

KIC 008038679

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})
008038679-01	OBS	No	437.414866	378.245714	1615.4	30.813	24.7	27.3	2.08	7373	9.09	6.38
008038679-02	OBS	No	2.048919	131.640989	31.7	10.585	11.1	8.9	2.08	7373	1.19	8133.66
008038679-03	OBS	No	373.093331	144.712924	1303.7	36.996	33.1	22.0	2.08	7373	9.27	7.88
008038679-04	OBS	No	2.048630	132.758023	58.1	11.263	14.2	15.0	2.08	7373	2.56	8135.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008038679-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
008038679-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008038679-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008038679-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

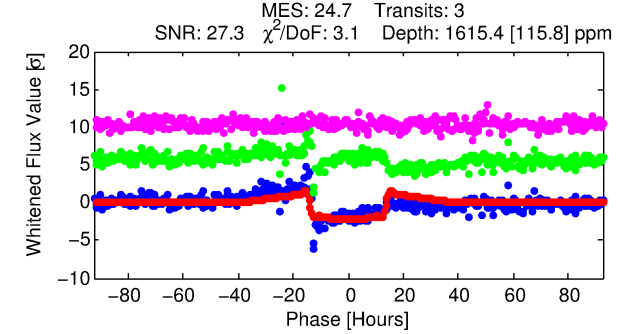
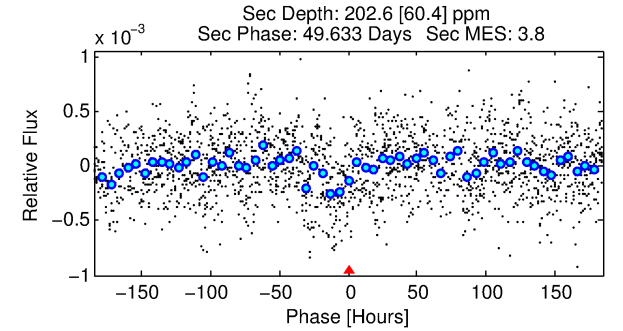
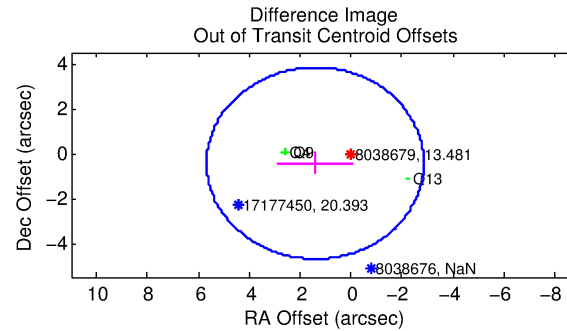
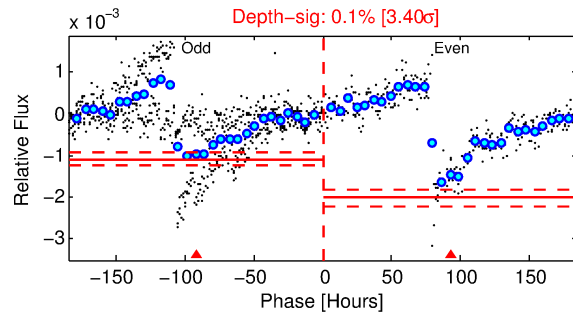
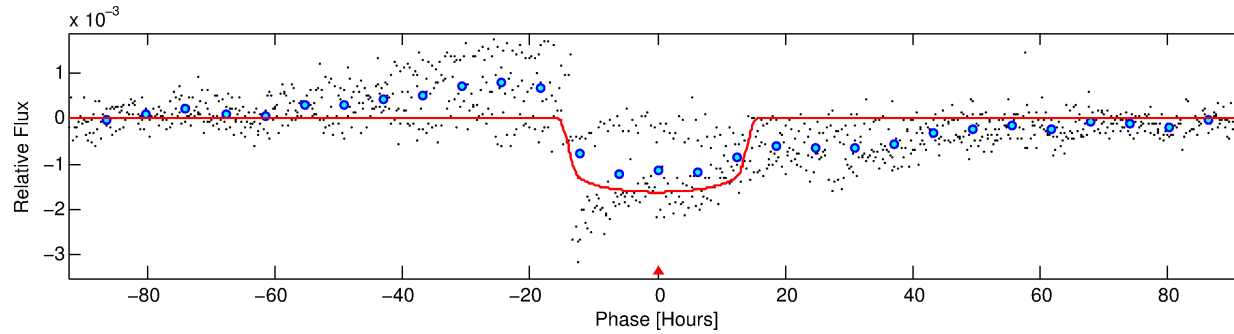
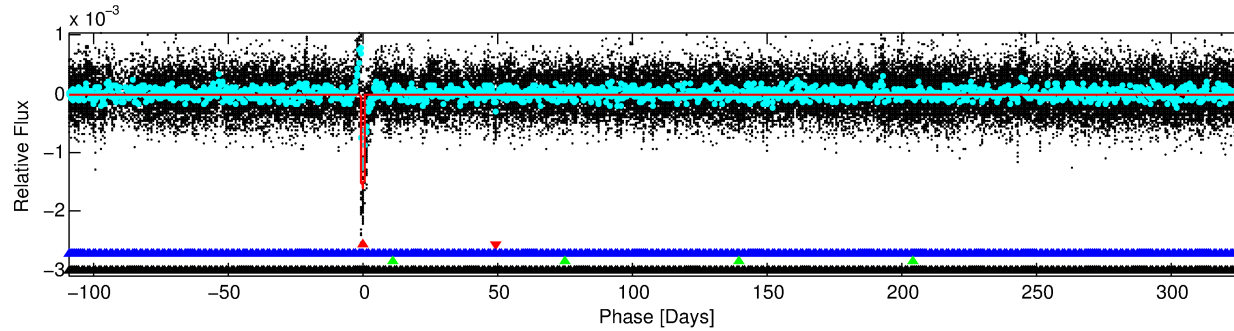
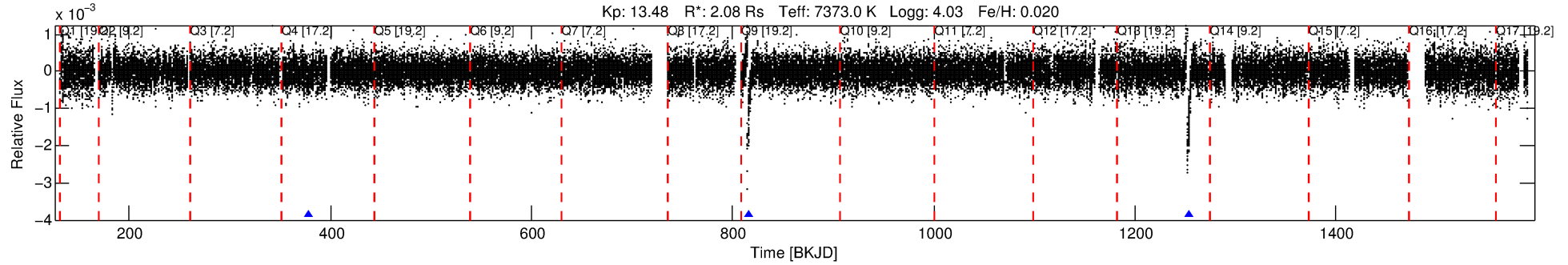
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008038679-01

No Significant Match Found

DV One-Page Summary

KIC: 8038679 Candidate: 1 of 4 Period: 437.415 d



DV Fit Results:

Period = 437.41487 [0.01355] d
Epoch = 378.2457 [0.0165] BKJD
Rp/R* = 0.0400 [0.0019]
a/R* = 77.29 [13.25]
b = 0.76 [0.10]
Seff = 6.37 [2.30]
Teq = 405 [37] K
Rp = 9.09 [2.40] Re
a = 1.3411 [0.2941] AU
Ag = 2424.20 [1084.55] [2.23 σ]
Teffp = 4396 [391] K [10.17 σ]

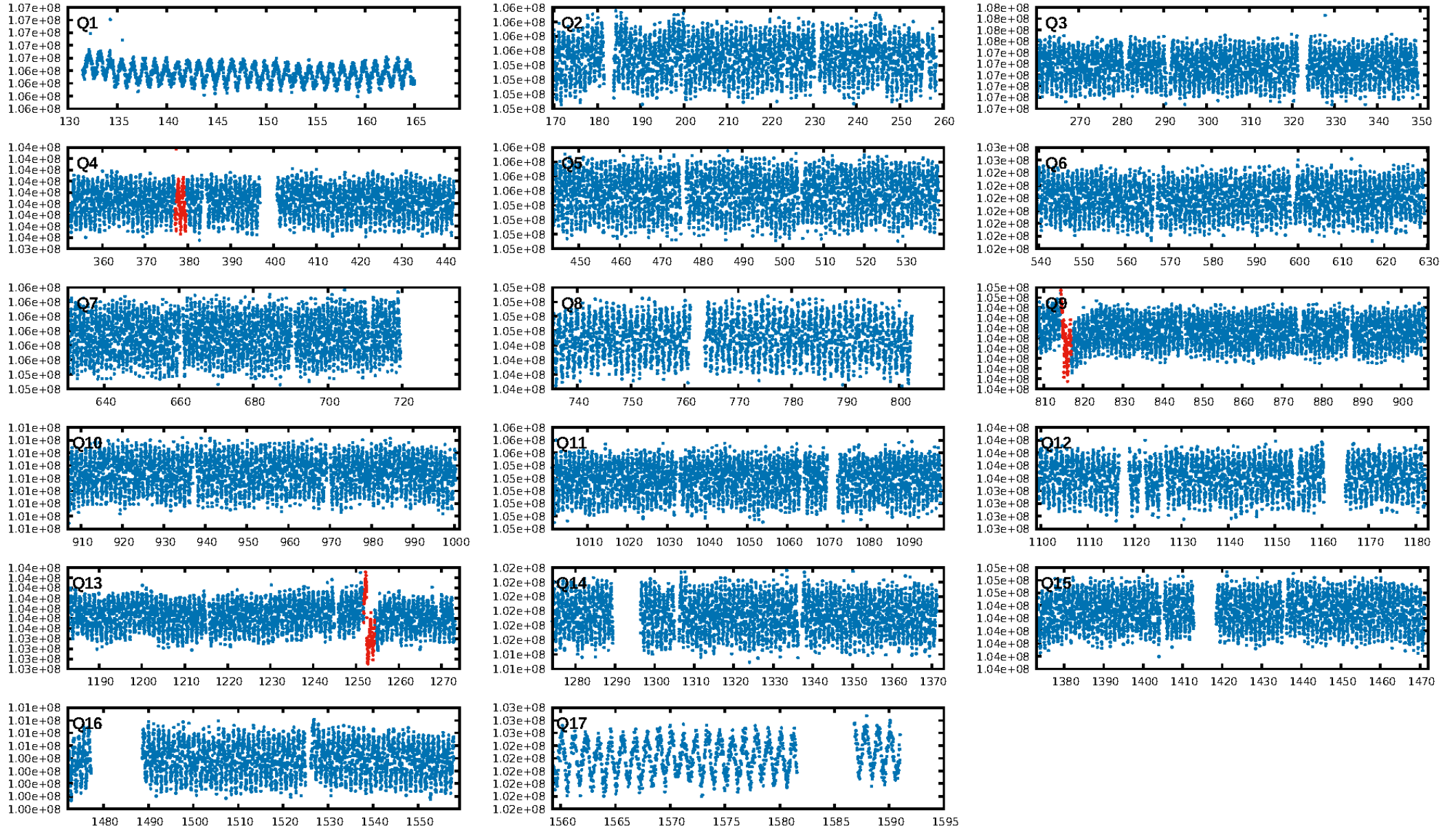
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.06 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgm: 1.00 [3/3]
GhostDiagnostic-chr: -2.219
Centroid-sig: 0.7%
Centroid-so: 0.753 arcsec [2.74 σ]
OotOffset-rm: 1.471 arcsec [1.04 σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-rm: 1.547 arcsec [1.11 σ]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

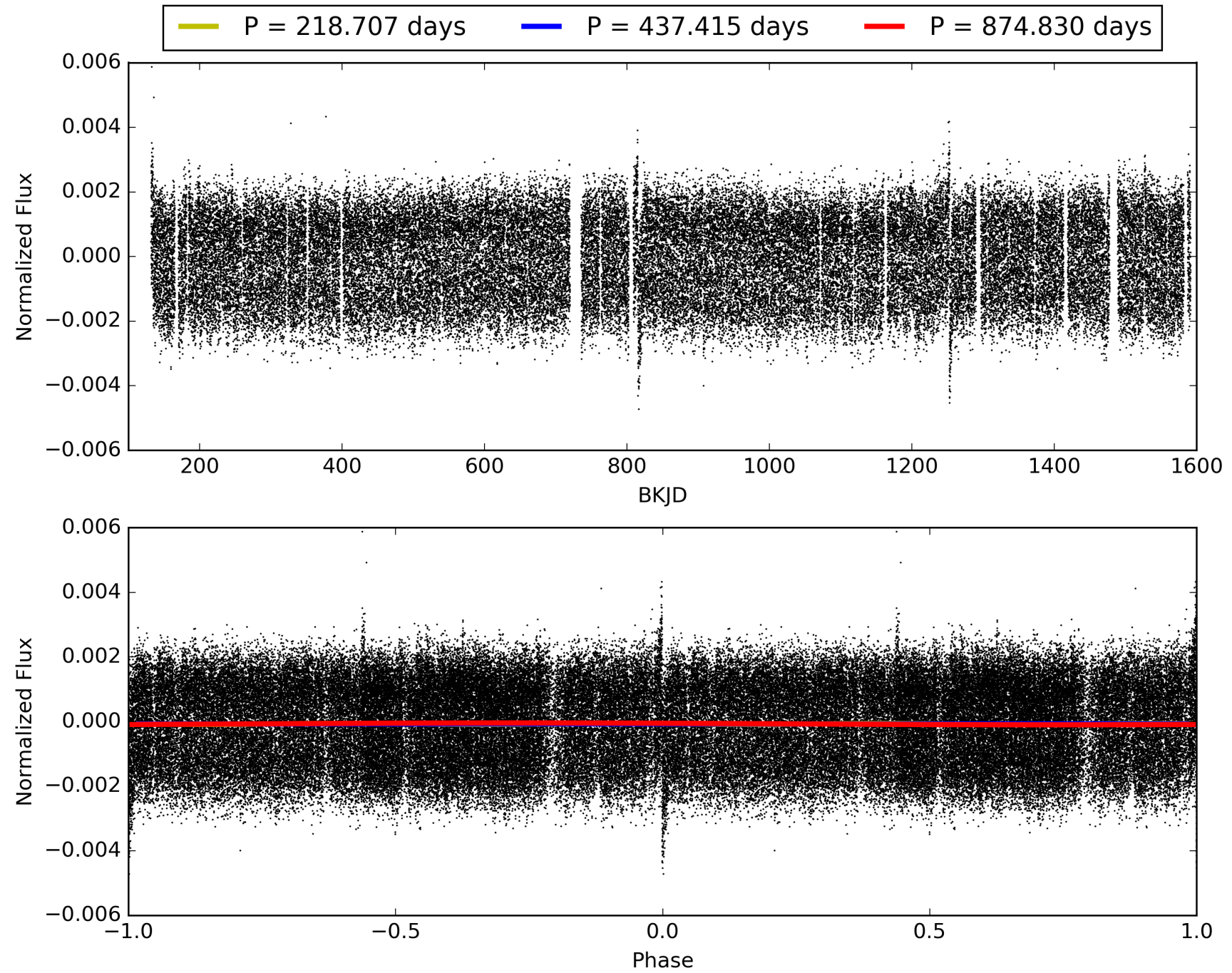
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008038679-01, PDC Light Curves

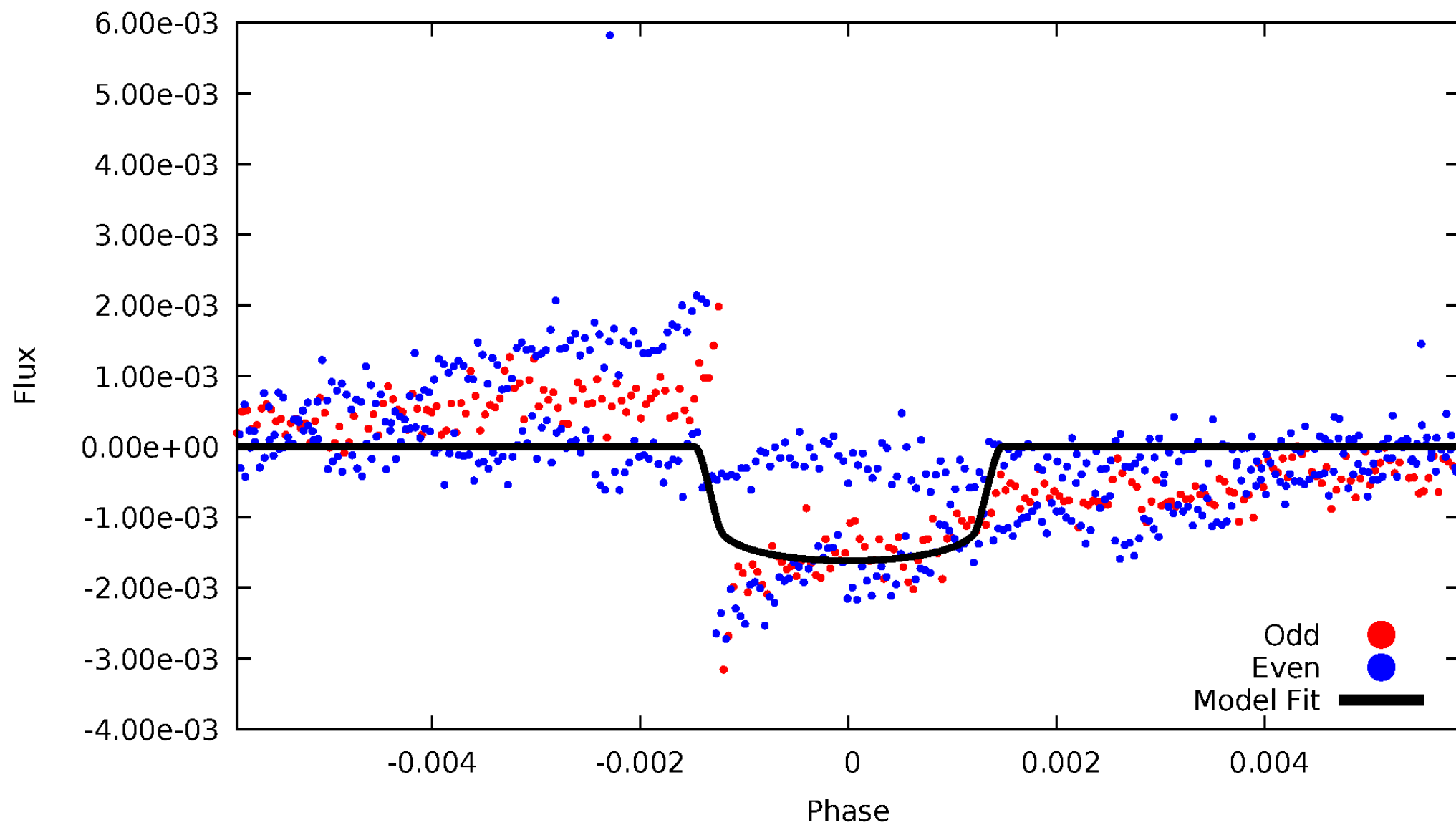


TCE 008038679-01



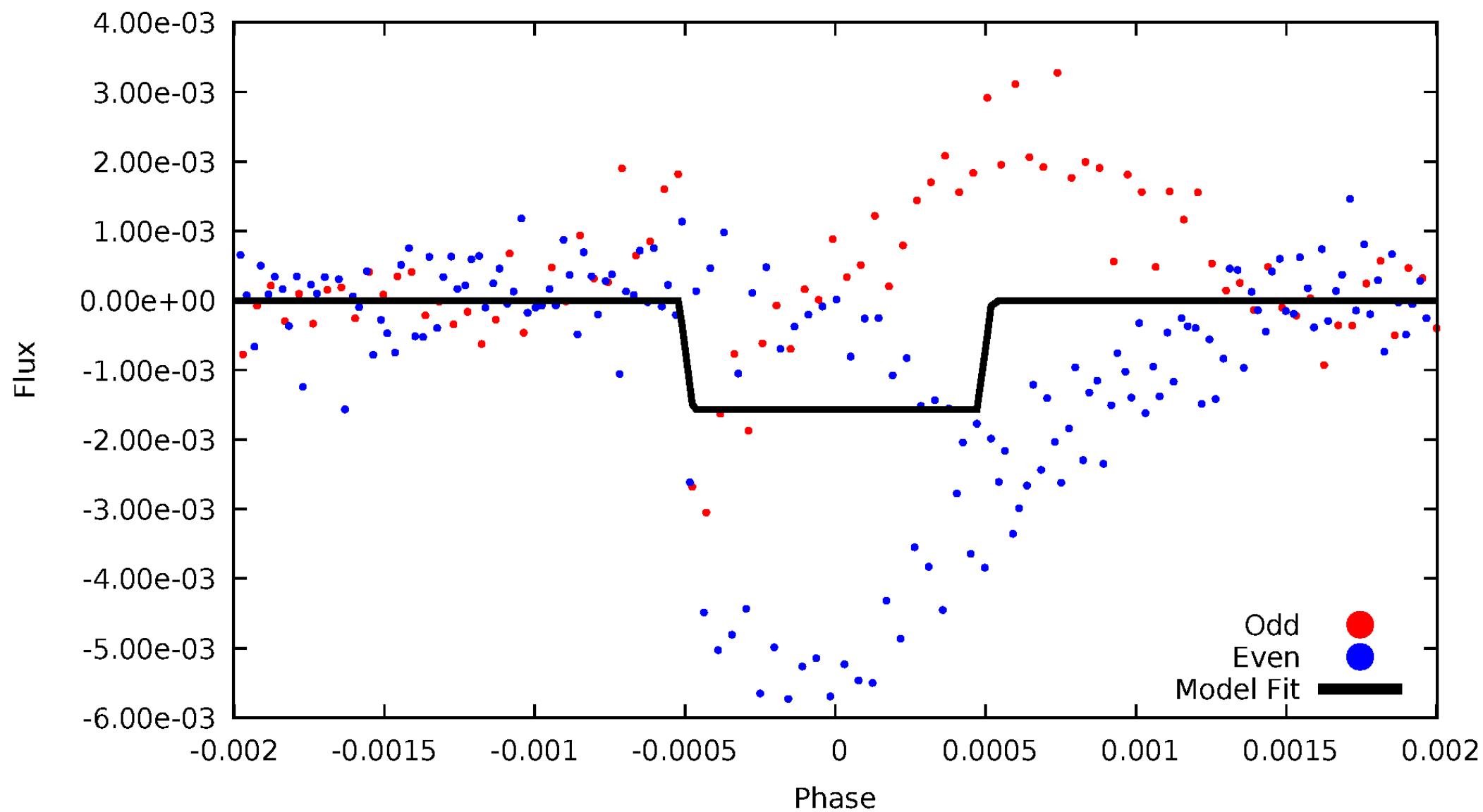
DV Odd/Even

TCE 008038679-01



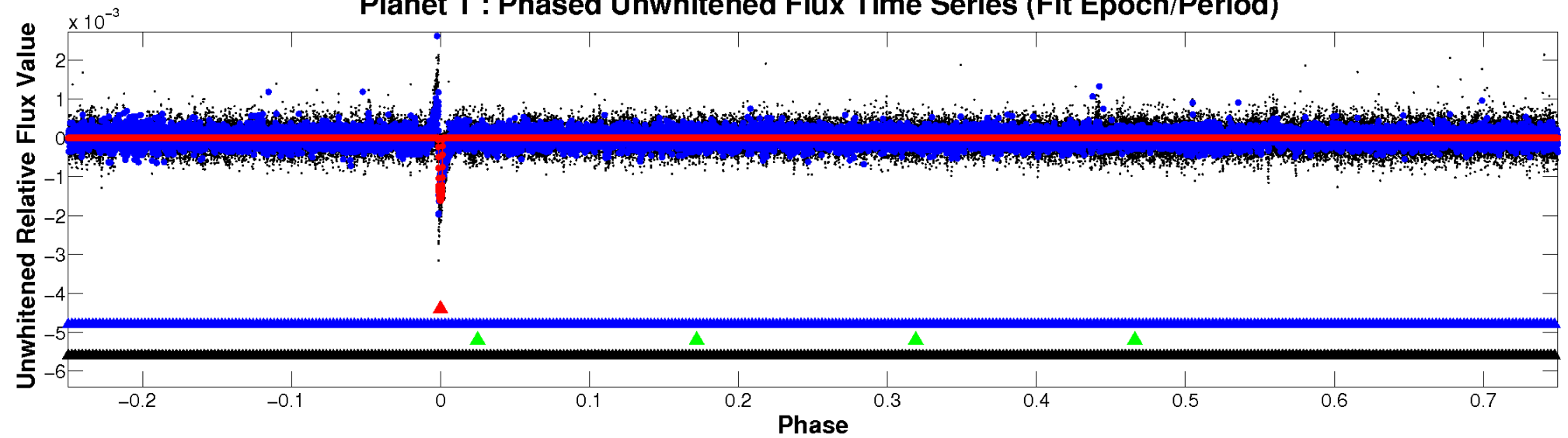
ALT Odd/Even

TCE 008038679-01

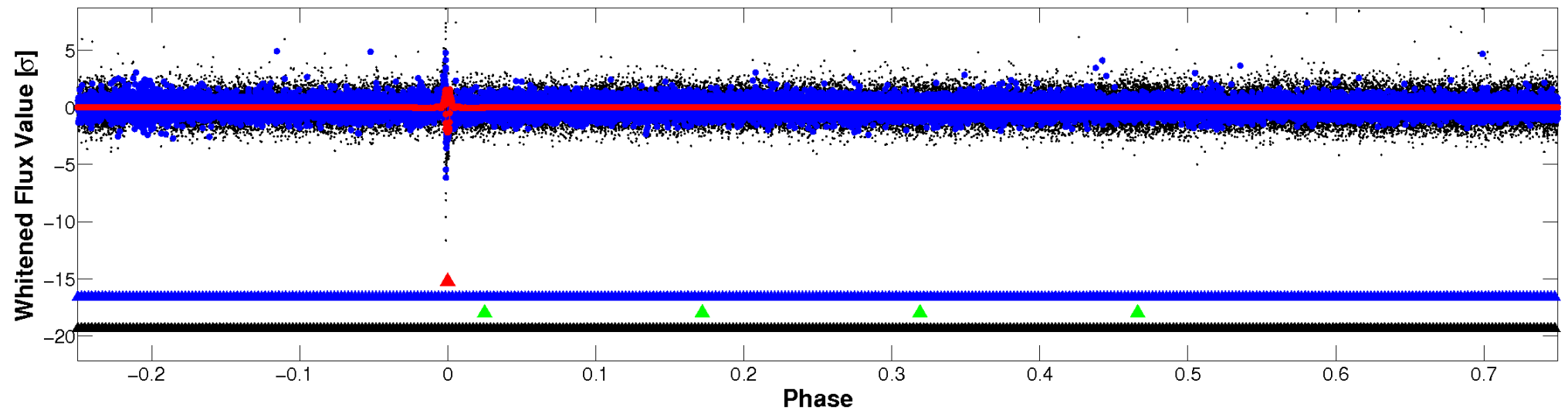


Non-Whitened Vs. Whitened Light Curve

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

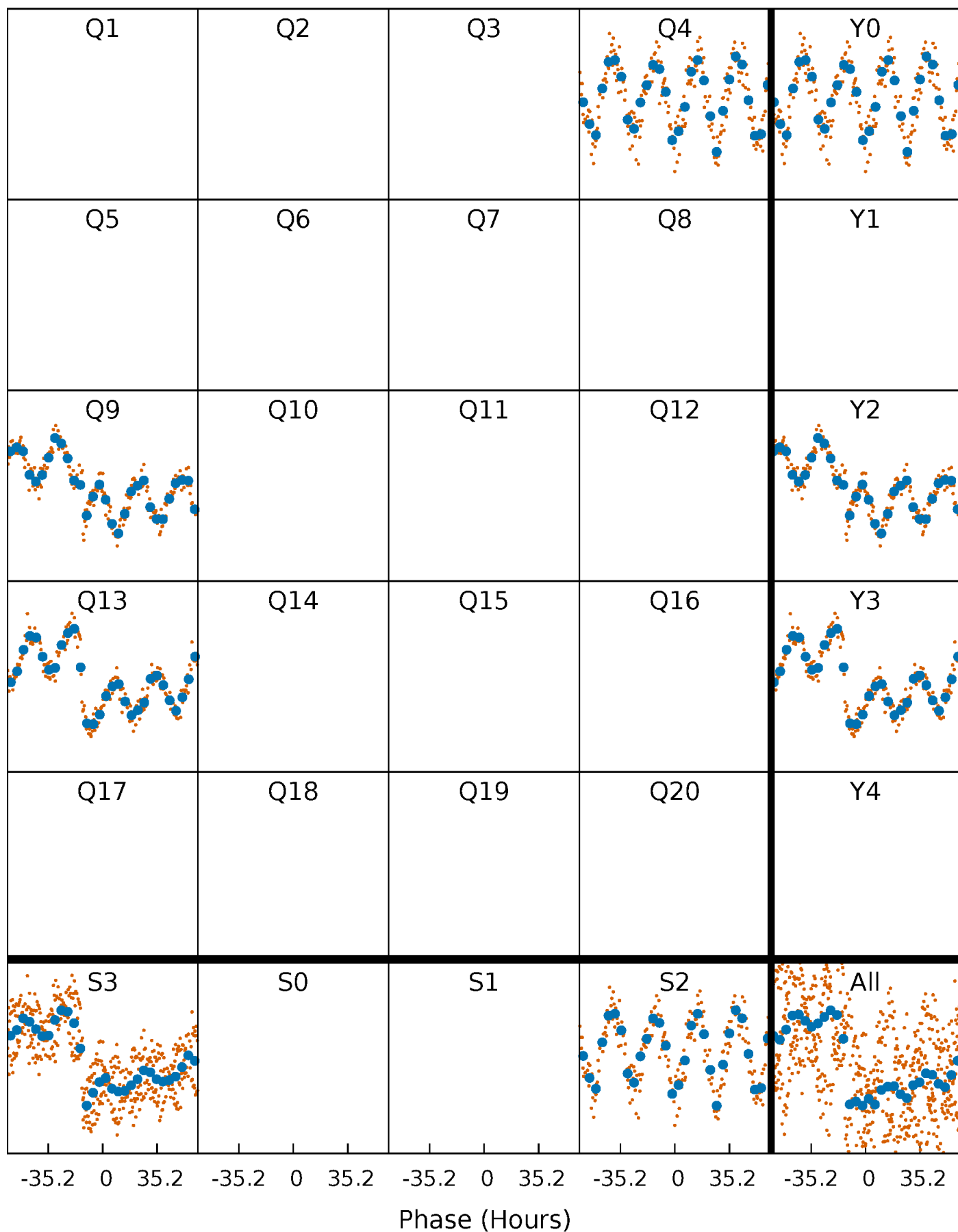


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



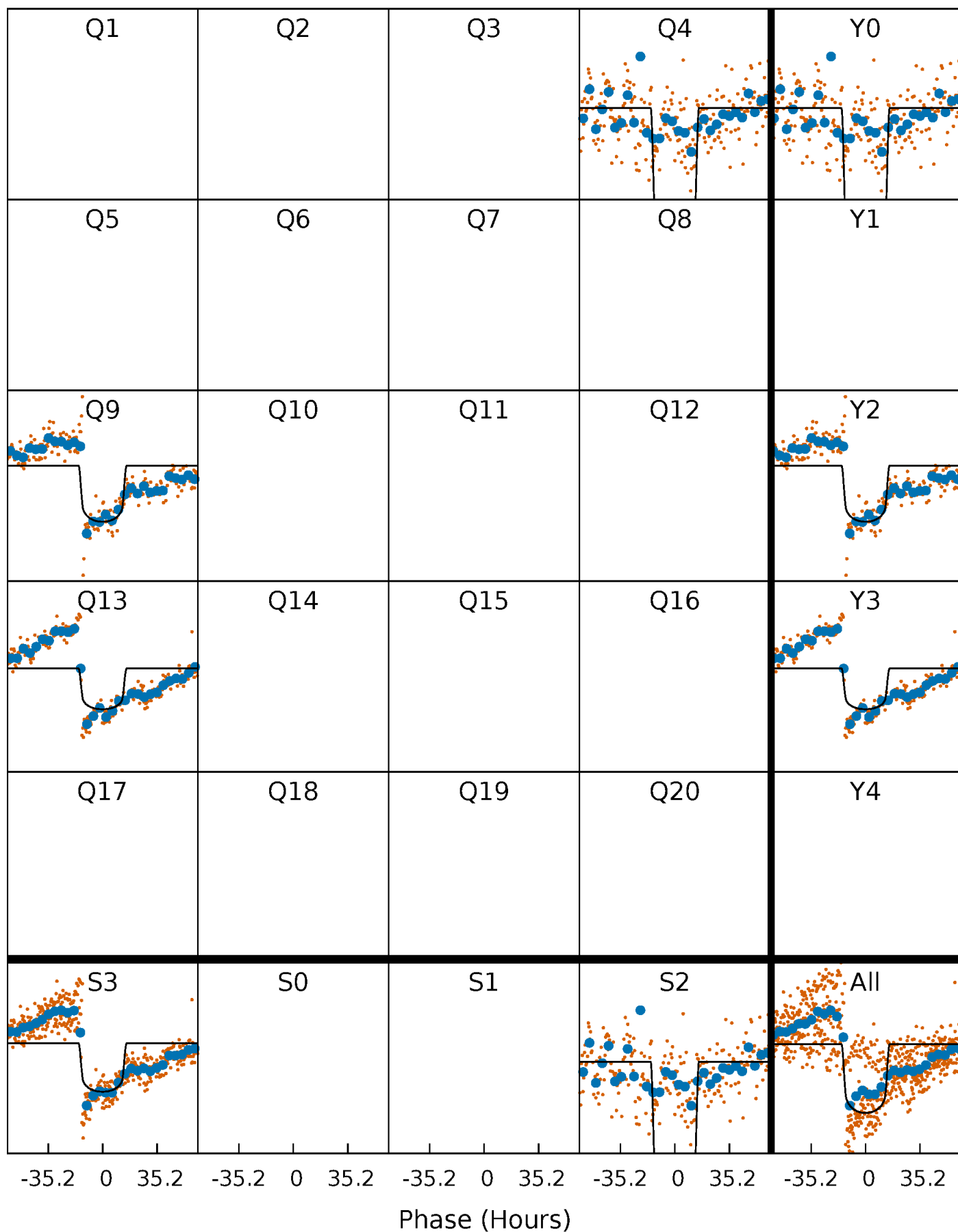
PDC Quarter-Phased Transit Curves

TCE 008038679-01 P=437.414867 Days $T_0=378.245714$ (BKJD)



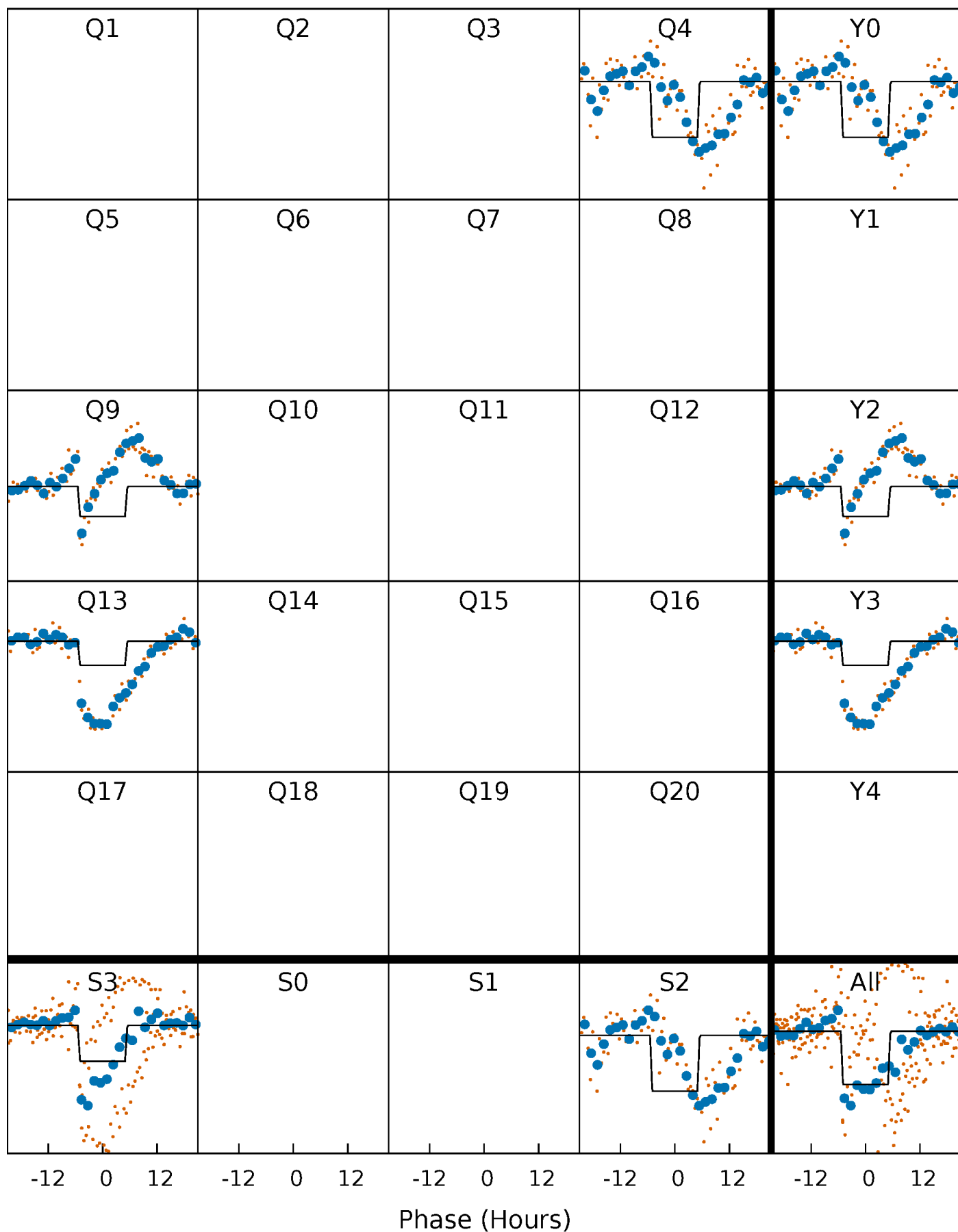
DV Quarter-Phased Transit Curves

TCE 008038679-01 P=437.414867 Days $T_0=378.245714$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

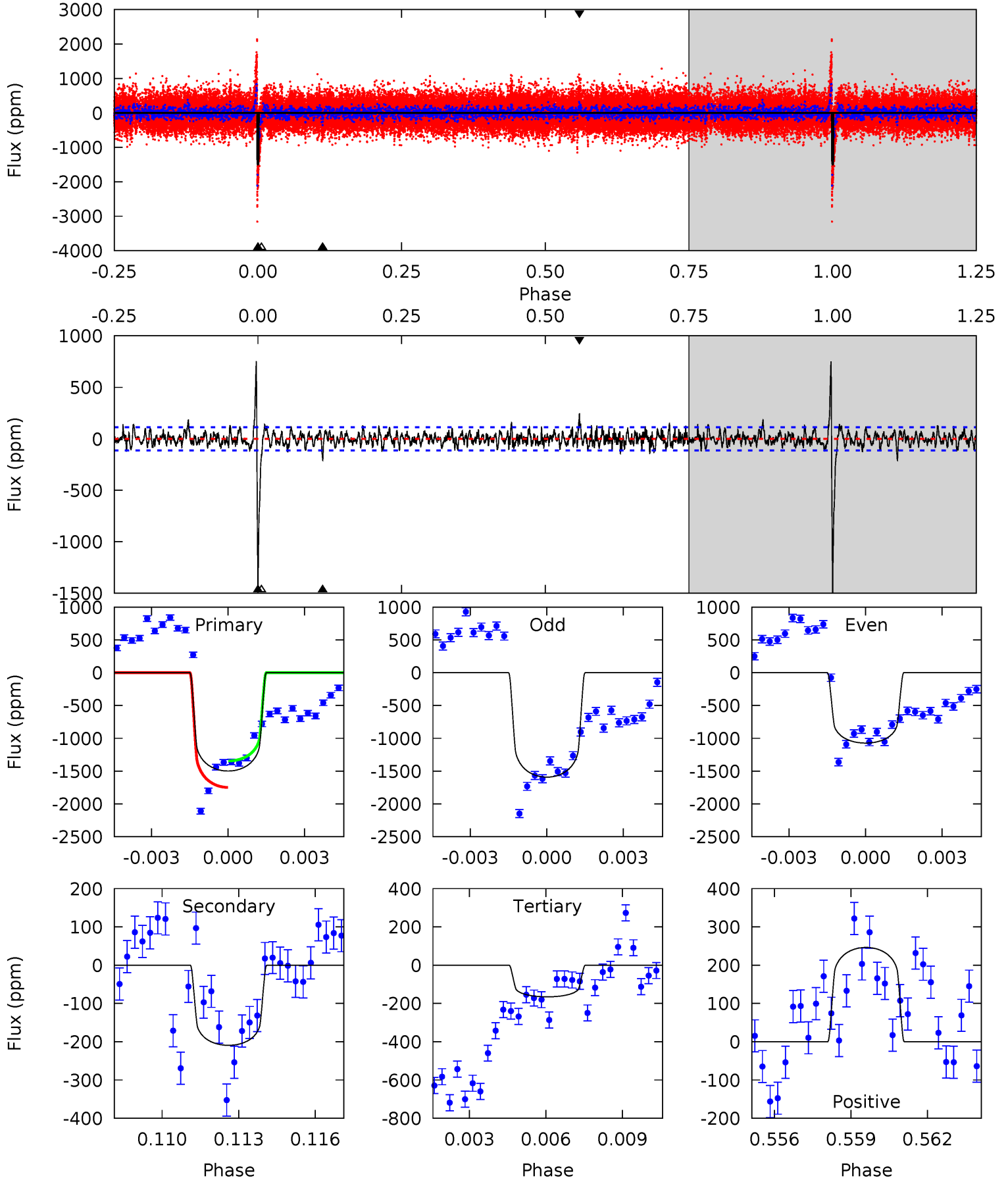
TCE 008038679-01 P=437.366729 Days $T_0=377.977641$ (BKJD)



