

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})
009596300-01	OBS	No	0.629693	131.556025	0.9	4.130	8.4	0.1	1.70	7571	0.17	30734.05
009596300-02	OBS	No	62.286638	143.822606	2094.6	2.185	16.5	11.0	1.70	7571	14.32	67.18
009596300-03	OBS	No	112.656642	138.493851	728.6	3.671	14.1	3.8	1.70	7571	4.68	30.49
009596300-04	OBS	No	94.602073	138.174543	2650.1	3.417	12.7	12.9	1.70	7571	15.89	38.48
009596300-05	OBS	No	109.204875	141.642702	1824.0	2.300	11.4	9.4	1.70	7571	7.50	31.78
009596300-06	OBS	No	217.903079	272.117949	382.4	0.719	10.1	2.4	1.70	7571	3.60	12.65
009596300-07	OBS	No	217.870671	272.296205	1577.3	28.757	7.9	8.5	1.70	7571	6.81	12.65
009596300-08	OBS	No	46.012266	144.537196	1315.6	1.963	9.3	10.2	1.70	7571	6.74	100.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009596300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009596300-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009596300-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009596300-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009596300-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009596300-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009596300-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
009596300-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

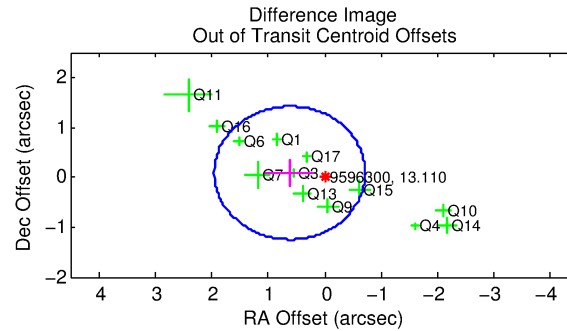
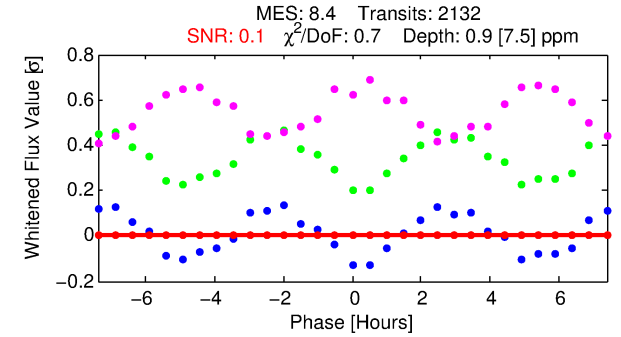
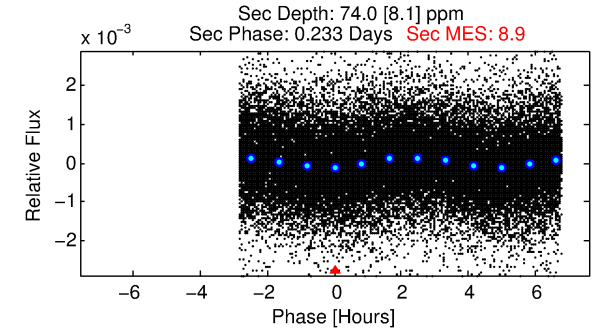
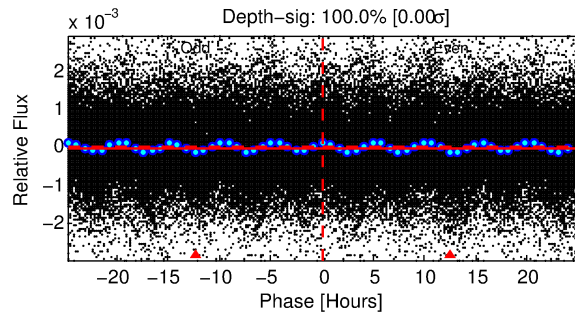
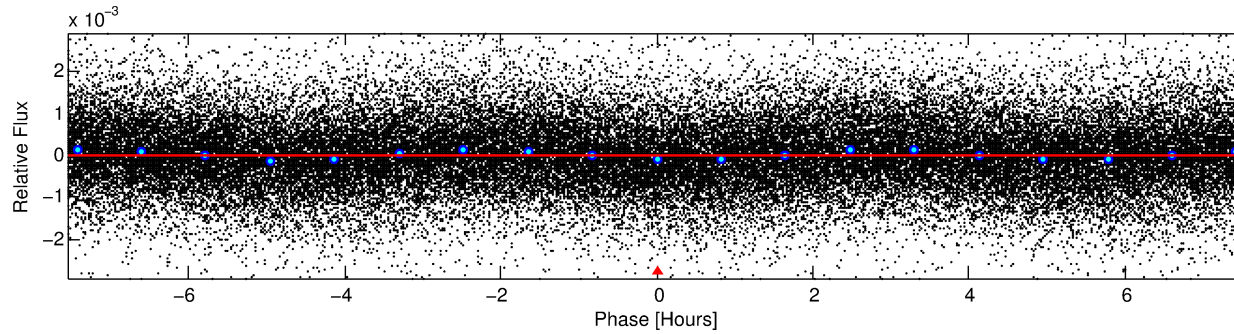
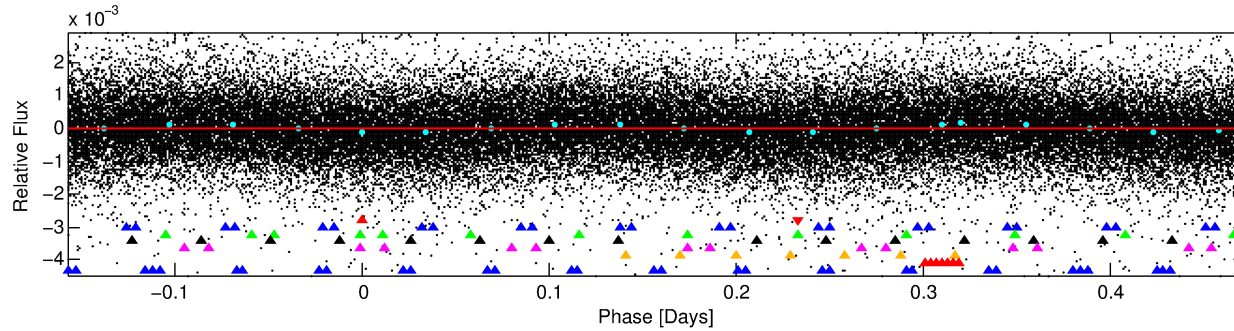
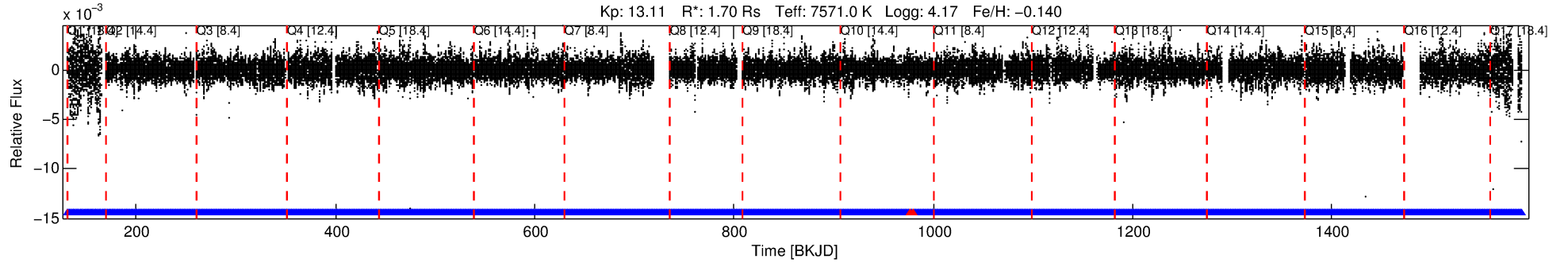
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009596300-01

No Significant Match Found

DV One-Page Summary

KIC: 9596300 Candidate: 1 of 8 Period: 0.630 d



DV Fit Results:

Period = 0.62969 [0.00070] d
Epoch = 131.5560 [0.0921] BKJD
Rp/R* = 0.0009 [0.0041]
a/R* = 1.18 [2.77]
b = 0.70 [6.23]
Seff = 30734.05 [12346.26]
Teq = 3376 [339] K
Rp = 0.17 [0.76] Re
a = 0.0166 [0.0043] AU
Ag = 385.16 [3448.66] [0.11 σ]
Teffp = 23125 [51735] K [0.38 σ]

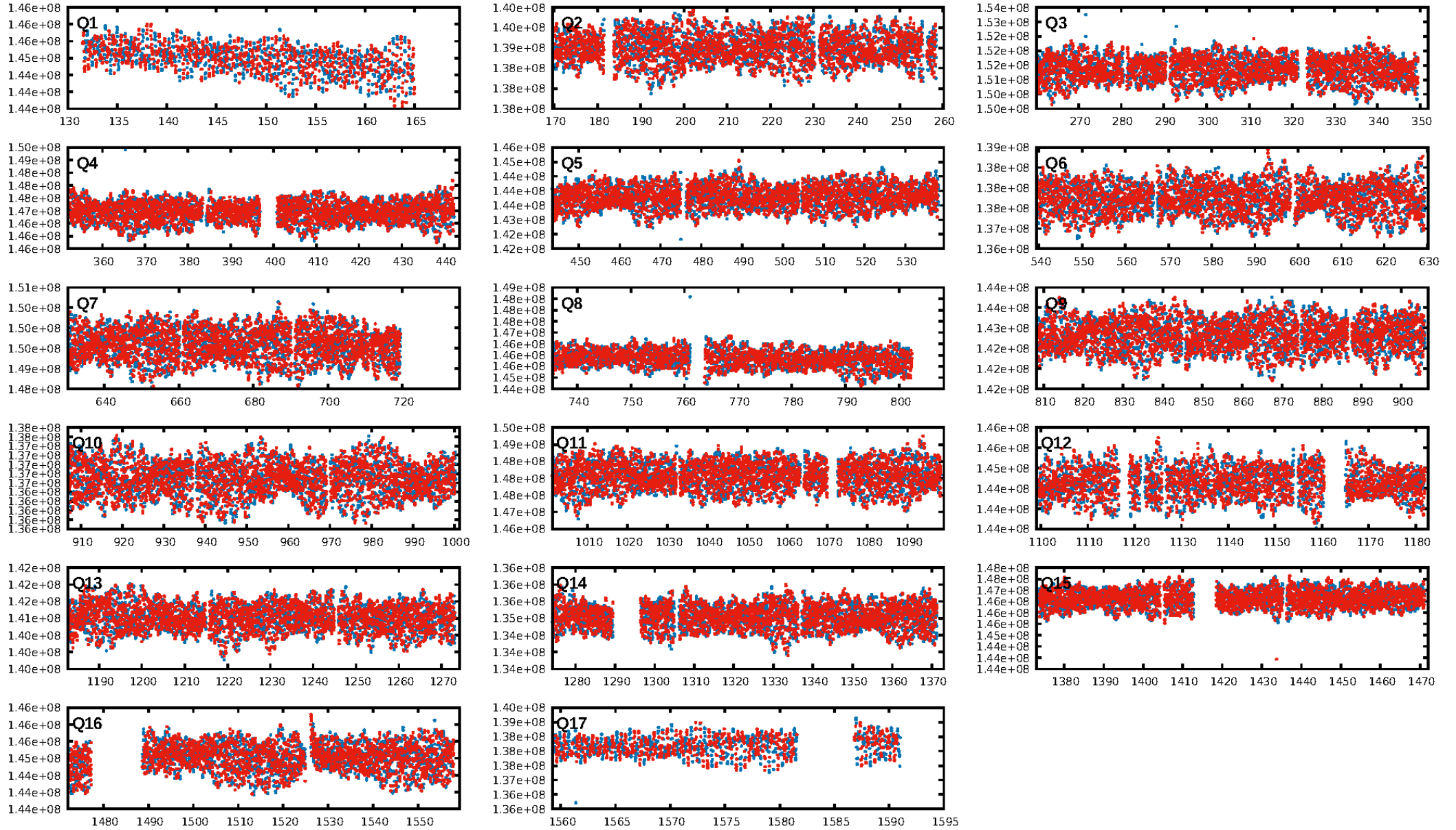
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [238.20 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.43e-09
RollingBand-fgt: 1.00 [2034/2036]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.624 arcsec [1.40 σ]
KicOffset-rm: 0.525 arcsec [1.40 σ]
OotOffset-st: 3/4/2/4 [13]
KicOffset-st: 3/4/2/4 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 1.00 [17/17]

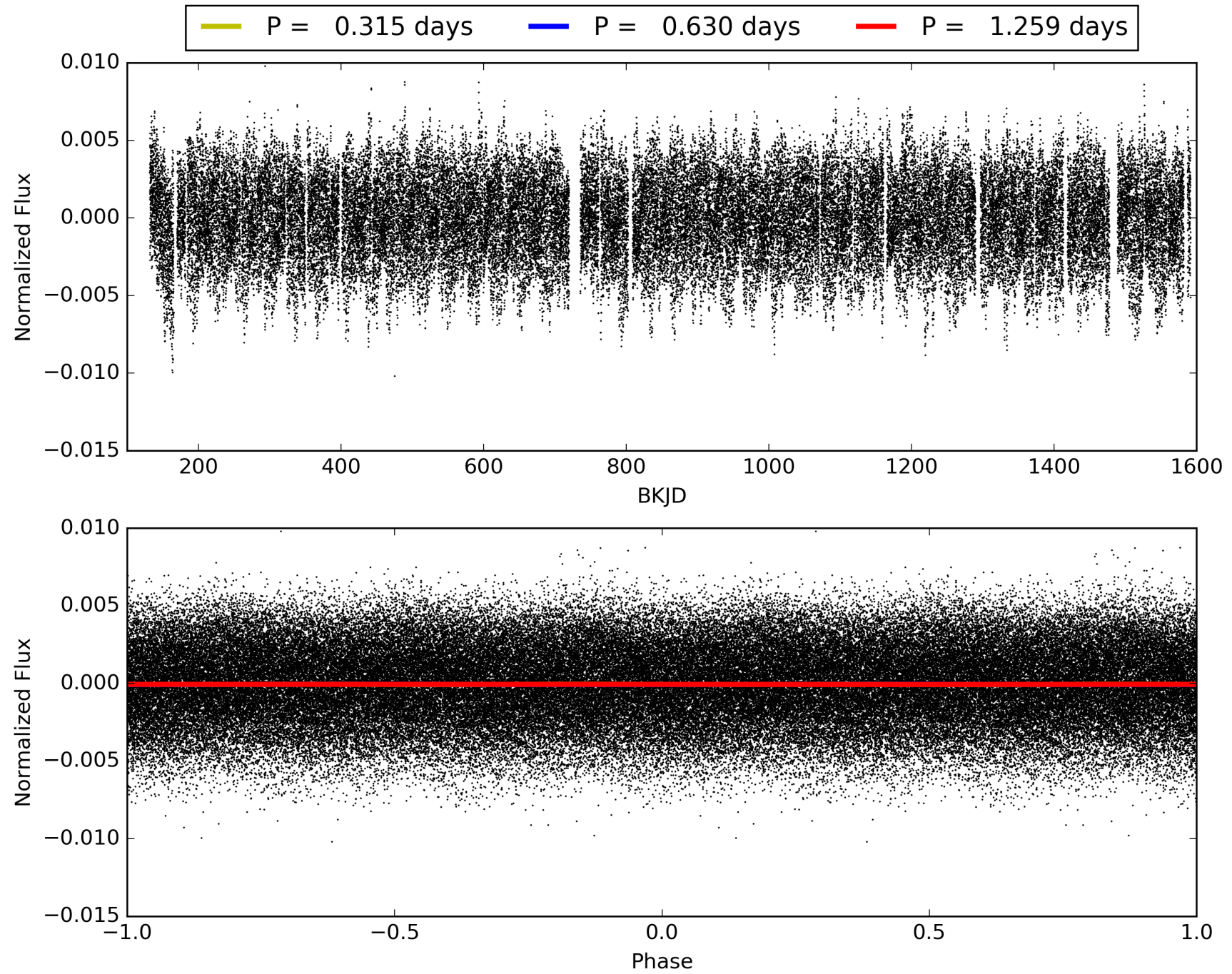
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:11:01 Z

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

TCE 009596300-01, PDC Light Curves

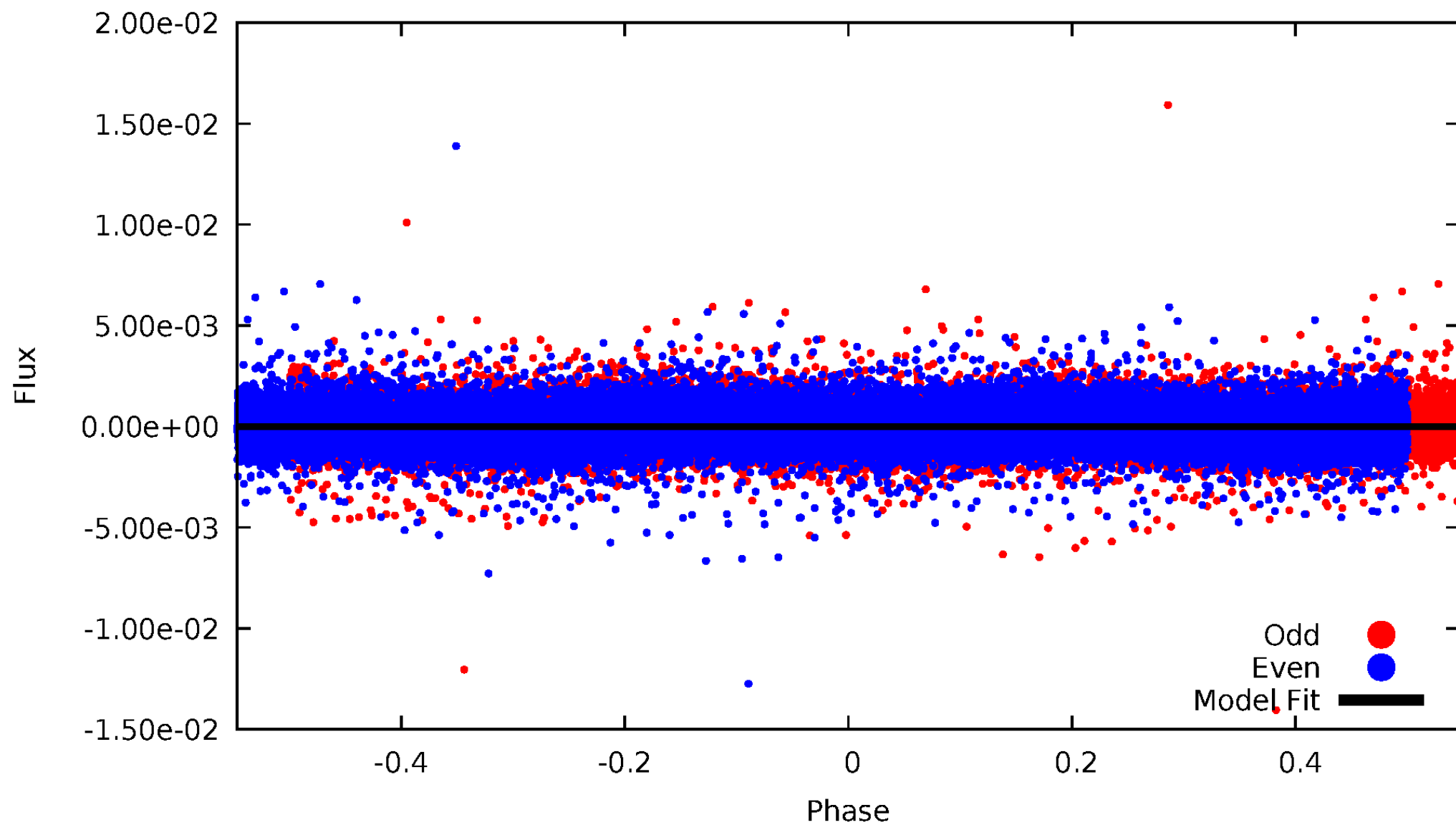


TCE 009596300-01



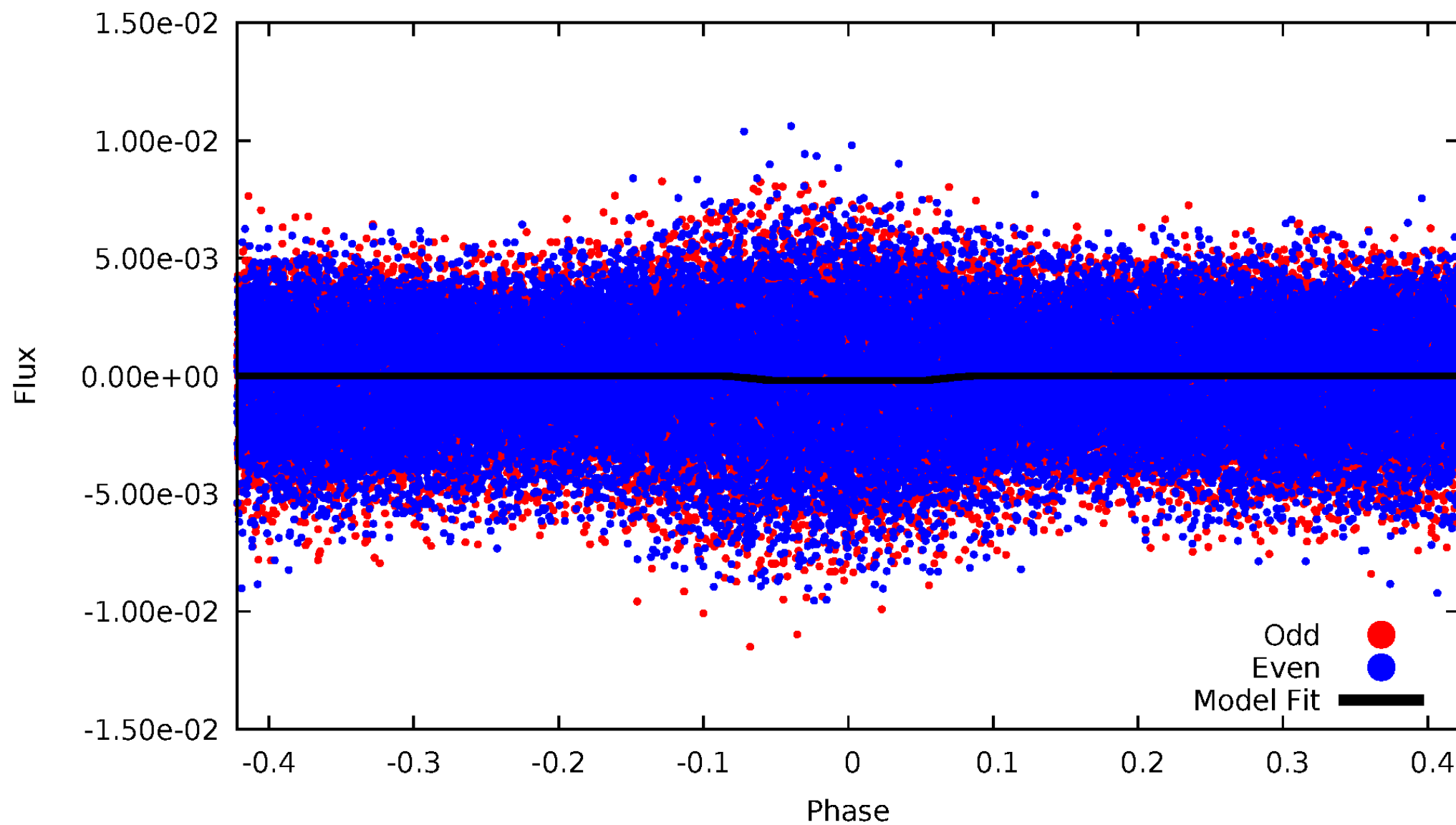
DV Odd/Even

TCE 009596300-01



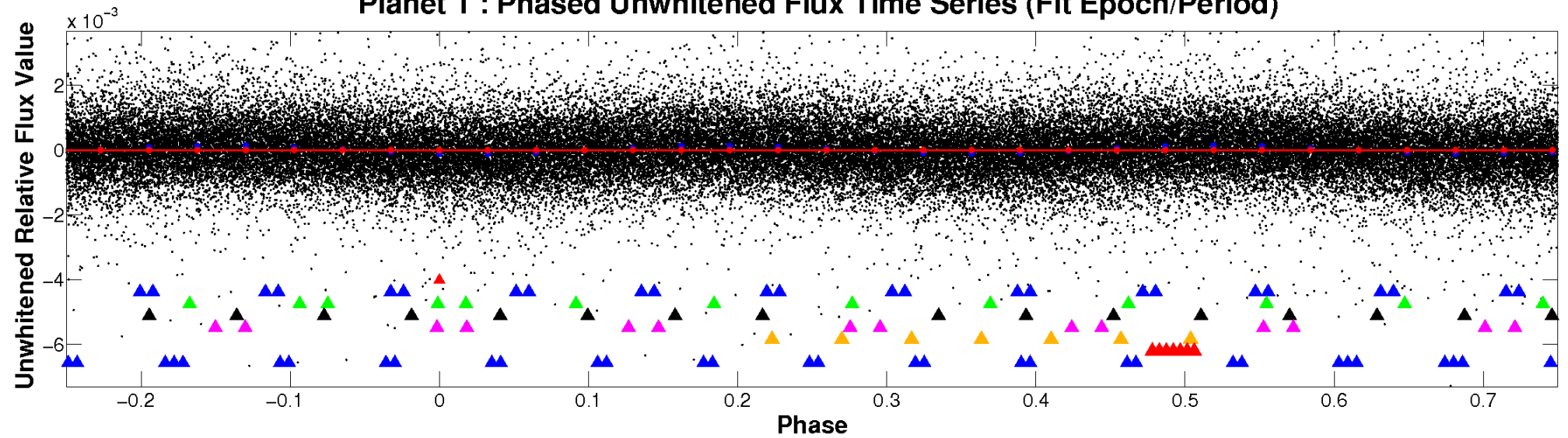
ALT Odd/Even

TCE 009596300-01

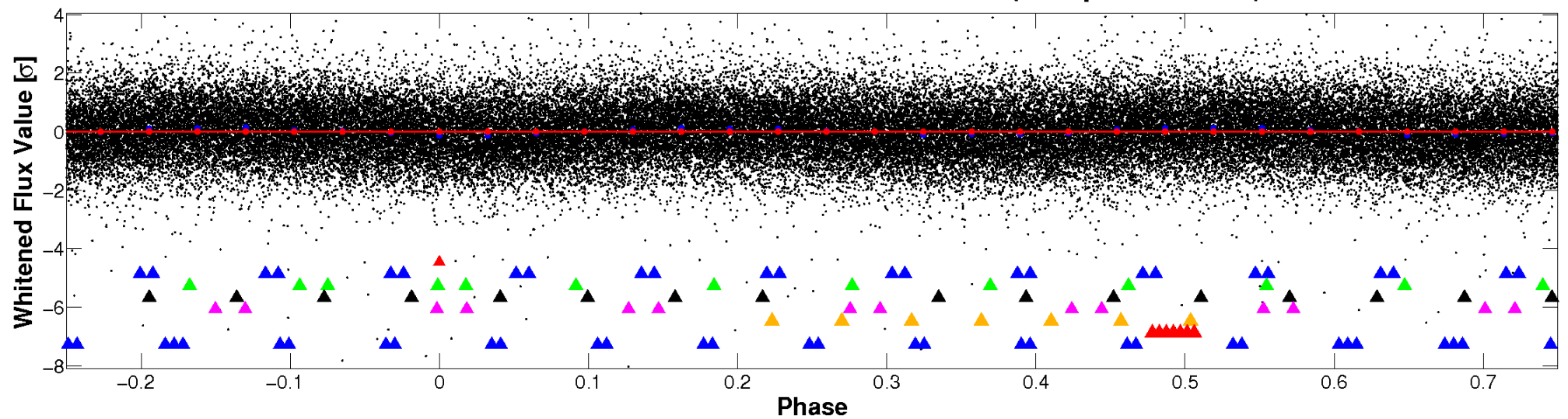


Non-Whitened Vs. Whitened Light Curve

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

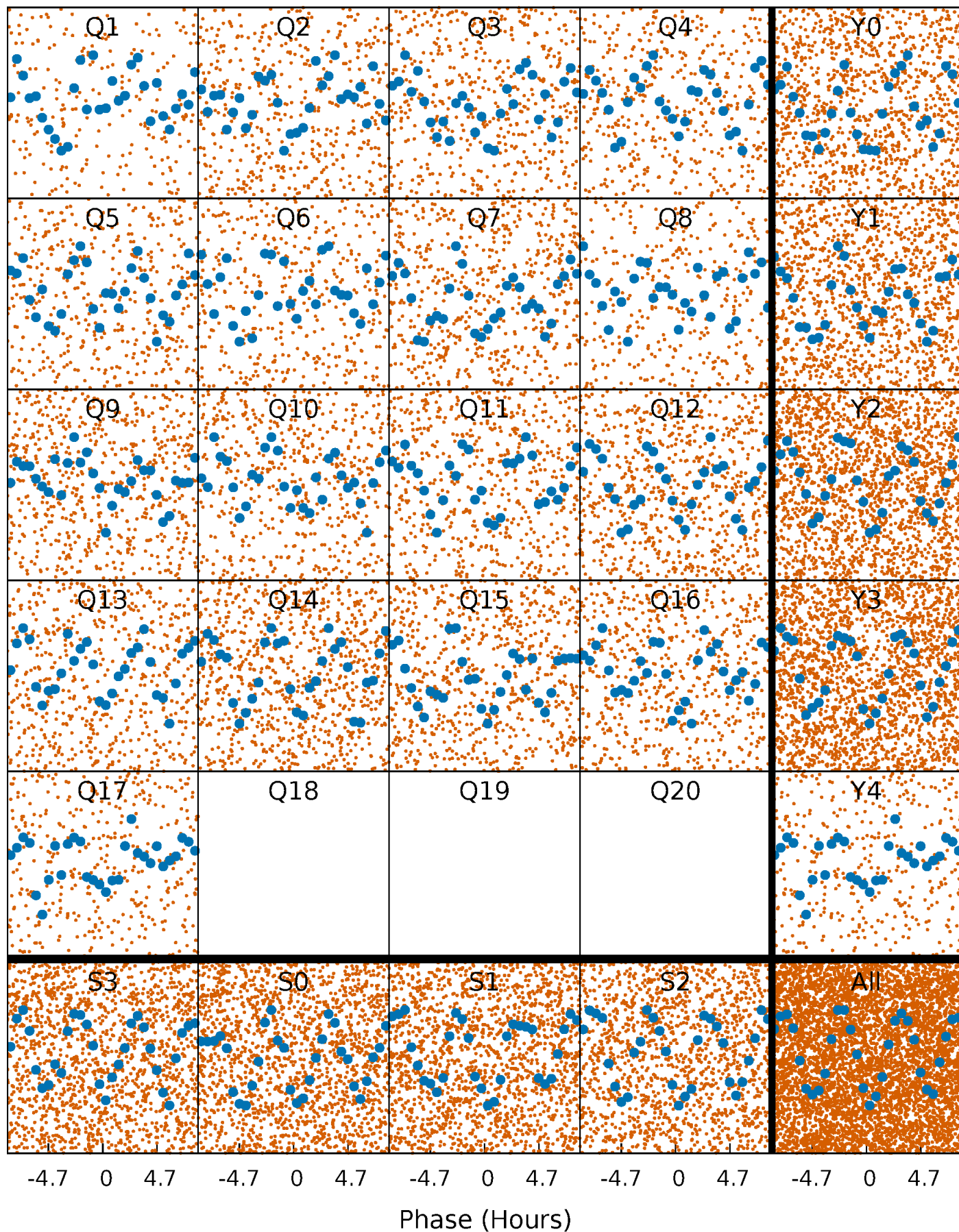


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



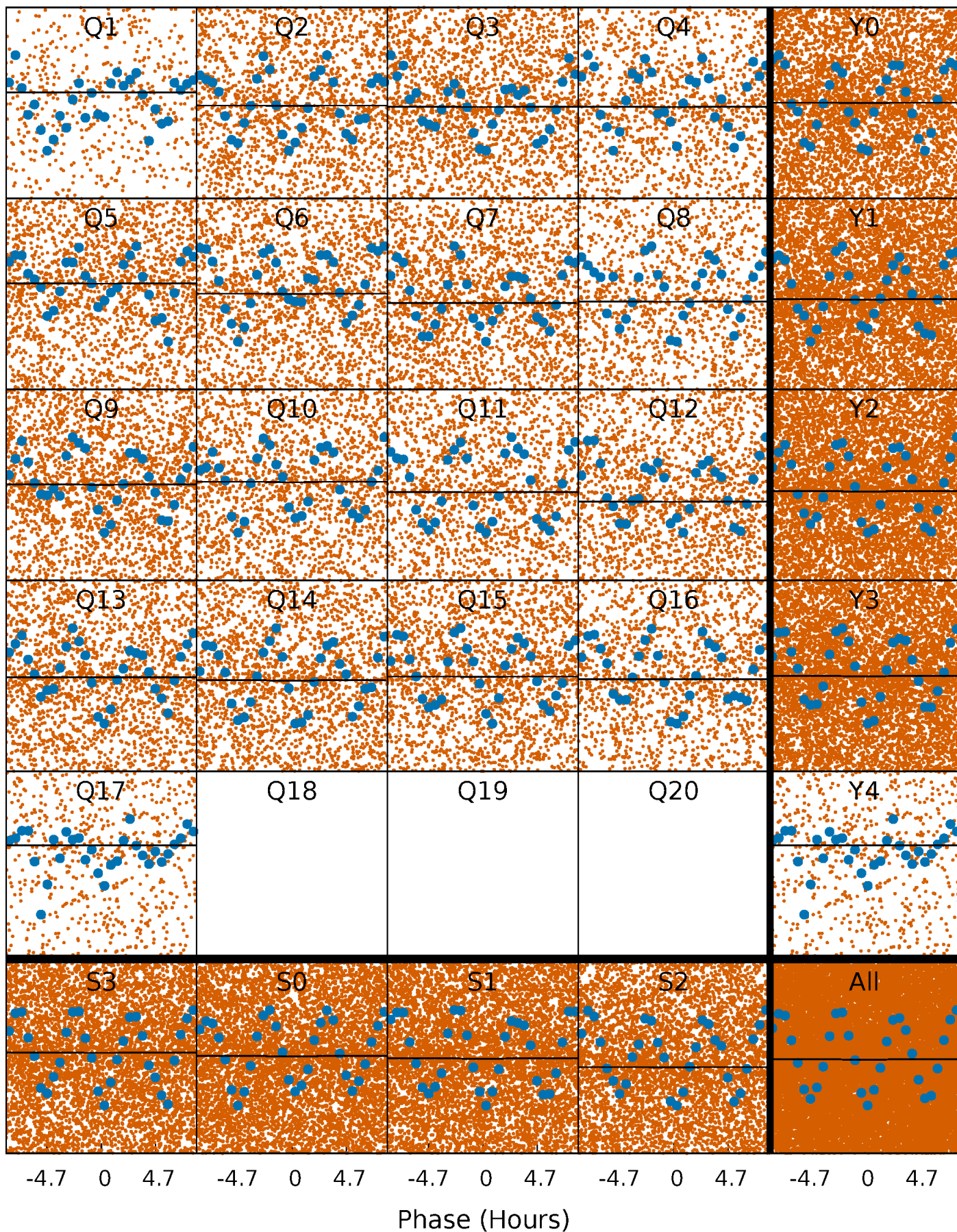
PDC Quarter-Phased Transit Curves

TCE 009596300-01 P= 0.629693 Days $T_0=131.556025$ (BKJD)



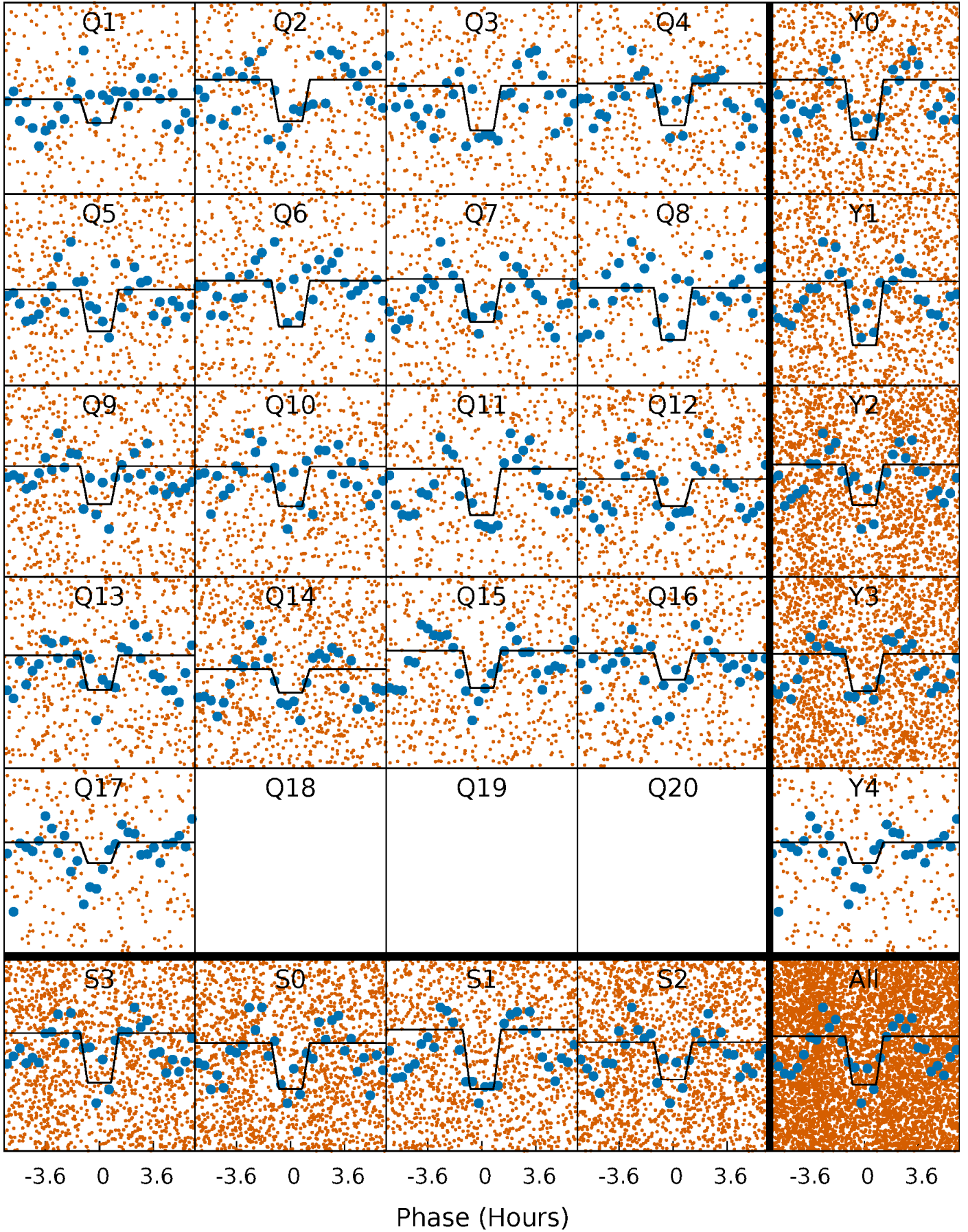
DV Quarter-Phased Transit Curves

TCE 009596300-01 P= 0.629693 Days $T_0=131.556025$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

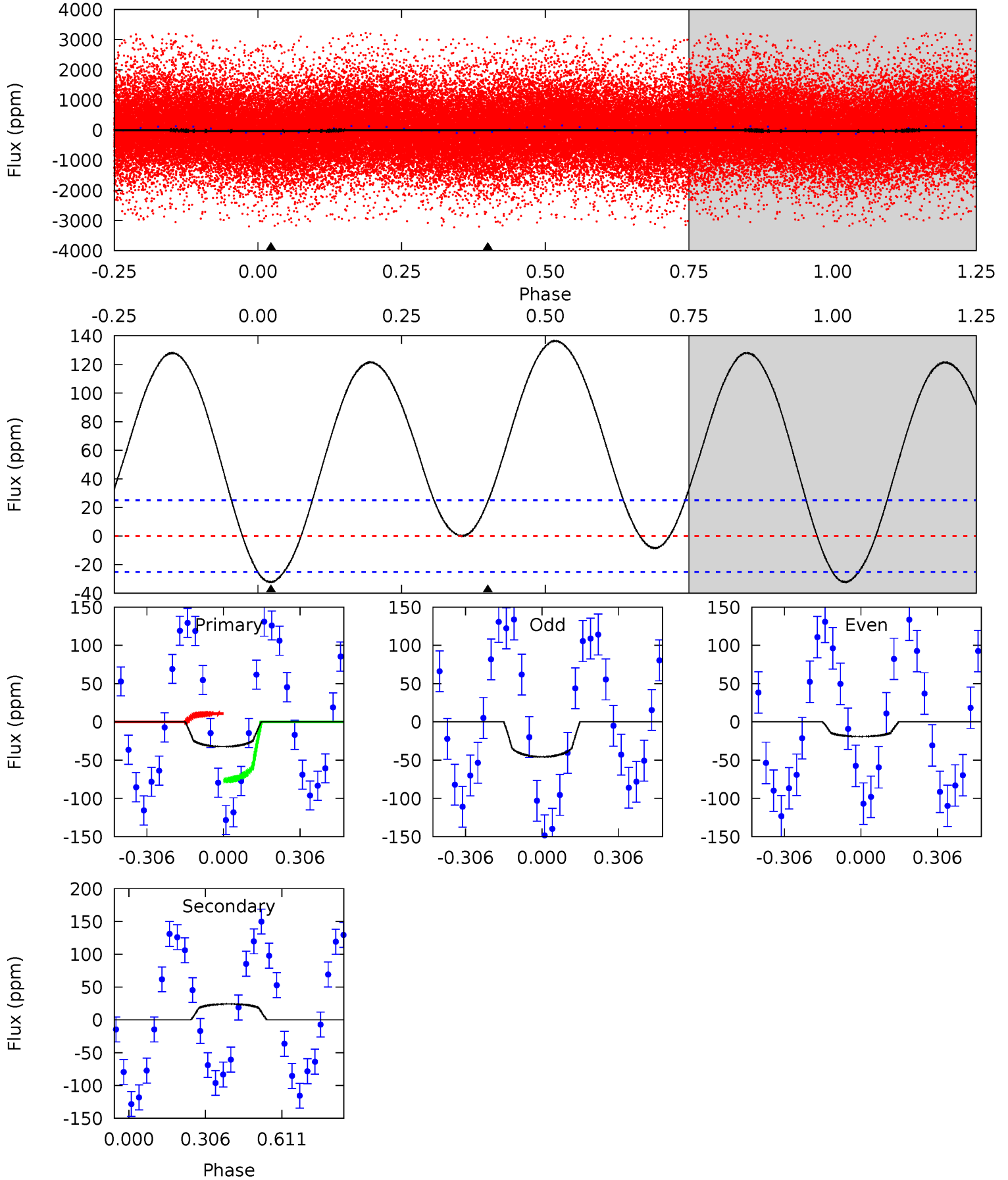
TCE 009596300-01 P= 0.629711 Days $T_0=131.550374$ (BKJD)



DV Model-Shift Uniqueness Test

009596300-01, P = 0.629693 Days, E = 130.926332 Days

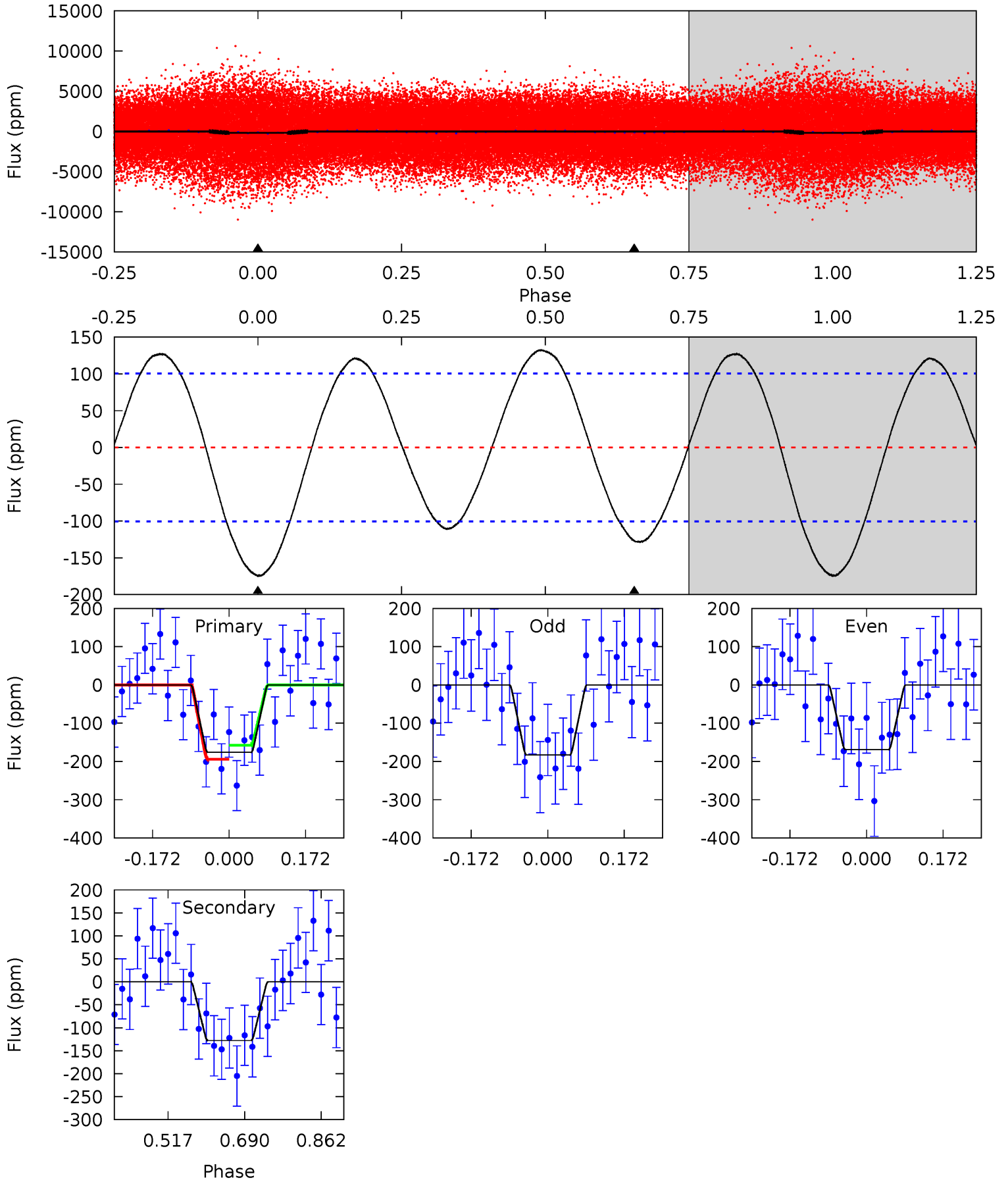
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.57	-4.17	0	0	4.32	1.02	2.87	5.57	5.57	-4.17	-4.17	2.29	1.01	0.81	5.57



Alt Model-Shift Uniqueness Test

009596300-01, P = 0.629711 Days, E = 130.920663 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.77	5.65	0	0	4.45	1.36	3.56	7.77	7.77	5.65	5.65	0.32	1.66	0.43	0.82



Stellar Parameters For KIC 009596300

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7571^{+211}_{-316}	$4.166^{+0.105}_{-0.195}$	$-0.140^{+0.200}_{-0.350}$	$1.696^{+0.533}_{-0.328}$	$1.535^{+0.219}_{-0.219}$	$0.443^{+0.264}_{-0.225}$
	+3%/-4%	+3%/-5%	+143%/-250%	+31%/-19%	+14%/-14%	+60%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009596300-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	24 ± 6	$0.63^{+0.59}_{-0.46}$	4776^{+339}_{-283}	-10010^{+3318}_{-27675}	$-9.041^{+6.718}_{-112.087}$
Alt.	-128 ± 23	$2.66^{+0.96}_{-0.76}$	4764^{+332}_{-287}	6418^{+1545}_{-964}	$2.603^{+2.960}_{-1.192}$

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

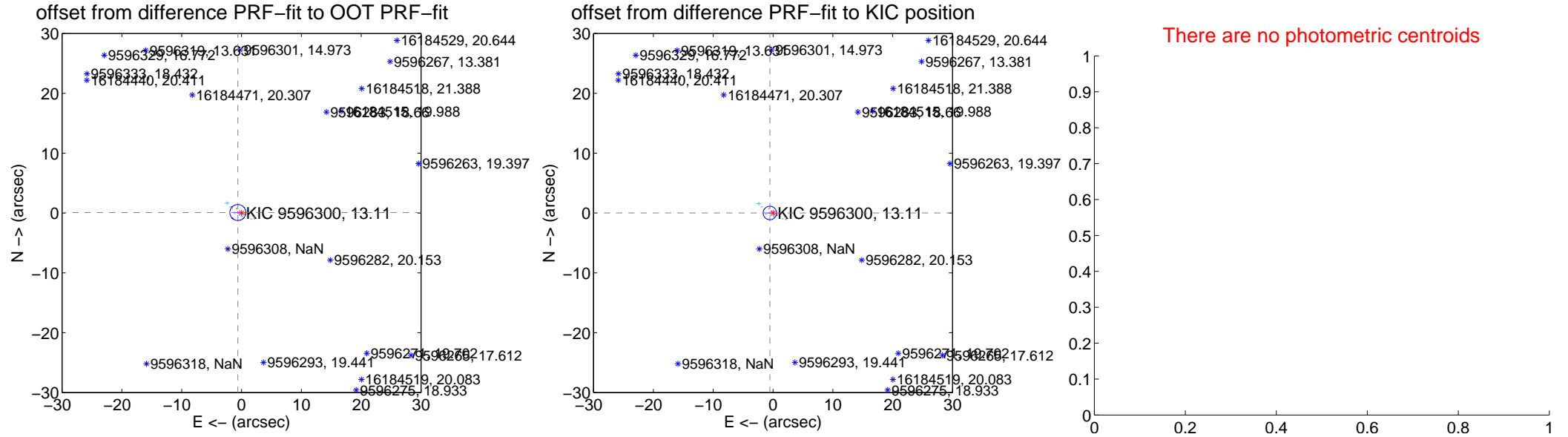
DV Centroid Data

Supplemental centroid analysis for 009596300-01. Kepler magnitude: 13.11. Transit SNR 0.13

There are 9 quarters with good PRF difference image offsets

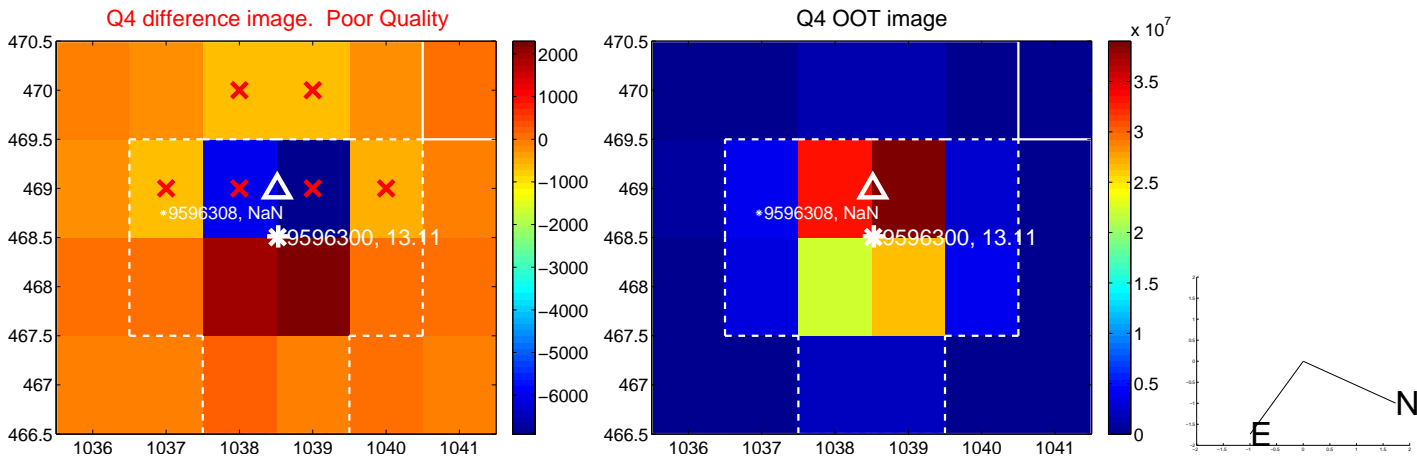
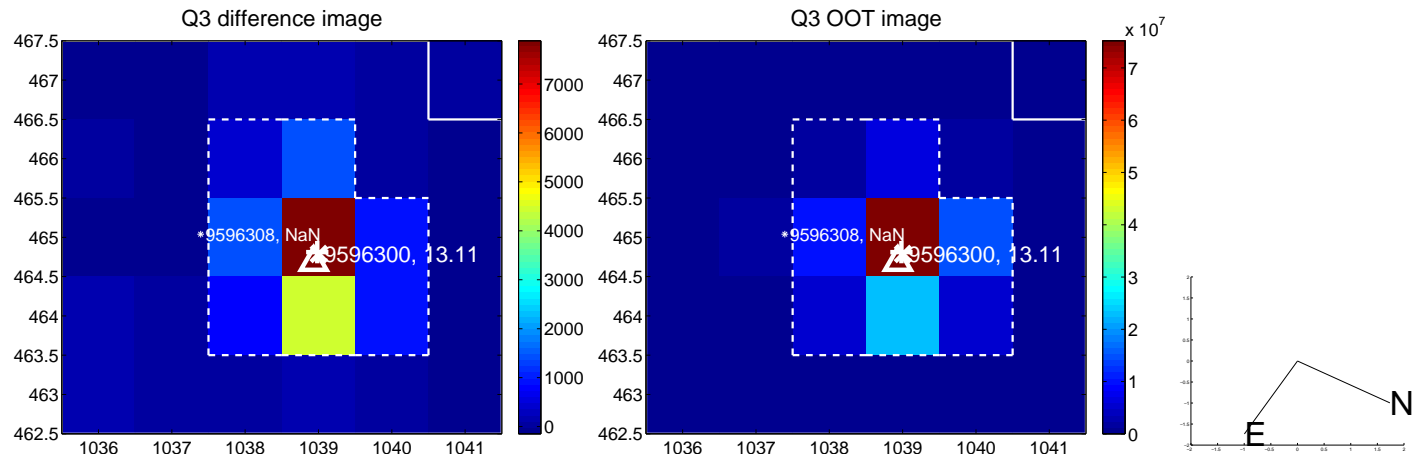
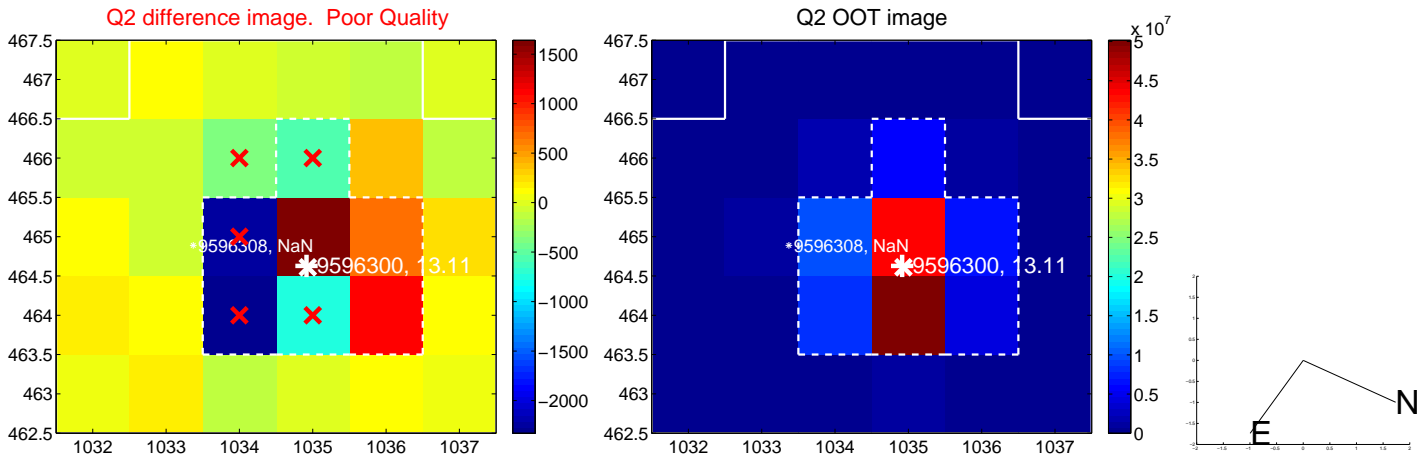
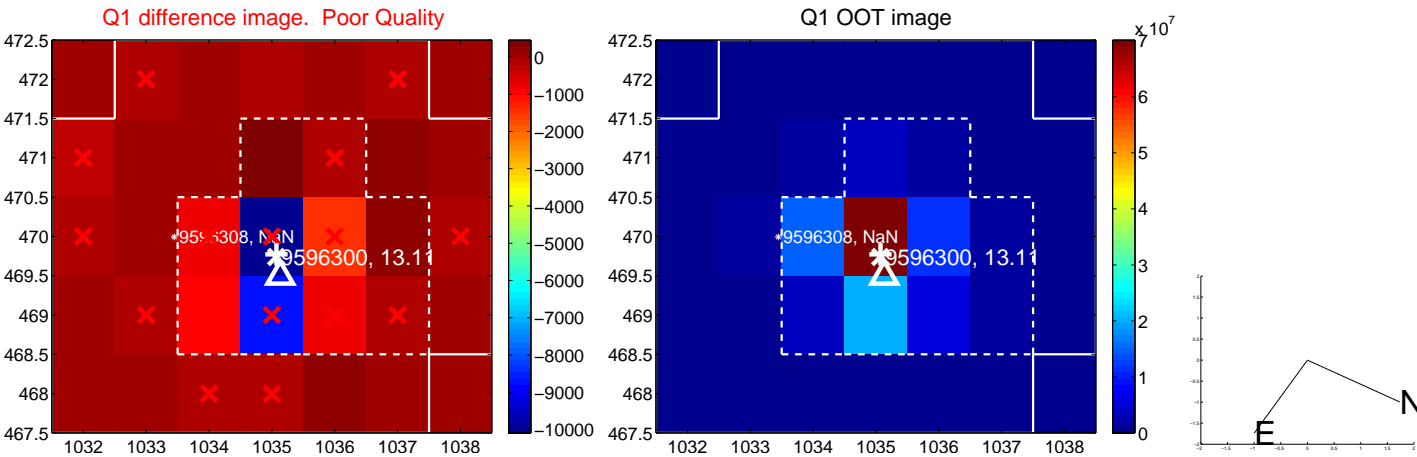
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.624 ± 0.445	1.40	0.619 ± 0.420	0.083 ± 0.247
PRF-fit source offset from KIC position	0.525 ± 0.376	1.40	0.525 ± 0.374	0.004 ± 0.213
photometric centroid source offset	—	—	—	—

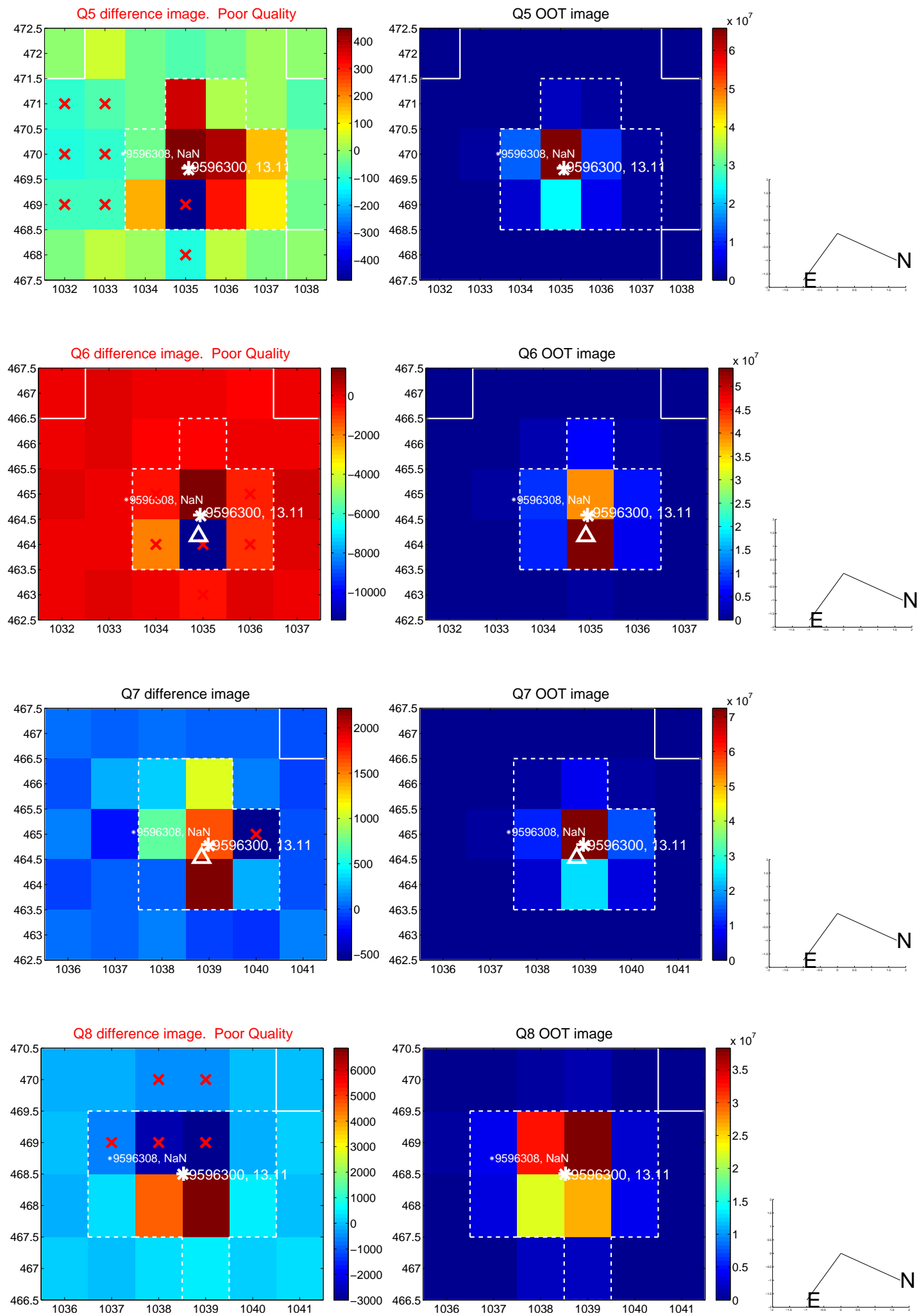


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

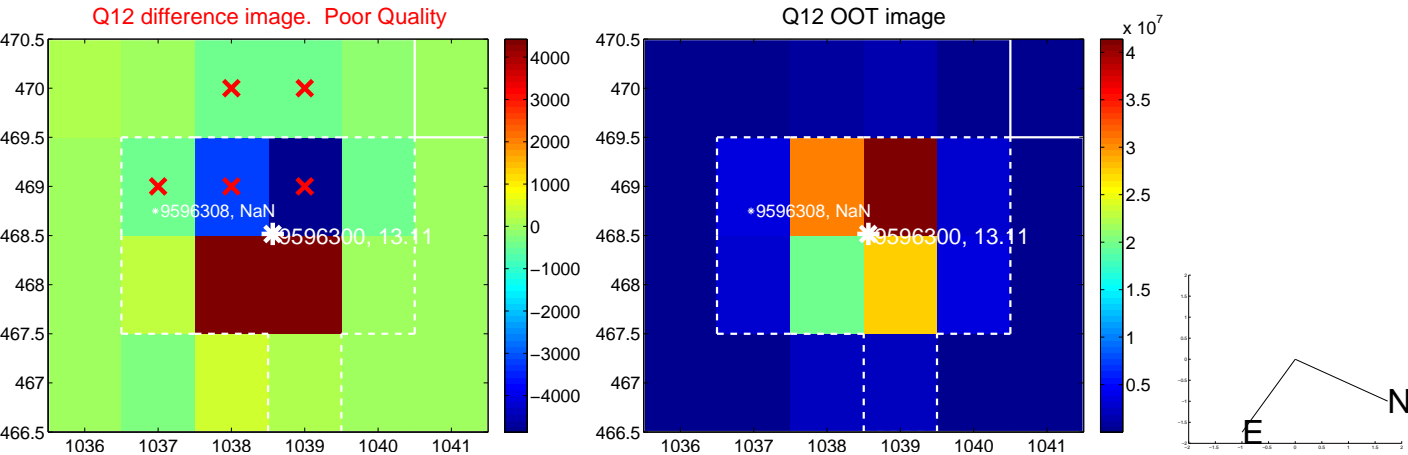
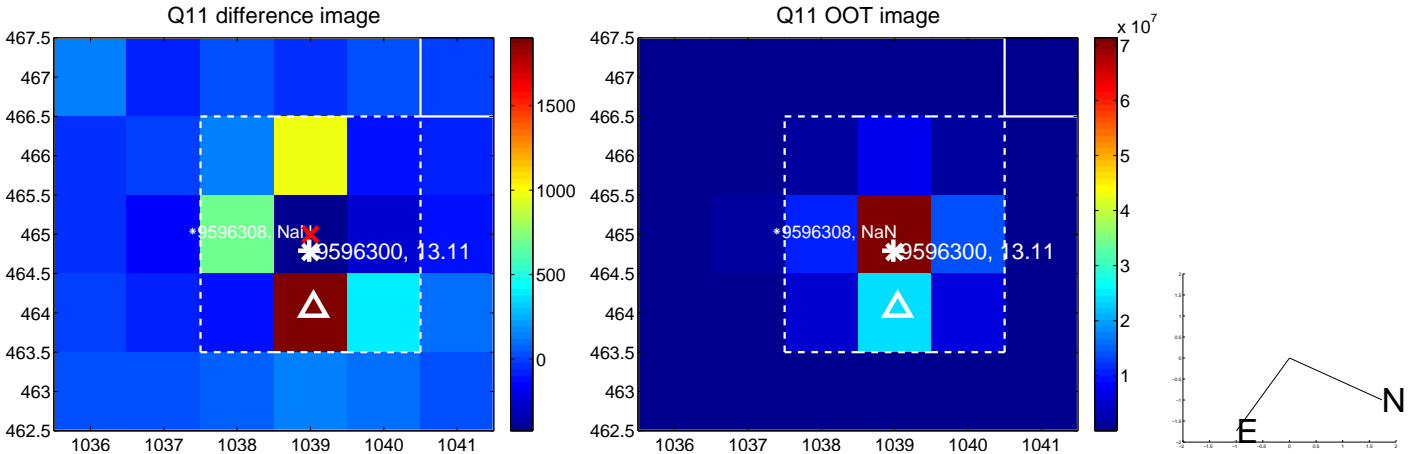
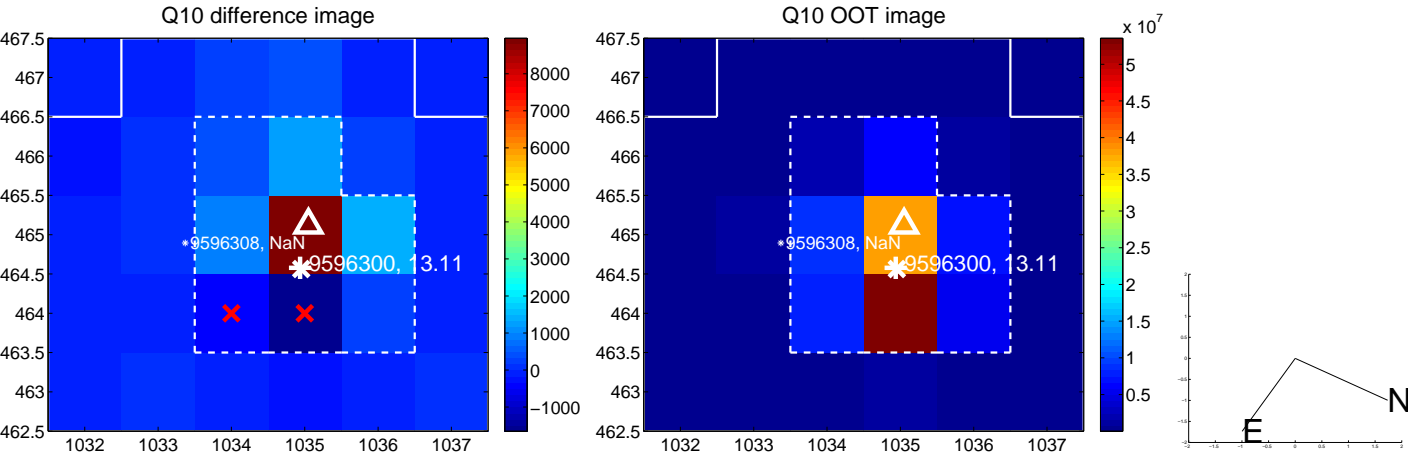
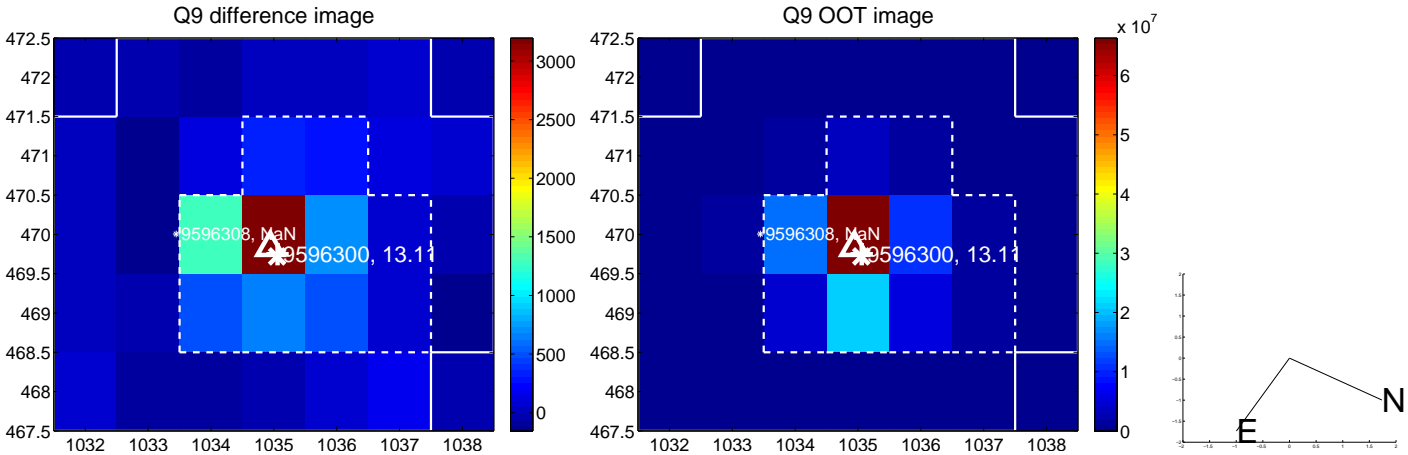
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



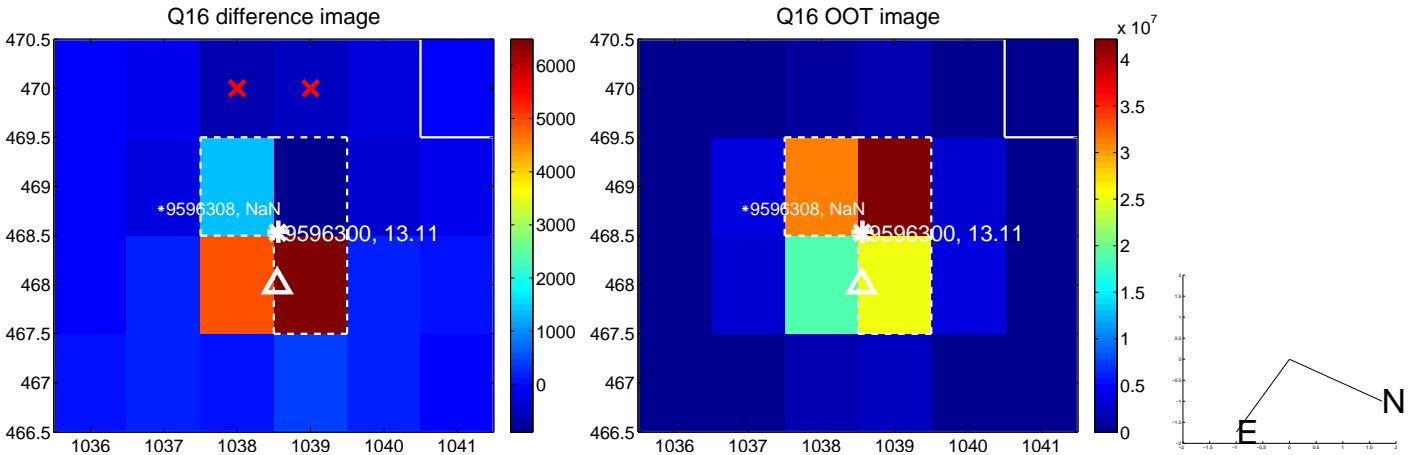
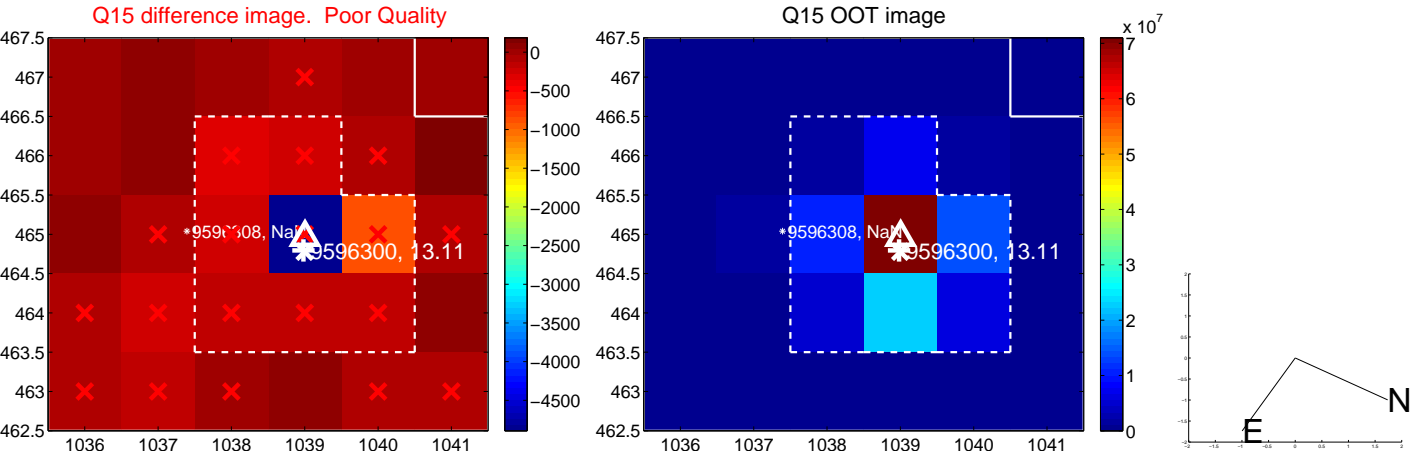
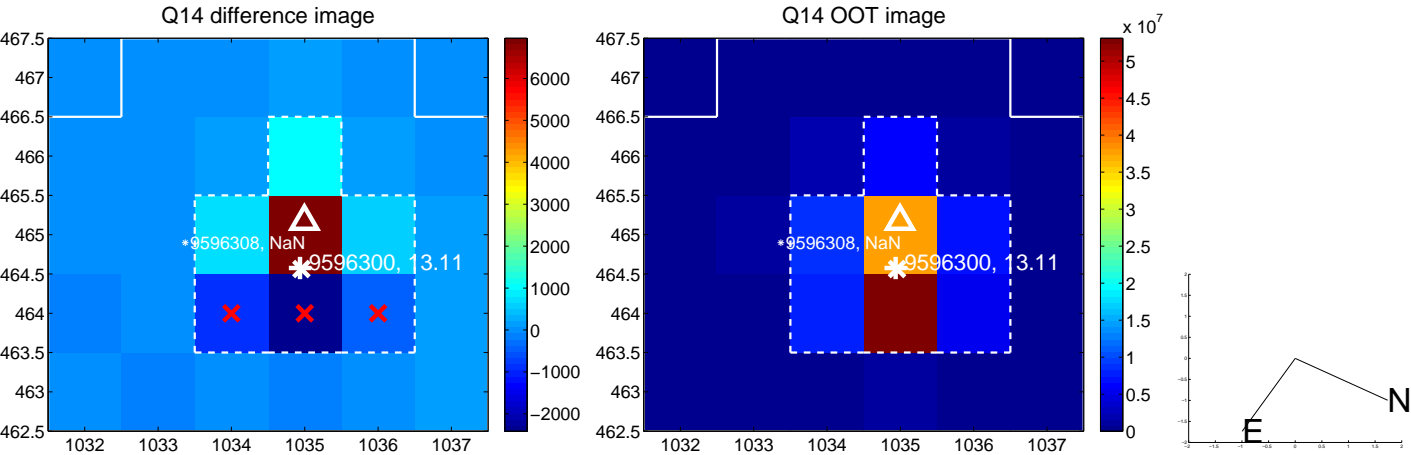
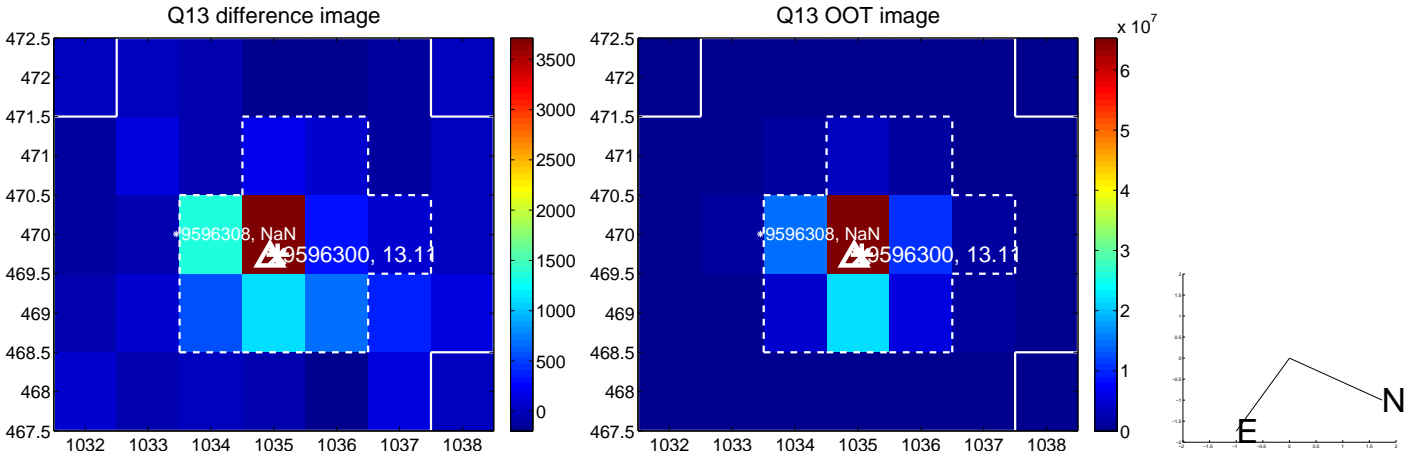
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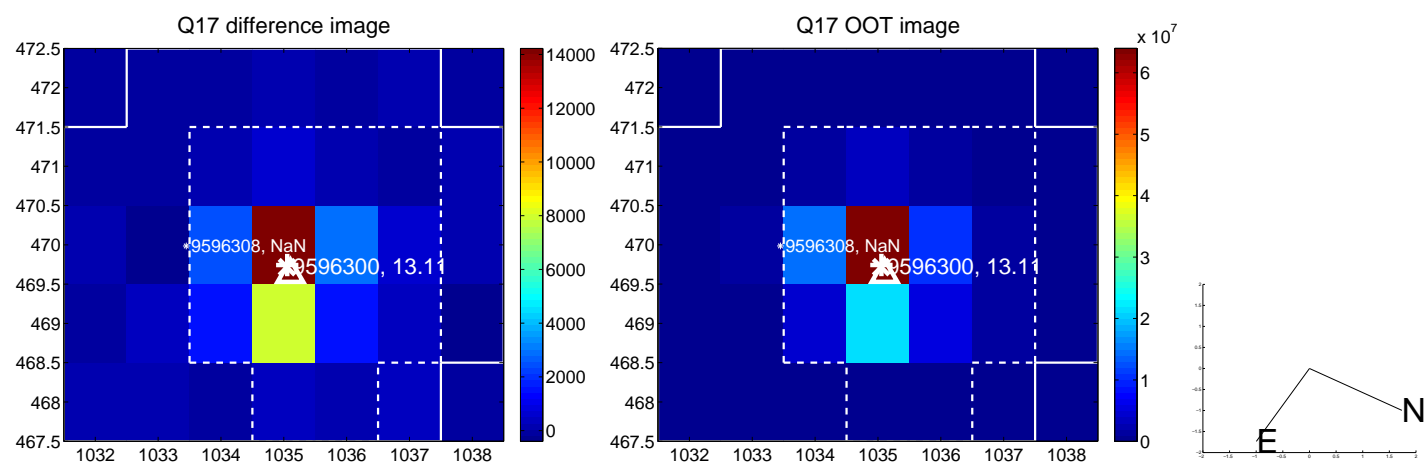
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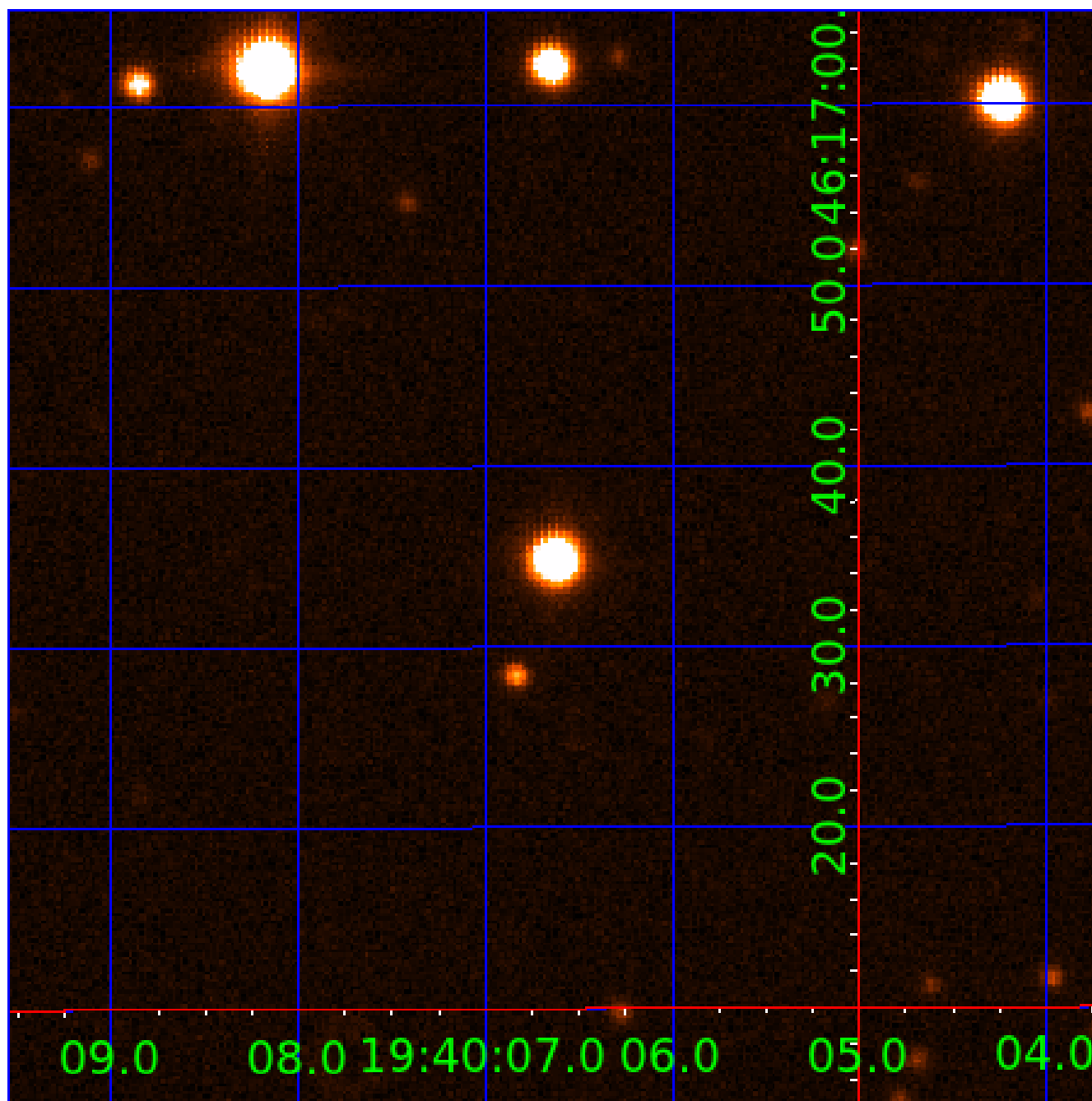
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folded centroid time series figure for this object.

