

KIC 003634384

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})
003634384-01	OBS	No	0.591342	131.524532	61.9	3.739	15.3	14.0	2.80	7698	2.28	83000.87
003634384-02	OBS	No	0.604615	131.693420	1081.7	0.707	14.4	27.1	2.80	7698	10.92	80580.32
003634384-03	OBS	No	0.604608	131.956855	878.6	0.919	11.7	24.9	2.80	7698	9.79	80581.54
003634384-04	OBS	No	0.604616	131.520369	88.0	1.500	10.4	-1.0	2.80	7698	2.67	80580.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003634384-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
003634384-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003634384-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003634384-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

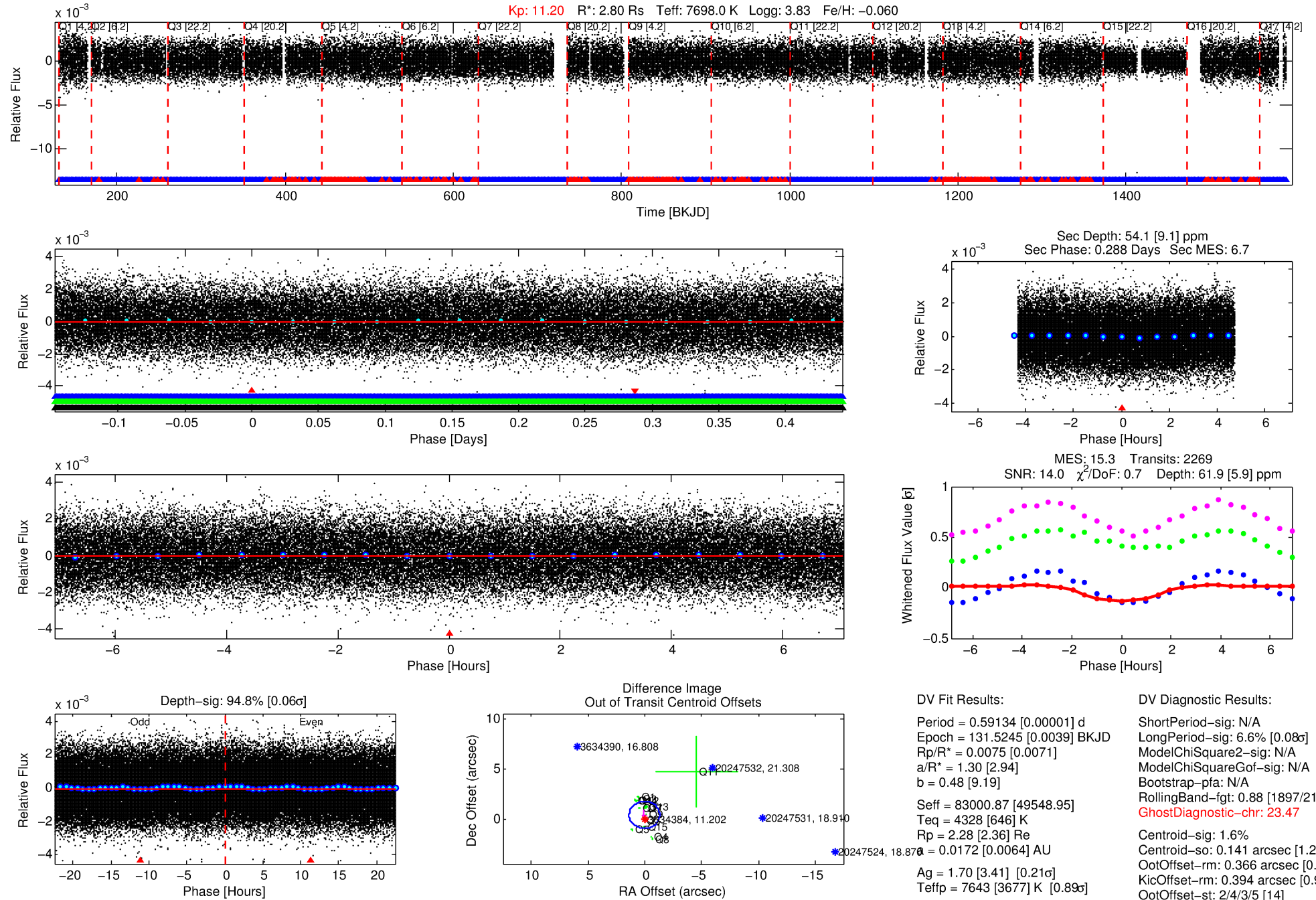
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003634384-01

No Significant Match Found

DV One-Page Summary

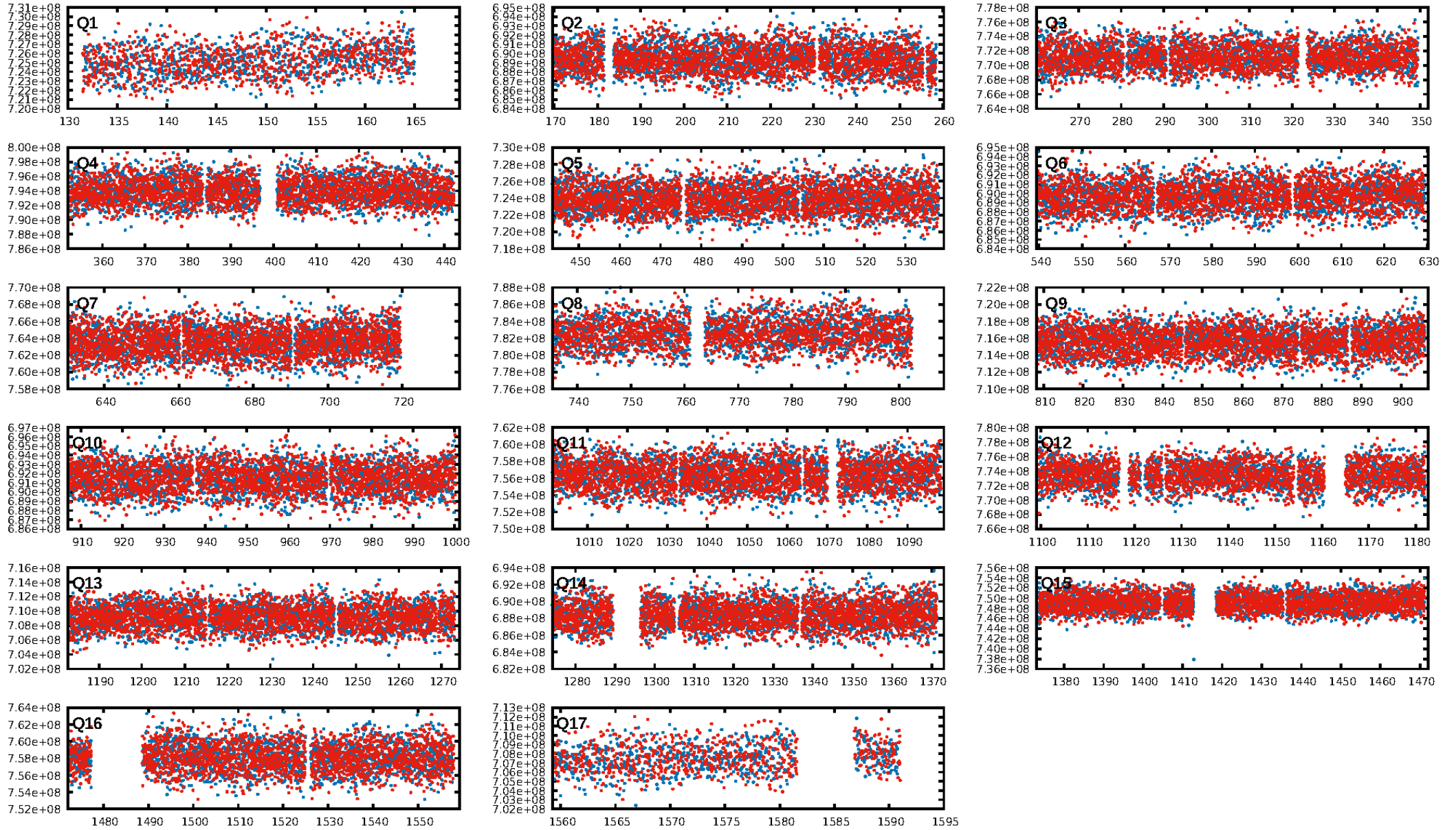
KIC: 3634384 Candidate: 1 of 4 Period: 0.591 d



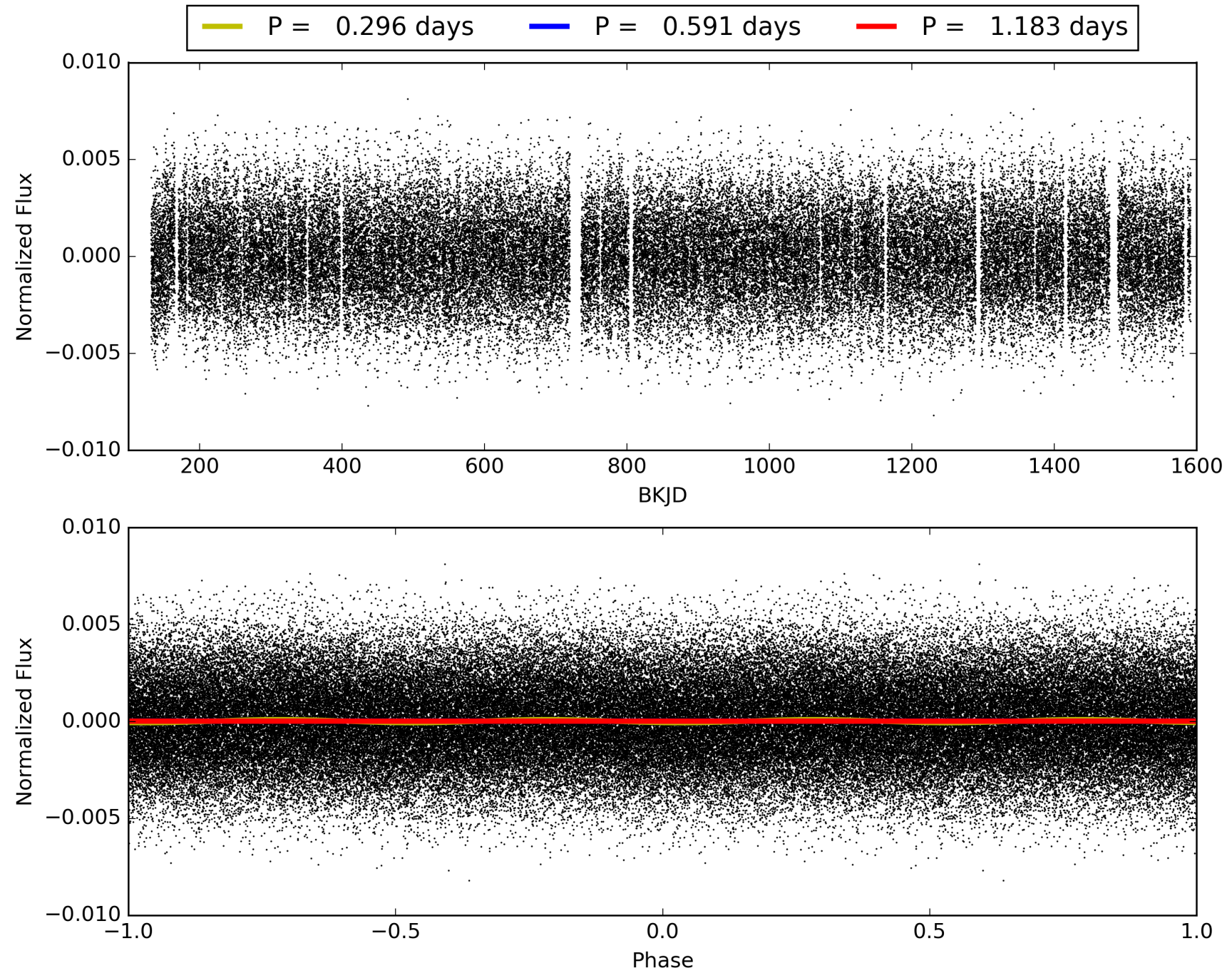
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 01:07:43 Z

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

TCE 003634384-01, PDC Light Curves

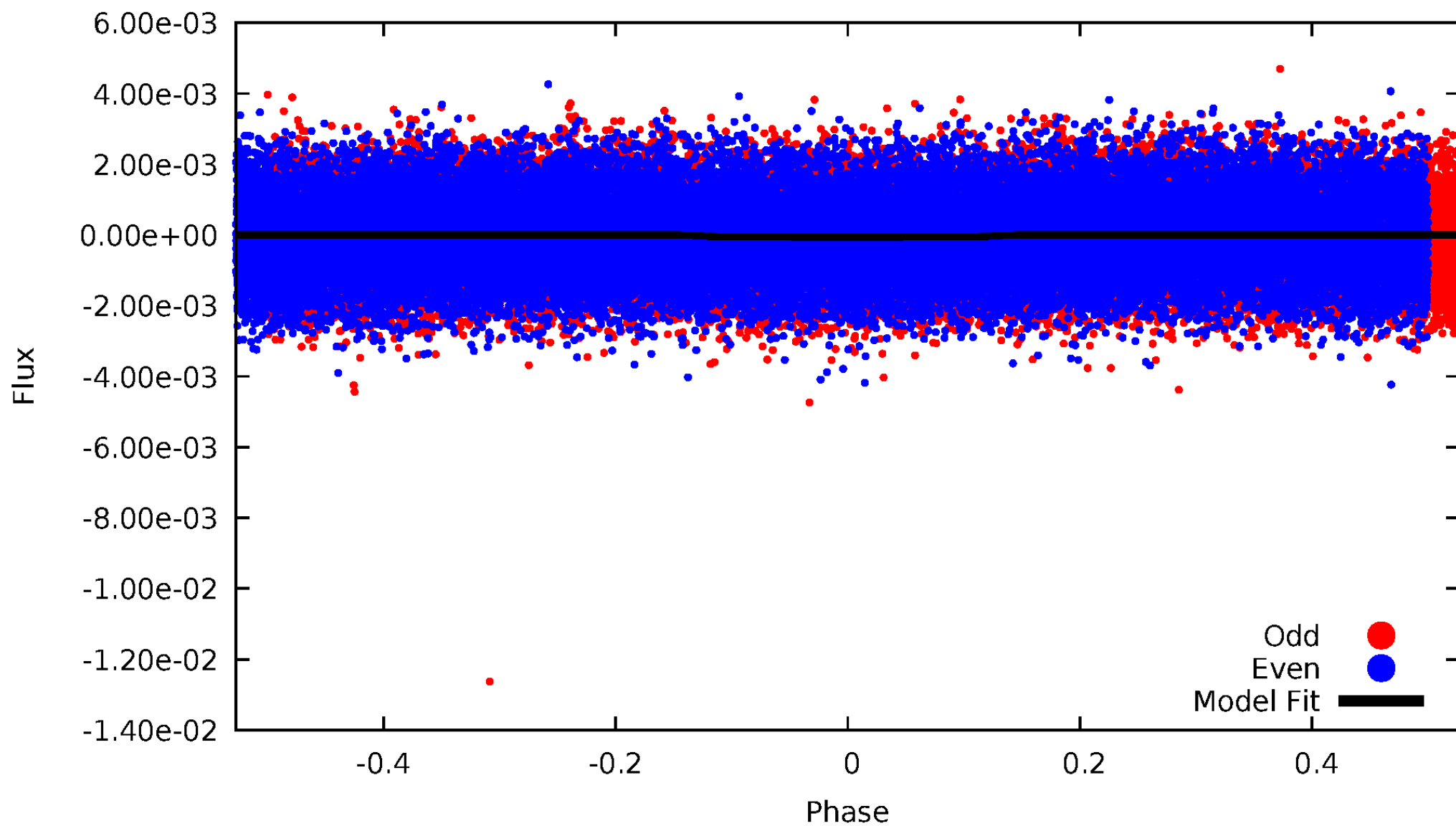


TCE 003634384-01



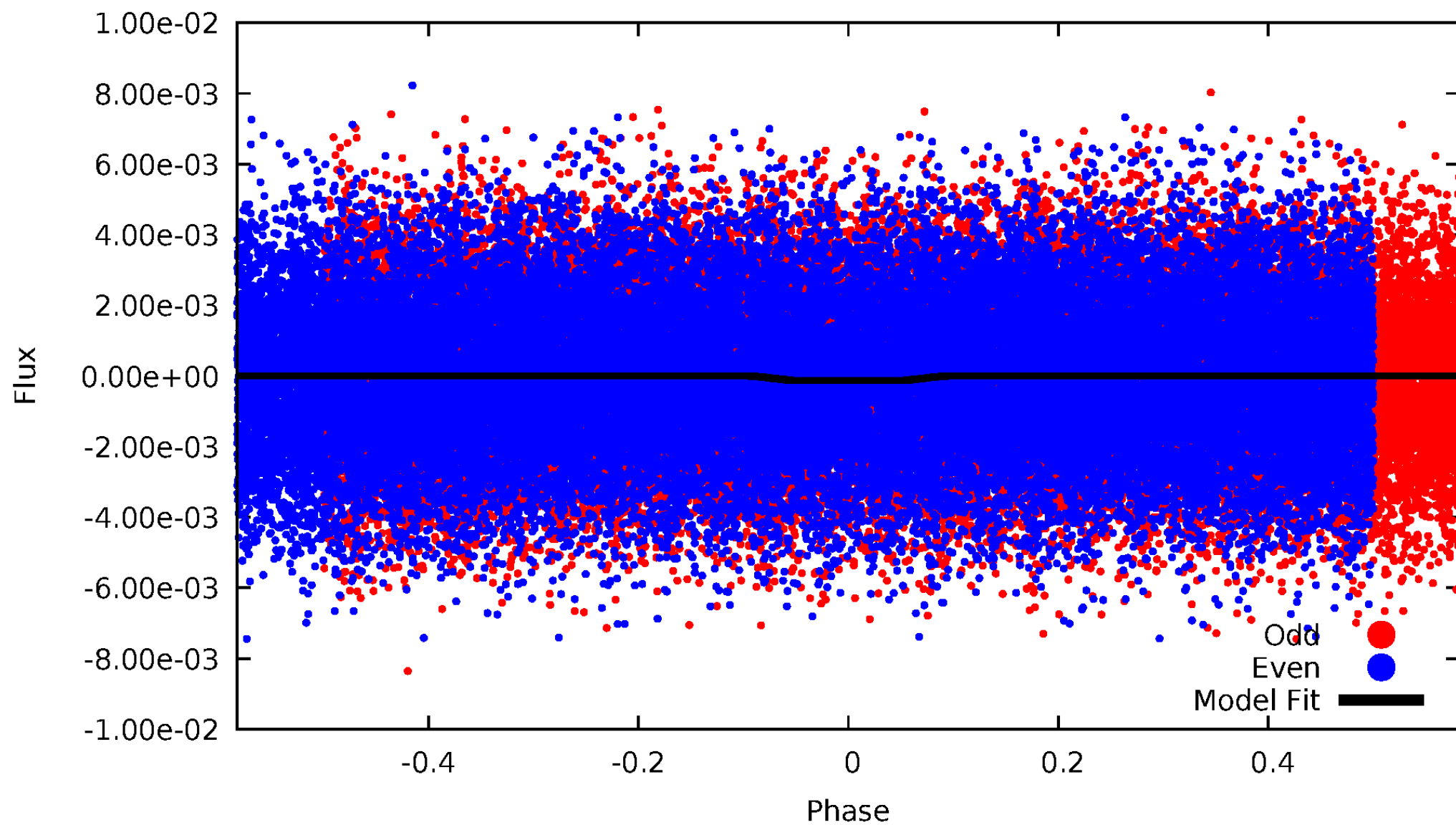
DV Odd/Even

TCE 003634384-01



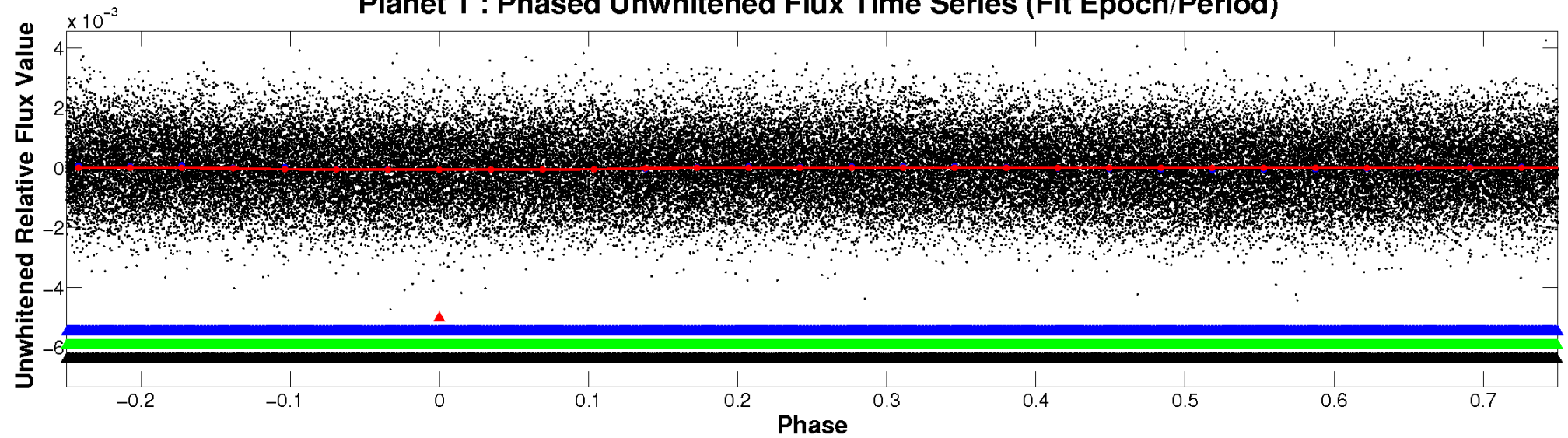
ALT Odd/Even

TCE 003634384-01

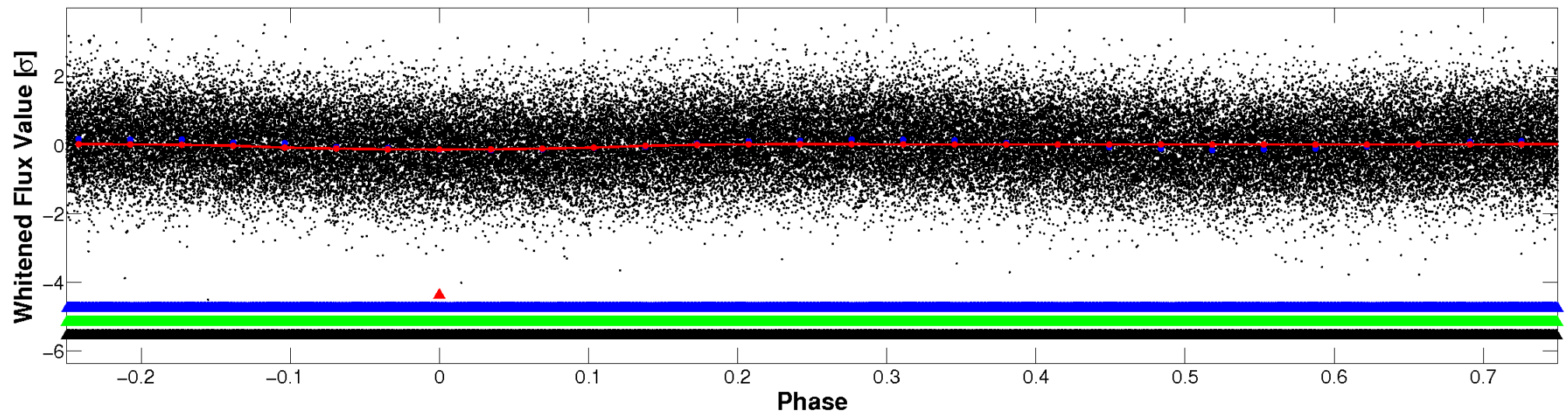


Non-Whitened Vs. Whitened Light Curve

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

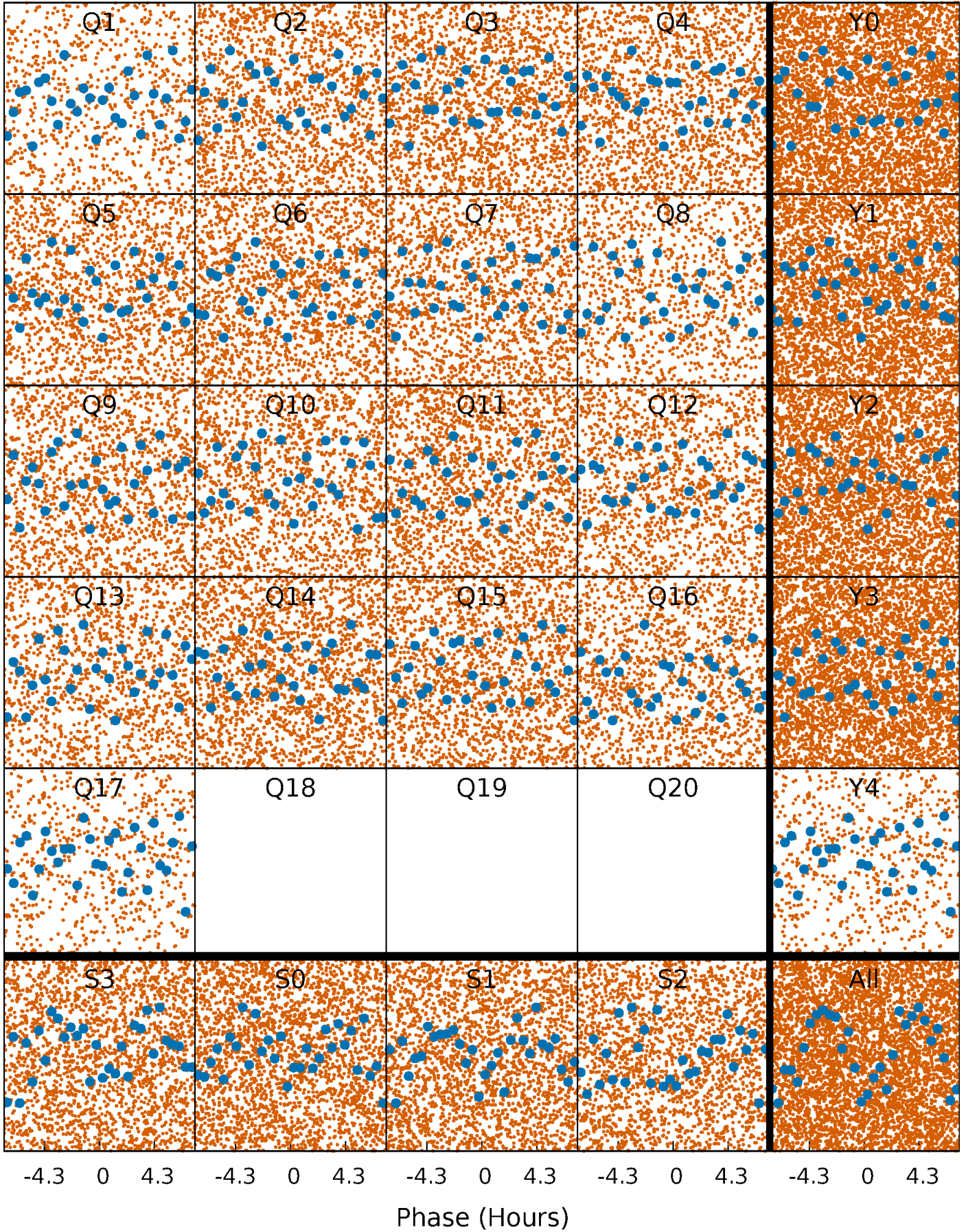


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



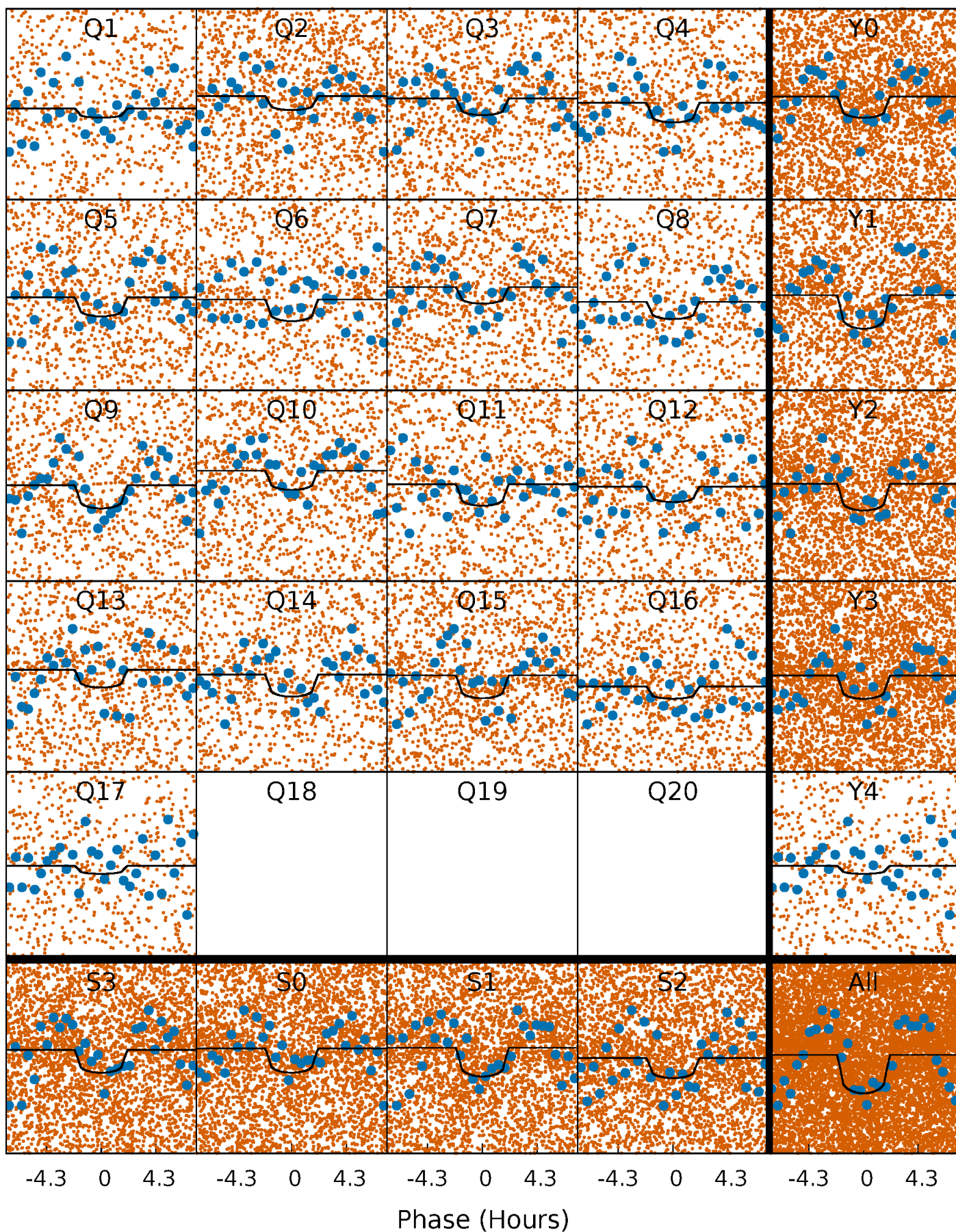
PDC Quarter-Phased Transit Curves

TCE 003634384-01 P= 0.591342 Days $T_0=131.524532$ (BKJD)



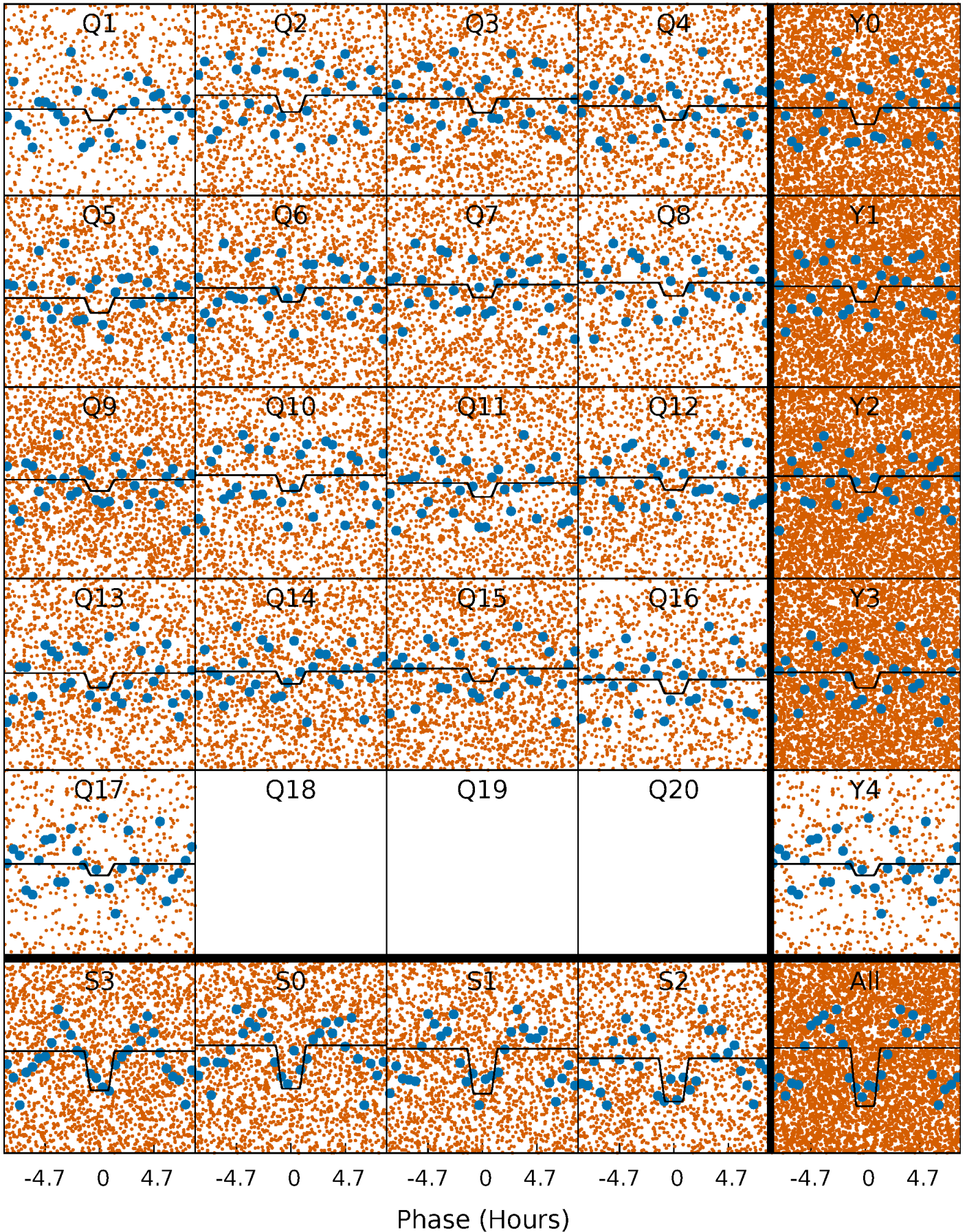
DV Quarter-Phased Transit Curves

TCE 003634384-01 P= 0.591342 Days $T_0=131.524532$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

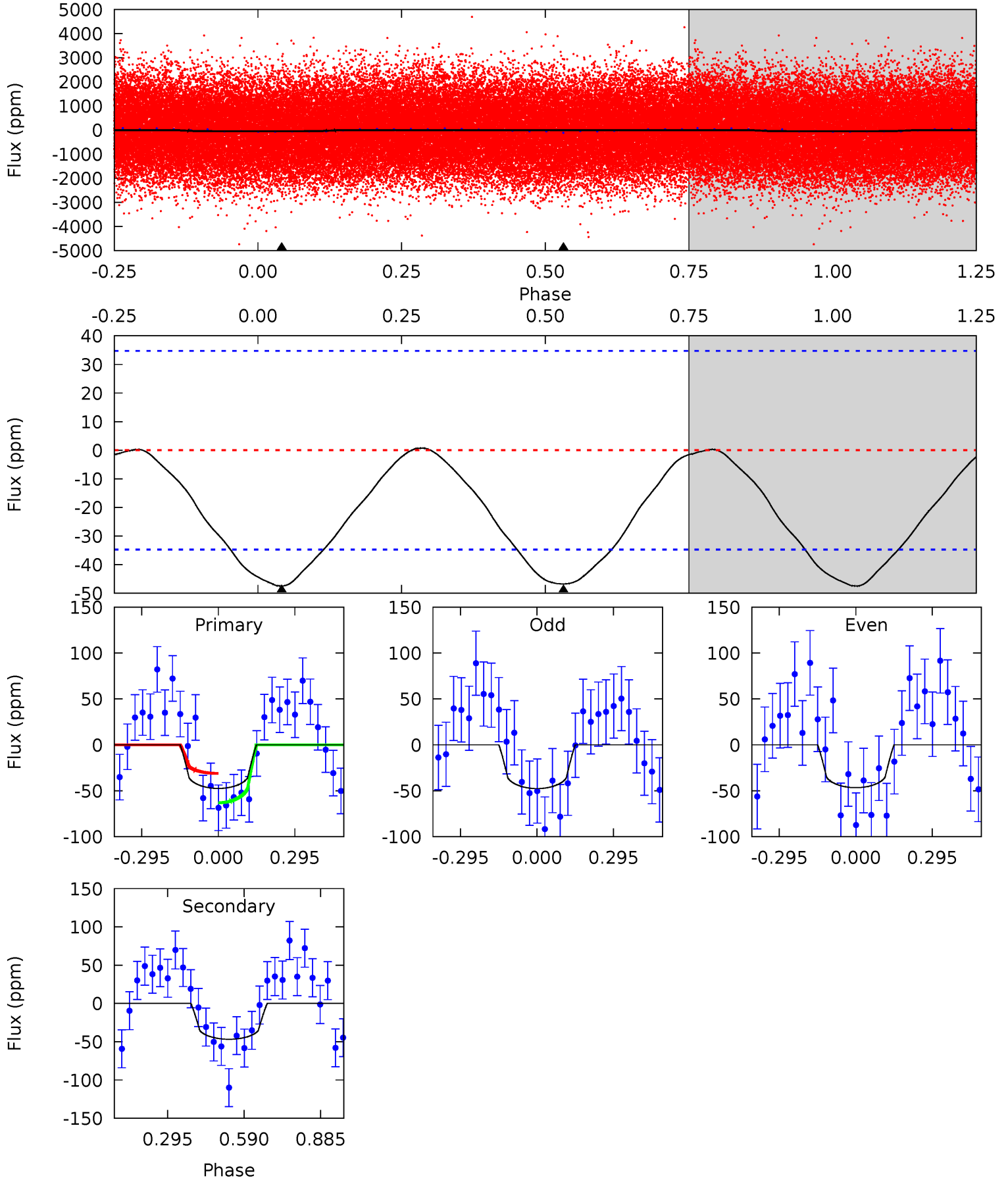
TCE 003634384-01 P= 0.591366 Days $T_0=131.514449$ (BKJD)