DV Model-Shift Uniqueness Test

008038679-01, P = 437.414867 Days, E = 378.245714 Days

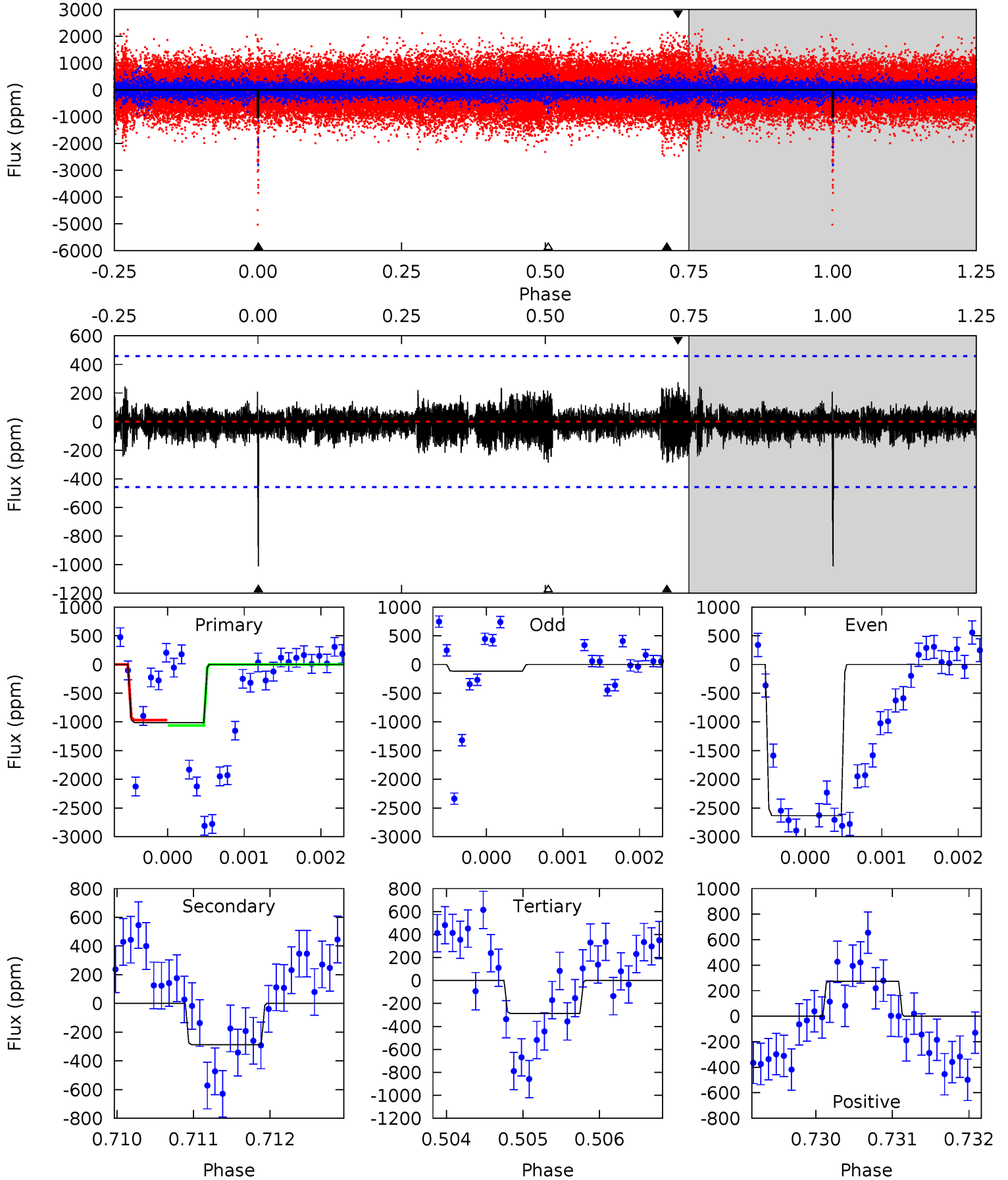
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
69.8	9.75	7.70	11.5	5.25	2.97	2.80	62.1	58.3	2.05	-1.72	12.4	0.79	0.33	9.24



Alt Model-Shift Uniqueness Test

008038679-01, P = 437.366729 Days, E = 377.977641 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	3.43	3.42	3.27	5.45	3.29	0.91	8.63	8.78	0.01	0.17	17.7	3.13	0.21	0.54



Stellar Parameters For KIC 008038679

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7373^{+233}_{-311}	$4.027^{+0.175}_{-0.157}$	$0.020^{+0.200}_{-0.350}$	$2.081^{+0.541}_{-0.541}$	$1.681^{+0.201}_{-0.302}$	$0.263^{+0.291}_{-0.121}$
	+3%/-4%	+4%/-4%	+1000%/-1750%	+26%/-26%	+12%/-18%	+111%/-46%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008038679-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-209 ± 21	$9.04^{+1.43}_{-1.28}$	564^{+40}_{-39}	4537^{+163}_{-159}	2494^{+820}_{-622}
Alt.	-288 ± 84	$8.85^{+1.41}_{-1.19}$	563^{+43}_{-40}	4851^{+343}_{-316}	3518^{+1661}_{-1208}

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 $A_{obs} \gg 1.0$

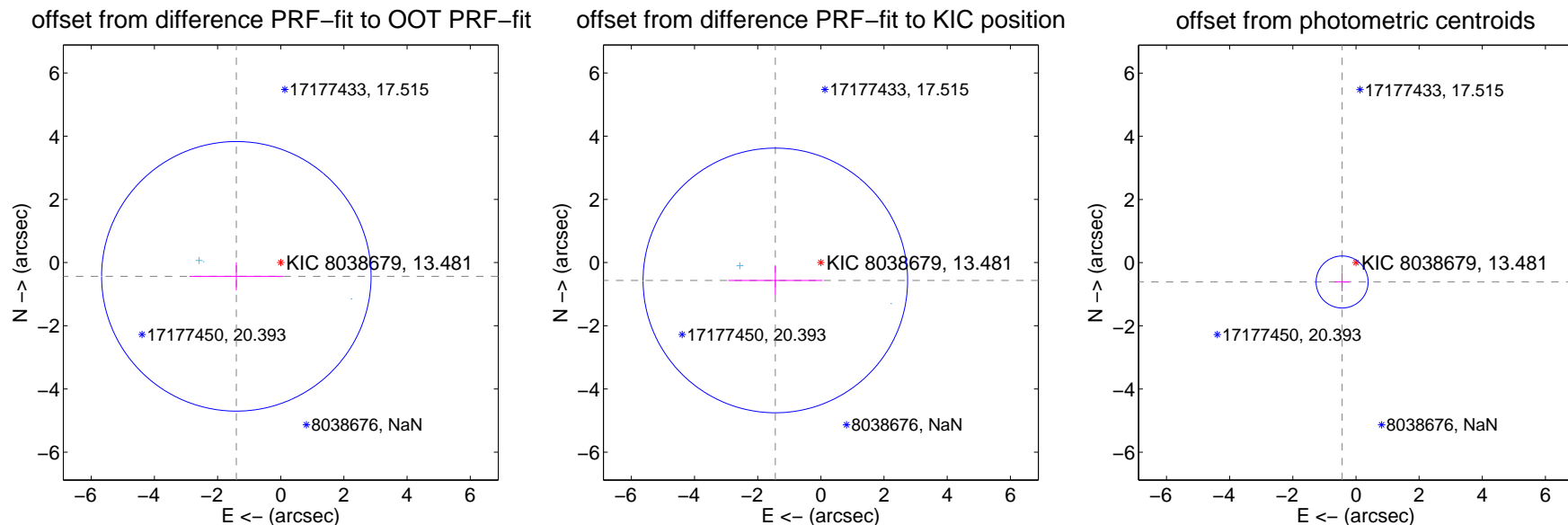
DV Centroid Data

Supplemental centroid analysis for 008038679-01. Kepler magnitude: 13.48. Transit SNR 27.31

There are 3 quarters with good PRF difference image offsets

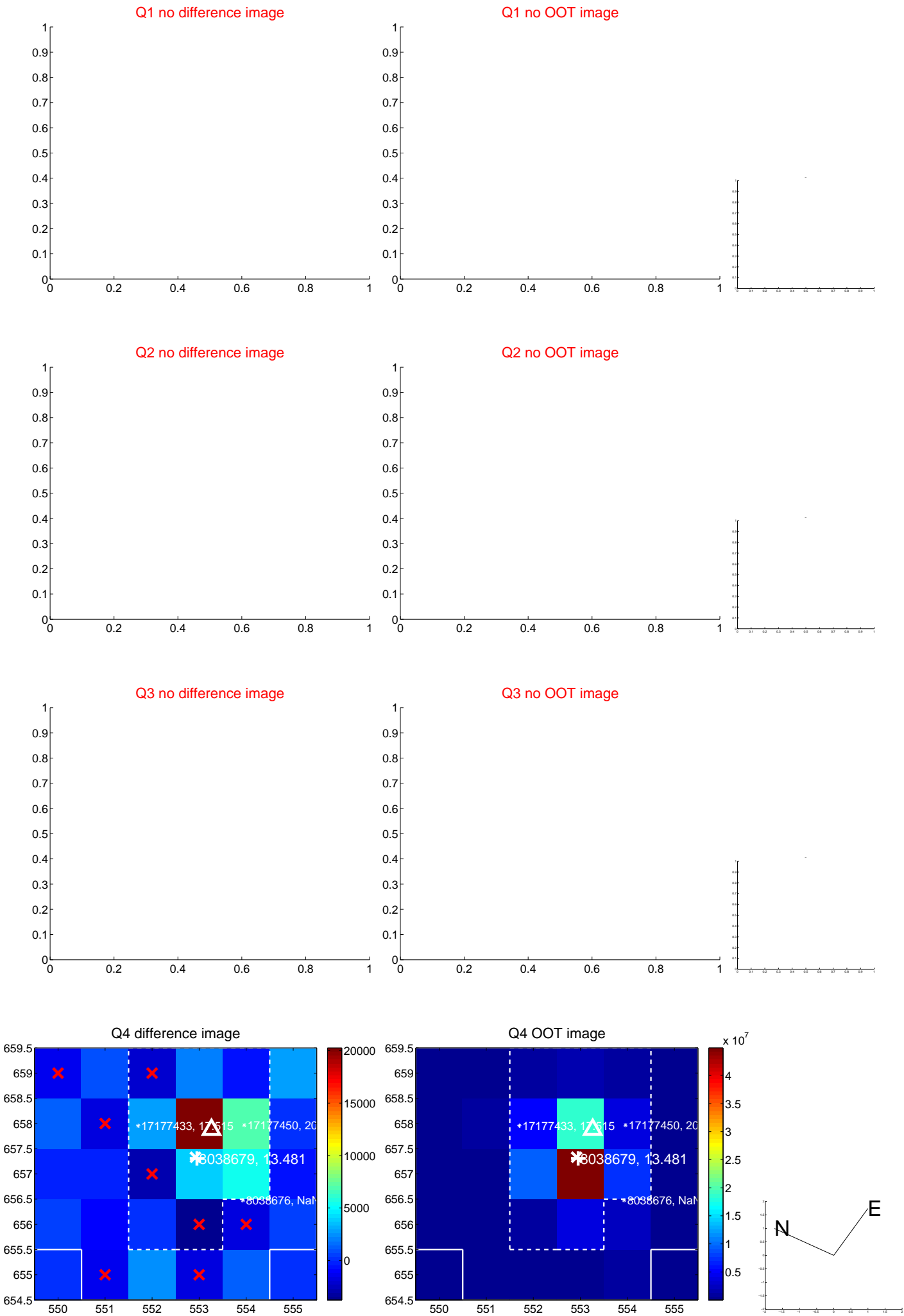
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.471 ± 1.422	1.04	1.406 ± 1.482	-0.435 ± 0.443
PRF-fit source offset from KIC position	1.547 ± 1.396	1.11	1.441 ± 1.488	-0.565 ± 0.452
photometric centroid source offset	0.75 ± 0.27	2.74	0.44 ± 0.24	-0.61 ± 0.29



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.

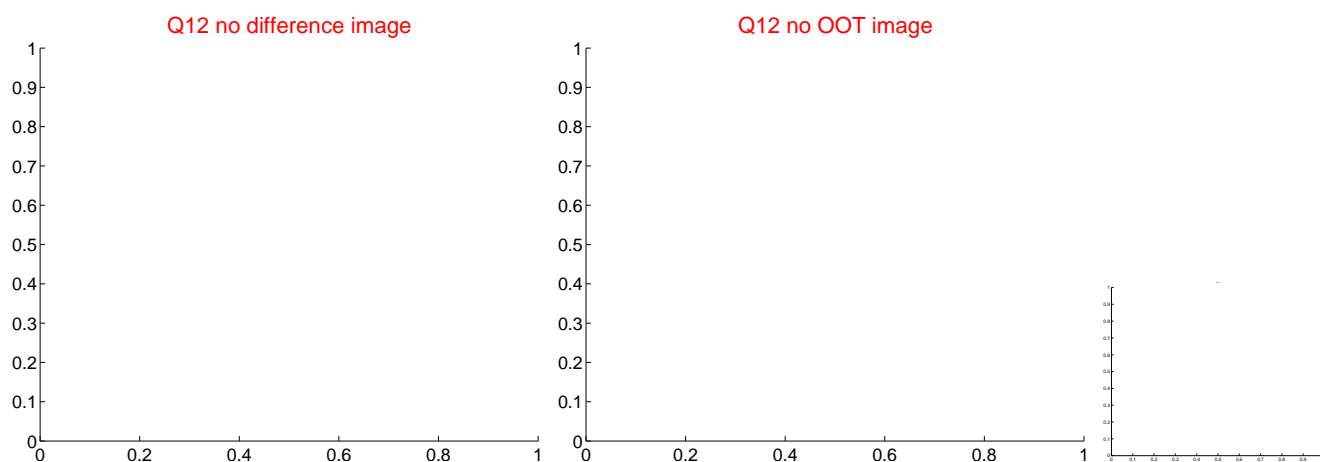
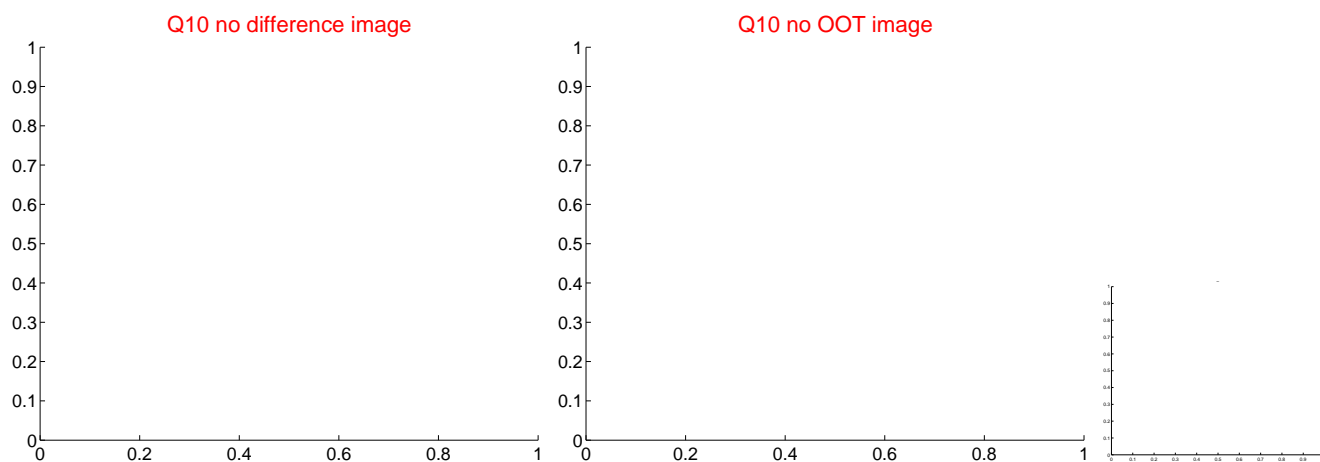
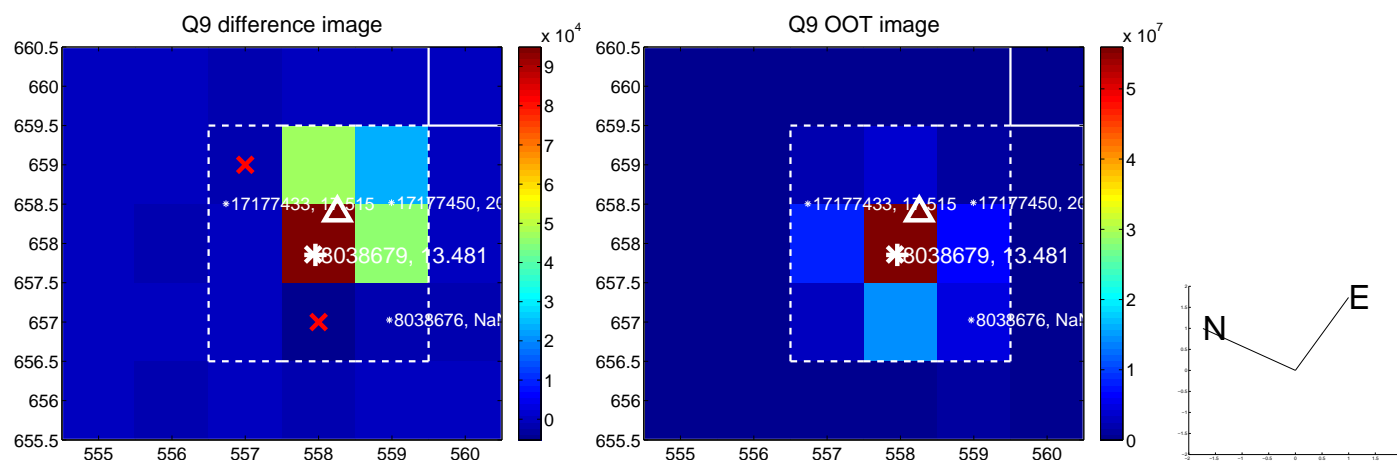
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



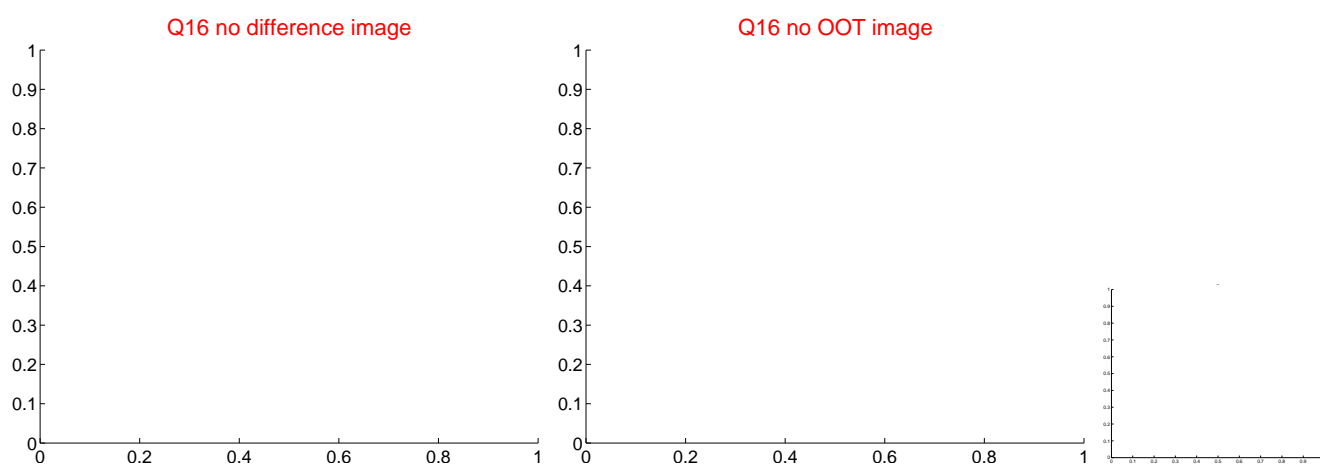
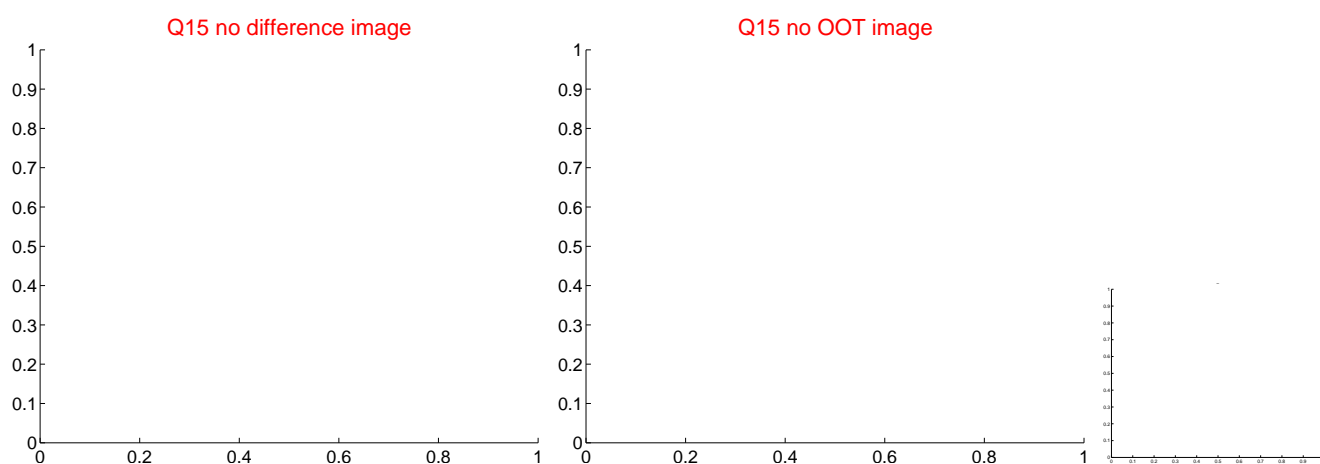
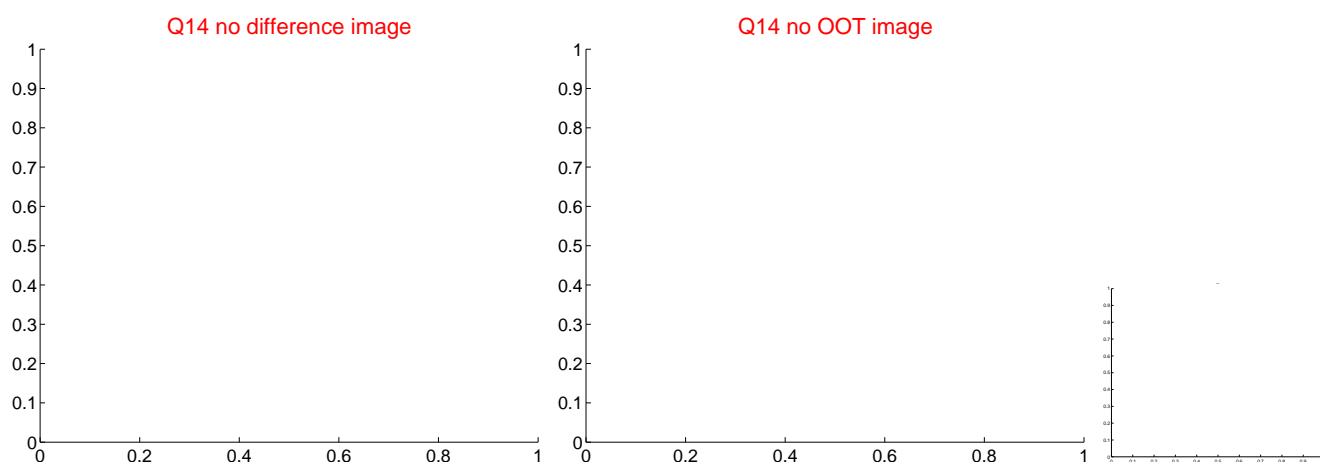
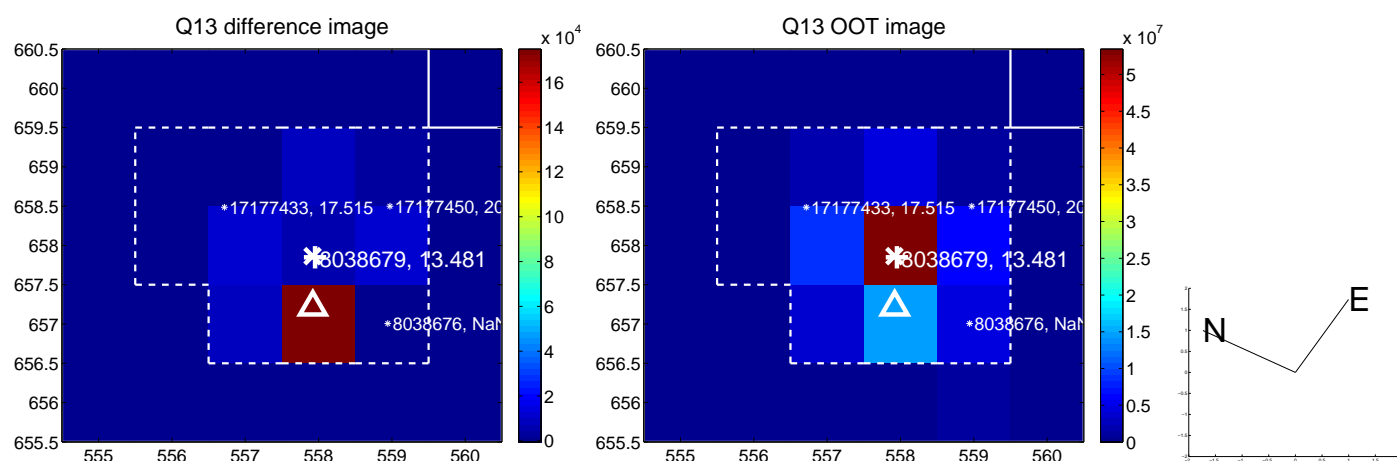
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



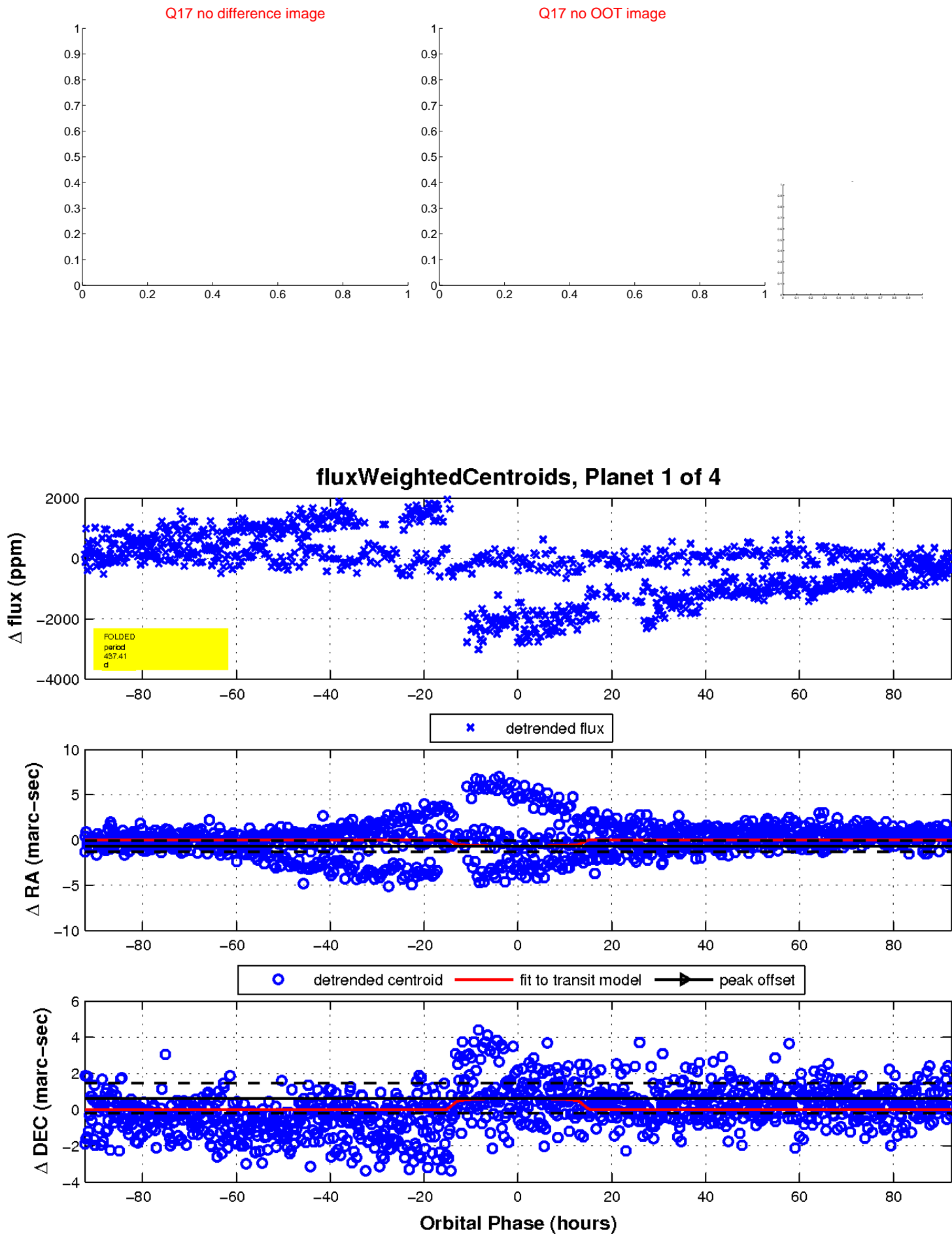
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

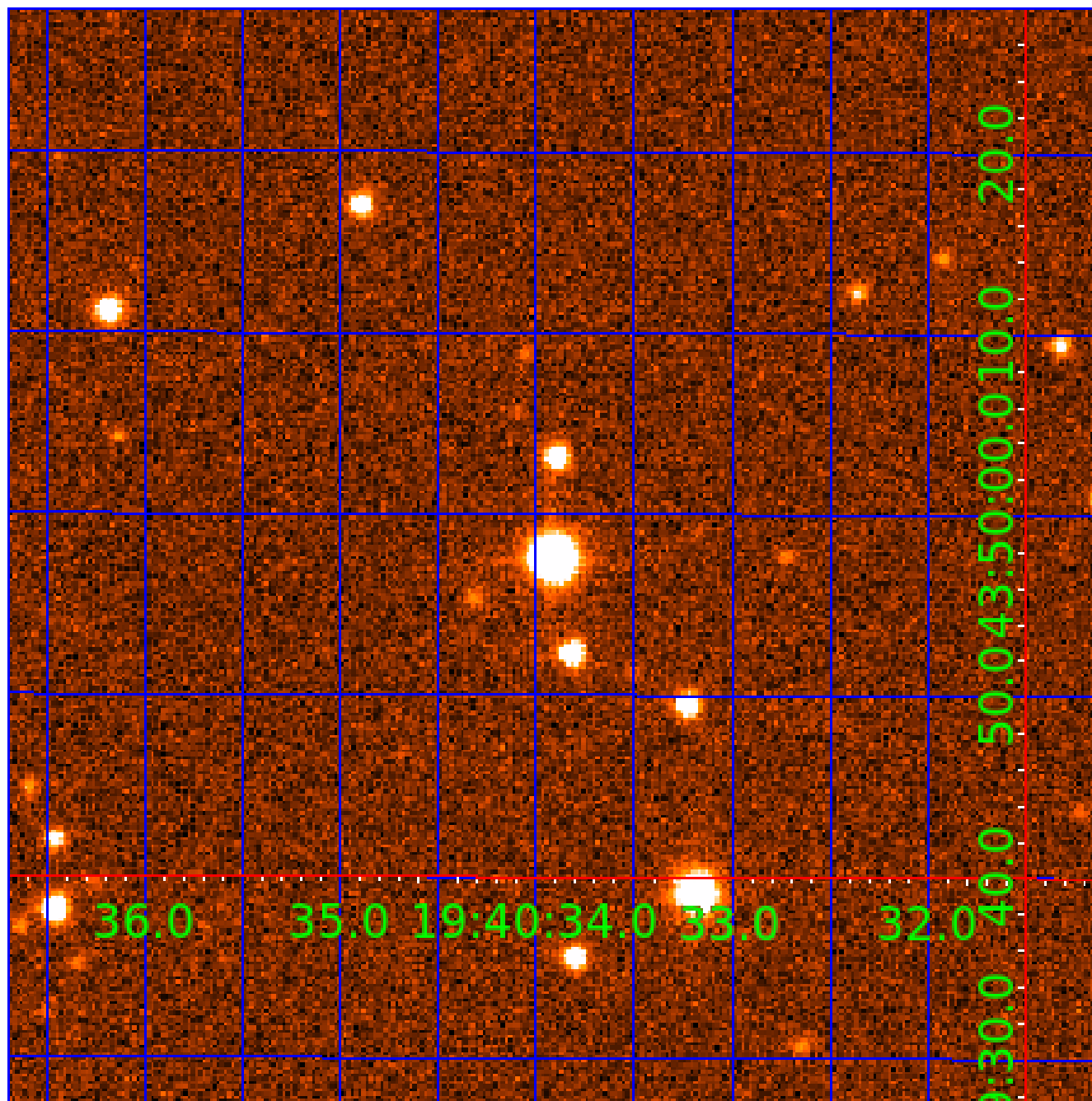


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008038679

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})
008038679-01	OBS	No	437.414866	378.245714	1615.4	30.813	24.7	27.3	2.08	7373	9.09	6.38
008038679-02	OBS	No	2.048919	131.640989	31.7	10.585	11.1	8.9	2.08	7373	1.19	8133.66
008038679-03	OBS	No	373.093331	144.712924	1303.7	36.996	33.1	22.0	2.08	7373	9.27	7.88
008038679-04	OBS	No	2.048630	132.758023	58.1	11.263	14.2	15.0	2.08	7373	2.56	8135.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008038679-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
008038679-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008038679-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008038679-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

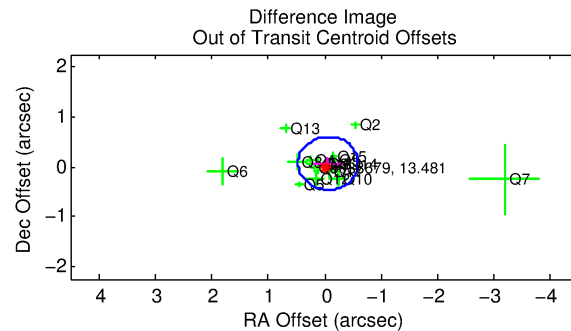
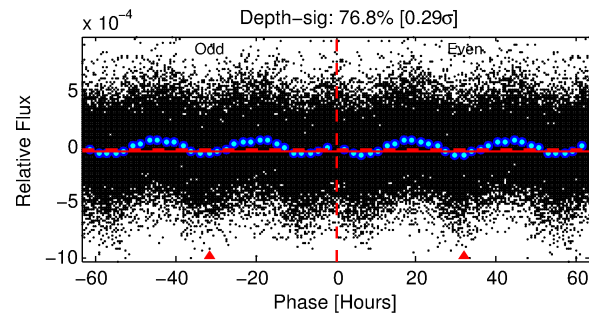
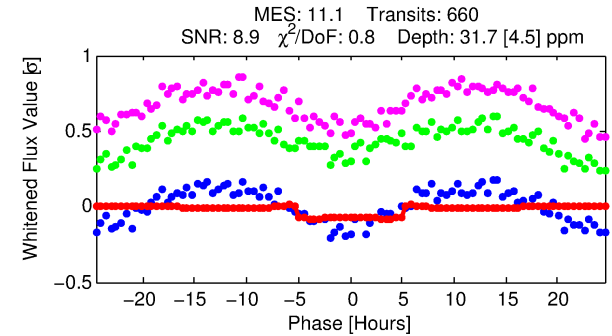
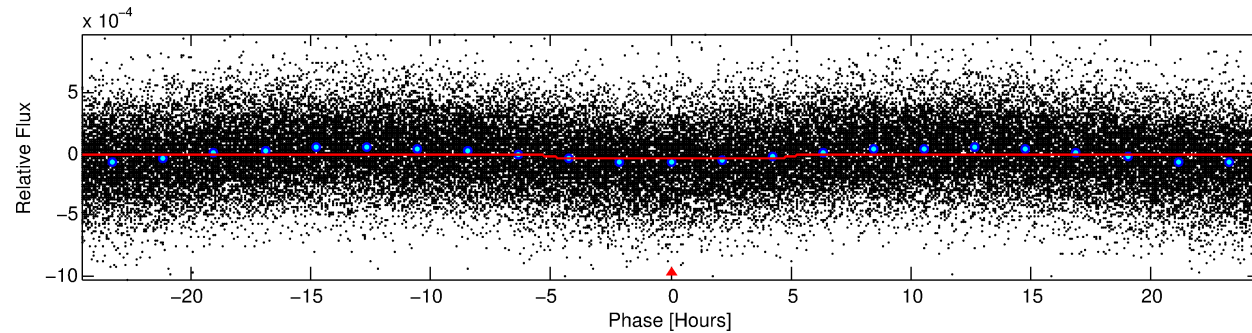
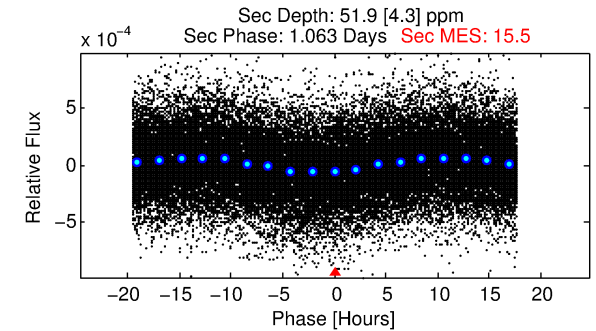
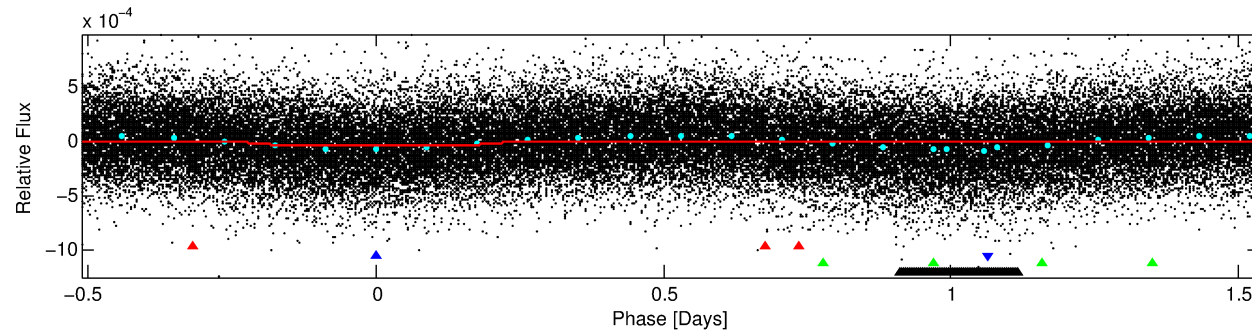
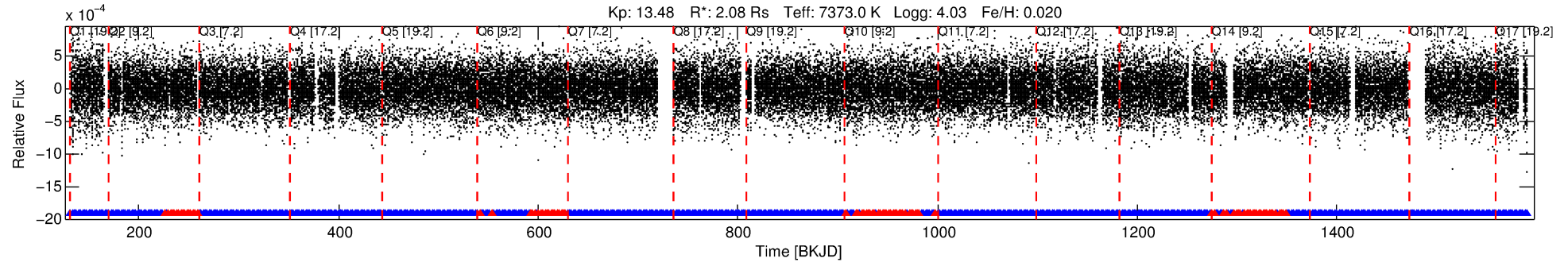
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008038679-02

No Significant Match Found

DV One-Page Summary

KIC: 8038679 Candidate: 2 of 4 Period: 2.049 d



DV Fit Results:

Period = 2.04892 [0.00003] d
Epoch = 131.6410 [0.0073] BKJD
Rp/R* = 0.0052 [0.0050]
a/R* = 1.61 [5.72]
b = 0.03 [197.82]
Seff = 8133.66 [2940.18]
Teff = 2422 [219] K
Rp = 1.19 [1.18] Re
a = 0.0375 [0.0082] AU
Ag = 28.48 [55.59] [0.49σ]
Teffp = 8649 [4179] K [1.49σ]