UKIRT Image

Declination



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009596300-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009596300-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009596300-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009596300-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009596300-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
009596300-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

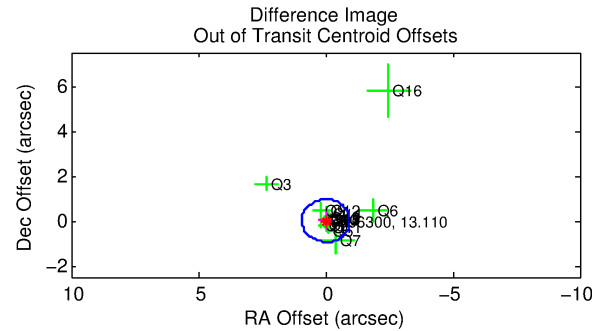
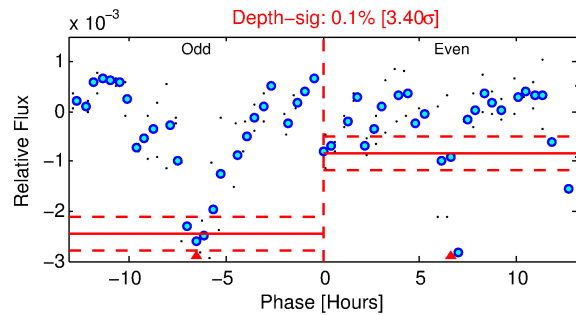
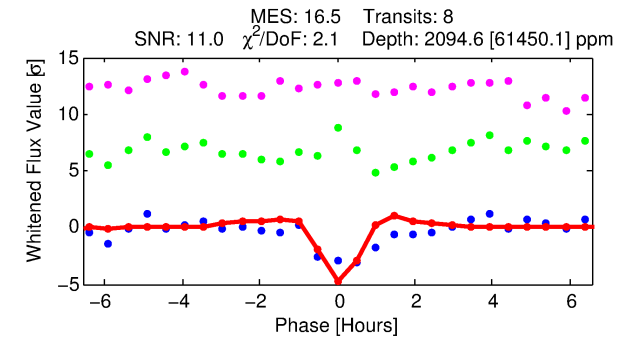
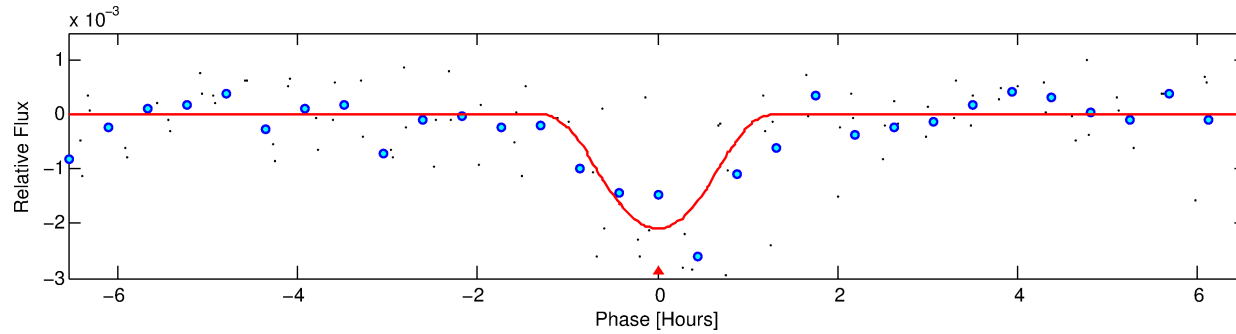
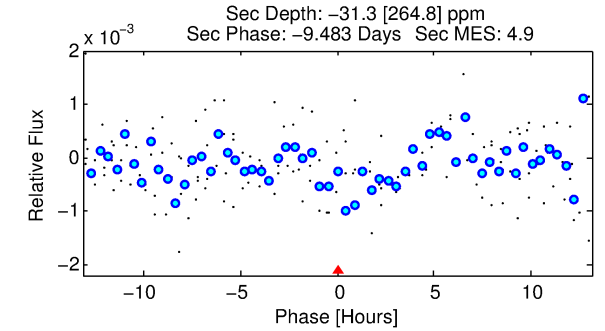
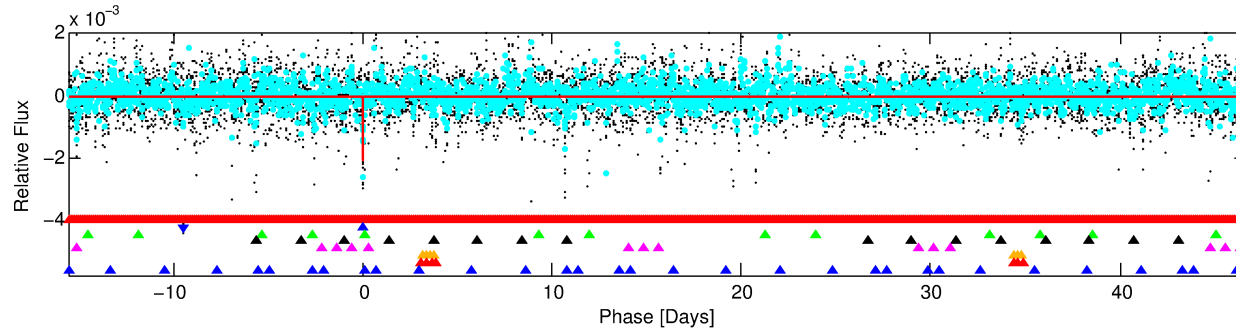
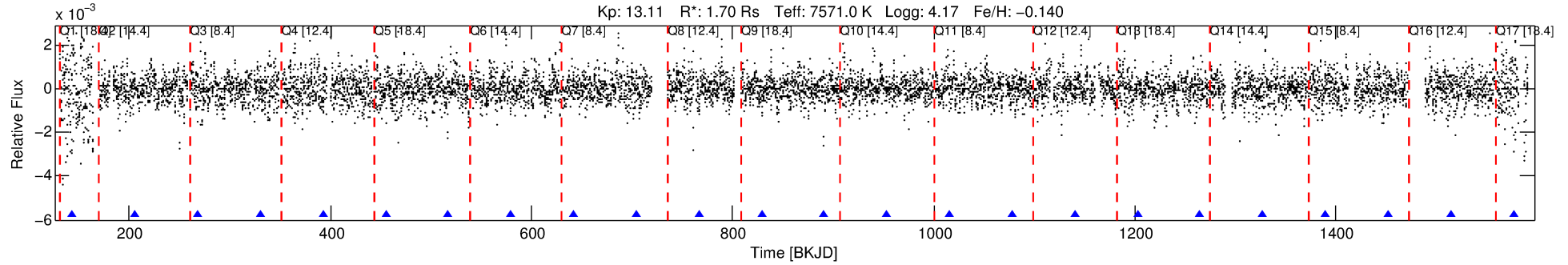
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009596300-02

No Significant Match Found

DV One-Page Summary

KIC: 9596300 Candidate: 2 of 8 Period: 62.287 d



DV Fit Results:

Period = 62.28664 [0.00041] d
Epoch = 143.8226 [0.0045] BKJD
Rp/R* = 0.0774 [0.5561]
a/R* = 87.29 [145.09]
b = 1.00 [0.73]
Seff = 67.18 [26.99]
Teff = 730 [73] K
Rp = 14.32 [103.01] Re
a = 0.3550 [0.0914] AU
Ag = N/A
Teffp = N/A

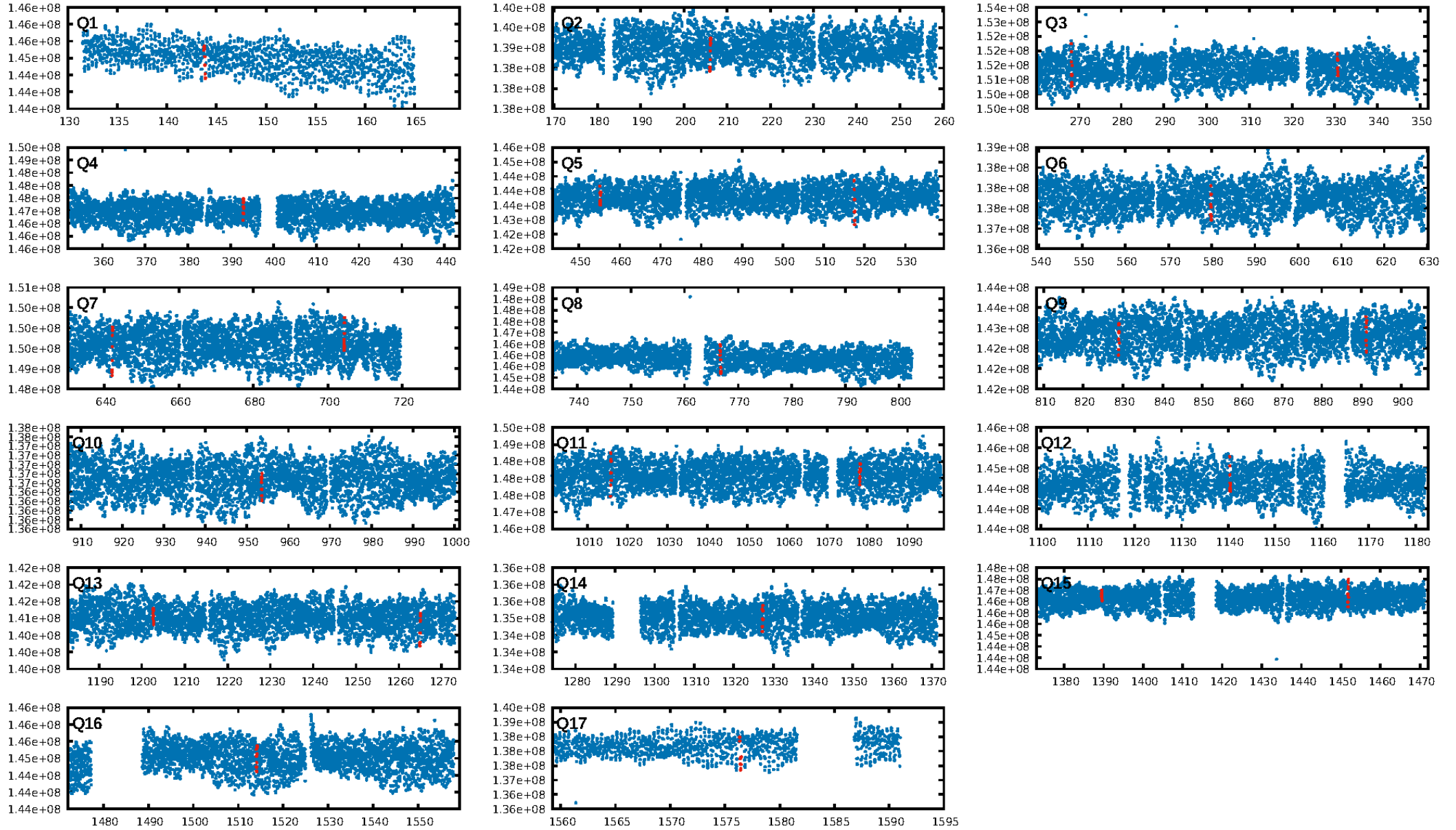
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [132.95σ]
LongPeriod-sig: 100.0% [191.22σ]
ModelChiSquare2-sig: 2.2%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 3.90e-21
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.3323
Centroid-sig: 6.5%
Centroid-so: 0.335 arcsec [3.51σ]
OotOffset-rm: 0.004 arcsec [0.01σ]
KicOffset-rm: 0.079 arcsec [0.34σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 0.00 [0/17]

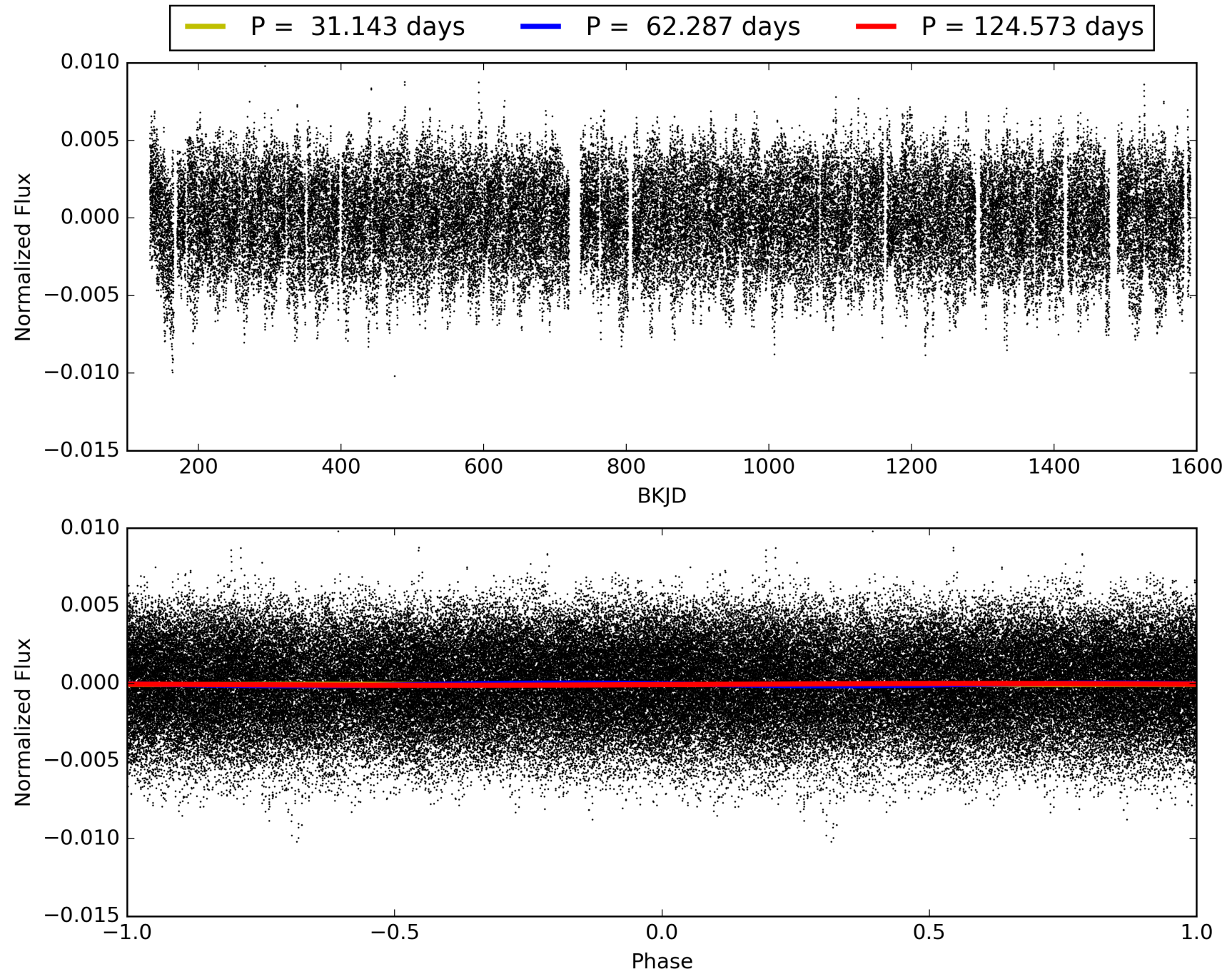
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:11:23 Z

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

TCE 009596300-02, PDC Light Curves

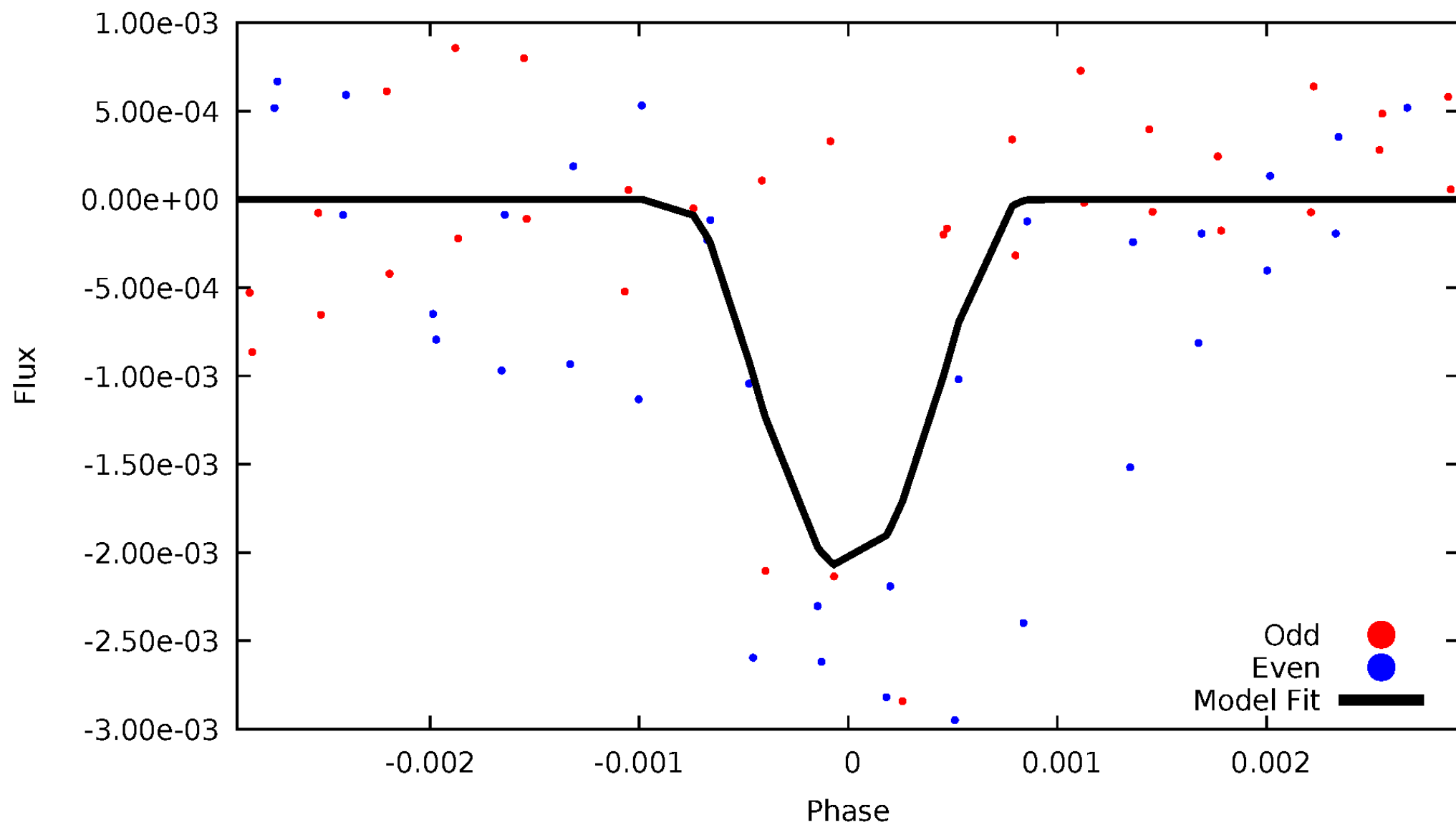


TCE 009596300-02



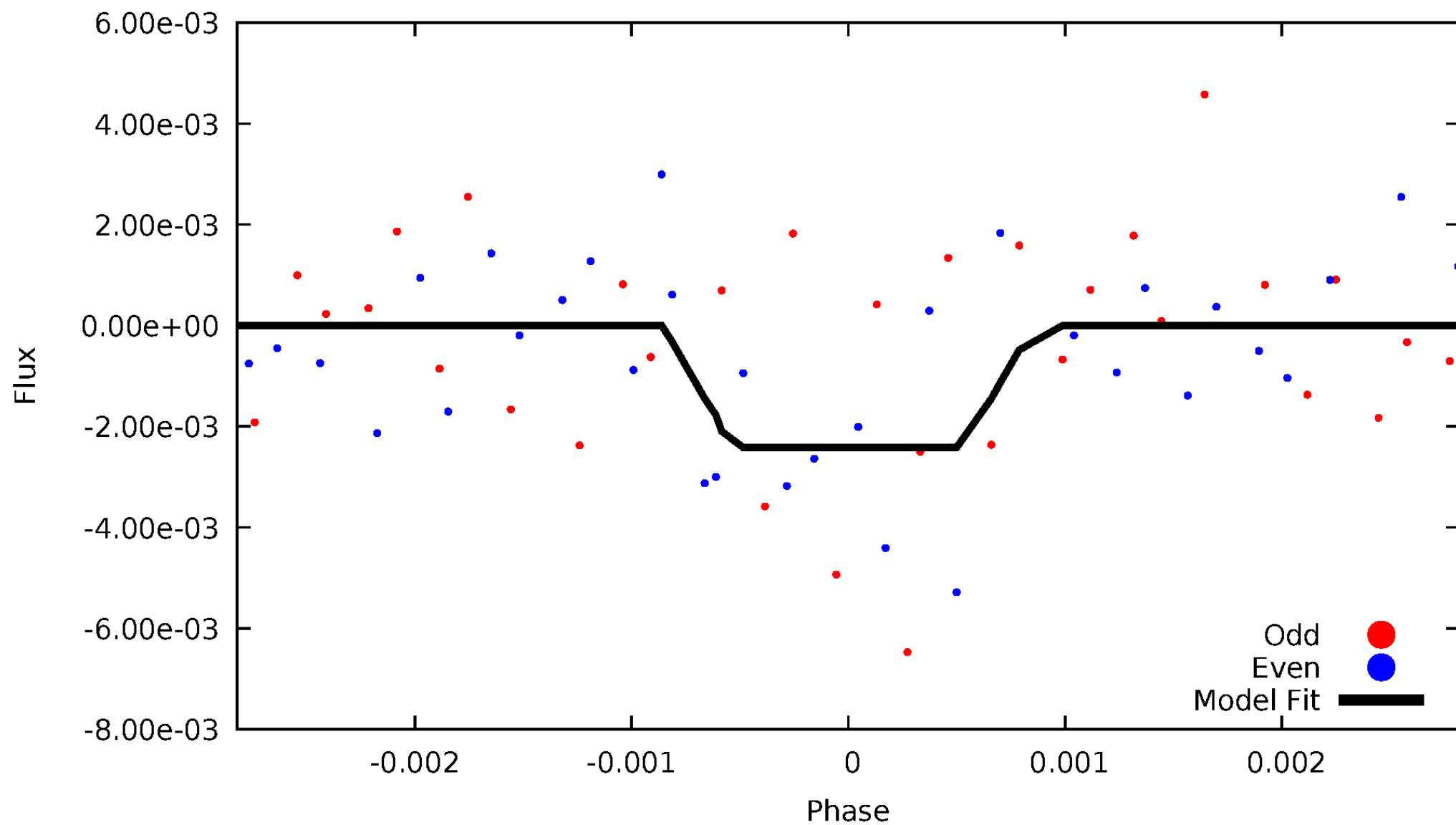
DV Odd/Even

TCE 009596300-02



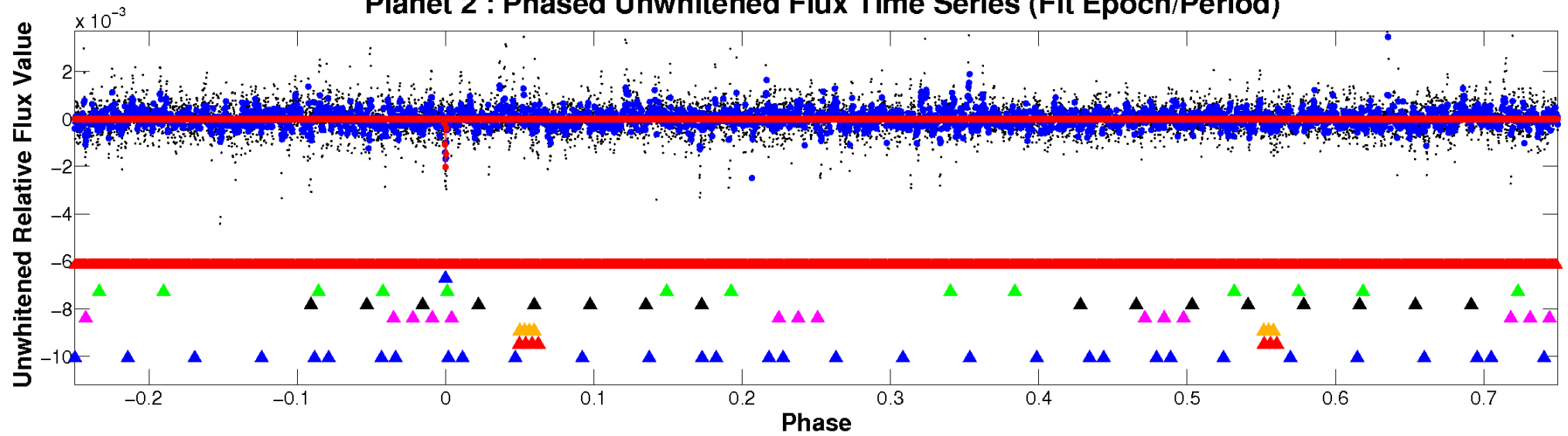
ALT Odd/Even

TCE 009596300-02

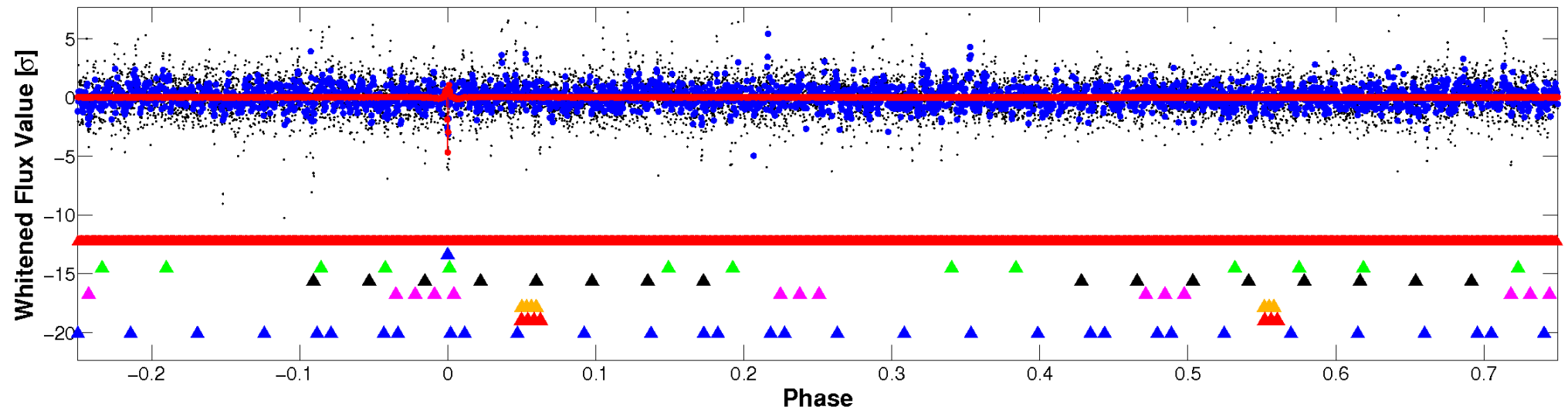


Non-Whitened Vs. Whitened Light Curve

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

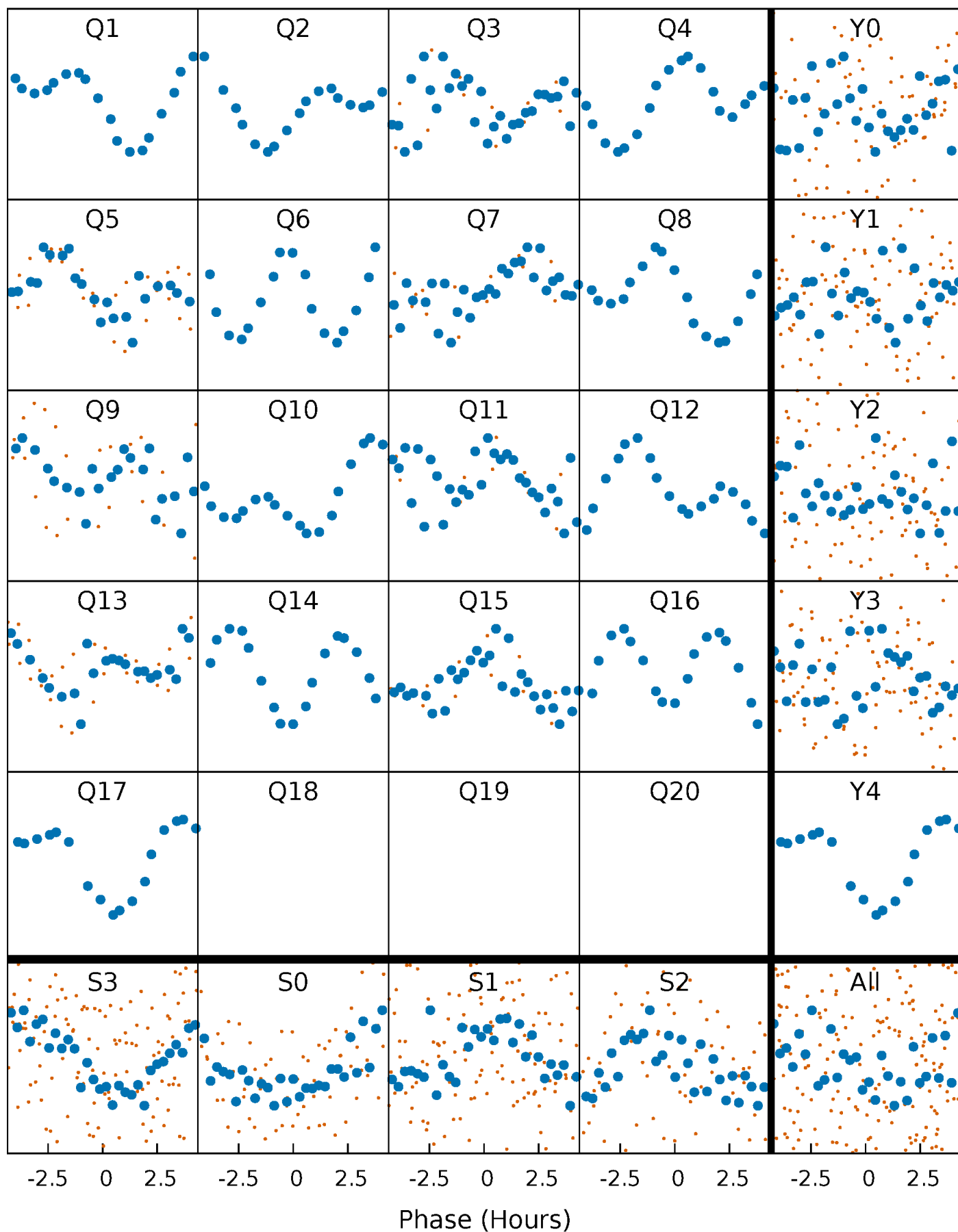


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



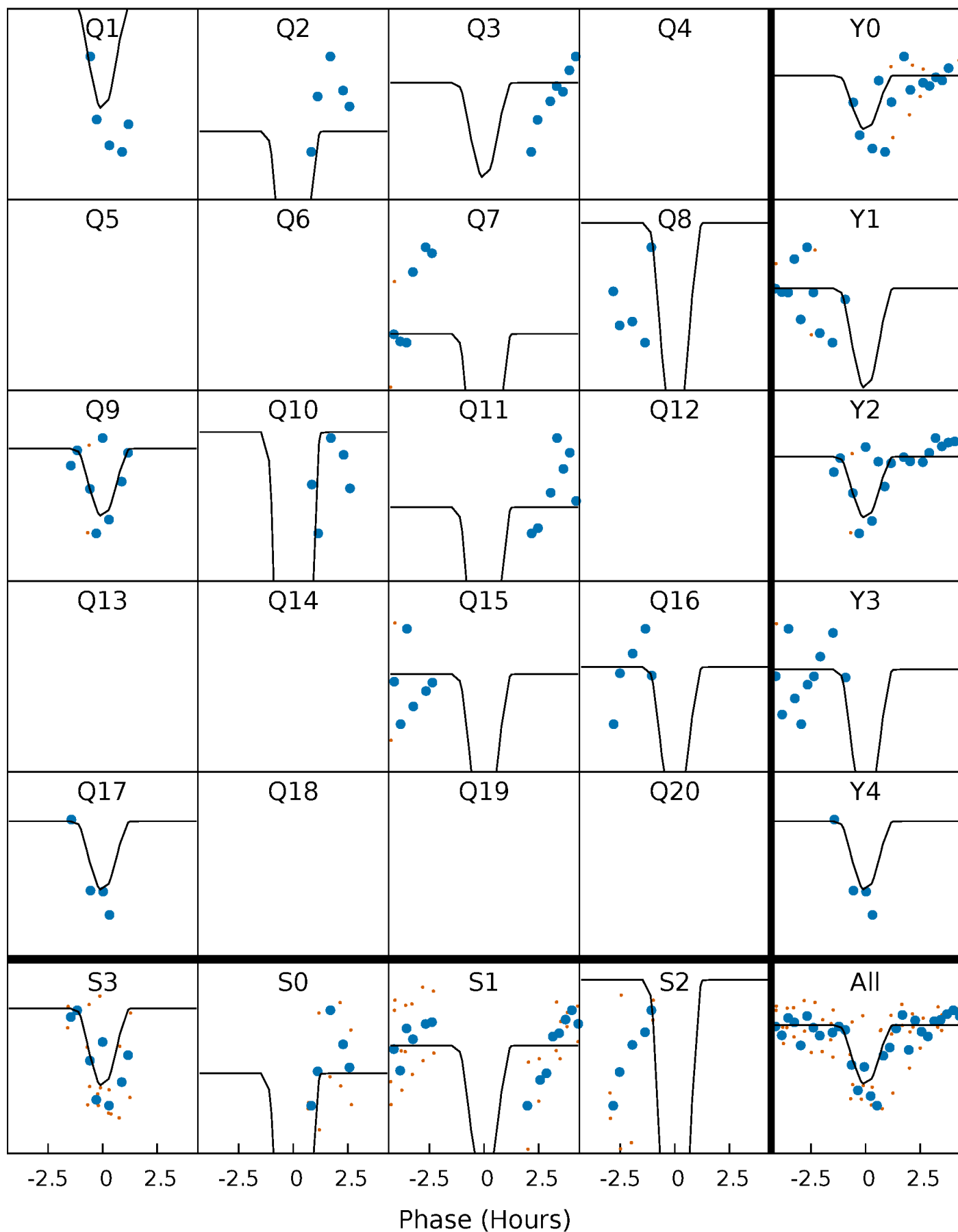
PDC Quarter-Phased Transit Curves

TCE 009596300-02 P= 62.286638 Days $T_0=143.822606$ (BKJD)



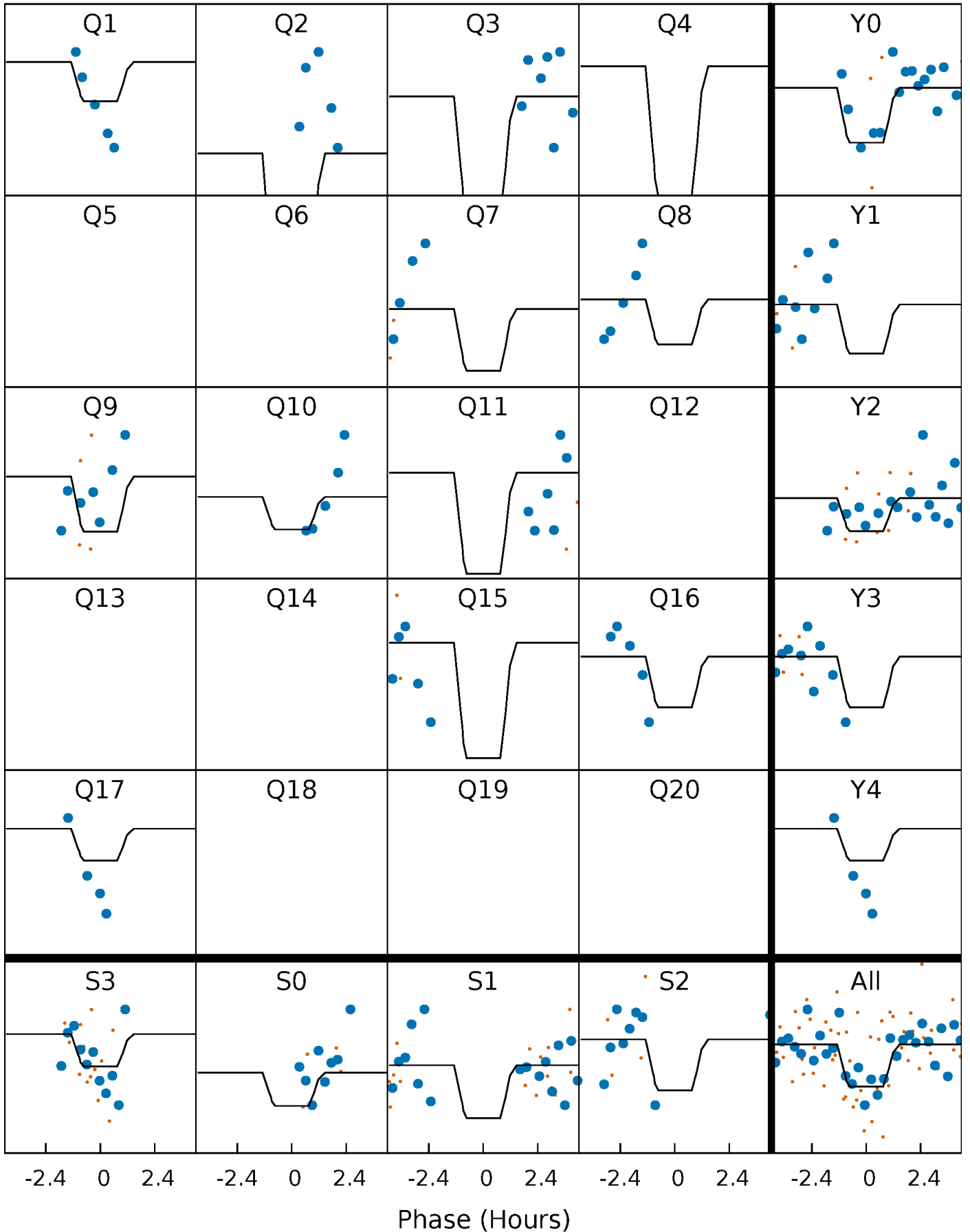
DV Quarter-Phased Transit Curves

TCE 009596300-02 P= 62.286638 Days $T_0=143.822606$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

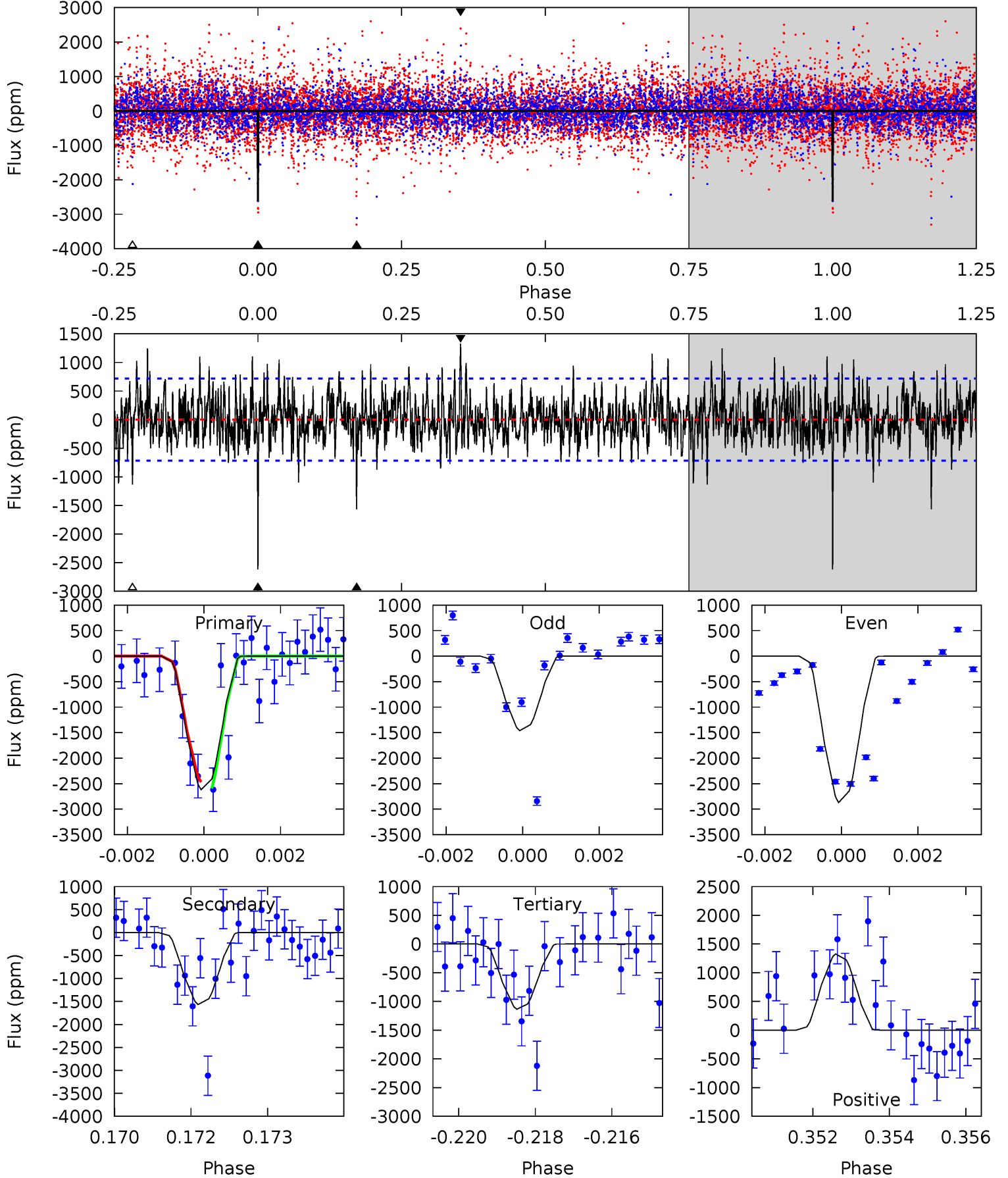
TCE 009596300-02 $P = 62.285686$ Days $T_0 = 143.843690$ (BKJD)



DV Model-Shift Uniqueness Test

009596300-02, P = 62.286638 Days, E = 81.535968 Days

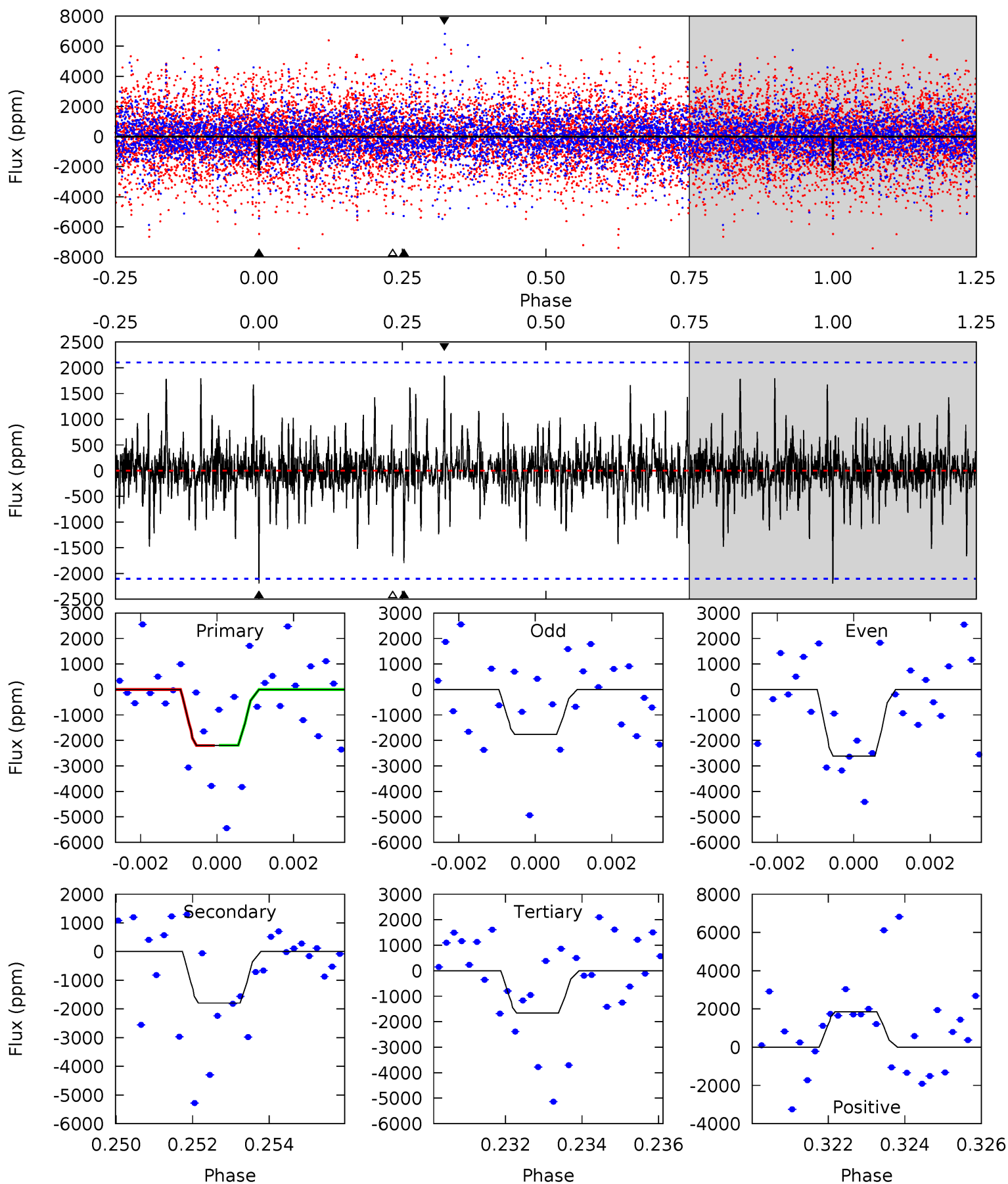
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	11.6	8.44	9.88	5.35	3.12	2.38	11.0	9.59	3.21	1.77	5.22	0.96	0.34	0.46



Alt Model-Shift Uniqueness Test

009596300-02, P = 62.285686 Days, E = 81.558004 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.58	4.56	4.22	4.69	5.35	3.12	1.01	1.35	0.88	0.34	-0.13	1.11	0.76	0.46	0.01



Stellar Parameters For KIC 009596300

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7571^{+211}_{-316}	$4.166^{+0.105}_{-0.195}$	$-0.140^{+0.200}_{-0.350}$	$1.696^{+0.533}_{-0.328}$	$1.535^{+0.219}_{-0.219}$	$0.443^{+0.264}_{-0.225}$
	+3%/-4%	+3%/-5%	+143%/-250%	+31%/-19%	+14%/-14%	+60%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009596300-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1566 ± 134	$80.53^{+80.59}_{-53.49}$	1029^{+86}_{-63}	2927^{+1196}_{-484}	16^{+129}_{-12}
Alt.	-1794 ± 393	$72.87^{+81.44}_{-50.45}$	1032^{+74}_{-67}	3072^{+1558}_{-561}	23^{+206}_{-18}

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

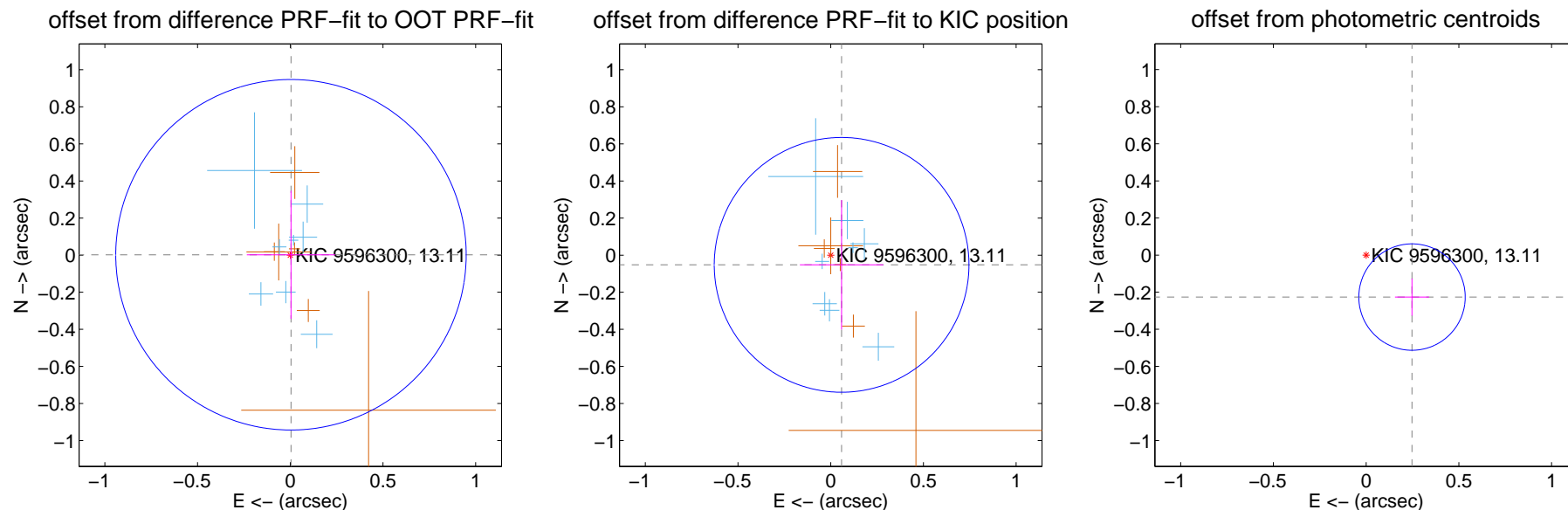
DV Centroid Data

Supplemental centroid analysis for 009596300-02. Kepler magnitude: 13.11. Transit SNR 10.98

There are 9 quarters with good PRF difference image offsets

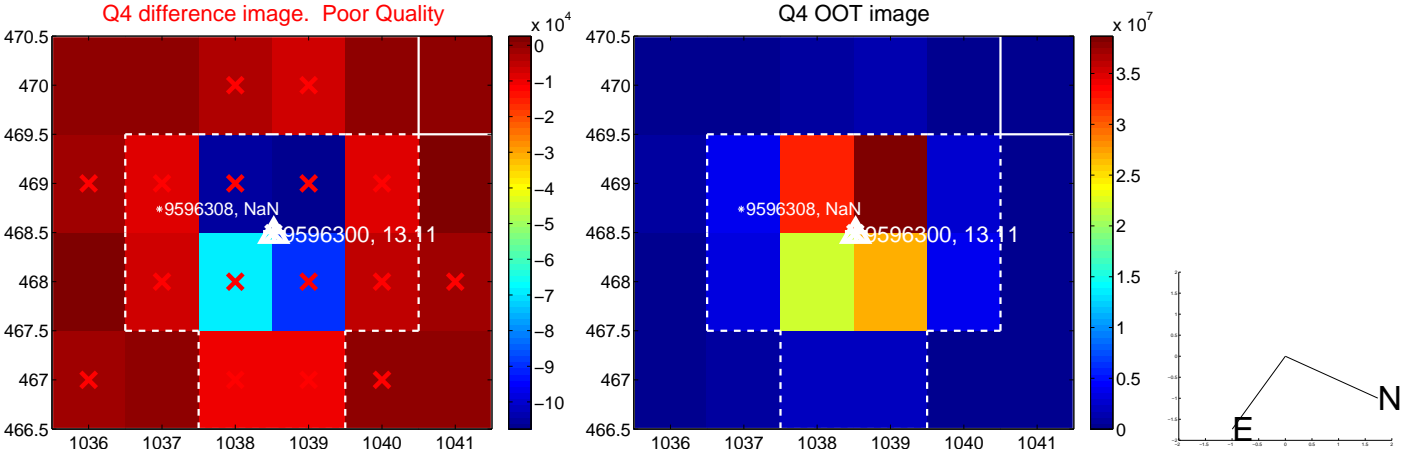
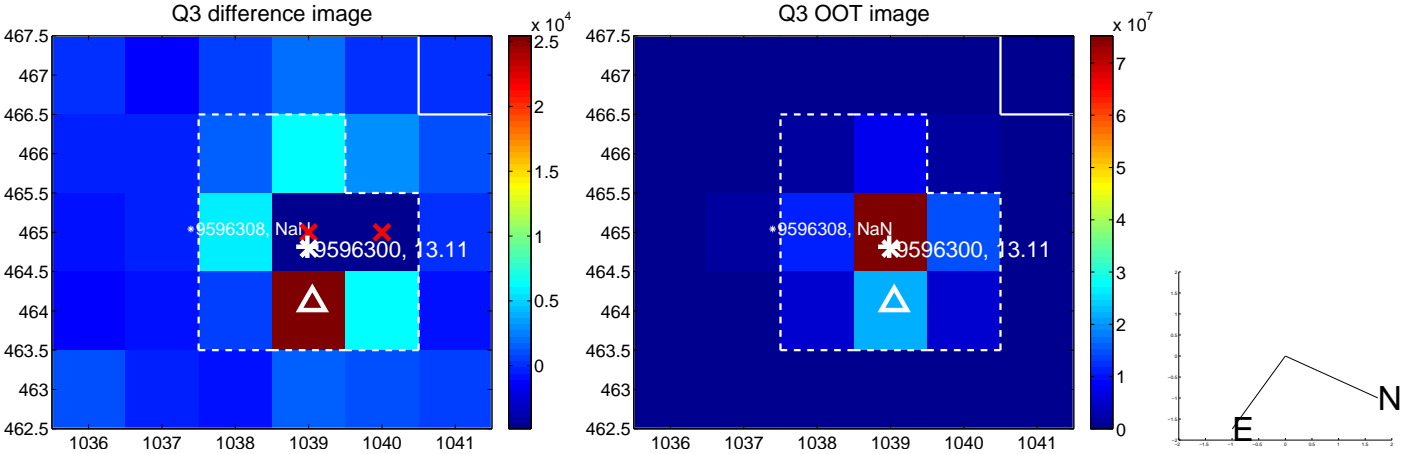
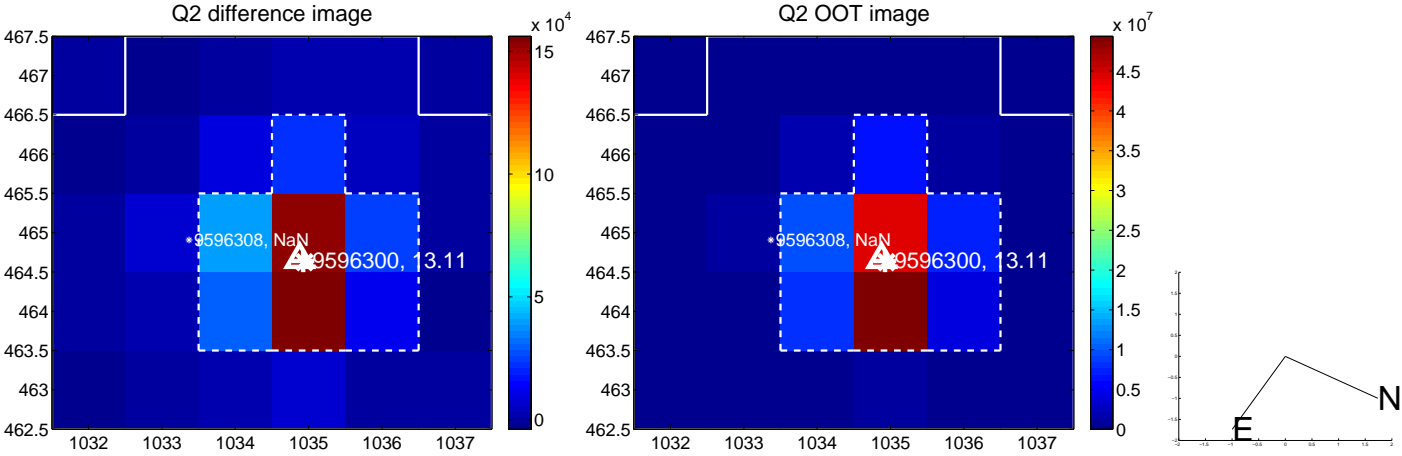
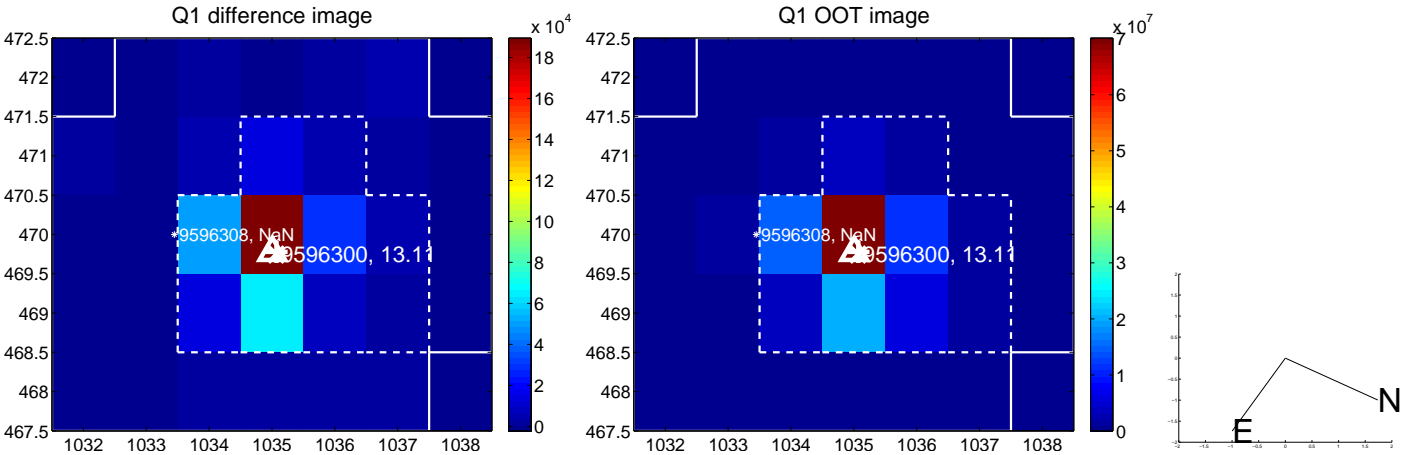
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.004 ± 0.315	0.01	-0.004 ± 0.238	0.002 ± 0.345
PRF-fit source offset from KIC position	0.079 ± 0.229	0.34	-0.059 ± 0.225	-0.052 ± 0.349
photometric centroid source offset	0.34 ± 0.10	3.51	-0.25 ± 0.09	-0.23 ± 0.10

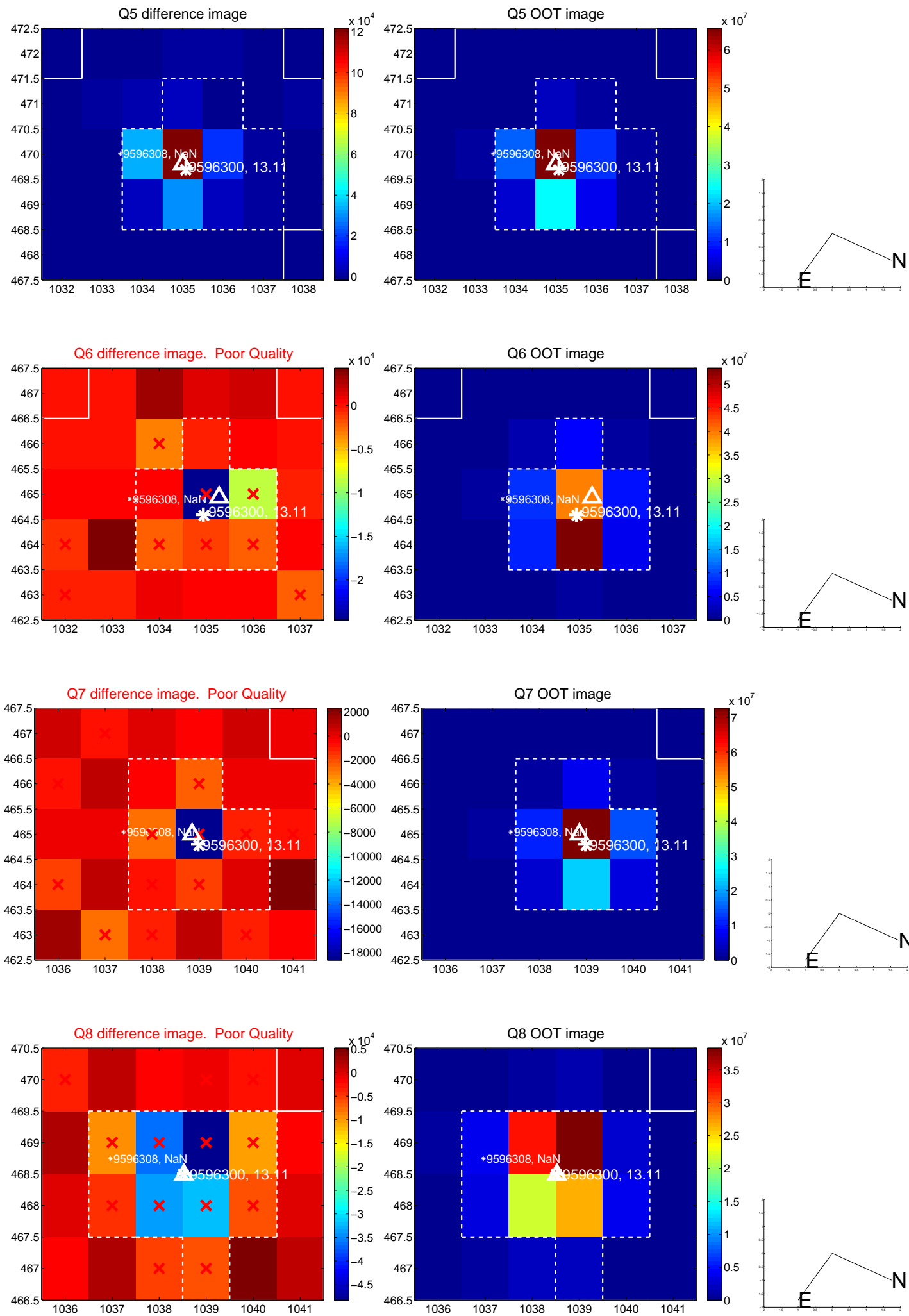


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

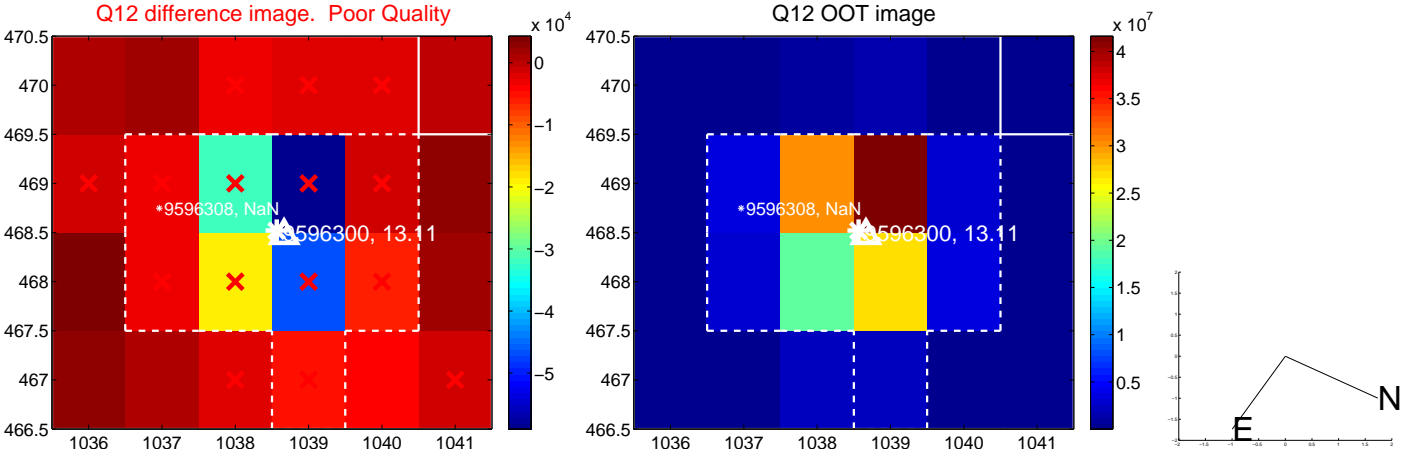
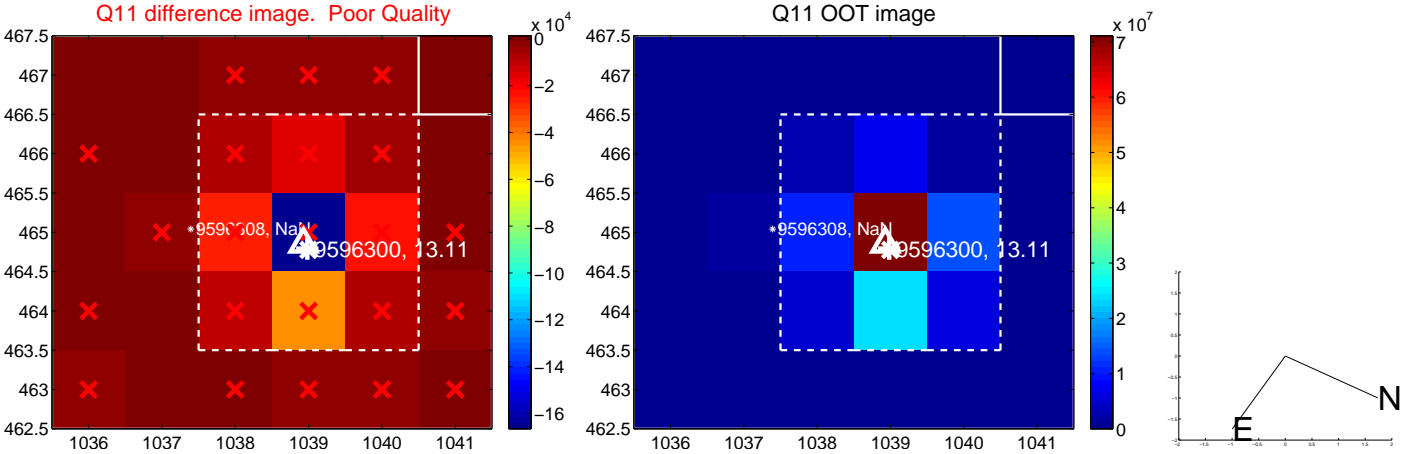
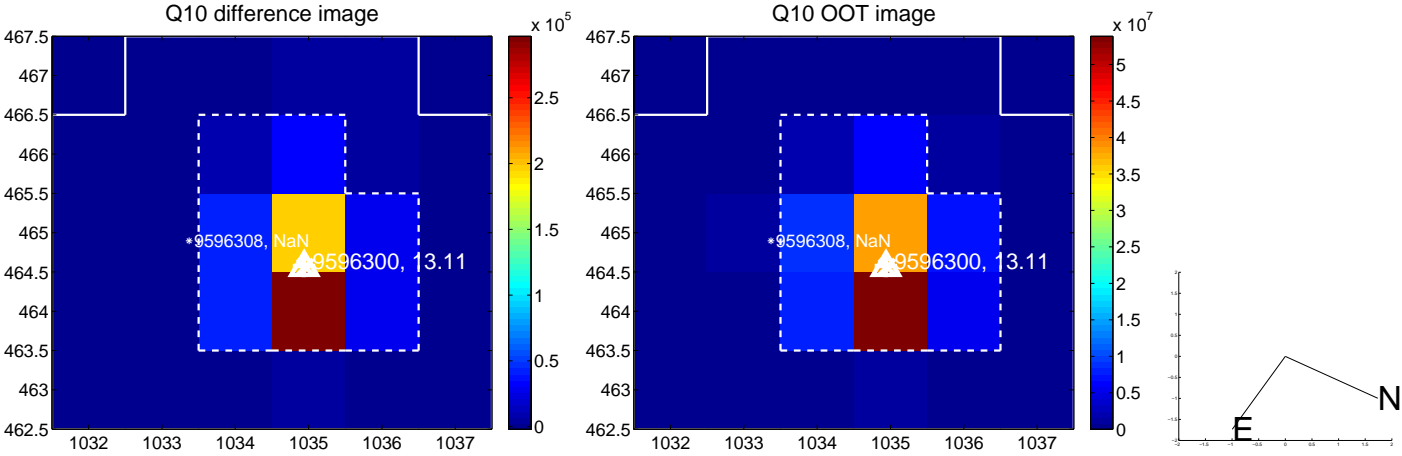
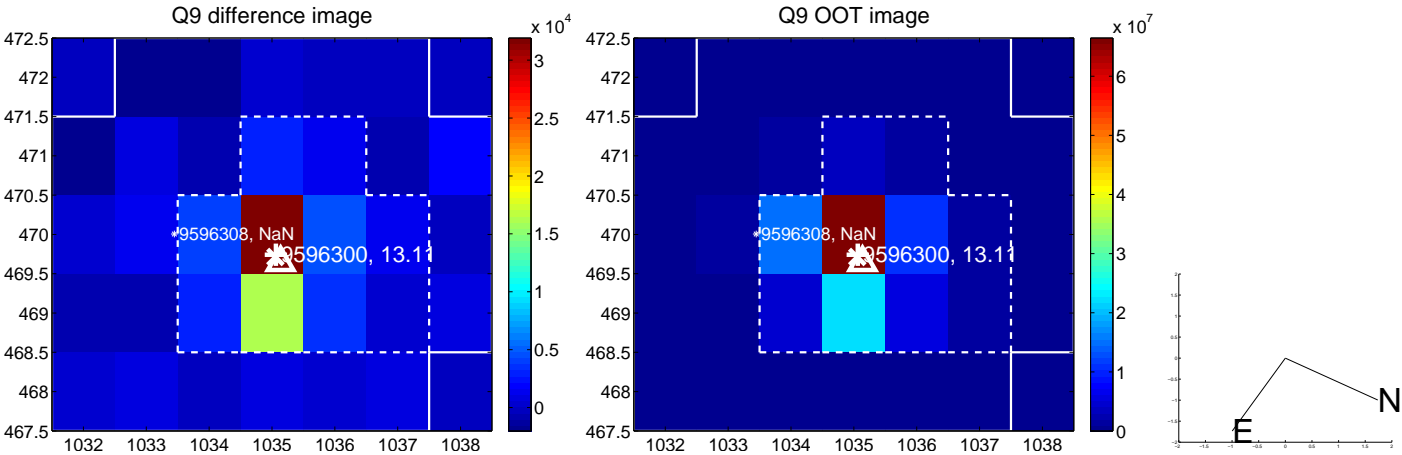
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



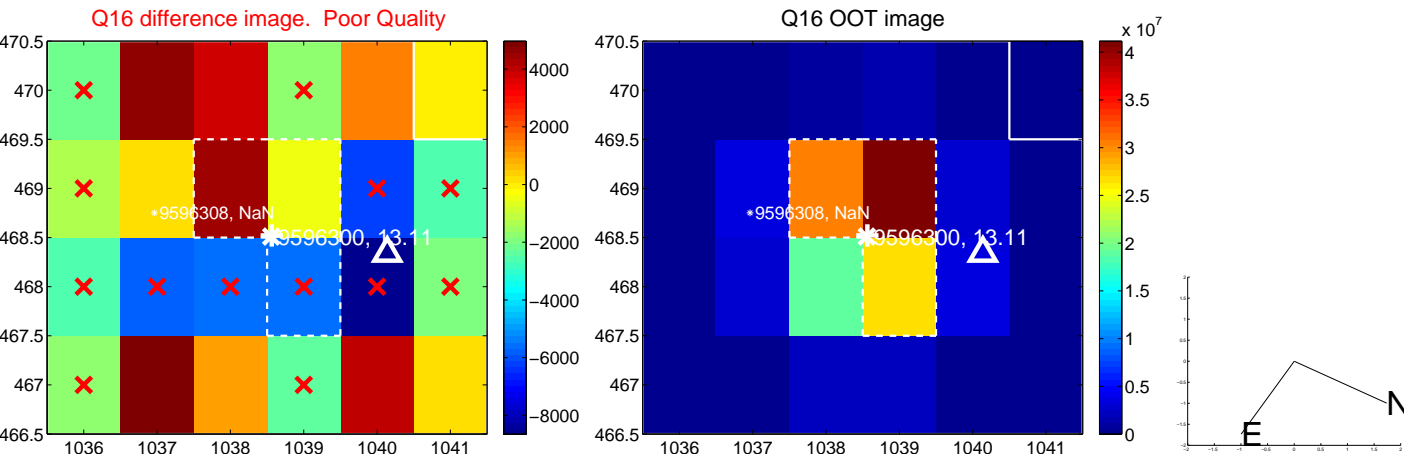
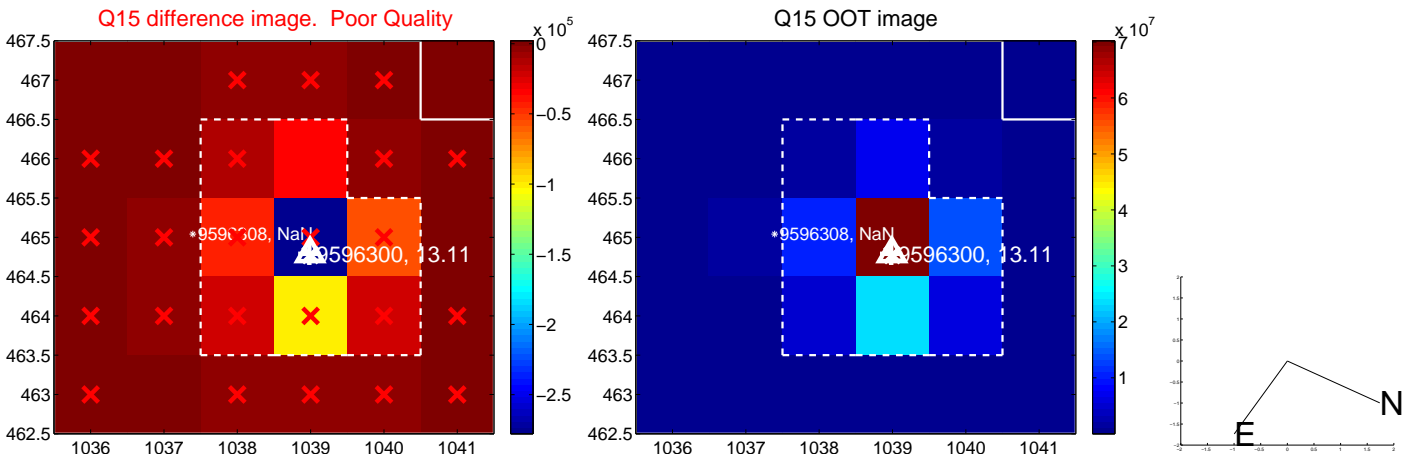
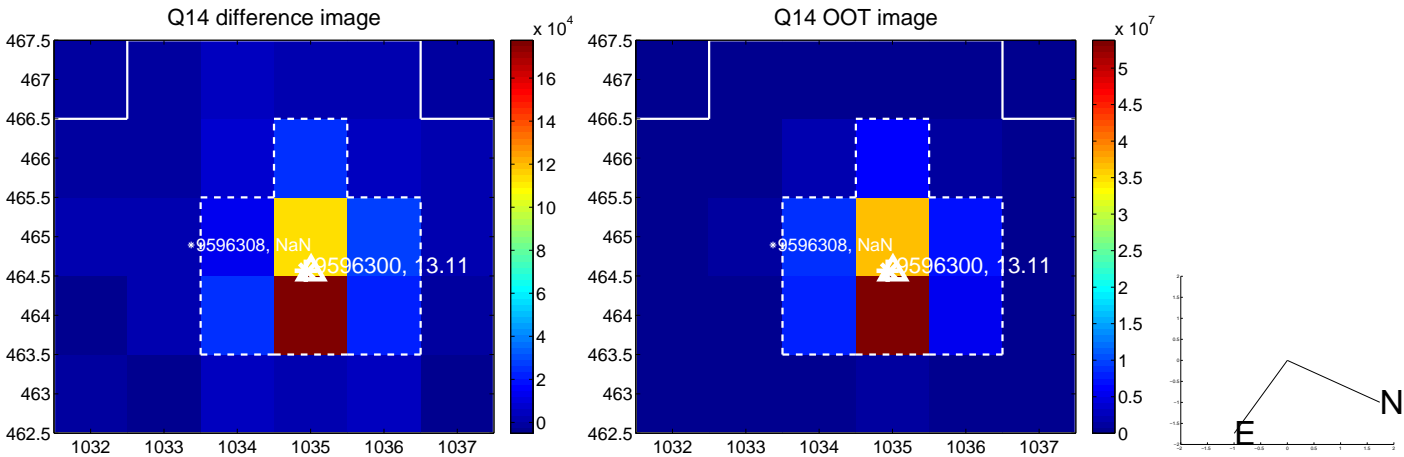
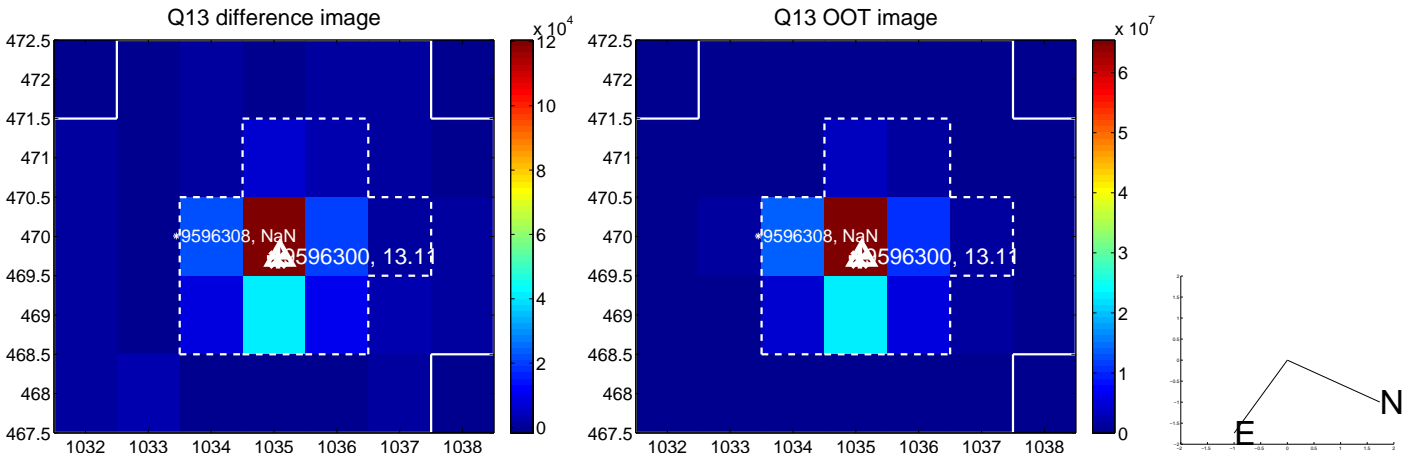
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



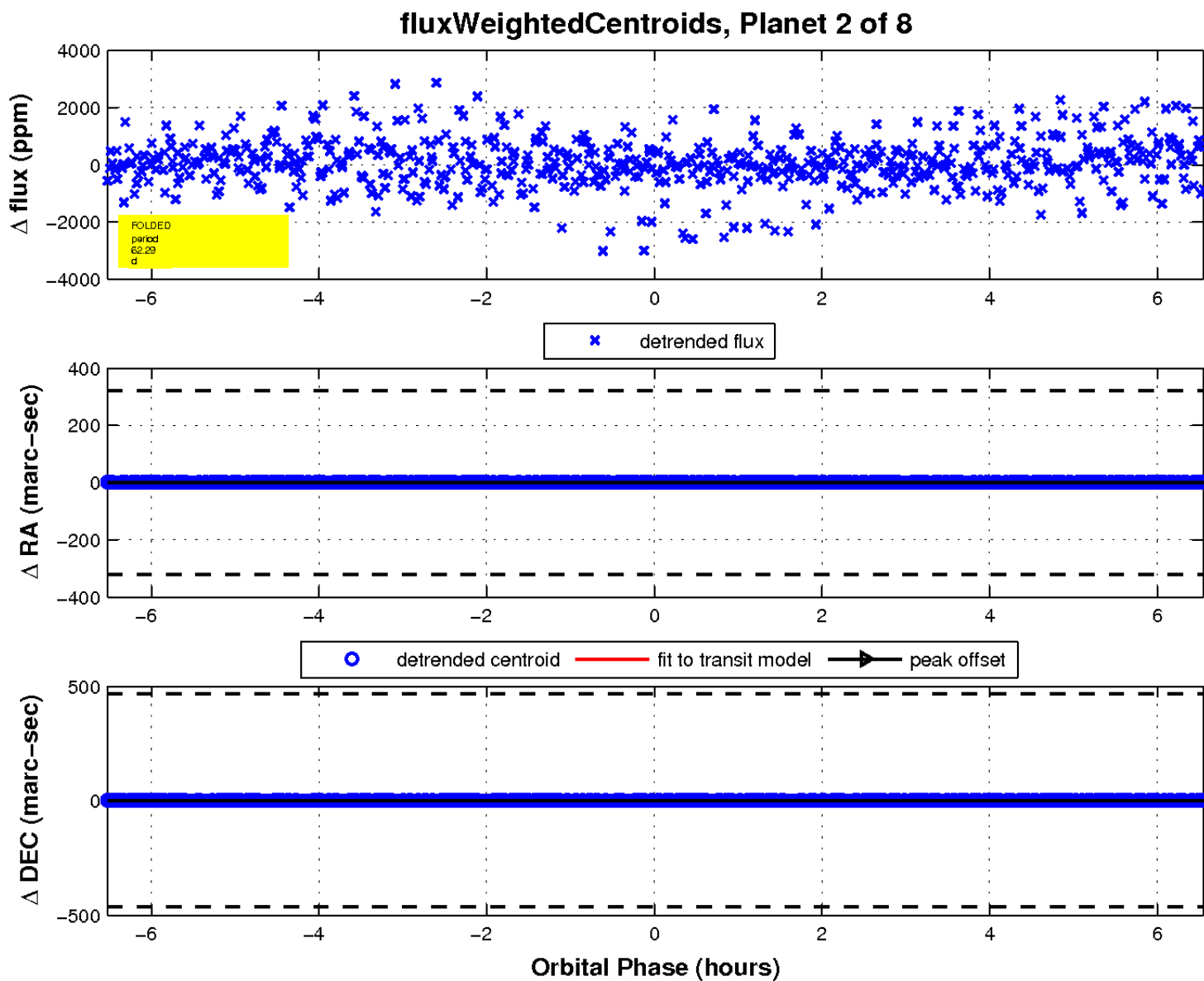
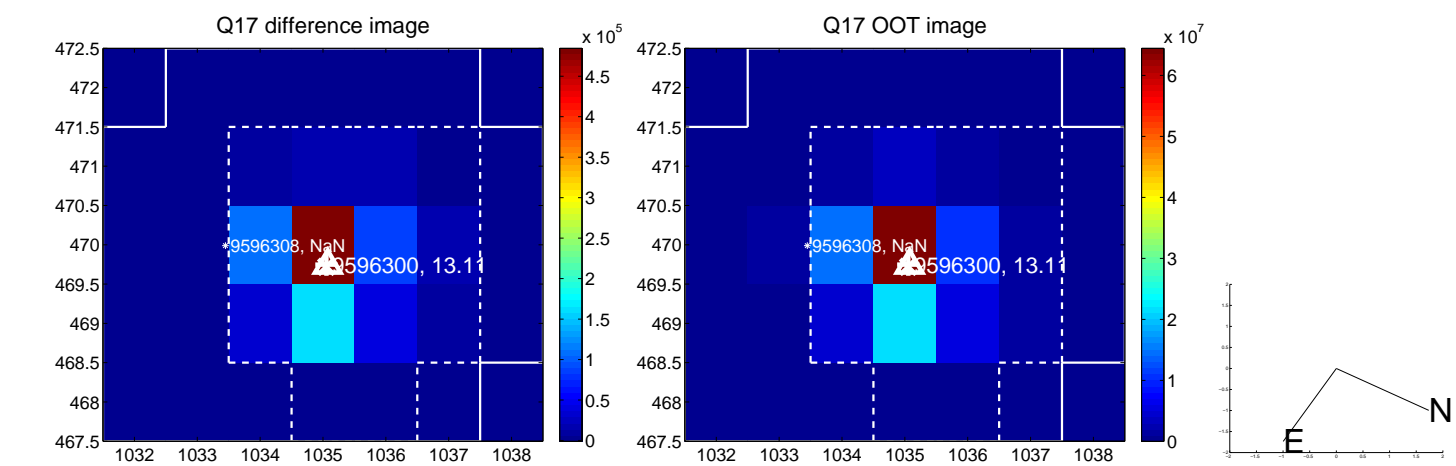
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

