

KIC 004820642

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})
004820642-01	OBS	No	0.961635	131.932413	0.0	2.006	9.8	0.0	1.39	6647	0.00	8039.44
004820642-02	OBS	No	0.961504	131.731627	30.2	0.526	10.0	3.4	1.39	6647	0.80	8040.90
004820642-03	OBS	No	96.021093	220.893765	244.6	2.547	7.2	7.4	1.39	6647	2.54	17.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004820642-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004820642-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
004820642-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

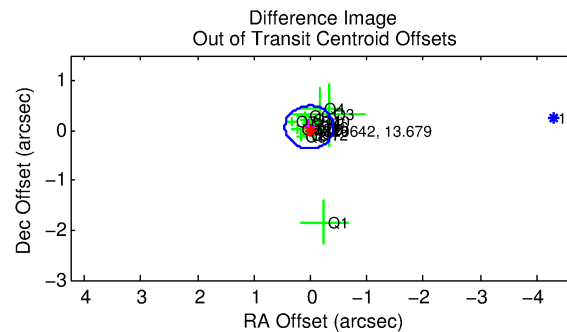
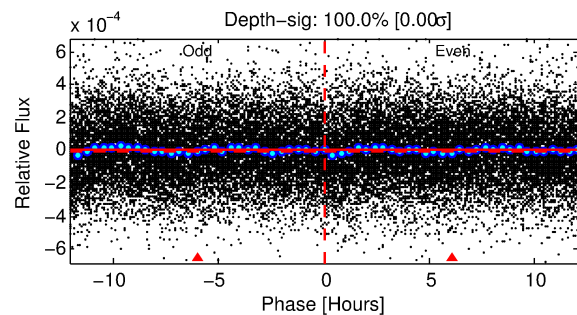
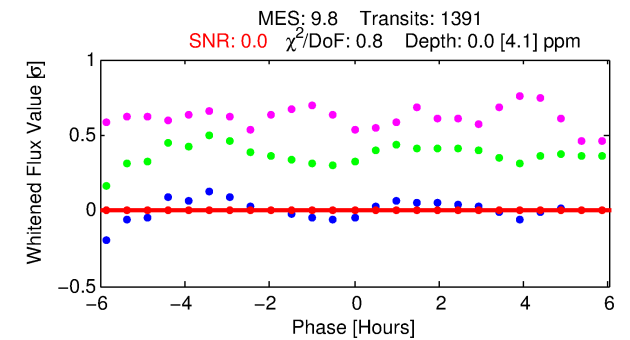
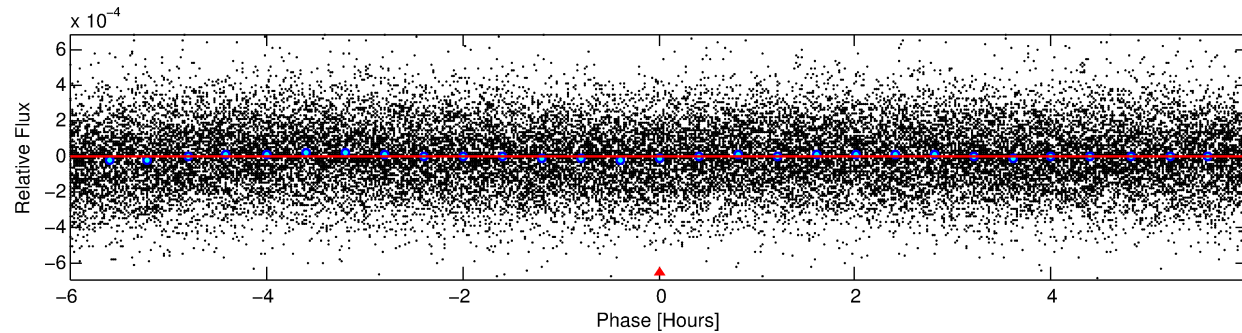
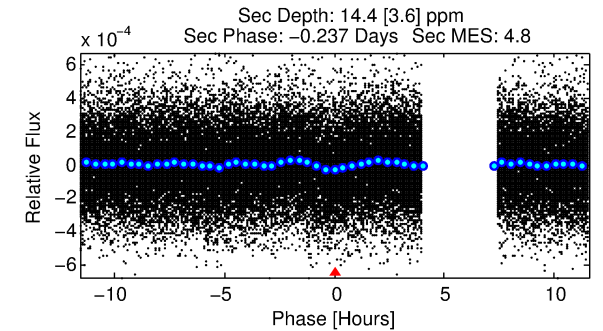
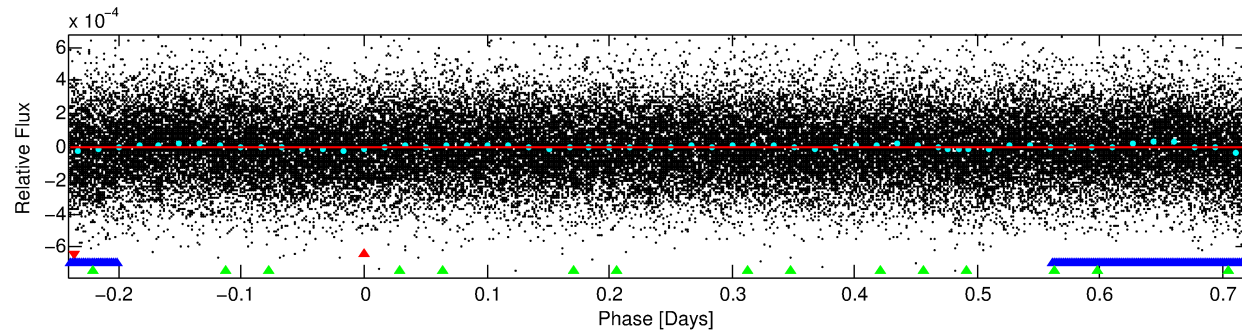
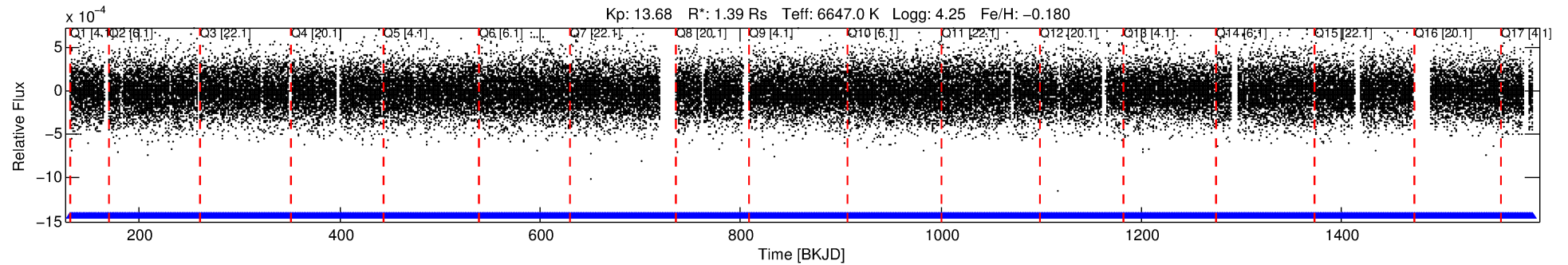
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004820642-01

No Significant Match Found

DV One-Page Summary

KIC: 4820642 Candidate: 1 of 3 Period: 0.962 d



DV Fit Results:

Period = 0.96163 [4.04828] d
Epoch = 131.9324 [971.3247] BKJD
Rp/R* = 0.0000 [0.2383]
a/R* = 2.08 [2589.65]
b = 0.86 [2386.68]
Seff = 8039.44 [45223.77]
Teq = 2415 [3396] K
Rp = 0.00 [36.04] Re
a = 0.0204 [0.0576] AU
Ag = 1646197.63 [83608334037.76] [0.00σ]
Teffp = 133719 [1697974969] K [0.00σ]

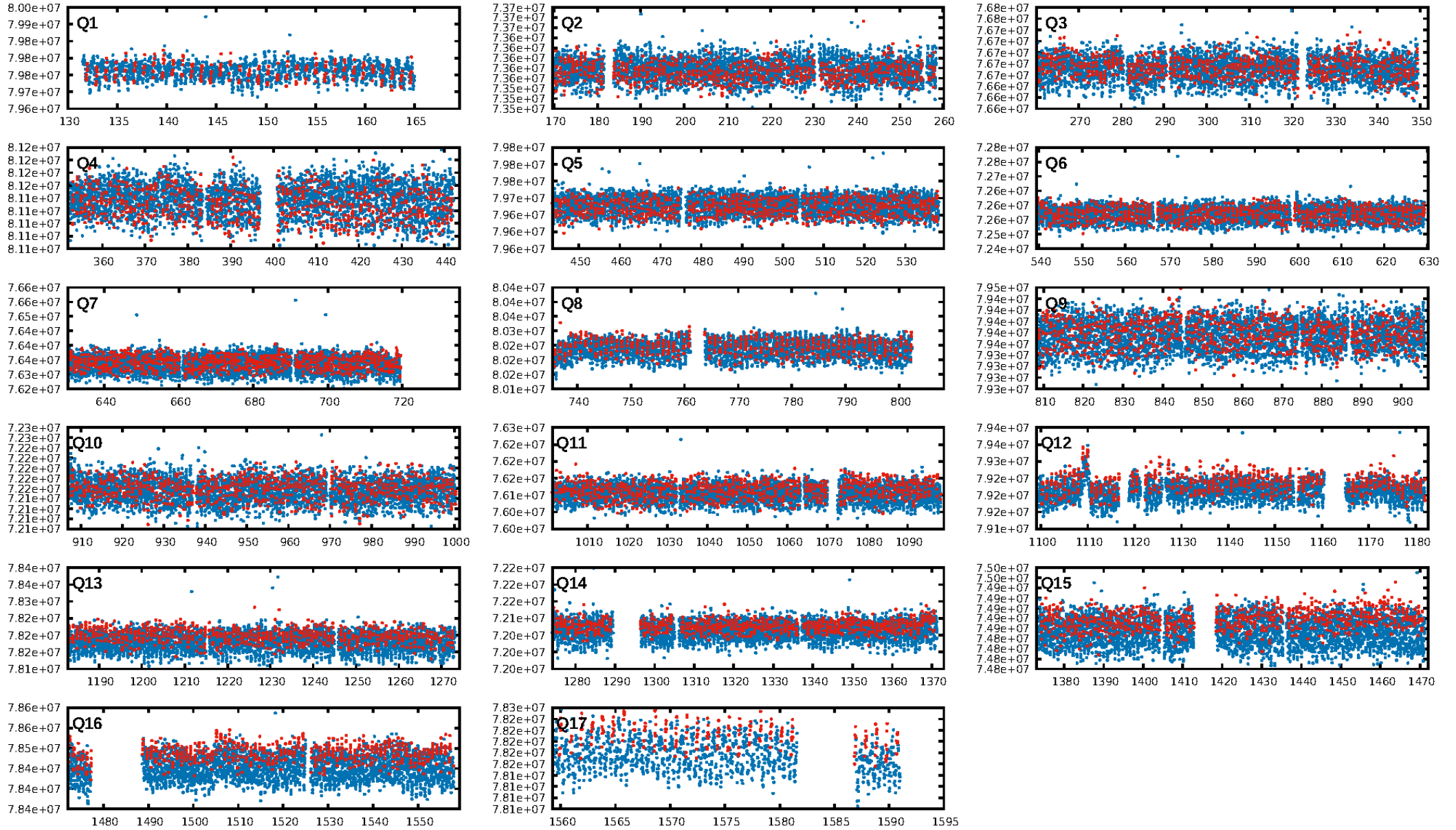
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [703.71σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.72e-20
RollingBand-fgt: 1.00 [1328/1328]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OutOffset-rm: 0.065 arcsec [0.46σ]
KicOffset-rm: 0.088 arcsec [0.62σ]
OutOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.07 [1/15]
DiffImageOverlap-fno: 0.59 [10/17]

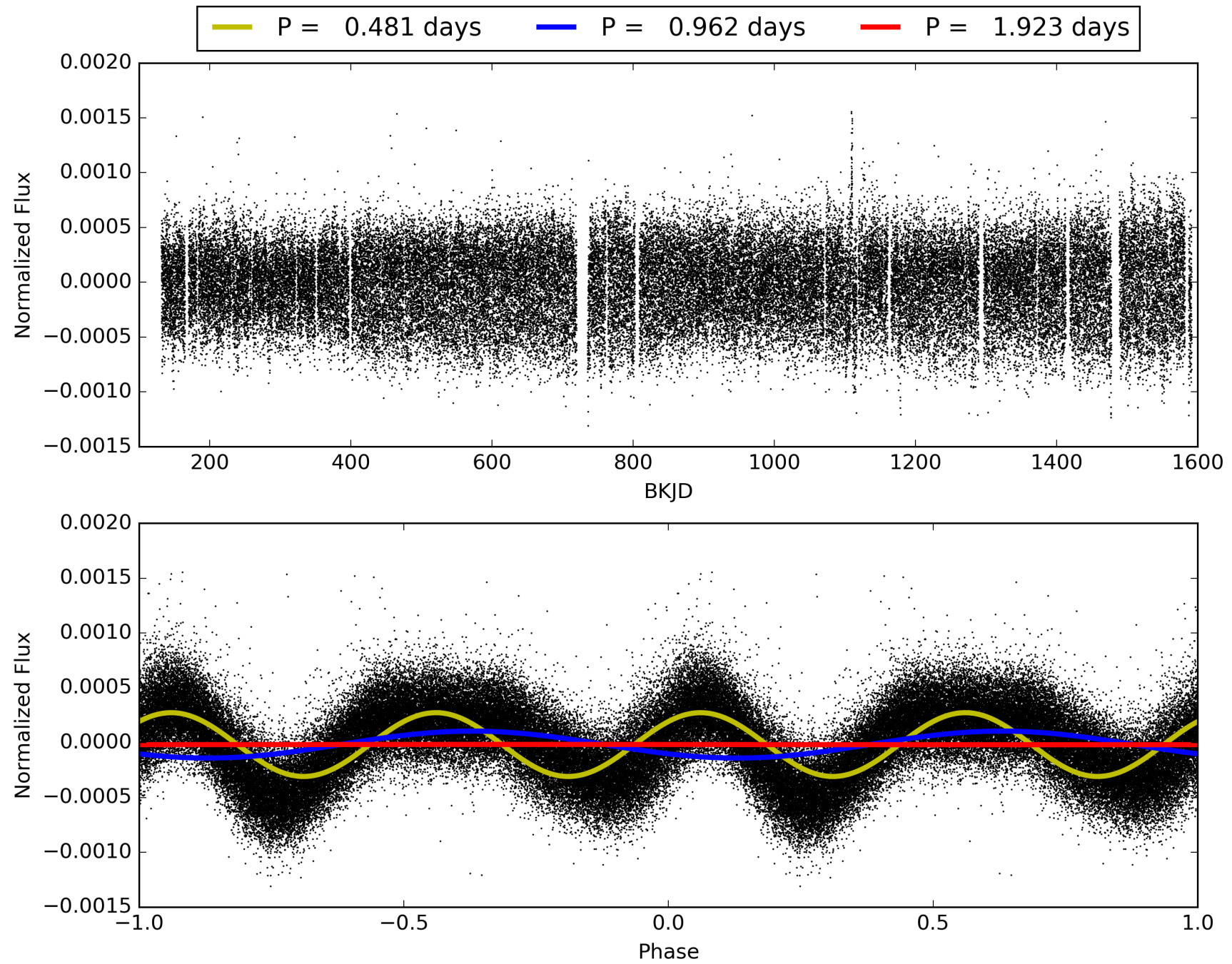
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:14:30 Z

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

TCE 004820642-01, PDC Light Curves

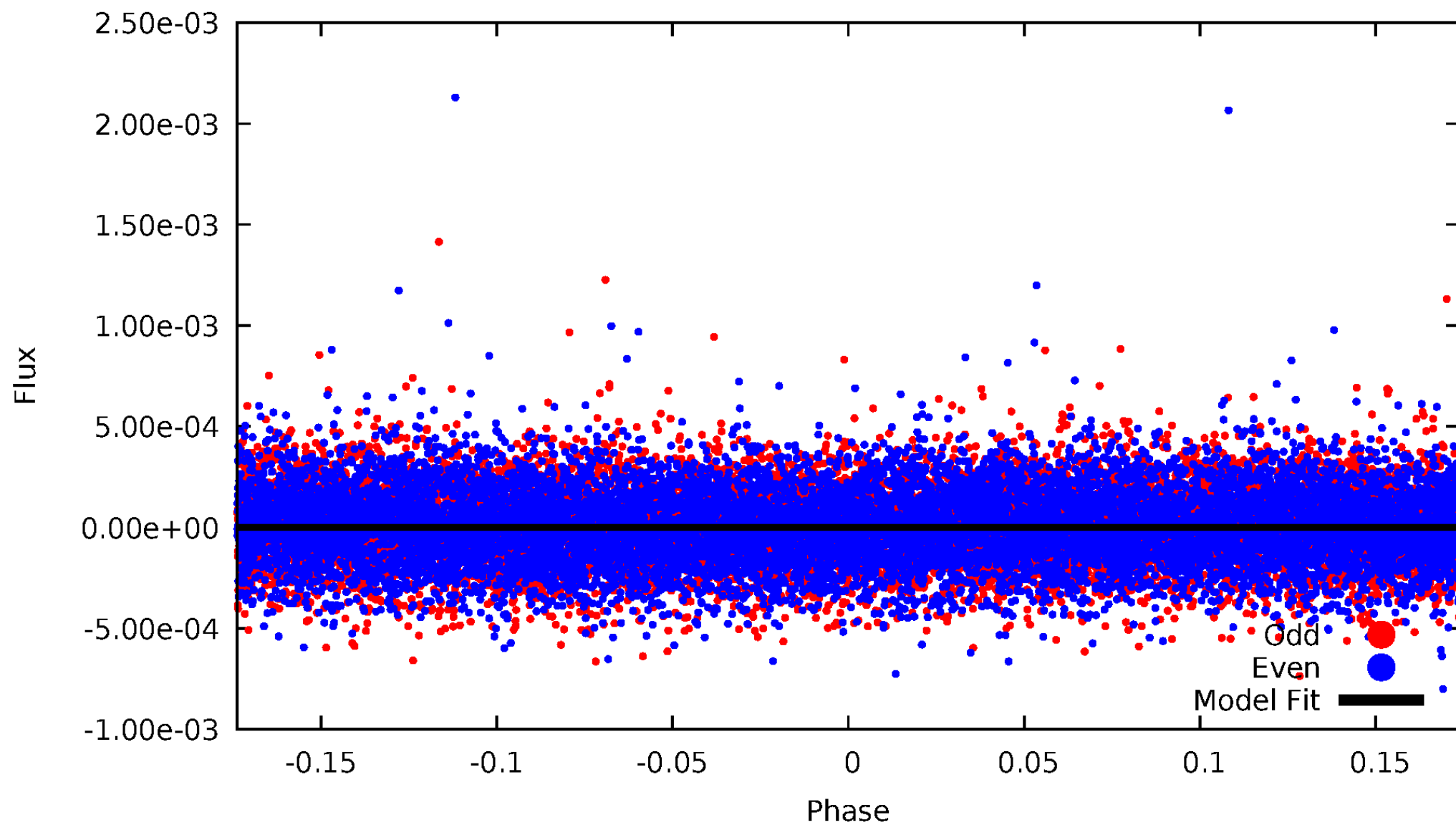


TCE 004820642-01



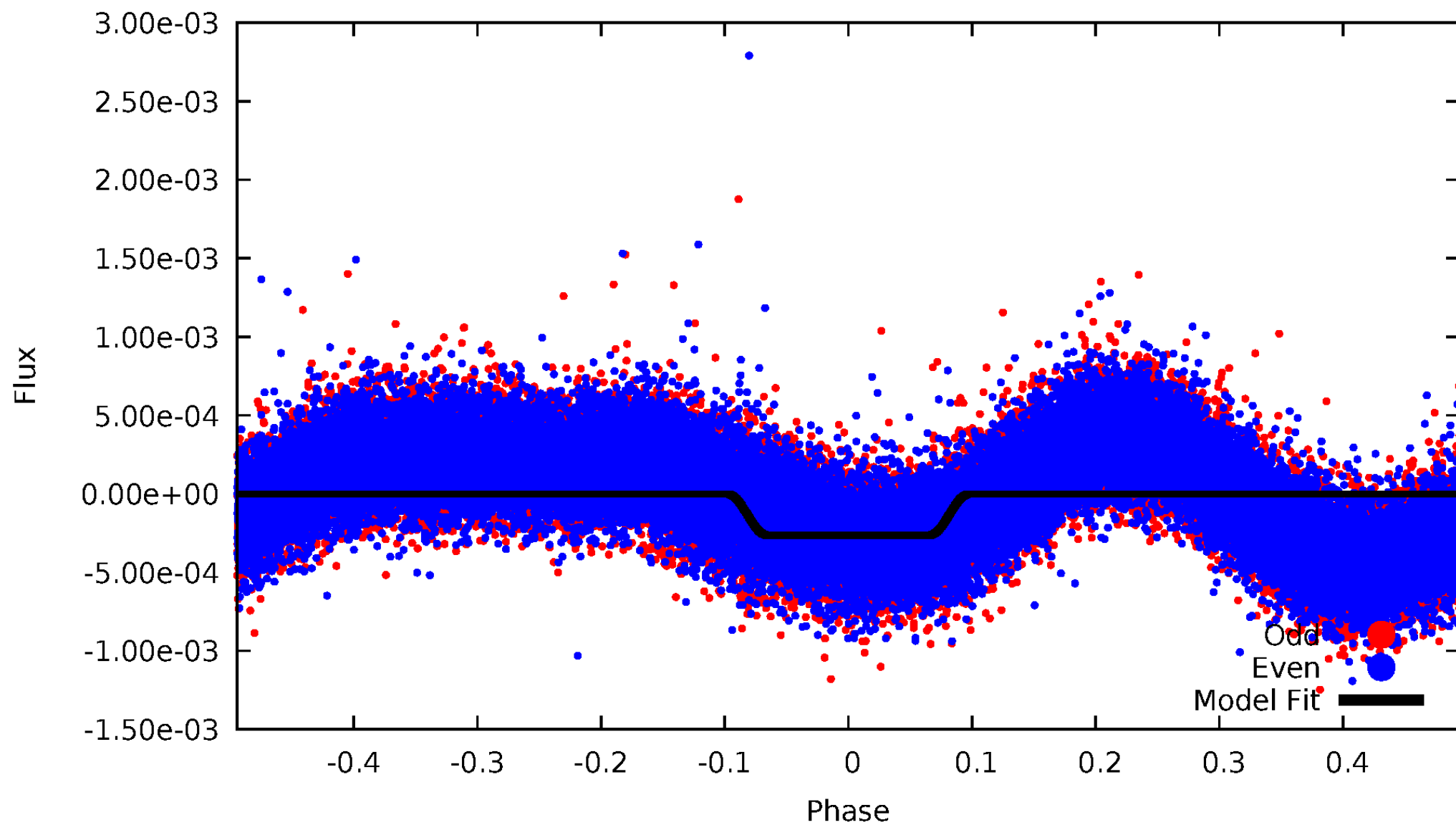
DV Odd/Even

TCE 004820642-01

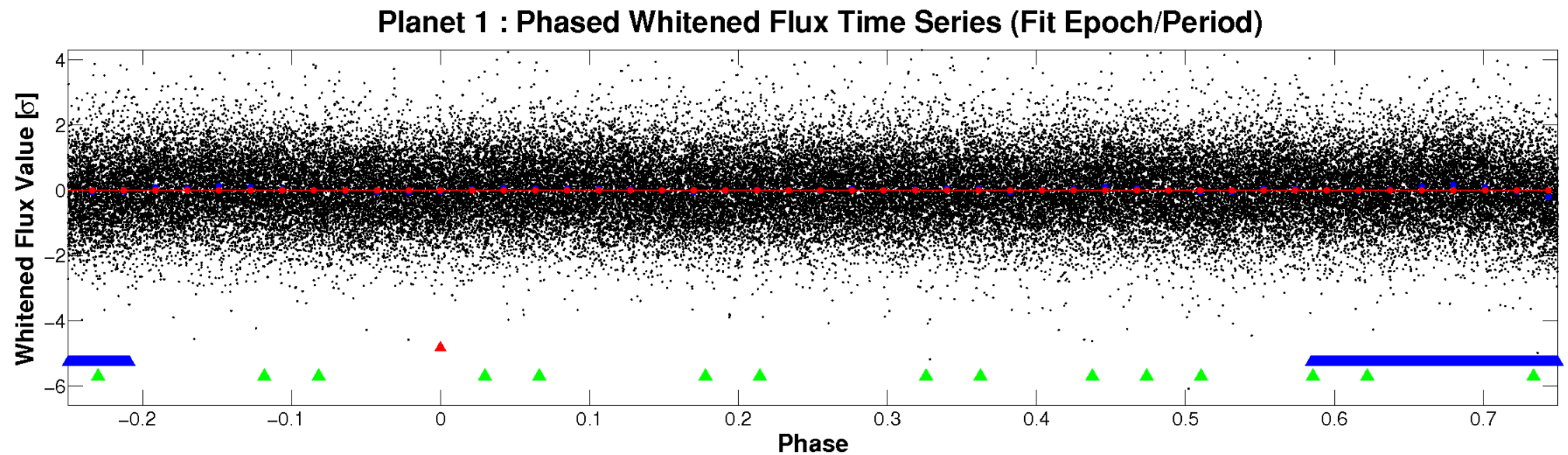
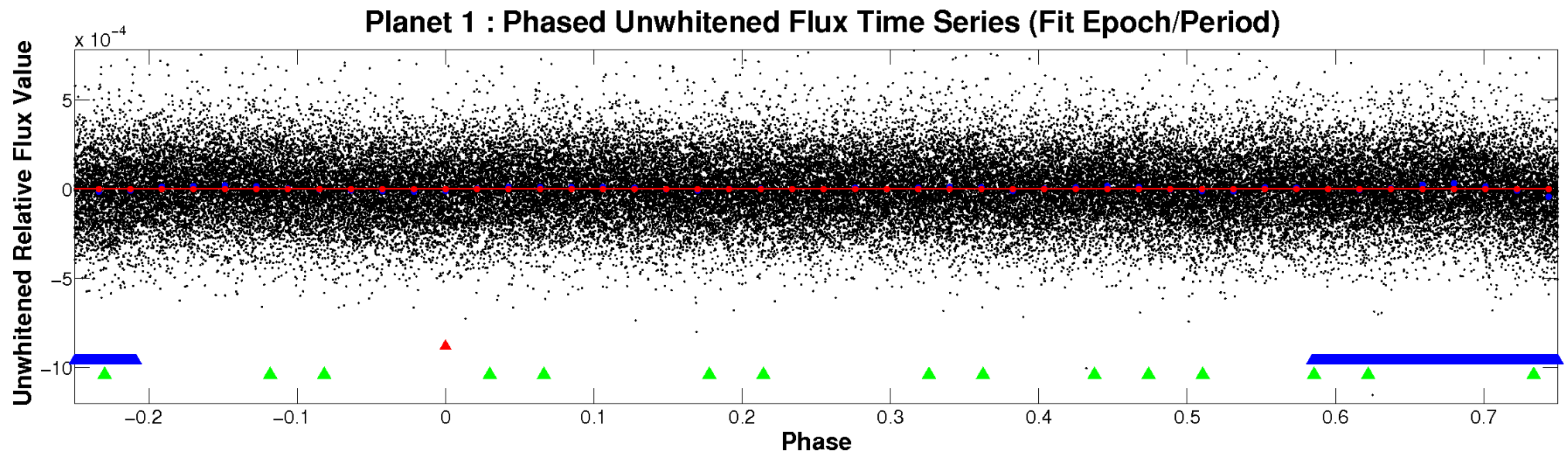


