

KIC 008396184

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})
008396184-01	OBS	No	0.656486	131.936895	14.3	4.663	10.1	8.3	4.43	5199	1.80	0.00
008396184-02	OBS	No	31.161776	155.800830	395.5	0.903	11.1	12.0	4.43	5199	10.45	234.07
008396184-03	OBS	No	21.065844	143.782105	315.5	1.046	9.8	11.1	4.43	5199	9.13	394.52
008396184-04	OBS	No	38.259300	136.611763	391.5	1.210	10.6	12.4	4.43	5199	8.91	178.04
008396184-05	OBS	No	92.730065	147.222722	254.1	8.957	9.4	9.3	4.43	5199	7.69	54.69
008396184-06	OBS	No	24.500546	139.857392	327.2	1.180	9.4	9.2	4.43	5199	7.98	322.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008396184-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET
008396184-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008396184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008396184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

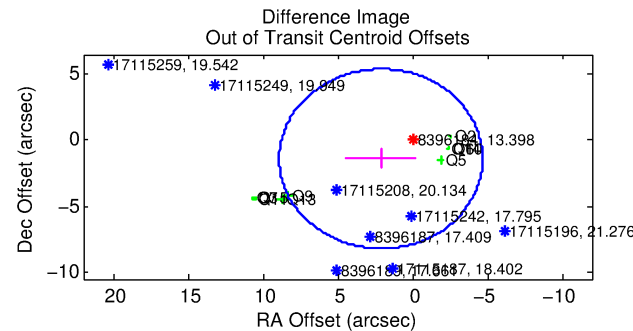
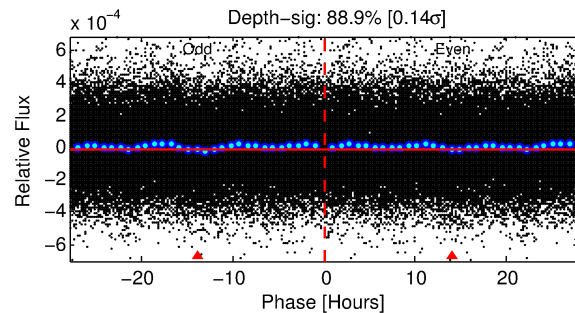
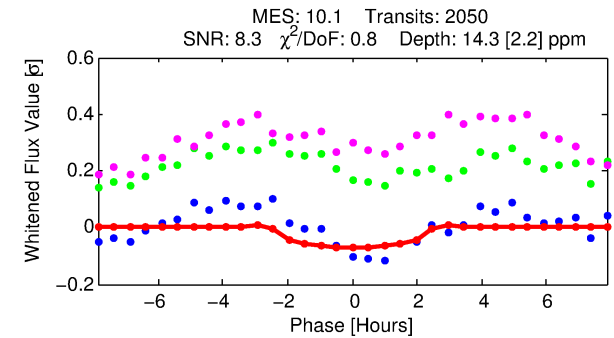
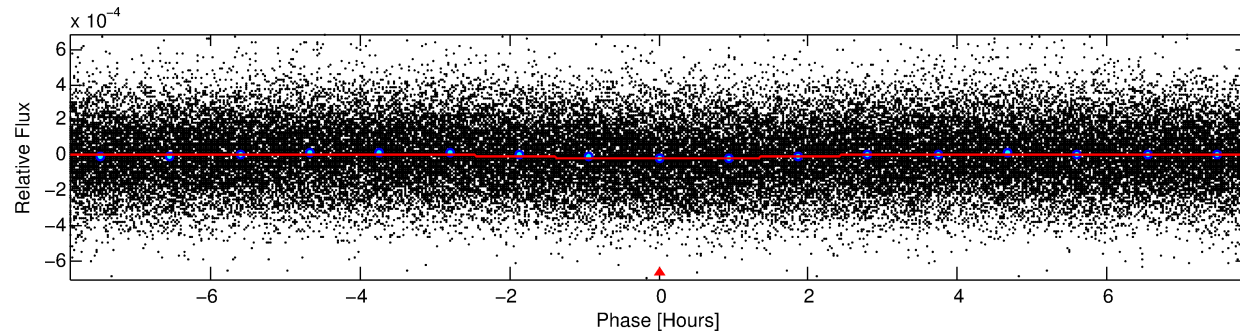
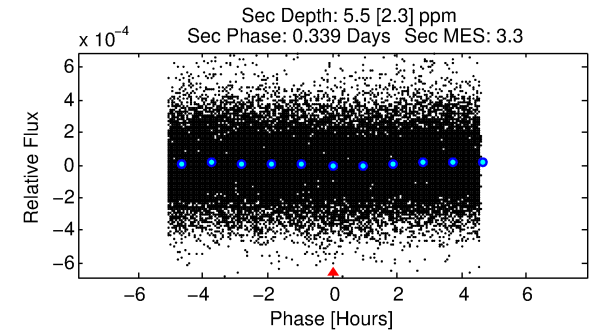
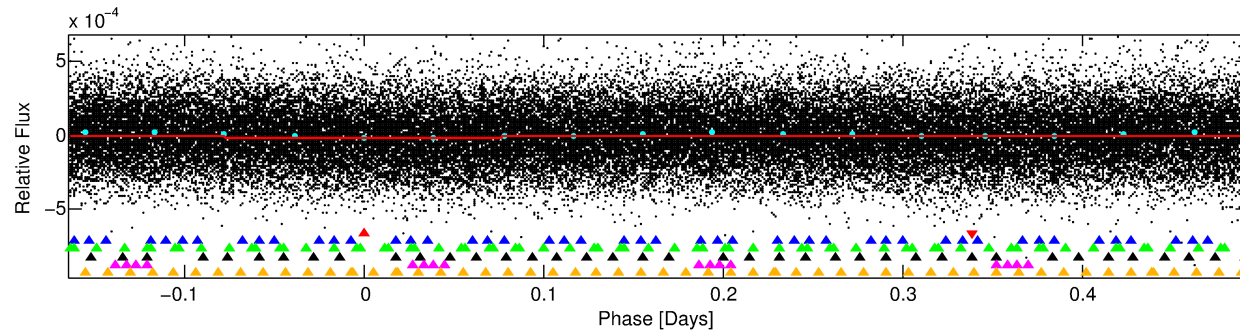
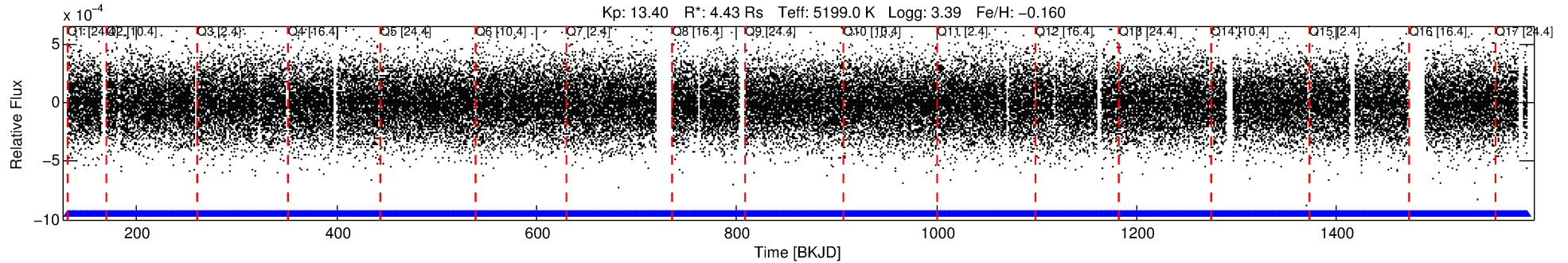
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008396184-01

No Significant Match Found

DV One-Page Summary

KIC: 8396184 Candidate: 1 of 6 Period: 0.656 d



DV Fit Results:

Period = 0.65649 [0.00001] d
Epoch = 131.9369 [0.0063] BKJD
Rp/R* = 0.0037 [0.0033]
a/R* = 1.13 [0.85]
b = 0.72 [2.40]
Seff = N/A
Teq = N/A
Rp = 1.80 [1.89] Re
a = N/A
Ag = N/A
Teffp = N/A

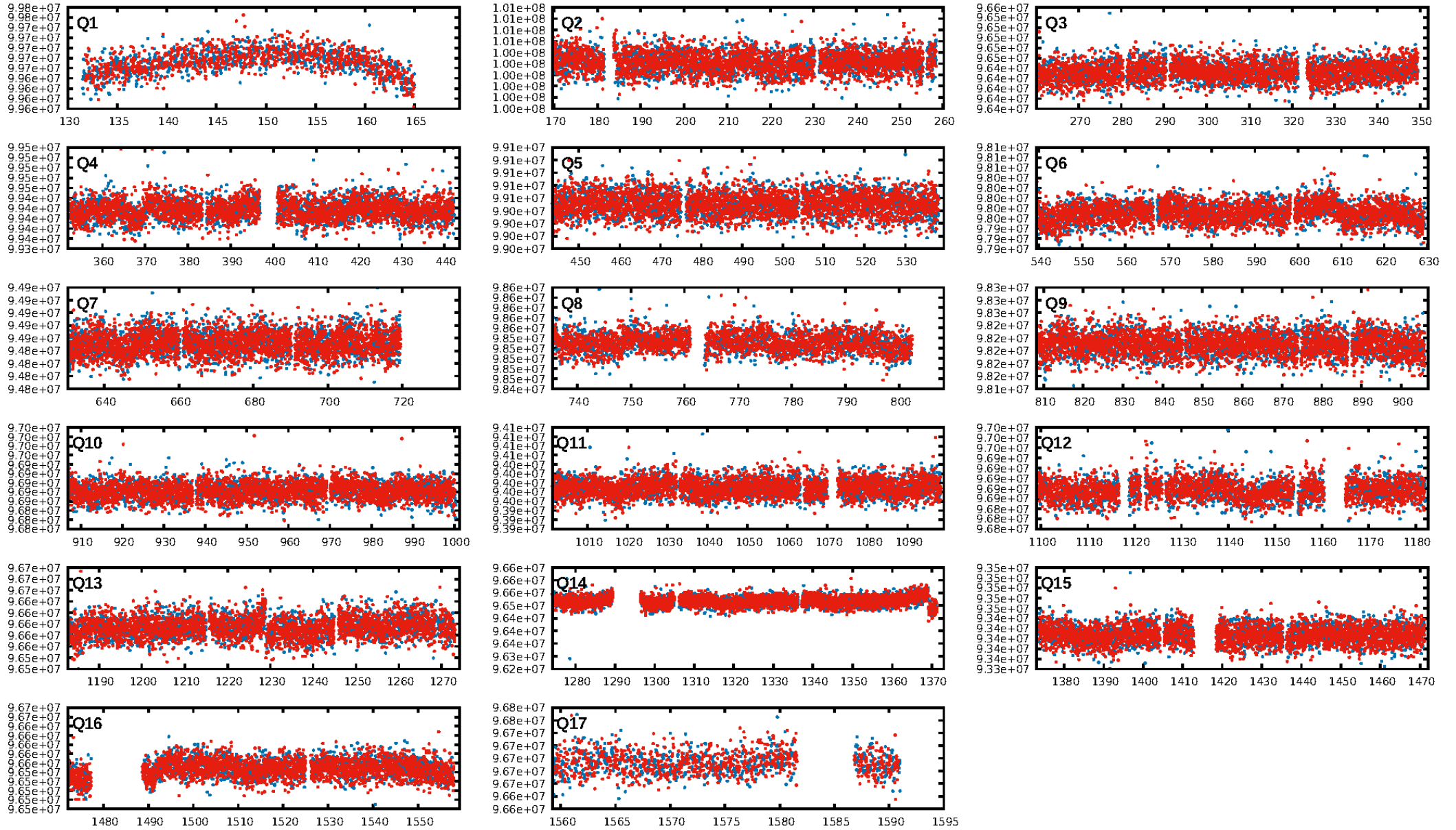
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [102.49σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.57e-18
RollingBand-fgt: 1.00 [1959/1959]
GhostDiagnostic-chr: -0.2504
Centroid-sig: 0.0%
Centroid-so: 10.242 arcsec [6.52σ]
OotOffset-rm: 2.539 arcsec [1.12σ]
KicOffset-rm: 2.365 arcsec [1.31σ]
OotOffset-st: 4/4/0/3 [11]
KicOffset-st: 4/4/0/3 [11]
DiffImageQuality-fgm: 0.27 [3/11]
DiffImageOverlap-fno: 1.00 [17/17]

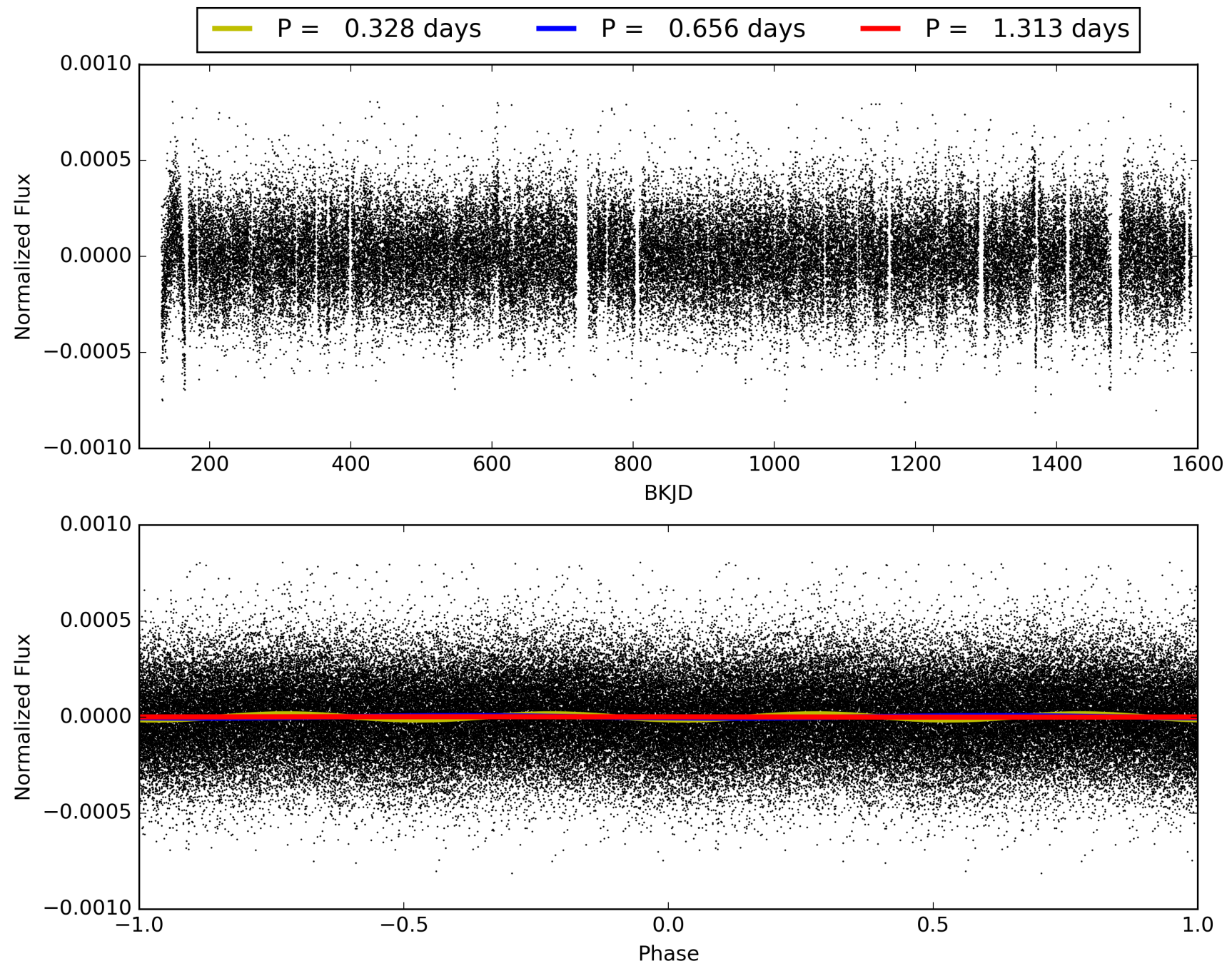
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:32:37 Z

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

TCE 008396184-01, PDC Light Curves

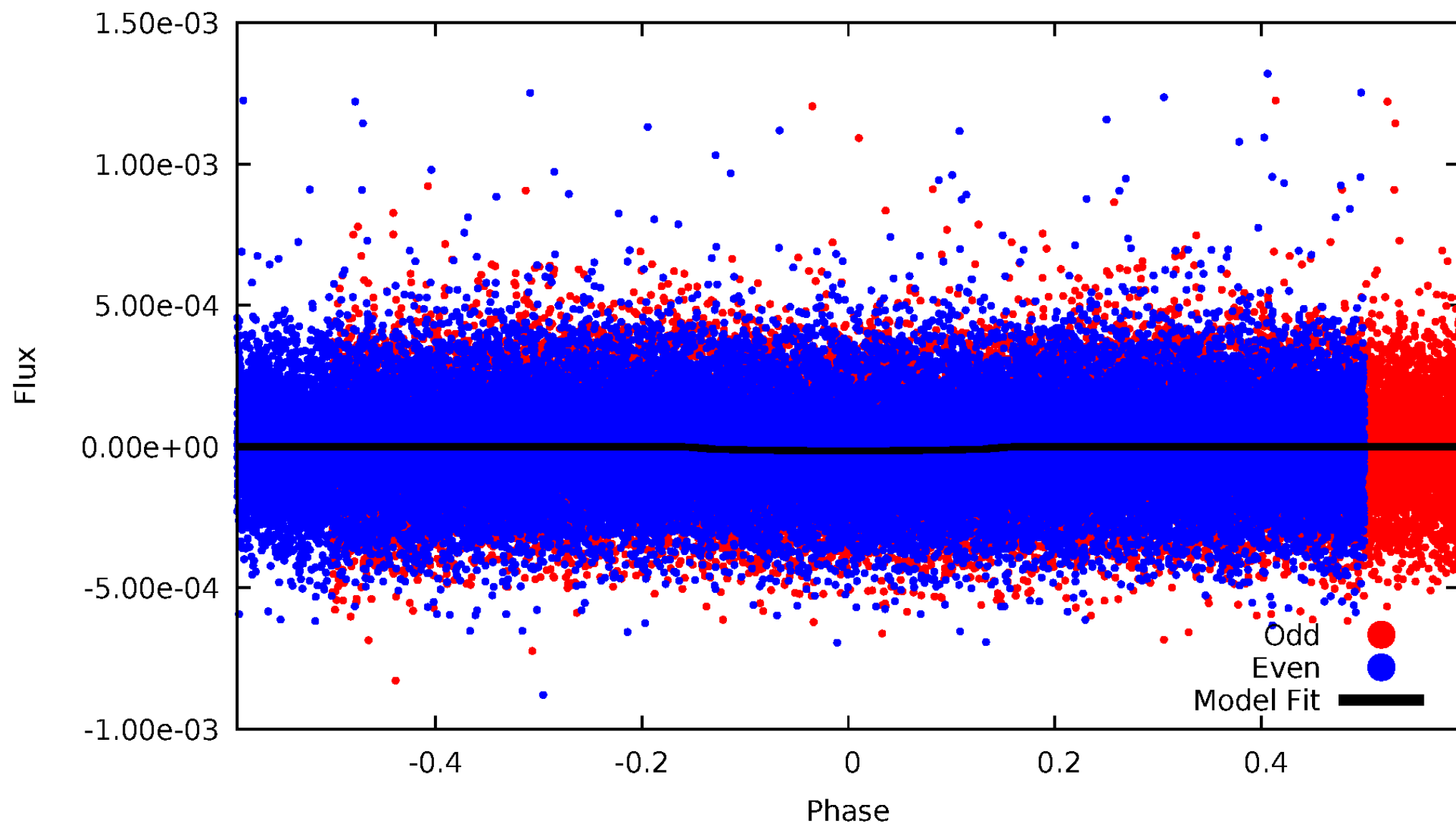


TCE 008396184-01



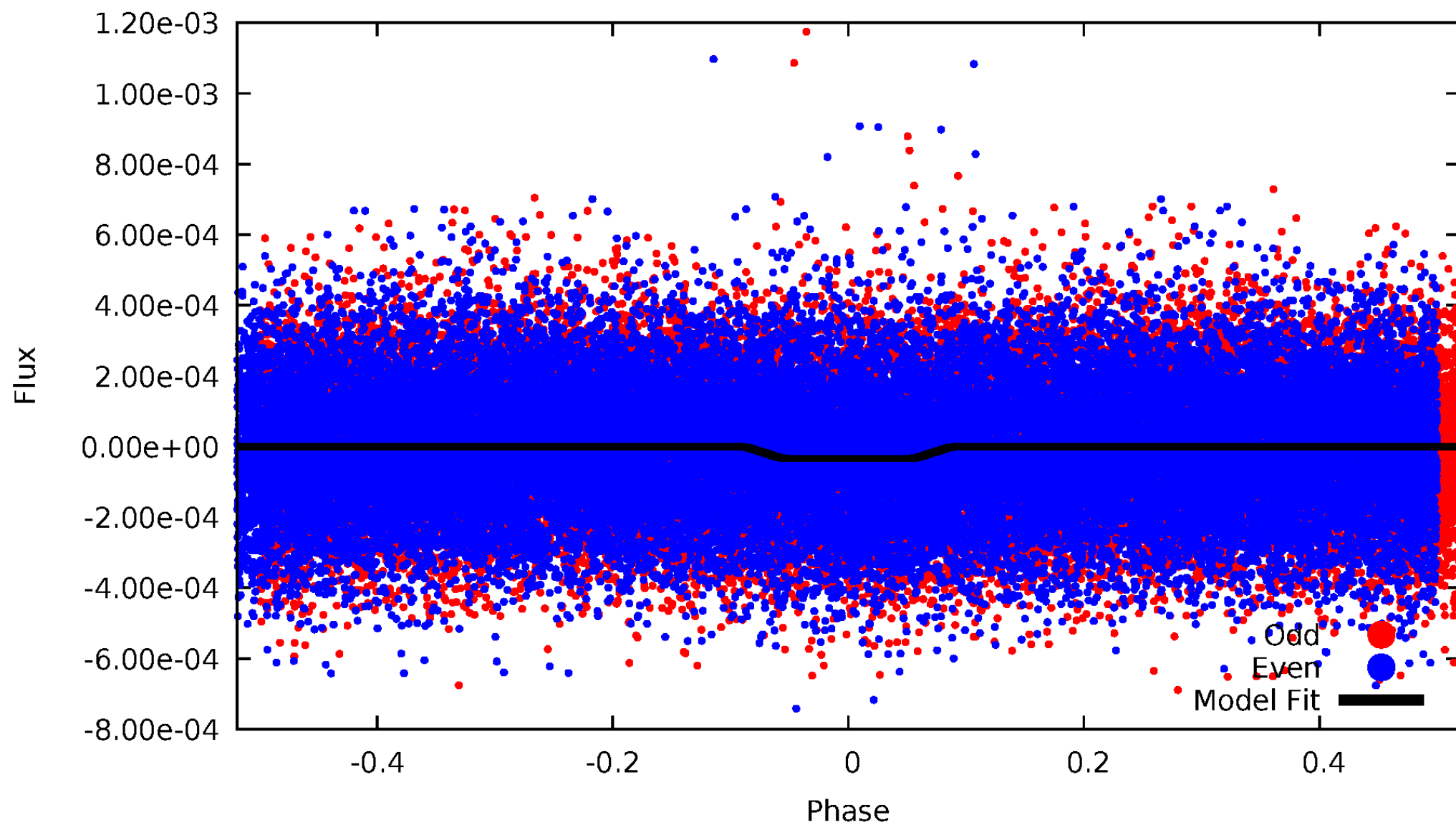
DV Odd/Even

TCE 008396184-01

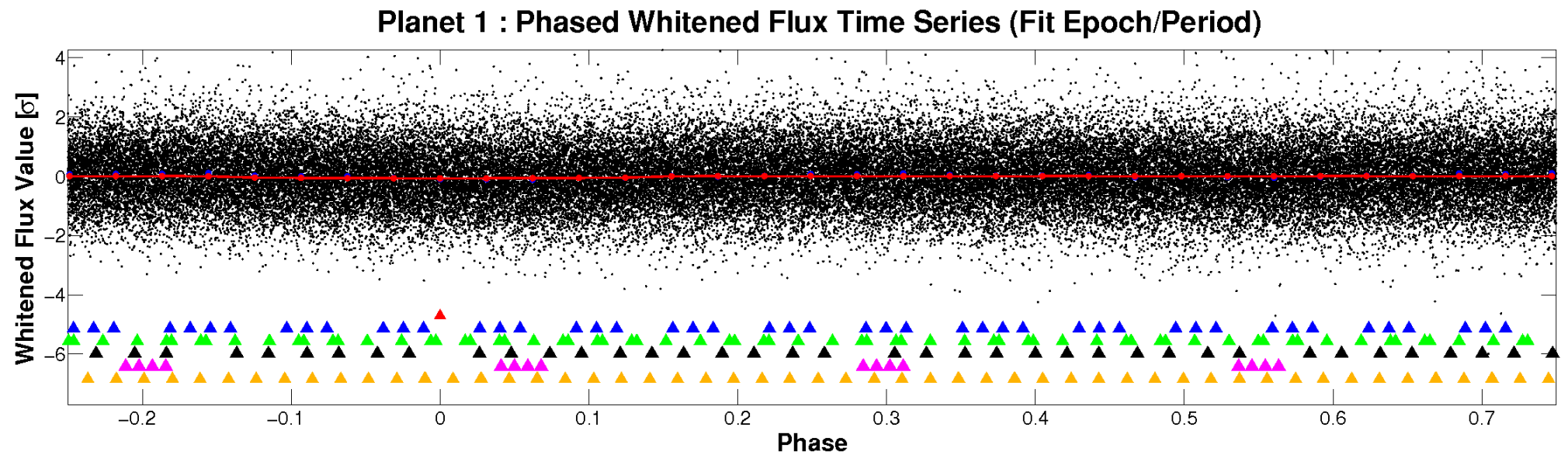
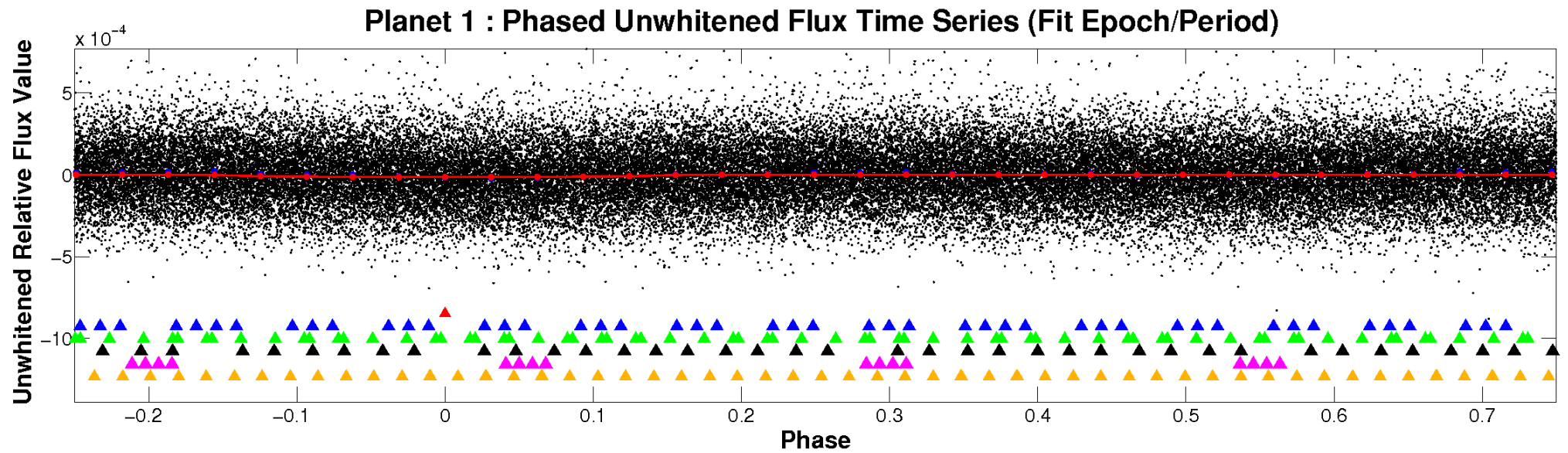


ALT Odd/Even

TCE 008396184-01

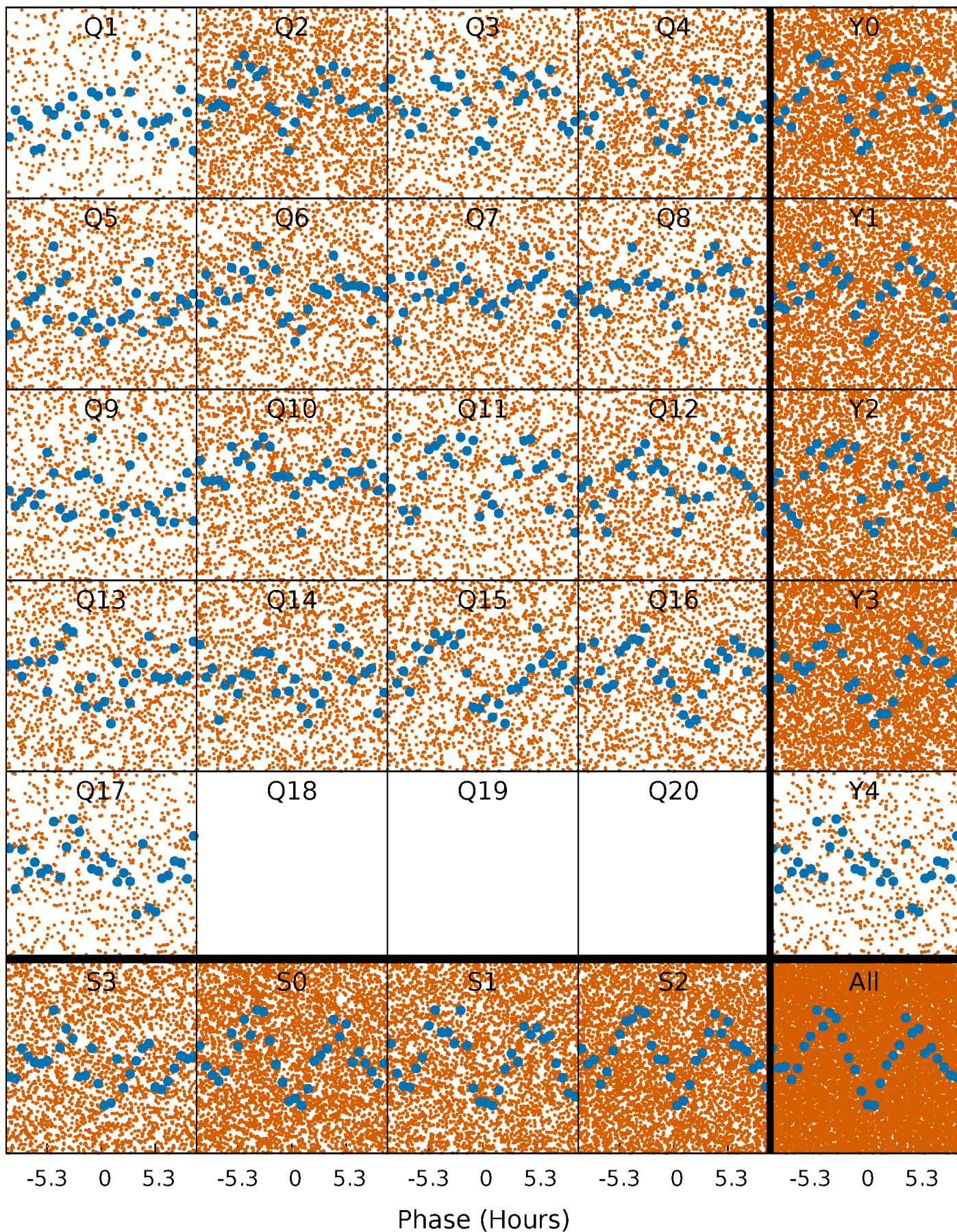


Non-Whitened Vs. Whitened Light Curve



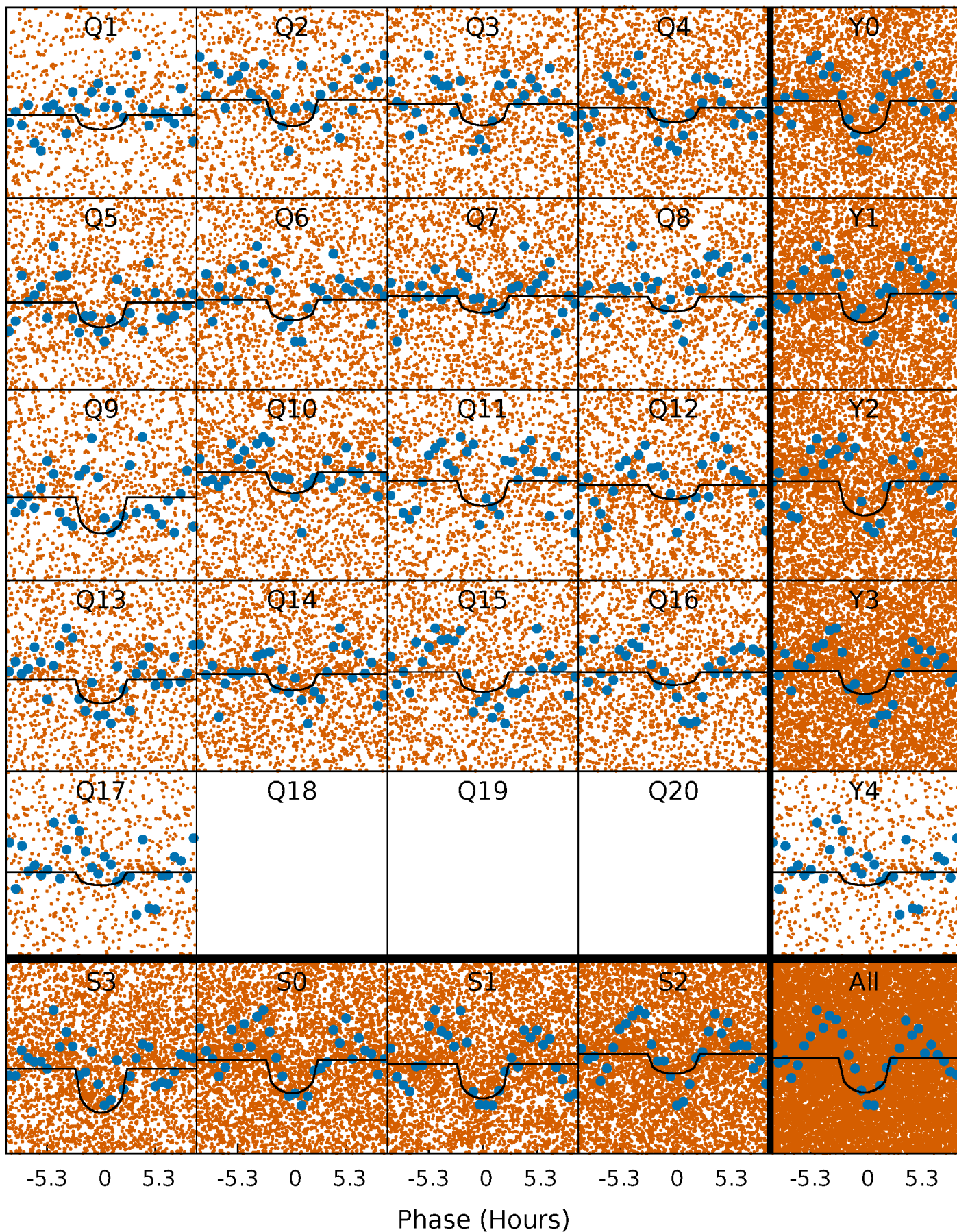
PDC Quarter-Phased Transit Curves

TCE 008396184-01 P= 0.656486 Days $T_0=131.936895$ (BKJD)



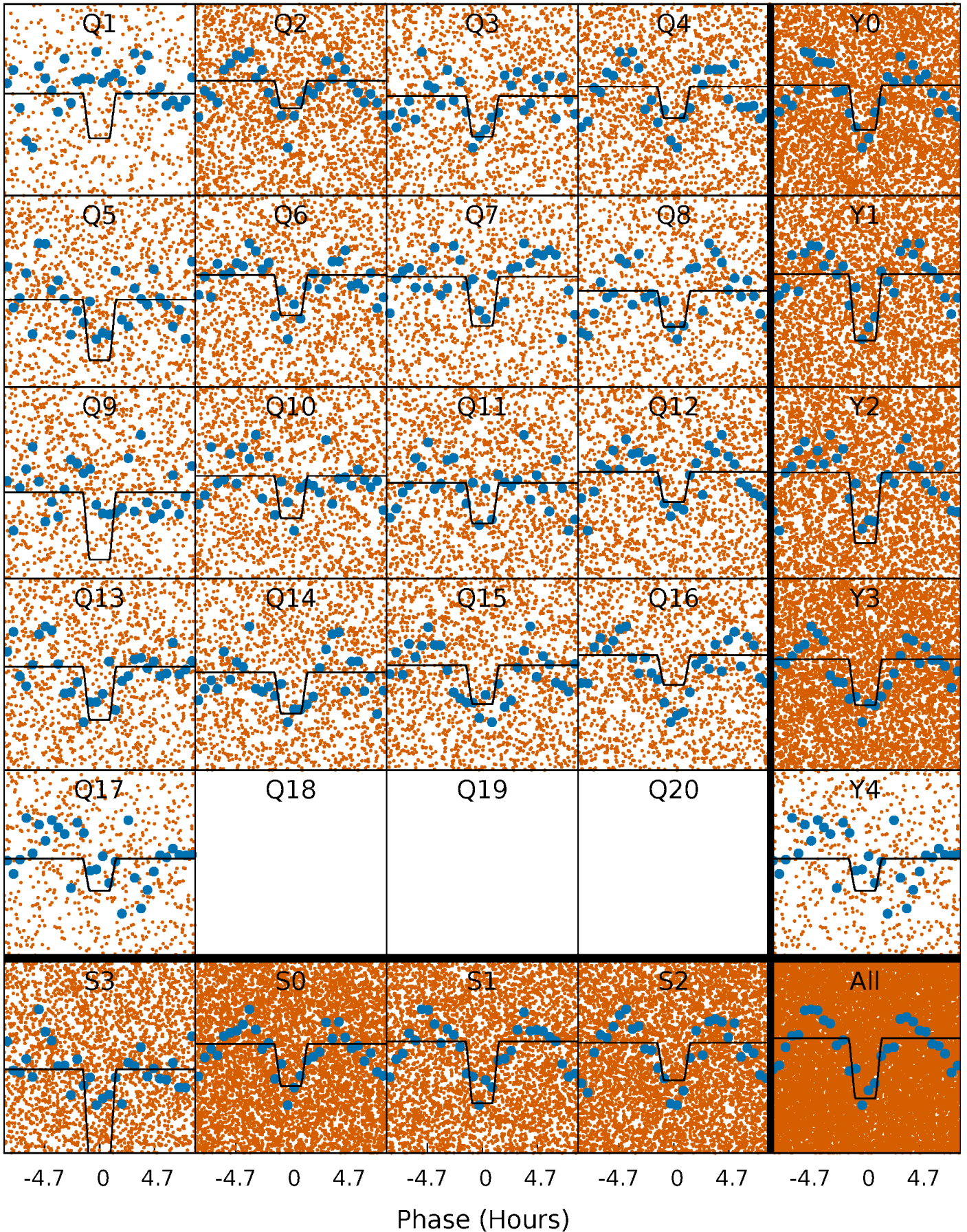
DV Quarter-Phased Transit Curves

TCE 008396184-01 P= 0.656486 Days $T_0=131.936895$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

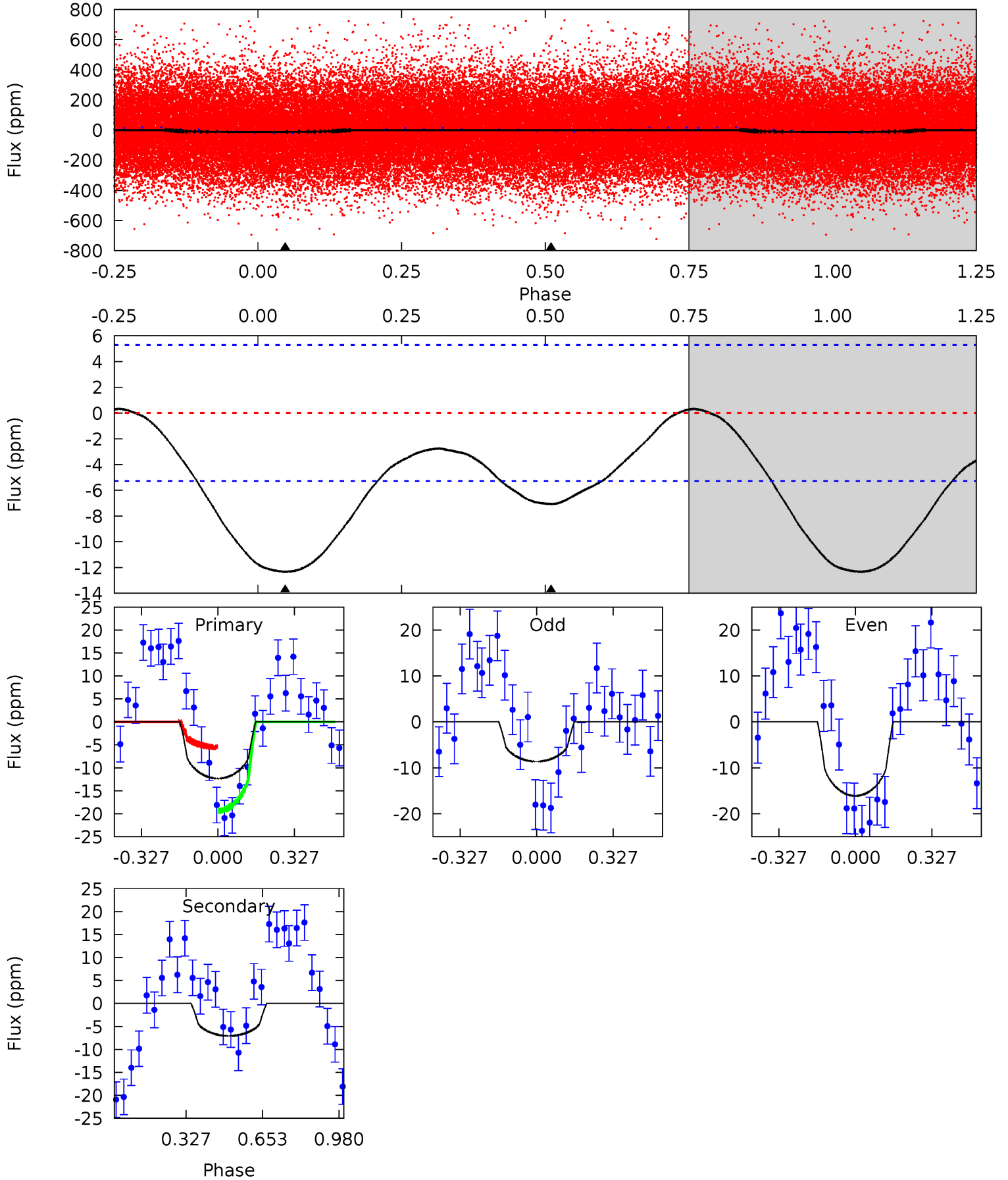
TCE 008396184-01 P= 0.656518 Days $T_0=131.925696$ (BKJD)



DV Model-Shift Uniqueness Test

008396184-01, P = 0.656486 Days, E = 131.280409 Days

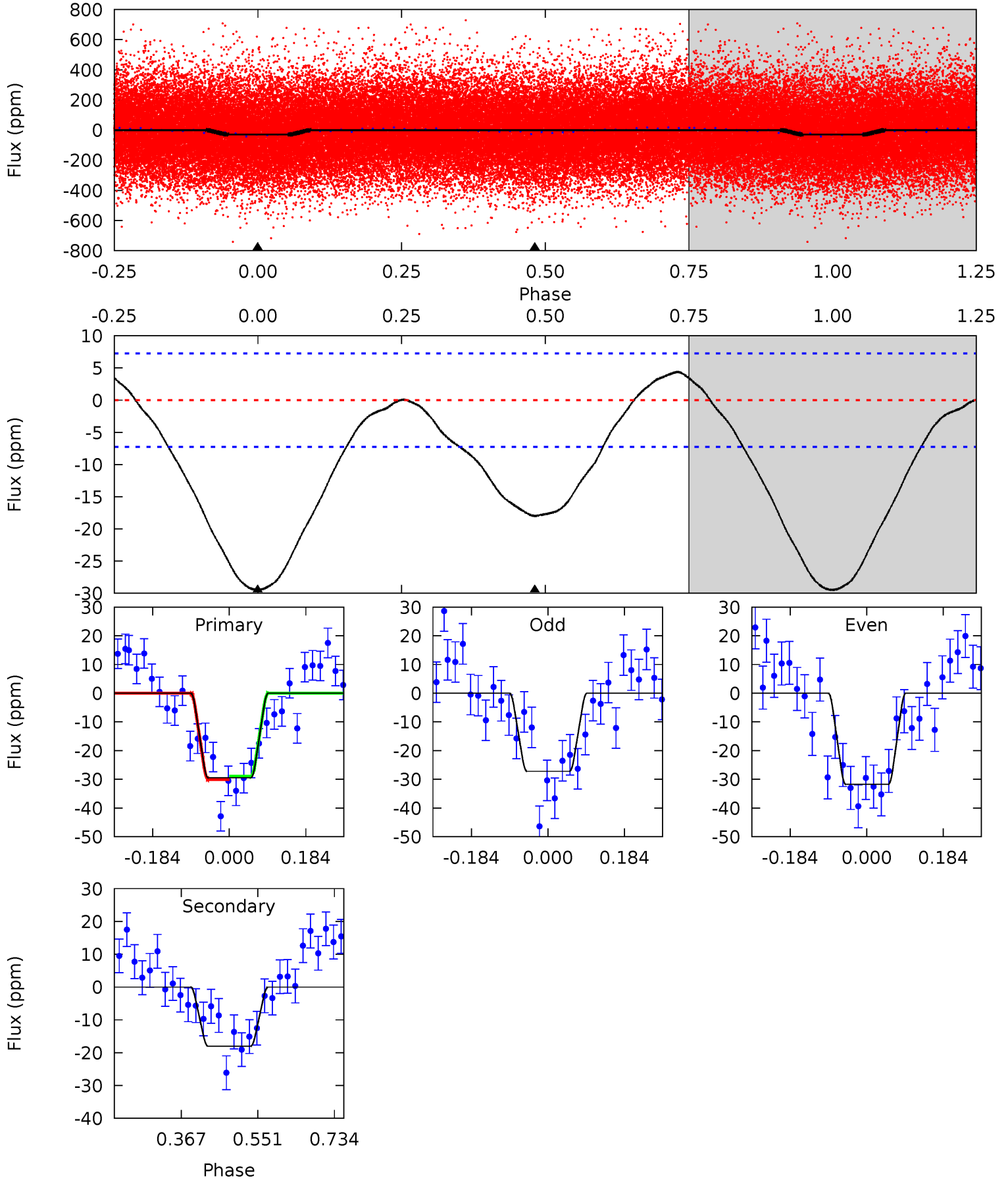
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	5.77	0	0	4.31	0.98	0.92	10.1	10.1	5.77	5.77	3.06	1.28	0.03	5.66



Alt Model-Shift Uniqueness Test

008396184-01, P = 0.656518 Days, E = 131.269178 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	11.0	0	0	4.44	1.33	1.41	18.0	18.0	11.0	11.0	1.40	0.99	0.13	0.36



Stellar Parameters For KIC 008396184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5199^{+164}_{-182}	$3.392^{+0.476}_{-0.204}$	$-0.160^{+0.300}_{-0.300}$	$4.430^{+1.219}_{-2.438}$	$1.764^{+0.196}_{-0.785}$	$0.029^{+0.141}_{-0.016}$
	+3%/-4%	+14%/-6%	+188%/-188%	+28%/-55%	+11%/-45%	+494%/-54%
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 008396184-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7 ± 1	$1.87^{+1.65}_{-1.15}$	5000^{+475}_{-651}	3085^{+3019}_{-7156}	$0.349^{+1.850}_{-0.255}$
Alt.	-18 ± 2	$2.63^{+1.91}_{-1.41}$	4992^{+459}_{-689}	3598^{+2443}_{-7464}	$0.432^{+1.494}_{-0.281}$

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 $A_{obs} \gg 1.0$

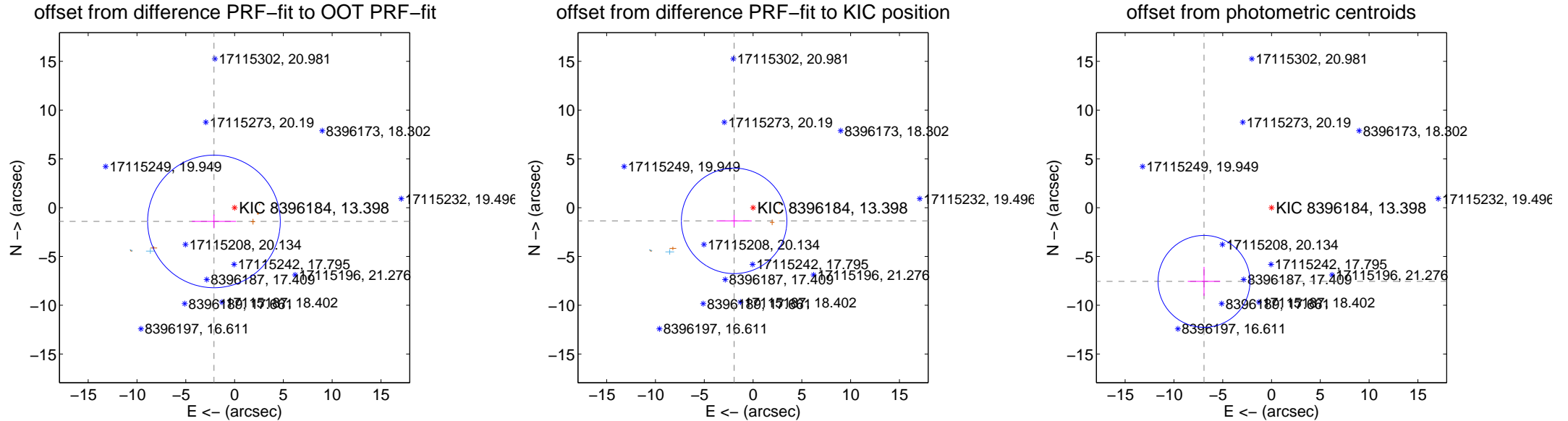
DV Centroid Data

Supplemental centroid analysis for 008396184-01. Kepler magnitude: 13.40. Transit SNR 8.26

There are 3 quarters with good PRF difference image offsets

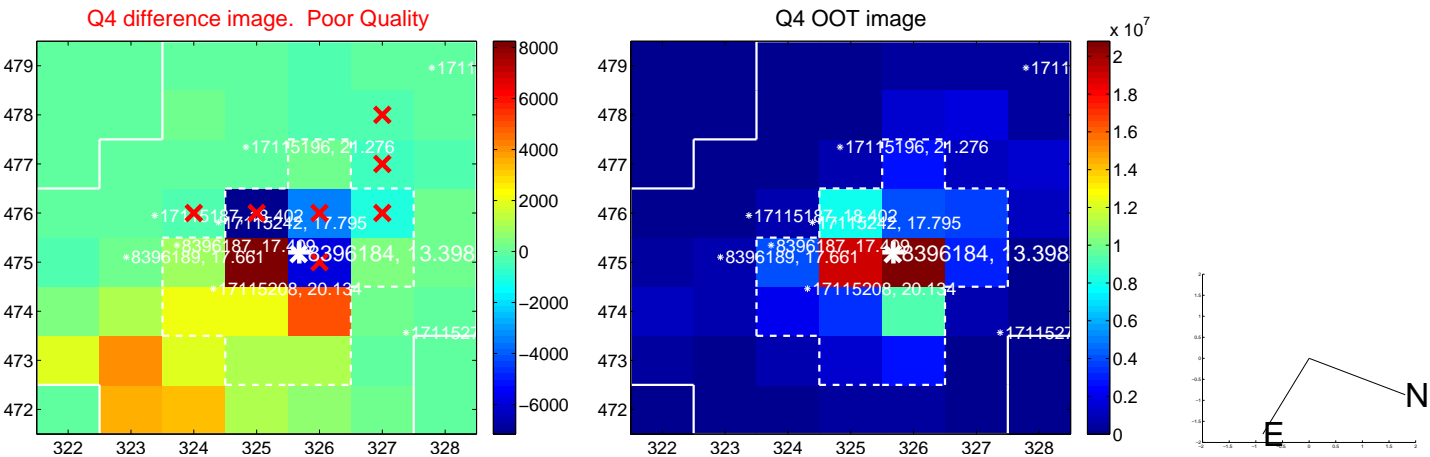
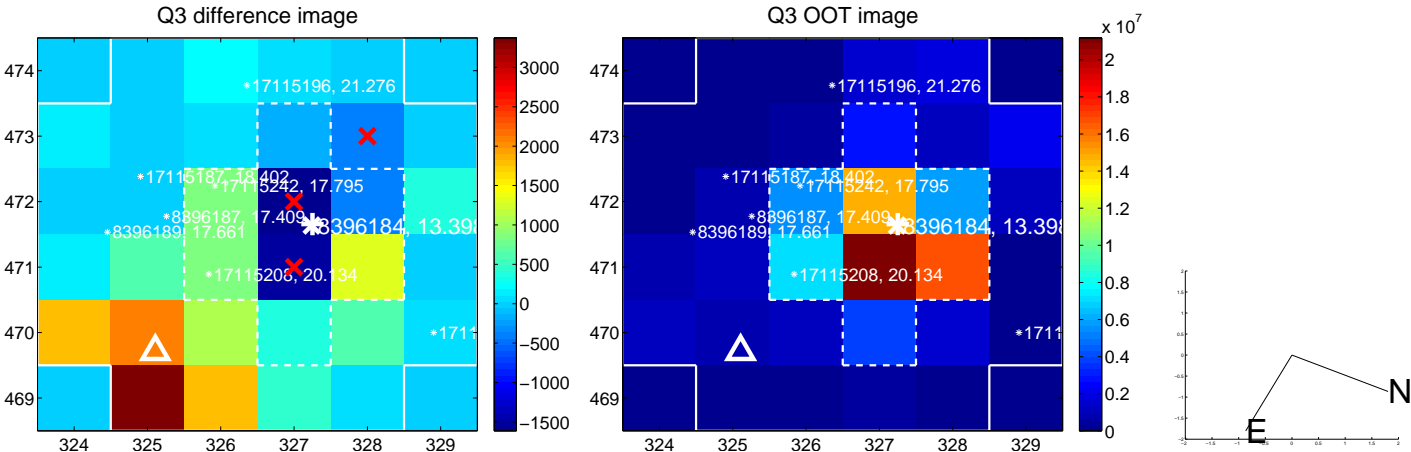
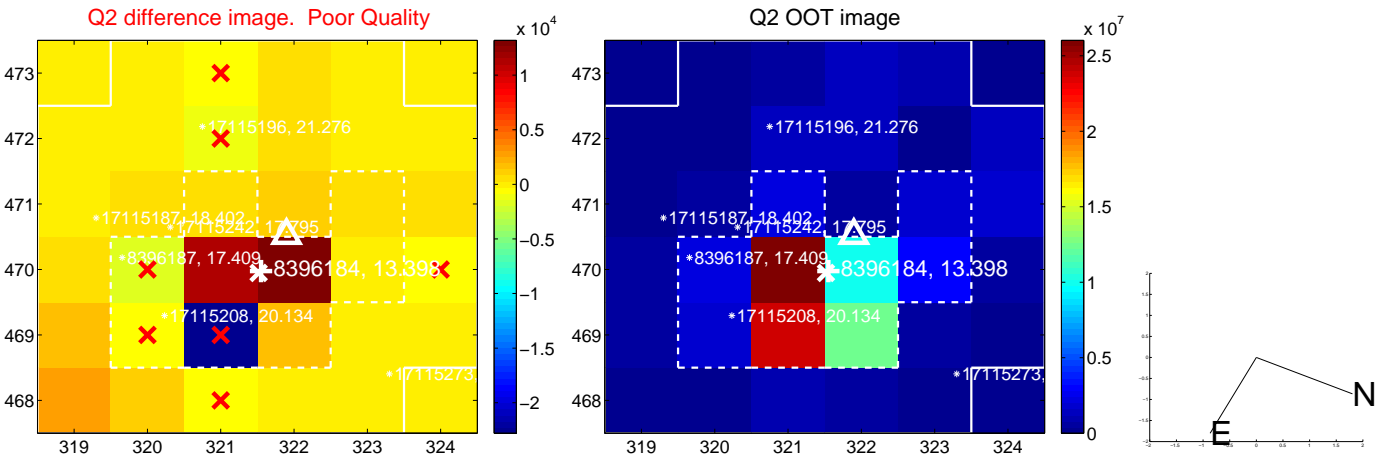
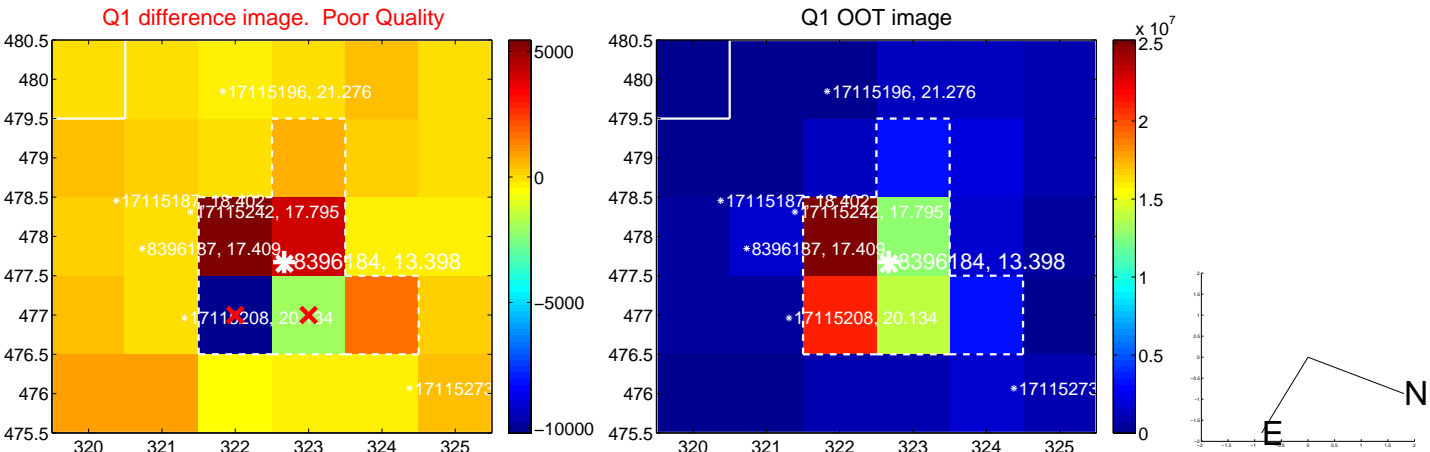
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.539 ± 2.265	1.12	2.112 ± 2.263	-1.409 ± 0.701
PRF-fit source offset from KIC position	2.365 ± 1.802	1.31	1.940 ± 1.802	-1.353 ± 0.581
photometric centroid source offset	10.24 ± 1.57	6.52	6.92 ± 1.66	-7.55 ± 1.49

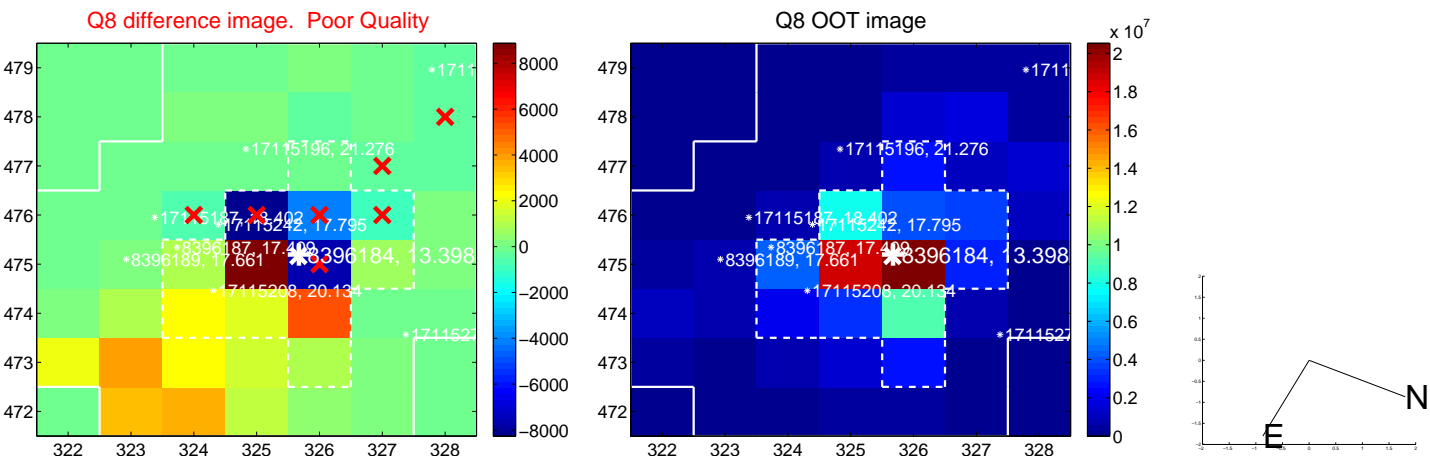
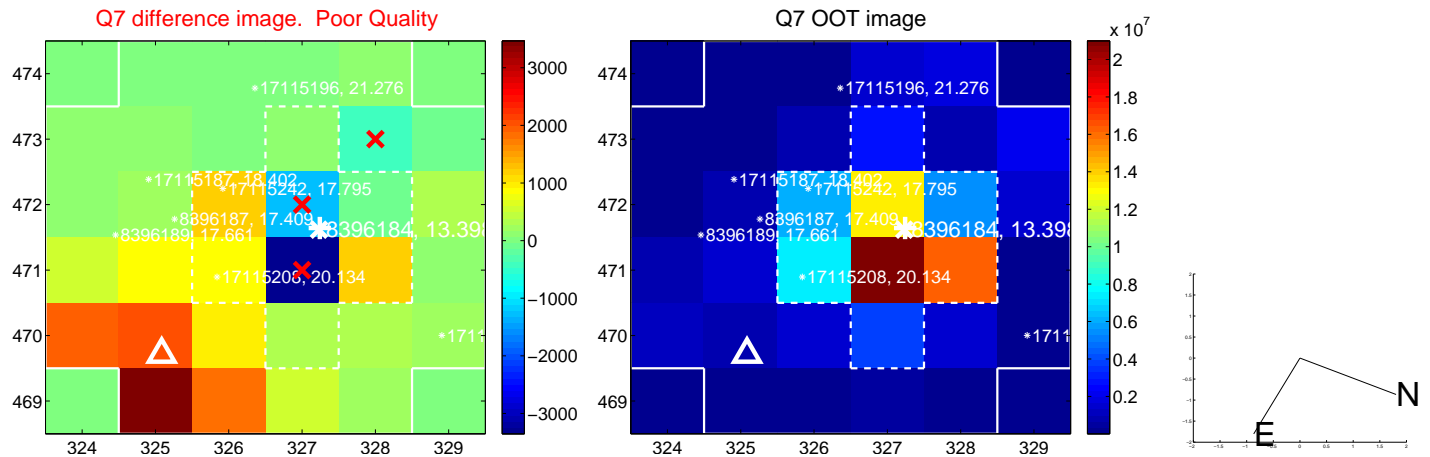
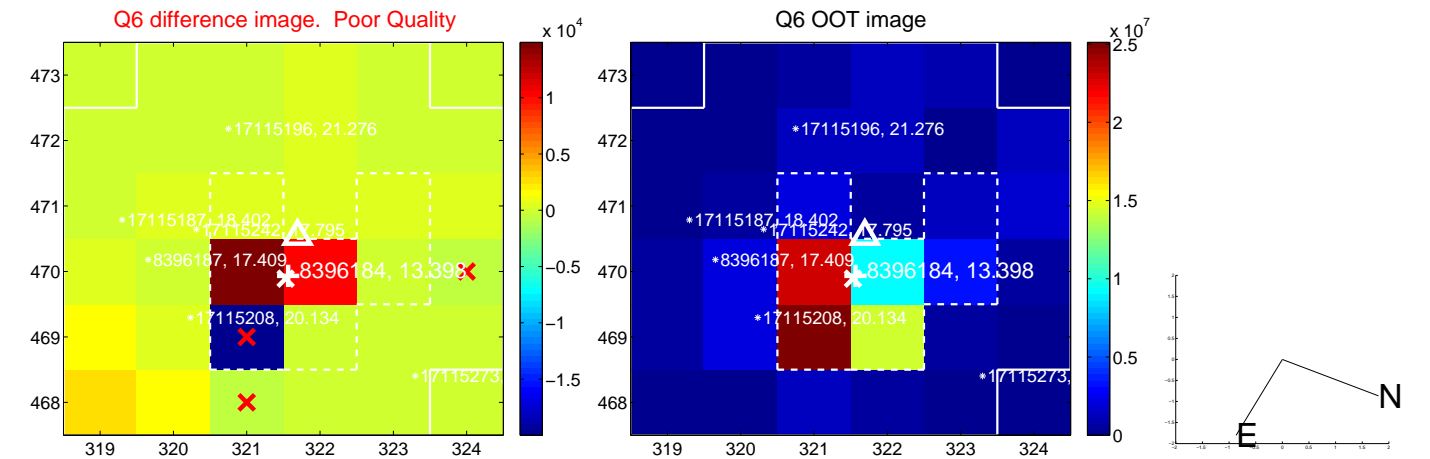
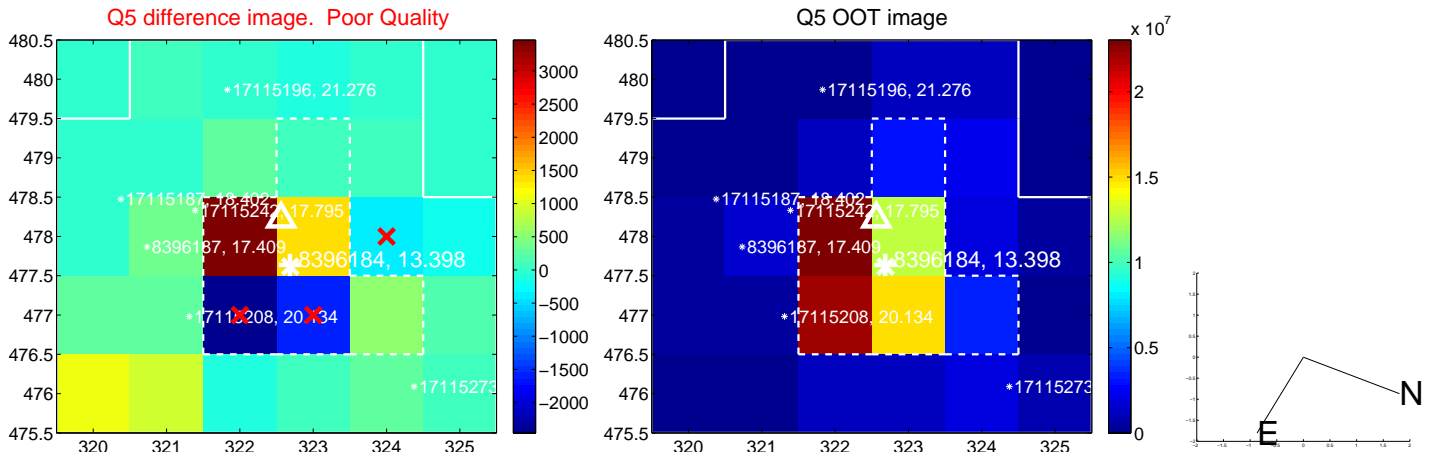