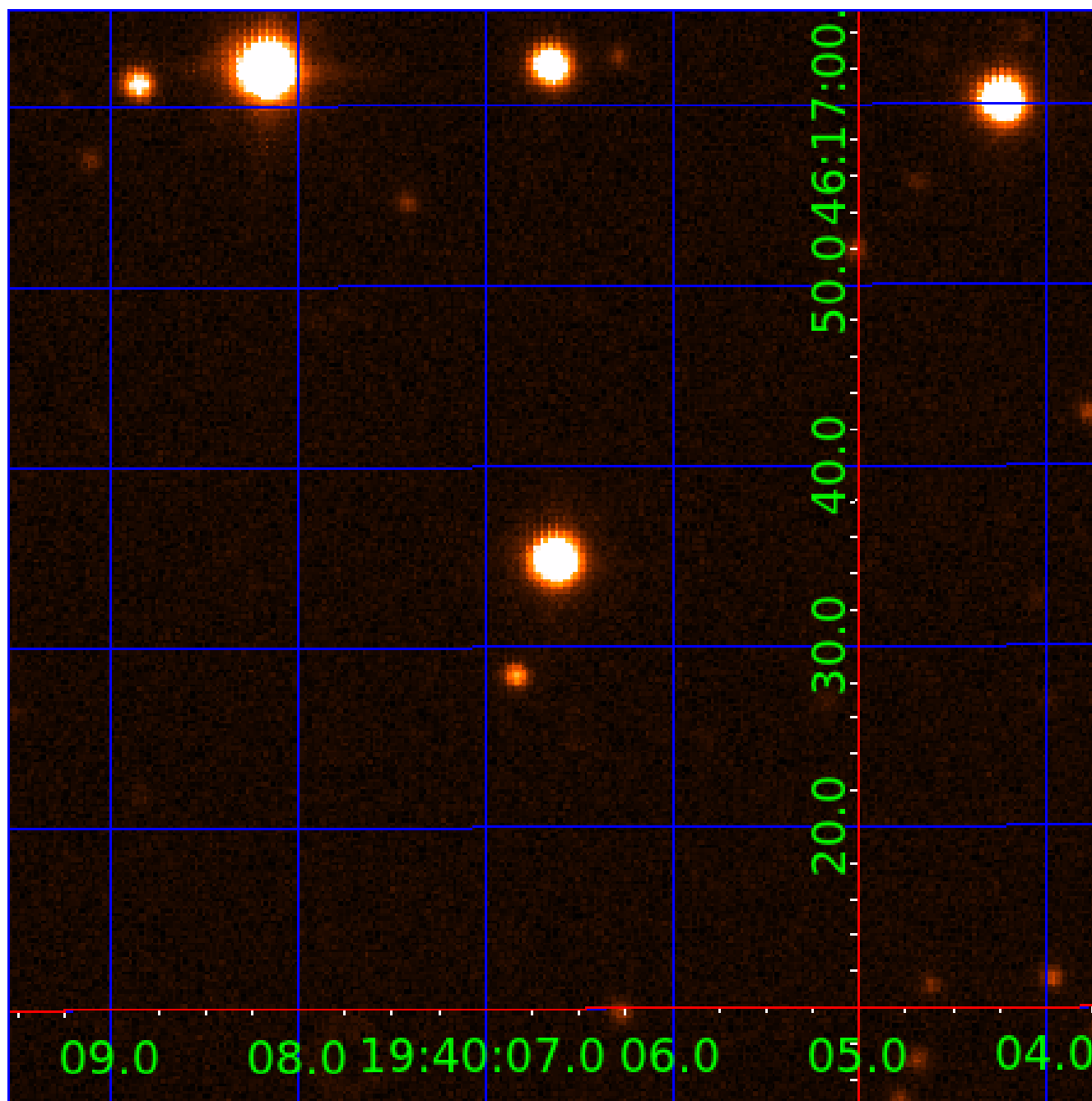


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009596300-01	OBS	No	0.629693	131.556025	0.9	4.130	8.4	0.1	1.70	7571	0.17	30734.05
009596300-02	OBS	No	62.286638	143.822606	2094.6	2.185	16.5	11.0	1.70	7571	14.32	67.18
009596300-03	OBS	No	112.656642	138.493851	728.6	3.671	14.1	3.8	1.70	7571	4.68	30.49
009596300-04	OBS	No	94.602073	138.174543	2650.1	3.417	12.7	12.9	1.70	7571	15.89	38.48
009596300-05	OBS	No	109.204875	141.642702	1824.0	2.300	11.4	9.4	1.70	7571	7.50	31.78
009596300-06	OBS	No	217.903079	272.117949	382.4	0.719	10.1	2.4	1.70	7571	3.60	12.65
009596300-07	OBS	No	217.870671	272.296205	1577.3	28.757	7.9	8.5	1.70	7571	6.81	12.65
009596300-08	OBS	No	46.012266	144.537196	1315.6	1.963	9.3	10.2	1.70	7571	6.74	100.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009596300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009596300-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009596300-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009596300-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009596300-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009596300-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009596300-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
009596300-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

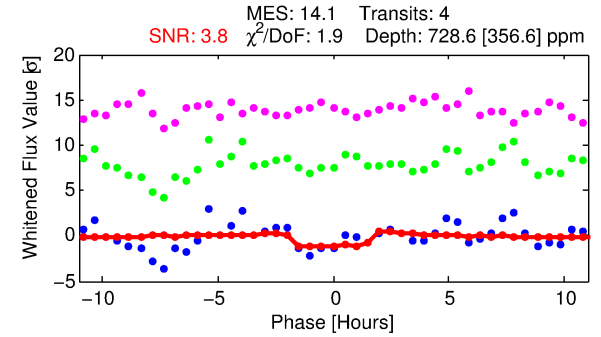
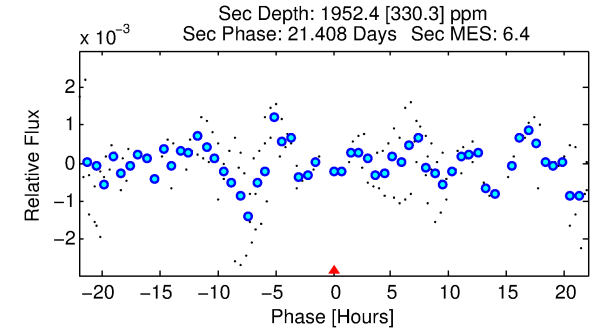
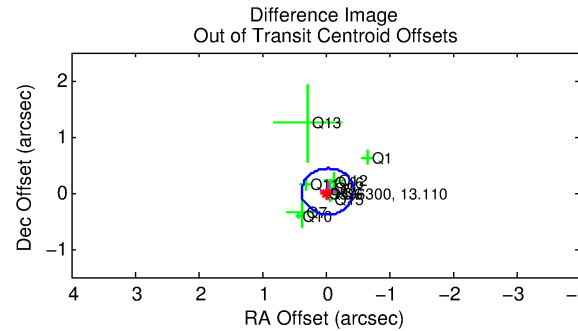
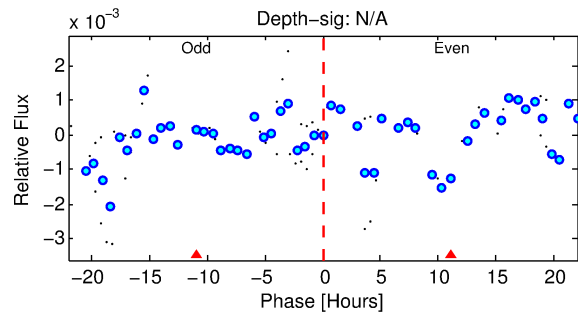
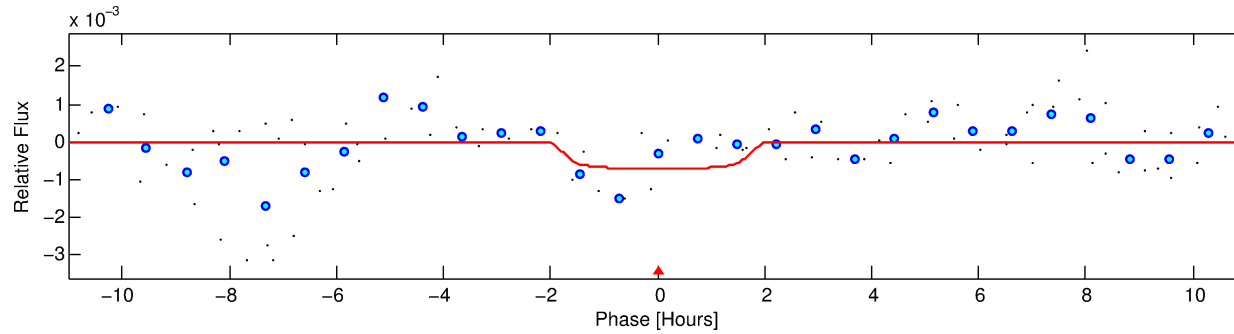
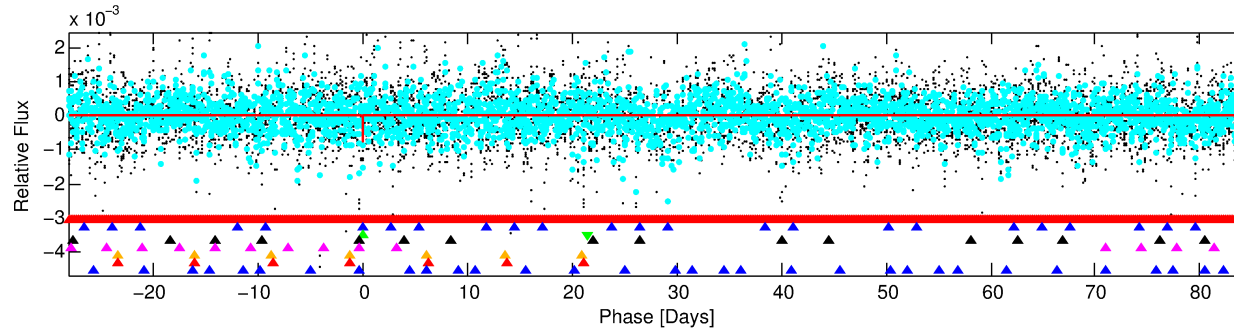
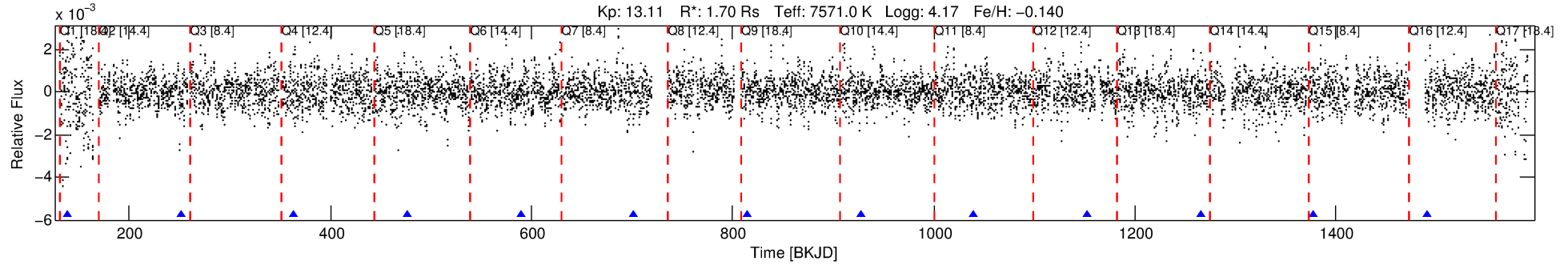
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009596300-03

No Significant Match Found

DV One-Page Summary

KIC: 9596300 Candidate: 3 of 8 Period: 112.657 d



DV Fit Results:

Period = 112.65664 [0.00983] d
Epoch = 138.4939 [0.0707] BKJD
Rp/R* = 0.0253 [0.3258]
a/R* = 226.59 [16835.09]
b = 0.34 [193.18]
Seff = 30.49 [12.25]
Teq = 599 [60] K
Rp = 4.68 [60.32] Re
a = 0.5270 [0.1357] AU
Ag = 13623.03 [351144.05] [0.04σ]
Teffp = 10008 [64488] K [0.15σ]

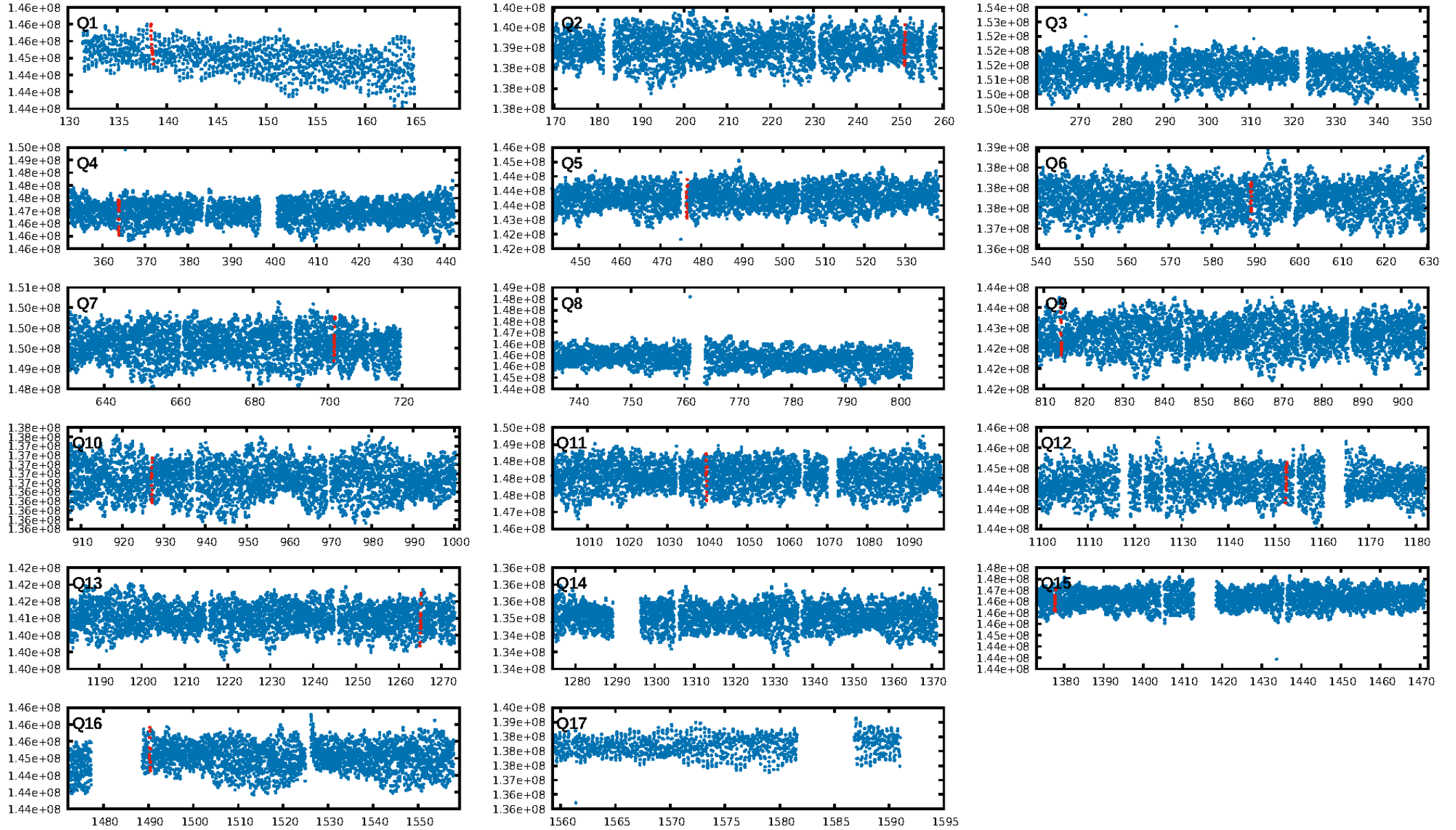
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.12σ]
LongPeriod-sig: 100.0% [87.10σ]
ModelChiSquare2-sig: 1.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.14e-15
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.2164
Centroid-sig: 11.6%
Centroid-so: 0.201 arcsec [0.91σ]
OotOffset-rm: 0.042 arcsec [0.31σ]
KicOffset-rm: 0.060 arcsec [0.43σ]
OotOffset-st: 2/3/3/3 [11]
KicOffset-st: 2/3/3/3 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 0.00 [0/12]

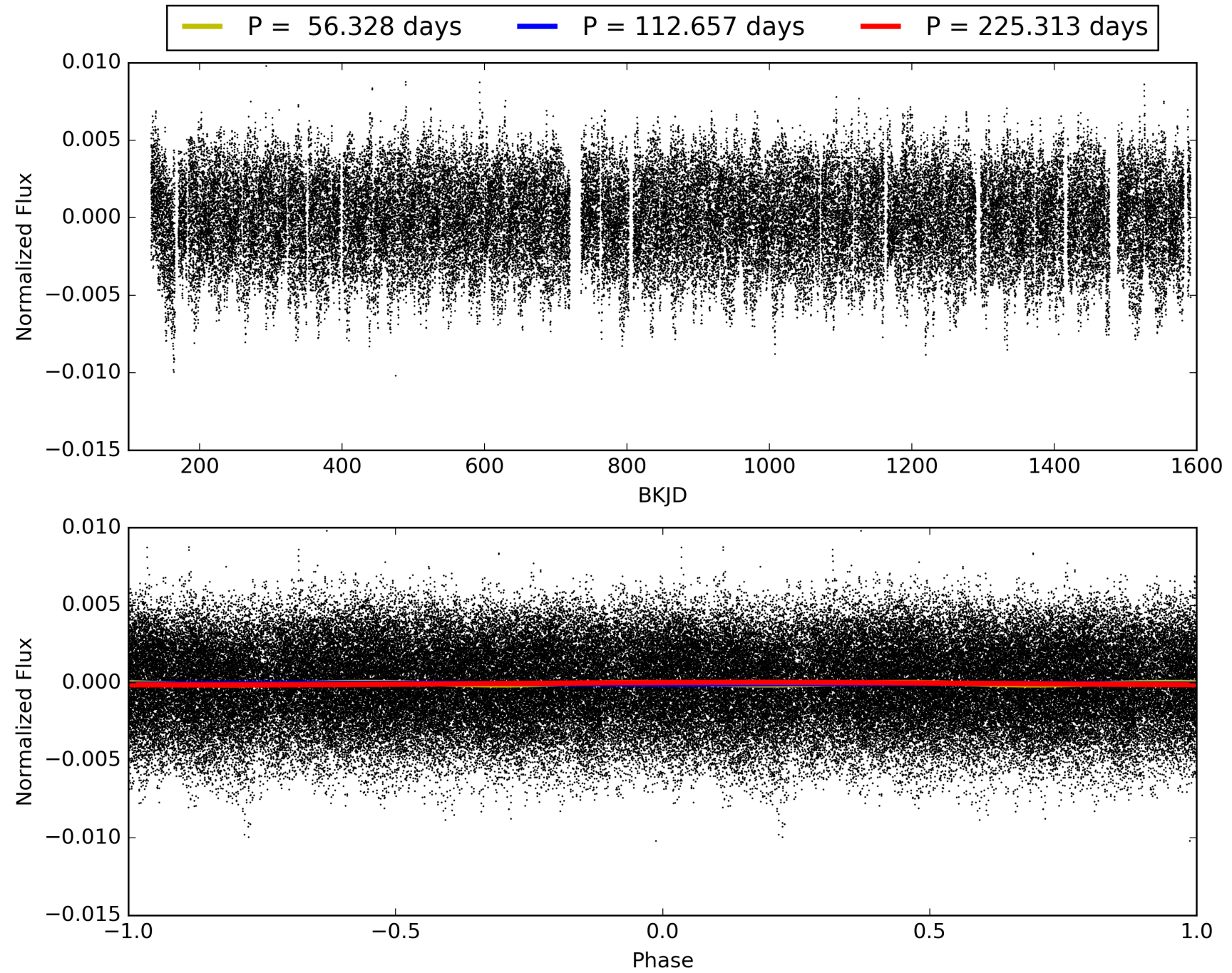
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:11:16 Z

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

TCE 009596300-03, PDC Light Curves

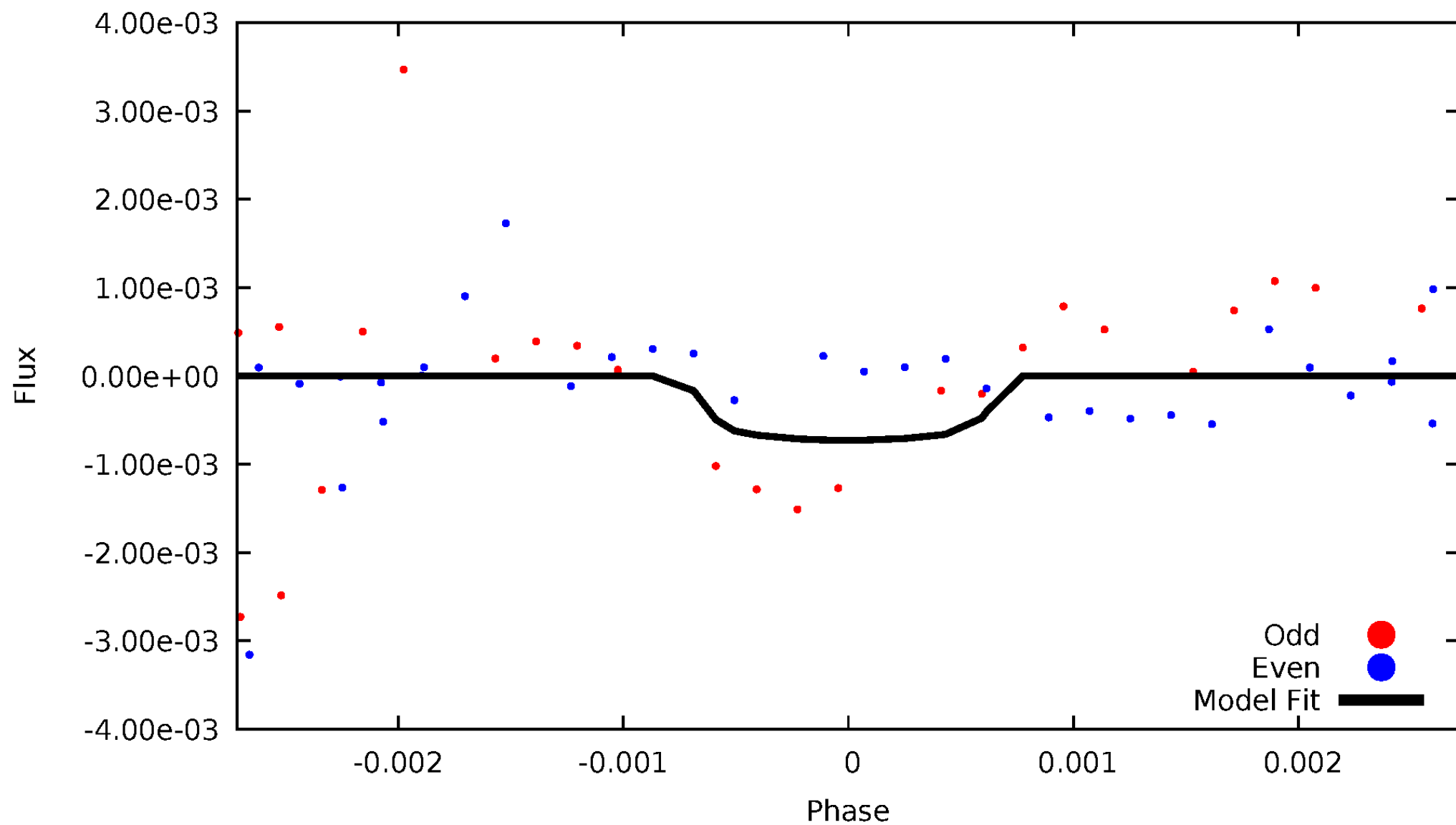


TCE 009596300-03



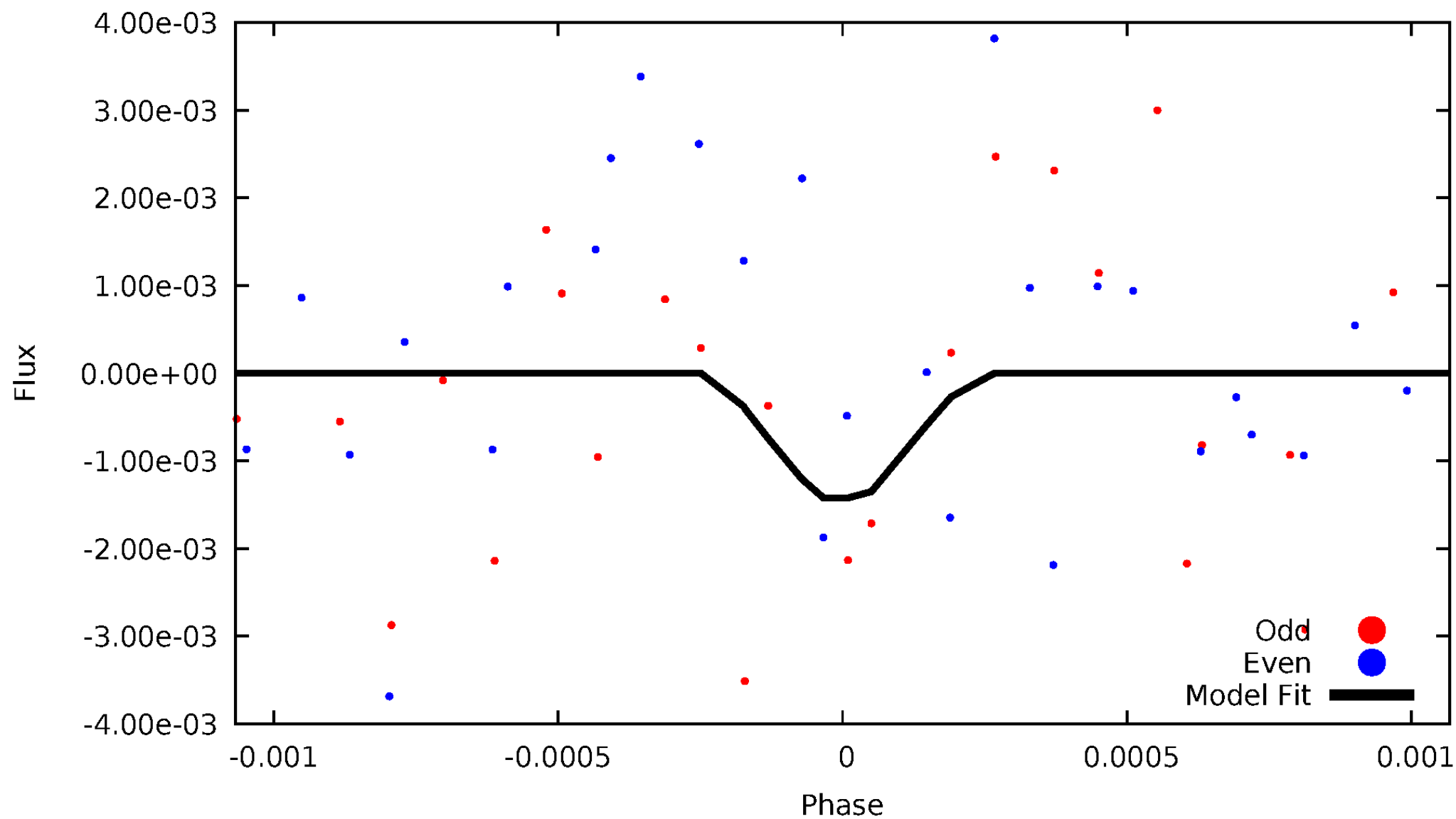
DV Odd/Even

TCE 009596300-03



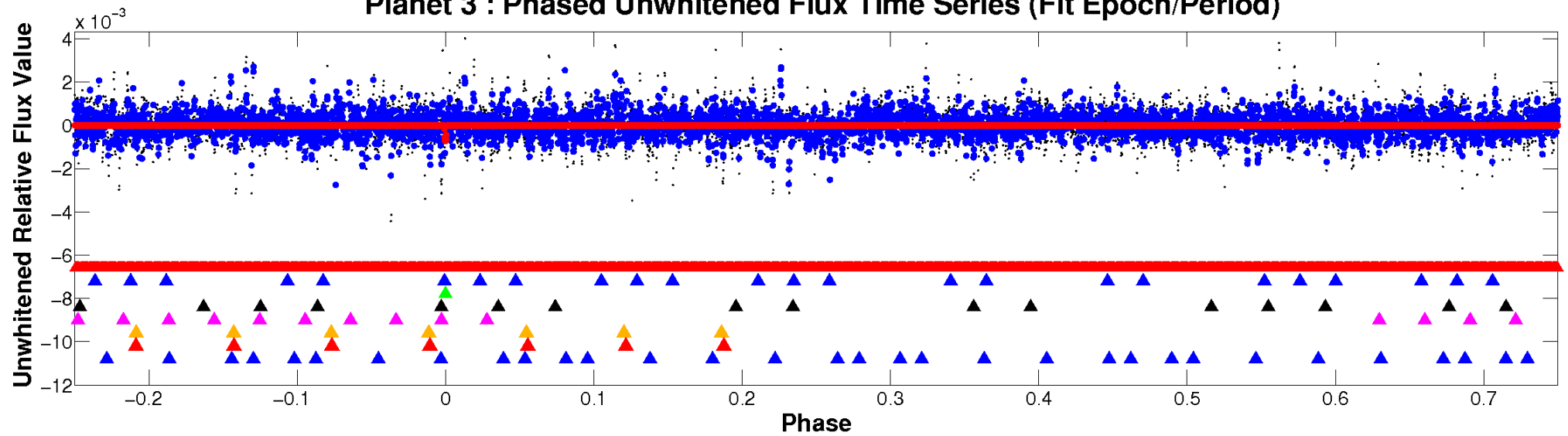
ALT Odd/Even

TCE 009596300-03

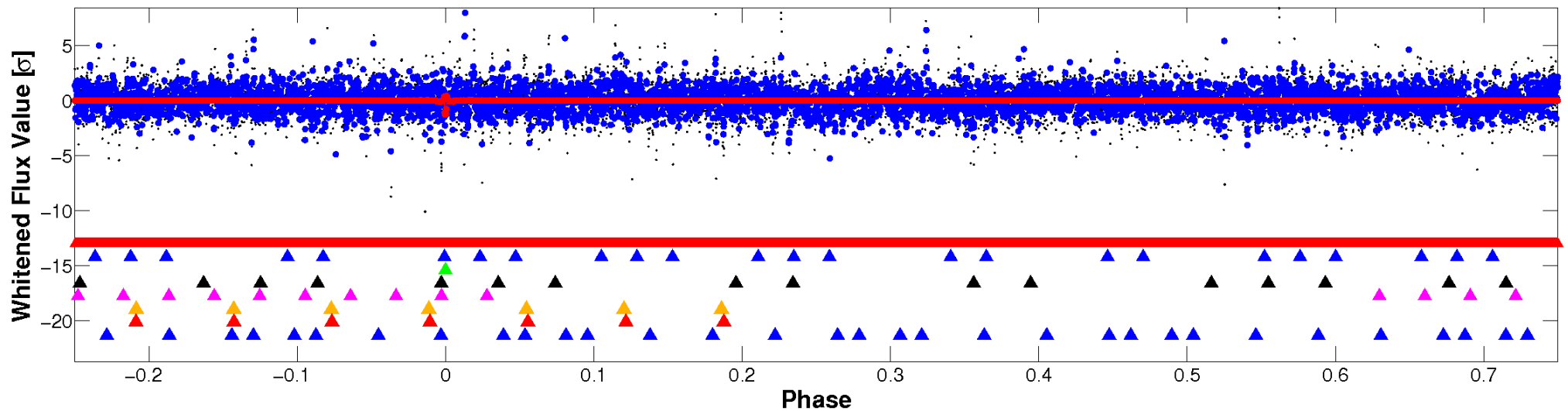


Non-Whitened Vs. Whitened Light Curve

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

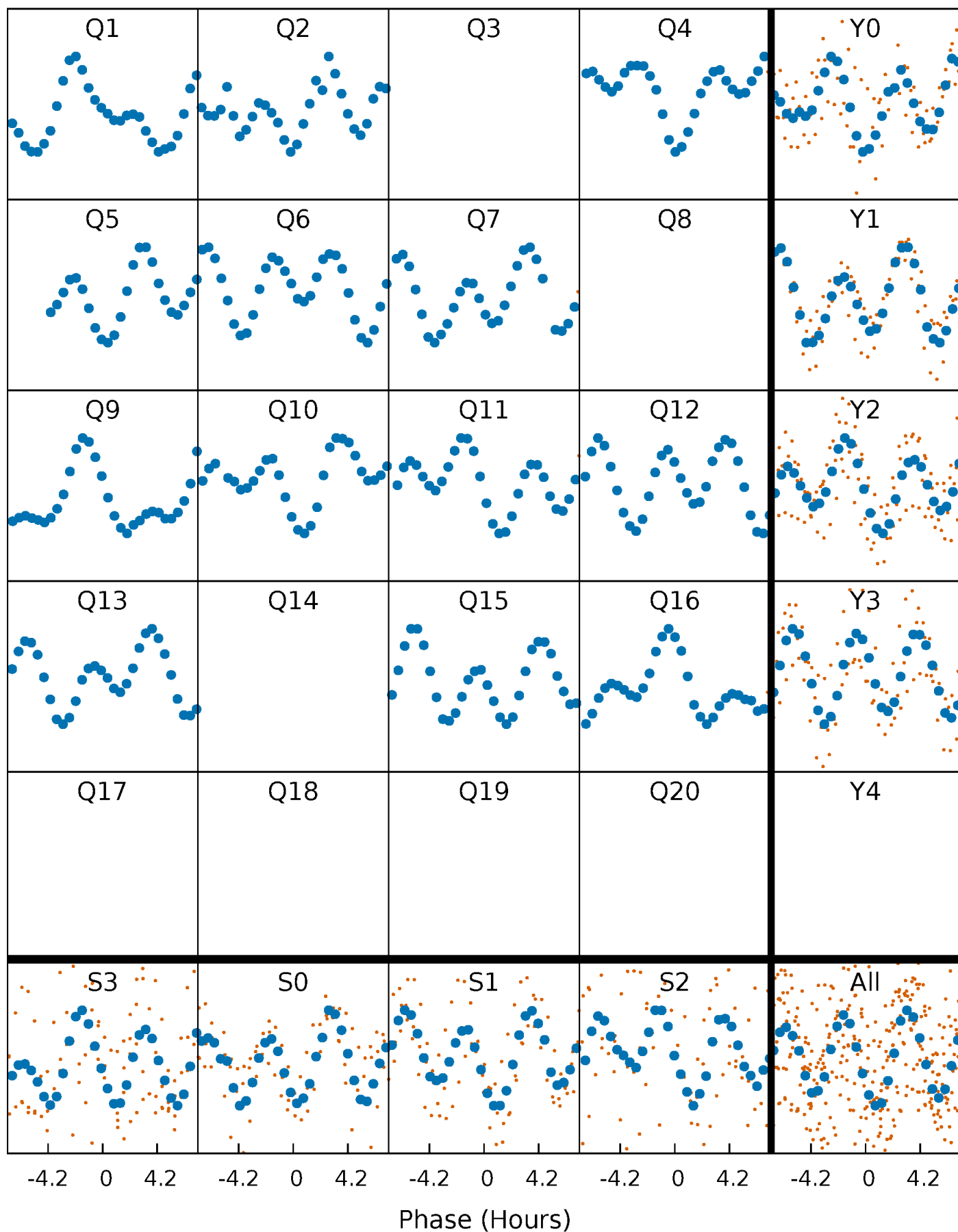


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



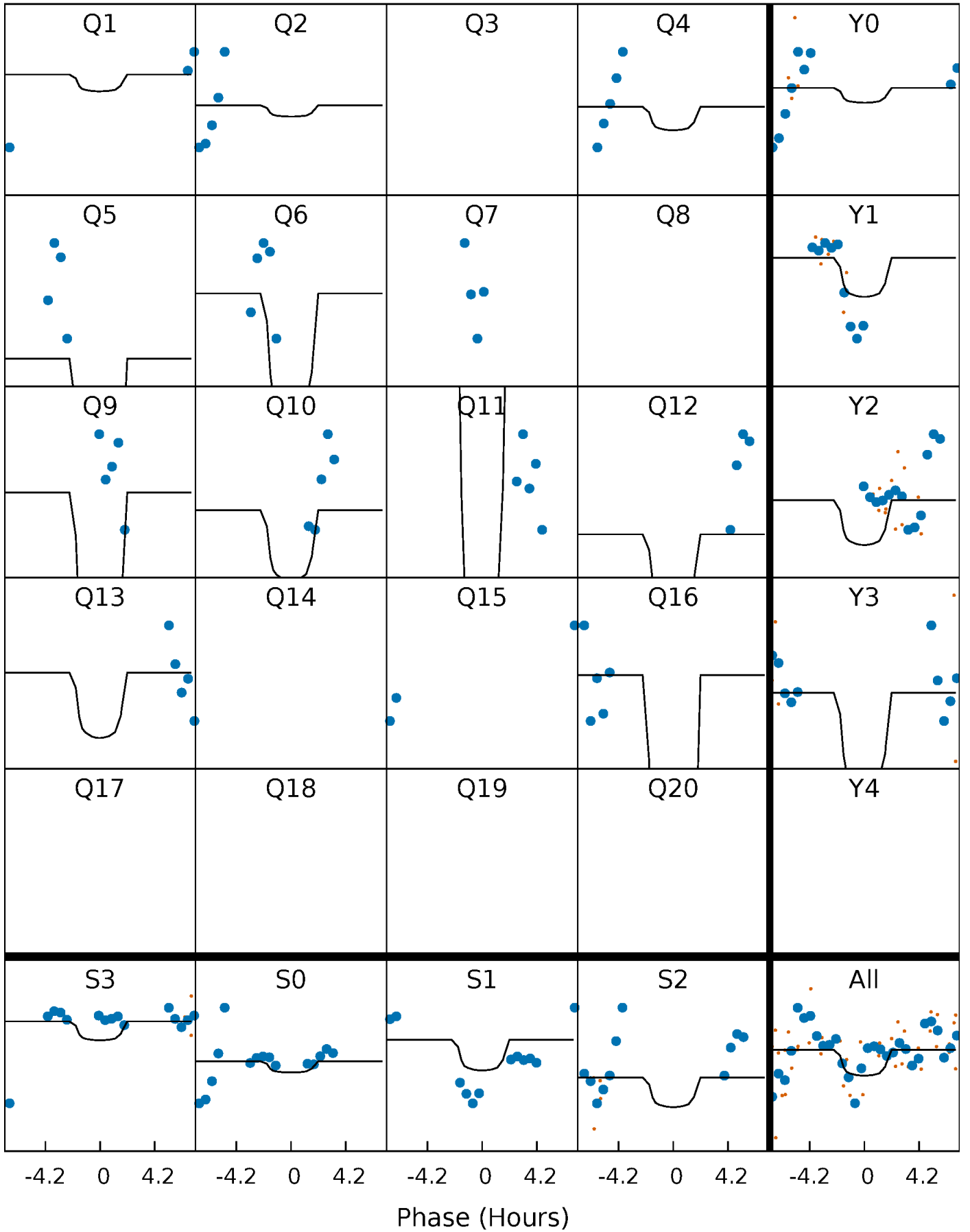
PDC Quarter-Phased Transit Curves

TCE 009596300-03 P=112.656642 Days $T_0=138.493851$ (BKJD)



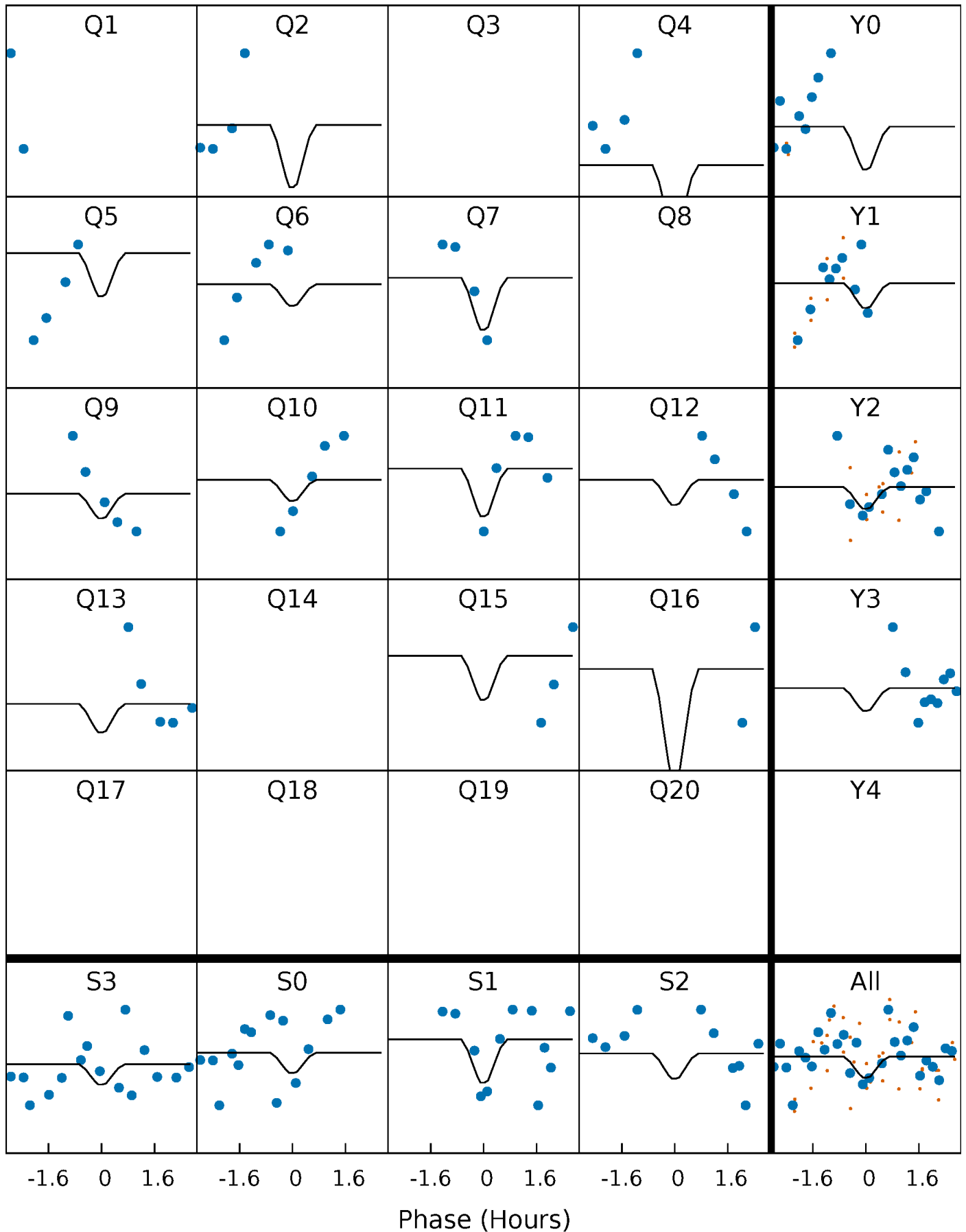
DV Quarter-Phased Transit Curves

TCE 009596300-03 $P=112.656642$ Days $T_0=138.493851$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

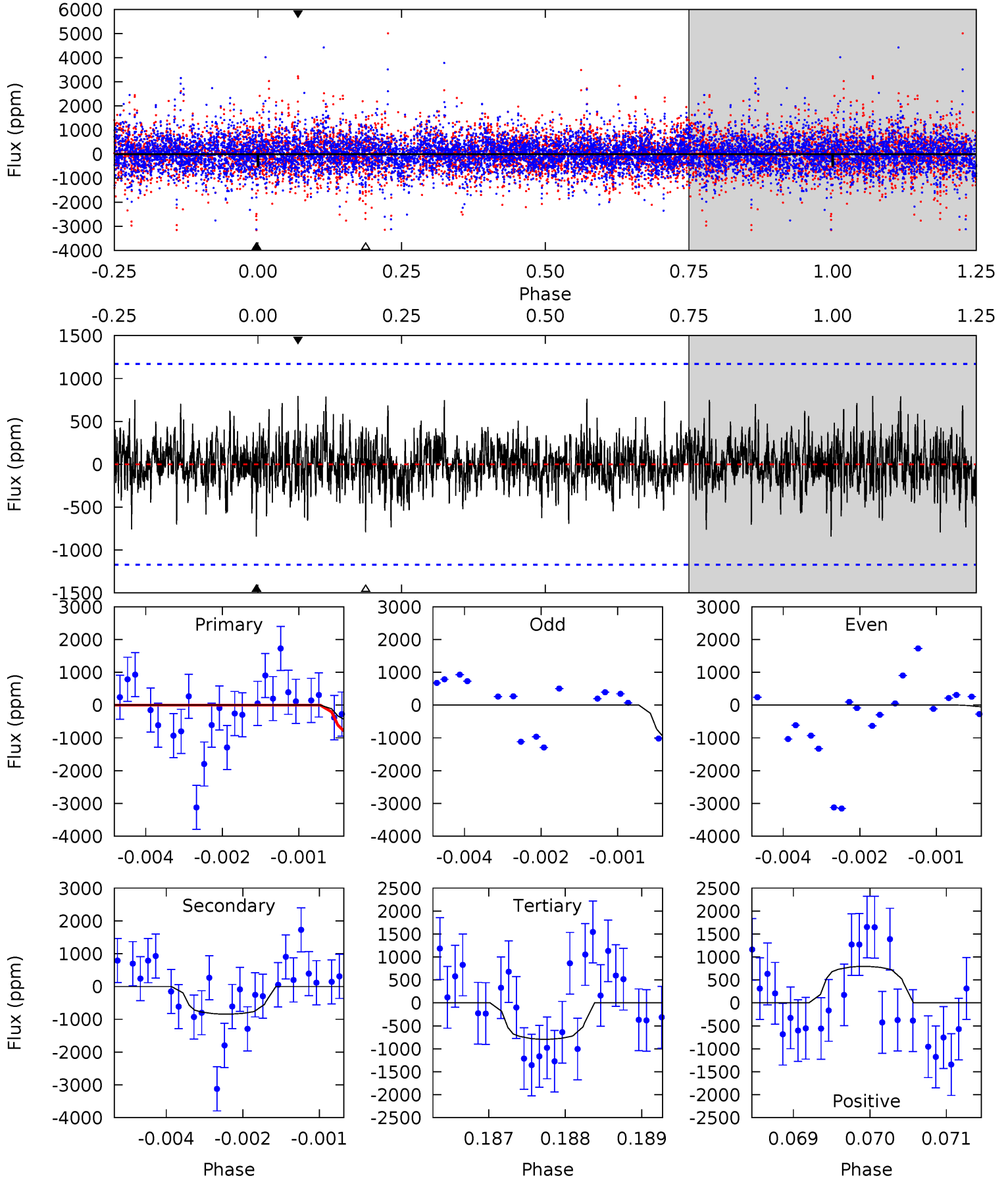
TCE 009596300-03 P=112.694924 Days $T_0=138.291648$ (BKJD)



DV Model-Shift Uniqueness Test

009596300-03, P = 112.656642 Days, E = 25.837209 Days

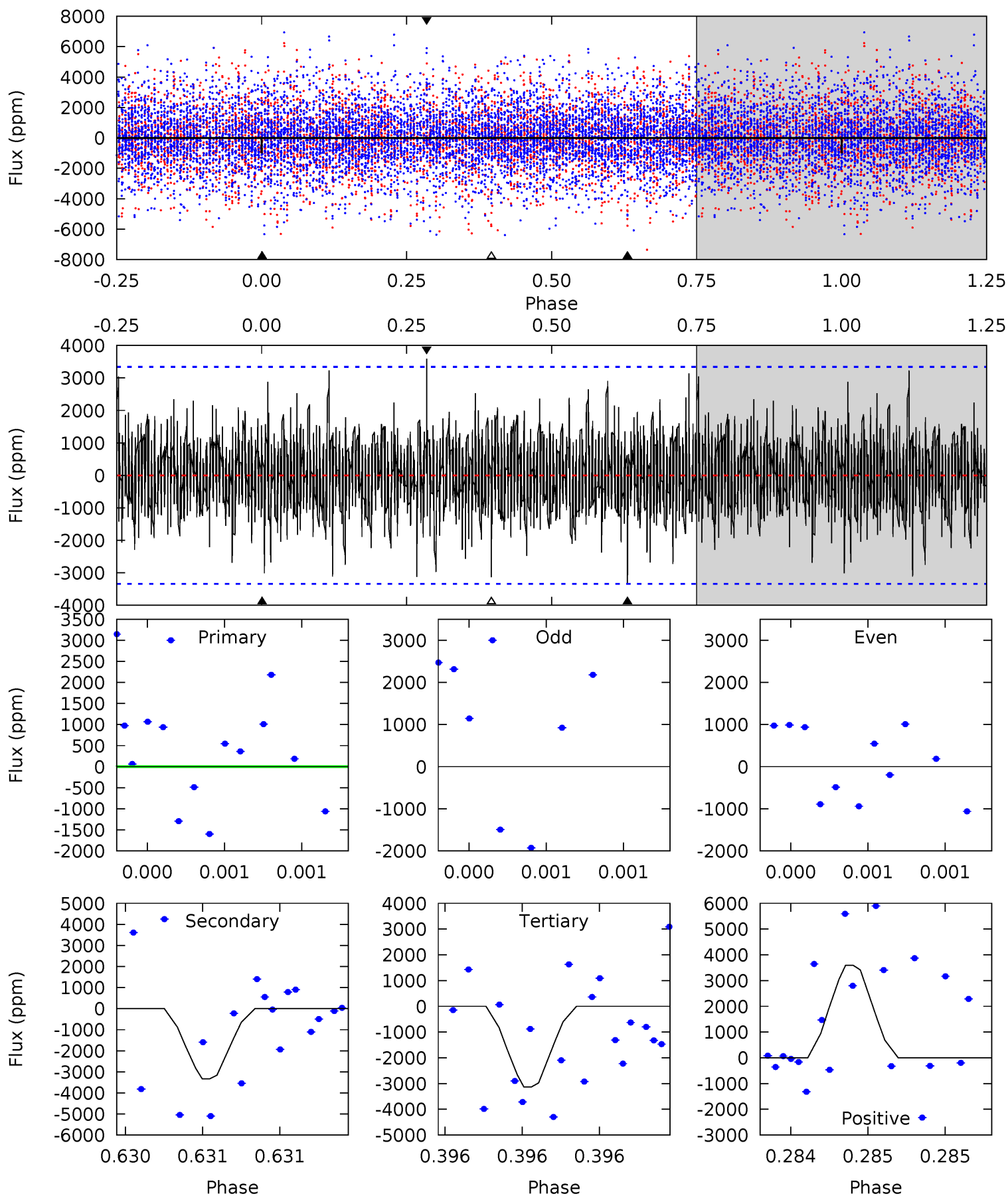
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.28	3.90	3.67	3.68	5.42	3.24	0.98	-1.40	-1.40	0.23	0.22	2.32	1.95	0.49	2.09



Alt Model-Shift Uniqueness Test

009596300-03, P = 112.694924 Days, E = 25.596724 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.70	5.57	5.25	6.02	5.60	3.51	1.42	-3.55	-4.32	0.33	-0.44	1.73	1.01	0.52	0.87



Stellar Parameters For KIC 009596300

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7571^{+211}_{-316}	$4.166^{+0.105}_{-0.195}$	$-0.140^{+0.200}_{-0.350}$	$1.696^{+0.533}_{-0.328}$	$1.535^{+0.219}_{-0.219}$	$0.443^{+0.264}_{-0.225}$
	+3%/-4%	+3%/-5%	+143%/-250%	+31%/-19%	+14%/-14%	+60%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009596300-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-843 ± 216	$42.30^{+49.92}_{-29.42}$	844^{+69}_{-50}	3238^{+1704}_{-606}	70^{+709}_{-55}
Alt.	-3327 ± 597	$43.01^{+47.01}_{-31.79}$	843^{+65}_{-51}	4052^{+3149}_{-870}	270^{+3489}_{-210}

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

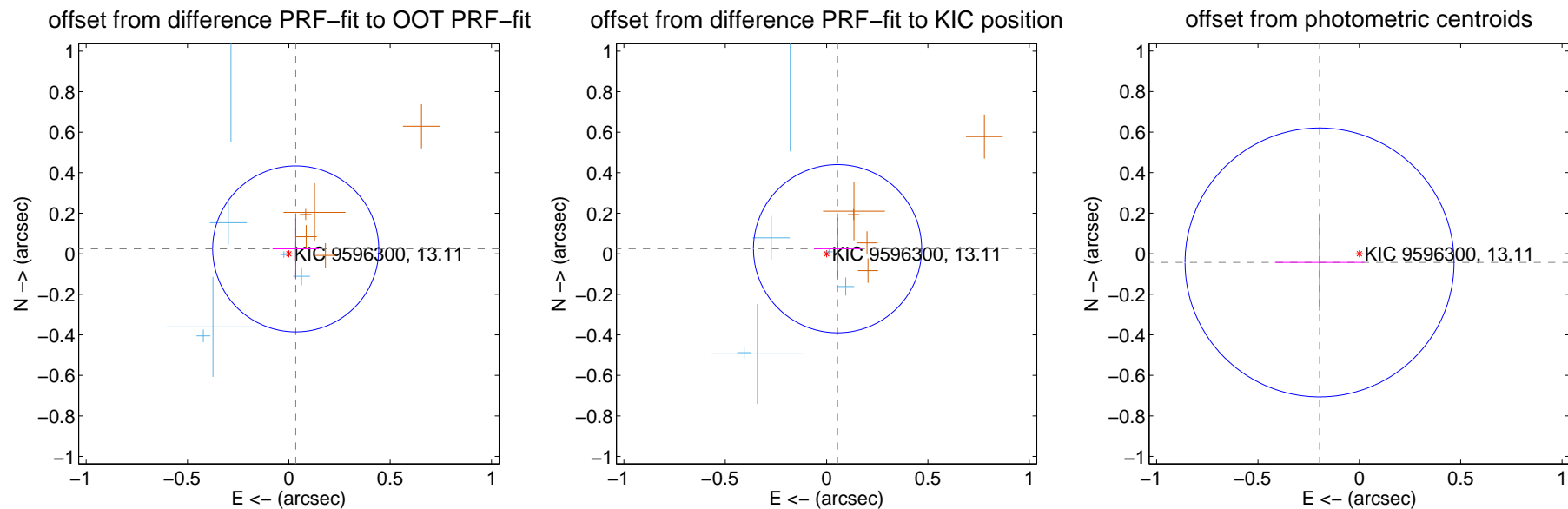
DV Centroid Data

Supplemental centroid analysis for 009596300-03. Kepler magnitude: 13.11. Transit SNR 3.84

There are 6 quarters with good PRF difference image offsets

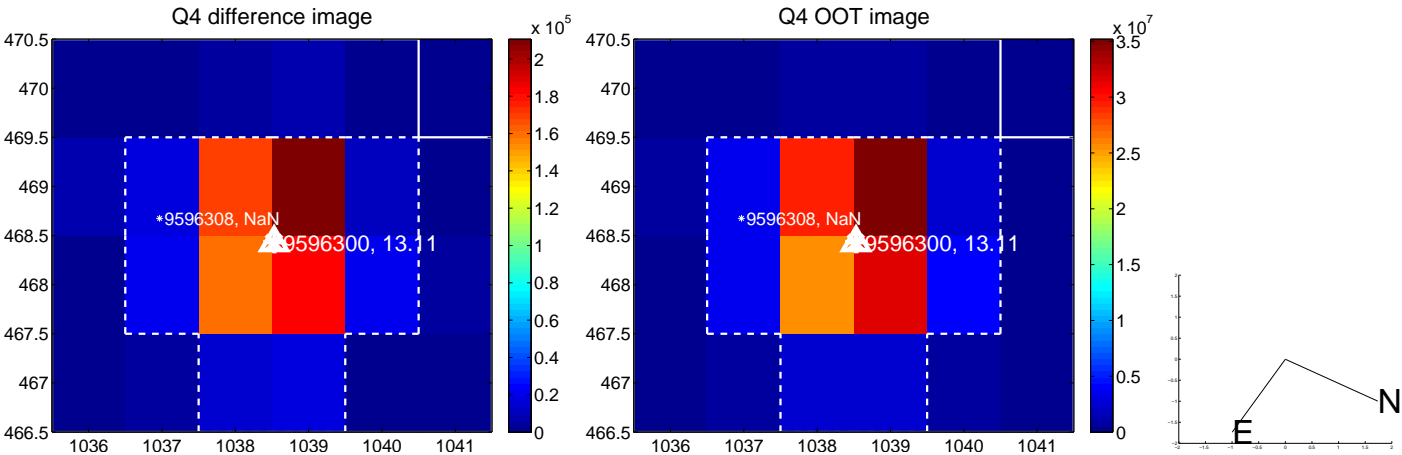
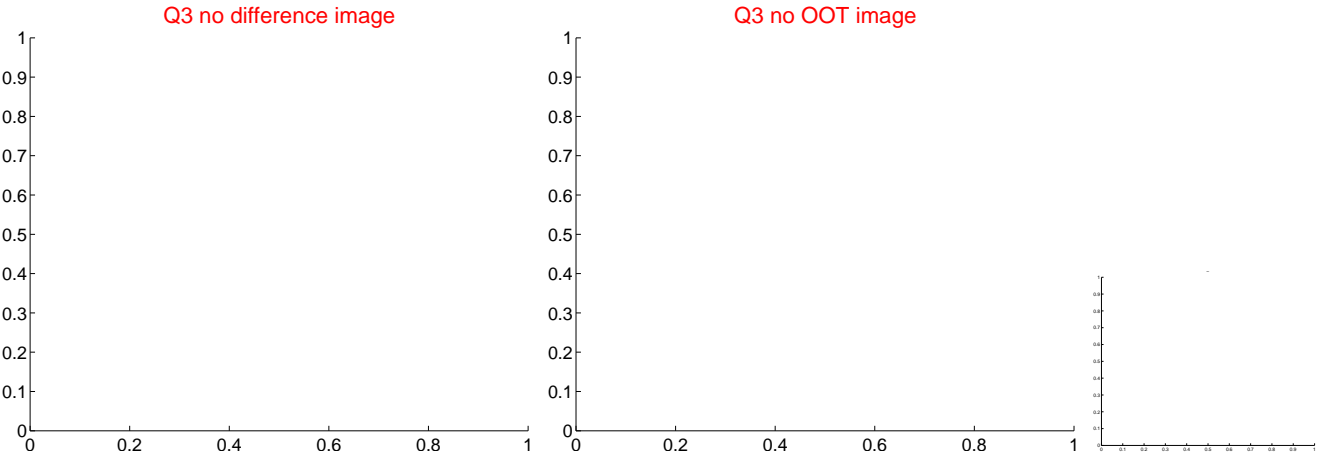
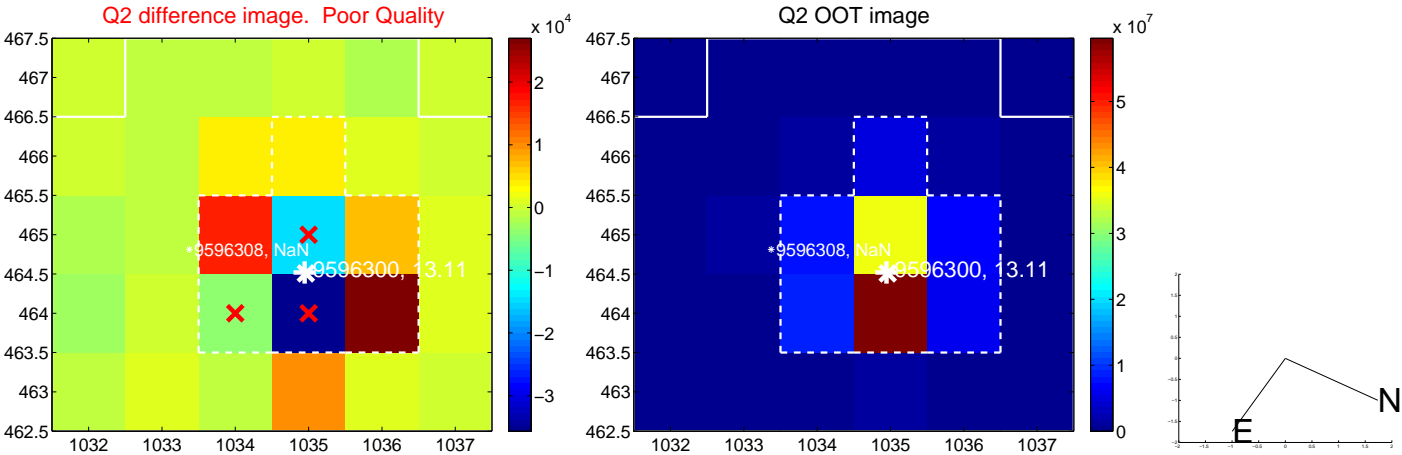
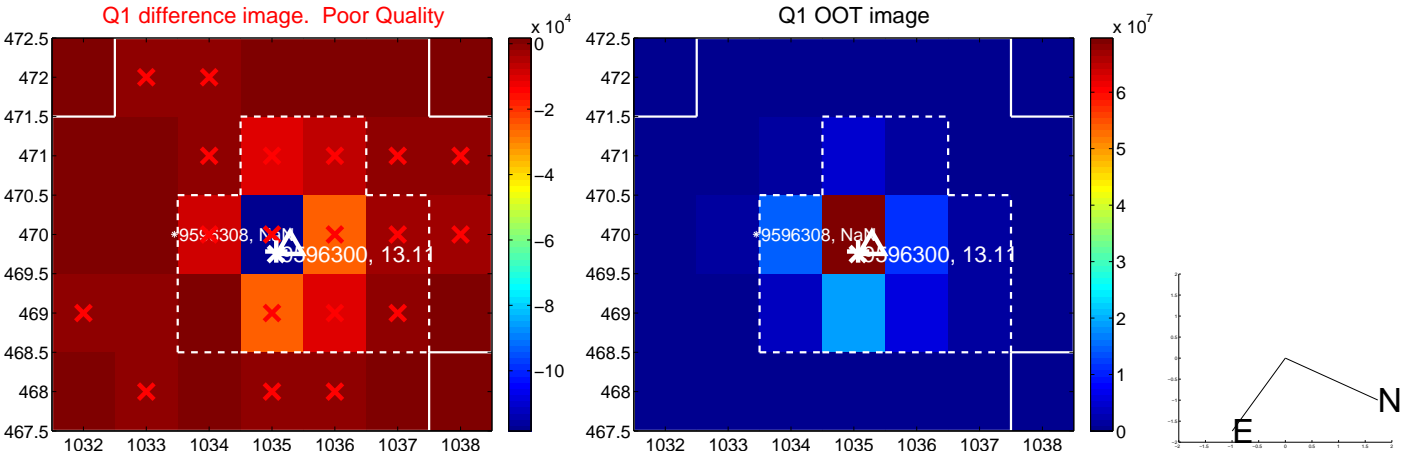
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.042 ± 0.137	0.31	-0.034 ± 0.114	0.024 ± 0.150
PRF-fit source offset from KIC position	0.060 ± 0.138	0.43	-0.054 ± 0.116	0.025 ± 0.153
photometric centroid source offset	0.20 ± 0.22	0.91	0.20 ± 0.22	-0.04 ± 0.24

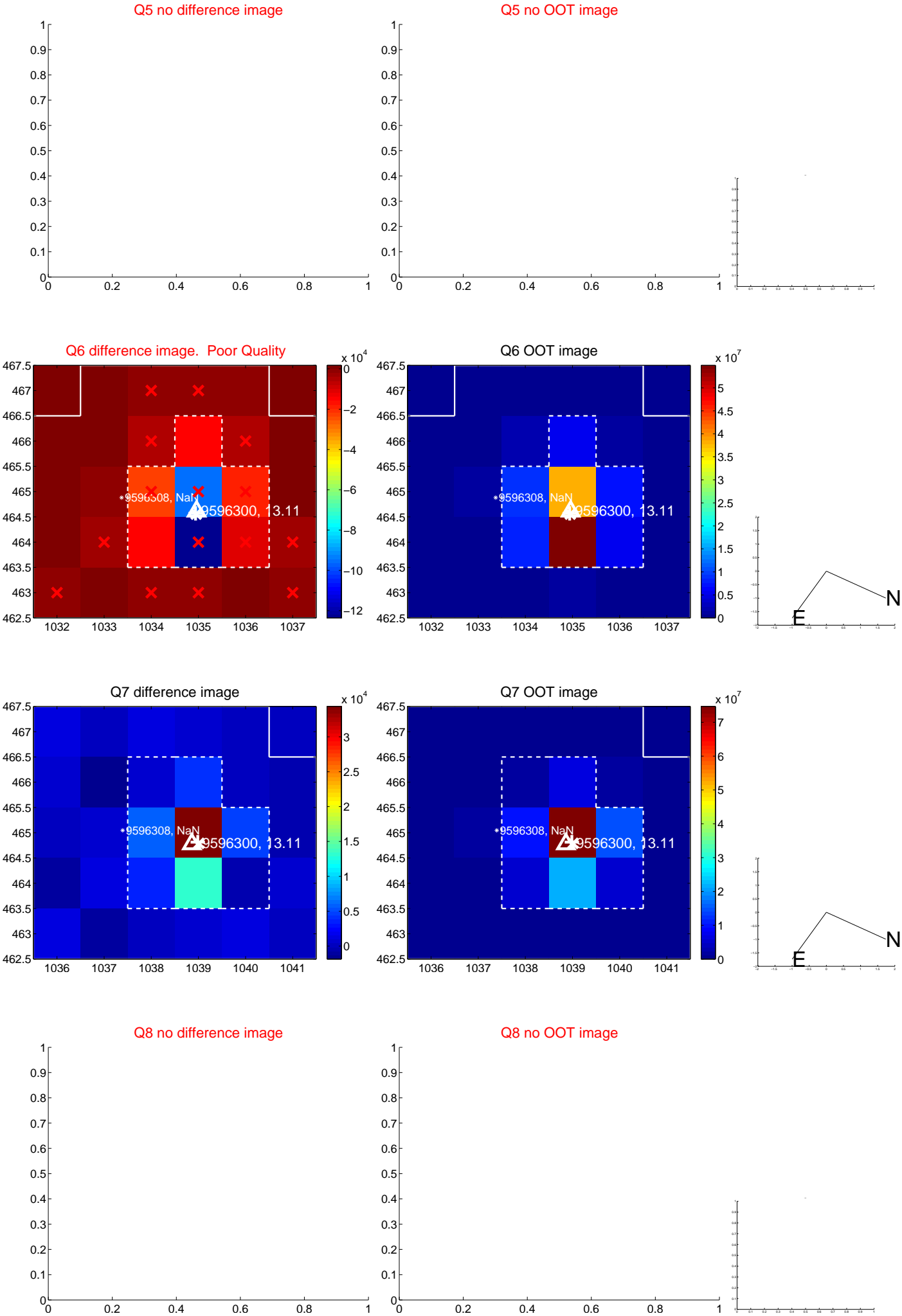


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

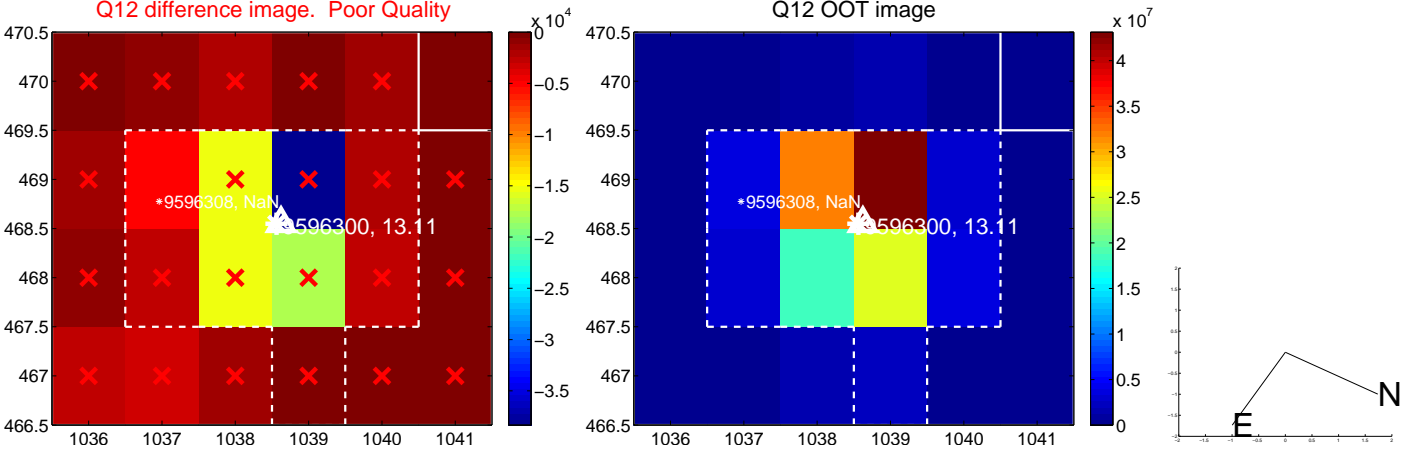
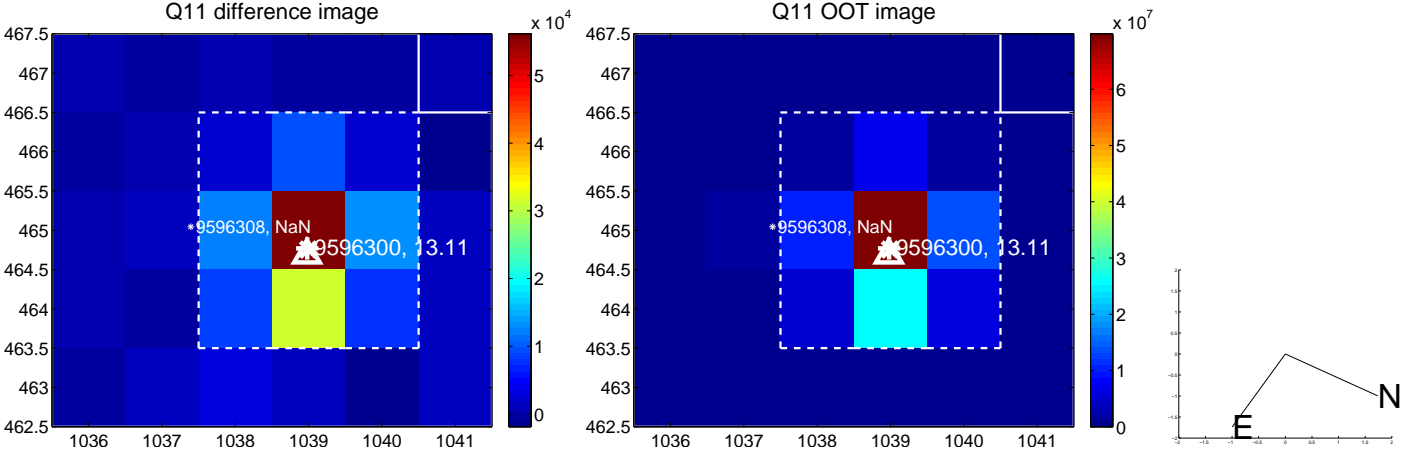
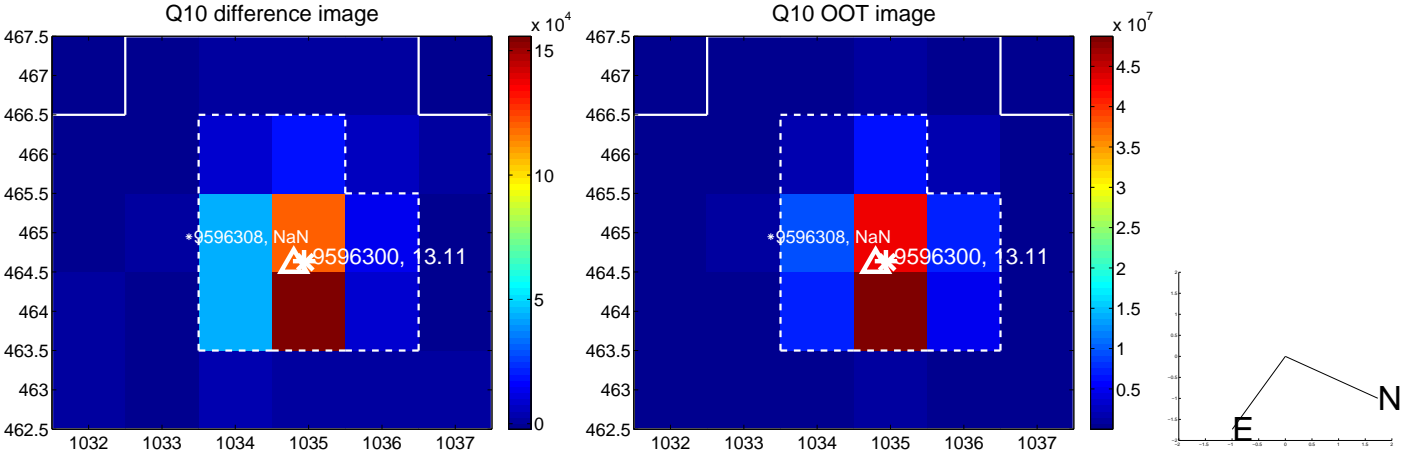
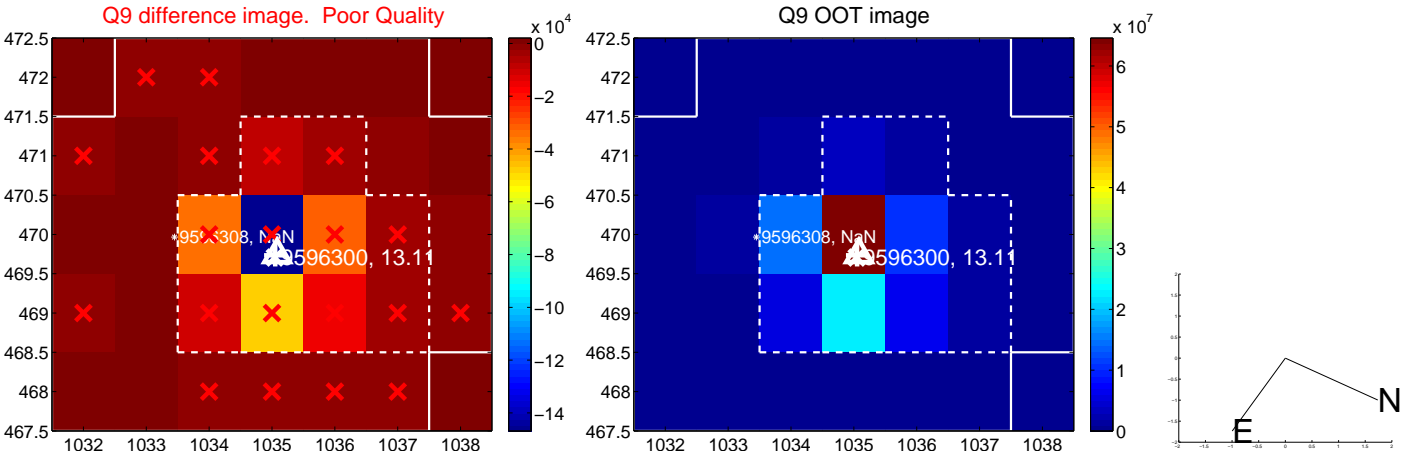
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



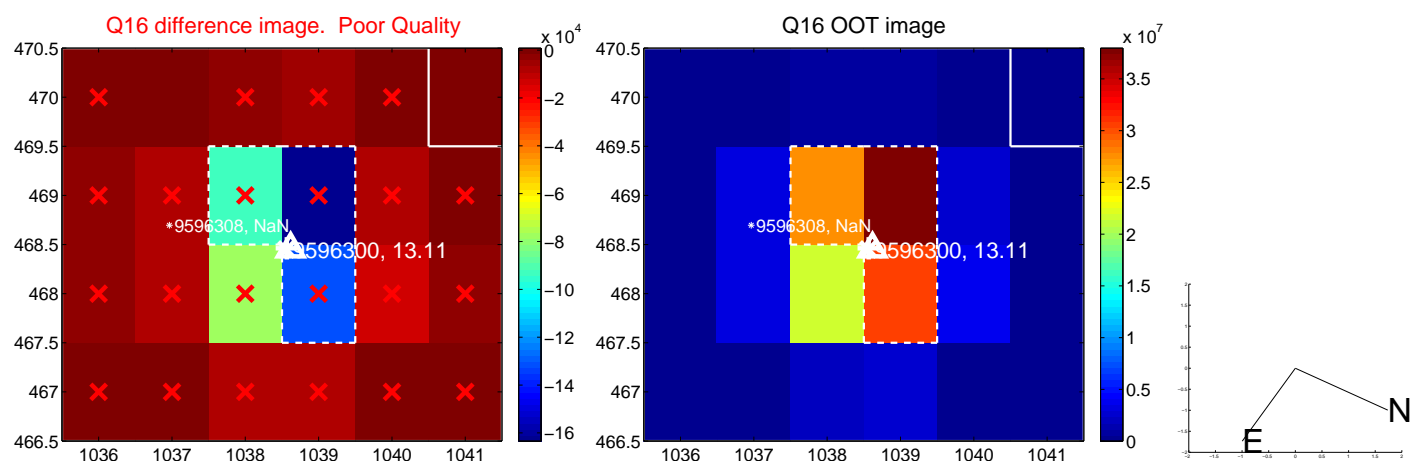
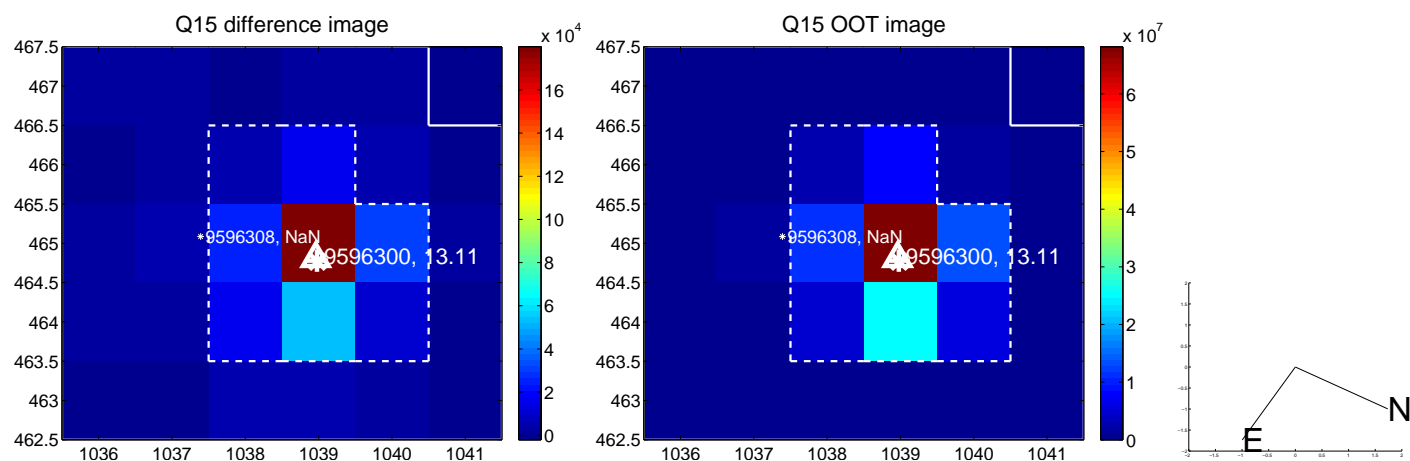
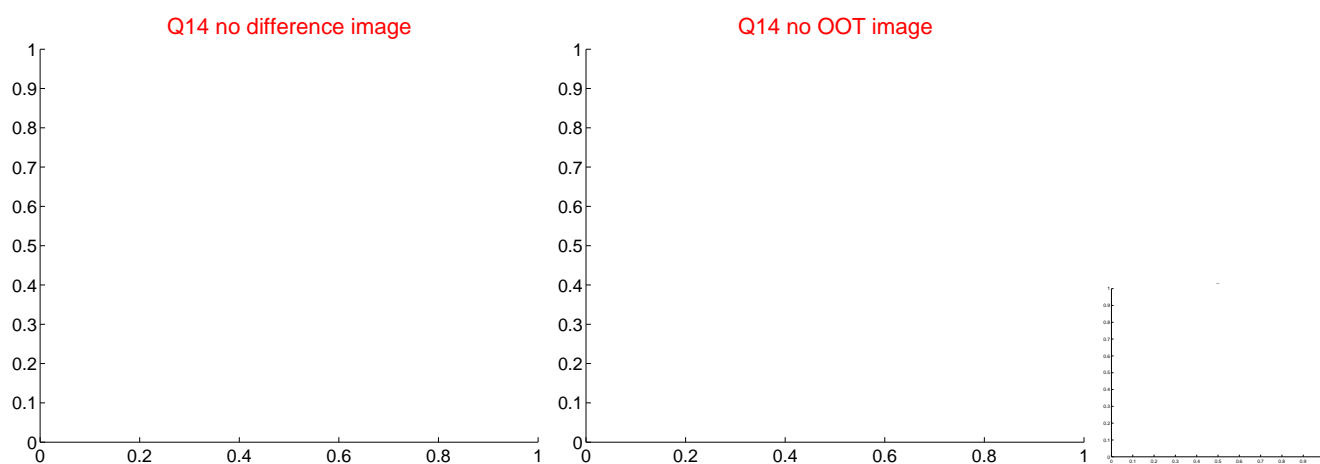
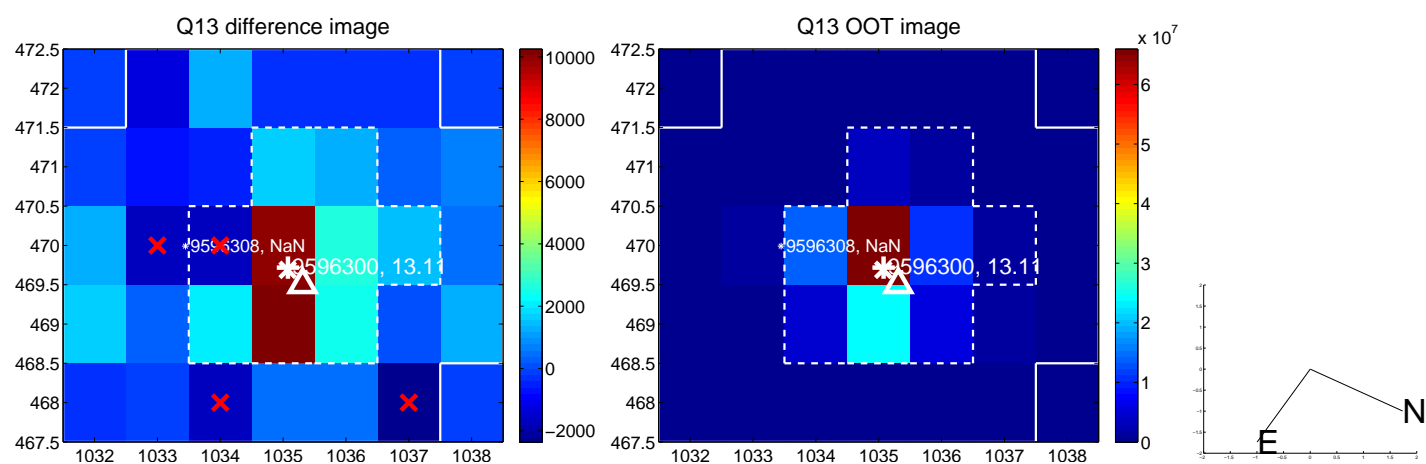
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



