

KIC 012833566

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})
012833566-01	OBS	No	0.896358	131.597371	17.4	1.556	14.0	8.2	3.03	6456	1.48	32538.78
012833566-02	OBS	No	0.896361	131.788150	13.0	1.849	8.3	6.7	3.03	6456	1.28	32538.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012833566-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
012833566-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

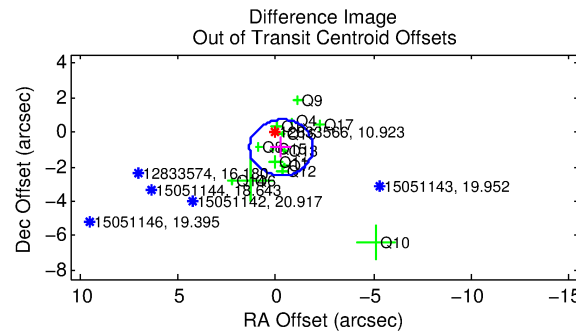
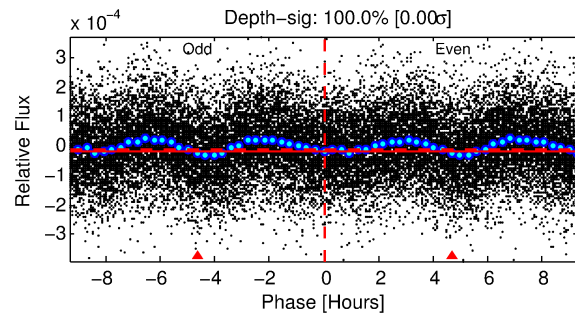
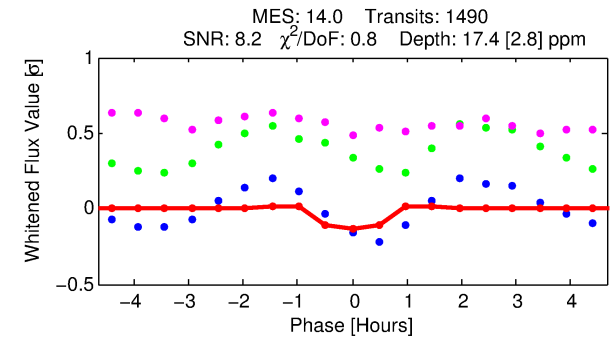
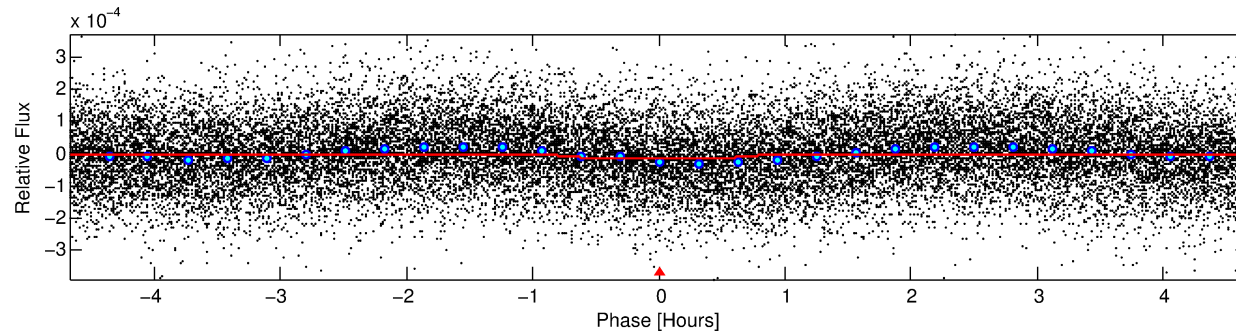
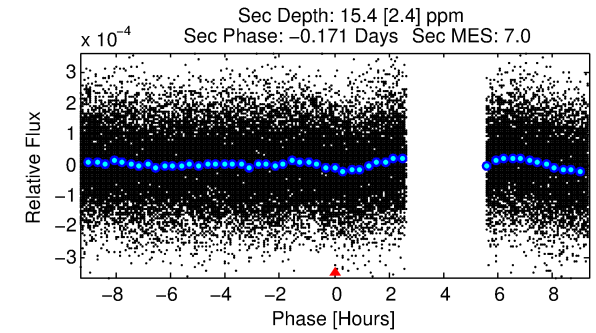
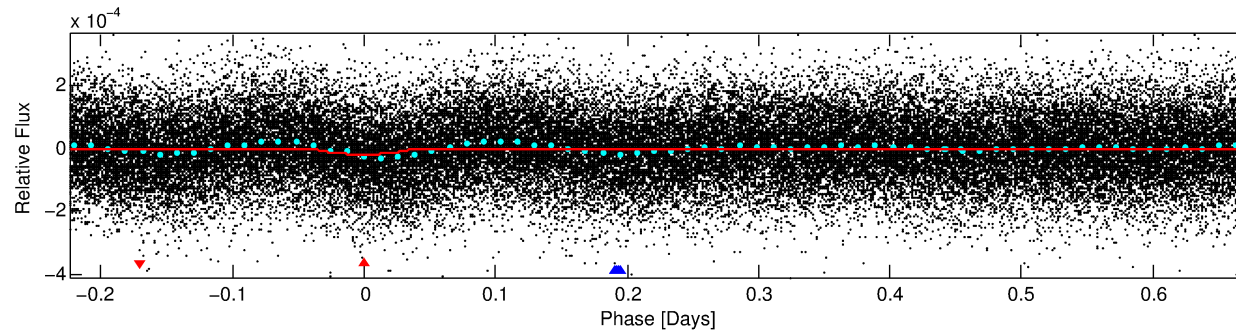
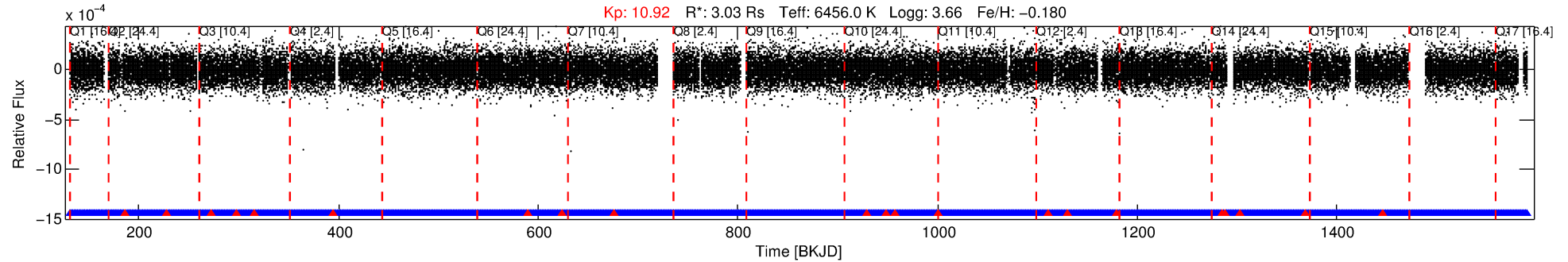
Ephemeris Match Information For 012833566-01

No Significant Match Found

DV One-Page Summary

KIC: 12833566 Candidate: 1 of 2 Period: 0.896 d

KOI: K03024 Corr: No Ephemeris Match



DV Fit Results:

Period = 0.89636 [0.00001] d
Epoch = 131.5974 [0.0022] BKJD
Rp/R* = 0.0045 [0.0008]
a/R* = 2.17 [1.69]
b = 0.90 [0.21]
Seff = 32538.79 [31095.01]
Teq = 3425 [818] K
Rp = 1.48 [0.85] Re
a = 0.0210 [0.0119] AU
Ag = 1.71 [1.75] [0.40σ]
Teffp = 6051 [649] K [2.52σ]

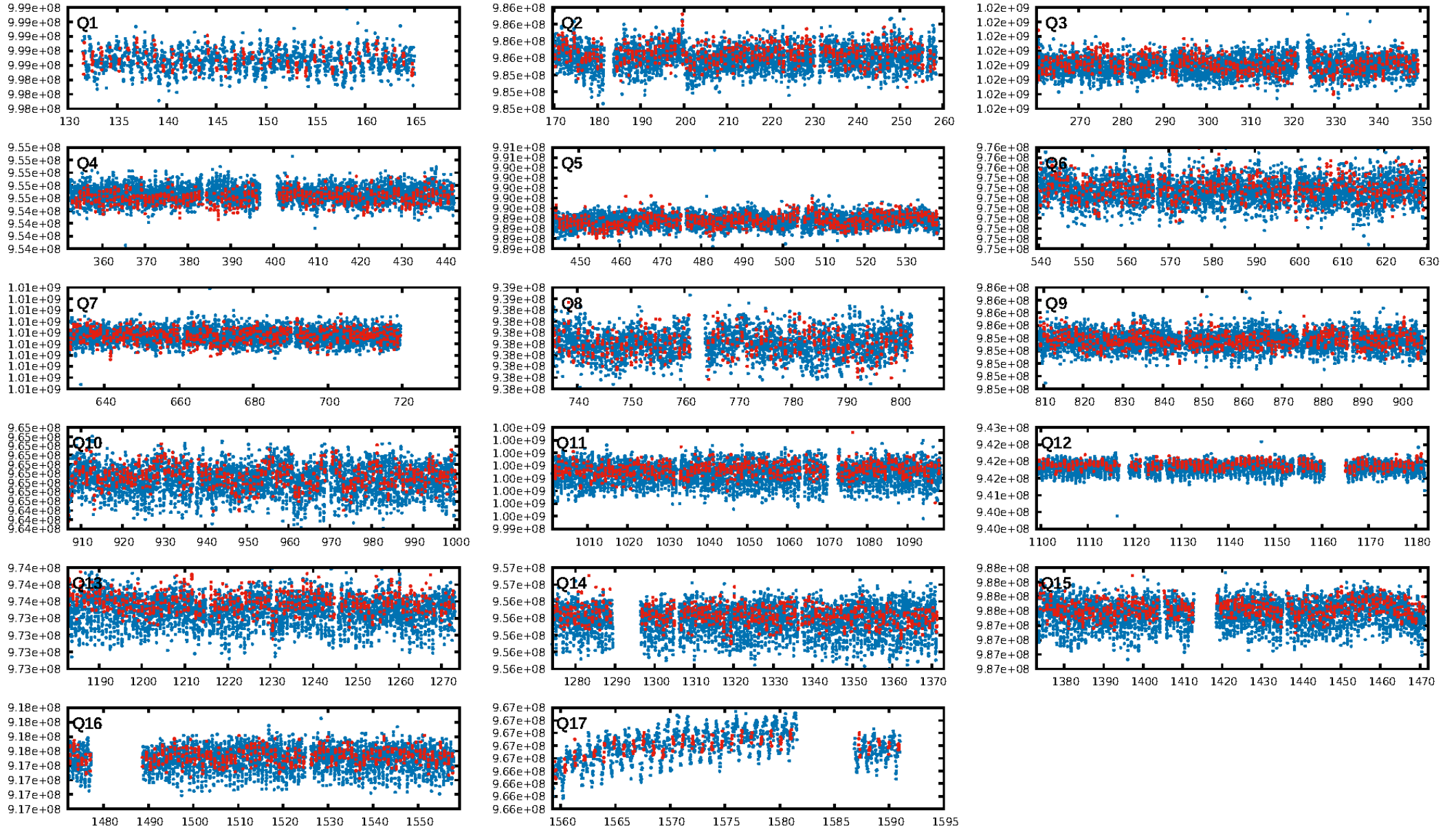
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.19e-34
RollingBand-fgt: 0.99 [1401/1422]
GhostDiagnostic-chr: N/A
Centroid-sig: 13.2%
Centroid-so: 1.407 arcsec [1.67σ]
OotOffset-rm: 0.938 arcsec [1.74σ]
KicOffset-rm: 0.945 arcsec [1.73σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 0.00 [0/17]

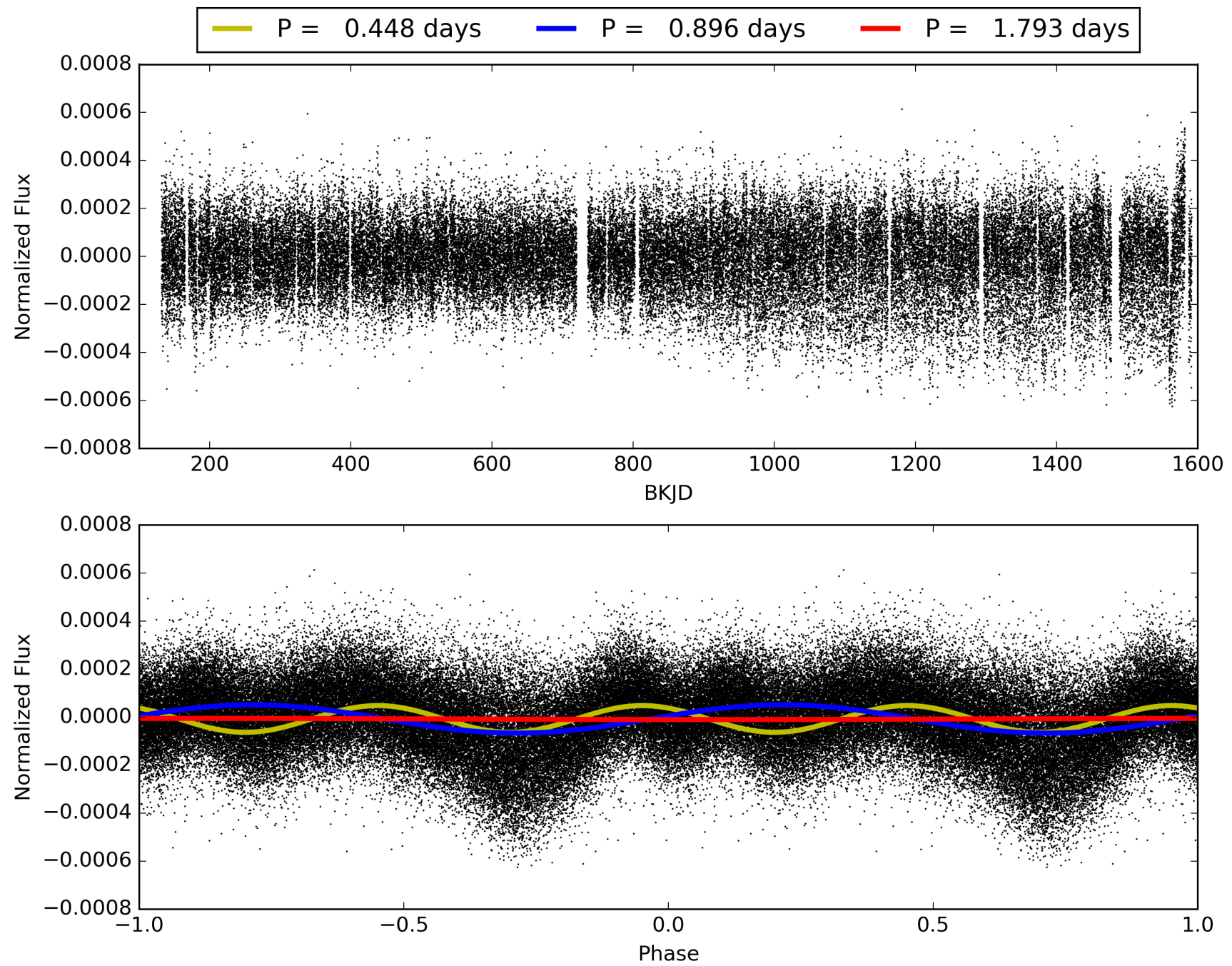
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:29:38 Z

