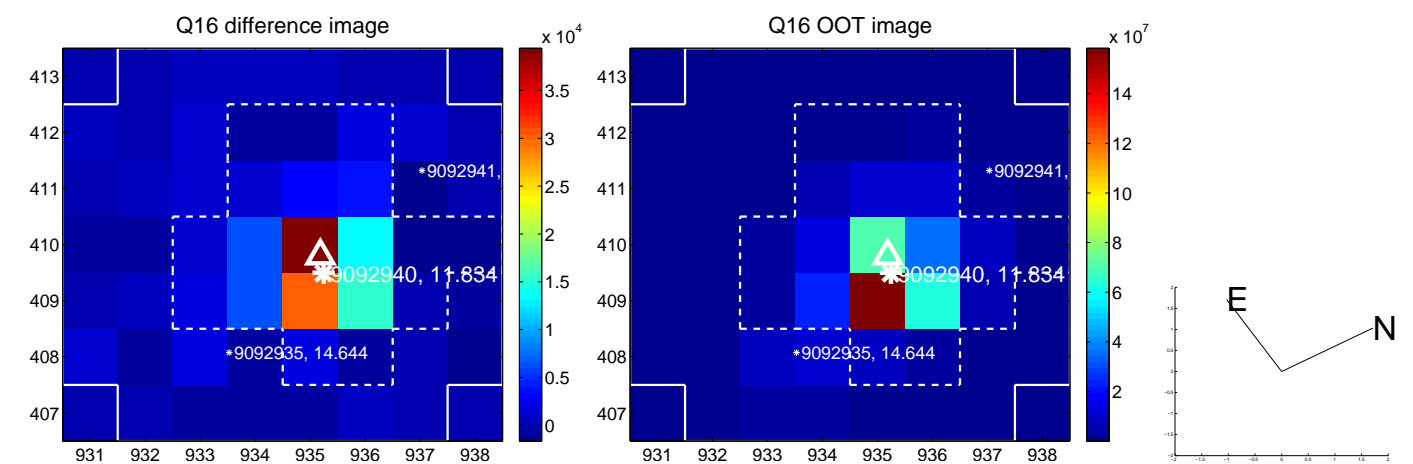
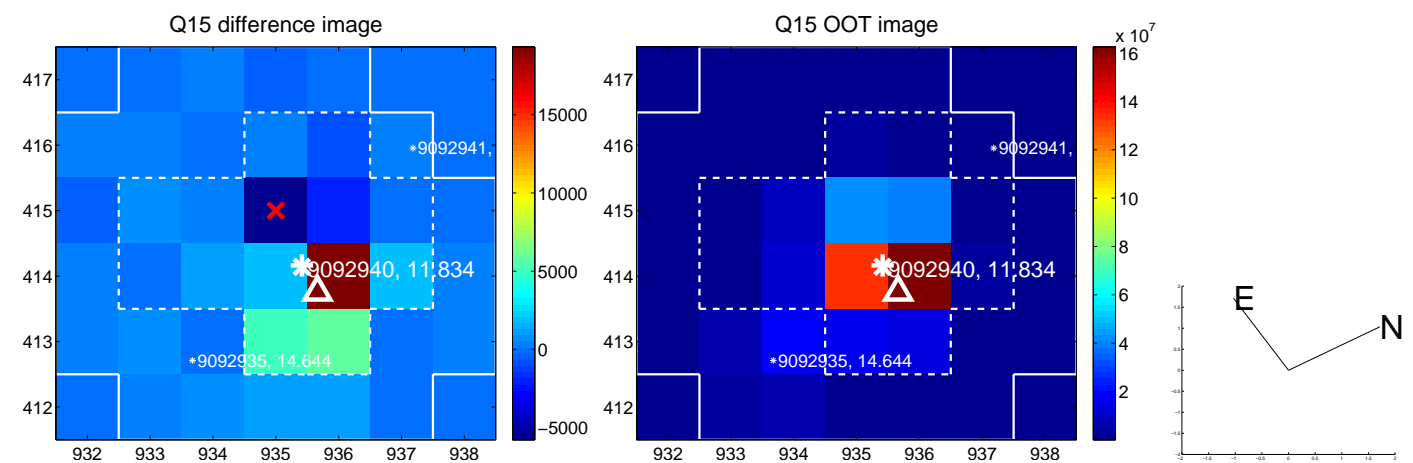
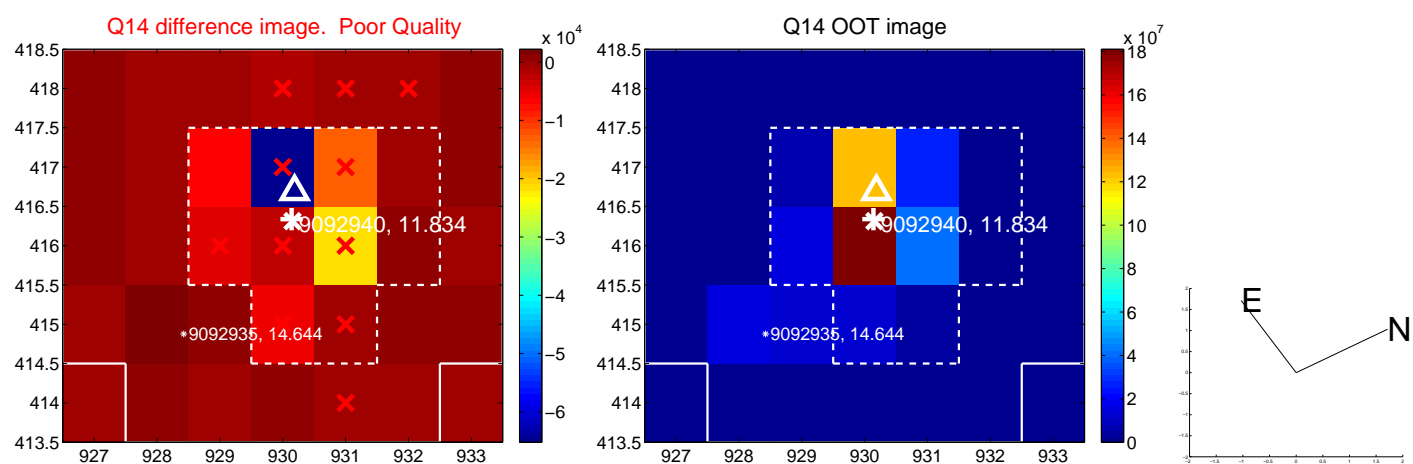
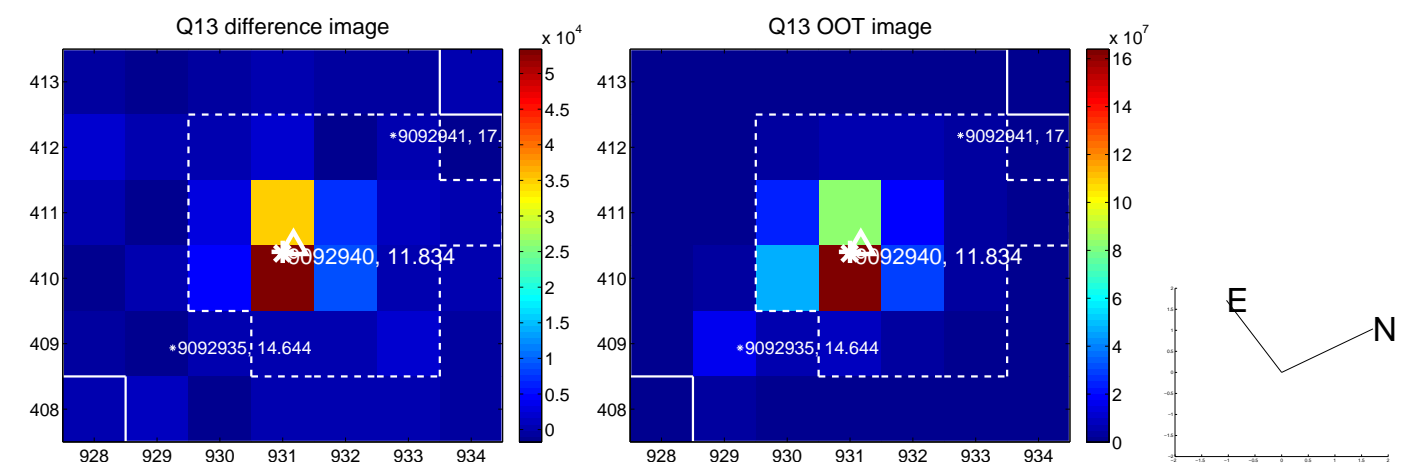
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



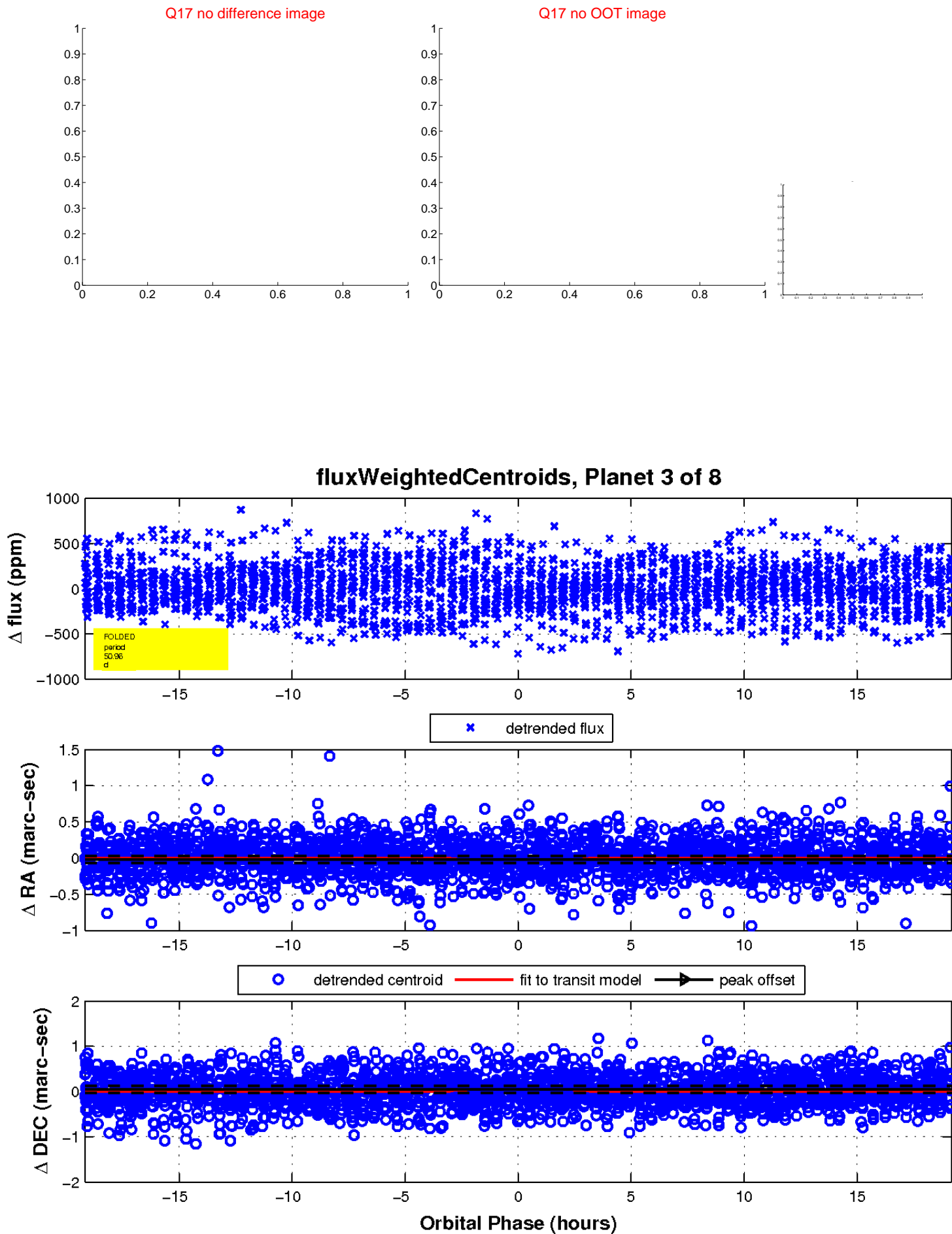
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

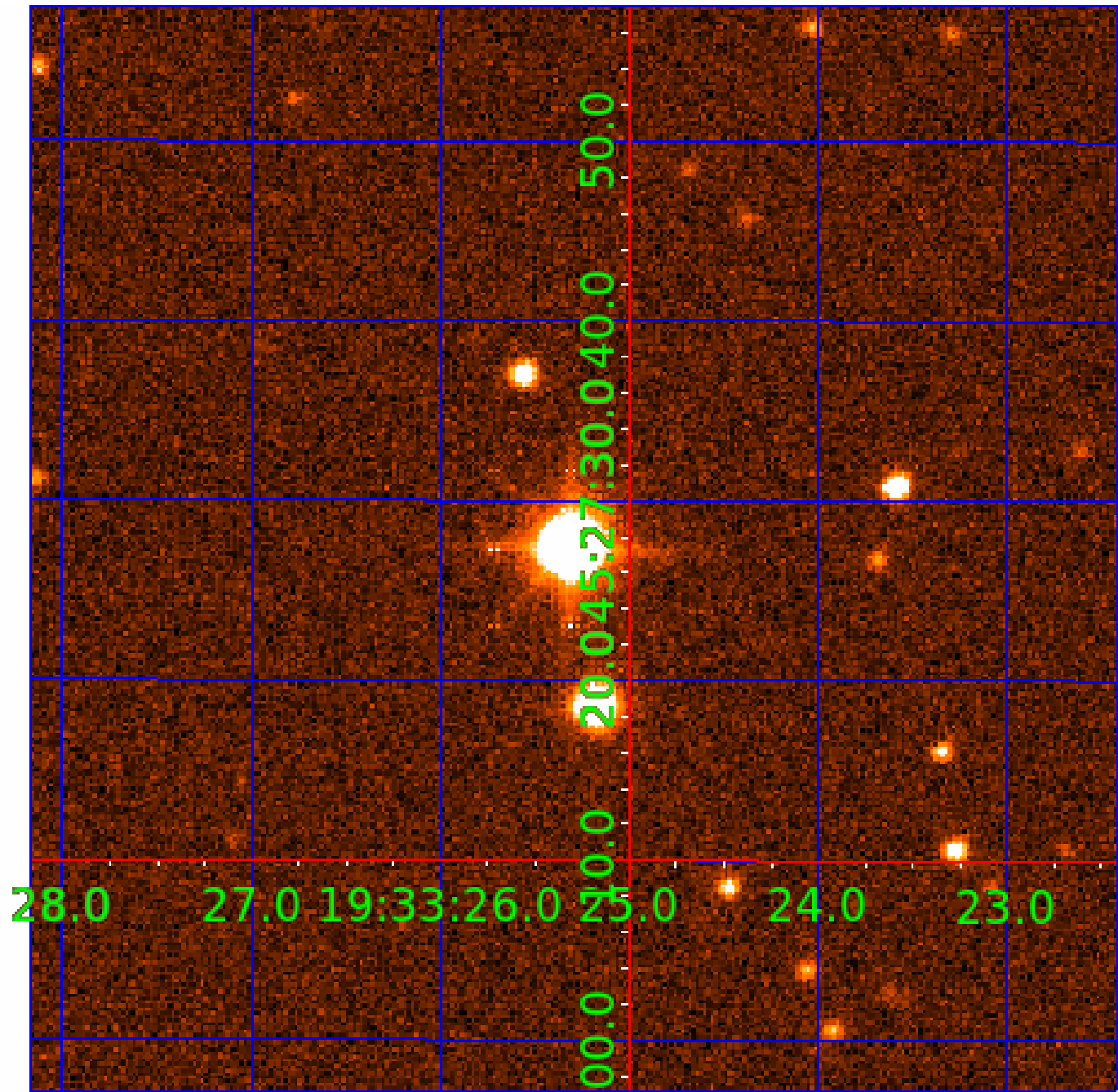


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009092940

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})
009092940-01	OBS	No	1.781951	131.871065	34.6	10.318	11.8	12.6	1.43	6575	0.98	3569.75
009092940-02	OBS	No	144.846819	248.414485	487.0	13.038	10.4	9.9	1.43	6575	6.07	10.14
009092940-03	OBS	No	50.961272	167.518869	182.6	6.394	9.5	9.3	1.43	6575	2.19	40.82
009092940-04	OBS	No	218.739298	203.063058	276.6	15.143	9.3	6.2	1.43	6575	2.51	5.85
009092940-05	OBS	No	45.135416	150.385762	116.4	5.916	8.8	5.5	1.43	6575	1.80	47.99
009092940-06	OBS	No	164.301407	153.974230	284.3	10.053	8.7	8.1	1.43	6575	4.71	8.57
009092940-07	OBS	No	83.498289	147.866364	219.1	3.151	9.2	7.8	1.43	6575	2.36	21.13
009092940-08	OBS	No	204.184137	131.967472	313.7	8.385	8.5	7.5	1.43	6575	4.93	6.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009092940-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
009092940-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
009092940-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009092940-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009092940-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
009092940-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_UNCERTAIN

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

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

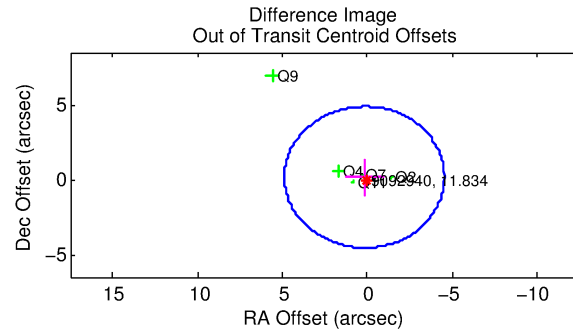
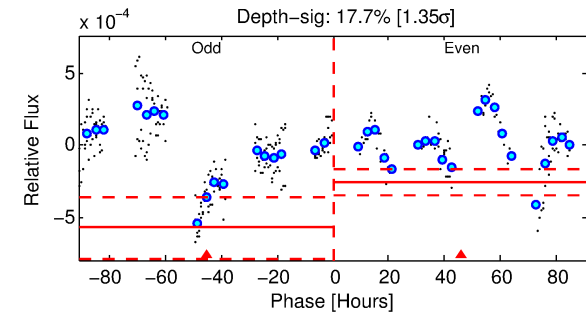
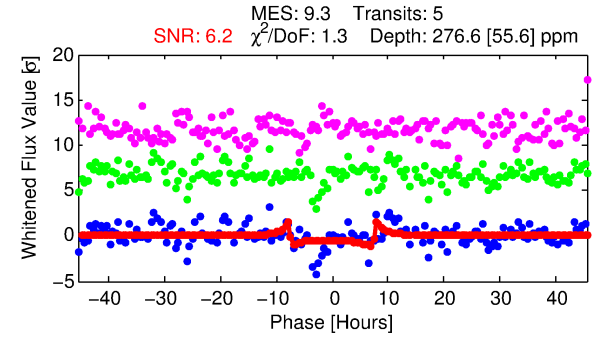
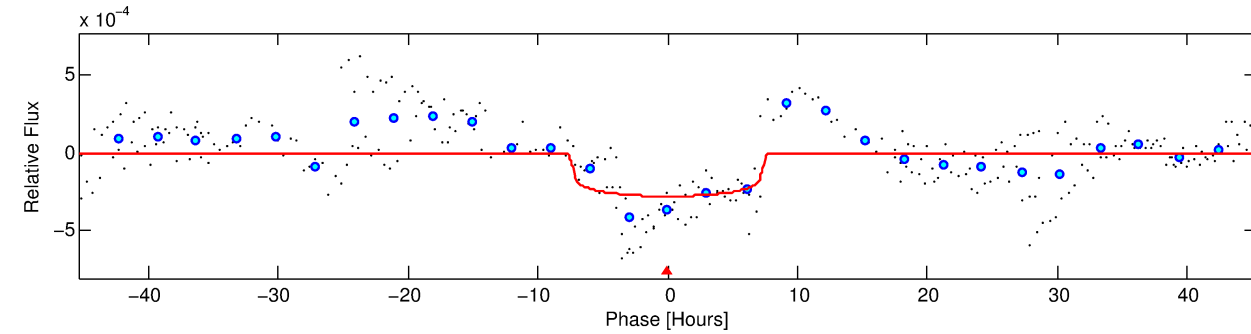
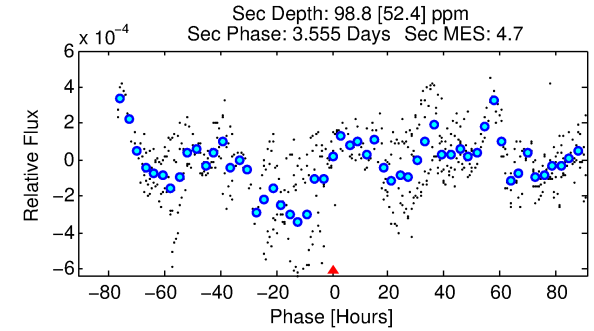
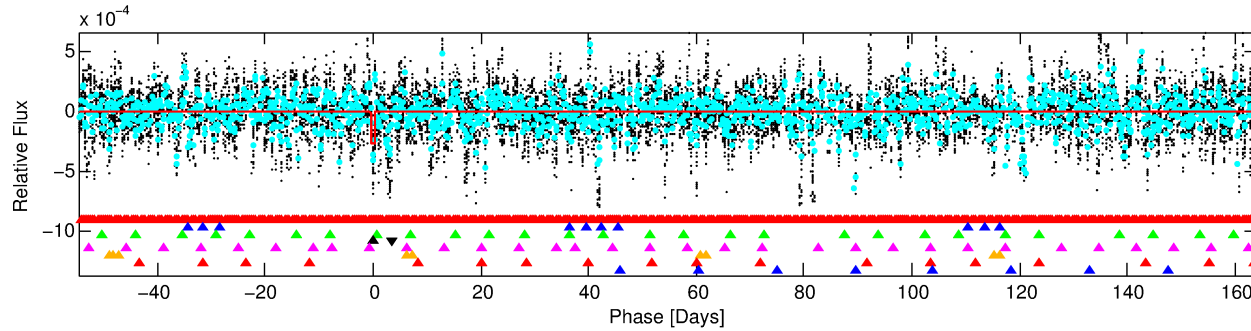
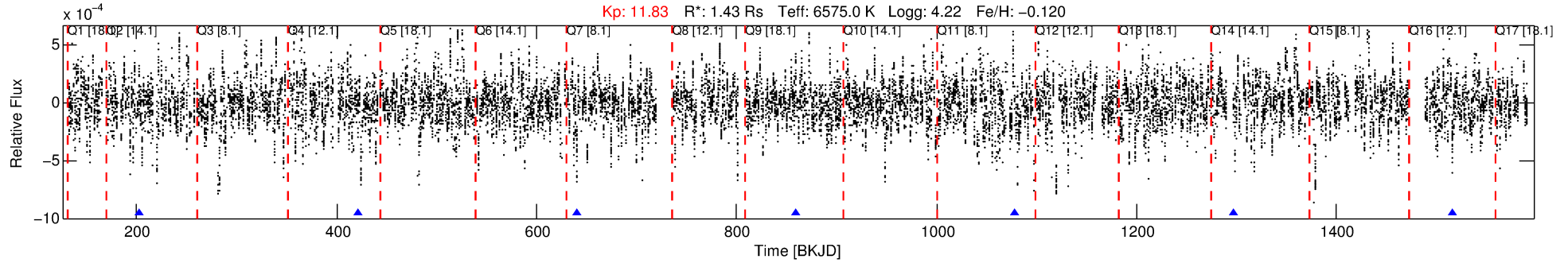
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092940-04

No Significant Match Found

DV One-Page Summary

KIC: 9092940 Candidate: 4 of 8 Period: 218.739 d



DV Fit Results:

Period = 218.73930 [0.00411] d
Epoch = 203.0631 [0.0132] BKJD
 $R_p/R^* = 0.0161$ [0.0045]
 $a/R^* = 86.63$ [118.37]
 $b = 0.65$ [1.23]
 $\text{Seff} = 5.85$ [2.25]
 $T_{\text{eq}} = 397$ [38] K
 $R_p = 2.51$ [1.05] R_e
 $a = 0.7644$ [0.1912] AU
 $A_g = 5035.80$ [4280.39] [1.18σ]
 $T_{\text{effp}} = 5165$ [1018] K [4.68σ]

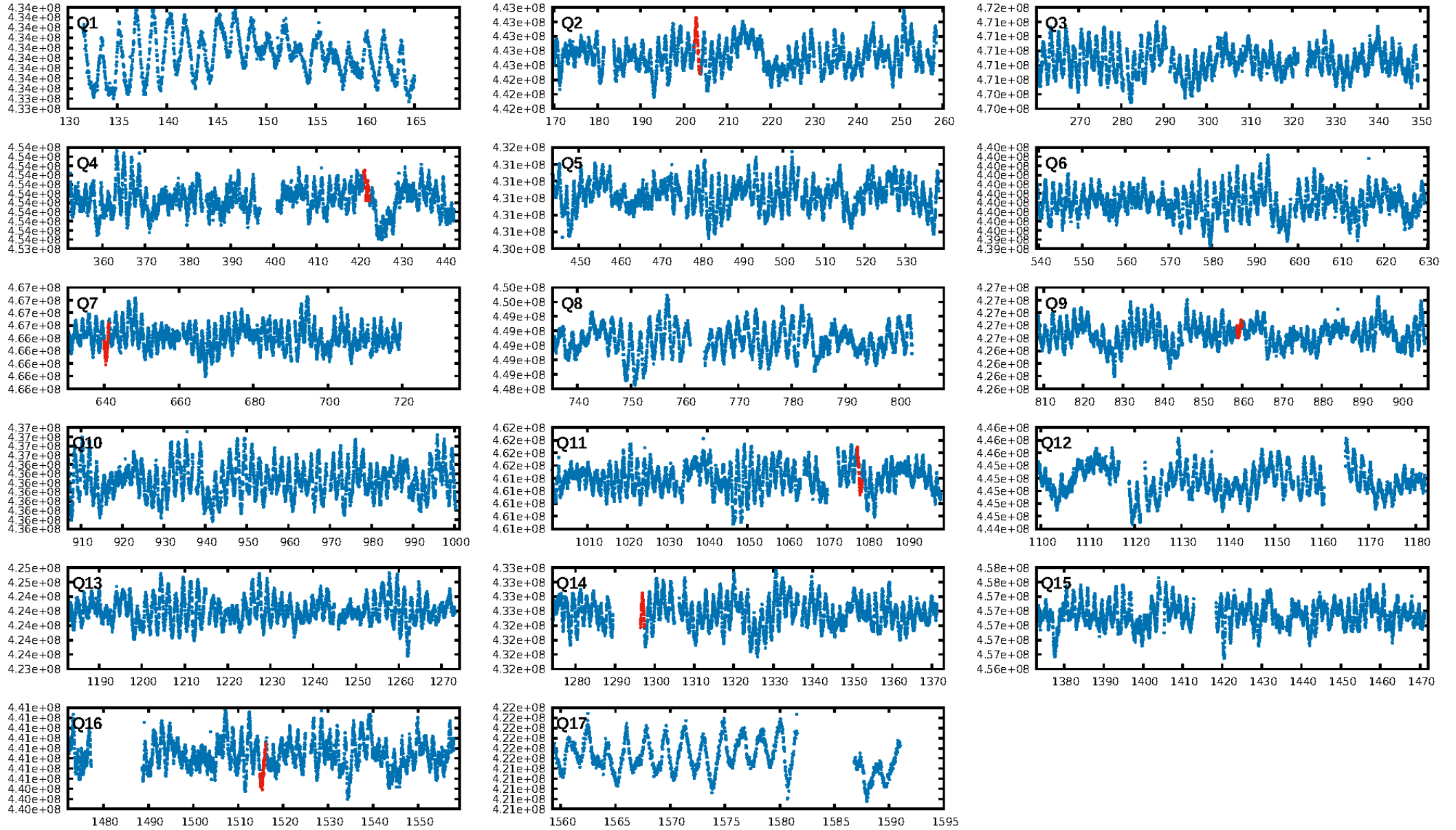
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [20.18σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.40e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.4223
Centroid-sig: 1.1%
Centroid-so: 1.148 arcsec [2.50σ]
OotOffset-rm: 0.224 arcsec [0.14σ]
KicOffset-rm: 0.296 arcsec [0.32σ]
OotOffset-st: 1/2/1/1 [5]
KicOffset-st: 1/2/1/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/5]

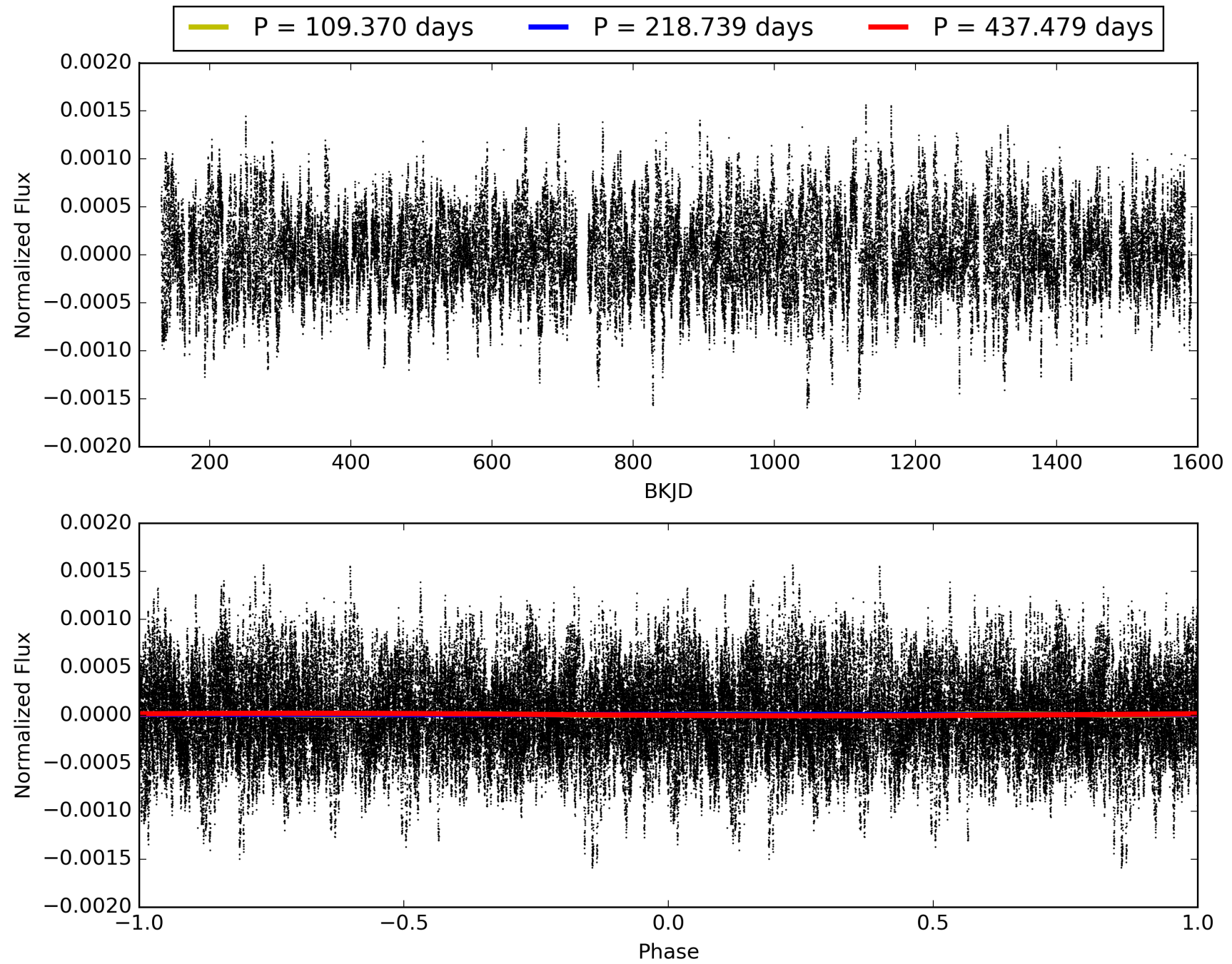
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:42:09 Z

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

TCE 009092940-04, PDC Light Curves

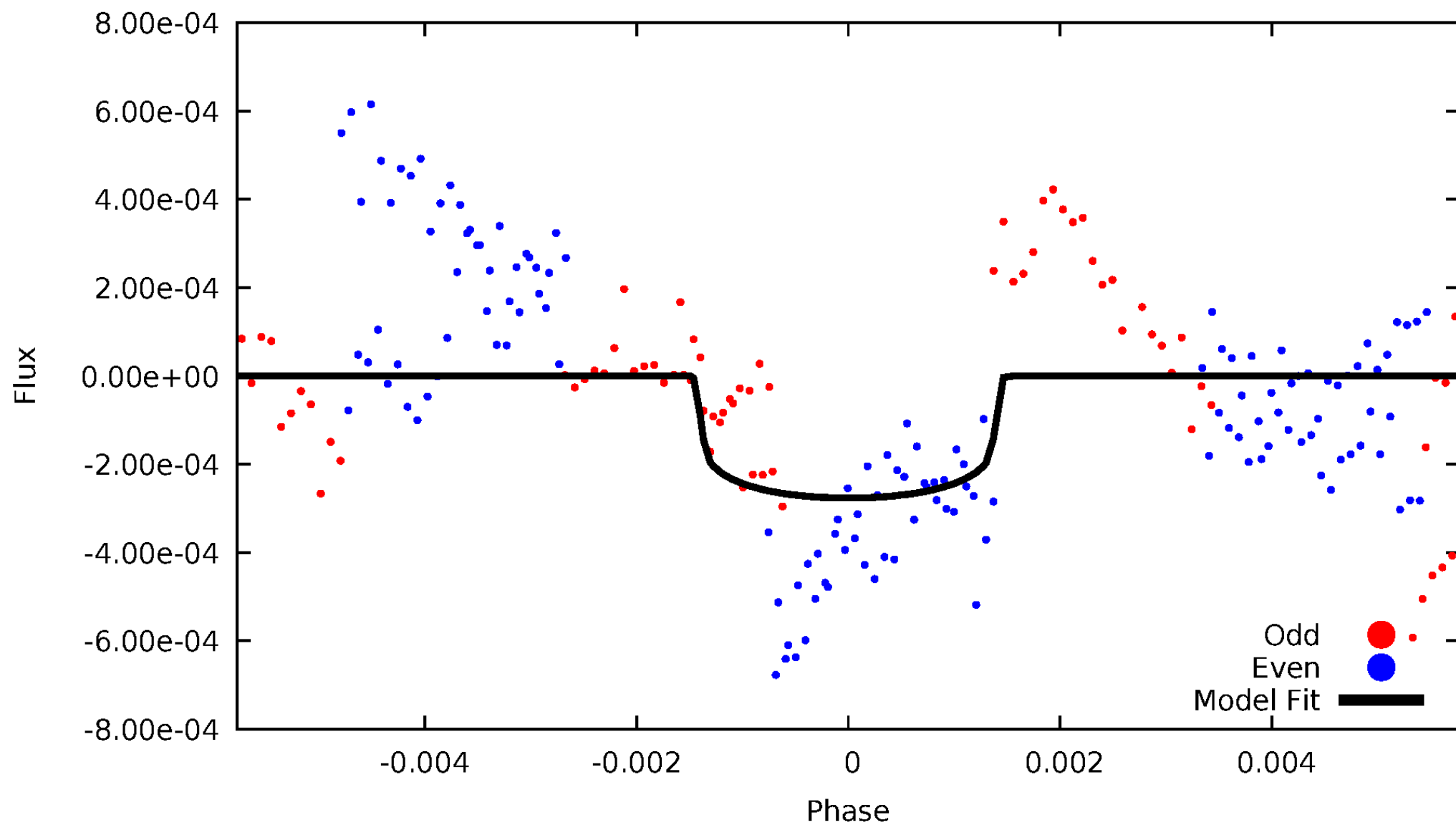


TCE 009092940-04



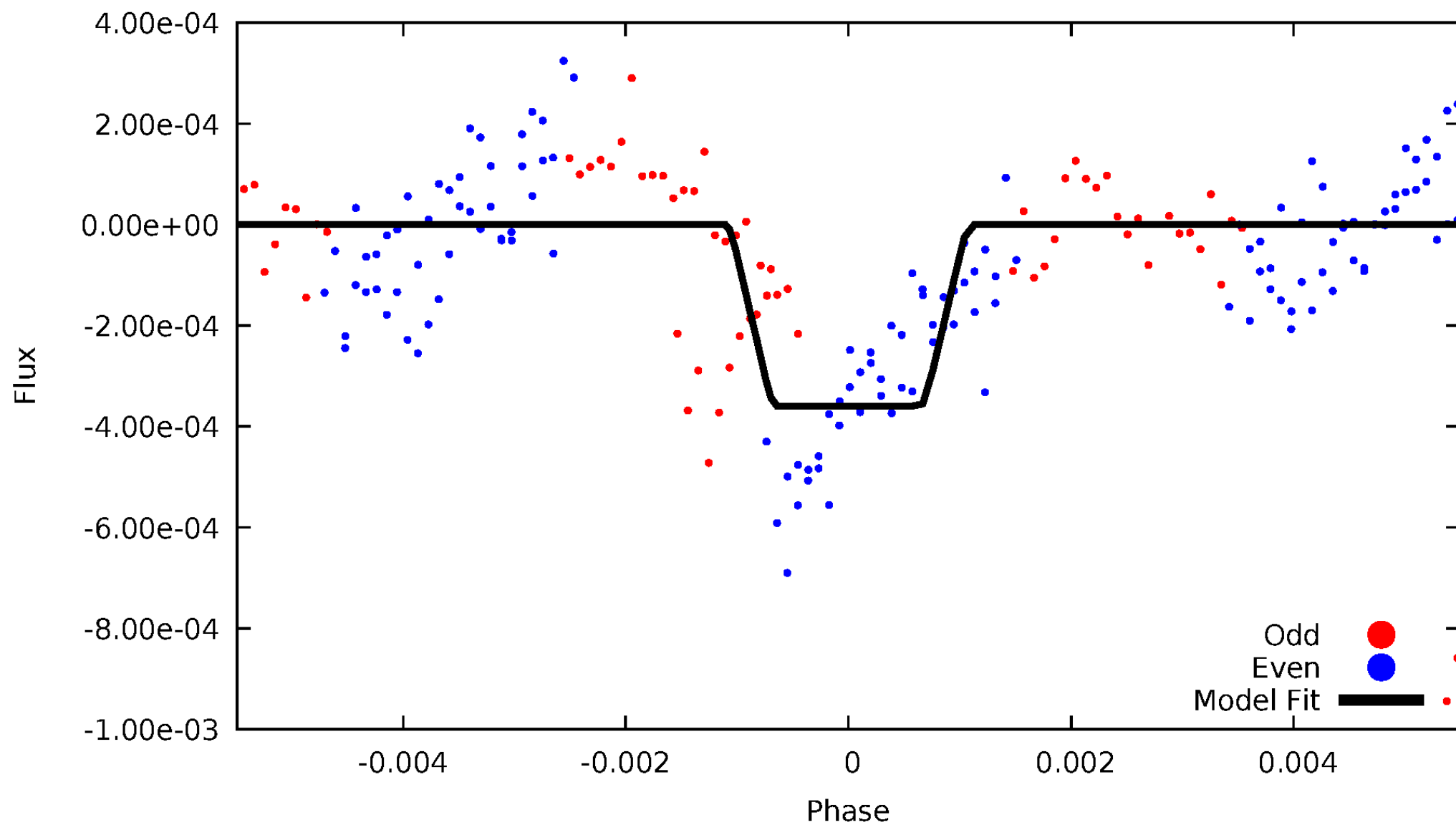
DV Odd/Even

TCE 009092940-04



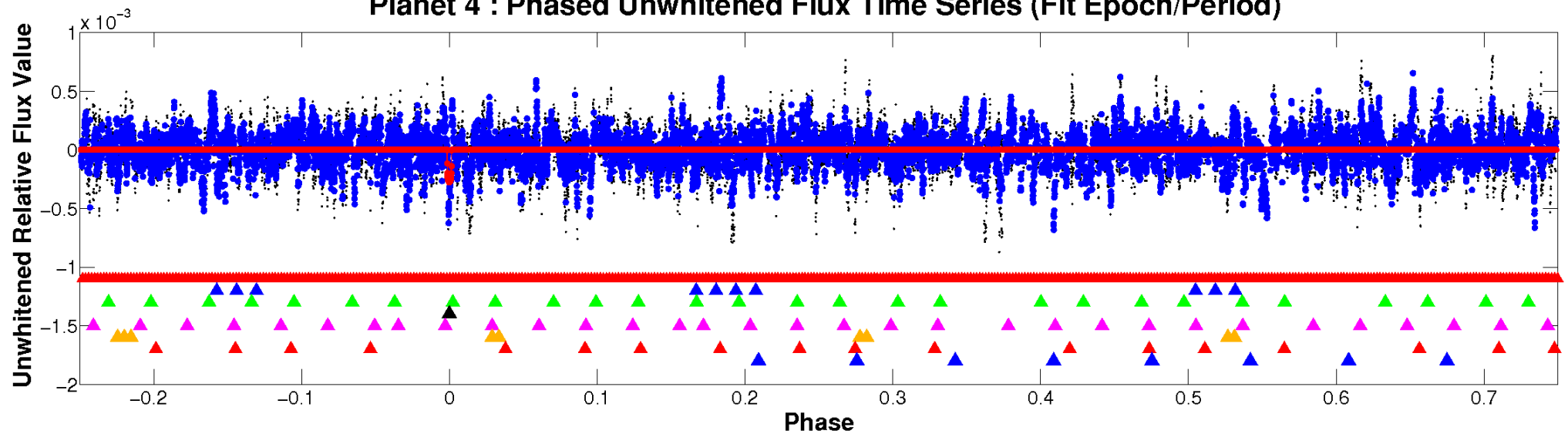
ALT Odd/Even

TCE 009092940-04

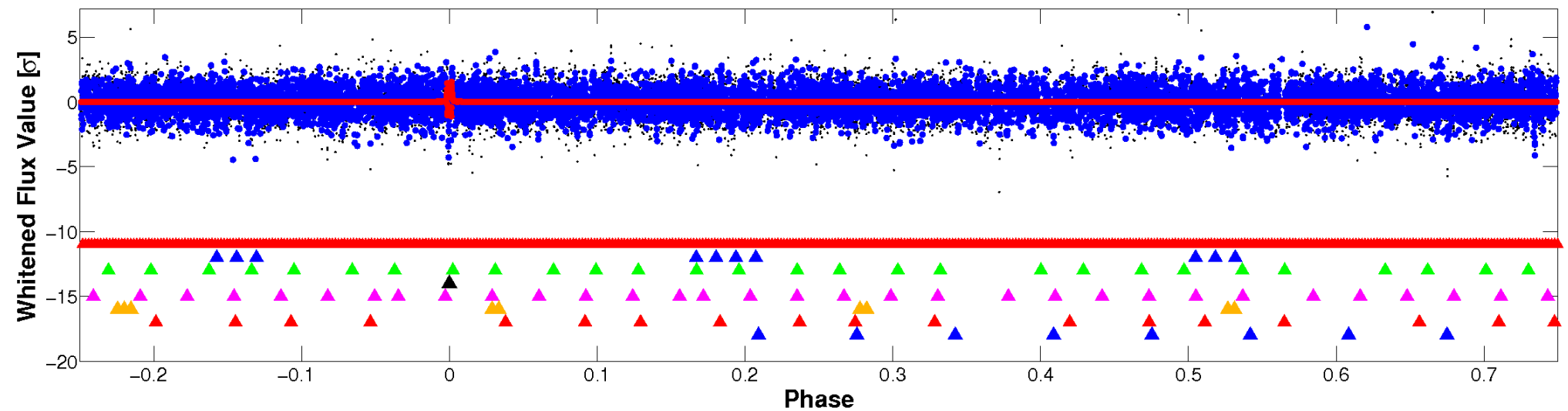


Non-Whitened Vs. Whitened Light Curve

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

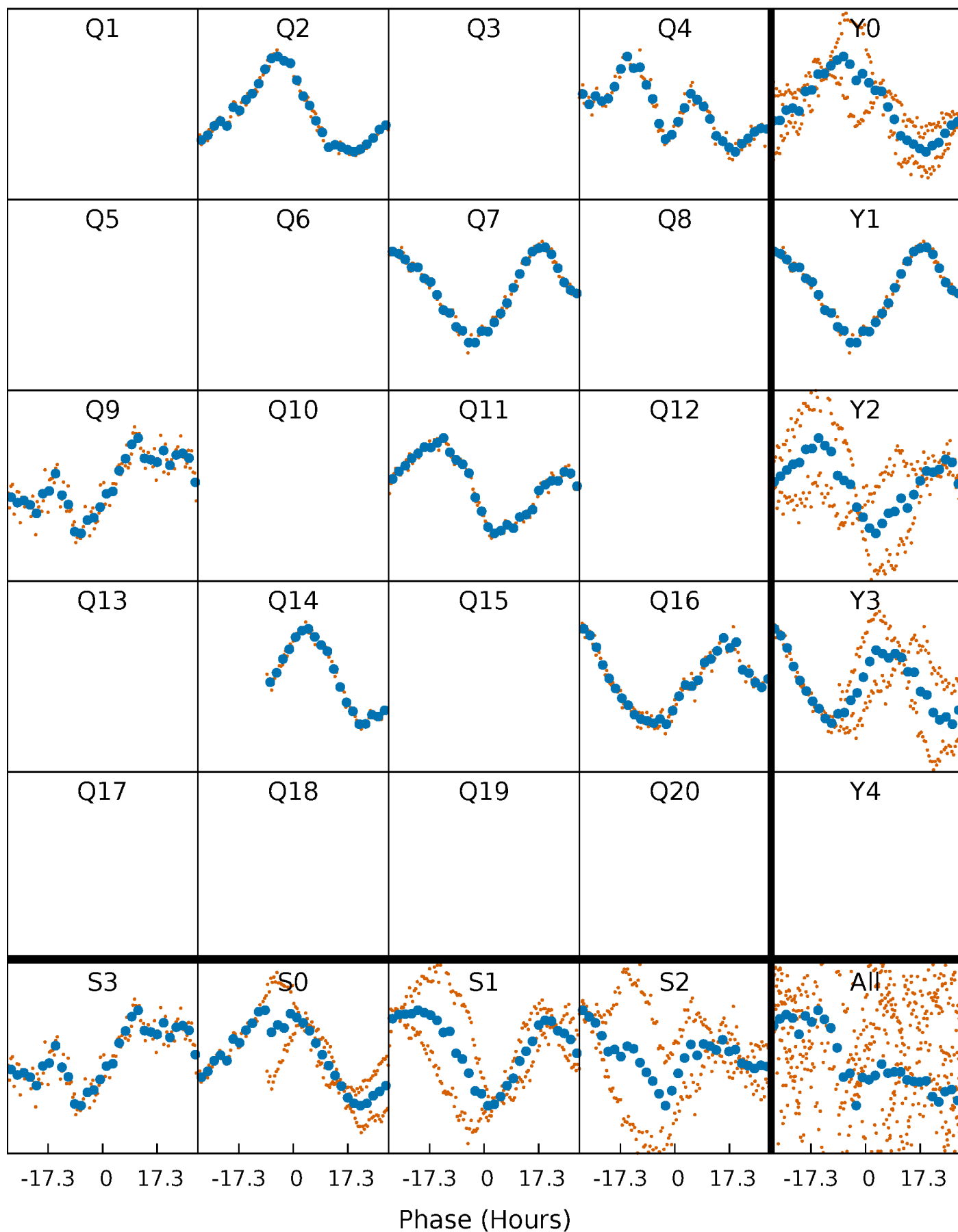


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



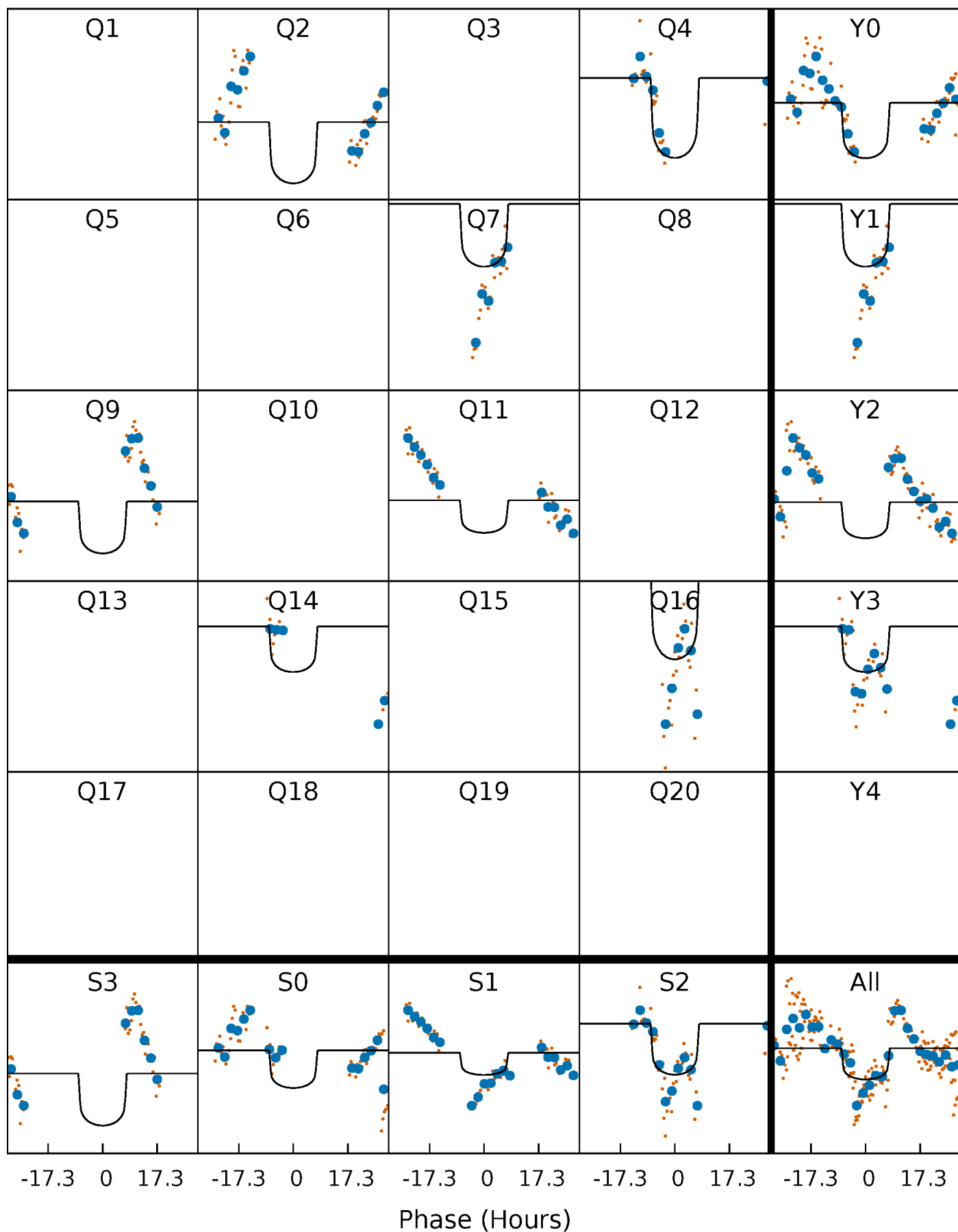
PDC Quarter-Phased Transit Curves

TCE 009092940-04 $P=218.739298$ Days $T_0=203.063058$ (BKJD)



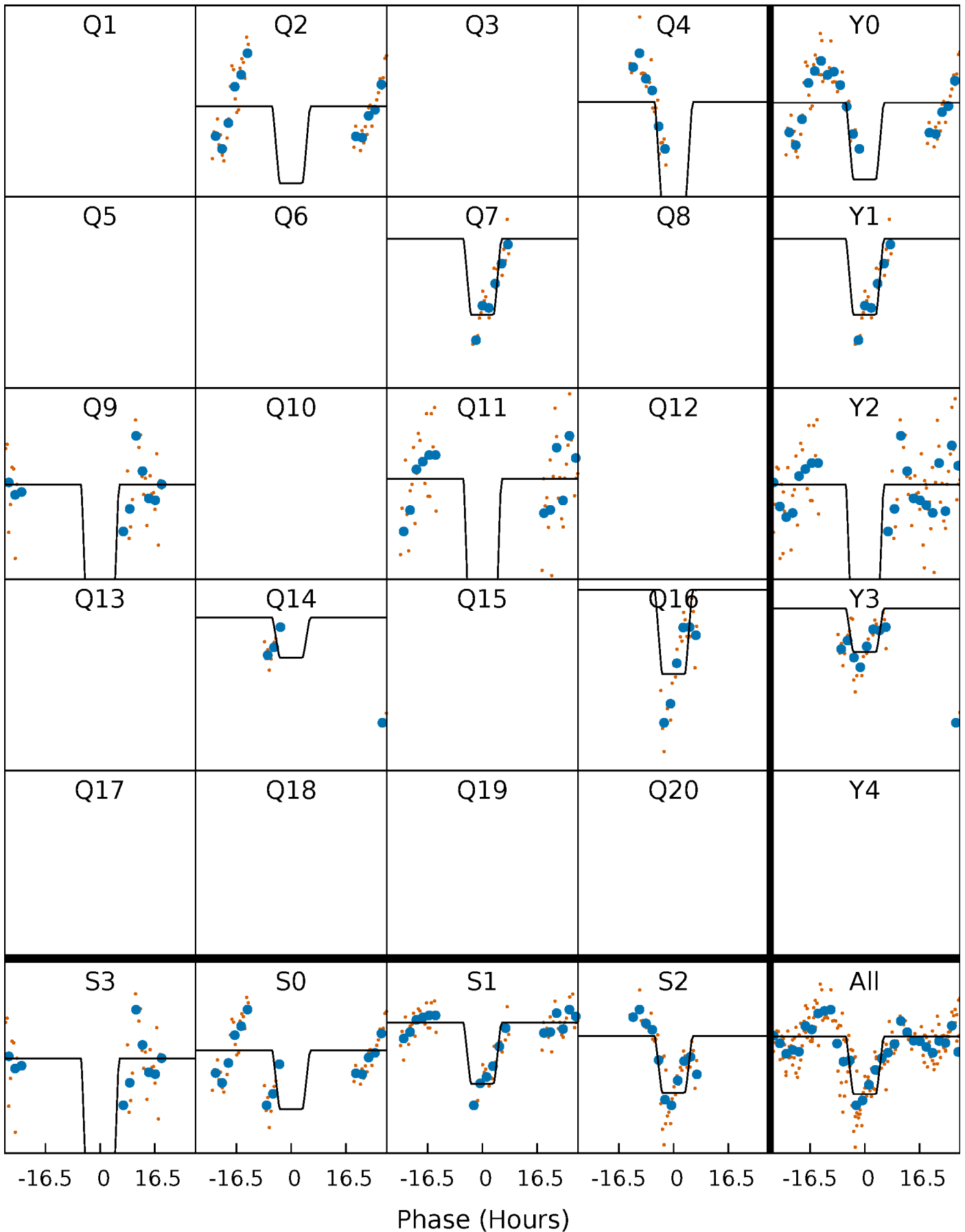
DV Quarter-Phased Transit Curves

TCE 009092940-04 $P=218.739298$ Days $T_0=203.063058$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

