

KIC 010383429

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})
010383429-01	OBS	No	0.619618	131.611311	18.7	1.897	14.1	14.2	2.75	7166	1.38	67480.85
010383429-02	OBS	No	2.027849	133.180342	21.7	22.083	7.7	11.2	2.75	7166	1.29	13887.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010383429-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_CROWDED
010383429-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—CENT_CROWDED

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

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

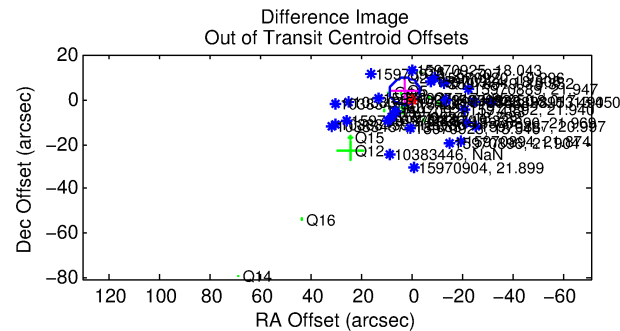
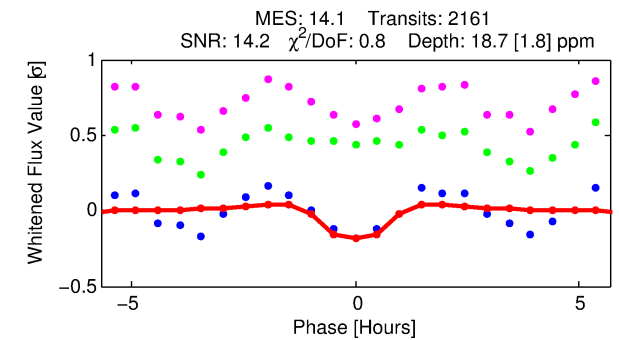
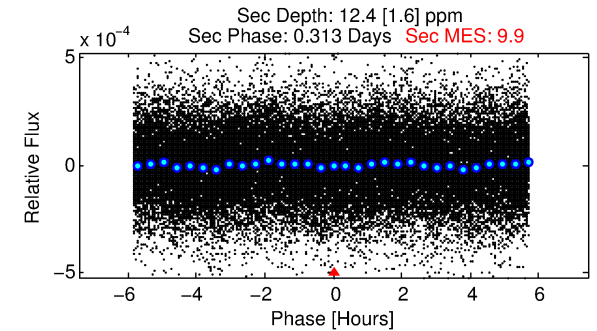
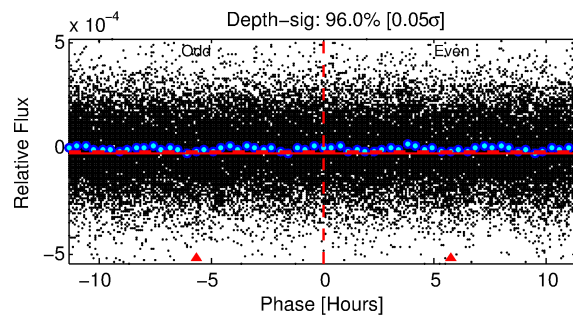
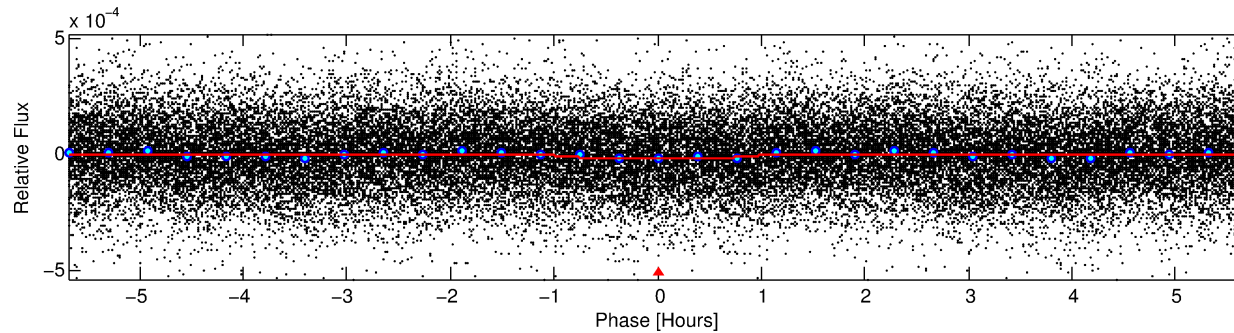
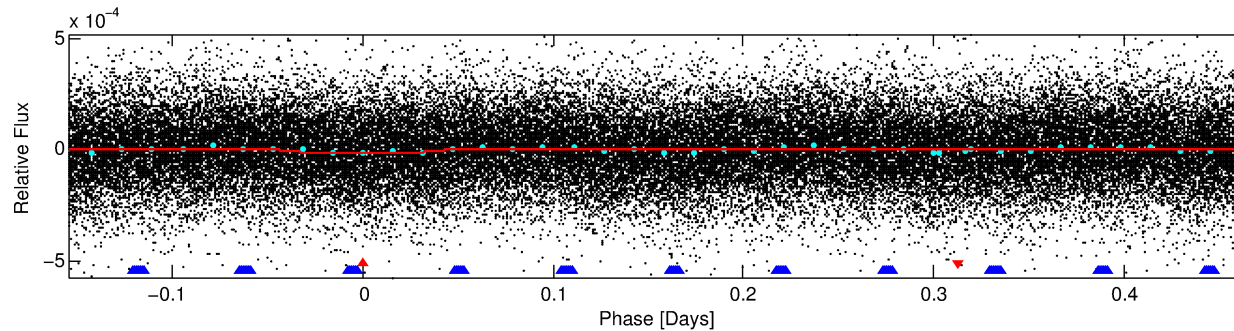
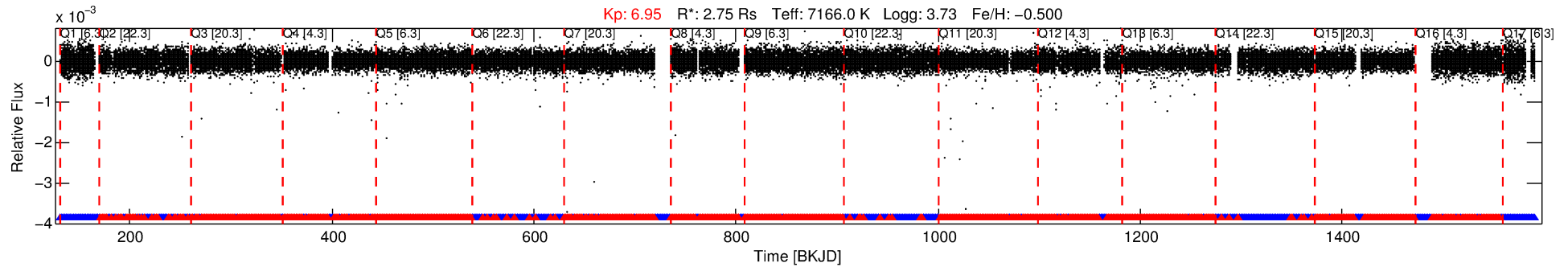
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010383429-01

No Significant Match Found

DV One-Page Summary

KIC: 10383429 Candidate: 1 of 2 Period: 0.620 d



DV Fit Results:

Period = 0.61962 [0.00001] d
Epoch = 131.6113 [0.0018] BKJD
 $R_p/R^* = 0.0046$ [0.0011]
 $a/R^* = 1.45$ [1.16]
 $b = 0.90$ [0.32]
 $\text{Seff} = 67480.85$ [58142.70]
 $T_{\text{eq}} = 4110$ [885] K
 $R_p = 1.38$ [0.79] R_e
 $a = 0.0163$ [0.0084] AU
 $A_g = 0.94$ [0.93] [-0.06 σ]
 $T_{\text{eff}} = 6261$ [836] K [1.77 σ]

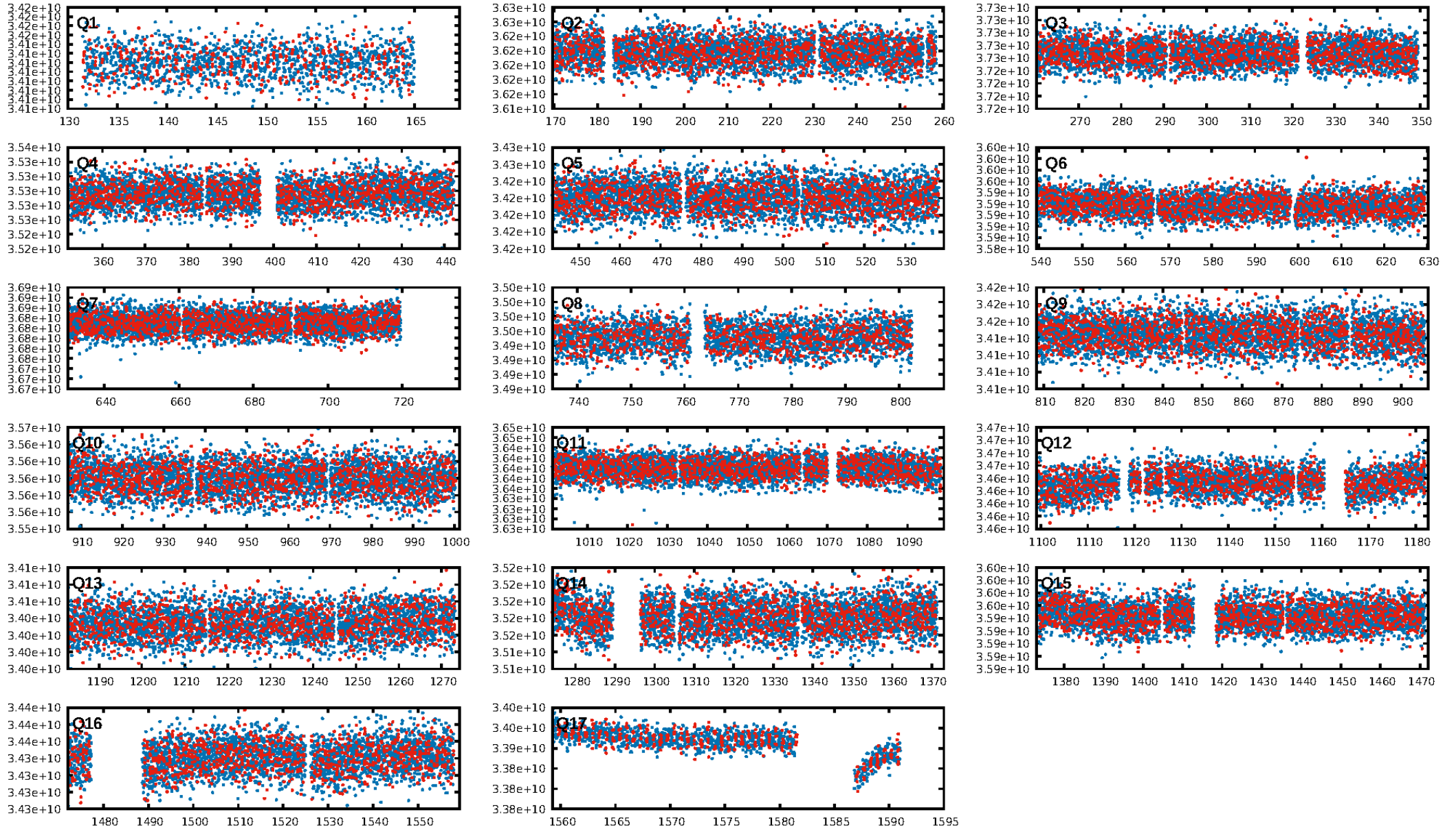
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 87.3% [1.52 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.41 [845/2063]
GhostDiagnostic-chr: N/A
Centroid-sig: 5.0%
Centroid-so: 4.614 arcsec [2.33 σ]
OotOffset-rm: 4.867 arcsec [2.42 σ]
KicOffset-rm: 4.555 arcsec [2.45 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 1.00 [17/17]

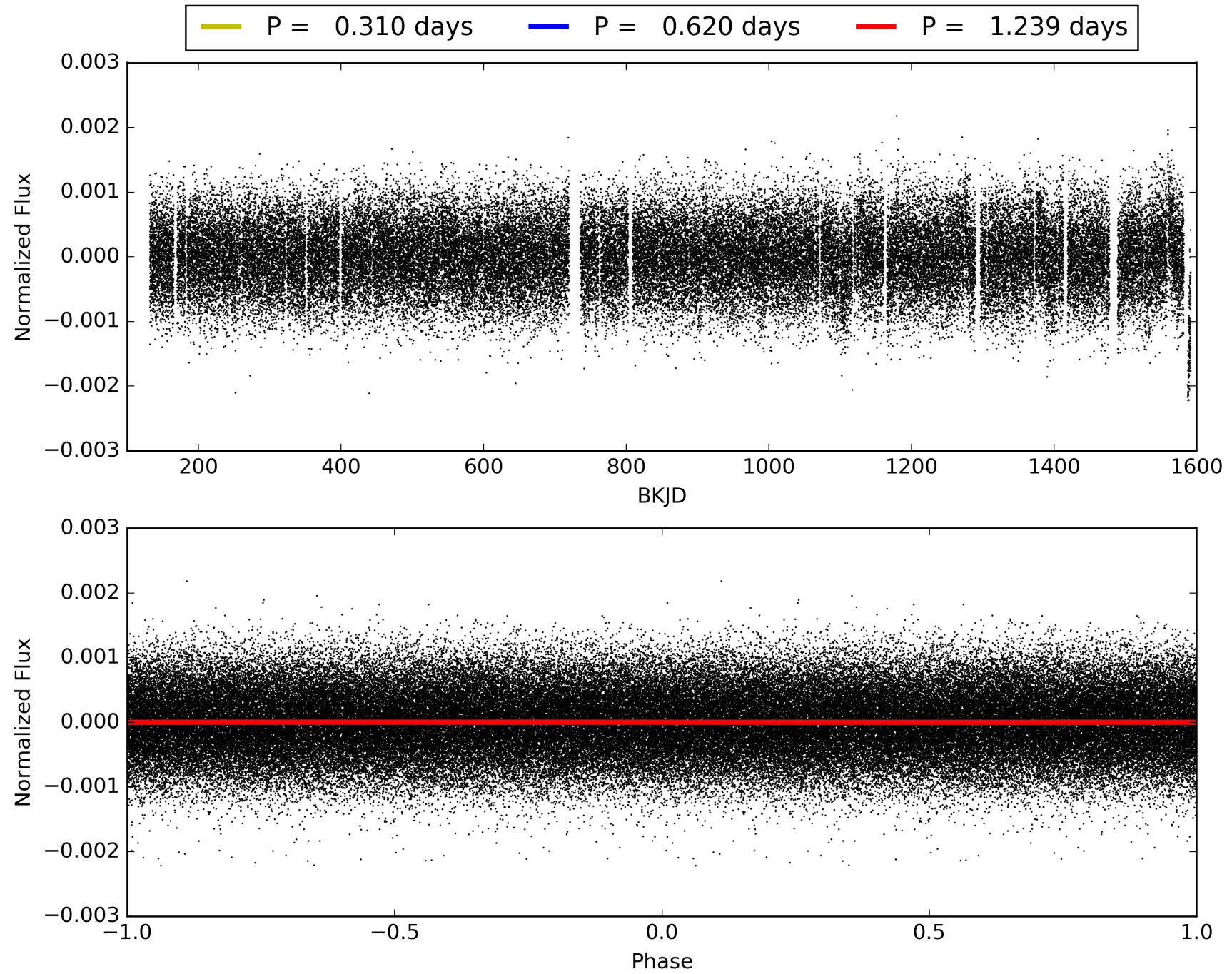
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:51:11 Z

