

KIC 012254389

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})
012254389-01	OBS	No	1.240863	132.148616	4.4	4.121	15.0	8.6	2.73	7663	0.67	28832.02
012254389-02	OBS	No	1.241004	132.680830	7.6	7.886	13.1	13.9	2.73	7663	0.77	28827.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012254389-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
012254389-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

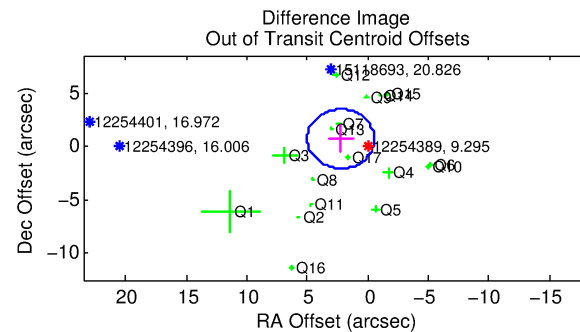
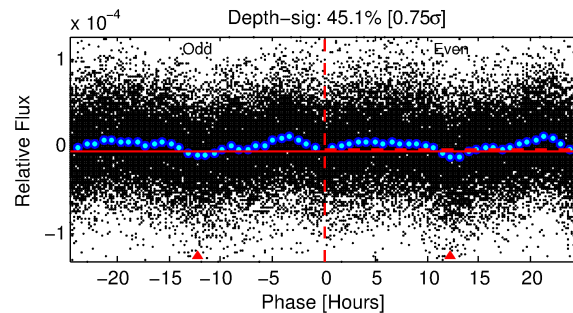
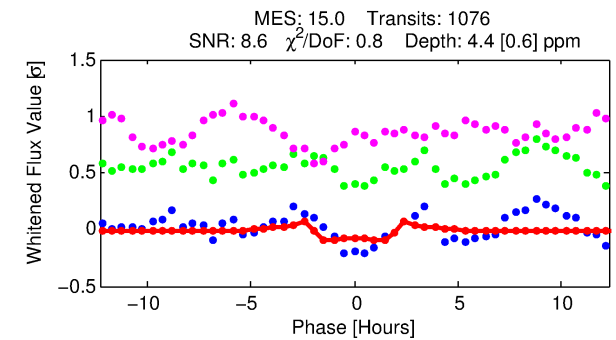
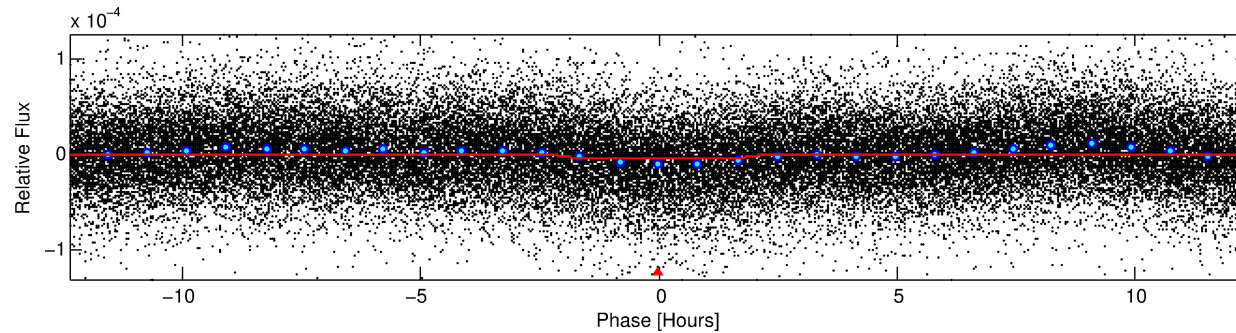
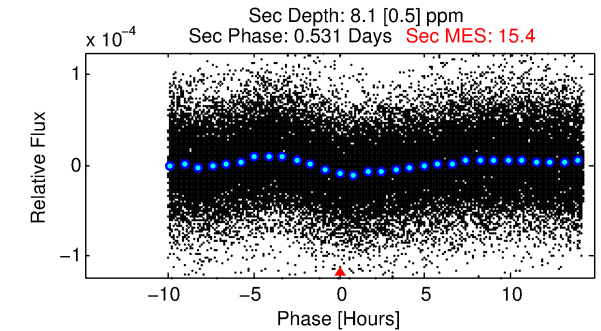
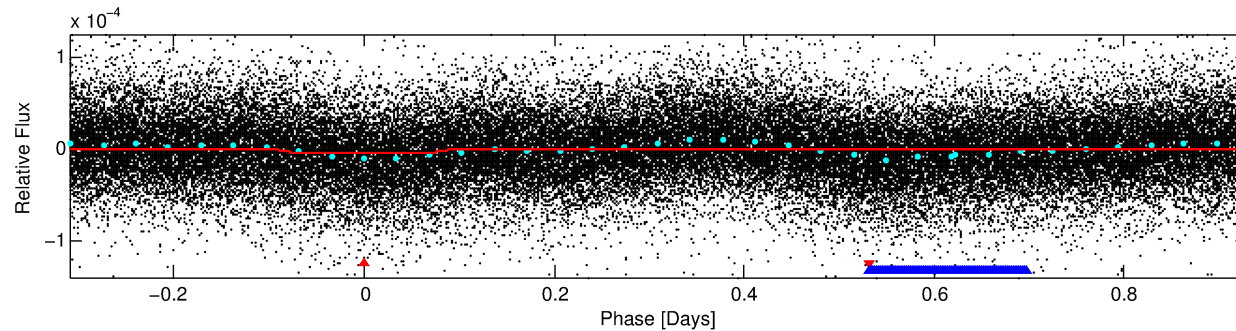
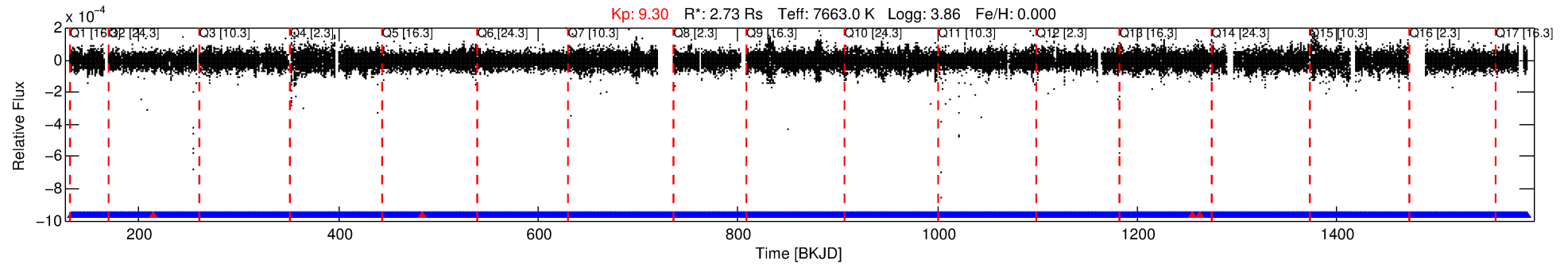
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012254389-01

No Significant Match Found

DV One-Page Summary

KIC: 12254389 Candidate: 1 of 2 Period: 1.241 d



DV Fit Results:

Period = 1.24086 [0.00001] d
Epoch = 132.1486 [0.0028] BKJD
Rp/R* = 0.0023 [0.0003]
a/R* = 1.31 [0.31]
b = 0.92 [0.09]
Seff = 28832.02 [16484.21]
Teq = 3323 [475] K
Rp = 0.67 [0.27] Re
a = 0.0282 [0.0099] AU
Ag = 7.80 [4.63] [1.47σ]
Teffp = 8586 [615] K [6.78σ]

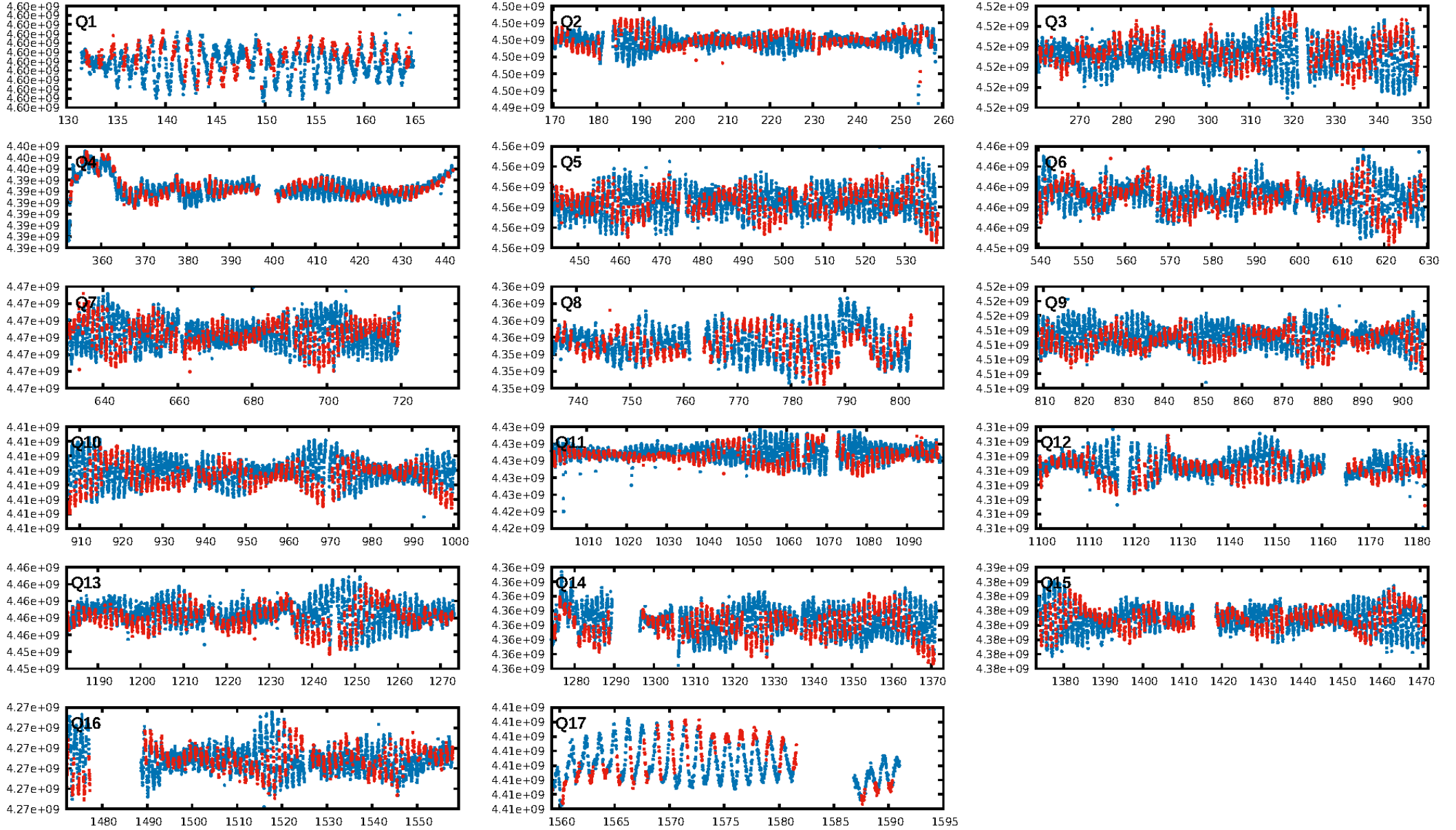
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1024/1028]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 2.350 arcsec [2.54σ]
KicOffset-rm: 2.583 arcsec [2.48σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.94 [16/17]

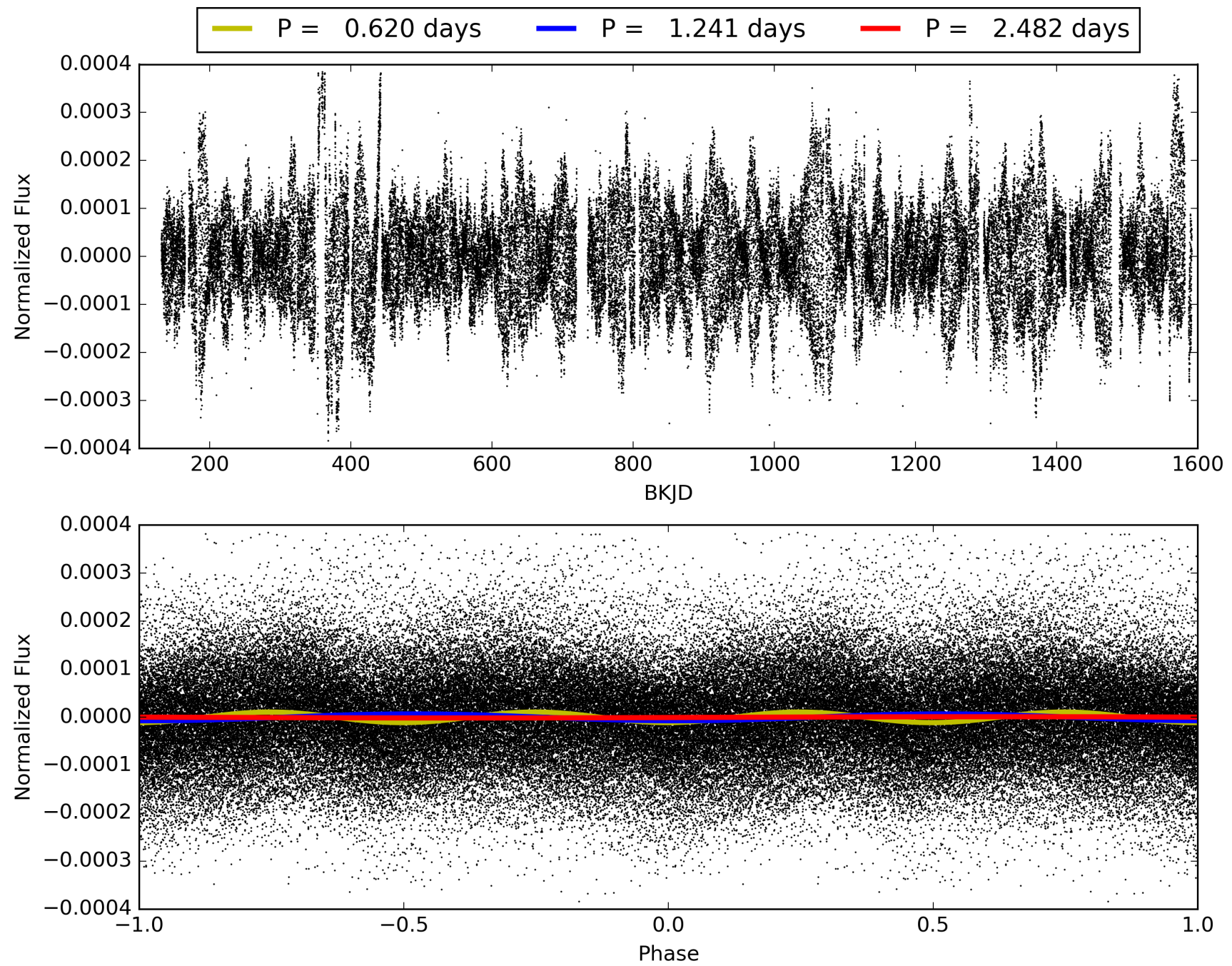
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:03:16 Z