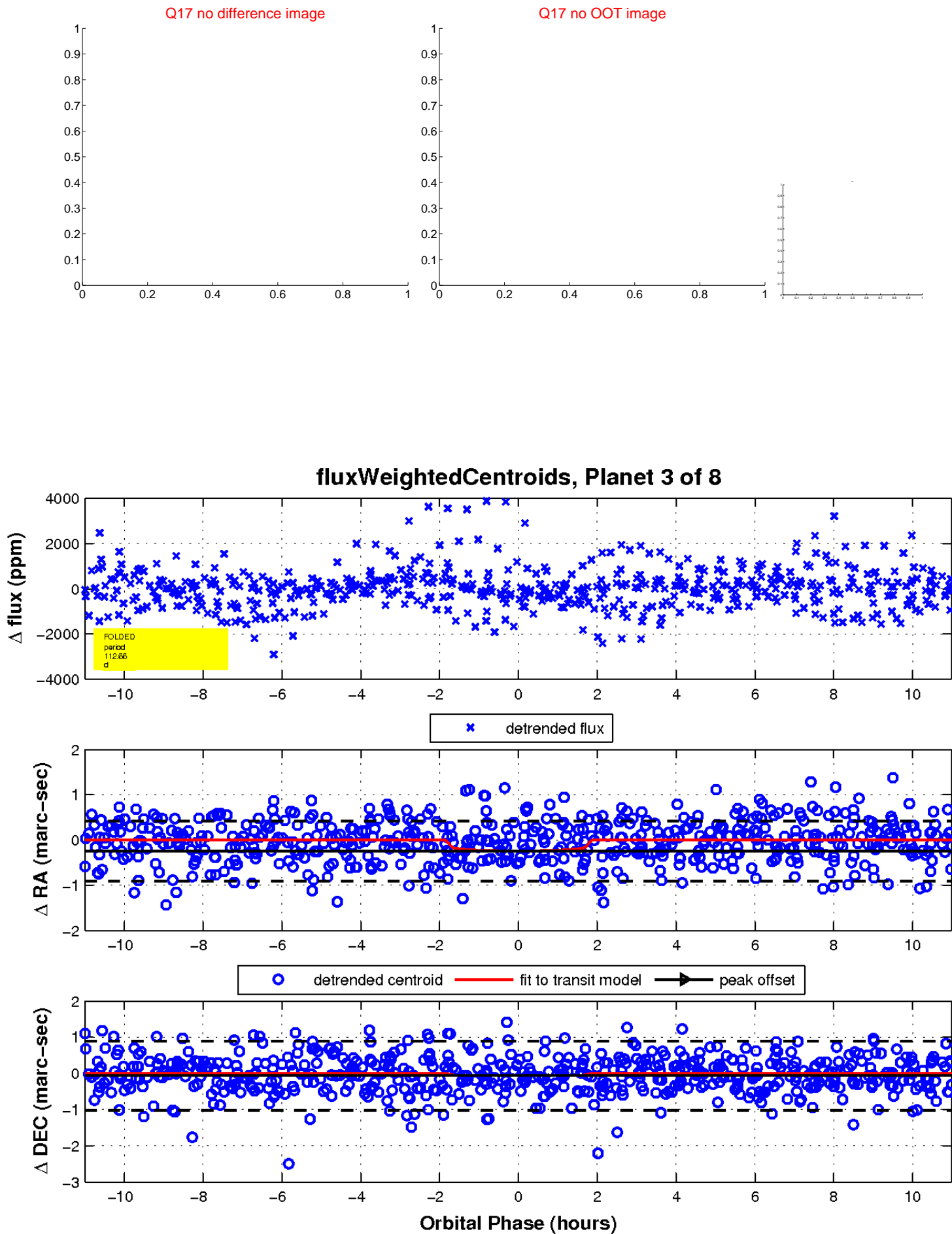
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

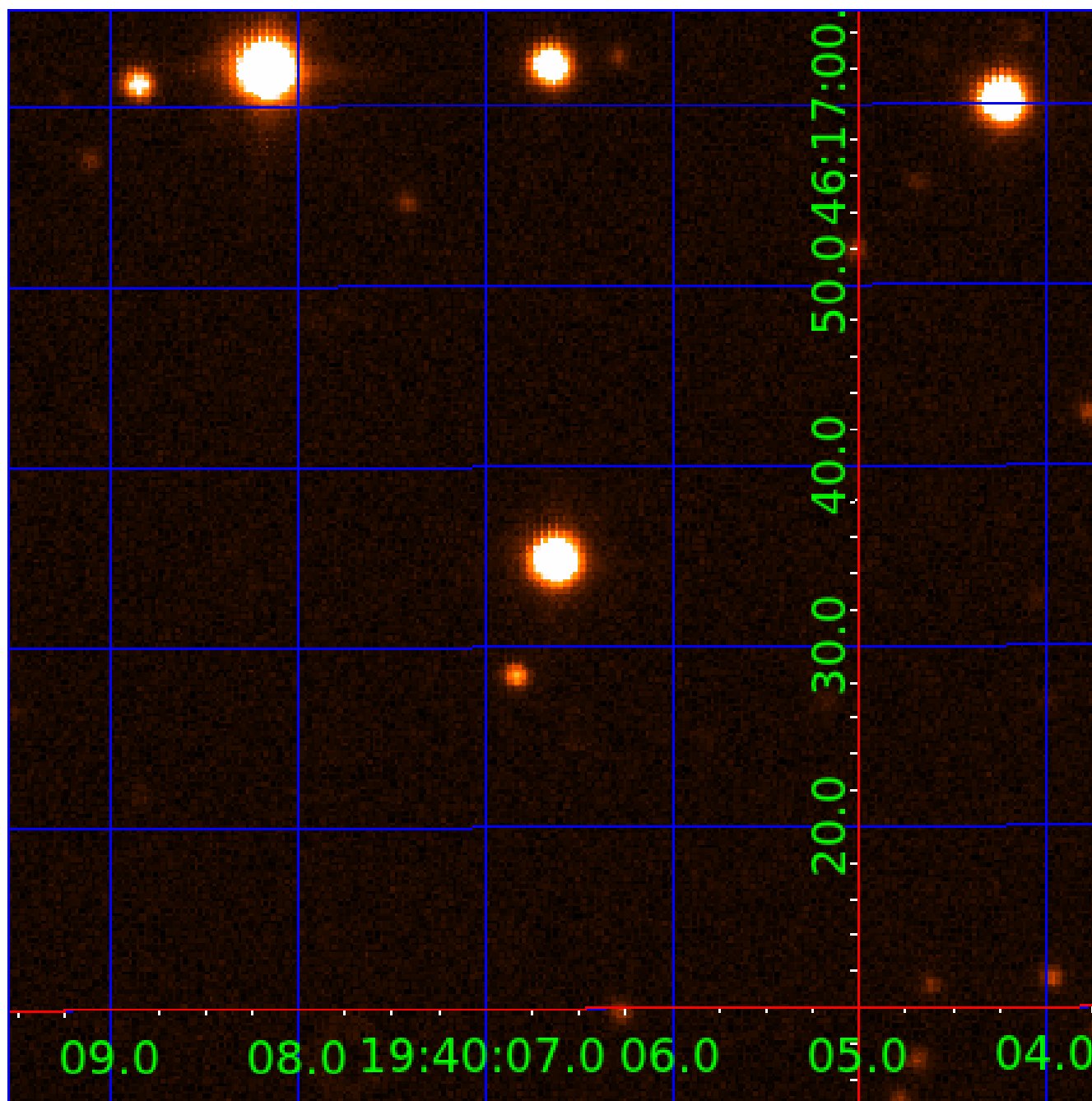


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009596300-01	OBS	No	0.629693	131.556025	0.9	4.130	8.4	0.1	1.70	7571	0.17	30734.05
009596300-02	OBS	No	62.286638	143.822606	2094.6	2.185	16.5	11.0	1.70	7571	14.32	67.18
009596300-03	OBS	No	112.656642	138.493851	728.6	3.671	14.1	3.8	1.70	7571	4.68	30.49
009596300-04	OBS	No	94.602073	138.174543	2650.1	3.417	12.7	12.9	1.70	7571	15.89	38.48
009596300-05	OBS	No	109.204875	141.642702	1824.0	2.300	11.4	9.4	1.70	7571	7.50	31.78
009596300-06	OBS	No	217.903079	272.117949	382.4	0.719	10.1	2.4	1.70	7571	3.60	12.65
009596300-07	OBS	No	217.870671	272.296205	1577.3	28.757	7.9	8.5	1.70	7571	6.81	12.65
009596300-08	OBS	No	46.012266	144.537196	1315.6	1.963	9.3	10.2	1.70	7571	6.74	100.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009596300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009596300-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009596300-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009596300-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009596300-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009596300-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009596300-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
009596300-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

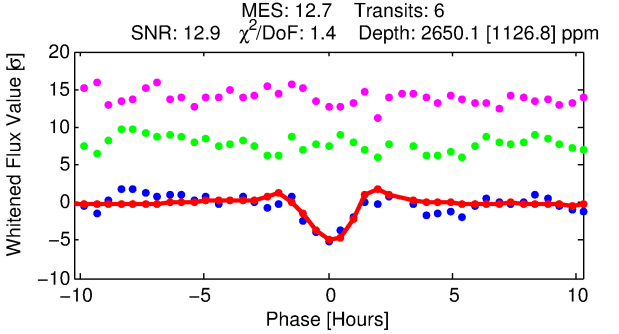
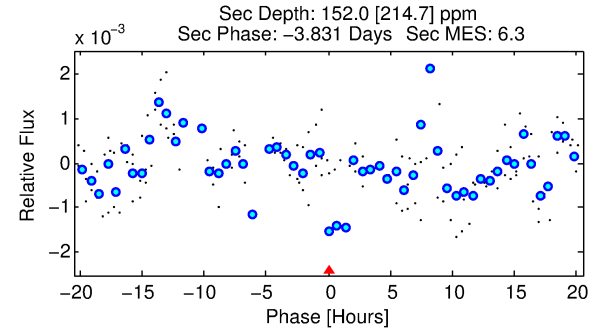
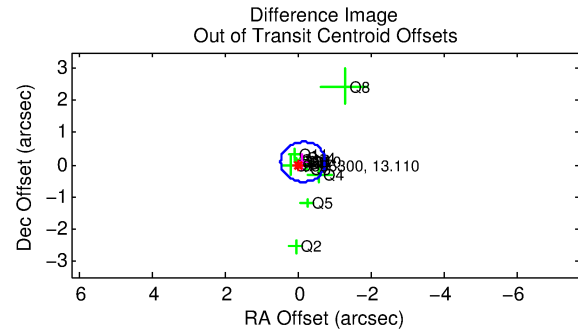
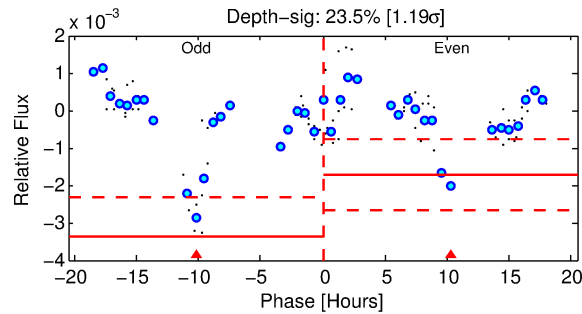
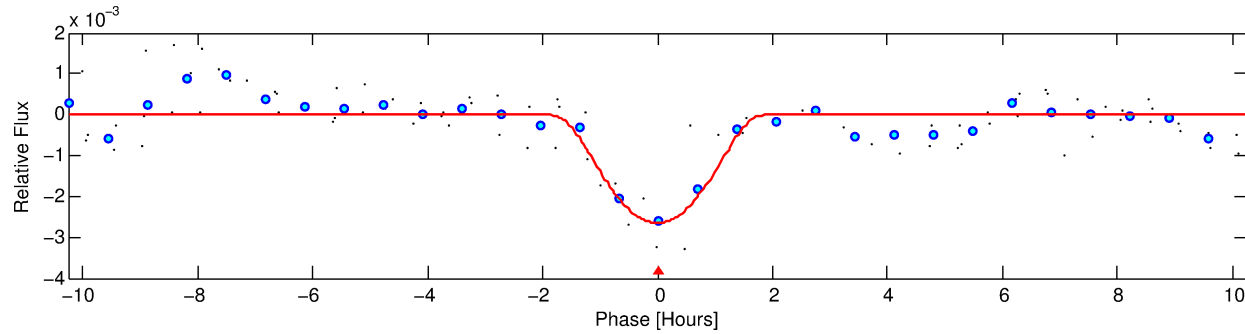
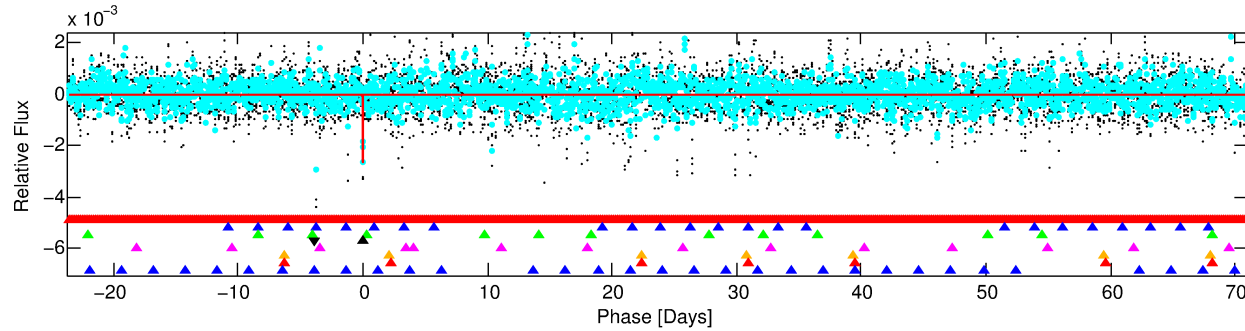
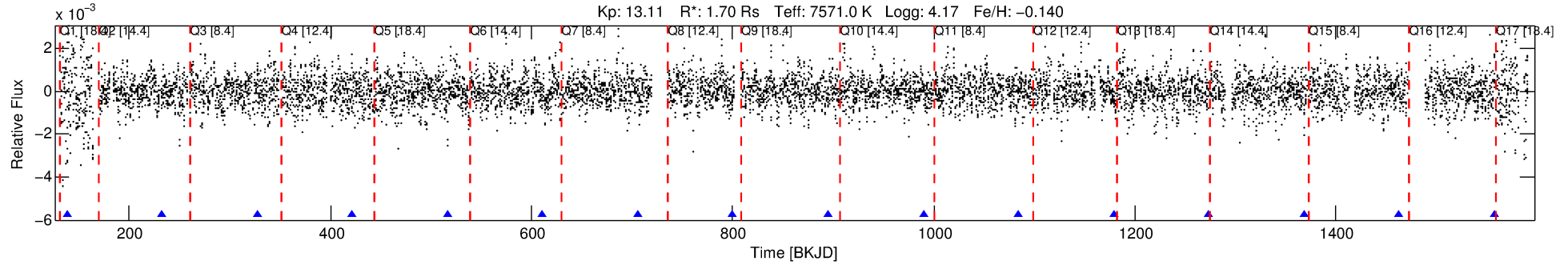
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009596300-04

No Significant Match Found

DV One-Page Summary

KIC: 9596300 Candidate: 4 of 8 Period: 94.602 d



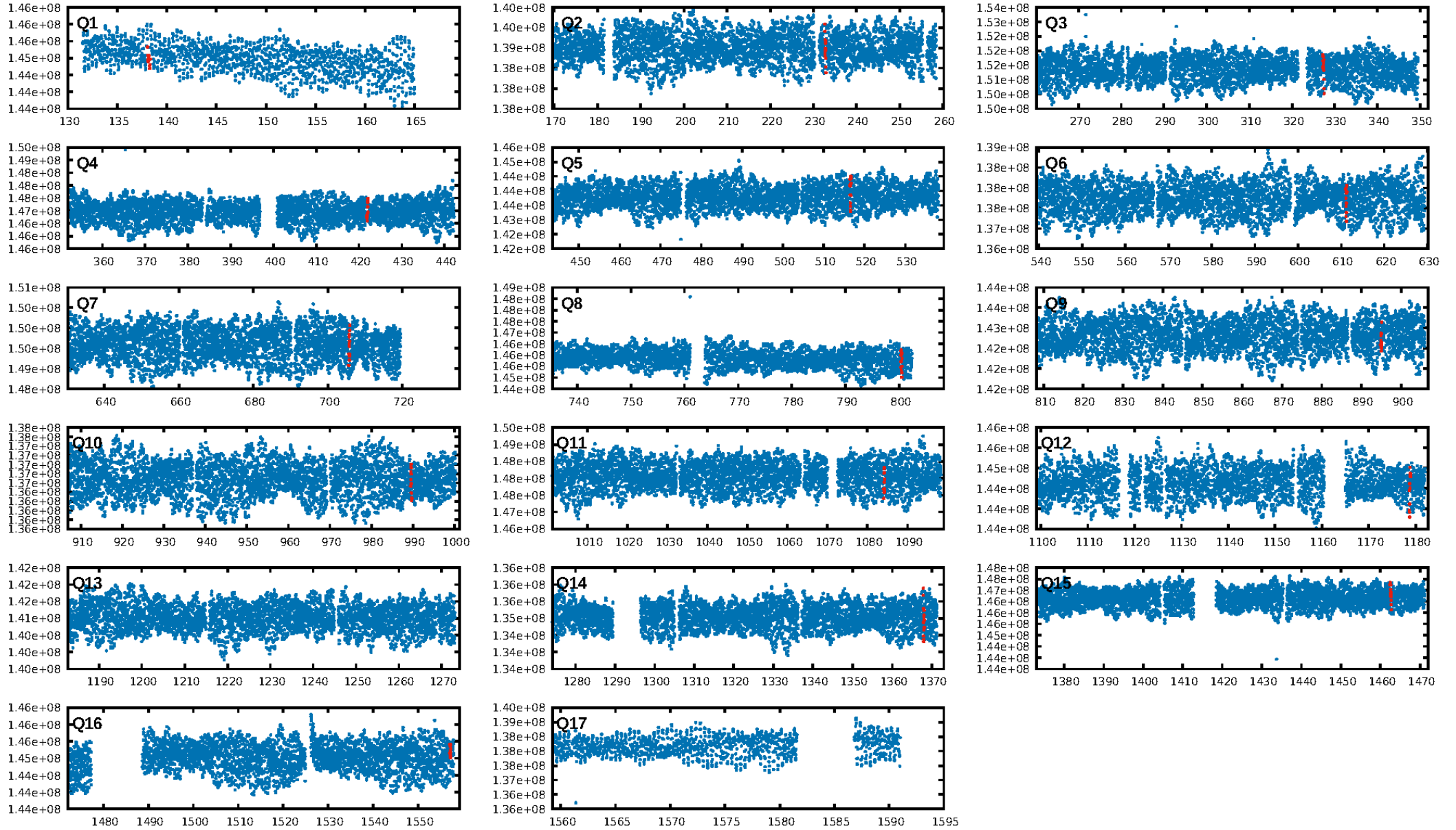
DV Fit Results:

Period = 94.60207 [0.00083] d
Epoch = 138.1745 [0.0067] BKJD
Rp/R* = 0.0858 [0.2447]
a/R* = 89.53 [56.36]
b = 1.00 [0.33]
Seff = 38.48 [15.46]
Teff = 635 [64] K
Rp = 15.89 [45.56] Re
a = 0.4691 [0.1208] AU
Ag = 72.89 [428.88] [0.17 σ]
Teffp = 2869 [4214] K [0.53 σ]

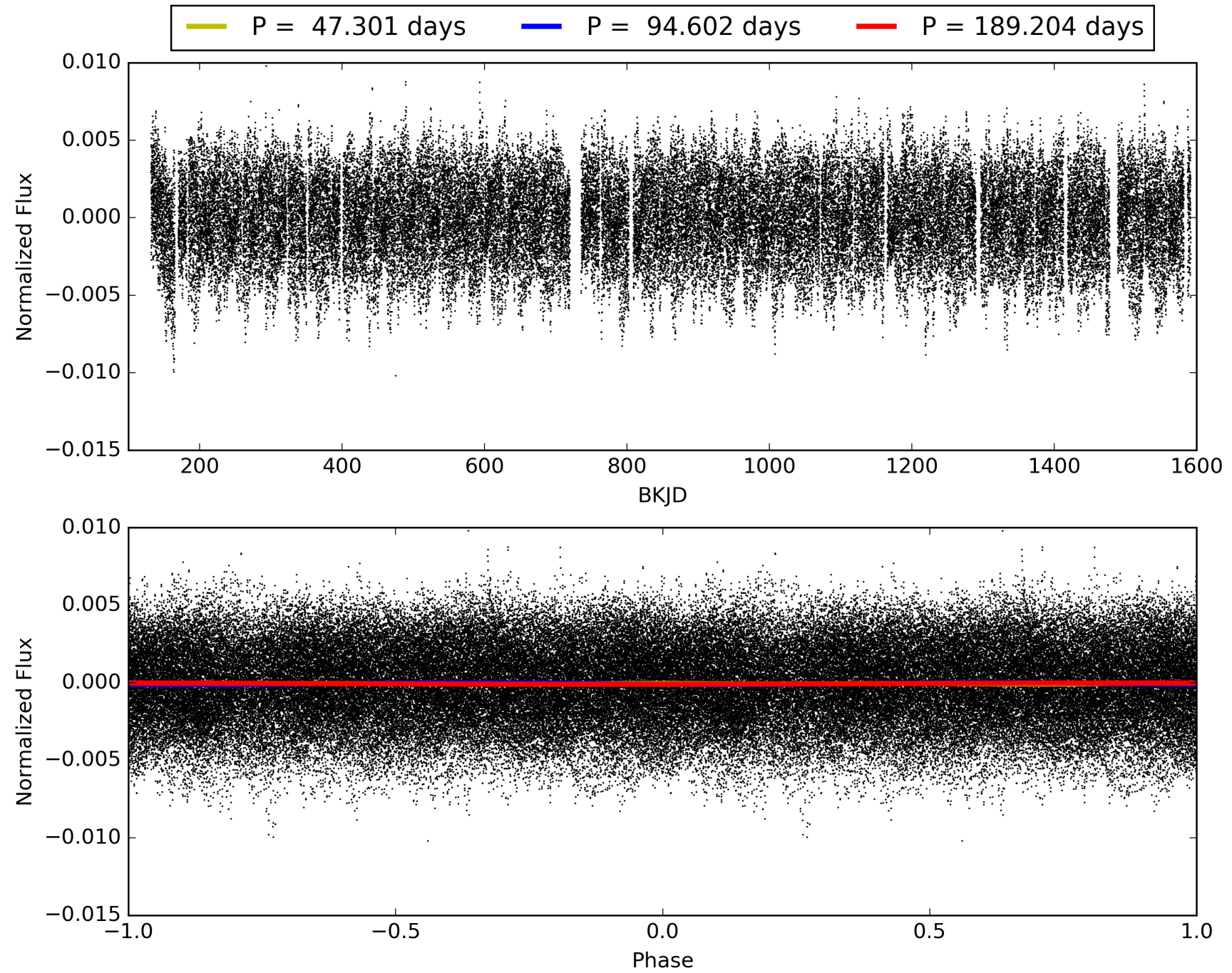
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [191.22 σ]
LongPeriod-sig: 100.0% [85.09 σ]
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.67e-14
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.8564
Centroid-sig: 19.7%
Centroid-so: 0.256 arcsec [3.22 σ]
OotOffset-rm: 0.156 arcsec [0.75 σ]
KicOffset-rm: 0.163 arcsec [1.28 σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 009596300-04, PDC Light Curves

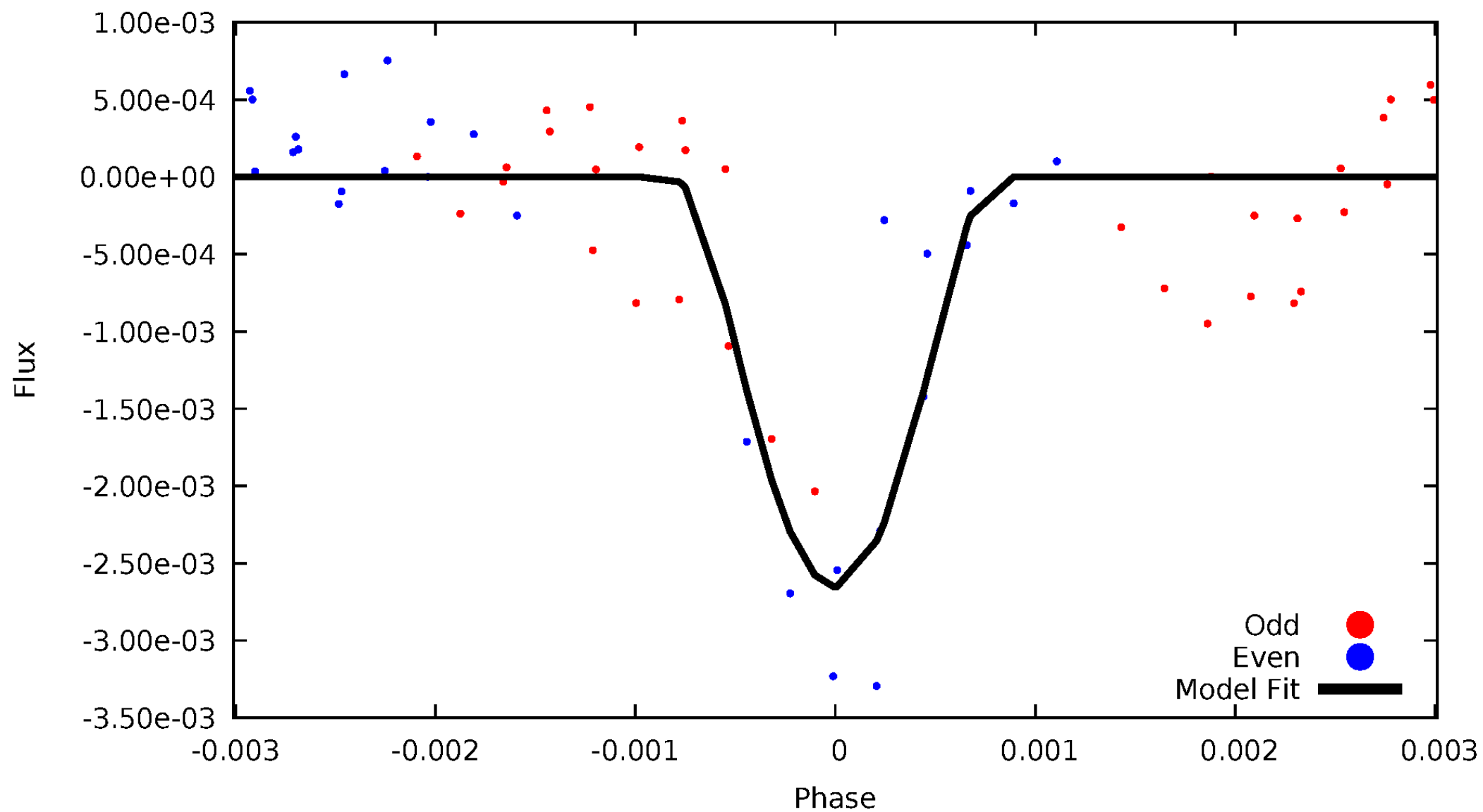


TCE 009596300-04



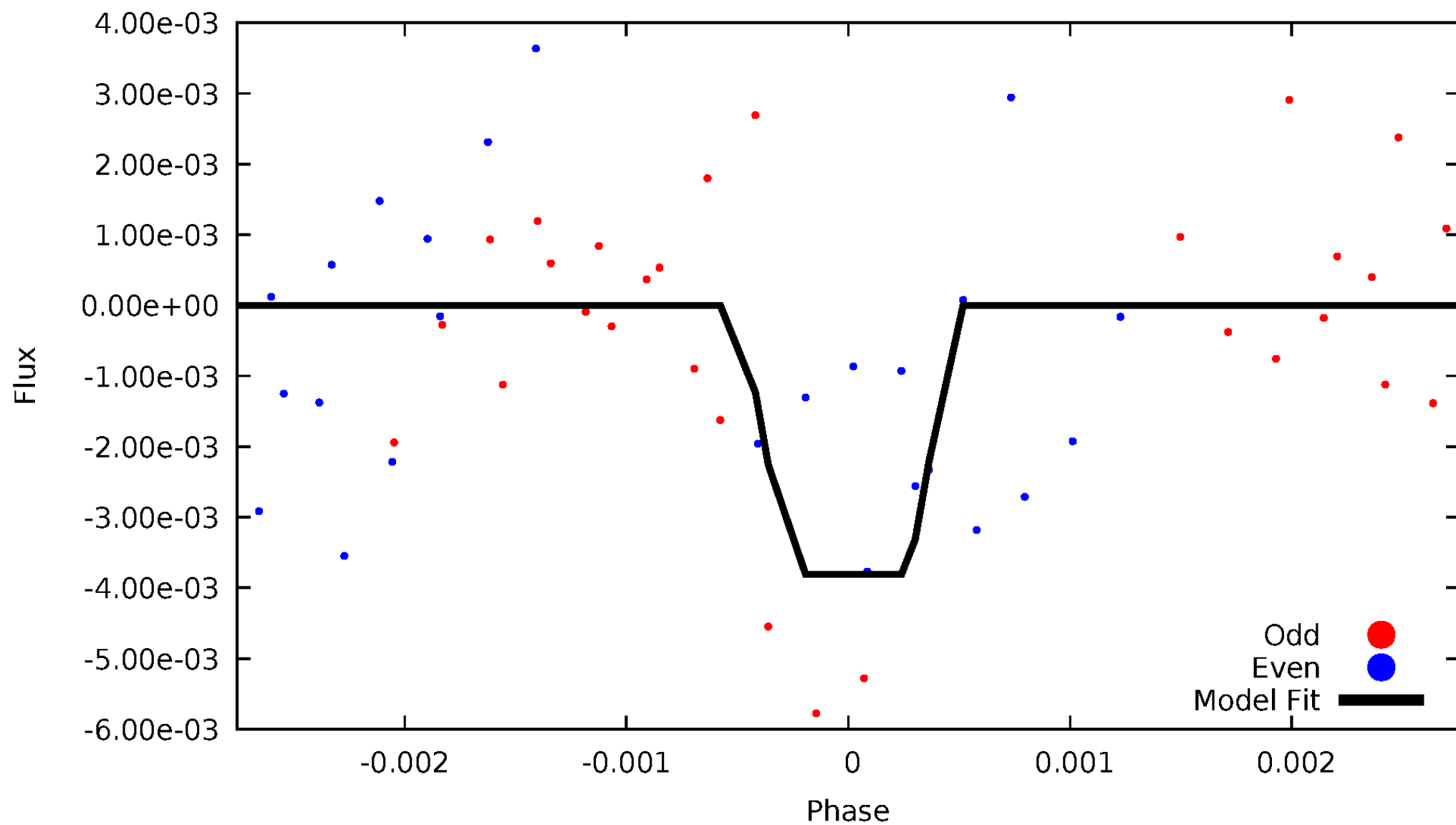
DV Odd/Even

TCE 009596300-04



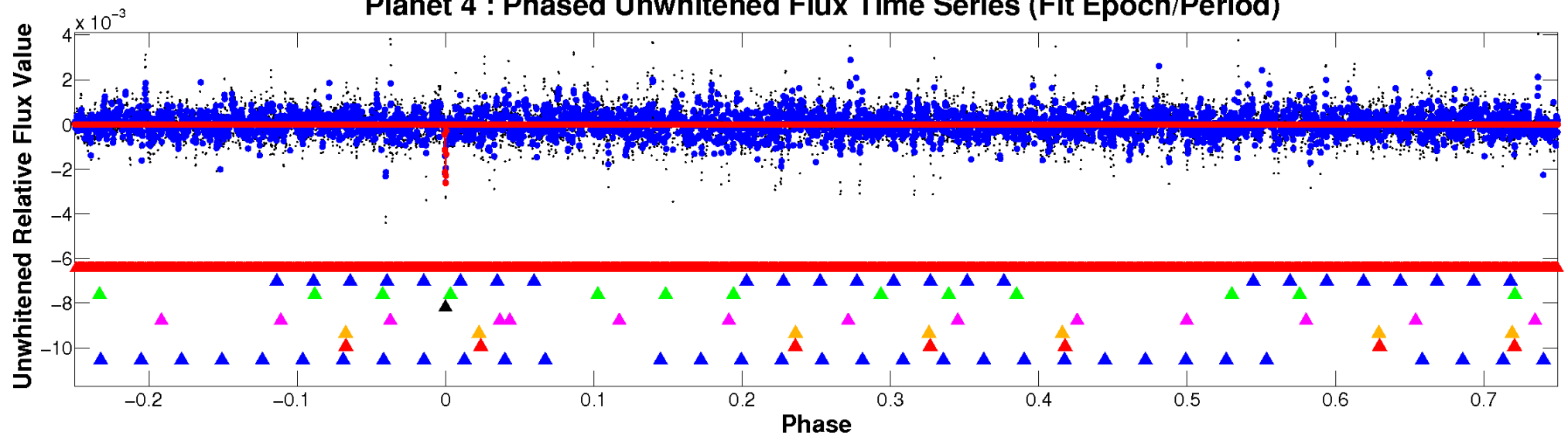
ALT Odd/Even

TCE 009596300-04

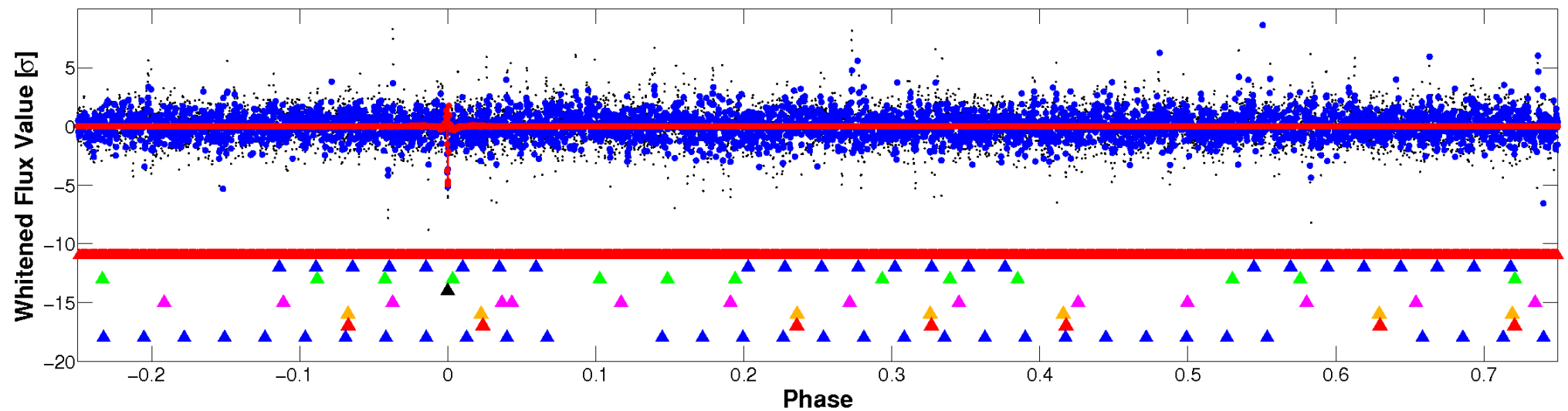


Non-Whitened Vs. Whitened Light Curve

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

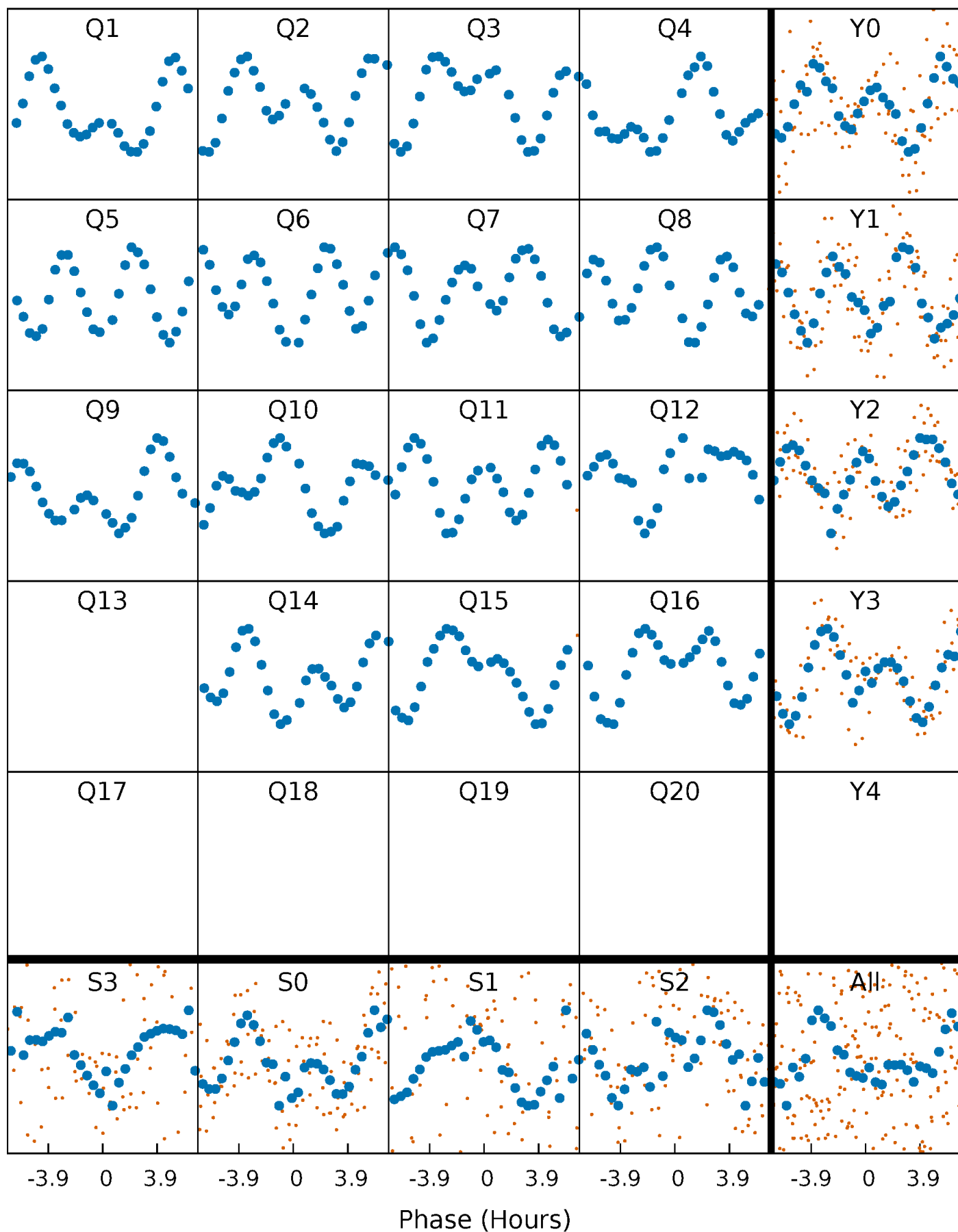


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



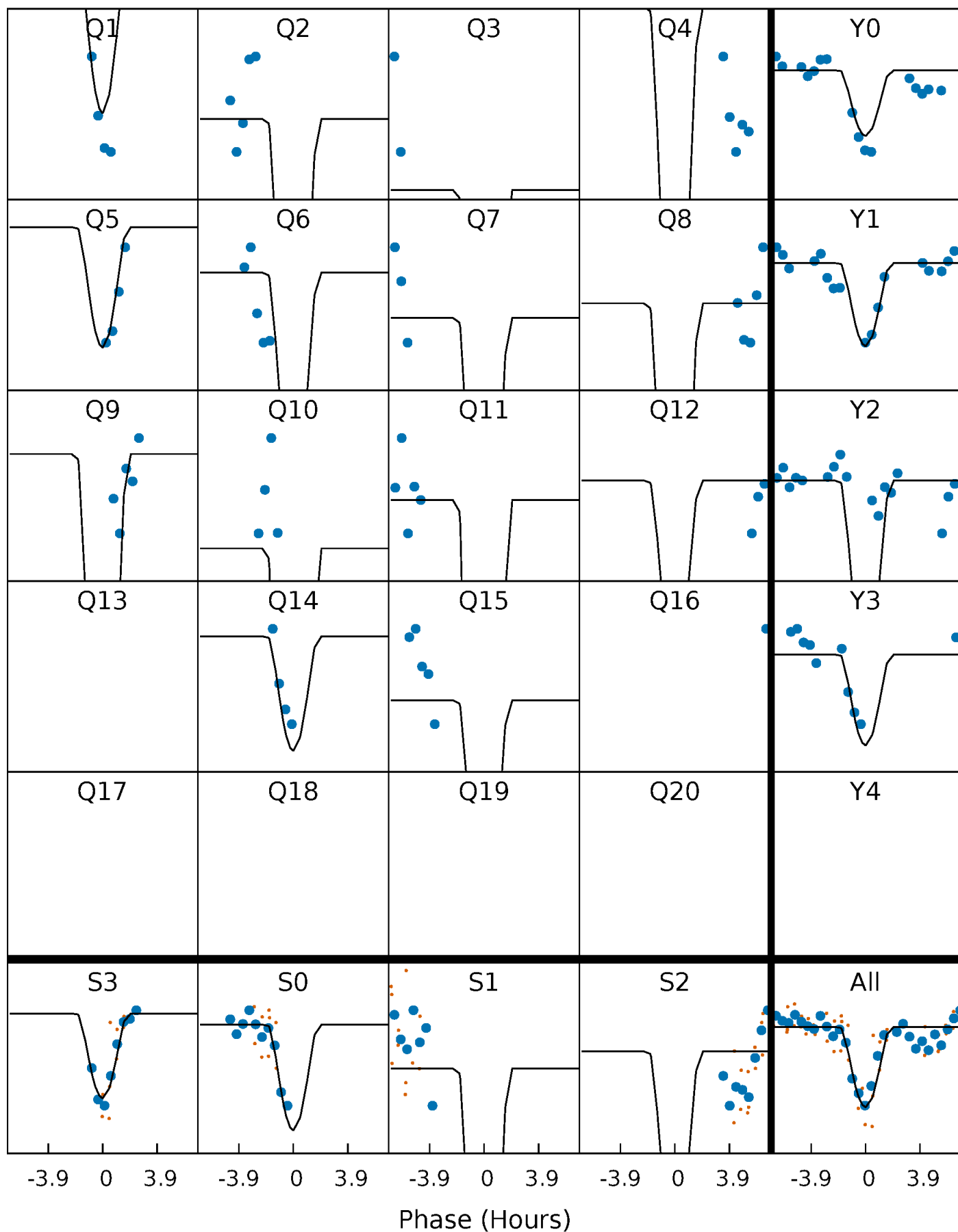
PDC Quarter-Phased Transit Curves

TCE 009596300-04 P= 94.602073 Days $T_0=138.174543$ (BKJD)



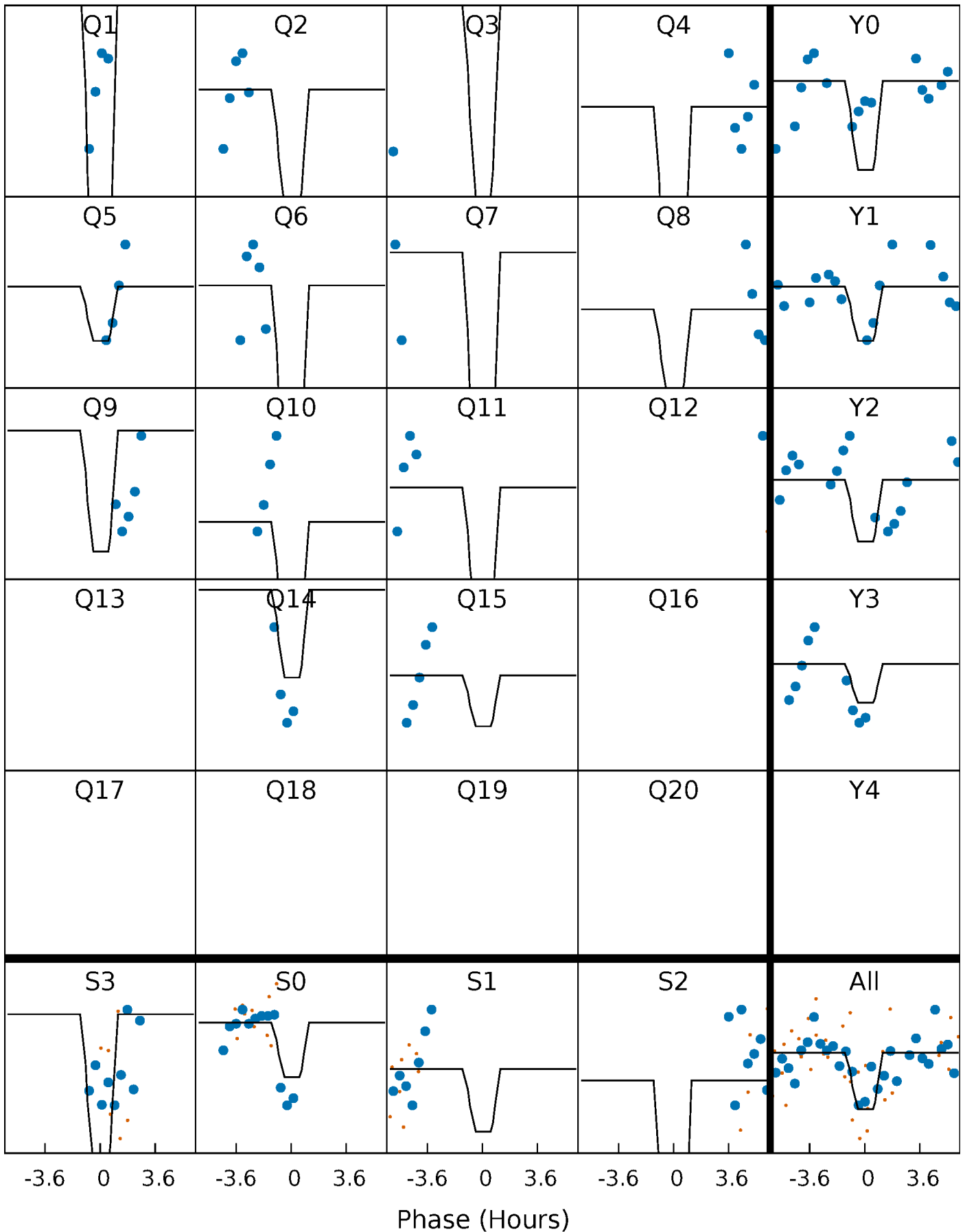
DV Quarter-Phased Transit Curves

TCE 009596300-04 P= 94.602073 Days $T_0=138.174543$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

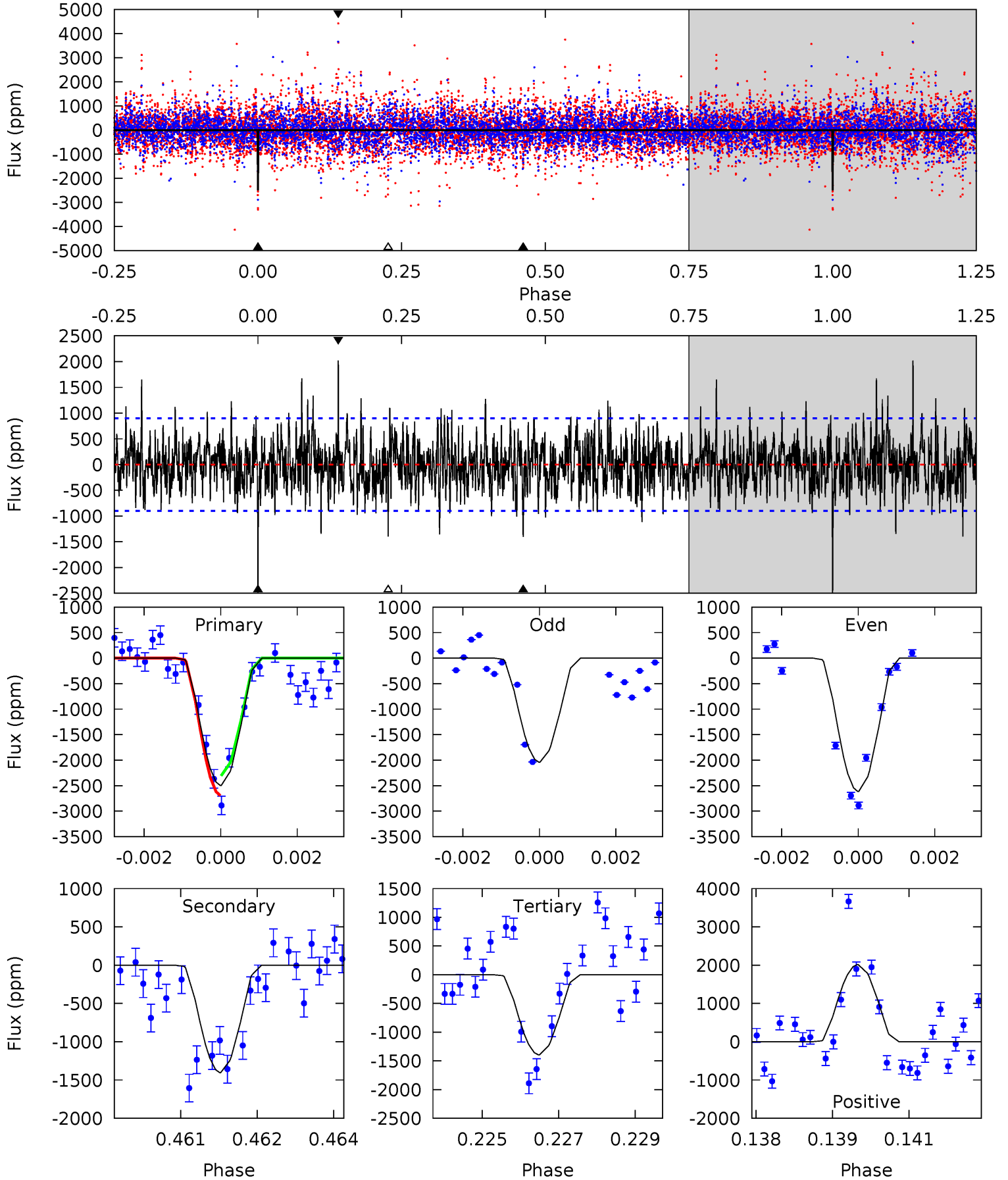
TCE 009596300-04 P= 94.601056 Days $T_0=138.171406$ (BKJD)



DV Model-Shift Uniqueness Test

009596300-04, P = 94.602073 Days, E = 43.572470 Days

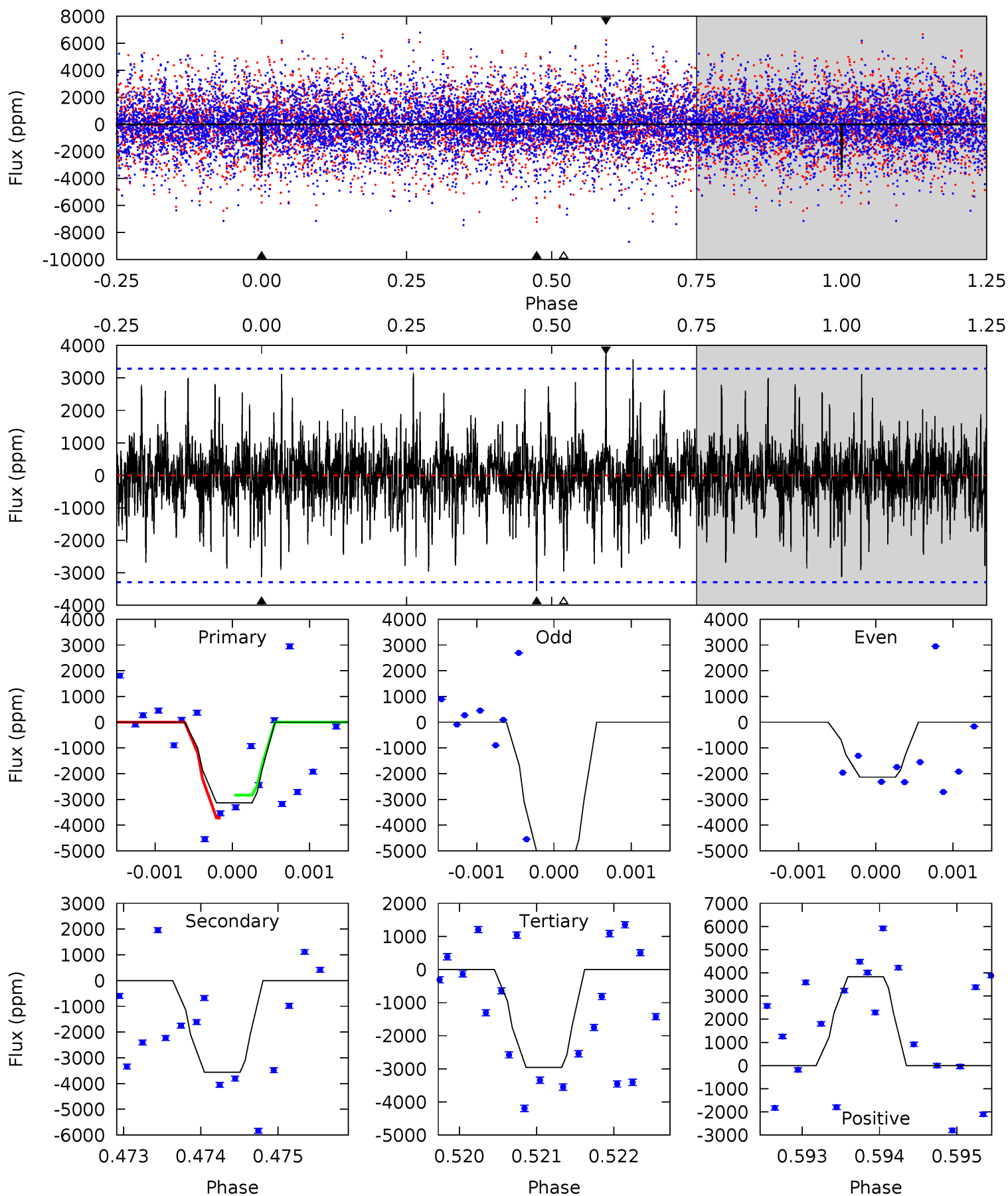
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	8.37	8.32	12.0	5.36	3.15	2.39	6.57	2.87	0.05	-3.65	1.58	0.76	0.45	1.15



Alt Model-Shift Uniqueness Test

009596300-04, P = 94.601056 Days, E = 43.570350 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.20	5.91	4.92	6.36	5.46	3.31	1.32	0.28	-1.16	1.00	-0.44	2.39	1.02	0.52	0.72



Stellar Parameters For KIC 009596300

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7571^{+211}_{-316}	$4.166^{+0.105}_{-0.195}$	$-0.140^{+0.200}_{-0.350}$	$1.696^{+0.533}_{-0.328}$	$1.535^{+0.219}_{-0.219}$	$0.443^{+0.264}_{-0.225}$
	+3%/-4%	+3%/-5%	+143%/-250%	+31%/-19%	+14%/-14%	+60%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009596300-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1403 ± 168	$39.27^{+41.70}_{-25.98}$	896^{+72}_{-57}	3583^{+1943}_{-655}	113^{+815}_{-86}
Alt.	-3560 ± 602	$34.08^{+36.91}_{-24.33}$	896^{+67}_{-53}	4436^{+3939}_{-984}	356^{+4313}_{-273}

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 $A_{obs} \gg 1.0$

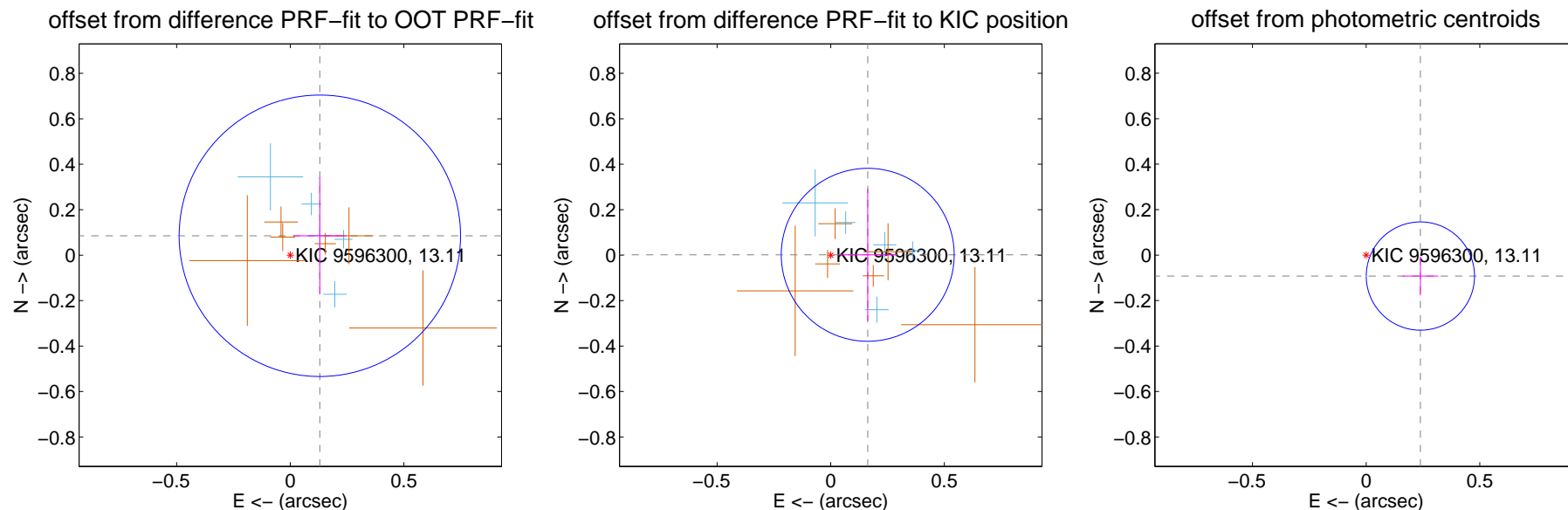
DV Centroid Data

Supplemental centroid analysis for 009596300-04. Kepler magnitude: 13.11. Transit SNR 12.86

There are 6 quarters with good PRF difference image offsets

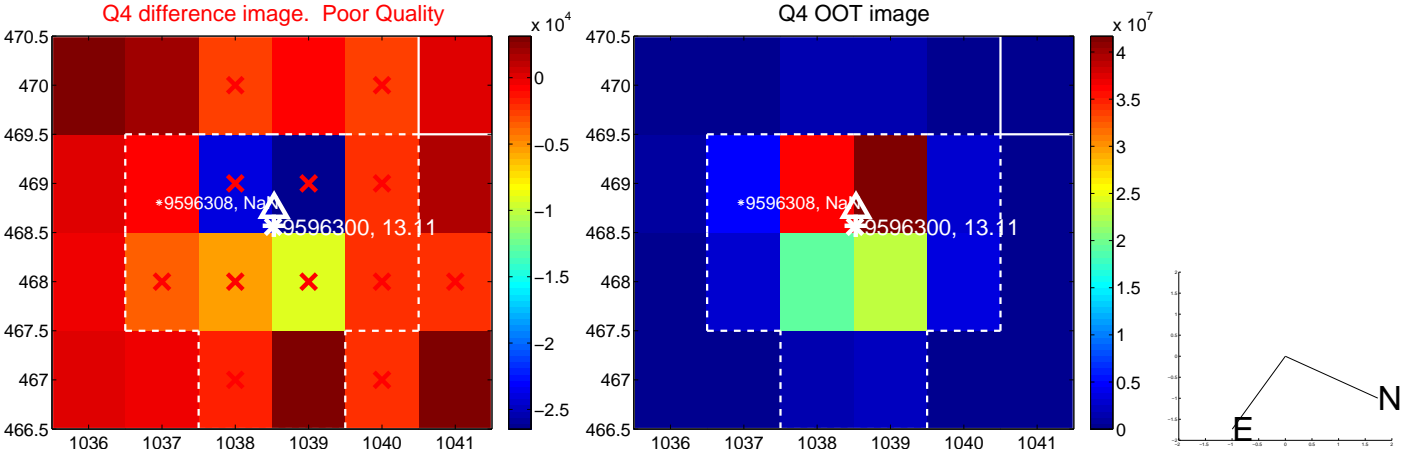
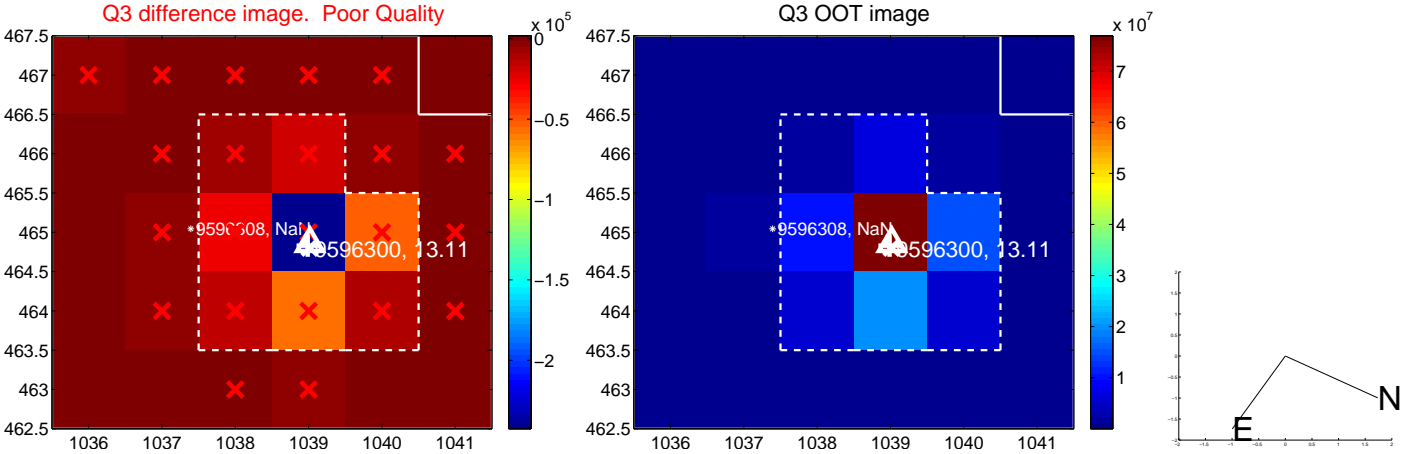
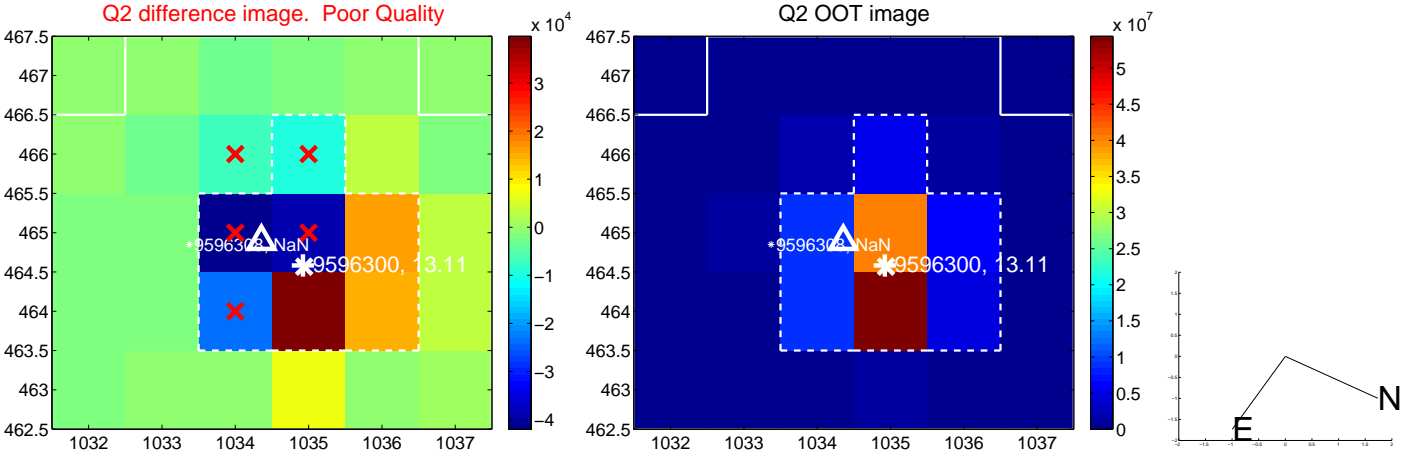
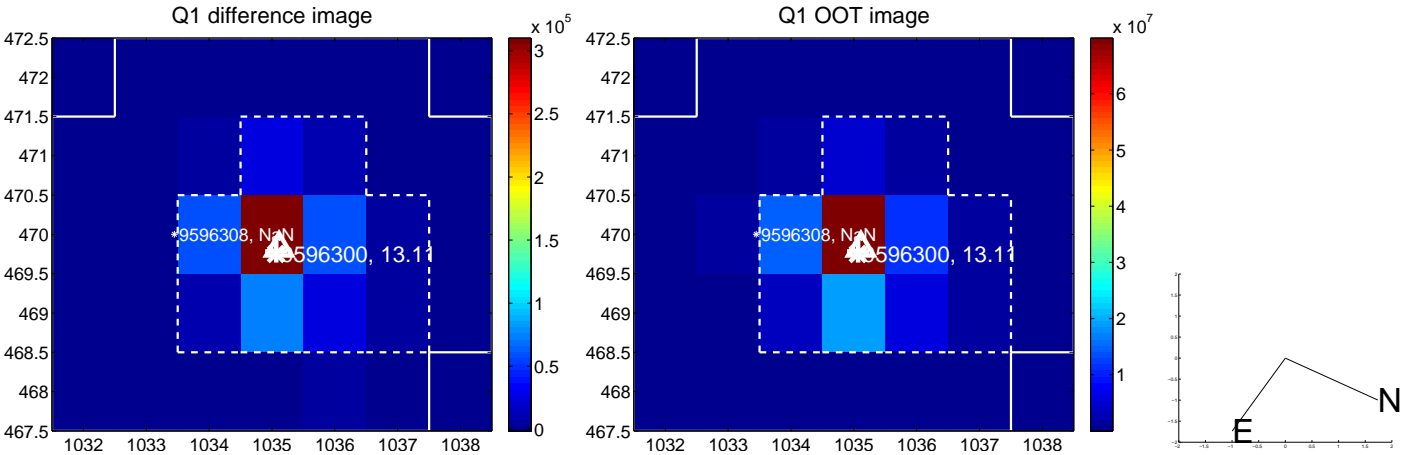
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.156 ± 0.206	0.75	-0.130 ± 0.117	0.085 ± 0.258
PRF-fit source offset from KIC position	0.163 ± 0.127	1.28	-0.163 ± 0.125	0.002 ± 0.290
photometric centroid source offset	0.26 ± 0.08	3.22	-0.24 ± 0.08	-0.09 ± 0.09

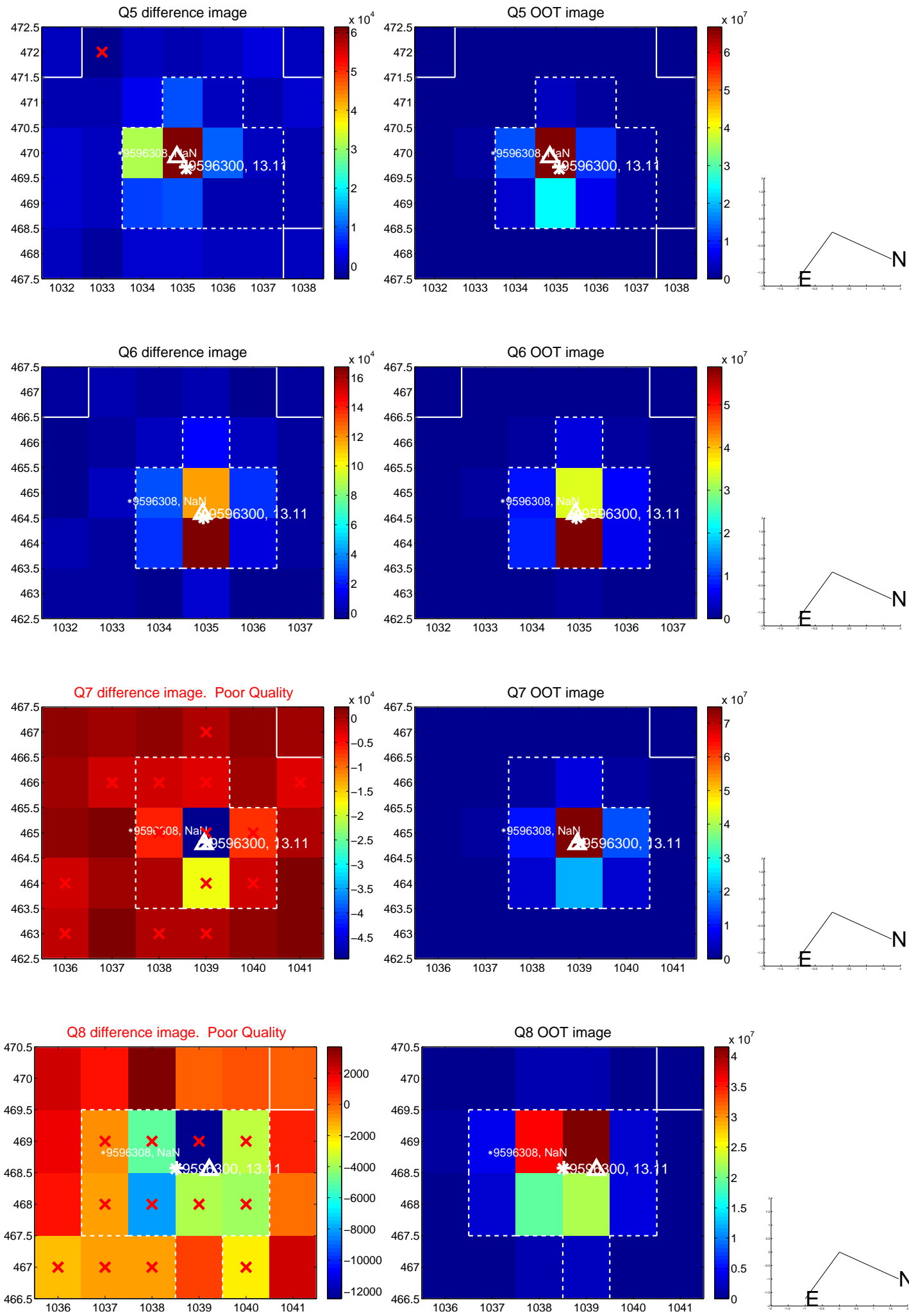


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

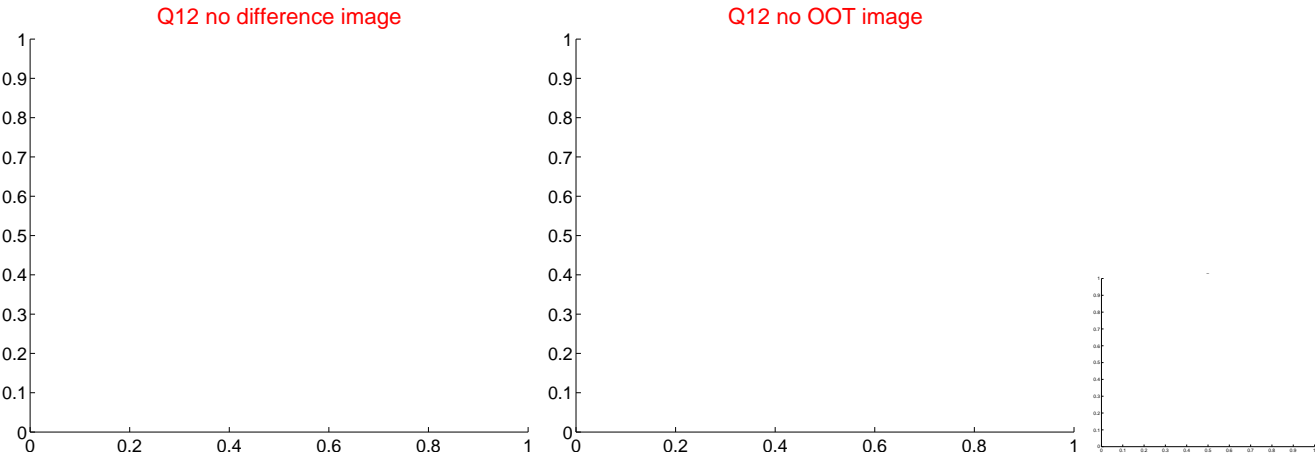
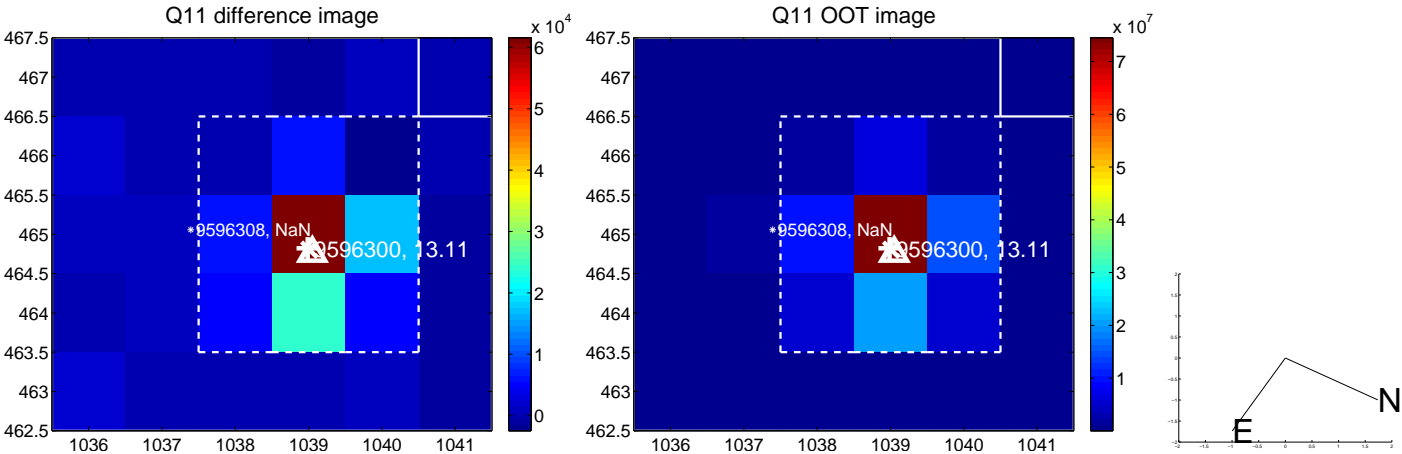
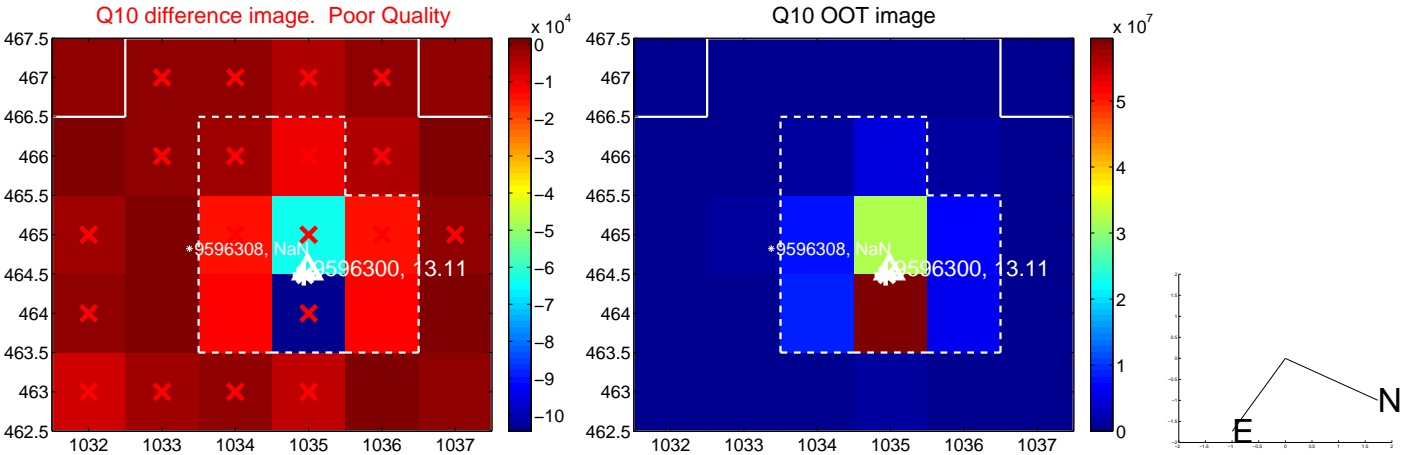
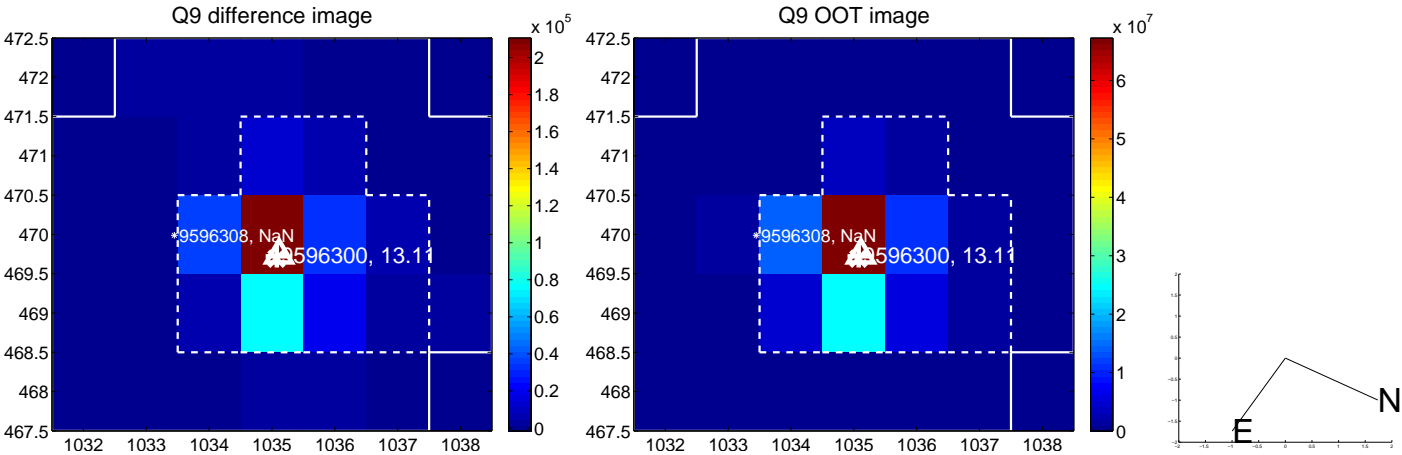
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



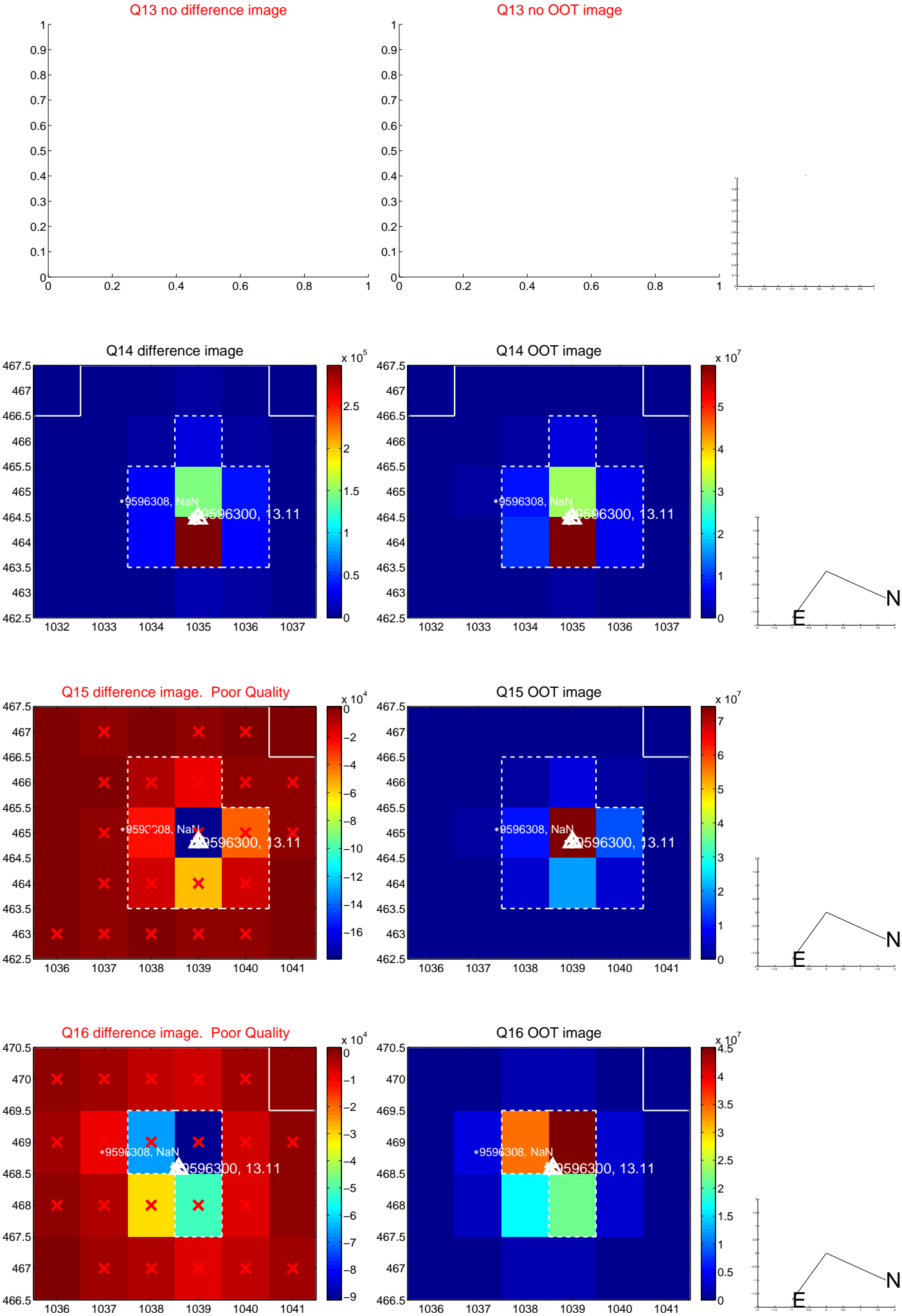
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



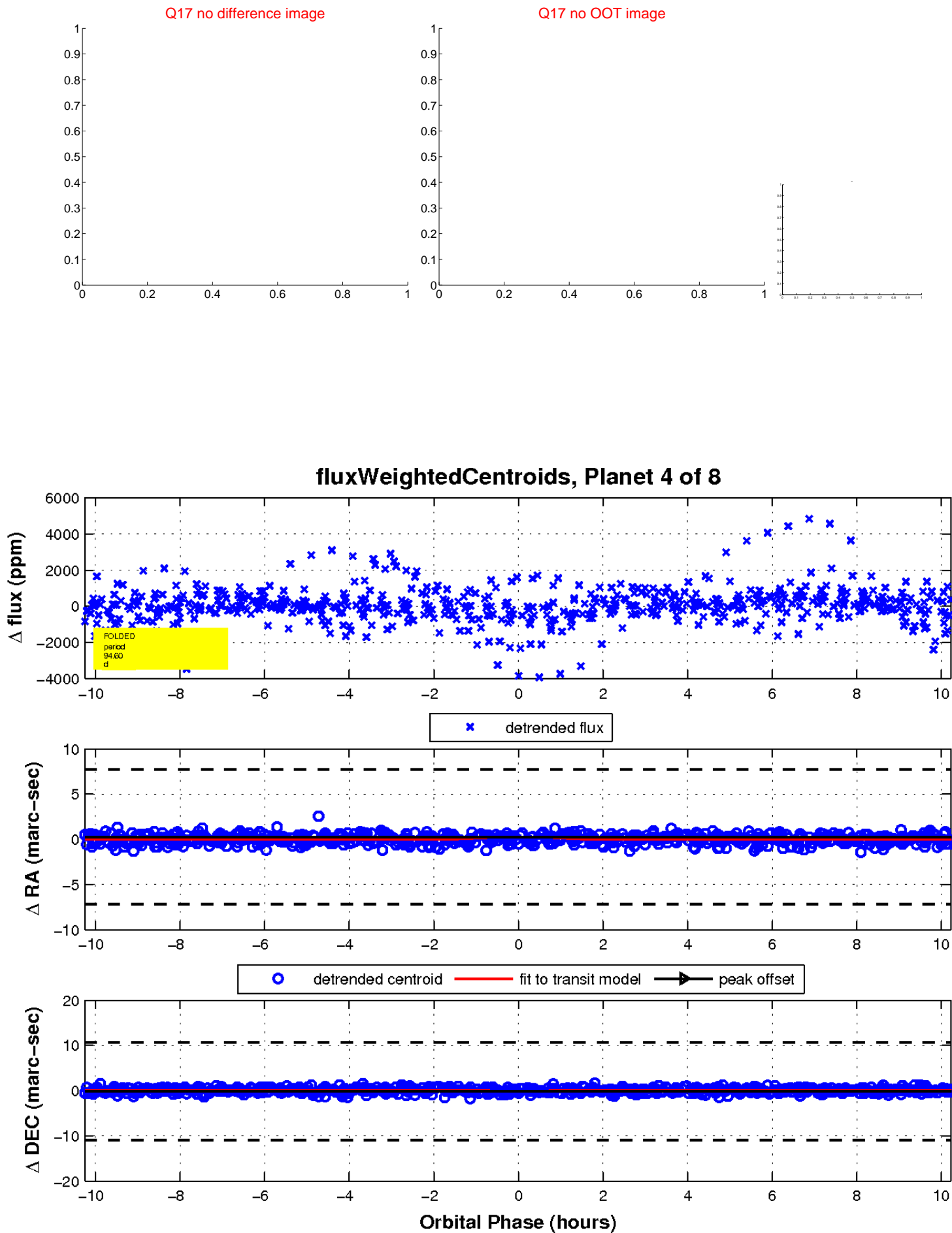
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