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

TCE 010383429-01, PDC Light Curves

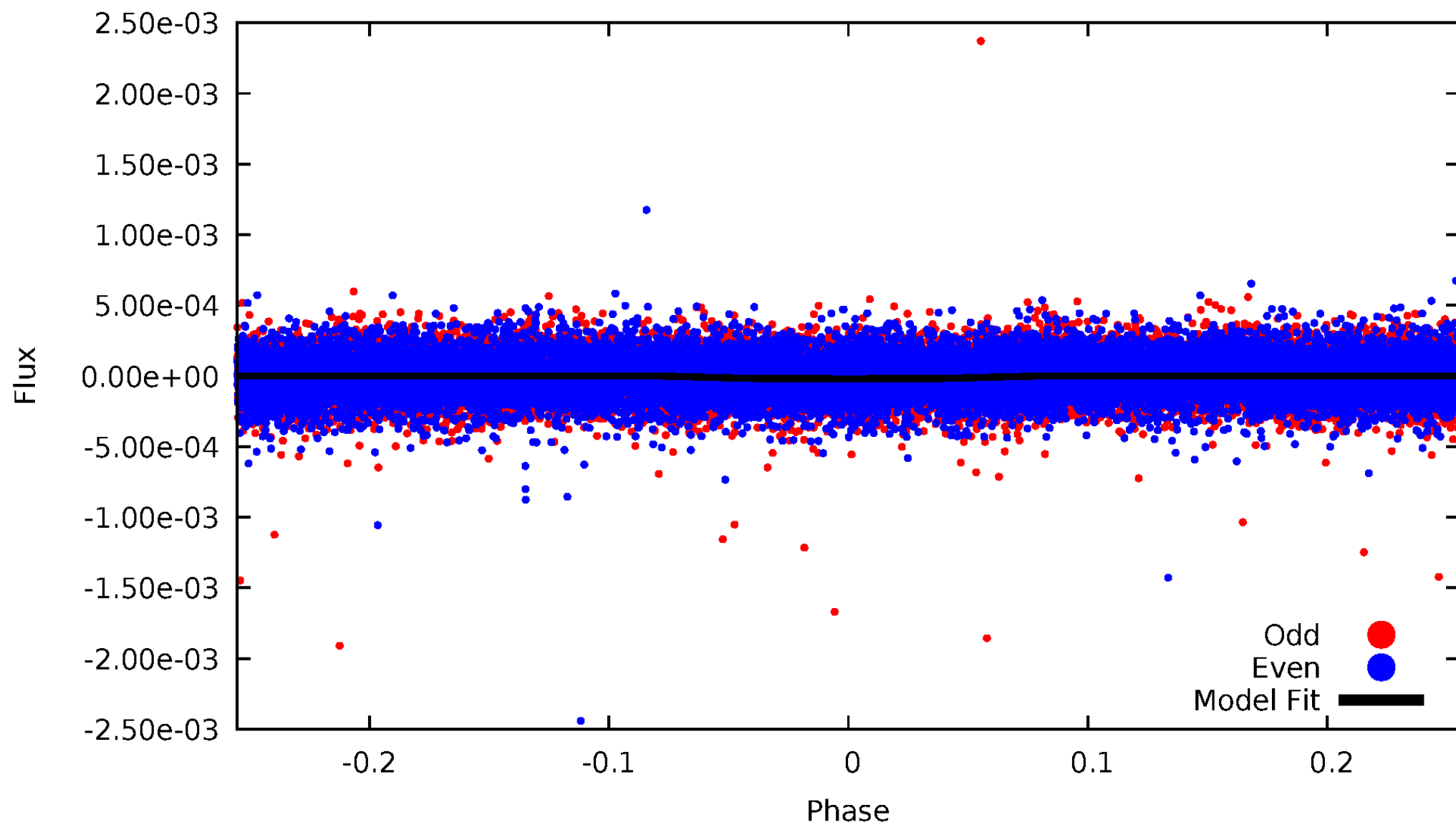


TCE 010383429-01



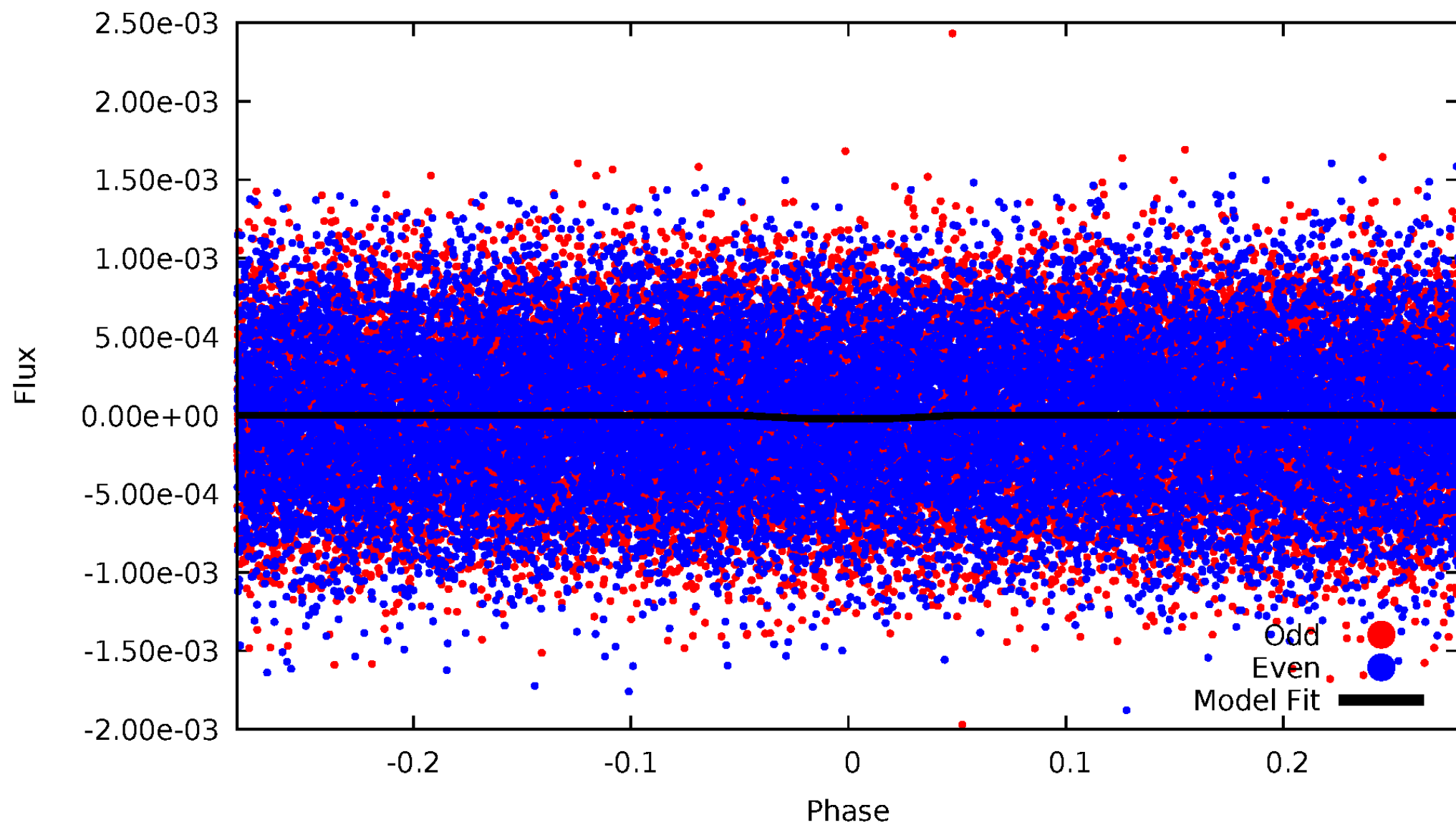
DV Odd/Even

TCE 010383429-01



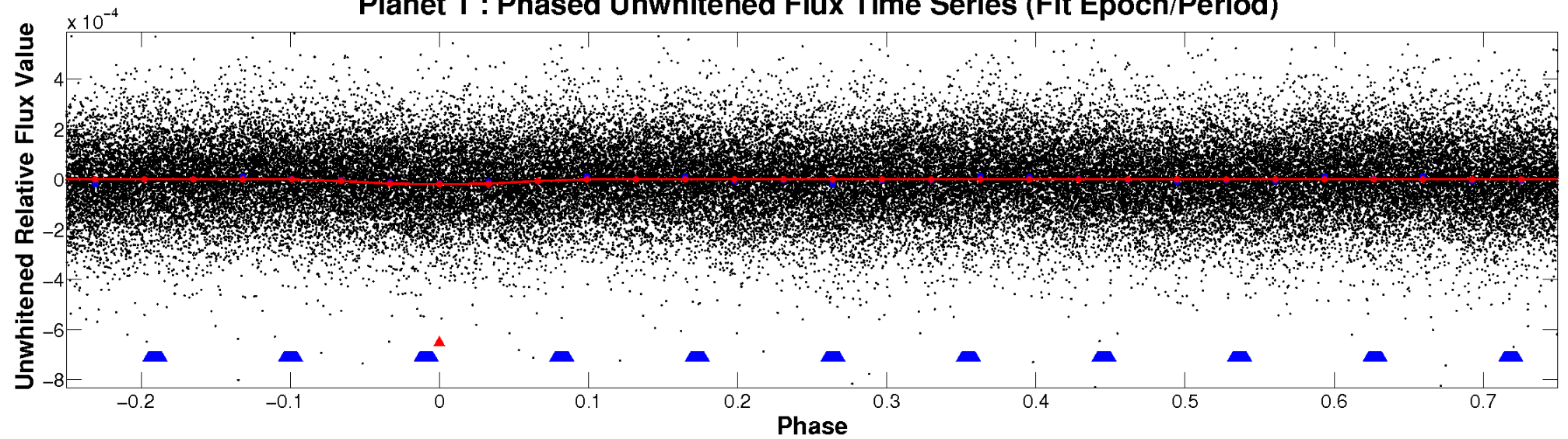
ALT Odd/Even

TCE 010383429-01

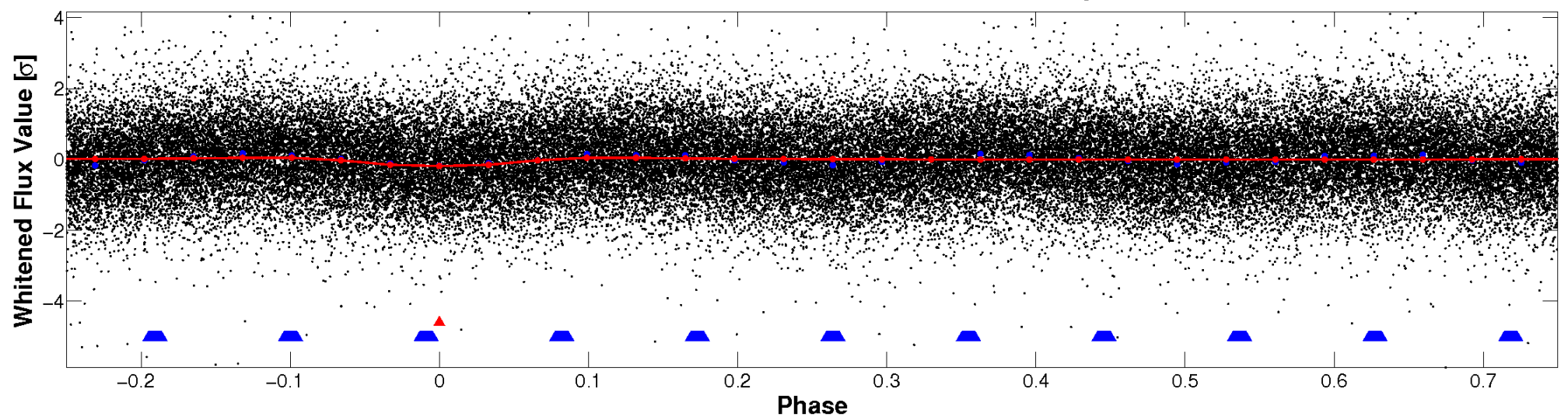


Non-Whitened Vs. Whitened Light Curve

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

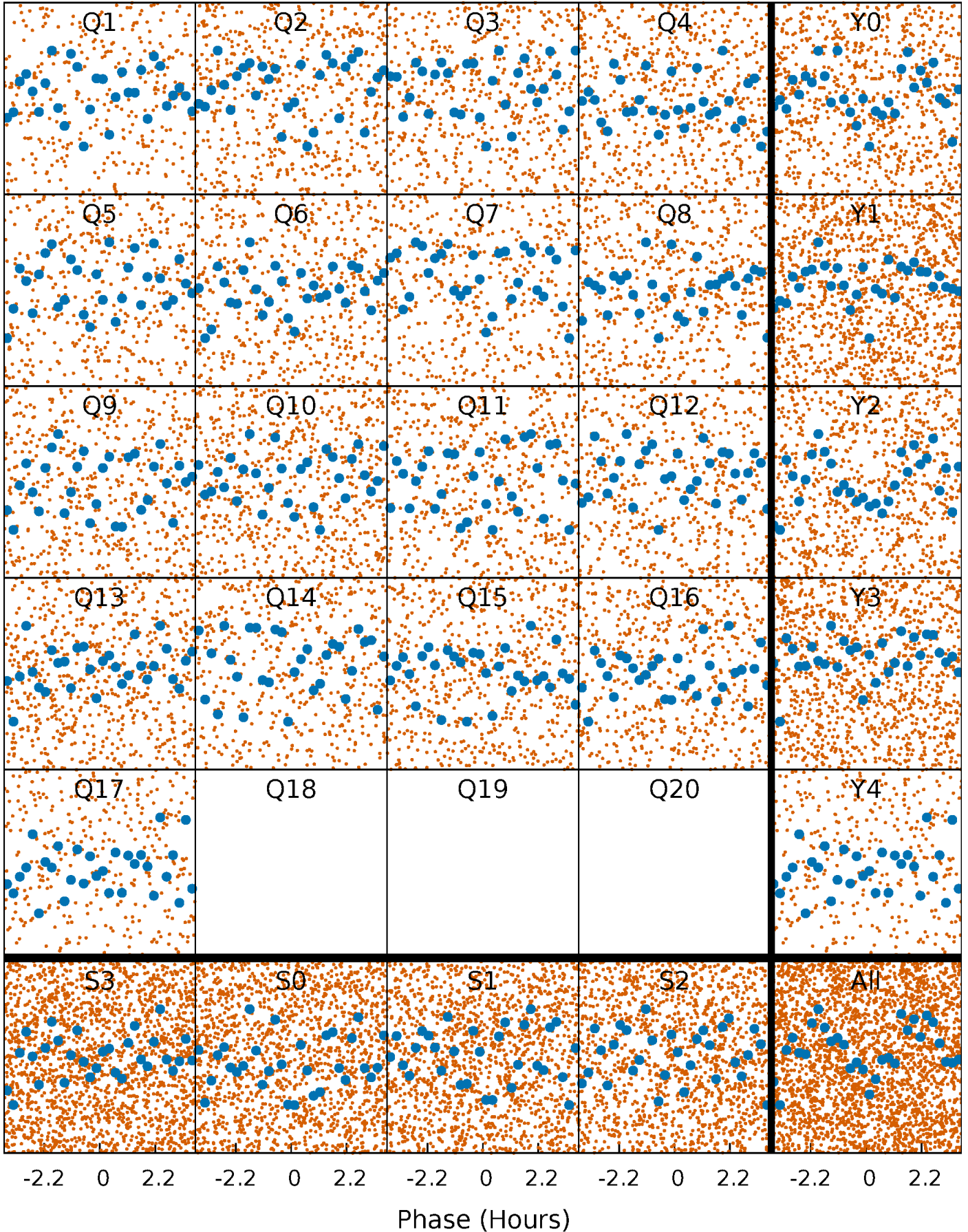


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



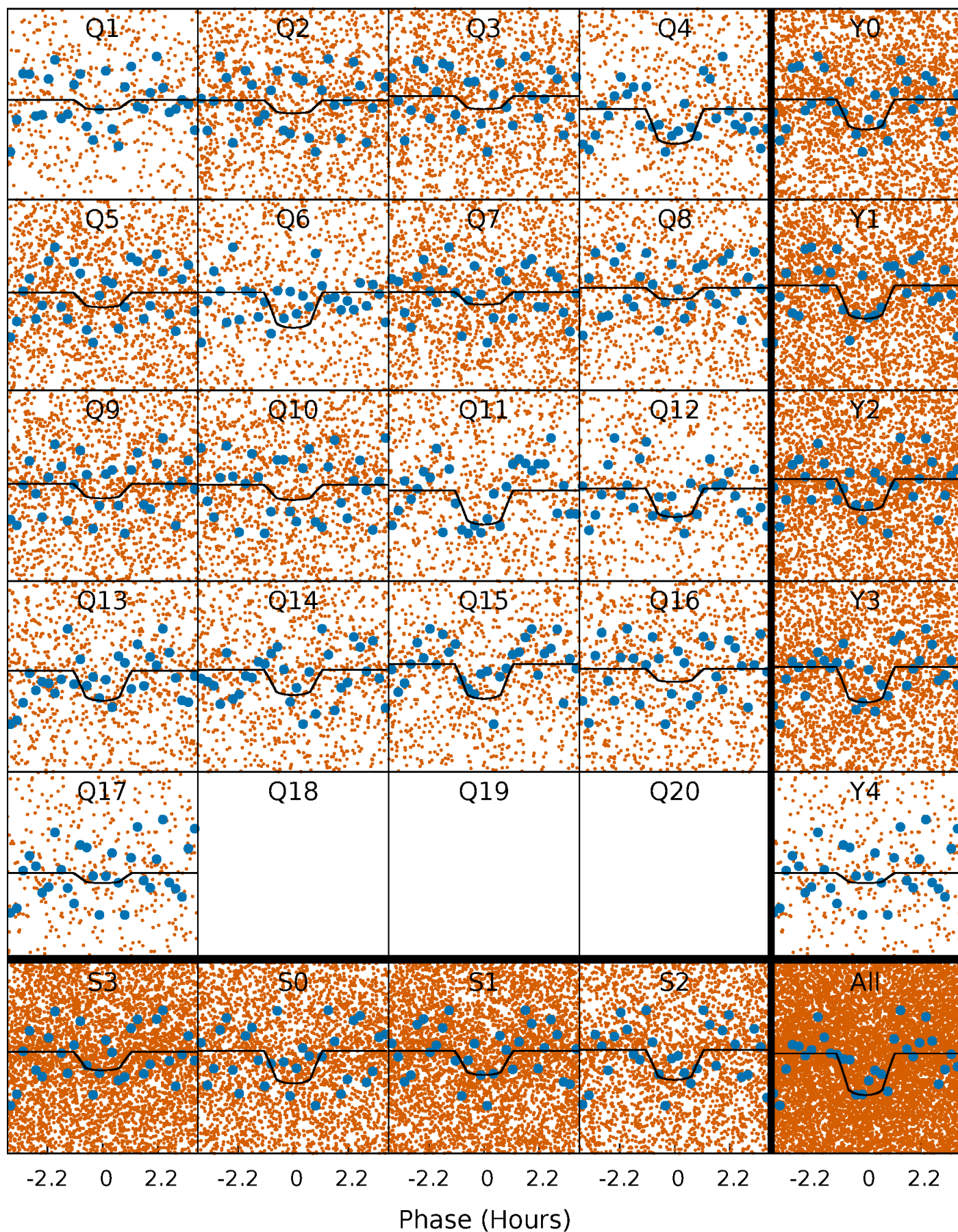
PDC Quarter-Phased Transit Curves

TCE 010383429-01 P= 0.619618 Days $T_0=131.611311$ (BKJD)



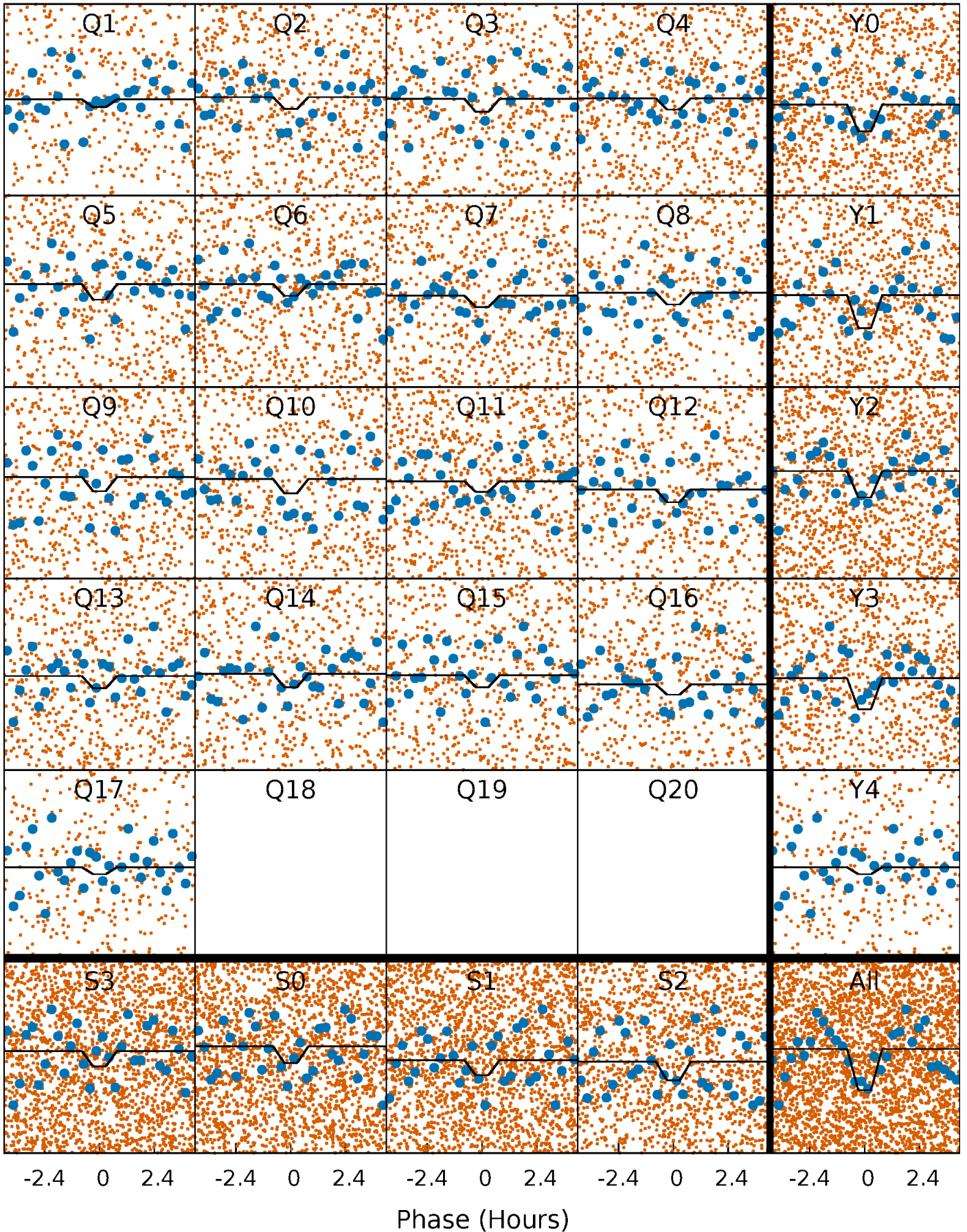
DV Quarter-Phased Transit Curves

TCE 010383429-01 P= 0.619618 Days $T_0=131.611311$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

