

KIC 009049010

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})
009049010-01	OBS	No	3.681208	131.599453	78.9	9.713	11.6	13.8	2.80	6240	4.75	3945.13
009049010-02	OBS	No	402.794548	519.462978	581.4	9.959	15.5	9.6	2.80	6240	9.04	7.54
009049010-03	OBS	7127.01	0.686951	131.890601	10.5	4.155	11.0	3.7	2.80	6240	0.98	36995.38
009049010-06	OBS	No	56.090536	143.269295	286.2	3.051	9.0	6.8	2.80	6240	5.49	104.44
009049010-07	OBS	No	46.230249	156.956499	227.6	1.927	7.4	6.2	2.80	6240	4.86	135.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009049010-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009049010-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
009049010-03	OBS	FP	0.00	1	0	0	0	LPP_DV
009049010-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009049010-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_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 009049010-01

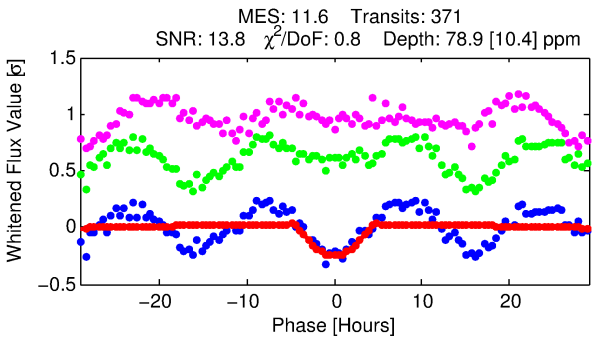
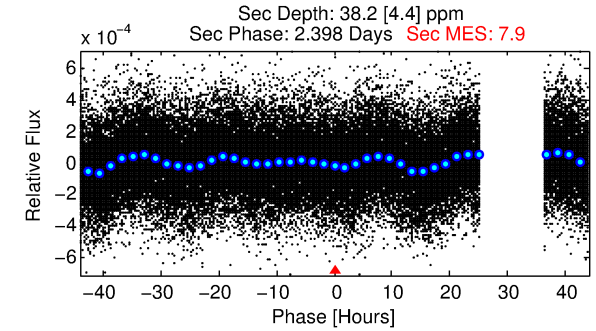
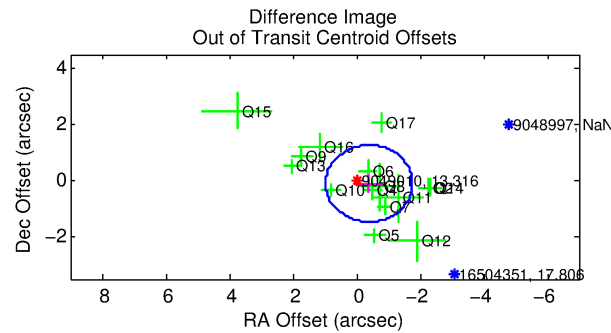
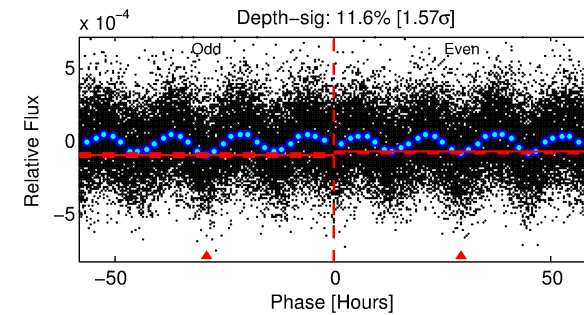
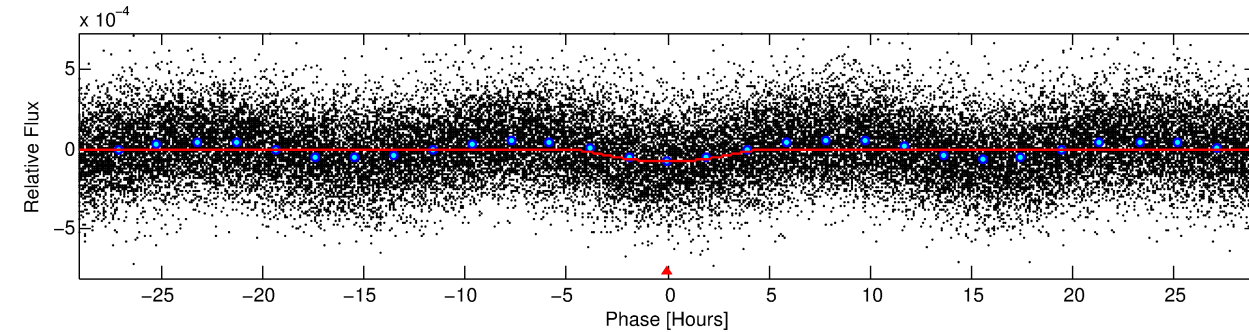
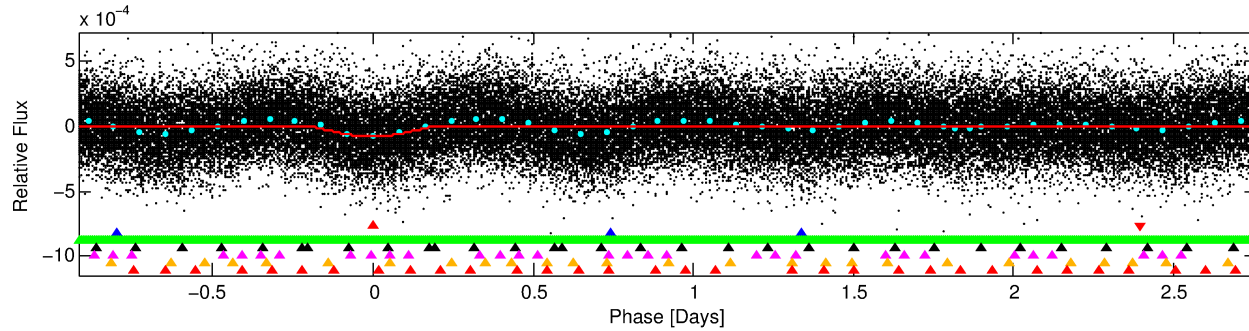
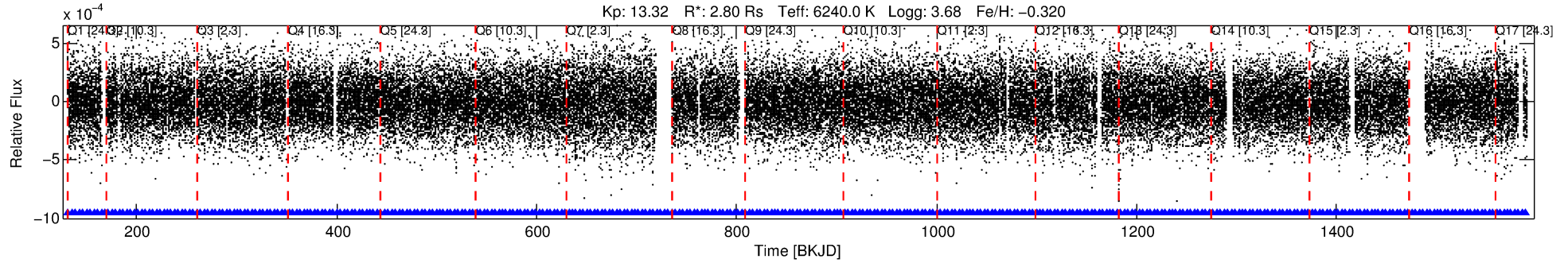
No Significant Match Found

DV One-Page Summary

KIC: 9049010 Candidate: 1 of 7 Period: 3.681 d

KOI: K07127 Corr: No Ephemeris Match

Kp: 13.32 R*: 2.80 Rs Teff: 6240.0 K Logg: 3.68 Fe/H: -0.320



DV Fit Results:

Period = 3.68121 [0.00006] d
Epoch = 131.5995 [0.0139] BKJD
Rp/R* = 0.0155 [0.0189]
a/R* = 1.14 [0.07]
b = 1.00 [0.03]
Seff = 3945.13 [4137.24]
Teq = 2021 [530] K
Rp = 4.75 [6.40] Re
a = 0.0520 [0.0322] AU
Ag = 2.52 [6.66] [0.23σ]
Teffp = 3935 [2399] K [0.78σ]

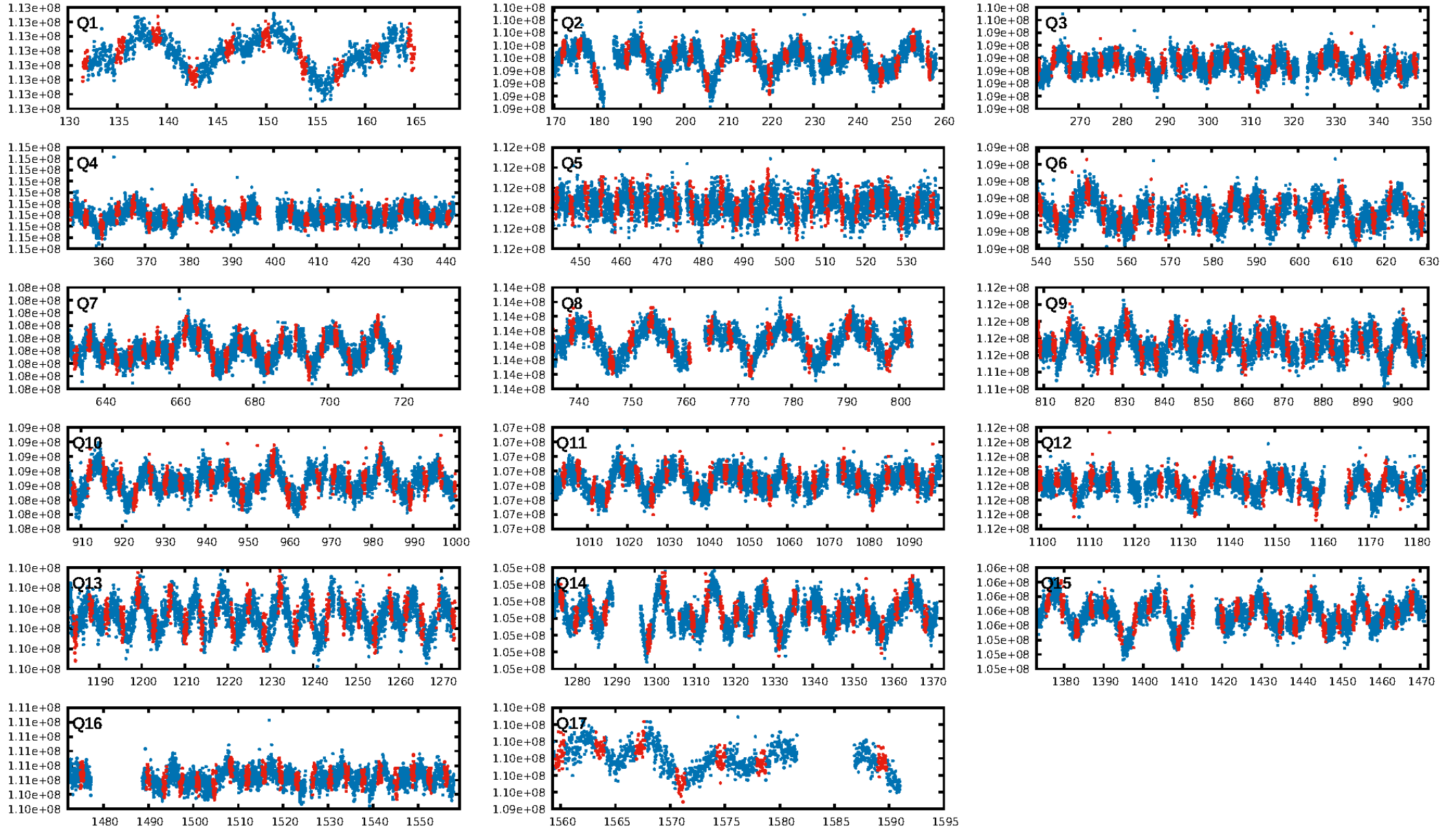
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.80σ]
LongPeriod-sig: 100.0% [103.12σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.10e-28
RollingBand-fgt: 1.00 [354/354]
GhostDiagnostic-chr: 2.584
Centroid-sig: 0.3%
Centroid-so: 1.030 arcsec [1.90σ]
OotOffset-rm: 0.405 arcsec [0.89σ]
KicOffset-rm: 0.349 arcsec [0.78σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 0.00 [0/17]

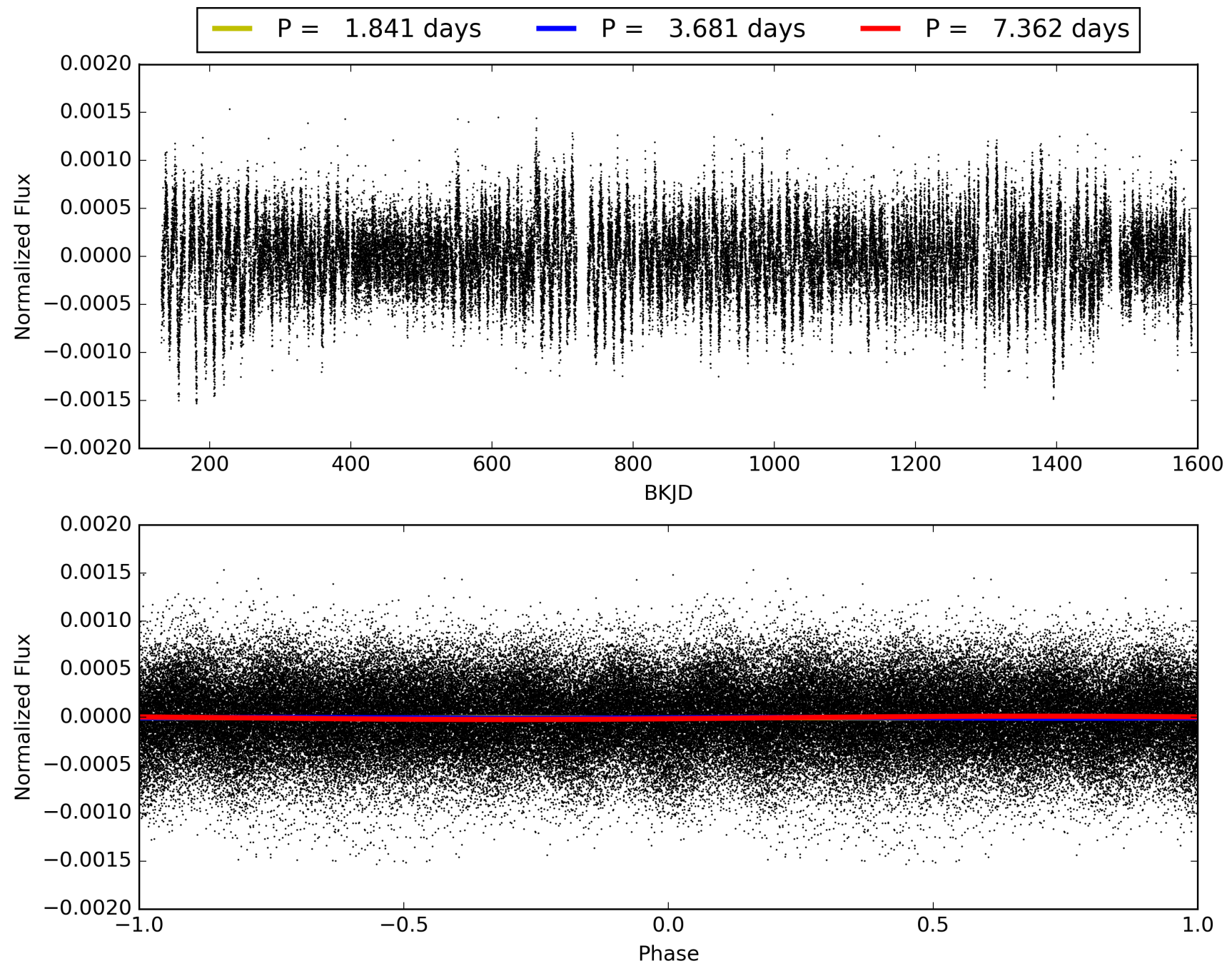
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009049010-01, PDC Light Curves

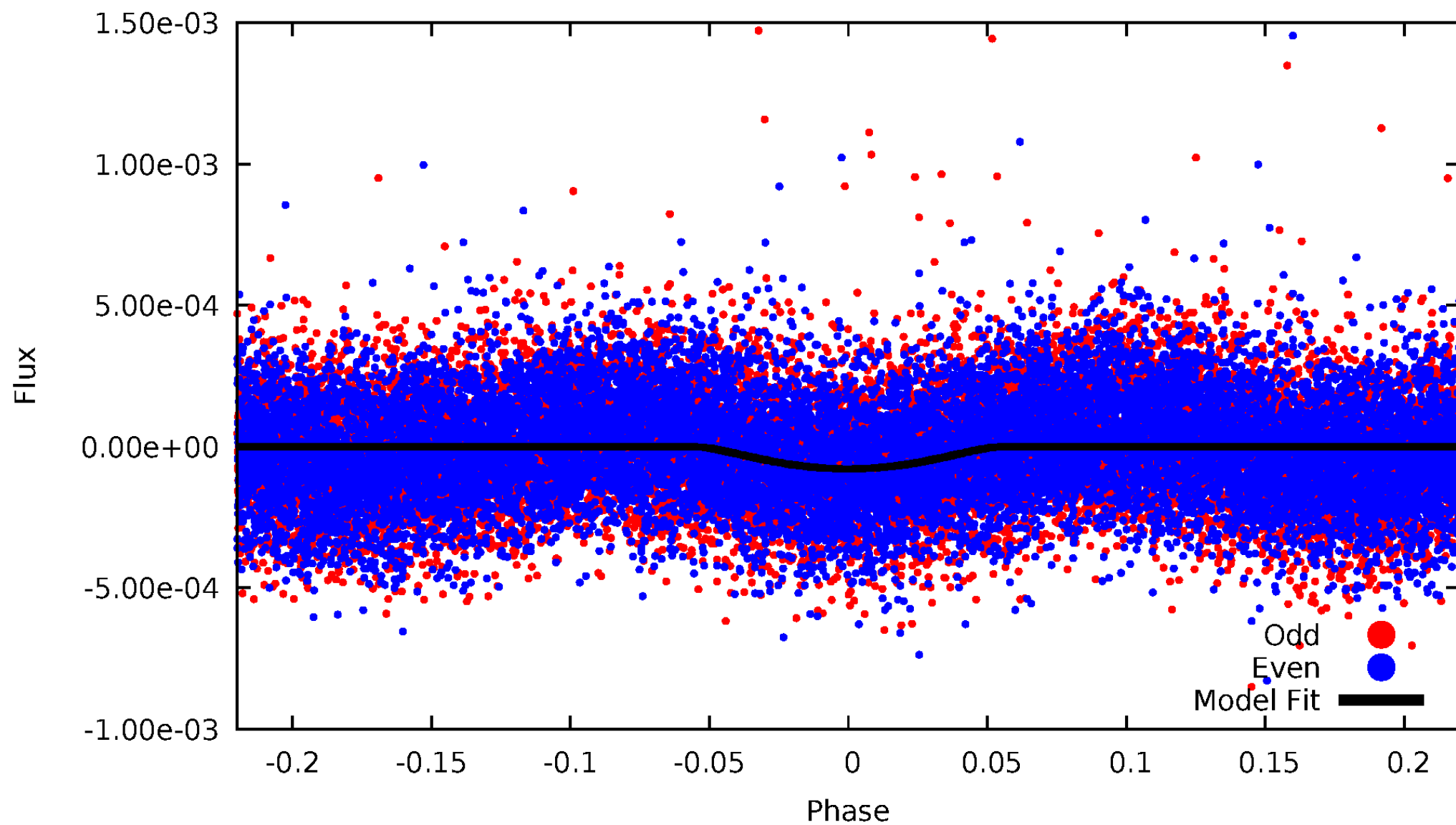


TCE 009049010-01



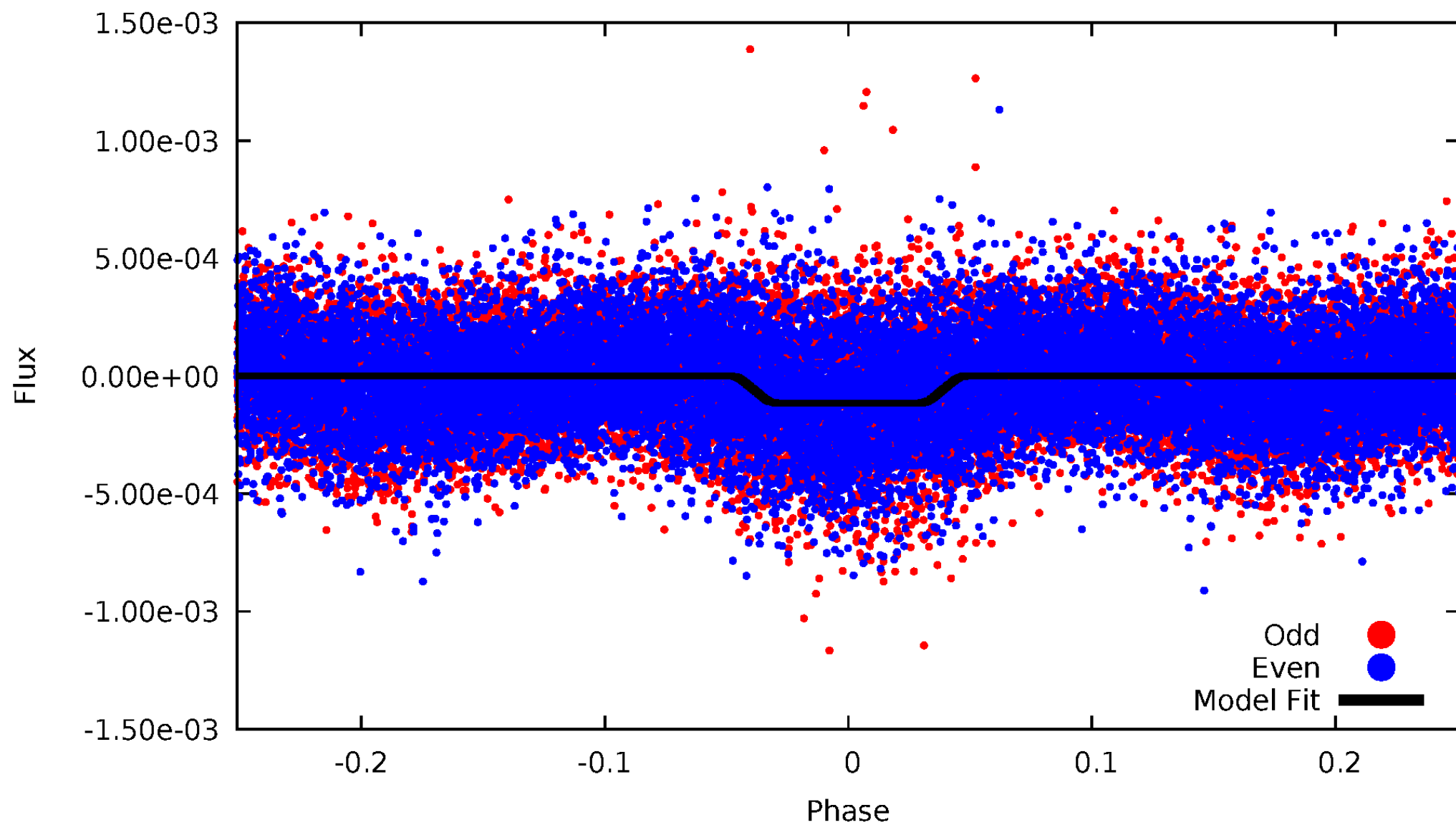
DV Odd/Even

TCE 009049010-01



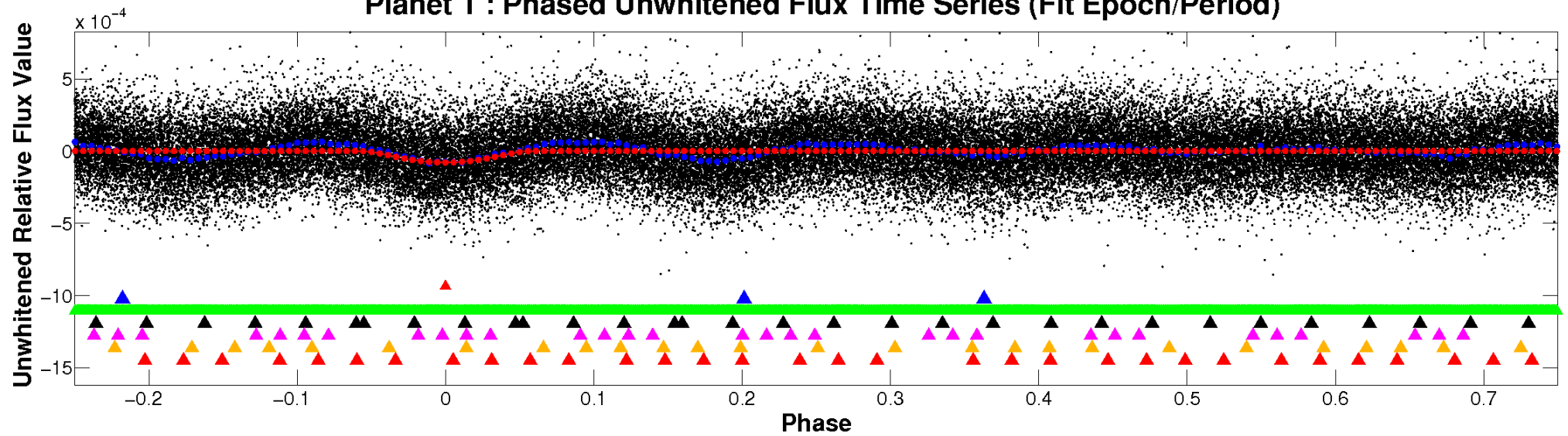
ALT Odd/Even

TCE 009049010-01

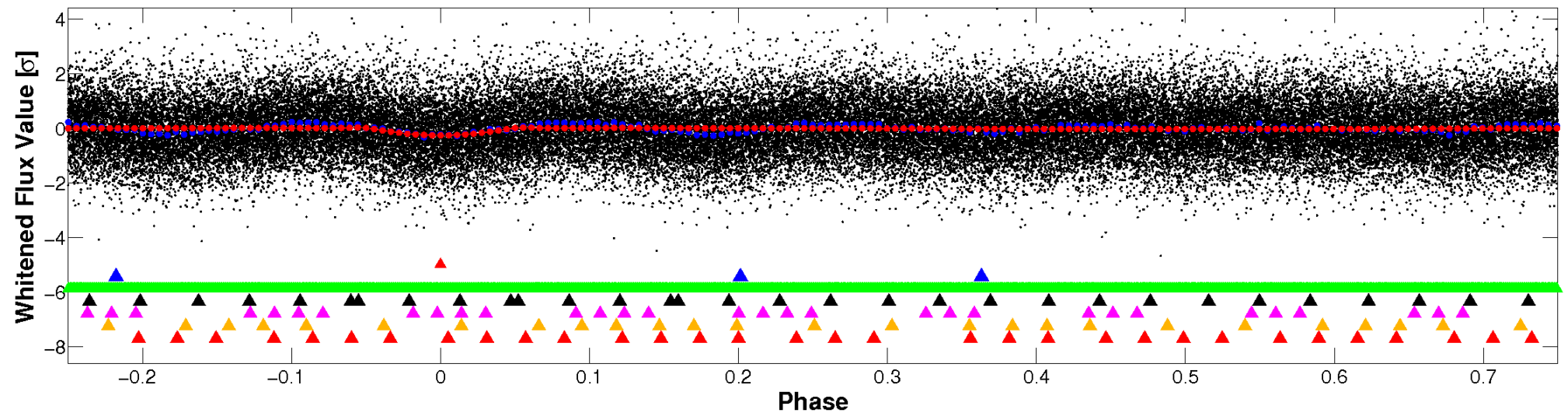


Non-Whitened Vs. Whitened Light Curve

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

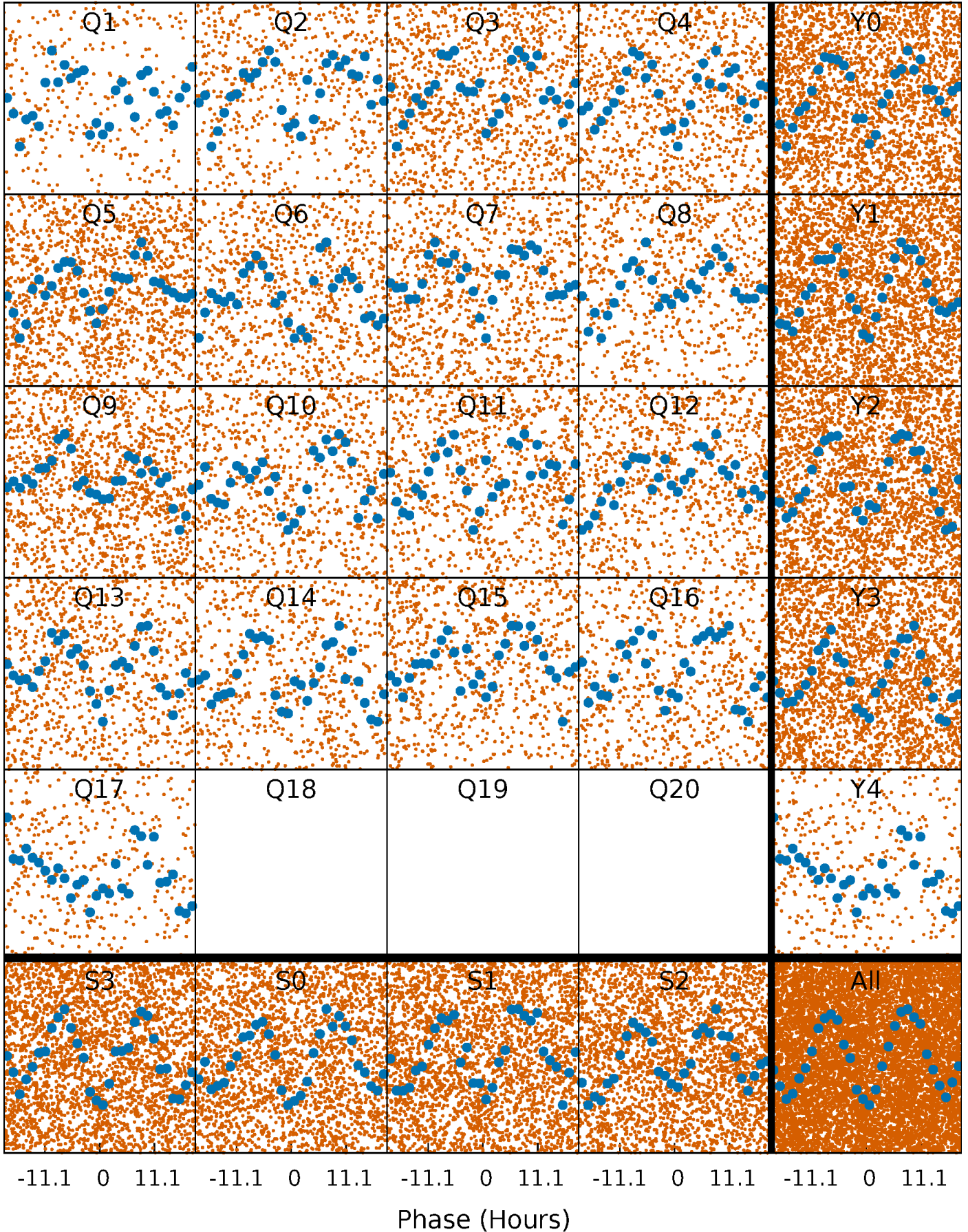


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



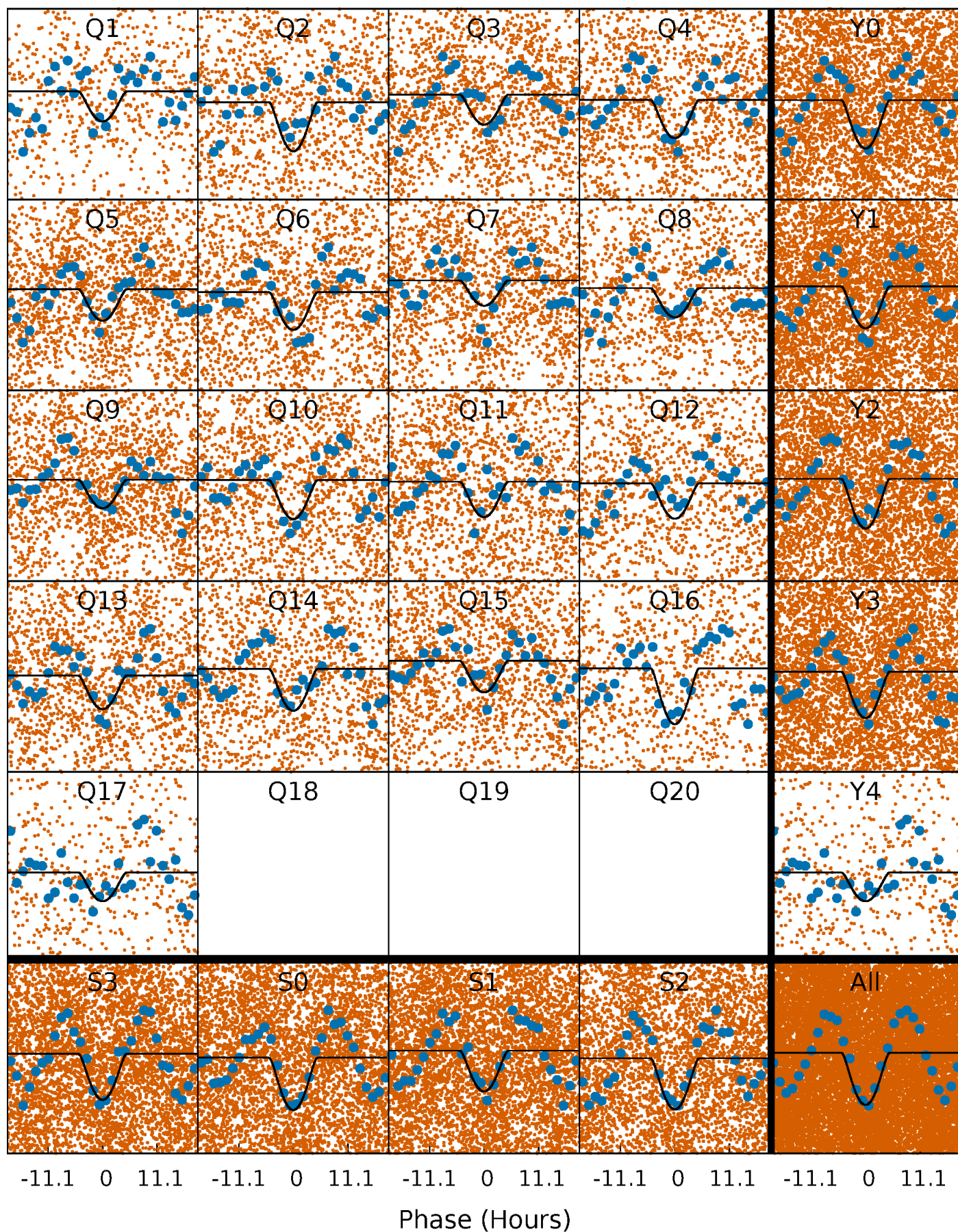
PDC Quarter-Phased Transit Curves

TCE 009049010-01 P= 3.681208 Days $T_0=131.599453$ (BKJD)



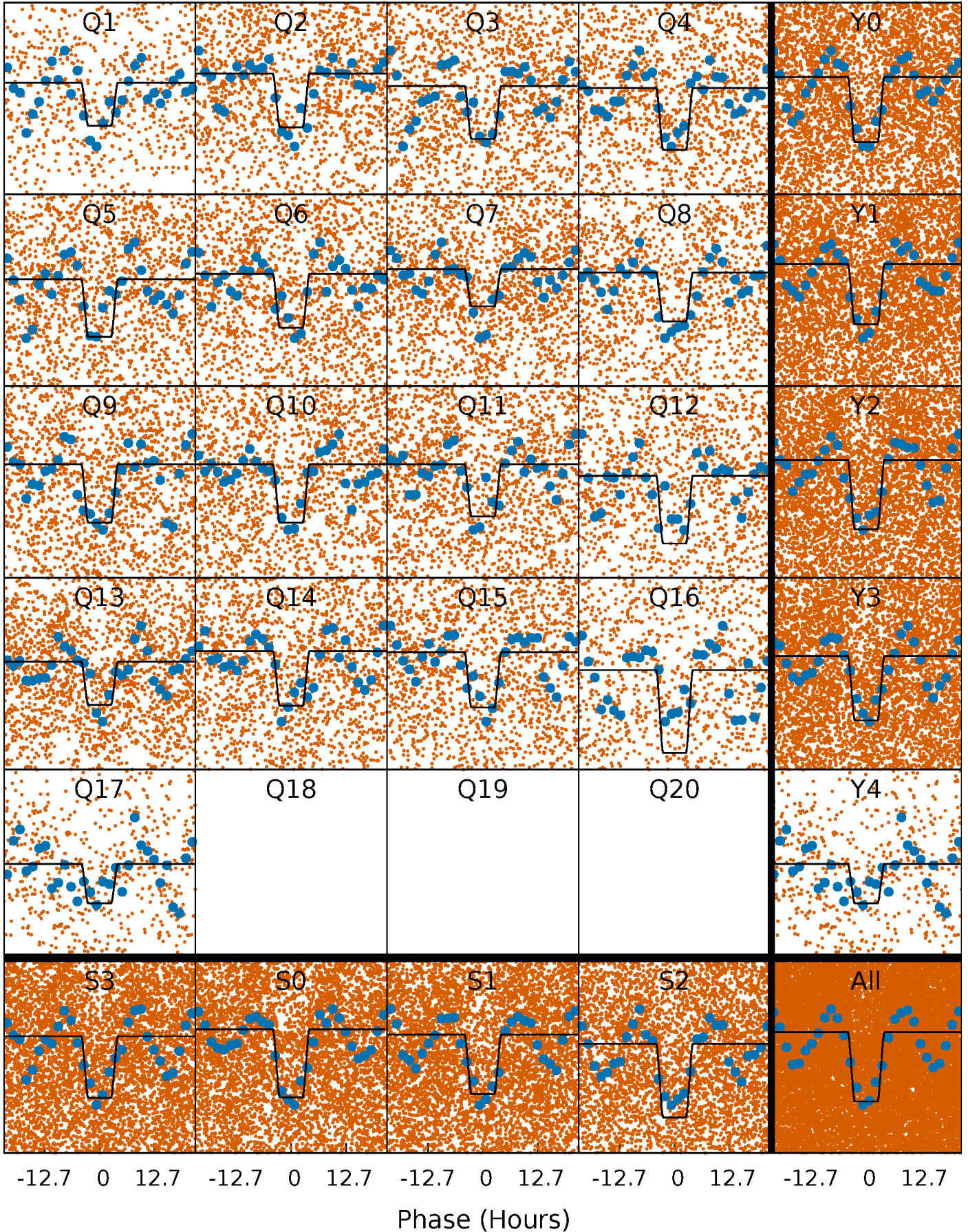
DV Quarter-Phased Transit Curves

TCE 009049010-01 P= 3.681208 Days $T_0=131.599453$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

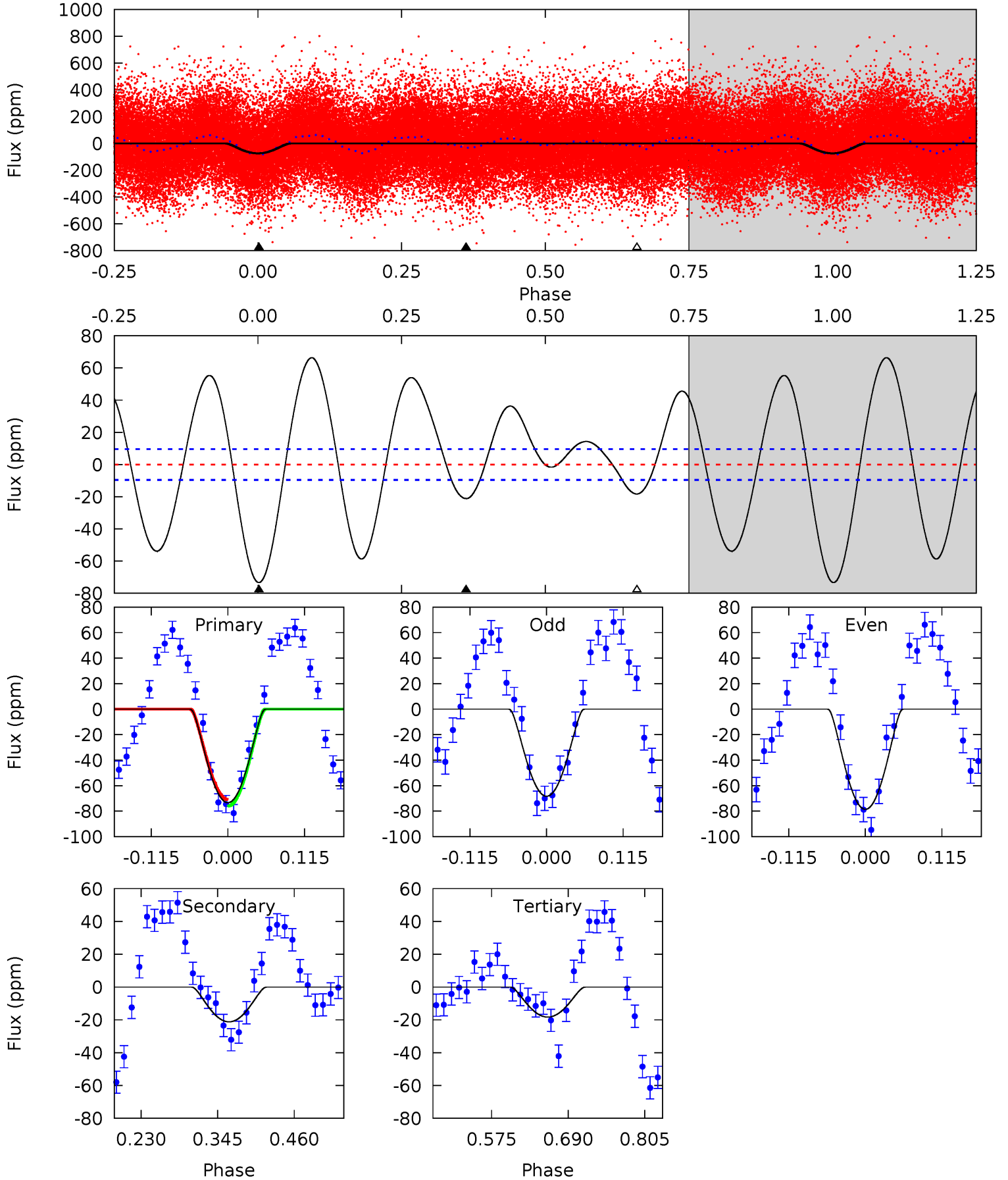
TCE 009049010-01 P= 3.681059 Days $T_0=131.637154$ (BKJD)



DV Model-Shift Uniqueness Test

009049010-01, P = 3.681208 Days, E = 127.918245 Days

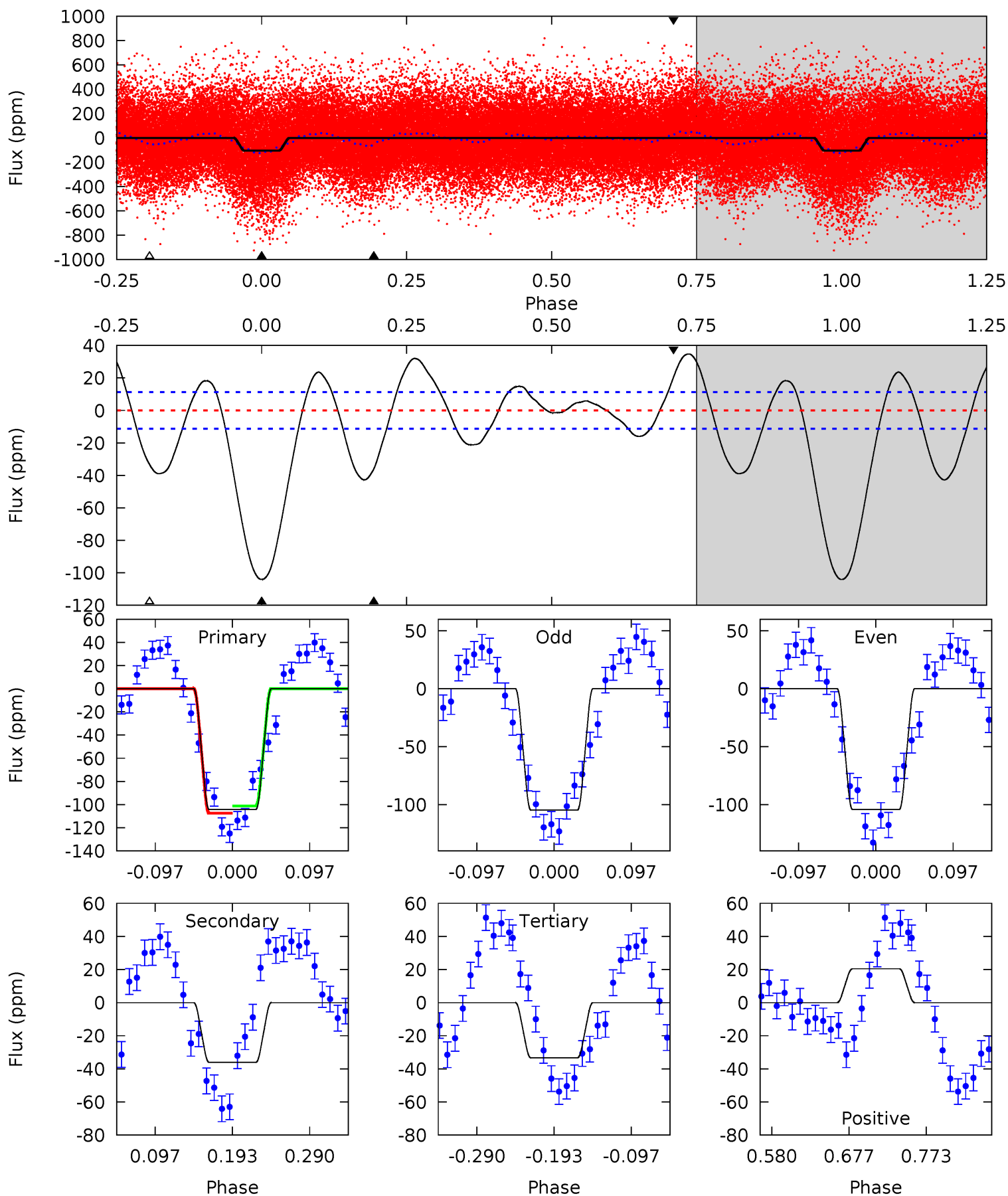
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.6	10.00	8.63	0	4.54	1.58	13.1	26.0	34.6	1.36	10.00	2.41	0.94	0.48	1.21



Alt Model-Shift Uniqueness Test

009049010-01, P = 3.681059 Days, E = 127.956095 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.2	14.6	13.5	8.27	4.57	1.66	6.84	28.7	33.9	1.12	6.32	0.08	1.02	0.25	1.26



Stellar Parameters For KIC 009049010

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6240^{+212}_{-212}	$3.684^{+0.629}_{-0.111}$	$-0.320^{+0.300}_{-0.300}$	$2.803^{+0.541}_{-1.623}$	$1.385^{+0.210}_{-0.420}$	$0.089^{+0.776}_{-0.028}$
	+3%/-3%	+17%/-3%	+94%/-94%	+19%/-58%	+15%/-30%	+876%/-32%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009049010-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-21 ± 2	$5.76^{+5.36}_{-3.68}$	2744^{+210}_{-428}	3177^{+1498}_{-5456}	$0.935^{+6.306}_{-0.673}$
Alt.	-36 ± 2	$4.64^{+4.55}_{-3.07}$	2729^{+210}_{-412}	3840^{+2420}_{-900}	$2.440^{+20.243}_{-1.828}$

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 $A_{obs} \gg 1.0$

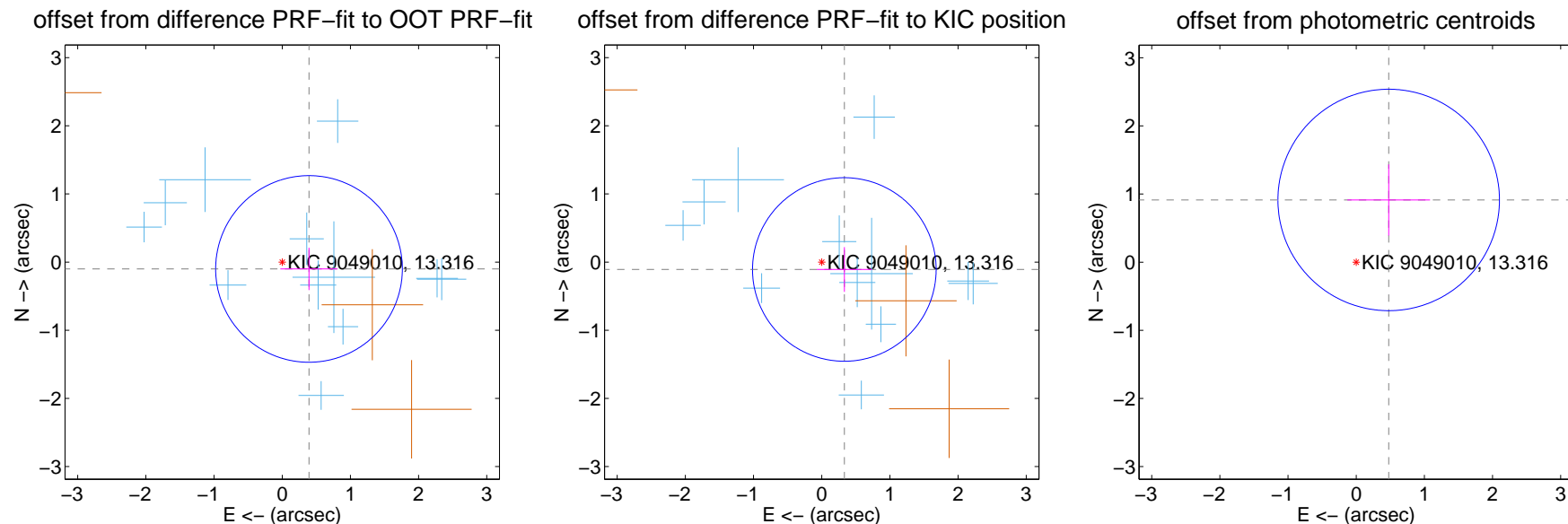
DV Centroid Data

Supplemental centroid analysis for 009049010-01. Kepler magnitude: 13.32. Transit SNR 13.84

There are 12 quarters with good PRF difference image offsets

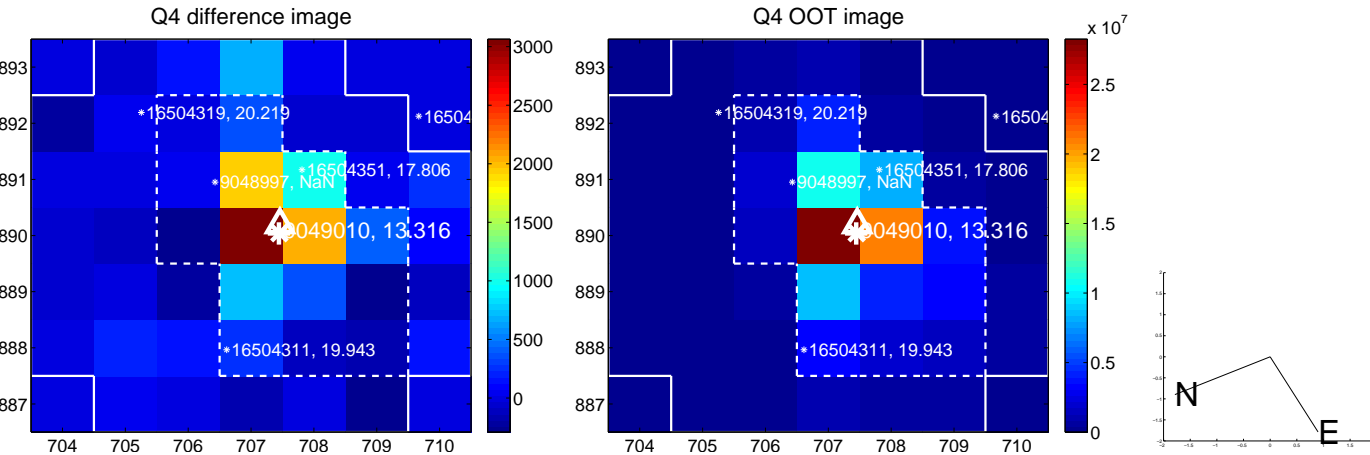
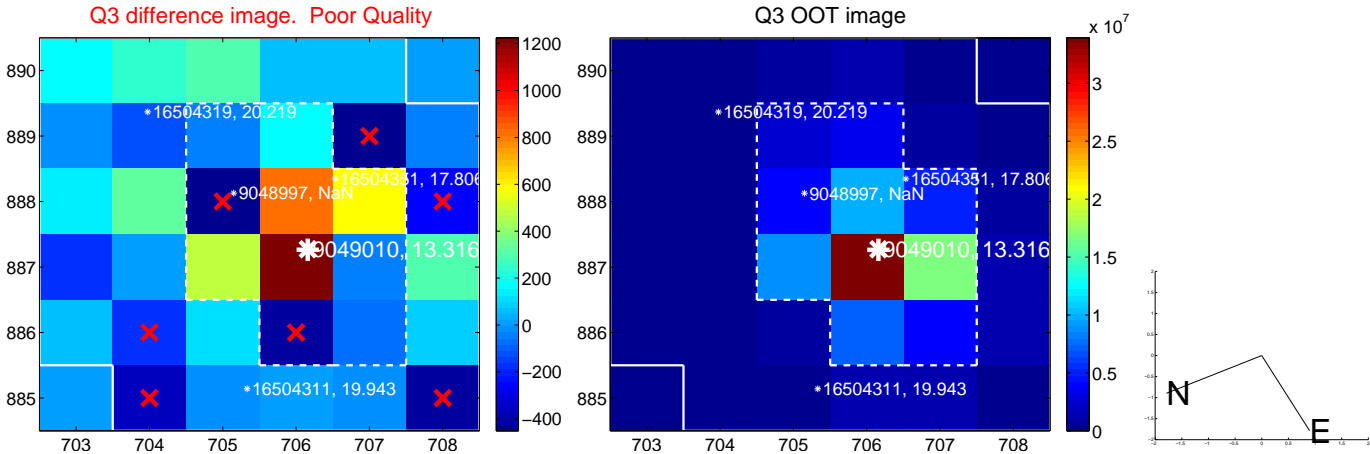
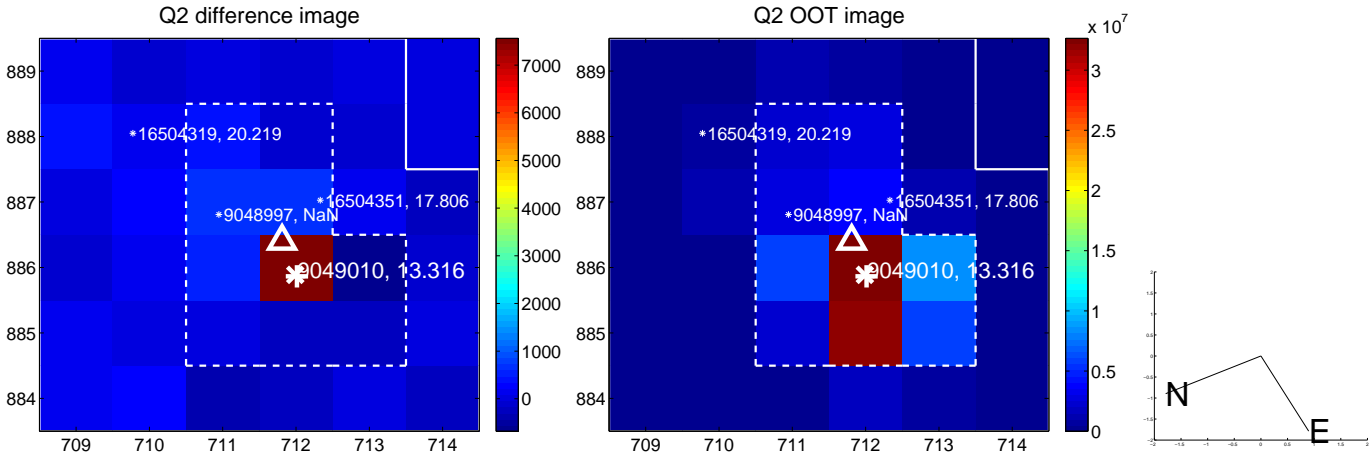
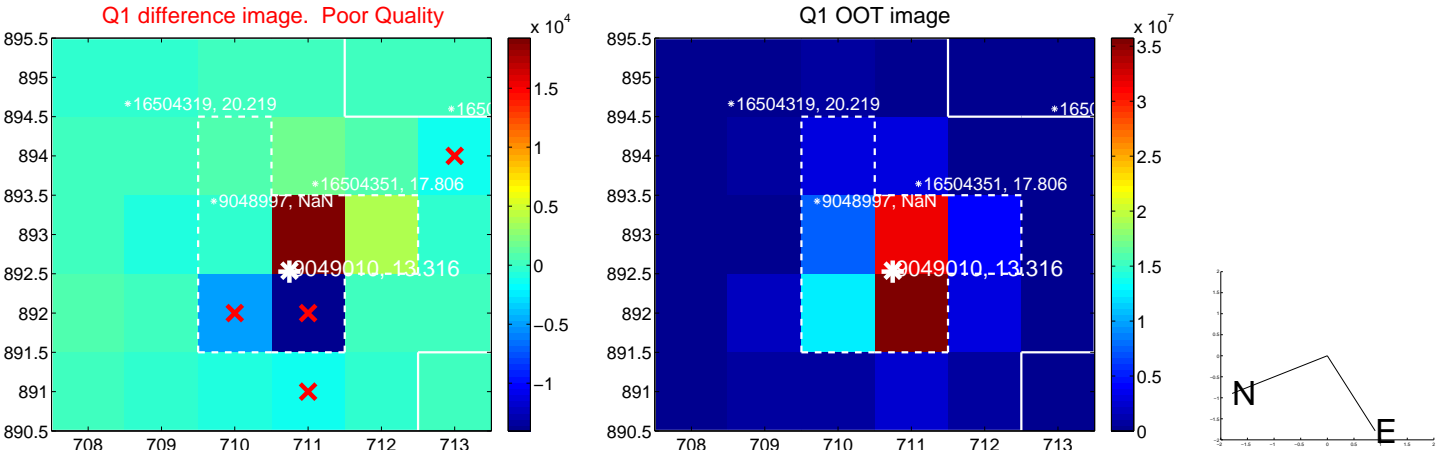
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.405 ± 0.456	0.89	-0.393 ± 0.421	-0.101 ± 0.311
PRF-fit source offset from KIC position	0.349 ± 0.449	0.78	-0.332 ± 0.403	-0.108 ± 0.328
photometric centroid source offset	1.03 ± 0.54	1.90	-0.48 ± 0.61	0.91 ± 0.52