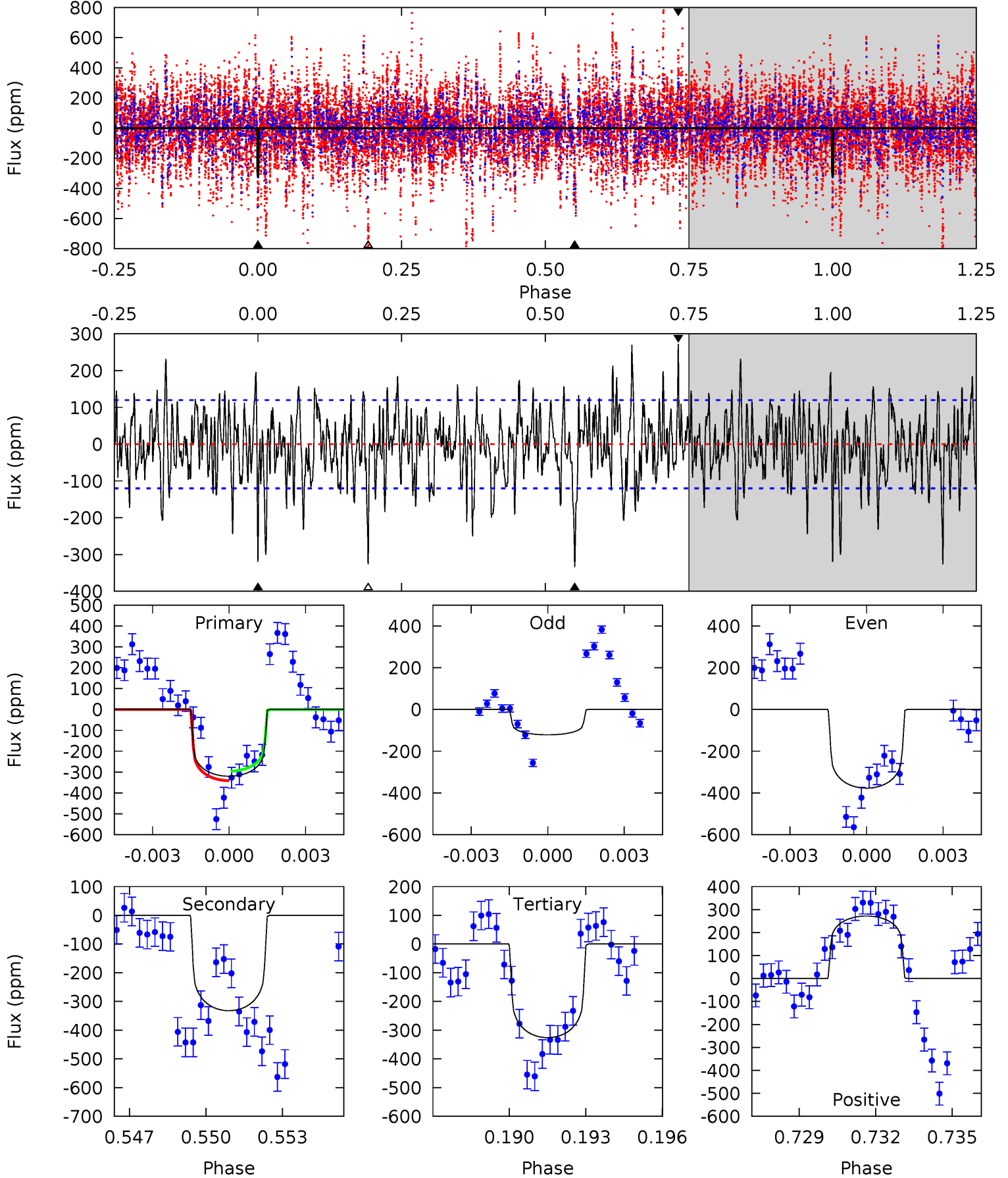
TCE 009092940-04 $P=218.745859$ Days $T_0=203.019374$ (BKJD)



DV Model-Shift Uniqueness Test

009092940-04, P = 218.739298 Days, E = 203.063058 Days

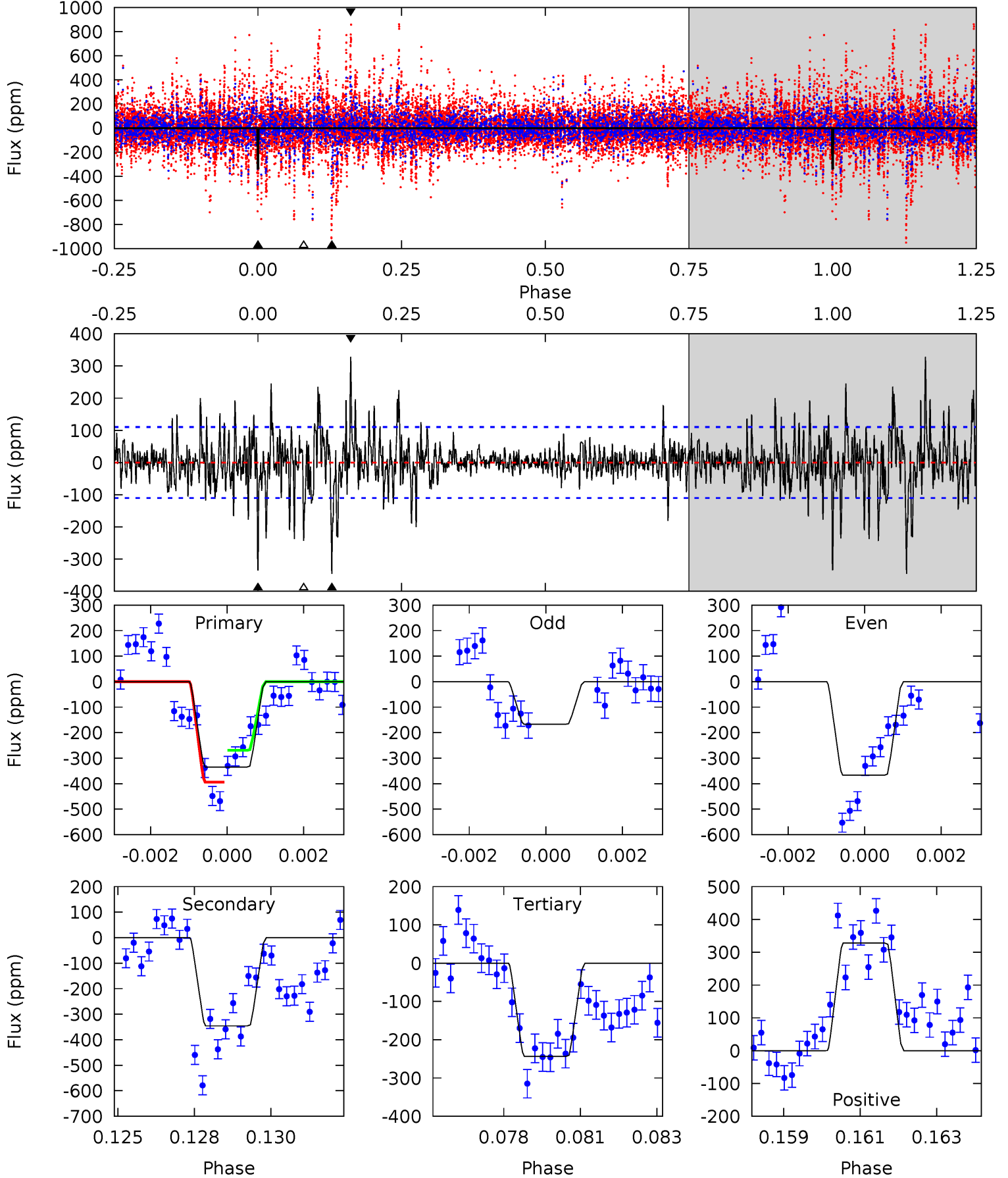
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	14.6	14.3	11.9	5.26	2.98	3.55	-0.27	2.10	0.27	2.64	5.02	0.50	0.45	1.00



Alt Model-Shift Uniqueness Test

009092940-04, P = 218.745859 Days, E = 203.019374 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.1	16.7	11.7	15.8	5.31	3.06	2.91	4.41	0.32	4.94	0.86	3.92	1.02	0.49	2.99



Stellar Parameters For KIC 009092940

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6575^{+181}_{-250}	$4.223^{+0.136}_{-0.187}$	$-0.120^{+0.250}_{-0.300}$	$1.429^{+0.439}_{-0.293}$	$1.247^{+0.188}_{-0.188}$	$0.602^{+0.444}_{-0.293}$
	+3%/-4%	+3%/-4%	+208%/-250%	+31%/-21%	+15%/-15%	+74%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009092940-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-332 ± 23	$2.47^{+0.90}_{-0.73}$	559^{+42}_{-36}	7114^{+1704}_{-978}	17204^{+18311}_{-7822}
Alt.	-346 ± 21	$2.95^{+0.89}_{-0.73}$	558^{+42}_{-37}	6509^{+1117}_{-668}	12734^{+9711}_{-5143}

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

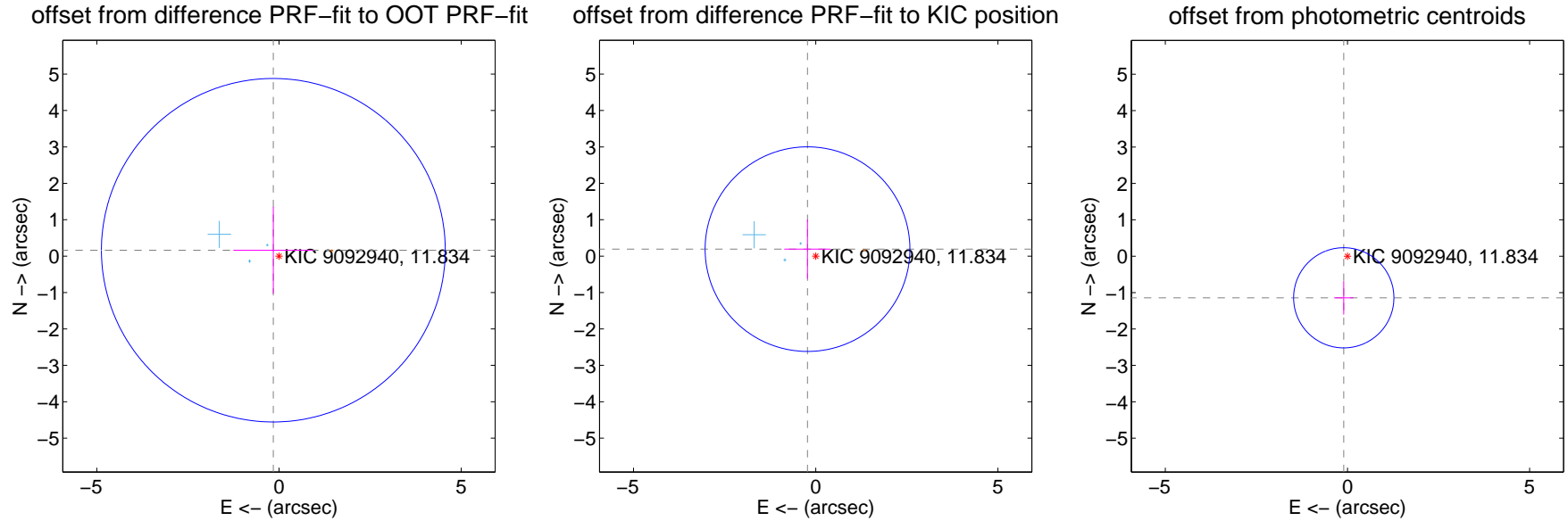
DV Centroid Data

Supplemental centroid analysis for 009092940-04. **Kepler magnitude: 11.83.** Transit SNR 6.17

There are 3 quarters with good PRF difference image offsets

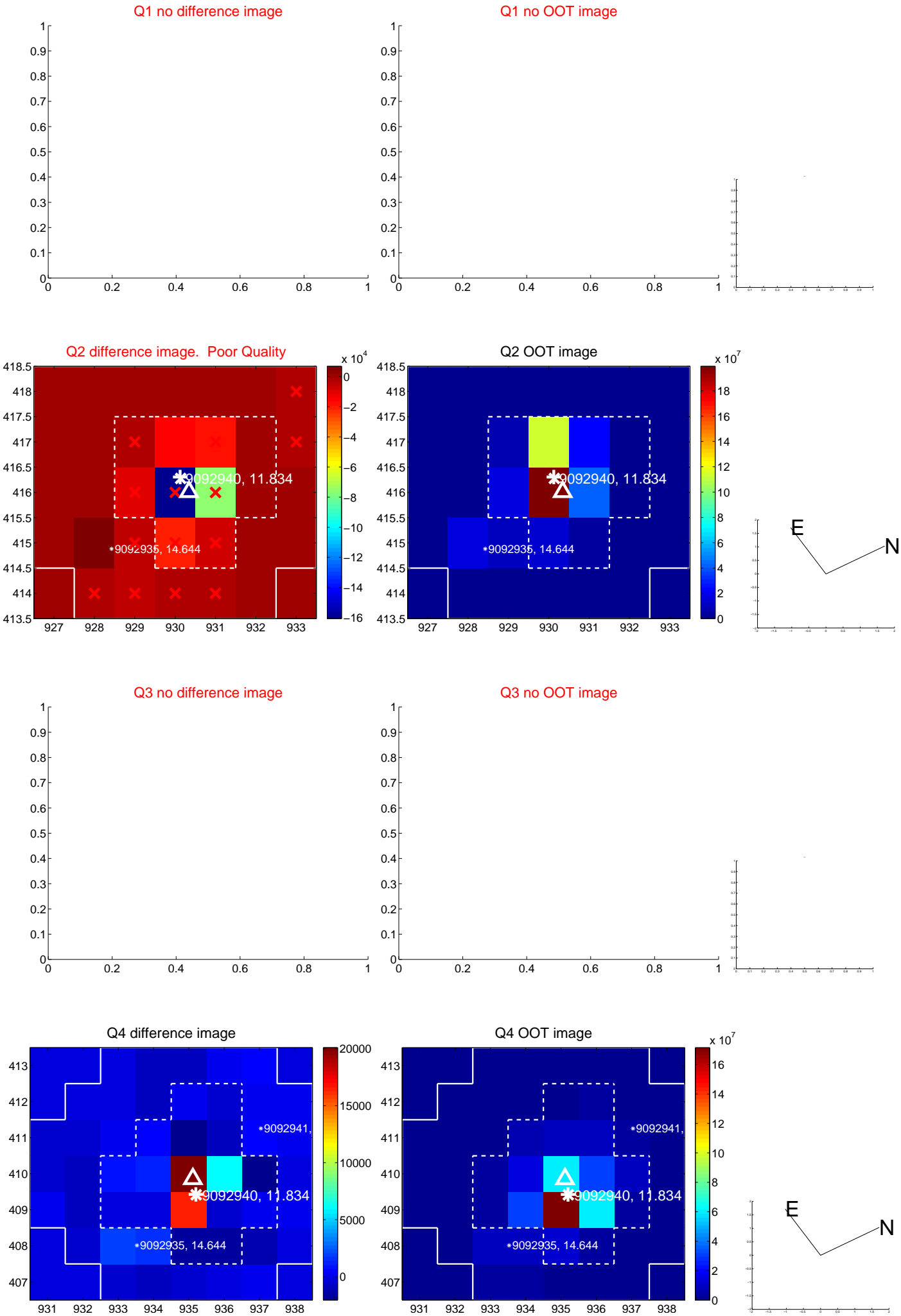
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.224 ± 1.573	0.14	0.155 ± 1.097	0.162 ± 1.192
PRF-fit source offset from KIC position	0.296 ± 0.937	0.32	0.225 ± 0.637	0.192 ± 0.814
photometric centroid source offset	1.15 ± 0.46	2.50	0.10 ± 0.27	-1.14 ± 0.46

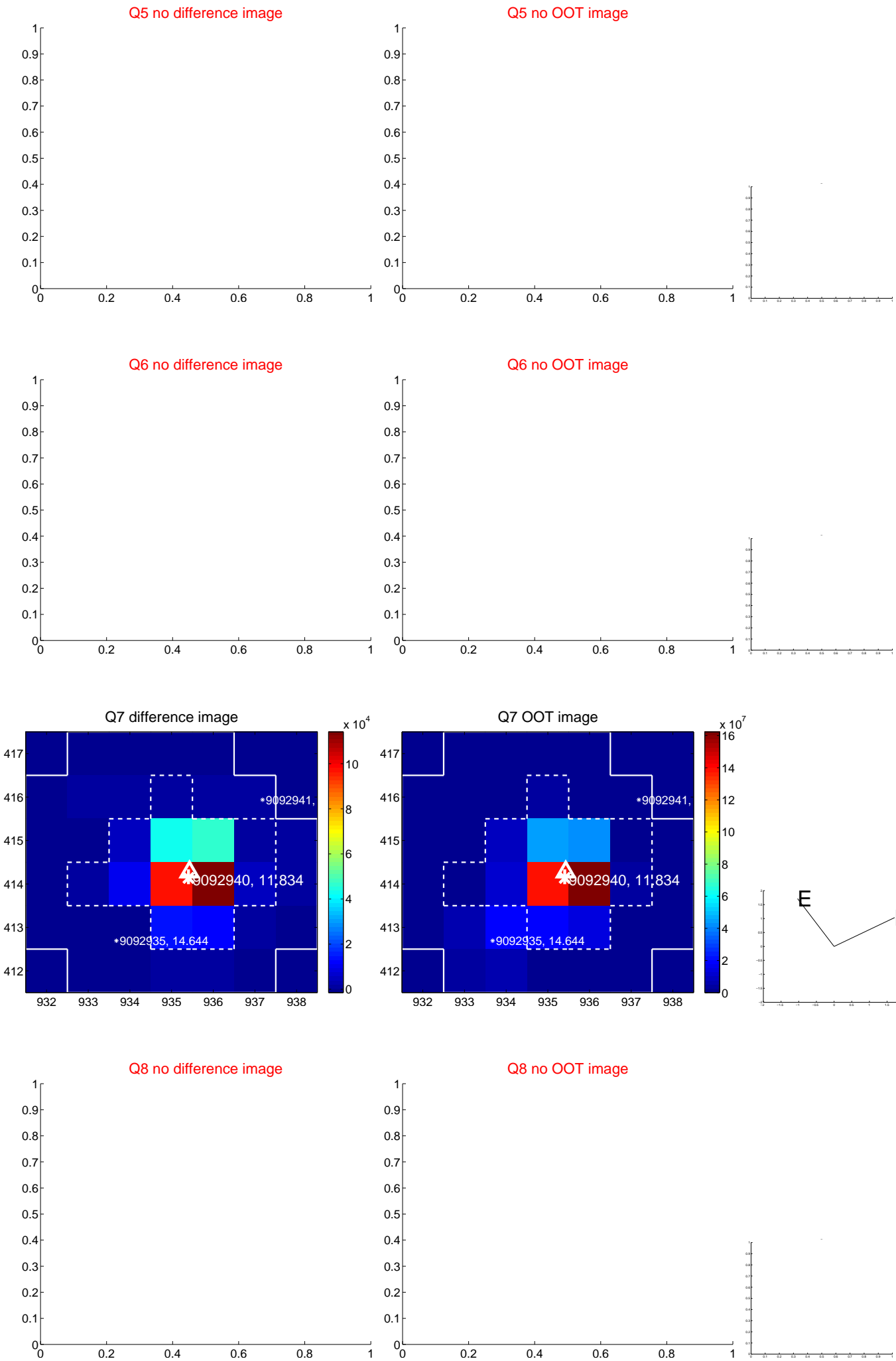


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

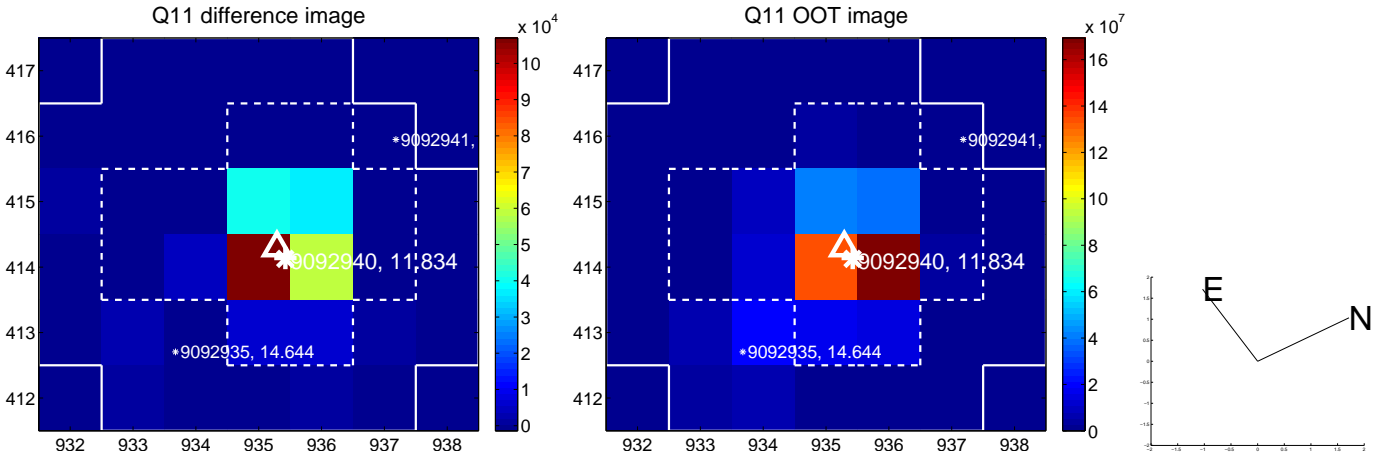
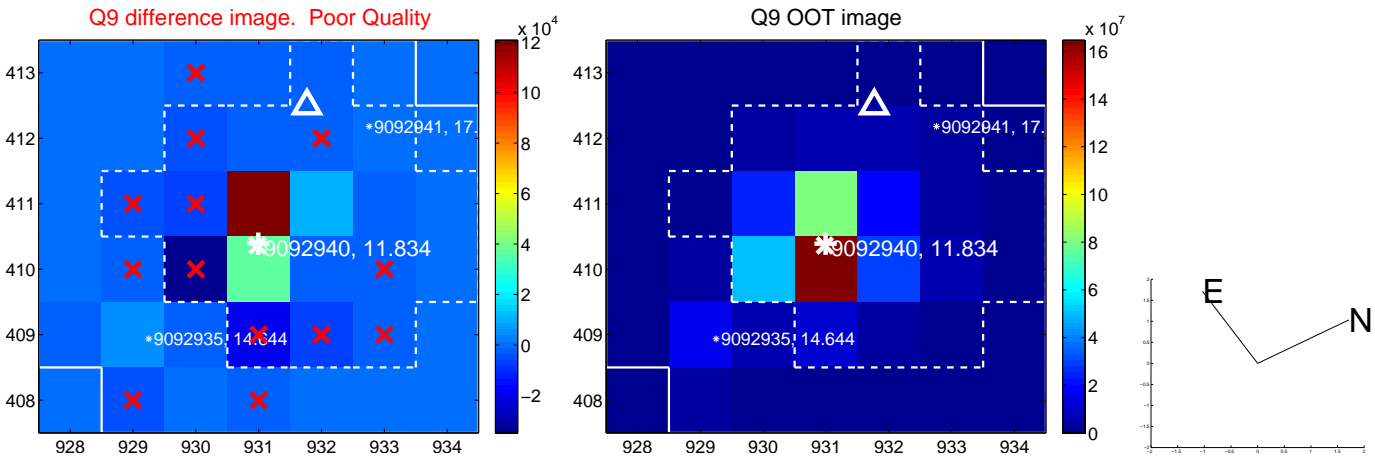
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



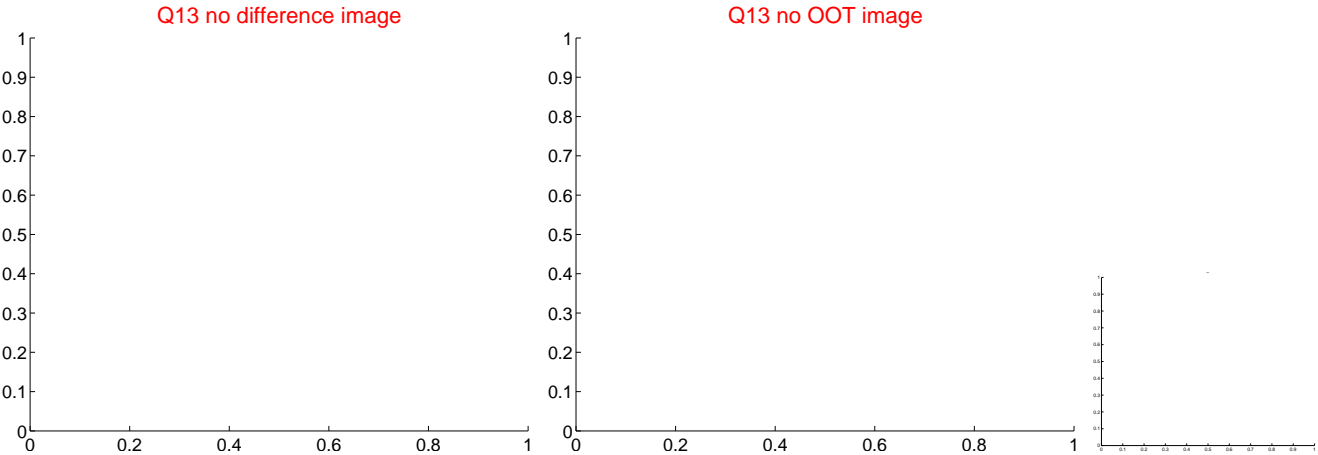
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



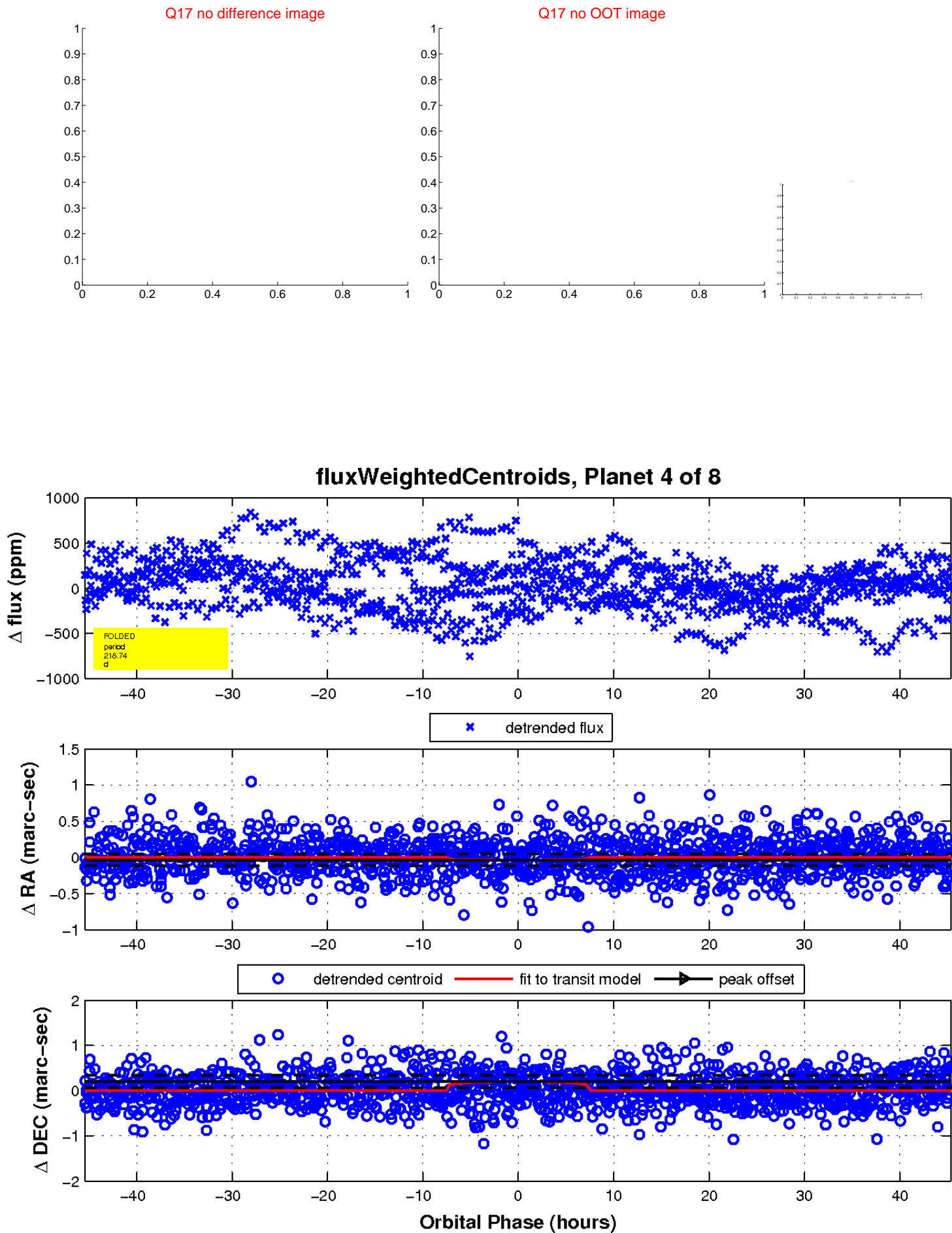
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

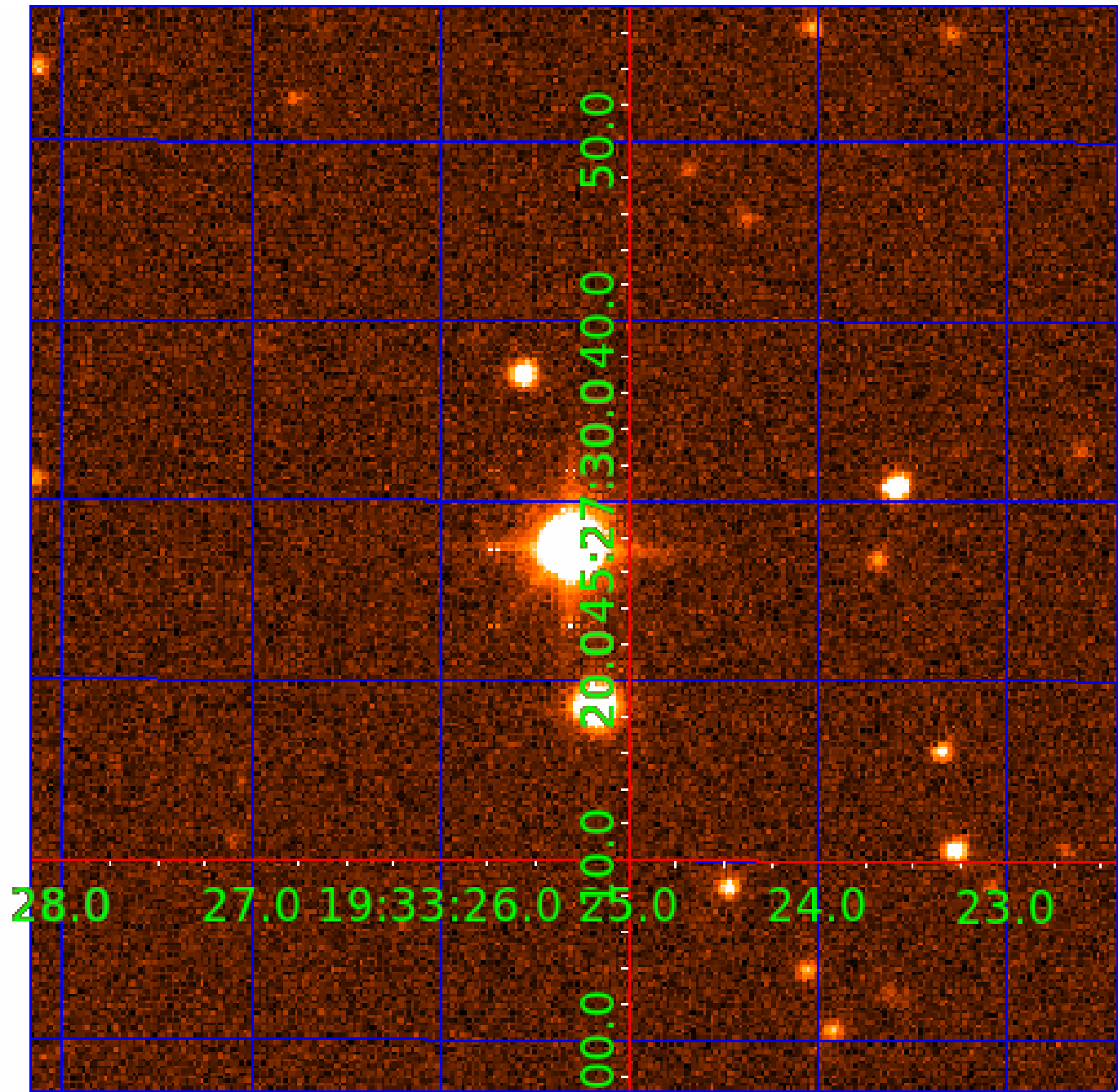


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009092940

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})
009092940-01	OBS	No	1.781951	131.871065	34.6	10.318	11.8	12.6	1.43	6575	0.98	3569.75
009092940-02	OBS	No	144.846819	248.414485	487.0	13.038	10.4	9.9	1.43	6575	6.07	10.14
009092940-03	OBS	No	50.961272	167.518869	182.6	6.394	9.5	9.3	1.43	6575	2.19	40.82
009092940-04	OBS	No	218.739298	203.063058	276.6	15.143	9.3	6.2	1.43	6575	2.51	5.85
009092940-05	OBS	No	45.135416	150.385762	116.4	5.916	8.8	5.5	1.43	6575	1.80	47.99
009092940-06	OBS	No	164.301407	153.974230	284.3	10.053	8.7	8.1	1.43	6575	4.71	8.57
009092940-07	OBS	No	83.498289	147.866364	219.1	3.151	9.2	7.8	1.43	6575	2.36	21.13
009092940-08	OBS	No	204.184137	131.967472	313.7	8.385	8.5	7.5	1.43	6575	4.93	6.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009092940-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
009092940-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
009092940-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009092940-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009092940-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
009092940-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_UNCERTAIN

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

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

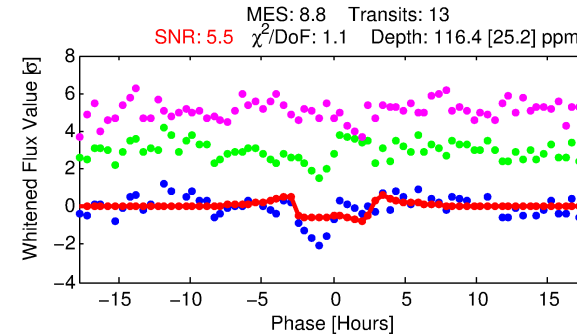
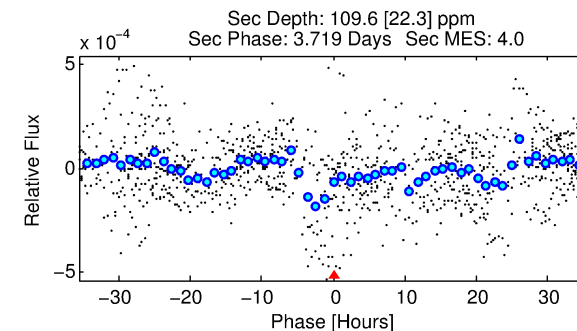
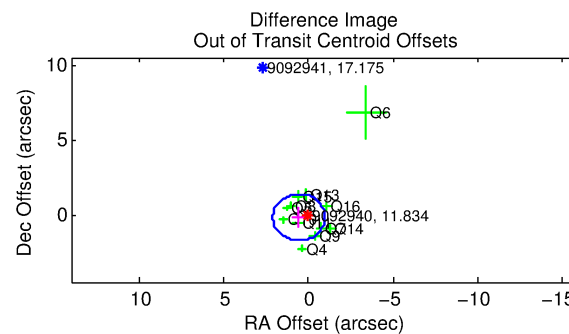
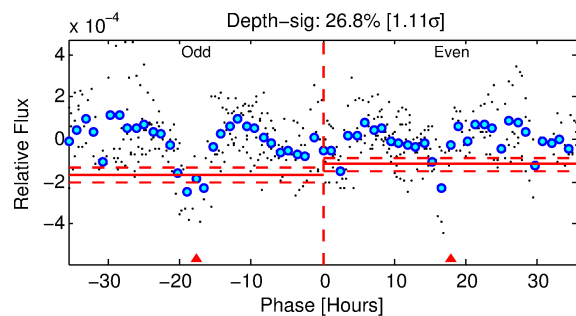
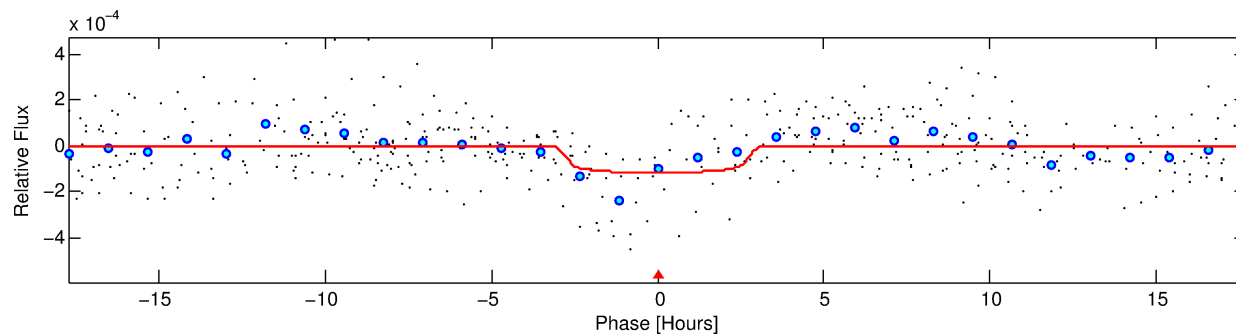
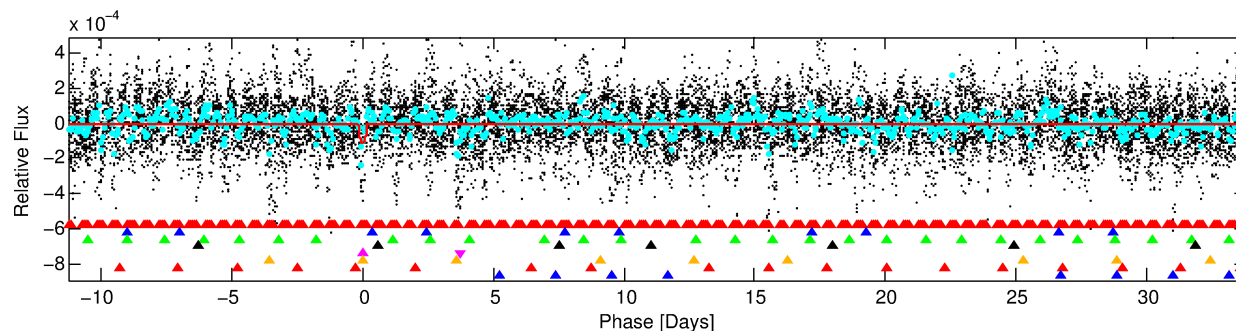
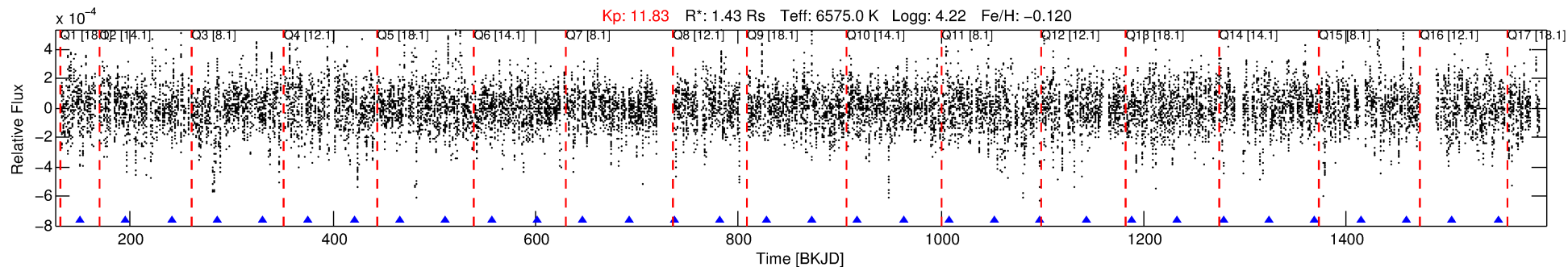
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092940-05

No Significant Match Found

DV One-Page Summary

KIC: 9092940 Candidate: 5 of 8 Period: 45.135 d



DV Fit Results:

Period = 45.13542 [0.00075] d
Epoch = 150.3858 [0.0117] BKJD
Rp/R* = 0.0115 [0.0033]
a/R* = 26.94 [38.44]
b = 0.90 [0.30]
Seff = 47.99 [18.43]
Teq = 671 [64] K
Rp = 1.80 [0.76] Re
a = 0.2669 [0.0668] AU
Ag = 1326.57 [933.60] [1.42 σ]
Teffp = 6262 [983] K [5.68 σ]

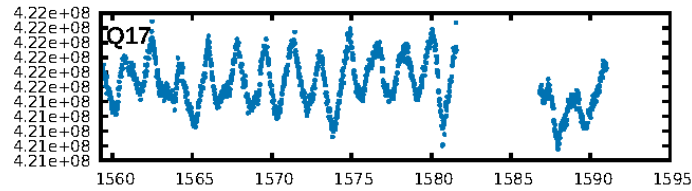
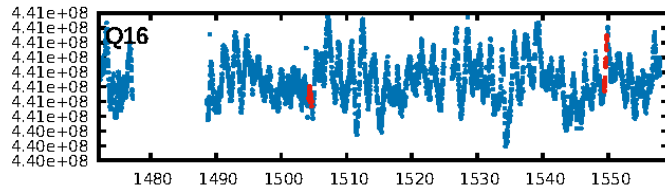
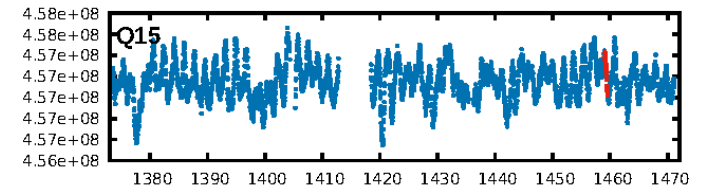
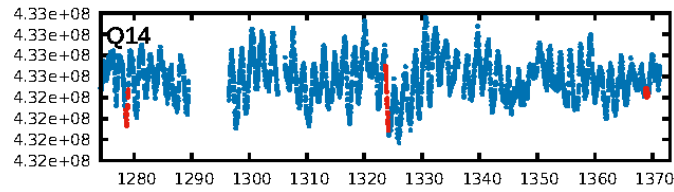
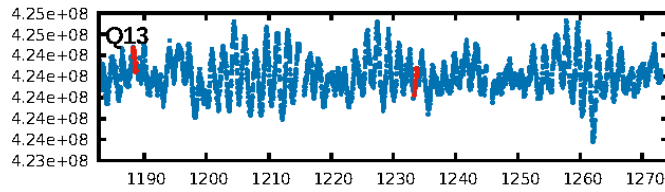
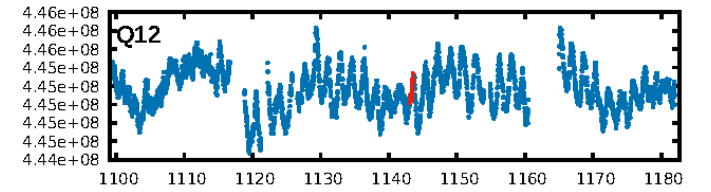
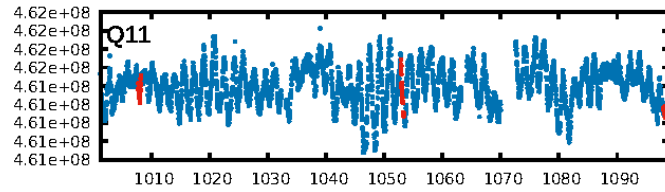
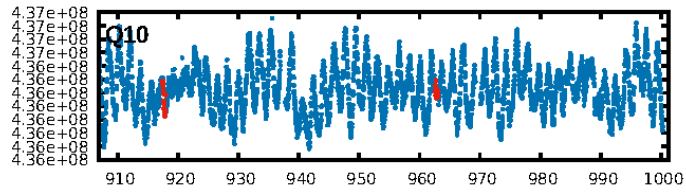
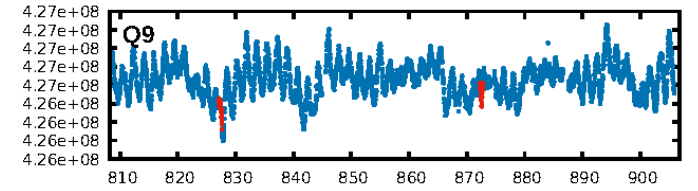
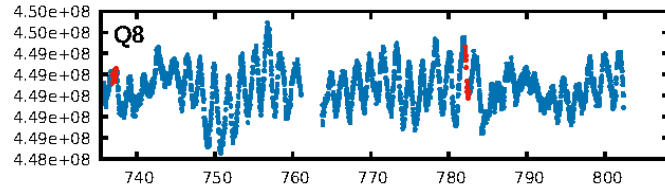
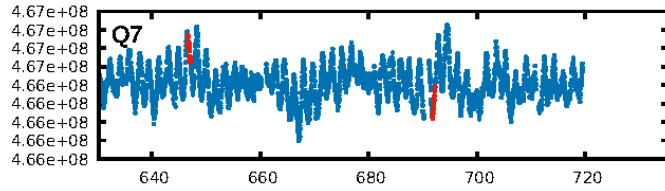
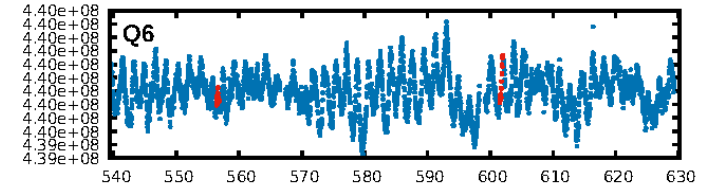
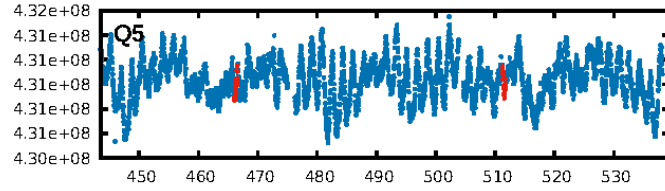
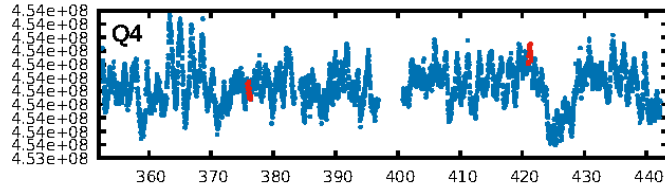
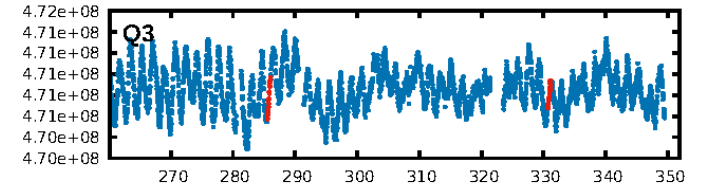
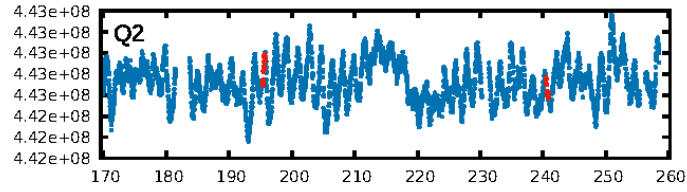
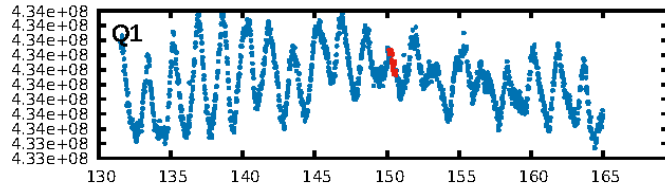
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [87.48 σ]
LongPeriod-sig: 100.0% [16.05 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.97e-10
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 1.383
Centroid-sig: 32.9%
Centroid-so: 0.878 arcsec [1.59 σ]
OotOffset-rm: 0.597 arcsec [1.16 σ]
KicOffset-rm: 0.651 arcsec [1.46 σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.00 [0/16]

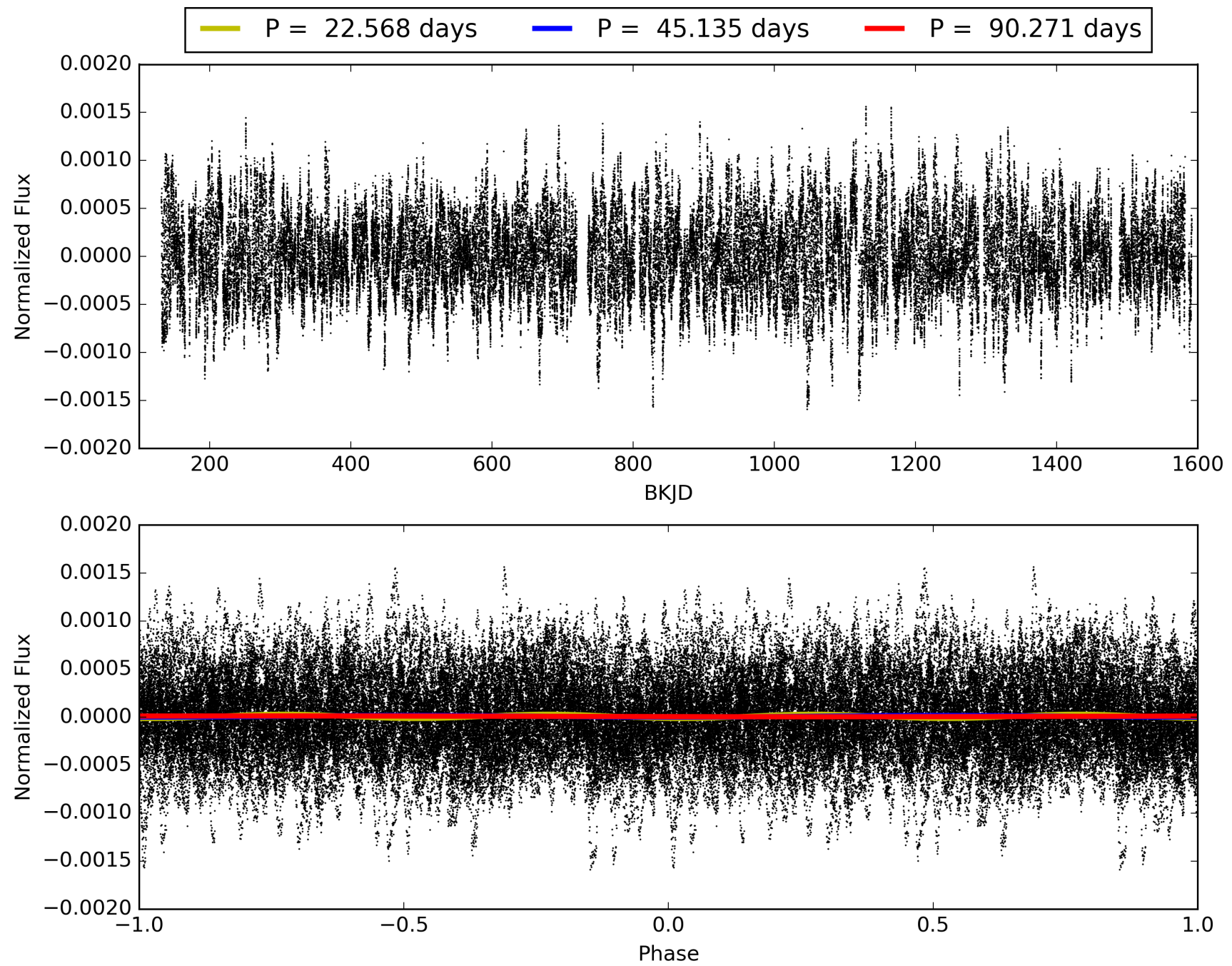
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:42:14 Z