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

TCE 012833566-01, PDC Light Curves

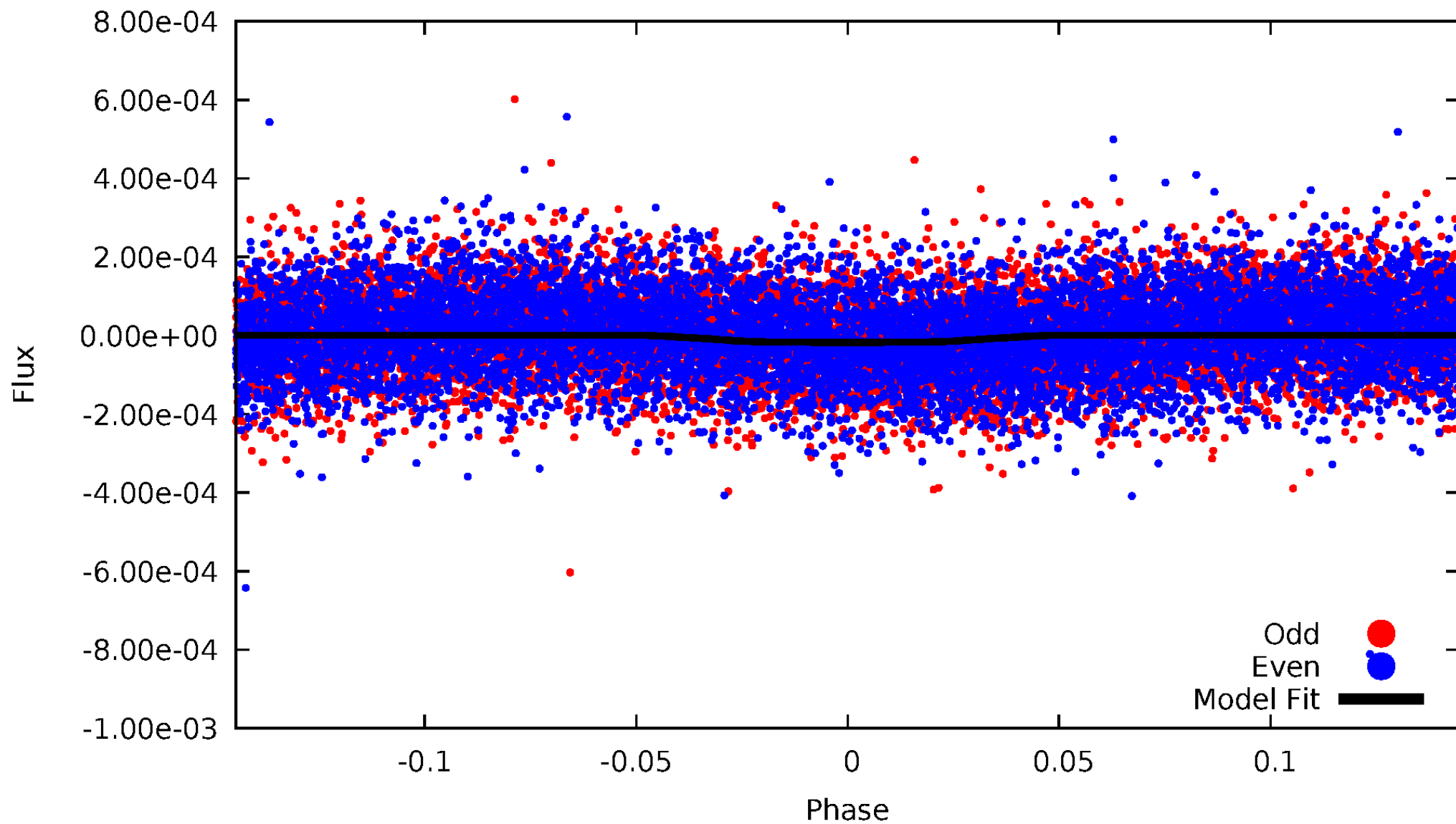


TCE 012833566-01



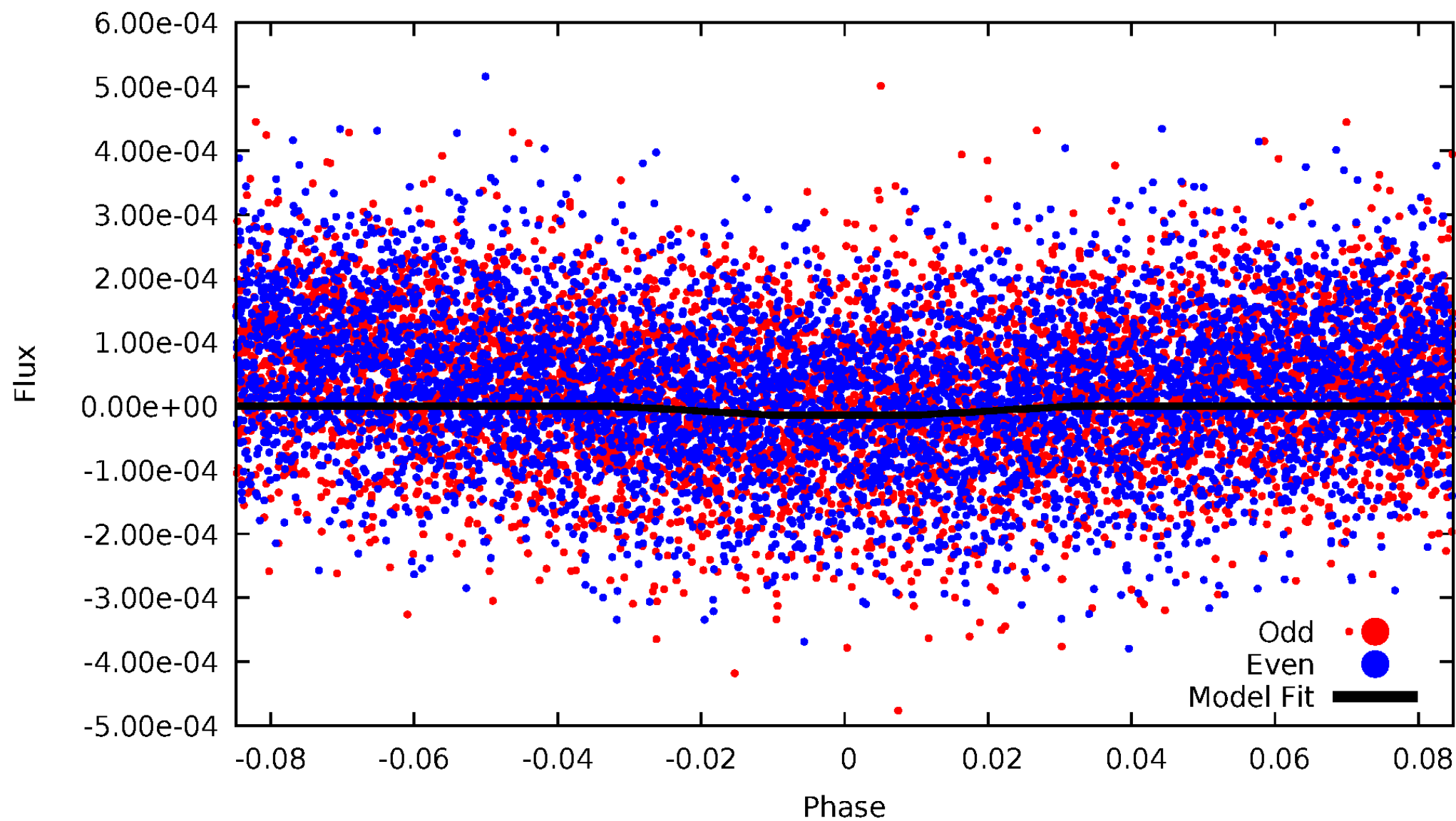
DV Odd/Even

TCE 012833566-01

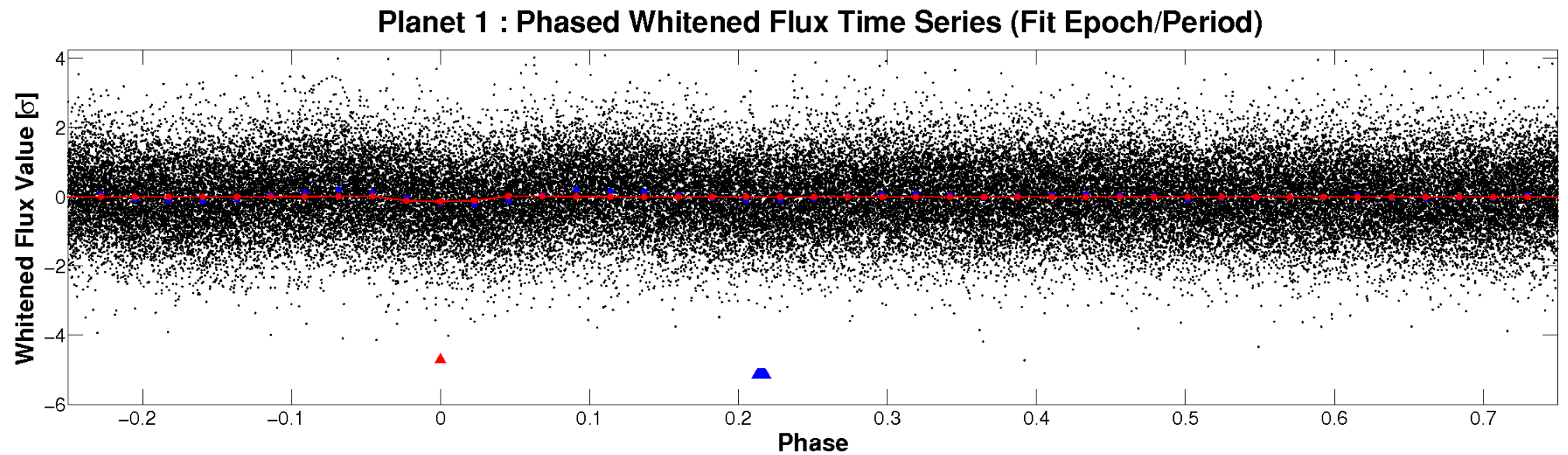
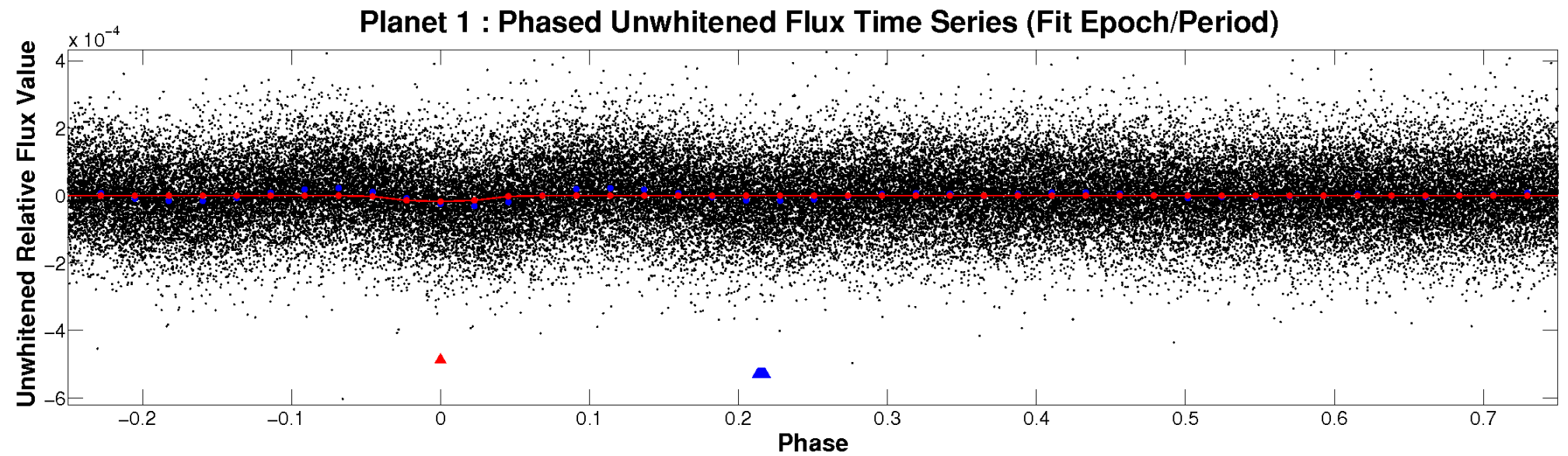


ALT Odd/Even

TCE 012833566-01

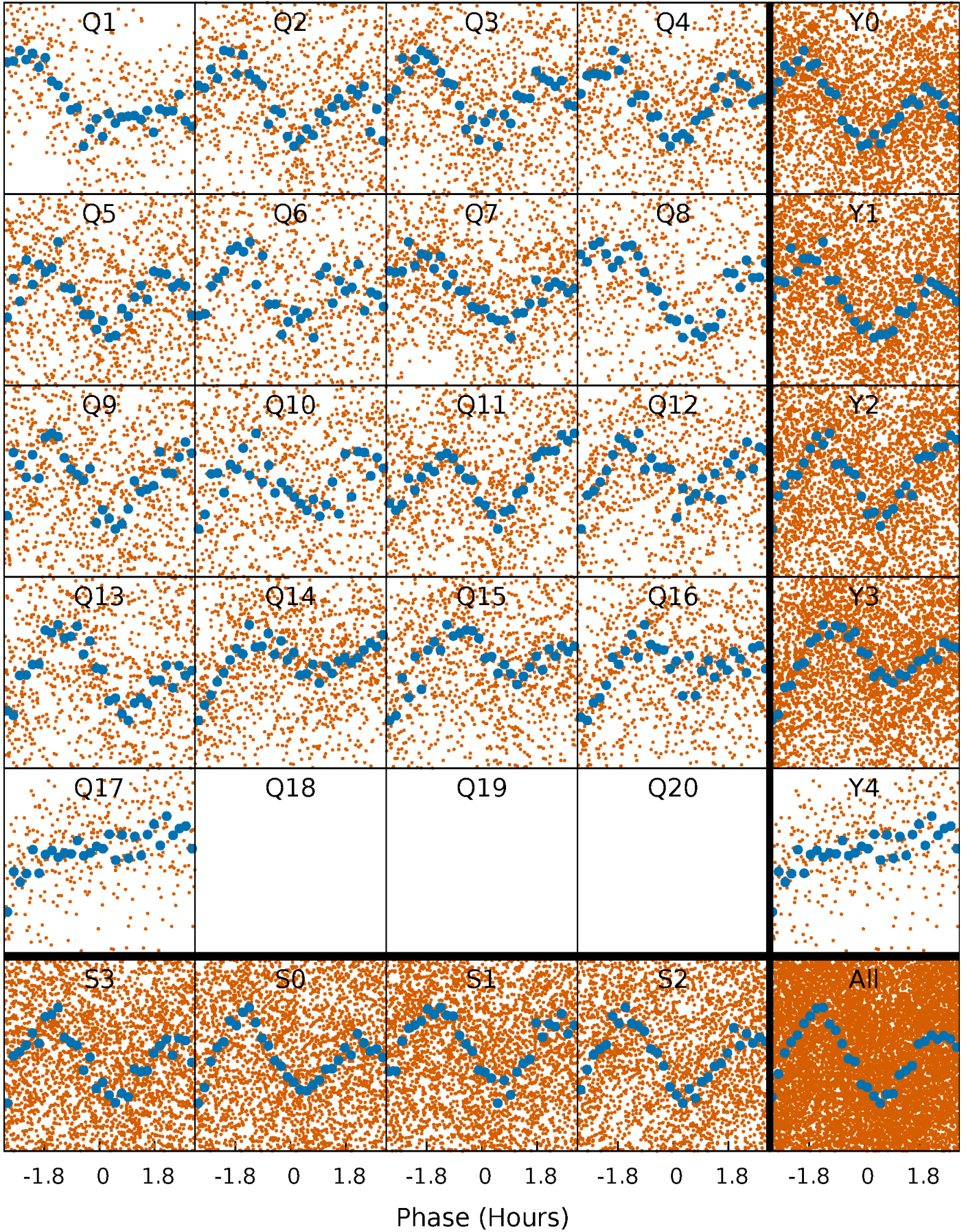


Non-Whitened Vs. Whitened Light Curve



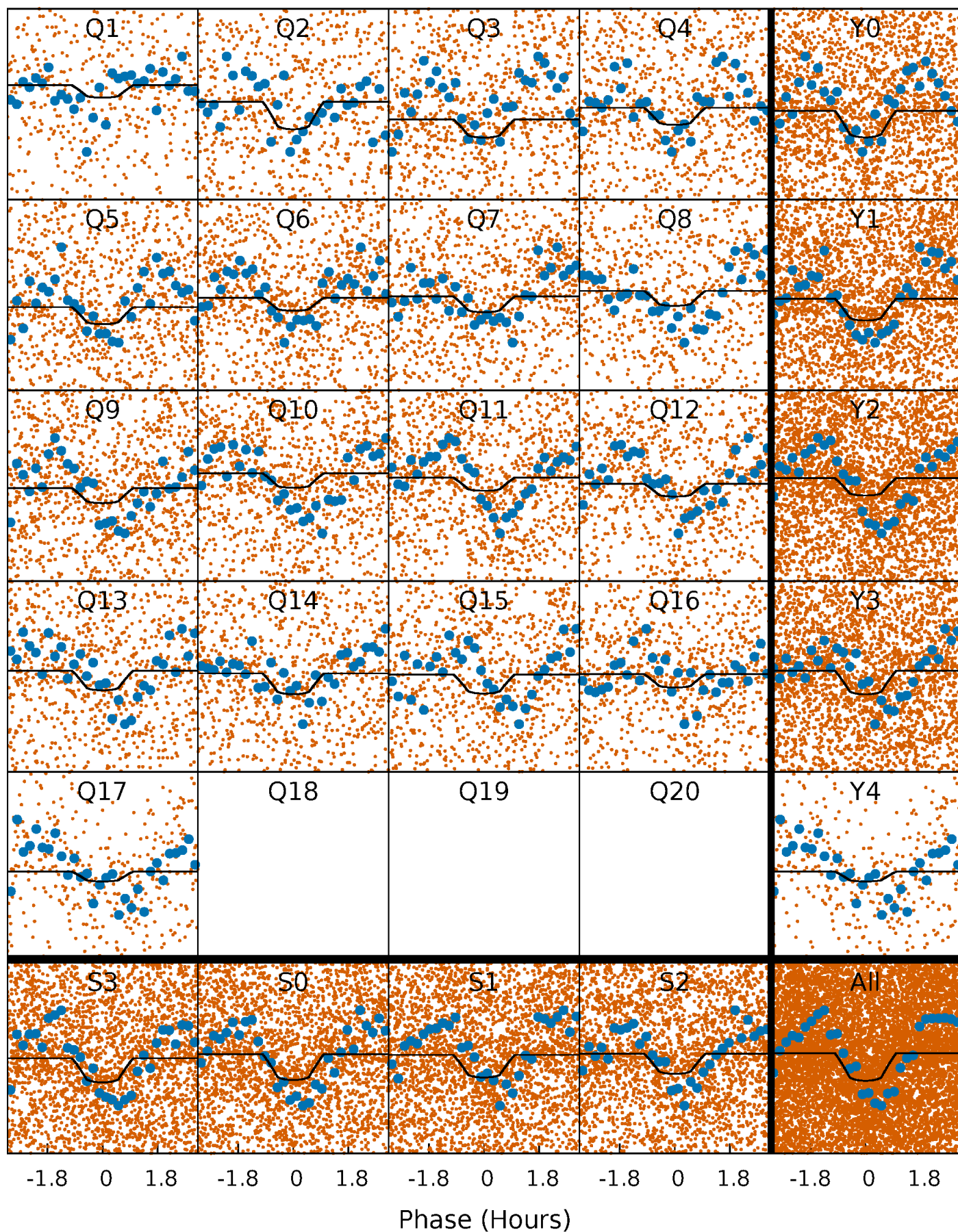
PDC Quarter-Phased Transit Curves

TCE 012833566-01 P= 0.896358 Days $T_0=131.597371$ (BKJD)



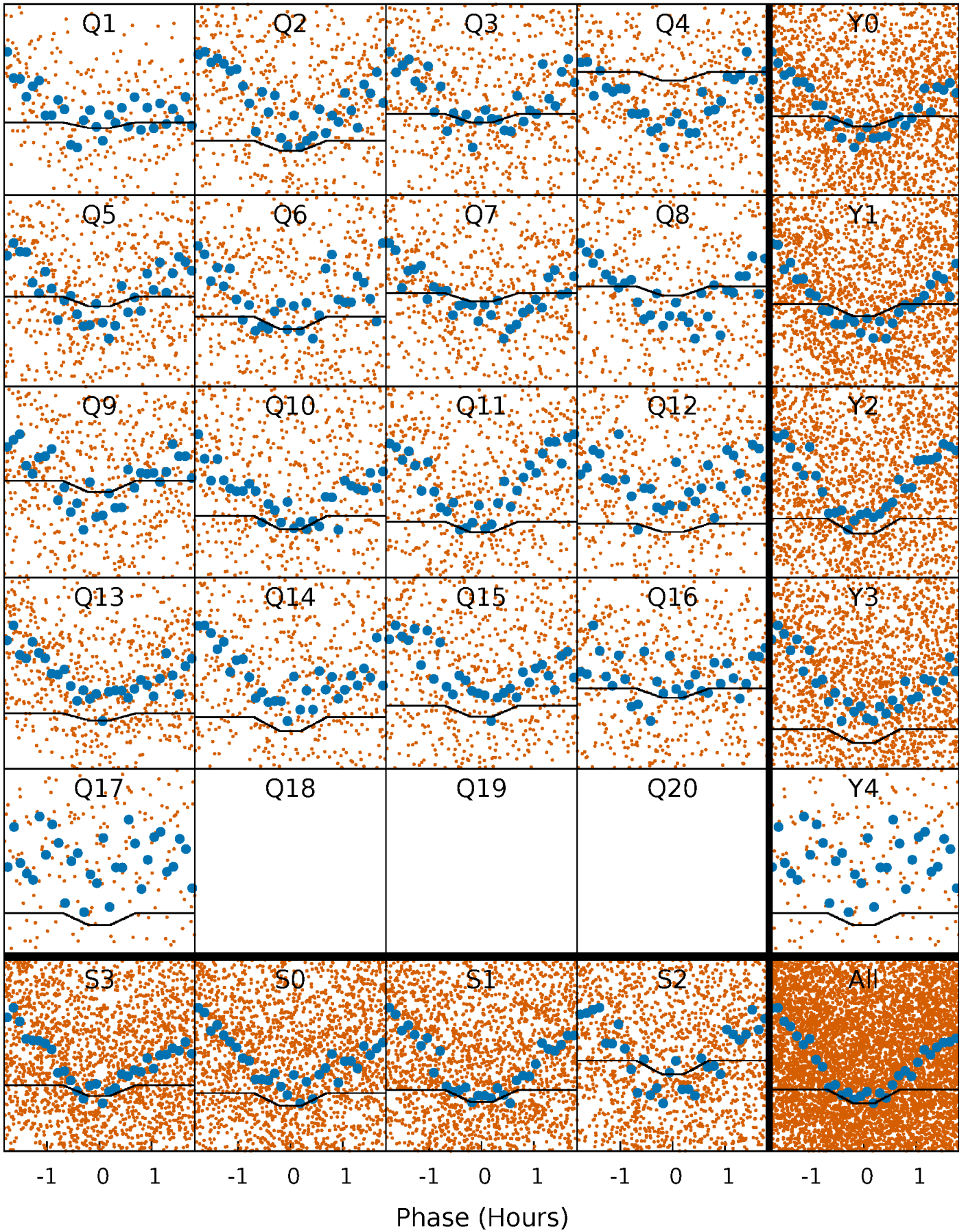
DV Quarter-Phased Transit Curves

TCE 012833566-01 P= 0.896358 Days $T_0=131.597371$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