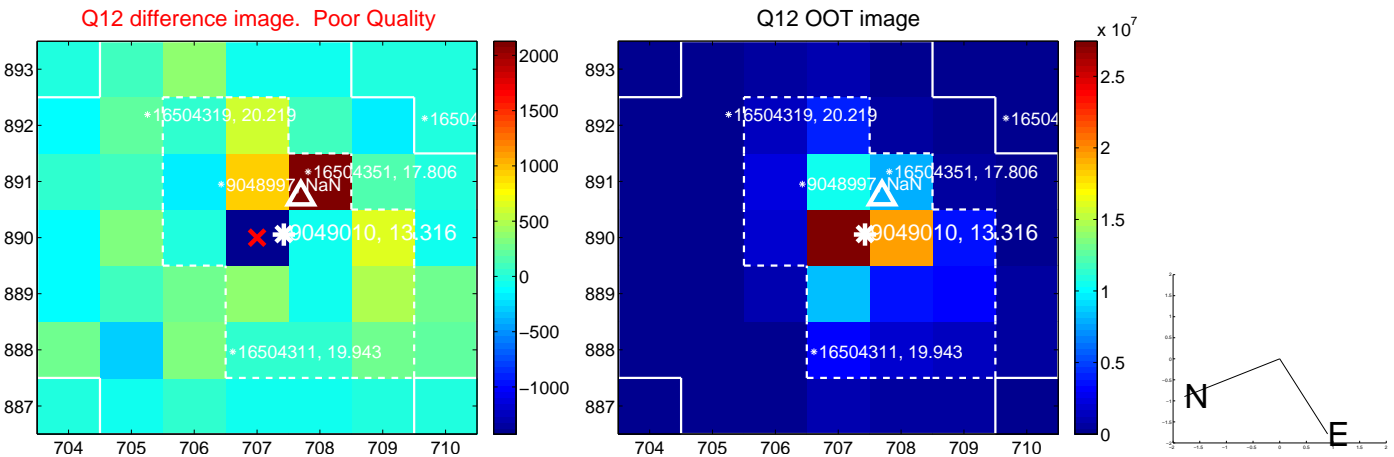
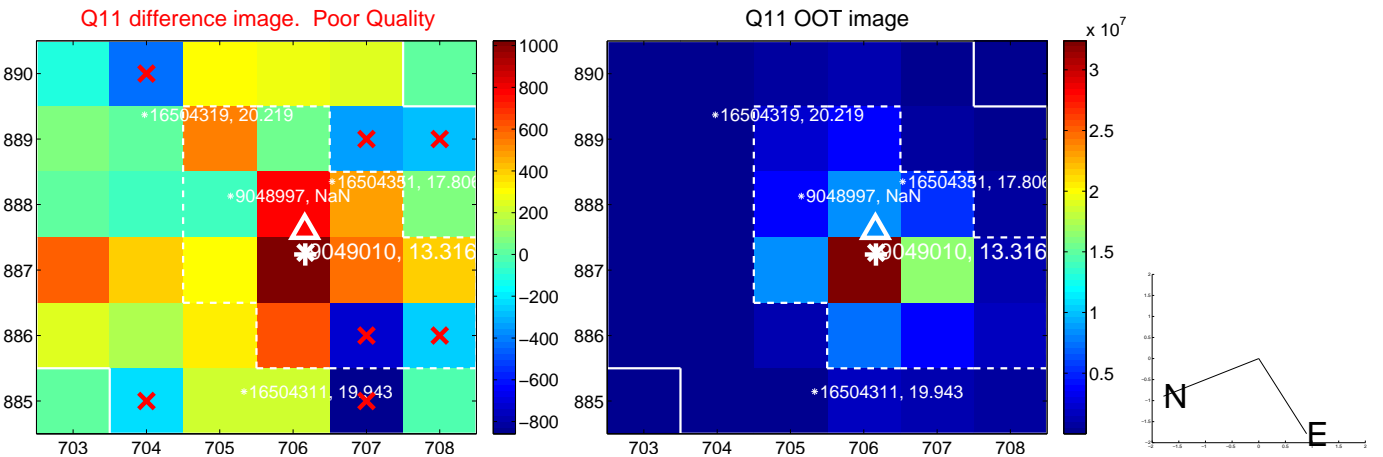
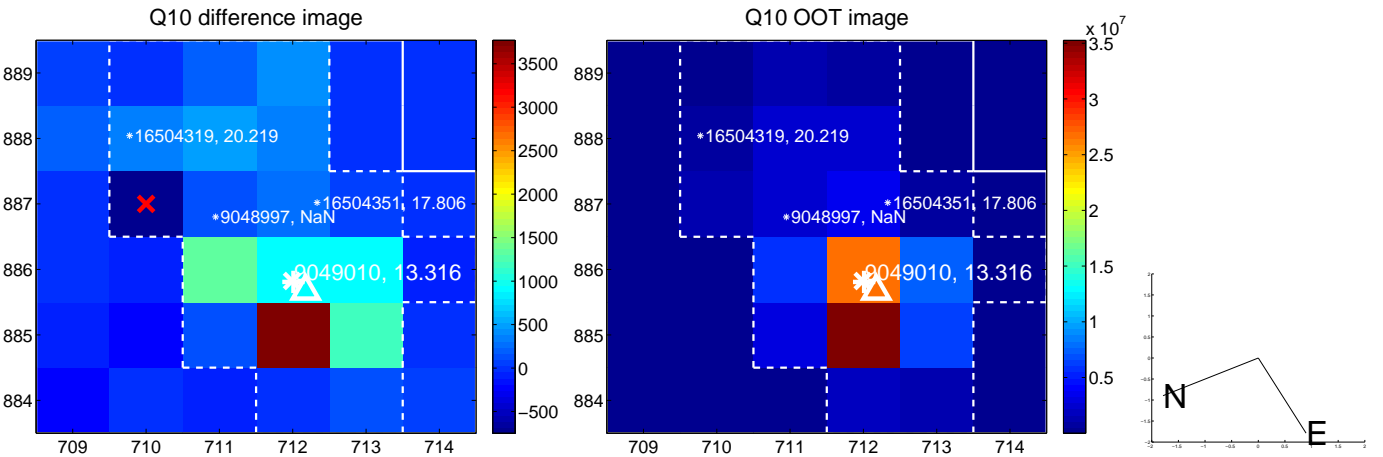
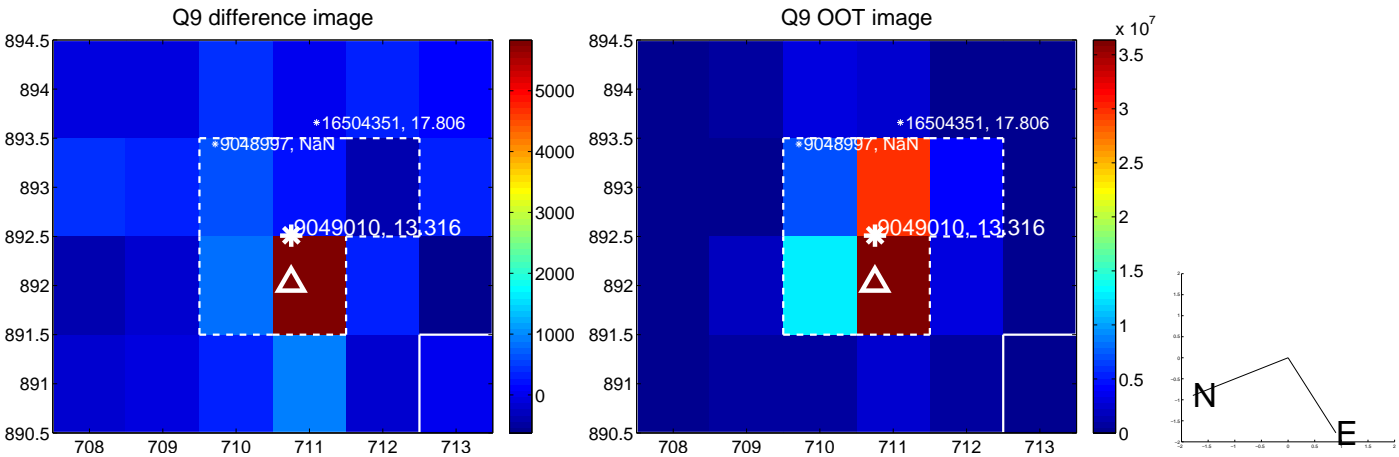


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

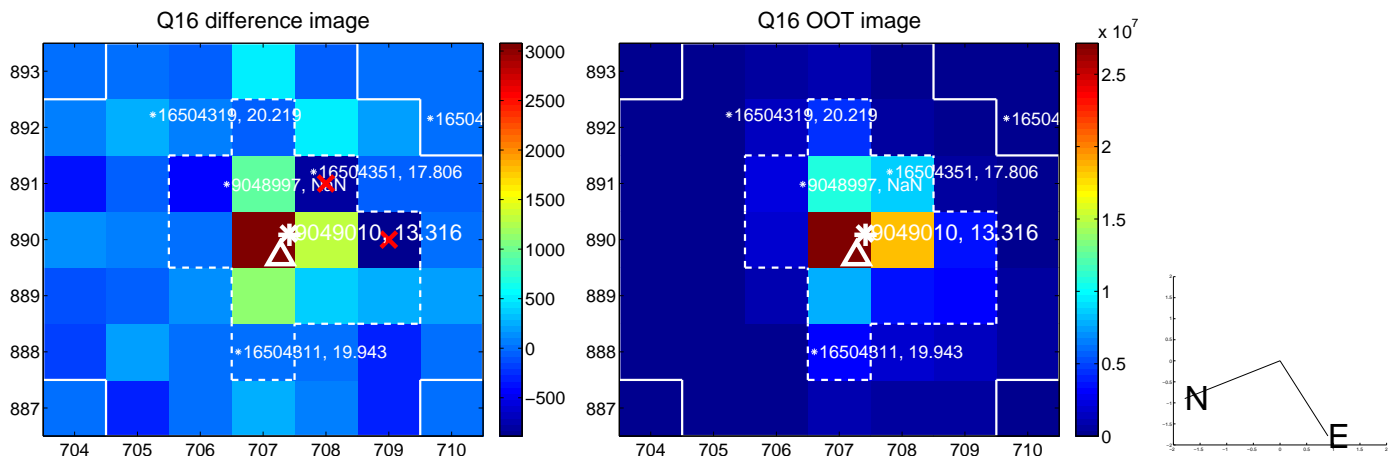
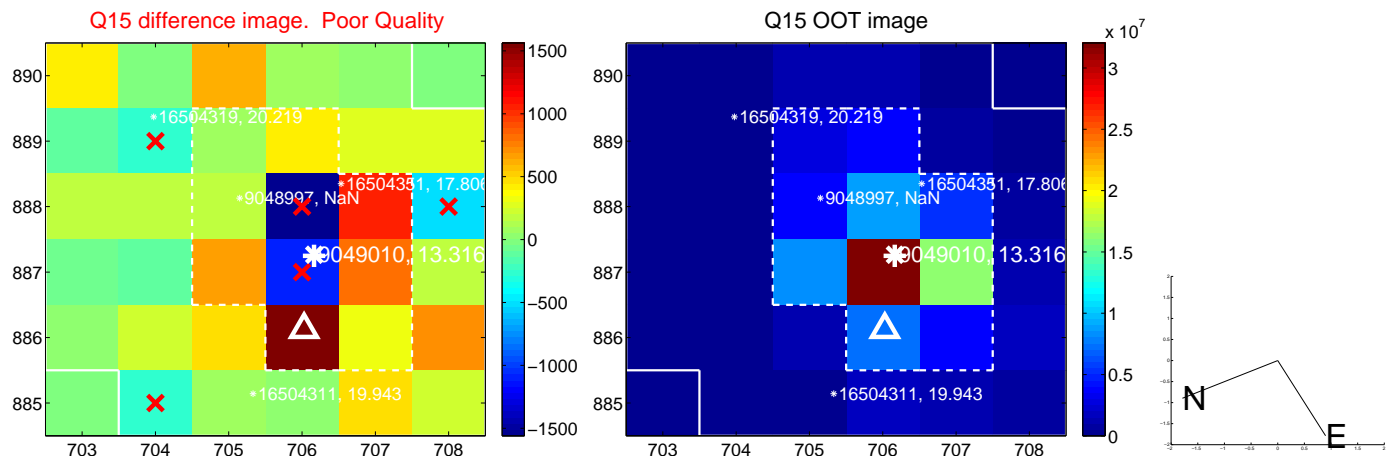
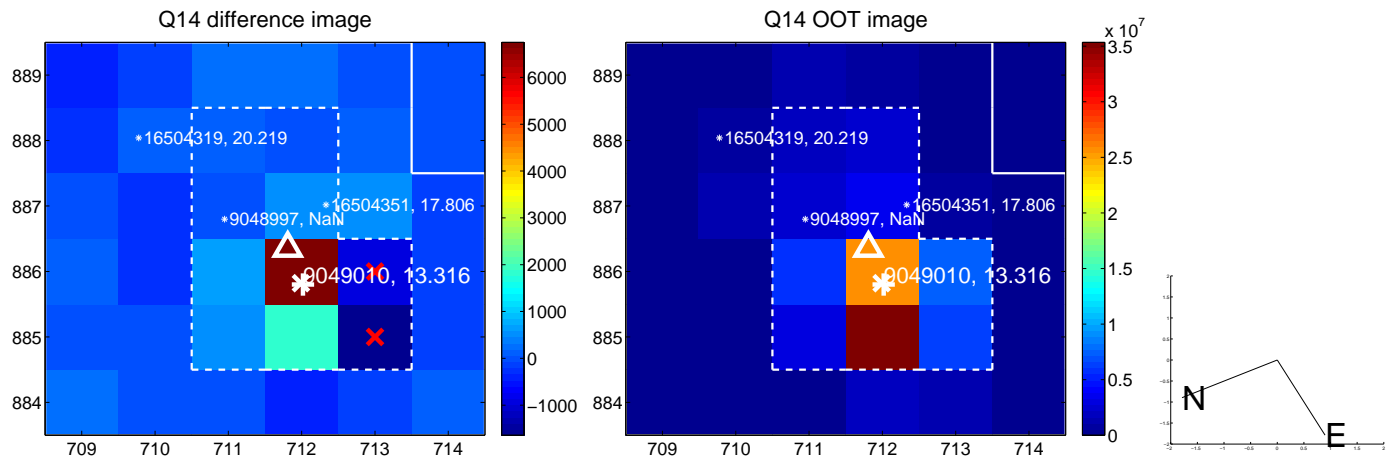
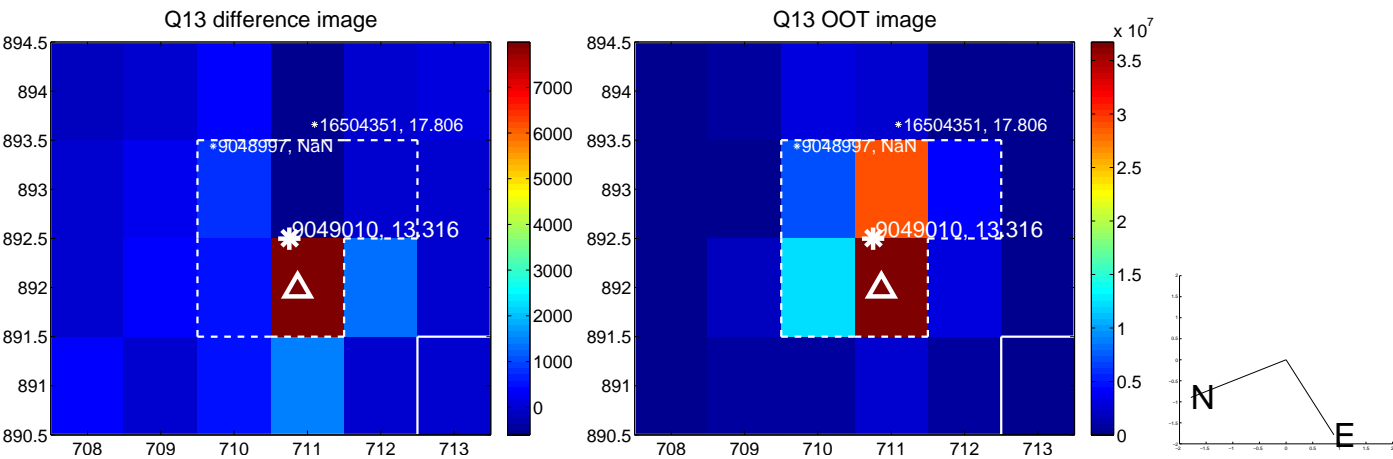
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



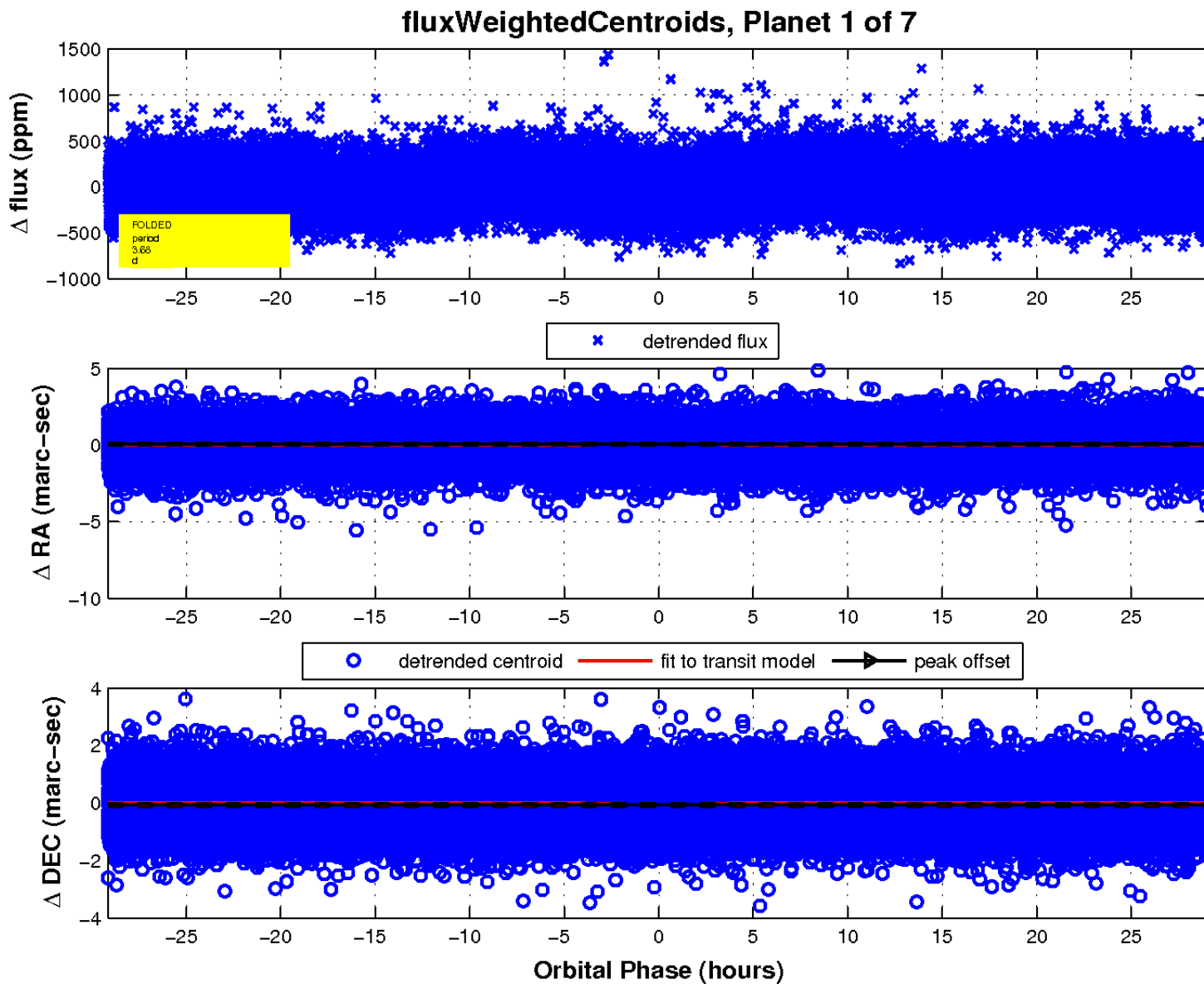
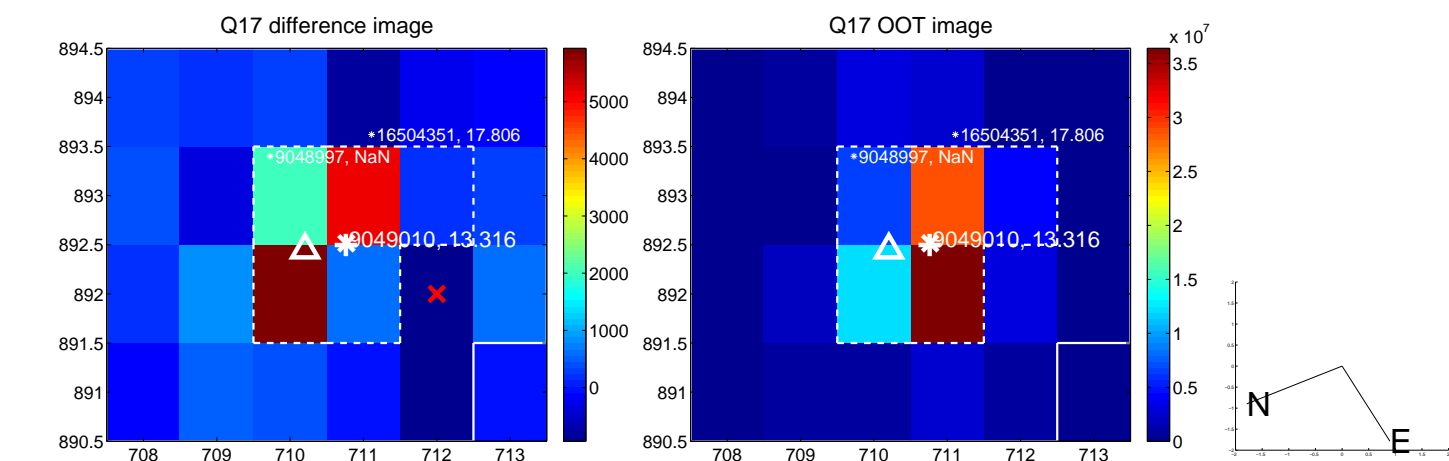
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

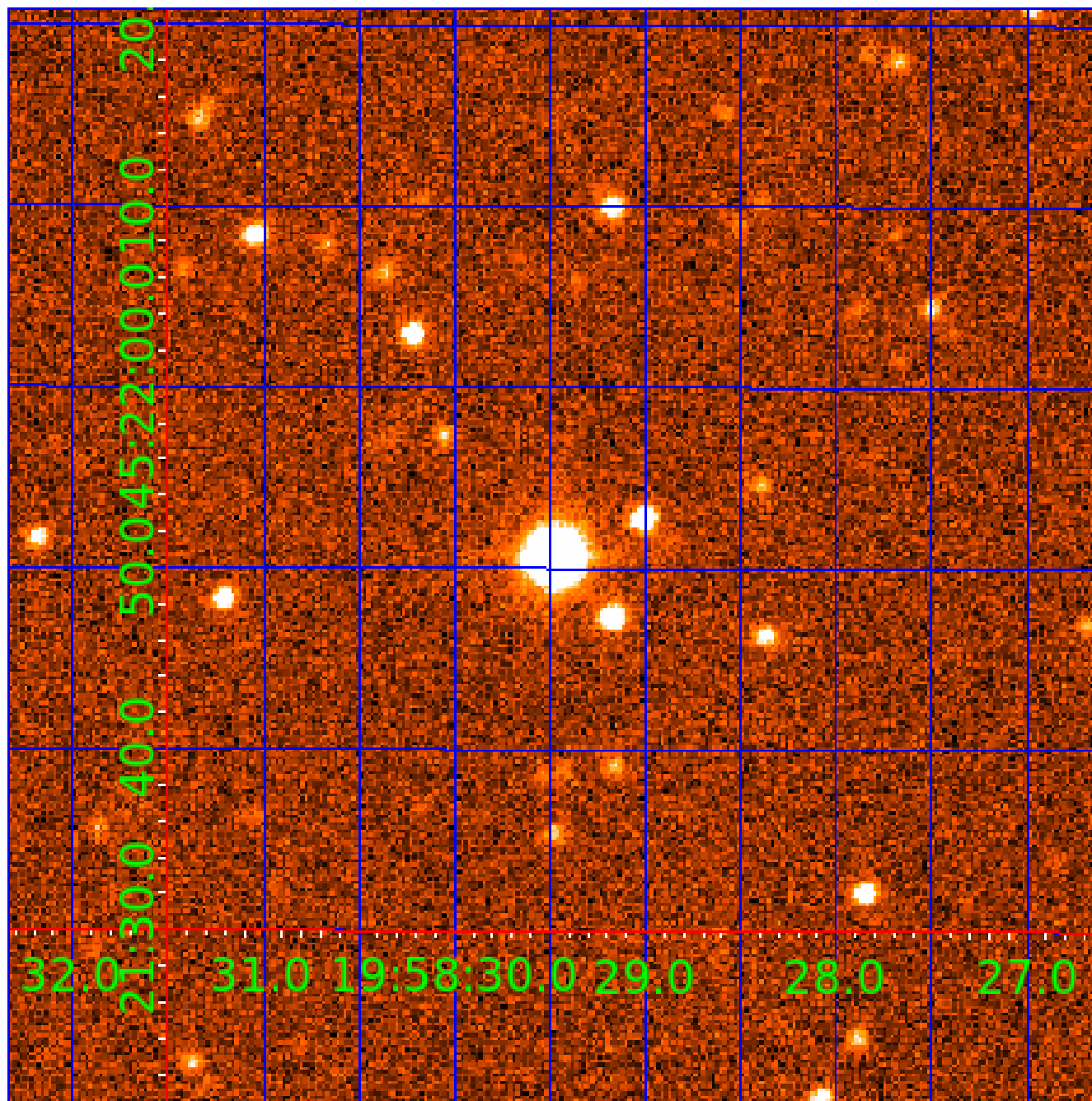


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009049010

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})
009049010-01	OBS	No	3.681208	131.599453	78.9	9.713	11.6	13.8	2.80	6240	4.75	3945.13
009049010-02	OBS	No	402.794548	519.462978	581.4	9.959	15.5	9.6	2.80	6240	9.04	7.54
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009049010-06	OBS	No	56.090536	143.269295	286.2	3.051	9.0	6.8	2.80	6240	5.49	104.44
009049010-07	OBS	No	46.230249	156.956499	227.6	1.927	7.4	6.2	2.80	6240	4.86	135.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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009049010-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
009049010-03	OBS	FP	0.00	1	0	0	0	LPP_DV
009049010-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009049010-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_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 009049010-02

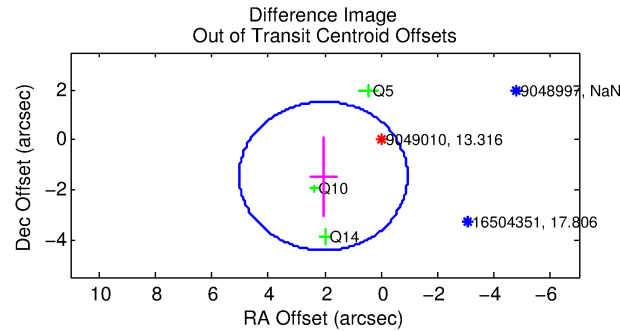
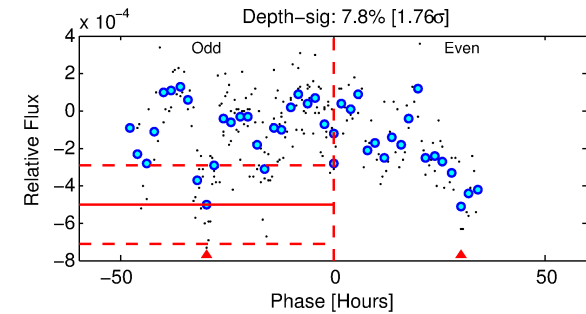
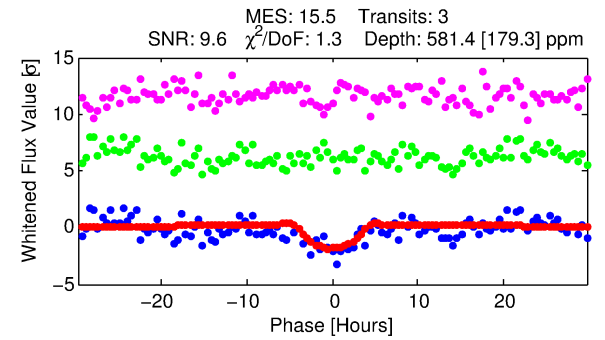
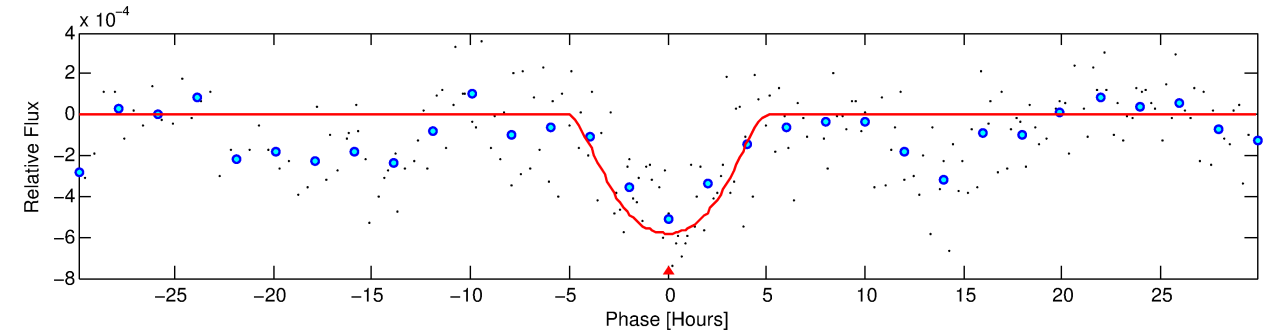
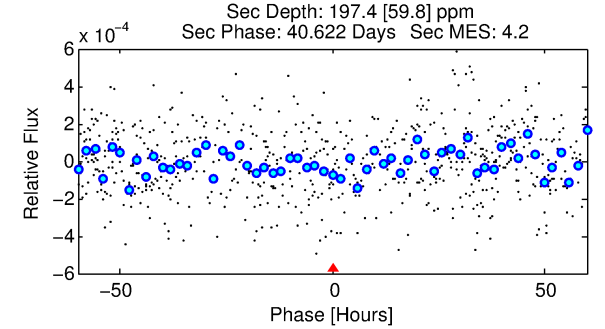
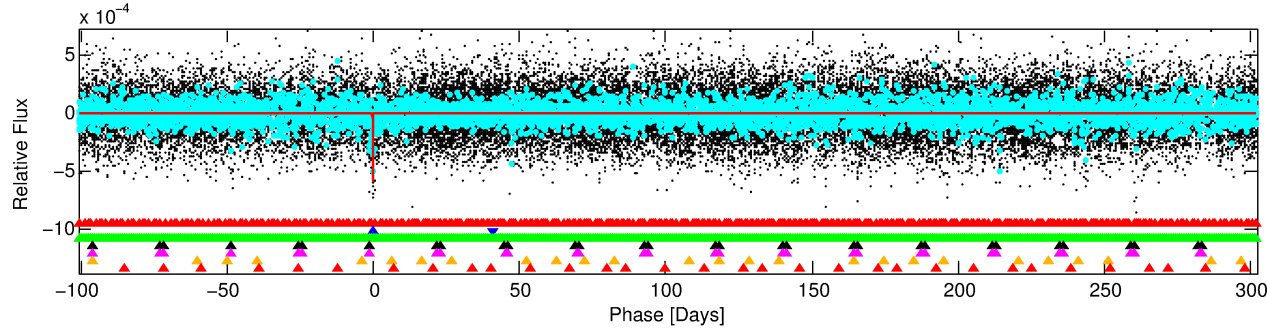
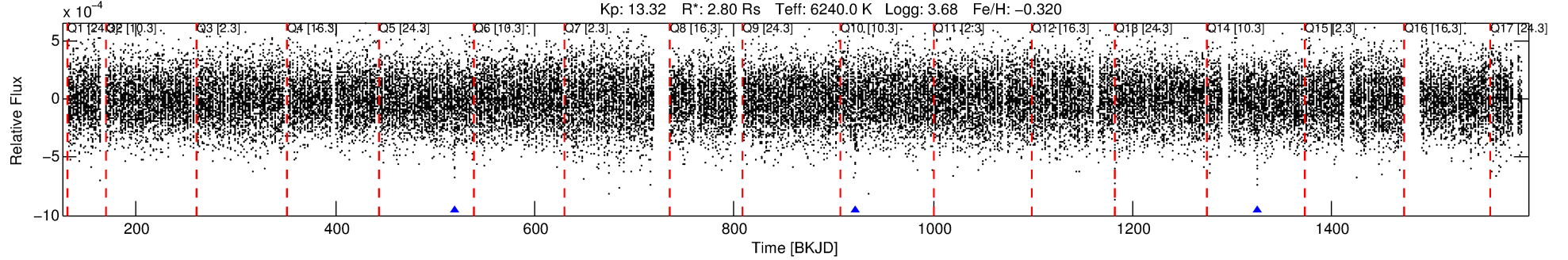
No Significant Match Found

DV One-Page Summary

KIC: 9049010 Candidate: 2 of 7 Period: 402.795 d

KOI: K07127 Corr: No Ephemeris Match

Kp: 13.32 R*: 2.80 Rs Teff: 6240.0 K Logg: 3.68 Fe/H: -0.320



DV Fit Results:

Period = 402.79455 [0.01735] d
Epoch = 519.4630 [0.0199] BKJD
Rp/R* = 0.0295 [0.0093]
a/R* = 102.68 [26.80]
b = 0.97 [0.03]
Seff = 7.54 [7.91]
Teq = 423 [111] K
Rp = 9.04 [5.95] Re
a = 1.1899 [0.7355] AU
Ag = 1882.57 [2357.94] [0.80σ]
Teffp = 4303 [765] K [5.02σ]

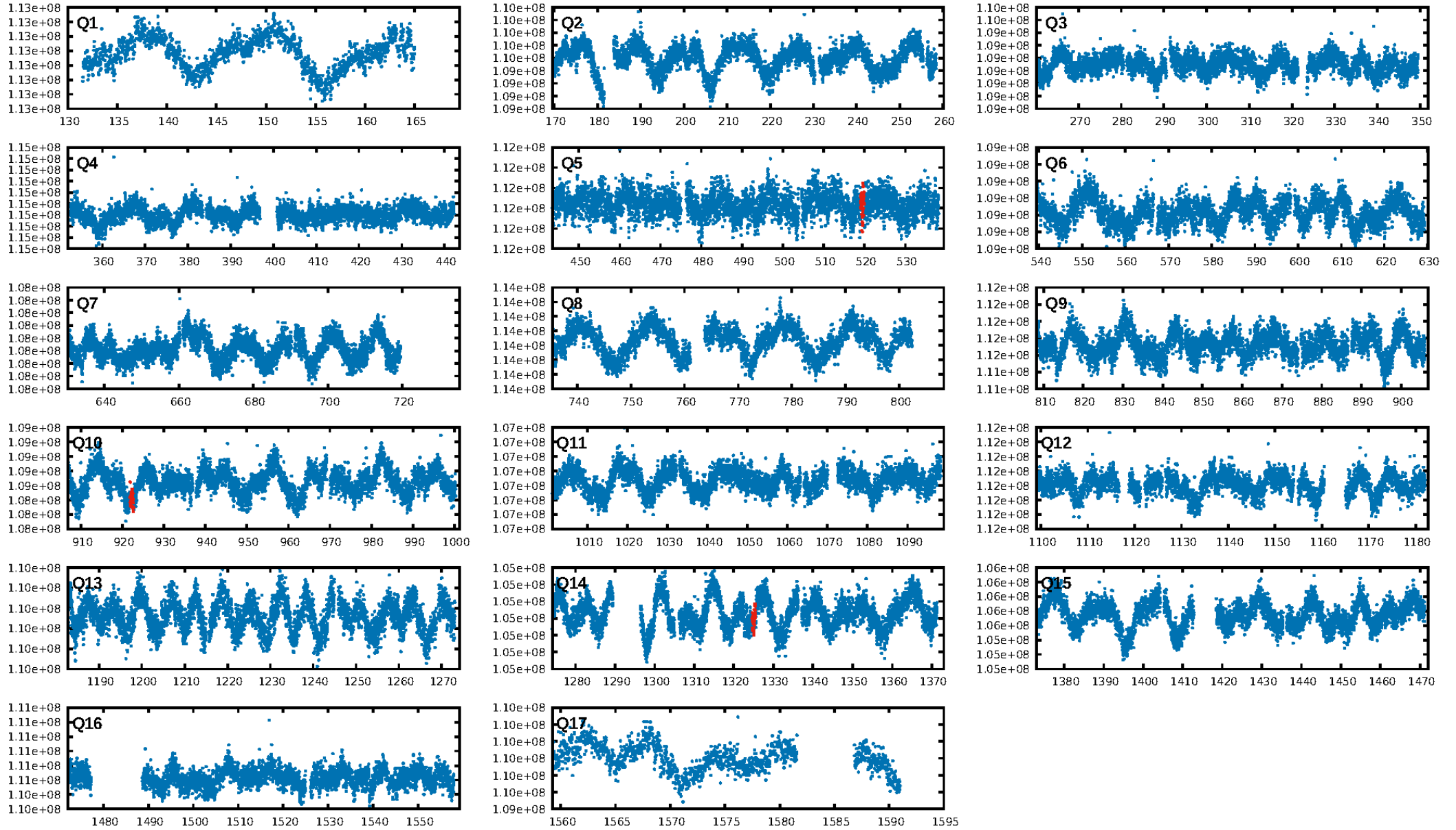
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [798.88σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 58.8%
Bootstrap-pfa: 3.30e-22
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.525
Centroid-sig: 3.1%
Centroid-so: 1.858 arcsec [2.22σ]
OotOffset-rm: 2.511 arcsec [2.53σ]
KicOffset-rm: 2.570 arcsec [2.28σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
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DiffImageOverlap-fno: 0.00 [0/3]

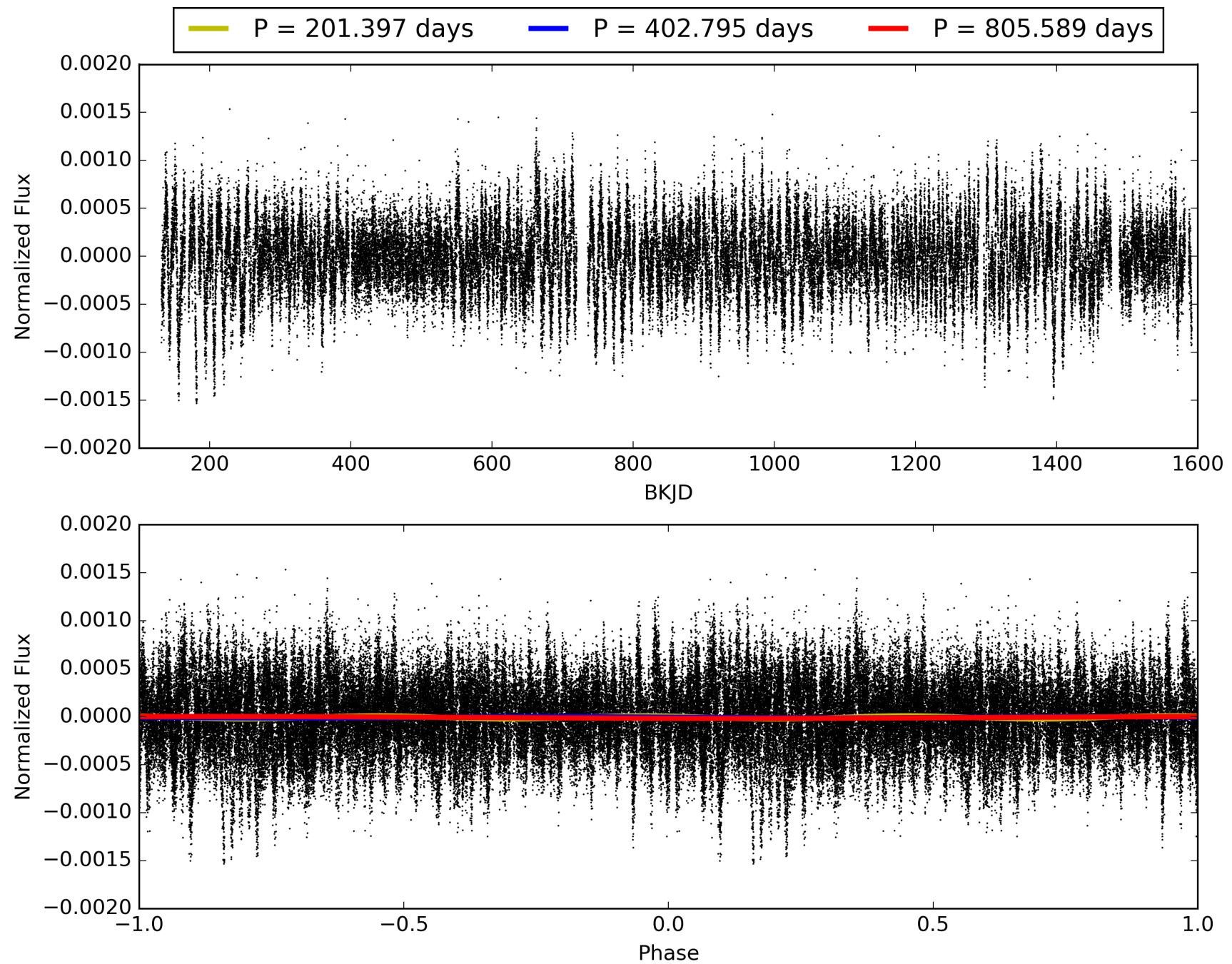
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:55:26 Z