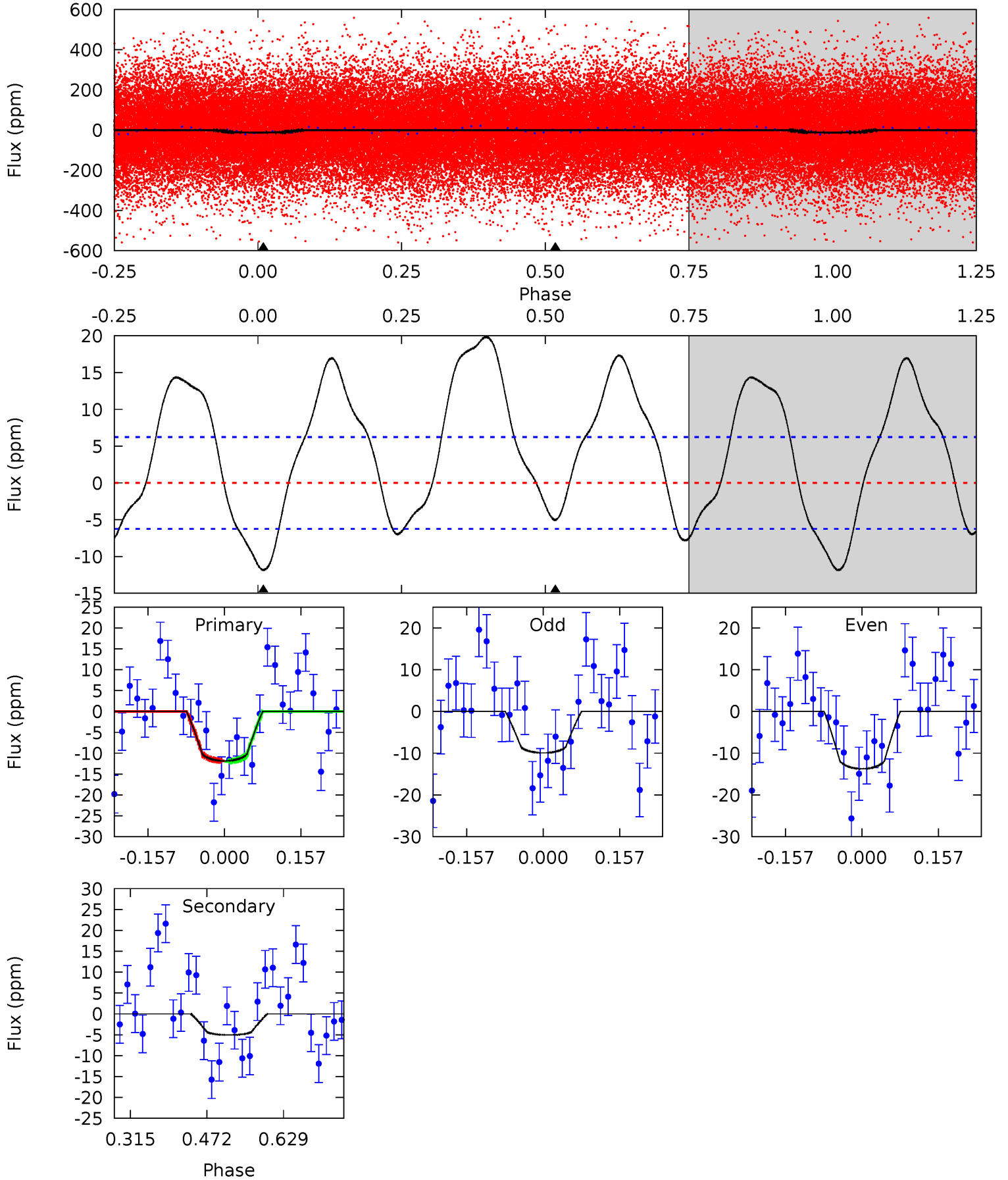
TCE 010383429-01 P= 0.619620 Days $T_0=131.614296$ (BKJD)



DV Model-Shift Uniqueness Test

010383429-01, P = 0.619618 Days, E = 130.991693 Days

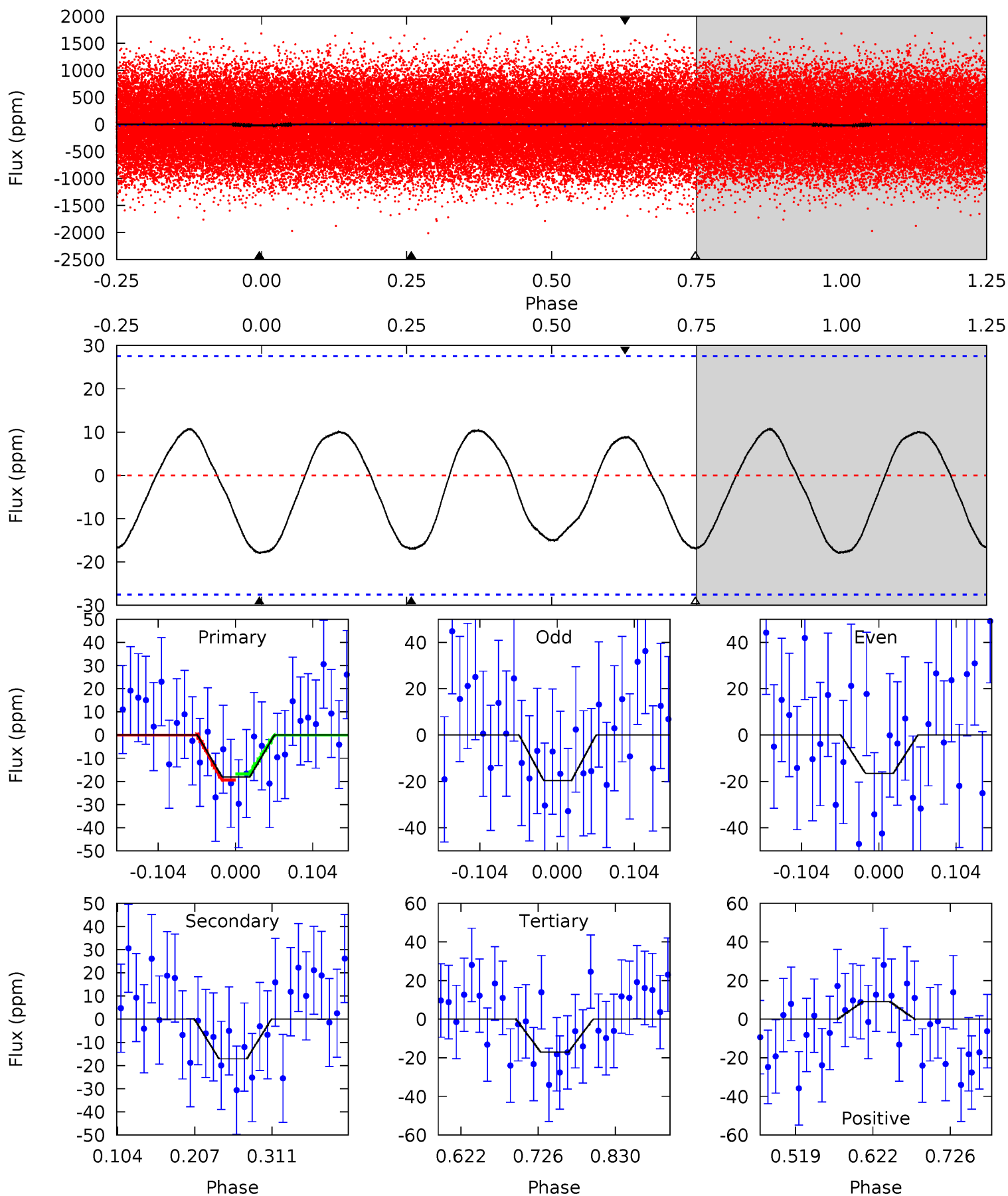
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.49	3.62	0	0	4.47	1.41	5.09	8.49	8.49	3.62	3.62	1.38	1.07	0.63	0.05



Alt Model-Shift Uniqueness Test

010383429-01, P = 0.619620 Days, E = 130.994676 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.99	2.84	2.82	1.50	4.56	1.63	1.56	0.17	1.50	0.01	1.34	0.26	0.78	0.38	0.21



Stellar Parameters For KIC 010383429

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7166^{+225}_{-300}	$3.734^{+0.502}_{-0.089}$	$-0.500^{+0.300}_{-0.300}$	$2.748^{+0.447}_{-1.431}$	$1.494^{+0.197}_{-0.366}$	$0.101^{+0.558}_{-0.028}$
	+3%/-4%	+13%/-2%	+60%/-60%	+16%/-52%	+13%/-24%	+550%/-28%
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 010383429-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5 ± 1	$1.22^{+0.44}_{-0.41}$	5538^{+432}_{-749}	4182^{+1127}_{-7633}	$0.481^{+0.617}_{-0.231}$
Alt.	-17 ± 6	$1.27^{+0.43}_{-0.39}$	5567^{+393}_{-655}	6254^{+1457}_{-1163}	$1.489^{+1.880}_{-0.751}$

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 $A_{obs} \gg 1.0$

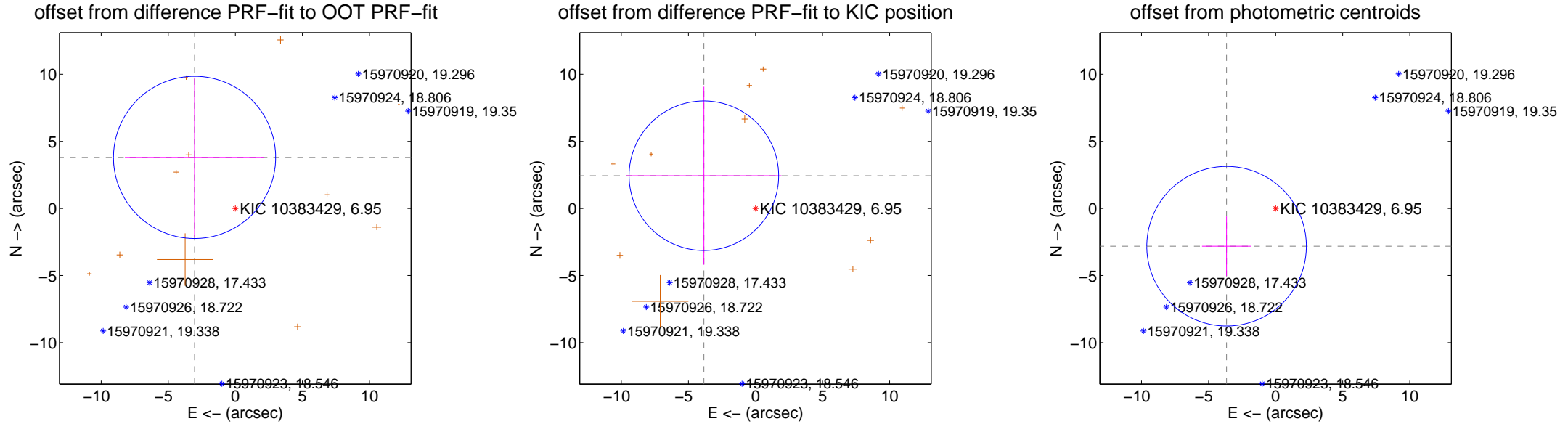
DV Centroid Data

Supplemental centroid analysis for 010383429-01. **Kepler magnitude: 6.95.** Transit SNR 14.18

There are 0 quarters with good PRF difference image offsets

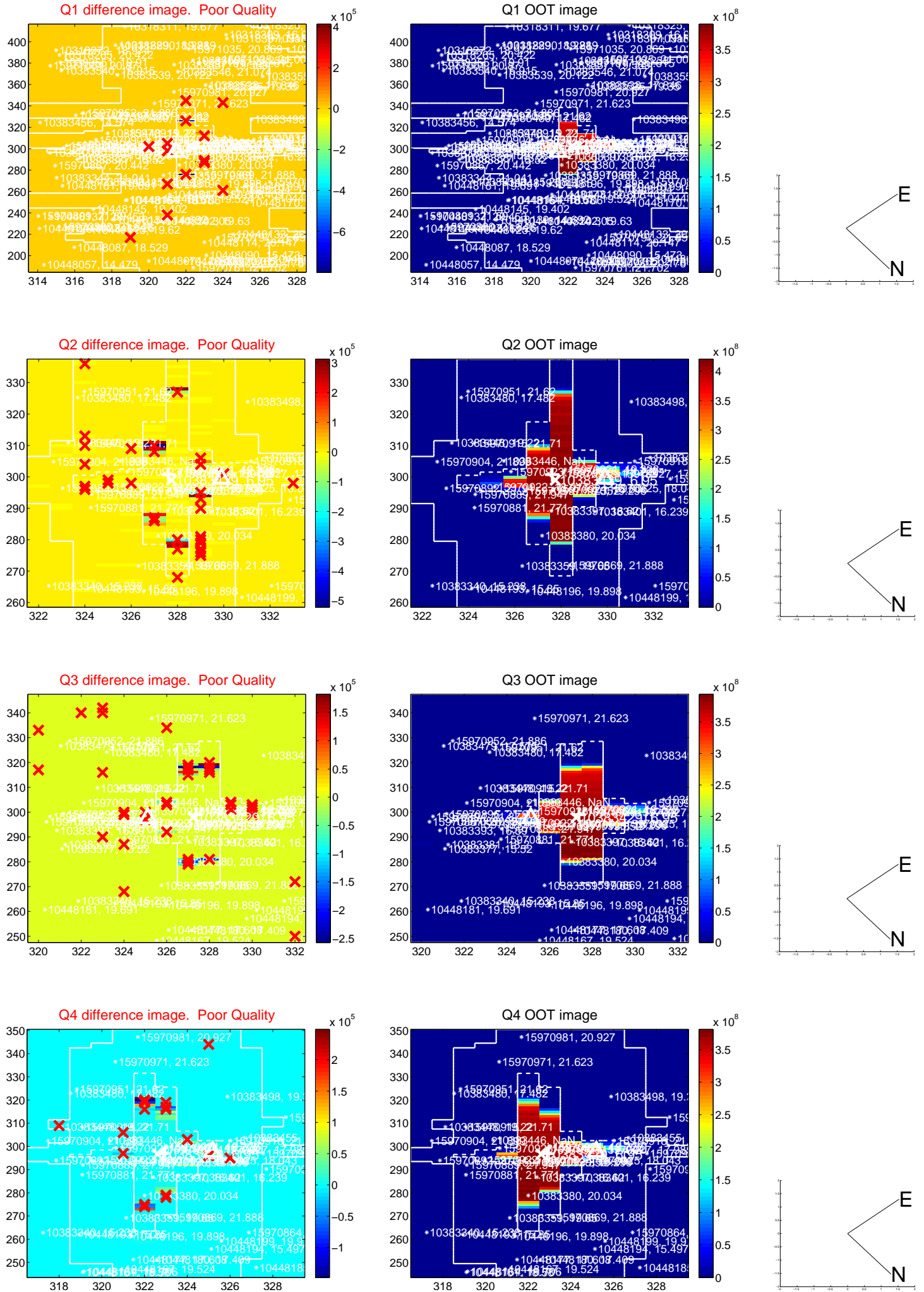
The OOT PRF centroid is offset from the target star catalog position by about 7.64 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.867 ± 2.014	2.42	3.039 ± 5.195	3.802 ± 5.950
PRF-fit source offset from KIC position	4.555 ± 1.858	2.45	3.846 ± 5.775	2.441 ± 6.632
photometric centroid source offset	4.61 ± 1.98	2.33	3.66 ± 1.83	-2.81 ± 2.22