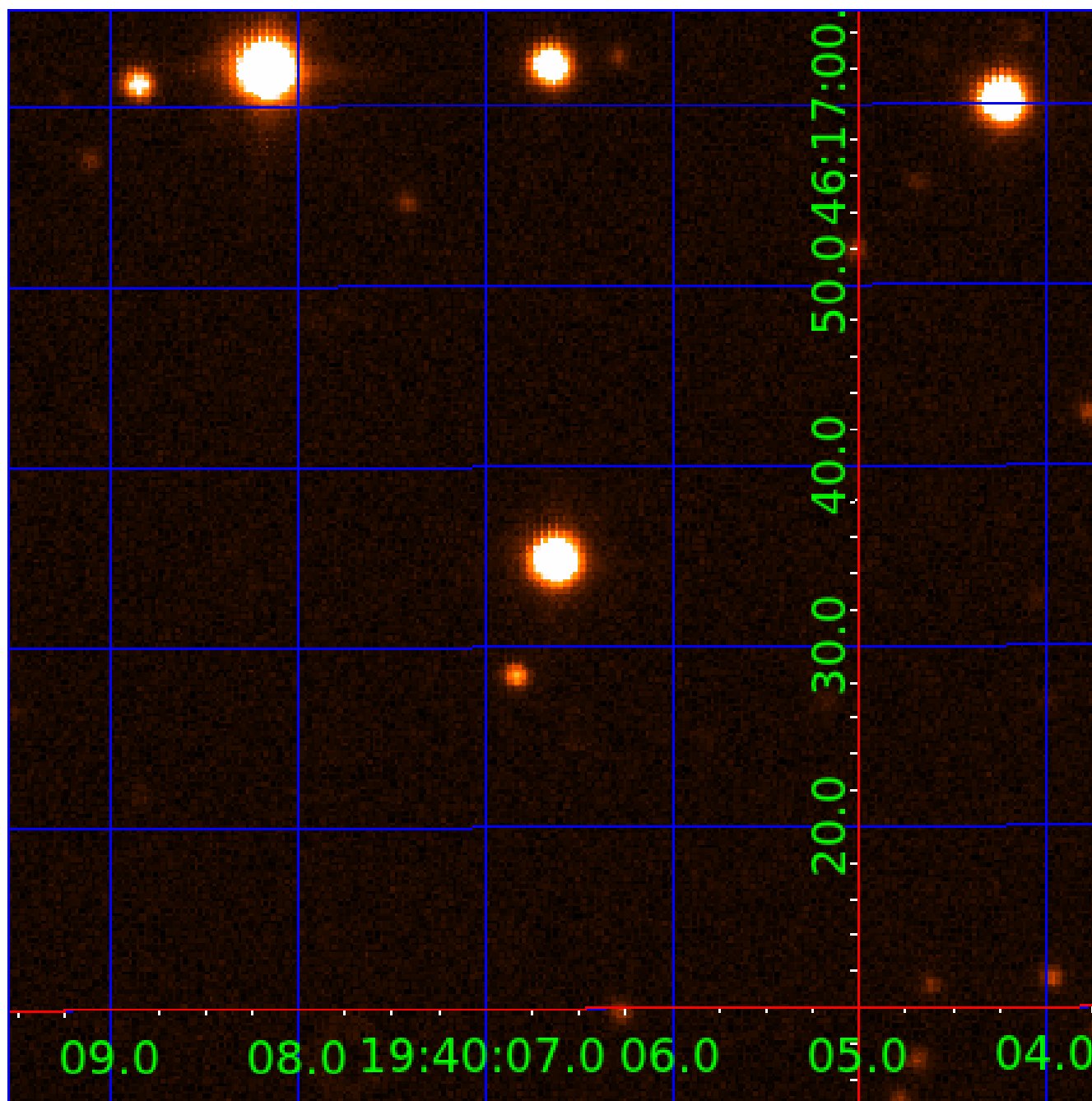


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009596300-01	OBS	No	0.629693	131.556025	0.9	4.130	8.4	0.1	1.70	7571	0.17	30734.05
009596300-02	OBS	No	62.286638	143.822606	2094.6	2.185	16.5	11.0	1.70	7571	14.32	67.18
009596300-03	OBS	No	112.656642	138.493851	728.6	3.671	14.1	3.8	1.70	7571	4.68	30.49
009596300-04	OBS	No	94.602073	138.174543	2650.1	3.417	12.7	12.9	1.70	7571	15.89	38.48
009596300-05	OBS	No	109.204875	141.642702	1824.0	2.300	11.4	9.4	1.70	7571	7.50	31.78
009596300-06	OBS	No	217.903079	272.117949	382.4	0.719	10.1	2.4	1.70	7571	3.60	12.65
009596300-07	OBS	No	217.870671	272.296205	1577.3	28.757	7.9	8.5	1.70	7571	6.81	12.65
009596300-08	OBS	No	46.012266	144.537196	1315.6	1.963	9.3	10.2	1.70	7571	6.74	100.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009596300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009596300-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009596300-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009596300-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009596300-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009596300-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009596300-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
009596300-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

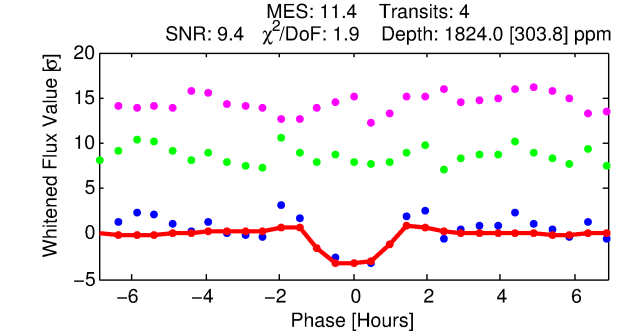
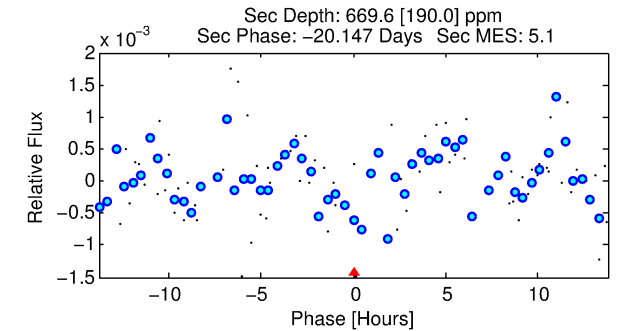
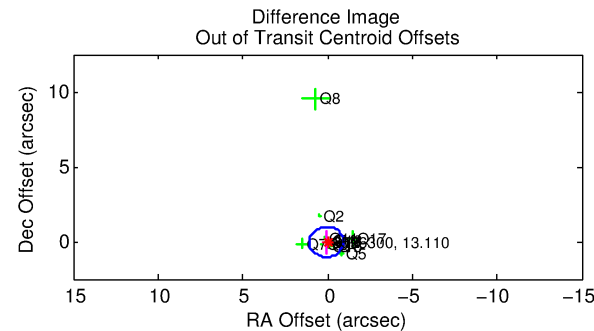
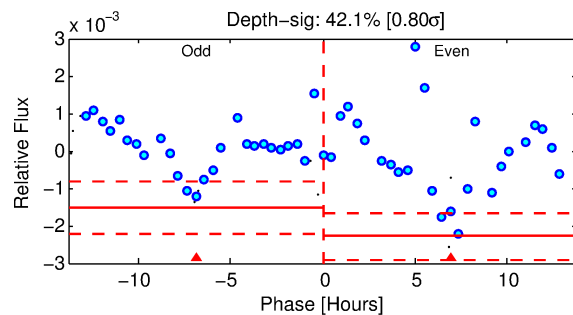
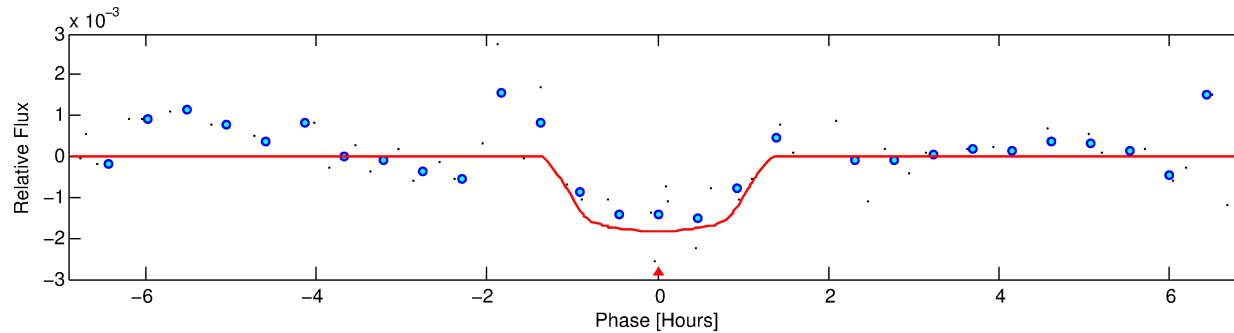
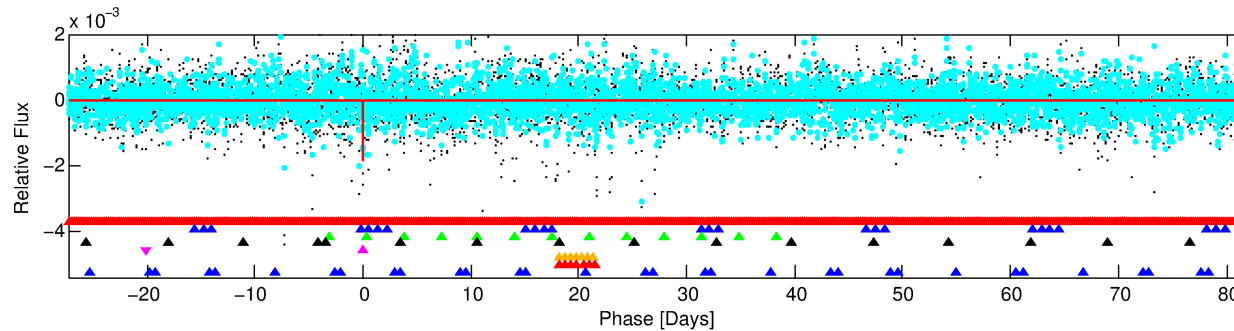
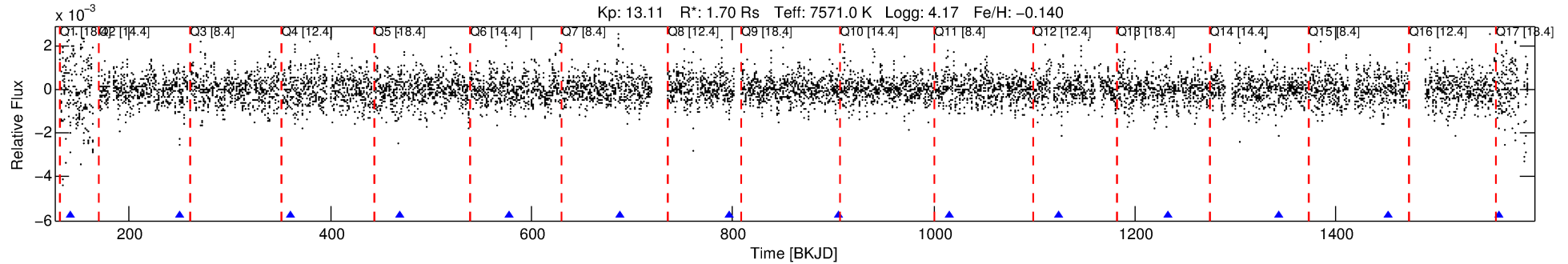
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009596300-05

No Significant Match Found

DV One-Page Summary

KIC: 9596300 Candidate: 5 of 8 Period: 109.205 d



DV Fit Results:

Period = 109.20488 [0.00128] d
Epoch = 141.6427 [0.0093] BKJD
Rp/R* = 0.0405 [0.3061]
a/R* = 335.28 [14592.11]
b = 0.48 [70.58]
Seff = 31.78 [12.77]
Teq = 605 [61] K
Rp = 7.50 [56.71] Re
a = 0.5162 [0.1329] AU
Ag = 1745.65 [26393.22] [0.07 σ]
Teffp = 6050 [22865] K [0.24 σ]

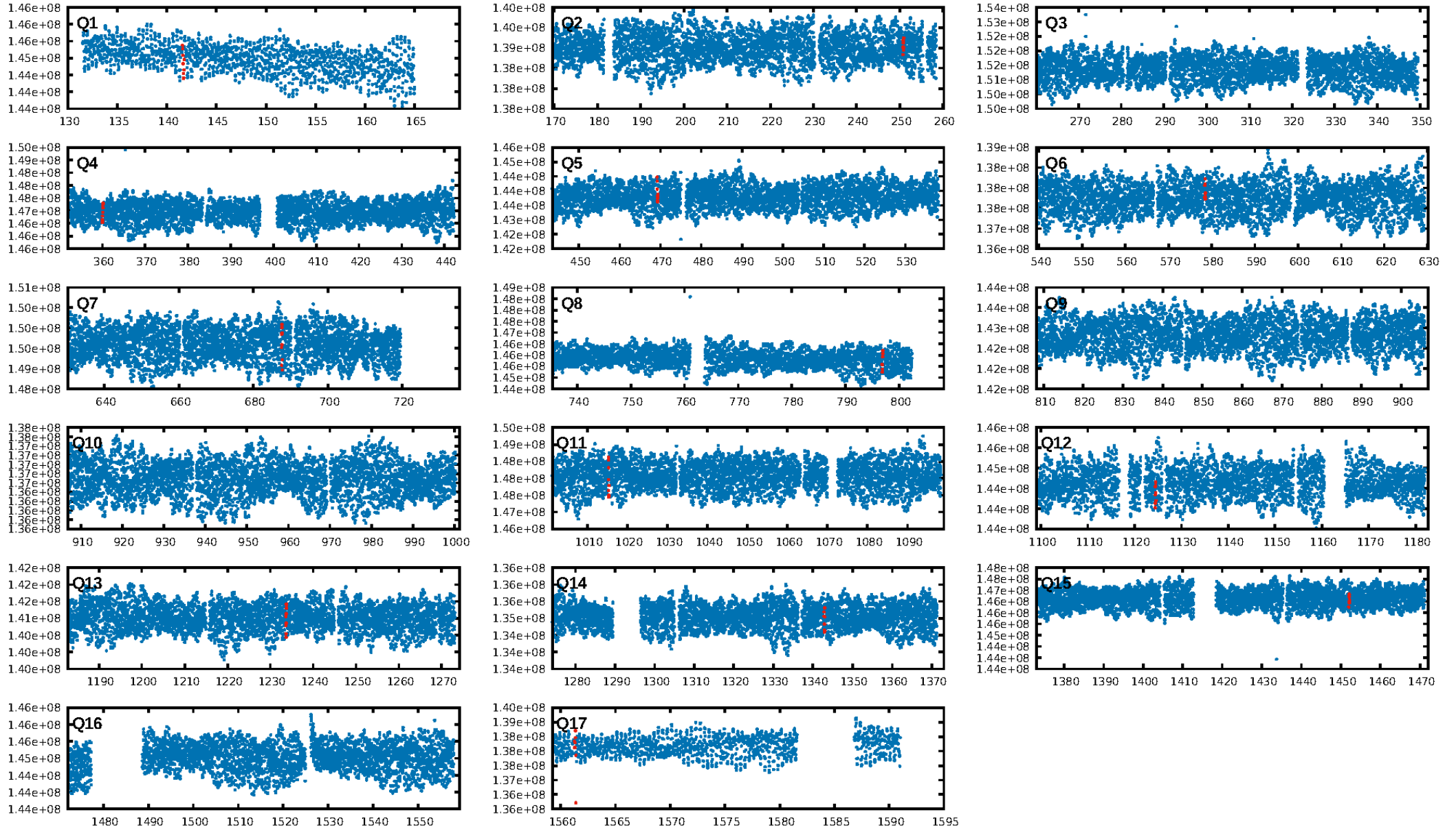
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [85.09 σ]
LongPeriod-sig: 100.0% [19.12 σ]
ModelChiSquare2-sig: 1.7%
ModelChiSquareGof-sig: 90.6%
Bootstrap-pfa: 6.95e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.7634
Centroid-sig: 10.0%
Centroid-so: 0.252 arcsec [2.00 σ]
OotOffset-rm: 0.080 arcsec [0.24 σ]
KicOffset-rm: 0.071 arcsec [0.11 σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.00 [0/13]

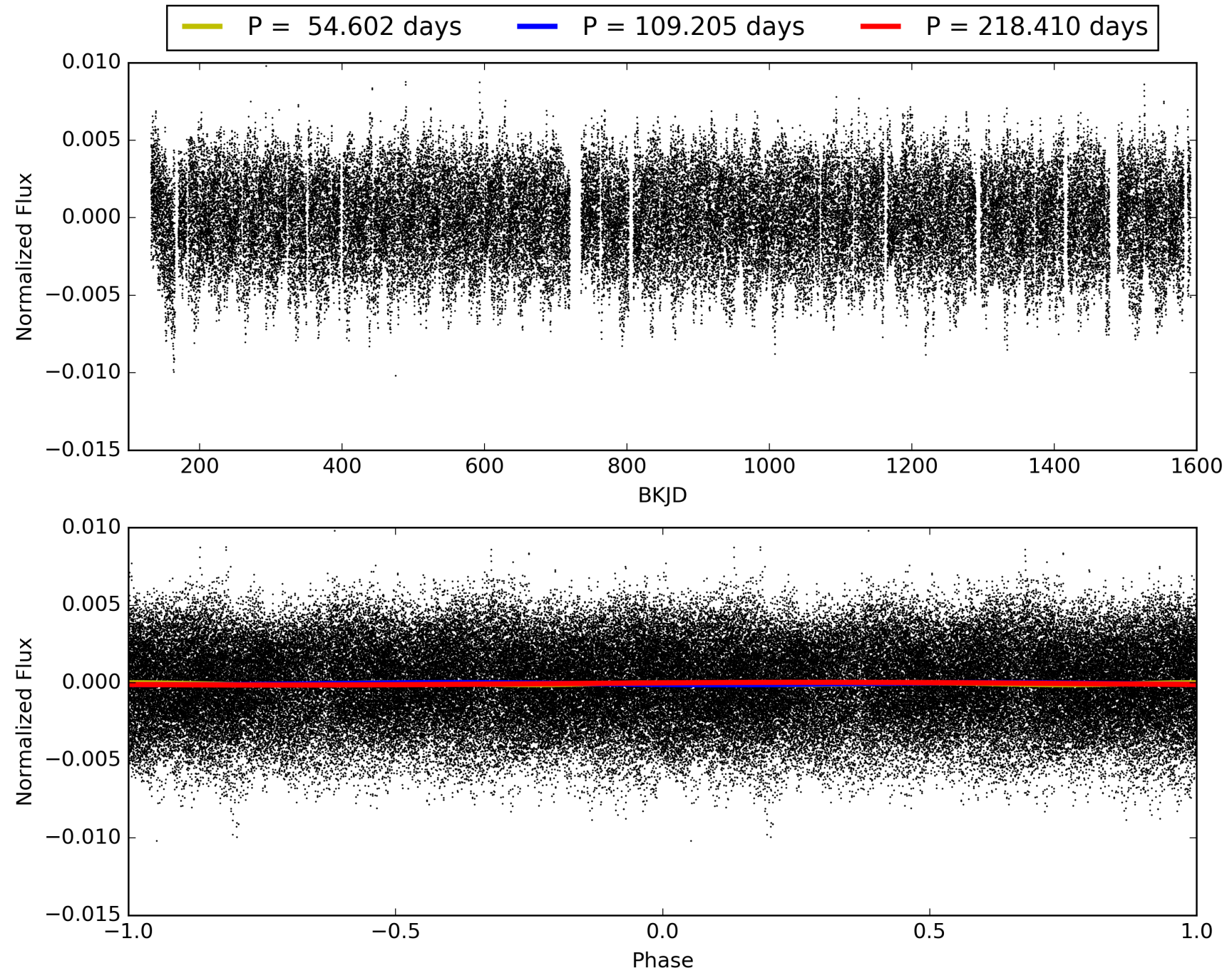
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:11:24 Z

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

TCE 009596300-05, PDC Light Curves

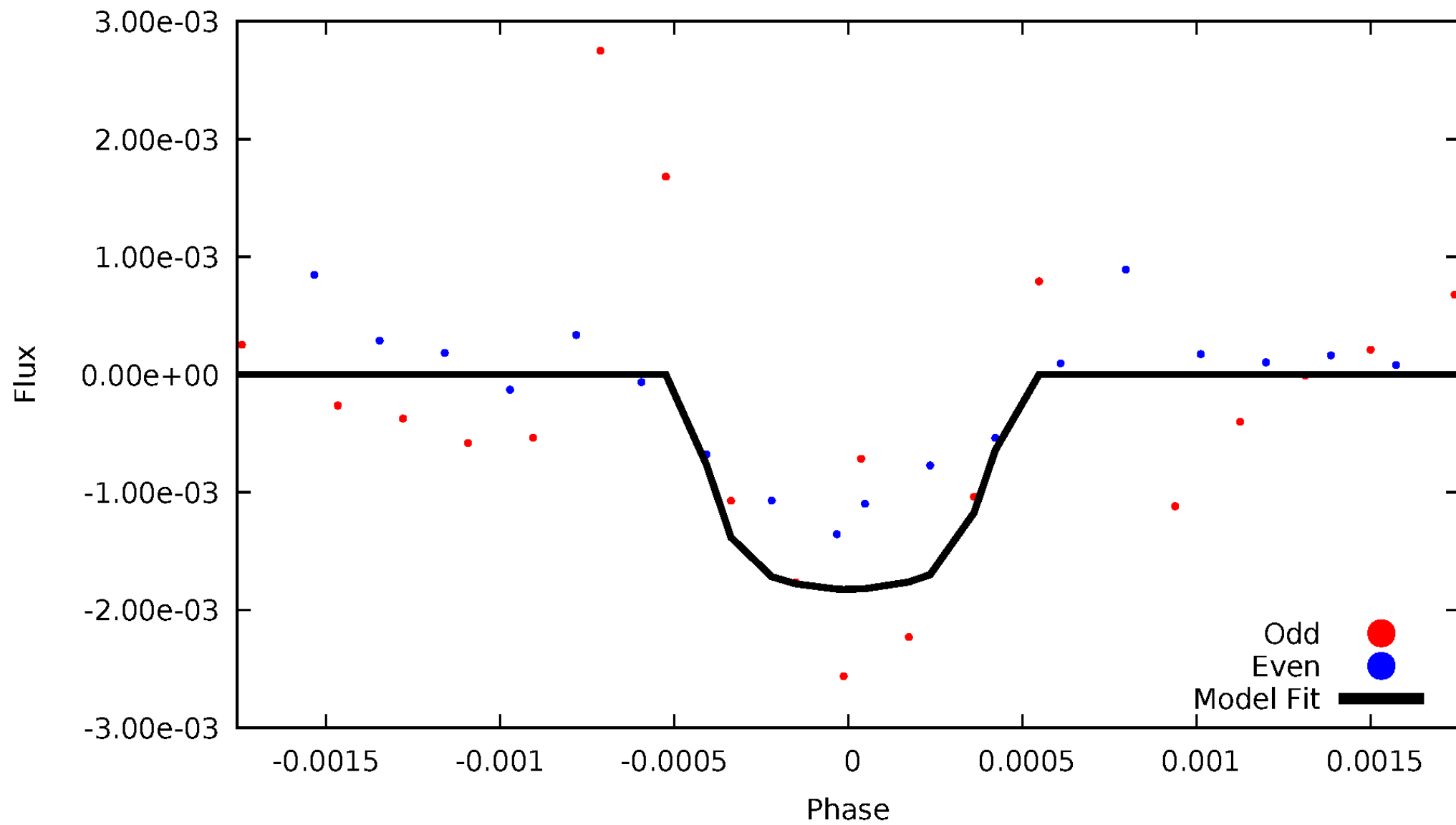


TCE 009596300-05



DV Odd/Even

TCE 009596300-05

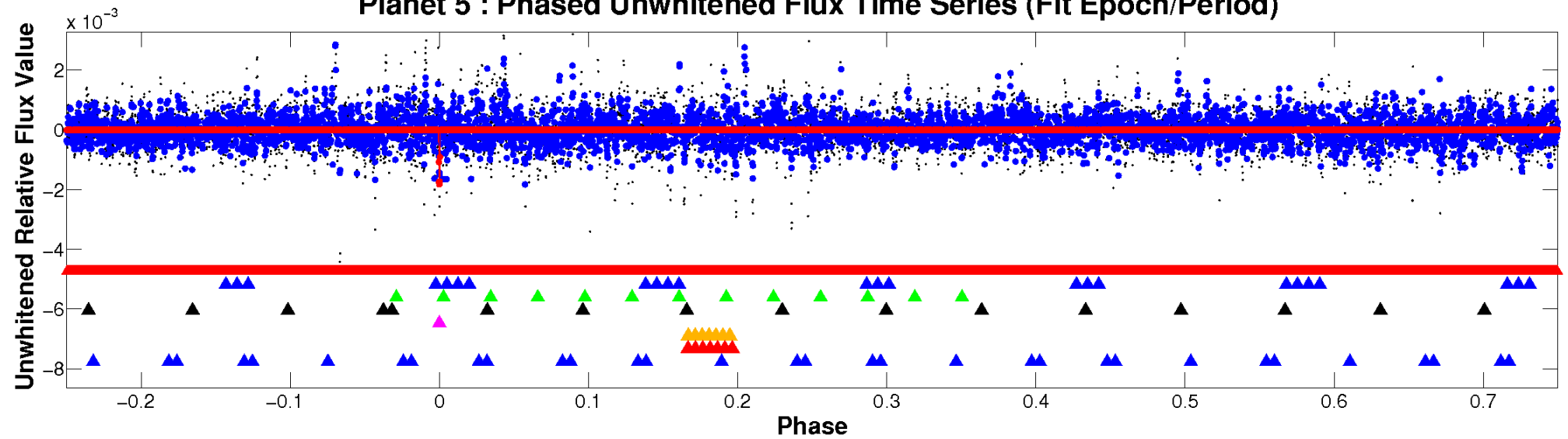


ALT Odd/Even

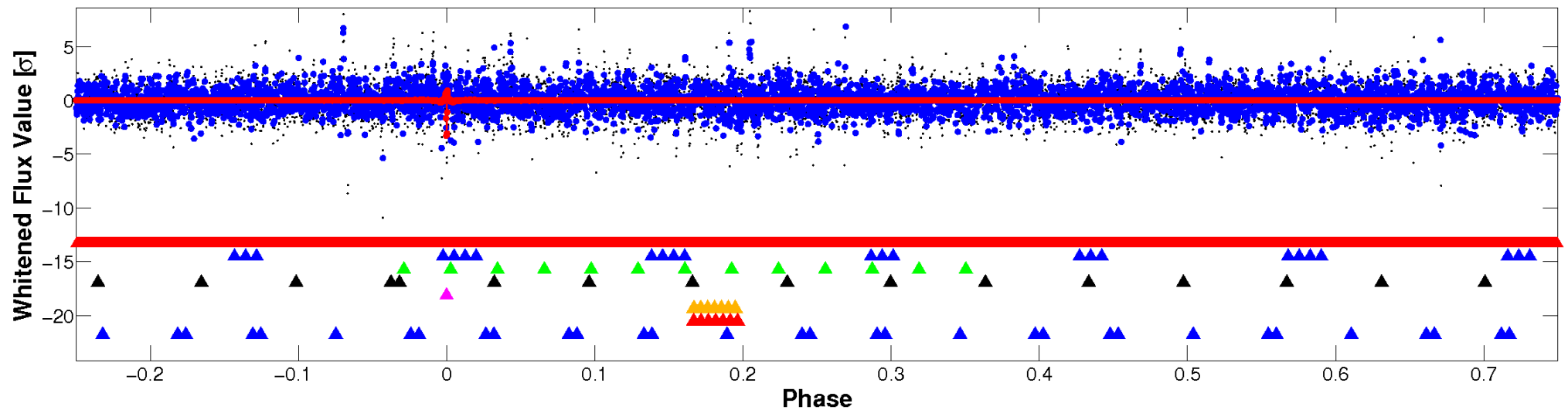
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

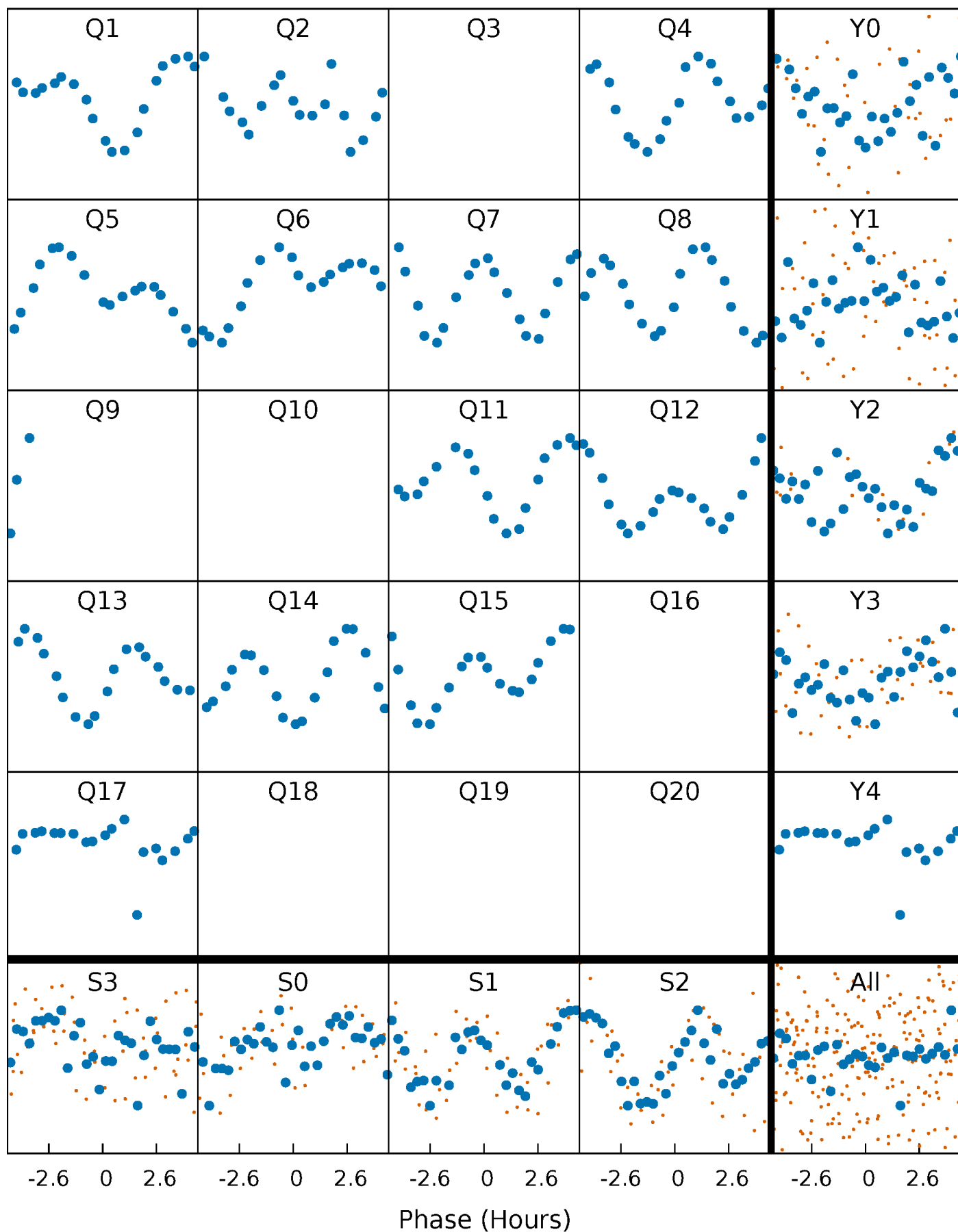


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



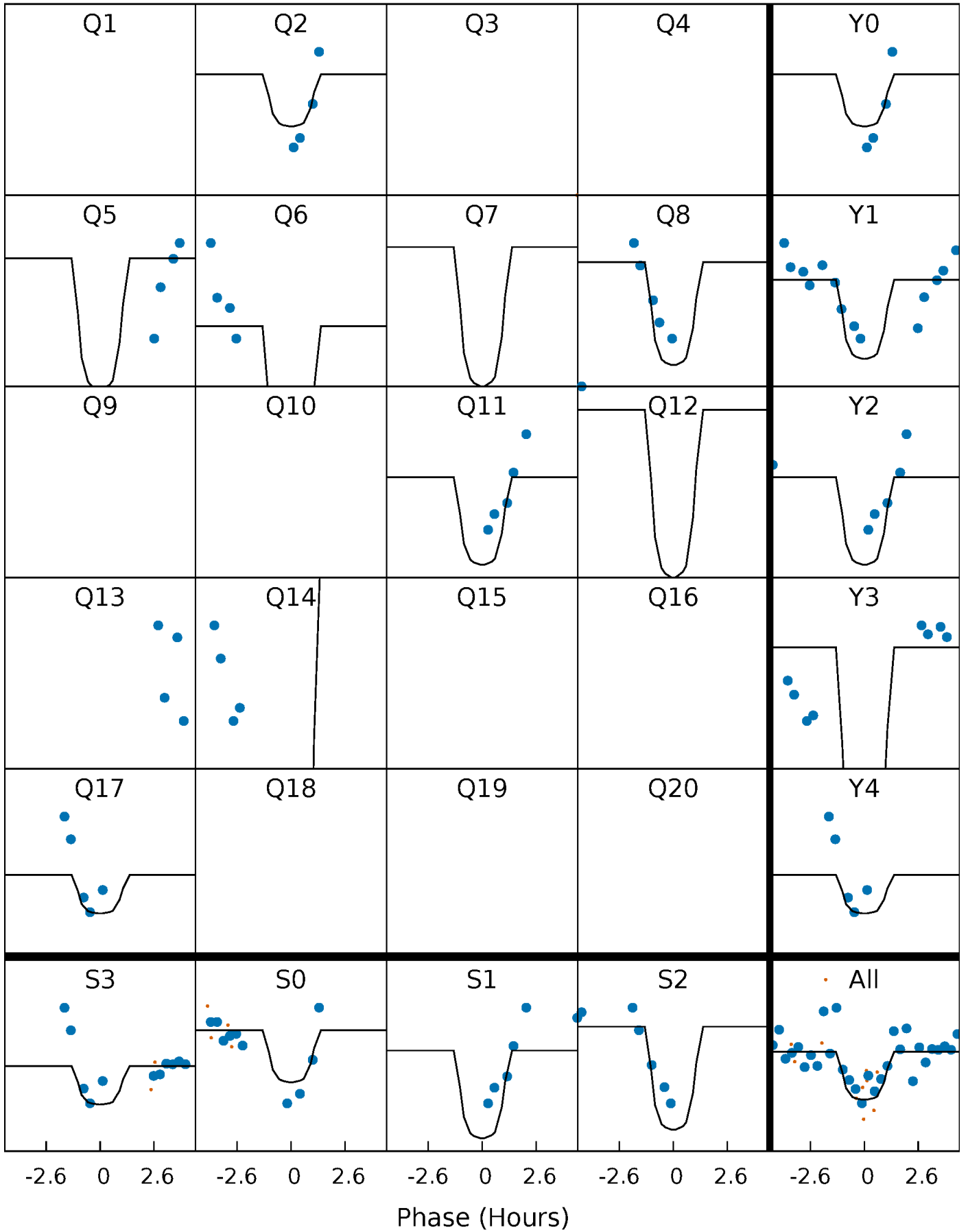
PDC Quarter-Phased Transit Curves

TCE 009596300-05 $P=109.204875$ Days $T_0=141.642702$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009596300-05 $P=109.204875$ Days $T_0=141.642702$ (BKJD)

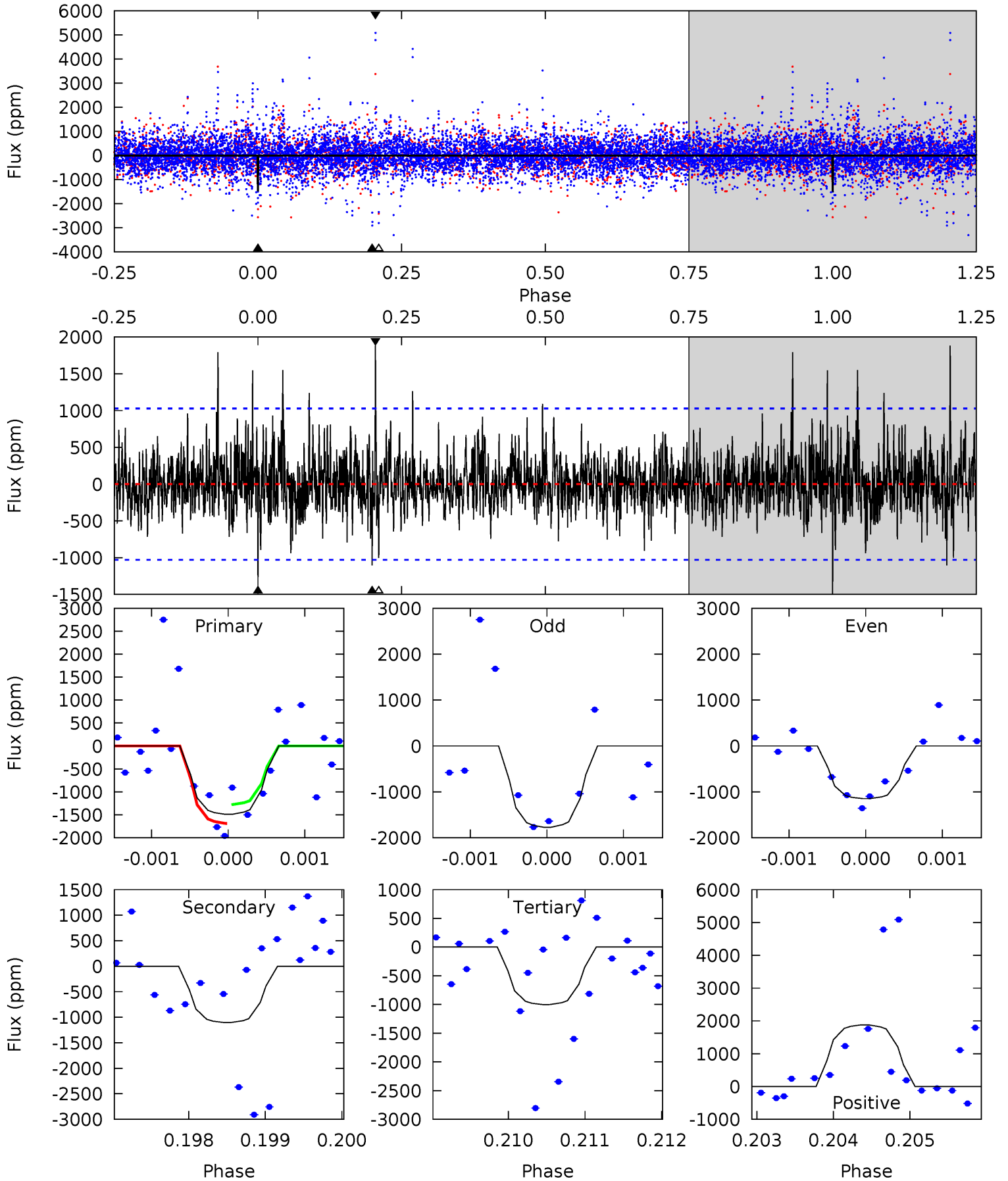


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009596300-05, P = 109.204875 Days, E = 32.437827 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.94	5.89	5.35	10.0	5.48	3.34	1.64	2.59	-2.09	0.54	-4.14	1.58	1.14	0.56	1.09



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009596300

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7571^{+211}_{-316}	$4.166^{+0.105}_{-0.195}$	$-0.140^{+0.200}_{-0.350}$	$1.696^{+0.533}_{-0.328}$	$1.535^{+0.219}_{-0.219}$	$0.443^{+0.264}_{-0.225}$
	+3%/-4%	+3%/-5%	+143%/-250%	+31%/-19%	+14%/-14%	+60%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009596300-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1104±188	$41.02^{+48.99}_{-28.88}$	857^{+62}_{-57}	3407^{+2094}_{-674}	92^{+1033}_{-72}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

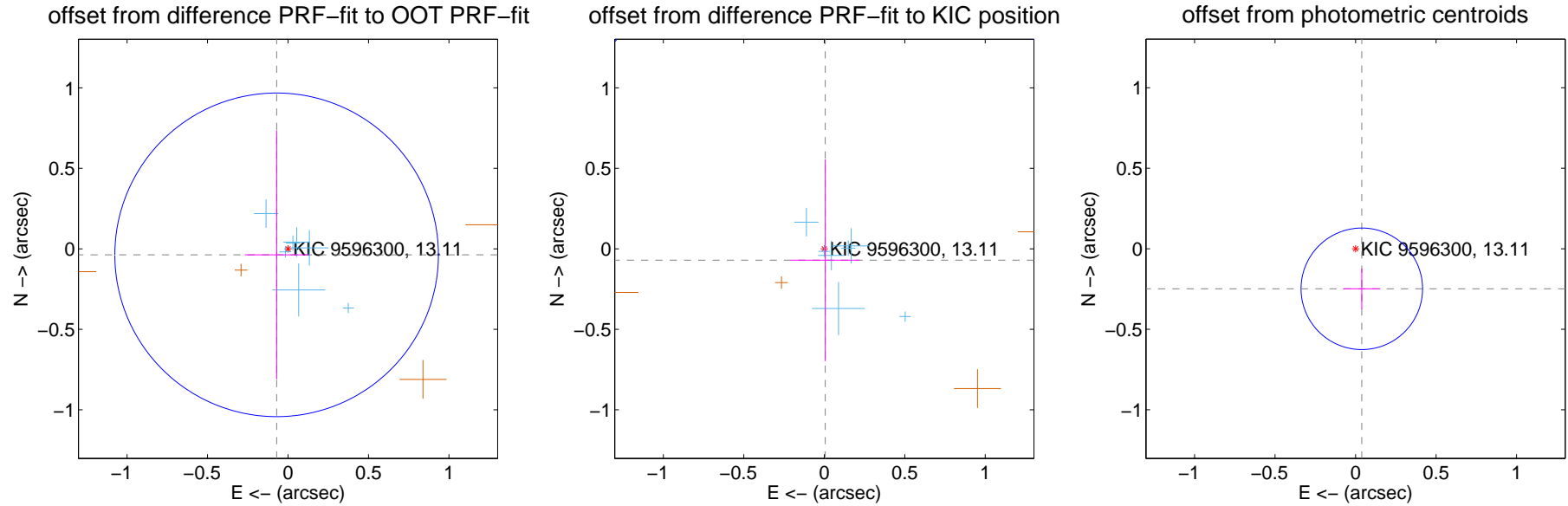
DV Centroid Data

Supplemental centroid analysis for 009596300-05. Kepler magnitude: 13.11. Transit SNR 9.41

There are 7 quarters with good PRF difference image offsets

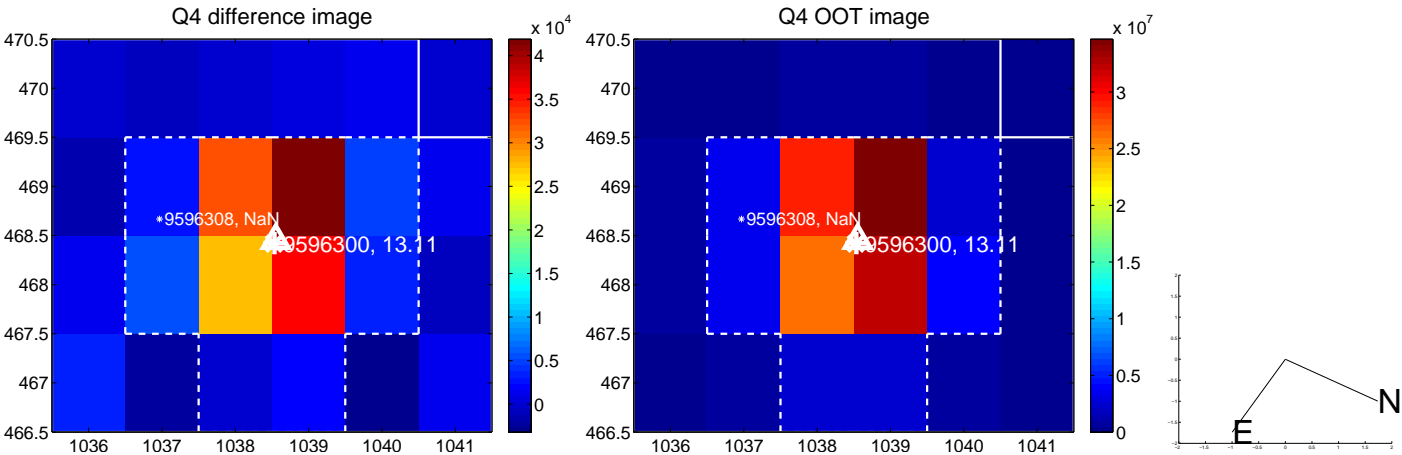
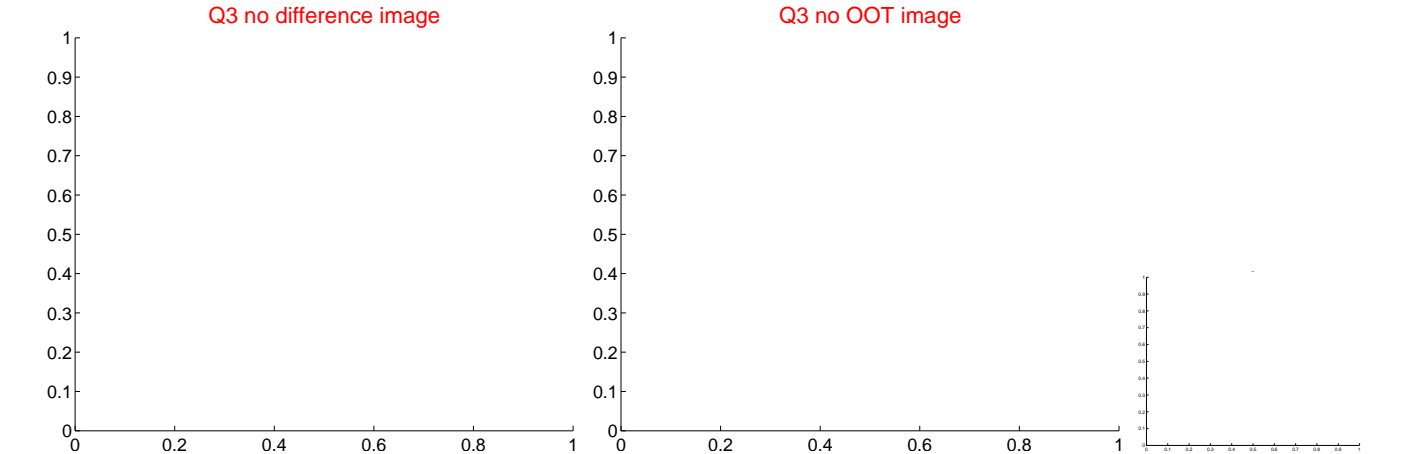
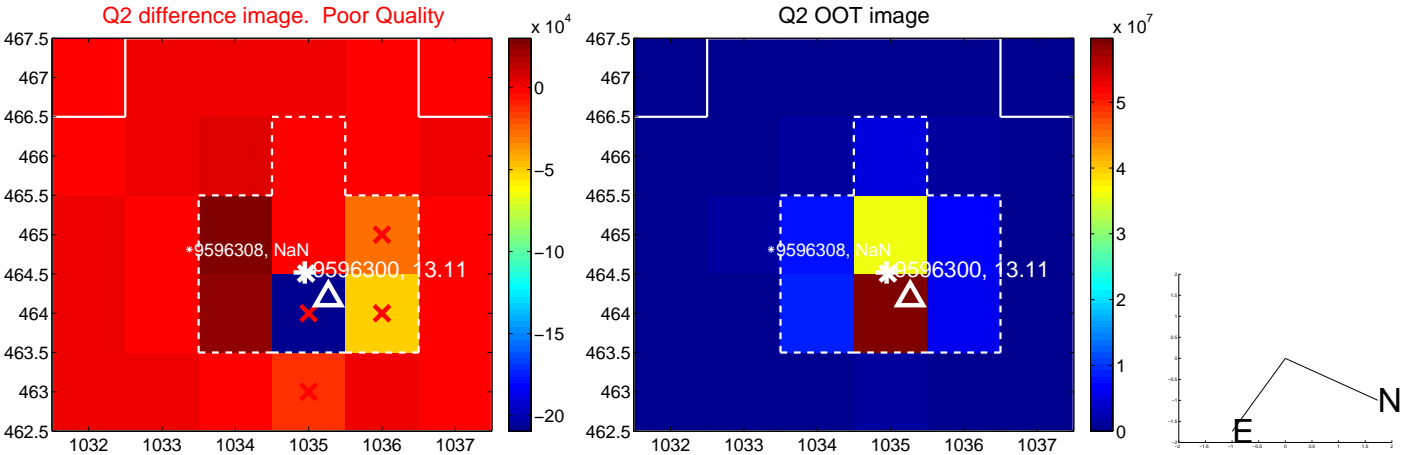
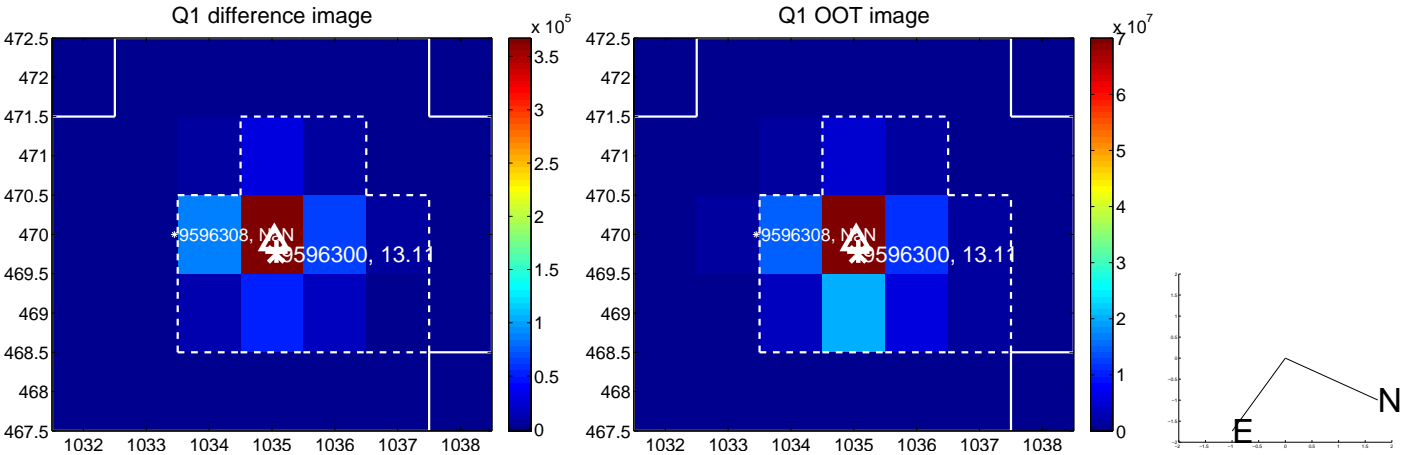
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.080 ± 0.335	0.24	0.071 ± 0.198	-0.037 ± 0.773
PRF-fit source offset from KIC position	0.071 ± 0.628	0.11	-0.006 ± 0.214	-0.071 ± 0.627
photometric centroid source offset	0.25 ± 0.13	2.00	-0.04 ± 0.12	-0.25 ± 0.13

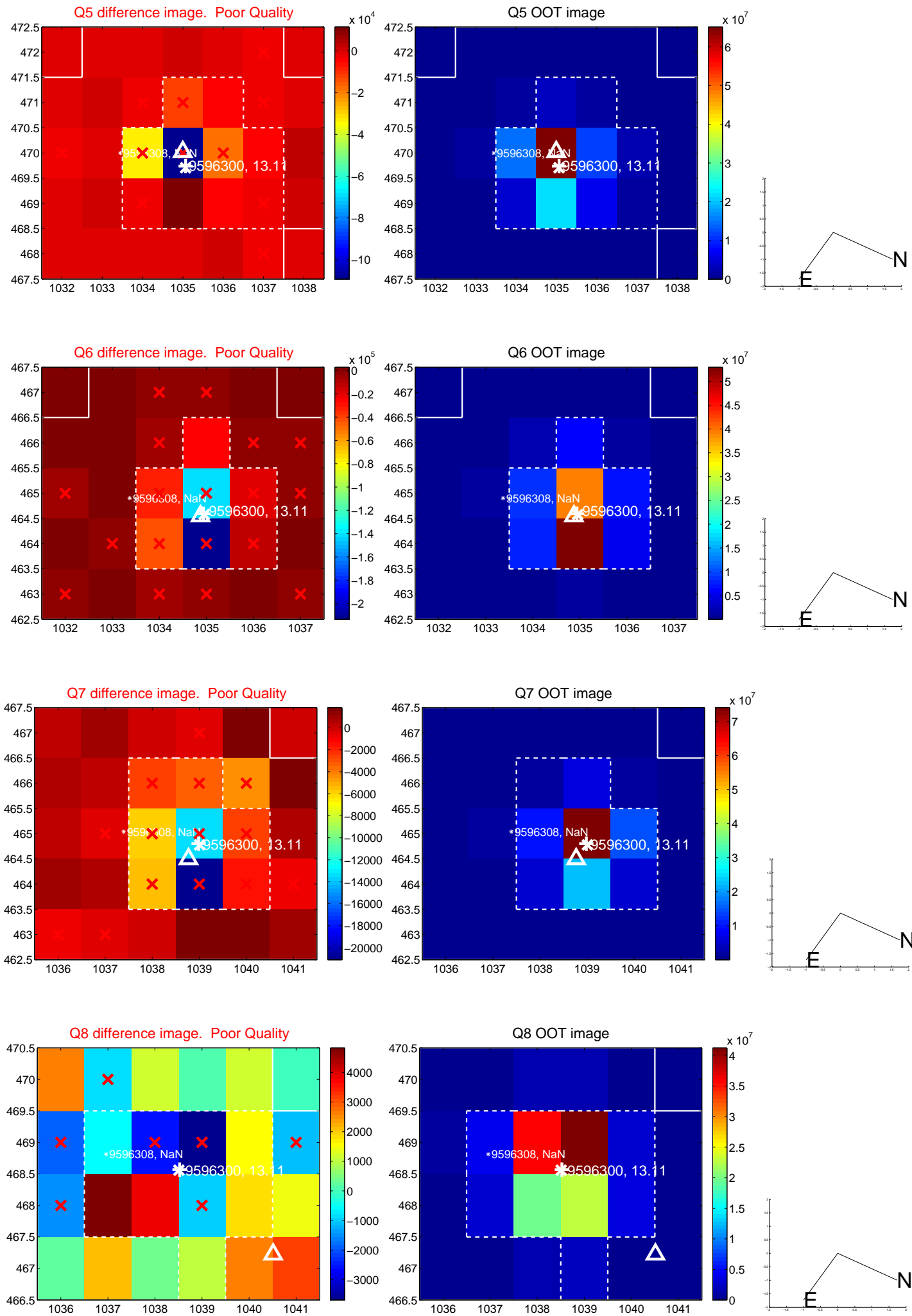


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

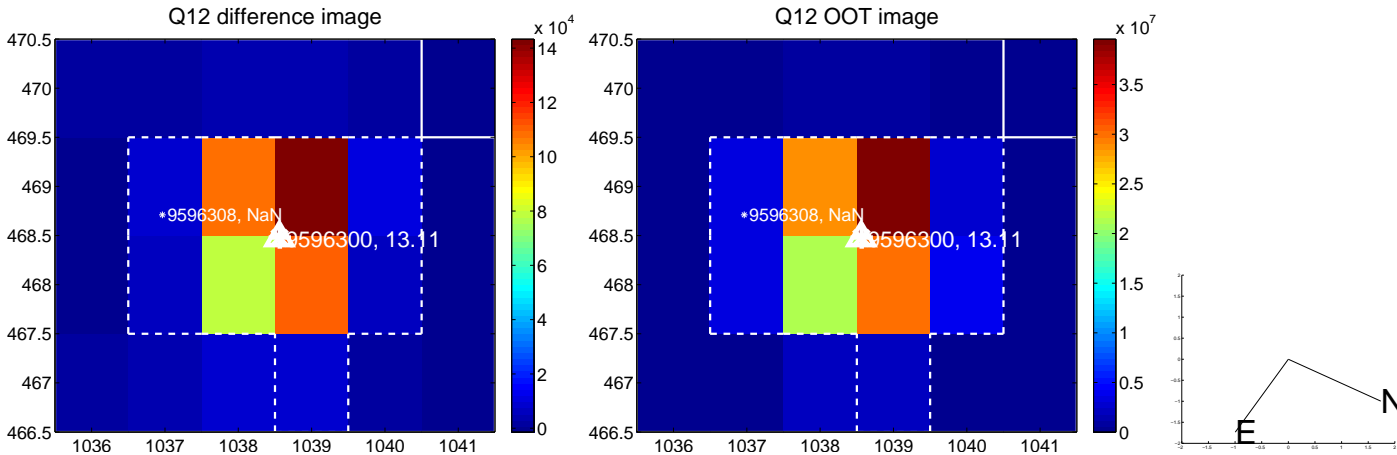
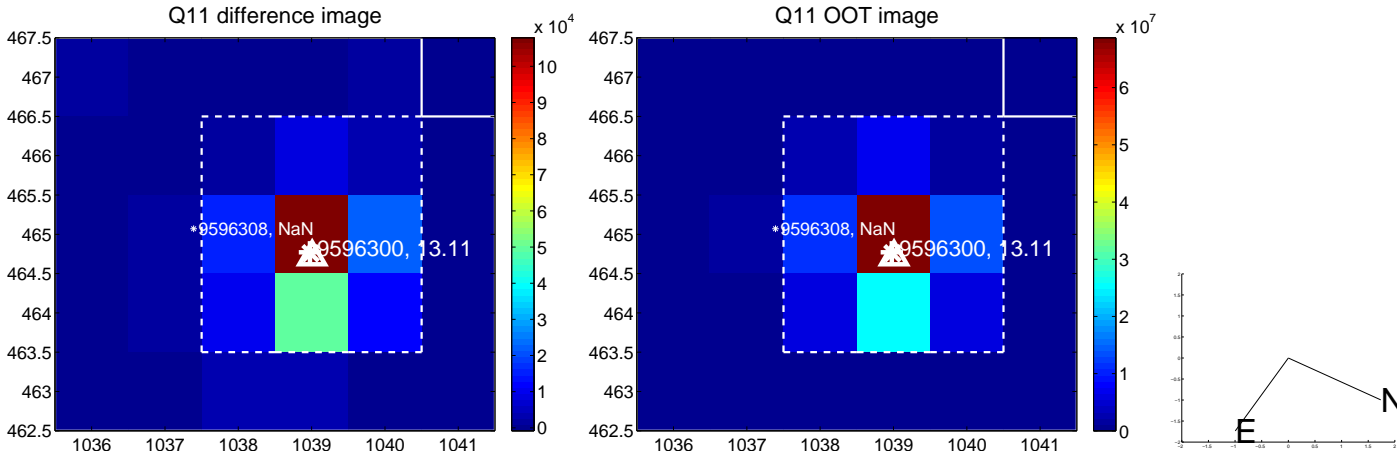
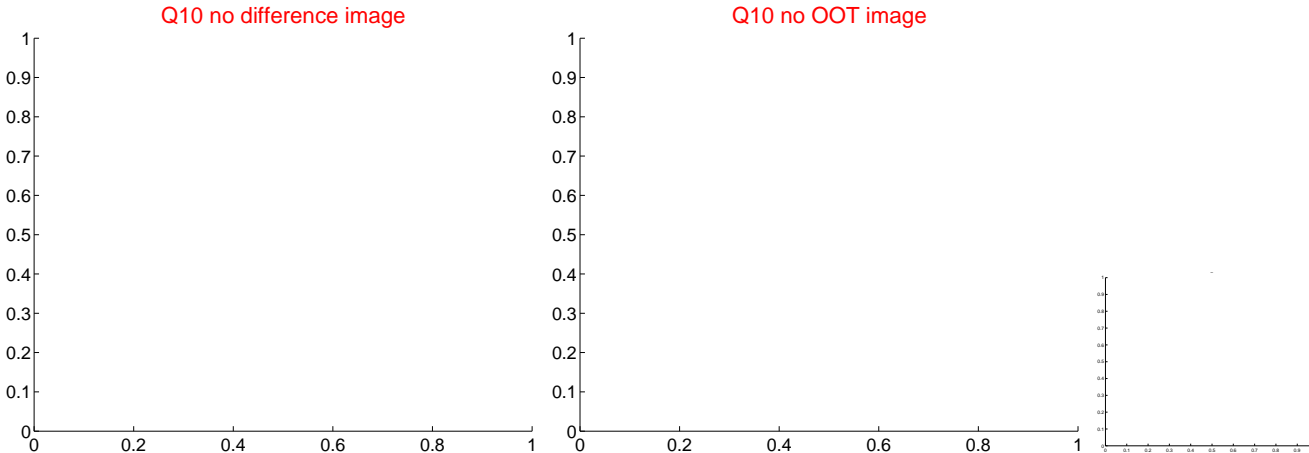
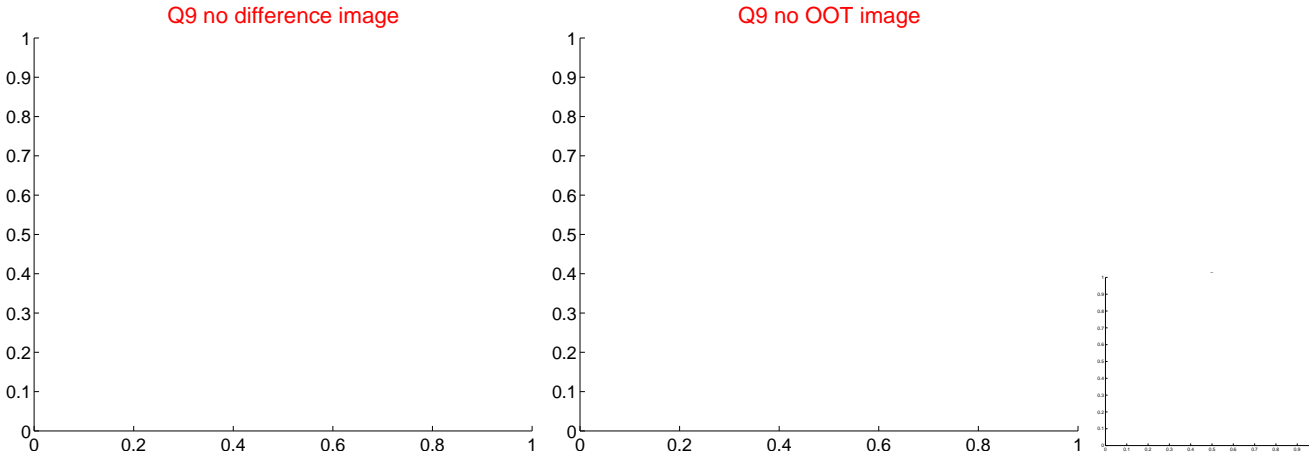
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



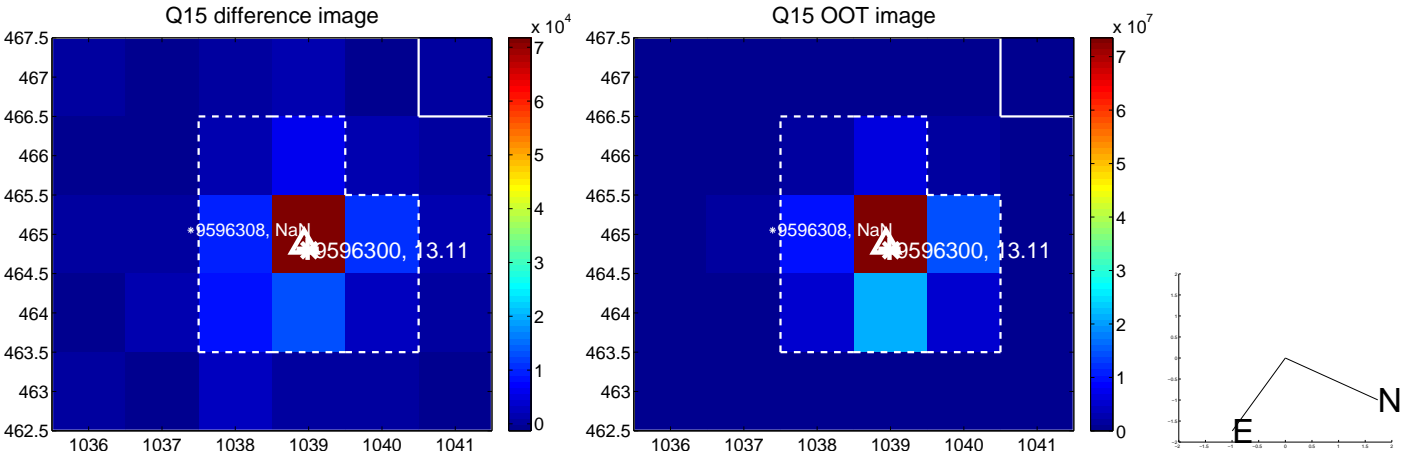
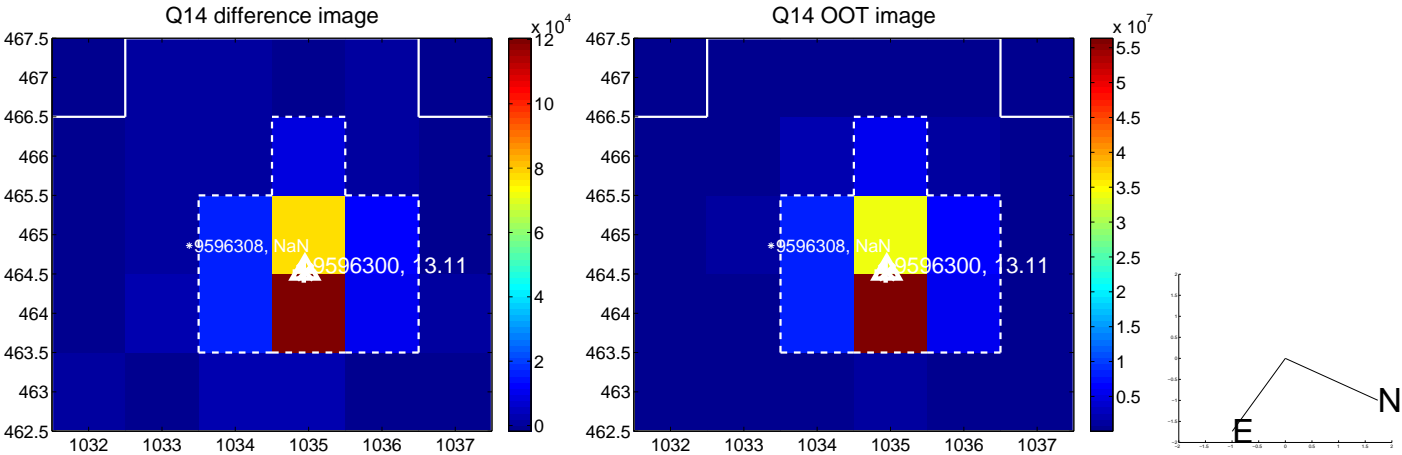
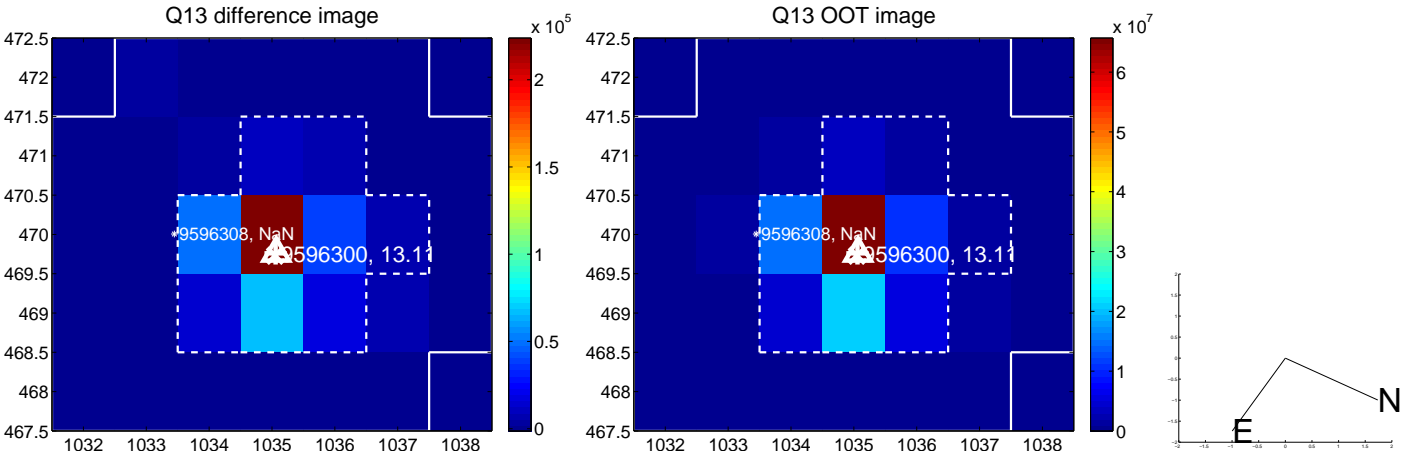
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



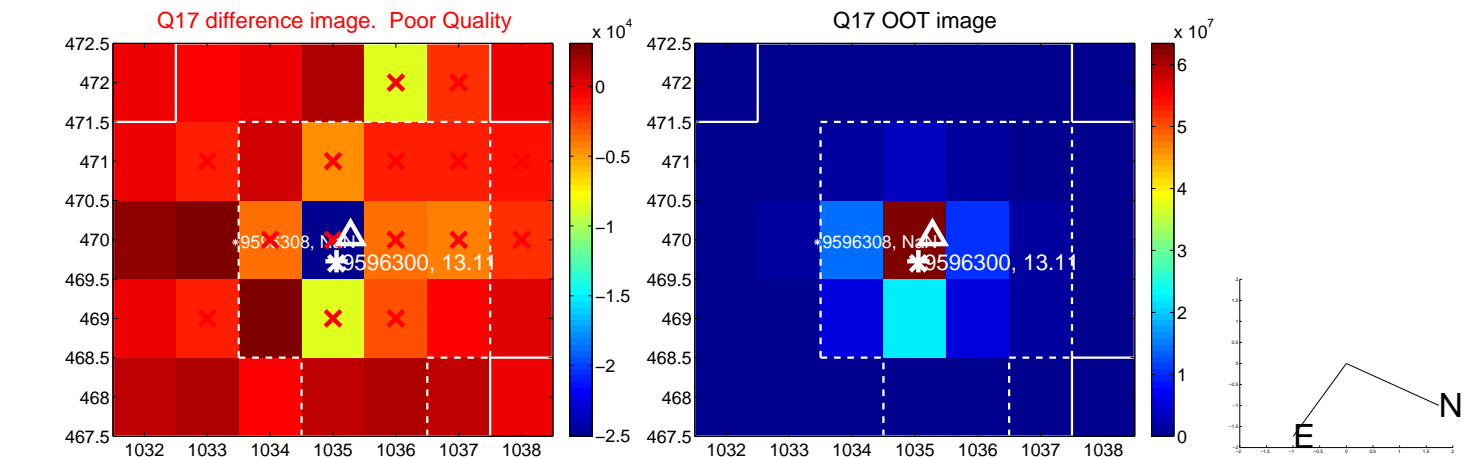
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



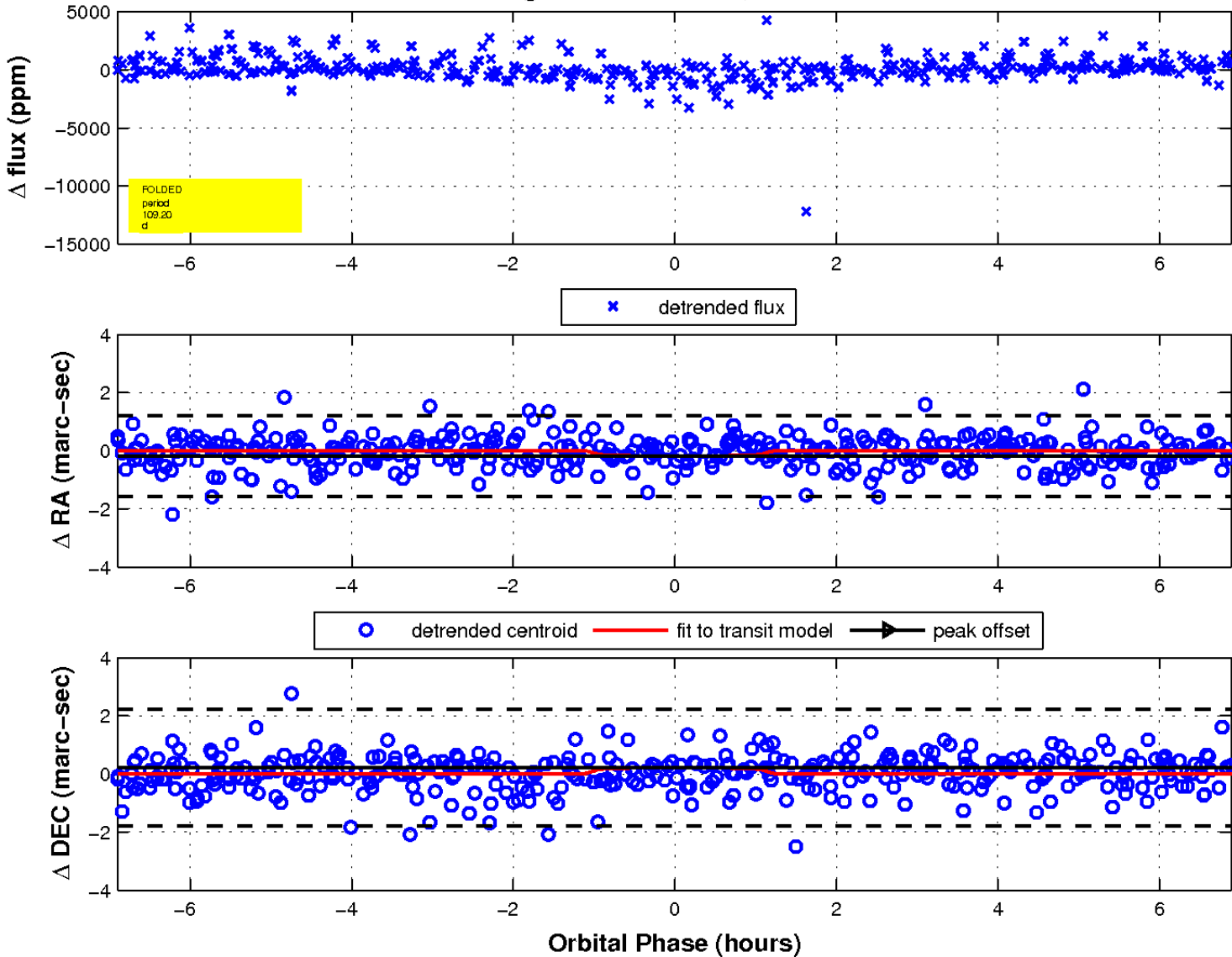
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

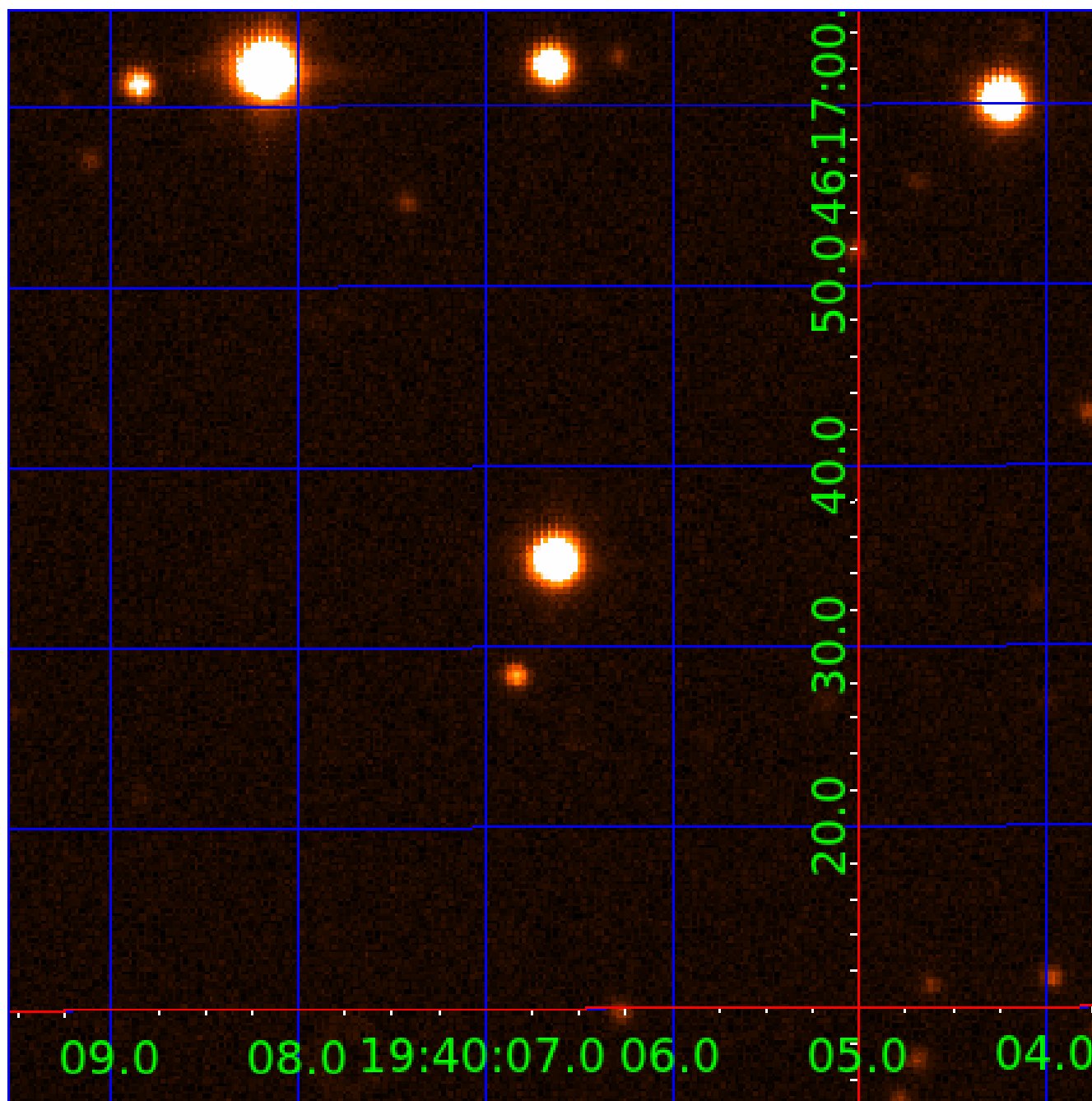


fluxWeightedCentroids, Planet 5 of 8



UKIRT Image

Declination



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})
009596300-01	OBS	No	0.629693	131.556025	0.9	4.130	8.4	0.1	1.70	7571	0.17	30734.05
009596300-02	OBS	No	62.286638	143.822606	2094.6	2.185	16.5	11.0	1.70	7571	14.32	67.18
009596300-03	OBS	No	112.656642	138.493851	728.6	3.671	14.1	3.8	1.70	7571	4.68	30.49
009596300-04	OBS	No	94.602073	138.174543	2650.1	3.417	12.7	12.9	1.70	7571	15.89	38.48
009596300-05	OBS	No	109.204875	141.642702	1824.0	2.300	11.4	9.4	1.70	7571	7.50	31.78
009596300-06	OBS	No	217.903079	272.117949	382.4	0.719	10.1	2.4	1.70	7571	3.60	12.65
009596300-07	OBS	No	217.870671	272.296205	1577.3	28.757	7.9	8.5	1.70	7571	6.81	12.65
009596300-08	OBS	No	46.012266	144.537196	1315.6	1.963	9.3	10.2	1.70	7571	6.74	100.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009596300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009596300-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009596300-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009596300-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009596300-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009596300-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009596300-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
009596300-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

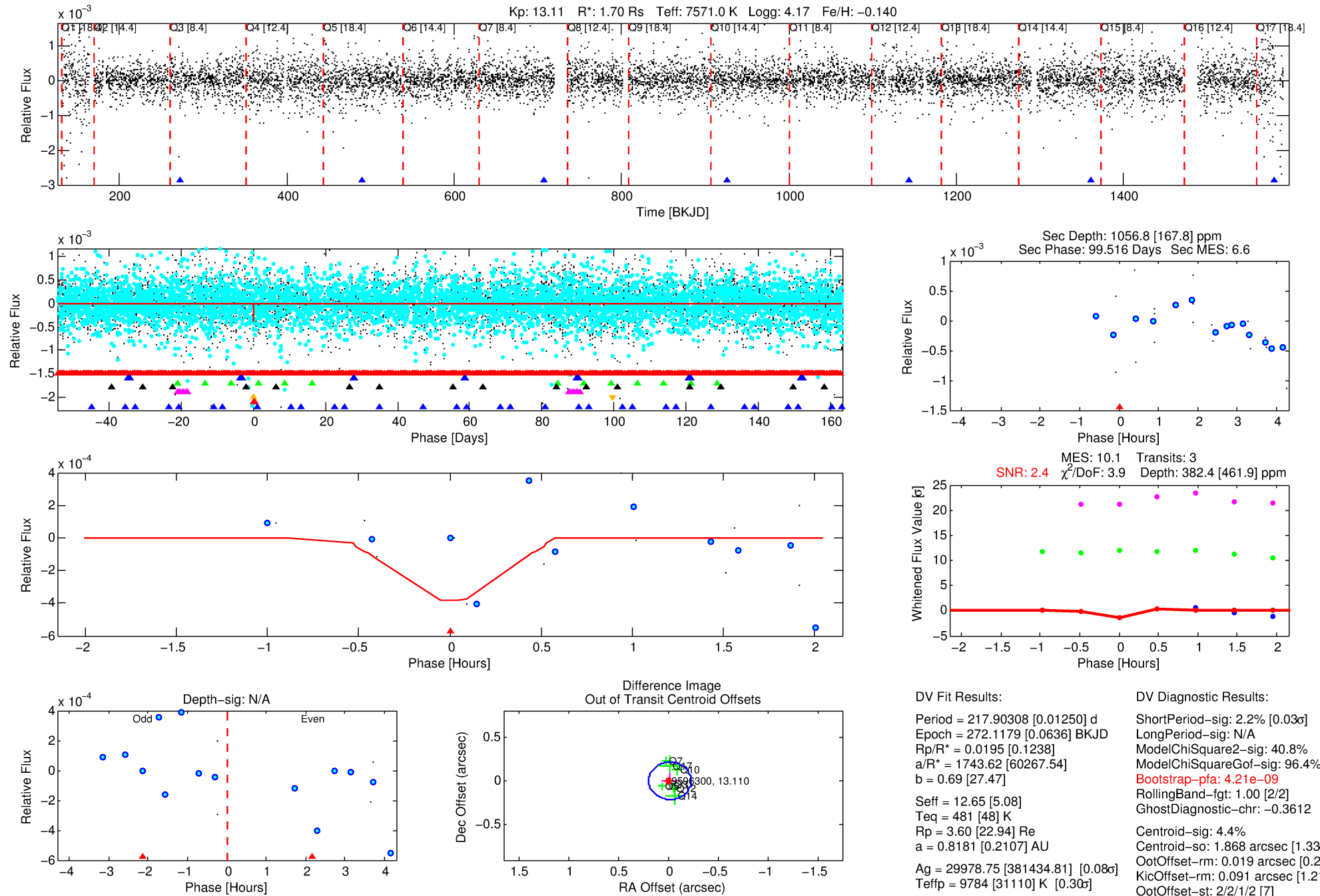
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009596300-06

No Significant Match Found

DV One-Page Summary

KIC: 9596300 Candidate: 6 of 8 Period: 217.903 d



DV Fit Results:

