

KIC 010713398

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})
010713398-01	OBS	No	1.316428	132.786891	173.2	4.719	10.2	9.6	1.65	7153	2.52	8507.42
010713398-02	OBS	No	1.316449	132.326460	197.2	4.707	8.2	10.8	1.65	7153	2.69	8507.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010713398-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
010713398-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

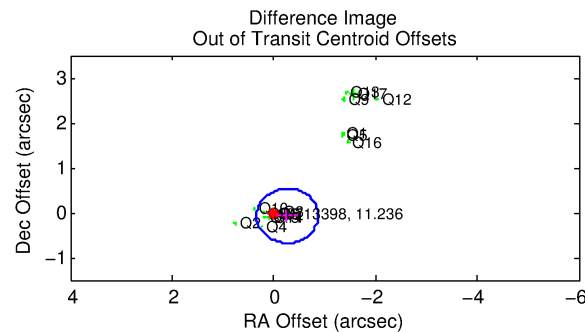
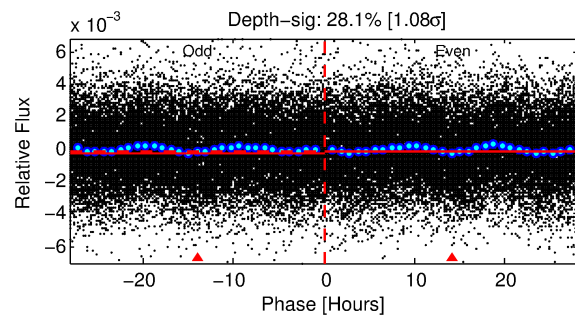
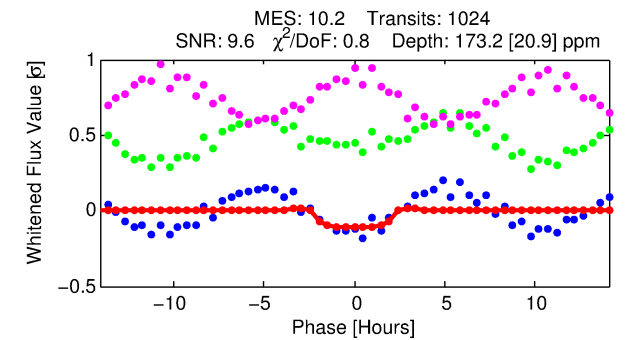
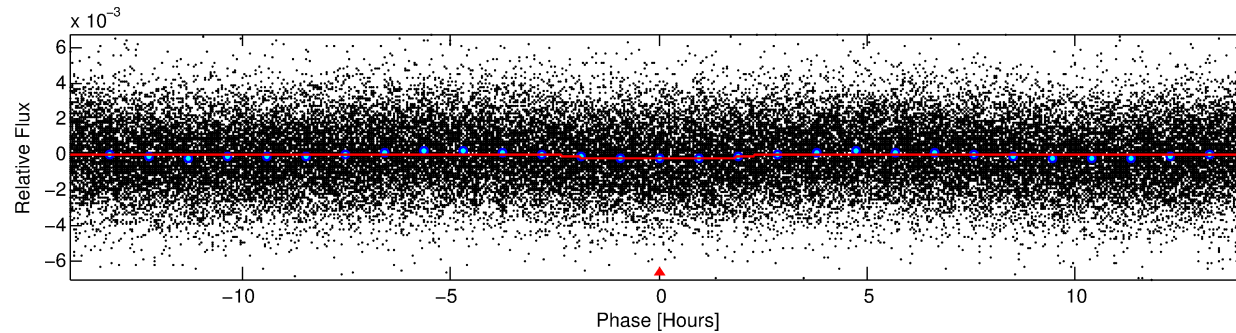
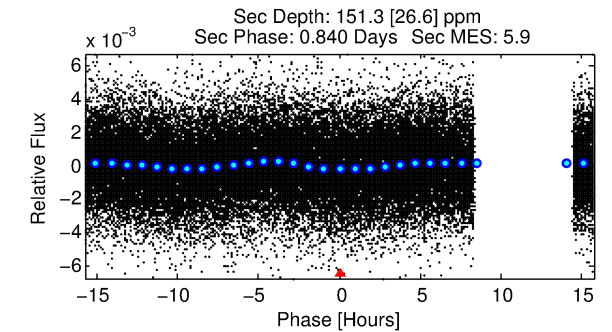
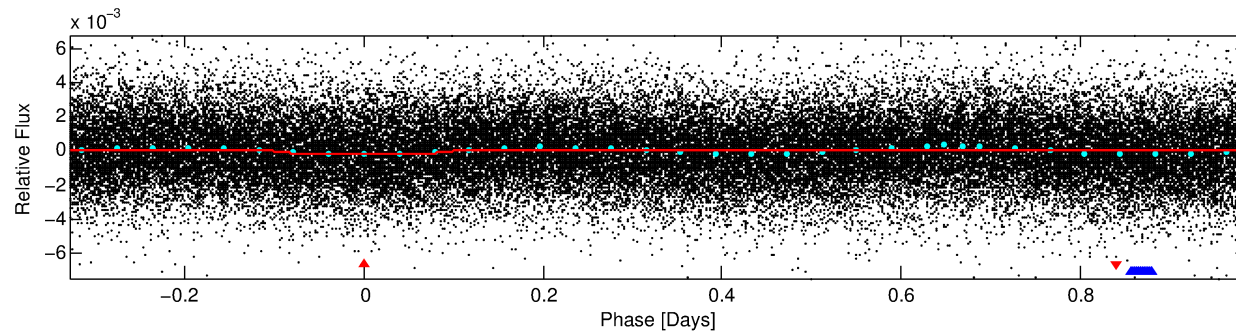
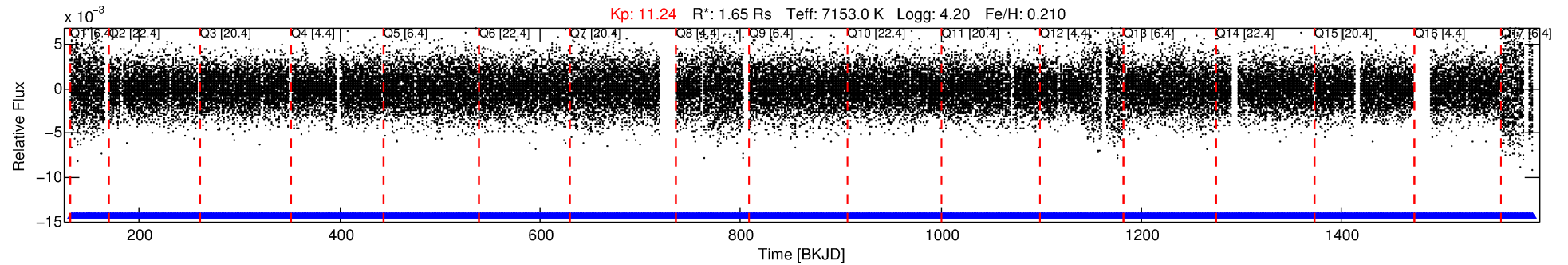
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010713398-01

No Significant Match Found

DV One-Page Summary

KIC: 10713398 Candidate: 1 of 2 Period: 1.316 d



DV Fit Results:

Period = 1.31643 [0.00002] d
Epoch = 132.7869 [0.0060] BKJD
Rp/R* = 0.0140 [0.0052]
a/R* = 1.37 [1.48]
b = 0.90 [0.50]
Seff = 8507.42 [3636.62]
T_{eq} = 2449 [262] K
Rp = 2.52 [1.27] Re
a = 0.0274 [0.0075] AU
Ag = 9.85 [8.48] [1.04σ]
T_{effp} = 6708 [1328] K [3.15σ]

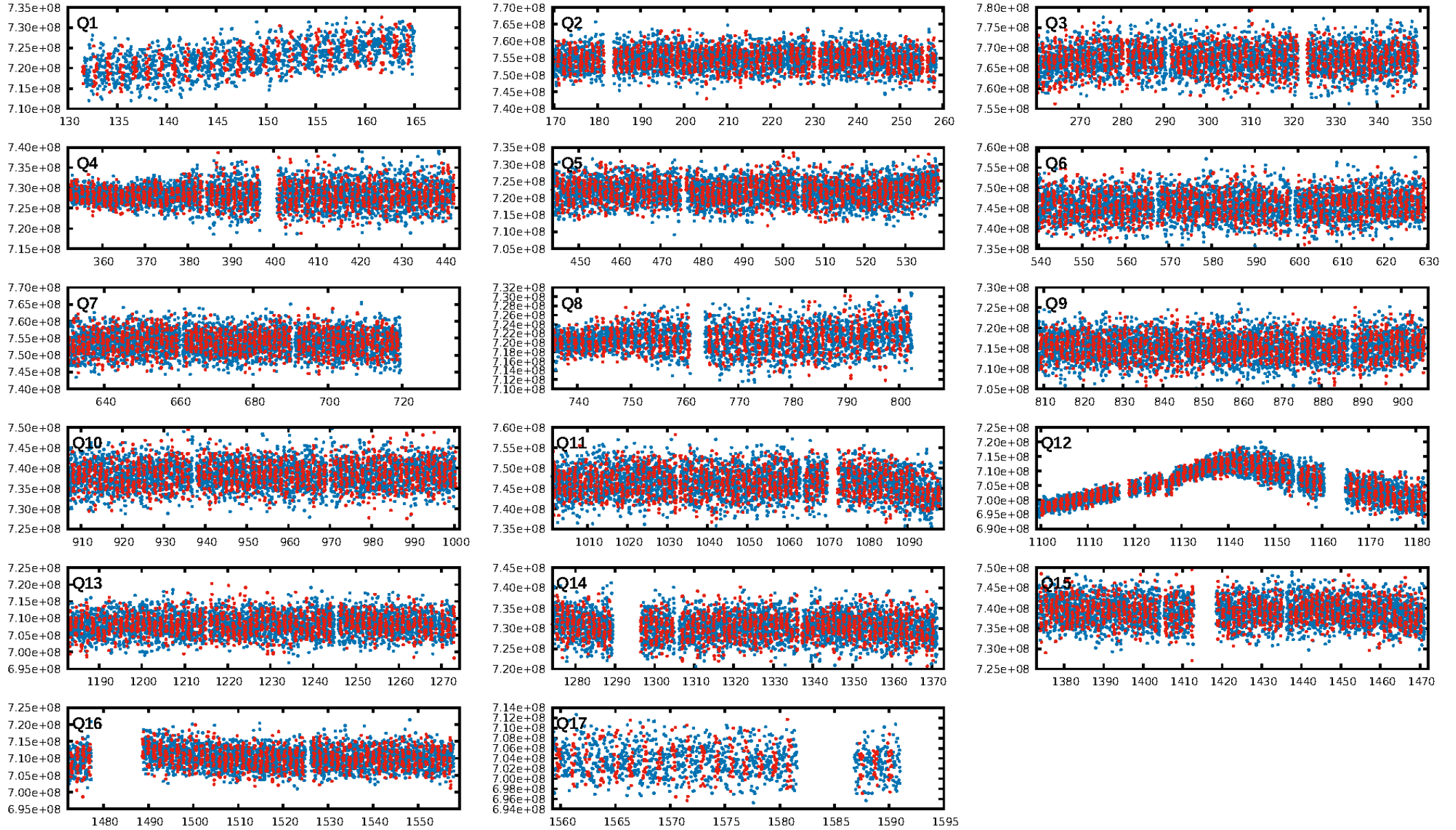
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.83e-16
RollingBand-fgt: 1.00 [978/978]
GhostDiagnostic-chr: 0.9931
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.274 arcsec [1.36σ]
KicOffset-rm: 0.268 arcsec [1.37σ]
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]

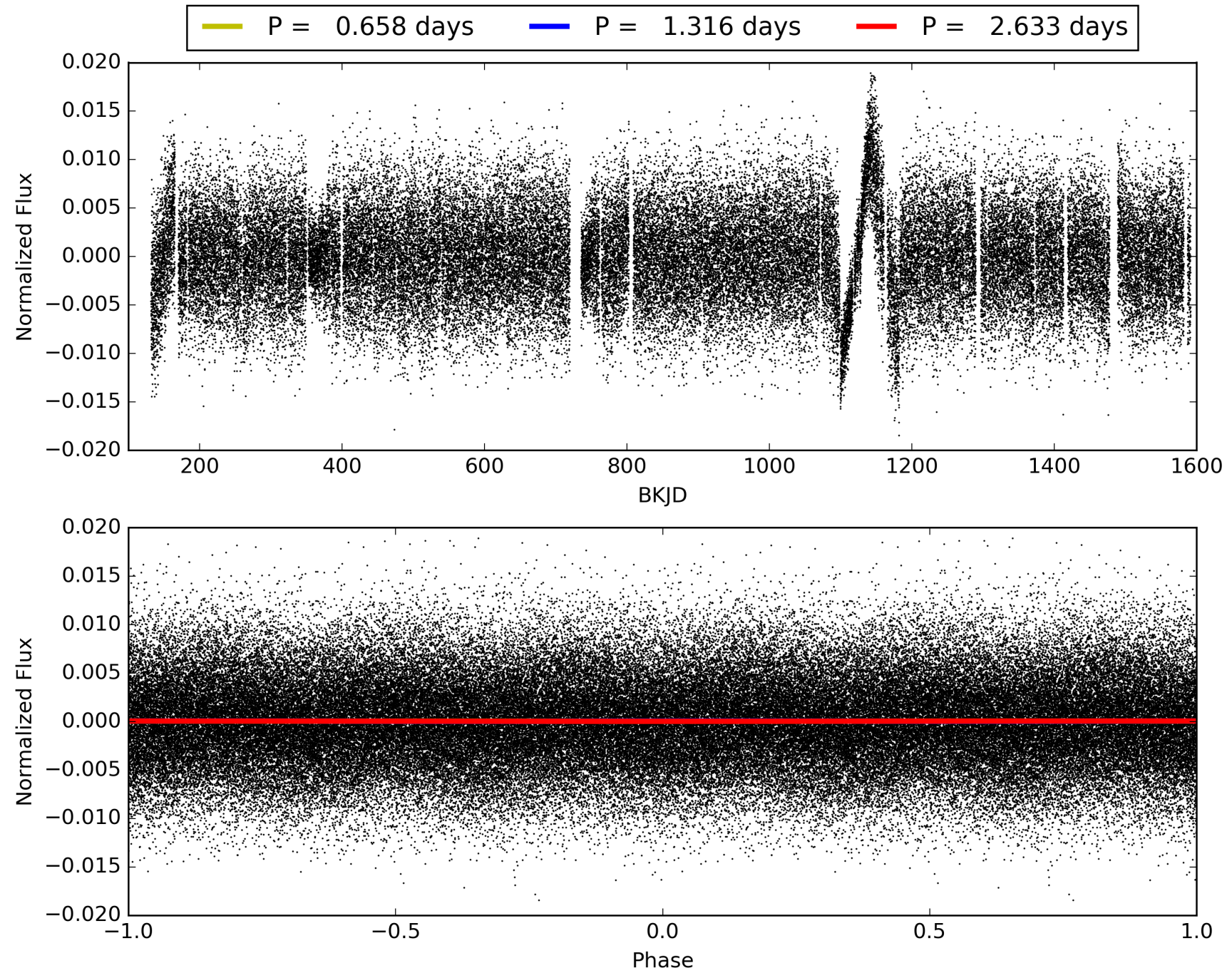
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:42:13 Z