DV Model-Shift Uniqueness Test

003634384-01, P = 0.591342 Days, E = 130.933190 Days

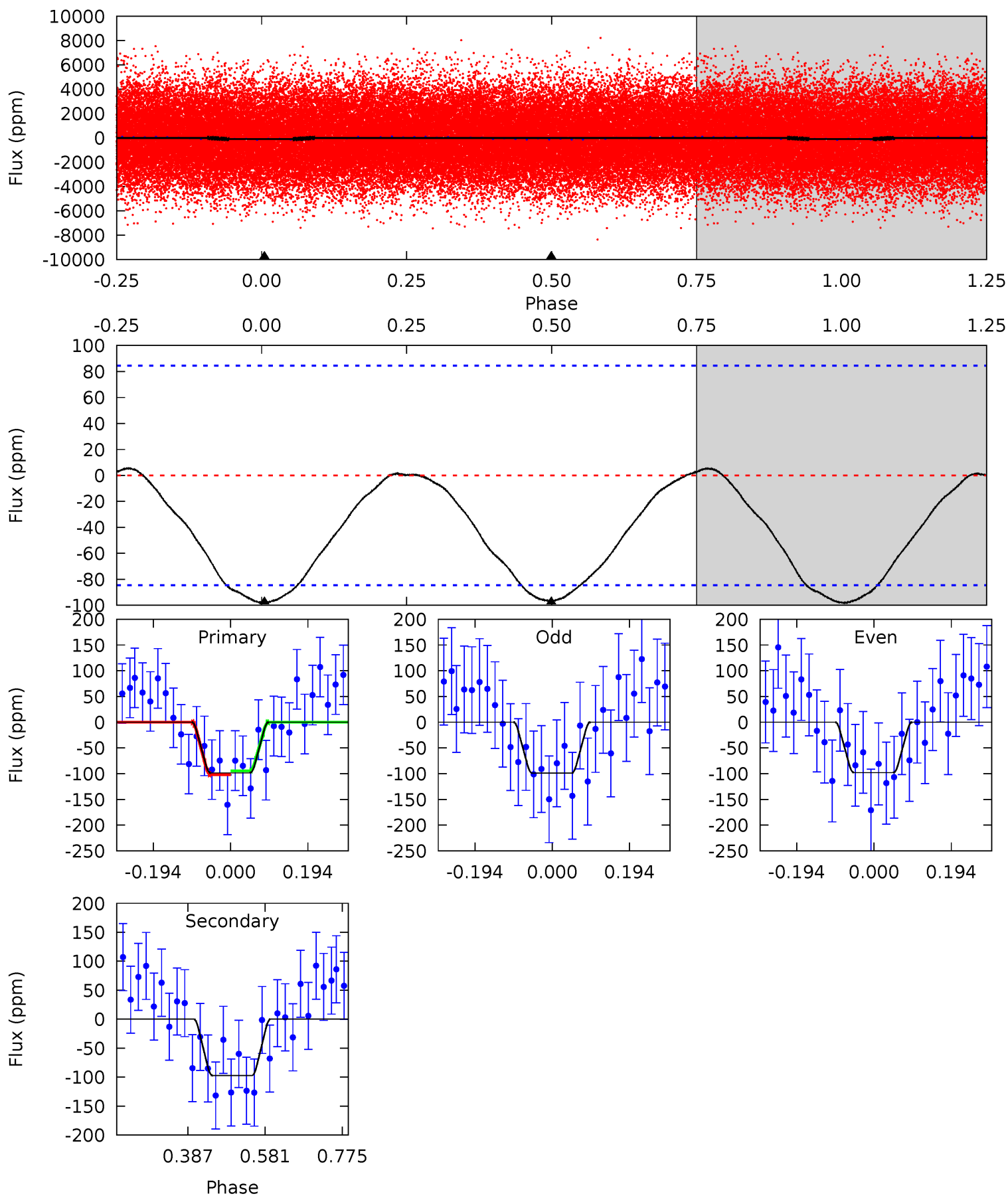
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.92	5.83	0	0	4.33	1.05	0.08	5.92	5.92	5.83	5.83	0.06	1.04	0.02	2.03



Alt Model-Shift Uniqueness Test

003634384-01, P = 0.591366 Days, E = 130.923083 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.15	5.09	0	0	4.42	1.30	0.20	5.15	5.15	5.09	5.09	0.02	0.99	0.05	0.19



Stellar Parameters For KIC 003634384

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7698^{+211}_{-316}	$3.834^{+0.330}_{-0.110}$	$-0.060^{+0.200}_{-0.350}$	$2.797^{+0.377}_{-1.132}$	$1.948^{+0.083}_{-0.471}$	$0.126^{+0.340}_{-0.035}$
	+3%/-4%	+9%/-3%	+333%/-583%	+13%/-40%	+4%/-24%	+271%/-28%
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 003634384-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-47 ± 8	$2.38^{+1.92}_{-1.45}$	5952^{+389}_{-599}	6320^{+6561}_{-2479}	$1.290^{+7.522}_{-0.899}$
Alt.	-97 ± 19	$3.31^{+2.14}_{-1.95}$	5942^{+389}_{-544}	6406^{+5835}_{-1914}	$1.393^{+6.799}_{-0.892}$

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

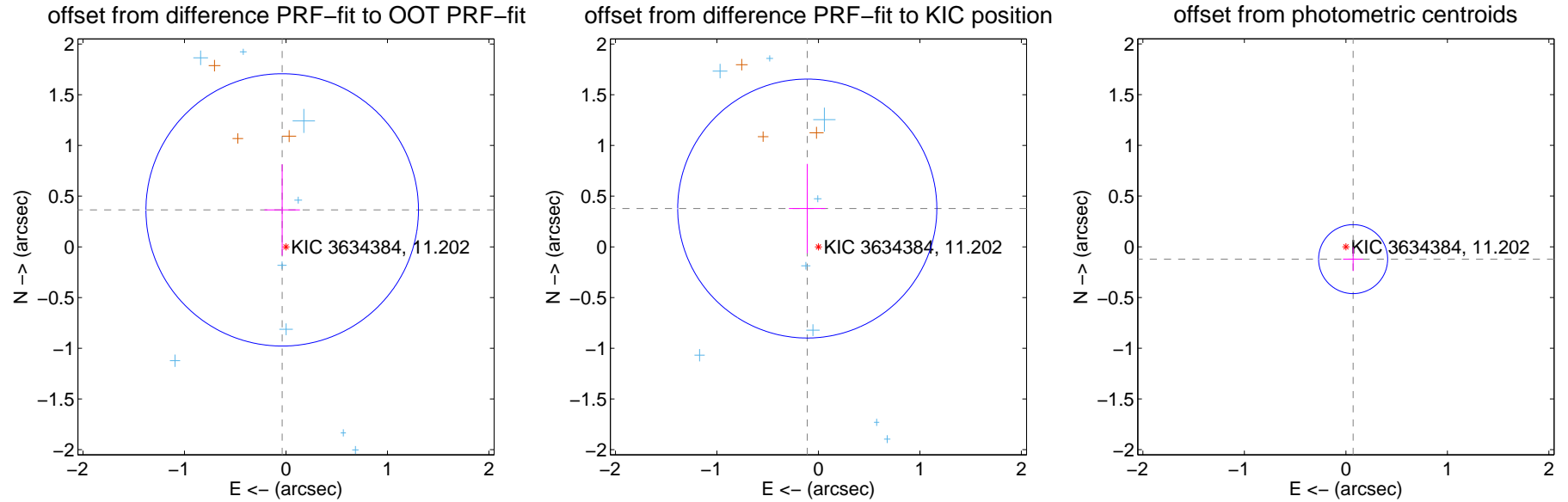
DV Centroid Data

Supplemental centroid analysis for 003634384-01. **Kepler magnitude: 11.20.** Transit SNR 13.98

There are 10 quarters with good PRF difference image offsets

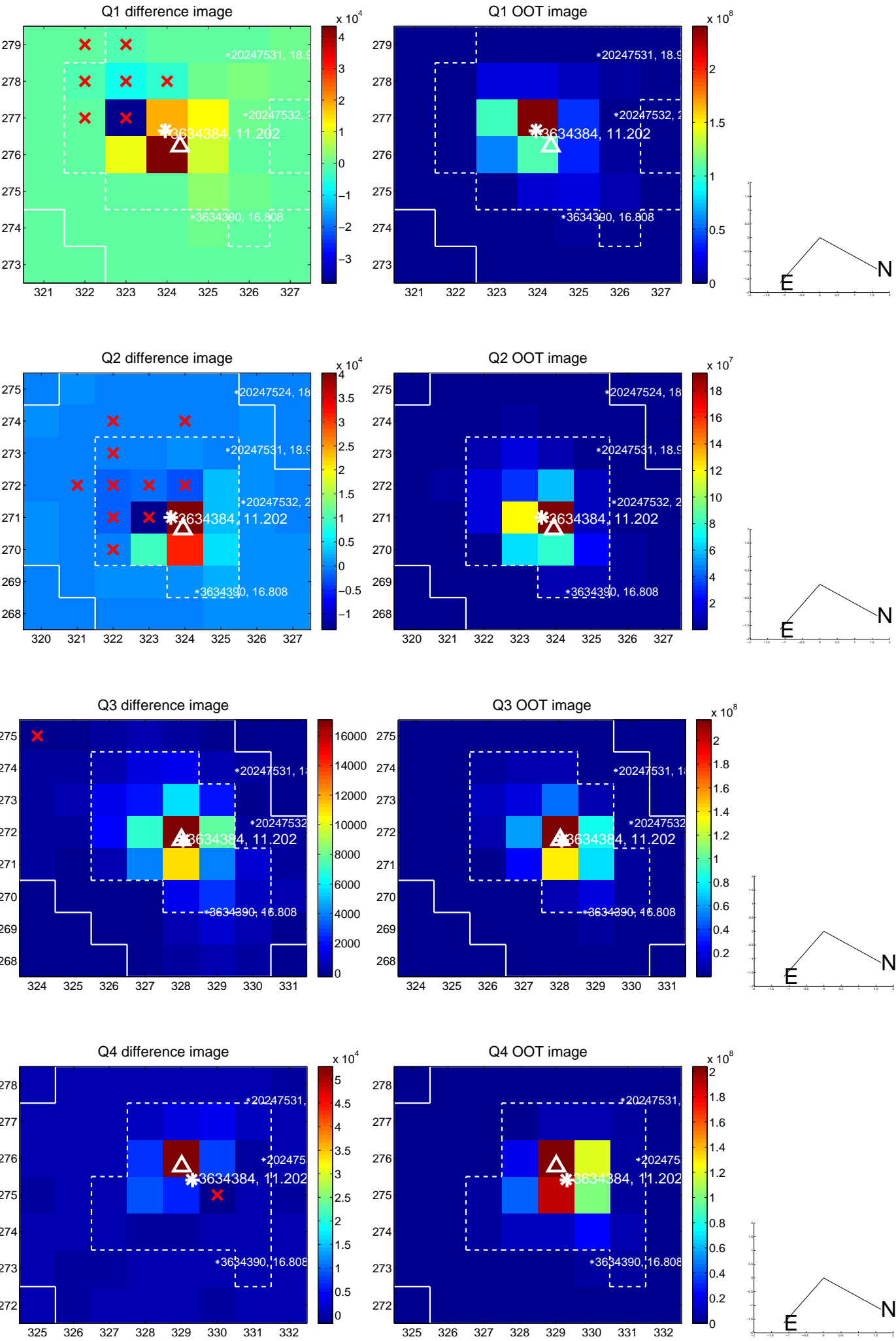
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.366 ± 0.448	0.82	0.037 ± 0.175	0.365 ± 0.450
PRF-fit source offset from KIC position	0.394 ± 0.426	0.92	0.110 ± 0.180	0.378 ± 0.440
photometric centroid source offset	0.14 ± 0.11	1.24	-0.07 ± 0.10	-0.12 ± 0.12

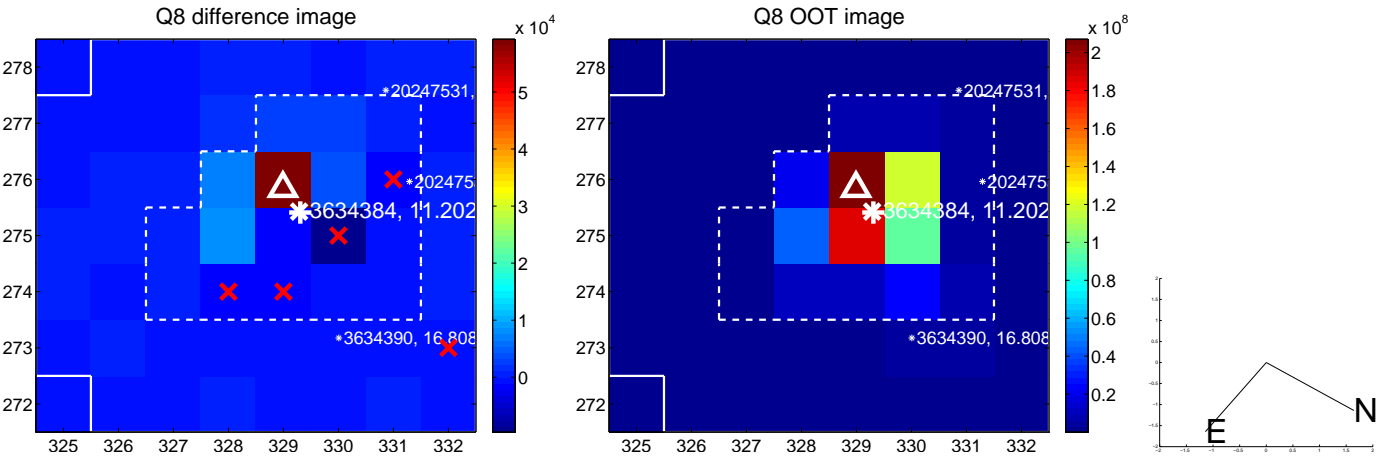
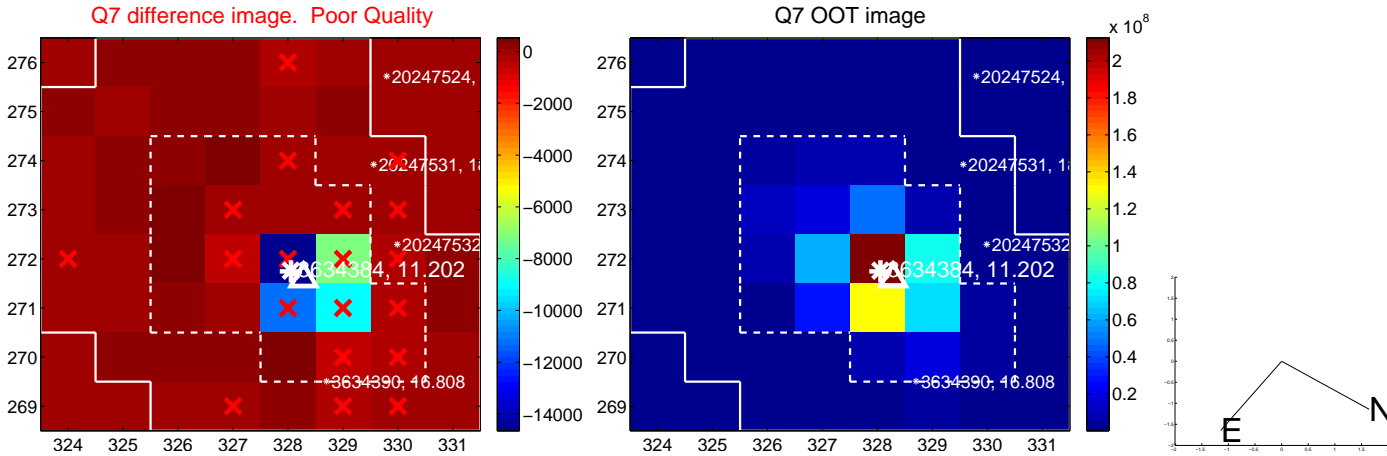
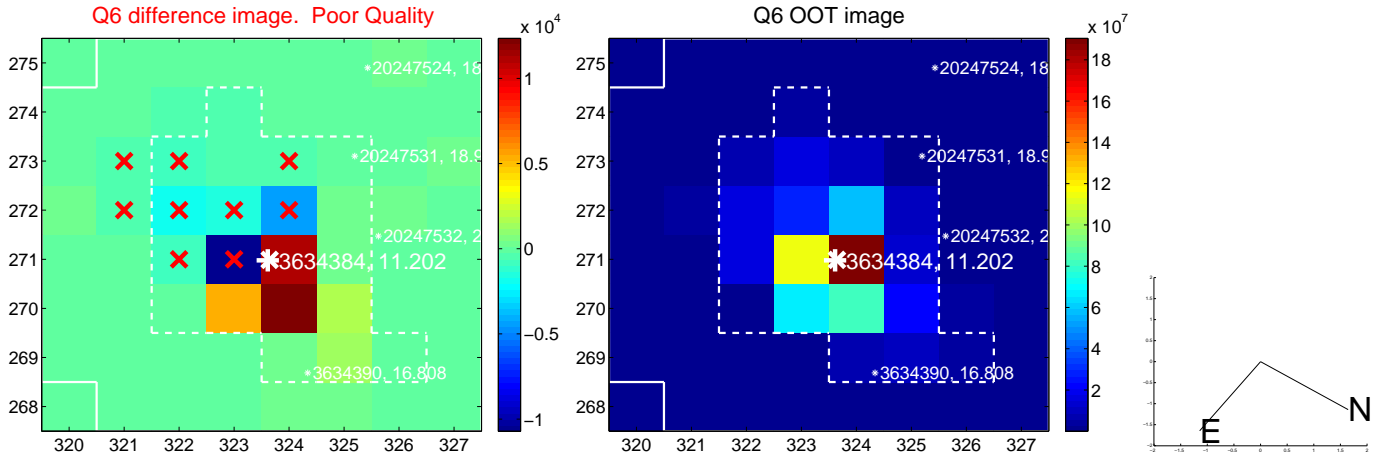
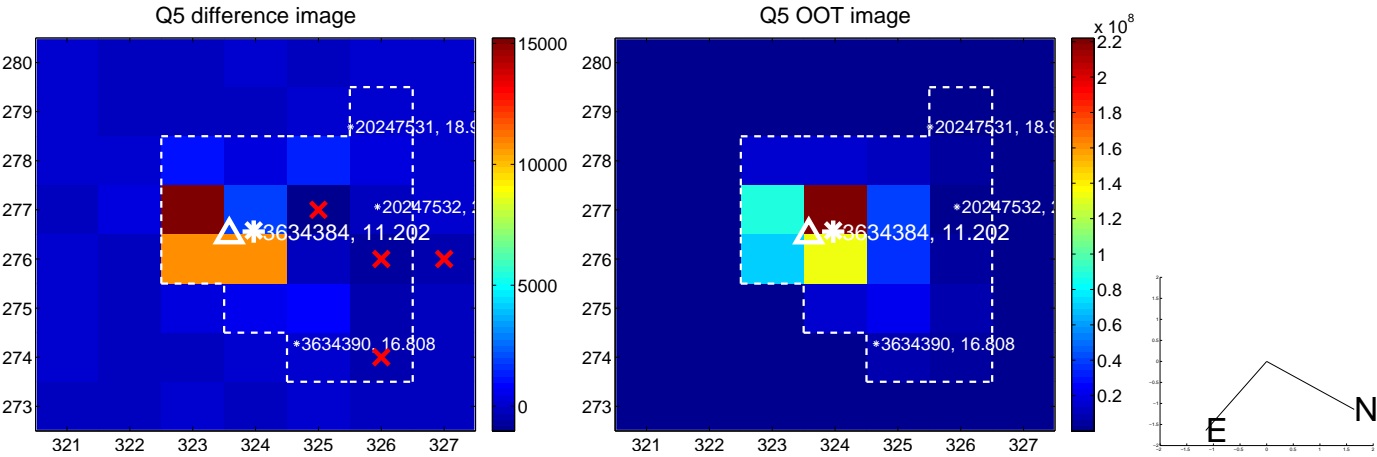


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

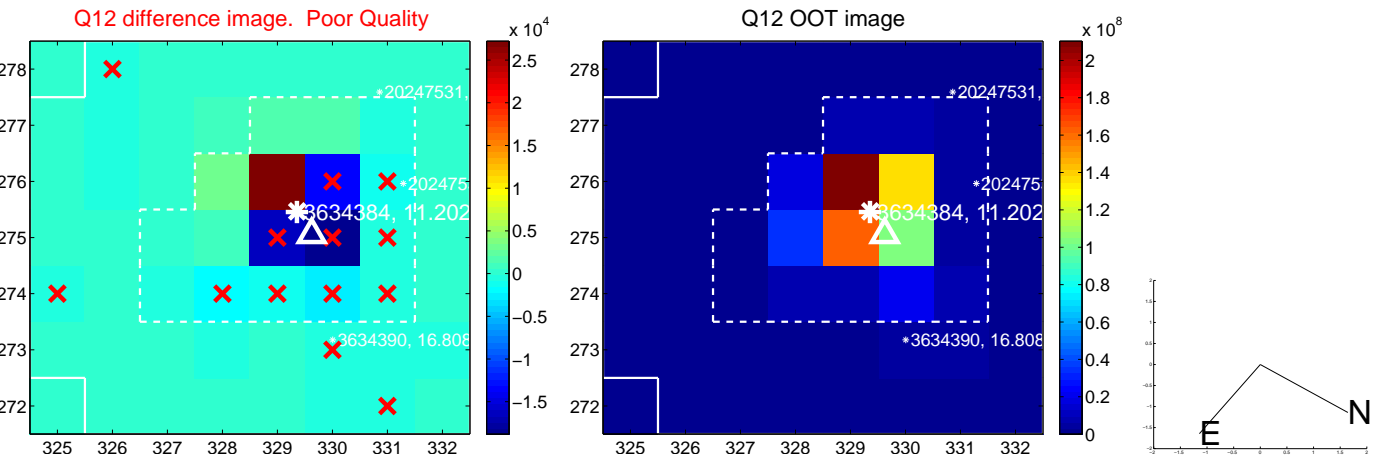
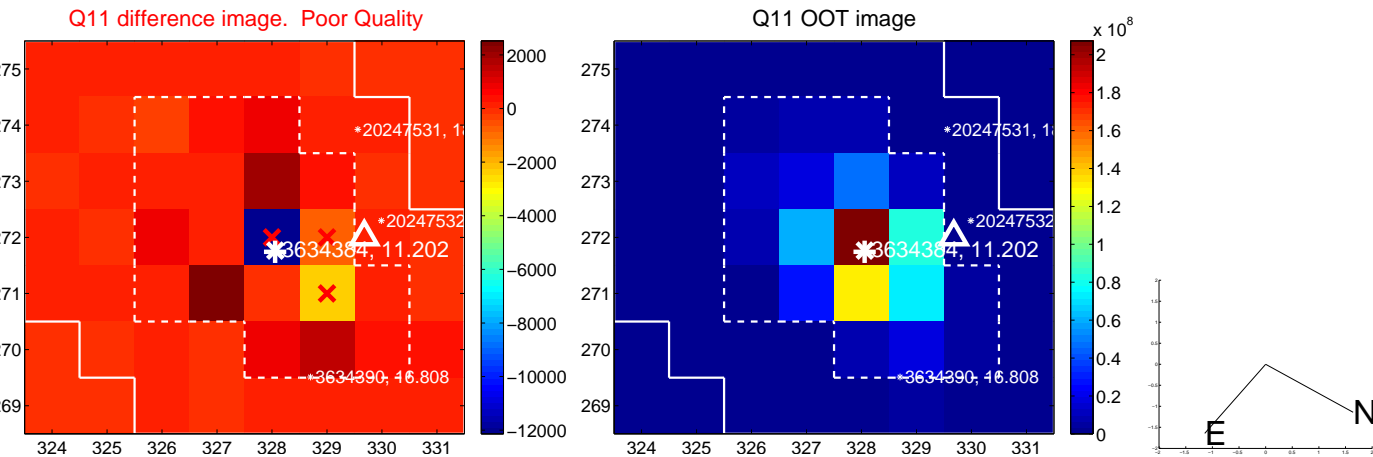
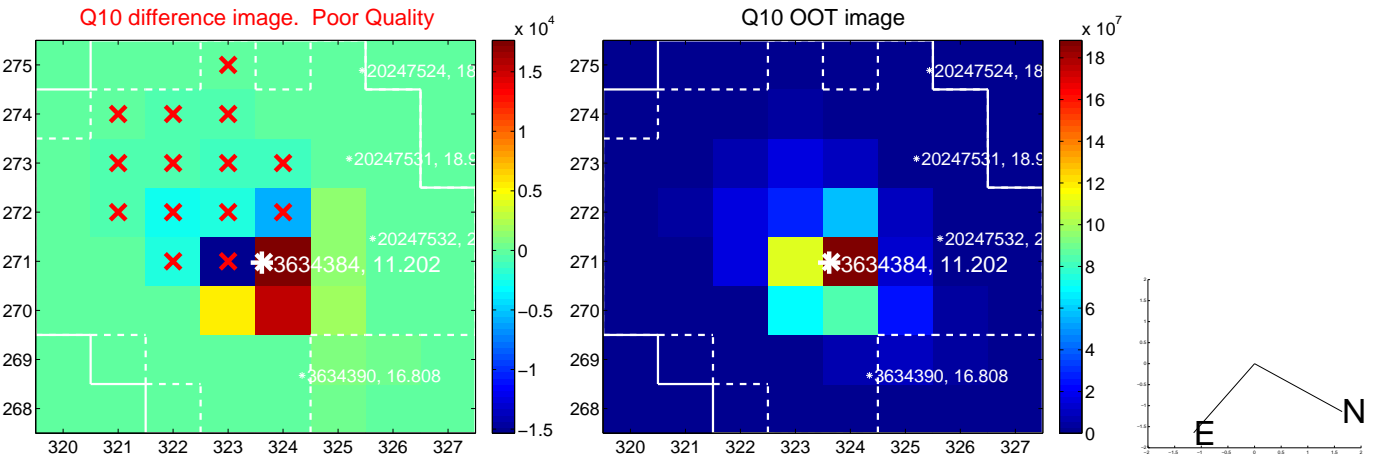
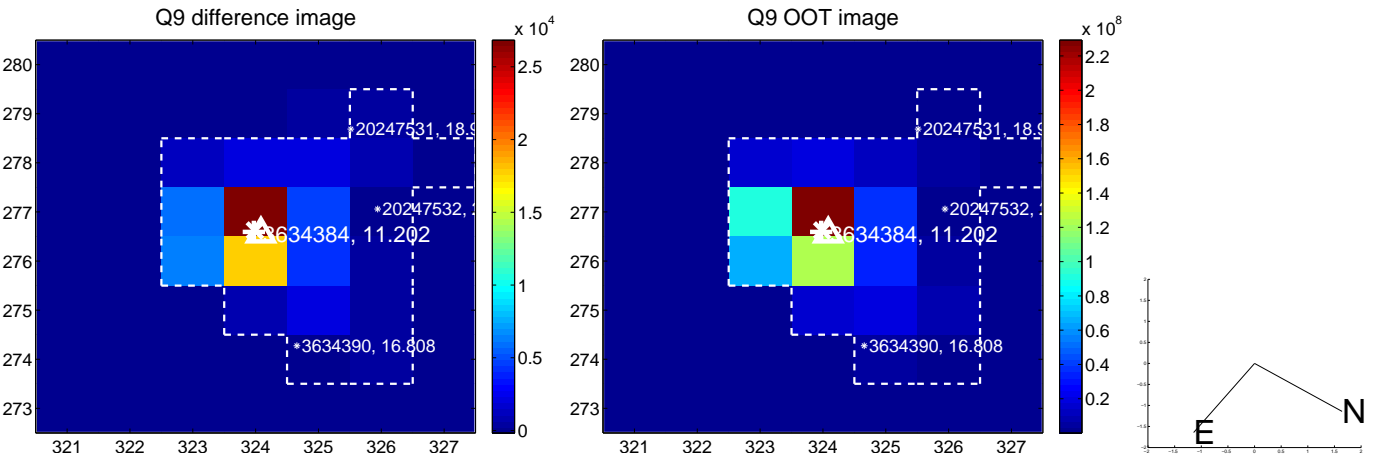
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



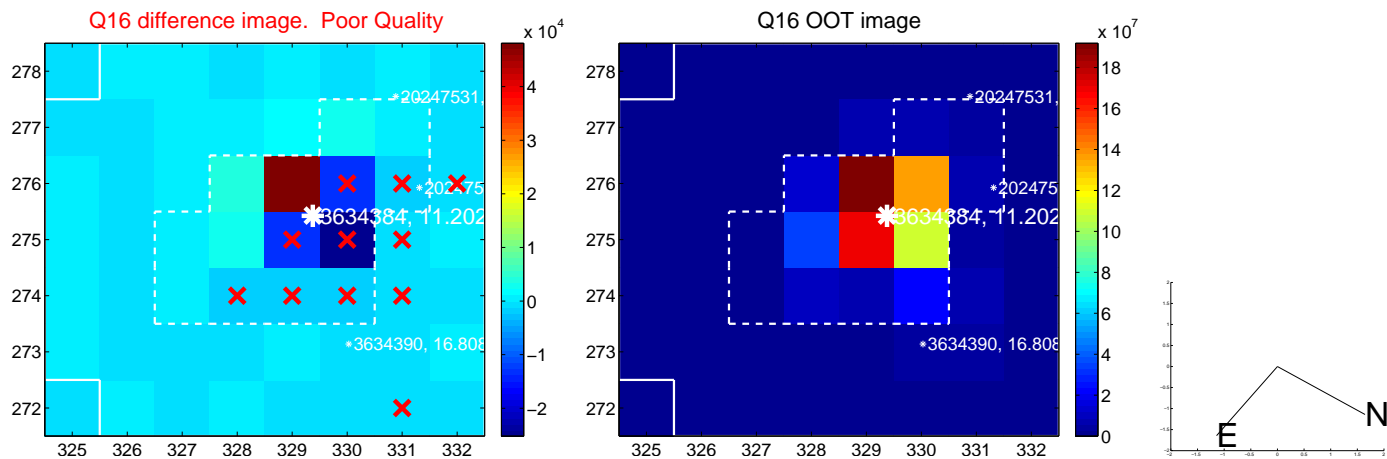
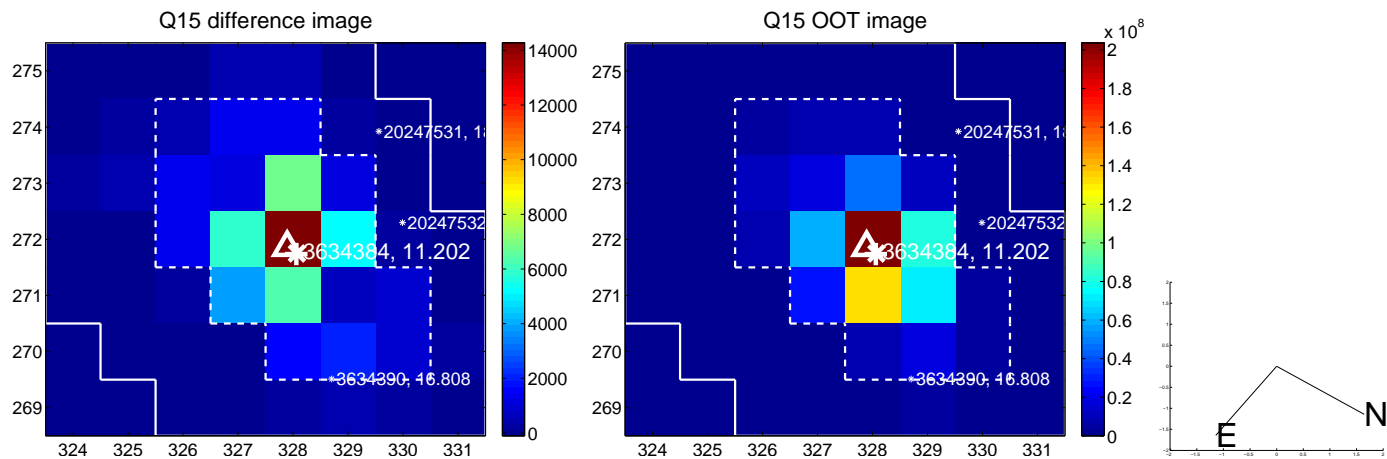
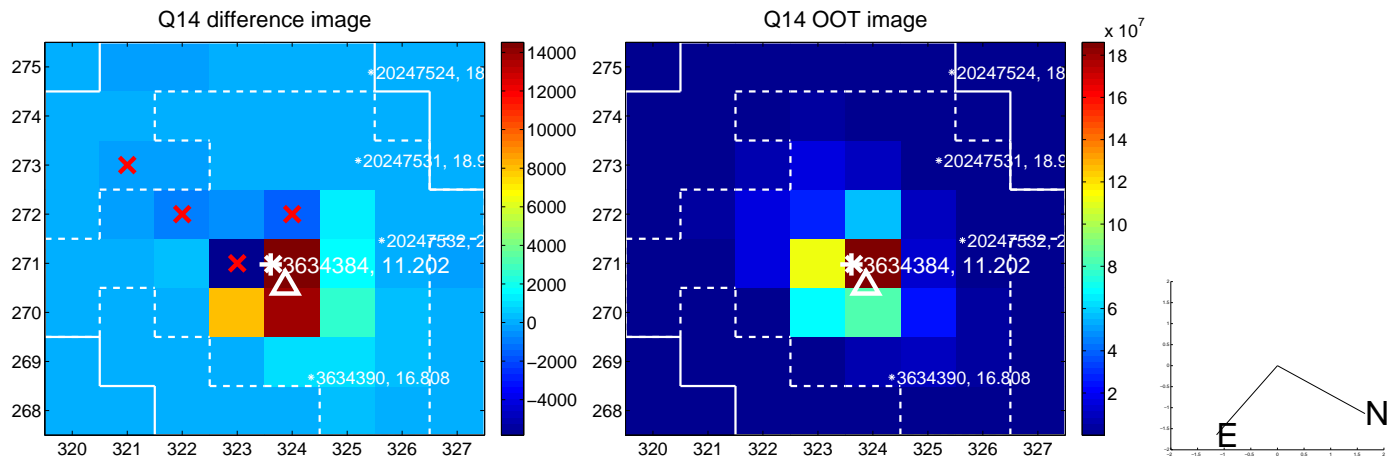
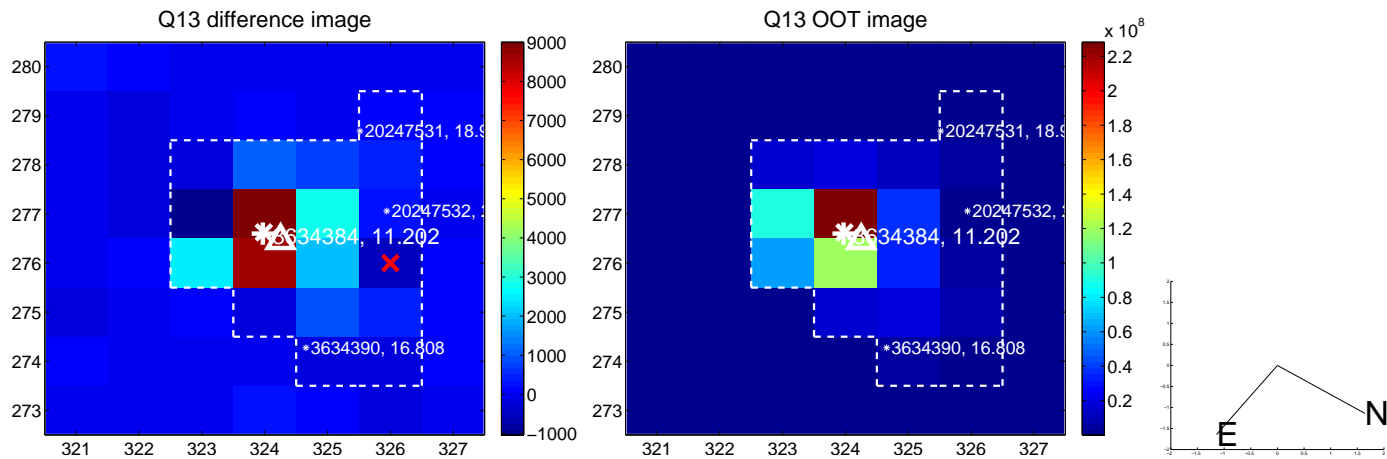
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