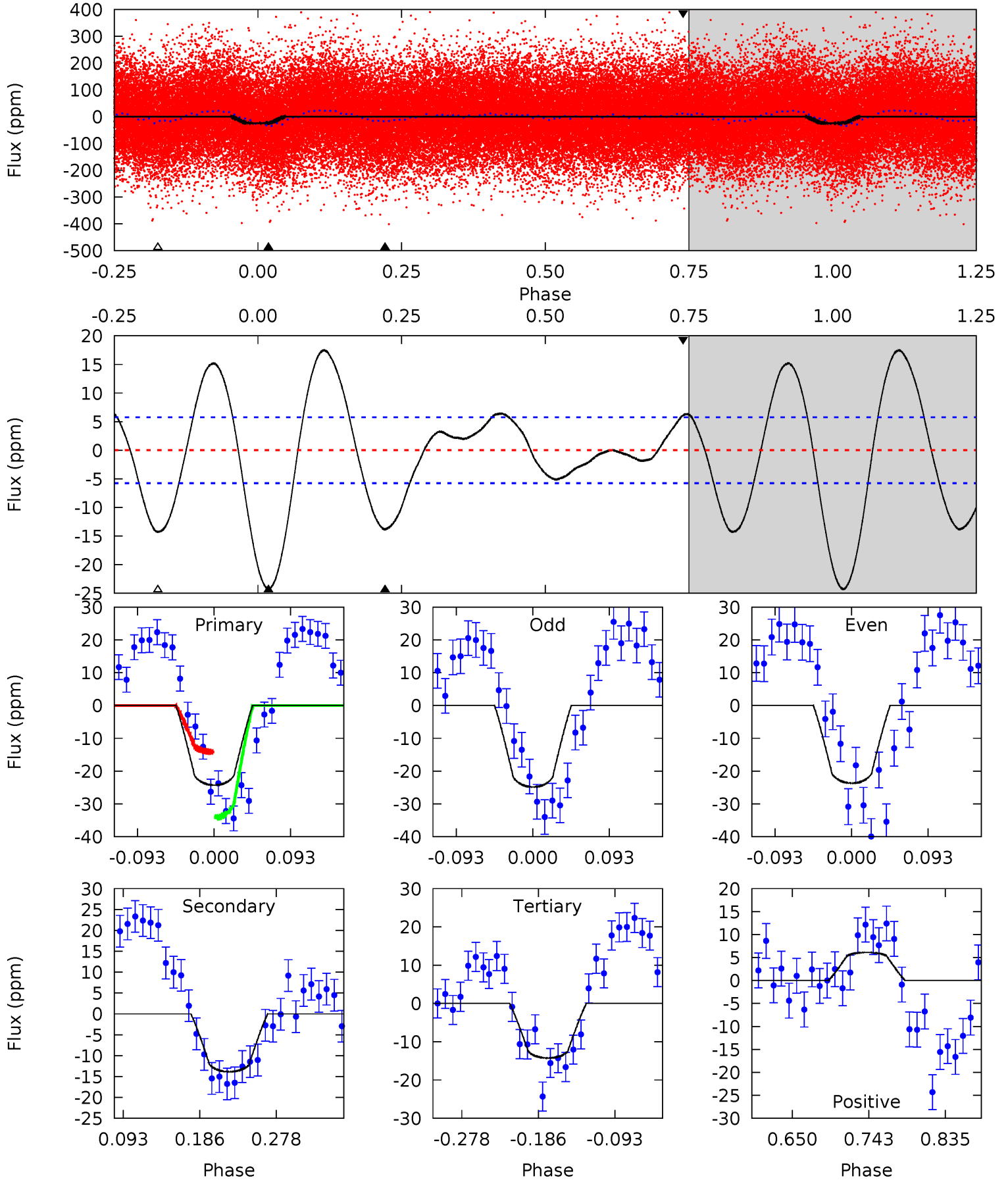
TCE 012833566-01 P= 0.896389 Days $T_0=131.595646$ (BKJD)



DV Model-Shift Uniqueness Test

012833566-01, P = 0.896358 Days, E = 130.701013 Days

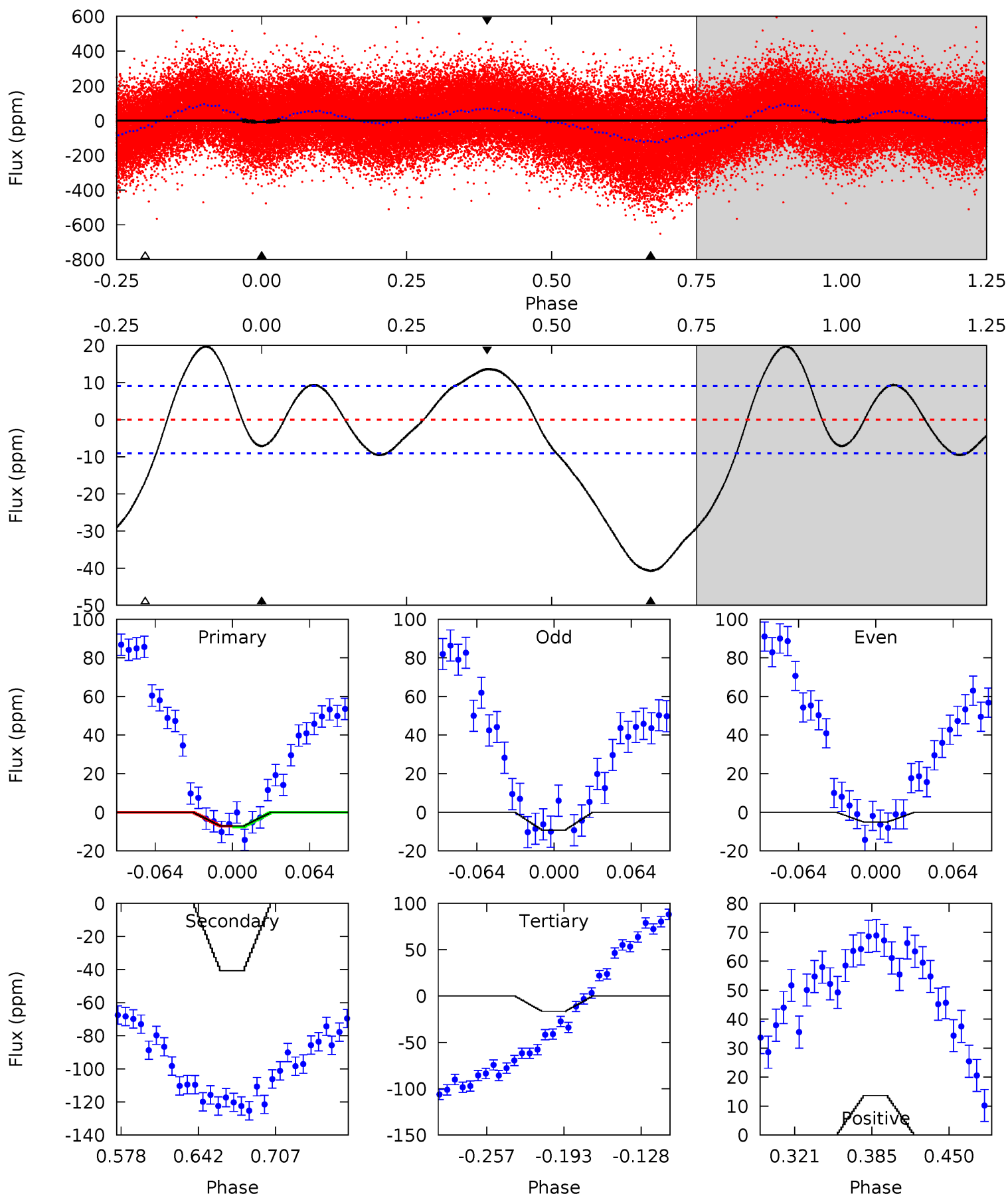
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	11.0	11.4	4.86	4.58	1.68	5.14	7.97	14.5	-0.33	6.16	0.46	1.10	0.42	7.90



Alt Model-Shift Uniqueness Test

012833566-01, P = 0.896389 Days, E = 130.699257 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.66	20.9	8.54	7.01	4.66	1.85	6.92	-4.88	-3.35	12.4	13.9	1.06	1.15	0.33	0.10



Stellar Parameters For KIC 012833566

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6456^{+182}_{-228}	$3.659^{+0.569}_{-0.100}$	$-0.180^{+0.300}_{-0.300}$	$3.030^{+0.547}_{-1.641}$	$1.530^{+0.198}_{-0.428}$	$0.077^{+0.597}_{-0.025}$
	+3%/-4%	+16%/-3%	+167%/-167%	+18%/-54%	+13%/-28%	+771%/-33%
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 012833566-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-14 ± 1	$1.33^{+0.41}_{-0.41}$	4621^{+363}_{-634}	5624^{+827}_{-576}	$1.933^{+1.883}_{-0.807}$
Alt.	-41 ± 2	$1.13^{+0.38}_{-0.38}$	4627^{+323}_{-636}	8524^{+1815}_{-1062}	$7.717^{+8.312}_{-3.416}$

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 $A_{obs} \gg 1.0$

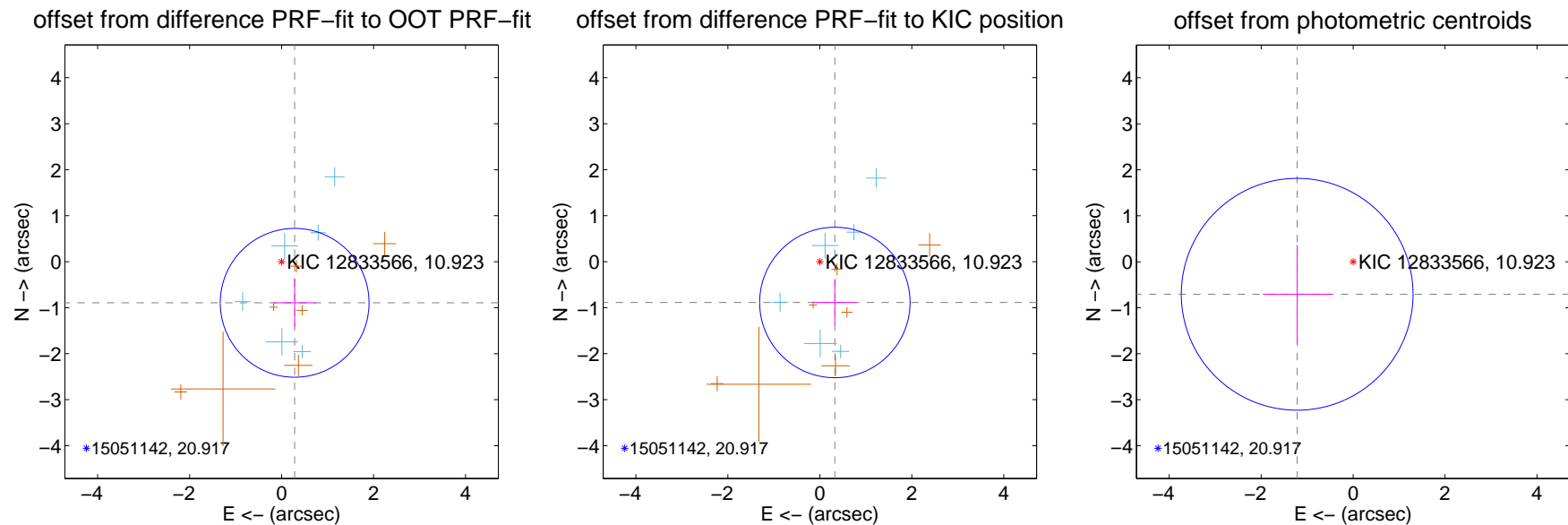
DV Centroid Data

Supplemental centroid analysis for 012833566-01. **Kepler magnitude: 10.92.** Transit SNR 8.16

There are 6 quarters with good PRF difference image offsets

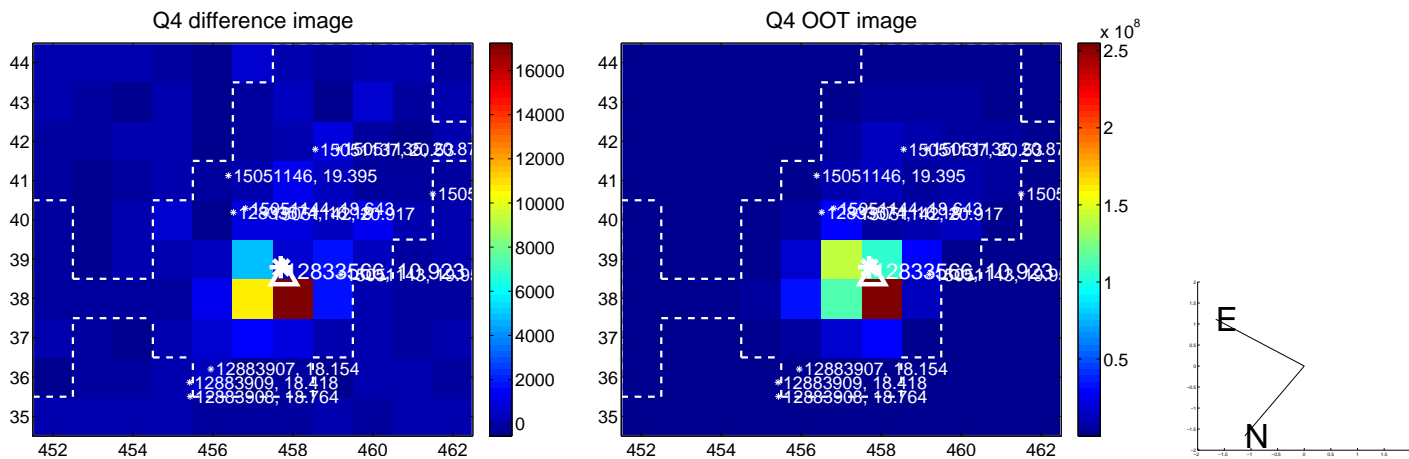
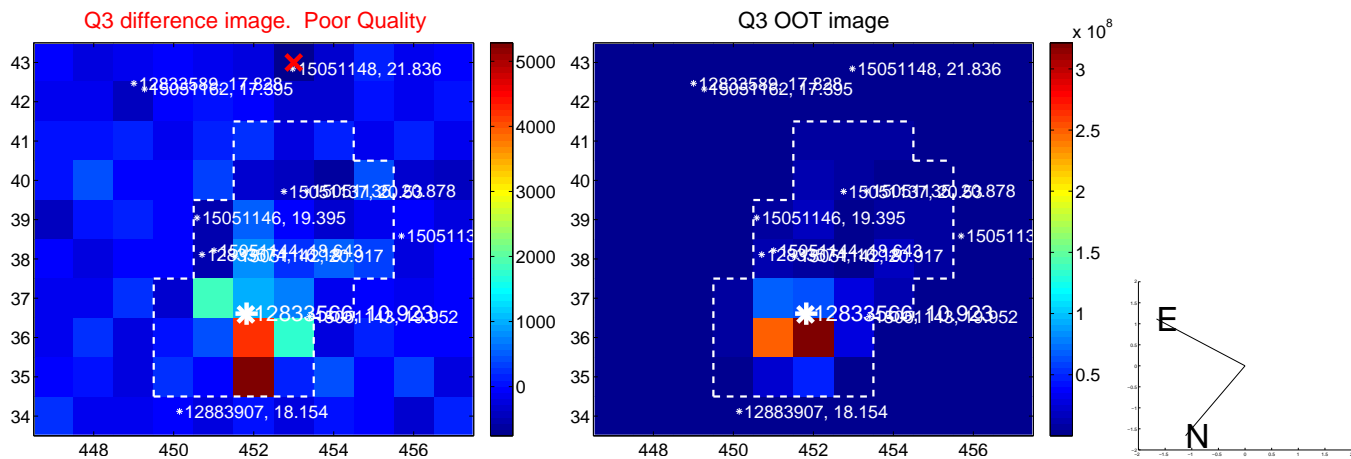
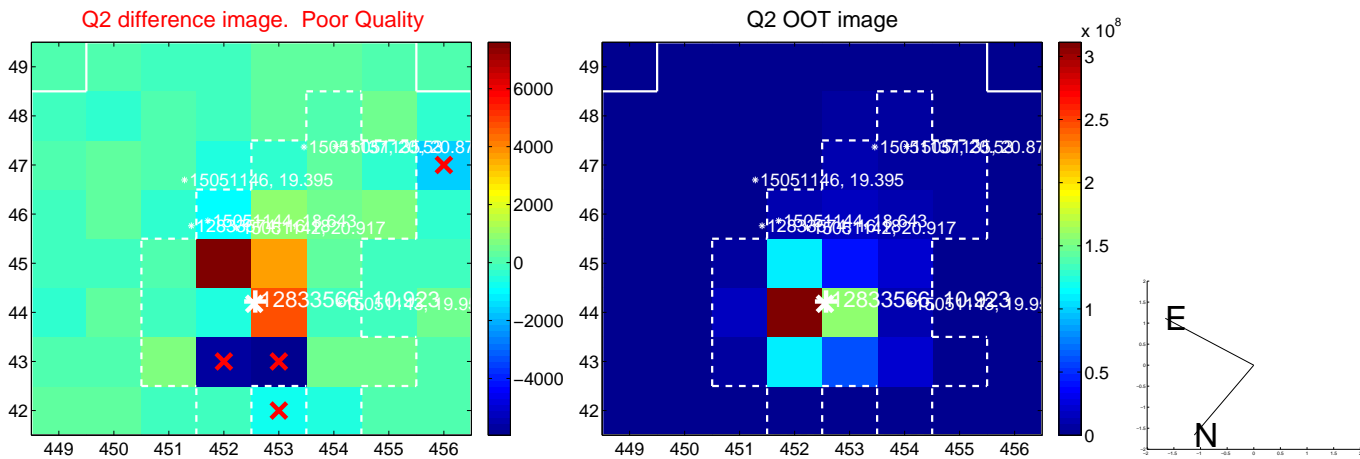
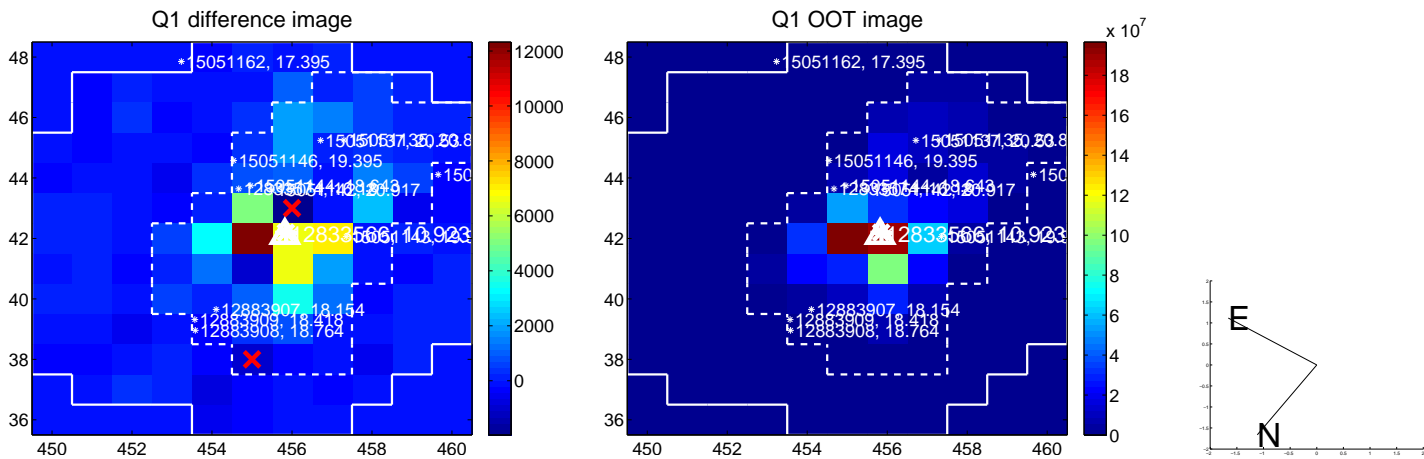
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.938 ± 0.539	1.74	-0.285 ± 0.468	-0.894 ± 0.528
PRF-fit source offset from KIC position	0.945 ± 0.545	1.73	-0.327 ± 0.467	-0.886 ± 0.497
photometric centroid source offset	1.41 ± 0.84	1.67	1.22 ± 0.74	-0.71 ± 1.07