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

TCE 009092940-05, PDC Light Curves

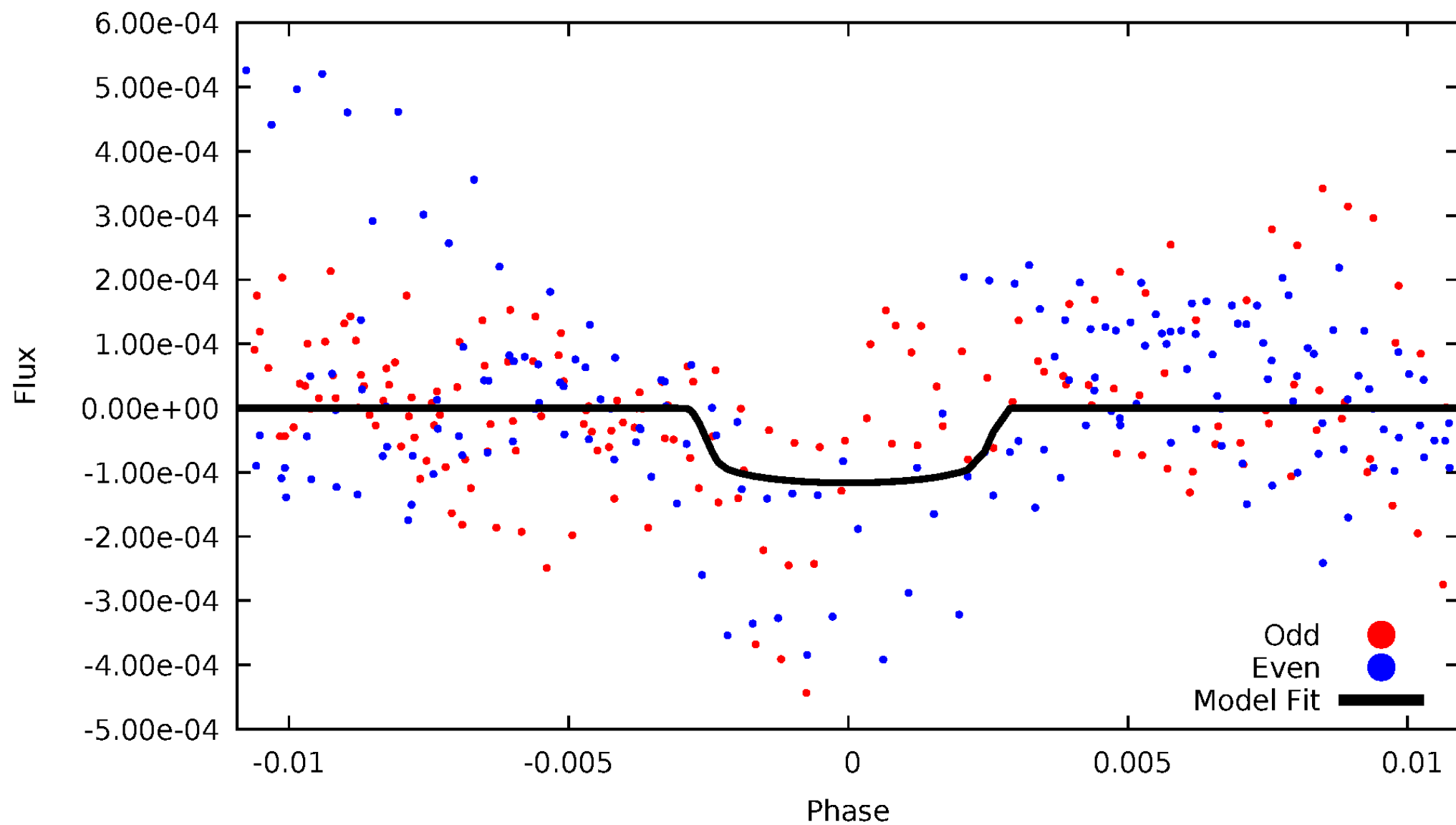


TCE 009092940-05



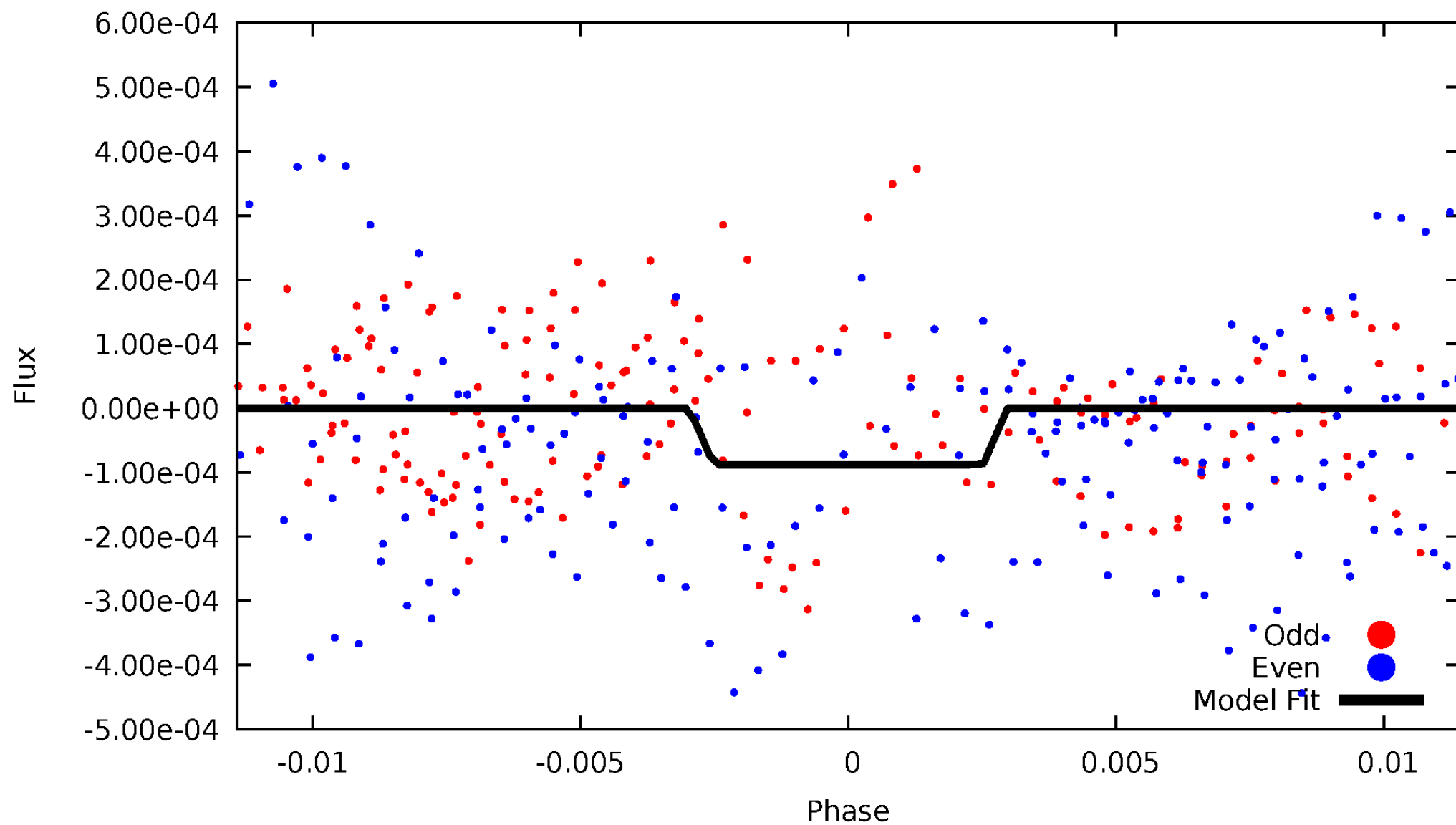
DV Odd/Even

TCE 009092940-05

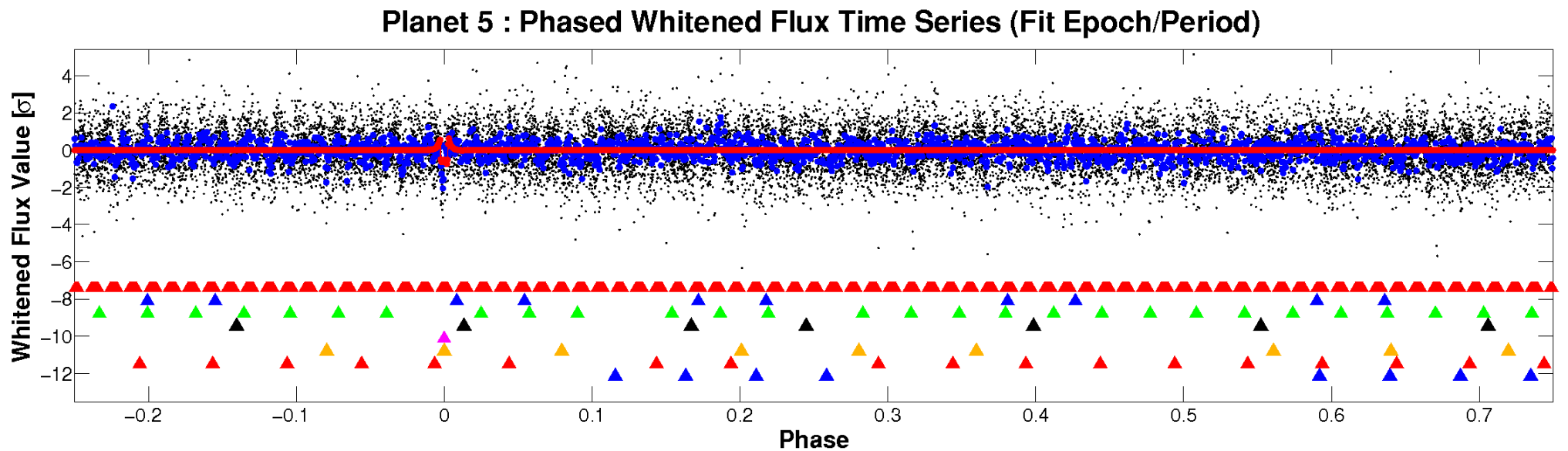
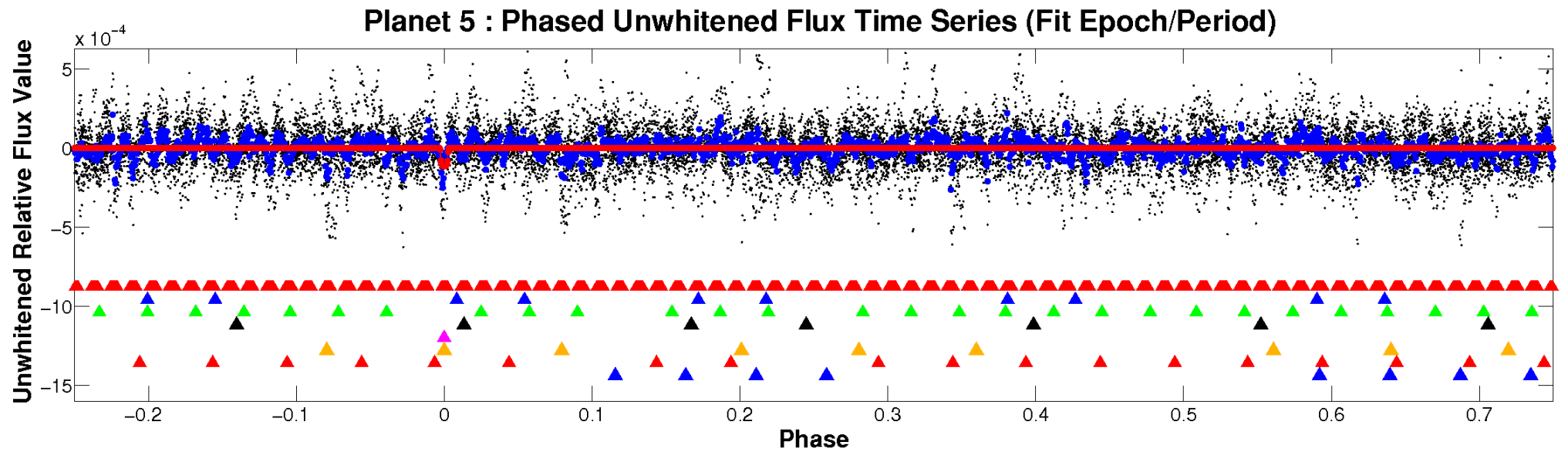


ALT Odd/Even

TCE 009092940-05

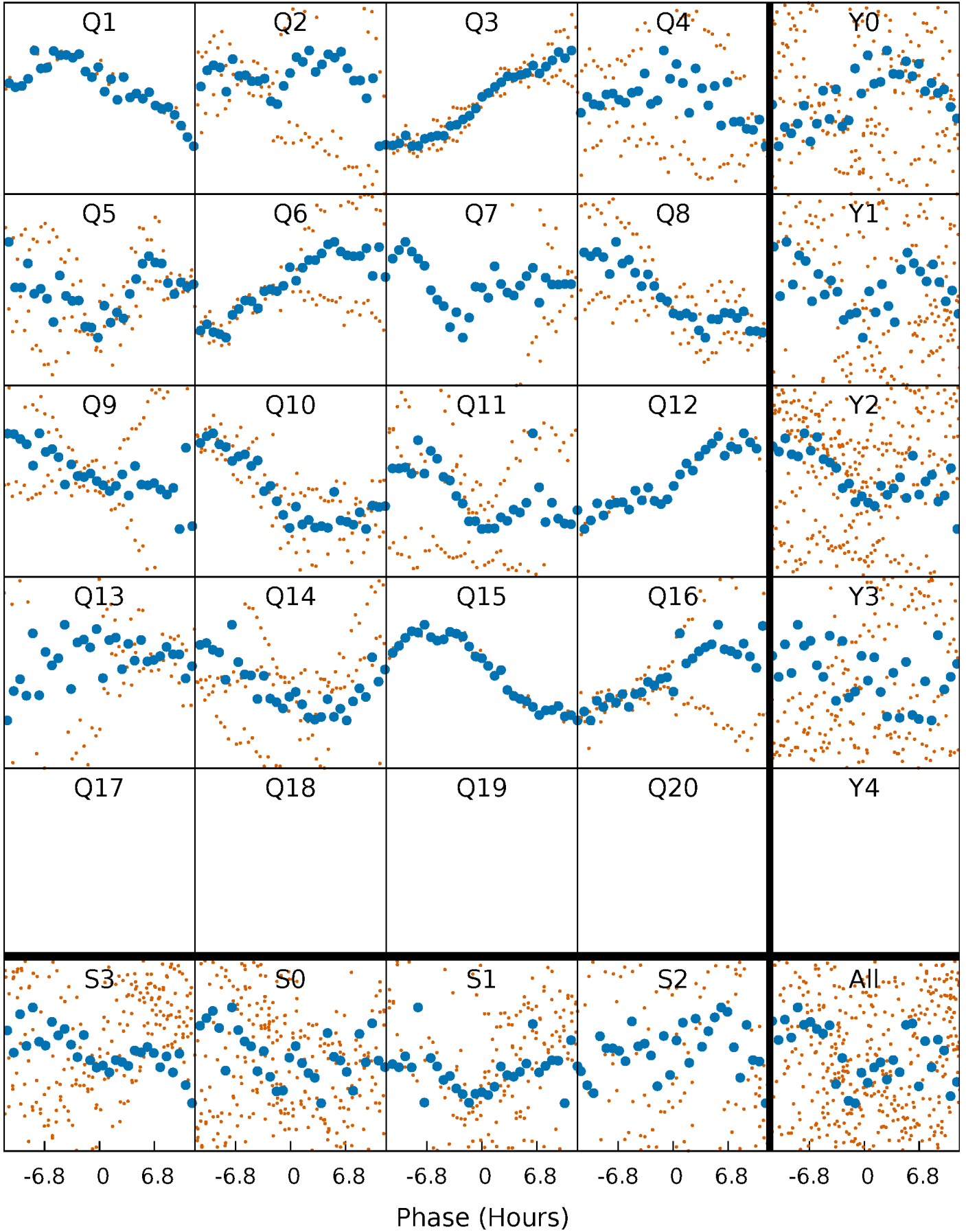


Non-Whitened Vs. Whitened Light Curve



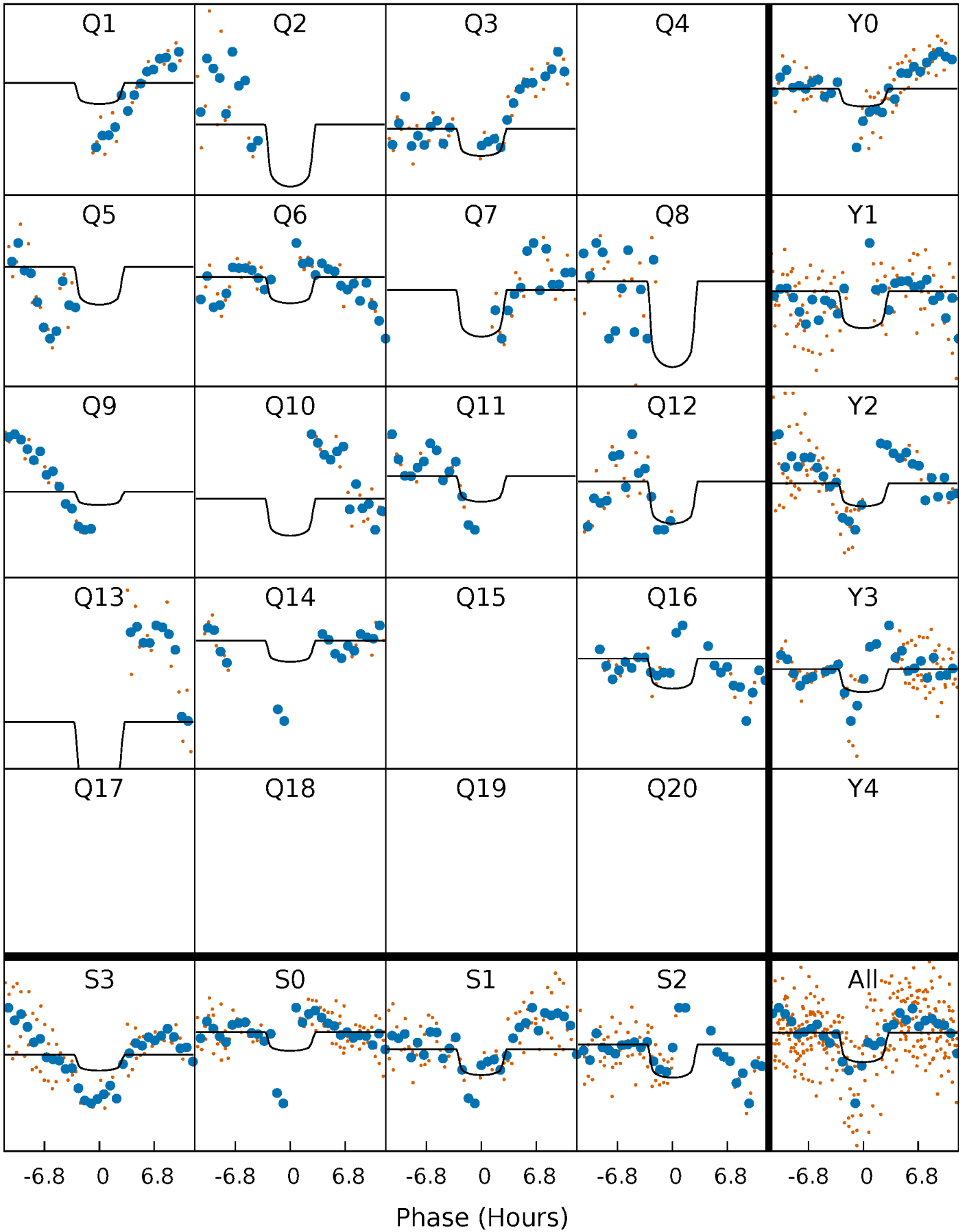
PDC Quarter-Phased Transit Curves

TCE 009092940-05 $P = 45.135416$ Days $T_0 = 150.385762$ (BKJD)



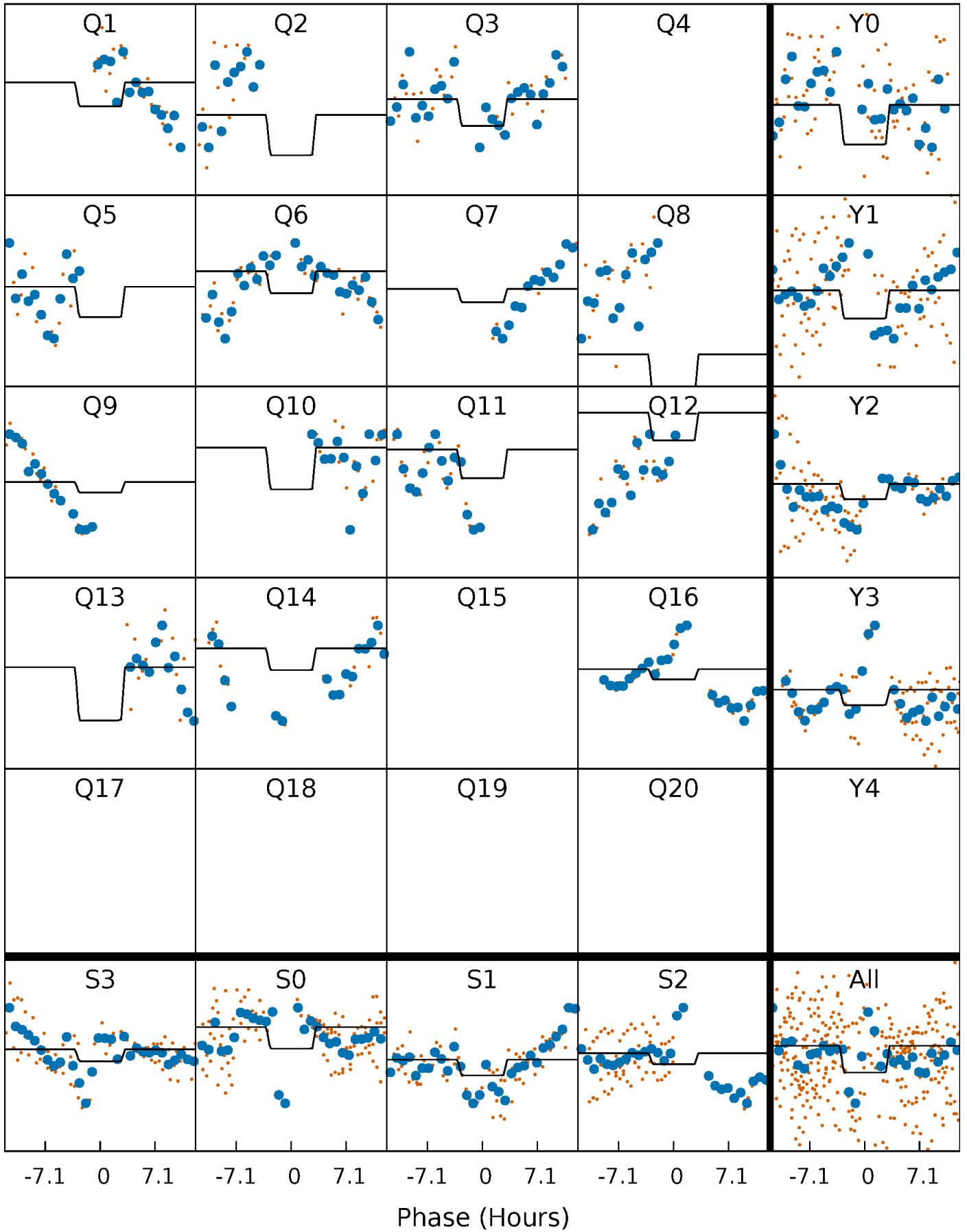
DV Quarter-Phased Transit Curves

TCE 009092940-05 $P = 45.135416$ Days $T_0 = 150.385762$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

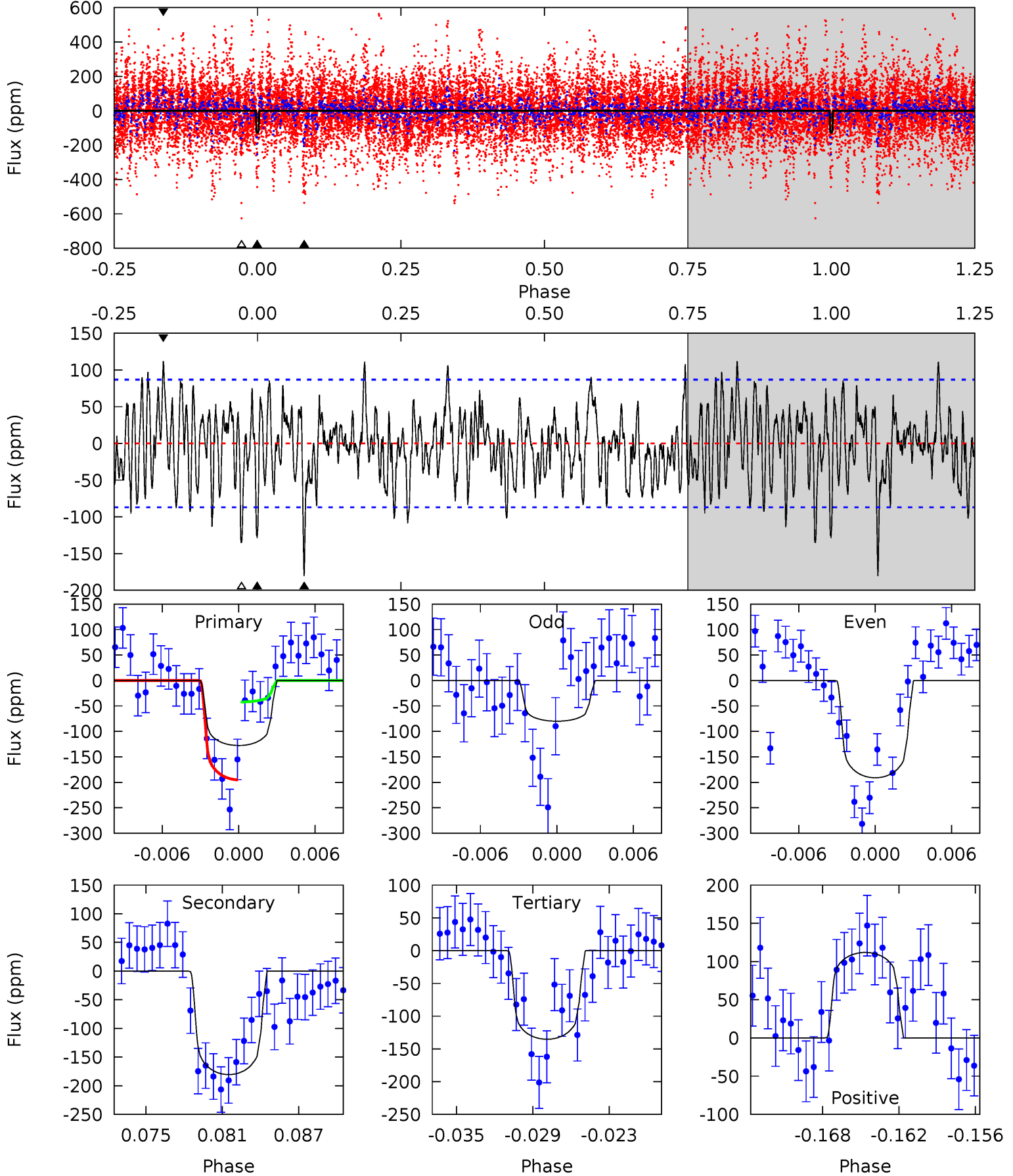
TCE 009092940-05 $P = 45.135569$ Days $T_0 = 150.382072$ (BKJD)



DV Model-Shift Uniqueness Test

009092940-05, P = 45.135416 Days, E = 105.250346 Days

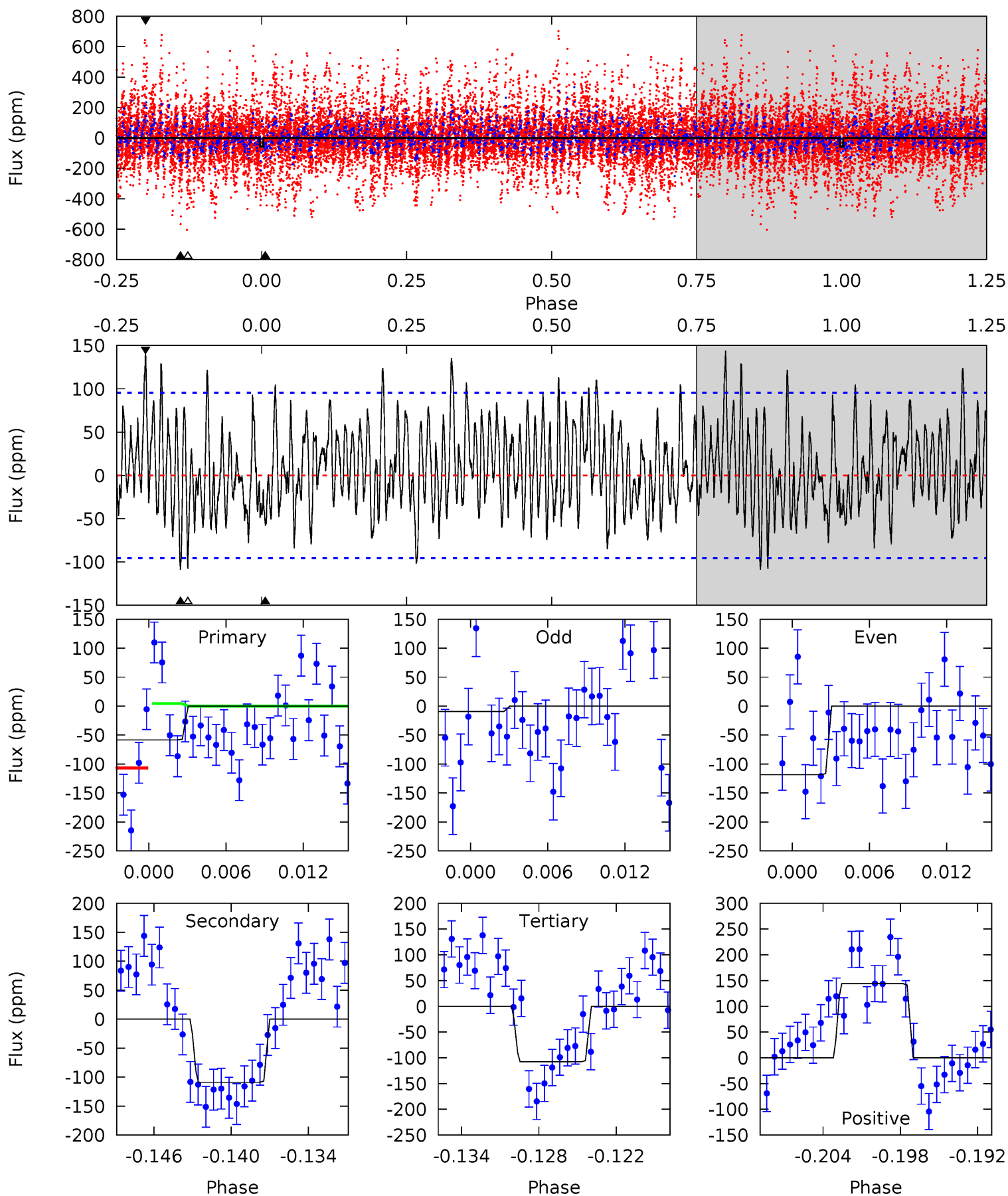
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.54	10.7	7.99	6.61	5.13	2.76	2.31	-0.45	0.94	2.67	4.05	3.28	1.29	0.38	4.49



Alt Model-Shift Uniqueness Test

009092940-05, P = 45.135569 Days, E = 105.246503 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.12	5.84	5.77	7.73	5.13	2.76	2.28	-2.65	-4.60	0.07	-1.88	2.86	2.44	0.57	2.77



Stellar Parameters For KIC 009092940

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6575^{+181}_{-250}	$4.223^{+0.136}_{-0.187}$	$-0.120^{+0.250}_{-0.300}$	$1.429^{+0.439}_{-0.293}$	$1.247^{+0.188}_{-0.188}$	$0.602^{+0.444}_{-0.293}$
	+3%/-4%	+3%/-4%	+208%/-250%	+31%/-21%	+15%/-15%	+74%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009092940-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-181 ± 17	$1.80^{+0.60}_{-0.54}$	938^{+72}_{-57}	7122^{+1765}_{-891}	2183^{+2270}_{-933}
Alt.	-109 ± 19	$1.50^{+0.60}_{-0.49}$	943^{+71}_{-58}	6857^{+2016}_{-973}	1861^{+2249}_{-928}

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 $A_{obs} \gg 1.0$

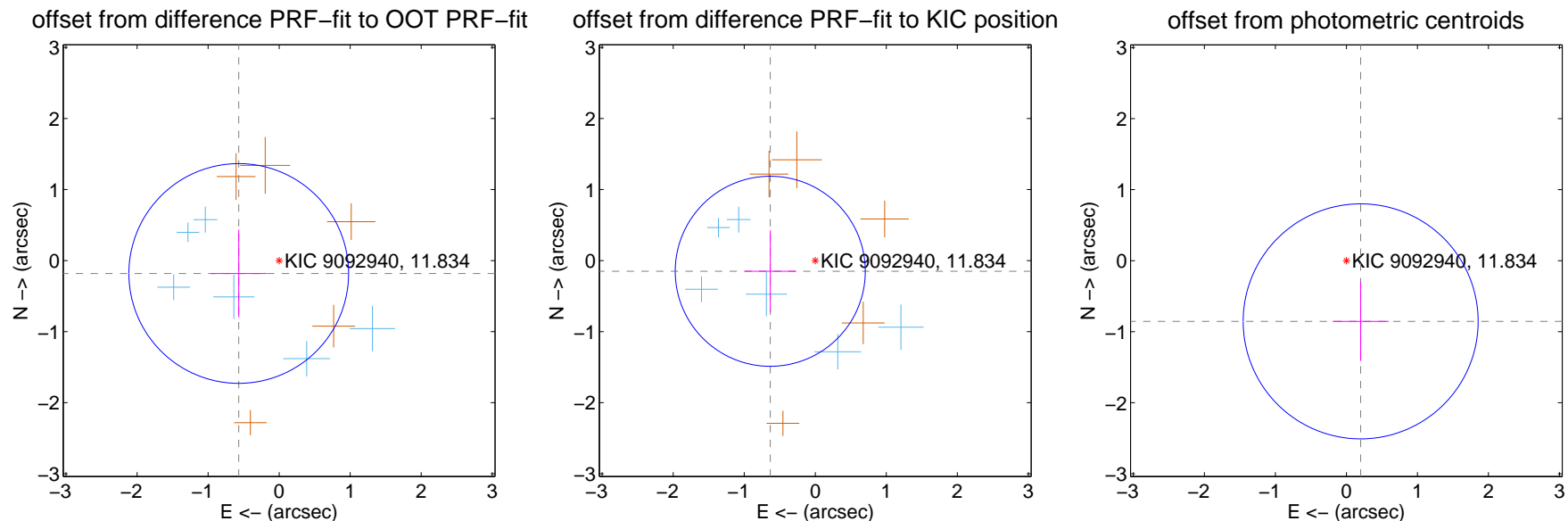
DV Centroid Data

Supplemental centroid analysis for 009092940-05. **Kepler magnitude: 11.83.** Transit SNR 5.55

There are 6 quarters with good PRF difference image offsets

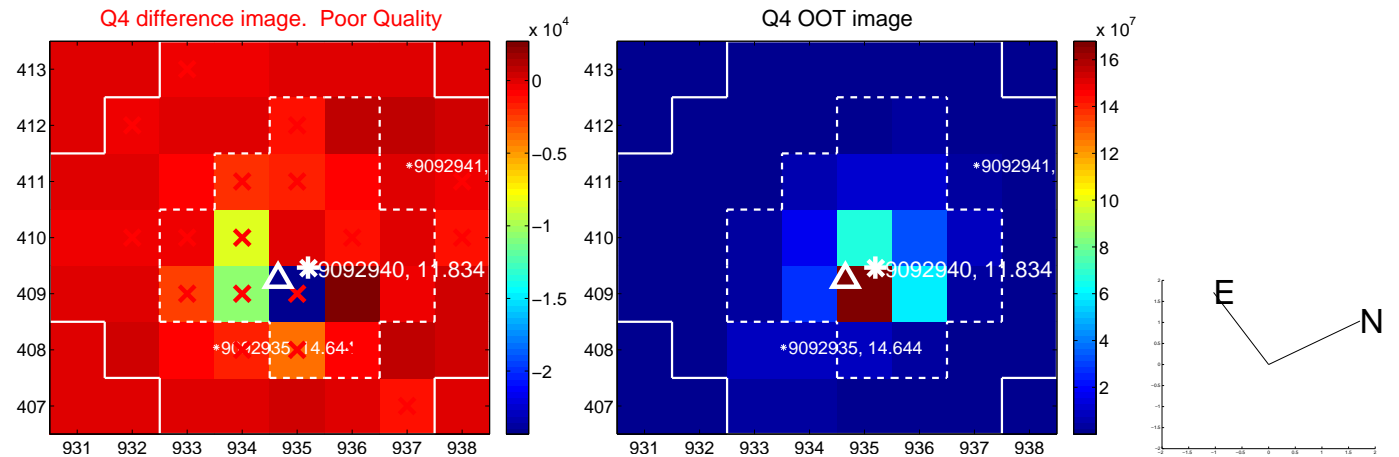
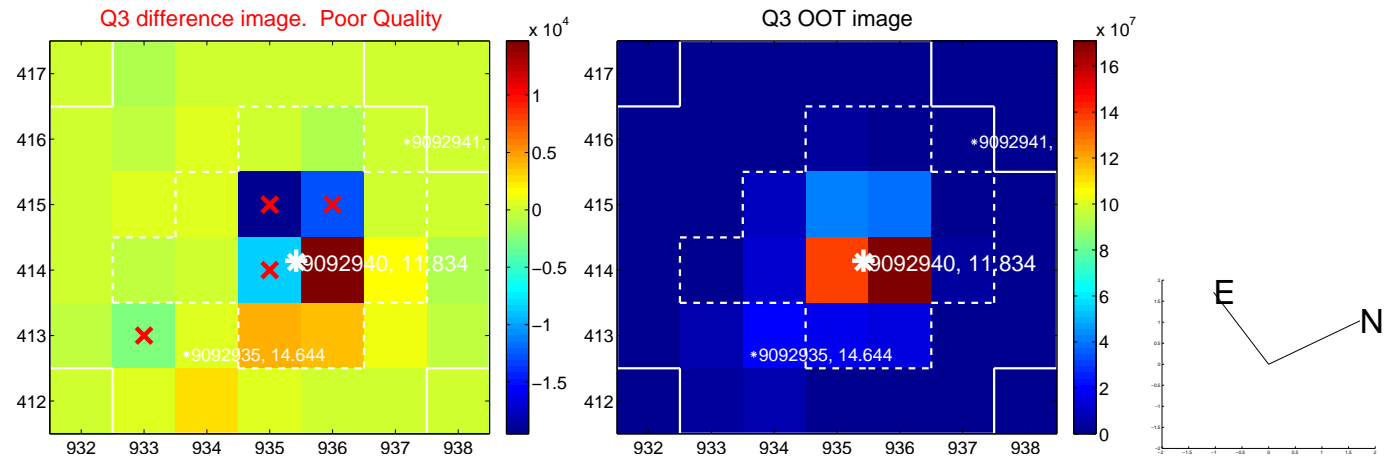
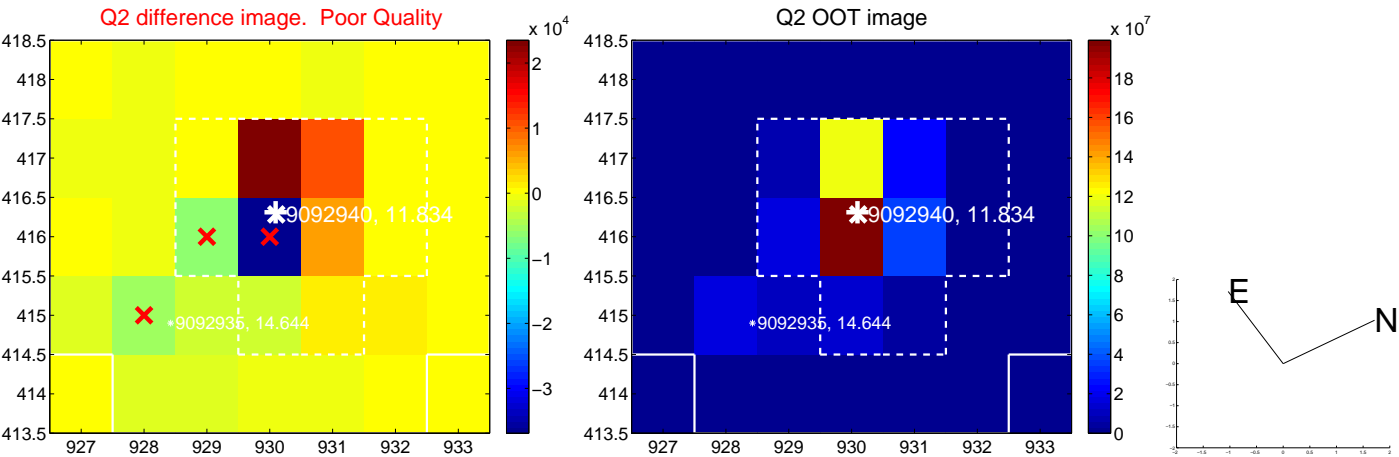
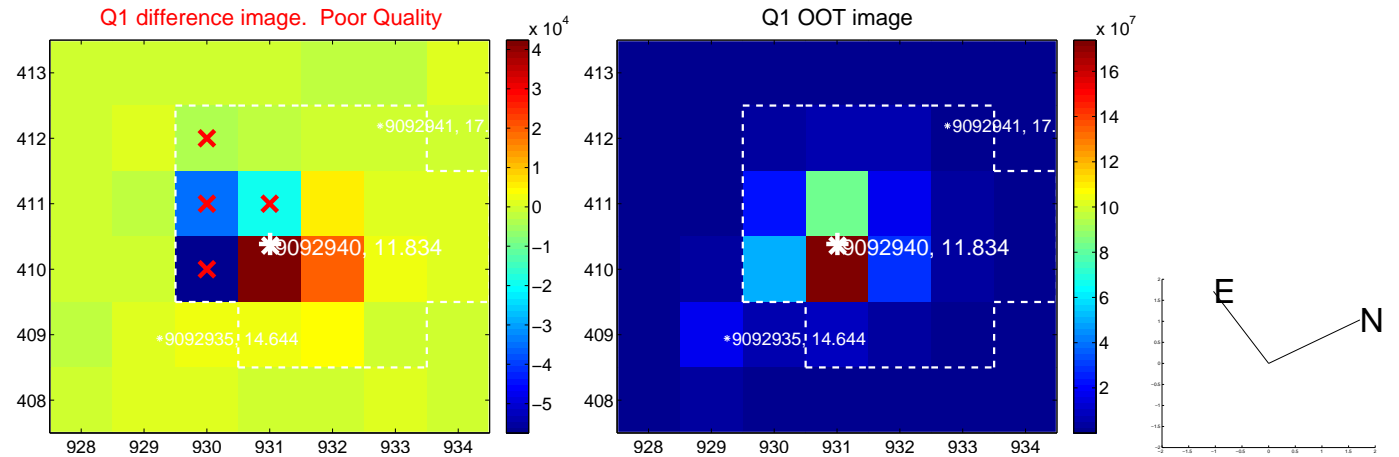
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.597 ± 0.515	1.16	0.569 ± 0.394	-0.181 ± 0.617
PRF-fit source offset from KIC position	0.651 ± 0.446	1.46	0.633 ± 0.364	-0.150 ± 0.575
photometric centroid source offset	0.88 ± 0.55	1.59	-0.20 ± 0.40	-0.85 ± 0.56

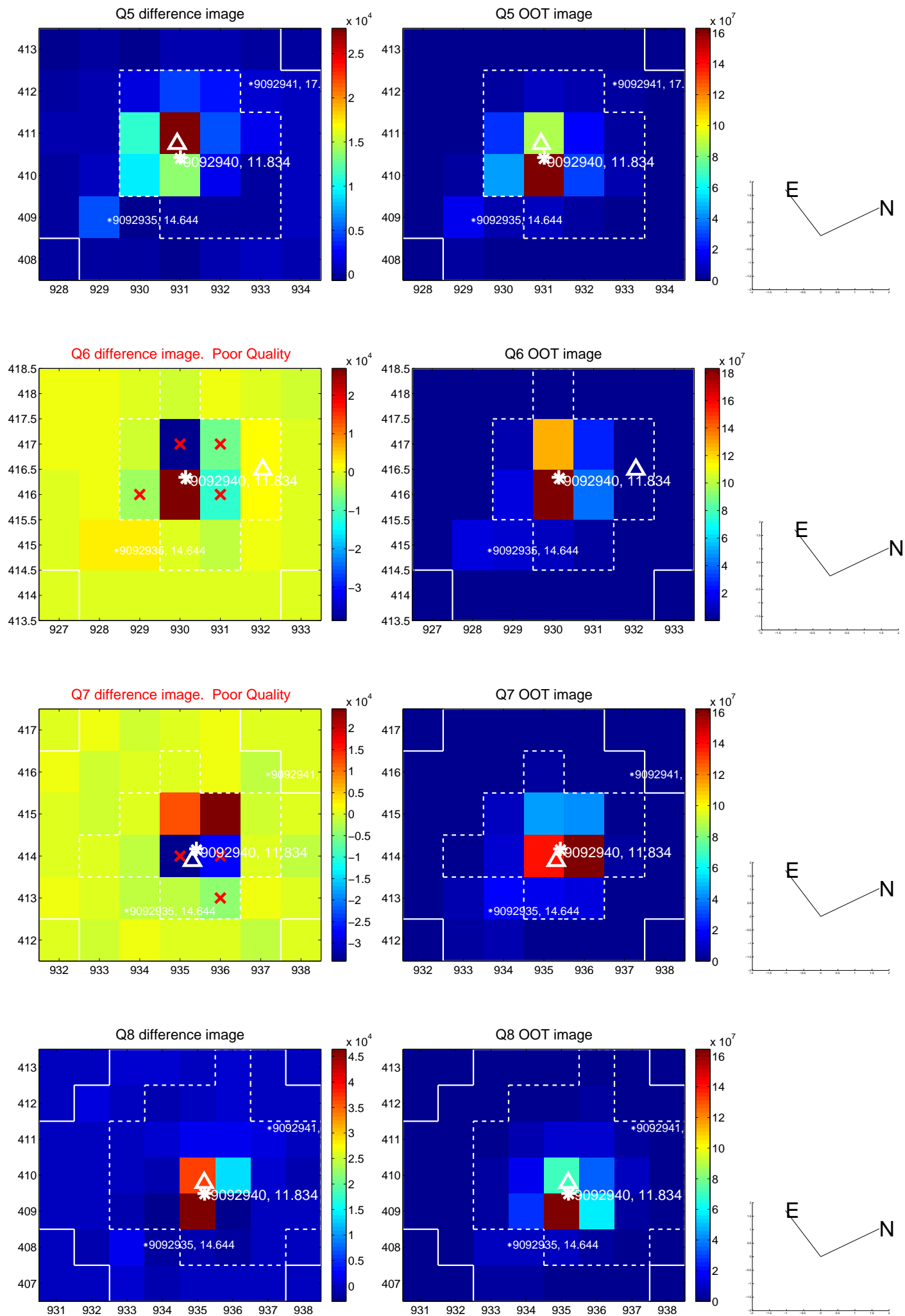


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

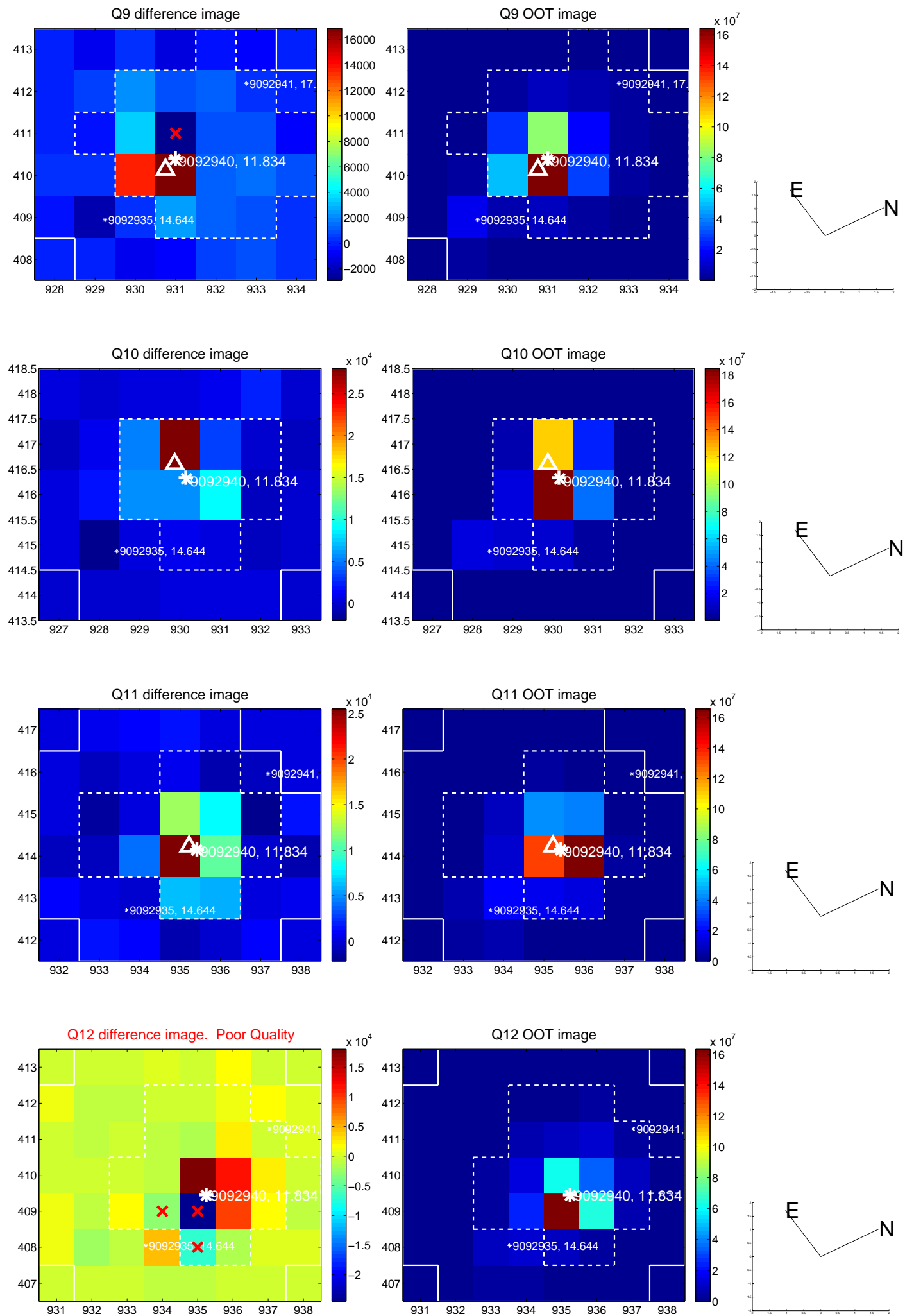
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