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

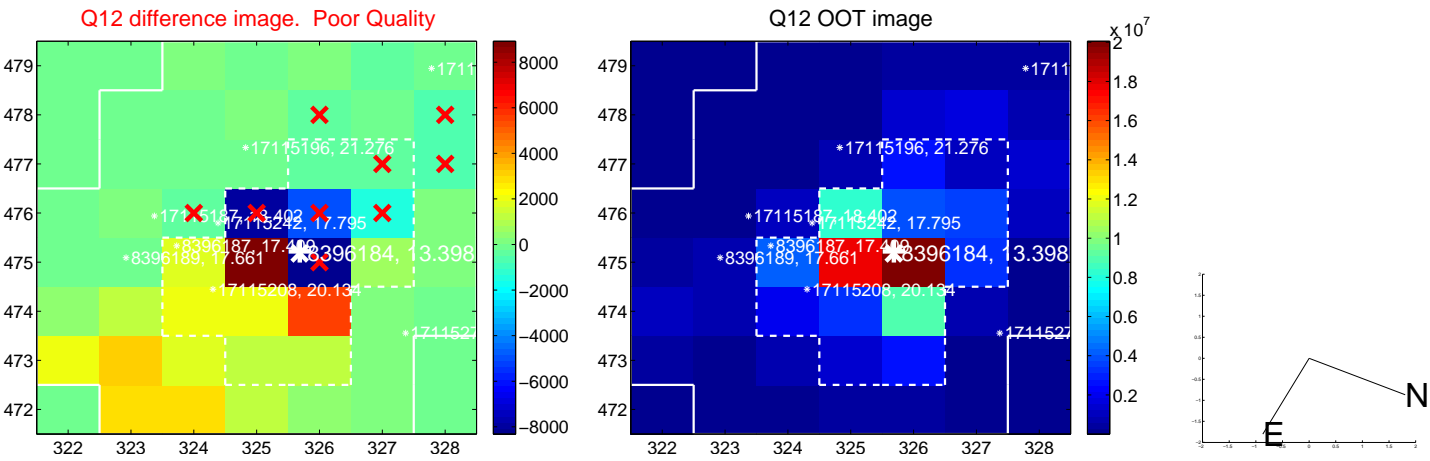
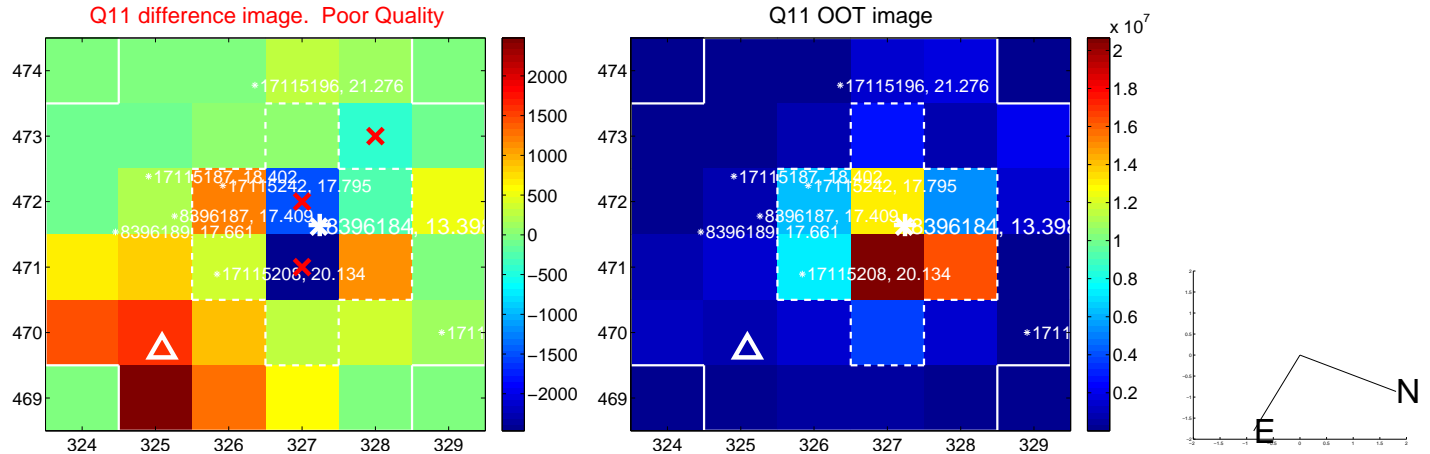
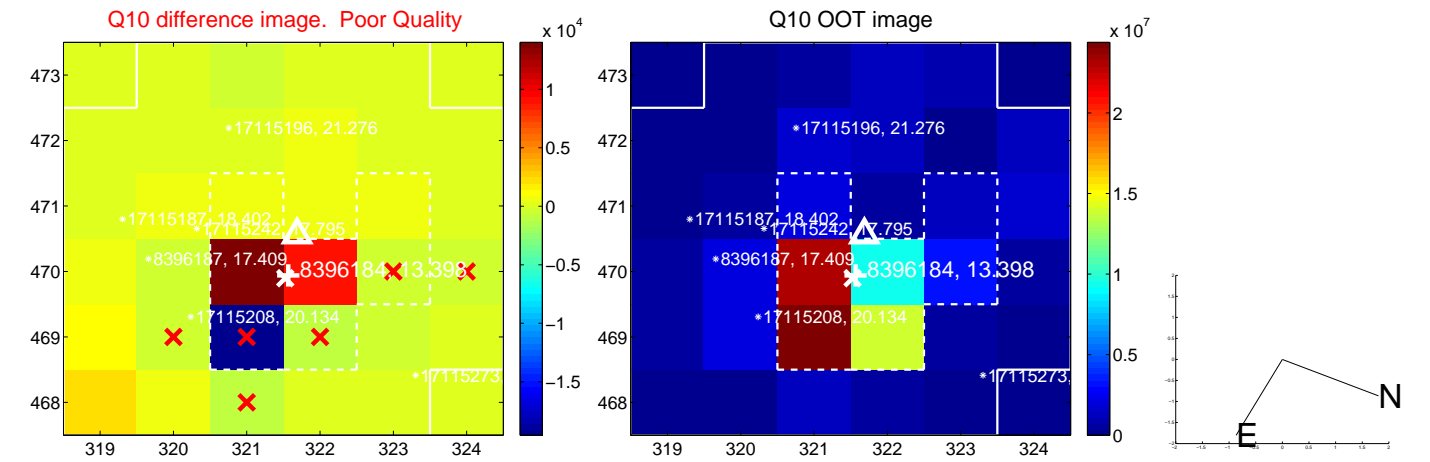
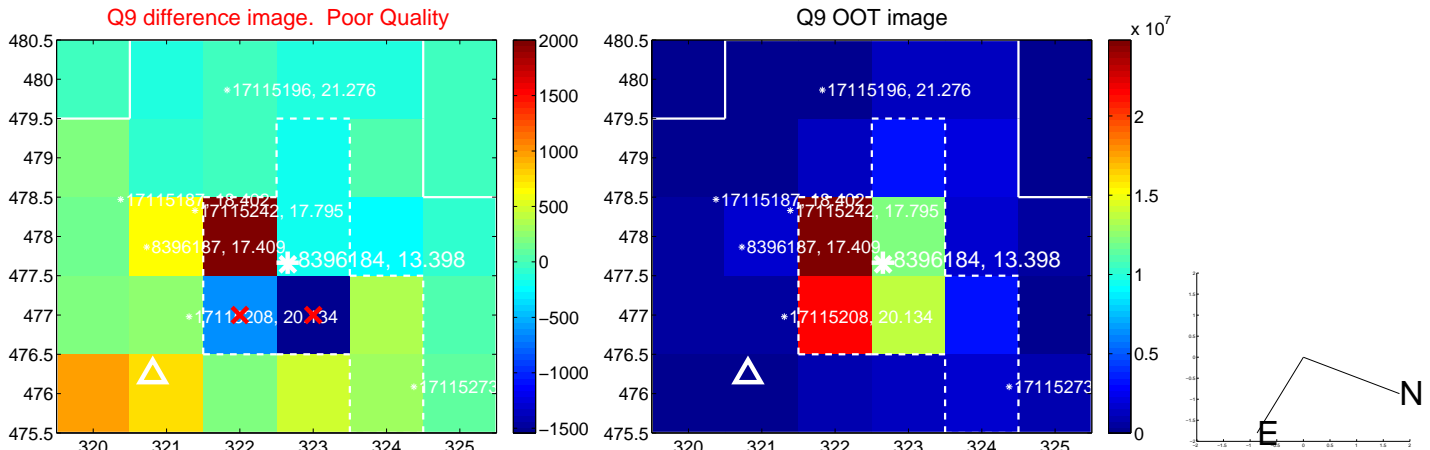
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



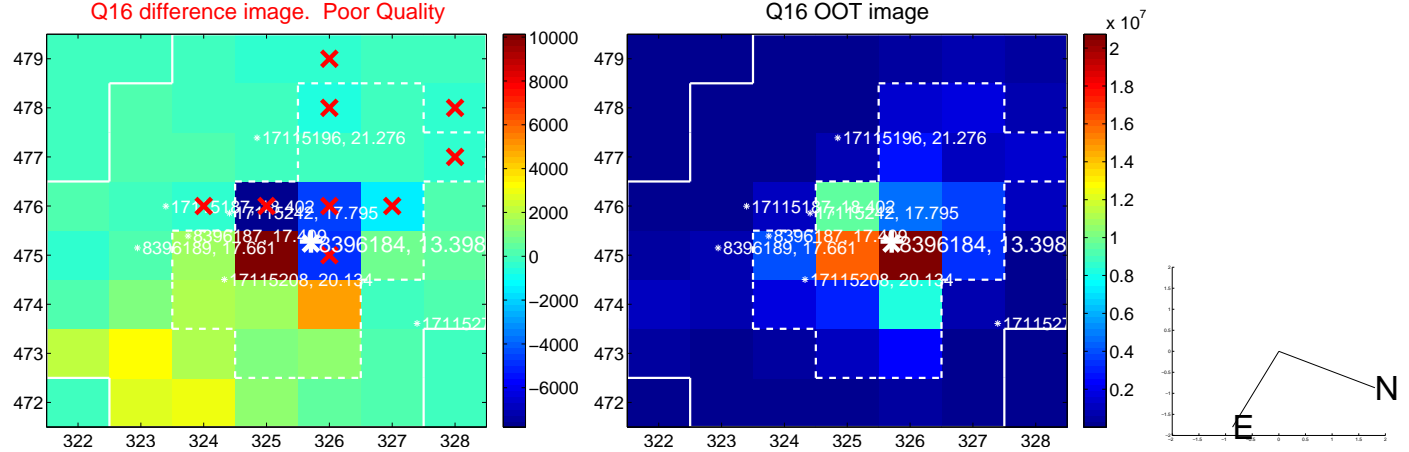
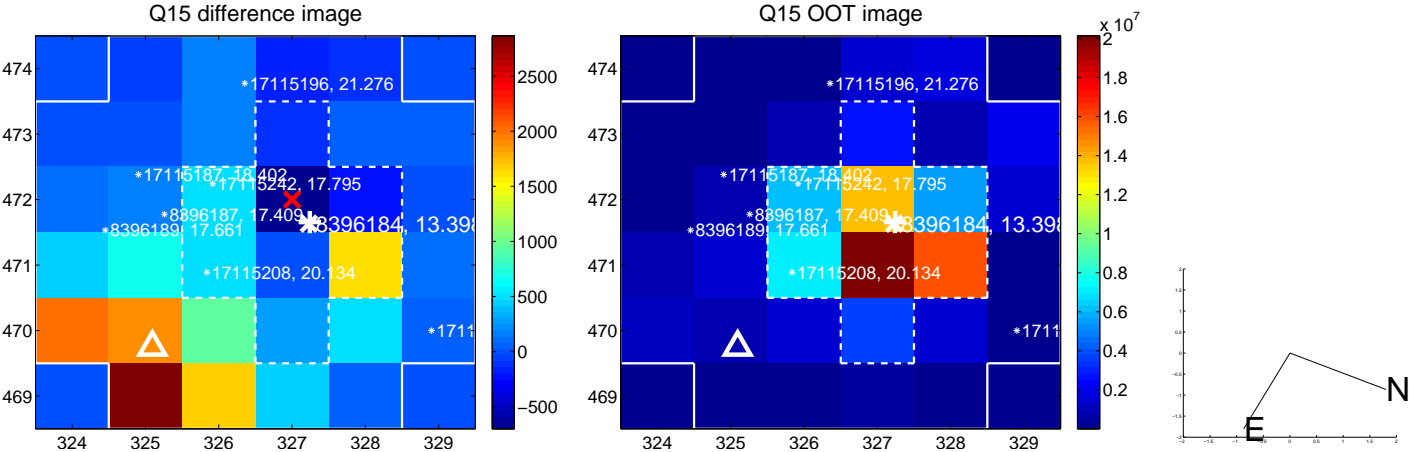
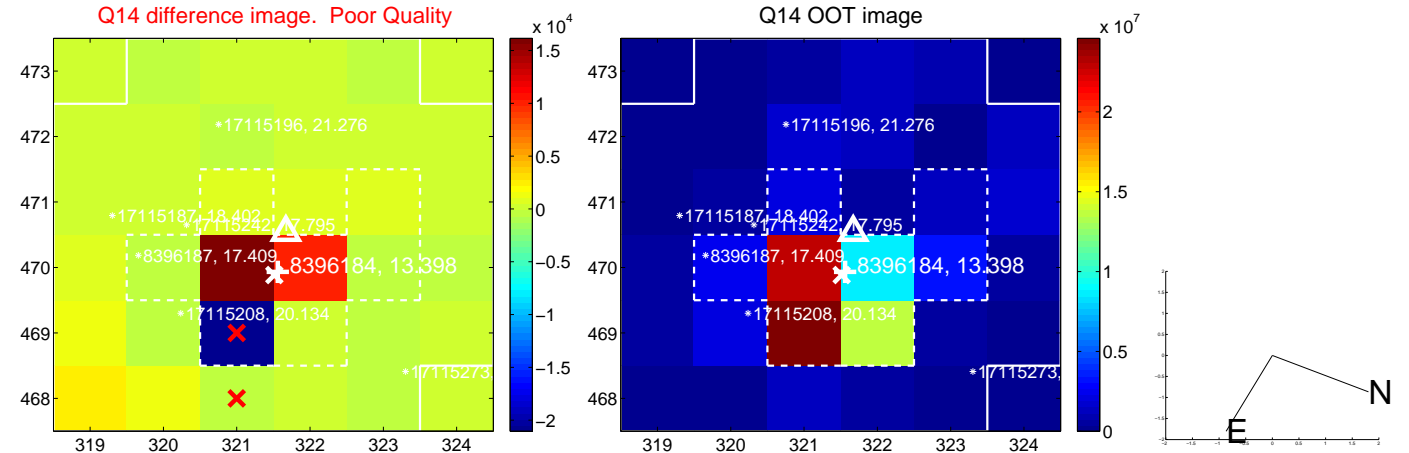
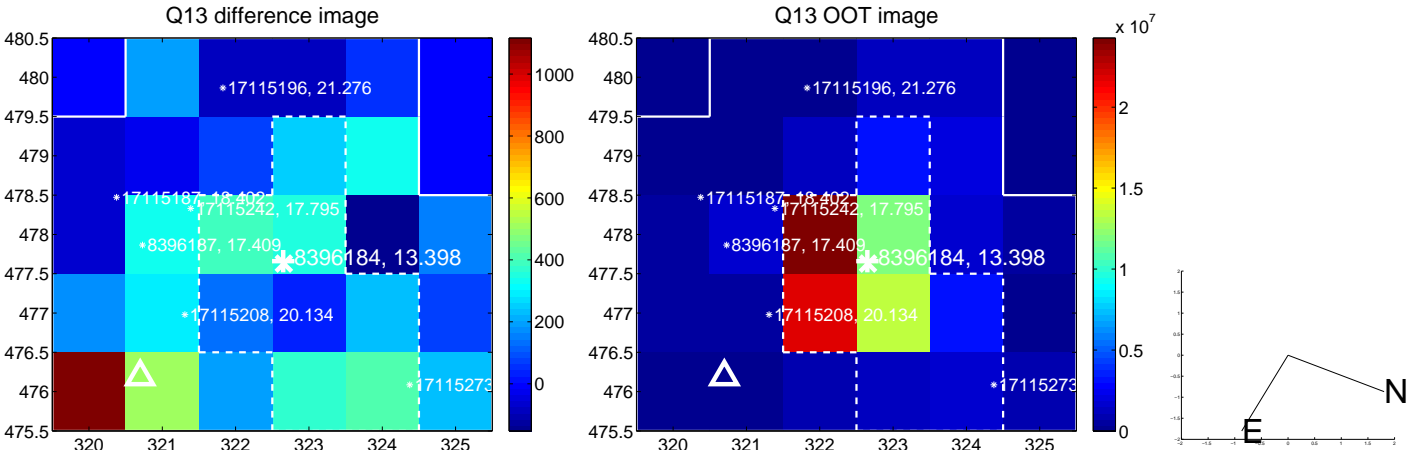
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



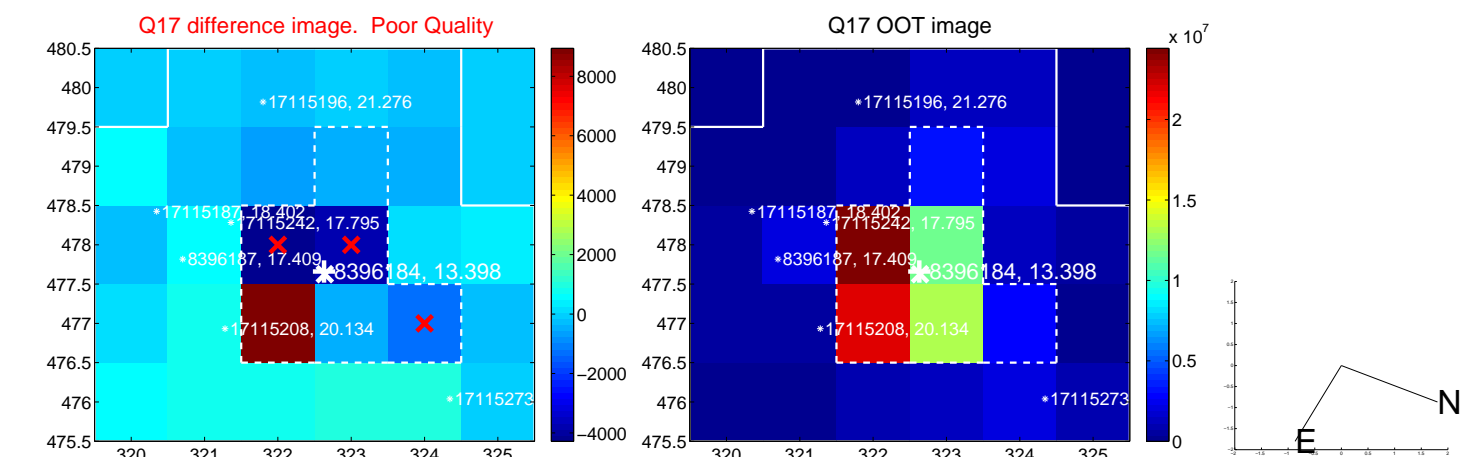
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



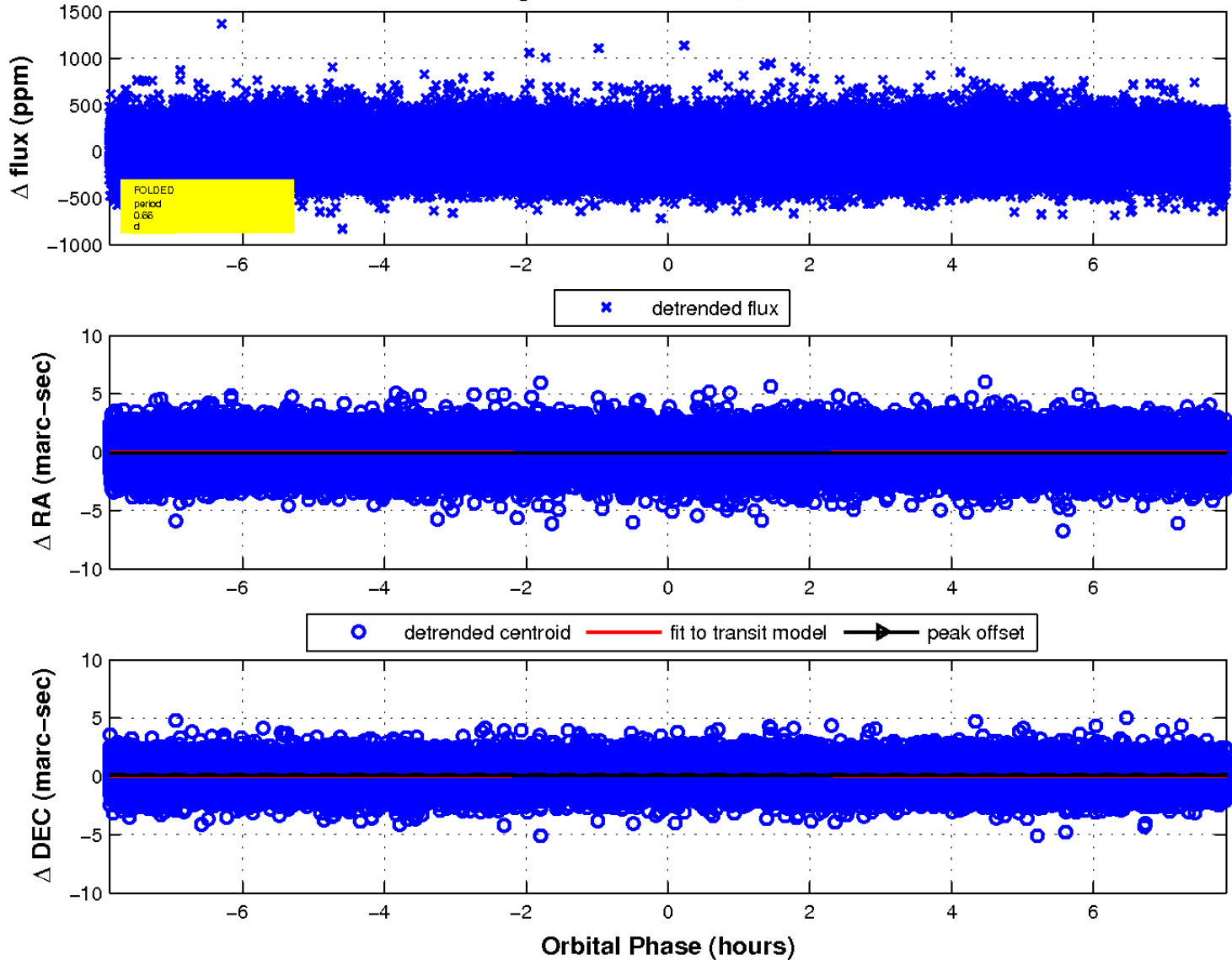
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

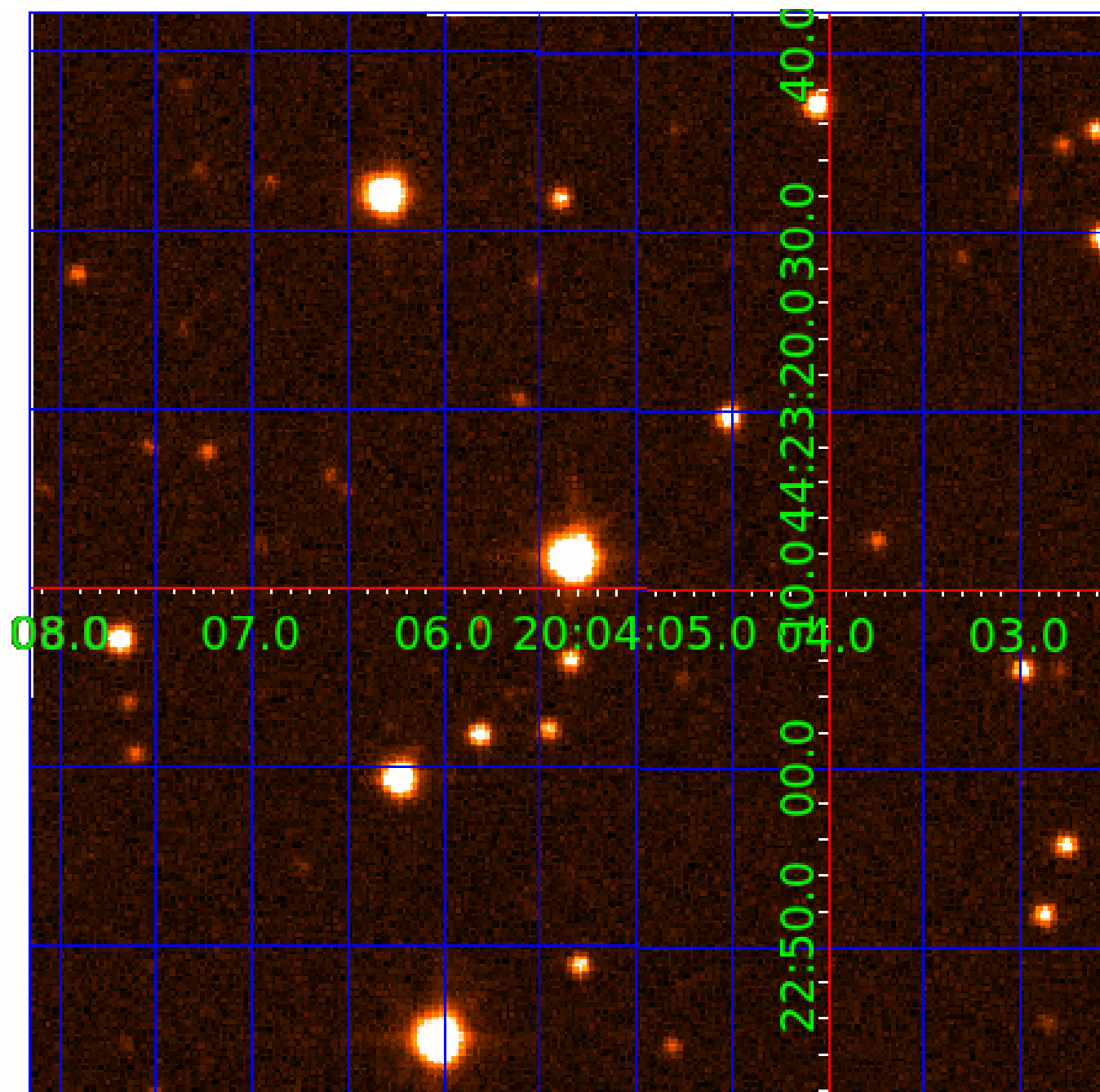


fluxWeightedCentroids, Planet 1 of 6



UKIRT Image

Declination



KIC 008396184

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})
008396184-01	OBS	No	0.656486	131.936895	14.3	4.663	10.1	8.3	4.43	5199	1.80	0.00
008396184-02	OBS	No	31.161776	155.800830	395.5	0.903	11.1	12.0	4.43	5199	10.45	234.07
008396184-03	OBS	No	21.065844	143.782105	315.5	1.046	9.8	11.1	4.43	5199	9.13	394.52
008396184-04	OBS	No	38.259300	136.611763	391.5	1.210	10.6	12.4	4.43	5199	8.91	178.04
008396184-05	OBS	No	92.730065	147.222722	254.1	8.957	9.4	9.3	4.43	5199	7.69	54.69
008396184-06	OBS	No	24.500546	139.857392	327.2	1.180	9.4	9.2	4.43	5199	7.98	322.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008396184-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET
008396184-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008396184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008396184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

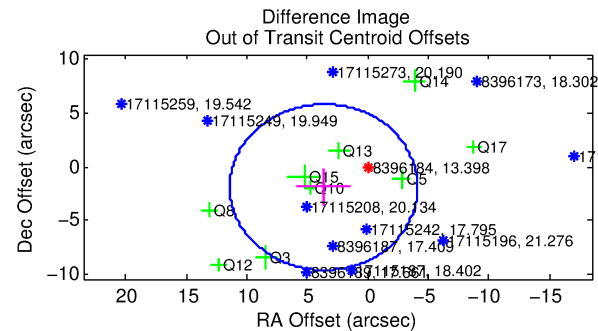
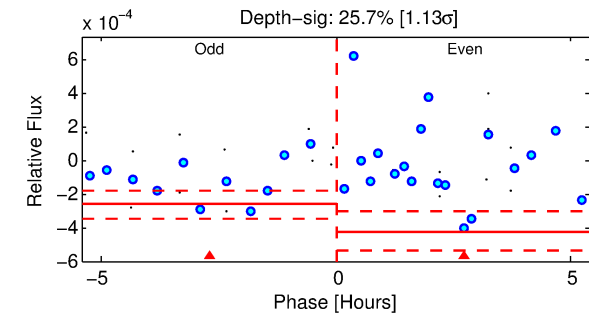
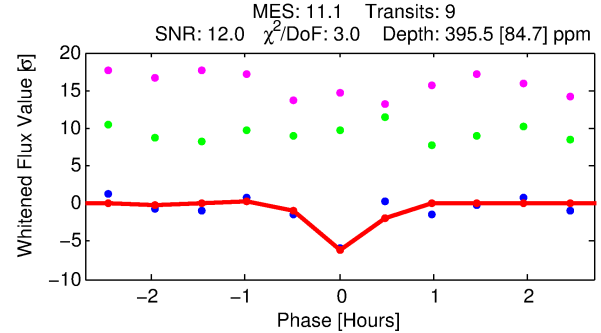
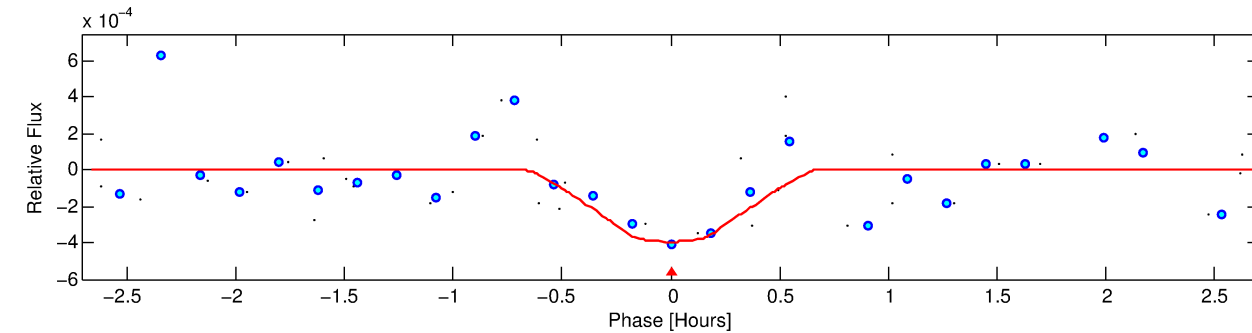
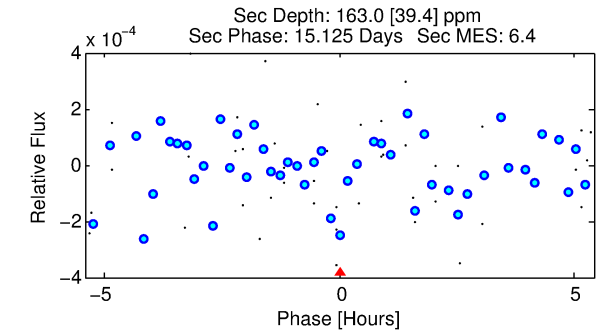
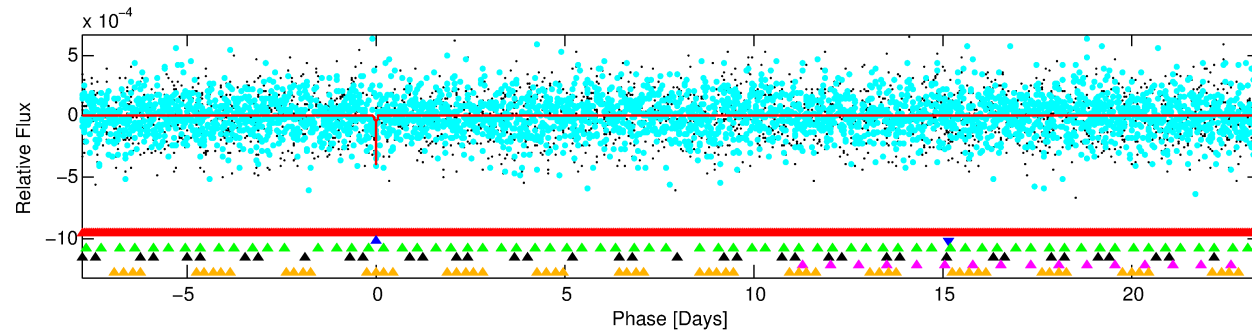
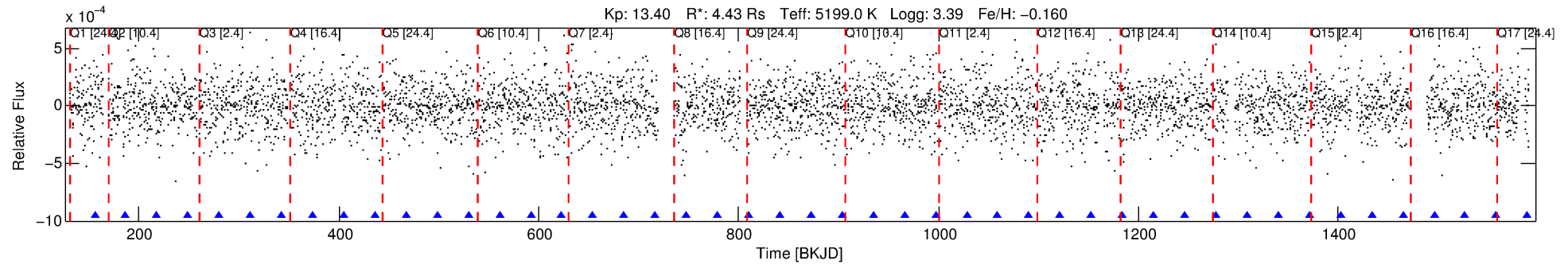
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008396184-02

No Significant Match Found

DV One-Page Summary

KIC: 8396184 Candidate: 2 of 6 Period: 31.162 d



DV Fit Results:

Period = 31.16178 [0.00020] d
Epoch = 155.8008 [0.0051] BKJD
Rp/R* = 0.0216 [0.0697]
a/R* = 142.03 [1881.57]
b = 0.87 [3.87]
Seff = 234.07 [194.17]
Teq = 997 [207] K
Rp = 10.45 [34.18] Re
a = 0.2343 [0.1213] AU
Ag = 45.06 [293.09] [0.15 σ]
Teffp = 3995 [6447] K [0.46 σ]

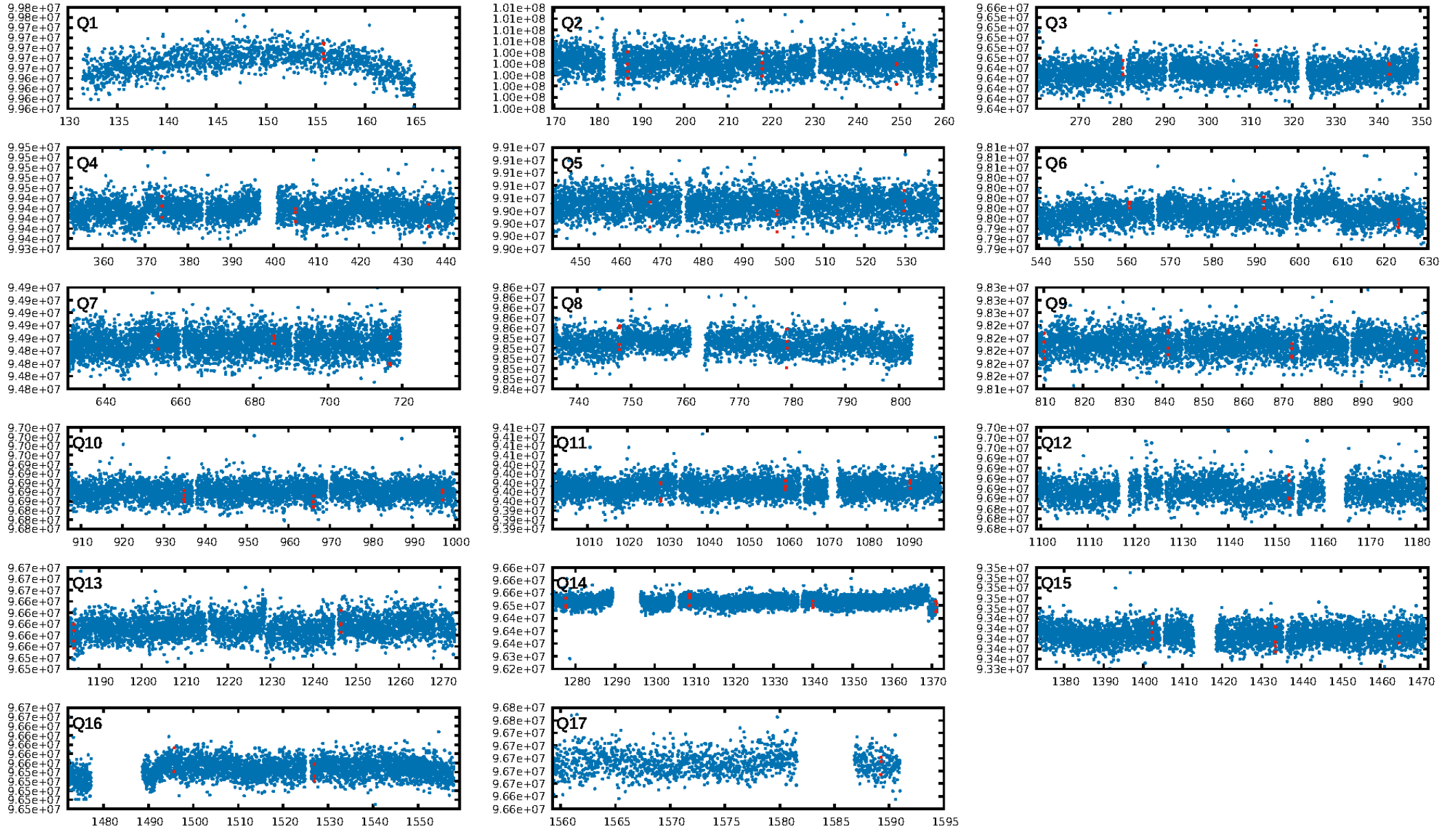
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [107.60 σ]
LongPeriod-sig: 100.0% [112.85 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 14.5%
Bootstrap-pfa: 1.24e-09
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 0.3466
Centroid-sig: 33.3%
Centroid-so: 0.453 arcsec [0.49 σ]
OotOffset-rm: 4.125 arcsec [1.60 σ]
OotOffset-st: 2/2/2/3 [9]
KicOffset-rm: 3.964 arcsec [1.53 σ]
KicOffset-st: 2/2/2/3 [9]
DiffImageQuality-fgm: 0.11 [1/9]
DiffImageOverlap-fno: 0.00 [0/16]

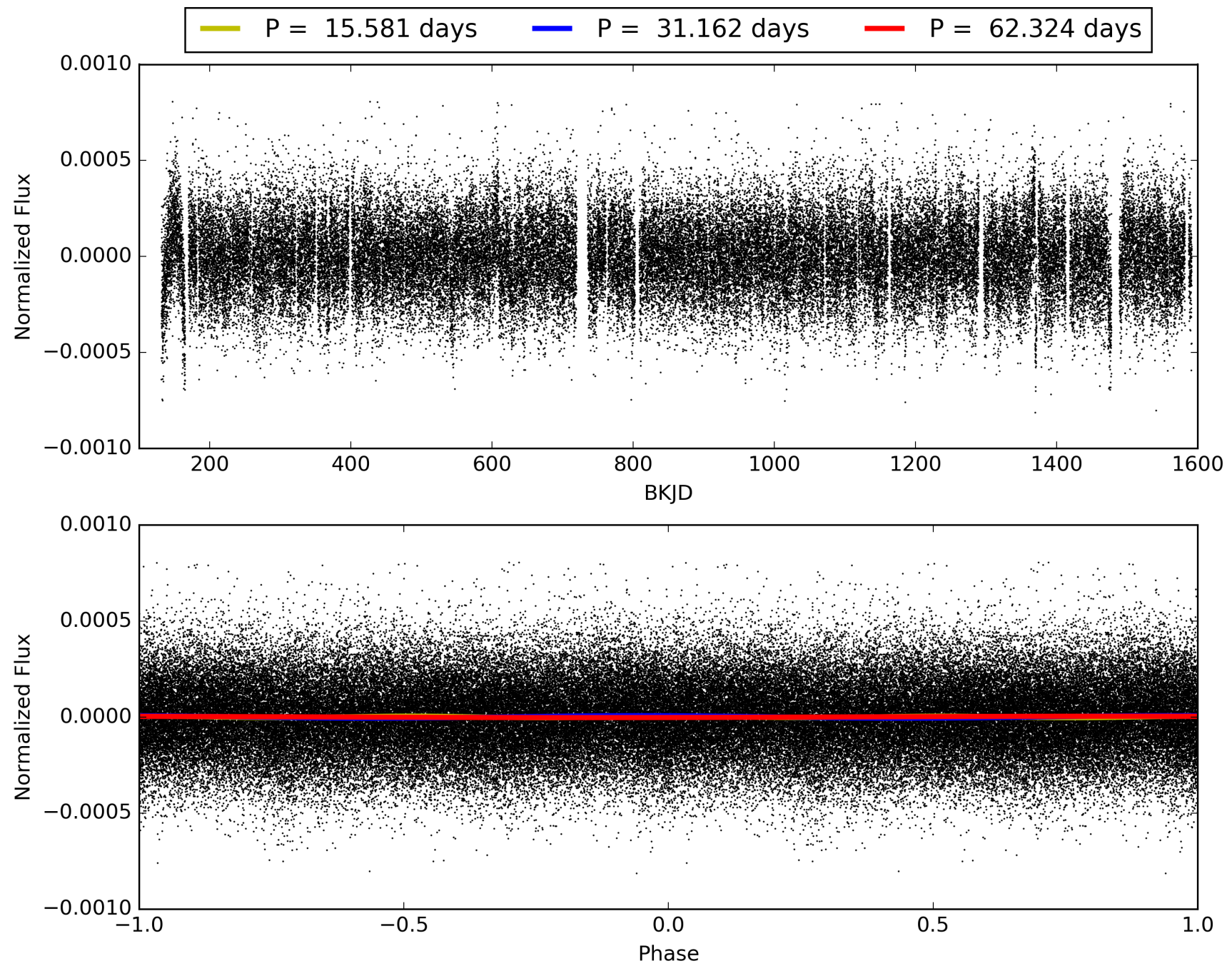
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:32:48 Z

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

TCE 008396184-02, PDC Light Curves

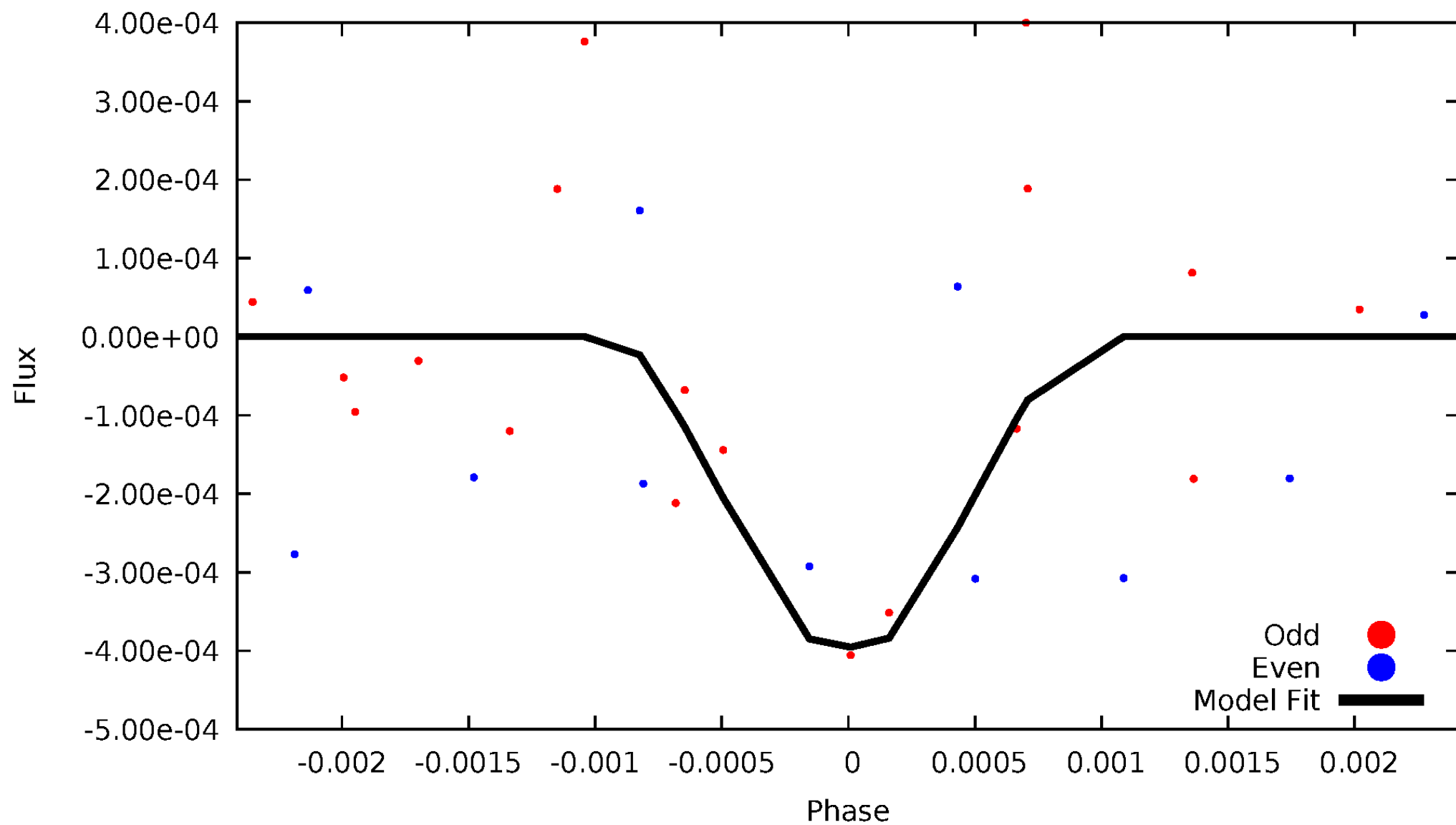


TCE 008396184-02



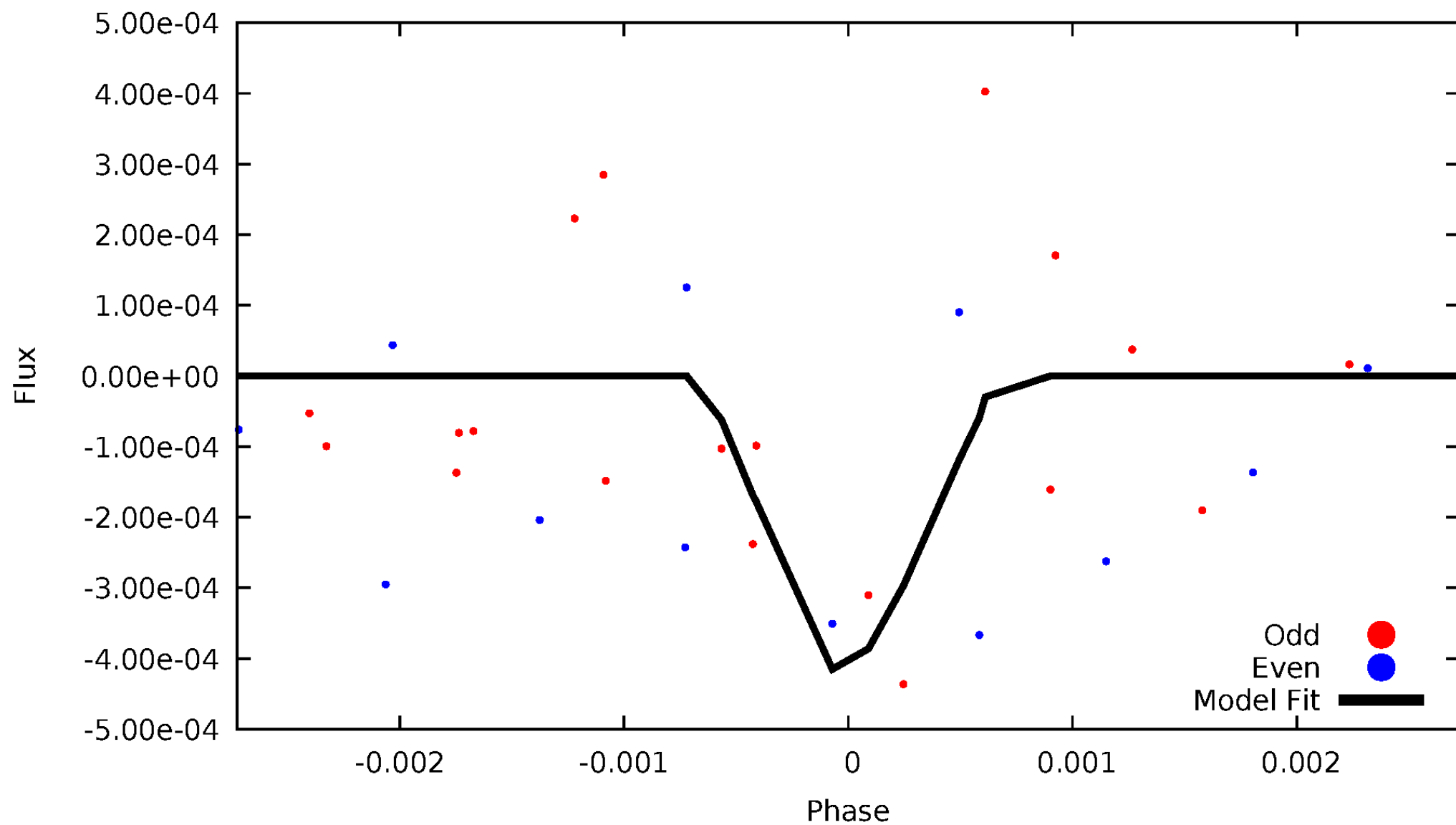
DV Odd/Even

TCE 008396184-02



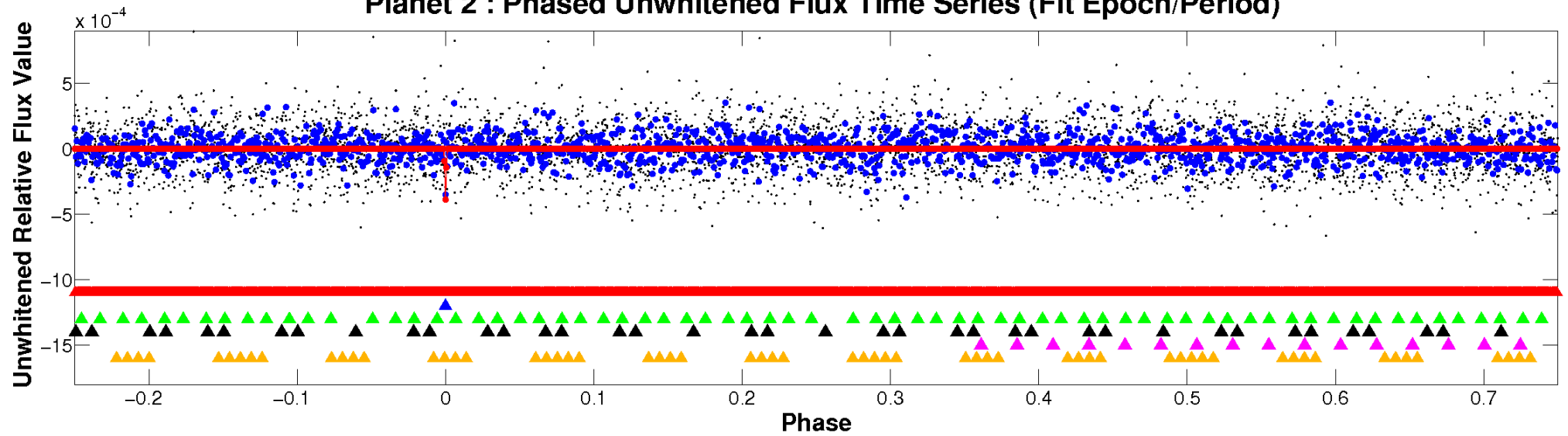
ALT Odd/Even

TCE 008396184-02

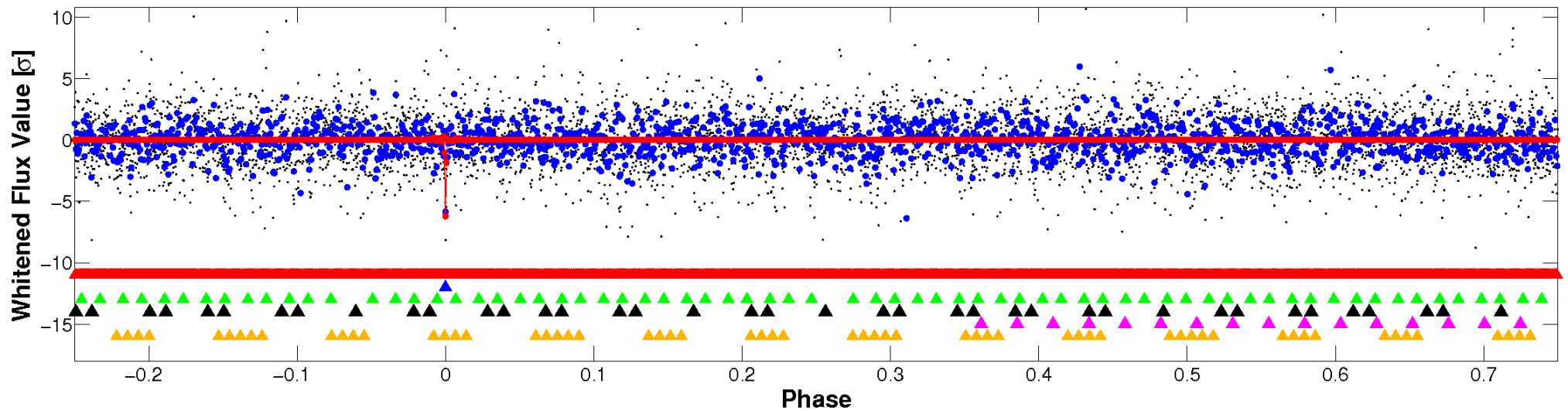


Non-Whitened Vs. Whitened Light Curve

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

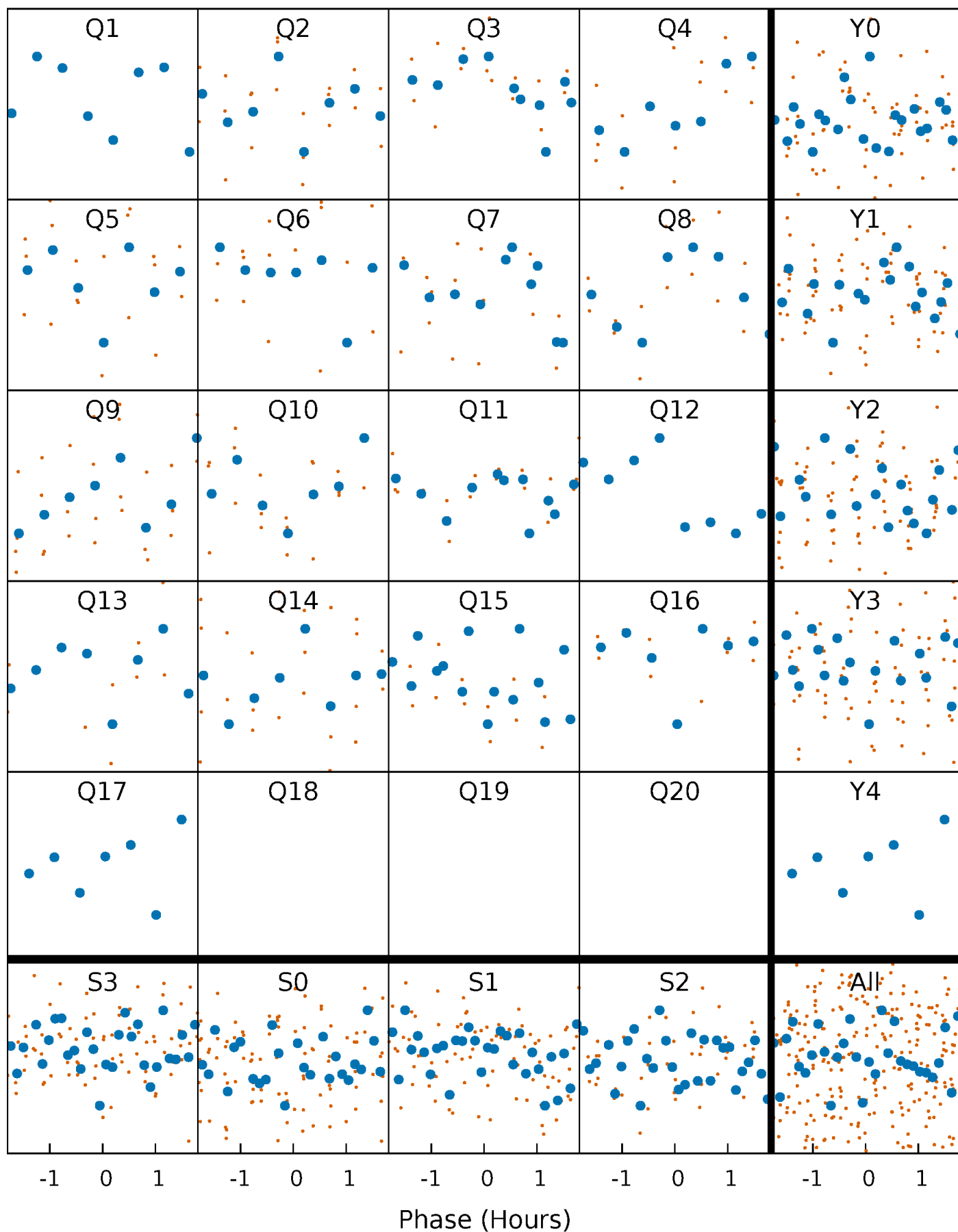


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



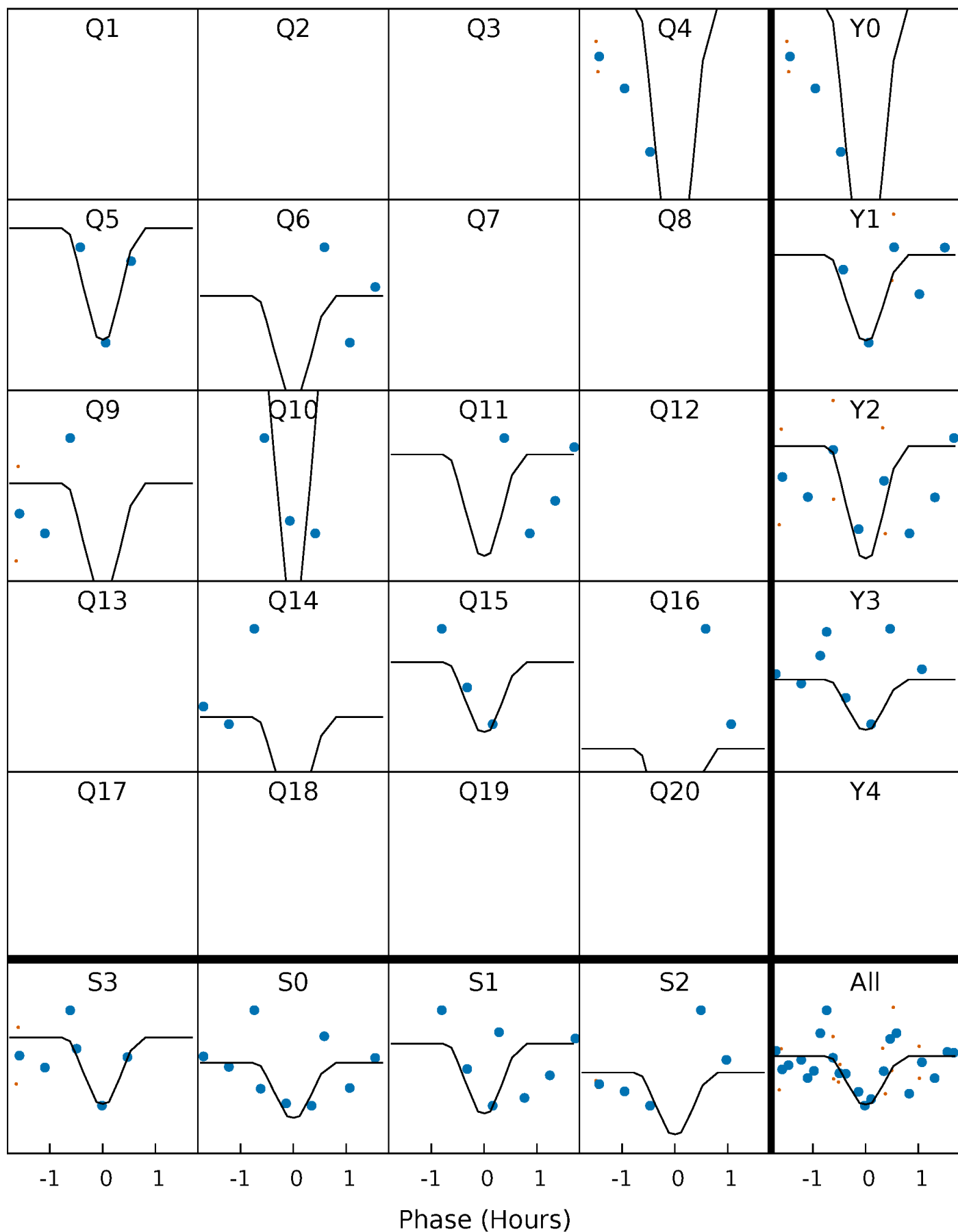
PDC Quarter-Phased Transit Curves

TCE 008396184-02 P= 31.161776 Days $T_0=155.800830$ (BKJD)



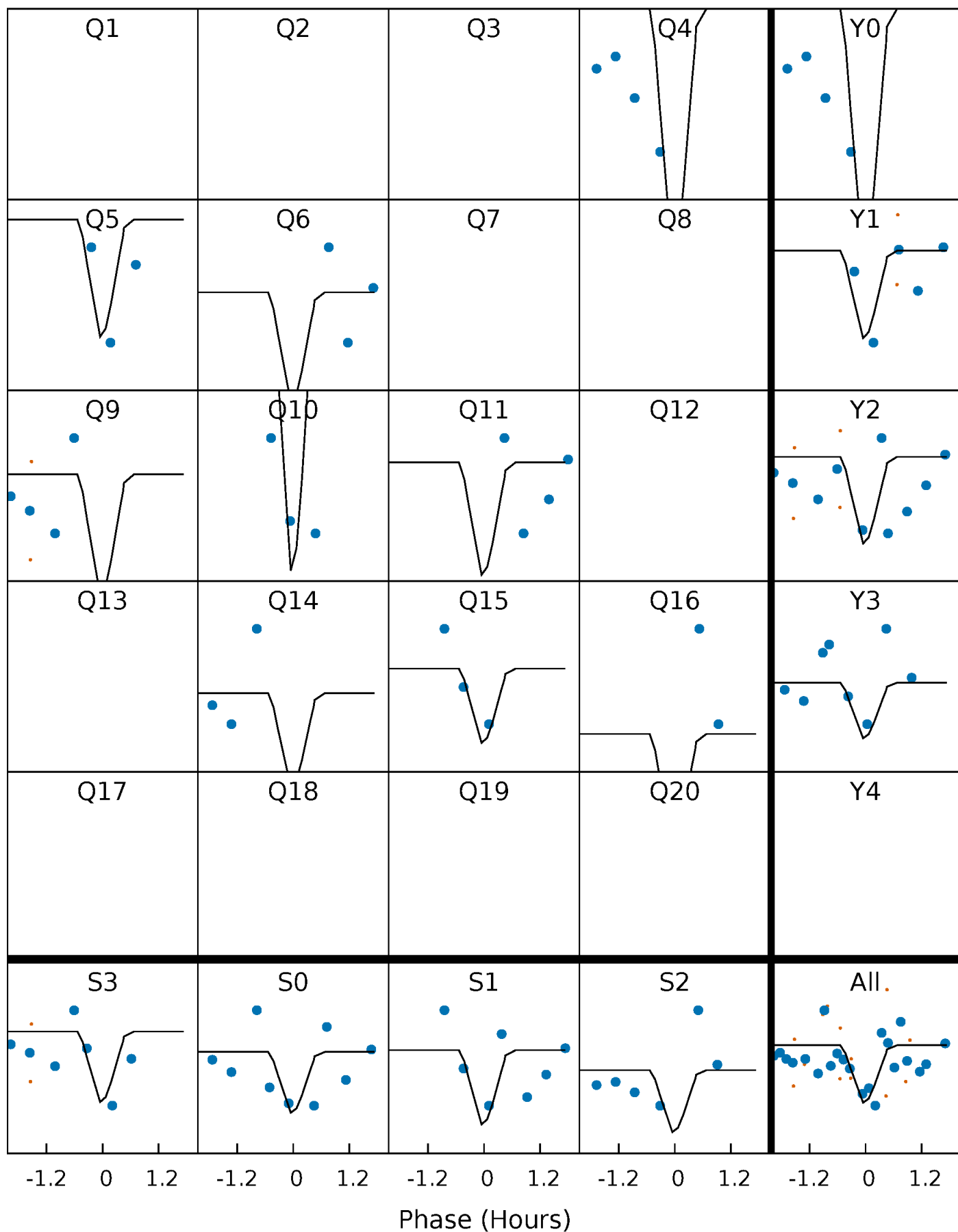
DV Quarter-Phased Transit Curves

TCE 008396184-02 P= 31.161776 Days $T_0=155.800830$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