ALT Odd/Even

TCE 004820642-01

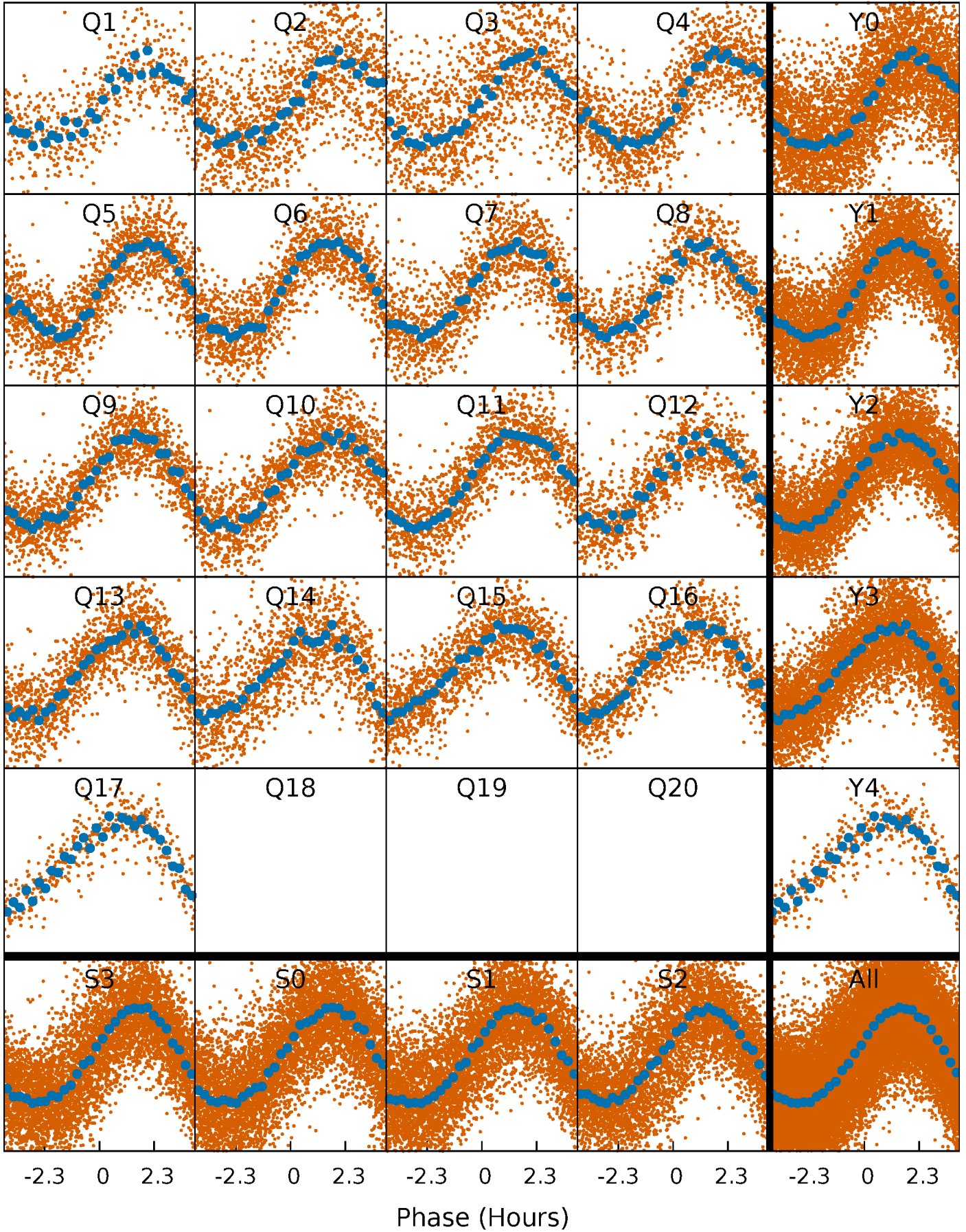


Non-Whitened Vs. Whitened Light Curve



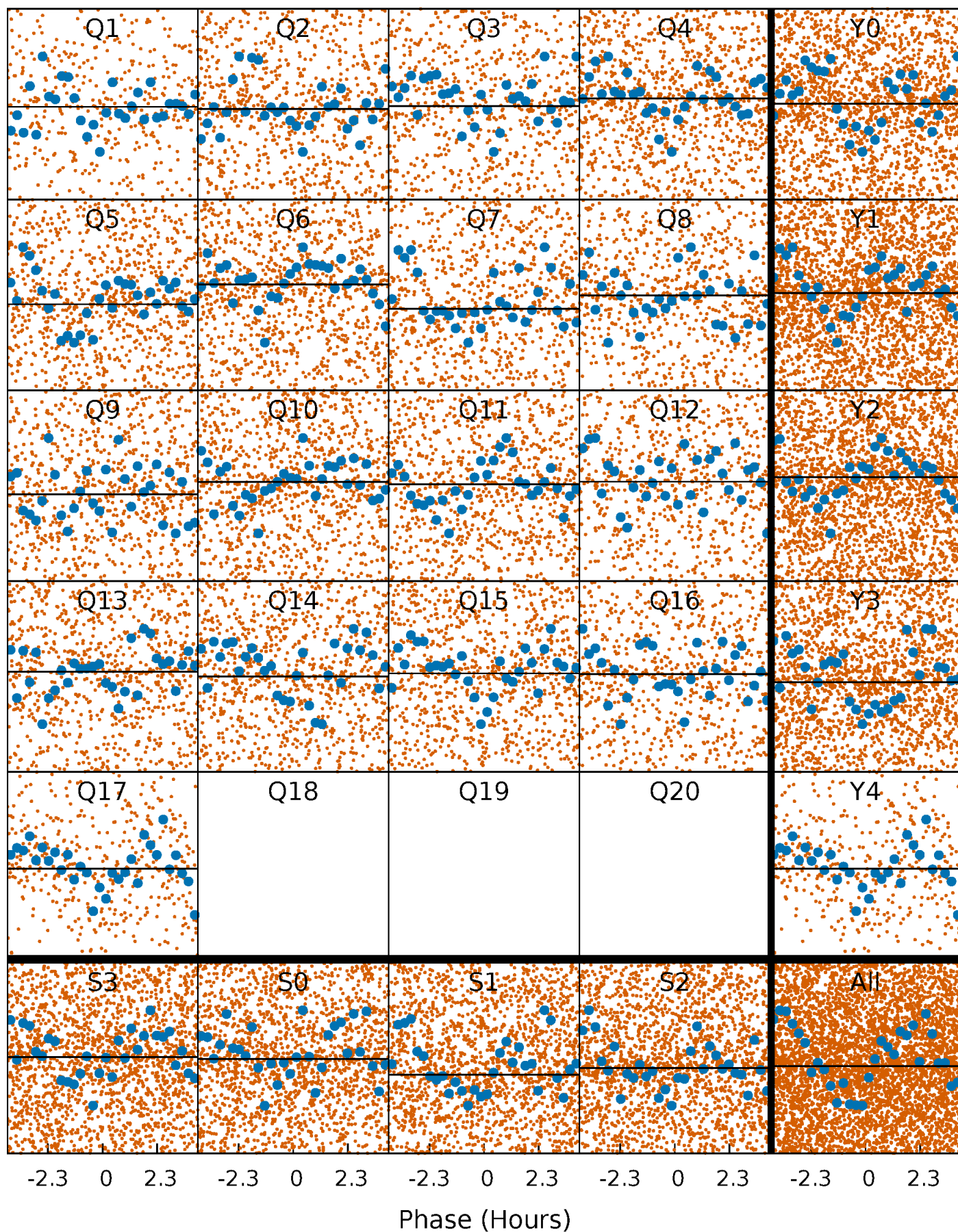
PDC Quarter-Phased Transit Curves

TCE 004820642-01 P= 0.961635 Days $T_0=131.932413$ (BKJD)



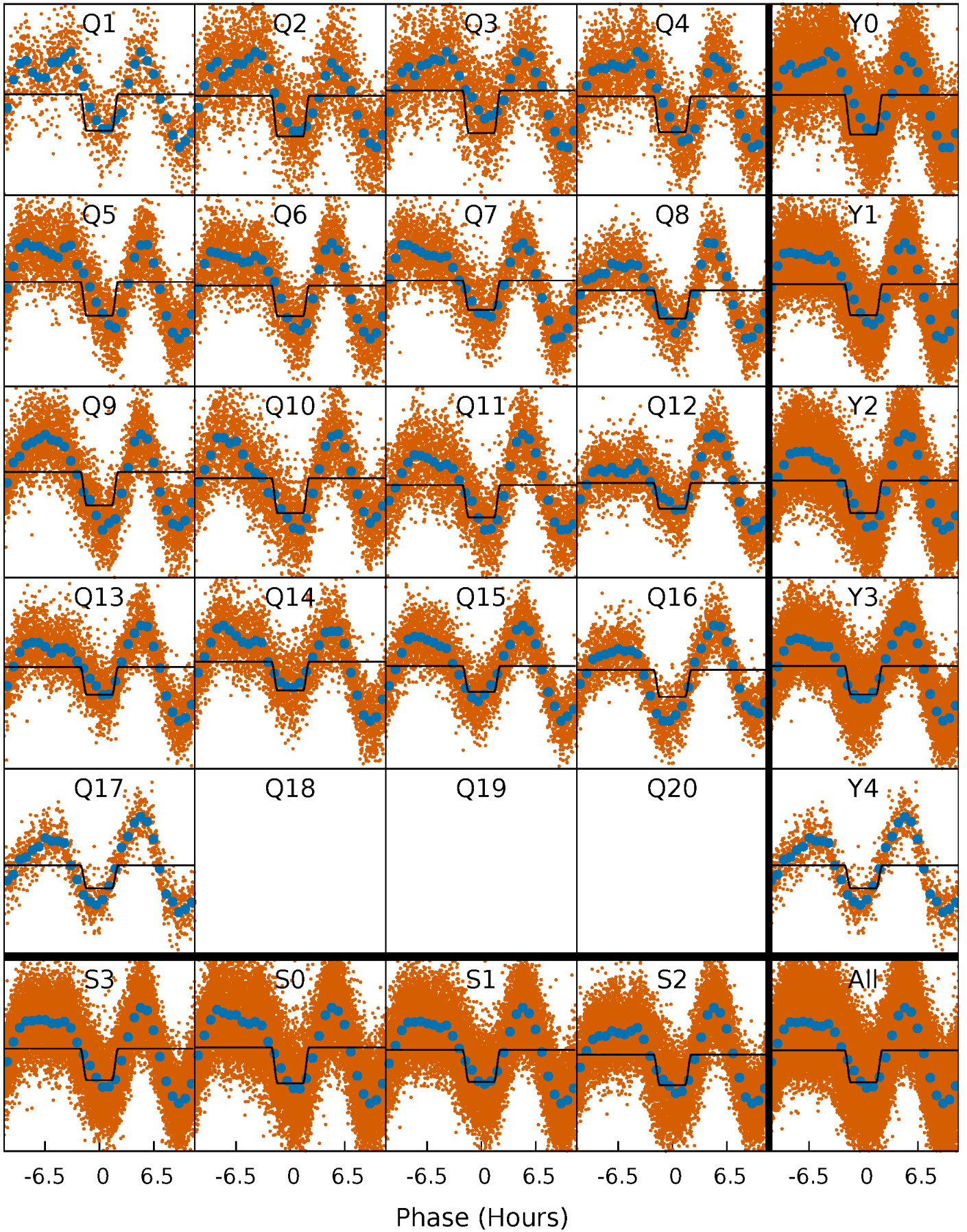
DV Quarter-Phased Transit Curves

TCE 004820642-01 P= 0.961635 Days $T_0=131.932413$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

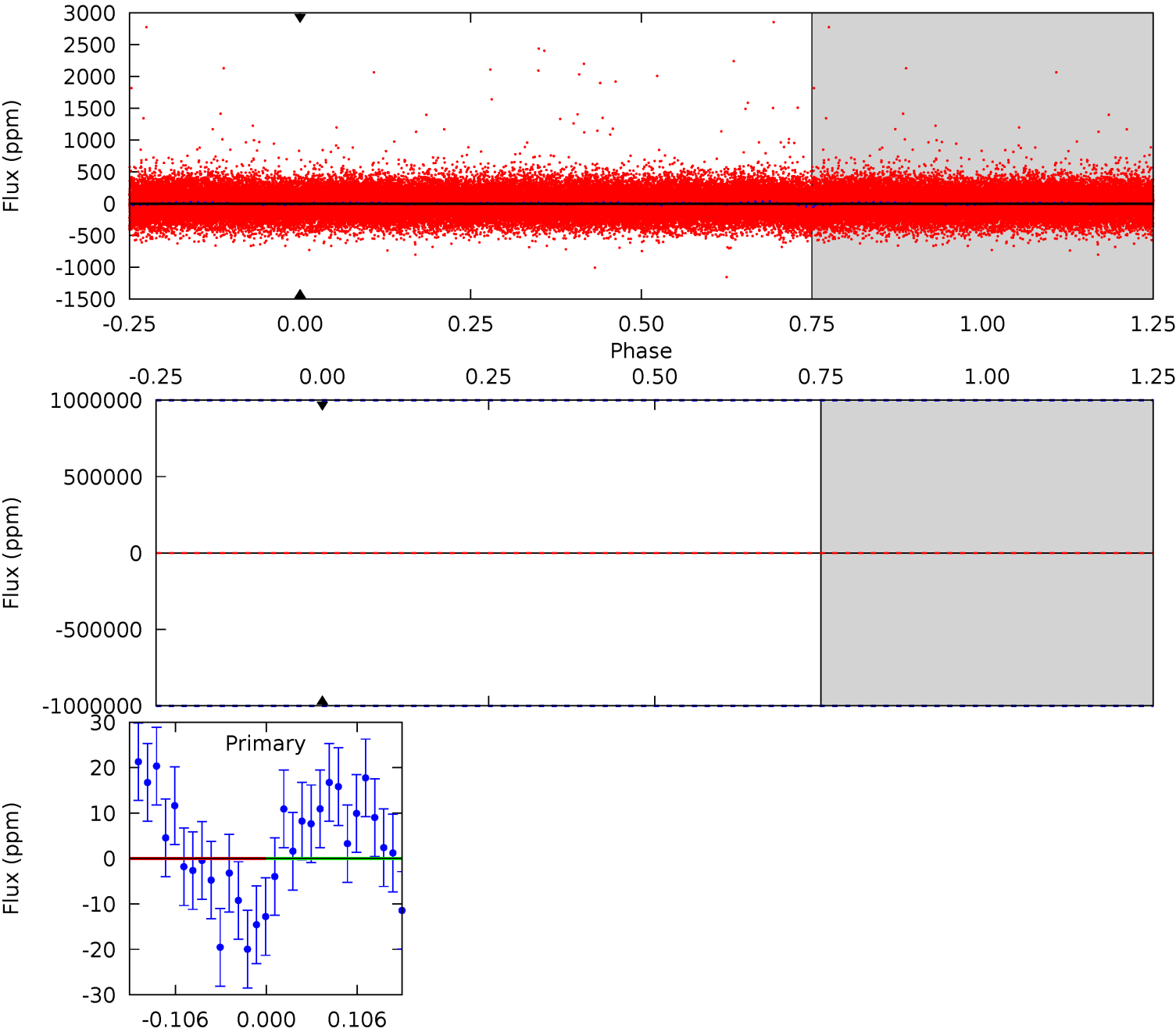
TCE 004820642-01 P= 0.961616 Days $T_0=131.802013$ (BKJD)



DV Model-Shift Uniqueness Test

004820642-01, P = 0.961635 Days, E = 130.970778 Days

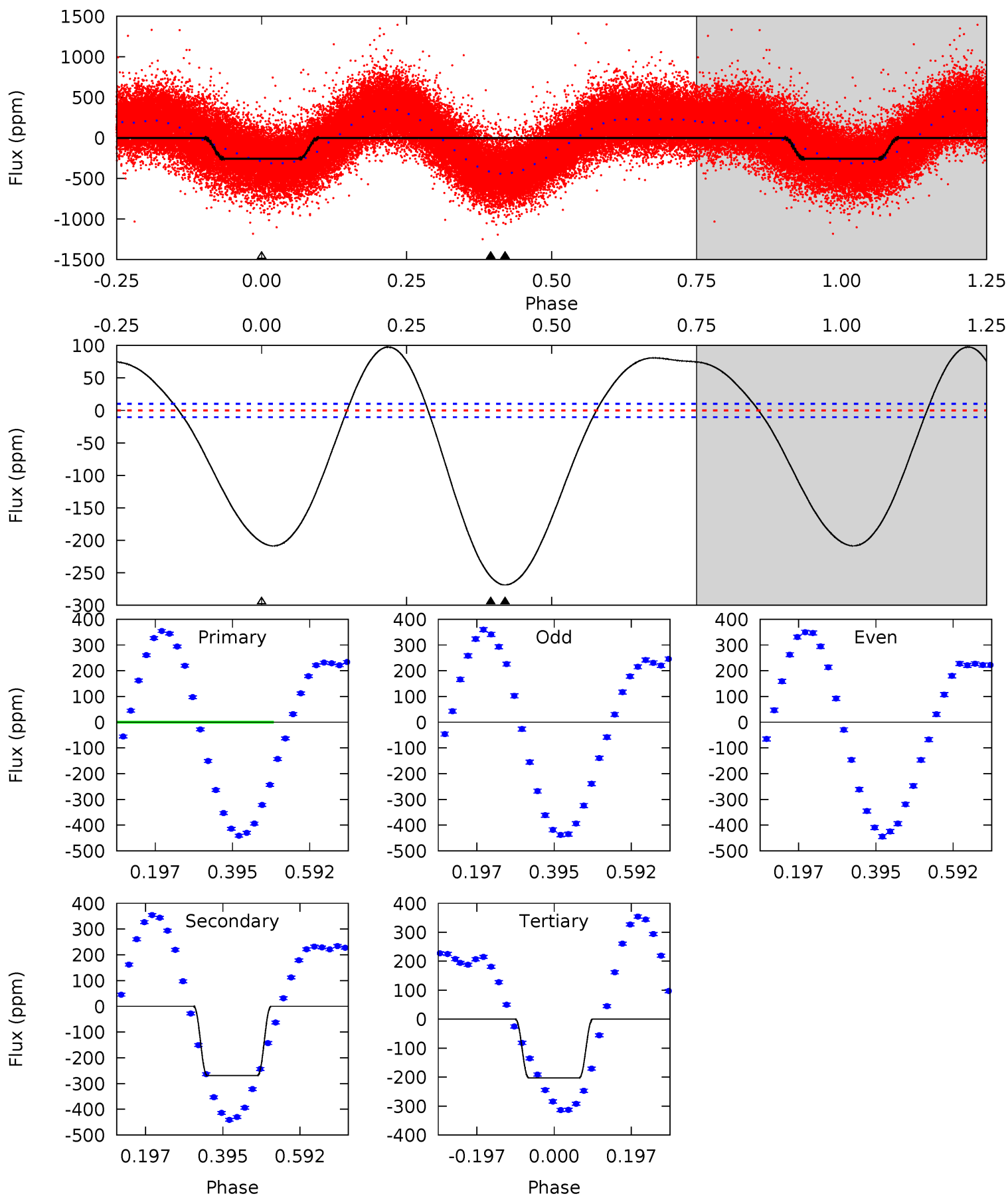
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004820642-01, P = 0.961616 Days, E = 130.840397 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
109.2	114.7	86.6	0	4.42	1.29	45.2	22.7	109.2	28.2	114.7	2.07	1.02	0.27	24.0



Stellar Parameters For KIC 004820642

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6647^{+166}_{-216}	$4.245^{+0.124}_{-0.186}$	$-0.180^{+0.250}_{-0.300}$	$1.386^{+0.408}_{-0.272}$	$1.239^{+0.175}_{-0.195}$	$0.655^{+0.383}_{-0.323}$
	+2%/-3%	+3%/-4%	+139%/-167%	+29%/-20%	+14%/-16%	+58%/-49%
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 004820642-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$26.31^{+25.10}_{-18.06}$	2326^{+1239}_{-475}	-4522^{+16182}_{-7957}	$-1.907^{+220.283}_{-285.880}$
Alt.	-269 ± 2	$25.33^{+26.37}_{-17.10}$	2300^{+1015}_{-494}	2307^{+1542}_{-5258}	$0.444^{+4.459}_{-0.378}$

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

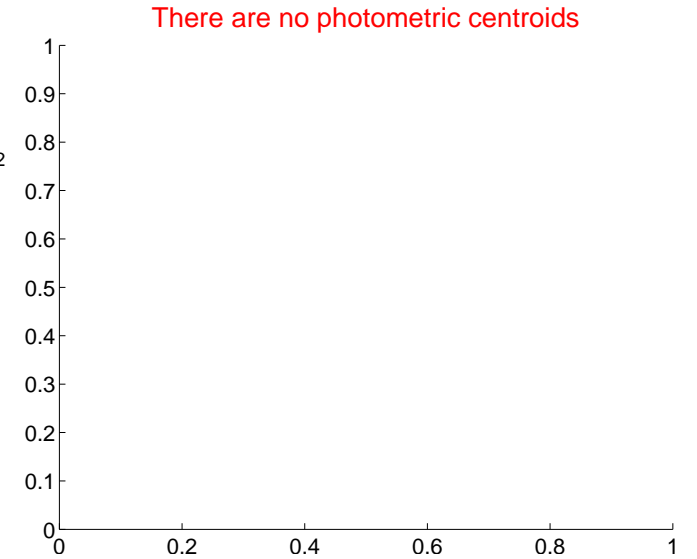
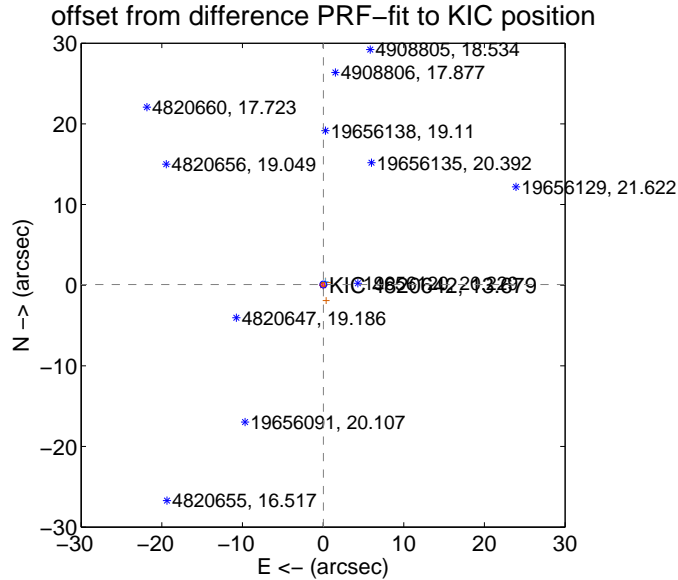
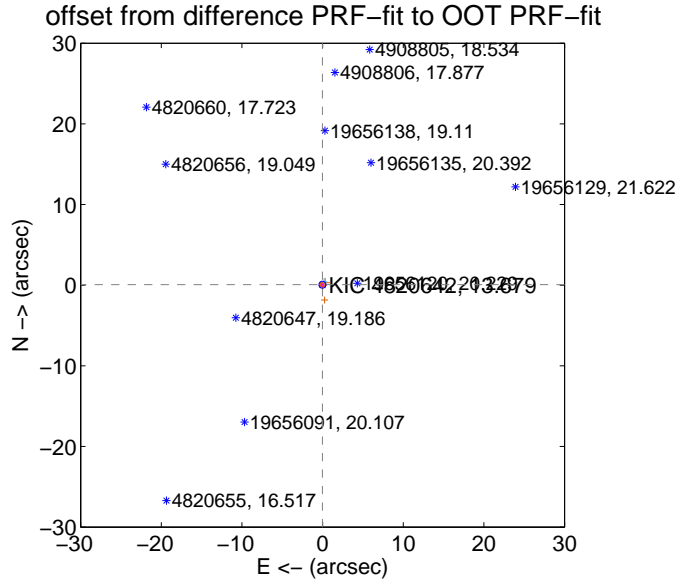
DV Centroid Data

Supplemental centroid analysis for 004820642-01. Kepler magnitude: 13.68. Transit SNR 0.00

There are 1 quarters with good PRF difference image offsets

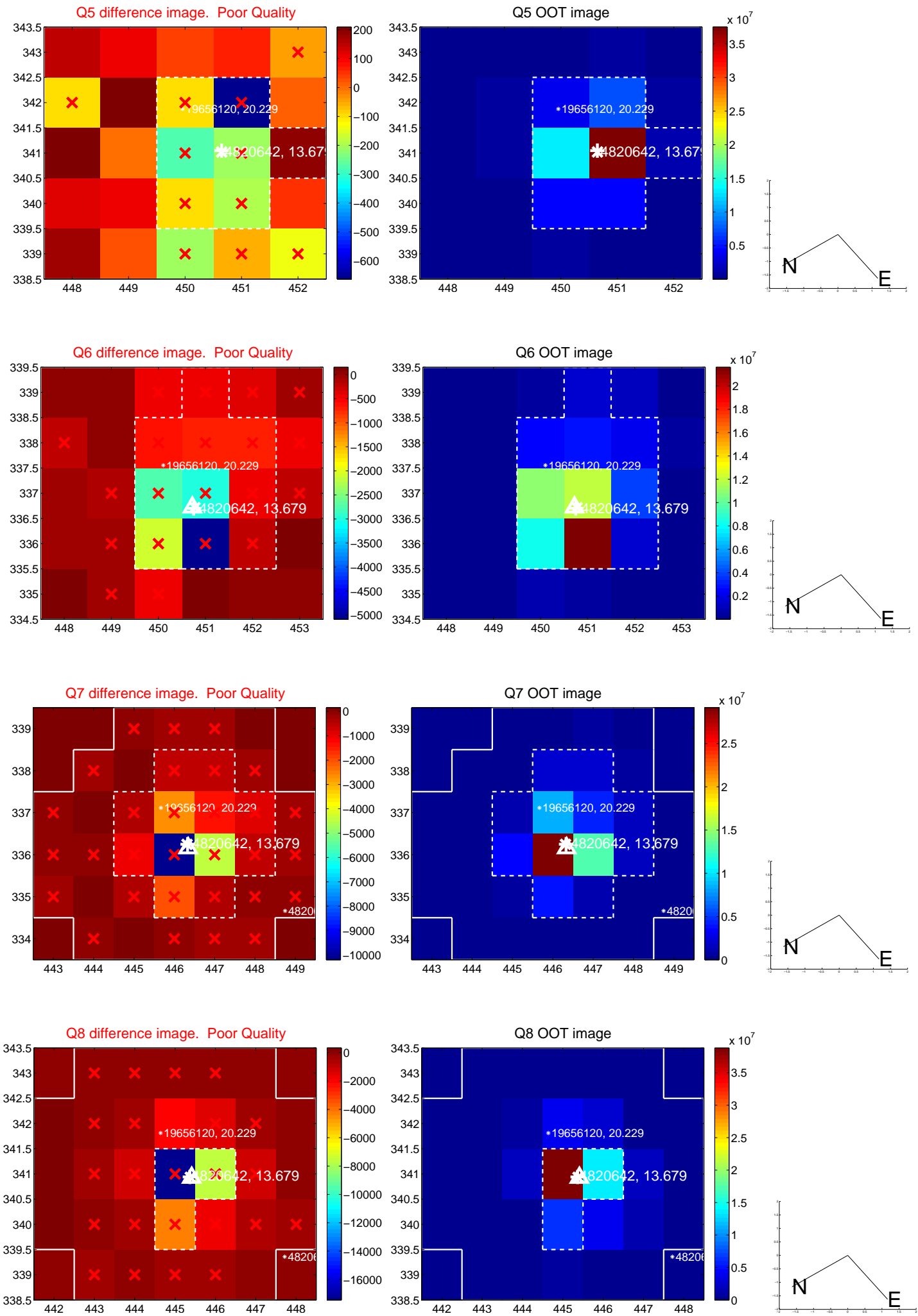
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.065 ± 0.143	0.46	0.022 ± 0.081	0.062 ± 0.145
PRF-fit source offset from KIC position	0.088 ± 0.142	0.62	-0.032 ± 0.080	0.083 ± 0.154
photometric centroid source offset	—	—	—	—