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

TCE 010713398-01, PDC Light Curves

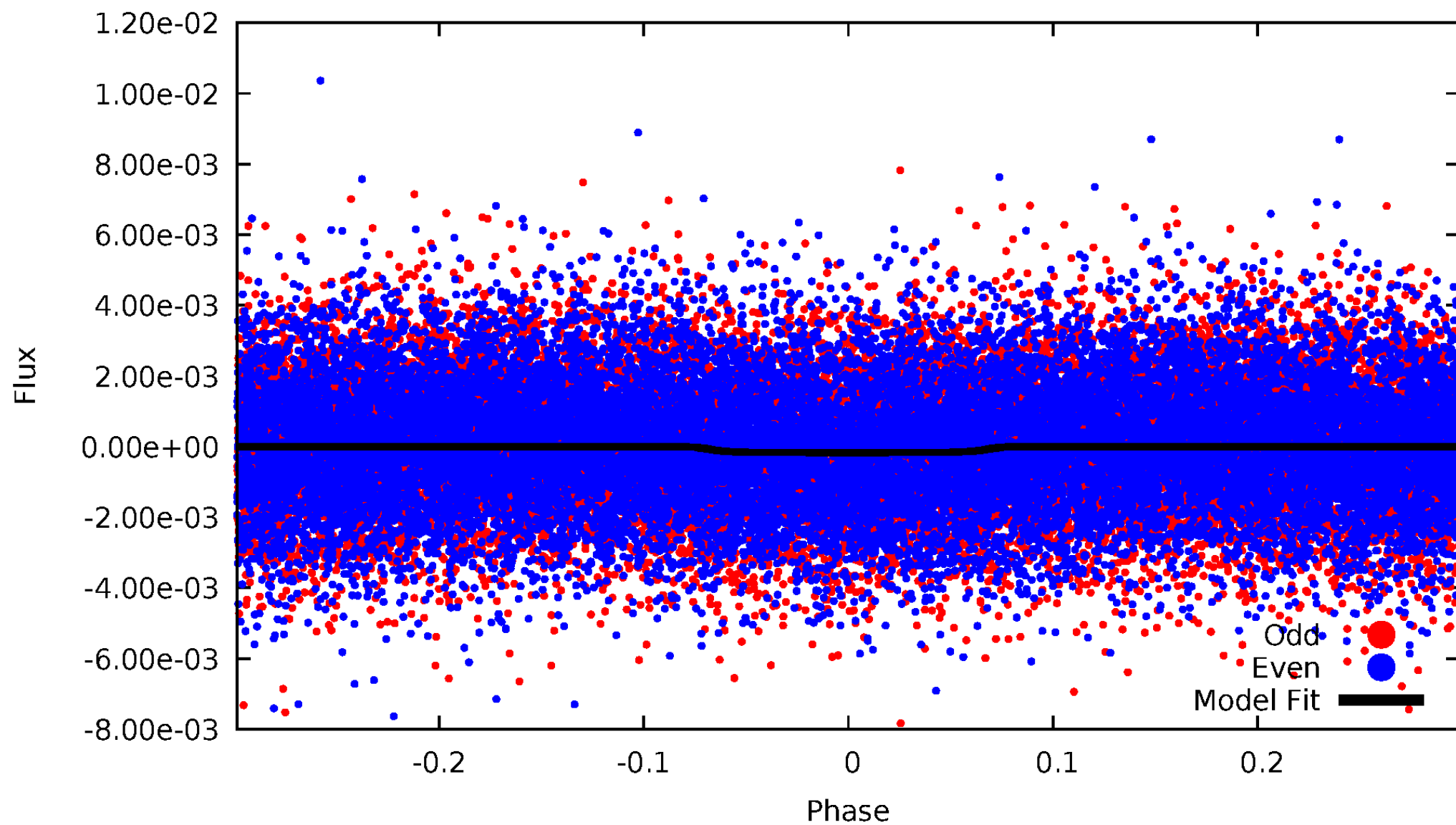


TCE 010713398-01



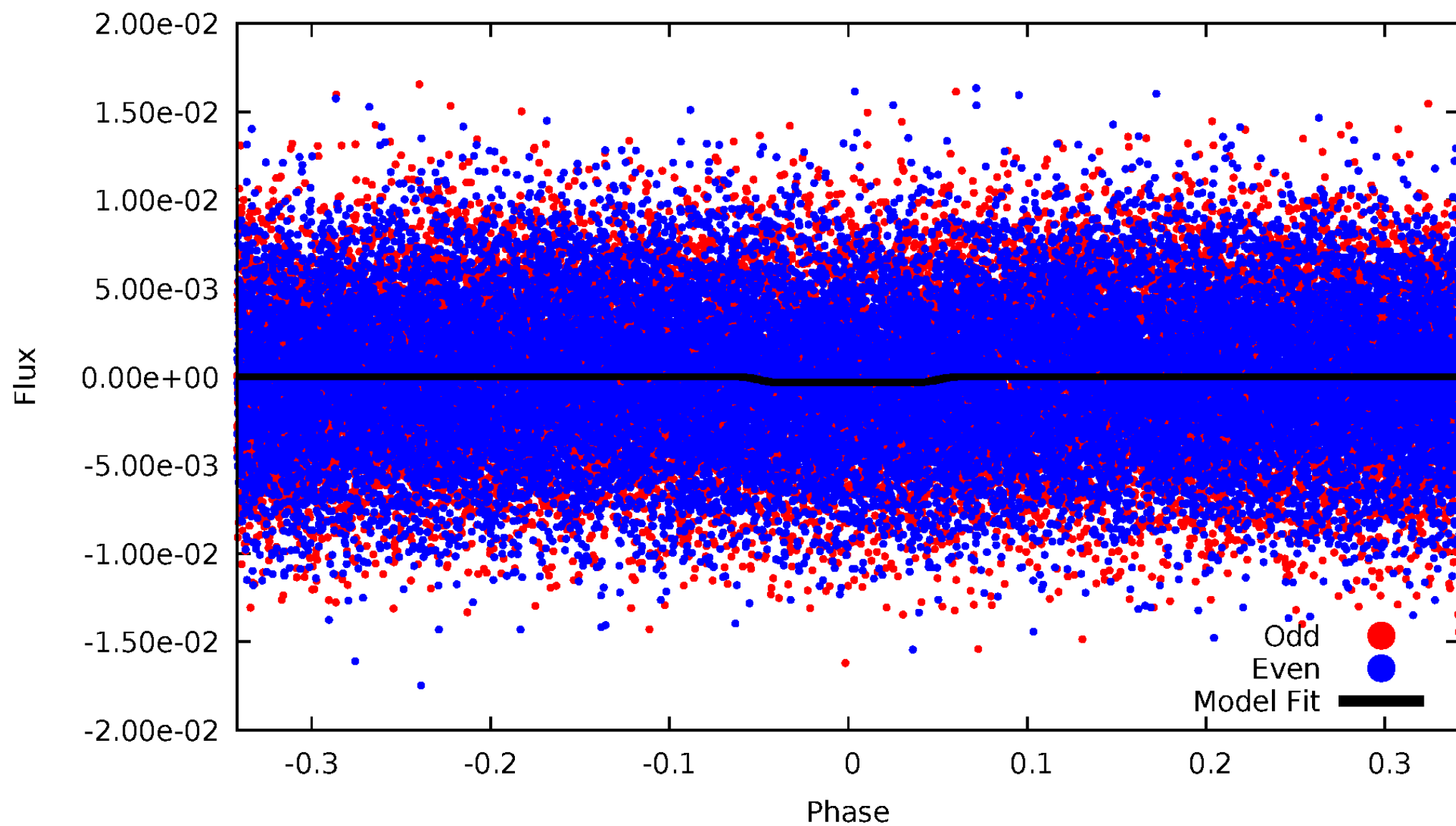
DV Odd/Even

TCE 010713398-01



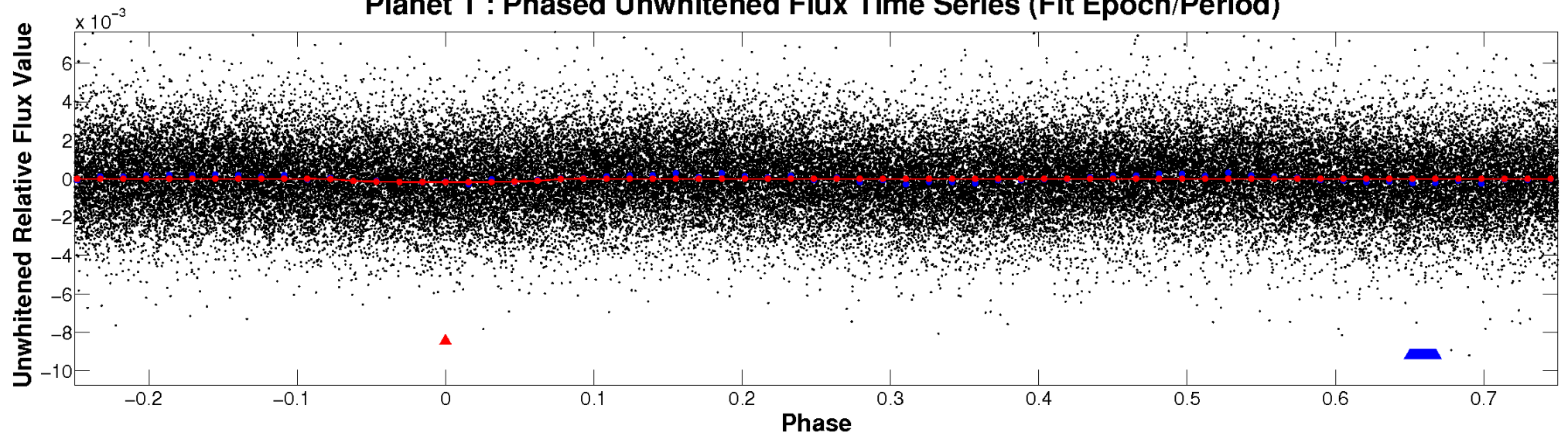
ALT Odd/Even

TCE 010713398-01

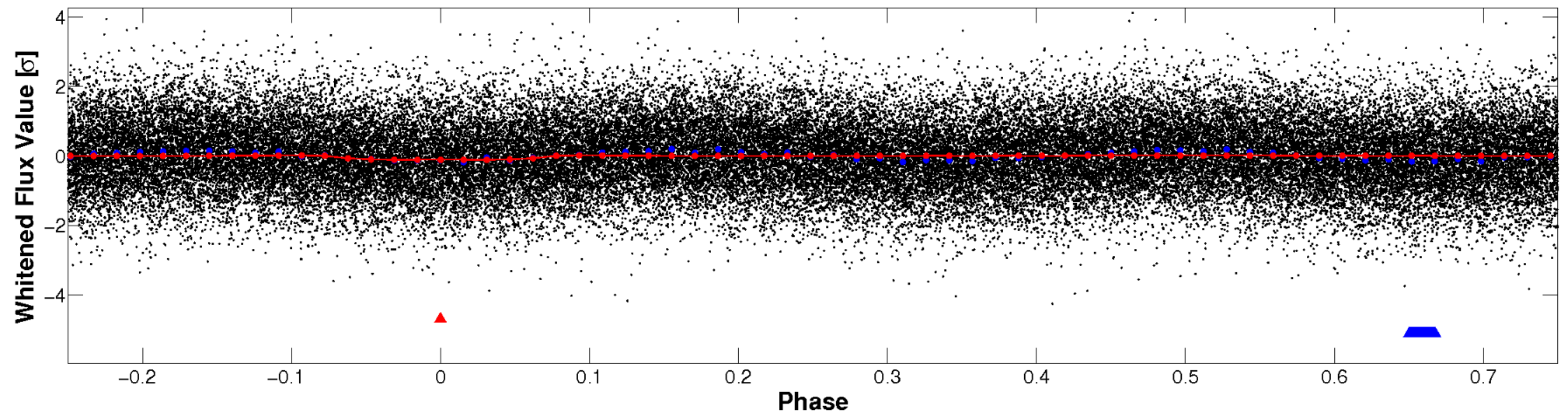


Non-Whitened Vs. Whitened Light Curve

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

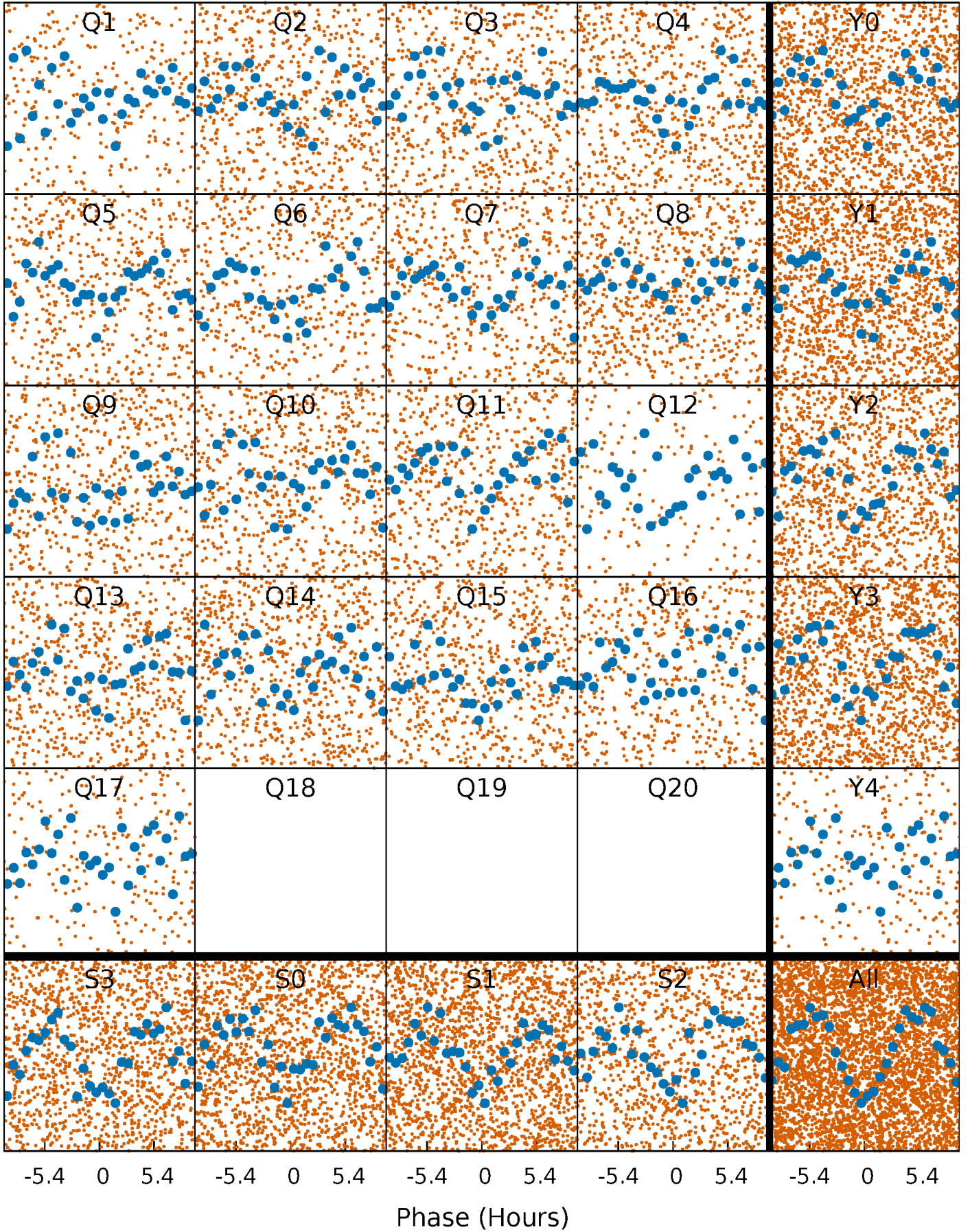


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



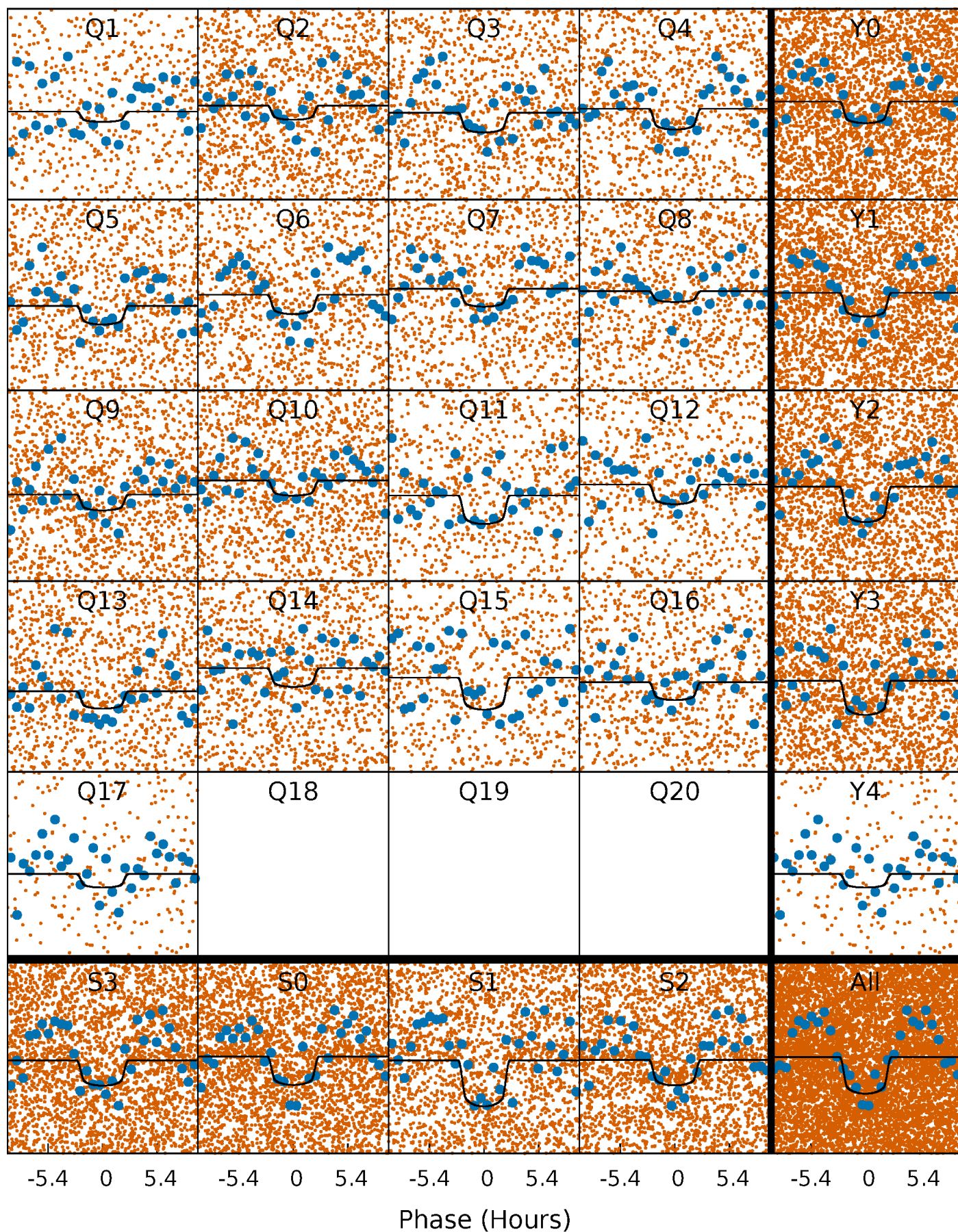
PDC Quarter-Phased Transit Curves

TCE 010713398-01 P= 1.316428 Days $T_0=132.786891$ (BKJD)