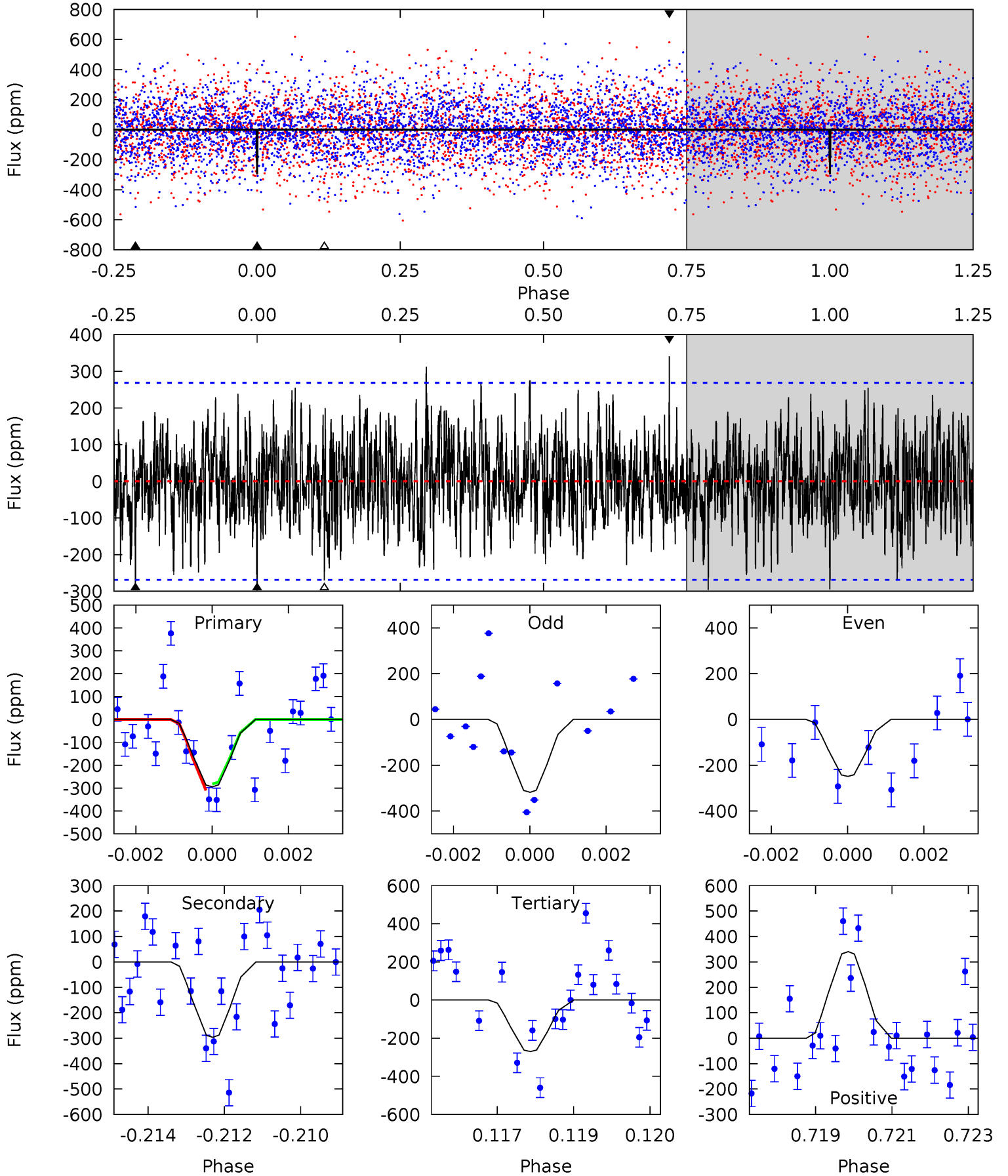
TCE 008396184-02 P= 31.162095 Days $T_0=155.789965$ (BKJD)



DV Model-Shift Uniqueness Test

008396184-02, P = 31.161776 Days, E = 124.639054 Days

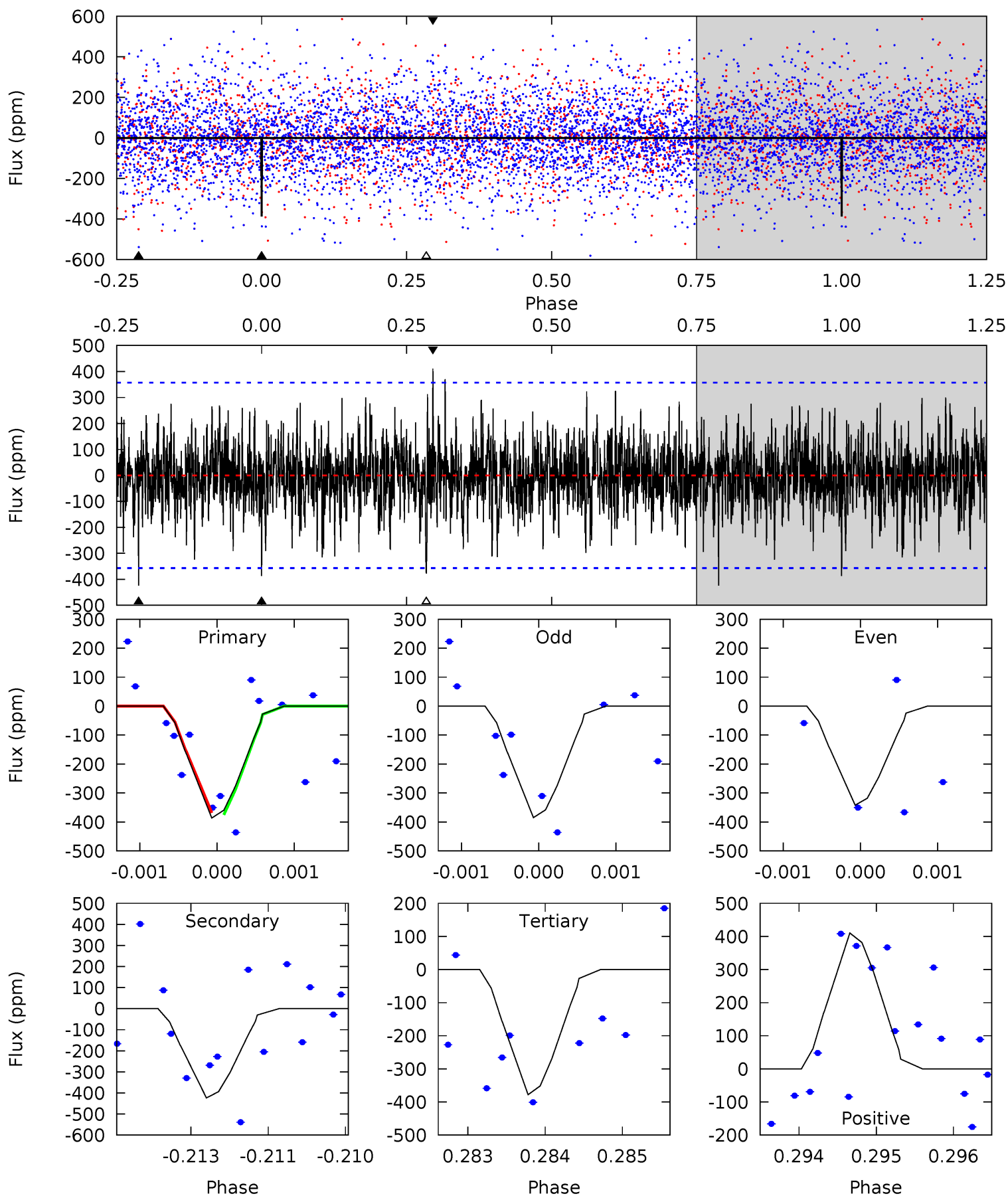
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.84	5.88	5.35	6.76	5.33	3.10	1.80	0.48	-0.92	0.53	-0.88	0.70	0.99	0.53	0.27



Alt Model-Shift Uniqueness Test

008396184-02, P = 31.162095 Days, E = 124.627870 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.89	6.46	5.76	6.26	5.44	3.28	1.51	0.13	-0.37	0.70	0.20	0.33	1.05	0.49	0.05



Stellar Parameters For KIC 008396184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5199^{+164}_{-182}	$3.392^{+0.476}_{-0.204}$	$-0.160^{+0.300}_{-0.300}$	$4.430^{+1.219}_{-2.438}$	$1.764^{+0.196}_{-0.785}$	$0.029^{+0.141}_{-0.016}$
	+3%/-4%	+14%/-6%	+188%/-188%	+28%/-55%	+11%/-45%	+494%/-54%
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 008396184-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-296 ± 50	$22.68^{+25.26}_{-15.39}$	1372^{+133}_{-185}	3444^{+1651}_{-698}	16^{+142}_{-13}
Alt.	-424 ± 66	$22.58^{+27.09}_{-15.14}$	1371^{+141}_{-190}	3554^{+2108}_{-692}	22^{+202}_{-17}

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 $A_{obs} \gg 1.0$

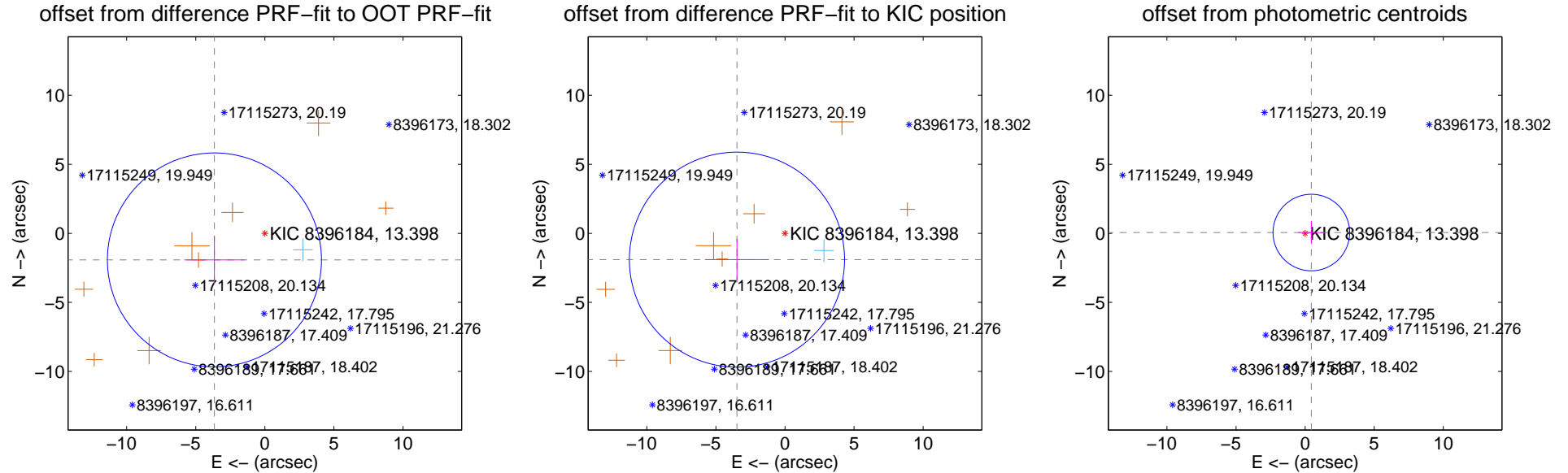
DV Centroid Data

Supplemental centroid analysis for 008396184-02. Kepler magnitude: 13.40. Transit SNR 11.98

There are 1 quarters with good PRF difference image offsets

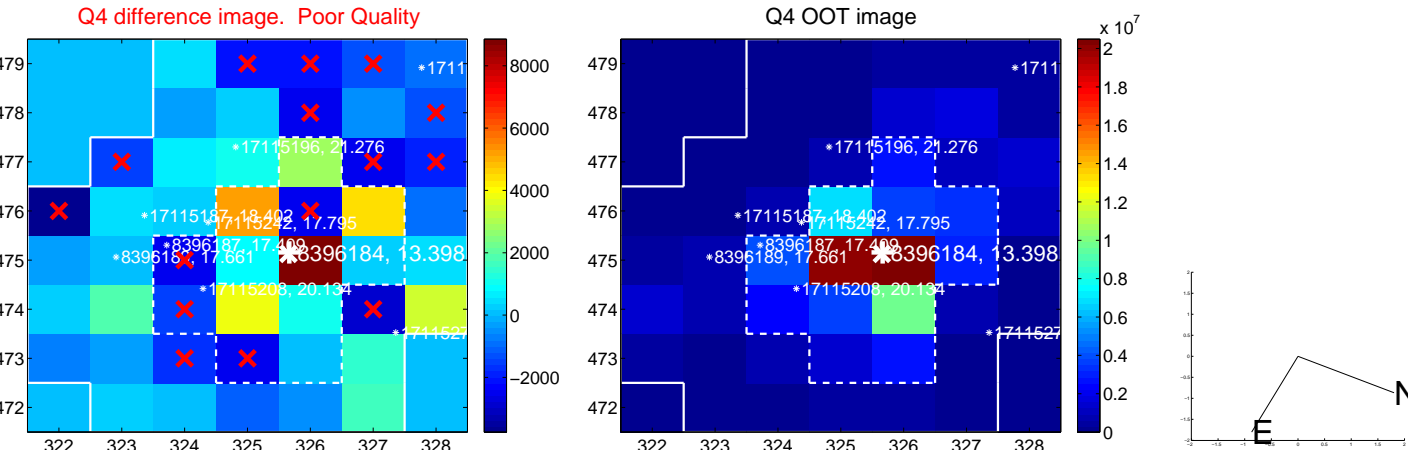
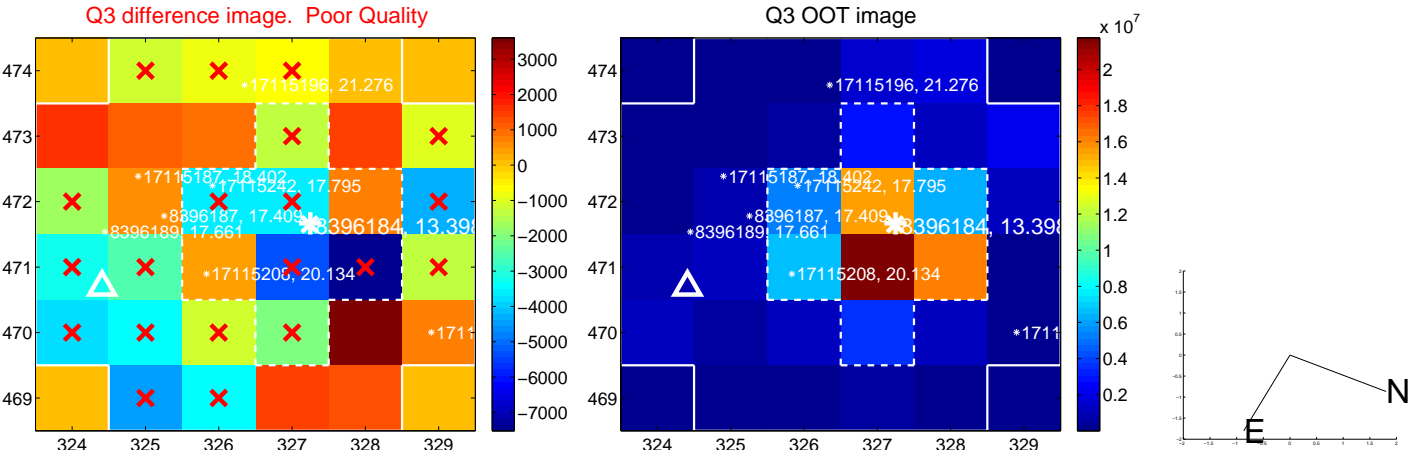
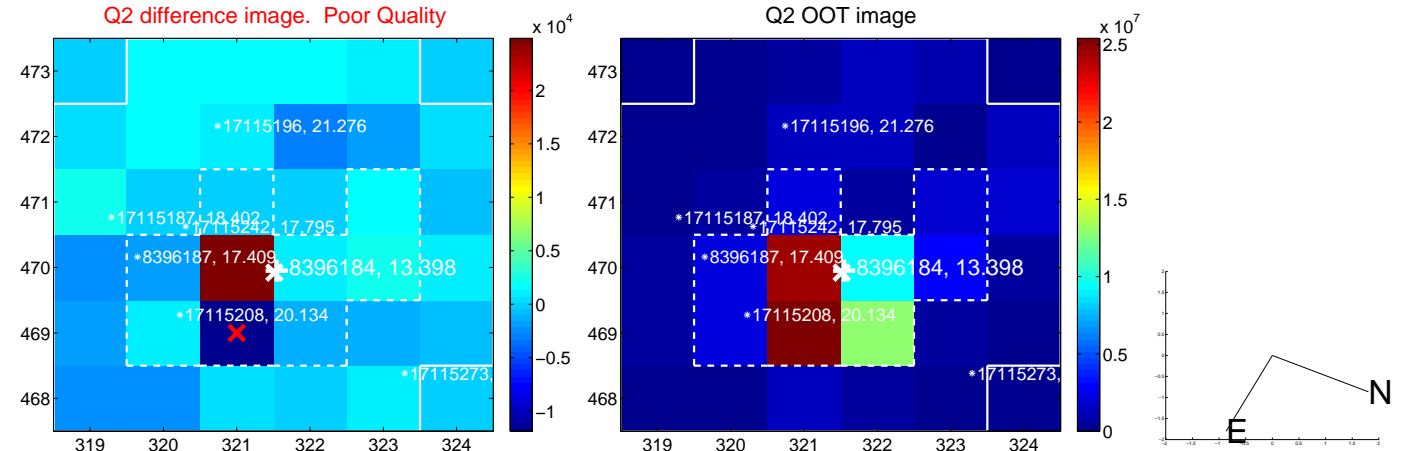
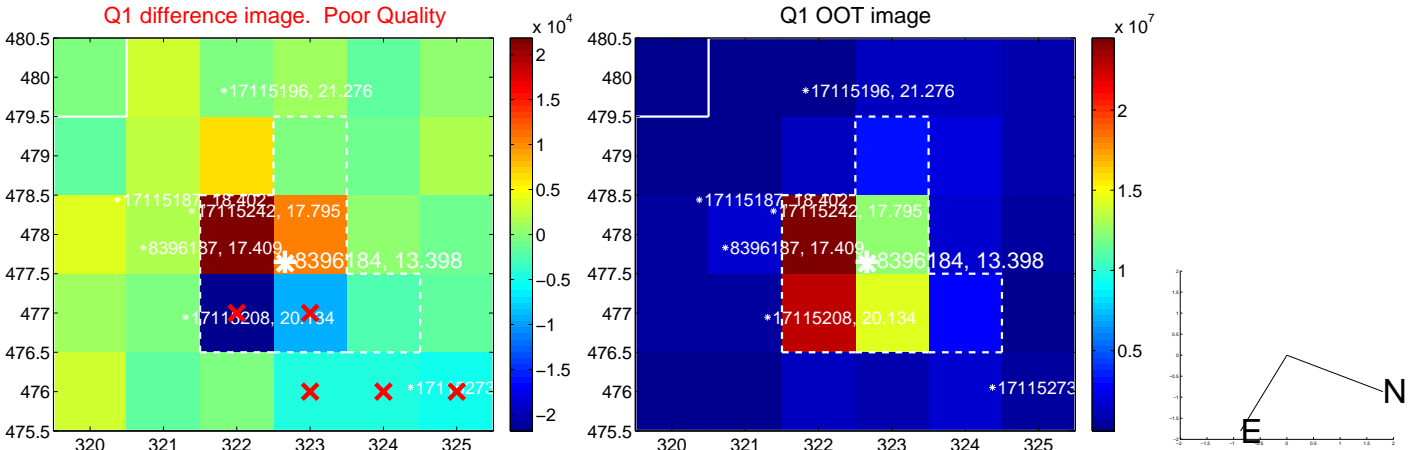
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.125 ± 2.582	1.60	3.649 ± 2.190	-1.924 ± 1.719
PRF-fit source offset from KIC position	3.964 ± 2.596	1.53	3.477 ± 2.318	-1.905 ± 1.474
photometric centroid source offset	0.45 ± 0.92	0.49	-0.45 ± 0.93	0.06 ± 0.84

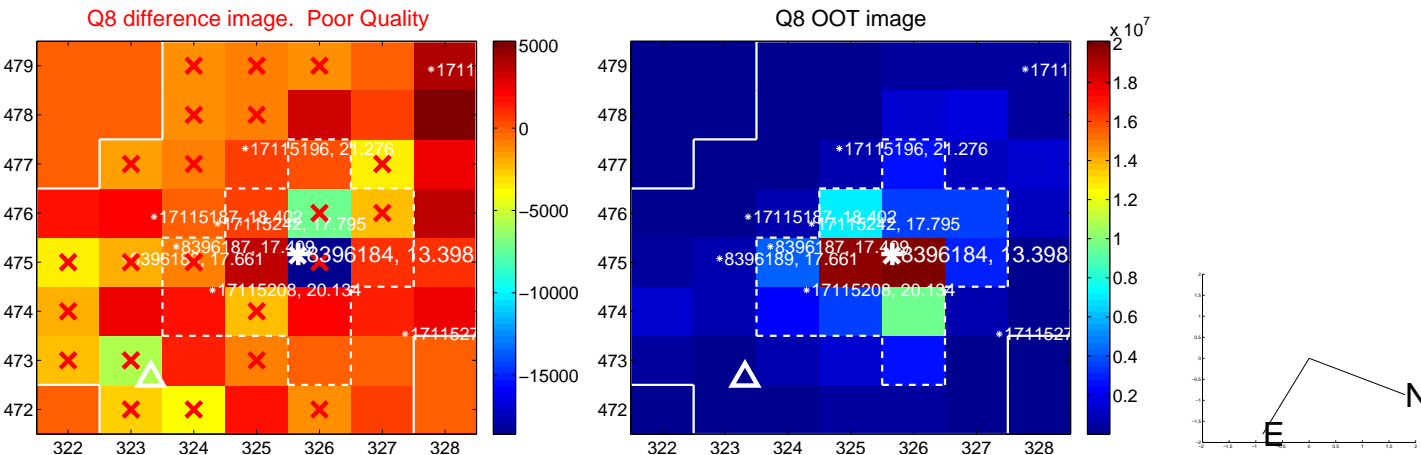
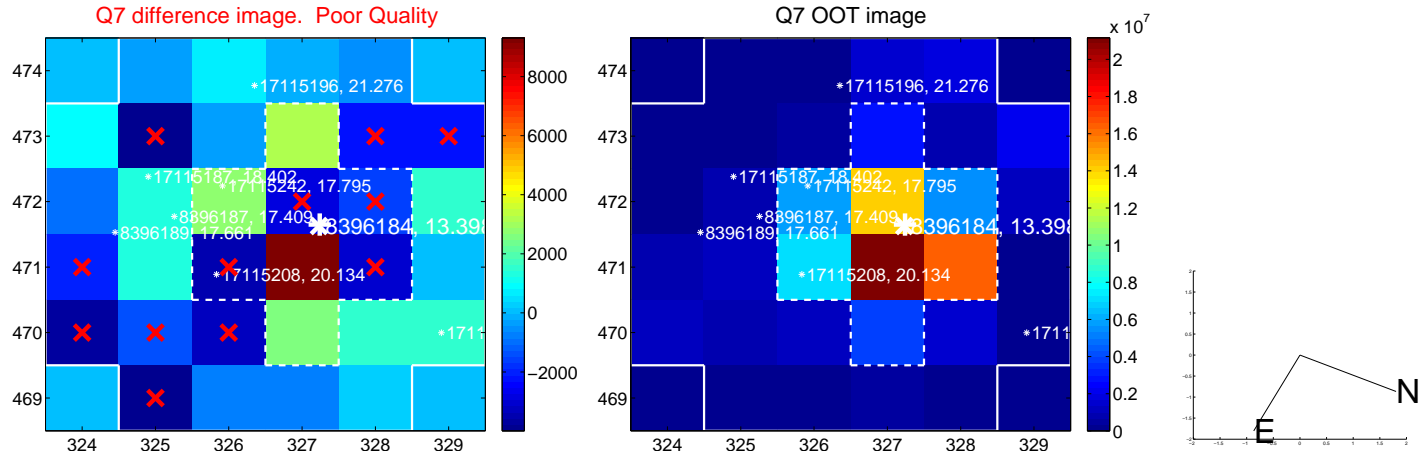
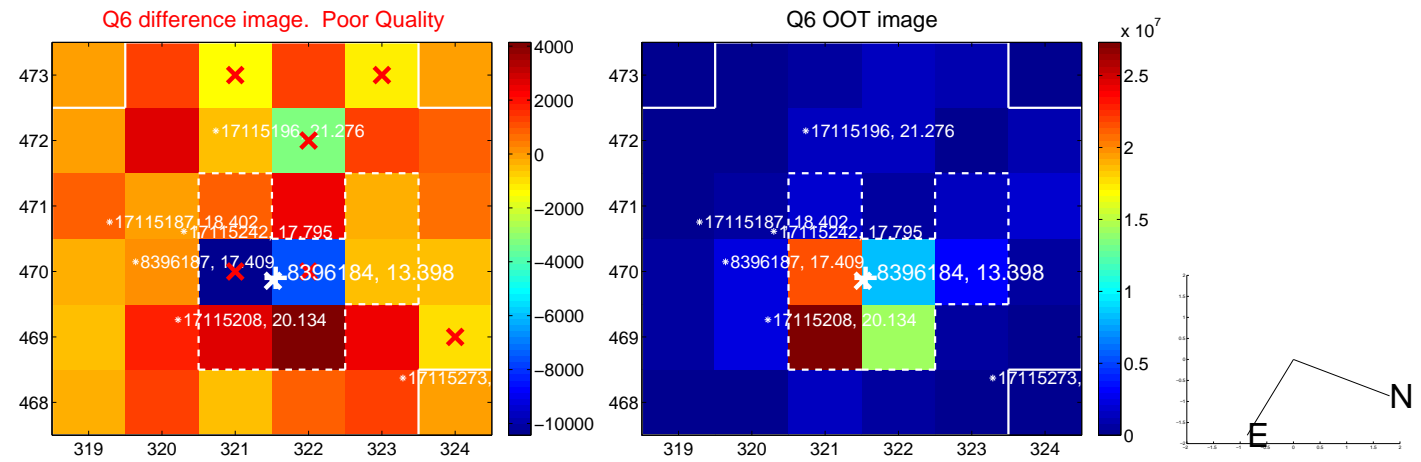
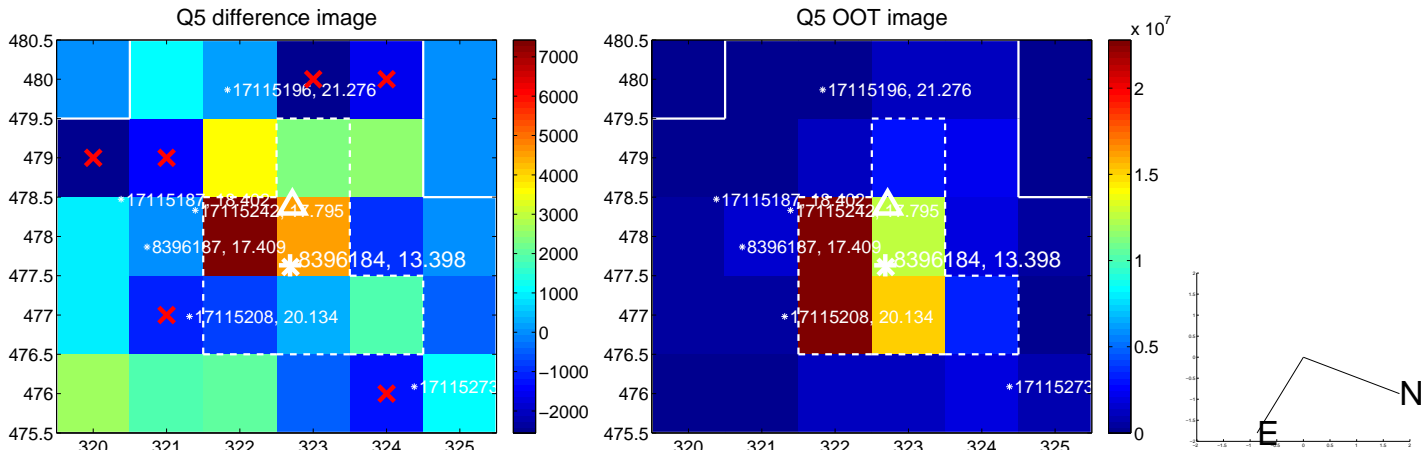


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

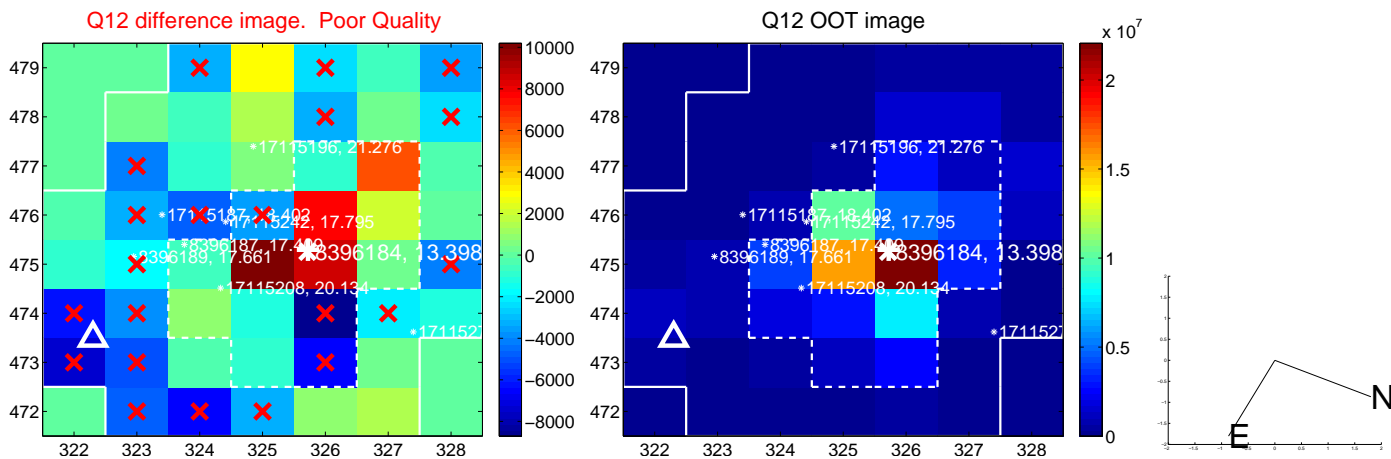
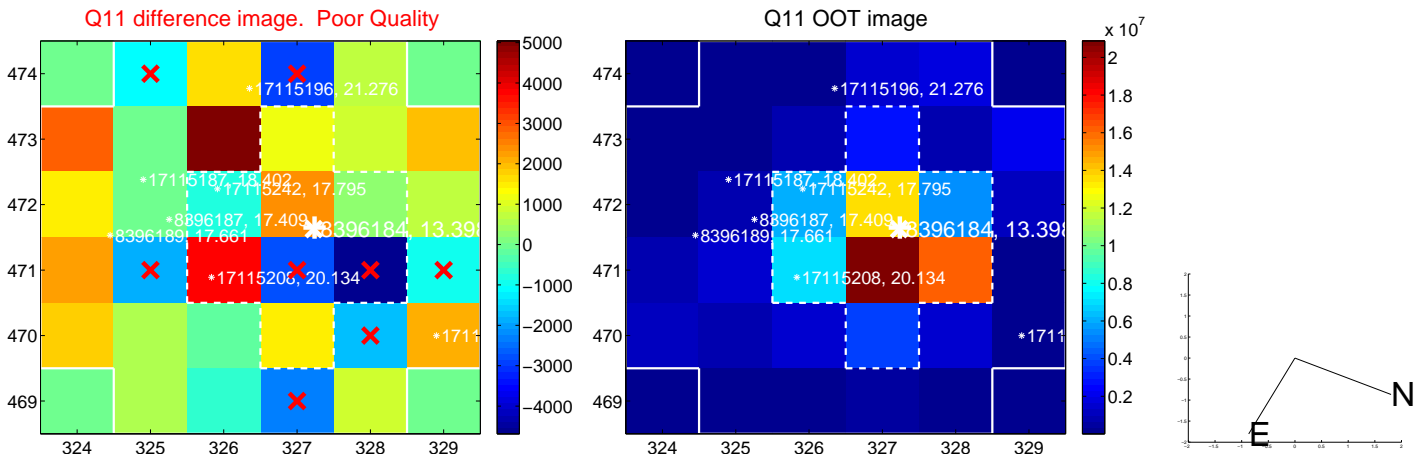
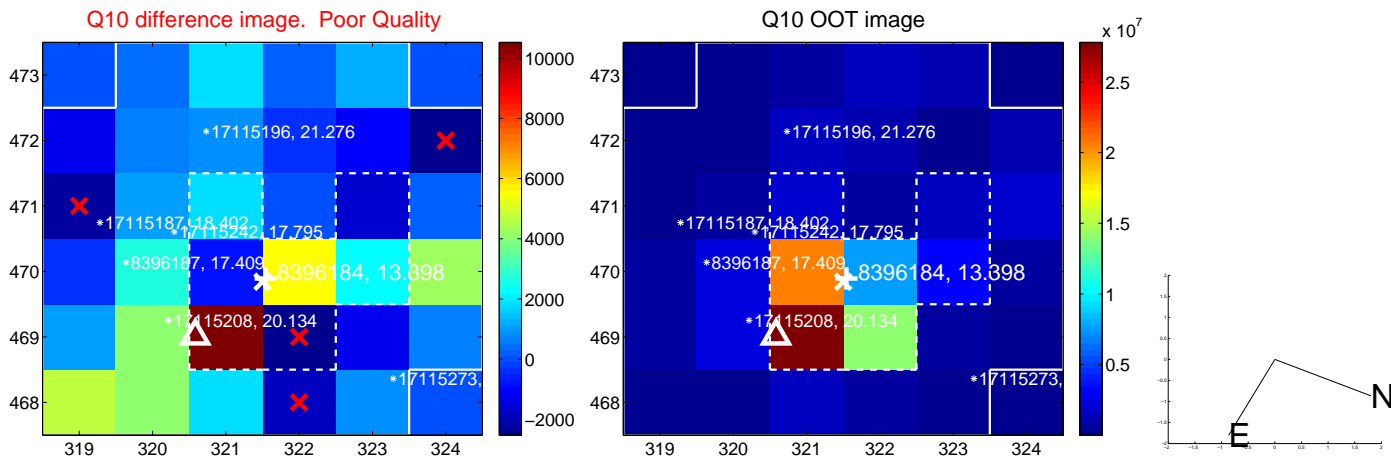
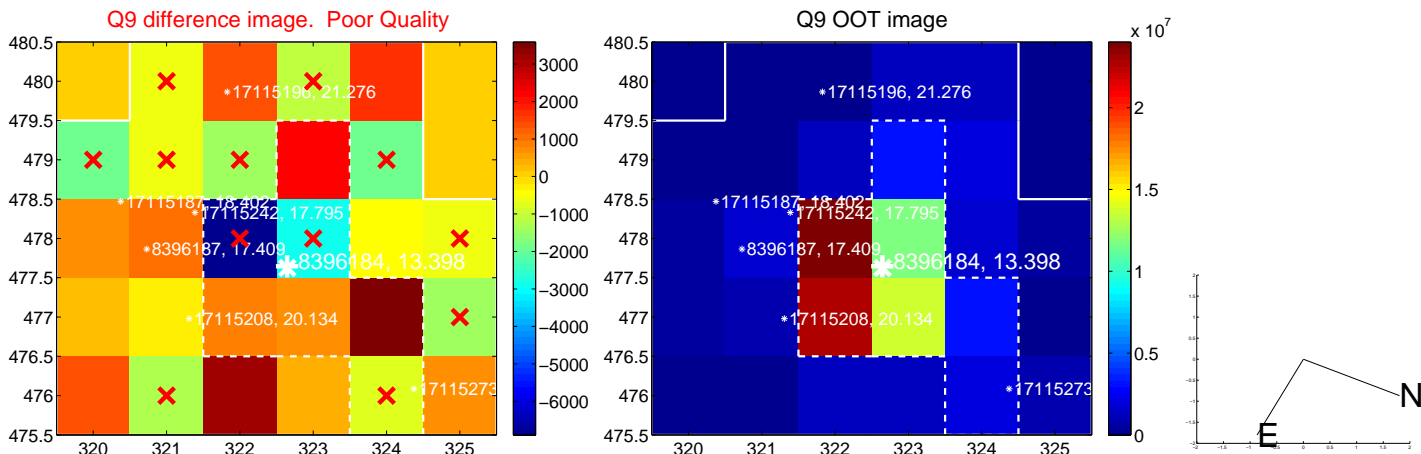
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



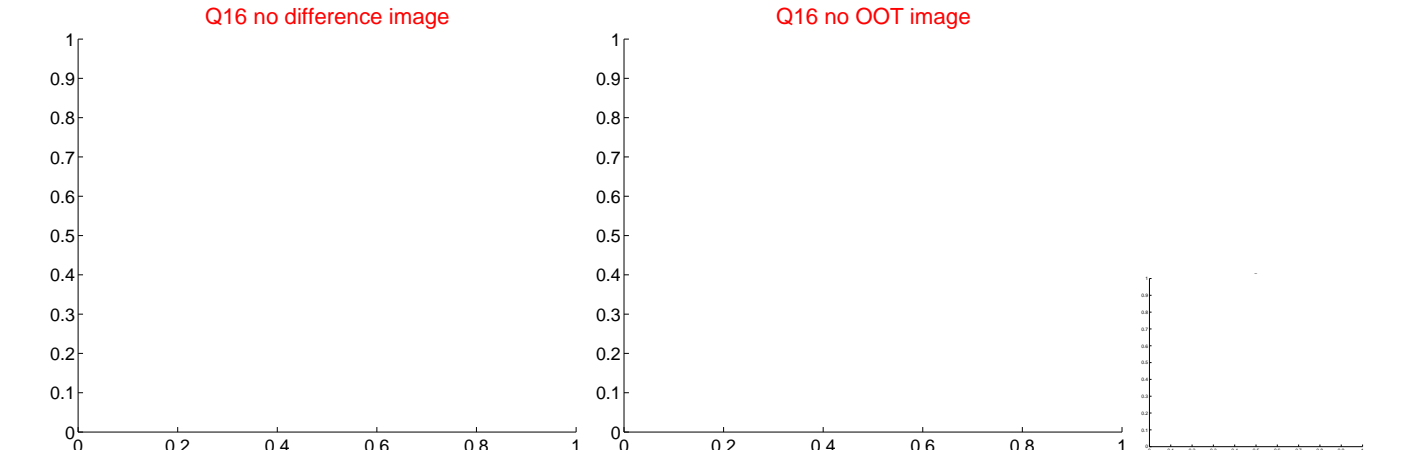
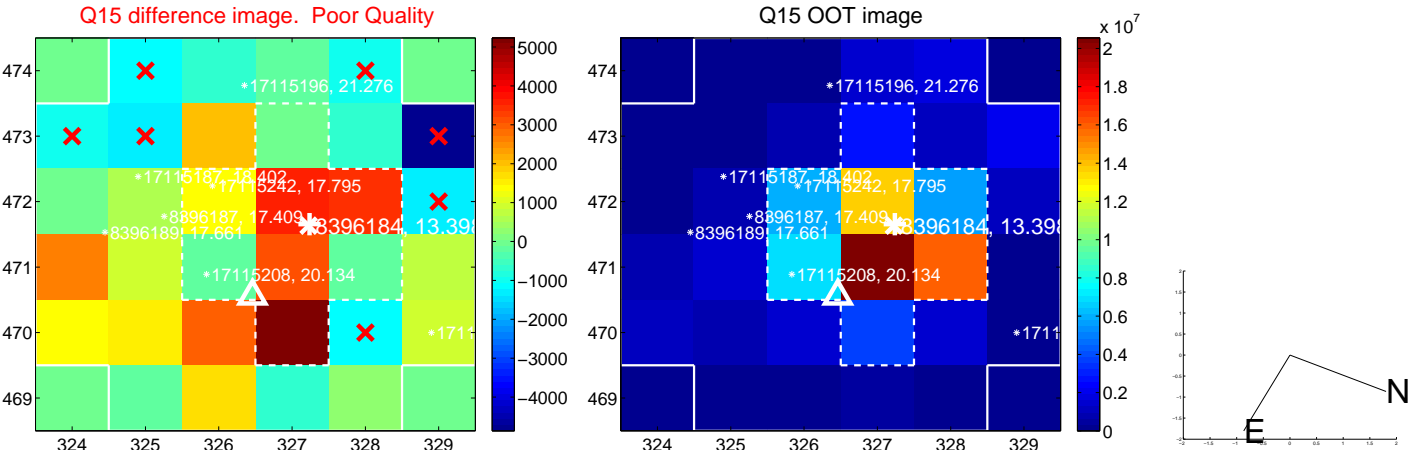
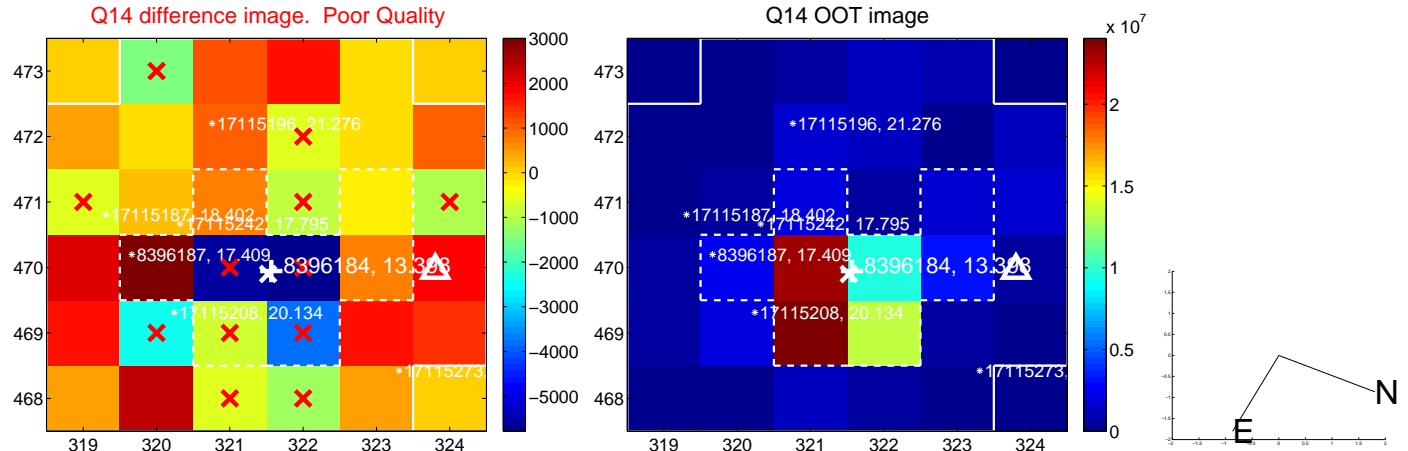
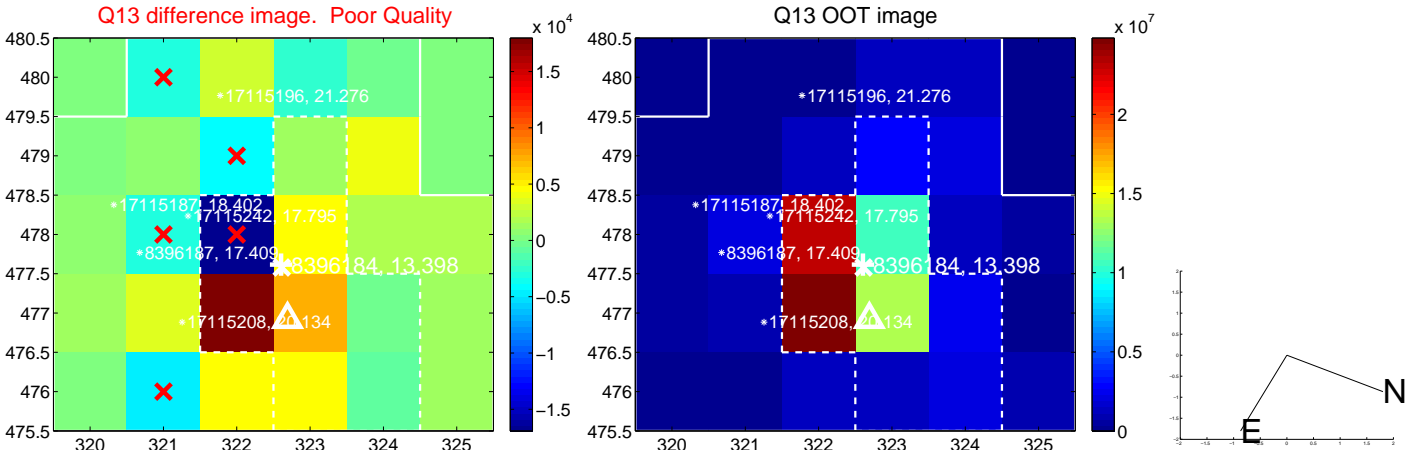
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



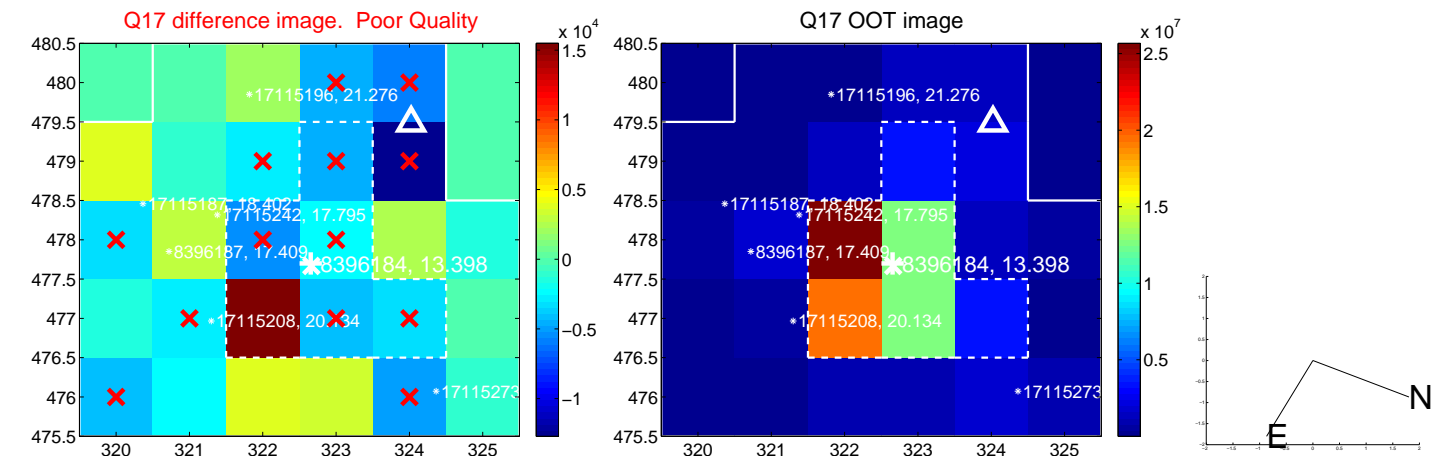
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



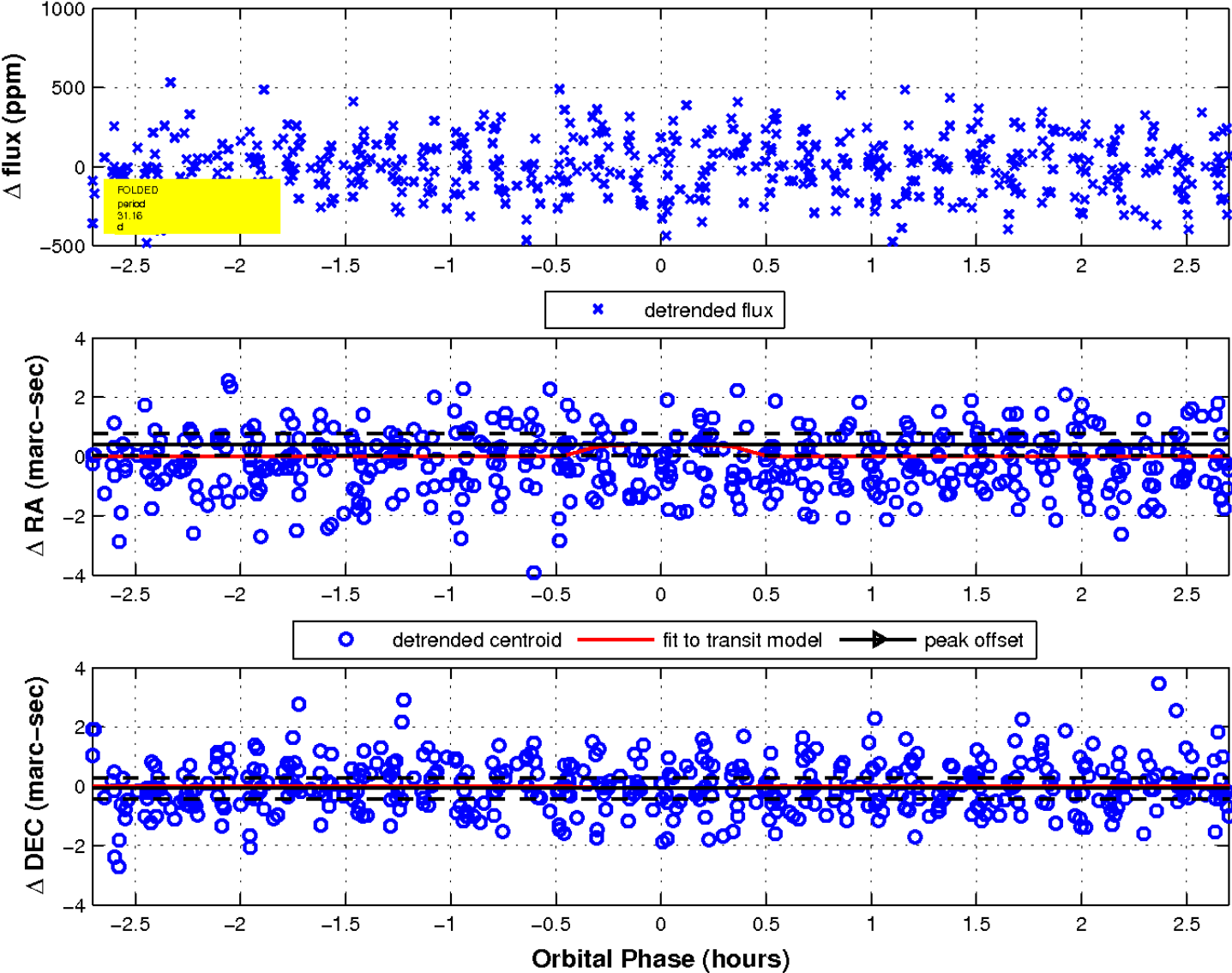
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

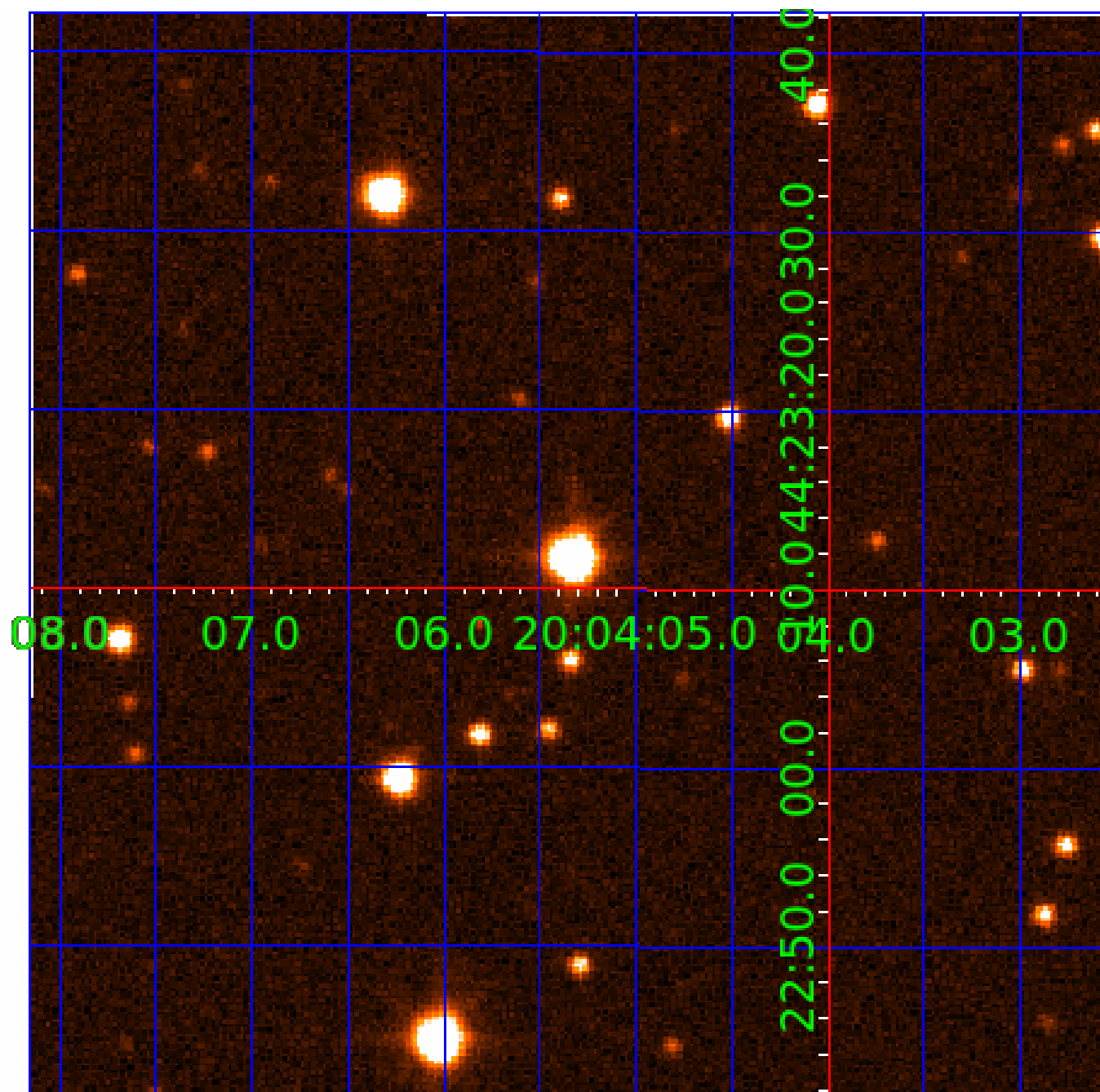


fluxWeightedCentroids, Planet 2 of 6



UKIRT Image

Declination



KIC 008396184

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})
008396184-01	OBS	No	0.656486	131.936895	14.3	4.663	10.1	8.3	4.43	5199	1.80	0.00
008396184-02	OBS	No	31.161776	155.800830	395.5	0.903	11.1	12.0	4.43	5199	10.45	234.07
008396184-03	OBS	No	21.065844	143.782105	315.5	1.046	9.8	11.1	4.43	5199	9.13	394.52
008396184-04	OBS	No	38.259300	136.611763	391.5	1.210	10.6	12.4	4.43	5199	8.91	178.04
008396184-05	OBS	No	92.730065	147.222722	254.1	8.957	9.4	9.3	4.43	5199	7.69	54.69
008396184-06	OBS	No	24.500546	139.857392	327.2	1.180	9.4	9.2	4.43	5199	7.98	322.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008396184-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET
008396184-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008396184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008396184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

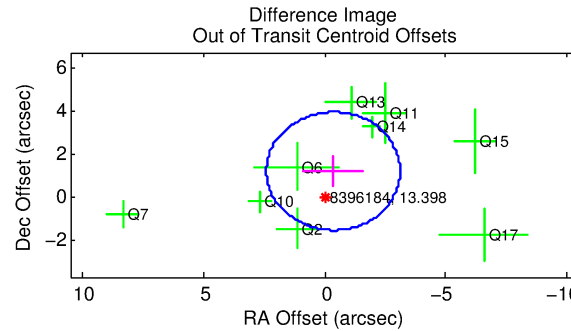
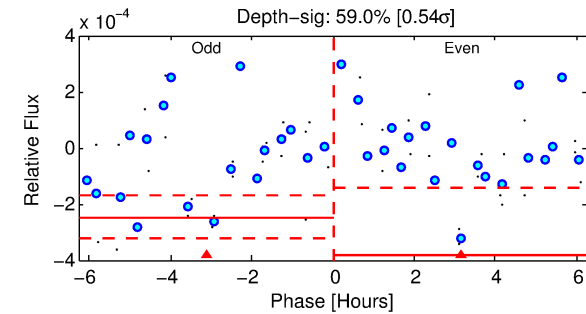
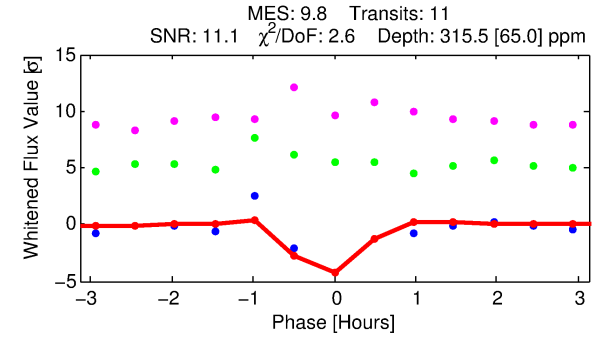
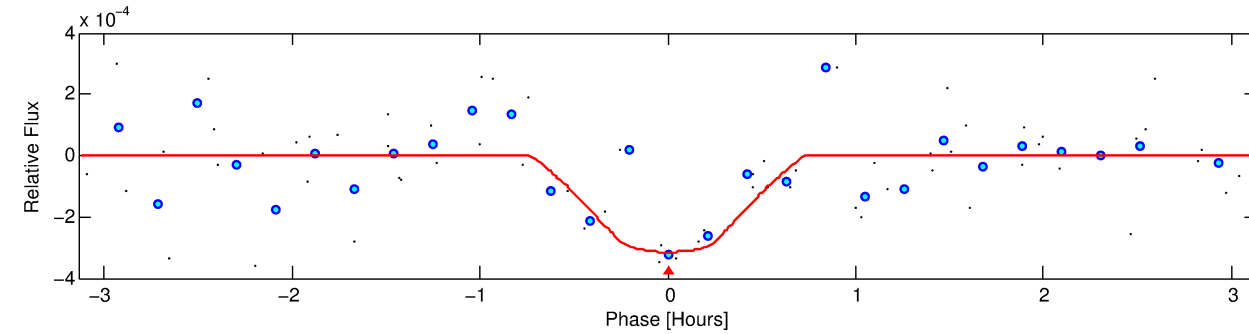
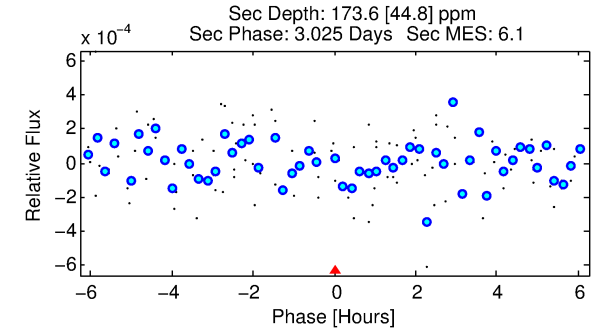
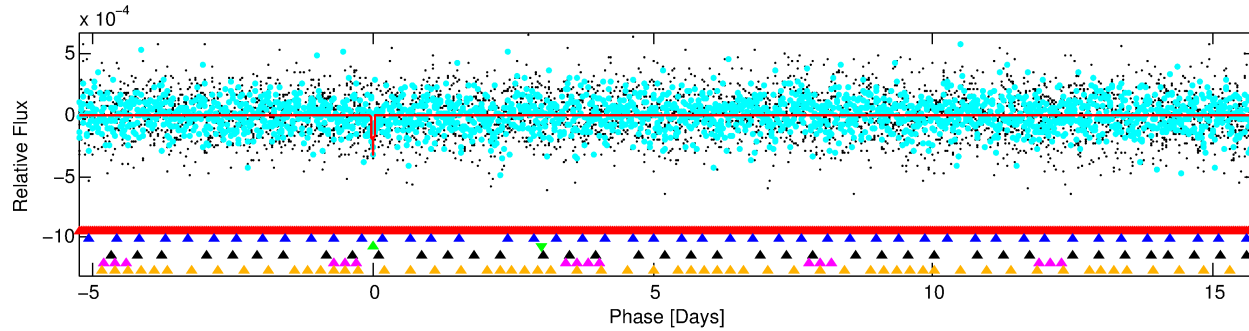
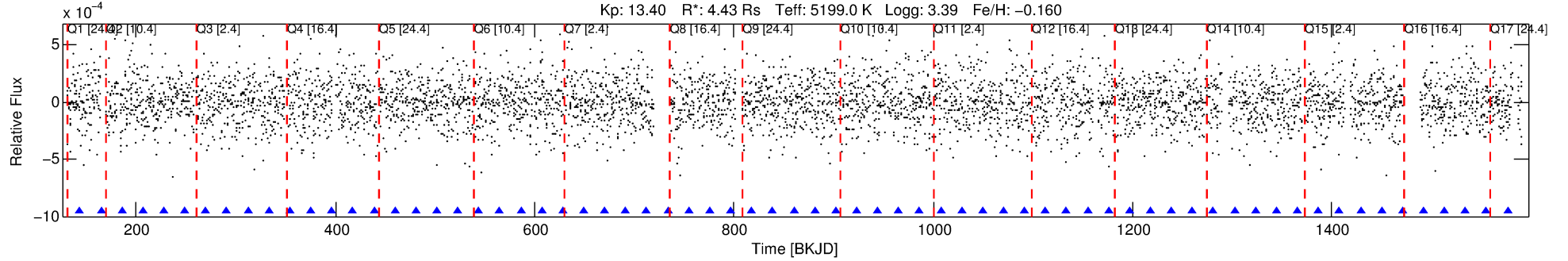
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008396184-03

No Significant Match Found

DV One-Page Summary

KIC: 8396184 Candidate: 3 of 6 Period: 21.066 d



DV Fit Results:

Period = 21.06584 [0.00015] d
Epoch = 143.7821 [0.0064] BKJD
Rp/R* = 0.0189 [0.0278]
a/R* = 87.61 [513.19]
b = 0.85 [2.03]
Seff = 394.52 [327.27]
Teq = 1136 [236] K
Rp = 9.13 [14.36] Re
a = 0.1804 [0.0934] AU
Ag = 37.34 [114.63] [0.32 σ]
Teffp = 4343 [3216] K [0.99 σ]

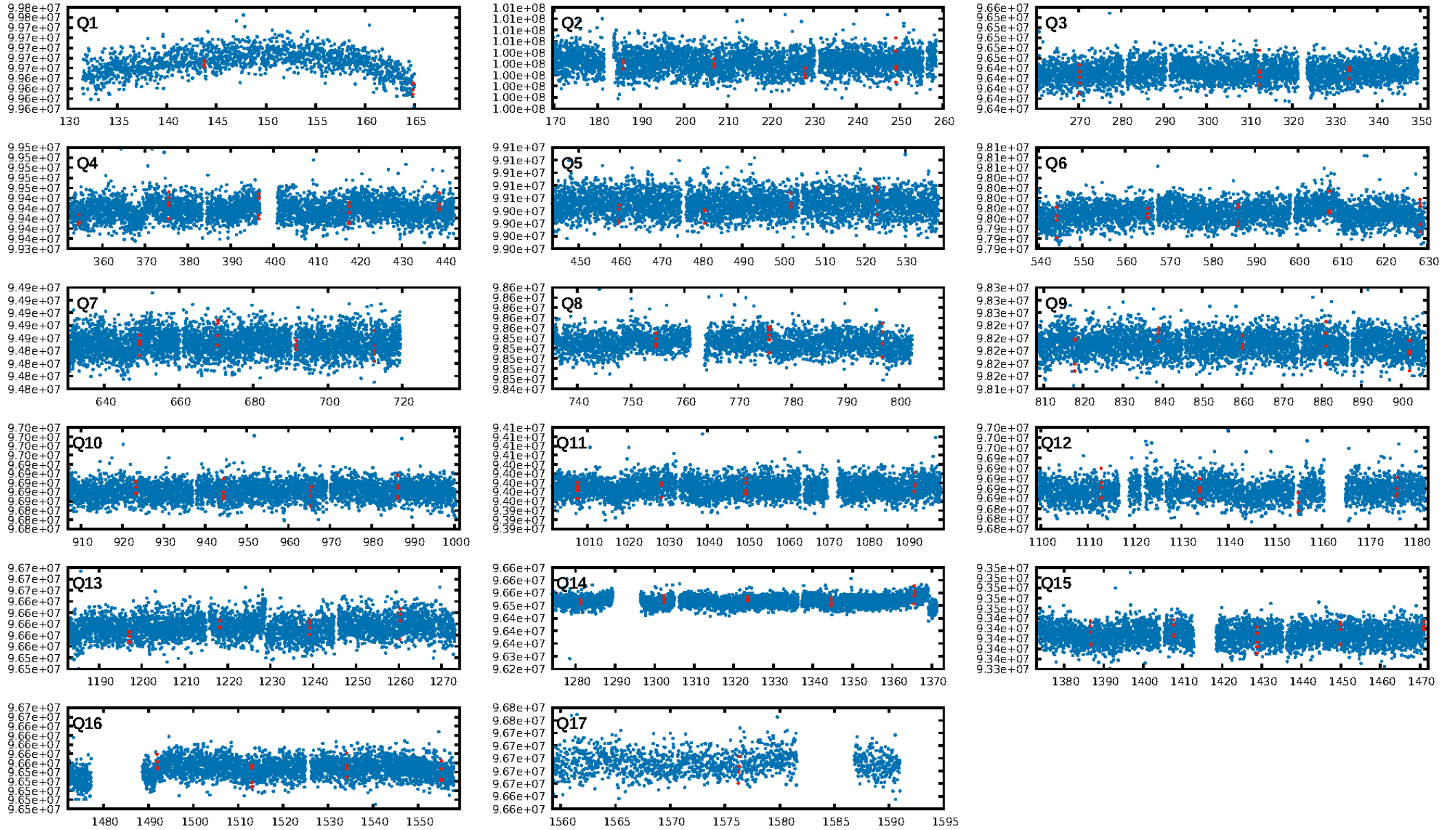
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [102.49 σ]
LongPeriod-sig: 100.0% [52.28 σ]
ModelChiSquare2-sig: 51.6%
ModelChiSquareGof-sig: 98.6%
Bootstrap-pfa: 6.27e-10
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: -1.072
Centroid-sig: 0.1%
Centroid-so: 1.921 arcsec [2.34 σ]
OotOffset-rm: 1.248 arcsec [1.36 σ]
KicOffset-rm: 1.359 arcsec [1.23 σ]
OotOffset-st: 4/3/0/2 [9]
KicOffset-st: 4/3/0/2 [9]
DiffImageQuality-fgm: 0.11 [1/9]
DiffImageOverlap-fno: 0.00 [0/17]