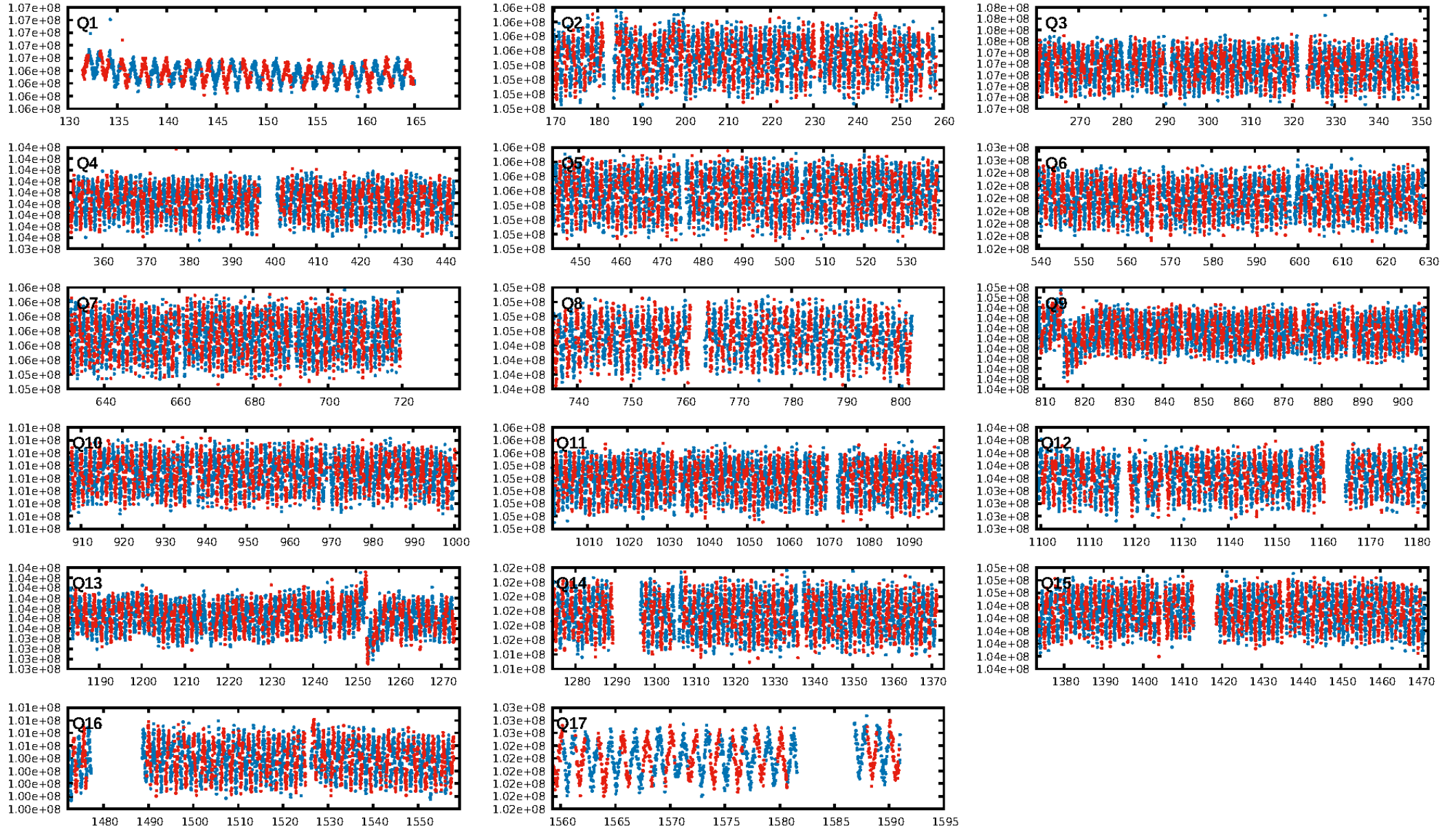
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [231.42σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.85 [536/630]
GhostDiagnostic-chr: 2.537
Centroid-sig: 0.0%
Centroid-so: 1.926 arcsec [2.30σ]
OotOffset-rm: 0.091 arcsec [0.52σ]
KicOffset-rm: 0.100 arcsec [0.60σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 0.12 [2/17]

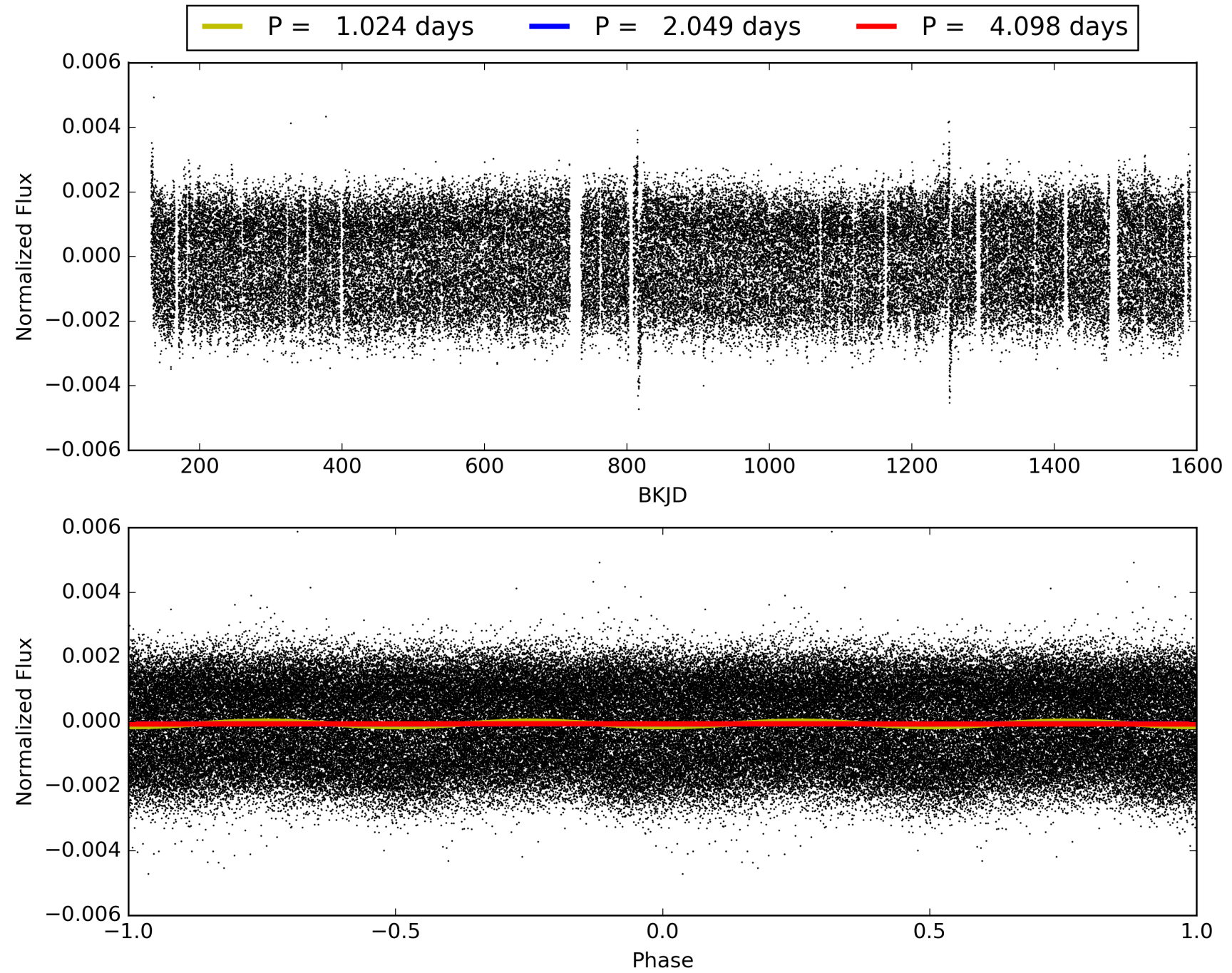
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:52:25 Z

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

TCE 008038679-02, PDC Light Curves

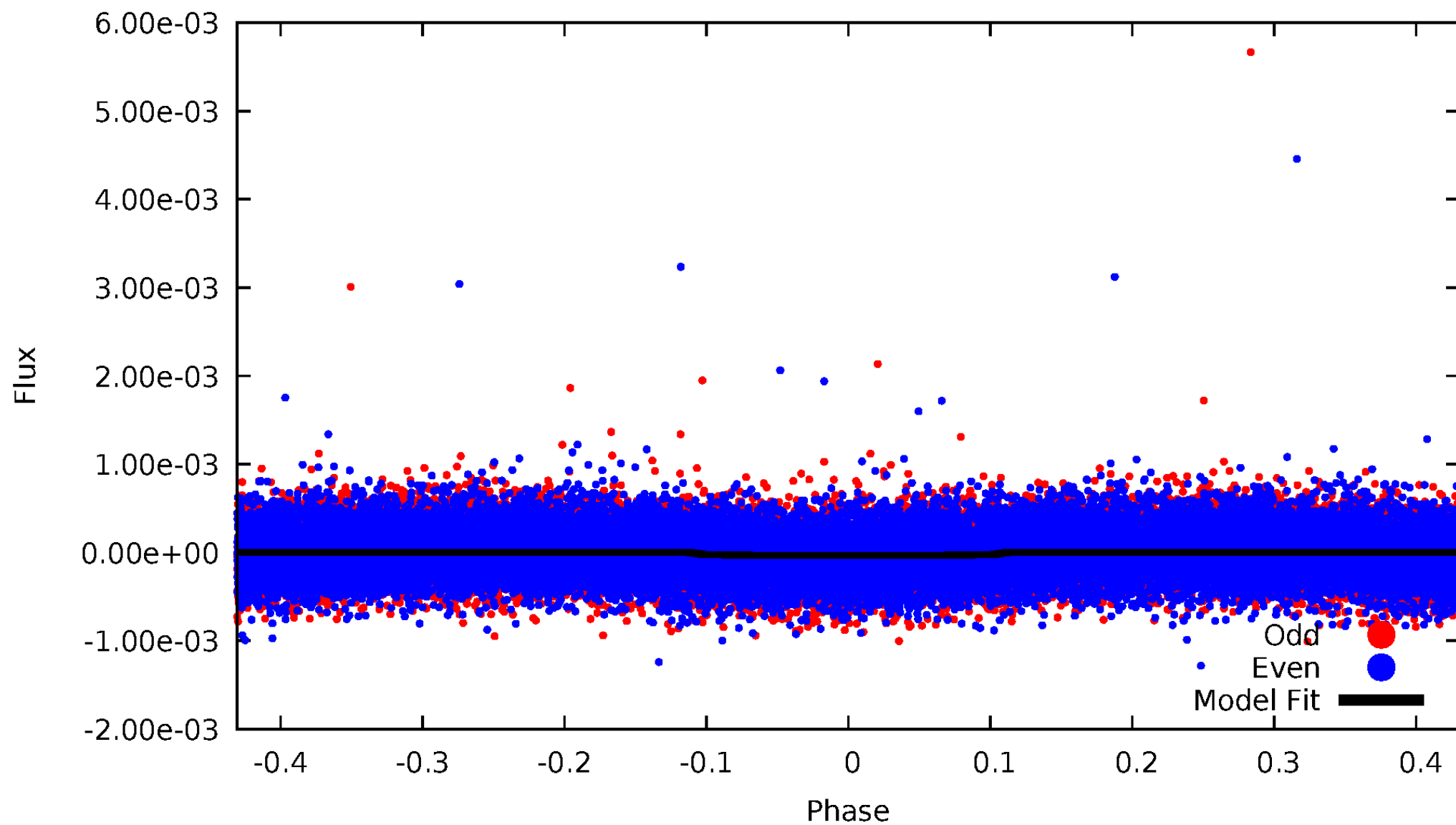


TCE 008038679-02



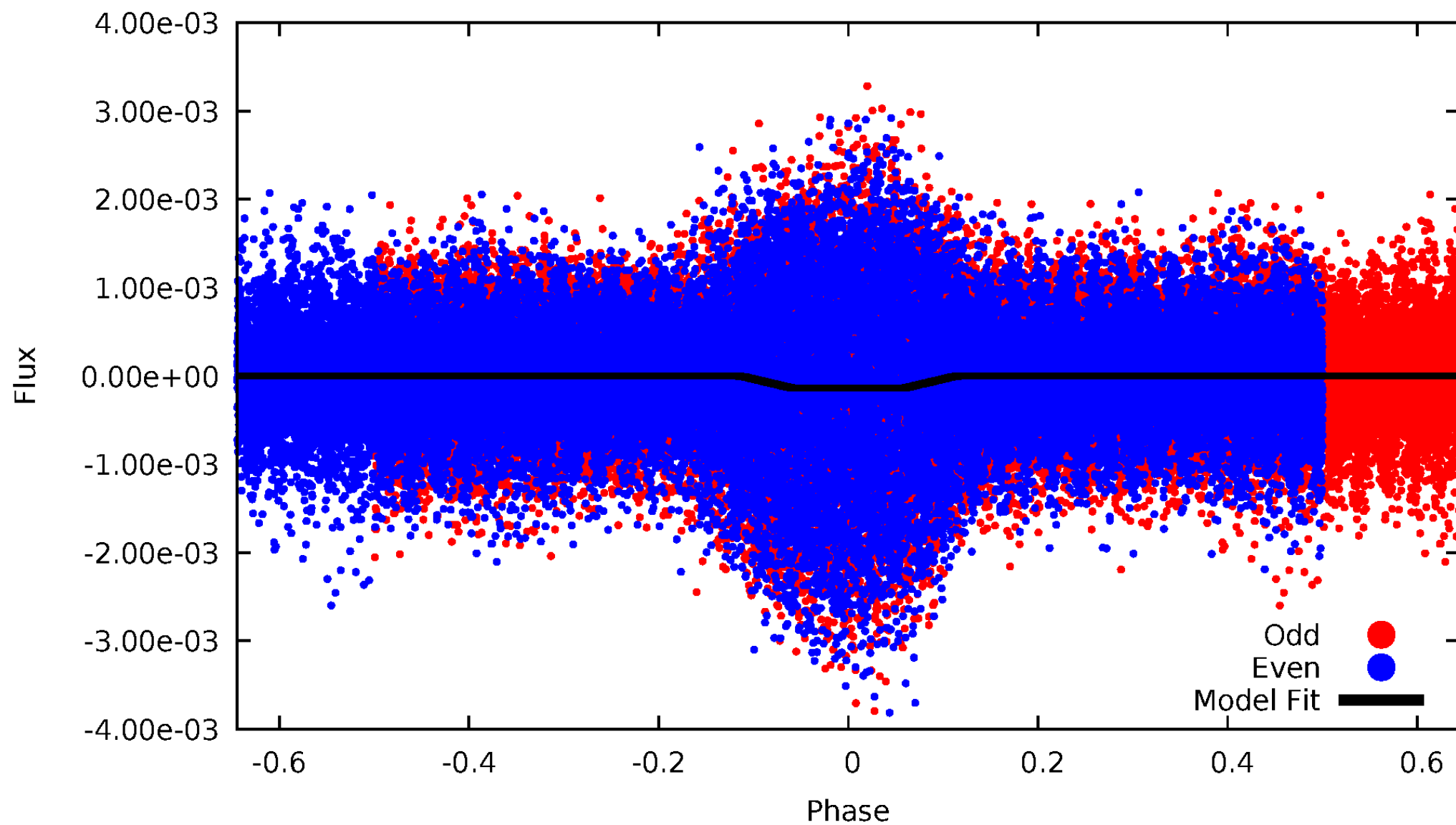
DV Odd/Even

TCE 008038679-02



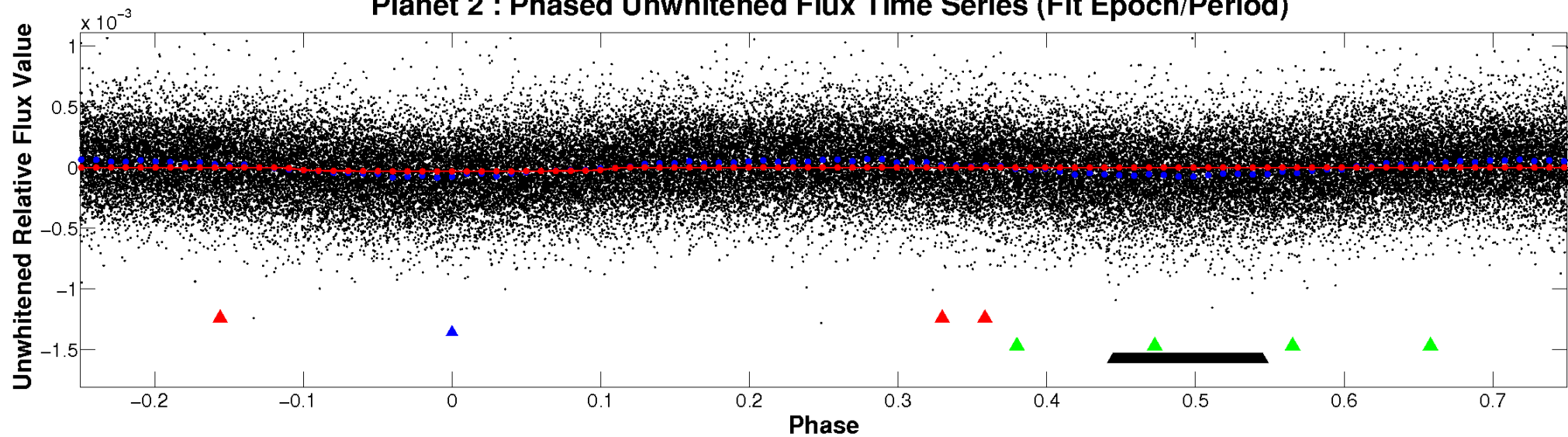
ALT Odd/Even

TCE 008038679-02

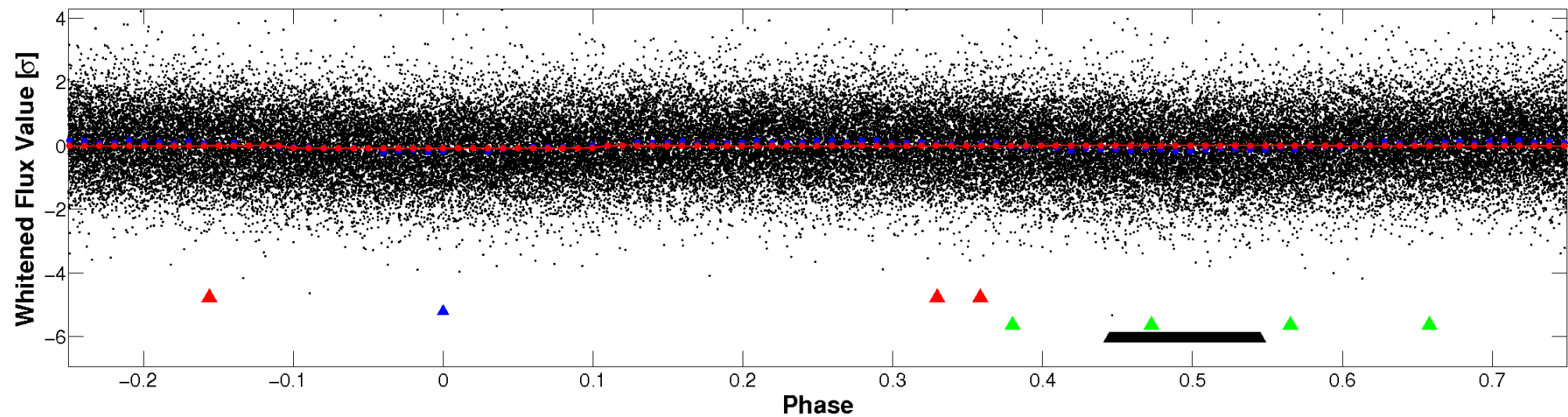


Non-Whitened Vs. Whitened Light Curve

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

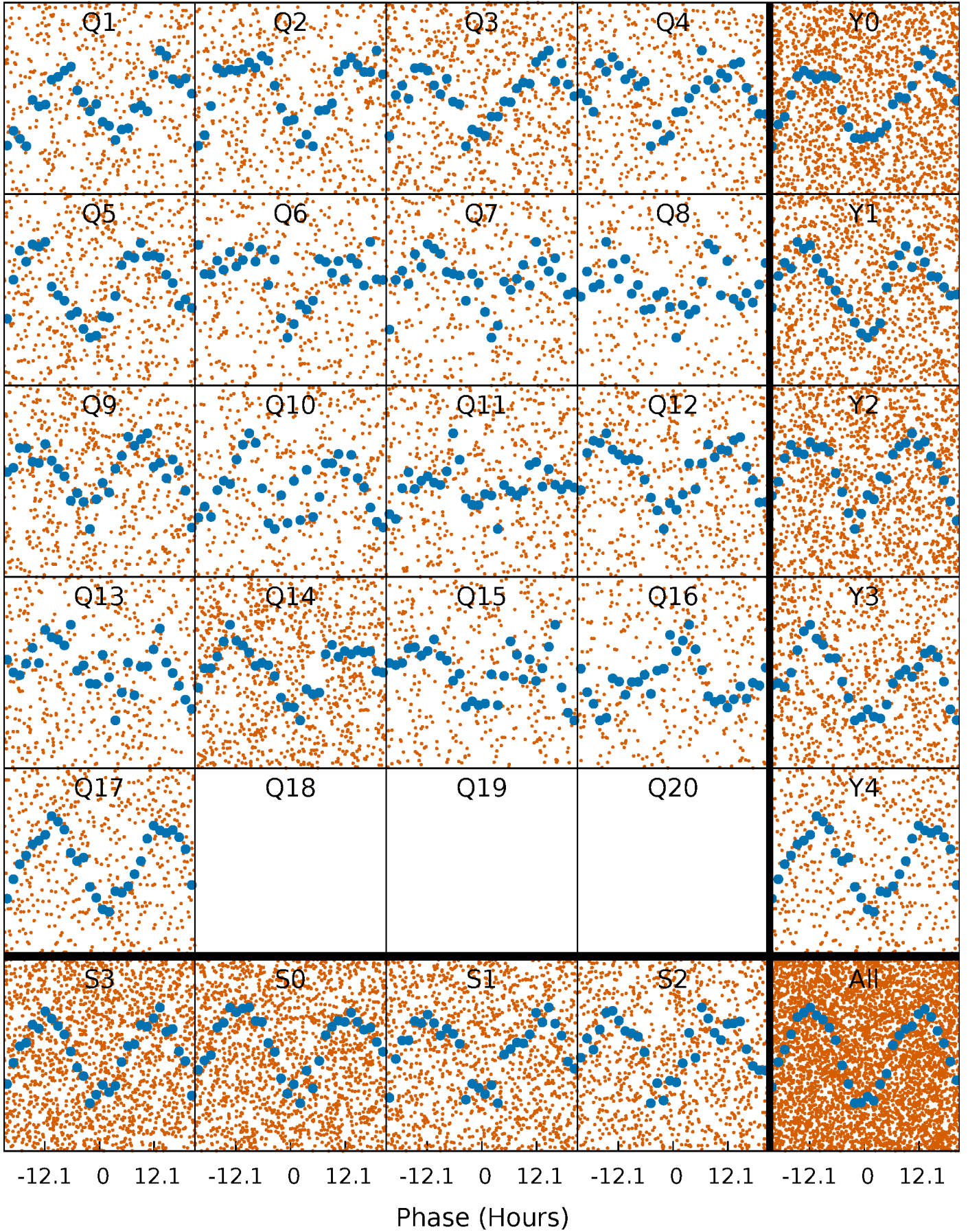


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



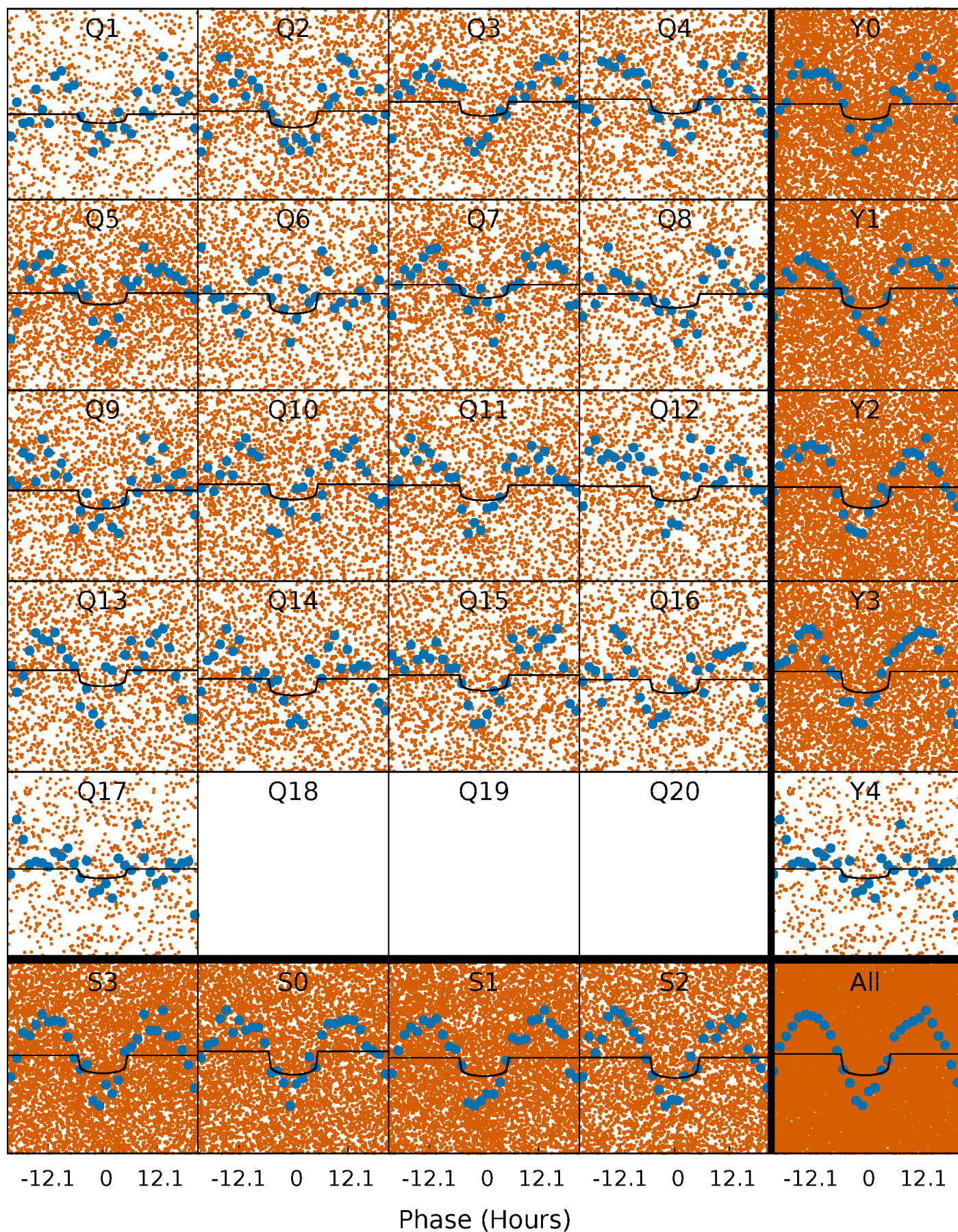
PDC Quarter-Phased Transit Curves

TCE 008038679-02 P= 2.048919 Days $T_0=131.640989$ (BKJD)



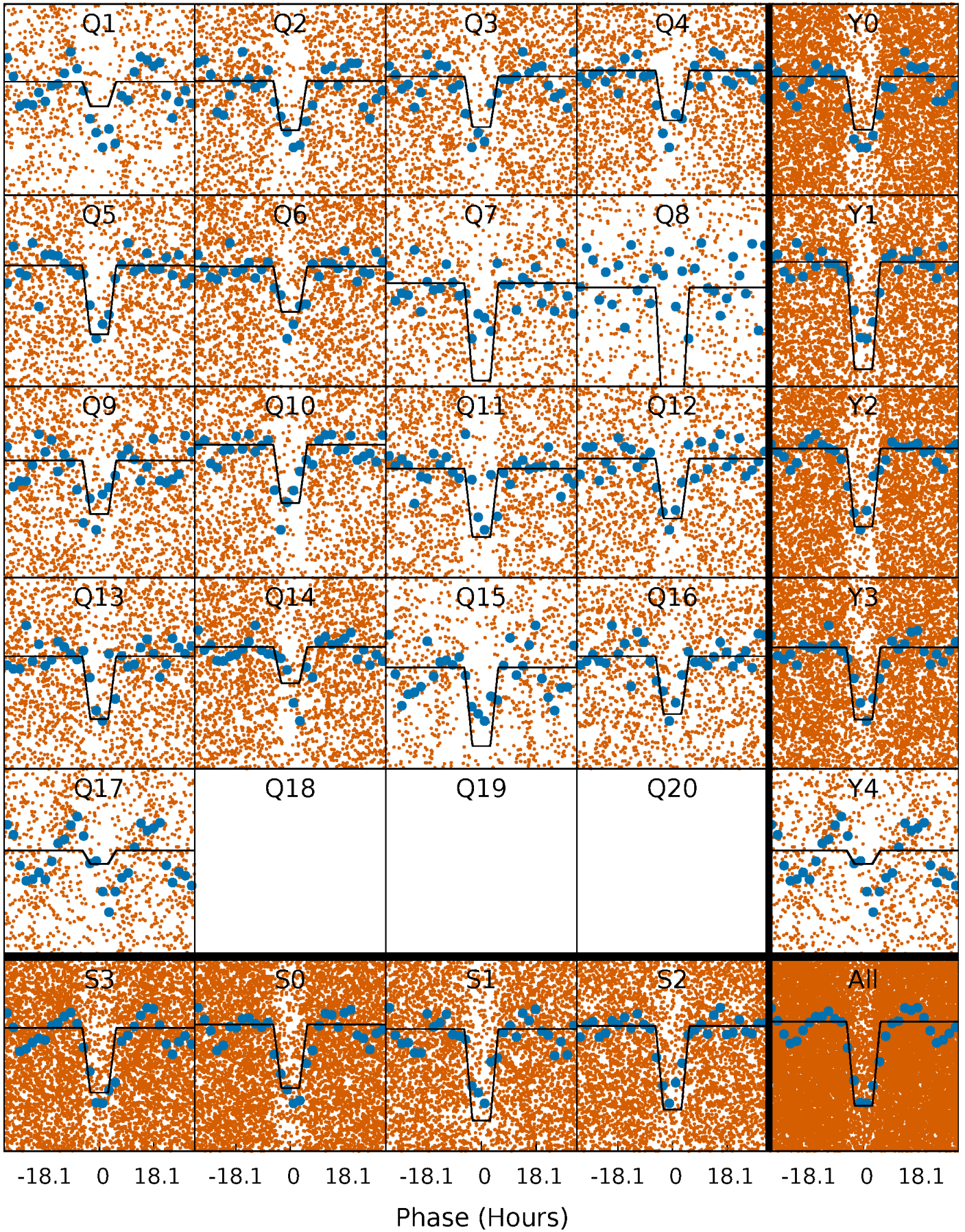
DV Quarter-Phased Transit Curves

TCE 008038679-02 P= 2.048919 Days $T_0=131.640989$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

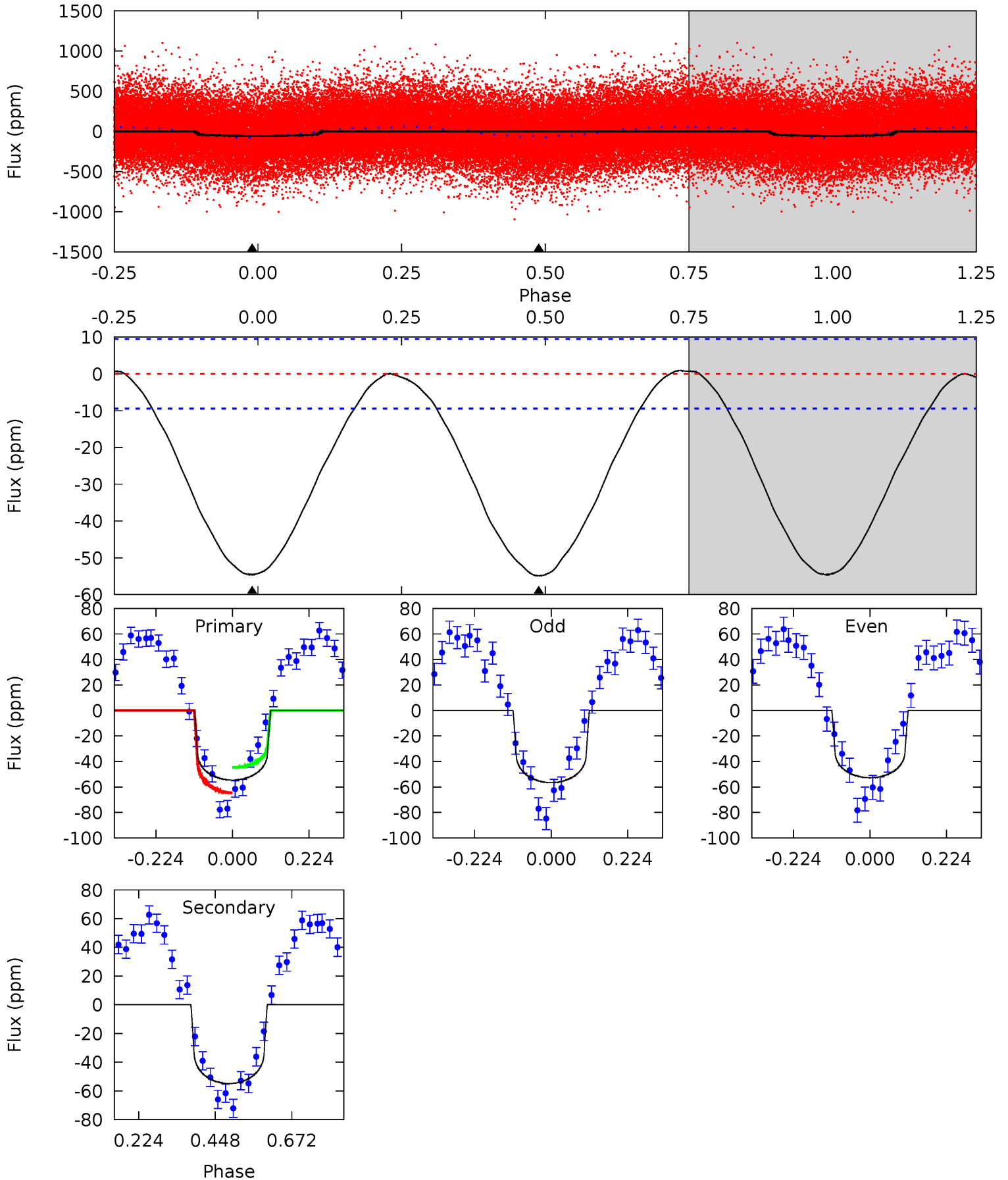
TCE 008038679-02 P= 2.048750 Days $T_0=131.663693$ (BKJD)



DV Model-Shift Uniqueness Test

008038679-02, P = 2.048919 Days, E = 129.592070 Days

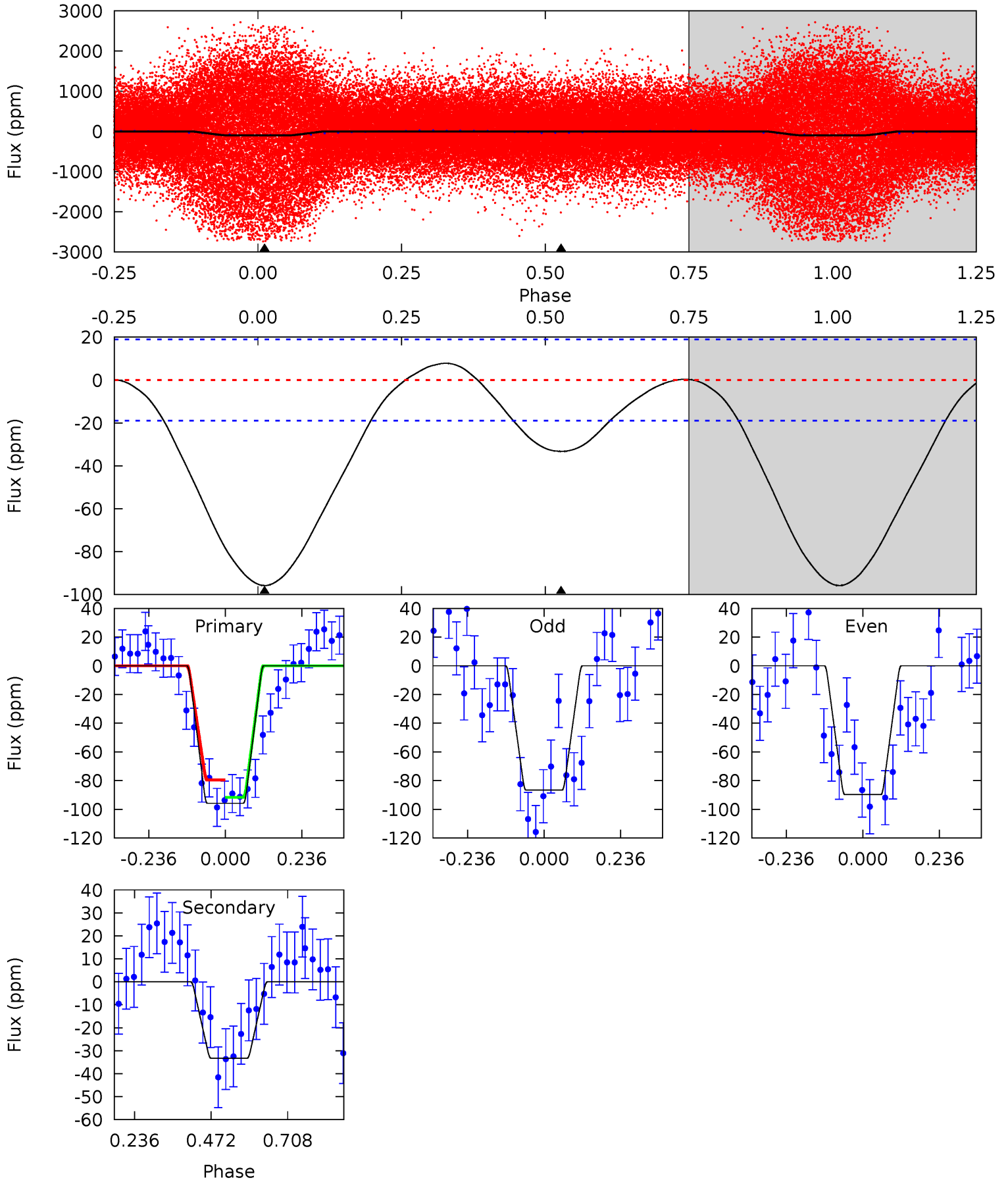
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.4	25.5	0	0	4.39	1.22	0.35	25.4	25.4	25.5	25.5	0.88	0.96	0.02	4.74



Alt Model-Shift Uniqueness Test

008038679-02, P = 2.048750 Days, E = 129.614943 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	7.68	0	0	4.38	1.18	0.72	22.1	22.1	7.68	7.68	0.36	-7.46	0.08	1.41



Stellar Parameters For KIC 008038679

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7373^{+233}_{-311}	$4.027^{+0.175}_{-0.157}$	$0.020^{+0.200}_{-0.350}$	$2.081^{+0.541}_{-0.541}$	$1.681^{+0.201}_{-0.302}$	$0.263^{+0.291}_{-0.121}$
	+3%/-4%	+4%/-4%	+1000%/-1750%	+26%/-26%	+12%/-18%	+111%/-46%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008038679-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-55 ± 2	$1.39^{+1.08}_{-0.84}$	3379^{+265}_{-247}	8180^{+8582}_{-2279}	22^{+117}_{-15}
Alt.	-33 ± 4	$2.72^{+1.19}_{-1.10}$	3359^{+263}_{-222}	4988^{+1386}_{-718}	$3.509^{+6.026}_{-1.829}$

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 $A_{obs} \gg 1.0$

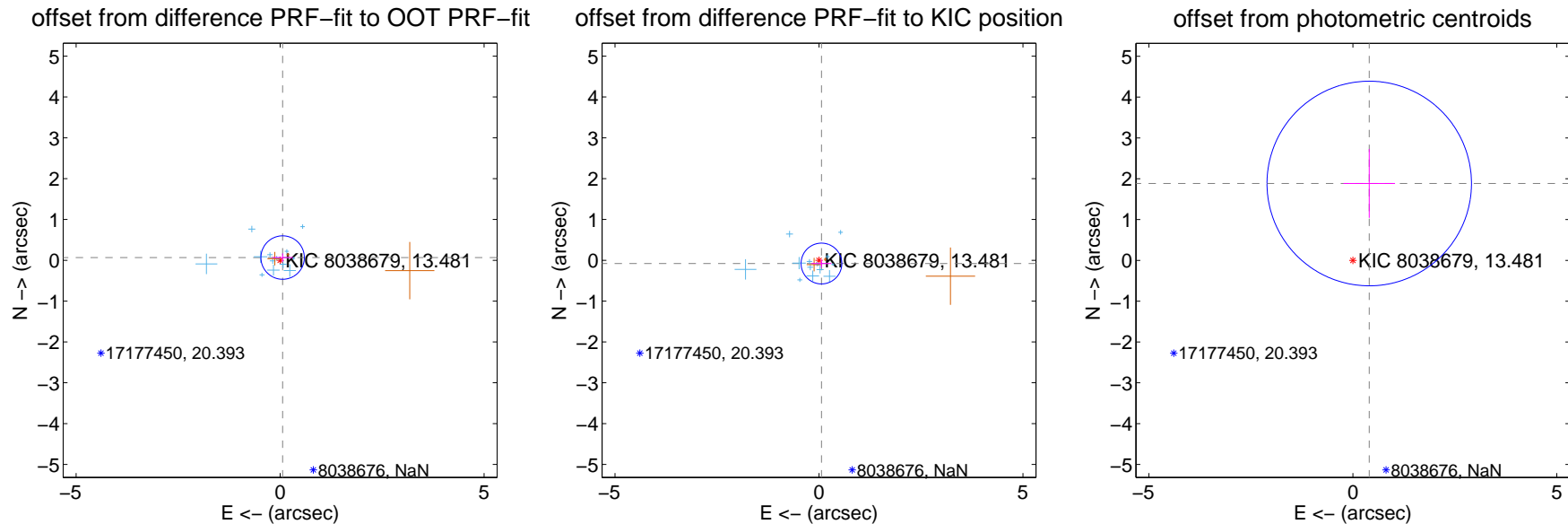
DV Centroid Data

Supplemental centroid analysis for 008038679-02. Kepler magnitude: 13.48. Transit SNR 8.92