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

TCE 012254389-01, PDC Light Curves

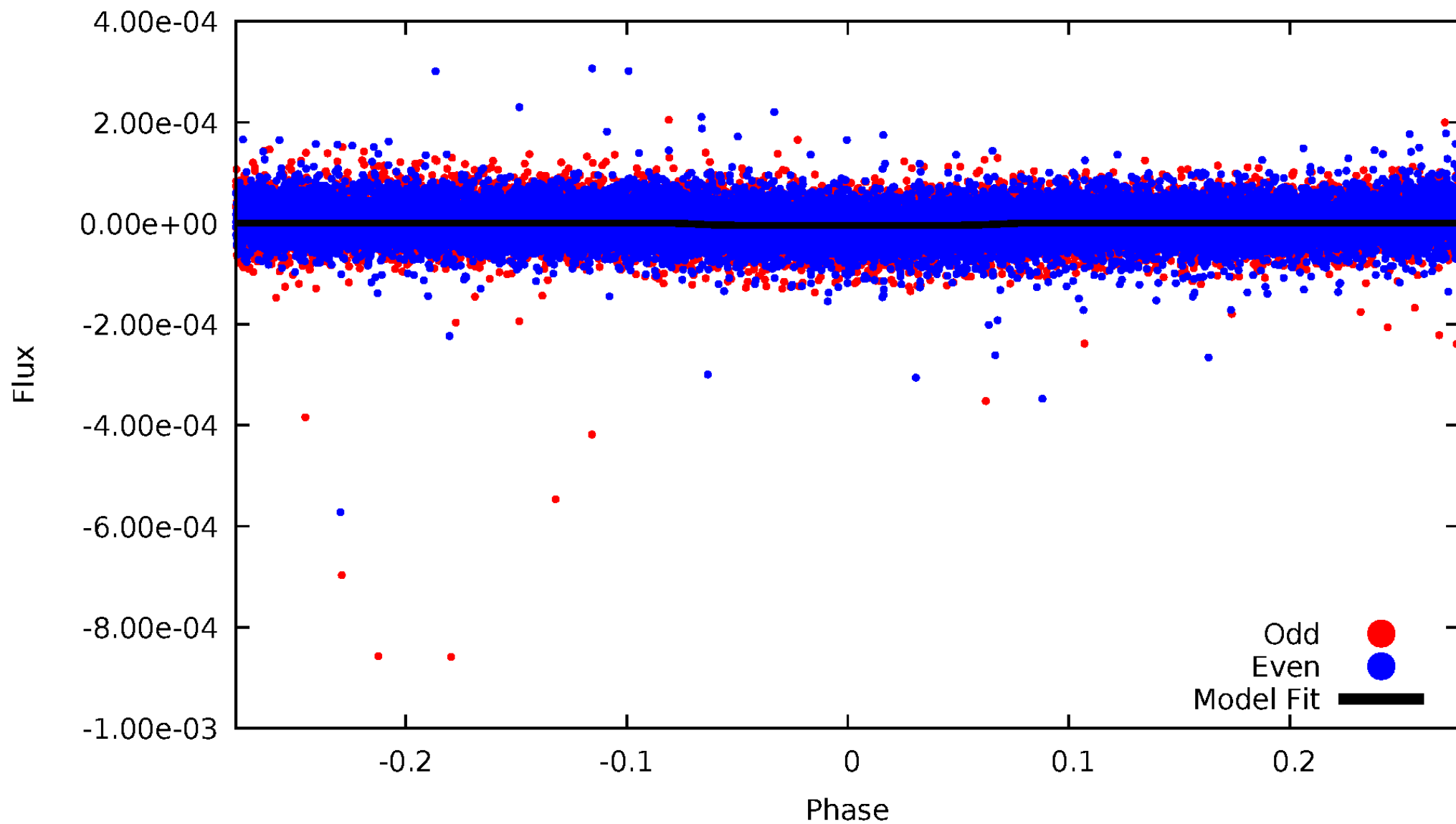


TCE 012254389-01



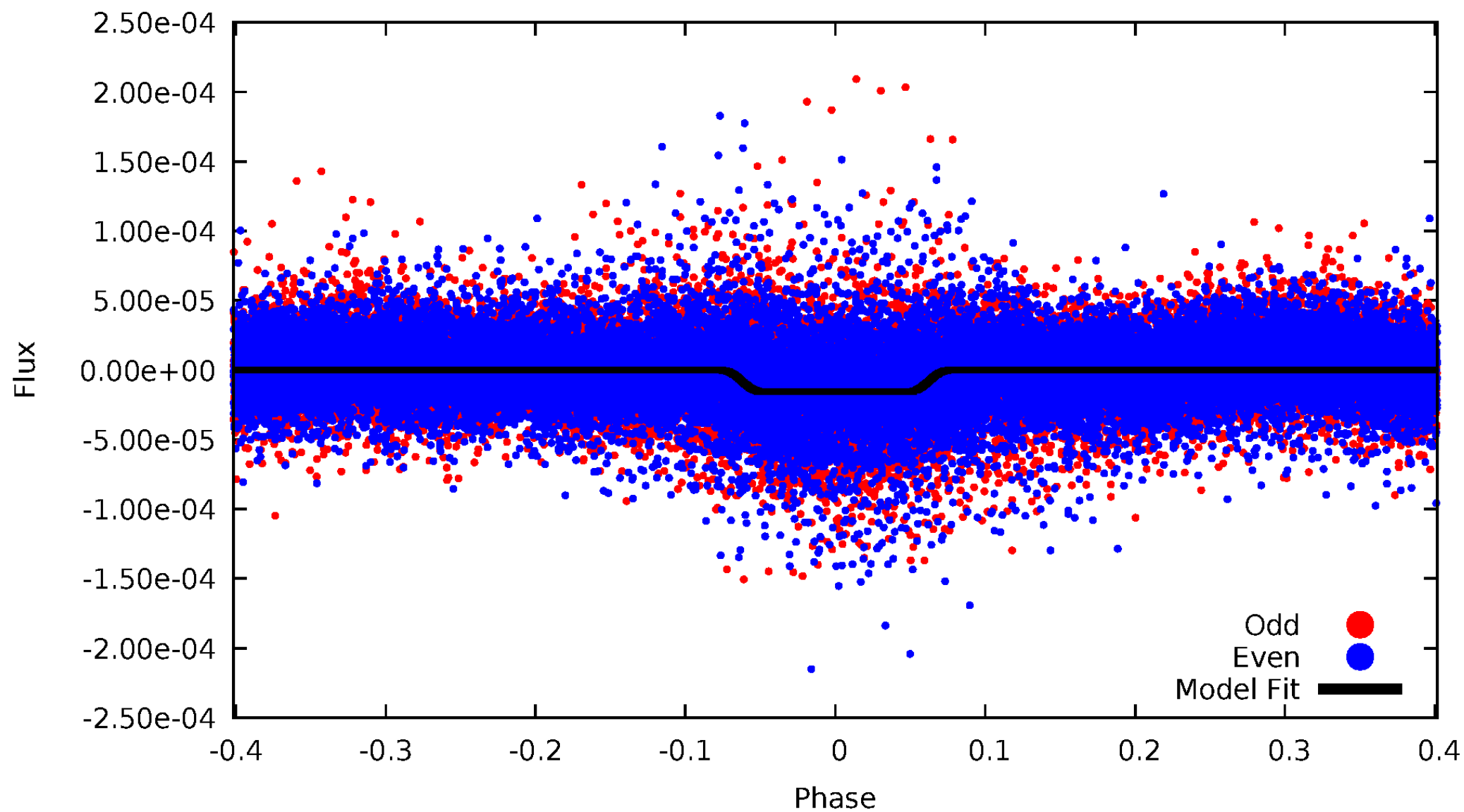
DV Odd/Even

TCE 012254389-01



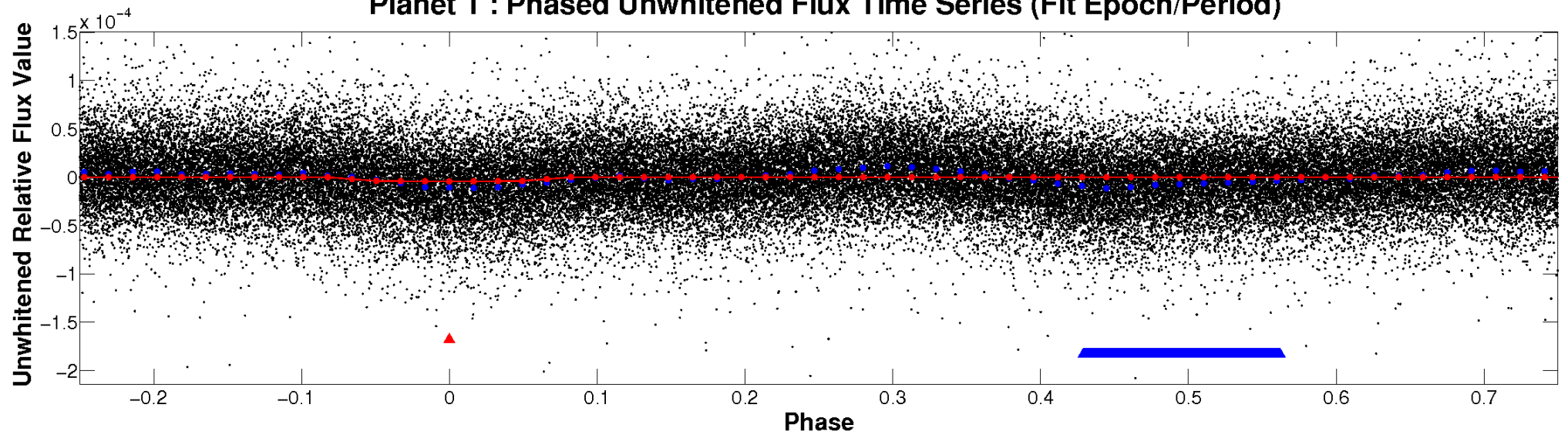
ALT Odd/Even

TCE 012254389-01

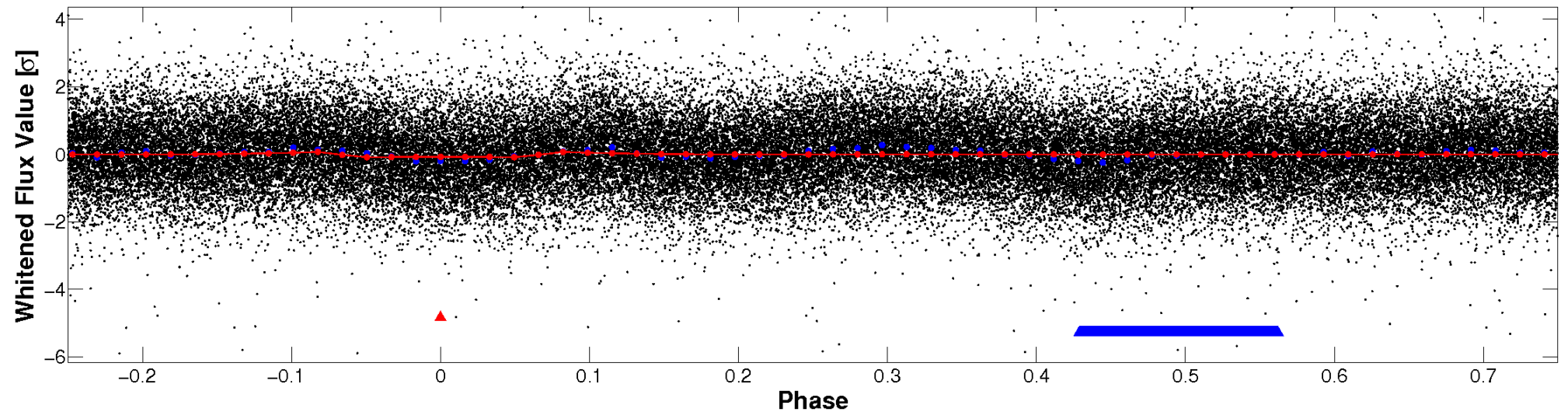


Non-Whitened Vs. Whitened Light Curve

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

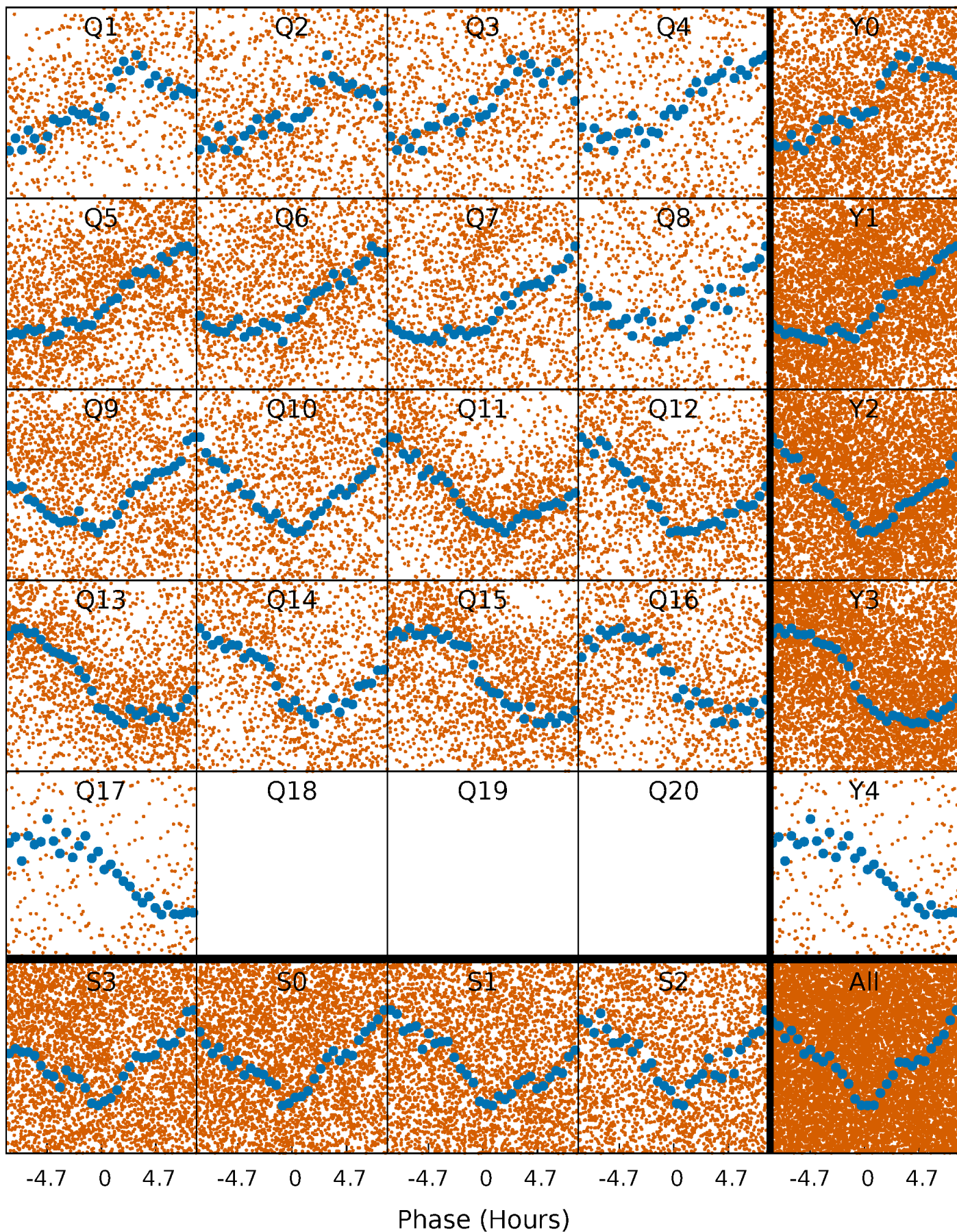


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



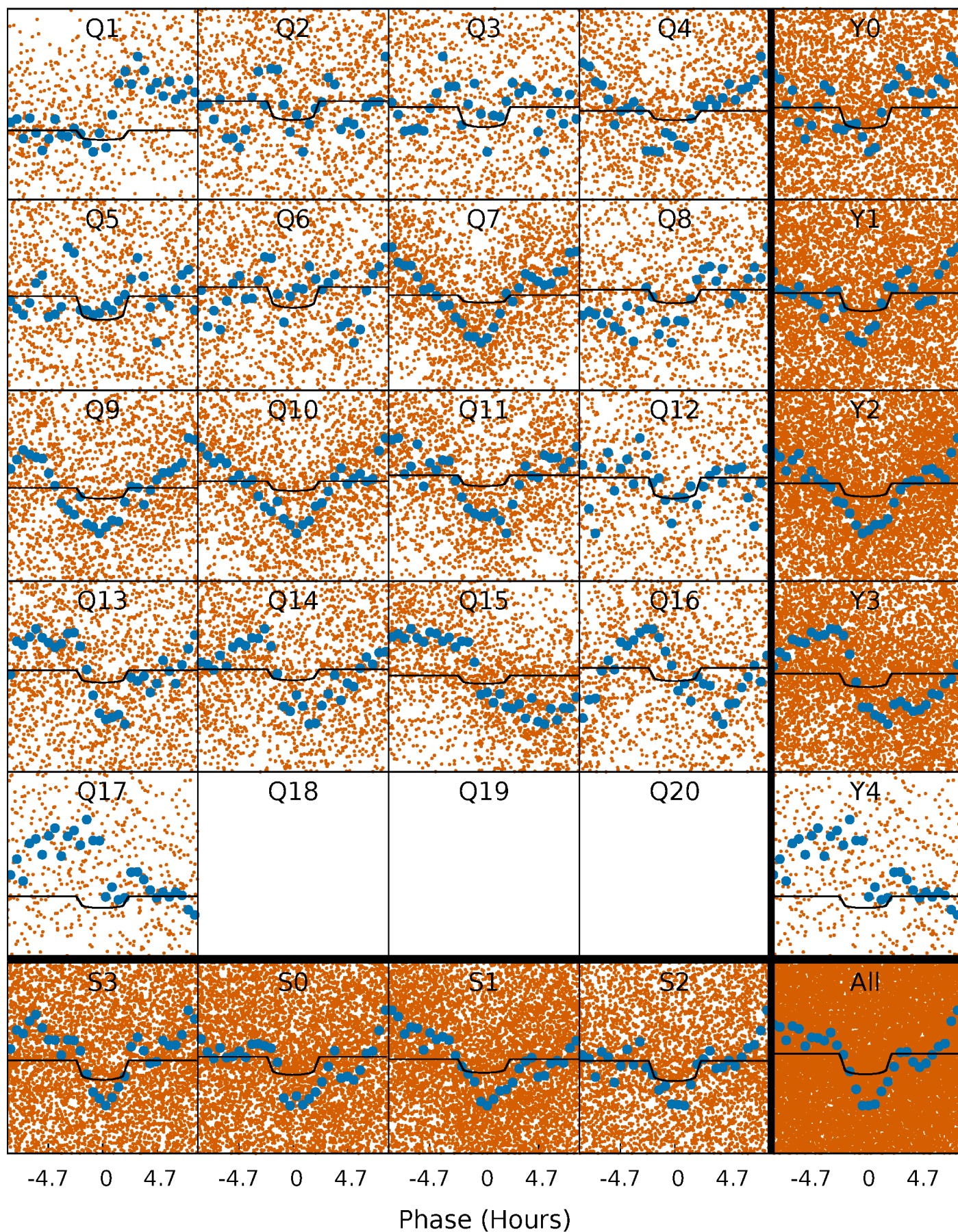
PDC Quarter-Phased Transit Curves

TCE 012254389-01 P= 1.240863 Days $T_0=132.148616$ (BKJD)



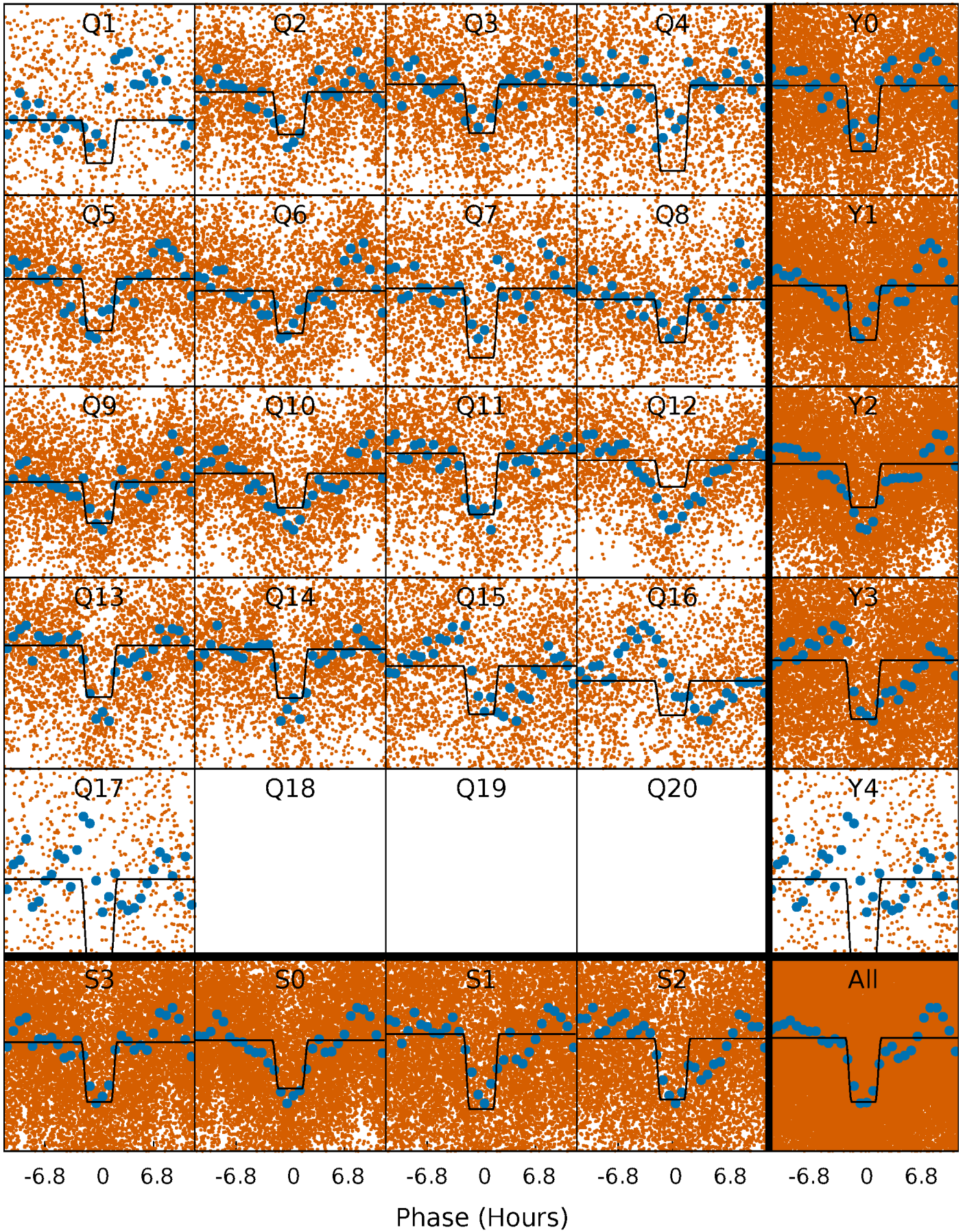
DV Quarter-Phased Transit Curves

TCE 012254389-01 P= 1.240863 Days $T_0=132.148616$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