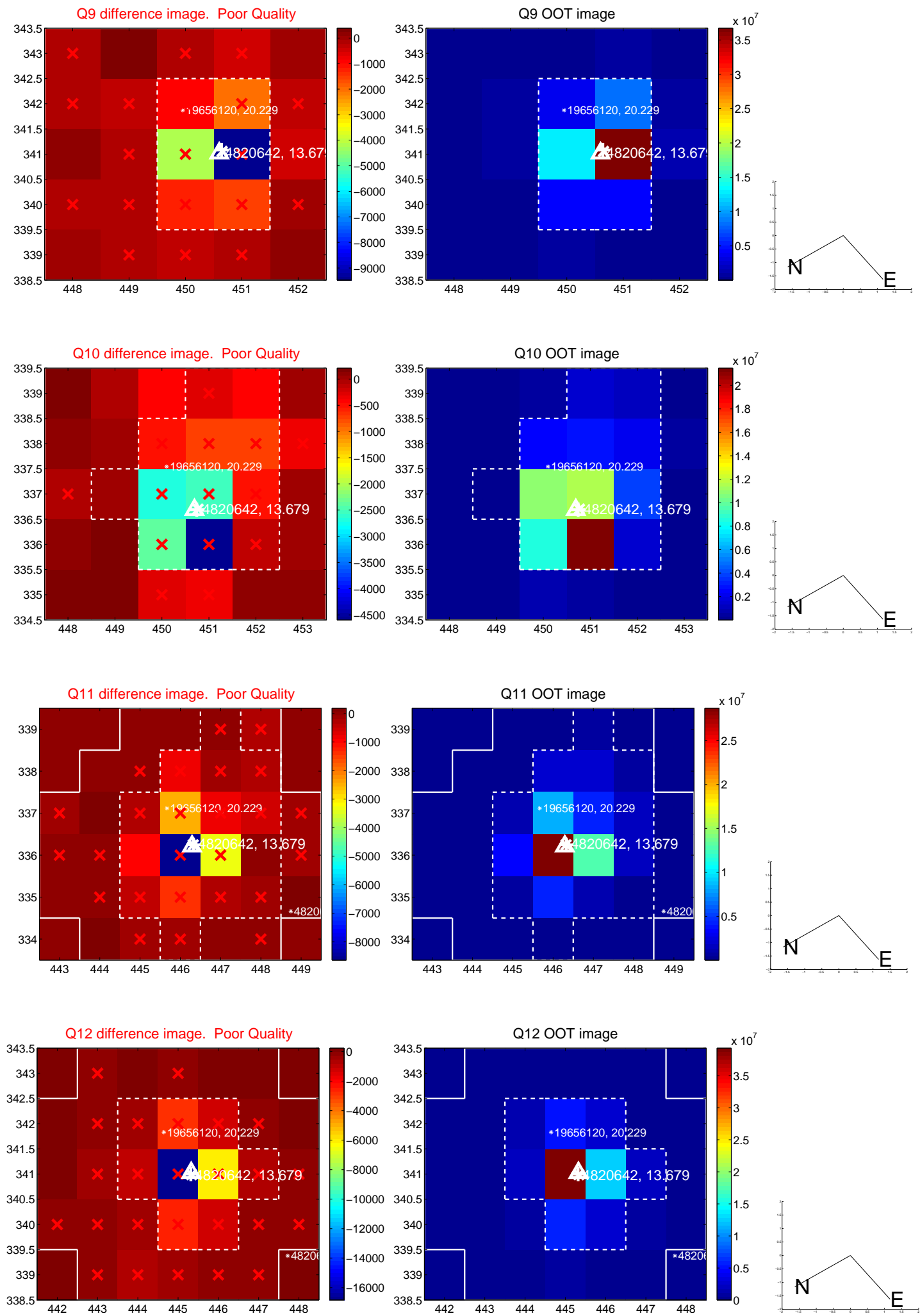


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

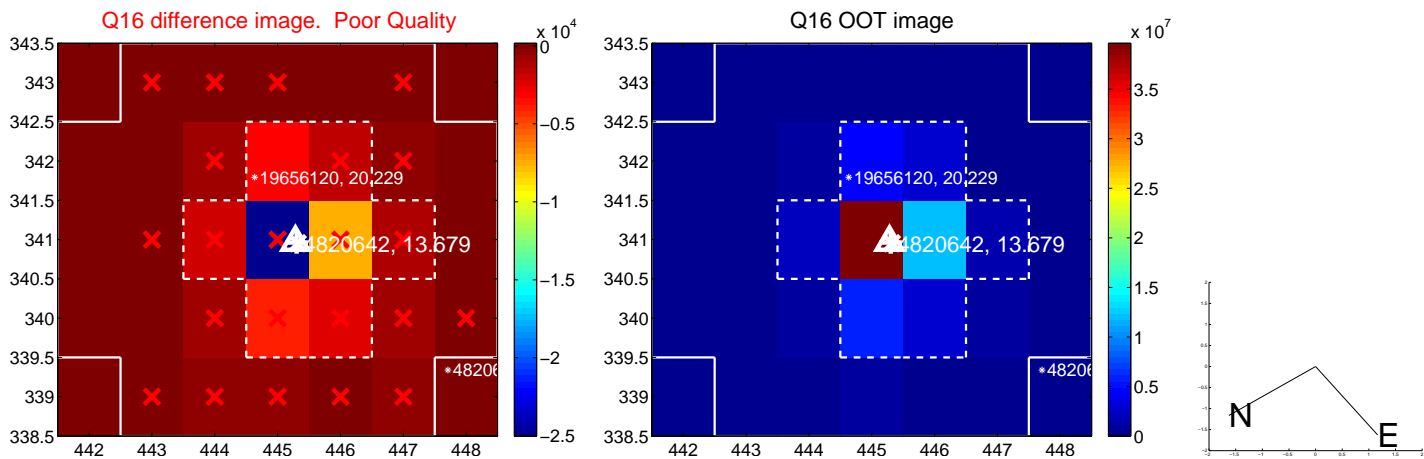
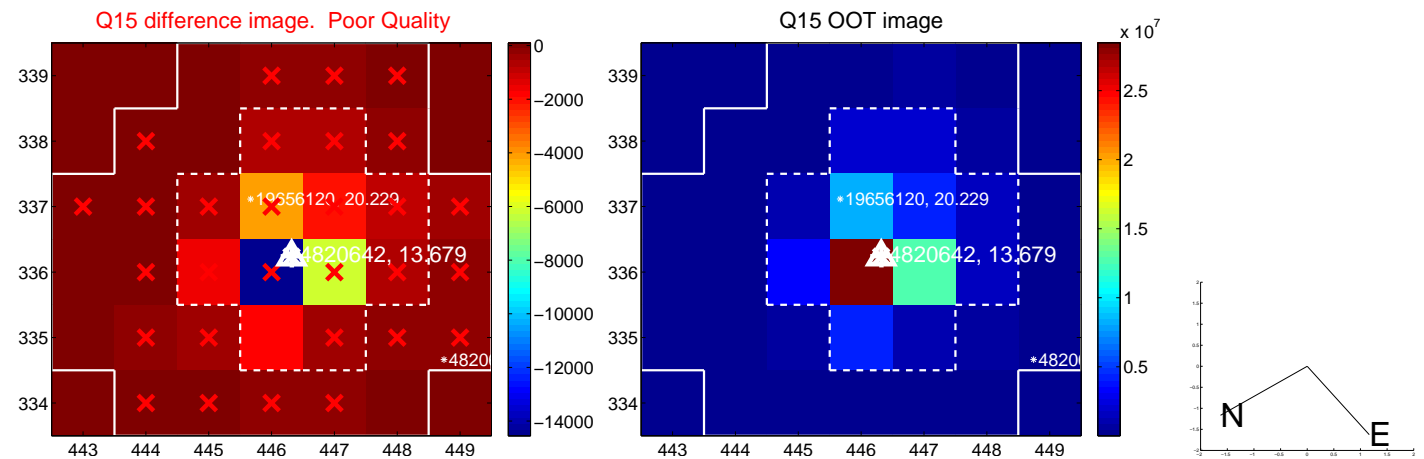
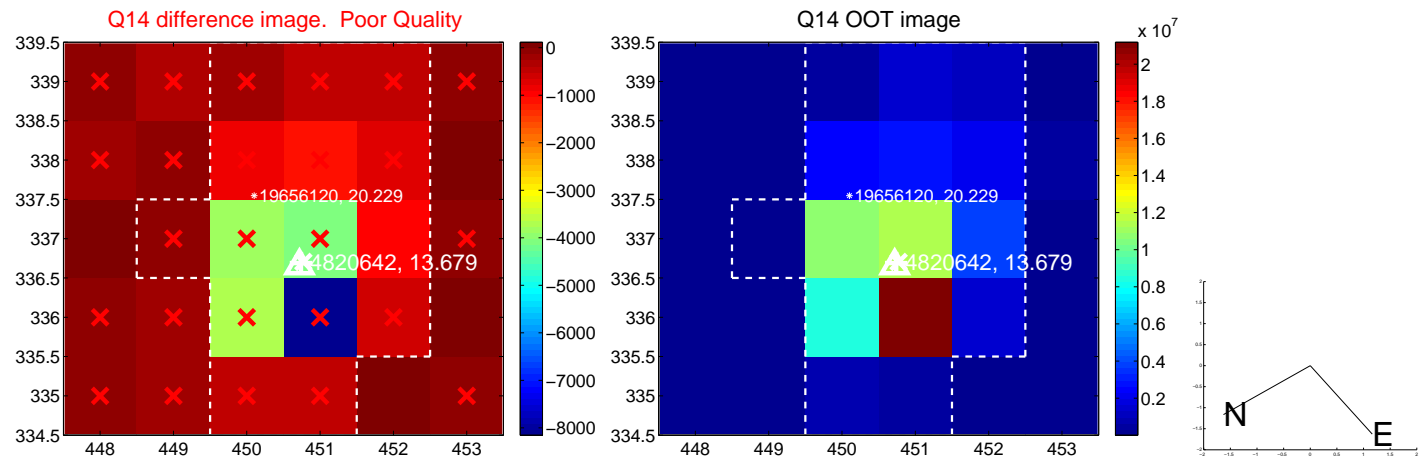
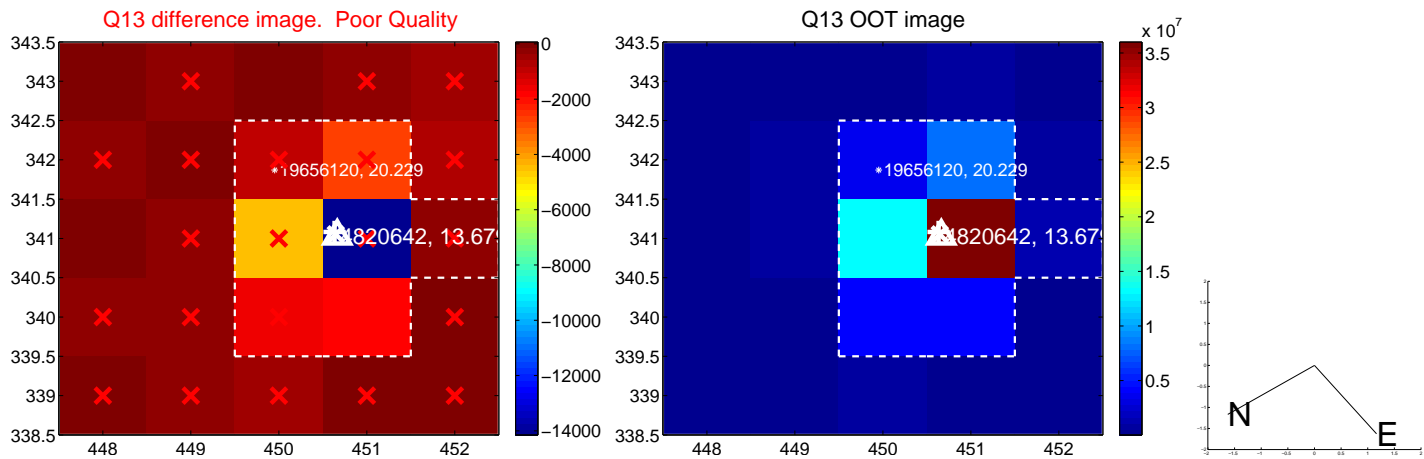
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



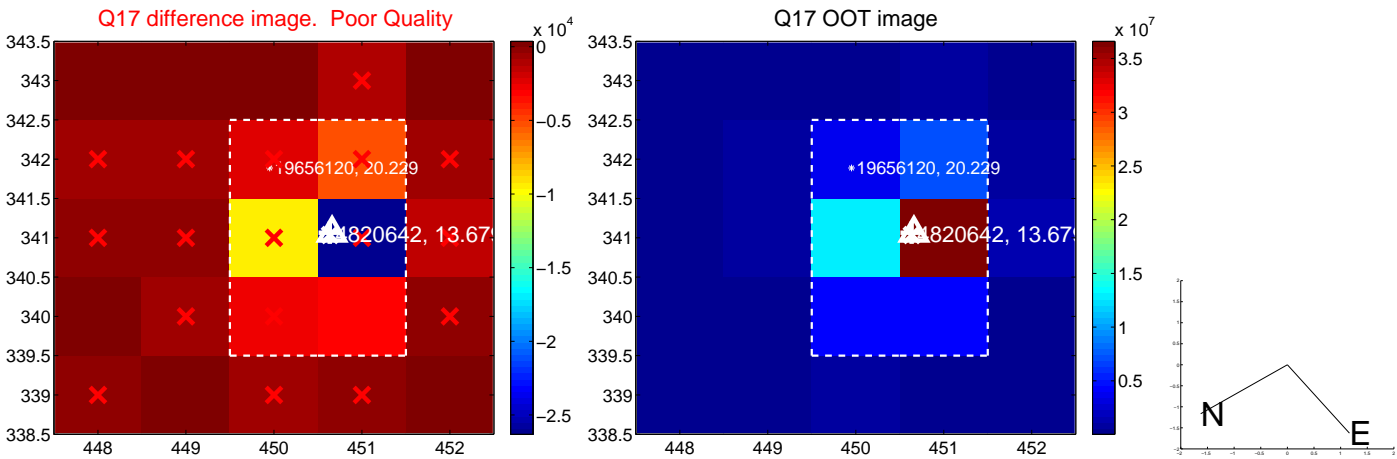
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



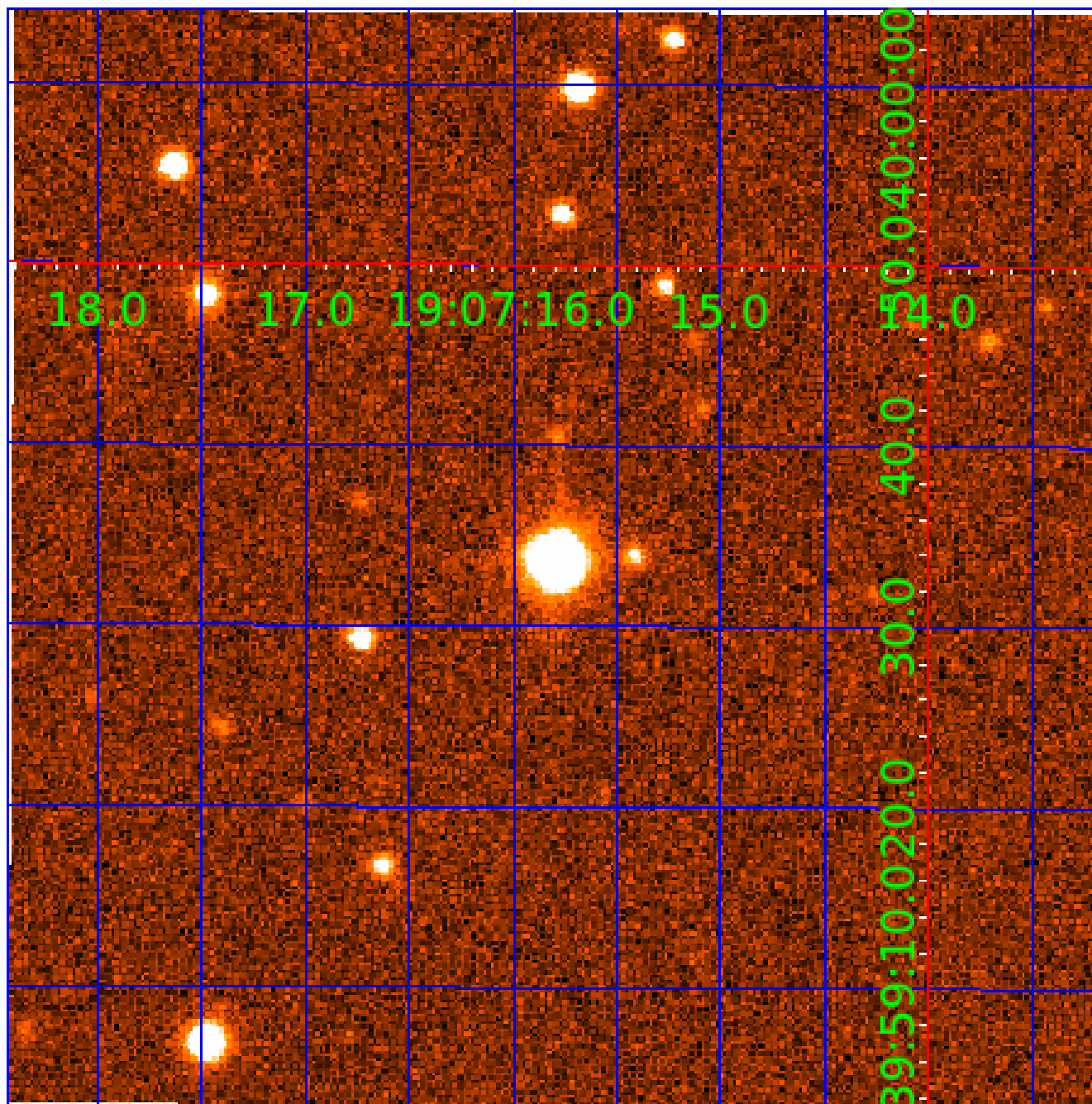
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 004820642

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})
004820642-01	OBS	No	0.961635	131.932413	0.0	2.006	9.8	0.0	1.39	6647	0.00	8039.44
004820642-02	OBS	No	0.961504	131.731627	30.2	0.526	10.0	3.4	1.39	6647	0.80	8040.90
004820642-03	OBS	No	96.021093	220.893765	244.6	2.547	7.2	7.4	1.39	6647	2.54	17.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004820642-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004820642-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
004820642-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

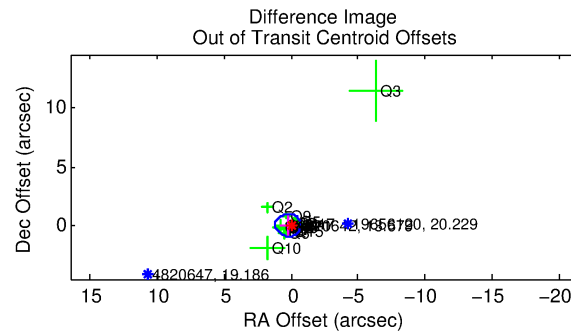
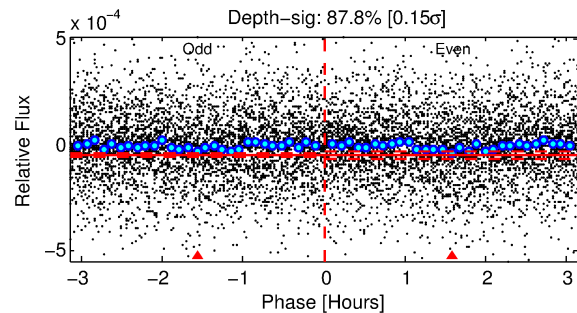
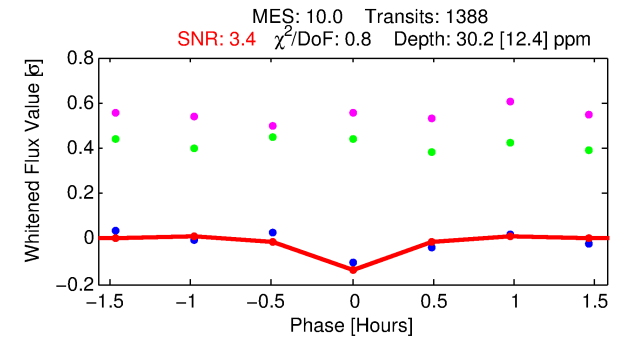
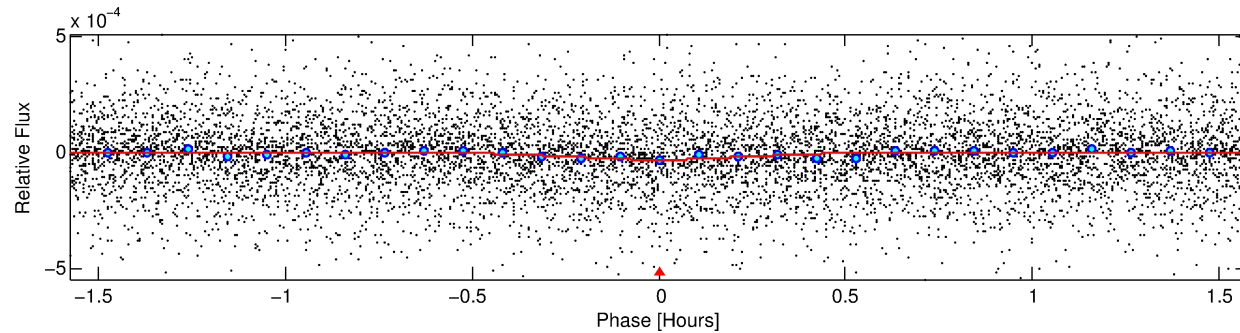
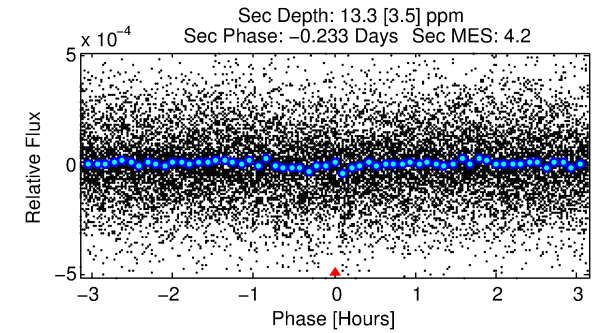
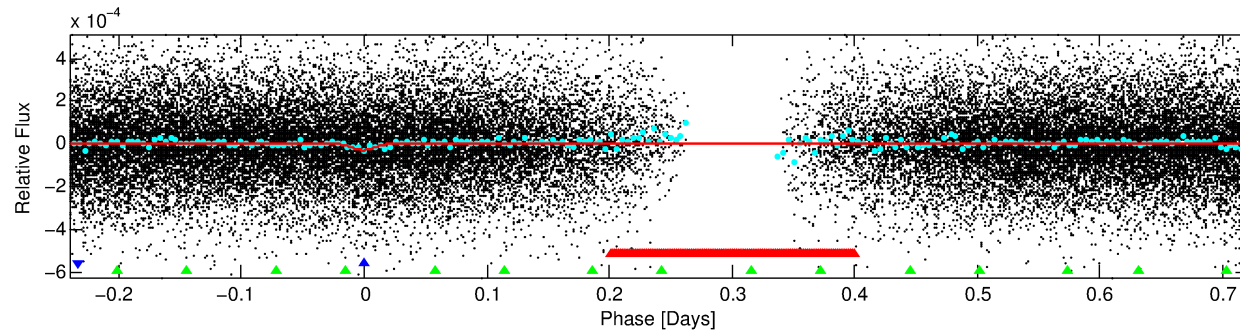
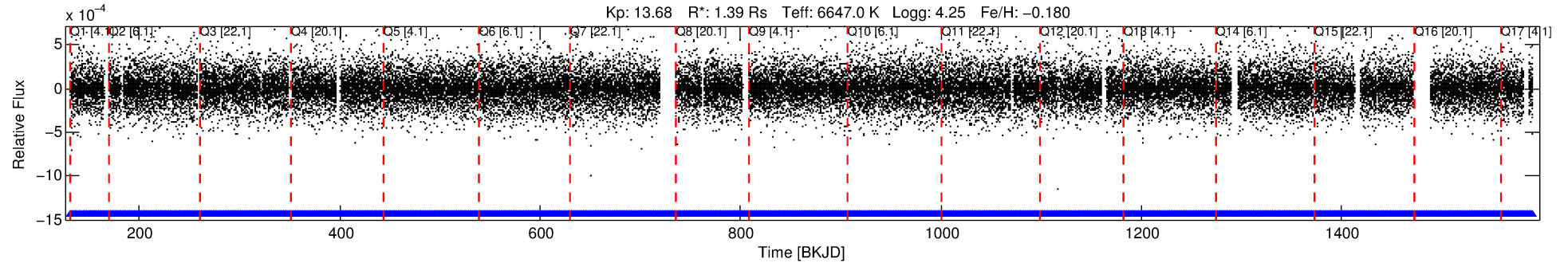
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004820642-02

No Significant Match Found

DV One-Page Summary

KIC: 4820642 Candidate: 2 of 3 Period: 0.962 d



DV Fit Results:

Period = 0.96150 [0.00003] d
Epoch = 131.7316 [0.0034] BKJD
Rp/R* = 0.0053 [0.0306]
a/R* = 14.02 [442.20]
b = 0.07 [477.08]
Seff = 8040.90 [2975.47]
Teq = 2415 [223] K
Rp = 0.80 [4.63] Re
a = 0.0204 [0.0050] AU
Ag = 4.82 [56.12] [0.07σ]
Teffp = 5532 [16088] K [0.19σ]

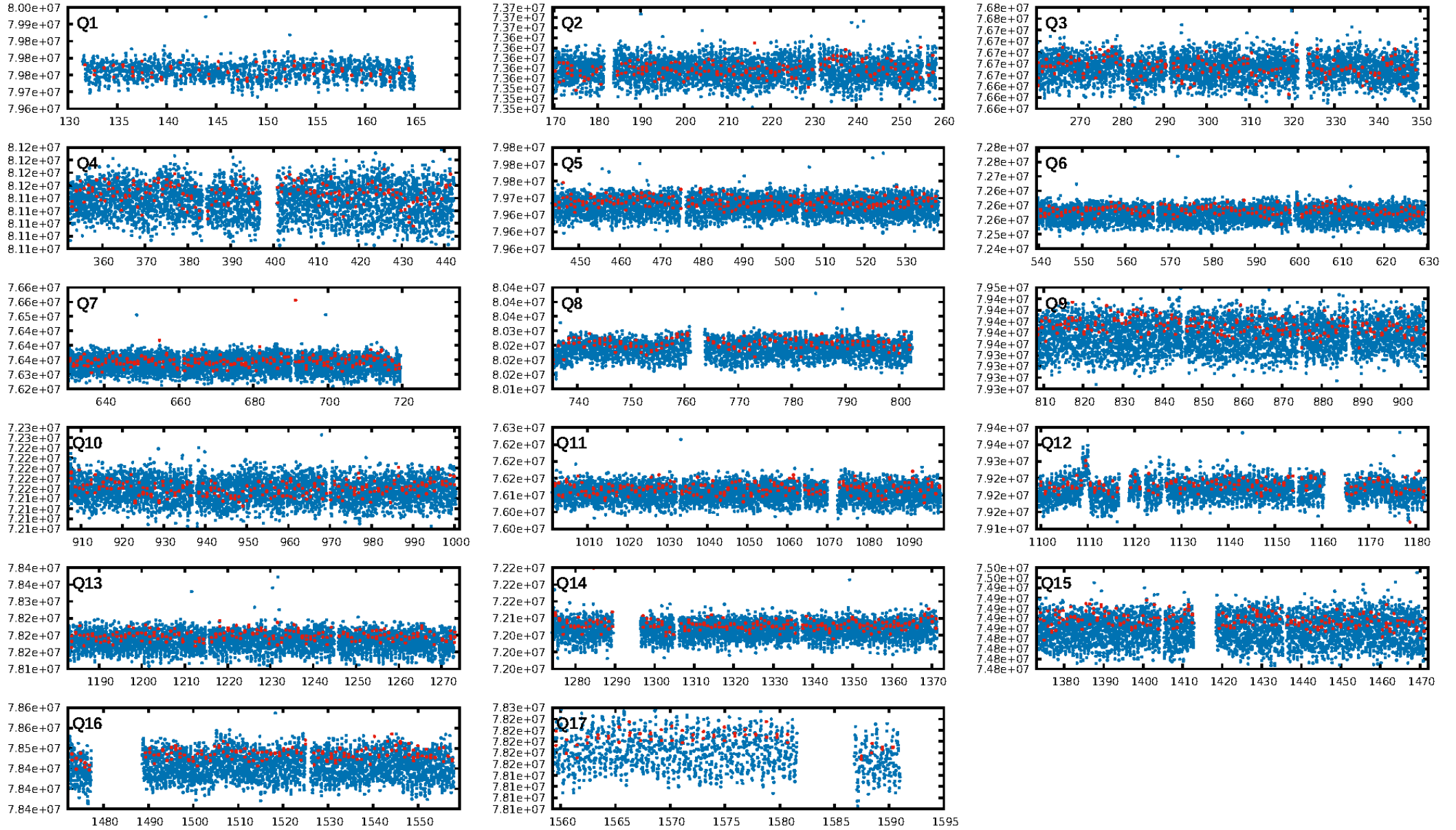
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.42e-21
RollingBand-fgt: 1.00 [1326/1326]
GhostDiagnostic-chr: -4.754
Centroid-sig: 0.4%
Centroid-so: 4.542 arcsec [2.14σ]
OotOffset-rm: 0.242 arcsec [0.77σ]
KicOffset-rm: 0.174 arcsec [0.46σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.07 [1/15]
DiffImageOverlap-fno: 0.71 [12/17]

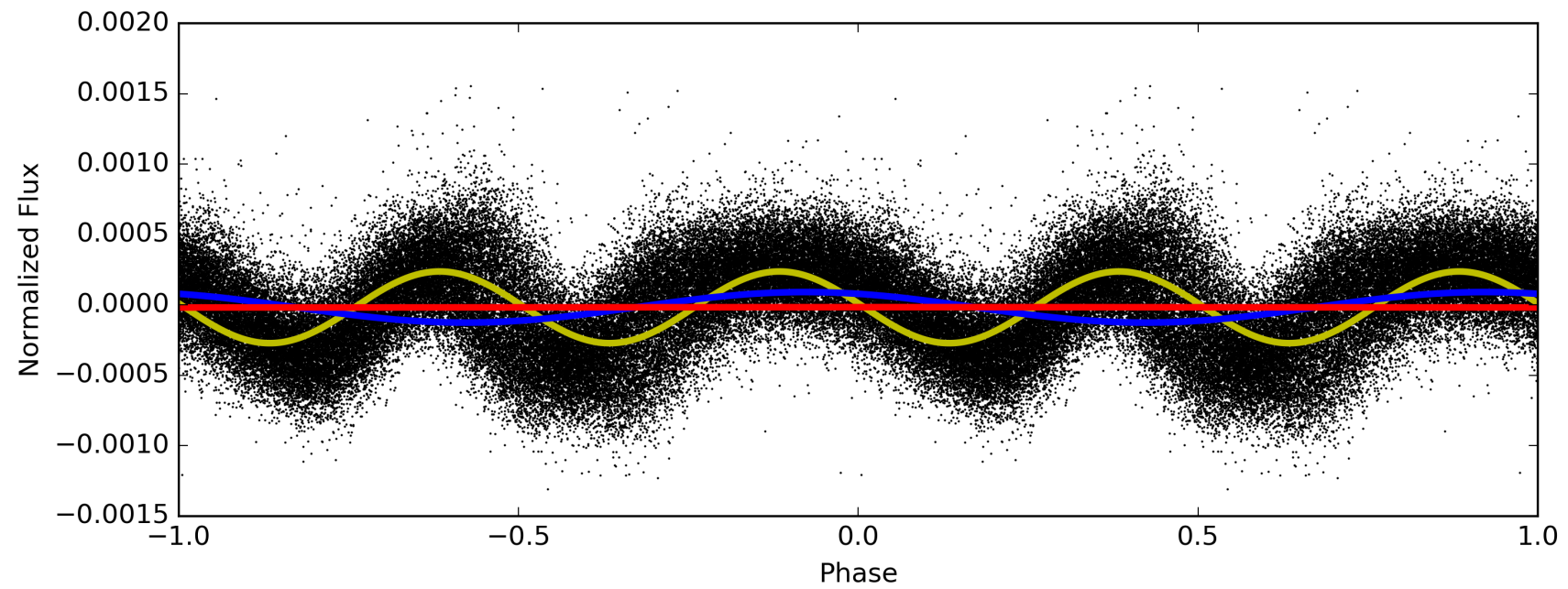
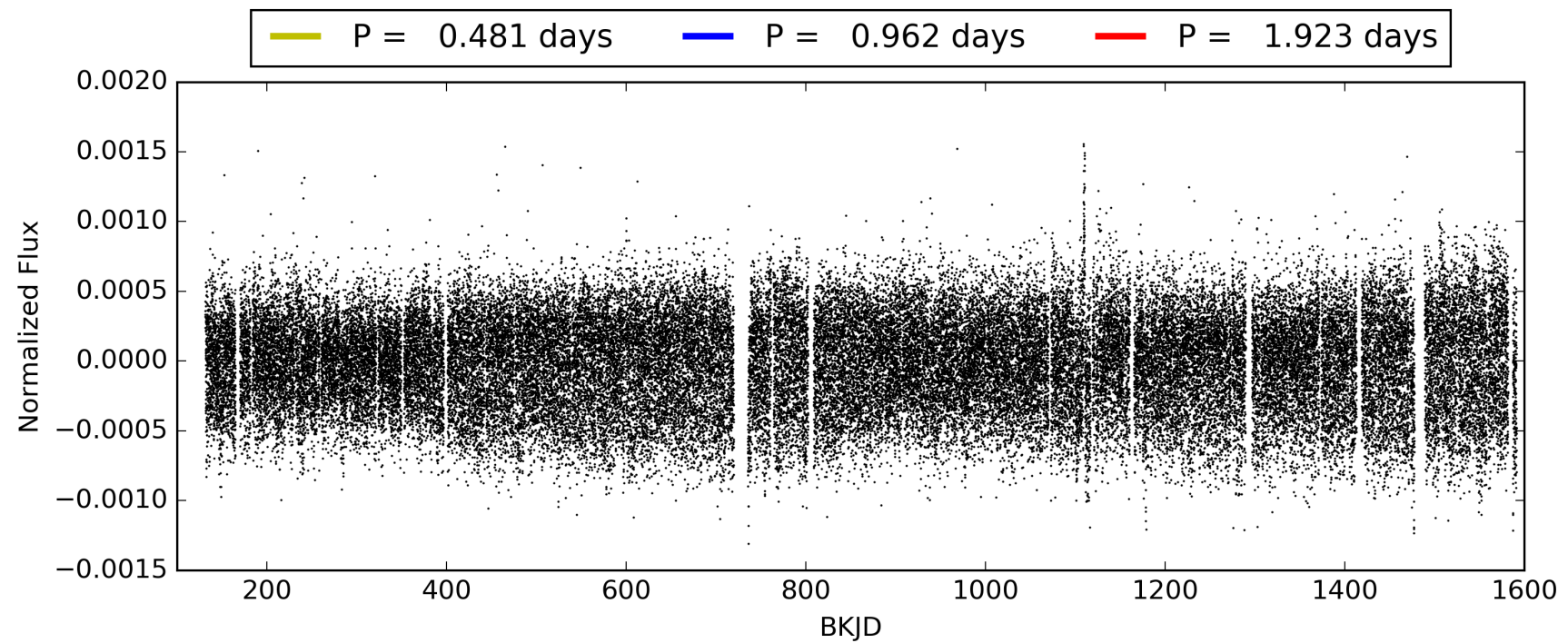
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:14:40 Z