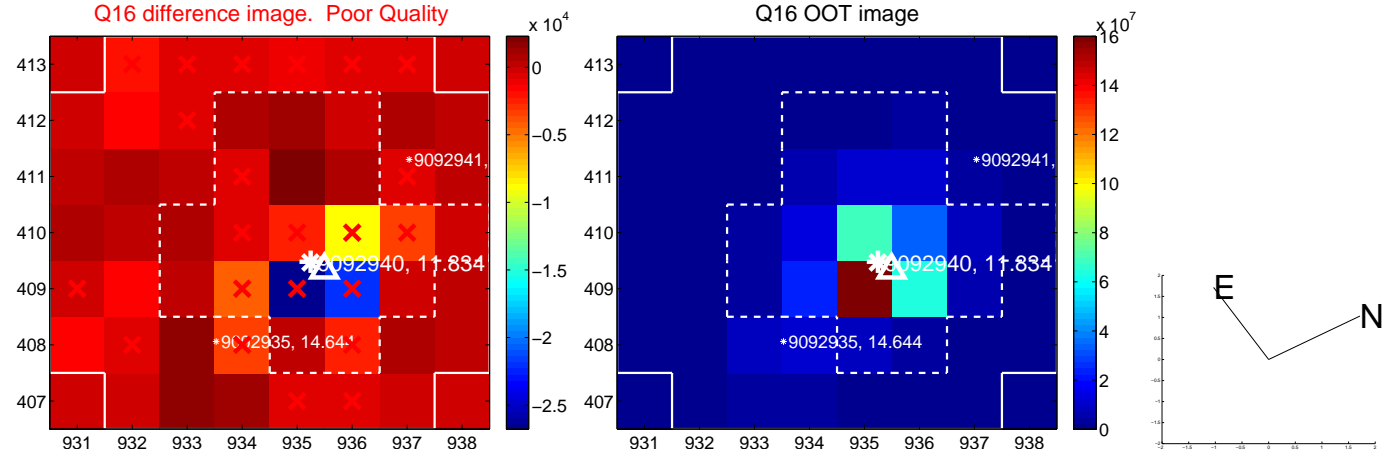
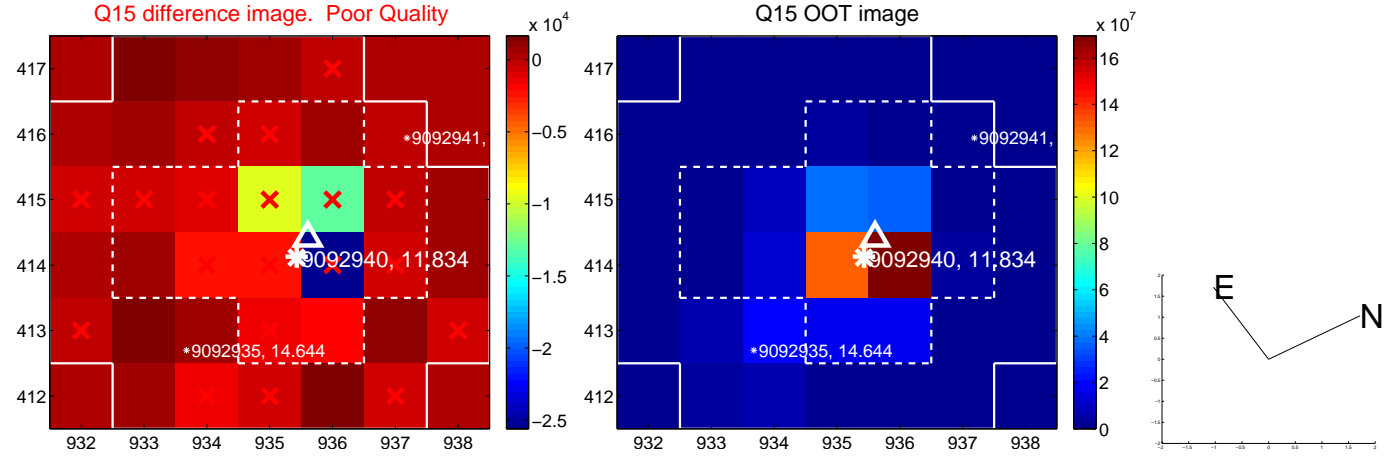
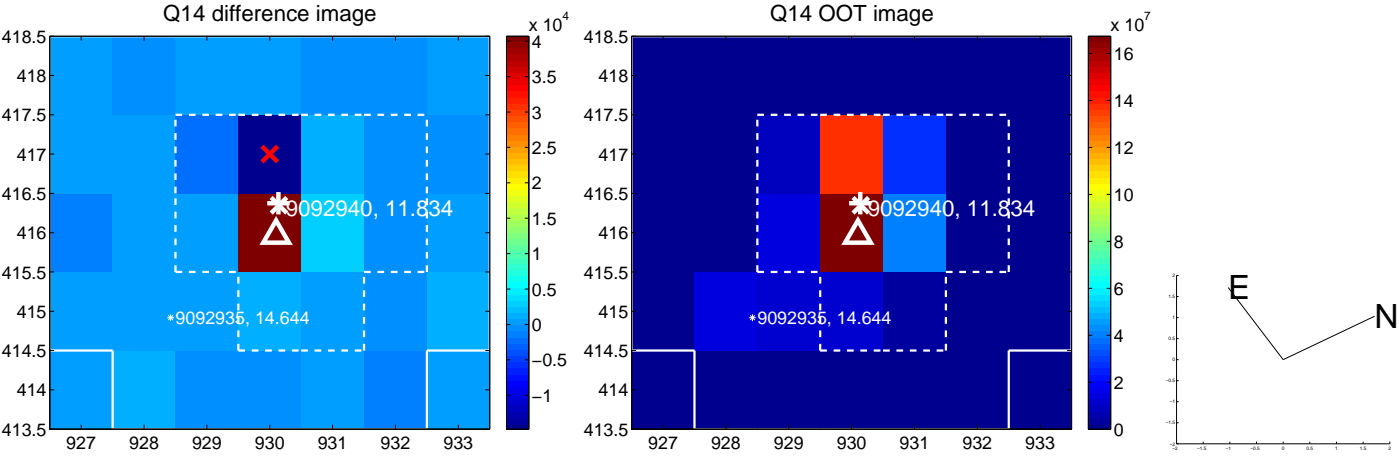
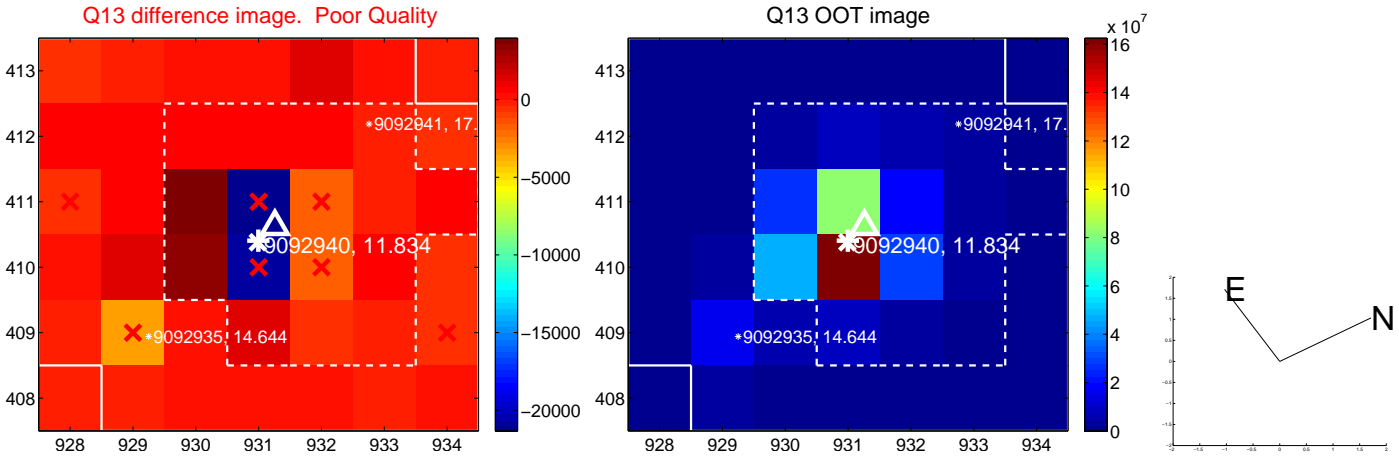
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



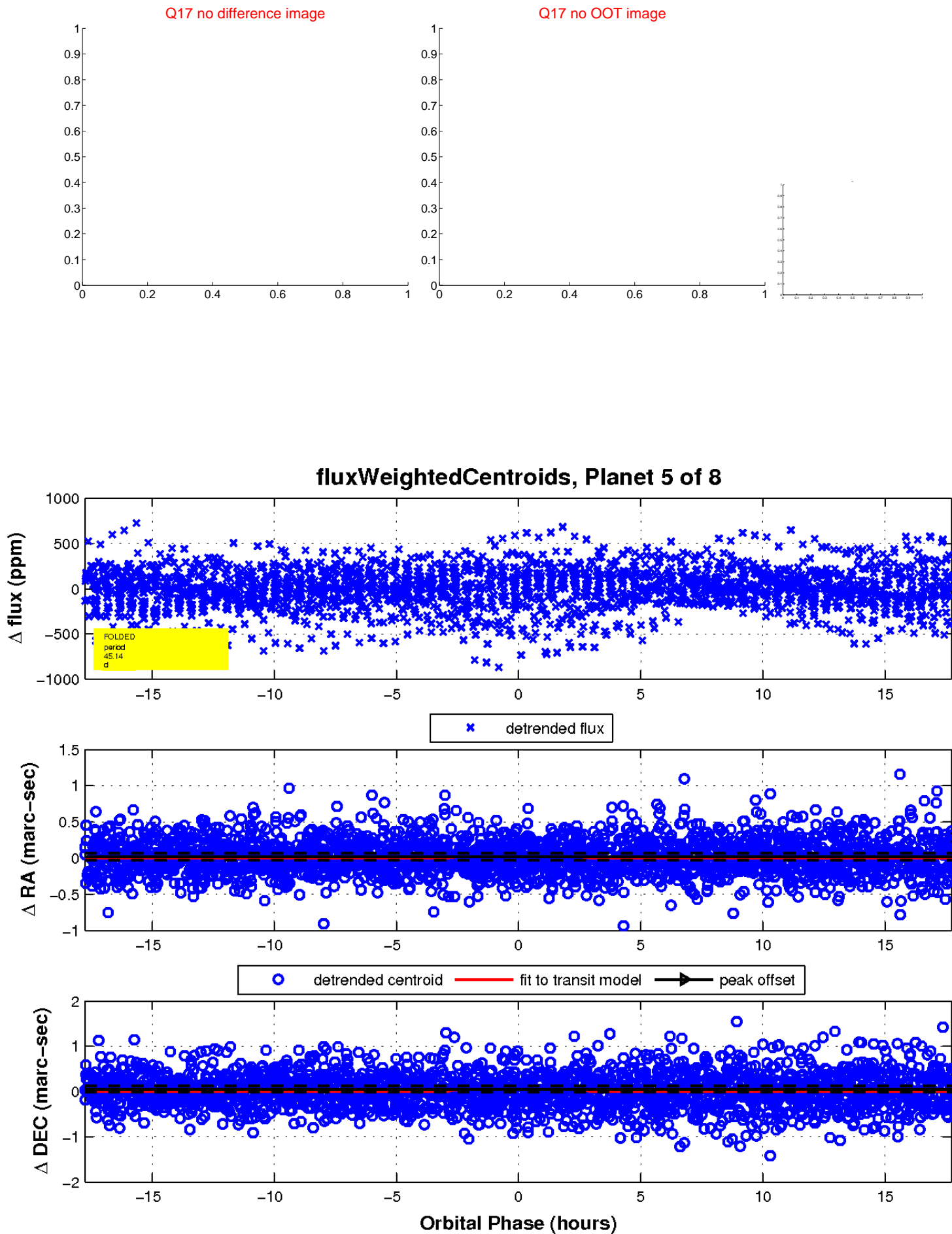
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

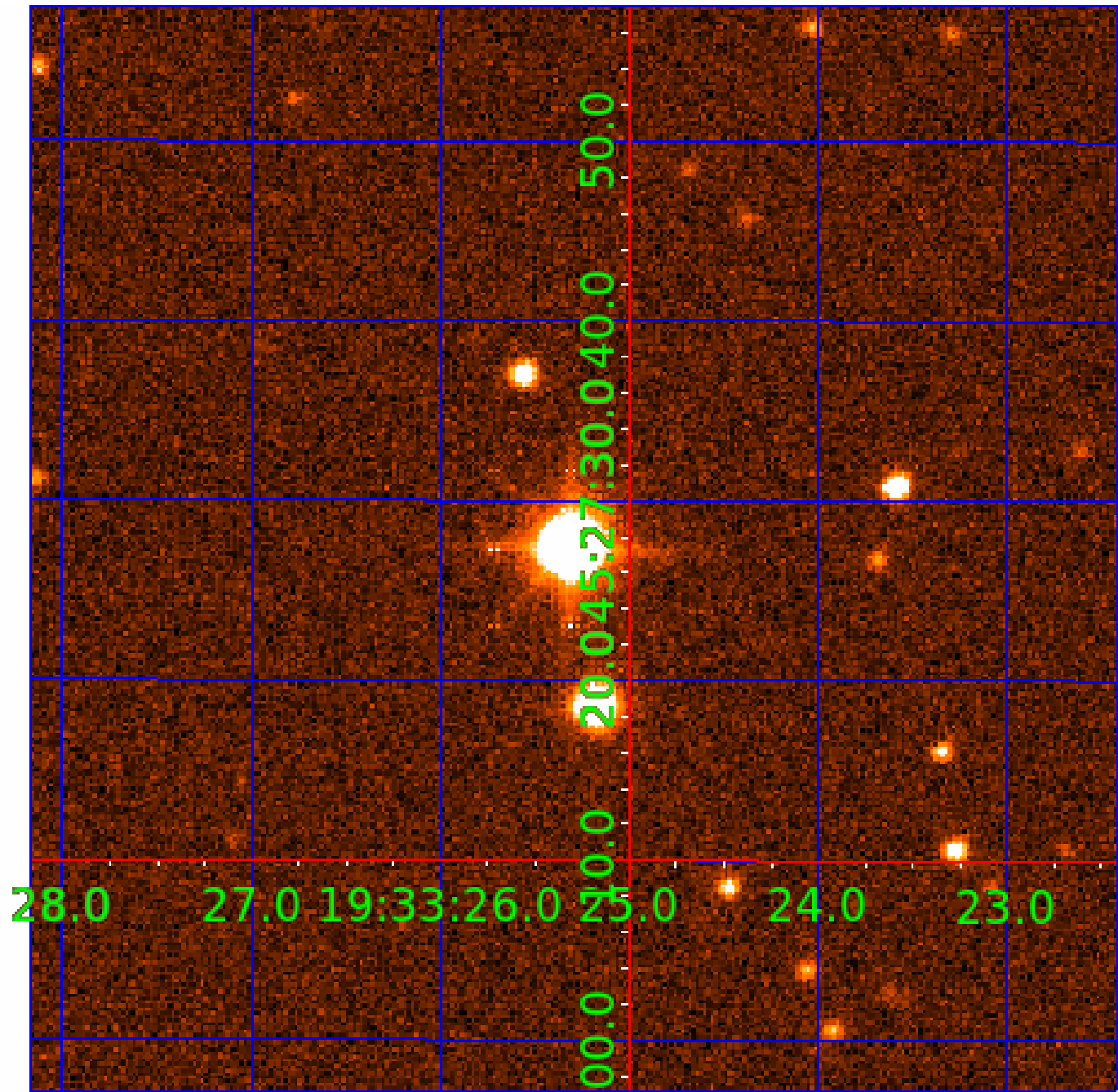


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009092940

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})
009092940-01	OBS	No	1.781951	131.871065	34.6	10.318	11.8	12.6	1.43	6575	0.98	3569.75
009092940-02	OBS	No	144.846819	248.414485	487.0	13.038	10.4	9.9	1.43	6575	6.07	10.14
009092940-03	OBS	No	50.961272	167.518869	182.6	6.394	9.5	9.3	1.43	6575	2.19	40.82
009092940-04	OBS	No	218.739298	203.063058	276.6	15.143	9.3	6.2	1.43	6575	2.51	5.85
009092940-05	OBS	No	45.135416	150.385762	116.4	5.916	8.8	5.5	1.43	6575	1.80	47.99
009092940-06	OBS	No	164.301407	153.974230	284.3	10.053	8.7	8.1	1.43	6575	4.71	8.57
009092940-07	OBS	No	83.498289	147.866364	219.1	3.151	9.2	7.8	1.43	6575	2.36	21.13
009092940-08	OBS	No	204.184137	131.967472	313.7	8.385	8.5	7.5	1.43	6575	4.93	6.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009092940-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
009092940-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
009092940-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009092940-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009092940-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
009092940-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_UNCERTAIN

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

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

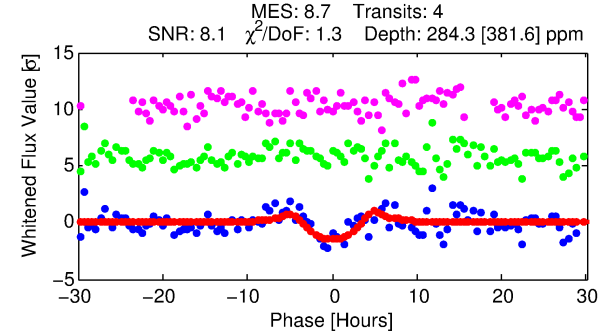
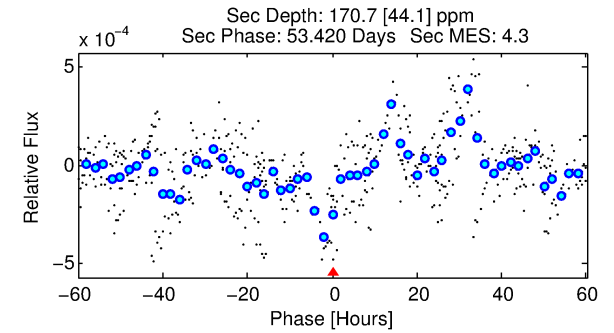
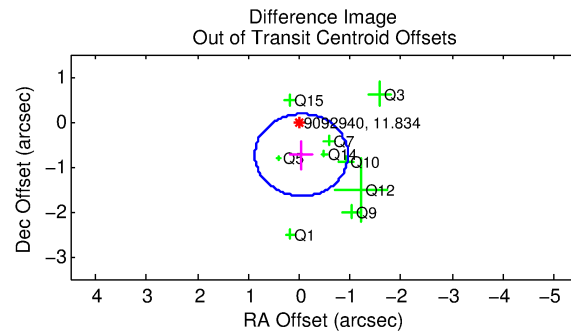
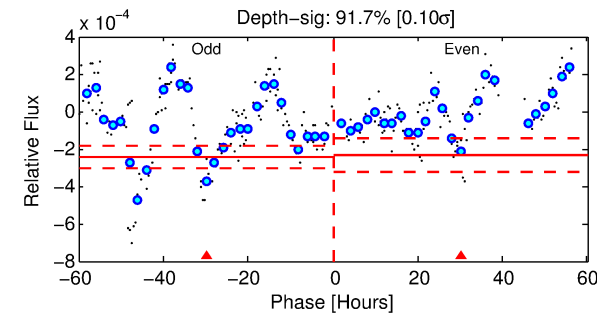
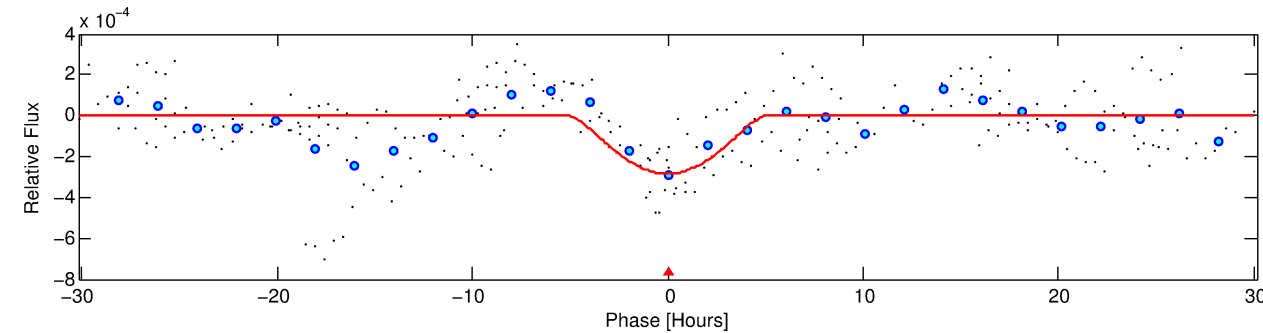
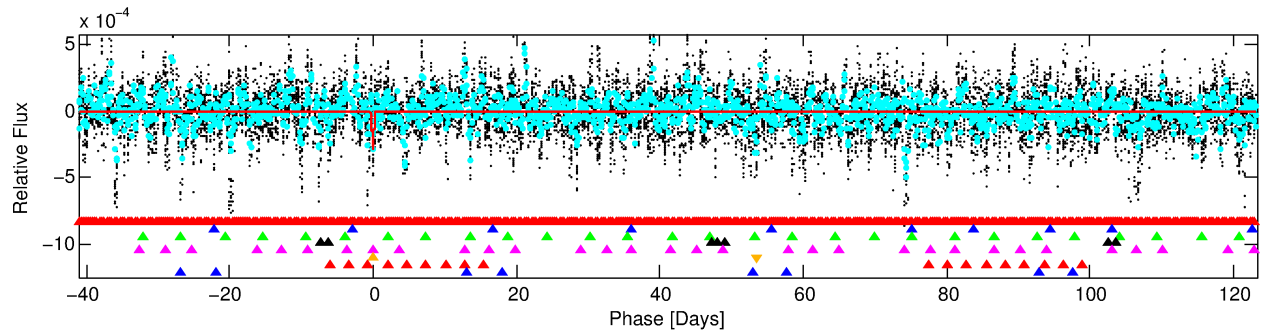
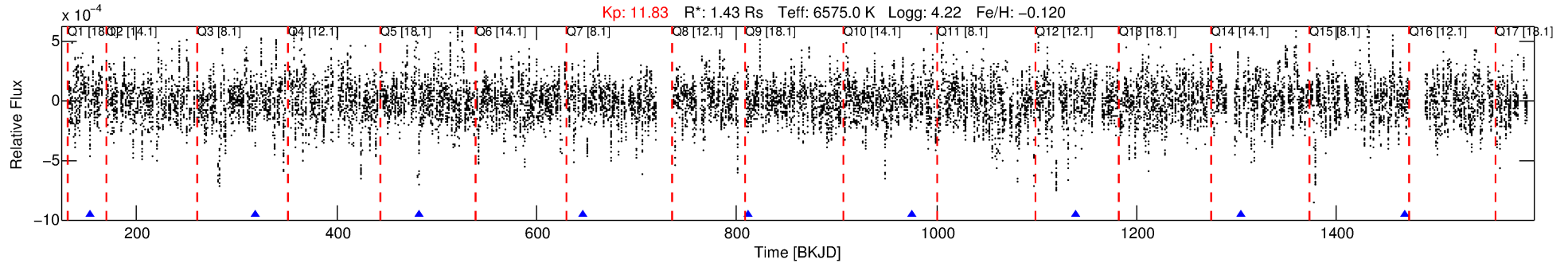
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092940-06

No Significant Match Found

DV One-Page Summary

KIC: 9092940 Candidate: 6 of 8 Period: 164.301 d



DV Fit Results:

Period = 164.30141 [0.00576] d
Epoch = 153.9742 [0.0239] BKJD
Rp/R* = 0.0302 [0.0805]
a/R* = 30.93 [22.26]
b = 1.00 [0.15]
Seff = 8.57 [3.29]
Teq = 436 [42] K
Rp = 4.71 [12.64] Re
a = 0.6317 [0.1580] AU
Ag = 1691.40 [9051.39] [0.19 σ]
Teffp = 4326 [5777] K [0.67 σ]

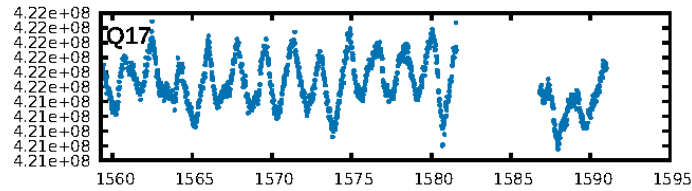
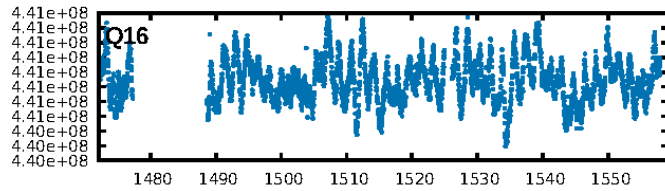
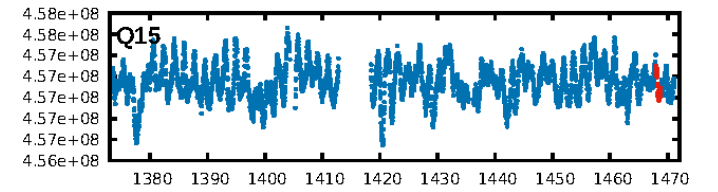
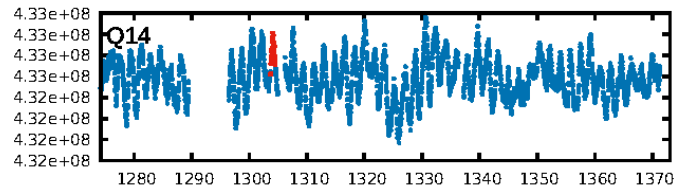
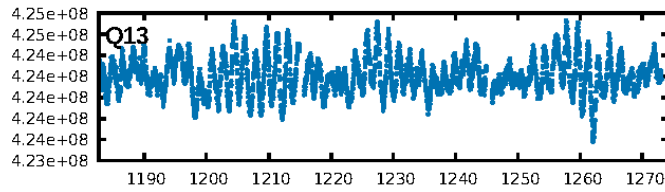
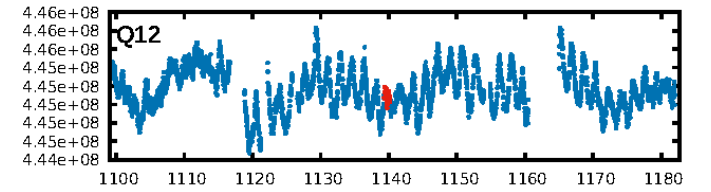
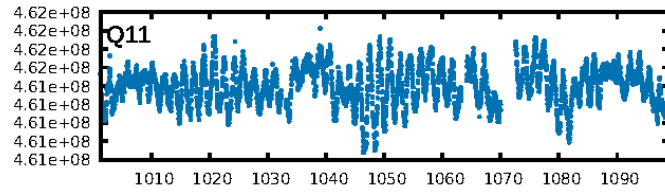
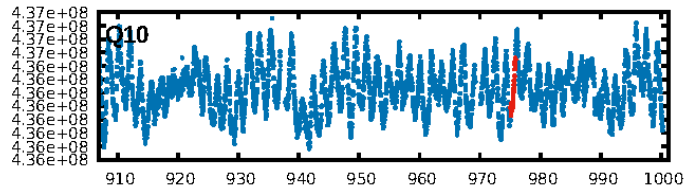
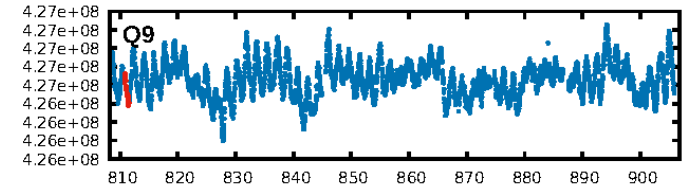
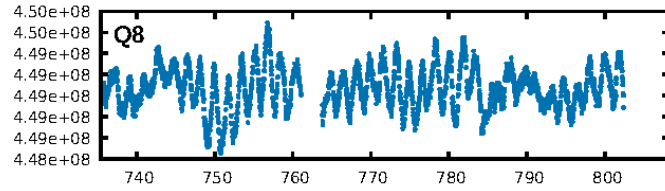
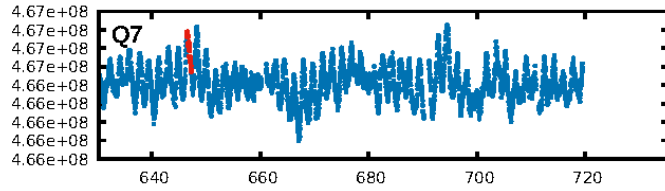
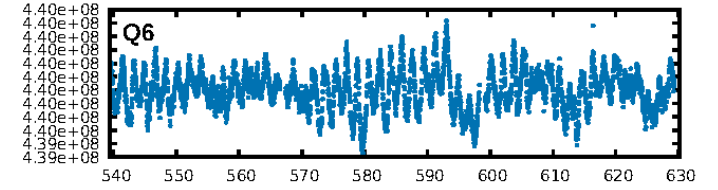
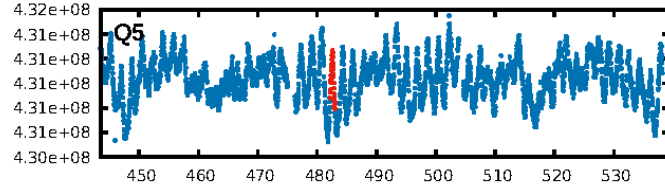
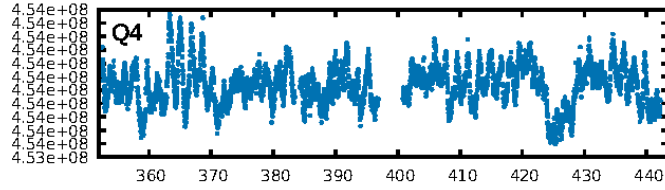
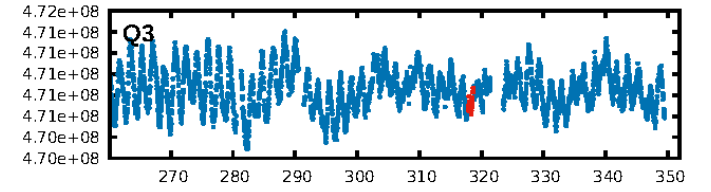
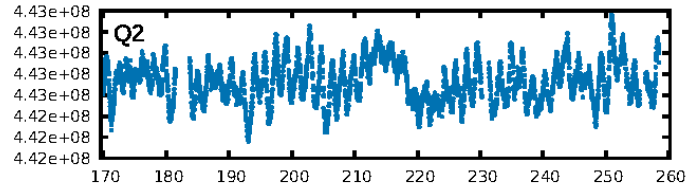
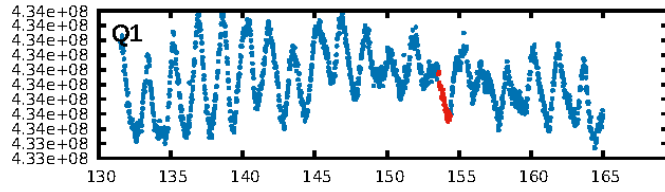
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.36 σ]
LongPeriod-sig: 100.0% [73.12 σ]
ModelChiSquare2-sig: 20.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.27e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.71
Centroid-sig: 0.8%
Centroid-so: 1.178 arcsec [2.52 σ]
OotOffset-rm: 0.741 arcsec [2.43 σ]
KicOffset-rm: 0.689 arcsec [2.18 σ]
OotOffset-st: 2/3/1/3 [9]
KicOffset-st: 2/3/1/3 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.00 [0/9]

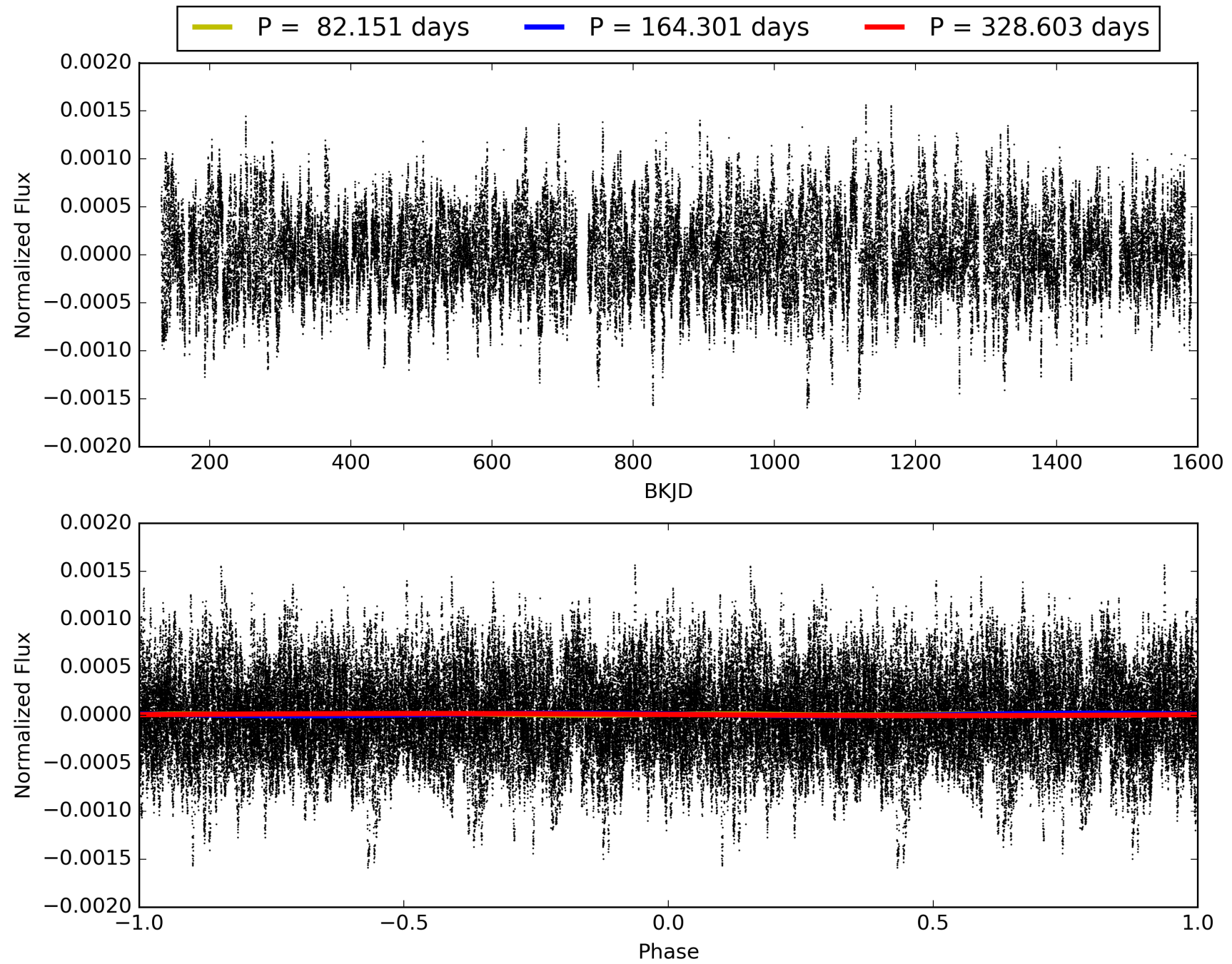
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:42:18 Z

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

TCE 009092940-06, PDC Light Curves

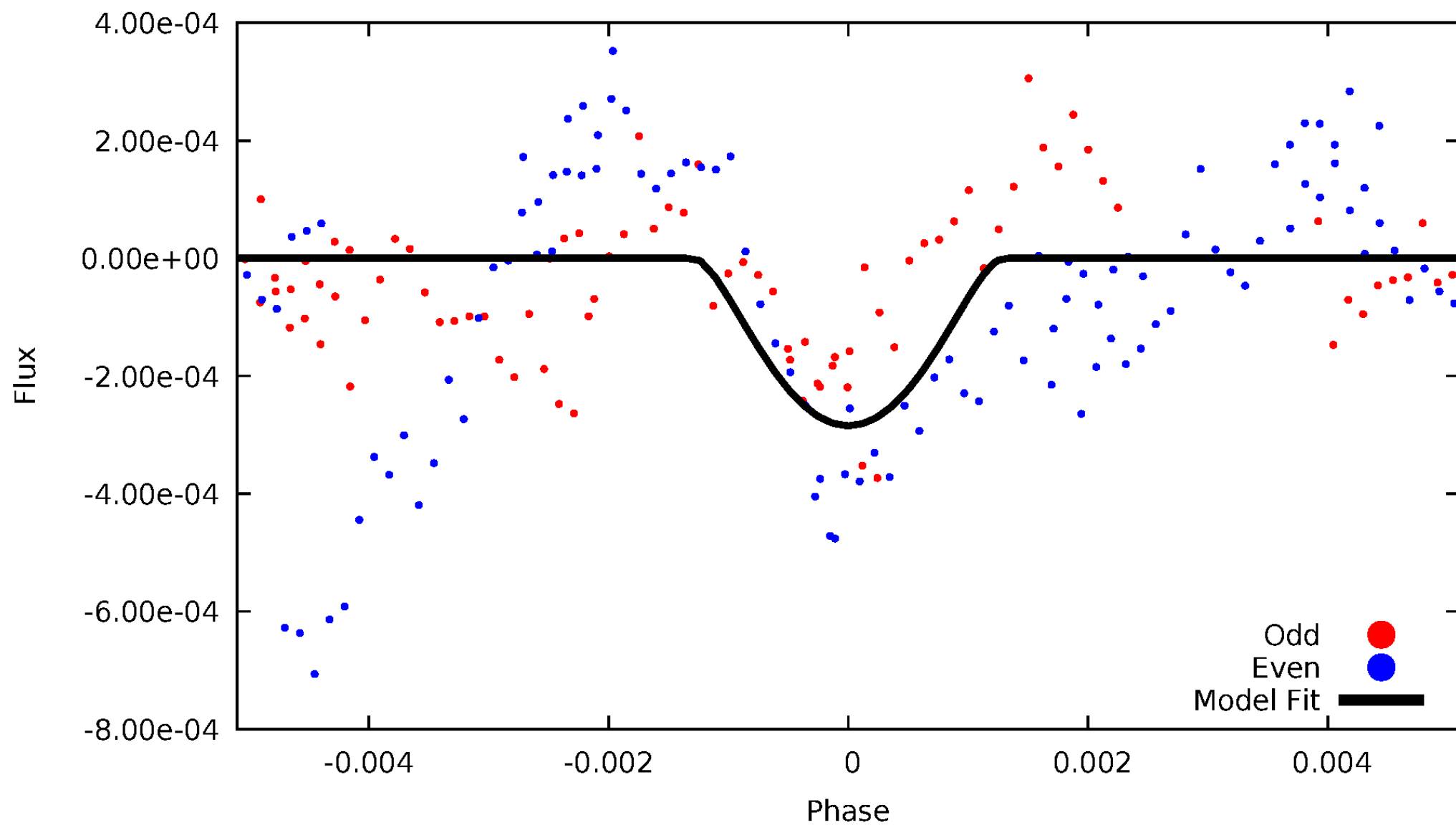


TCE 009092940-06



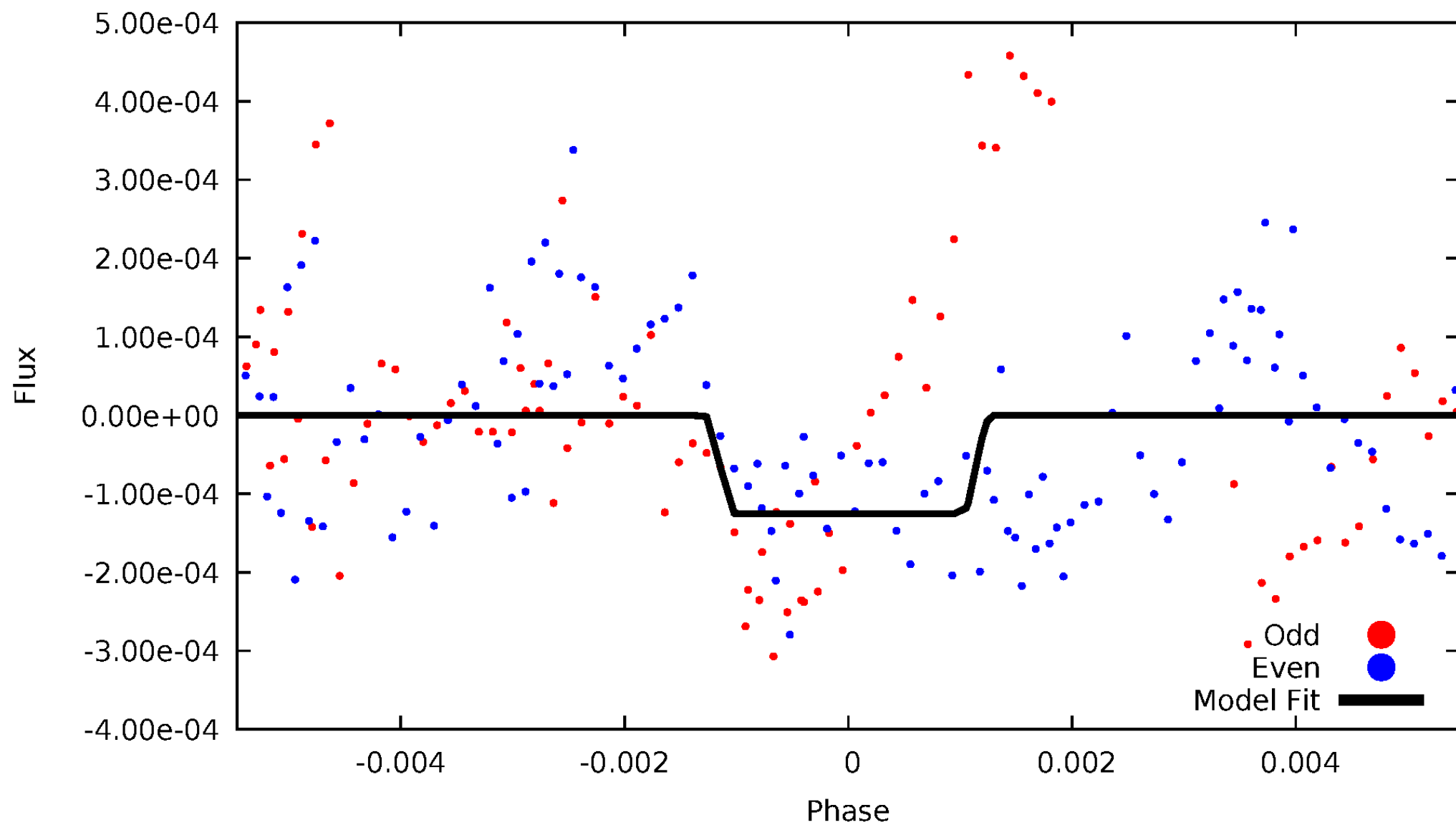
DV Odd/Even

TCE 009092940-06



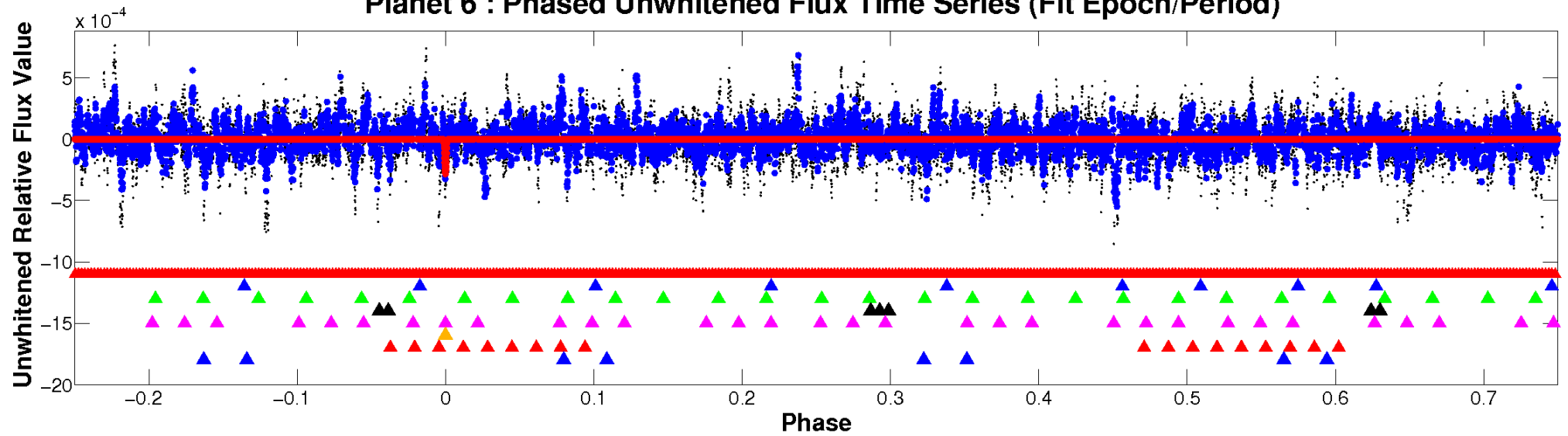
ALT Odd/Even

TCE 009092940-06

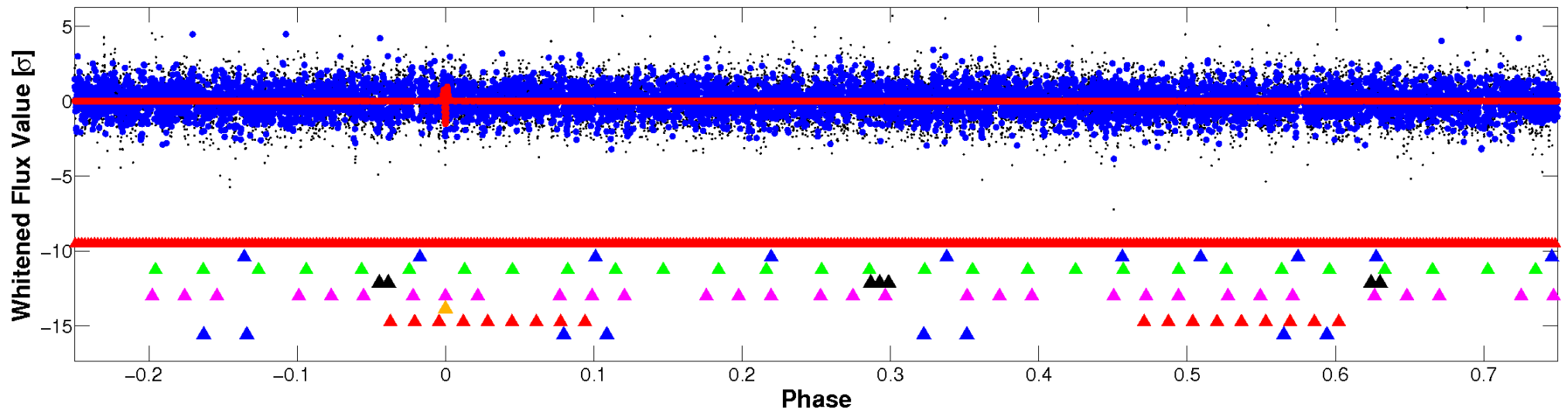


Non-Whitened Vs. Whitened Light Curve

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

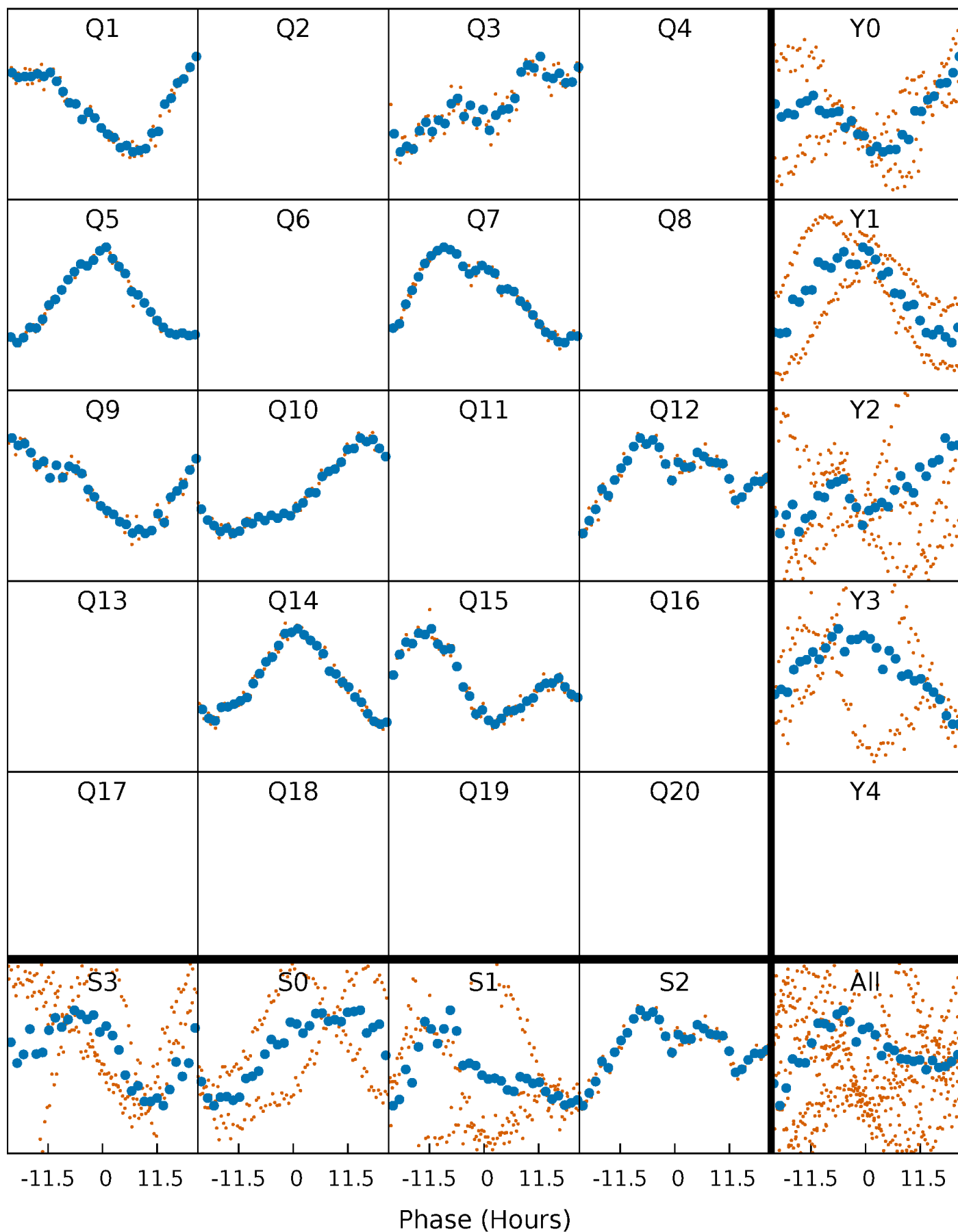


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



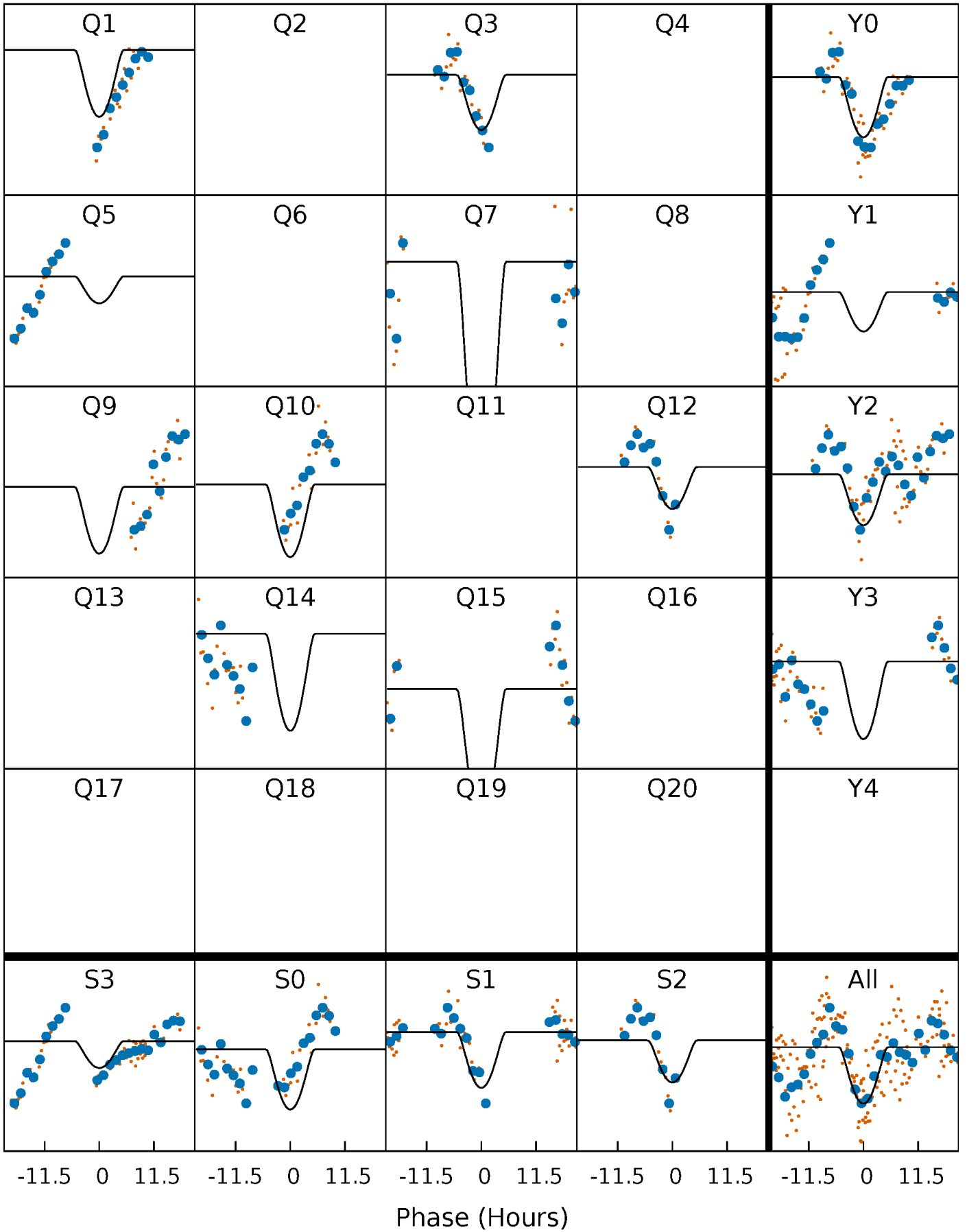
PDC Quarter-Phased Transit Curves

TCE 009092940-06 P=164.301407 Days $T_0=153.974230$ (BKJD)