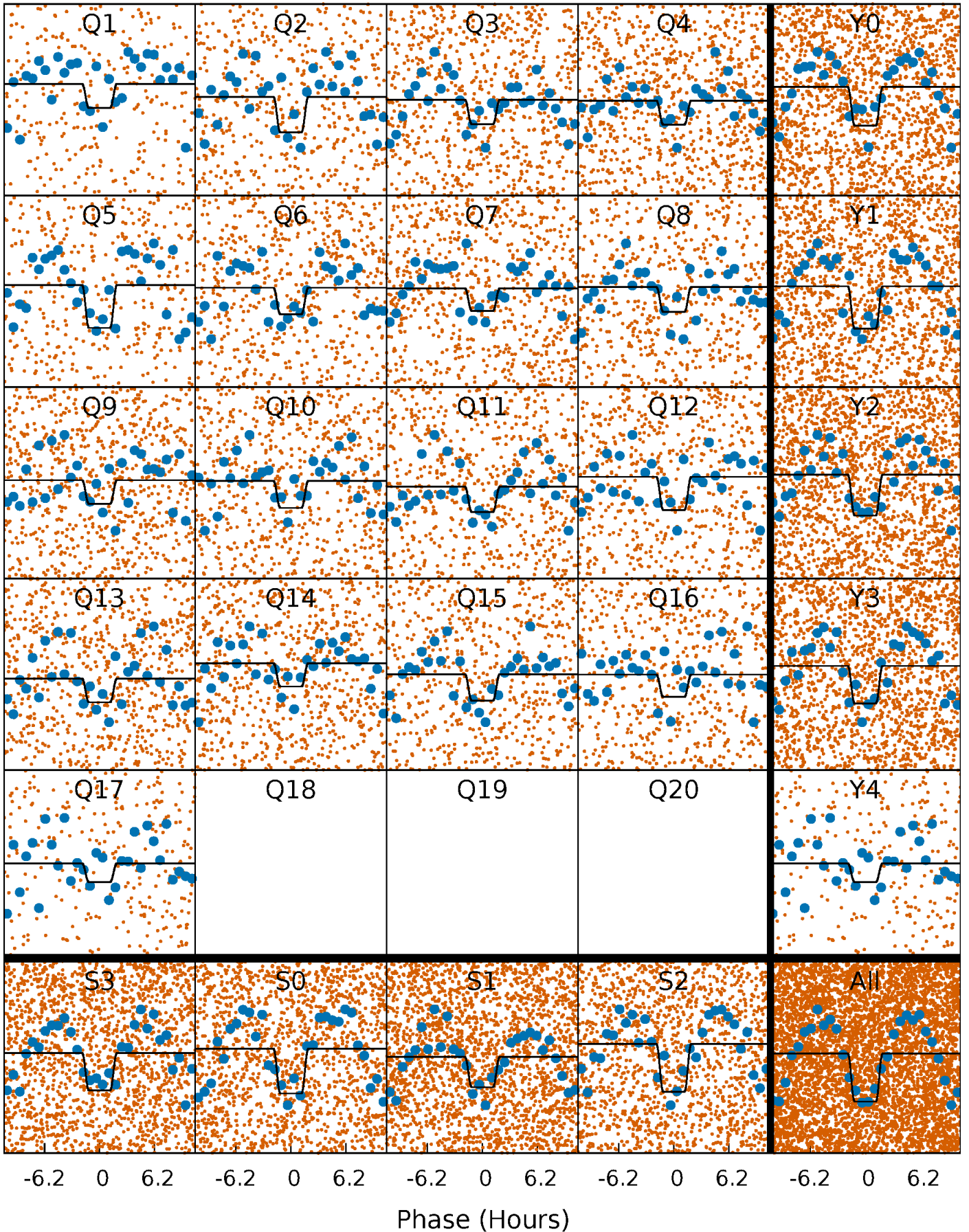
DV Quarter-Phased Transit Curves

TCE 010713398-01 P= 1.316428 Days $T_0=132.786891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

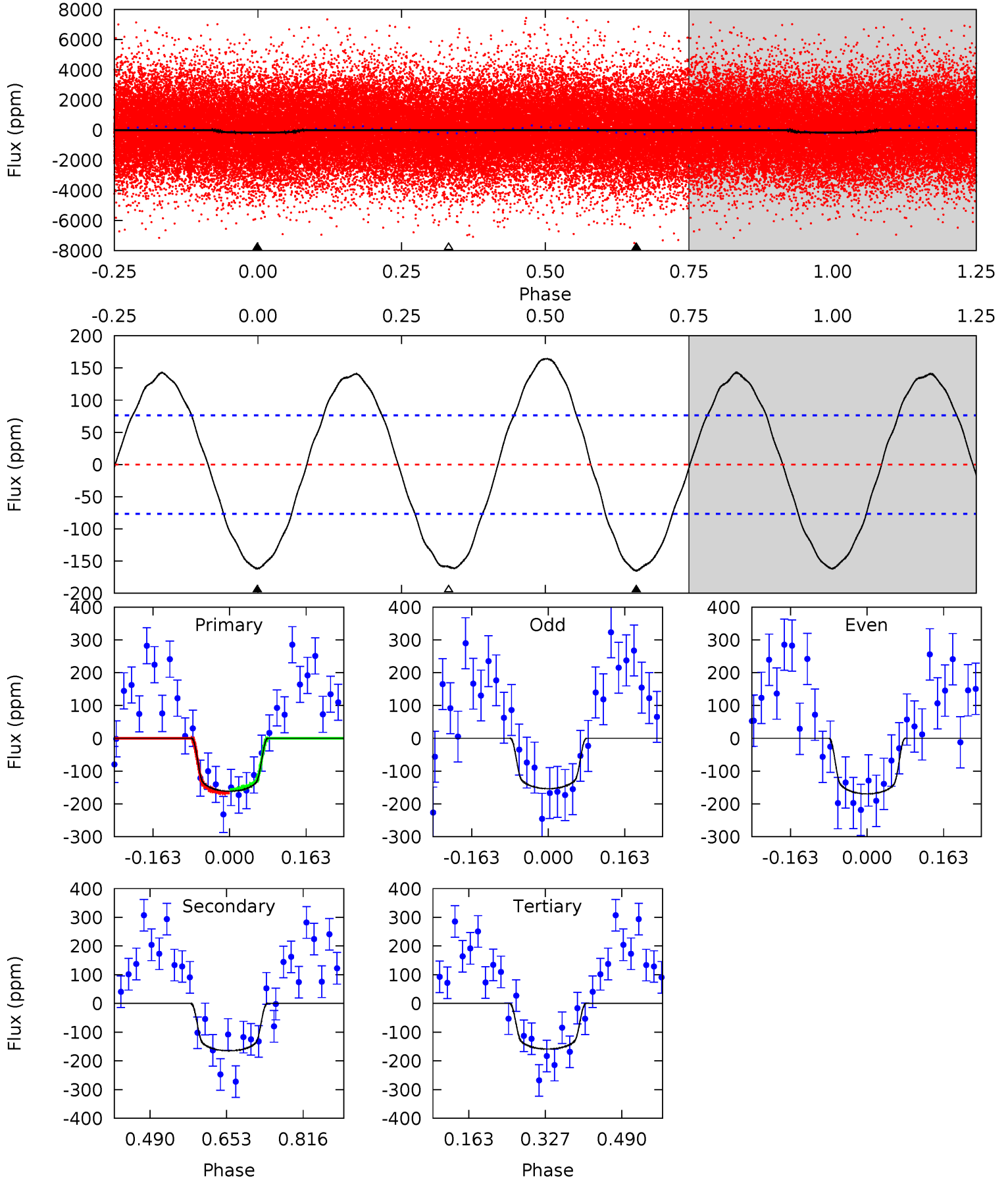
TCE 010713398-01 P= 1.316426 Days $T_0=132.787247$ (BKJD)



DV Model-Shift Uniqueness Test

010713398-01, P = 1.316428 Days, E = 131.470463 Days

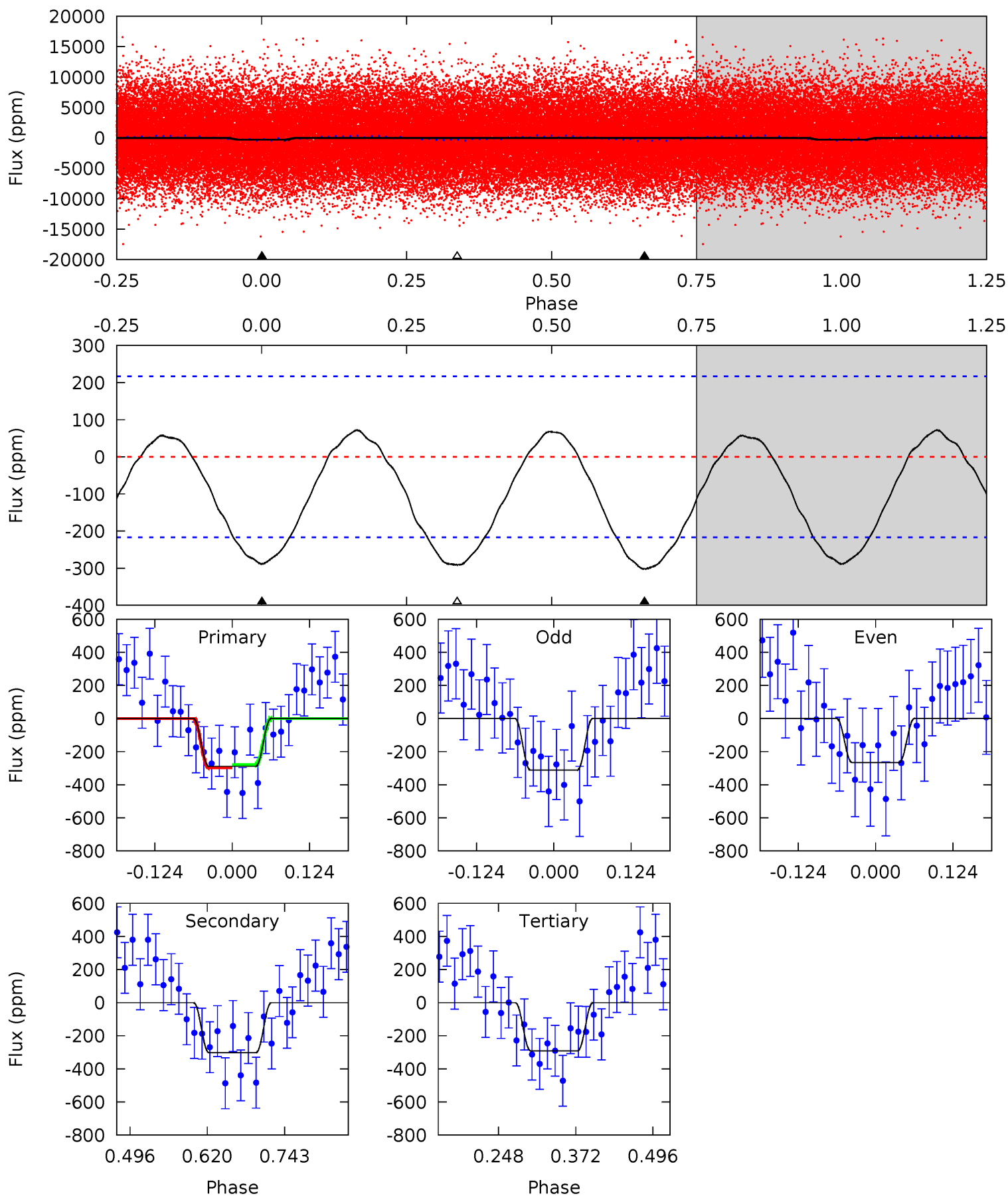
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.41	9.60	9.24	0	4.46	1.39	6.50	0.16	9.41	0.36	9.60	0.47	1.05	0.50	0.32



Alt Model-Shift Uniqueness Test

010713398-01, P = 1.316426 Days, E = 131.470821 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.01	6.30	6.07	0	4.52	1.54	2.63	-0.05	6.01	0.23	6.30	0.48	0.91	0.19	0.20



Stellar Parameters For KIC 010713398

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7153^{+195}_{-335}	$4.202^{+0.073}_{-0.203}$	$0.210^{+0.150}_{-0.350}$	$1.649^{+0.556}_{-0.238}$	$1.579^{+0.214}_{-0.214}$	$0.496^{+0.197}_{-0.270}$
	+3%/-5%	+2%/-5%	+71%/-167%	+34%/-14%	+14%/-14%	+40%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 010713398-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-165 ± 17	$2.58^{+1.09}_{-1.02}$	3471^{+254}_{-191}	6759^{+2478}_{-1123}	$9.939^{+18.689}_{-5.007}$
Alt.	-302 ± 48	$3.37^{+1.16}_{-1.00}$	3480^{+282}_{-206}	6917^{+1694}_{-1008}	11^{+11}_{-5}

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

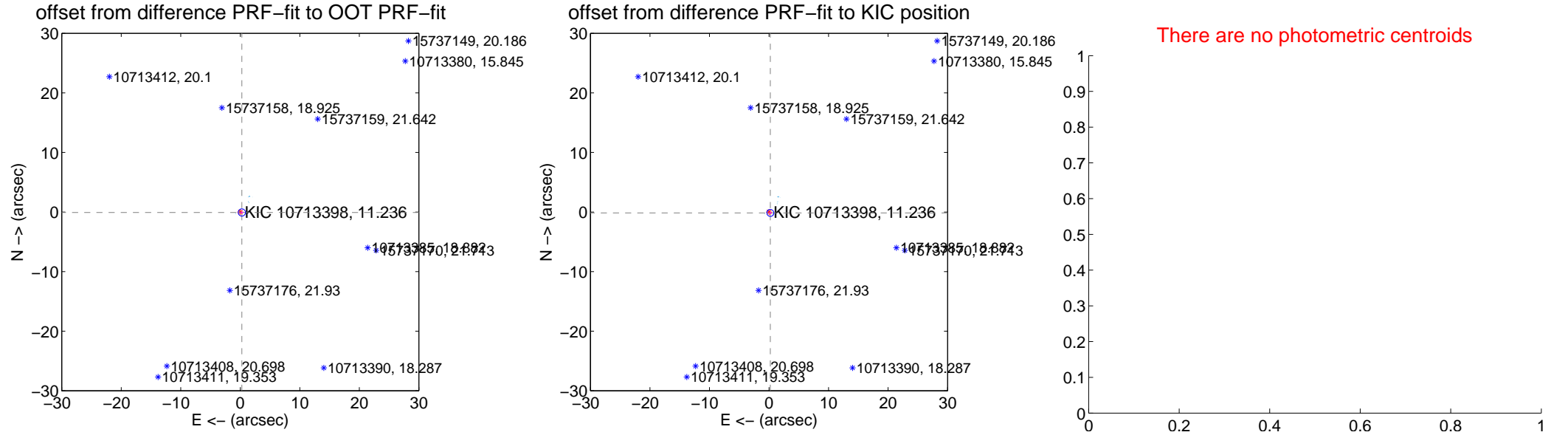
DV Centroid Data

Supplemental centroid analysis for 010713398-01. **Kepler magnitude: 11.24.** Transit SNR 9.56