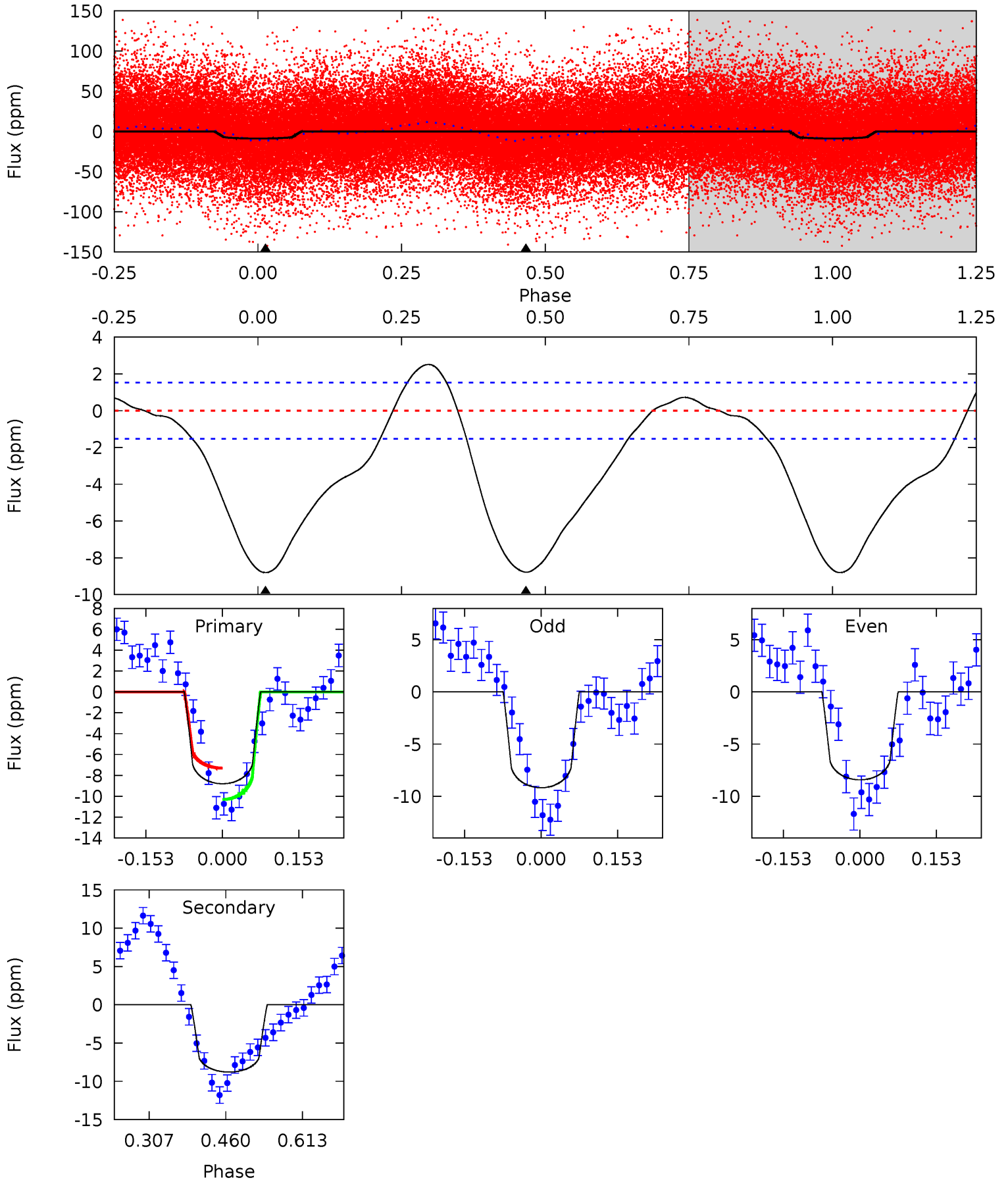
TCE 012254389-01 P= 1.240887 Days $T_0=132.141875$ (BKJD)



DV Model-Shift Uniqueness Test

012254389-01, P = 1.240863 Days, E = 130.907753 Days

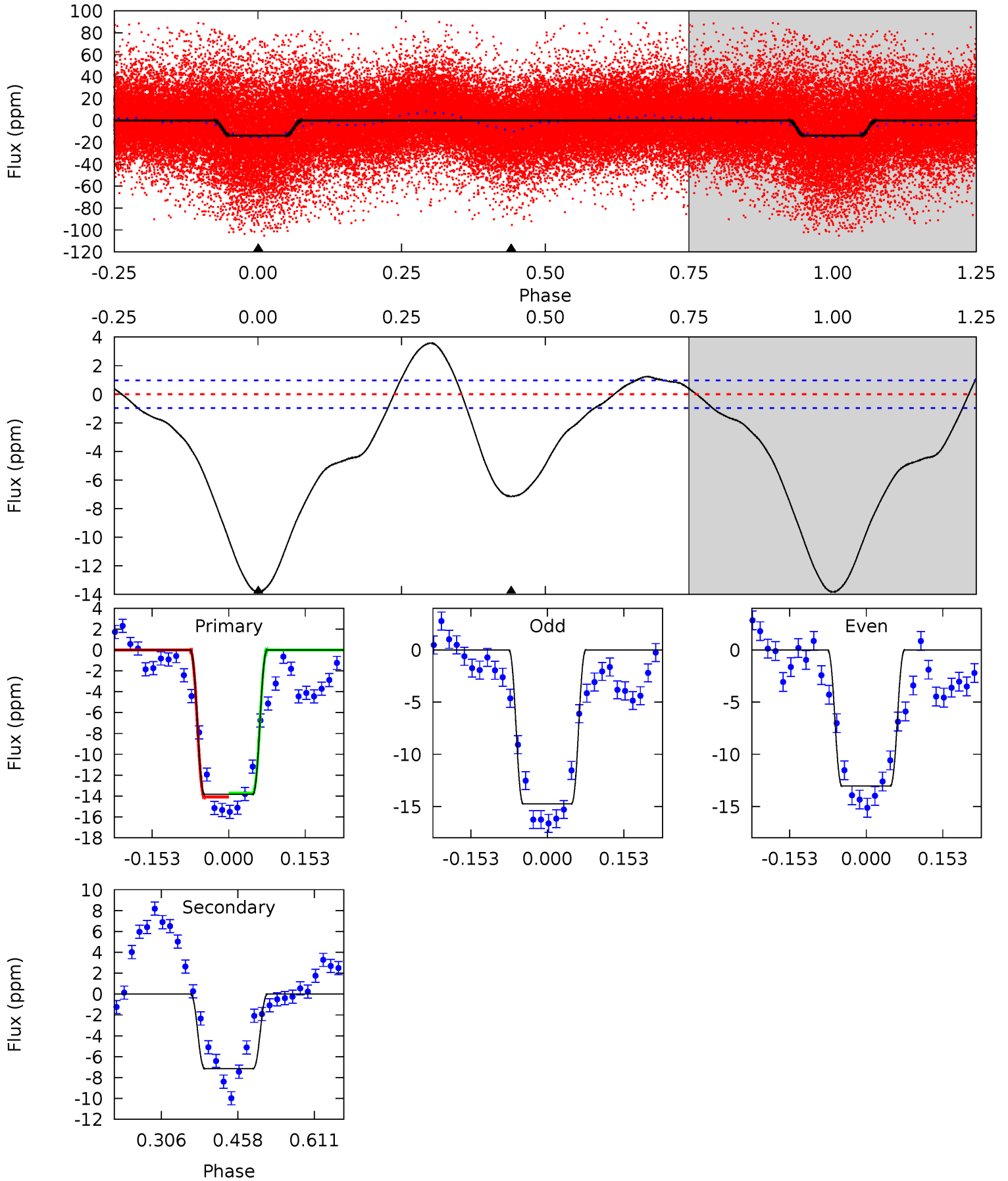
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	25.7	0	0	4.47	1.43	4.27	25.7	25.7	25.7	25.7	1.11	1.21	0.22	4.44



Alt Model-Shift Uniqueness Test

012254389-01, P = 1.240887 Days, E = 130.900988 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.2	33.2	0	0	4.48	1.43	8.76	64.2	64.2	33.2	33.2	3.94	1.03	0.21	0.88



Stellar Parameters For KIC 012254389

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7663^{+214}_{-322}	$3.856^{+0.315}_{-0.105}$	$0.000^{+0.200}_{-0.350}$	$2.726^{+0.446}_{-1.041}$	$1.945^{+0.082}_{-0.439}$	$0.135^{+0.297}_{-0.043}$
	+3%/-4%	+8%/-3%	+inf%/-inf%	+16%/-38%	+4%/-23%	+220%/-32%
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 012254389-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-9 ± 0	$0.63^{+0.12}_{-0.13}$	4528^{+317}_{-458}	9024^{+821}_{-773}	$9.608^{+5.219}_{-2.909}$
Alt.	-7 ± 0	$1.13^{+0.16}_{-0.22}$	4555^{+298}_{-424}	5960^{+300}_{-285}	$2.378^{+1.160}_{-0.532}$

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 $A_{obs} \gg 1.0$

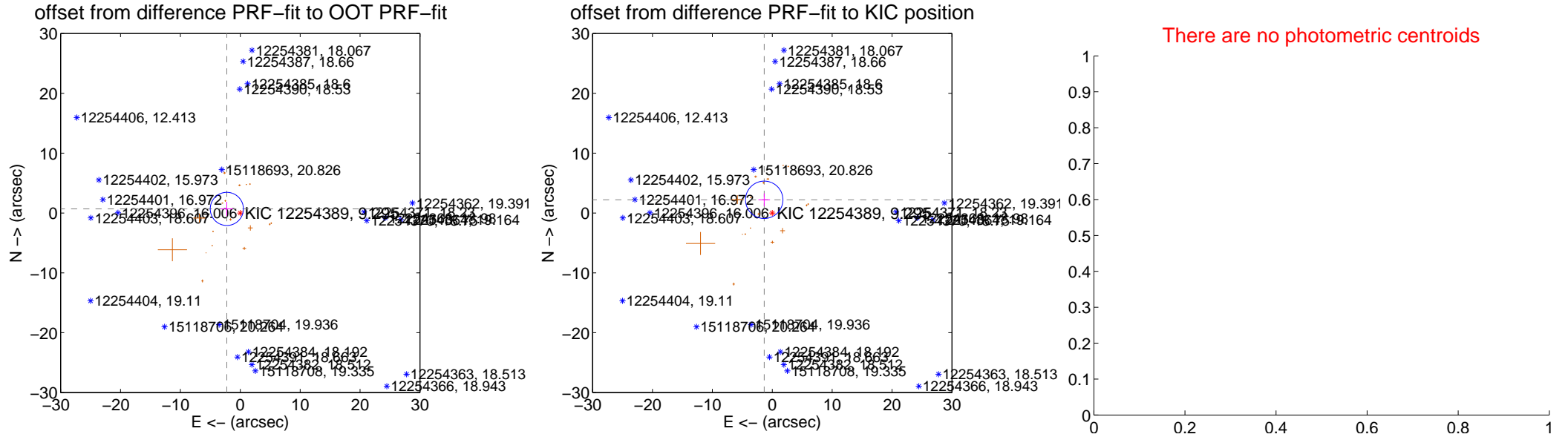
DV Centroid Data

Supplemental centroid analysis for 012254389-01. **Kepler magnitude: 9.29.** Transit SNR 8.56

There are 0 quarters with good PRF difference image offsets

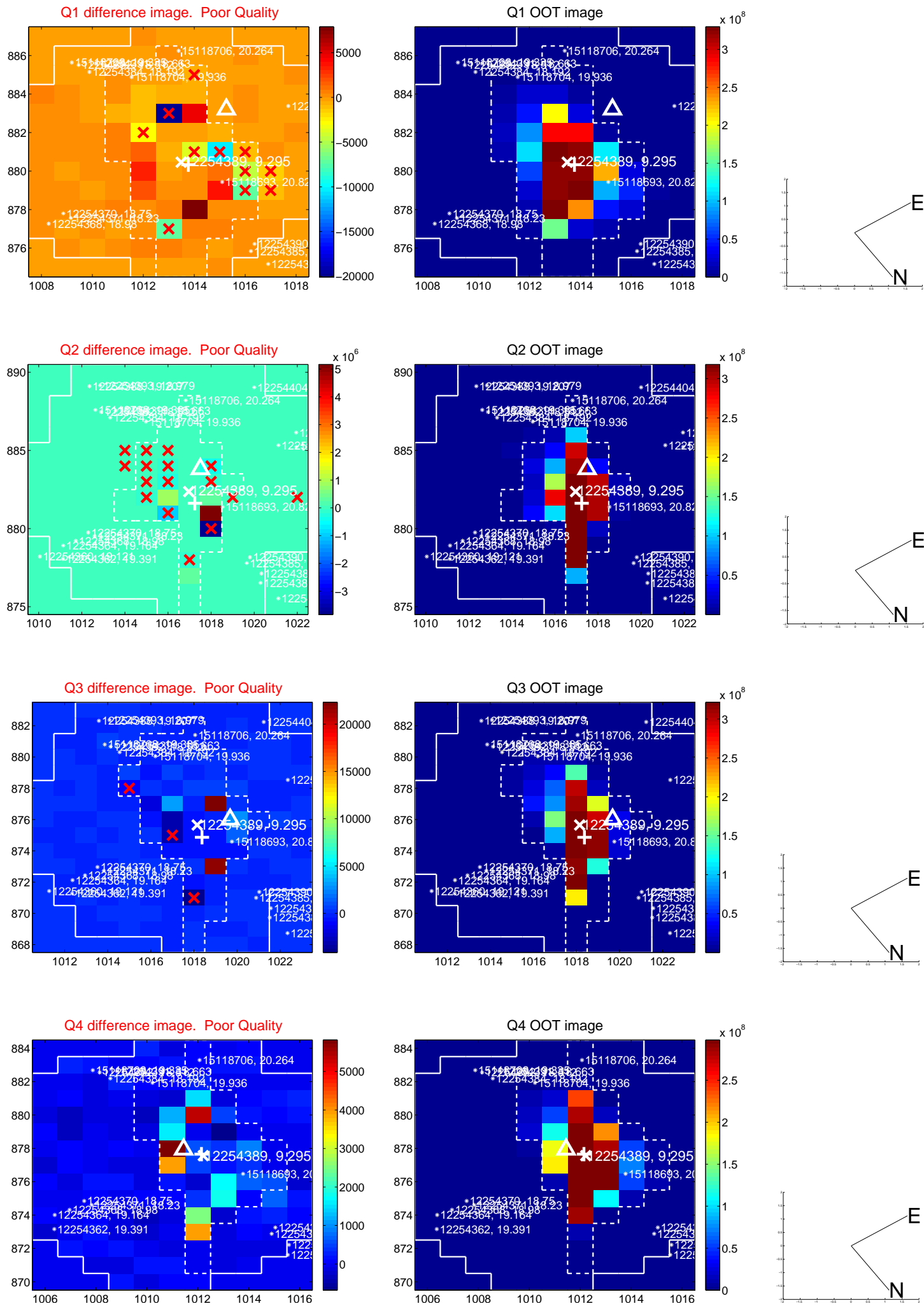
The direct PRF centroid is offset from the target star catalog position by about 1.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.350 ± 0.923	2.54	2.247 ± 1.022	0.687 ± 1.179
PRF-fit source offset from KIC position	2.583 ± 1.041	2.48	1.341 ± 0.969	2.207 ± 1.066
photometric centroid source offset	—	—	—	—