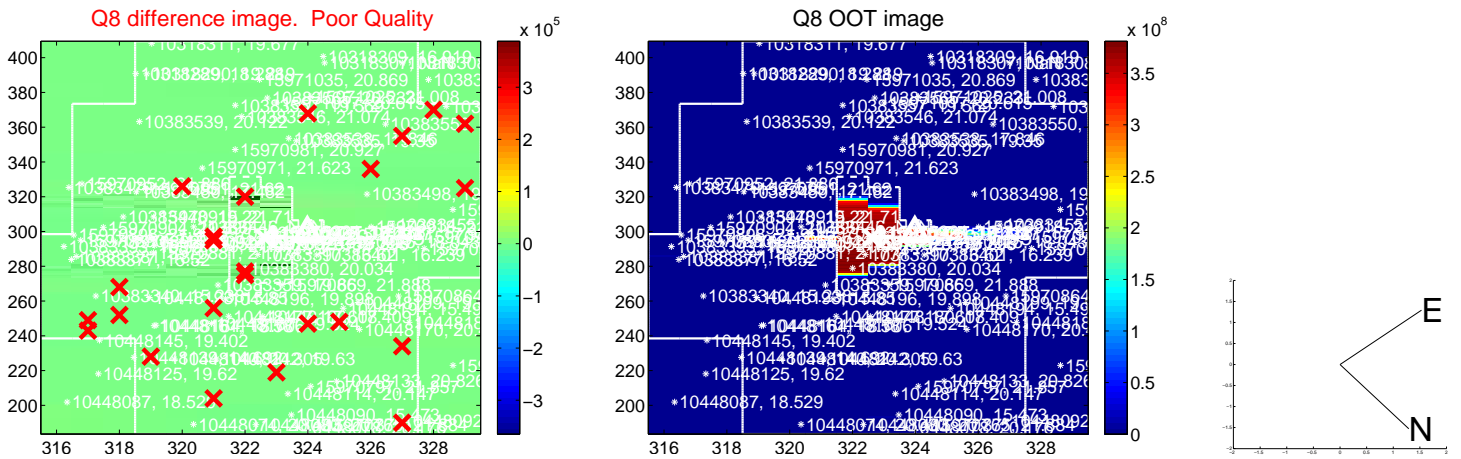
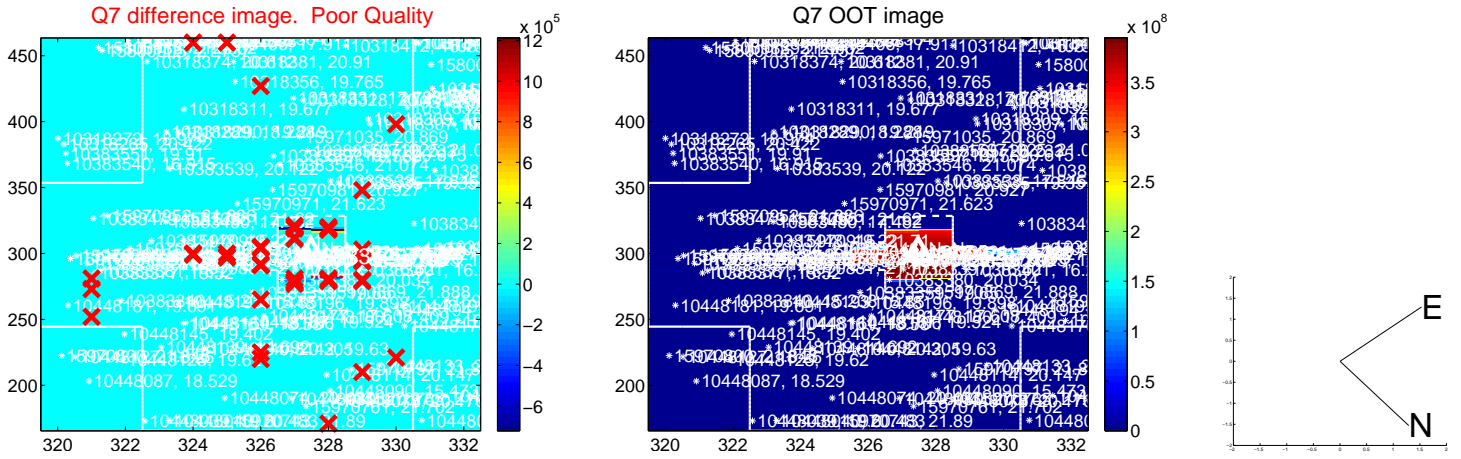
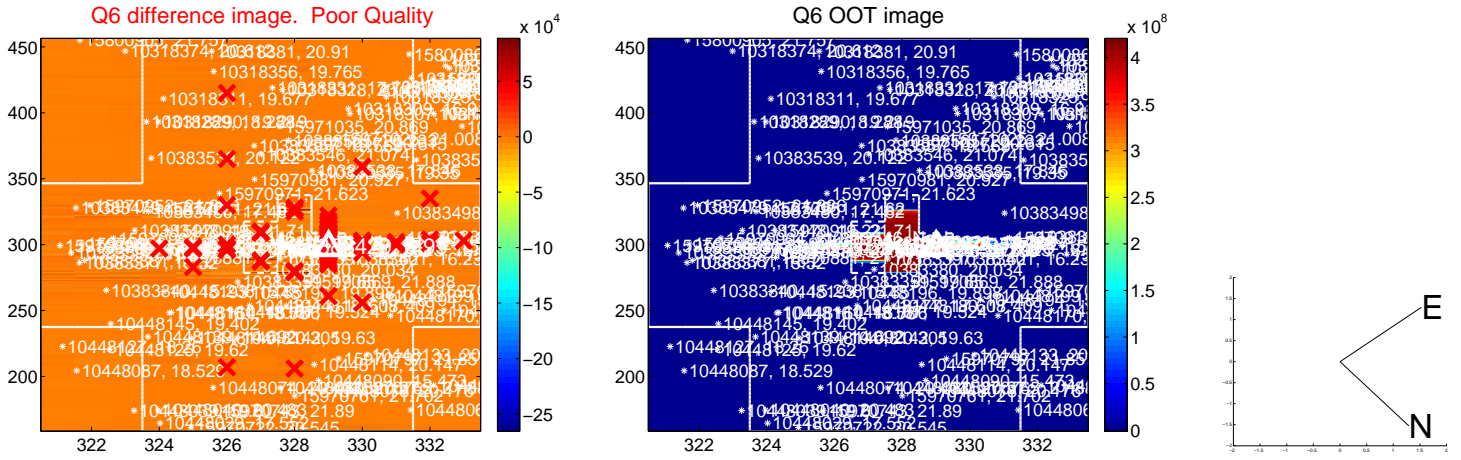
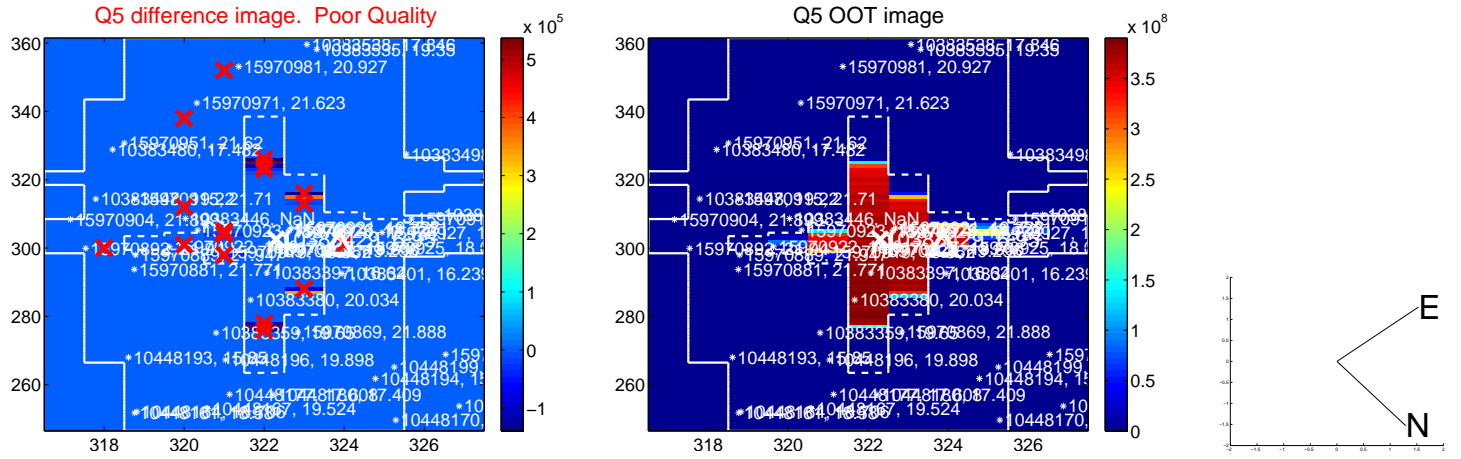


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

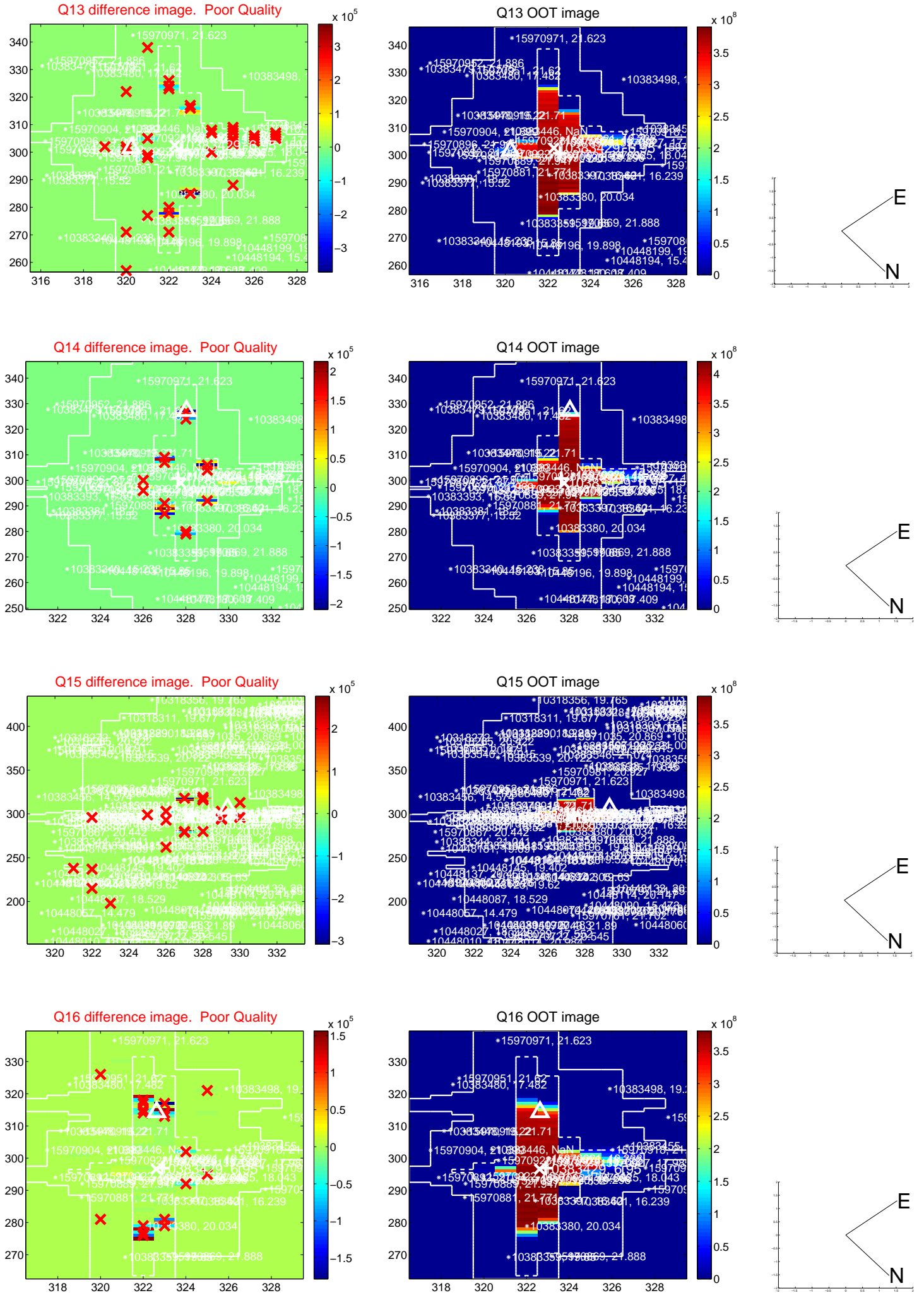
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



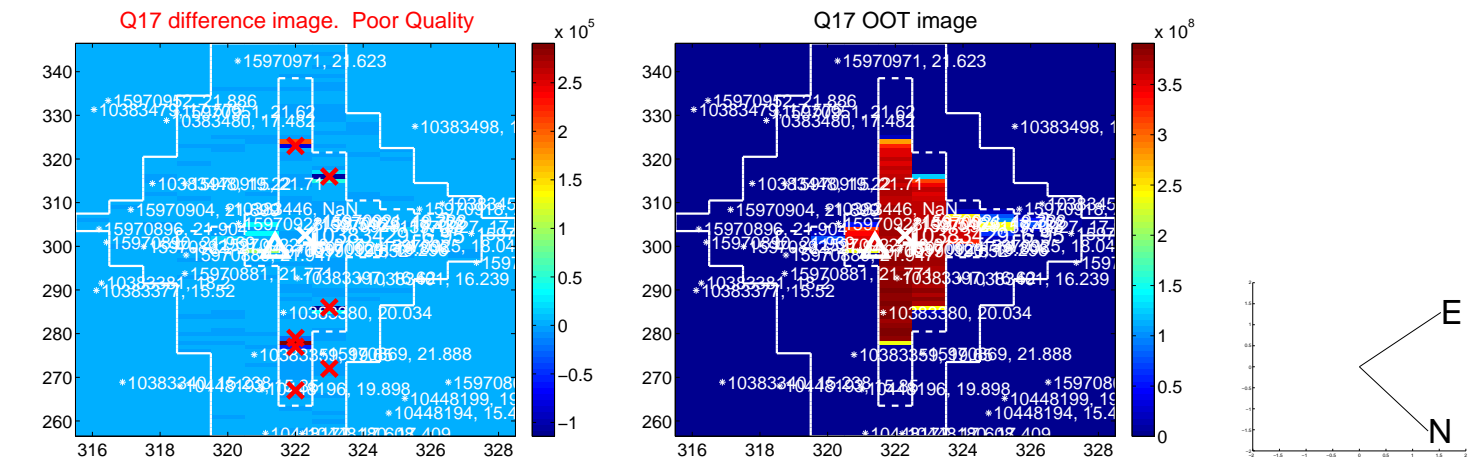
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



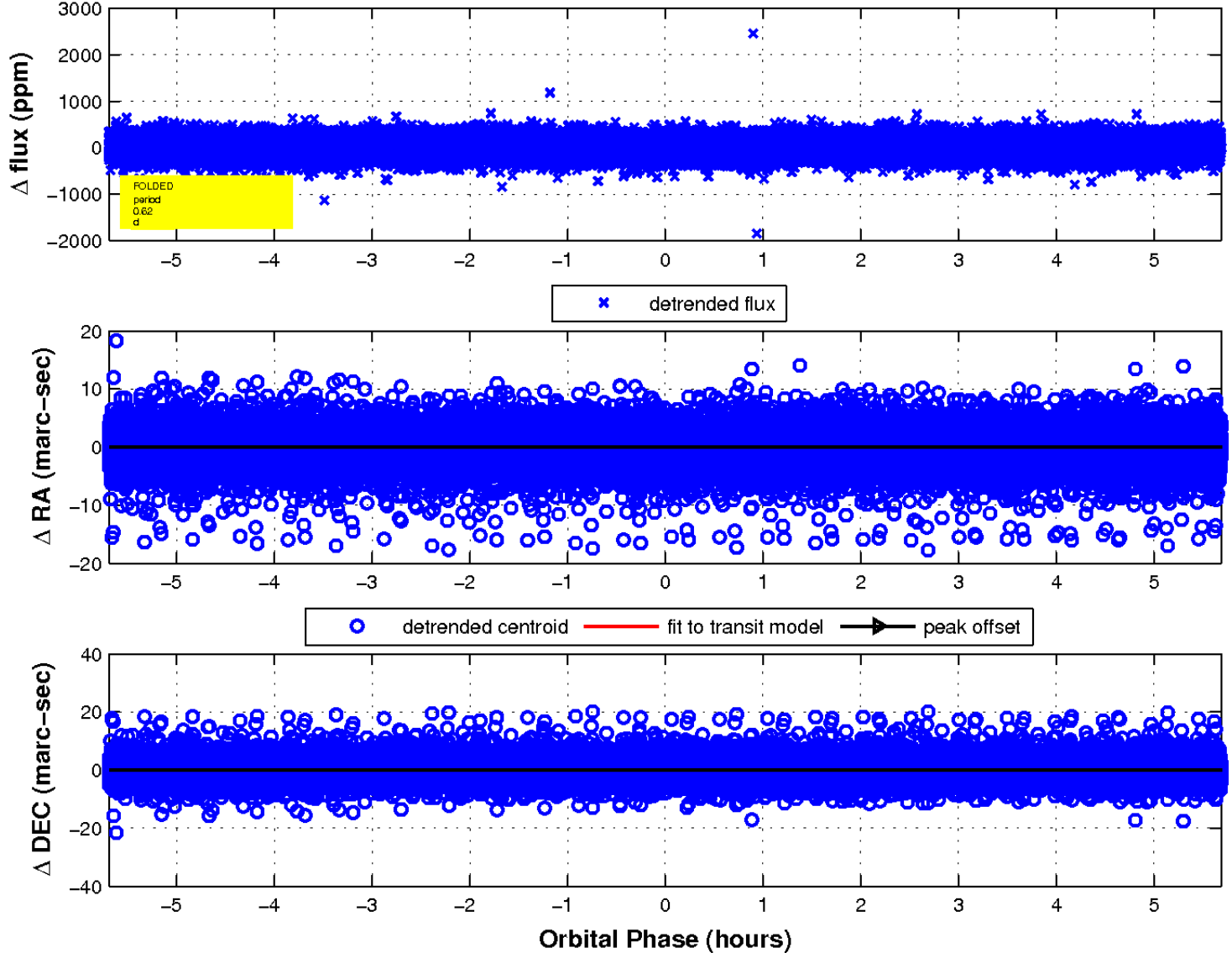
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

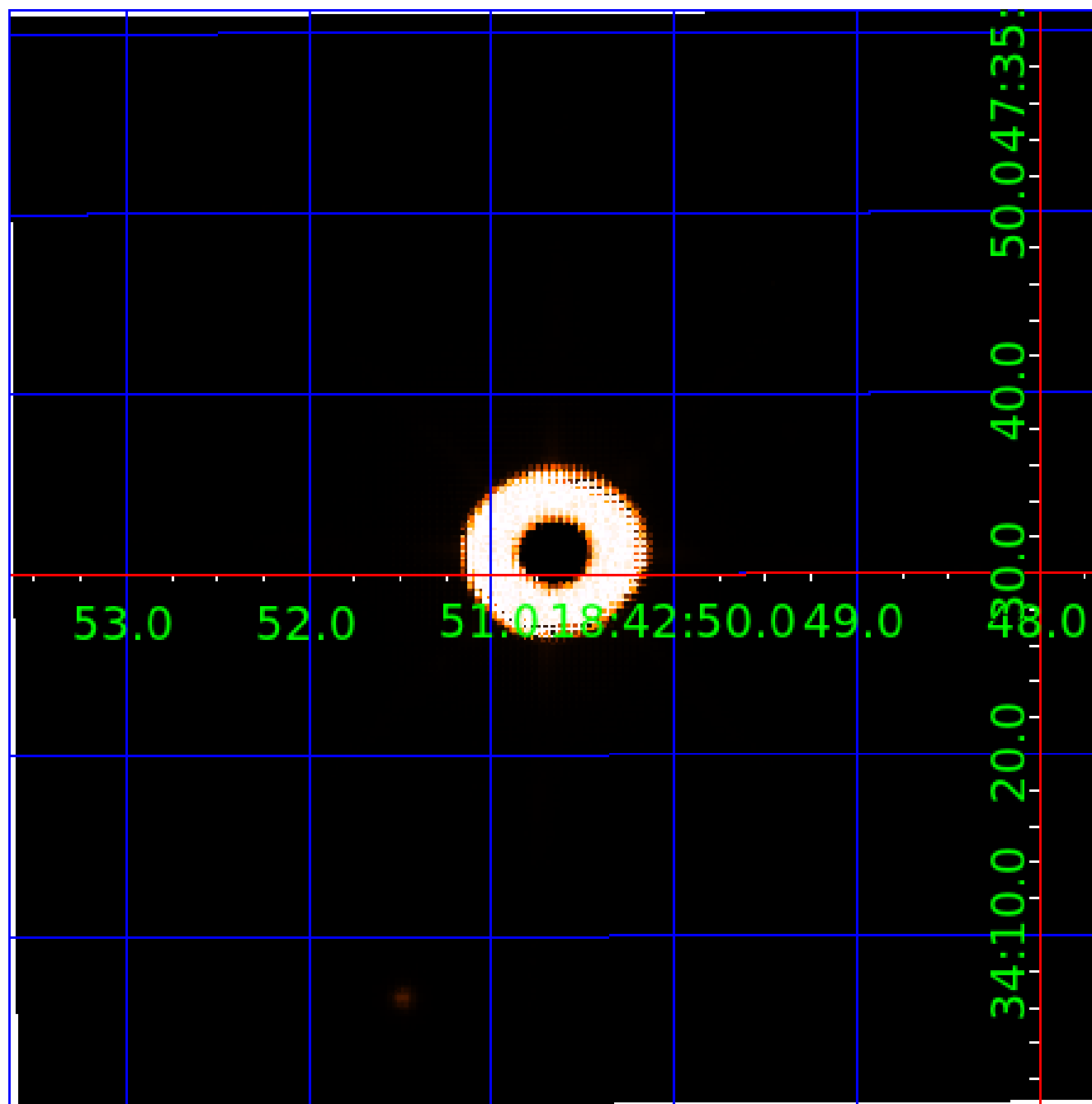


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010383429

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})
010383429-01	OBS	No	0.619618	131.611311	18.7	1.897	14.1	14.2	2.75	7166	1.38	67480.85
010383429-02	OBS	No	2.027849	133.180342	21.7	22.083	7.7	11.2	2.75	7166	1.29	13887.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010383429-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_CROWDED
010383429-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—CENT_CROWDED