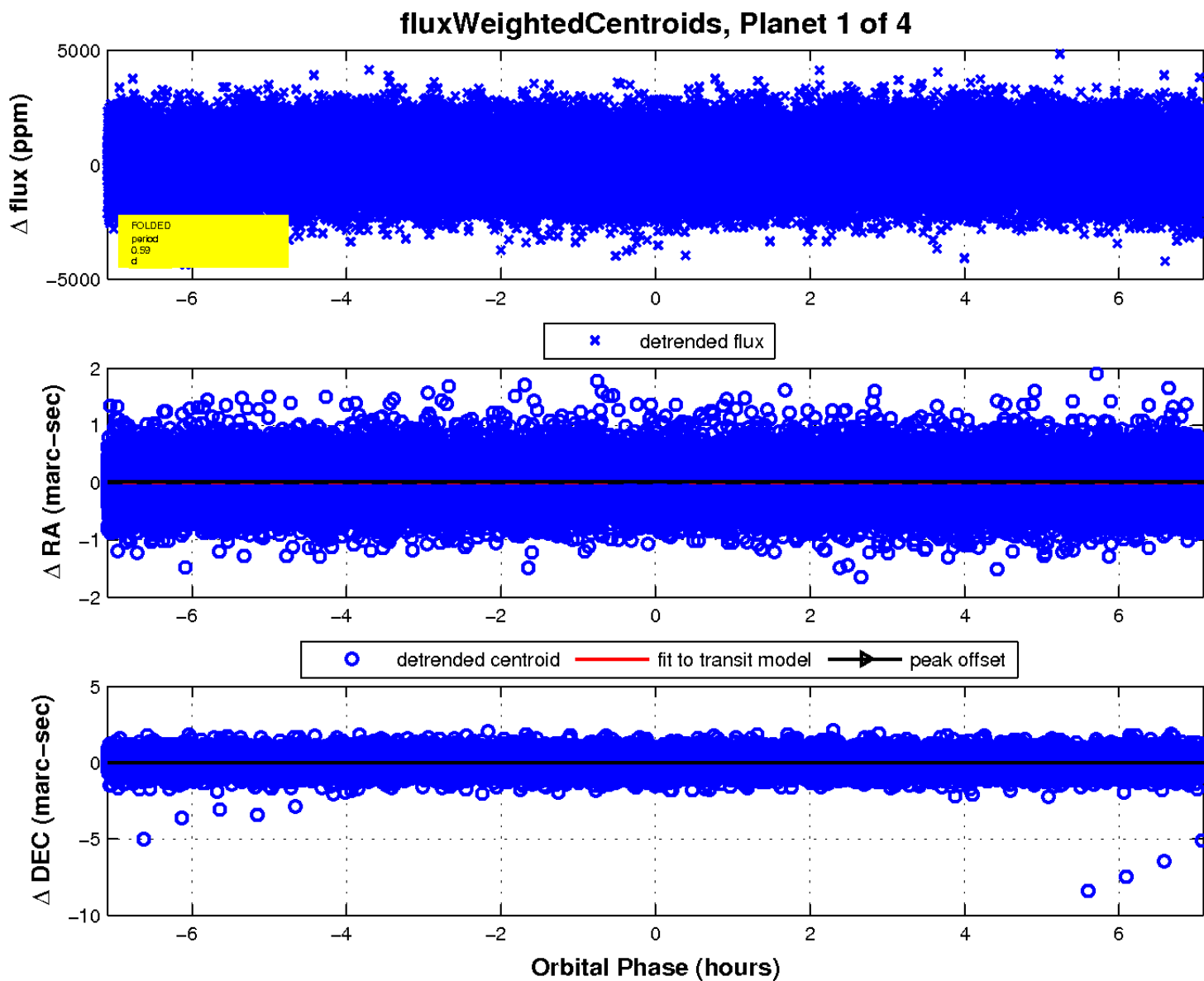
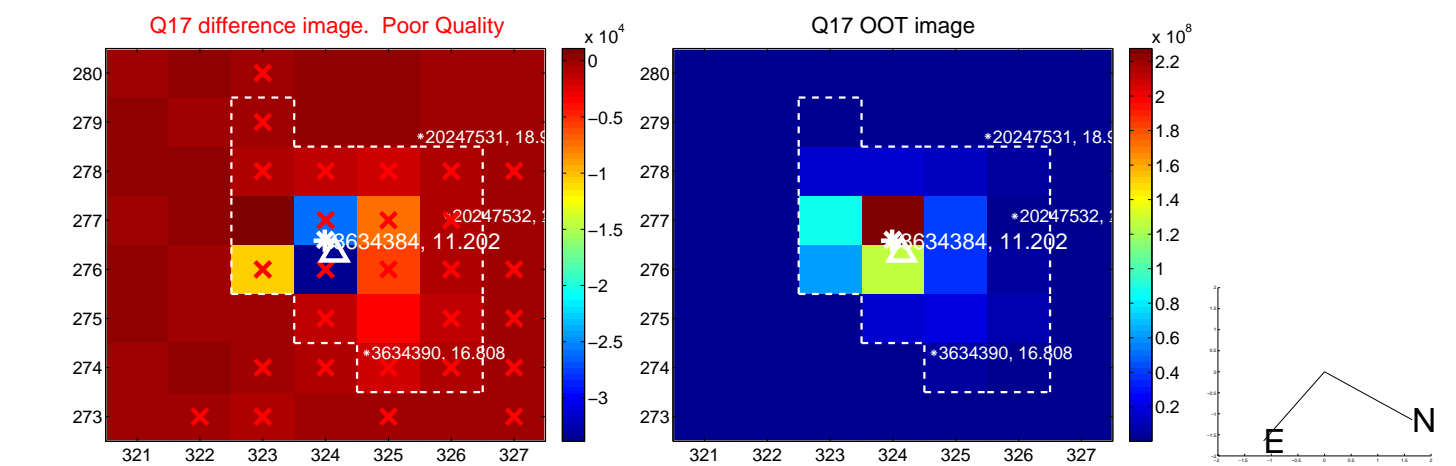
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

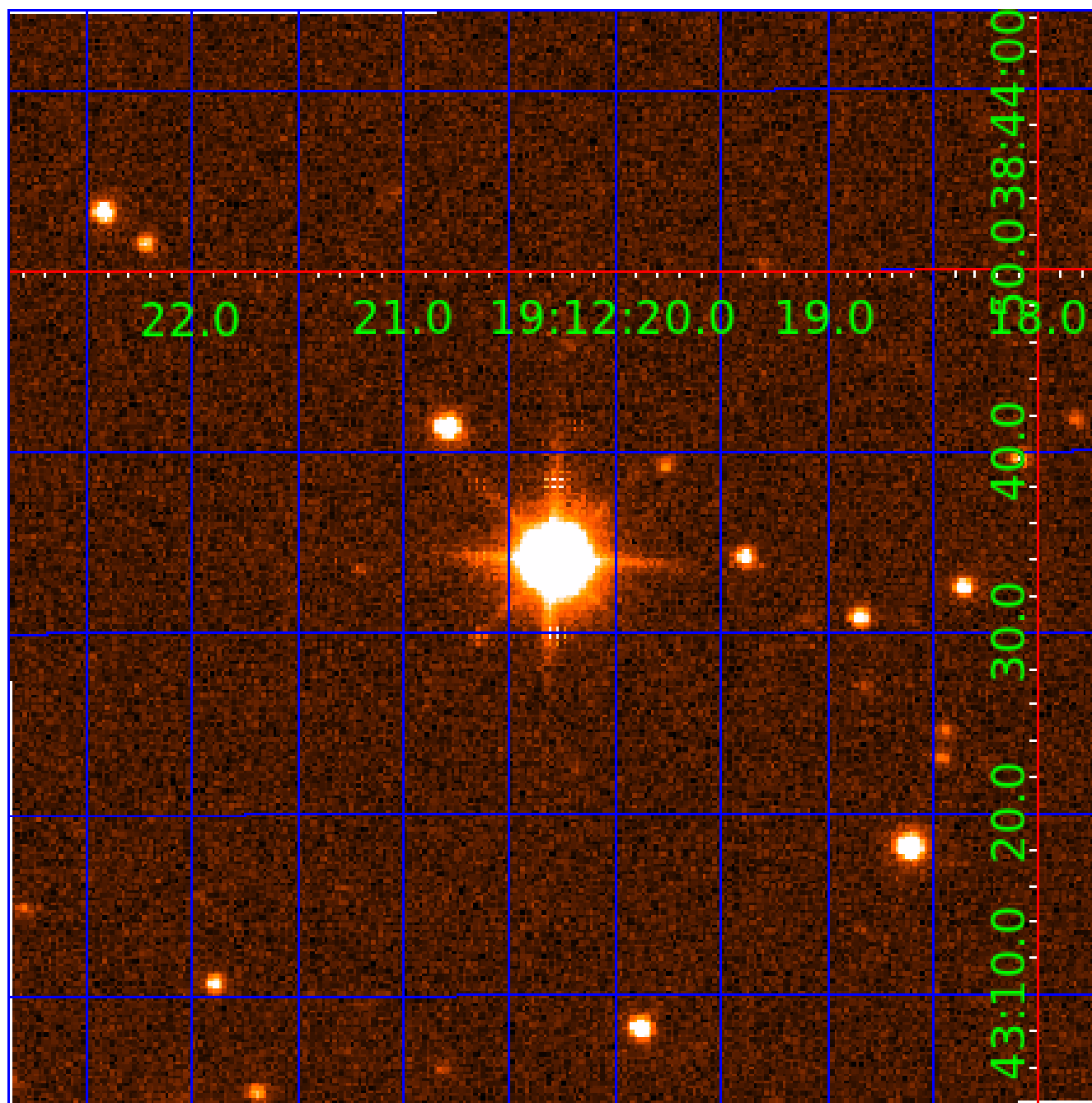


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003634384

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})
003634384-01	OBS	No	0.591342	131.524532	61.9	3.739	15.3	14.0	2.80	7698	2.28	83000.87
003634384-02	OBS	No	0.604615	131.693420	1081.7	0.707	14.4	27.1	2.80	7698	10.92	80580.32
003634384-03	OBS	No	0.604608	131.956855	878.6	0.919	11.7	24.9	2.80	7698	9.79	80581.54
003634384-04	OBS	No	0.604616	131.520369	88.0	1.500	10.4	-1.0	2.80	7698	2.67	80580.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003634384-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
003634384-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003634384-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003634384-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

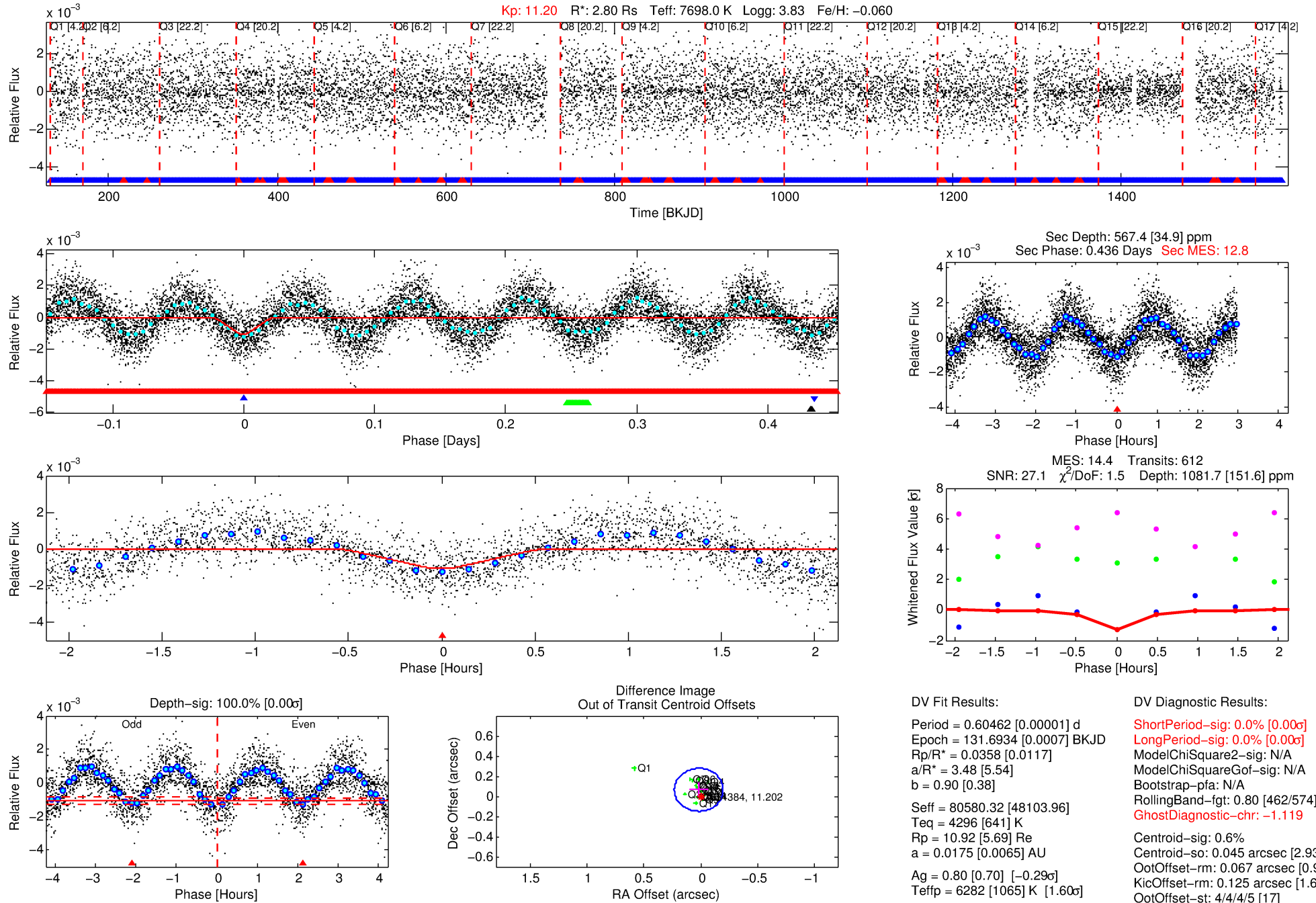
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003634384-02

No Significant Match Found

DV One-Page Summary

KIC: 3634384 Candidate: 2 of 4 Period: 0.605 d



DV Fit Results:

Period = 0.60462 [0.00001] d
Epoch = 131.6934 [0.0007] BKJD
Rp/R* = 0.0358 [0.0117]
a/R* = 3.48 [5.54]
b = 0.90 [0.38]
Seff = 80580.32 [48103.96]
Teq = 4296 [641] K
Rp = 10.92 [5.69] Re
a = 0.0175 [0.0065] AU
Ag = 0.80 [0.70] [-0.29σ]
Teffp = 6282 [1065] K [1.60σ]

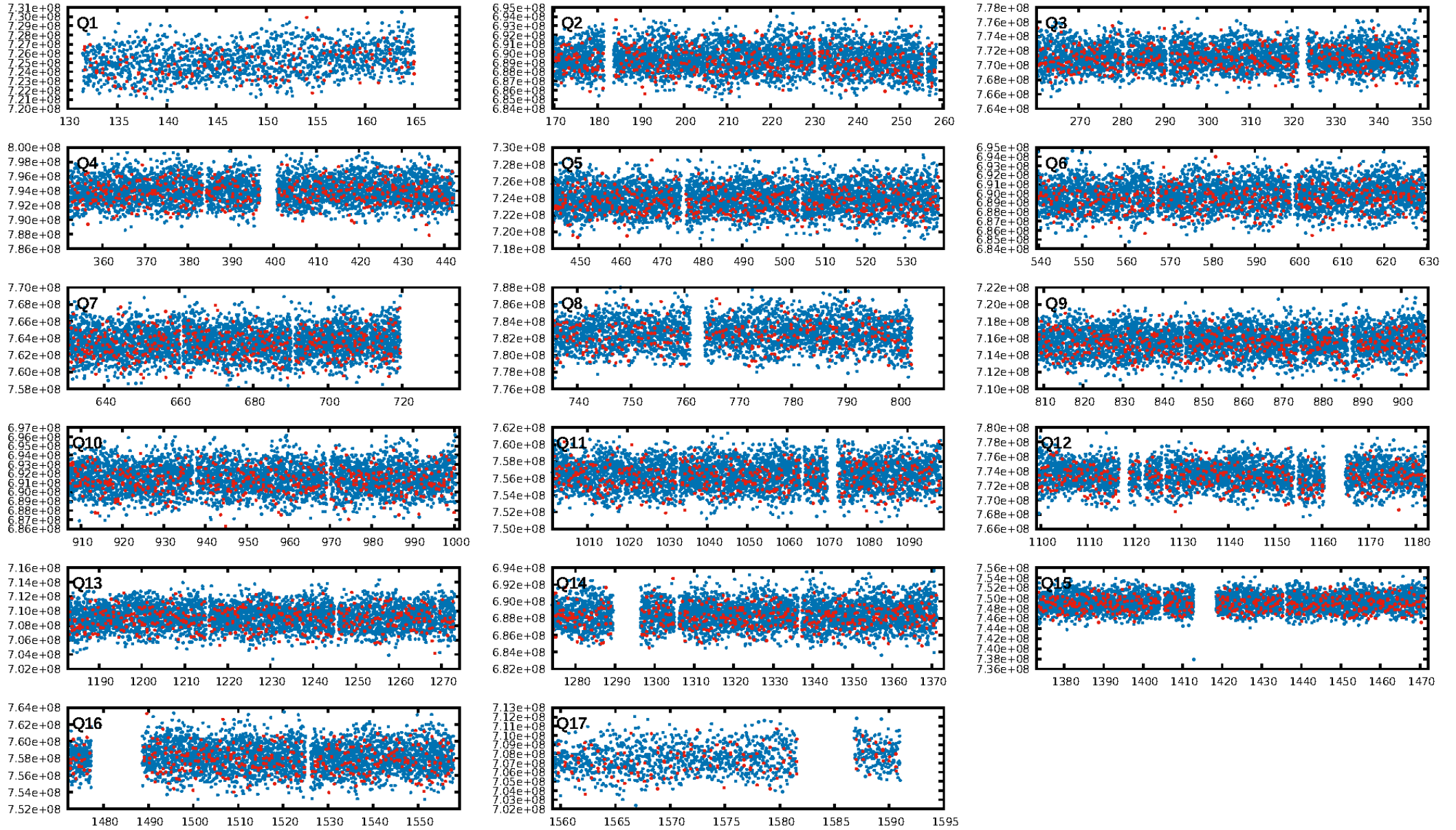
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.80 [462/574]
GhostDiagnostic-chr: -1.119
Centroid-sig: 0.6%
Centroid-so: 0.045 arcsec [2.93σ]
OotOffset-rm: 0.067 arcsec [0.94σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.125 arcsec [1.64σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

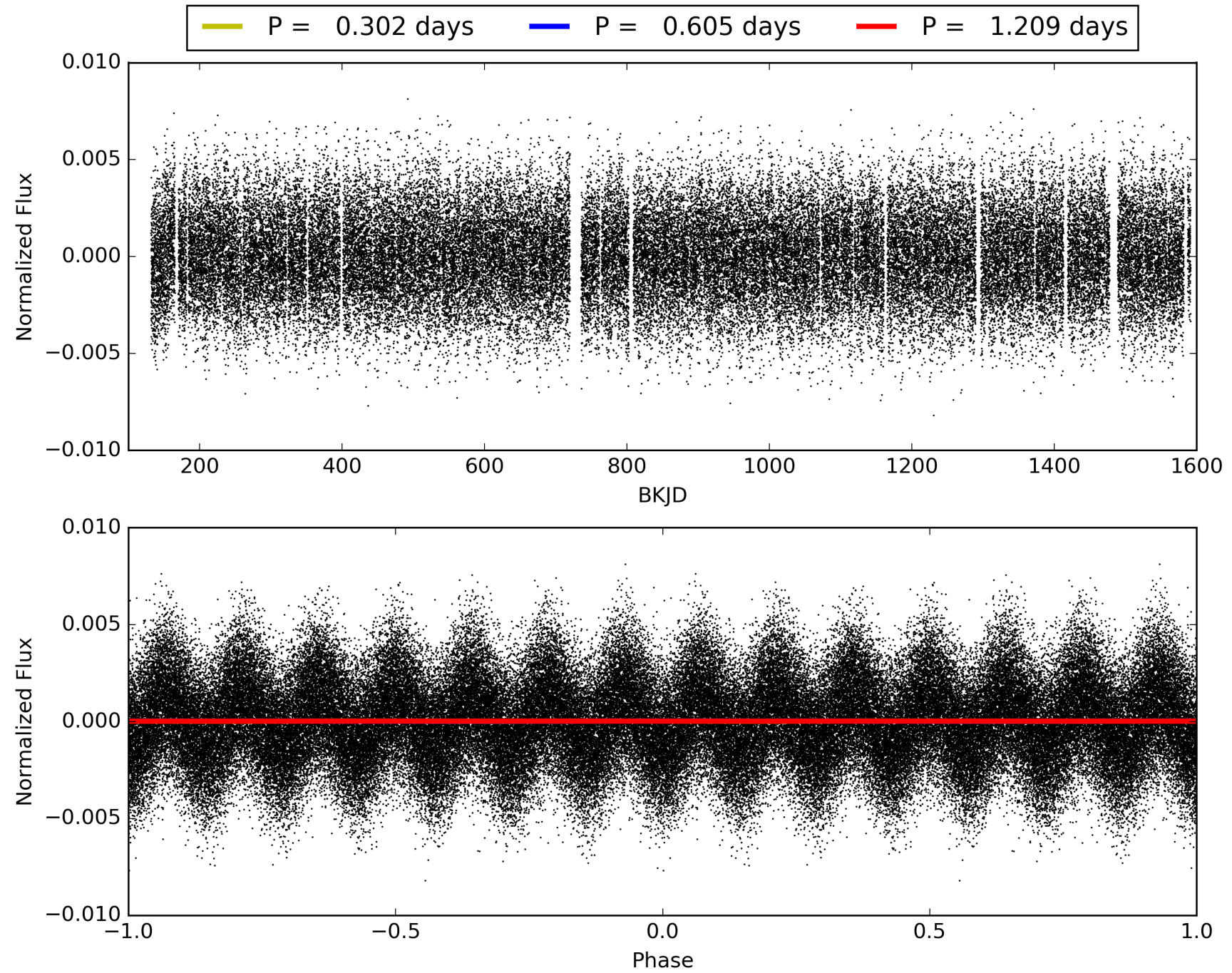
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 01:07:56 Z

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

TCE 003634384-02, PDC Light Curves

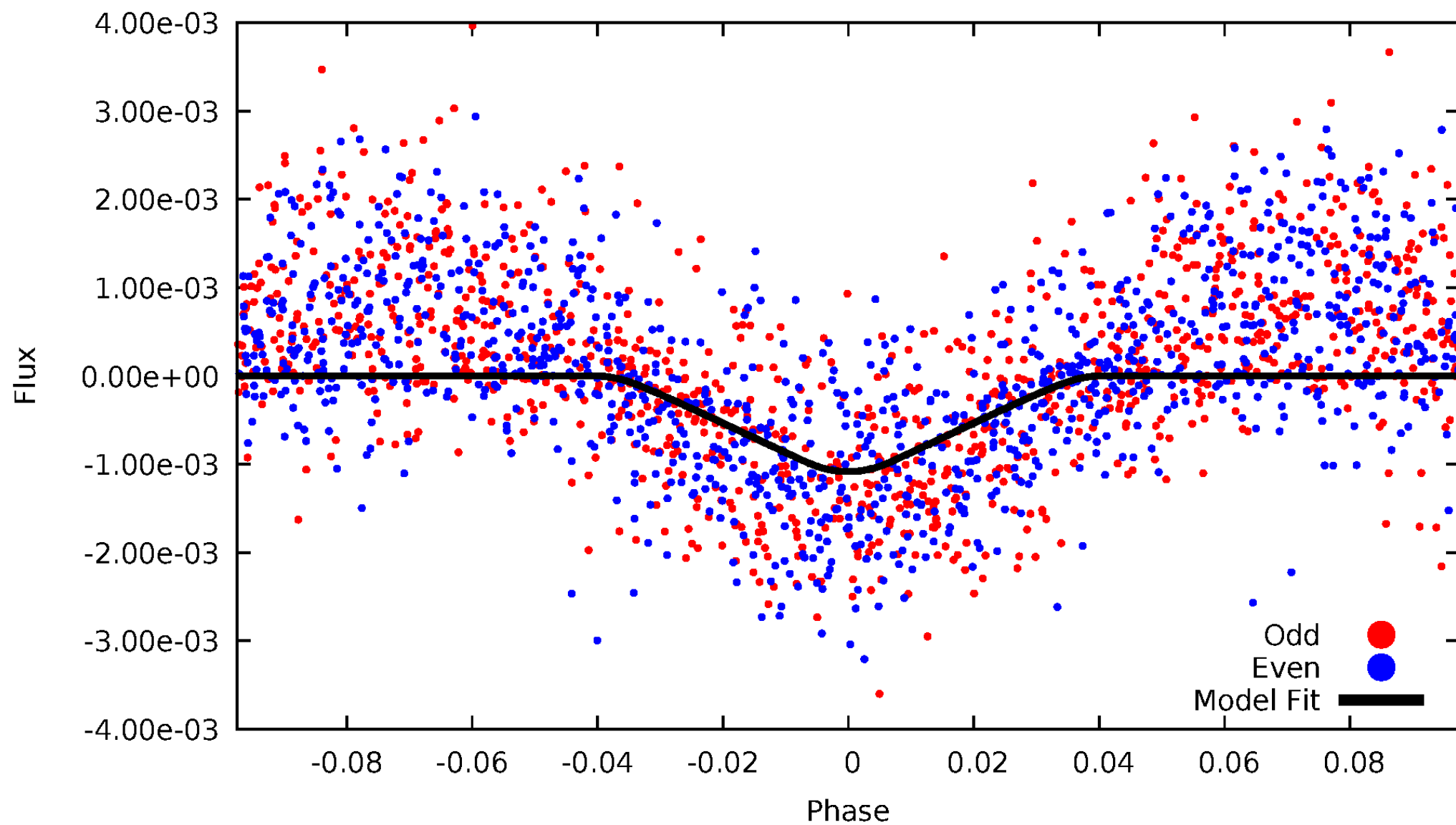


TCE 003634384-02



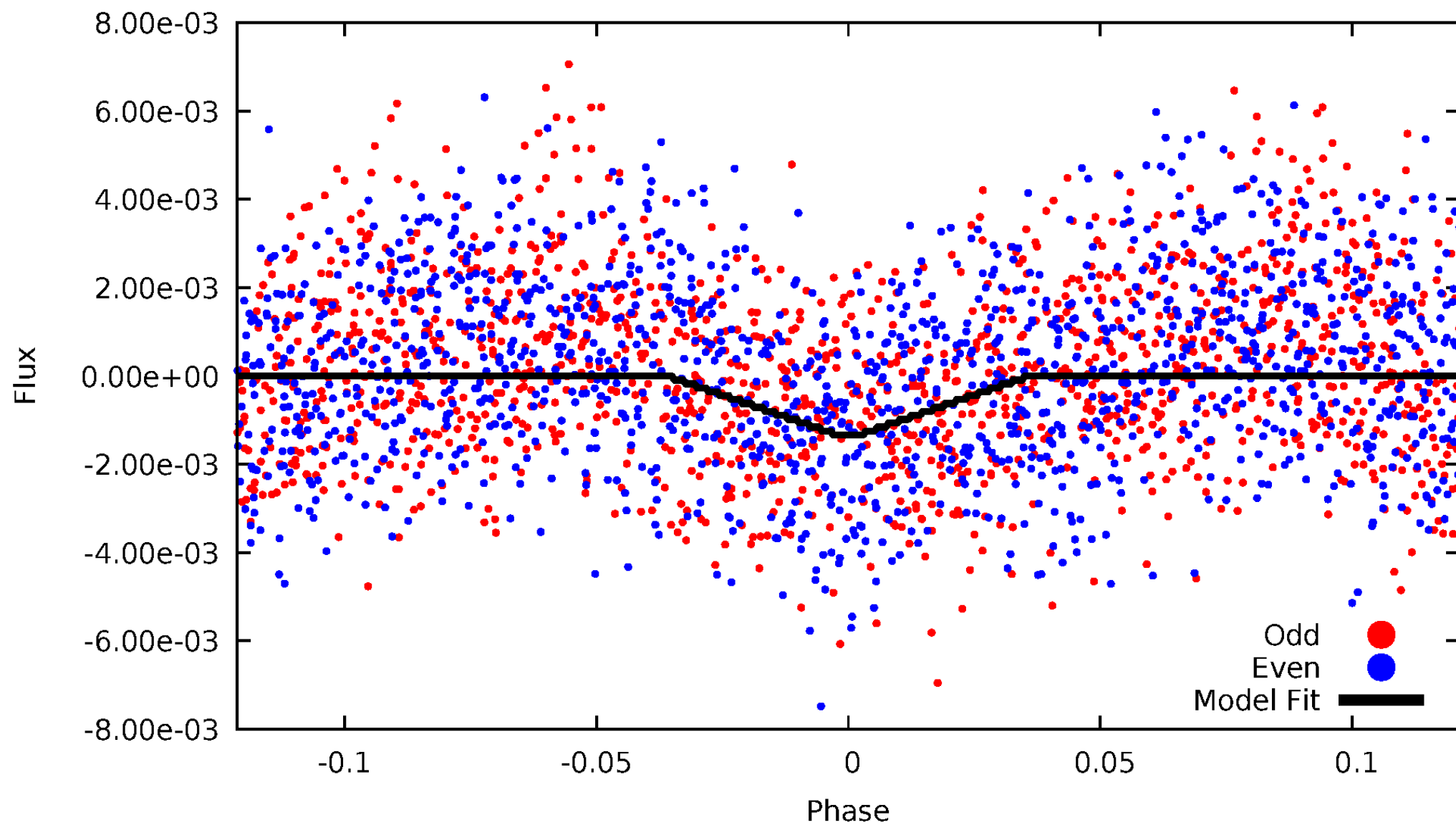
DV Odd/Even

TCE 003634384-02



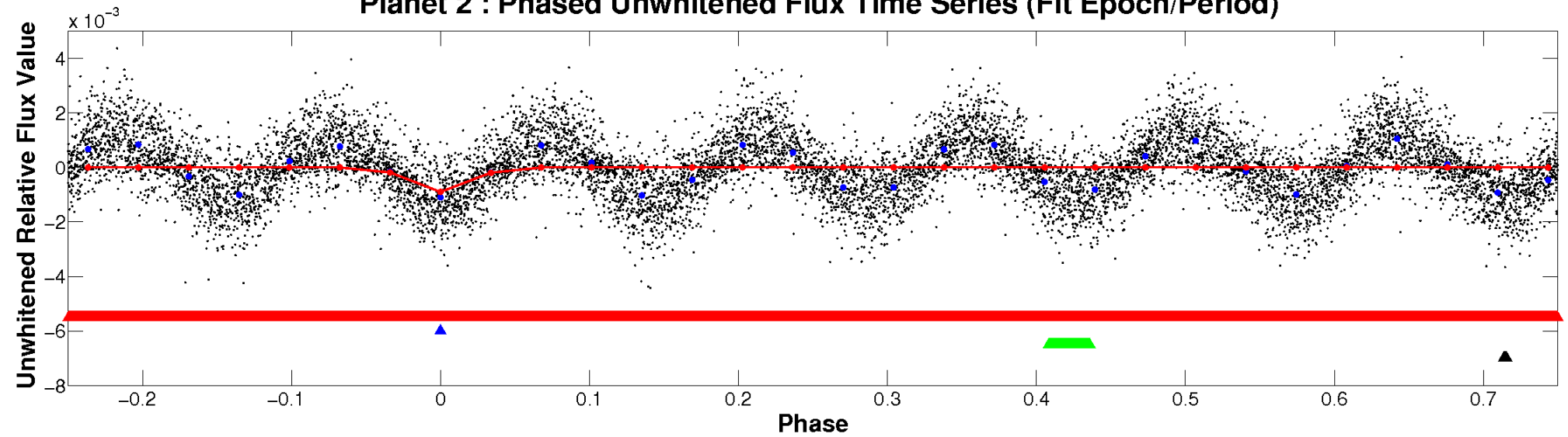
ALT Odd/Even

TCE 003634384-02

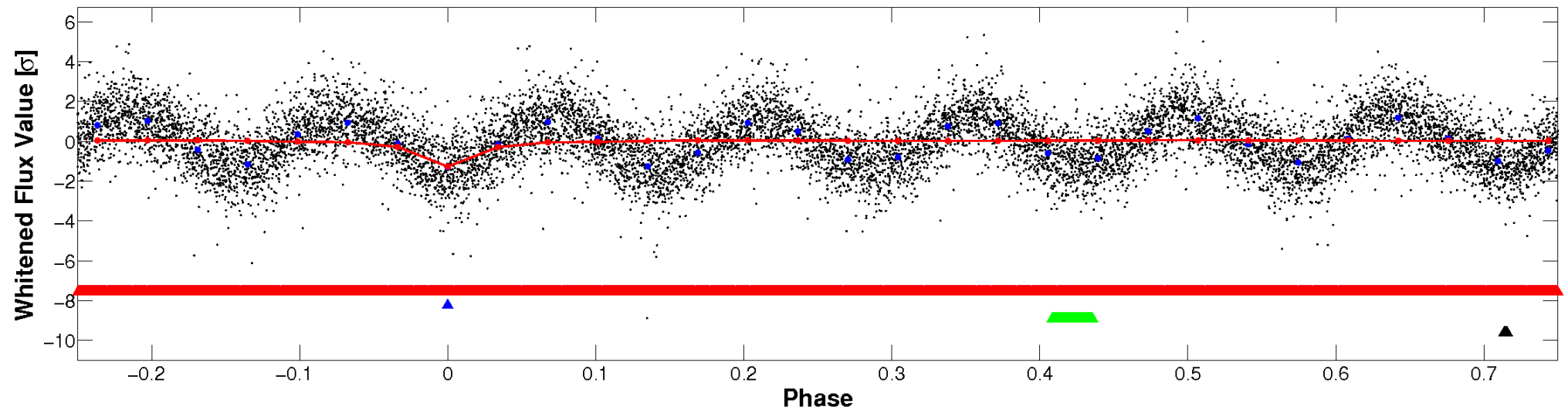


Non-Whitened Vs. Whitened Light Curve

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

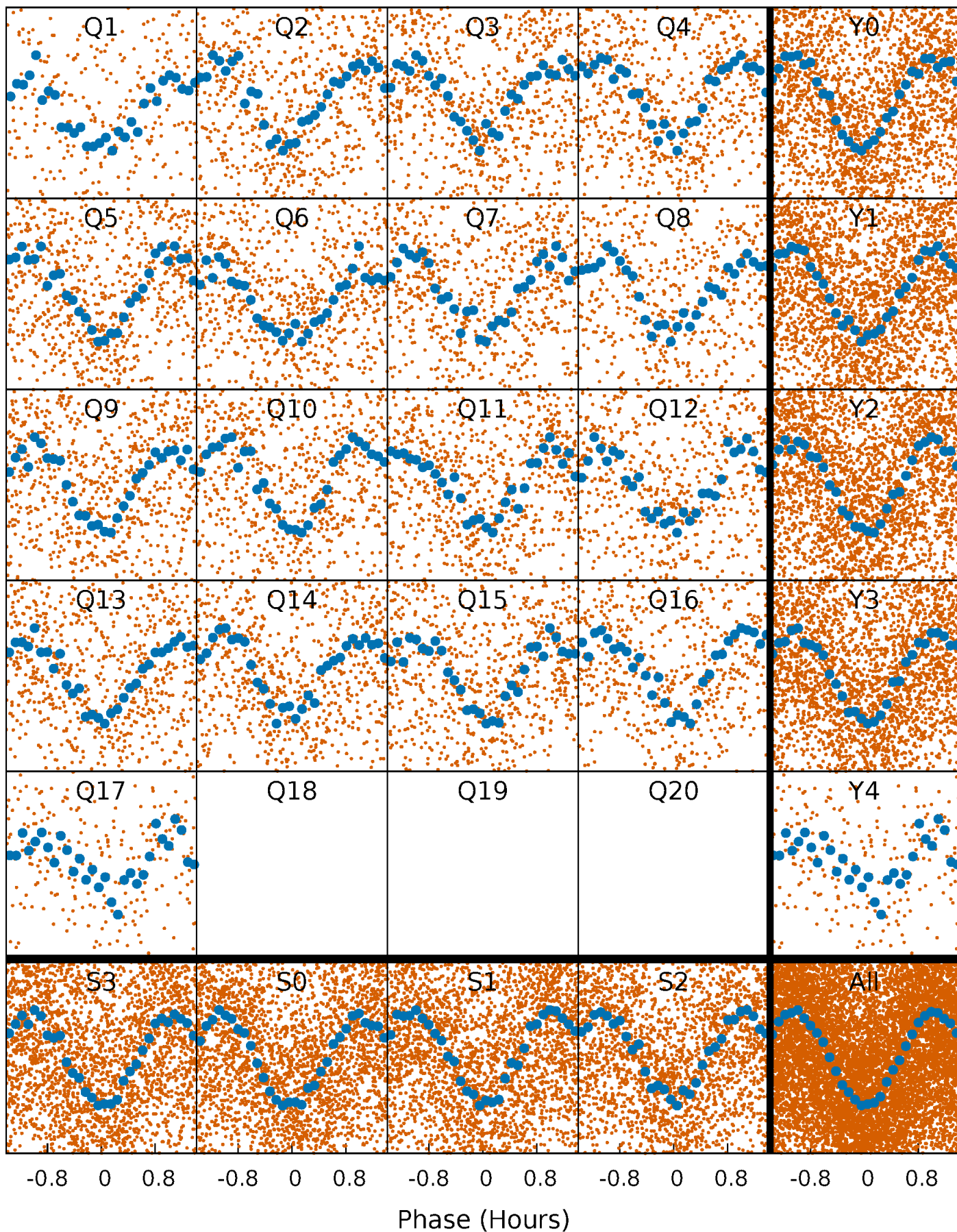


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



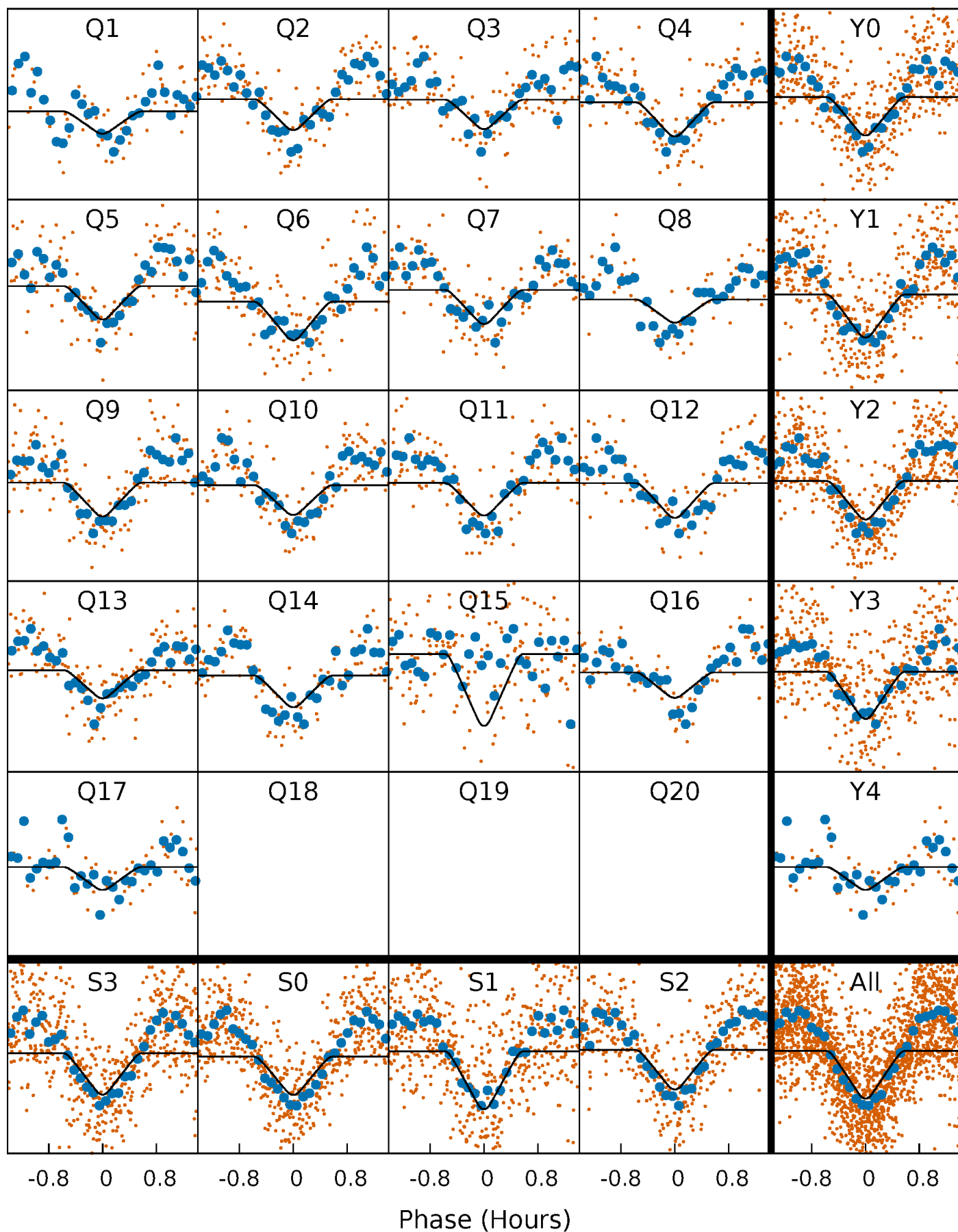
PDC Quarter-Phased Transit Curves

TCE 003634384-02 P= 0.604615 Days $T_0=131.693420$ (BKJD)