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

TCE 004820642-02, PDC Light Curves

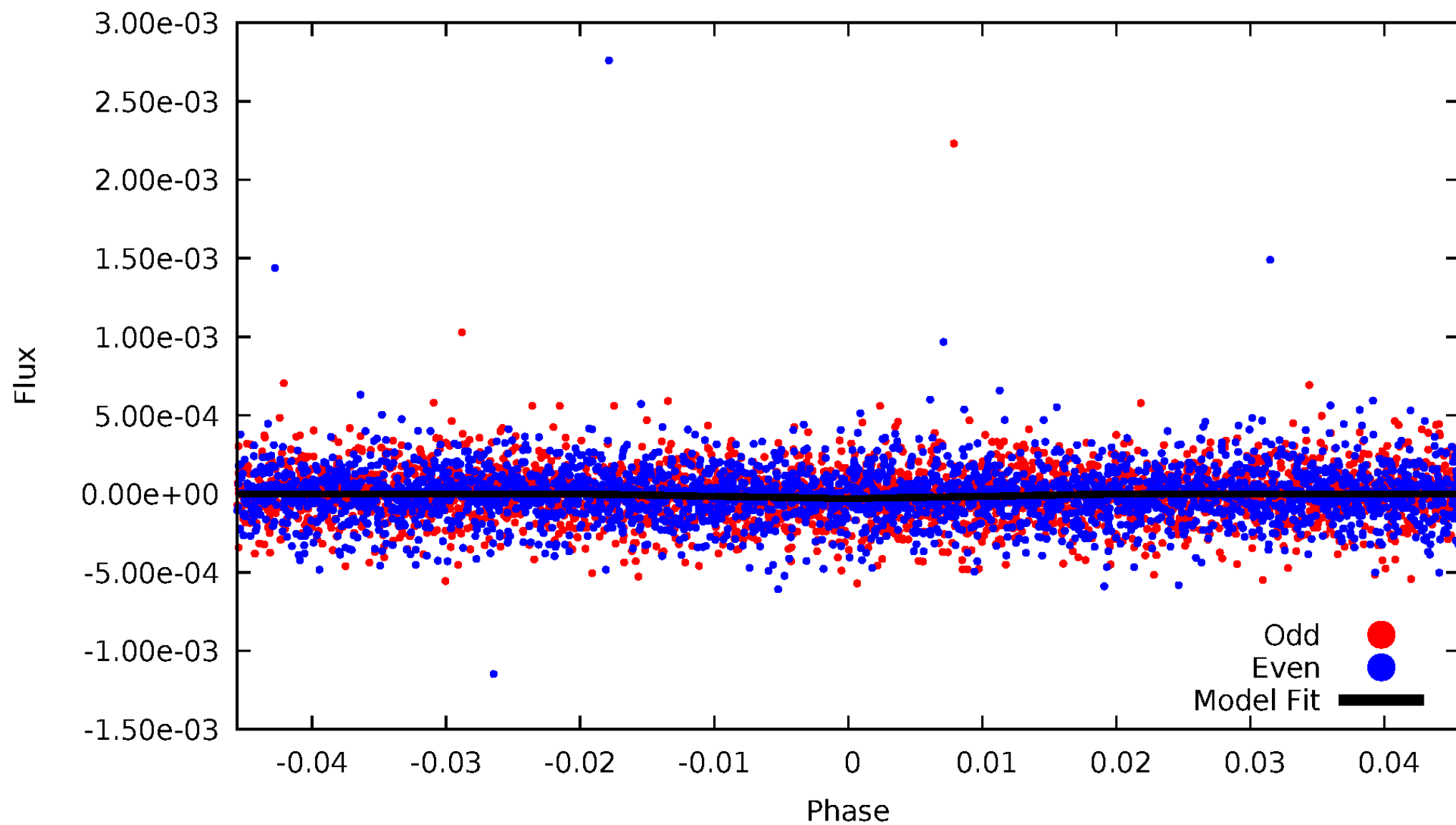


TCE 004820642-02



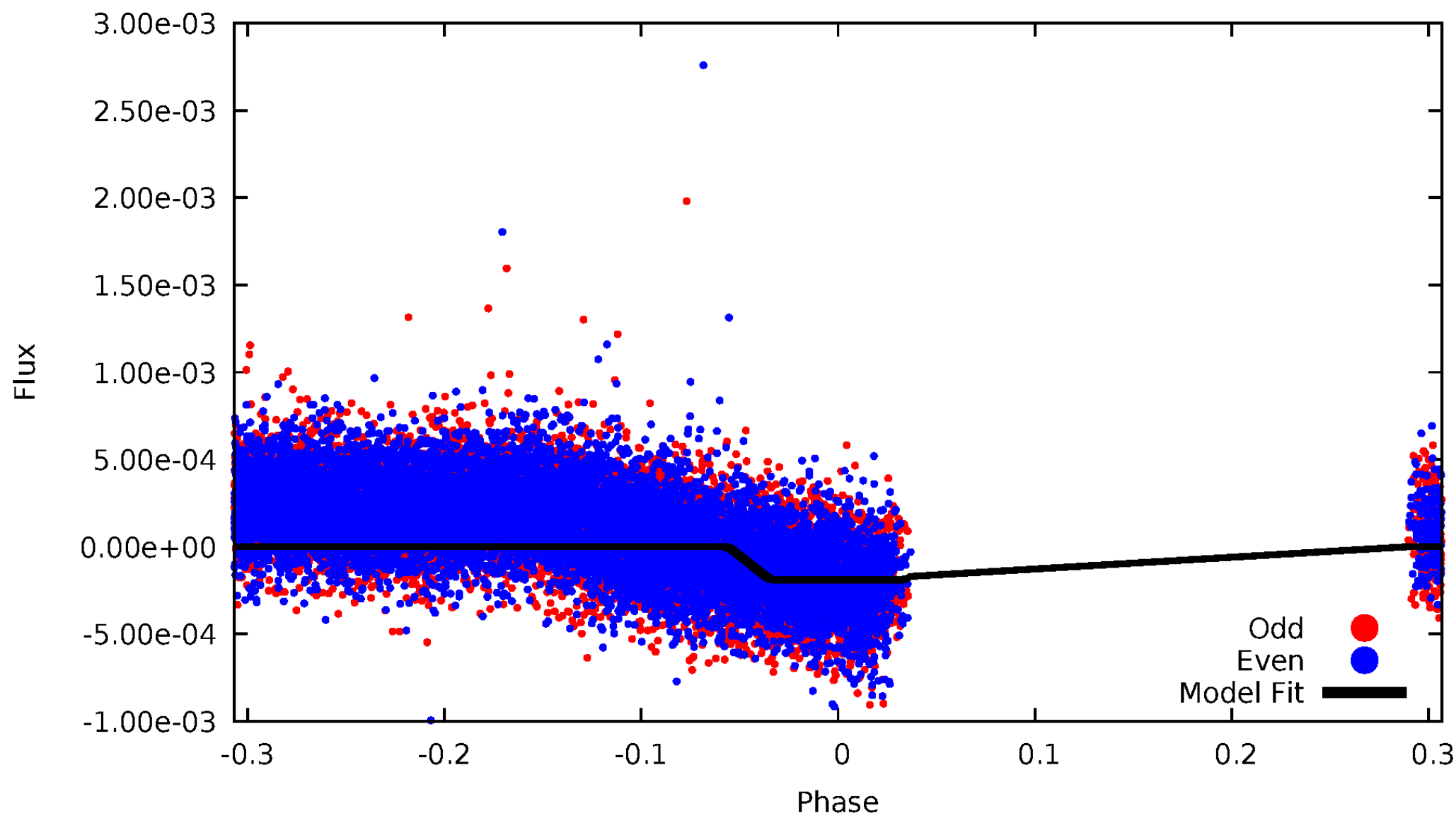
DV Odd/Even

TCE 004820642-02



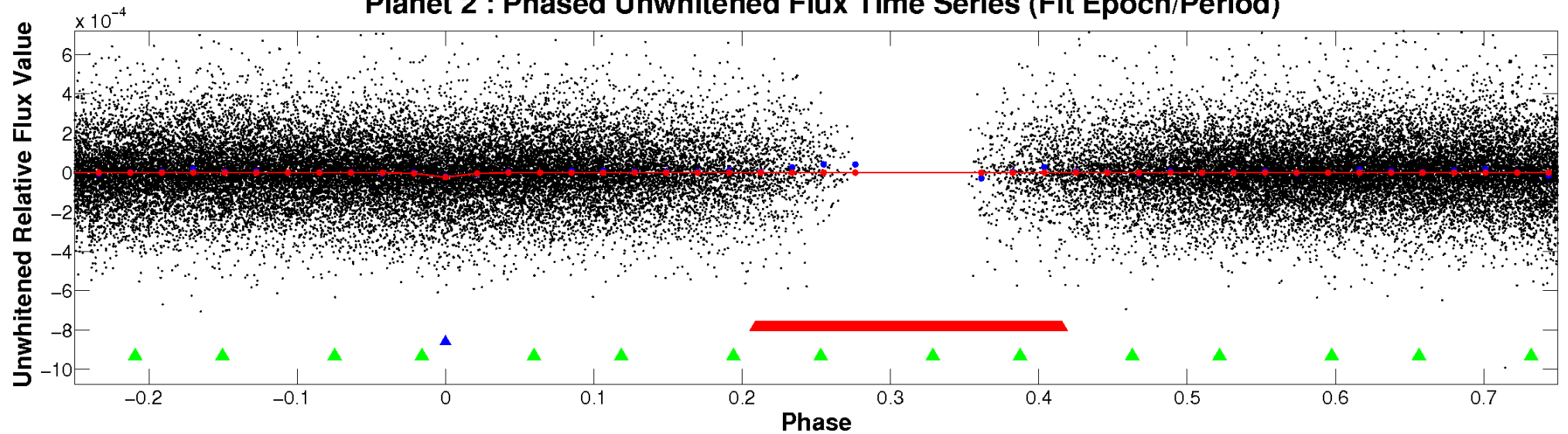
ALT Odd/Even

TCE 004820642-02

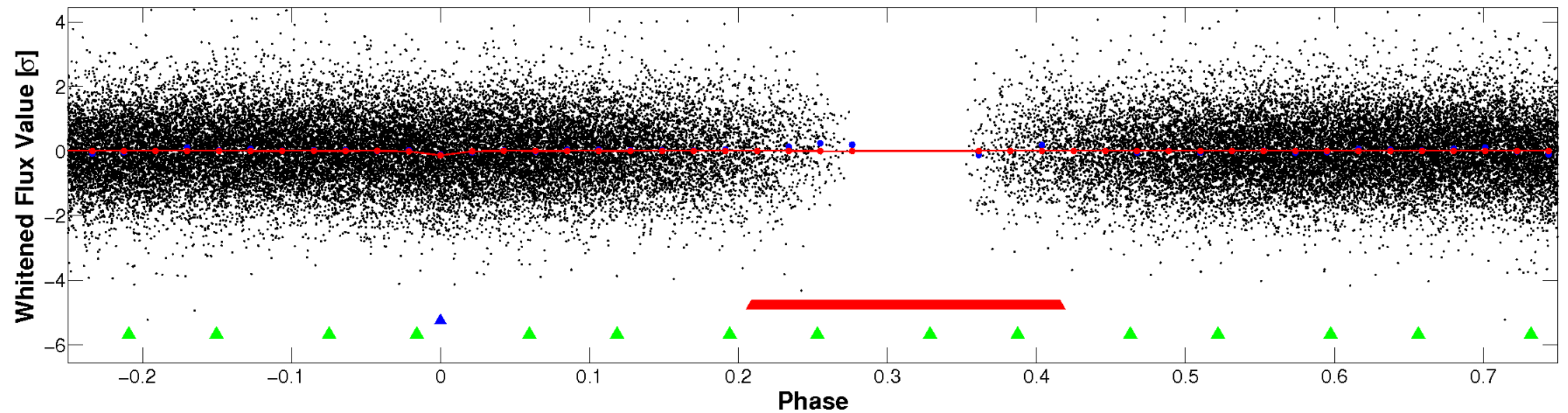


Non-Whitened Vs. Whitened Light Curve

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

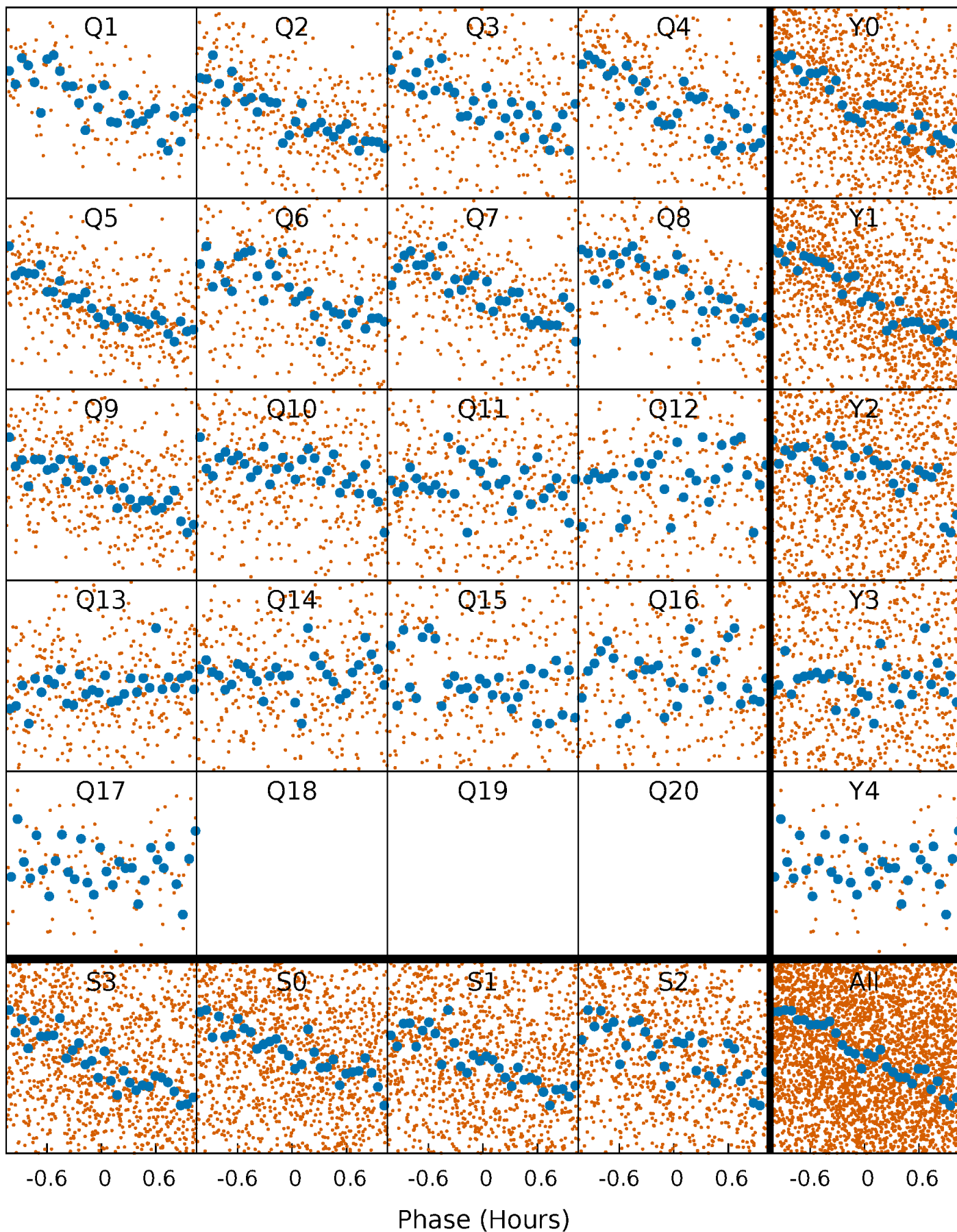


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



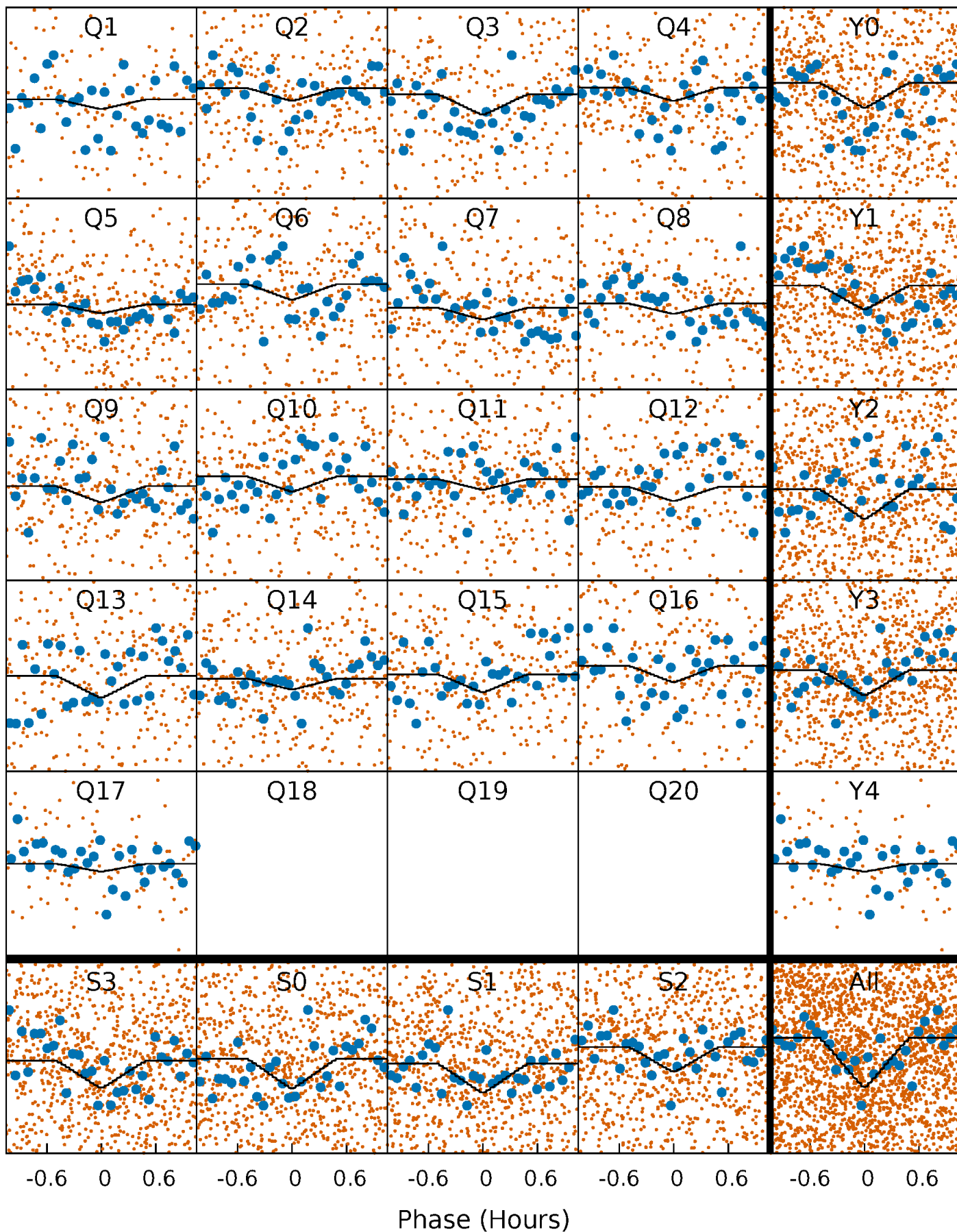
PDC Quarter-Phased Transit Curves

TCE 004820642-02 P= 0.961504 Days $T_0=131.731627$ (BKJD)



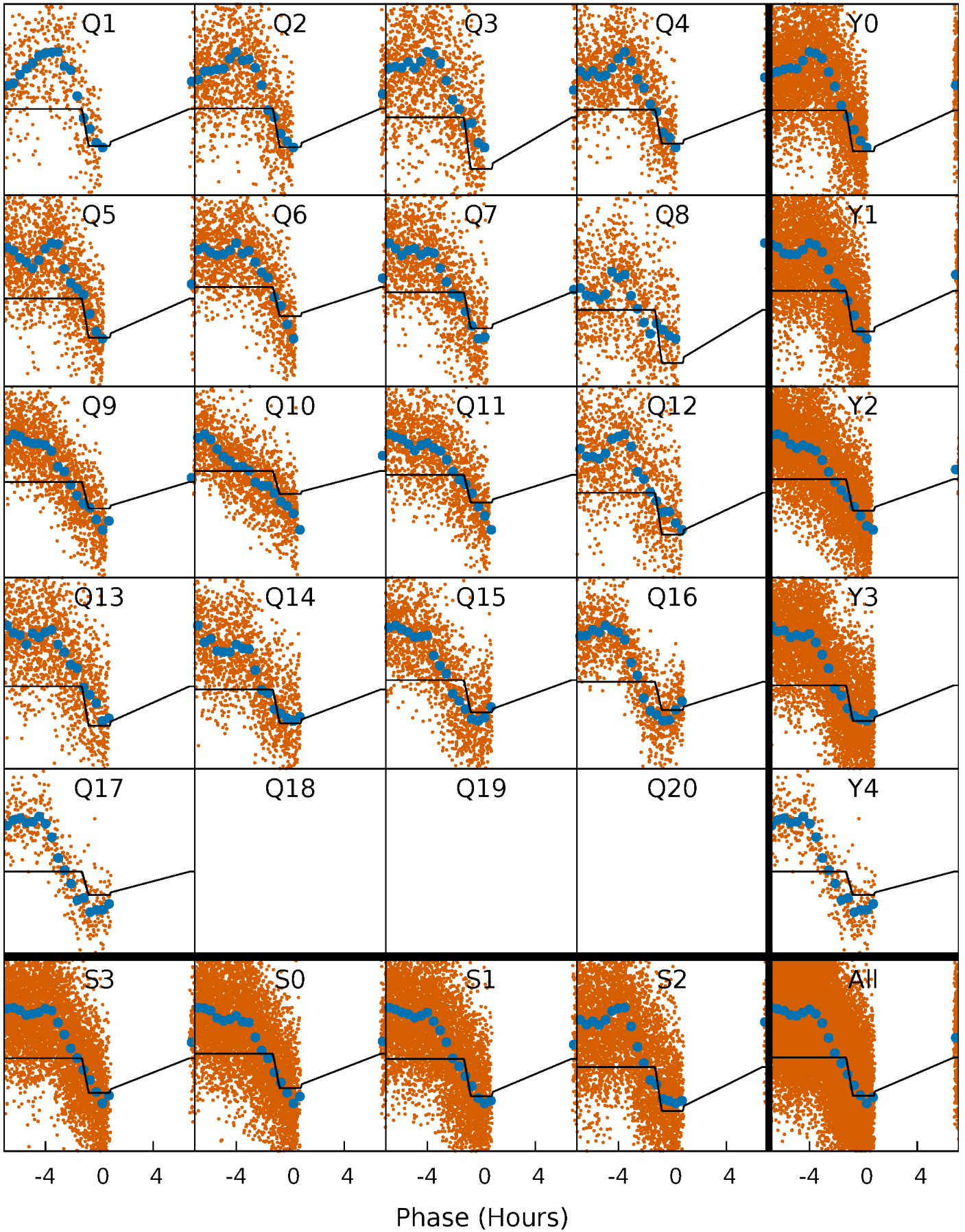
DV Quarter-Phased Transit Curves

TCE 004820642-02 P= 0.961504 Days $T_0=131.731627$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

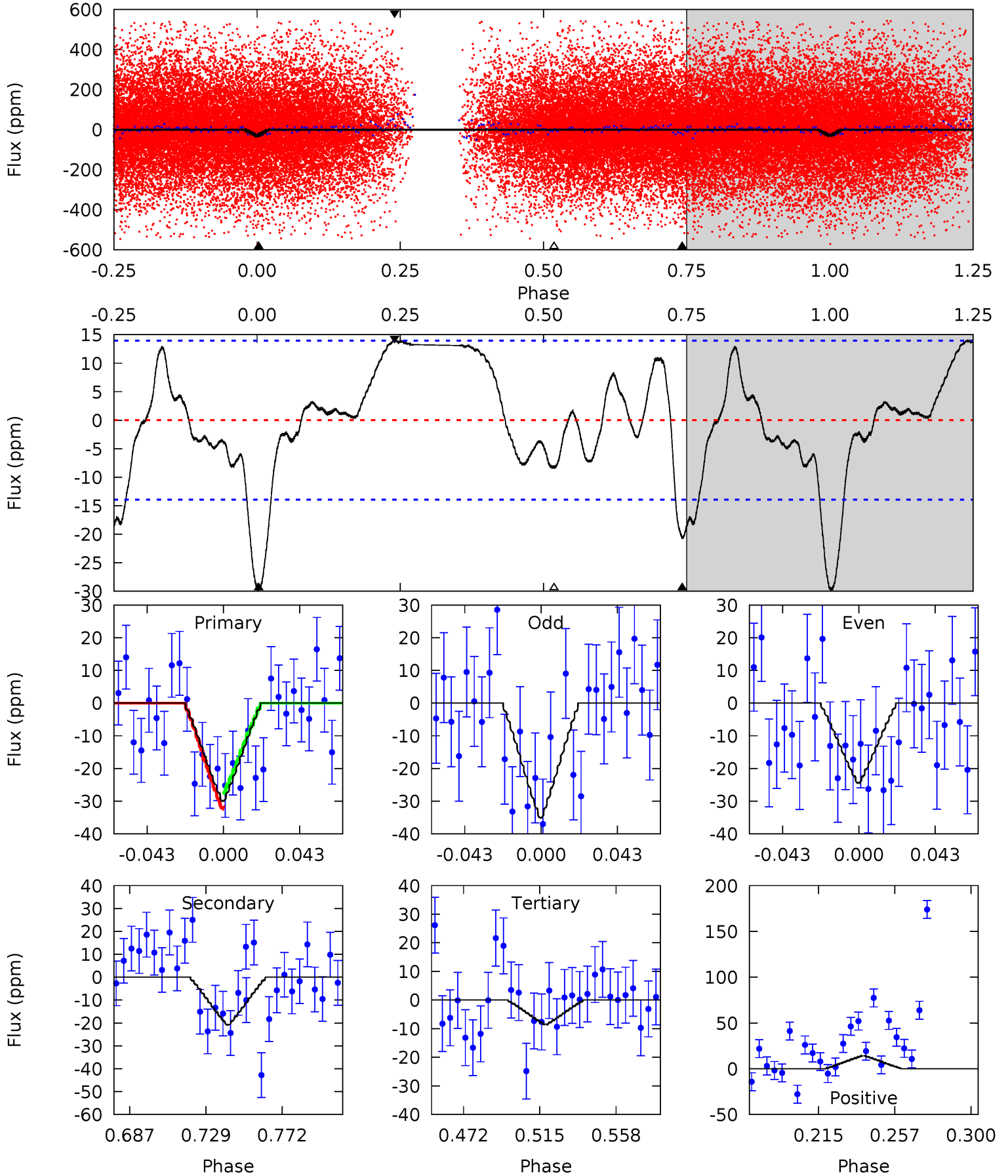
TCE 004820642-02 P= 0.961616 Days $T_0=131.790501$ (BKJD)



DV Model-Shift Uniqueness Test

004820642-02, P = 0.961504 Days, E = 130.770123 Days

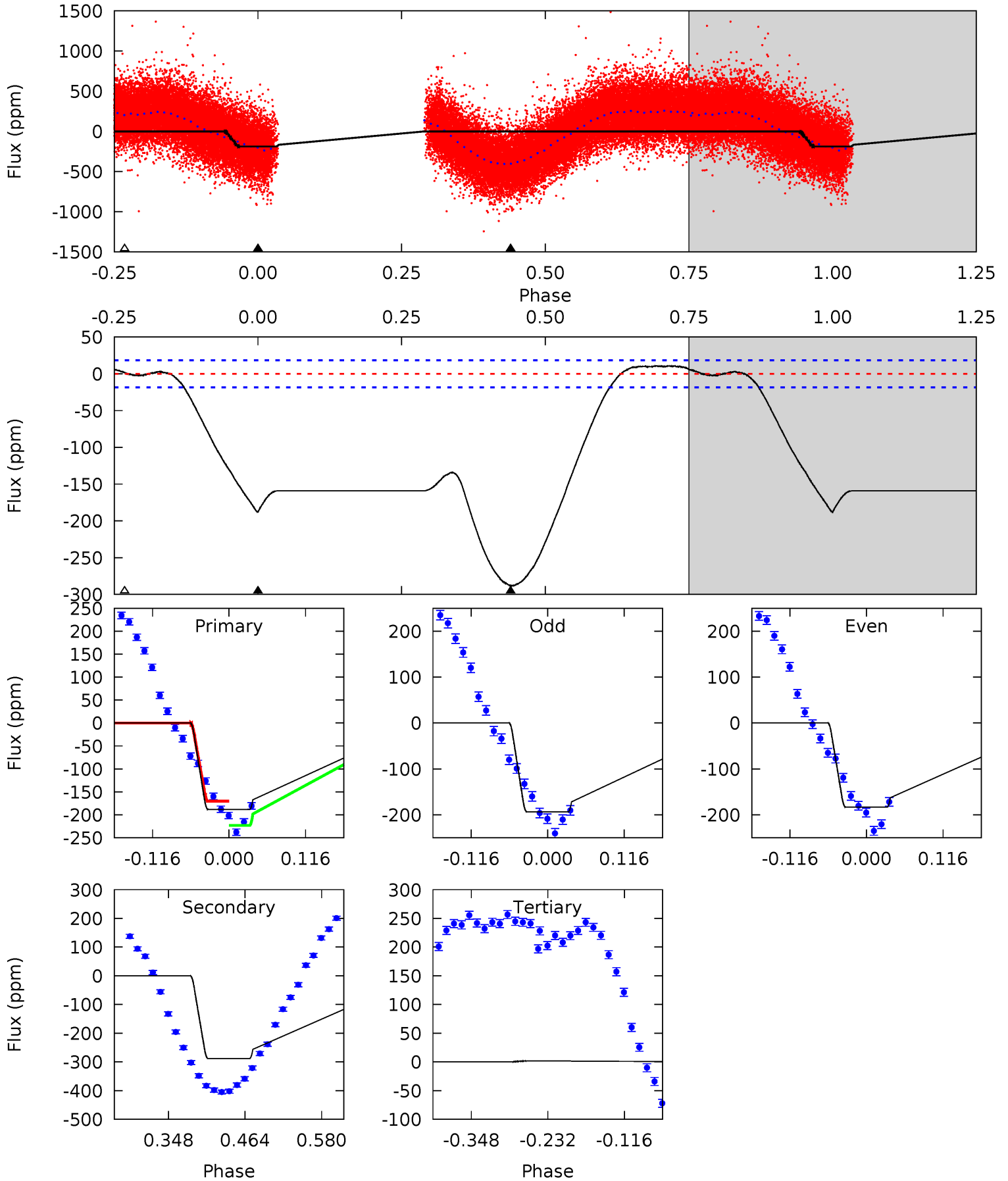
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	7.07	2.90	4.79	4.74	2.02	1.81	7.26	5.37	4.17	2.28	1.82	0.92	0.32	0.78



Alt Model-Shift Uniqueness Test

004820642-02, P = 0.961616 Days, E = 130.828885 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.5	71.1	-0.40	0	4.53	1.57	10.7	46.9	46.5	71.5	71.1	1.25	1.00	0.04	6.83



Stellar Parameters For KIC 004820642

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6647^{+166}_{-216}	$4.245^{+0.124}_{-0.186}$	$-0.180^{+0.250}_{-0.300}$	$1.386^{+0.408}_{-0.272}$	$1.239^{+0.175}_{-0.195}$	$0.655^{+0.383}_{-0.323}$
	+2%/-3%	+3%/-4%	+139%/-167%	+29%/-20%	+14%/-16%	+58%/-49%
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 004820642-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-21 ± 3	$3.47^{+3.73}_{-2.36}$	3395^{+240}_{-206}	2746^{+2448}_{-5913}	$0.389^{+3.182}_{-0.301}$
Alt.	-288 ± 4	$4.13^{+3.73}_{-2.73}$	3406^{+256}_{-203}	5286^{+4243}_{-1405}	$3.890^{+27.910}_{-2.833}$

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

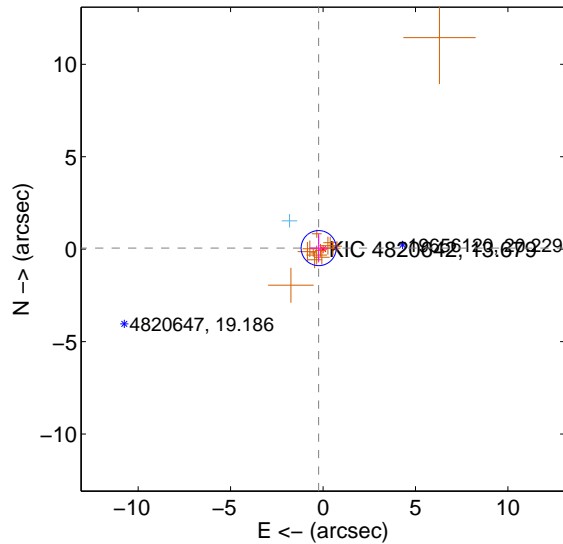
Supplemental centroid analysis for 004820642-02. Kepler magnitude: 13.68. Transit SNR 3.40

There are 1 quarters with good PRF difference image offsets

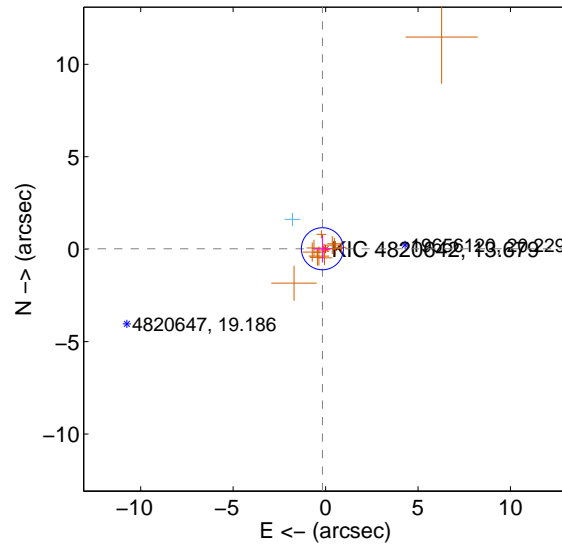
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.242 ± 0.316	0.77	0.236 ± 0.486	0.057 ± 0.774
PRF-fit source offset from KIC position	0.174 ± 0.379	0.46	0.172 ± 0.466	0.023 ± 0.746
photometric centroid source offset	4.54 ± 2.12	2.14	3.55 ± 2.07	2.83 ± 2.21