There are 17 quarters with good PRF difference image offsets

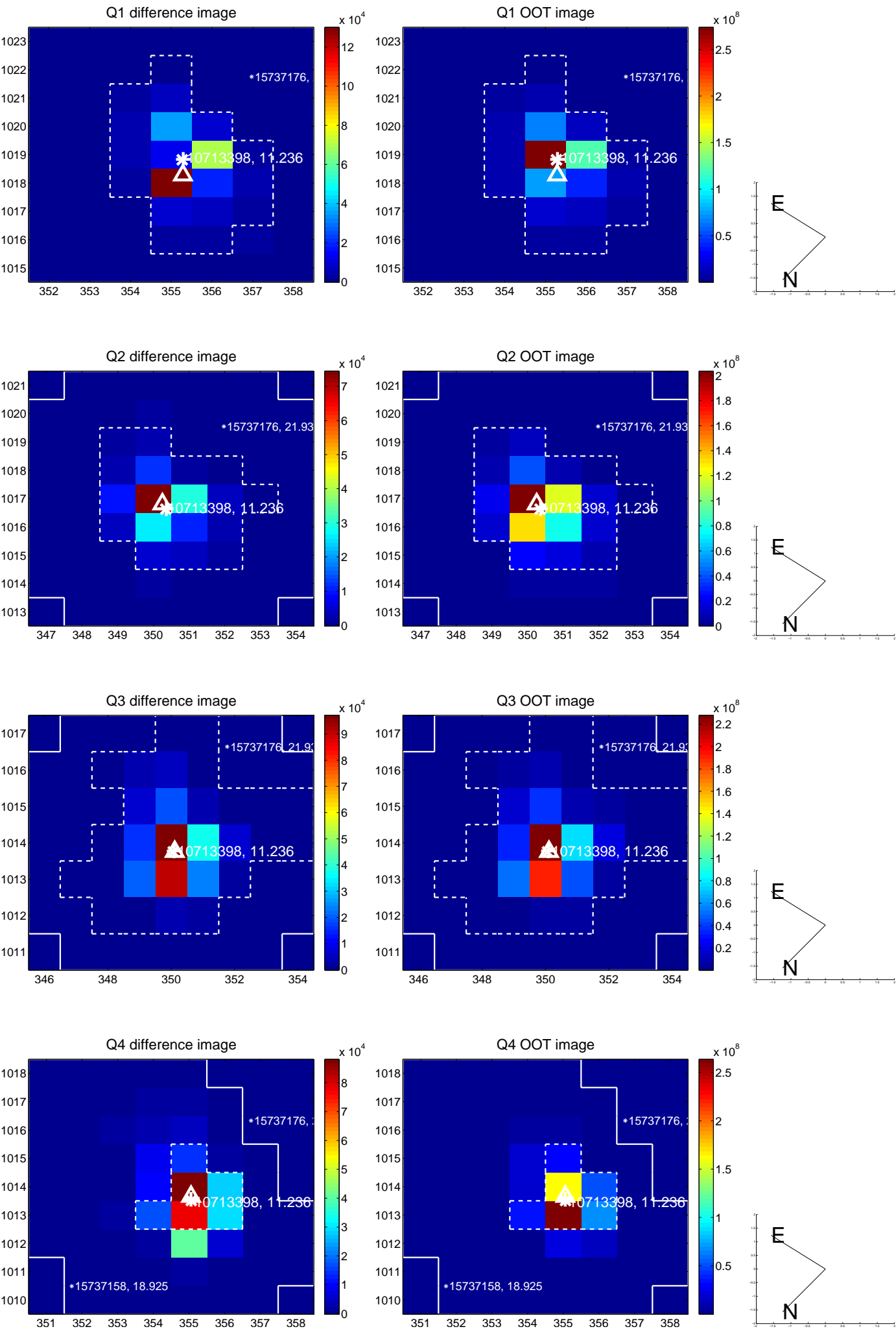
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.274 ± 0.202	1.36	-0.264 ± 0.208	-0.074 ± 0.108
PRF-fit source offset from KIC position	0.268 ± 0.195	1.37	-0.223 ± 0.219	-0.149 ± 0.126
photometric centroid source offset	—	—	—	—

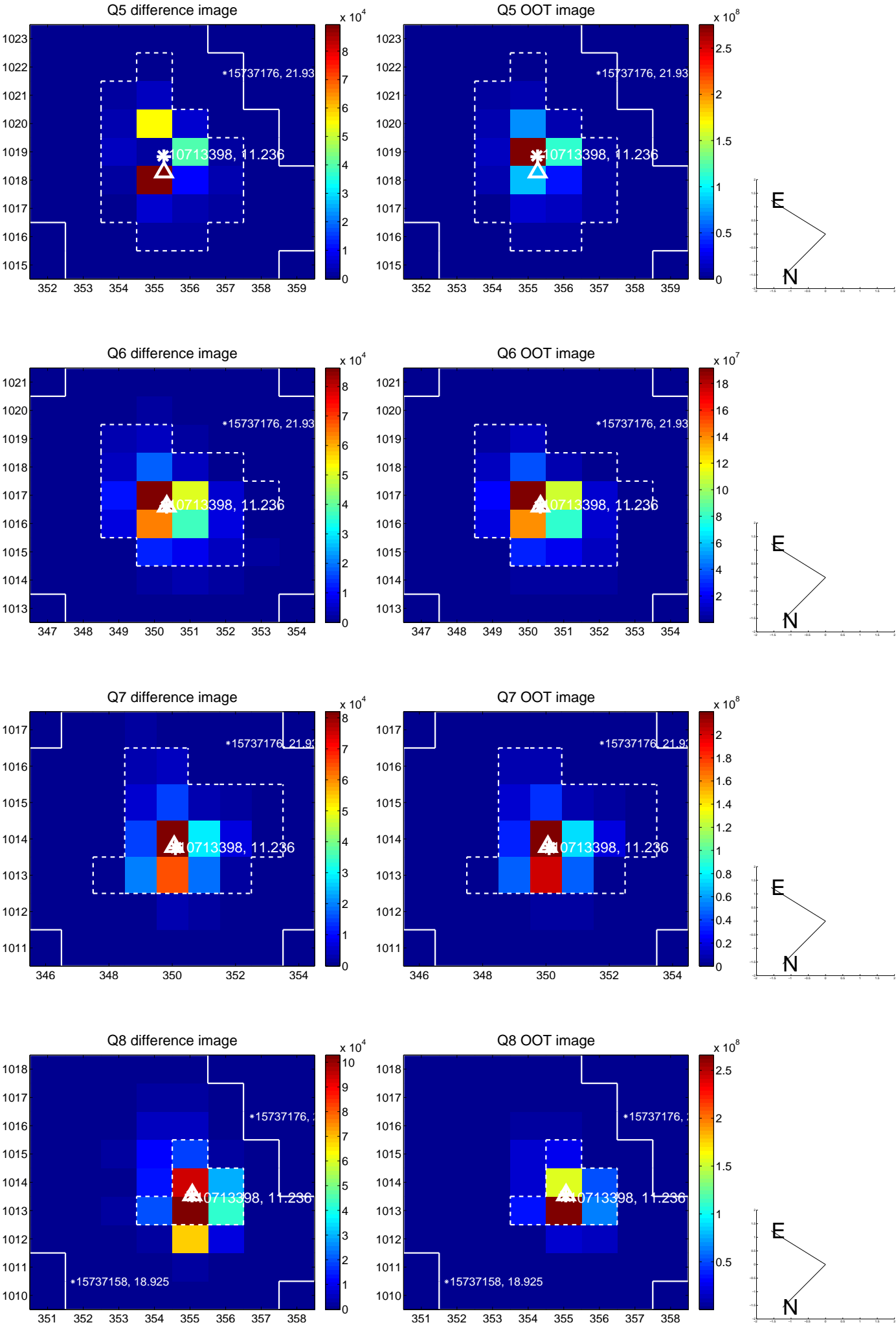


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

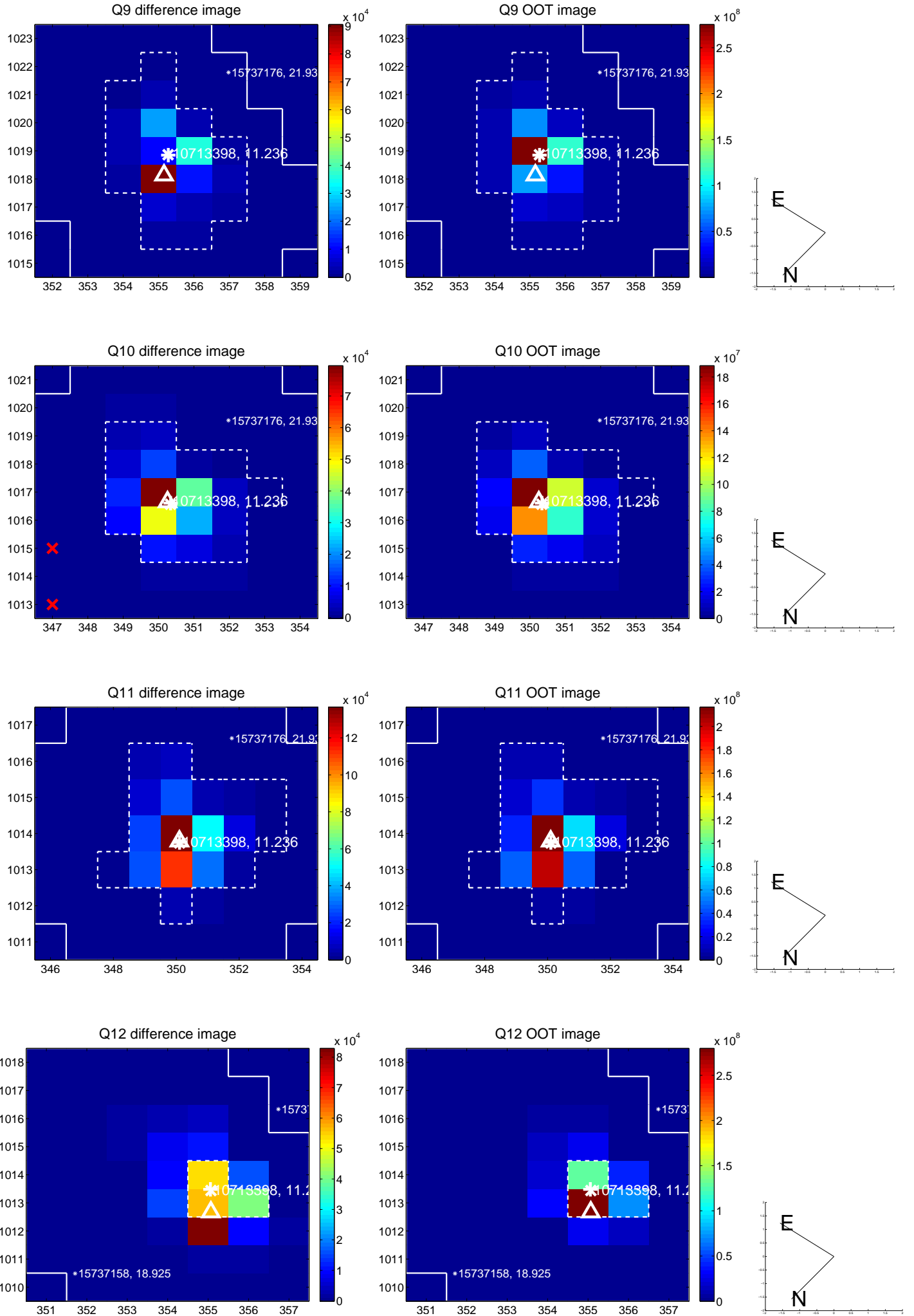
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



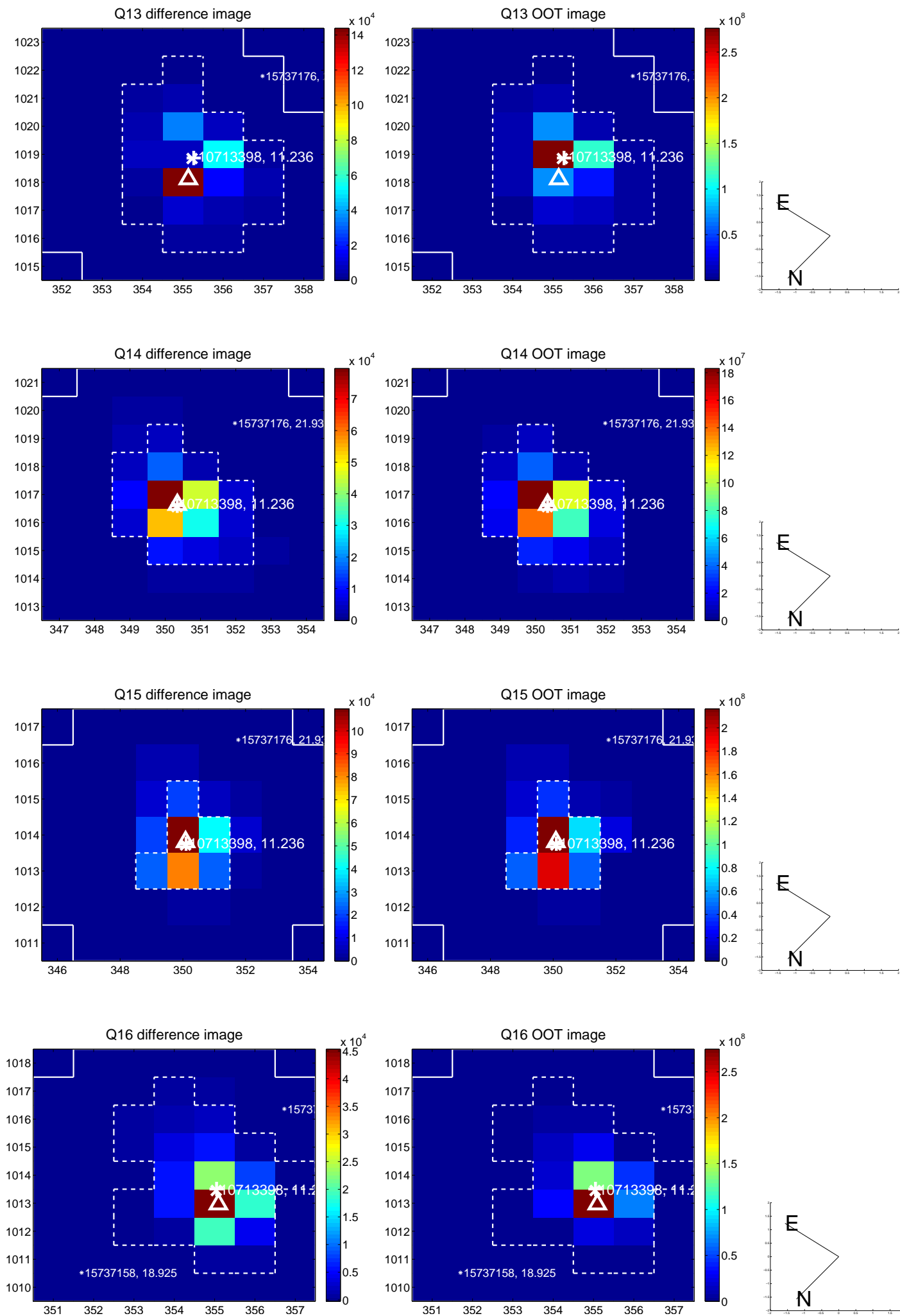
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



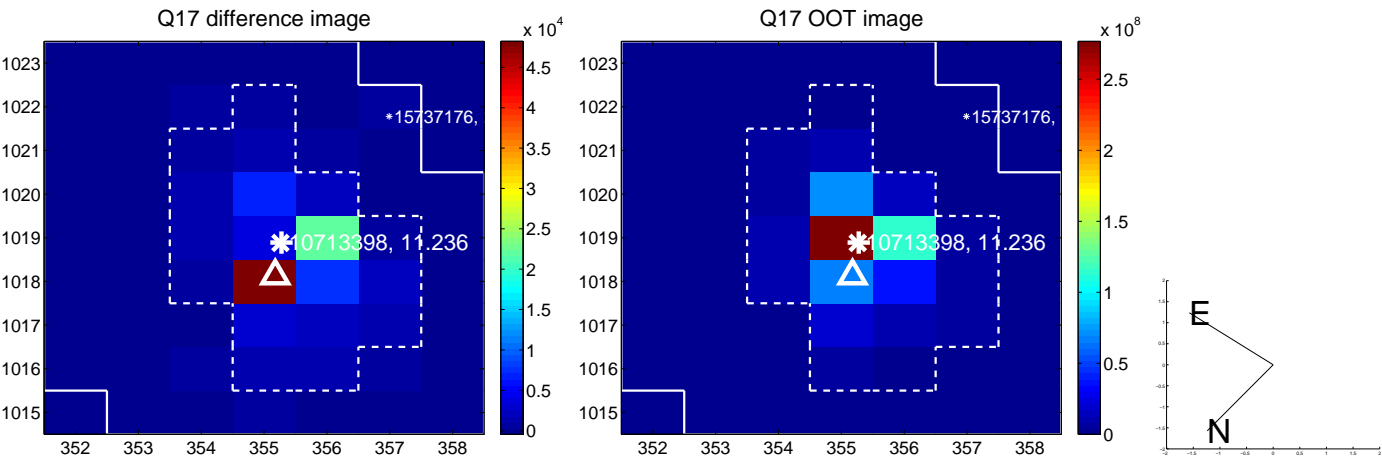
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