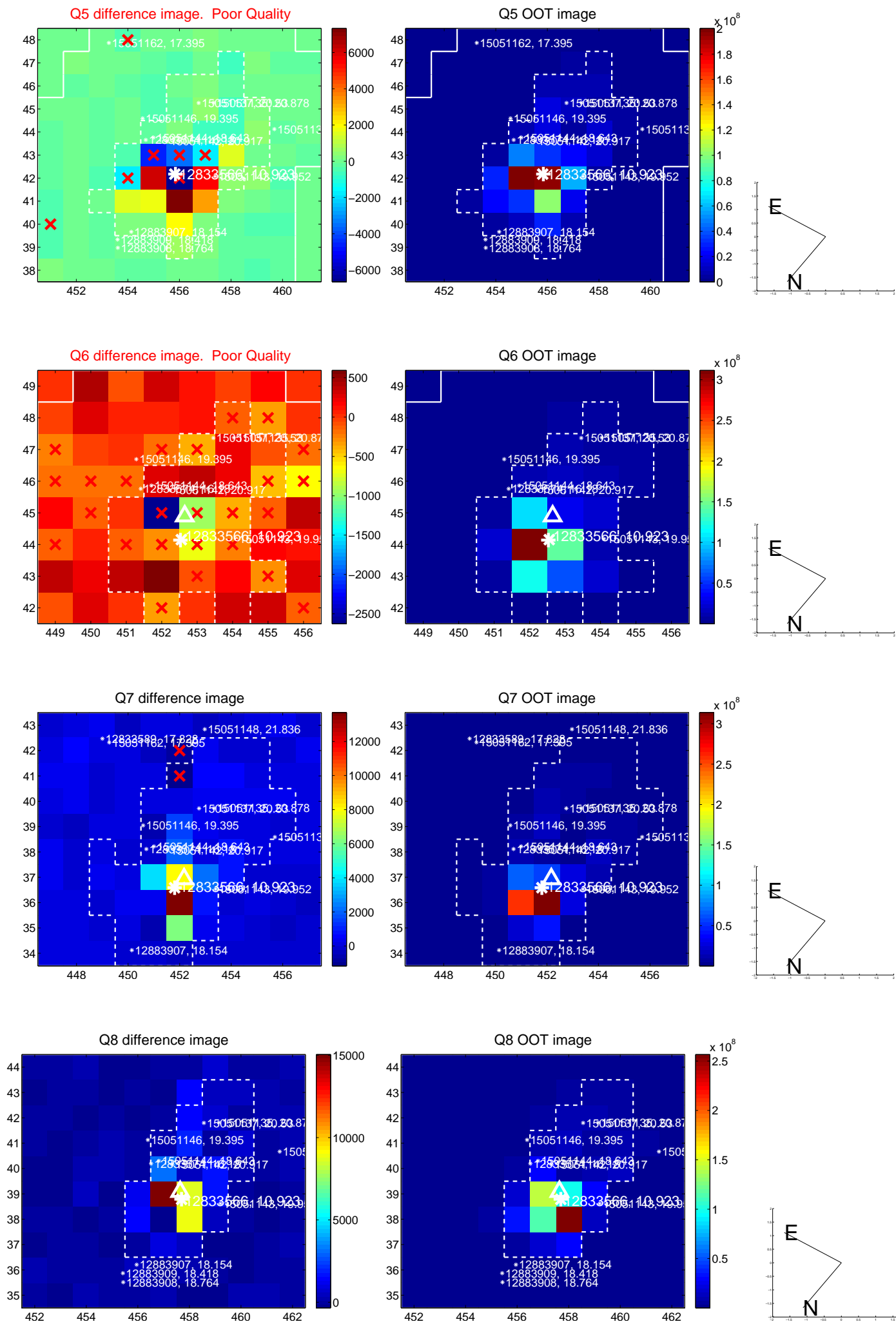


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

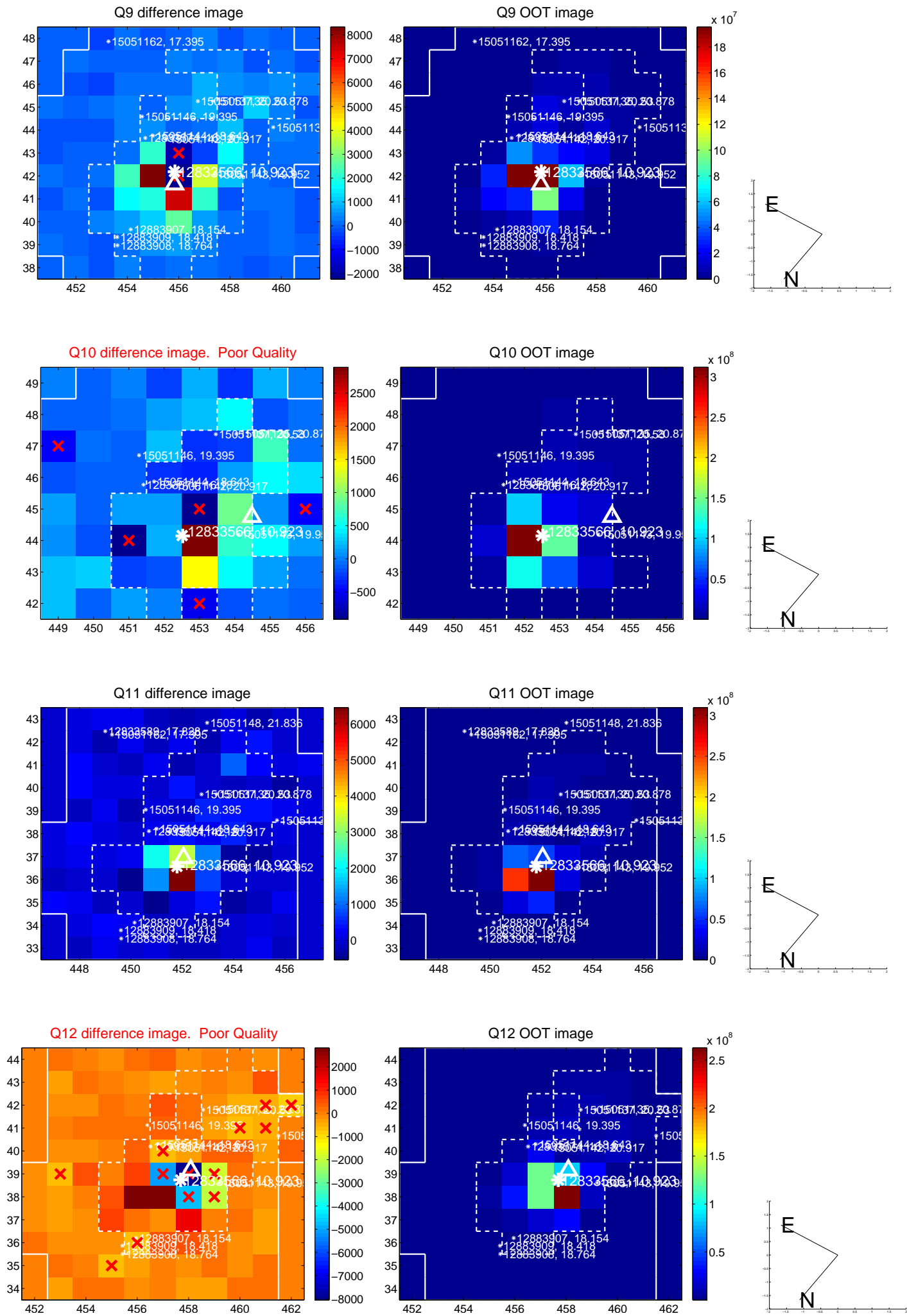
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



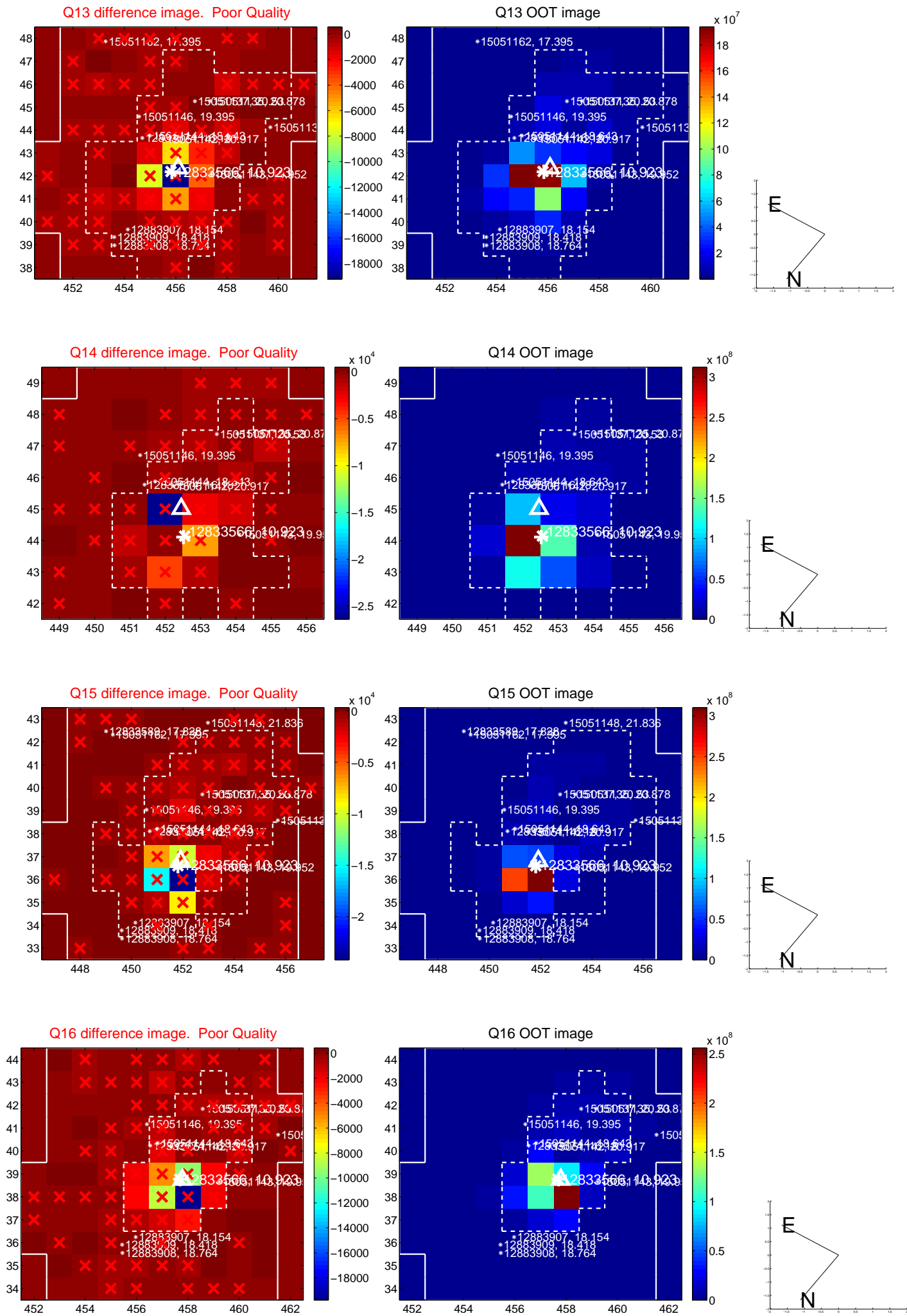
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



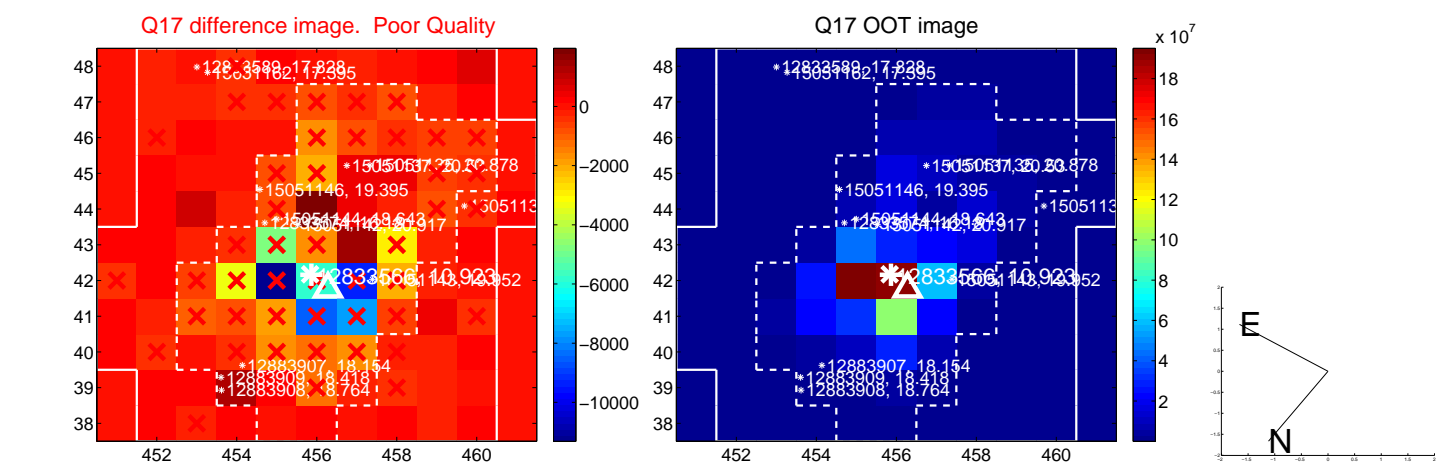
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



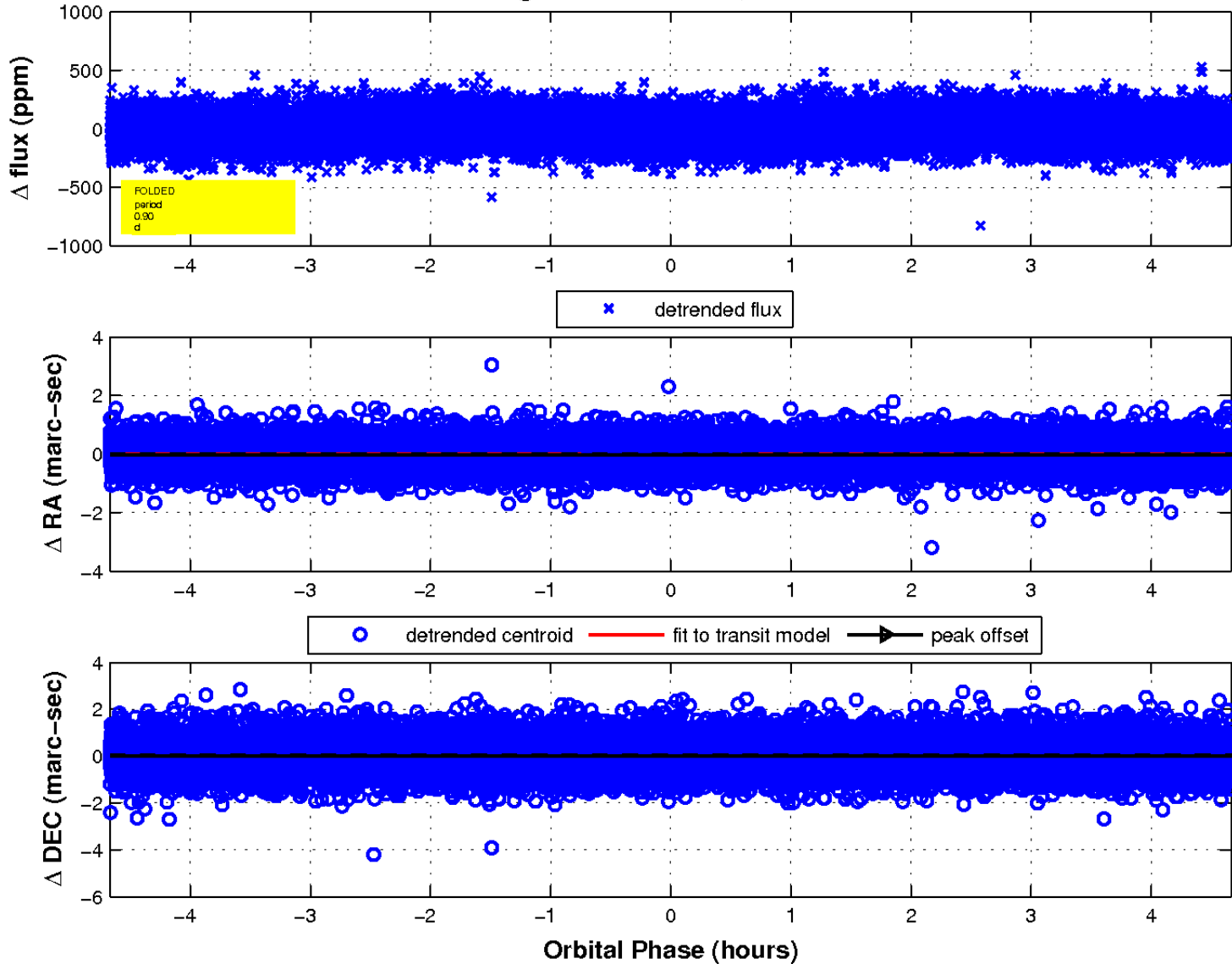
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