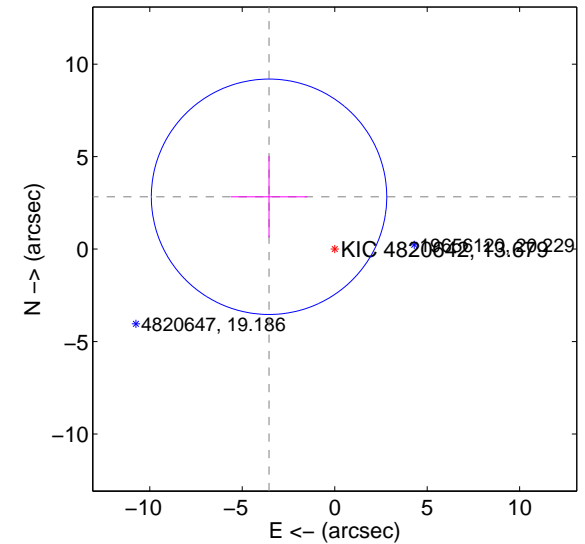
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

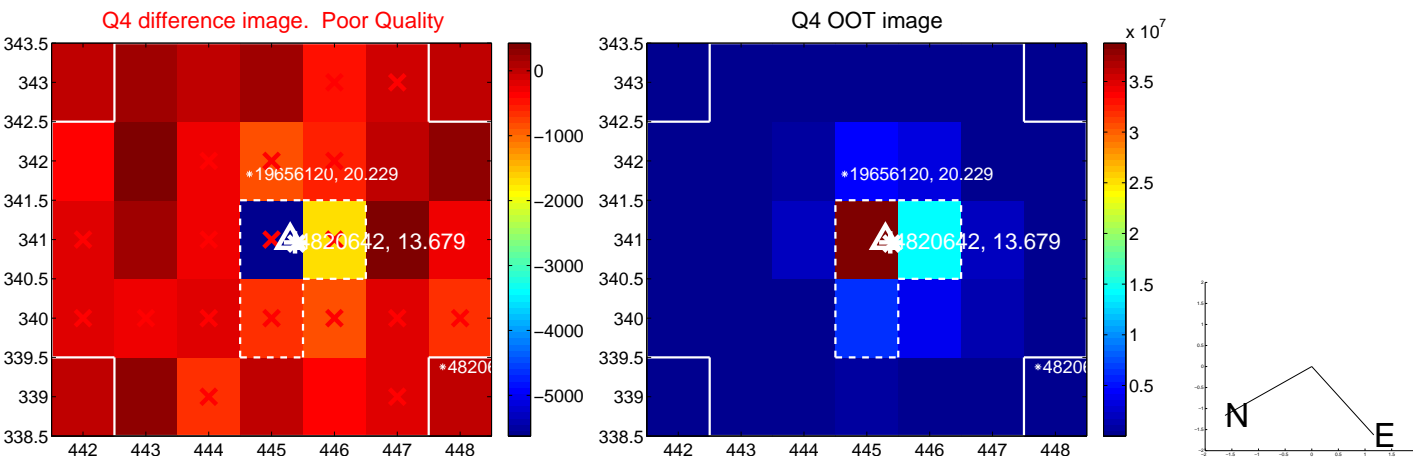
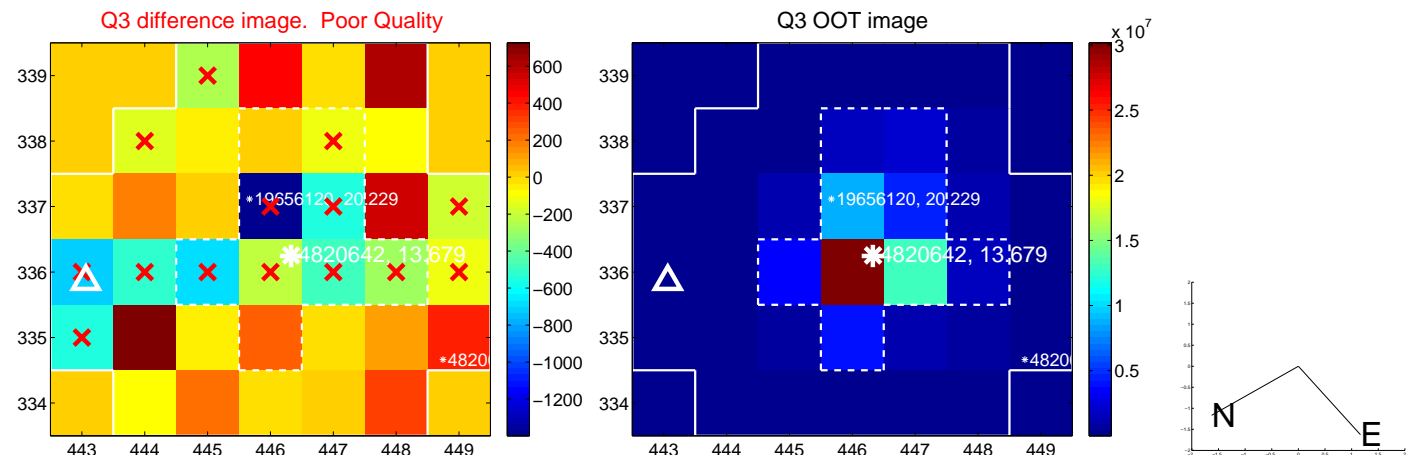
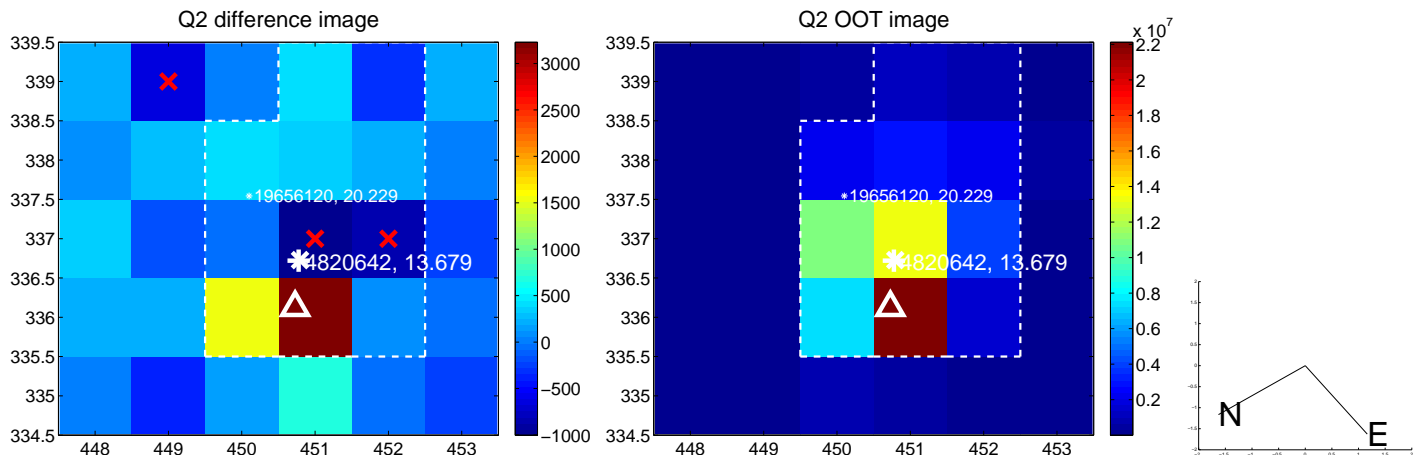
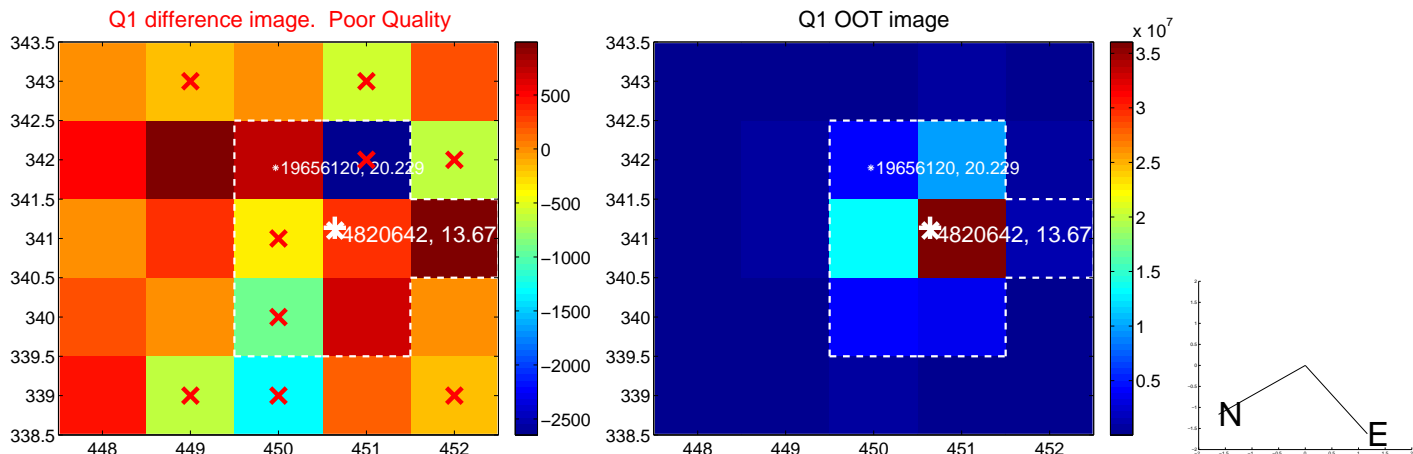


offset from photometric centroids

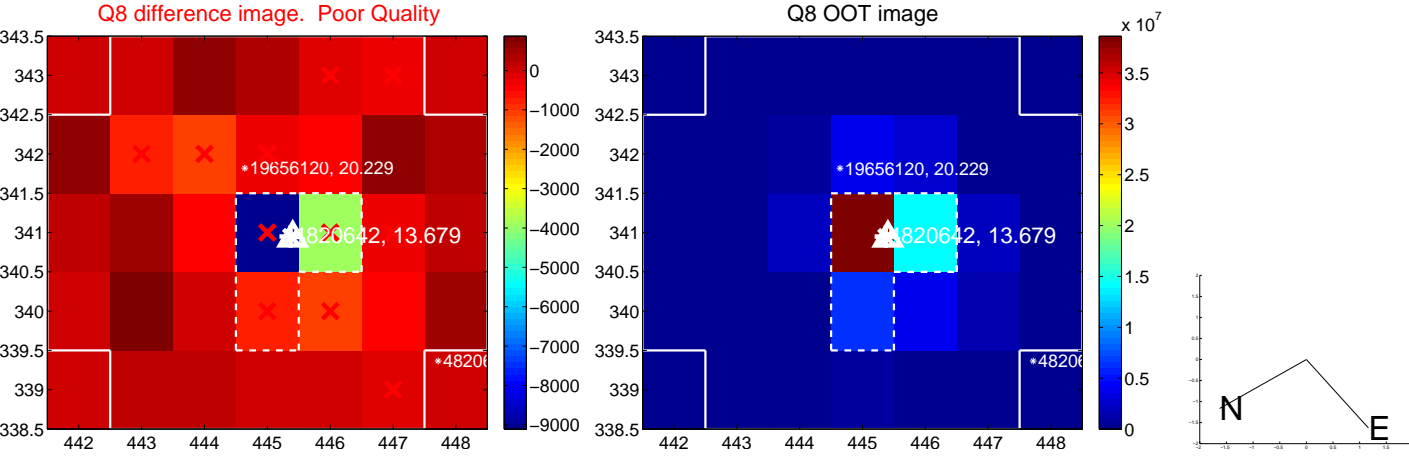
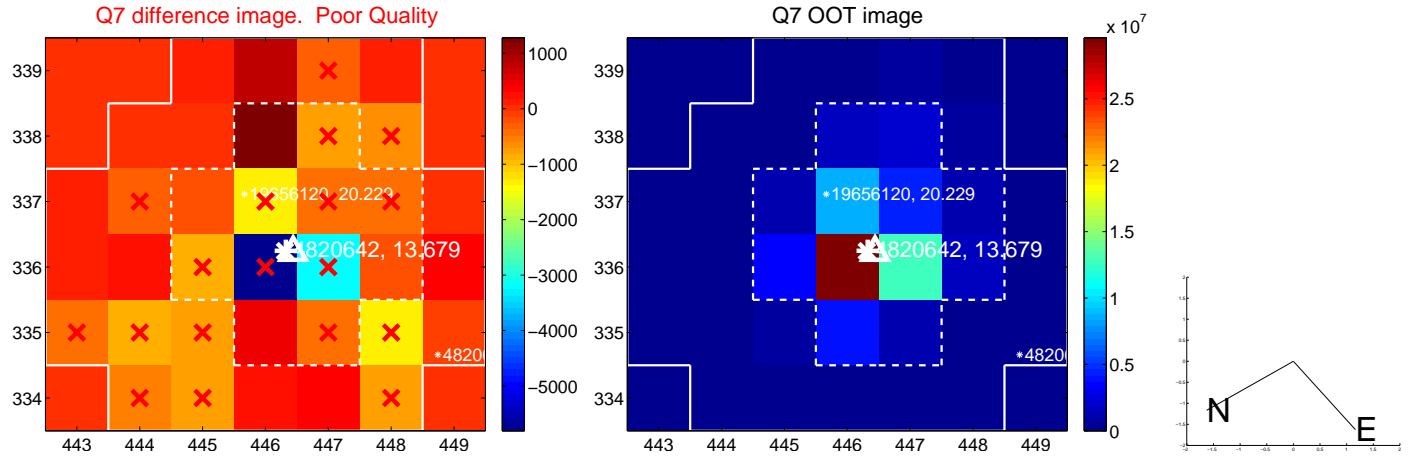
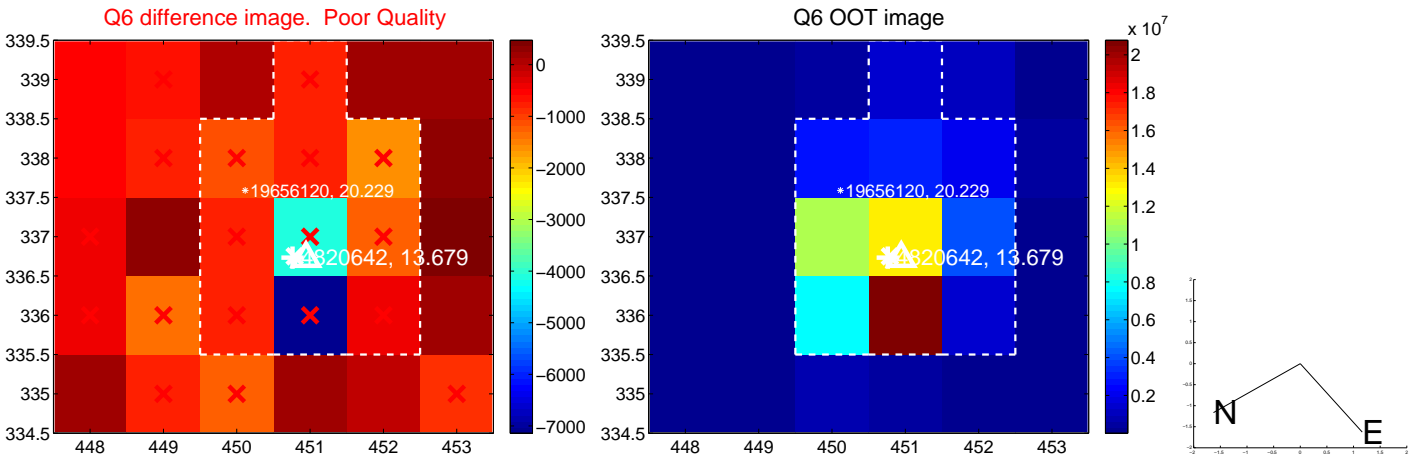
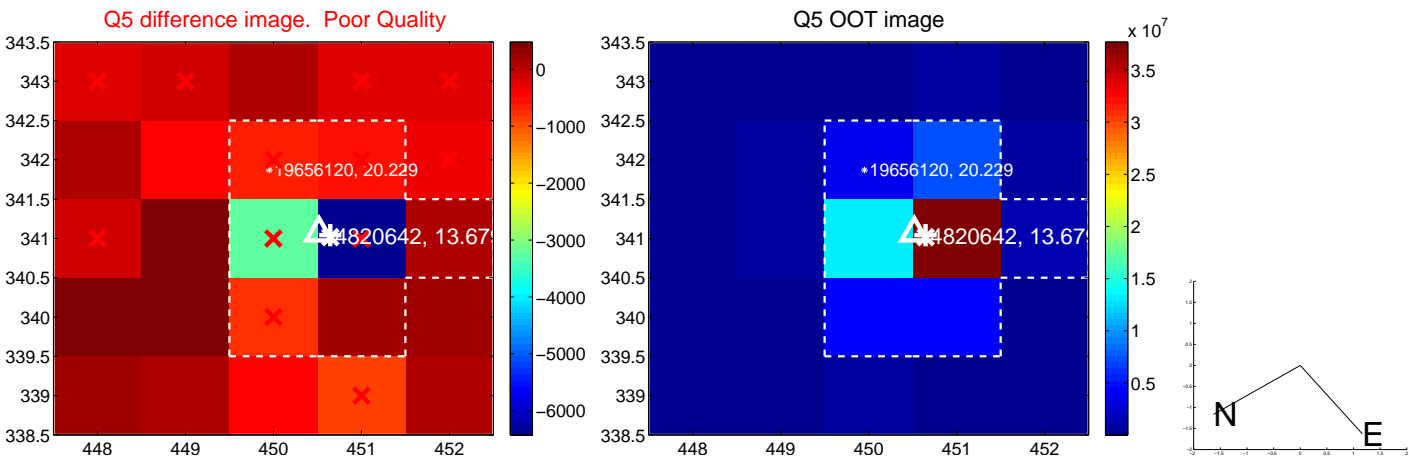


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

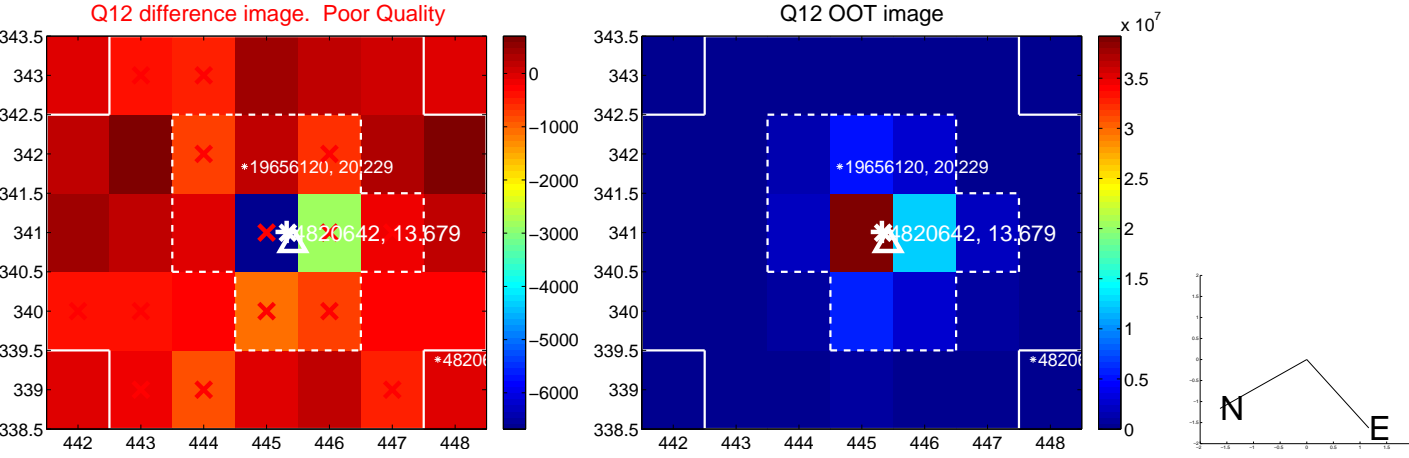
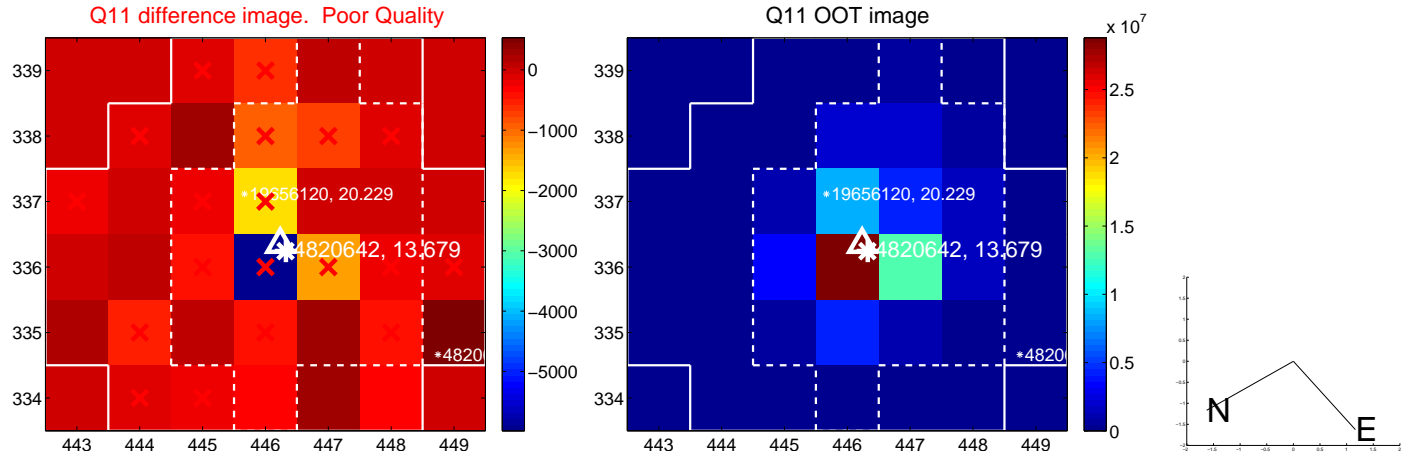
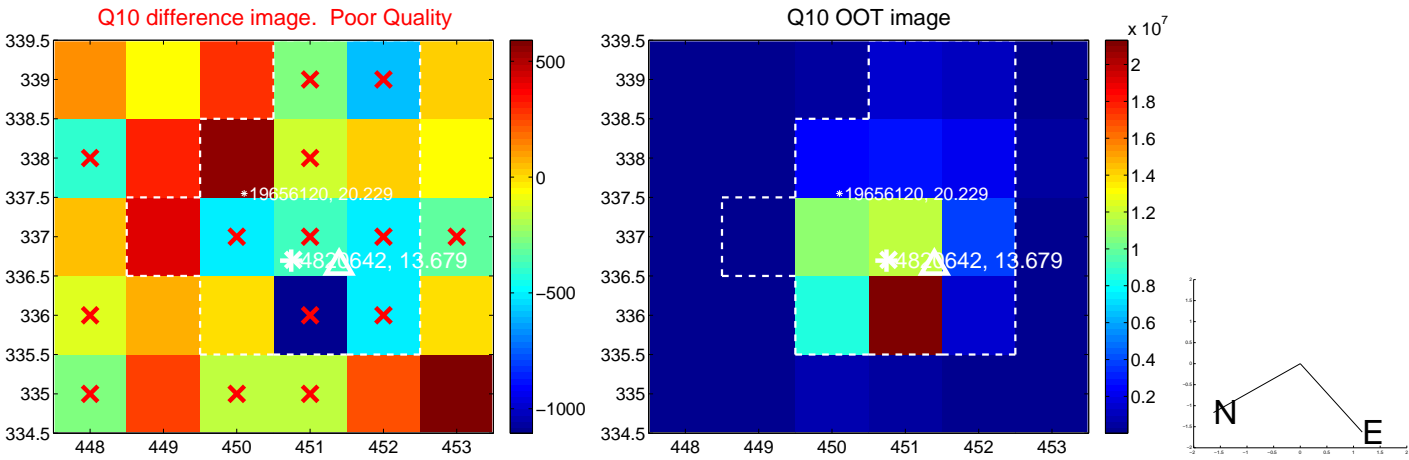
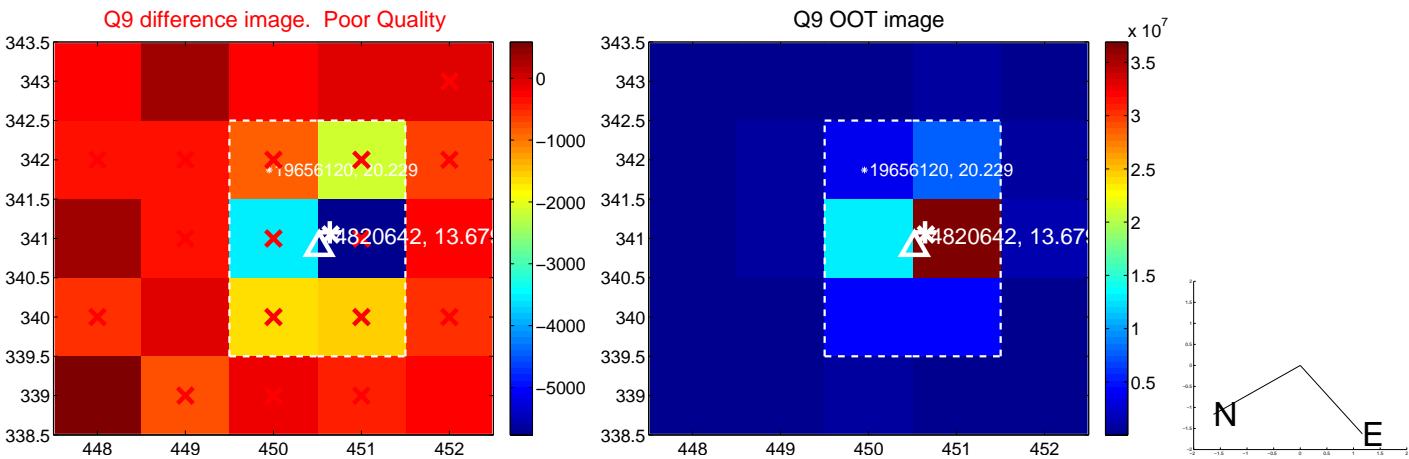
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



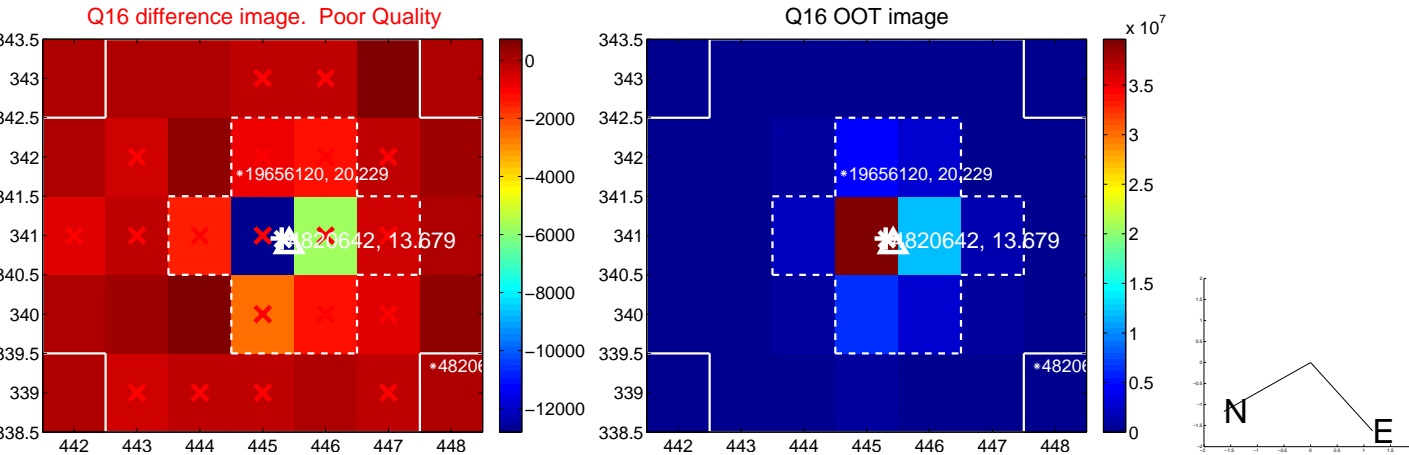
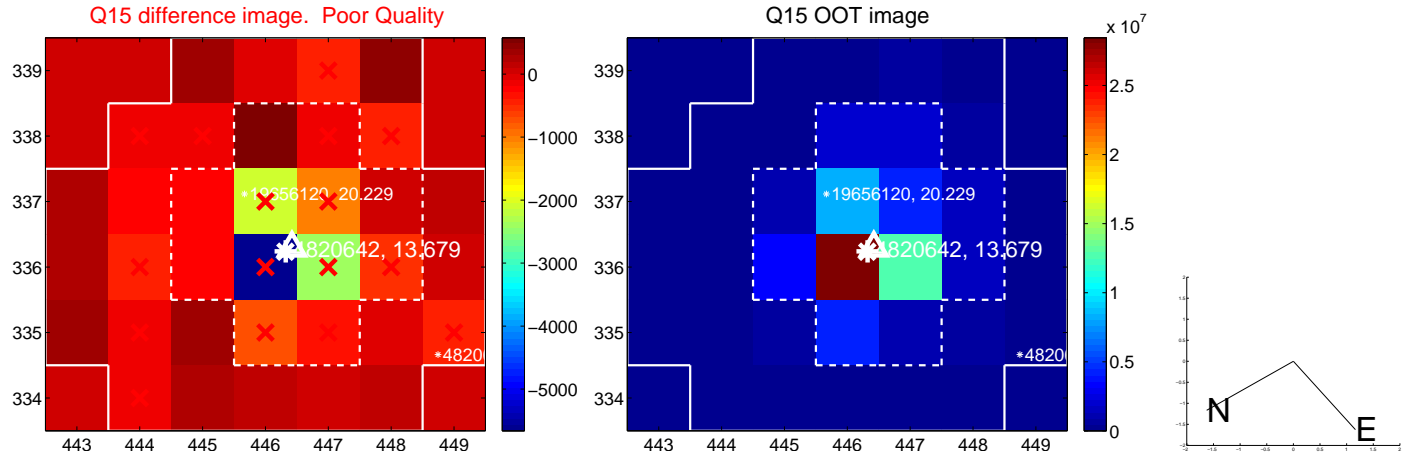
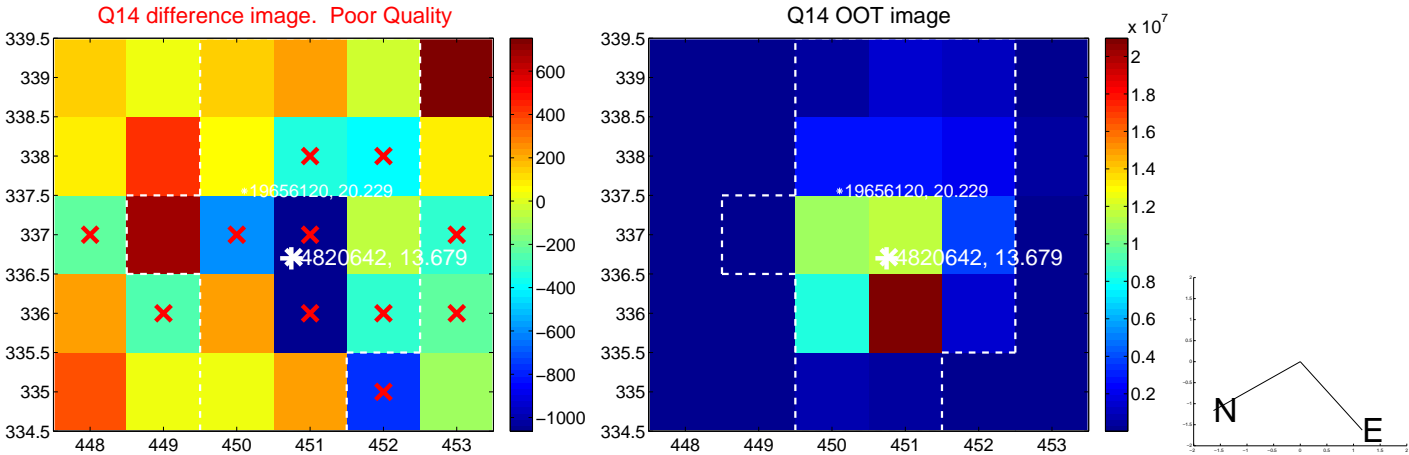
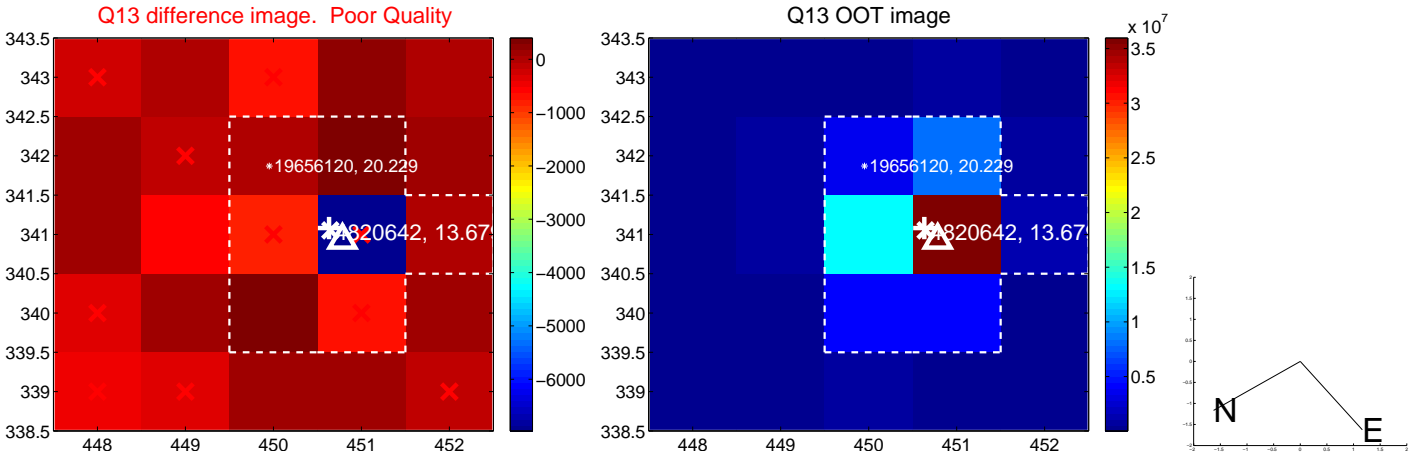
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