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

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

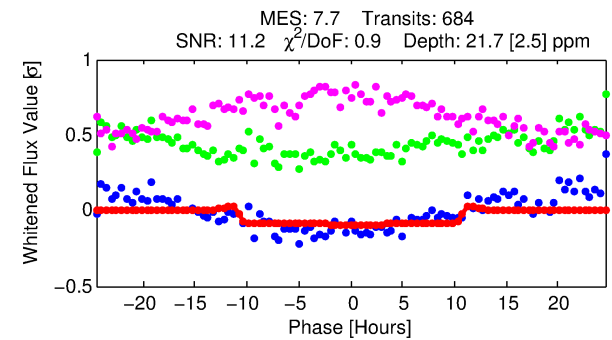
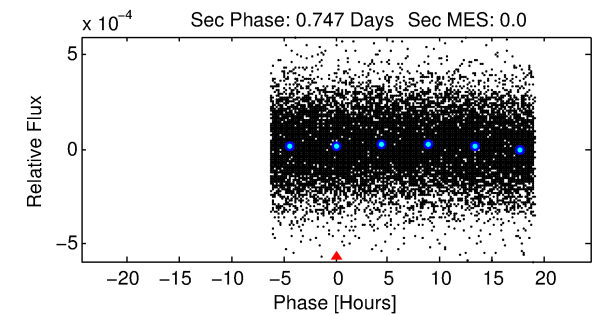
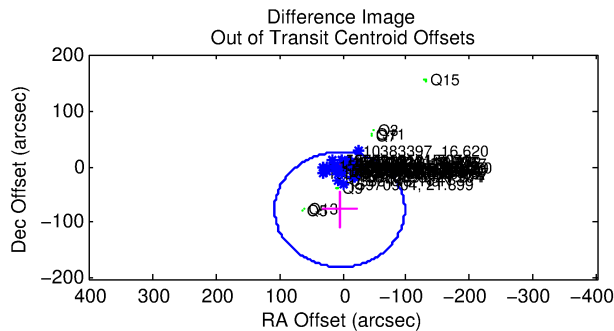
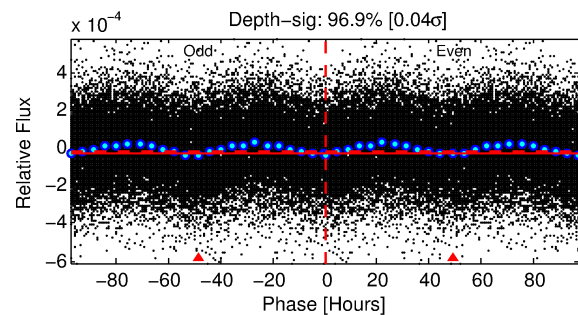
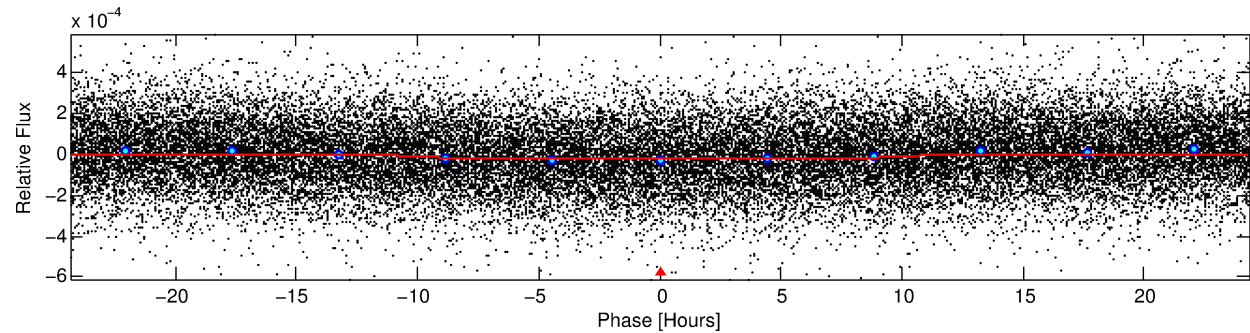
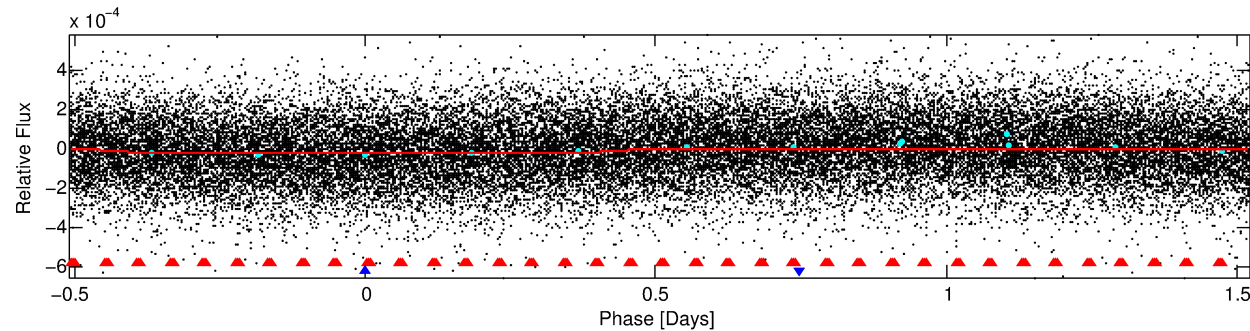
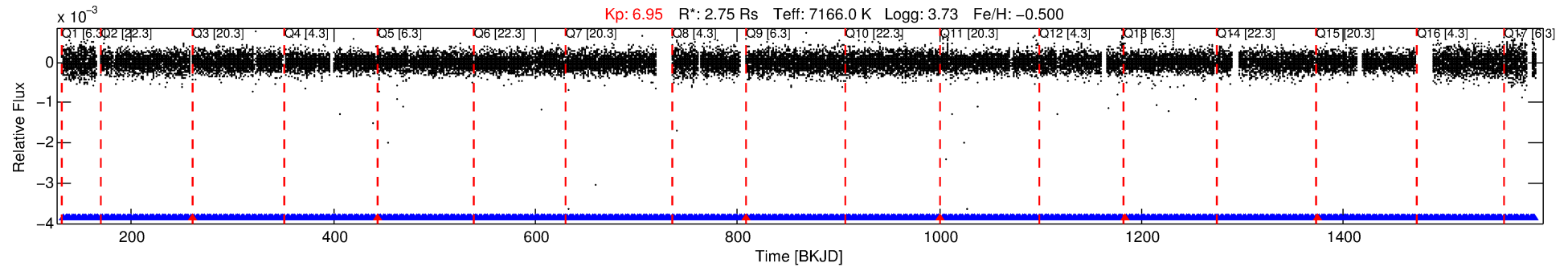
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010383429-02

No Significant Match Found

DV One-Page Summary

KIC: 10383429 Candidate: 2 of 2 Period: 2.028 d



DV Fit Results:

Period = 2.02785 [0.00004] d
Epoch = 133.1803 [0.0108] BKJD
Rp/R* = 0.0043 [0.0022]
a/R* = 1.01 [0.09]
b = 0.03 [88.24]
Seff = 13887.75 [11965.93]
Teq = 2768 [596] K
Rp = 1.29 [0.94] Re
a = 0.0358 [0.0186] AU
Ag = N/A
Teffp = N/A

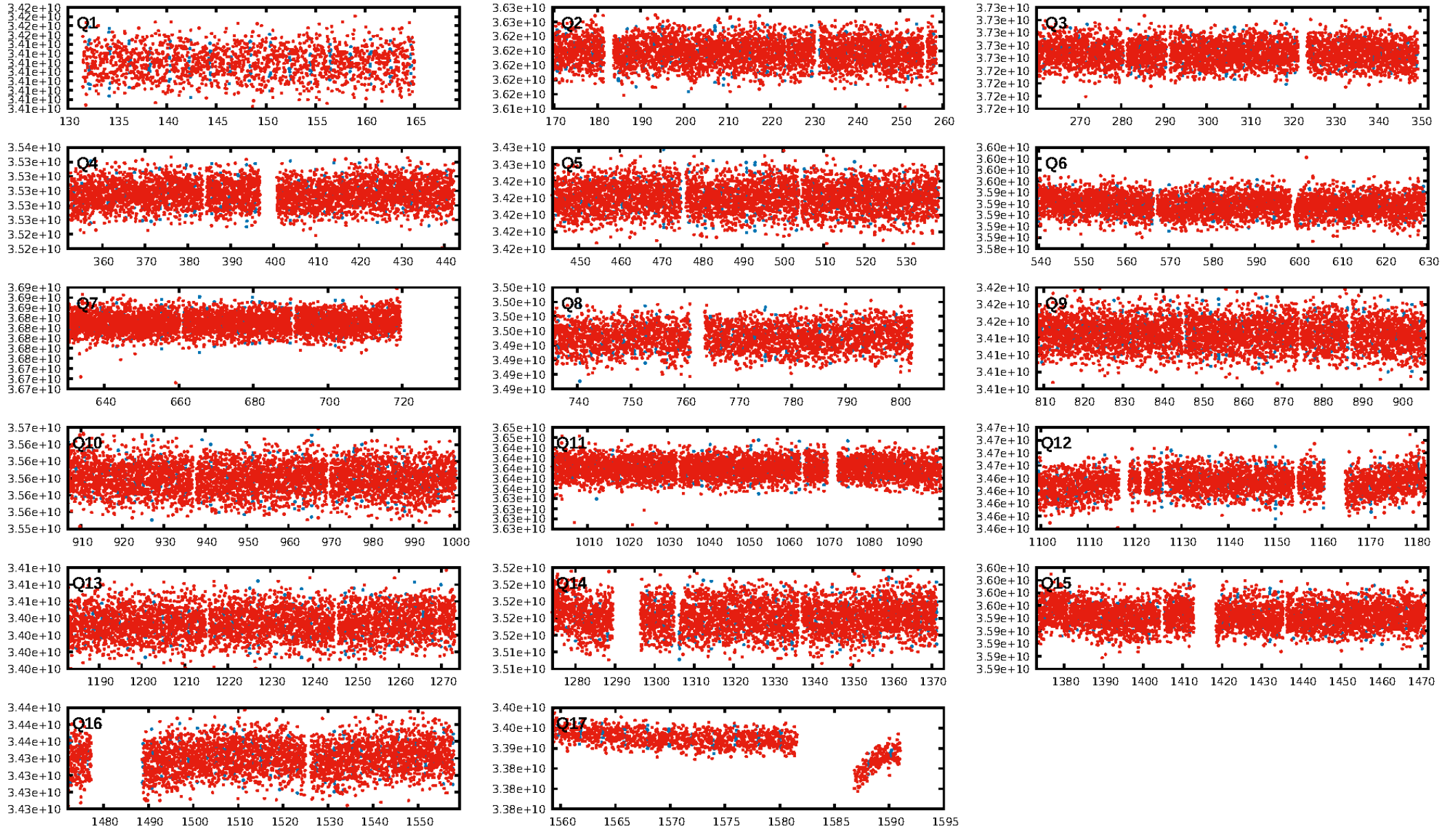
DV Diagnostic Results:

ShortPeriod-sig: 87.3% [1.52 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [648/654]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 5.067 arcsec [1.99 σ]
OotOffset-rm: 76.642 arcsec [2.24 σ]
KicOffset-rm: 91.348 arcsec [2.90 σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/17]

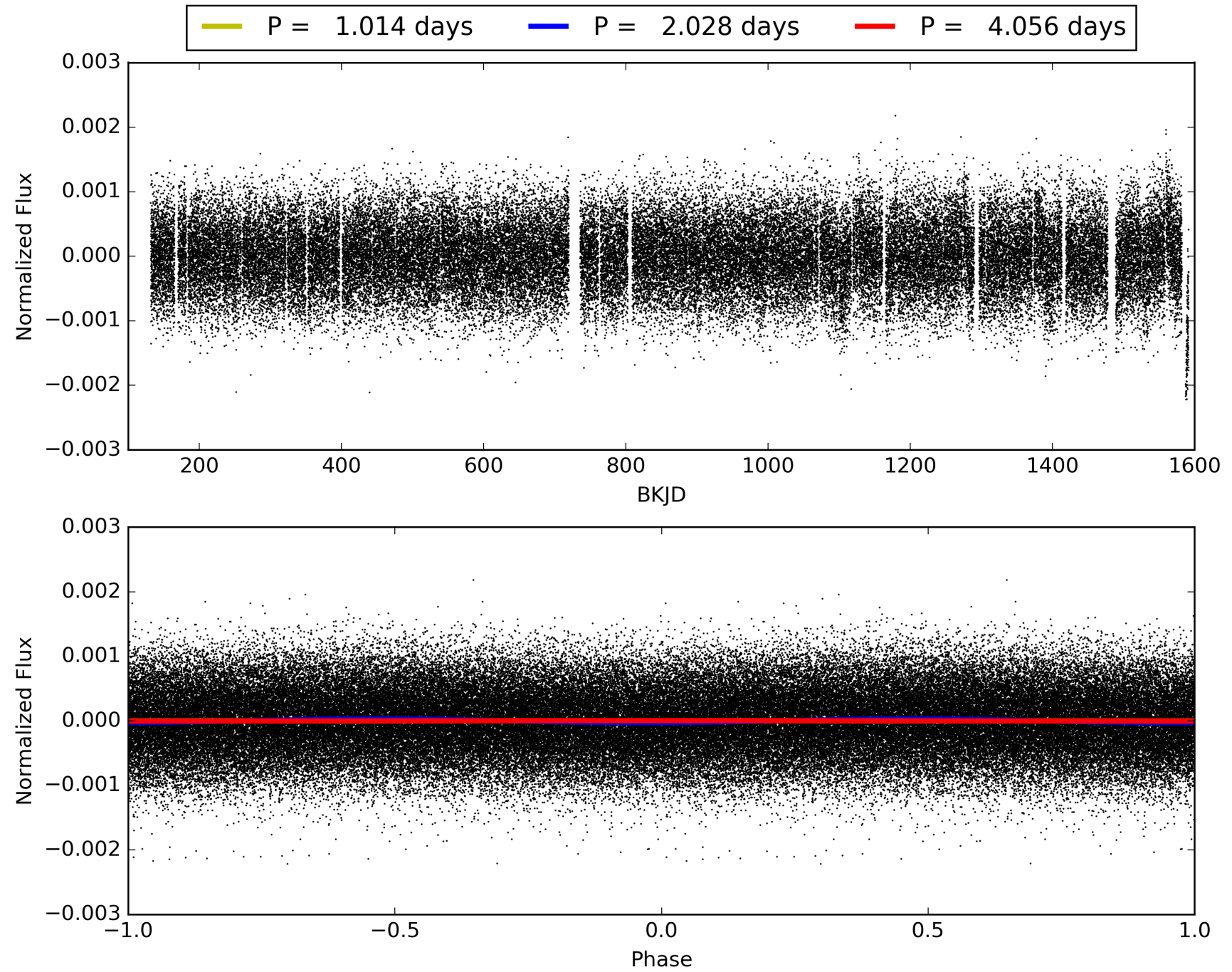
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:51:26 Z