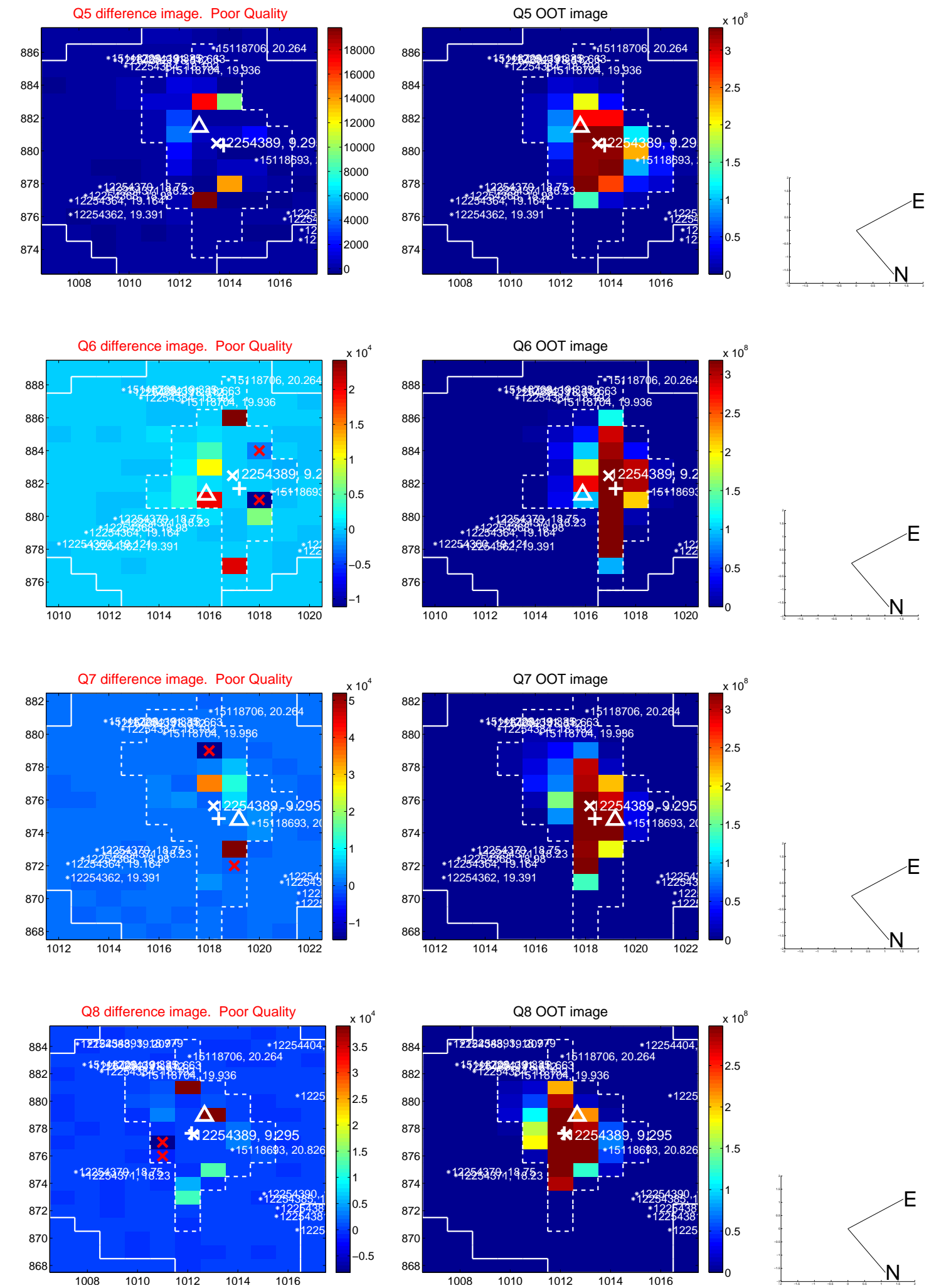


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

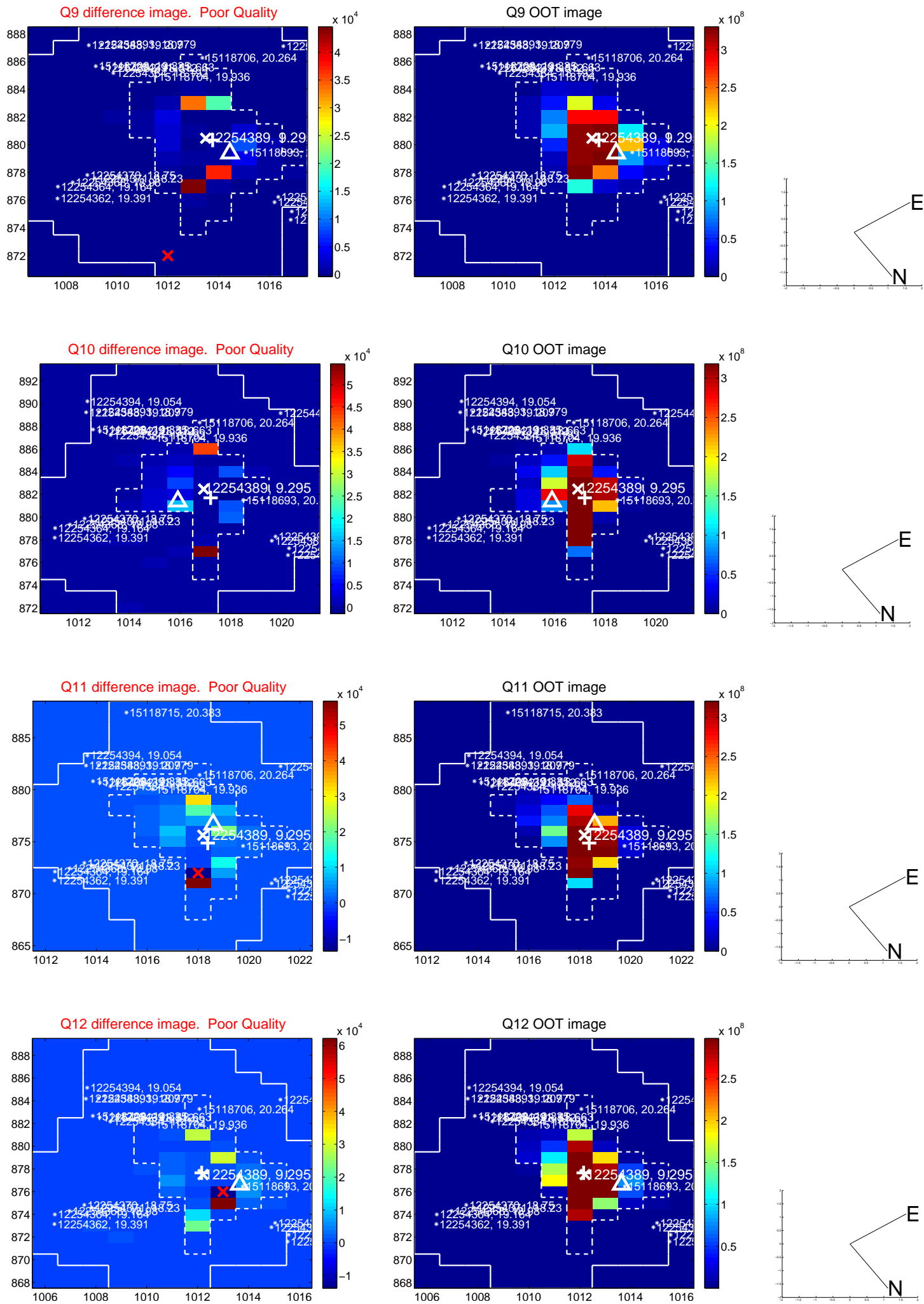
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



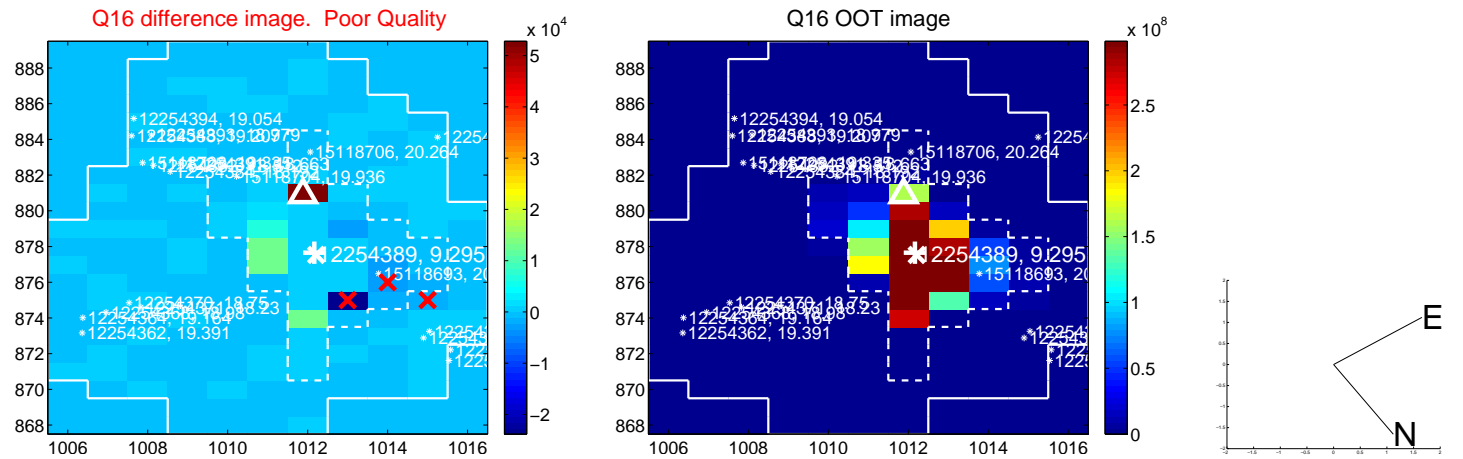
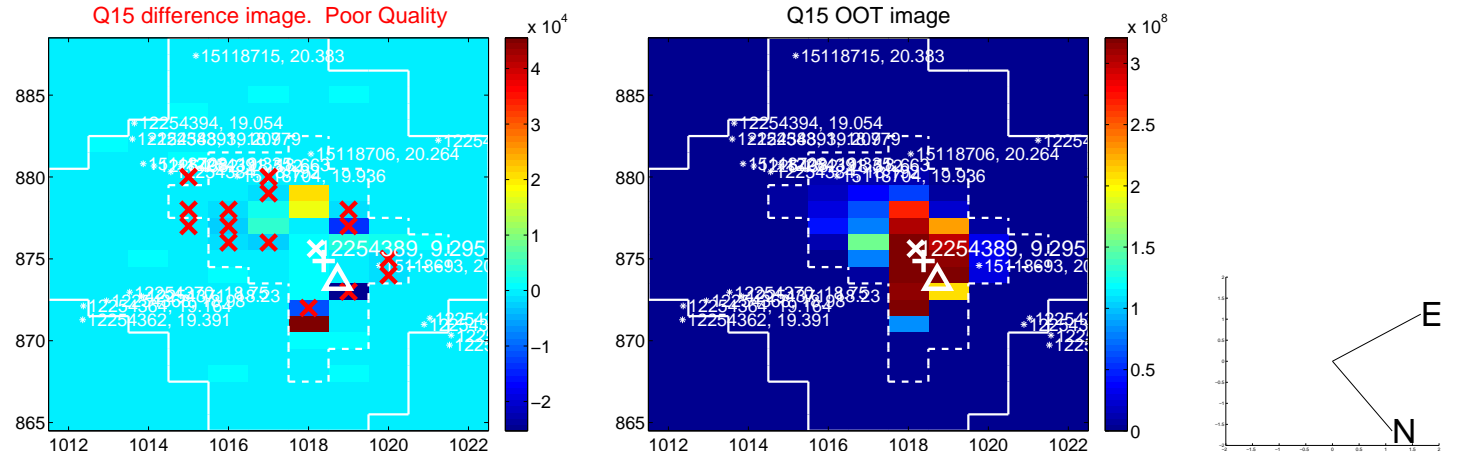
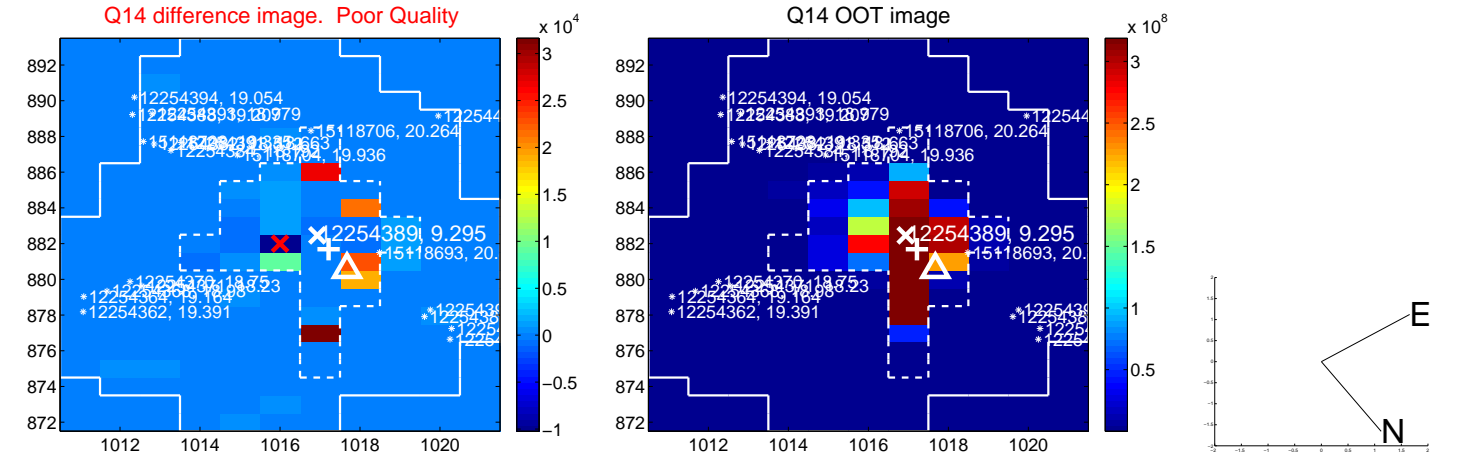
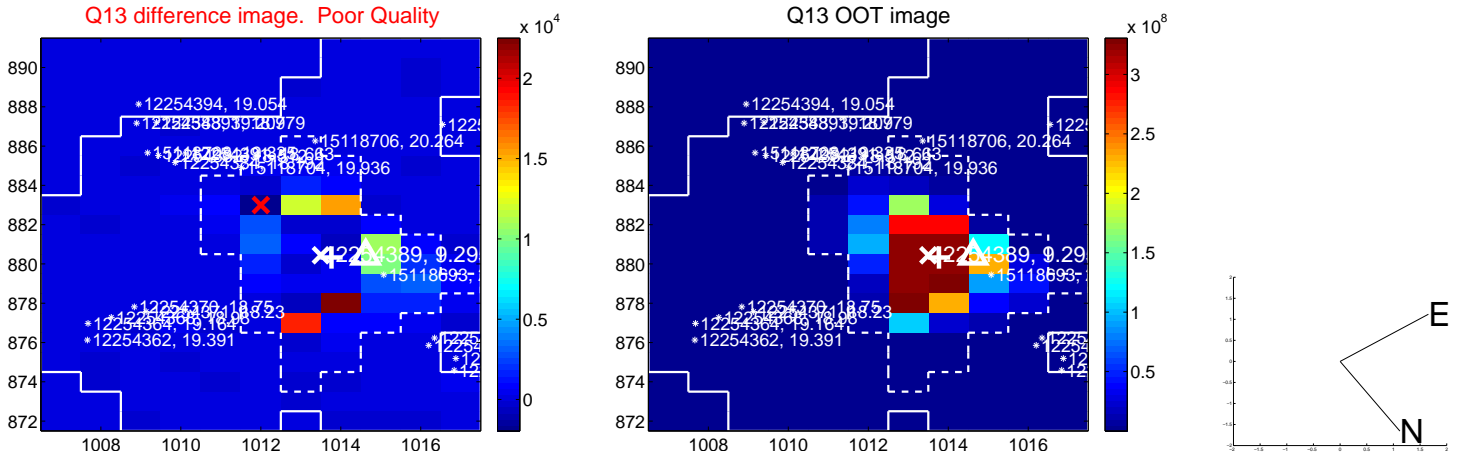
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



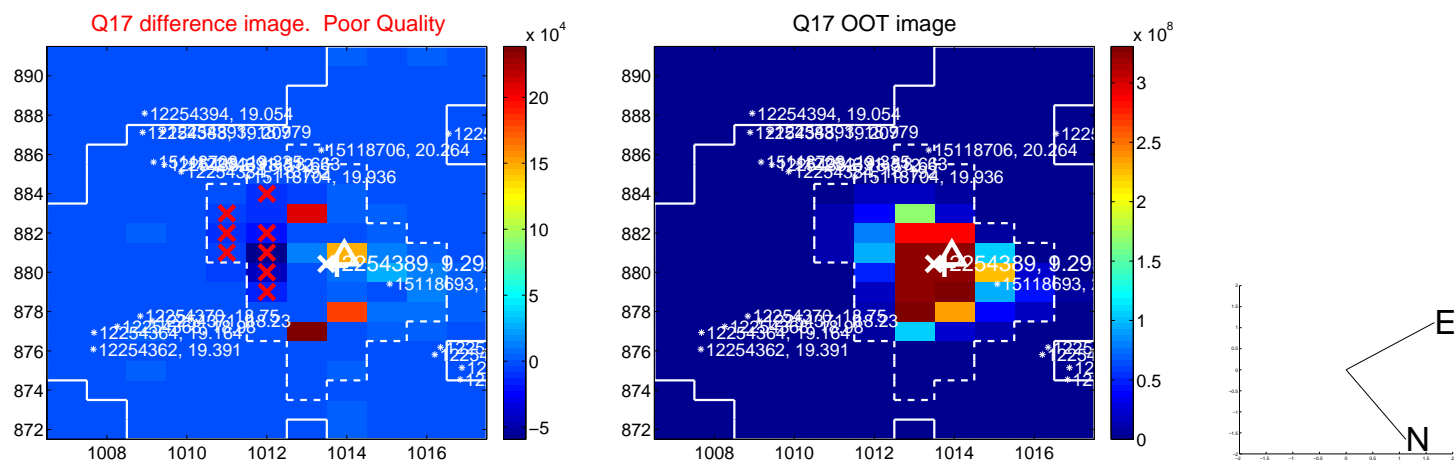
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

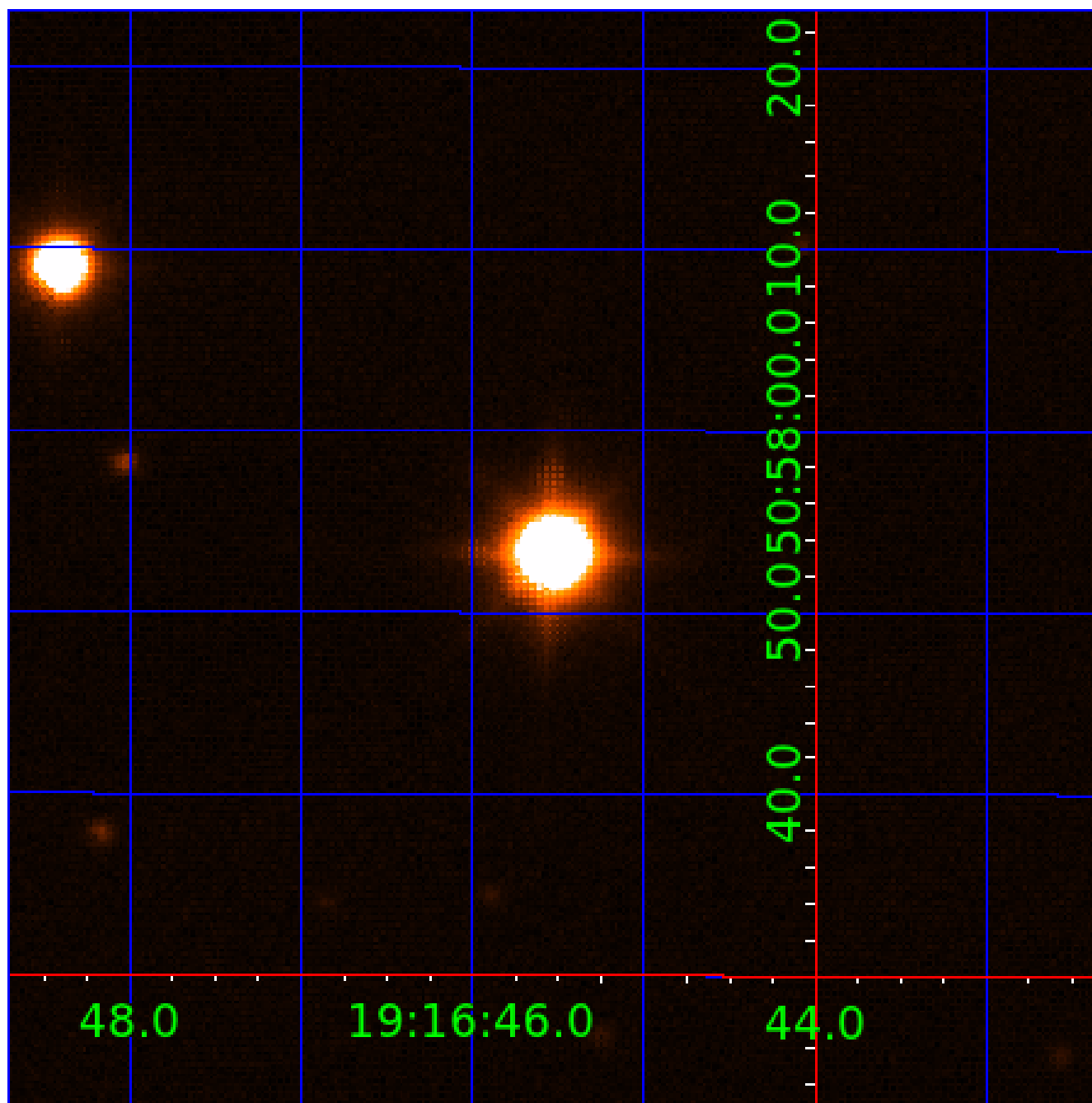


folded centroid time series figure for this object.