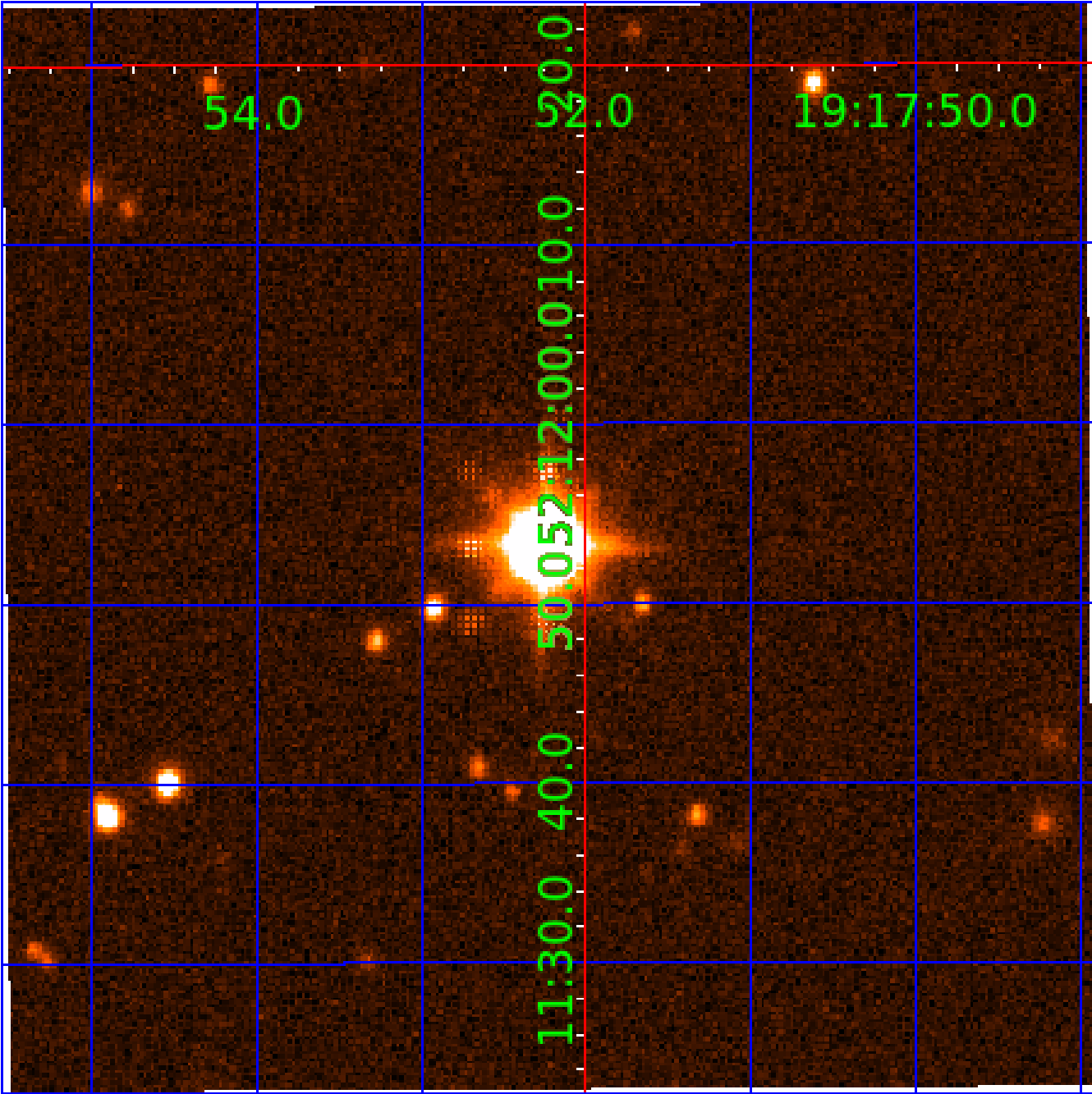


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 012833566

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})
012833566-01	OBS	No	0.896358	131.597371	17.4	1.556	14.0	8.2	3.03	6456	1.48	32538.78
012833566-02	OBS	No	0.896361	131.788150	13.0	1.849	8.3	6.7	3.03	6456	1.28	32538.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012833566-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
012833566-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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 012833566-02

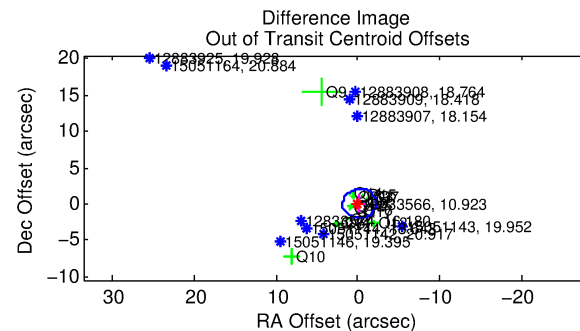
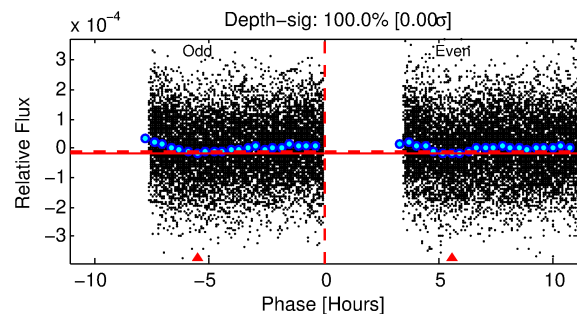
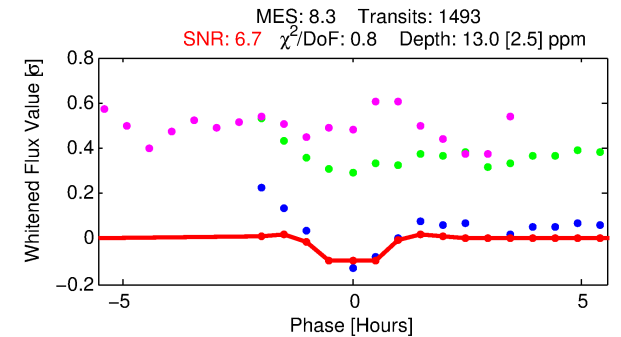
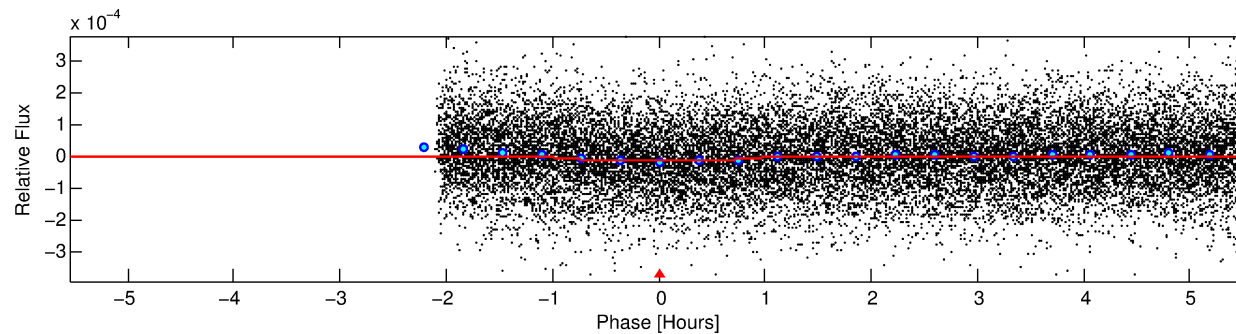
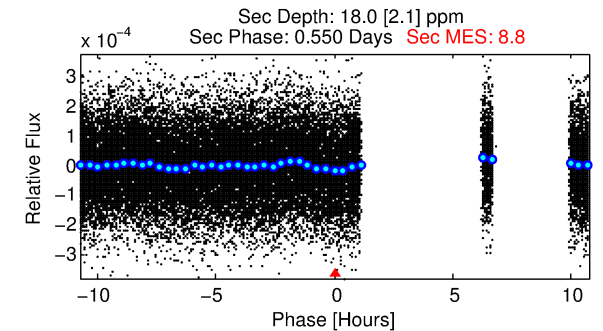
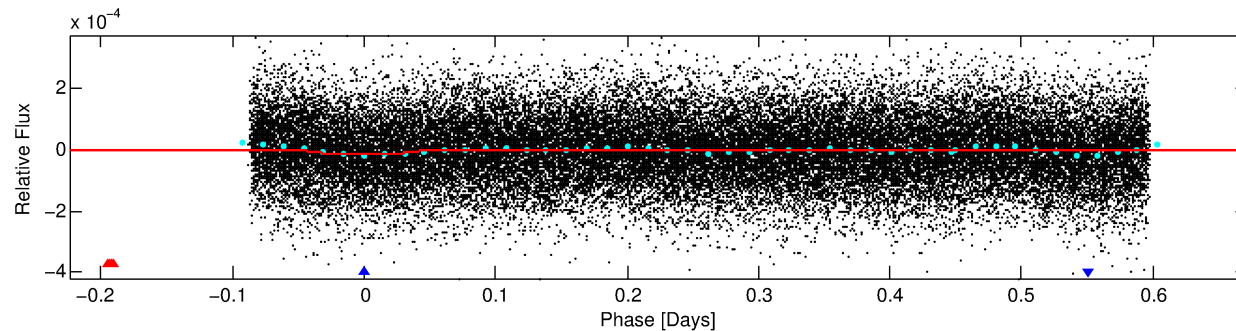
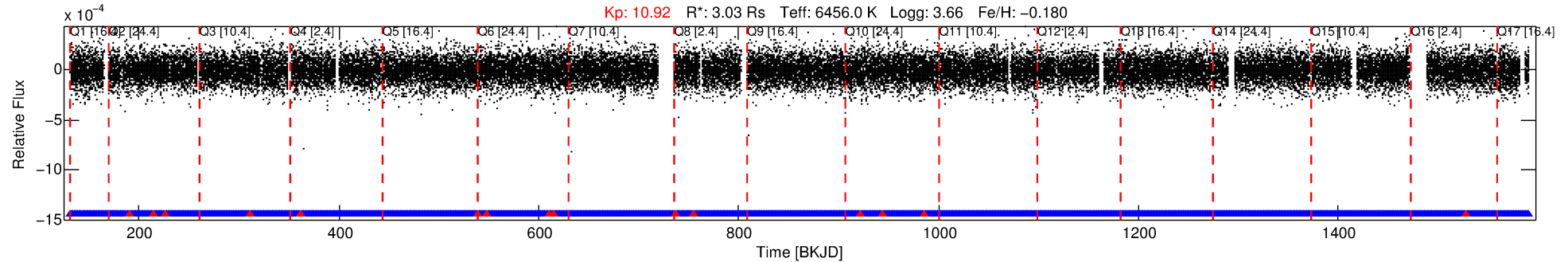
No Significant Match Found

DV One-Page Summary

KIC: 12833566 Candidate: 2 of 2 Period: 0.896 d

KOI: K03024 Corr: No Ephemeris Match

Kp: 10.92 R*: 3.03 Rs Teff: 6456.0 K Logg: 3.66 Fe/H: -0.180



DV Fit Results:

Period = 0.89636 [0.00001] d
Epoch = 131.7882 [0.0030] BKJD
Rp/R* = 0.0039 [0.0008]
a/R* = 1.89 [1.50]
b = 0.90 [0.23]
Seff = 32538.65 [31094.88]
Teq = 3425 [818] K
Rp = 1.28 [0.74] Re
a = 0.0210 [0.0119] AU
Ag = 2.66 [2.77] [0.60σ]
Teffp = 6760 [779] K [2.95σ]

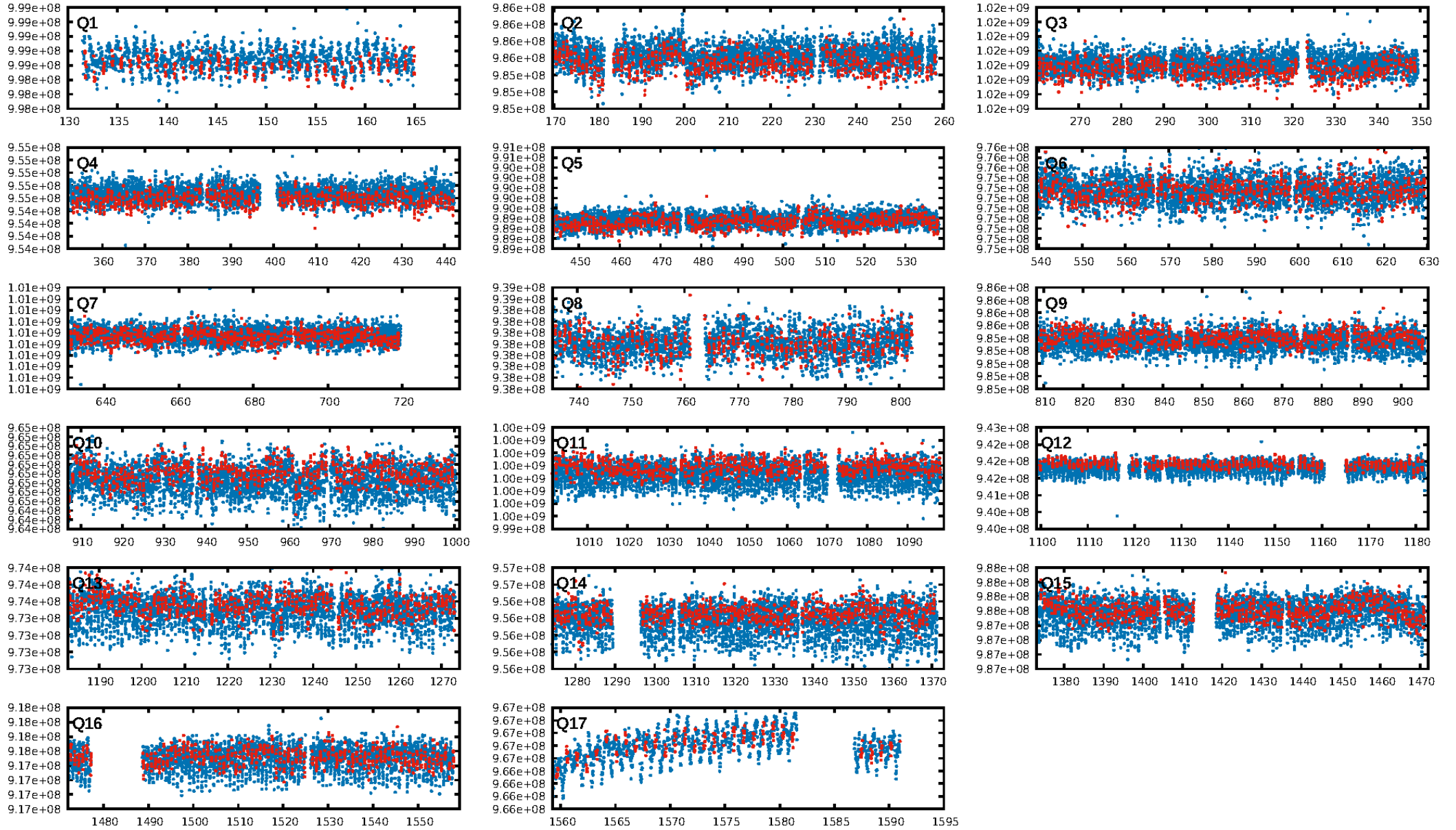
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.10e-13
RollingBand-fgt: 0.99 [1411/1426]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 4.194 arcsec [3.21σ]
OotOffset-rm: 0.147 arcsec [0.22σ]
KicOffset-rm: 0.179 arcsec [0.28σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
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DiffImageOverlap-fno: 0.00 [0/17]

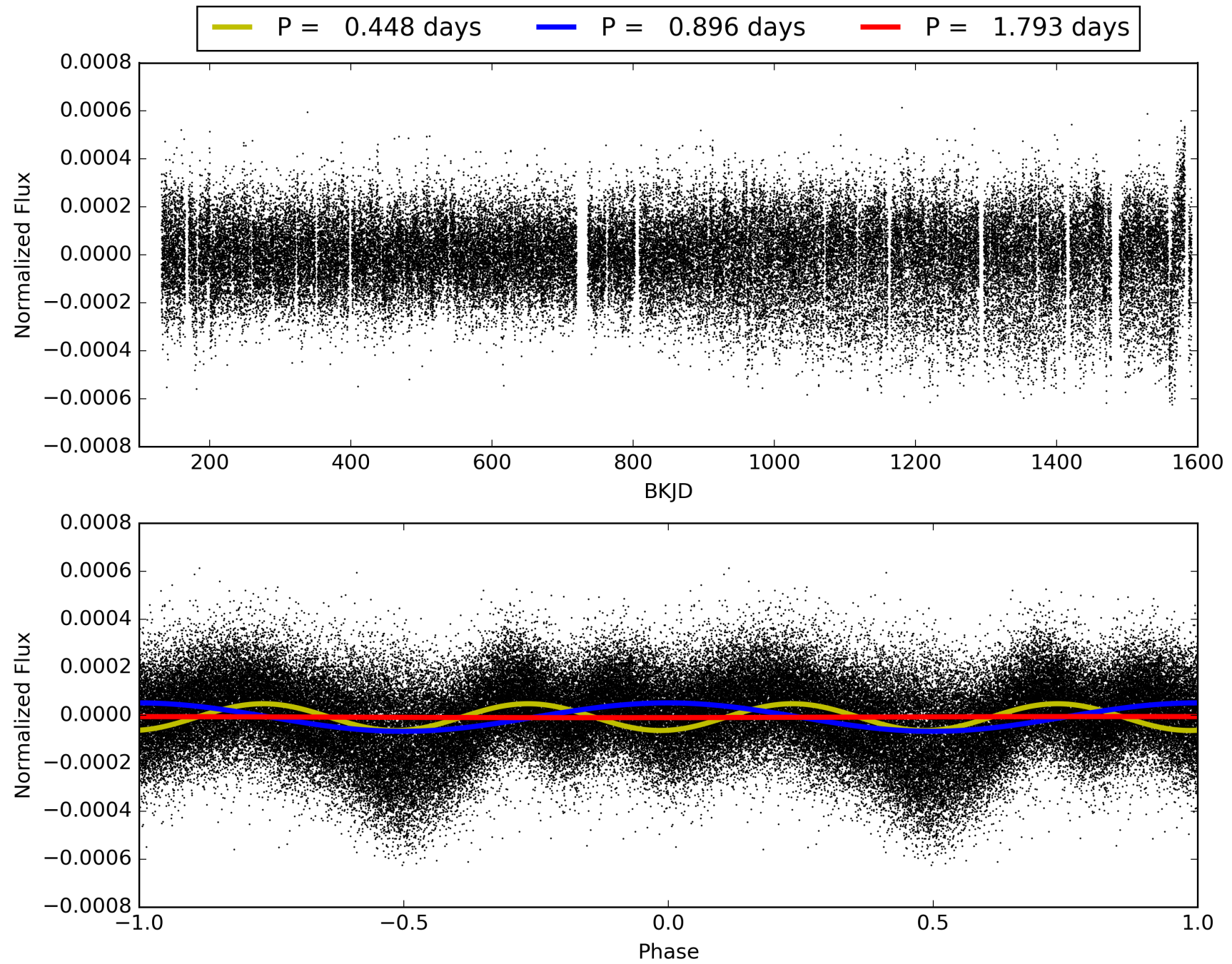
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:29:47 Z