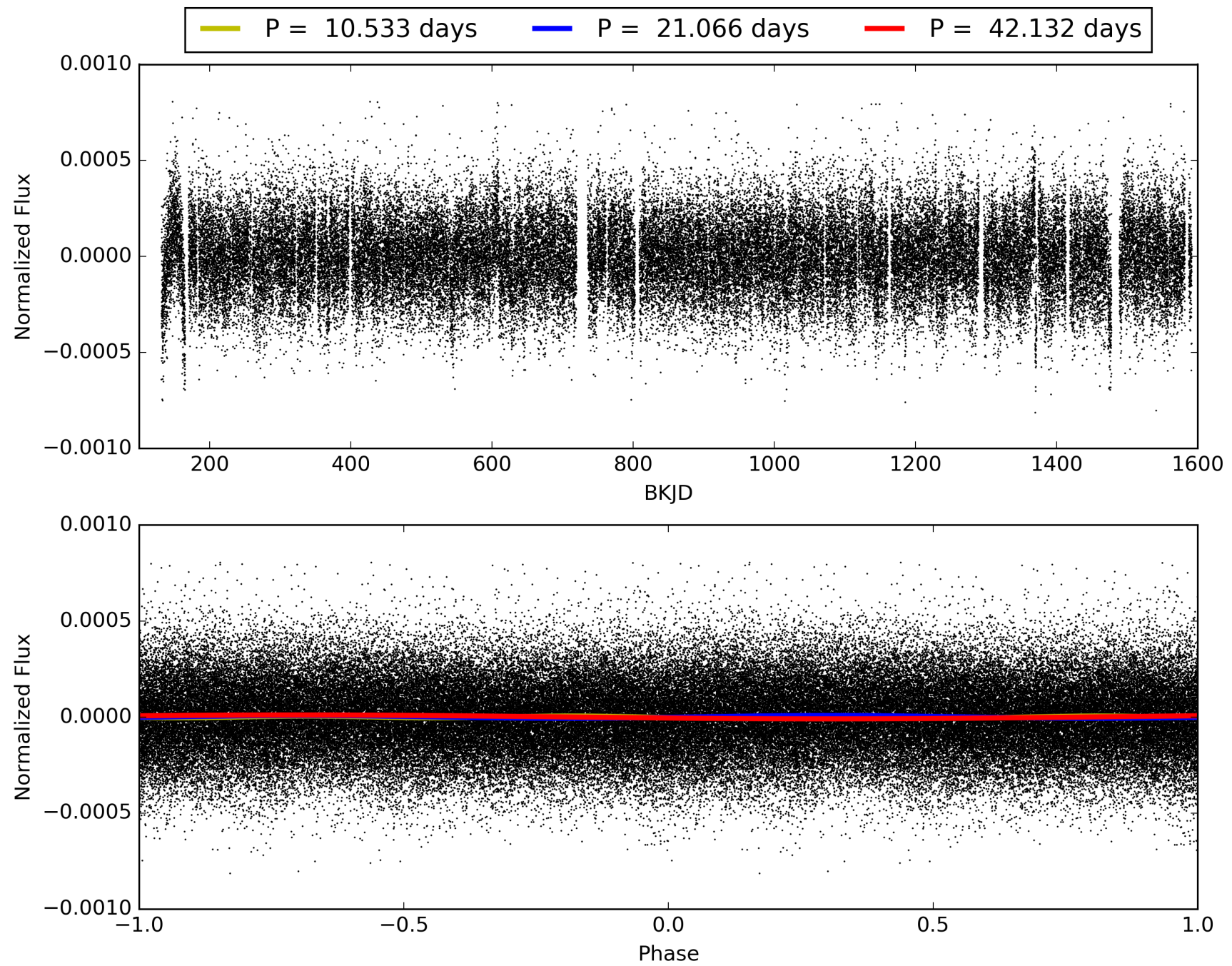
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:32:51 Z

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

TCE 008396184-03, PDC Light Curves

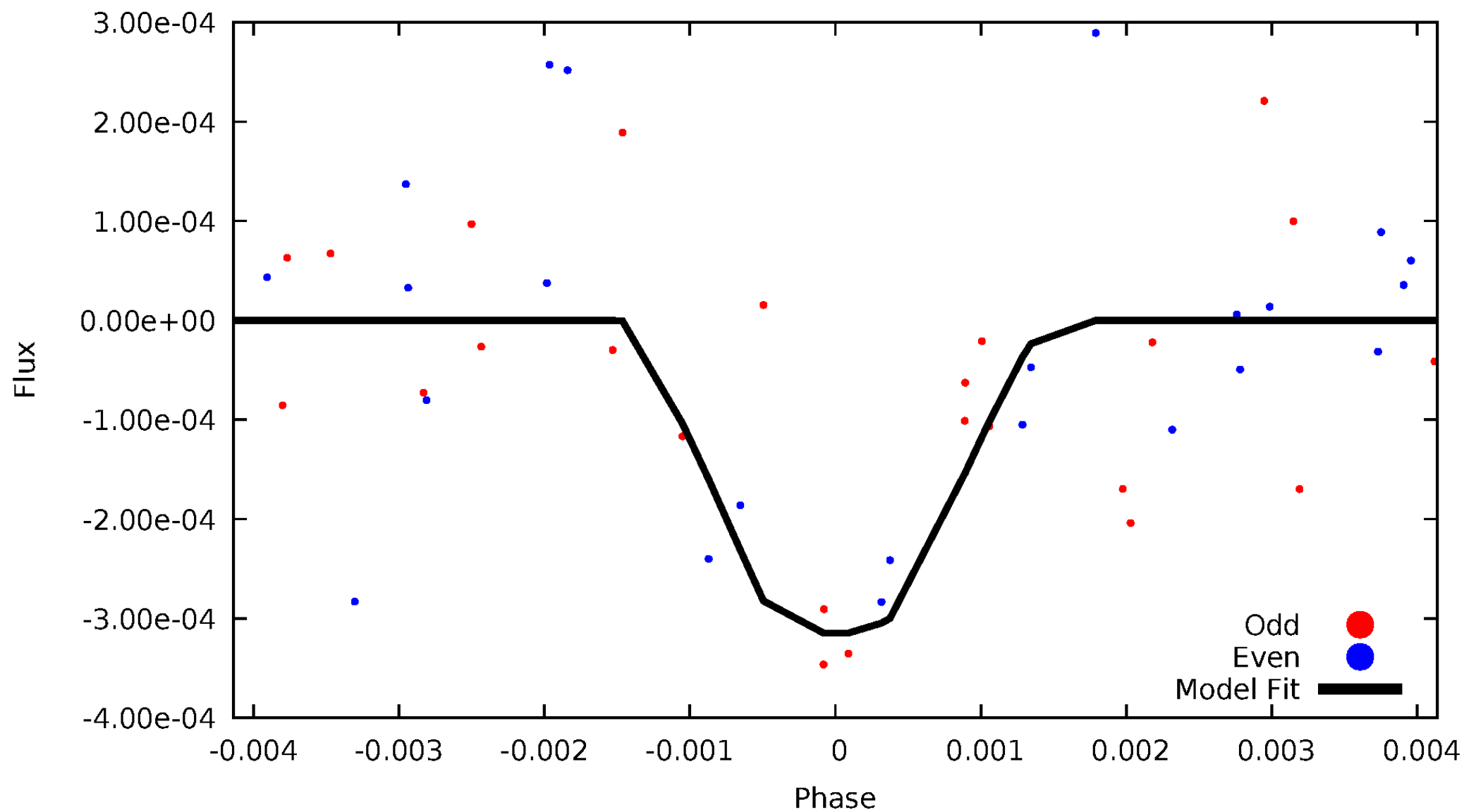


TCE 008396184-03



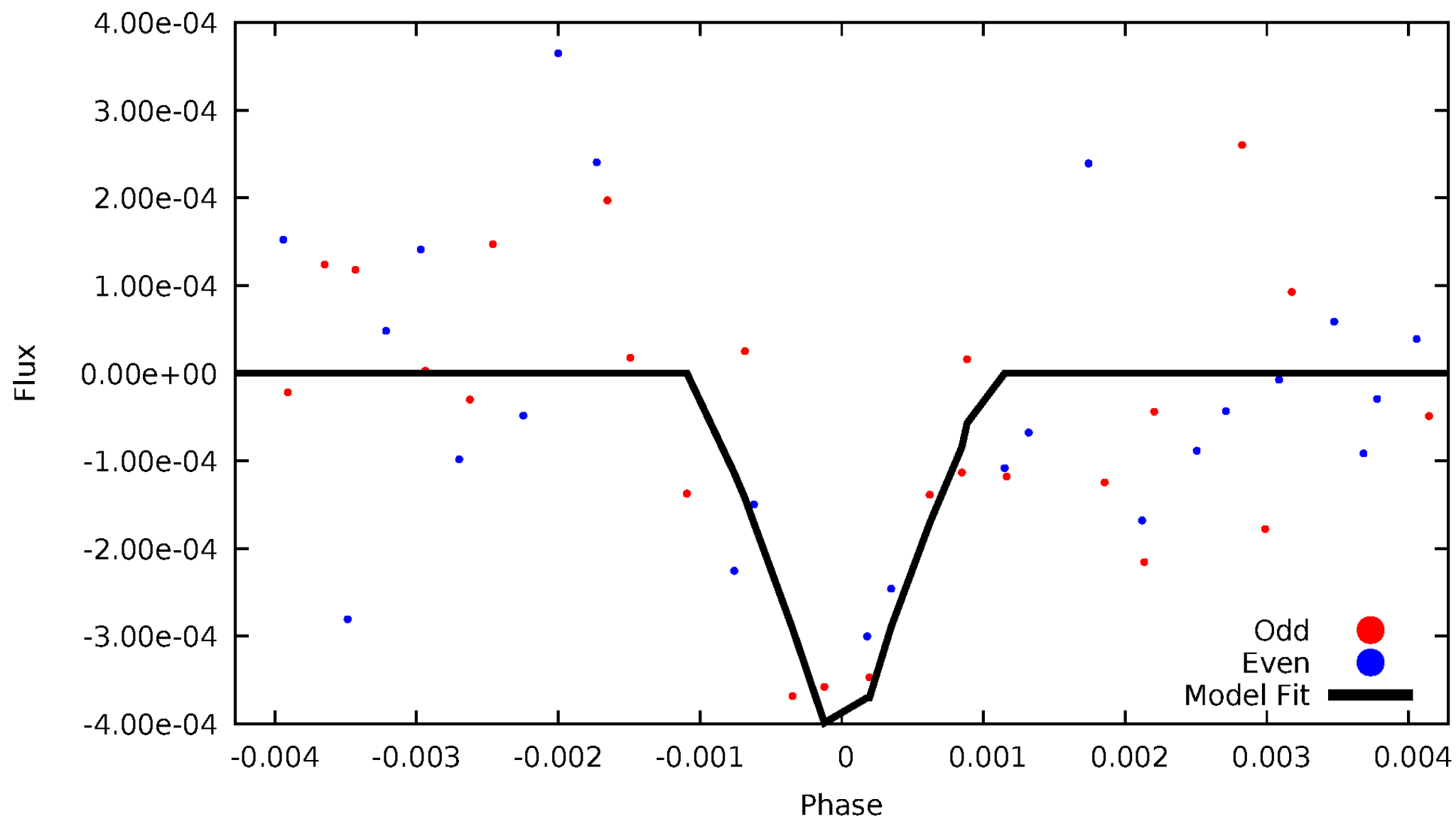
DV Odd/Even

TCE 008396184-03



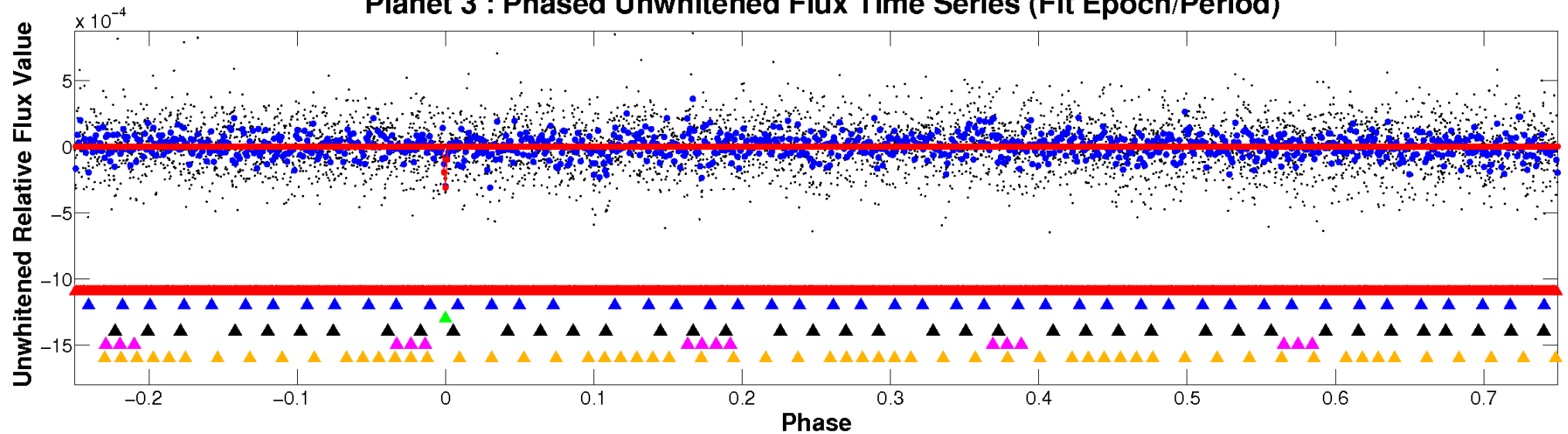
ALT Odd/Even

TCE 008396184-03

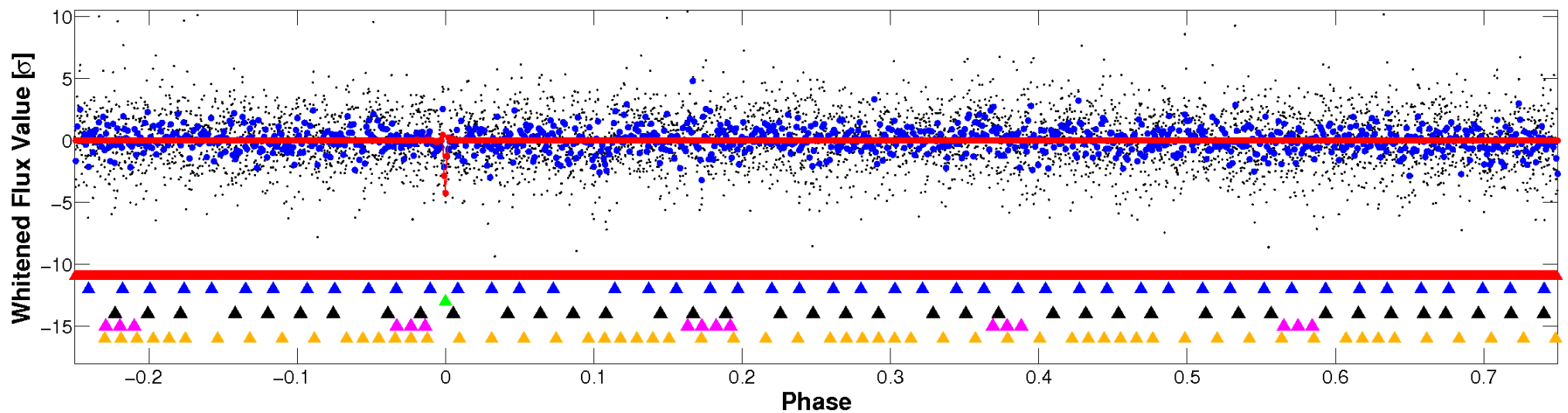


Non-Whitened Vs. Whitened Light Curve

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

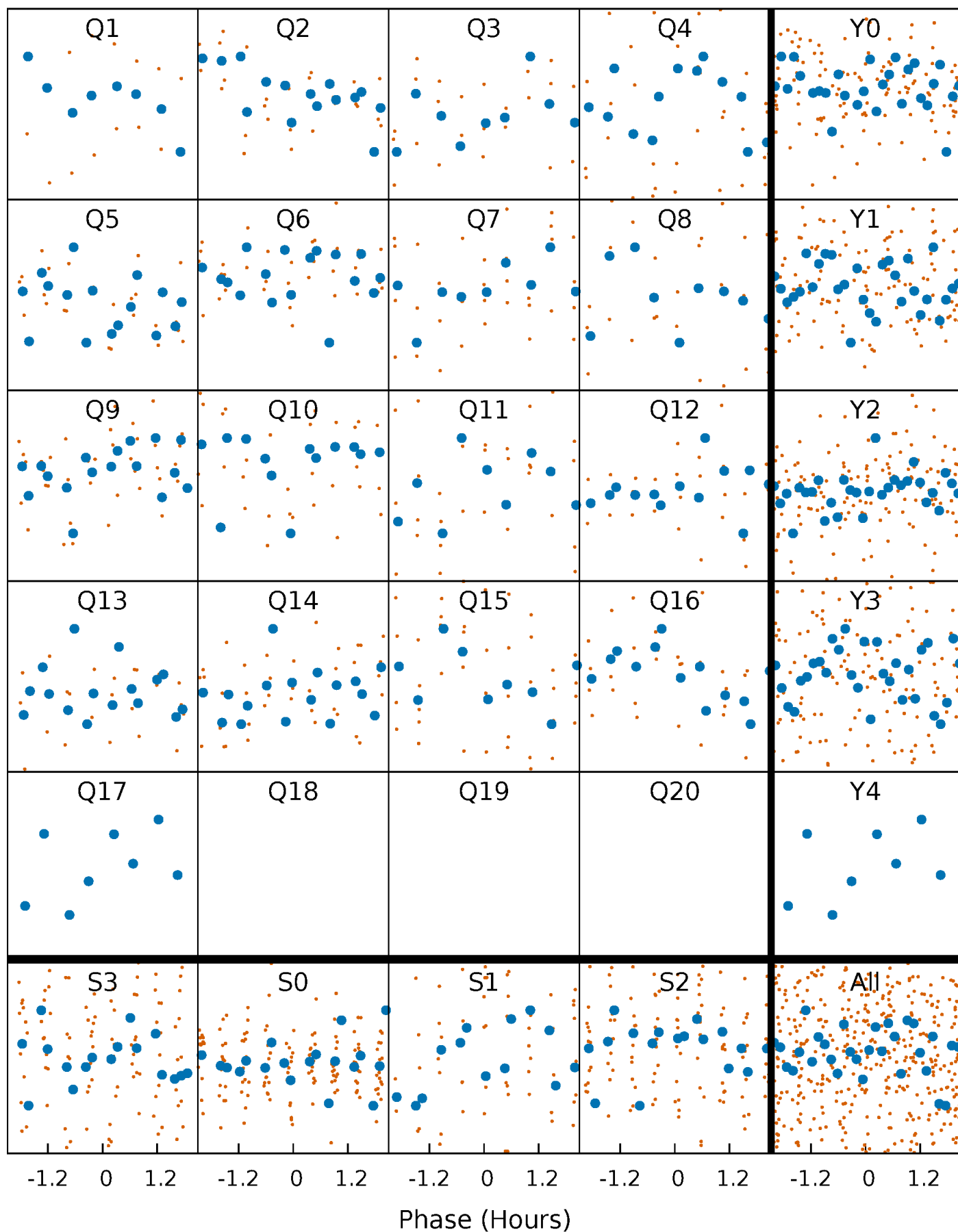


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



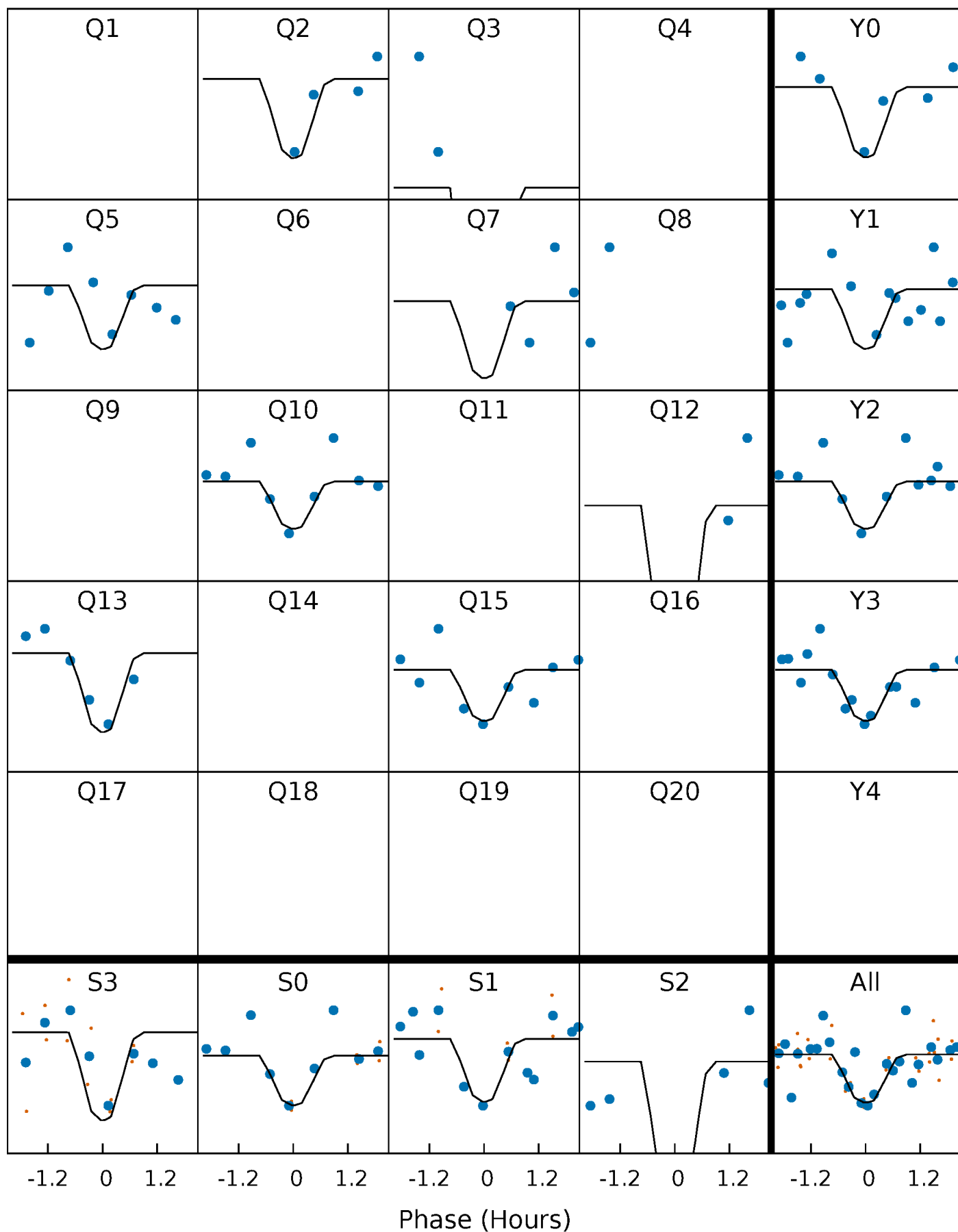
PDC Quarter-Phased Transit Curves

TCE 008396184-03 P= 21.065844 Days $T_0=143.782105$ (BKJD)



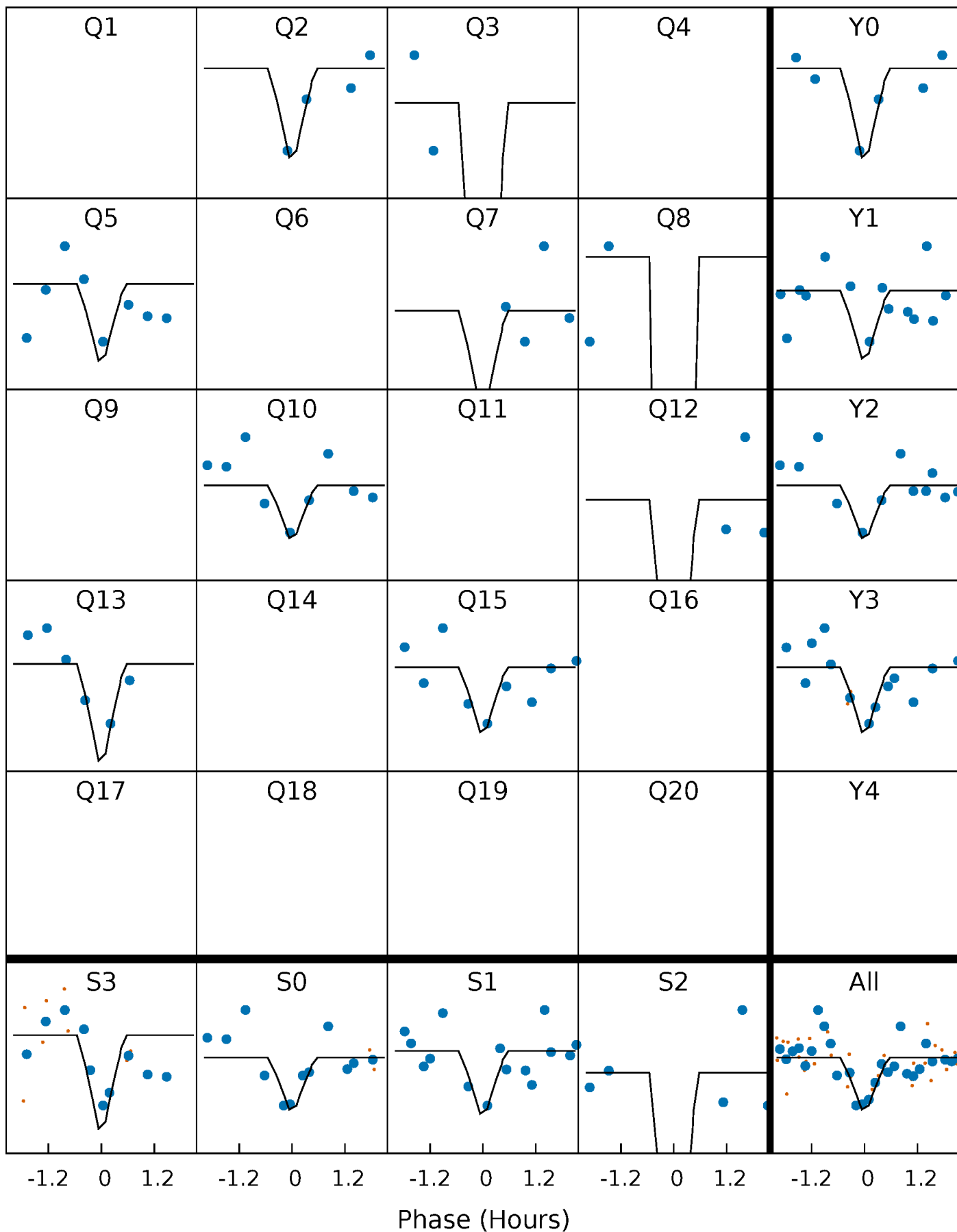
DV Quarter-Phased Transit Curves

TCE 008396184-03 P= 21.065844 Days $T_0=143.782105$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

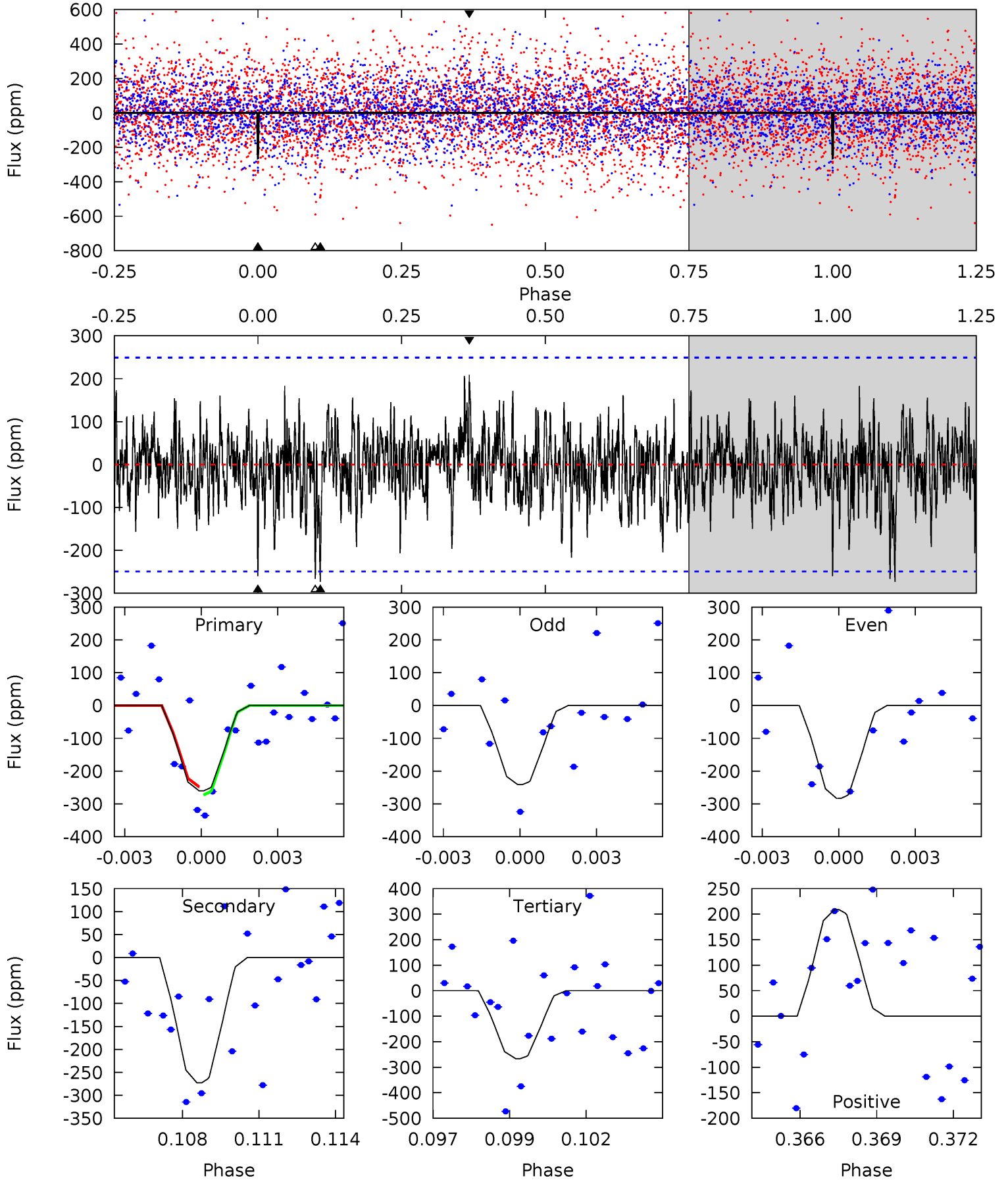
TCE 008396184-03 P= 21.065703 Days $T_0=143.788501$ (BKJD)



DV Model-Shift Uniqueness Test

008396184-03, P = 21.065844 Days, E = 122.716261 Days

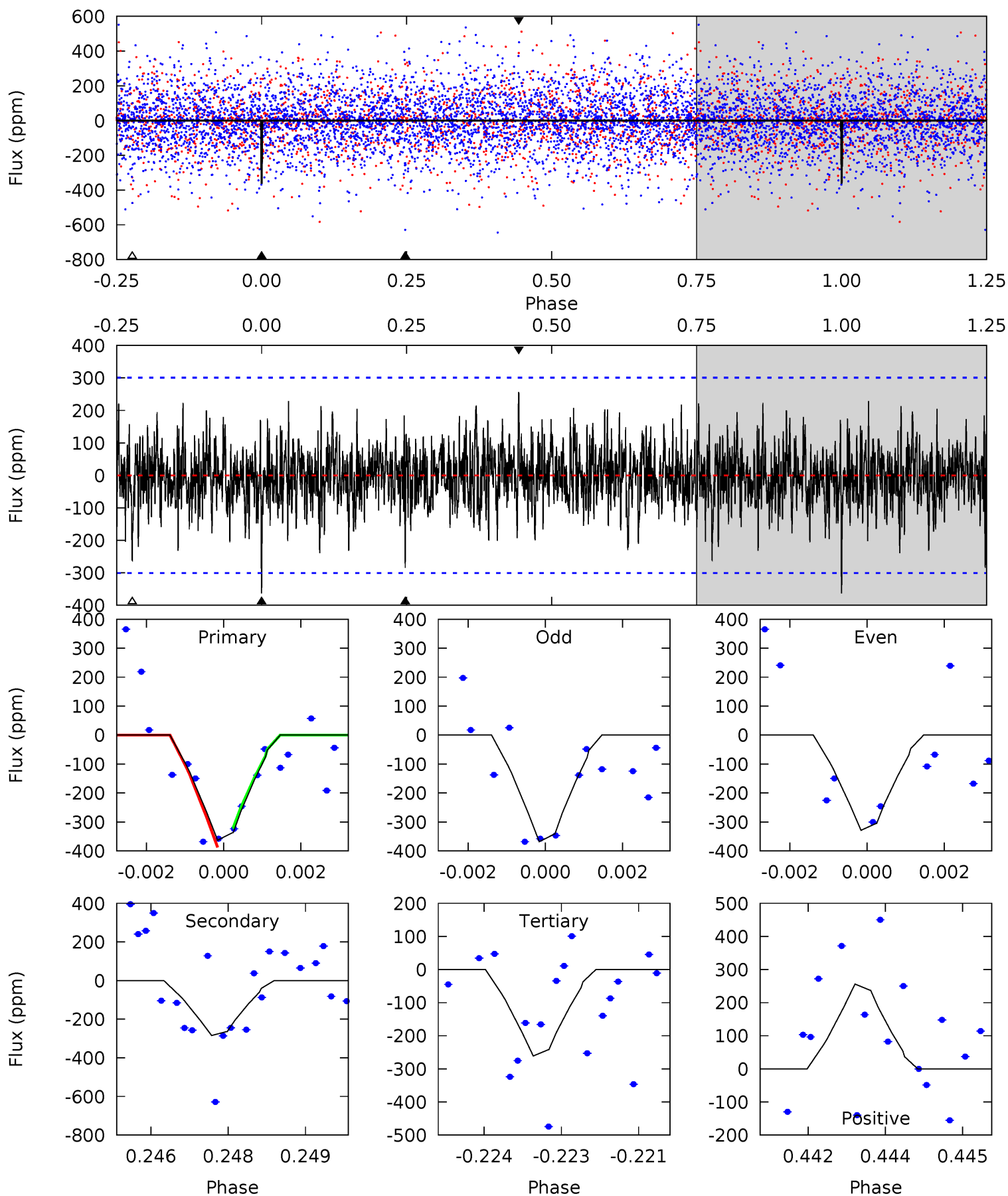
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.49	5.77	5.62	4.41	5.26	2.98	1.39	-0.13	1.08	0.14	1.36	0.44	0.88	0.43	0.25



Alt Model-Shift Uniqueness Test

008396184-03, P = 21.065703 Days, E = 122.722798 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.48	5.08	4.66	4.57	5.37	3.16	1.32	1.82	1.91	0.42	0.51	0.35	1.06	0.41	0.59



Stellar Parameters For KIC 008396184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5199^{+164}_{-182}	$3.392^{+0.476}_{-0.204}$	$-0.160^{+0.300}_{-0.300}$	$4.430^{+1.219}_{-2.438}$	$1.764^{+0.196}_{-0.785}$	$0.029^{+0.141}_{-0.016}$
	+3%/-4%	+14%/-6%	+188%/-188%	+28%/-55%	+11%/-45%	+494%/-54%
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 008396184-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-273 ± 47	$11.59^{+12.79}_{-7.63}$	1571^{+152}_{-196}	4228^{+2619}_{-882}	33^{+254}_{-25}
Alt.	-285 ± 56	$12.38^{+12.15}_{-8.07}$	1581^{+140}_{-217}	4179^{+2297}_{-809}	32^{+229}_{-24}

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

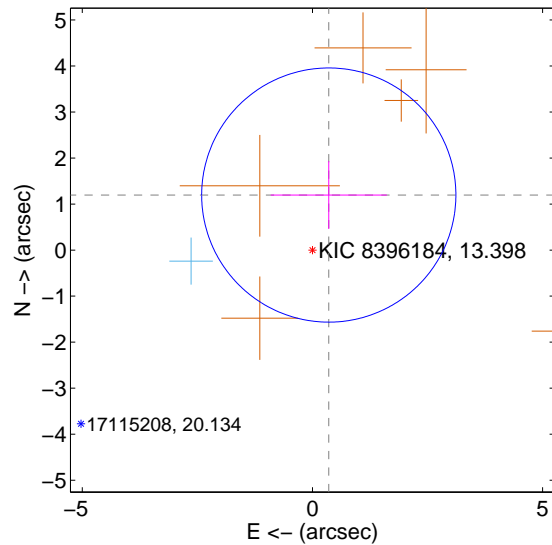
Supplemental centroid analysis for 008396184-03. Kepler magnitude: 13.40. Transit SNR 11.14

There are 1 quarters with good PRF difference image offsets

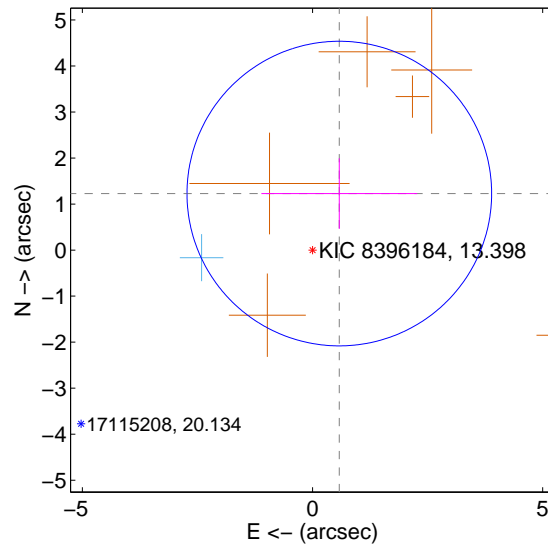
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.248 ± 0.921	1.36	-0.355 ± 1.261	1.196 ± 0.737
PRF-fit source offset from KIC position	1.359 ± 1.103	1.23	-0.582 ± 1.693	1.228 ± 0.767
photometric centroid source offset	1.92 ± 0.82	2.34	0.07 ± 0.89	-1.92 ± 0.82

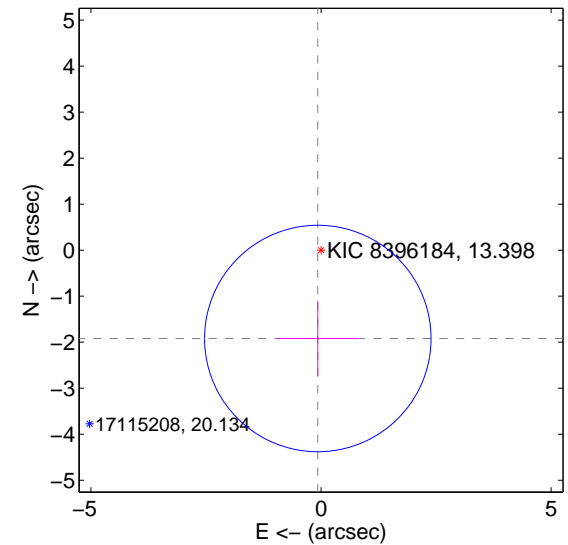
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

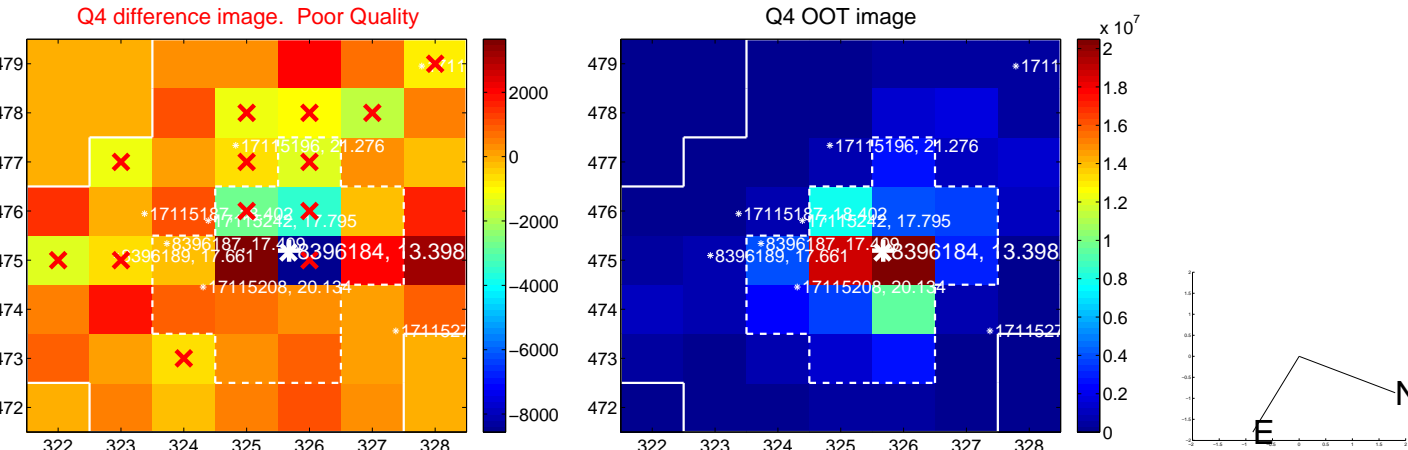
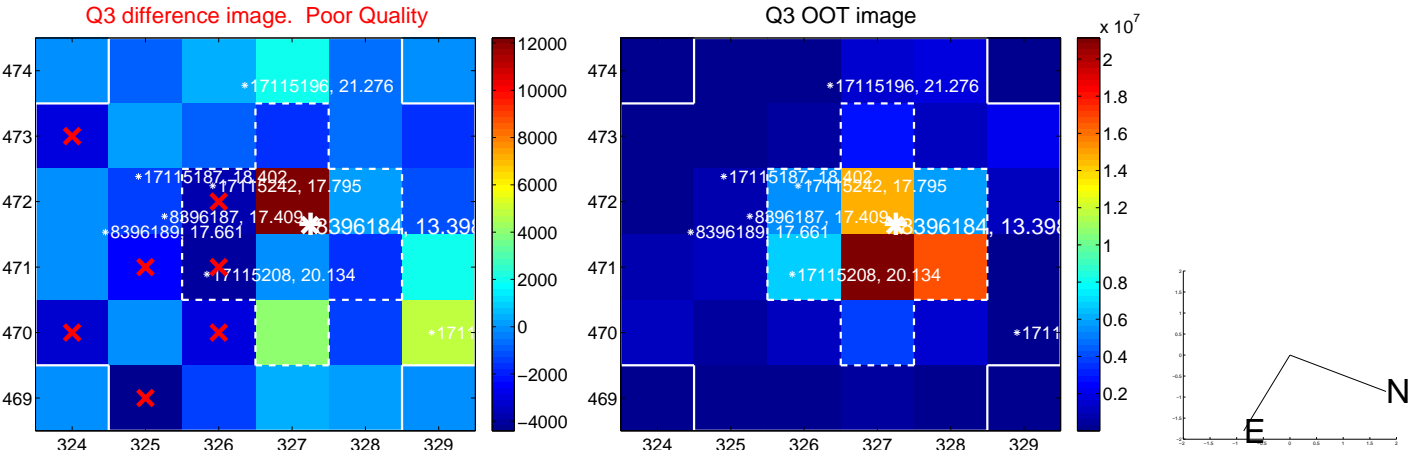
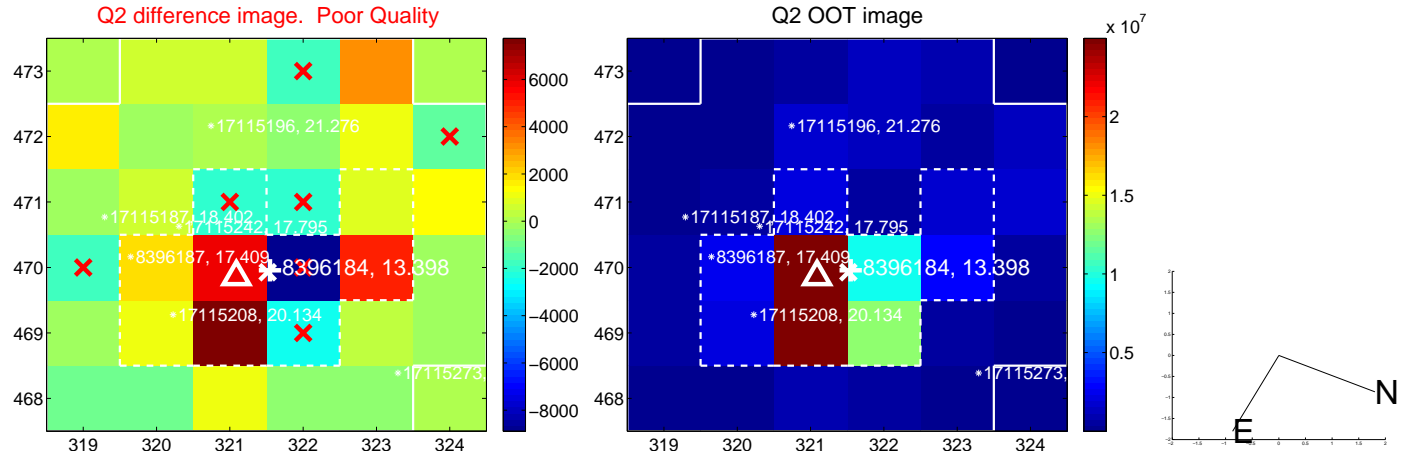
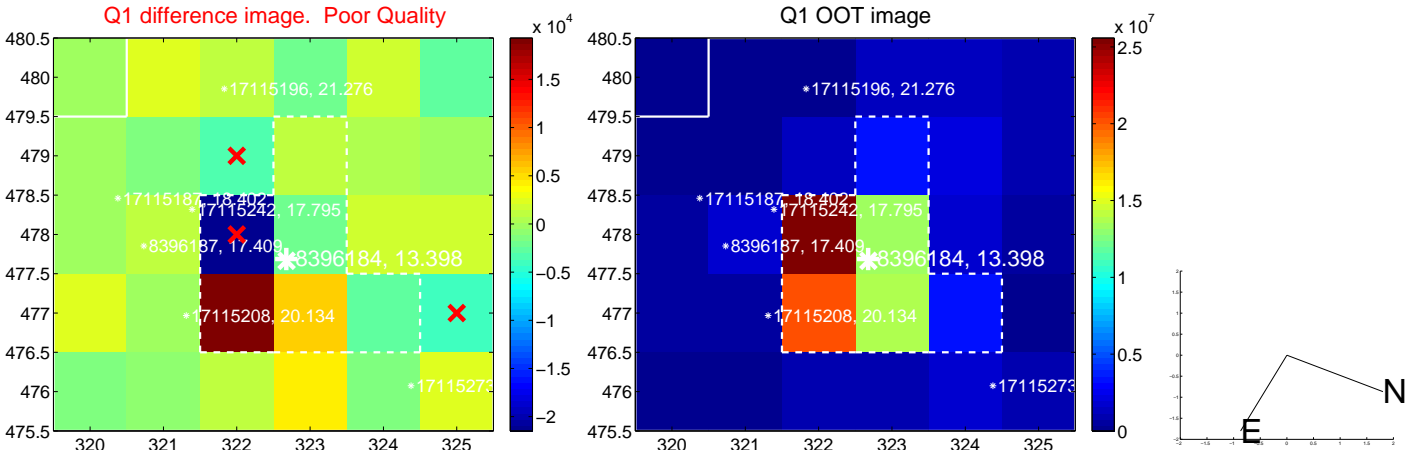


offset from photometric centroids

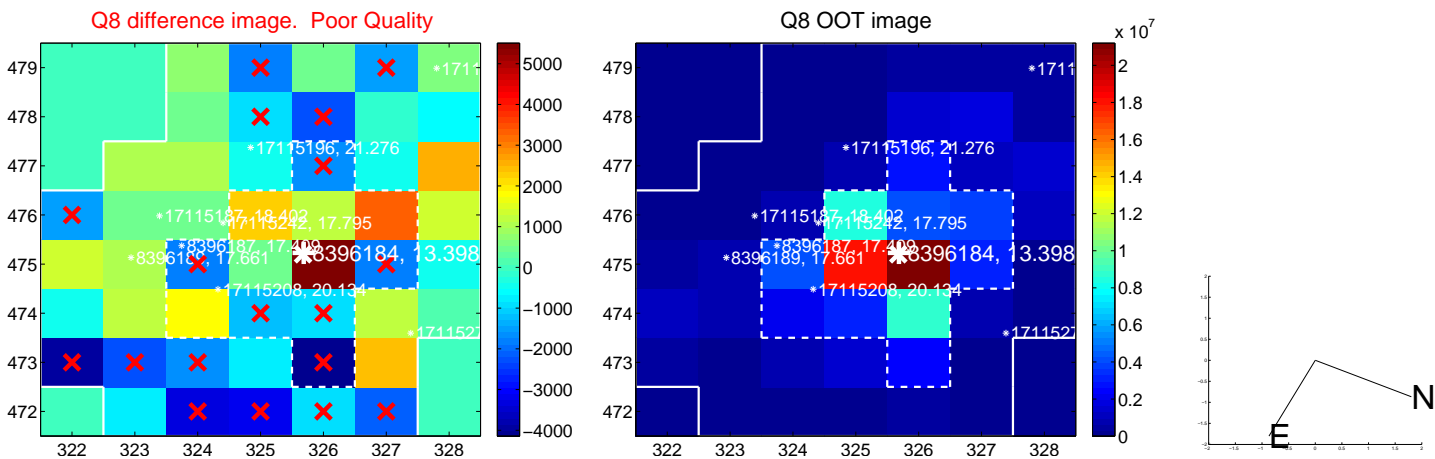
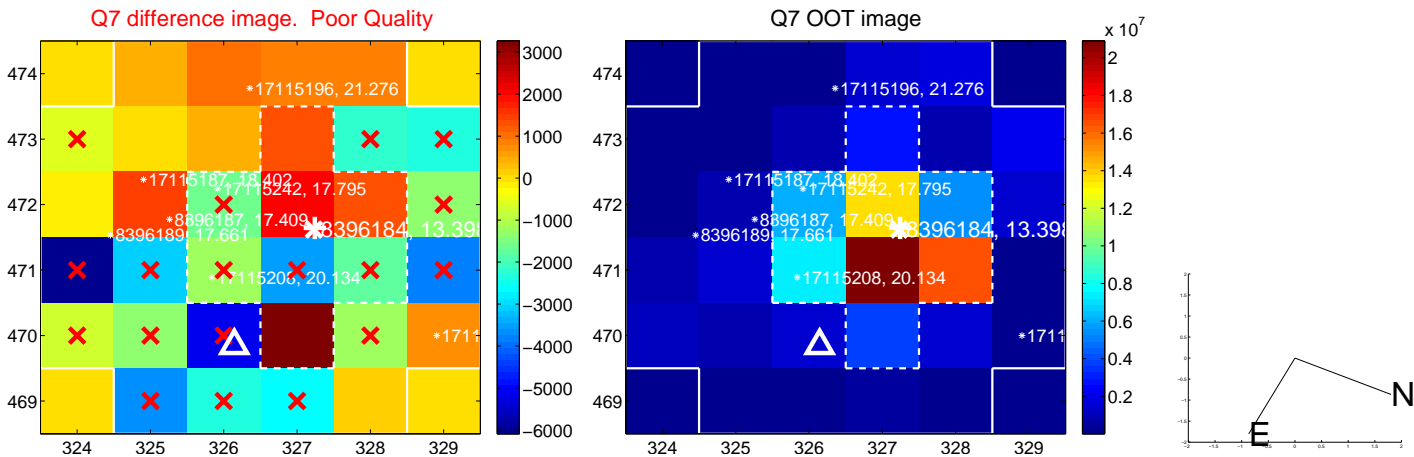
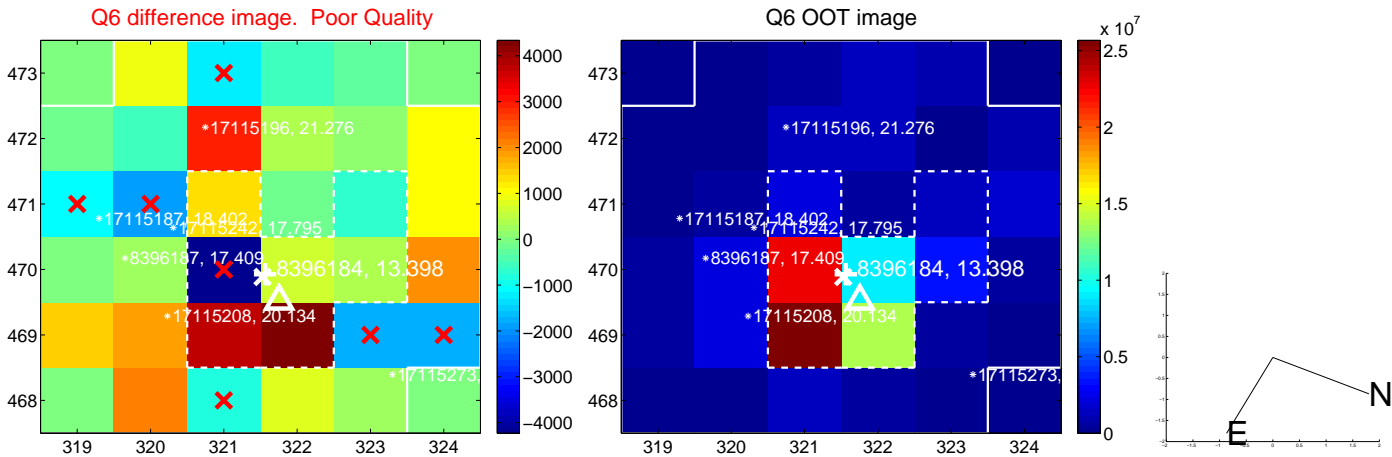
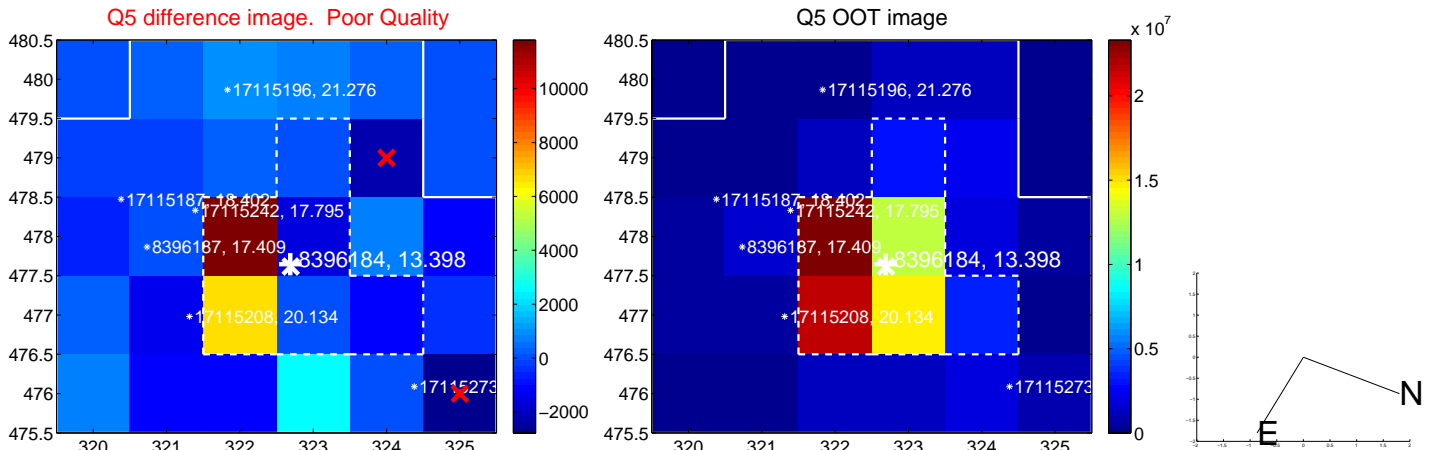


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

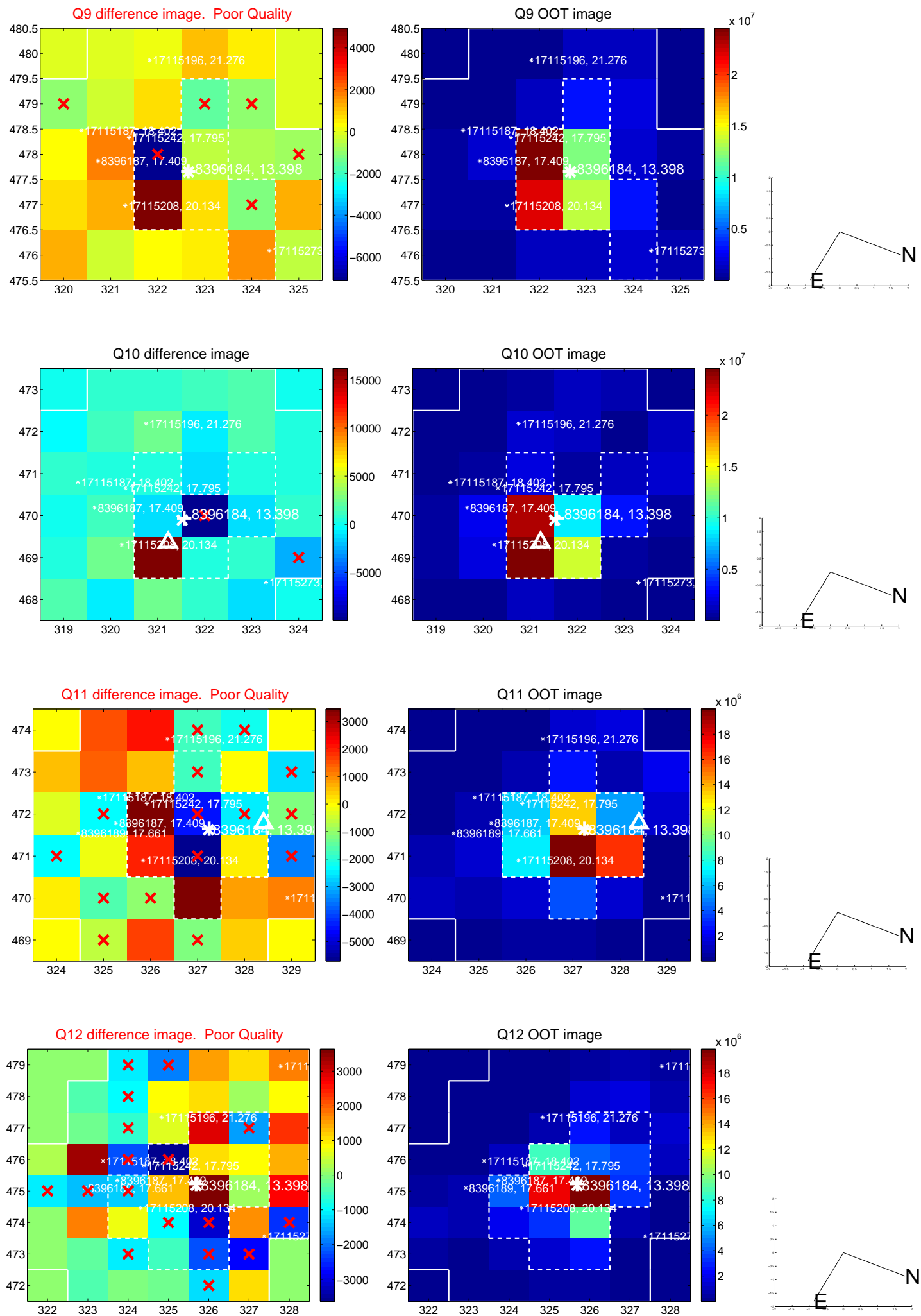
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



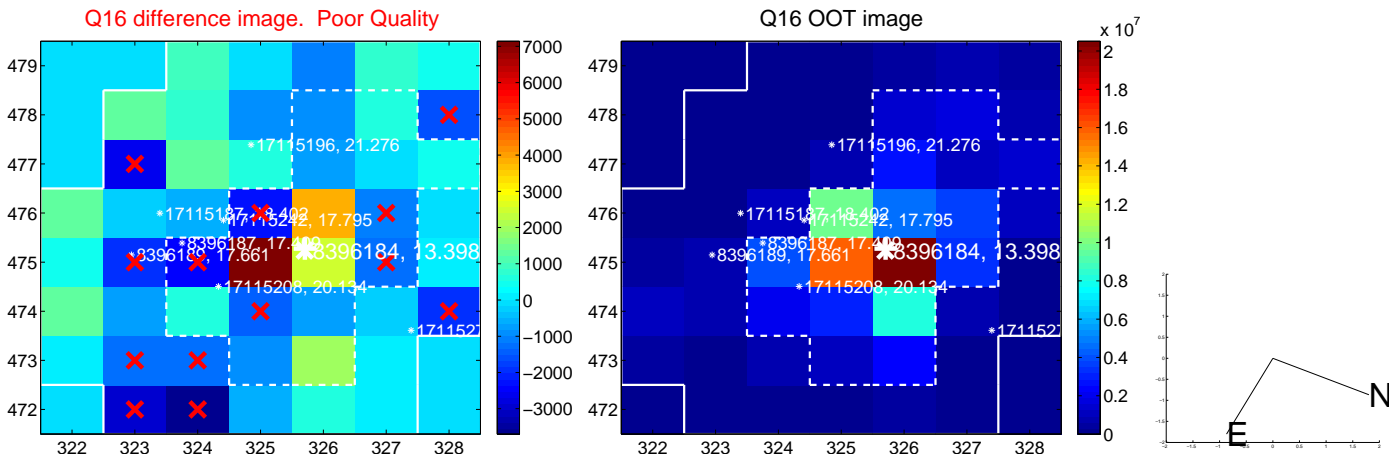
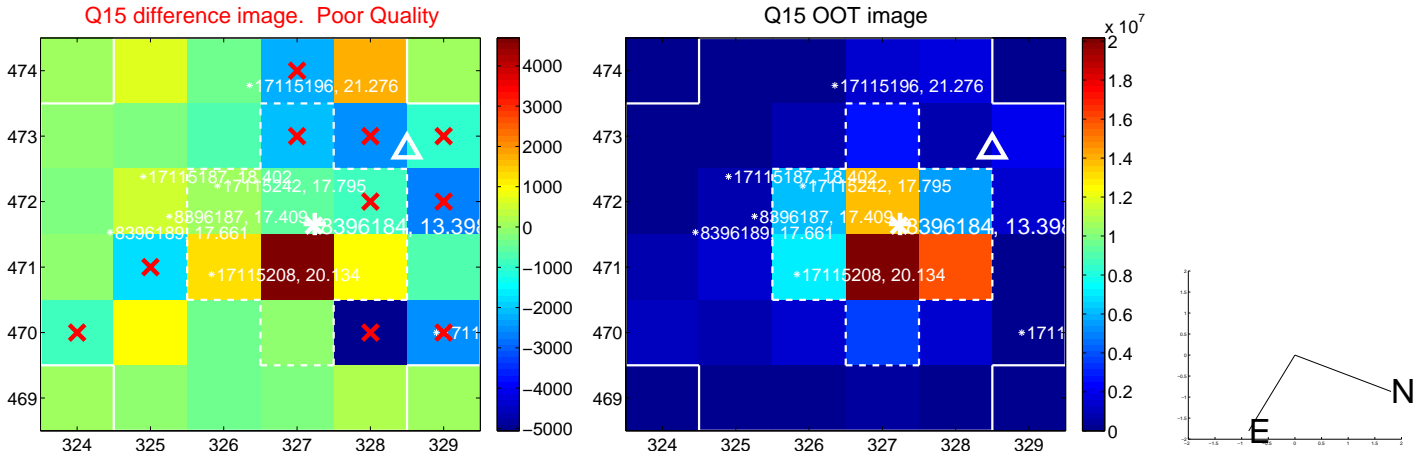
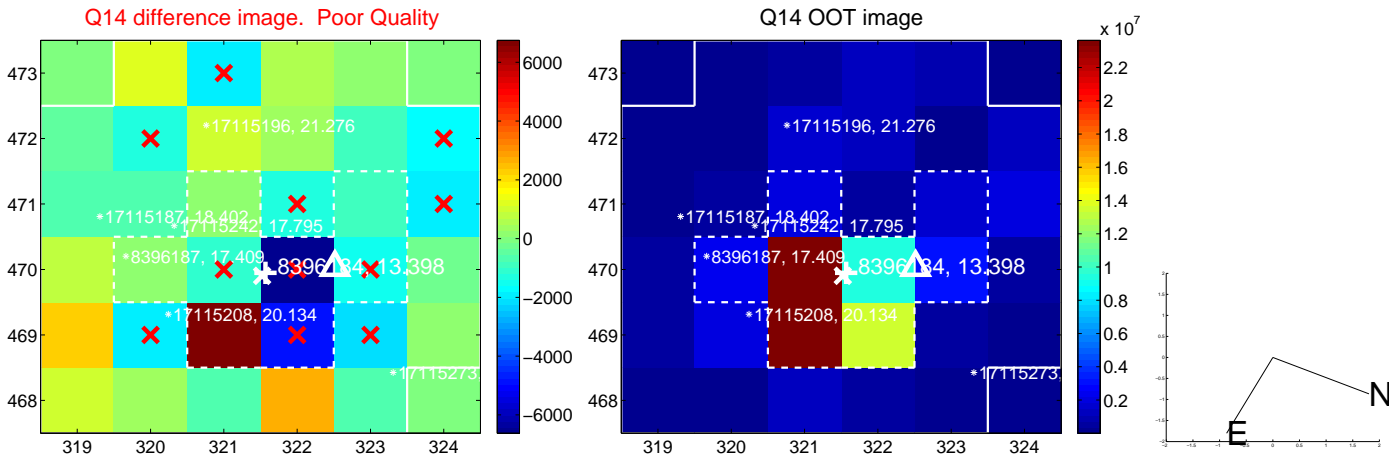
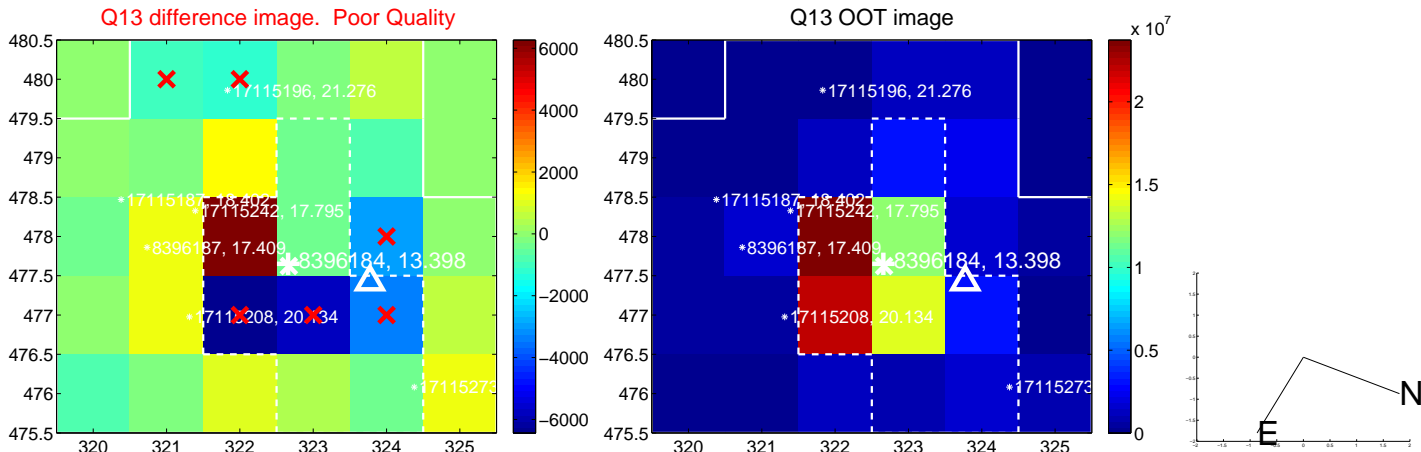
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