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

TCE 010383429-02, PDC Light Curves

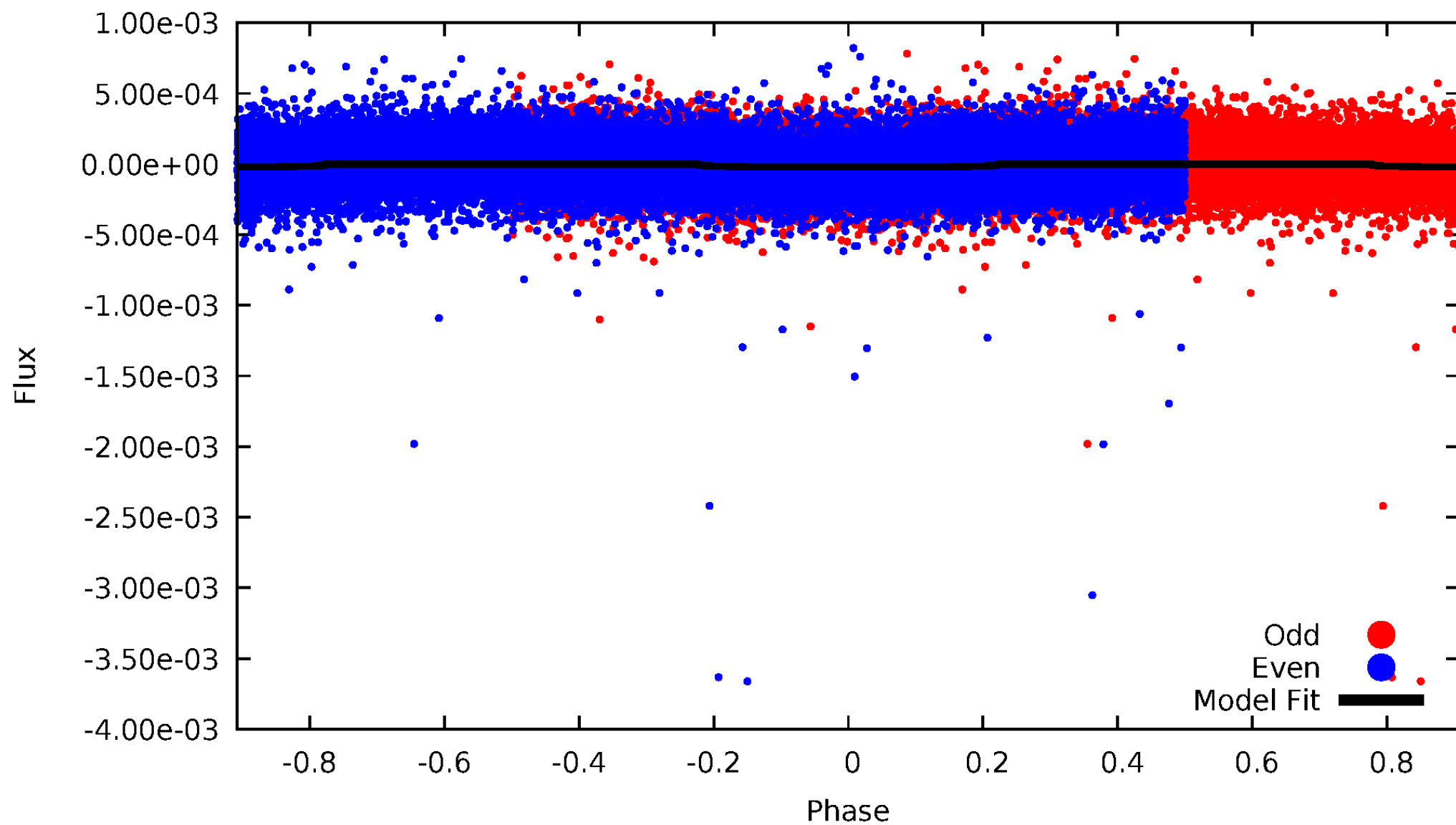


TCE 010383429-02



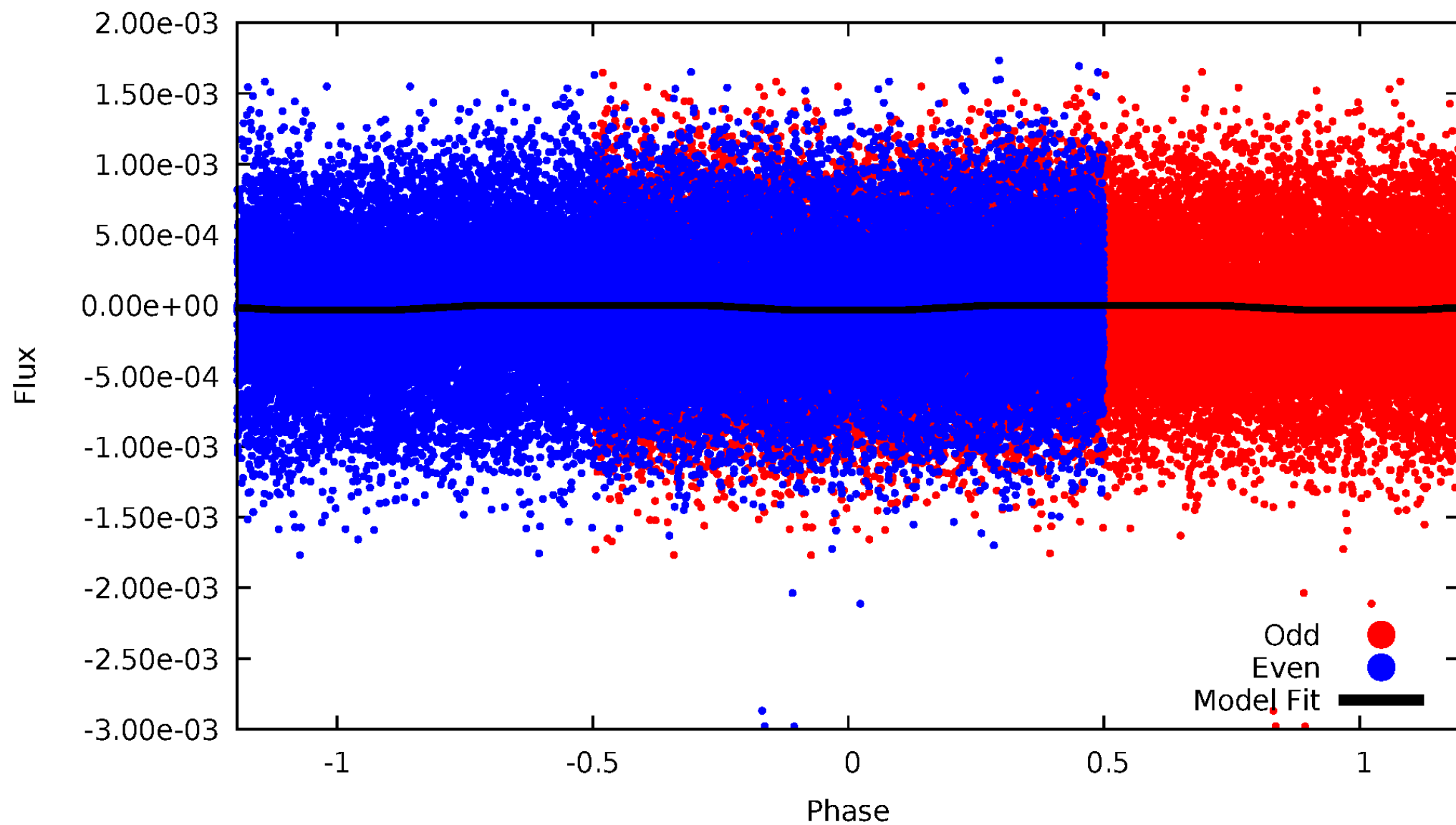
DV Odd/Even

TCE 010383429-02



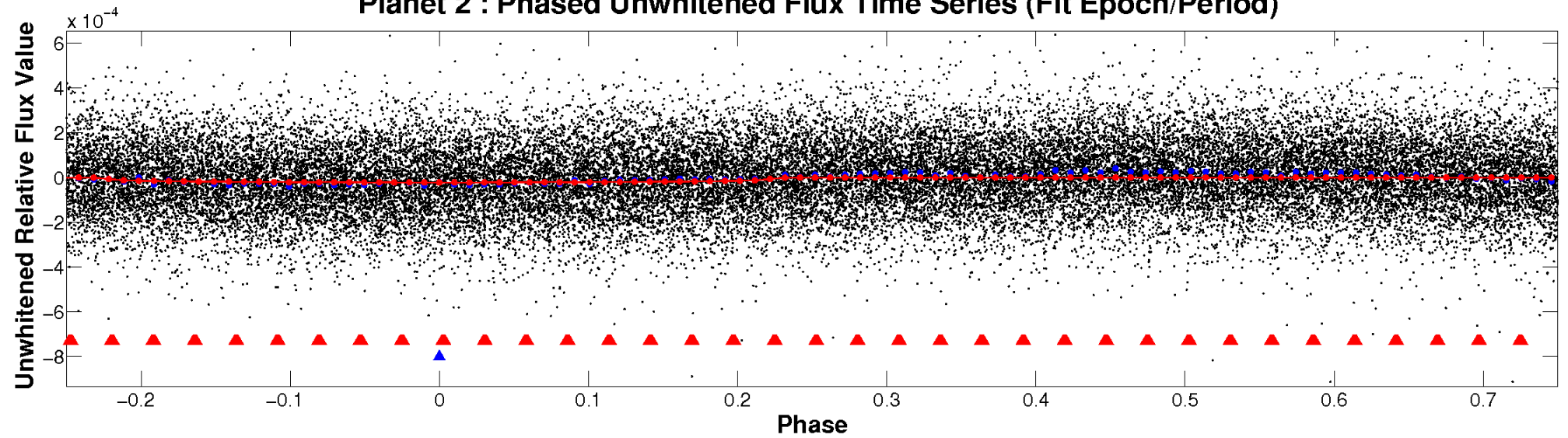
ALT Odd/Even

TCE 010383429-02

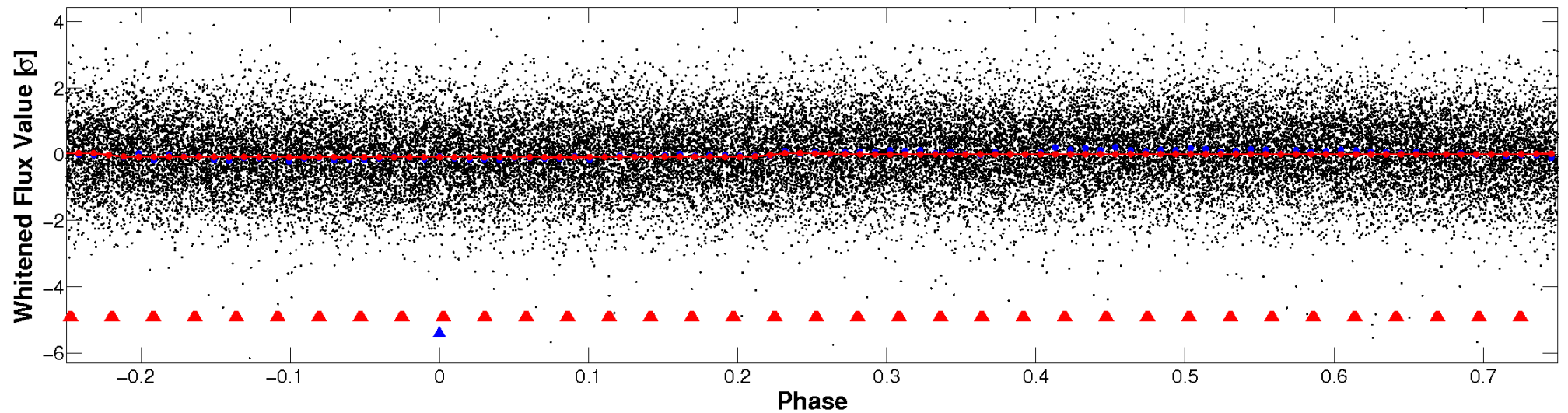


Non-Whitened Vs. Whitened Light Curve

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

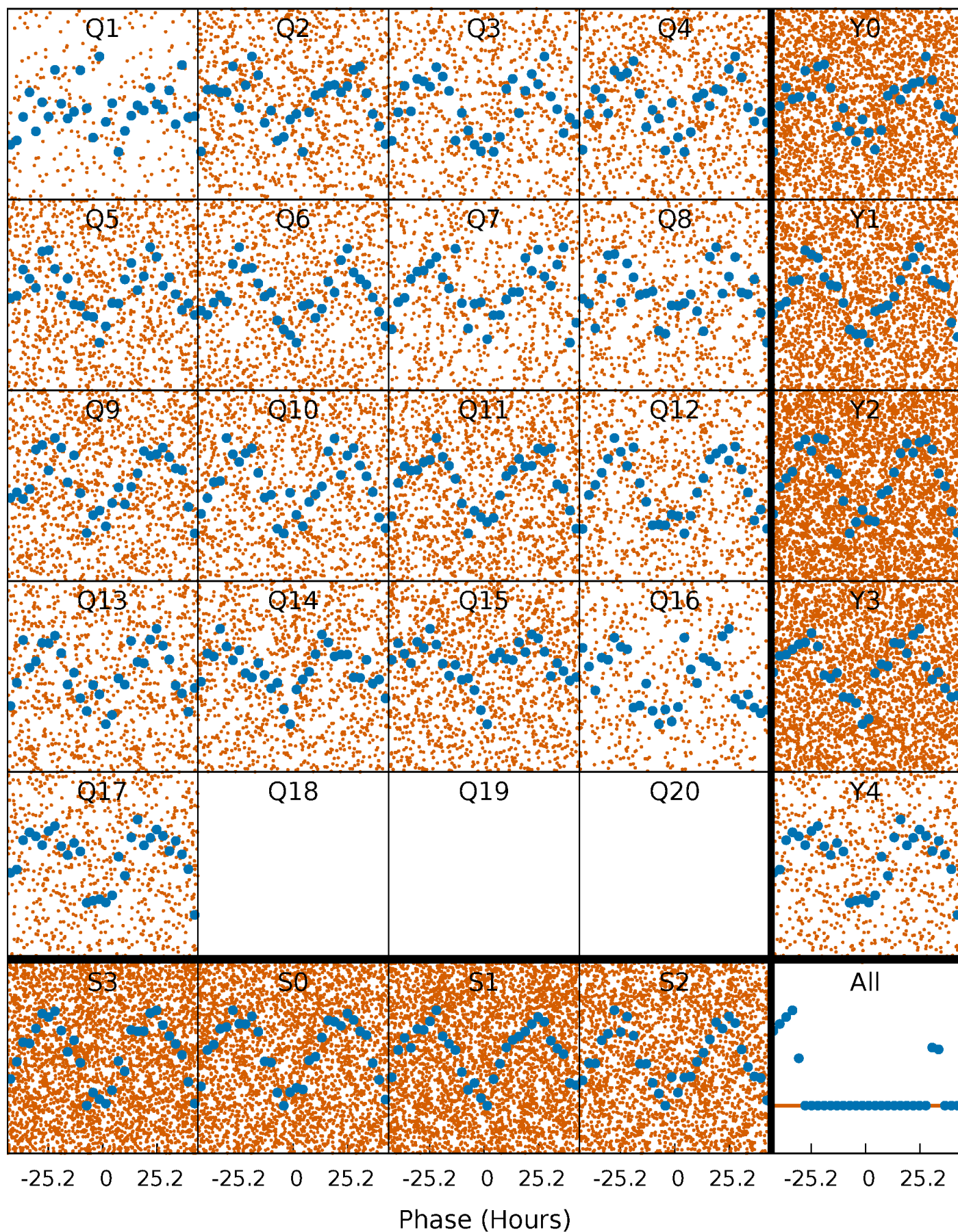


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



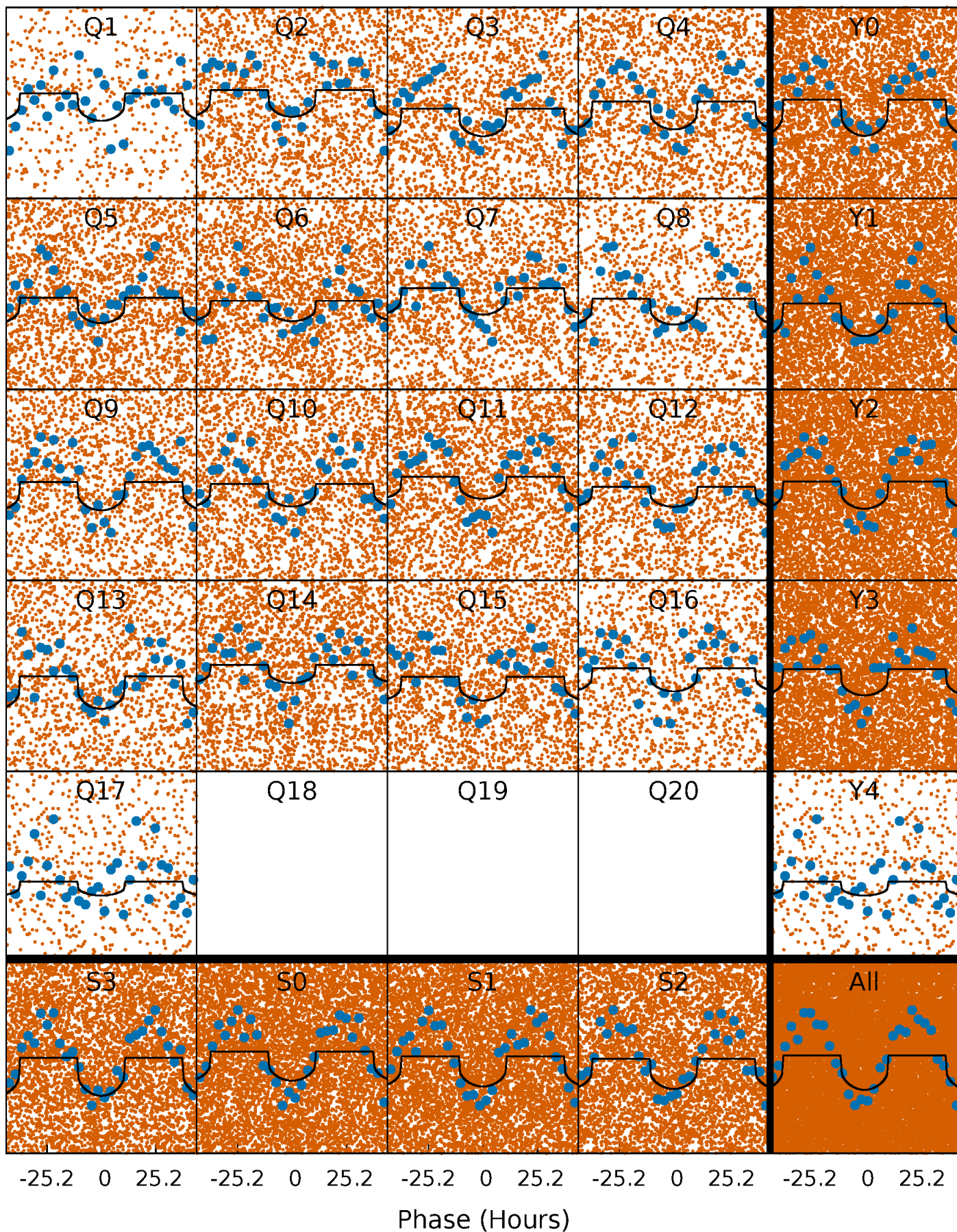
PDC Quarter-Phased Transit Curves

TCE 010383429-02 P= 2.027849 Days $T_0=133.180342$ (BKJD)



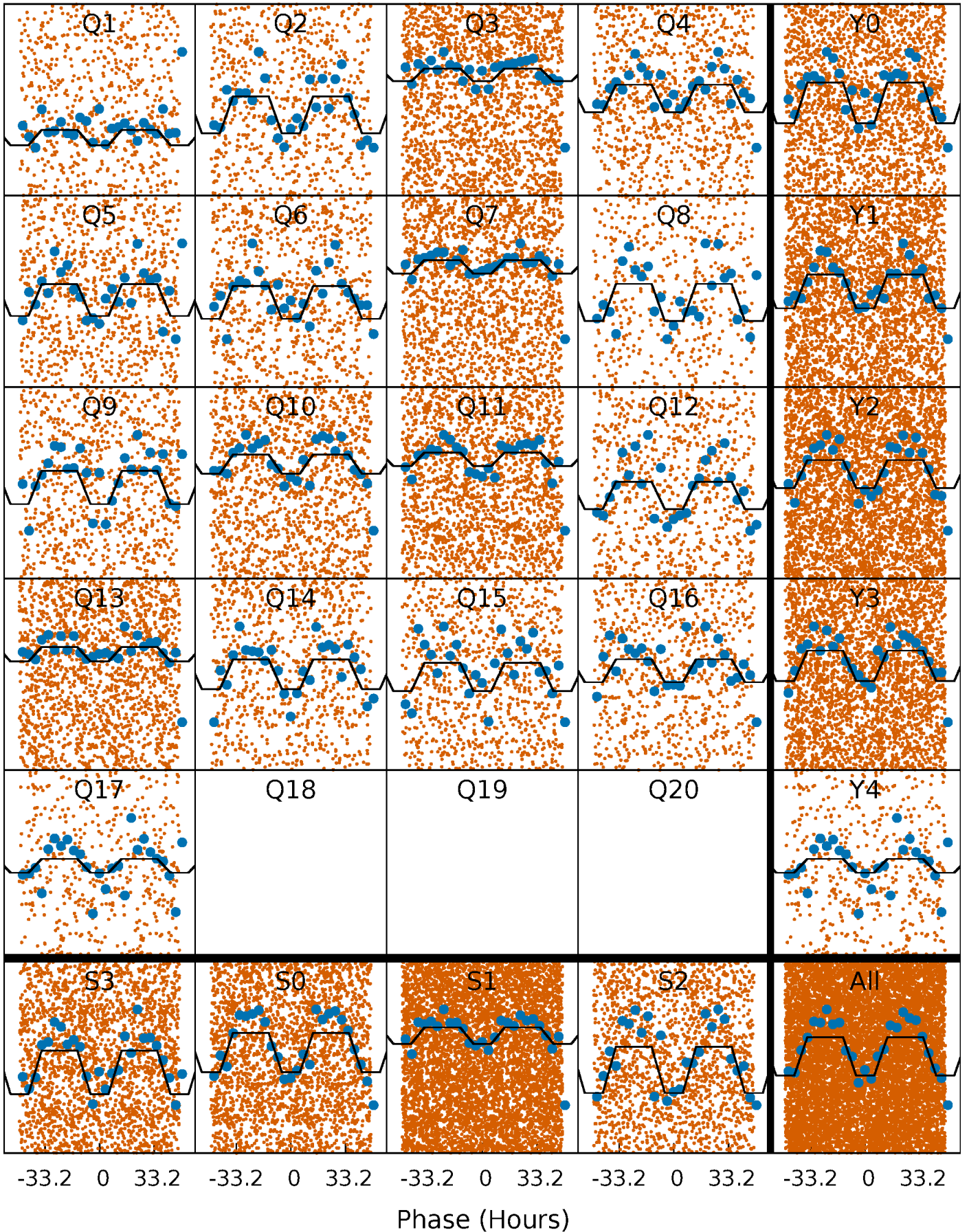
DV Quarter-Phased Transit Curves

TCE 010383429-02 P= 2.027849 Days $T_0=133.180342$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