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

TCE 009049010-02, PDC Light Curves

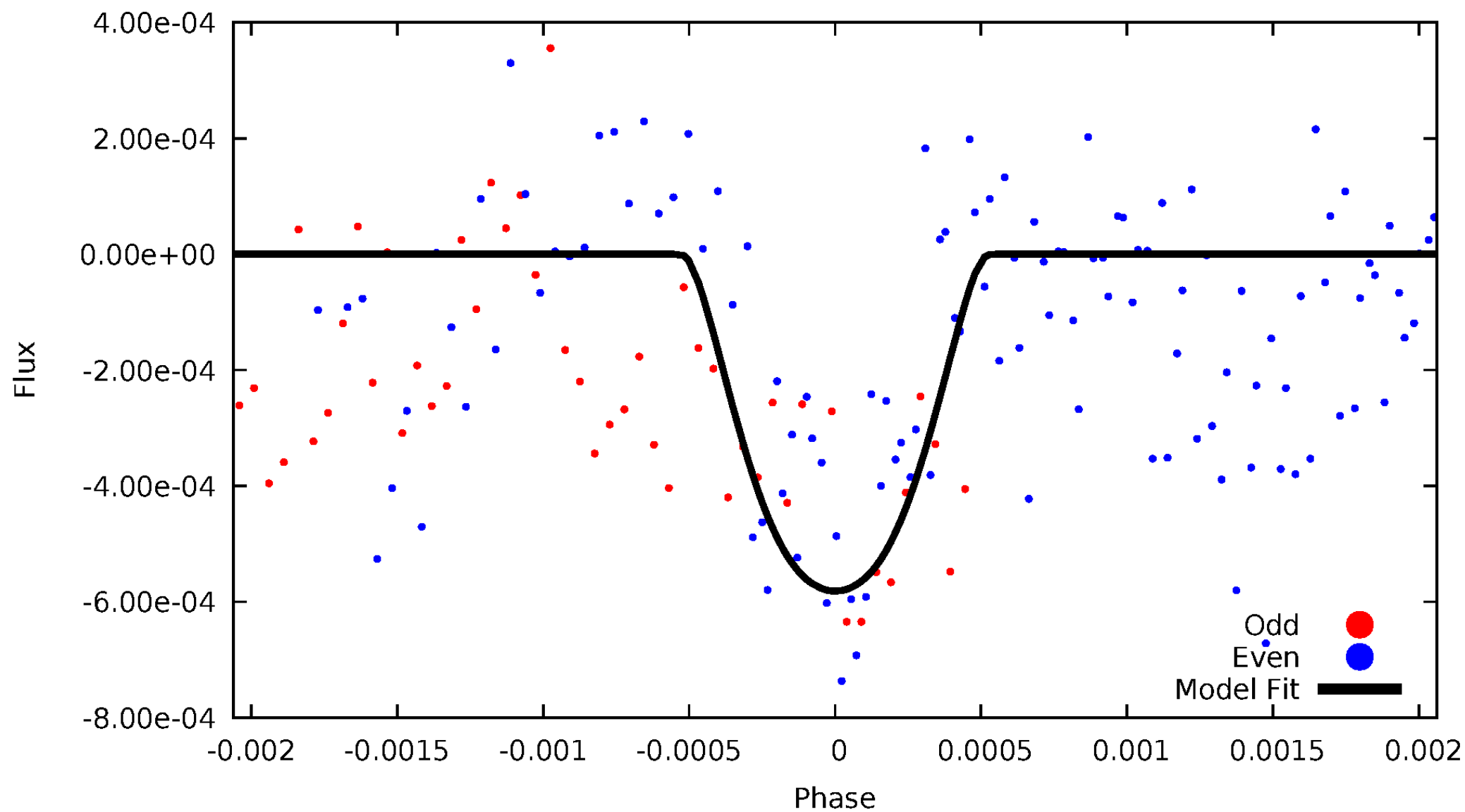


TCE 009049010-02



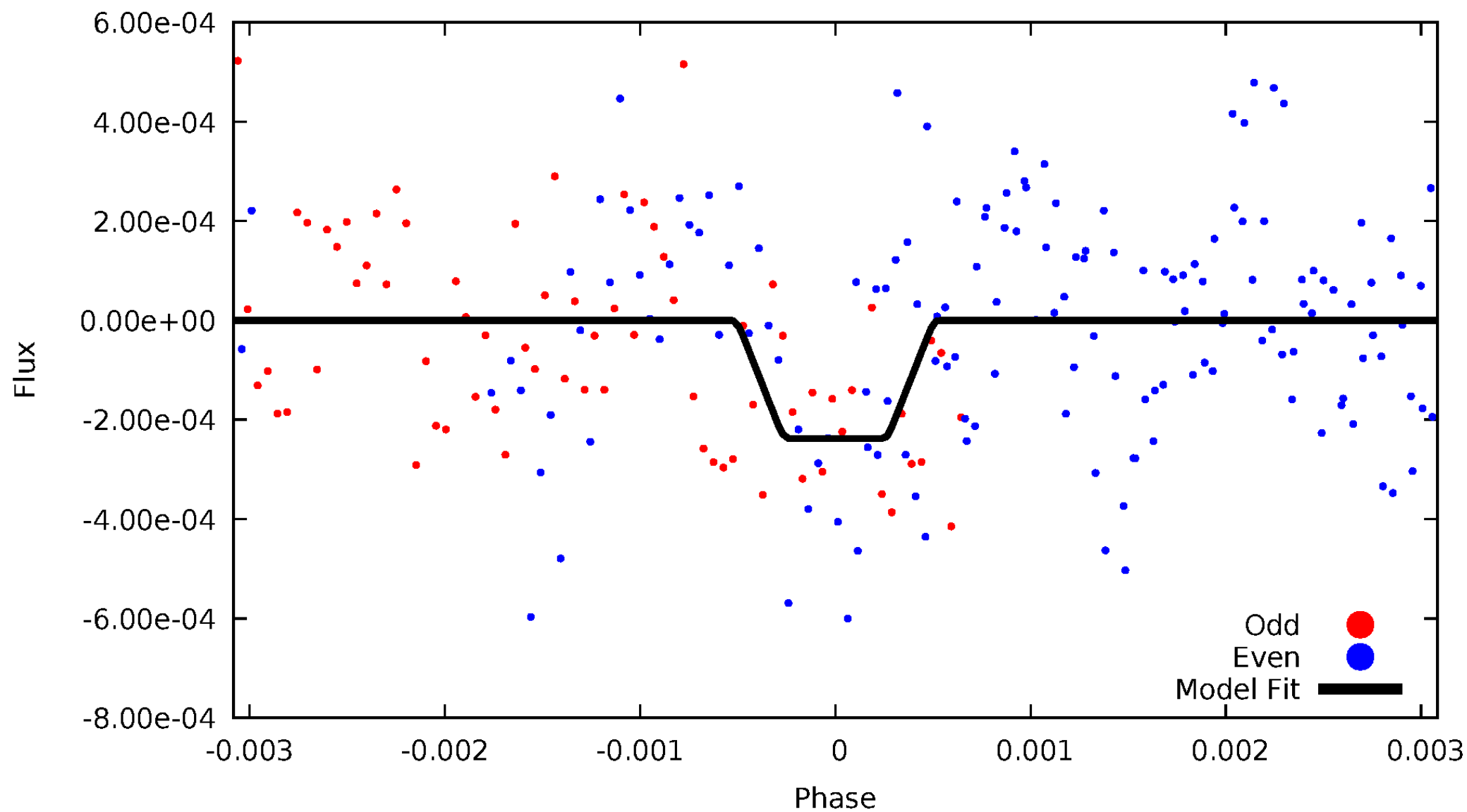
DV Odd/Even

TCE 009049010-02



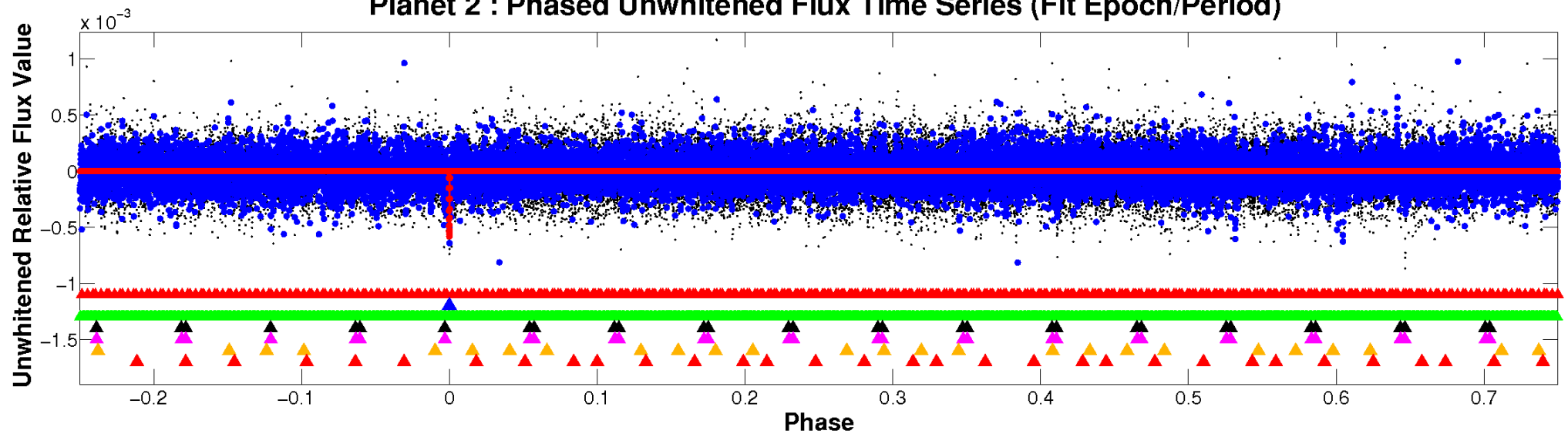
ALT Odd/Even

TCE 009049010-02

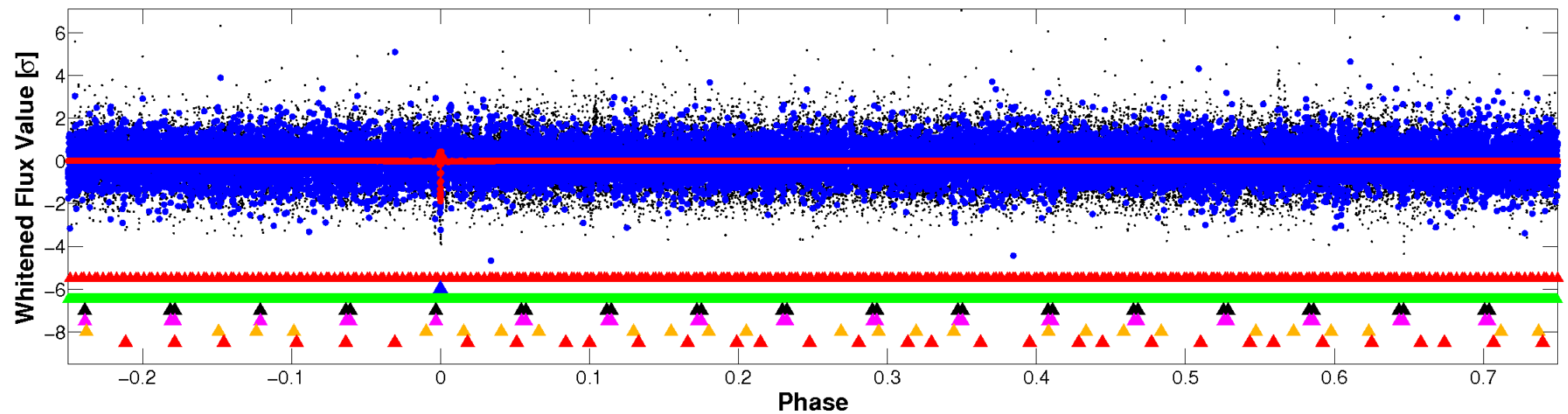


Non-Whitened Vs. Whitened Light Curve

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

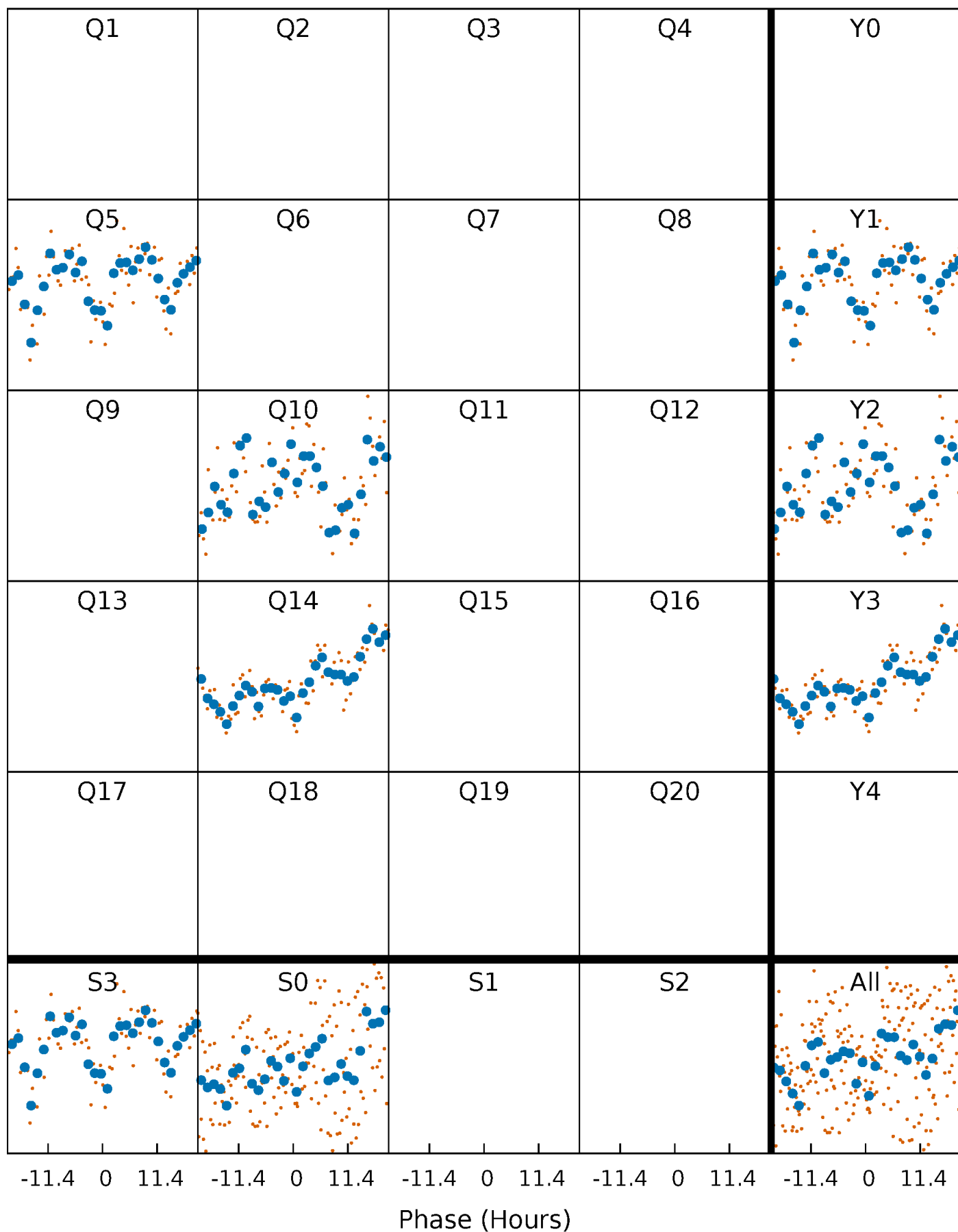


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



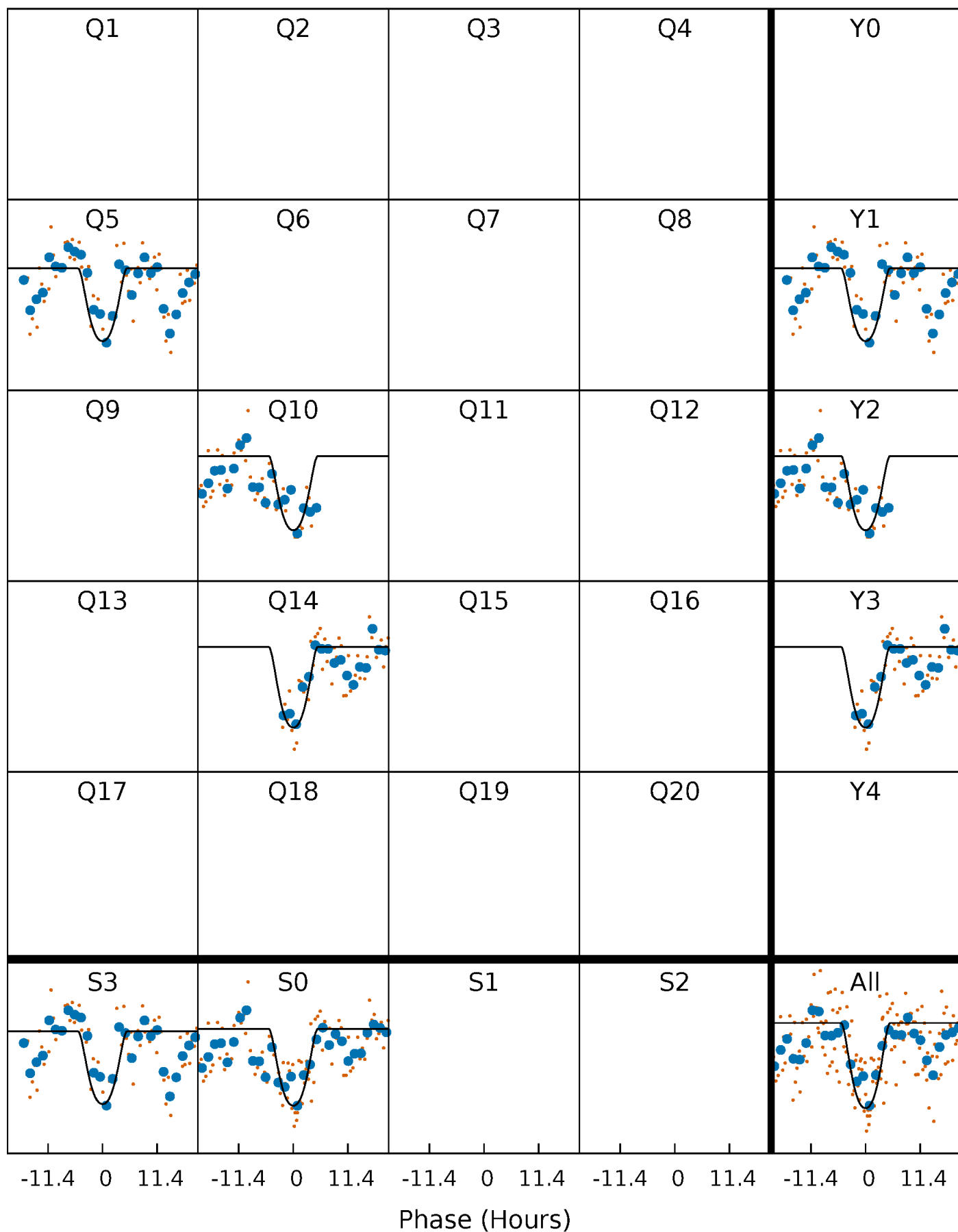
PDC Quarter-Phased Transit Curves

TCE 009049010-02 $P=402.794548$ Days $T_0=519.462978$ (BKJD)



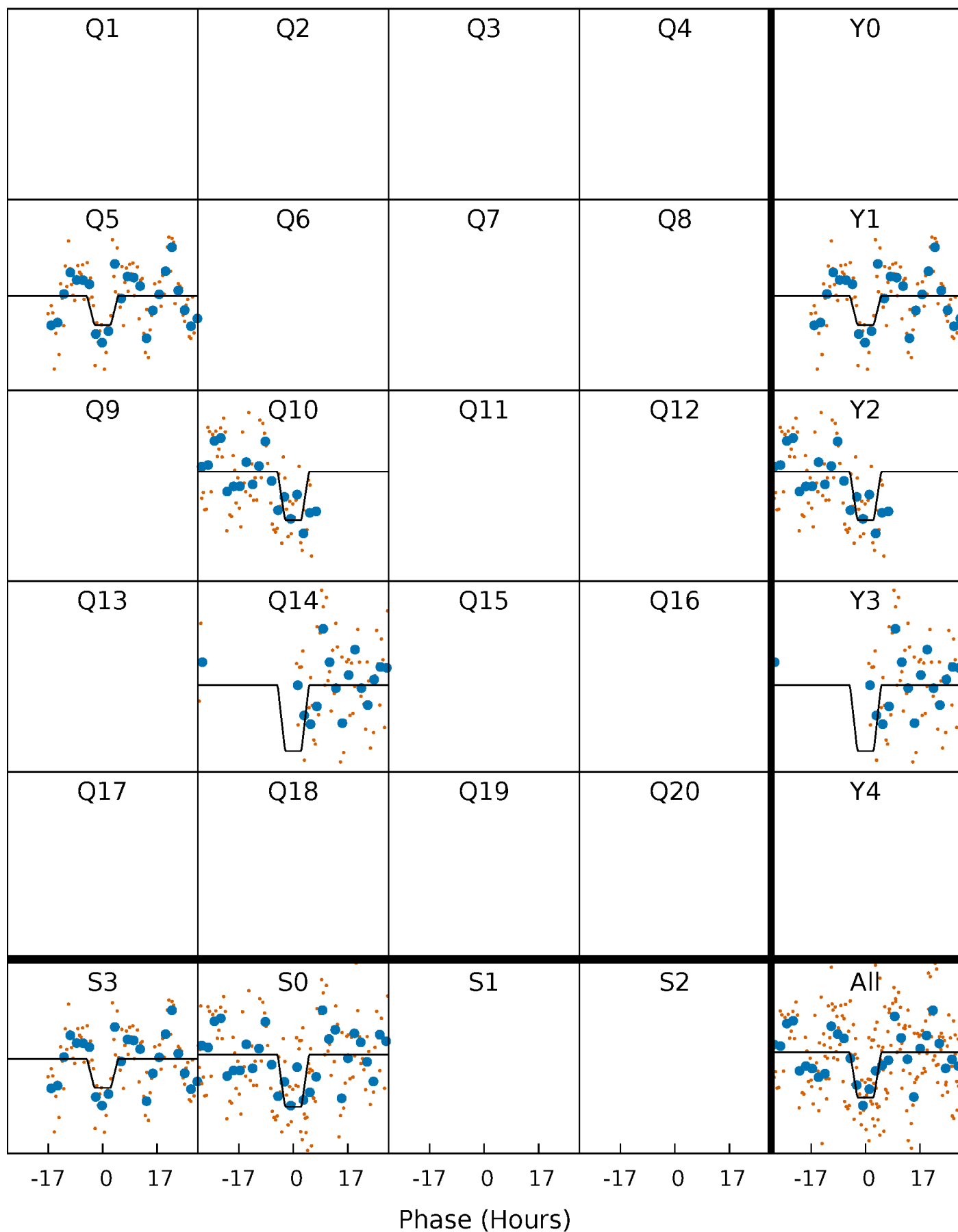
DV Quarter-Phased Transit Curves

TCE 009049010-02 $P=402.794548$ Days $T_0=519.462978$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

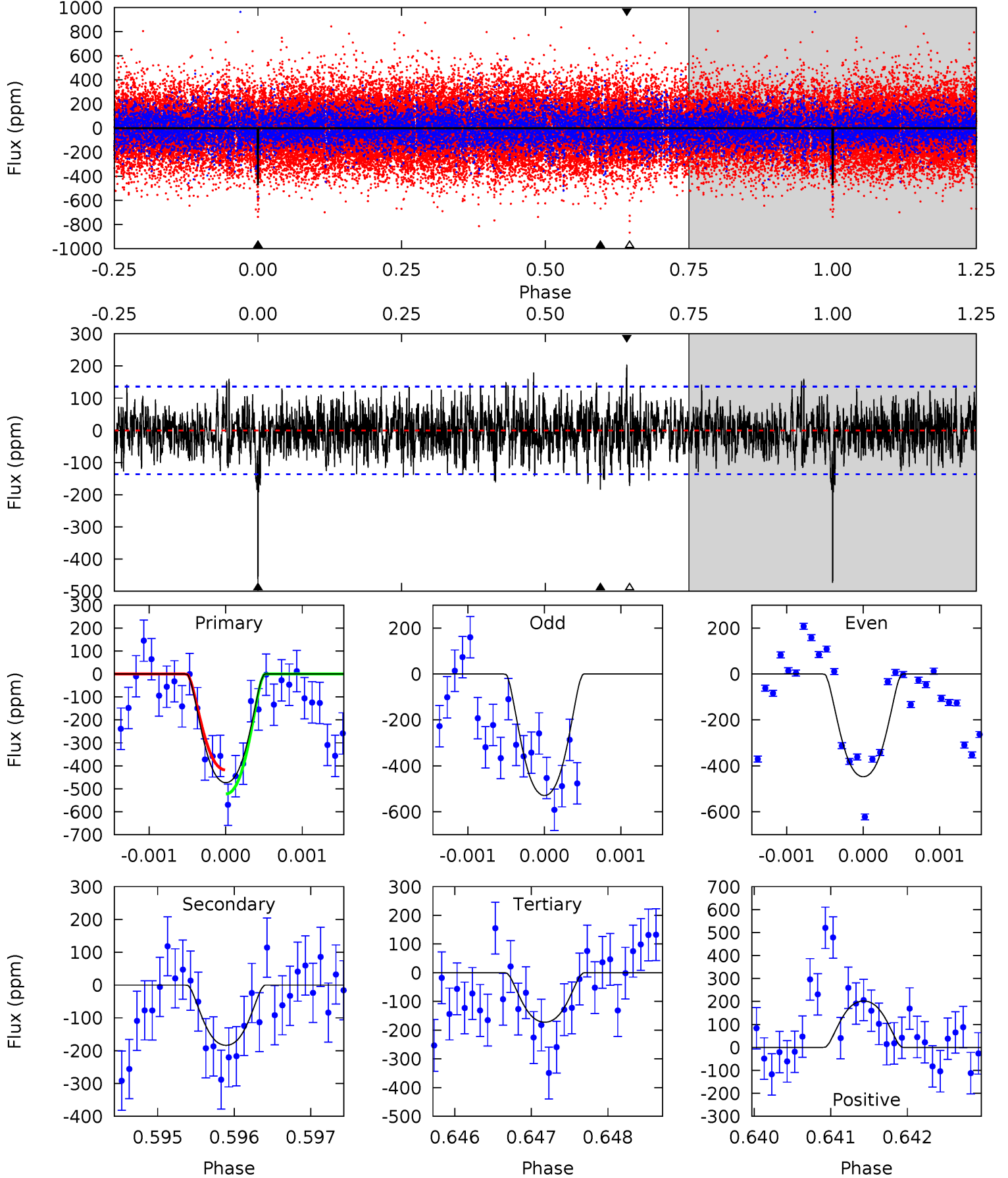
TCE 009049010-02 P=402.718223 Days $T_0=519.459500$ (BKJD)



DV Model-Shift Uniqueness Test

009049010-02, P = 402.794548 Days, E = 116.668430 Days

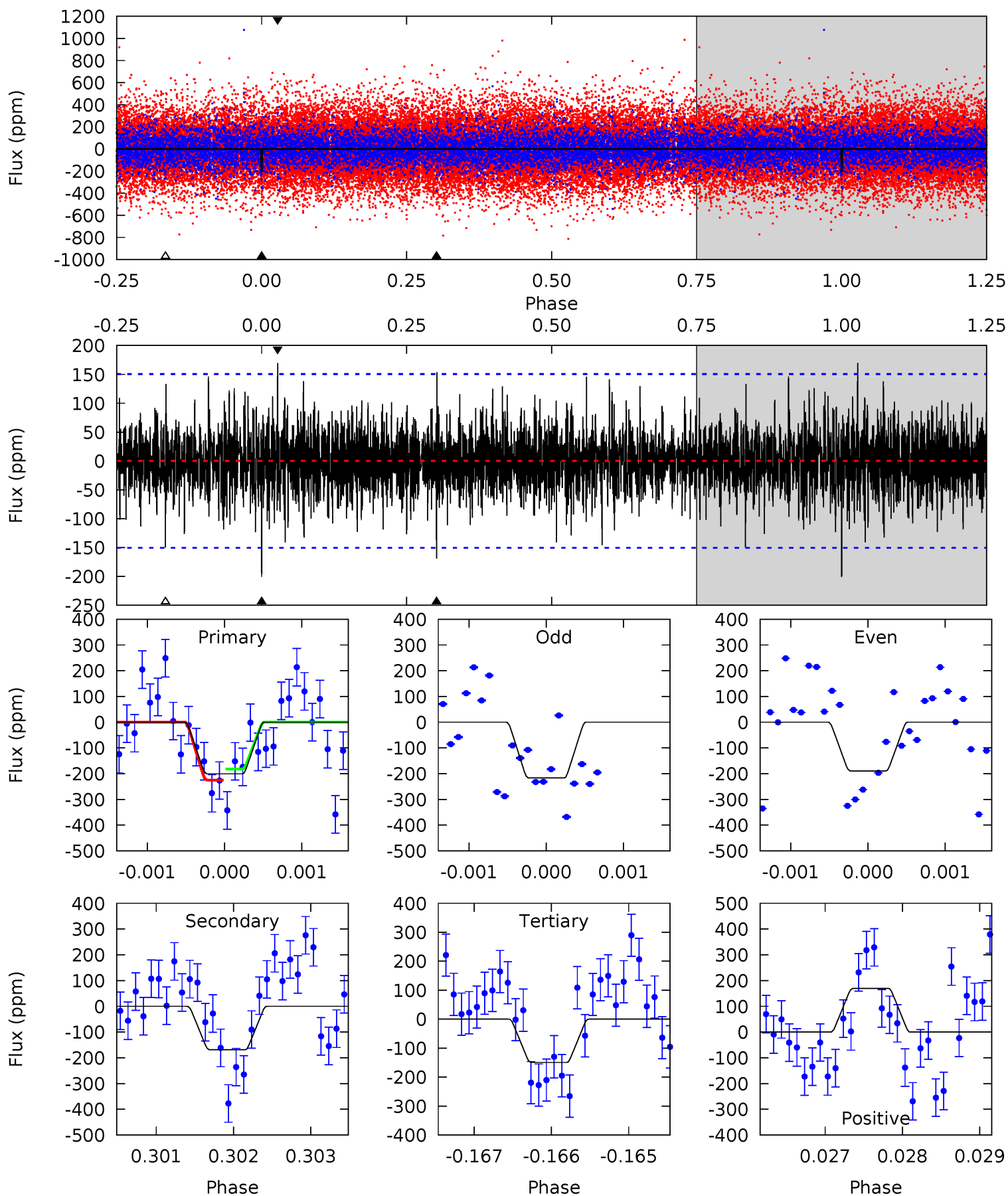
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	7.34	6.88	8.07	5.45	3.28	2.08	12.0	10.8	0.46	-0.73	1.55	0.92	0.30	2.08



Alt Model-Shift Uniqueness Test

009049010-02, $P = 402.718223$ Days, $E = 116.741277$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.24	6.10	5.41	6.13	5.44	3.28	1.49	1.84	1.11	0.70	-0.03	0.49	0.78	0.46	0.76



Stellar Parameters For KIC 009049010

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6240^{+212}_{-212}	$3.684^{+0.629}_{-0.111}$	$-0.320^{+0.300}_{-0.300}$	$2.803^{+0.541}_{-1.623}$	$1.385^{+0.210}_{-0.420}$	$0.089^{+0.776}_{-0.028}$
	+3%/-3%	+17%/-3%	+94%/-94%	+19%/-58%	+15%/-30%	+876%/-32%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009049010-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-184 ± 25	$7.70^{+3.74}_{-2.85}$	570^{+47}_{-84}	4439^{+803}_{-475}	2361^{+3552}_{-1257}
Alt.	-169 ± 28	$4.11^{+2.72}_{-2.36}$	570^{+47}_{-86}	5725^{+2892}_{-1078}	7772^{+32237}_{-5001}

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 $A_{obs} \gg 1.0$

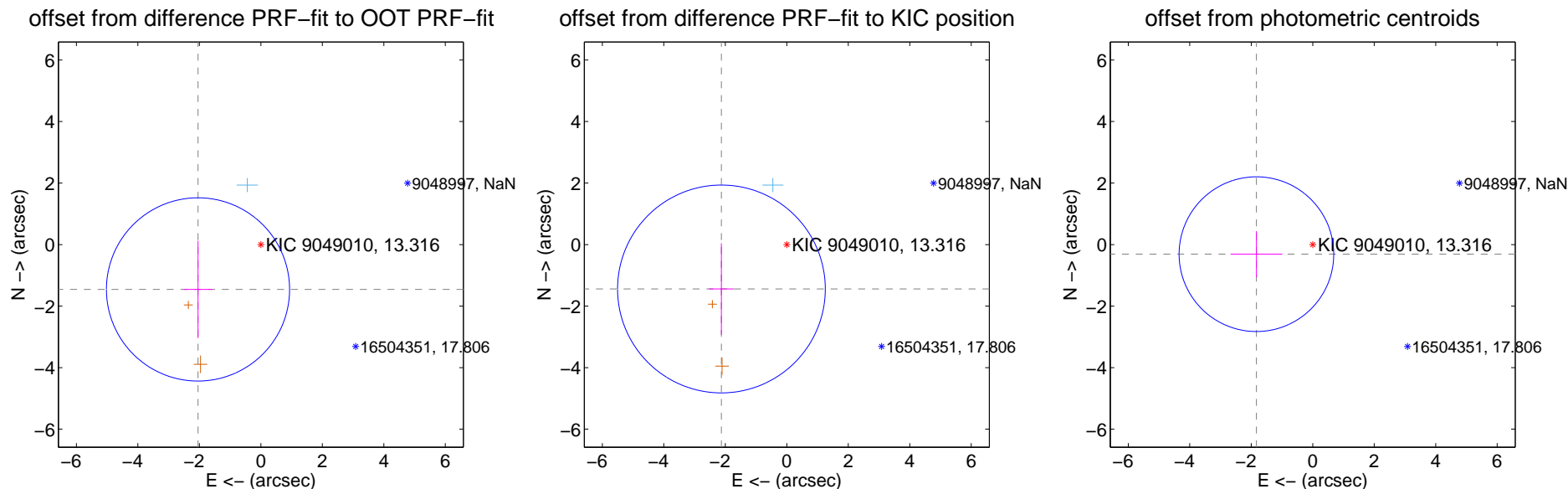
DV Centroid Data

Supplemental centroid analysis for 009049010-02. Kepler magnitude: 13.32. Transit SNR 9.60

There are 1 quarters with good PRF difference image offsets

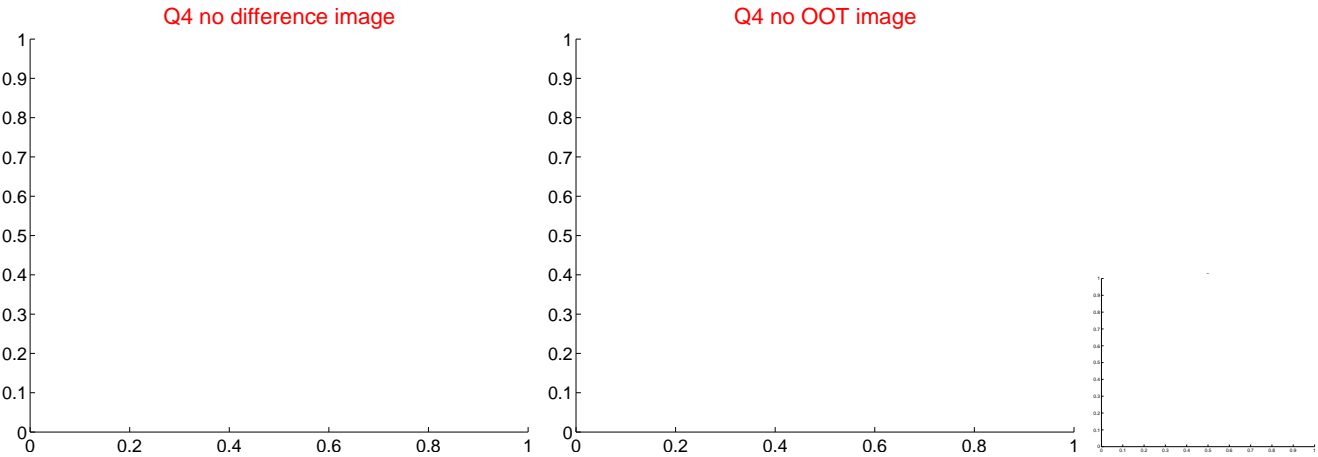
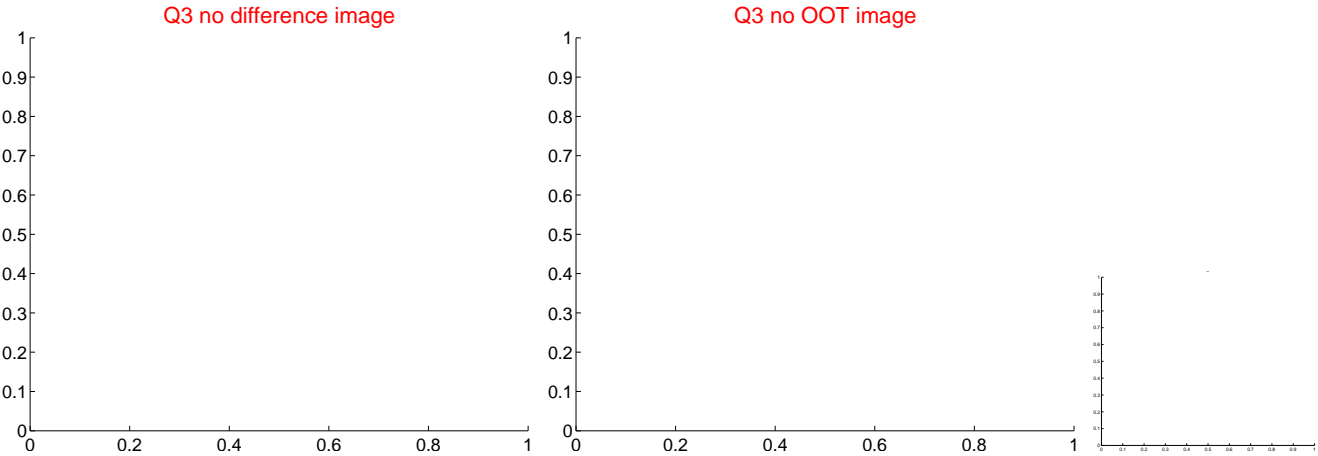
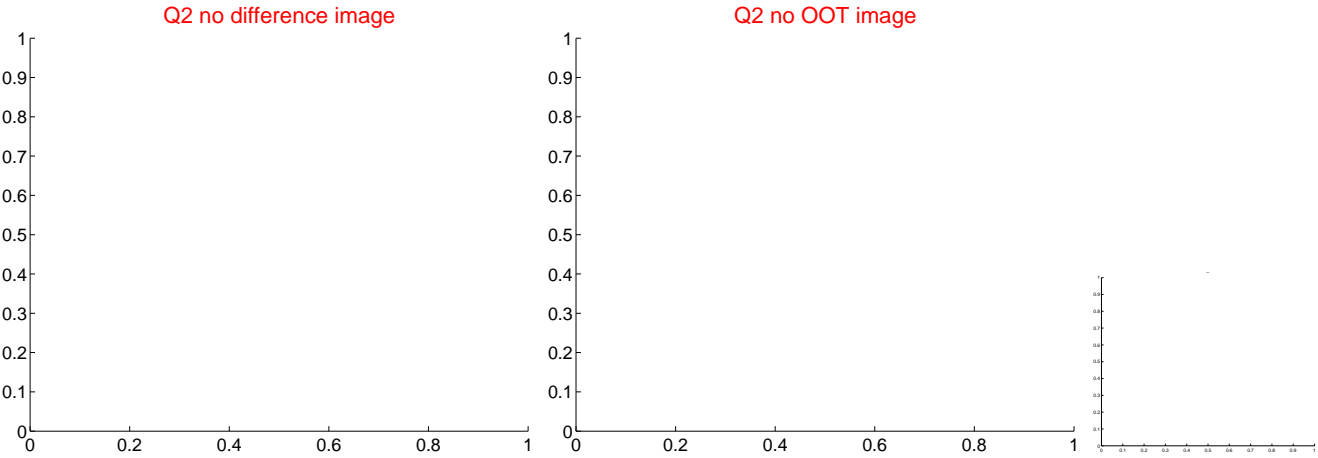
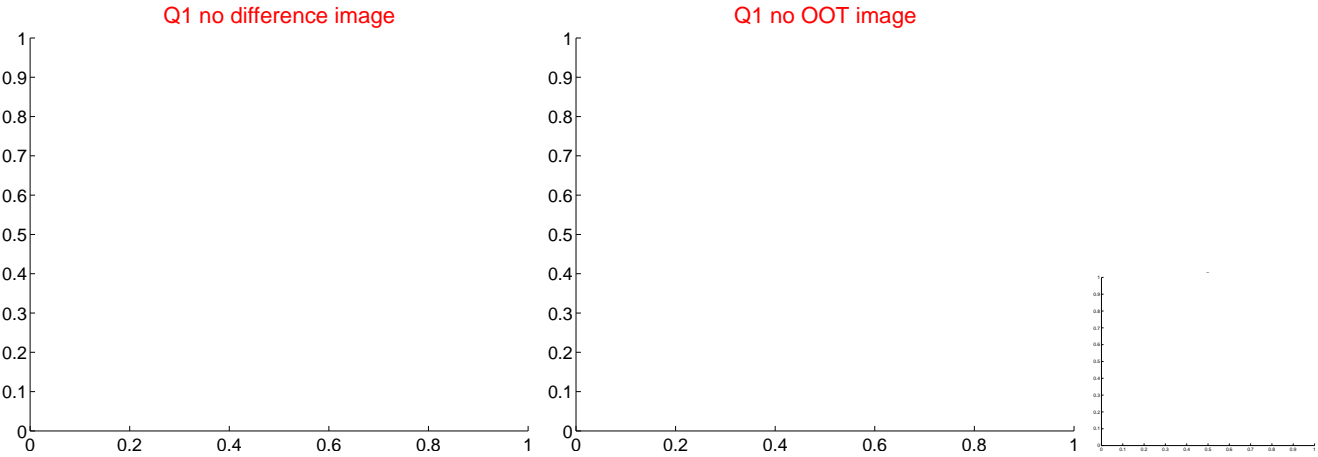
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.511 ± 0.993	2.53	2.044 ± 0.466	-1.458 ± 1.580
PRF-fit source offset from KIC position	2.570 ± 1.126	2.28	2.126 ± 0.403	-1.443 ± 1.484
photometric centroid source offset	1.86 ± 0.84	2.22	1.83 ± 0.84	-0.31 ± 0.75

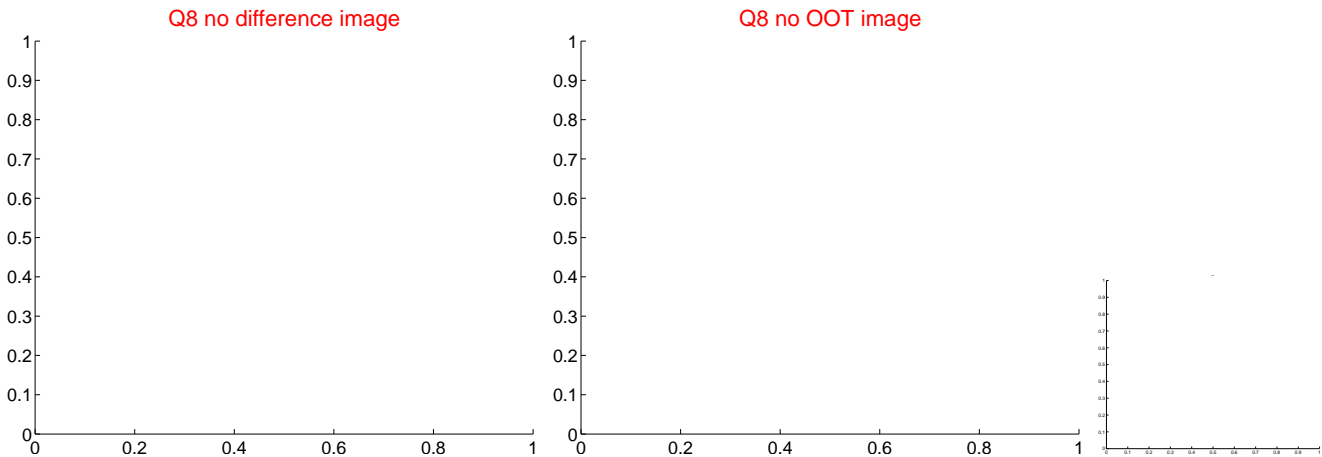
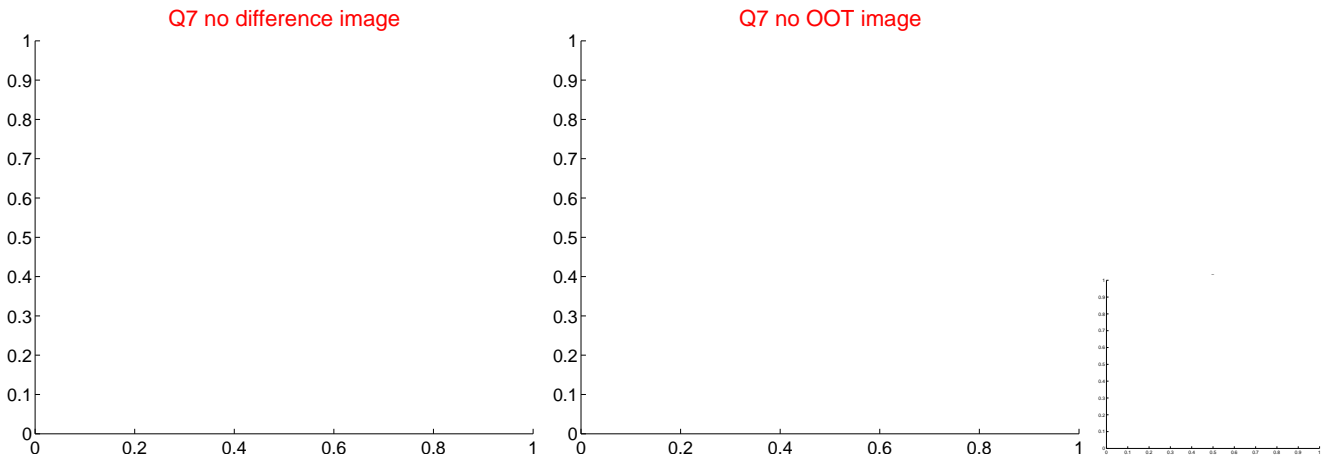
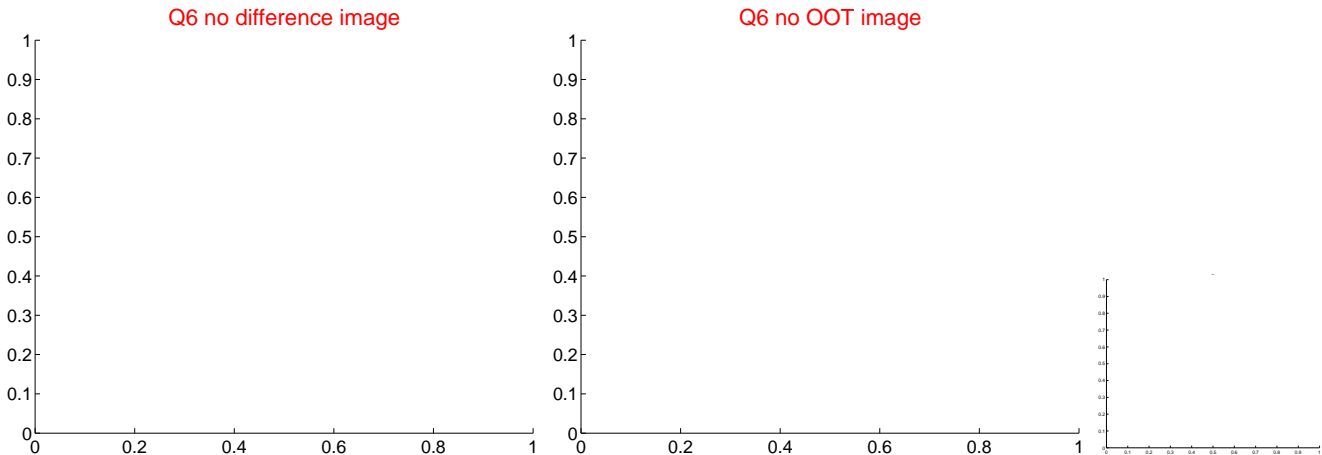
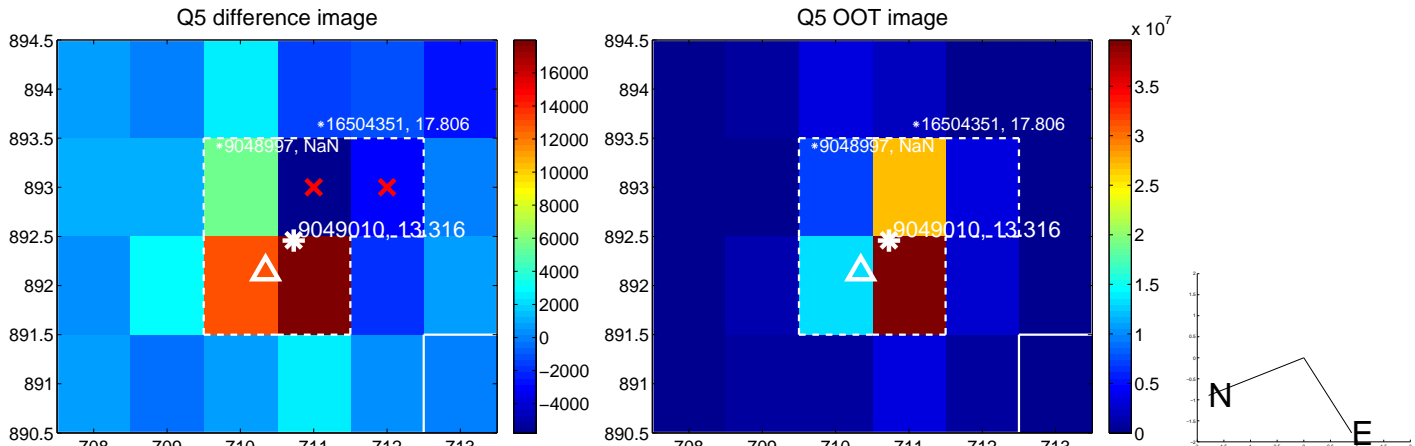


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

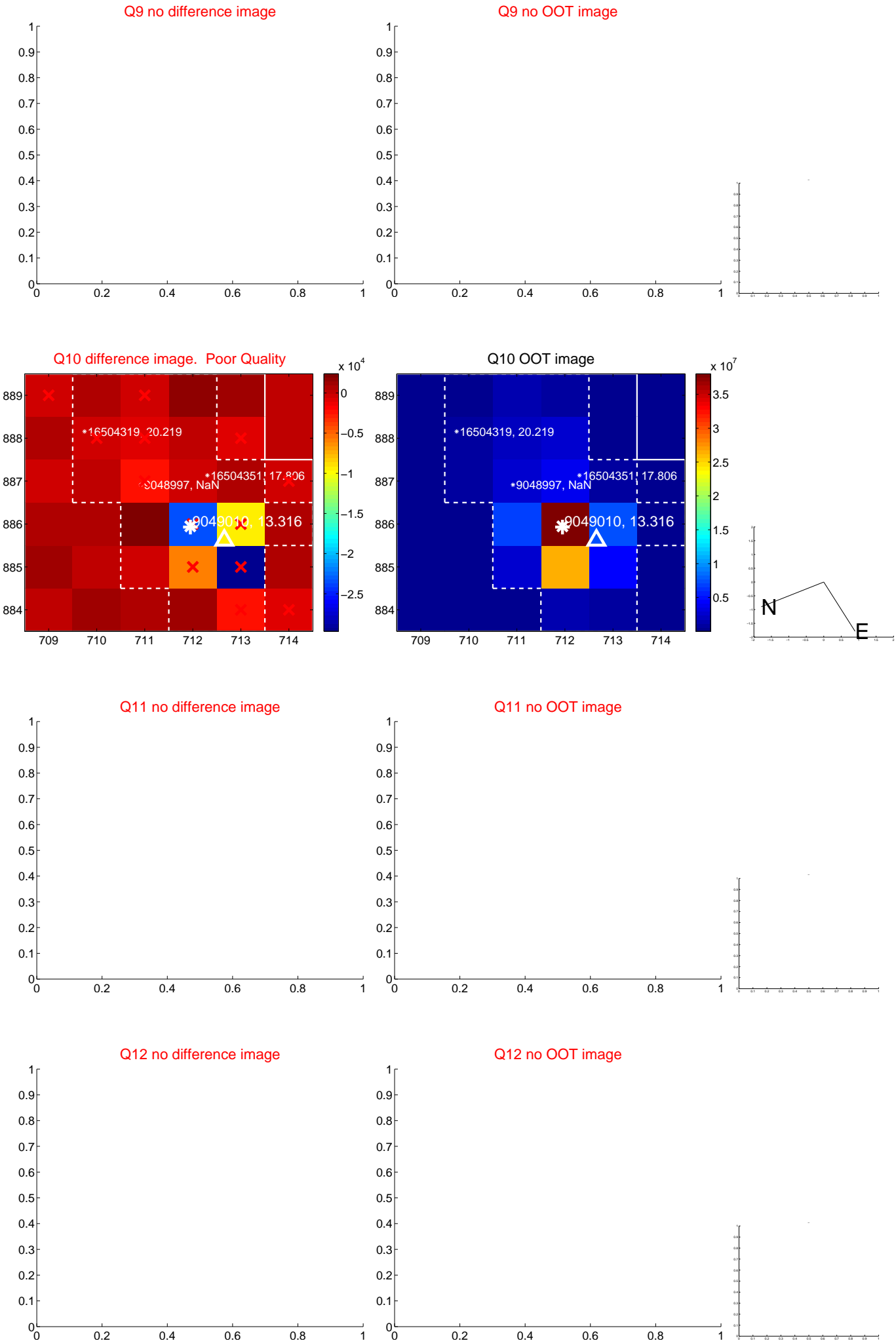
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



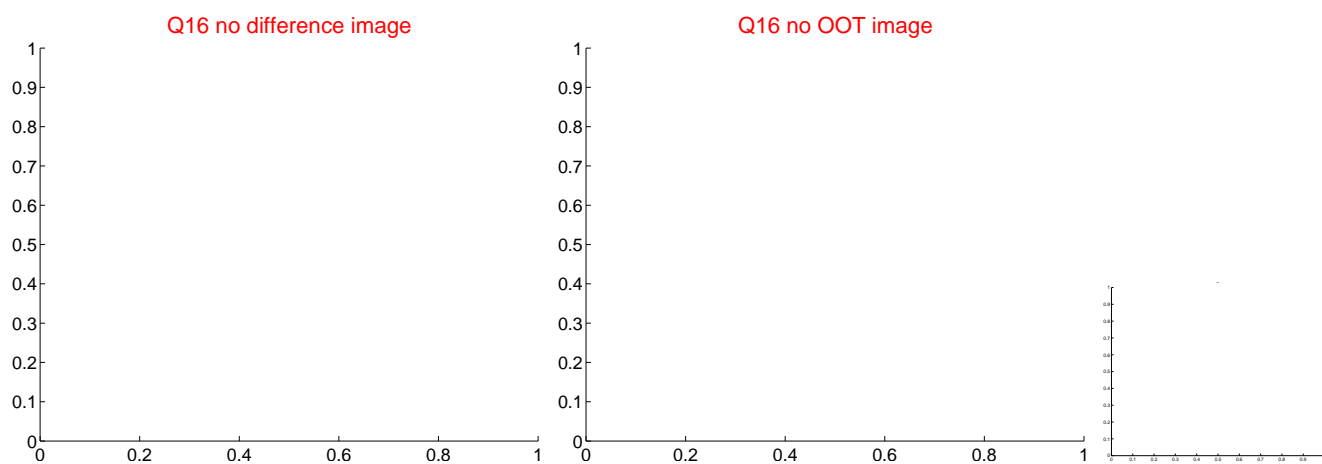
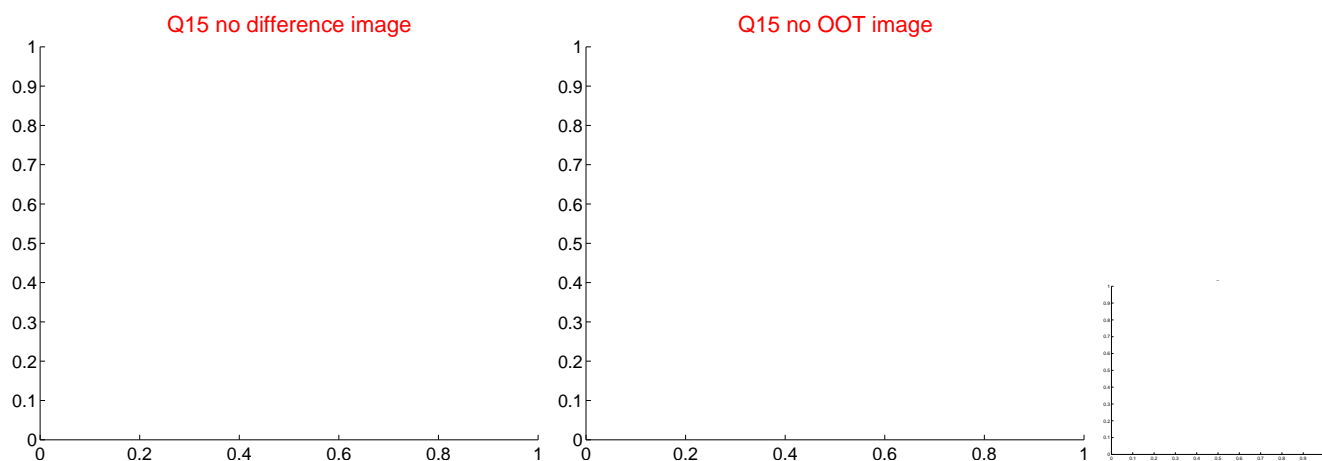
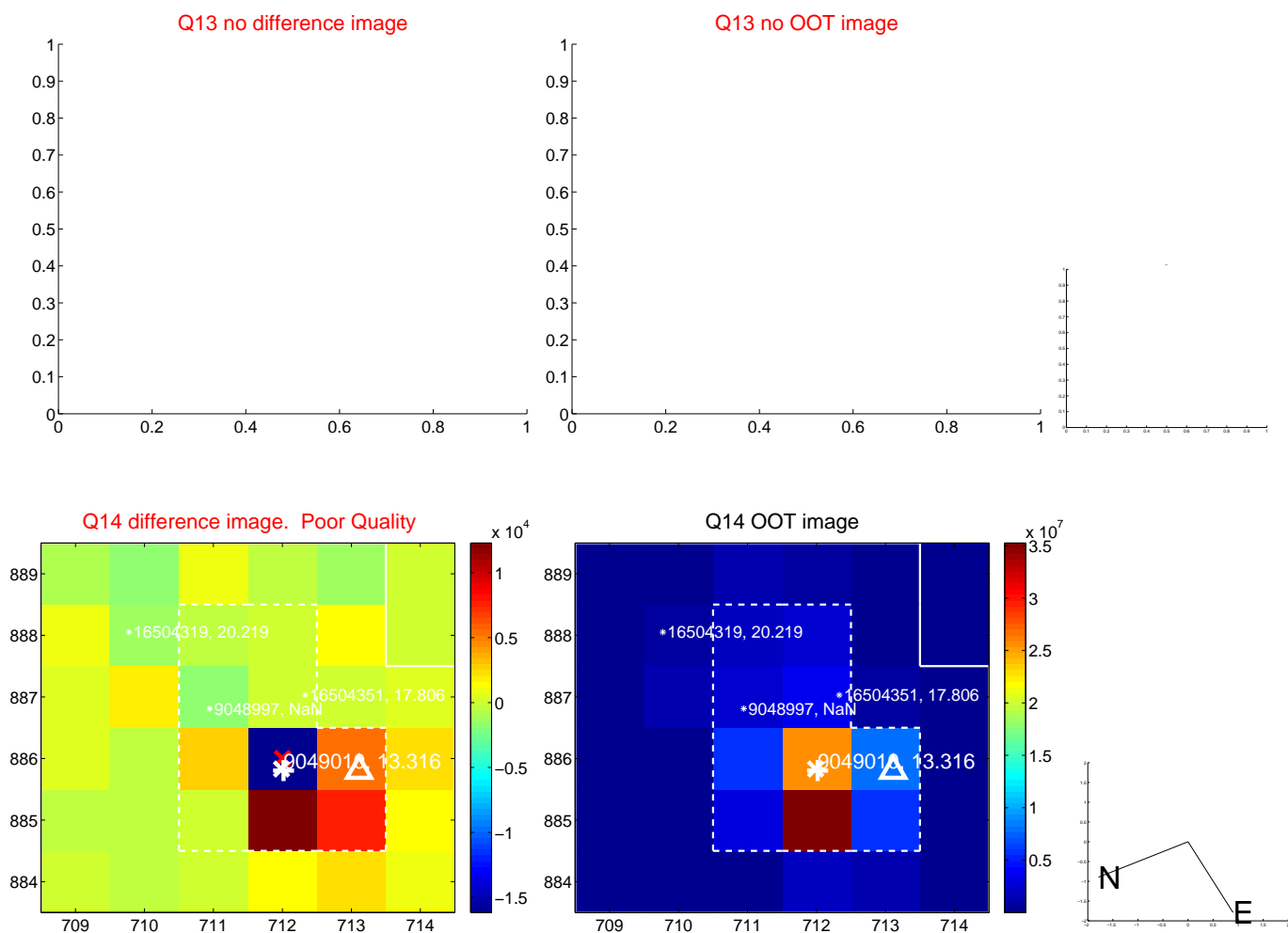
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



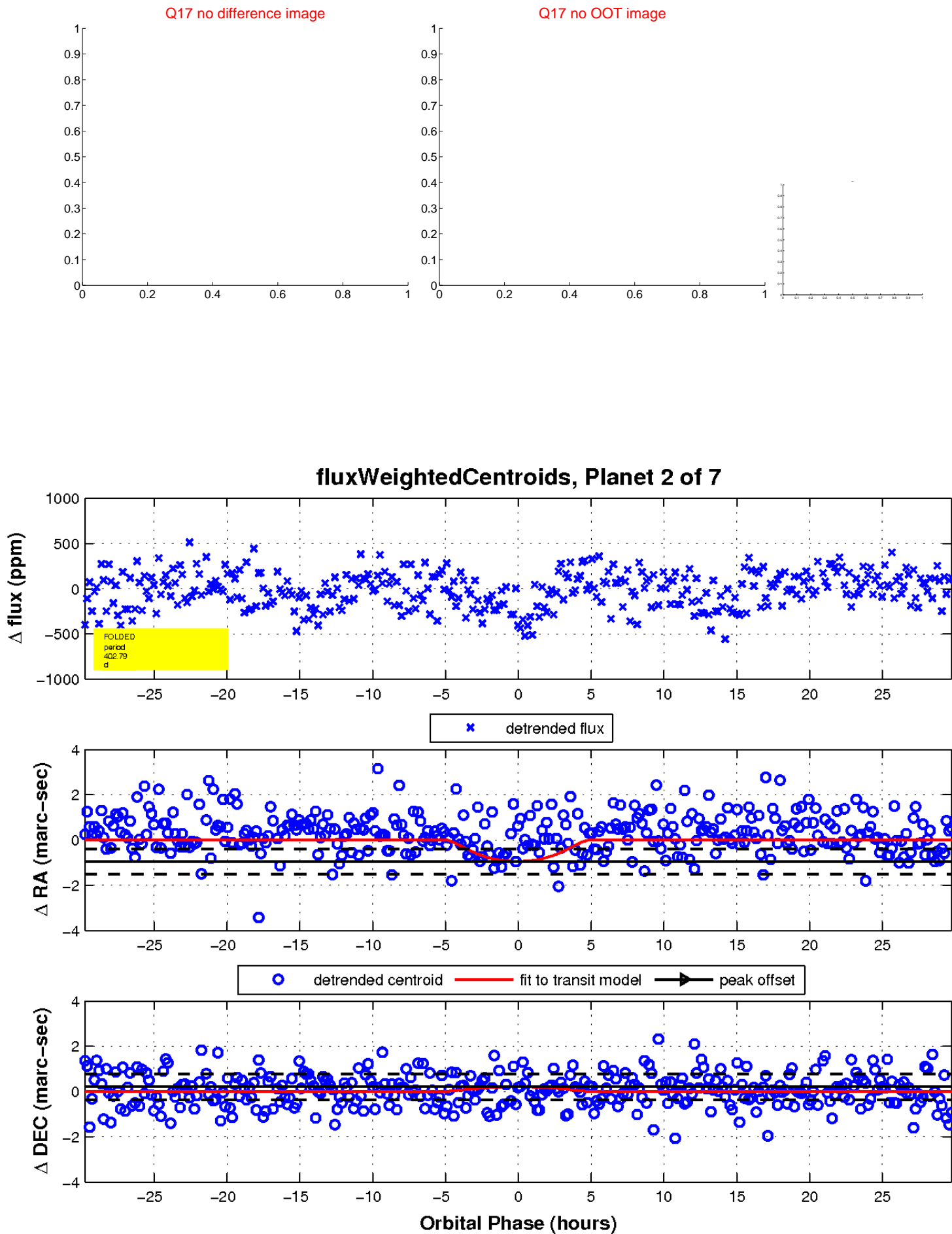
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

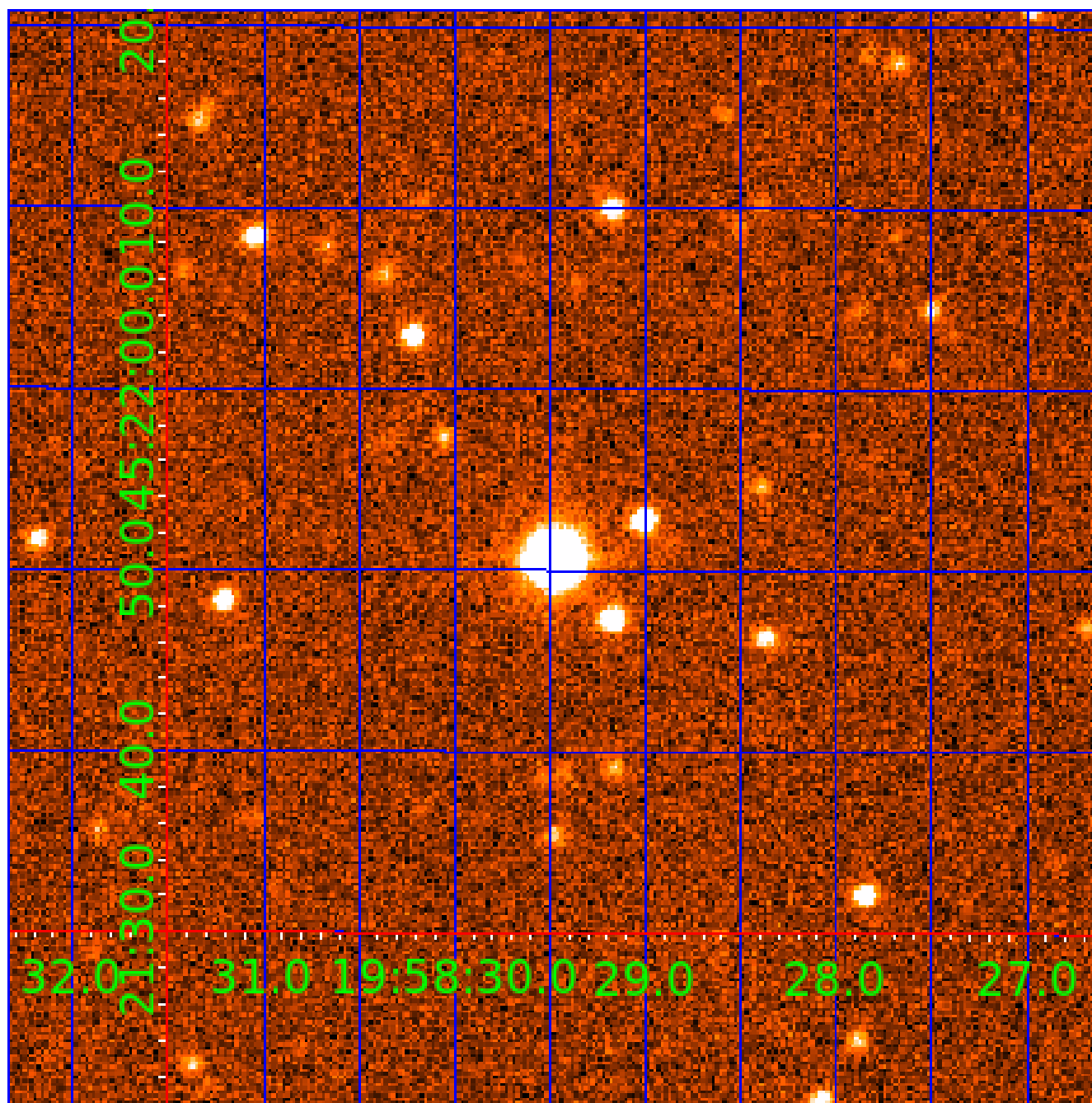


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009049010

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})
009049010-01	OBS	No	3.681208	131.599453	78.9	9.713	11.6	13.8	2.80	6240	4.75	3945.13
009049010-02	OBS	No	402.794548	519.462978	581.4	9.959	15.5	9.6	2.80	6240	9.04	7.54
009049010-03	OBS	7127.01	0.686951	131.890601	10.5	4.155	11.0	3.7	2.80	6240	0.98	36995.38
009049010-06	OBS	No	56.090536	143.269295	286.2	3.051	9.0	6.8	2.80	6240	5.49	104.44
009049010-07	OBS	No	46.230249	156.956499	227.6	1.927	7.4	6.2	2.80	6240	4.86	135.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009049010-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009049010-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
009049010-03	OBS	FP	0.00	1	0	0	0	LPP_DV
009049010-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009049010-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_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.