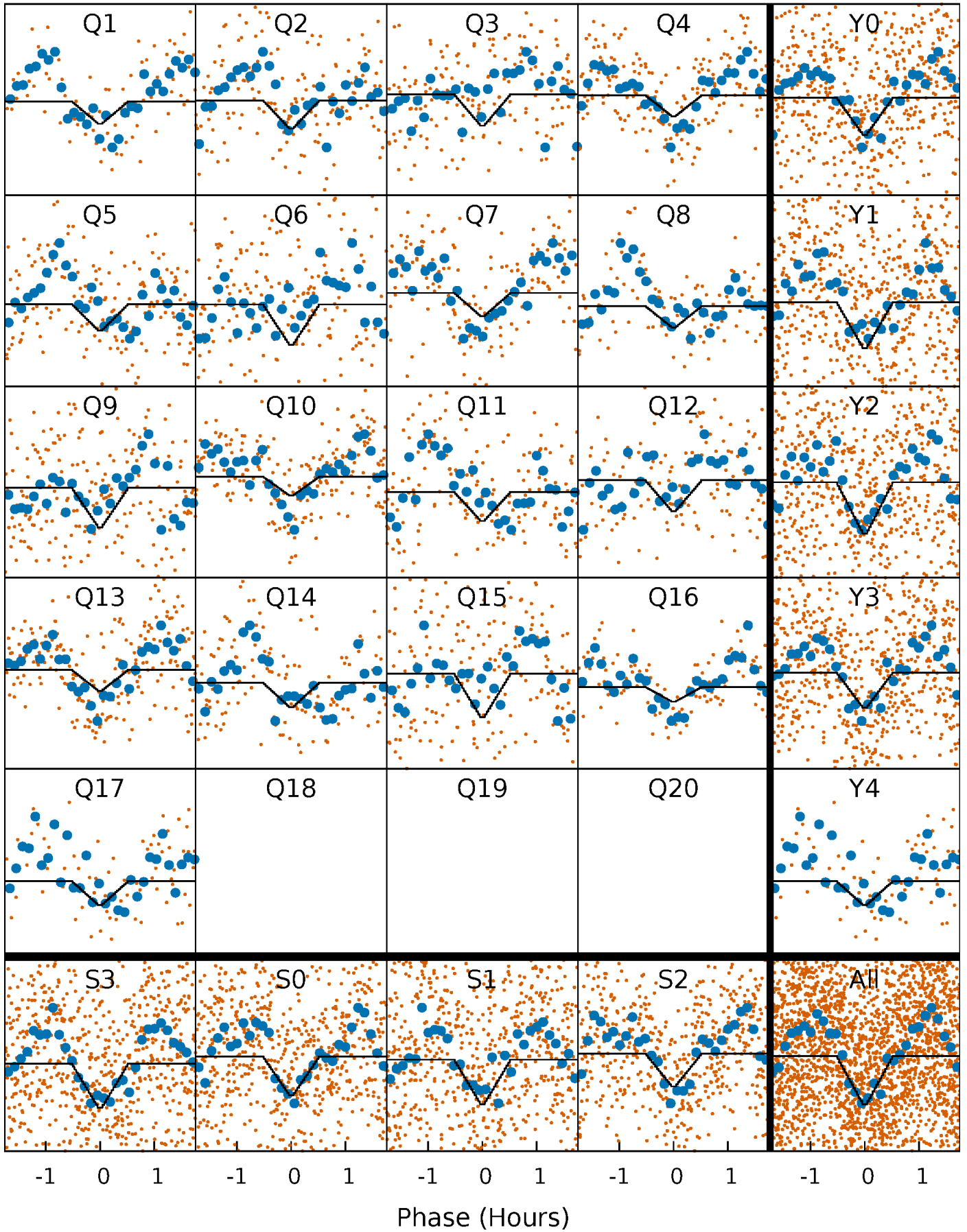
DV Quarter-Phased Transit Curves

TCE 003634384-02 $P = 0.604615$ Days $T_0 = 131.693420$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

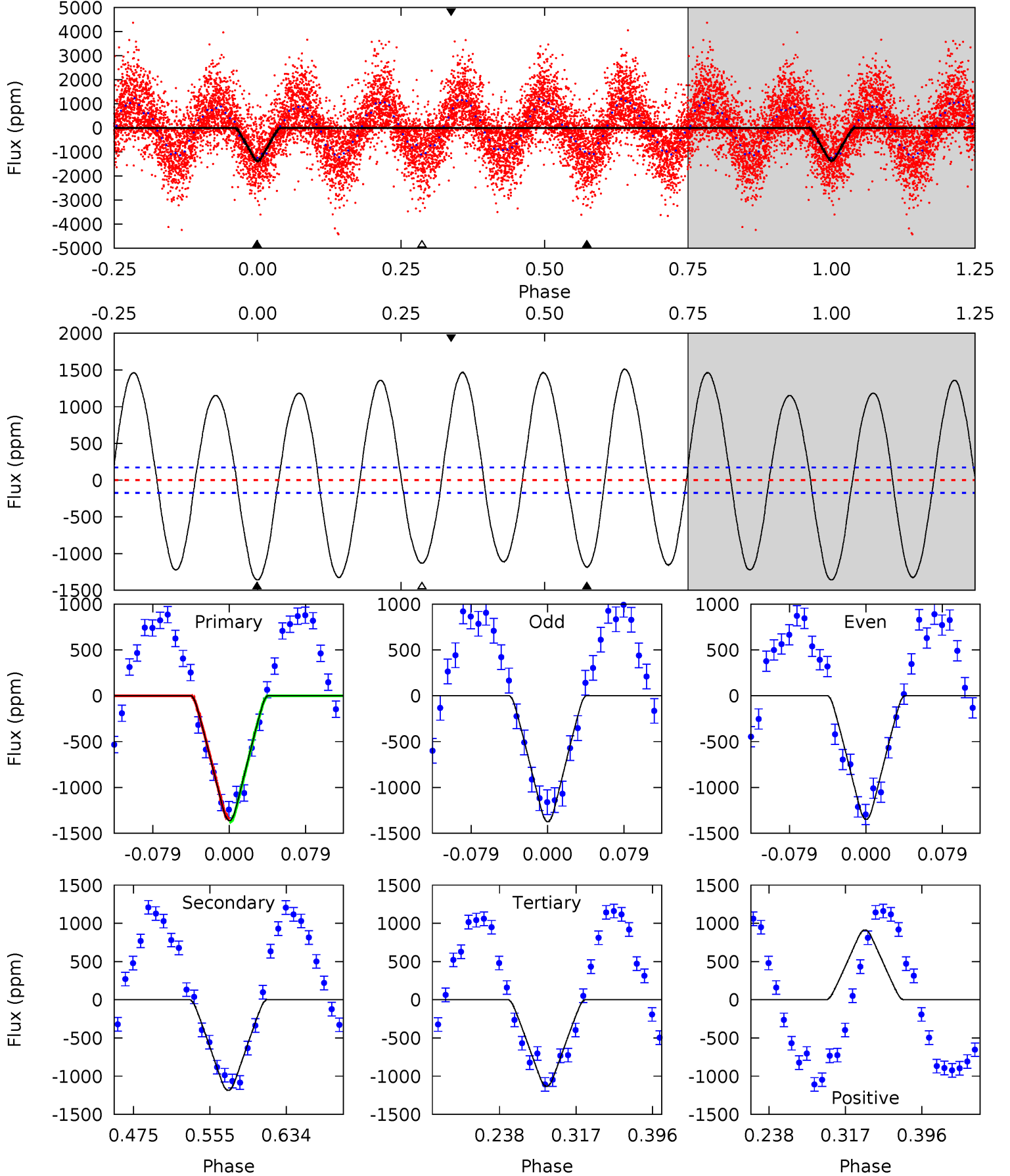
TCE 003634384-02 P= 0.604616 Days $T_0=131.689968$ (BKJD)



DV Model-Shift Uniqueness Test

003634384-02, P = 0.604615 Days, E = 131.693420 Days

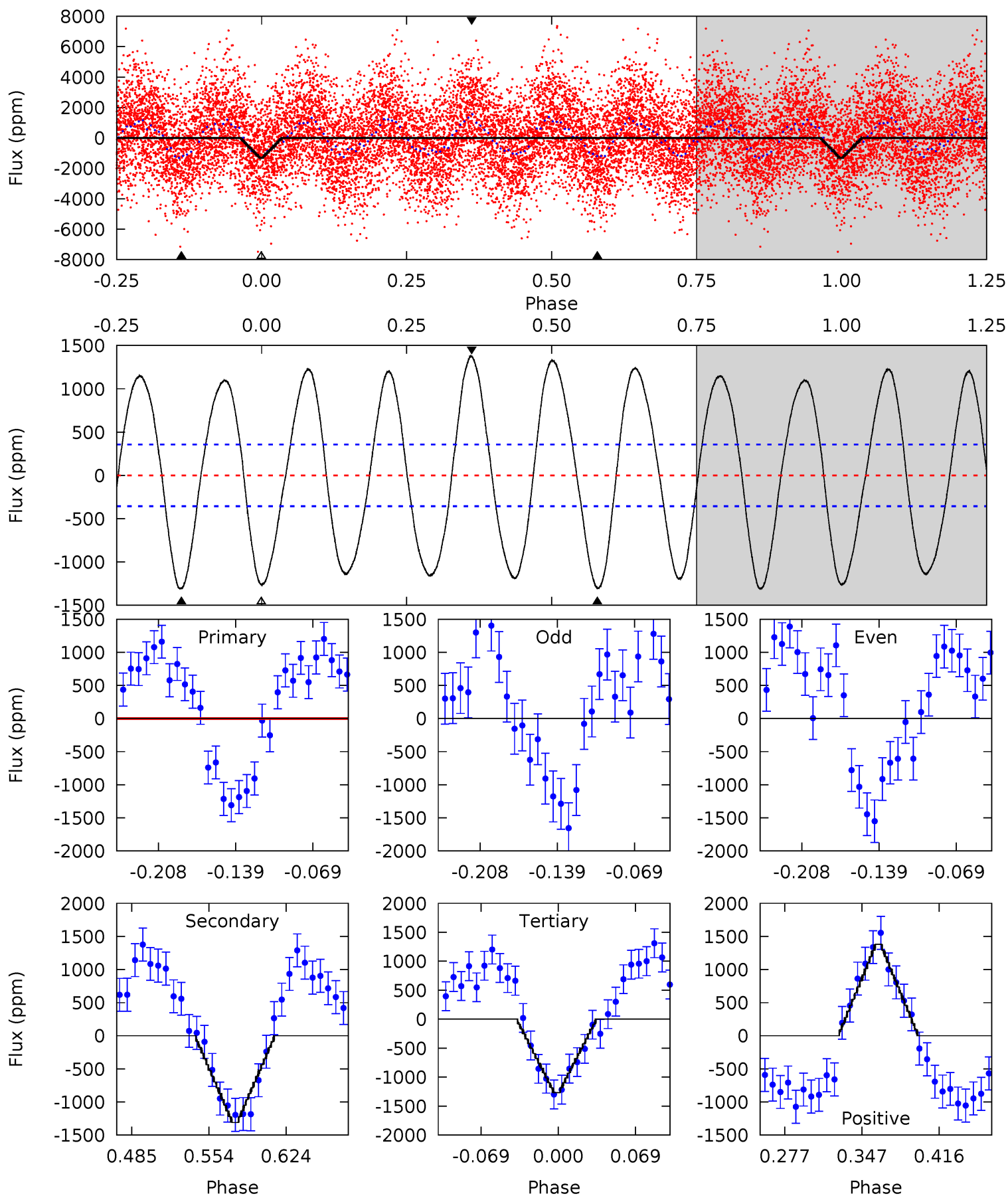
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.3	31.6	30.2	24.3	4.61	1.76	23.9	6.06	12.0	1.39	7.30	0.34	0.97	0.53	0.44



Alt Model-Shift Uniqueness Test

003634384-02, P = 0.604616 Days, E = 131.689968 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	17.1	16.5	18.0	4.64	1.82	11.2	0.58	-0.88	0.56	-0.90	1.01	1.20	0.51	0.39



Stellar Parameters For KIC 003634384

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7698^{+211}_{-316}	$3.834^{+0.330}_{-0.110}$	$-0.060^{+0.200}_{-0.350}$	$2.797^{+0.377}_{-1.132}$	$1.948^{+0.083}_{-0.471}$	$0.126^{+0.340}_{-0.035}$
	+3%/-4%	+9%/-3%	+333%/-583%	+13%/-40%	+4%/-24%	+271%/-28%
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 003634384-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1185 ± 37	$10.18^{+3.94}_{-3.53}$	5908^{+349}_{-607}	7018^{+2226}_{-1100}	$1.847^{+2.308}_{-0.866}$
Alt.	-1311 ± 77	$10.19^{+4.12}_{-3.67}$	5882^{+404}_{-634}	7245^{+2554}_{-1260}	$2.030^{+3.164}_{-0.951}$

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

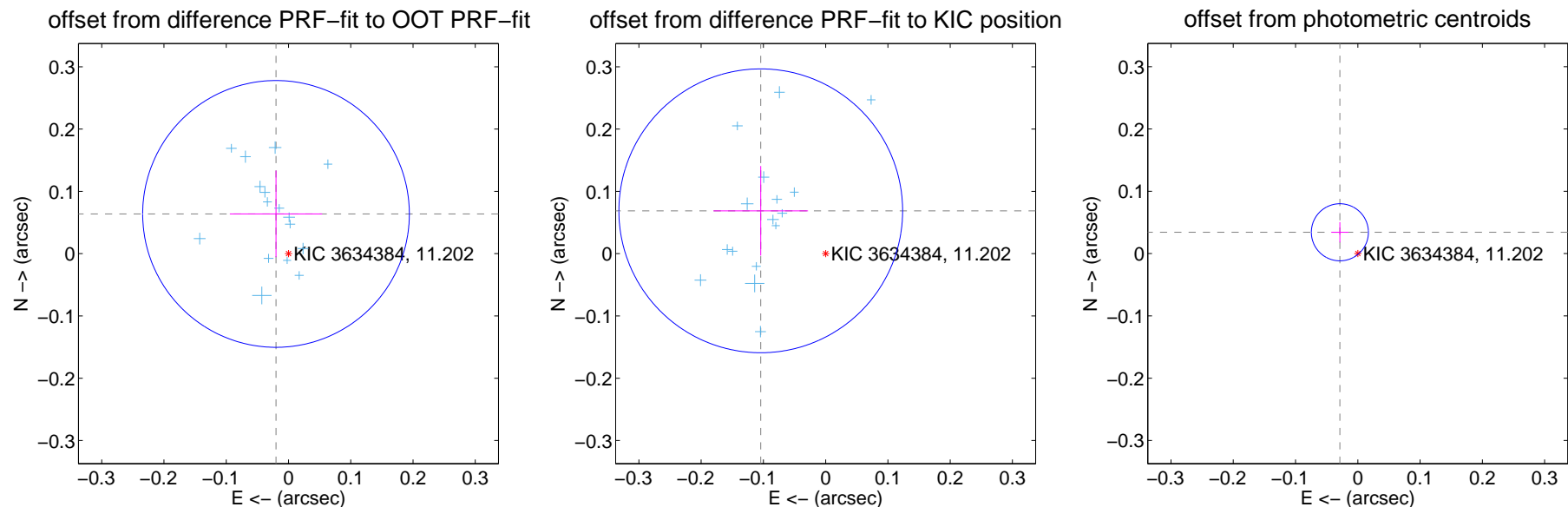
DV Centroid Data

Supplemental centroid analysis for 003634384-02. **Kepler magnitude: 11.20.** Transit SNR 27.08

There are 17 quarters with good PRF difference image offsets

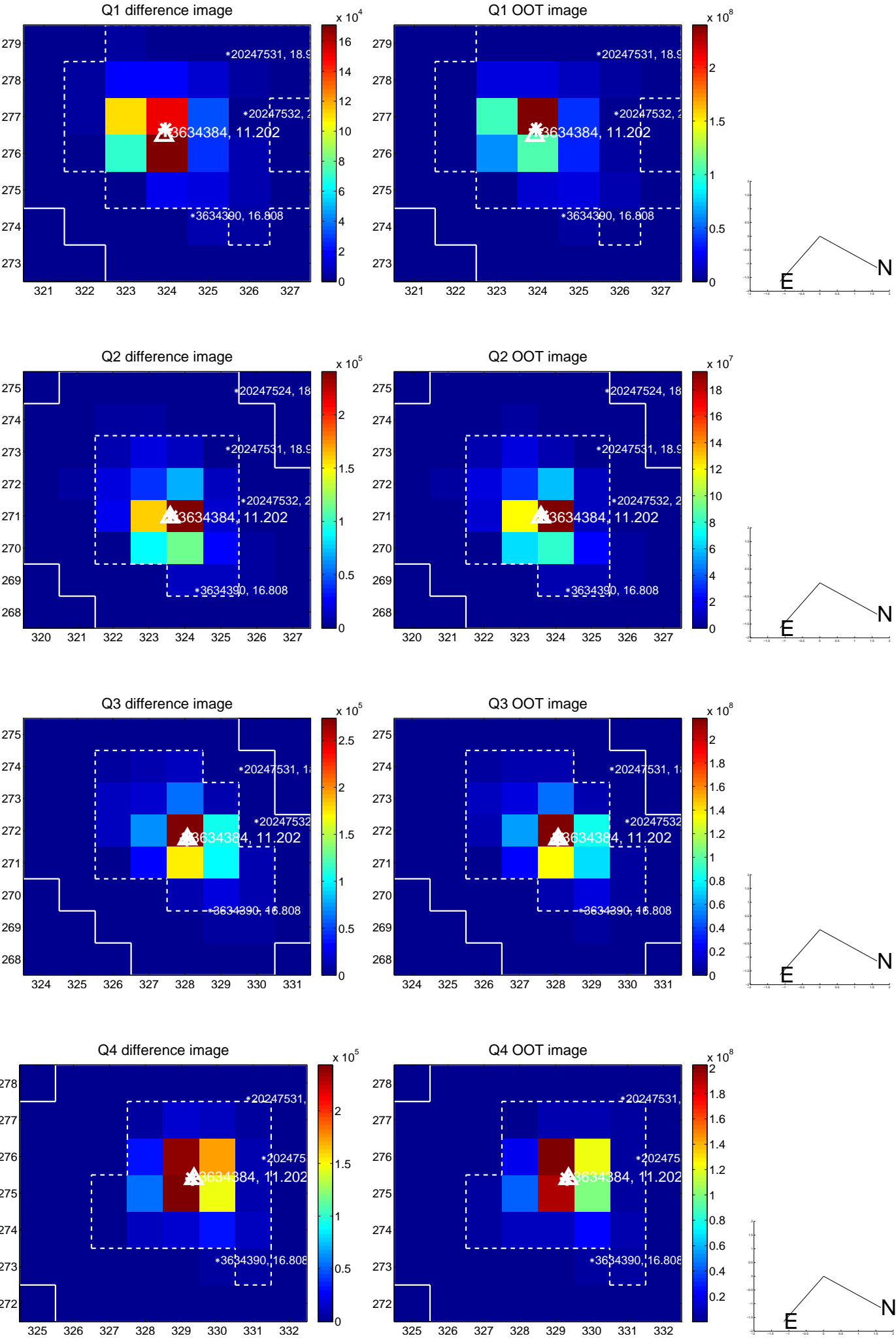
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.067 ± 0.071	0.94	0.020 ± 0.074	0.064 ± 0.069
PRF-fit source offset from KIC position	0.125 ± 0.076	1.64	0.104 ± 0.076	0.069 ± 0.072
photometric centroid source offset	0.04 ± 0.02	2.93	0.03 ± 0.01	0.03 ± 0.02

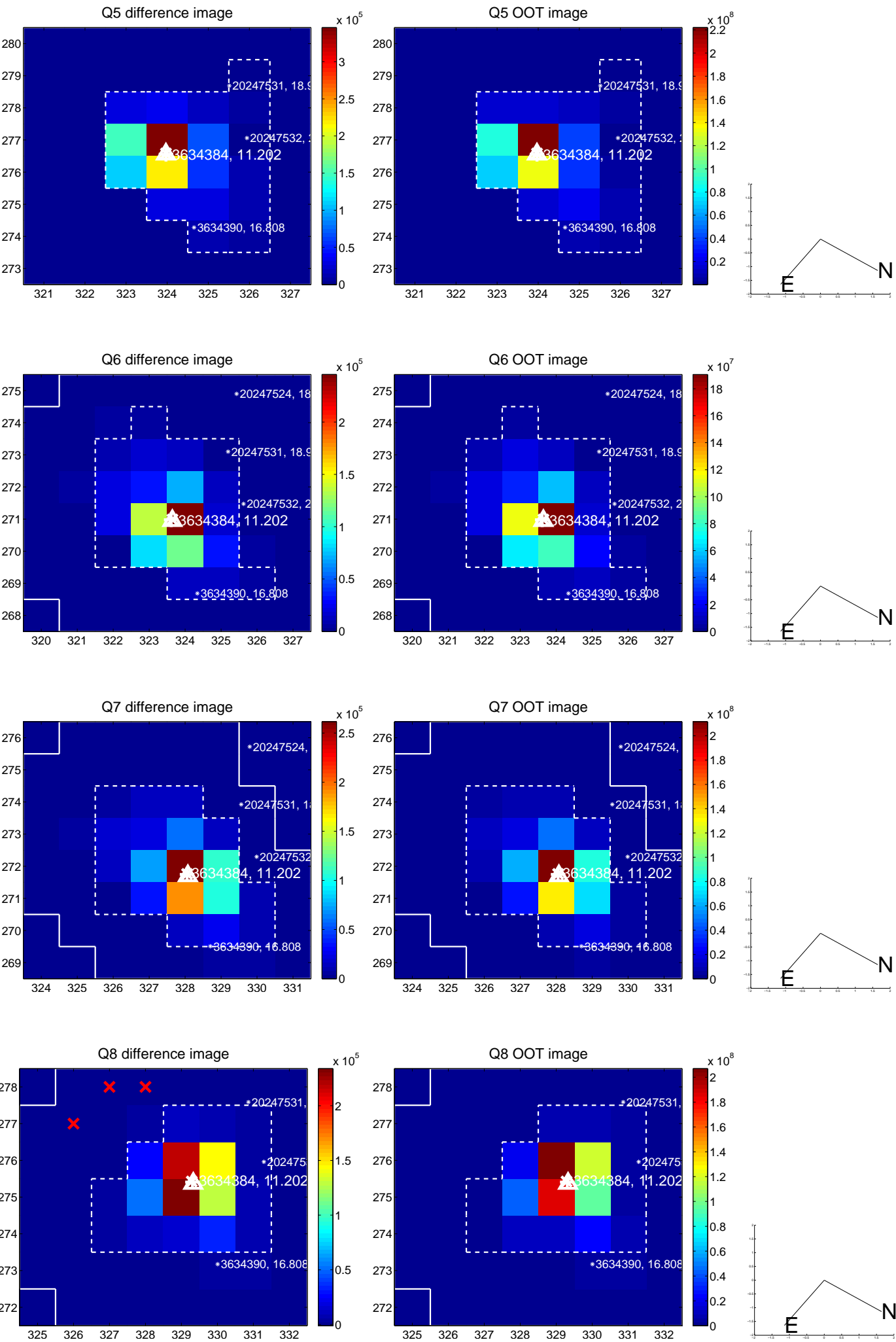


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

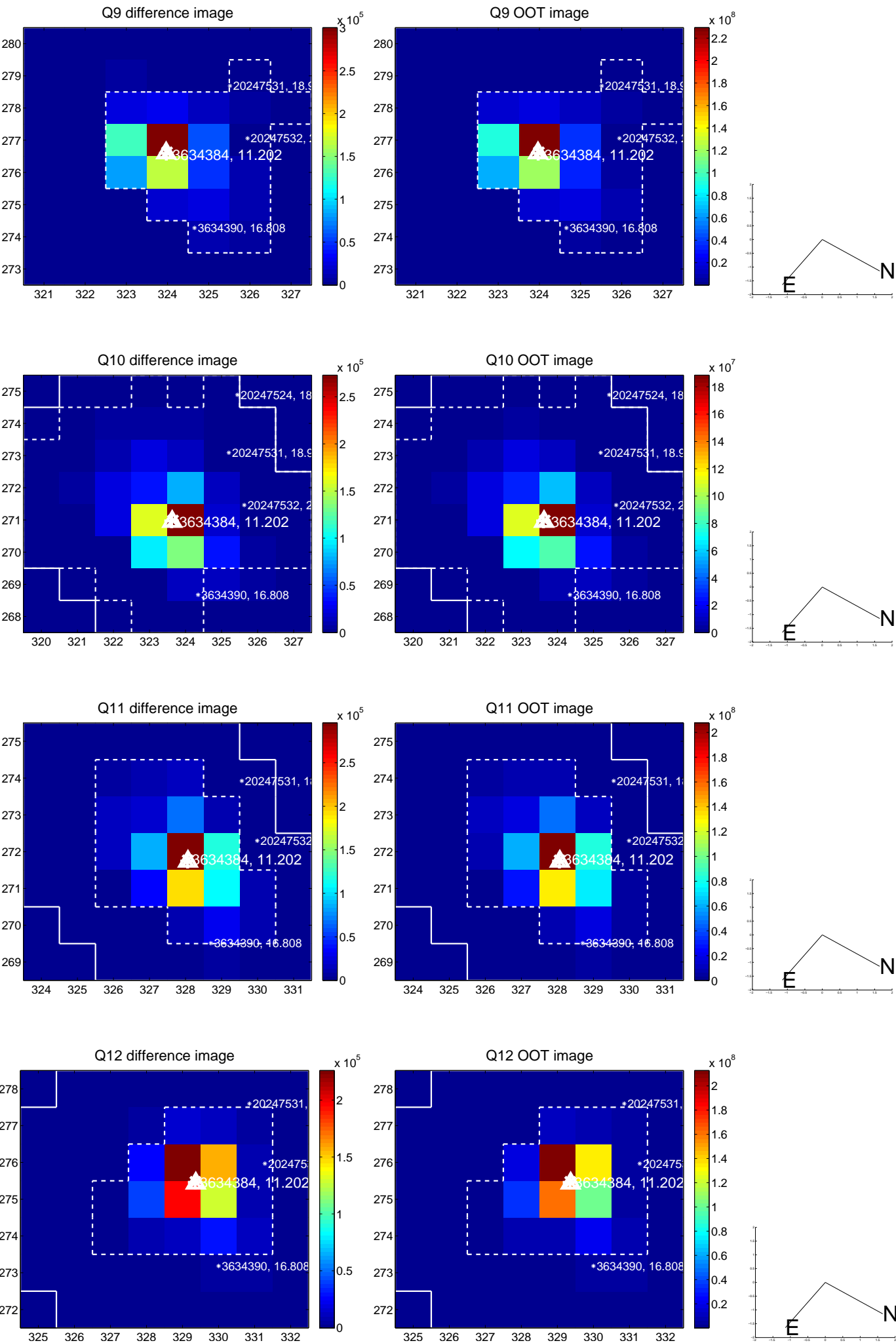
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



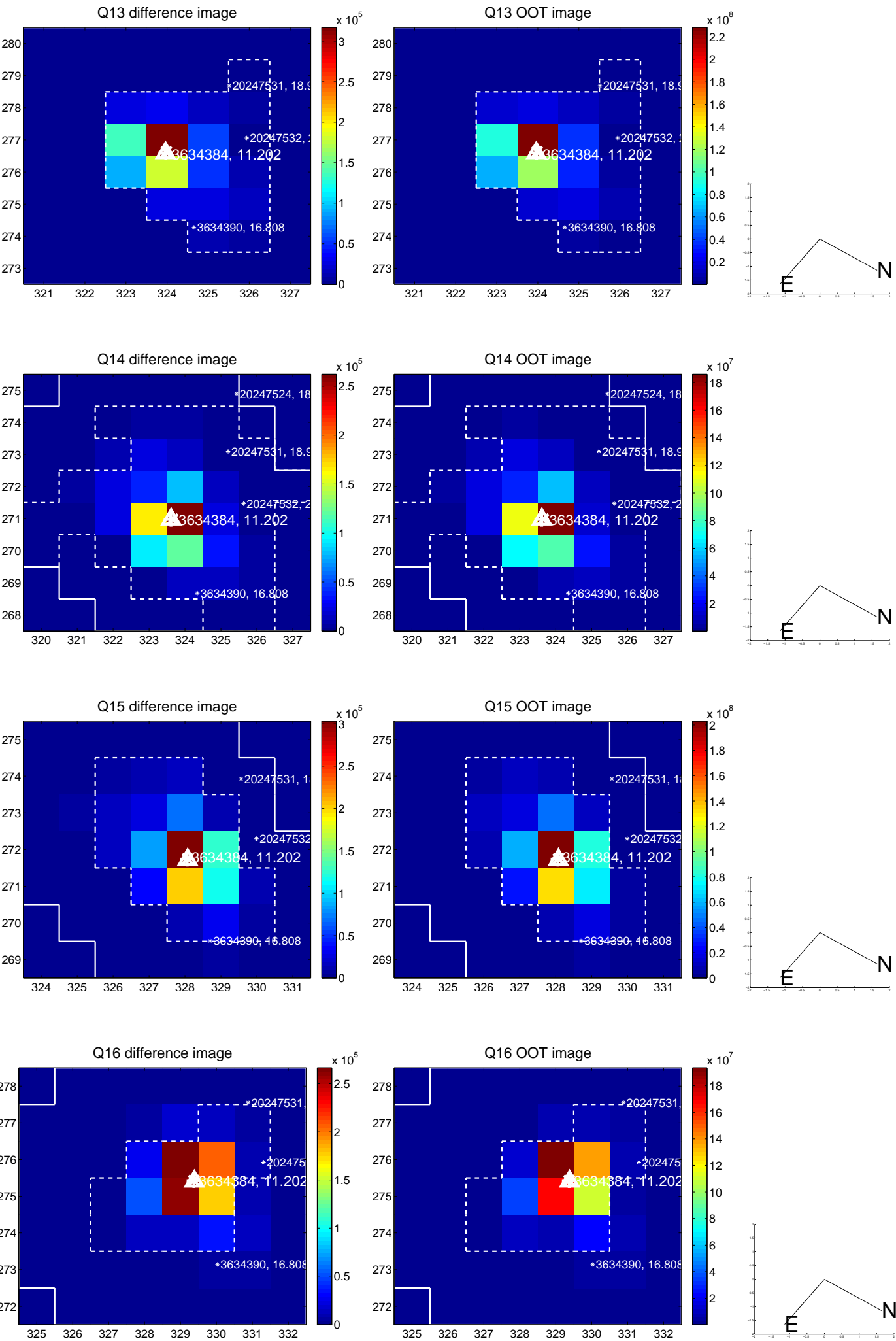
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



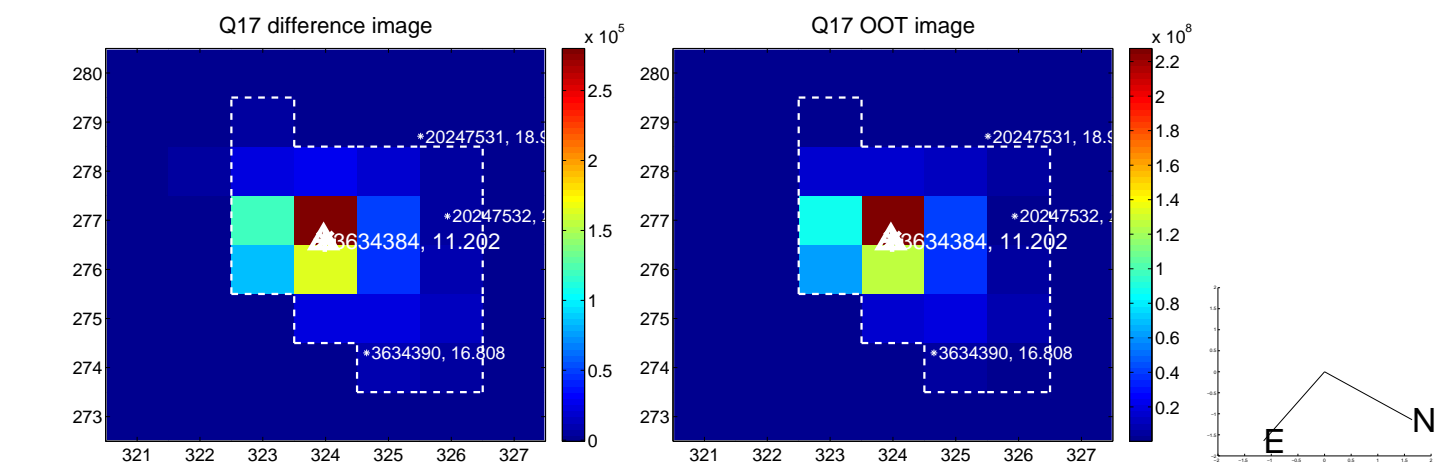
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