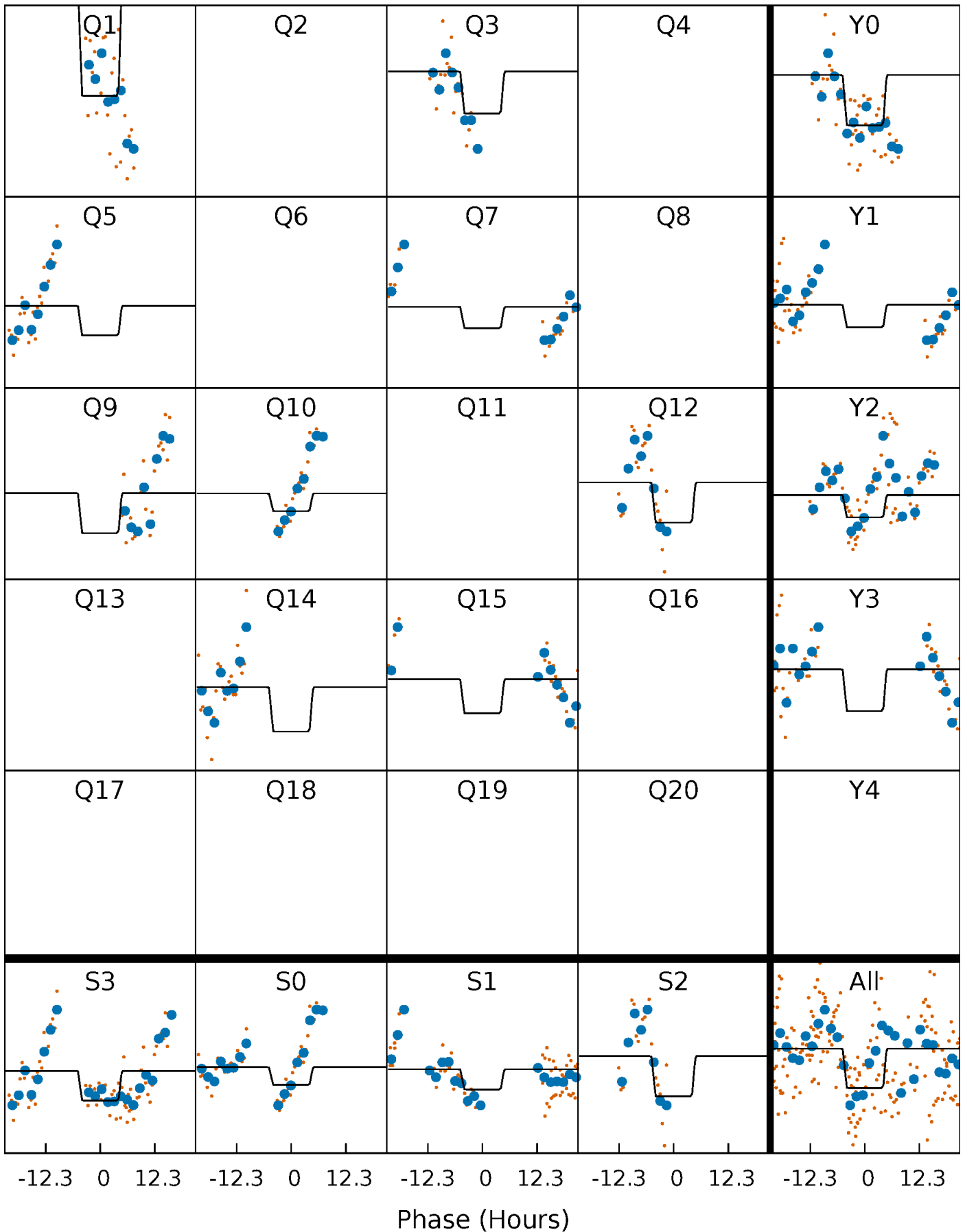
DV Quarter-Phased Transit Curves

TCE 009092940-06 $P=164.301407$ Days $T_0=153.974230$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

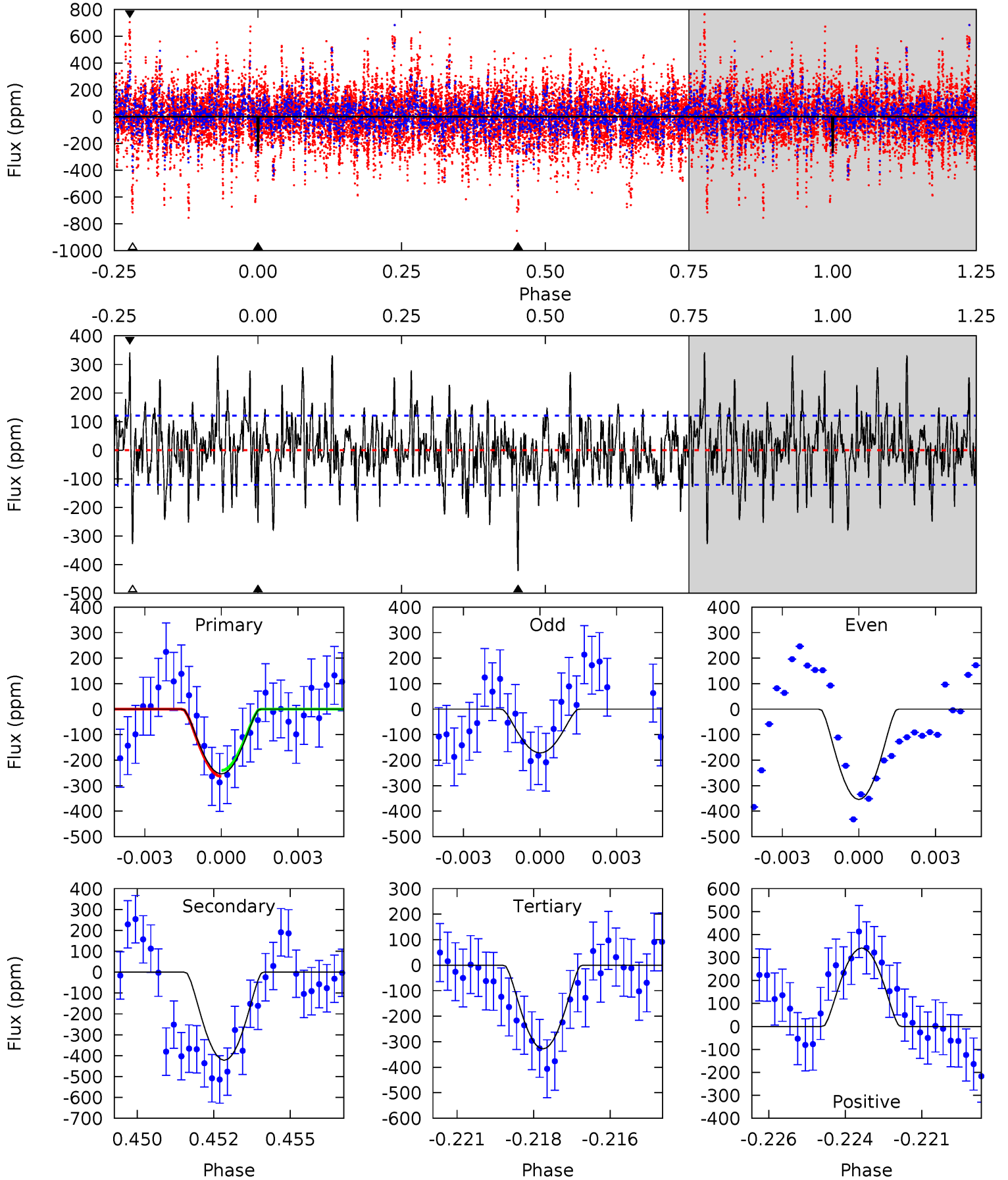
TCE 009092940-06 P=164.298043 Days $T_0=154.062145$ (BKJD)



DV Model-Shift Uniqueness Test

009092940-06, P = 164.301407 Days, E = 153.974230 Days

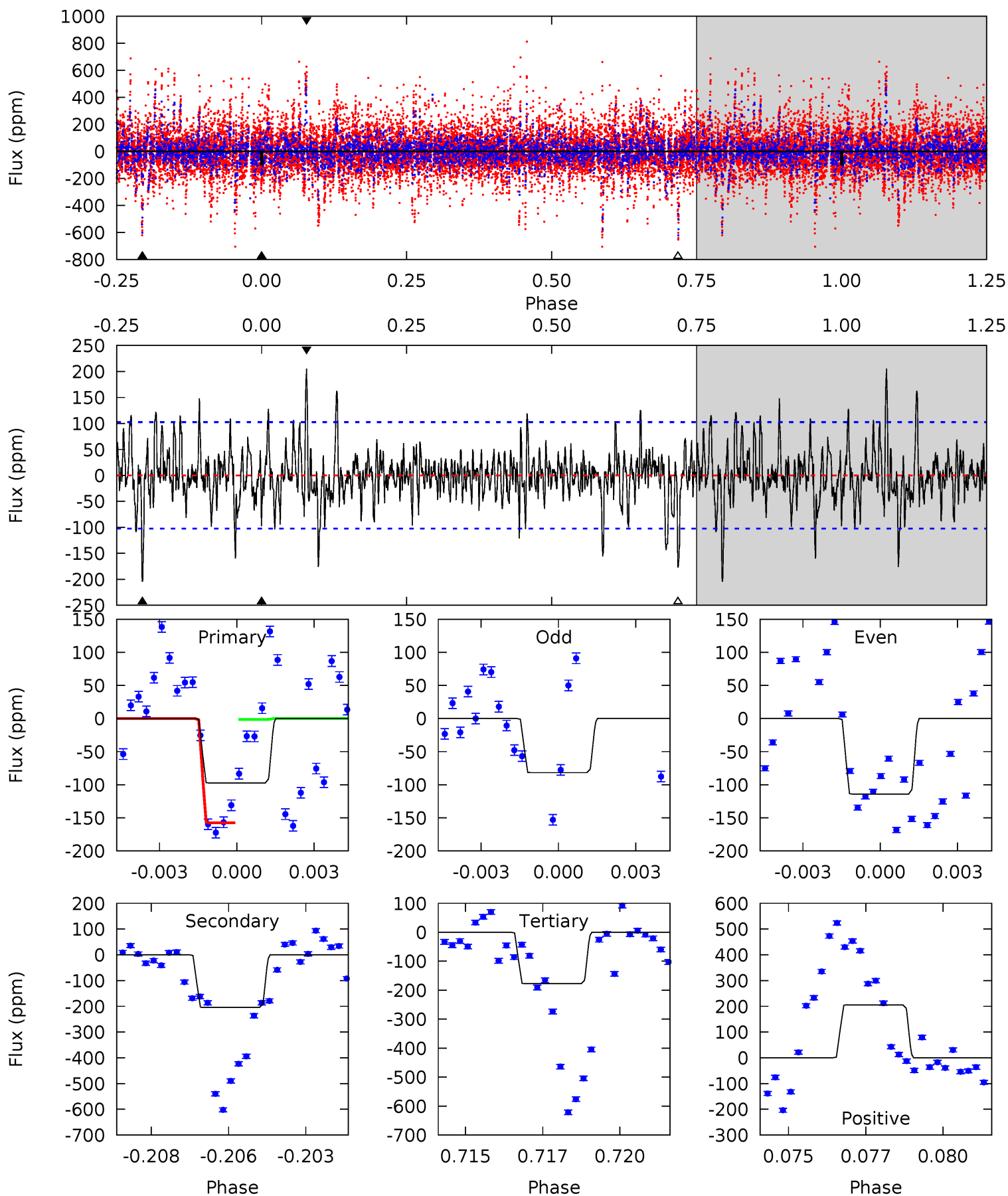
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	18.4	14.3	14.9	5.28	3.01	3.90	-3.25	-3.84	4.12	3.52	4.03	0.99	0.45	0.52



Alt Model-Shift Uniqueness Test

009092940-06, P = 164.298043 Days, E = 154.062145 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.02	10.5	9.14	10.6	5.28	3.01	2.09	-4.12	-5.57	1.39	-0.05	0.82	0.96	0.50	4.00



Stellar Parameters For KIC 009092940

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6575^{+181}_{-250}	$4.223^{+0.136}_{-0.187}$	$-0.120^{+0.250}_{-0.300}$	$1.429^{+0.439}_{-0.293}$	$1.247^{+0.188}_{-0.188}$	$0.602^{+0.444}_{-0.293}$
	+3%/-4%	+3%/-4%	+208%/-250%	+31%/-21%	+15%/-15%	+74%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009092940-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-422 ± 23	$10.72^{+10.05}_{-7.79}$	614^{+43}_{-40}	3966^{+3057}_{-792}	847^{+10127}_{-636}
Alt.	-204 ± 19	$9.66^{+10.20}_{-6.43}$	611^{+46}_{-39}	3638^{+1895}_{-699}	486^{+3949}_{-377}

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 $A_{obs} \gg 1.0$

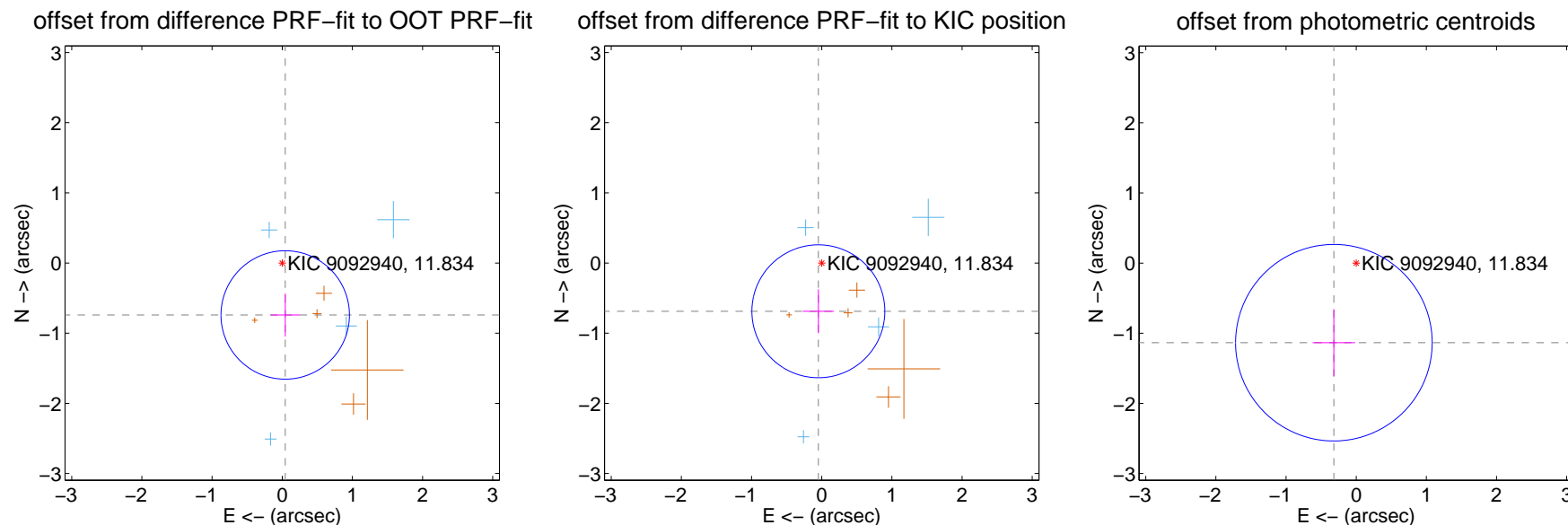
DV Centroid Data

Supplemental centroid analysis for 009092940-06. **Kepler magnitude: 11.83.** Transit SNR 8.07

There are 4 quarters with good PRF difference image offsets

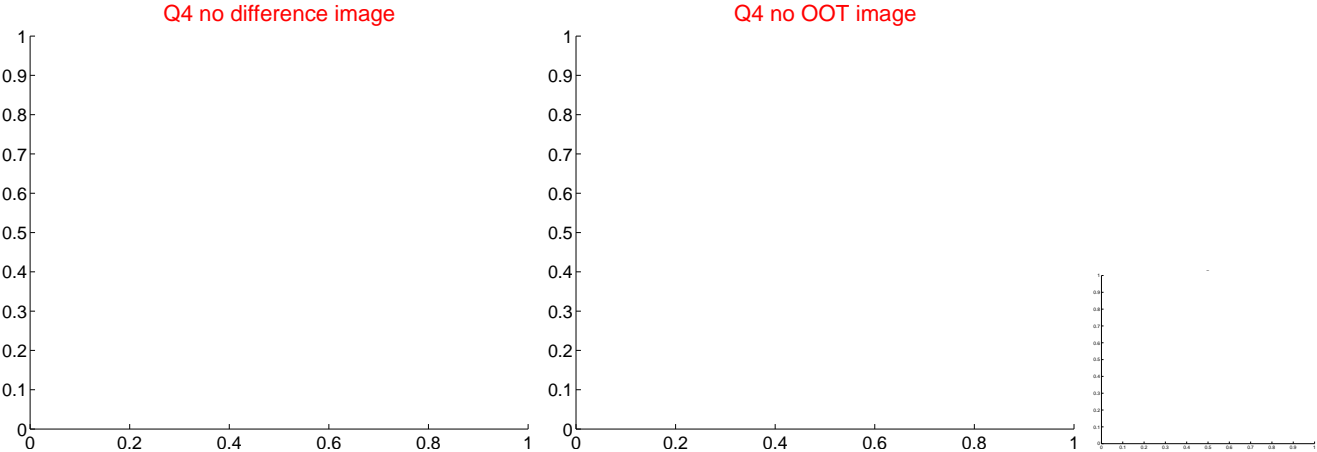
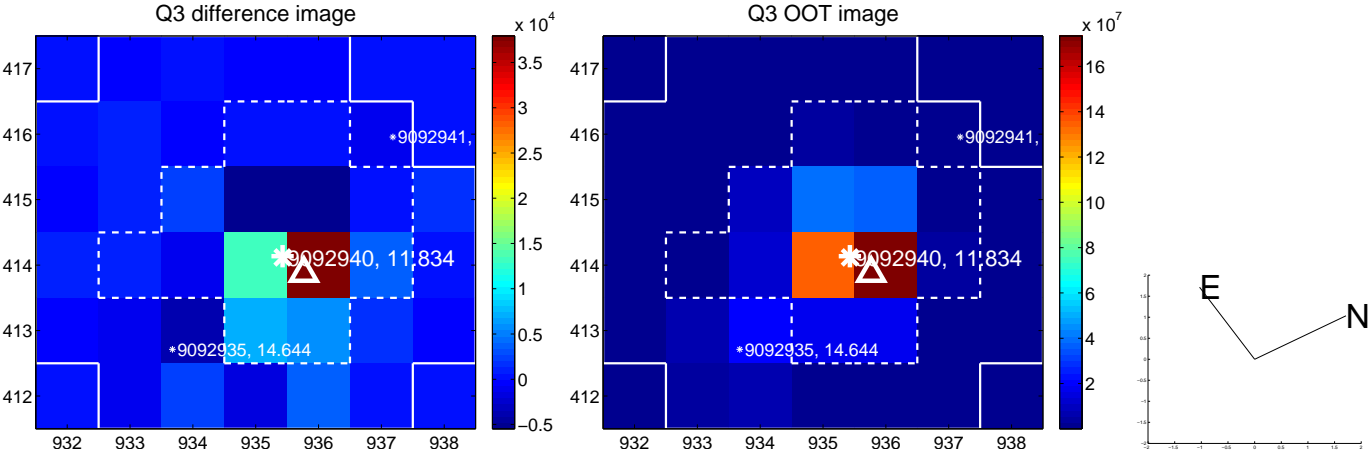
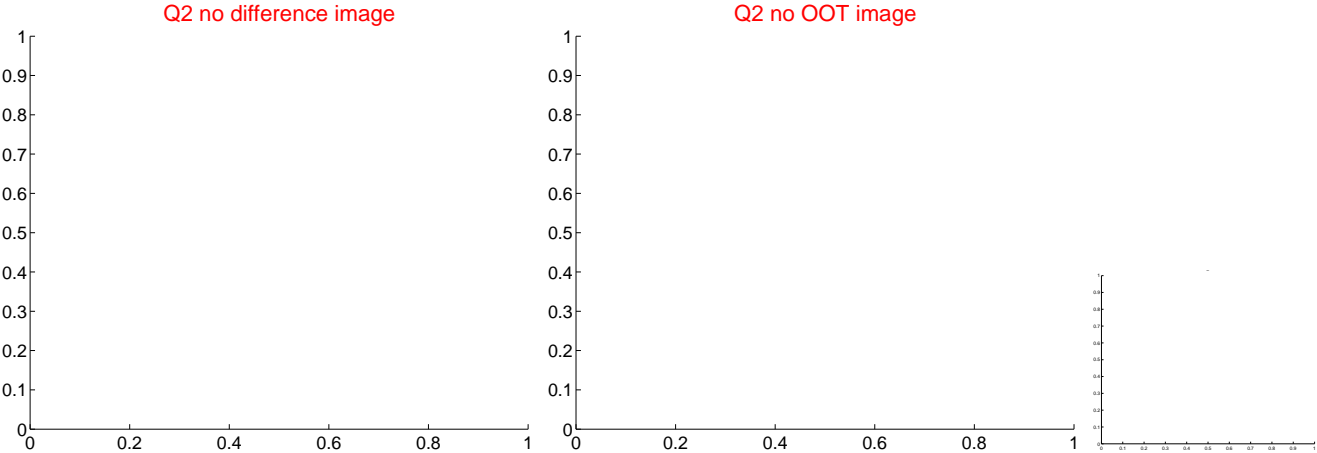
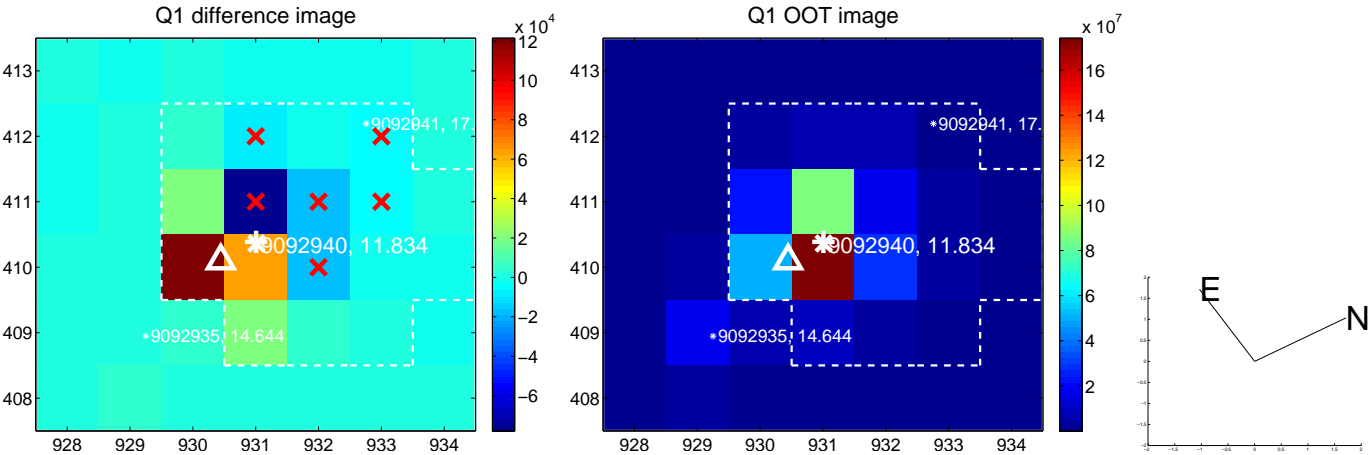
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.741 ± 0.305	2.43	-0.043 ± 0.209	-0.740 ± 0.307
PRF-fit source offset from KIC position	0.689 ± 0.316	2.18	0.048 ± 0.221	-0.688 ± 0.314
photometric centroid source offset	1.18 ± 0.47	2.52	0.32 ± 0.30	-1.13 ± 0.48

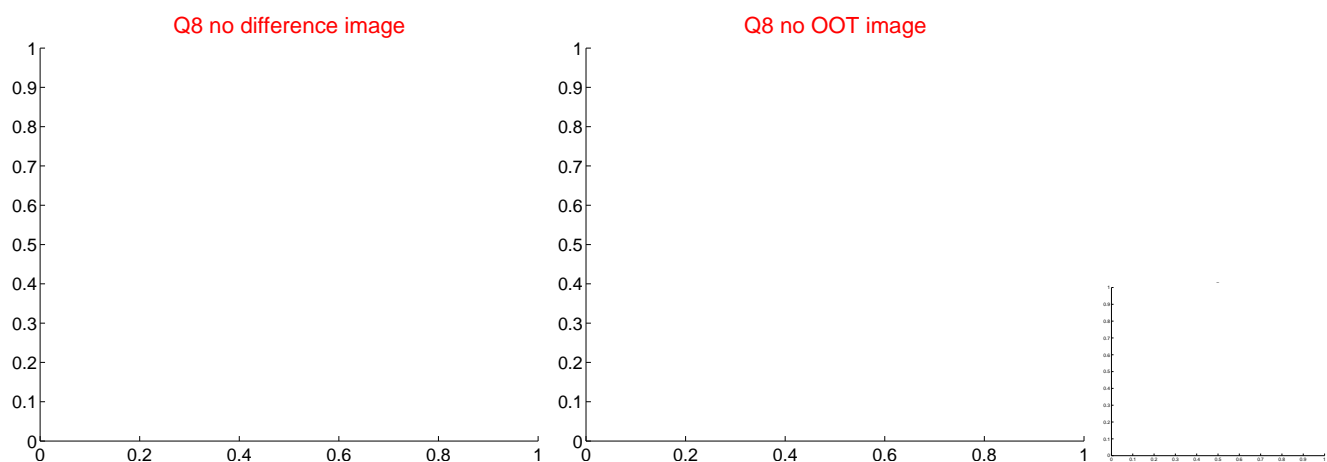
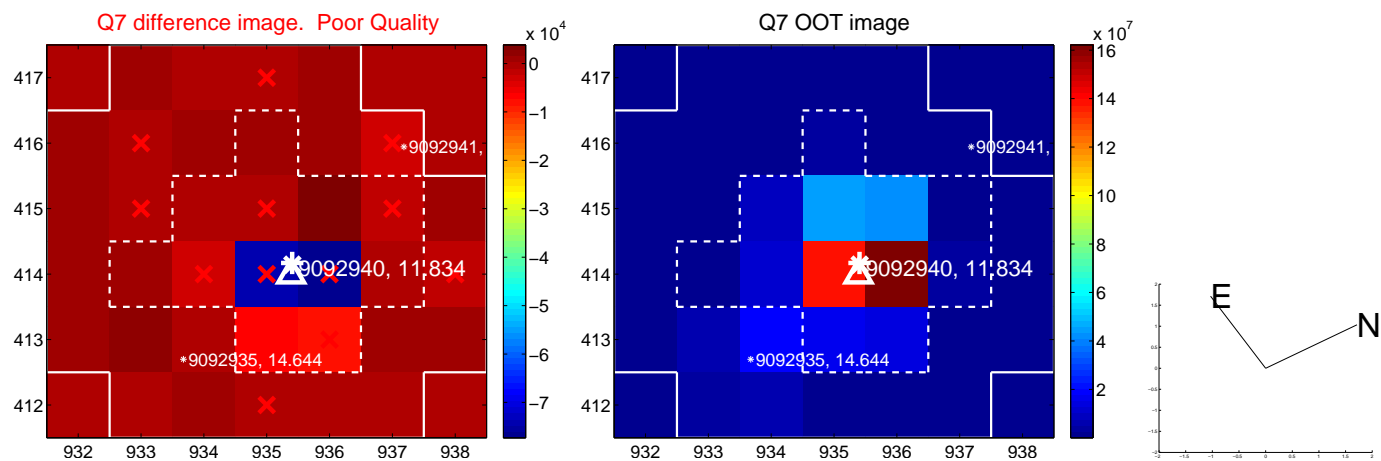
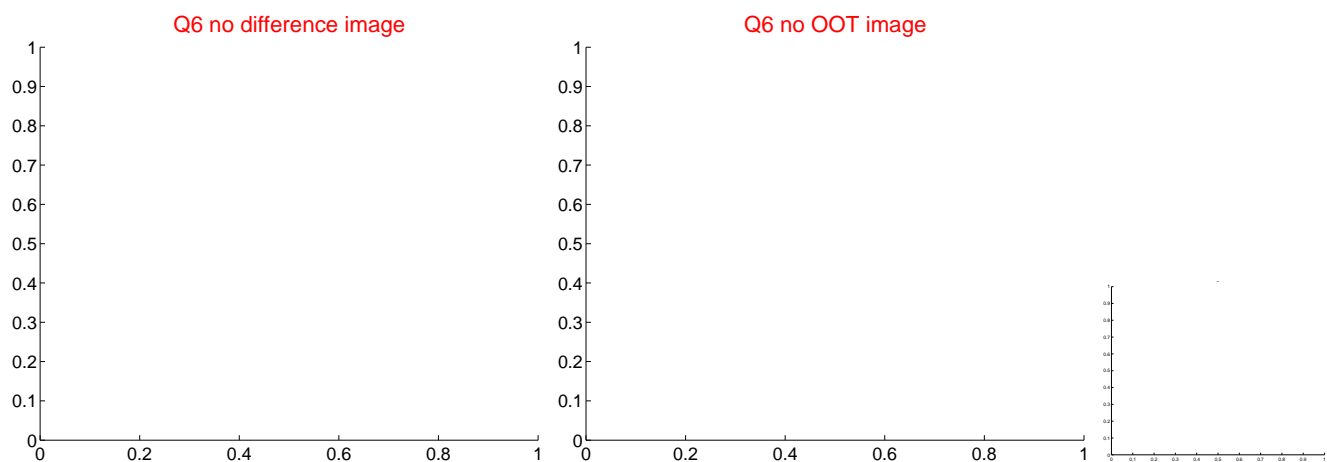
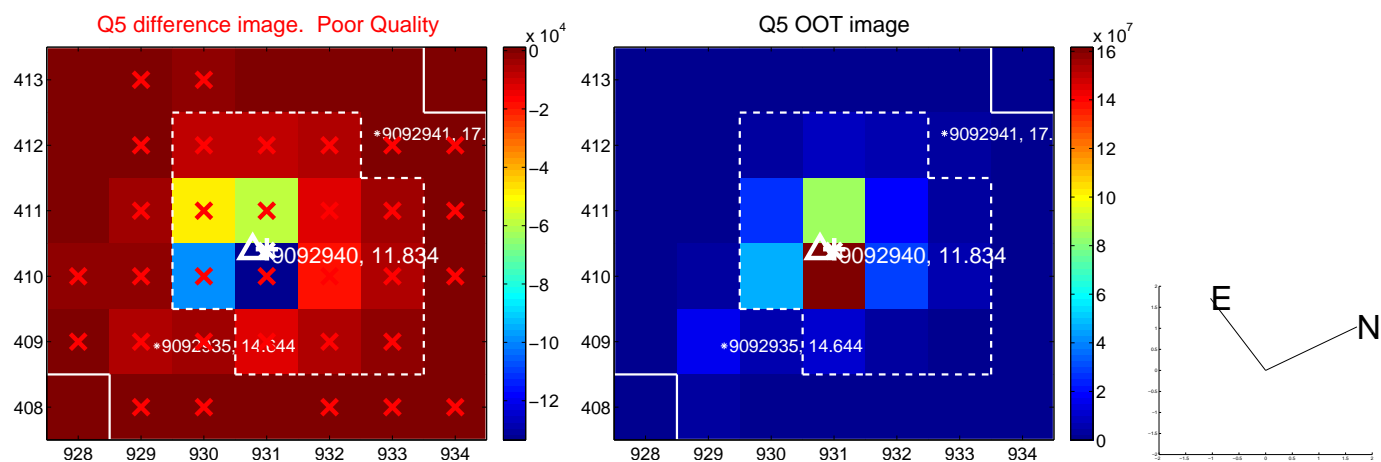


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

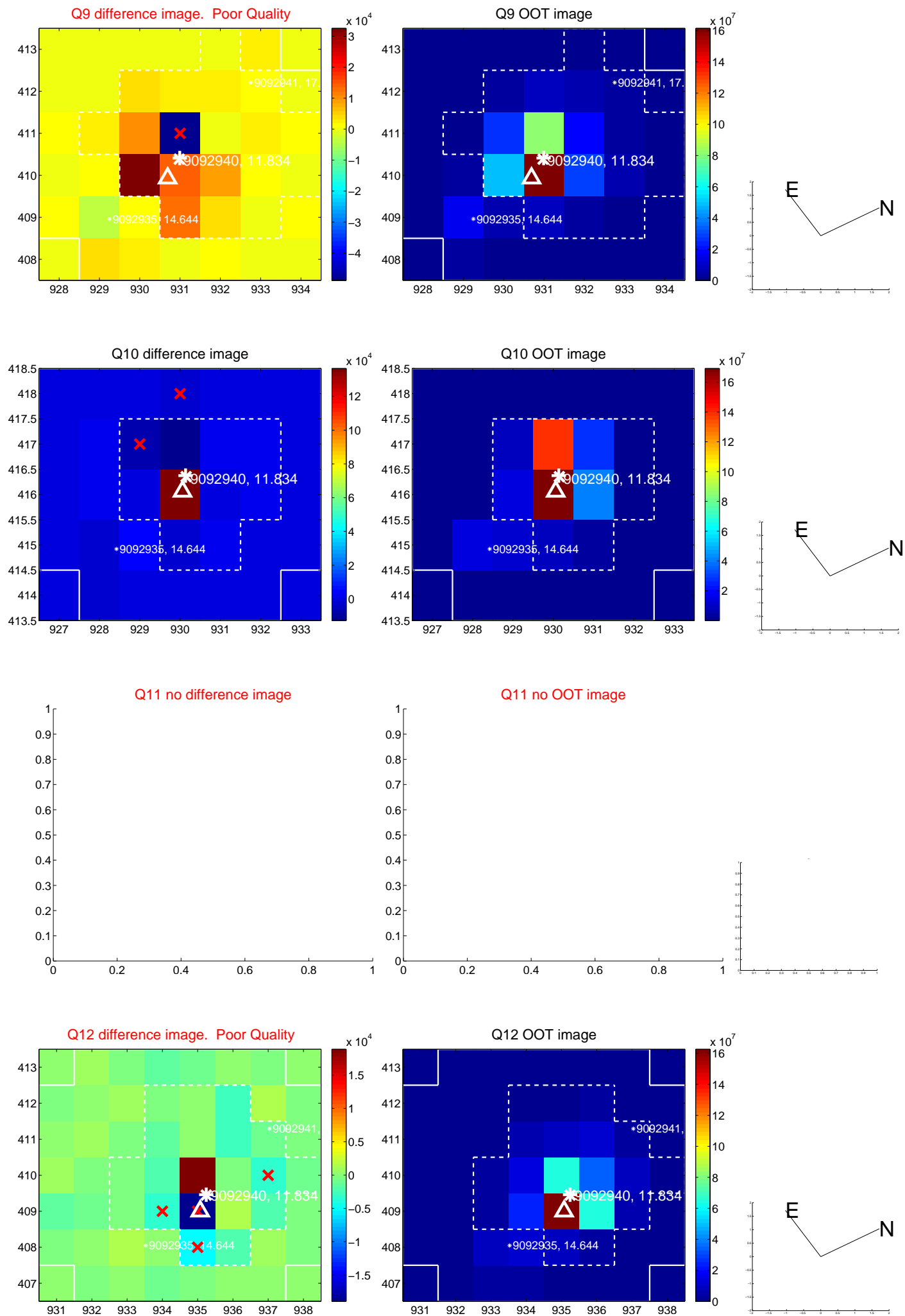
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

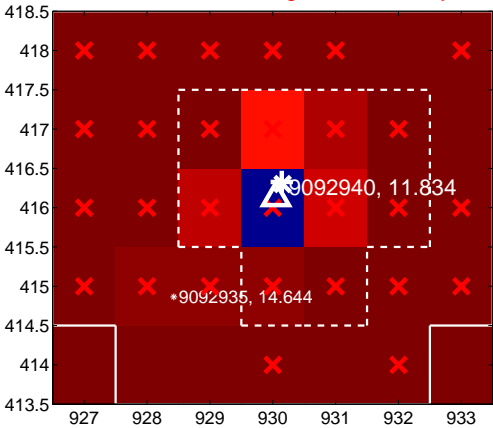
Q13 no difference image



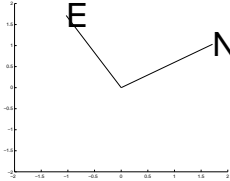
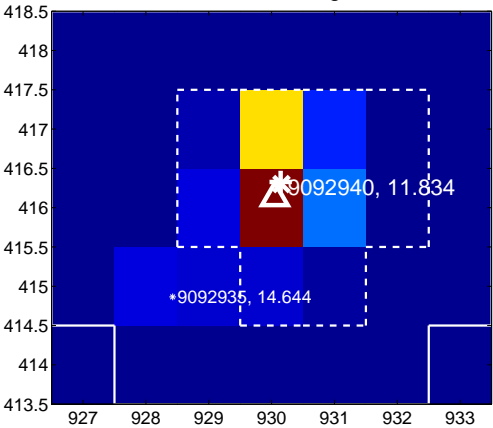
Q13 no OOT image



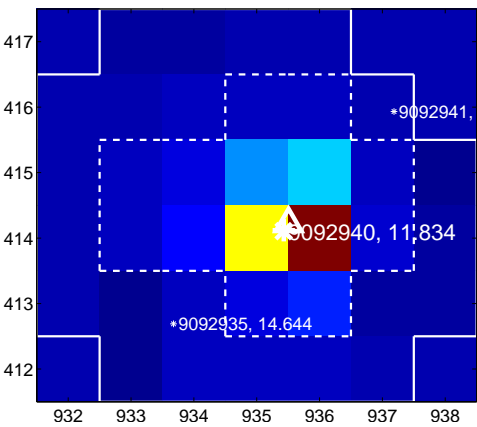
Q14 difference image. Poor Quality



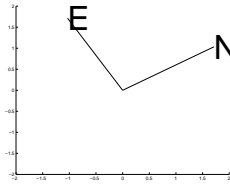
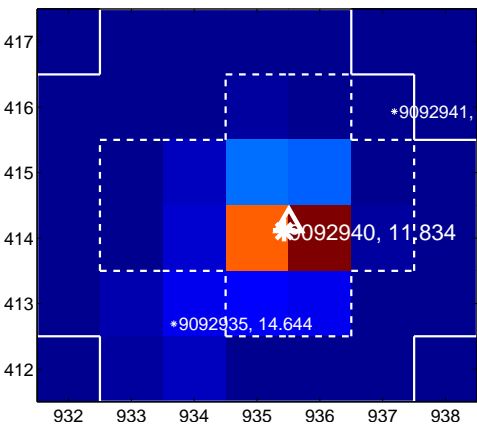
Q14 OOT image



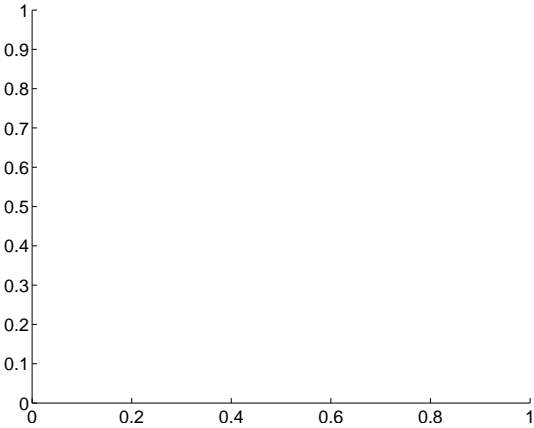
Q15 difference image



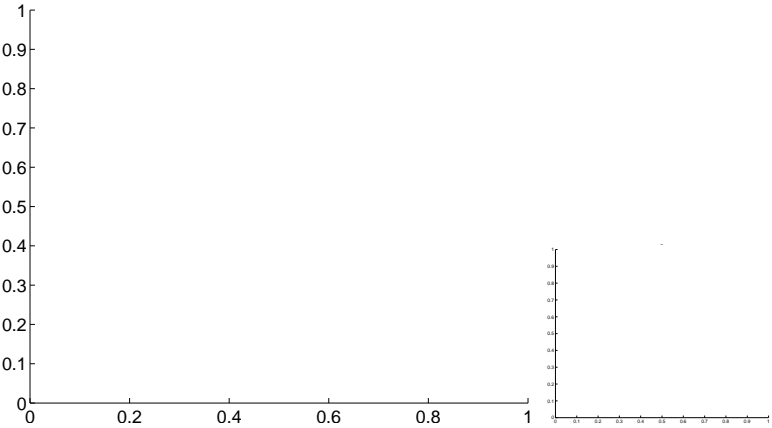
Q15 OOT image



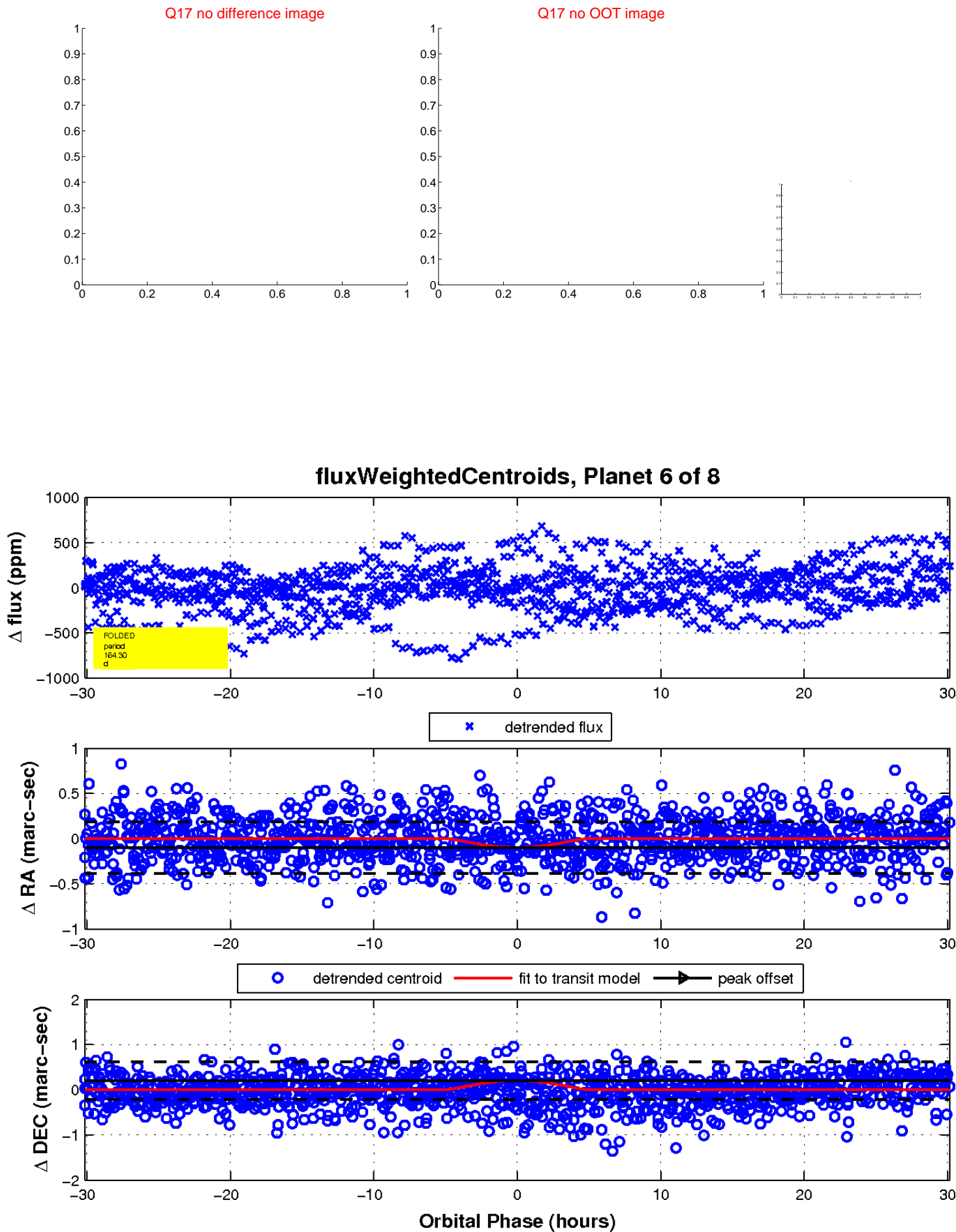
Q16 no difference image



Q16 no OOT image

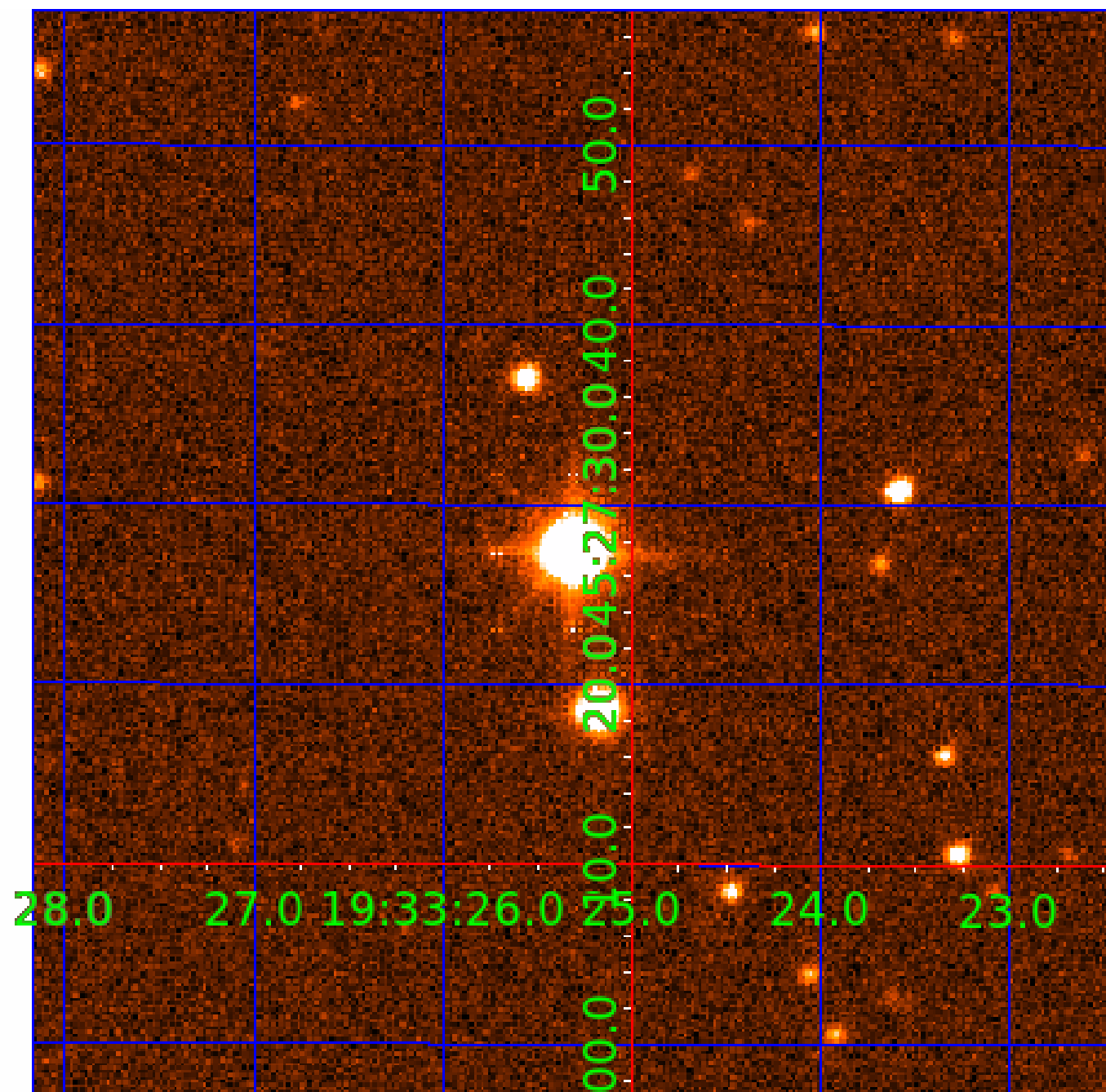


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009092940

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})
009092940-01	OBS	No	1.781951	131.871065	34.6	10.318	11.8	12.6	1.43	6575	0.98	3569.75
009092940-02	OBS	No	144.846819	248.414485	487.0	13.038	10.4	9.9	1.43	6575	6.07	10.14
009092940-03	OBS	No	50.961272	167.518869	182.6	6.394	9.5	9.3	1.43	6575	2.19	40.82
009092940-04	OBS	No	218.739298	203.063058	276.6	15.143	9.3	6.2	1.43	6575	2.51	5.85
009092940-05	OBS	No	45.135416	150.385762	116.4	5.916	8.8	5.5	1.43	6575	1.80	47.99
009092940-06	OBS	No	164.301407	153.974230	284.3	10.053	8.7	8.1	1.43	6575	4.71	8.57
009092940-07	OBS	No	83.498289	147.866364	219.1	3.151	9.2	7.8	1.43	6575	2.36	21.13
009092940-08	OBS	No	204.184137	131.967472	313.7	8.385	8.5	7.5	1.43	6575	4.93	6.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009092940-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
009092940-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
009092940-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009092940-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009092940-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
009092940-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_UNCERTAIN

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

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

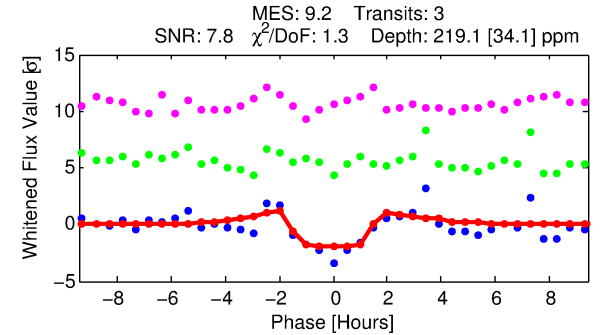
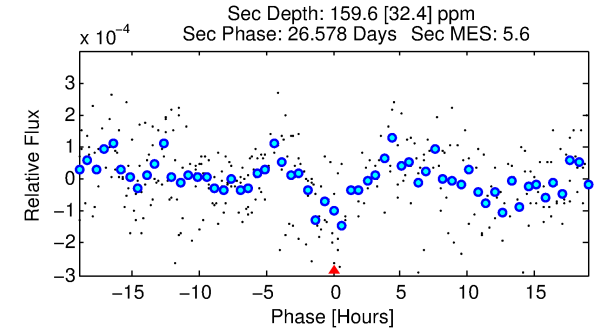
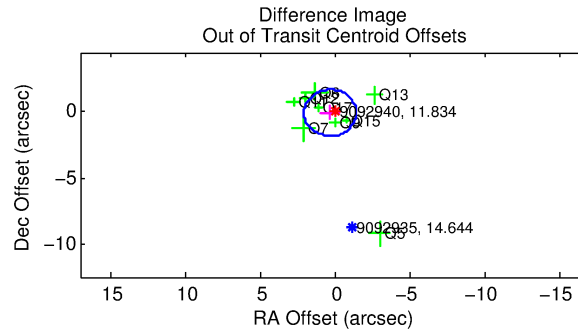
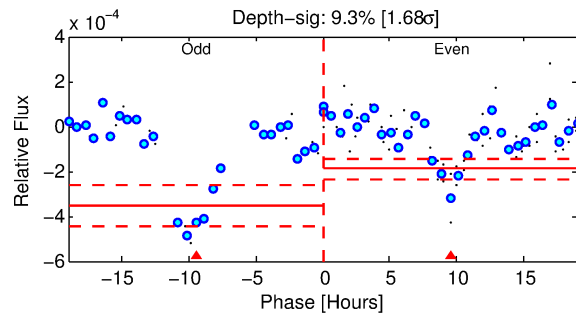
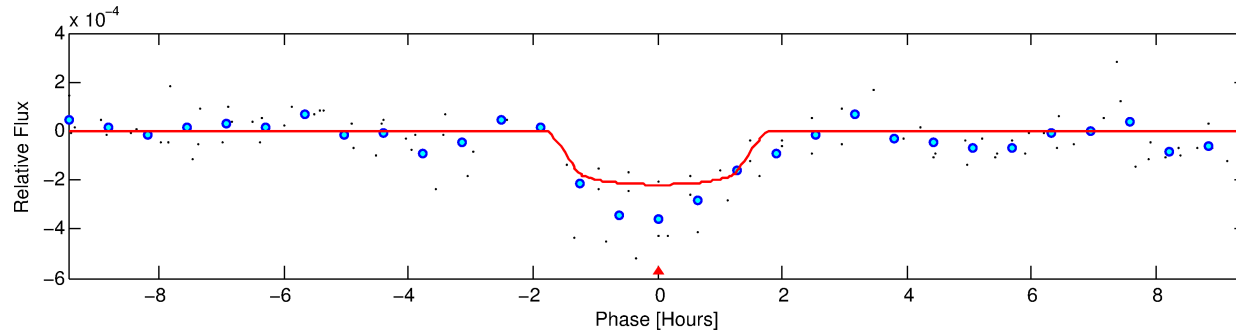
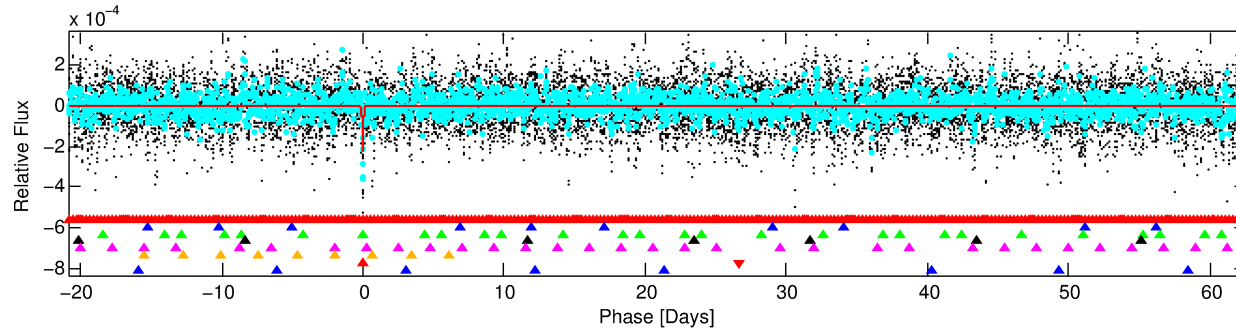
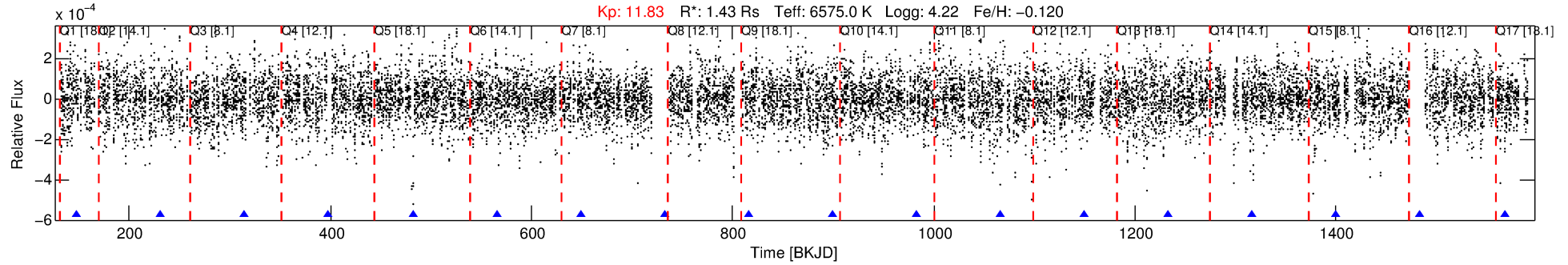
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092940-07