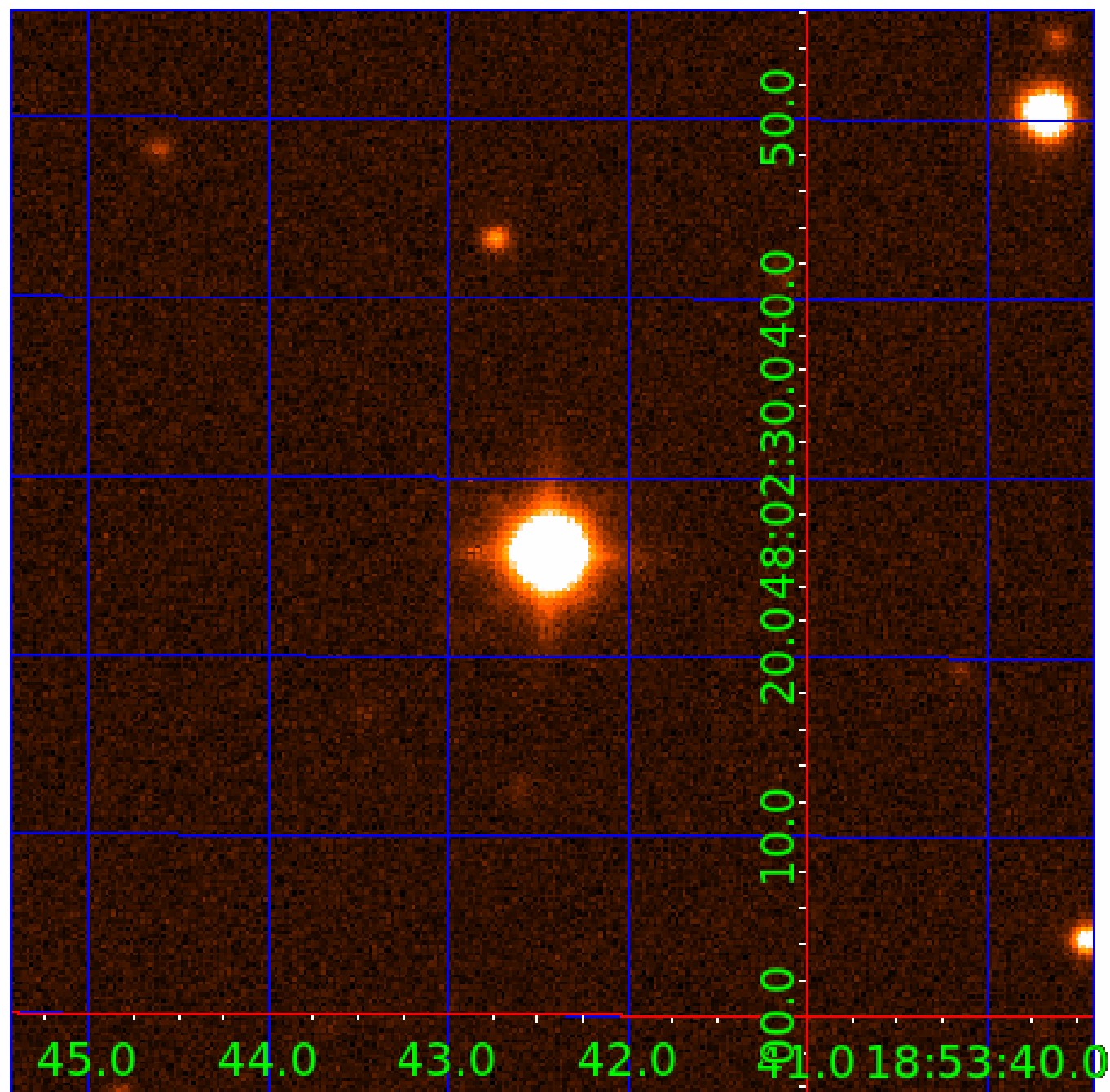
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 010713398

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})
010713398-01	OBS	No	1.316428	132.786891	173.2	4.719	10.2	9.6	1.65	7153	2.52	8507.42
010713398-02	OBS	No	1.316449	132.326460	197.2	4.707	8.2	10.8	1.65	7153	2.69	8507.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010713398-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
010713398-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

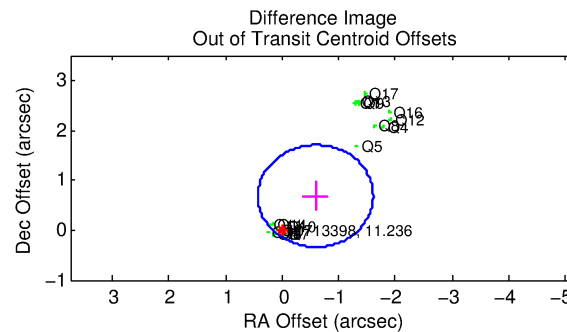
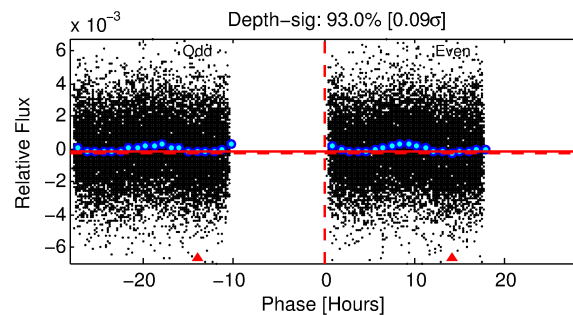
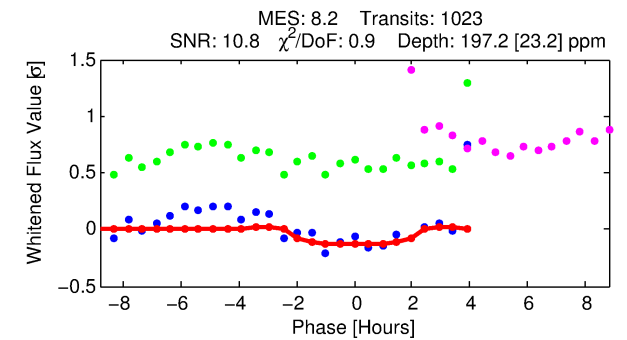
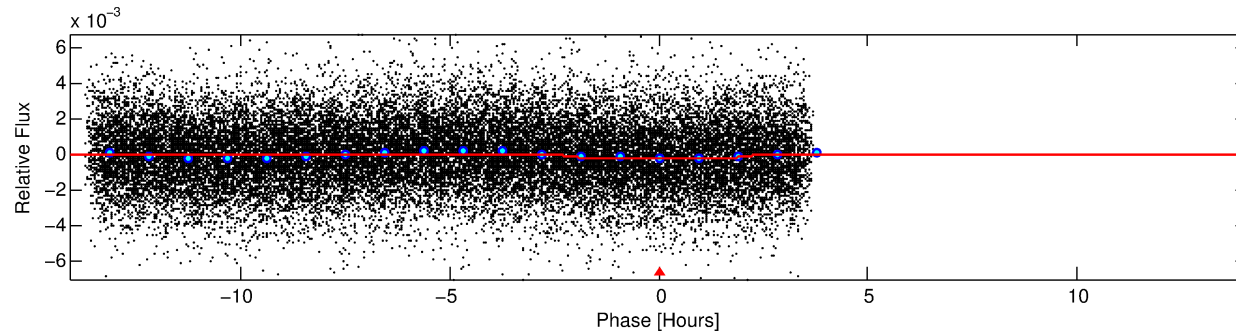
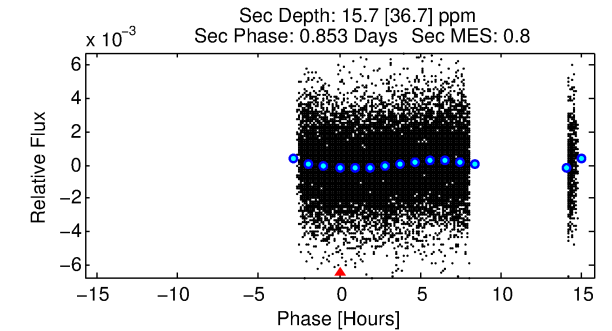
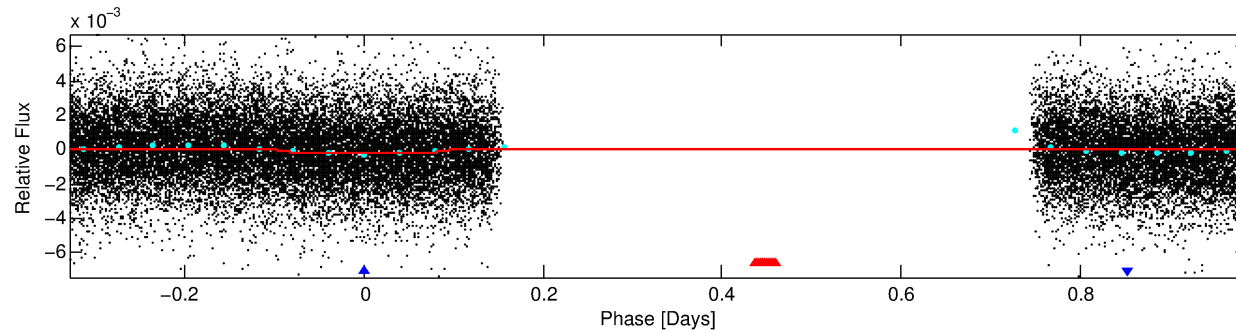
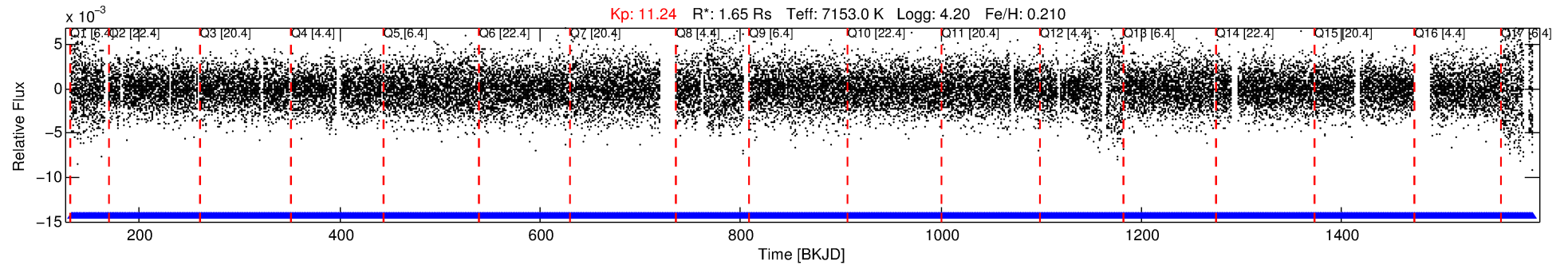
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010713398-02

No Significant Match Found

DV One-Page Summary

KIC: 10713398 Candidate: 2 of 2 Period: 1.316 d



DV Fit Results:

Period = 1.31645 [0.00002] d
Epoch = 132.3265 [0.0059] BKJD
Rp/R* = 0.0149 [0.0045]
a/R* = 1.38 [1.18]
b = 0.90 [0.39]
Seff = 8507.25 [3636.55]
Teq = 2449 [262] K
Rp = 2.69 [1.21] Re
a = 0.0274 [0.0075] AU
Ag = 0.90 [2.19] [-0.05σ]
Teffp = 3683 [2235] K [0.55σ]

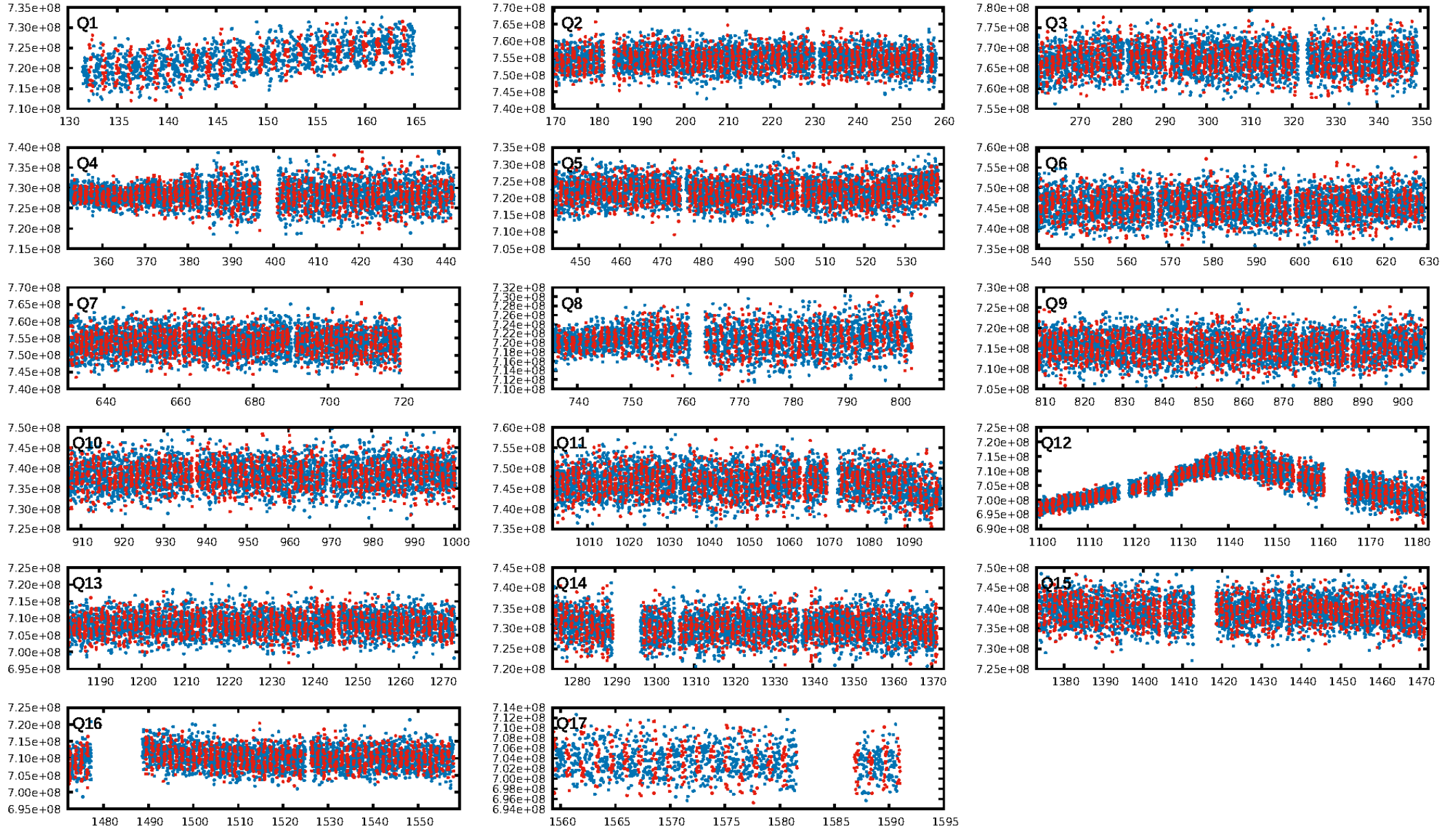
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.13e-10
RollingBand-fgt: 1.00 [977/977]
GhostDiagnostic-chr: 1.111
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.901 arcsec [2.65σ]
KicOffset-rm: 0.815 arcsec [2.33σ]
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]

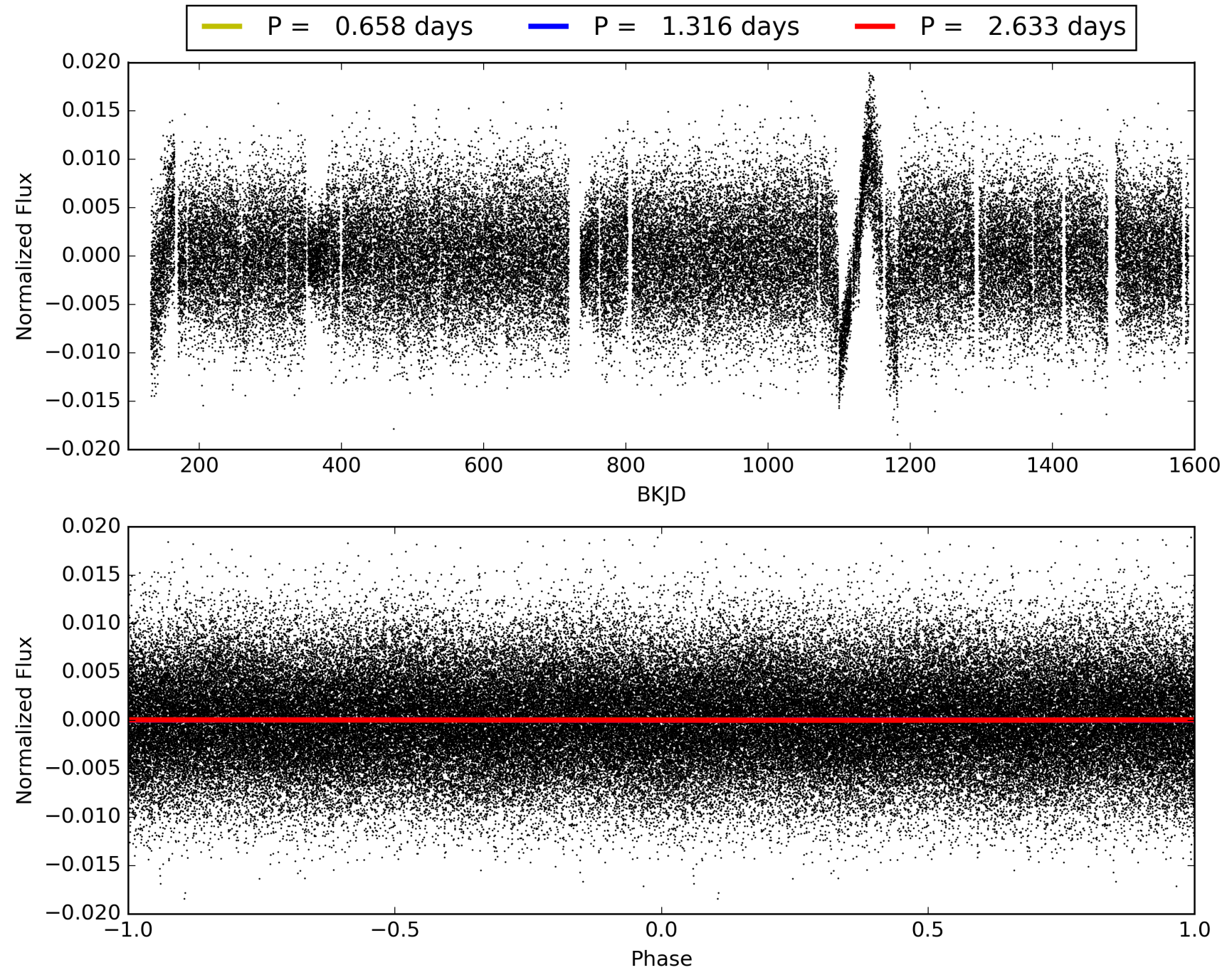
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:42:26 Z