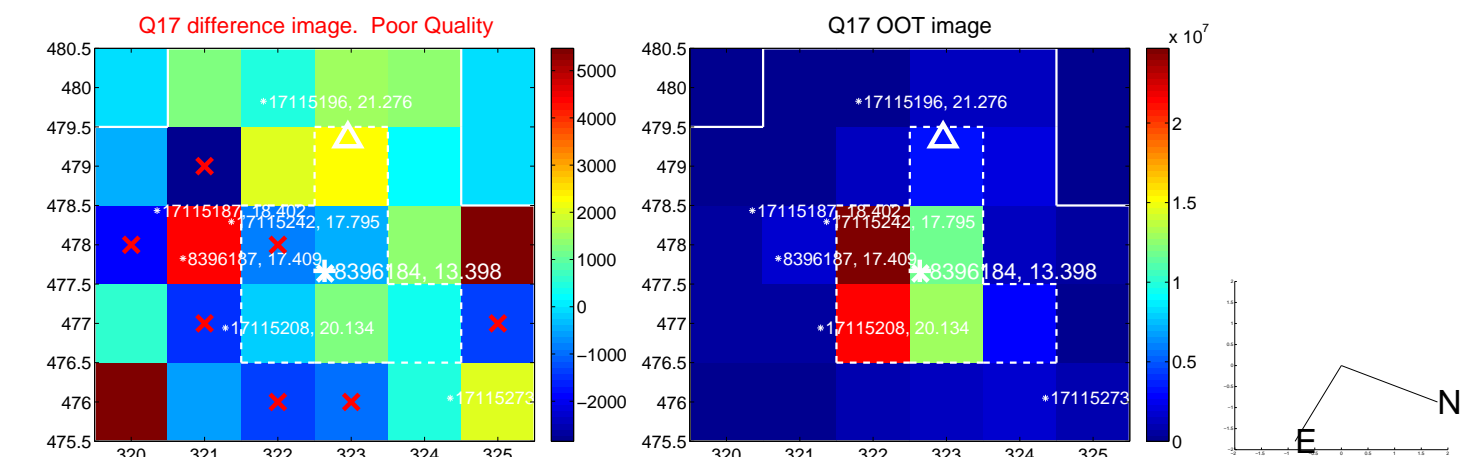
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



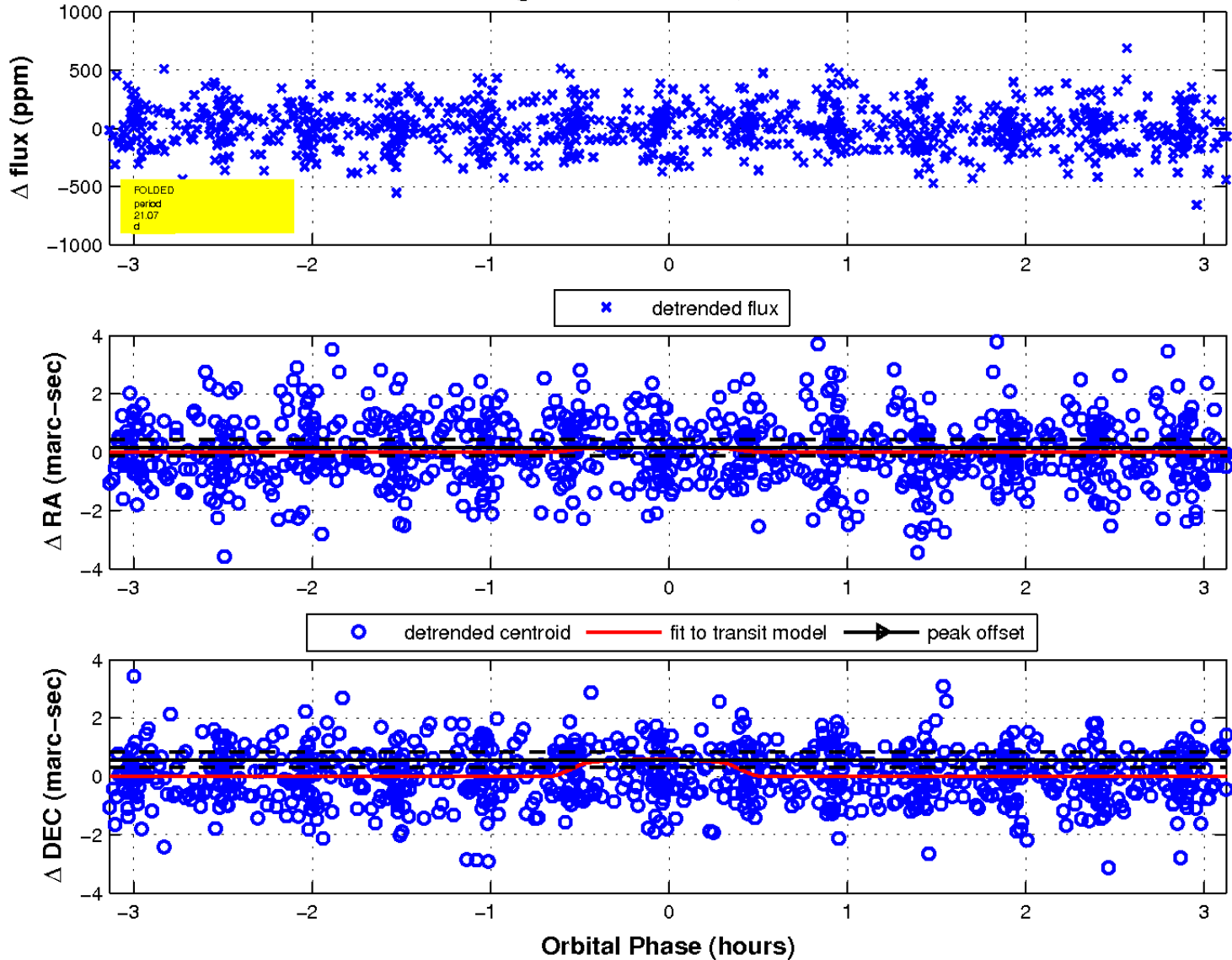
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



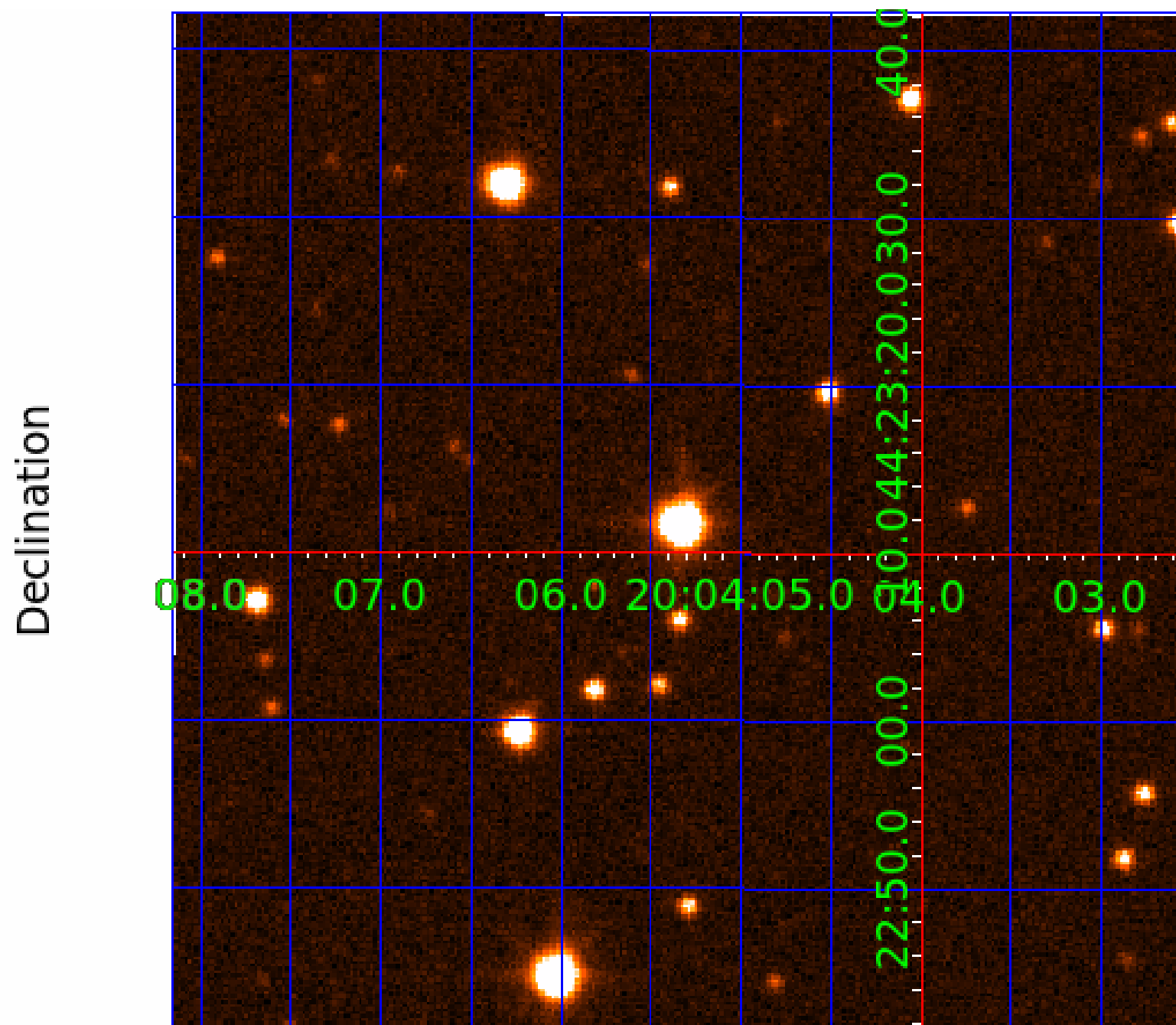
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 3 of 6



UKIRT Image



KIC 008396184

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})
008396184-01	OBS	No	0.656486	131.936895	14.3	4.663	10.1	8.3	4.43	5199	1.80	0.00
008396184-02	OBS	No	31.161776	155.800830	395.5	0.903	11.1	12.0	4.43	5199	10.45	234.07
008396184-03	OBS	No	21.065844	143.782105	315.5	1.046	9.8	11.1	4.43	5199	9.13	394.52
008396184-04	OBS	No	38.259300	136.611763	391.5	1.210	10.6	12.4	4.43	5199	8.91	178.04
008396184-05	OBS	No	92.730065	147.222722	254.1	8.957	9.4	9.3	4.43	5199	7.69	54.69
008396184-06	OBS	No	24.500546	139.857392	327.2	1.180	9.4	9.2	4.43	5199	7.98	322.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008396184-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET
008396184-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008396184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008396184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

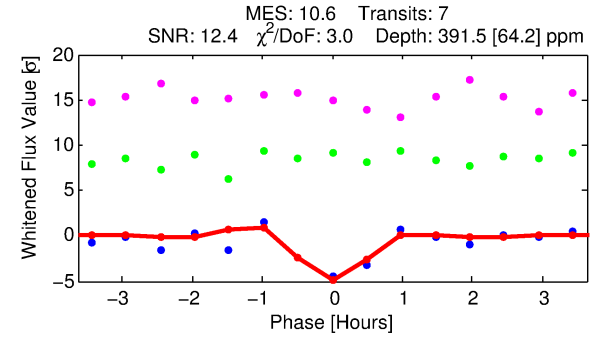
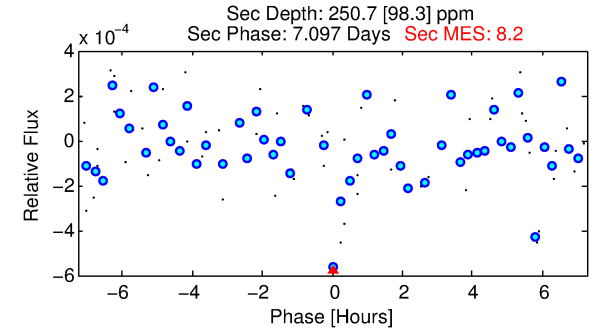
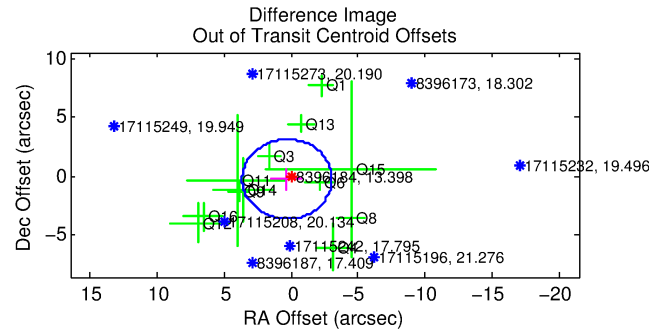
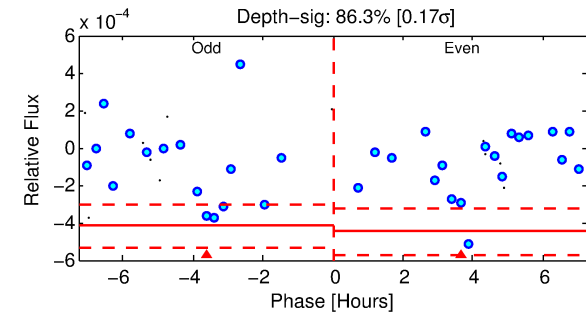
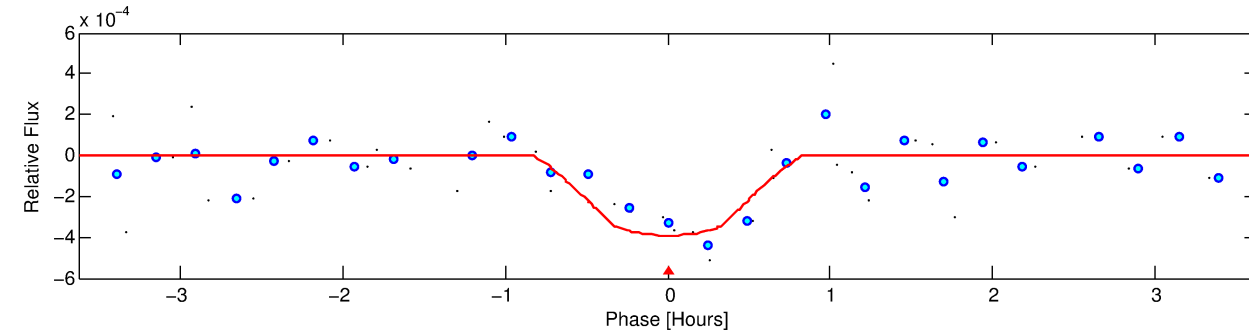
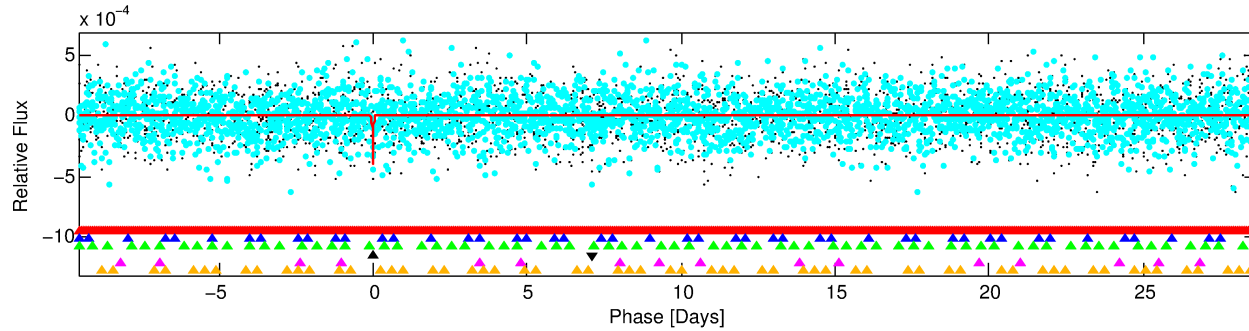
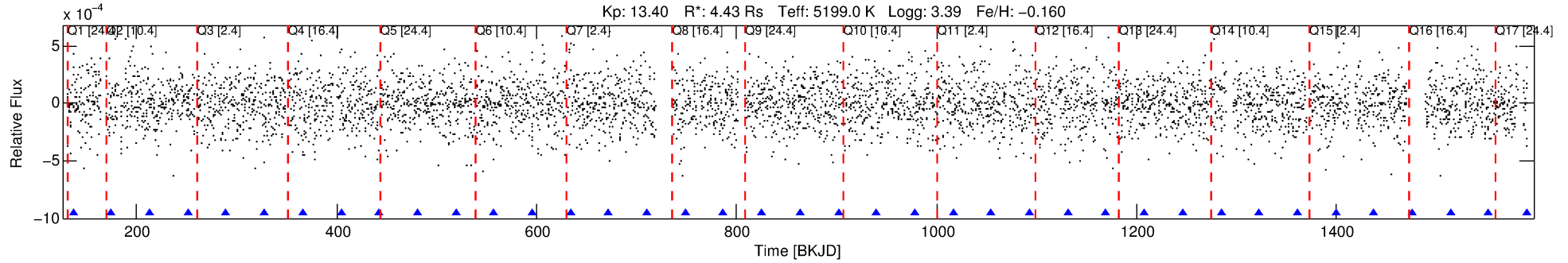
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008396184-04

No Significant Match Found

DV One-Page Summary

KIC: 8396184 Candidate: 4 of 6 Period: 38.259 d



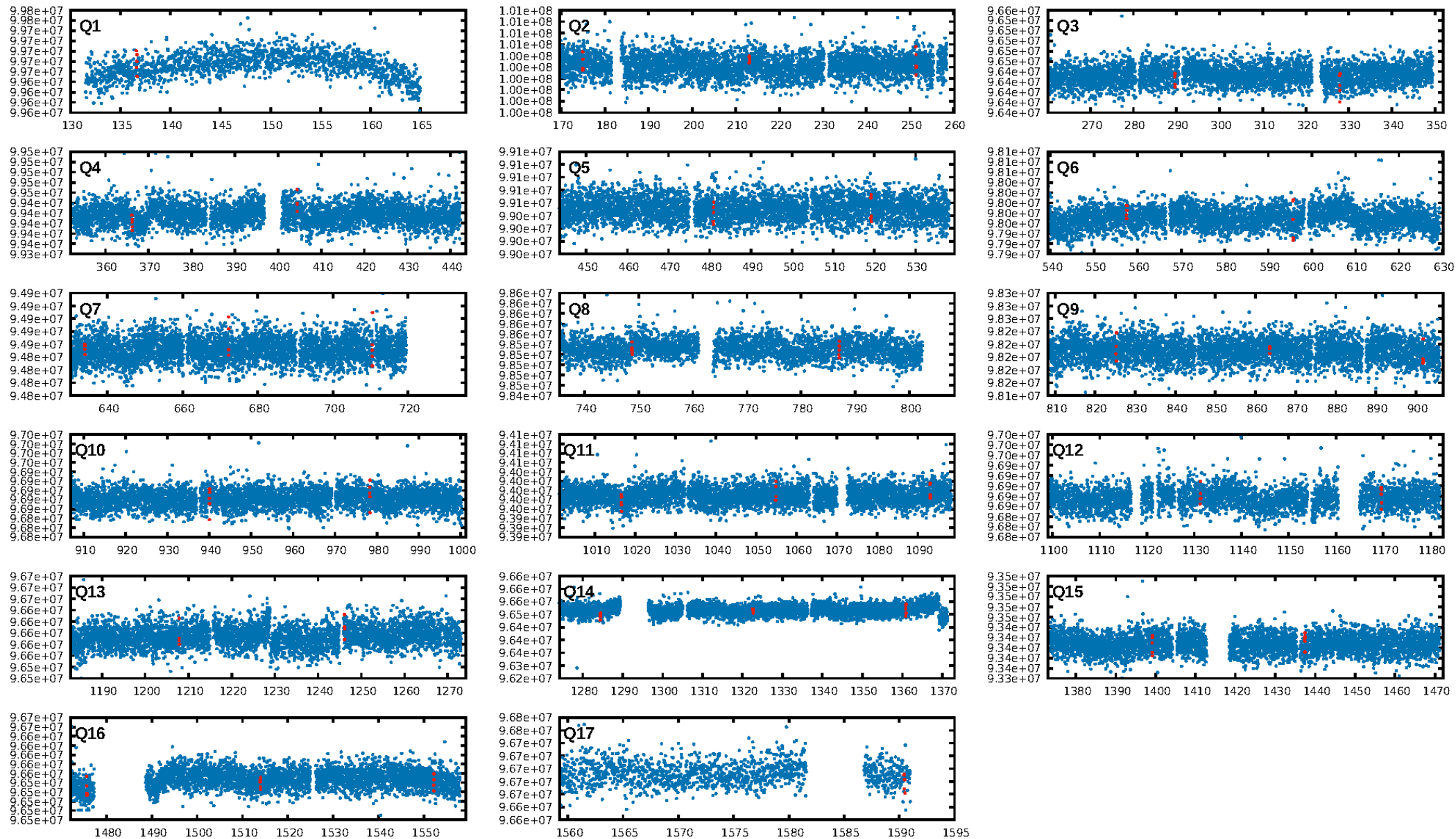
DV Fit Results:

Period = 38.25930 [0.00033] d
Epoch = 136.6118 [0.0081] BKJD
Rp/R* = 0.0184 [0.0313]
a/R* = 218.26 [1399.41]
b = 0.47 [10.80]
Seff = 178.04 [147.69]
Teq = 931 [193] K
Rp = 8.91 [15.91] Re
a = 0.2686 [0.1391] AU
Ag = 125.36 [440.80] [0.28 σ]
Teffp = 4819 [4123] K [0.94 σ]

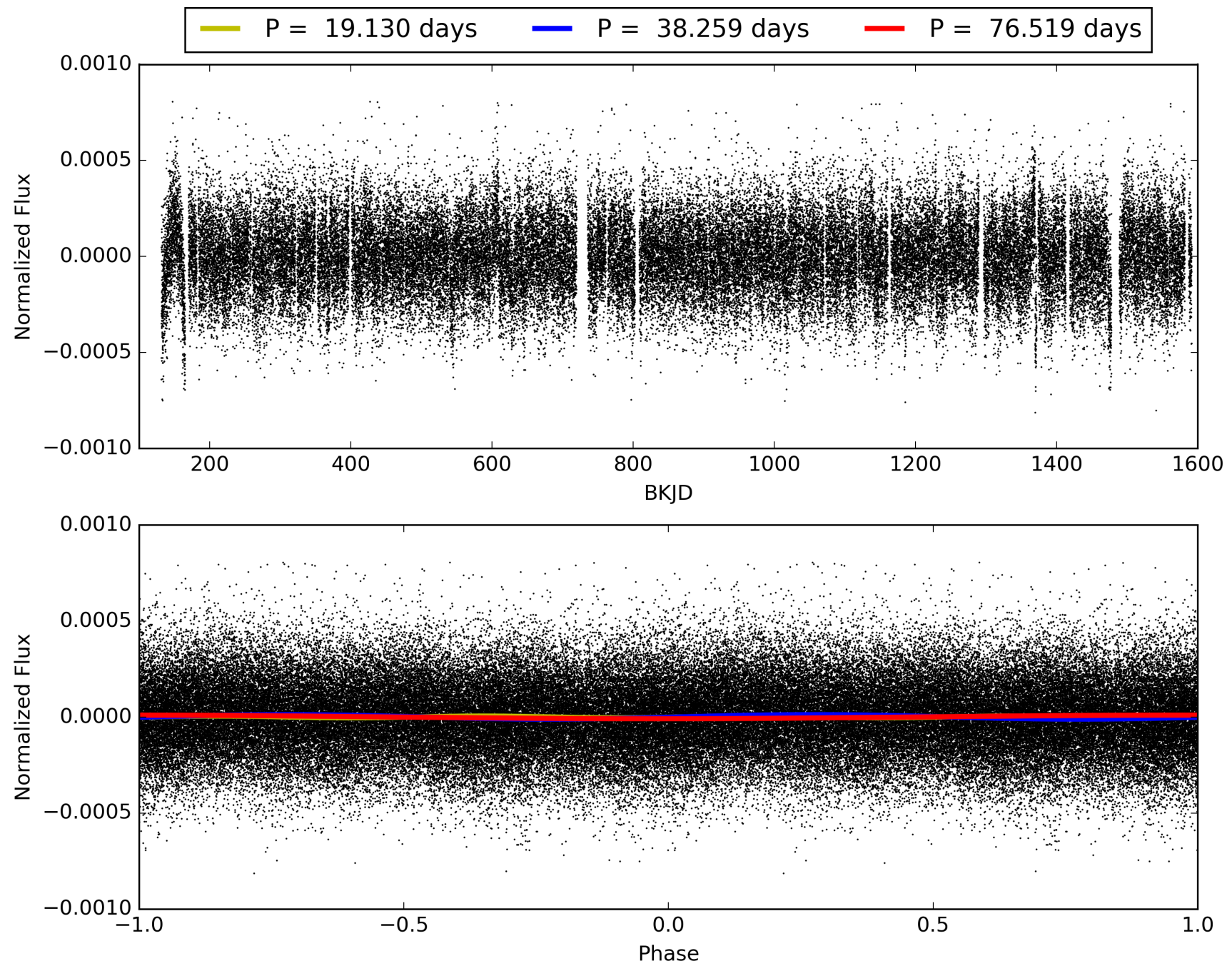
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [112.85 σ]
LongPeriod-sig: 100.0% [144.64 σ]
ModelChiSquare2-sig: 37.8%
ModelChiSquareGof-sig: 90.2%
Bootstrap-pfa: 4.82e-09
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -1.591
Centroid-sig: 0.3%
Centroid-so: 2.032 arcsec [2.39 σ]
OotOffset-rm: 0.386 arcsec [0.34 σ]
KicOffset-rm: 0.279 arcsec [0.20 σ]
OotOffset-st: 2/3/4/3 [12]
KicOffset-st: 2/3/4/3 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 008396184-04, PDC Light Curves

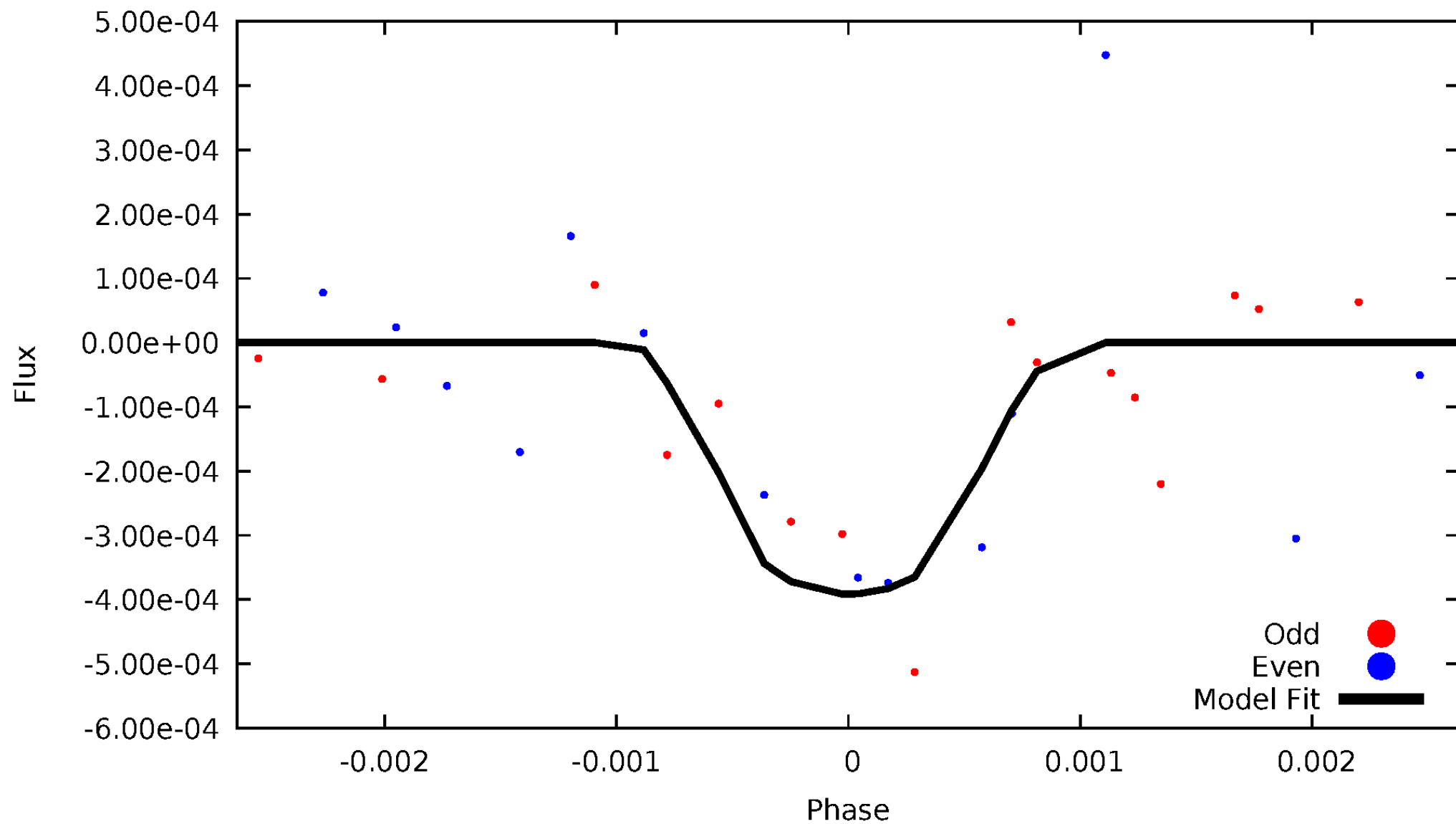


TCE 008396184-04



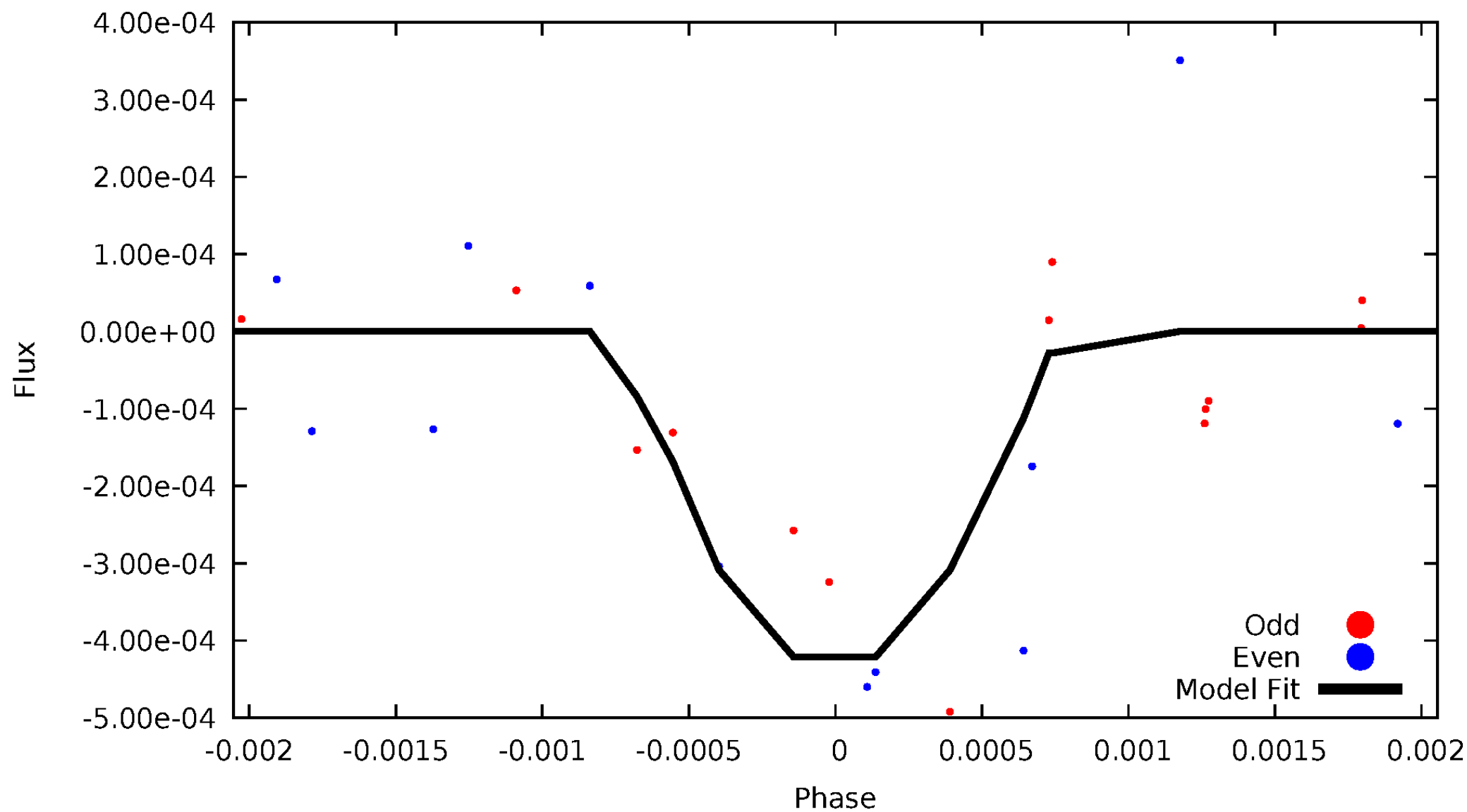
DV Odd/Even

TCE 008396184-04



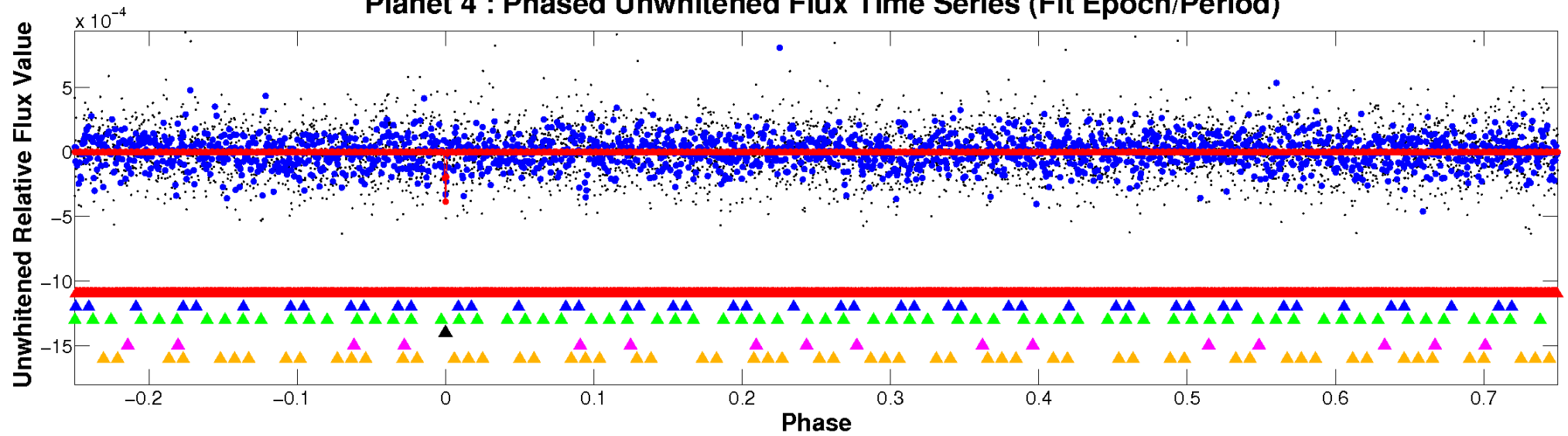
ALT Odd/Even

TCE 008396184-04

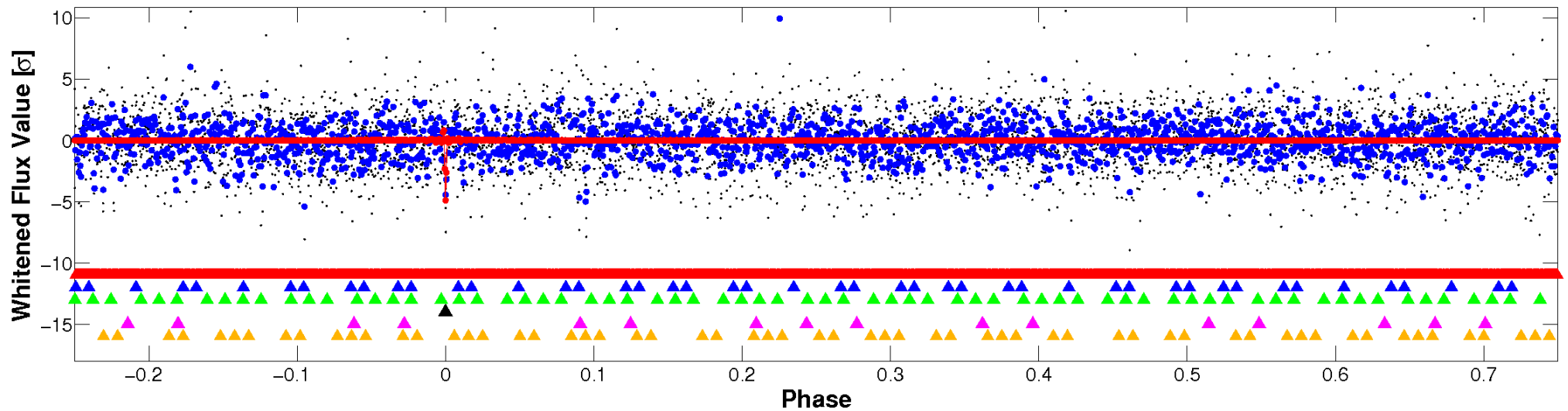


Non-Whitened Vs. Whitened Light Curve

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

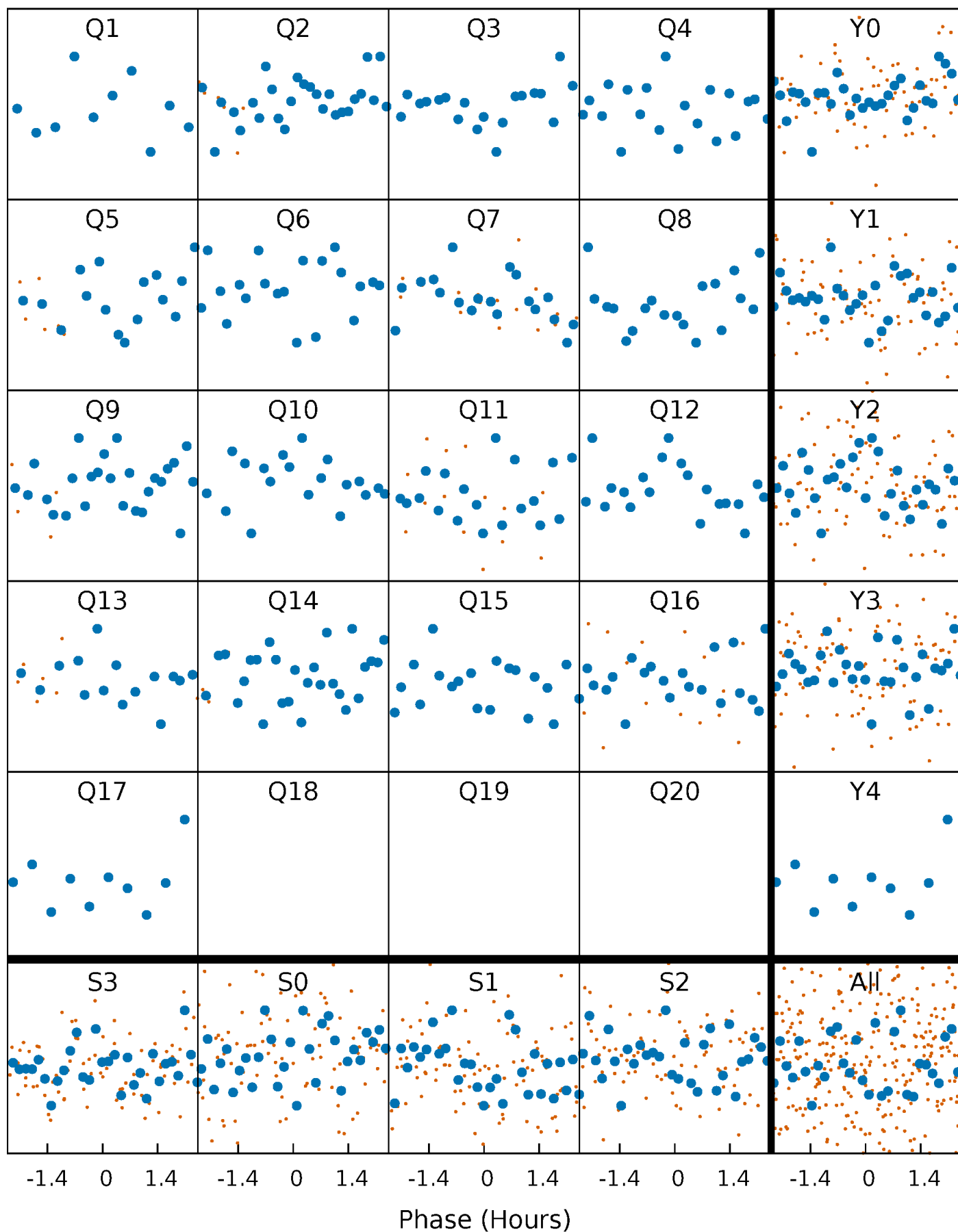


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



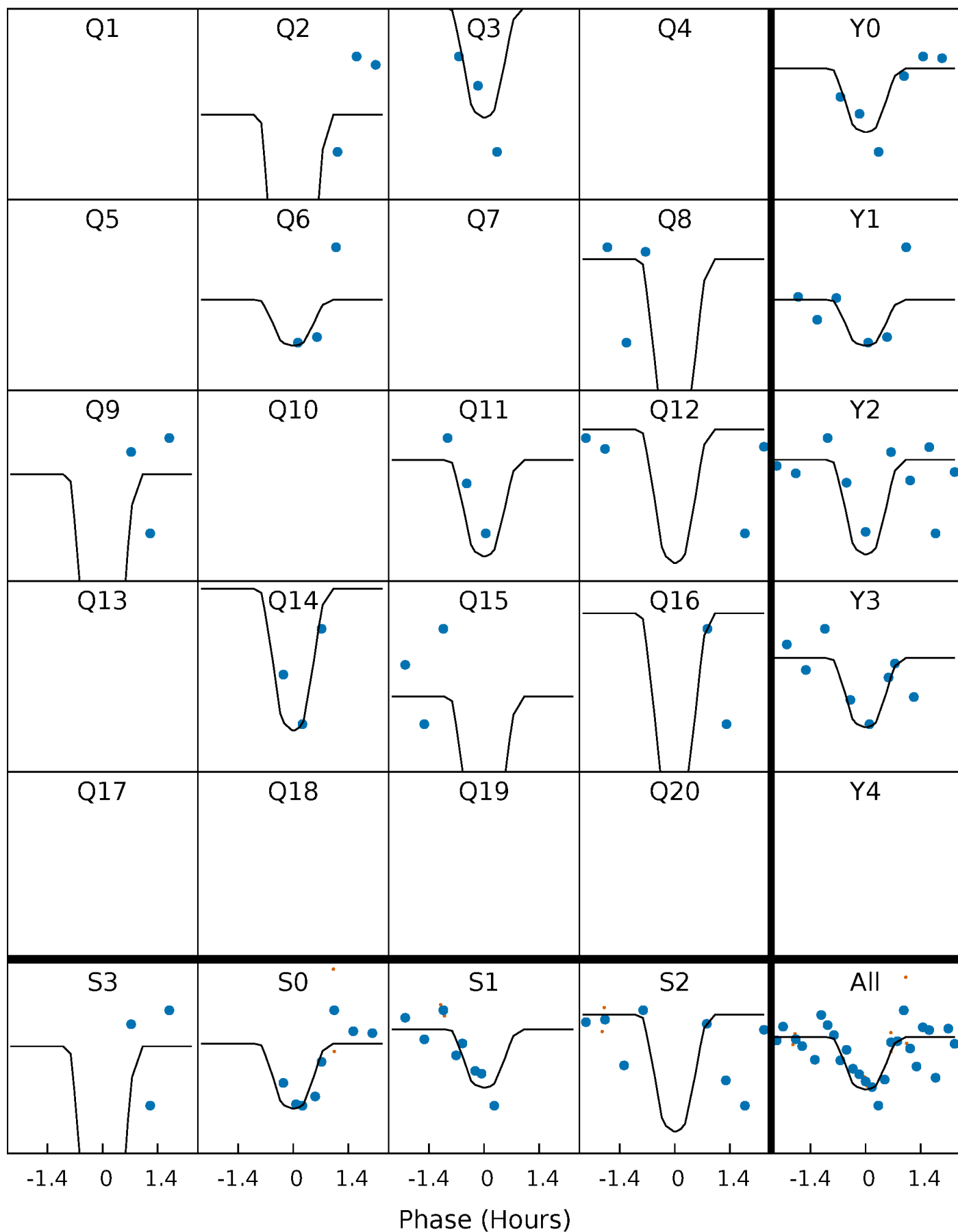
PDC Quarter-Phased Transit Curves

TCE 008396184-04 P= 38.259300 Days $T_0=136.611763$ (BKJD)



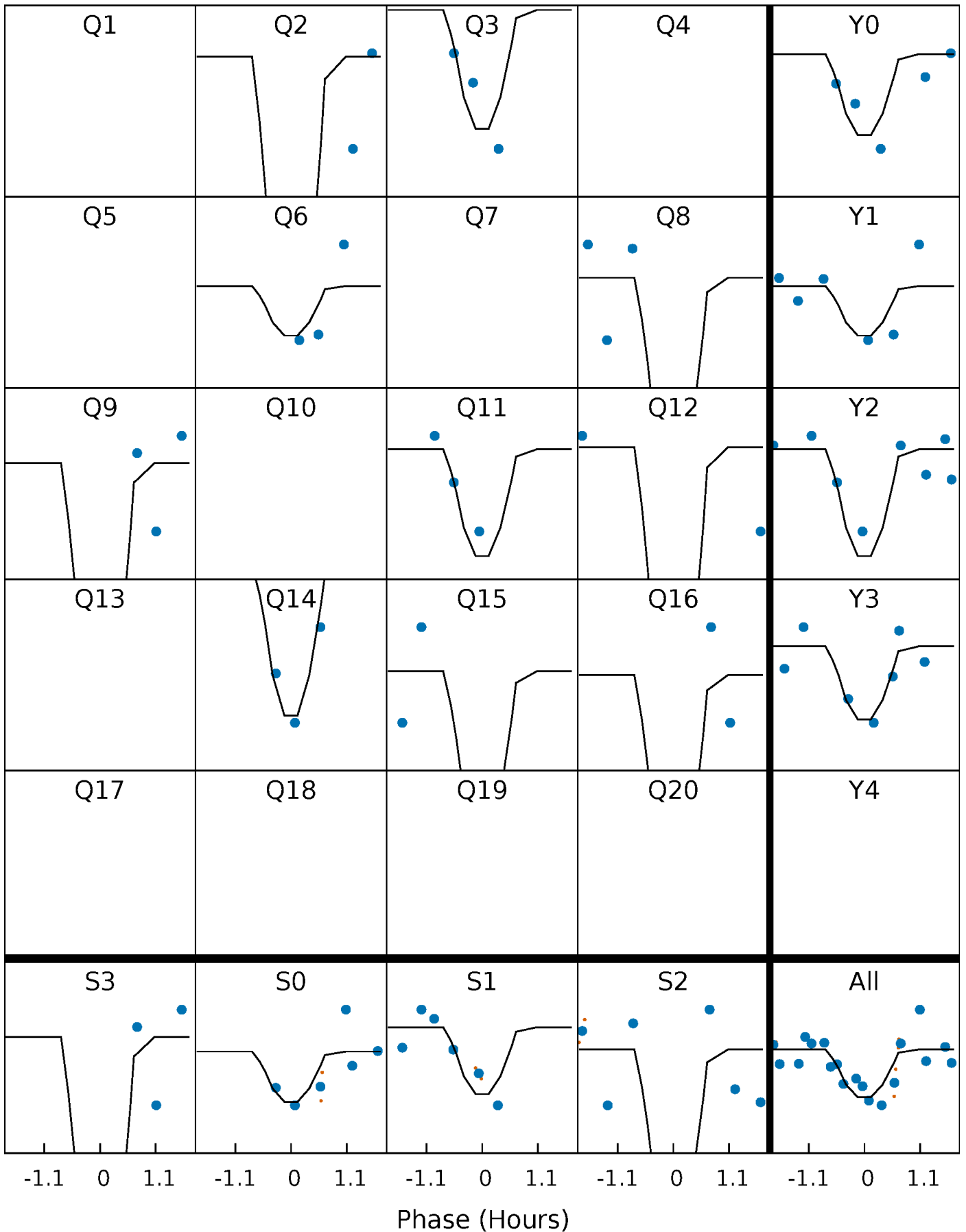
DV Quarter-Phased Transit Curves

TCE 008396184-04 P= 38.259300 Days $T_0=136.611763$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

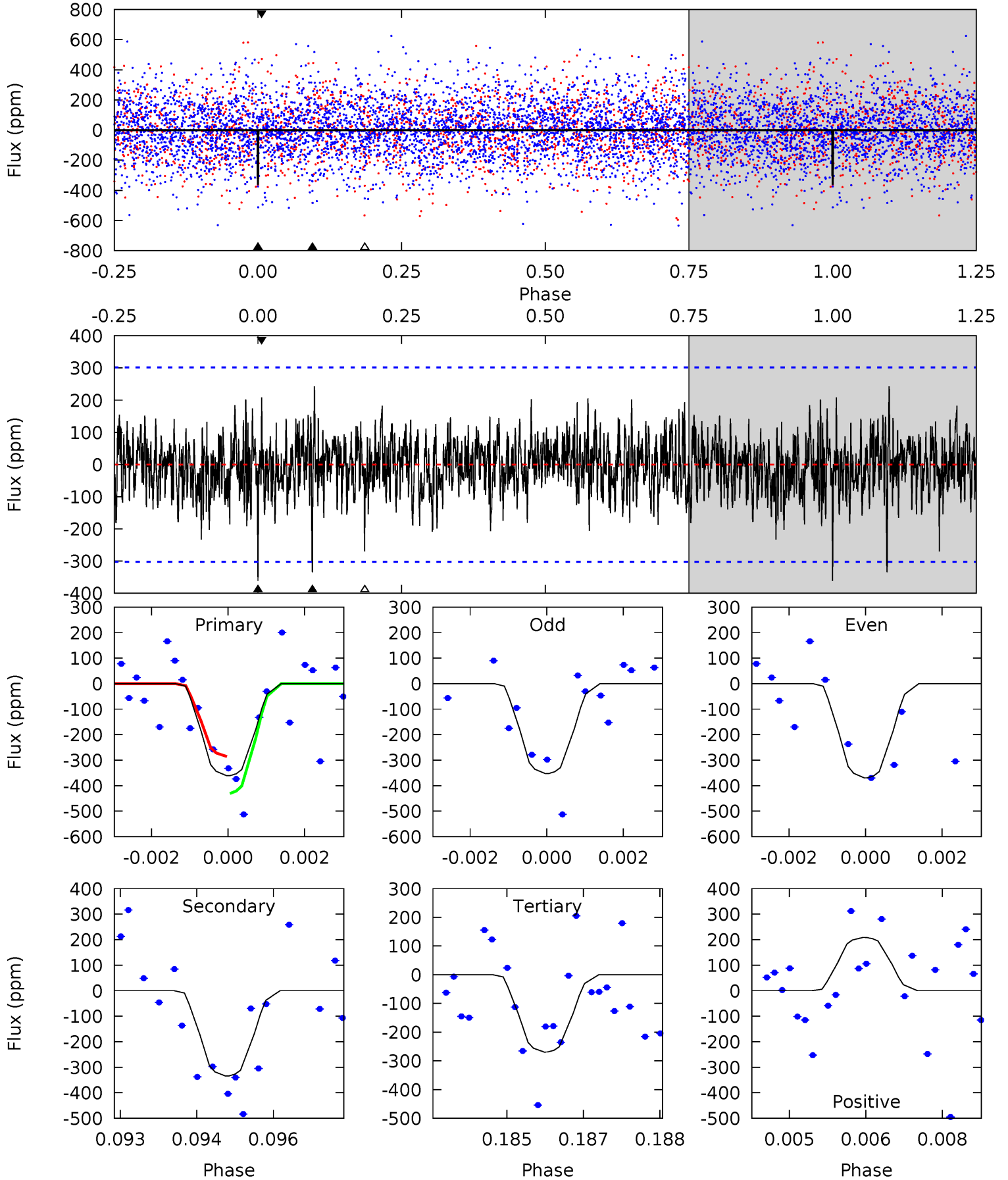
TCE 008396184-04 P= 38.259513 Days $T_0=136.606684$ (BKJD)



DV Model-Shift Uniqueness Test

008396184-04, P = 38.259300 Days, E = 98.352463 Days

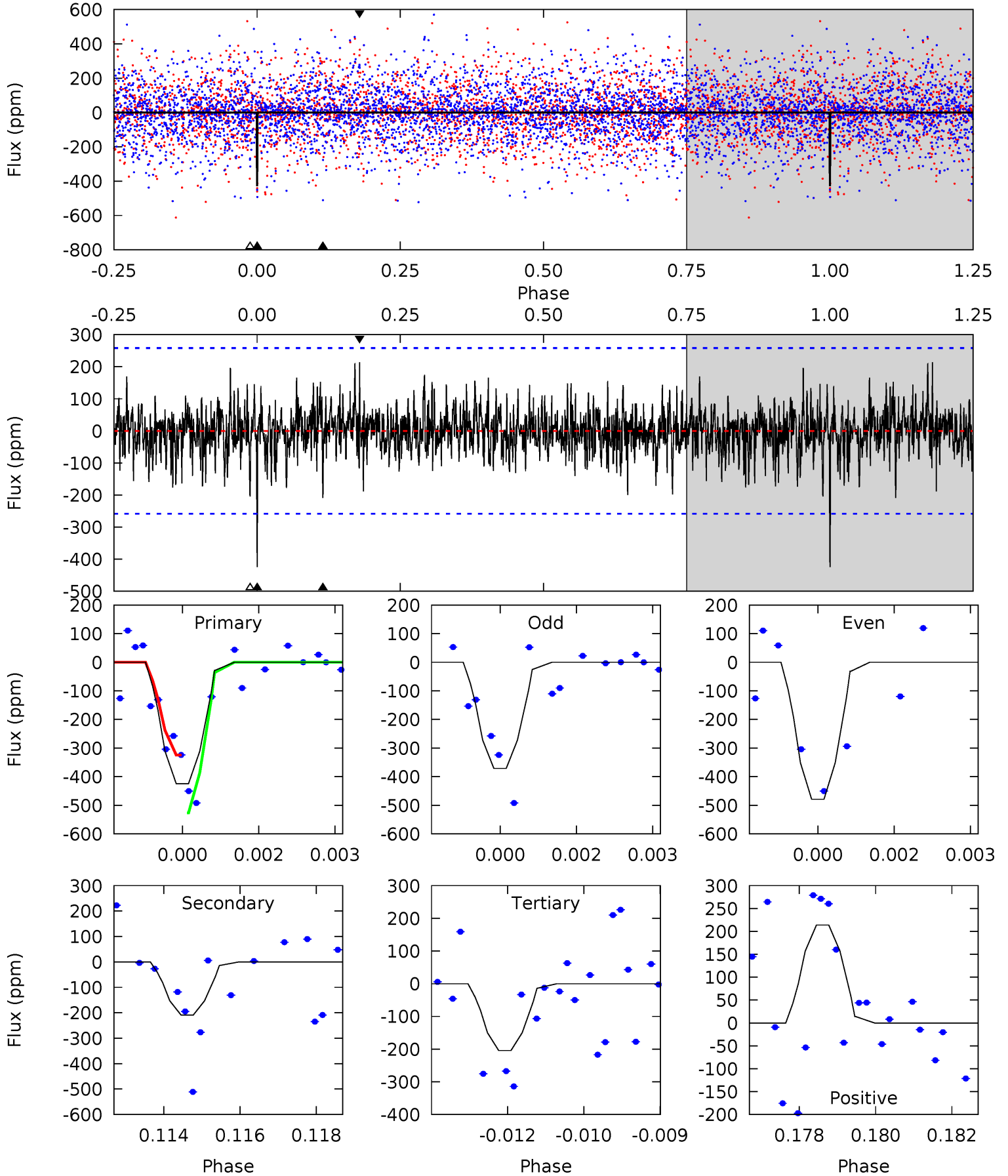
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.42	5.94	4.79	3.71	5.37	3.16	1.29	1.63	2.71	1.15	2.23	0.15	0.96	0.40	1.26



Alt Model-Shift Uniqueness Test

008396184-04, P = 38.259513 Days, E = 98.347171 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.79	4.32	4.23	4.43	5.35	3.13	1.18	4.56	4.36	0.09	-0.11	1.17	1.00	0.34	1.94



Stellar Parameters For KIC 008396184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5199^{+164}_{-182}	$3.392^{+0.476}_{-0.204}$	$-0.160^{+0.300}_{-0.300}$	$4.430^{+1.219}_{-2.438}$	$1.764^{+0.196}_{-0.785}$	$0.029^{+0.141}_{-0.016}$
	+3%/-4%	+14%/-6%	+188%/-188%	+28%/-55%	+11%/-45%	+494%/-54%
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 008396184-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-334 ± 56	$12.59^{+12.90}_{-8.49}$	1296^{+118}_{-195}	4333^{+2772}_{-893}	85^{+666}_{-66}
Alt.	-209 ± 48	$13.20^{+14.01}_{-8.99}$	1291^{+116}_{-182}	3879^{+2332}_{-757}	45^{+377}_{-35}

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 $A_{obs} \gg 1.0$

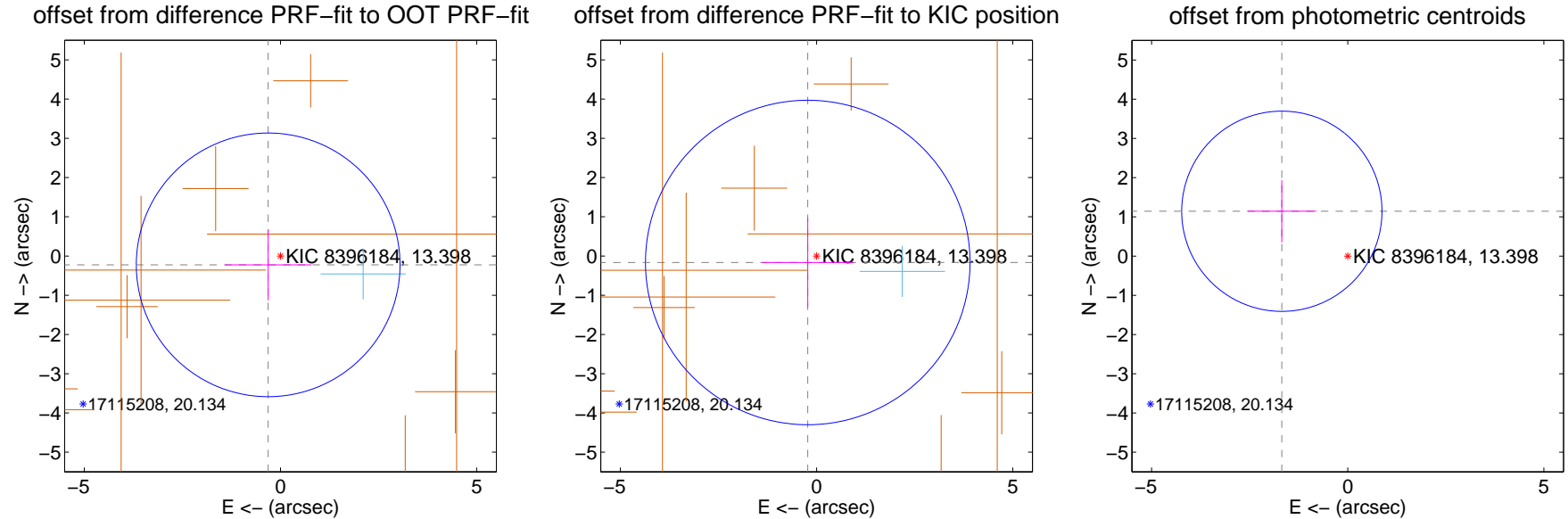
DV Centroid Data

Supplemental centroid analysis for 008396184-04. Kepler magnitude: 13.40. Transit SNR 12.44