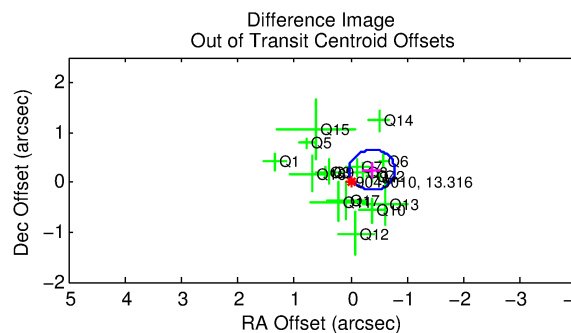
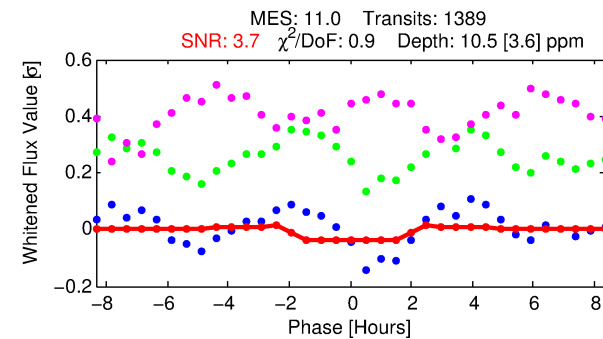
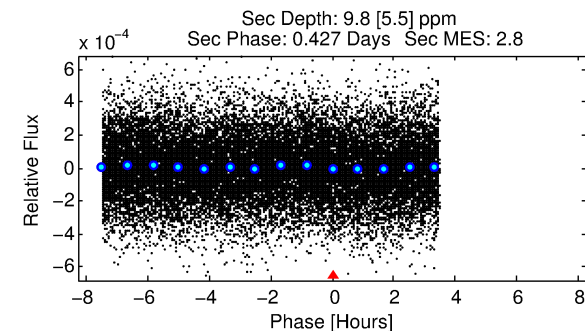
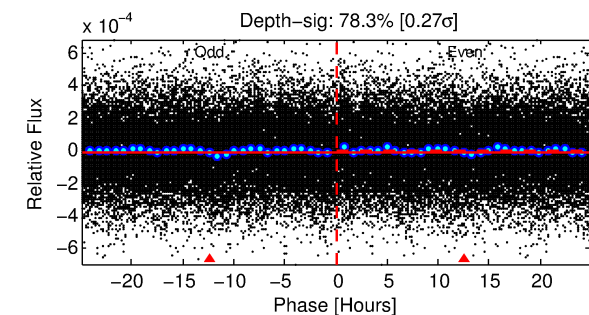
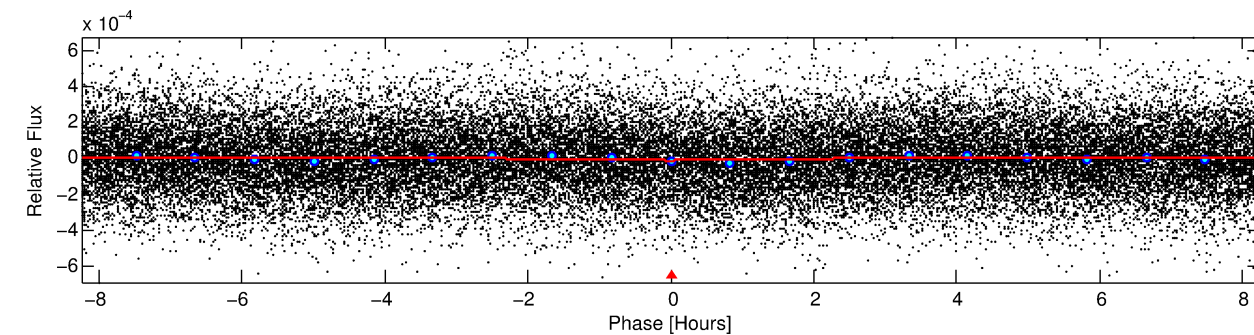
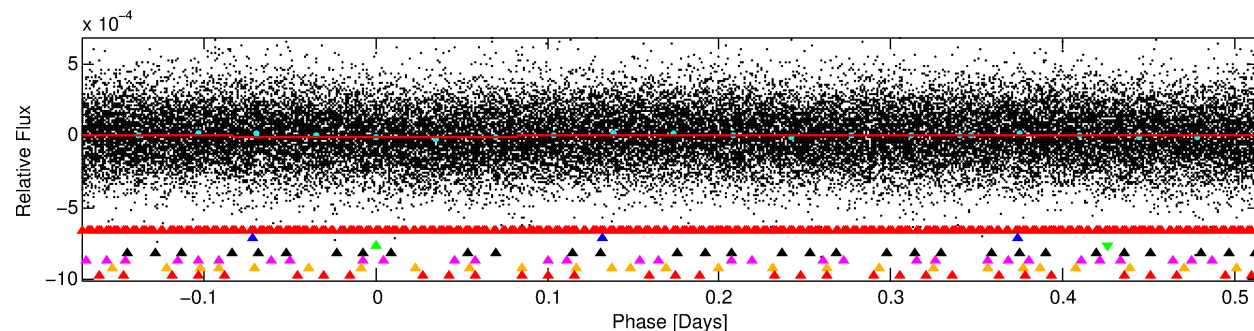
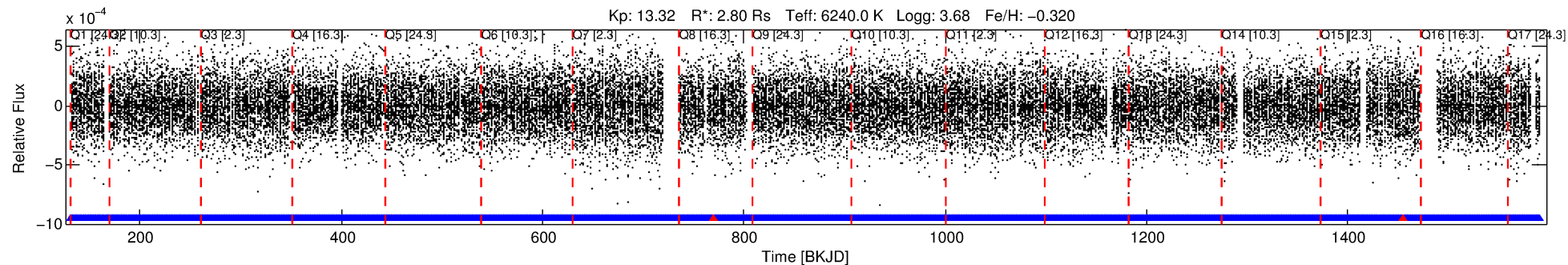
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009049010-03

No Significant Match Found

DV One-Page Summary

KIC: 9049010 Candidate: 3 of 7 Period: 0.687 d
KOI: K07127.01 Corr: 0.762



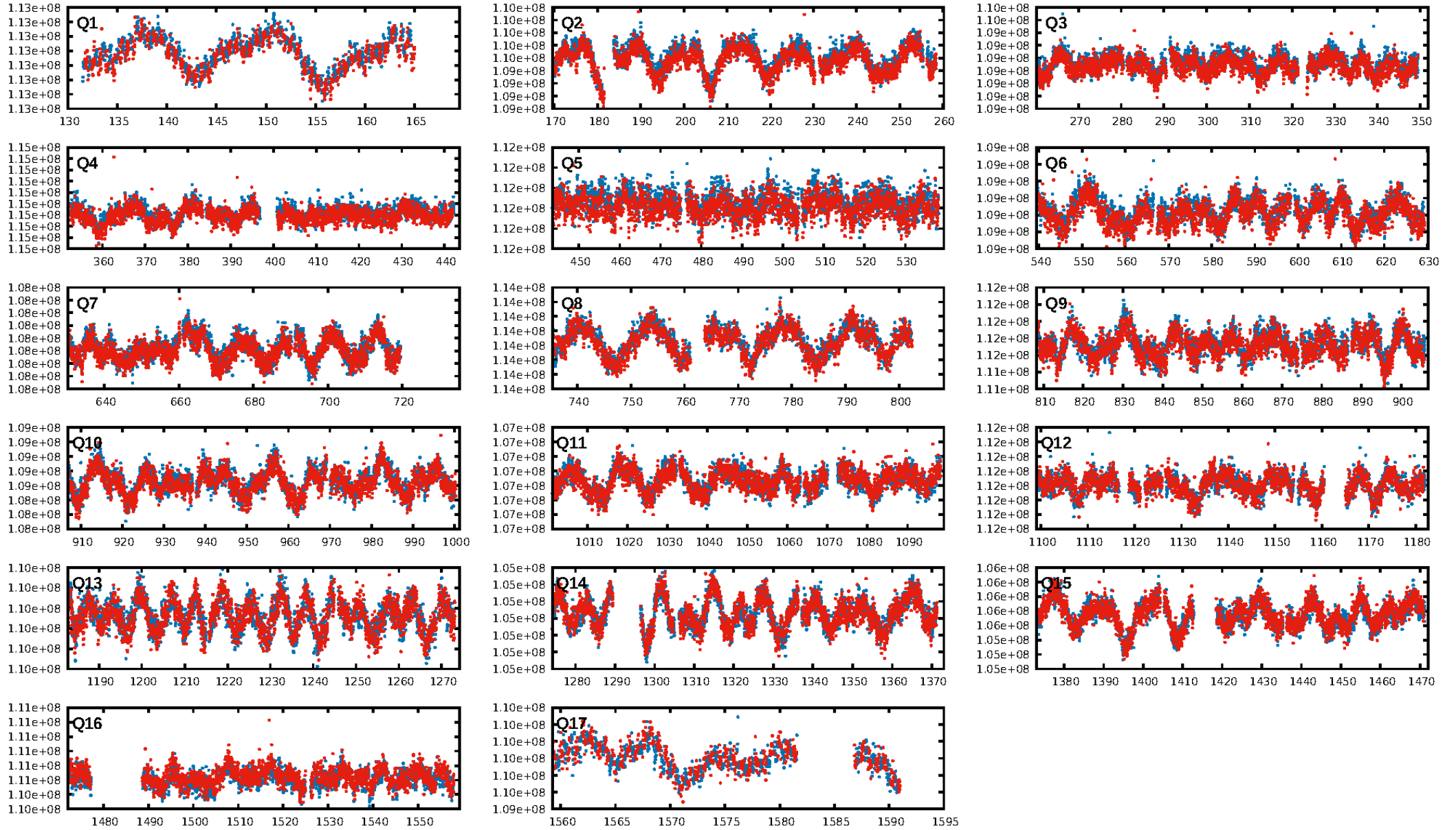
DV Fit Results:

Period = 0.68695 [0.00003] d
Epoch = 131.8906 [0.0090] BKJD
Rp/R* = 0.0032 [0.0021]
a/R* = 1.21 [1.29]
b = 0.73 [2.14]
Self = 36995.38 [38796.92]
Teff = 3536 [927] K
Rp = 0.98 [0.85] Re
a = 0.0170 [0.0105] AU
Ag = 1.61 [2.82] [0.22 σ]
Teffp = 6158 [2187] K [1.10 σ]

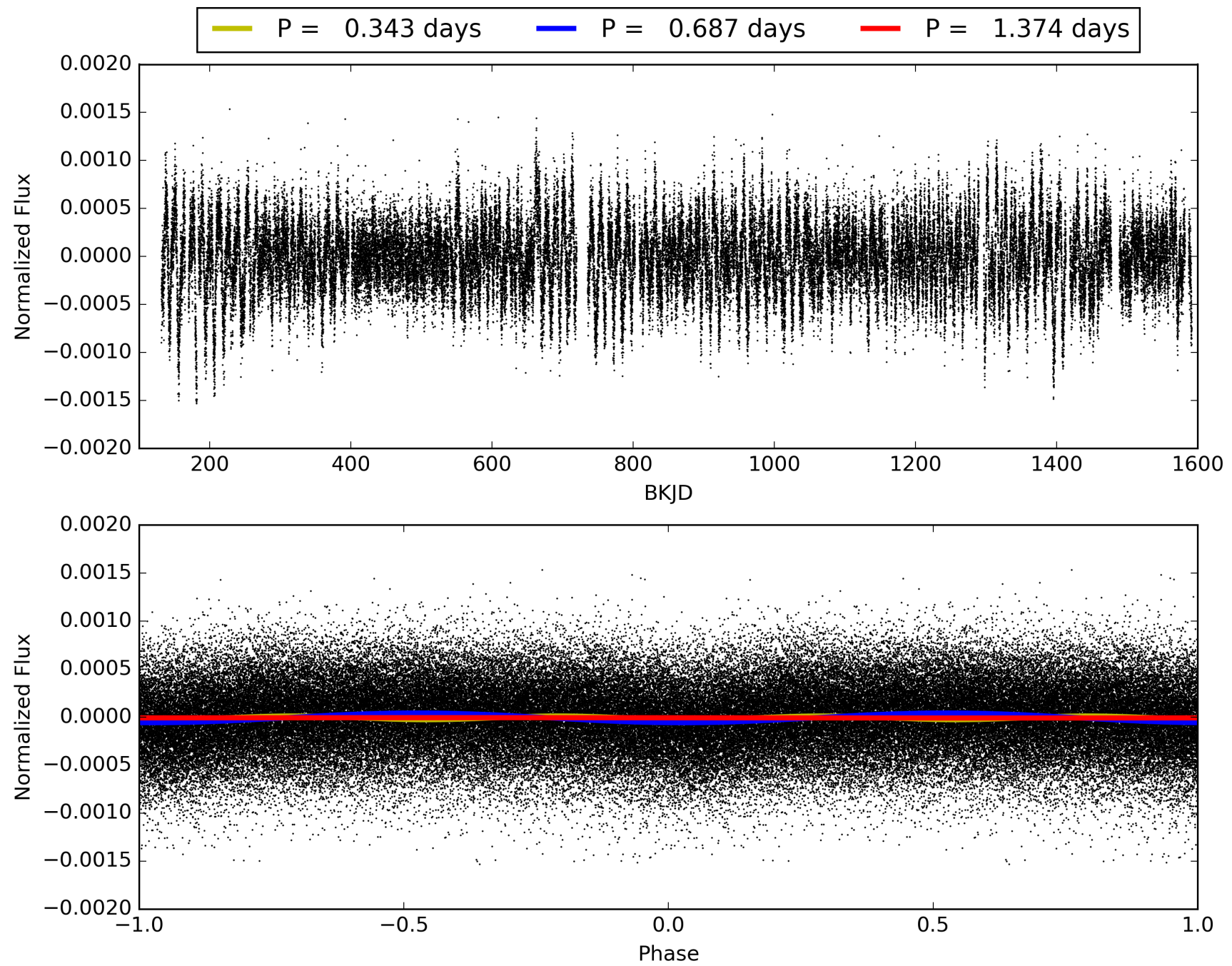
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [6.80 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.17e-22
RollingBand-fgt: 1.00 [1323/1325]
GhostDiagnostic-chr: 0.4047
Centroid-sig: 98.3%
Centroid-so: 0.098 arcsec [0.05 σ]
OotOffset-rm: 0.444 arcsec [3.30 σ]
KicOffset-rm: 0.379 arcsec [3.09 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009049010-03, PDC Light Curves

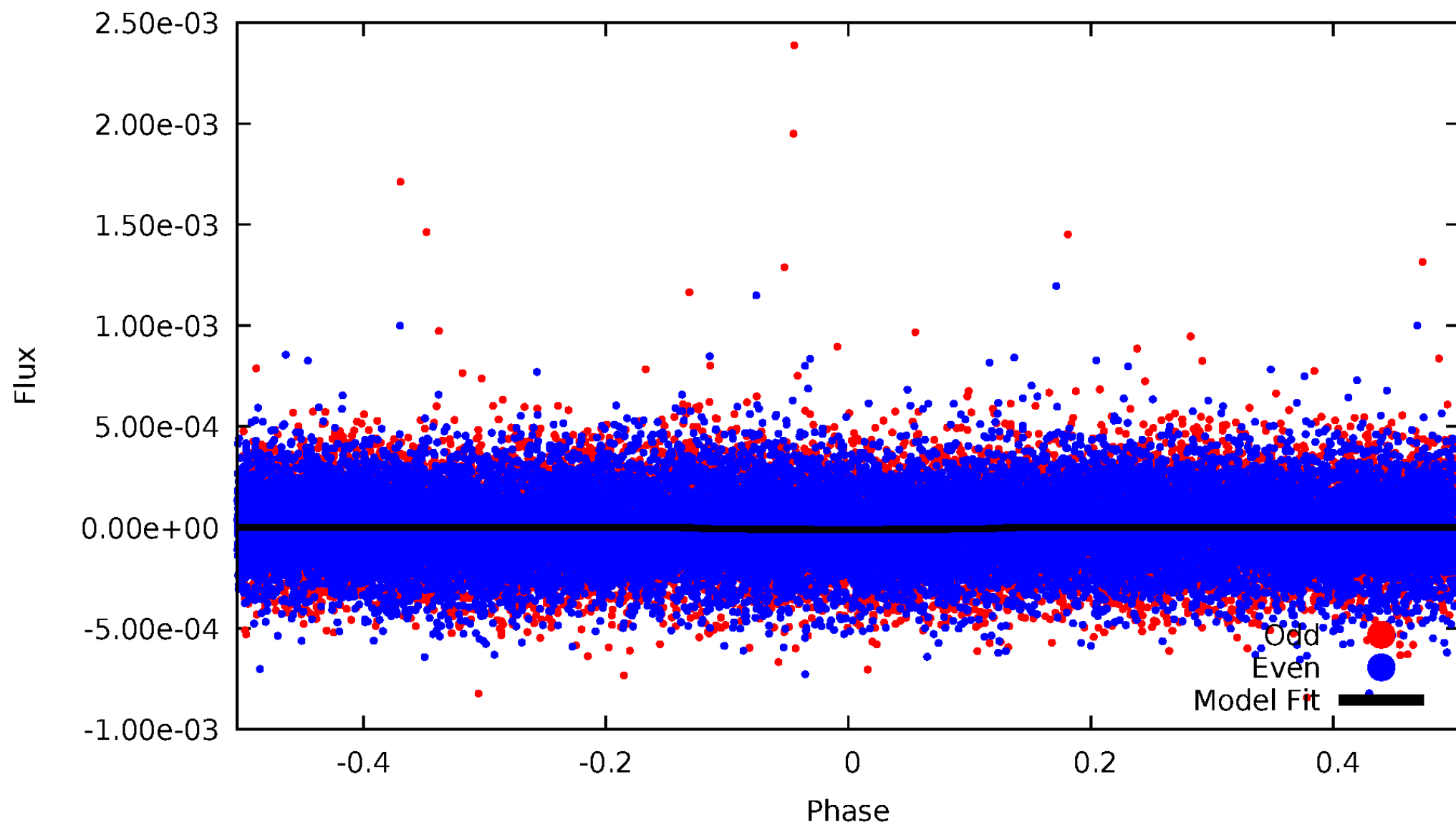


TCE 009049010-03



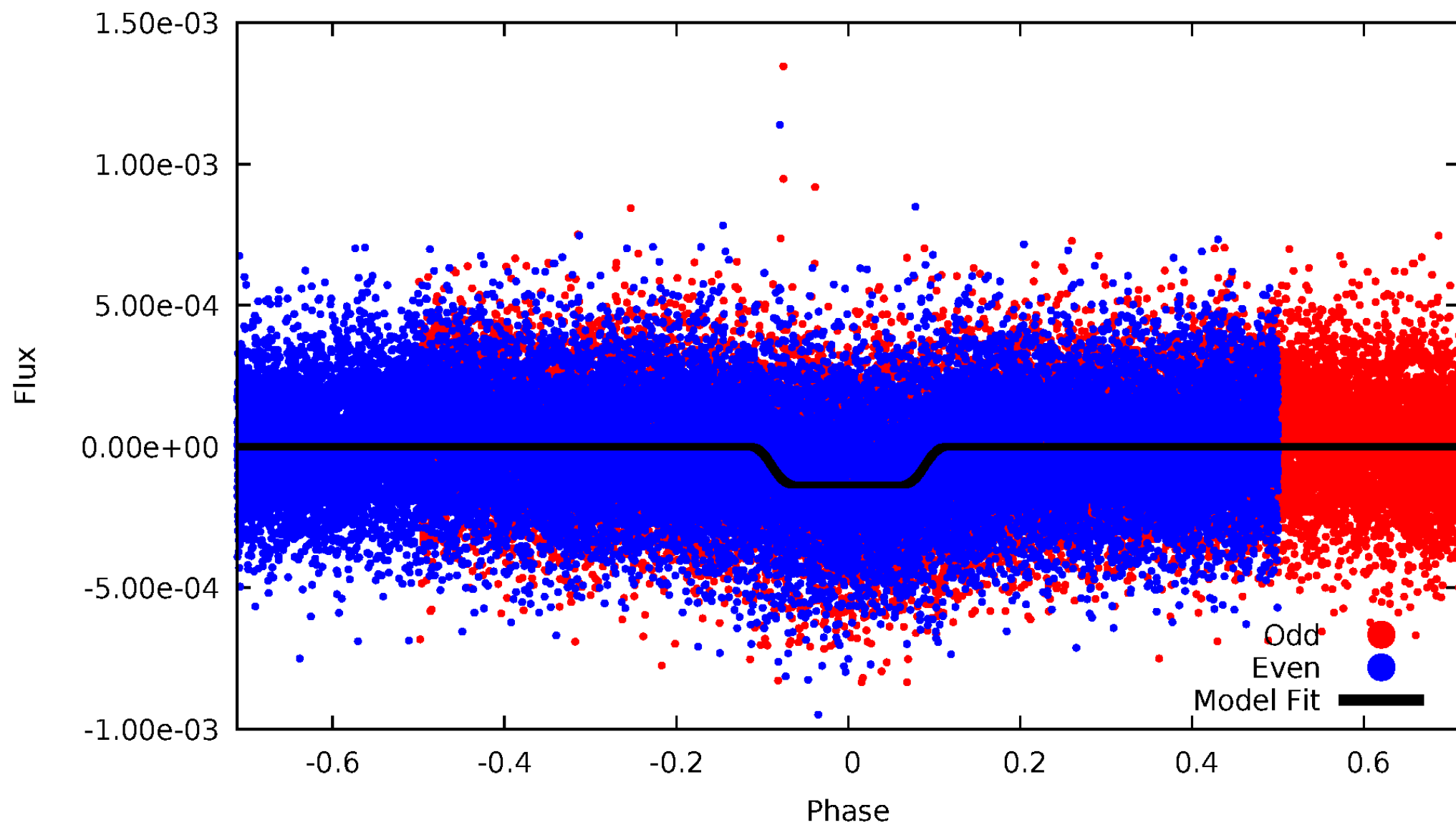
DV Odd/Even

TCE 009049010-03



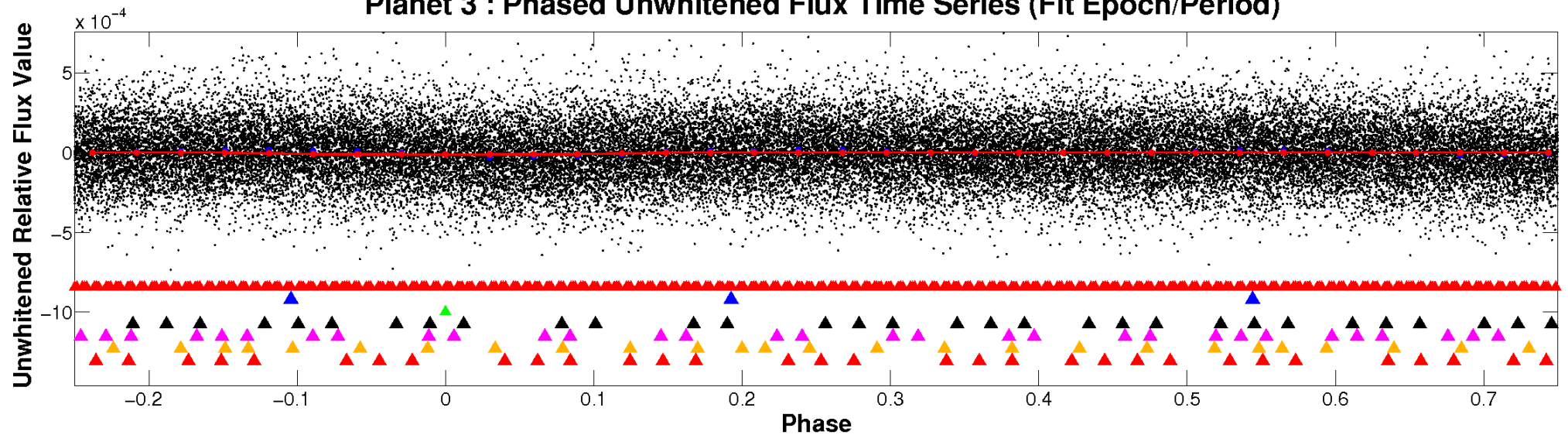
ALT Odd/Even

TCE 009049010-03

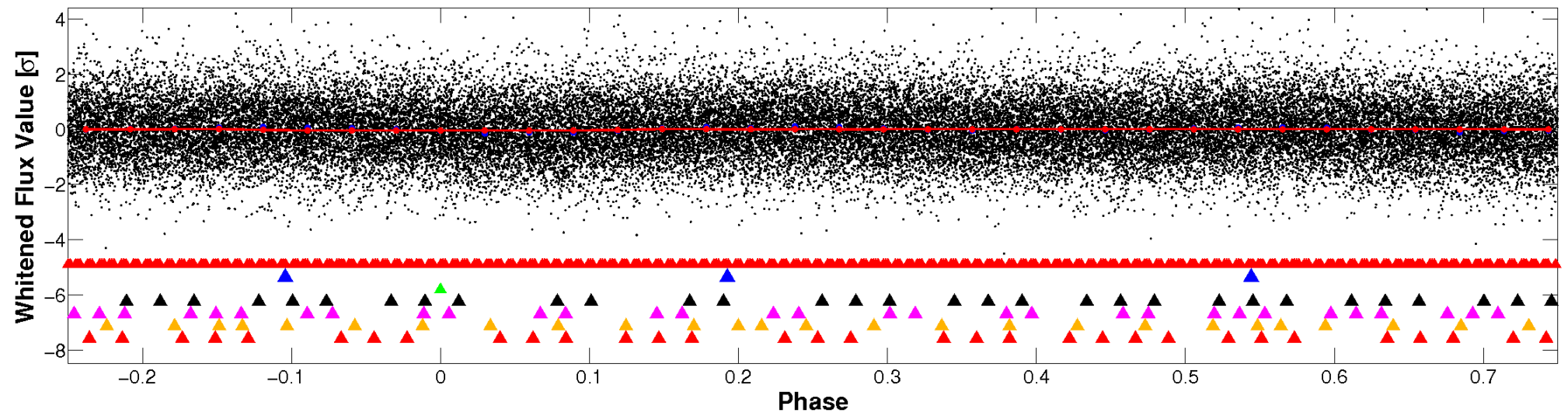


Non-Whitened Vs. Whitened Light Curve

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

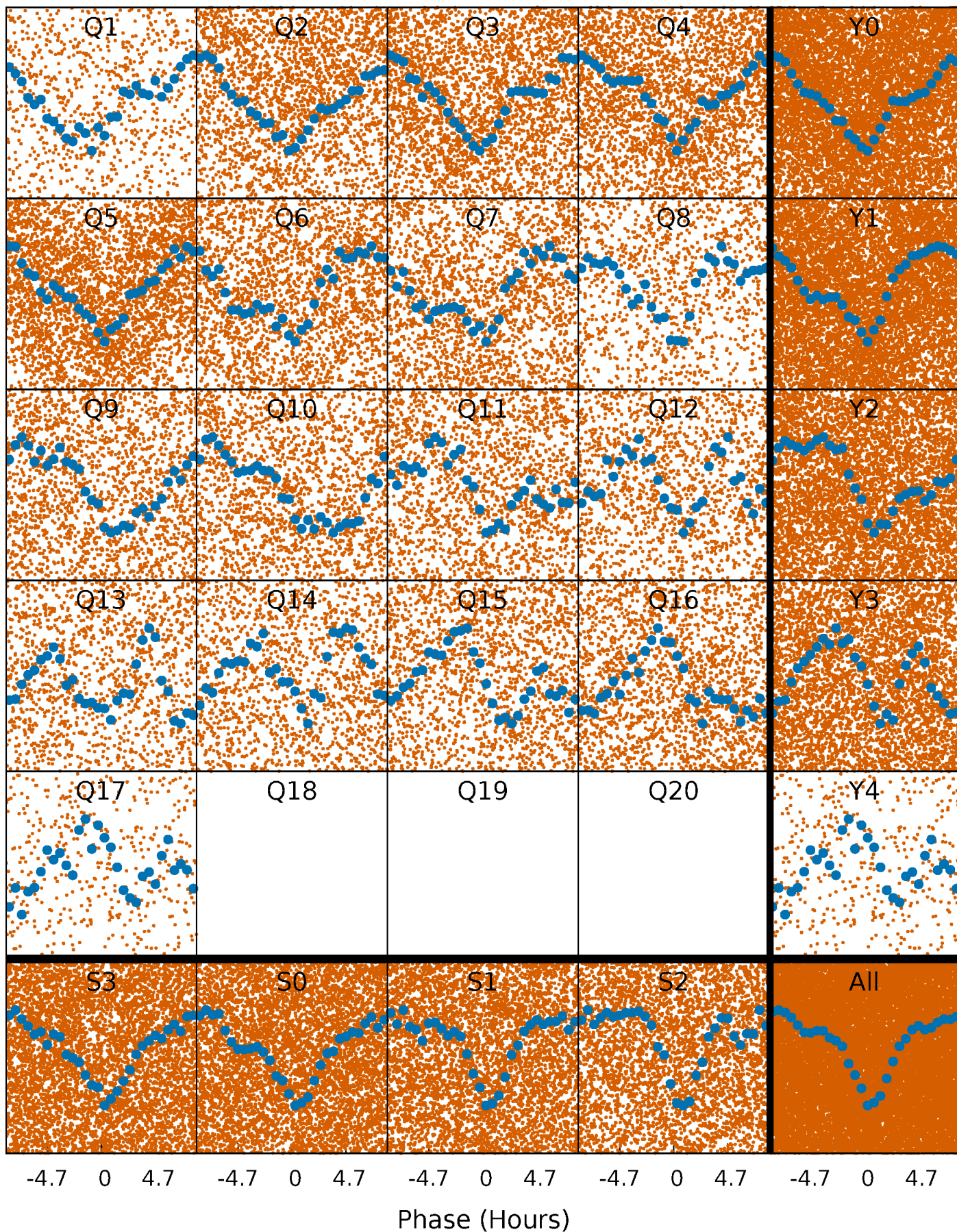


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



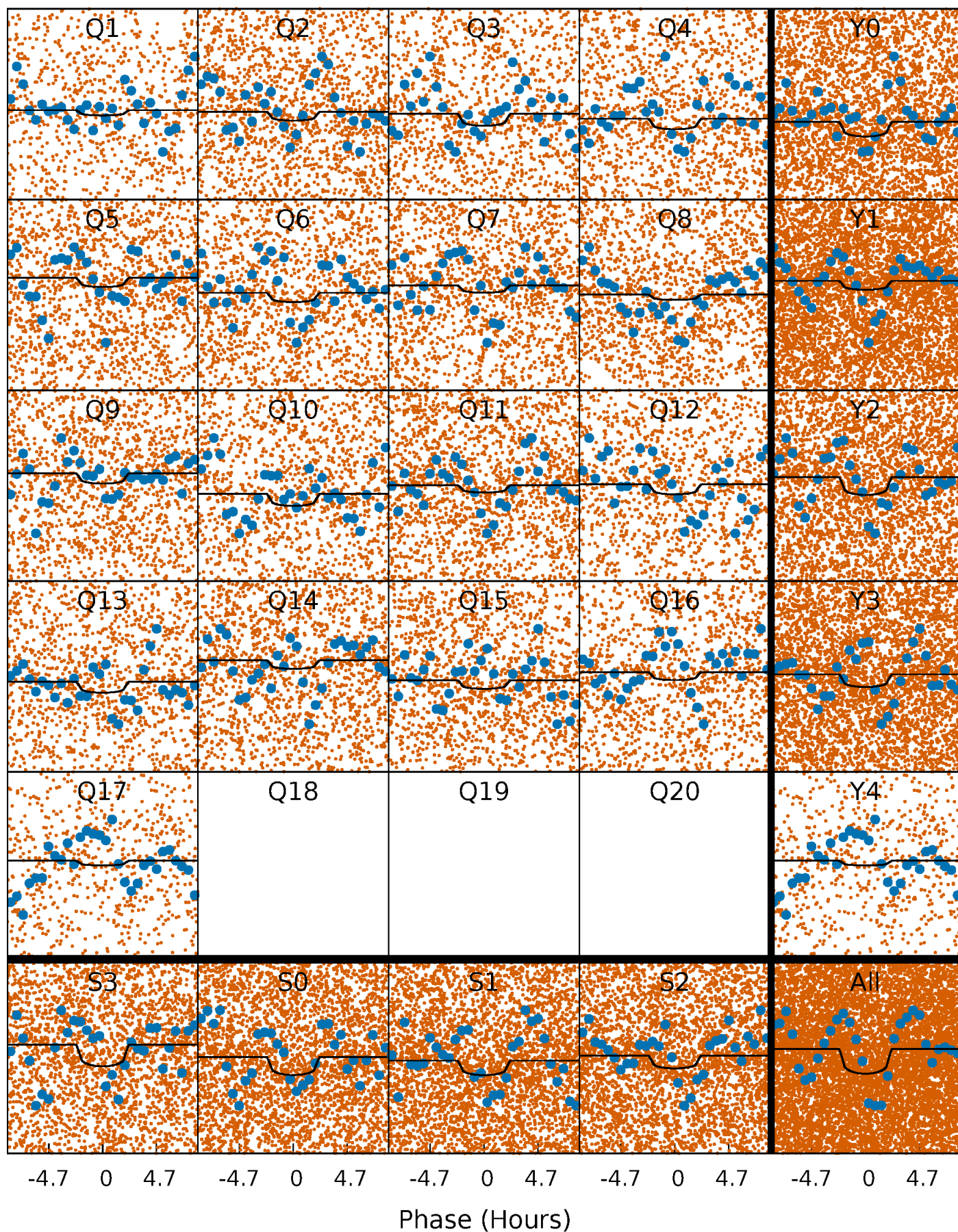
PDC Quarter-Phased Transit Curves

TCE 009049010-03 P= 0.686951 Days $T_0=131.890601$ (BKJD)



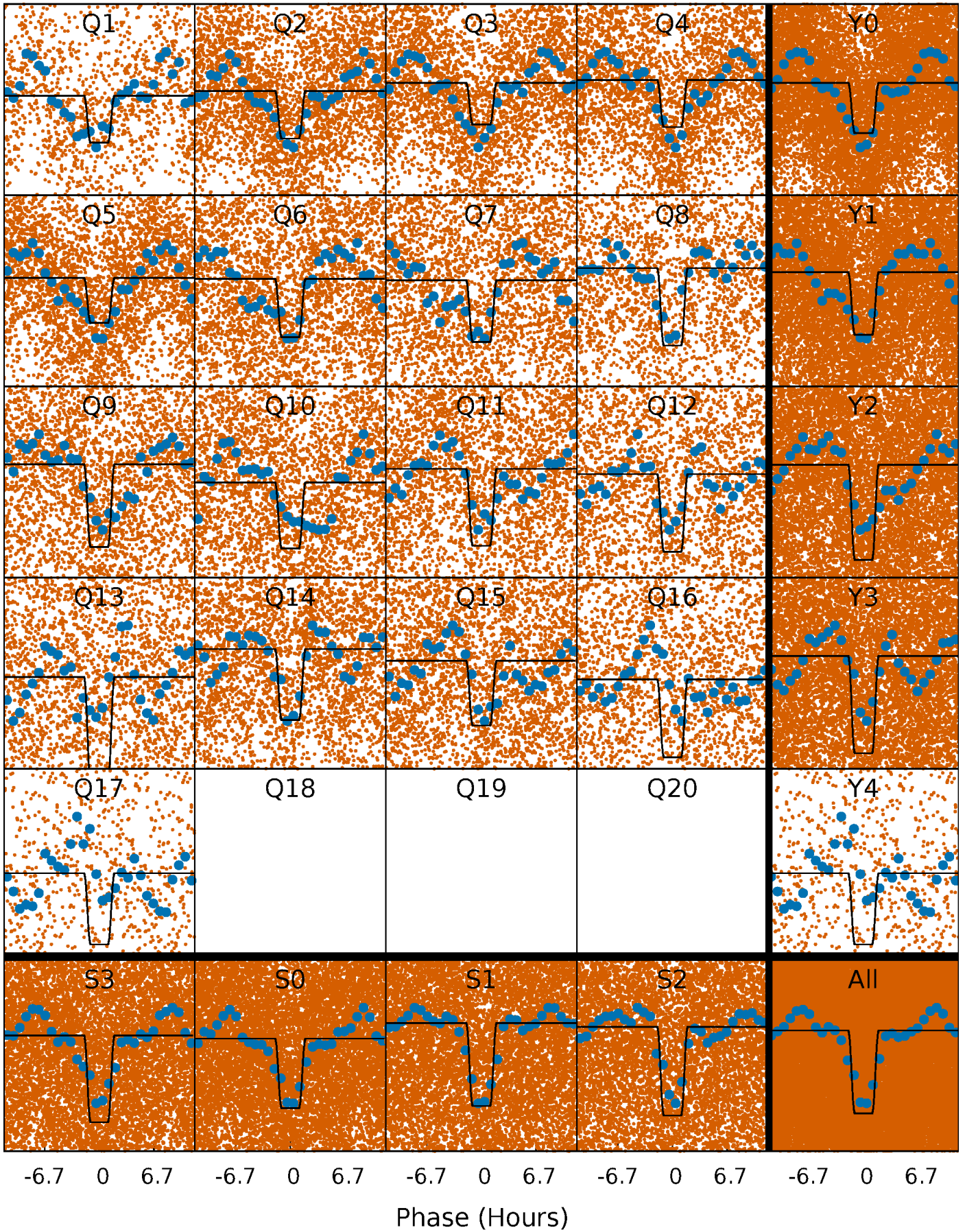
DV Quarter-Phased Transit Curves

TCE 009049010-03 P= 0.686951 Days $T_0=131.890601$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

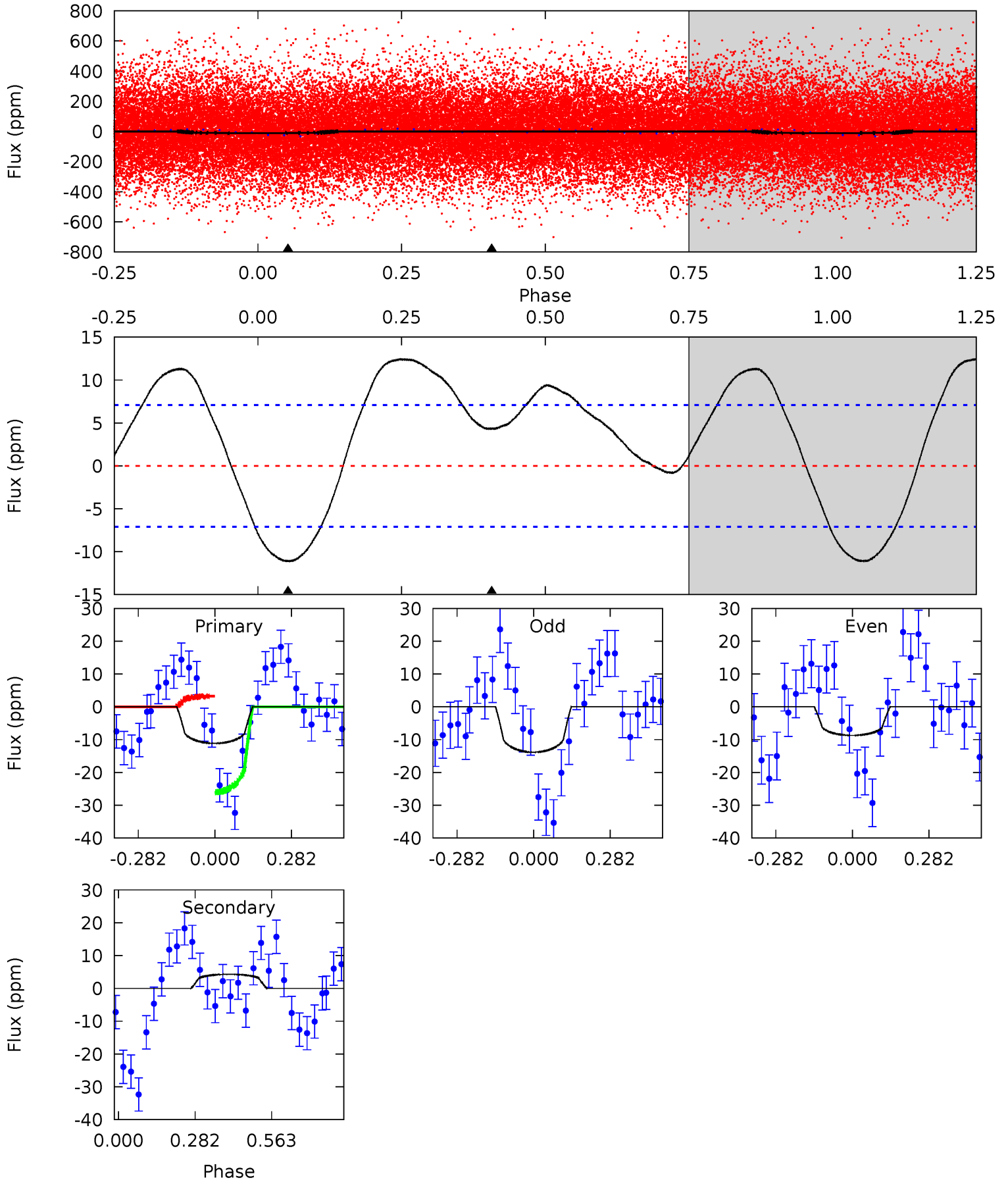
TCE 009049010-03 P= 0.686989 Days $T_0=131.879868$ (BKJD)



DV Model-Shift Uniqueness Test

009049010-03, P = 0.686951 Days, E = 131.890601 Days

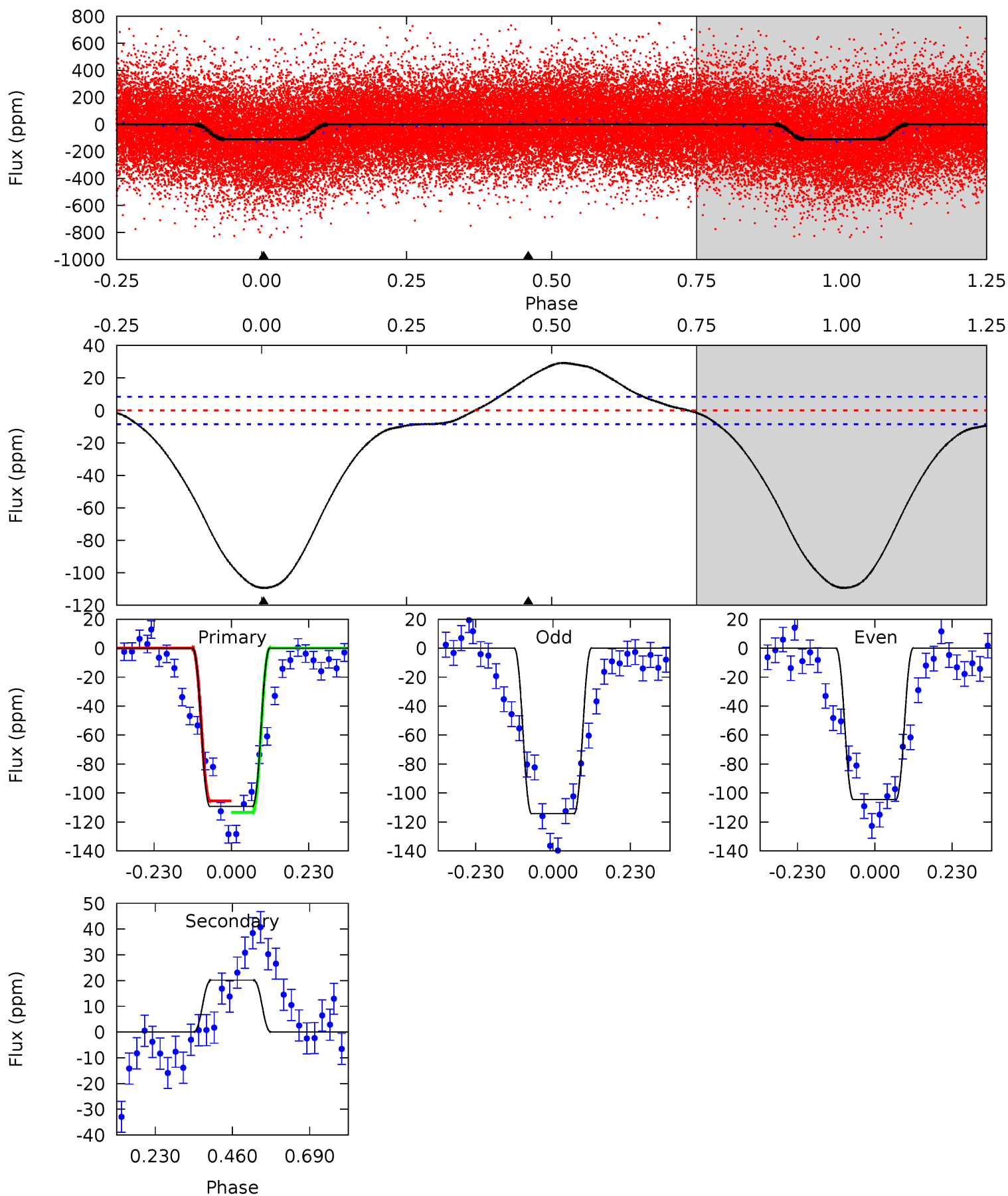
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.82	-2.63	0	0	4.34	1.08	1.03	6.82	6.82	-2.63	-2.63	1.57	1.42	0.53	7.03



Alt Model-Shift Uniqueness Test

009049010-03, P = 0.686989 Days, E = 131.879868 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.6	-10.4	0	0	4.39	1.20	2.11	56.6	56.6	-10.4	-10.4	2.51	0.98	0.21	2.10



Stellar Parameters For KIC 009049010

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6240^{+212}_{-212}	$3.684^{+0.629}_{-0.111}$	$-0.320^{+0.300}_{-0.300}$	$2.803^{+0.541}_{-1.623}$	$1.385^{+0.210}_{-0.420}$	$0.089^{+0.776}_{-0.028}$
	+3%/-3%	+17%/-3%	+94%/-94%	+19%/-58%	+15%/-30%	+876%/-32%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009049010-03 / KOI 7127.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	4 ± 2	$0.93^{+0.65}_{-0.50}$	4772^{+390}_{-735}	-5295^{+681}_{-1698}	$-0.752^{+0.520}_{-2.779}$
Alt.	20 ± 2	$3.14^{+1.01}_{-1.10}$	4745^{+430}_{-812}	-4758^{+328}_{-323}	$-0.332^{+0.148}_{-0.389}$

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 $A_{obs} \gg 1.0$

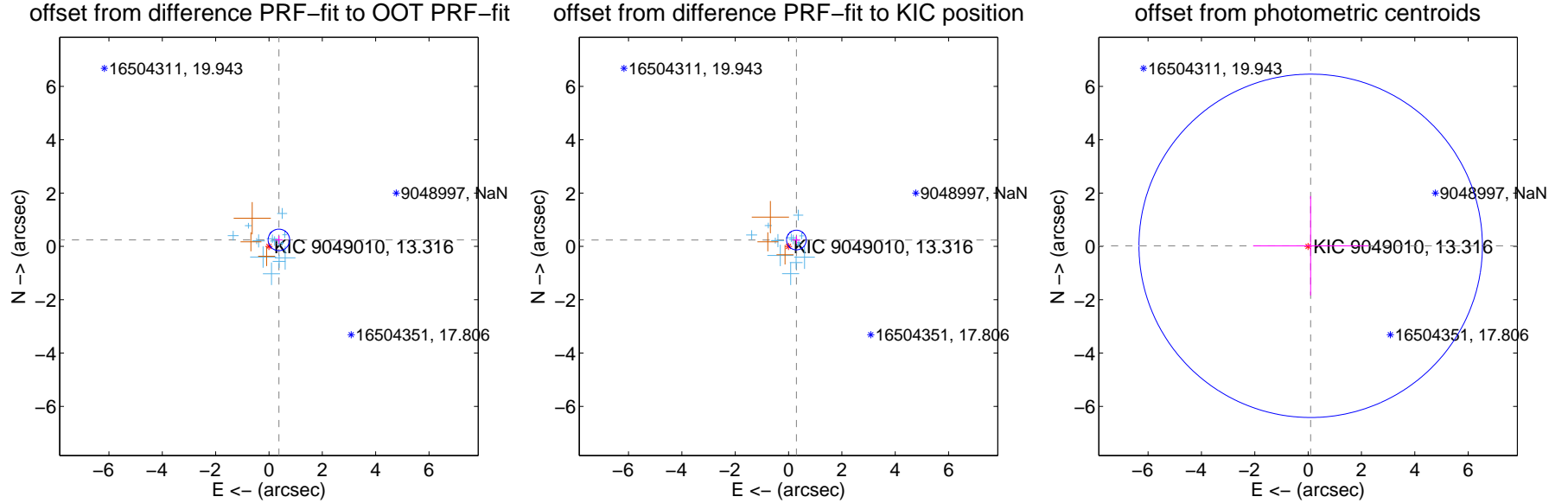
DV Centroid Data

Supplemental centroid analysis for 009049010-03. Kepler magnitude: 13.32. Transit SNR 3.74