There are 14 quarters with good PRF difference image offsets

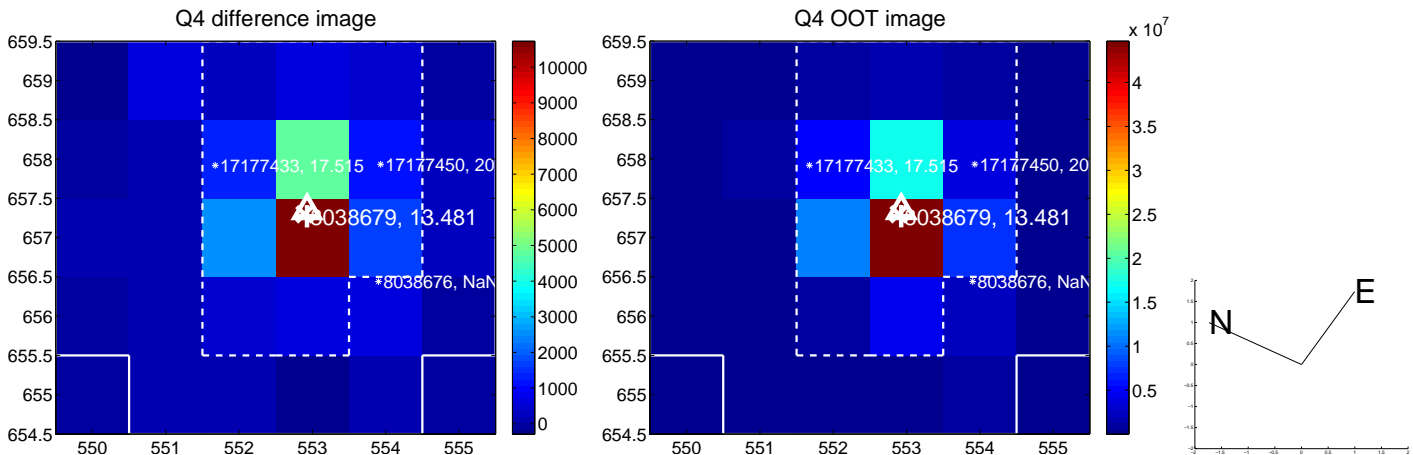
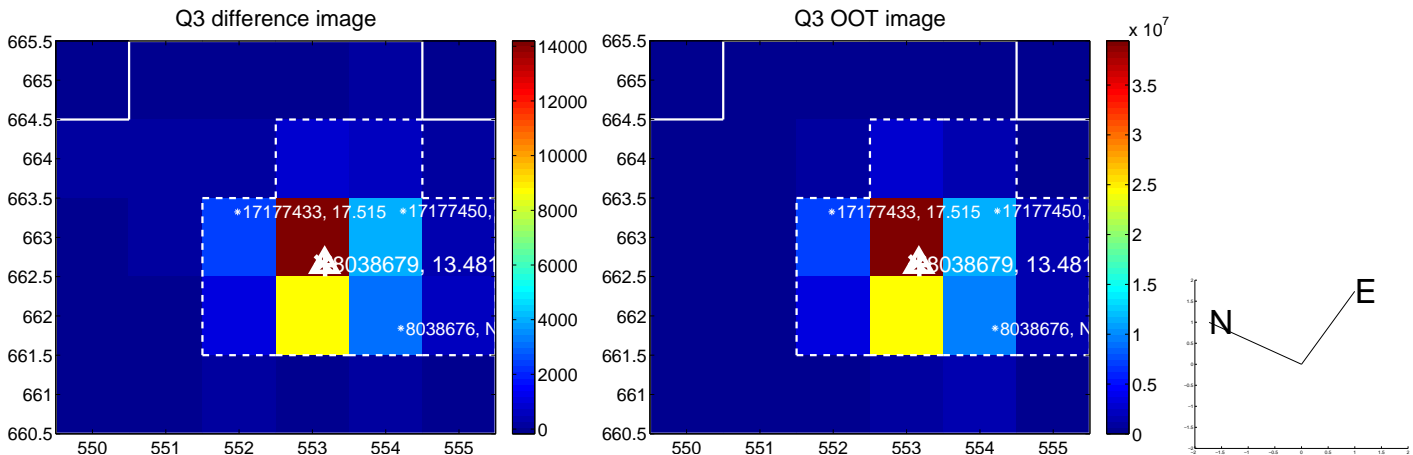
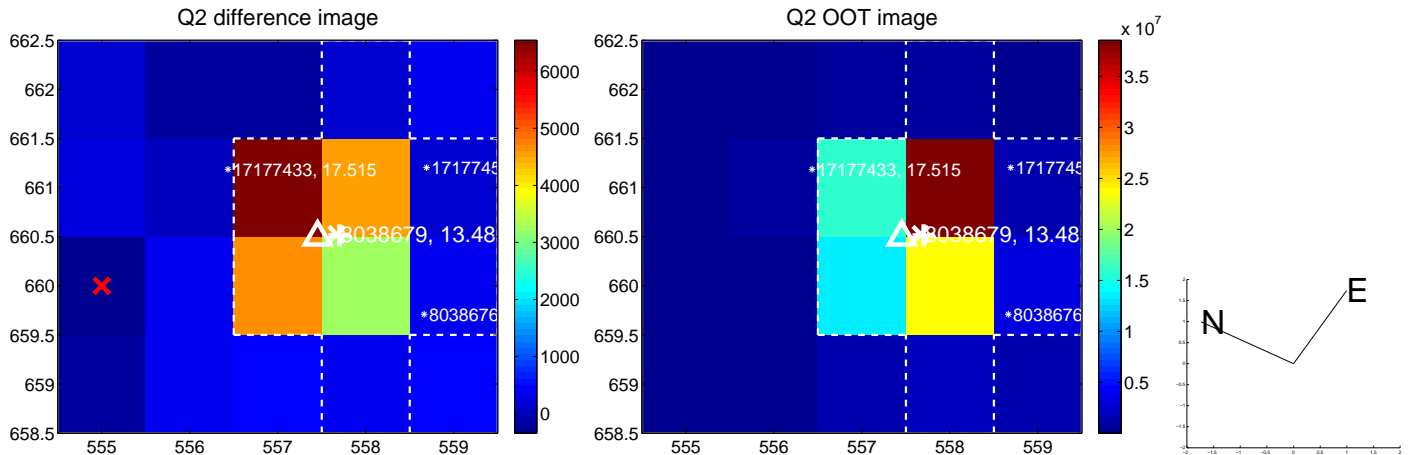
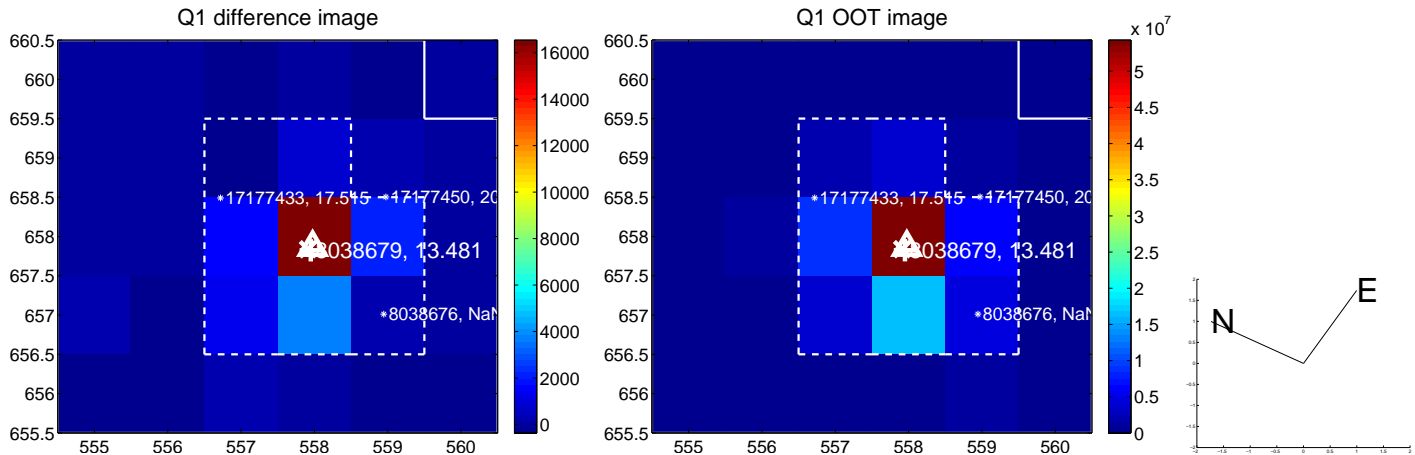
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.177	0.52	-0.062 ± 0.253	0.067 ± 0.100
PRF-fit source offset from KIC position	0.100 ± 0.167	0.60	-0.061 ± 0.242	-0.079 ± 0.099
photometric centroid source offset	1.93 ± 0.84	2.30	-0.40 ± 0.63	1.88 ± 0.84

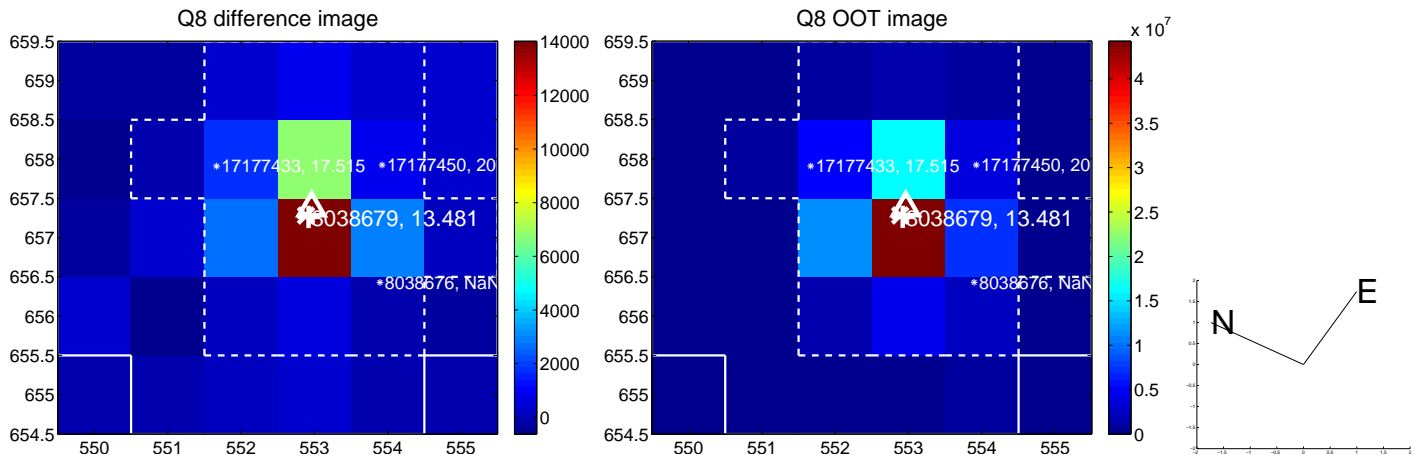
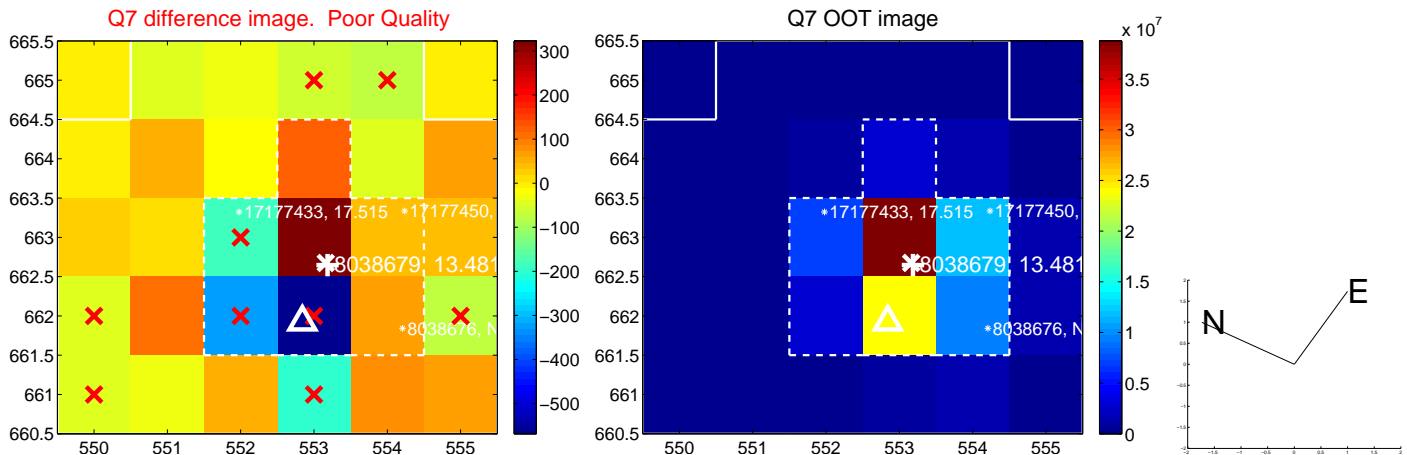
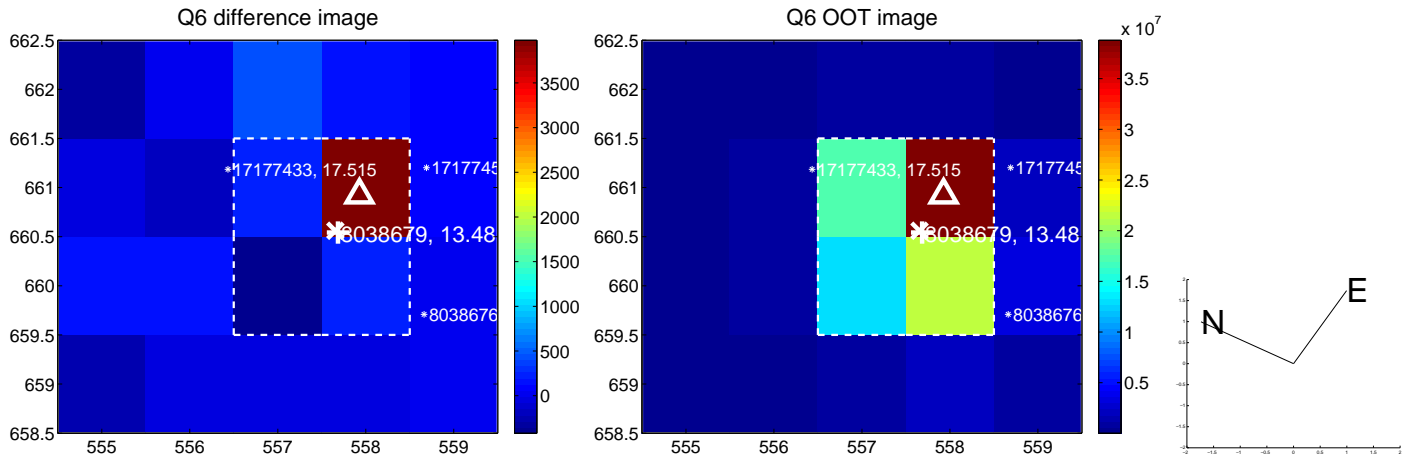
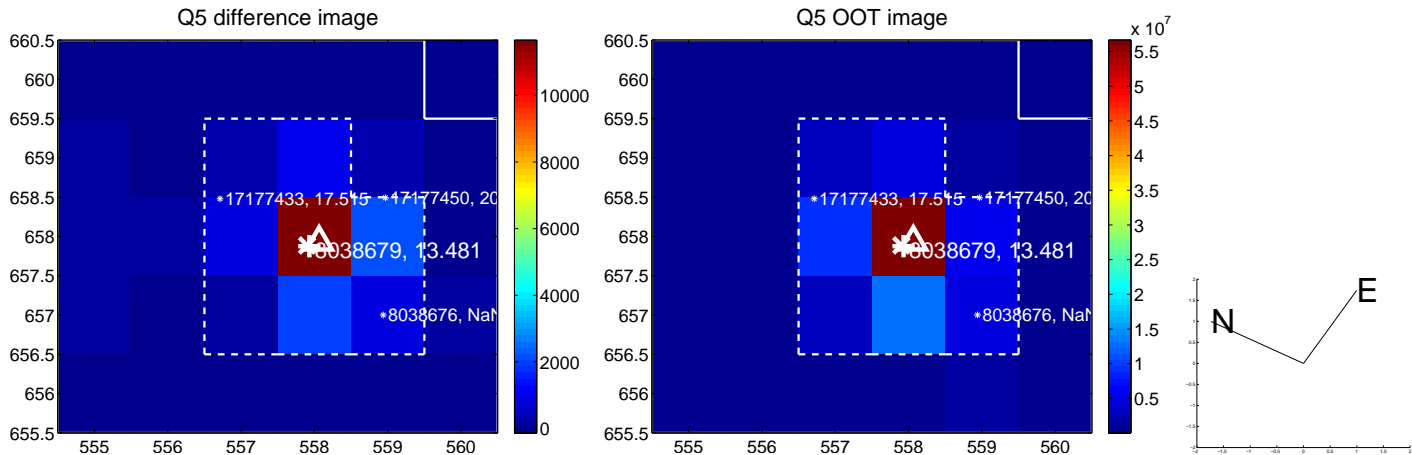


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

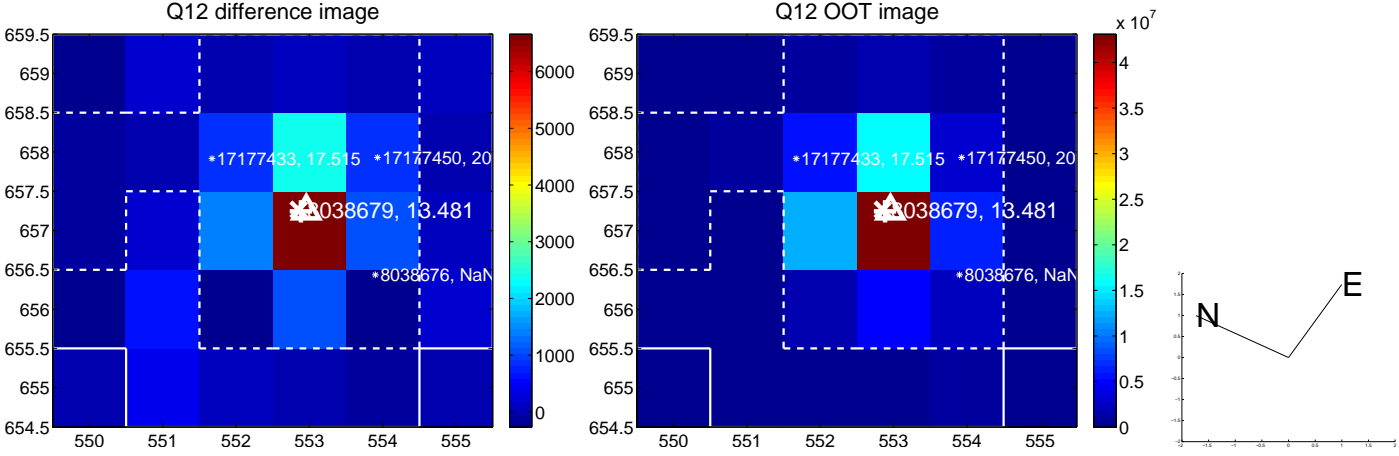
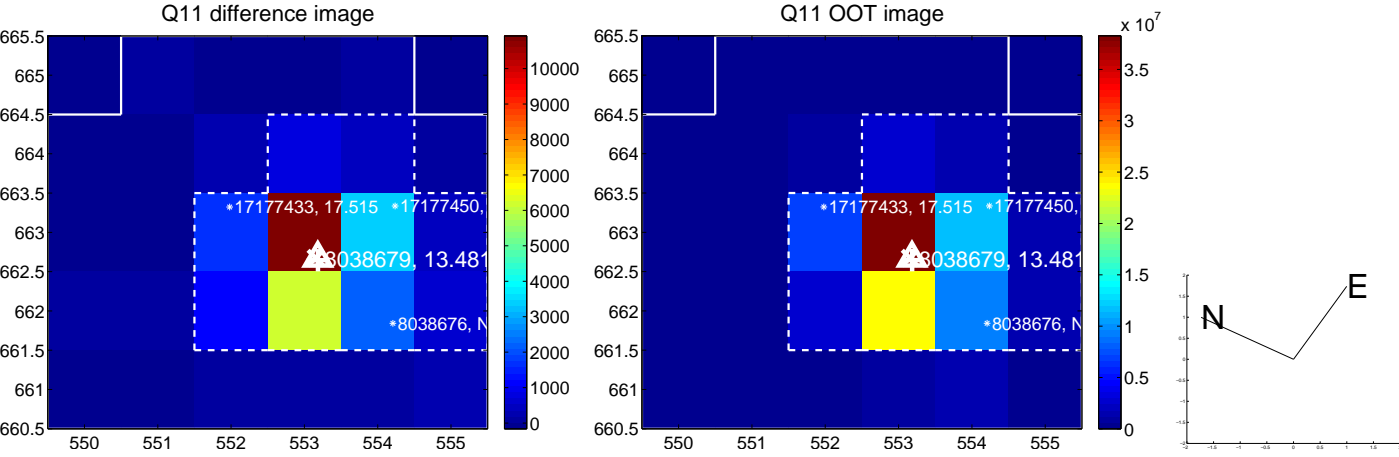
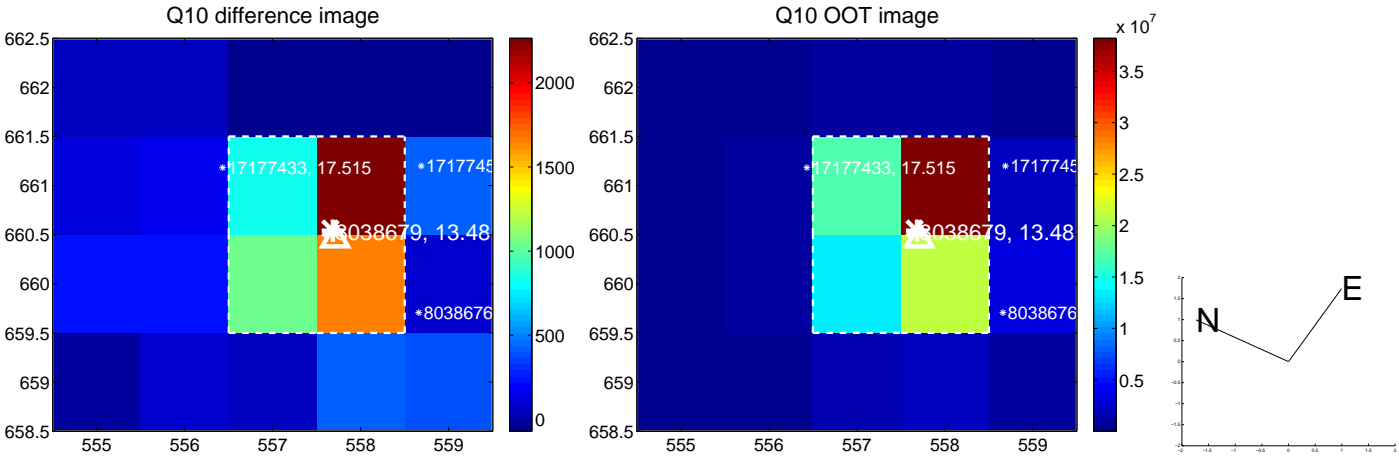
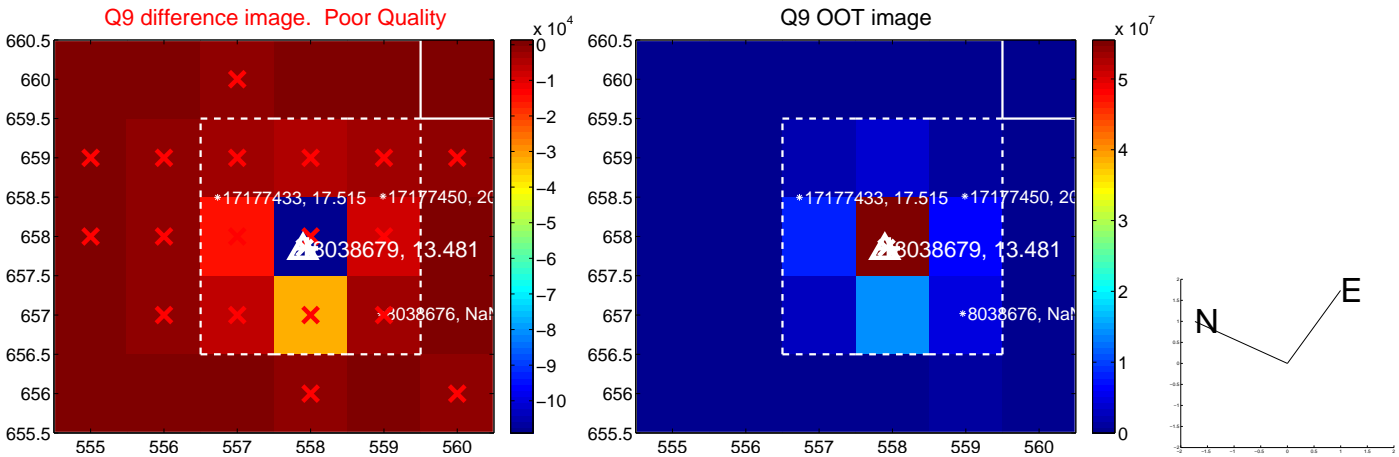
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



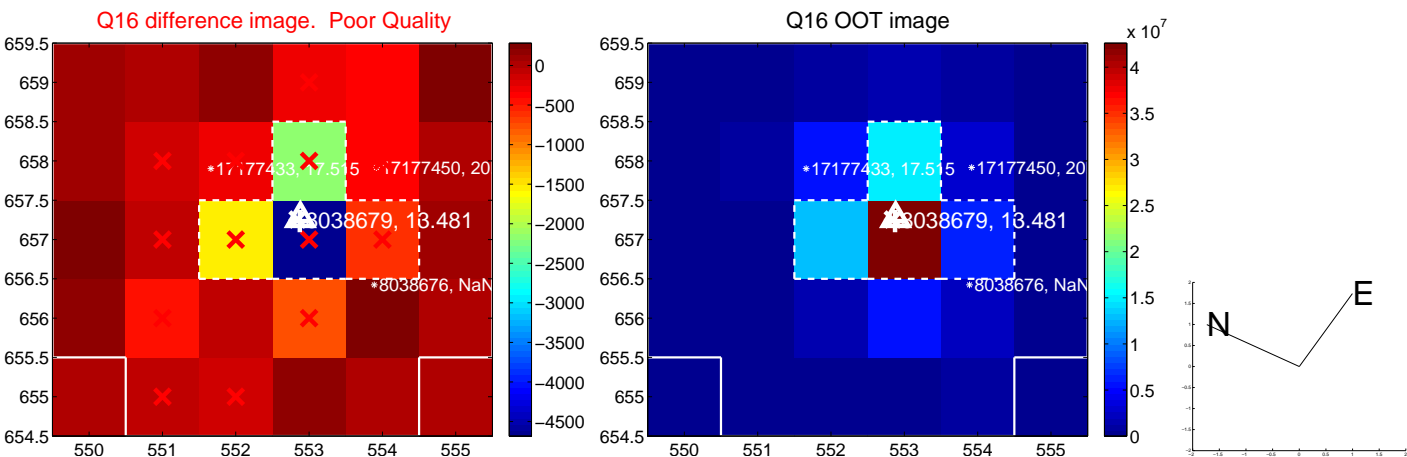
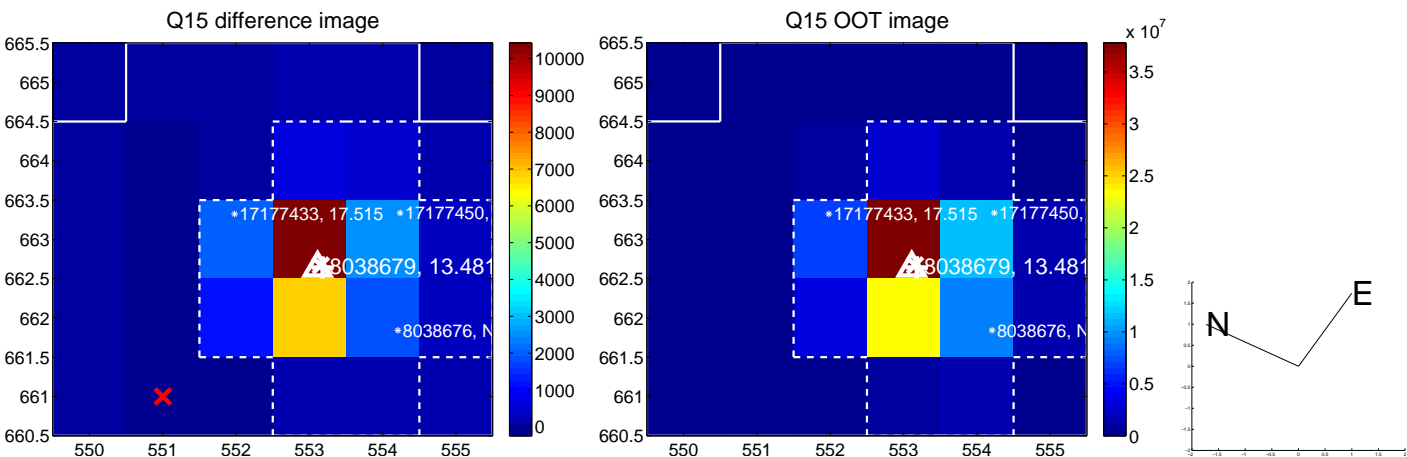
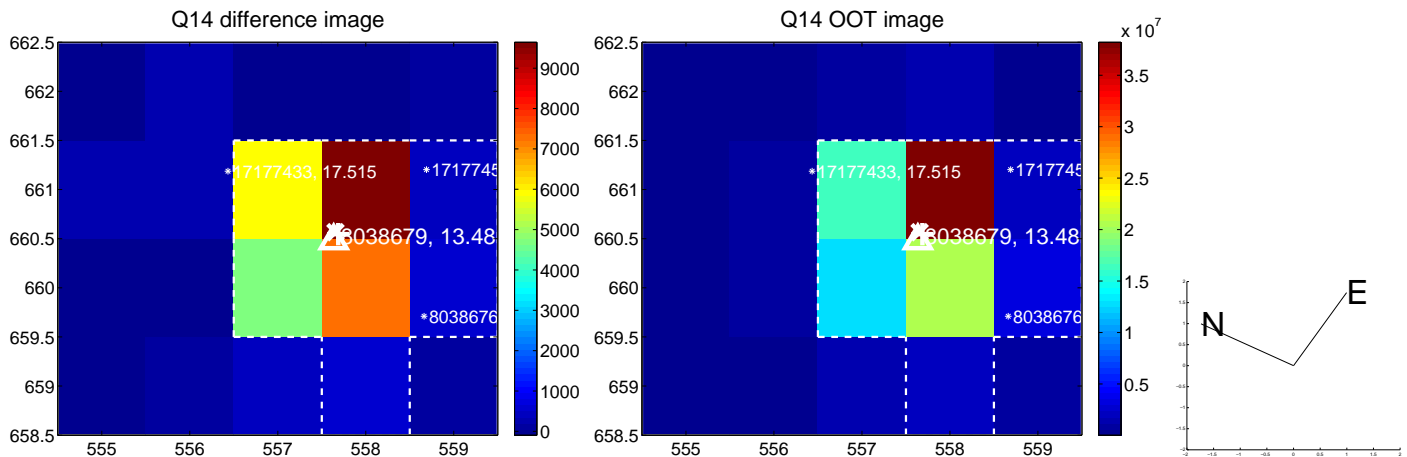
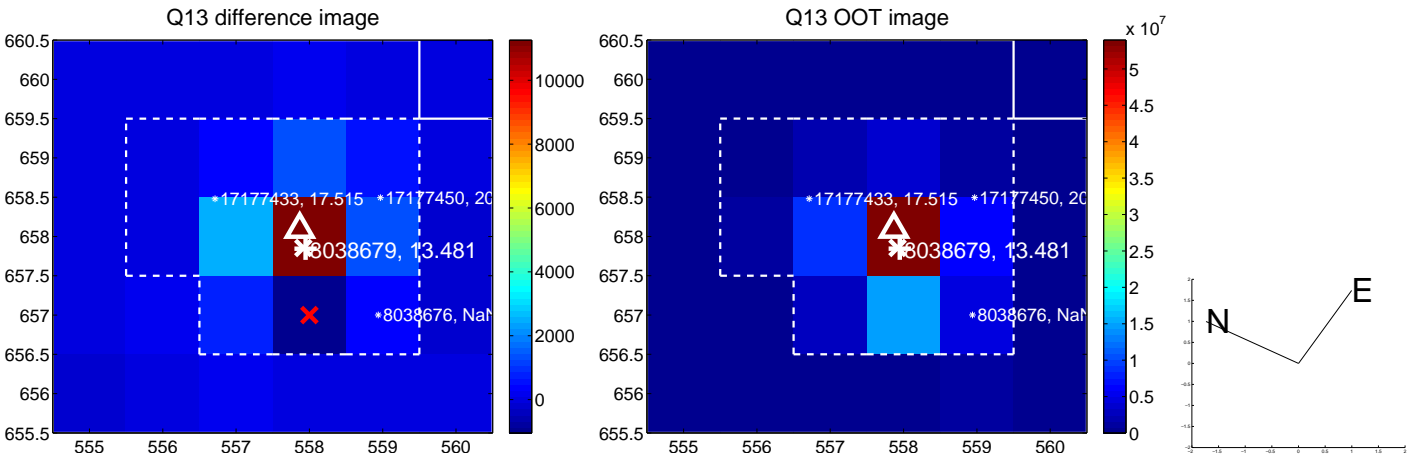
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



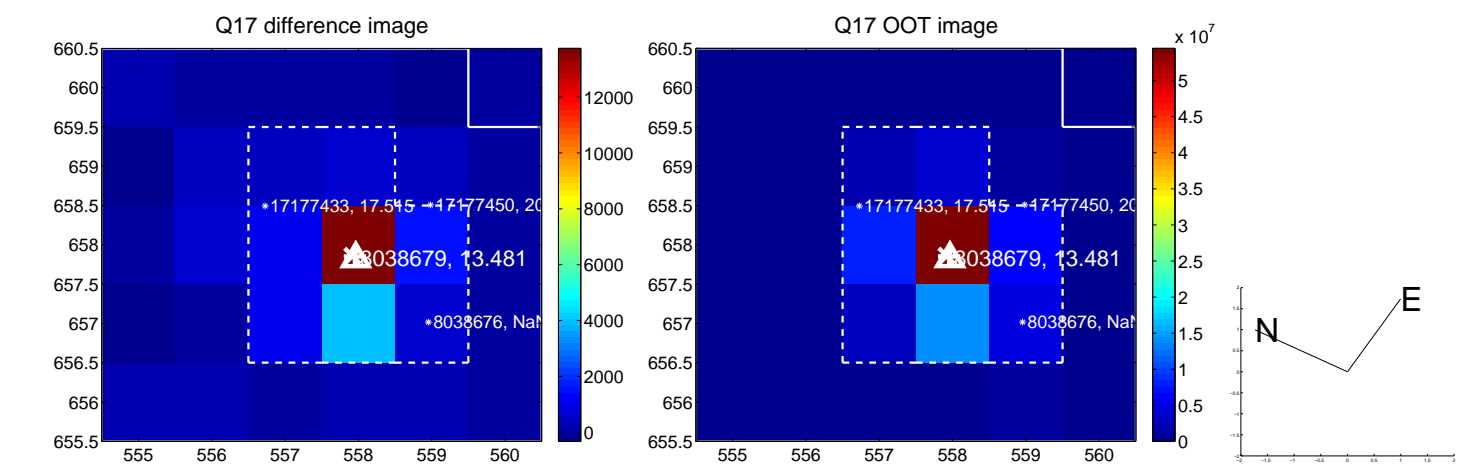
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



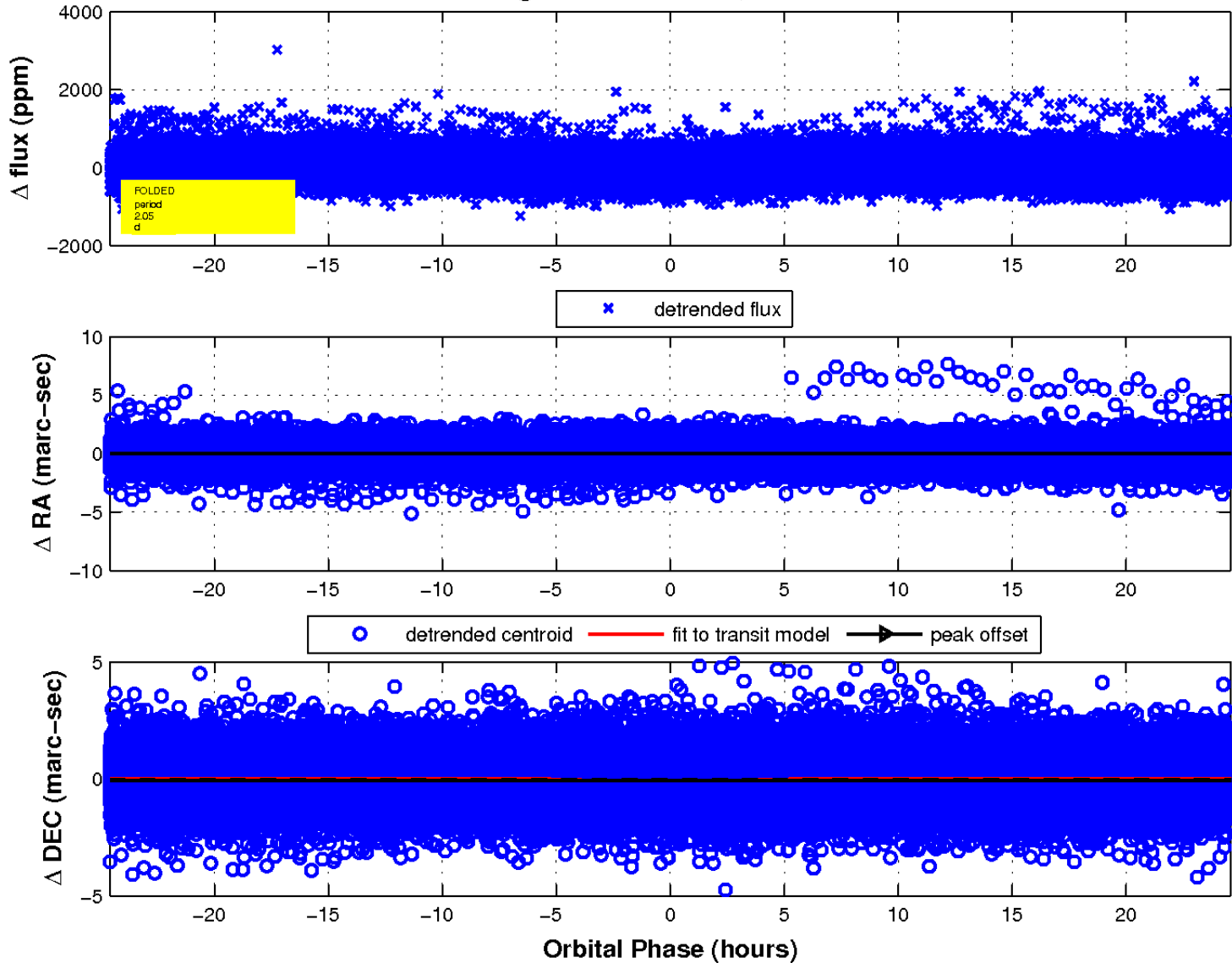
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

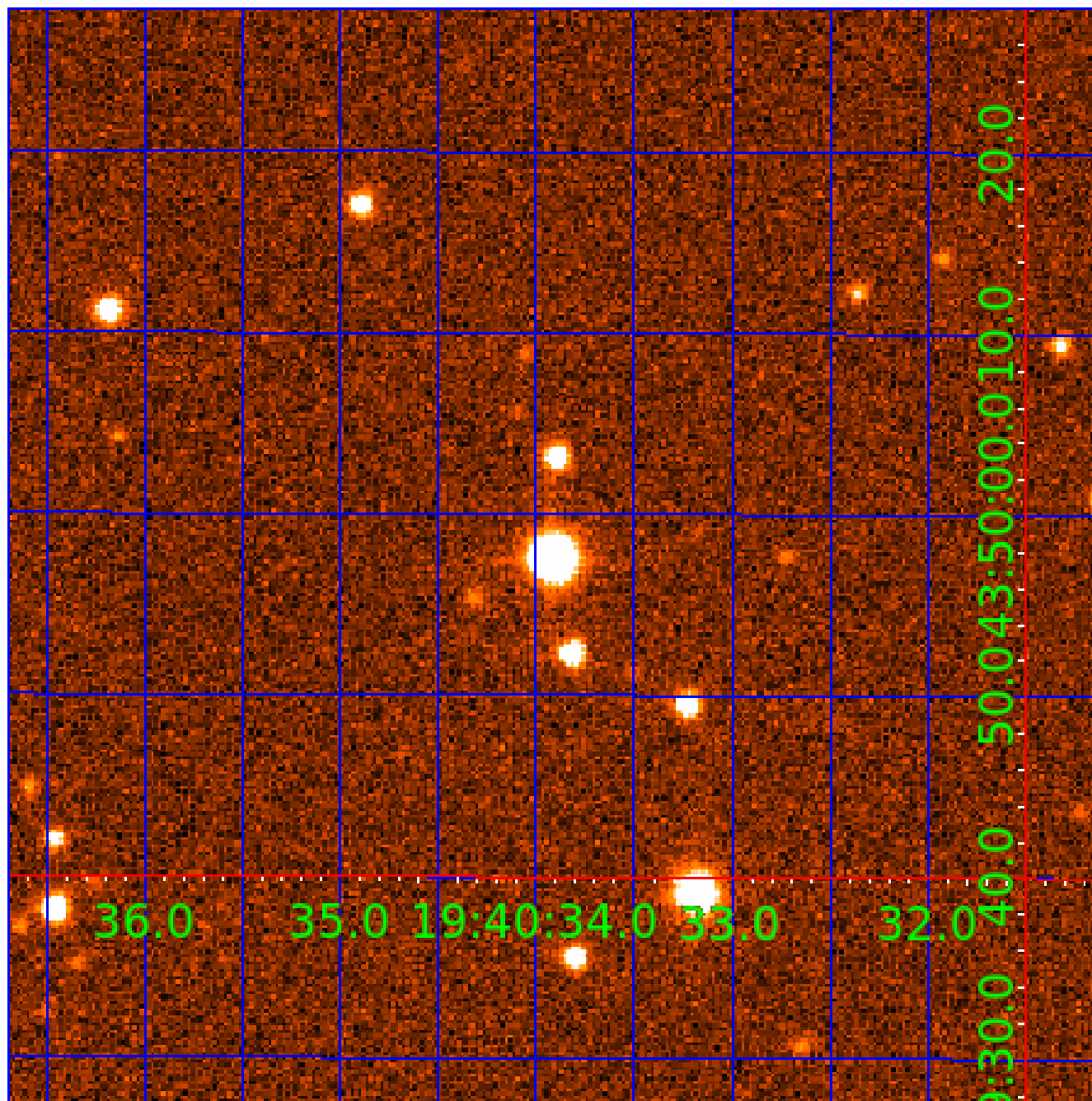


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 008038679

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})
008038679-01	OBS	No	437.414866	378.245714	1615.4	30.813	24.7	27.3	2.08	7373	9.09	6.38
008038679-02	OBS	No	2.048919	131.640989	31.7	10.585	11.1	8.9	2.08	7373	1.19	8133.66
008038679-03	OBS	No	373.093331	144.712924	1303.7	36.996	33.1	22.0	2.08	7373	9.27	7.88
008038679-04	OBS	No	2.048630	132.758023	58.1	11.263	14.2	15.0	2.08	7373	2.56	8135.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008038679-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
008038679-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008038679-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008038679-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