No Significant Match Found

DV One-Page Summary

KIC: 9092940 Candidate: 7 of 8 Period: 83.498 d



DV Fit Results:

Period = 83.49829 [0.00094] d
Epoch = 147.8664 [0.0125] BKJD
Rp/R* = 0.0151 [0.0417]
a/R* = 121.35 [1924.89]
b = 0.82 [6.37]
Seff = 21.13 [8.12]
Teq = 547 [52] K
Rp = 2.36 [6.54] Re
a = 0.4023 [0.1006] AU
Ag = 2559.44 [14157.90] [0.18 σ]
Teffp = 6012 [8301] K [0.66 σ]

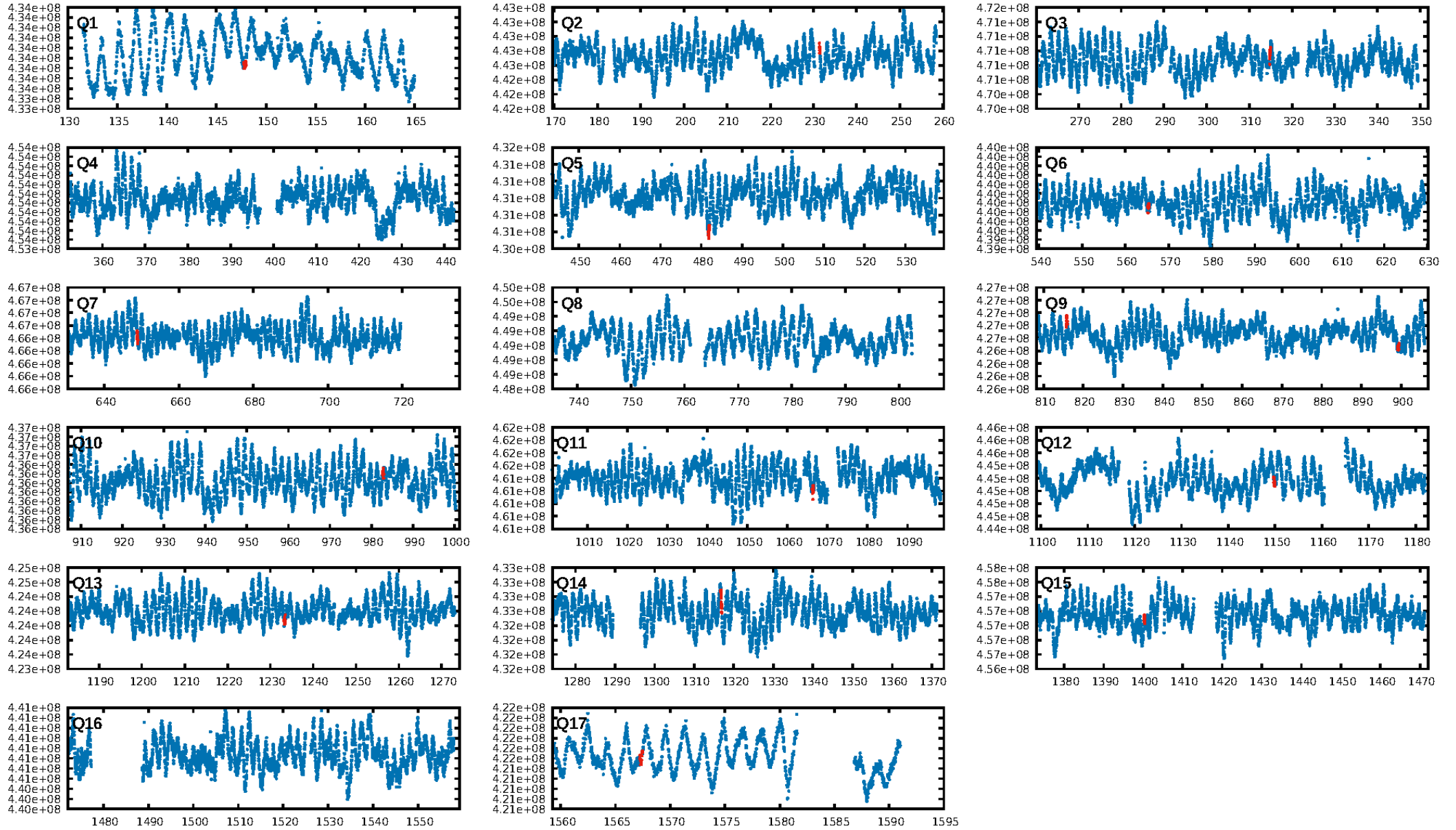
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [109.55 σ]
LongPeriod-sig: 100.0% [109.77 σ]
ModelChiSquare2-sig: 3.8%
ModelChiSquareGof-sig: 75.6%
Bootstrap-pfa: 4.91e-11
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -4.302
Centroid-sig: 10.3%
Centroid-so: 0.968 arcsec [1.93 σ]
OotOffset-rm: 0.308 arcsec [0.53 σ]
OotOffset-st: 1/3/1/4 [9]
KicOffset-rm: 0.367 arcsec [0.63 σ]
KicOffset-st: 1/3/1/4 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.23 [3/13]

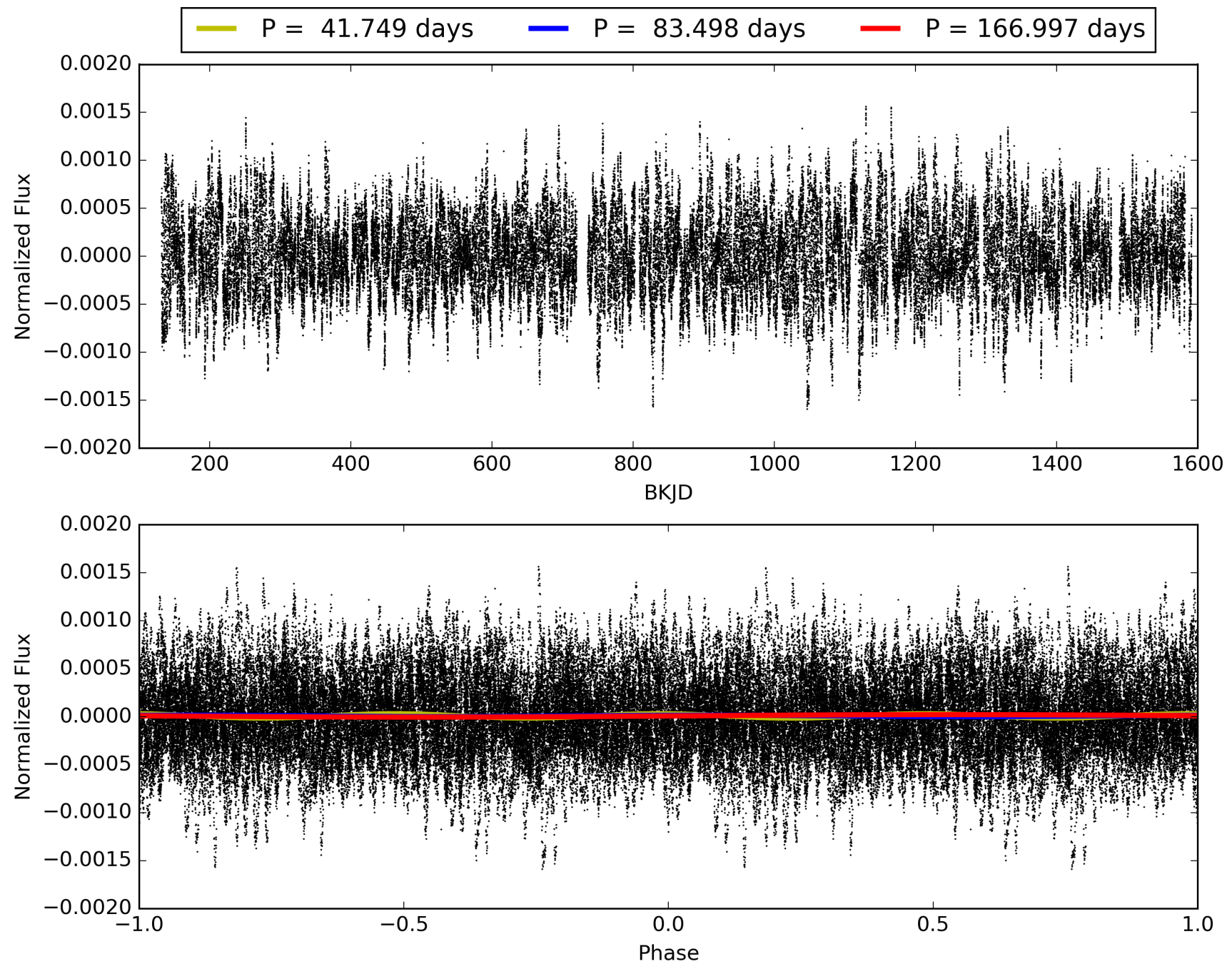
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:42:23 Z

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

TCE 009092940-07, PDC Light Curves

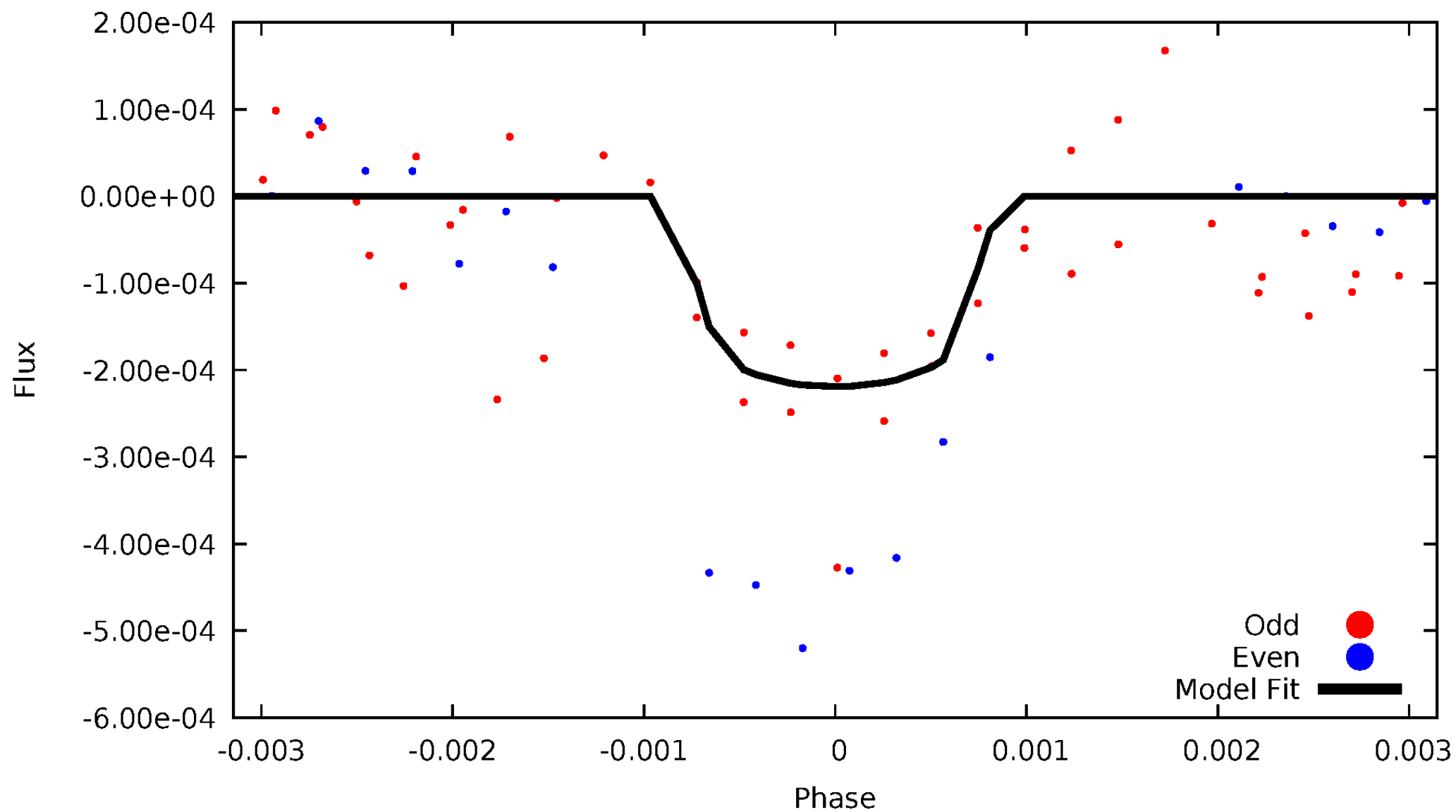


TCE 009092940-07



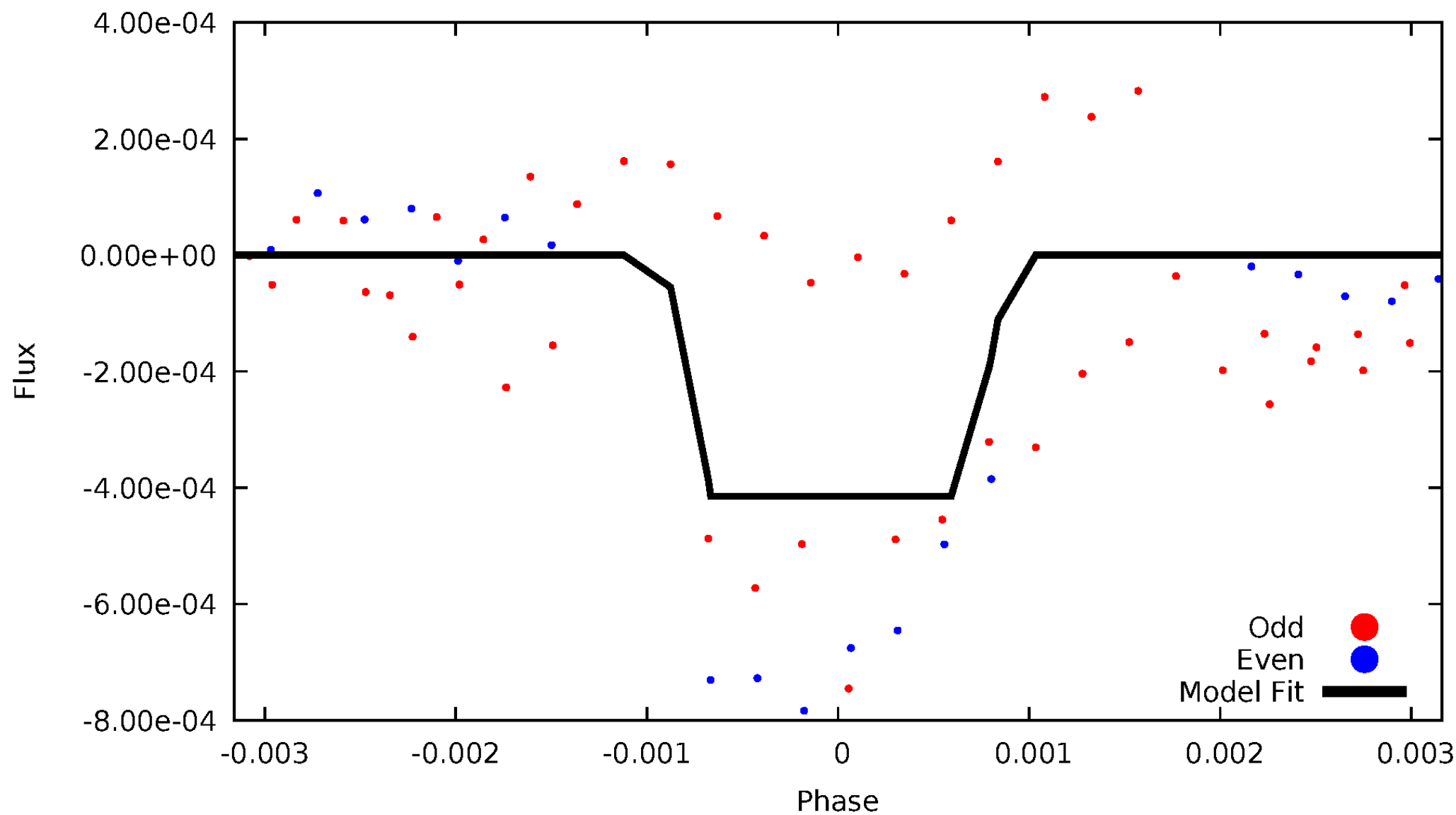
DV Odd/Even

TCE 009092940-07



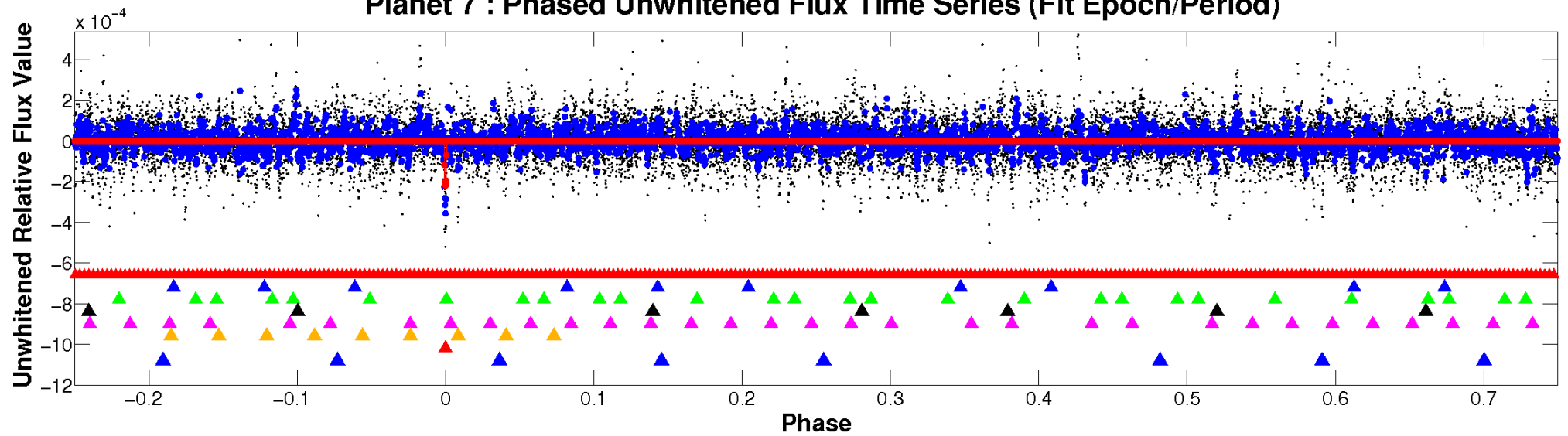
ALT Odd/Even

TCE 009092940-07

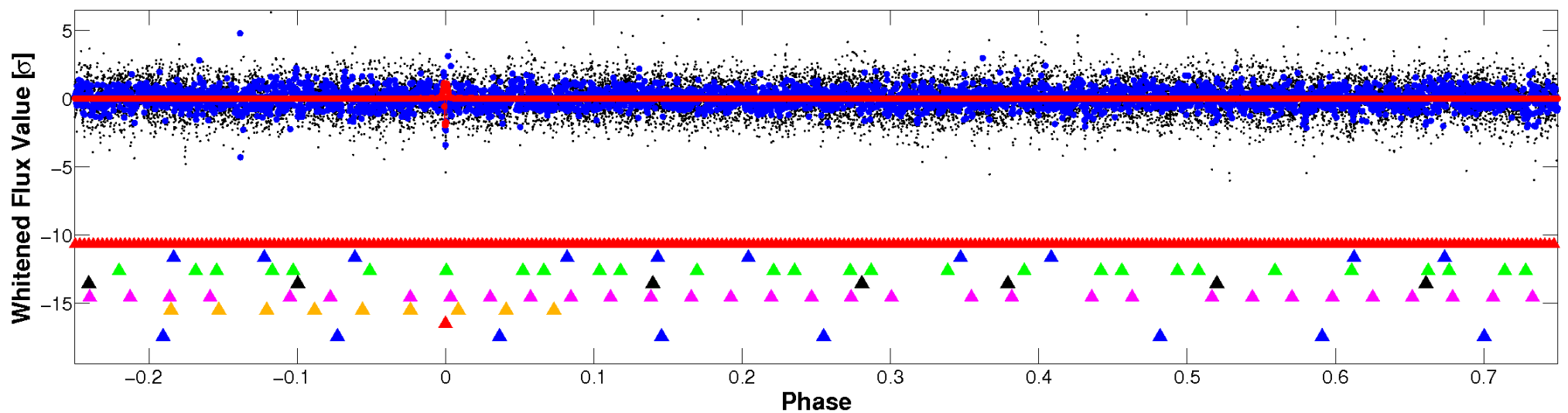


Non-Whitened Vs. Whitened Light Curve

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

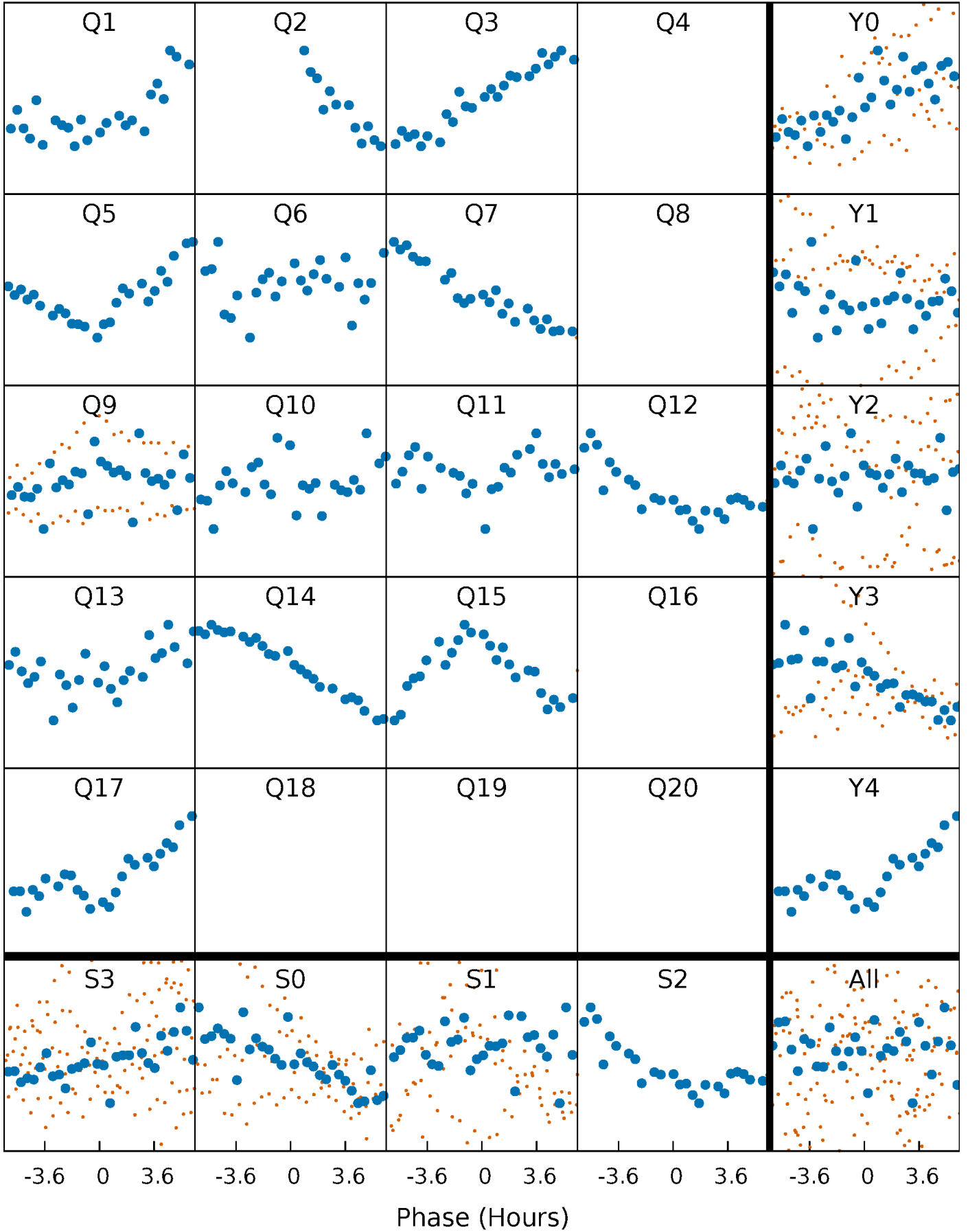


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



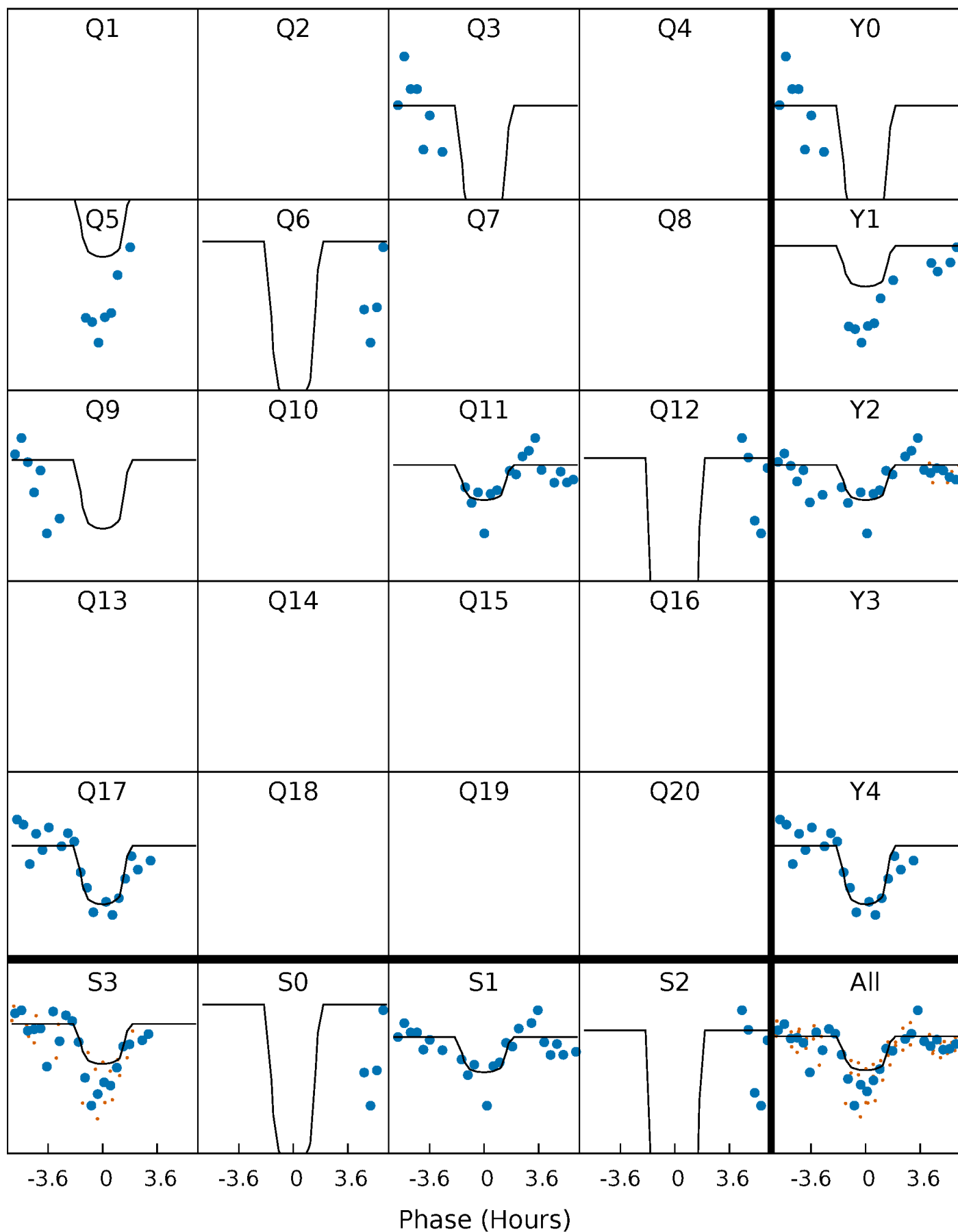
PDC Quarter-Phased Transit Curves

TCE 009092940-07 $P = 83.498289$ Days $T_0 = 147.866364$ (BKJD)



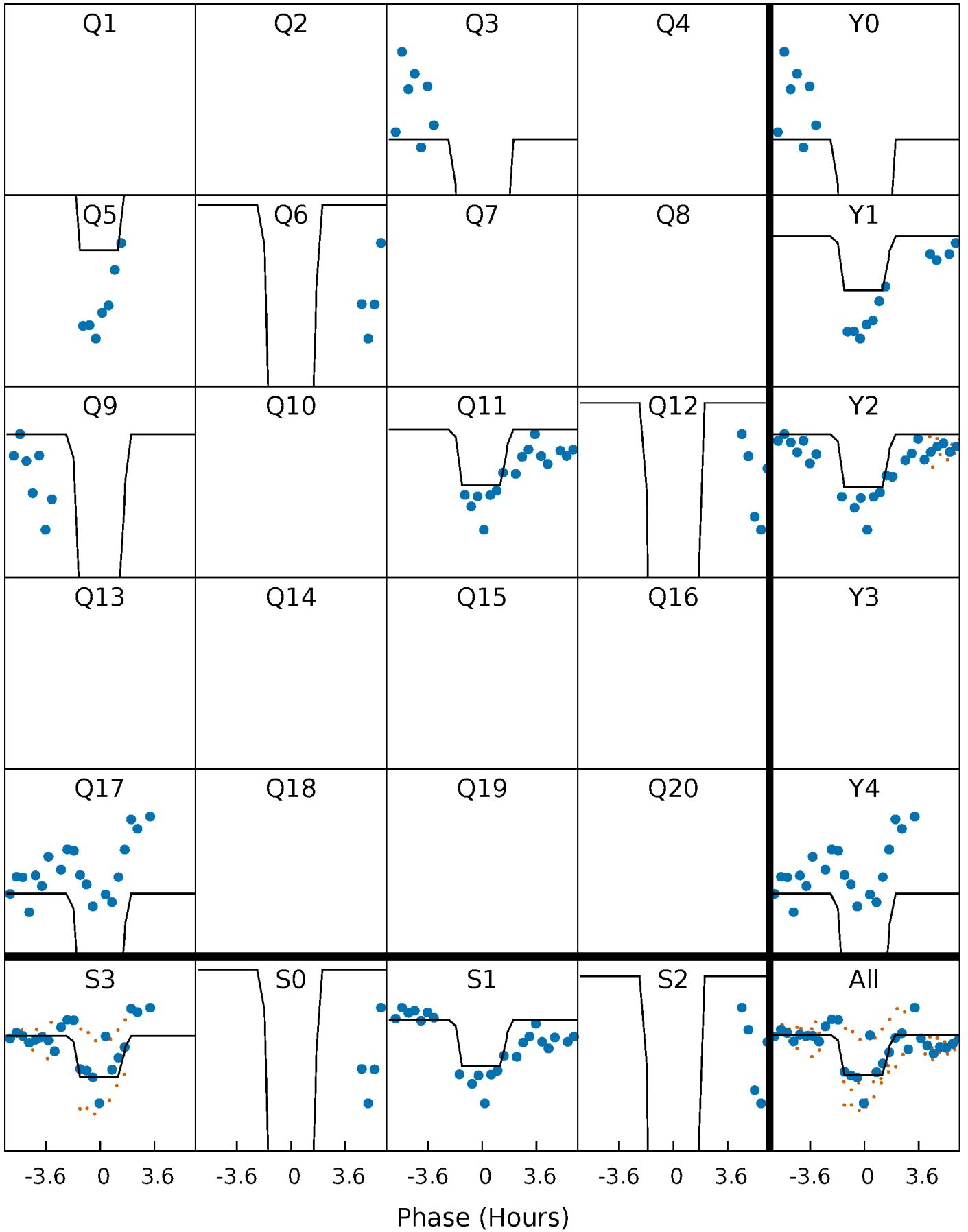
DV Quarter-Phased Transit Curves

TCE 009092940-07 $P = 83.498289$ Days $T_0 = 147.866364$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

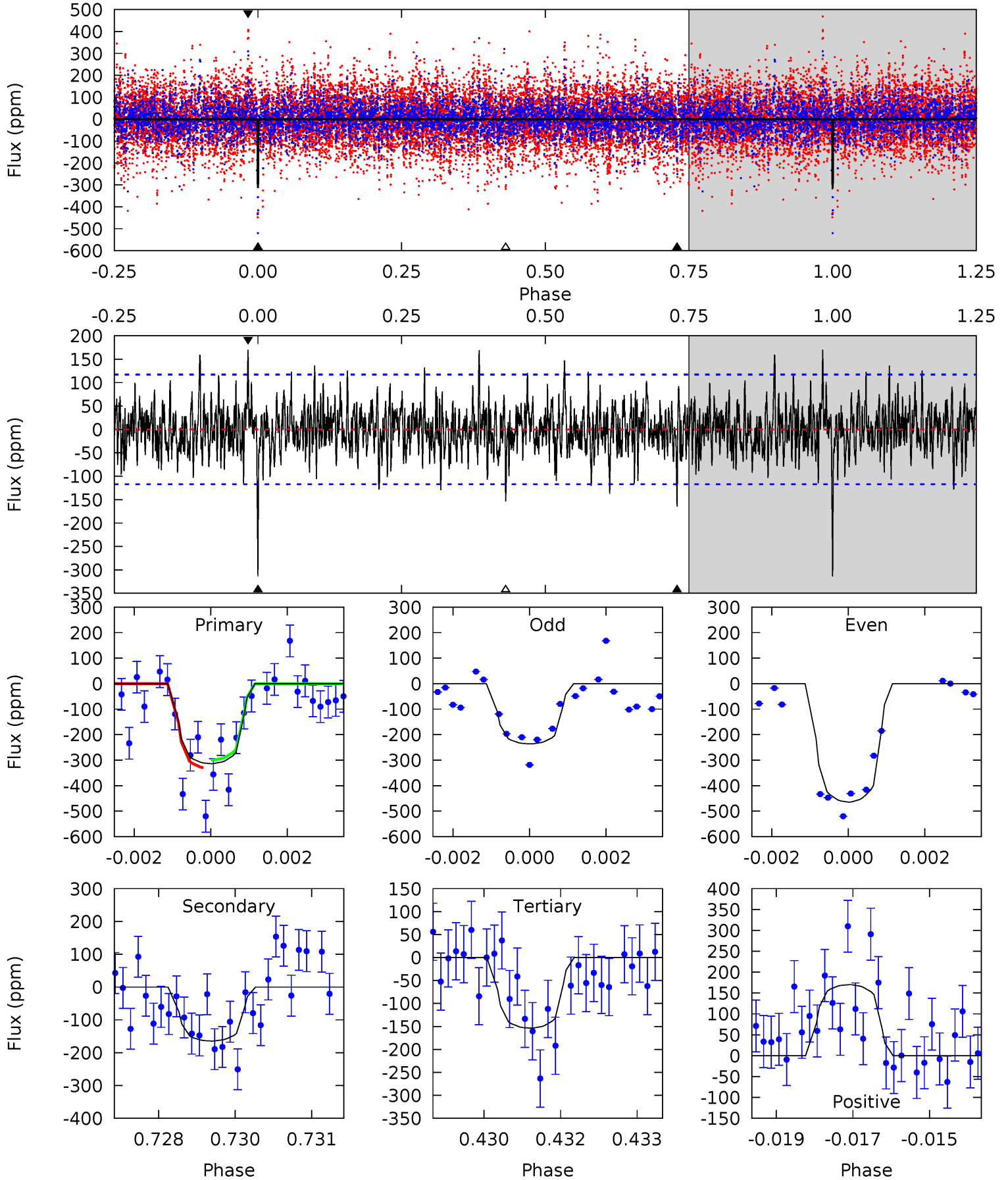
TCE 009092940-07 $P = 83.497657$ Days $T_0 = 147.869524$ (BKJD)



DV Model-Shift Uniqueness Test

009092940-07, P = 83.498289 Days, E = 64.368075 Days

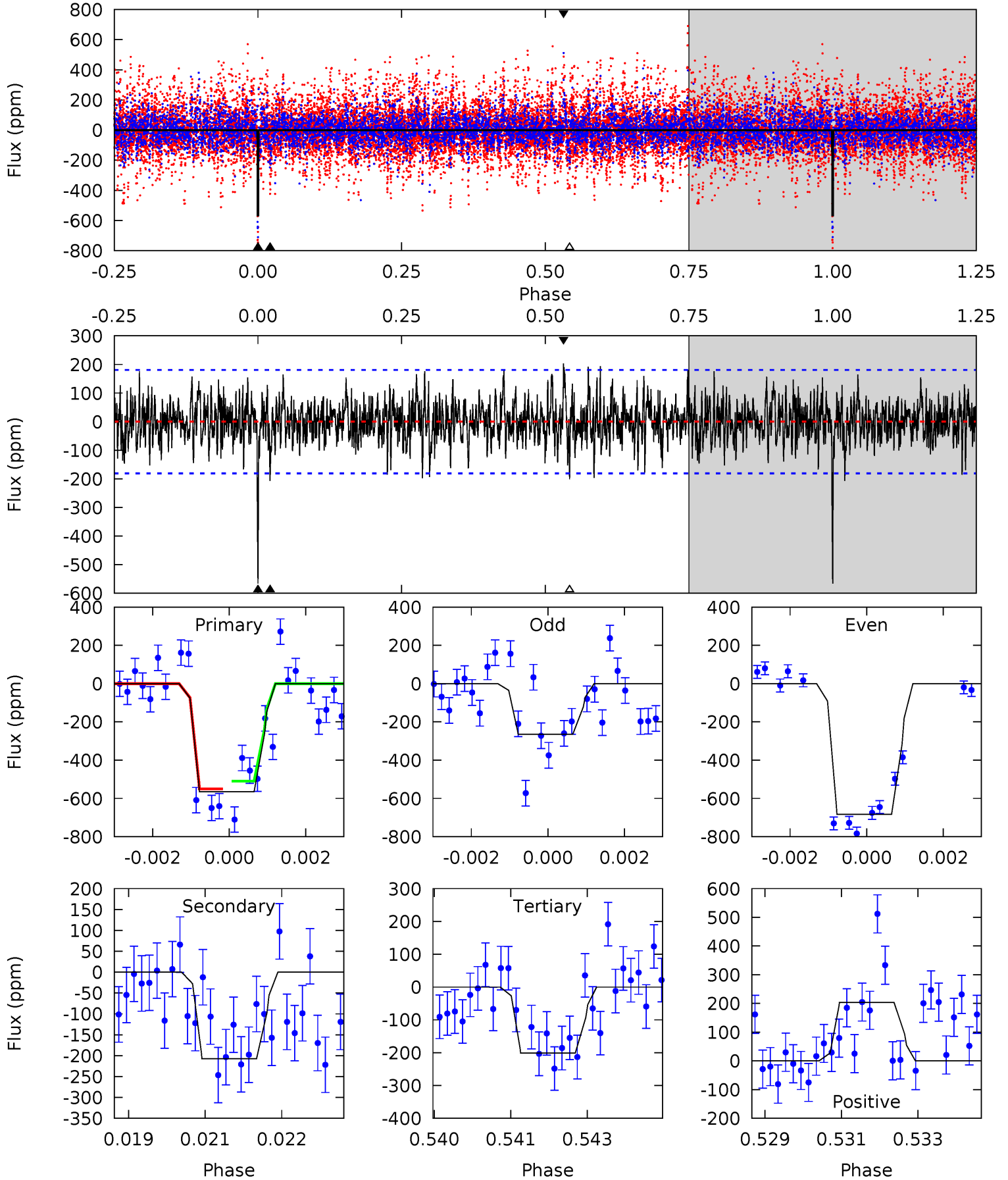
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	7.51	7.02	7.76	5.35	3.14	1.89	7.31	6.57	0.49	-0.25	4.98	1.27	0.35	0.68



Alt Model-Shift Uniqueness Test

009092940-07, P = 83.497657 Days, E = 64.371867 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	6.13	5.95	6.02	5.35	3.14	1.71	10.8	10.7	0.18	0.11	6.66	0.73	0.26	0.62



Stellar Parameters For KIC 009092940

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6575^{+181}_{-250}	$4.223^{+0.136}_{-0.187}$	$-0.120^{+0.250}_{-0.300}$	$1.429^{+0.439}_{-0.293}$	$1.247^{+0.188}_{-0.188}$	$0.602^{+0.444}_{-0.293}$
	+3%/-4%	+3%/-4%	+208%/-250%	+31%/-21%	+15%/-15%	+74%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009092940-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-165 ± 22	$5.42^{+5.73}_{-3.62}$	765^{+57}_{-50}	4240^{+2521}_{-865}	492^{+3731}_{-370}
Alt.	-207 ± 34	$6.05^{+5.42}_{-4.23}$	768^{+55}_{-50}	4232^{+3021}_{-836}	473^{+4797}_{-338}

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

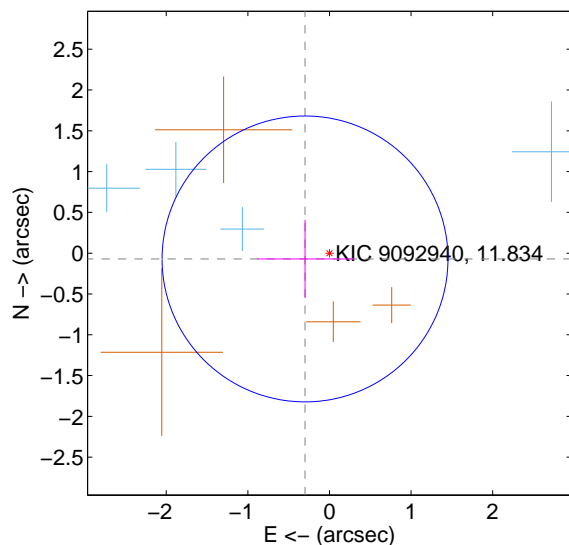
Supplemental centroid analysis for 009092940-07. **Kepler magnitude: 11.83.** Transit SNR 7.81

There are 4 quarters with good PRF difference image offsets

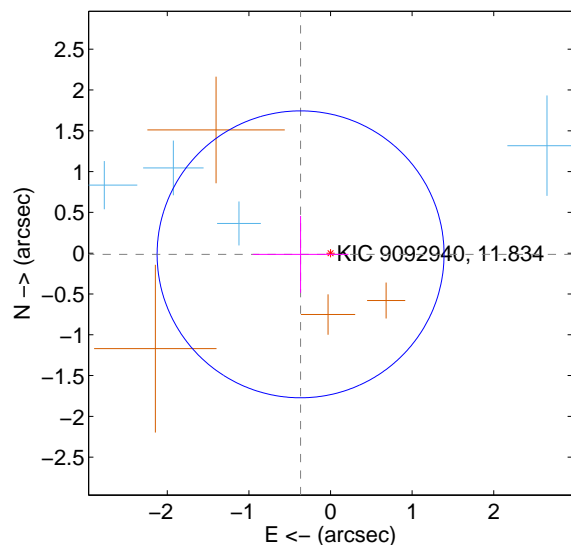
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.308 ± 0.584	0.53	0.300 ± 0.589	-0.071 ± 0.478
PRF-fit source offset from KIC position	0.367 ± 0.586	0.63	0.367 ± 0.586	-0.014 ± 0.471
photometric centroid source offset	0.97 ± 0.50	1.93	0.02 ± 0.38	-0.97 ± 0.50

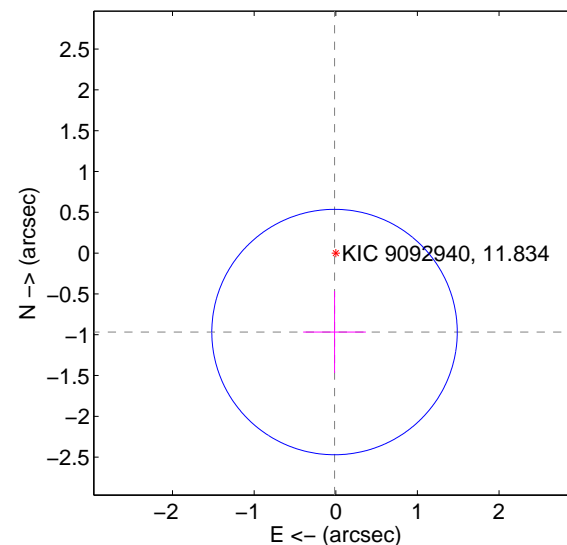
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

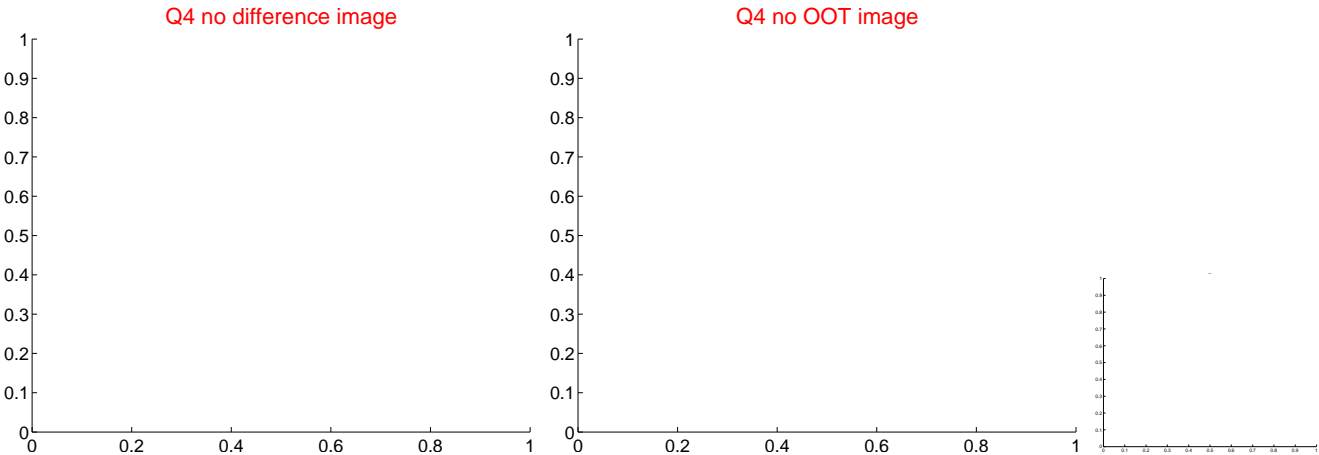
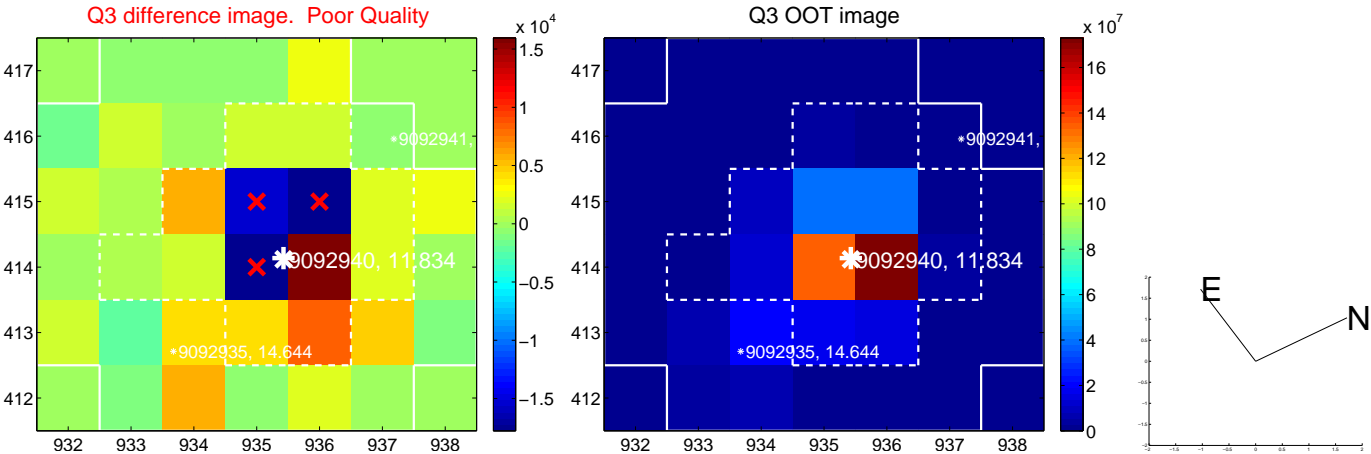
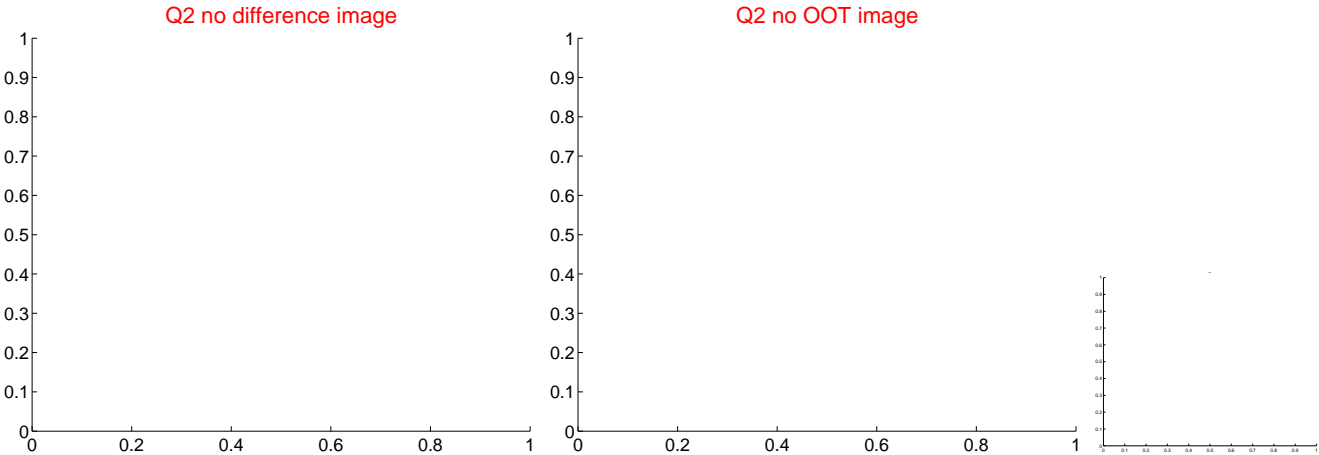
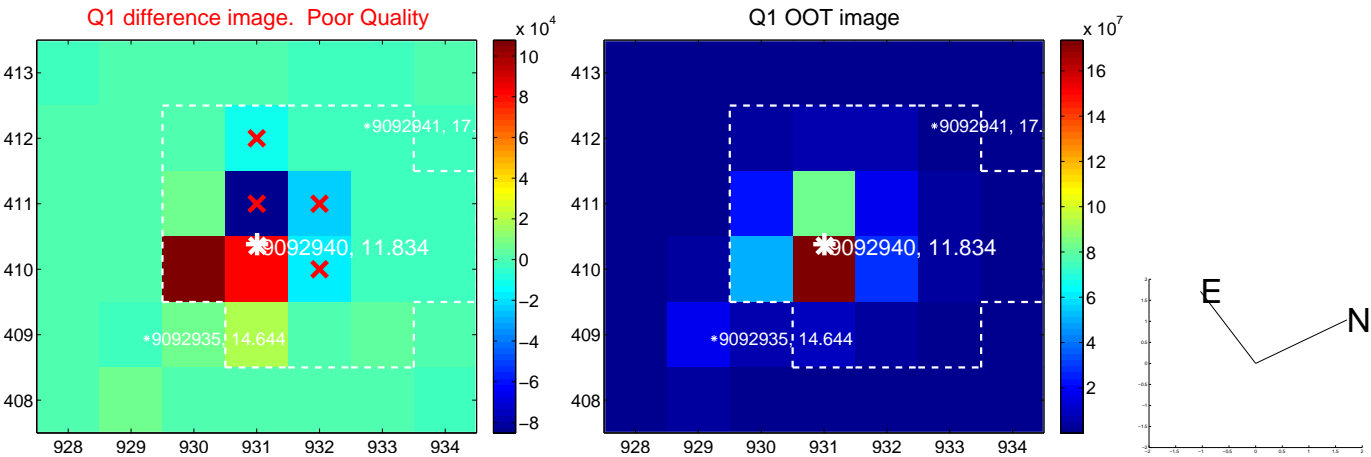


offset from photometric centroids

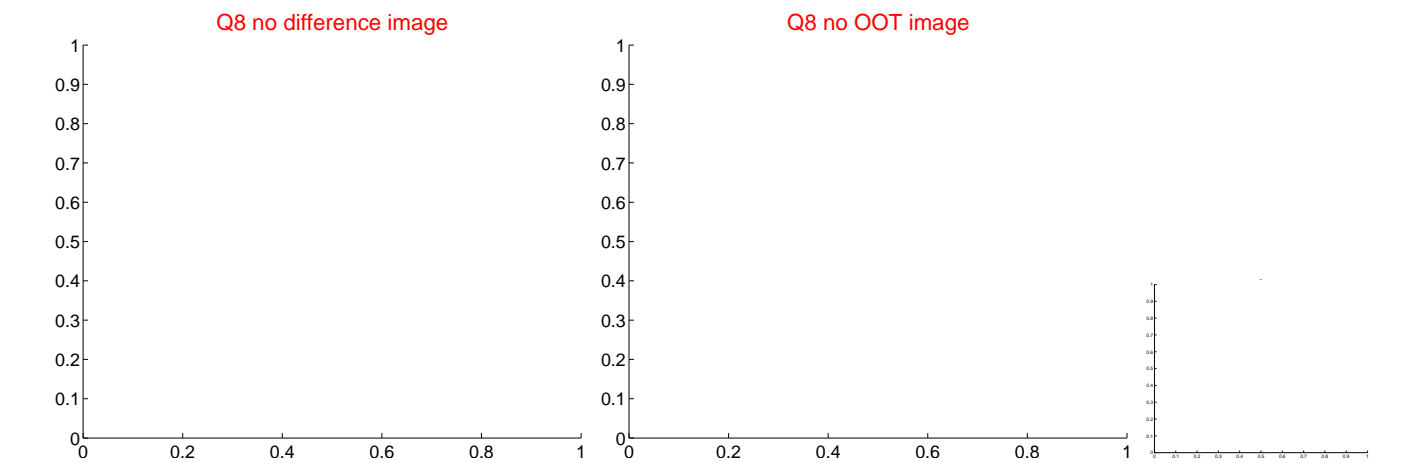
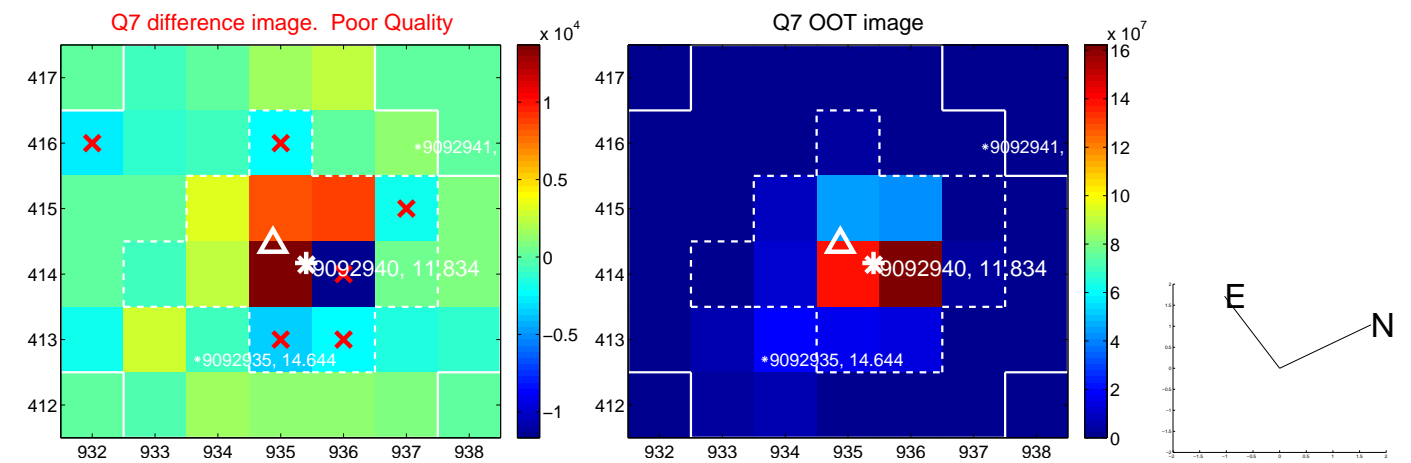
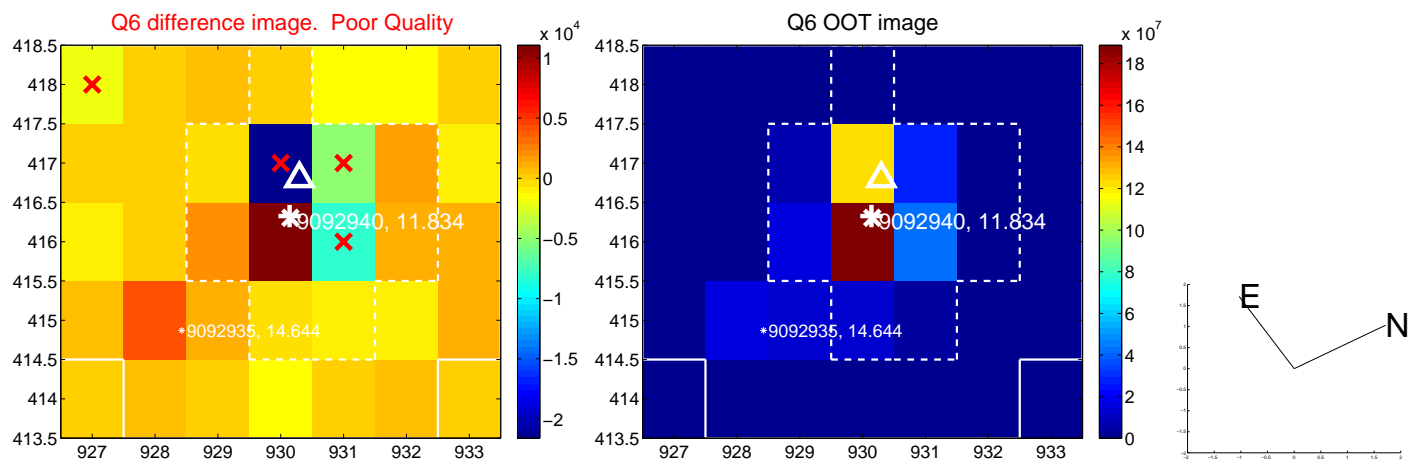
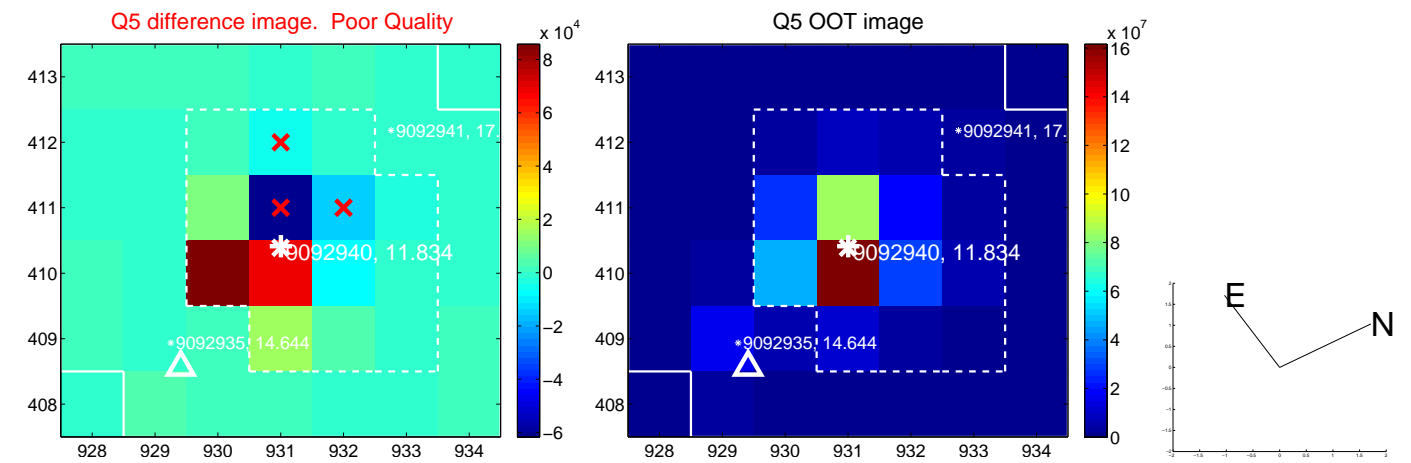