There are 14 quarters with good PRF difference image offsets

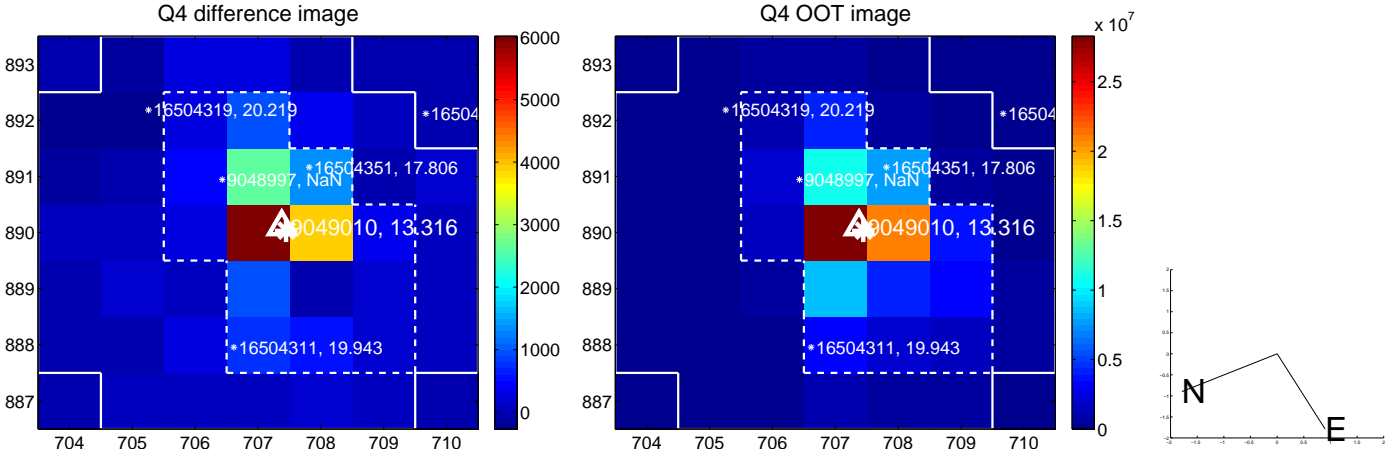
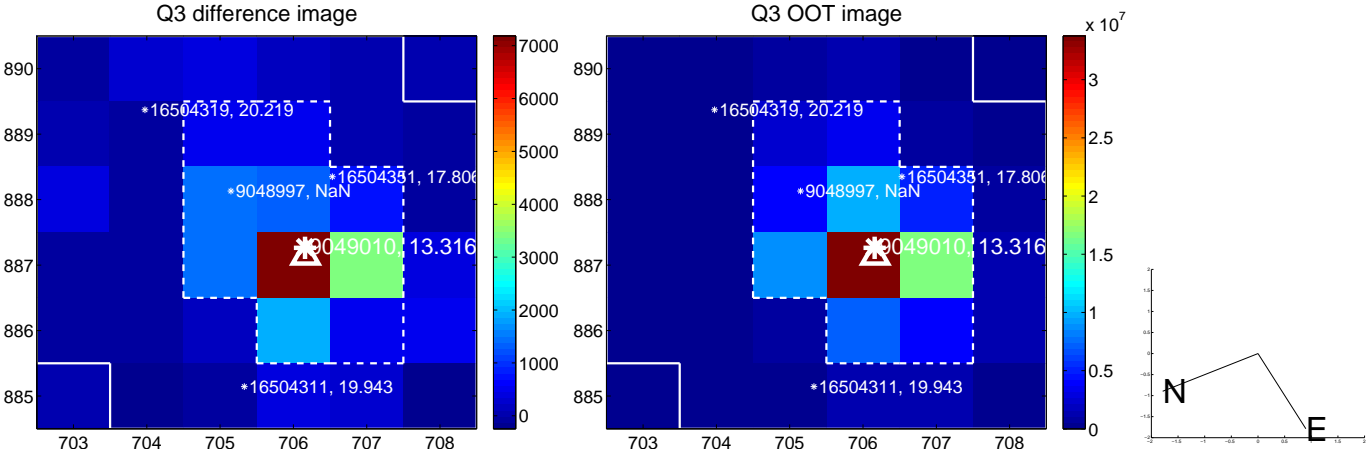
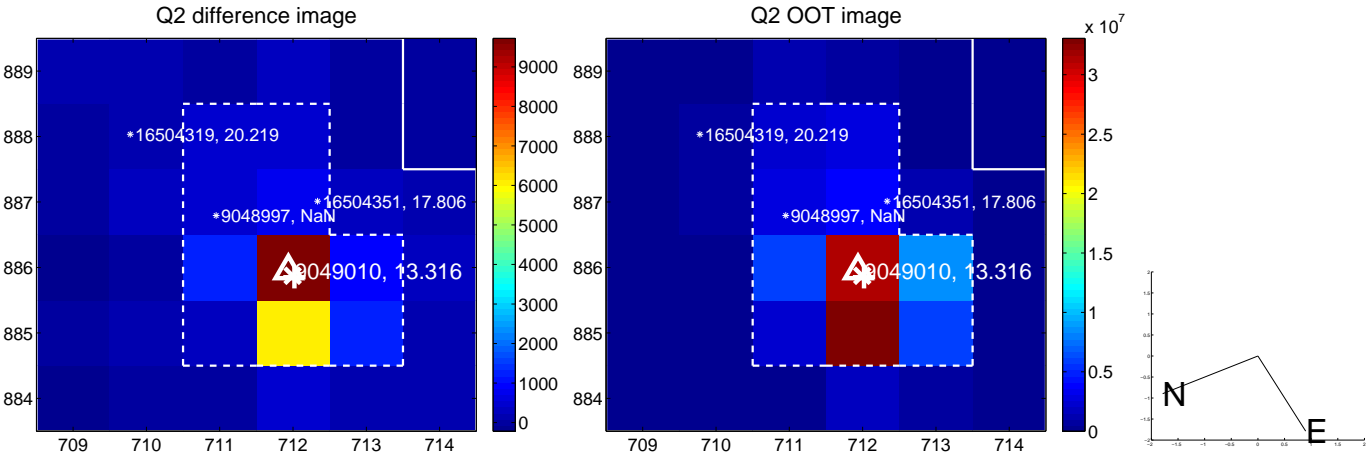
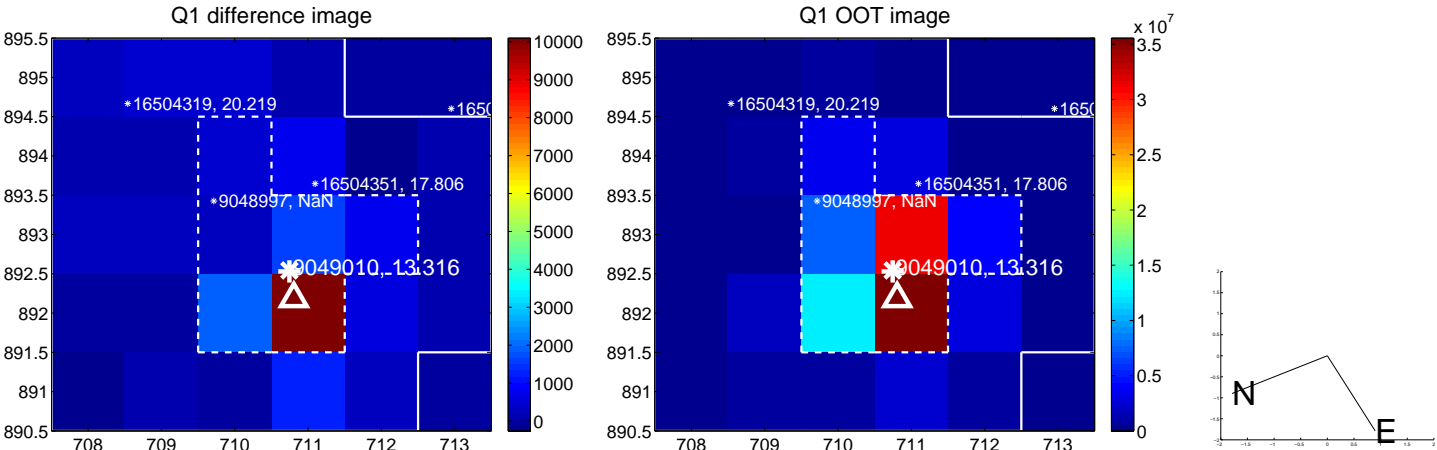
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.444 ± 0.134	3.30	-0.372 ± 0.147	0.244 ± 0.151
PRF-fit source offset from KIC position	0.379 ± 0.123	3.09	-0.294 ± 0.144	0.240 ± 0.147
photometric centroid source offset	0.10 ± 2.15	0.05	-0.10 ± 2.16	0.02 ± 1.86

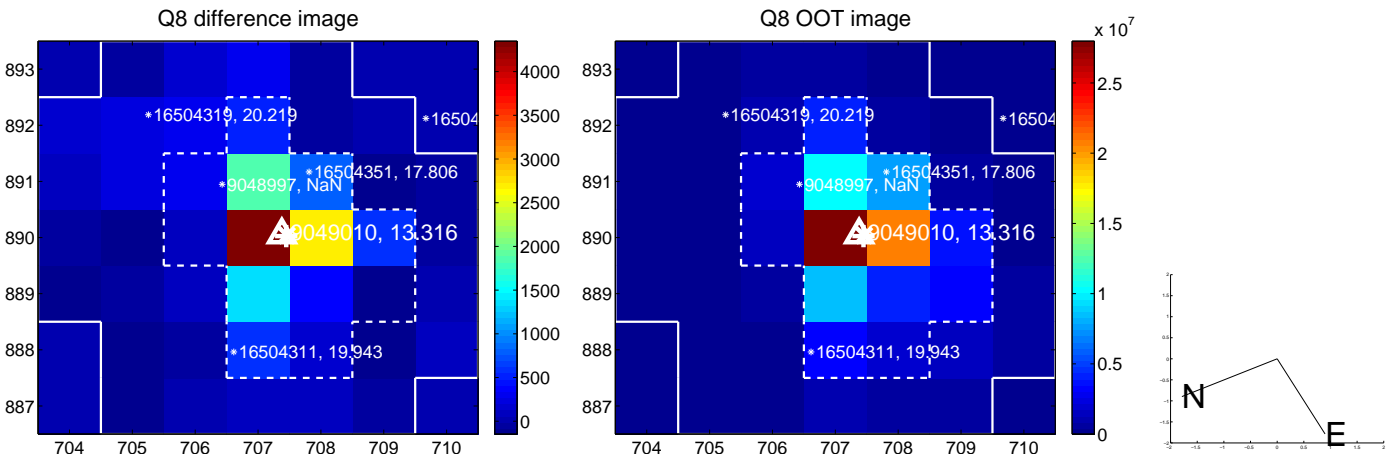
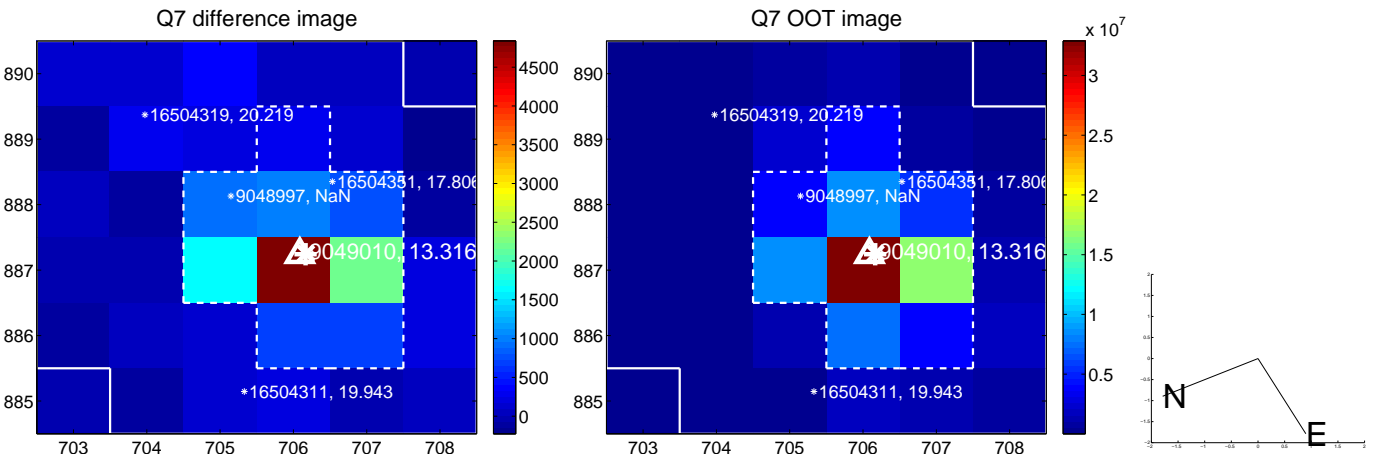
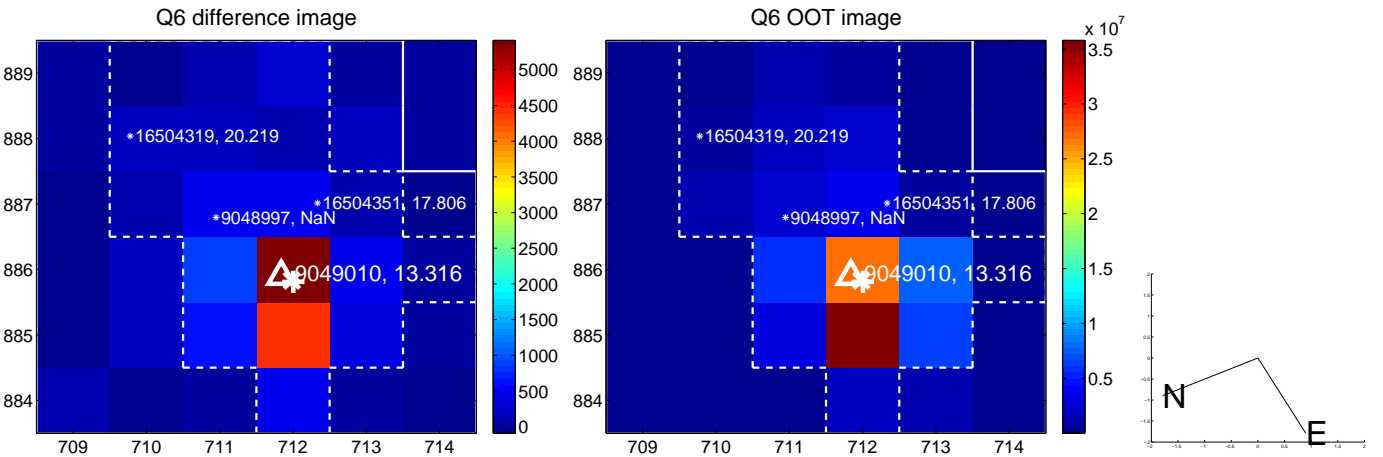
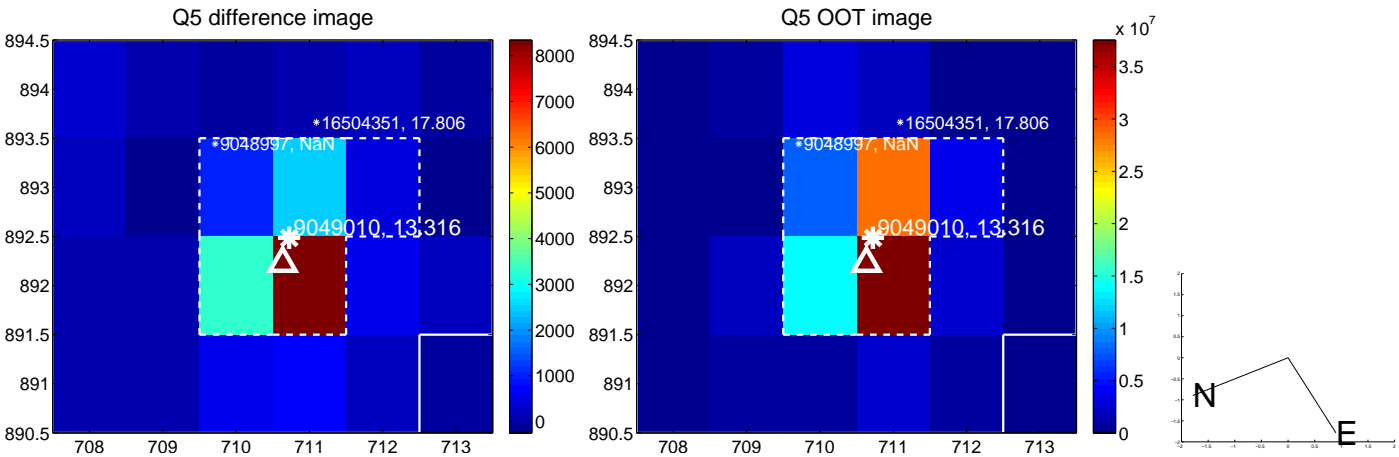


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

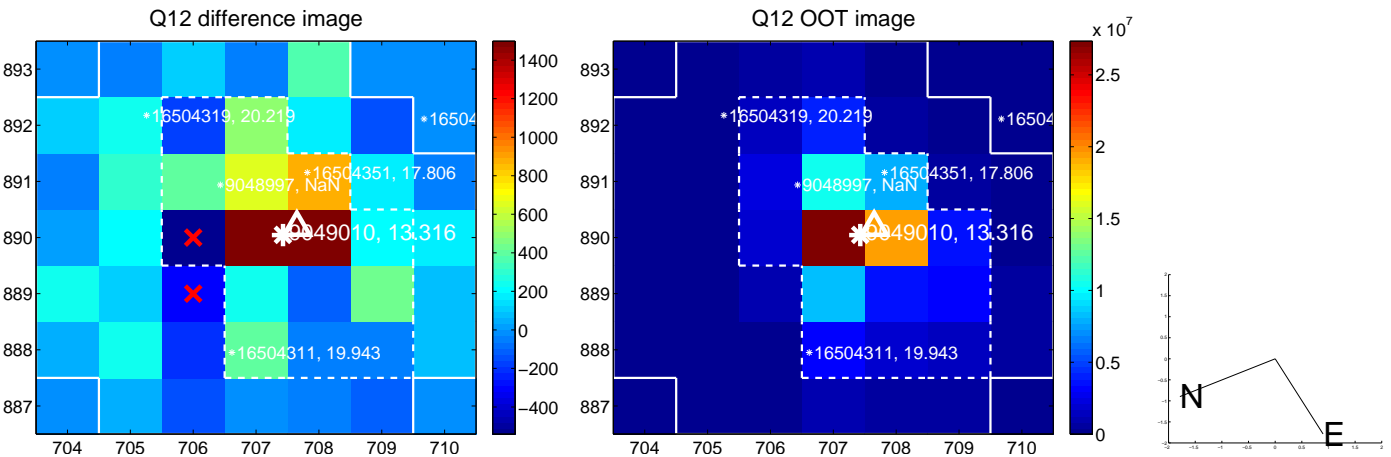
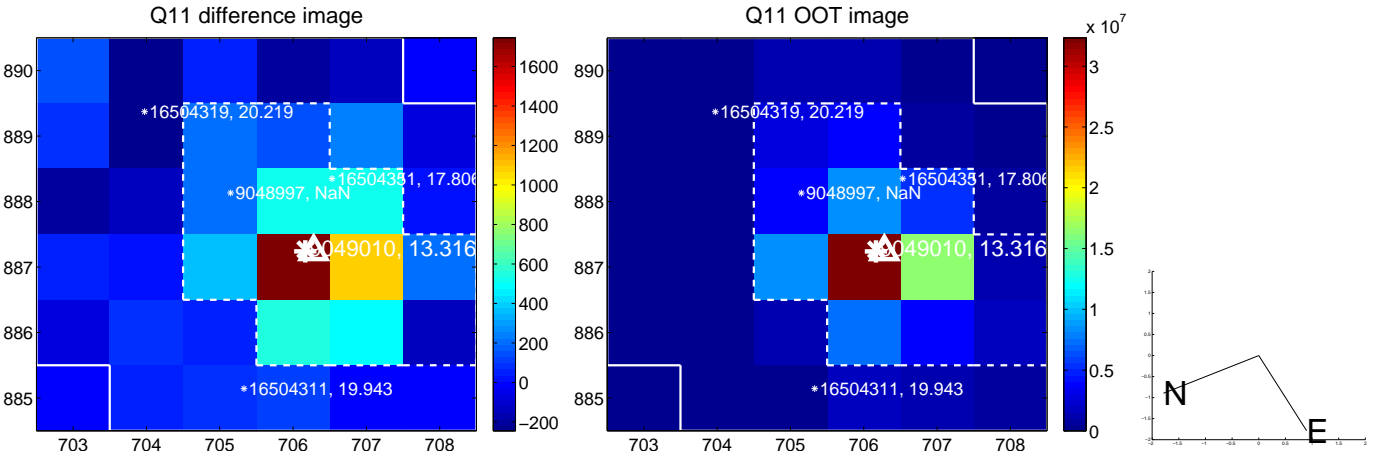
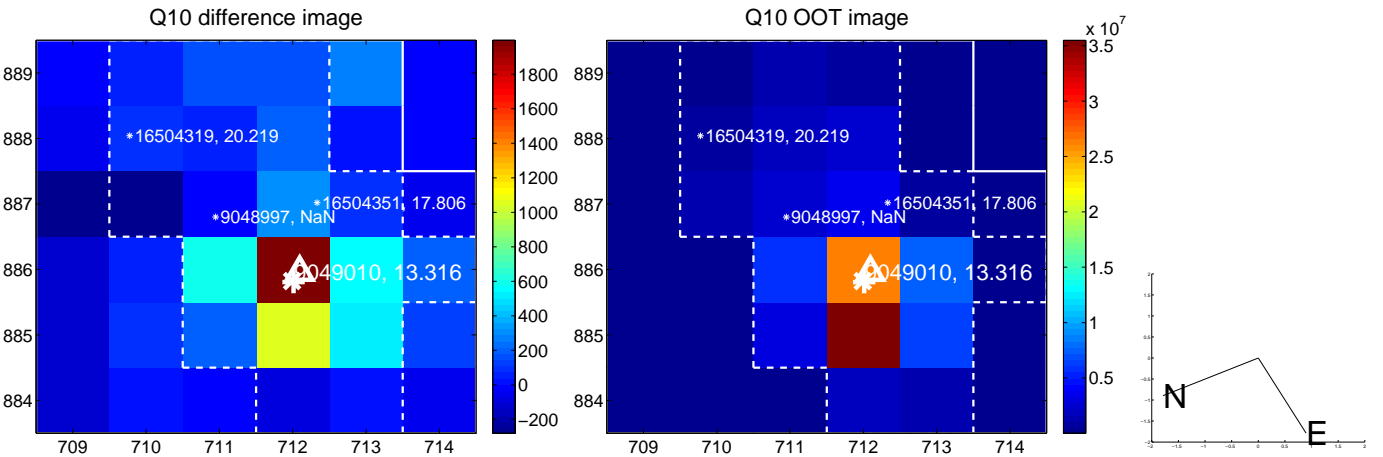
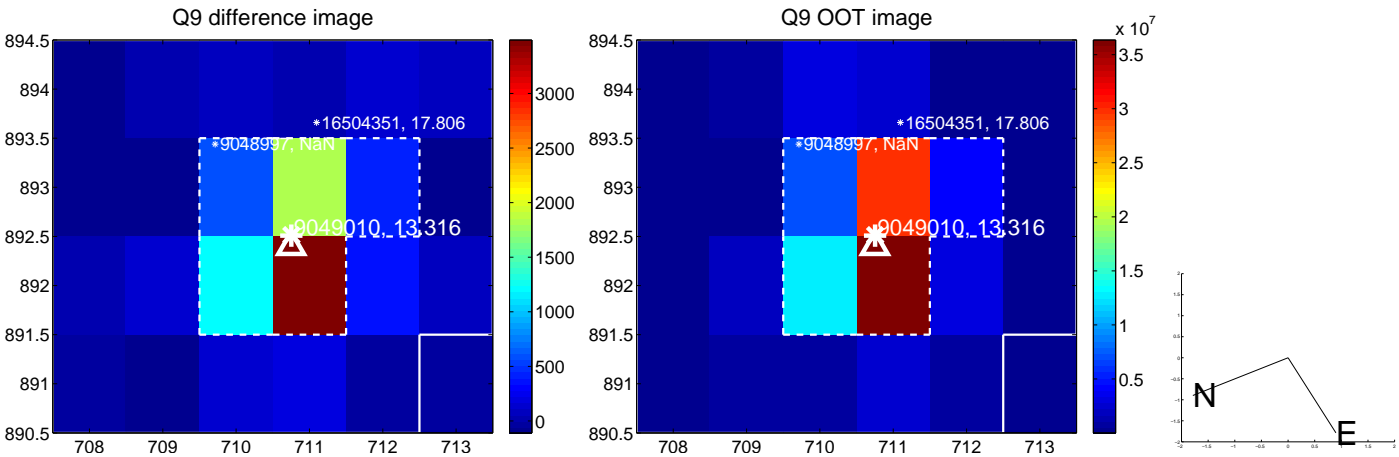
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



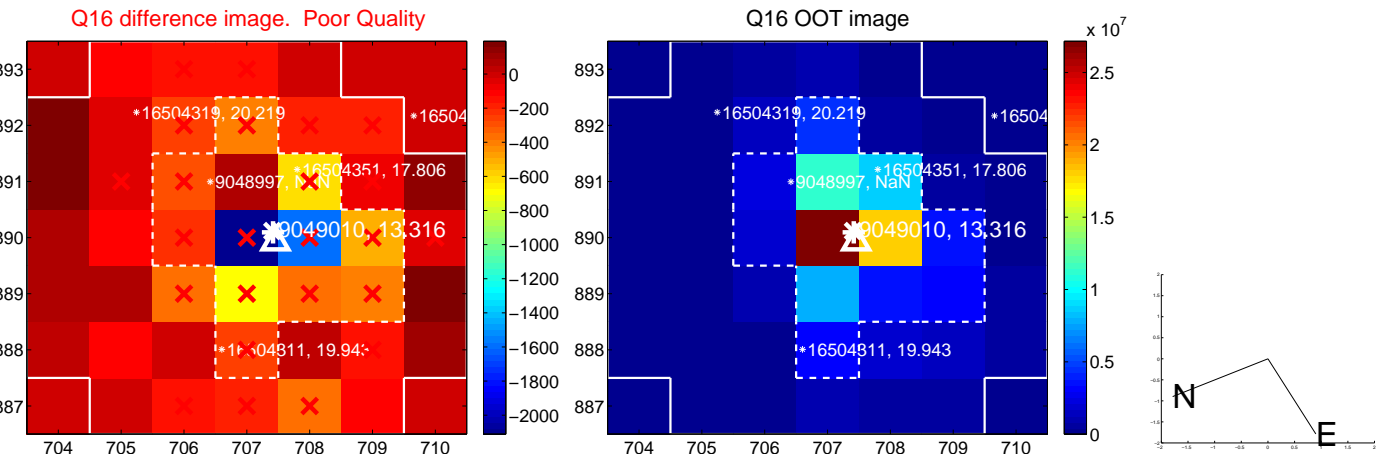
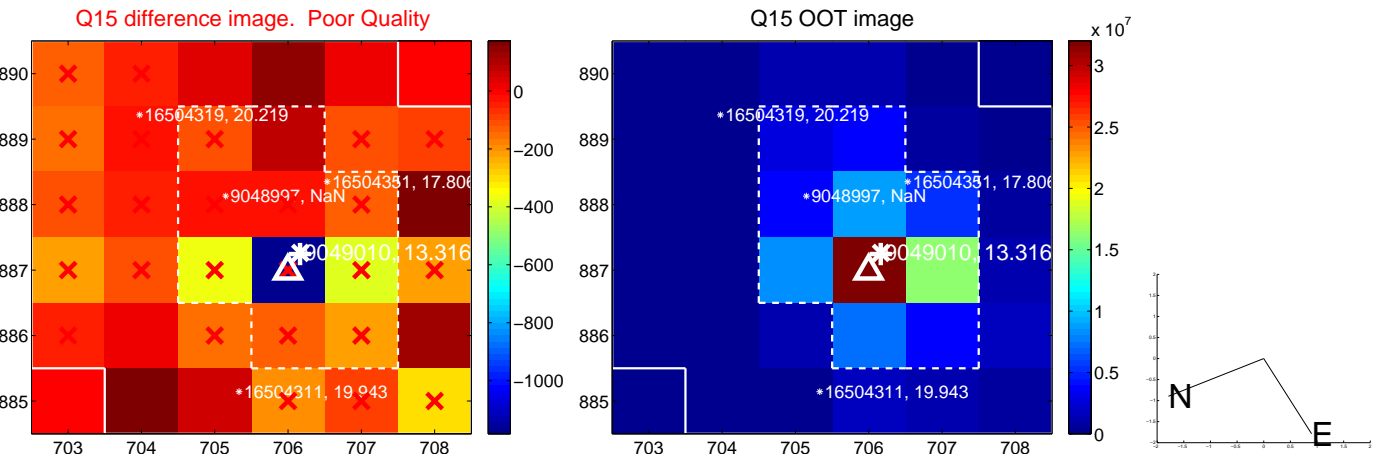
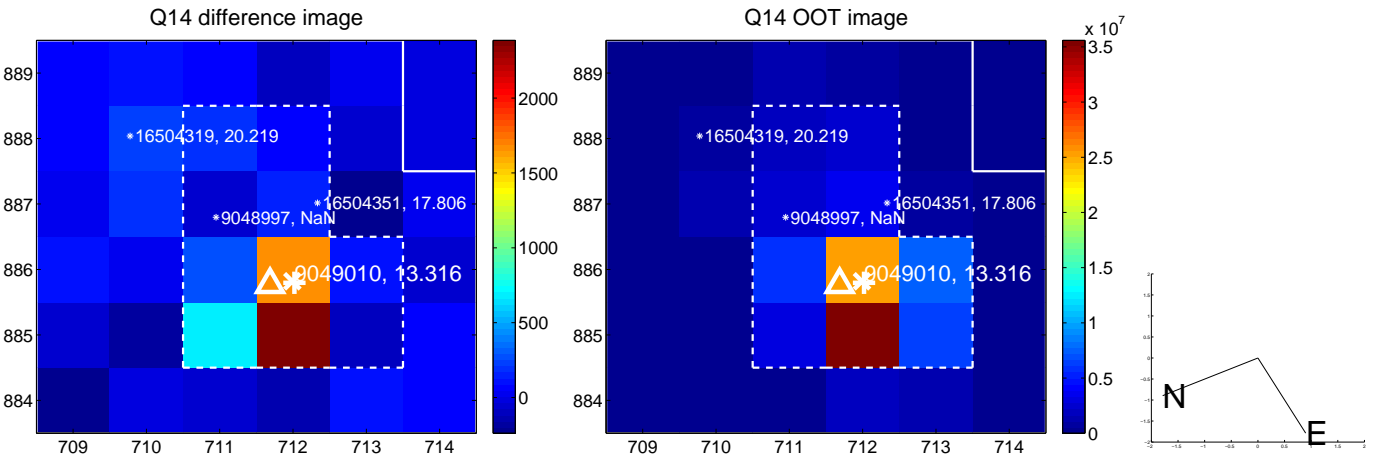
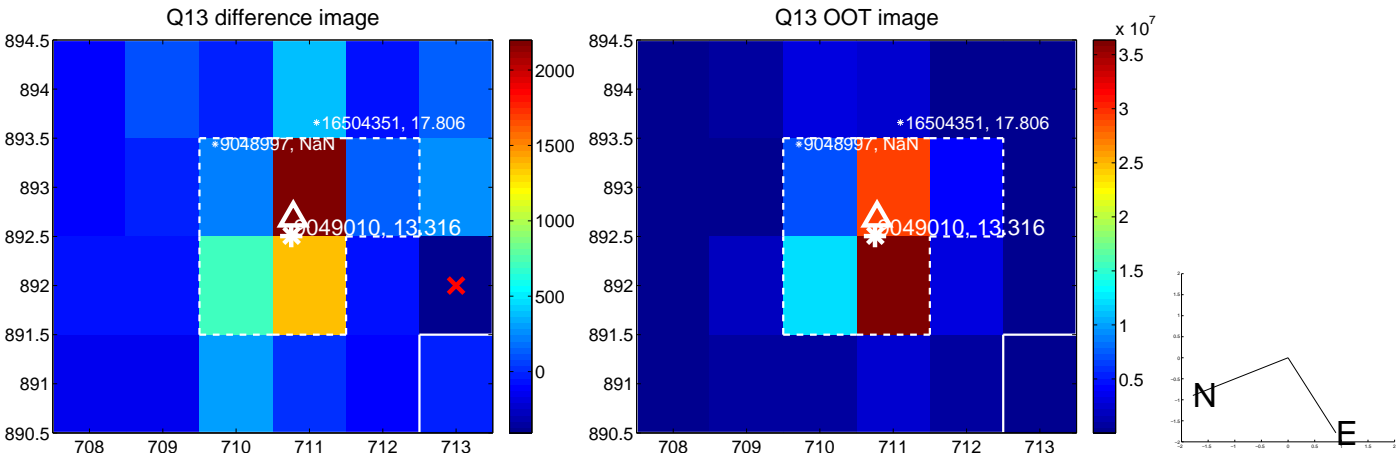
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



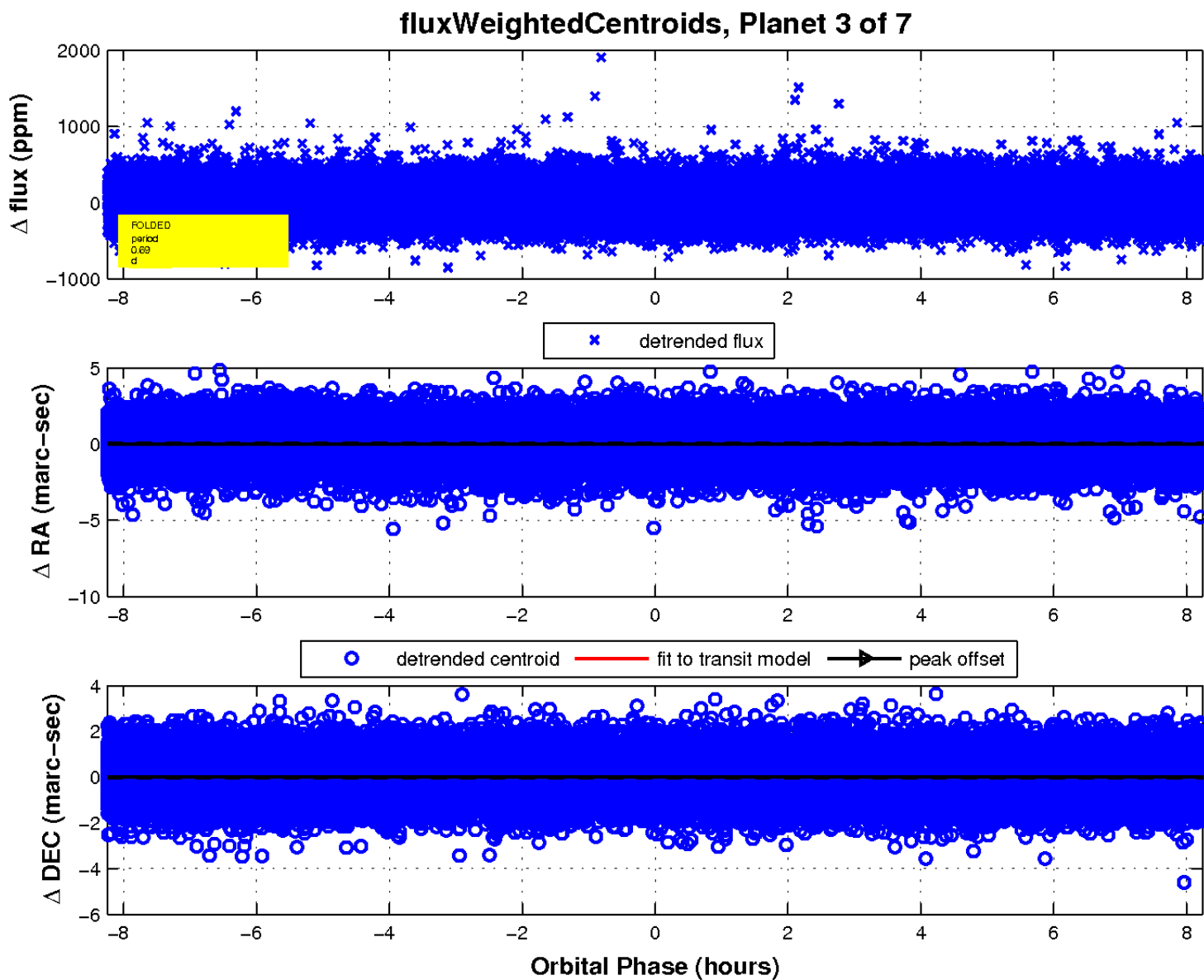
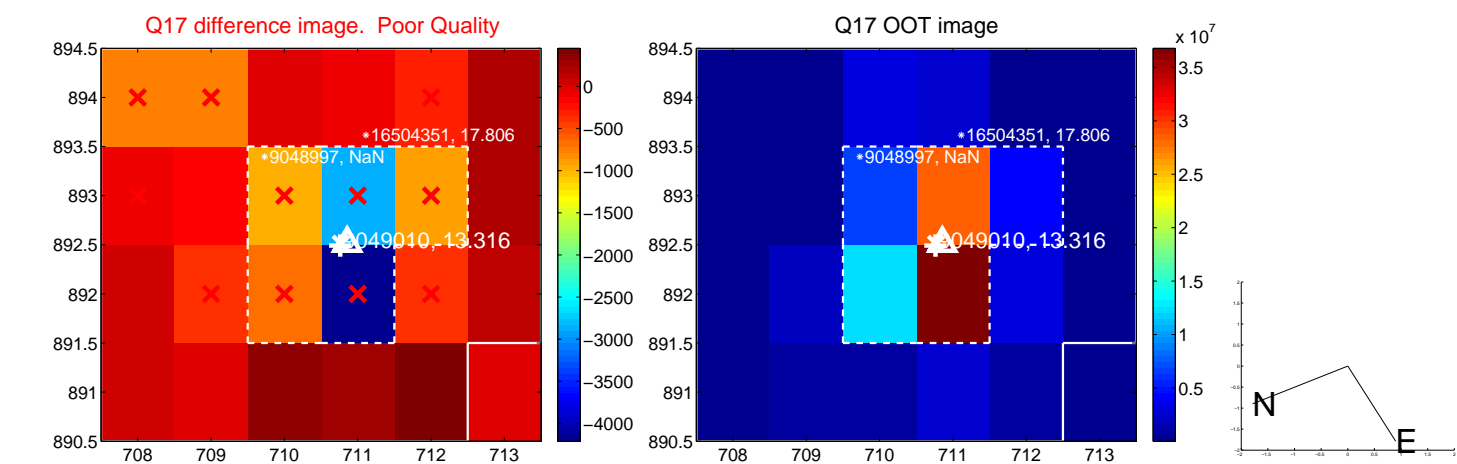
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

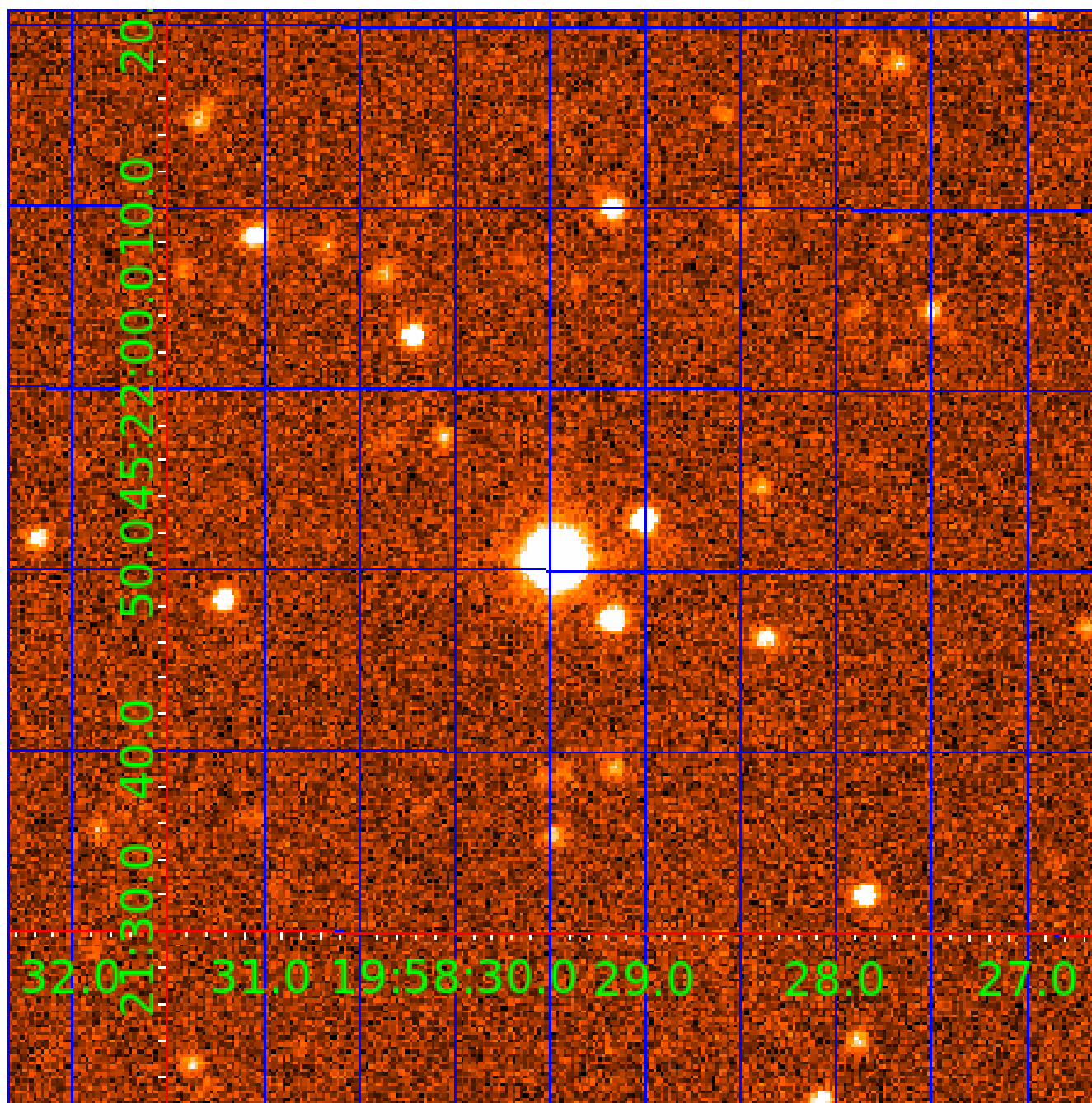


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009049010

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})
009049010-01	OBS	No	3.681208	131.599453	78.9	9.713	11.6	13.8	2.80	6240	4.75	3945.13
009049010-02	OBS	No	402.794548	519.462978	581.4	9.959	15.5	9.6	2.80	6240	9.04	7.54
009049010-03	OBS	7127.01	0.686951	131.890601	10.5	4.155	11.0	3.7	2.80	6240	0.98	36995.38
009049010-06	OBS	No	56.090536	143.269295	286.2	3.051	9.0	6.8	2.80	6240	5.49	104.44
009049010-07	OBS	No	46.230249	156.956499	227.6	1.927	7.4	6.2	2.80	6240	4.86	135.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009049010-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009049010-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009049010-03	OBS	FP	0.00	1	0	0	0	LPP_DV
009049010-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009049010-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_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 009049010-06

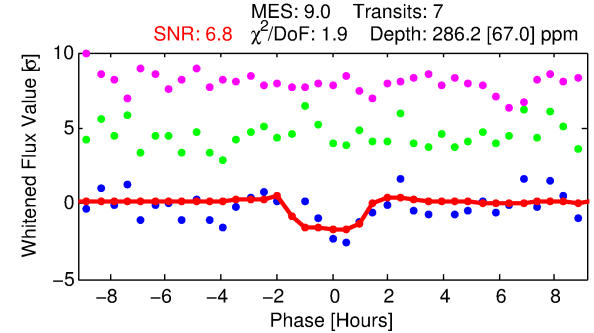
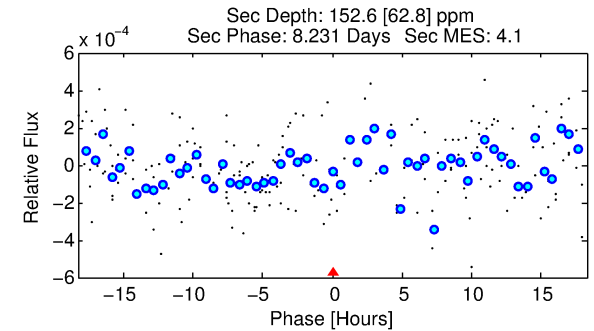
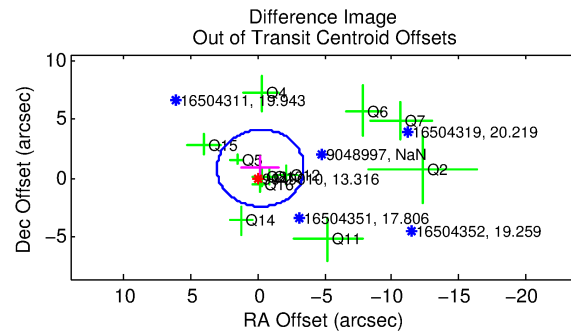
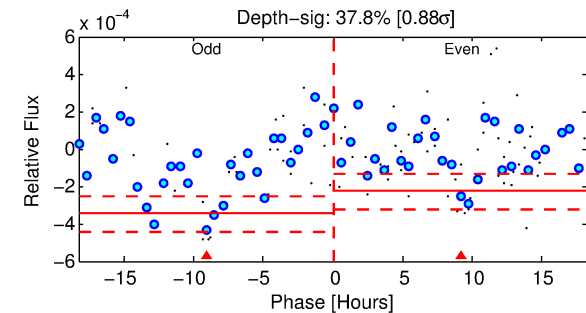
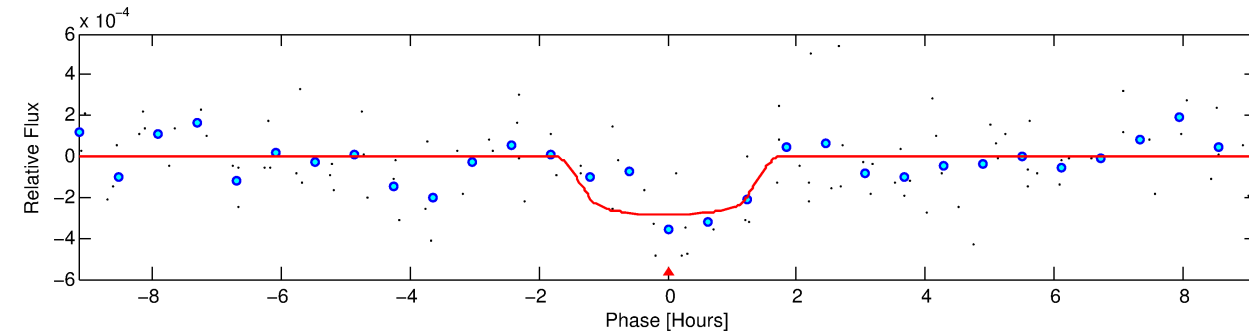
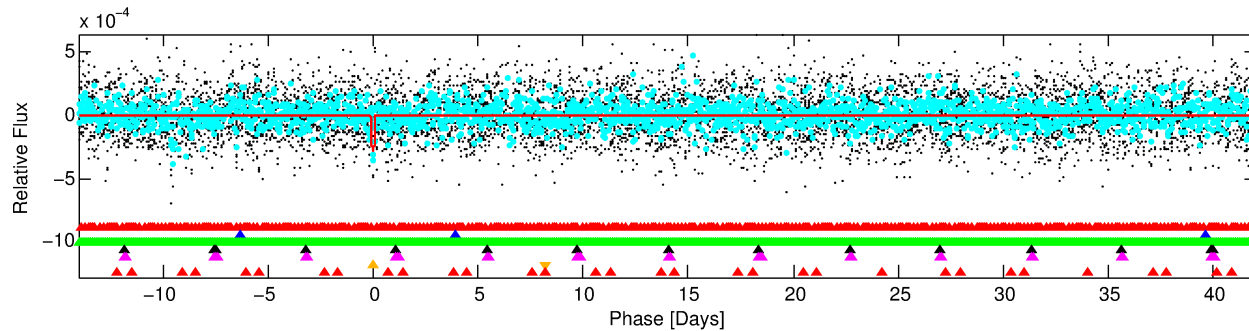
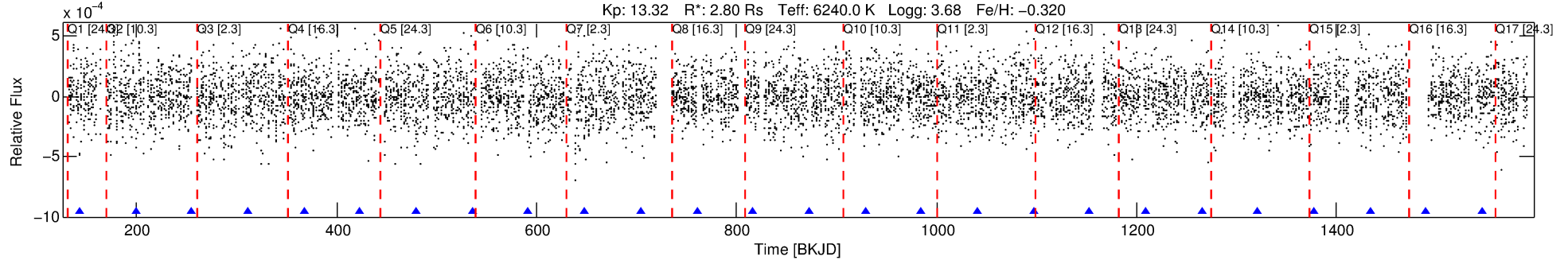
No Significant Match Found

DV One-Page Summary

KIC: 9049010 Candidate: 6 of 7 Period: 56.091 d

KOI: K07127 Corr: No Ephemeris Match

Kp: 13.32 R*: 2.80 Rs Teff: 6240.0 K Logg: 3.68 Fe/H: -0.320



DV Fit Results:

Period = 56.09054 [0.00126] d
Epoch = 143.2693 [0.0174] BKJD
Rp/R* = 0.0180 [0.0165]
a/R* = 70.71 [359.61]
b = 0.88 [1.24]
Seff = 104.44 [109.52]
Teq = 815 [214] K
Rp = 5.49 [5.97] Re
a = 0.3197 [0.1976] AU
Ag = 284.50 [613.03] [0.46σ]
Teffp = 5176 [2448] K [1.77σ]

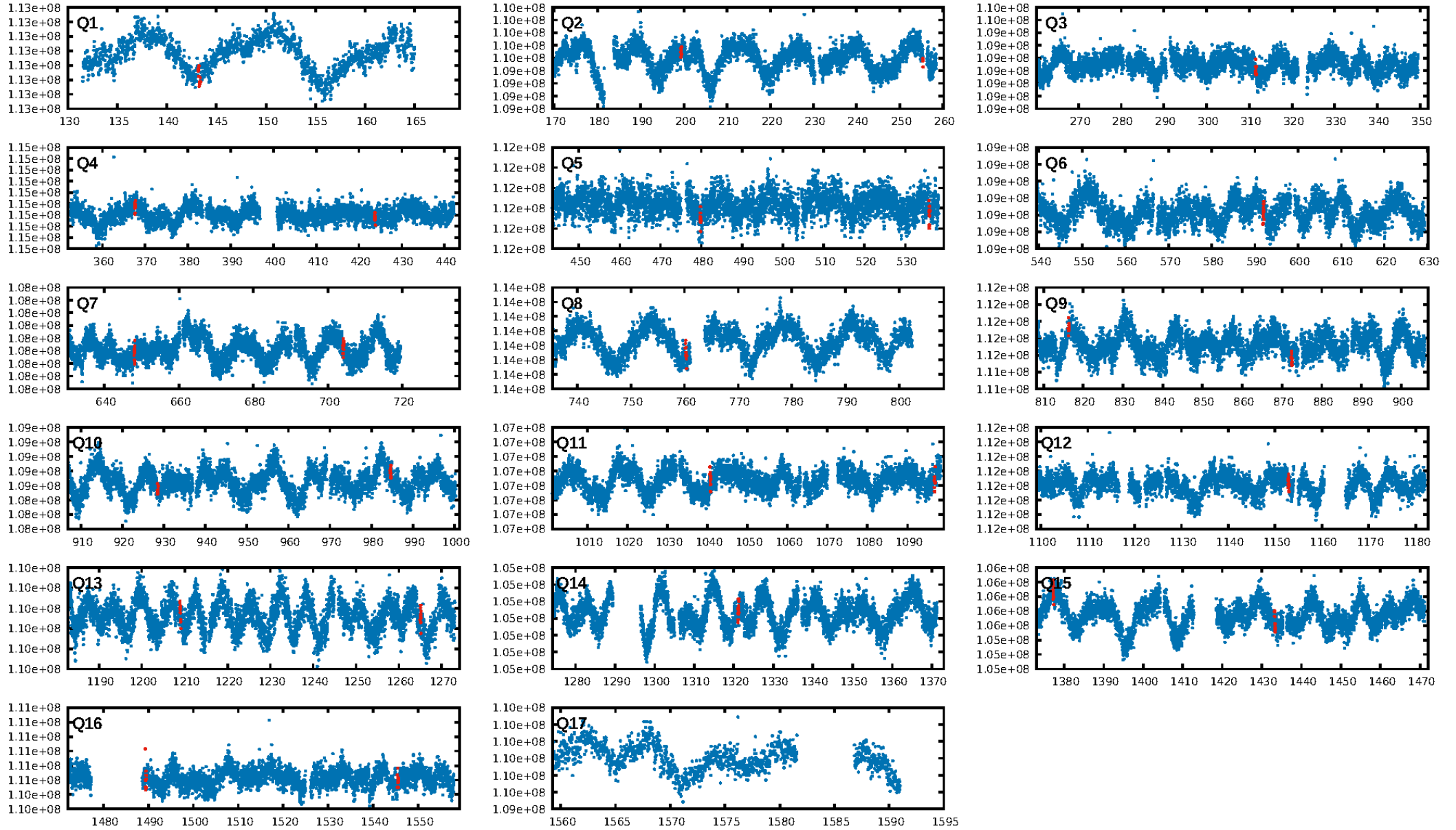
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [65.98σ]
LongPeriod-sig: 100.0% [798.88σ]
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 4.62e-11
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -2.226
Centroid-sig: 5.9%
Centroid-so: 1.009 arcsec [1.37σ]
OotOffset-rm: 0.897 arcsec [0.83σ]
KicOffset-rm: 0.900 arcsec [0.82σ]
OotOffset-st: 3/3/4/2 [12]
KicOffset-st: 3/3/4/2 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 0.00 [0/16]

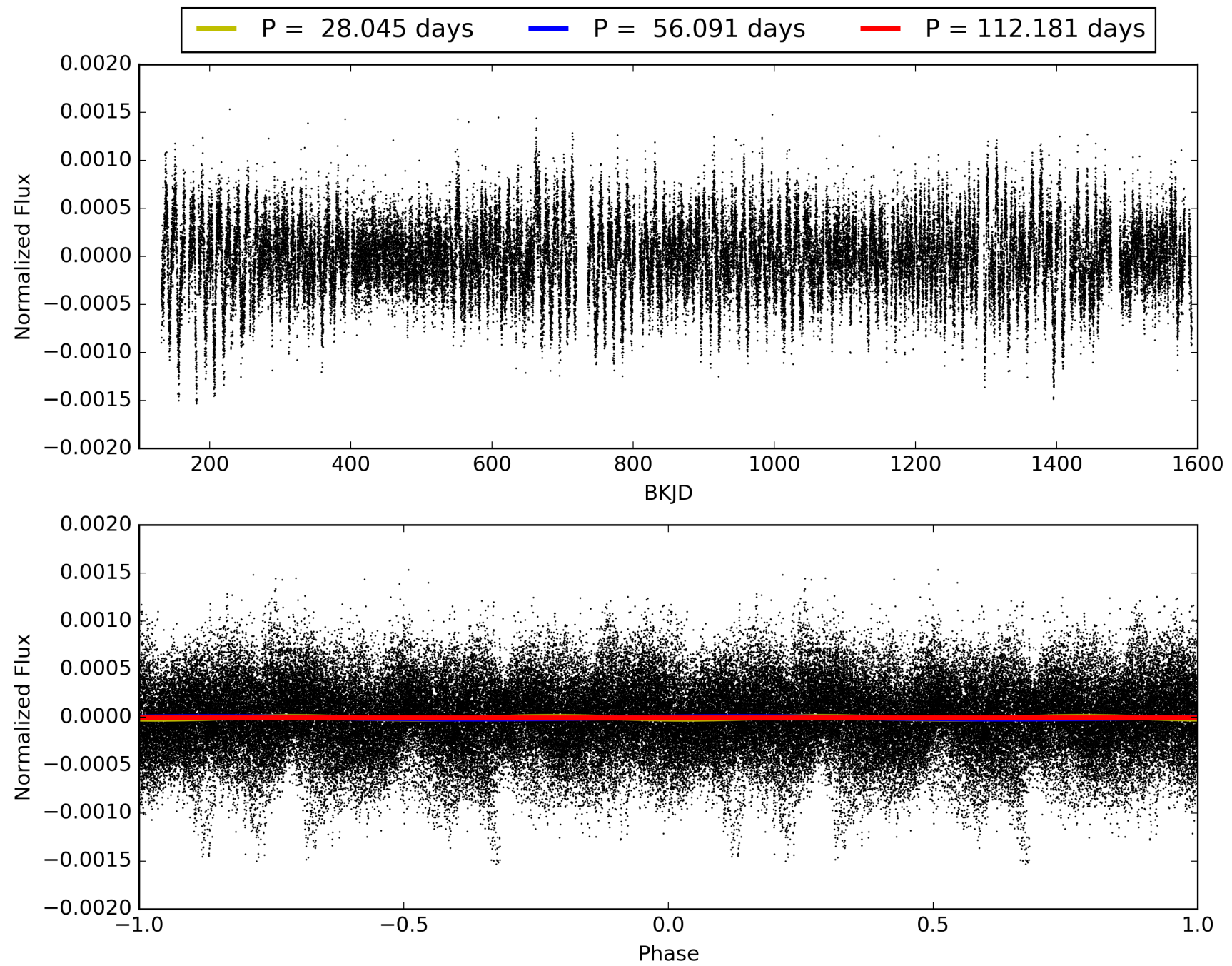
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:55:53 Z