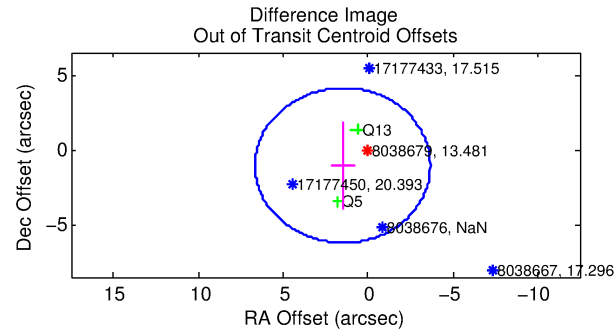
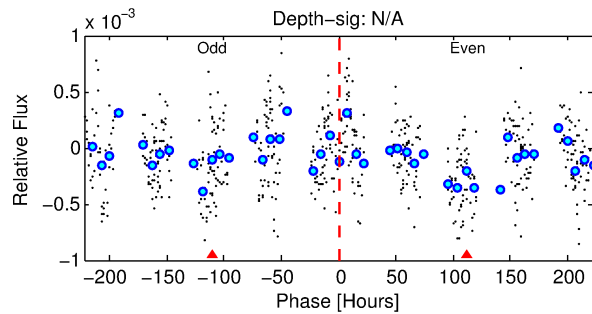
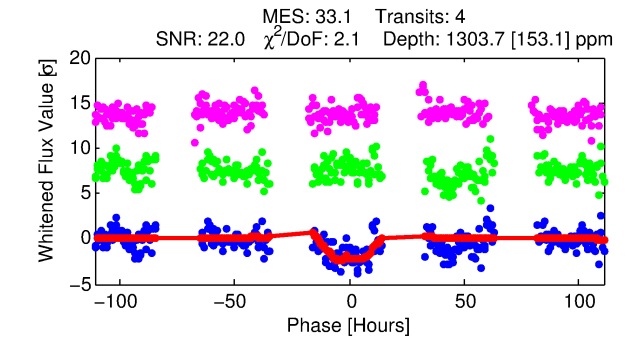
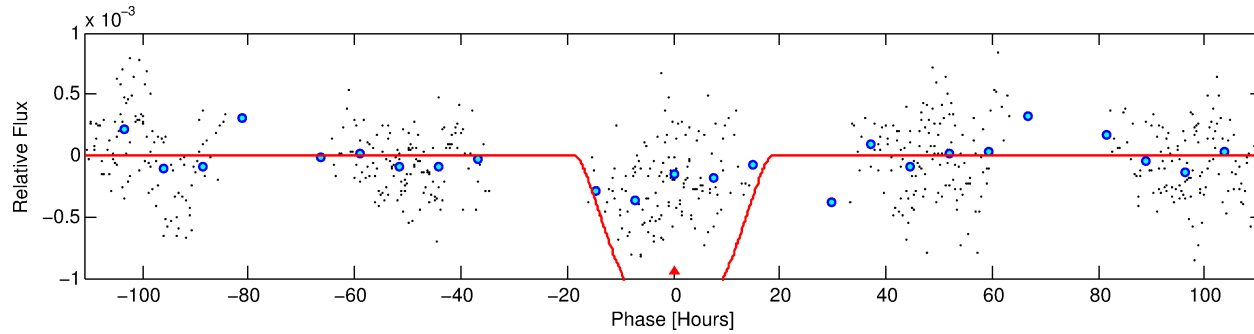
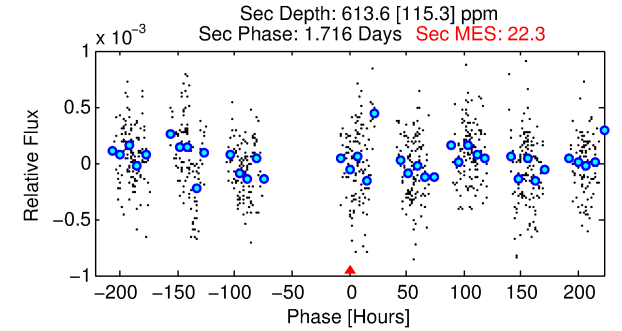
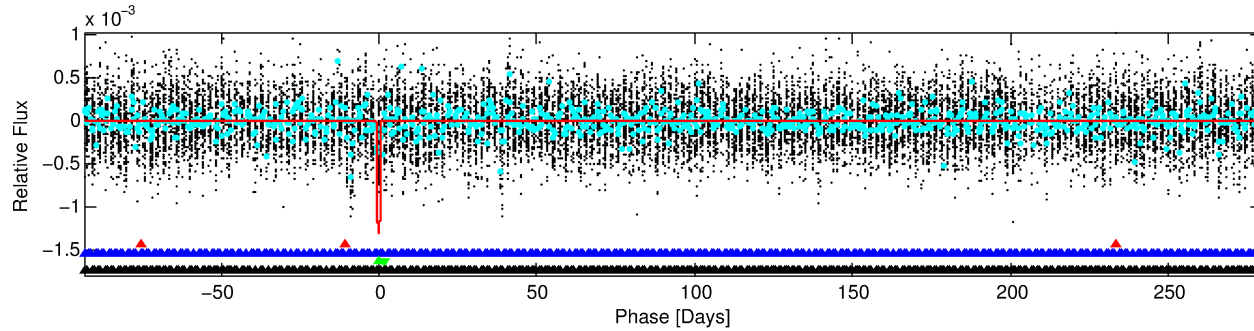
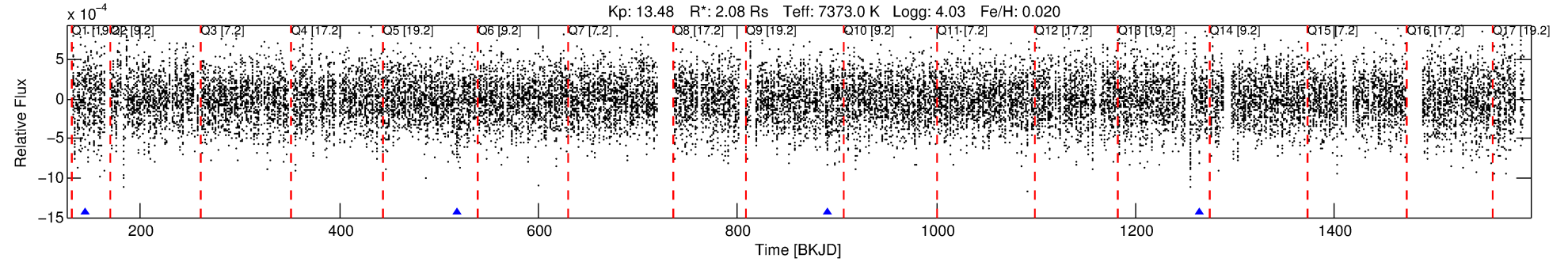
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008038679-03

No Significant Match Found

DV One-Page Summary

KIC: 8038679 Candidate: 3 of 4 Period: 373.093 d



DV Fit Results:

Period = 373.09333 [0.06045] d
Epoch = 144.7129 [0.1049] BKJD
Rp/R* = 0.0408 [0.0028]
a/R* = 31.87 [6.24]
b = 0.96 [0.01]
Seff = 7.88 [2.85]
Teq = 427 [39] K
Rp = 9.27 [2.49] Re
a = 1.2062 [0.2645] AU
Ag = 5712.41 [2256.00] [2.53] σ
Teff = 5743 [412] K [12.85] σ

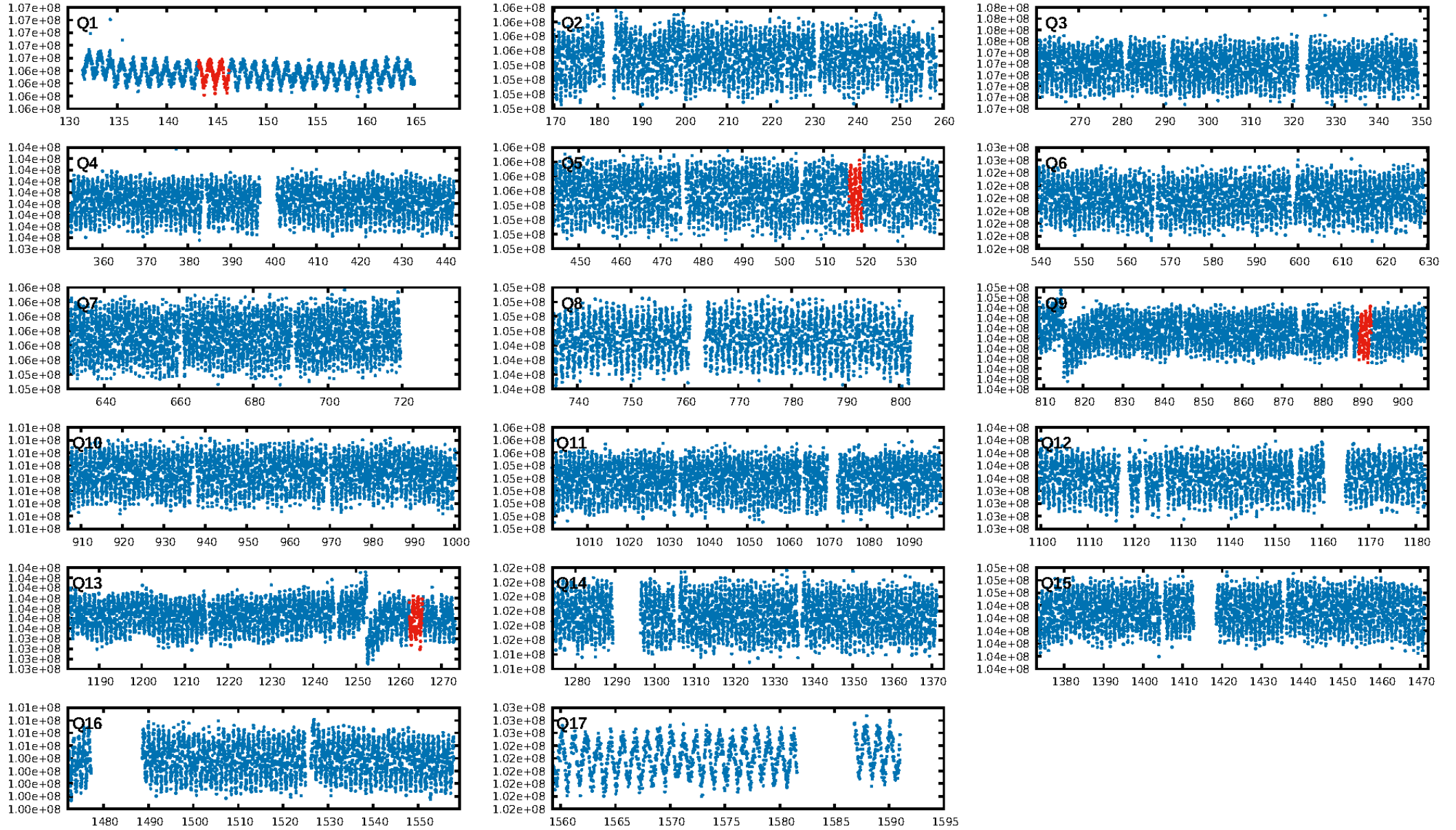
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [231.42] σ
LongPeriod-sig: 100.0% [32.06] σ
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 99.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.5185
Centroid-sig: 0.0%
Centroid-so: 0.473 arcsec [3.01] σ
OotOffset-rm: 1.815 arcsec [1.05] σ
KicOffset-rm: 1.918 arcsec [1.03] σ
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/4]

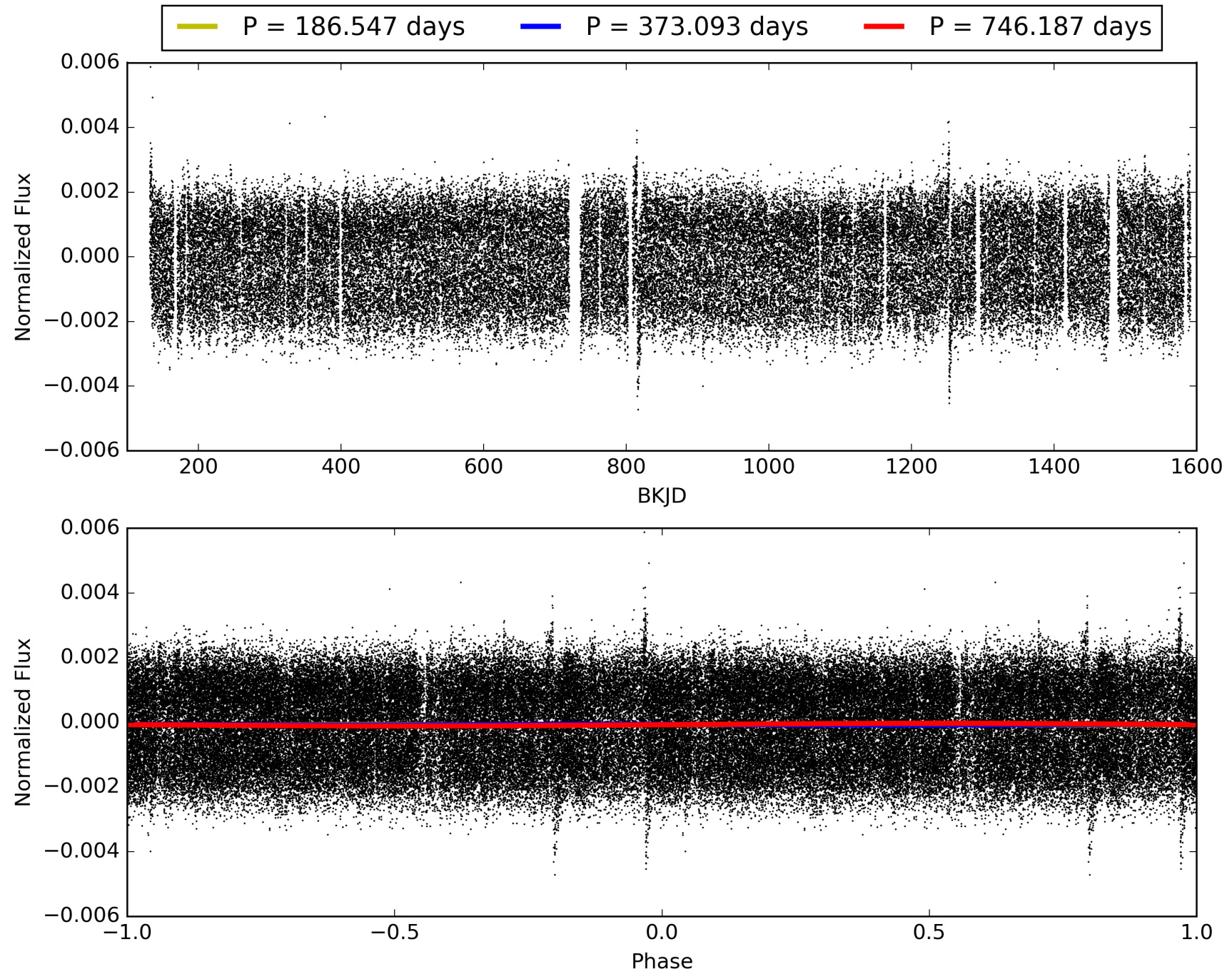
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:52:37 Z

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

TCE 008038679-03, PDC Light Curves

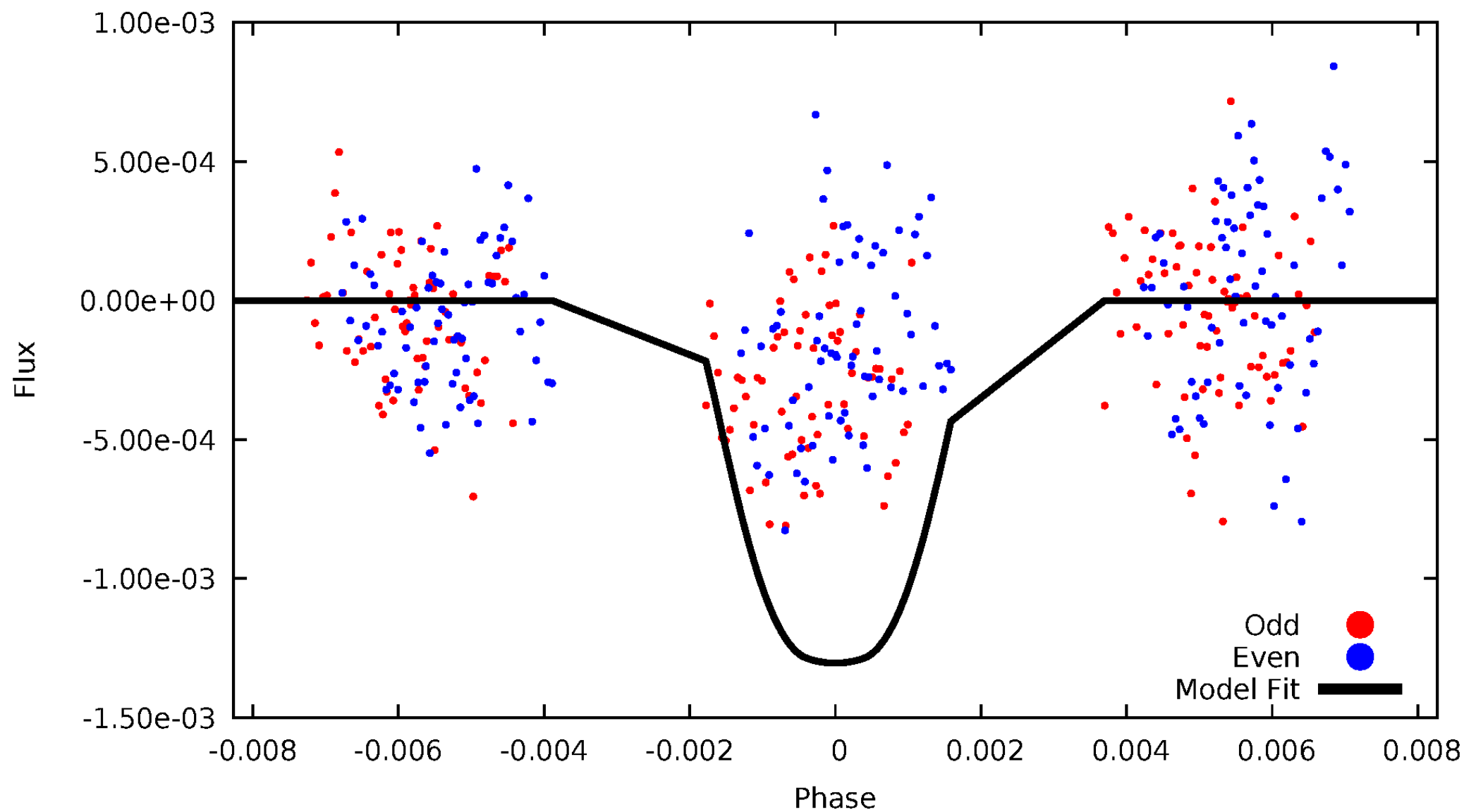


TCE 008038679-03



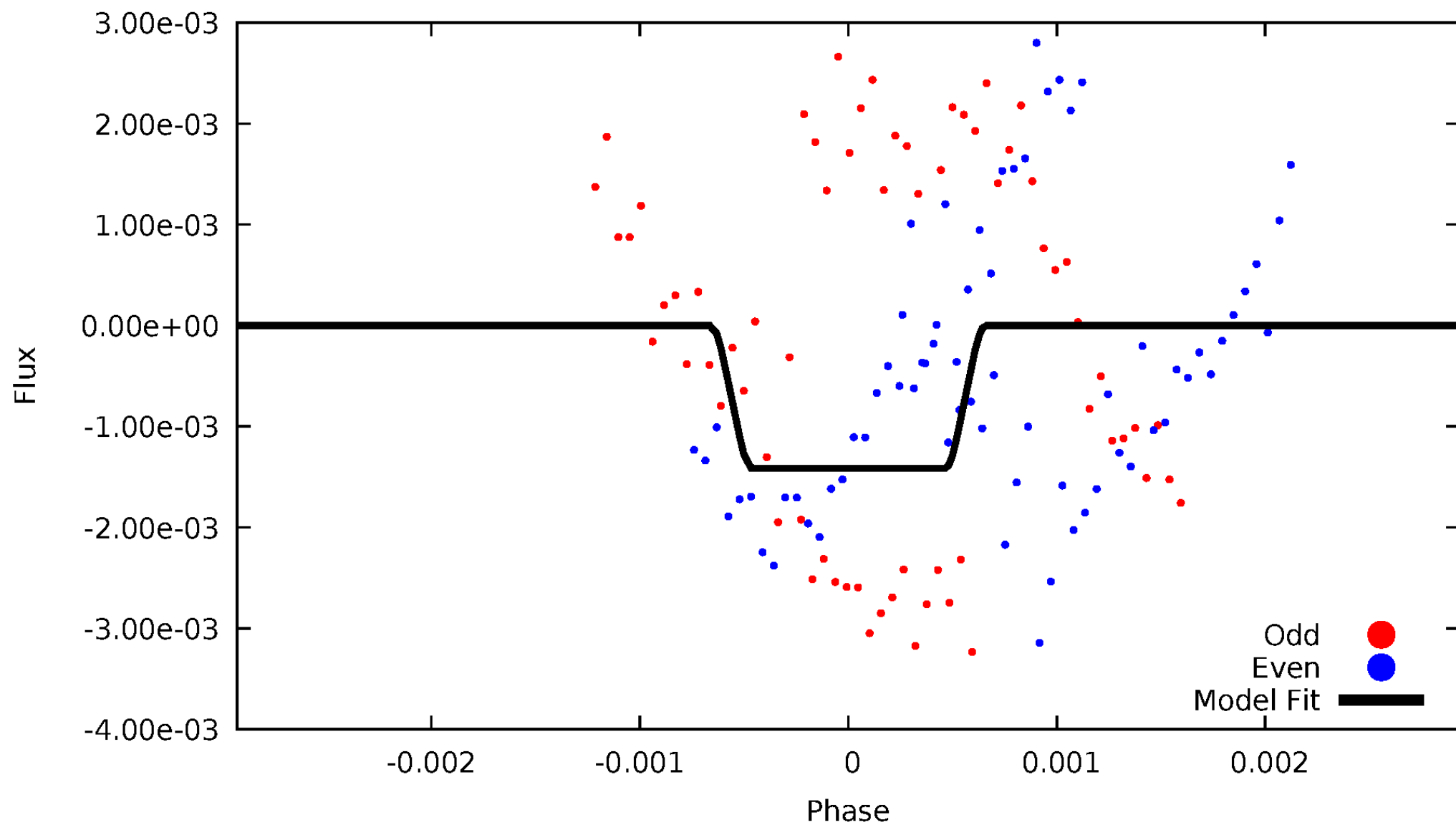
DV Odd/Even

TCE 008038679-03



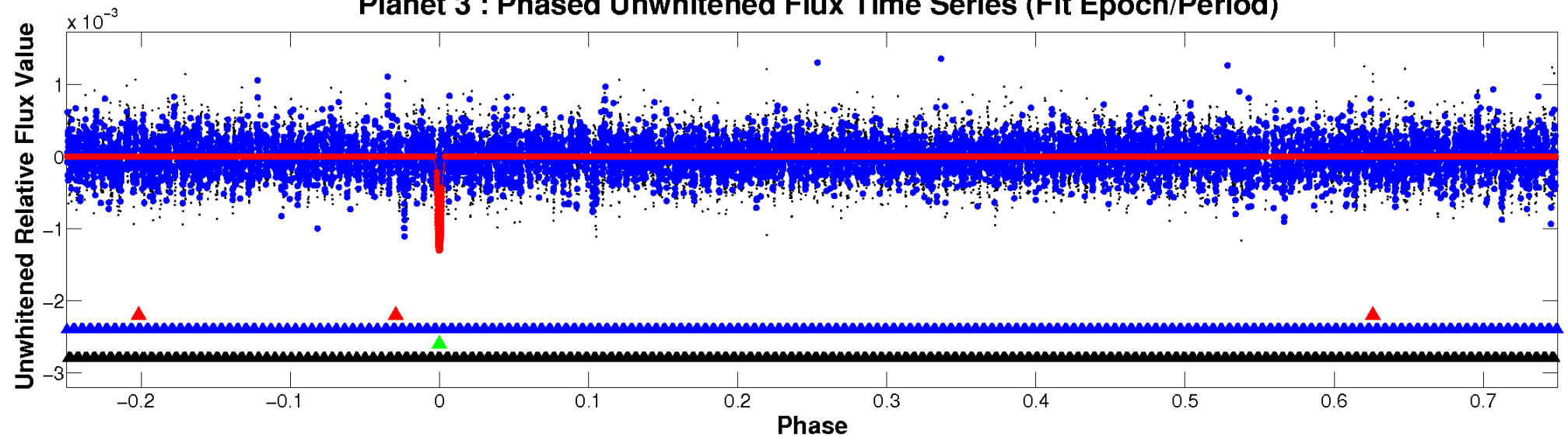
ALT Odd/Even

TCE 008038679-03

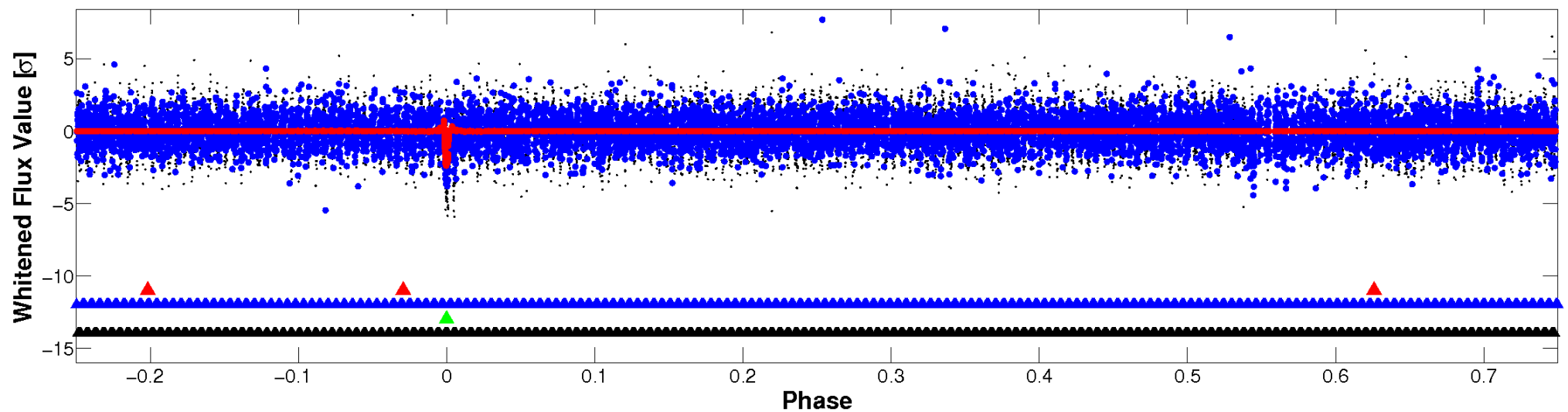


Non-Whitened Vs. Whitened Light Curve

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

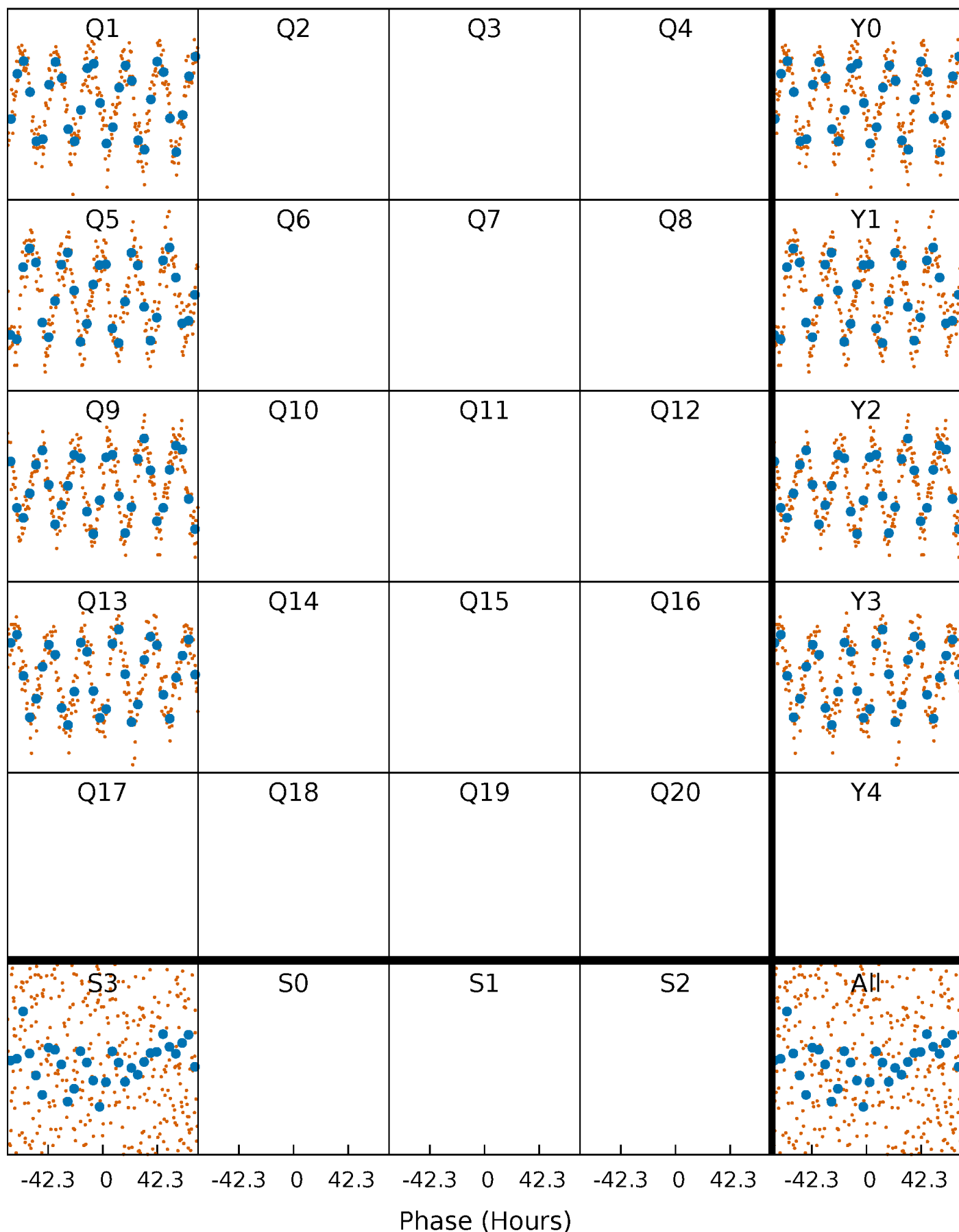


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



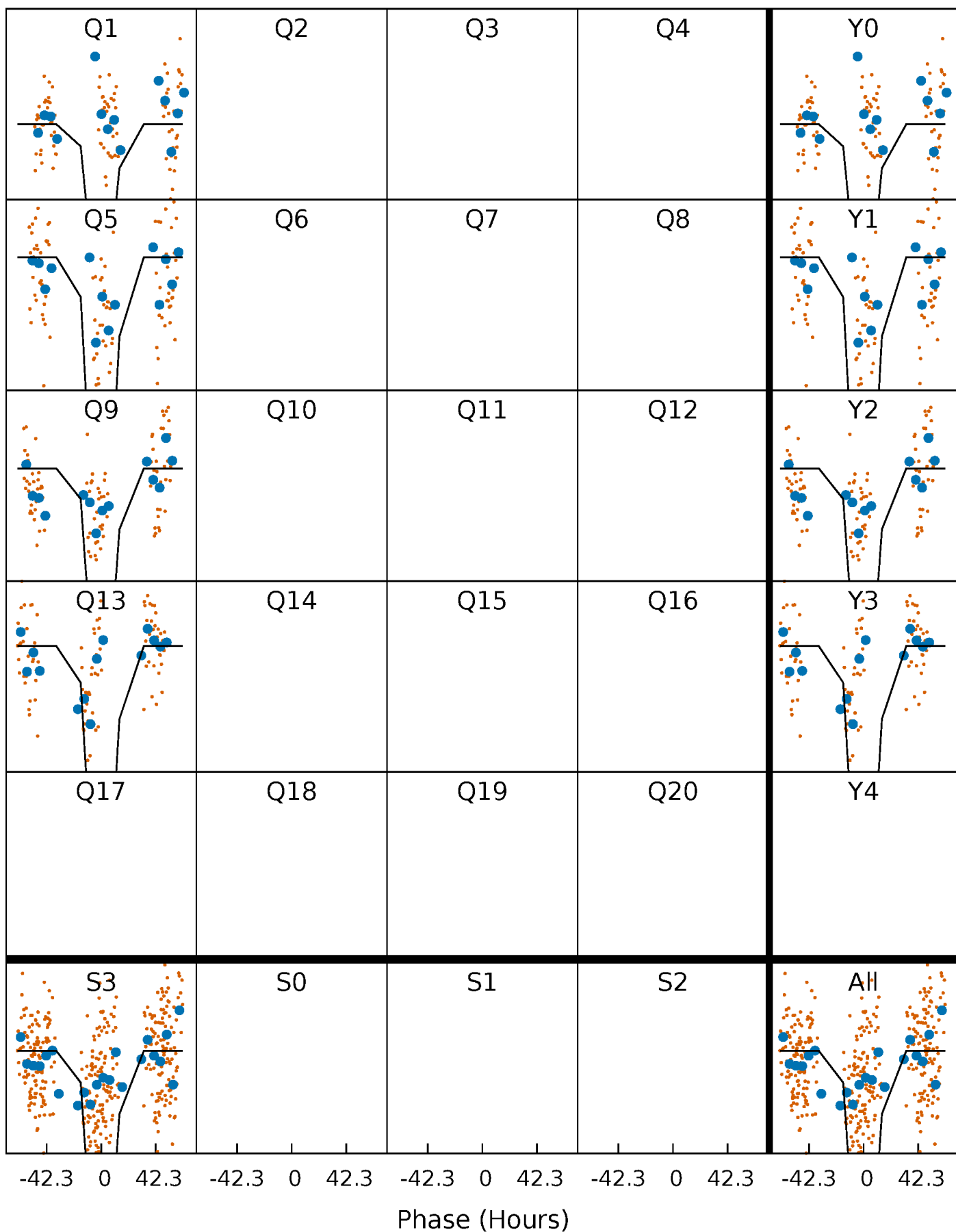
PDC Quarter-Phased Transit Curves

TCE 008038679-03 $P=373.093331$ Days $T_0=144.712924$ (BKJD)



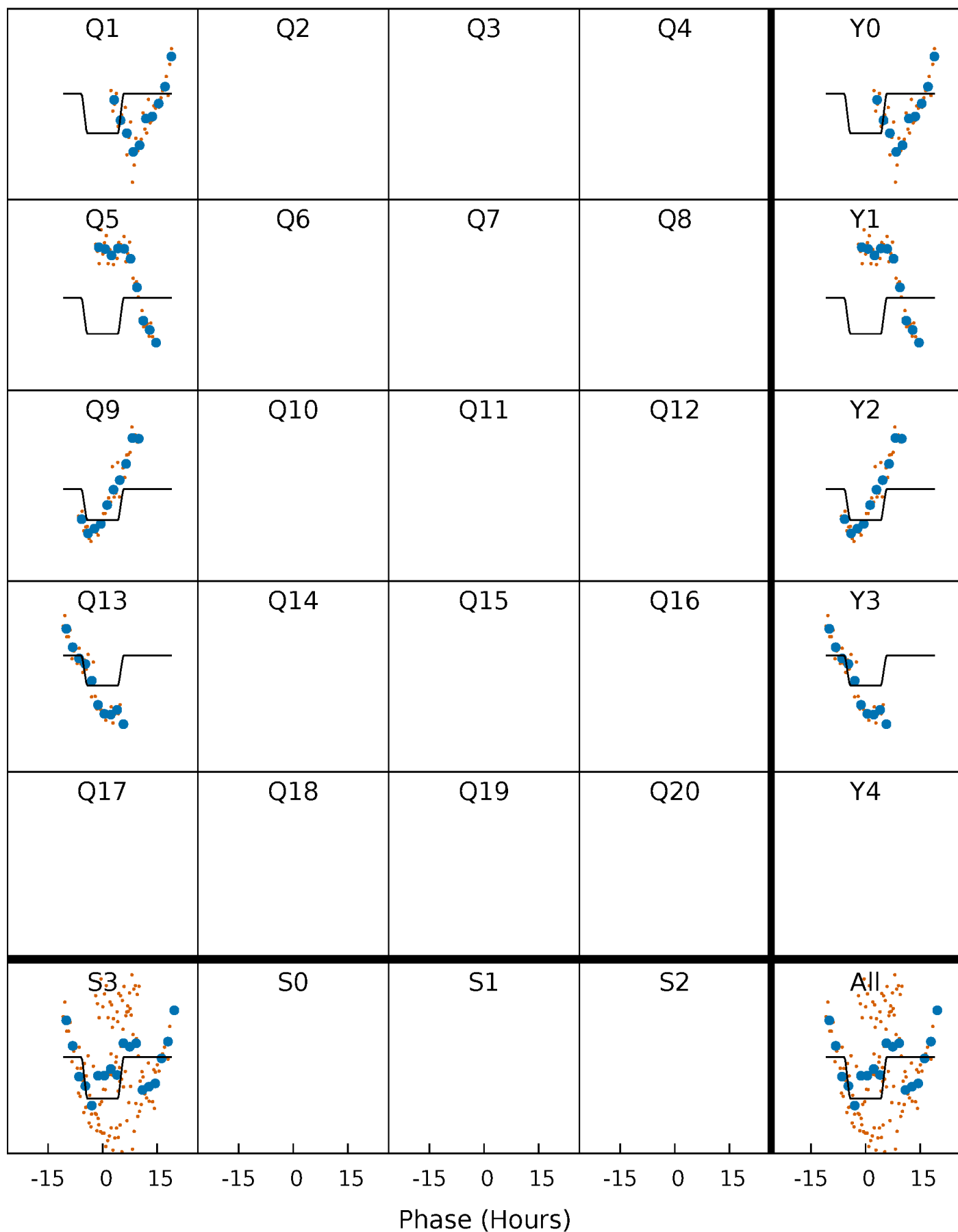
DV Quarter-Phased Transit Curves

TCE 008038679-03 P=373.093331 Days $T_0=144.712924$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

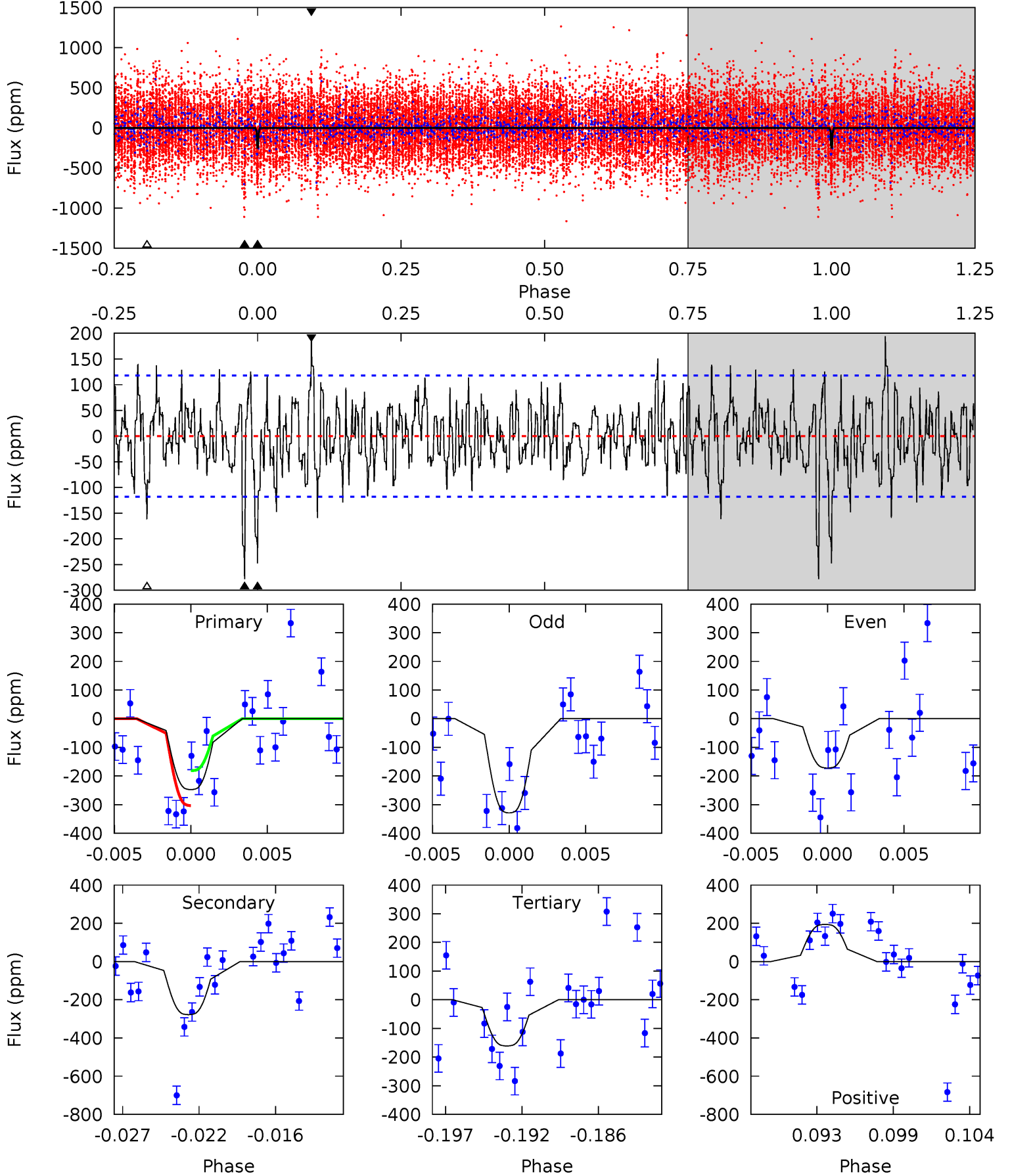
TCE 008038679-03 P=373.089561 Days $T_0=144.513755$ (BKJD)