Period = 217.90308 [0.01250] d
Epoch = 272.1179 [0.0636] BKJD
Rp/R* = 0.0195 [0.1238]
a/R* = 1743.62 [60267.54]
b = 0.69 [27.47]
Seff = 12.65 [5.08]
Teq = 481 [48] K
Rp = 3.60 [22.94] Re
a = 0.8181 [0.2107] AU
Ag = 29978.75 [381434.81] [0.08] σ
Teffp = 9784 [31110] K [0.30] σ

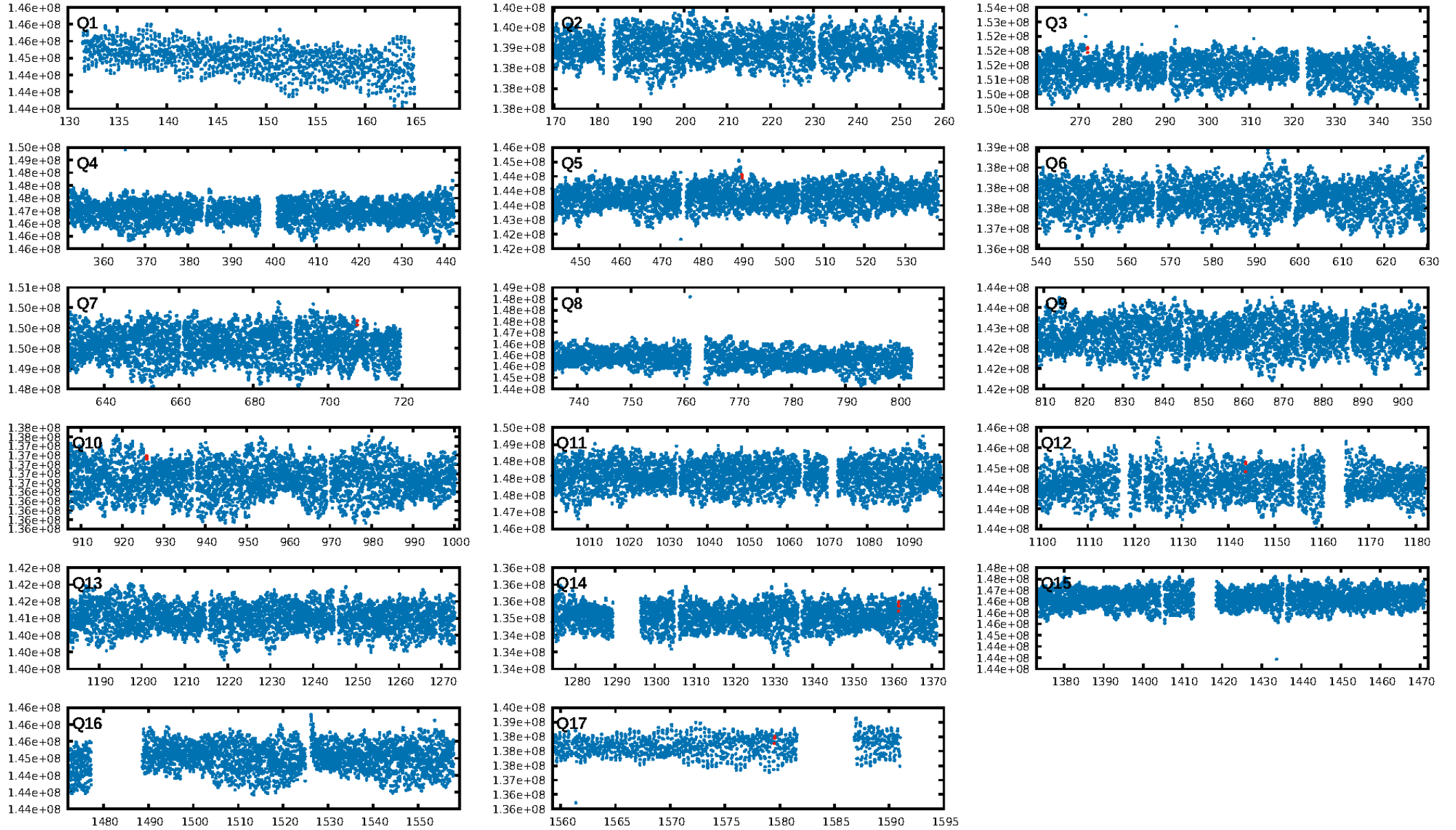
DV Diagnostic Results:

ShortPeriod-sig: 2.2% [0.03] σ
LongPeriod-sig: N/A
ModelChiSquare2-sig: 40.8%
ModelChiSquareGof-sig: 96.4%
Bootstrap-pfa: 4.21e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.3612
Centroid-sig: 4.4%
Centroid-so: 1.868 arcsec [1.33] σ
OotOffset-rm: 0.019 arcsec [0.27] σ
KicOffset-rm: 0.091 arcsec [1.21] σ
OotOffset-st: 2/2/1/2 [7]
KicOffset-st: 2/2/1/2 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/7]

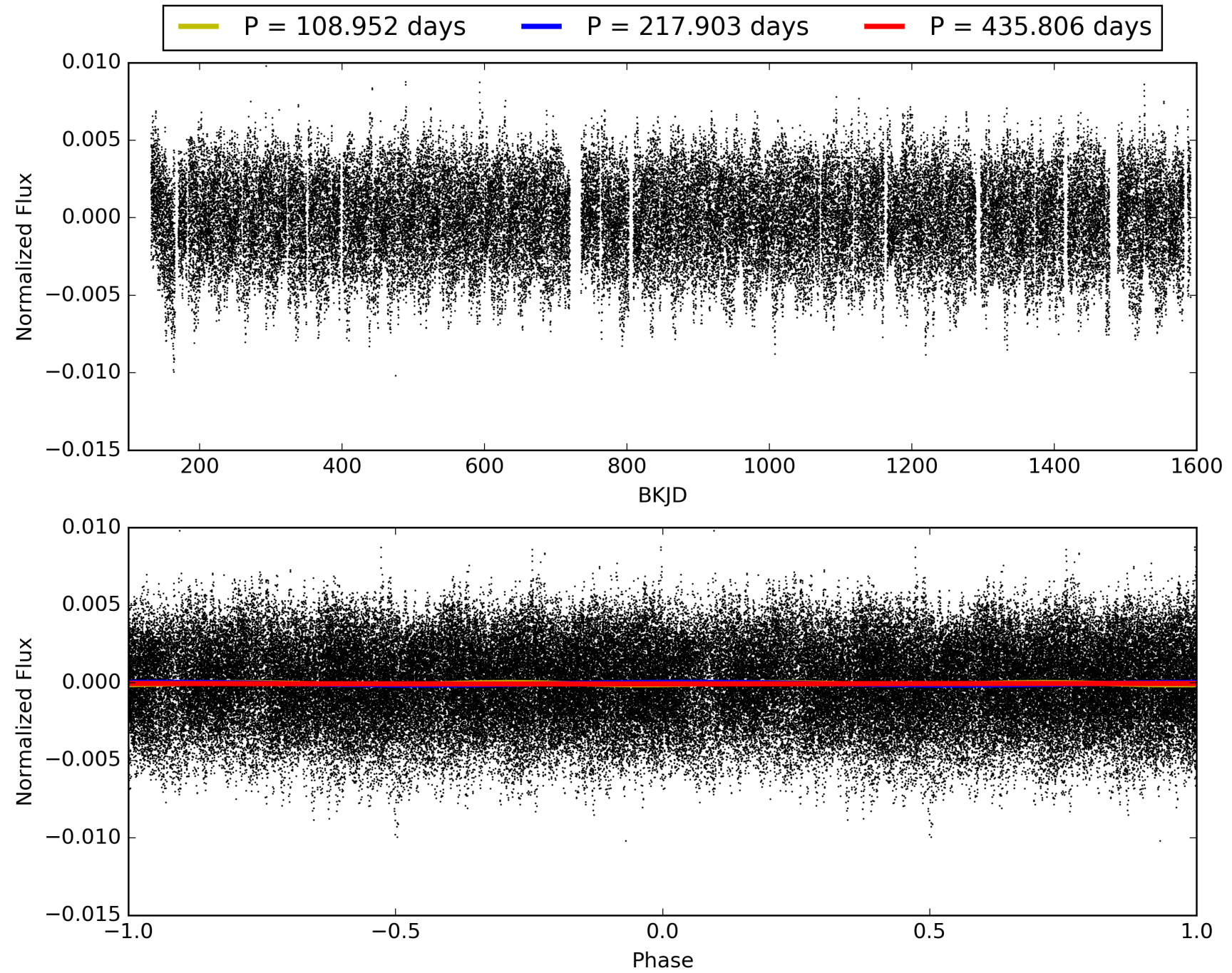
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:11:32 Z

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

TCE 009596300-06, PDC Light Curves

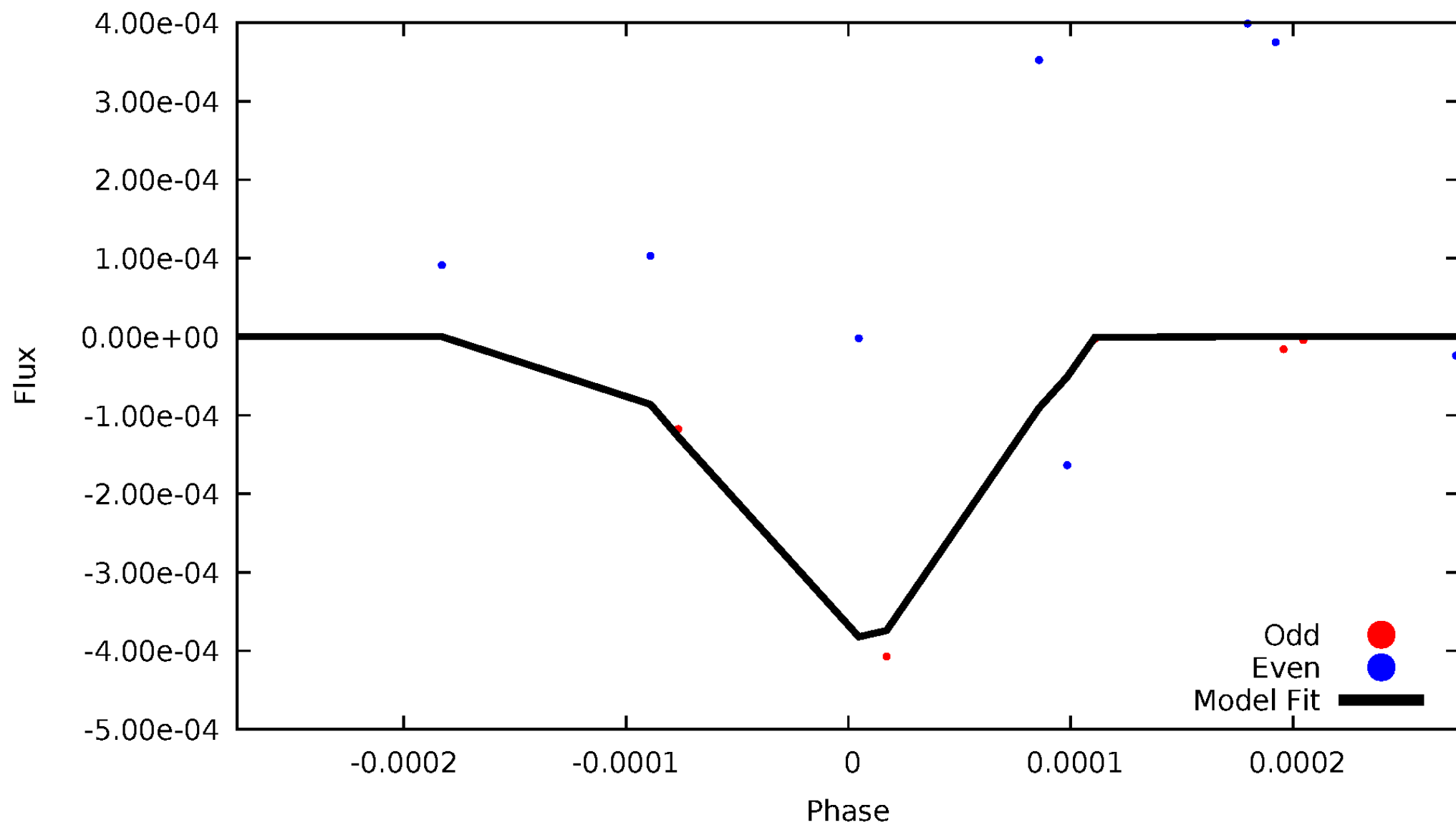


TCE 009596300-06



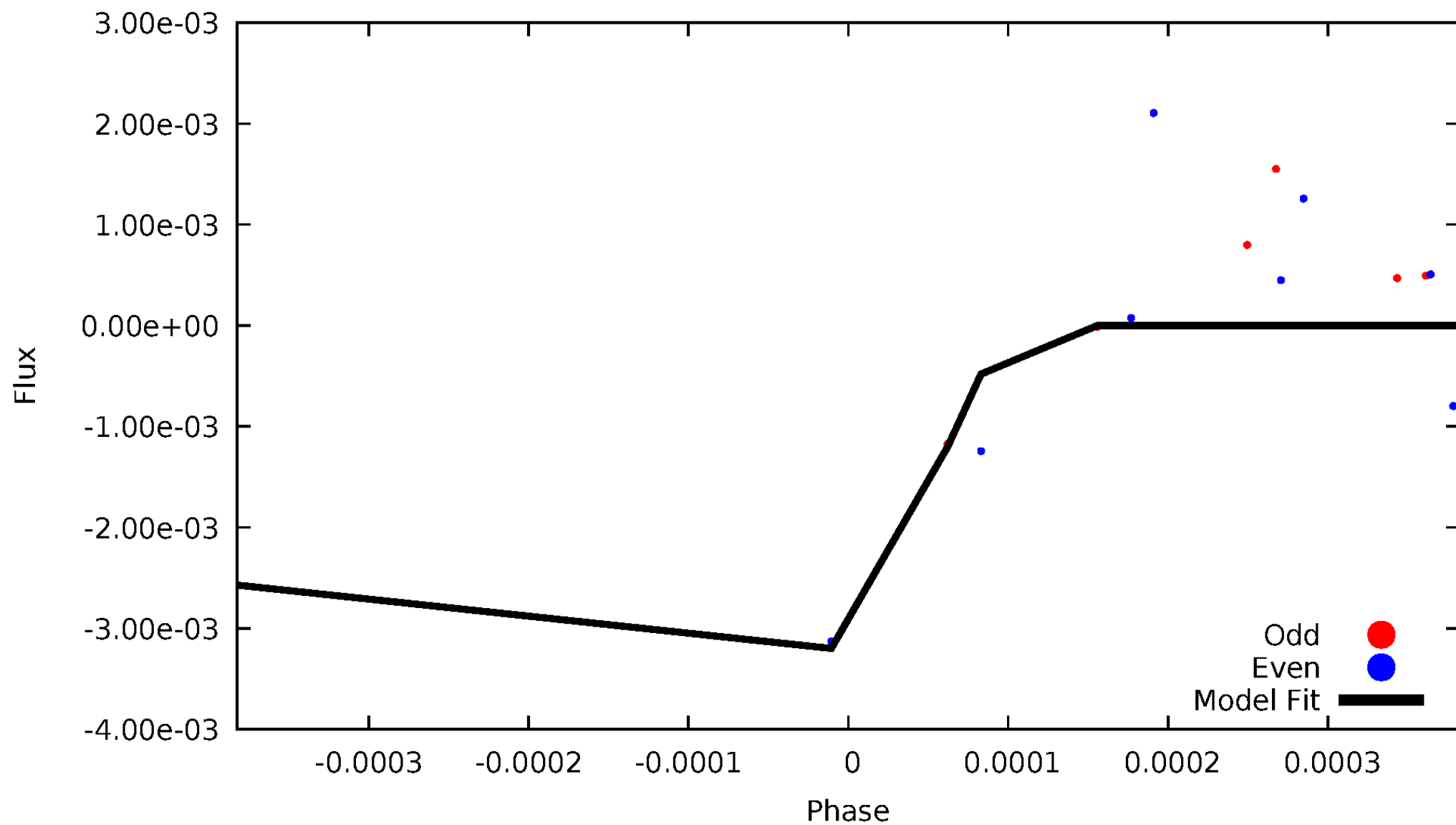
DV Odd/Even

TCE 009596300-06



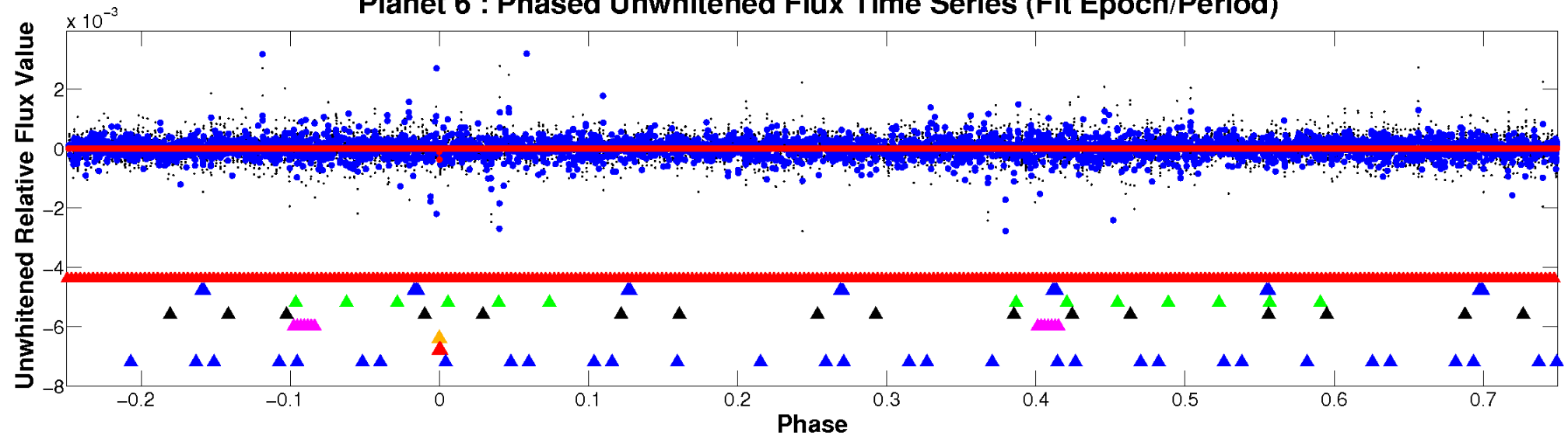
ALT Odd/Even

TCE 009596300-06

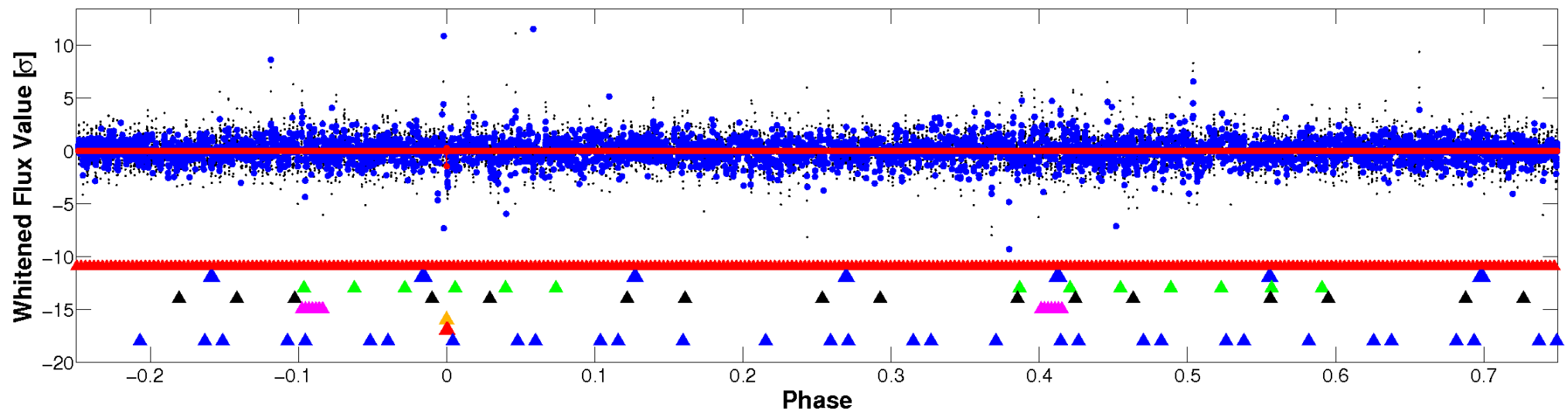


Non-Whitened Vs. Whitened Light Curve

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

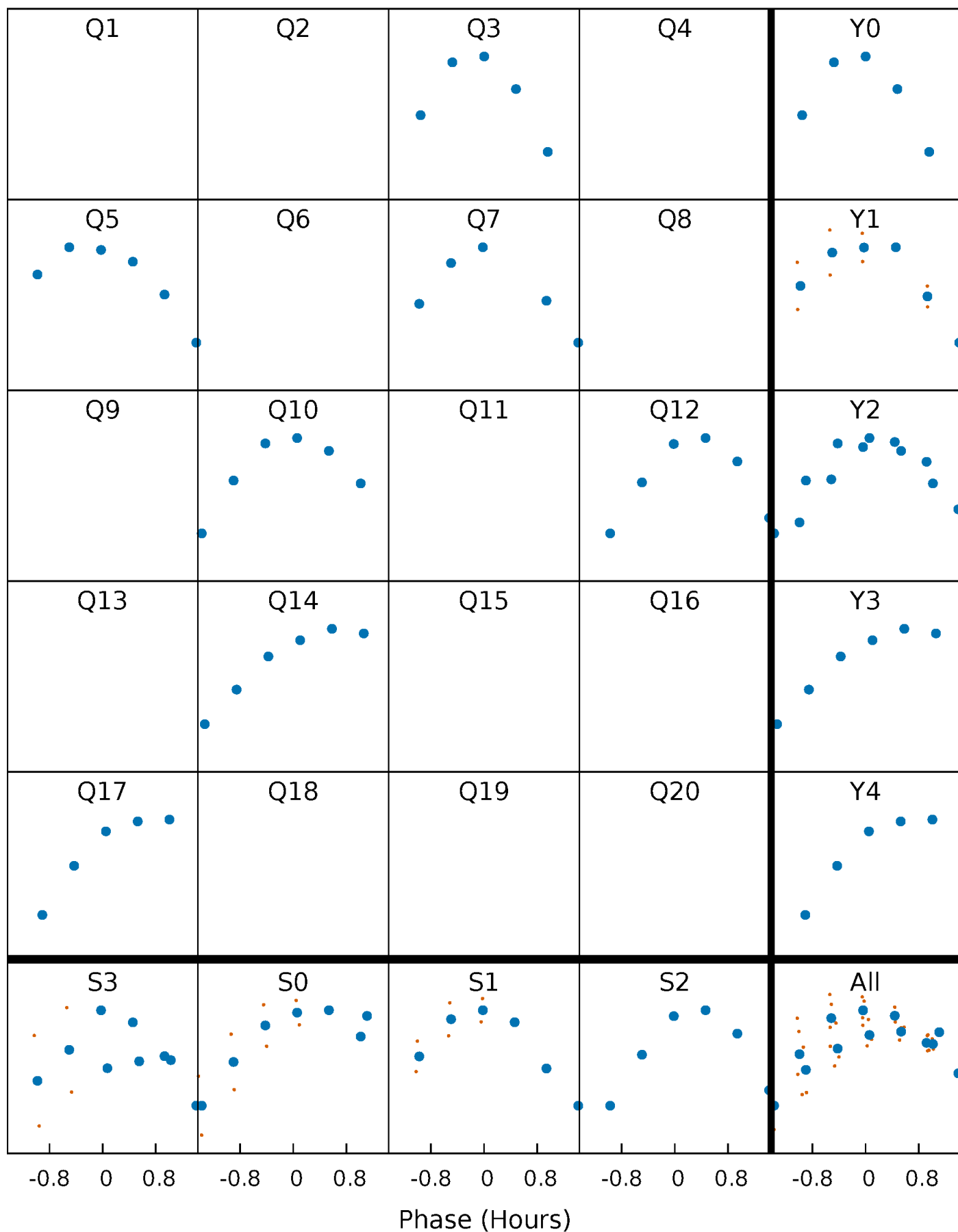


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



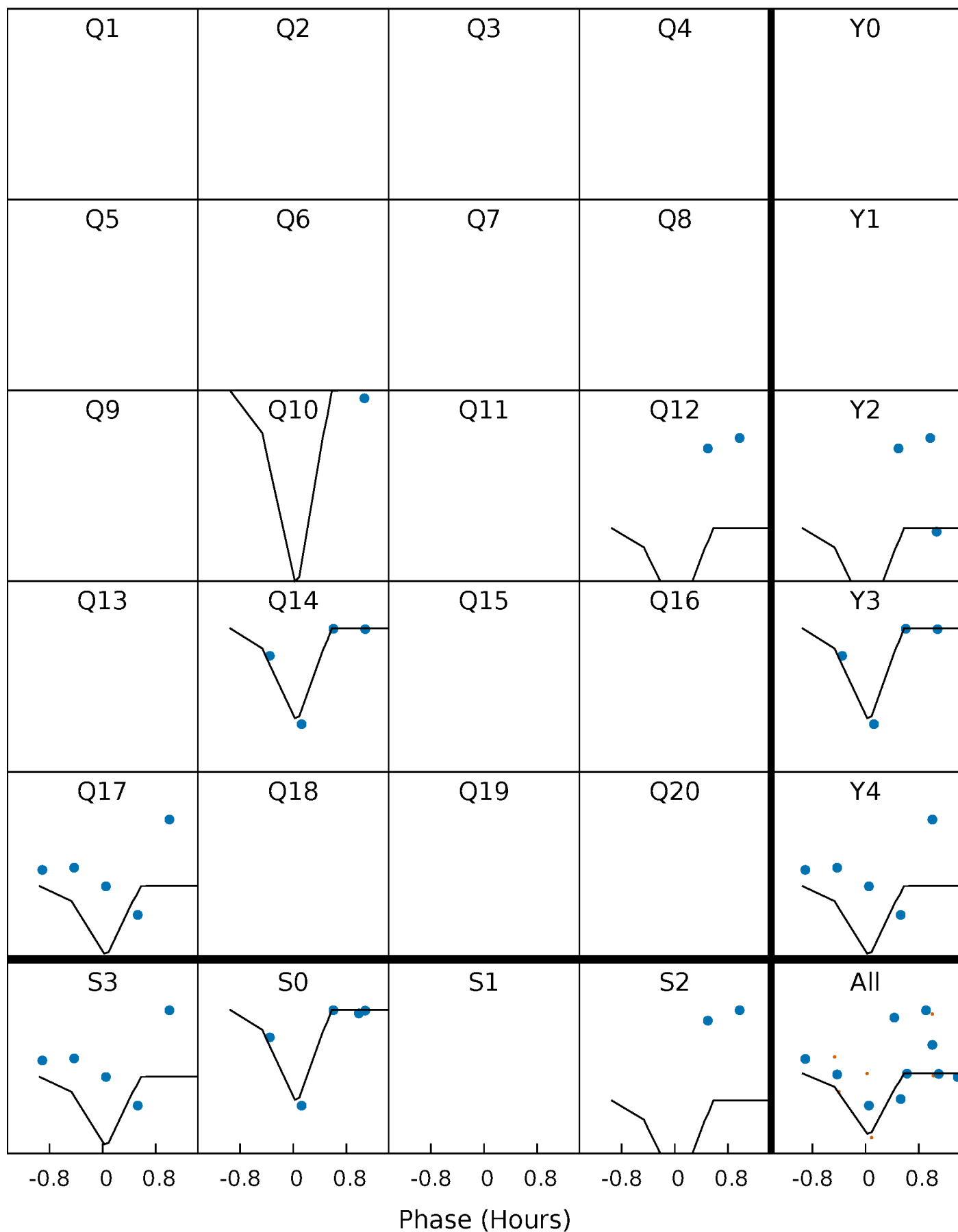
PDC Quarter-Phased Transit Curves

TCE 009596300-06 $P=217.903079$ Days $T_0=272.117949$ (BKJD)



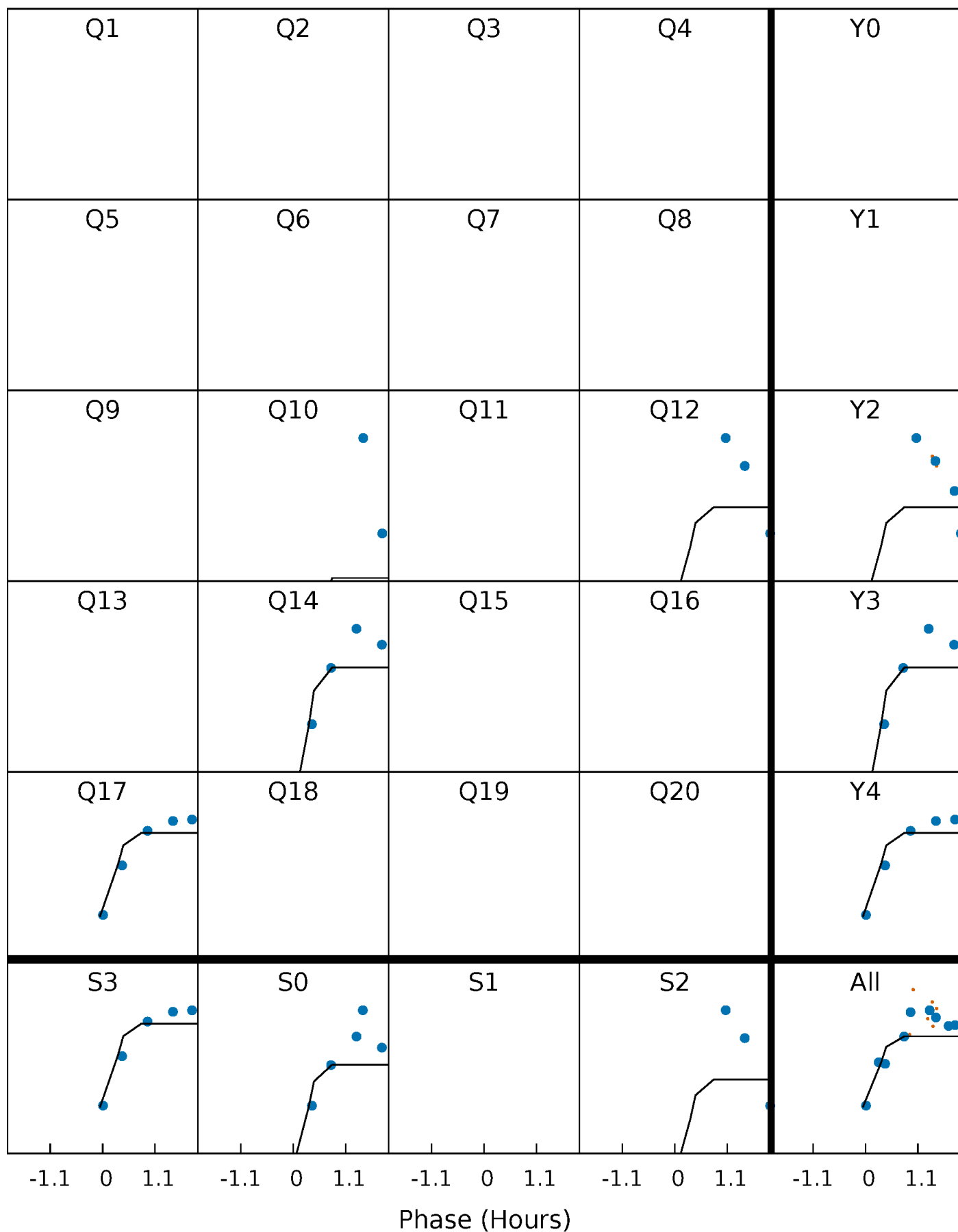
DV Quarter-Phased Transit Curves

TCE 009596300-06 P=217.903079 Days $T_0=272.117949$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

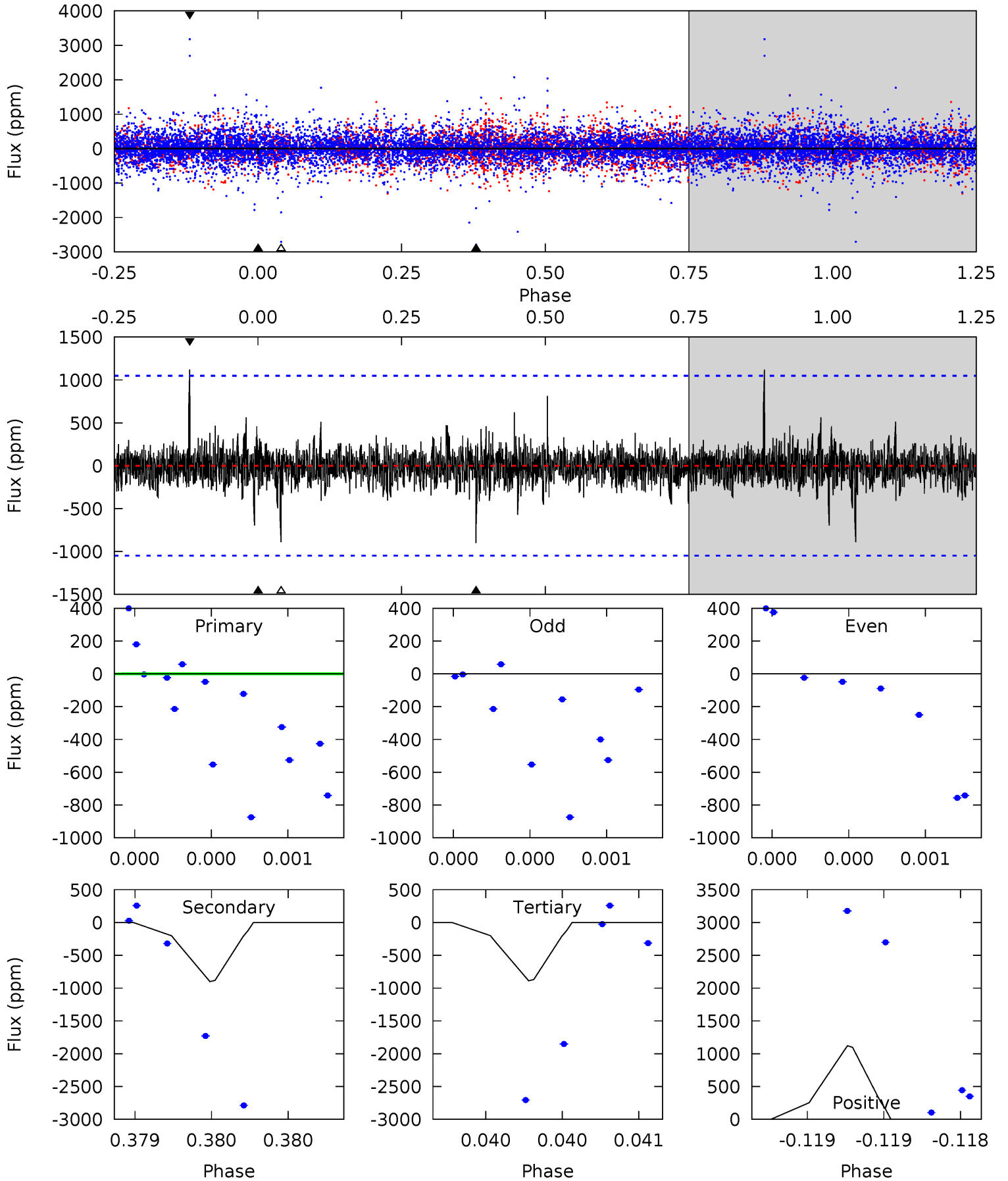
TCE 009596300-06 P=217.895790 Days $T_0=272.124167$ (BKJD)



DV Model-Shift Uniqueness Test

009596300-06, P = 217.903079 Days, E = 54.214870 Days

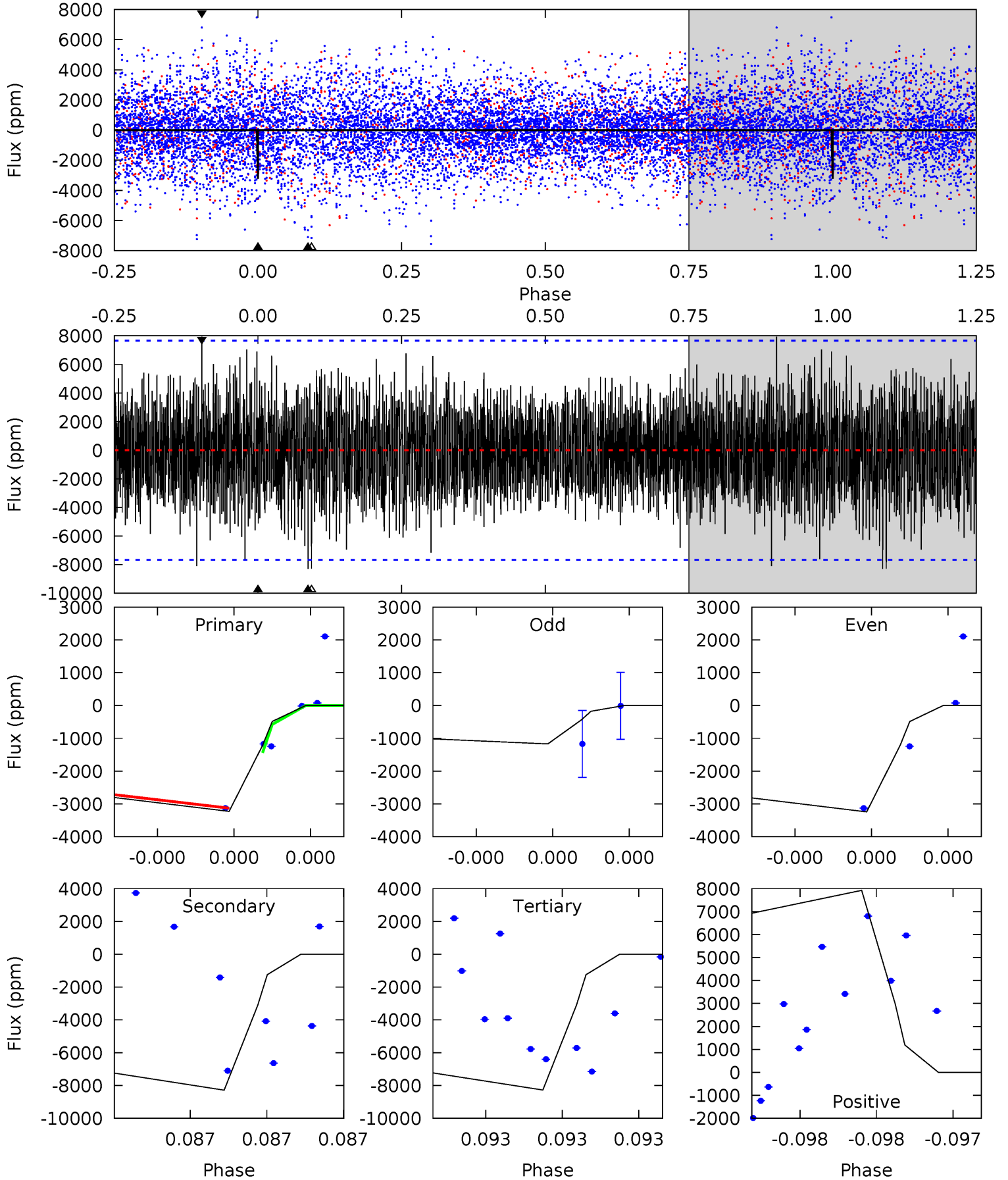
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.89	4.94	4.87	6.14	5.74	3.74	0.65	-3.98	-5.26	0.07	-1.20	0.76	1.00	0.55	0.00



Alt Model-Shift Uniqueness Test

009596300-06, P = 217.895790 Days, E = 54.228377 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.43	6.24	6.23	5.96	5.76	3.77	1.58	-3.80	-3.53	0.01	0.27	0.90	1.00	0.49	0.64



Stellar Parameters For KIC 009596300

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7571^{+211}_{-316}	$4.166^{+0.105}_{-0.195}$	$-0.140^{+0.200}_{-0.350}$	$1.696^{+0.533}_{-0.328}$	$1.535^{+0.219}_{-0.219}$	$0.443^{+0.264}_{-0.225}$
	+3%/-4%	+3%/-5%	+143%/-250%	+31%/-19%	+14%/-14%	+60%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009596300-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-902±183	$17.55^{+19.28}_{-11.98}$	679^{+52}_{-41}	4414^{+3152}_{-1003}	1055^{+9878}_{-830}
Alt.	-8287±1329	$20.74^{+20.92}_{-13.86}$	678^{+54}_{-43}	6701^{+8277}_{-1849}	6512^{+57914}_{-4834}

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 $A_{obs} \gg 1.0$

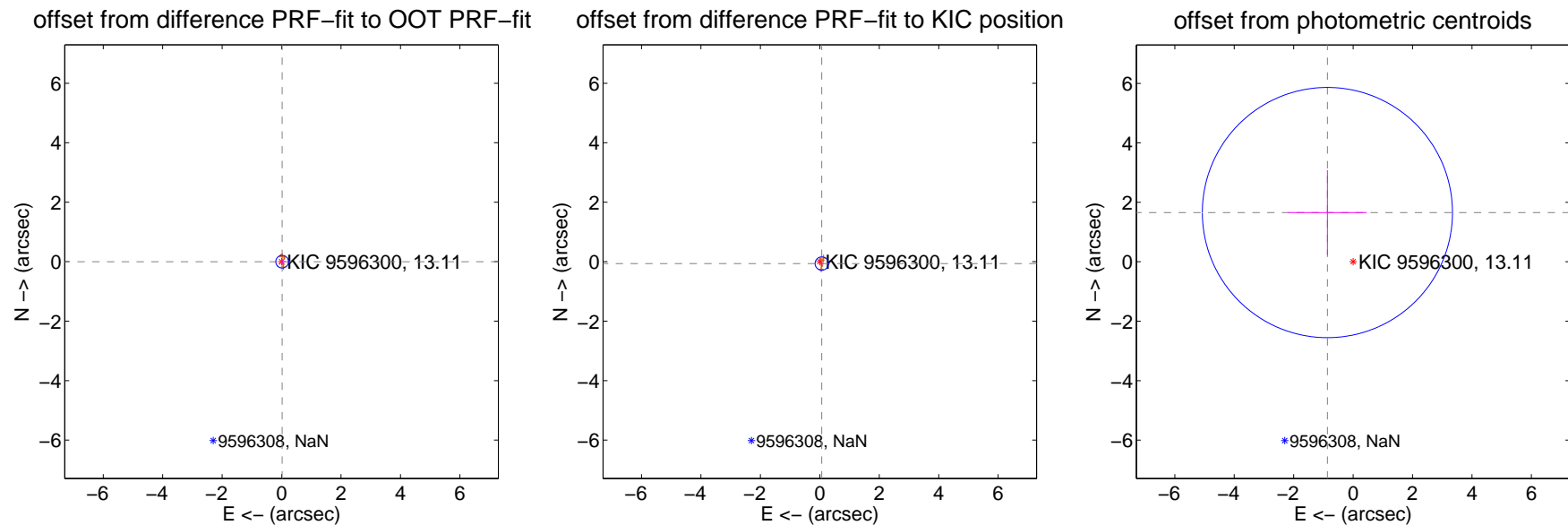
DV Centroid Data

Supplemental centroid analysis for 009596300-06. Kepler magnitude: 13.11. Transit SNR 2.35

There are 0 quarters with good PRF difference image offsets

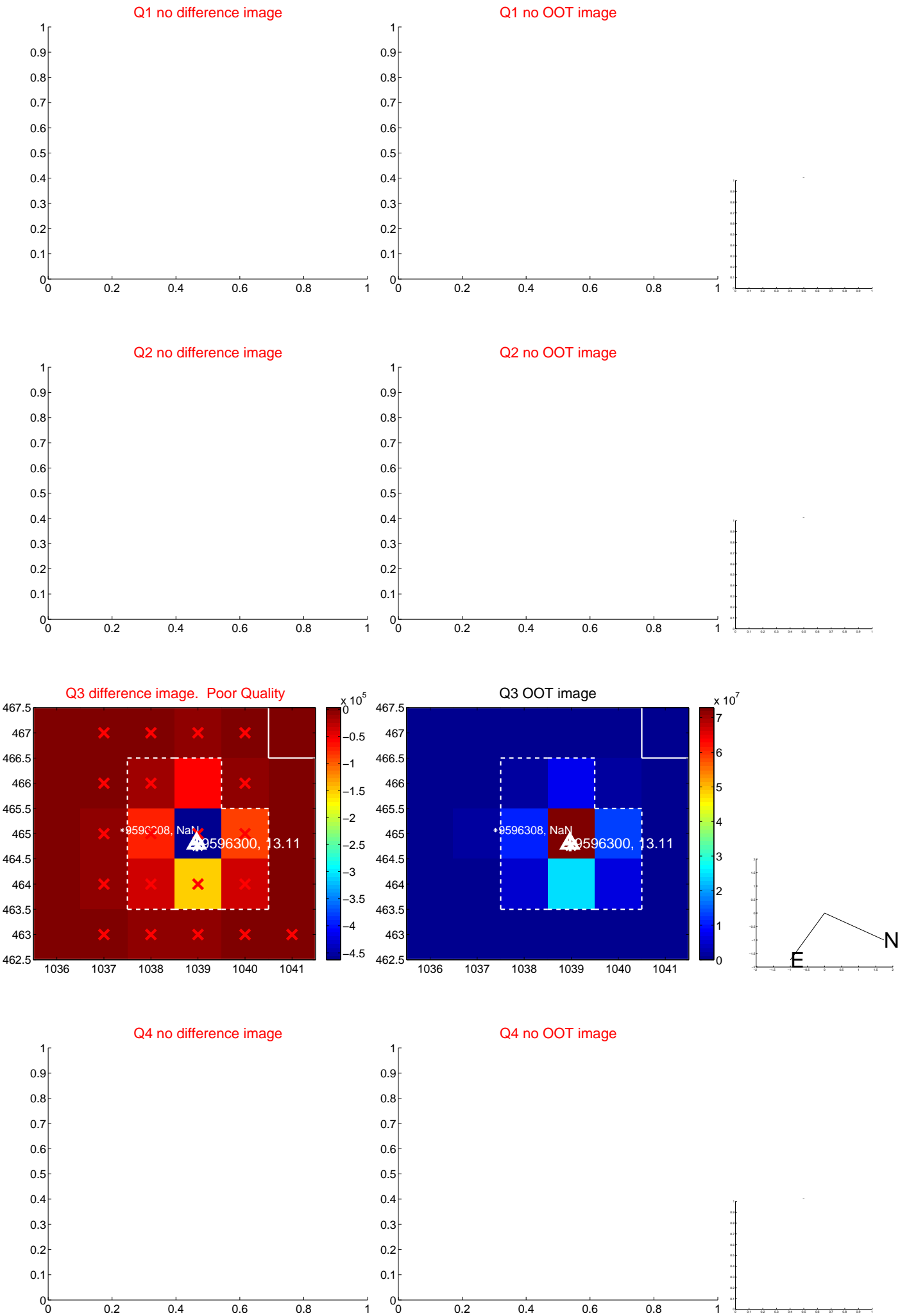
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.071	0.27	-0.019 ± 0.071	-0.000 ± 0.087
PRF-fit source offset from KIC position	0.091 ± 0.075	1.21	-0.065 ± 0.068	-0.063 ± 0.081
photometric centroid source offset	1.87 ± 1.40	1.33	0.86 ± 1.32	1.66 ± 1.42

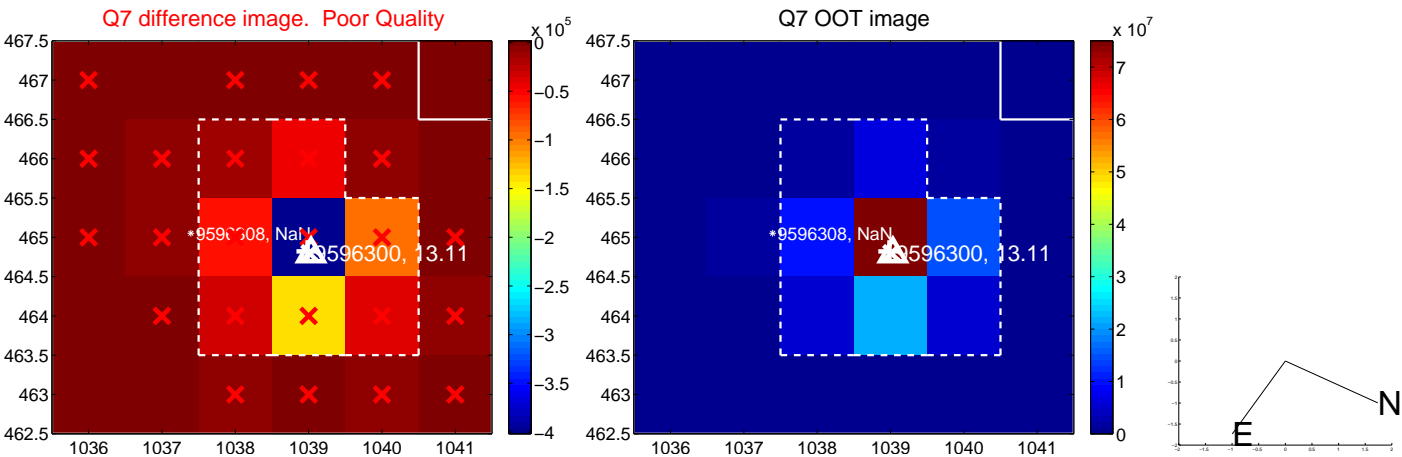
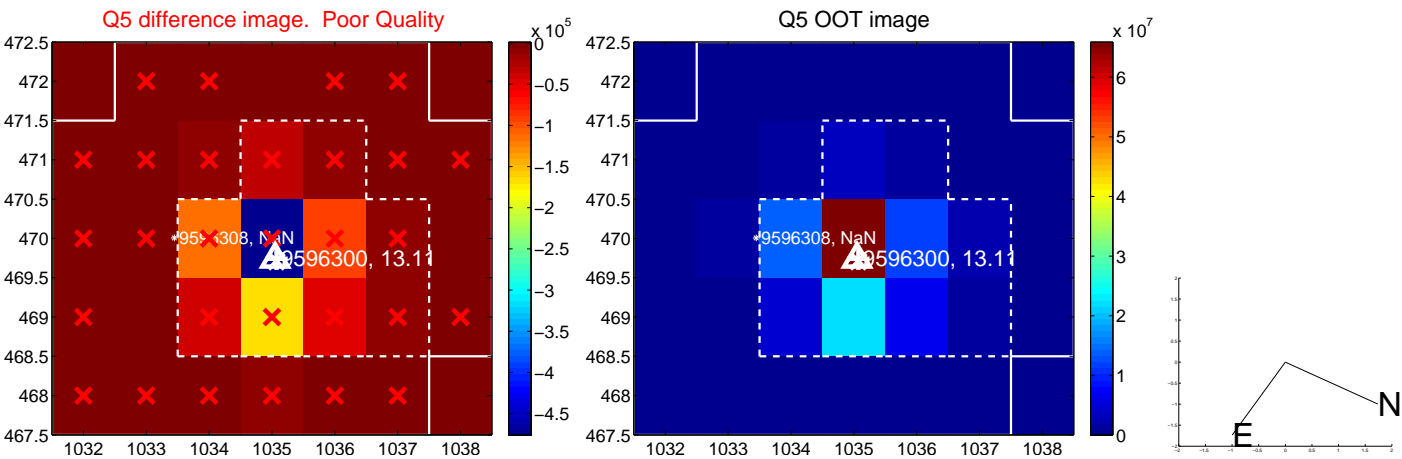


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

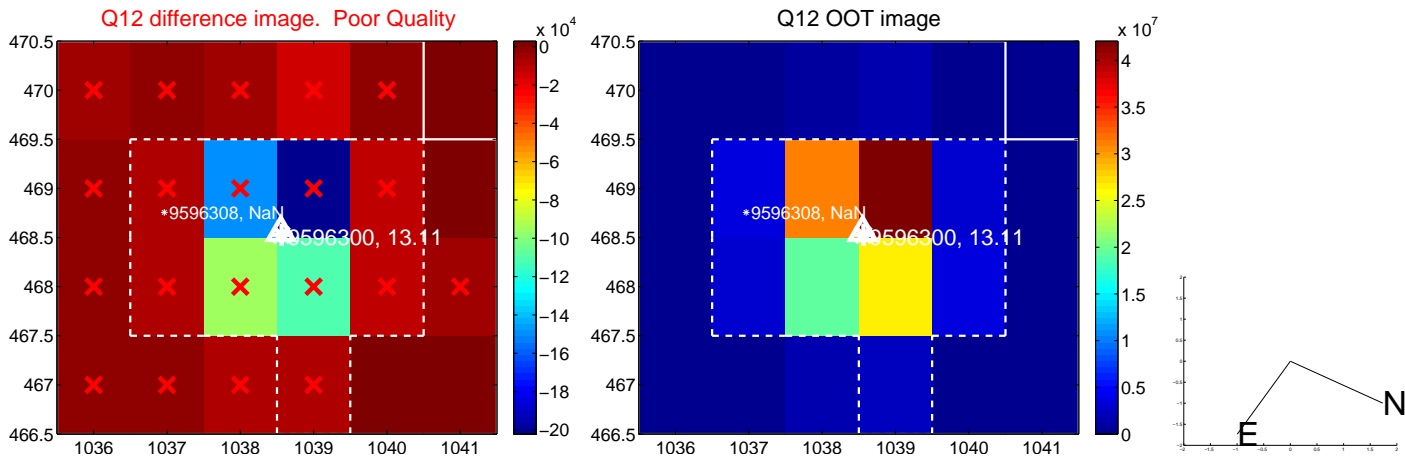
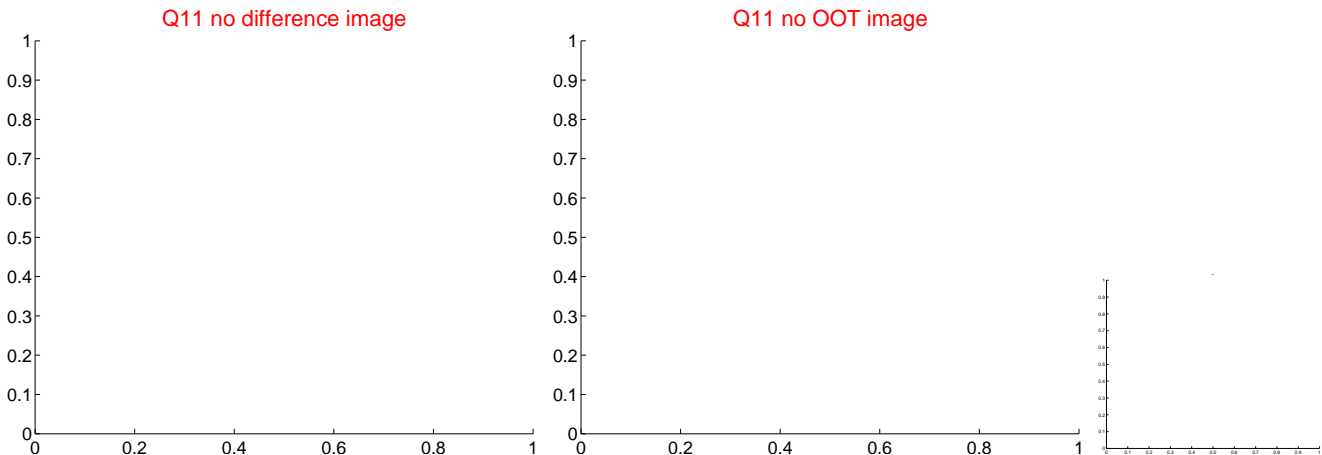
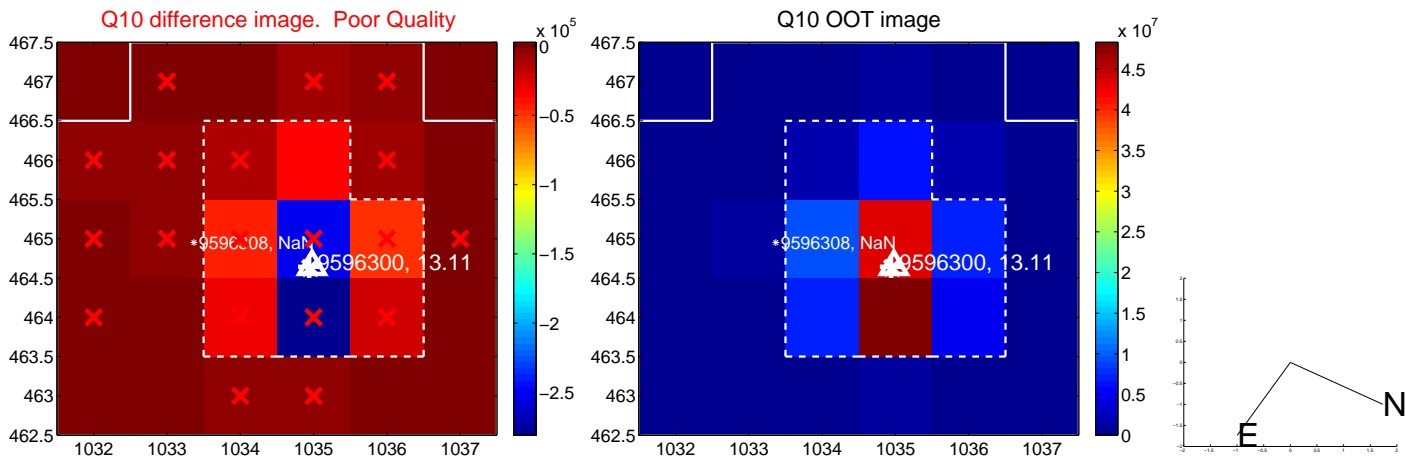
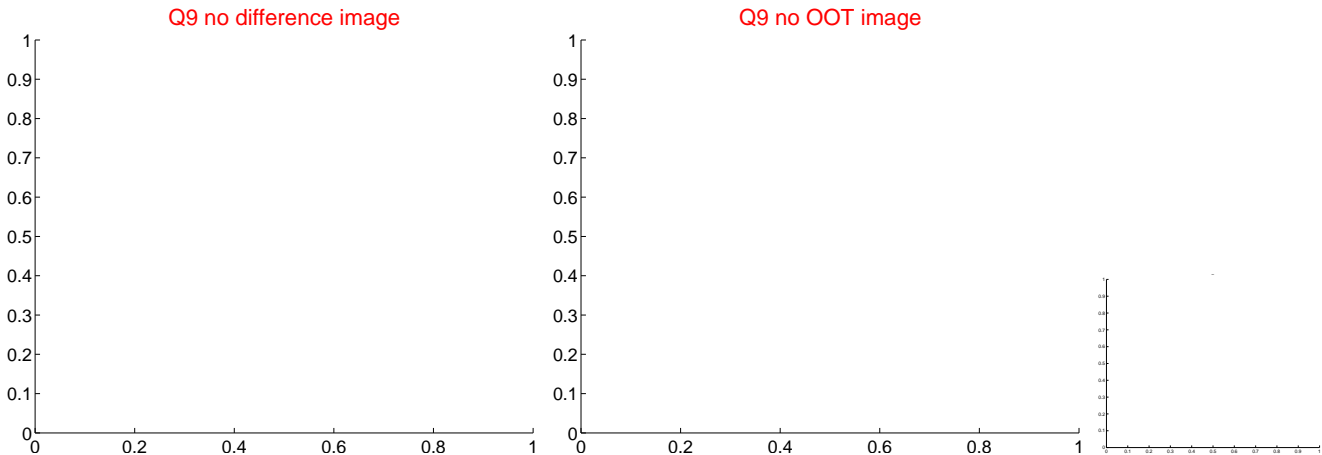
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



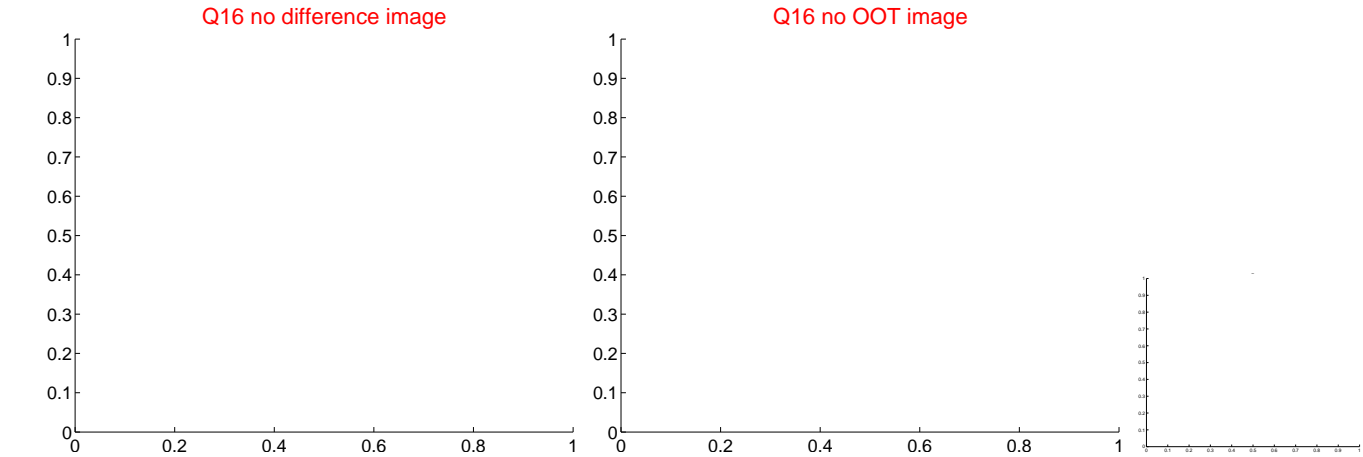
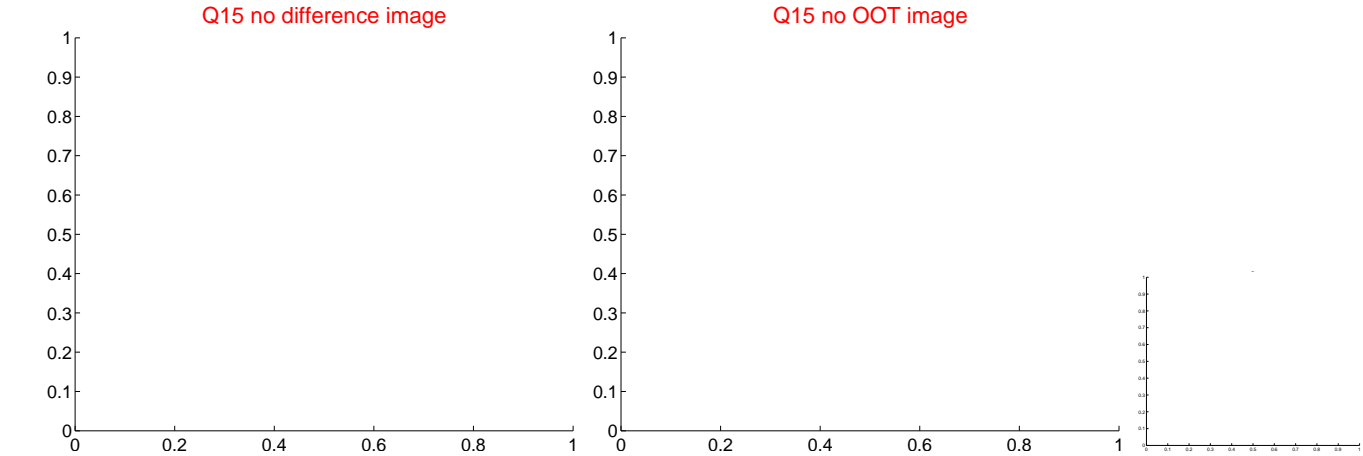
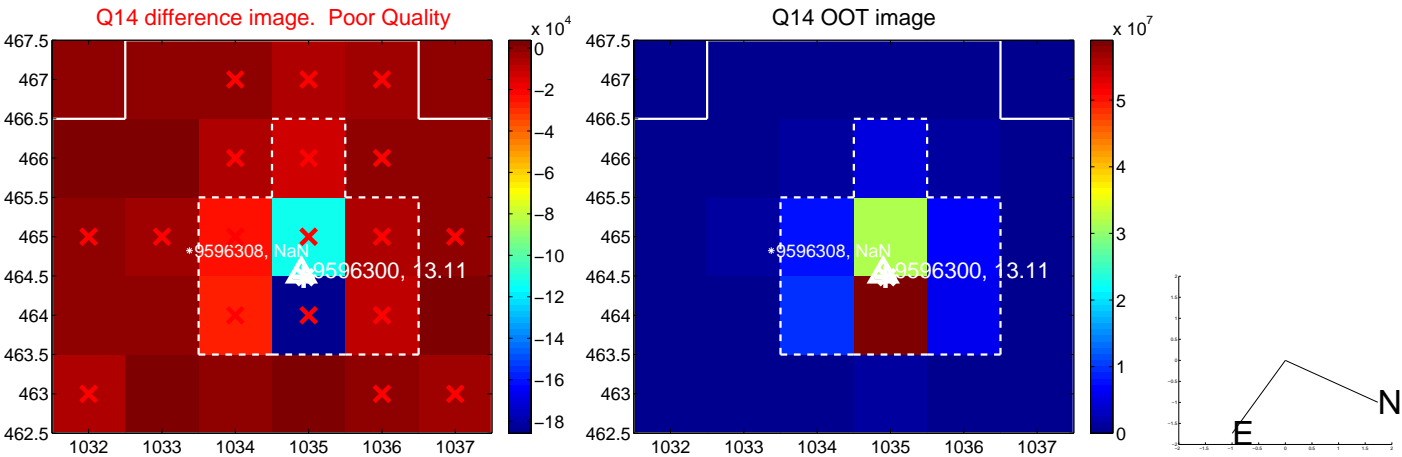
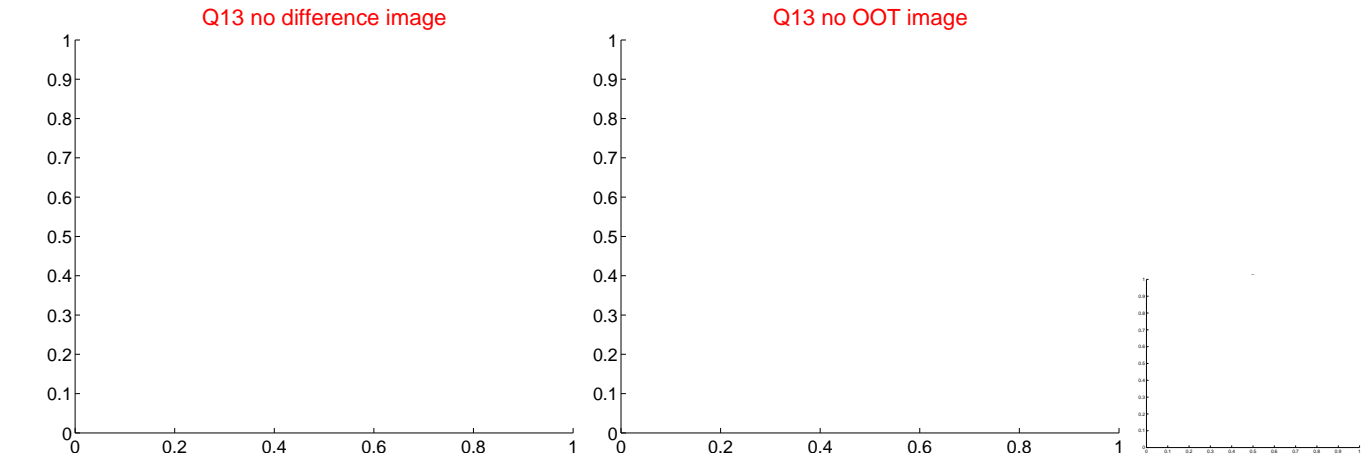
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



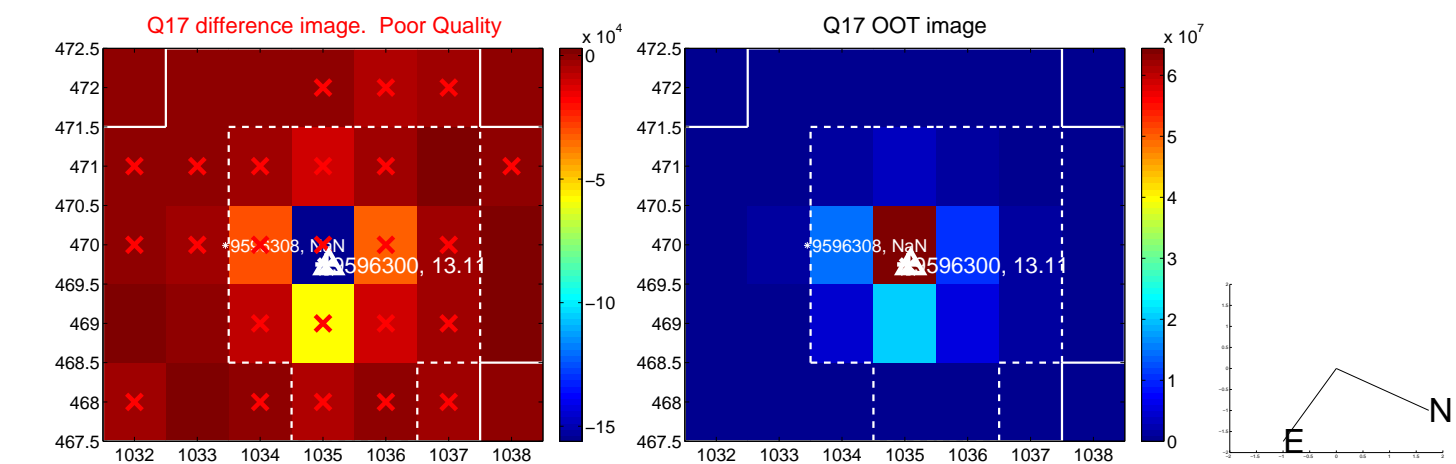
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



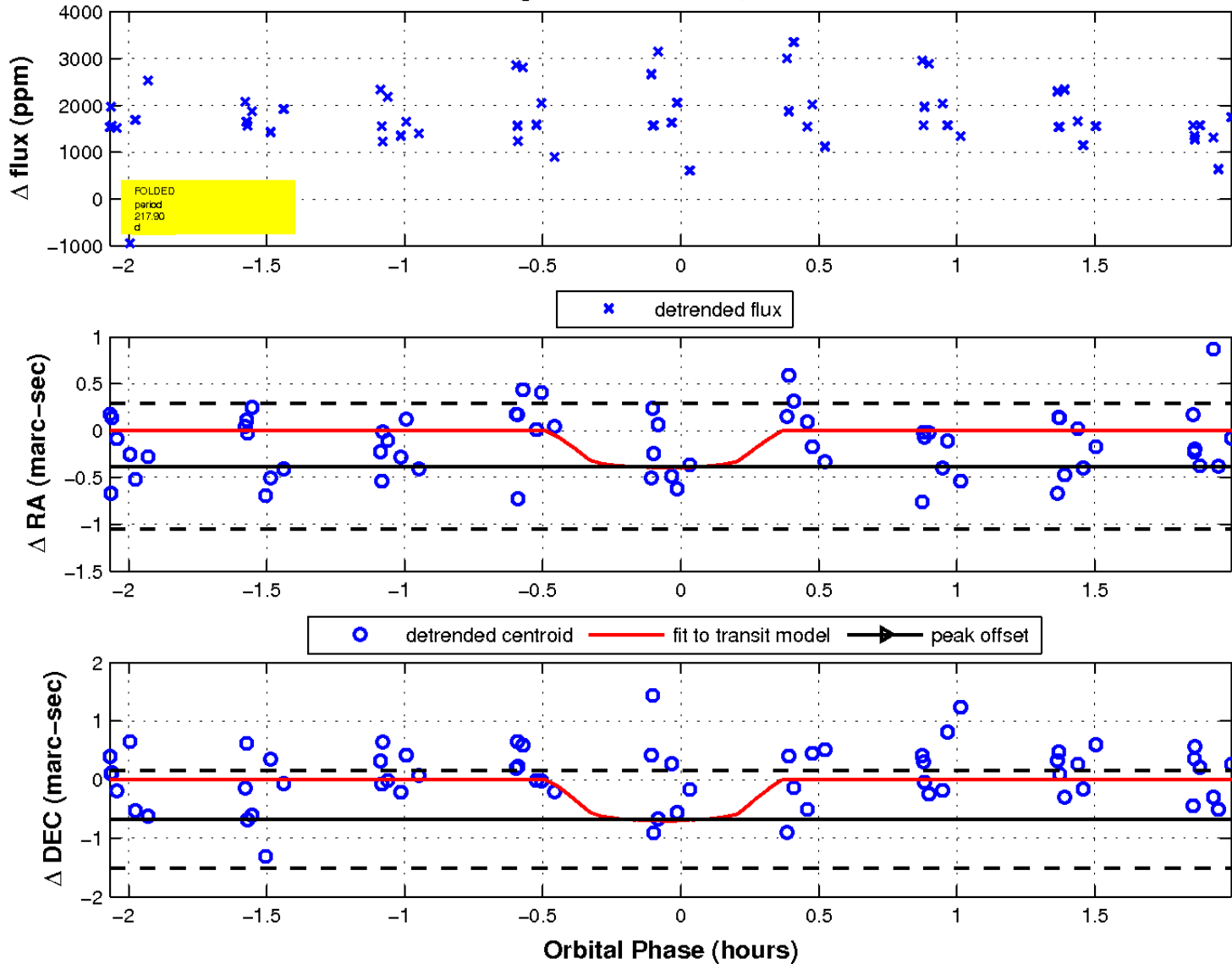
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

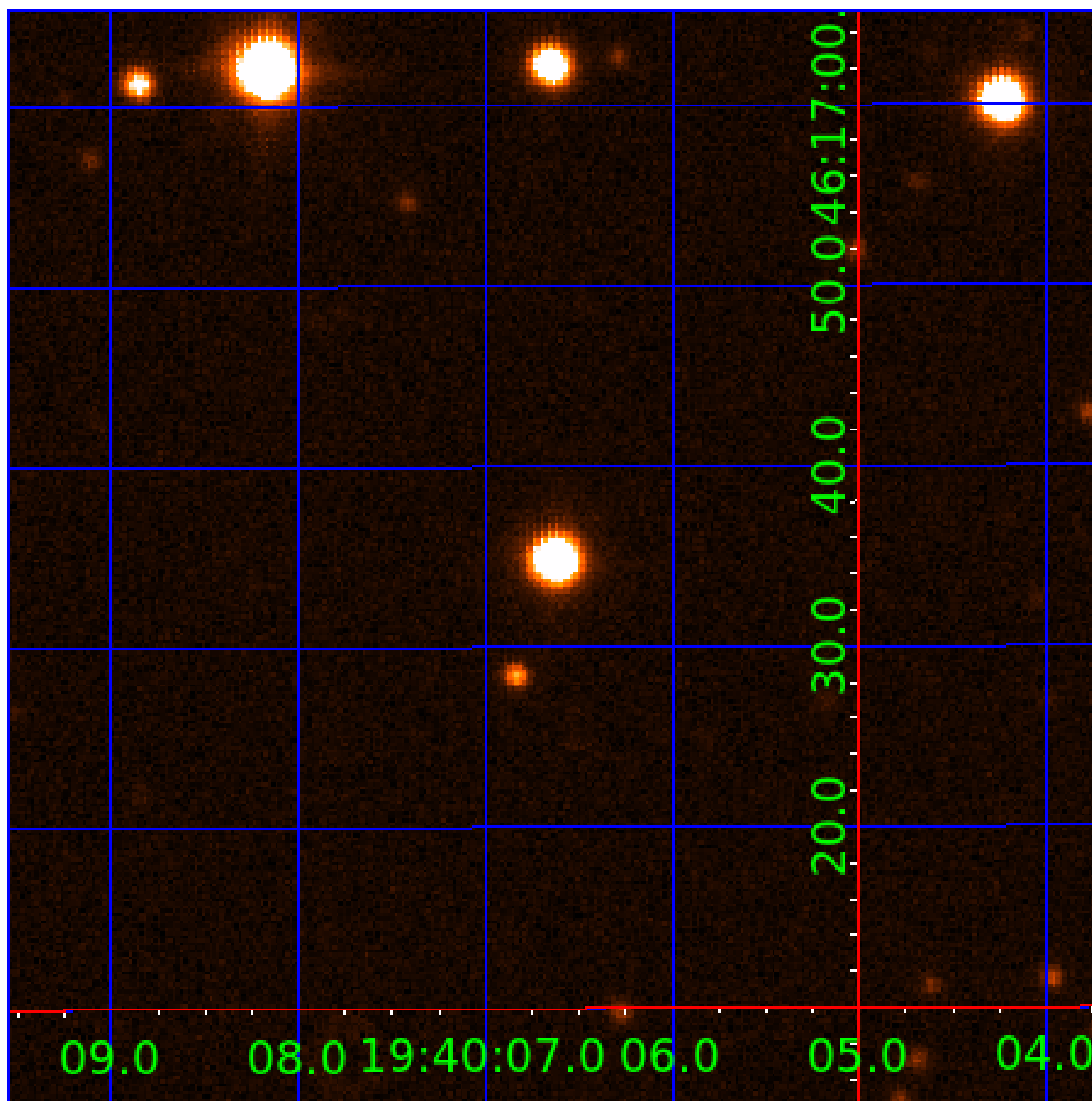


fluxWeightedCentroids, Planet 6 of 8



UKIRT Image

Declination



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})
009596300-01	OBS	No	0.629693	131.556025	0.9	4.130	8.4	0.1	1.70	7571	0.17	30734.05
009596300-02	OBS	No	62.286638	143.822606	2094.6	2.185	16.5	11.0	1.70	7571	14.32	67.18
009596300-03	OBS	No	112.656642	138.493851	728.6	3.671	14.1	3.8	1.70	7571	4.68	30.49
009596300-04	OBS	No	94.602073	138.174543	2650.1	3.417	12.7	12.9	1.70	7571	15.89	38.48
009596300-05	OBS	No	109.204875	141.642702	1824.0	2.300	11.4	9.4	1.70	7571	7.50	31.78
009596300-06	OBS	No	217.903079	272.117949	382.4	0.719	10.1	2.4	1.70	7571	3.60	12.65
009596300-07	OBS	No	217.870671	272.296205	1577.3	28.757	7.9	8.5	1.70	7571	6.81	12.65
009596300-08	OBS	No	46.012266	144.537196	1315.6	1.963	9.3	10.2	1.70	7571	6.74	100.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009596300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009596300-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009596300-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009596300-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009596300-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009596300-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009596300-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
009596300-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

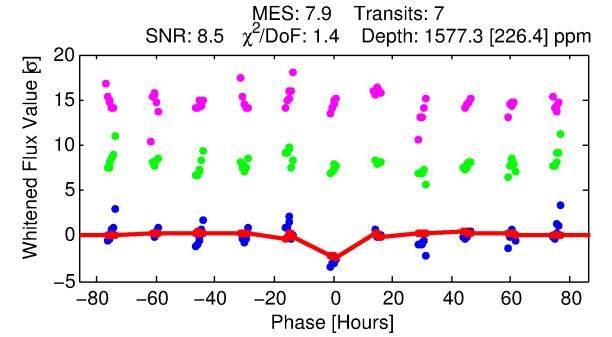
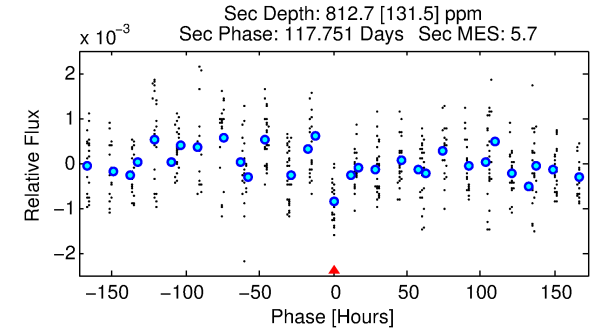
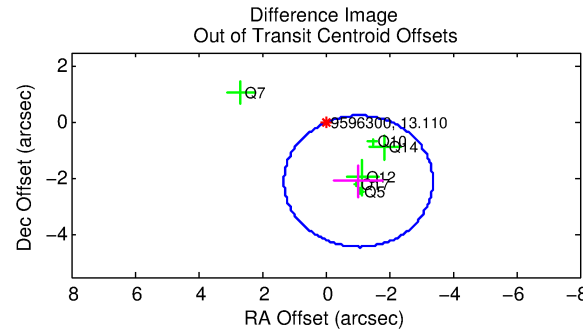
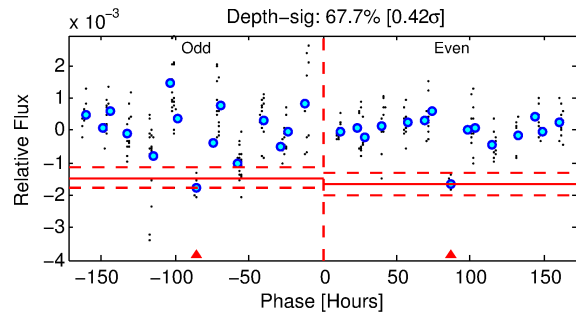
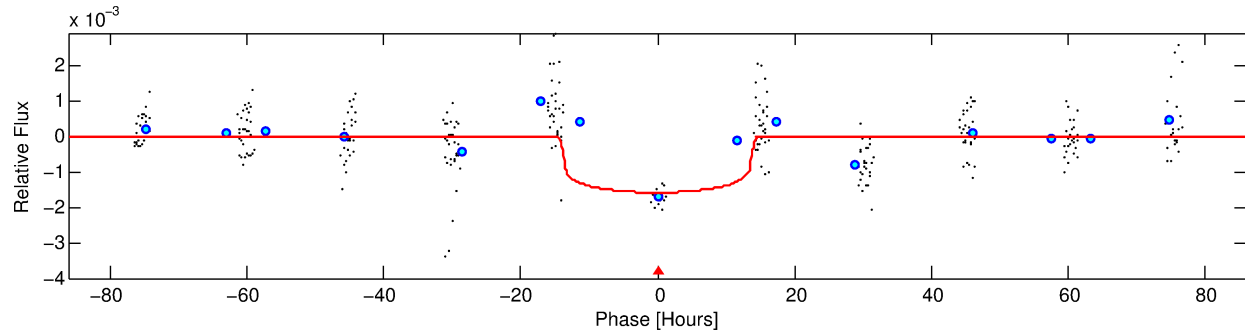
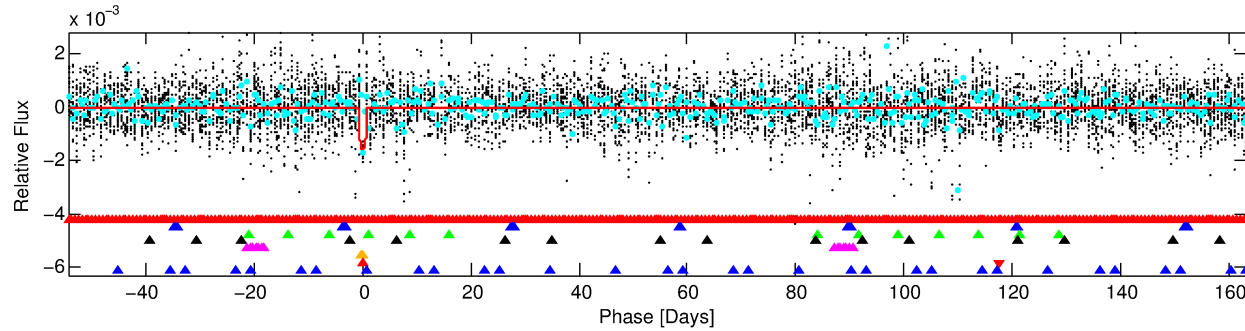
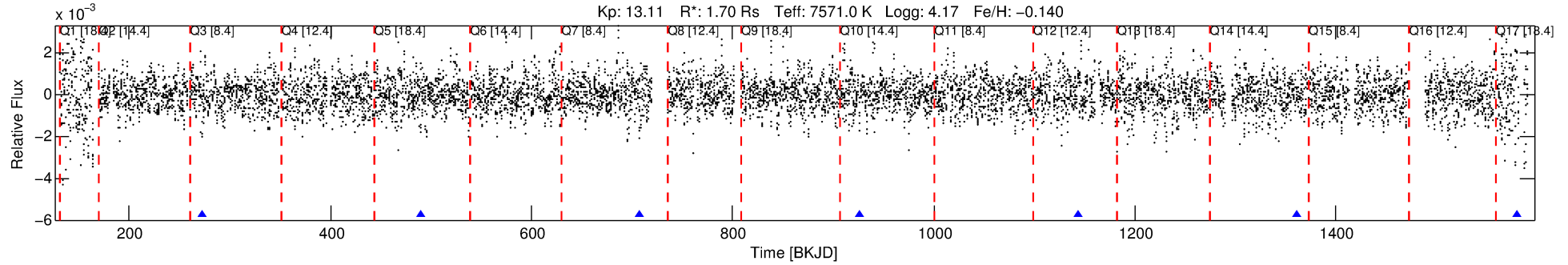
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009596300-07