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

TCE 009049010-06, PDC Light Curves

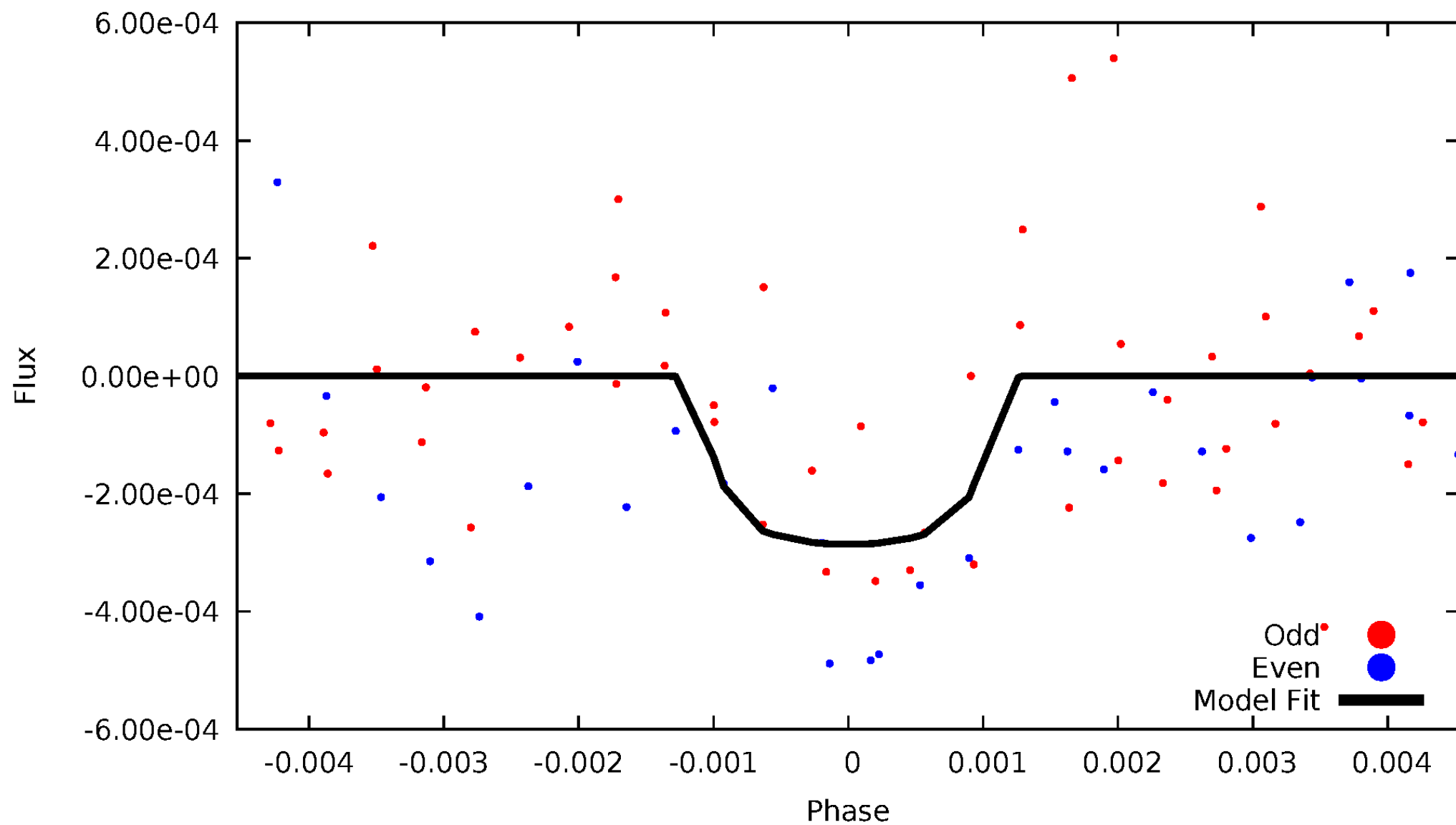


TCE 009049010-06



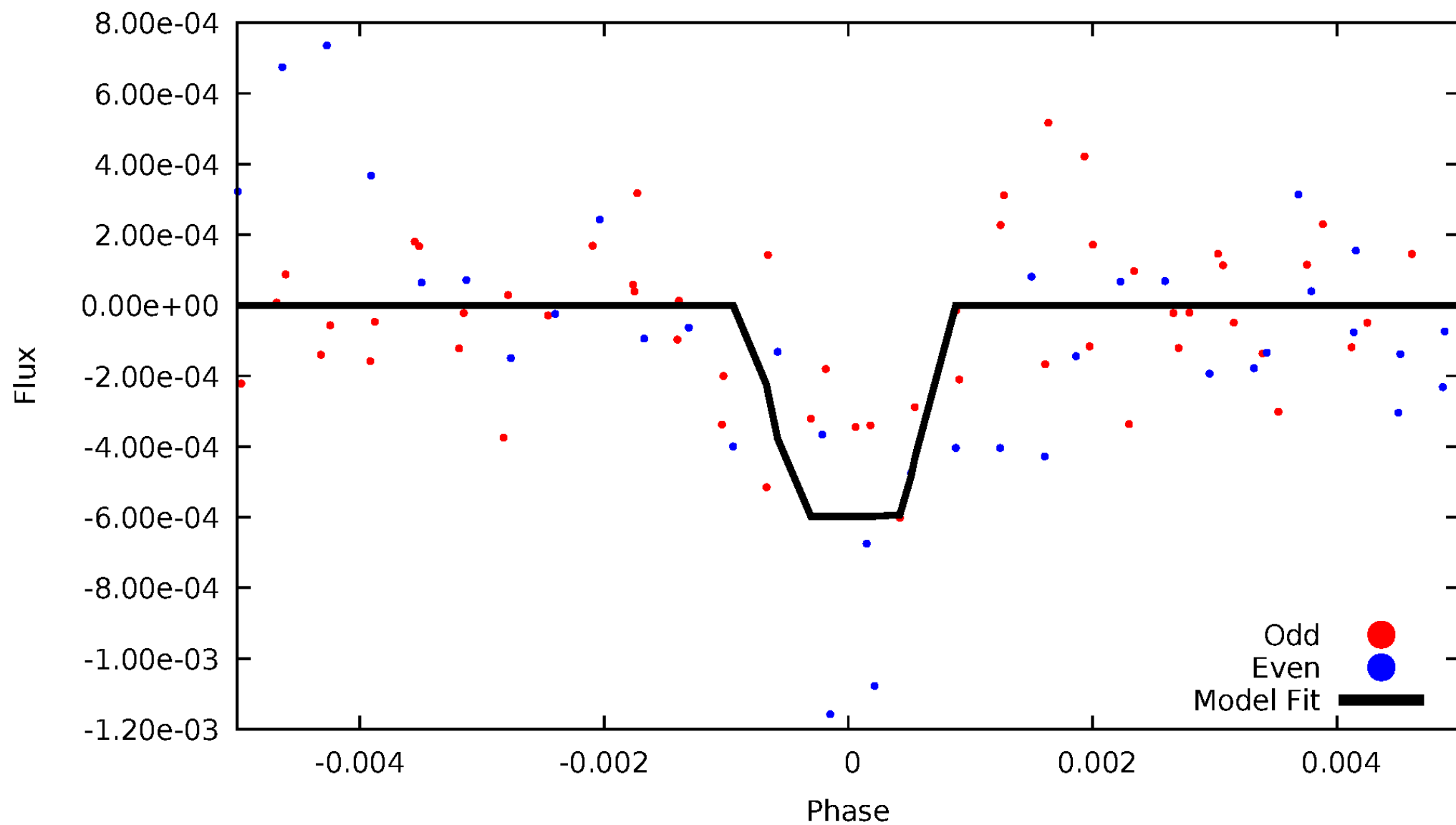
DV Odd/Even

TCE 009049010-06



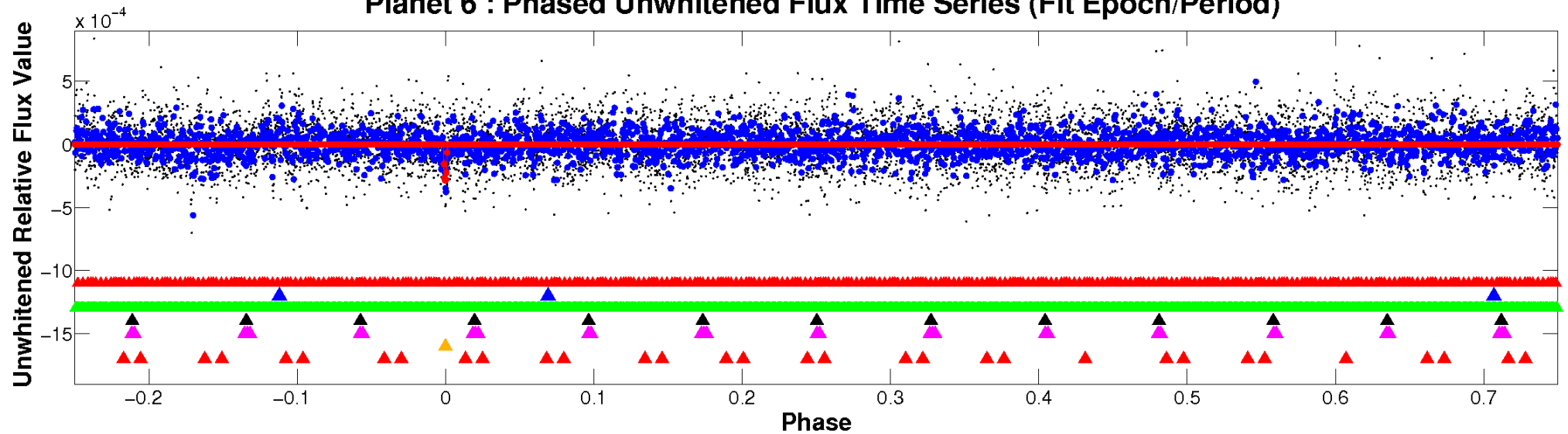
ALT Odd/Even

TCE 009049010-06

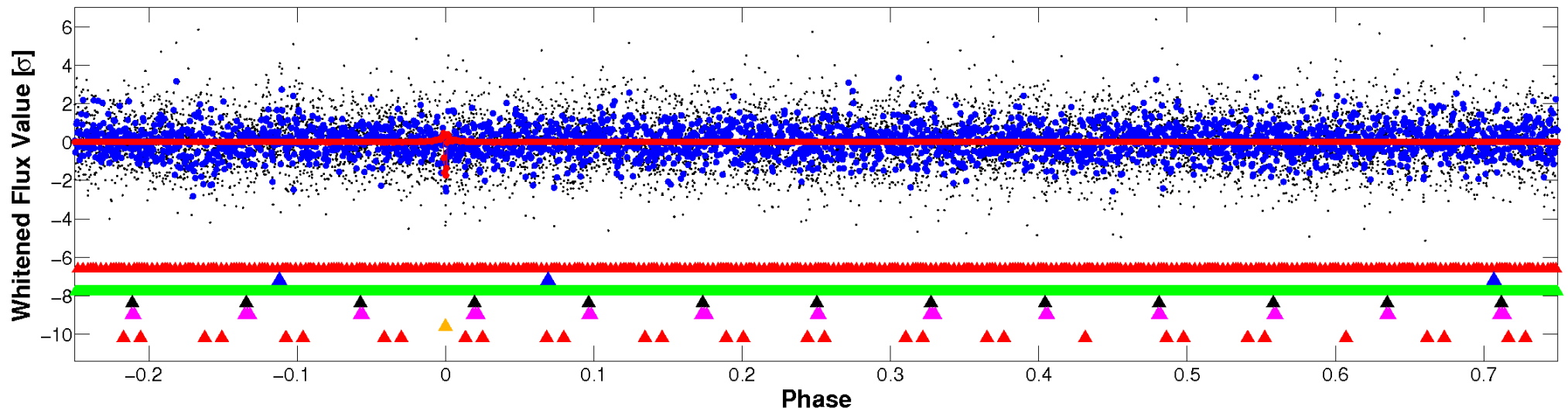


Non-Whitened Vs. Whitened Light Curve

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

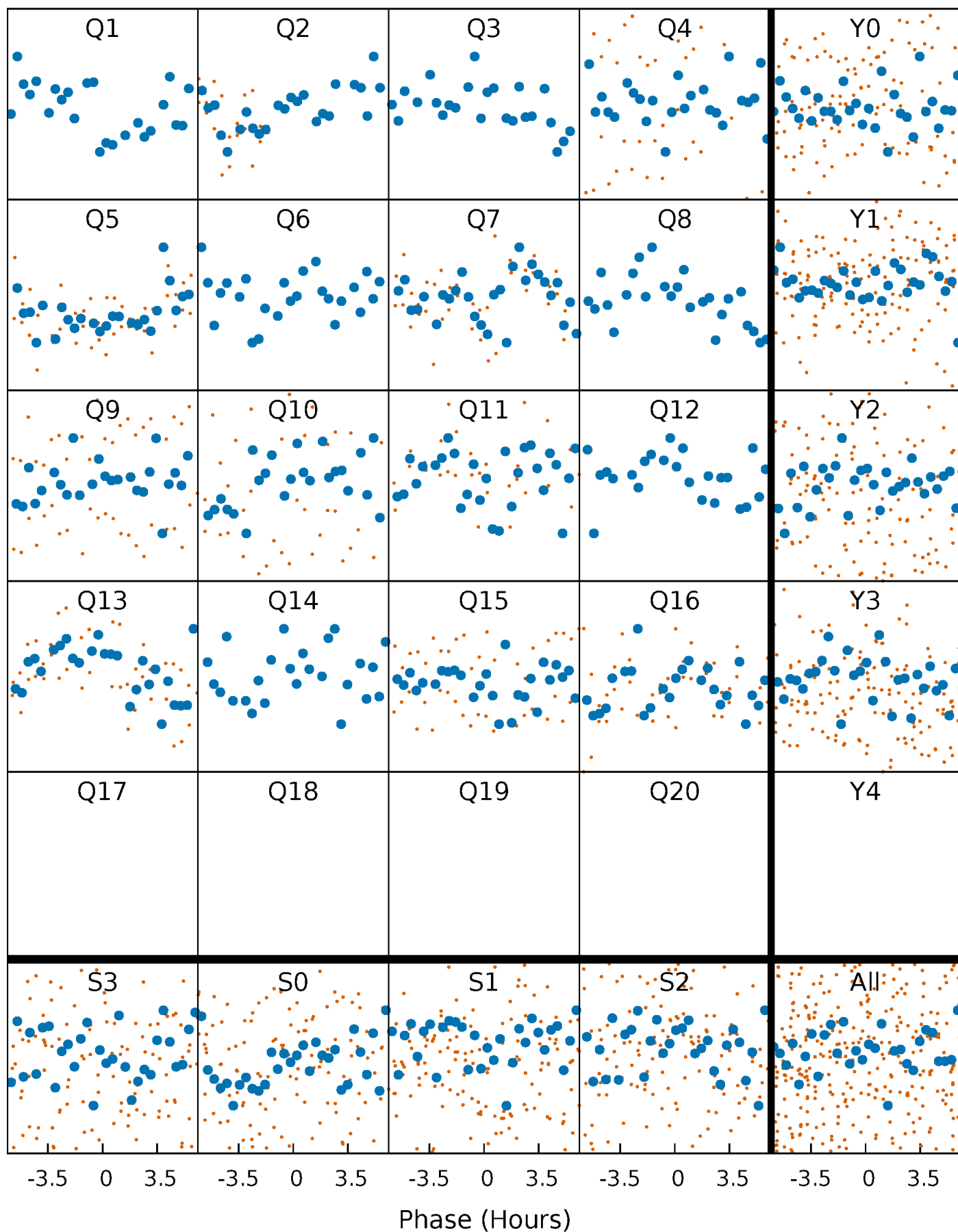


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



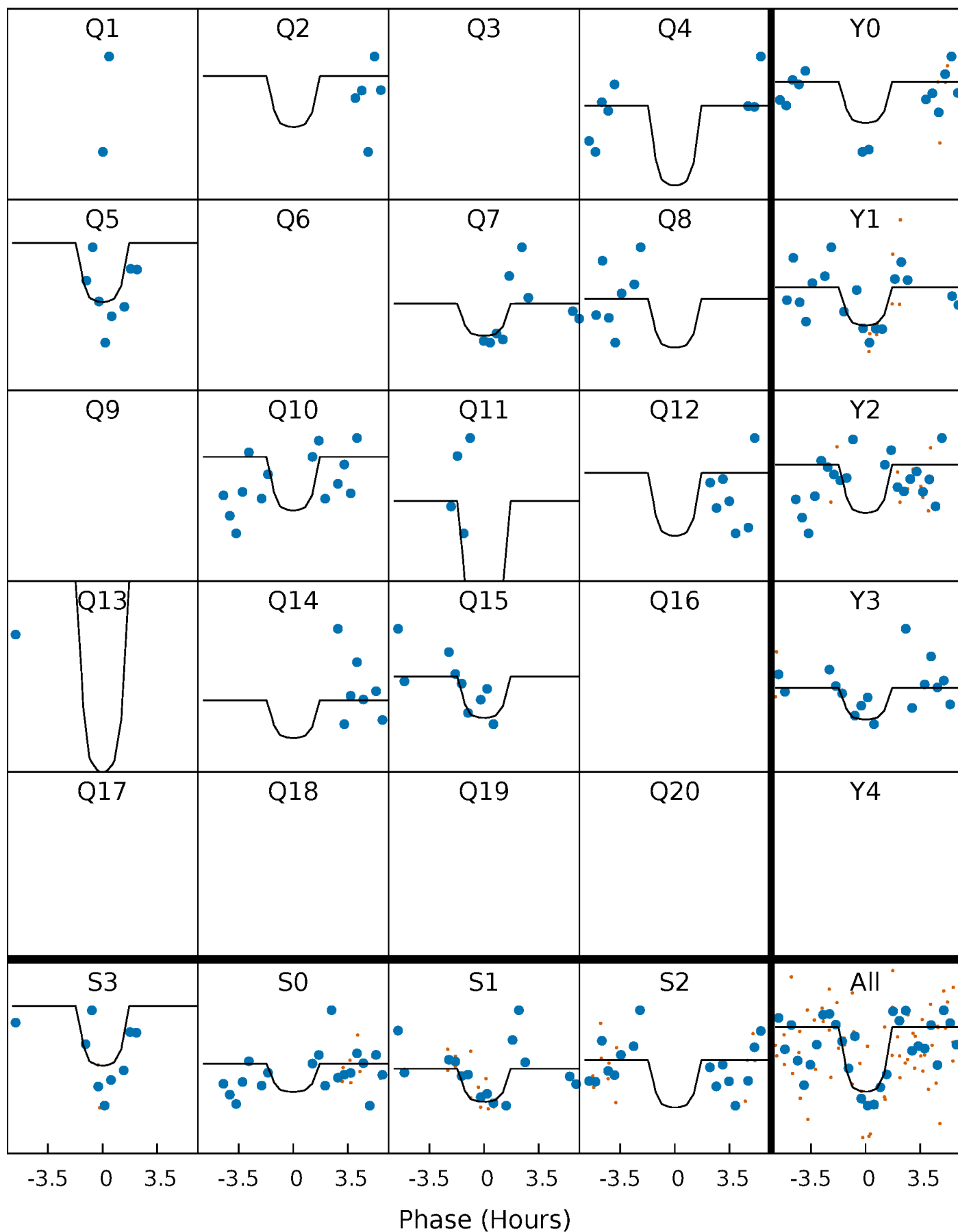
PDC Quarter-Phased Transit Curves

TCE 009049010-06 P= 56.090536 Days $T_0=143.269295$ (BKJD)



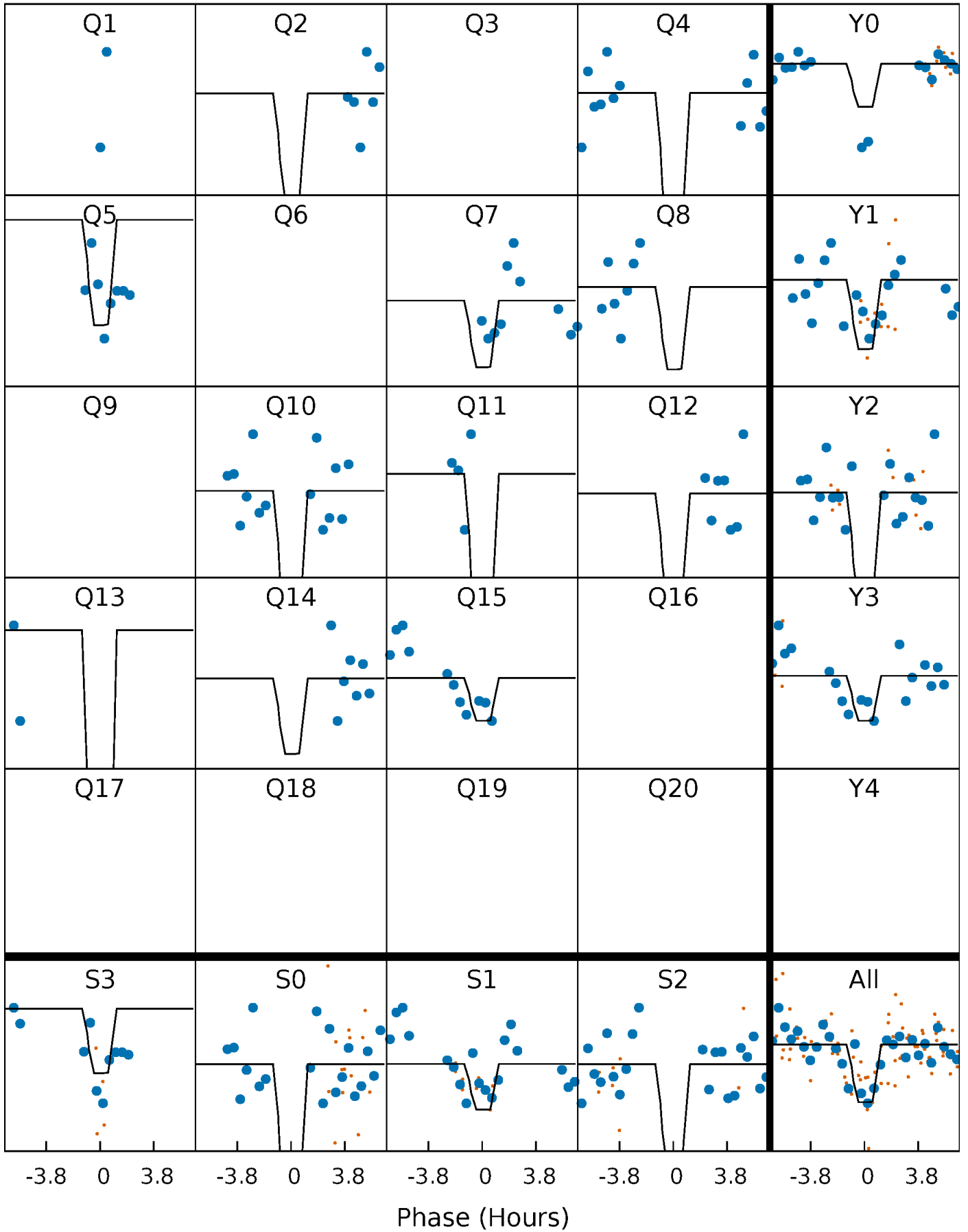
DV Quarter-Phased Transit Curves

TCE 009049010-06 P= 56.090536 Days $T_0=143.269295$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

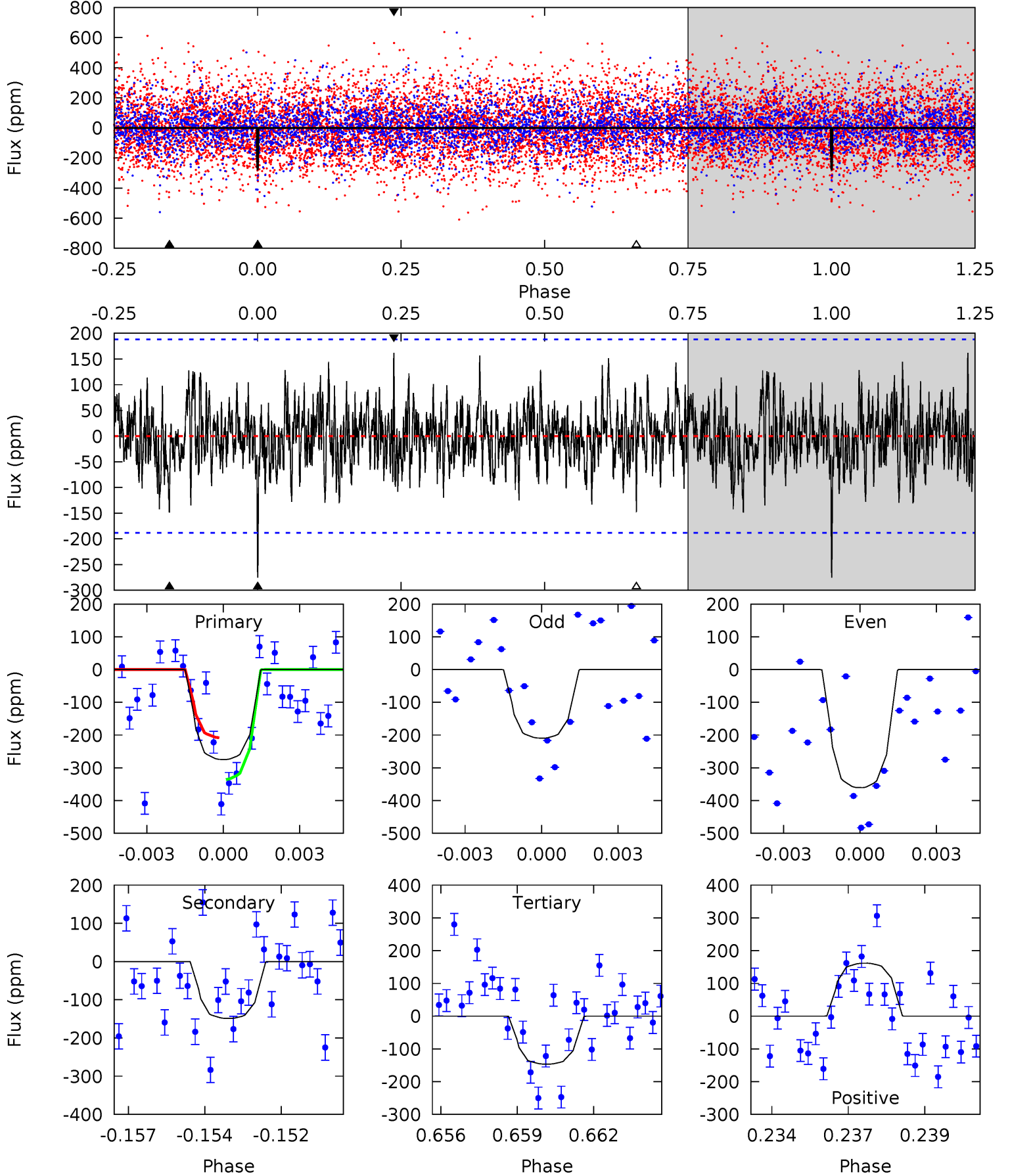
TCE 009049010-06 P= 56.090599 Days $T_0=143.269869$ (BKJD)



DV Model-Shift Uniqueness Test

009049010-06, P = 56.090536 Days, E = 87.178759 Days

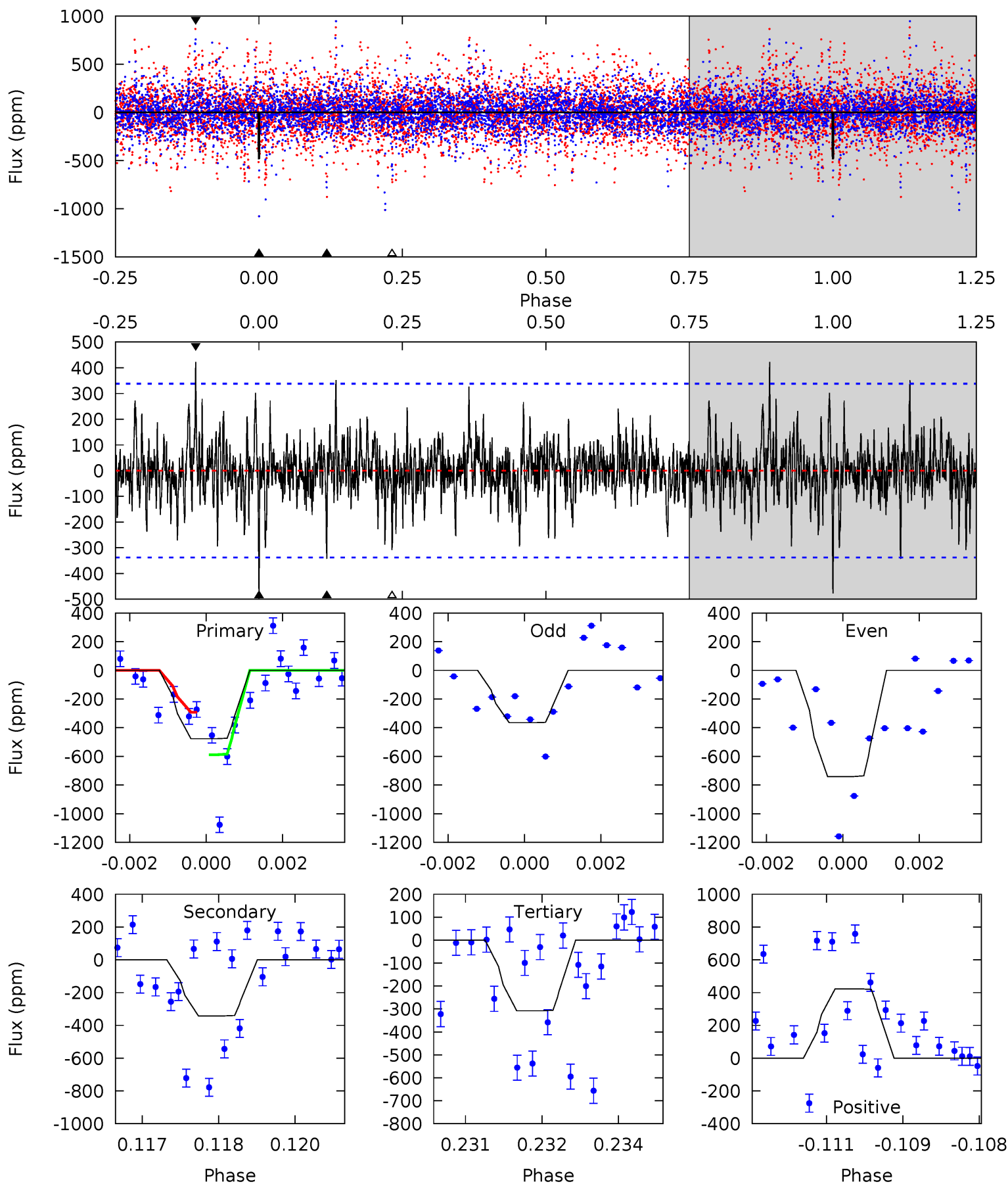
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.71	4.18	4.11	4.53	5.28	3.01	1.33	3.60	3.18	0.07	-0.36	2.09	0.81	0.37	1.78



Alt Model-Shift Uniqueness Test

009049010-06, P = 56.090599 Days, E = 87.179270 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.59	5.44	4.90	6.72	5.37	3.17	1.36	2.69	0.87	0.54	-1.28	3.06	1.23	0.47	0



Stellar Parameters For KIC 009049010

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6240^{+212}_{-212}	$3.684^{+0.629}_{-0.111}$	$-0.320^{+0.300}_{-0.300}$	$2.803^{+0.541}_{-1.623}$	$1.385^{+0.210}_{-0.420}$	$0.089^{+0.776}_{-0.028}$
	+3%/-3%	+17%/-3%	+94%/-94%	+19%/-58%	+15%/-30%	+876%/-32%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009049010-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-149 ± 36	$5.55^{+4.62}_{-3.61}$	1107^{+87}_{-159}	4865^{+3269}_{-953}	272^{+1782}_{-199}
Alt.	-342 ± 63	$6.84^{+5.05}_{-4.08}$	1102^{+90}_{-156}	5416^{+2638}_{-1056}	420^{+2130}_{-283}

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 $A_{obs} \gg 1.0$

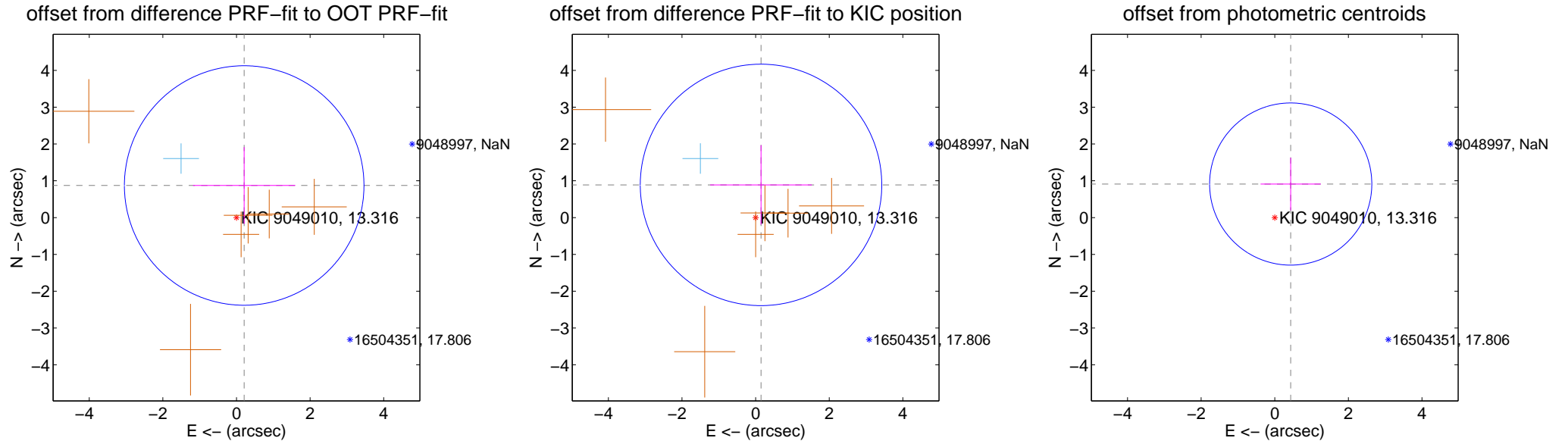
DV Centroid Data

Supplemental centroid analysis for 009049010-06. Kepler magnitude: 13.32. Transit SNR 6.77

There are 1 quarters with good PRF difference image offsets

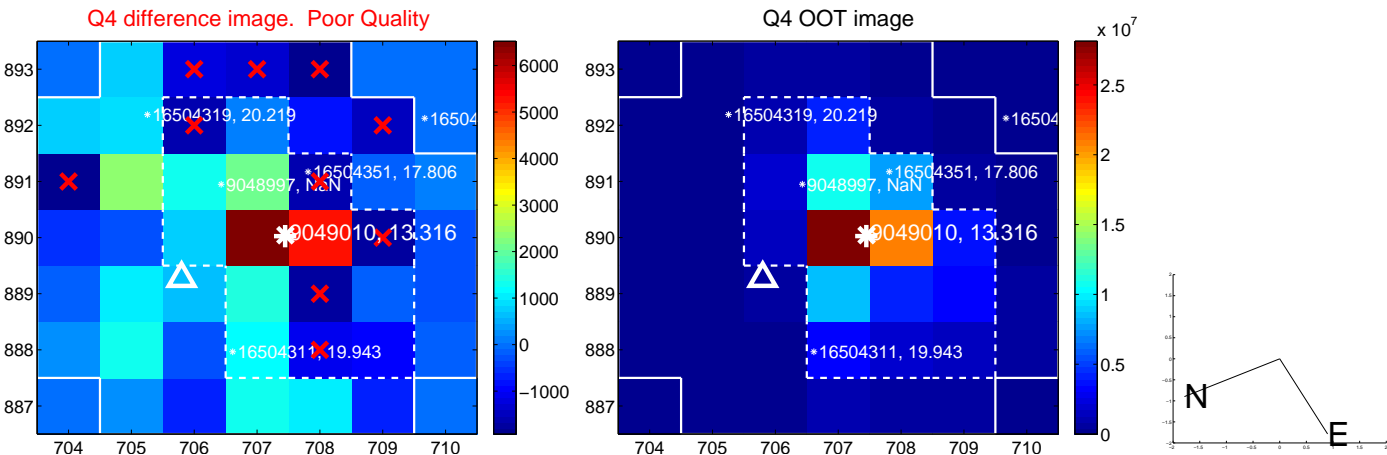
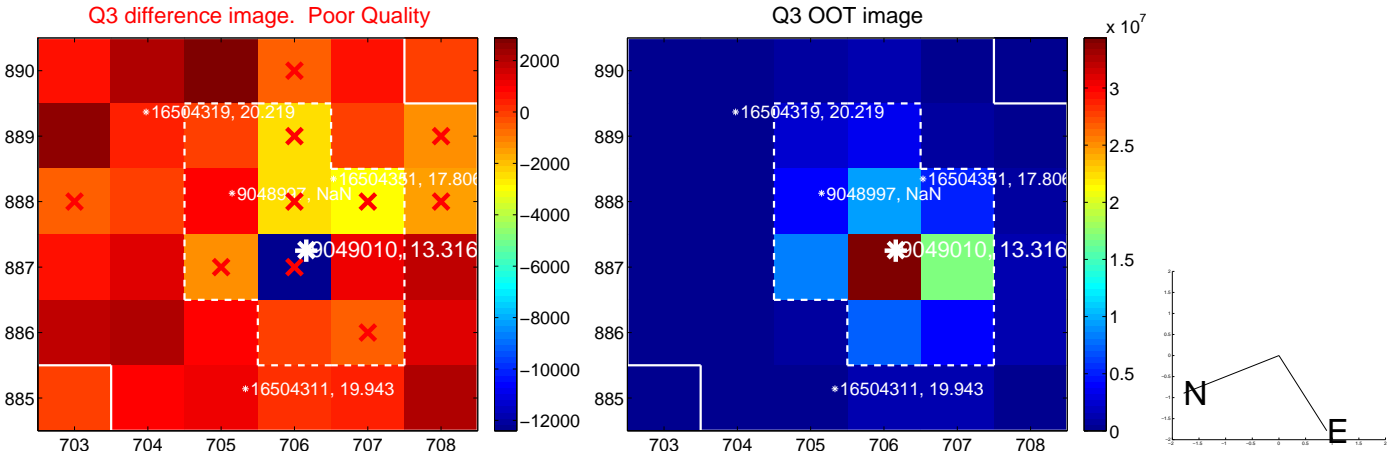
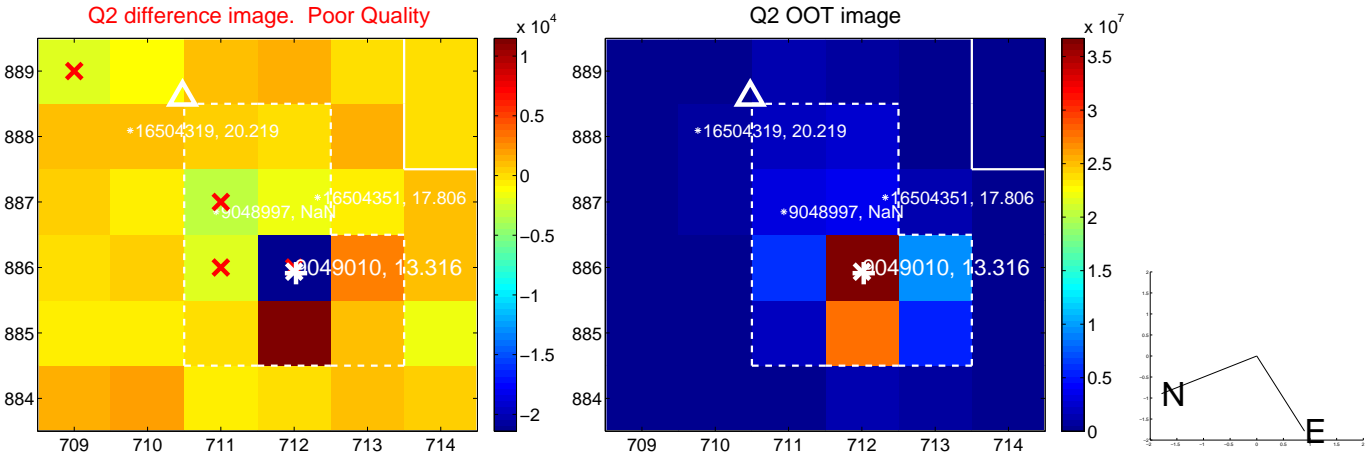
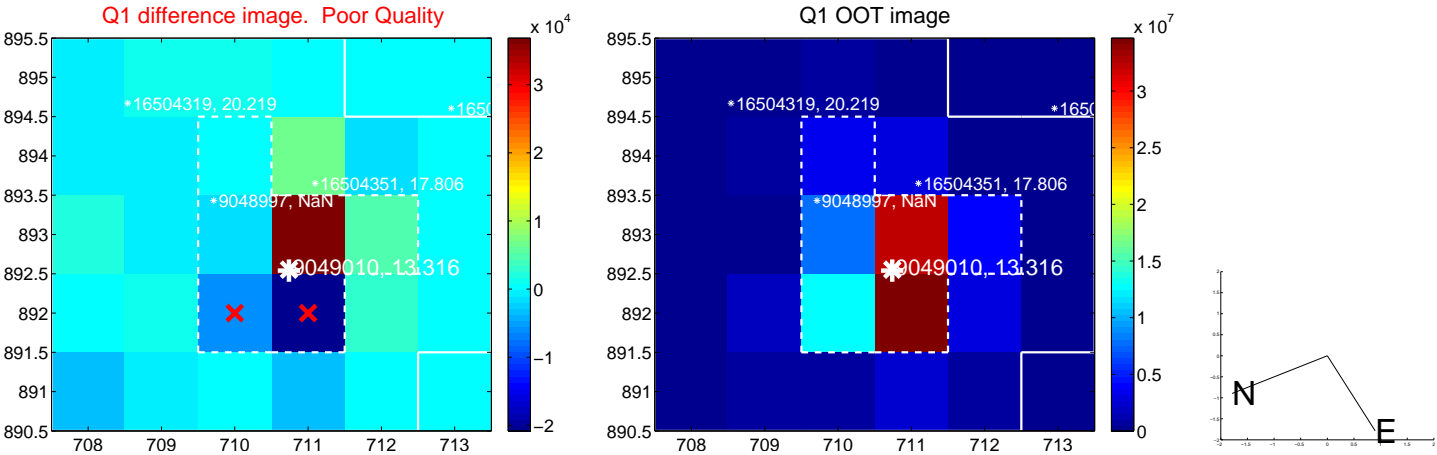
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.897 ± 1.085	0.83	-0.209 ± 1.388	0.872 ± 1.043
PRF-fit source offset from KIC position	0.900 ± 1.093	0.82	-0.147 ± 1.380	0.888 ± 1.078
photometric centroid source offset	1.01 ± 0.73	1.37	-0.43 ± 0.82	0.91 ± 0.71

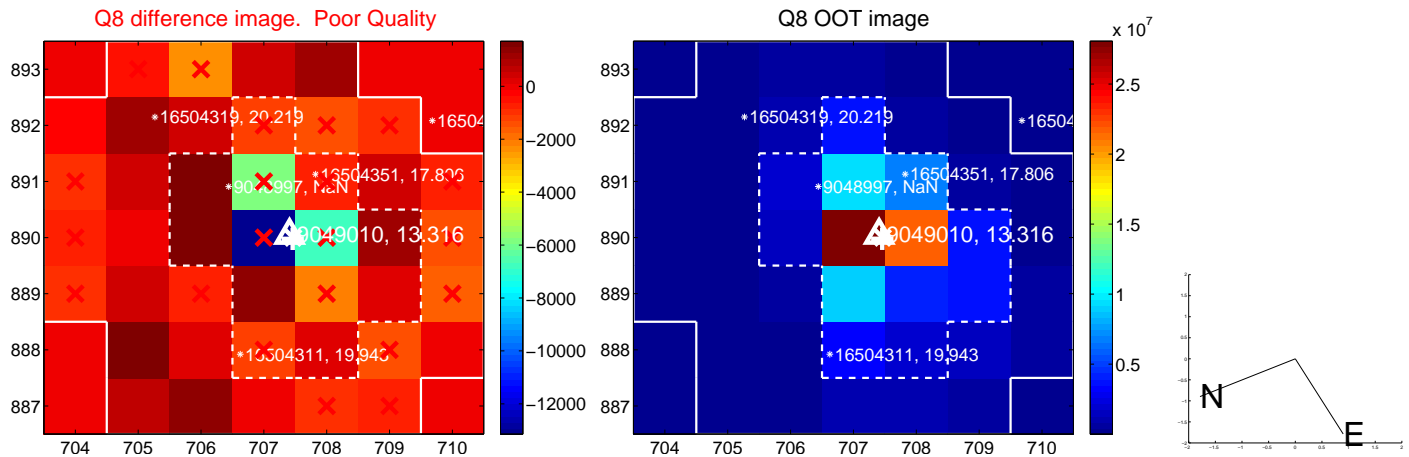
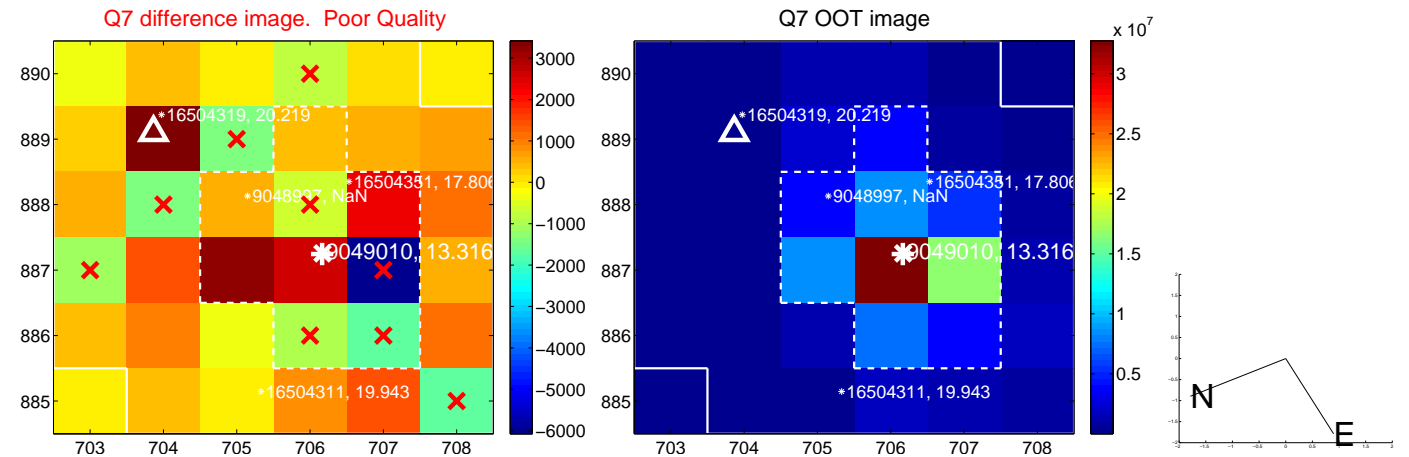
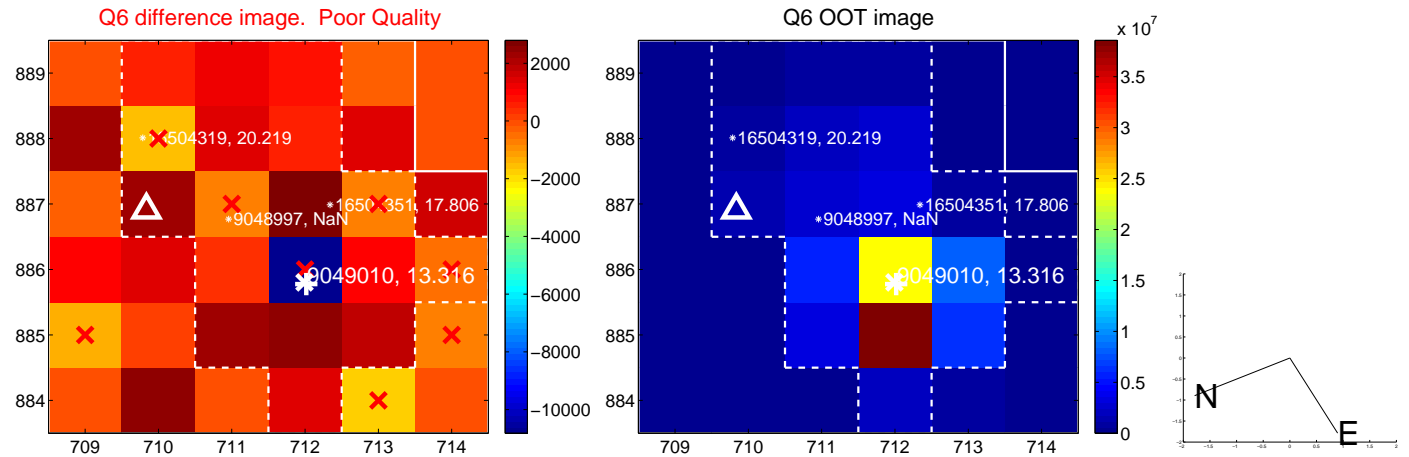
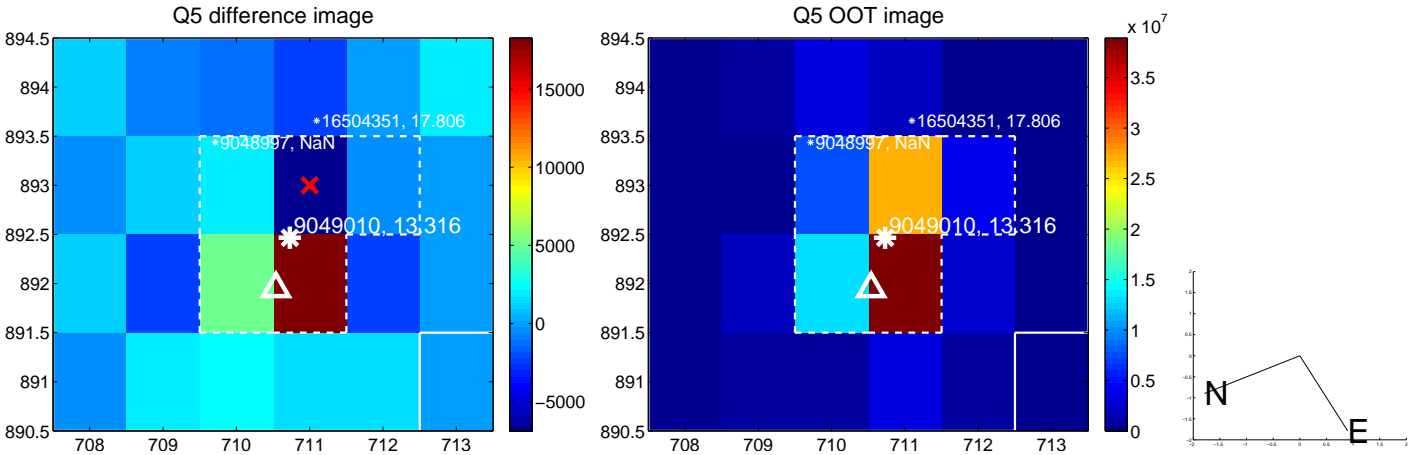