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

TCE 010713398-02, PDC Light Curves

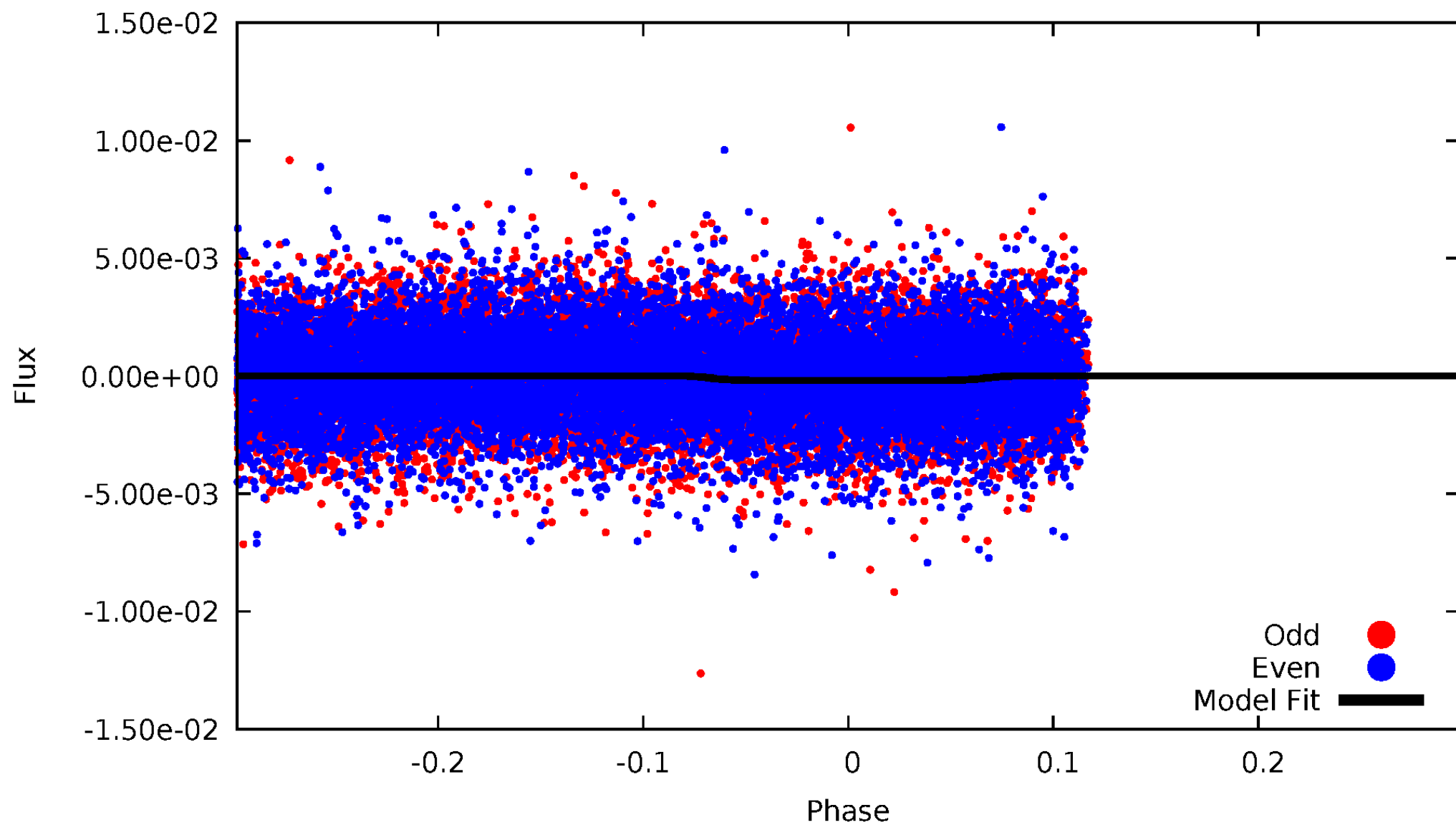


TCE 010713398-02



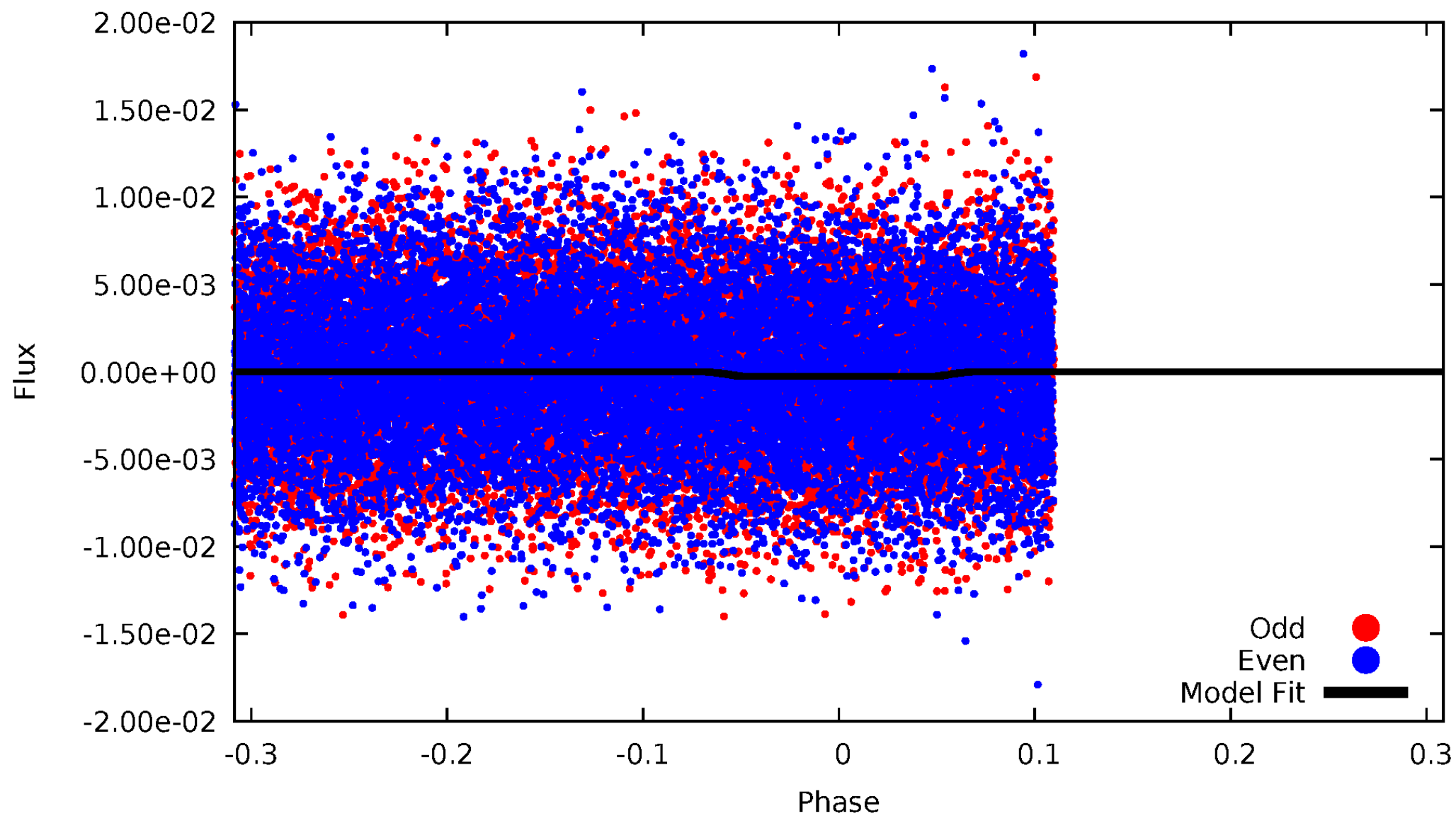
DV Odd/Even

TCE 010713398-02



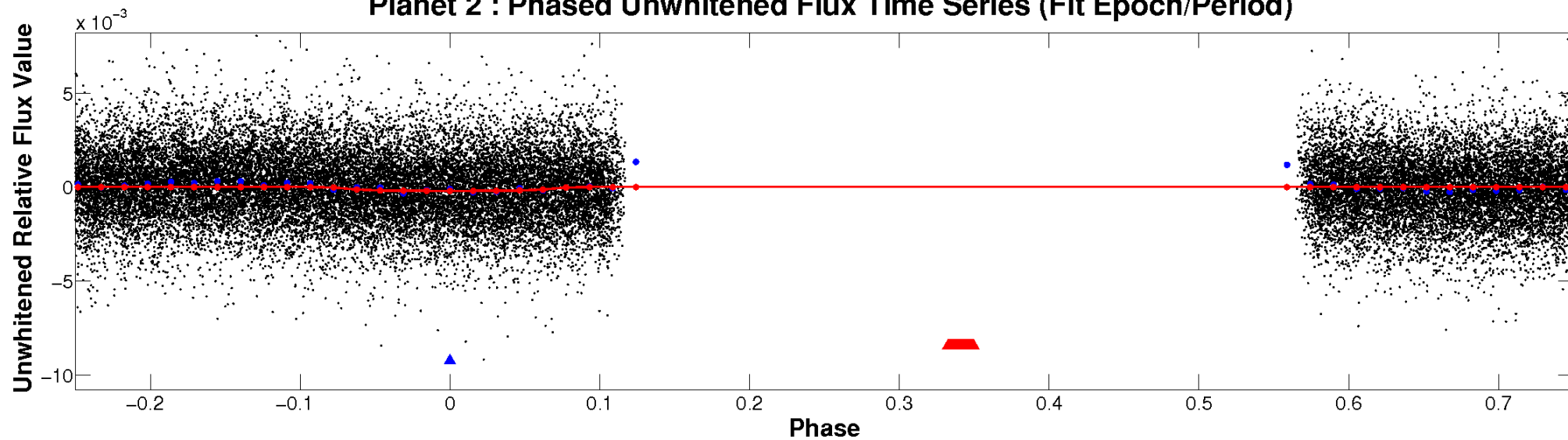
ALT Odd/Even

TCE 010713398-02

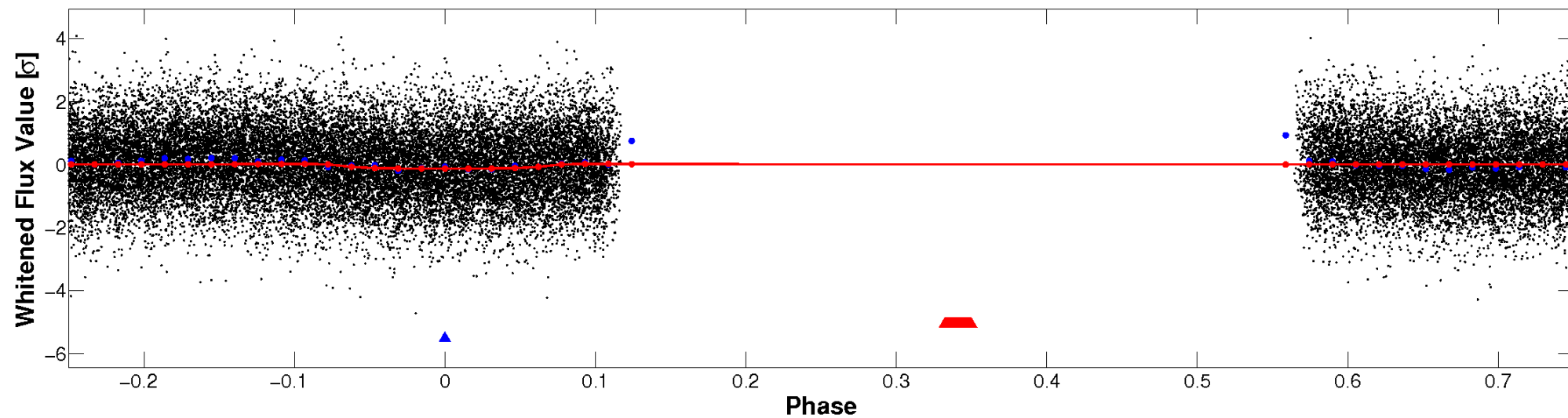


Non-Whitened Vs. Whitened Light Curve

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

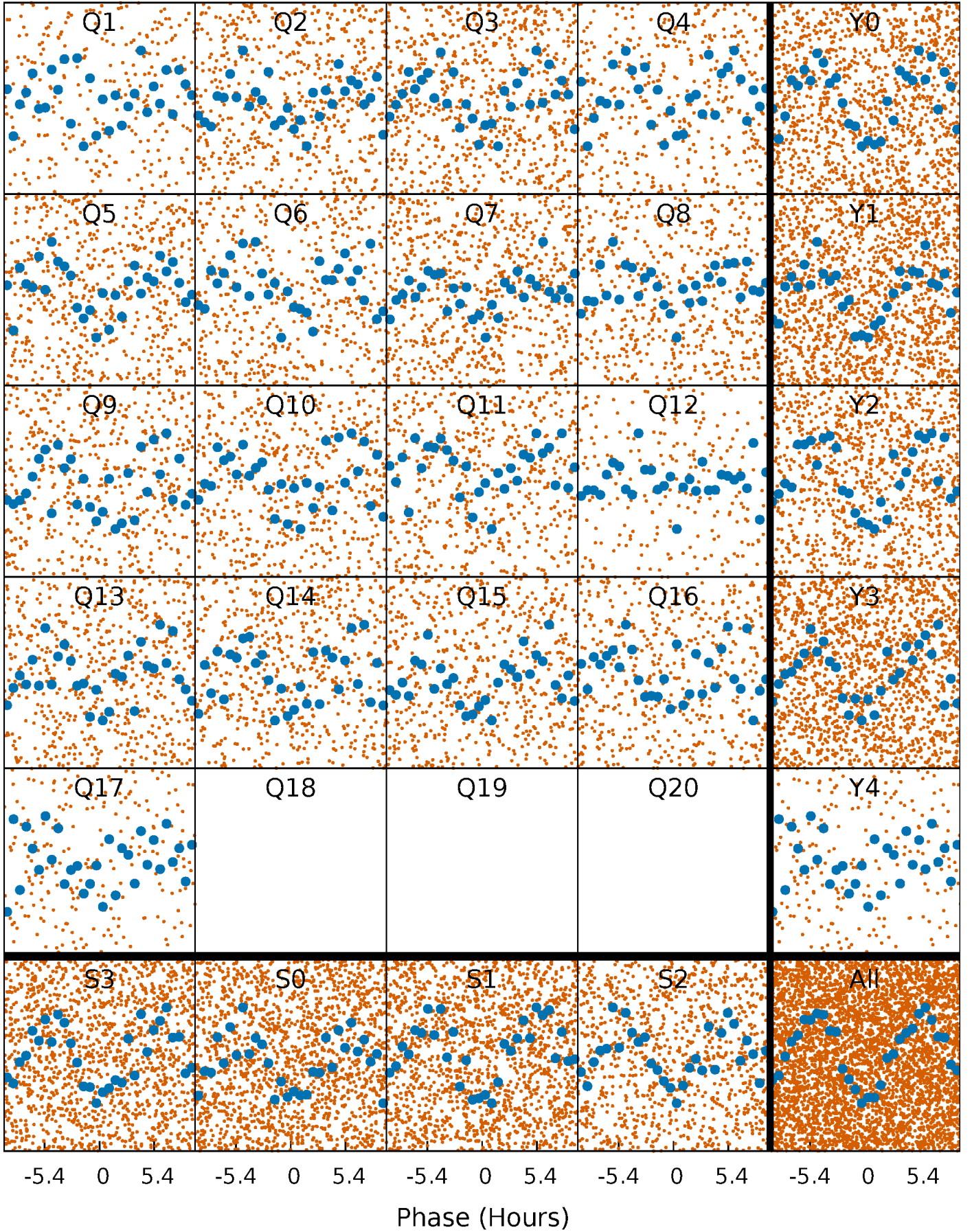


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



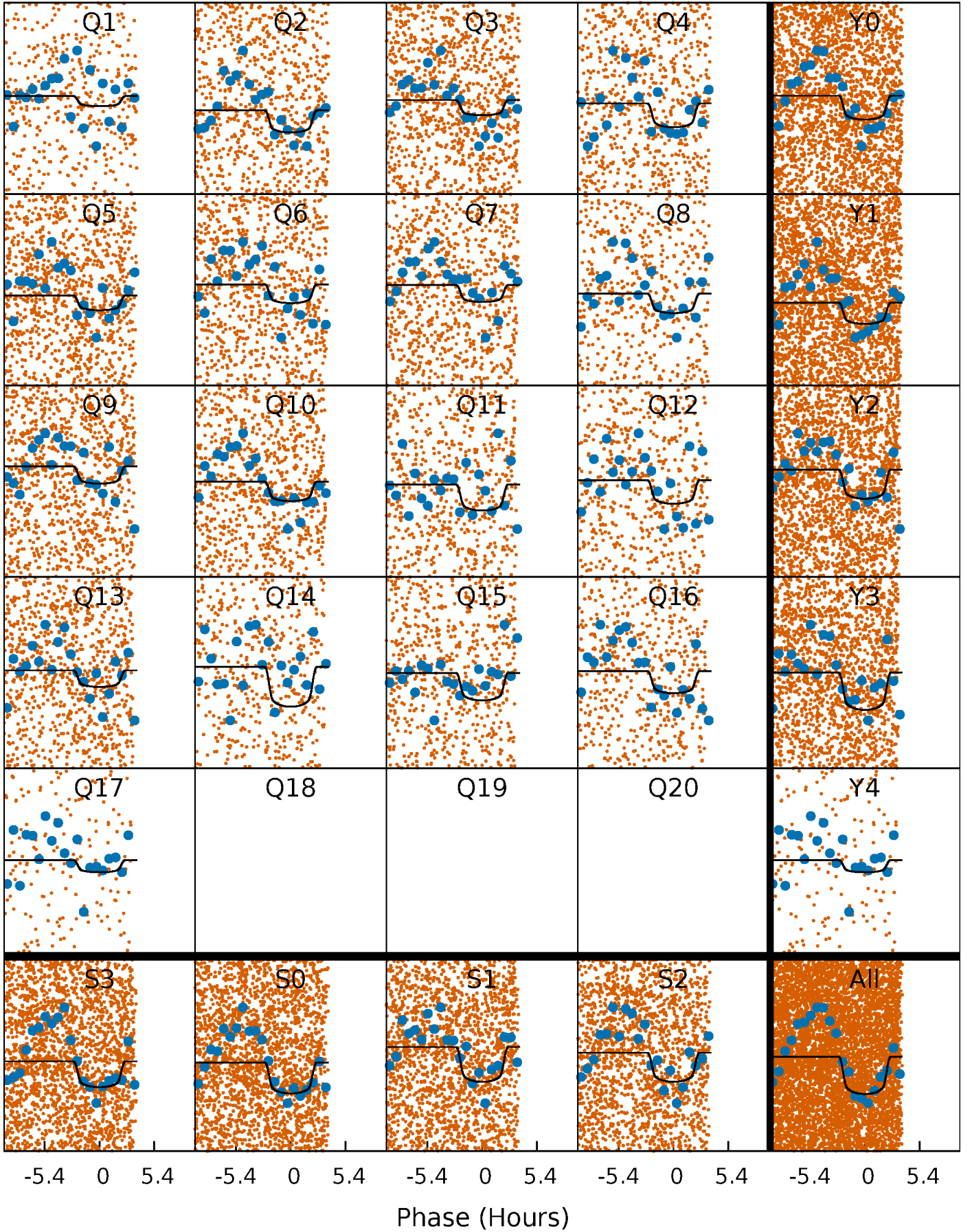
PDC Quarter-Phased Transit Curves

TCE 010713398-02 P= 1.316449 Days $T_0=132.326460$ (BKJD)