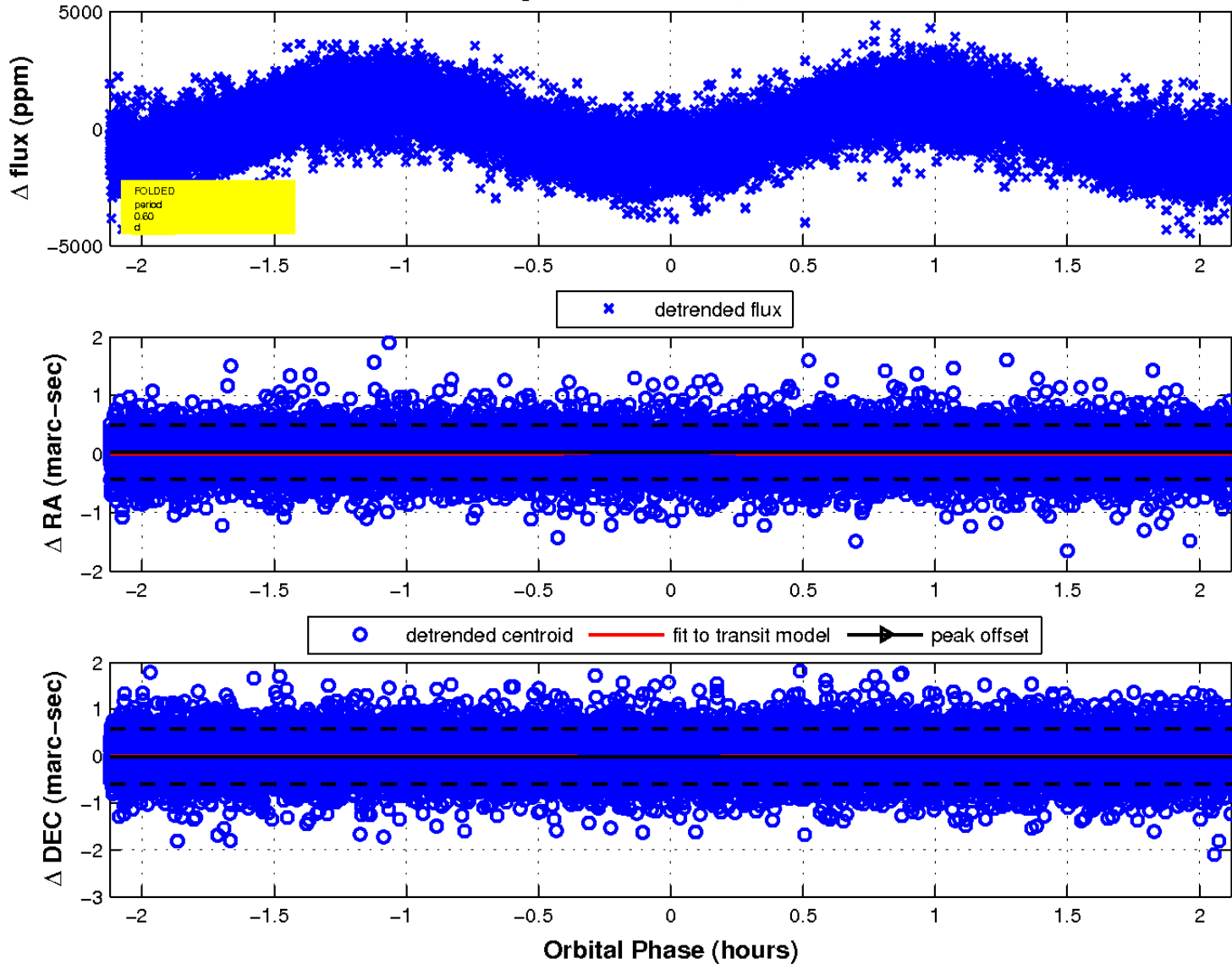
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

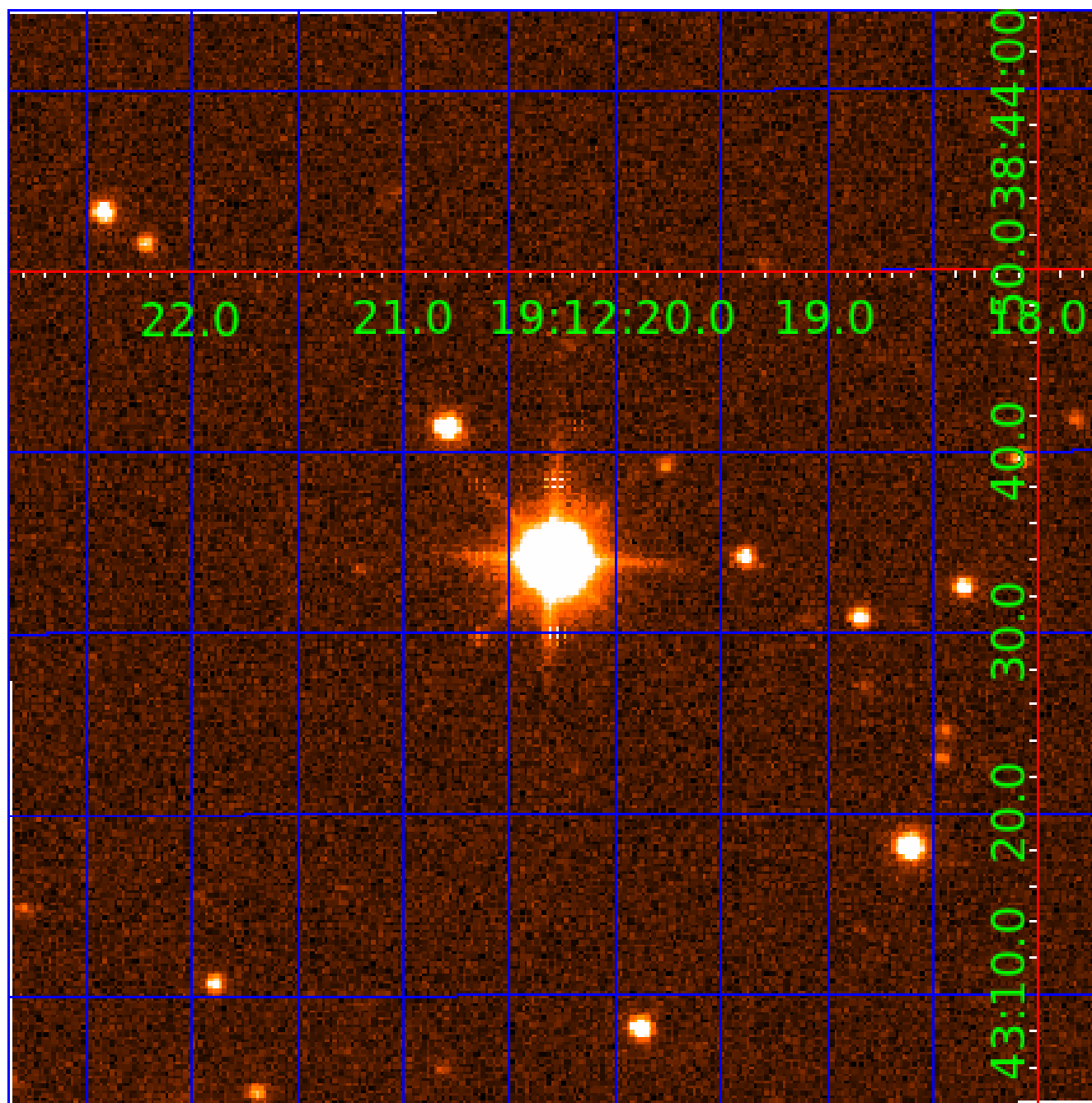


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 003634384

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})
003634384-01	OBS	No	0.591342	131.524532	61.9	3.739	15.3	14.0	2.80	7698	2.28	83000.87
003634384-02	OBS	No	0.604615	131.693420	1081.7	0.707	14.4	27.1	2.80	7698	10.92	80580.32
003634384-03	OBS	No	0.604608	131.956855	878.6	0.919	11.7	24.9	2.80	7698	9.79	80581.54
003634384-04	OBS	No	0.604616	131.520369	88.0	1.500	10.4	-1.0	2.80	7698	2.67	80580.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003634384-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
003634384-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003634384-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003634384-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

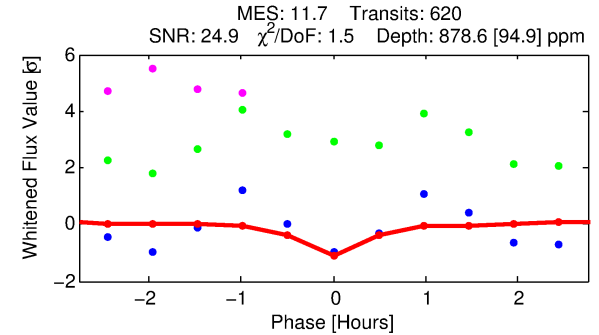
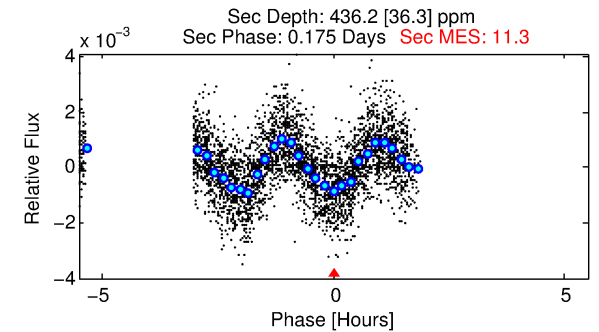
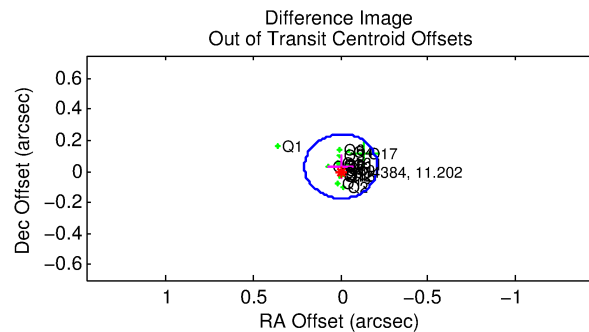
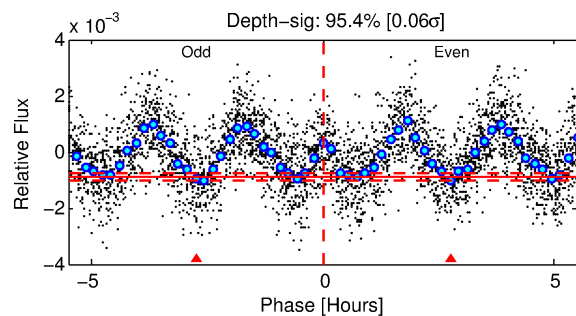
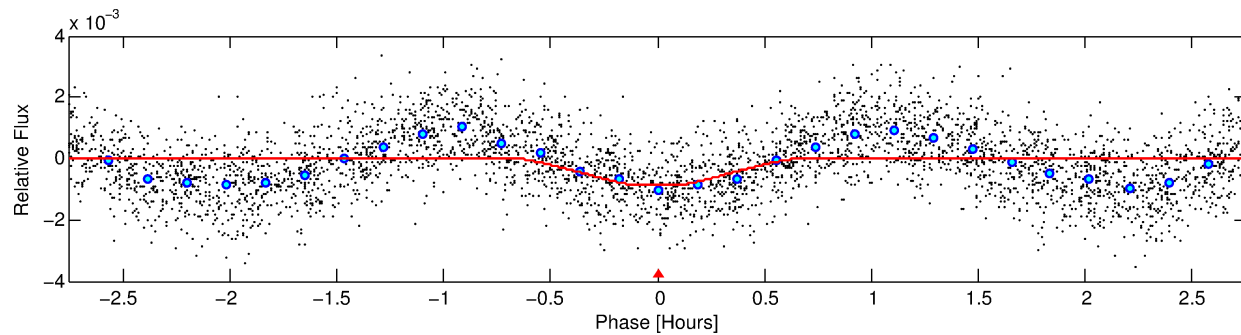
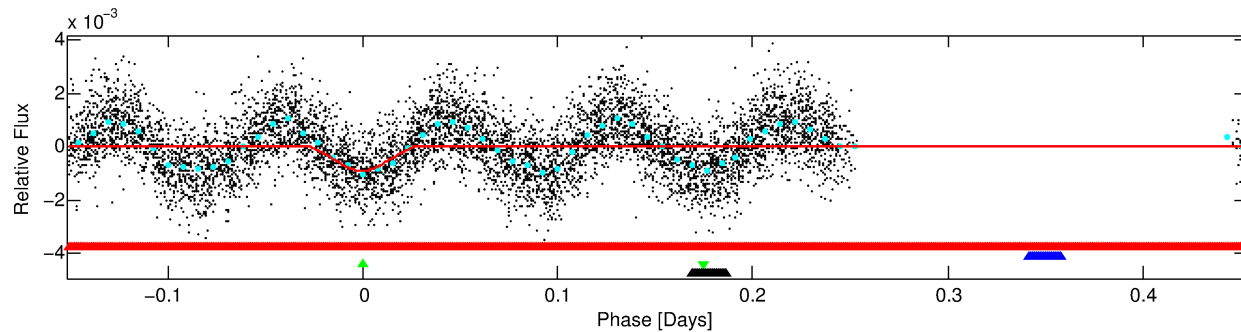
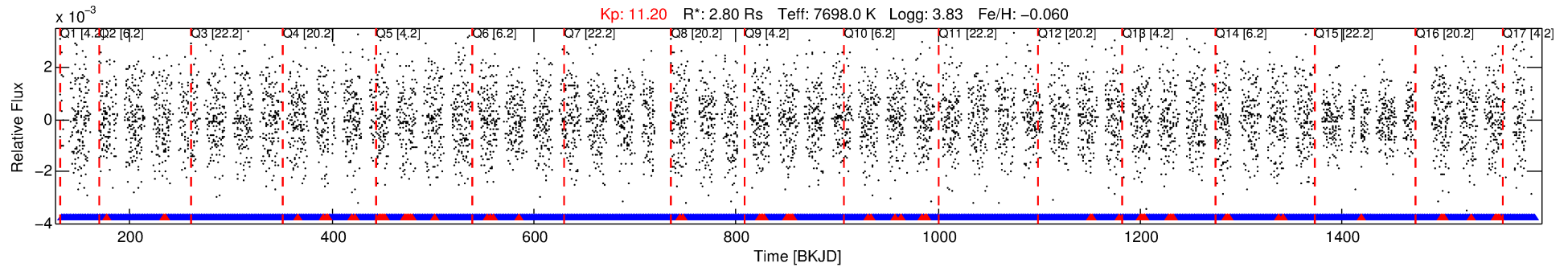
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003634384-03

No Significant Match Found

DV One-Page Summary

KIC: 3634384 Candidate: 3 of 4 Period: 0.605 d



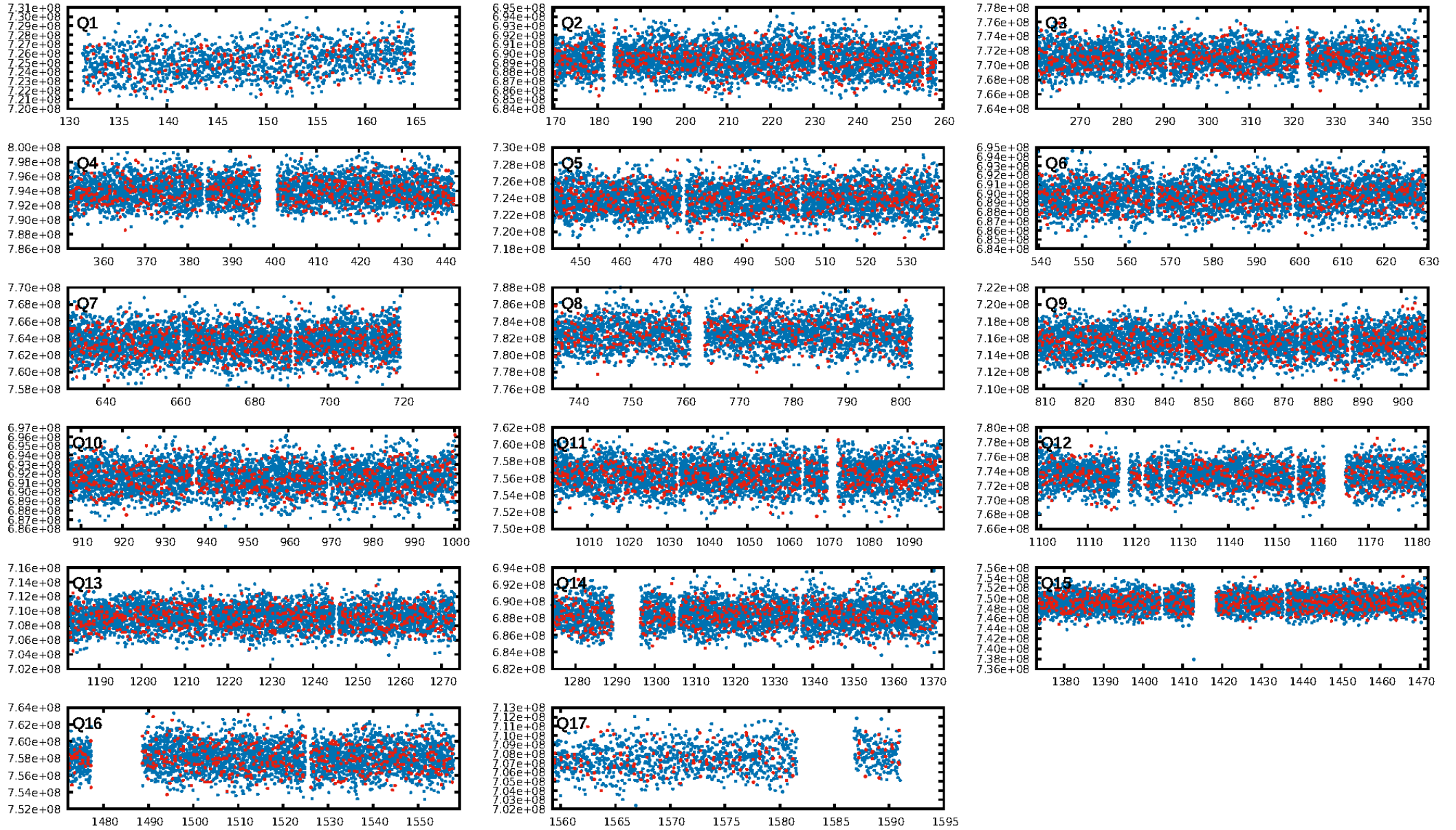
DV Fit Results:

Period = 0.60461 [0.00001] d
Epoch = 131.9569 [0.0009] BKJD
Rp/R* = 0.0321 [0.0079]
a/R* = 2.65 [3.13]
b = 0.91 [0.28]
Seff = 80581.54 [48104.68]
Teq = 4296 [641] K
Rp = 9.79 [4.63] Re
a = 0.0175 [0.0065] AU
Ag = 0.77 [0.58] [-0.40 σ]
Teffp = 6212 [814] K [1.85 σ]

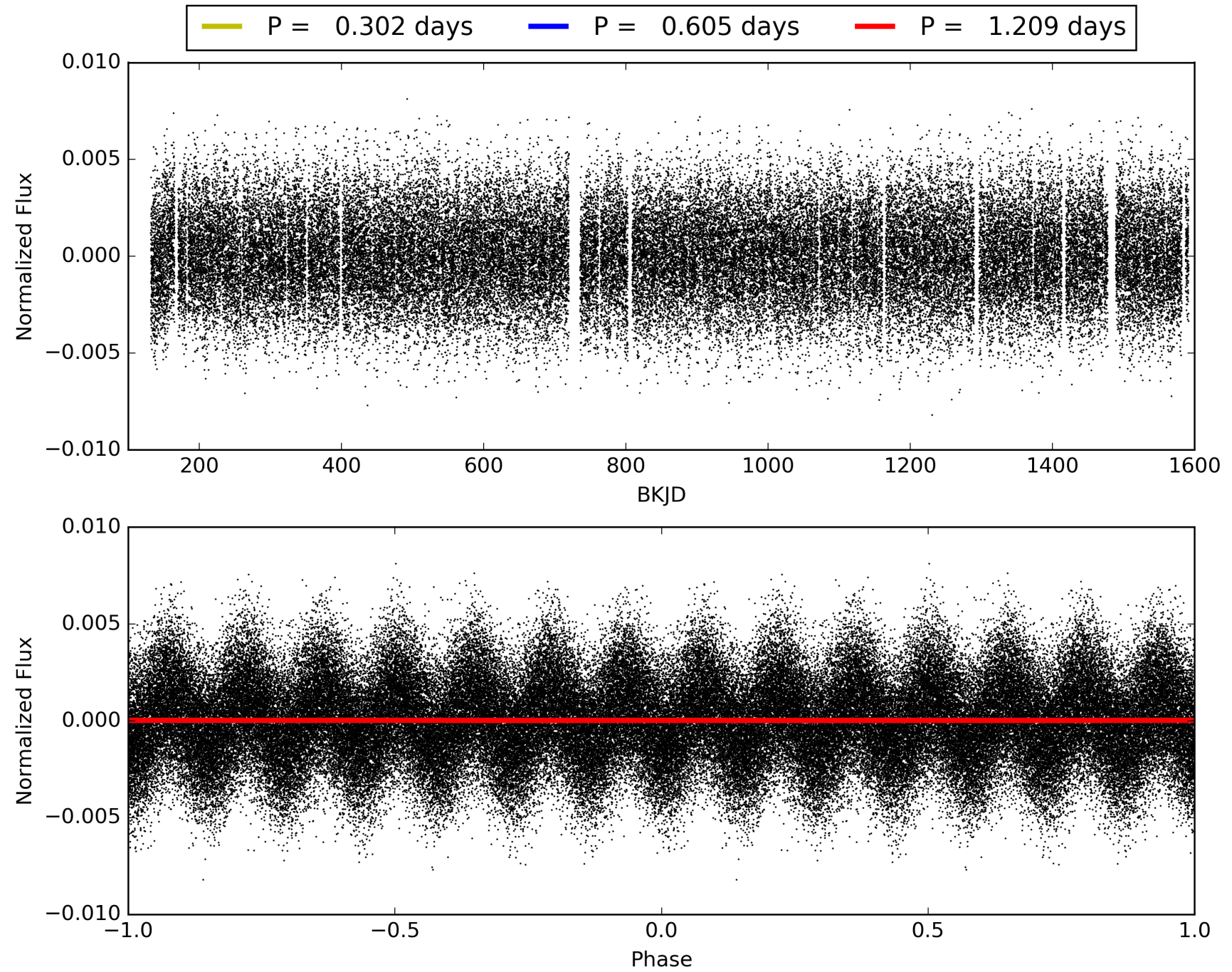
DV Diagnostic Results:

ShortPeriod-sig: 6.6% [0.08 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.84 [505/601]
GhostDiagnostic-chr: -12.53
Centroid-sig: 0.0%
Centroid-so: 0.032 arcsec [2.15 σ]
OotOffset-rm: 0.034 arcsec [0.49 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.085 arcsec [1.17 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 003634384-03, PDC Light Curves

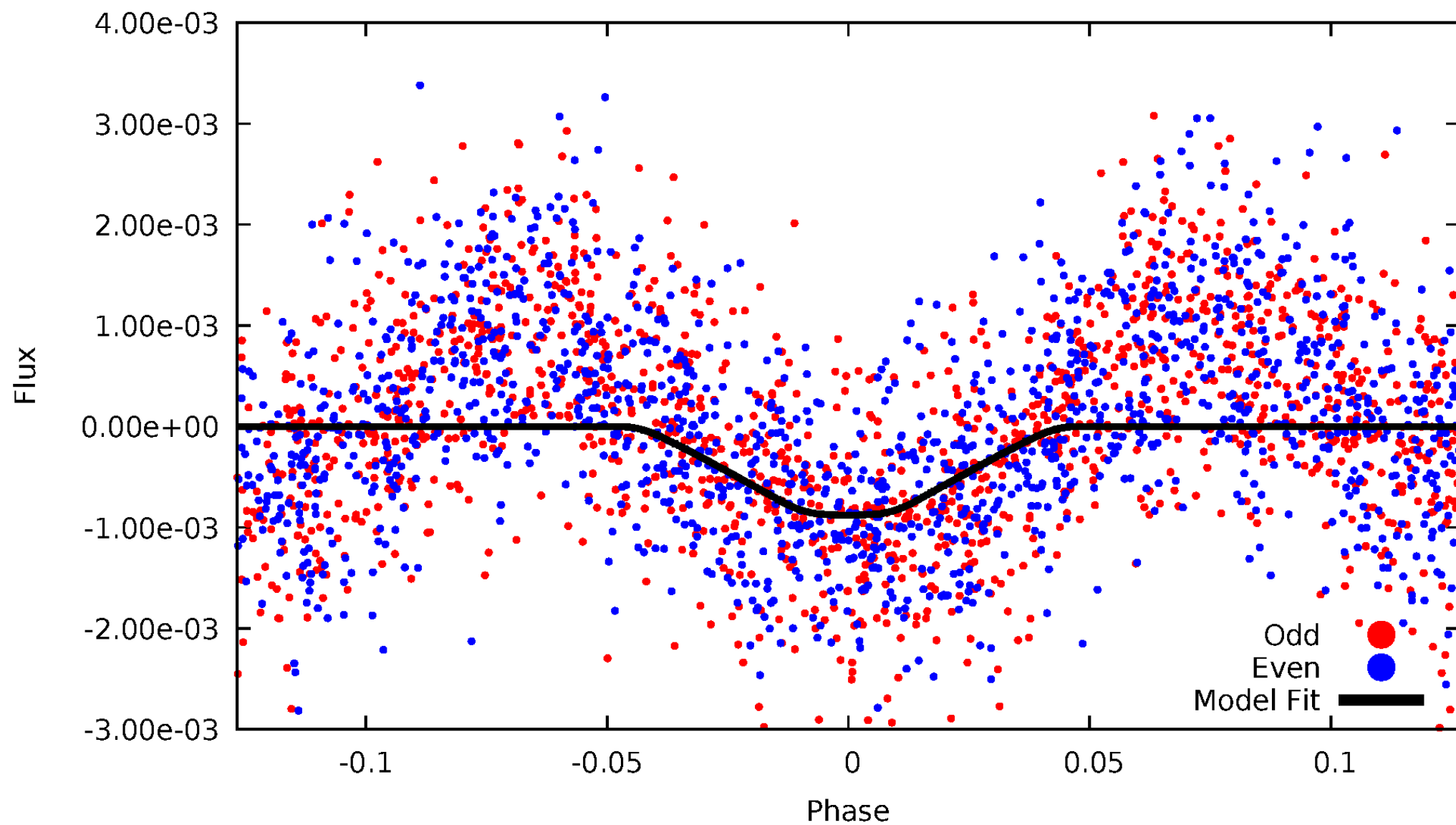


TCE 003634384-03



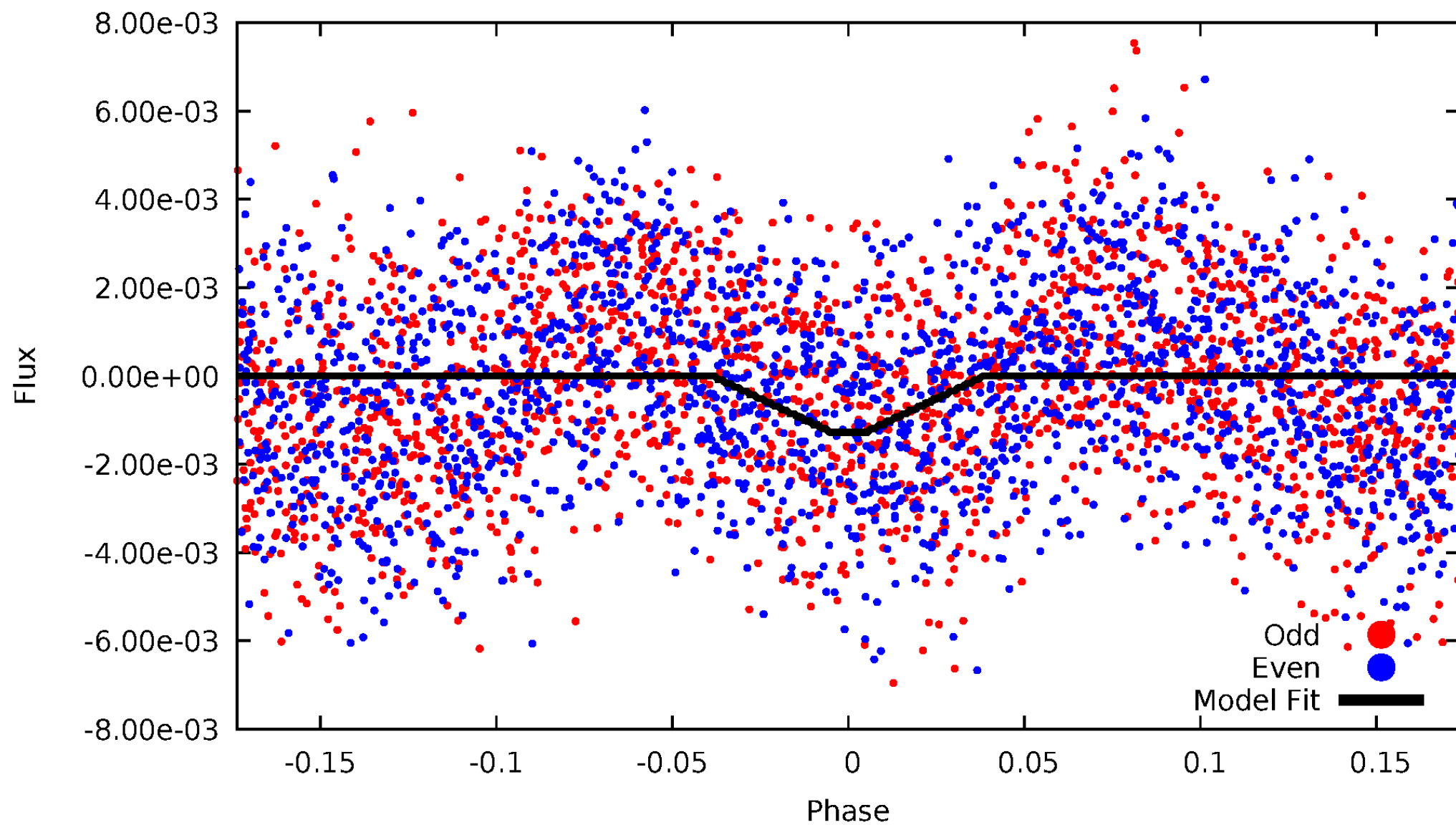
DV Odd/Even

TCE 003634384-03



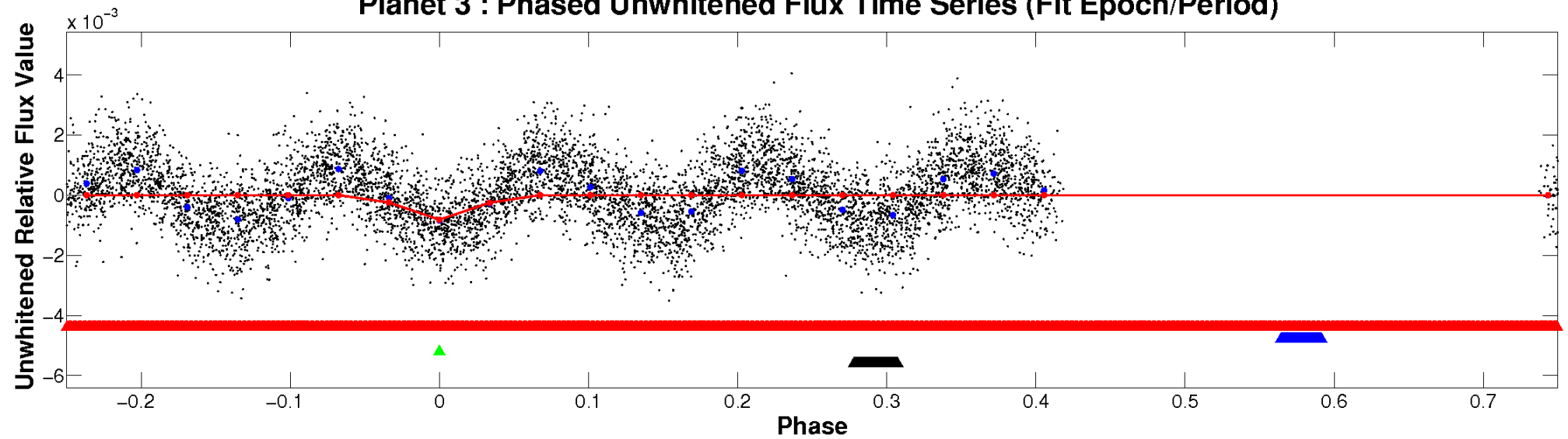
ALT Odd/Even

TCE 003634384-03

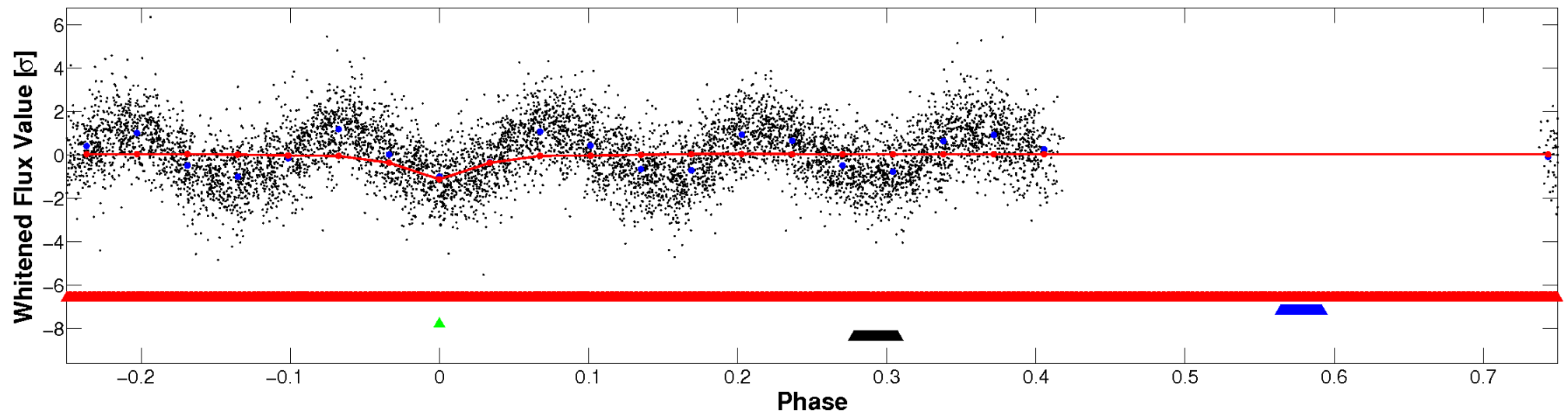


Non-Whitened Vs. Whitened Light Curve

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

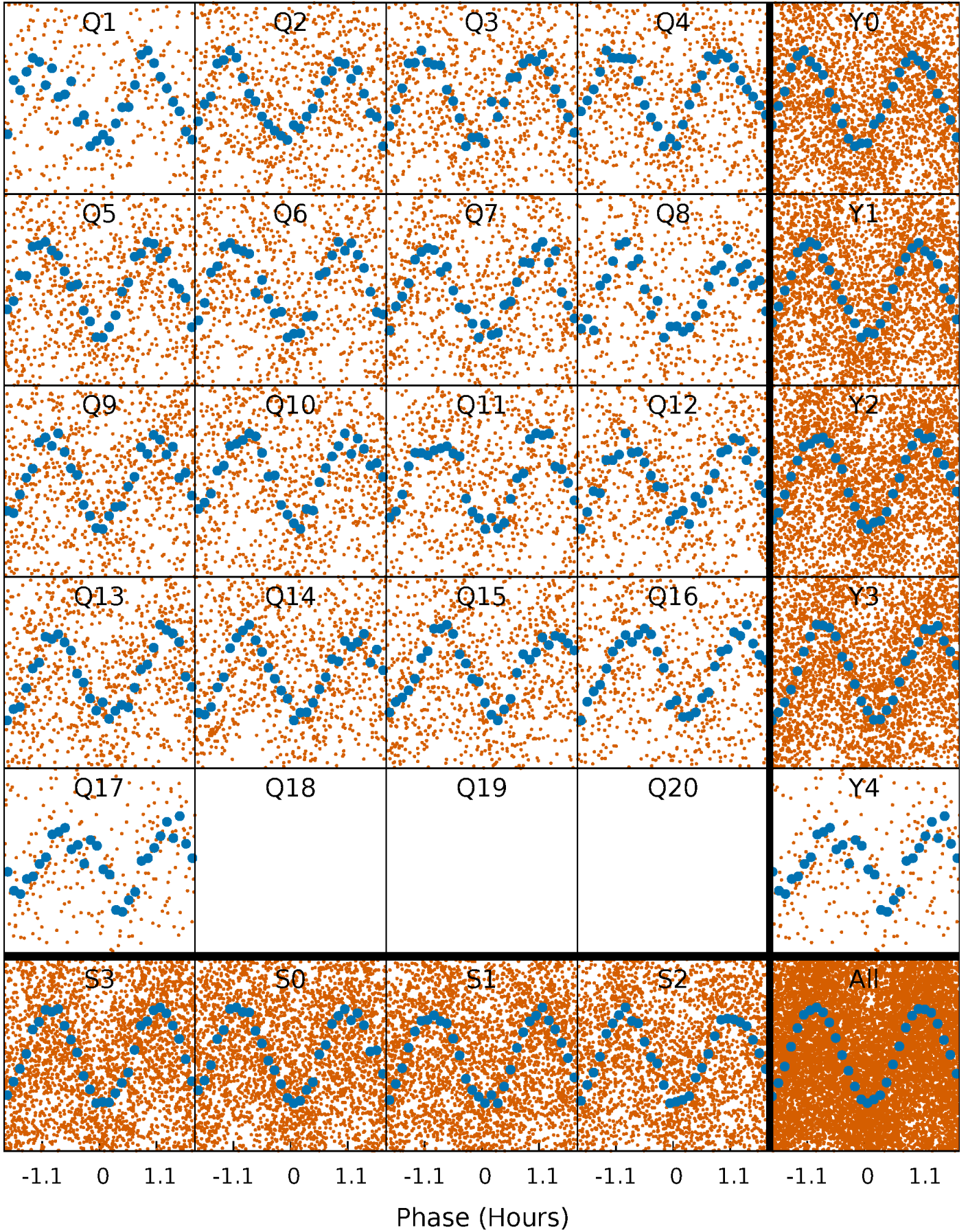


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



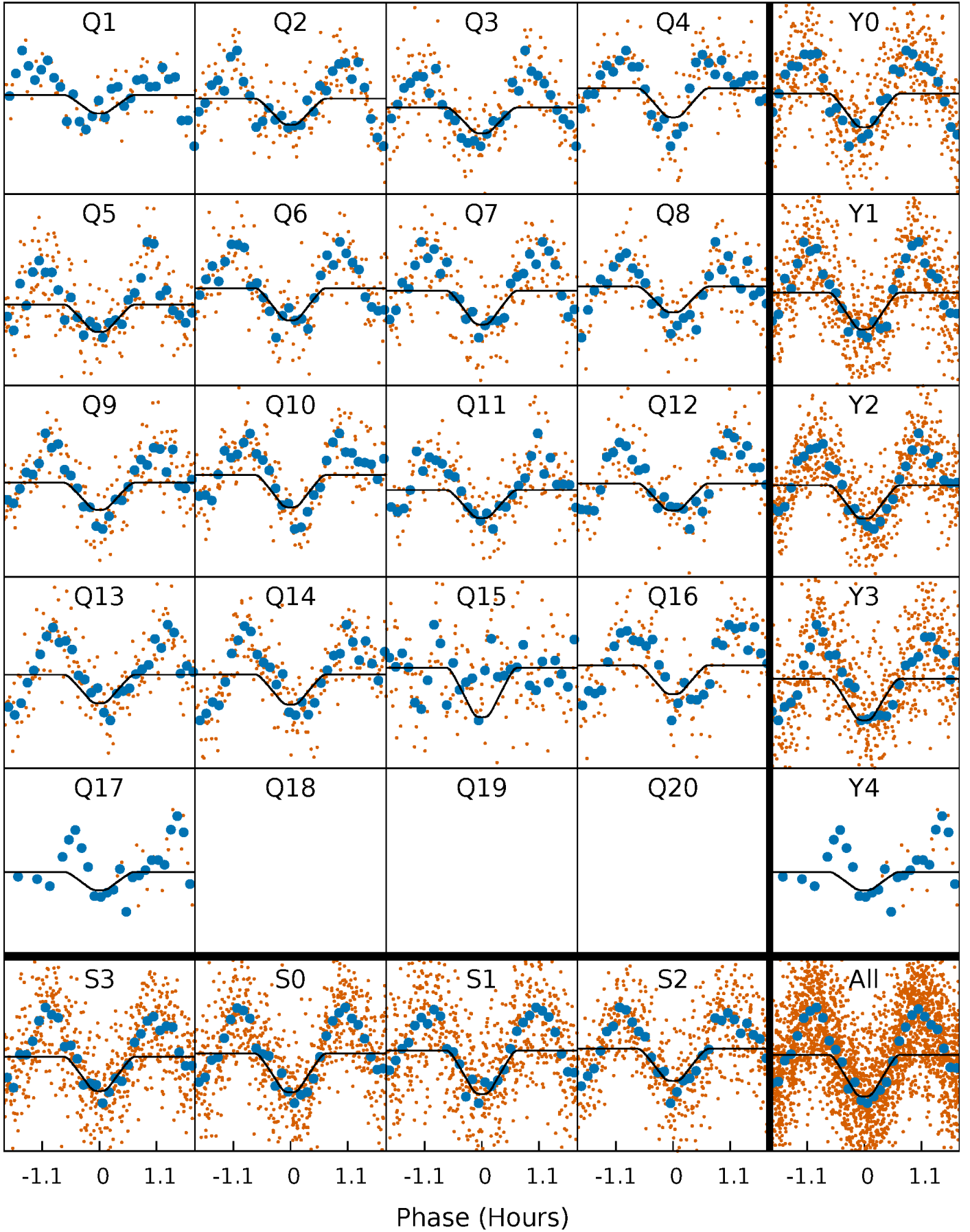
PDC Quarter-Phased Transit Curves

TCE 003634384-03 P= 0.604608 Days $T_0=131.956855$ (BKJD)