UKIRT Image

Declination



KIC 012254389

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})
012254389-01	OBS	No	1.240863	132.148616	4.4	4.121	15.0	8.6	2.73	7663	0.67	28832.02
012254389-02	OBS	No	1.241004	132.680830	7.6	7.886	13.1	13.9	2.73	7663	0.77	28827.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012254389-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
012254389-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

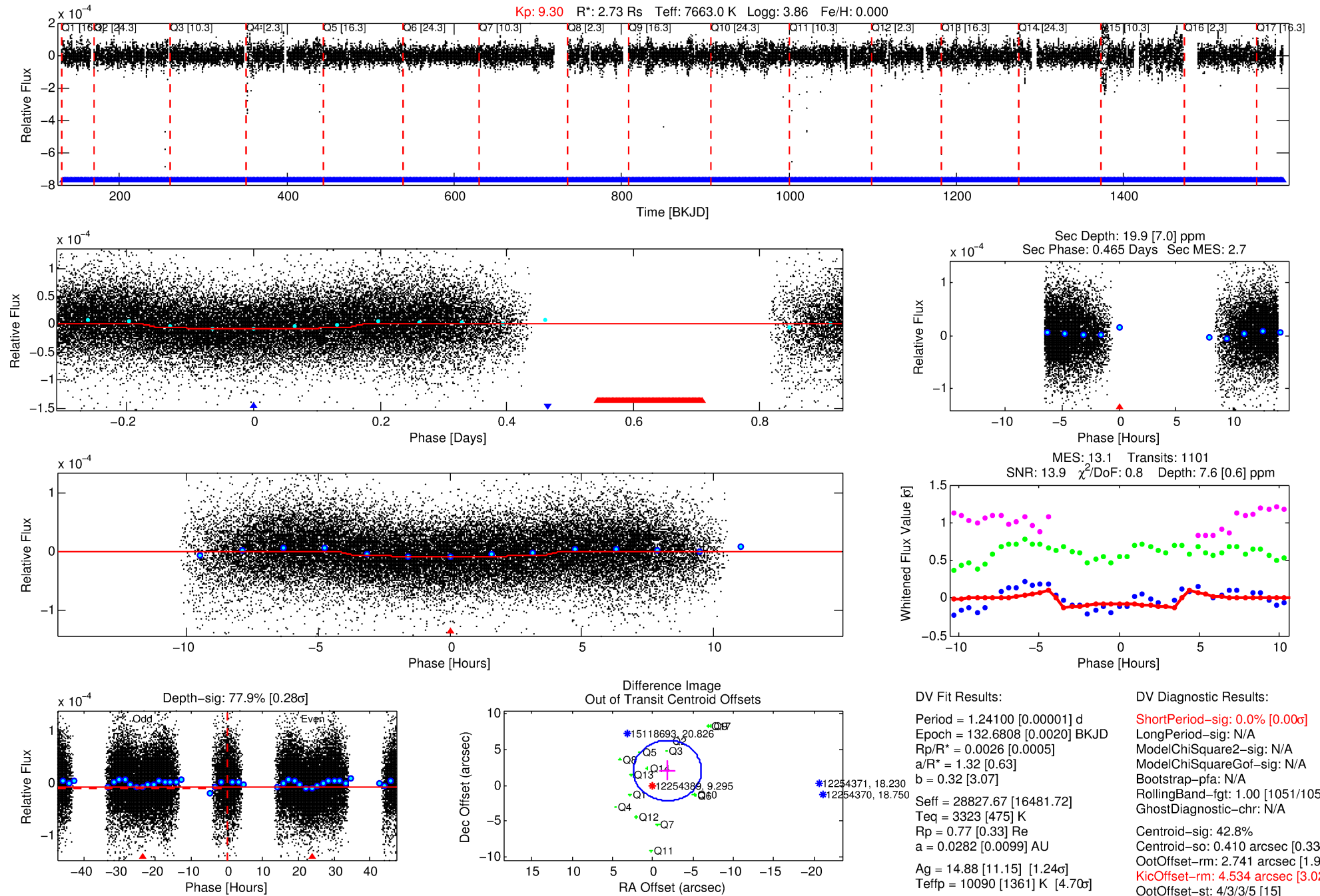
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012254389-02

No Significant Match Found

DV One-Page Summary

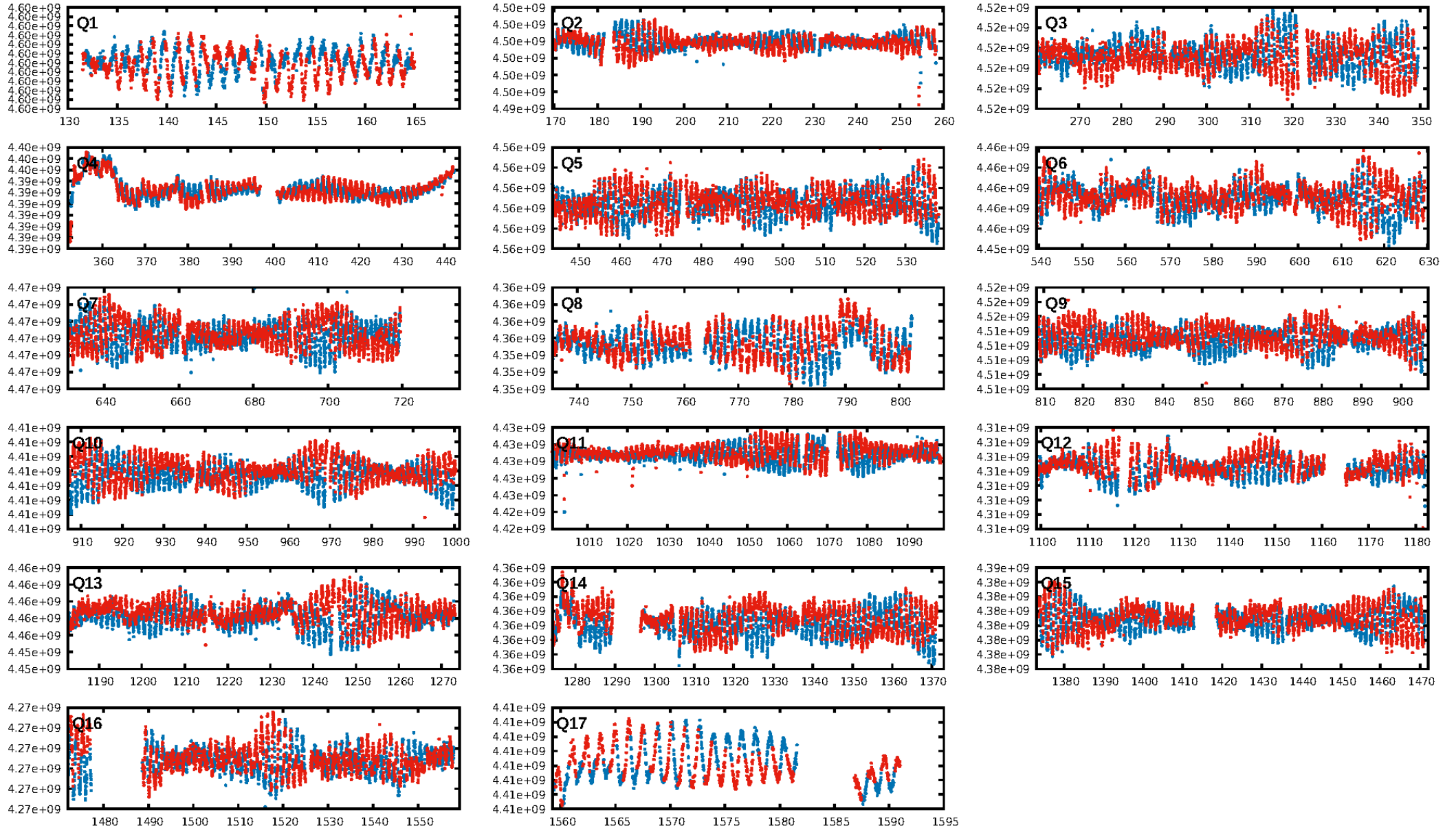
KIC: 12254389 Candidate: 2 of 2 Period: 1.241 d



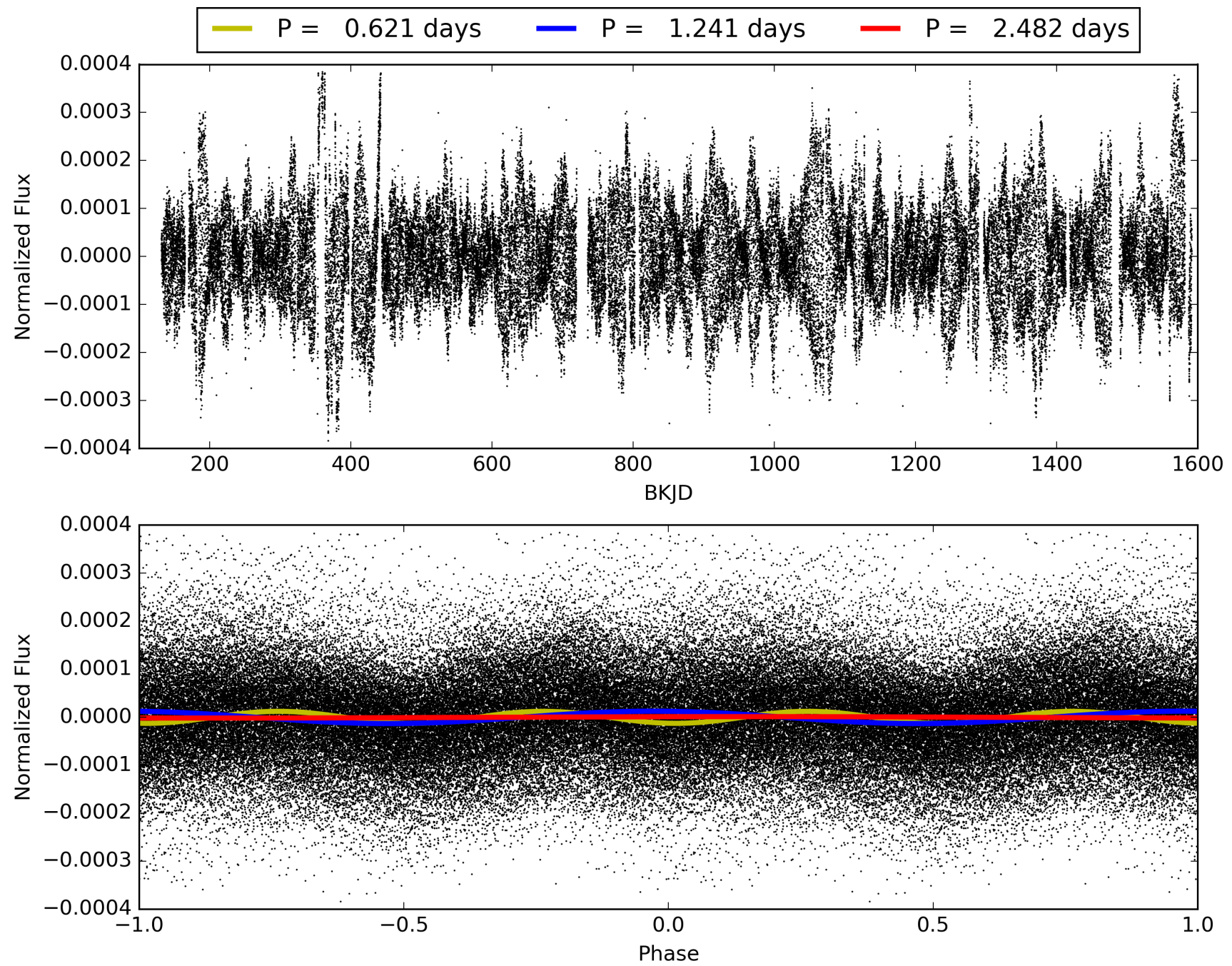
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:03:29 Z