There are 1 quarters with good PRF difference image offsets

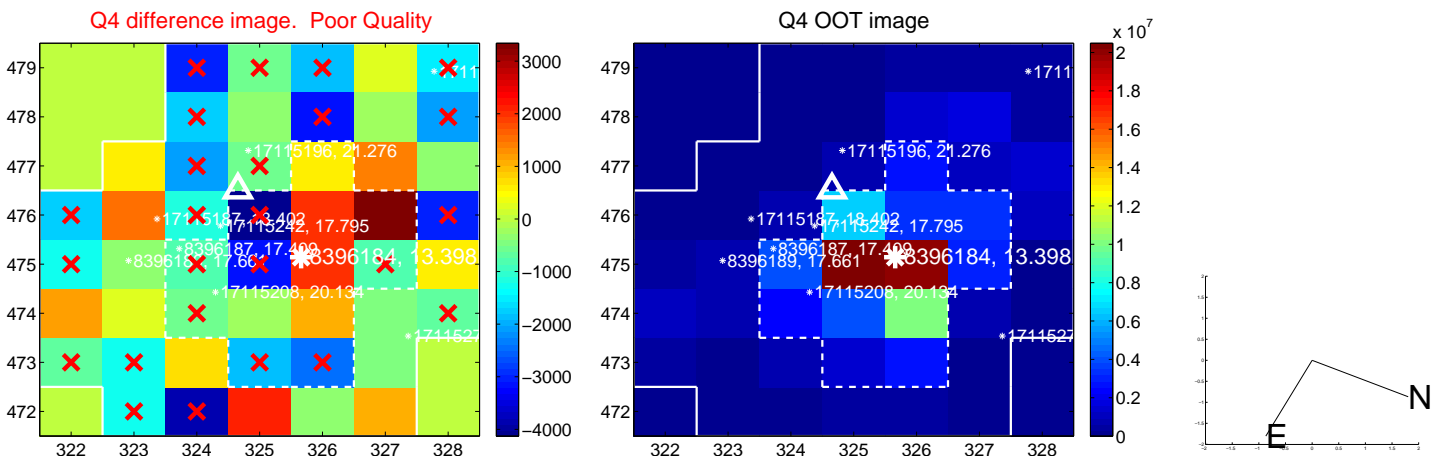
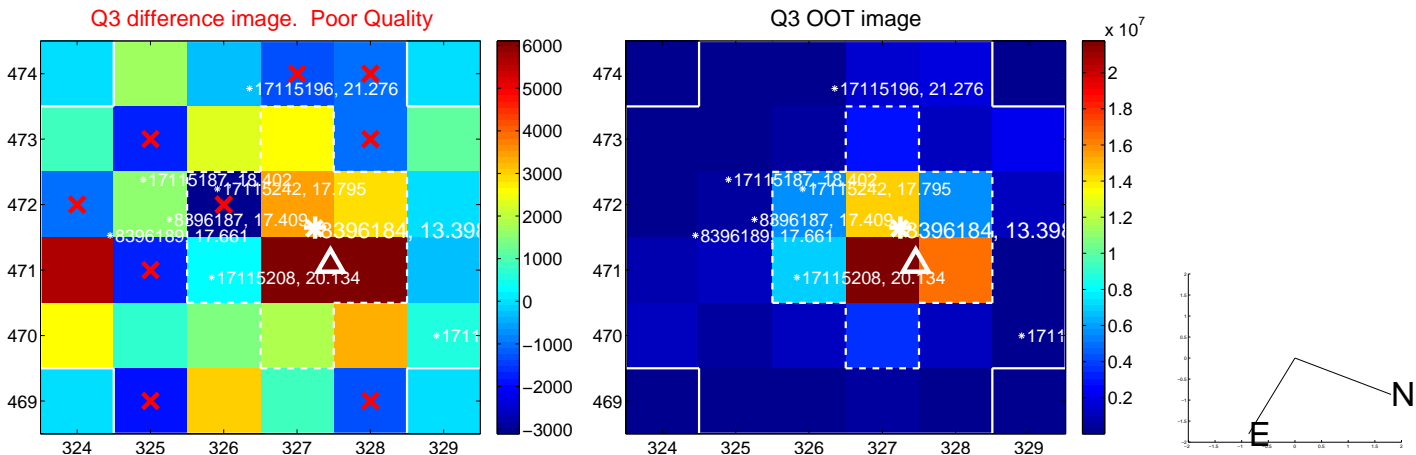
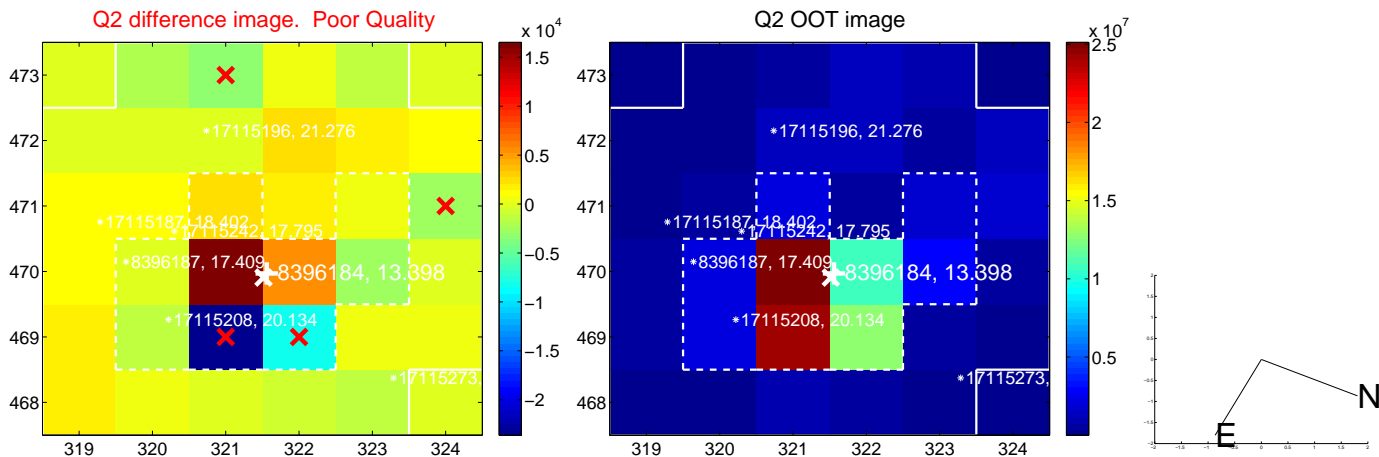
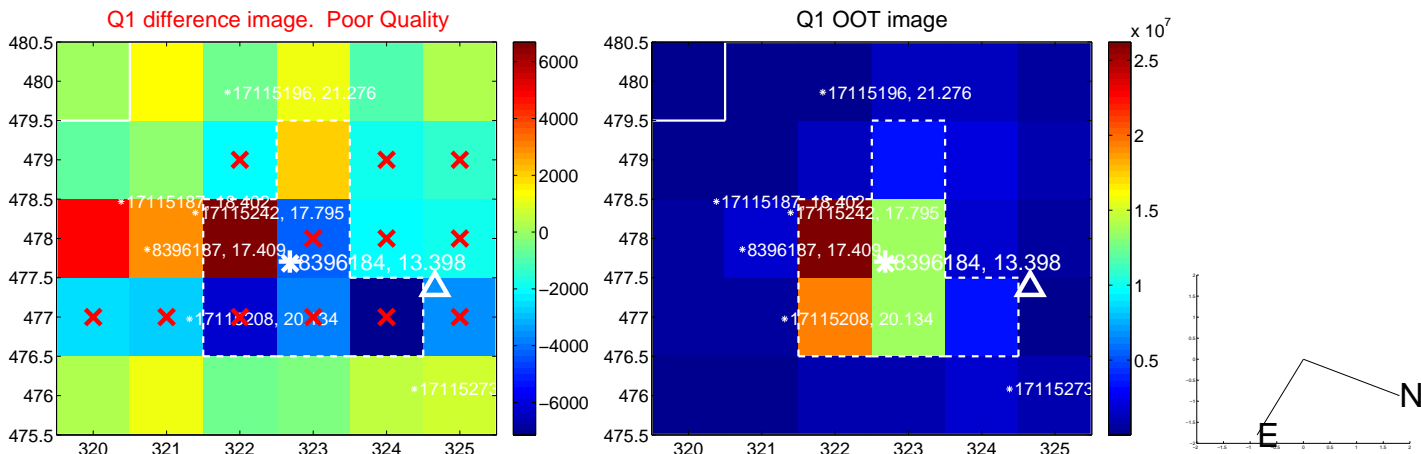
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.386 ± 1.120	0.34	0.313 ± 1.104	-0.225 ± 0.902
PRF-fit source offset from KIC position	0.279 ± 1.379	0.20	0.225 ± 1.169	-0.165 ± 1.133
photometric centroid source offset	2.03 ± 0.85	2.39	1.68 ± 0.88	1.14 ± 0.79

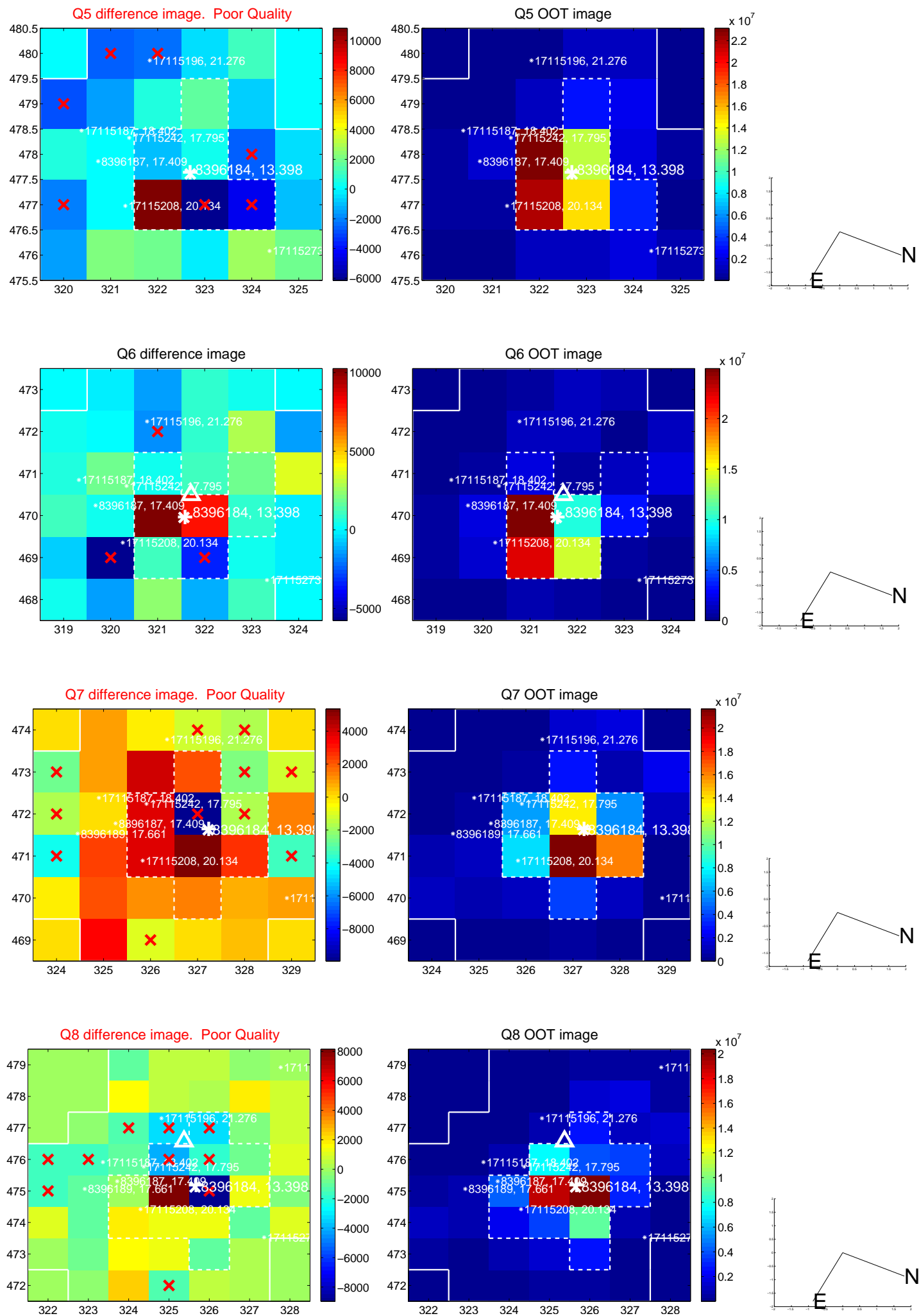


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

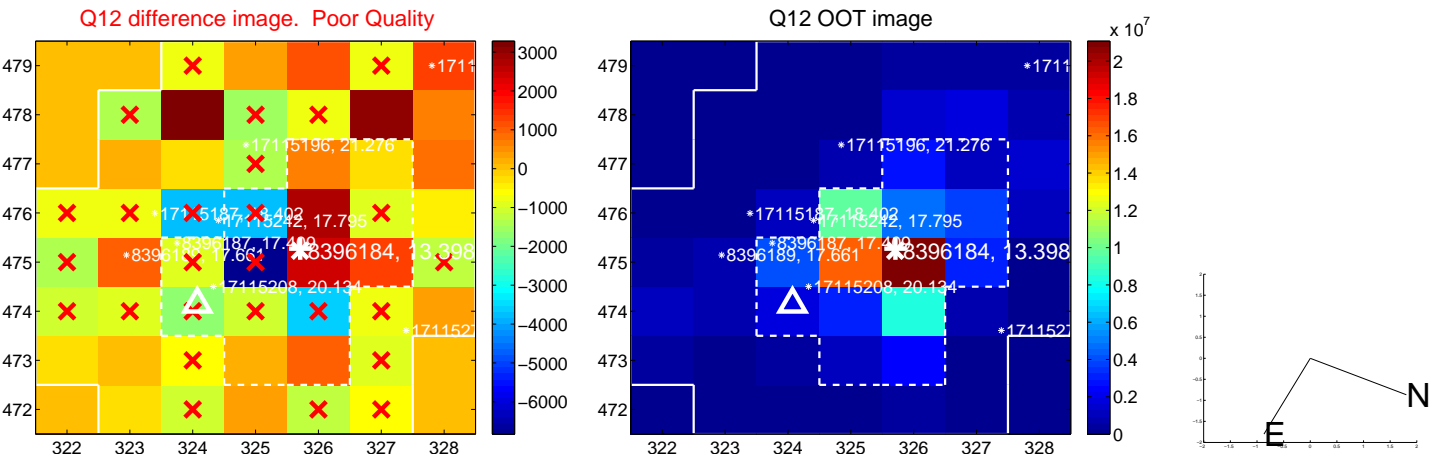
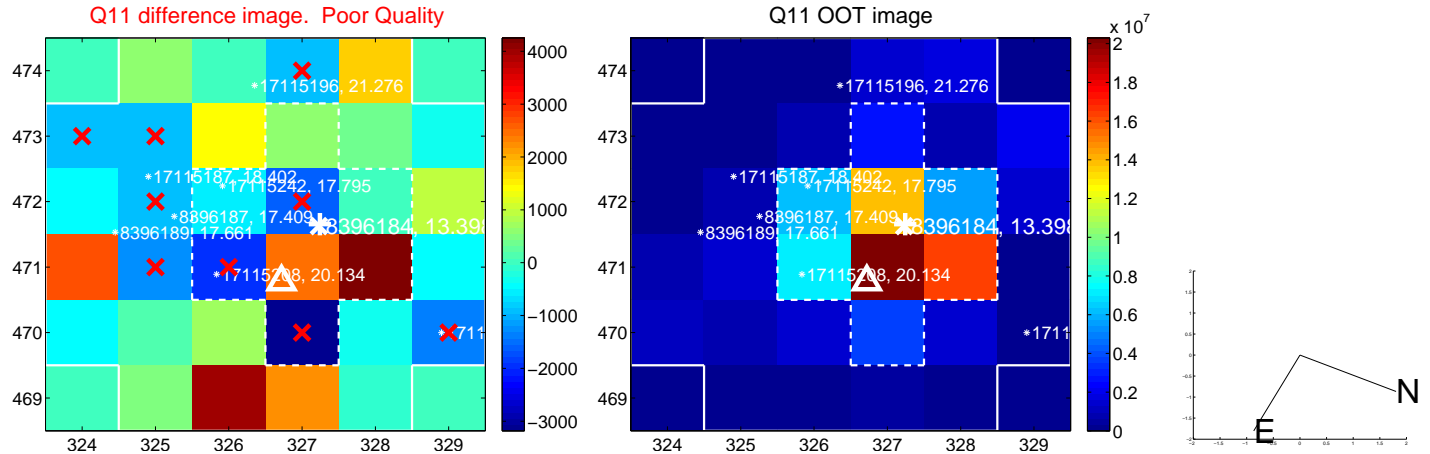
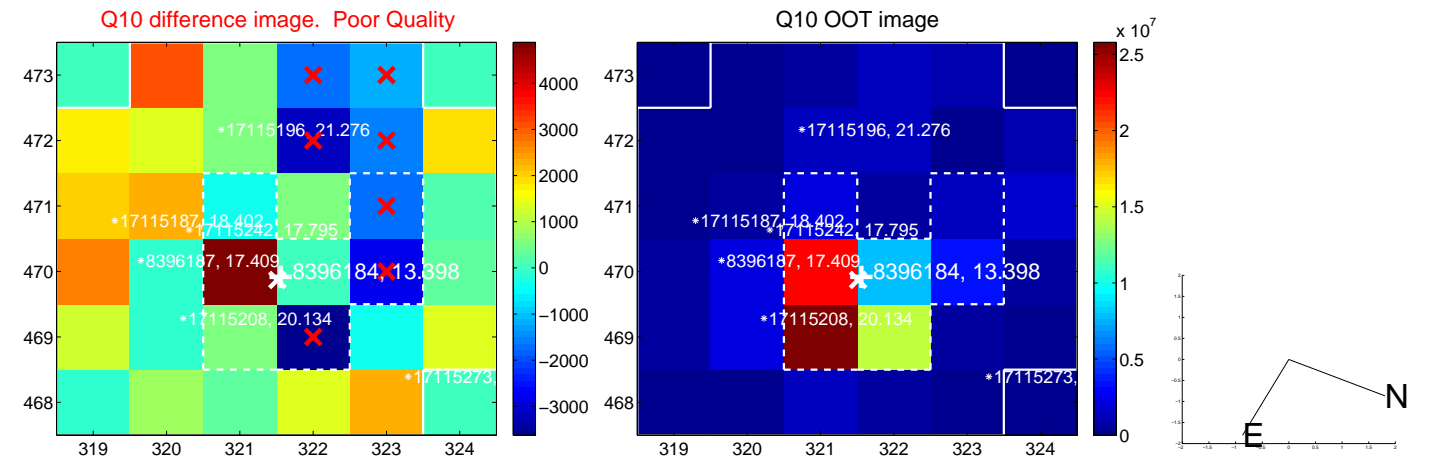
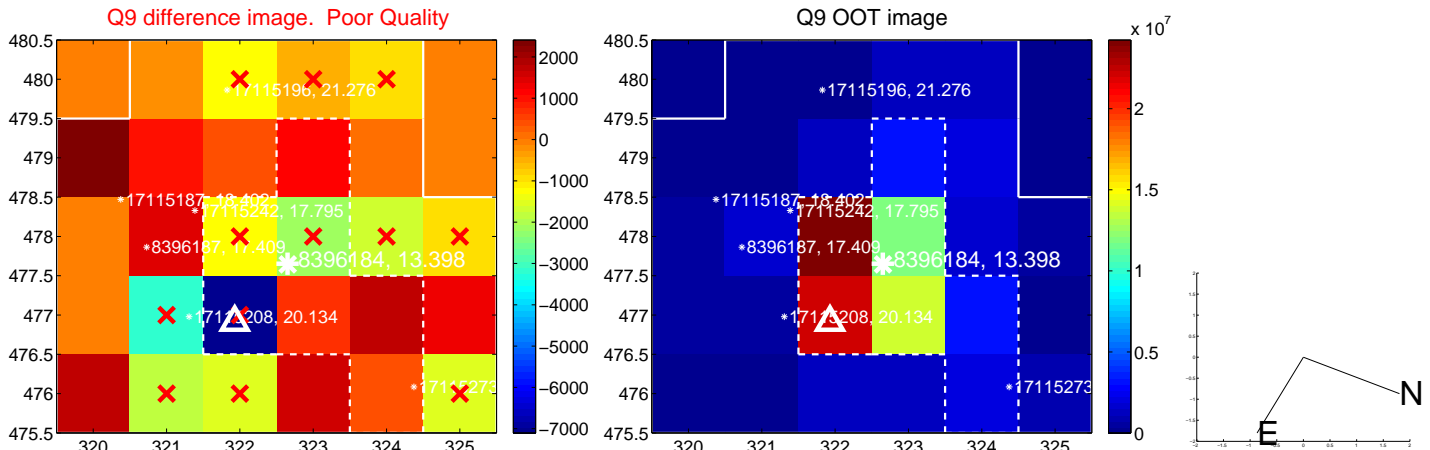
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



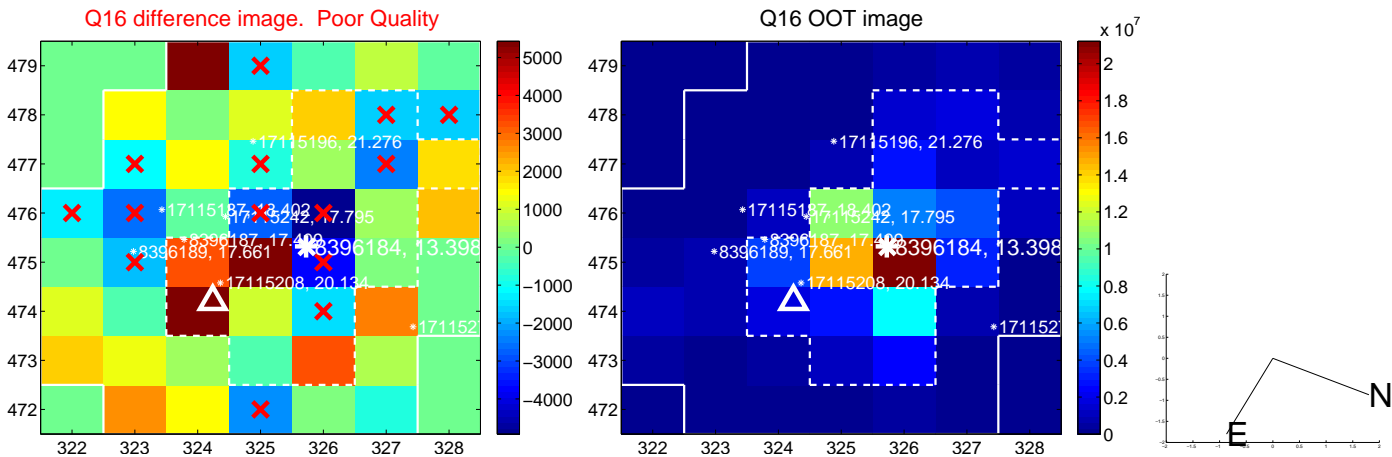
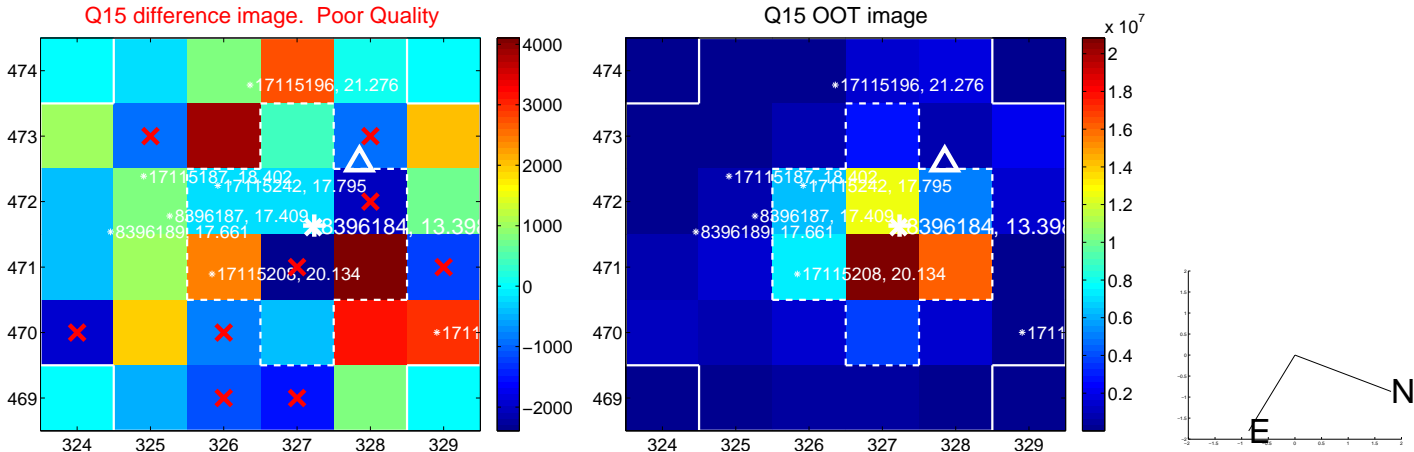
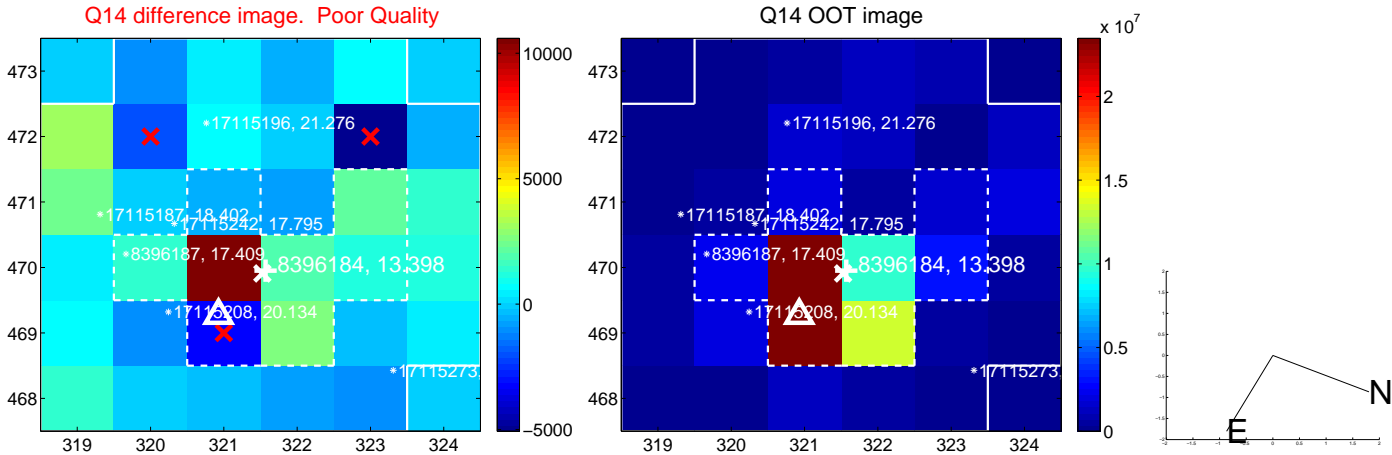
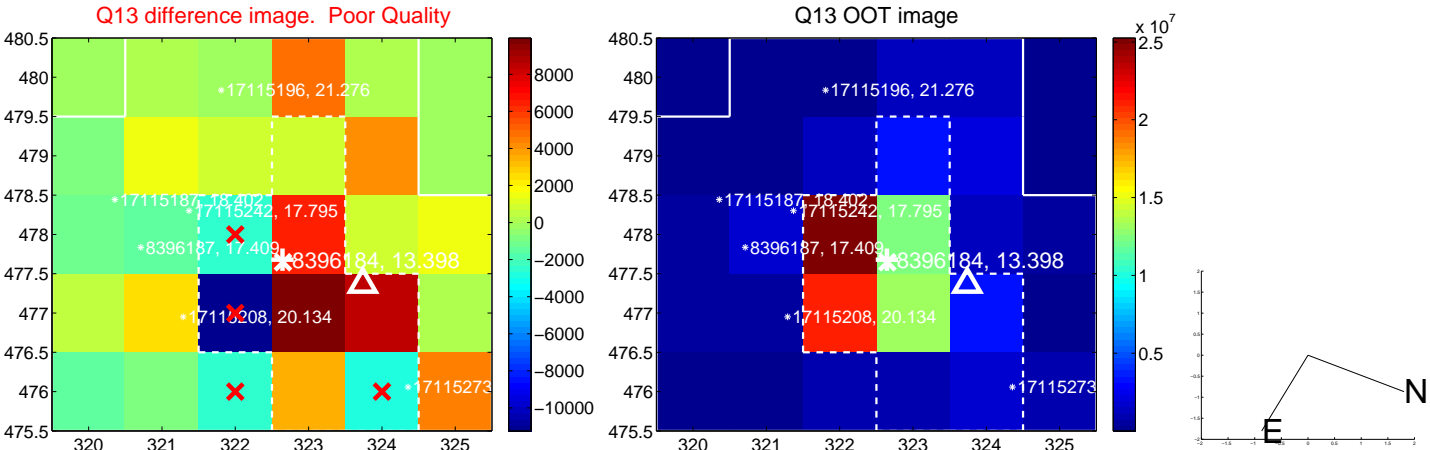
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



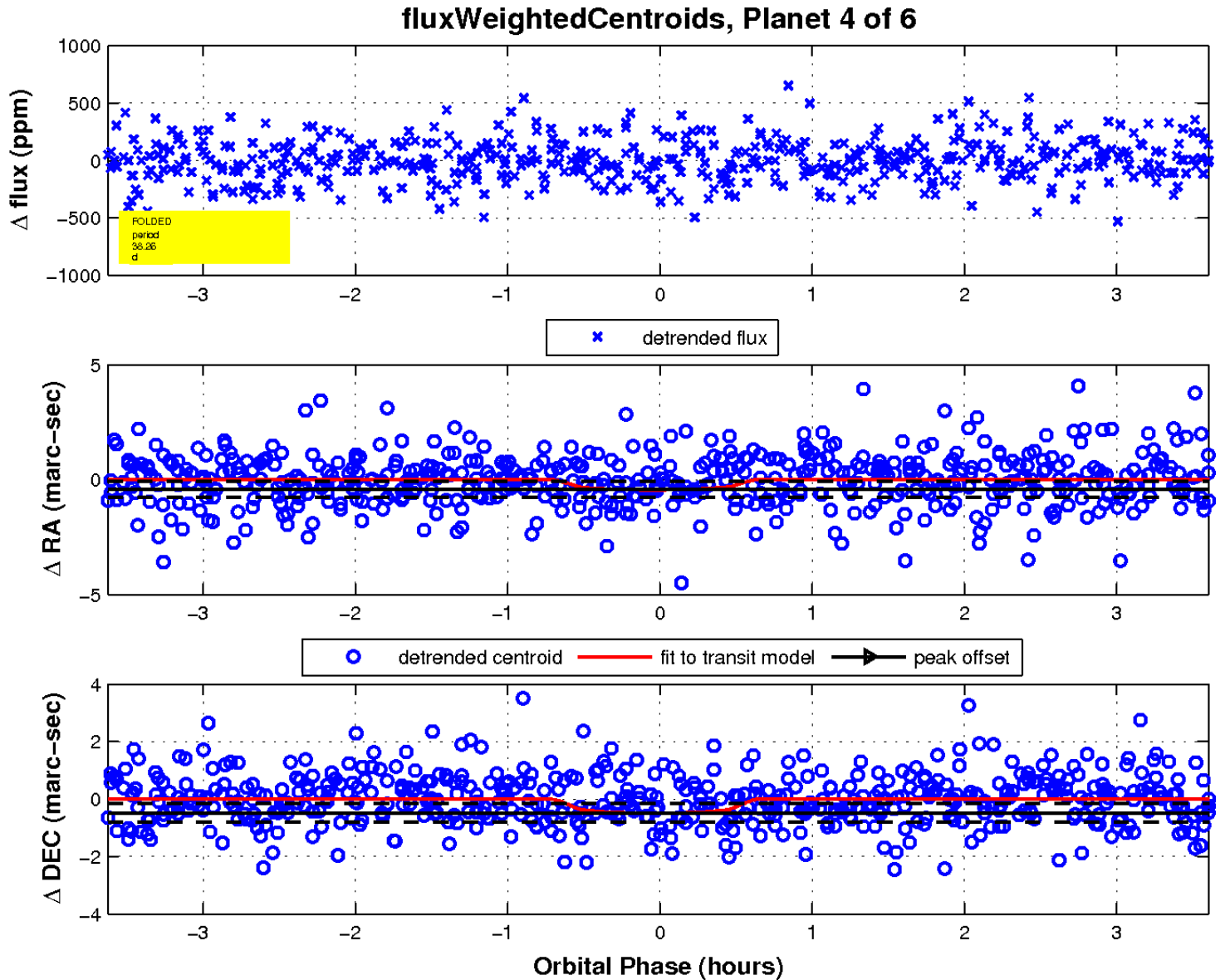
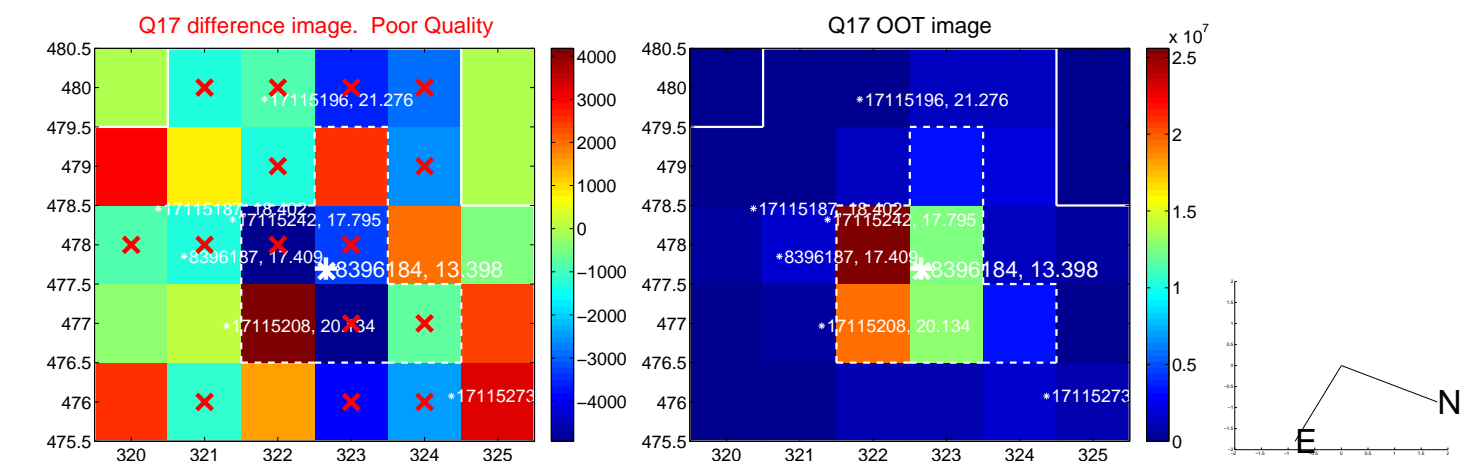
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

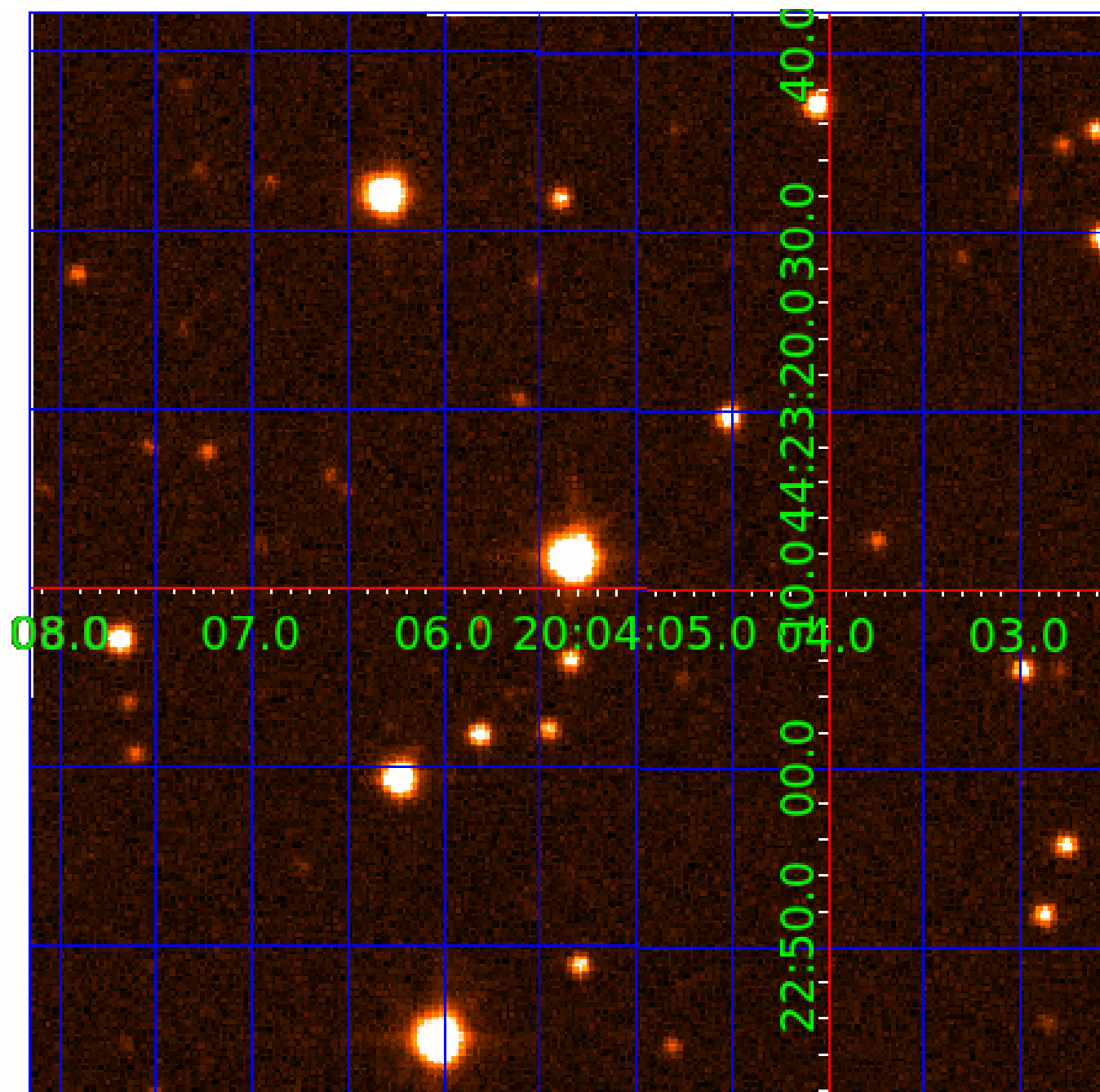


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008396184

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})
008396184-01	OBS	No	0.656486	131.936895	14.3	4.663	10.1	8.3	4.43	5199	1.80	0.00
008396184-02	OBS	No	31.161776	155.800830	395.5	0.903	11.1	12.0	4.43	5199	10.45	234.07
008396184-03	OBS	No	21.065844	143.782105	315.5	1.046	9.8	11.1	4.43	5199	9.13	394.52
008396184-04	OBS	No	38.259300	136.611763	391.5	1.210	10.6	12.4	4.43	5199	8.91	178.04
008396184-05	OBS	No	92.730065	147.222722	254.1	8.957	9.4	9.3	4.43	5199	7.69	54.69
008396184-06	OBS	No	24.500546	139.857392	327.2	1.180	9.4	9.2	4.43	5199	7.98	322.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008396184-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET
008396184-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008396184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008396184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

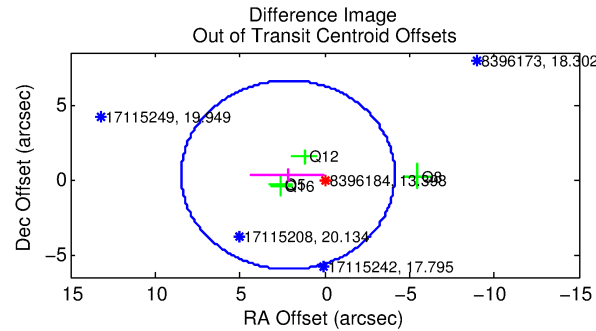
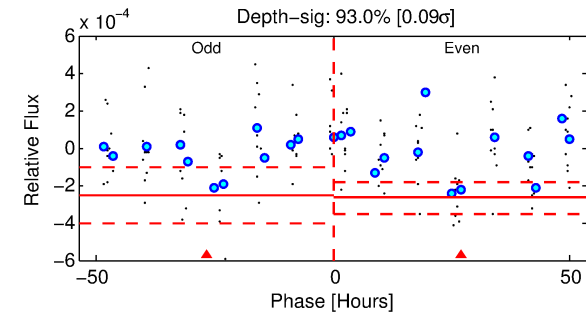
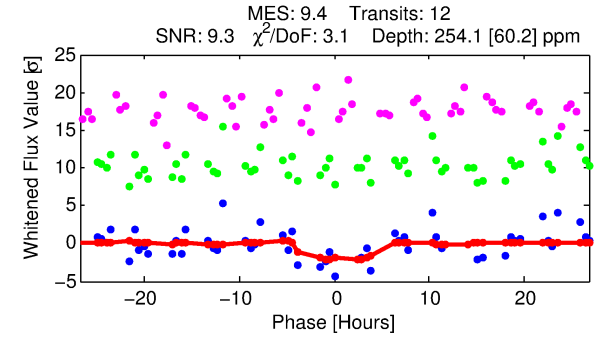
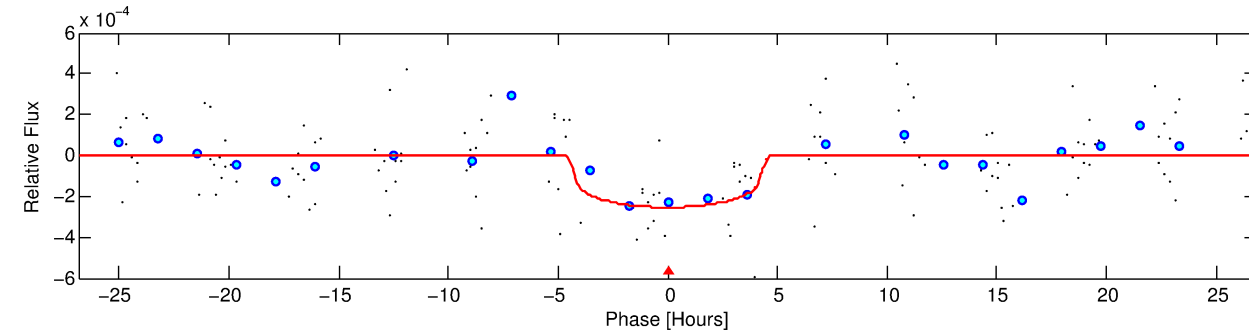
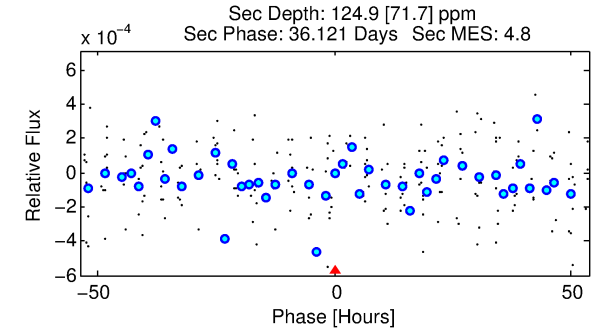
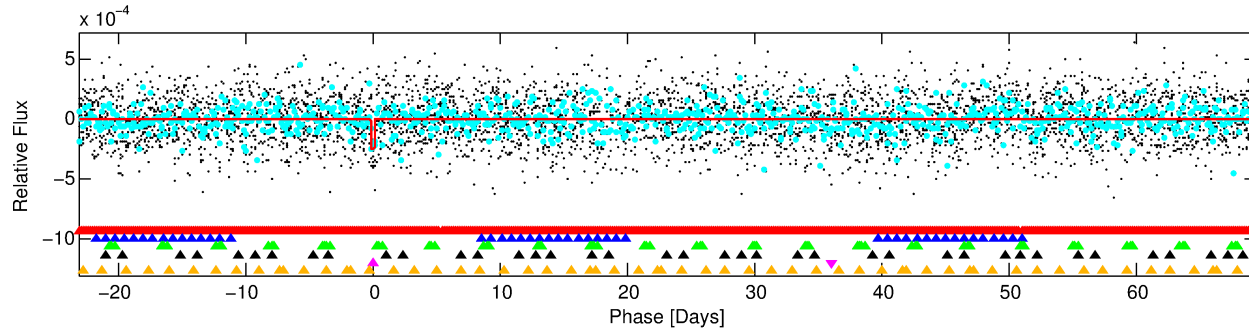
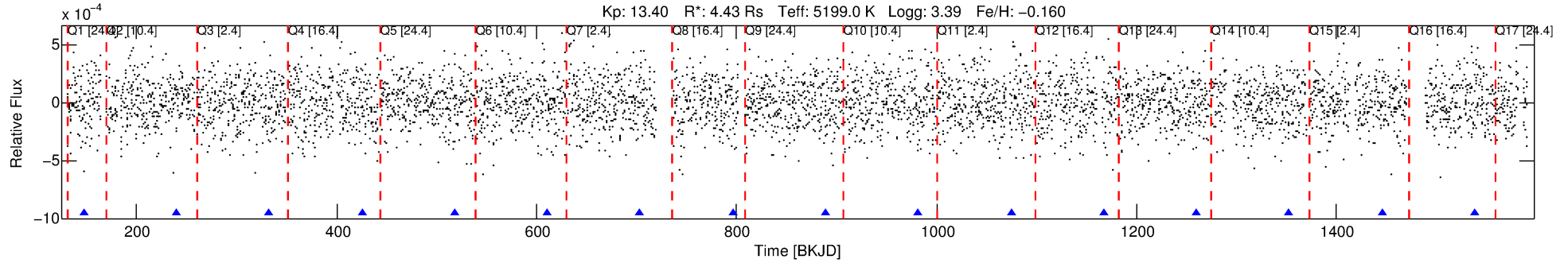
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008396184-05

No Significant Match Found

DV One-Page Summary

KIC: 8396184 Candidate: 5 of 6 Period: 92.730 d



DV Fit Results:

Period = 92.73007 [0.00476] d
Epoch = 147.2227 [0.0441] BKJD
Rp/R* = 0.0159 [0.0230]
a/R* = 53.96 [298.71]
b = 0.75 [3.27]
Seff = 54.69 [45.36]
Teq = 693 [144] K
Rp = 7.69 [11.91] Re
a = 0.4847 [0.2509] AU
Ag = 272.91 [836.29] [0.33σ]
Teffp = 4358 [3221] K [1.14σ]

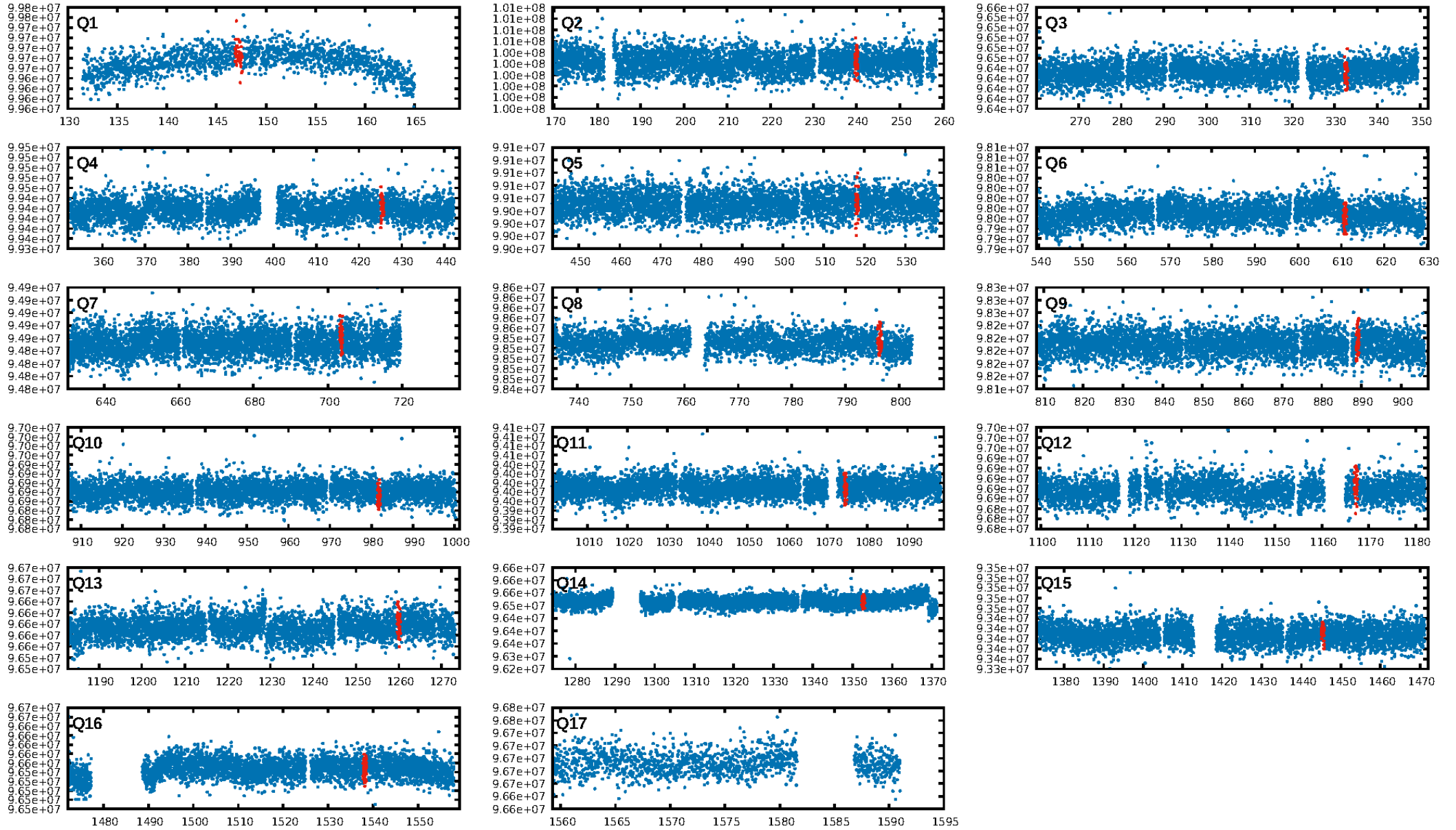
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [144.64σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 18.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.28e-09
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 2.038
Centroid-sig: 12.7%
Centroid-so: 0.593 arcsec [0.77σ]
OotOffset-rm: 2.180 arcsec [1.04σ]
OotOffset-st: 0/0/3/1 [4]
KicOffset-rm: 2.062 arcsec [1.24σ]
KicOffset-st: 0/0/3/1 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.00 [0/16]

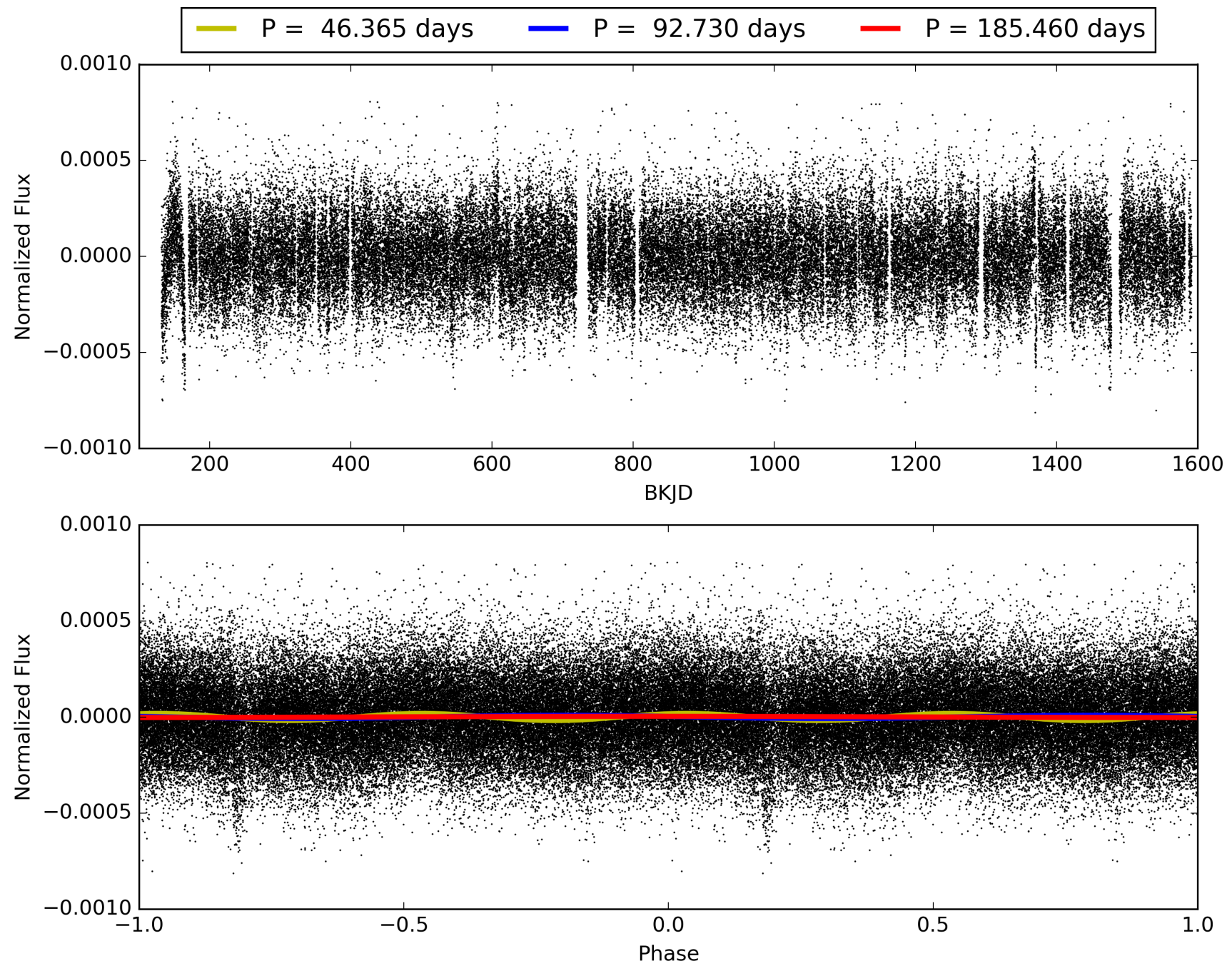
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:32:58 Z

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

TCE 008396184-05, PDC Light Curves

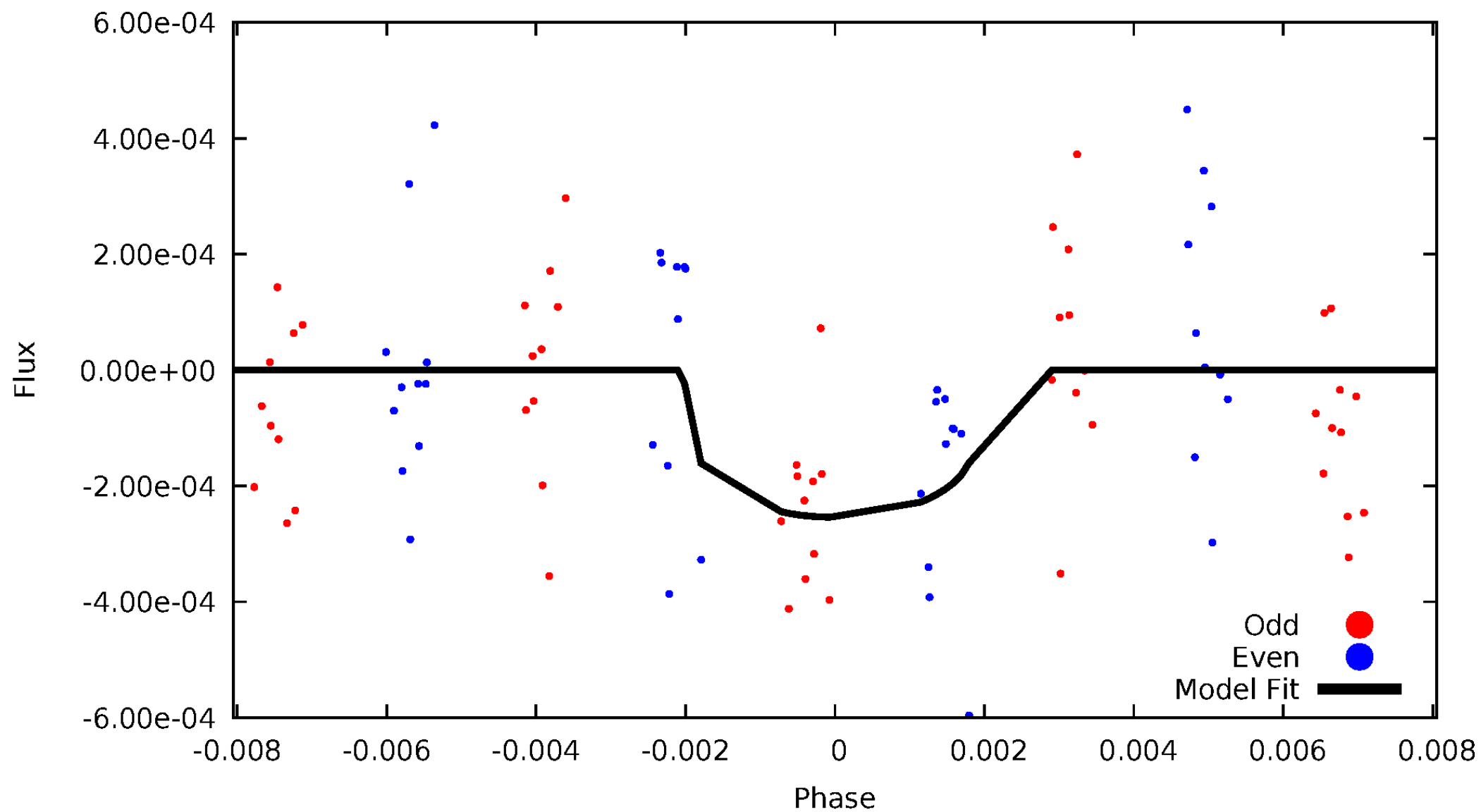


TCE 008396184-05



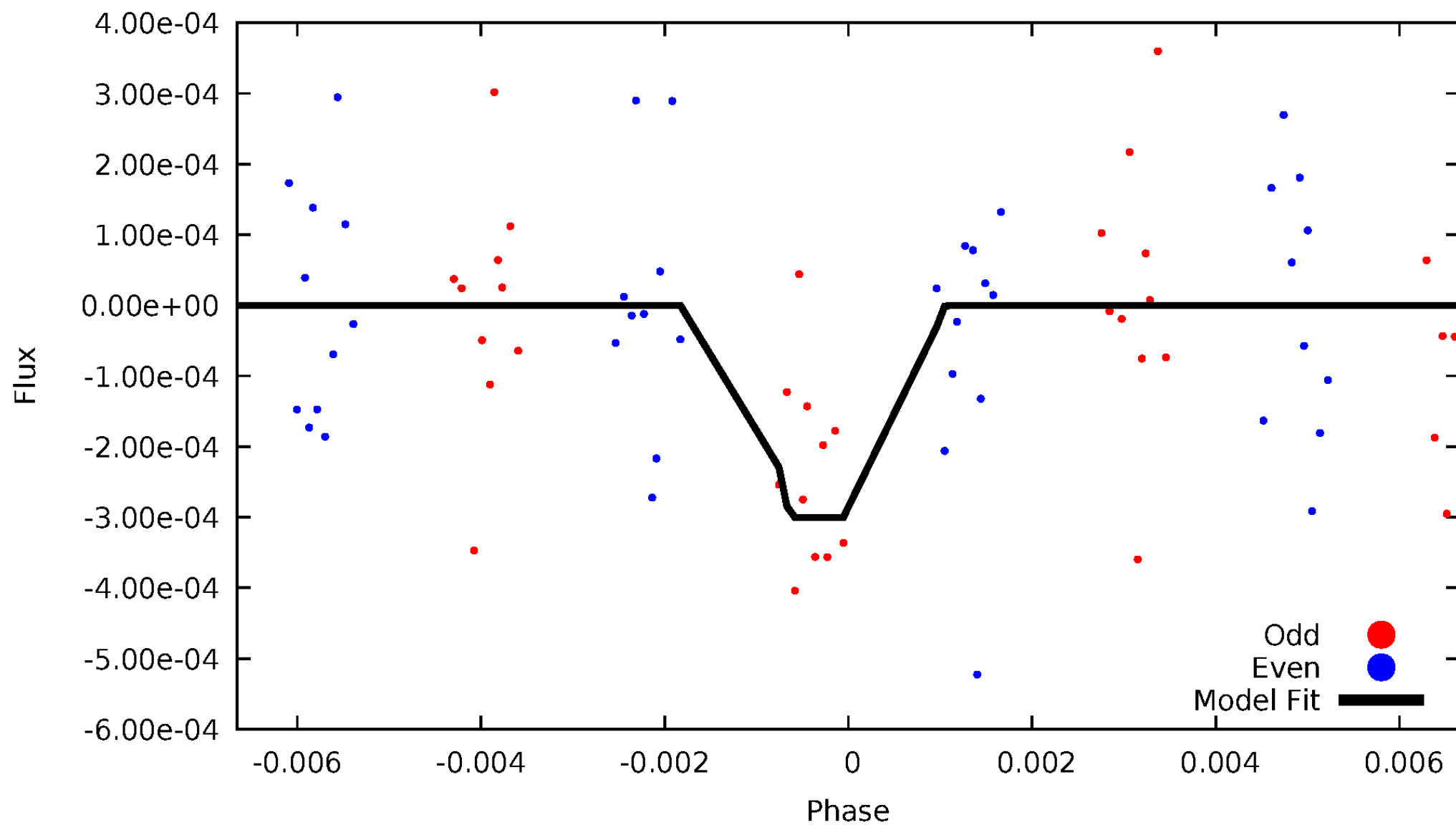
DV Odd/Even

TCE 008396184-05



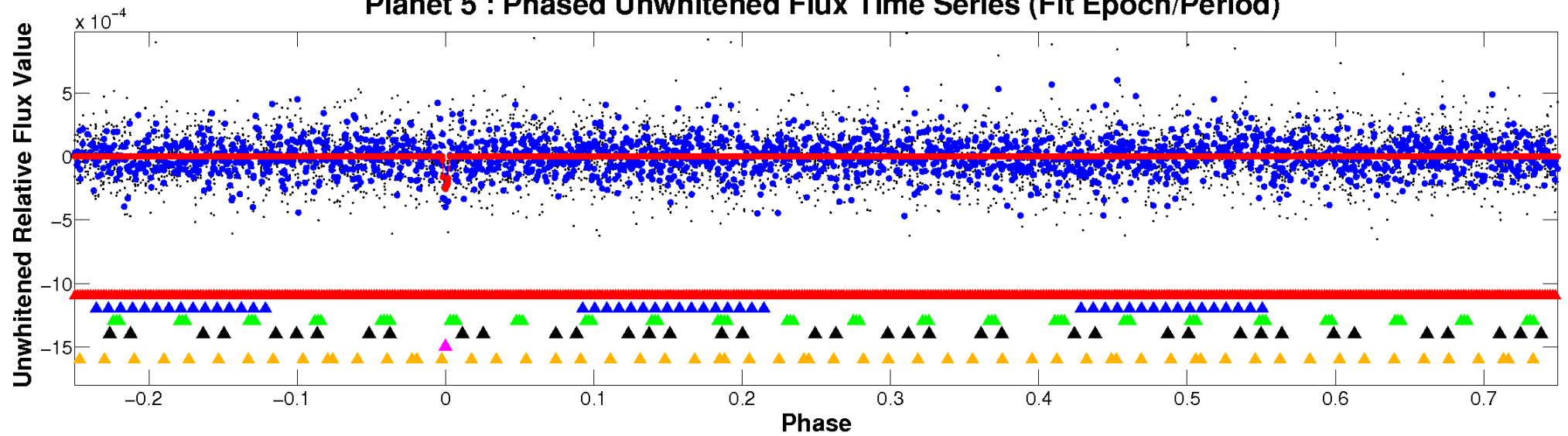
ALT Odd/Even

TCE 008396184-05

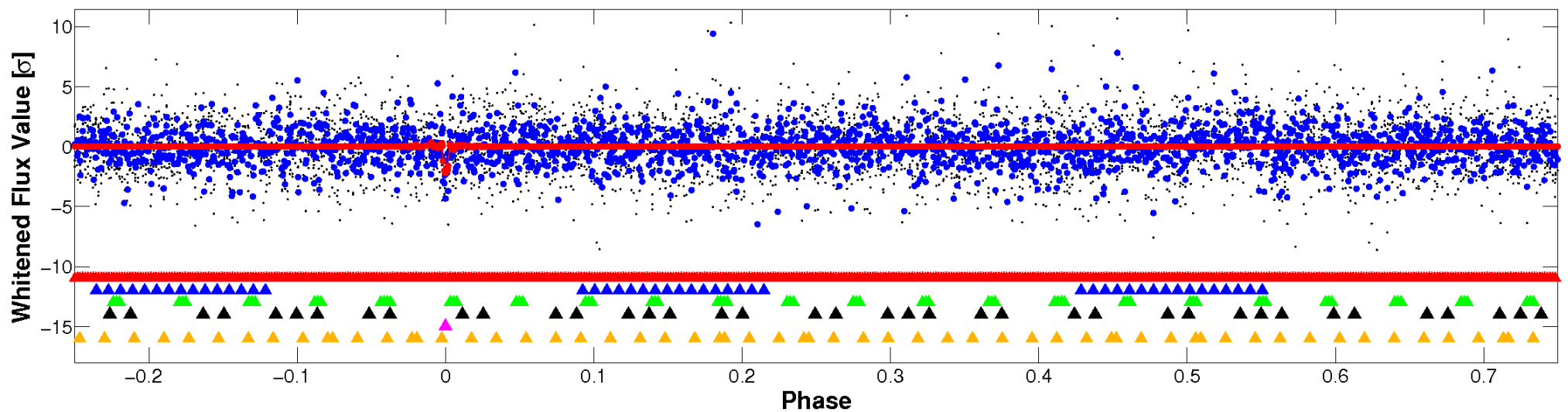


Non-Whitened Vs. Whitened Light Curve

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

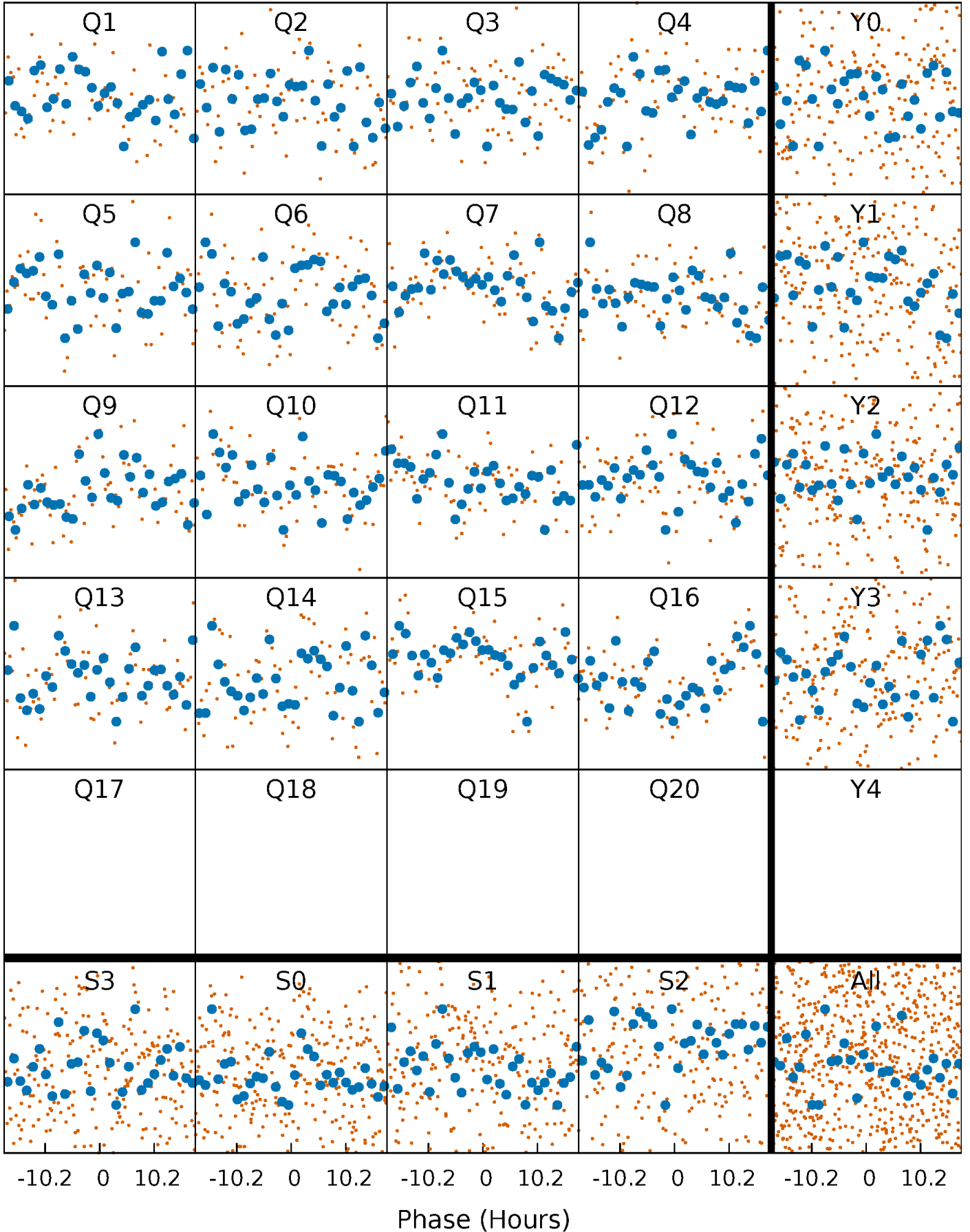


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



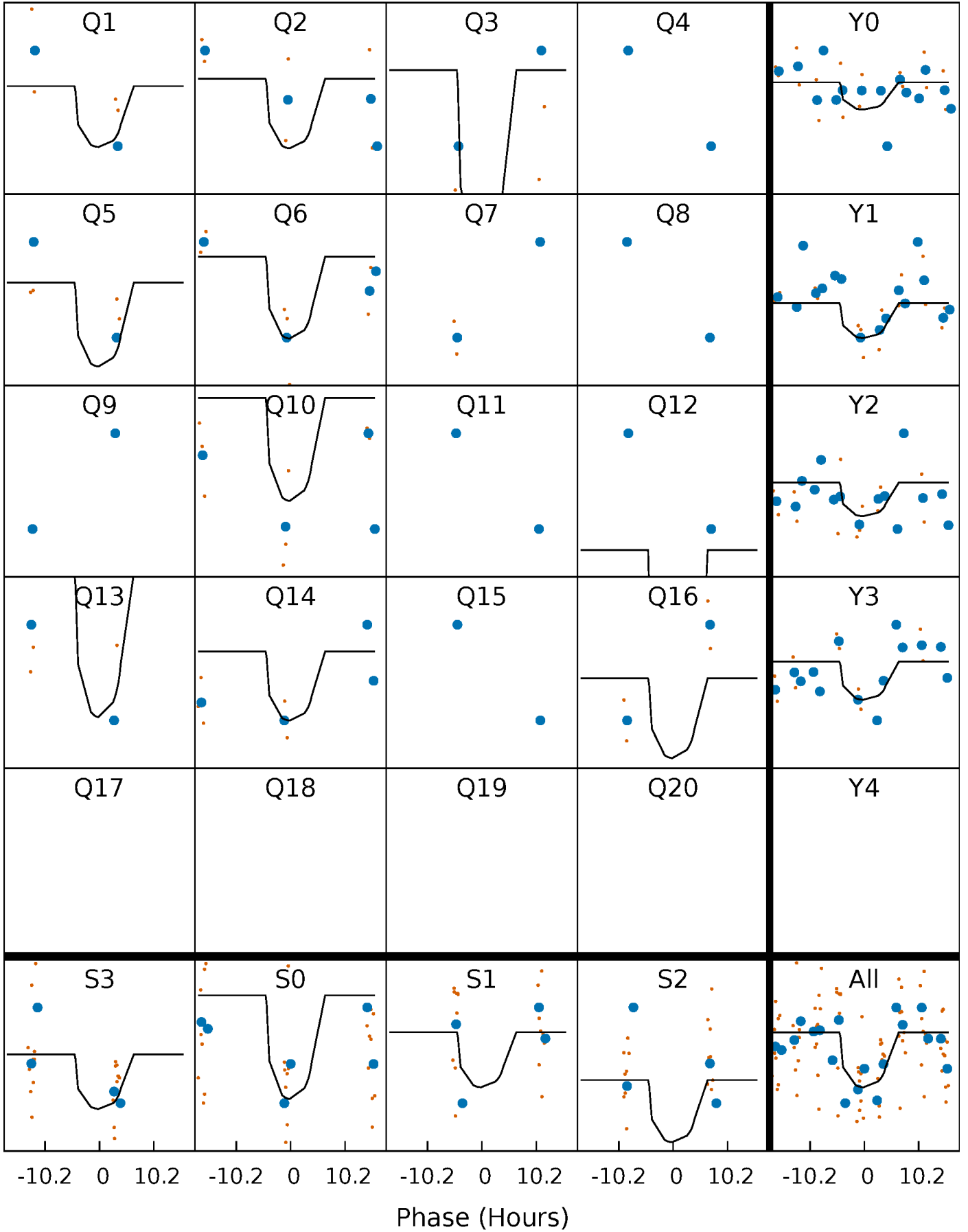
PDC Quarter-Phased Transit Curves

TCE 008396184-05 $P = 92.730065$ Days $T_0 = 147.222722$ (BKJD)