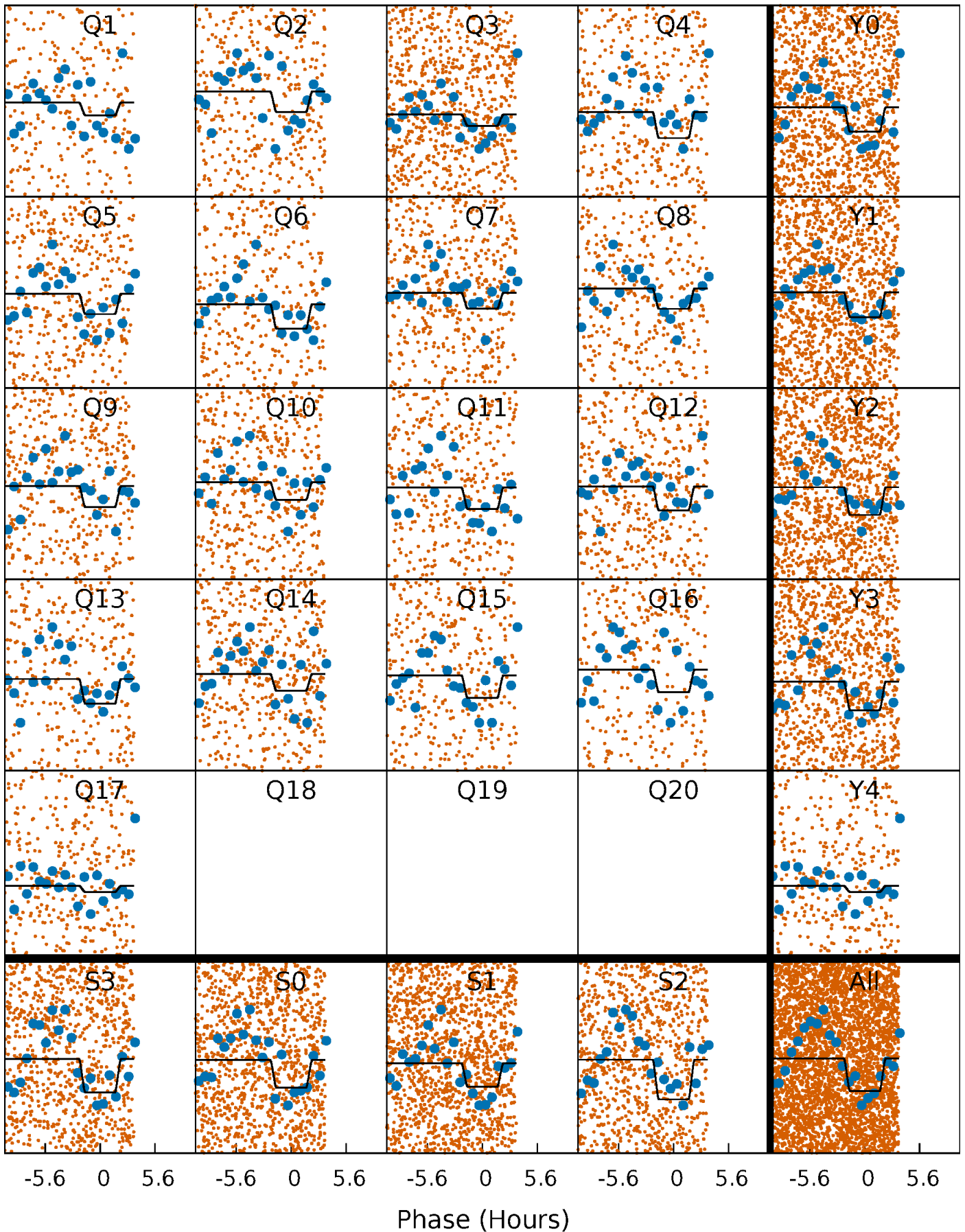
DV Quarter-Phased Transit Curves

TCE 010713398-02 P= 1.316449 Days $T_0=132.326460$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

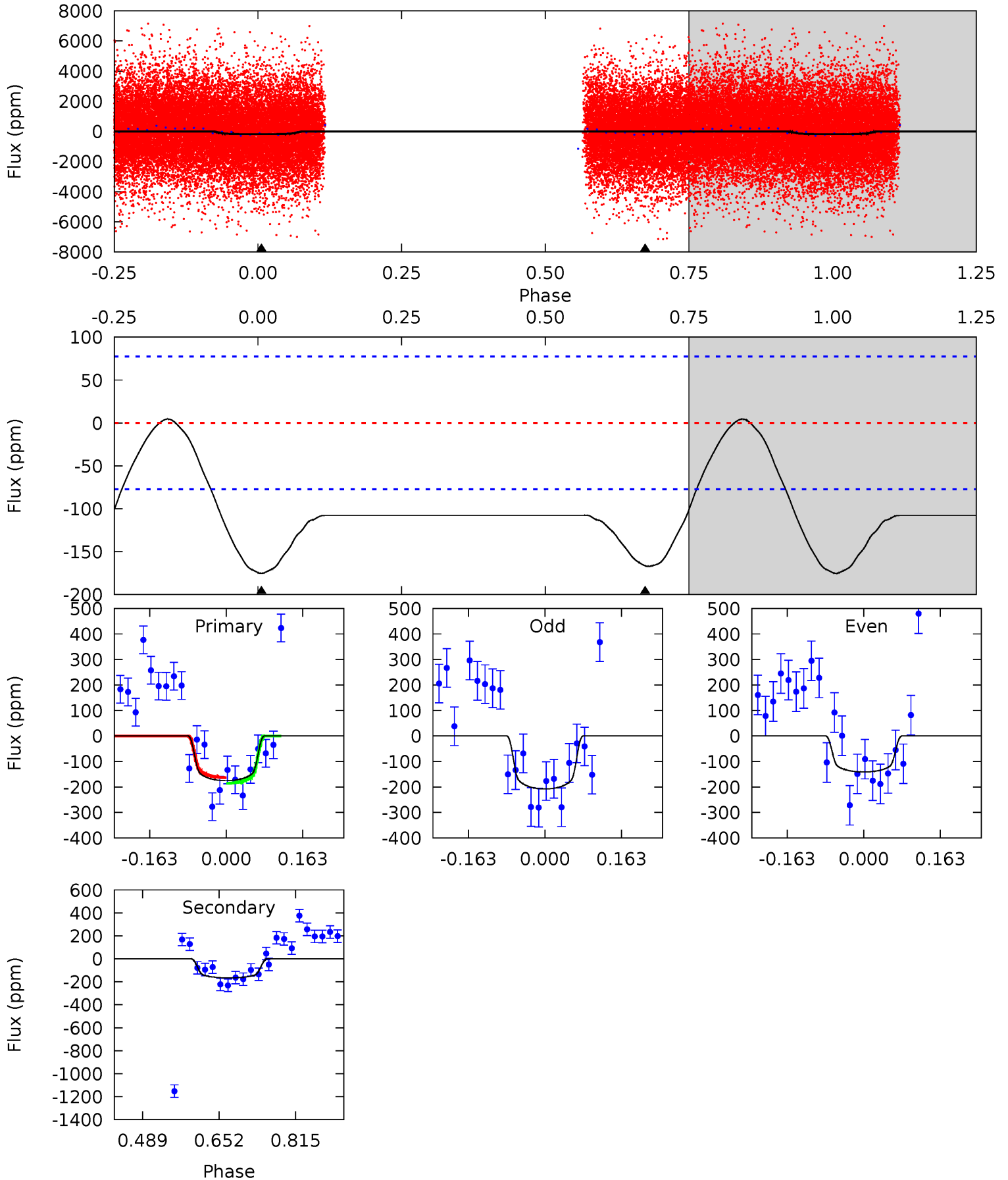
TCE 010713398-02 P= 1.316426 Days $T_0=132.338988$ (BKJD)



DV Model-Shift Uniqueness Test

010713398-02, P = 1.316449 Days, E = 131.010011 Days

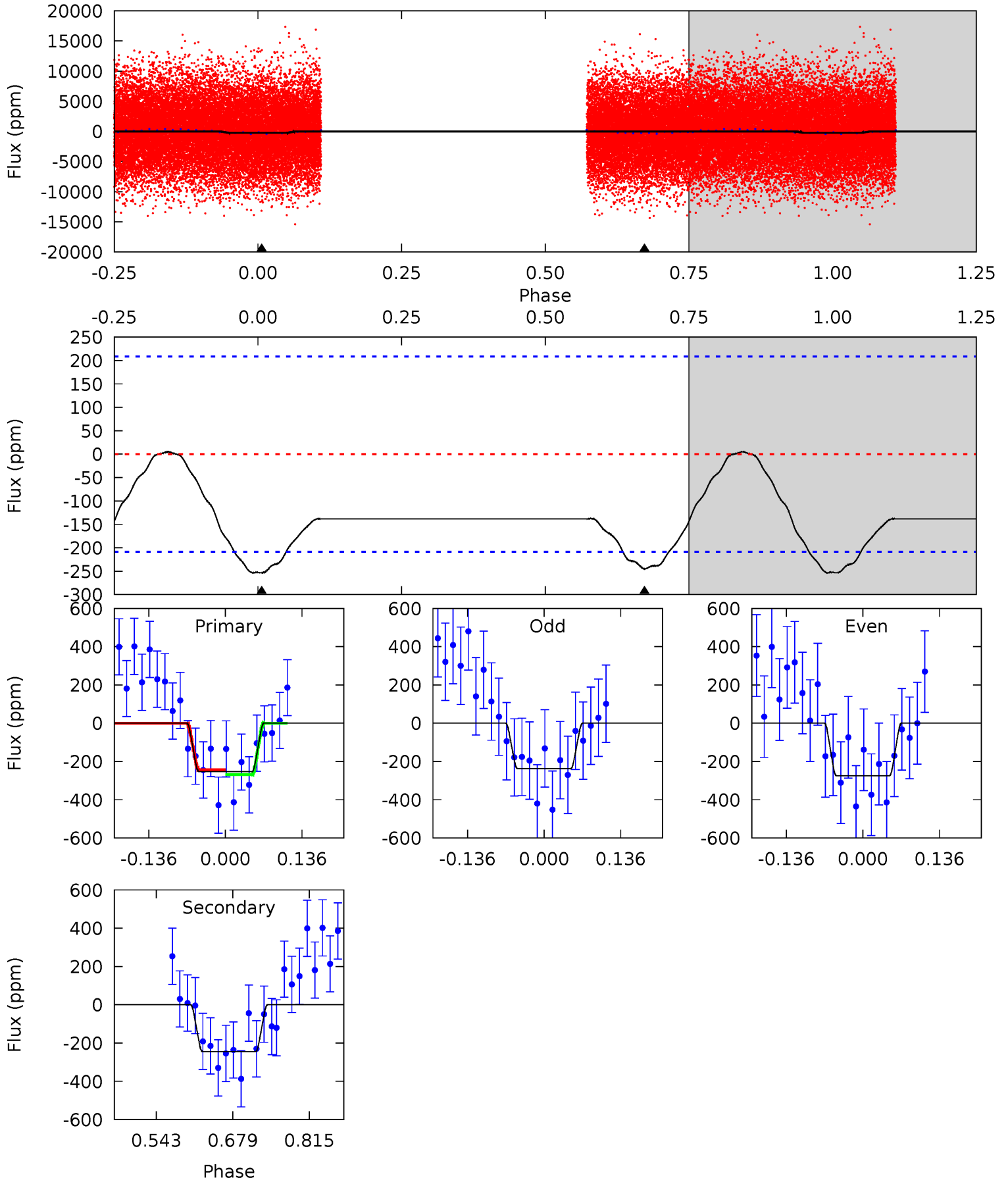
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	9.60	0	0	4.46	1.39	0.27	10.1	10.1	9.60	9.60	1.91	1.13	0.03	0.64



Alt Model-Shift Uniqueness Test

010713398-02, P = 1.316426 Days, E = 131.022562 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.47	5.29	0	0	4.50	1.49	0.16	5.47	5.47	5.29	5.29	0.39	0.99	0.02	0.27



Stellar Parameters For KIC 010713398

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7153^{+195}_{-335}	$4.202^{+0.073}_{-0.203}$	$0.210^{+0.150}_{-0.350}$	$1.649^{+0.556}_{-0.238}$	$1.579^{+0.214}_{-0.214}$	$0.496^{+0.197}_{-0.270}$
	+3%/-5%	+2%/-5%	+71%/-167%	+34%/-14%	+14%/-14%	+40%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 010713398-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-166 ± 17	$2.79^{+0.93}_{-0.84}$	3466^{+254}_{-210}	6476^{+1521}_{-841}	$8.520^{+9.423}_{-3.676}$
Alt.	-245 ± 46	$3.07^{+0.92}_{-0.93}$	3480^{+267}_{-203}	6848^{+1729}_{-892}	10^{+11}_{-4}

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 $A_{obs} \gg 1.0$

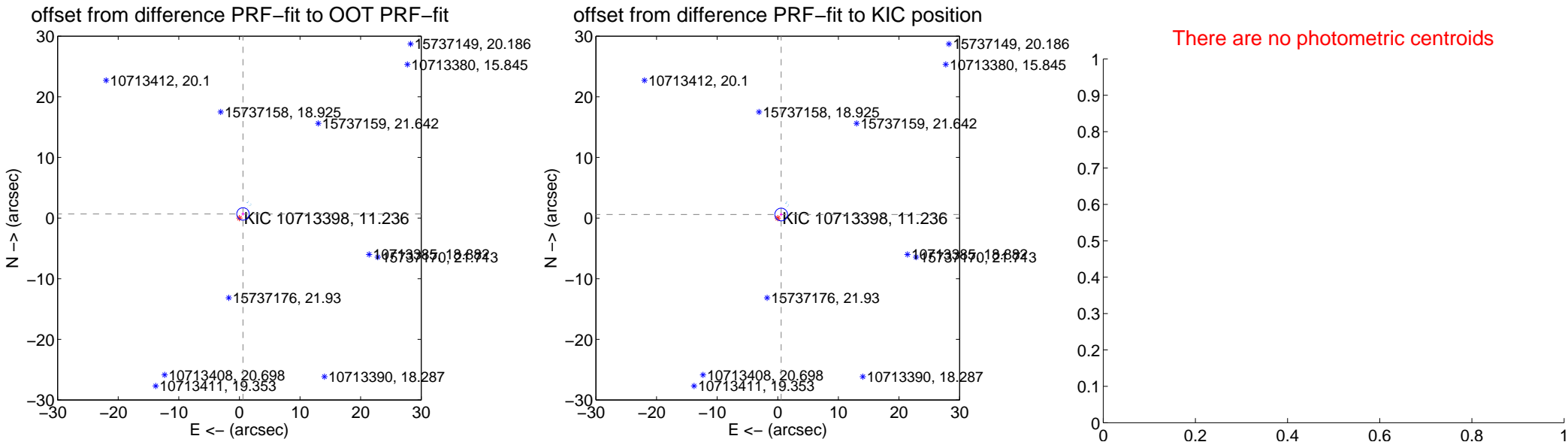
DV Centroid Data

Supplemental centroid analysis for 010713398-02. **Kepler magnitude: 11.24.** Transit SNR 10.75