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

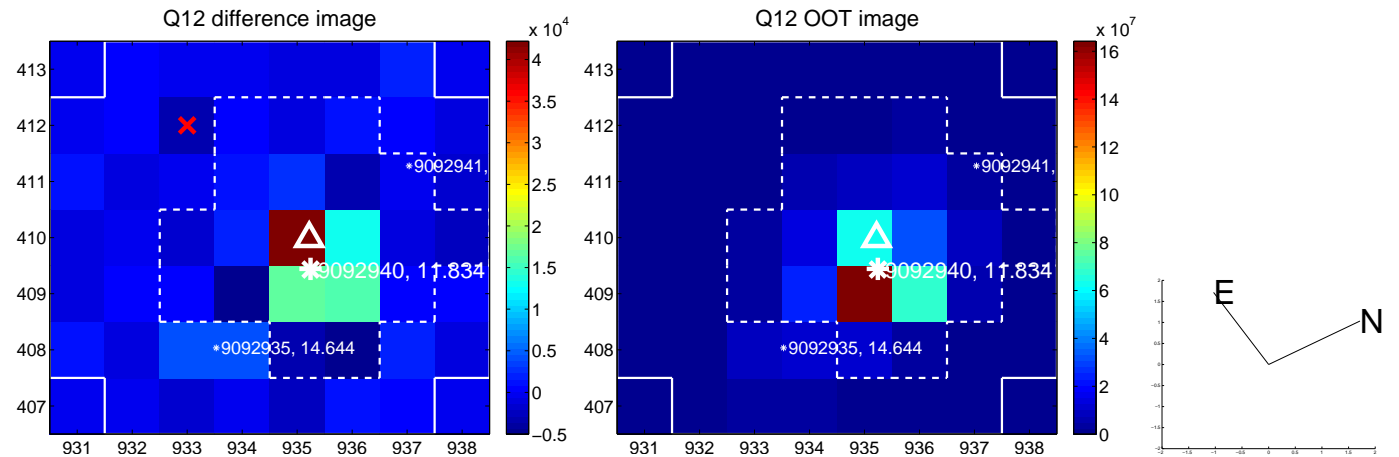
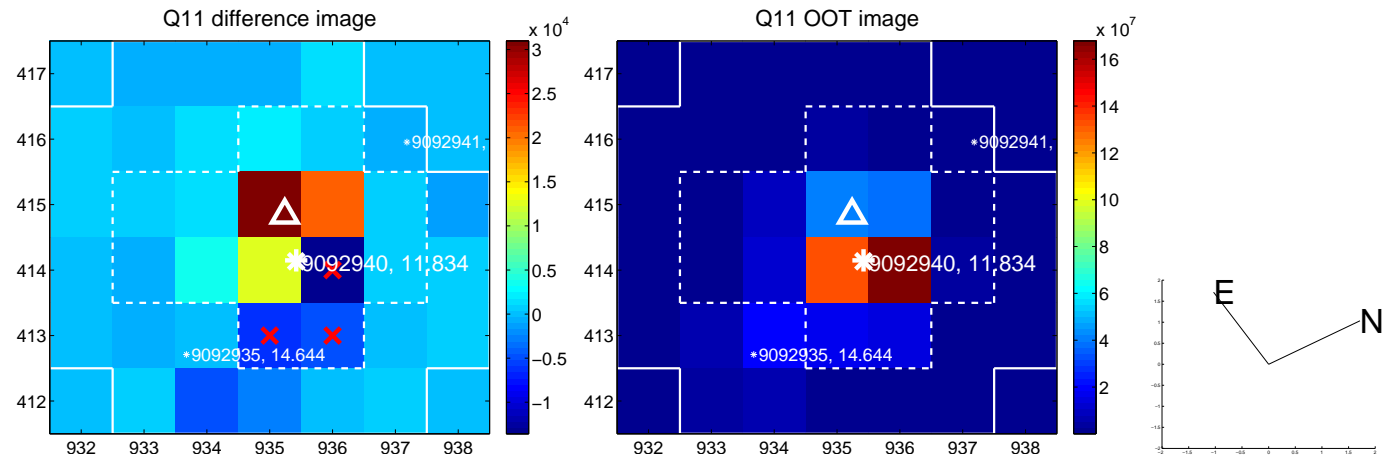
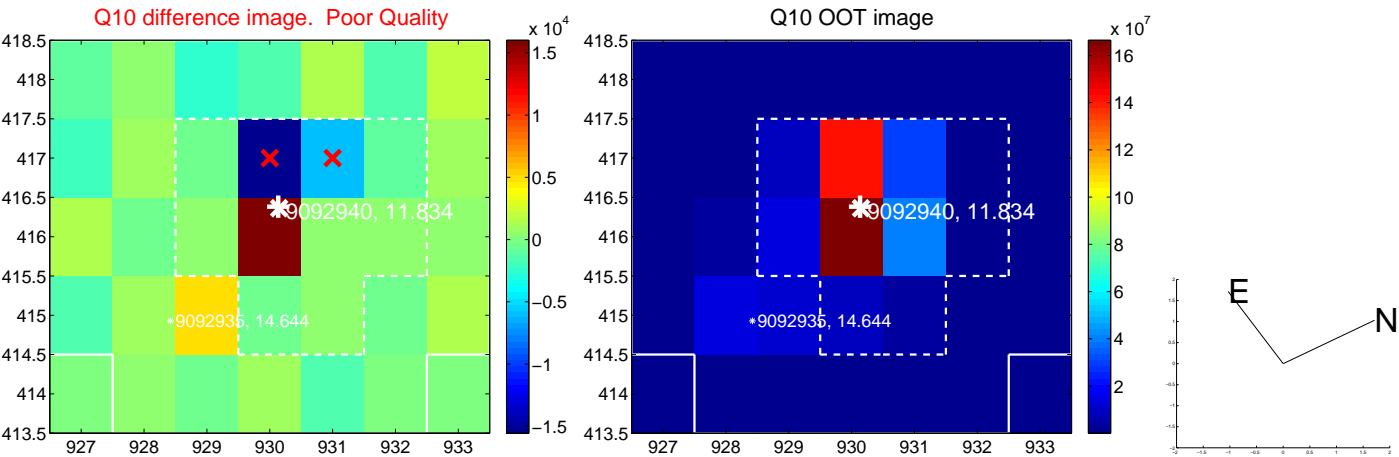
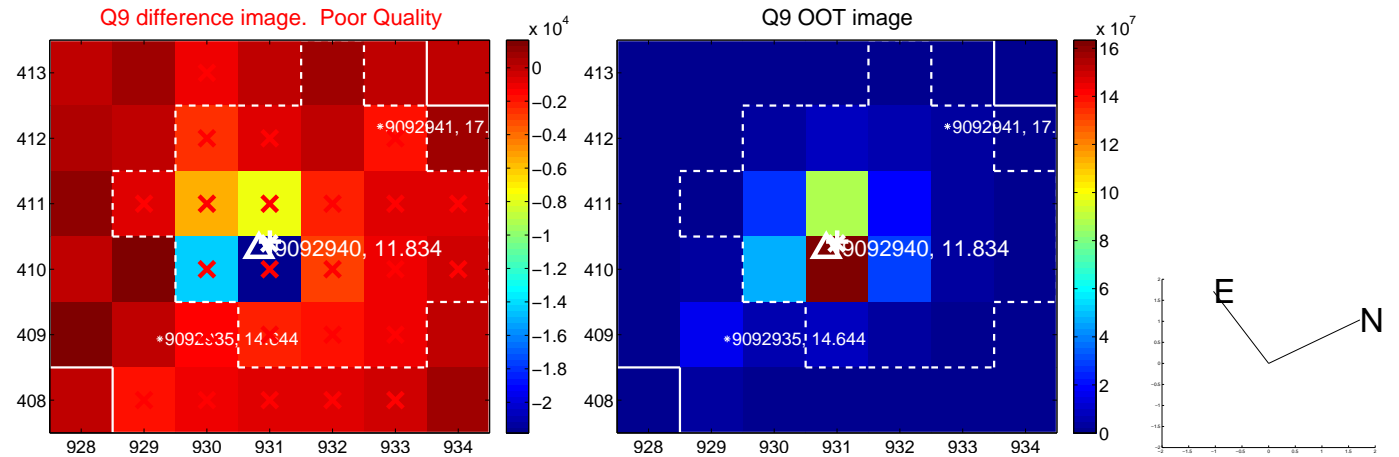
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



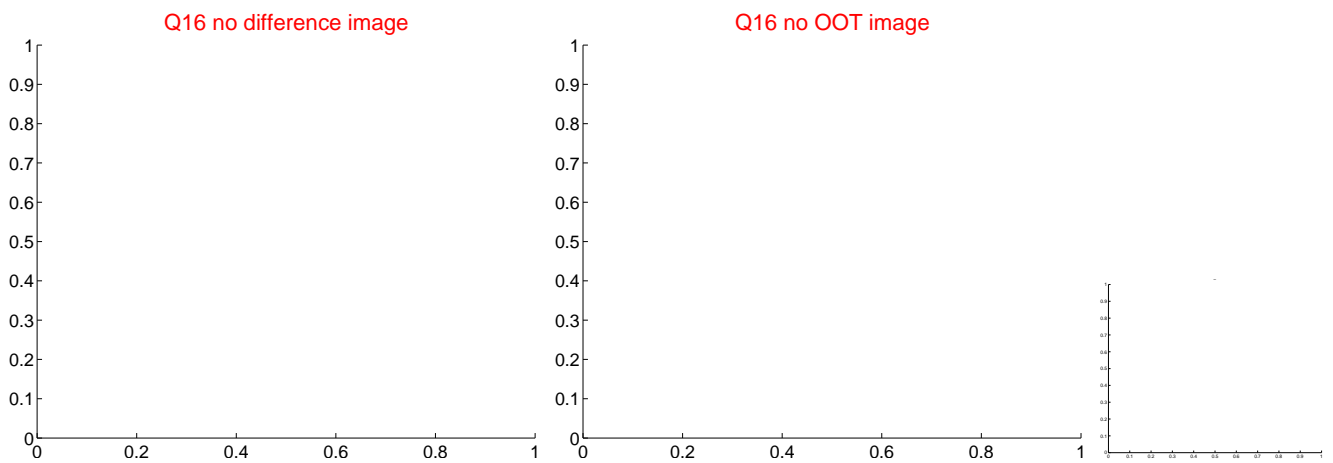
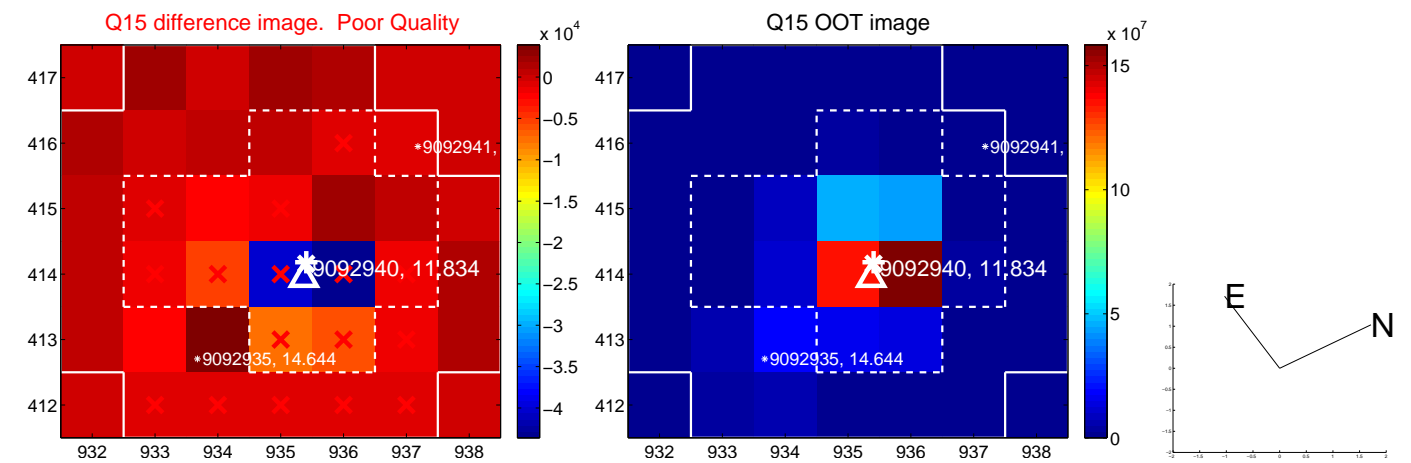
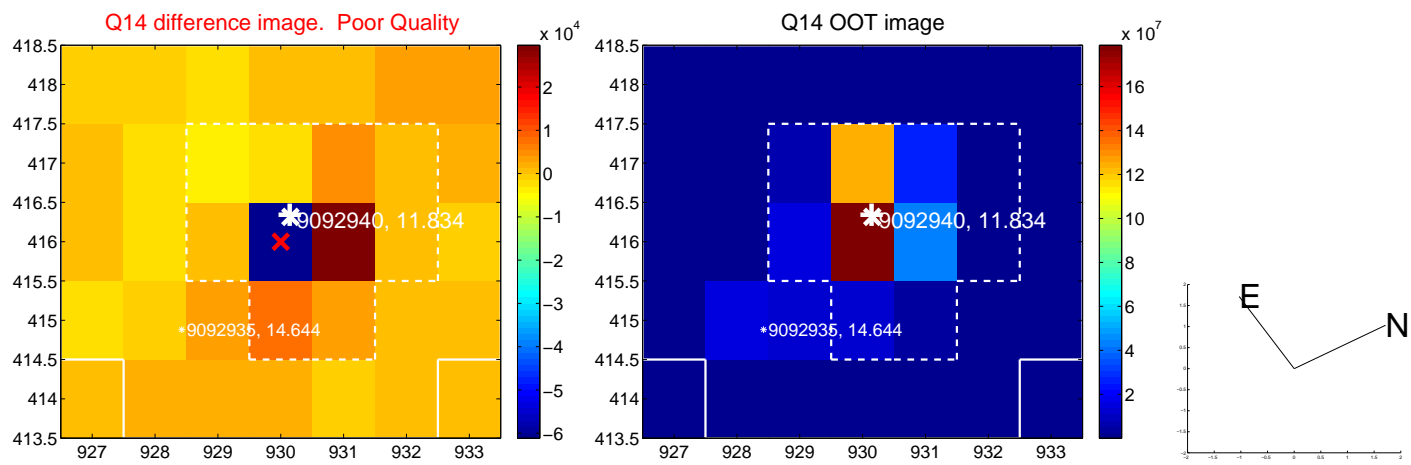
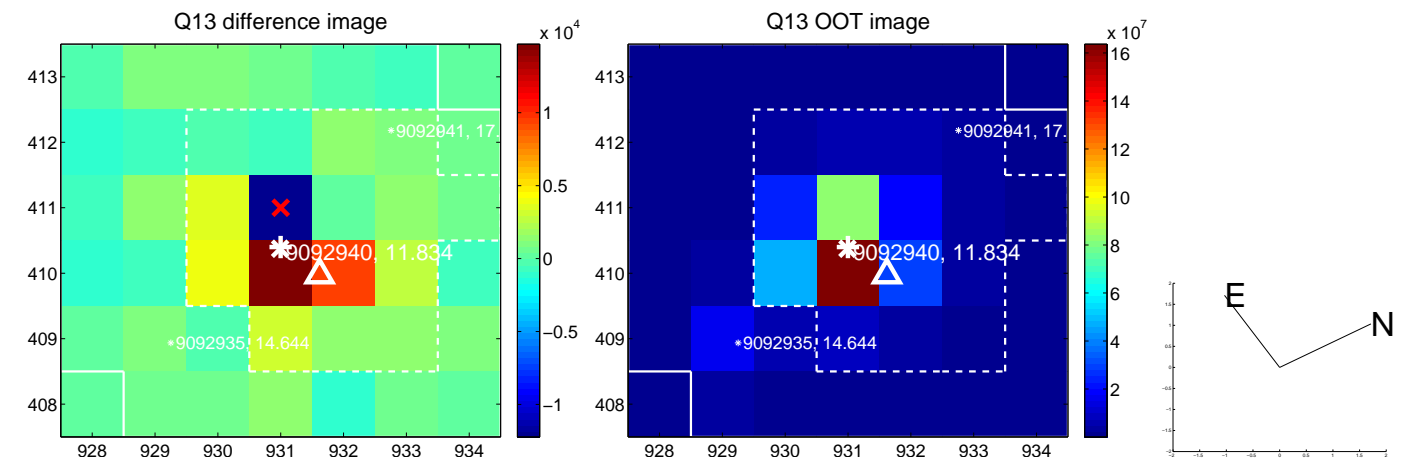
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



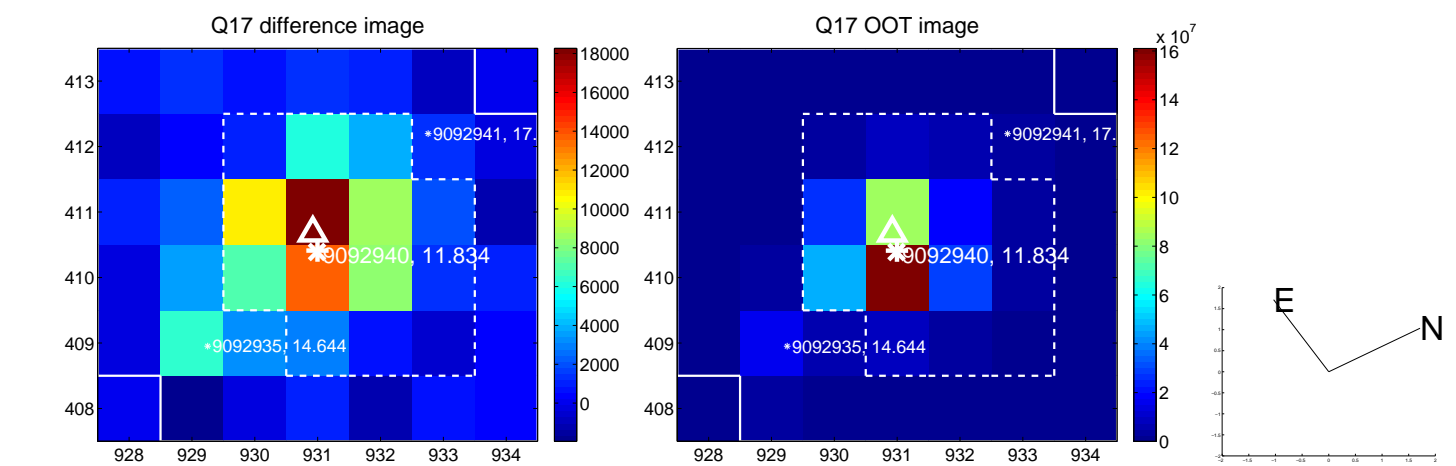
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



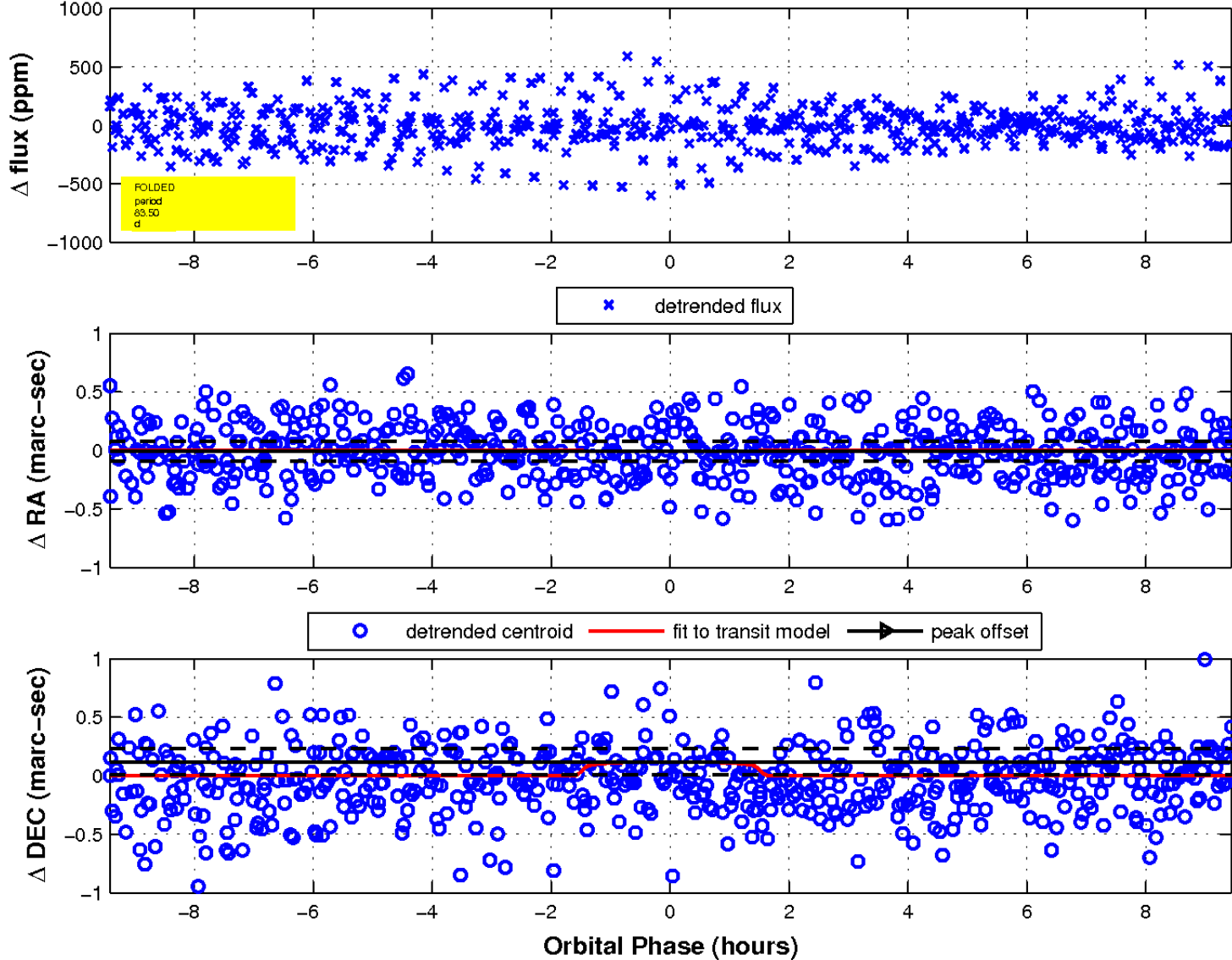
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

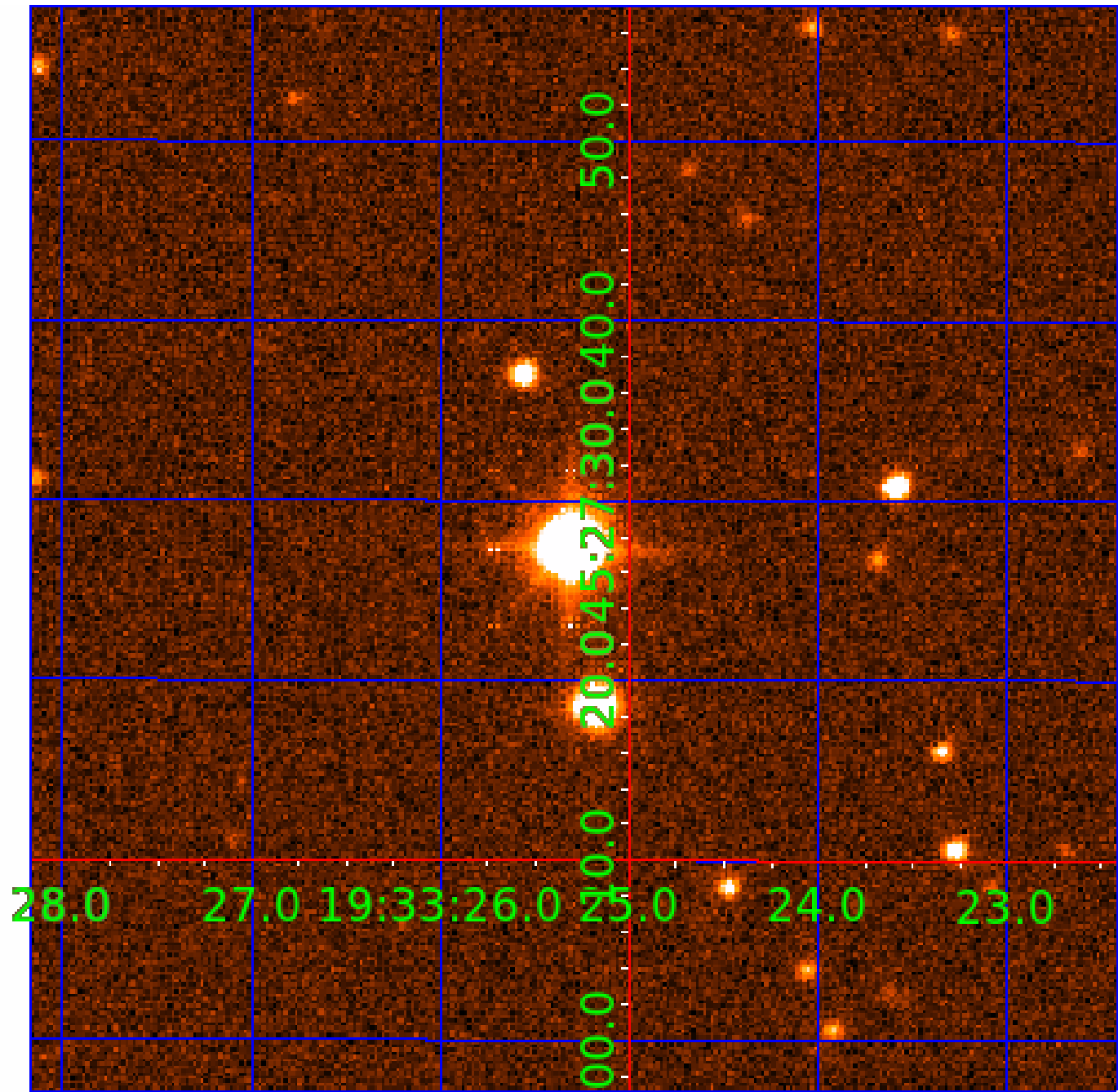


fluxWeightedCentroids, Planet 7 of 8



UKIRT Image

Declination



KIC 009092940

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})
009092940-01	OBS	No	1.781951	131.871065	34.6	10.318	11.8	12.6	1.43	6575	0.98	3569.75
009092940-02	OBS	No	144.846819	248.414485	487.0	13.038	10.4	9.9	1.43	6575	6.07	10.14
009092940-03	OBS	No	50.961272	167.518869	182.6	6.394	9.5	9.3	1.43	6575	2.19	40.82
009092940-04	OBS	No	218.739298	203.063058	276.6	15.143	9.3	6.2	1.43	6575	2.51	5.85
009092940-05	OBS	No	45.135416	150.385762	116.4	5.916	8.8	5.5	1.43	6575	1.80	47.99
009092940-06	OBS	No	164.301407	153.974230	284.3	10.053	8.7	8.1	1.43	6575	4.71	8.57
009092940-07	OBS	No	83.498289	147.866364	219.1	3.151	9.2	7.8	1.43	6575	2.36	21.13
009092940-08	OBS	No	204.184137	131.967472	313.7	8.385	8.5	7.5	1.43	6575	4.93	6.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009092940-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
009092940-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
009092940-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009092940-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009092940-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009092940-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
009092940-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_UNCERTAIN

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

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

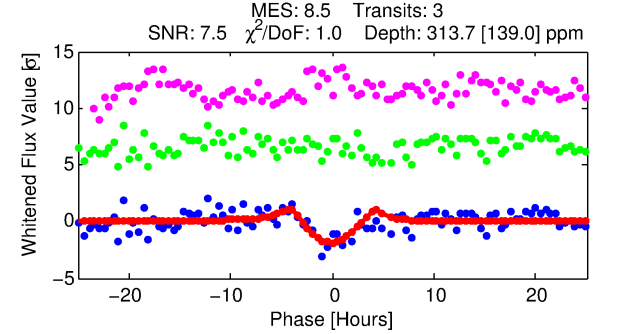
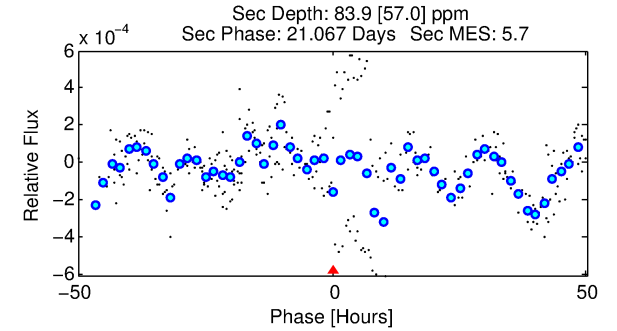
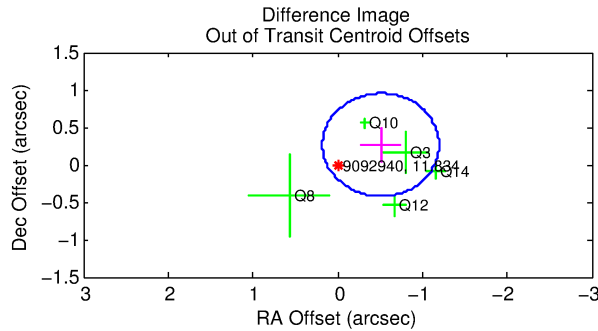
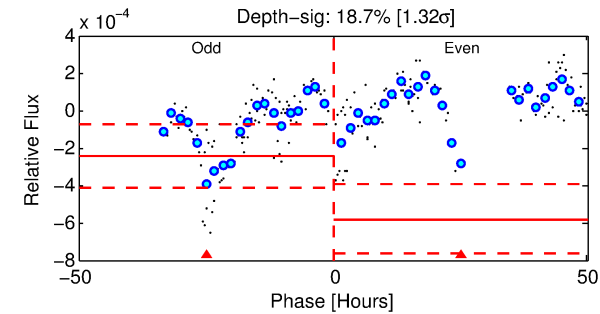
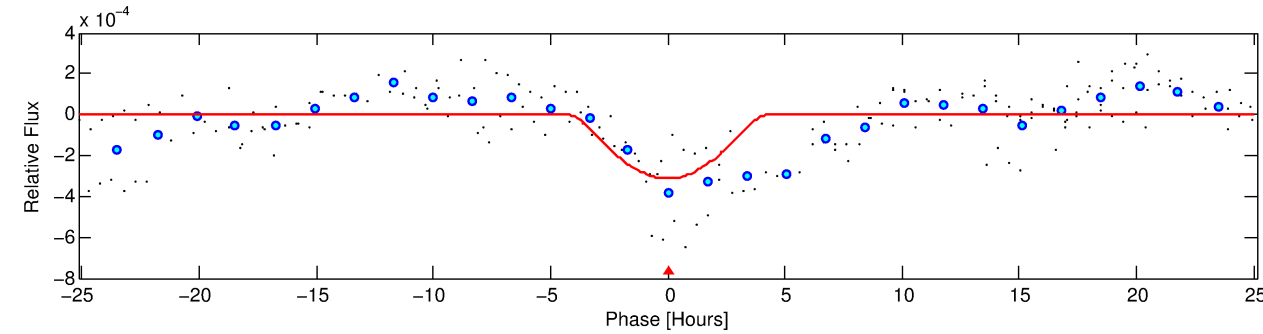
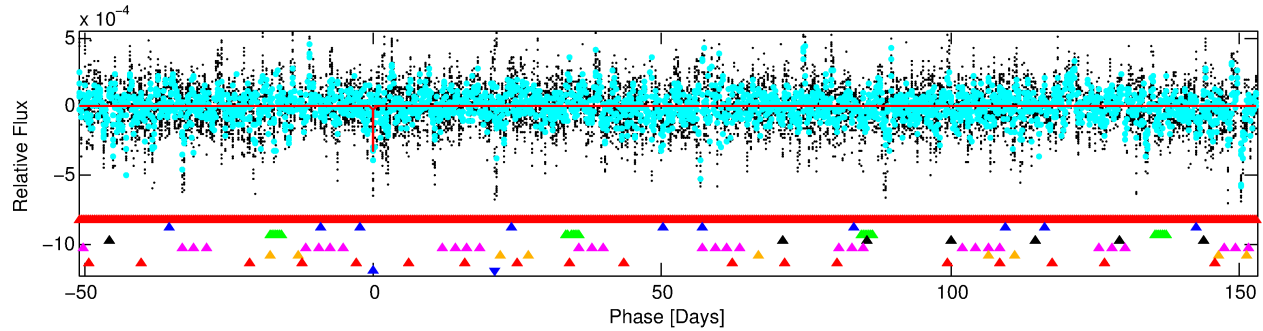
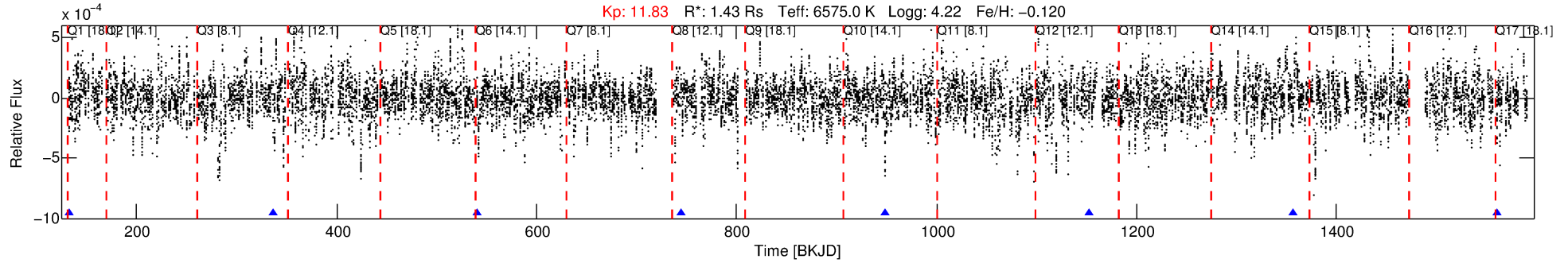
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092940-08

No Significant Match Found

DV One-Page Summary

KIC: 9092940 Candidate: 8 of 8 Period: 204.184 d



DV Fit Results:

Period = 204.18414 [0.00495] d
Epoch = 131.9675 [0.0238] BKJD
 $R_p/R^* = 0.0316$ [0.0780]
 $a/R^* = 47.18$ [31.57]
 $b = 1.00$ [0.10]
 $S_{\text{eff}} = 6.41$ [2.46]
 $T_{\text{eq}} = 406$ [39] K
 $R_p = 4.93$ [12.26] R_{e}
 $a = 0.7301$ [0.1826] AU
 $A_g = 1012.07$ [5052.91] [0.20 σ]
 $T_{\text{eff}} = 3539$ [4408] K [0.71 σ]

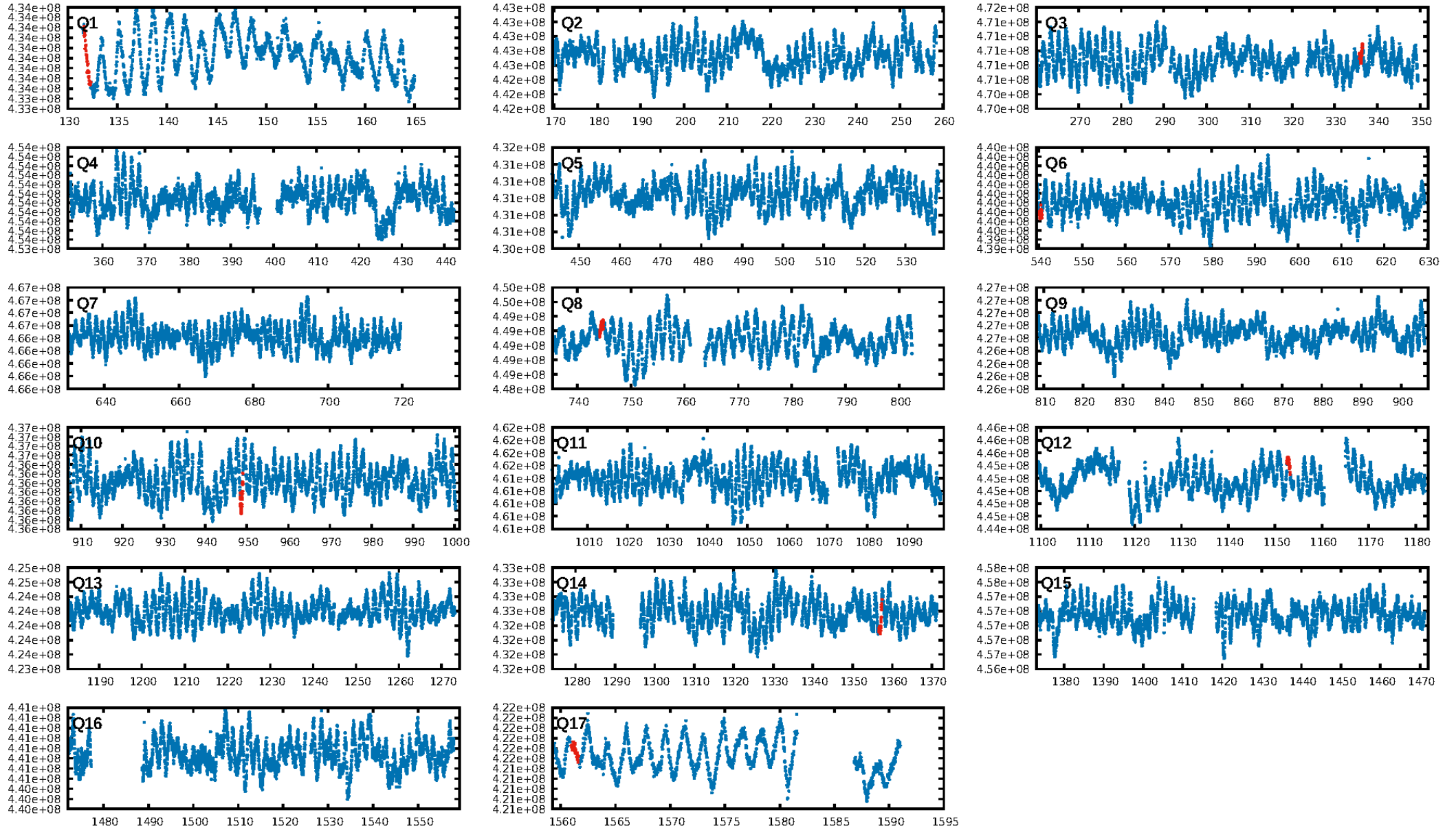
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [73.12 σ]
LongPeriod-sig: 100.0% [20.18 σ]
ModelChiSquare2-sig: 10.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.66e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4627
Centroid-sig: 0.1%
Centroid-so: 0.522 arcsec [1.21 σ]
OotOffset-rm: 0.572 arcsec [2.50 σ]
KicOffset-rm: 0.869 arcsec [3.98 σ]
OotOffset-st: 2/1/2/0 [5]
KicOffset-st: 2/1/2/0 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/5]

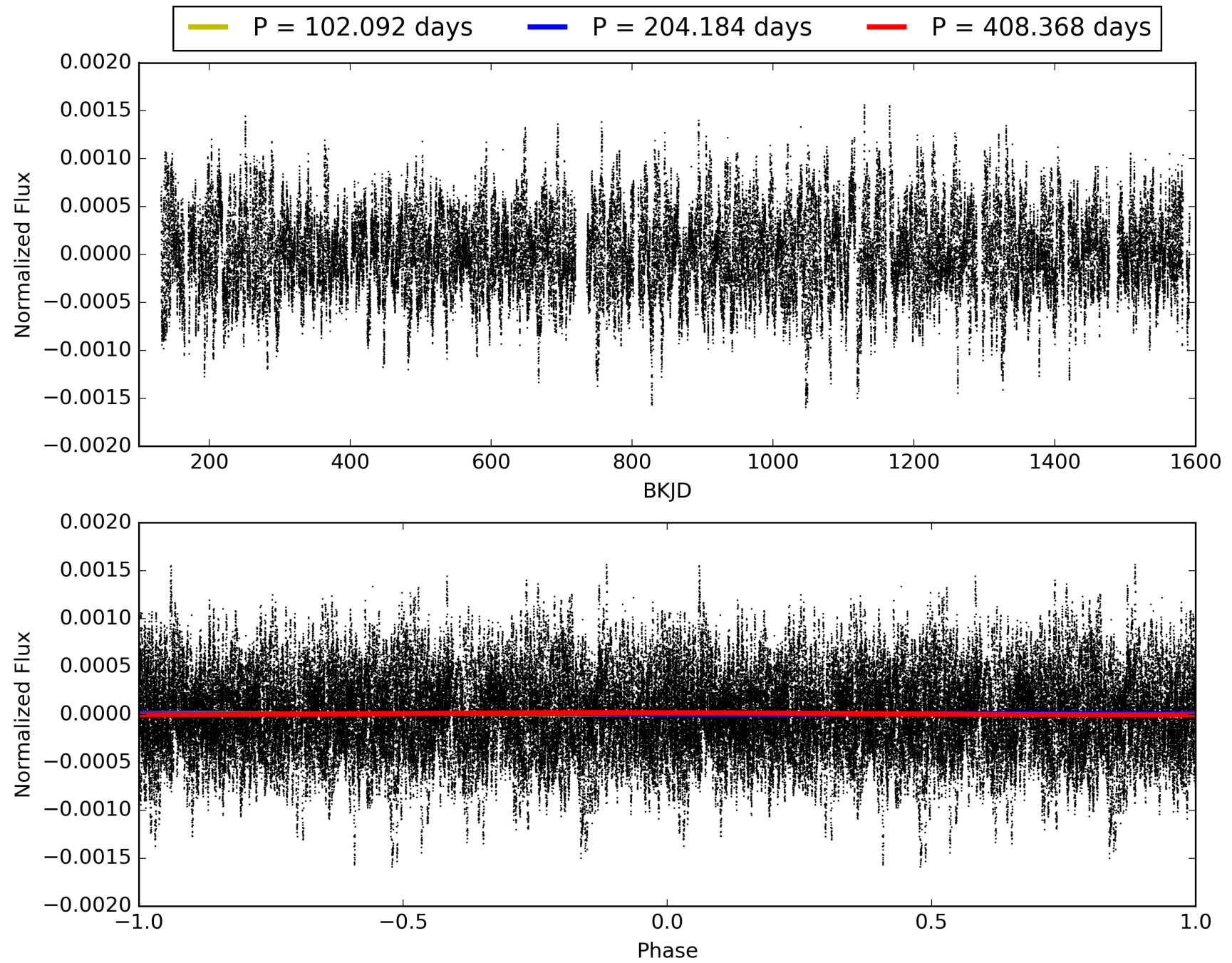
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:42:27 Z