DV Model-Shift Uniqueness Test

008038679-03, P = 373.093331 Days, E = 144.712924 Days

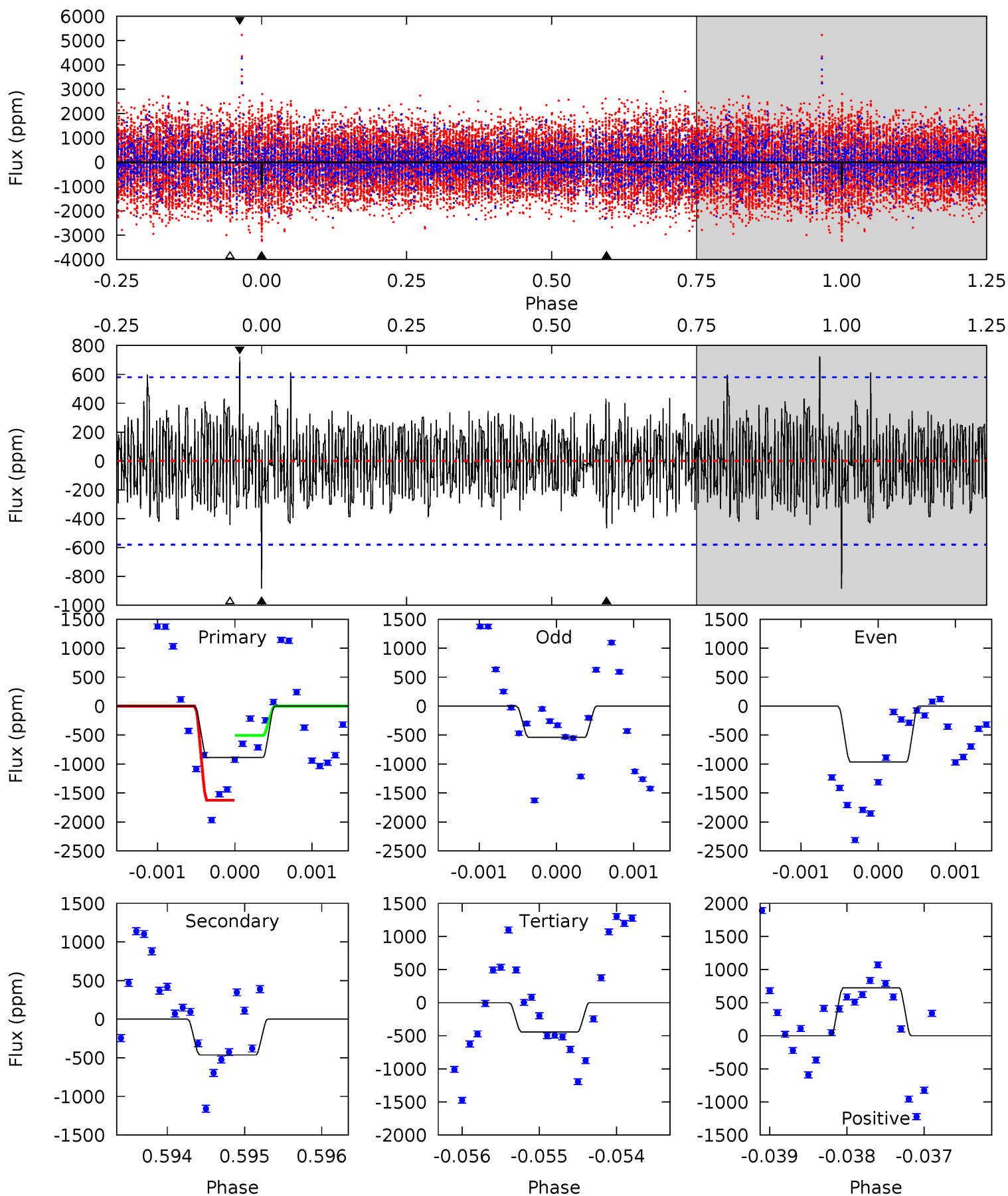
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	12.1	7.02	8.45	5.14	2.78	2.31	3.76	2.33	5.09	3.66	3.41	0.76	0.41	2.65



Alt Model-Shift Uniqueness Test

008038679-03, P = 373.089561 Days, E = 144.513755 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.24	4.32	4.13	6.74	5.41	3.22	1.49	4.12	1.50	0.19	-2.43	2.01	0.58	0.45	4.84



Stellar Parameters For KIC 008038679

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7373^{+233}_{-311}	$4.027^{+0.175}_{-0.157}$	$0.020^{+0.200}_{-0.350}$	$2.081^{+0.541}_{-0.541}$	$1.681^{+0.201}_{-0.302}$	$0.263^{+0.291}_{-0.121}$
	+3%/-4%	+4%/-4%	+1000%/-1750%	+26%/-26%	+12%/-18%	+111%/-46%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008038679-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-278 ± 23	$9.20^{+1.55}_{-1.29}$	597^{+43}_{-44}	4768^{+206}_{-205}	2575^{+882}_{-625}
Alt.	-463 ± 107	$8.49^{+1.40}_{-1.21}$	598^{+45}_{-45}	5522^{+381}_{-392}	5016^{+1990}_{-1671}

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

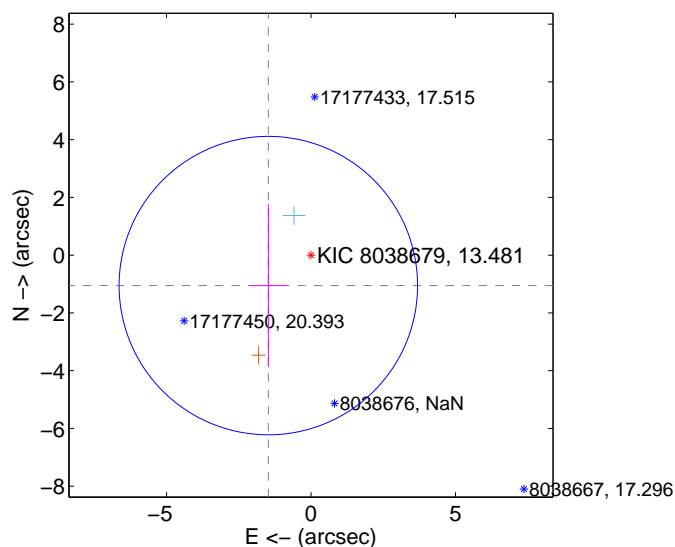
Supplemental centroid analysis for 008038679-03. Kepler magnitude: 13.48. Transit SNR 21.96

There are 1 quarters with good PRF difference image offsets

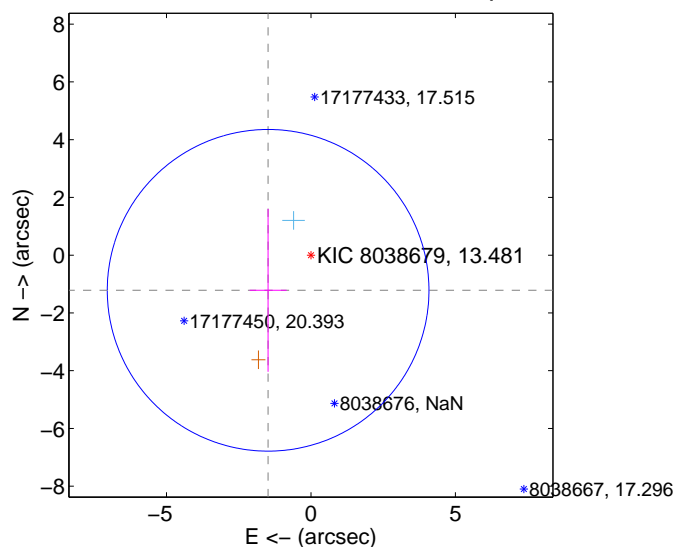
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.815 ± 1.722	1.05	1.477 ± 0.643	-1.054 ± 2.826
PRF-fit source offset from KIC position	1.918 ± 1.856	1.03	1.483 ± 0.639	-1.217 ± 2.821
photometric centroid source offset	0.47 ± 0.16	3.01	-0.47 ± 0.16	0.03 ± 0.20

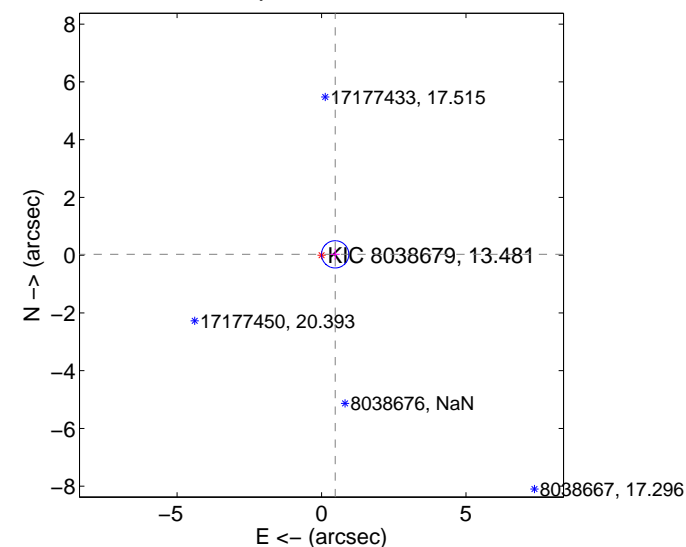
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

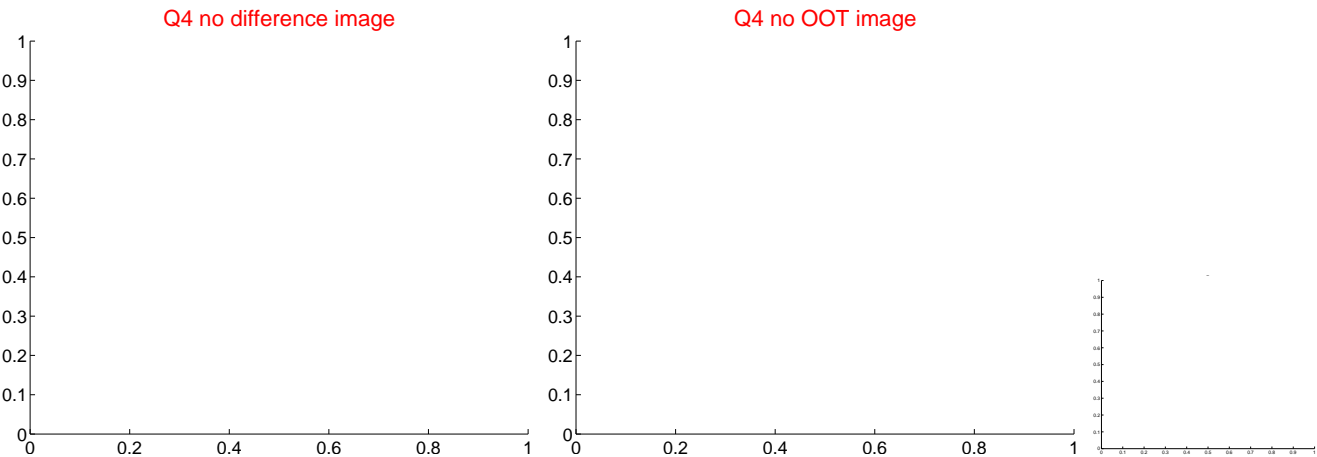
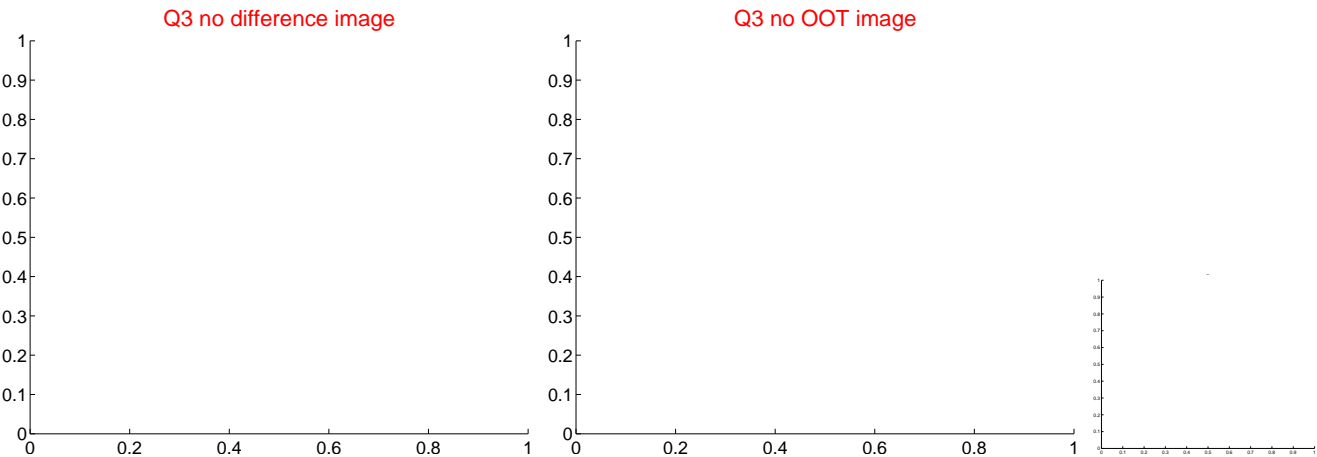
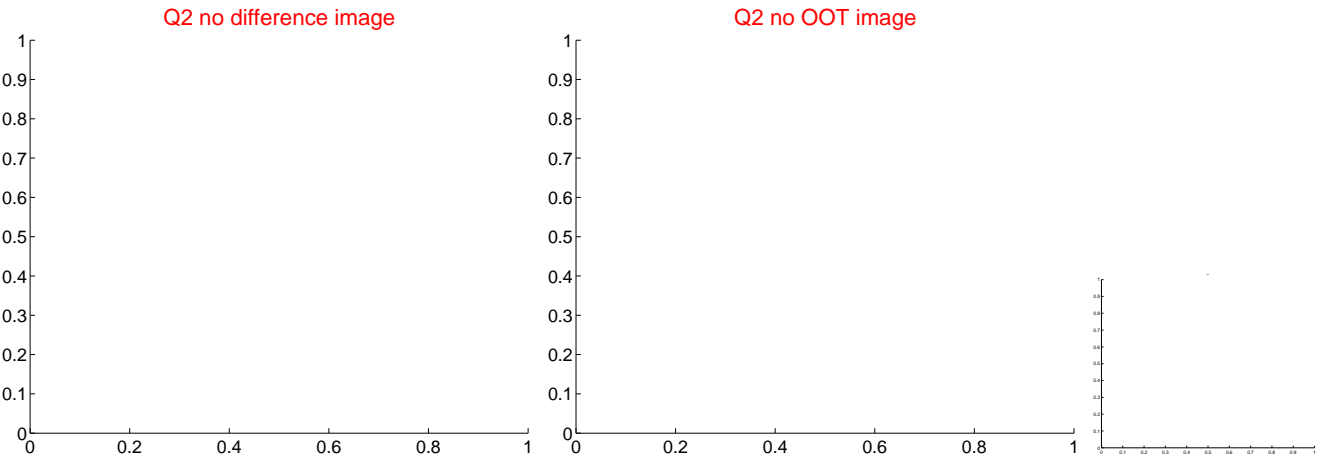
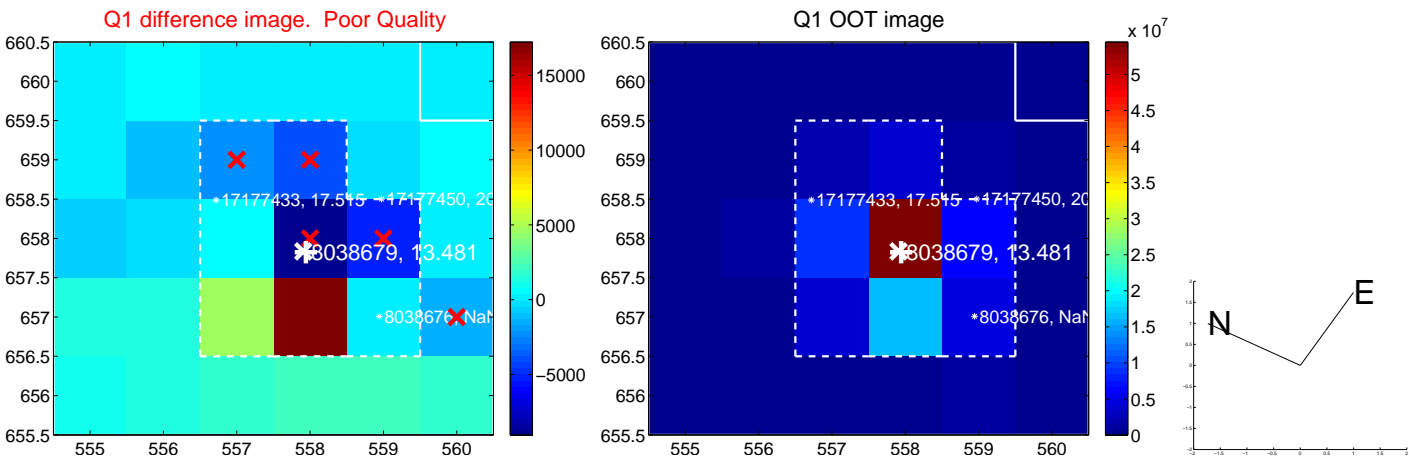


offset from photometric centroids

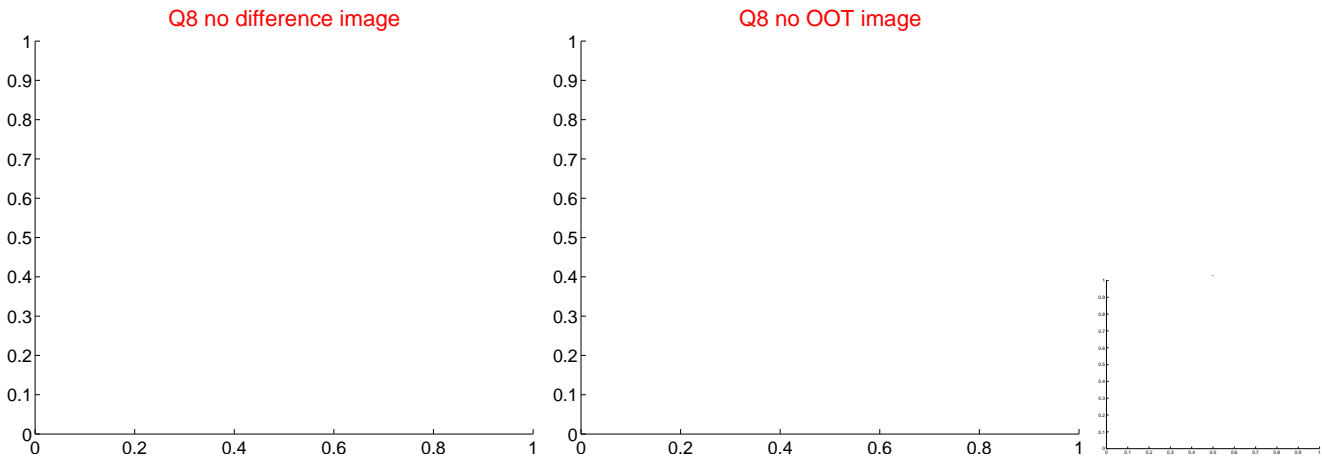
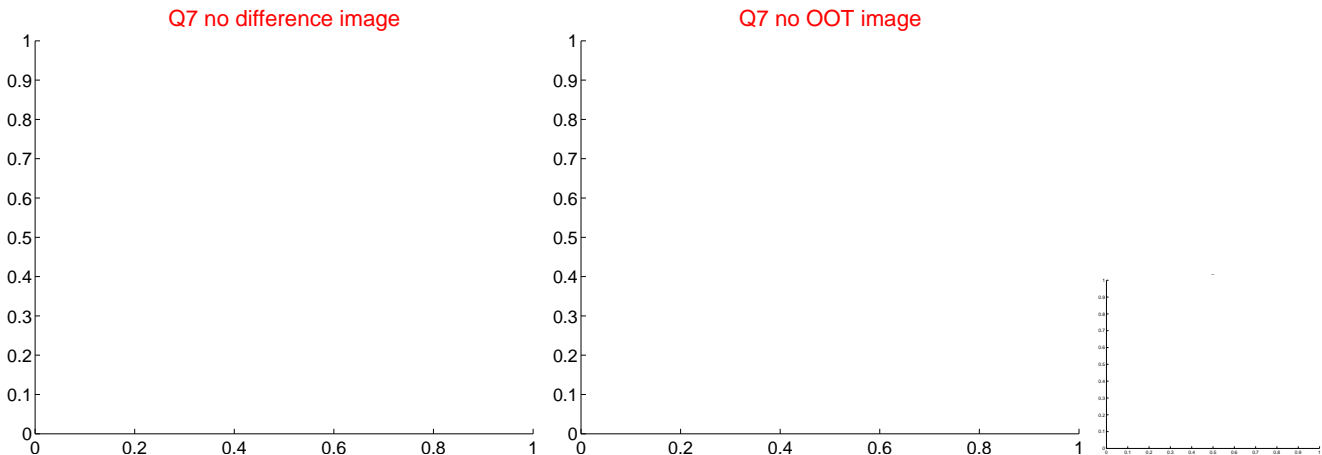
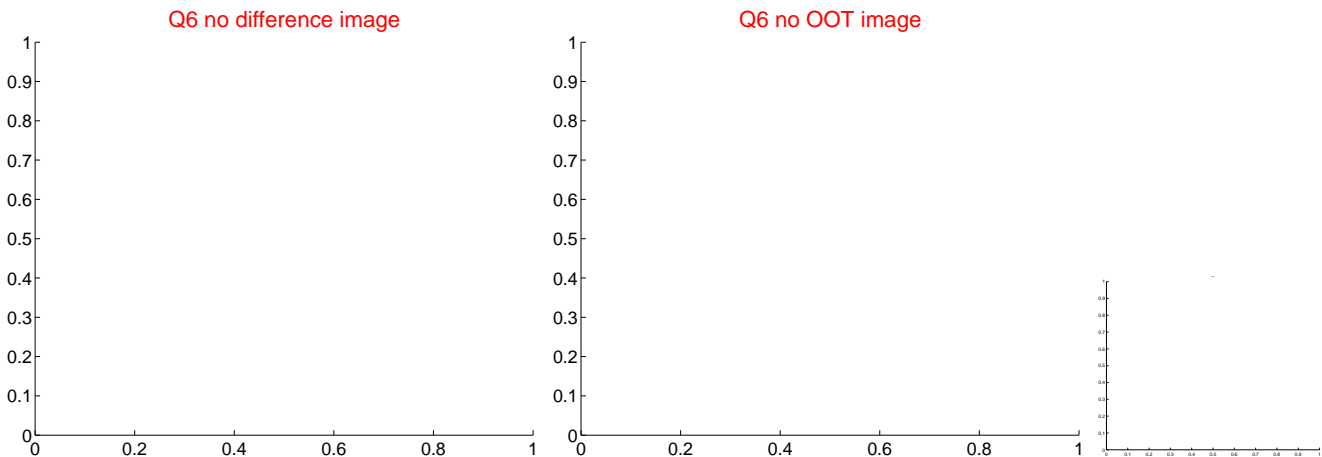
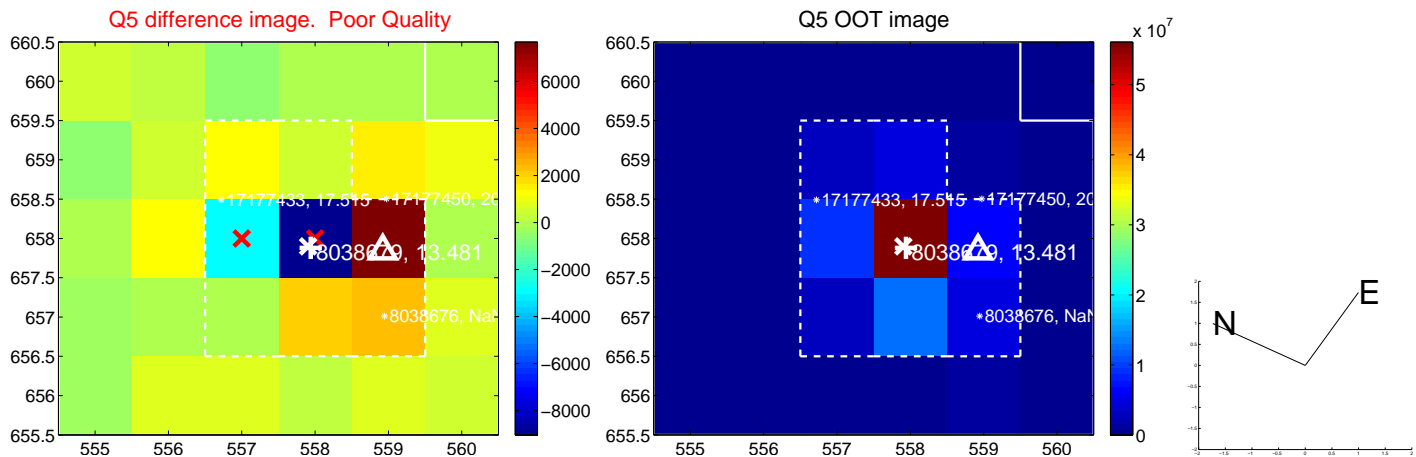


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

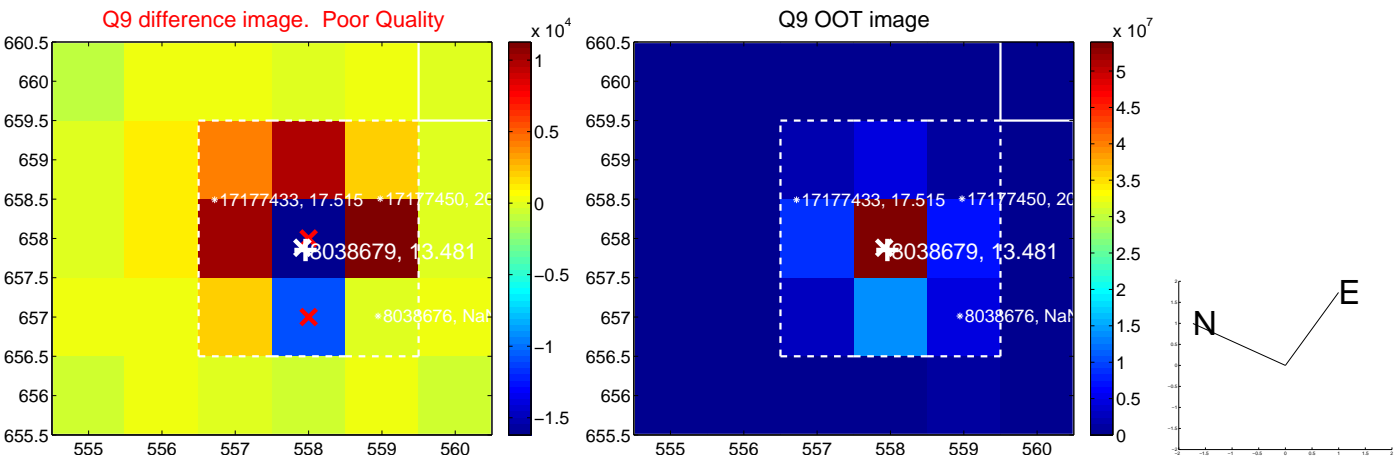
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



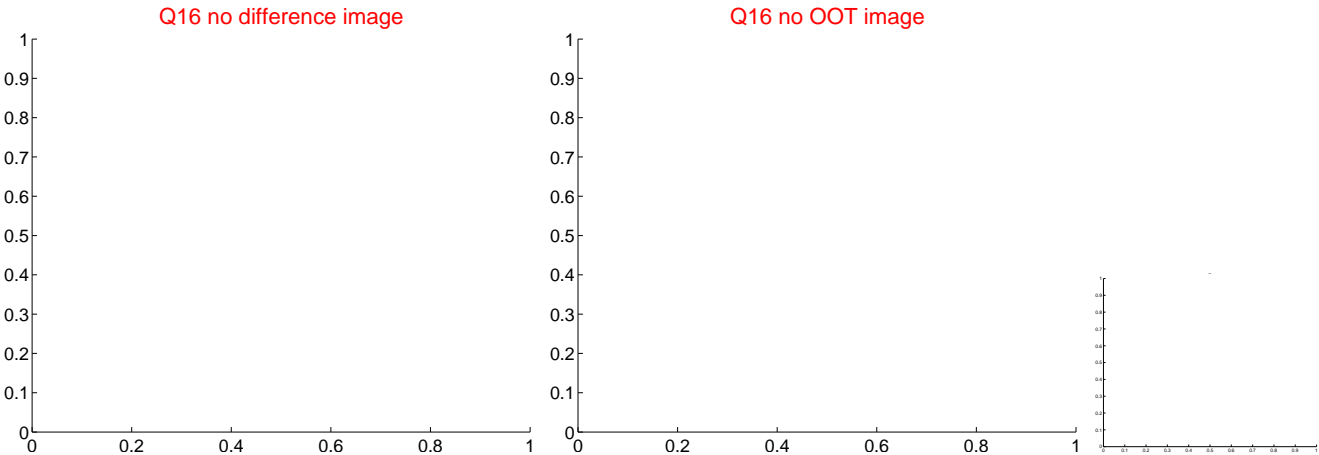
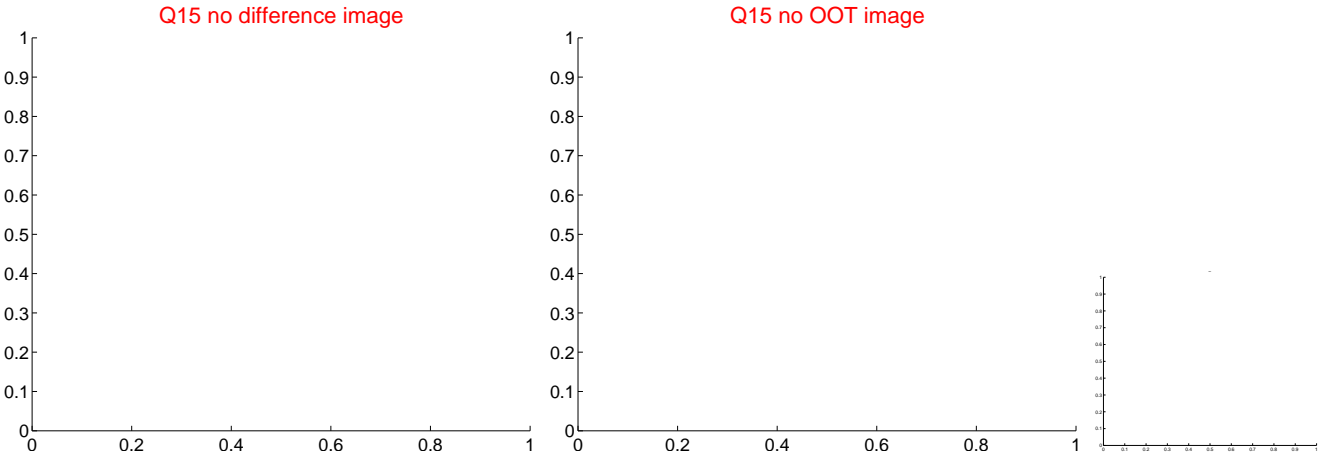
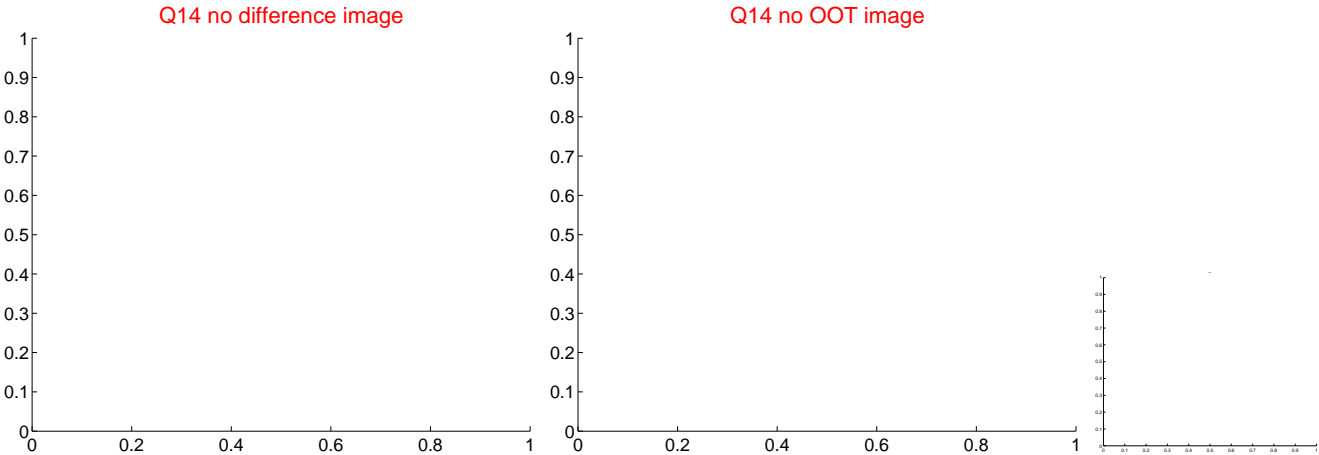
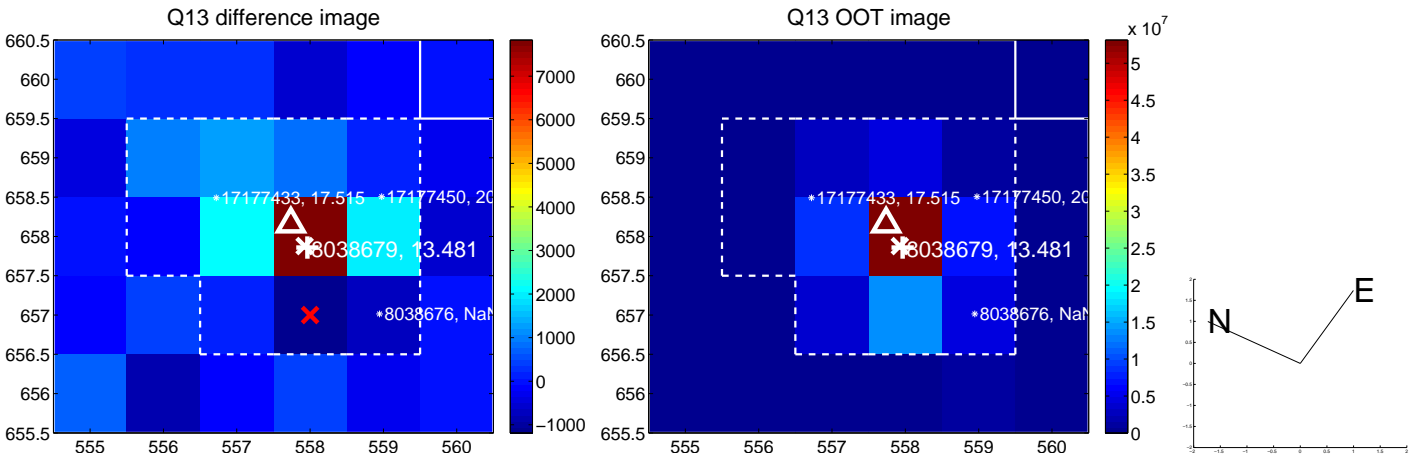
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



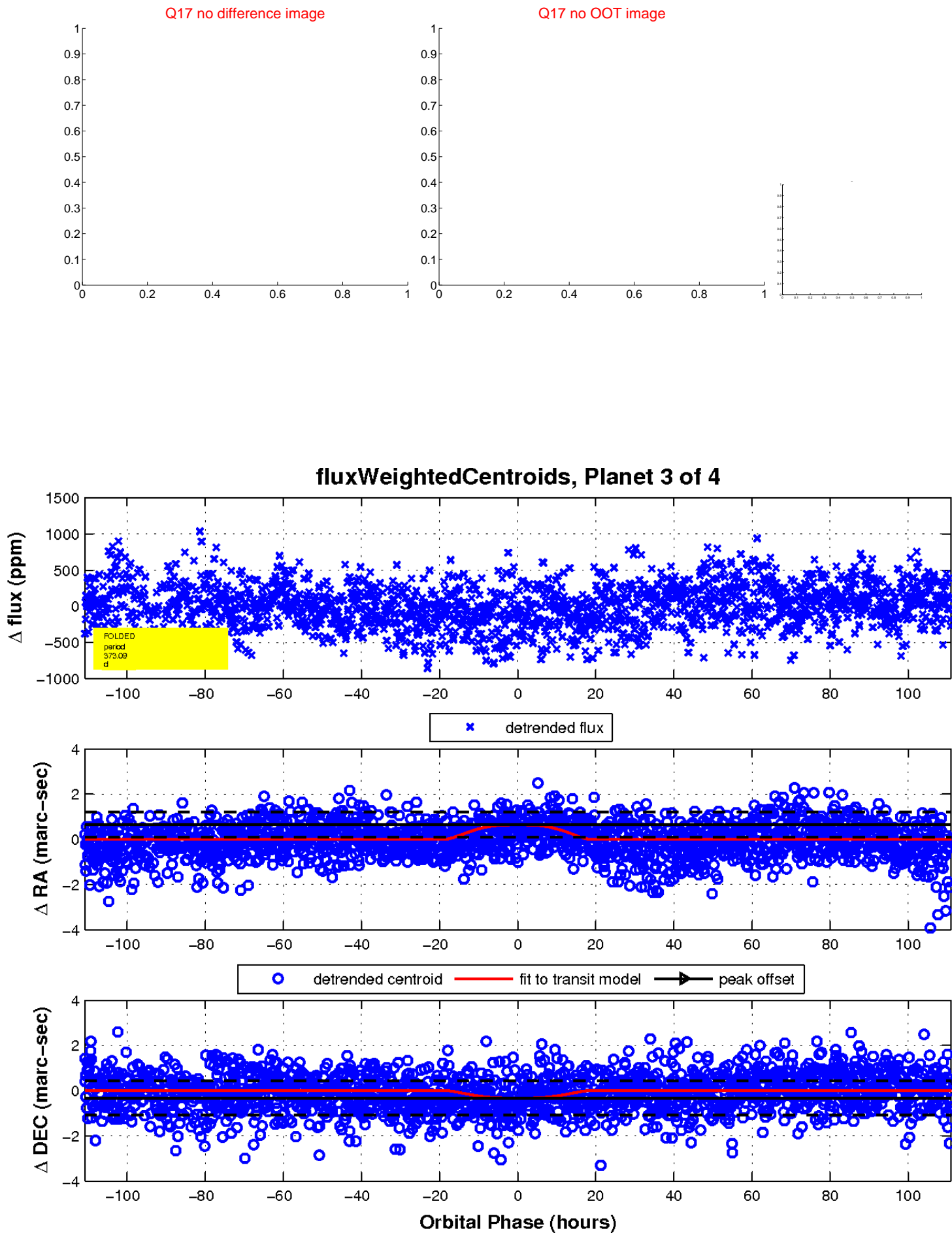
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

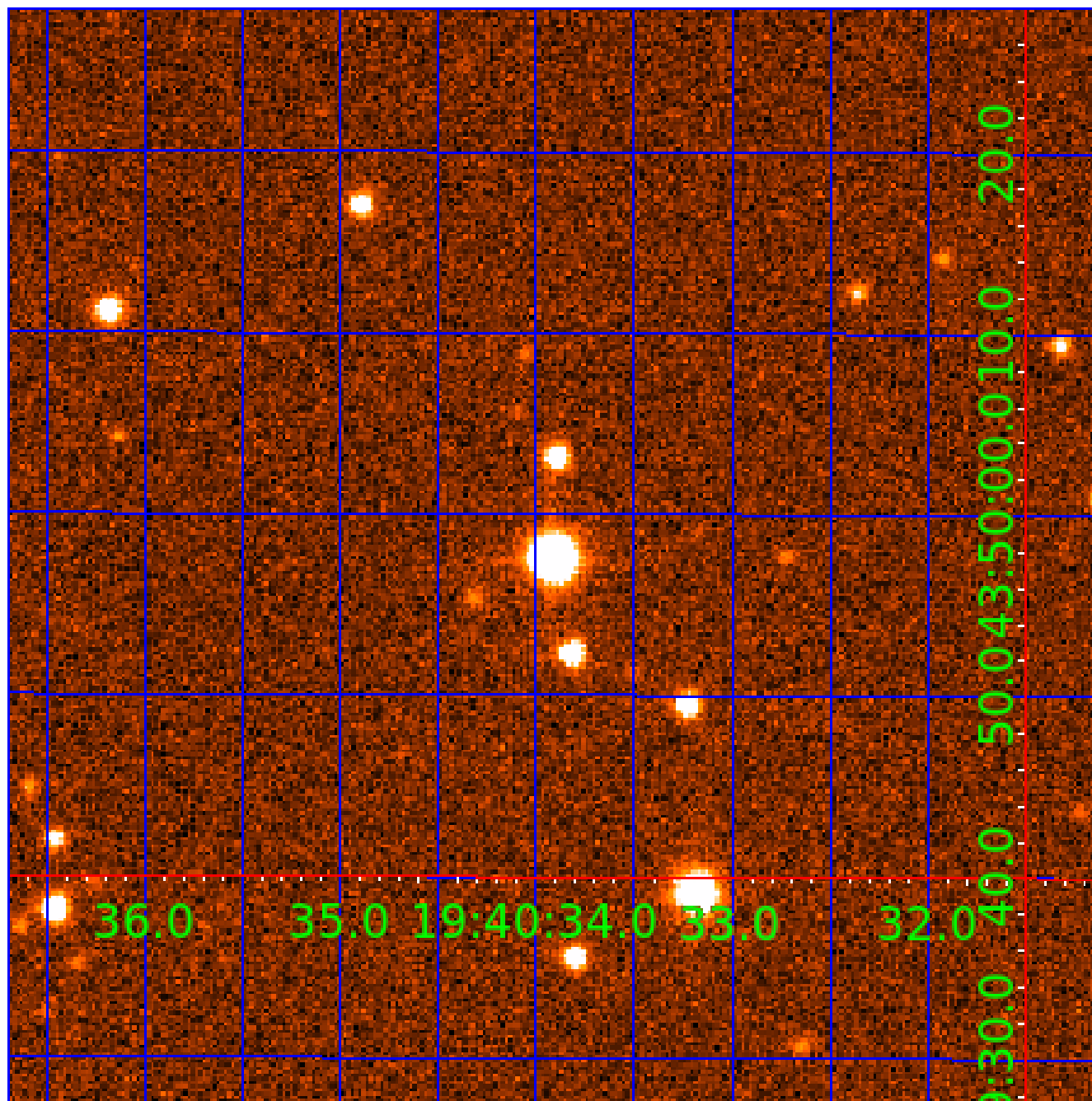


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008038679

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})
008038679-01	OBS	No	437.414866	378.245714	1615.4	30.813	24.7	27.3	2.08	7373	9.09	6.38
008038679-02	OBS	No	2.048919	131.640989	31.7	10.585	11.1	8.9	2.08	7373	1.19	8133.66
008038679-03	OBS	No	373.093331	144.712924	1303.7	36.996	33.1	22.0	2.08	7373	9.27	7.88
008038679-04	OBS	No	2.048630	132.758023	58.1	11.263	14.2	15.0	2.08	7373	2.56	8135.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008038679-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
008038679-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008038679-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008038679-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