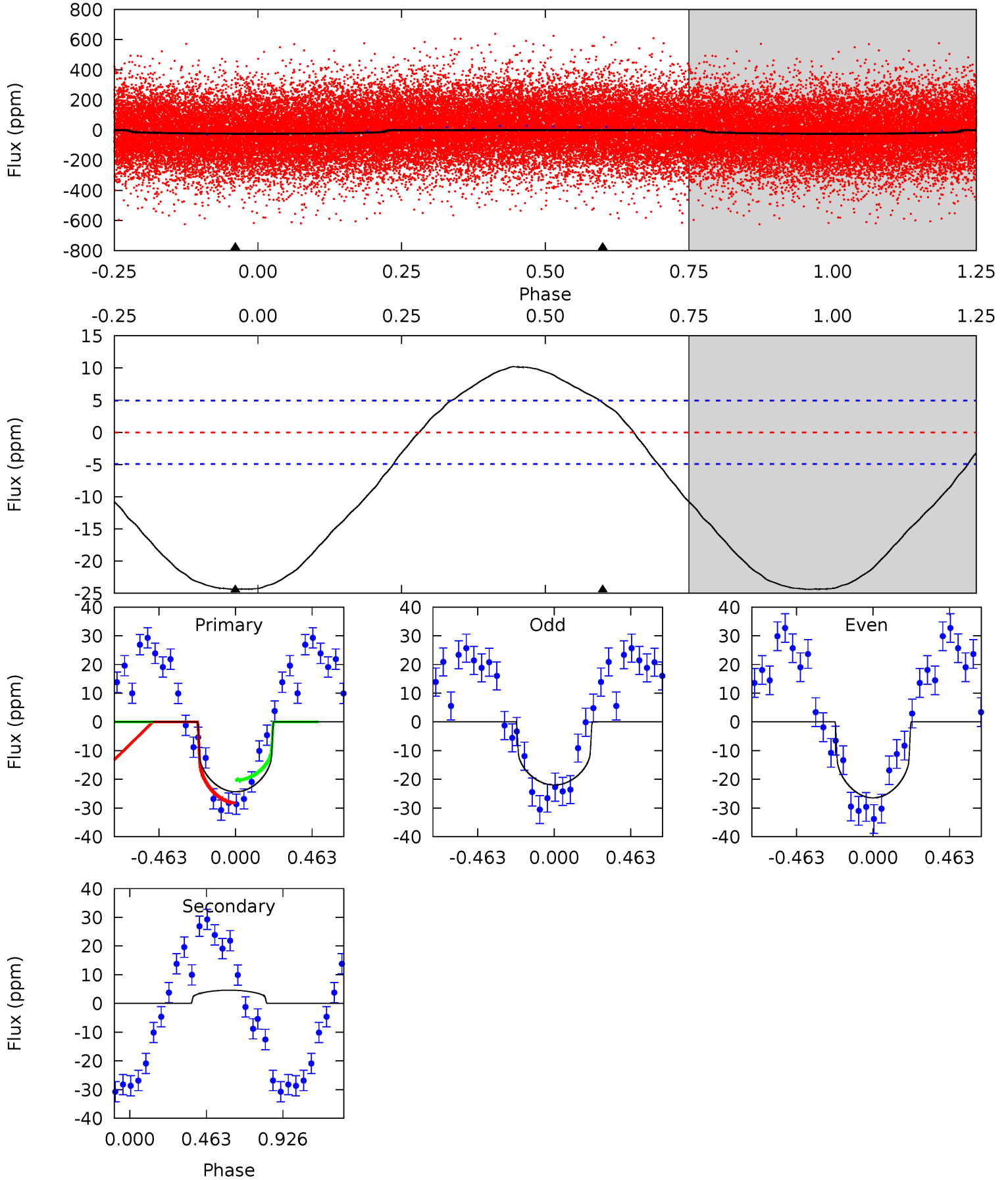
TCE 010383429-02 $P = 2.027643$ Days $T_0 = 133.182464$ (BKJD)



DV Model-Shift Uniqueness Test

010383429-02, P = 2.027849 Days, E = 131.152493 Days

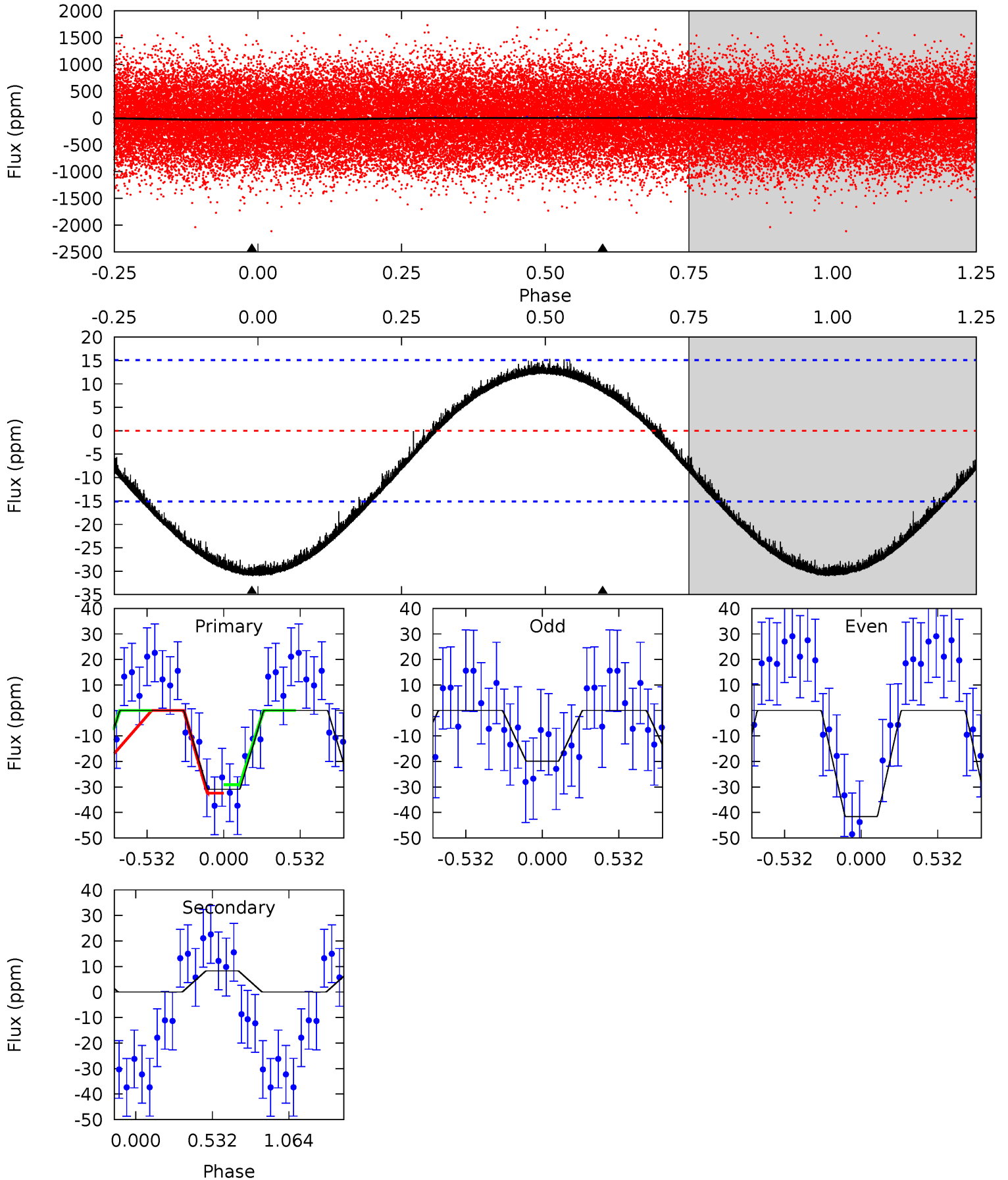
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	-3.98	0	0	4.23	0.73	2.57	20.9	20.9	-3.98	-3.98	1.92	1.03	0.29	3.41



Alt Model-Shift Uniqueness Test

010383429-02, P = 2.027643 Days, E = 131.154821 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.61	-2.31	0	0	4.20	0.63	1.00	8.61	8.61	-2.31	-2.31	3.05	0.92	0.33	0.47



Stellar Parameters For KIC 010383429

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7166^{+225}_{-300}	$3.734^{+0.502}_{-0.089}$	$-0.500^{+0.300}_{-0.300}$	$2.748^{+0.447}_{-1.431}$	$1.494^{+0.197}_{-0.366}$	$0.101^{+0.558}_{-0.028}$
	+3%/-4%	+13%/-2%	+60%/-60%	+16%/-52%	+13%/-24%	+550%/-28%
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 010383429-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	5 ± 1	$1.15^{+0.75}_{-0.56}$	3745^{+279}_{-536}	-5135^{+704}_{-1785}	$-2.386^{+1.529}_{-6.655}$
Alt.	8 ± 4	$1.50^{+0.78}_{-0.64}$	3725^{+285}_{-483}	-5202^{+763}_{-1404}	$-2.310^{+1.488}_{-5.590}$

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 $A_{obs} \gg 1.0$

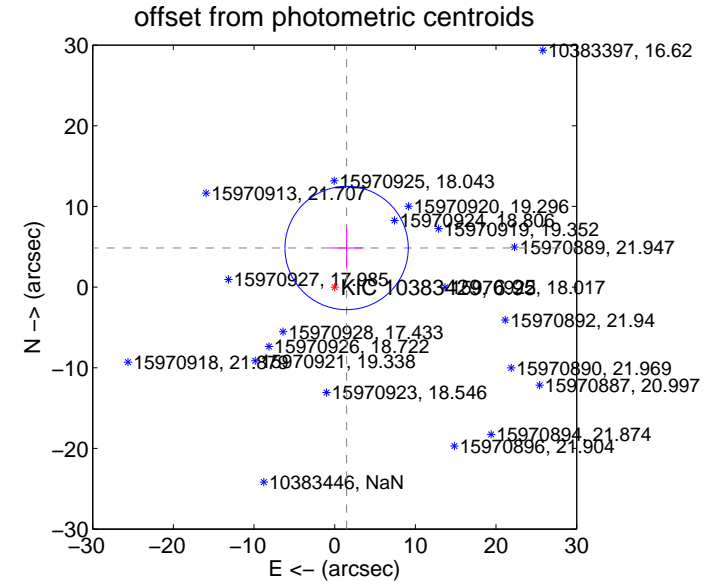
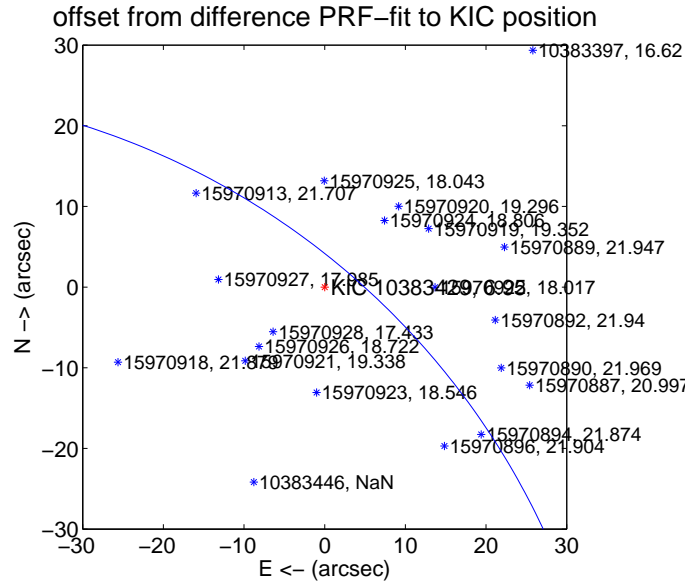
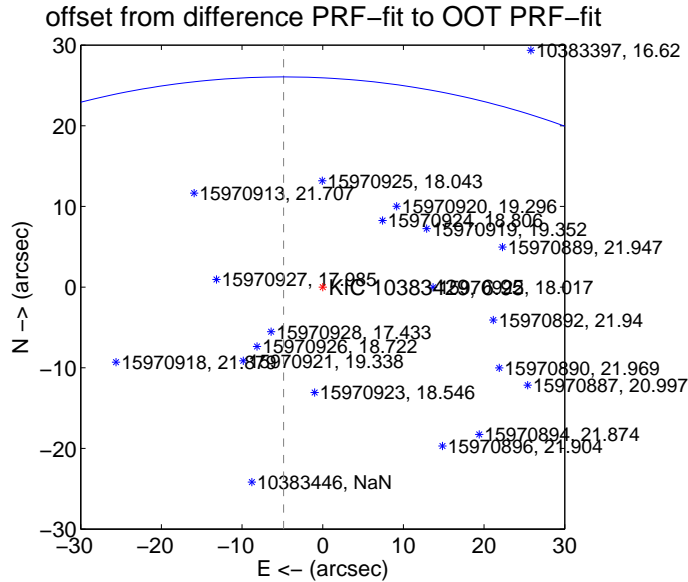
DV Centroid Data

Supplemental centroid analysis for 010383429-02. **Kepler magnitude: 6.95.** Transit SNR 11.19

There are 0 quarters with good PRF difference image offsets

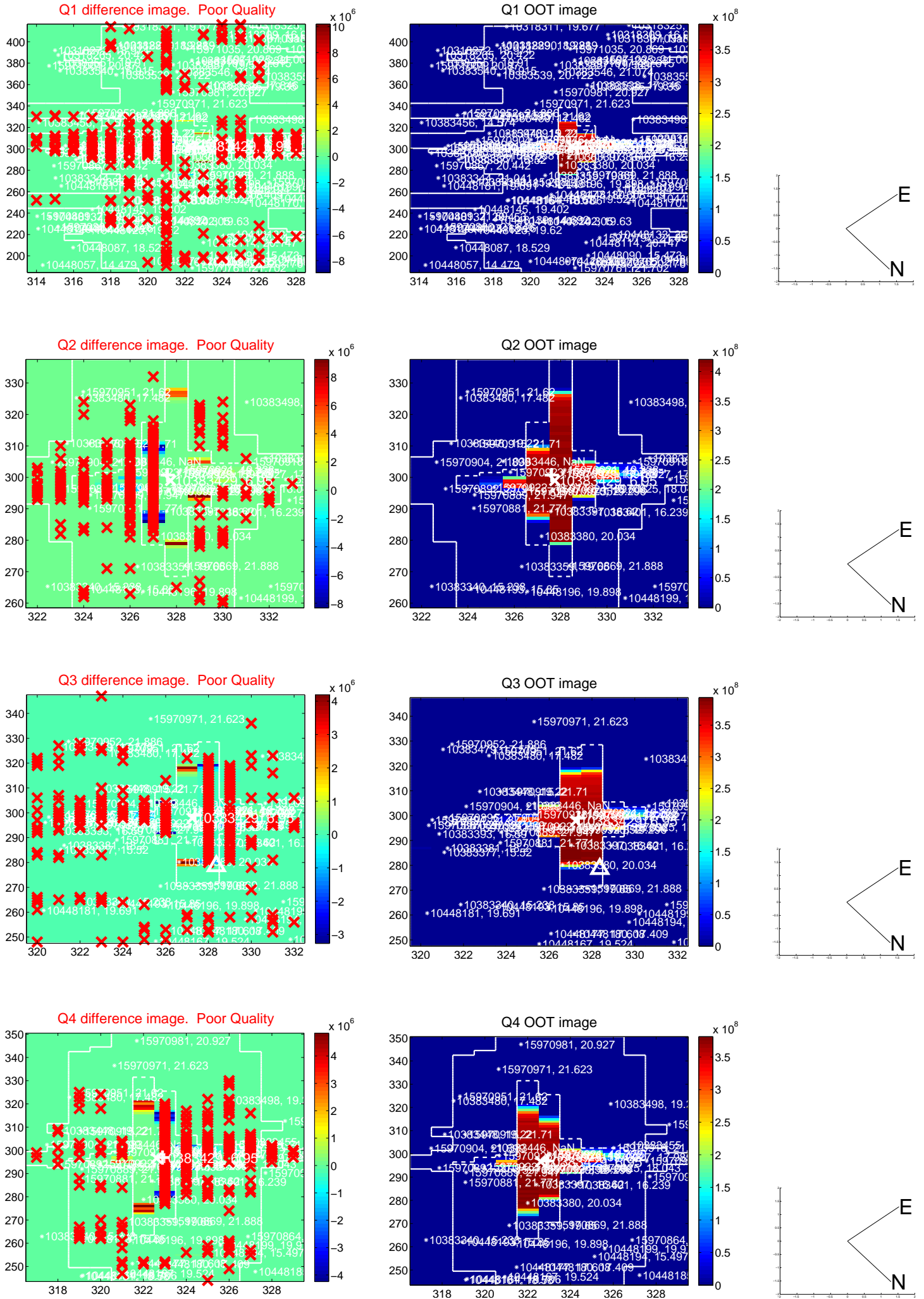
The OOT PRF centroid is offset from the target star catalog position by about 4.50 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	76.642 ± 34.181	2.24	4.850 ± 25.632	-76.489 ± 32.635
PRF-fit source offset from KIC position	91.348 ± 31.528	2.90	58.570 ± 19.639	-70.099 ± 24.812
photometric centroid source offset	5.07 ± 2.55	1.99	-1.48 ± 2.12	4.85 ± 2.58