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

TCE 009092940-08, PDC Light Curves

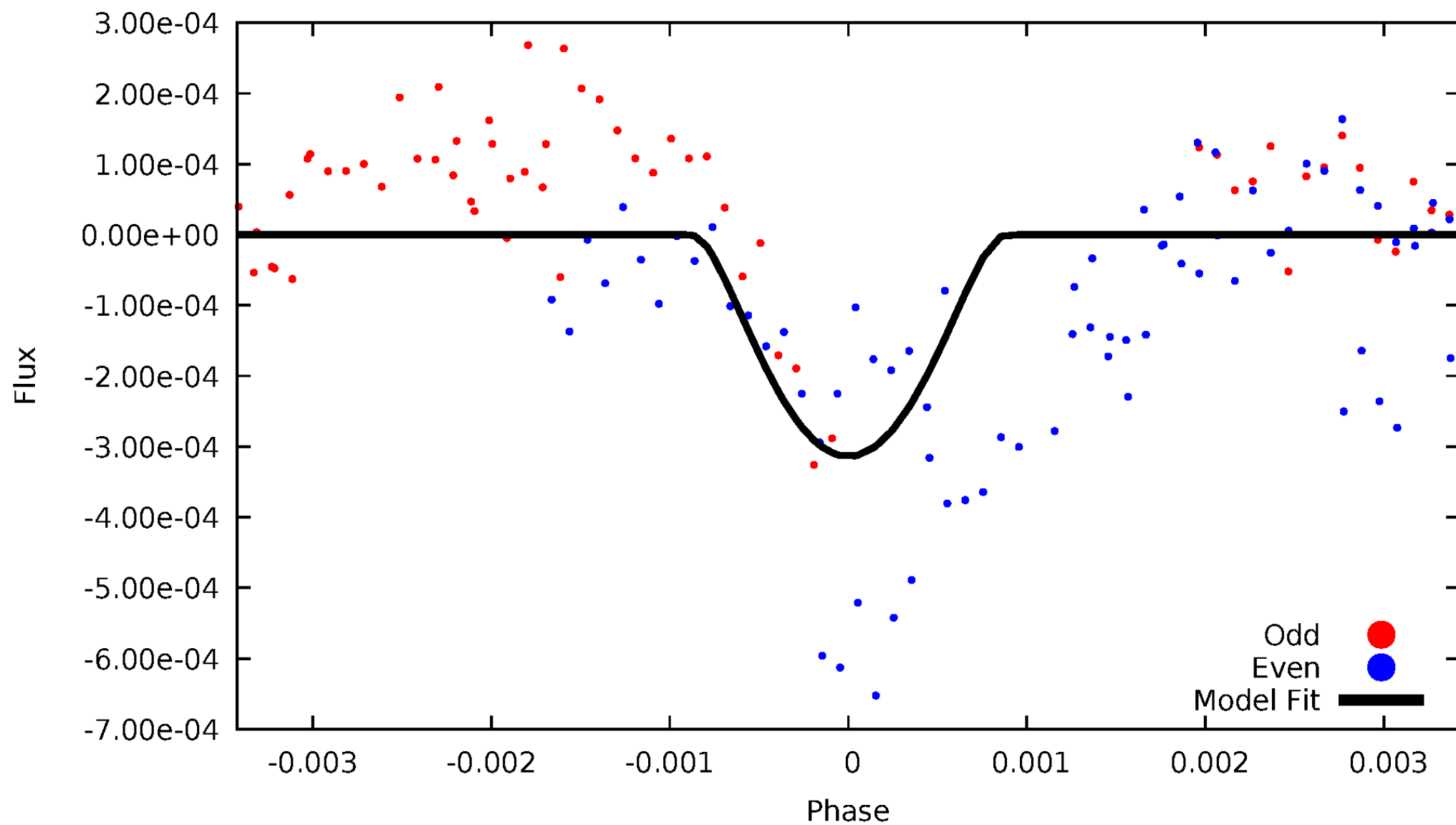


TCE 009092940-08



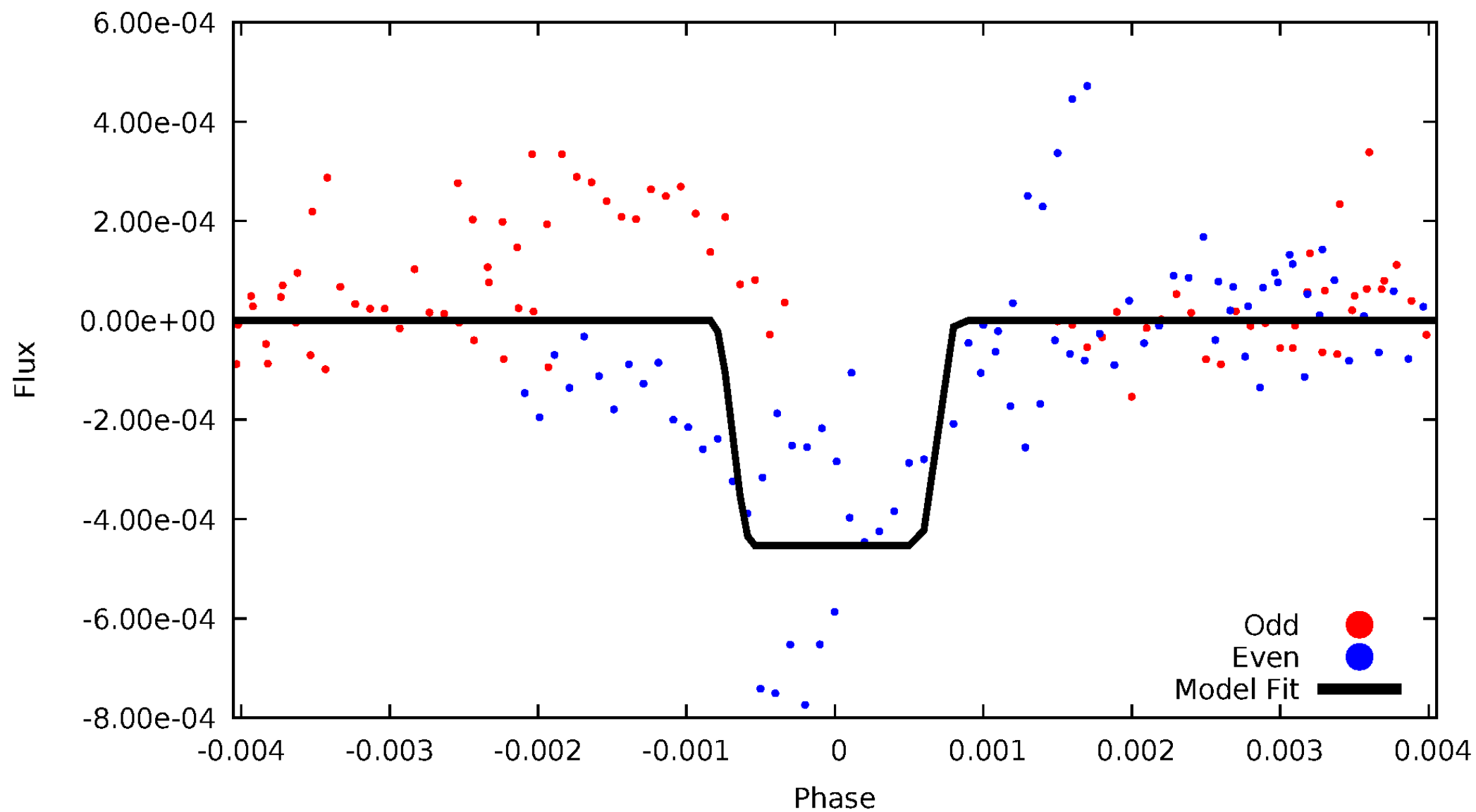
DV Odd/Even

TCE 009092940-08



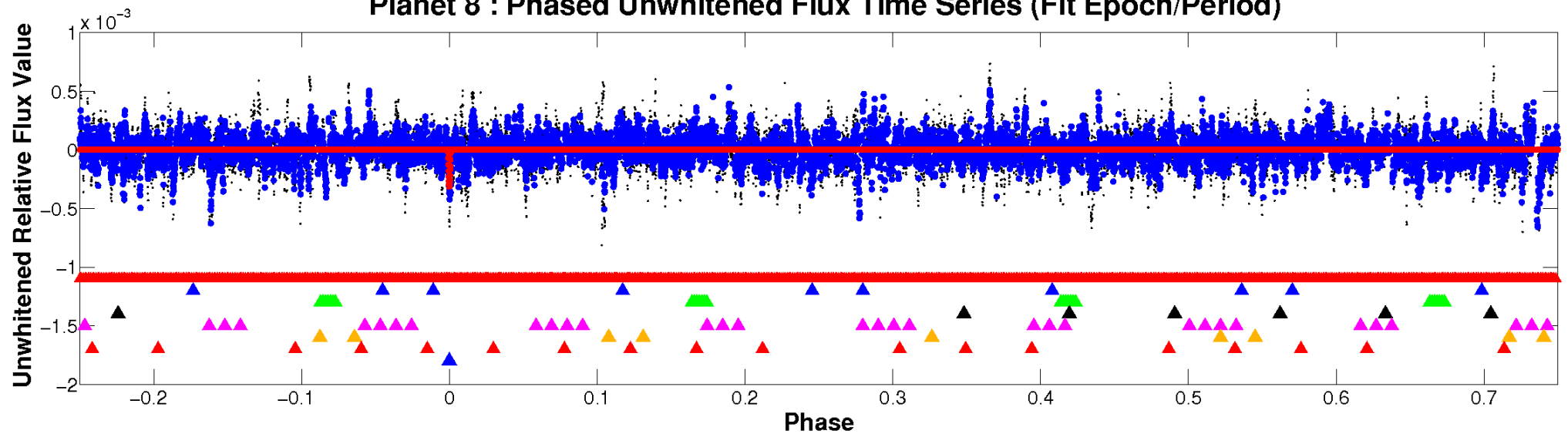
ALT Odd/Even

TCE 009092940-08

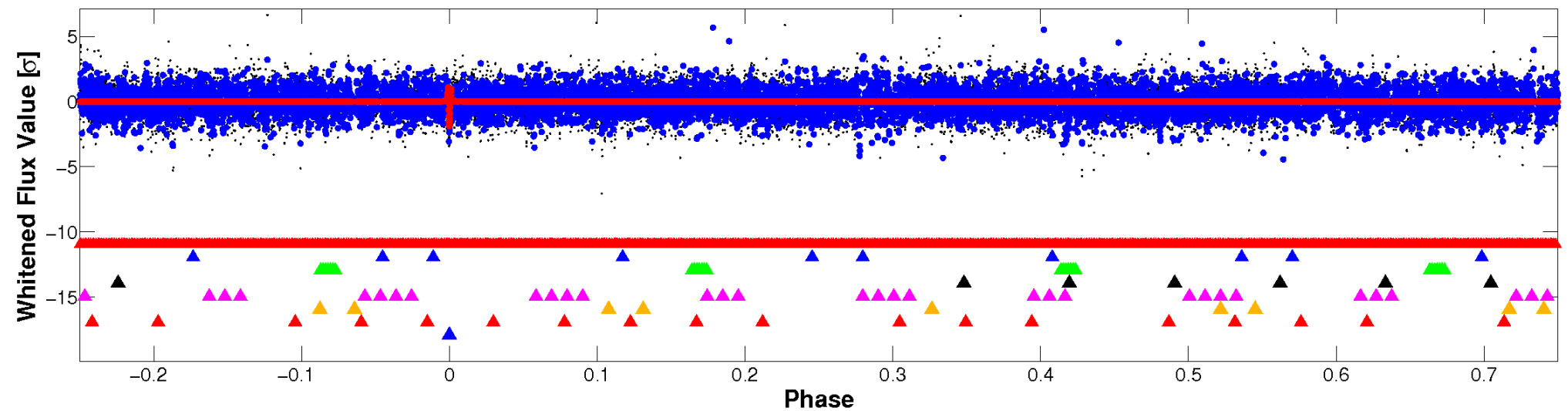


Non-Whitened Vs. Whitened Light Curve

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

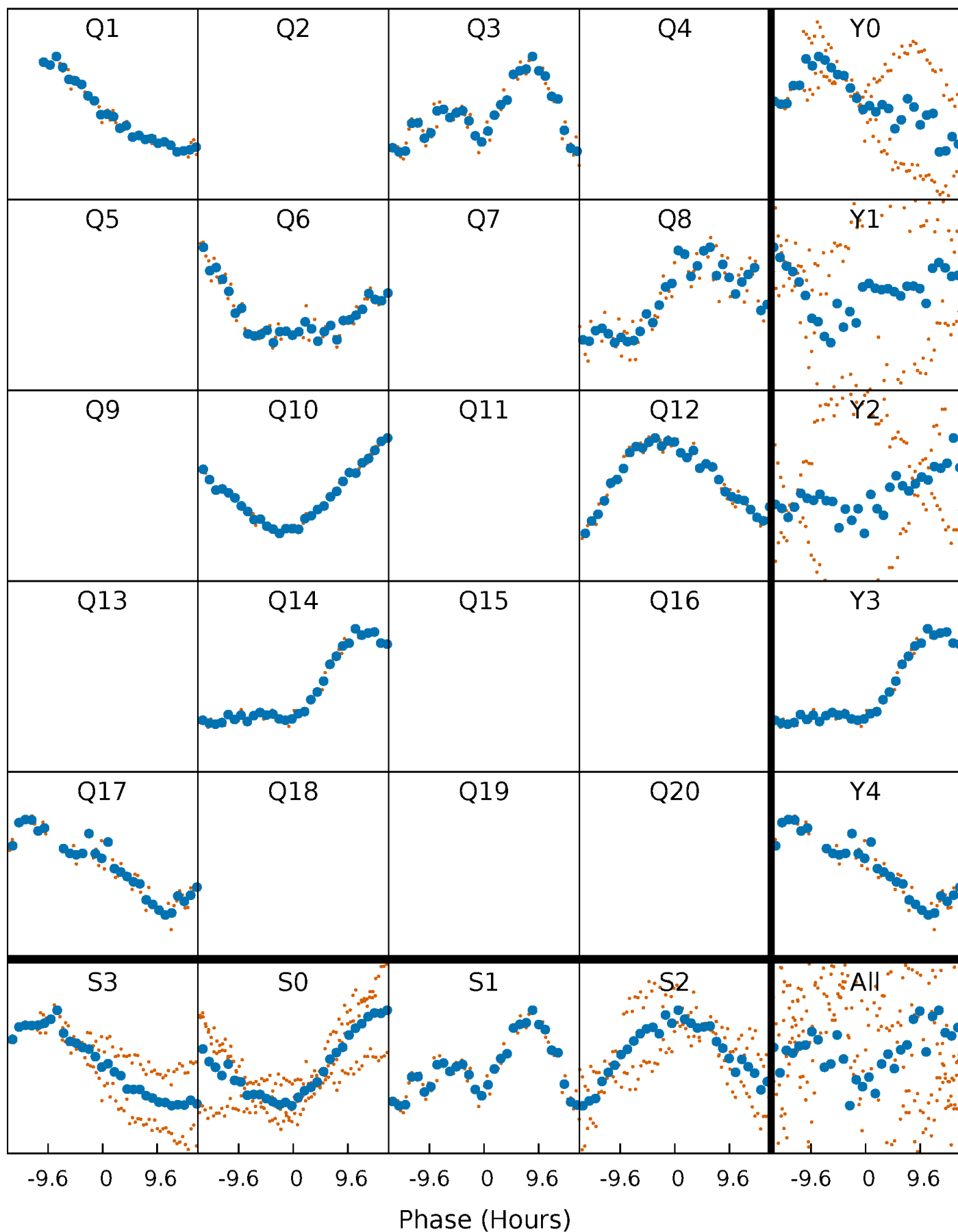


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



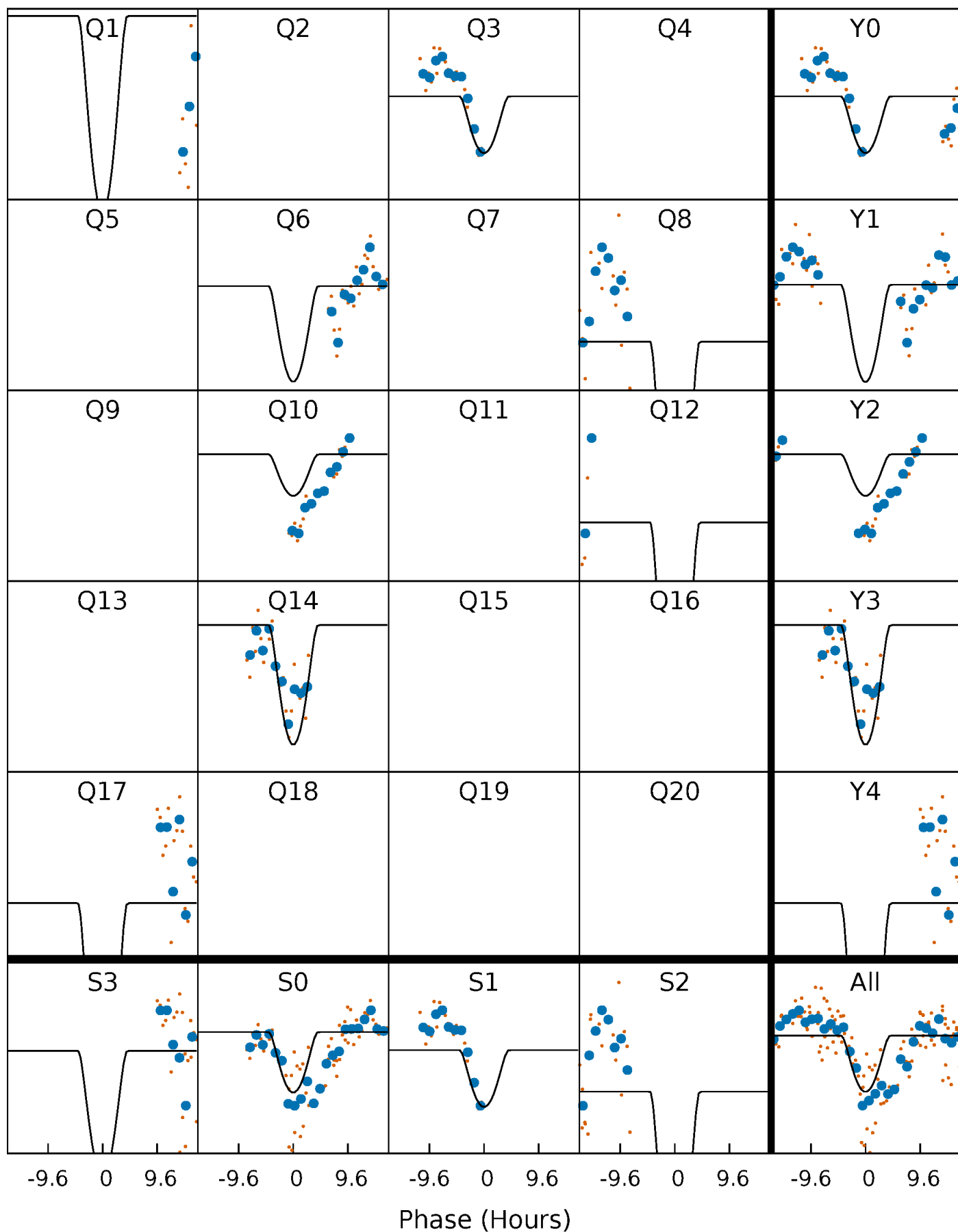
PDC Quarter-Phased Transit Curves

TCE 009092940-08 $P=204.184137$ Days $T_0=131.967472$ (BKJD)



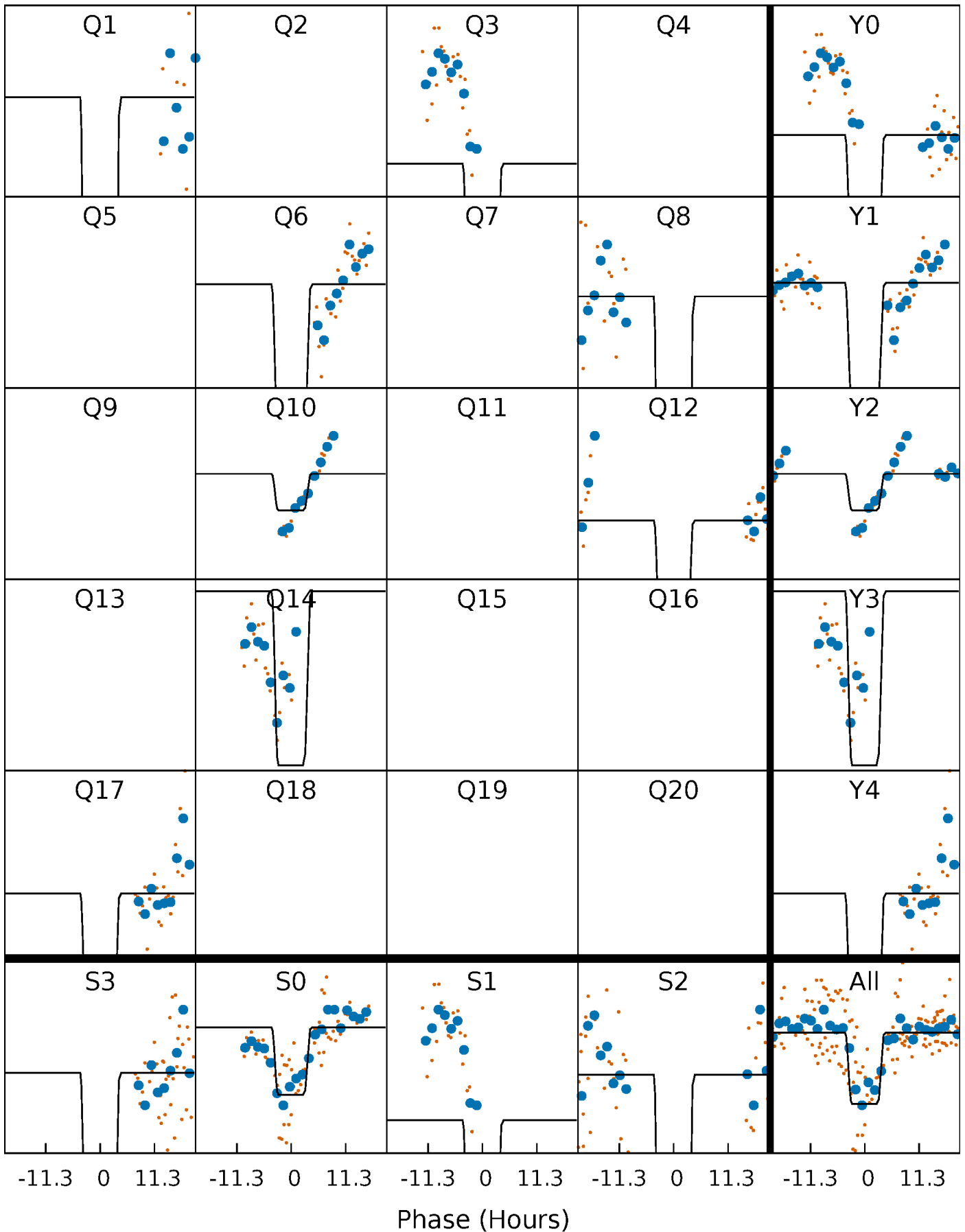
DV Quarter-Phased Transit Curves

TCE 009092940-08 P=204.184137 Days $T_0=131.967472$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

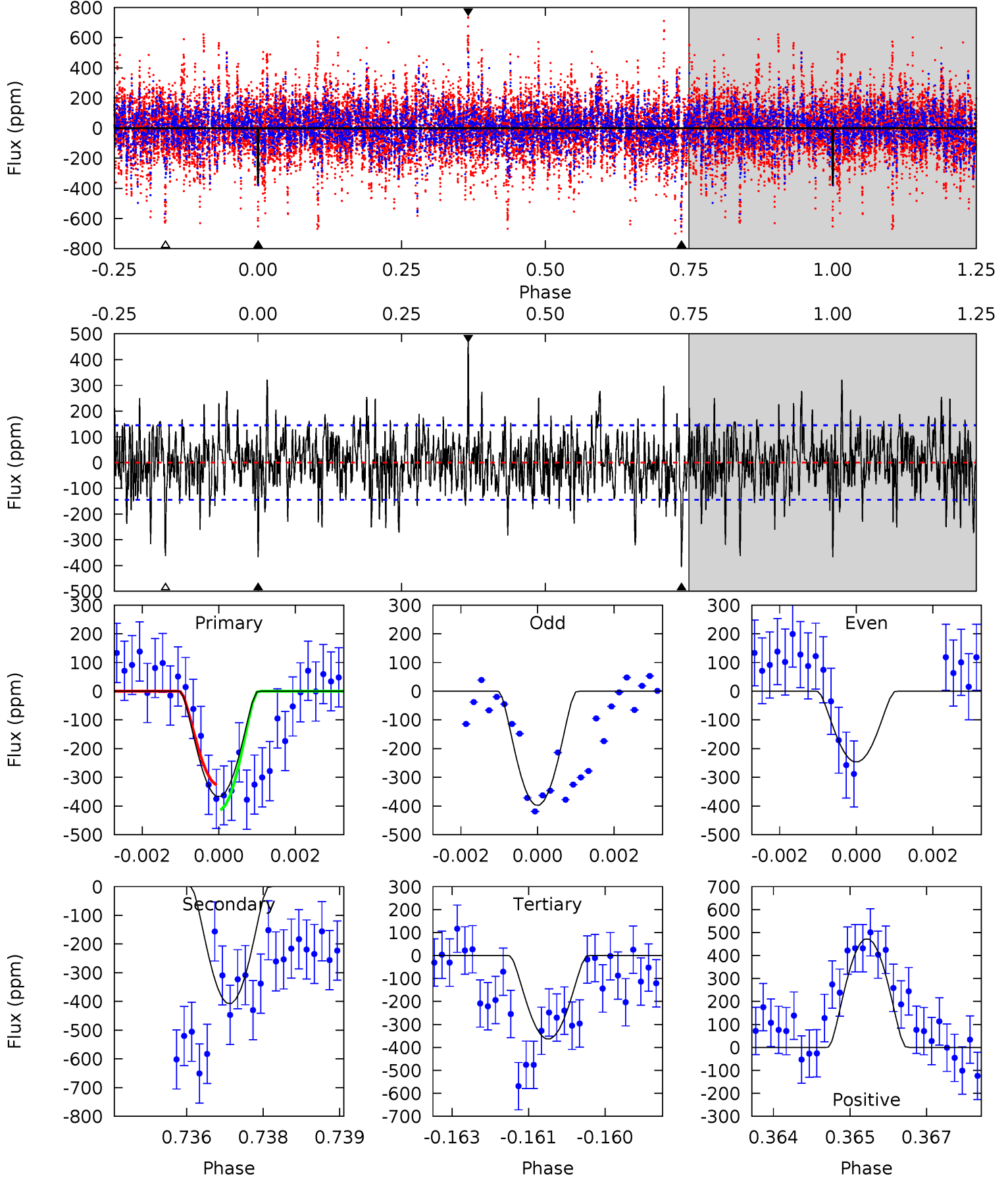
TCE 009092940-08 $P=204.191571$ Days $T_0=132.010382$ (BKJD)



DV Model-Shift Uniqueness Test

009092940-08, P = 204.184137 Days, E = 131.967472 Days

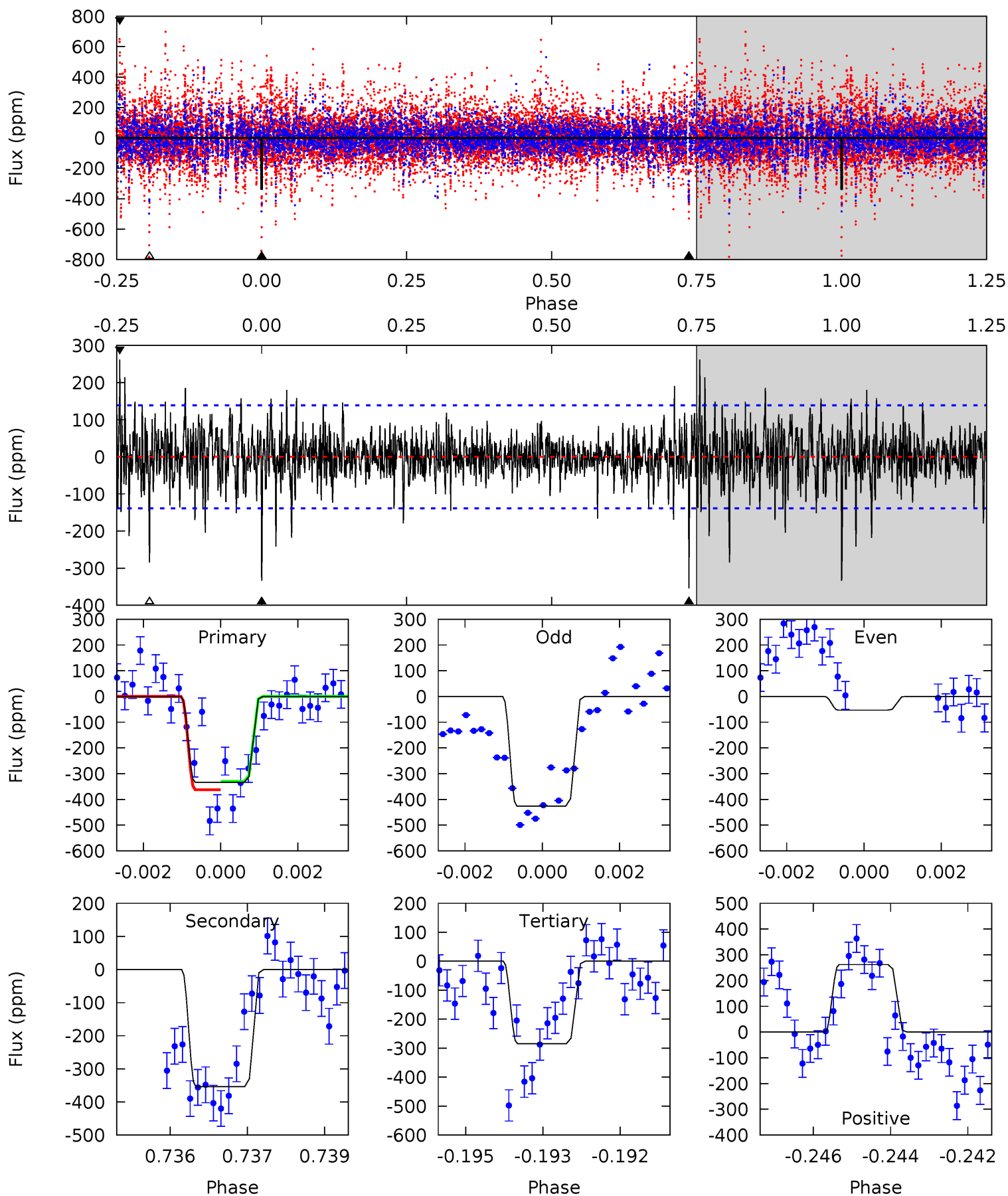
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	15.0	13.4	17.4	5.35	3.14	3.38	0.14	-3.88	1.63	-2.40	2.39	1.47	0.54	1.60



Alt Model-Shift Uniqueness Test

009092940-08, P = 204.191571 Days, E = 132.010382 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	13.7	11.0	10.1	5.36	3.15	2.00	1.91	2.78	2.67	3.54	5.27	0.94	0.43	0.62



Stellar Parameters For KIC 009092940

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6575^{+181}_{-250}	$4.223^{+0.136}_{-0.187}$	$-0.120^{+0.250}_{-0.300}$	$1.429^{+0.439}_{-0.293}$	$1.247^{+0.188}_{-0.188}$	$0.602^{+0.444}_{-0.293}$
	+3%/-4%	+3%/-4%	+208%/-250%	+31%/-21%	+15%/-15%	+74%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009092940-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-407 ± 27	$10.21^{+10.60}_{-7.04}$	570^{+44}_{-38}	3974^{+2558}_{-796}	1109^{+10706}_{-839}
Alt.	-354 ± 26	$9.89^{+10.26}_{-6.79}$	570^{+44}_{-35}	3925^{+2433}_{-780}	1044^{+9561}_{-789}

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

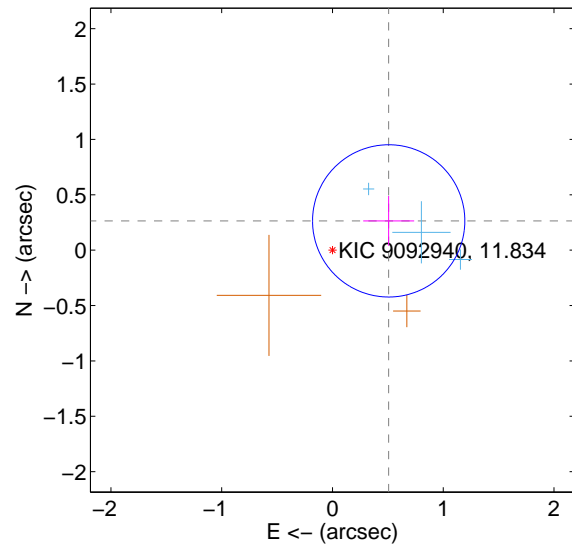
Supplemental centroid analysis for 009092940-08. **Kepler magnitude: 11.83.** Transit SNR 7.49

There are 3 quarters with good PRF difference image offsets

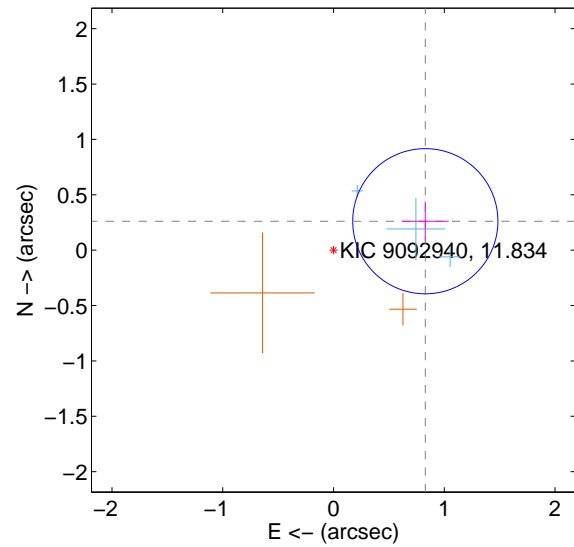
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.572 ± 0.229	2.50	-0.508 ± 0.230	0.264 ± 0.225
PRF-fit source offset from KIC position	0.869 ± 0.218	3.98	-0.829 ± 0.212	0.261 ± 0.177
photometric centroid source offset	0.52 ± 0.43	1.21	0.19 ± 0.32	0.49 ± 0.45

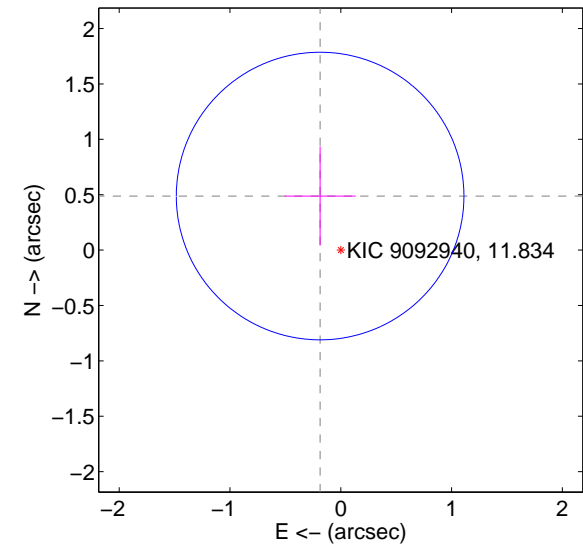
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

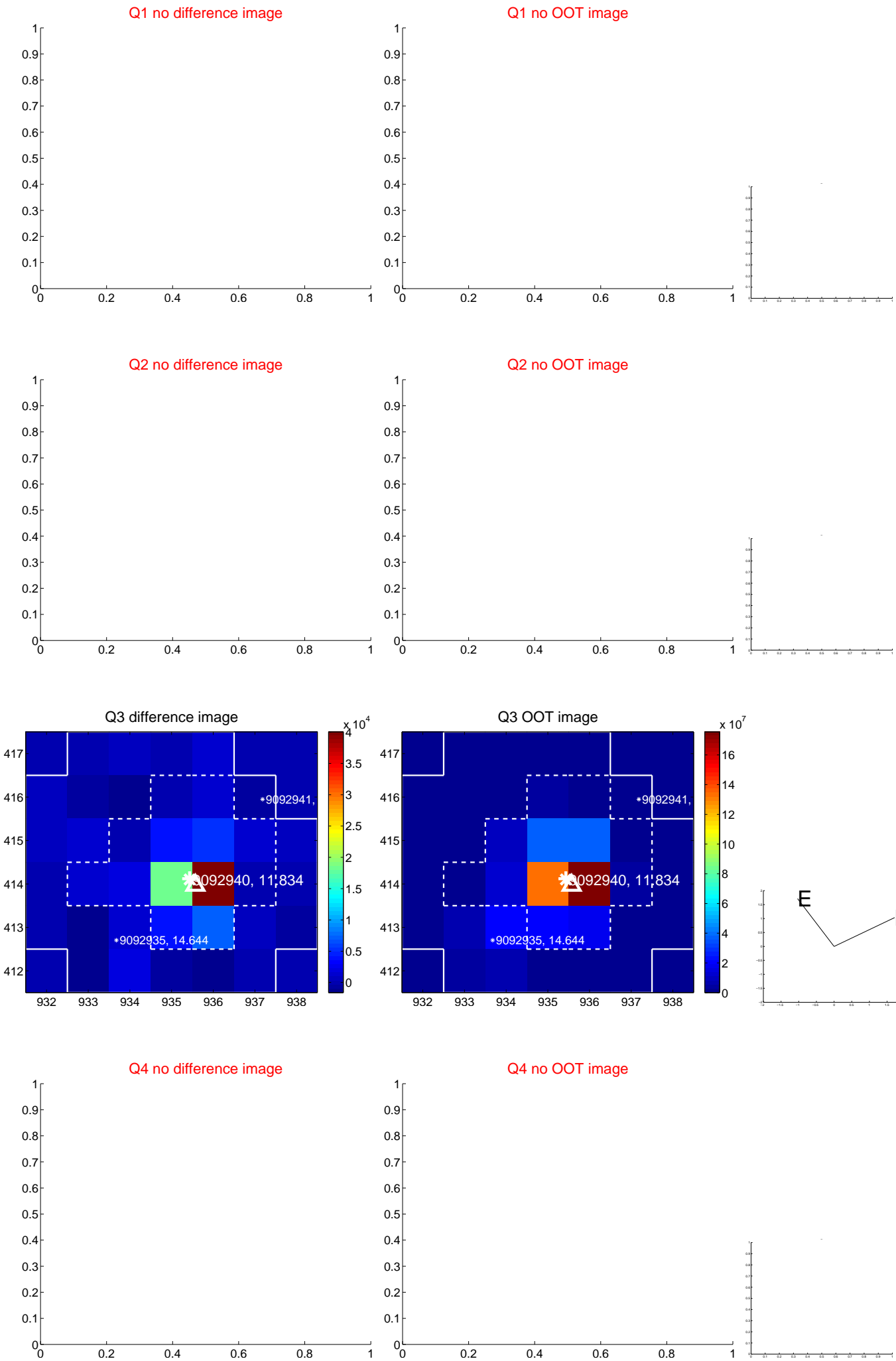


offset from photometric centroids

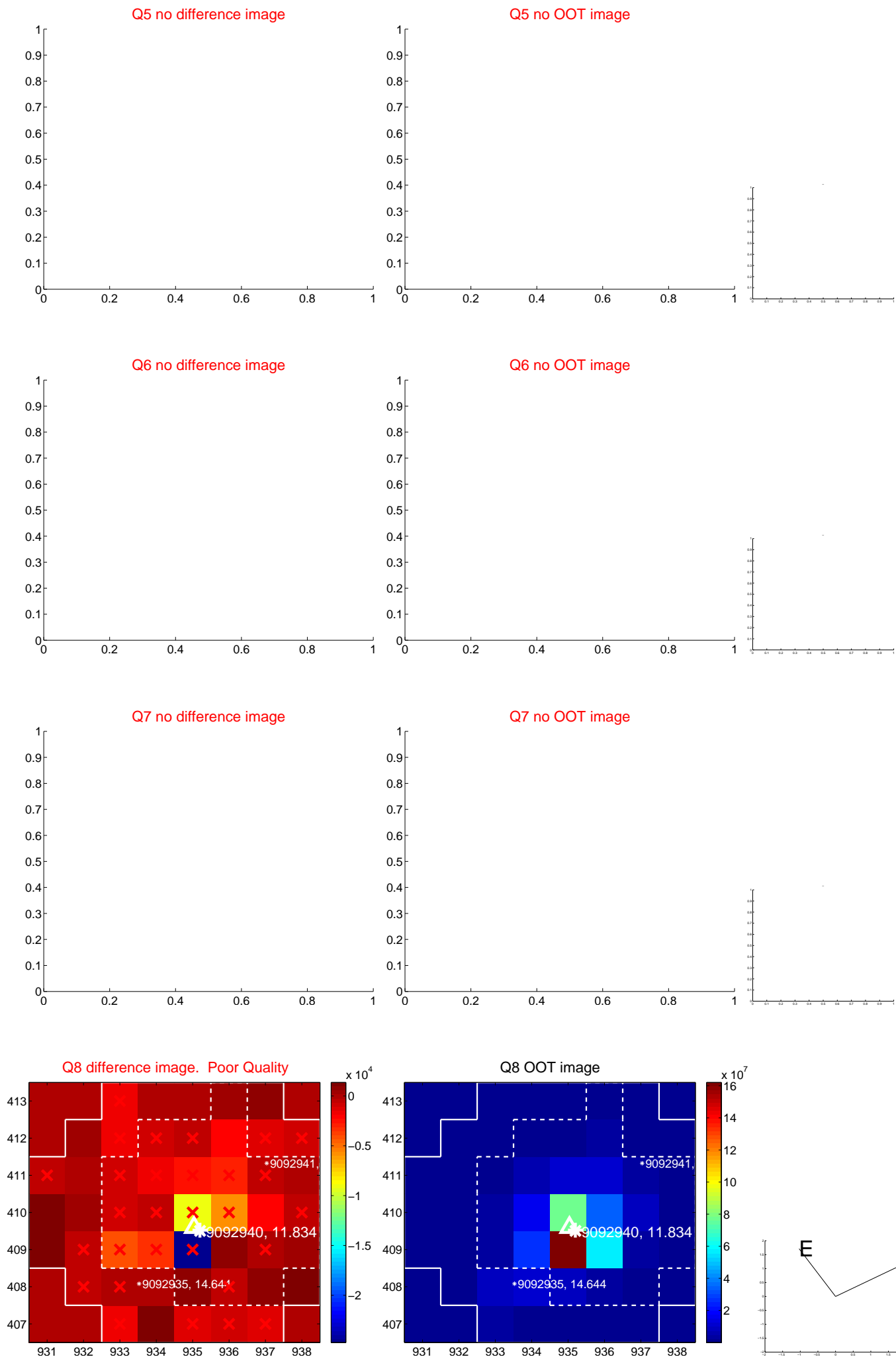


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

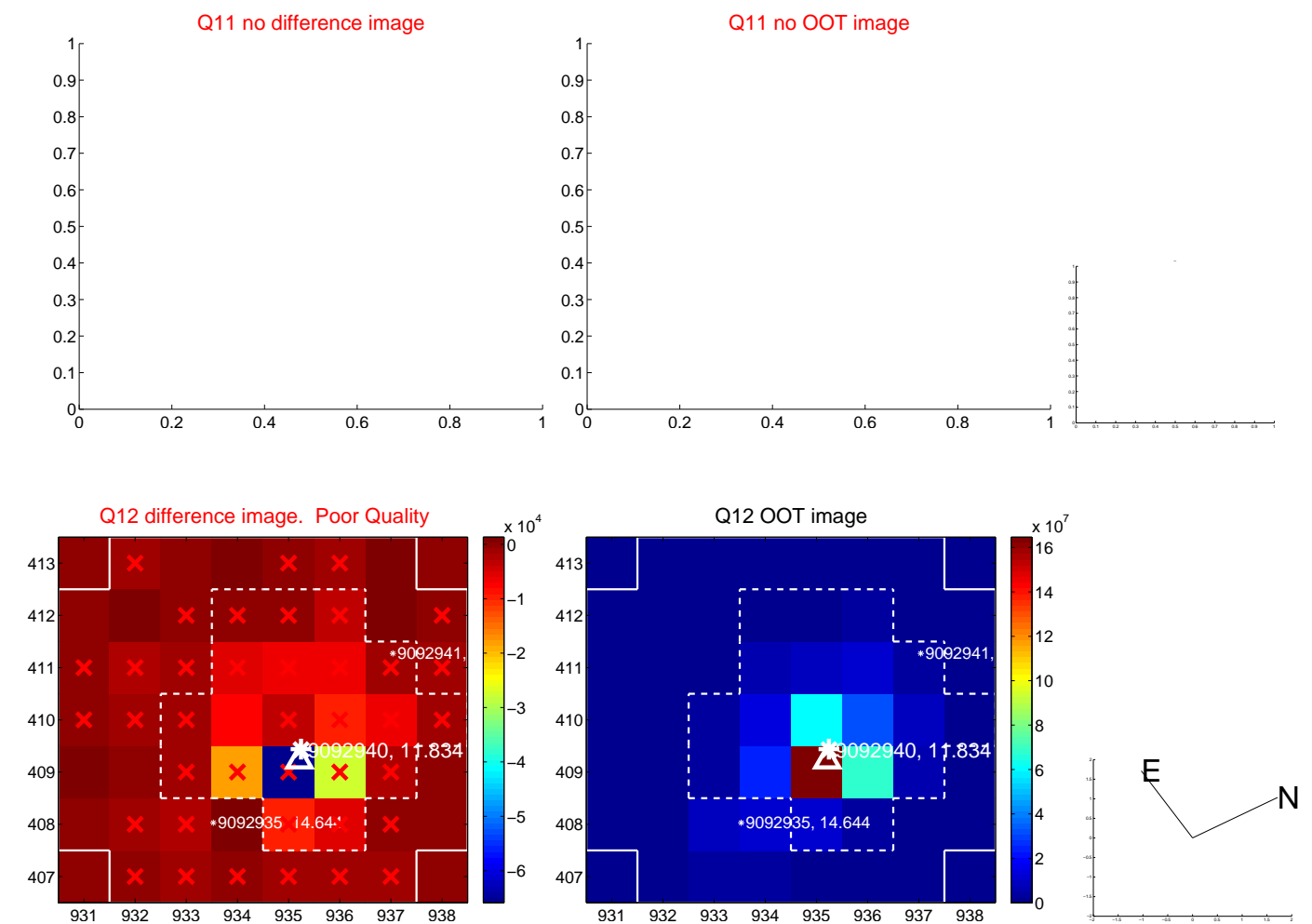
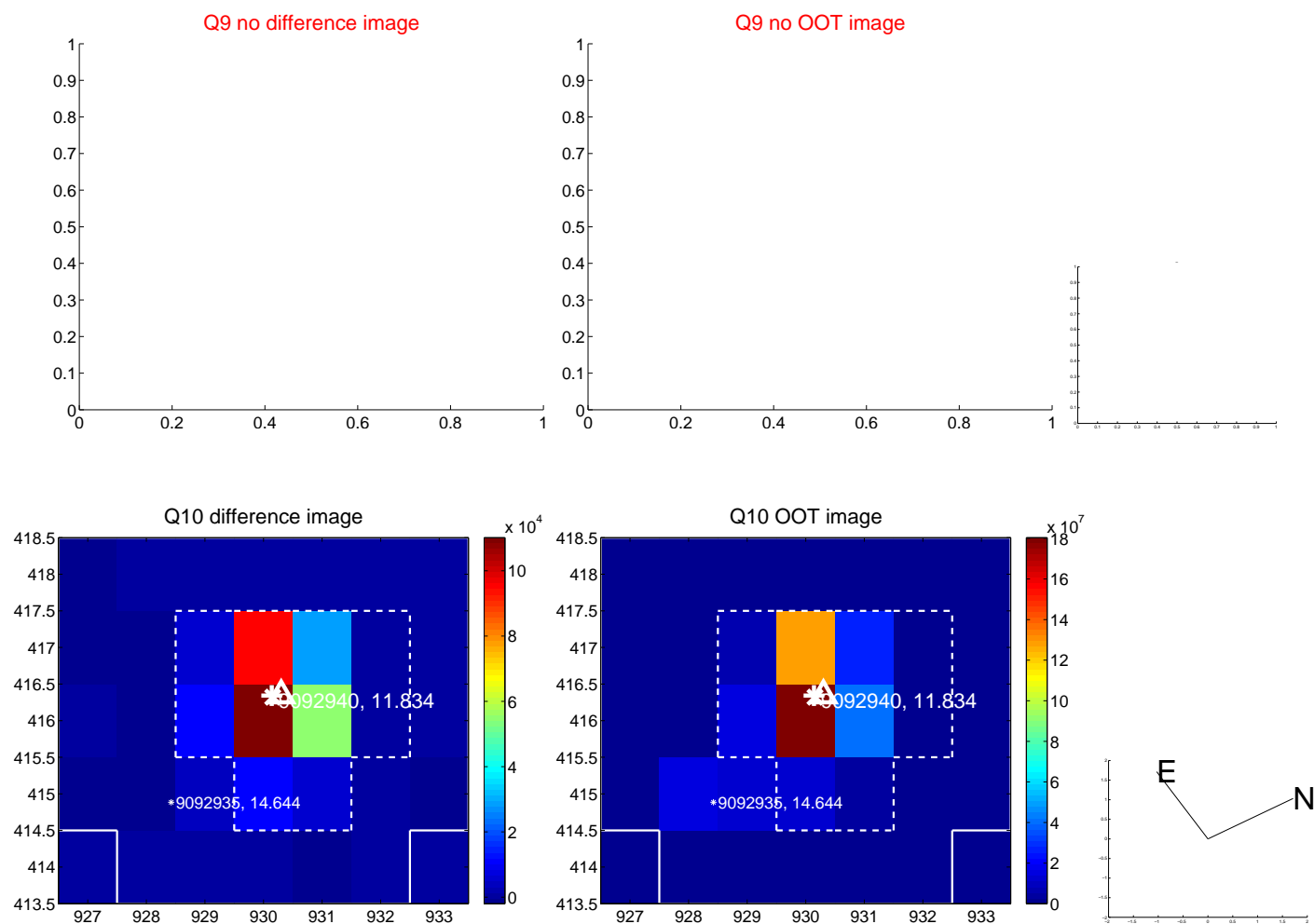
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



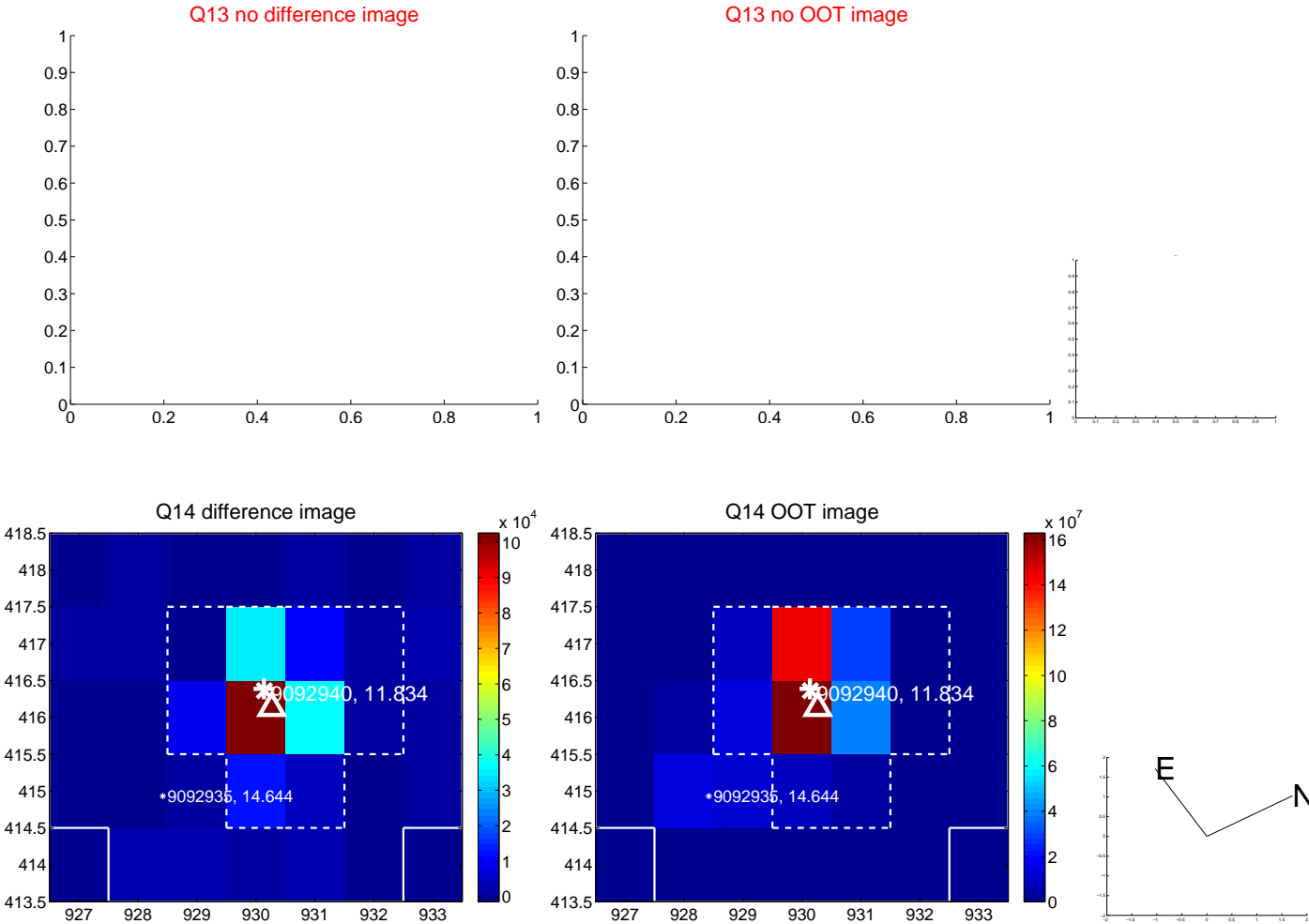
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



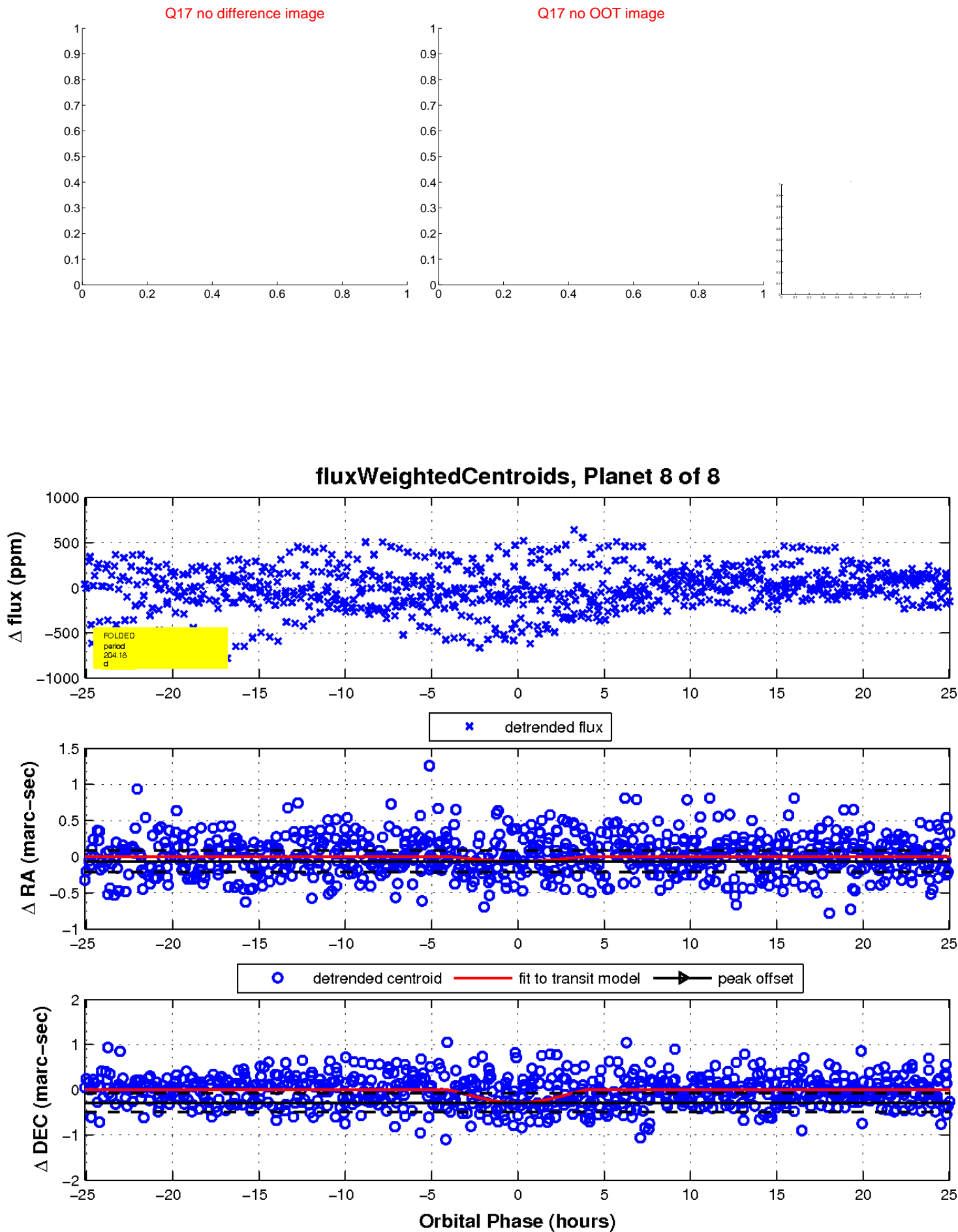
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