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

TCE 012254389-02, PDC Light Curves

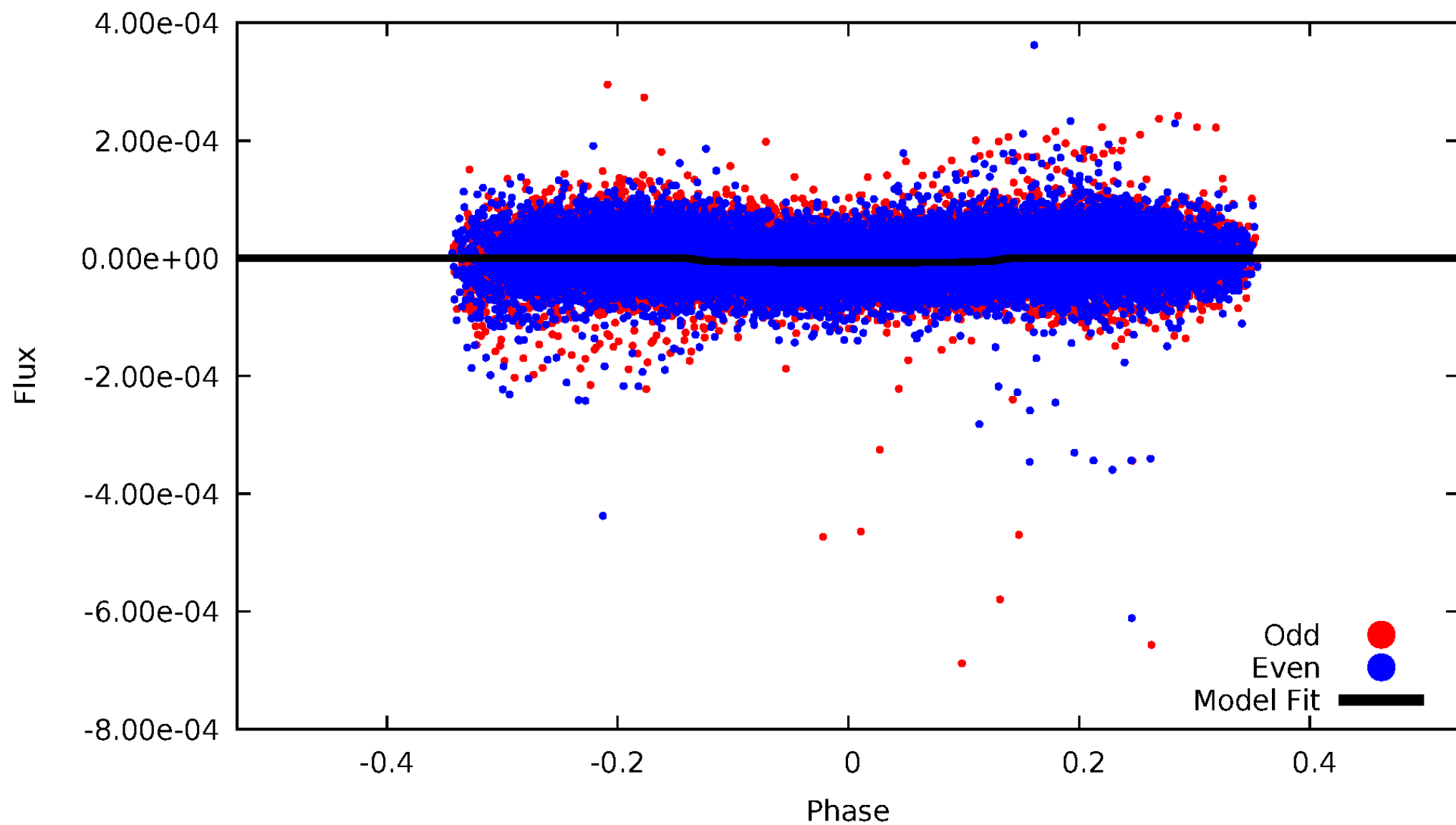


TCE 012254389-02



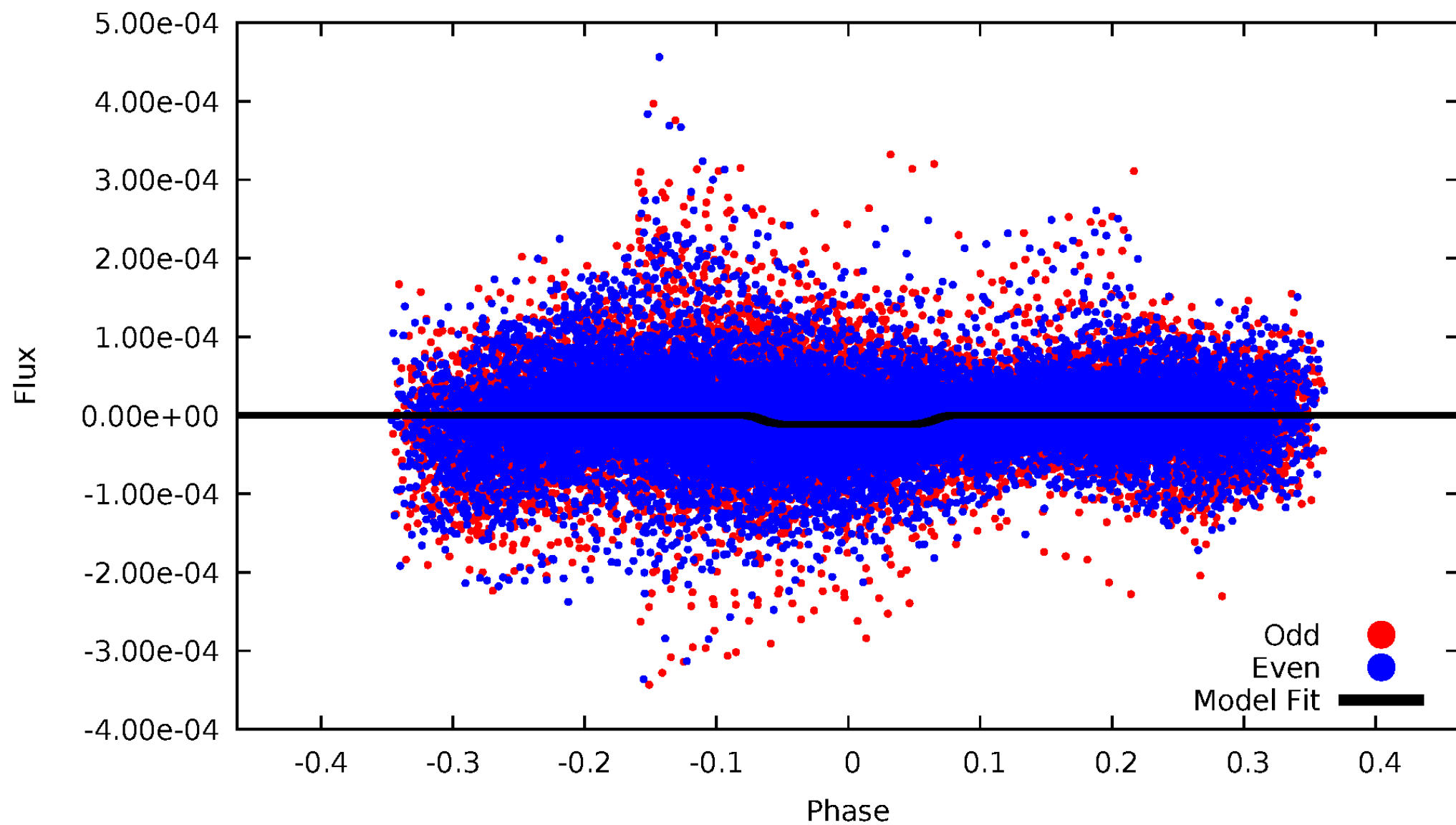
DV Odd/Even

TCE 012254389-02



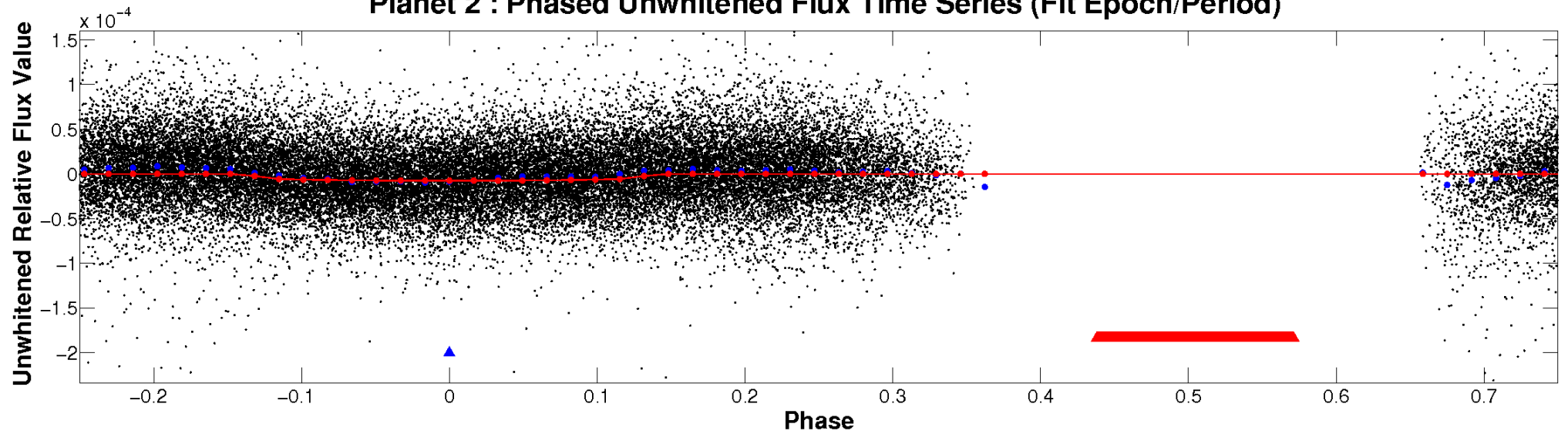
ALT Odd/Even

TCE 012254389-02

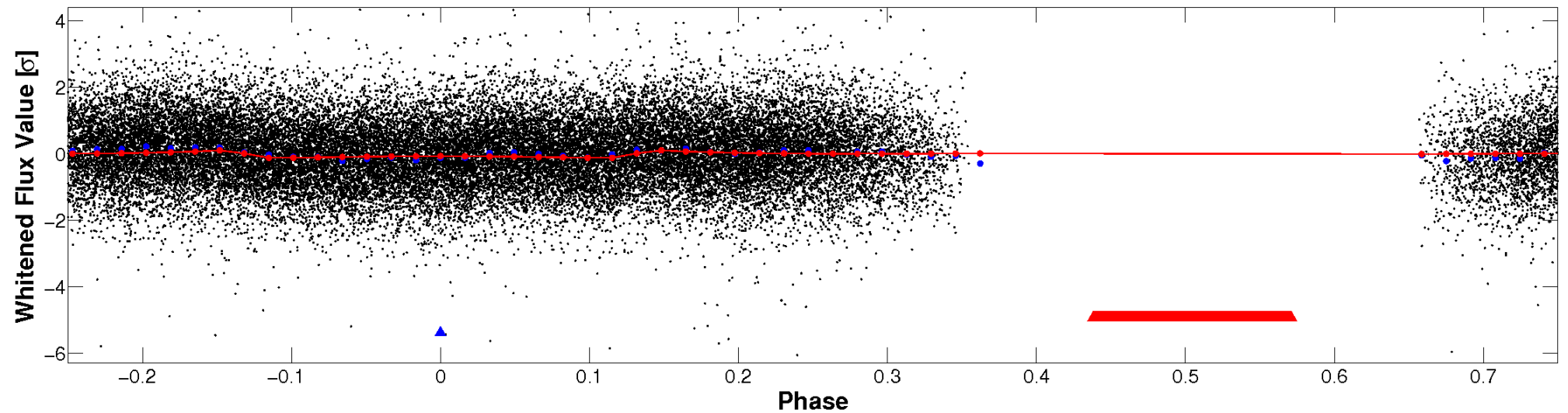


Non-Whitened Vs. Whitened Light Curve

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

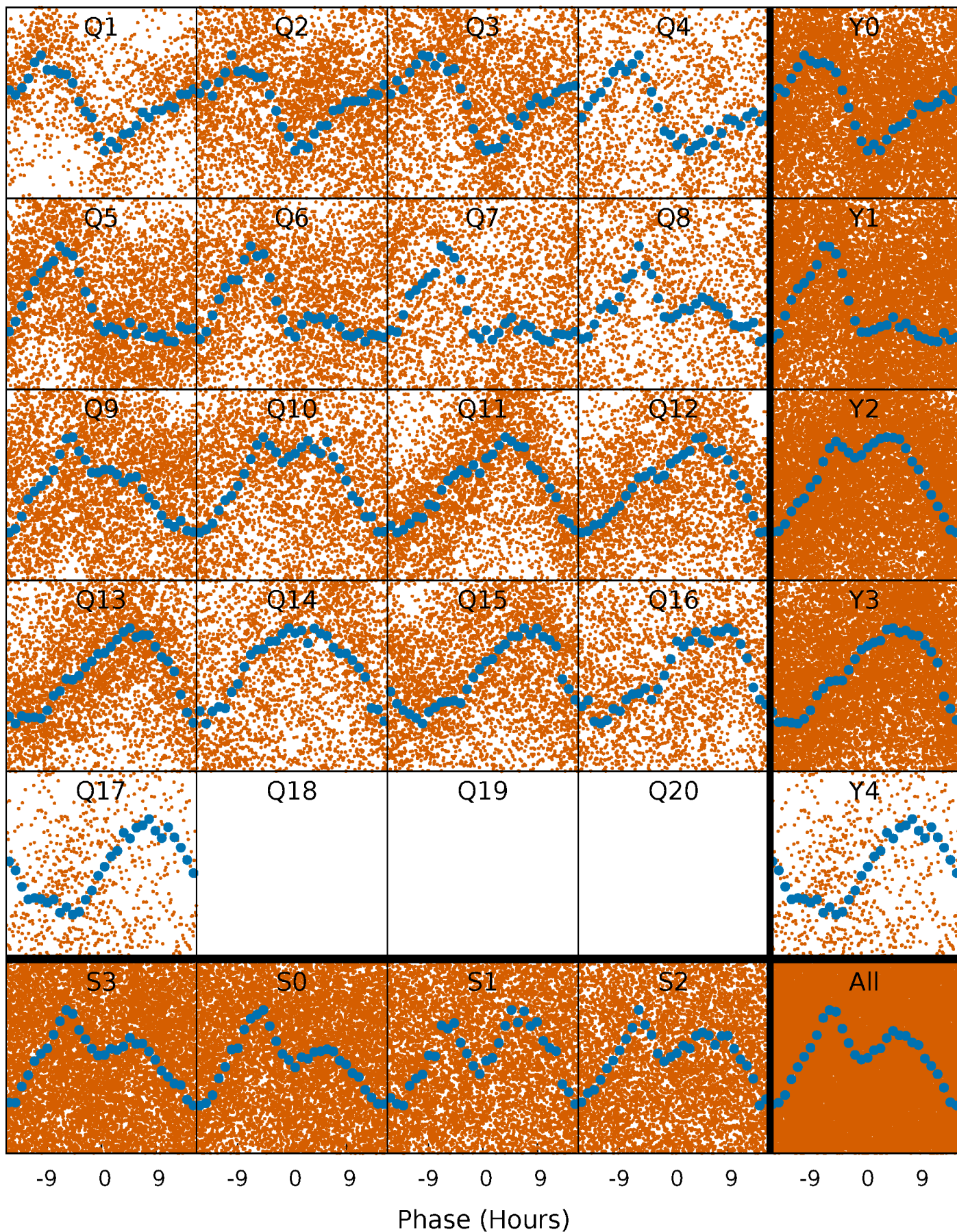


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



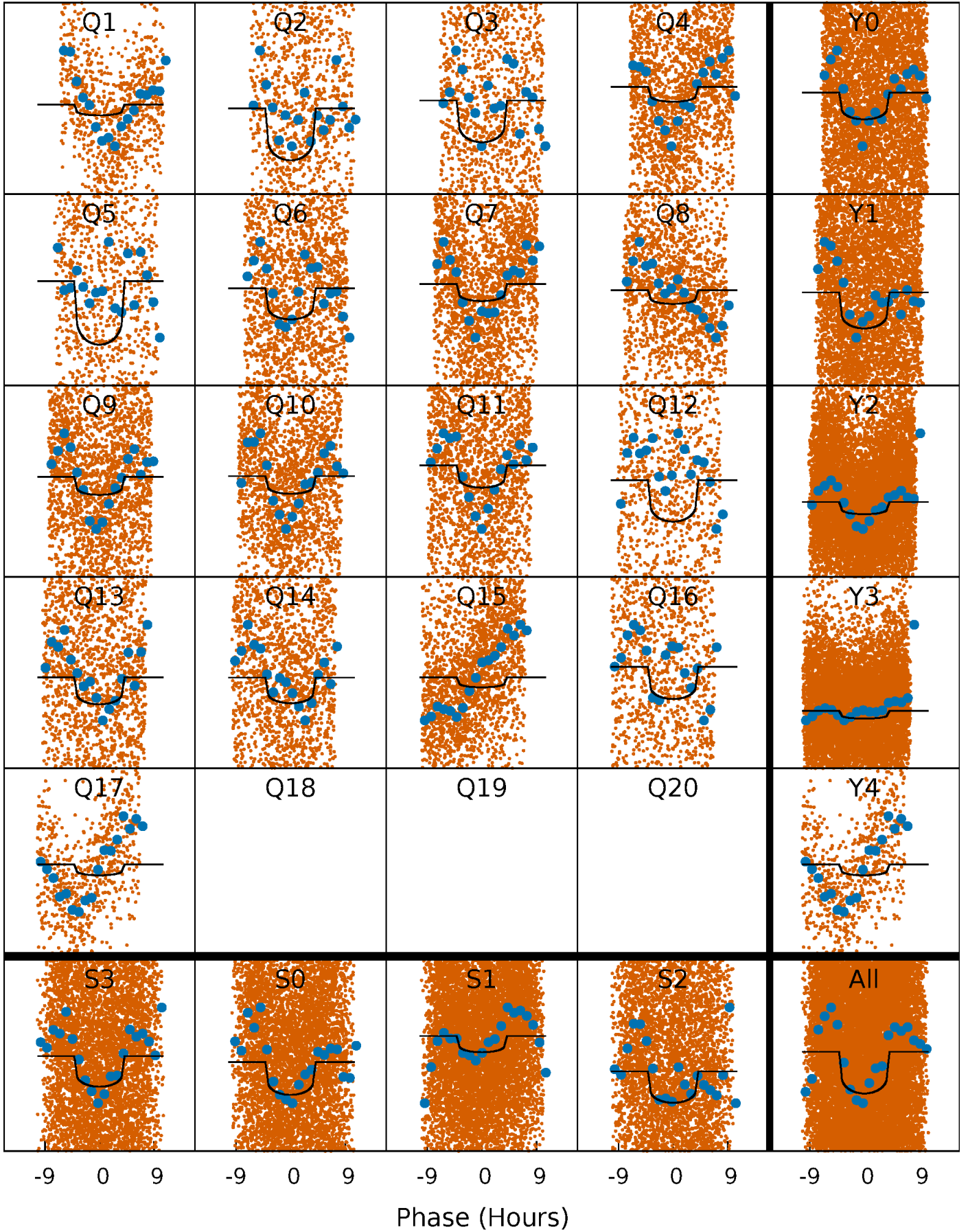
PDC Quarter-Phased Transit Curves

TCE 012254389-02 P= 1.241004 Days $T_0=132.680830$ (BKJD)



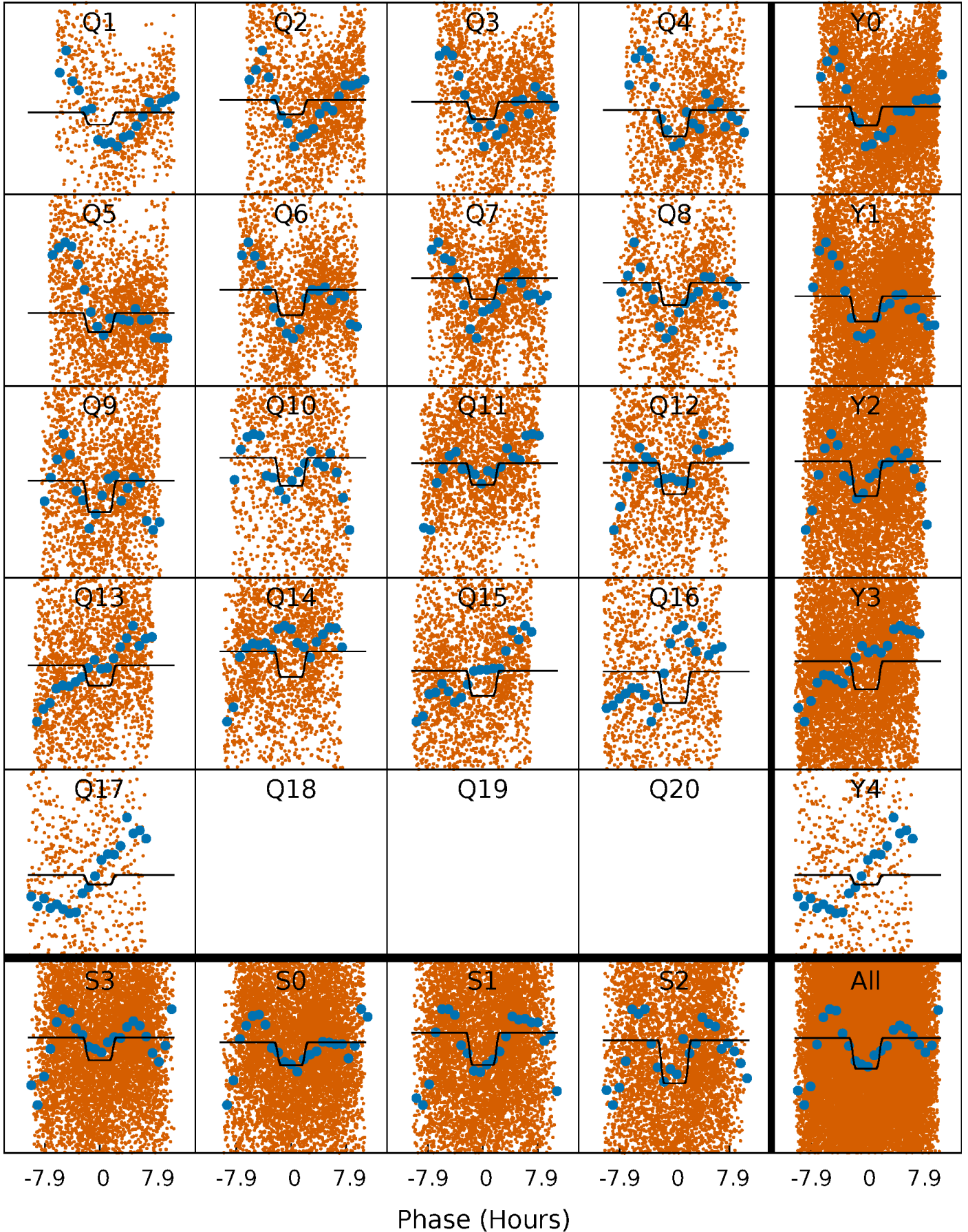
DV Quarter-Phased Transit Curves

TCE 012254389-02 P= 1.241004 Days $T_0=132.680830$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