No Significant Match Found

DV One-Page Summary

KIC: 9596300 Candidate: 7 of 8 Period: 217.871 d



DV Fit Results:

Period = 217.87067 [0.00435] d
Epoch = 272.2962 [0.0154] BKJD
Rp/R* = 0.0368 [0.0049]
a/R* = 60.01 [34.52]
b = 0.01 [71.16]
Seff = 12.65 [5.08]
Teq = 481 [48] K
Rp = 6.81 [2.33] Re
a = 0.8181 [0.2106] AU
Ag = 6455.99 [3104.36] [2.08 σ]
Teffp = 6665 [591] K [10.44 σ]

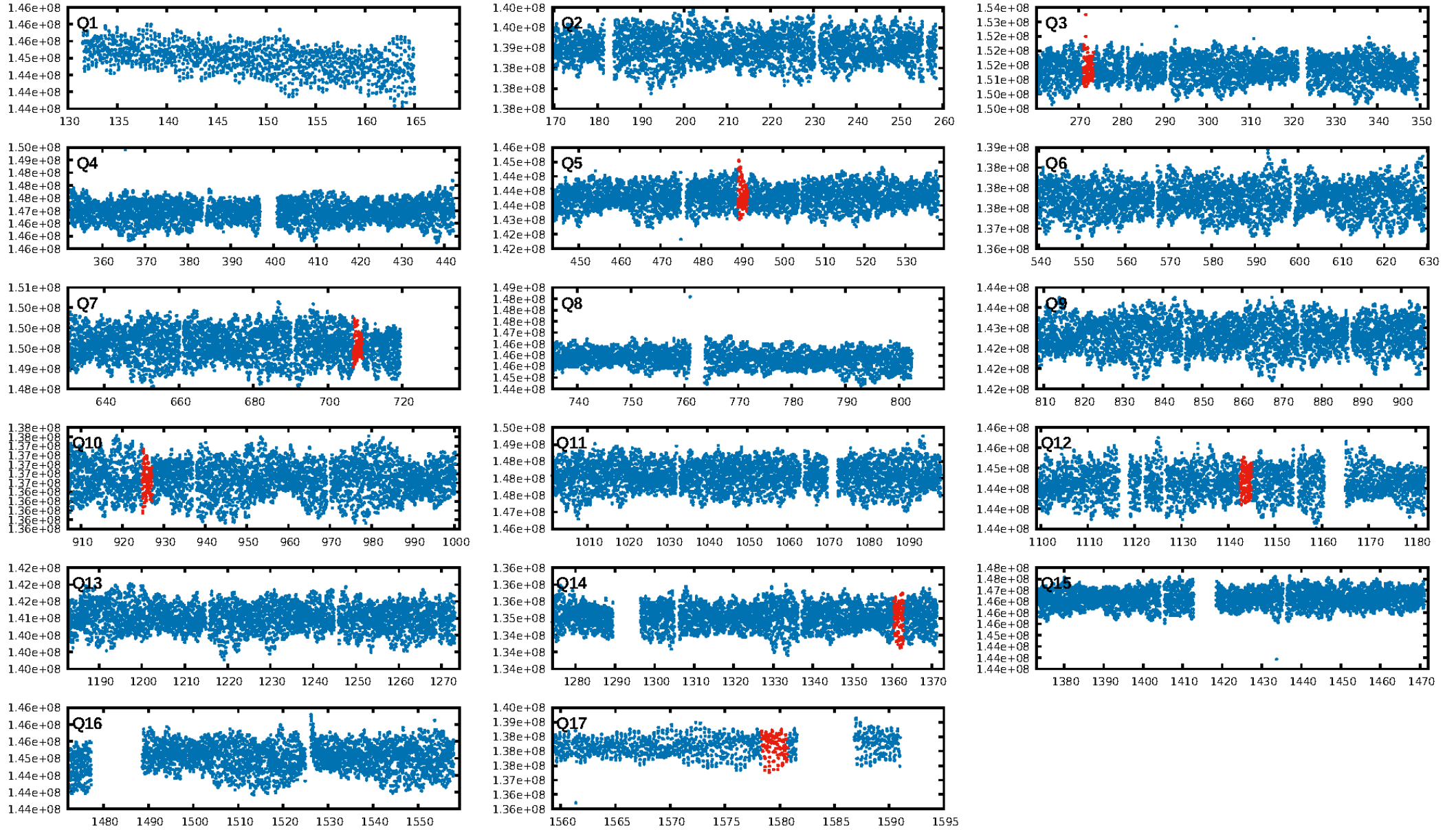
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [87.10 σ]
LongPeriod-sig: 2.2% [0.03 σ]
ModelChiSquare2-sig: 78.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.74e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.1837
Centroid-sig: 83.3%
Centroid-so: 0.202 arcsec [3.46 σ]
OotOffset-rm: 2.336 arcsec [3.00 σ]
KicOffset-rm: 2.426 arcsec [4.67 σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.00 [0/6]

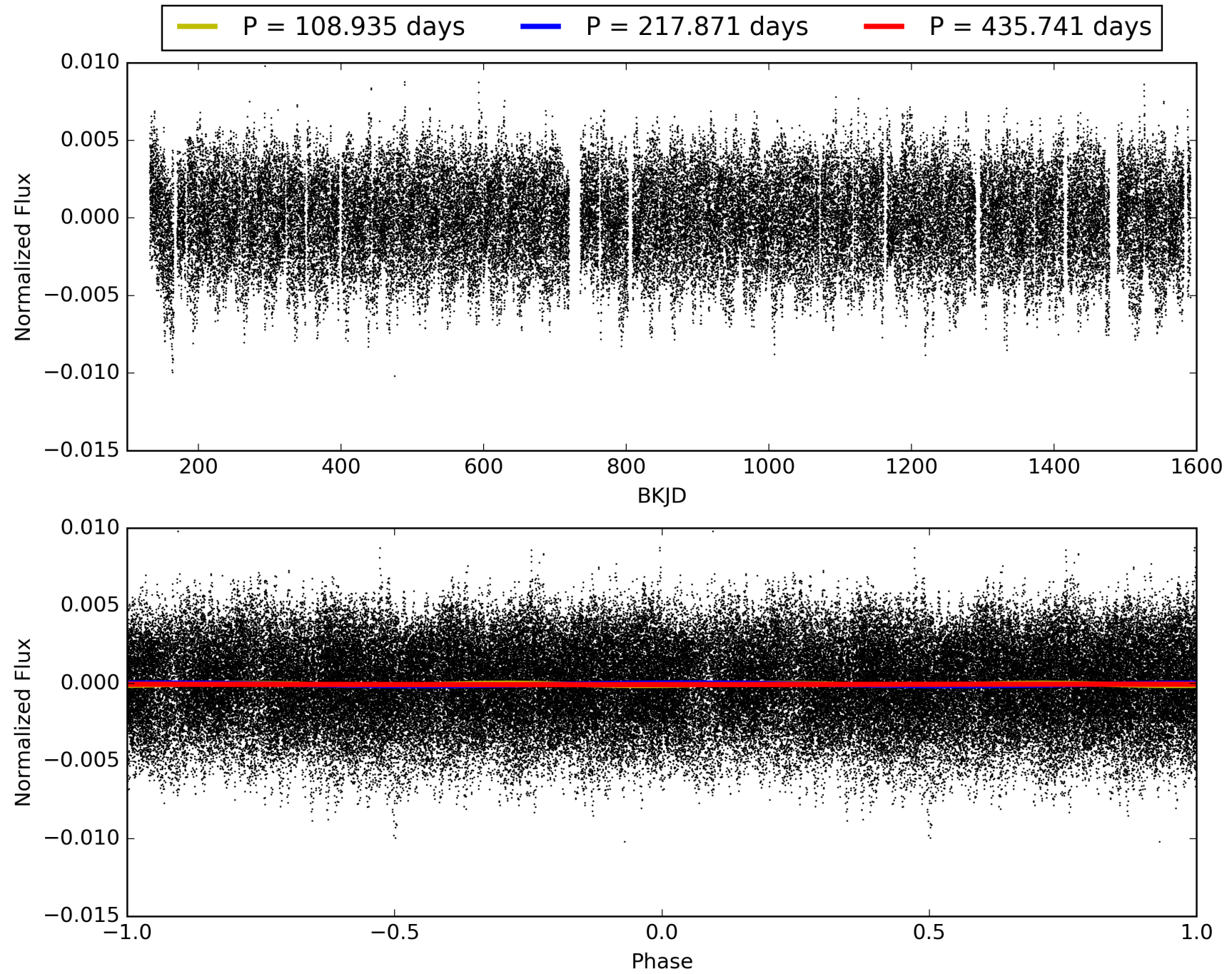
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:11:37 Z

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

TCE 009596300-07, PDC Light Curves

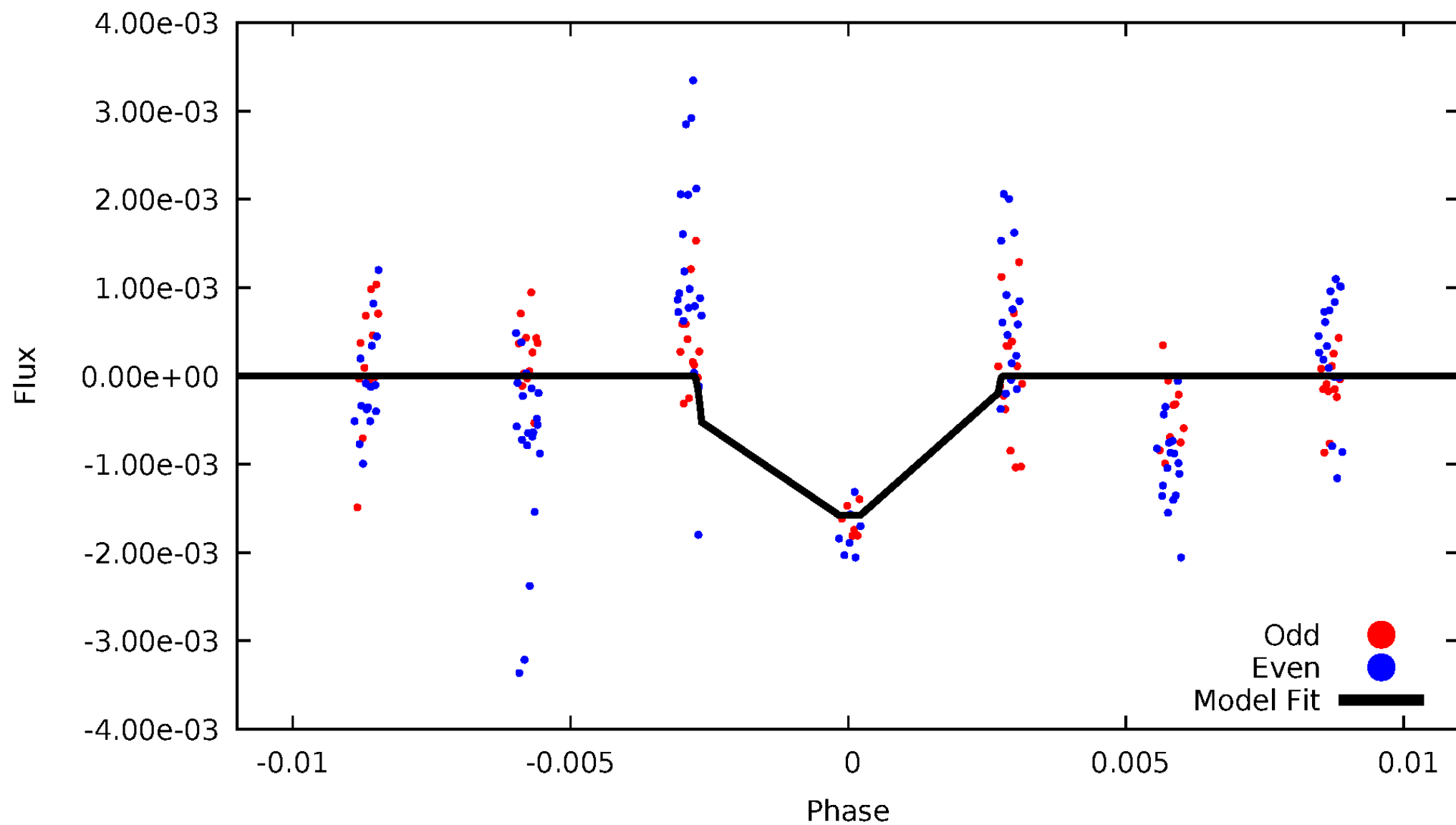


TCE 009596300-07



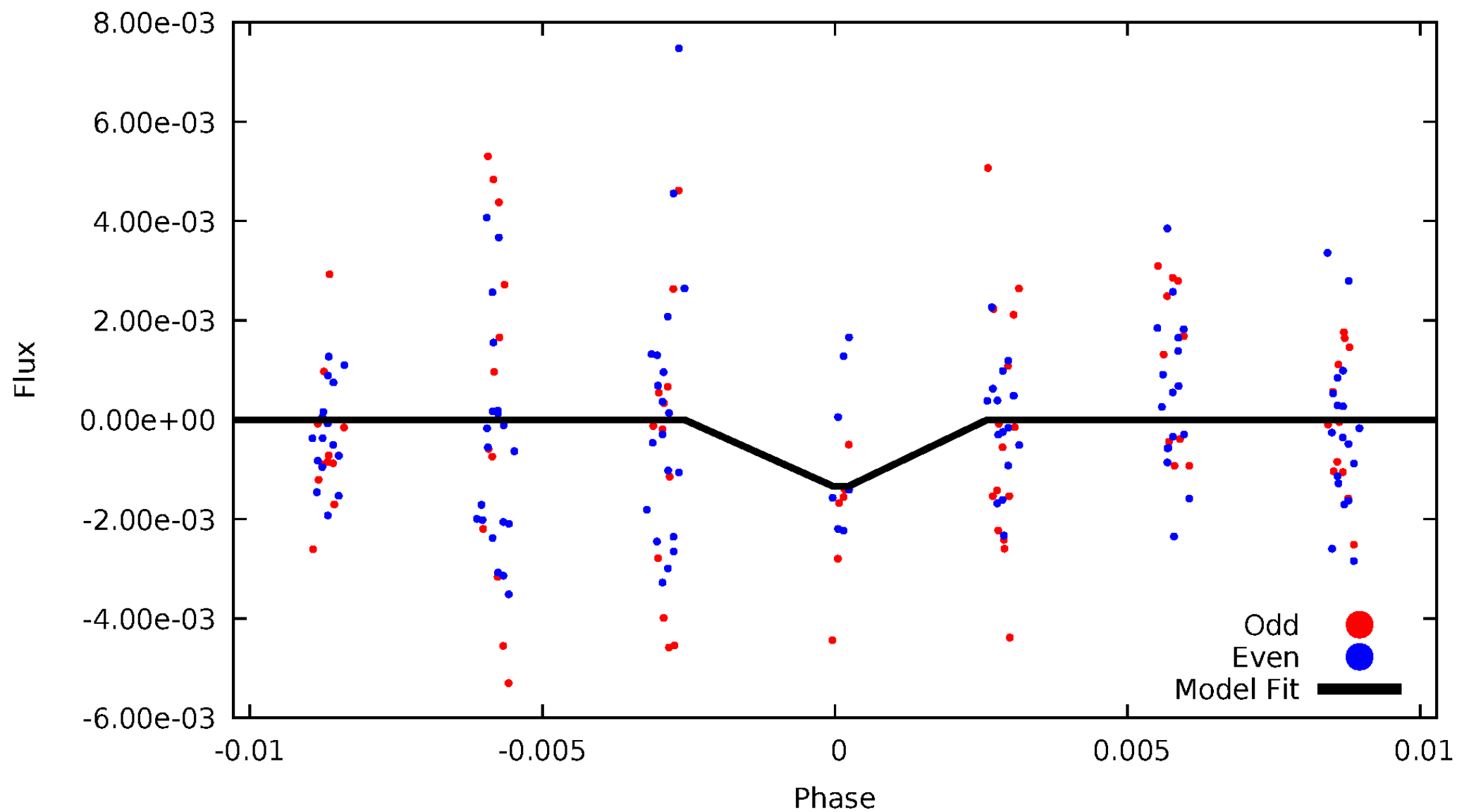
DV Odd/Even

TCE 009596300-07



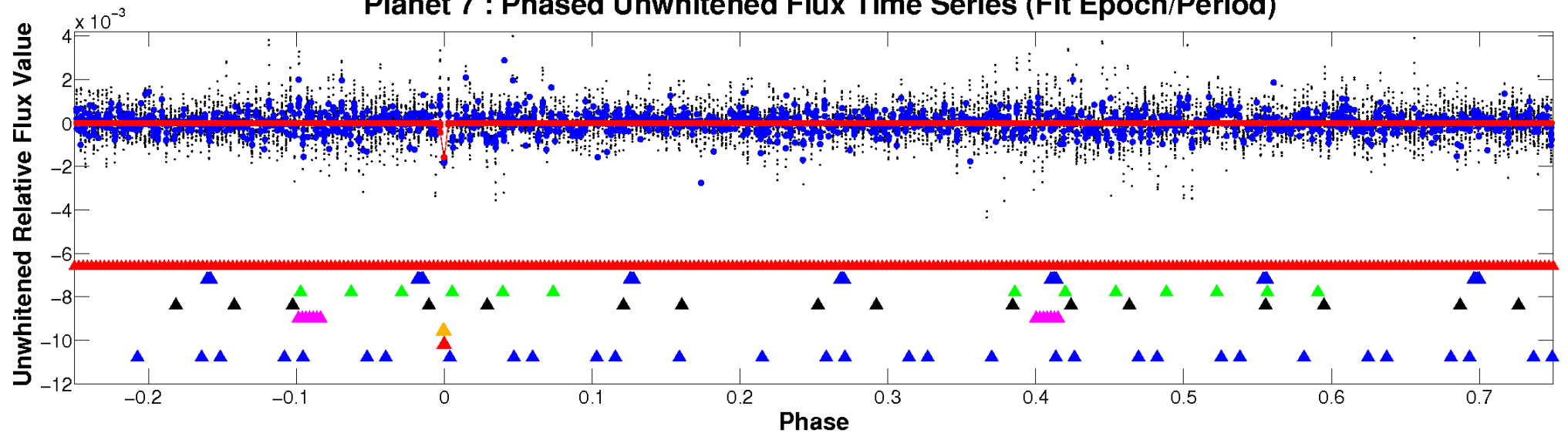
ALT Odd/Even

TCE 009596300-07

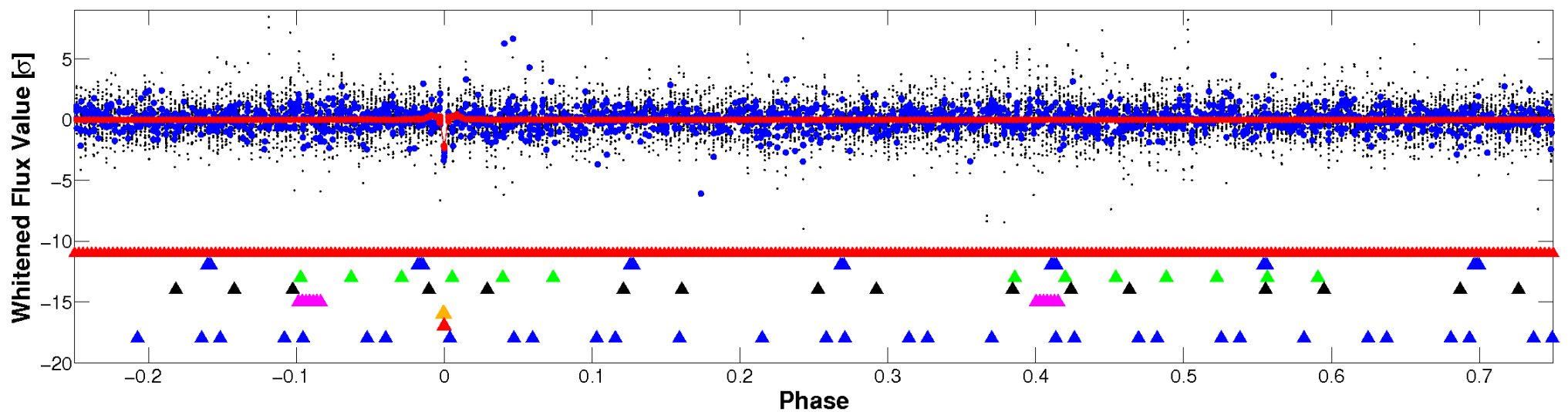


Non-Whitened Vs. Whitened Light Curve

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

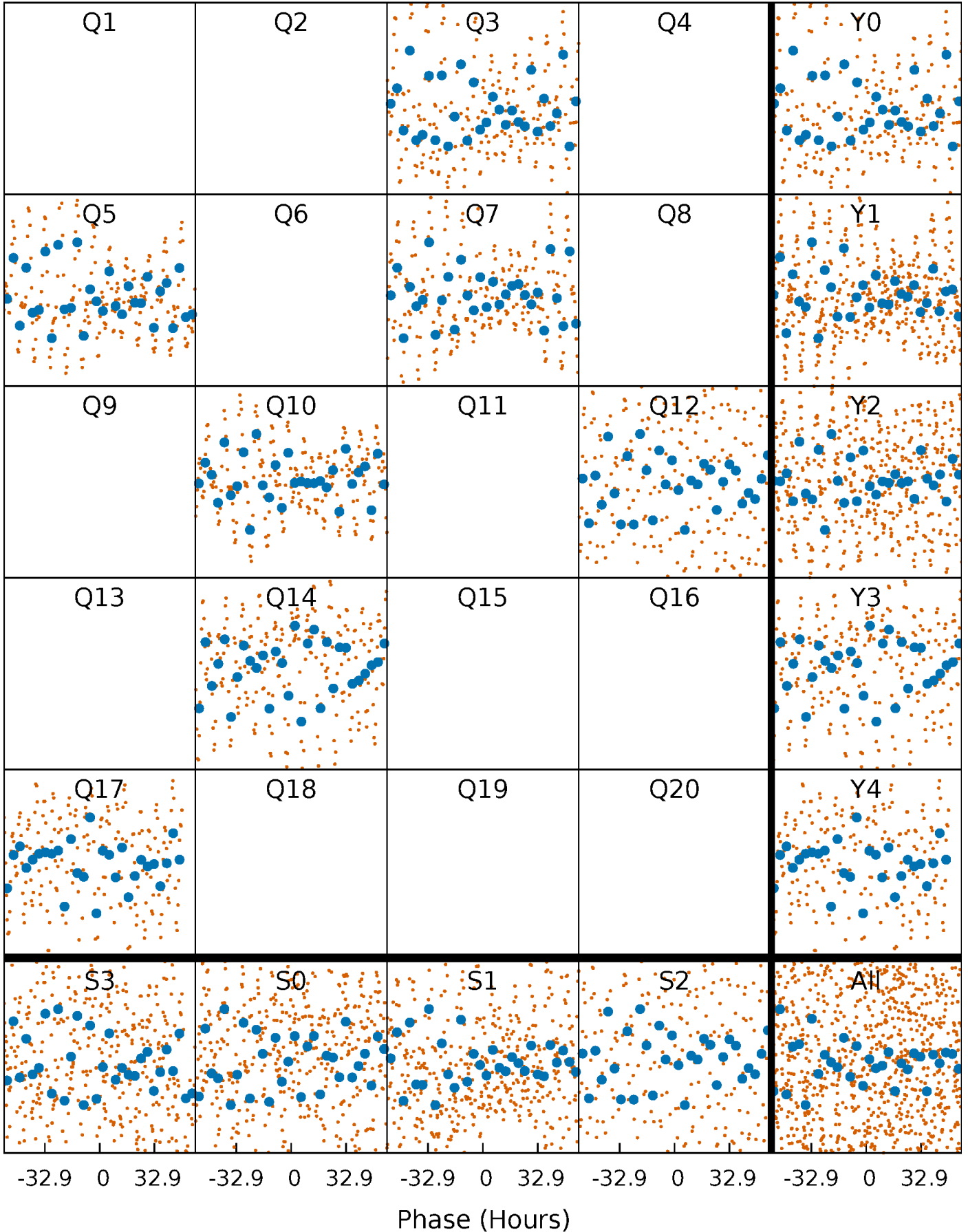


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



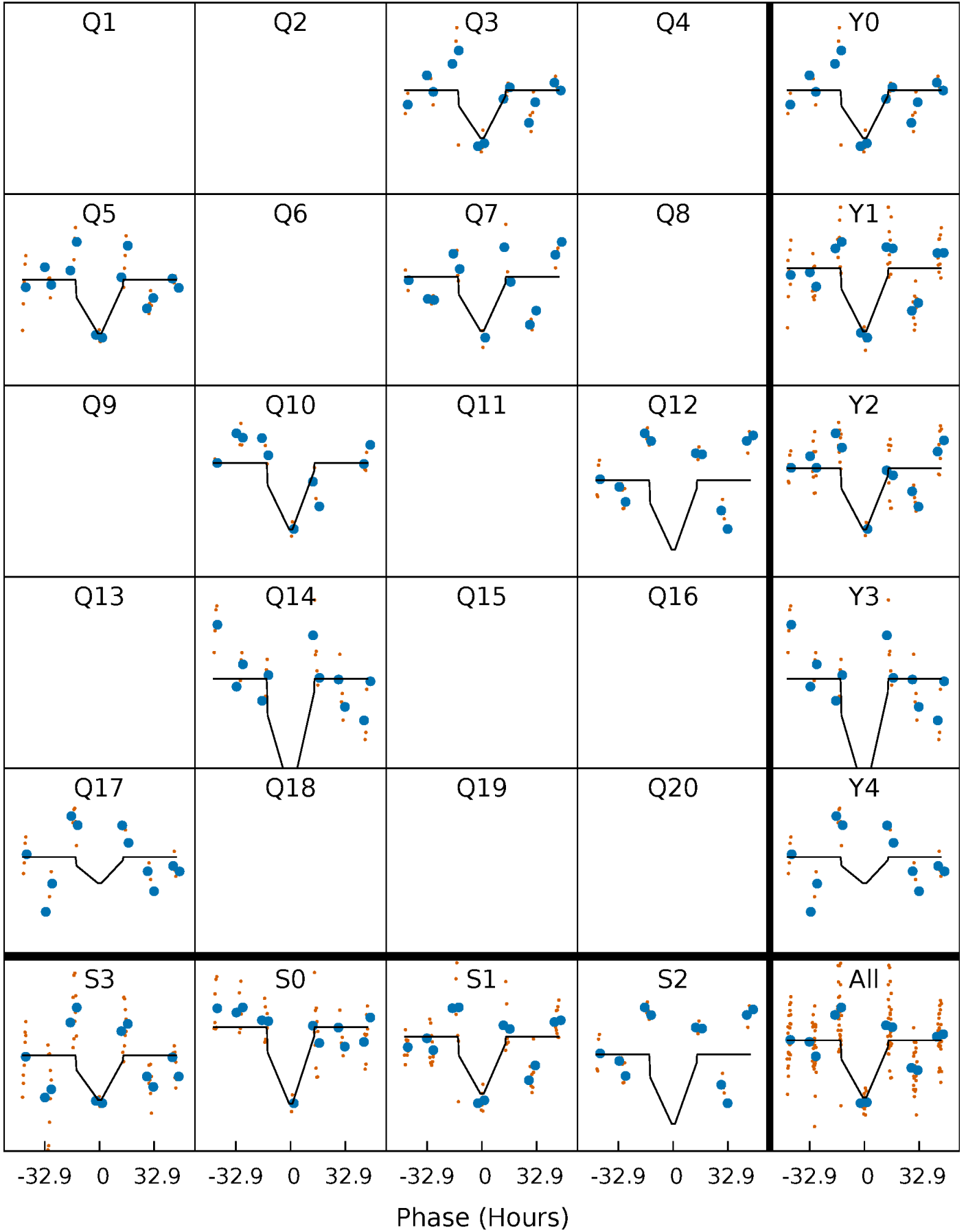
PDC Quarter-Phased Transit Curves

TCE 009596300-07 $P=217.870671$ Days $T_0=272.296205$ (BKJD)



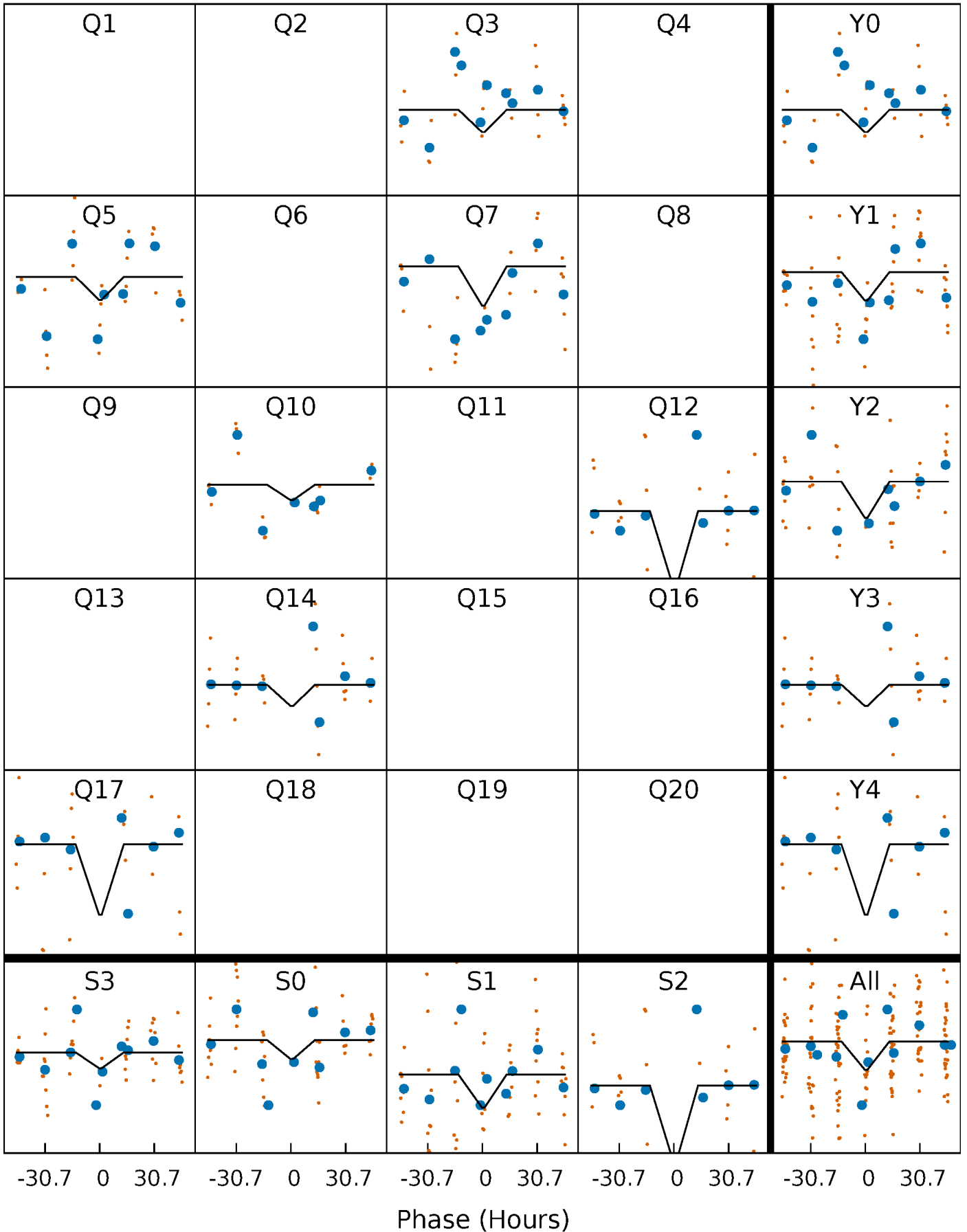
DV Quarter-Phased Transit Curves

TCE 009596300-07 P=217.870671 Days $T_0=272.296205$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

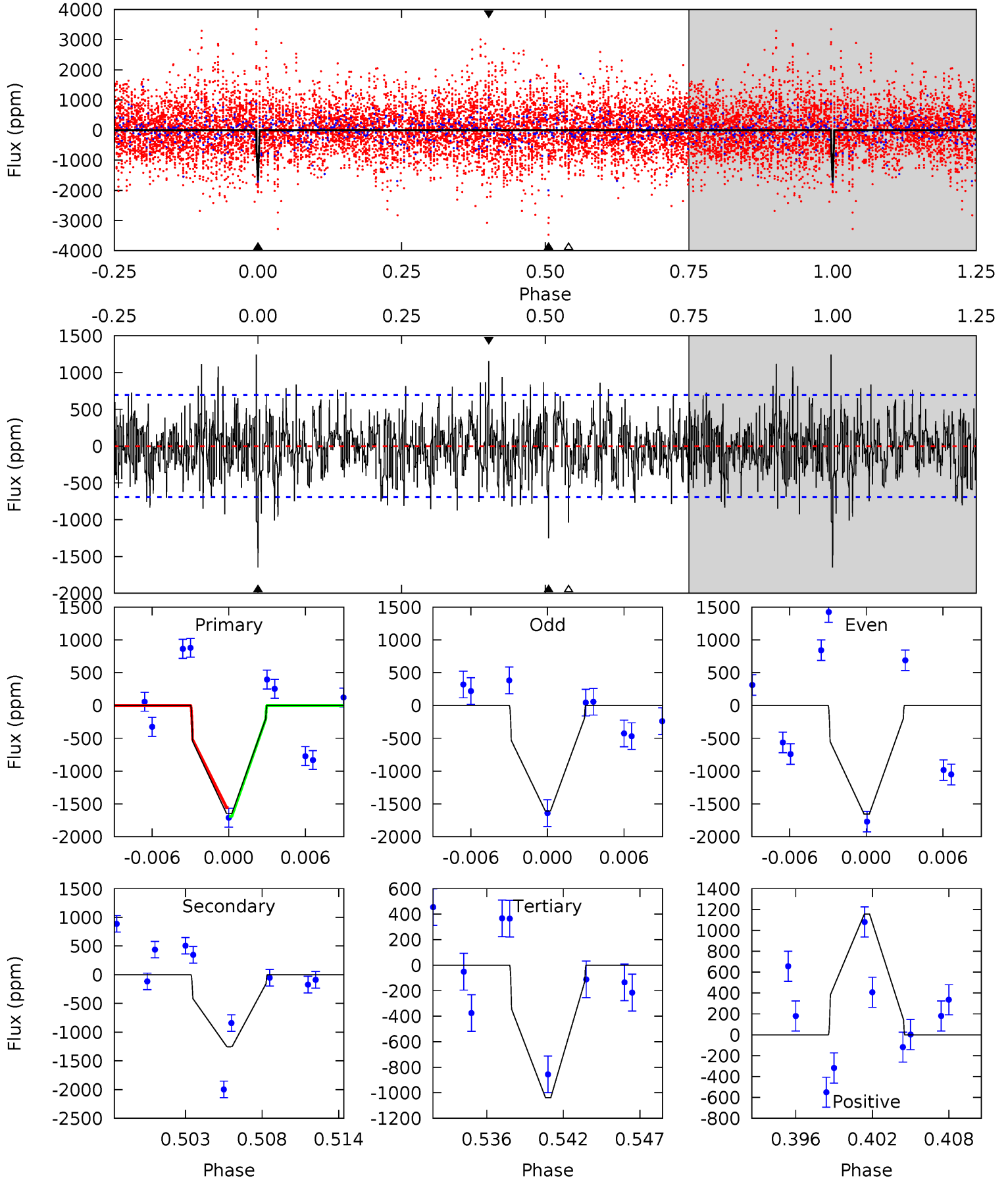
TCE 009596300-07 $P=217.882372$ Days $T_0=272.268563$ (BKJD)



DV Model-Shift Uniqueness Test

009596300-07, $P = 217.870671$ Days, $E = 54.425534$ Days

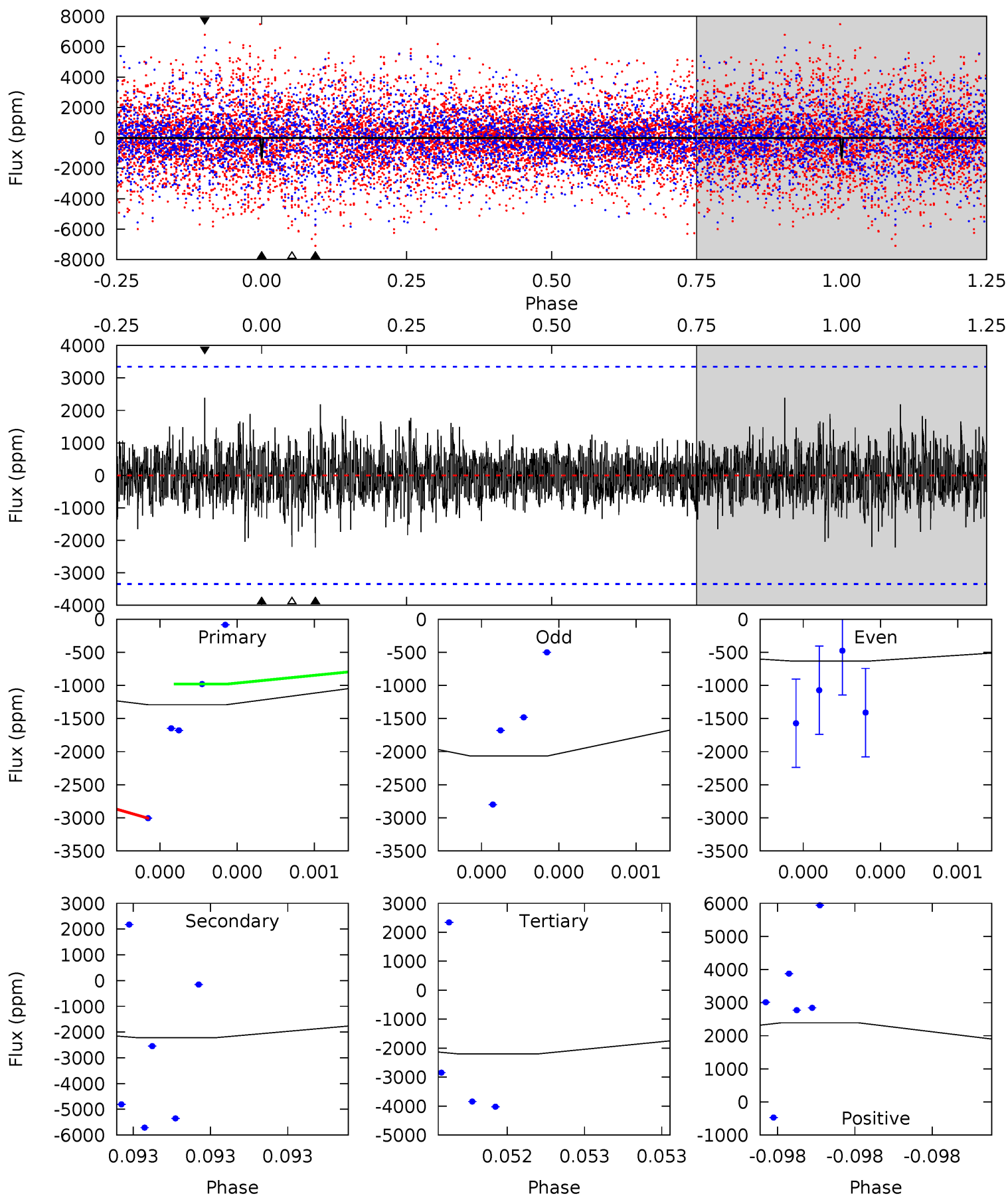
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	9.28	7.70	8.56	5.14	2.77	2.39	4.51	3.64	1.58	0.72	0.17	-0.21	0.43	0.50



Alt Model-Shift Uniqueness Test

009596300-07, P = 217.882372 Days, E = 54.386191 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.19	3.76	3.73	4.05	5.67	3.63	0.82	-1.54	-1.86	0.03	-0.28	1.26	0.78	0.52	0.00



Stellar Parameters For KIC 009596300

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7571^{+211}_{-316}	$4.166^{+0.105}_{-0.195}$	$-0.140^{+0.200}_{-0.350}$	$1.696^{+0.533}_{-0.328}$	$1.535^{+0.219}_{-0.219}$	$0.443^{+0.264}_{-0.225}$
	+3%/-4%	+3%/-5%	+143%/-250%	+31%/-19%	+14%/-14%	+60%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009596300-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1253 ± 135	$6.91^{+1.48}_{-1.21}$	677^{+50}_{-40}	7363^{+769}_{-589}	9418^{+4419}_{-2942}
Alt.	-2220 ± 590	$6.90^{+1.45}_{-1.06}$	680^{+48}_{-43}	8832^{+1336}_{-1082}	16570^{+9106}_{-6417}

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

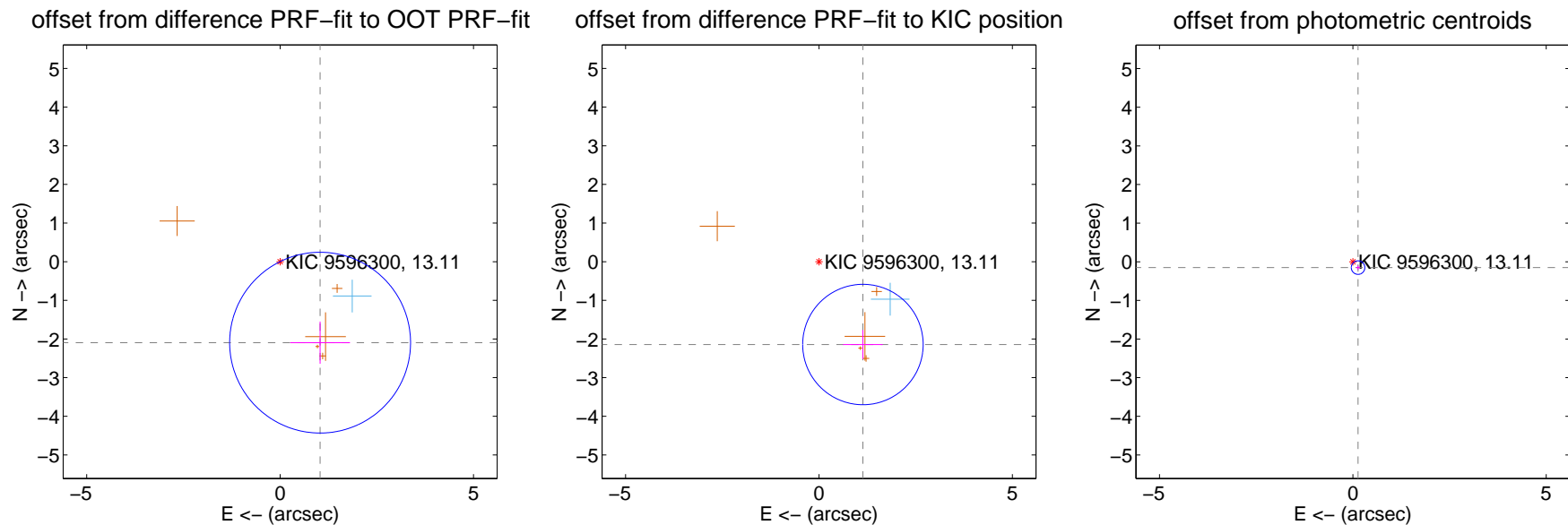
DV Centroid Data

Supplemental centroid analysis for 009596300-07. Kepler magnitude: 13.11. Transit SNR 8.46

There are 1 quarters with good PRF difference image offsets

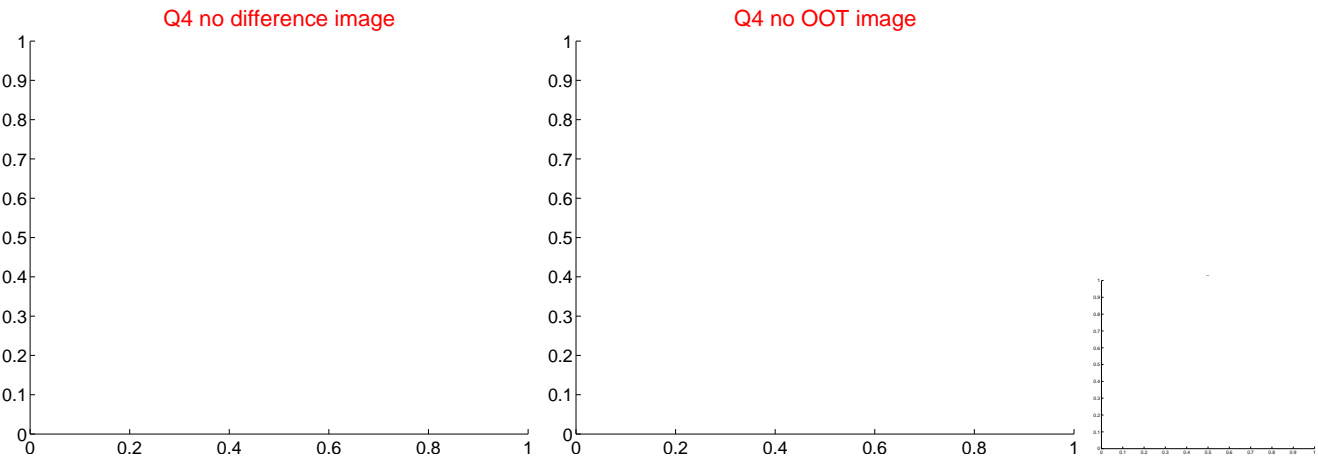
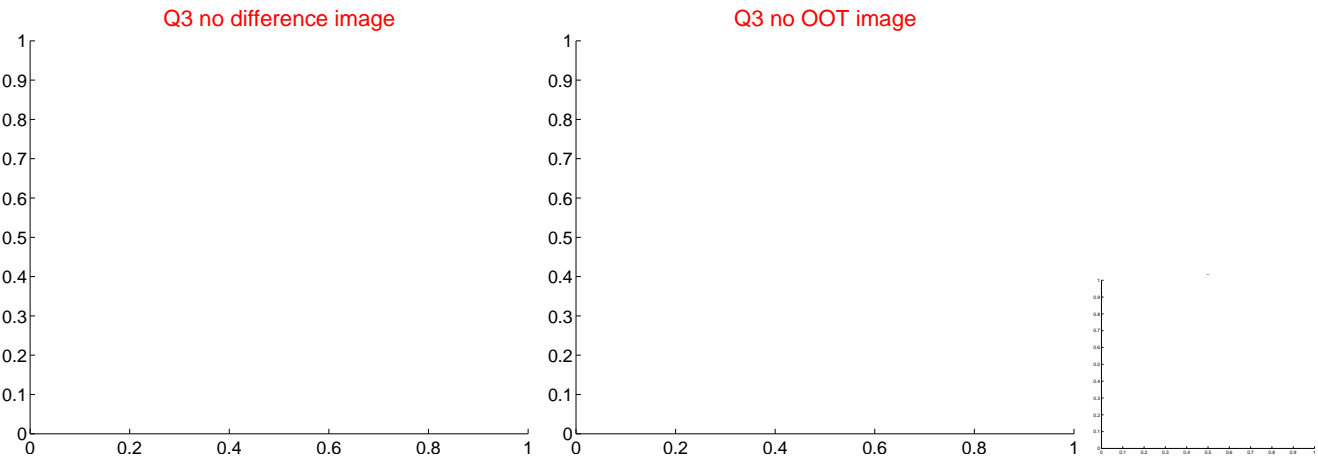
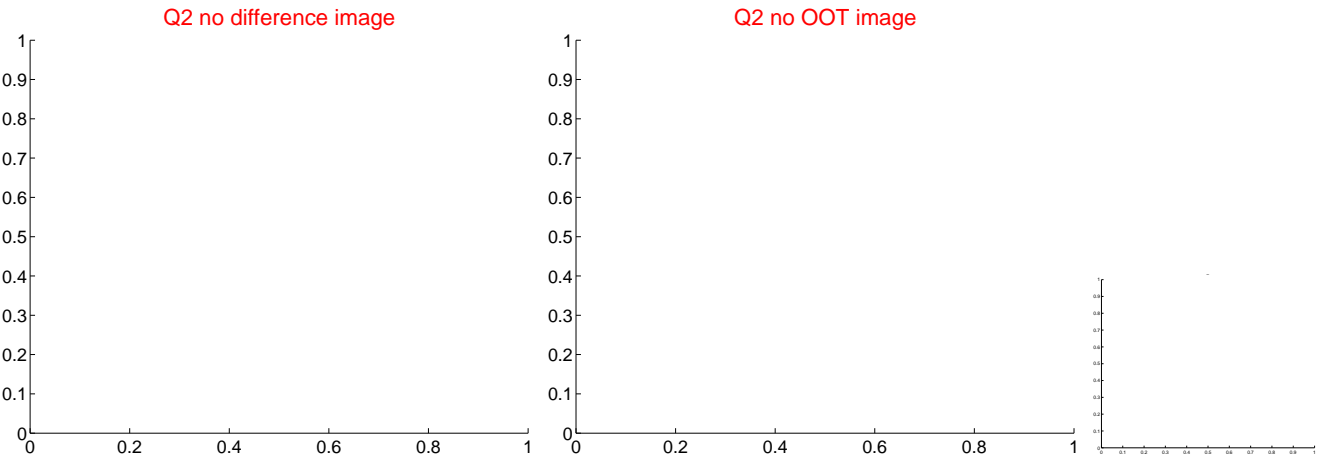
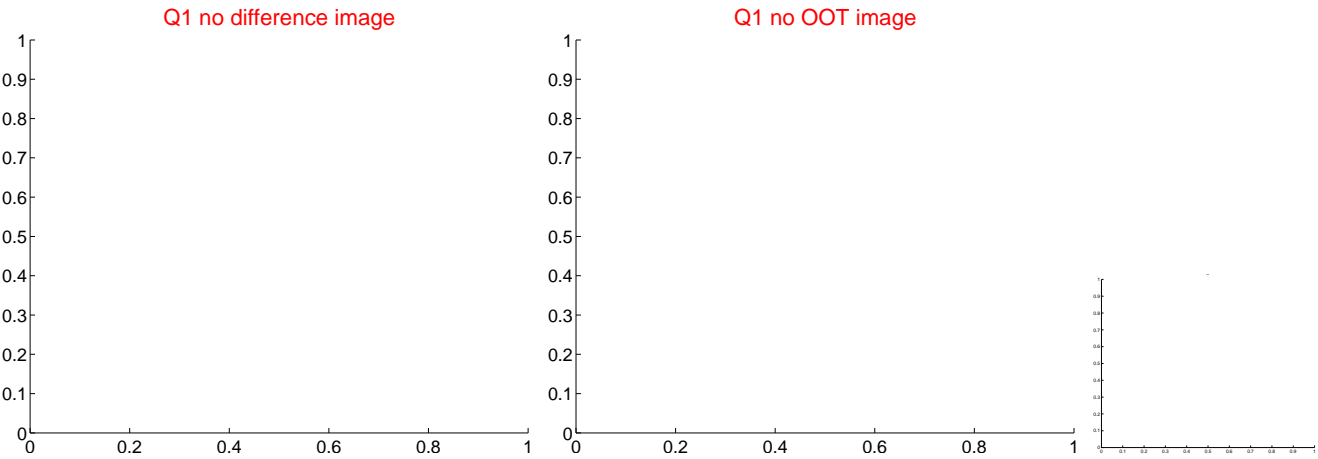
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.336 ± 0.780	3.00	-1.034 ± 0.771	-2.095 ± 0.545
PRF-fit source offset from KIC position	2.426 ± 0.519	4.67	-1.136 ± 0.513	-2.143 ± 0.373
photometric centroid source offset	0.20 ± 0.06	3.46	-0.13 ± 0.06	-0.15 ± 0.06

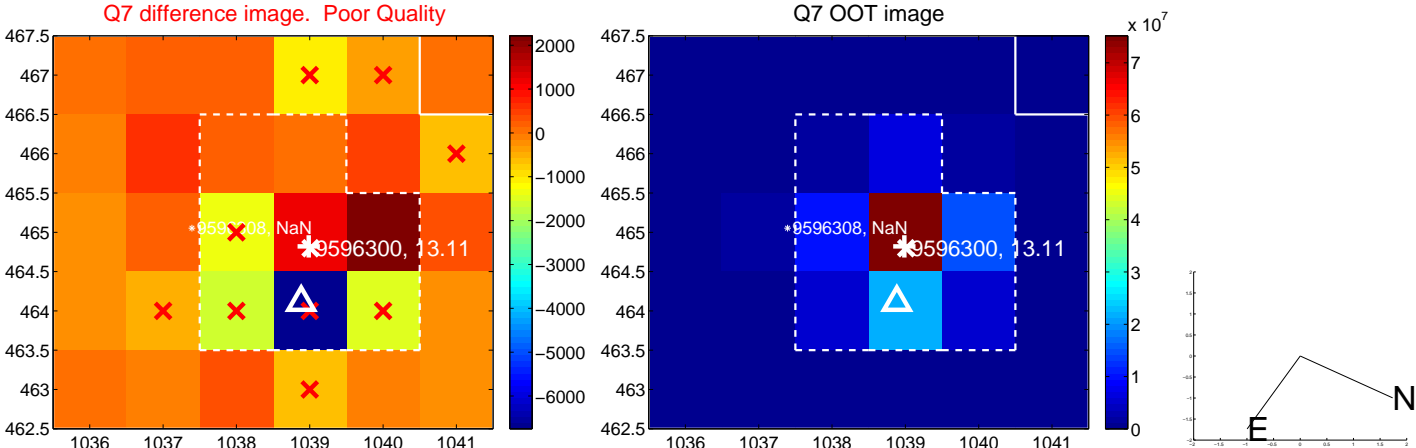
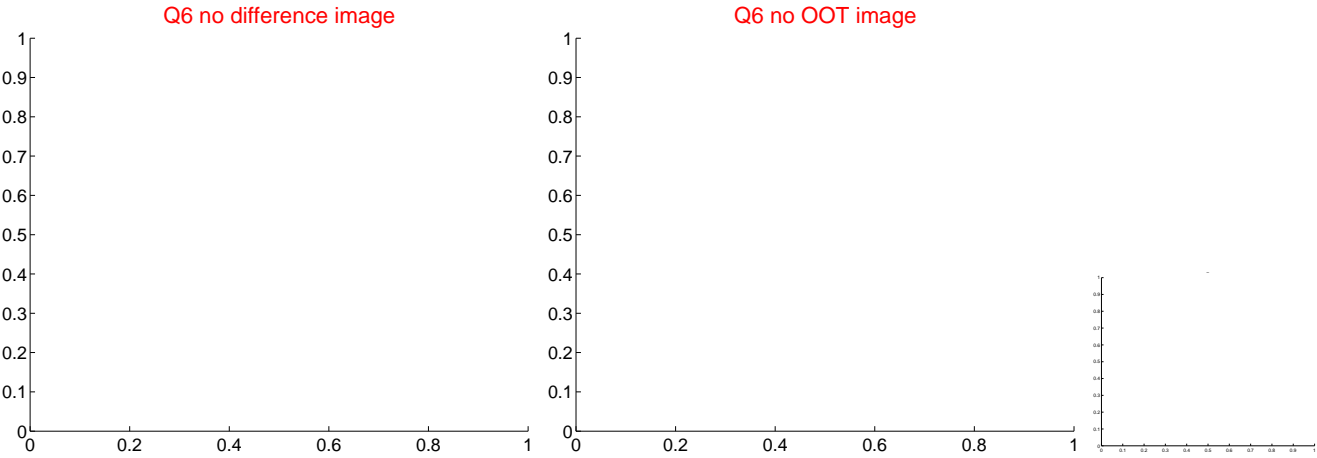
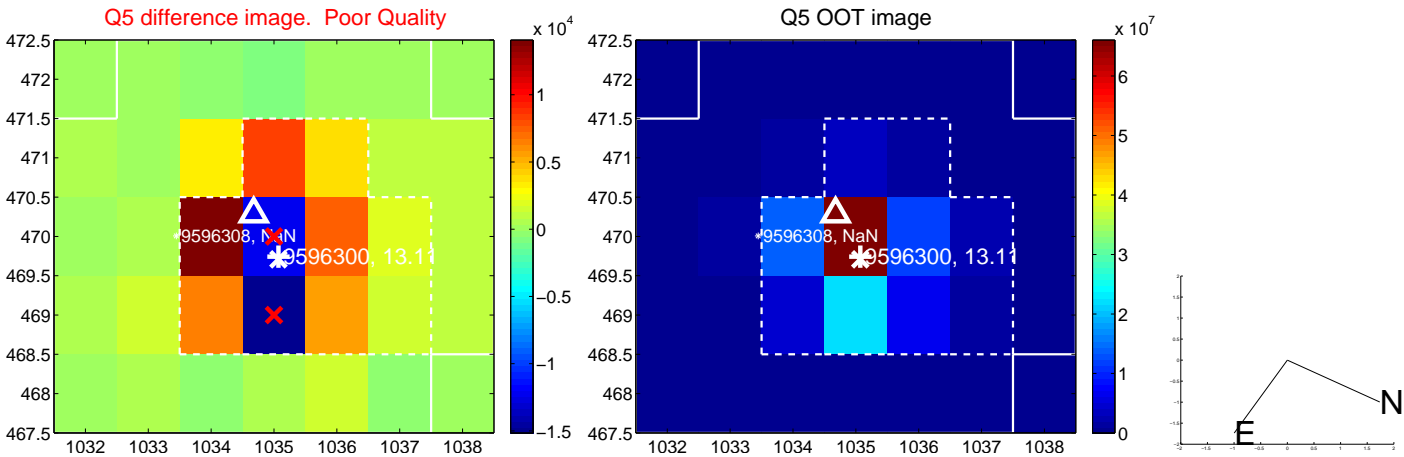


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

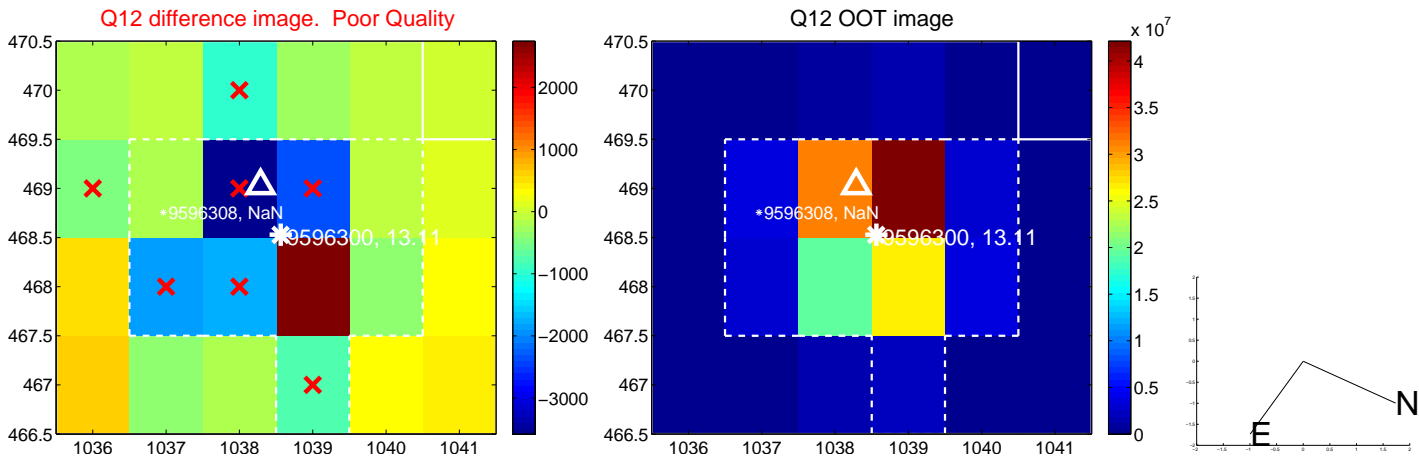
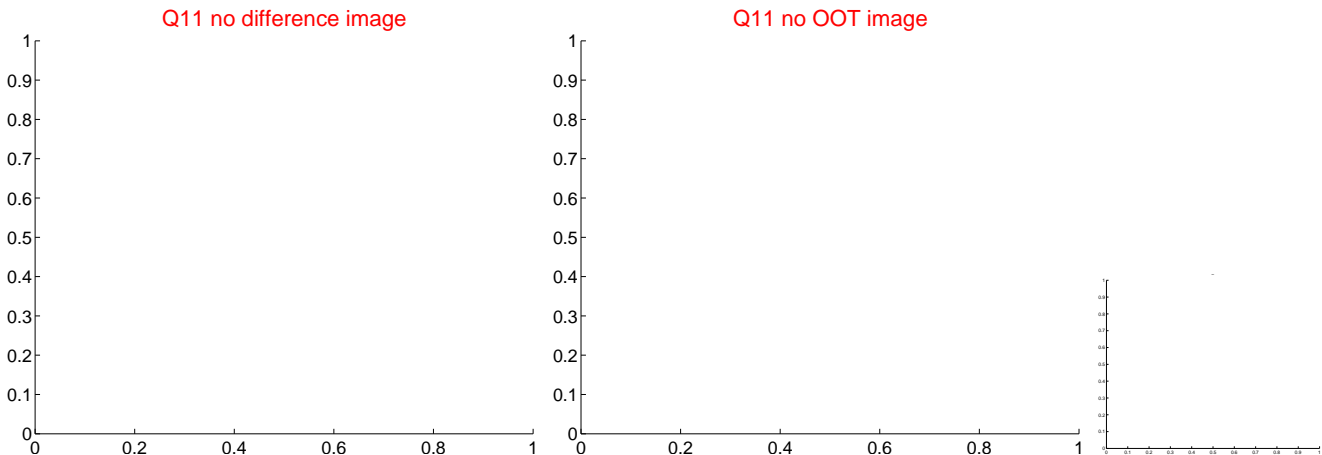
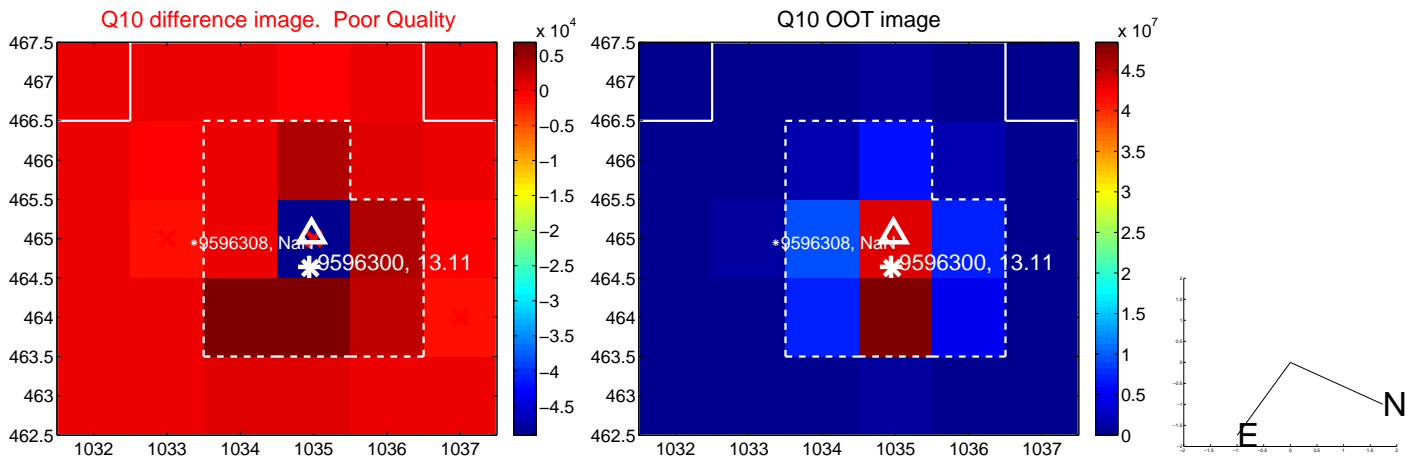
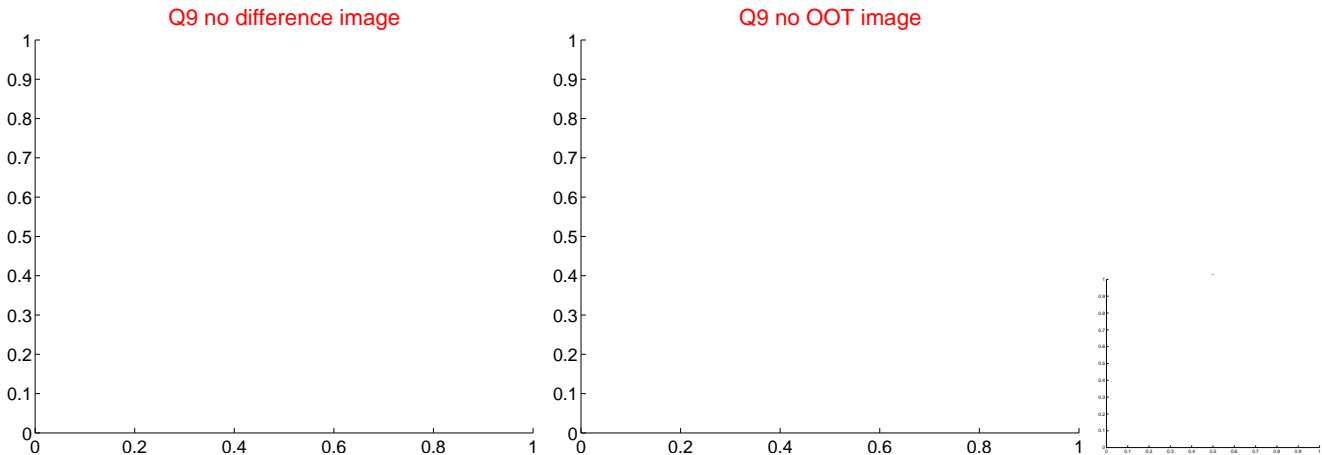
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



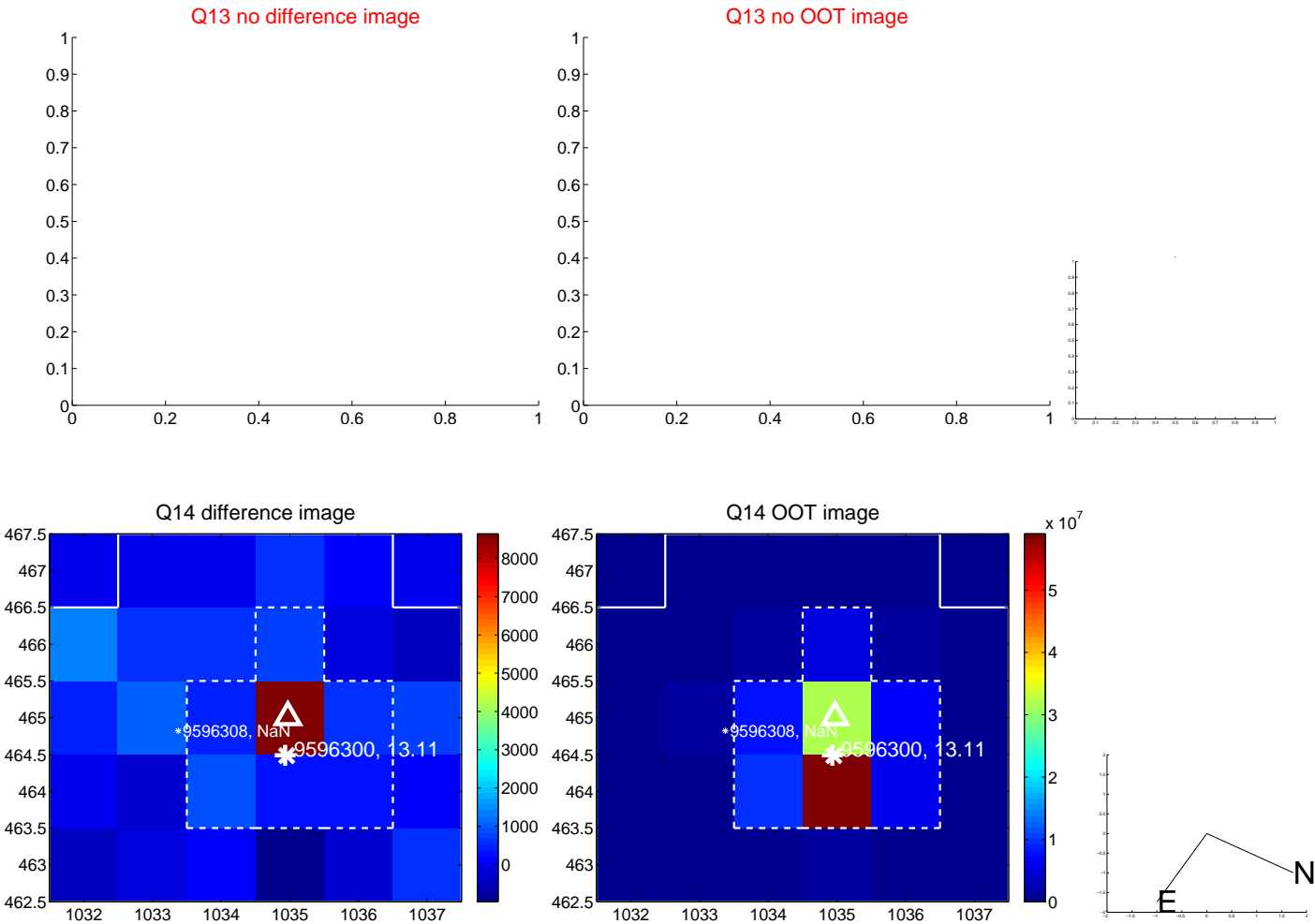
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



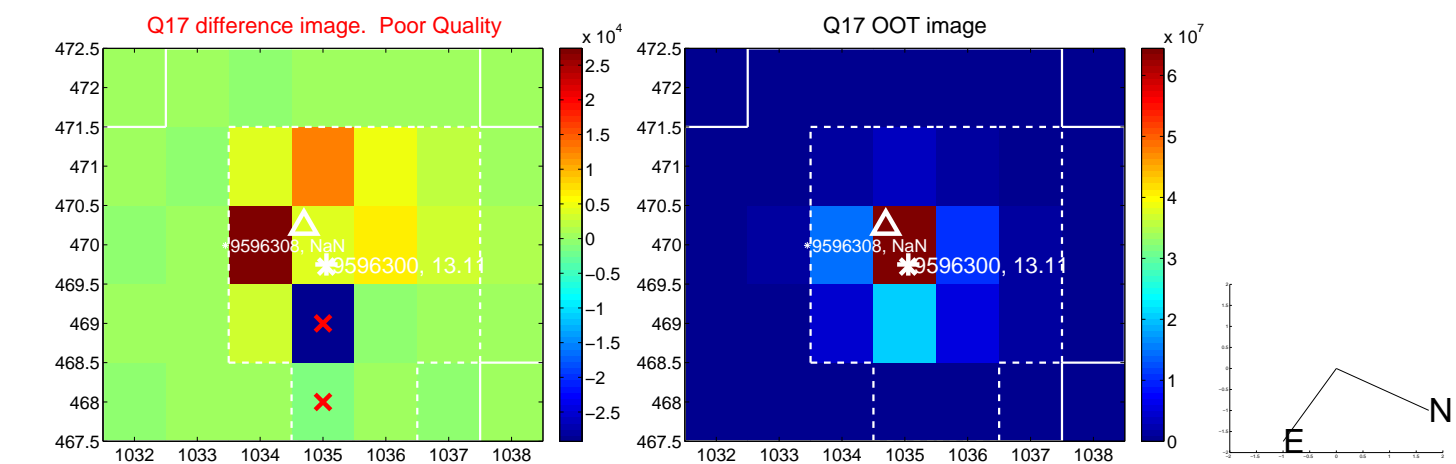
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



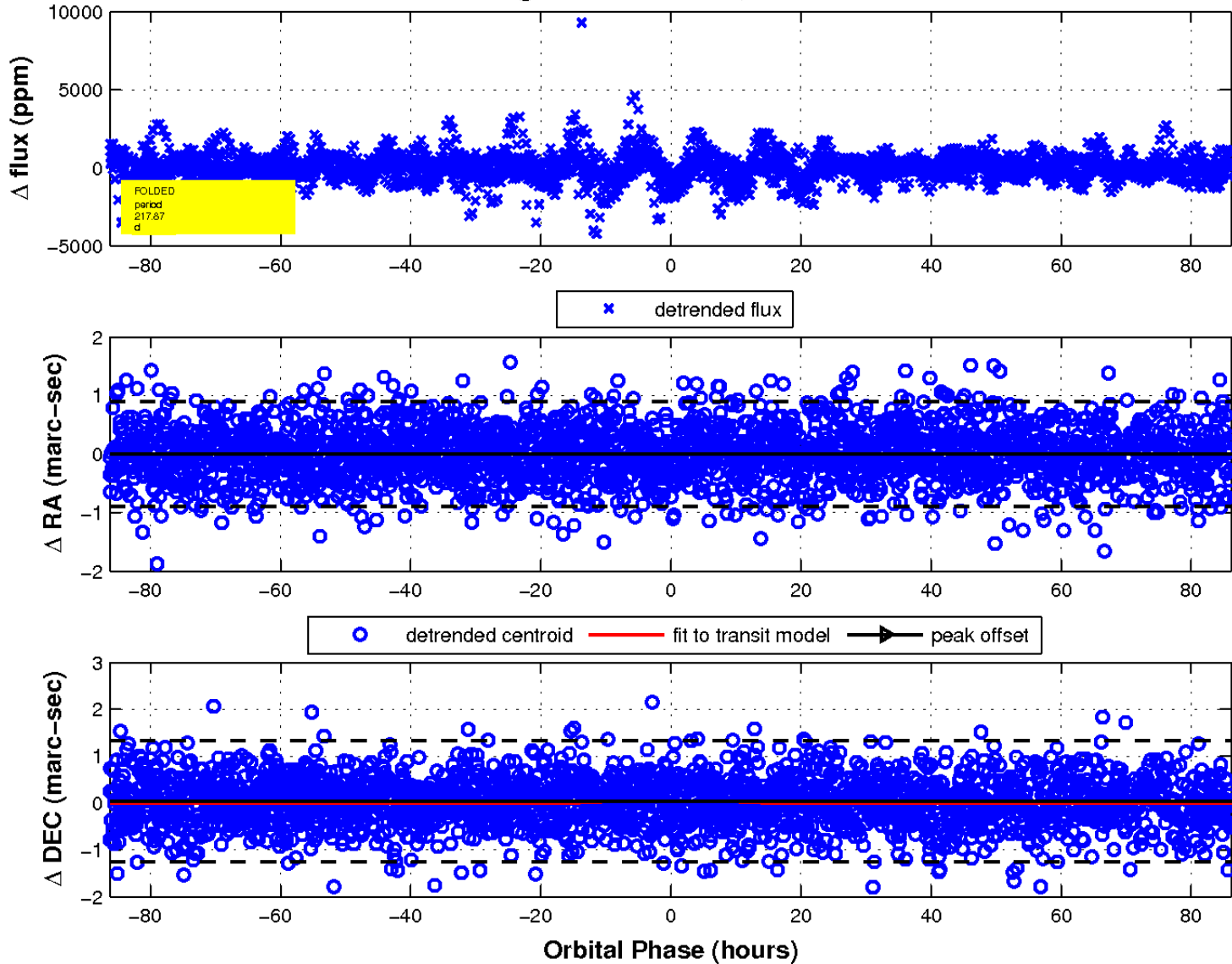
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

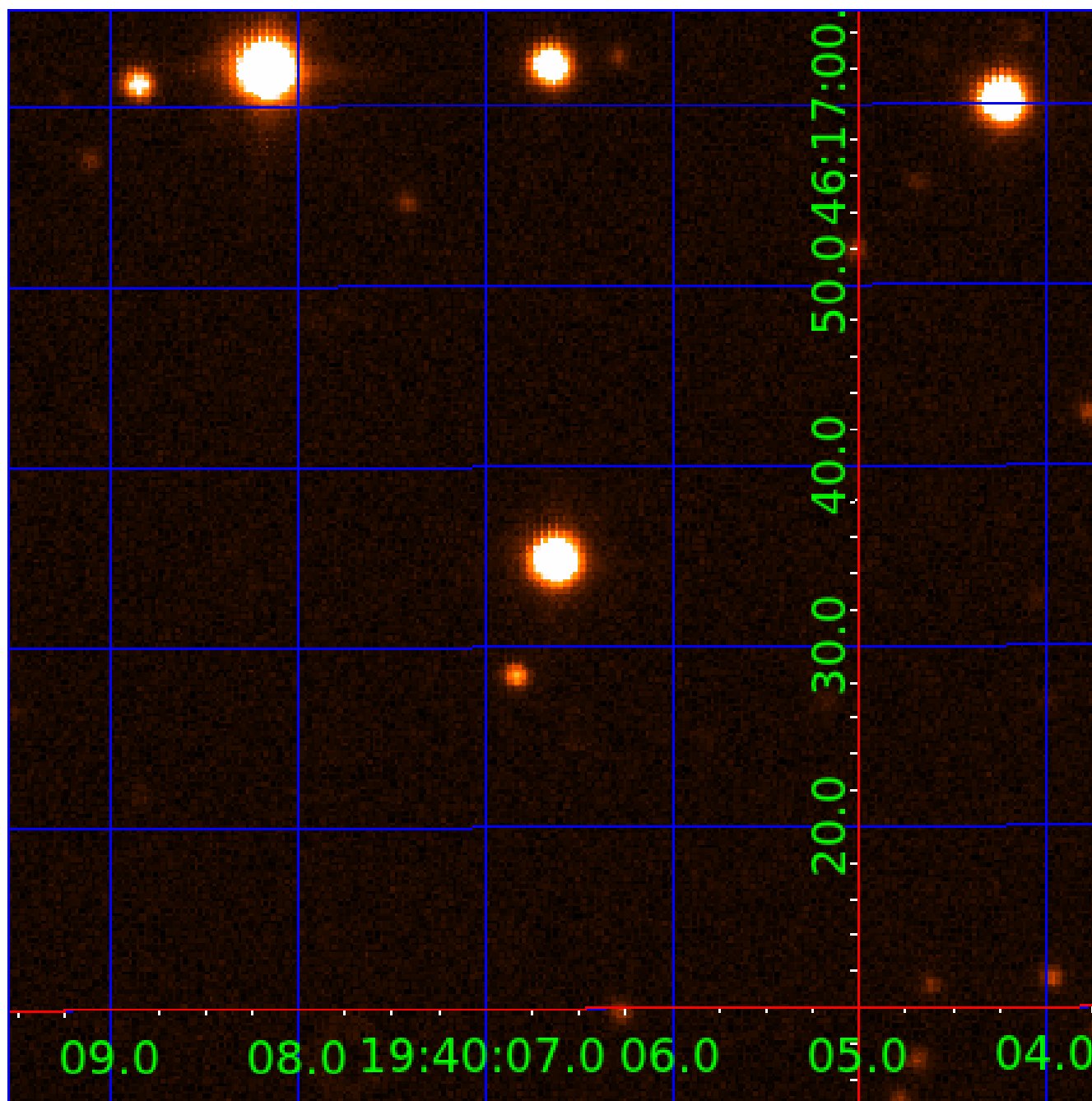


fluxWeightedCentroids, Planet 7 of 8



UKIRT Image

Declination



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})
009596300-01	OBS	No	0.629693	131.556025	0.9	4.130	8.4	0.1	1.70	7571	0.17	30734.05
009596300-02	OBS	No	62.286638	143.822606	2094.6	2.185	16.5	11.0	1.70	7571	14.32	67.18
009596300-03	OBS	No	112.656642	138.493851	728.6	3.671	14.1	3.8	1.70	7571	4.68	30.49
009596300-04	OBS	No	94.602073	138.174543	2650.1	3.417	12.7	12.9	1.70	7571	15.89	38.48
009596300-05	OBS	No	109.204875	141.642702	1824.0	2.300	11.4	9.4	1.70	7571	7.50	31.78
009596300-06	OBS	No	217.903079	272.117949	382.4	0.719	10.1	2.4	1.70	7571	3.60	12.65
009596300-07	OBS	No	217.870671	272.296205	1577.3	28.757	7.9	8.5	1.70	7571	6.81	12.65
009596300-08	OBS	No	46.012266	144.537196	1315.6	1.963	9.3	10.2	1.70	7571	6.74	100.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009596300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009596300-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009596300-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009596300-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009596300-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009596300-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009596300-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST
009596300-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

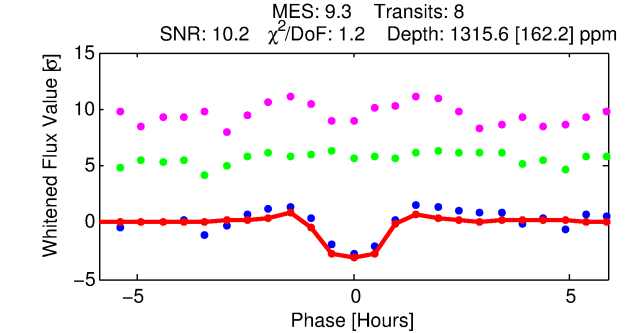
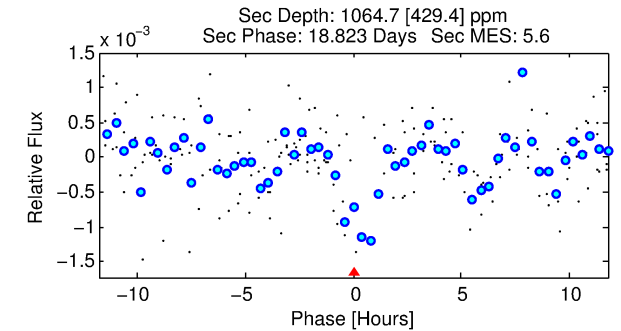
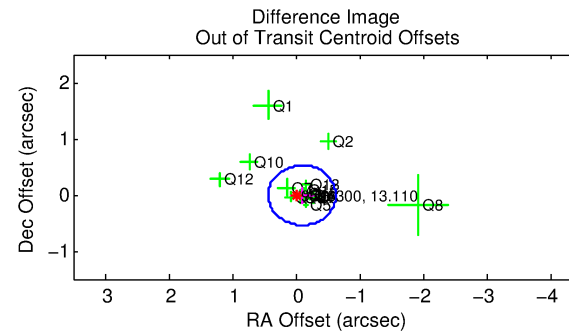
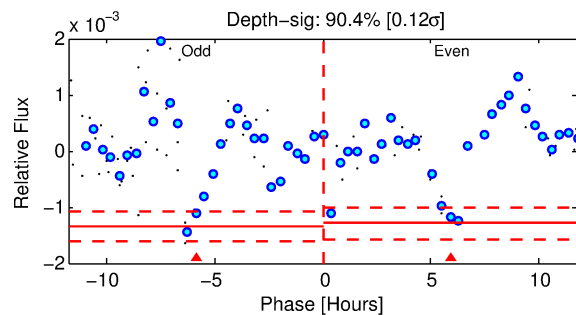
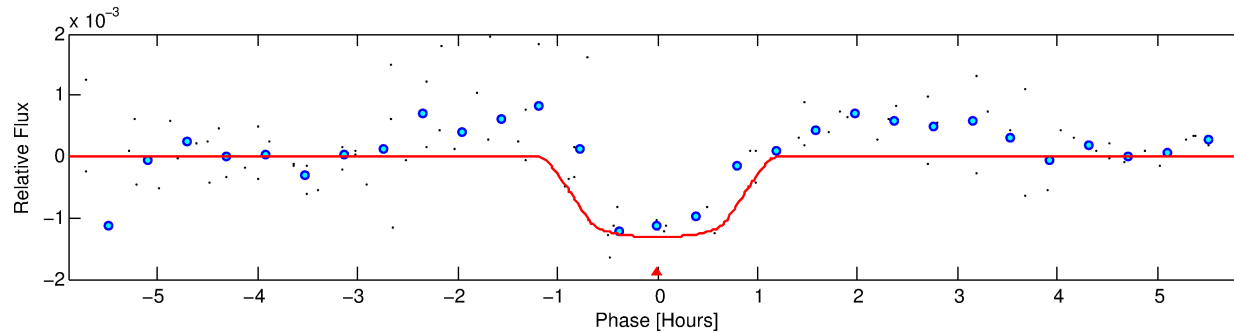
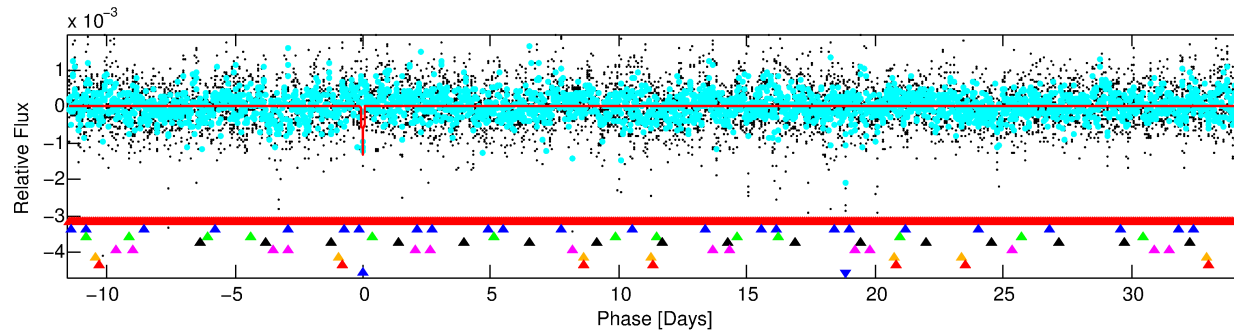
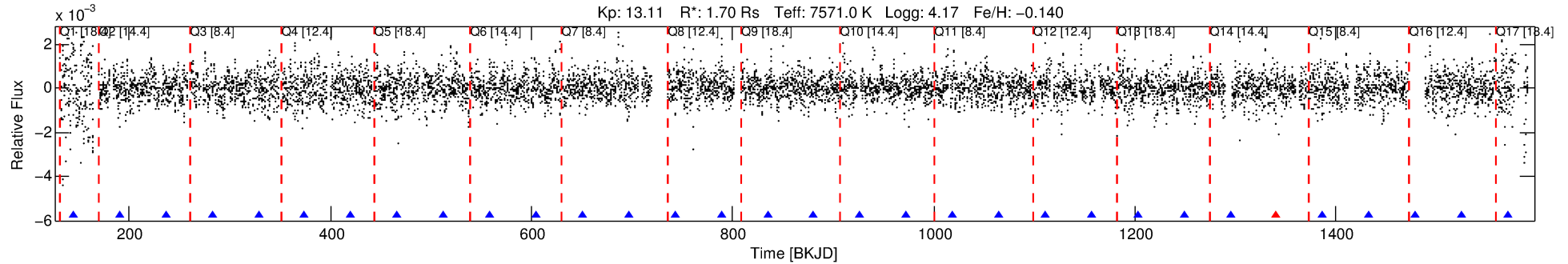
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009596300-08