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

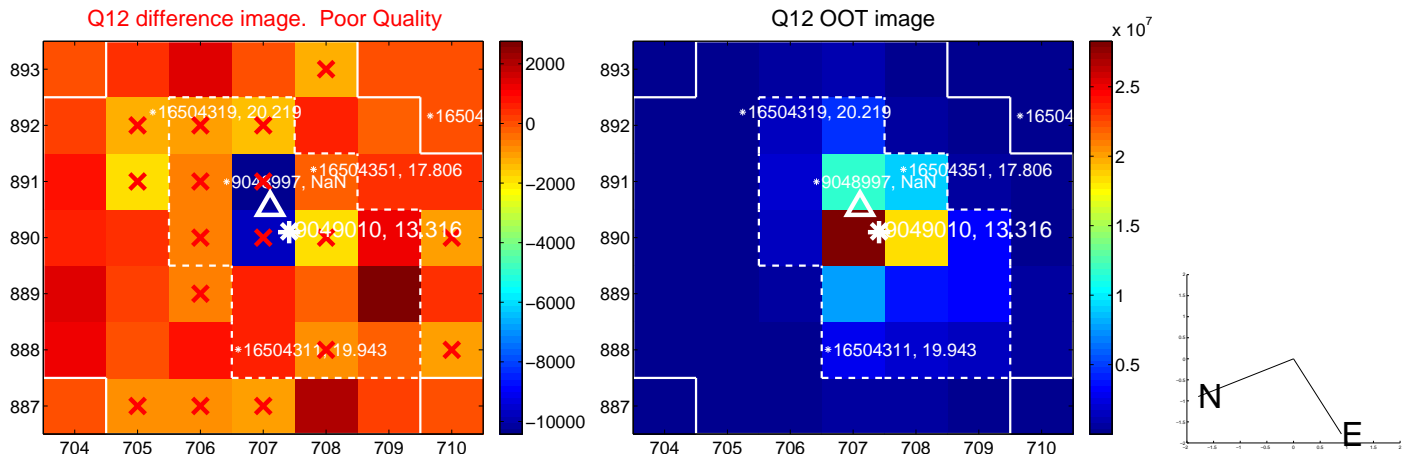
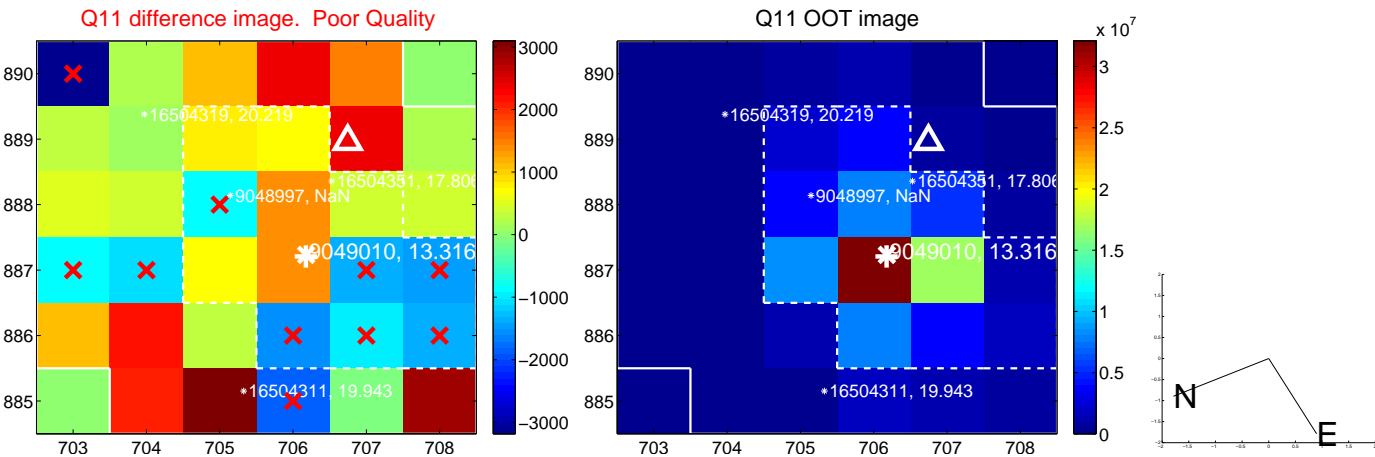
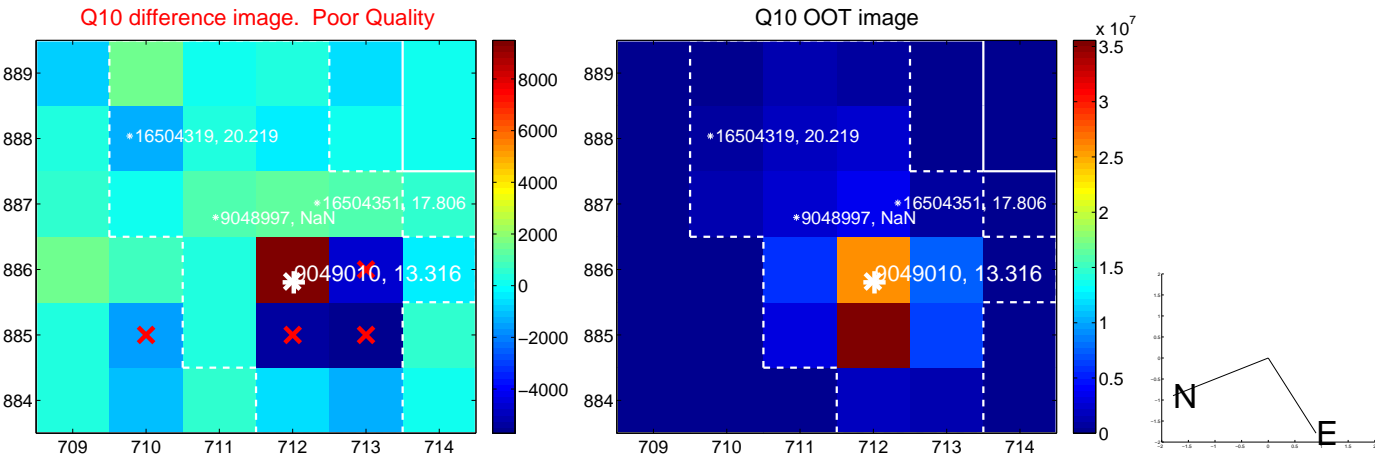
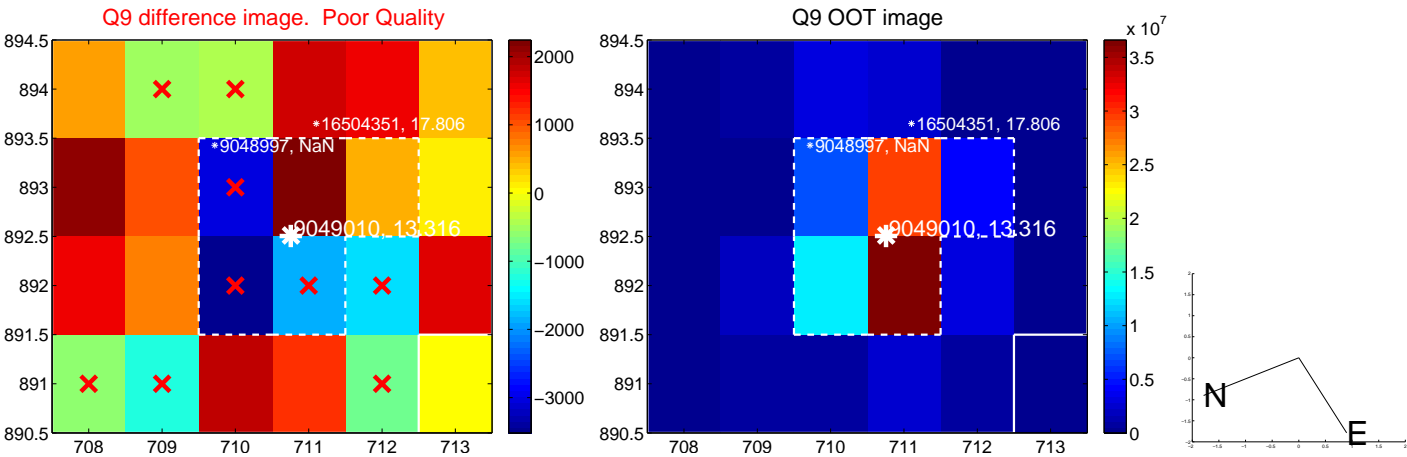
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



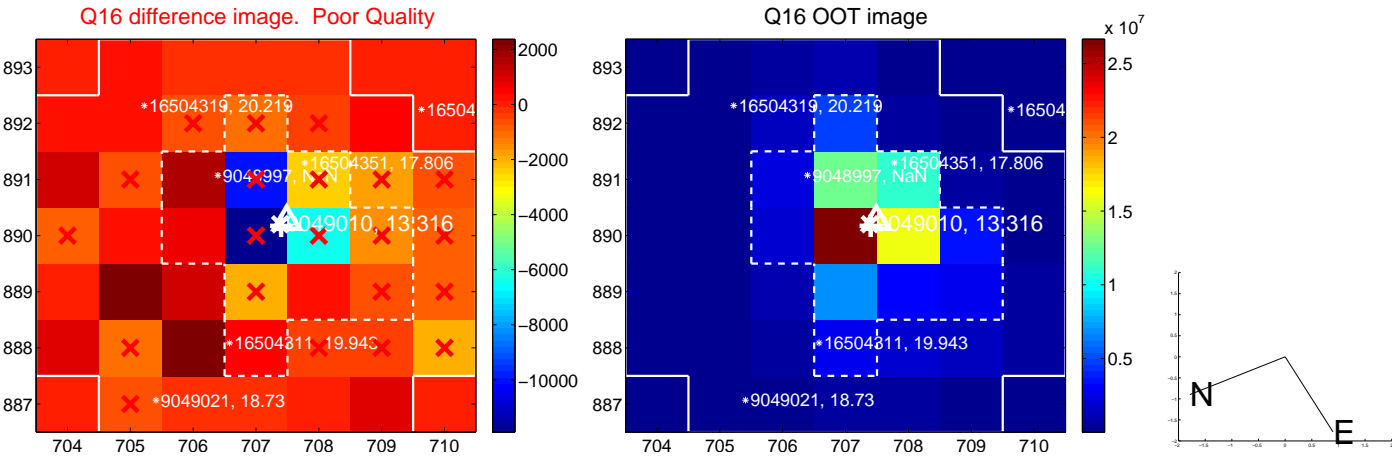
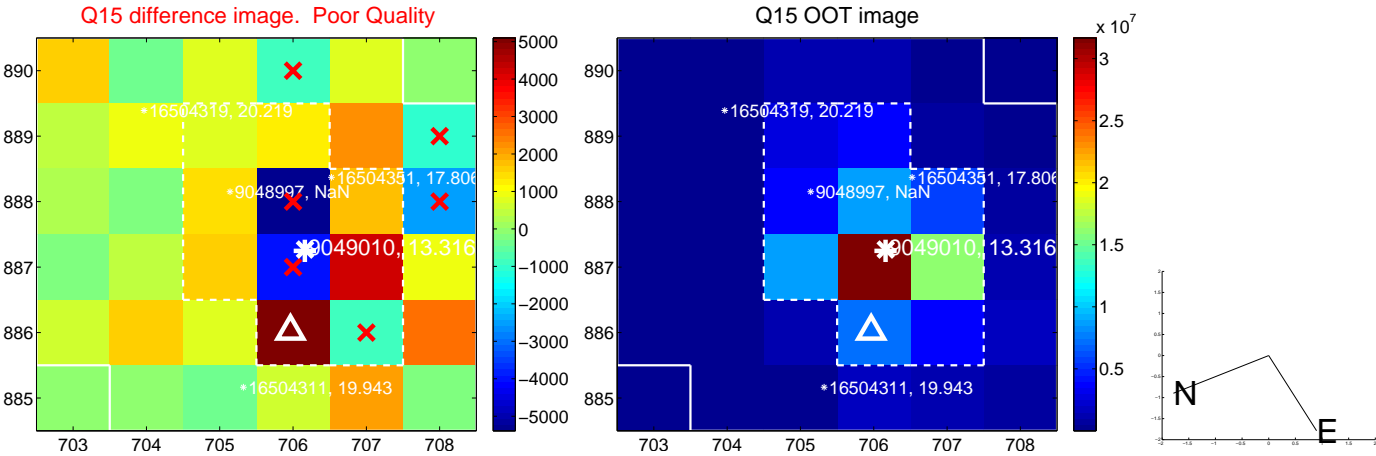
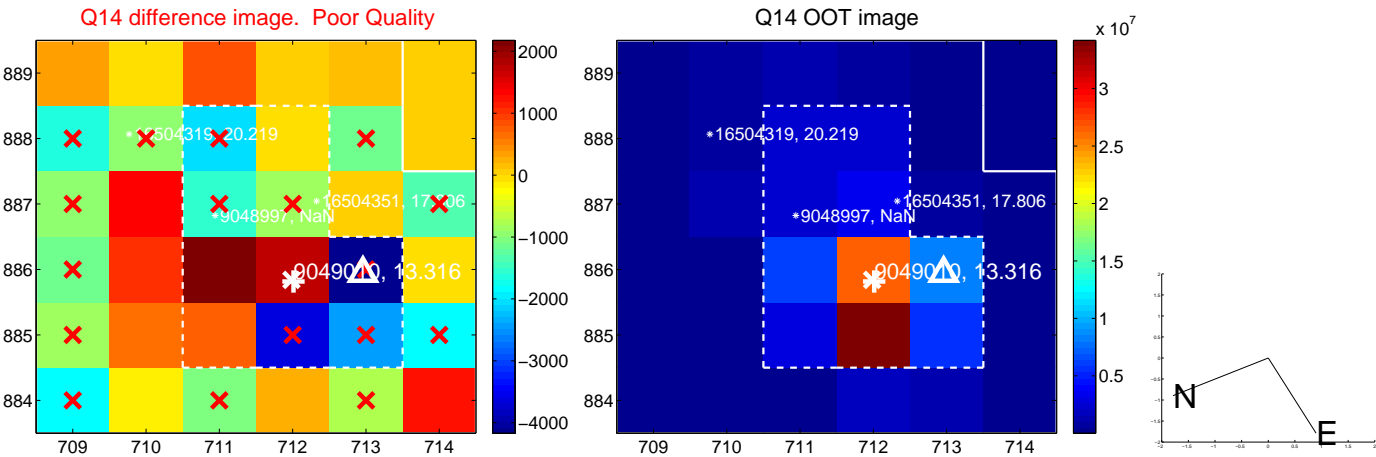
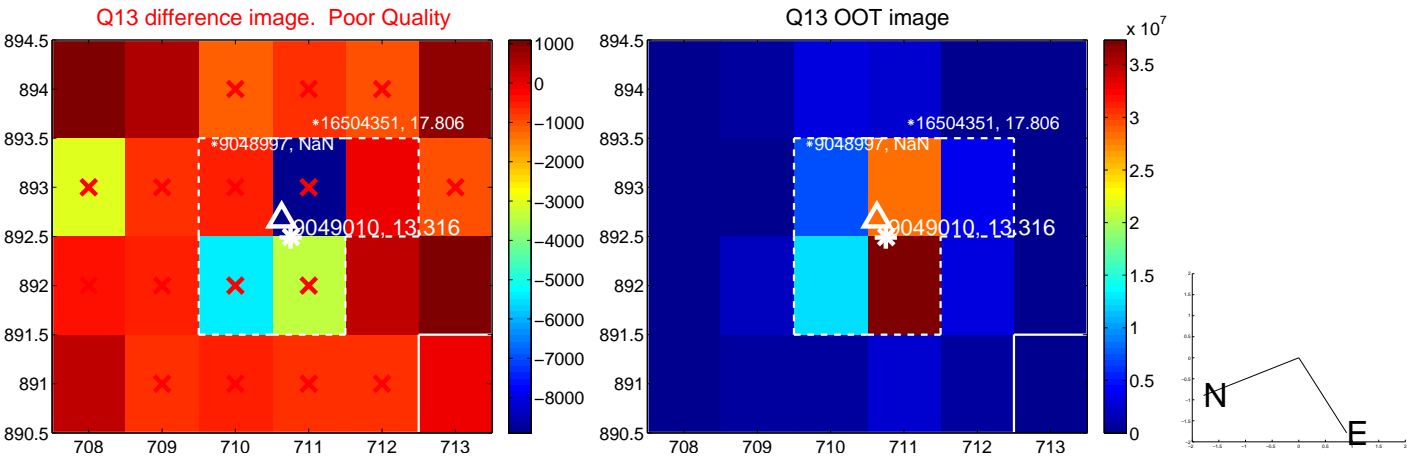
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



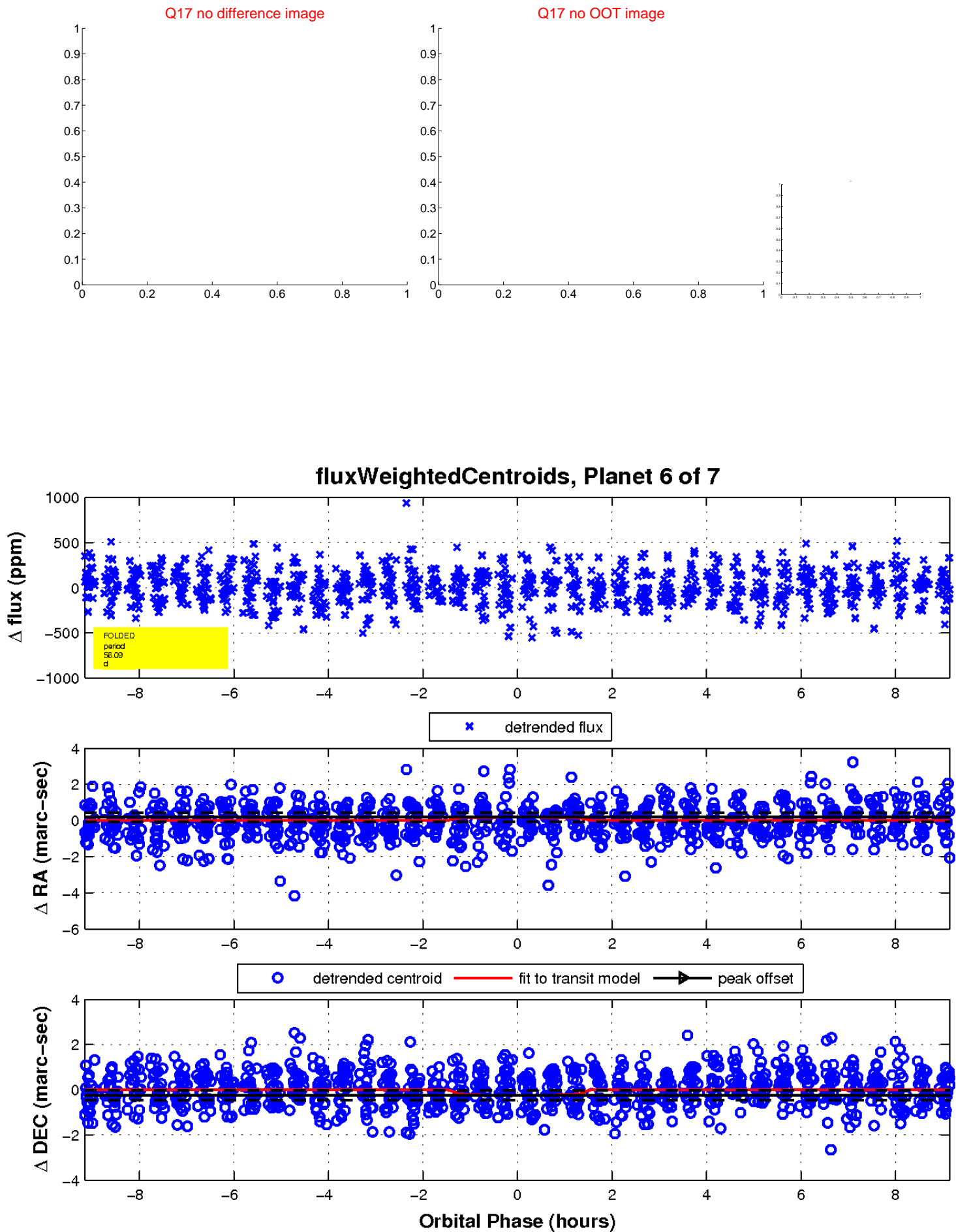
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

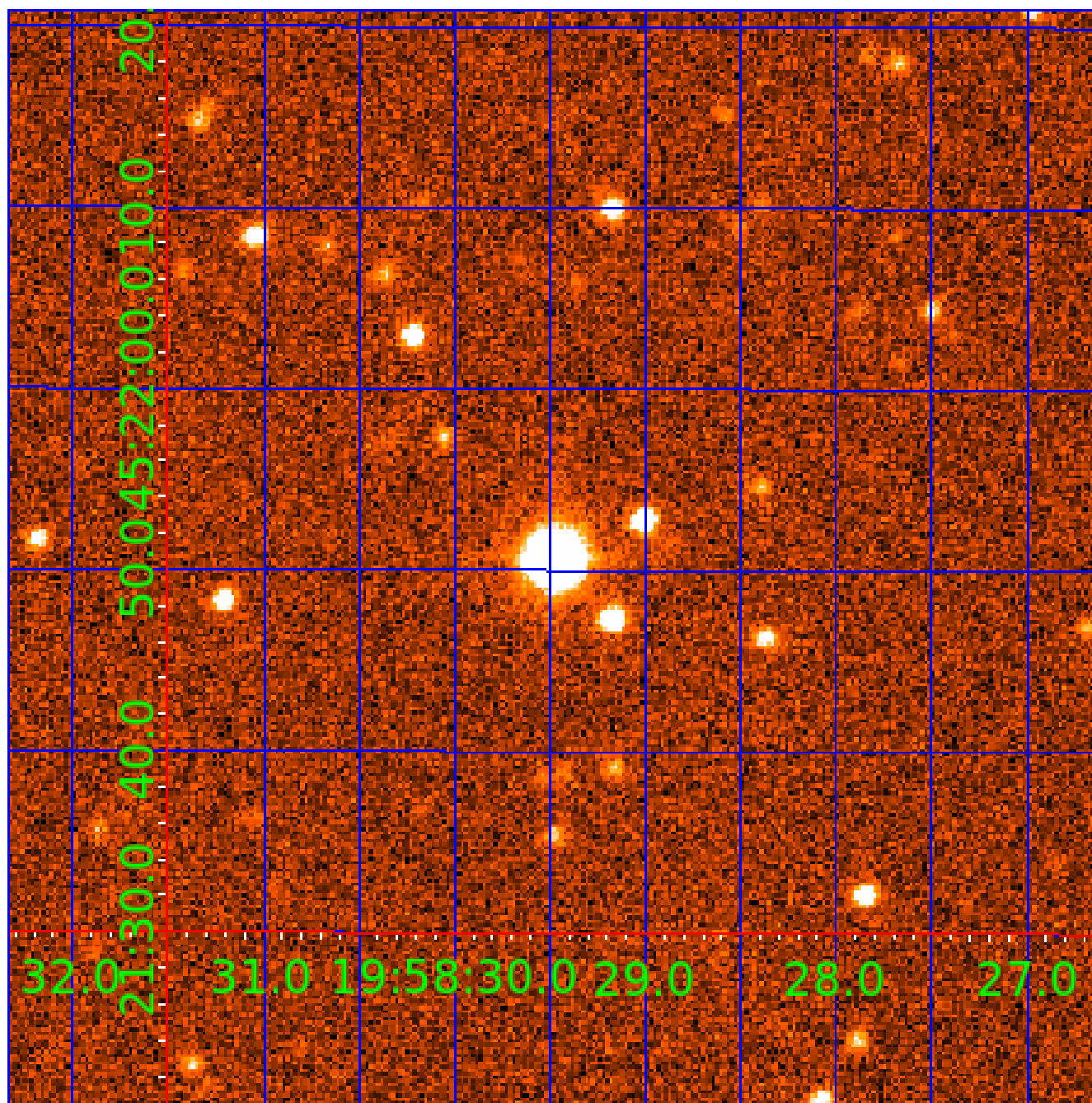


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009049010

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})
009049010-01	OBS	No	3.681208	131.599453	78.9	9.713	11.6	13.8	2.80	6240	4.75	3945.13
009049010-02	OBS	No	402.794548	519.462978	581.4	9.959	15.5	9.6	2.80	6240	9.04	7.54
009049010-03	OBS	7127.01	0.686951	131.890601	10.5	4.155	11.0	3.7	2.80	6240	0.98	36995.38
009049010-06	OBS	No	56.090536	143.269295	286.2	3.051	9.0	6.8	2.80	6240	5.49	104.44
009049010-07	OBS	No	46.230249	156.956499	227.6	1.927	7.4	6.2	2.80	6240	4.86	135.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009049010-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009049010-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009049010-03	OBS	FP	0.00	1	0	0	0	LPP_DV
009049010-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009049010-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_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.

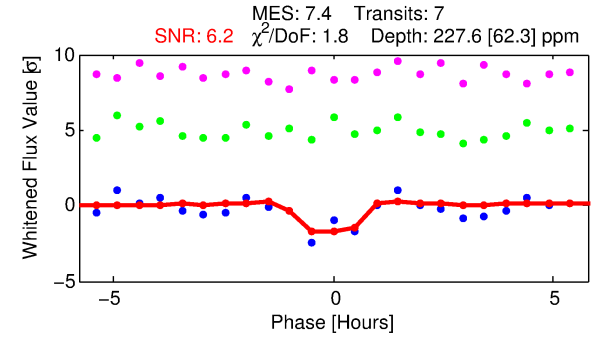
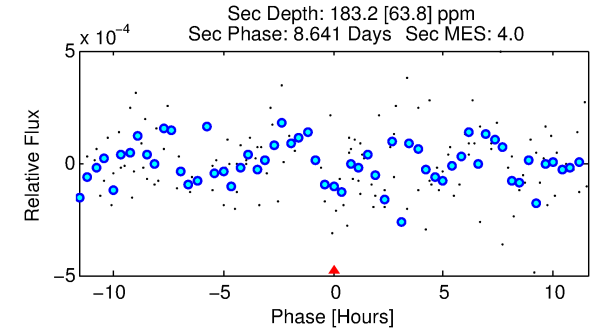
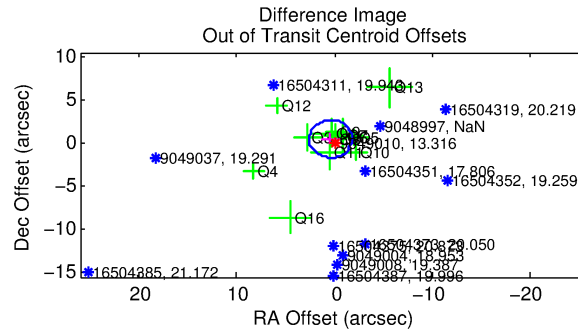
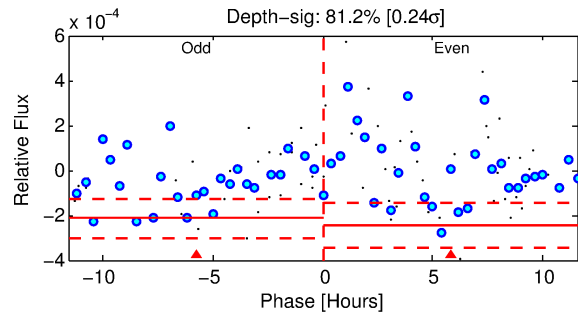
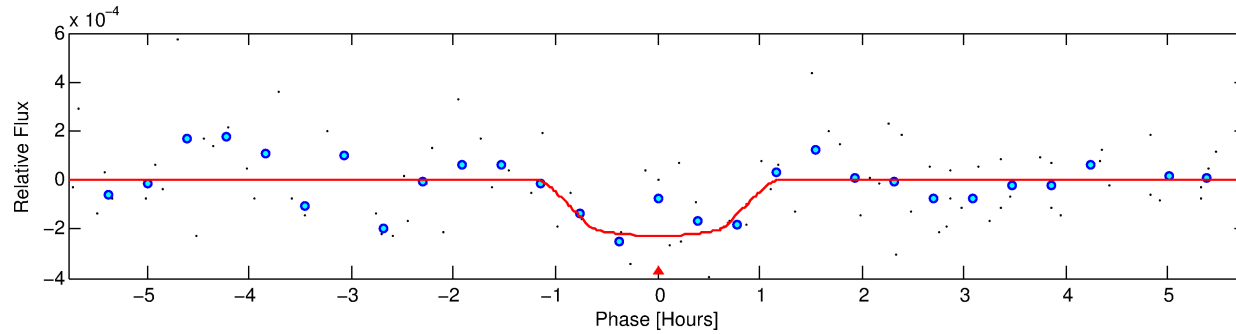
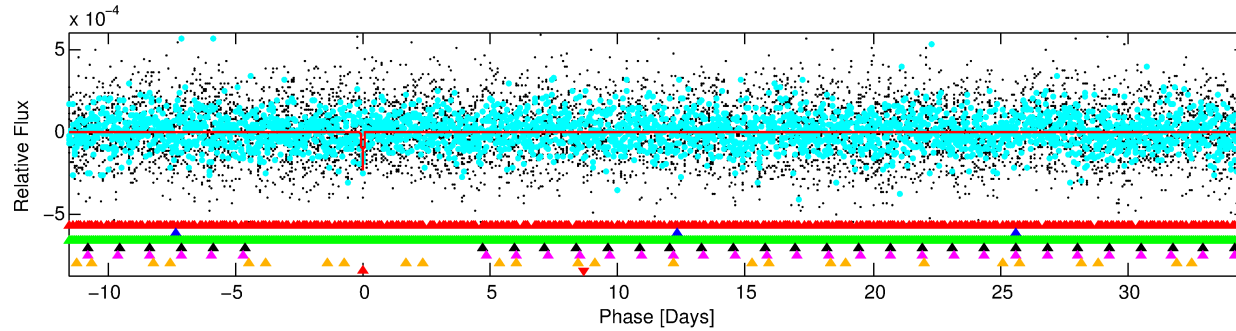
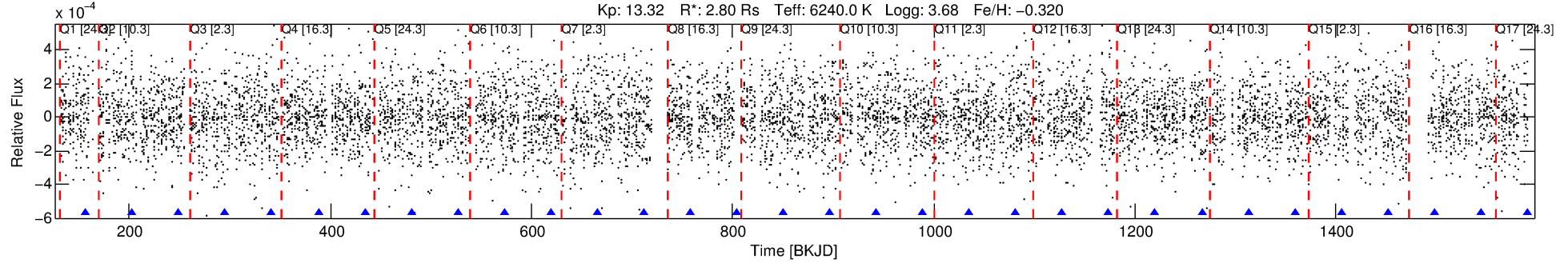
Ephemeris Match Information For 009049010-07

No Significant Match Found

DV One-Page Summary

KIC: 9049010 Candidate: 7 of 7 Period: 46.230 d
KOI: K07127 Corr: No Ephemeris Match

Kp: 13.32 R*: 2.80 Rs Teff: 6240.0 K Logg: 3.68 Fe/H: -0.320



DV Fit Results:

Period = 46.23025 [0.00073] d
Epoch = 156.9565 [0.0122] BKJD
Rp/R* = 0.0159 [0.0336]
a/R* = 95.44 [1097.06]
b = 0.87 [3.21]
Seff = 135.15 [141.73]
Teq = 869 [228] K
Rp = 4.86 [10.66] Re
a = 0.2810 [0.1737] AU
Ag = 336.91 [1472.13] [0.23σ]
Teffp = 5759 [6113] K [0.80σ]

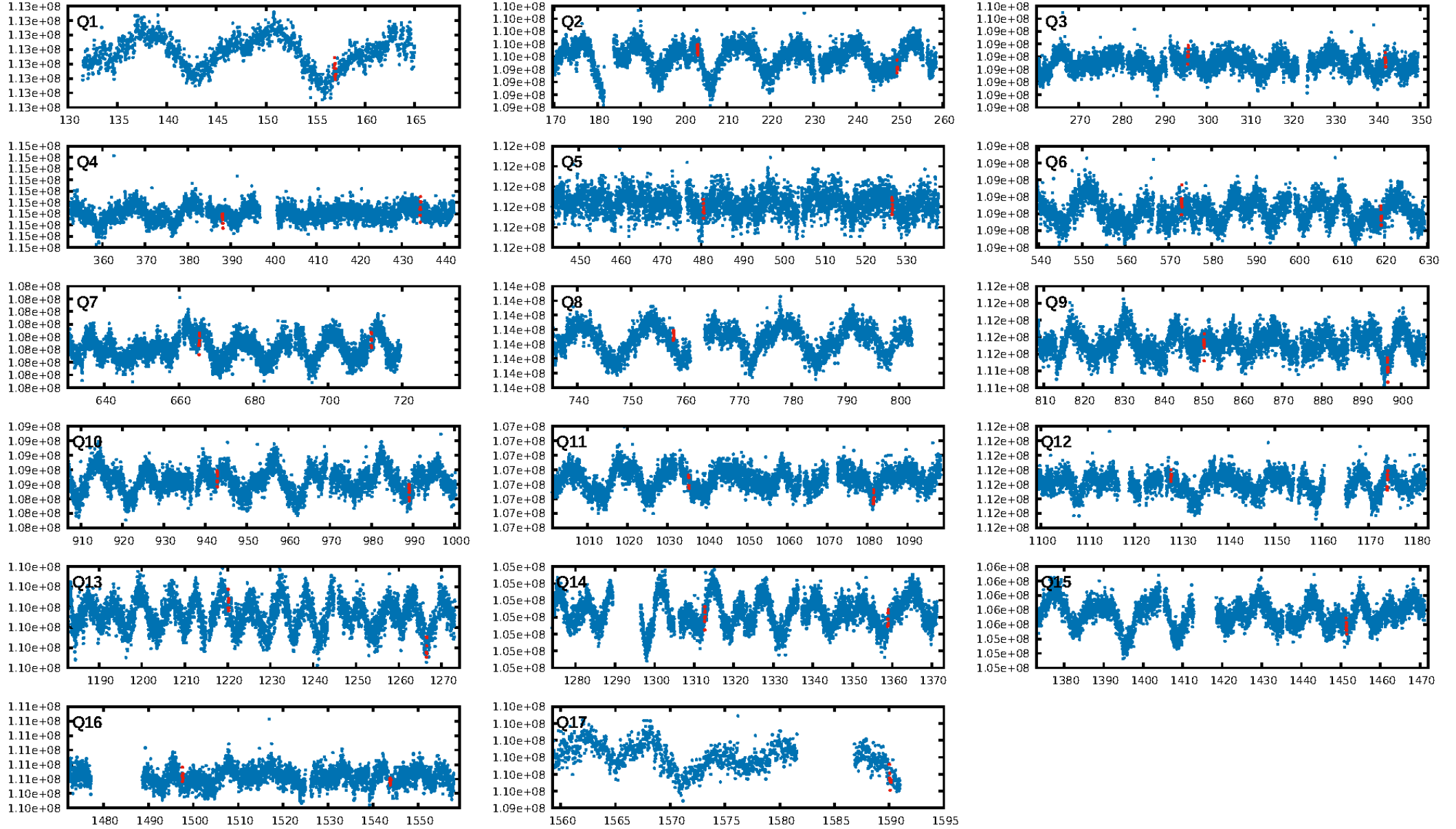
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [103.12σ]
LongPeriod-sig: 71.1% [1.06σ]
ModelChiSquare2-sig: 11.6%
ModelChiSquareGof-sig: 93.2%
Bootstrap-pfa: 1.67e-08
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.387
Centroid-sig: 1.9%
Centroid-so: 1.692 arcsec [1.67σ]
OotOffset-rm: 0.631 arcsec [0.87σ]
KicOffset-rm: 0.673 arcsec [0.92σ]
OotOffset-st: 2/3/4/4 [13]
KicOffset-st: 2/3/4/4 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 0.00 [0/17]

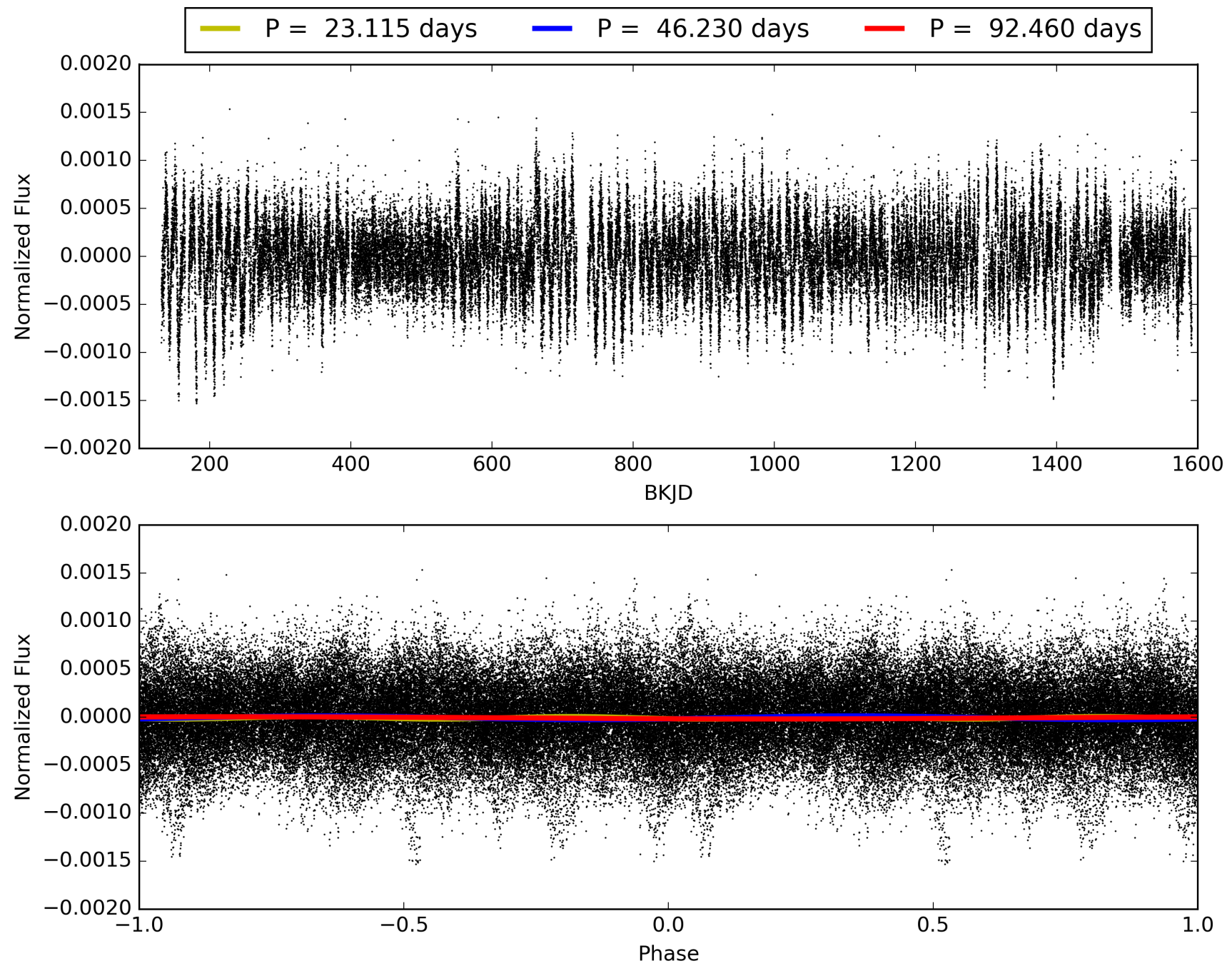
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:55:57 Z

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

TCE 009049010-07, PDC Light Curves

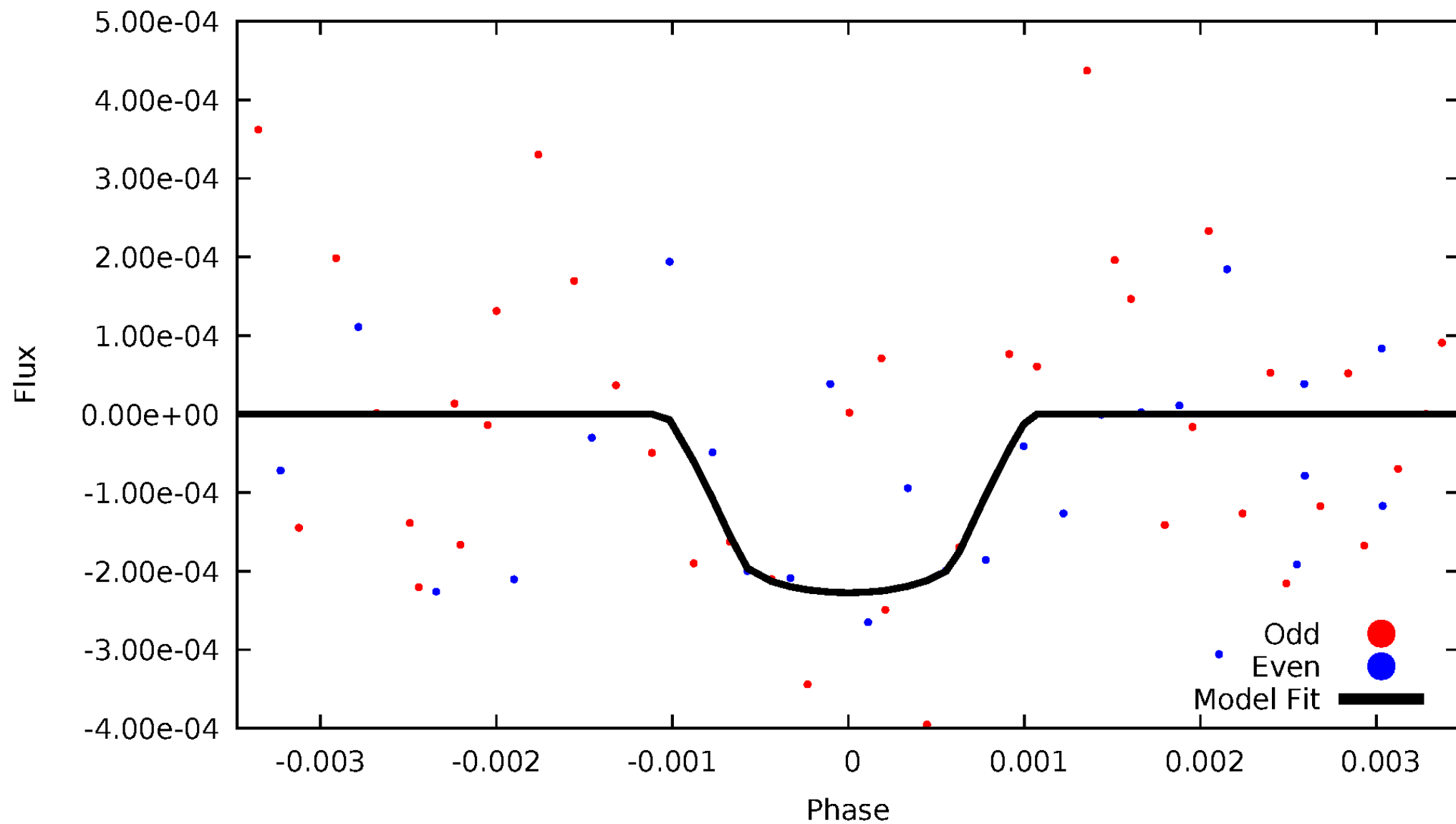


TCE 009049010-07



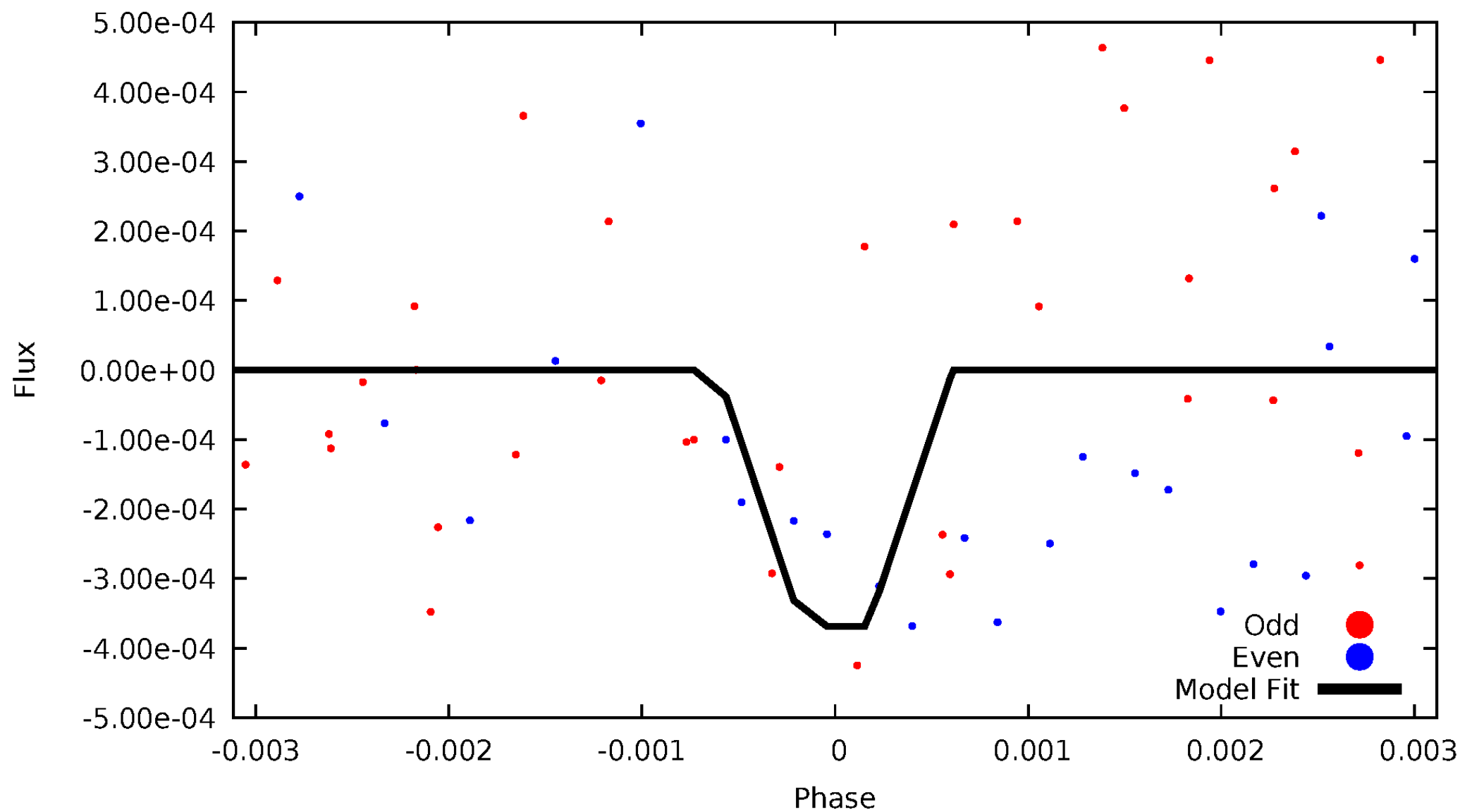
DV Odd/Even

TCE 009049010-07



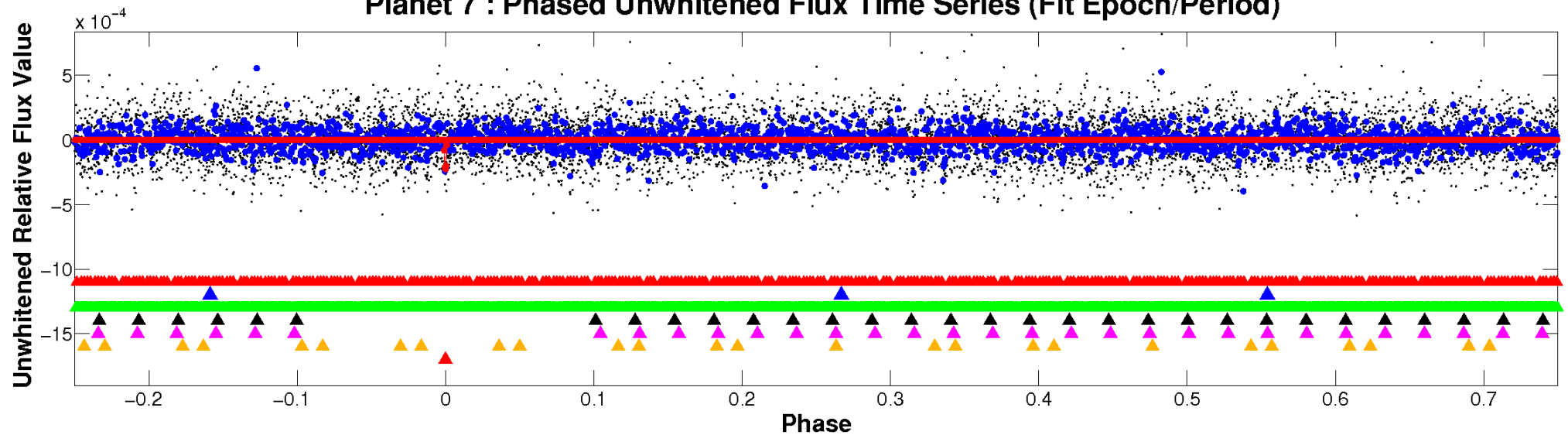
ALT Odd/Even

TCE 009049010-07

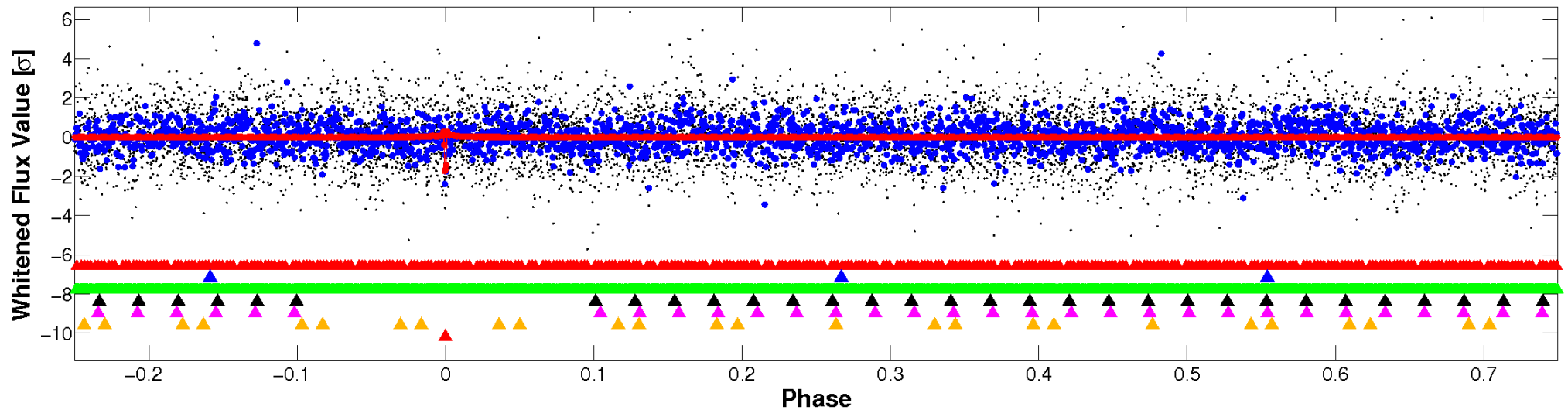


Non-Whitened Vs. Whitened Light Curve

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

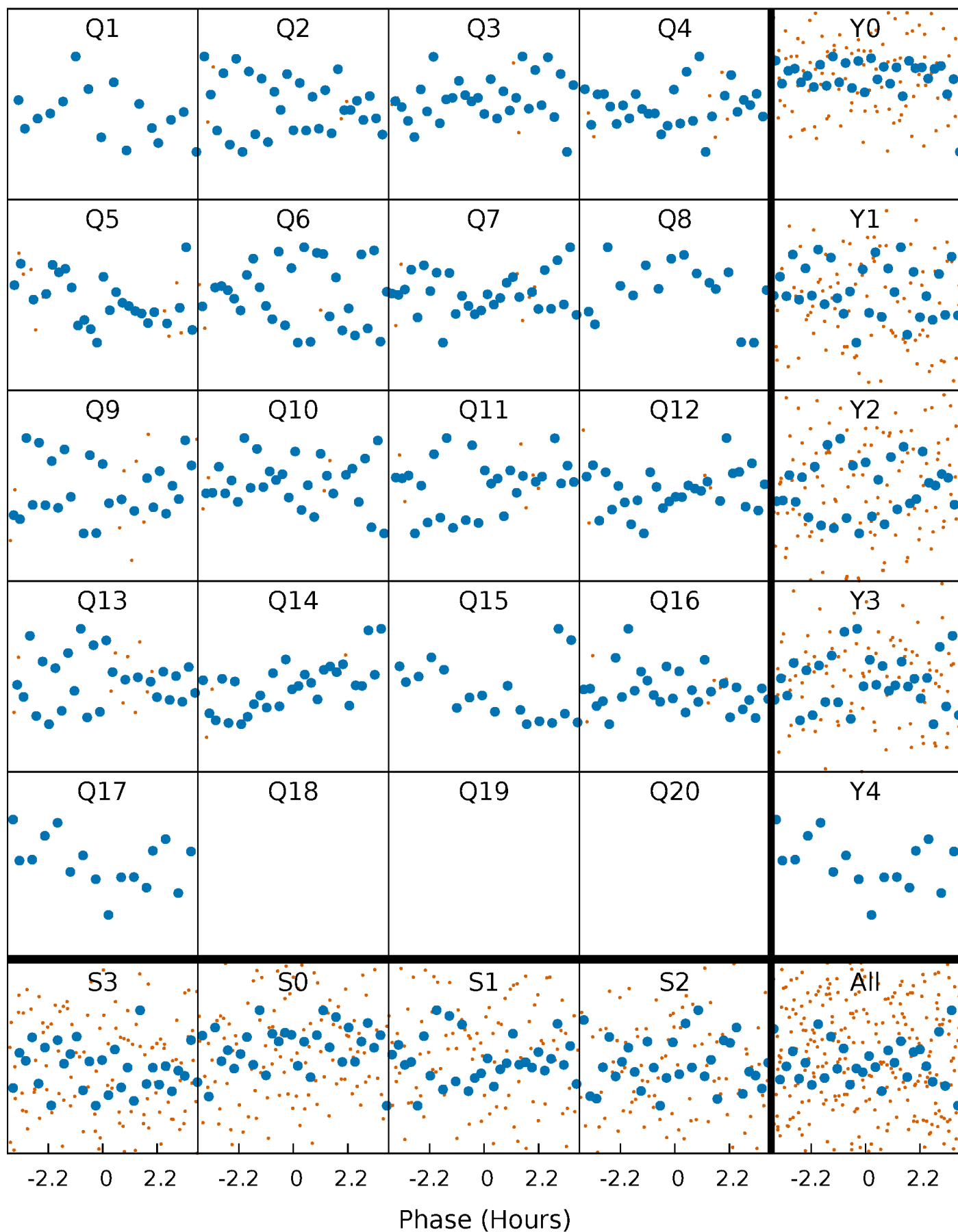


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



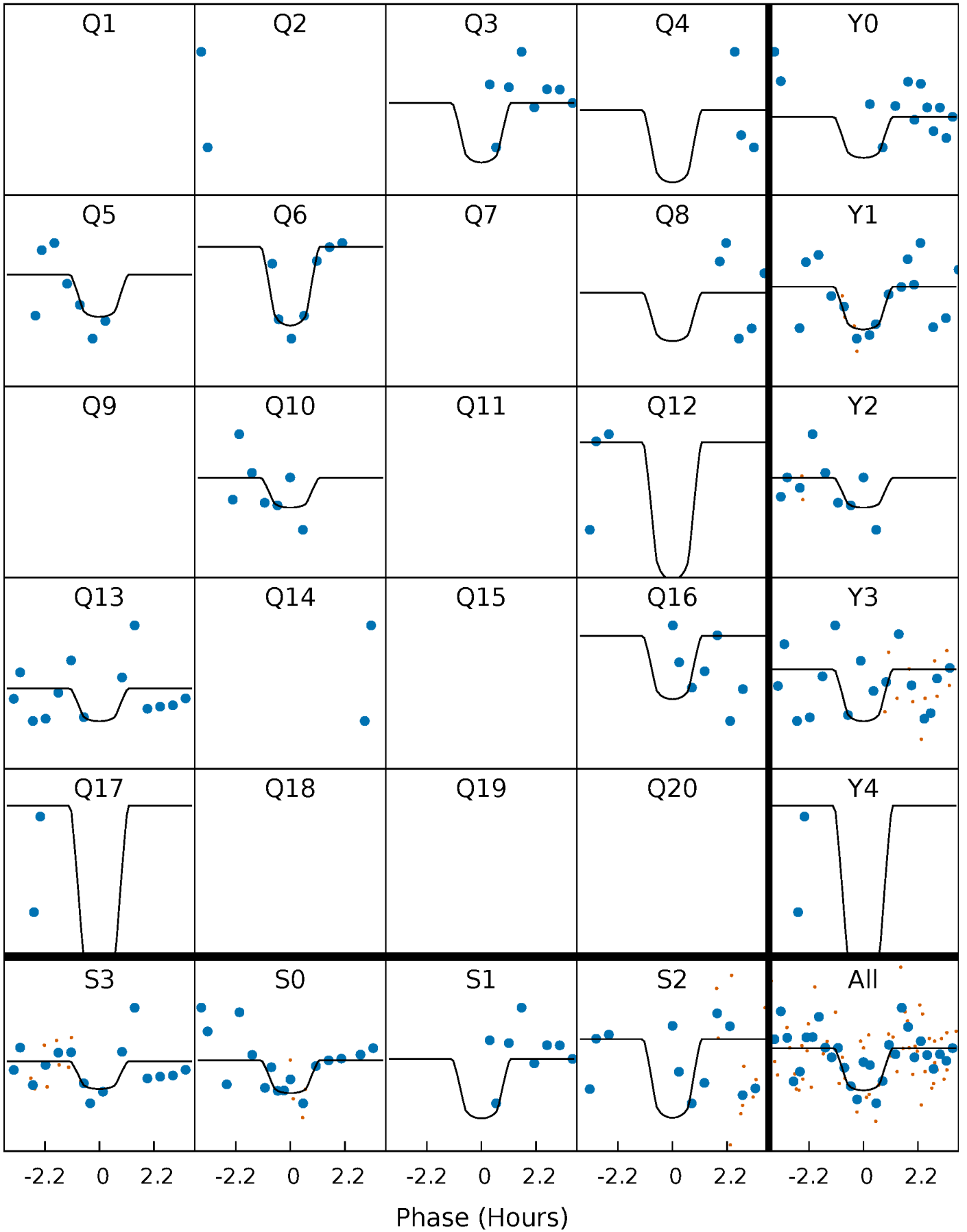
PDC Quarter-Phased Transit Curves

TCE 009049010-07 $P = 46.230249$ Days $T_0 = 156.956499$ (BKJD)