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

TCE 012833566-02, PDC Light Curves

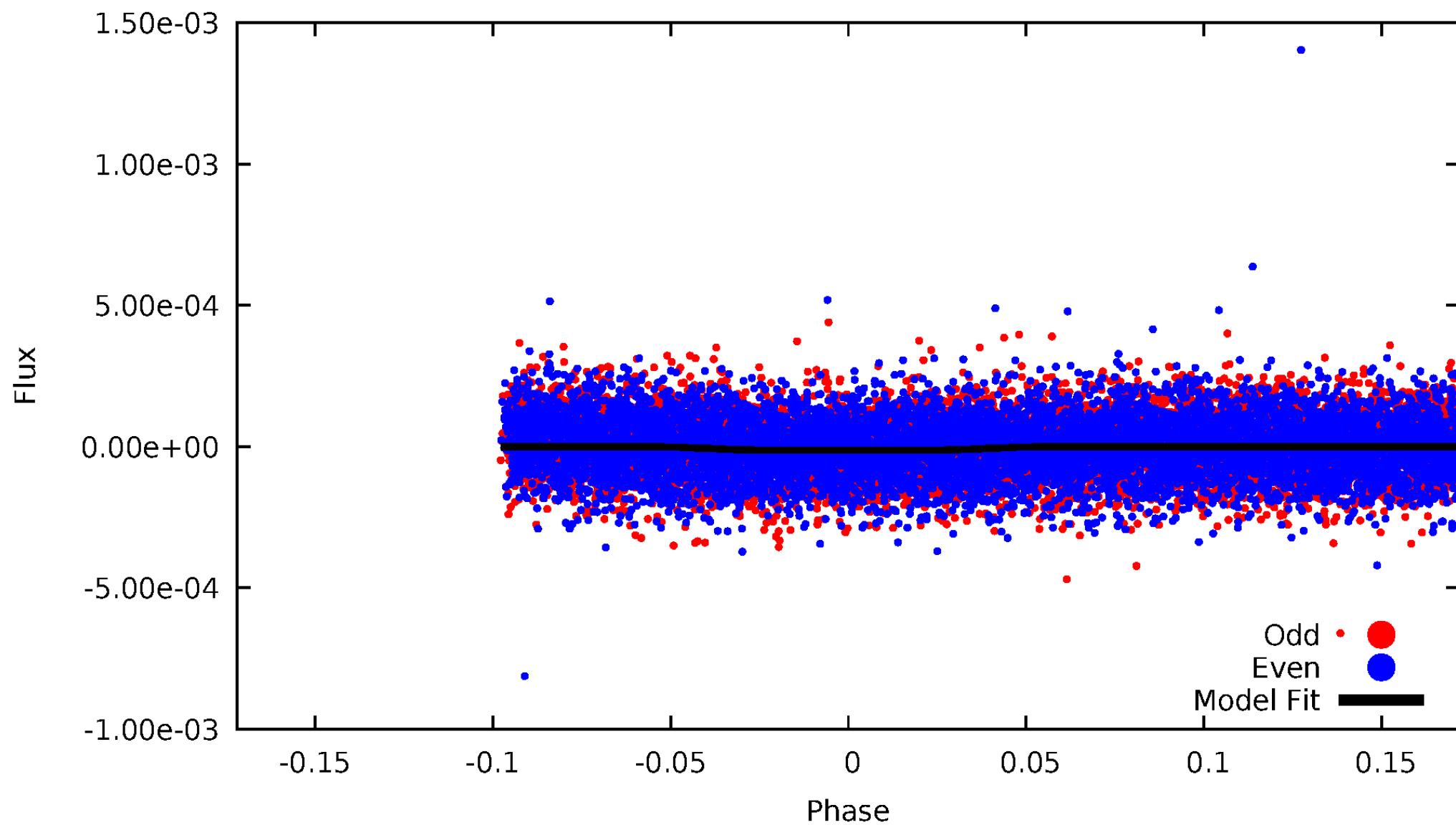


TCE 012833566-02



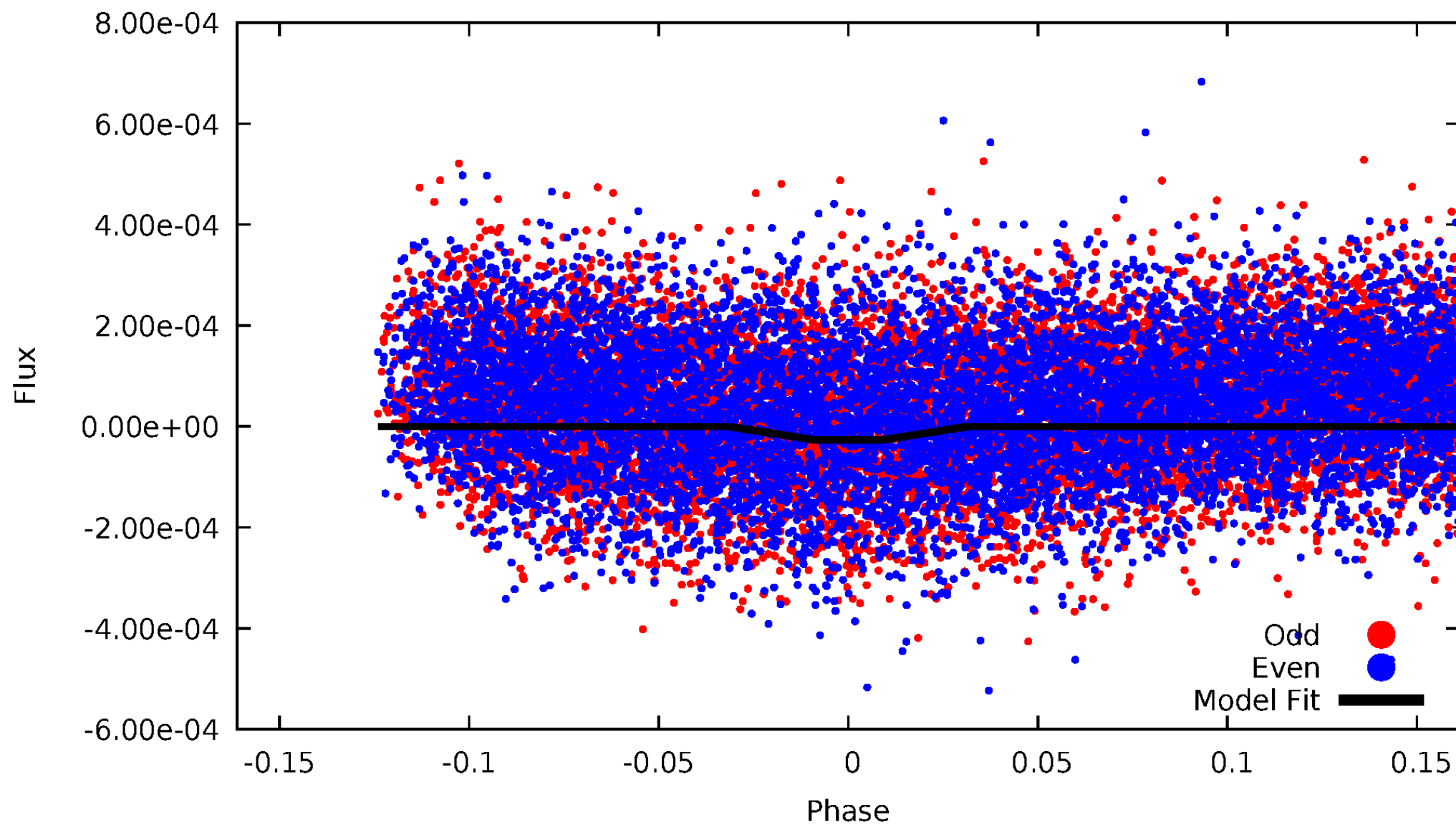
DV Odd/Even

TCE 012833566-02



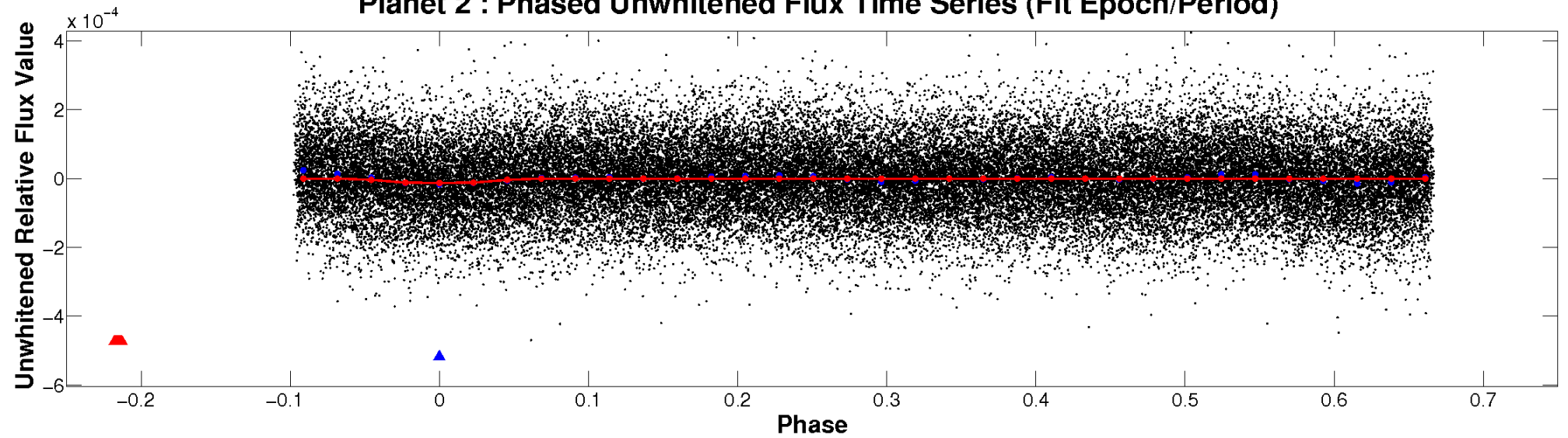
ALT Odd/Even

TCE 012833566-02

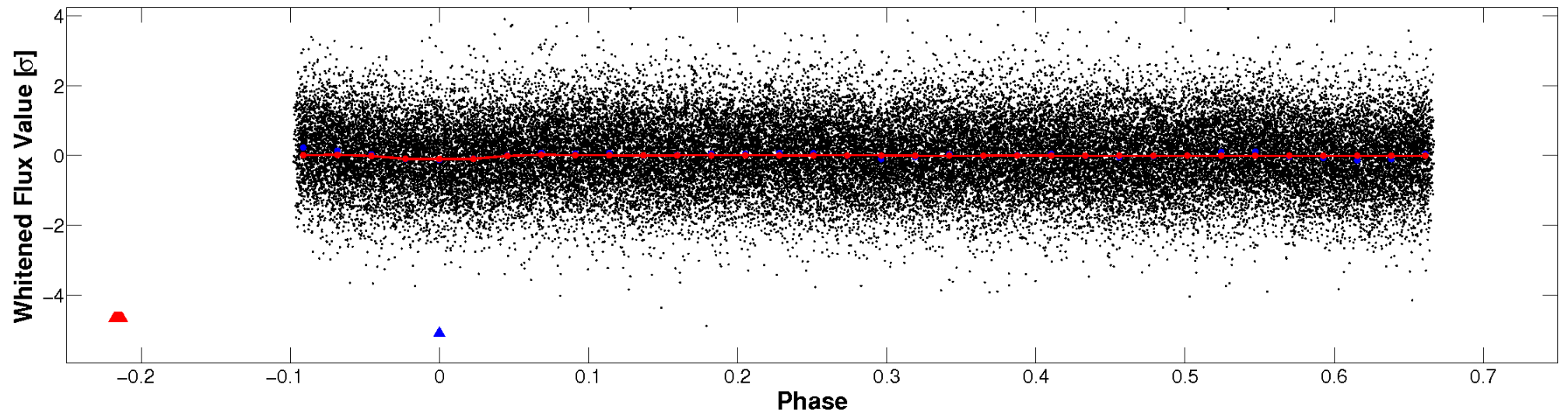


Non-Whitened Vs. Whitened Light Curve

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

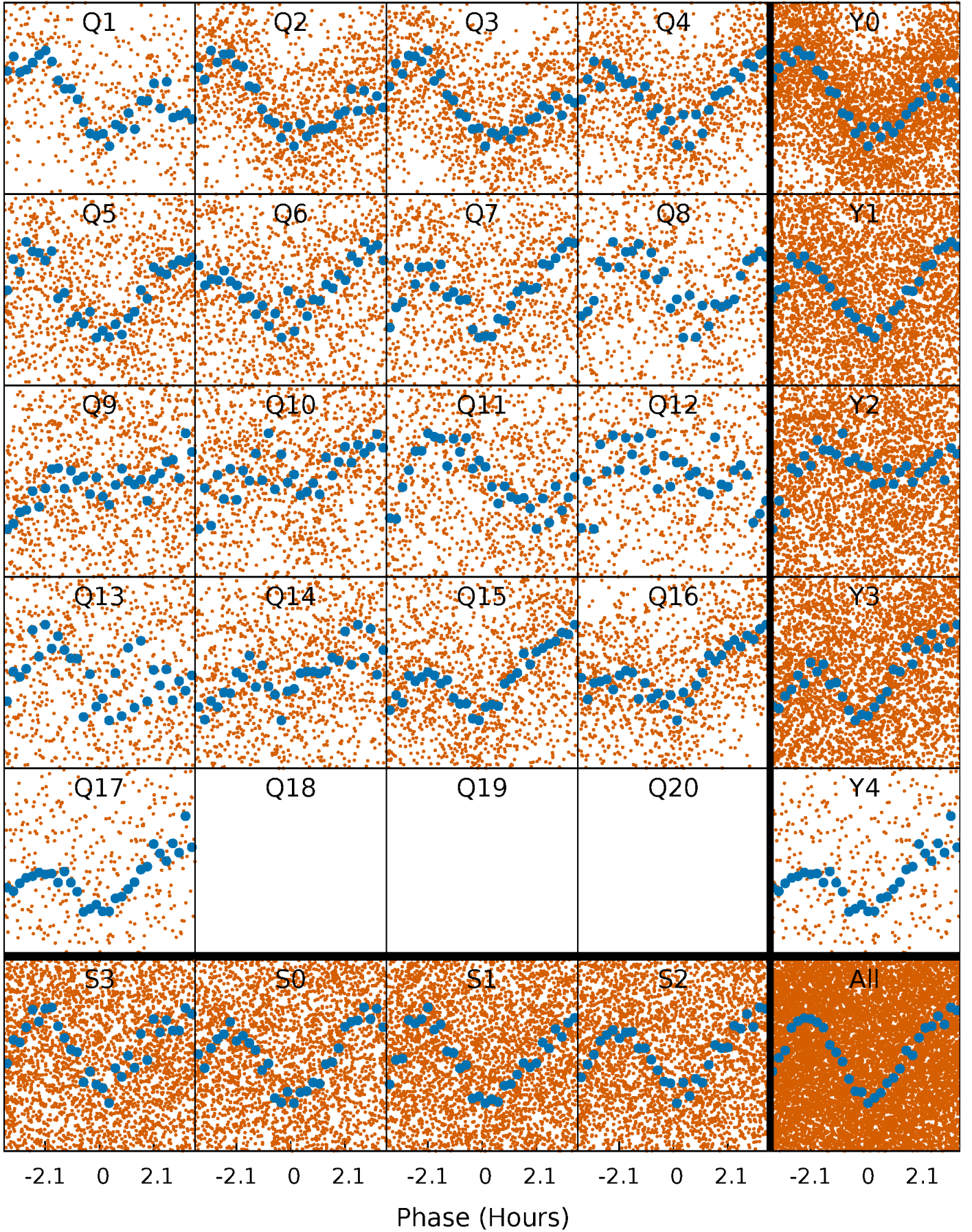


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



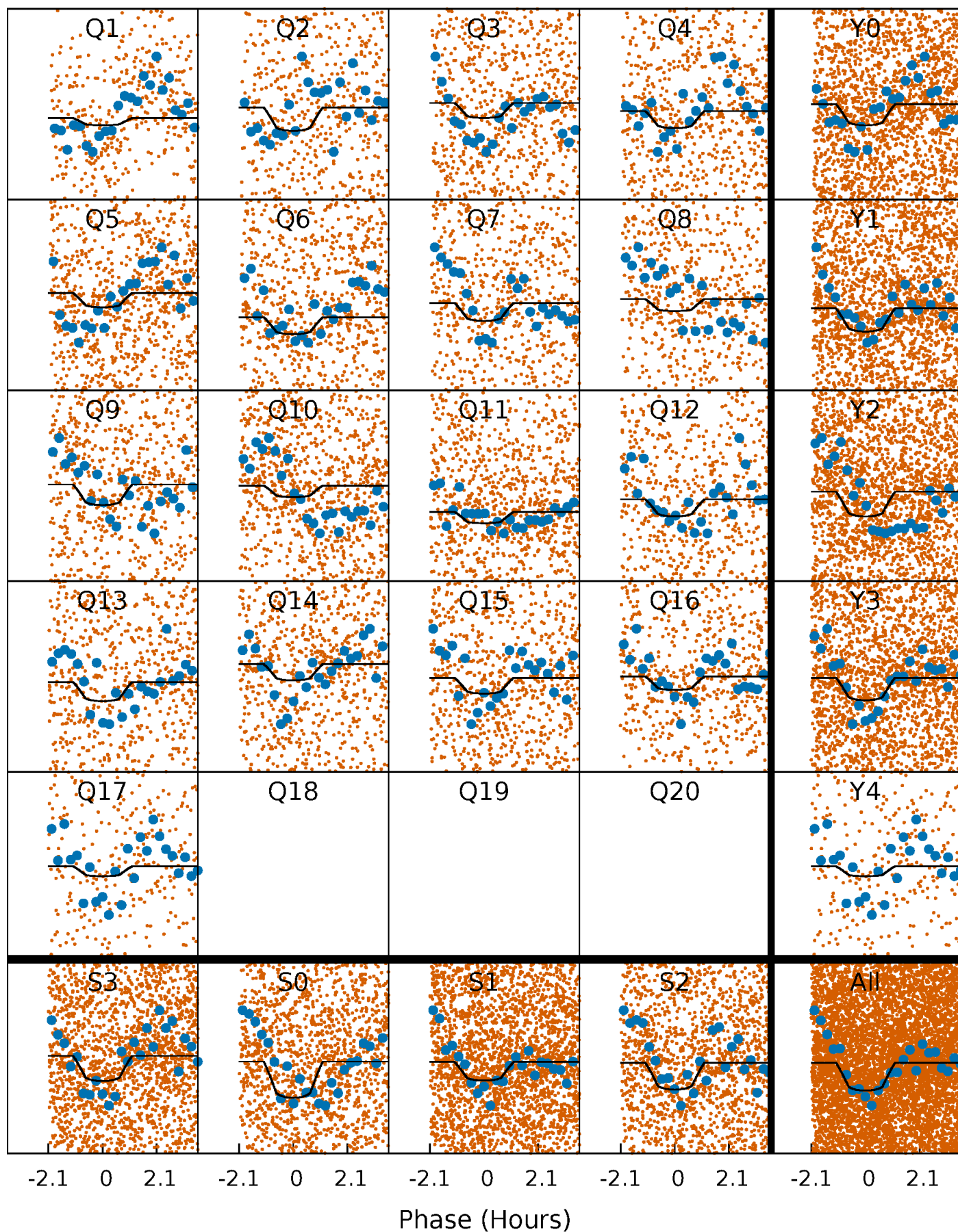
PDC Quarter-Phased Transit Curves

TCE 012833566-02 $P = 0.896361$ Days $T_0 = 131.788150$ (BKJD)