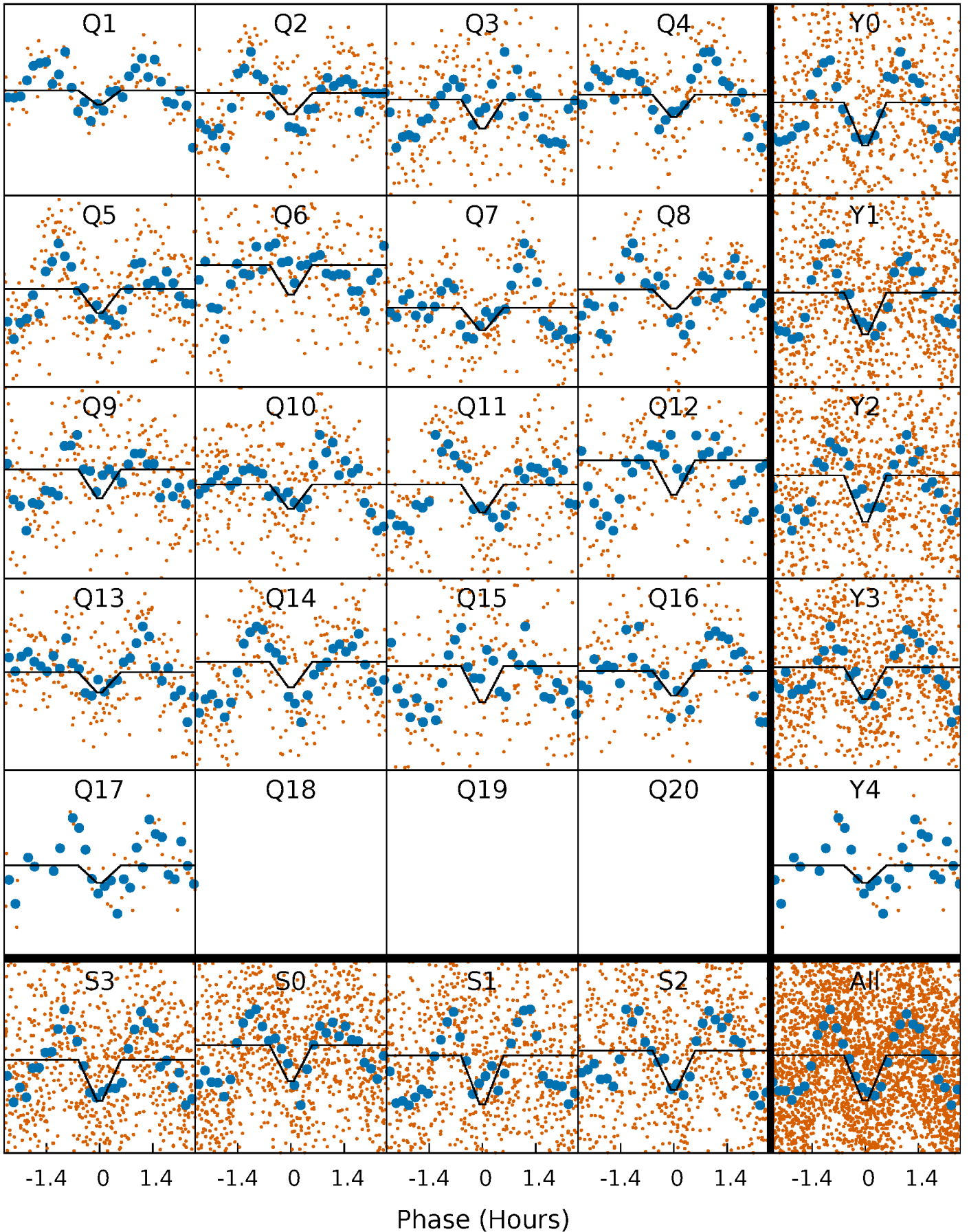
DV Quarter-Phased Transit Curves

TCE 003634384-03 P= 0.604608 Days $T_0=131.956855$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

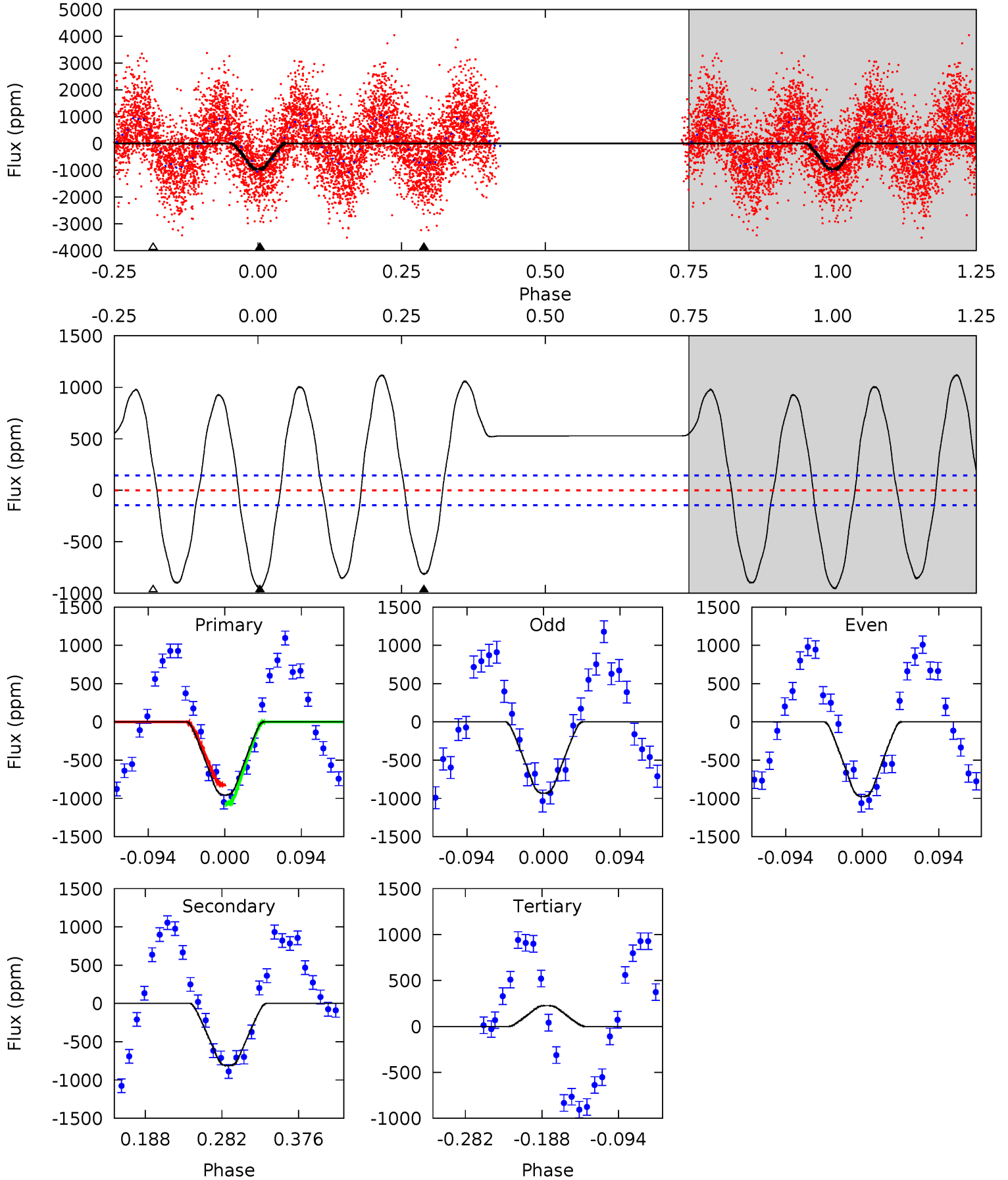
TCE 003634384-03 P= 0.604610 Days $T_0=131.953736$ (BKJD)



DV Model-Shift Uniqueness Test

003634384-03, P = 0.604608 Days, E = 131.352247 Days

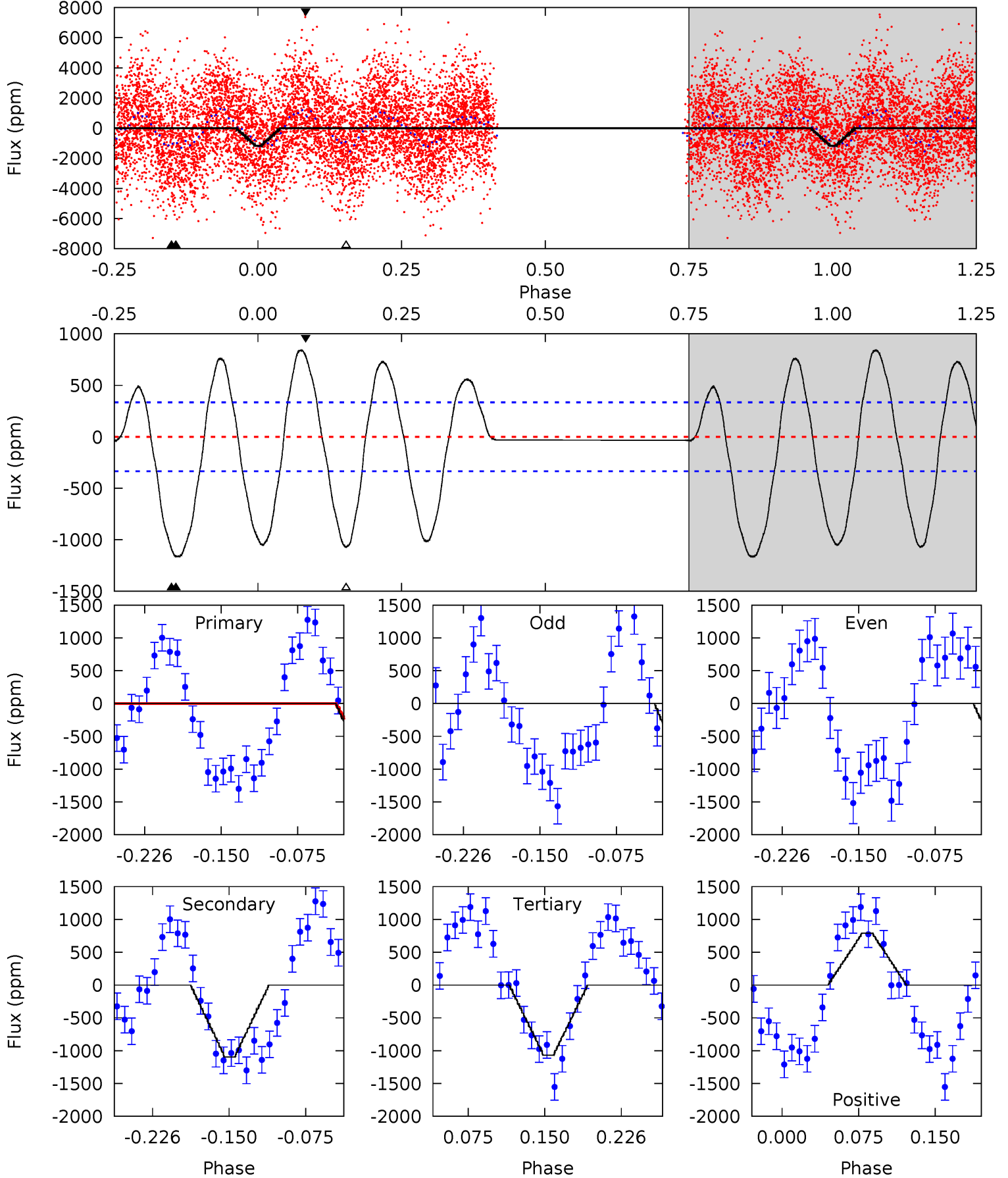
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.2	25.7	-7.16	0	4.58	1.68	19.5	37.3	30.2	32.8	25.7	0.67	1.01	0.54	4.29



Alt Model-Shift Uniqueness Test

003634384-03, P = 0.604610 Days, E = 131.349126 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	15.1	14.8	11.0	4.62	1.78	8.35	1.36	5.19	0.36	4.19	0.92	1.01	0.42	3.27



Stellar Parameters For KIC 003634384

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7698^{+211}_{-316}	$3.834^{+0.330}_{-0.110}$	$-0.060^{+0.200}_{-0.350}$	$2.797^{+0.377}_{-1.132}$	$1.948^{+0.083}_{-0.471}$	$0.126^{+0.340}_{-0.035}$
	+3%/-4%	+9%/-3%	+333%/-583%	+13%/-40%	+4%/-24%	+271%/-28%
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 003634384-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-813 ± 32	$9.10^{+2.95}_{-2.76}$	5898^{+379}_{-583}	6686^{+1499}_{-945}	$1.571^{+1.578}_{-0.651}$
Alt.	-1095 ± 72	$10.11^{+2.82}_{-2.65}$	5896^{+364}_{-547}	6946^{+1193}_{-880}	$1.735^{+1.444}_{-0.673}$

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

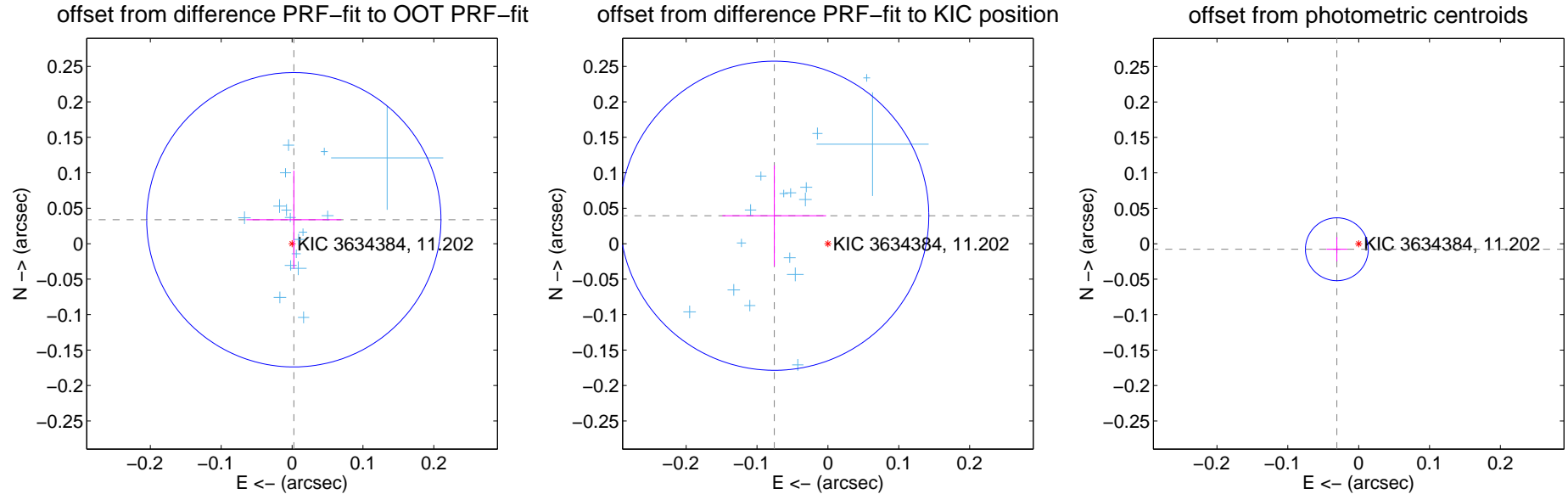
DV Centroid Data

Supplemental centroid analysis for 003634384-03. **Kepler magnitude: 11.20.** Transit SNR 24.90

There are 17 quarters with good PRF difference image offsets

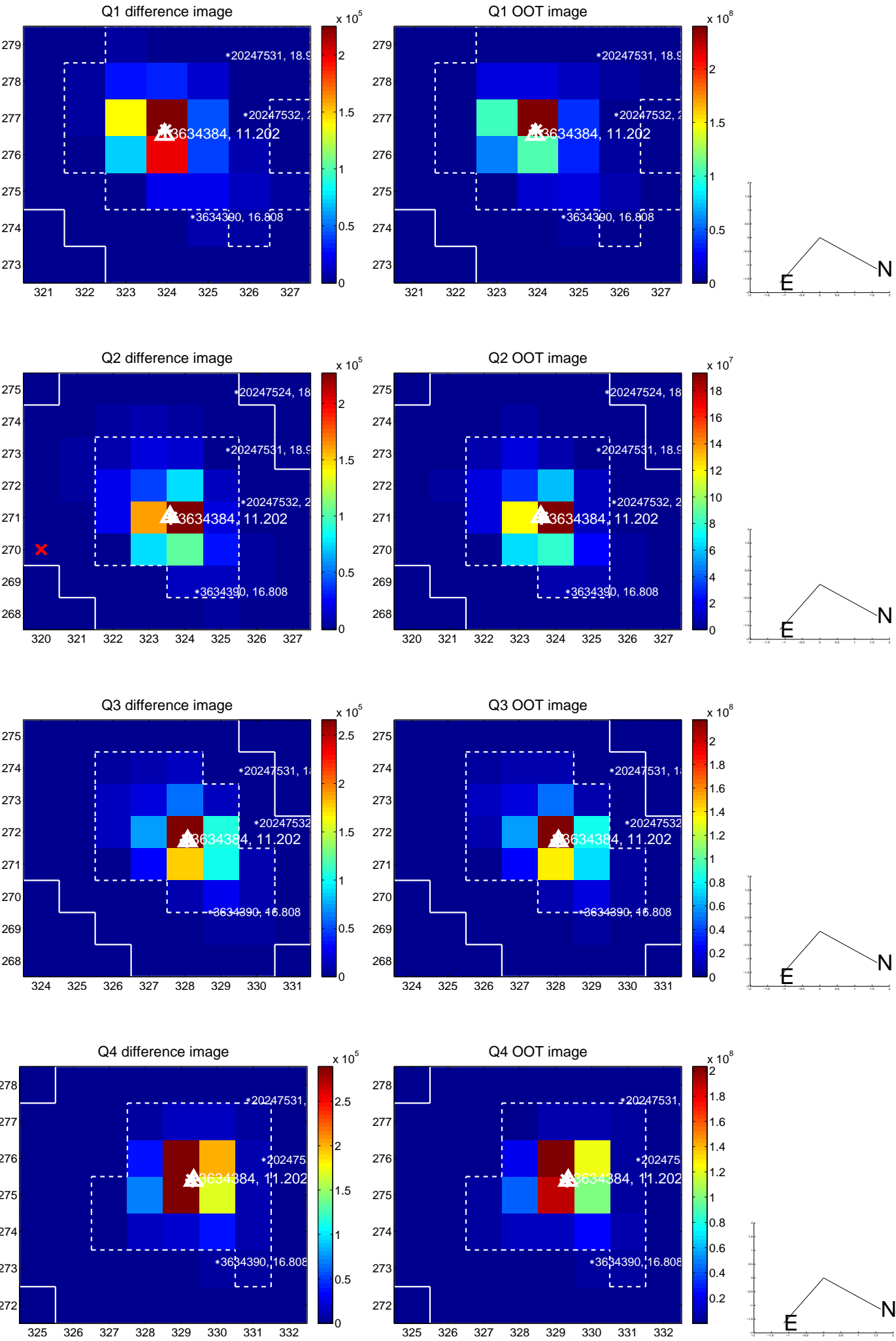
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.034 ± 0.069	0.49	-0.002 ± 0.067	0.034 ± 0.069
PRF-fit source offset from KIC position	0.085 ± 0.073	1.17	0.076 ± 0.073	0.039 ± 0.071
photometric centroid source offset	0.03 ± 0.01	2.15	0.03 ± 0.01	-0.01 ± 0.02

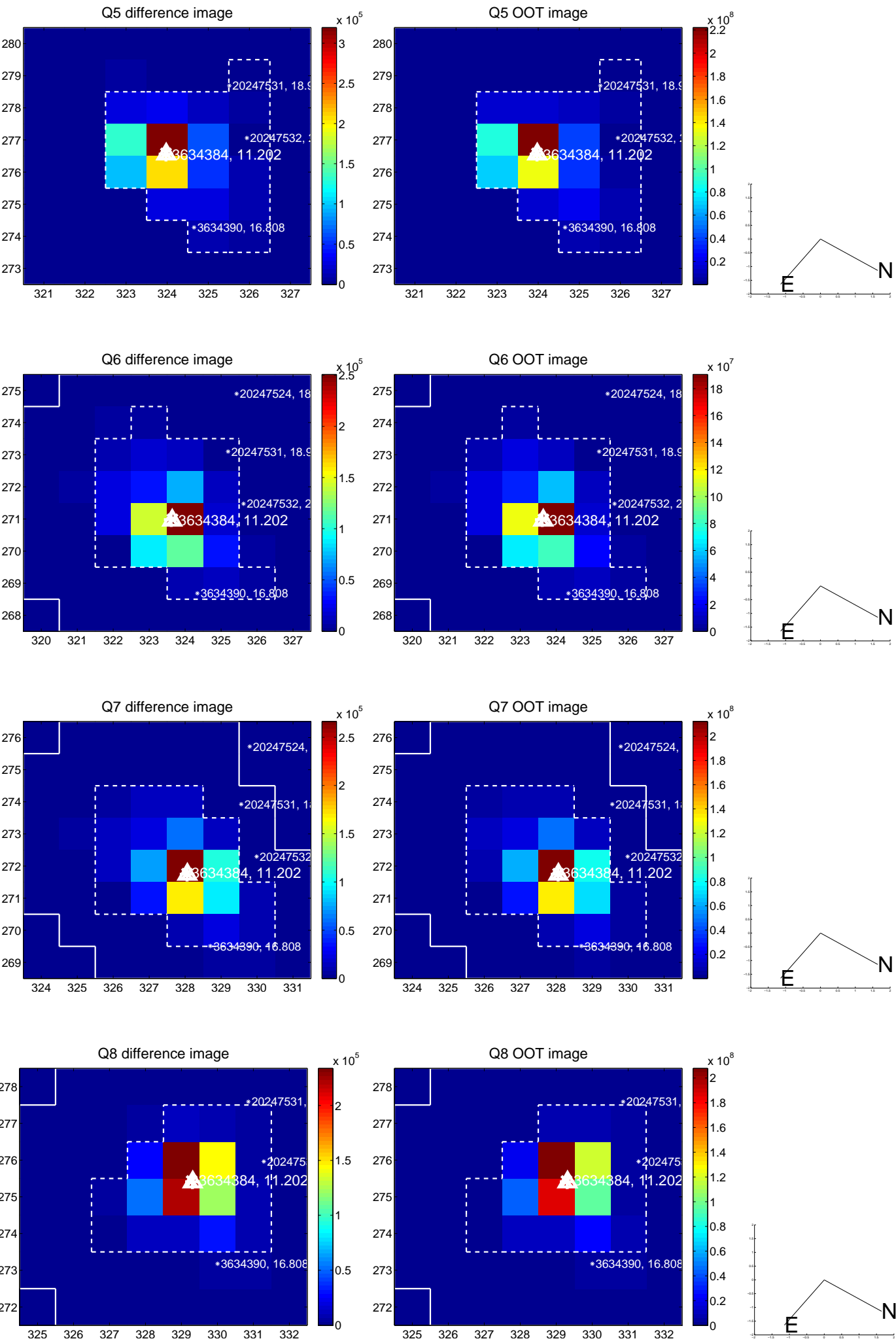


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

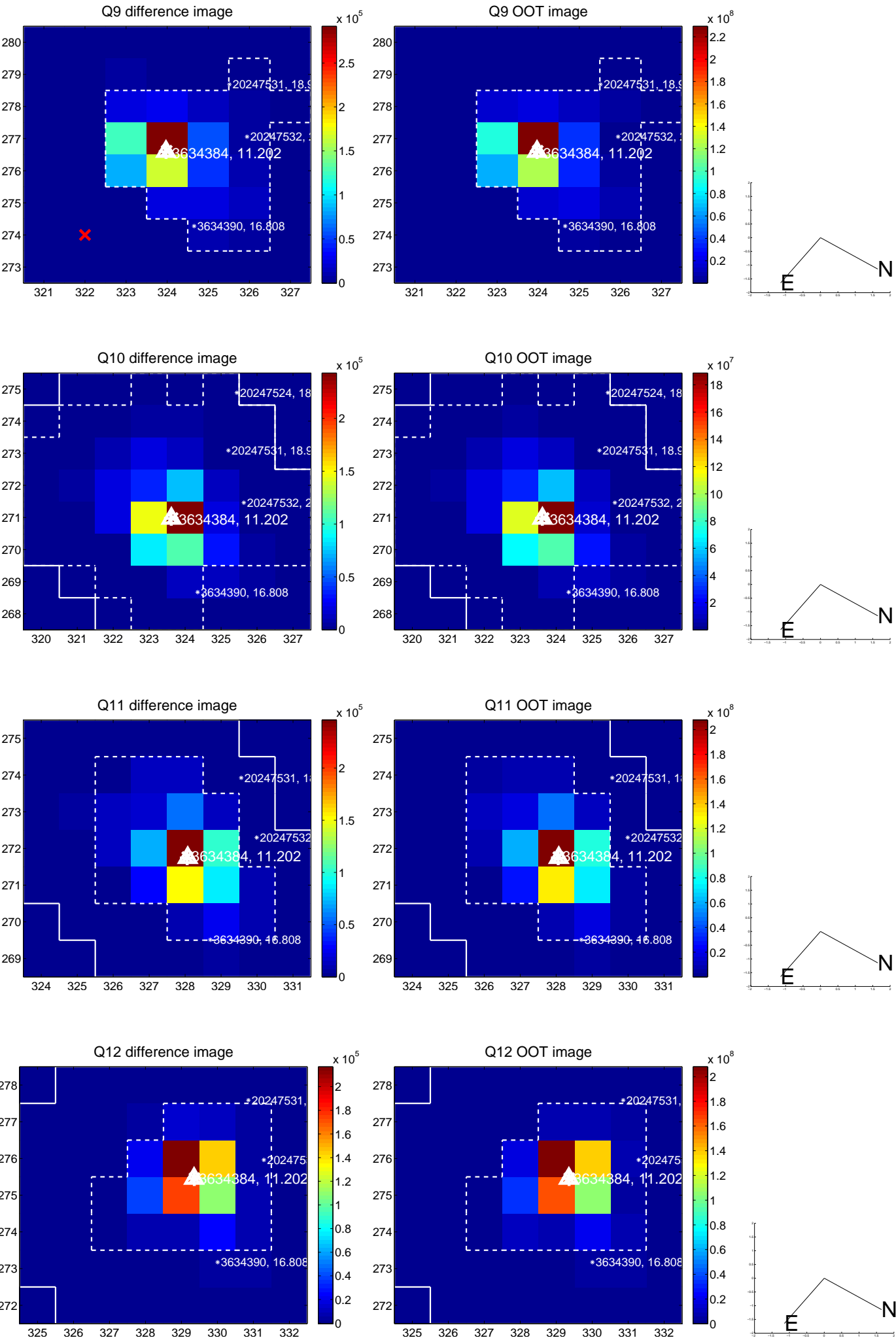
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



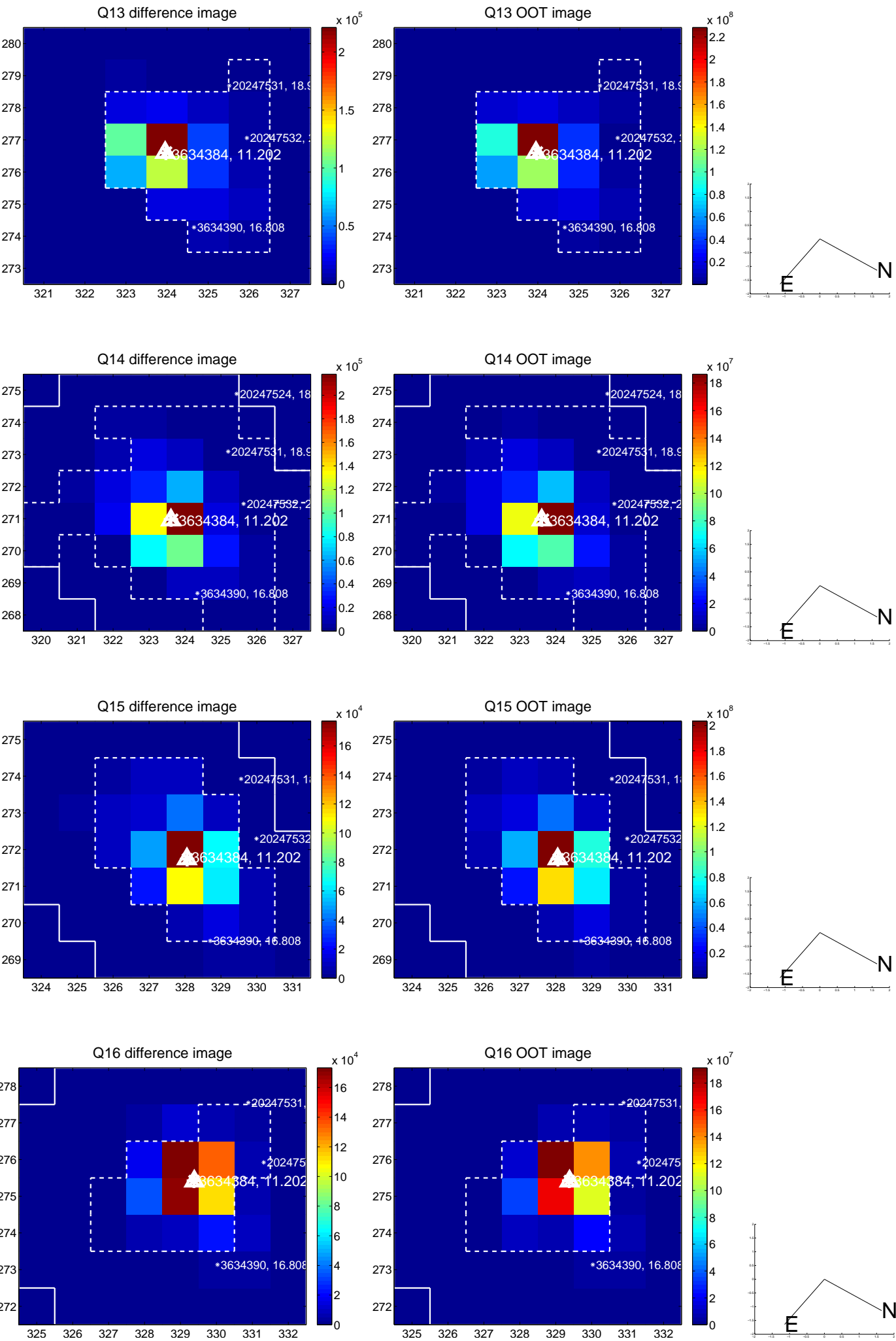
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



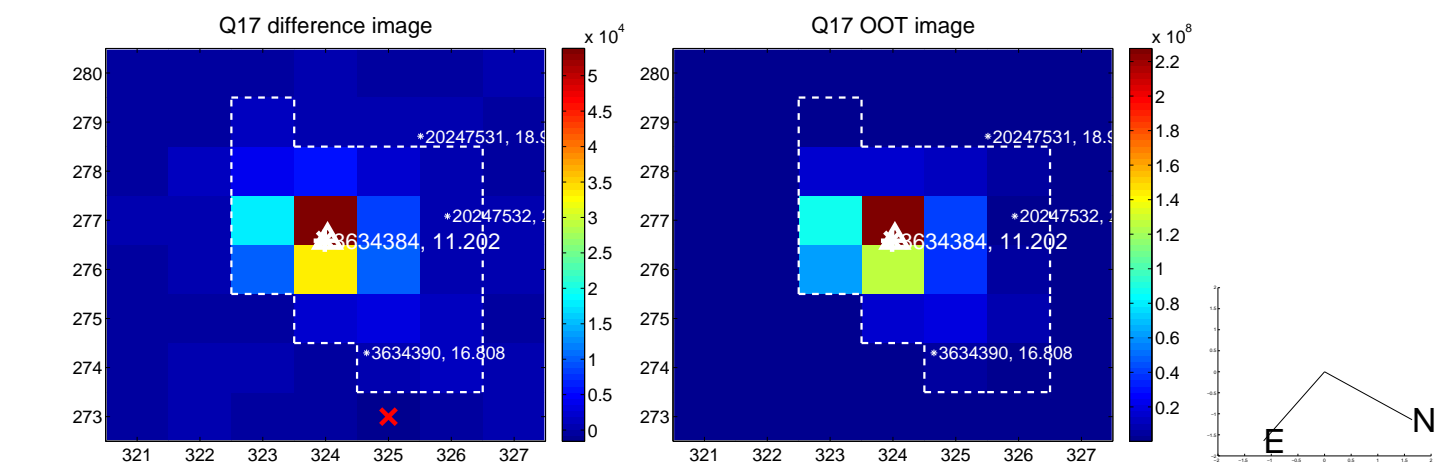
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