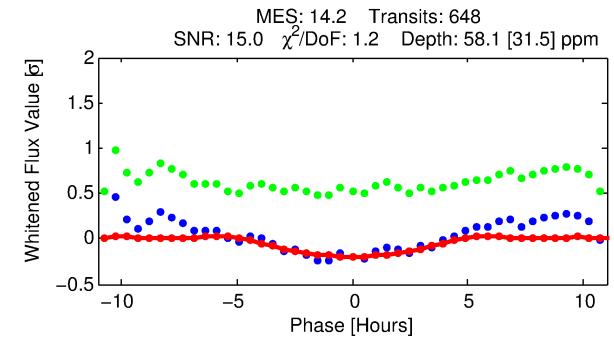
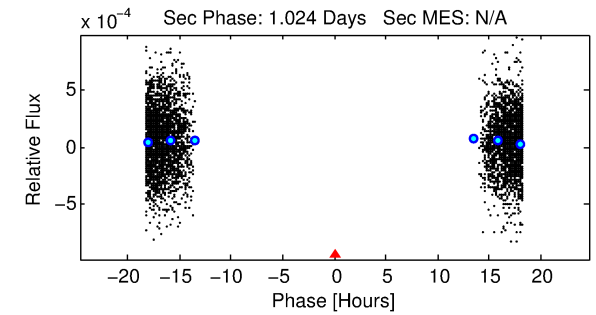
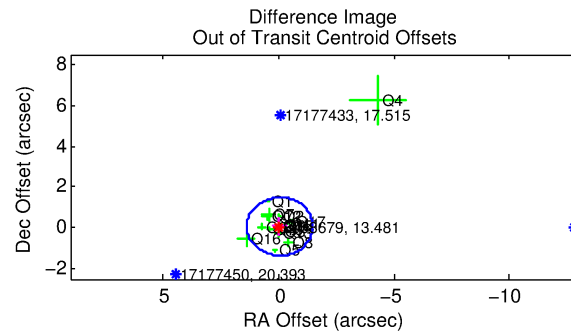
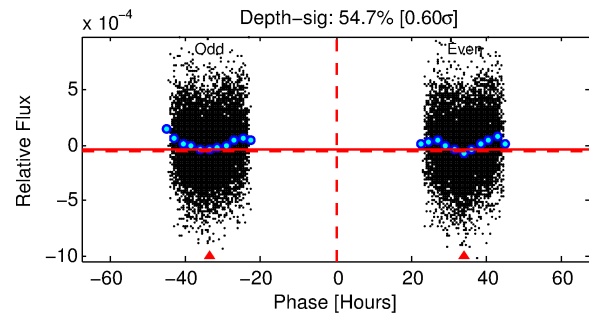
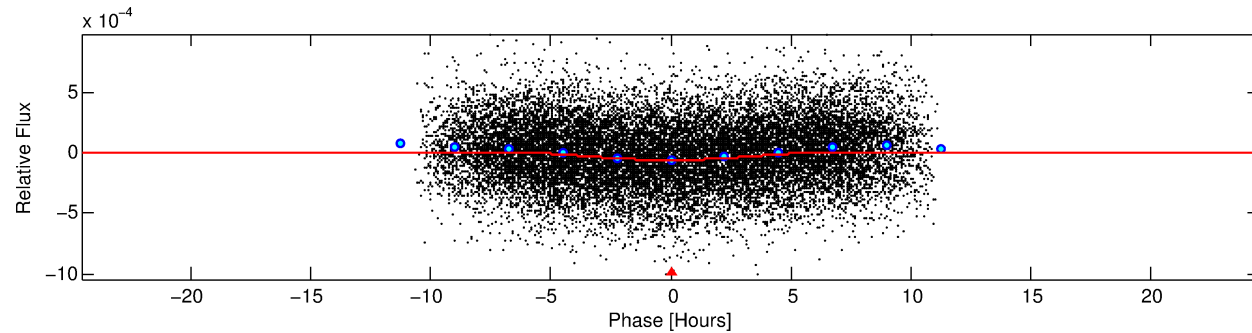
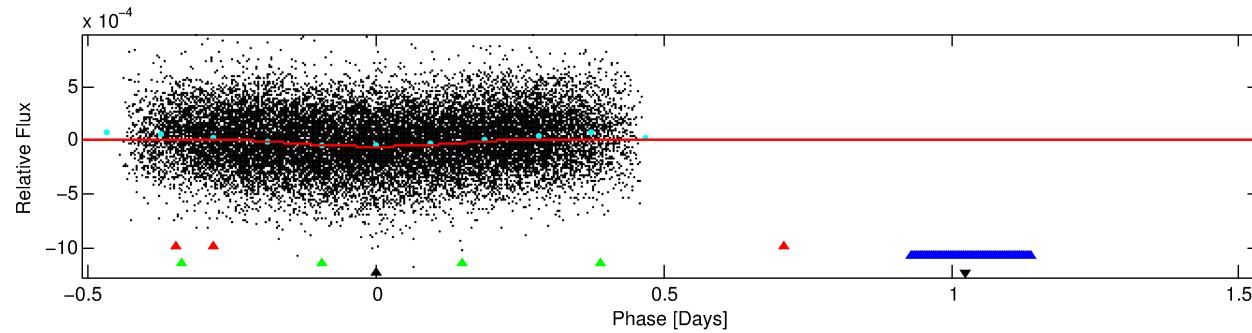
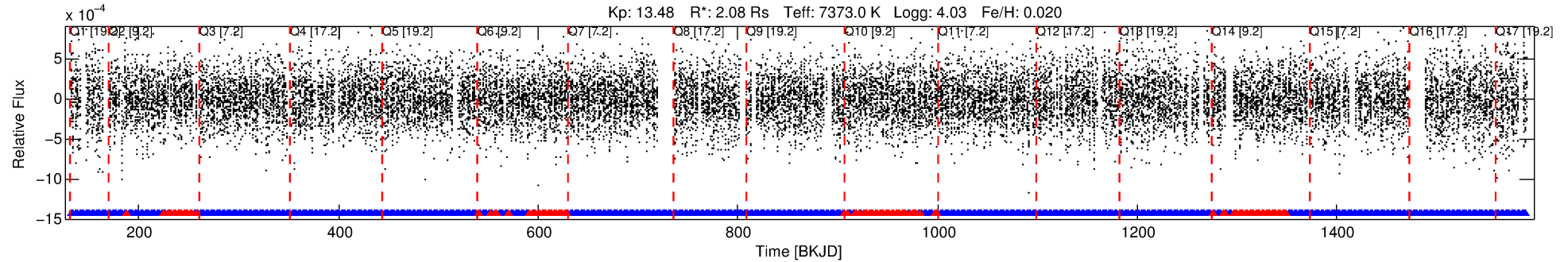
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008038679-04

No Significant Match Found

DV One-Page Summary

KIC: 8038679 Candidate: 4 of 4 Period: 2.049 d



DV Fit Results:

Period = 2.04863 [0.00005] d
Epoch = 132.7580 [0.0180] BKJD
Rp/R* = 0.0113 [0.0087]
a/R* = 1.03 [0.01]
b = 1.00 [0.02]
Seff = 8135.20 [2940.74]
Teff = 2422 [219] K
Rp = 2.56 [2.09] Re
a = 0.0375 [0.0082] AU

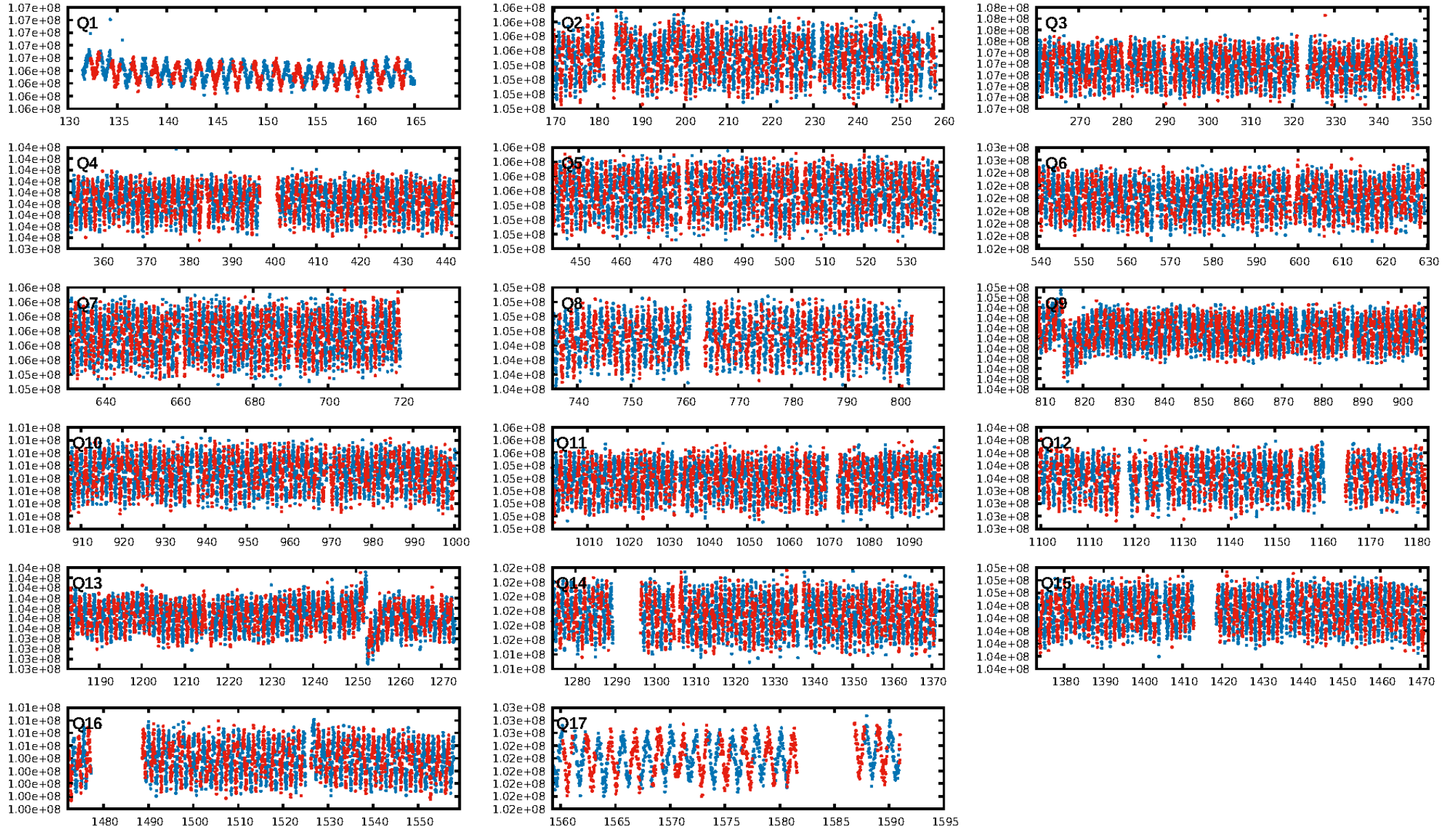
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.84 [519/621]
GhostDiagnostic-chr: 1.614
Centroid-sig: 49.9%
Centroid-so: 0.157 arcsec [0.29 σ]
OotOffset-rm: 0.089 arcsec [0.19 σ]
KicOffset-rm: 0.092 arcsec [0.43 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.00 [0/17]

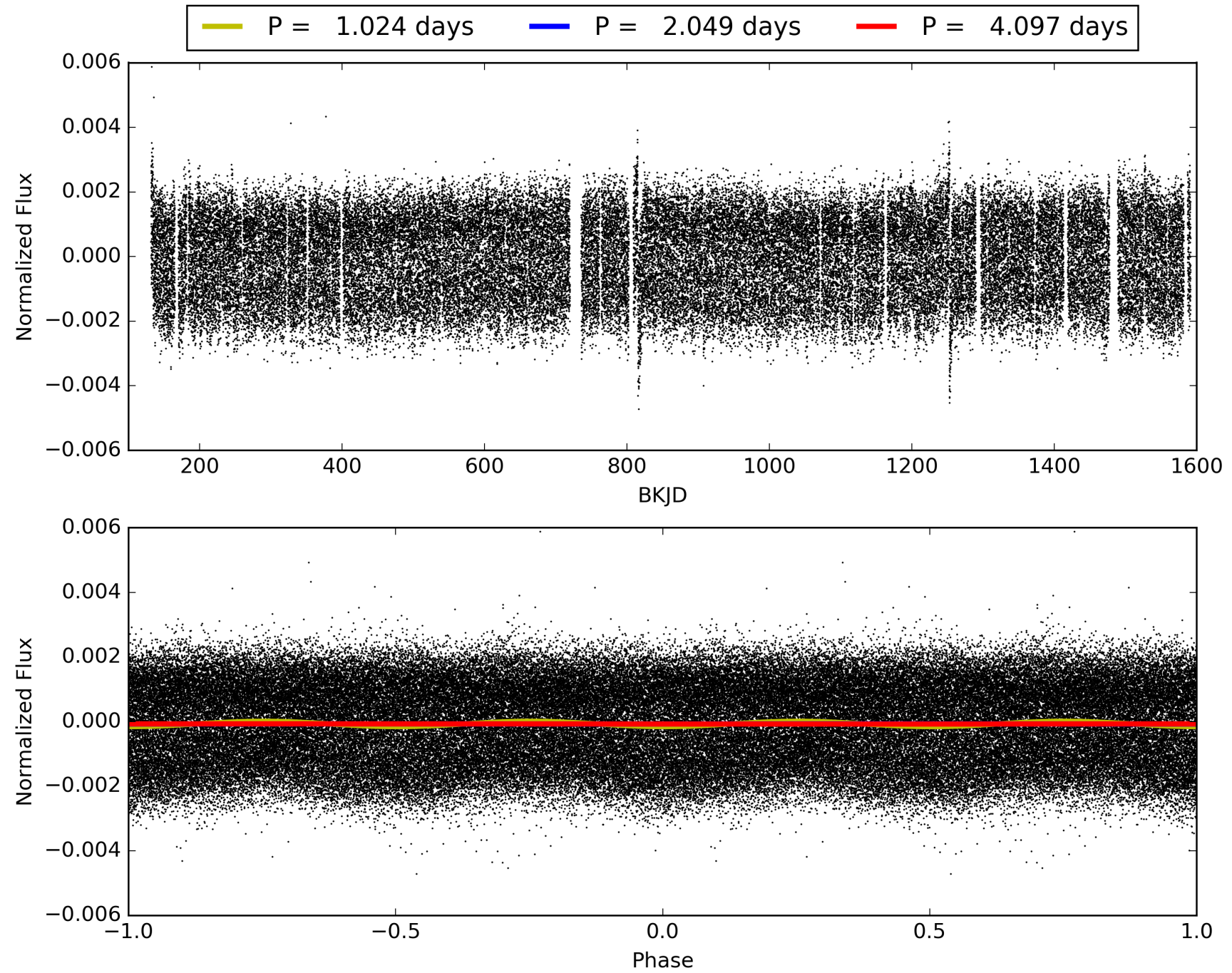
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:52:45 Z

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

TCE 008038679-04, PDC Light Curves

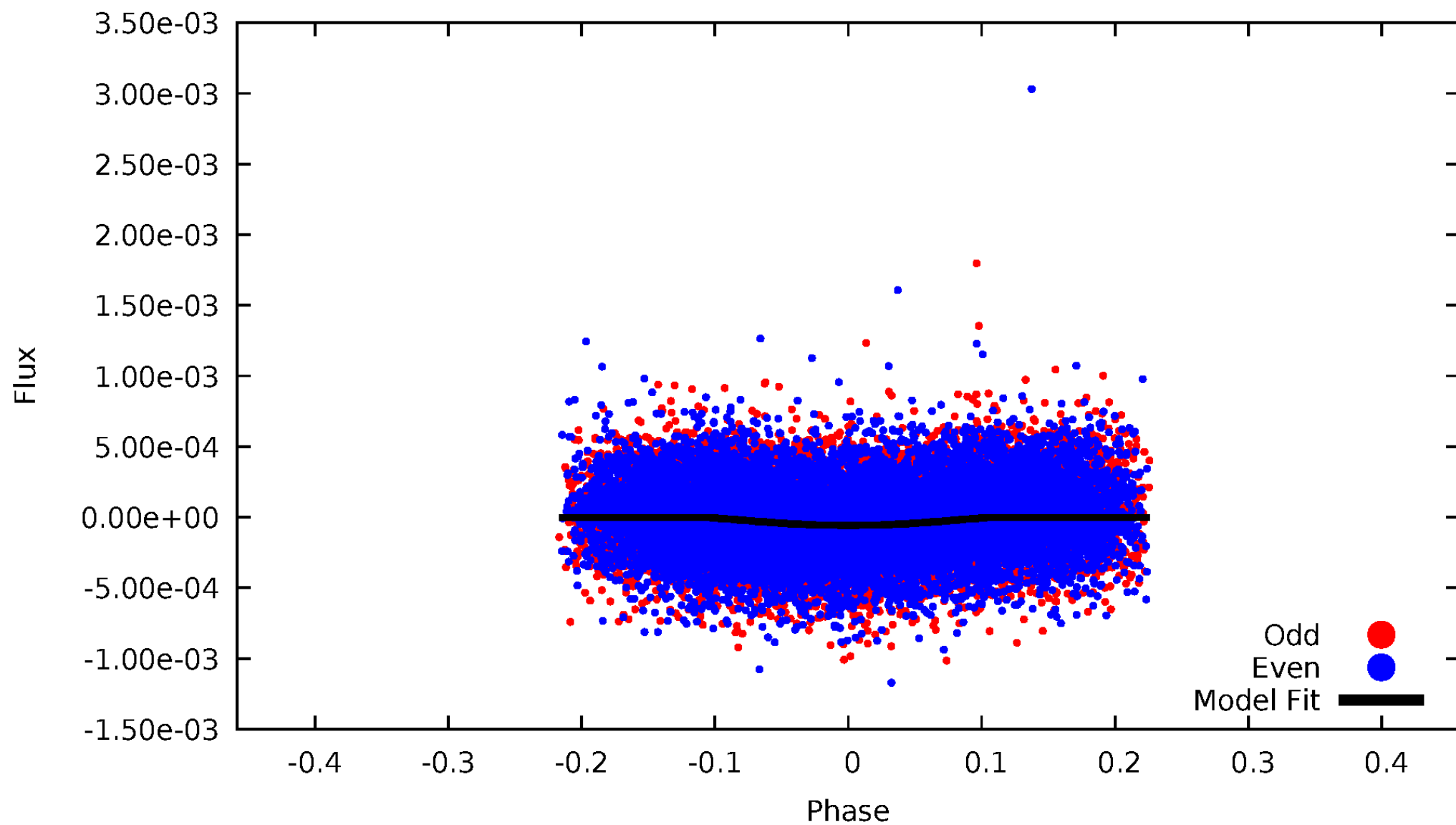


TCE 008038679-04



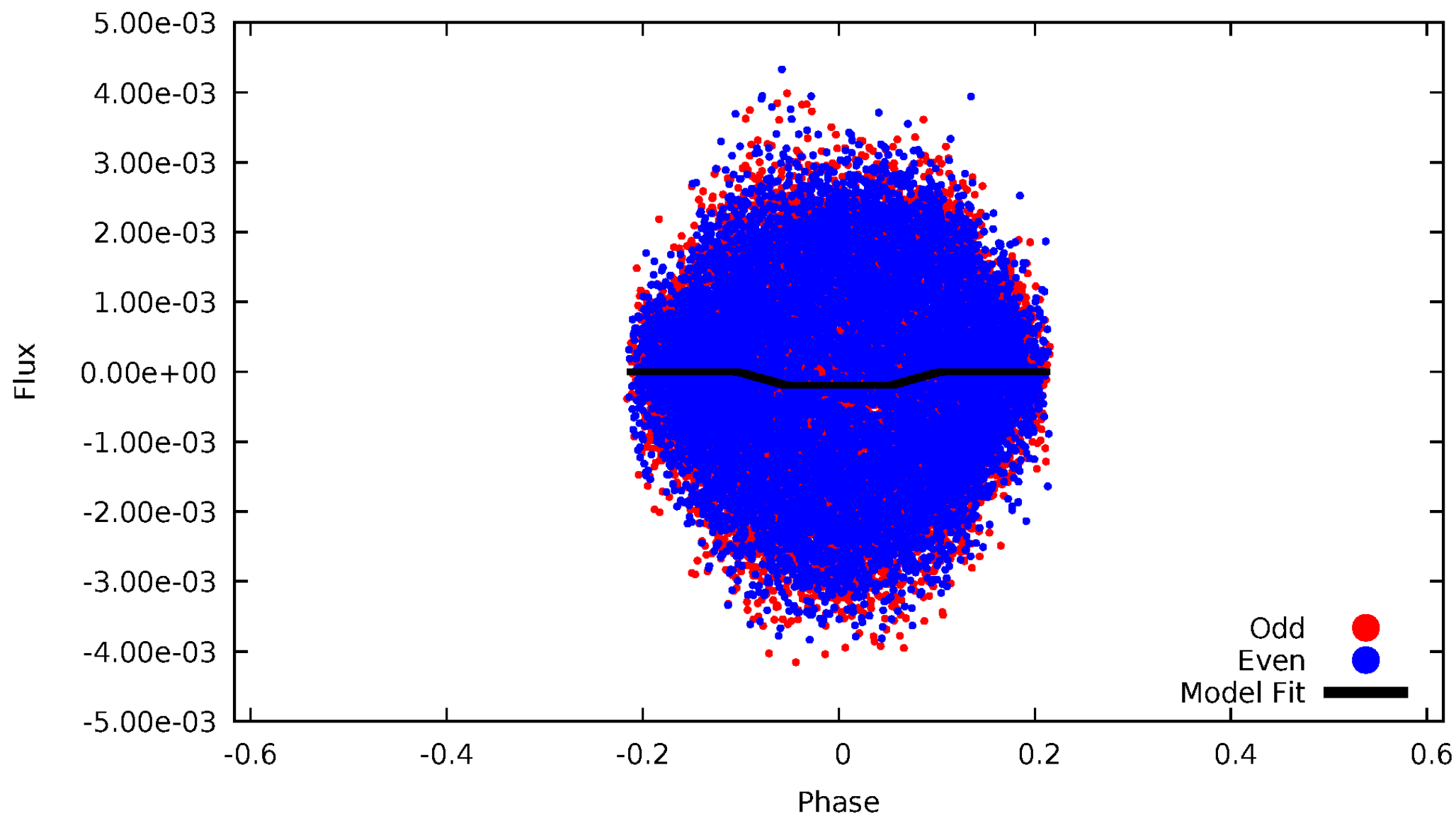
DV Odd/Even

TCE 008038679-04



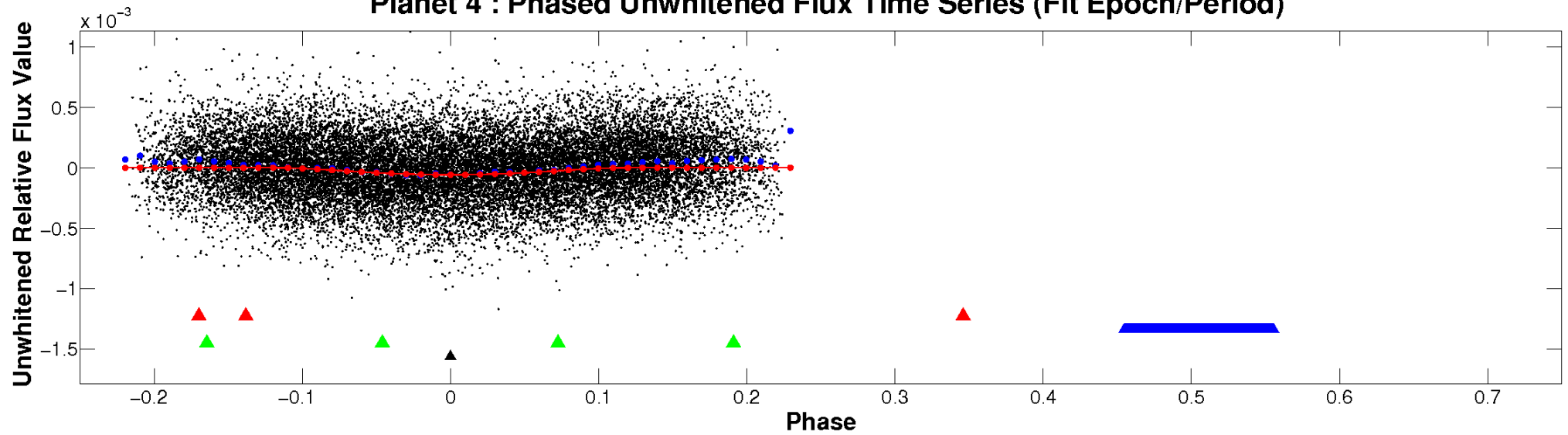
ALT Odd/Even

TCE 008038679-04

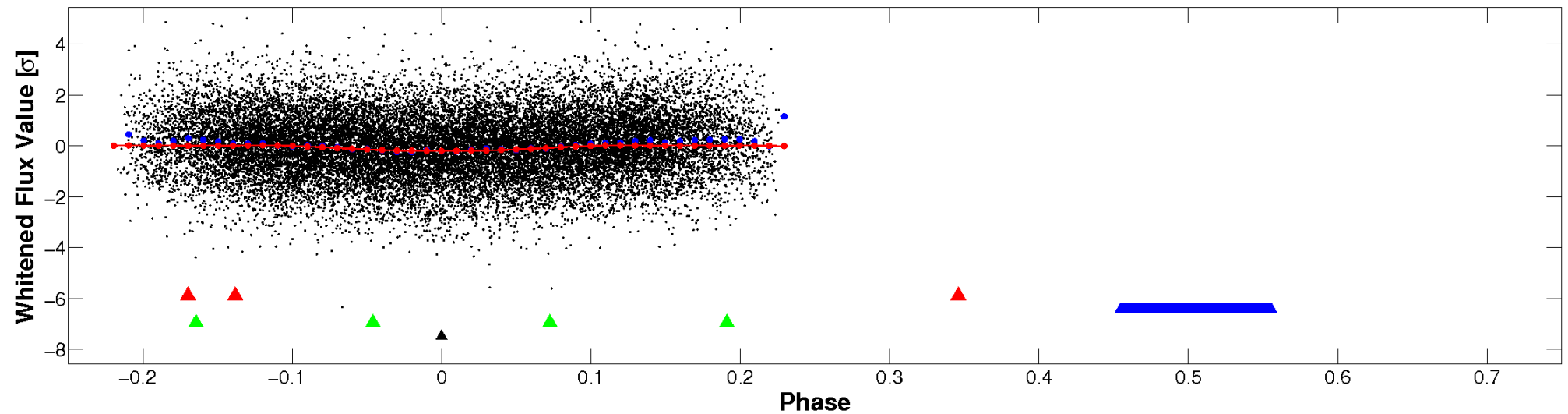


Non-Whitened Vs. Whitened Light Curve

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

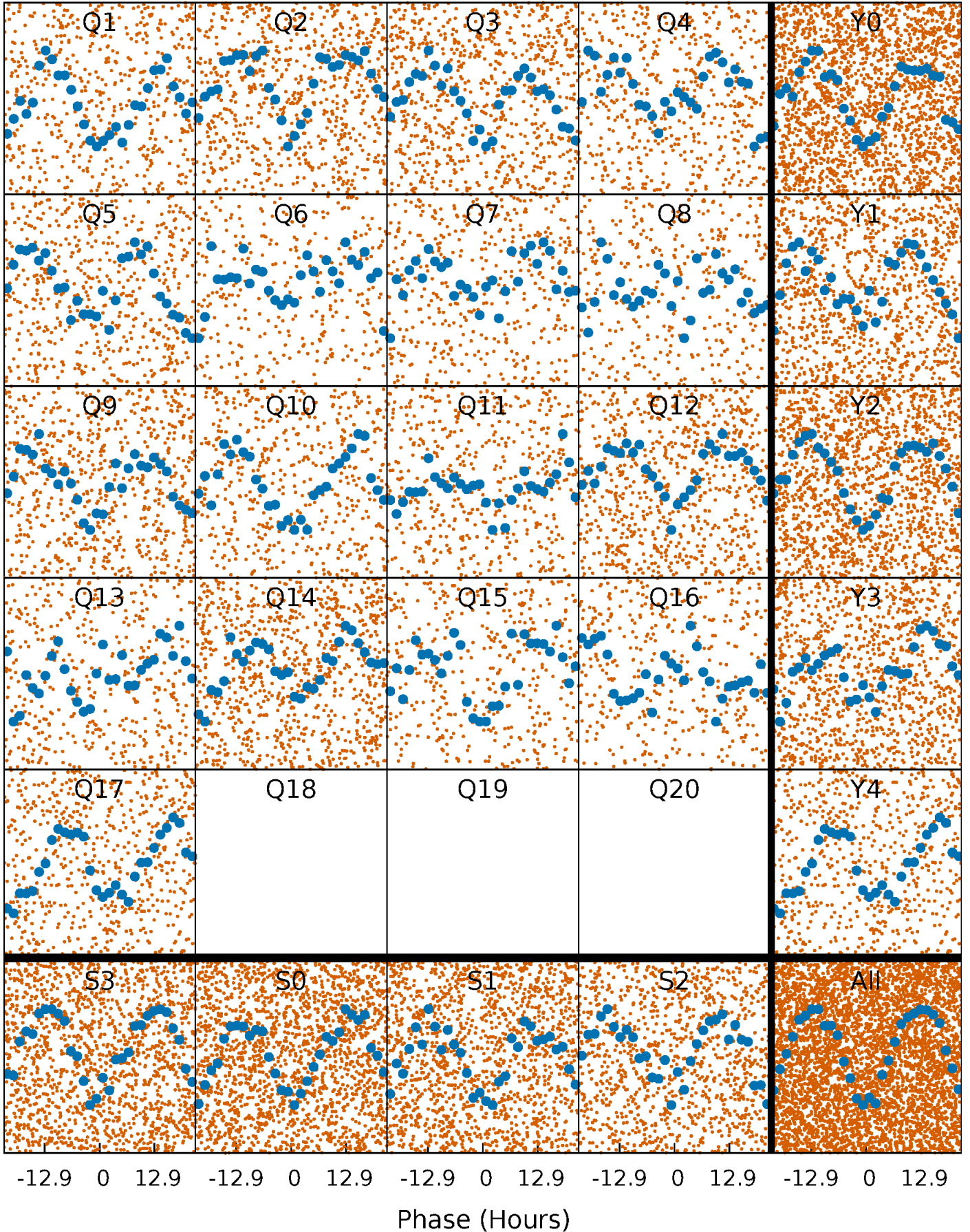


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



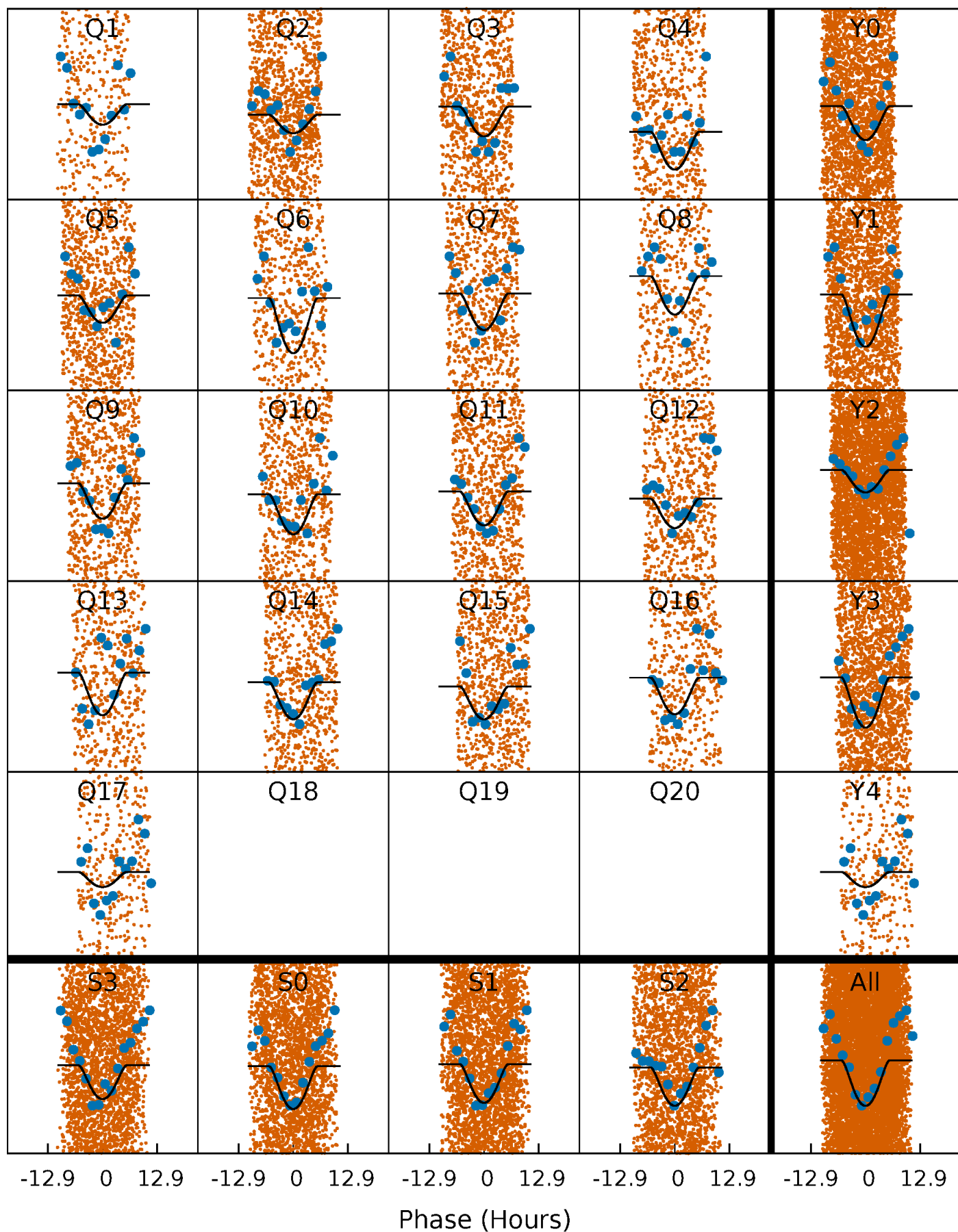
PDC Quarter-Phased Transit Curves

TCE 008038679-04 P= 2.048630 Days $T_0=132.758023$ (BKJD)



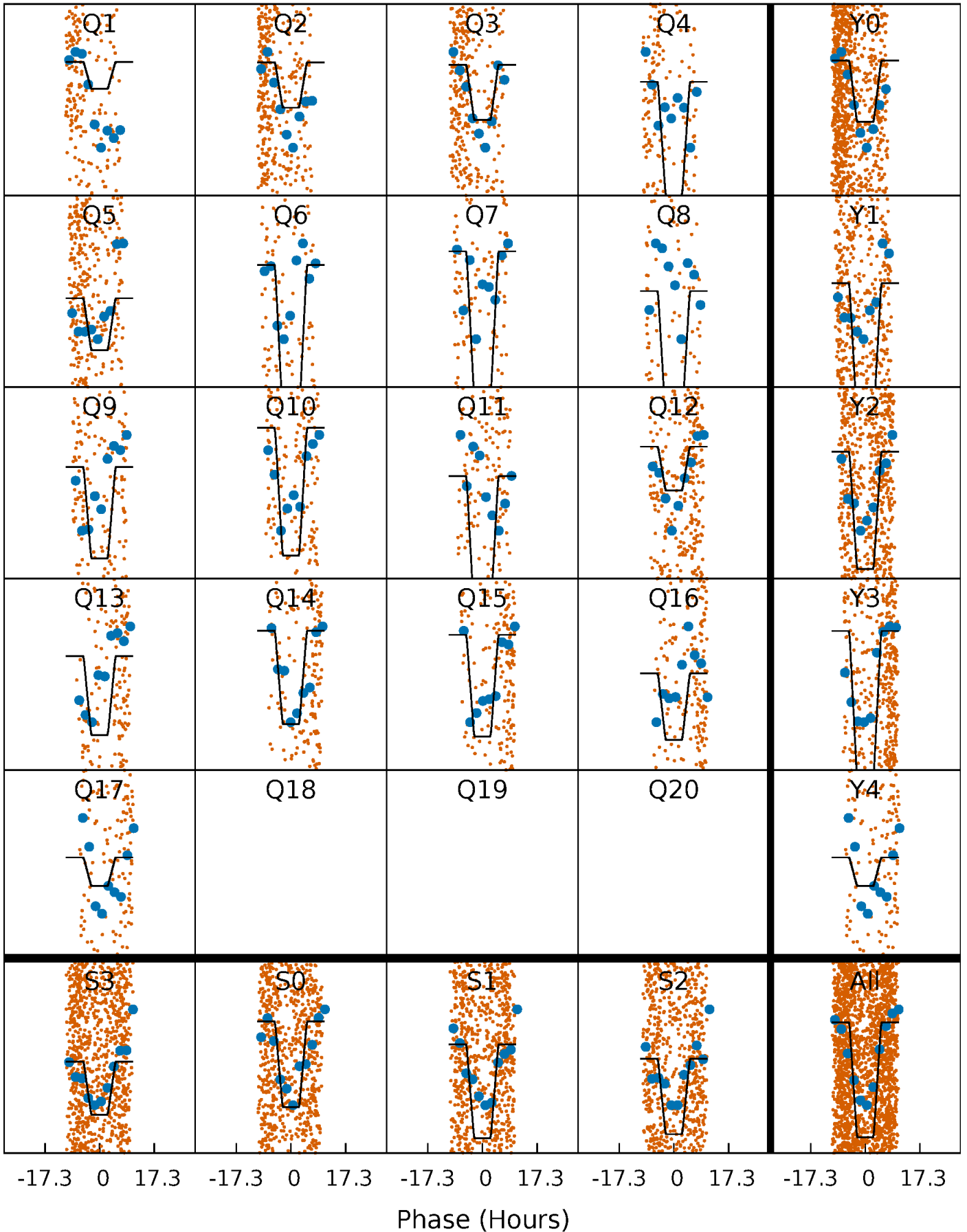
DV Quarter-Phased Transit Curves

TCE 008038679-04 P= 2.048630 Days $T_0=132.758023$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

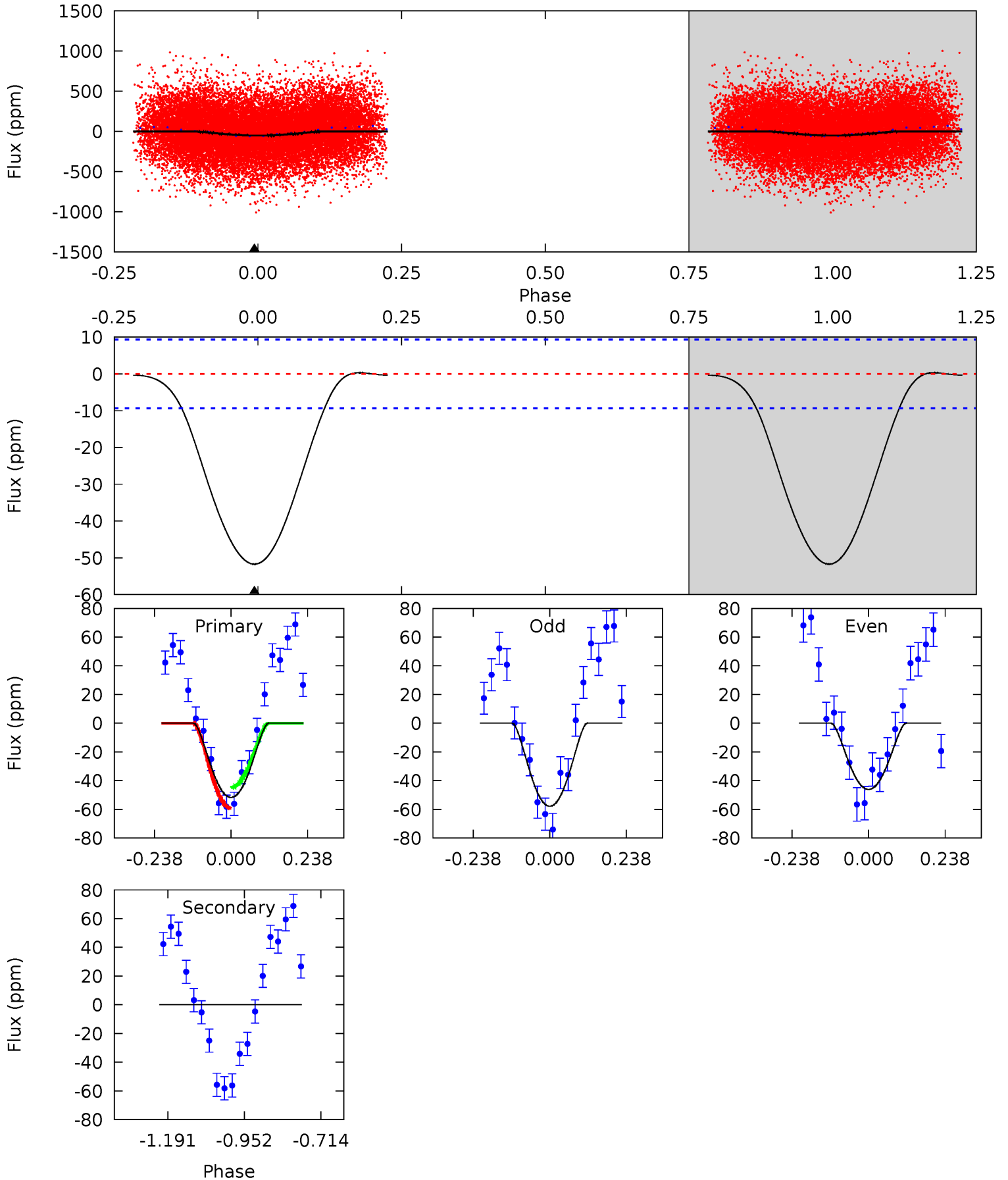
TCE 008038679-04 P= 2.048662 Days $T_0=132.756218$ (BKJD)