There are 17 quarters with good PRF difference image offsets

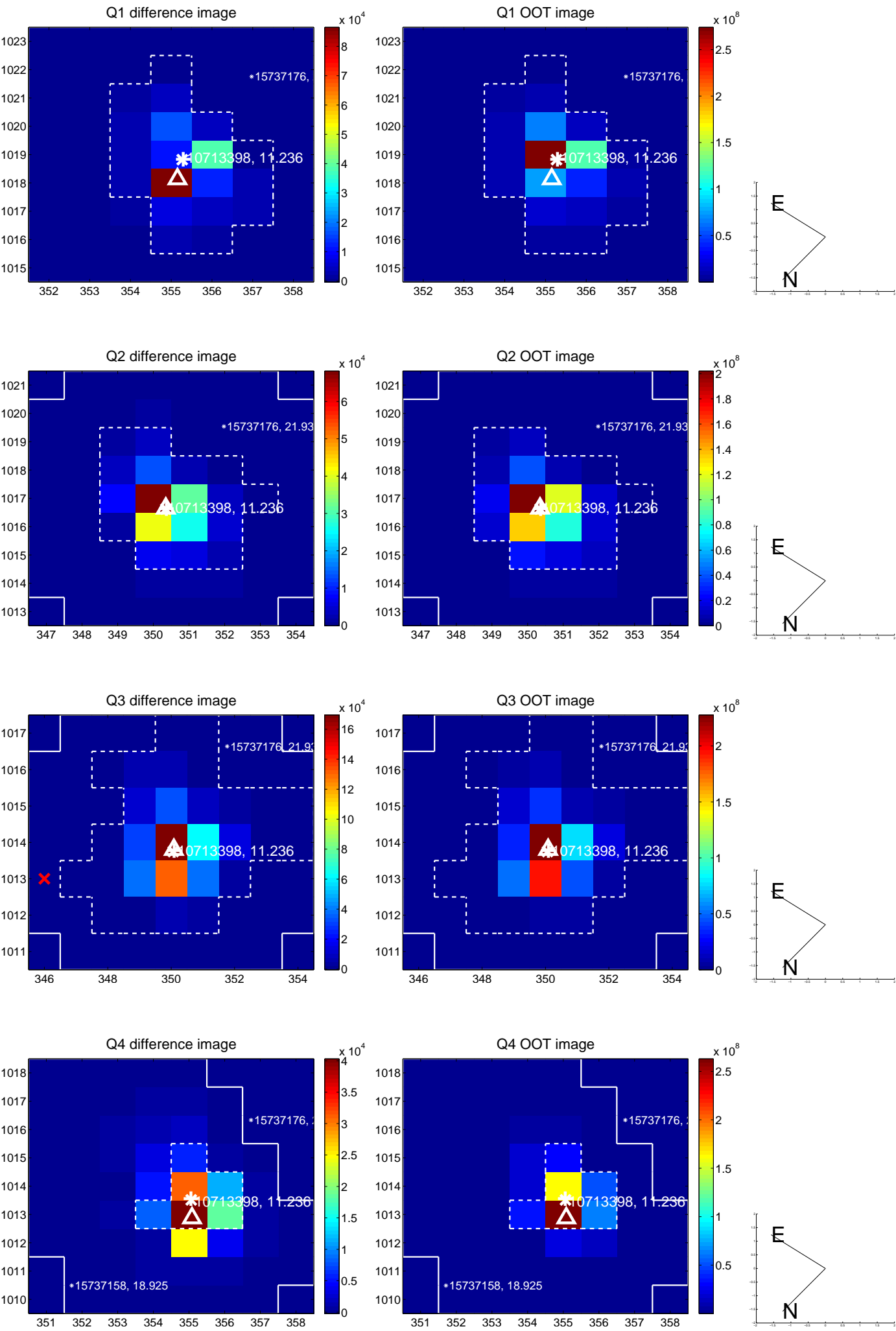
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.901 ± 0.341	2.65	-0.590 ± 0.211	0.681 ± 0.283
PRF-fit source offset from KIC position	0.815 ± 0.349	2.33	-0.565 ± 0.216	0.588 ± 0.291
photometric centroid source offset	—	—	—	—

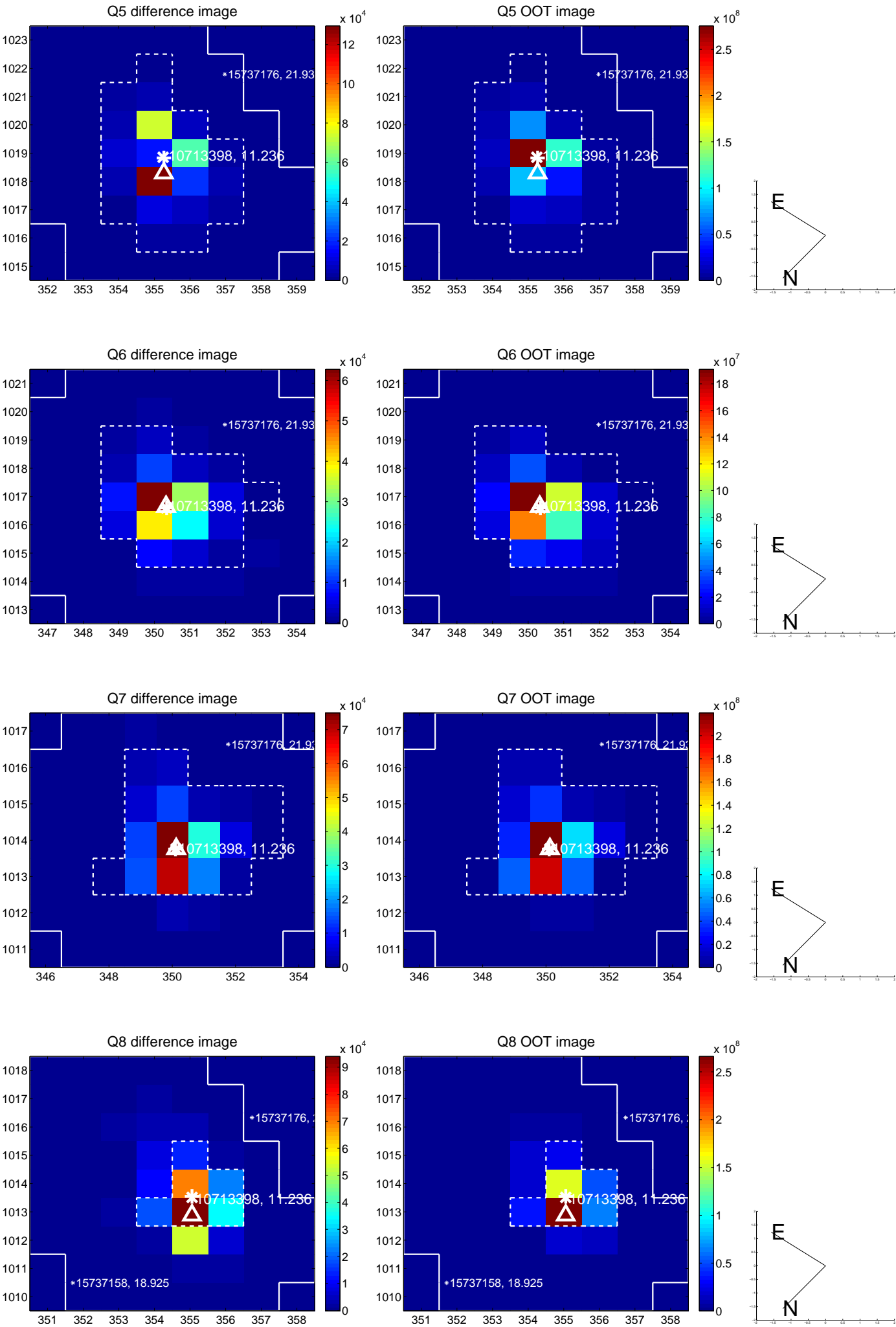


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

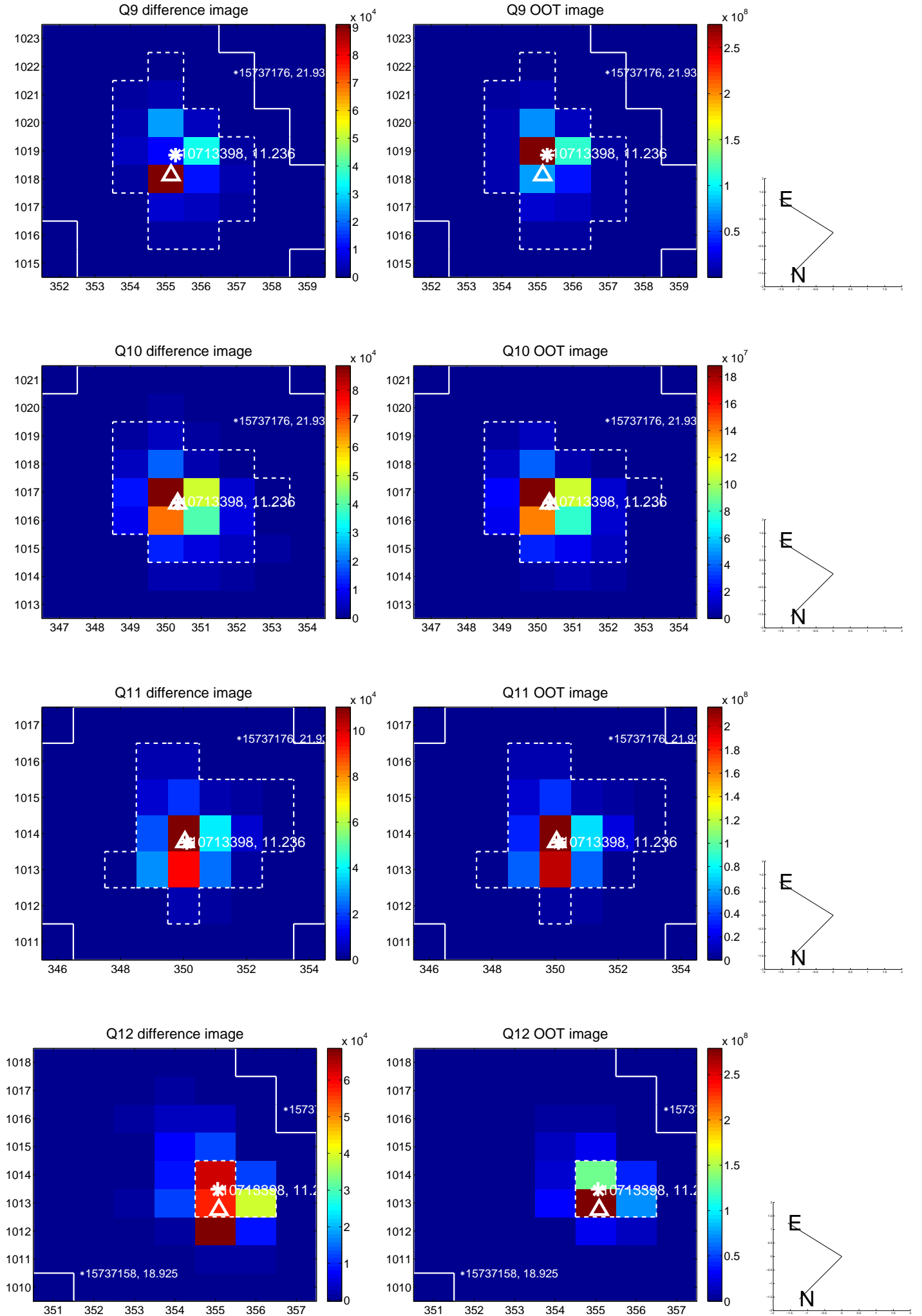
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



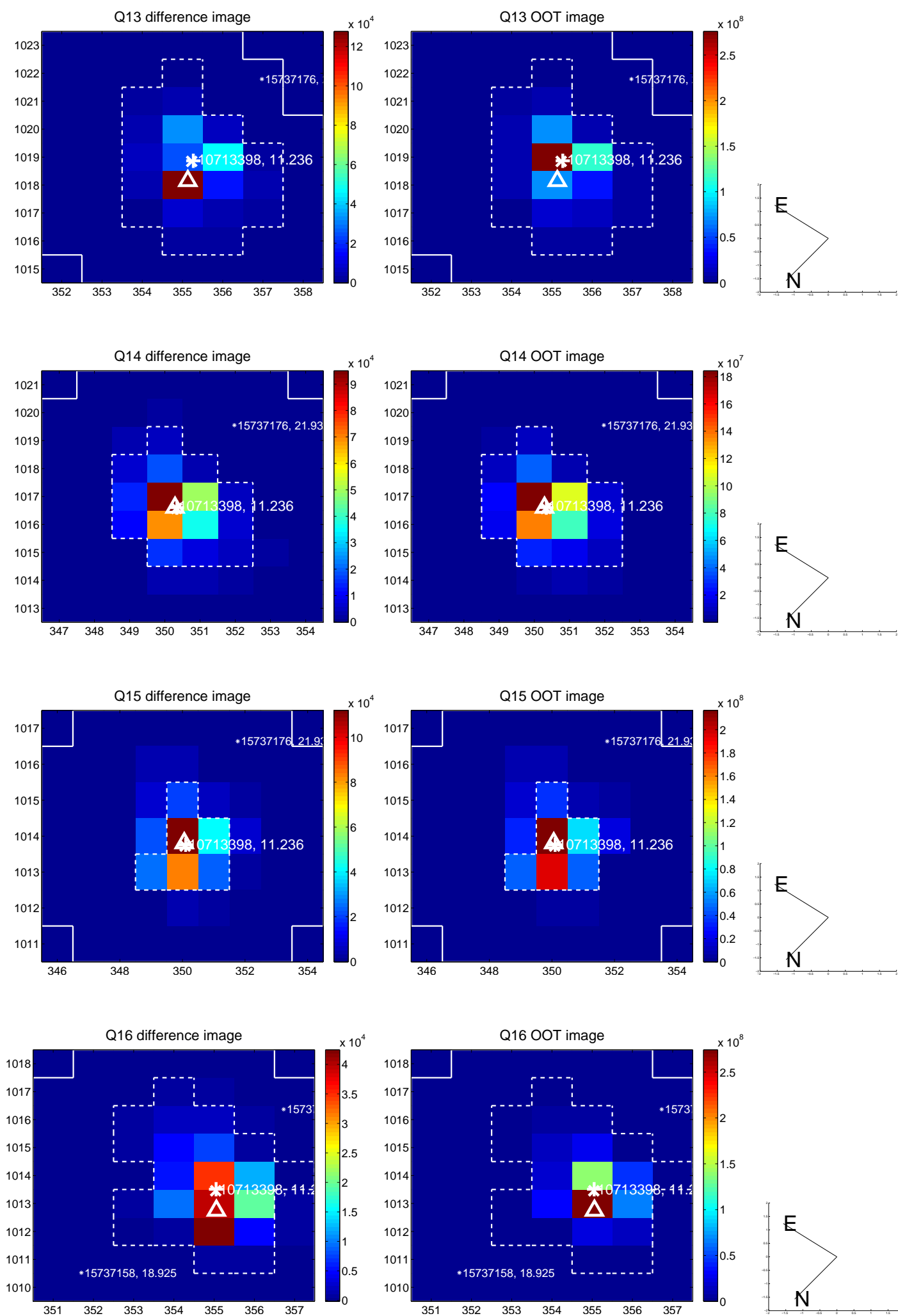
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



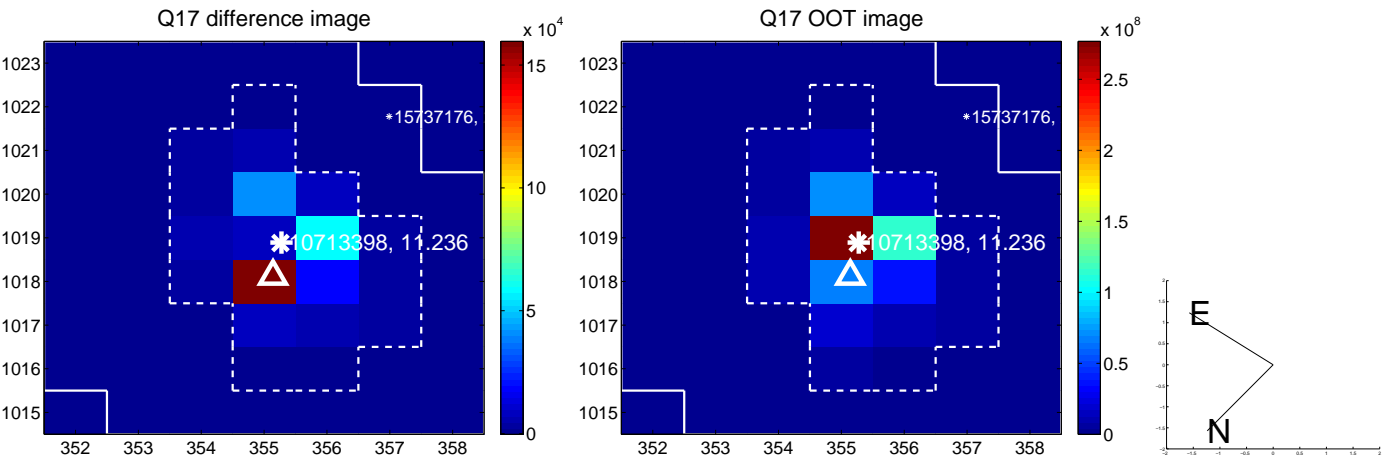
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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