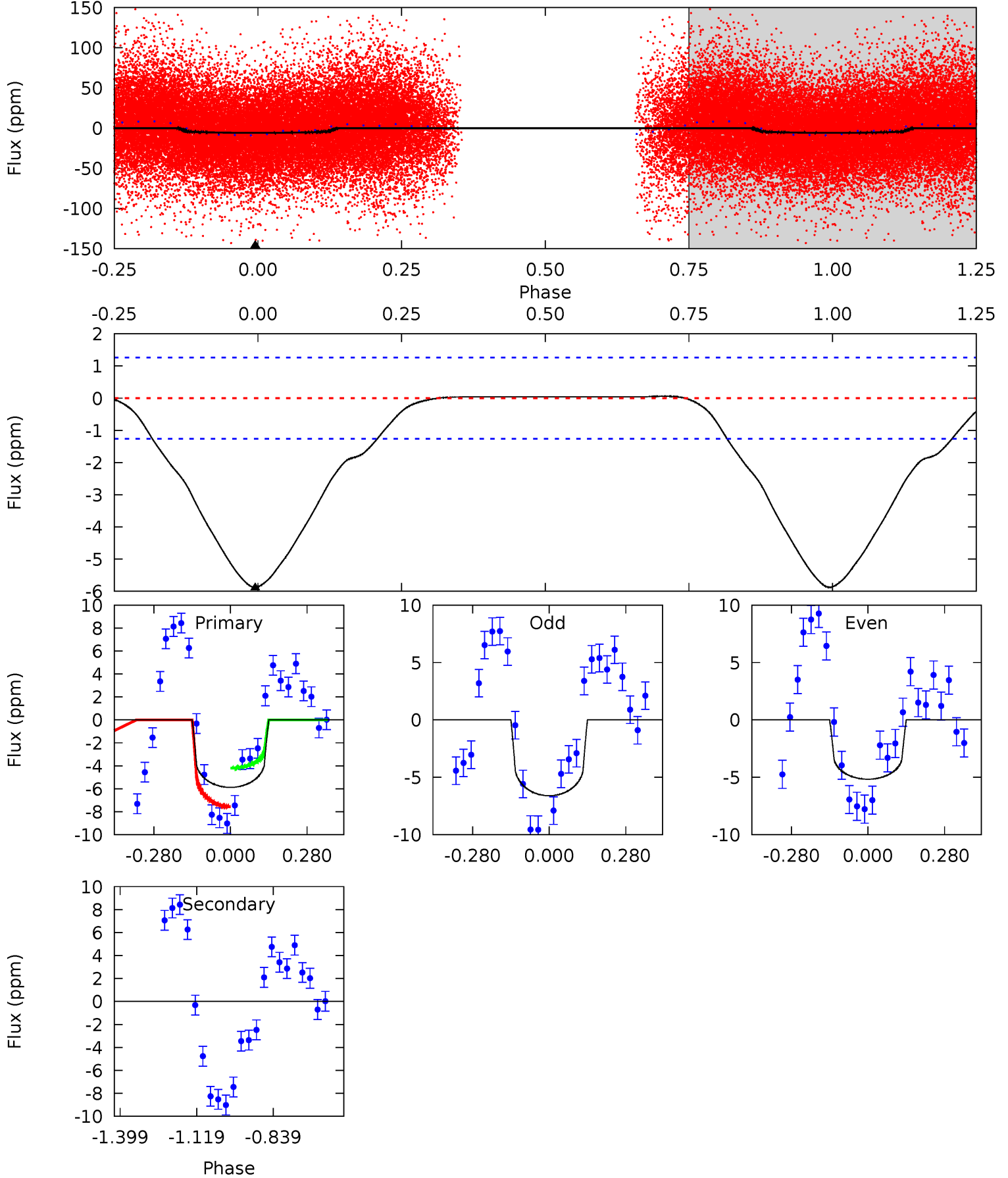
TCE 012254389-02 $P = 1.241014$ Days $T_0 = 132.672920$ (BKJD)



DV Model-Shift Uniqueness Test

012254389-02, P = 1.241004 Days, E = 131.439826 Days

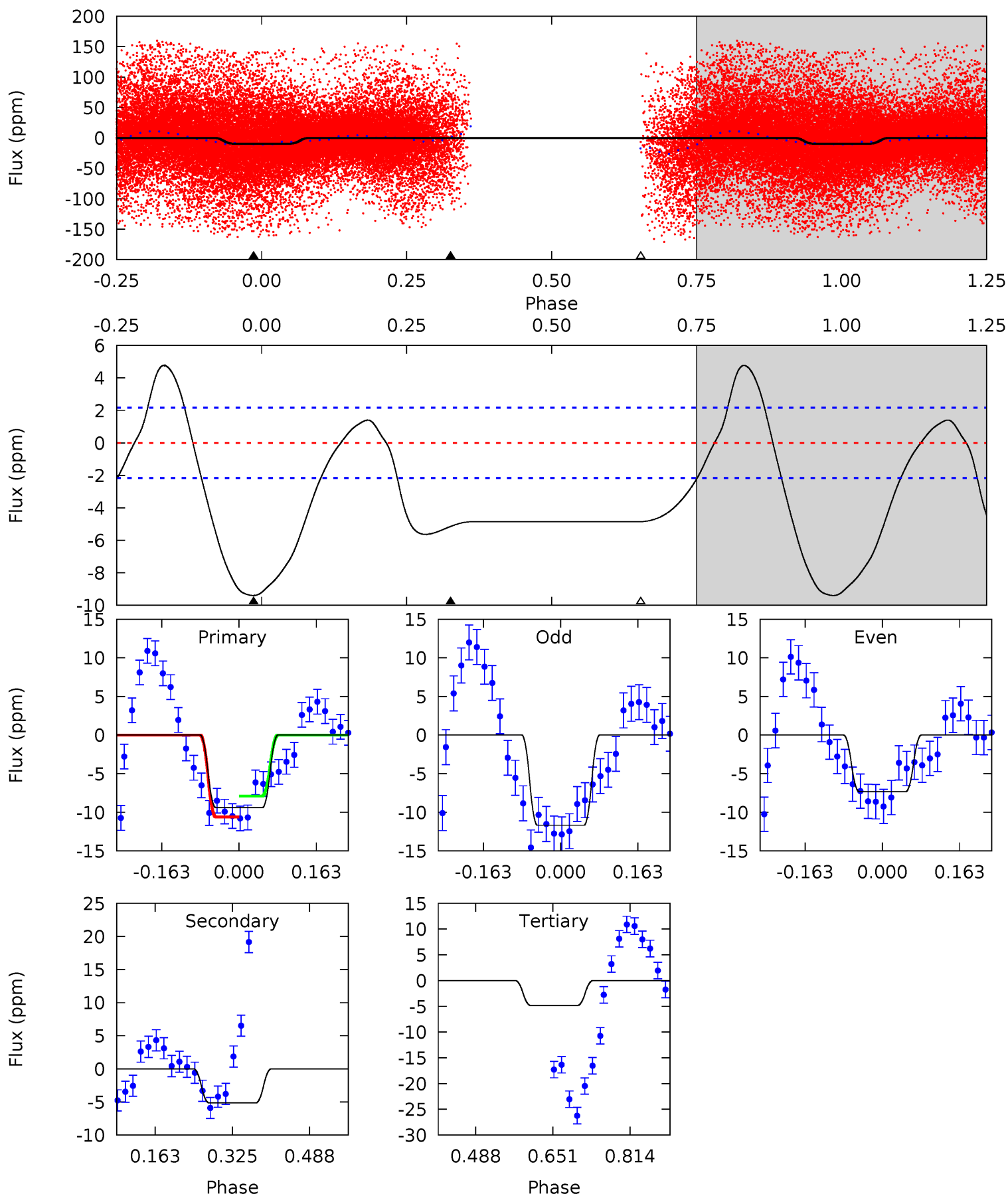
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	0	0	0	4.34	1.08	0.37	20.2	20.2	0	0	2.50	1.10	0.01	6.76



Alt Model-Shift Uniqueness Test

012254389-02, P = 1.241014 Days, E = 131.431906 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	10.6	10.0	0	4.46	1.40	5.33	9.37	19.4	0.61	10.6	4.49	0.93	0.34	3.13



Stellar Parameters For KIC 012254389

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7663^{+214}_{-322}	$3.856^{+0.315}_{-0.105}$	$0.000^{+0.200}_{-0.350}$	$2.726^{+0.446}_{-1.041}$	$1.945^{+0.082}_{-0.439}$	$0.135^{+0.297}_{-0.043}$
	+3%/-4%	+8%/-3%	+inf%/-inf%	+16%/-38%	+4%/-23%	+220%/-32%
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 012254389-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 0	$0.71^{+0.18}_{-0.18}$	4537^{+327}_{-395}	-4003^{+1316}_{-455}	$-0.009^{+0.286}_{-0.257}$
Alt.	-5 ± 0	$0.93^{+0.20}_{-0.20}$	4536^{+309}_{-437}	5969^{+588}_{-462}	$2.519^{+1.675}_{-0.821}$

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

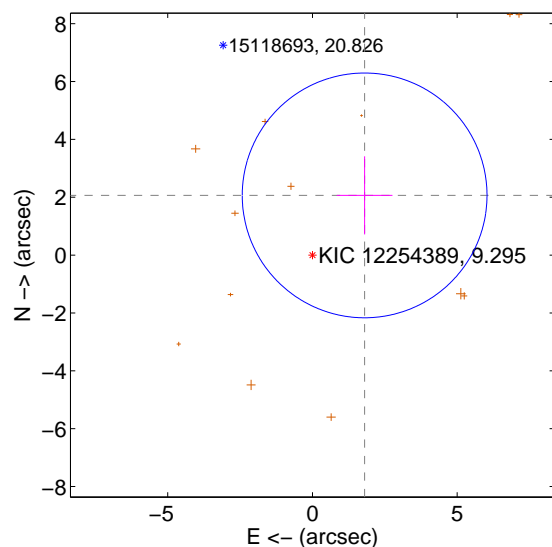
Supplemental centroid analysis for 012254389-02. **Kepler magnitude: 9.29.** Transit SNR 13.94

There are 0 quarters with good PRF difference image offsets

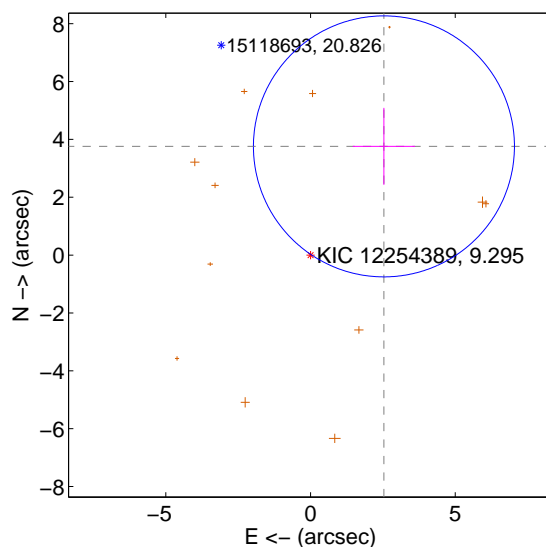
The direct PRF centroid is offset from the target star catalog position by about 1.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.741 ± 1.410	1.94	-1.804 ± 0.962	2.063 ± 1.351
PRF-fit source offset from KIC position	4.534 ± 1.503	3.02	-2.537 ± 1.077	3.758 ± 1.331
photometric centroid source offset	0.41 ± 1.25	0.33	-0.36 ± 1.09	0.20 ± 1.64

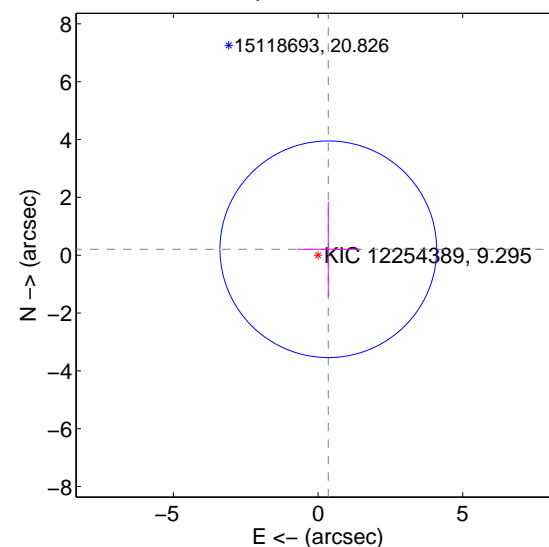
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