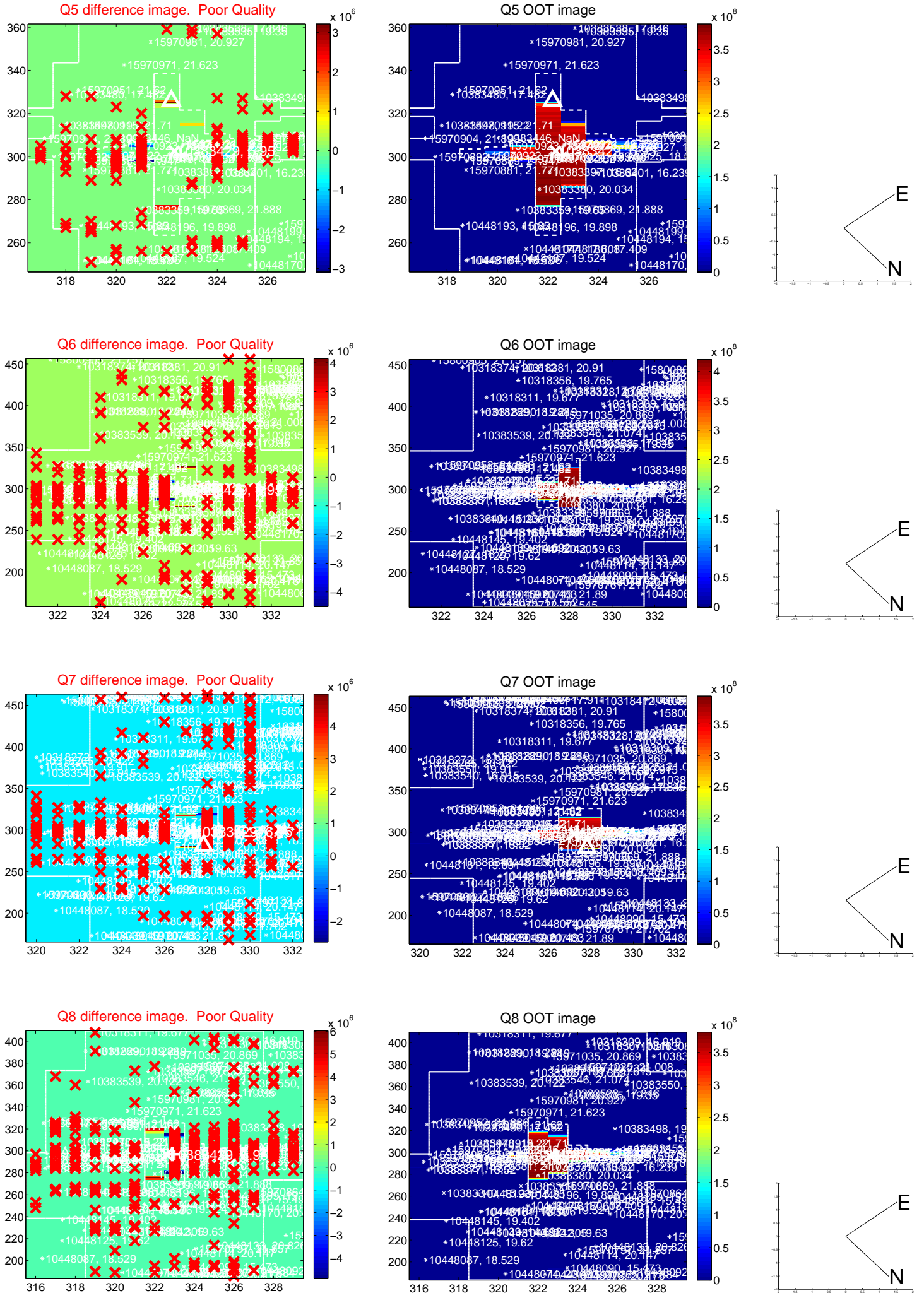


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

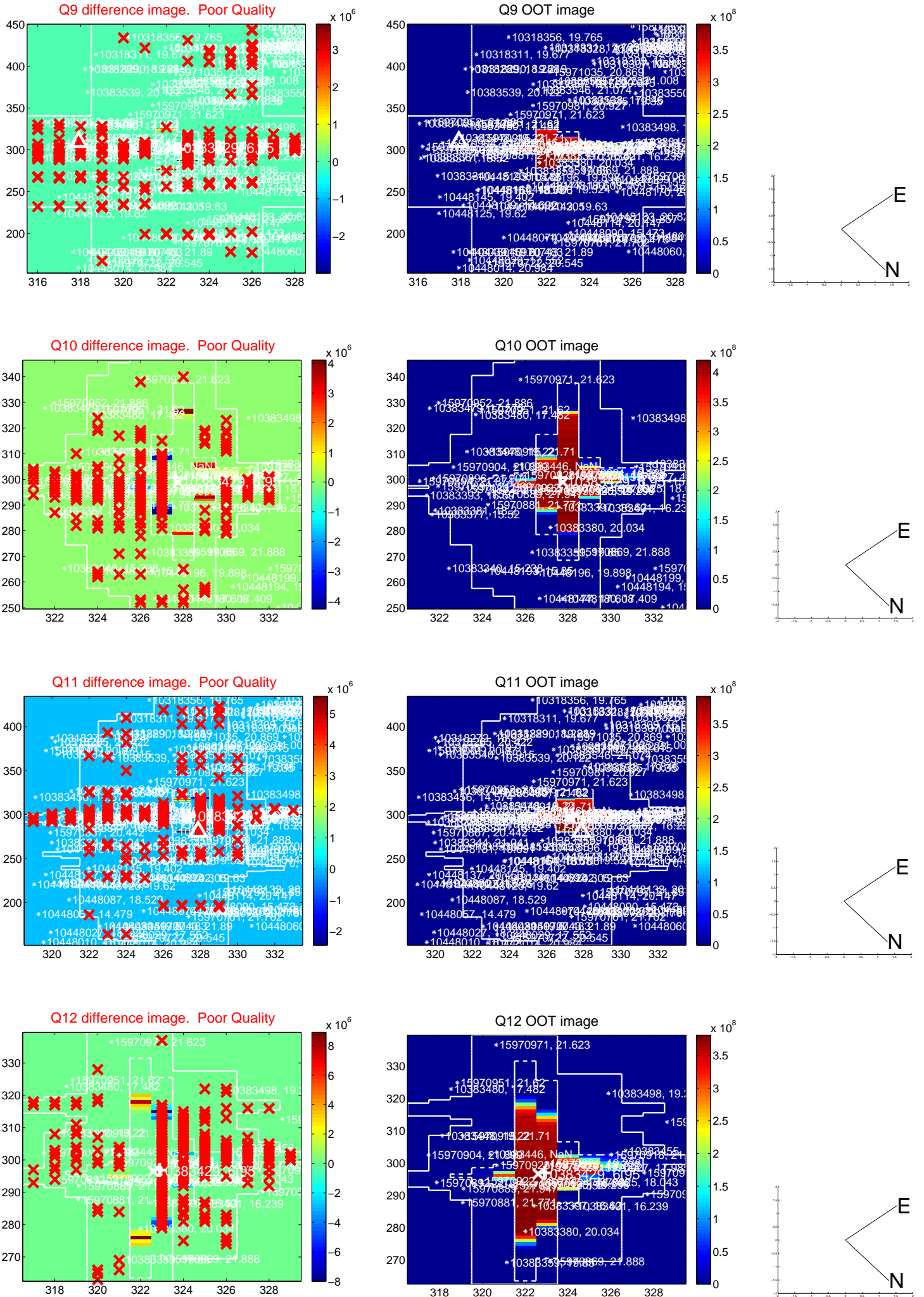
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



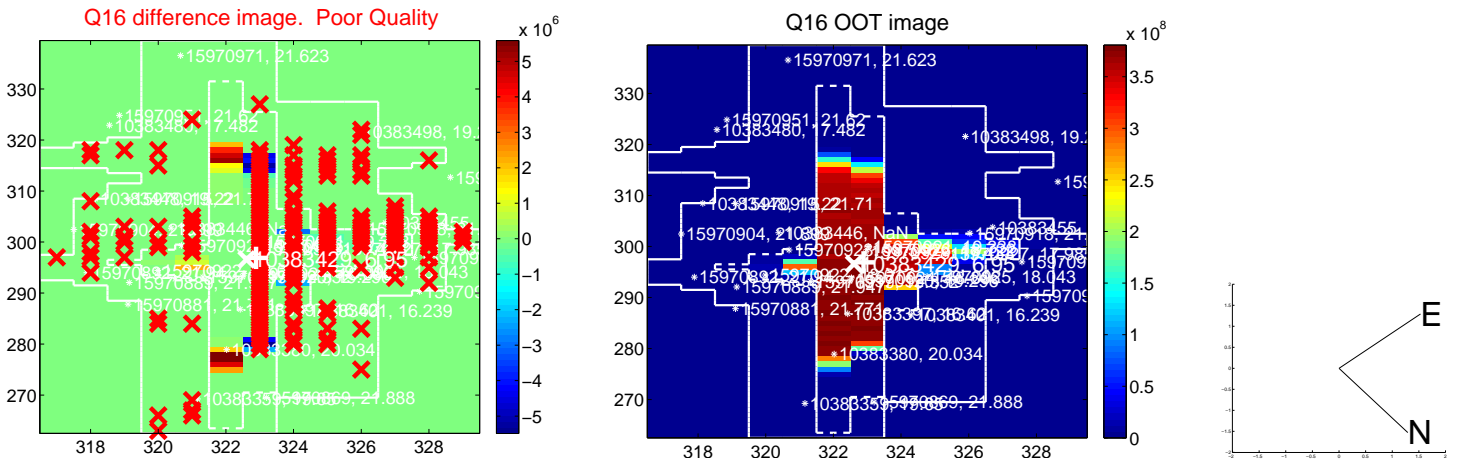
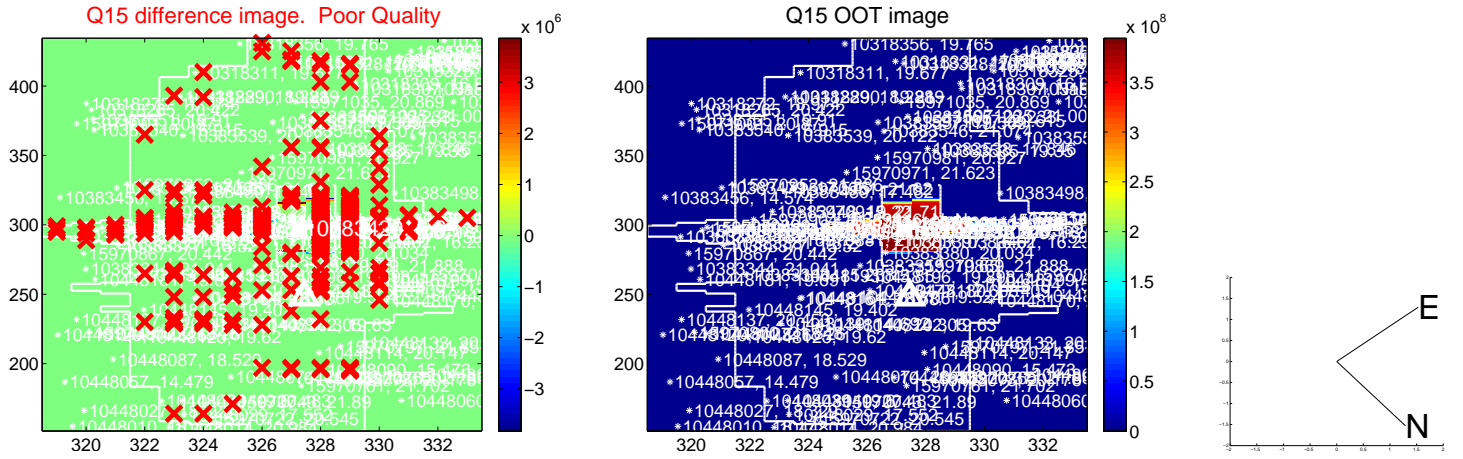
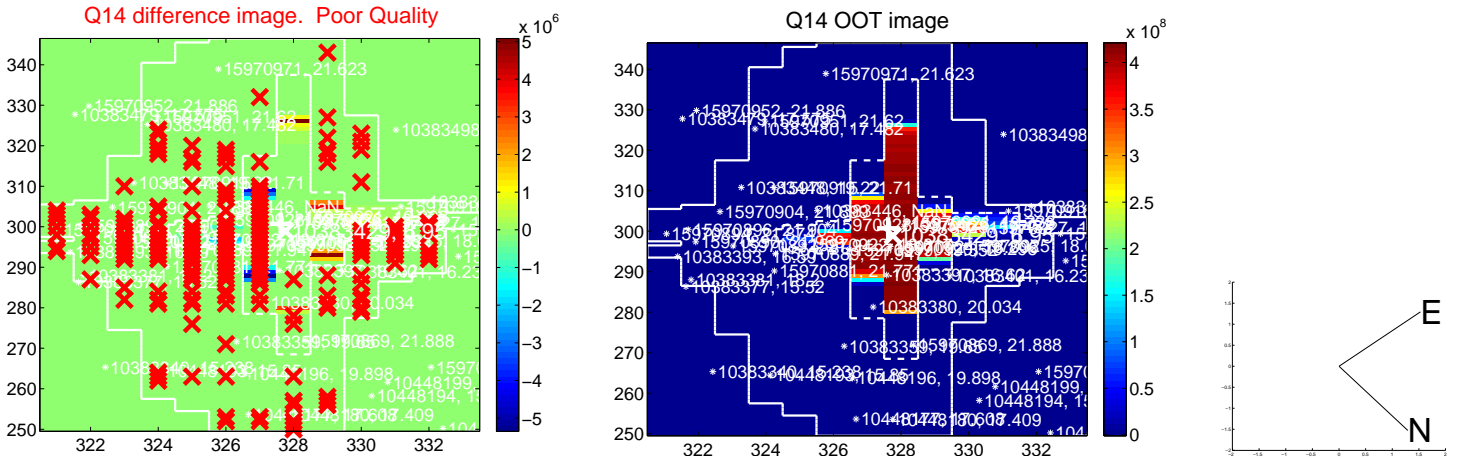
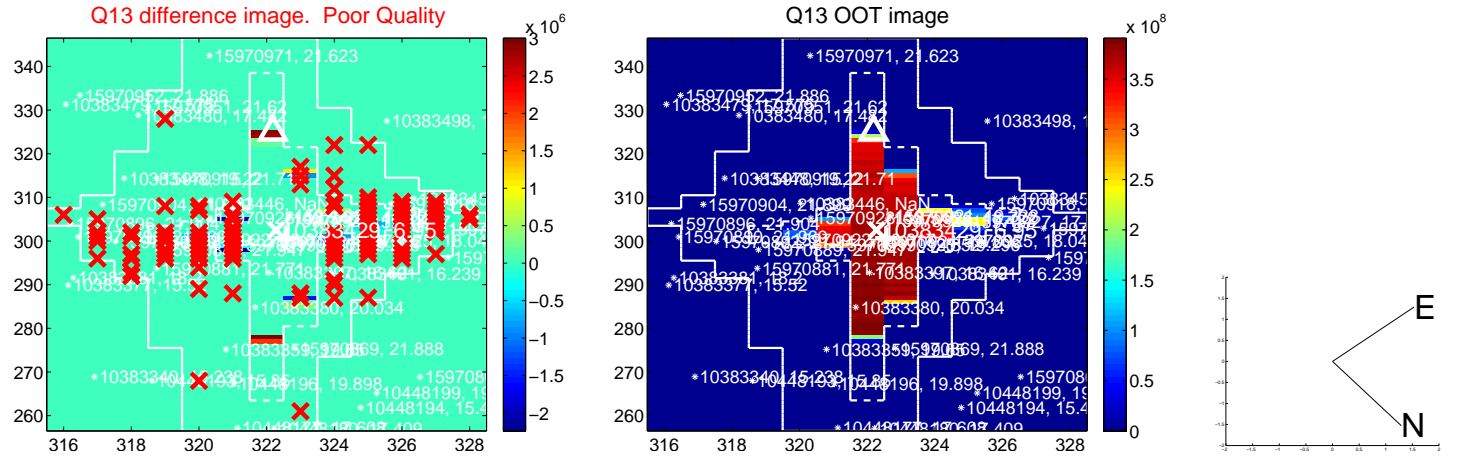
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



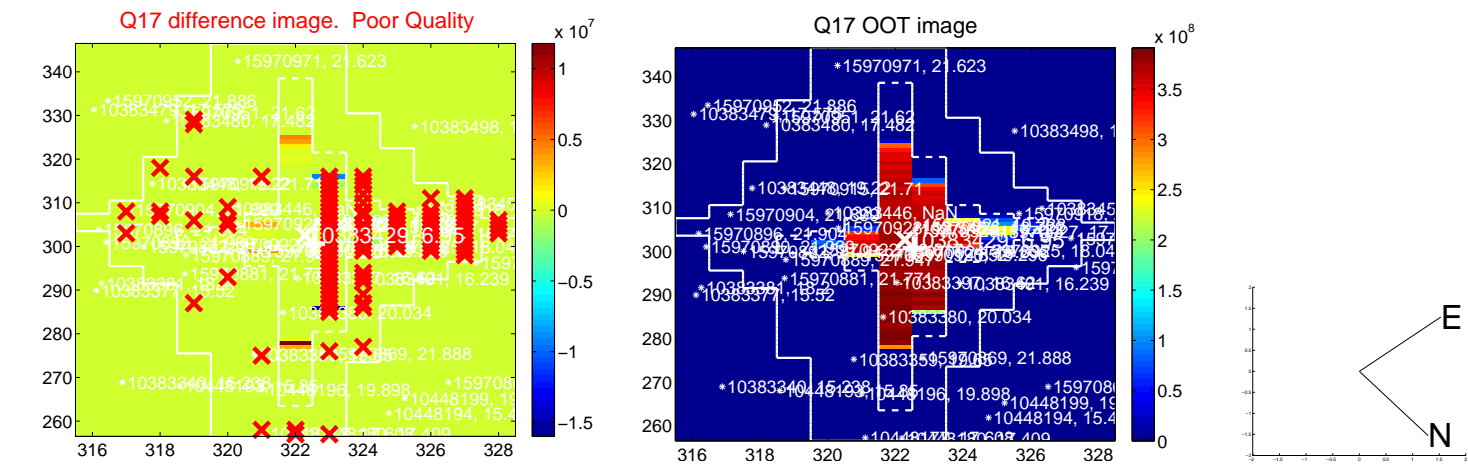
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



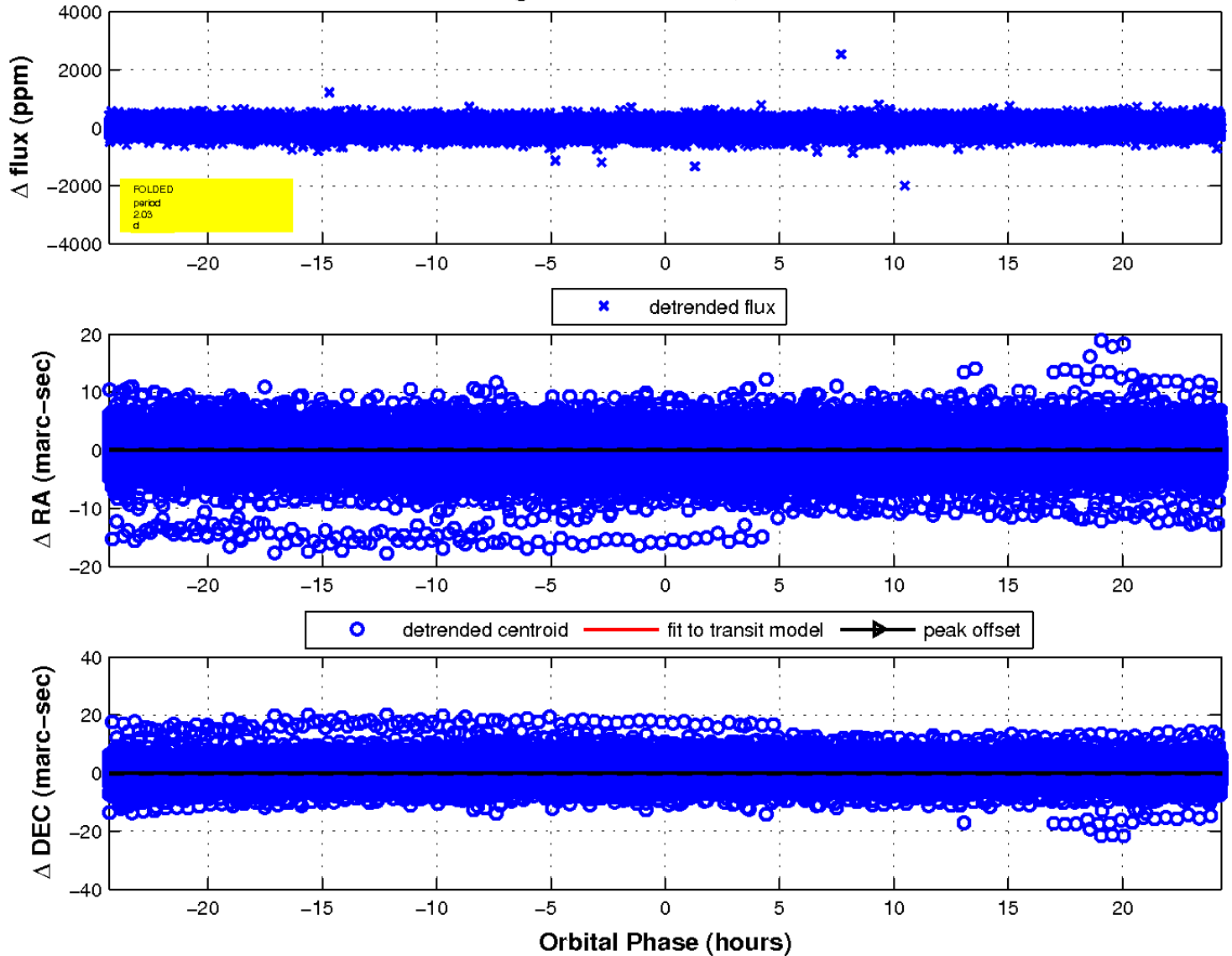
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