No Significant Match Found

DV One-Page Summary

KIC: 9596300 Candidate: 8 of 8 Period: 46.012 d



DV Fit Results:

Period = 46.01227 [0.00033] d
Epoch = 144.5372 [0.0058] BKJD
Rp/R* = 0.0364 [0.0386]
a/R* = 123.44 [766.76]
b = 0.77 [3.25]
Seff = 100.61 [40.41]
Teq = 808 [81] K
Rp = 6.74 [7.46] Re
a = 0.2901 [0.0747] AU
Ag = 1085.55 [2378.77] [0.46 σ]
Teffp = 7167 [3883] K [1.64 σ]

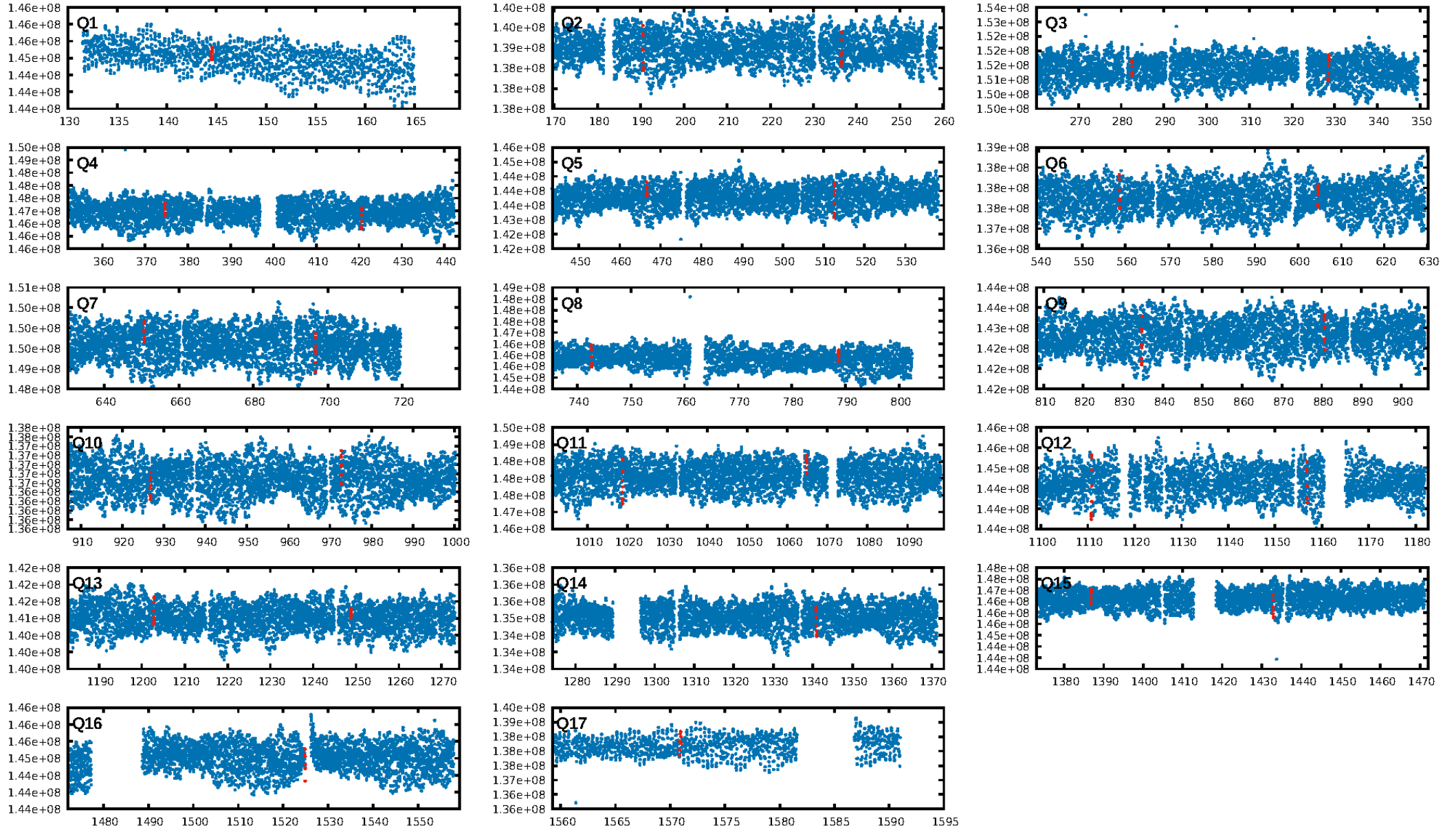
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [238.20 σ]
LongPeriod-sig: 100.0% [132.95 σ]
ModelChiSquare2-sig: 48.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.42e-09
RollingBand-fgt: 0.86 [6/7]
GhostDiagnostic-chr: -0.7825
Centroid-sig: 0.9%
Centroid-so: 0.290 arcsec [2.57 σ]
OotOffset-rm: 0.099 arcsec [0.56 σ]
KicOffset-rm: 0.156 arcsec [0.86 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.38 [6/16]
DiffImageOverlap-fno: 0.00 [0/16]

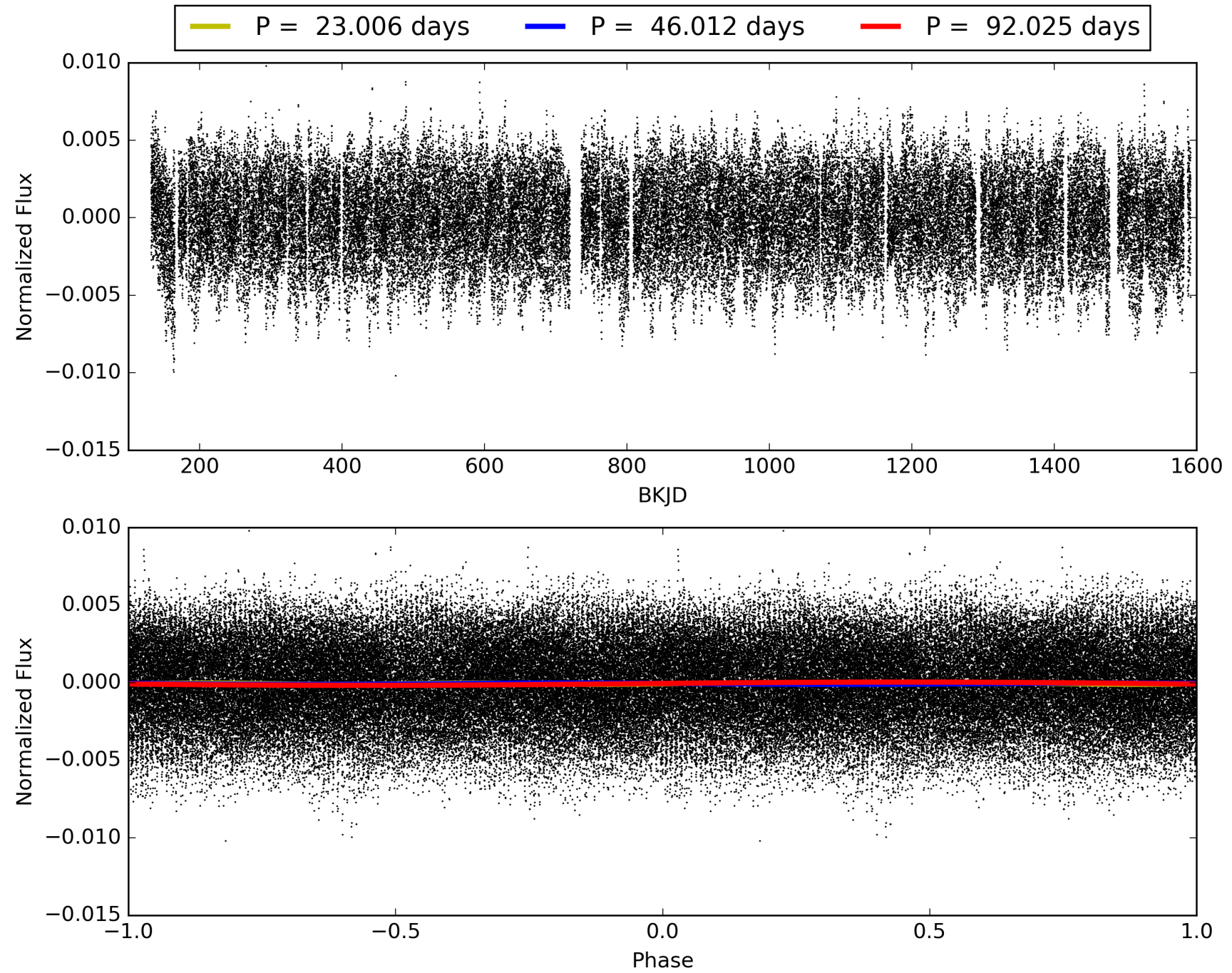
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:11:40 Z

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

TCE 009596300-08, PDC Light Curves

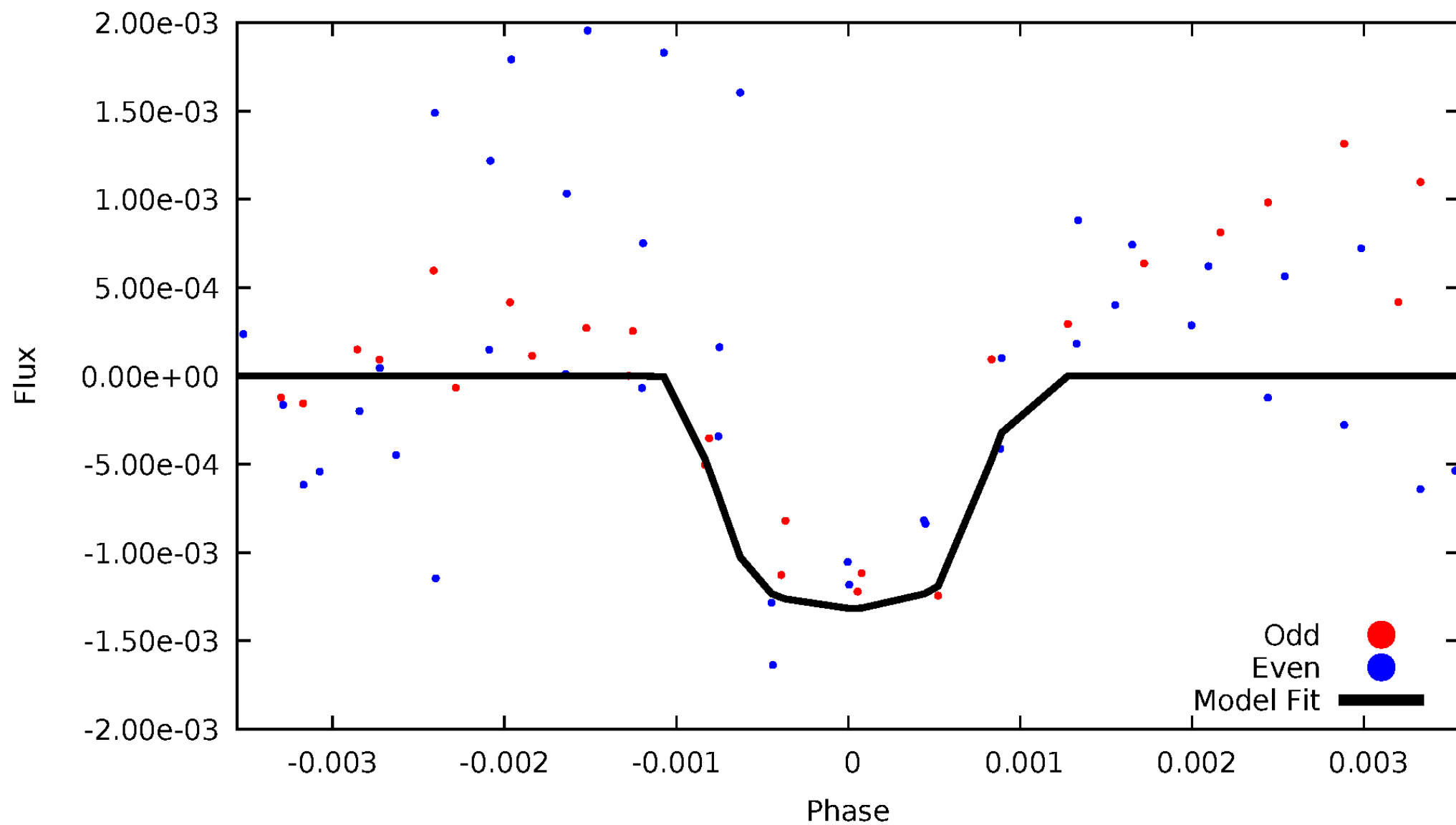


TCE 009596300-08



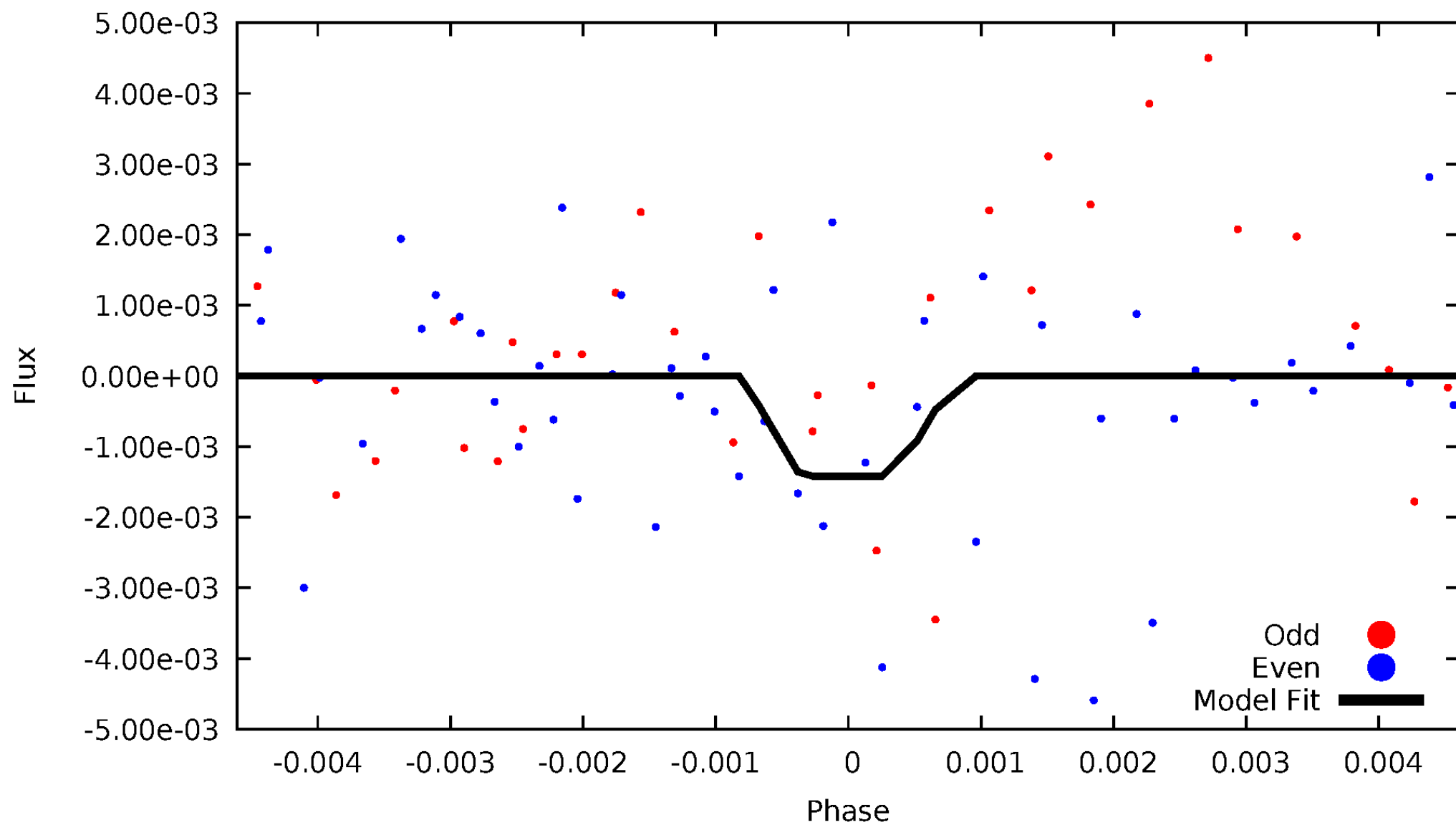
DV Odd/Even

TCE 009596300-08



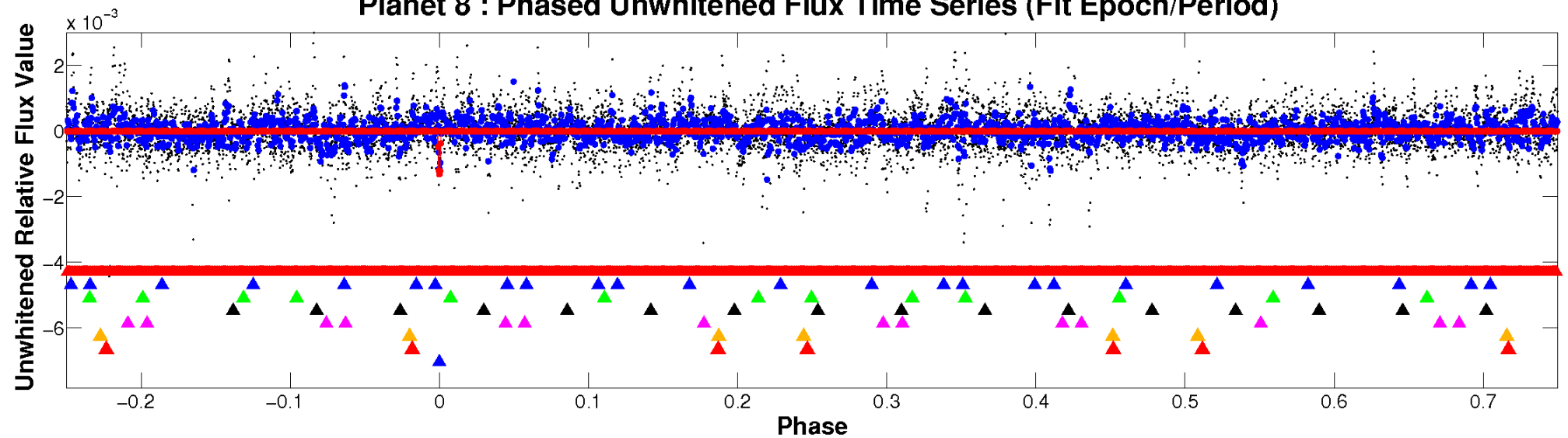
ALT Odd/Even

TCE 009596300-08

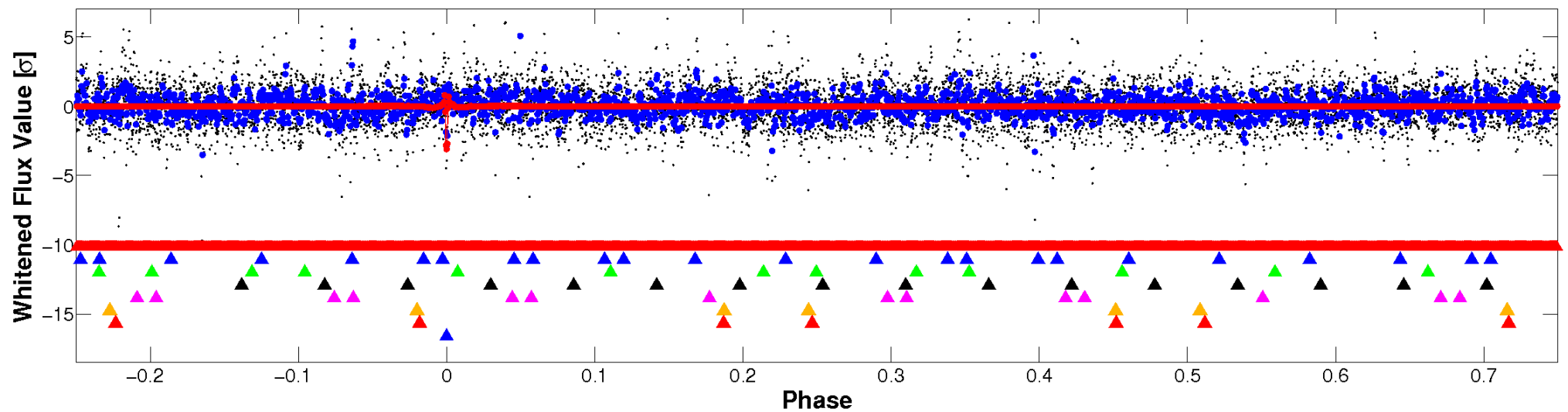


Non-Whitened Vs. Whitened Light Curve

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

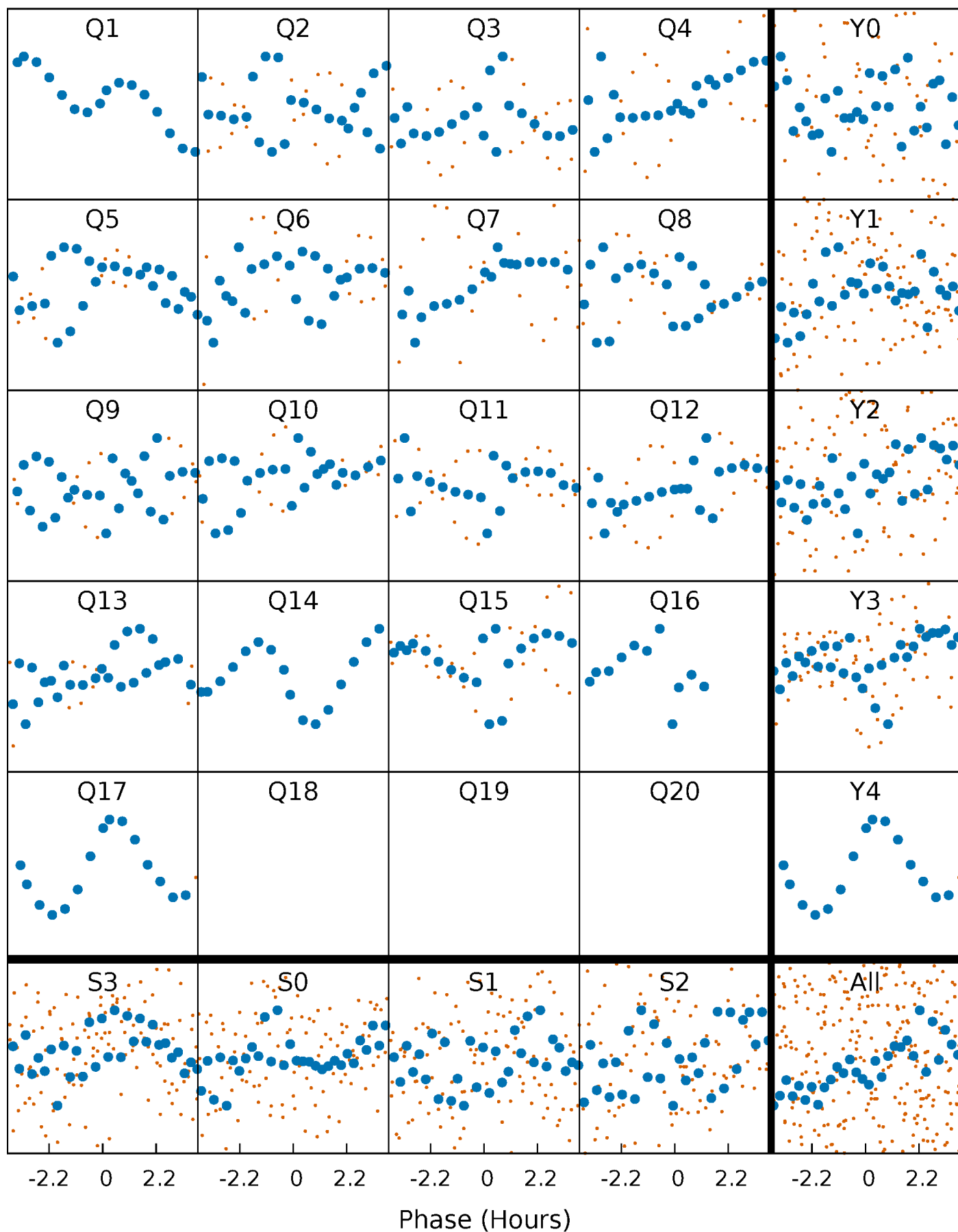


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



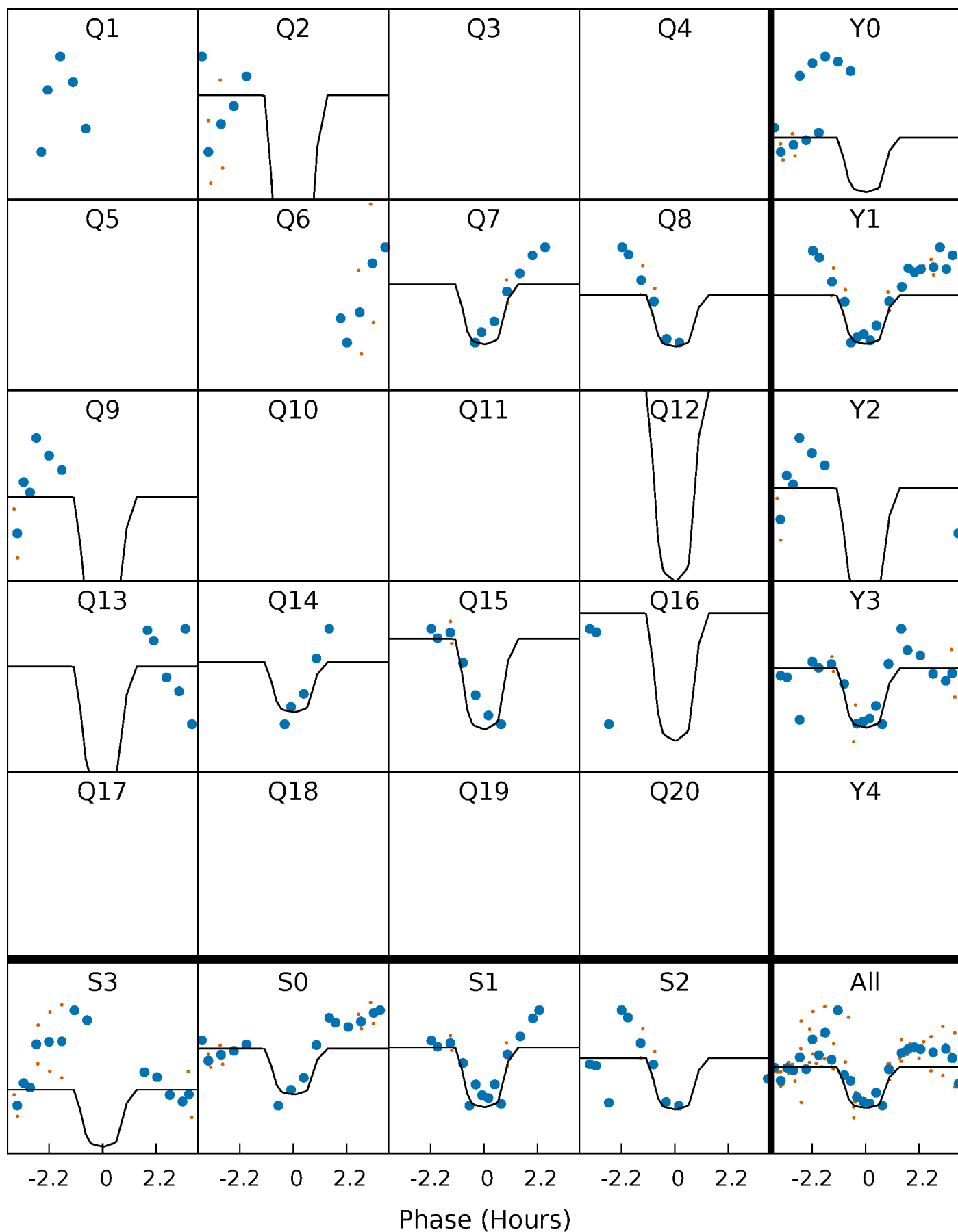
PDC Quarter-Phased Transit Curves

TCE 009596300-08 $P = 46.012266$ Days $T_0 = 144.537196$ (BKJD)



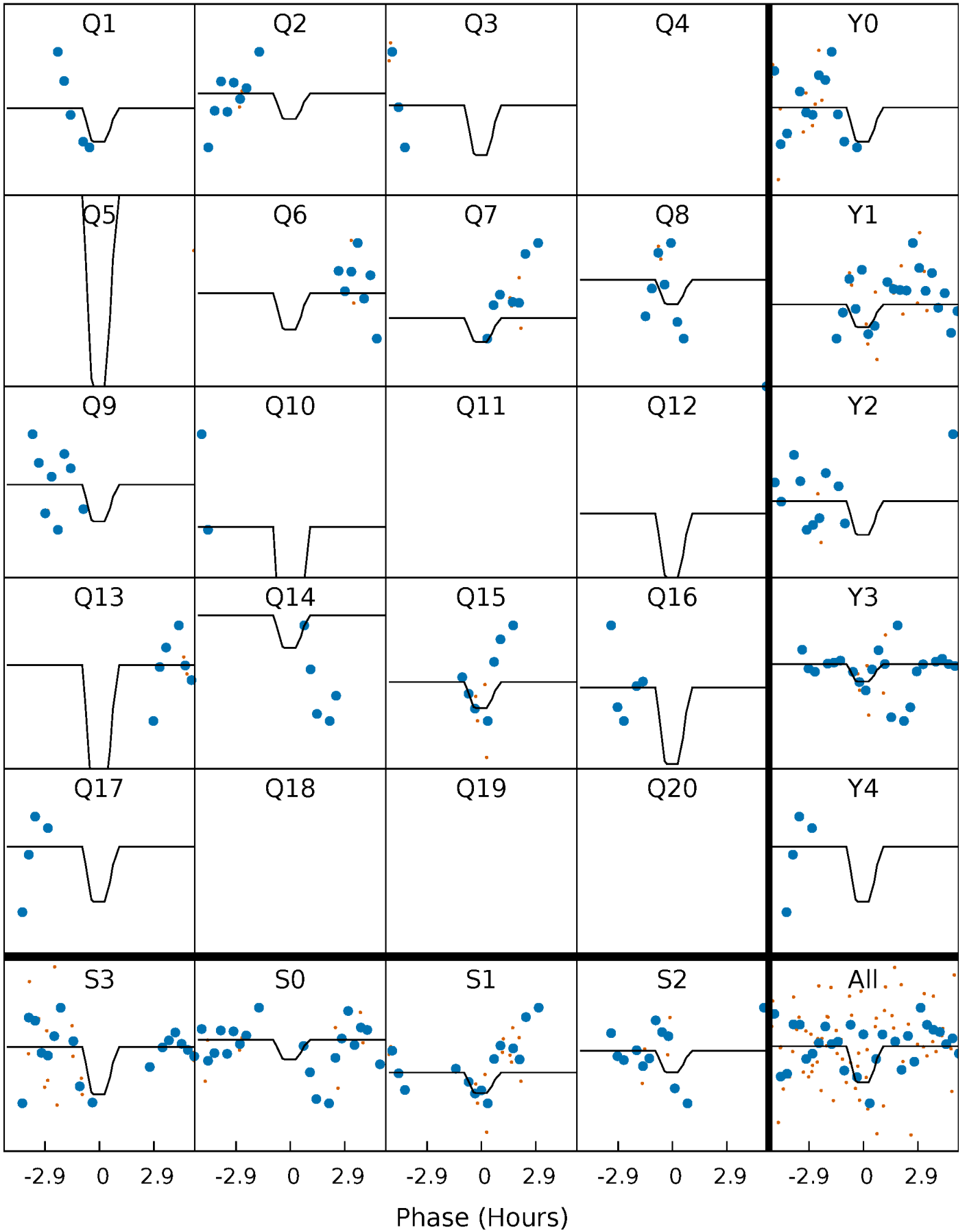
DV Quarter-Phased Transit Curves

TCE 009596300-08 P= 46.012266 Days $T_0=144.537196$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

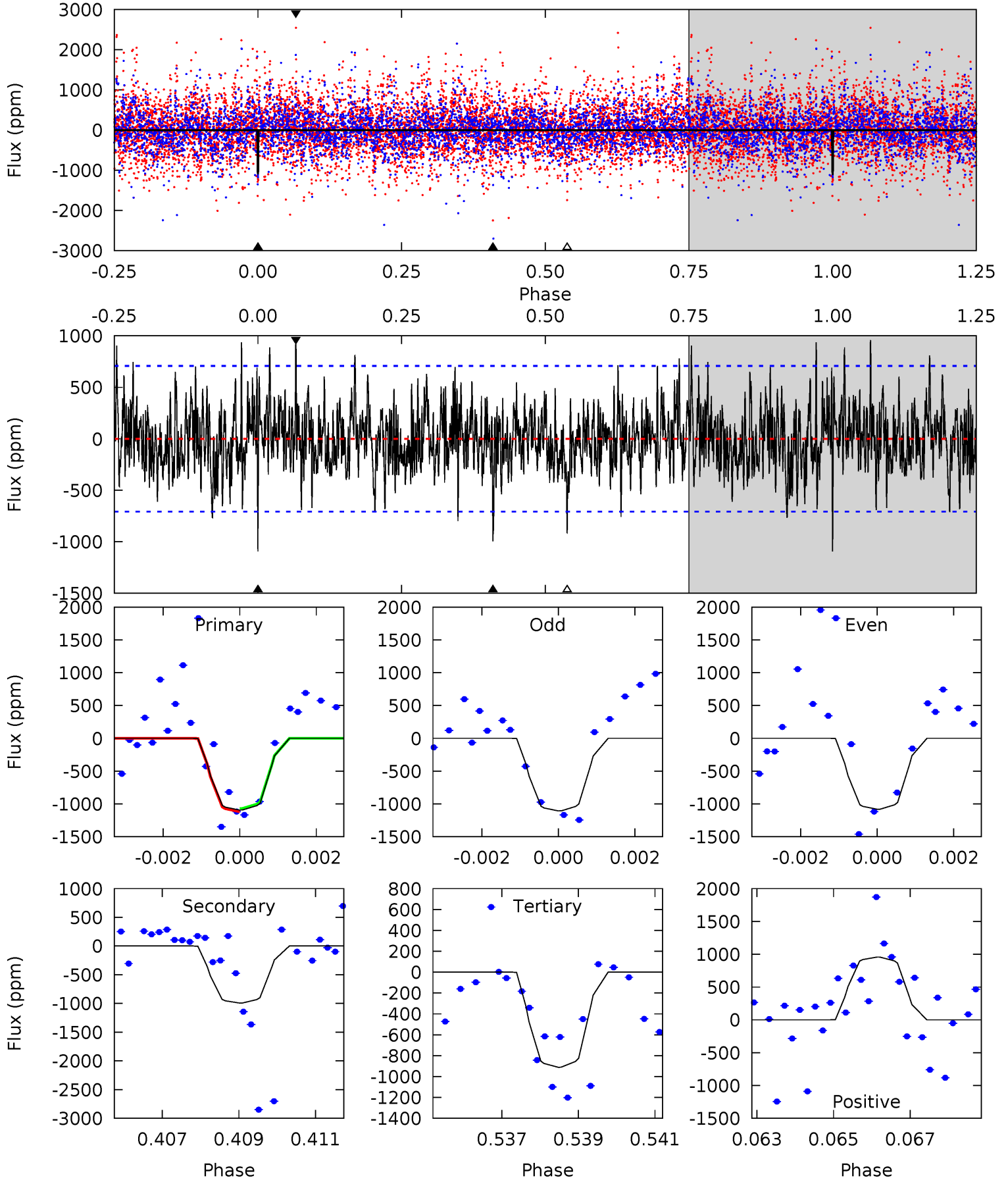
TCE 009596300-08 P= 46.011011 Days $T_0=144.525758$ (BKJD)



DV Model-Shift Uniqueness Test

009596300-08, P = 46.012266 Days, E = 98.524930 Days

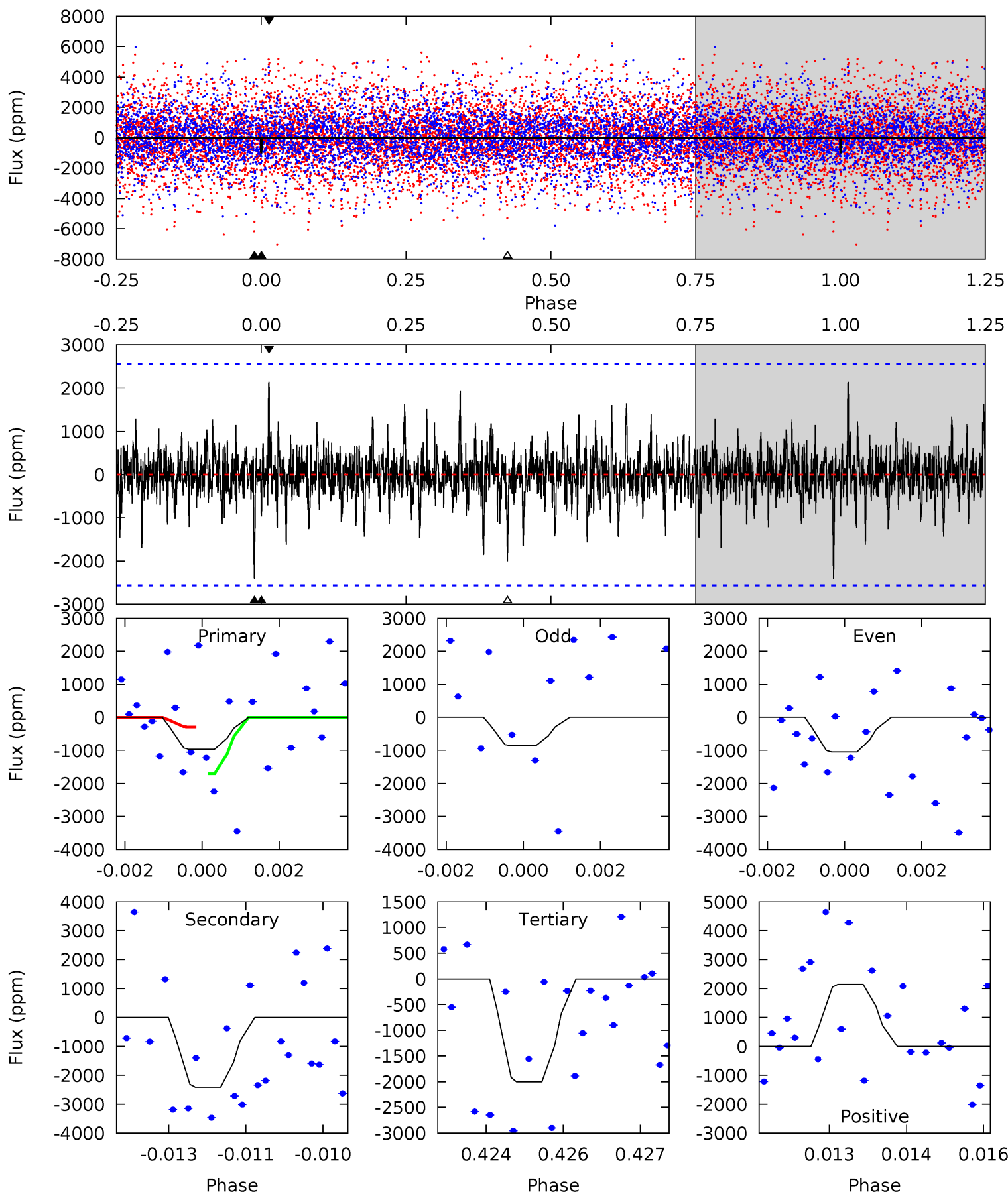
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.24	7.49	6.87	7.22	5.33	3.10	1.90	1.37	1.03	0.62	0.27	0.09	0.47	0.47	0.18



Alt Model-Shift Uniqueness Test

009596300-08, P = 46.011011 Days, E = 98.514747 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.03	5.05	4.20	4.49	5.37	3.16	0.95	-2.16	-2.46	0.86	0.56	0.19	1.00	0.47	1.47



Stellar Parameters For KIC 009596300

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7571^{+211}_{-316}	$4.166^{+0.105}_{-0.195}$	$-0.140^{+0.200}_{-0.350}$	$1.696^{+0.533}_{-0.328}$	$1.535^{+0.219}_{-0.219}$	$0.443^{+0.264}_{-0.225}$
	+3%/-4%	+3%/-5%	+143%/-250%	+31%/-19%	+14%/-14%	+60%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009596300-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-993 ± 133	$8.65^{+6.73}_{-5.65}$	1133^{+95}_{-72}	6145^{+5702}_{-1402}	598^{+4217}_{-412}
Alt.	-2411 ± 477	$9.09^{+7.07}_{-5.98}$	1139^{+93}_{-67}	7676^{+10228}_{-2046}	1321^{+10794}_{-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 $A_{obs} \gg 1.0$

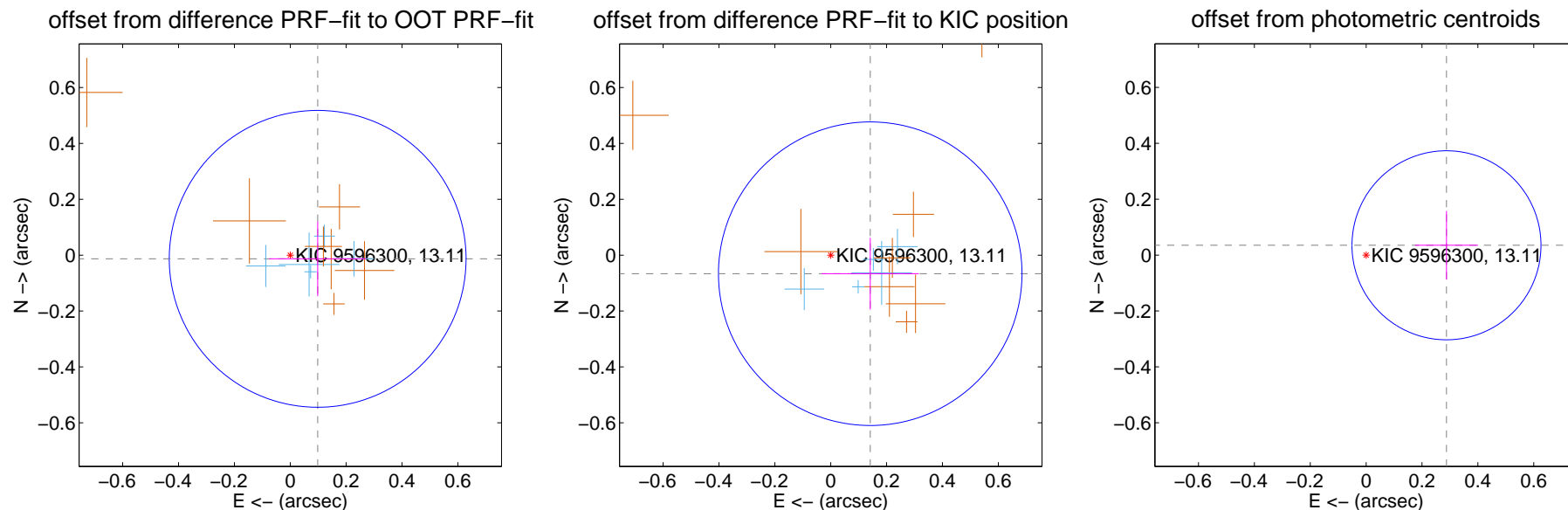
DV Centroid Data

Supplemental centroid analysis for 009596300-08. Kepler magnitude: 13.11. Transit SNR 10.17

There are 6 quarters with good PRF difference image offsets

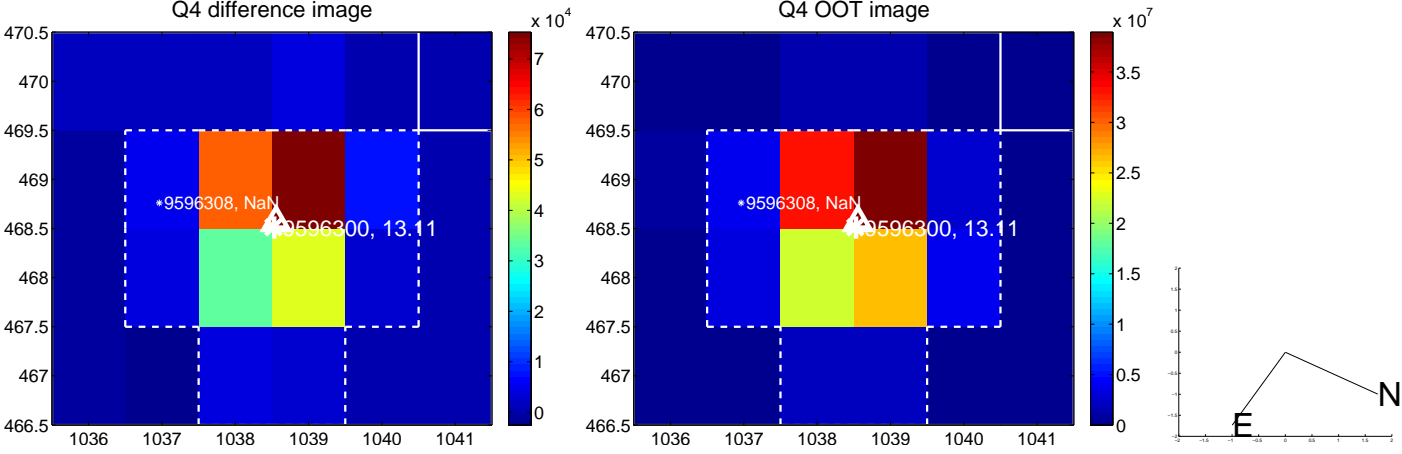
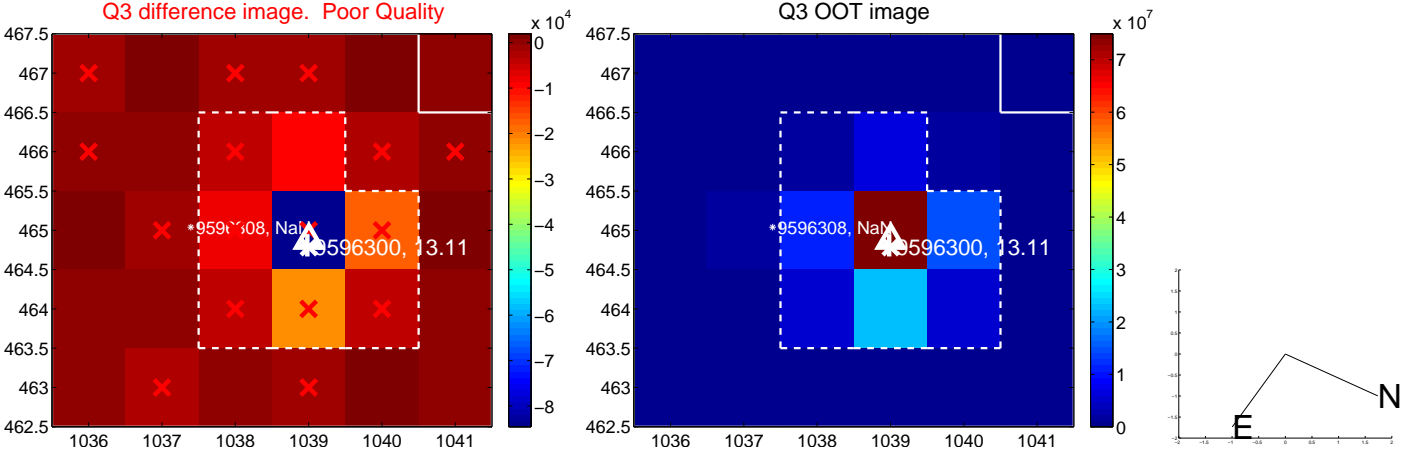
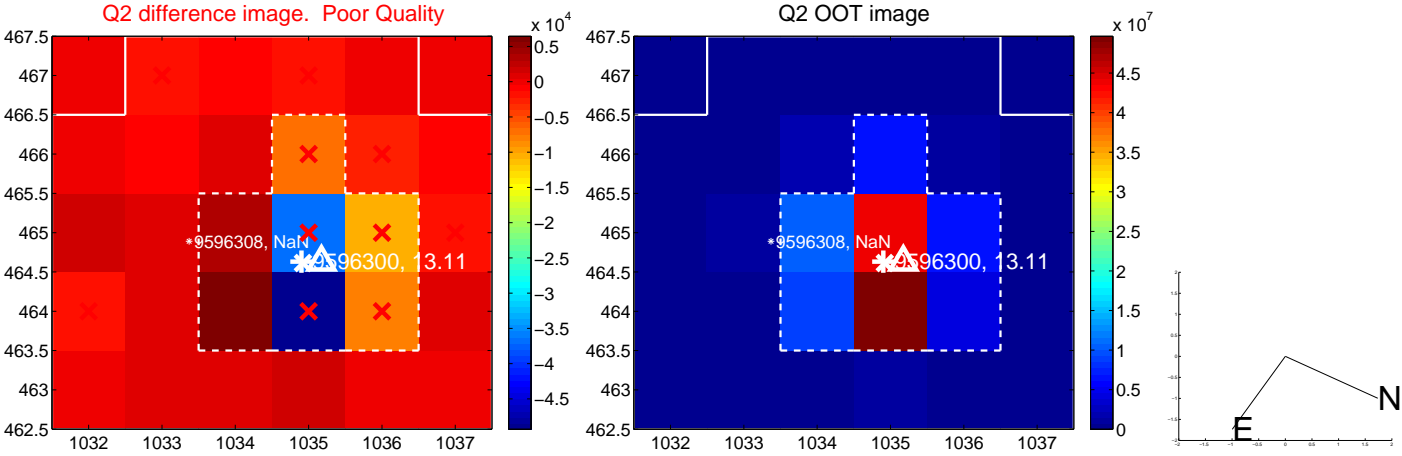
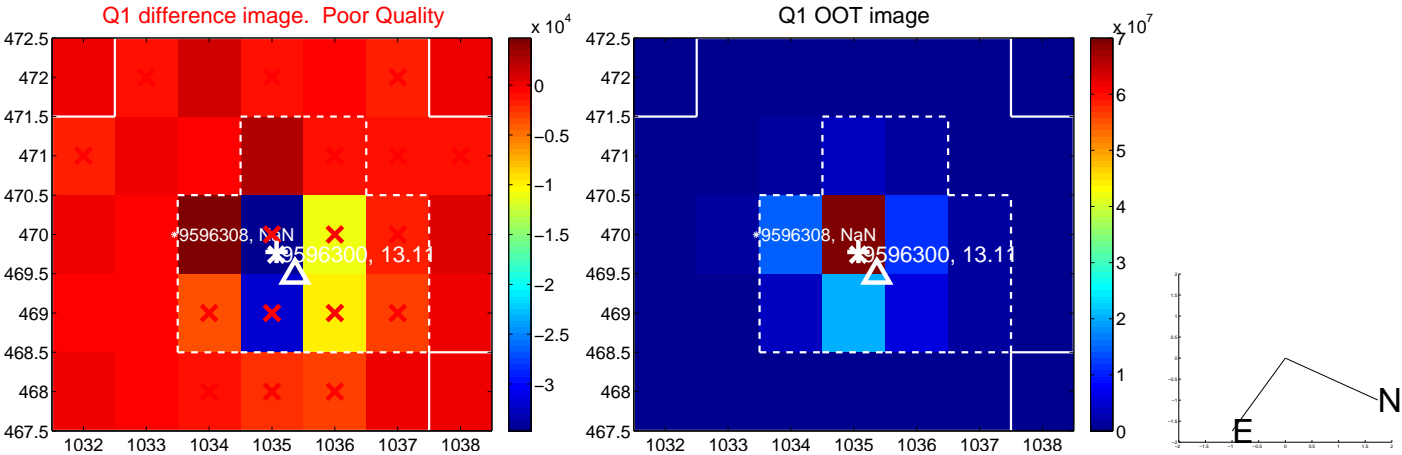
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.099 ± 0.177	0.56	-0.098 ± 0.173	-0.013 ± 0.134
PRF-fit source offset from KIC position	0.156 ± 0.181	0.86	-0.141 ± 0.174	-0.066 ± 0.128
photometric centroid source offset	0.29 ± 0.11	2.57	-0.29 ± 0.11	0.04 ± 0.12

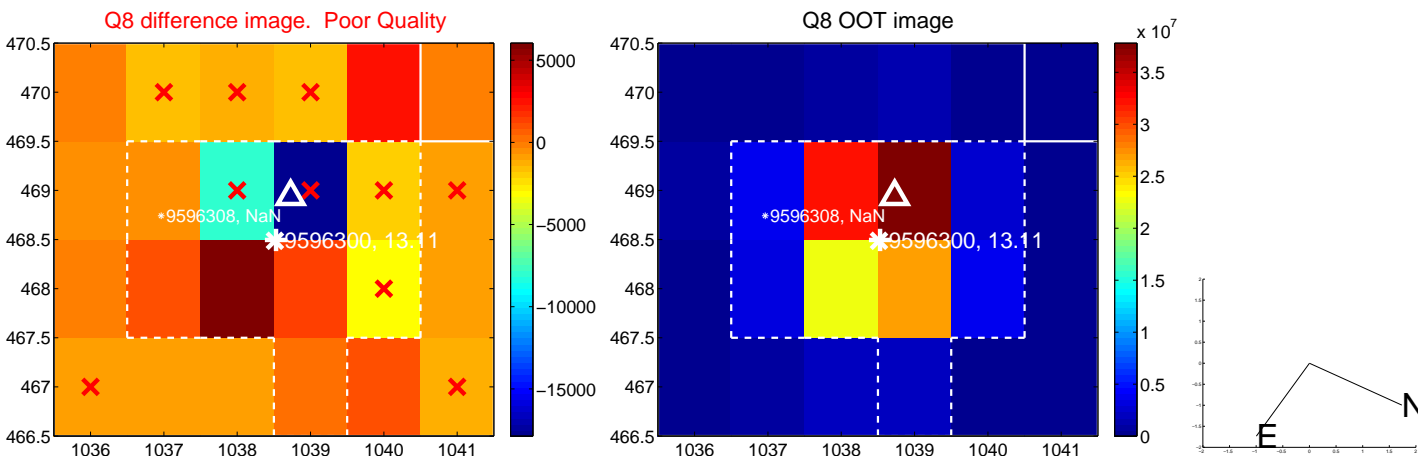
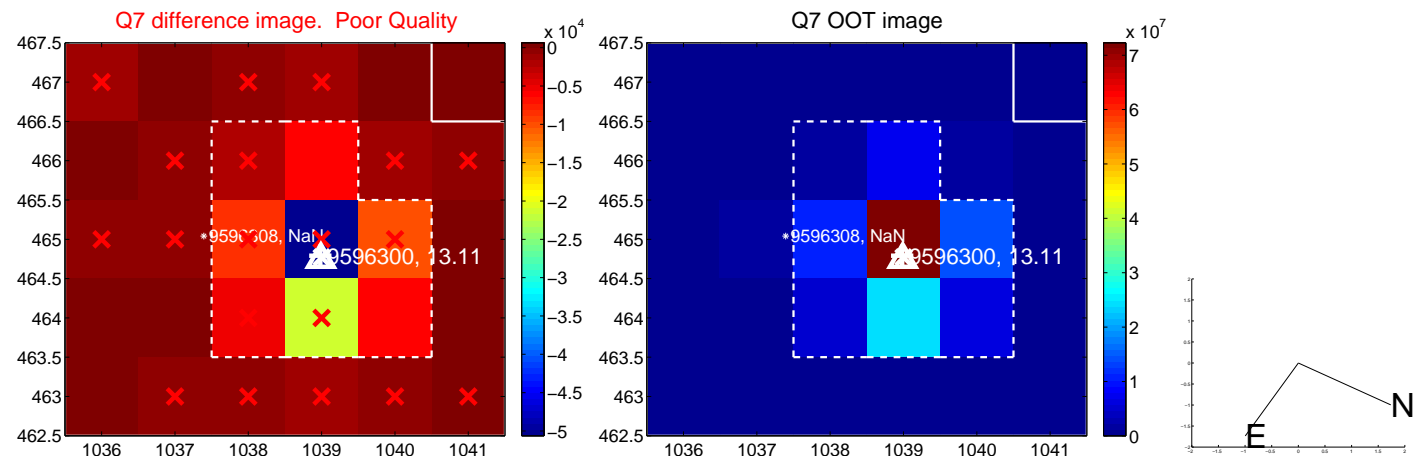
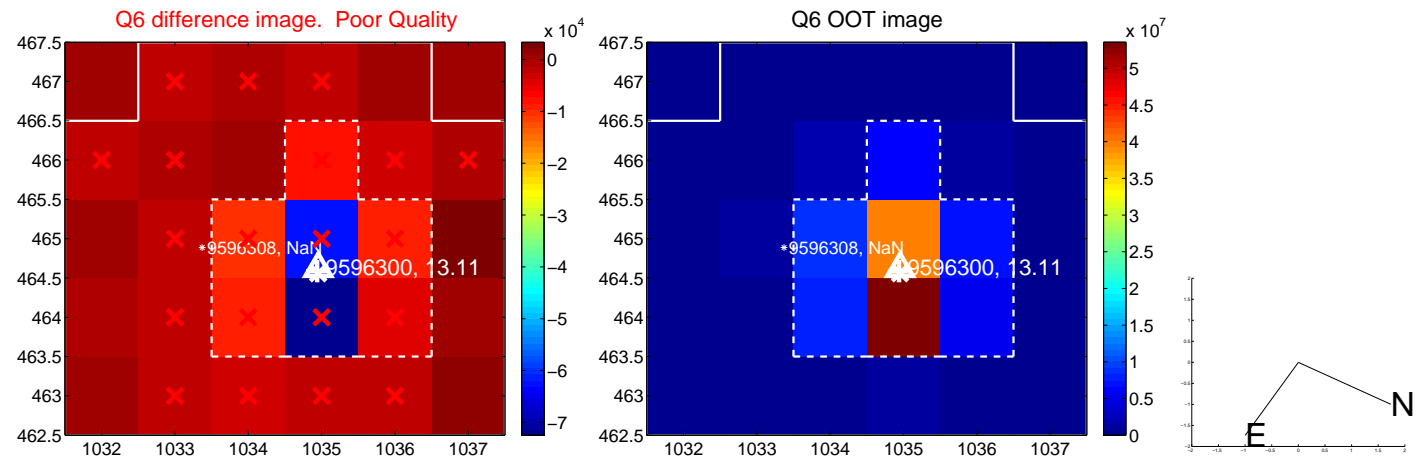
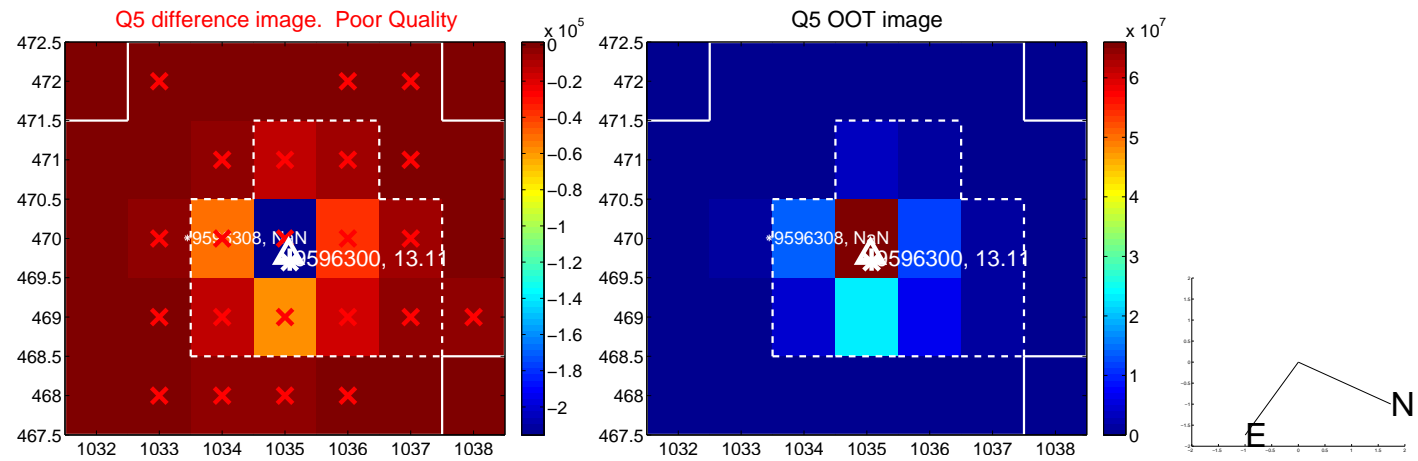


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

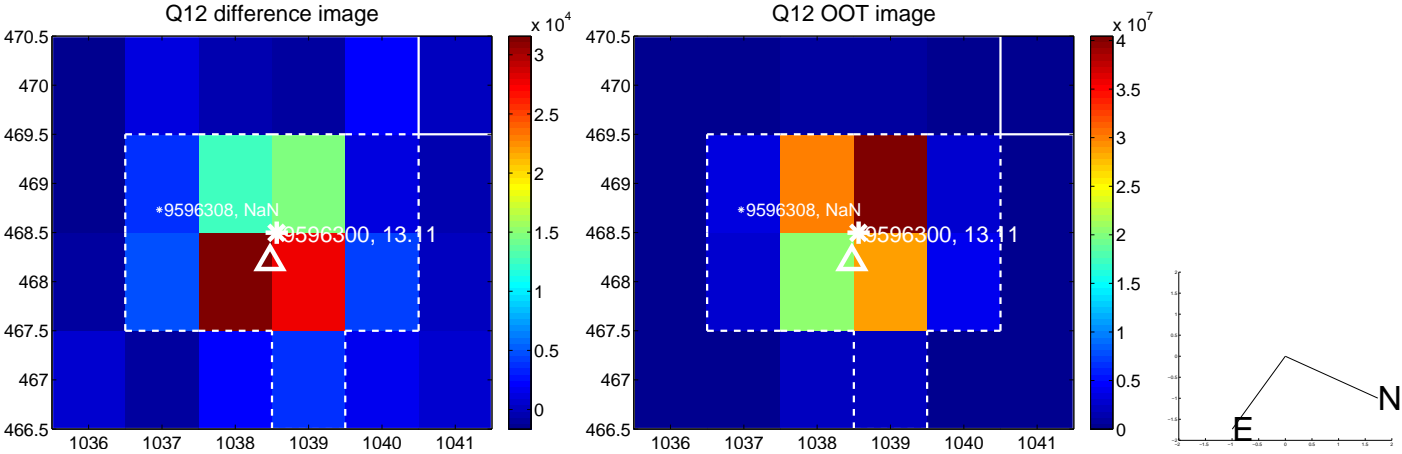
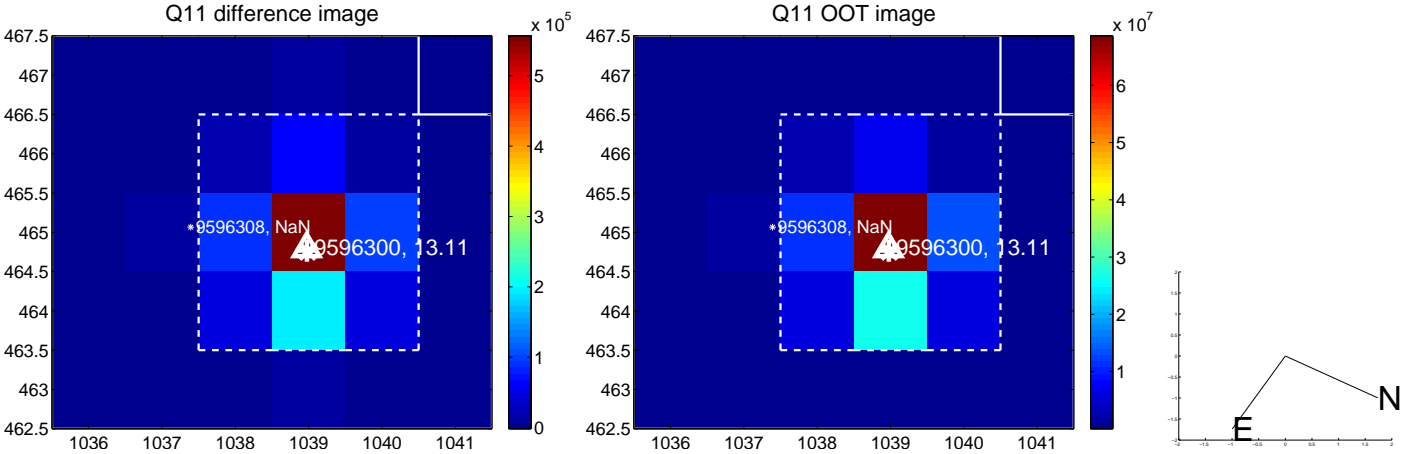
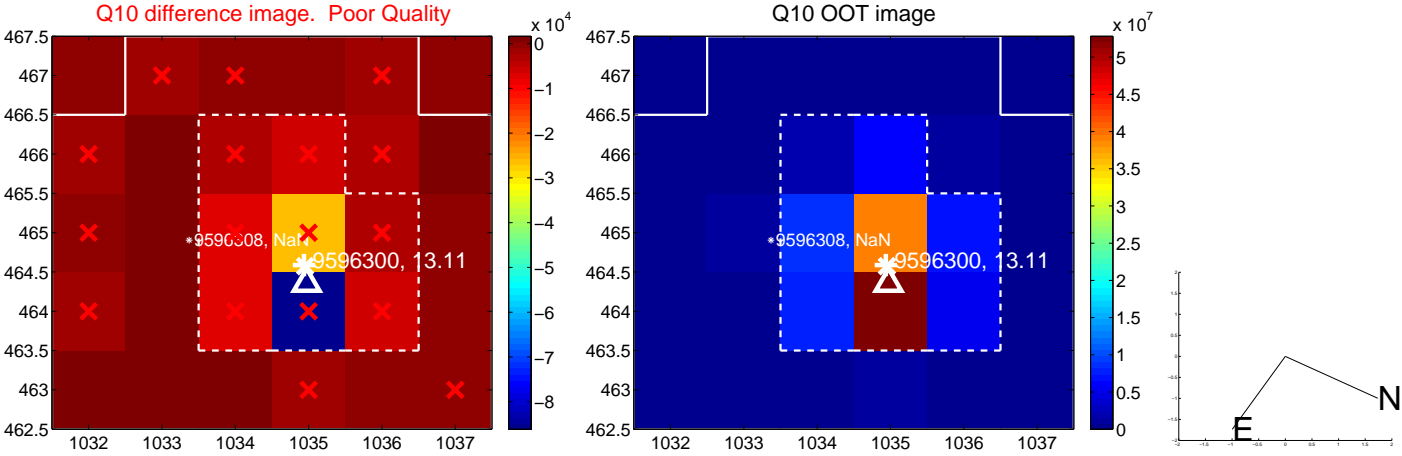
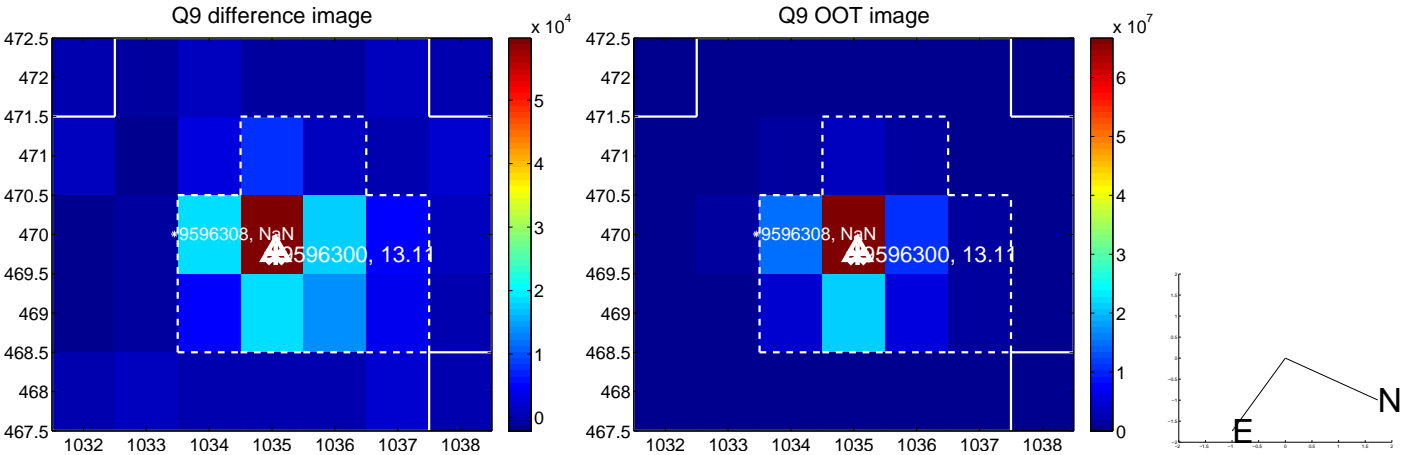
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



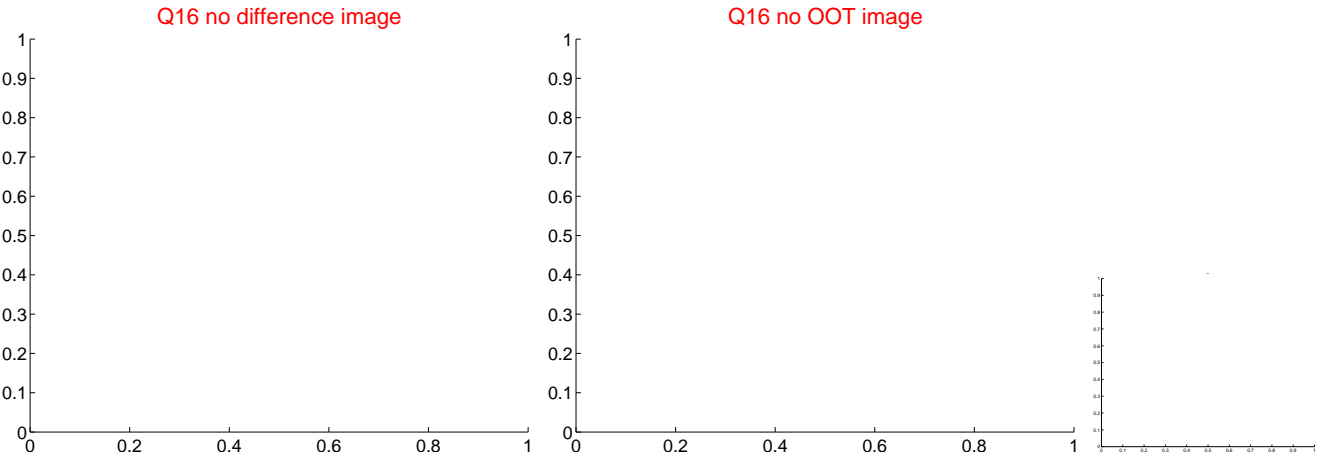
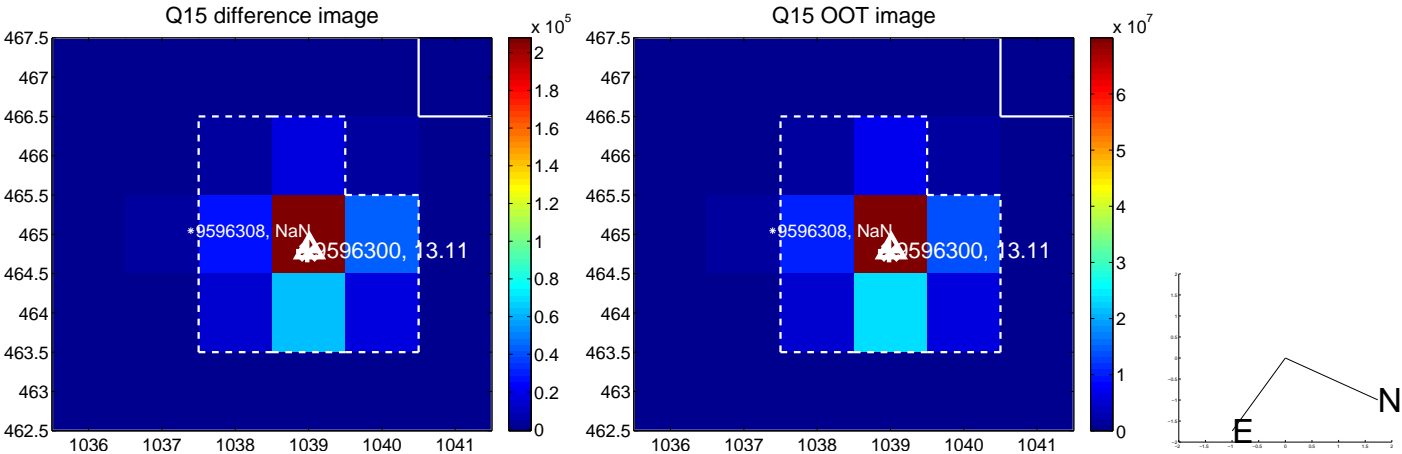
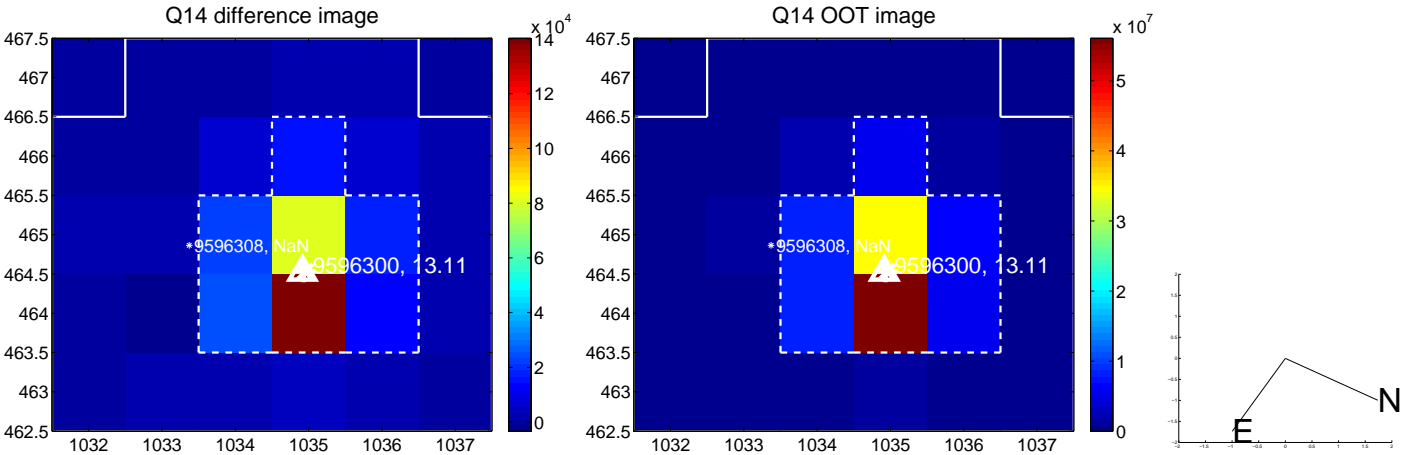
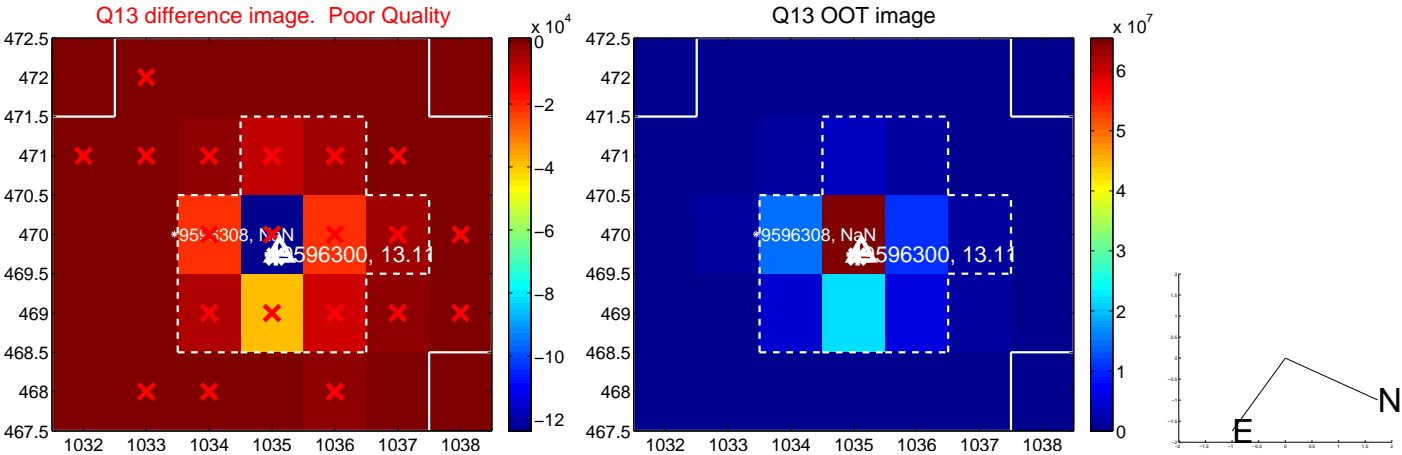
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



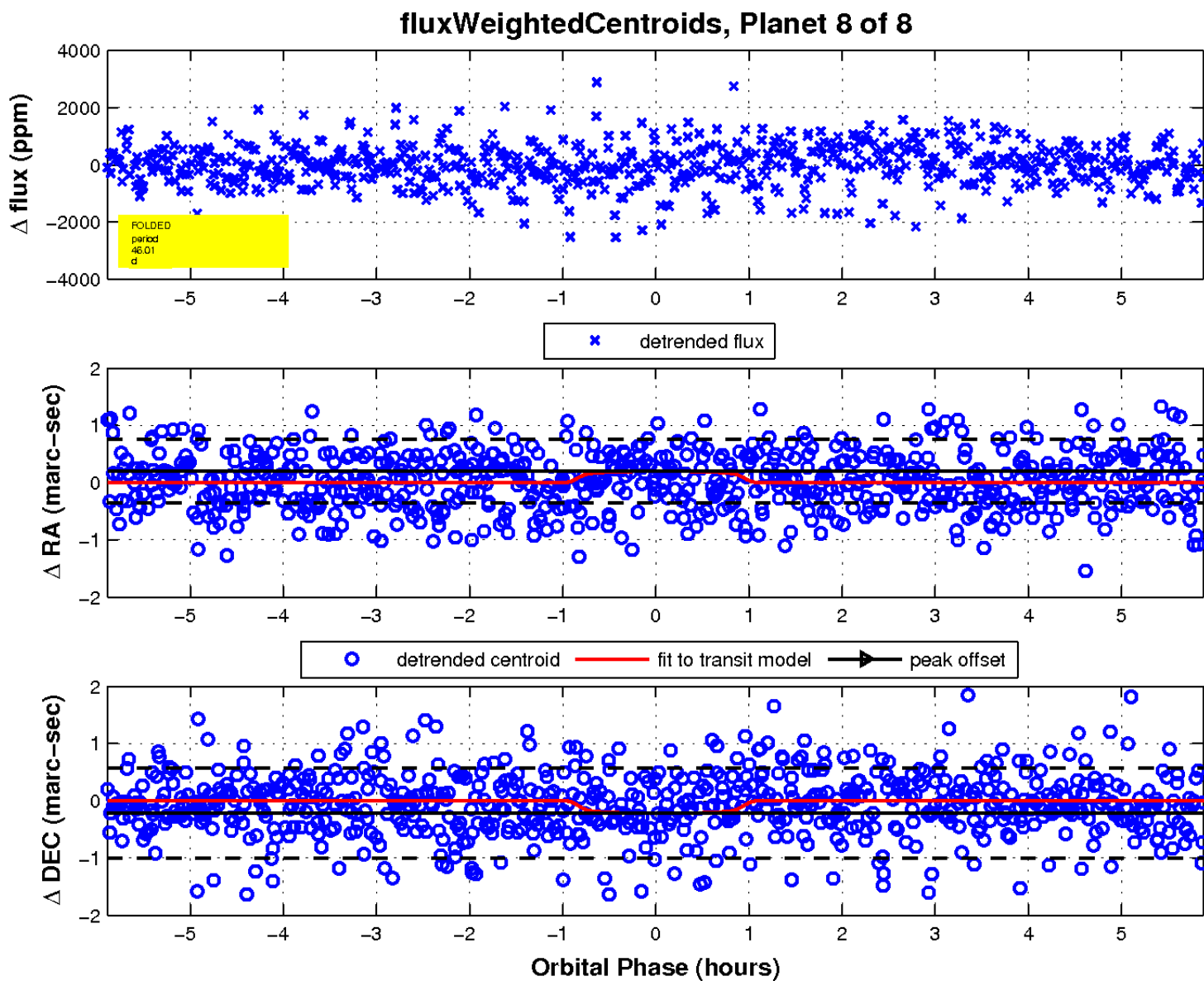
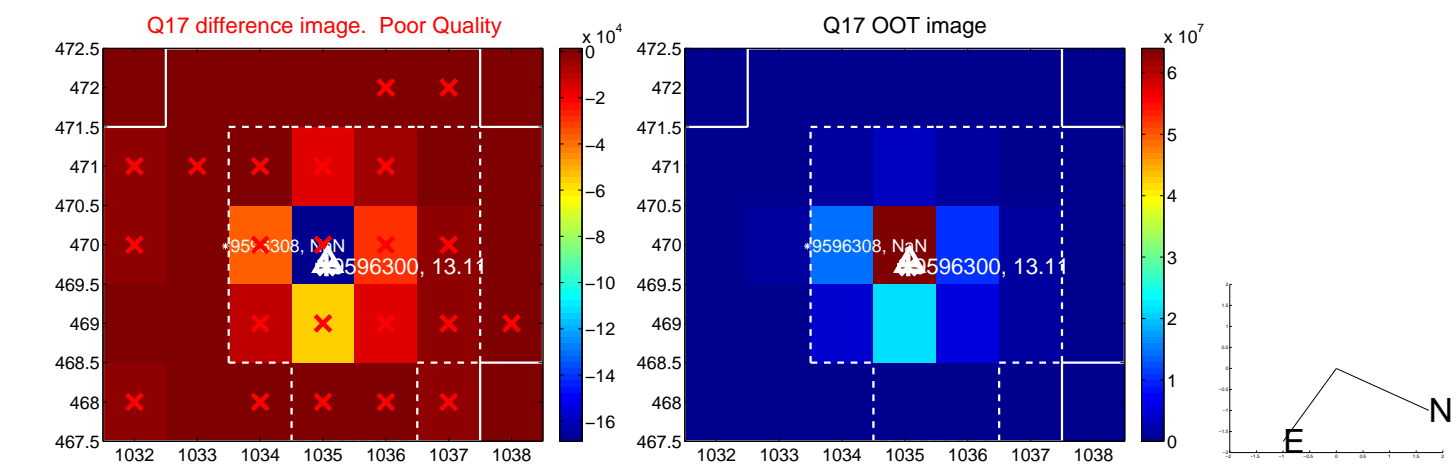
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