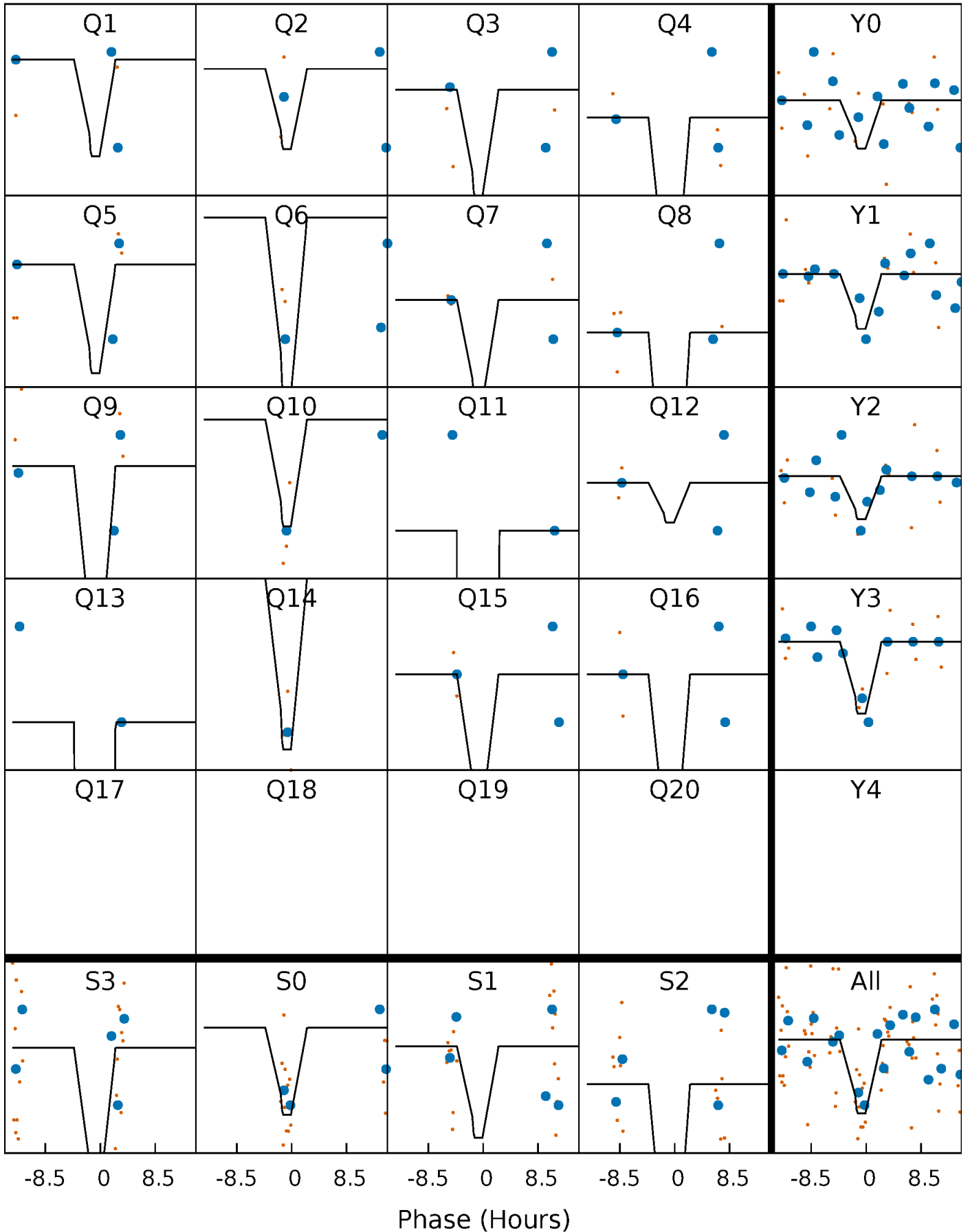
DV Quarter-Phased Transit Curves

TCE 008396184-05 $P = 92.730065$ Days $T_0 = 147.222722$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

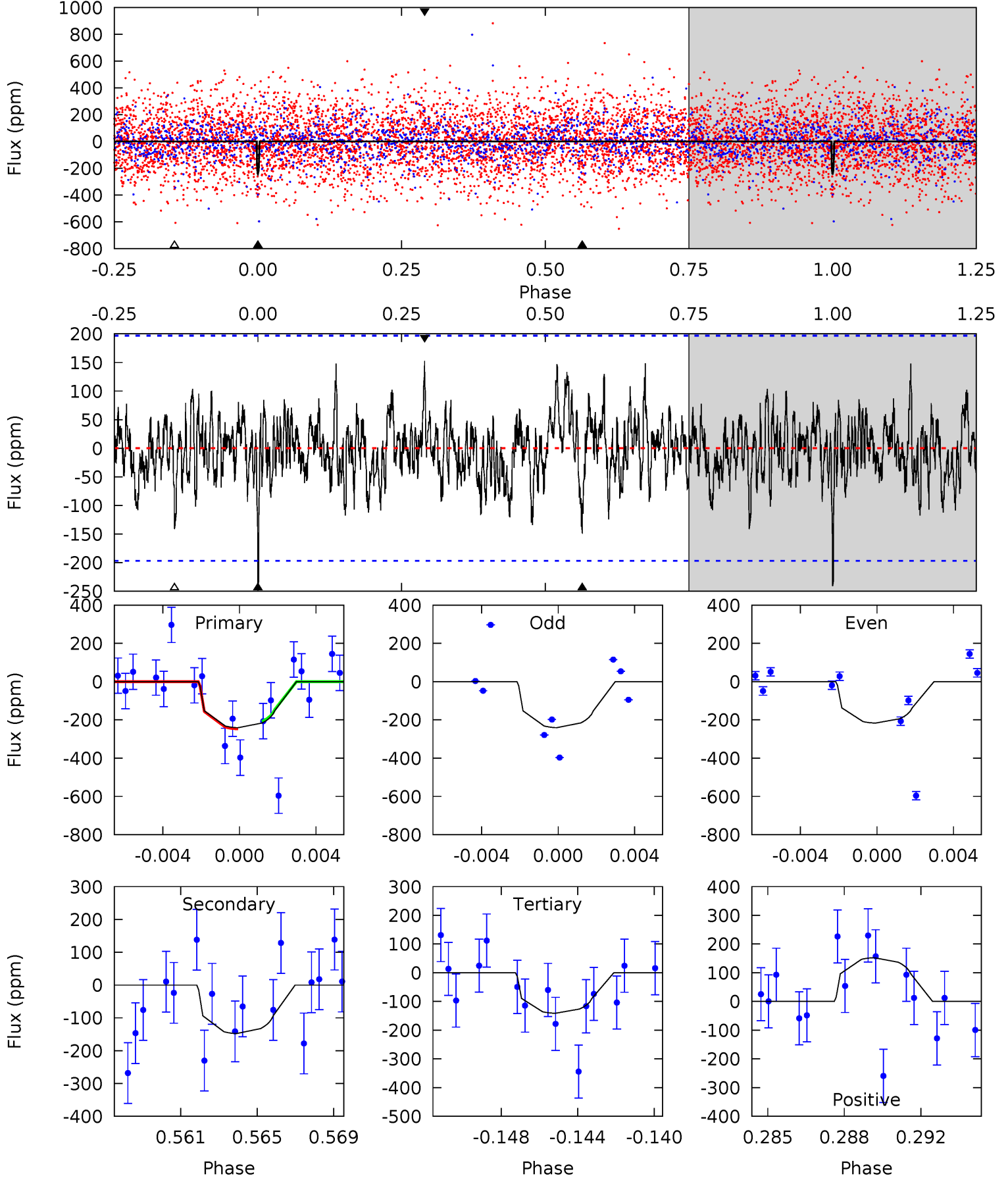
TCE 008396184-05 $P = 92.725655$ Days $T_0 = 147.259161$ (BKJD)



DV Model-Shift Uniqueness Test

008396184-05, P = 92.730065 Days, E = 54.492657 Days

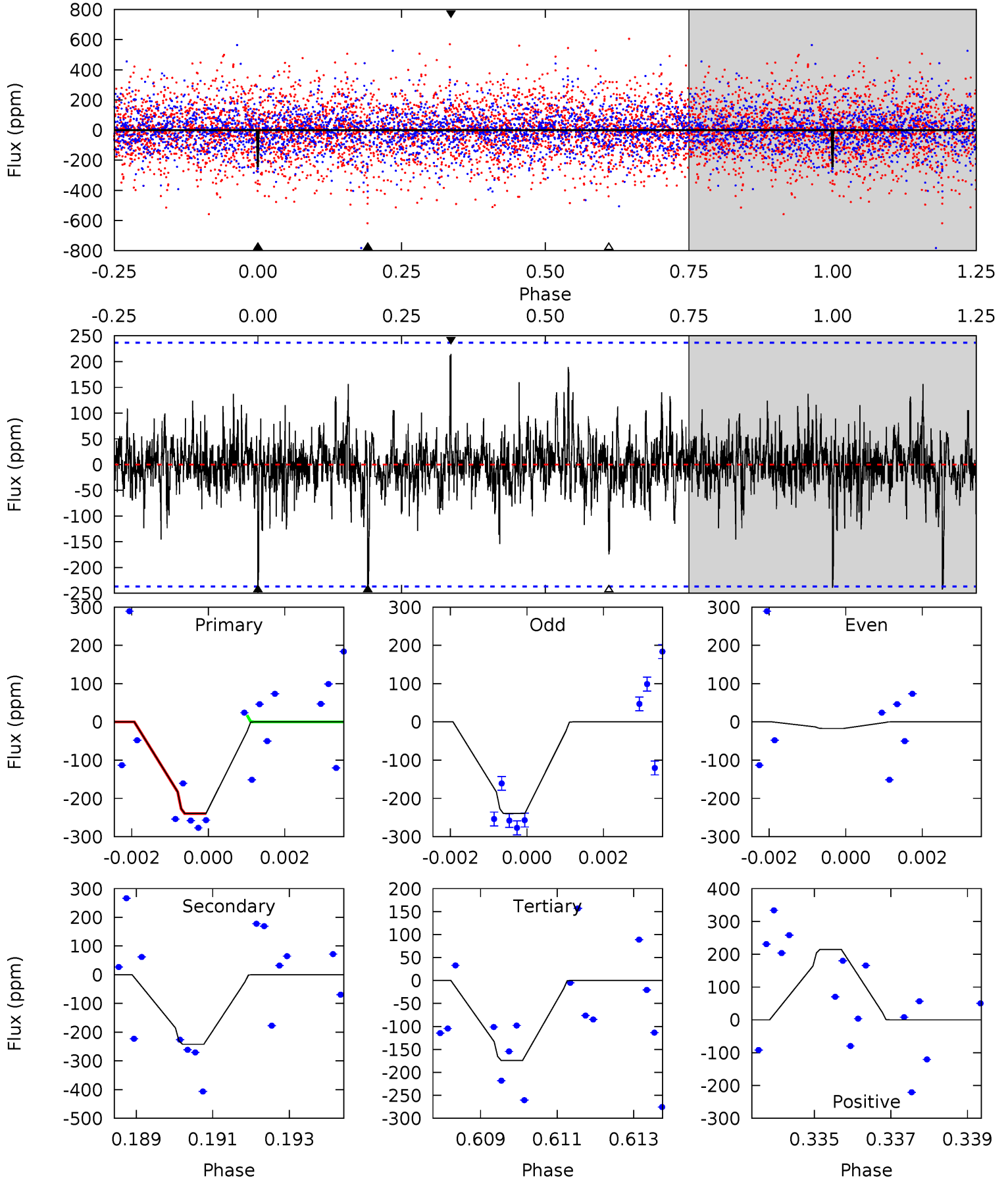
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.37	3.91	3.73	4.03	5.20	2.89	1.22	2.64	2.34	0.18	-0.12	0.32	1.00	0.39	0.50



Alt Model-Shift Uniqueness Test

008396184-05, P = 92.725655 Days, E = 54.533506 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.39	5.47	3.93	4.85	5.34	3.11	0.94	1.46	0.55	1.54	0.62	2.24	0.92	0.47	1.85



Stellar Parameters For KIC 008396184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5199^{+164}_{-182}	$3.392^{+0.476}_{-0.204}$	$-0.160^{+0.300}_{-0.300}$	$4.430^{+1.219}_{-2.438}$	$1.764^{+0.196}_{-0.785}$	$0.029^{+0.141}_{-0.016}$
	+3%/-4%	+14%/-6%	+188%/-188%	+28%/-55%	+11%/-45%	+494%/-54%
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 008396184-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-148 ± 38	$9.60^{+10.55}_{-6.38}$	959^{+82}_{-128}	4014^{+2398}_{-759}	182^{+1446}_{-139}
Alt.	-242 ± 44	$10.42^{+10.29}_{-7.05}$	953^{+92}_{-119}	4296^{+2869}_{-803}	282^{+2168}_{-212}

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 $A_{obs} \gg 1.0$

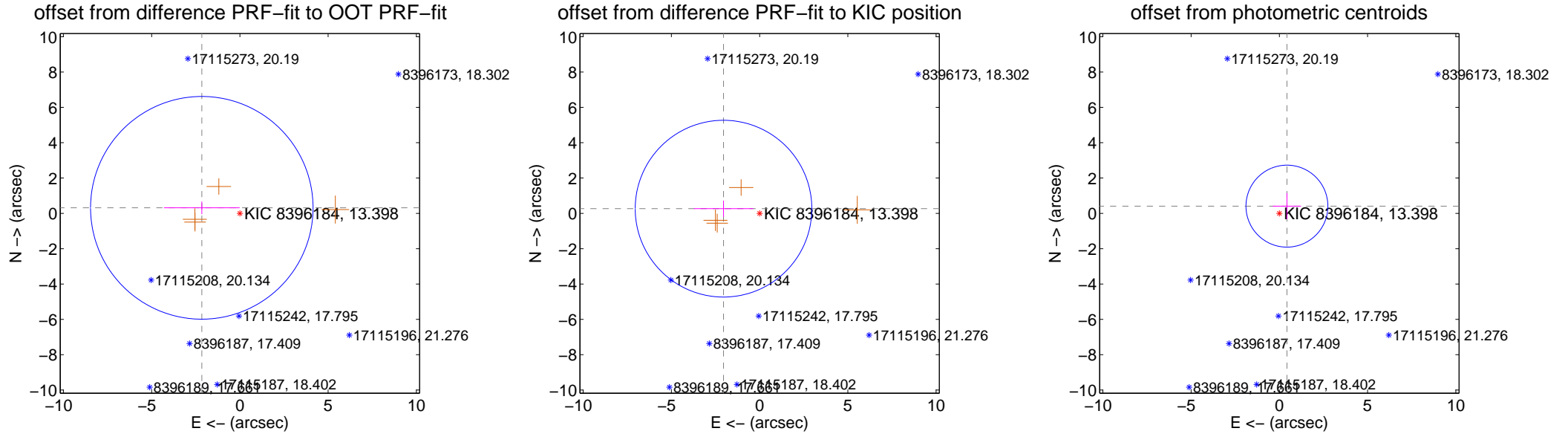
DV Centroid Data

Supplemental centroid analysis for 008396184-05. Kepler magnitude: 13.40. Transit SNR 9.26

There are 0 quarters with good PRF difference image offsets

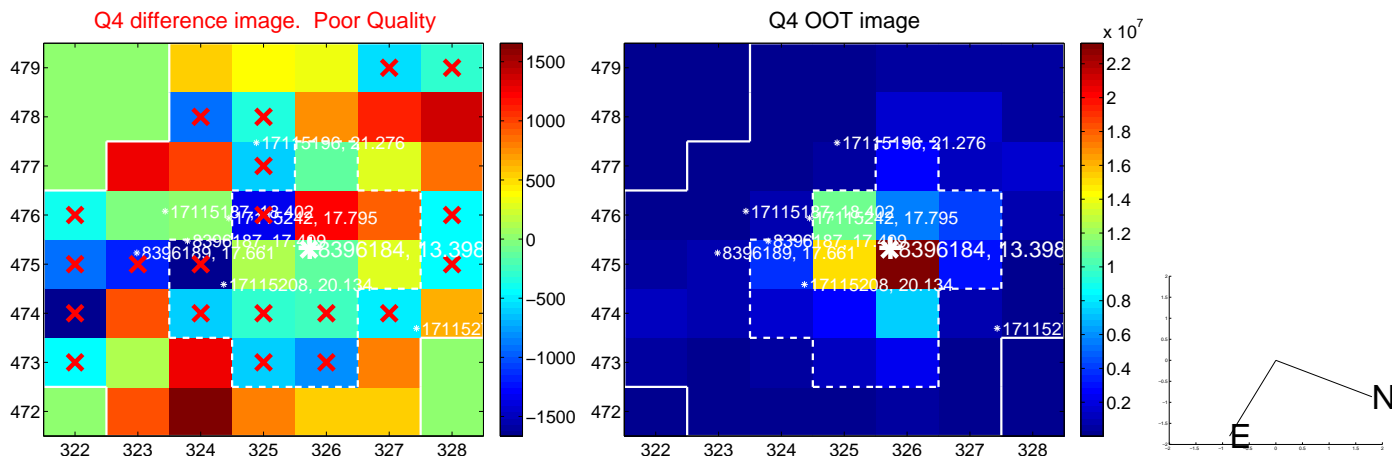
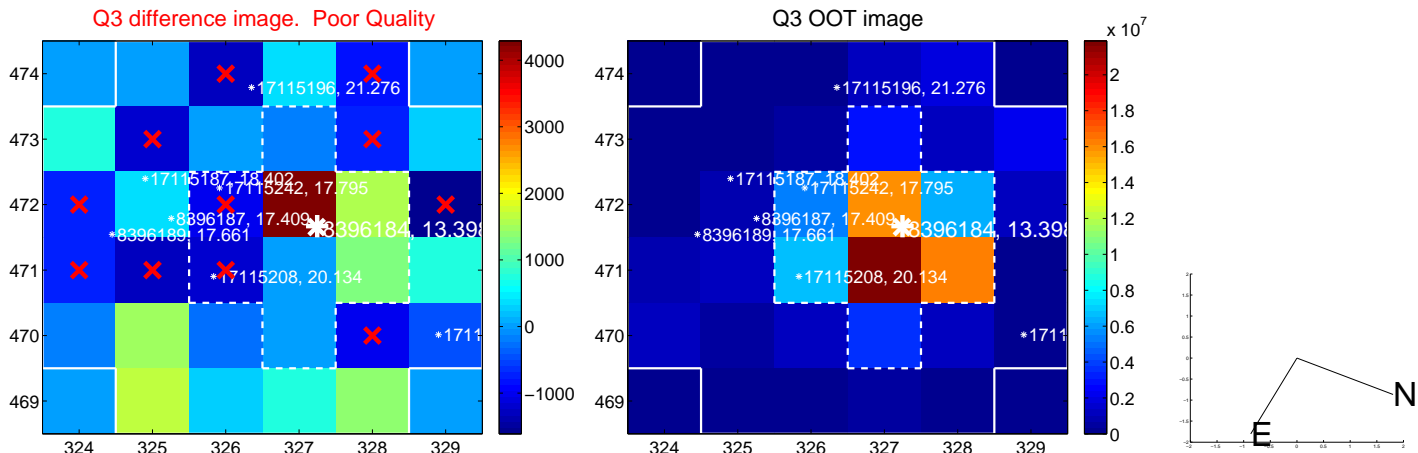
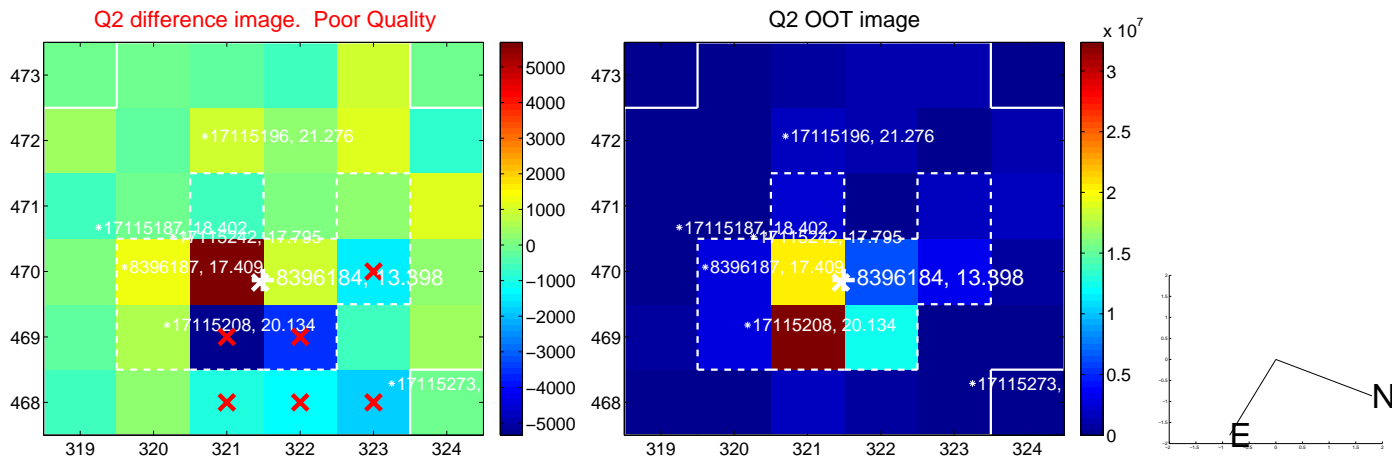
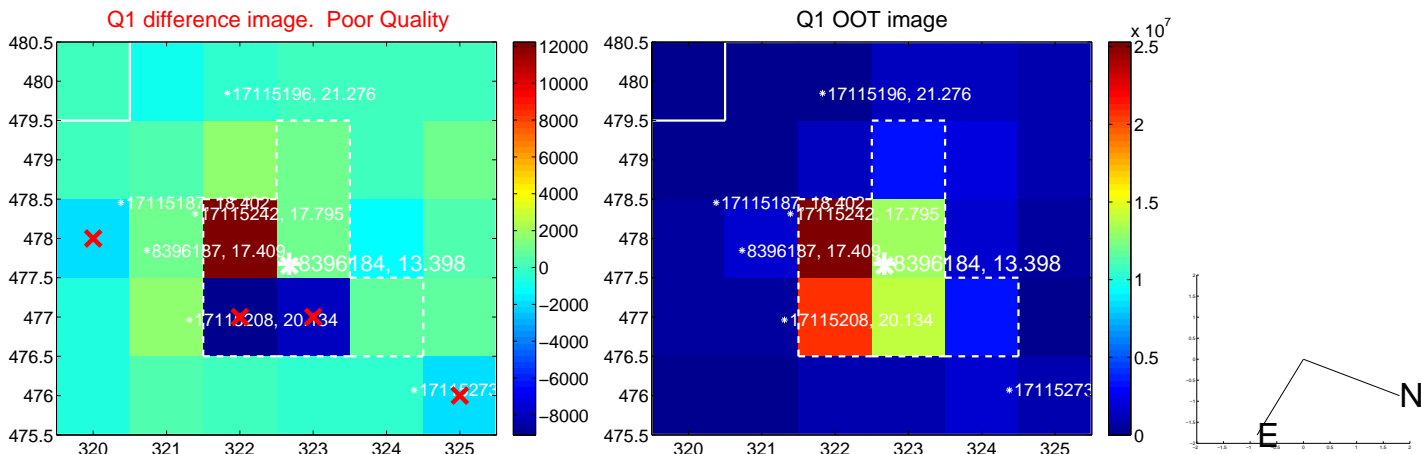
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.180 ± 2.101	1.04	2.157 ± 2.146	0.313 ± 0.358
PRF-fit source offset from KIC position	2.062 ± 1.667	1.24	2.045 ± 1.687	0.265 ± 0.462
photometric centroid source offset	0.59 ± 0.77	0.77	-0.43 ± 0.80	0.41 ± 0.74

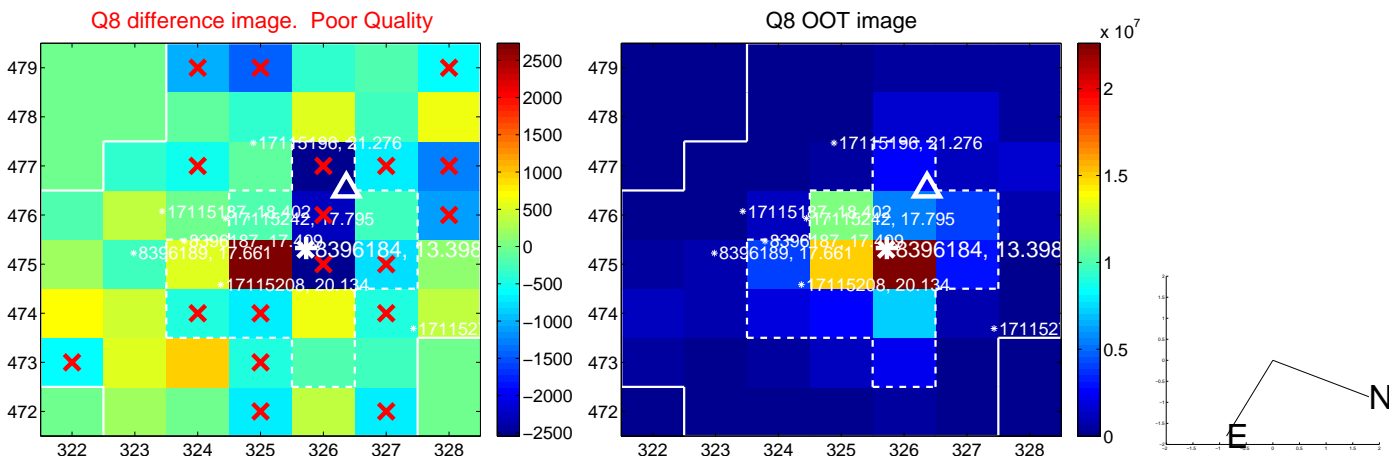
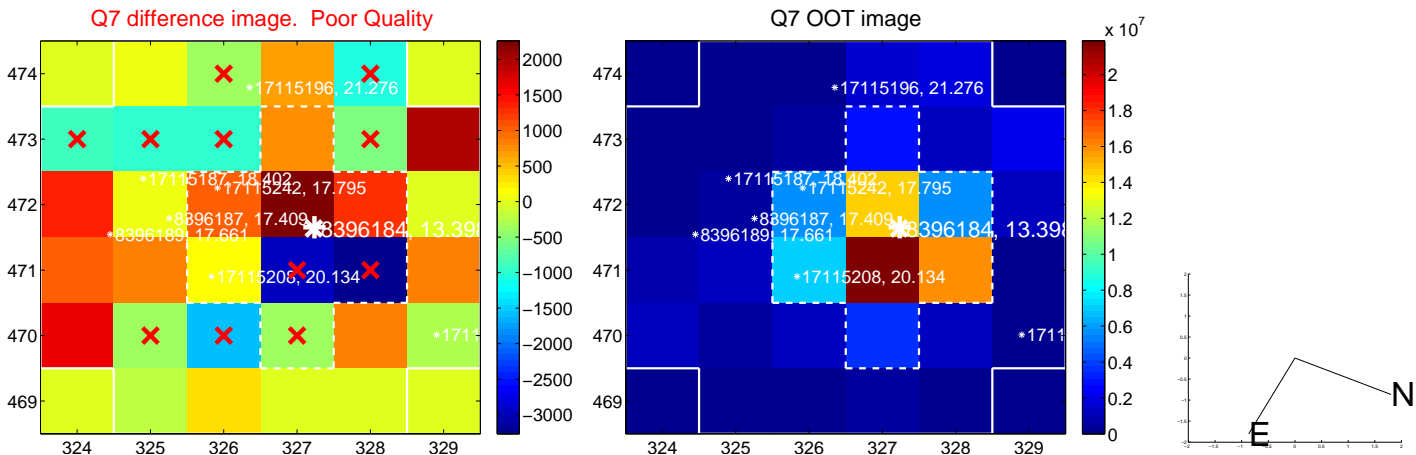
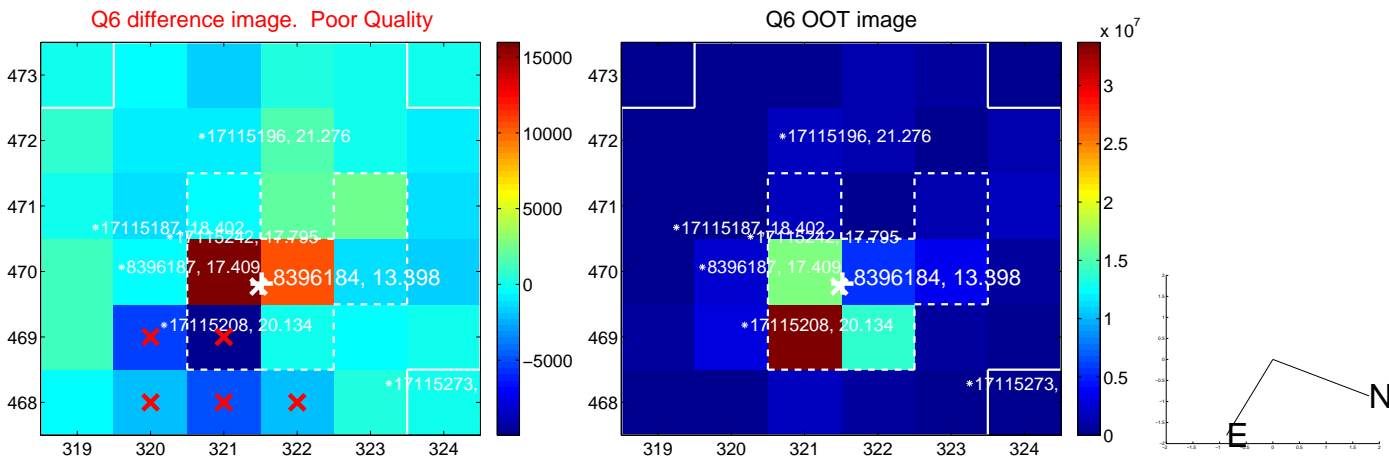
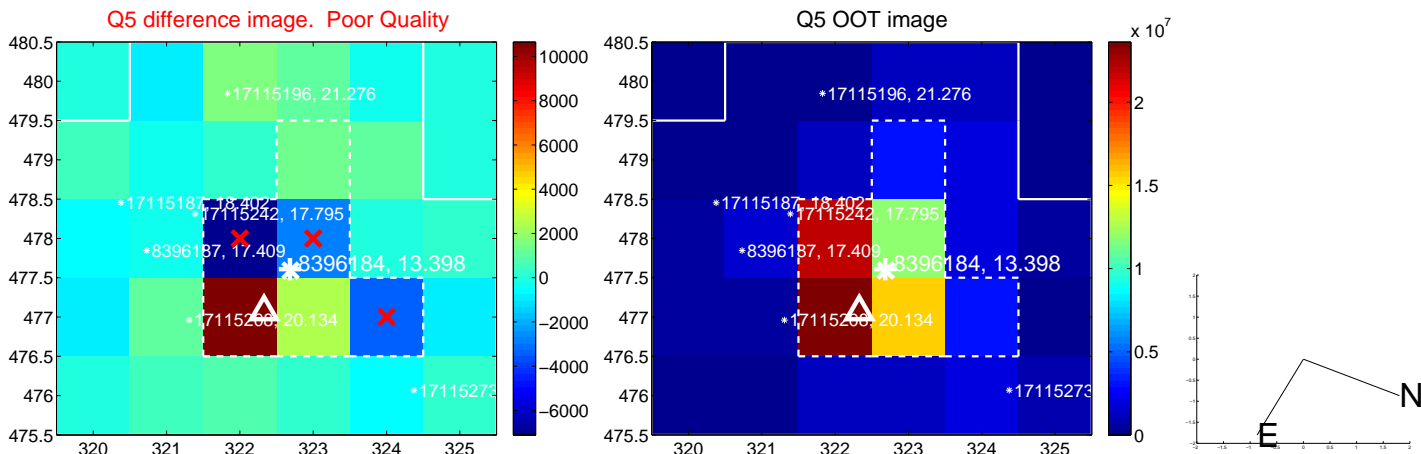


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

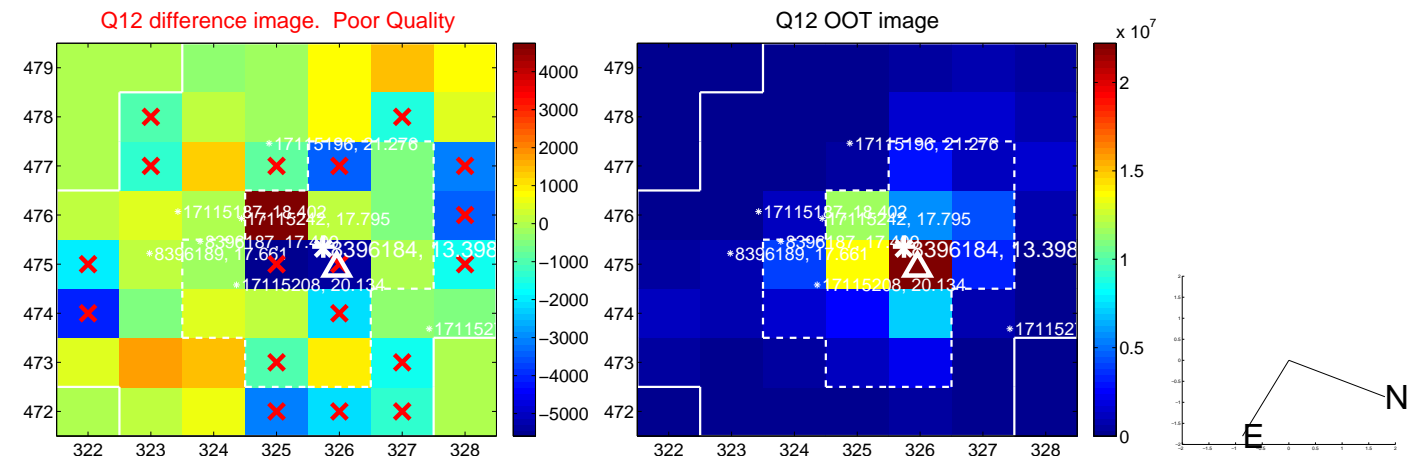
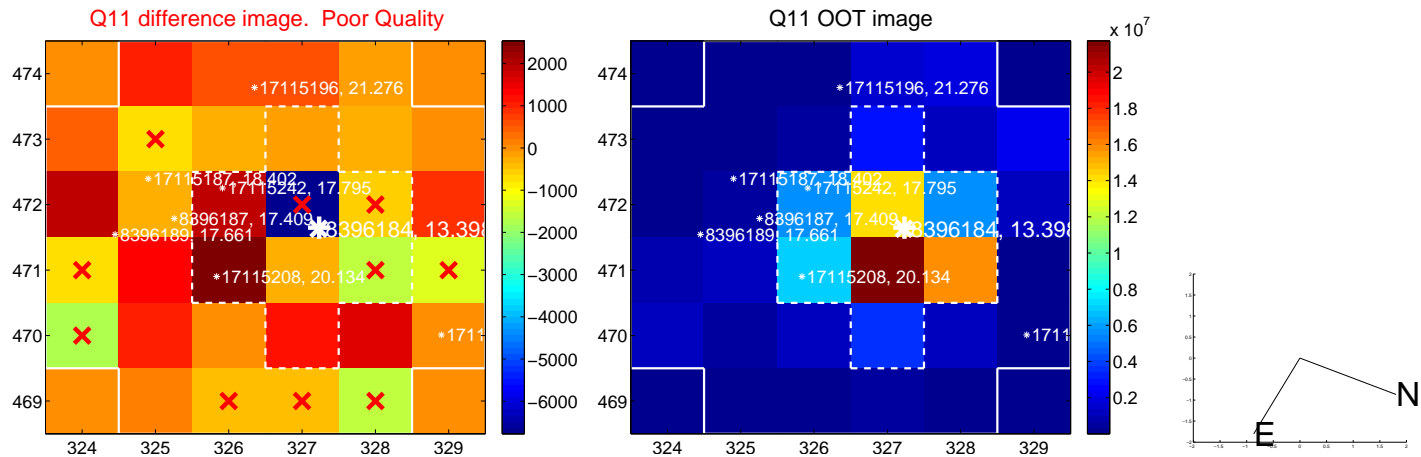
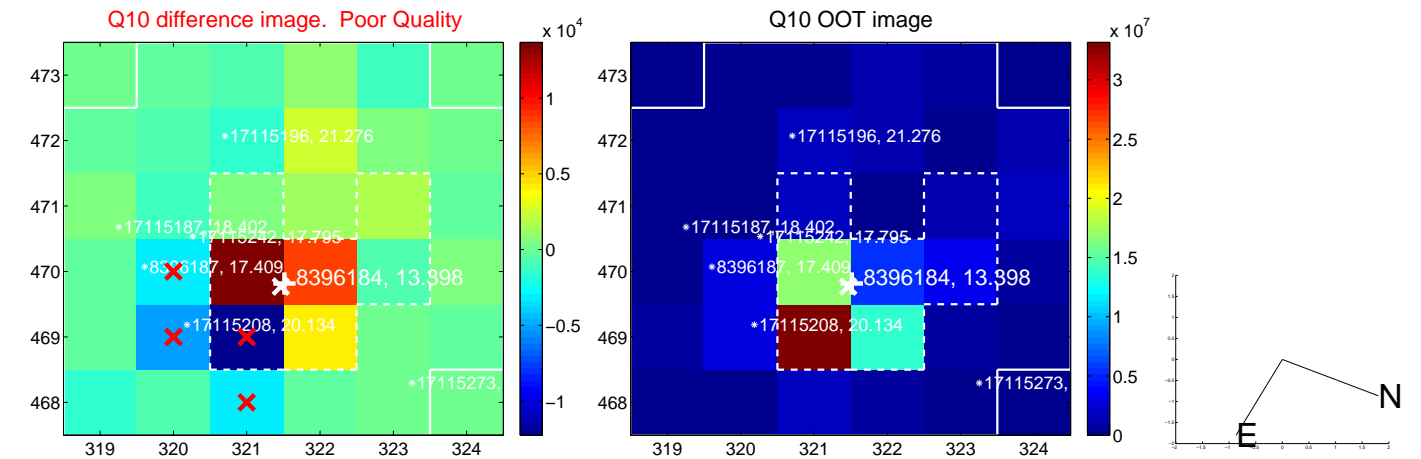
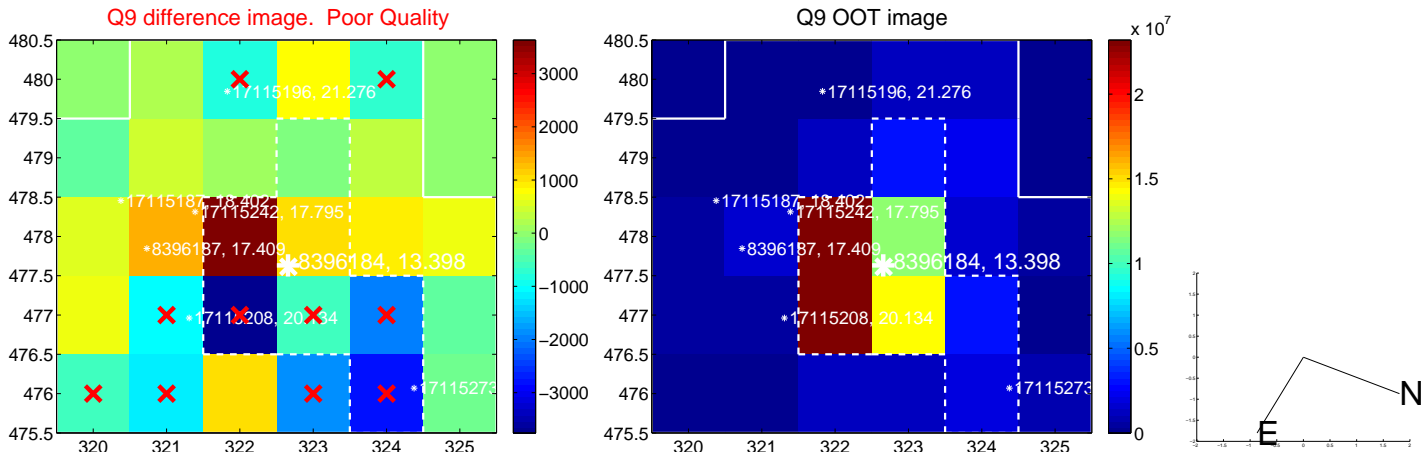
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



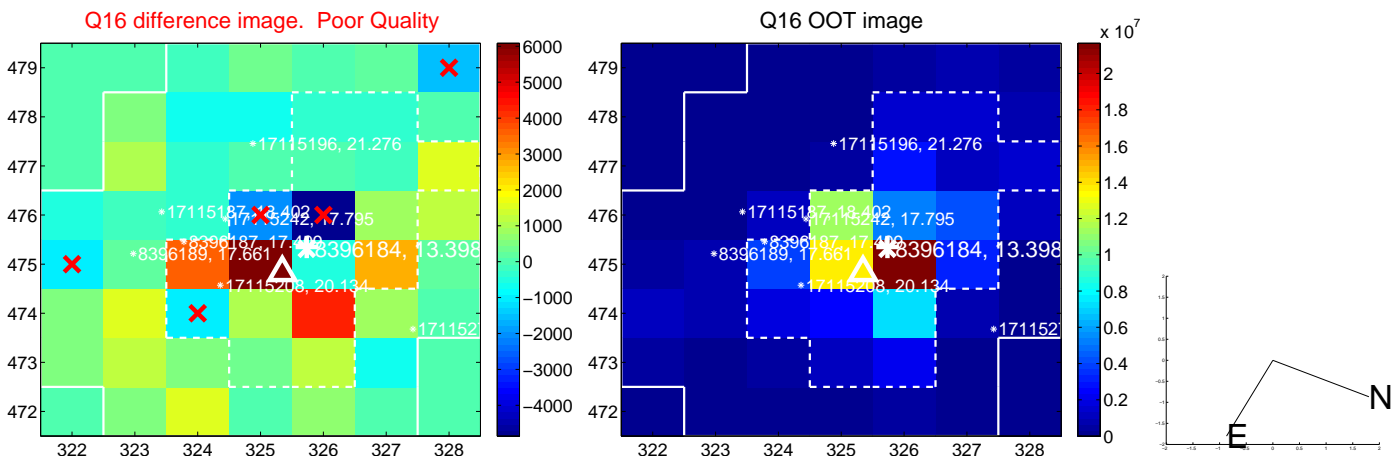
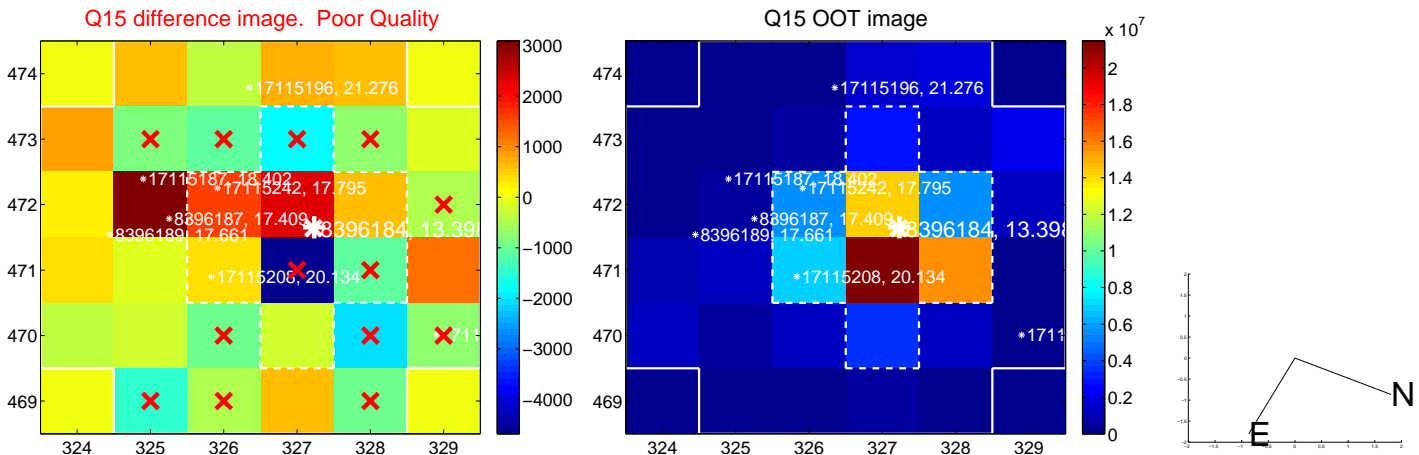
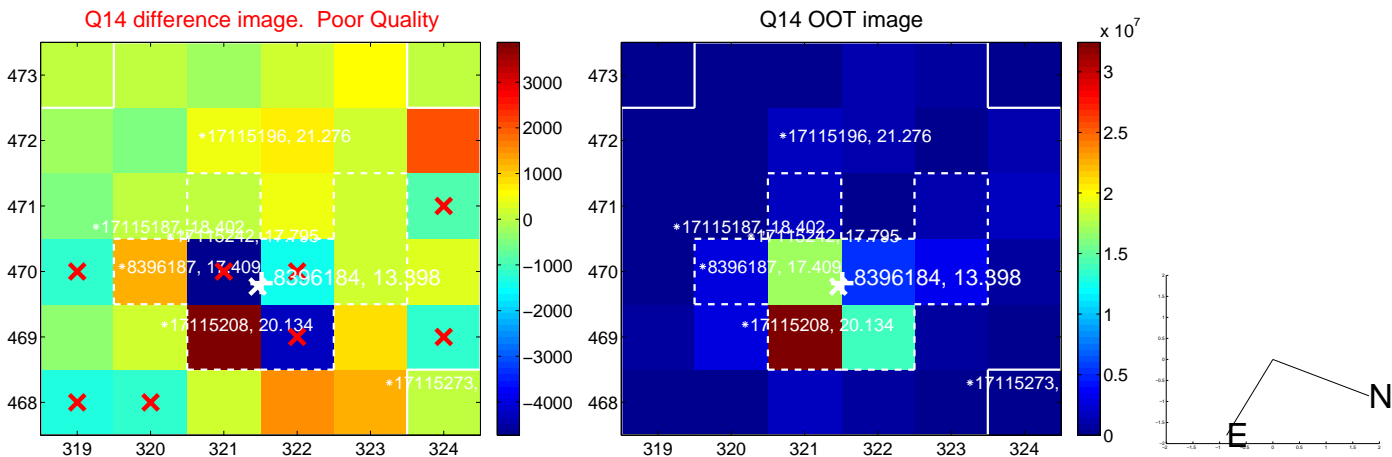
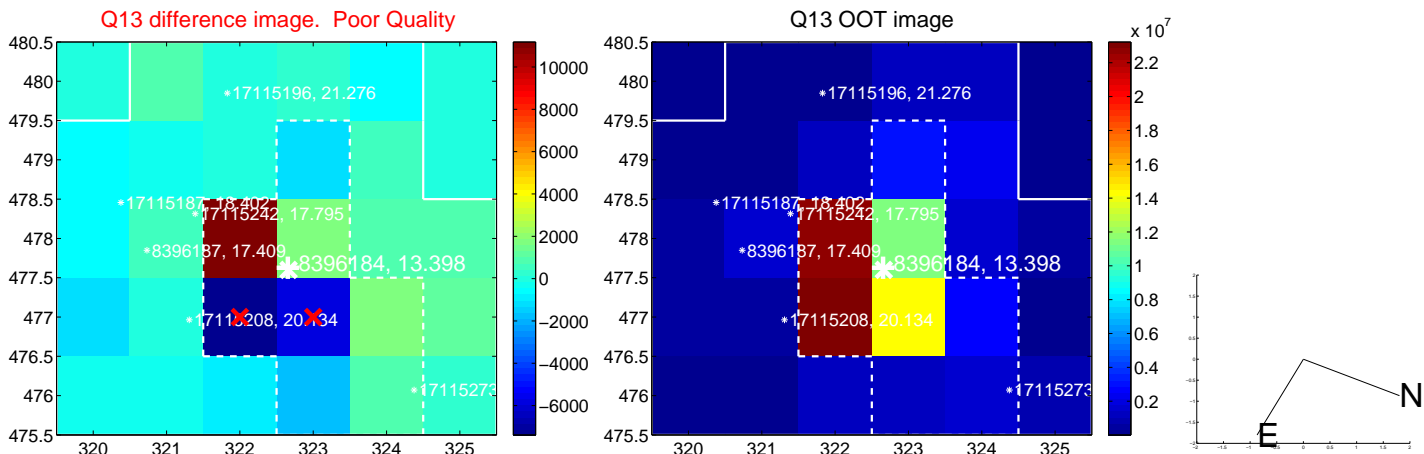
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



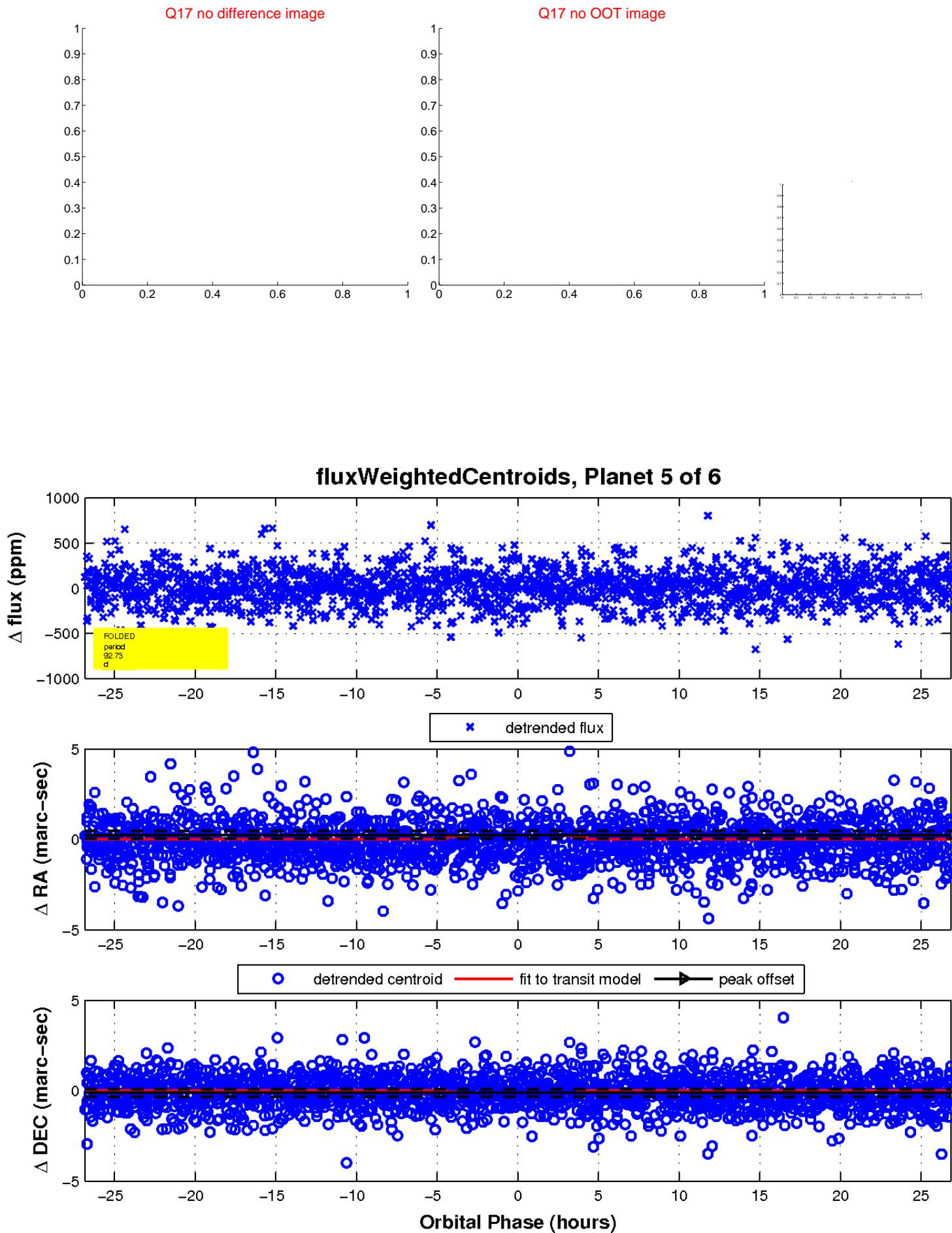
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

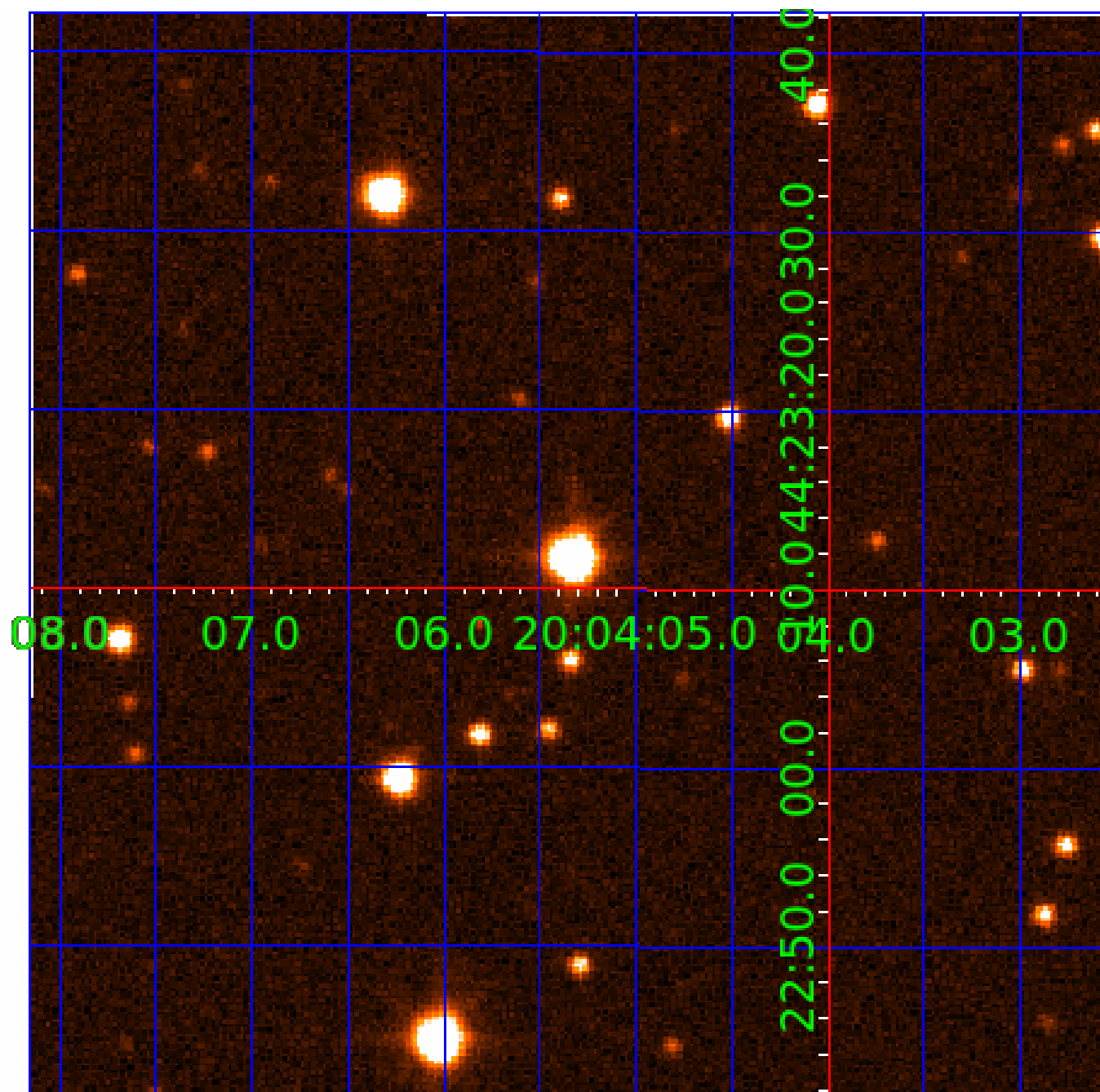


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008396184

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})
008396184-01	OBS	No	0.656486	131.936895	14.3	4.663	10.1	8.3	4.43	5199	1.80	0.00
008396184-02	OBS	No	31.161776	155.800830	395.5	0.903	11.1	12.0	4.43	5199	10.45	234.07
008396184-03	OBS	No	21.065844	143.782105	315.5	1.046	9.8	11.1	4.43	5199	9.13	394.52
008396184-04	OBS	No	38.259300	136.611763	391.5	1.210	10.6	12.4	4.43	5199	8.91	178.04
008396184-05	OBS	No	92.730065	147.222722	254.1	8.957	9.4	9.3	4.43	5199	7.69	54.69
008396184-06	OBS	No	24.500546	139.857392	327.2	1.180	9.4	9.2	4.43	5199	7.98	322.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008396184-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET
008396184-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008396184-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008396184-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008396184-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

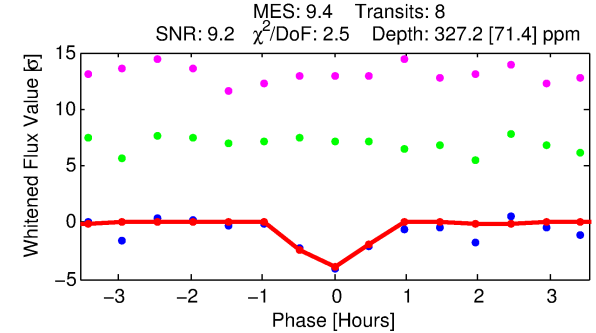
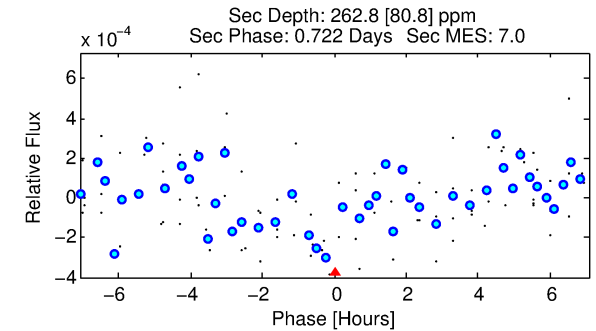
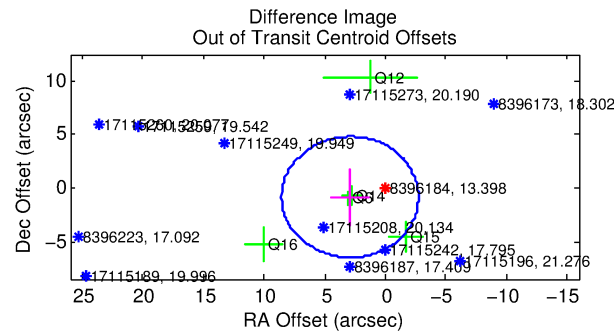
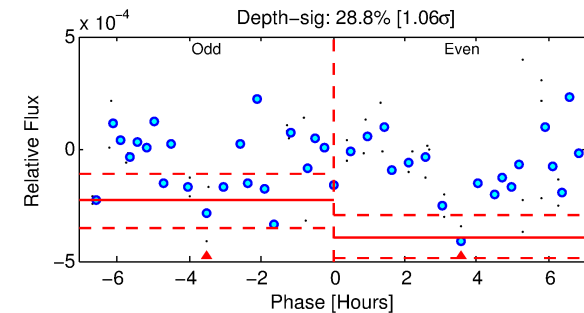
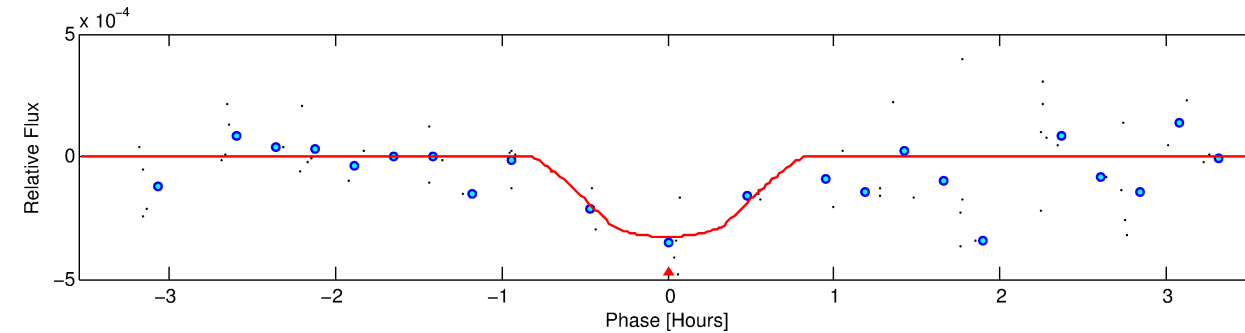
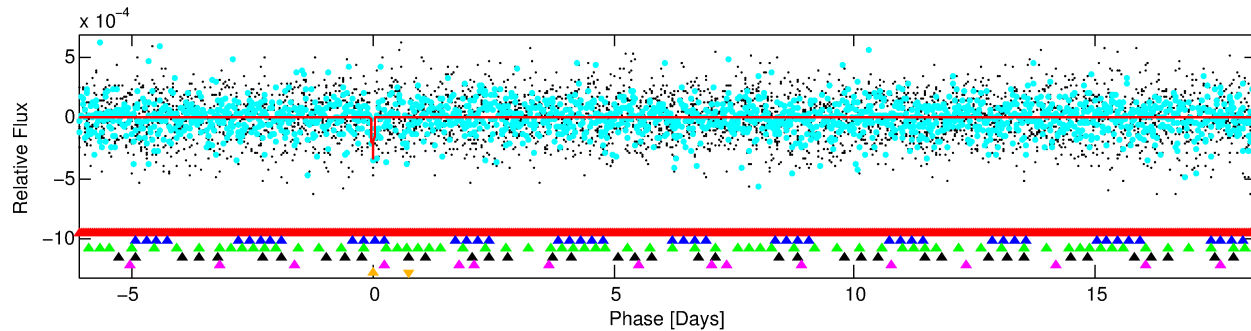
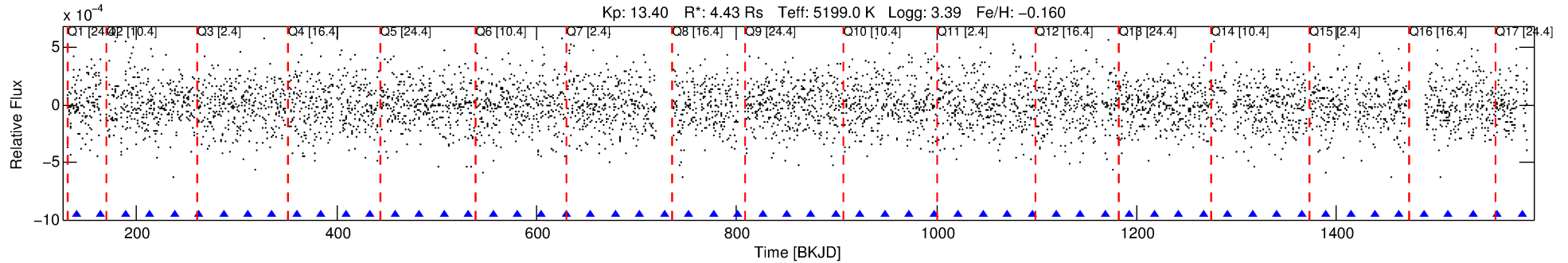
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008396184-06