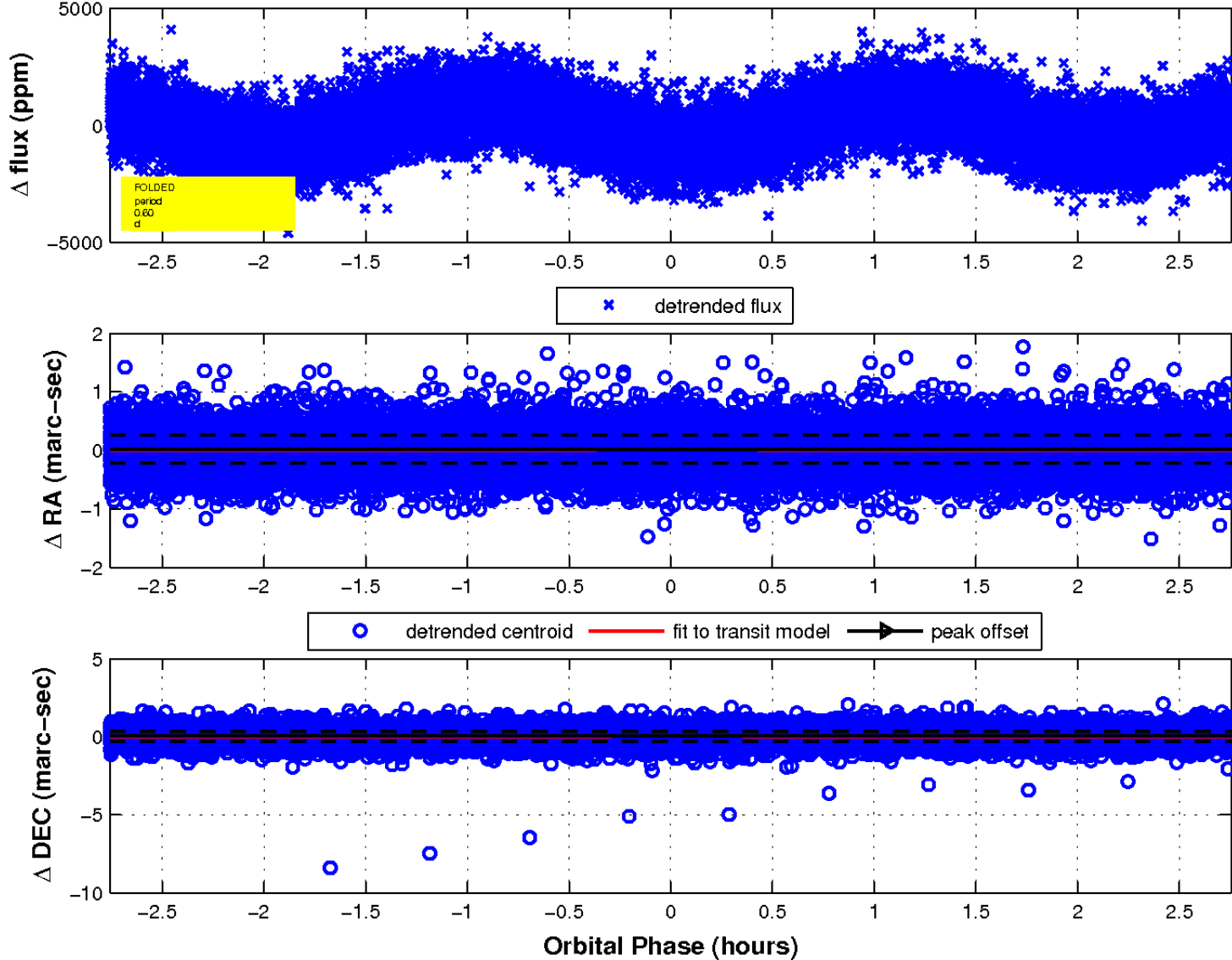
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

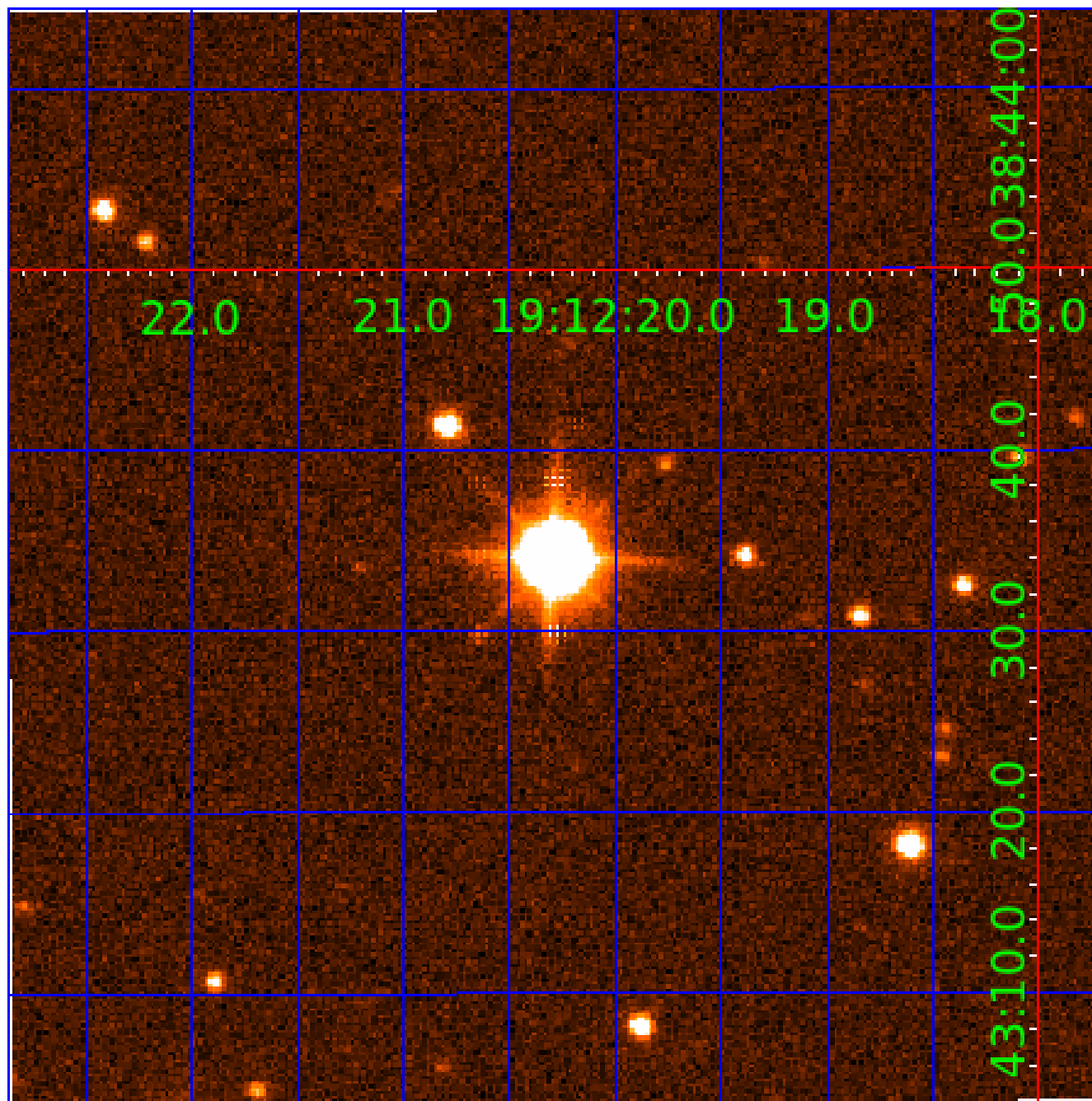


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 003634384

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})
003634384-01	OBS	No	0.591342	131.524532	61.9	3.739	15.3	14.0	2.80	7698	2.28	83000.87
003634384-02	OBS	No	0.604615	131.693420	1081.7	0.707	14.4	27.1	2.80	7698	10.92	80580.32
003634384-03	OBS	No	0.604608	131.956855	878.6	0.919	11.7	24.9	2.80	7698	9.79	80581.54
003634384-04	OBS	No	0.604616	131.520369	88.0	1.500	10.4	-1.0	2.80	7698	2.67	80580.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003634384-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
003634384-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003634384-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003634384-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

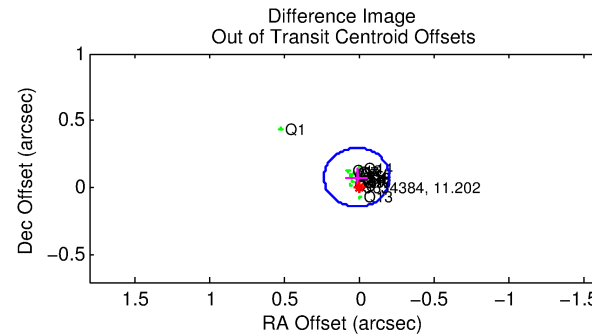
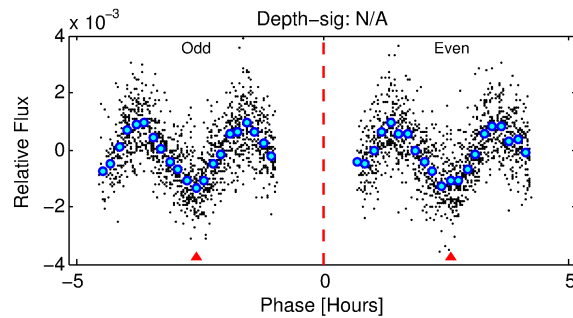
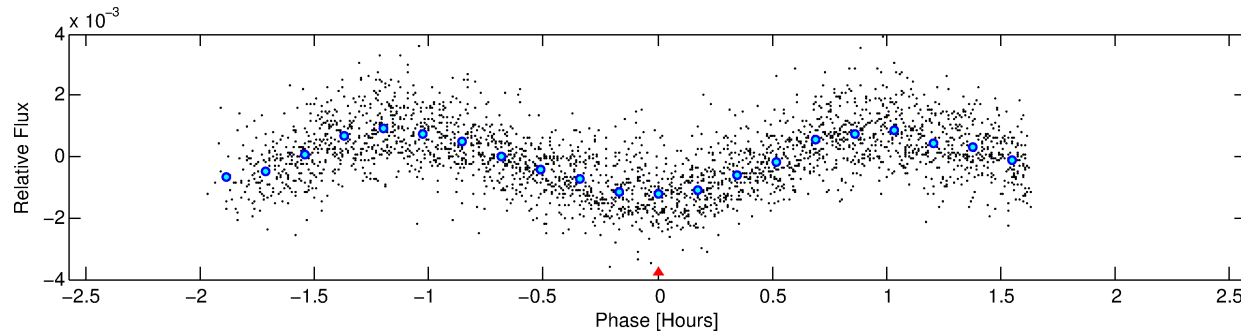
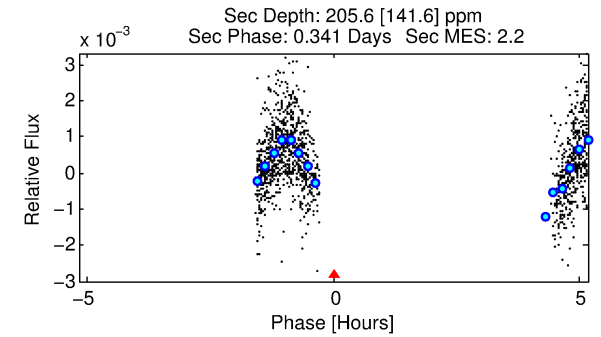
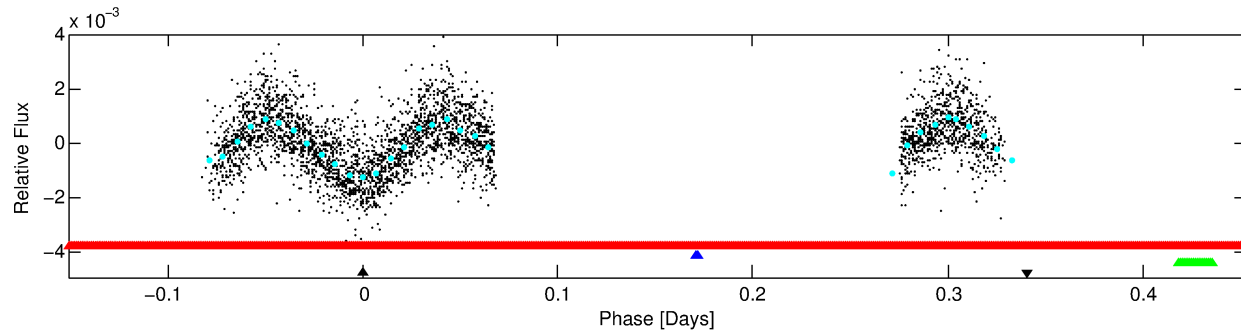
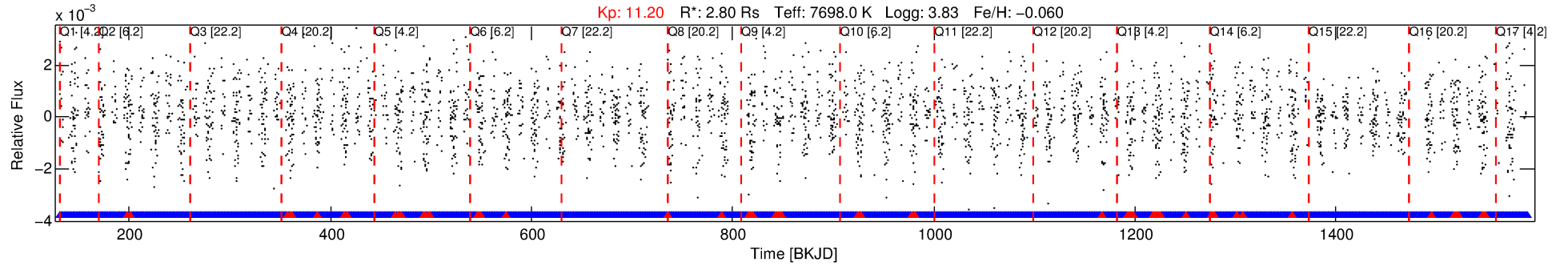
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003634384-04

No Significant Match Found

DV One-Page Summary

KIC: 3634384 Candidate: 4 of 4 Period: 0.605 d



TPS TCE Results:

Period = 0.60462 d
Epoch = 131.5204 BKJD

DV fit results are unavailable

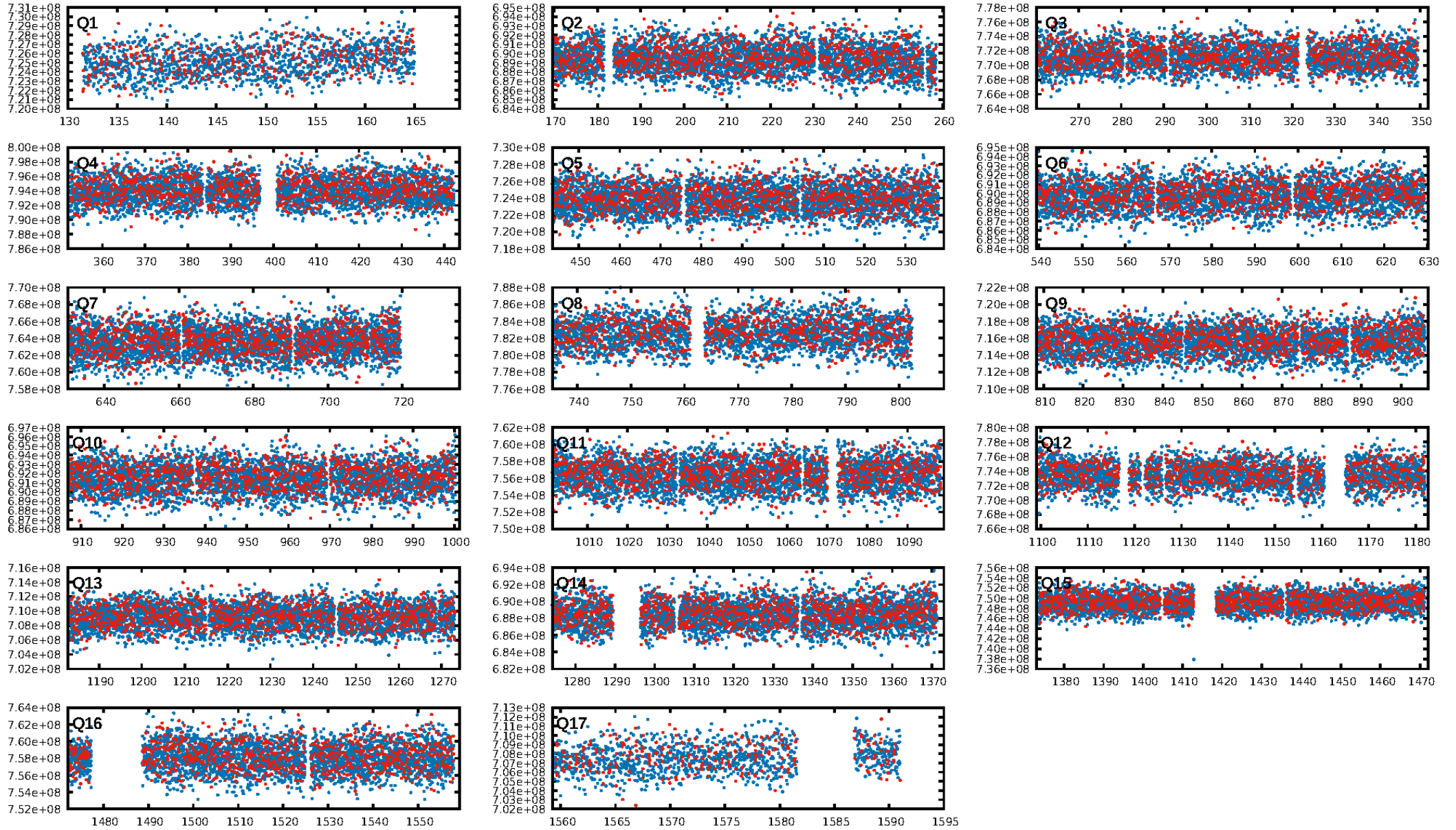
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.85 [519/613]
GhostDiagnostic-chr: 14.17
Centroid-sig: 18.0%
Centroid-so: 0.059 arcsec [9.00 σ]
OotOffset-rm: 0.079 arcsec [1.09 σ]
KicOffset-rm: 0.135 arcsec [1.74 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

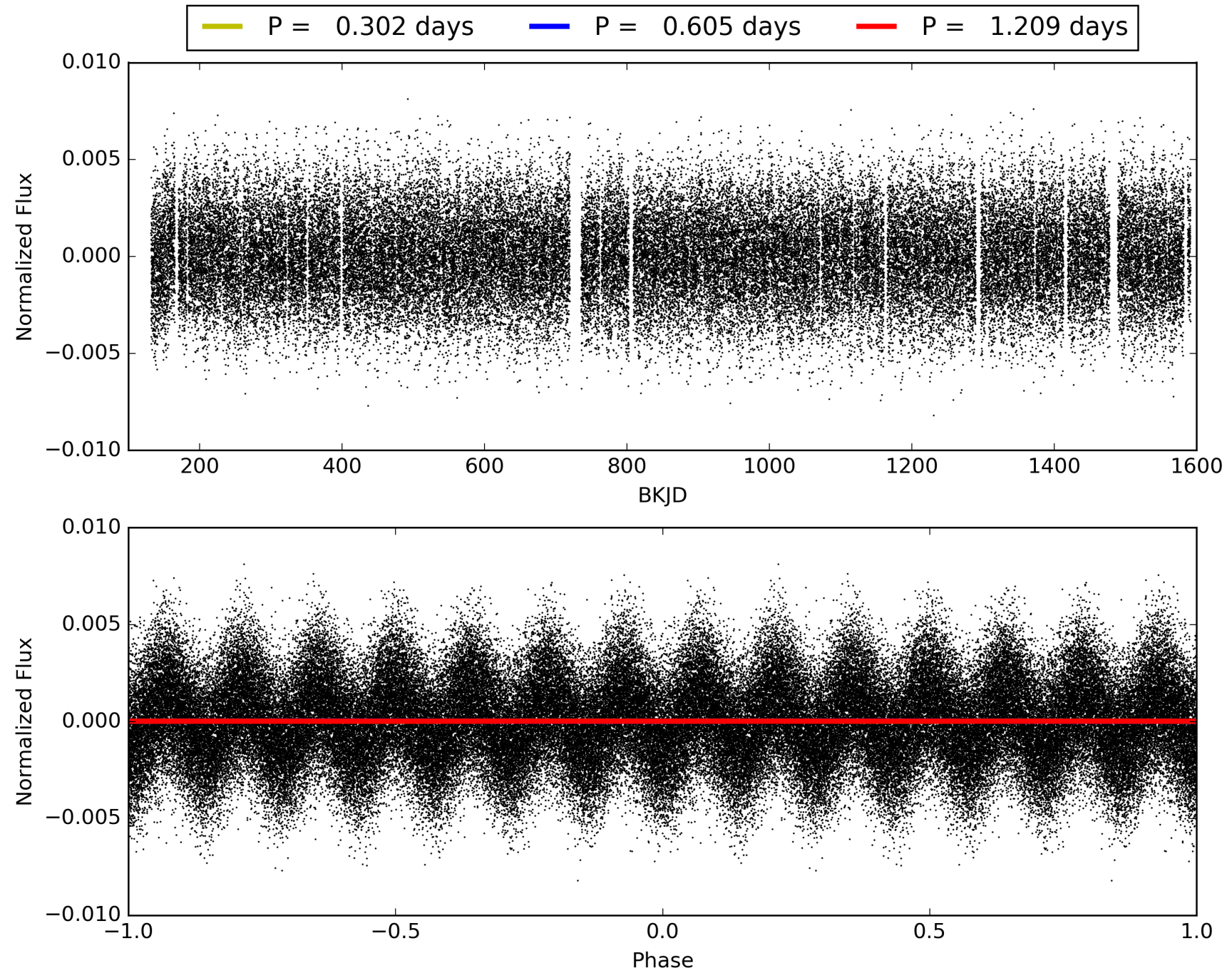
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 01:08:06 Z

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

TCE 003634384-04, PDC Light Curves

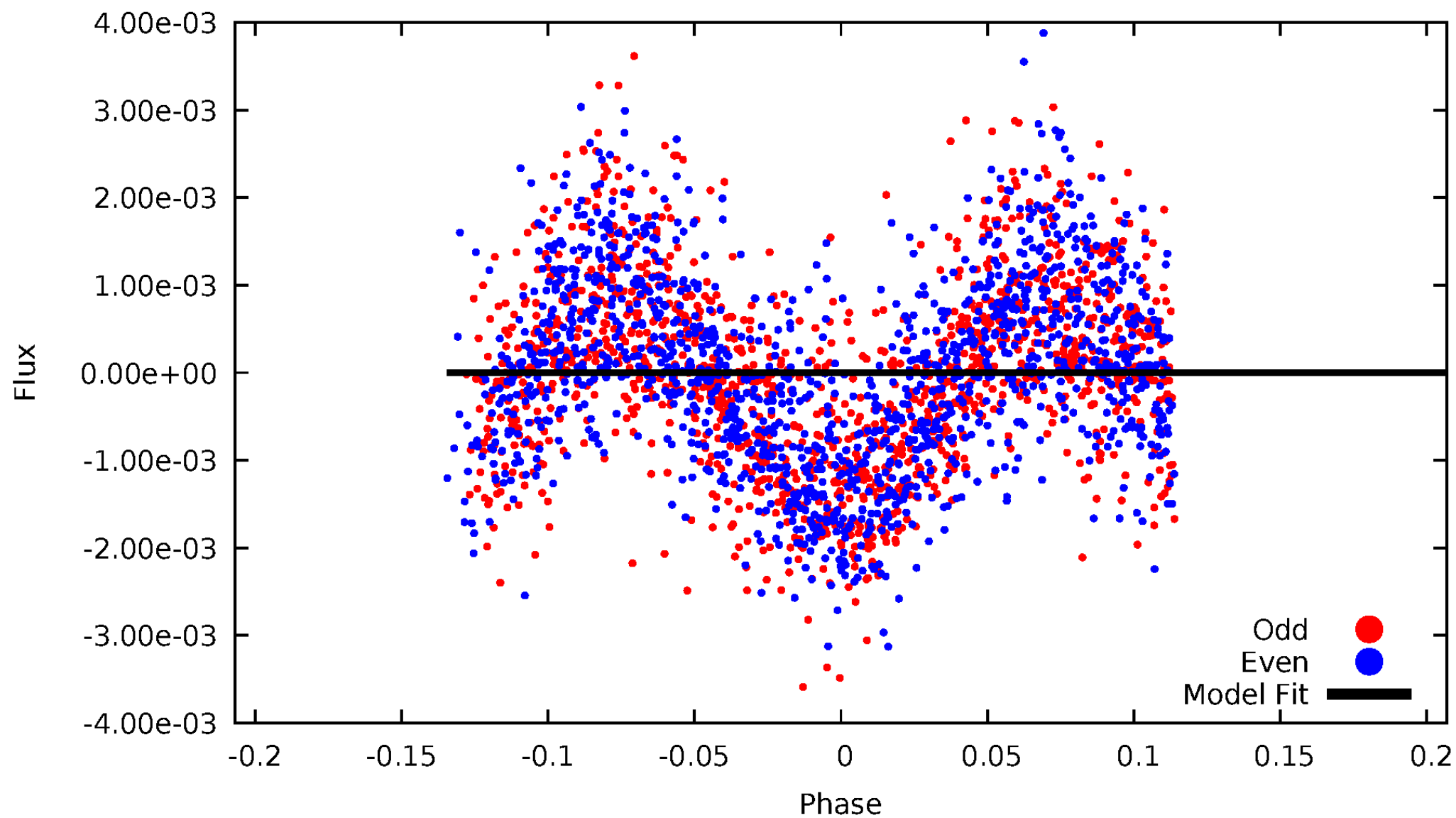


TCE 003634384-04



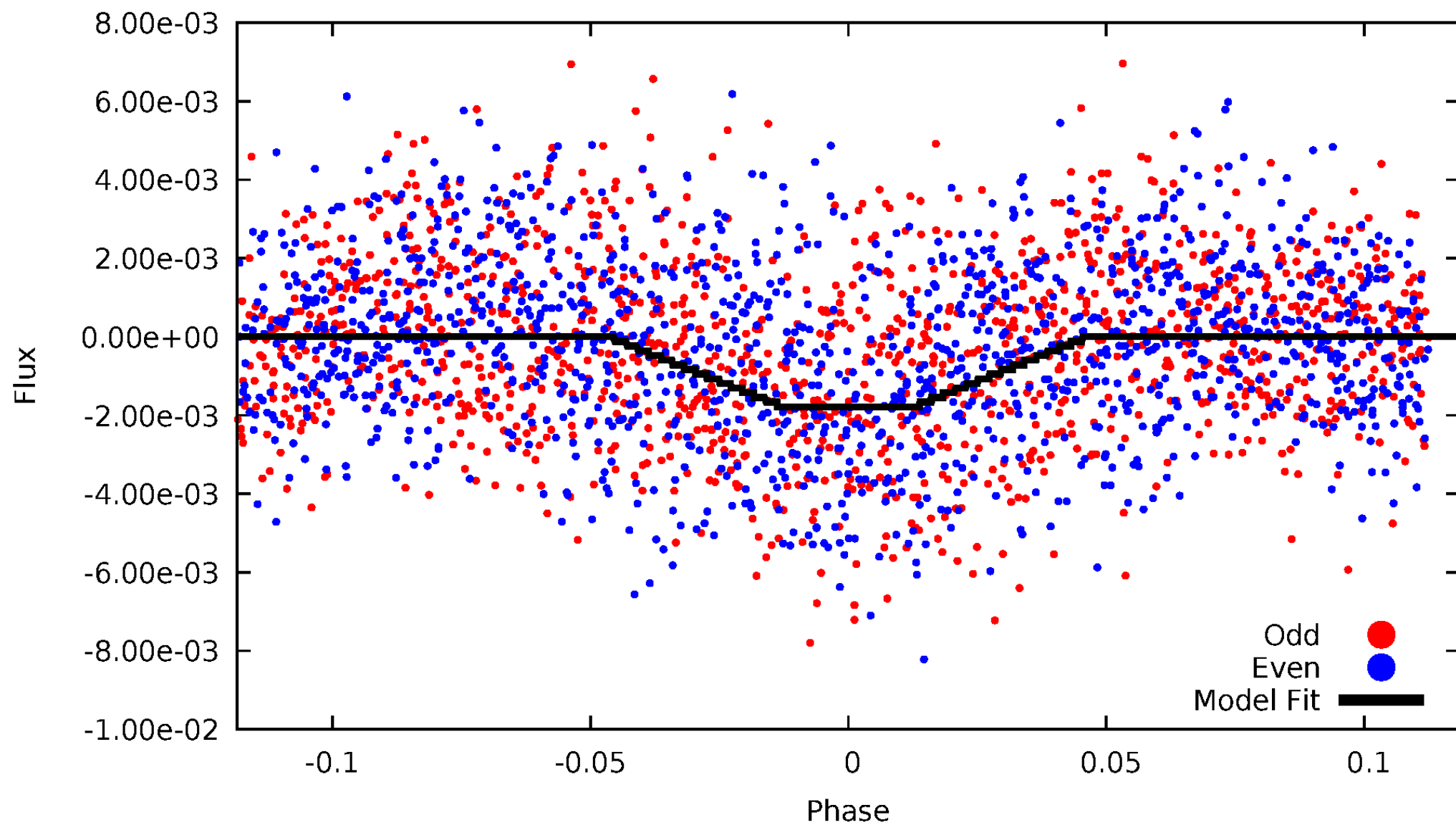
DV Odd/Even

TCE 003634384-04



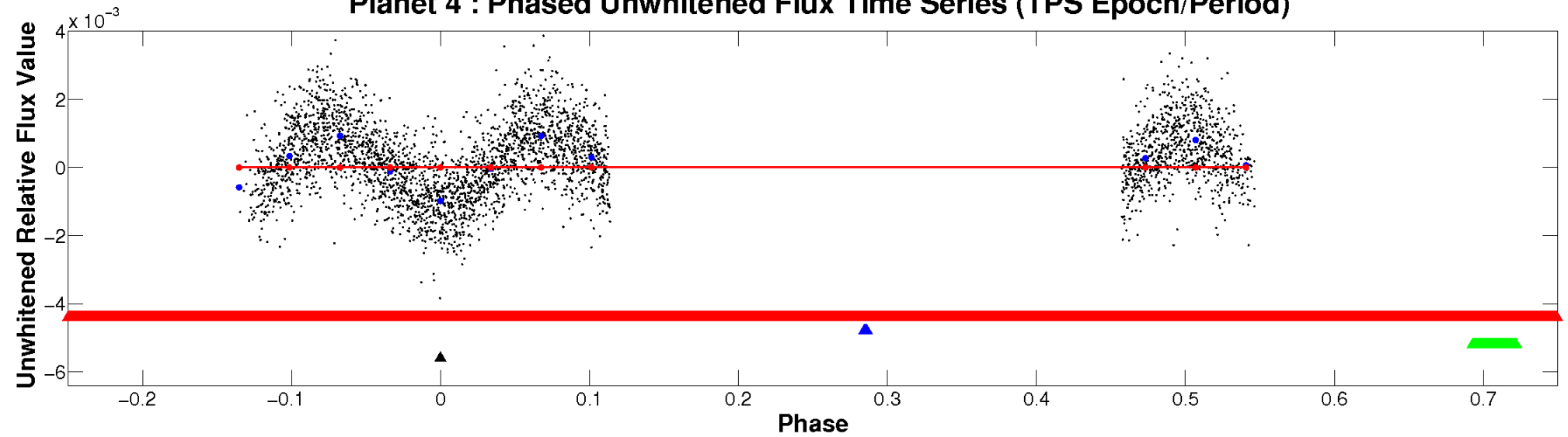
ALT Odd/Even

TCE 003634384-04

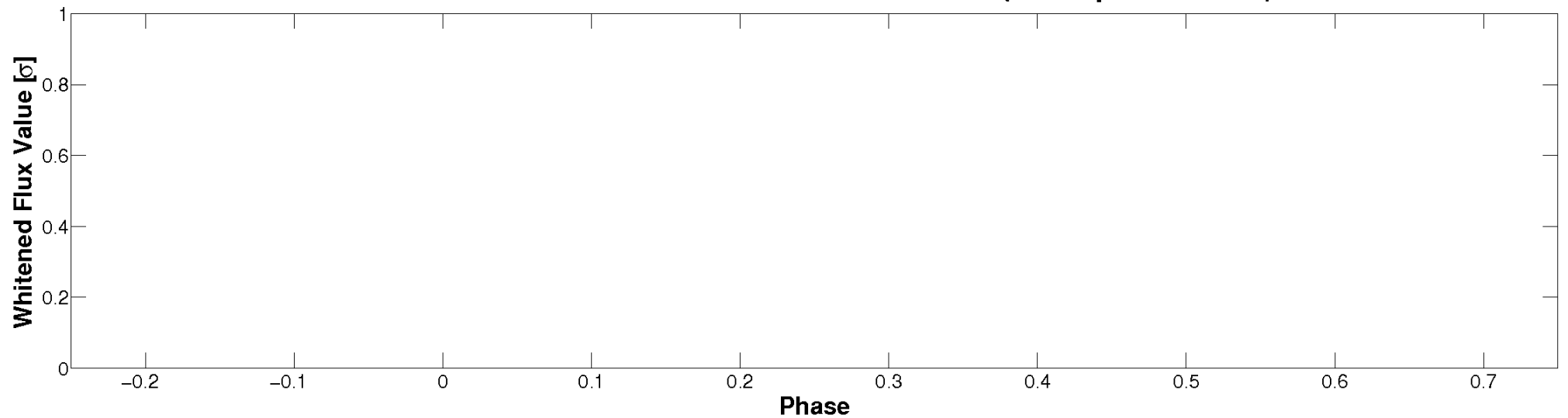


Non-Whitened Vs. Whitened Light Curve

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

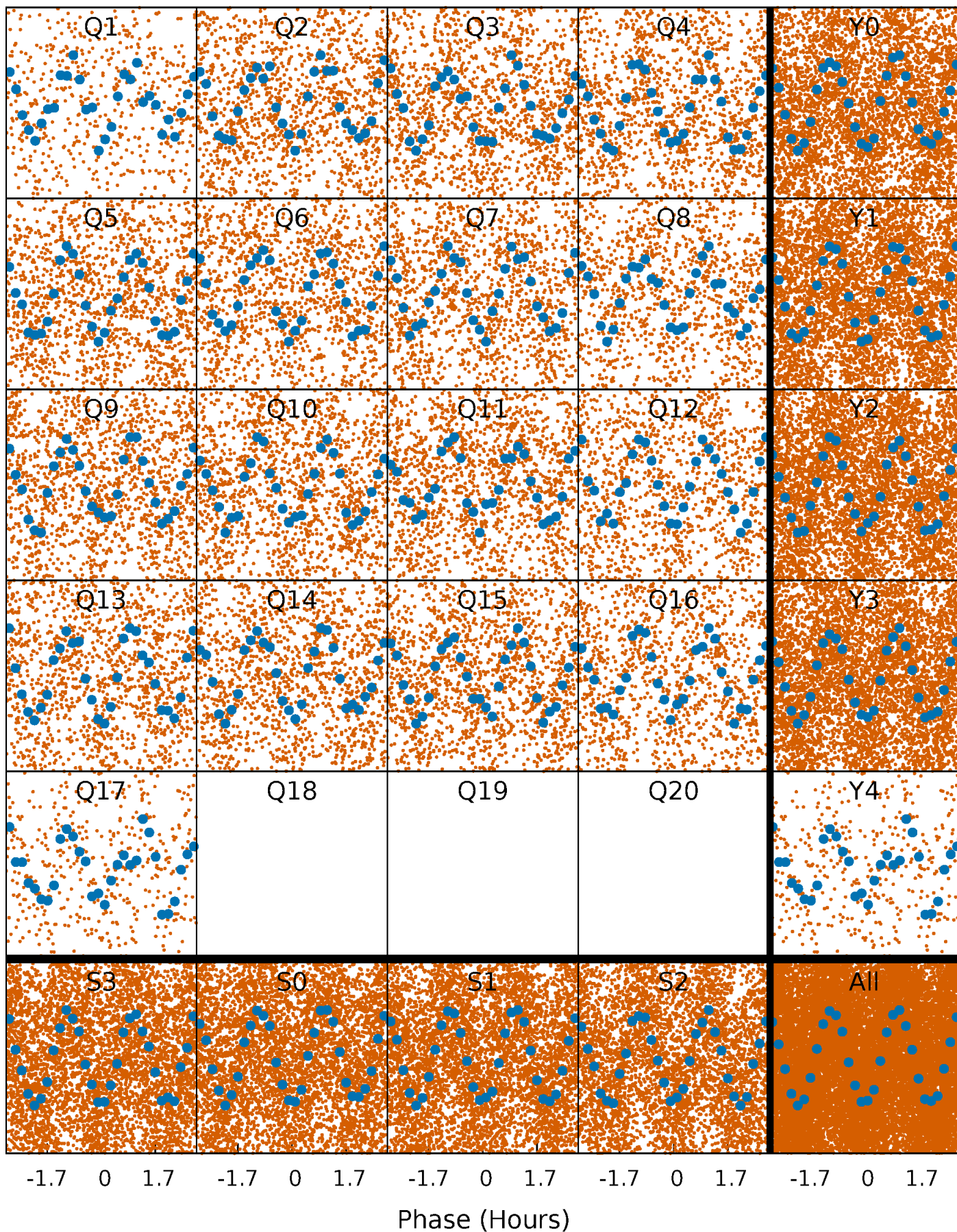


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



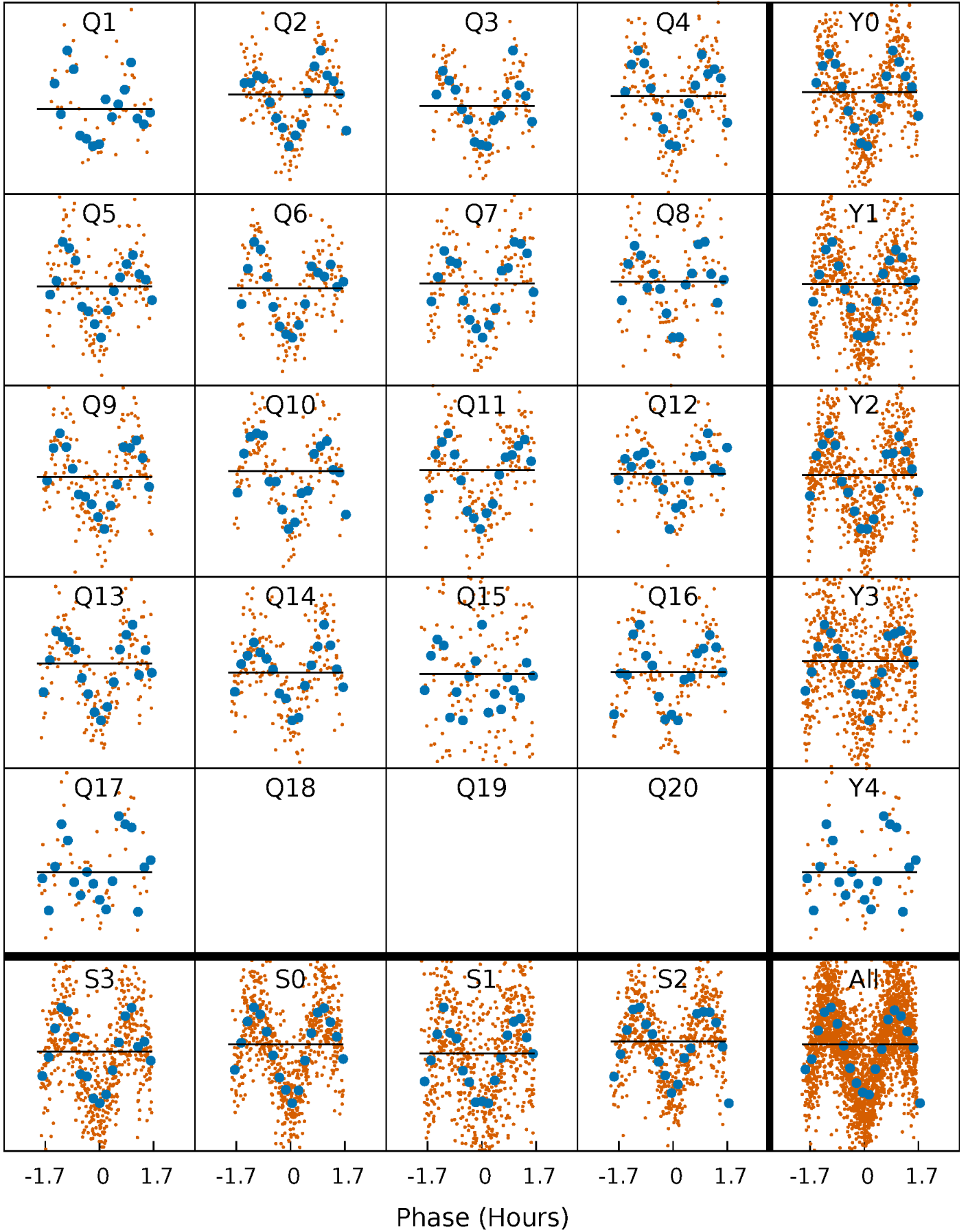
PDC Quarter-Phased Transit Curves

TCE 003634384-04 $P = 0.604616$ Days $T_0 = 131.520369$ (BKJD)