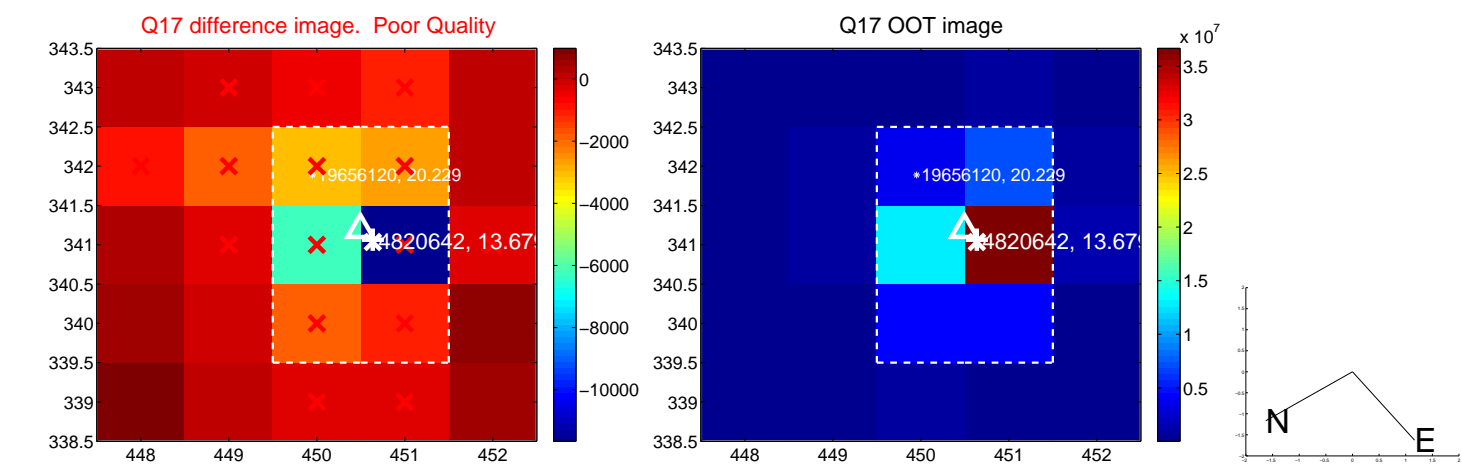
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



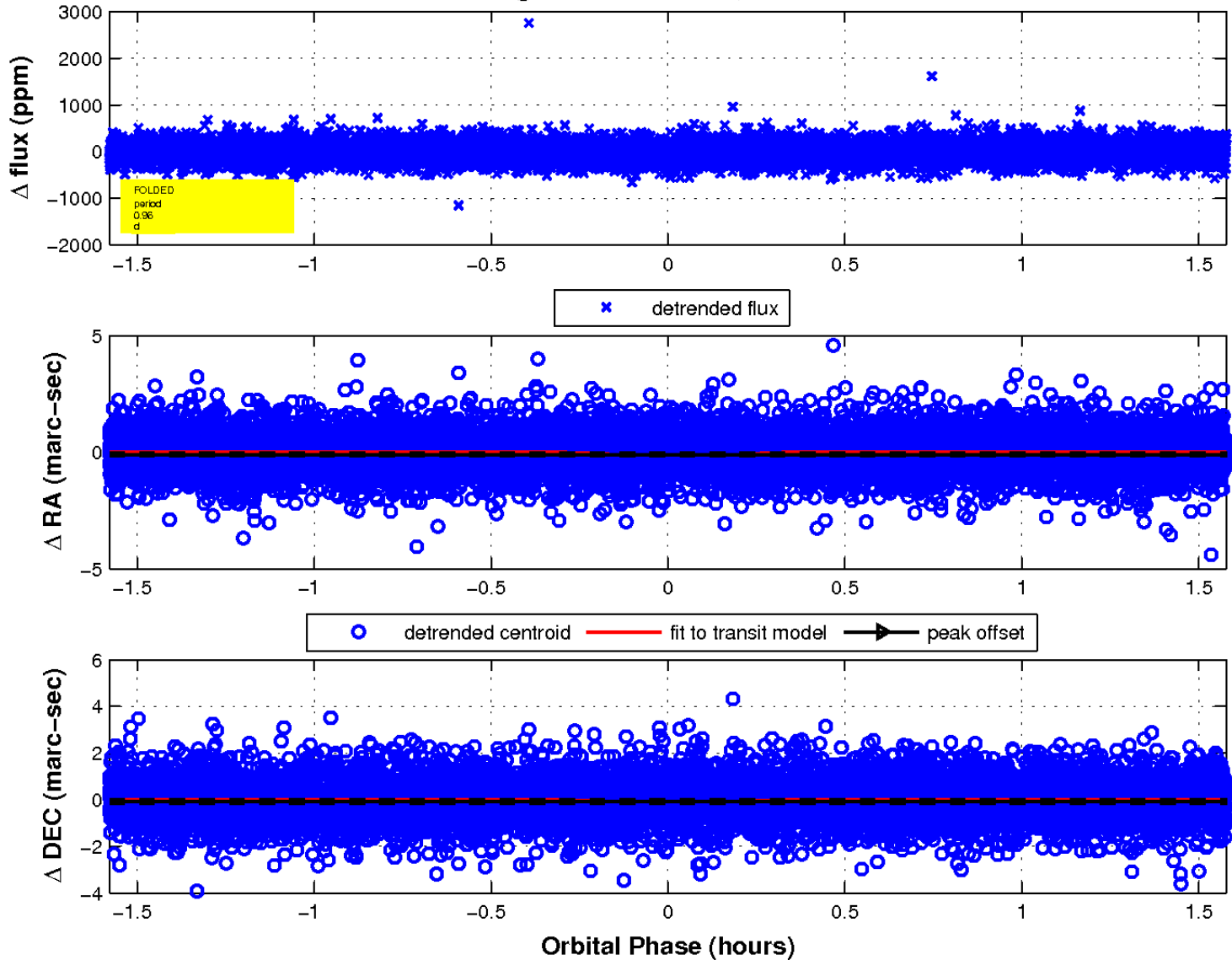
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

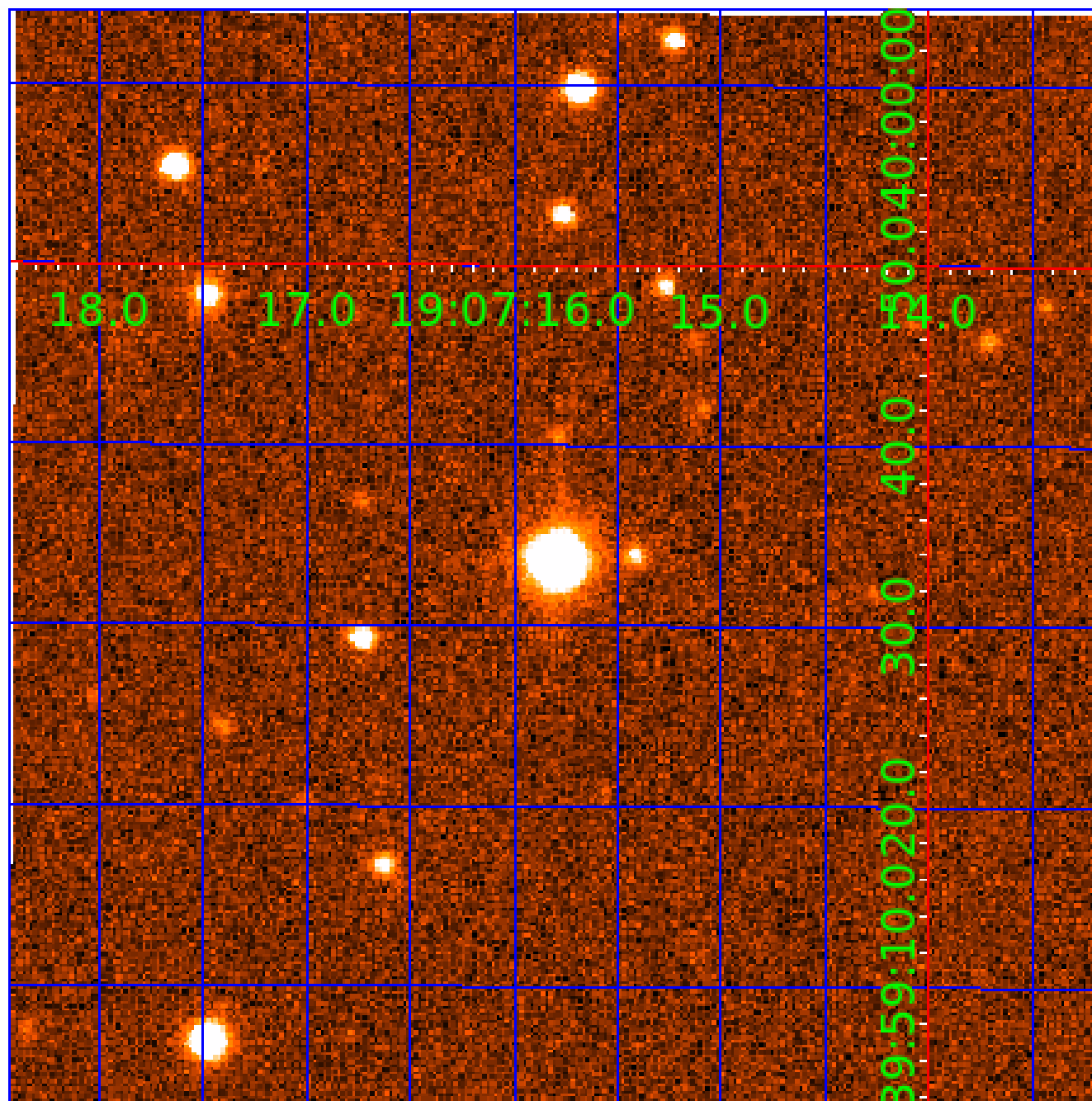


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 004820642

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})
004820642-01	OBS	No	0.961635	131.932413	0.0	2.006	9.8	0.0	1.39	6647	0.00	8039.44
004820642-02	OBS	No	0.961504	131.731627	30.2	0.526	10.0	3.4	1.39	6647	0.80	8040.90
004820642-03	OBS	No	96.021093	220.893765	244.6	2.547	7.2	7.4	1.39	6647	2.54	17.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004820642-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
004820642-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
004820642-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

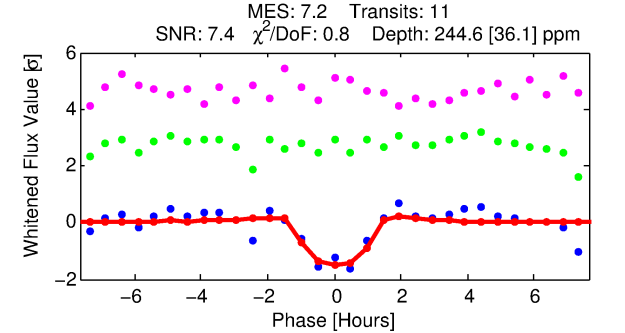
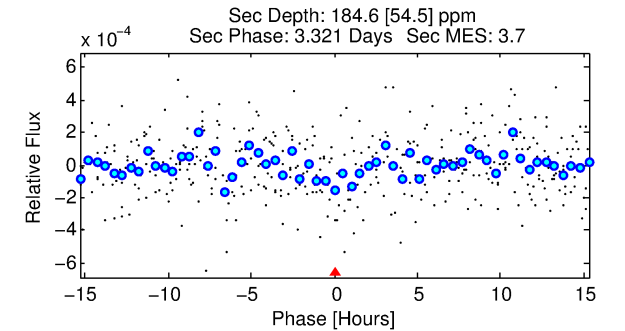
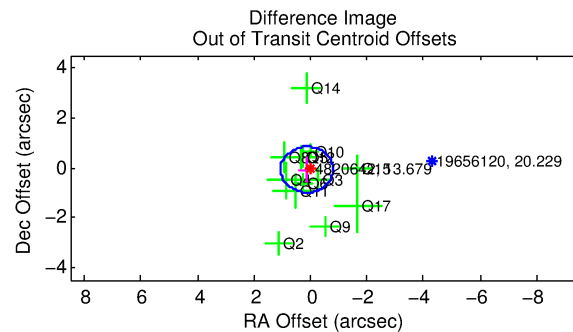
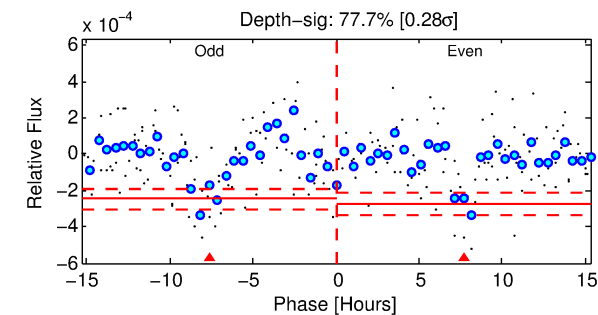
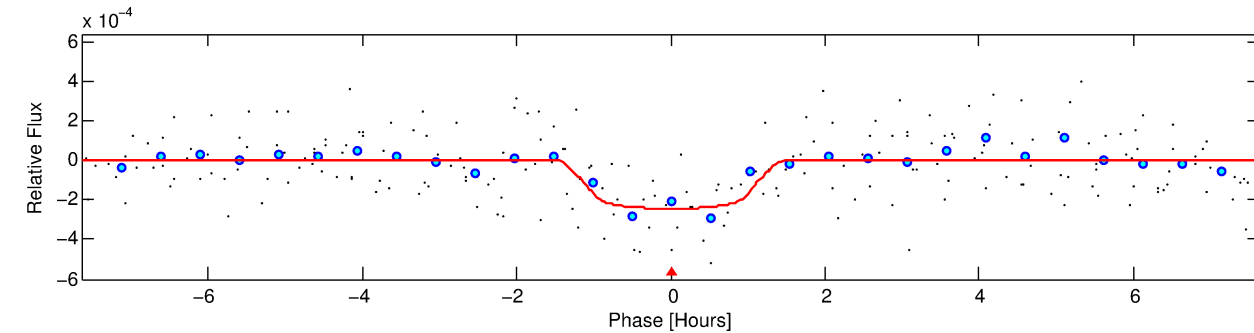
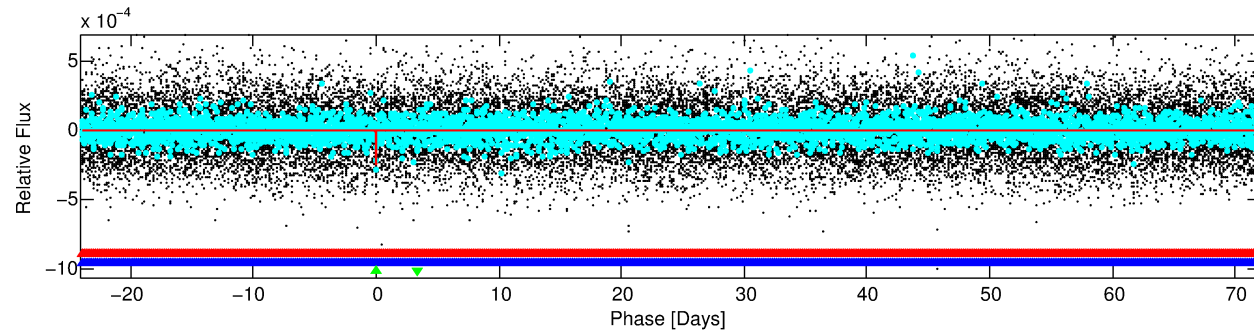
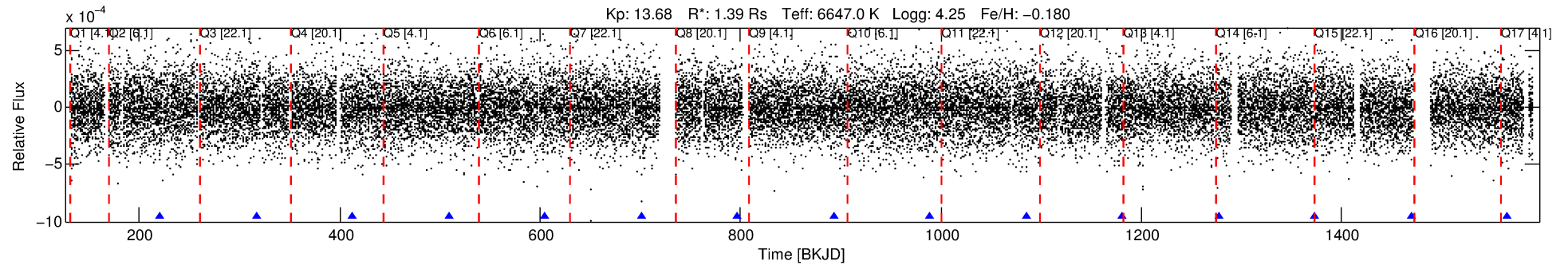
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004820642-03

No Significant Match Found

DV One-Page Summary

KIC: 4820642 Candidate: 3 of 3 Period: 96.021 d



DV Fit Results:

Period = 96.02109 [0.00096] d
Epoch = 220.8938 [0.0065] BKJD
Rp/R* = 0.0168 [0.0092]
a/R* = 132.58 [412.80]
b = 0.91 [0.62]
Seff = 17.35 [6.42]
Teq = 520 [48] K
Rp = 2.54 [1.59] Re
a = 0.4400 [0.1068] AU
Ag = 3036.58 [3613.21] [0.84 σ]
Teffp = 5973 [1711] K [3.19 σ]

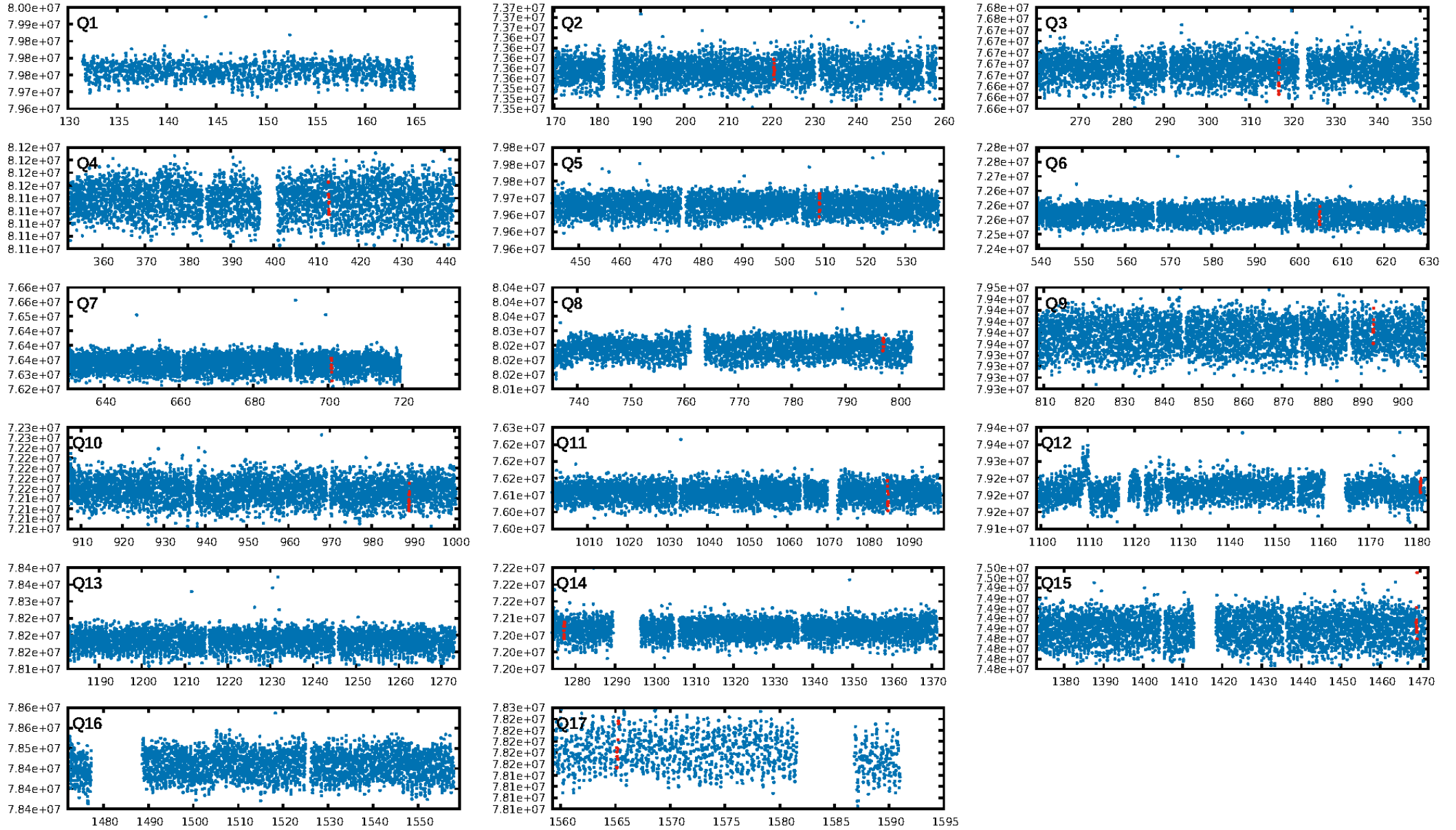
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [703.71 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 41.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.63e-11
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 55.6
Centroid-sig: 15.4%
Centroid-so: 1.492 arcsec [1.23 σ]
OotOffset-rm: 0.157 arcsec [0.51 σ]
KicOffset-rm: 0.106 arcsec [0.44 σ]
OotOffset-st: 4/3/3/3 [13]
KicOffset-st: 4/3/3/3 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 0.07 [1/14]

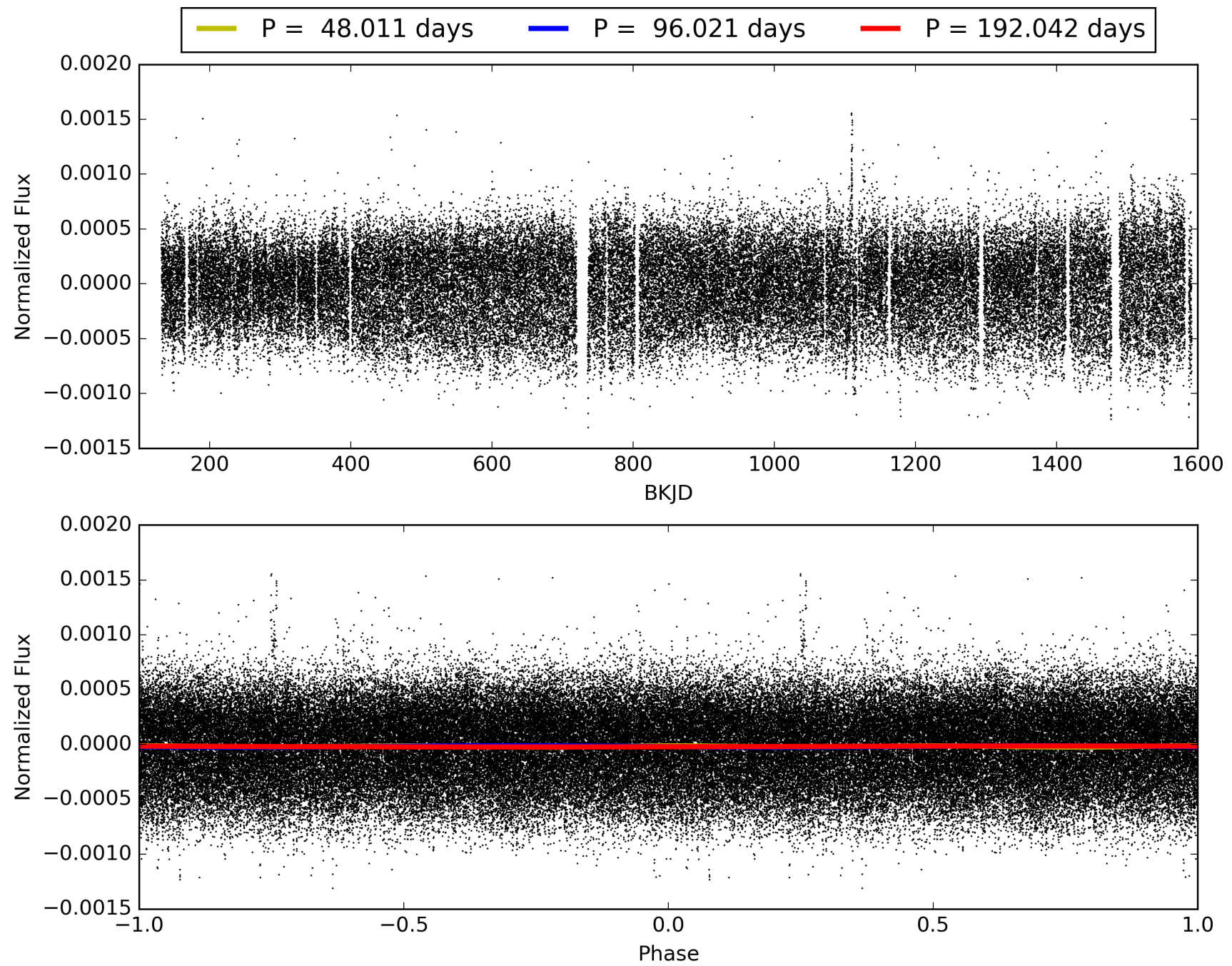
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:14:48 Z