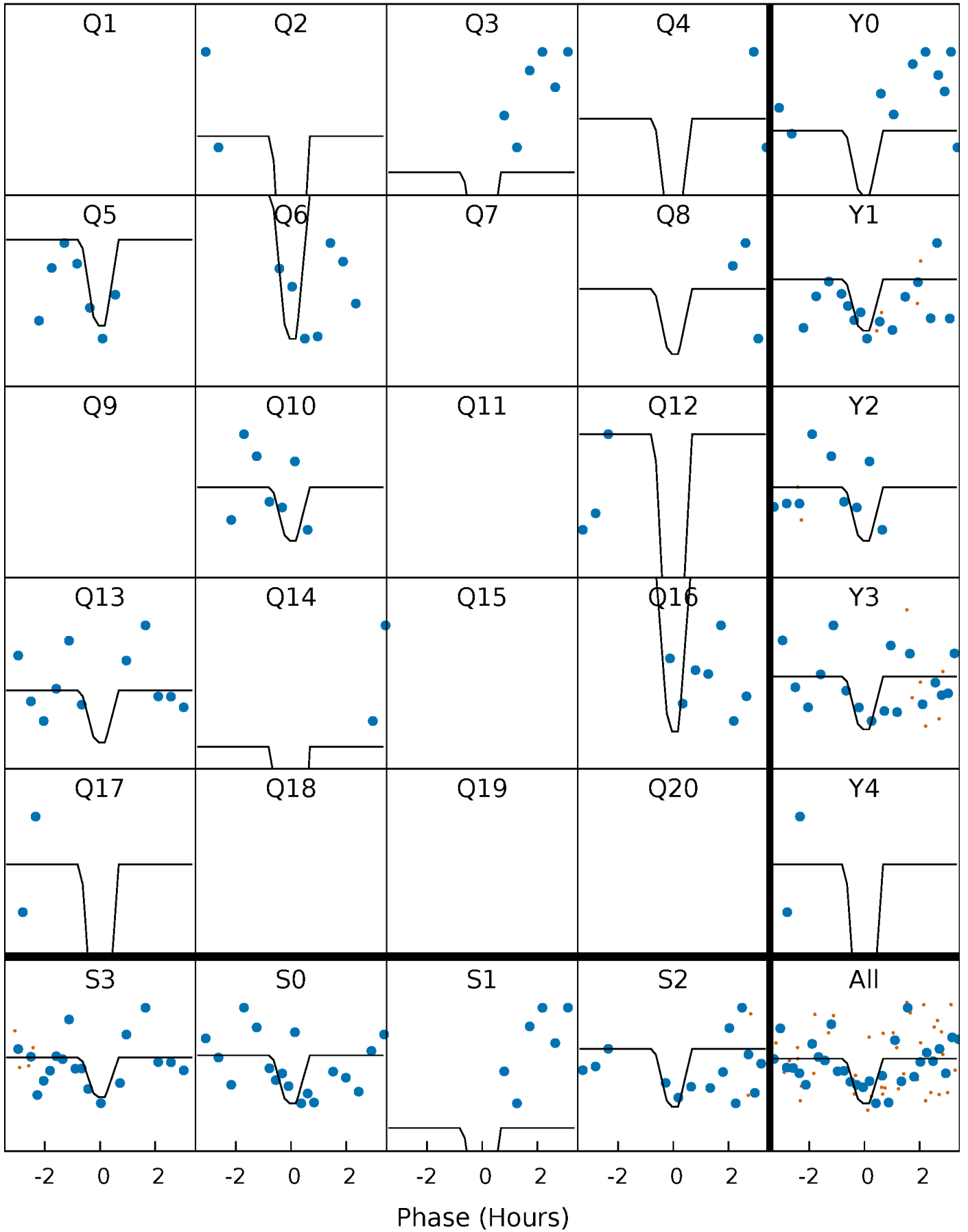
DV Quarter-Phased Transit Curves

TCE 009049010-07 $P = 46.230249$ Days $T_0 = 156.956499$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

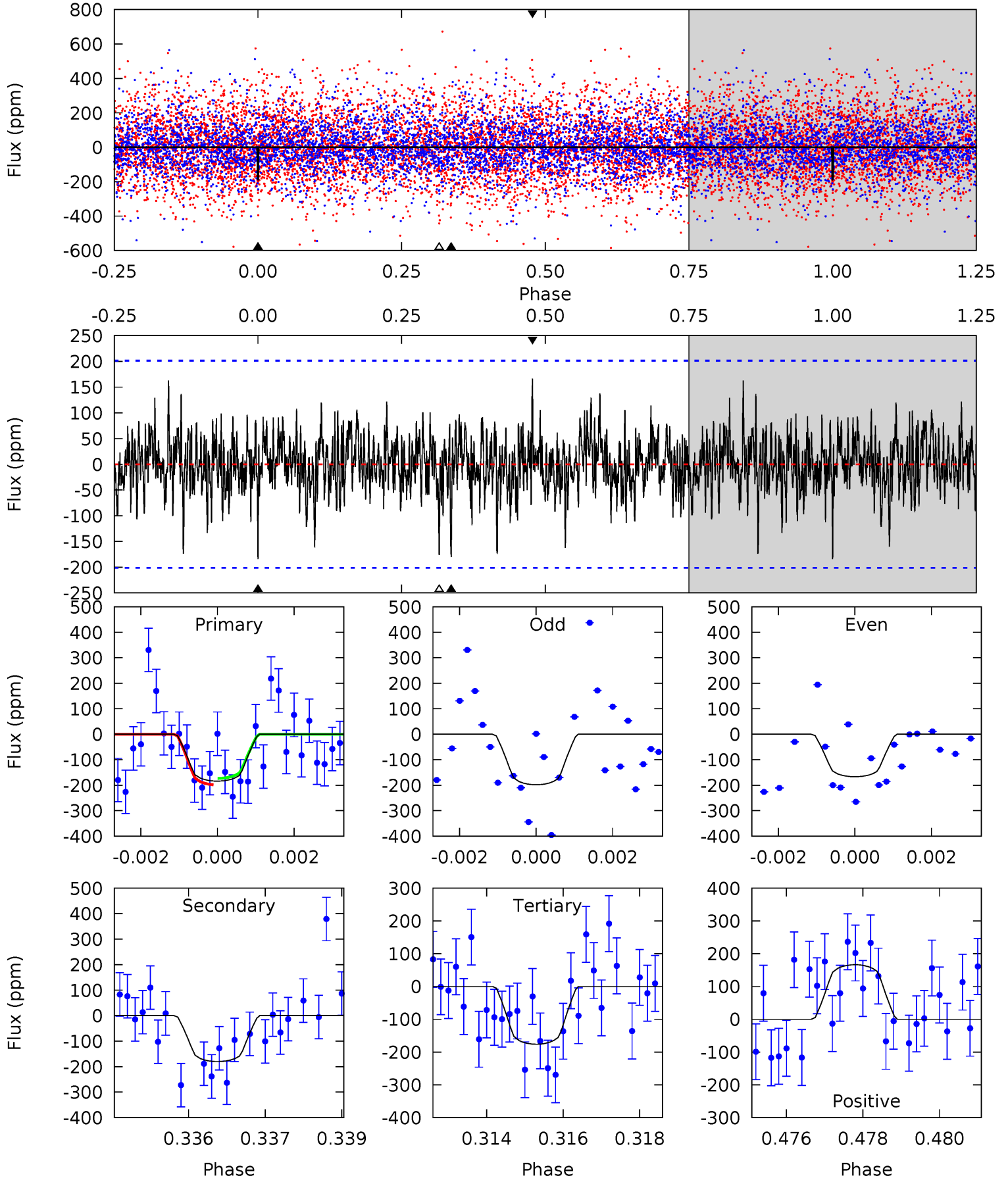
TCE 009049010-07 $P = 46.231166$ Days $T_0 = 156.934066$ (BKJD)



DV Model-Shift Uniqueness Test

009049010-07, P = 46.230249 Days, E = 110.726250 Days

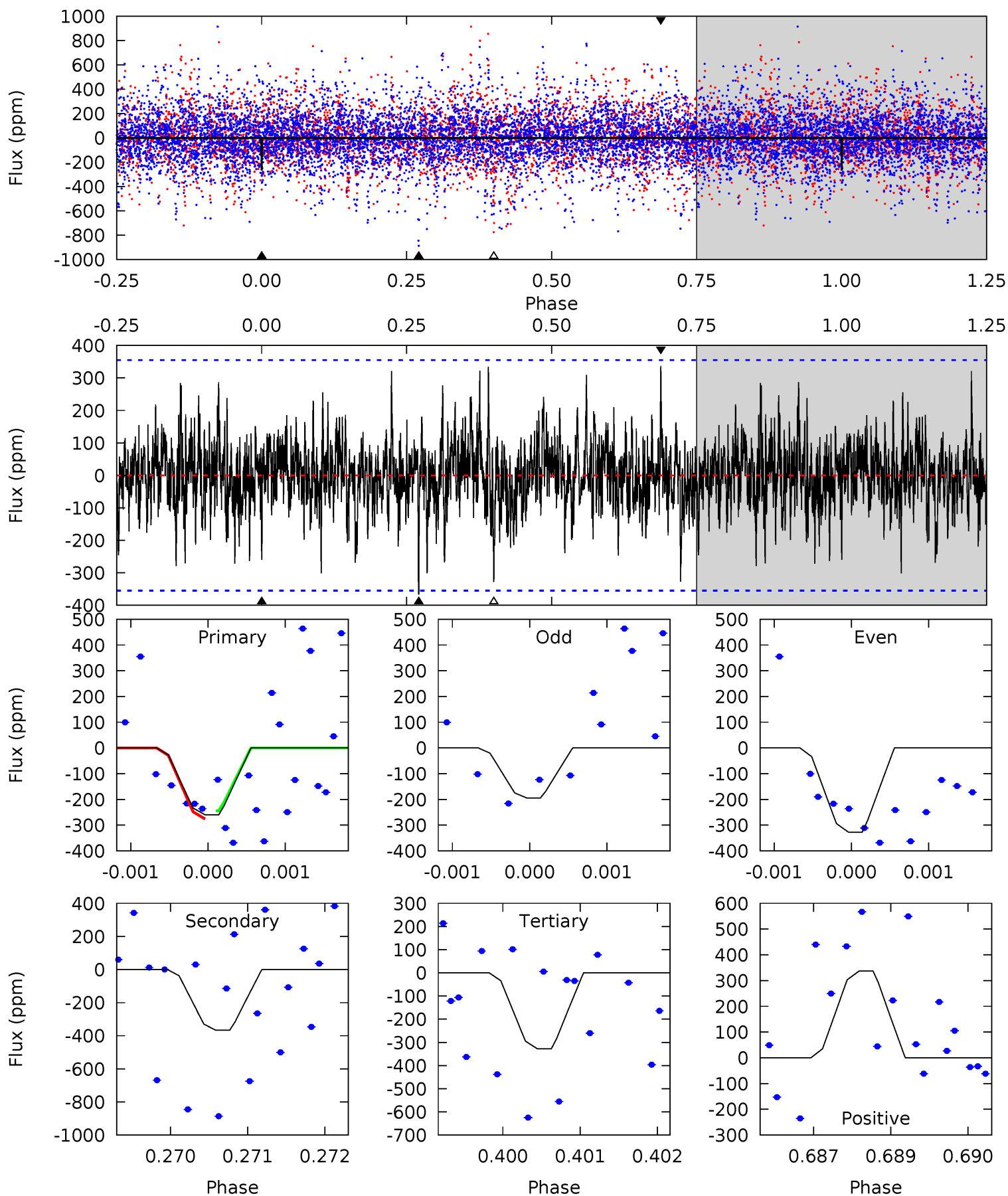
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.88	4.78	4.67	4.41	5.33	3.10	1.23	0.21	0.47	0.10	0.36	0.42	0.80	0.47	0.33



Alt Model-Shift Uniqueness Test

009049010-07, P = 46.231166 Days, E = 110.702900 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.98	5.62	5.03	5.17	5.43	3.26	1.34	-1.05	-1.19	0.59	0.45	0.97	0.81	0.48	0.24



Stellar Parameters For KIC 009049010

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6240^{+212}_{-212}	$3.684^{+0.629}_{-0.111}$	$-0.320^{+0.300}_{-0.300}$	$2.803^{+0.541}_{-1.623}$	$1.385^{+0.210}_{-0.420}$	$0.089^{+0.776}_{-0.028}$
	+3%/-3%	+17%/-3%	+94%/-94%	+19%/-58%	+15%/-30%	+876%/-32%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009049010-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-180 ± 38	$8.17^{+7.57}_{-5.50}$	1170^{+98}_{-173}	4323^{+2533}_{-817}	118^{+885}_{-86}
Alt.	-367 ± 65	$8.00^{+8.91}_{-5.38}$	1172^{+92}_{-177}	4999^{+4174}_{-1170}	252^{+2113}_{-199}

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 $A_{obs} \gg 1.0$

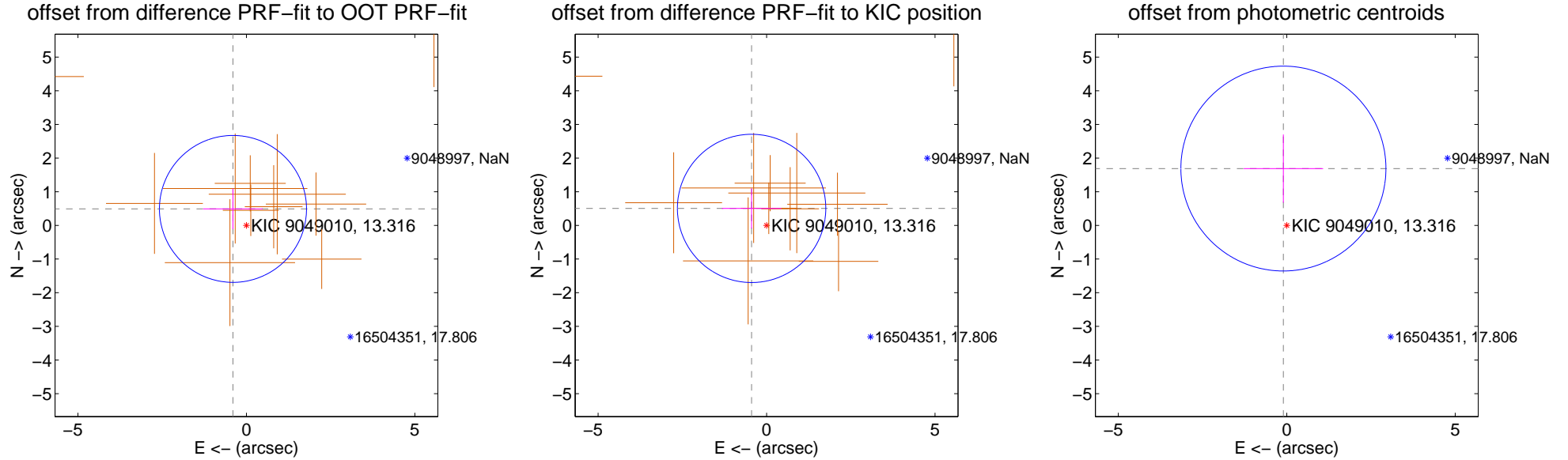
DV Centroid Data

Supplemental centroid analysis for 009049010-07. Kepler magnitude: 13.32. Transit SNR 6.16

There are 0 quarters with good PRF difference image offsets

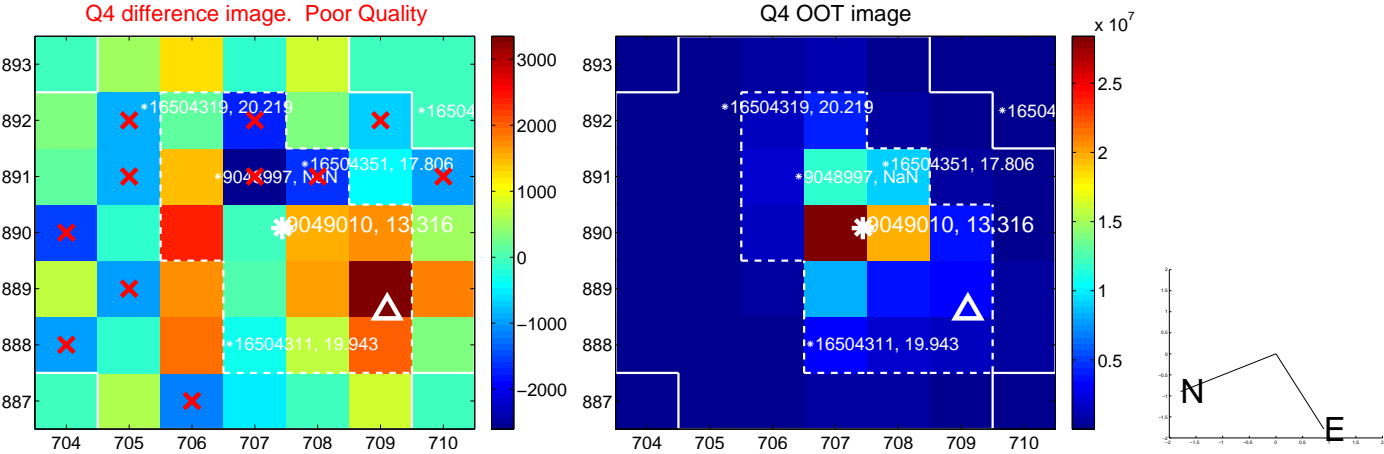
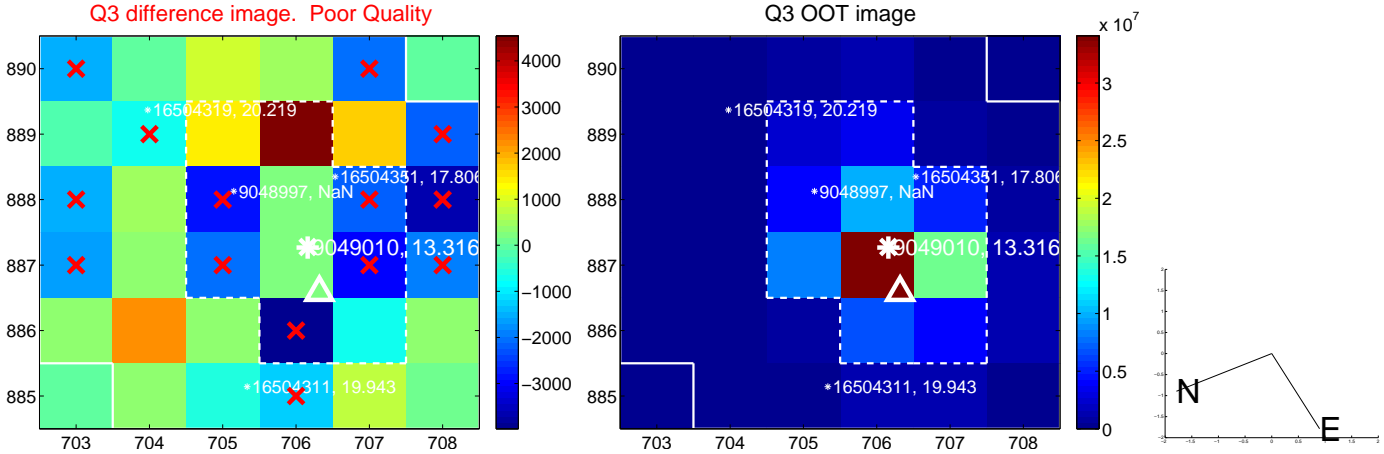
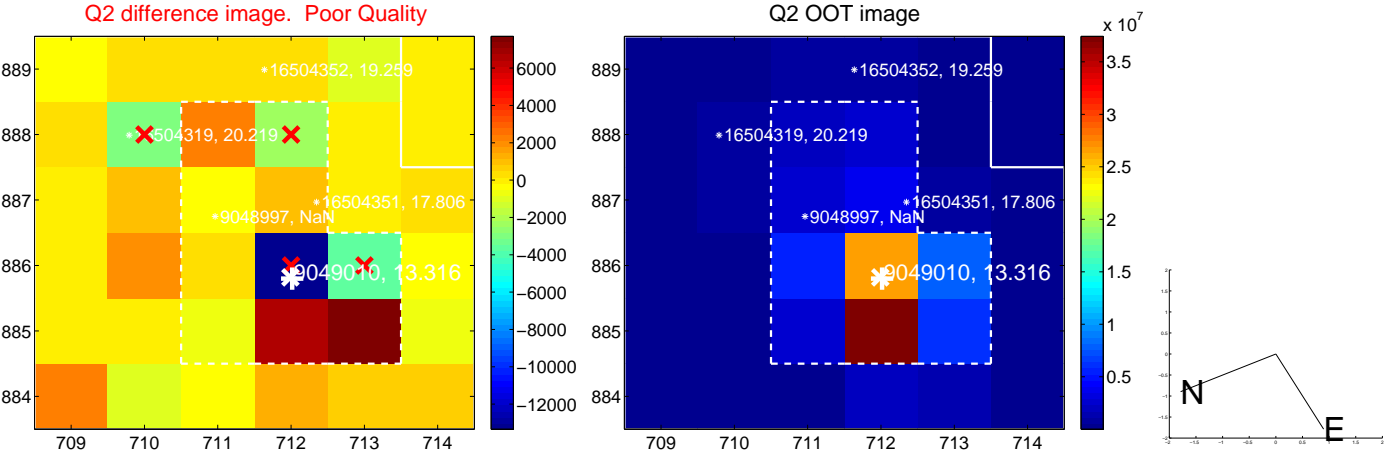
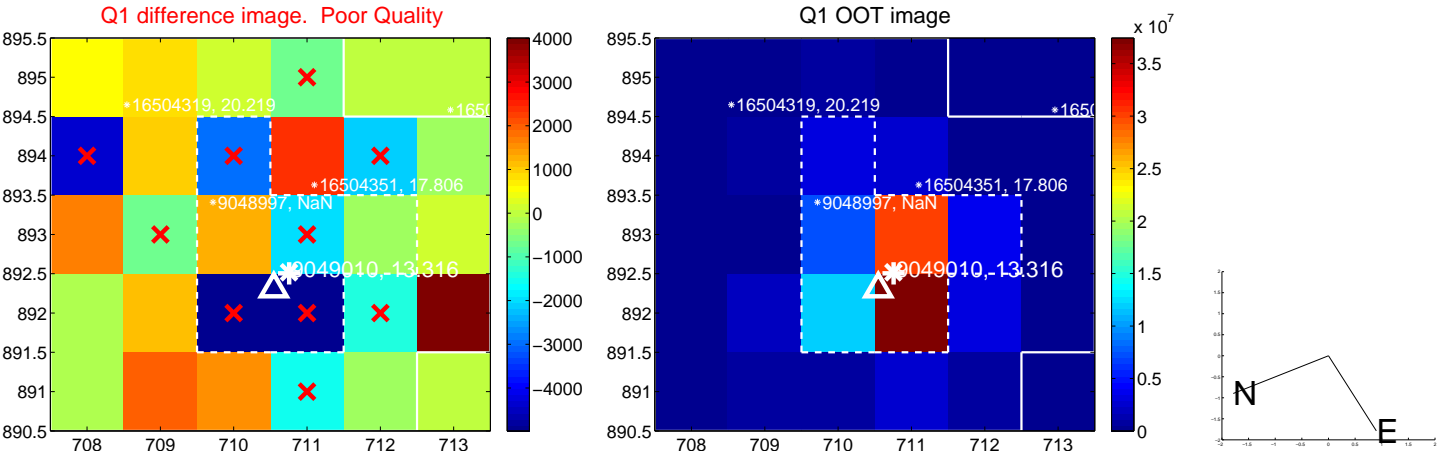
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.631 ± 0.728	0.87	0.398 ± 0.885	0.490 ± 0.601
PRF-fit source offset from KIC position	0.673 ± 0.734	0.92	0.444 ± 0.883	0.505 ± 0.594
photometric centroid source offset	1.69 ± 1.01	1.67	0.10 ± 1.18	1.69 ± 1.01

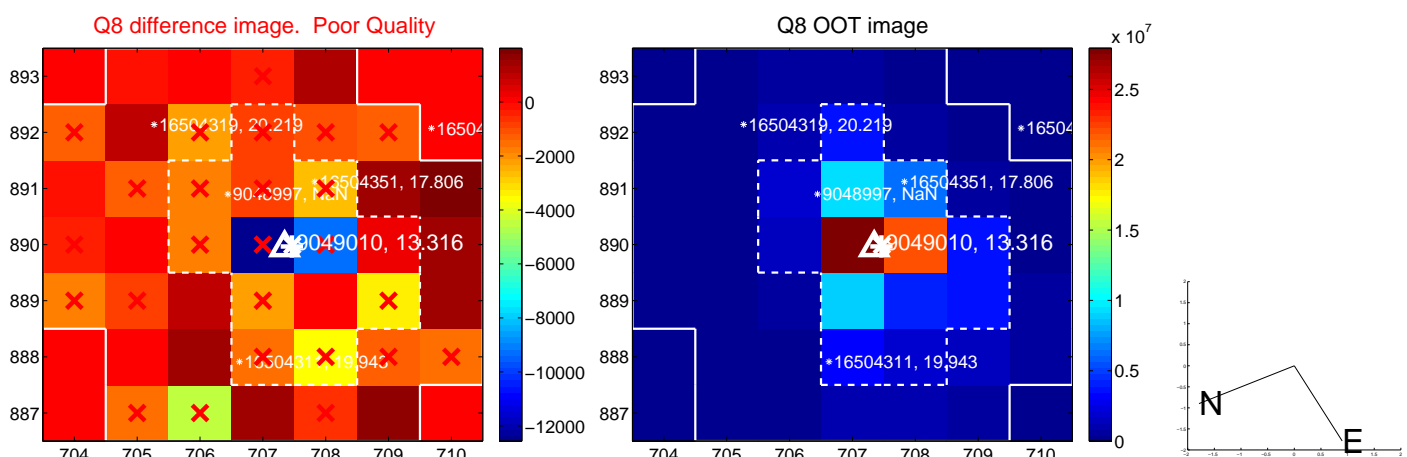
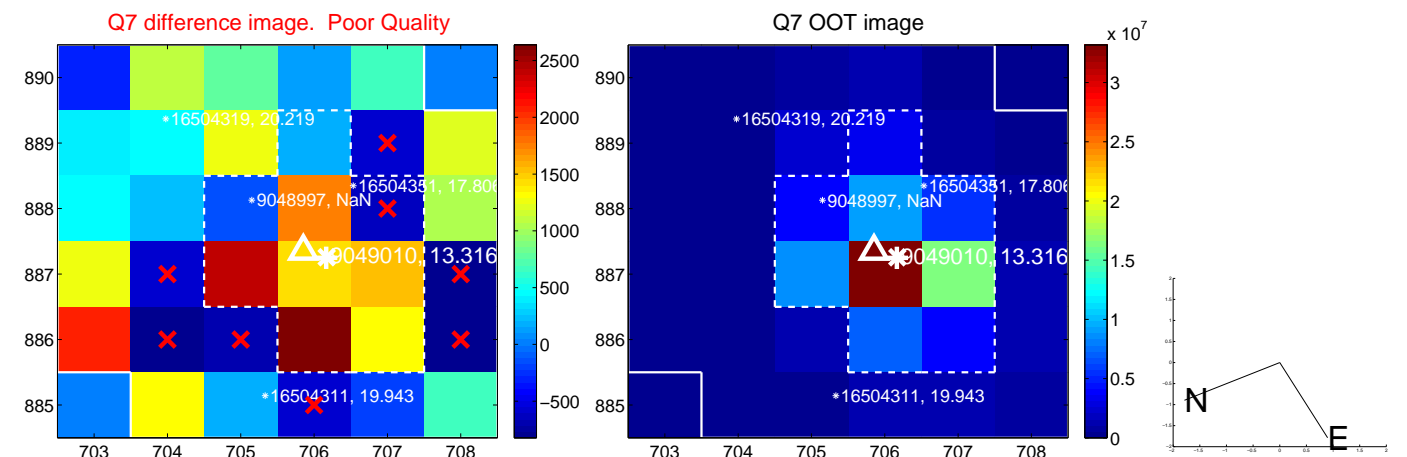
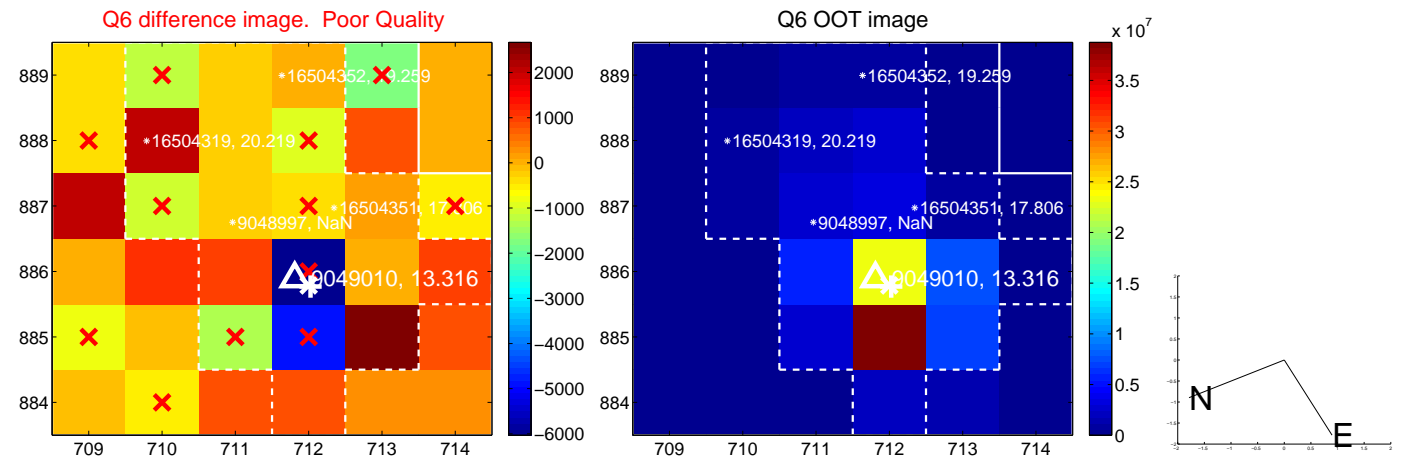
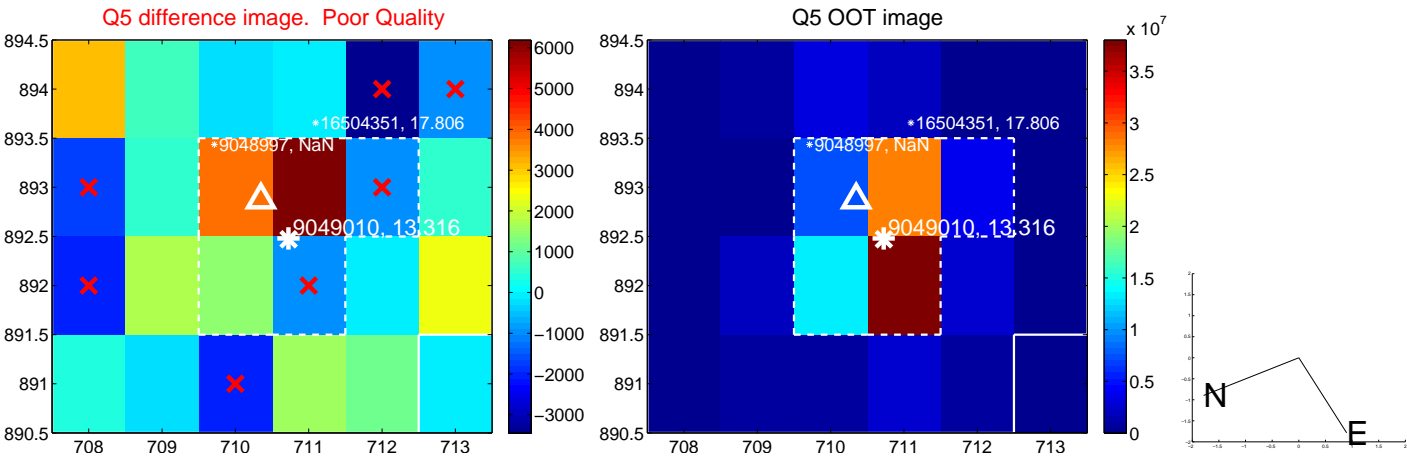


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

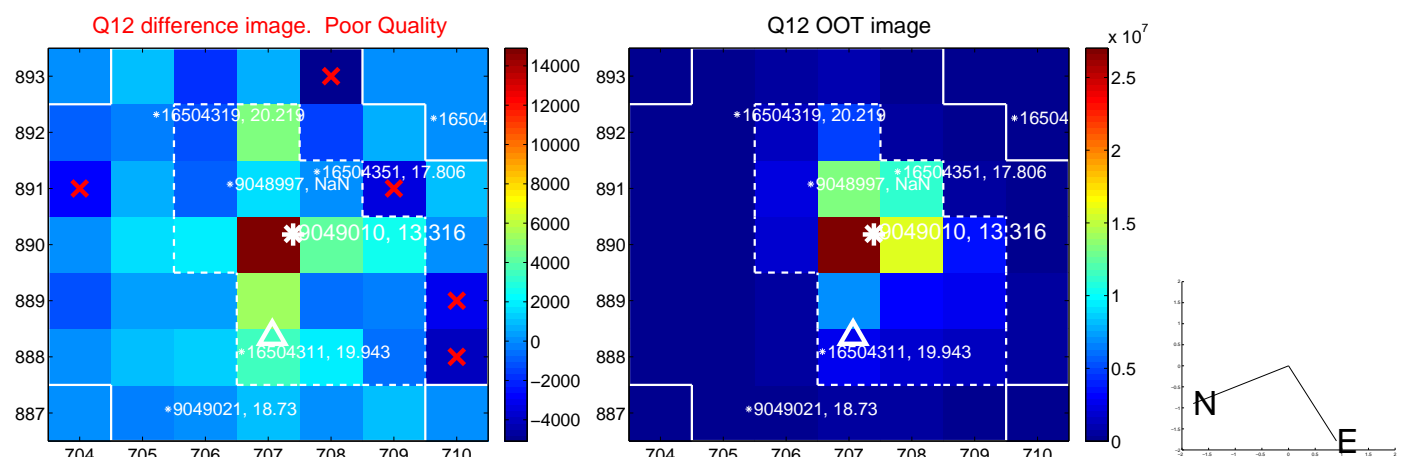
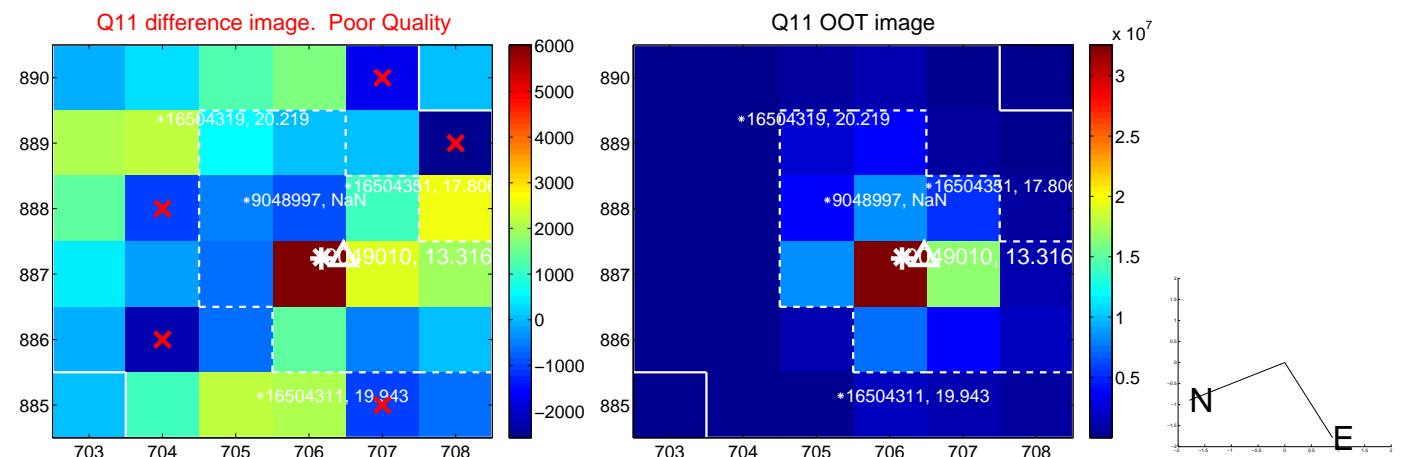
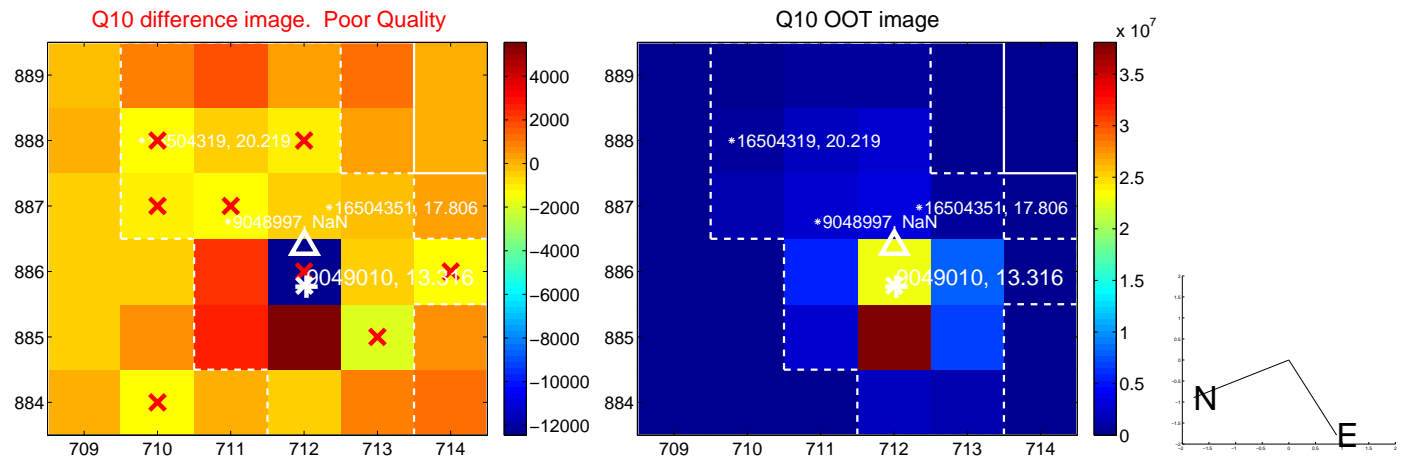
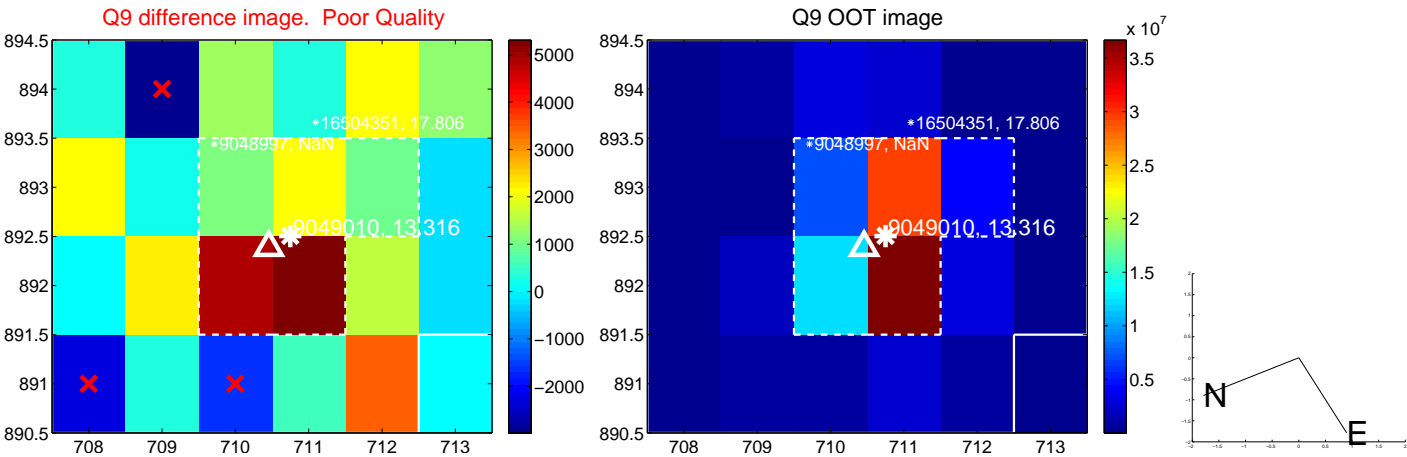
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



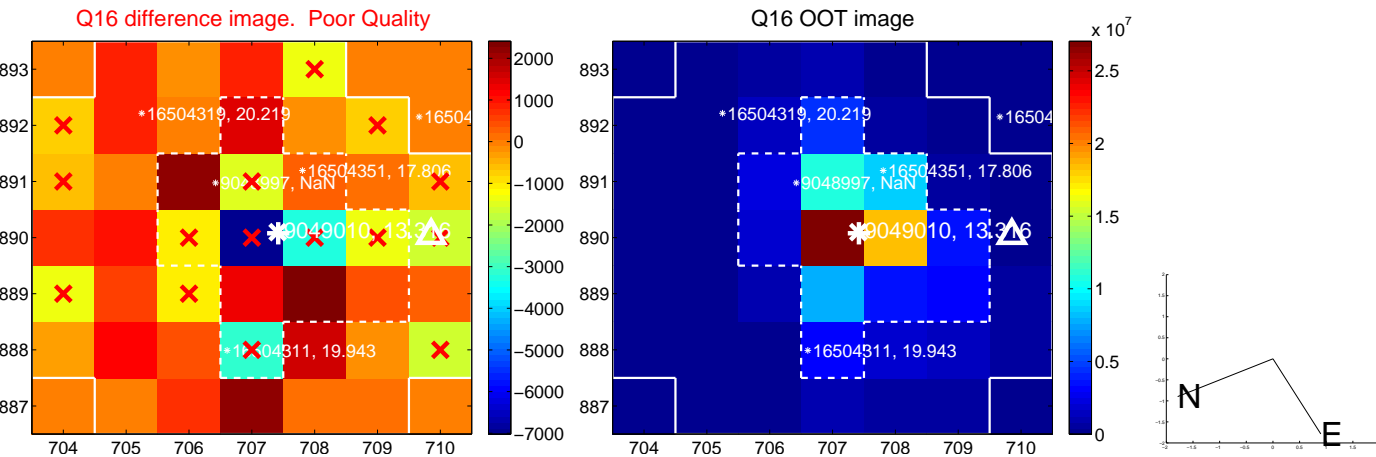
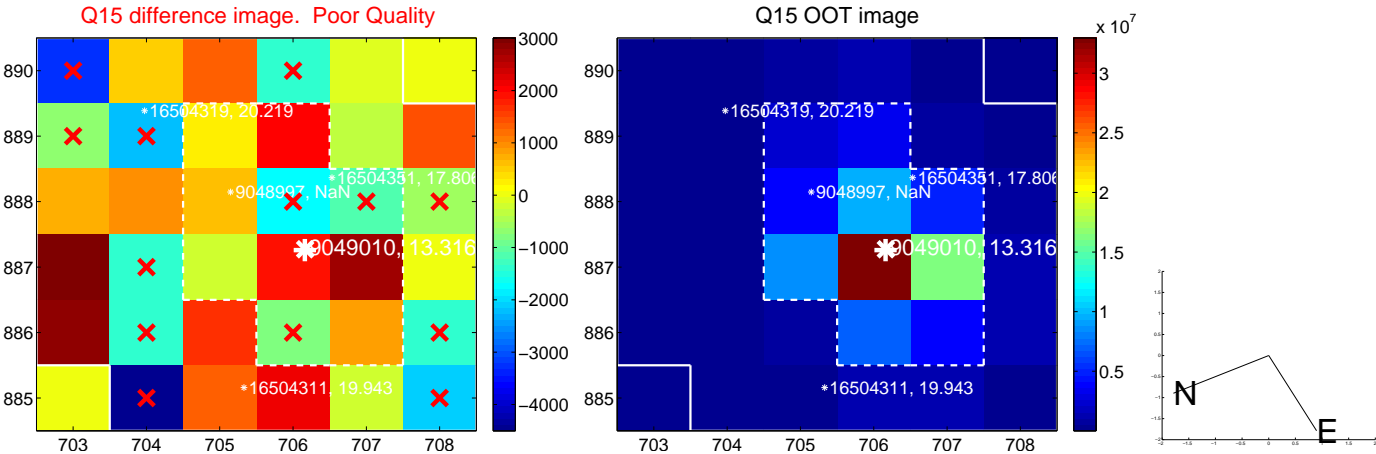
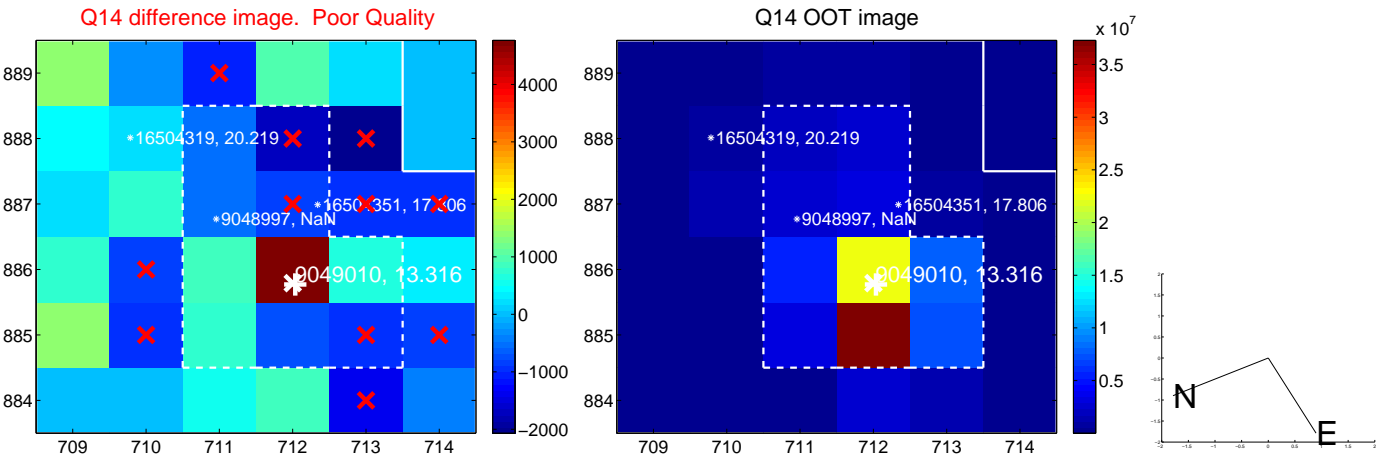
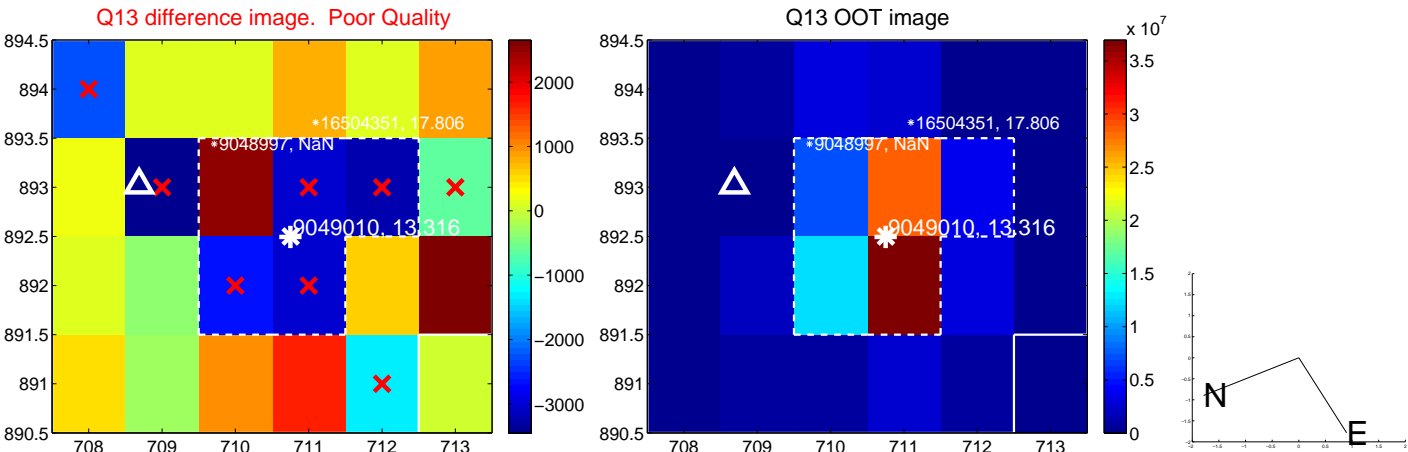
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



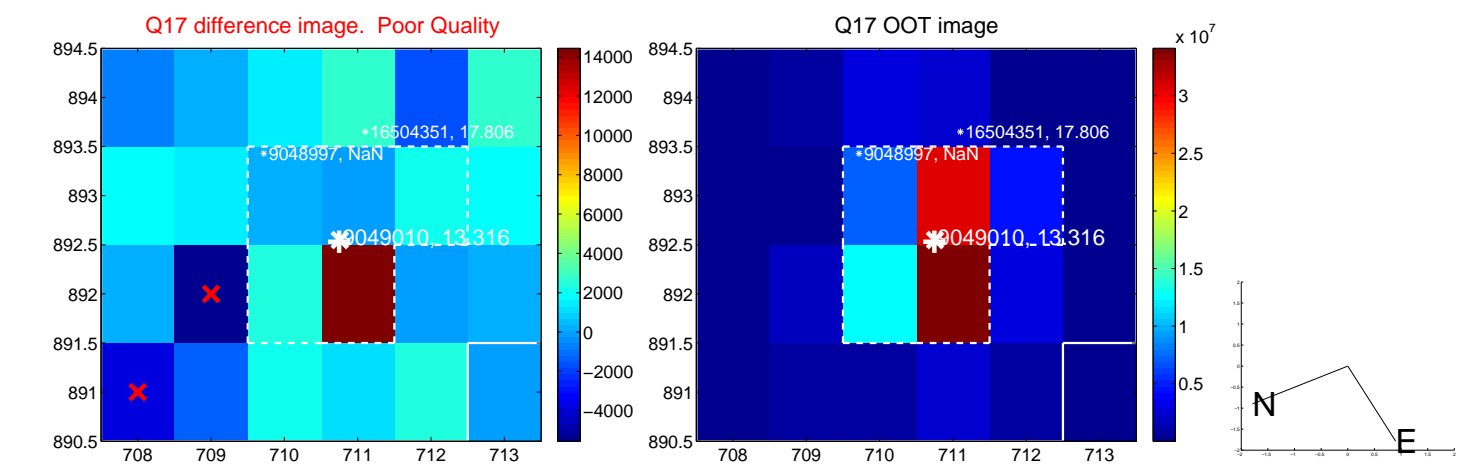
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



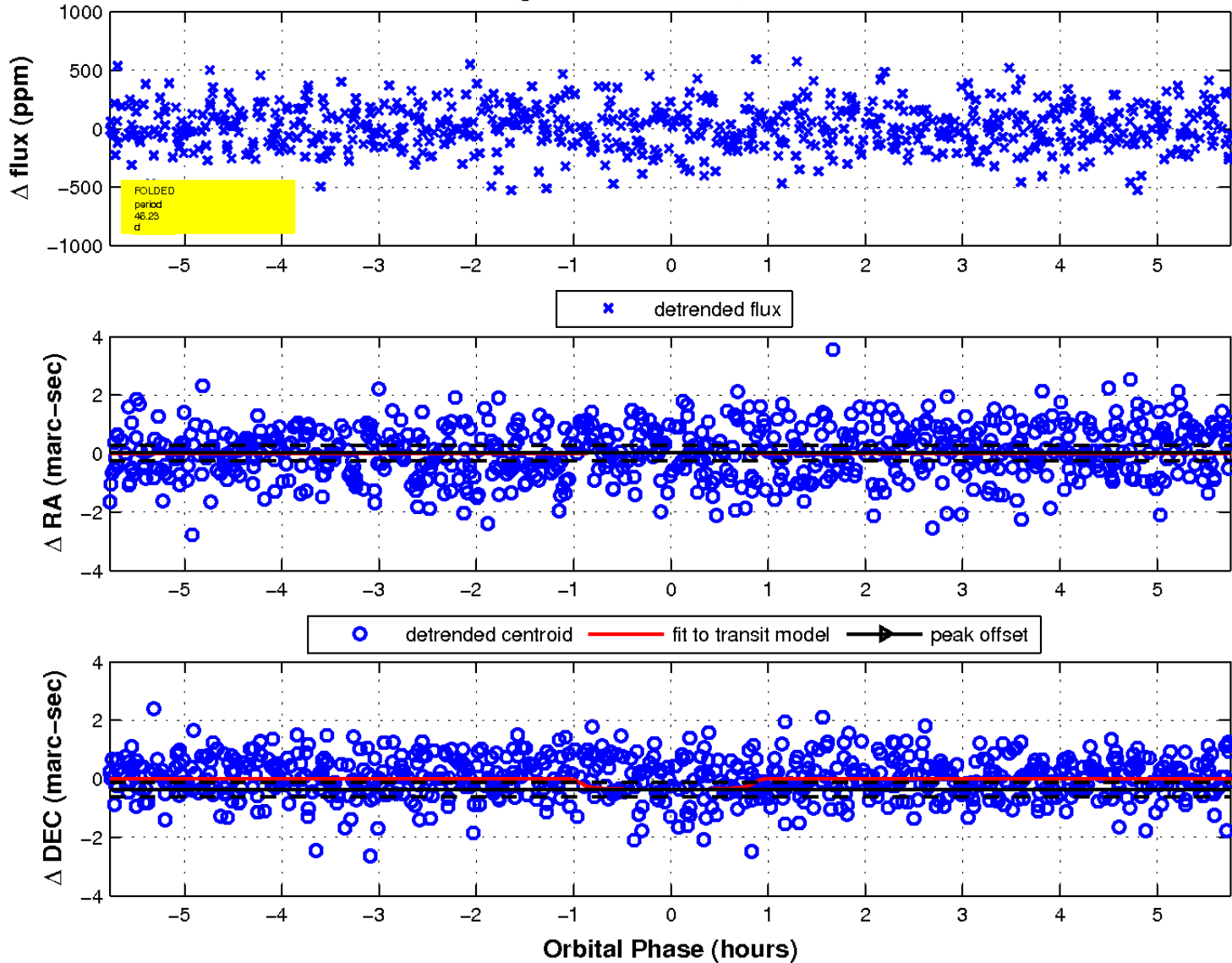
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 7 of 7



UKIRT Image

Declination