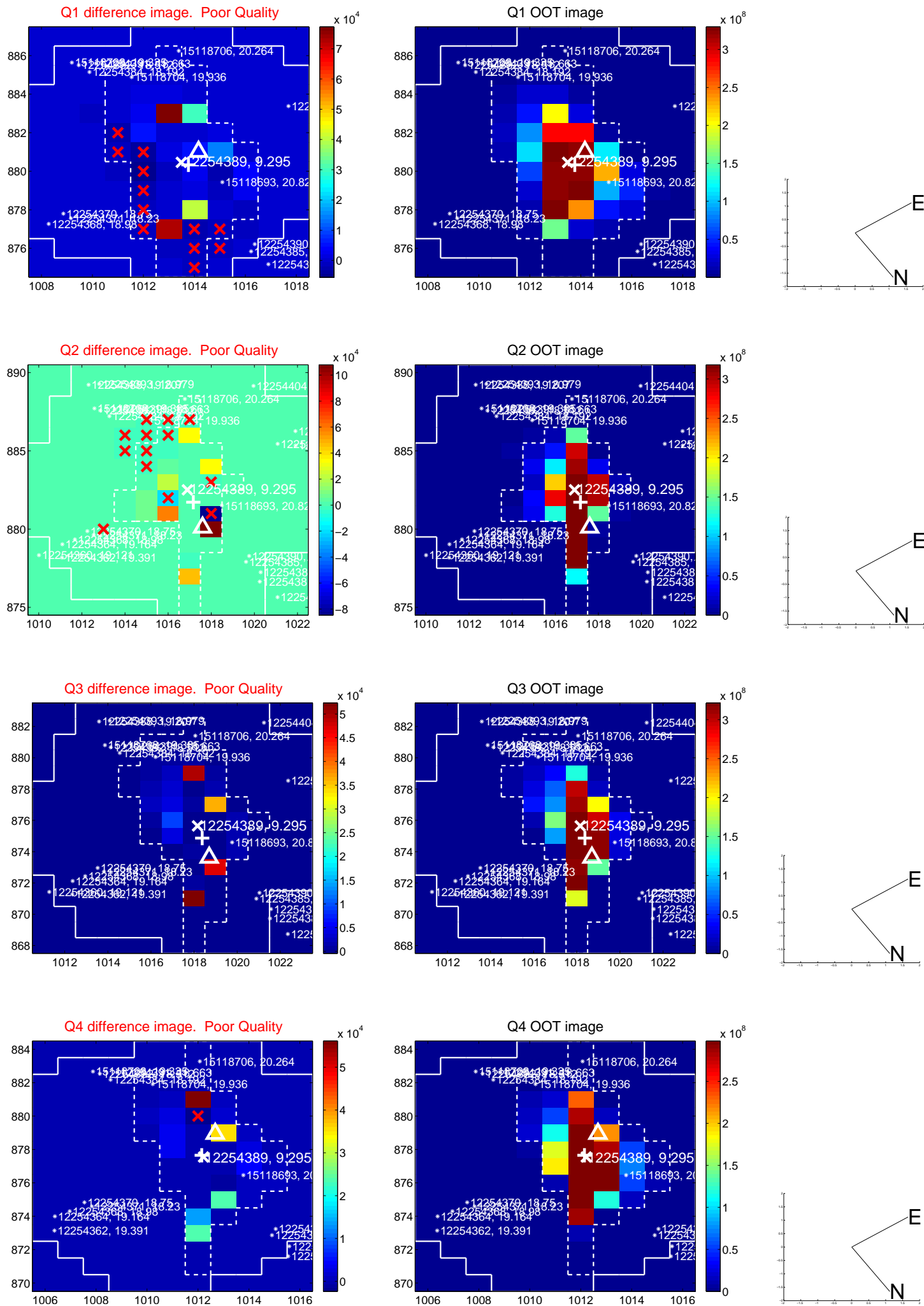


offset from photometric centroids

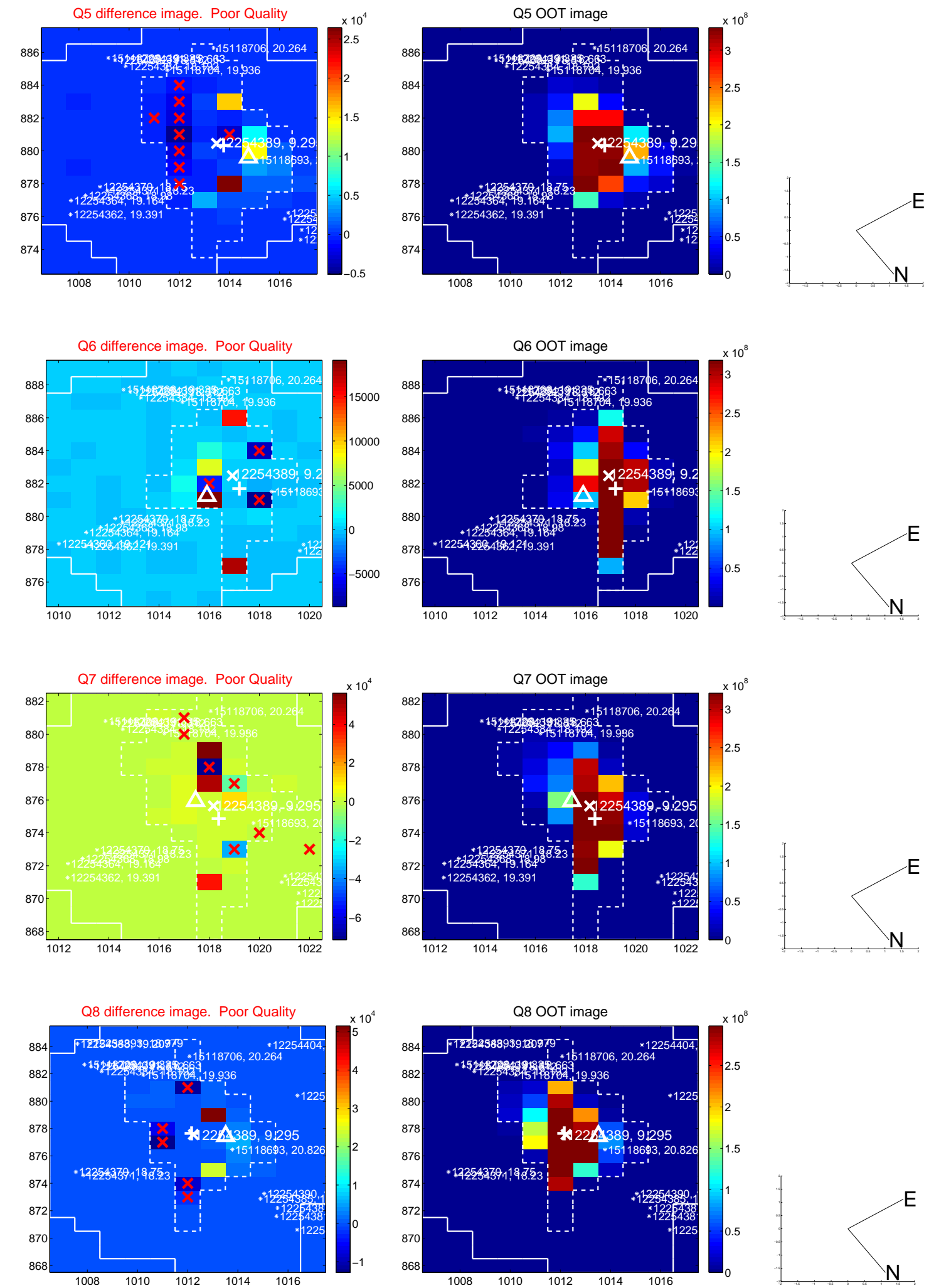


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

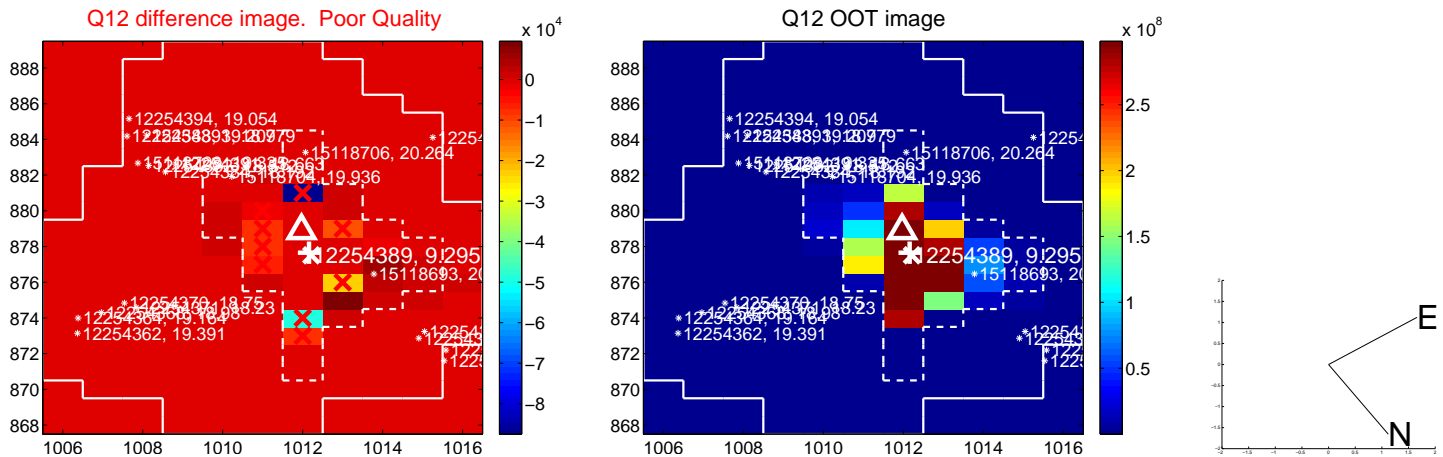
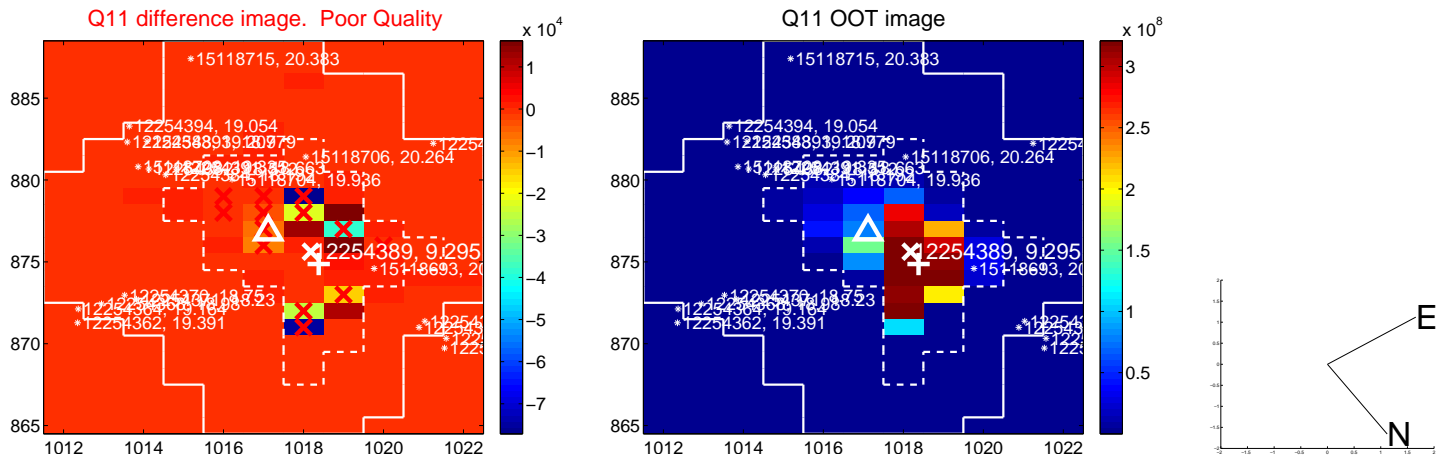
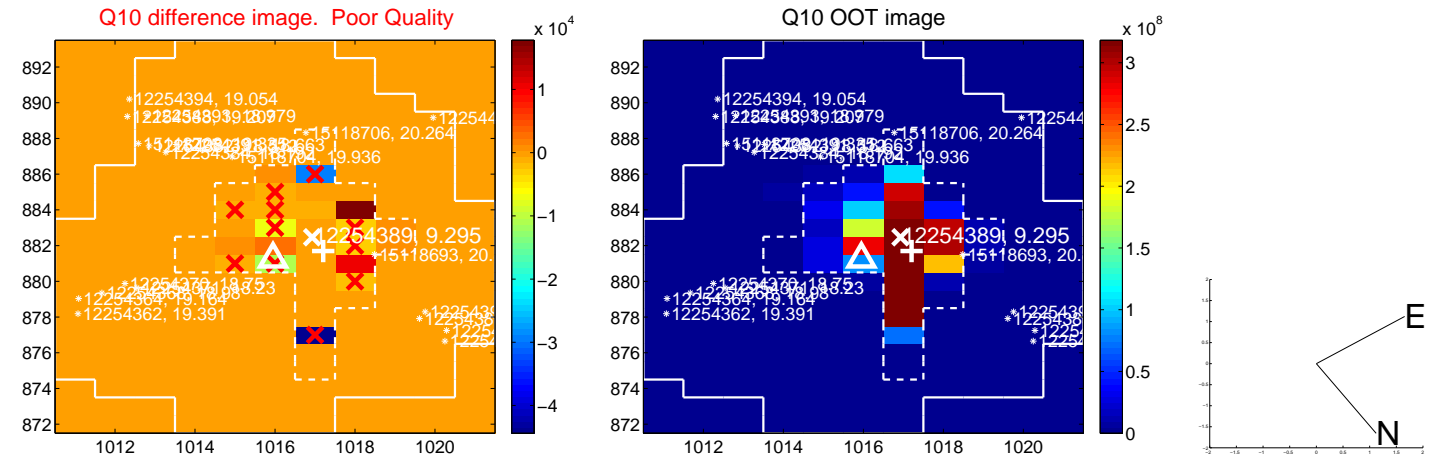
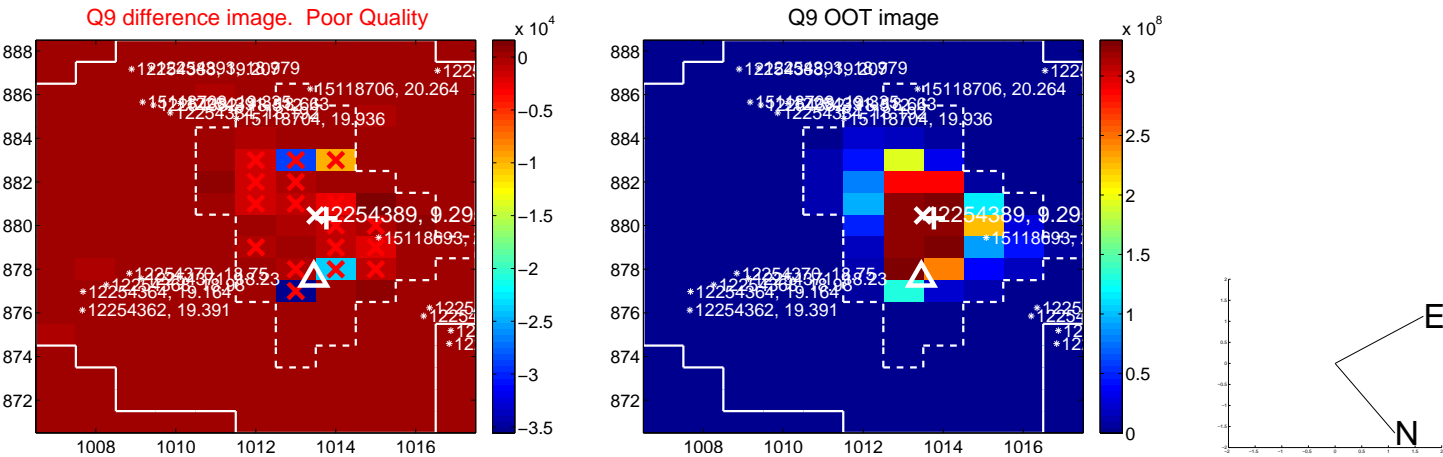
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



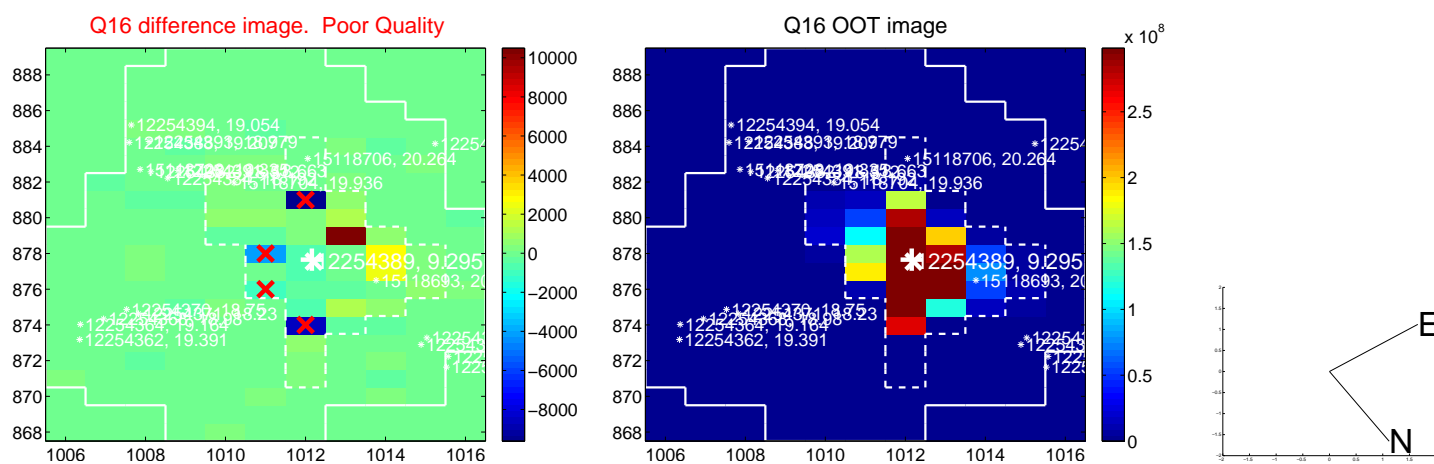
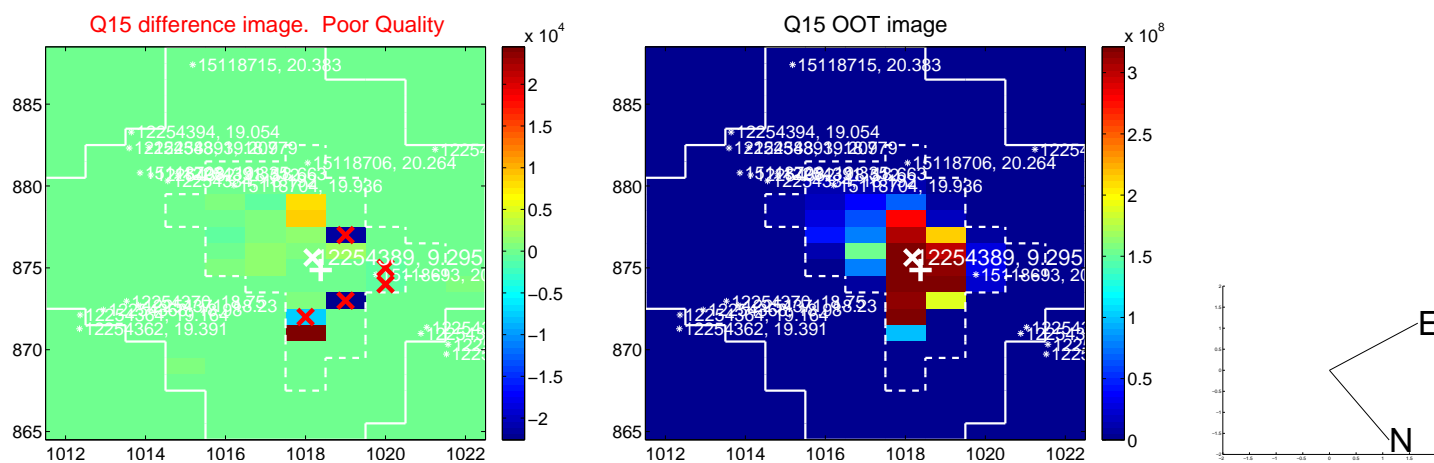
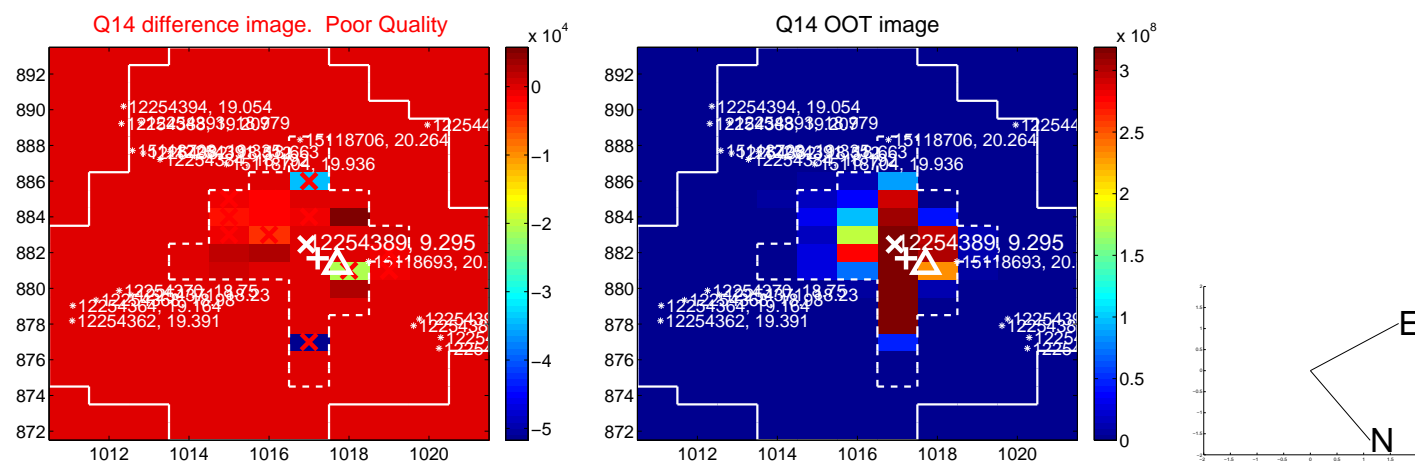
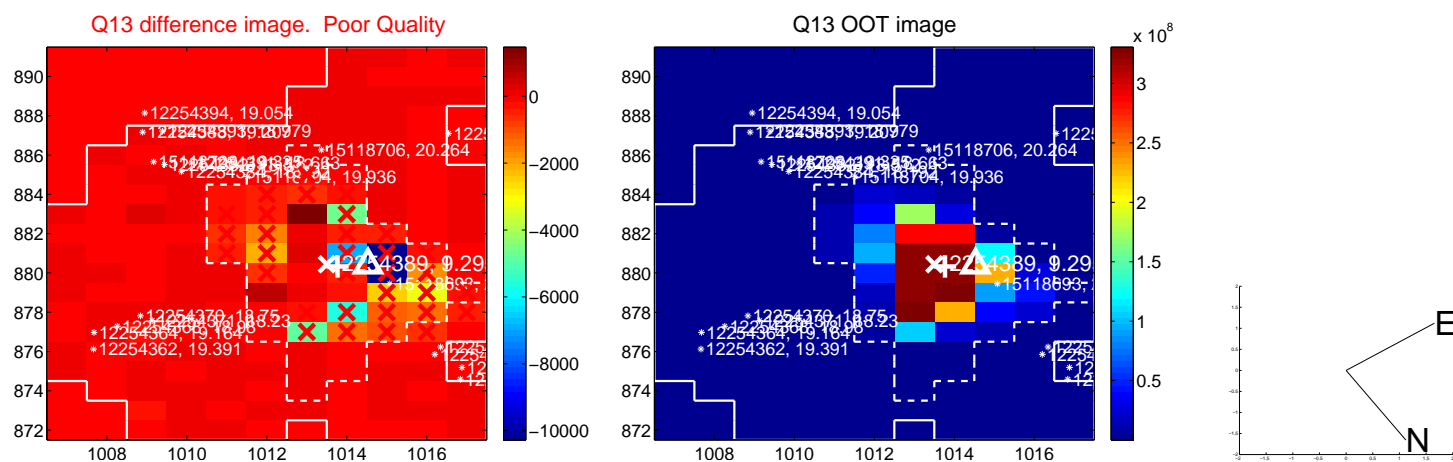
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