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

TCE 004820642-03, PDC Light Curves

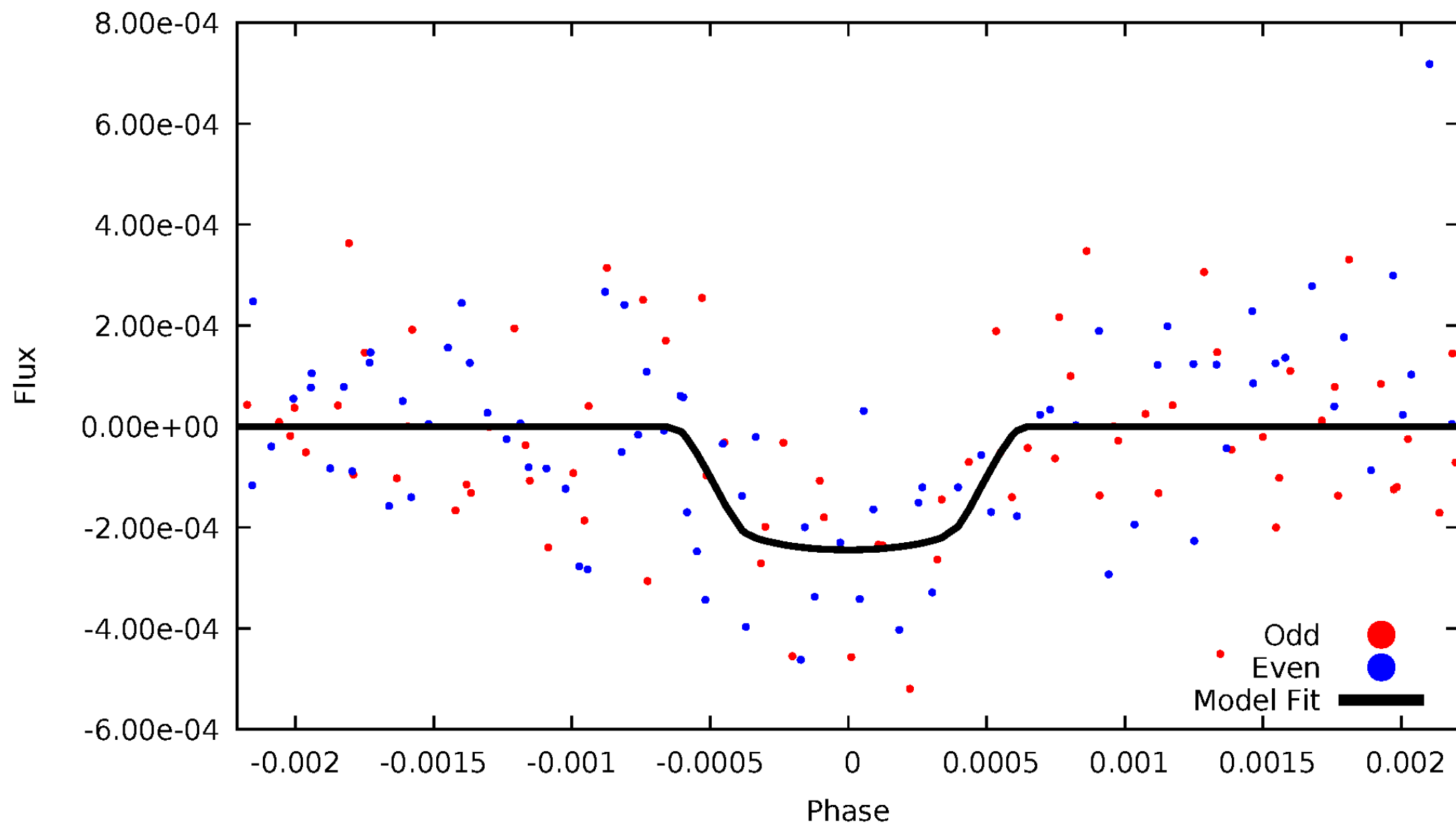


TCE 004820642-03



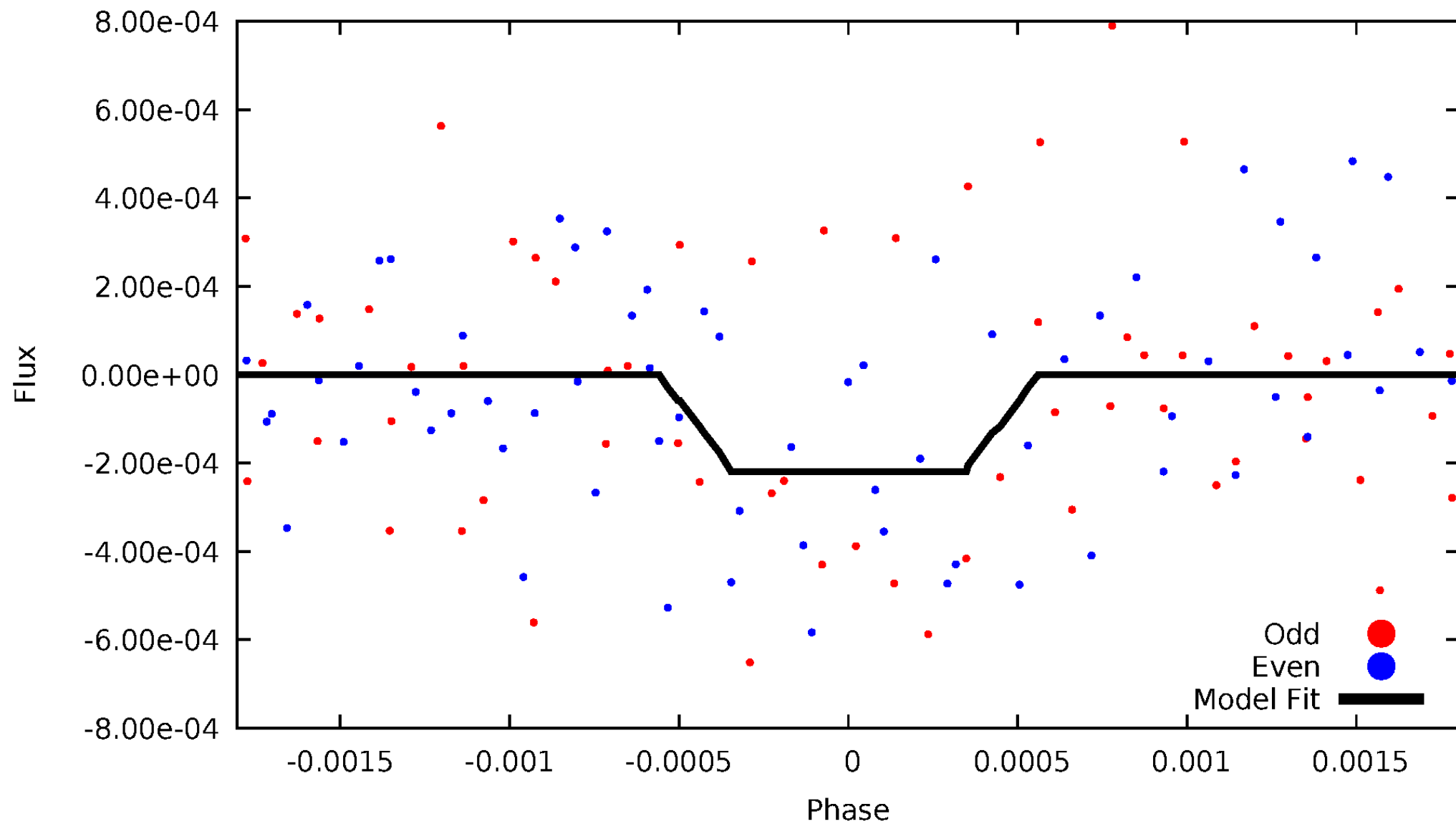
DV Odd/Even

TCE 004820642-03

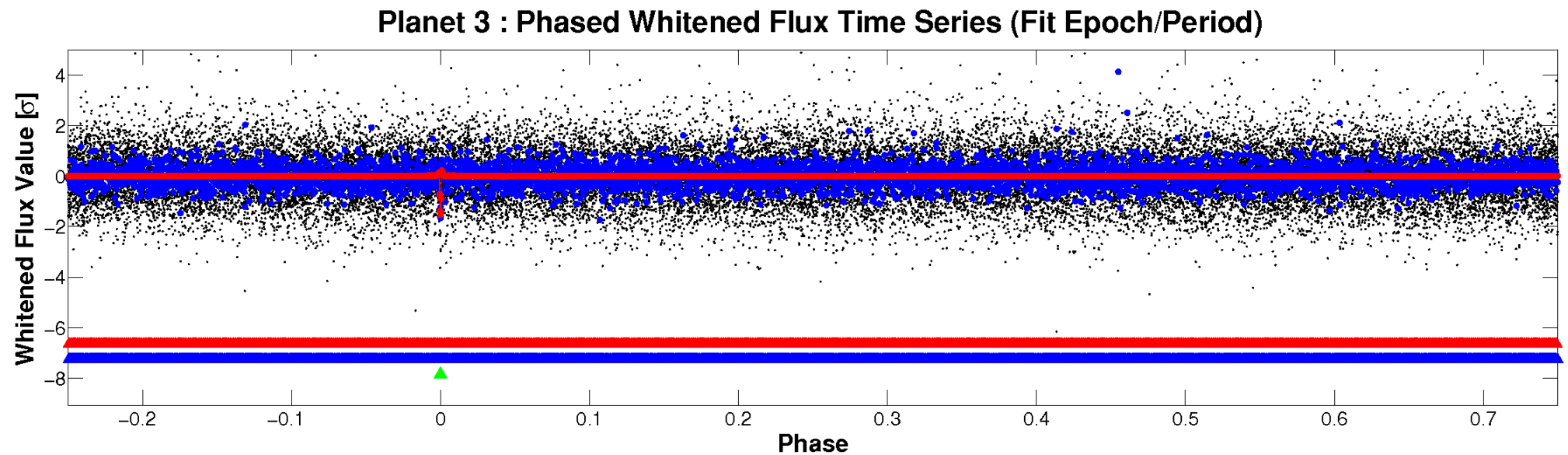
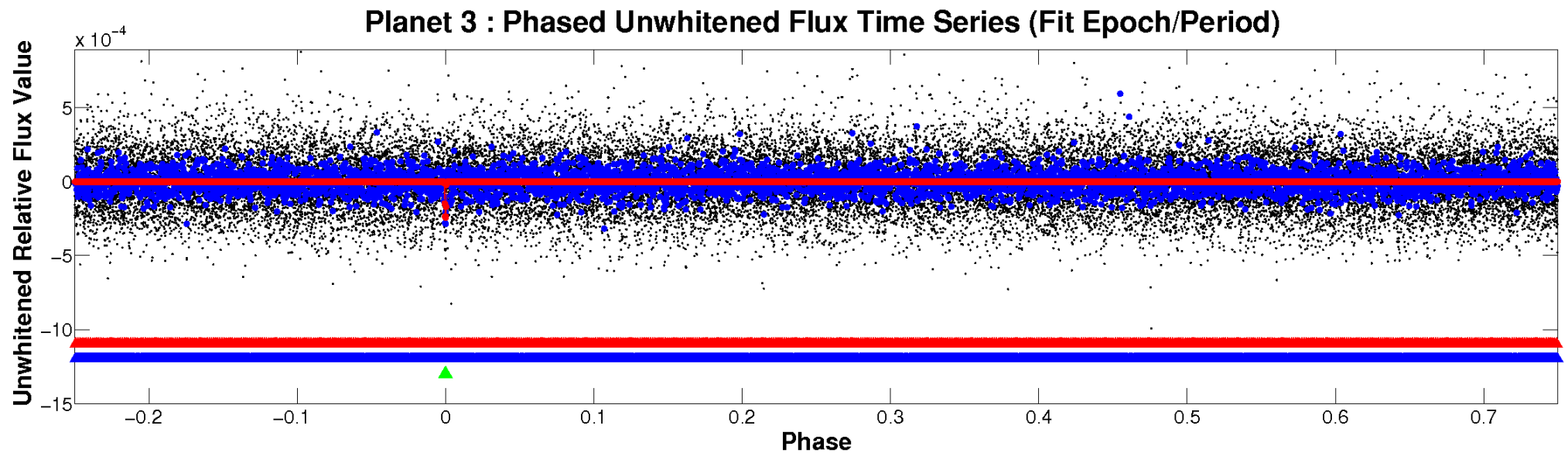


ALT Odd/Even

TCE 004820642-03

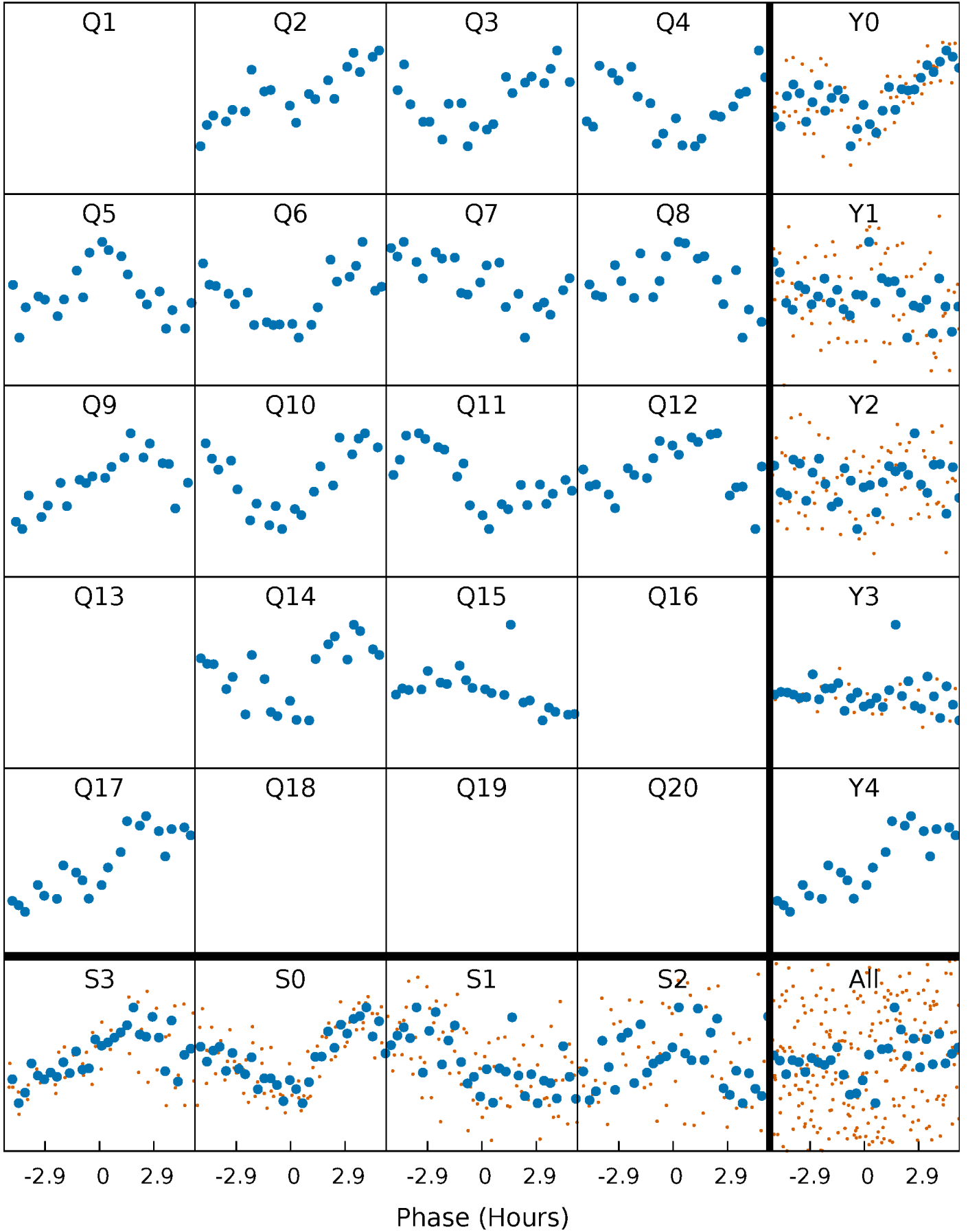


Non-Whitened Vs. Whitened Light Curve



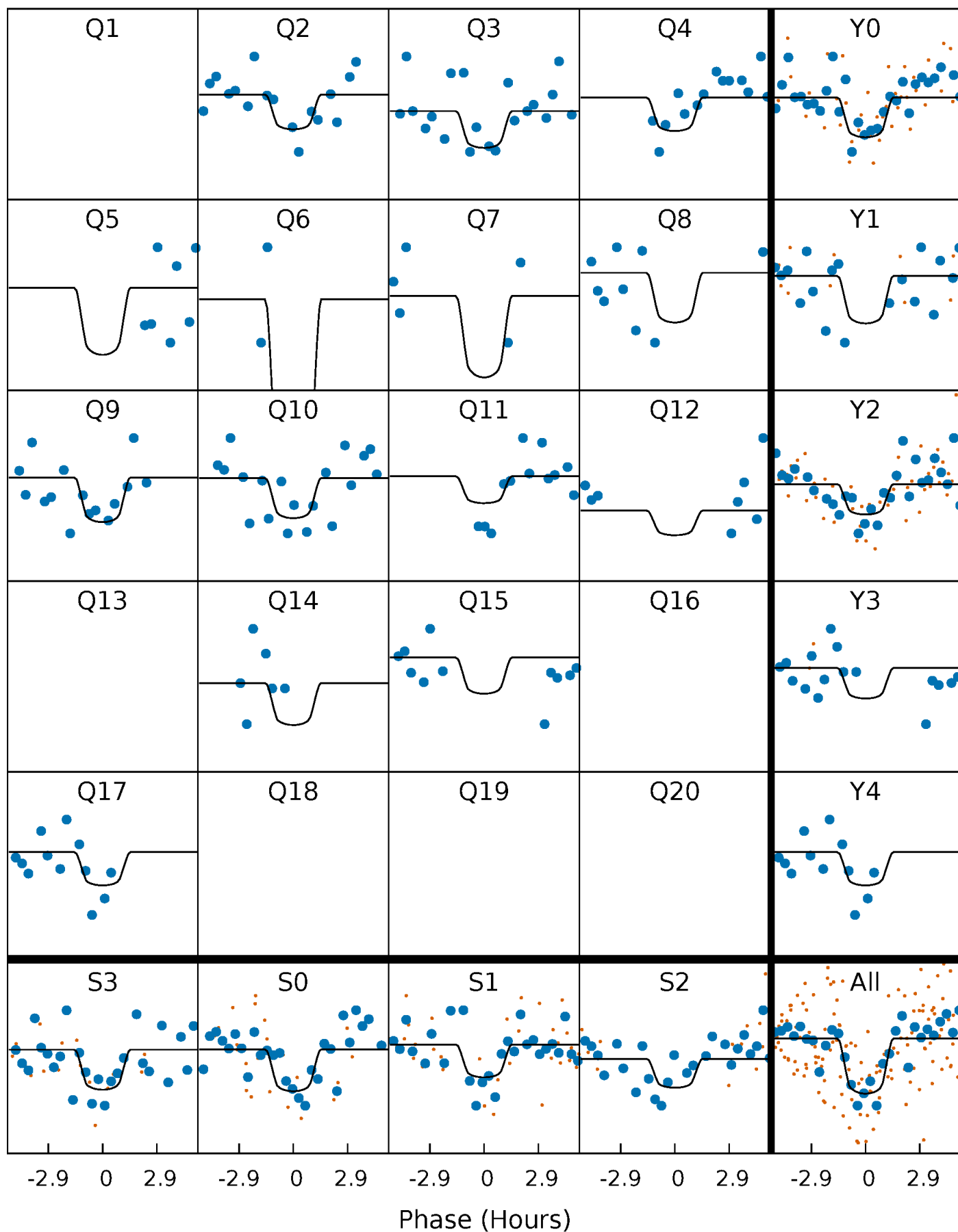
PDC Quarter-Phased Transit Curves

TCE 004820642-03 P= 96.021093 Days $T_0=220.893765$ (BKJD)



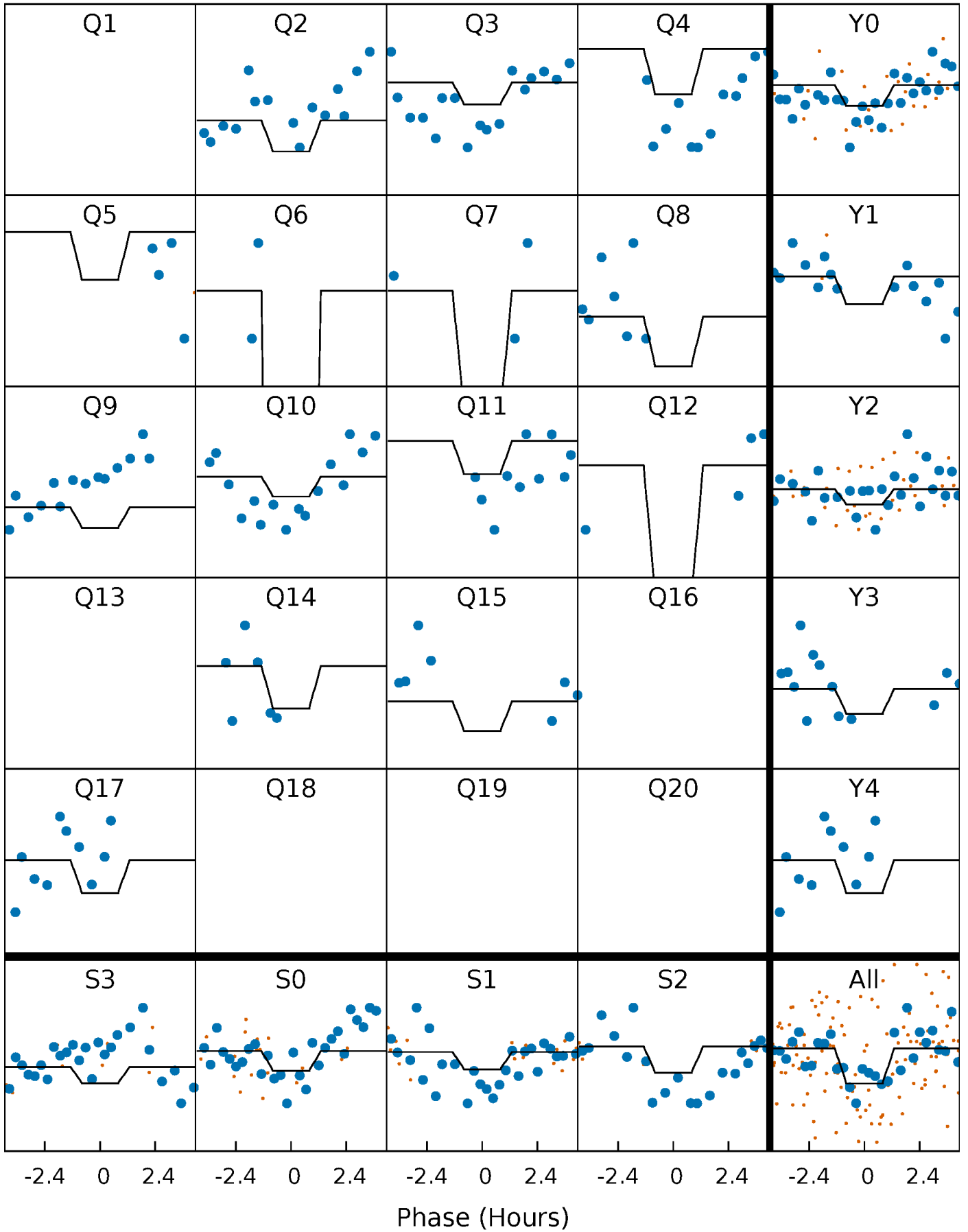
DV Quarter-Phased Transit Curves

TCE 004820642-03 P= 96.021093 Days $T_0=220.893765$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

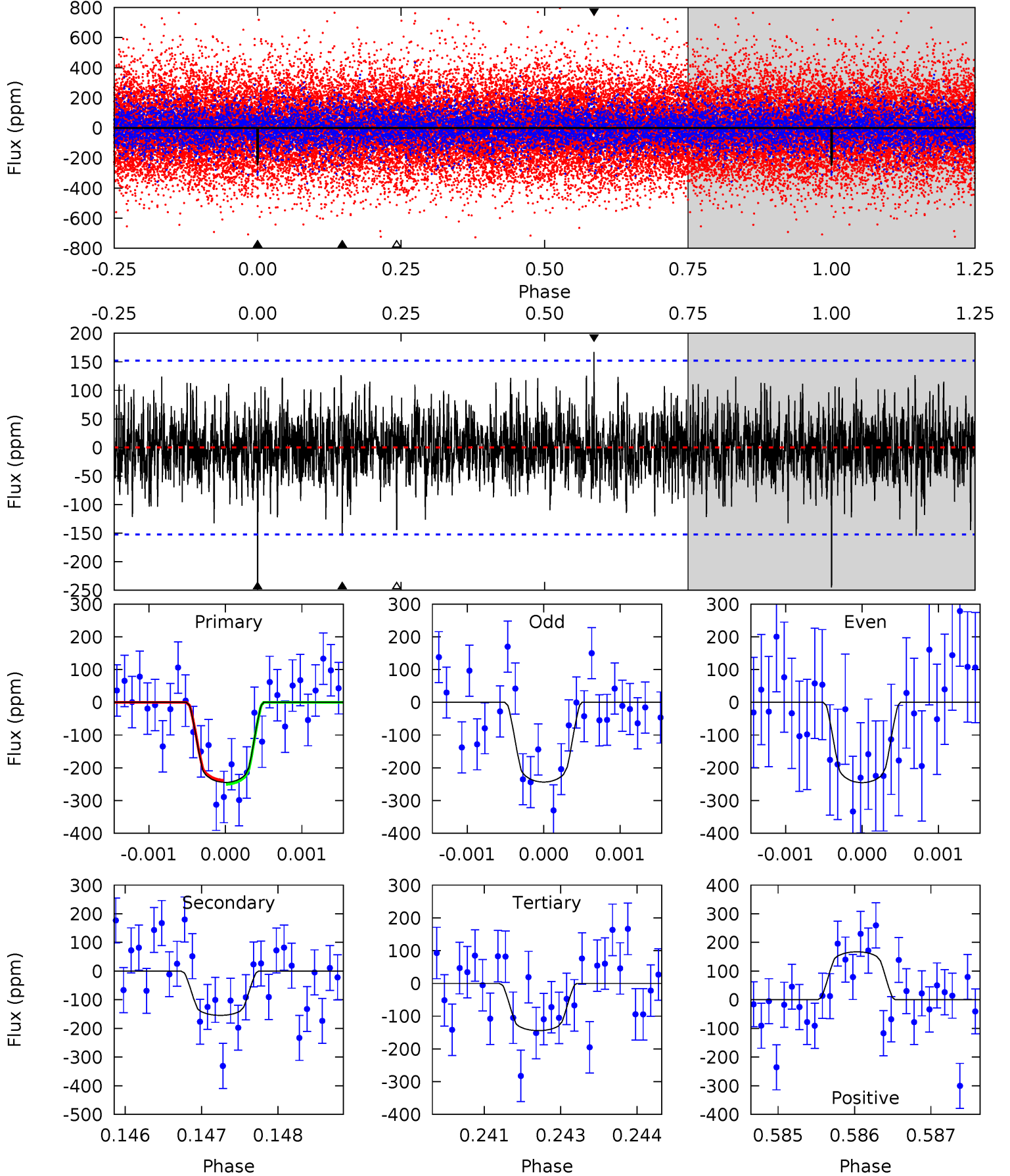
TCE 004820642-03 P= 96.021261 Days $T_0=220.891077$ (BKJD)



DV Model-Shift Uniqueness Test

004820642-03, P = 96.021093 Days, E = 124.872672 Days

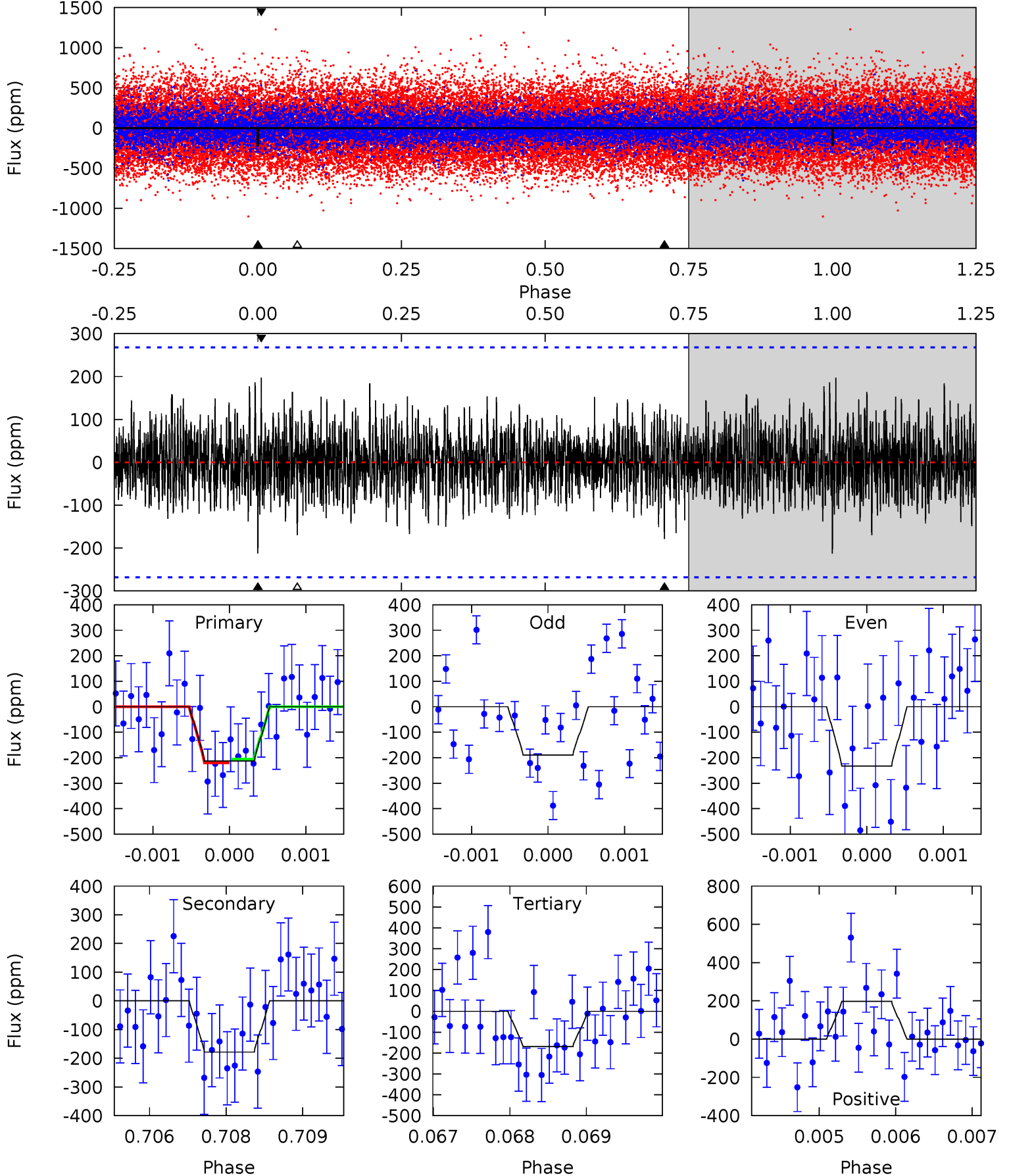
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.69	5.49	5.13	5.94	5.41	3.22	1.41	3.57	2.75	0.36	-0.45	0.03	1.02	0.41	0.21



Alt Model-Shift Uniqueness Test

004820642-03, P = 96.021261 Days, E = 124.869816 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.32	3.62	3.44	4.01	5.44	3.27	1.09	0.88	0.31	0.18	-0.39	0.44	0.59	0.48	0.14



Stellar Parameters For KIC 004820642

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6647^{+166}_{-216}	$4.245^{+0.124}_{-0.186}$	$-0.180^{+0.250}_{-0.300}$	$1.386^{+0.408}_{-0.272}$	$1.239^{+0.175}_{-0.195}$	$0.655^{+0.383}_{-0.323}$
	+2%/-3%	+3%/-4%	+139%/-167%	+29%/-20%	+14%/-16%	+58%/-49%
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 004820642-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-155 ± 28	$2.50^{+1.67}_{-1.25}$	734^{+54}_{-46}	5755^{+2648}_{-1103}	2553^{+8129}_{-1646}
Alt.	-179 ± 49	$2.37^{+1.50}_{-1.31}$	734^{+59}_{-44}	6159^{+3639}_{-1319}	3171^{+13340}_{-2004}

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 $A_{obs} \gg 1.0$

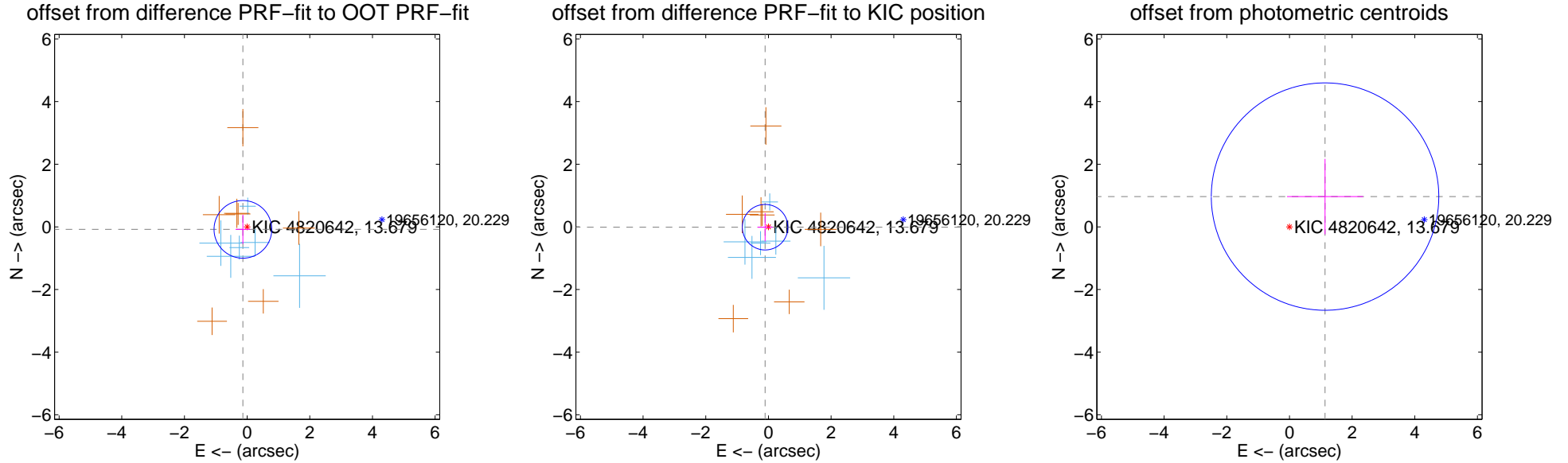
DV Centroid Data

Supplemental centroid analysis for 004820642-03. Kepler magnitude: 13.68. Transit SNR 7.42