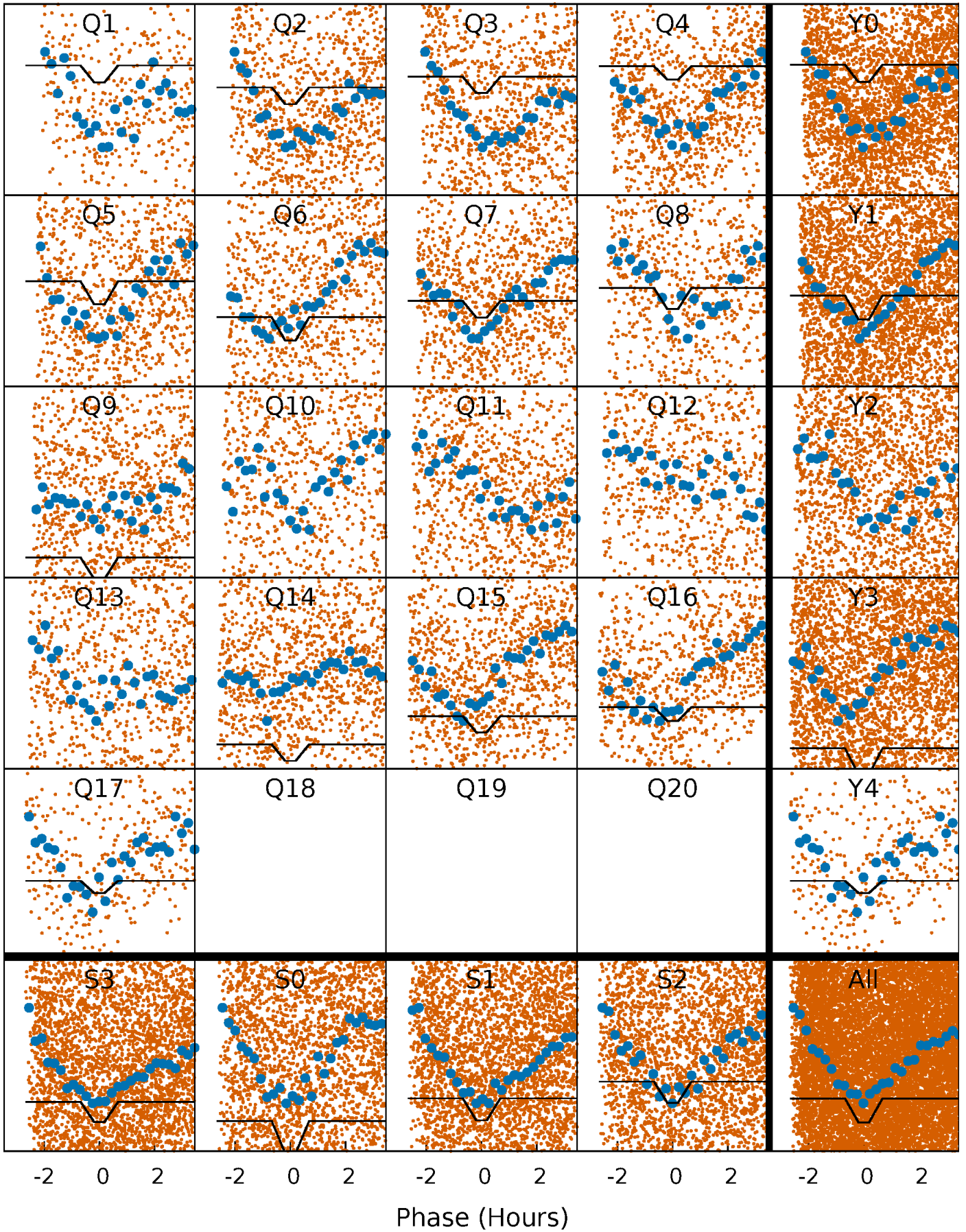
DV Quarter-Phased Transit Curves

TCE 012833566-02 $P = 0.896361$ Days $T_0 = 131.788150$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

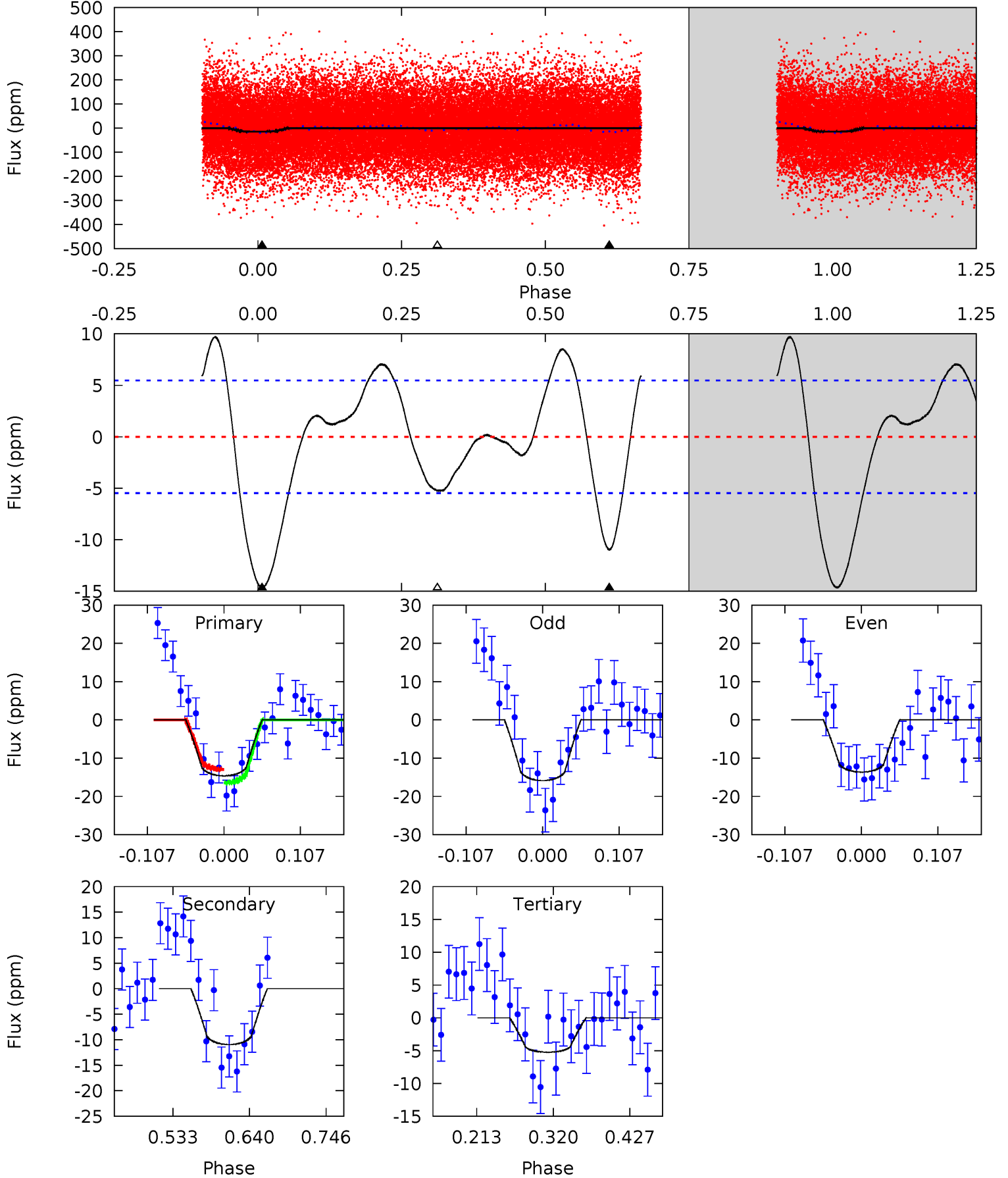
TCE 012833566-02 P= 0.896373 Days $T_0=131.792406$ (BKJD)



DV Model-Shift Uniqueness Test

012833566-02, P = 0.896361 Days, E = 130.891789 Days

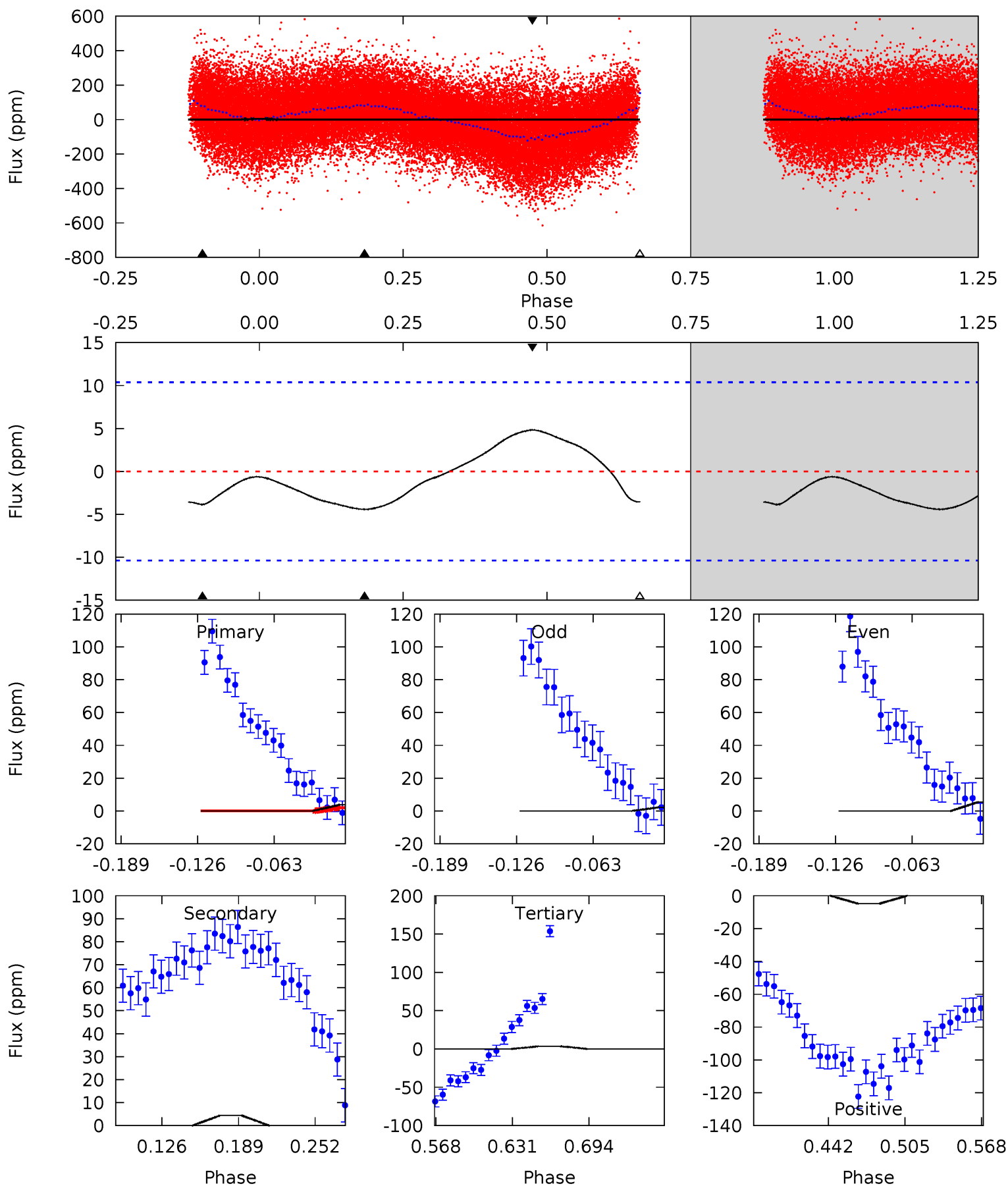
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	9.11	4.35	0	4.55	1.61	2.81	7.82	12.2	4.76	9.11	0.93	0.94	0.40	1.47



Alt Model-Shift Uniqueness Test

012833566-02, P = 0.896373 Days, E = 130.896033 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.73	1.98	1.60	2.17	4.66	1.86	1.15	0.13	-0.44	0.38	-0.19	0.72	0.65	0.52	0.81



Stellar Parameters For KIC 012833566

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6456^{+182}_{-228}	$3.659^{+0.569}_{-0.100}$	$-0.180^{+0.300}_{-0.300}$	$3.030^{+0.547}_{-1.641}$	$1.530^{+0.198}_{-0.428}$	$0.077^{+0.597}_{-0.025}$
	+3%/-4%	+16%/-3%	+167%/-167%	+18%/-54%	+13%/-28%	+771%/-33%
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 012833566-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 1	$1.17^{+0.35}_{-0.38}$	4653^{+321}_{-624}	5710^{+892}_{-593}	$1.942^{+2.170}_{-0.778}$
Alt.	-4 ± 2	$1.58^{+0.39}_{-0.48}$	4639^{+346}_{-639}	3498^{+858}_{-7039}	$0.434^{+0.476}_{-0.258}$

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 $A_{obs} \gg 1.0$

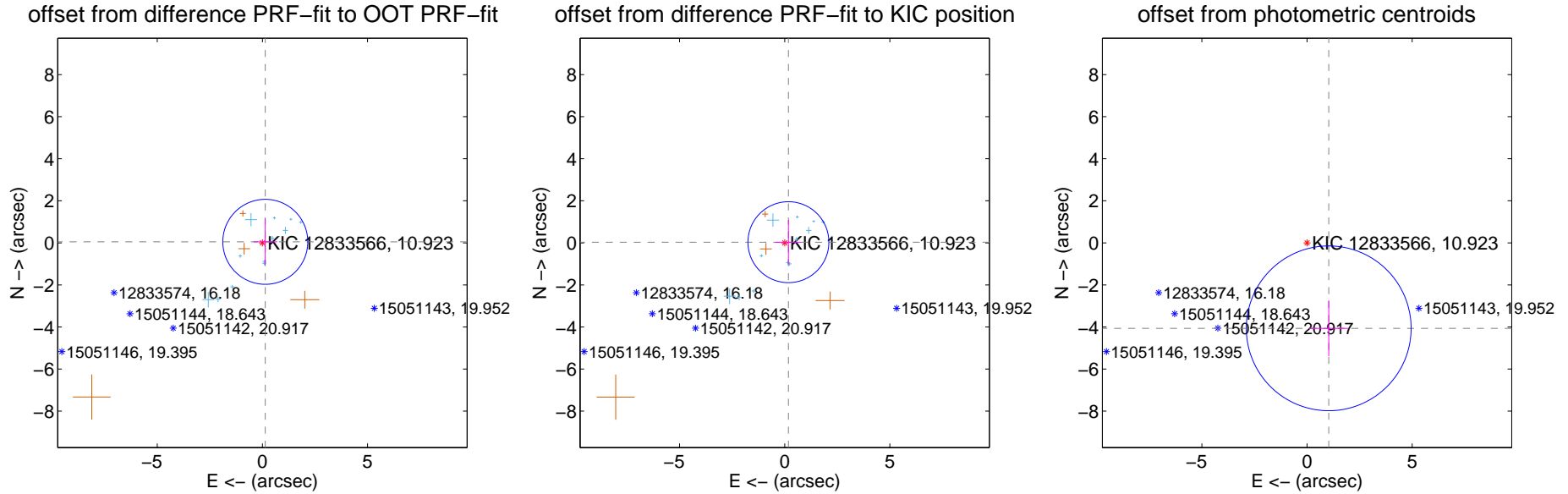
DV Centroid Data

Supplemental centroid analysis for 012833566-02. **Kepler magnitude: 10.92.** Transit SNR 6.66