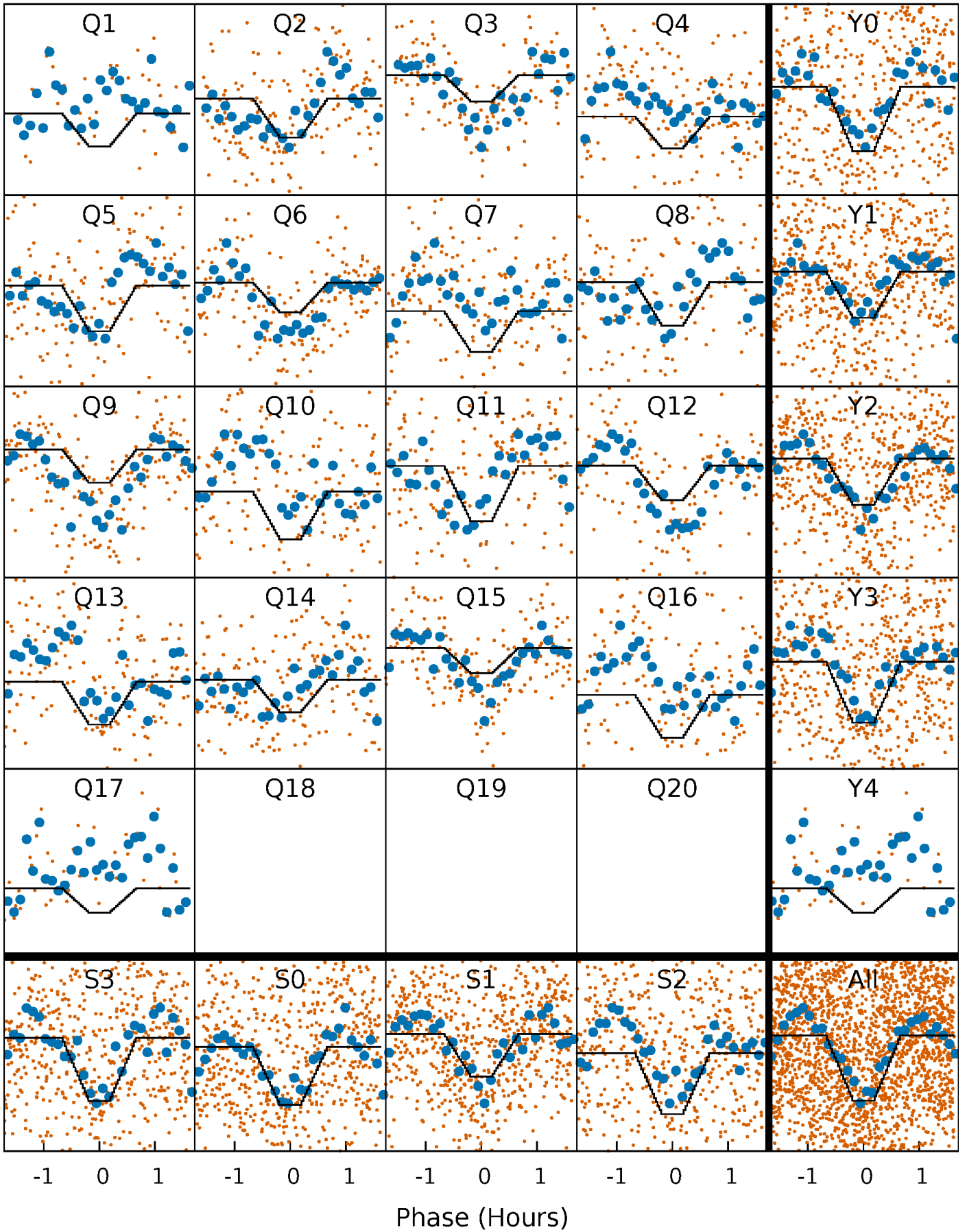
DV Quarter-Phased Transit Curves

TCE 003634384-04 P= 0.604616 Days $T_0=131.520369$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

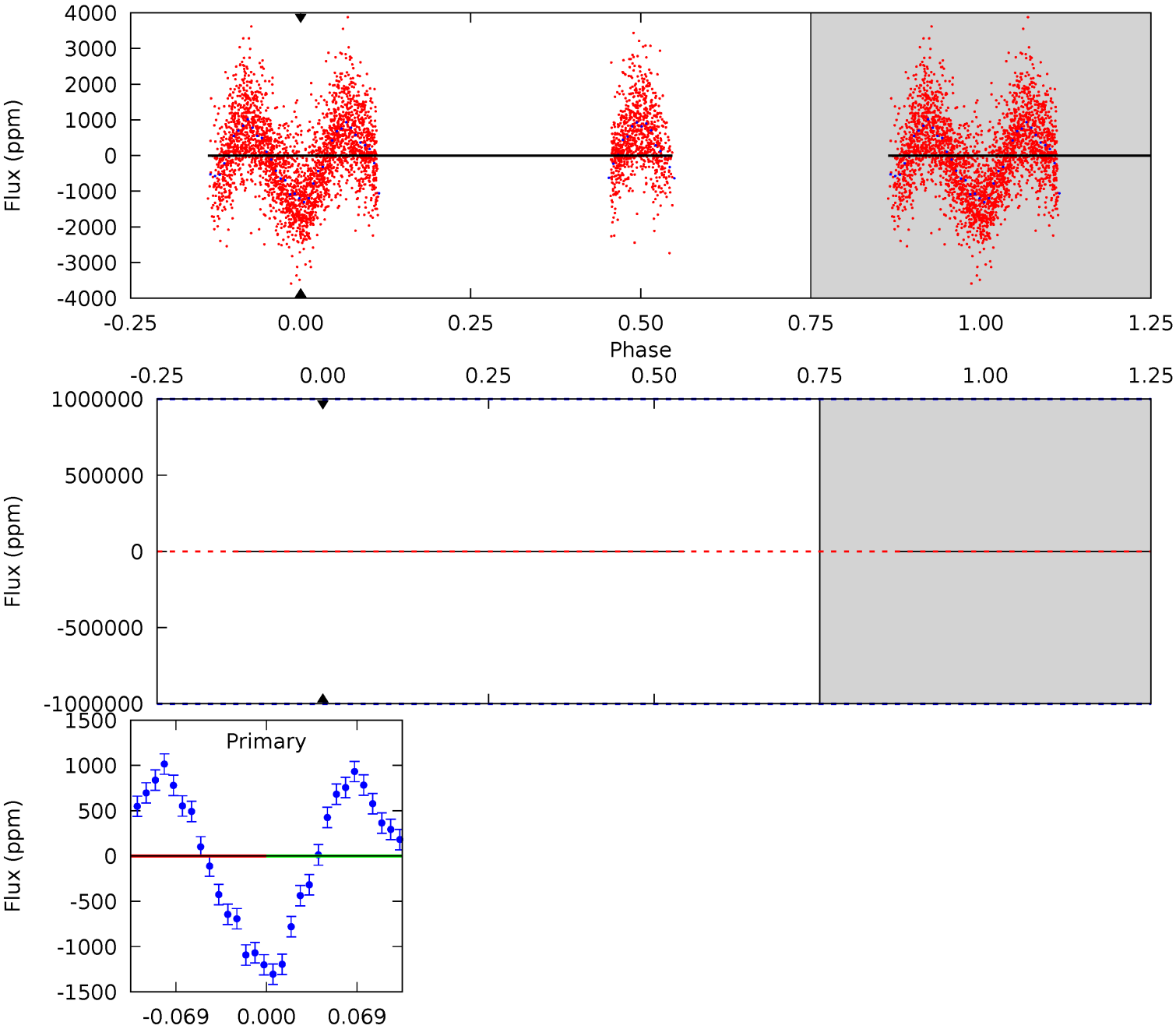
TCE 003634384-04 P= 0.604616 Days $T_0=131.521228$ (BKJD)



DV Model-Shift Uniqueness Test

003634384-04, P = 0.604616 Days, E = 131.520369 Days

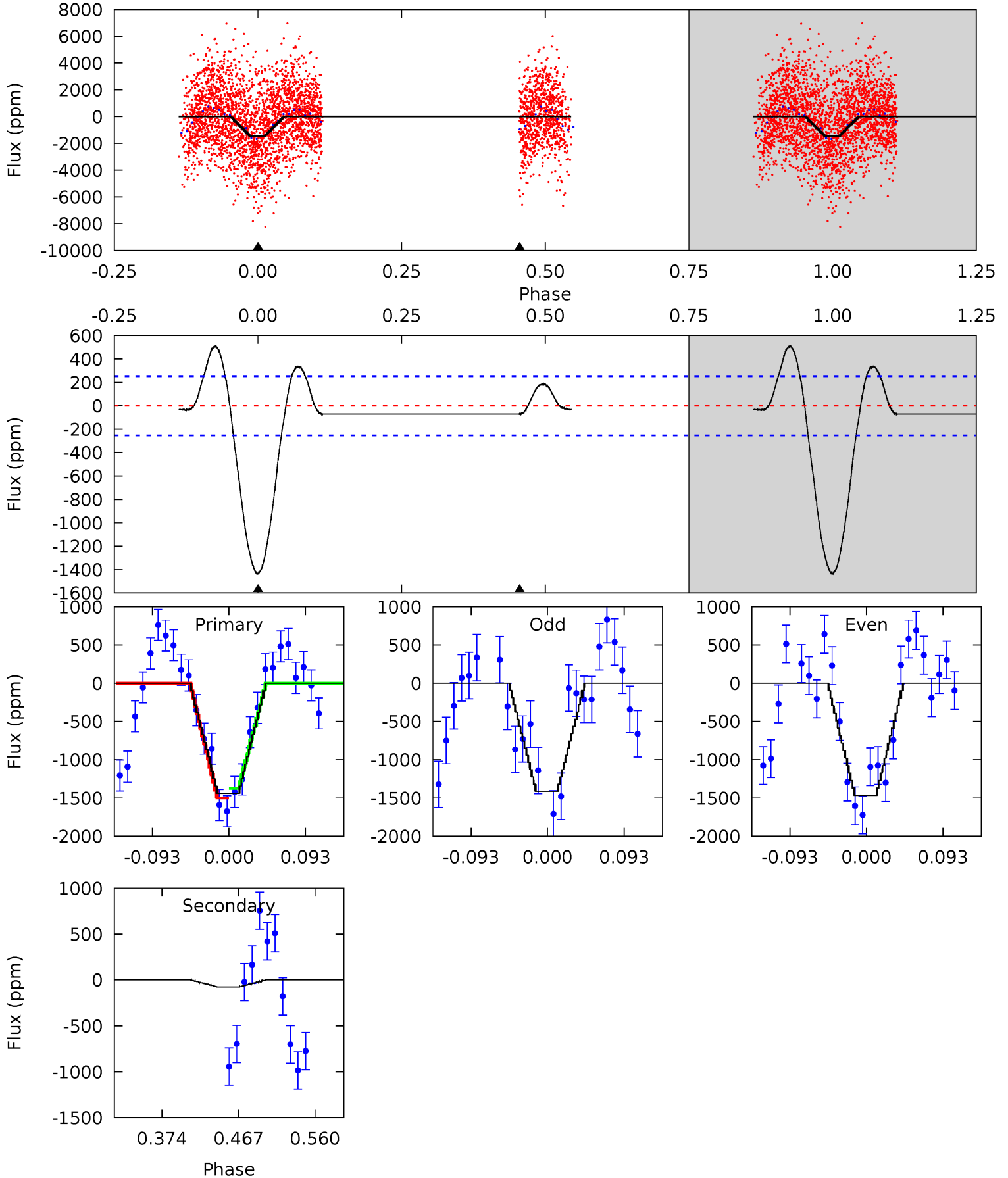
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003634384-04, P = 0.604616 Days, E = 131.521228 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.0	1.38	0	0	4.58	1.68	1.64	26.0	26.0	1.38	1.38	0.49	1.01	0.26	1.11



Stellar Parameters For KIC 003634384

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7698^{+211}_{-316}	$3.834^{+0.330}_{-0.110}$	$-0.060^{+0.200}_{-0.350}$	$2.797^{+0.377}_{-1.132}$	$1.948^{+0.083}_{-0.471}$	$0.126^{+0.340}_{-0.035}$
	+3%/-4%	+9%/-3%	+333%/-583%	+13%/-40%	+4%/-24%	+271%/-28%
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 003634384-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$20.04^{+20.59}_{-13.45}$	5933^{+341}_{-544}	5372^{+39028}_{-40613}	$0.766^{+69.187}_{-53.913}$
Alt.	-77 ± 55	$22.86^{+24.79}_{-16.04}$	5920^{+391}_{-598}	-4678^{+1193}_{-378}	$0.018^{+0.216}_{-0.016}$

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

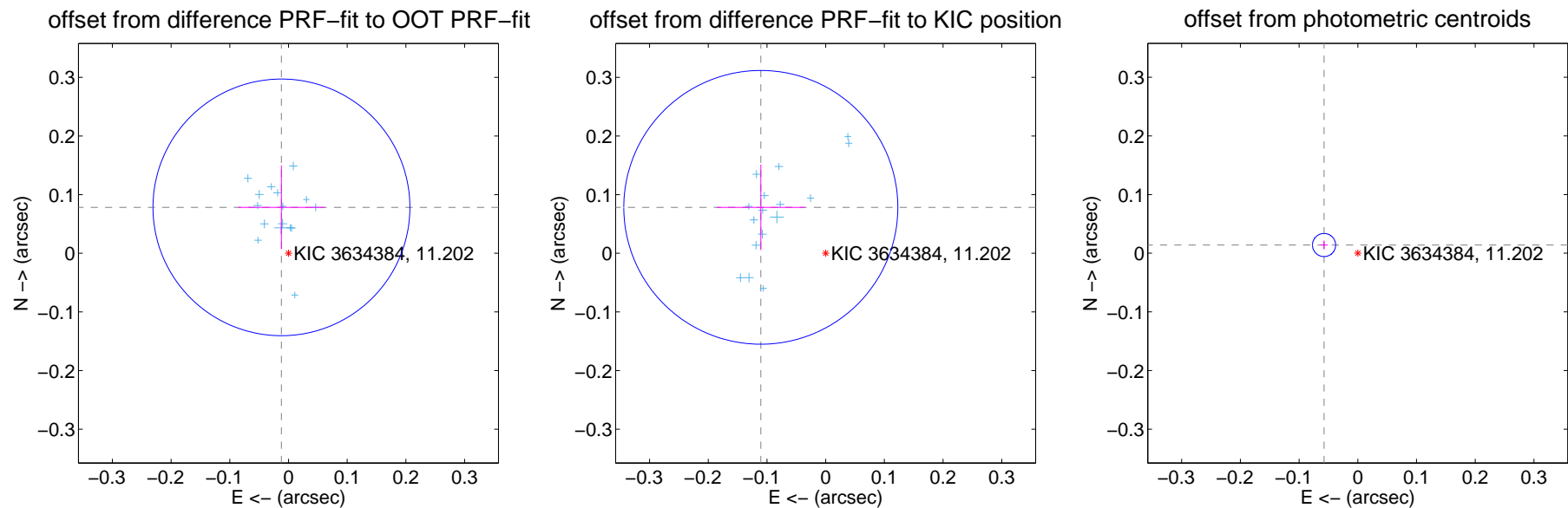
DV Centroid Data

Supplemental centroid analysis for 003634384-04. **Kepler magnitude: 11.20.** Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

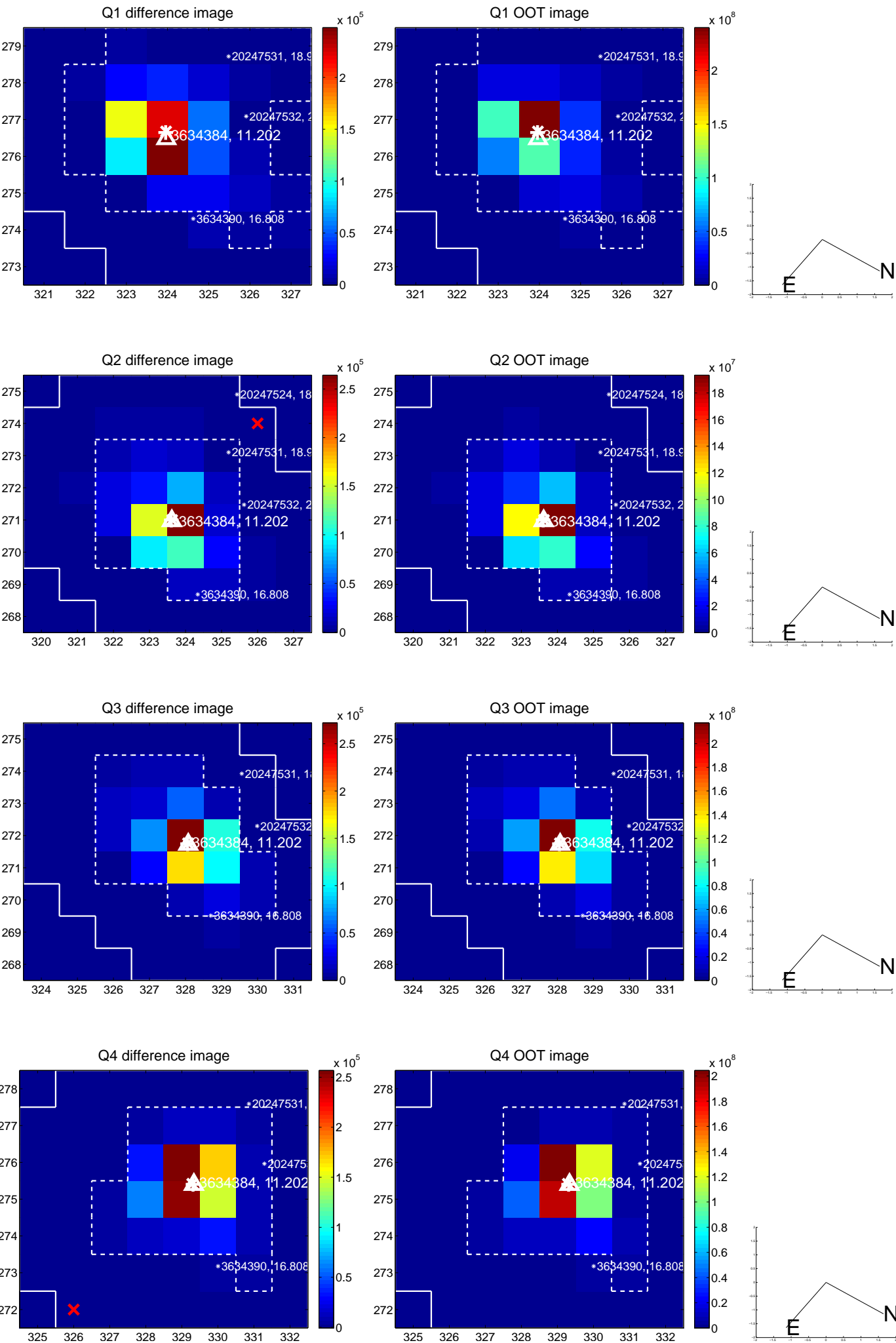
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.079 ± 0.073	1.09	0.012 ± 0.074	0.078 ± 0.071
PRF-fit source offset from KIC position	0.135 ± 0.078	1.74	0.110 ± 0.075	0.078 ± 0.073
photometric centroid source offset	0.06 ± 0.01	9.00	0.06 ± 0.01	0.01 ± 0.01

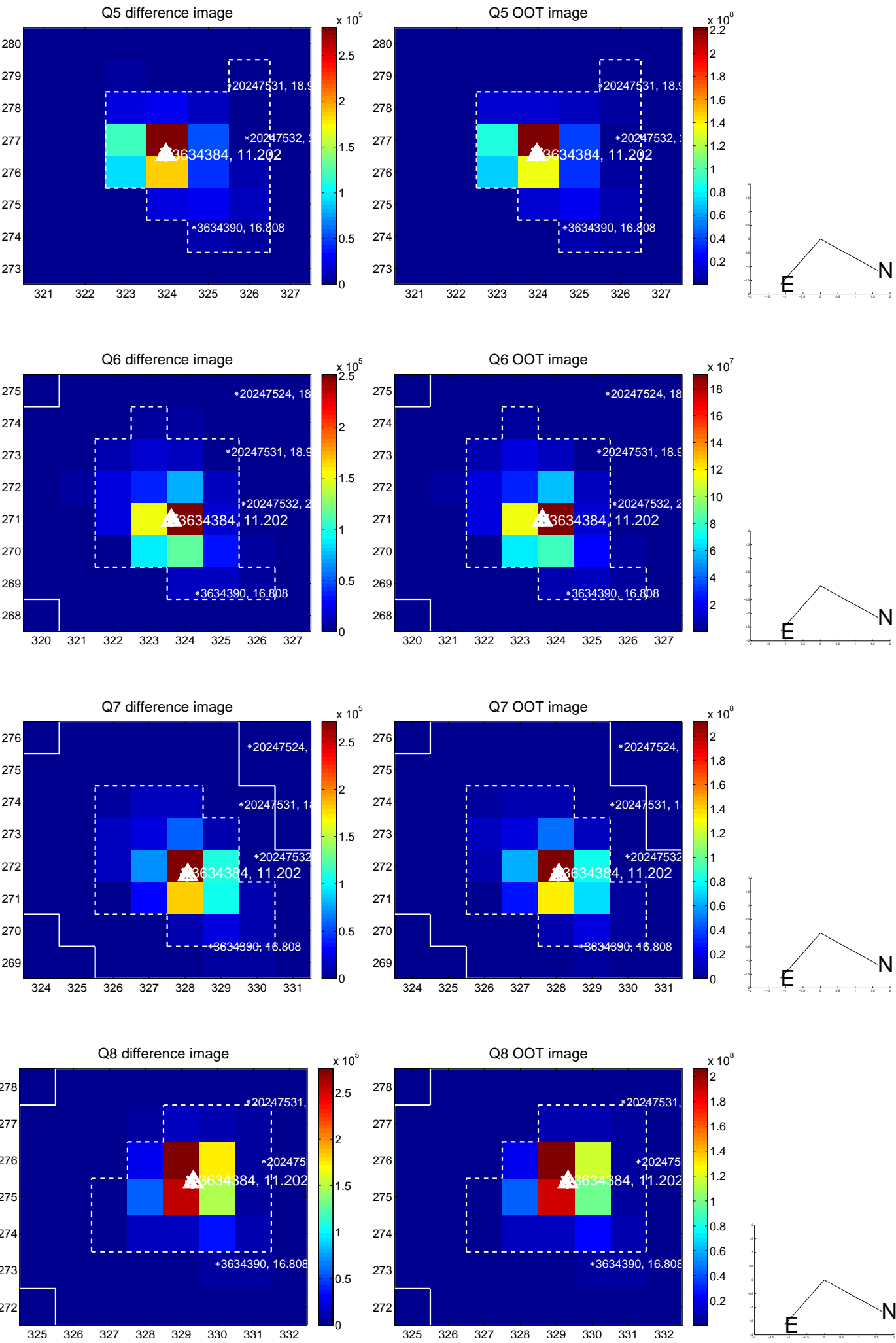


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

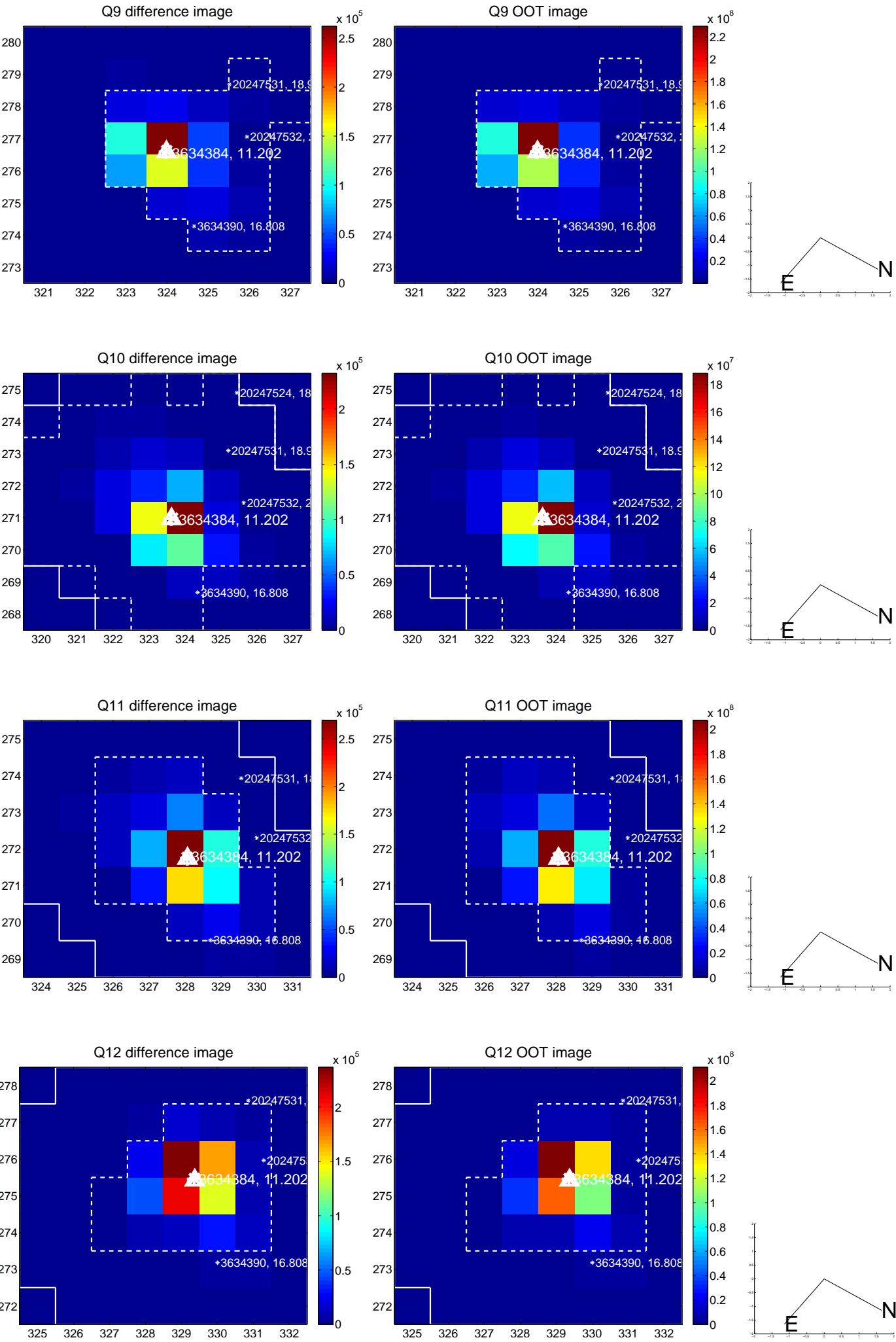
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



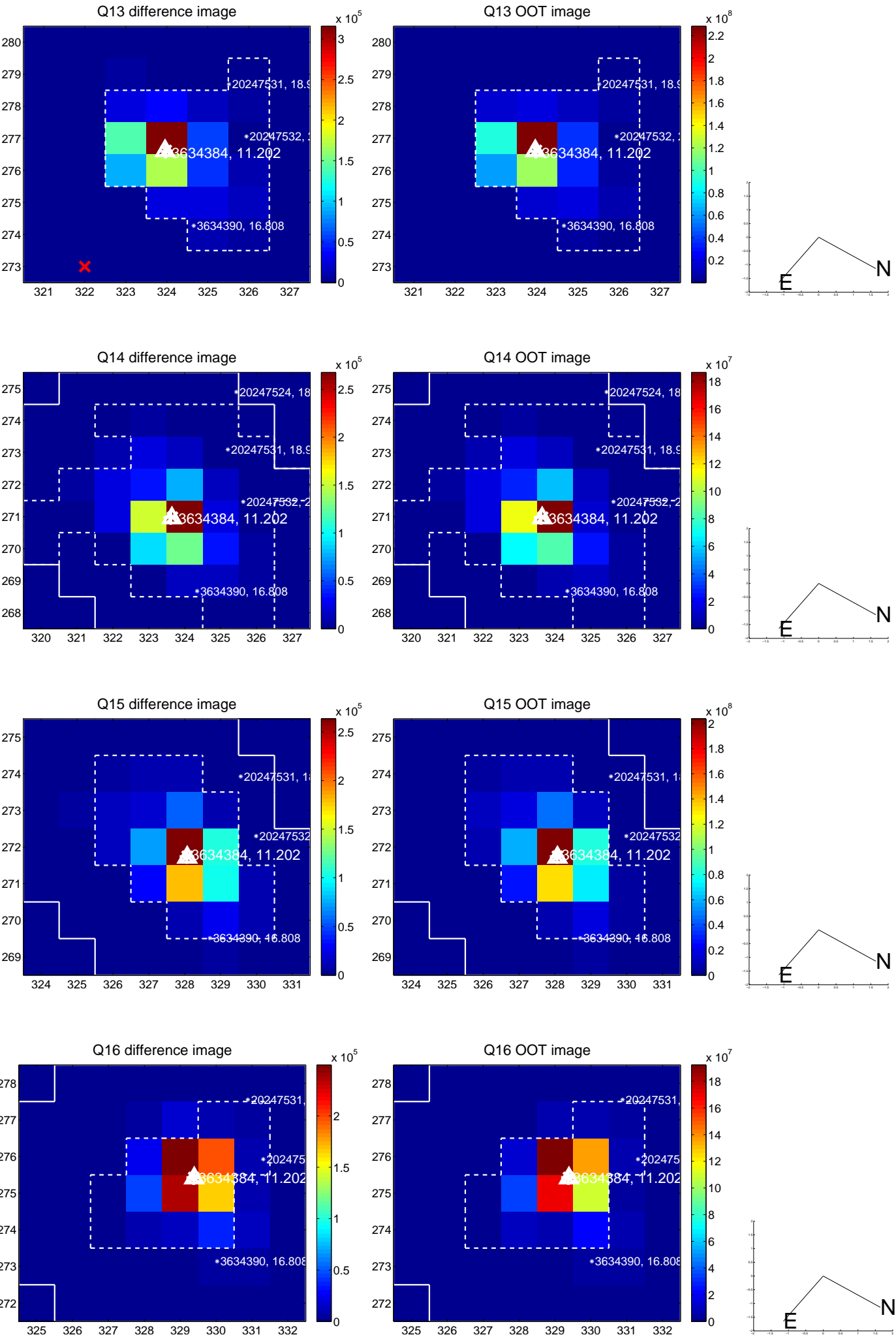
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



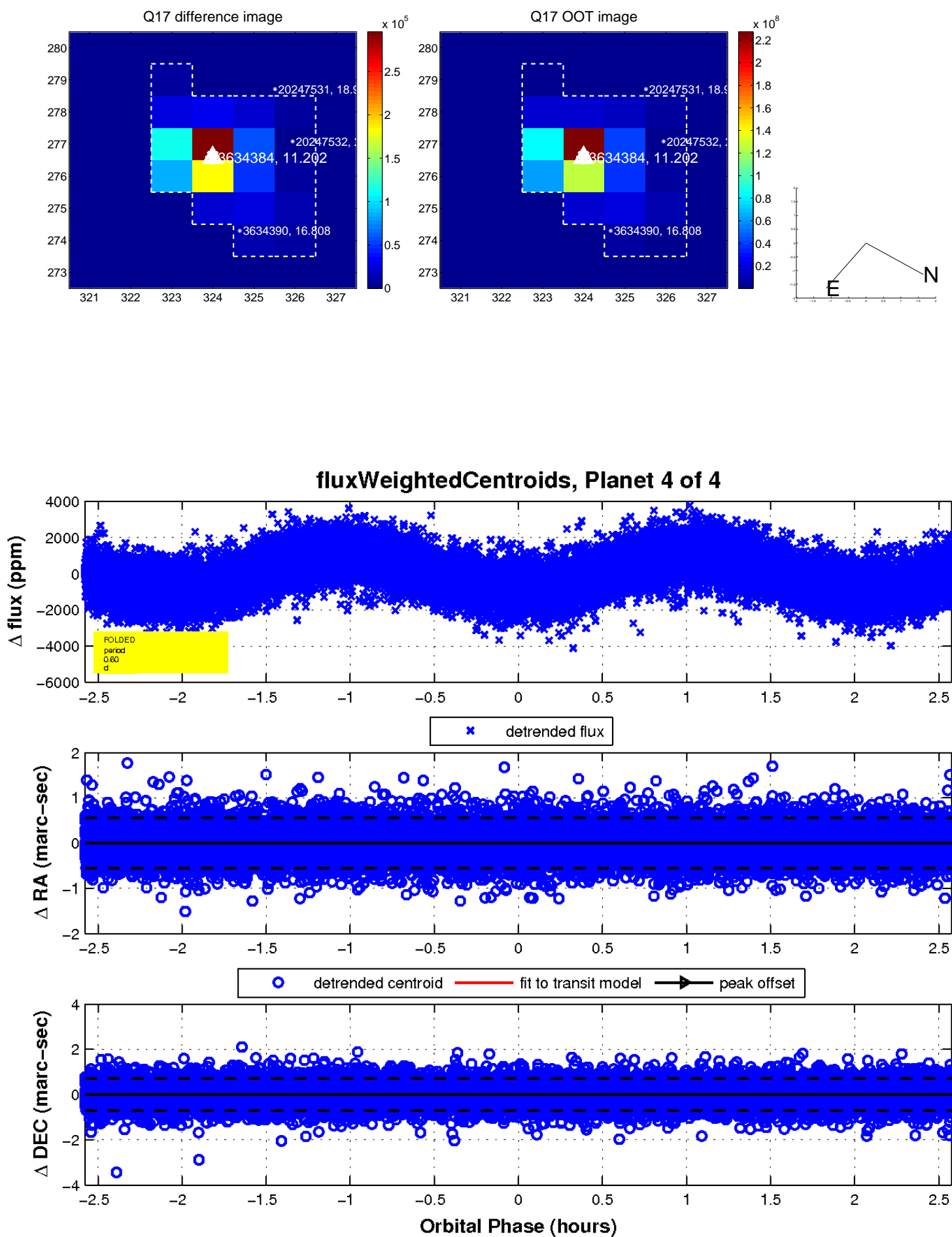
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