There are 6 quarters with good PRF difference image offsets

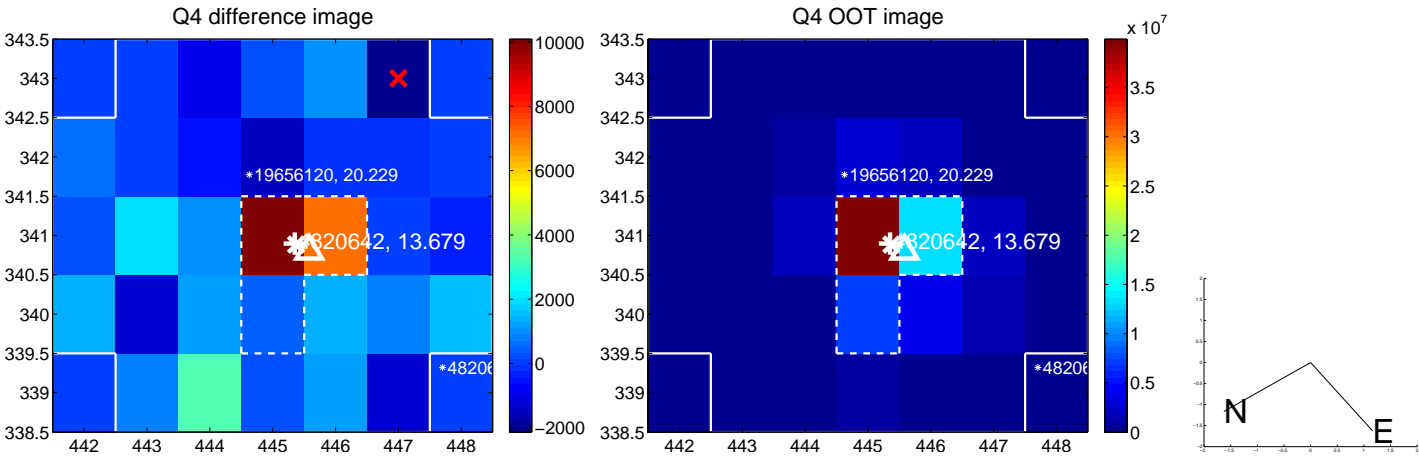
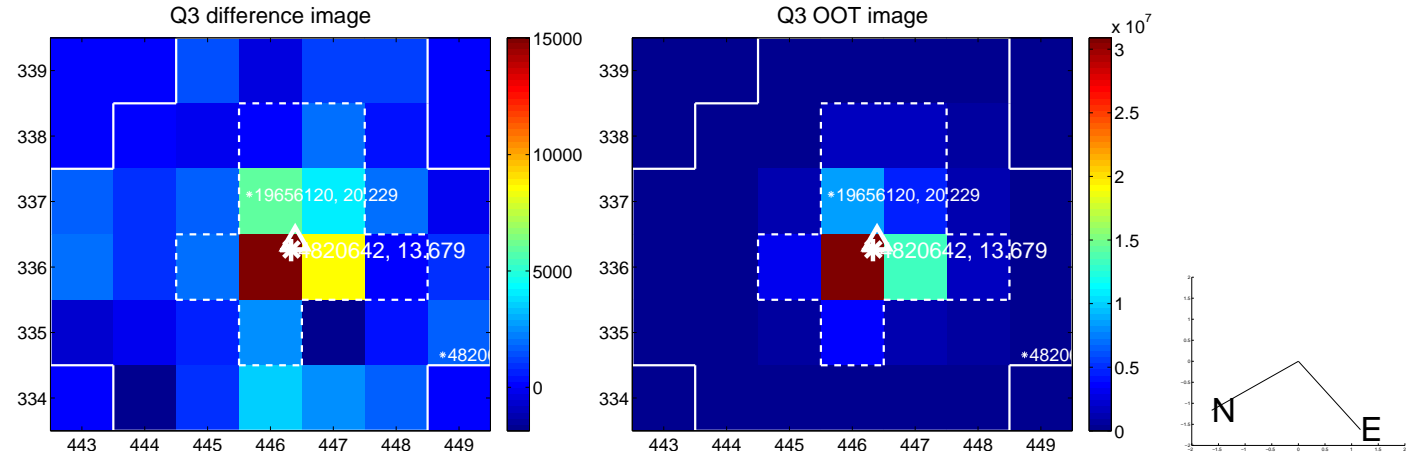
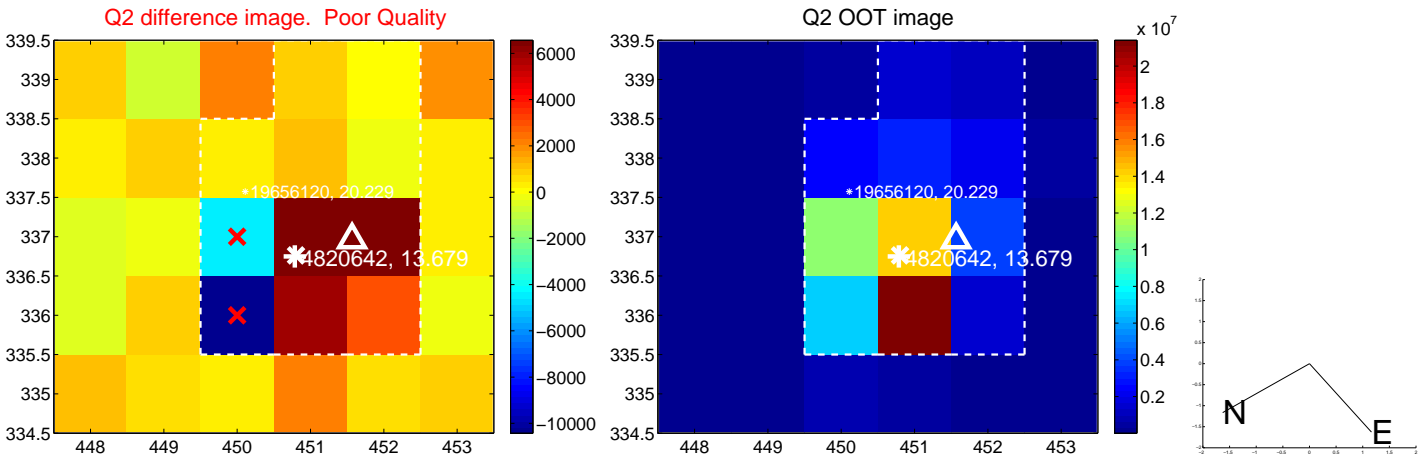
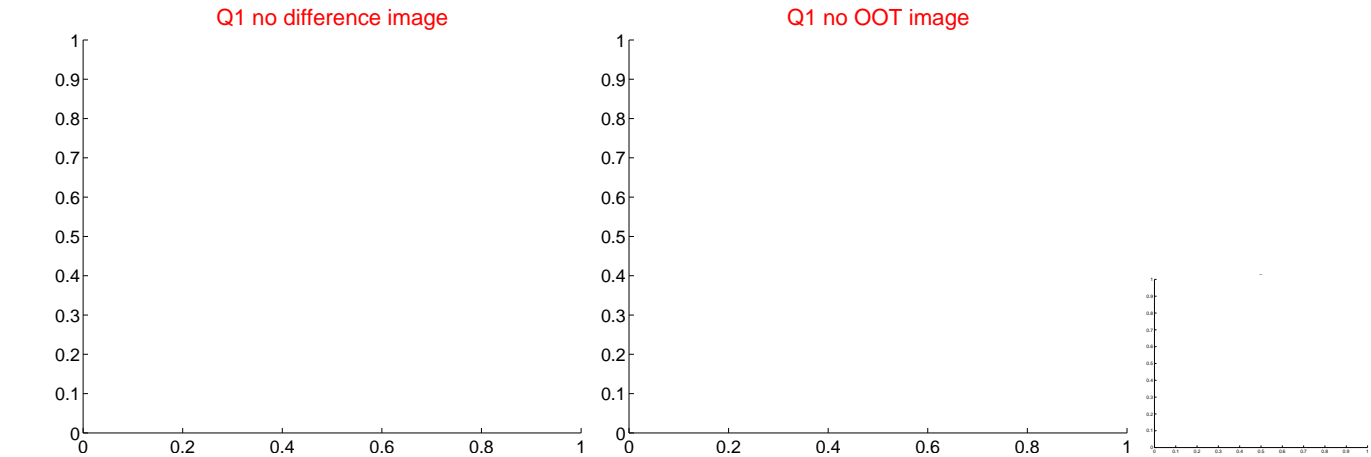
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.157 ± 0.307	0.51	0.135 ± 0.234	-0.080 ± 0.464
PRF-fit source offset from KIC position	0.106 ± 0.242	0.44	0.106 ± 0.244	-0.011 ± 0.450
photometric centroid source offset	1.49 ± 1.21	1.23	-1.14 ± 1.21	0.97 ± 1.20

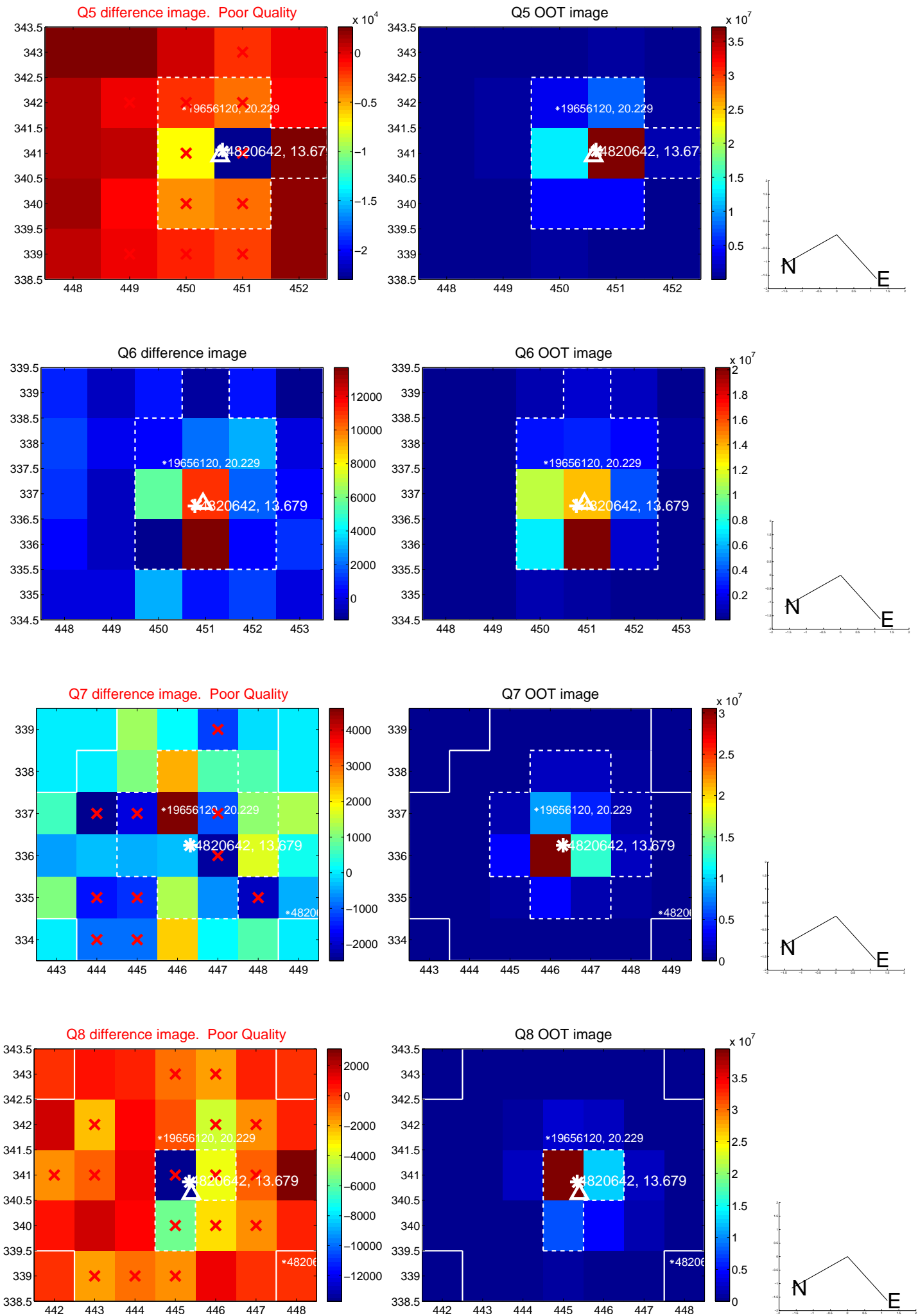


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

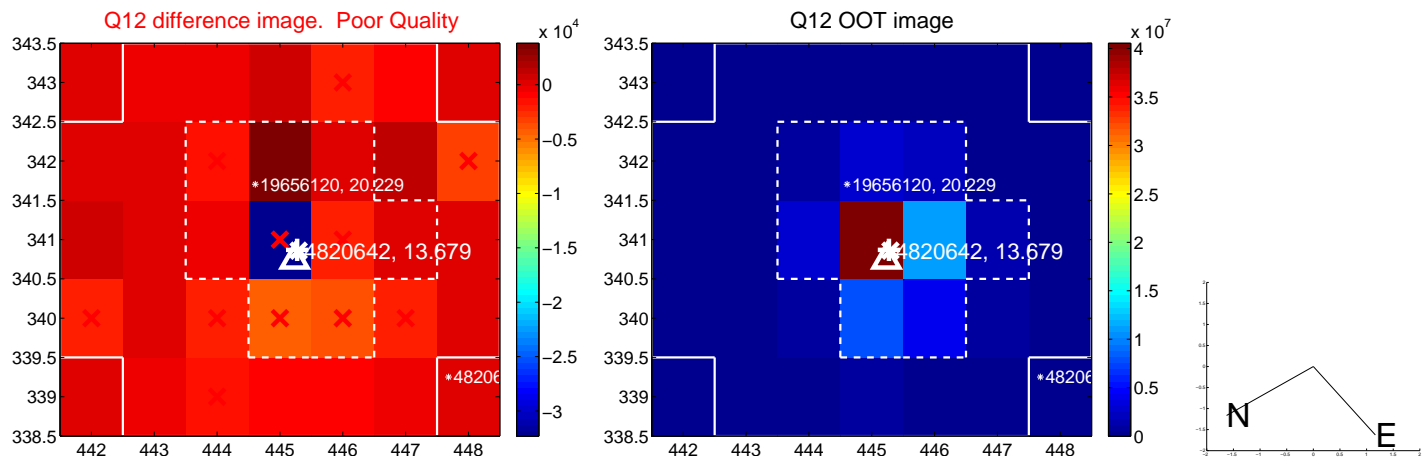
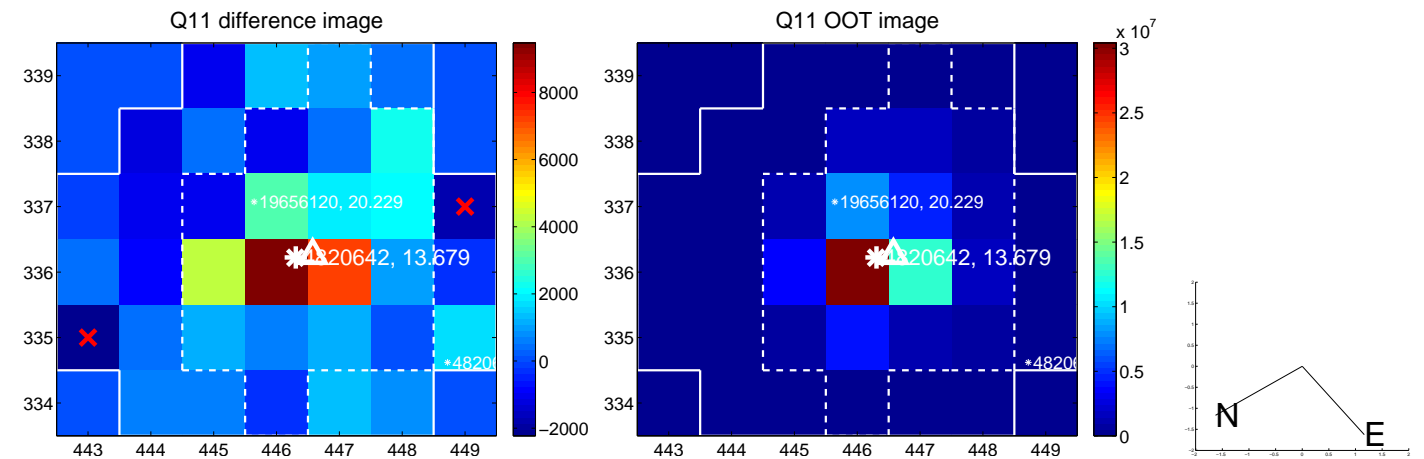
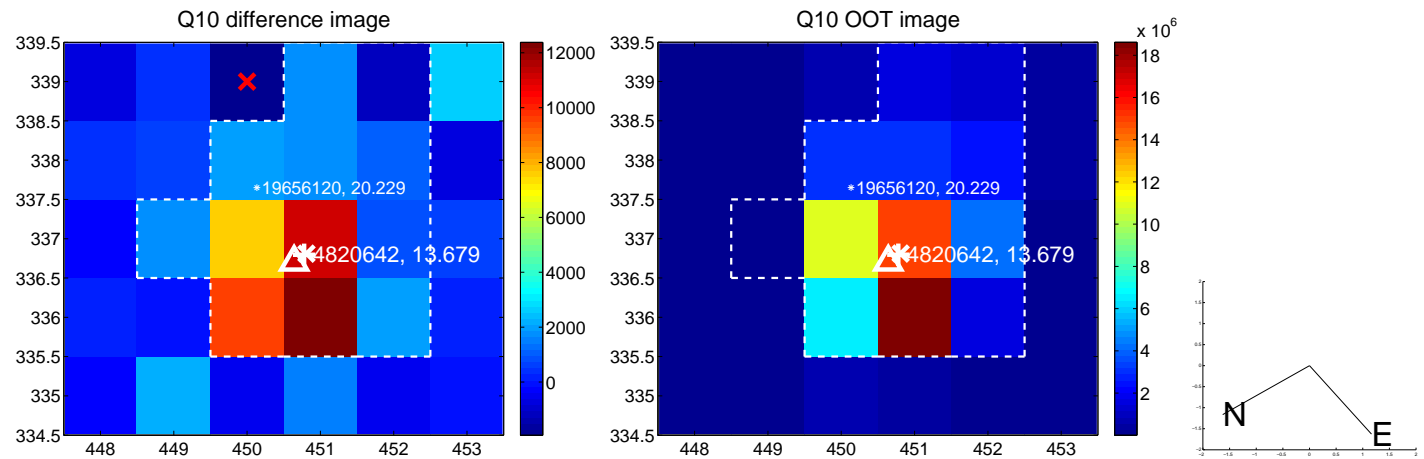
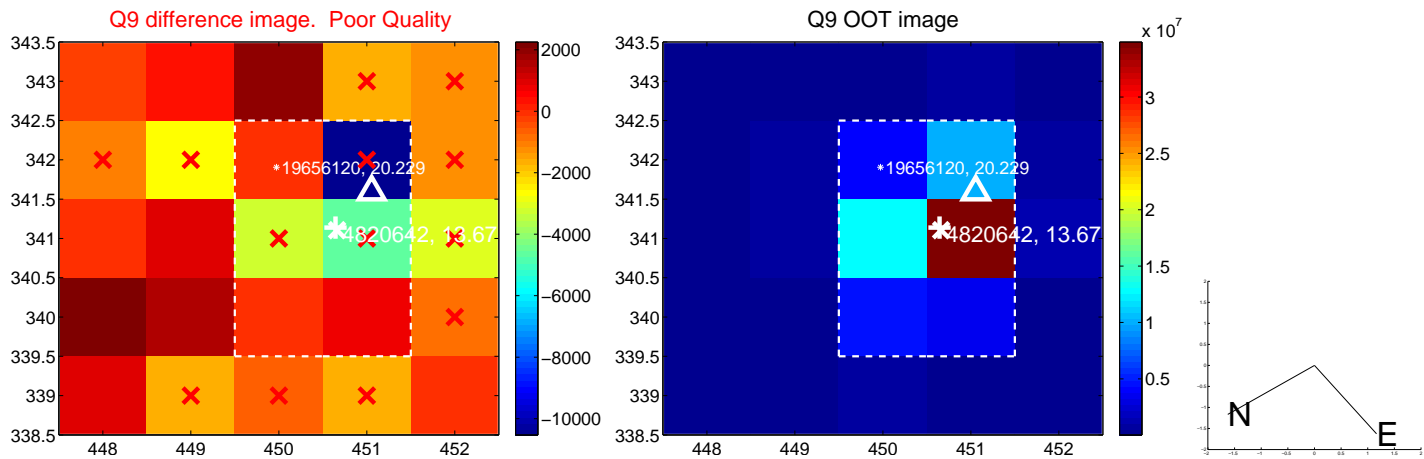
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



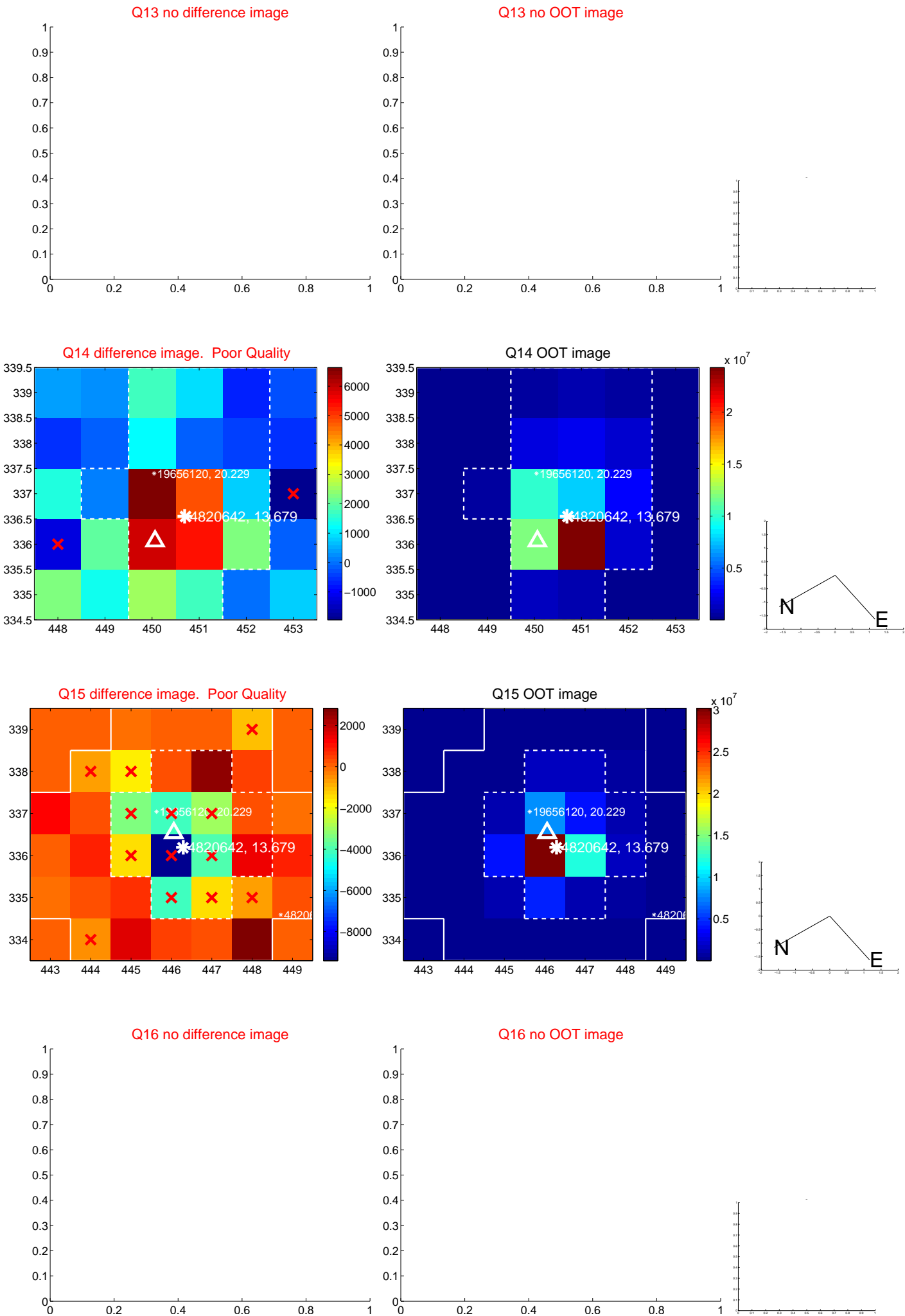
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



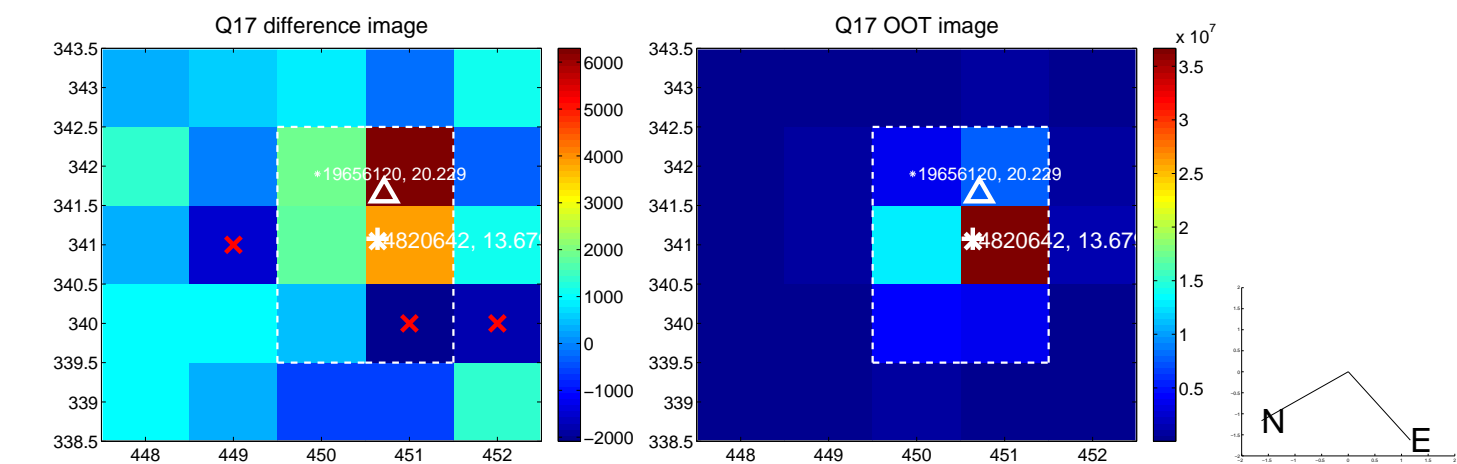
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



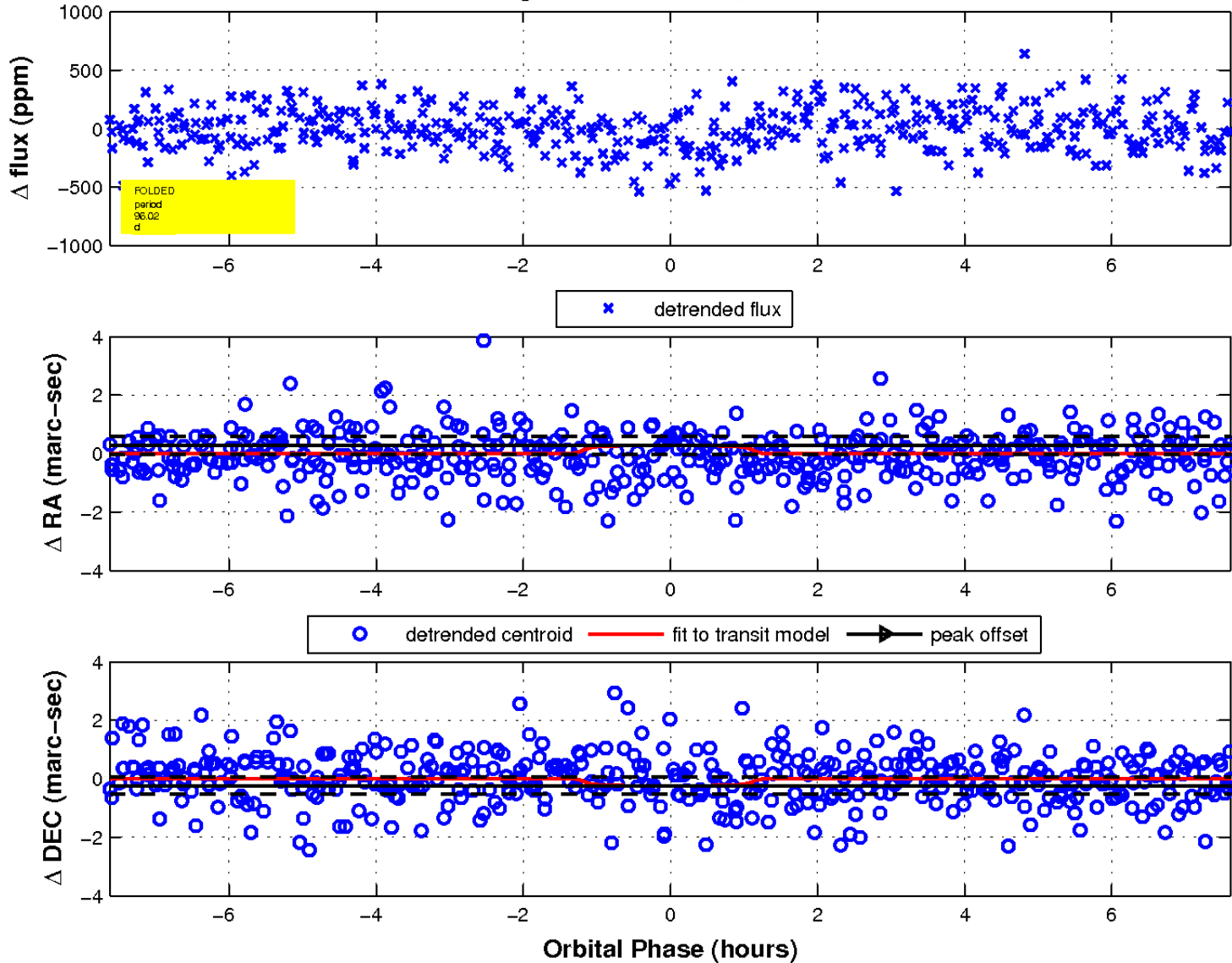
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