There are 12 quarters with good PRF difference image offsets

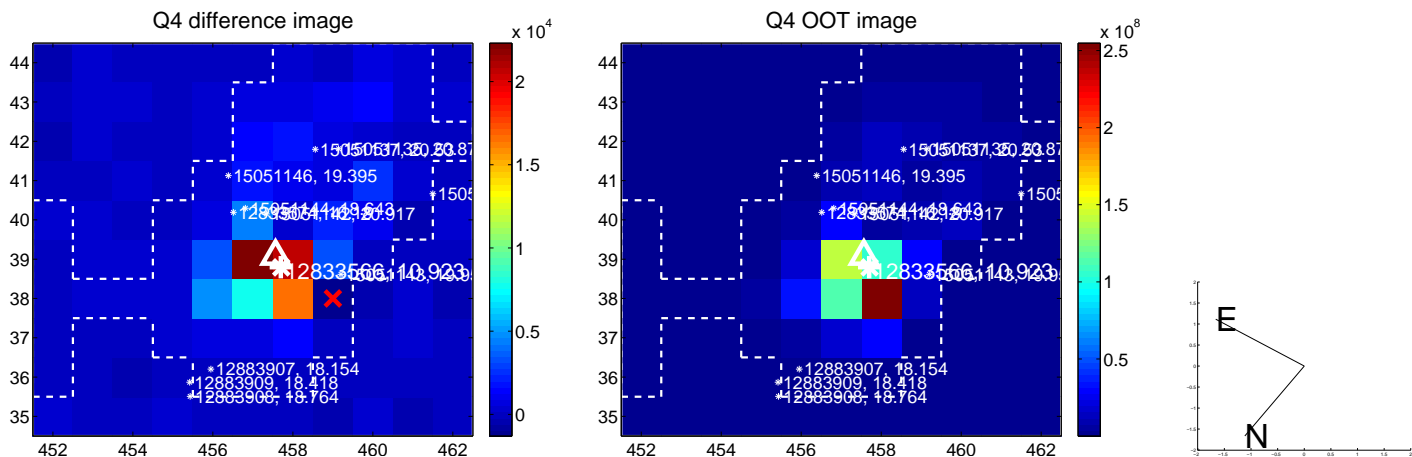
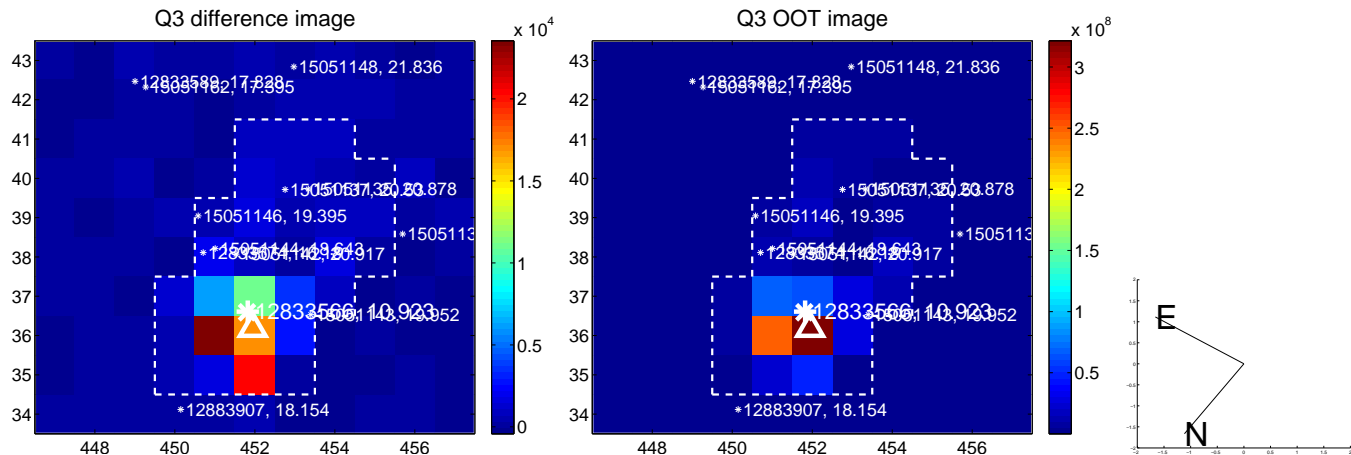
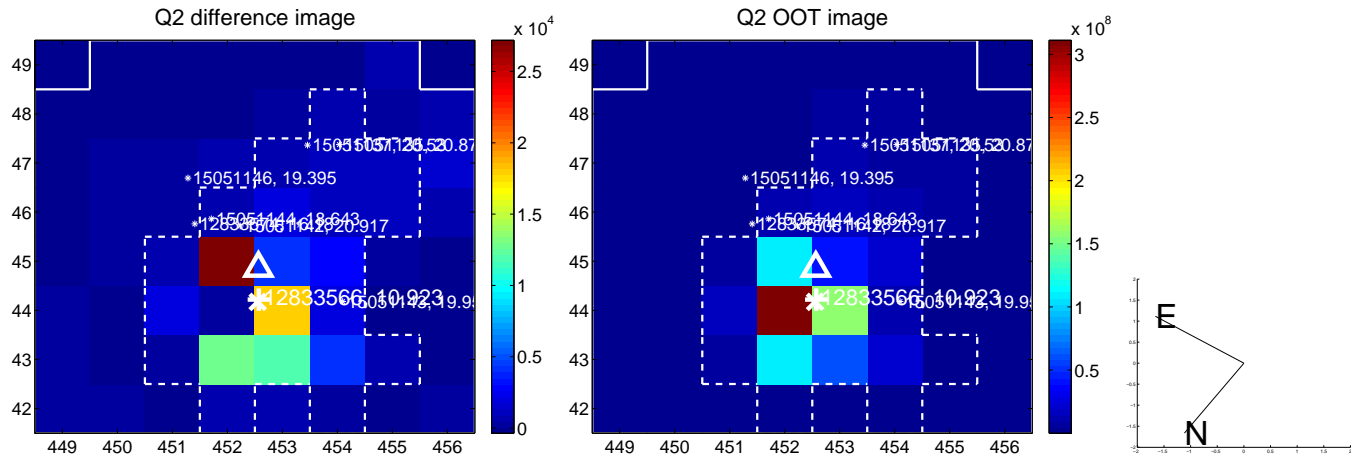
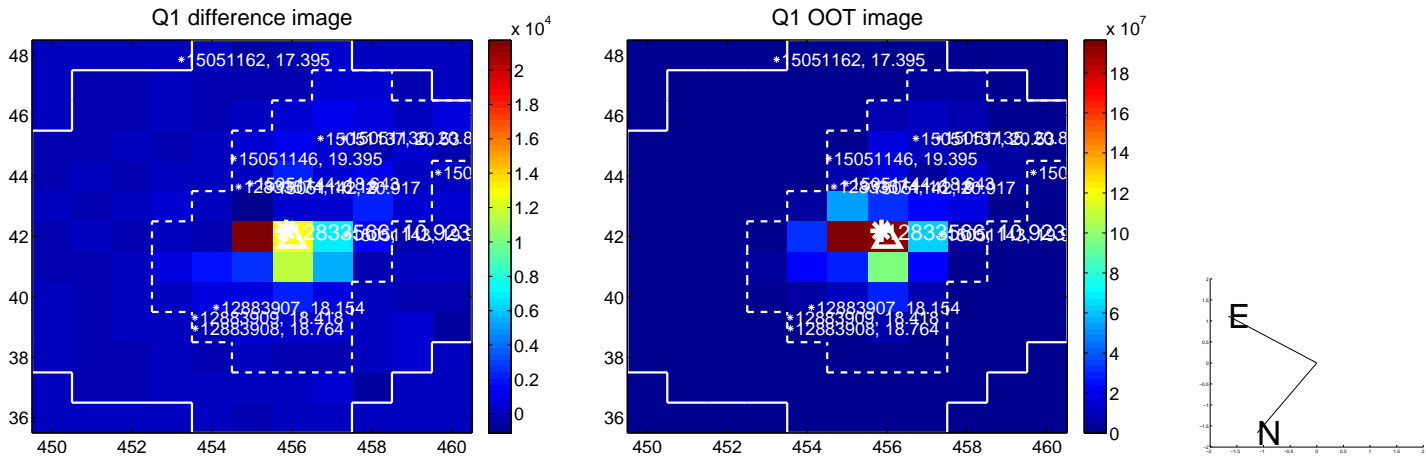
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.147 ± 0.674	0.22	-0.138 ± 0.563	0.049 ± 1.090
PRF-fit source offset from KIC position	0.179 ± 0.642	0.28	-0.176 ± 0.616	0.032 ± 1.059
photometric centroid source offset	4.19 ± 1.31	3.21	-1.03 ± 0.92	-4.06 ± 1.33

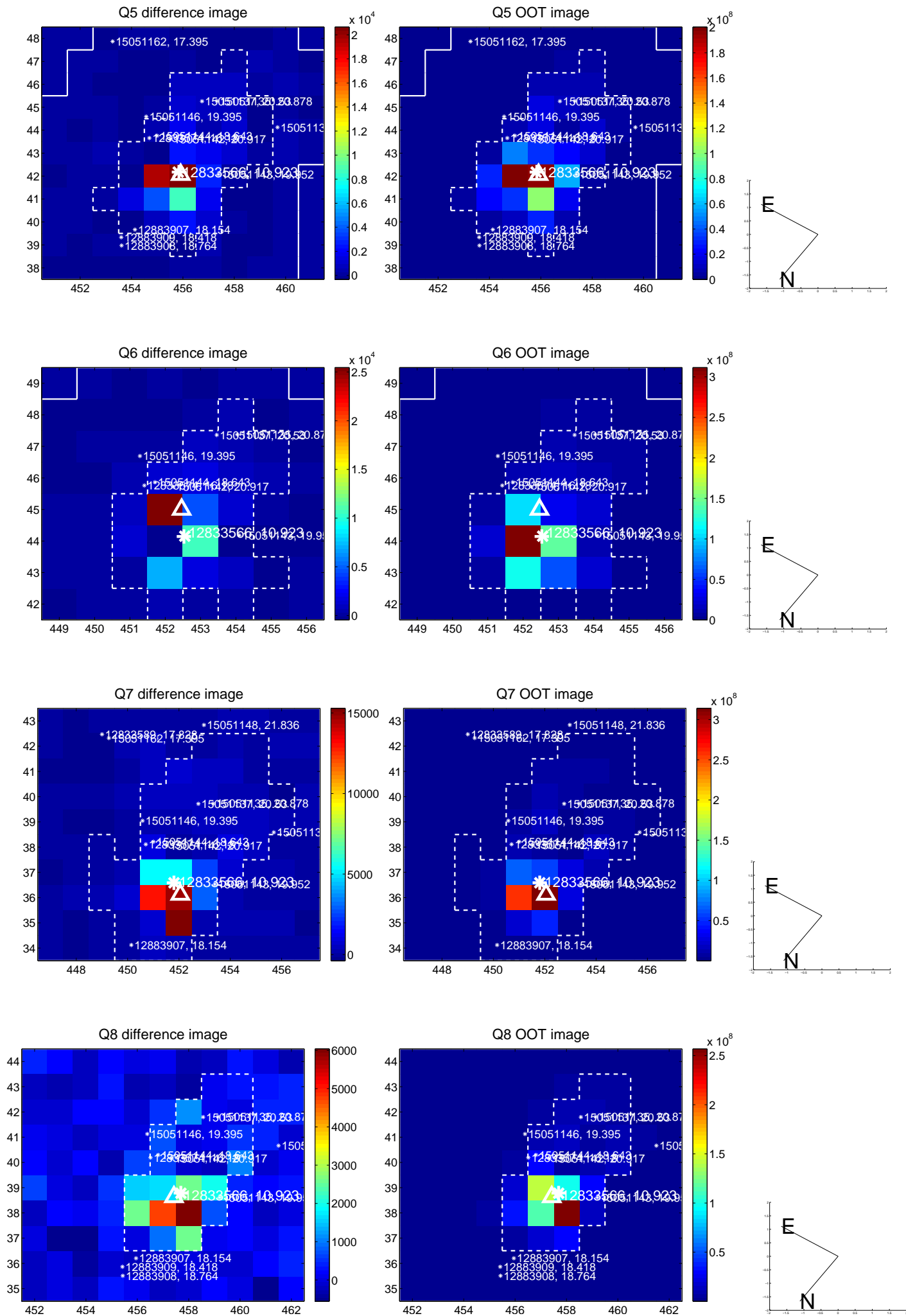


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

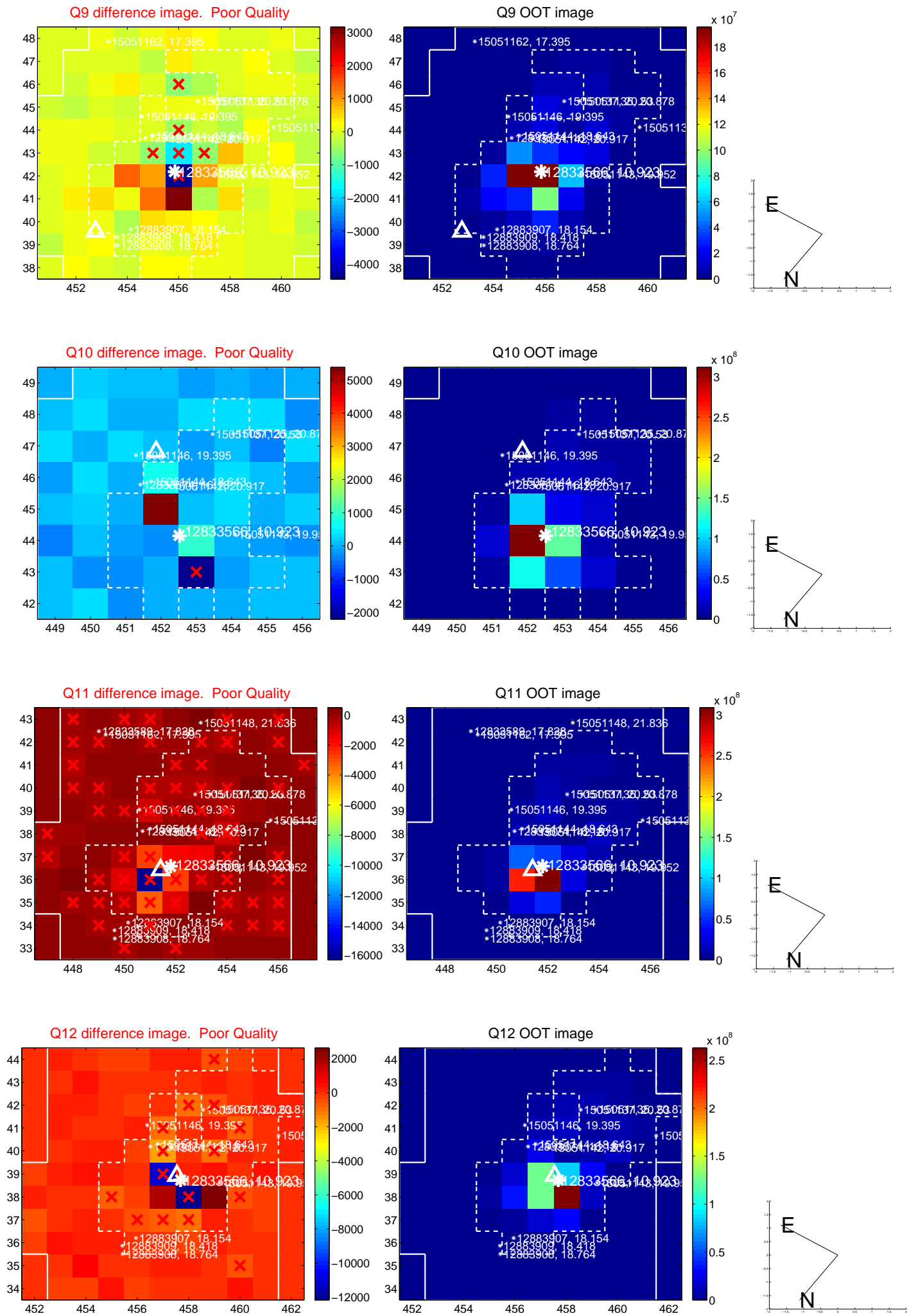
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



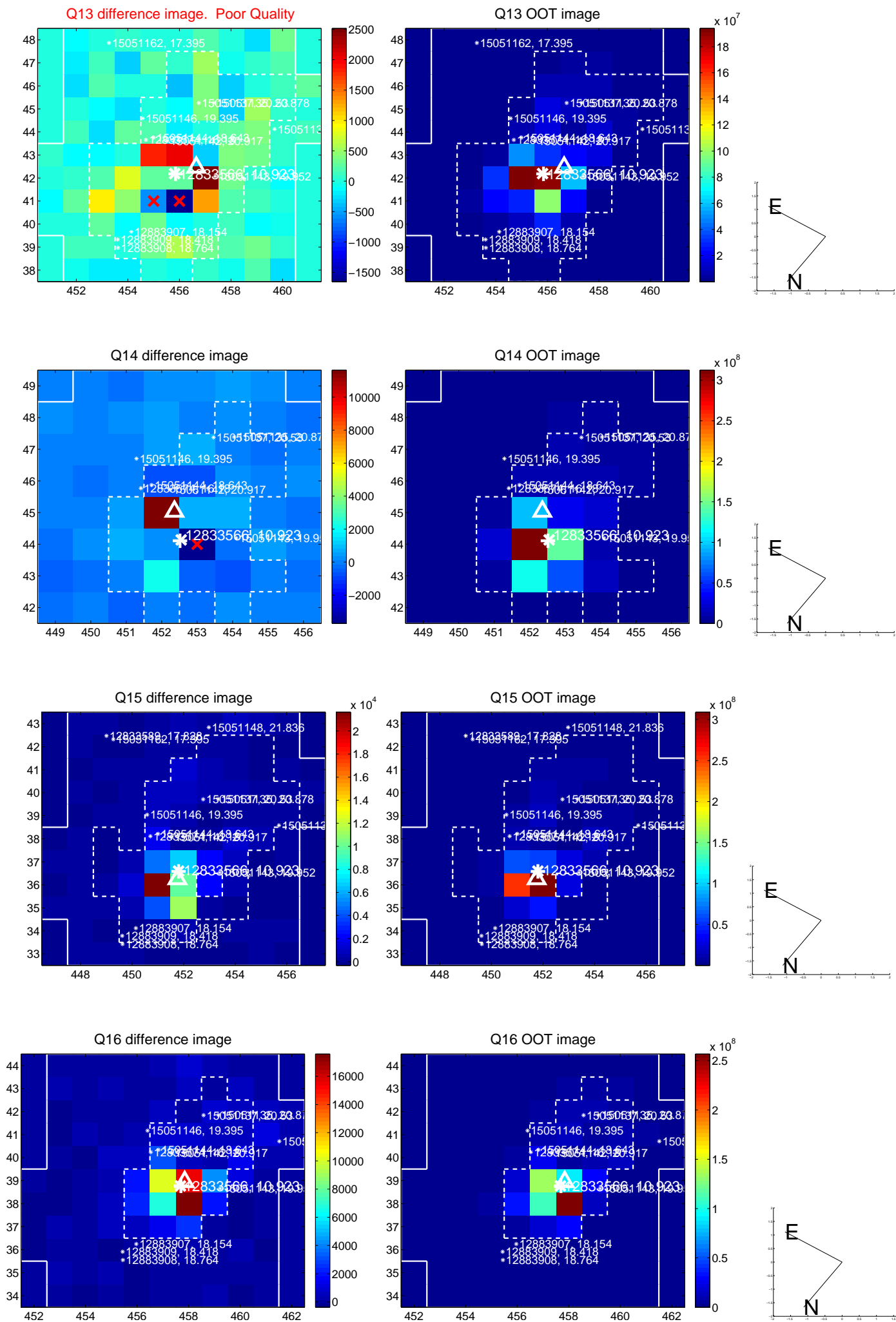
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



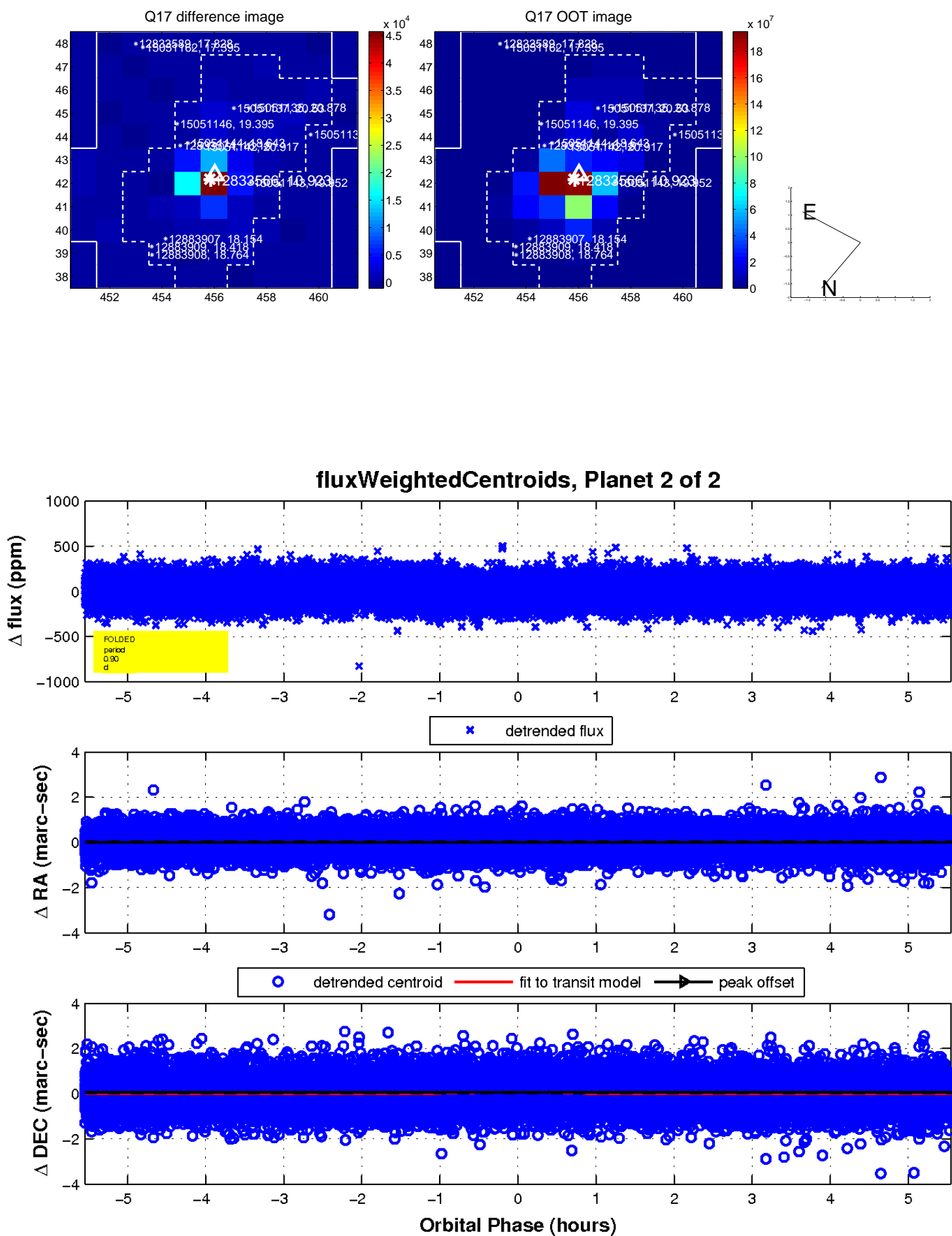
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