No Significant Match Found

DV One-Page Summary

KIC: 8396184 Candidate: 6 of 6 Period: 24.501 d



DV Fit Results:

Period = 24.50055 [0.00045] d
Epoch = 139.8574 [0.0159] BKJD
Rp/R* = 0.0165 [0.0662]
a/R* = 154.43 [2320.57]
b = 0.29 [47.60]
Seff = 322.56 [267.57]
Teq = 1081 [224] K
Rp = 7.98 [32.29] Re
a = 0.1996 [0.1033] AU
Ag = 90.50 [730.12] [0.12 σ]
Teffp = 5153 [10342] K [0.39 σ]

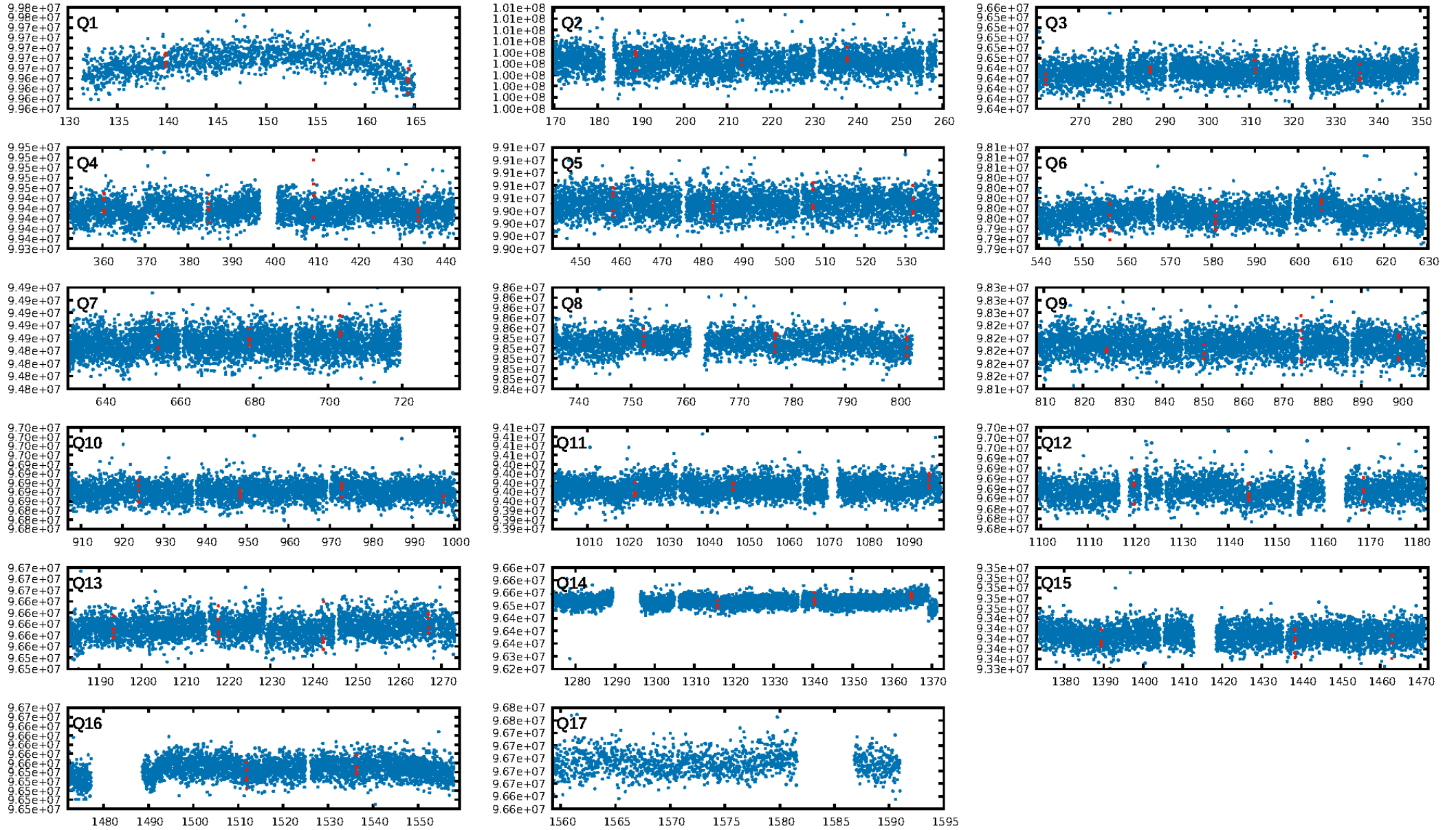
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [52.28 σ]
LongPeriod-sig: 100.0% [107.60 σ]
ModelChiSquare2-sig: 1.6%
ModelChiSquareGof-sig: 70.4%
Bootstrap-pfa: 1.10e-07
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 19.17
Centroid-sig: 48.6%
Centroid-so: 0.491 arcsec [0.60 σ]
OotOffset-rm: 3.028 arcsec [1.61 σ]
KicOffset-rm: 2.793 arcsec [1.42 σ]
OotOffset-st: 2/1/2/0 [5]
KicOffset-st: 2/1/2/0 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 0.06 [1/16]

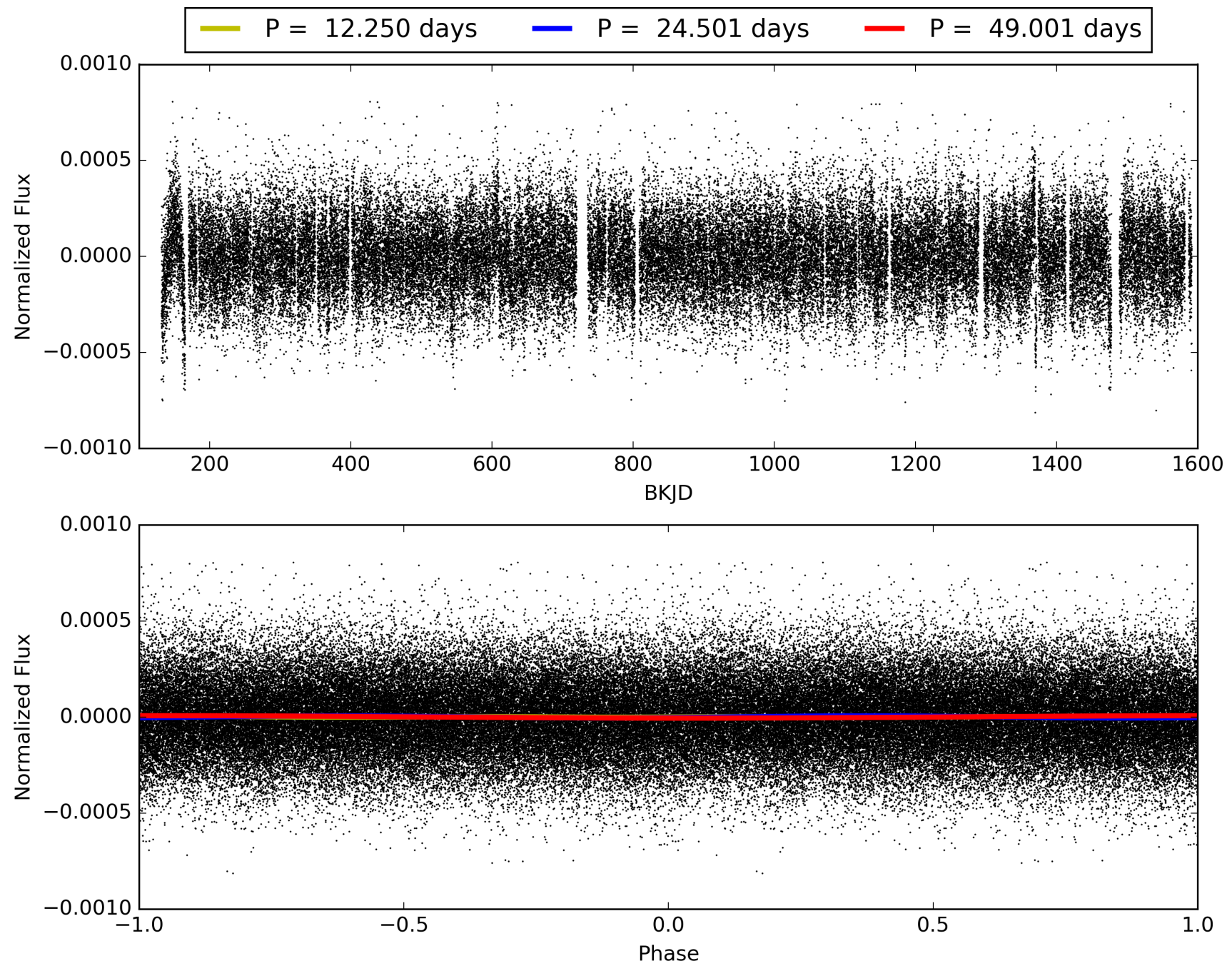
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:33:01 Z

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

TCE 008396184-06, PDC Light Curves

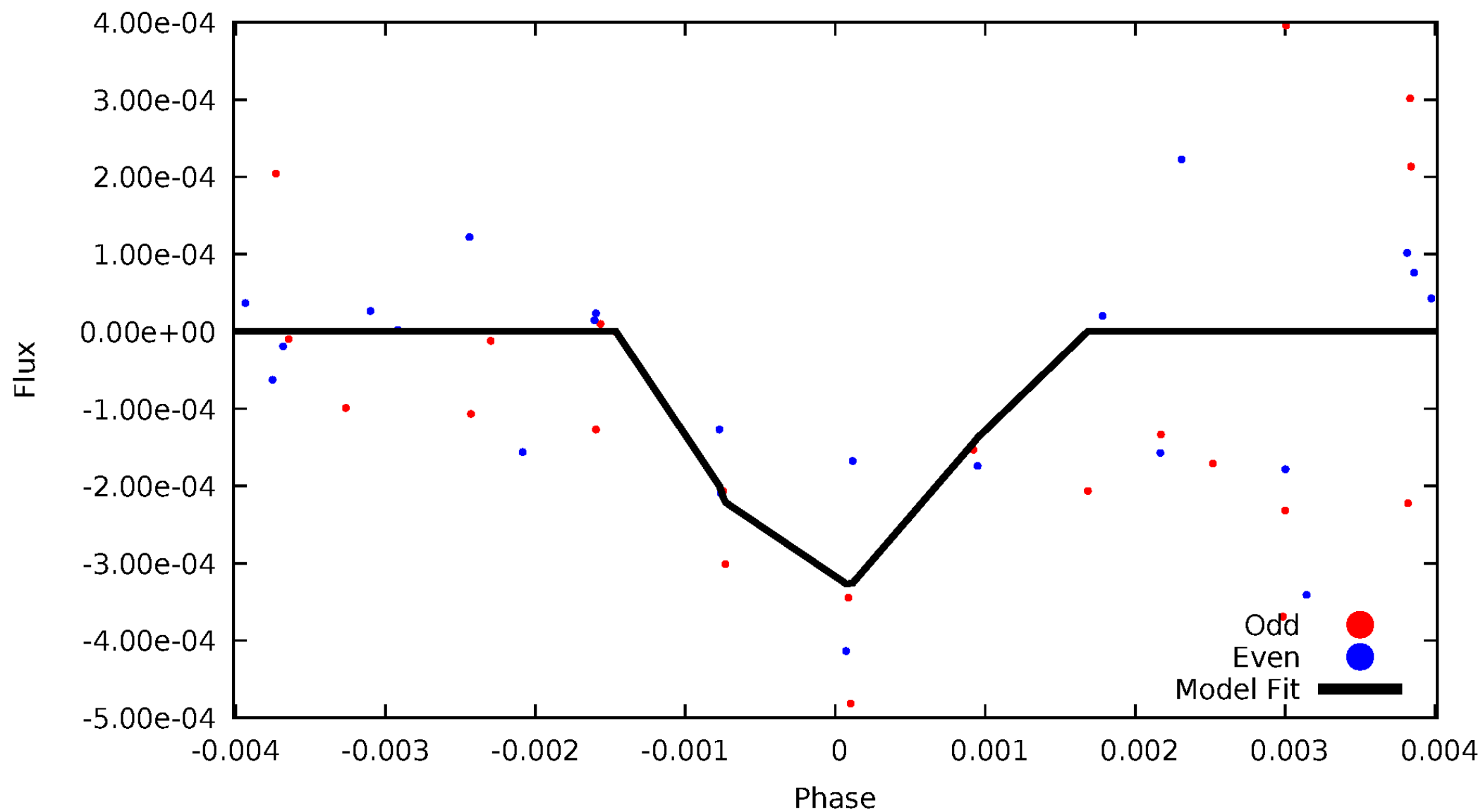


TCE 008396184-06



DV Odd/Even

TCE 008396184-06

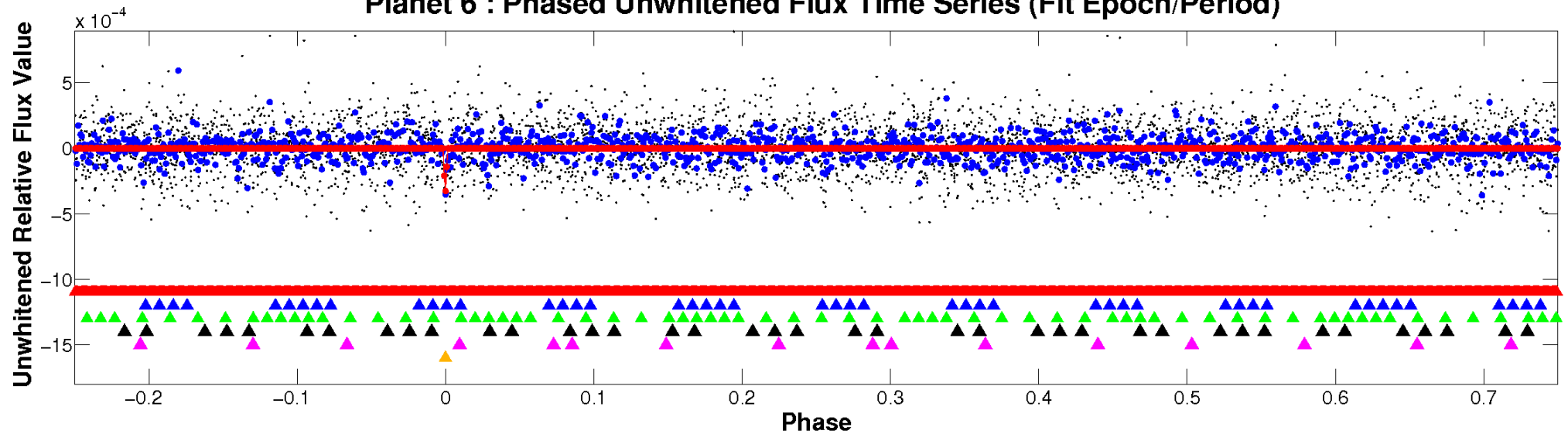


ALT Odd/Even

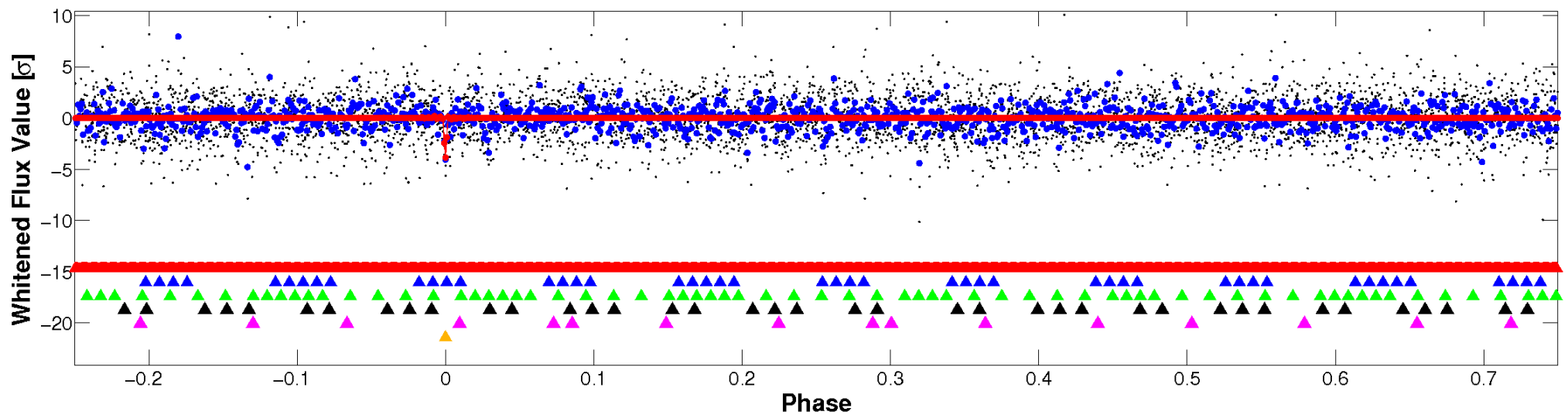
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

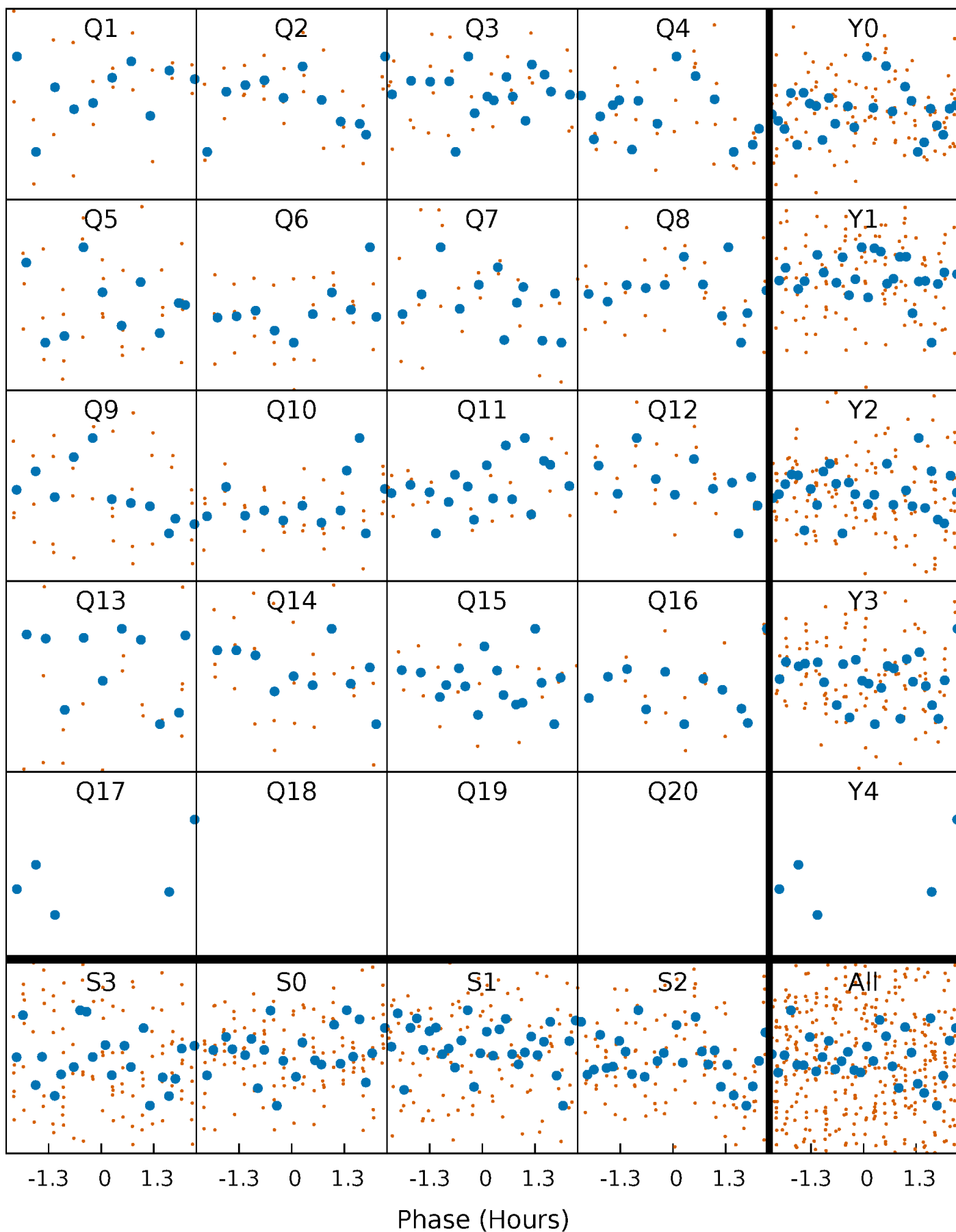


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



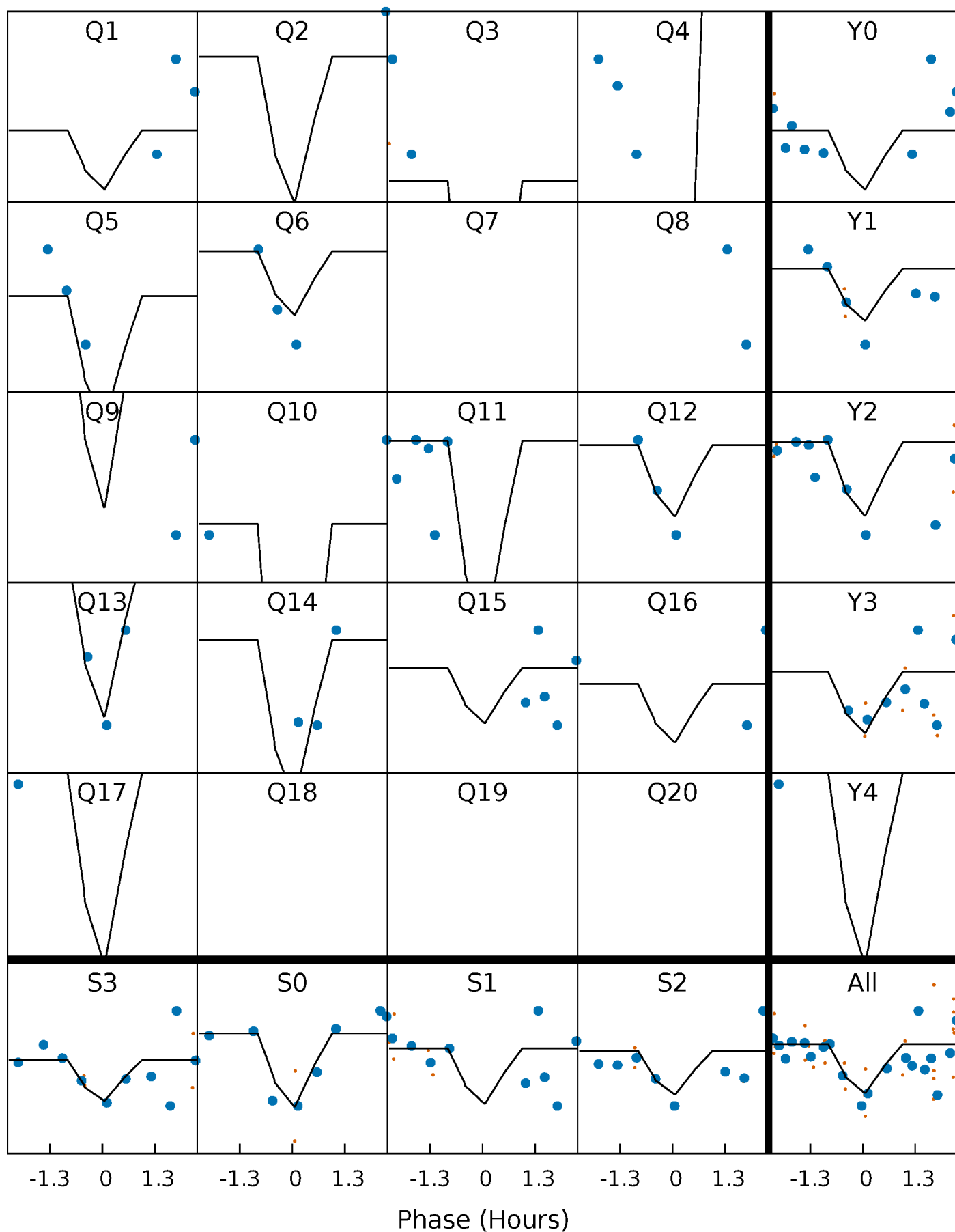
PDC Quarter-Phased Transit Curves

TCE 008396184-06 P= 24.500546 Days $T_0=139.857392$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008396184-06 P= 24.500546 Days $T_0=139.857392$ (BKJD)

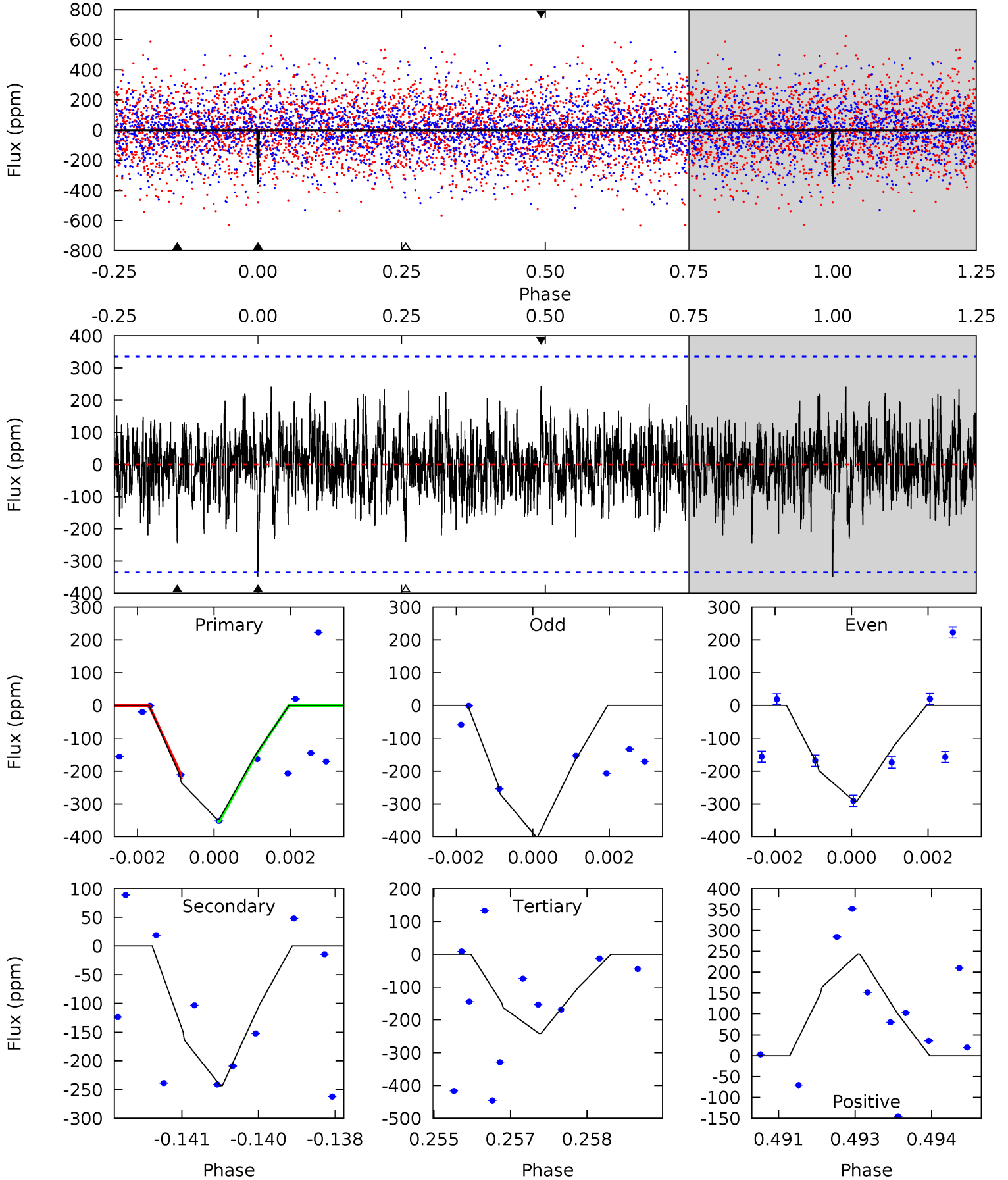


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008396184-06, P = 24.500546 Days, E = 115.356846 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.56	3.89	3.86	3.90	5.35	3.13	1.20	1.70	1.67	0.03	-0.01	0.83	0.96	0.41	1.02



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008396184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5199^{+164}_{-182}	$3.392^{+0.476}_{-0.204}$	$-0.160^{+0.300}_{-0.300}$	$4.430^{+1.219}_{-2.438}$	$1.764^{+0.196}_{-0.785}$	$0.029^{+0.141}_{-0.016}$
	+3%/-4%	+14%/-6%	+188%/-188%	+28%/-55%	+11%/-45%	+494%/-54%
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 008396184-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-243 ± 63	$22.70^{+26.11}_{-15.58}$	1486^{+146}_{-200}	3344^{+1650}_{-643}	$9.928^{+88.031}_{-7.640}$
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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

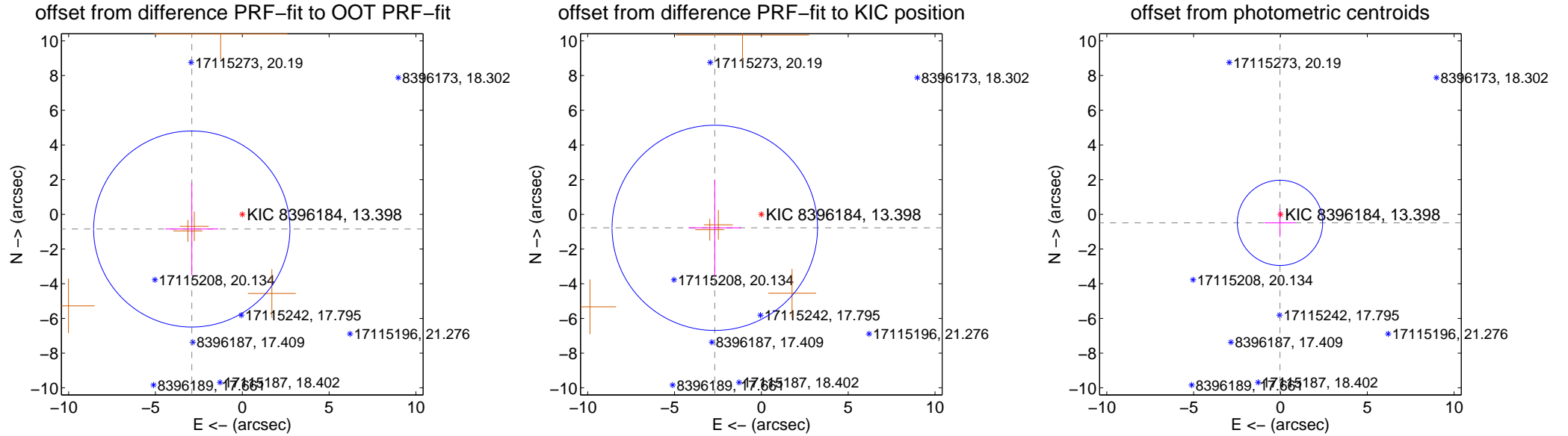
DV Centroid Data

Supplemental centroid analysis for 008396184-06. Kepler magnitude: 13.40. Transit SNR 9.20

There are 0 quarters with good PRF difference image offsets

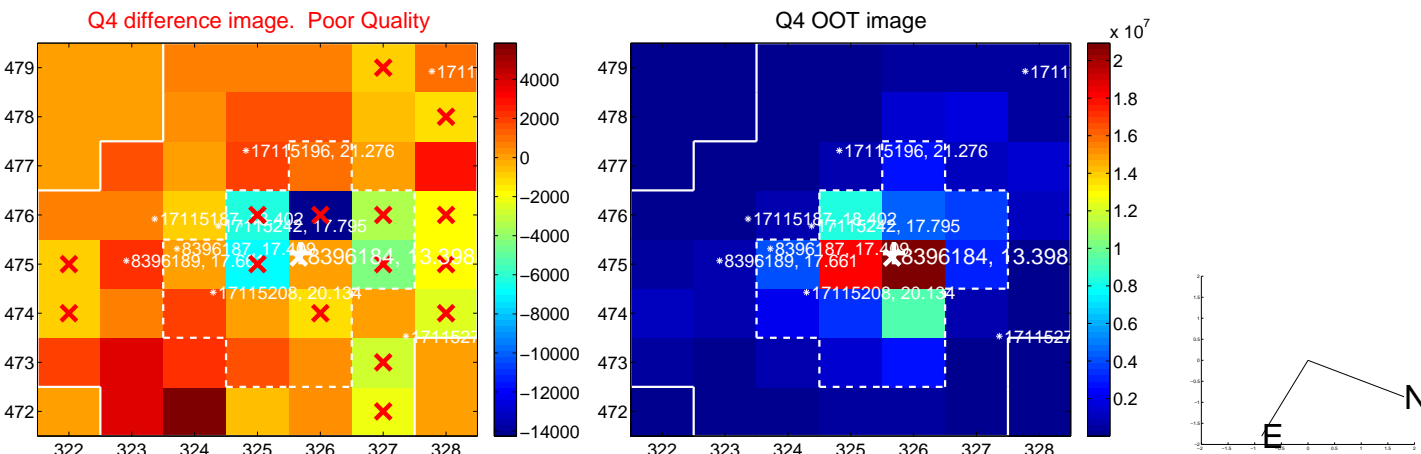
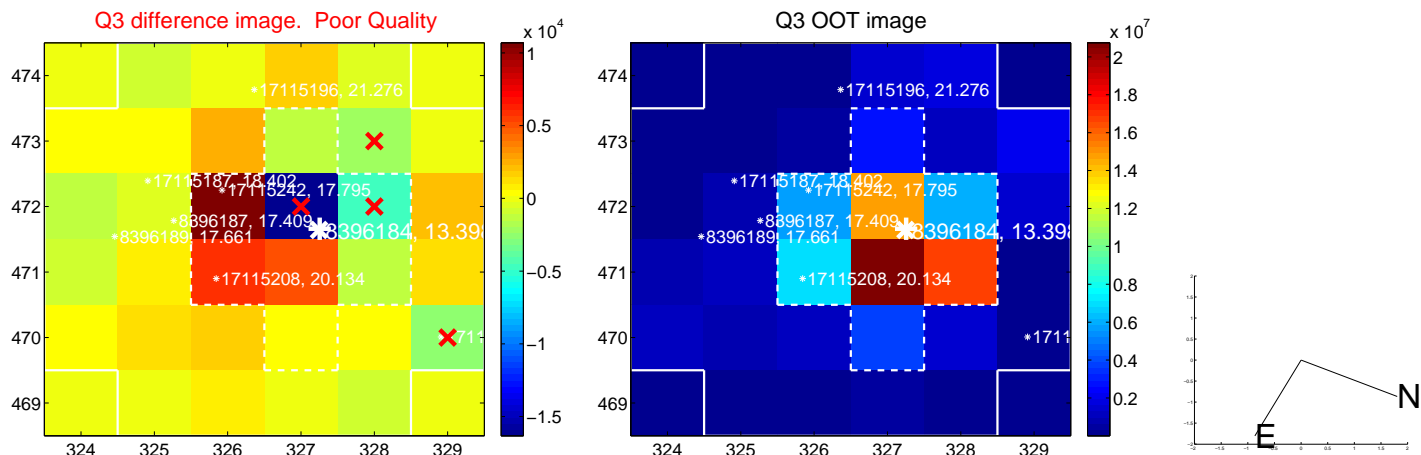
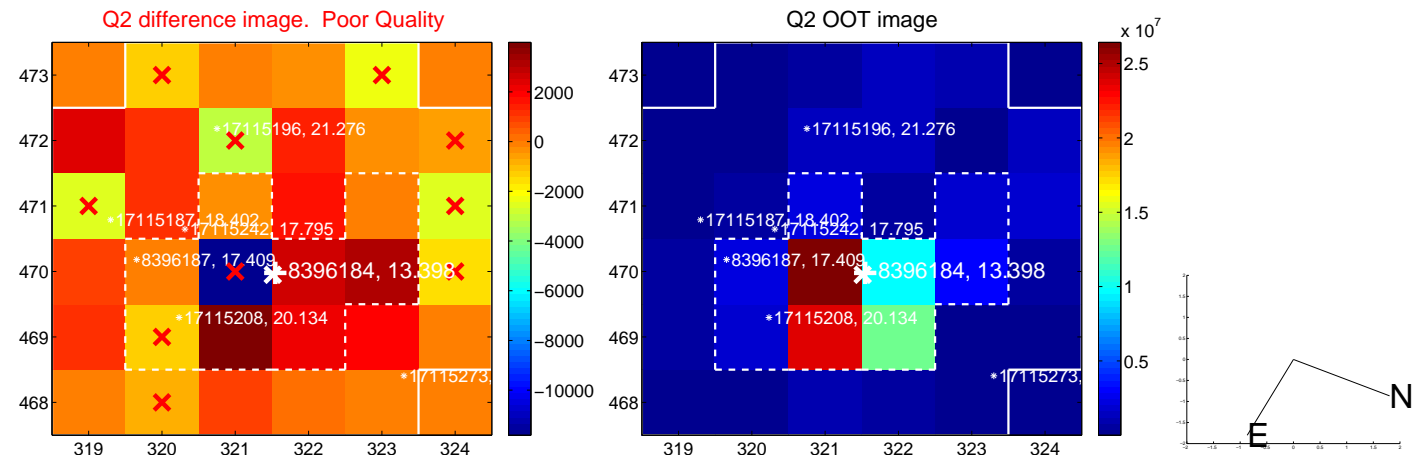
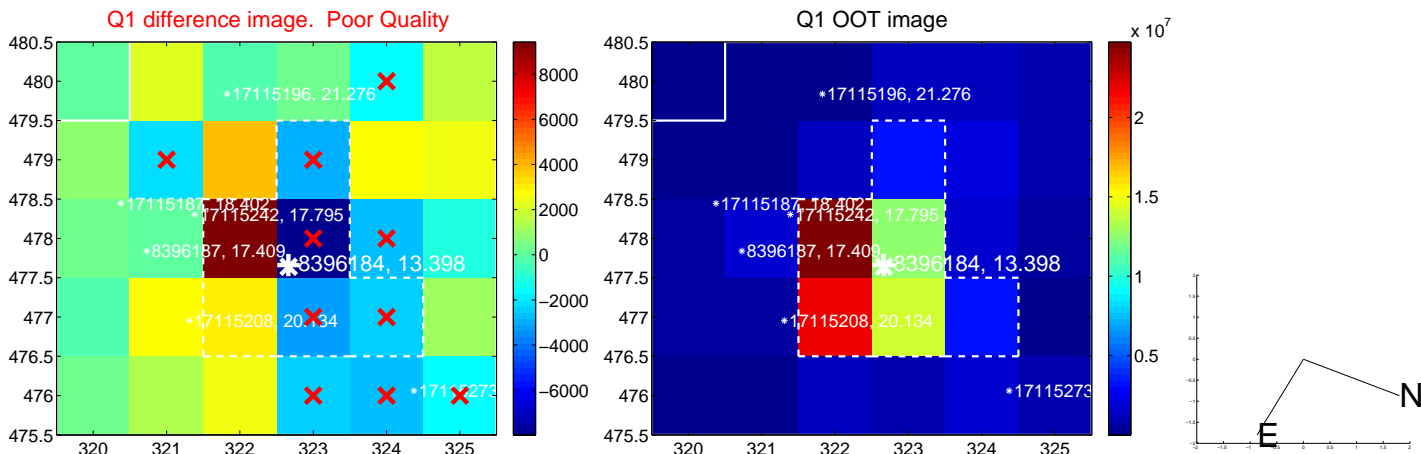
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.028 ± 1.884	1.61	2.908 ± 1.532	-0.846 ± 2.668
PRF-fit source offset from KIC position	2.793 ± 1.972	1.42	2.682 ± 1.520	-0.778 ± 2.773
photometric centroid source offset	0.49 ± 0.82	0.60	0.03 ± 0.89	-0.49 ± 0.82

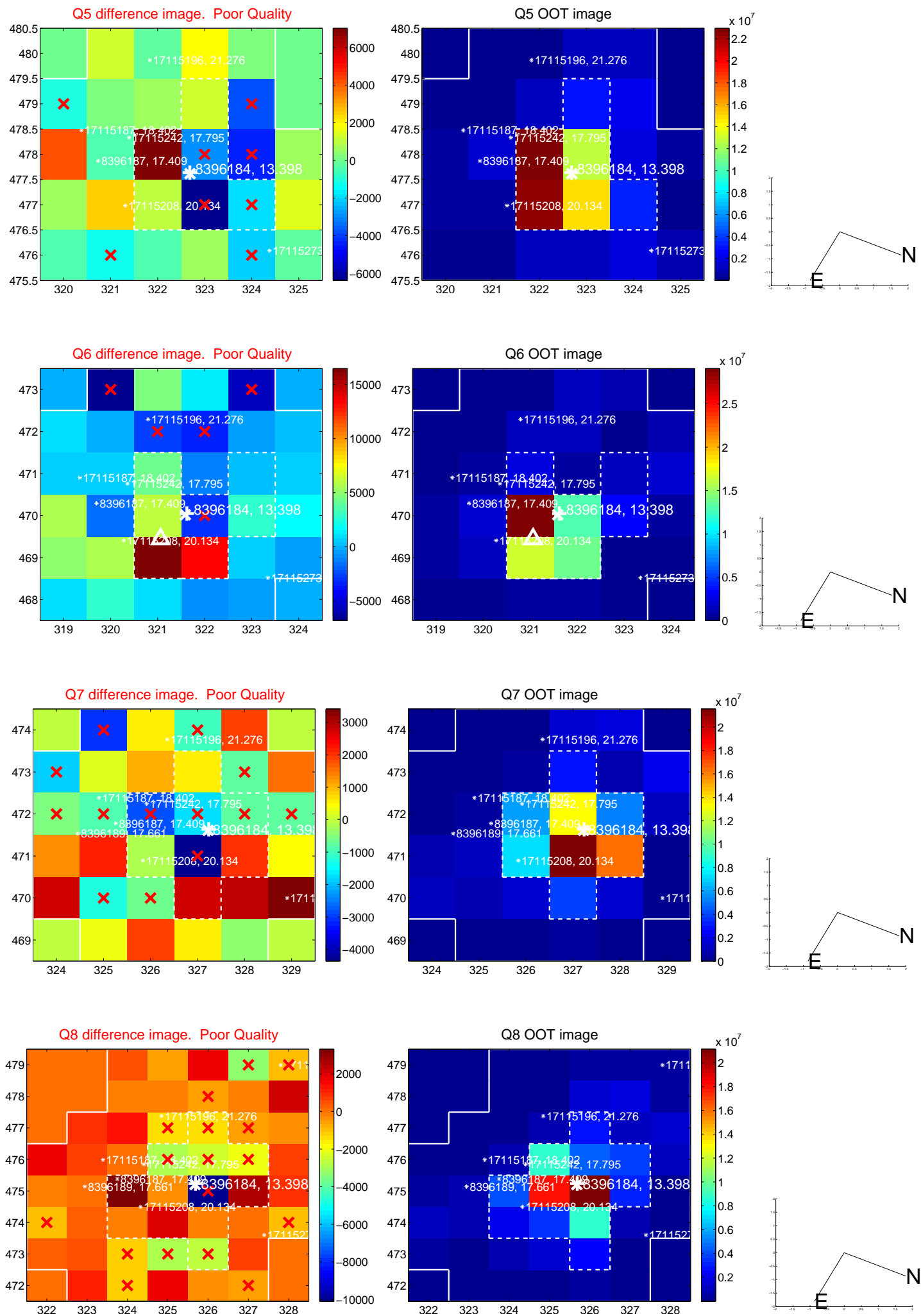


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

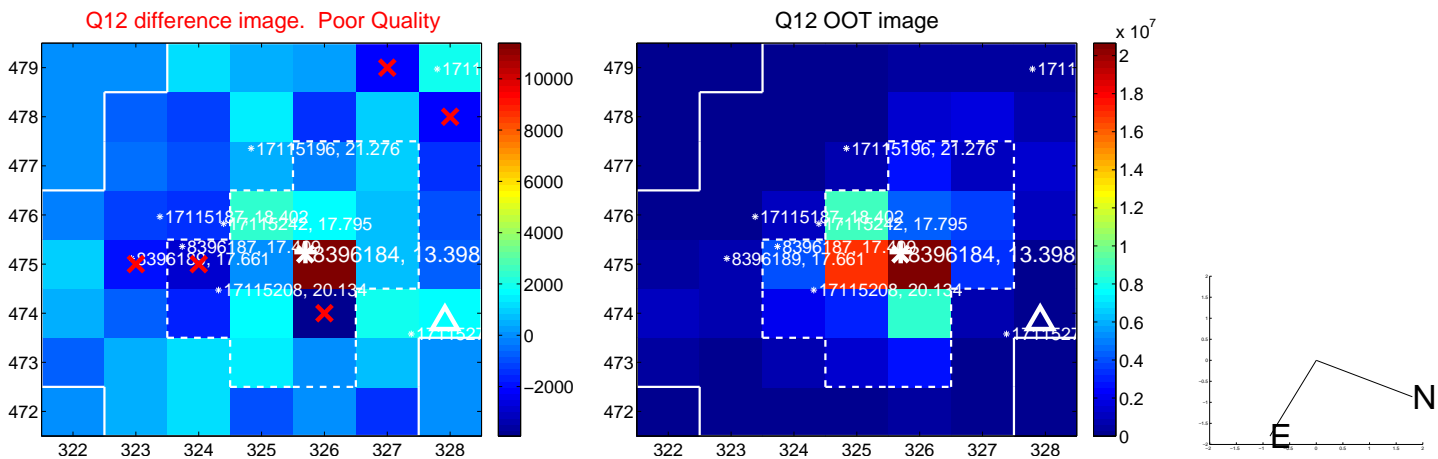
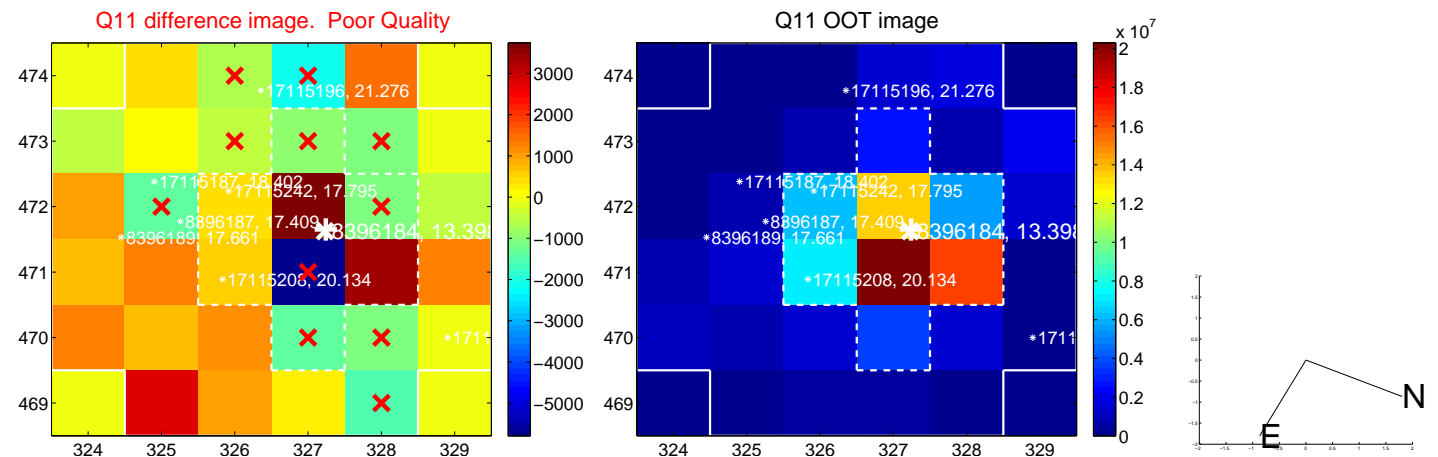
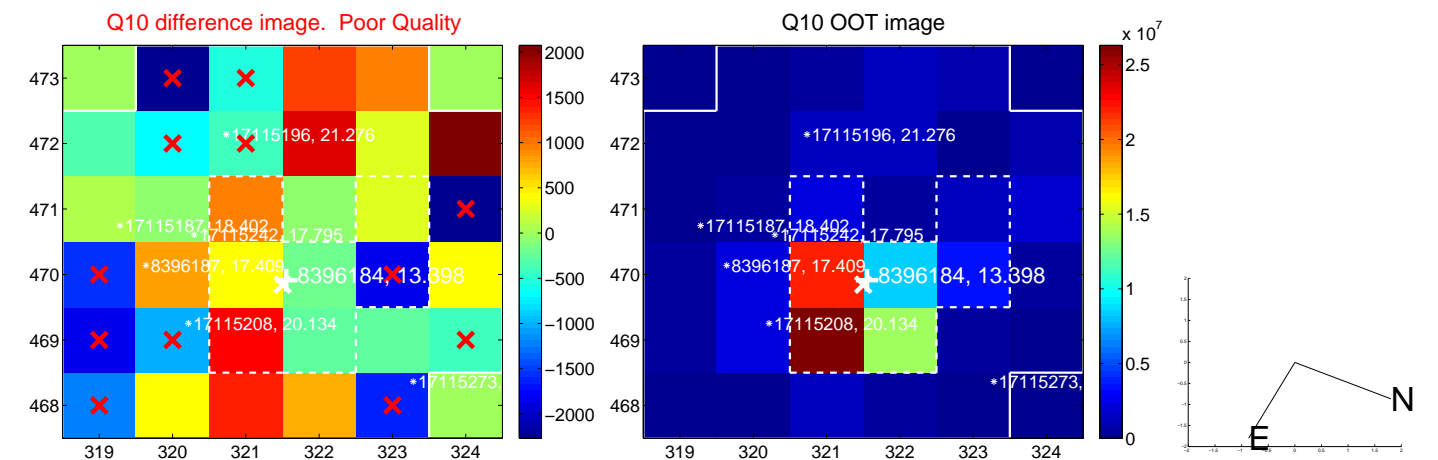
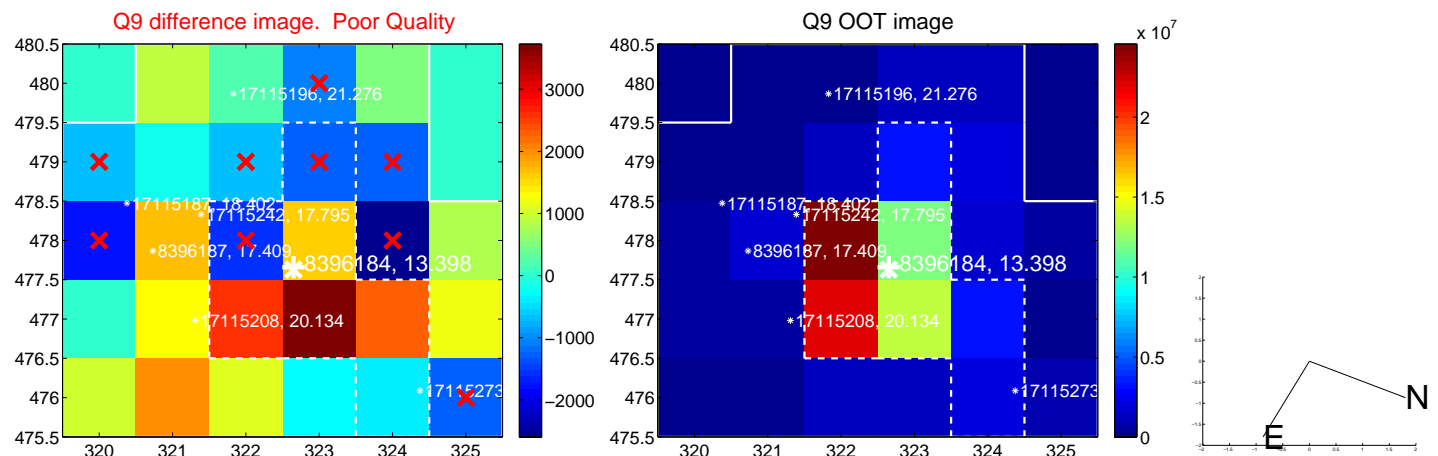
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



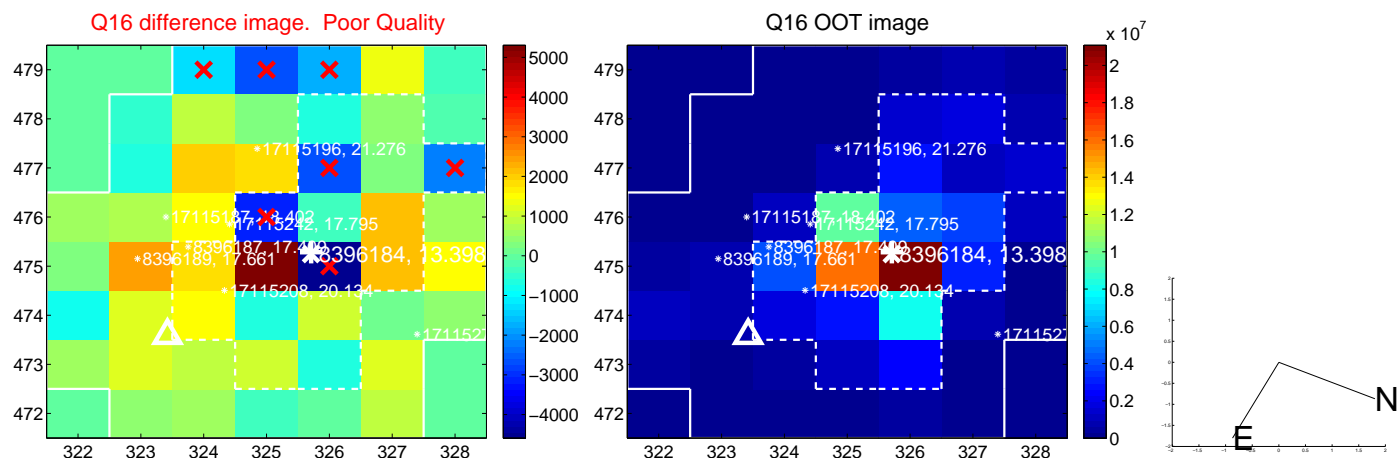
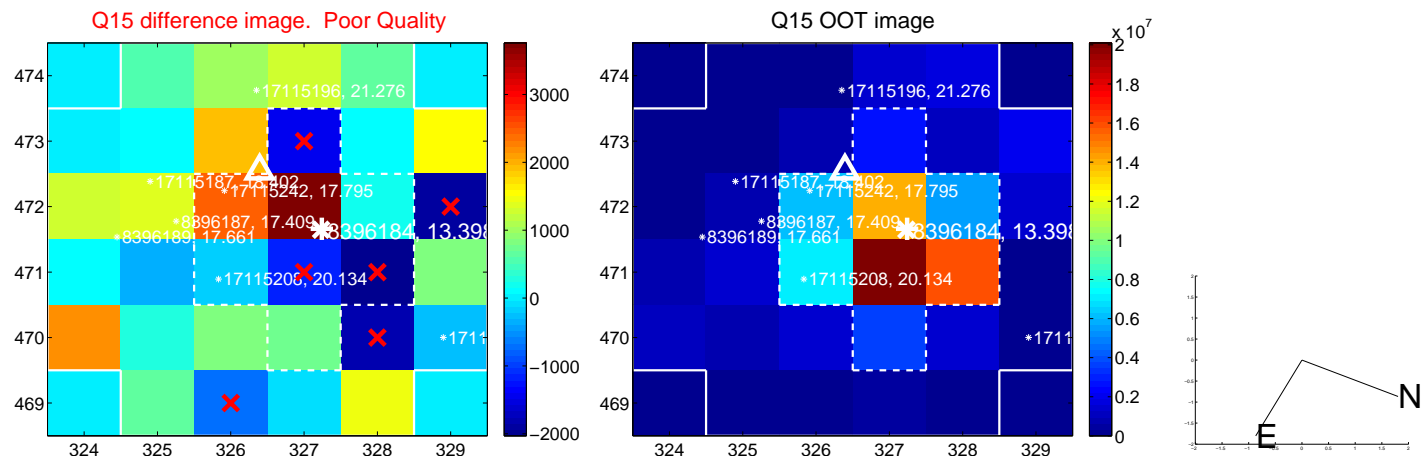
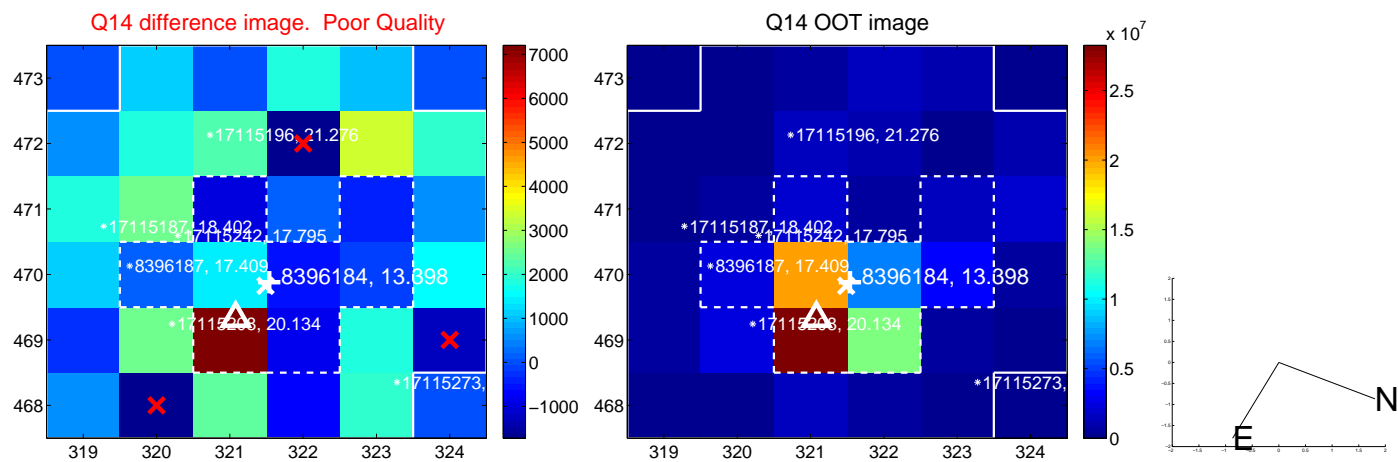
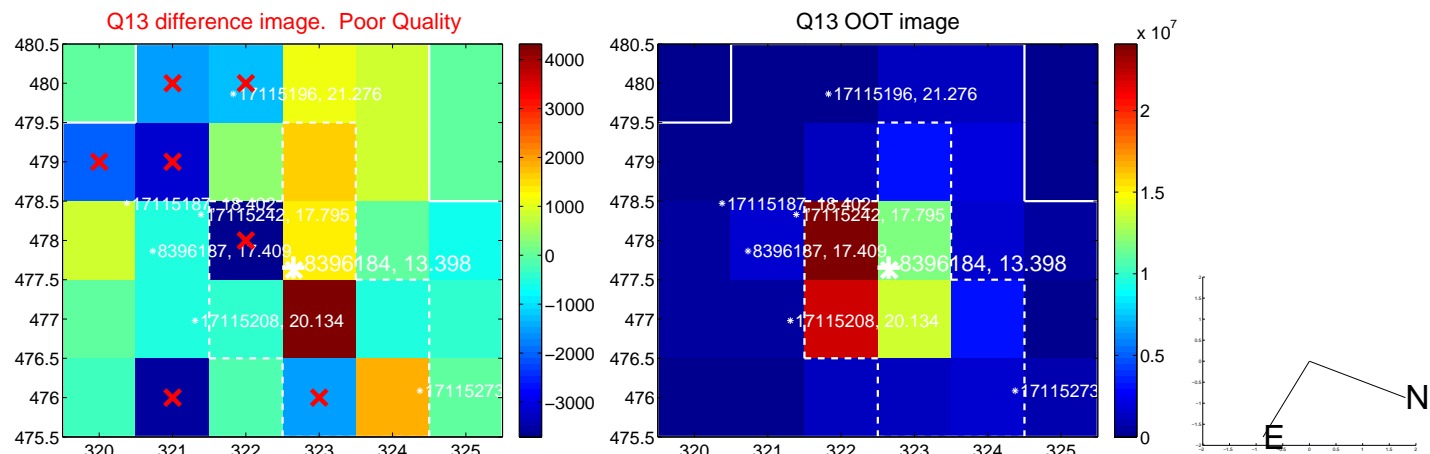
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



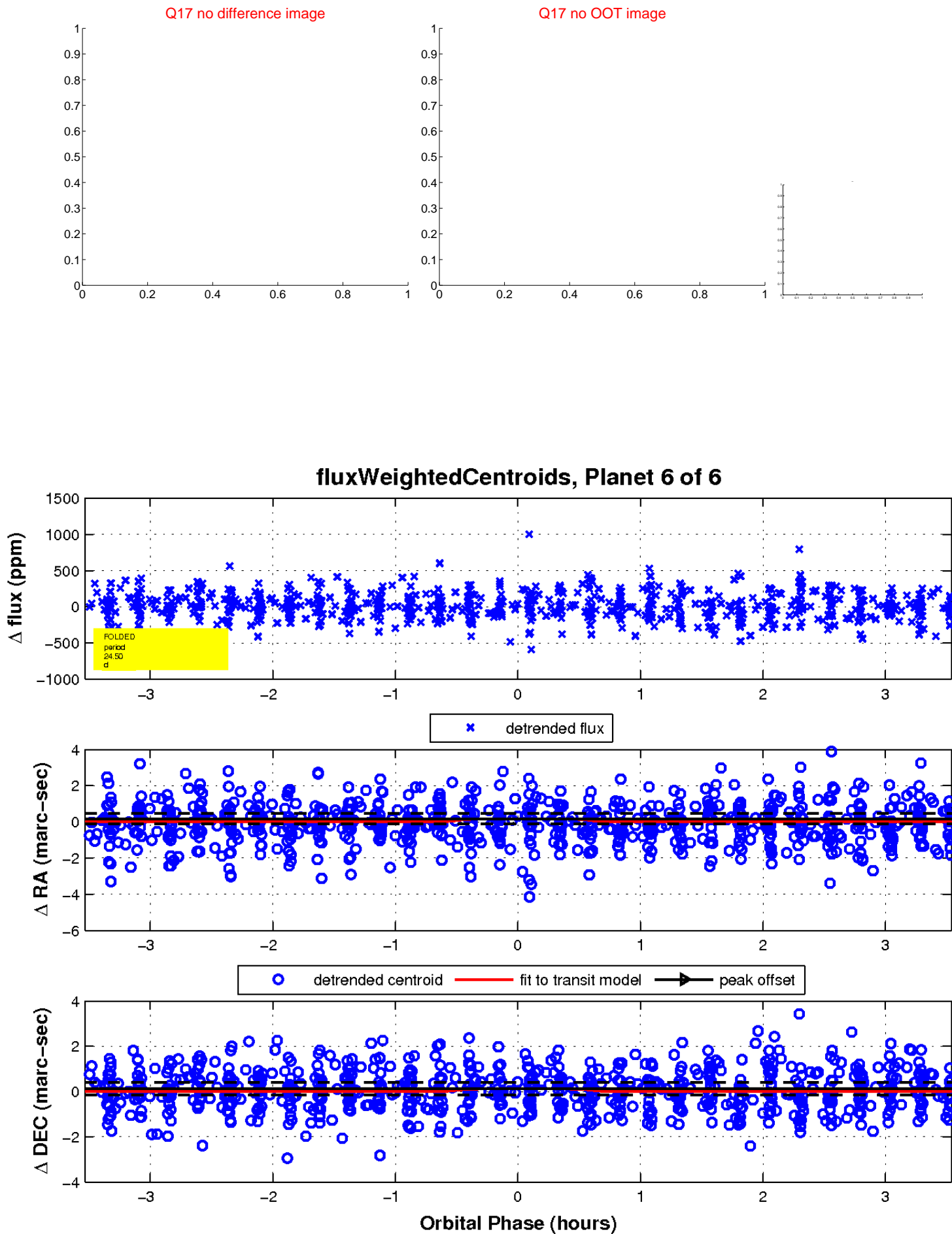
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