DV Model-Shift Uniqueness Test

008038679-04, P = 2.048630 Days, E = 130.709393 Days

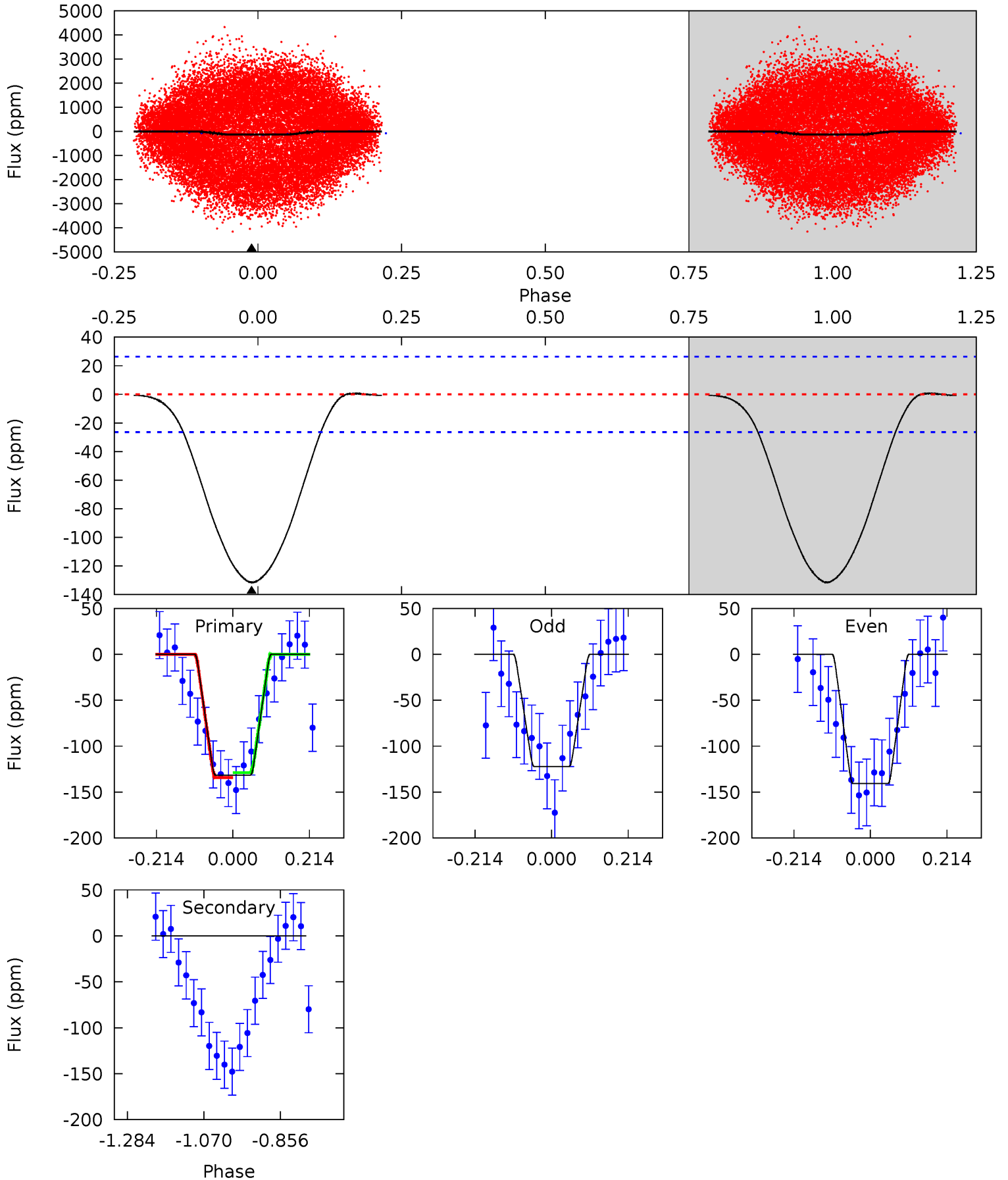
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.2	0	0	0	4.38	1.18	0.31	24.2	24.2	0	0	2.76	0.93	0.01	3.33



Alt Model-Shift Uniqueness Test

008038679-04, P = 2.048662 Days, E = 130.707556 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	0	0	0	4.40	1.24	0.22	21.9	21.9	0	0	1.55	8.41	0.00	0.24



Stellar Parameters For KIC 008038679

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7373^{+233}_{-311}	$4.027^{+0.175}_{-0.157}$	$0.020^{+0.200}_{-0.350}$	$2.081^{+0.541}_{-0.541}$	$1.681^{+0.201}_{-0.302}$	$0.263^{+0.291}_{-0.121}$
	+3%/-4%	+4%/-4%	+1000%/-1750%	+26%/-26%	+12%/-18%	+111%/-46%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008038679-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 2	$2.71^{+2.04}_{-1.62}$	3372^{+227}_{-260}	-3298^{+5883}_{-407}	$-0.004^{+0.360}_{-0.309}$
Alt.	0 ± 6	$3.22^{+2.02}_{-1.80}$	3370^{+235}_{-232}	-3277^{+6539}_{-674}	$-0.005^{+0.632}_{-0.631}$

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 $A_{obs} \gg 1.0$

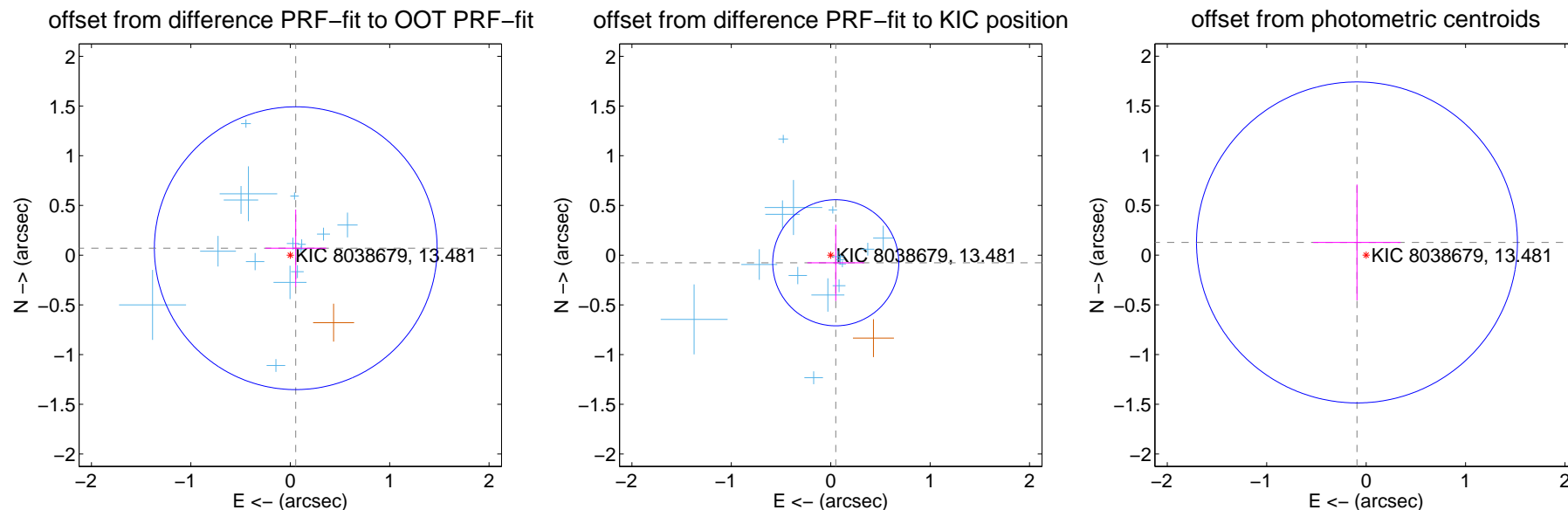
DV Centroid Data

Supplemental centroid analysis for 008038679-04. Kepler magnitude: 13.48. Transit SNR 15.00

There are 15 quarters with good PRF difference image offsets

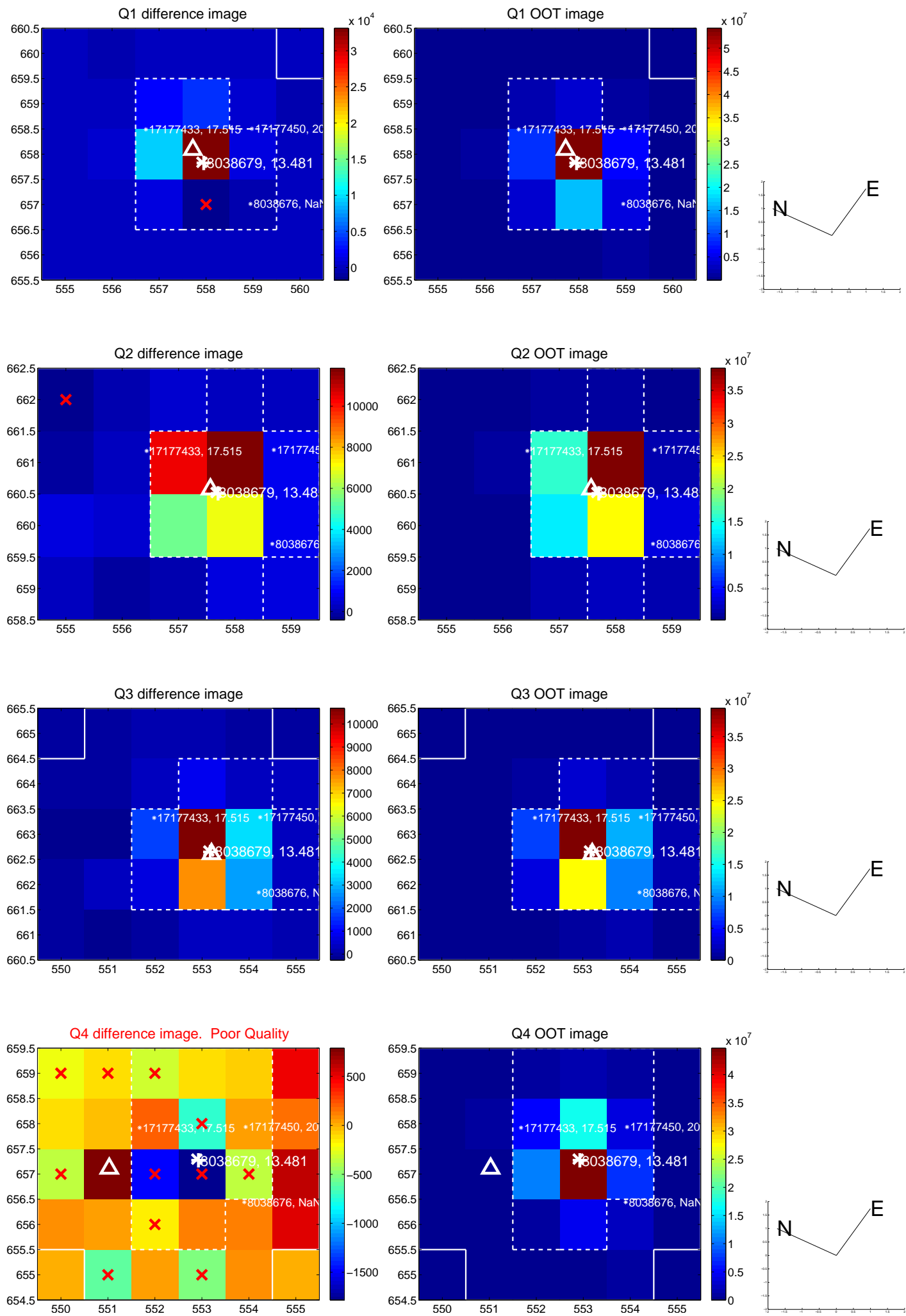
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.089 ± 0.474	0.19	-0.055 ± 0.306	0.070 ± 0.389
PRF-fit source offset from KIC position	0.092 ± 0.211	0.43	-0.051 ± 0.286	-0.077 ± 0.383
photometric centroid source offset	0.16 ± 0.54	0.29	0.09 ± 0.44	0.13 ± 0.58

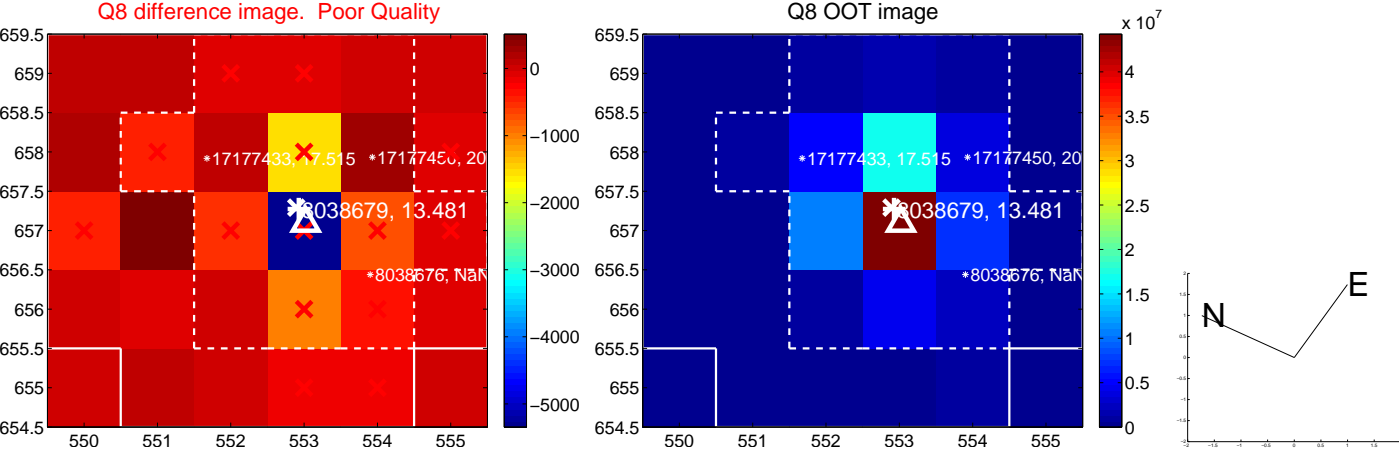
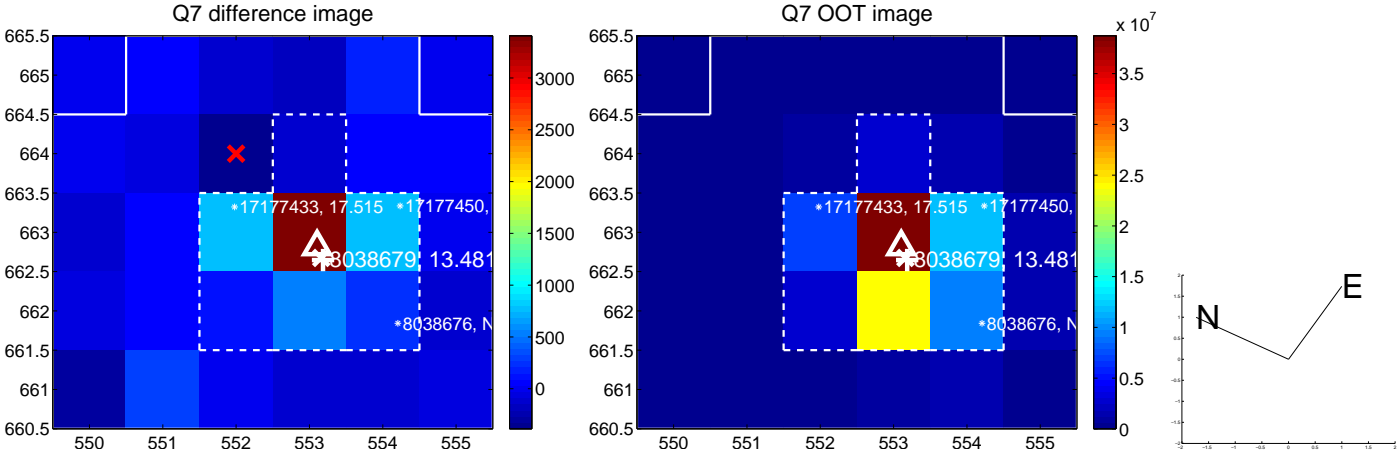
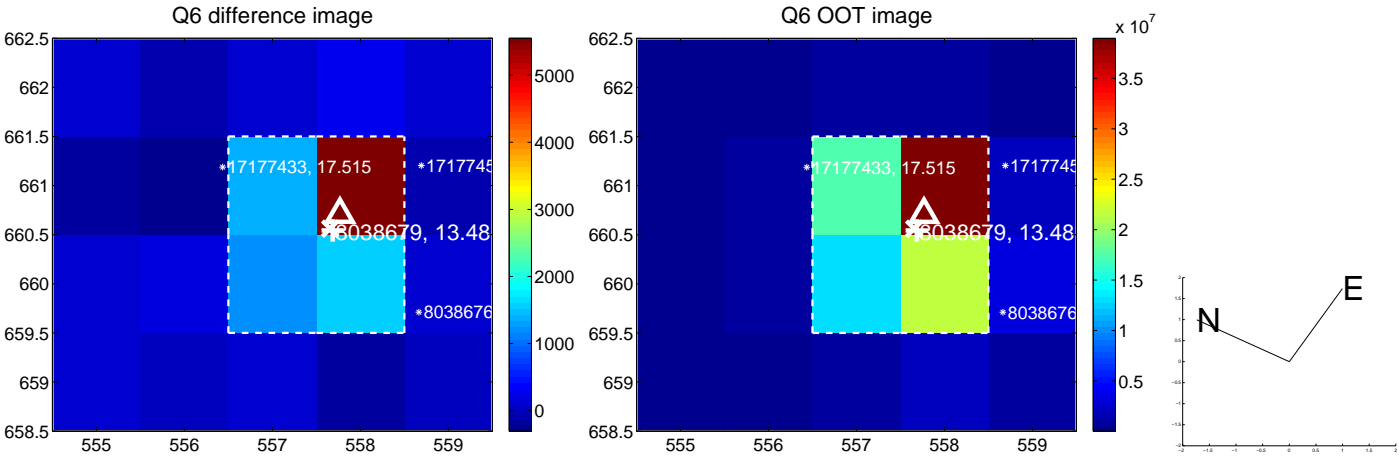
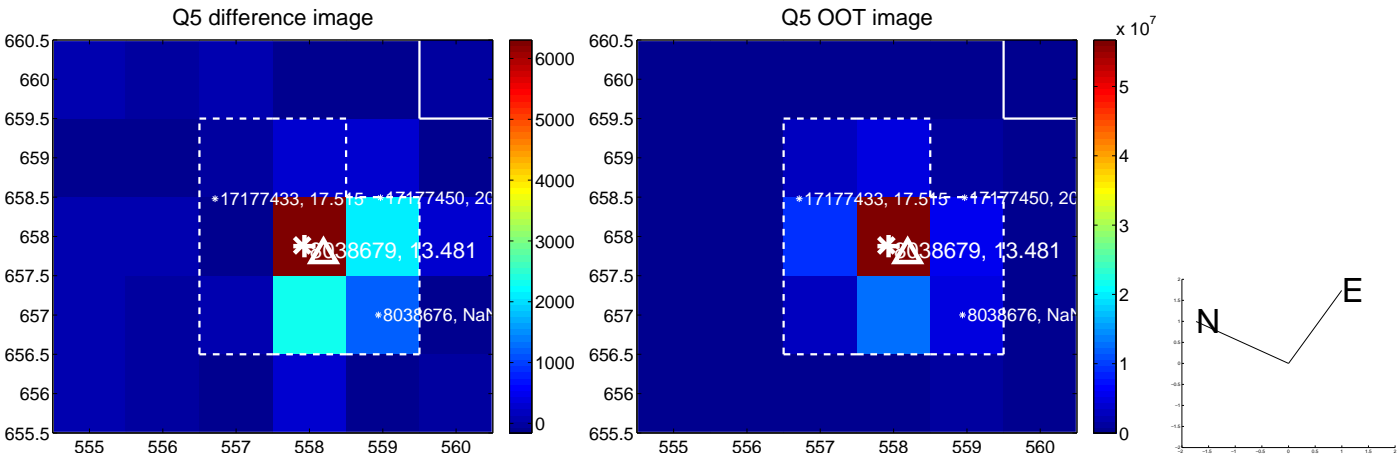


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

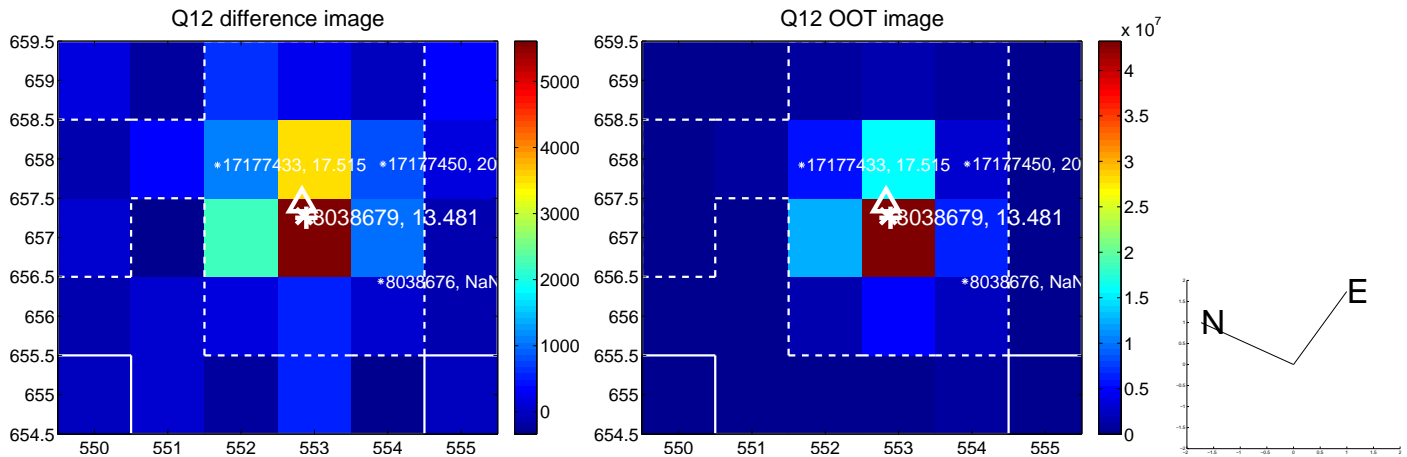
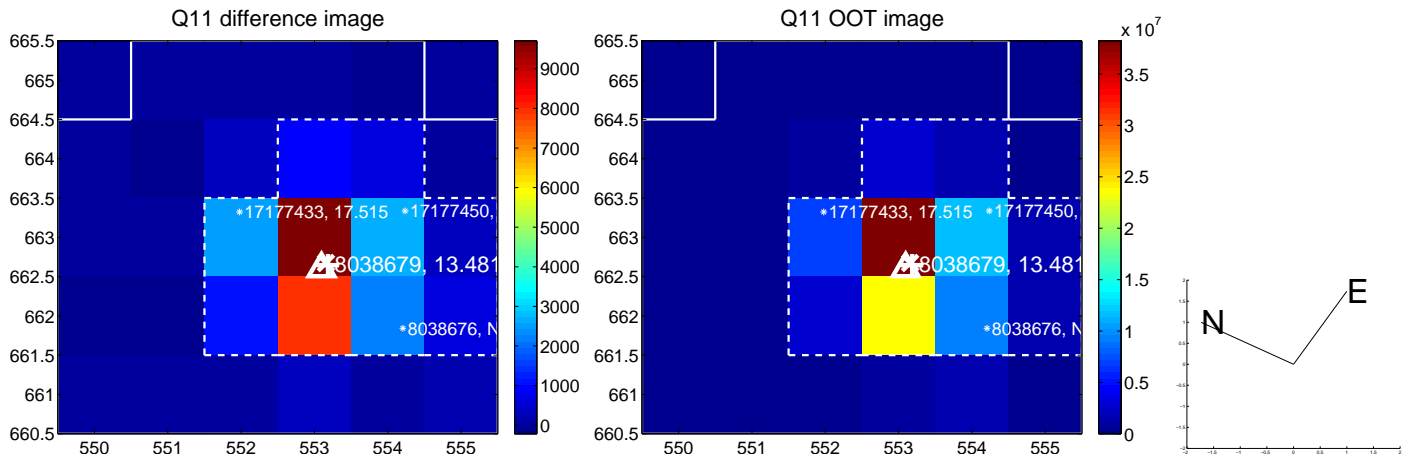
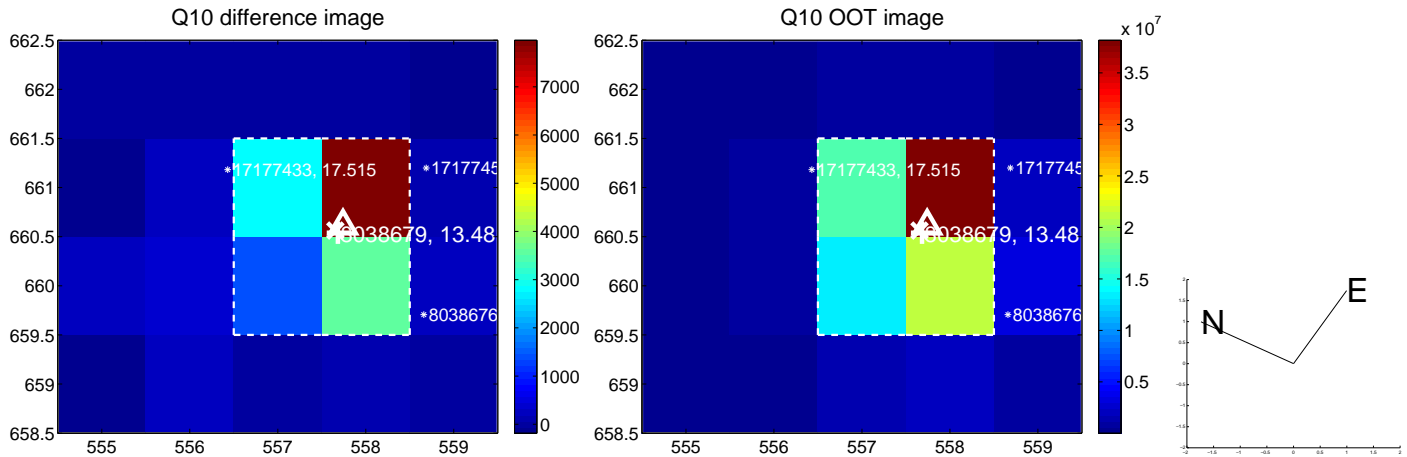
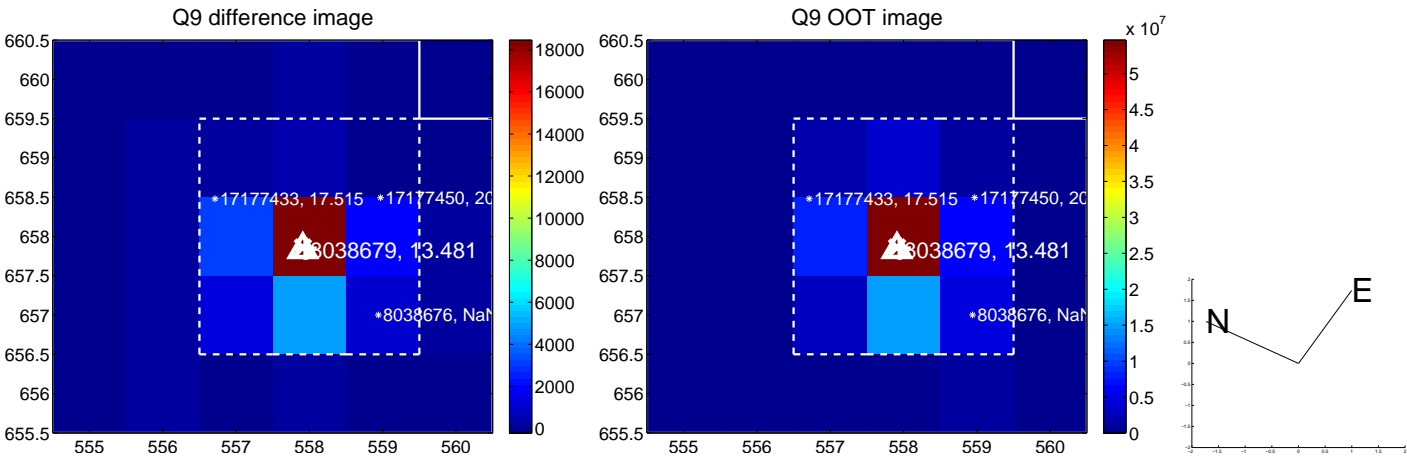
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



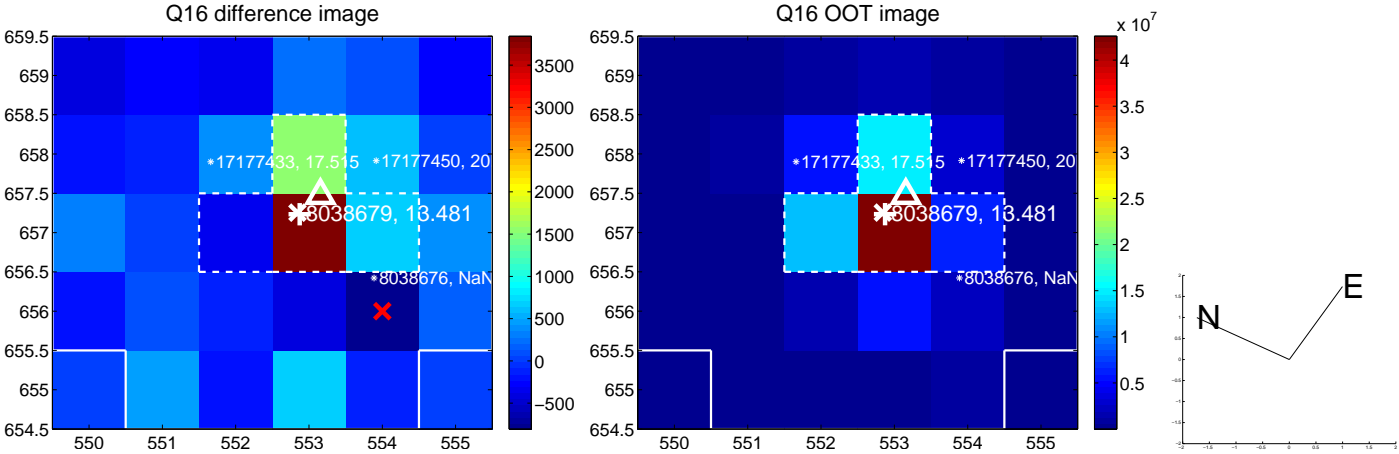
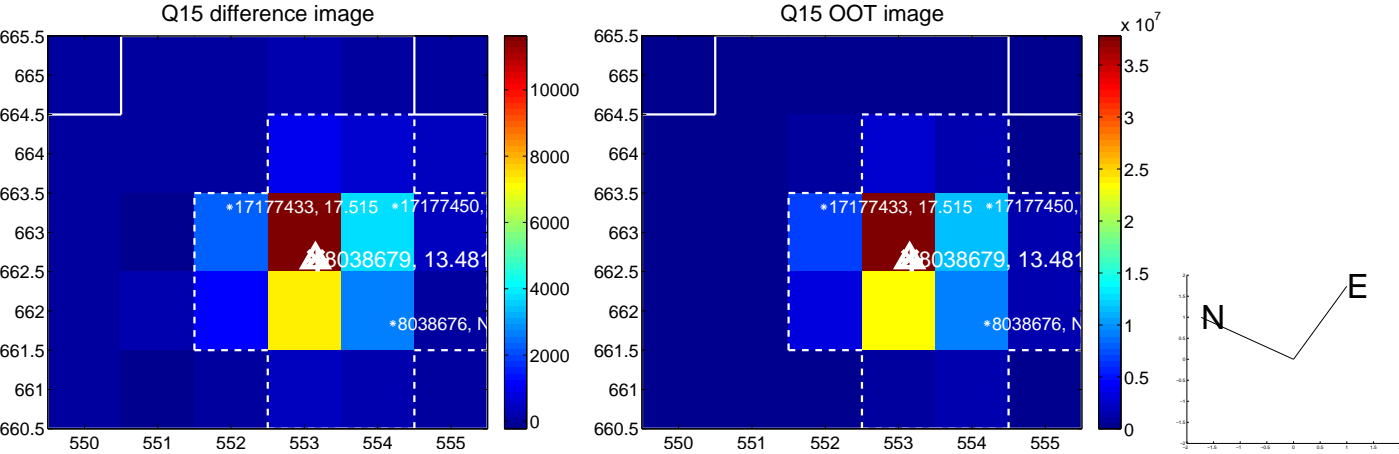
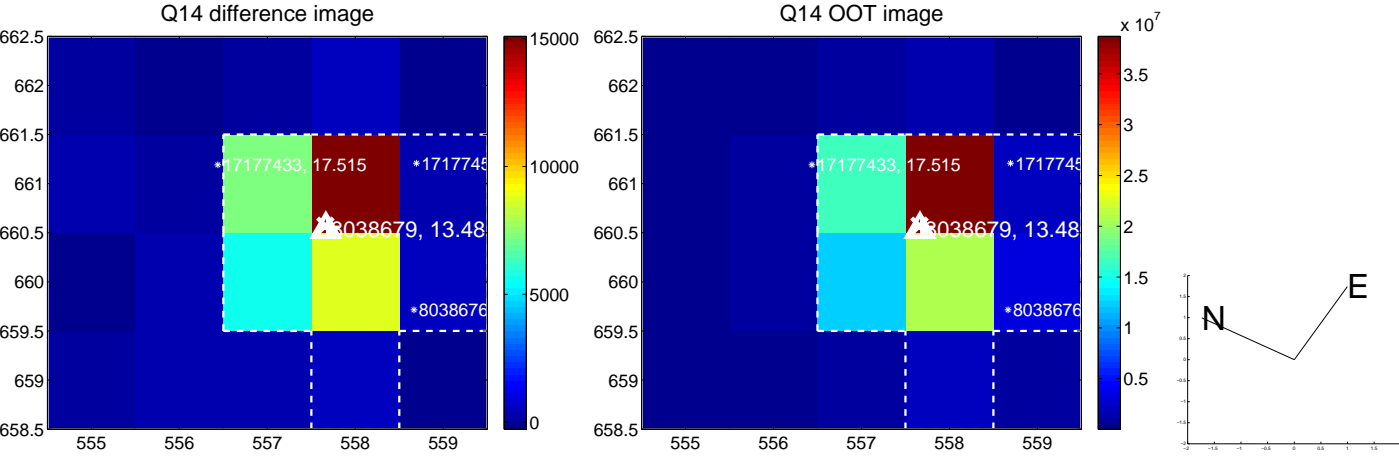
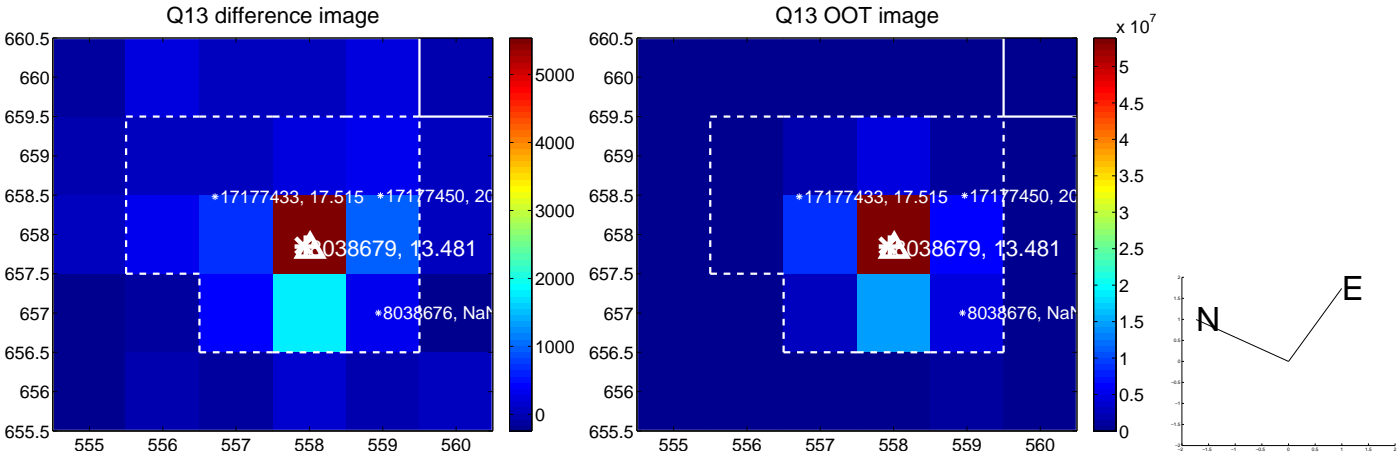
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



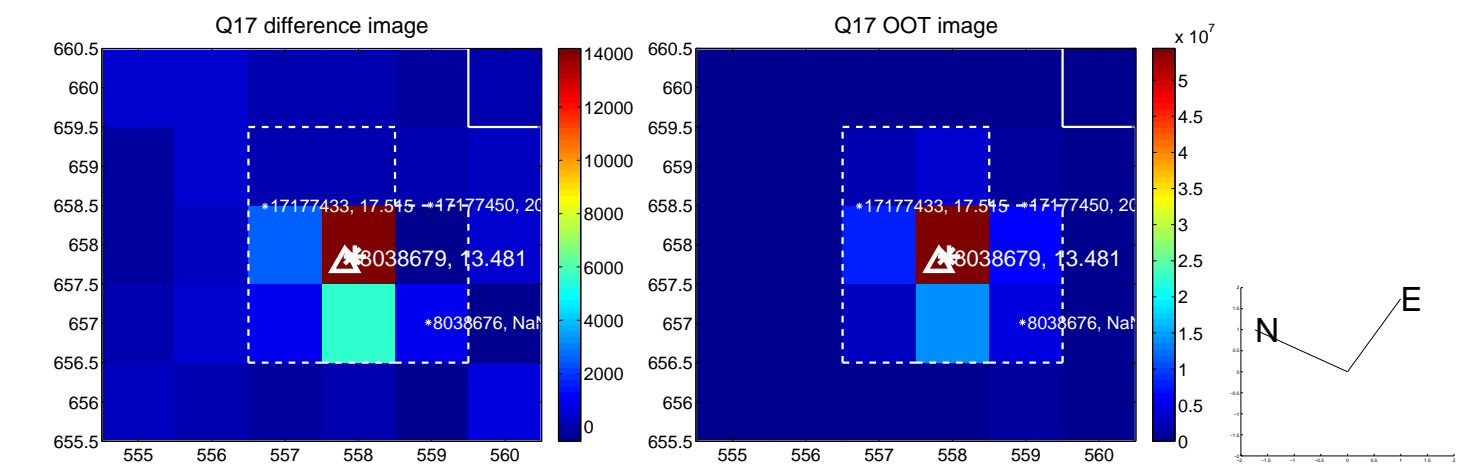
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



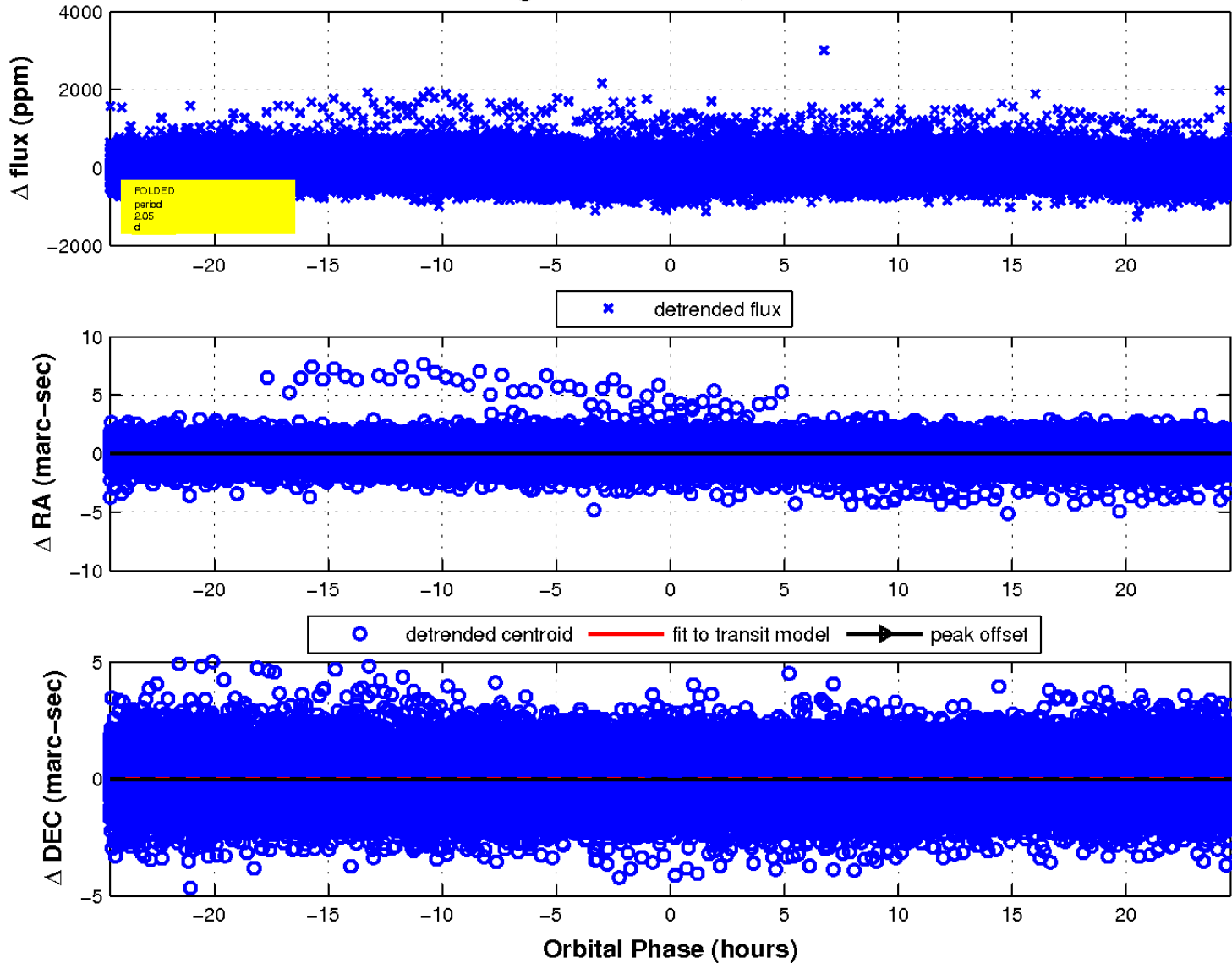
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

