

KIC 011086639

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})
011086639-01	OBS	No	2.676655	134.315781	14.3	20.077	7.2	8.9	0.90	5912	0.35	669.12
011086639-02	OBS	No	294.531428	156.992257	247.3	7.712	17.3	16.5	0.90	5912	1.44	1.27
011086639-03	OBS	No	36.272190	160.645379	337.0	1.205	15.2	15.9	0.90	5912	1.78	20.71
011086639-04	OBS	No	19.761860	139.546505	330.5	0.886	13.8	12.0	0.90	5912	1.70	46.54
011086639-05	OBS	No	15.448184	142.372145	98.5	5.319	12.8	9.7	0.90	5912	1.05	64.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011086639-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
011086639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_MEAS
011086639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
011086639-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011086639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS—CENT_UNCERTAIN

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

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

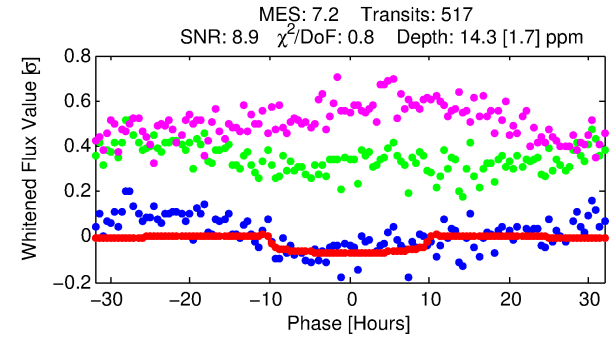
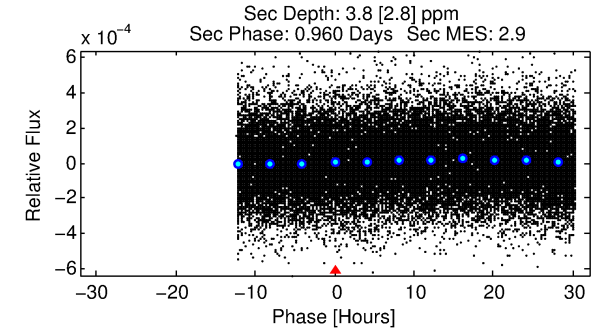
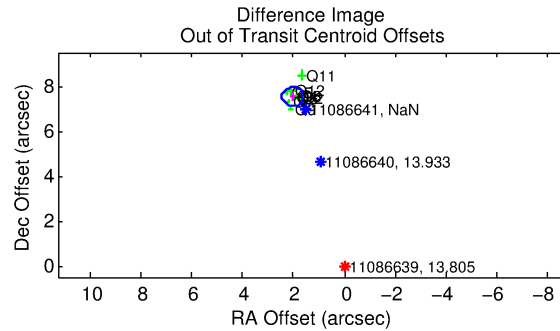
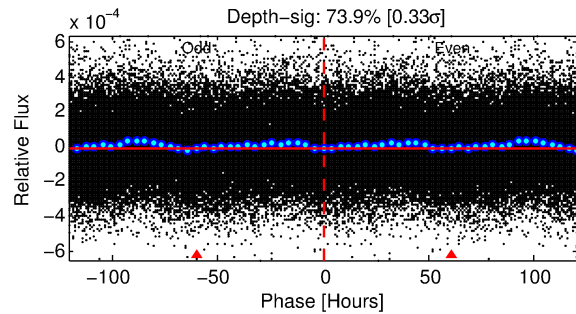
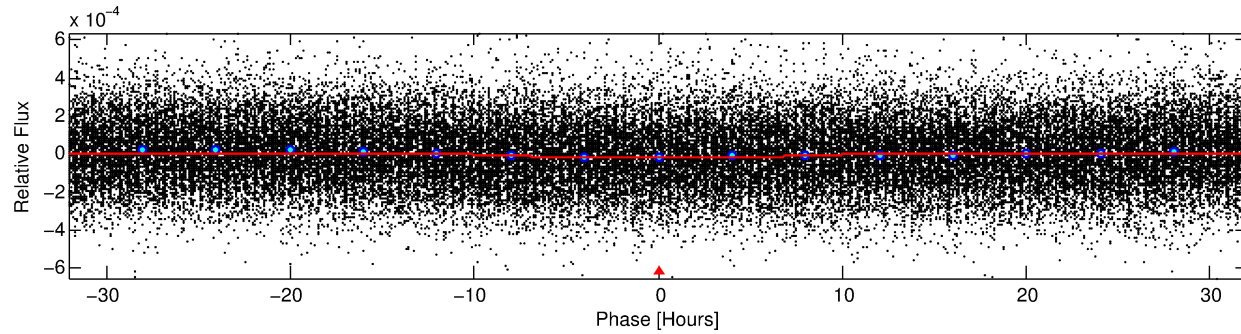
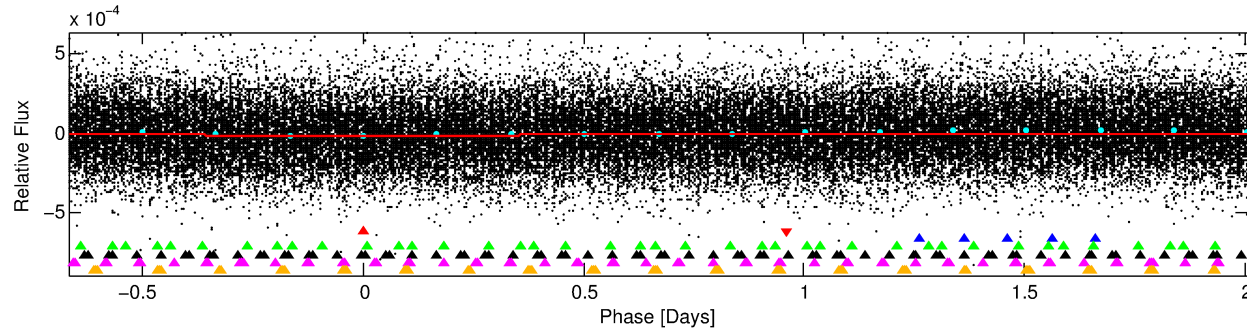
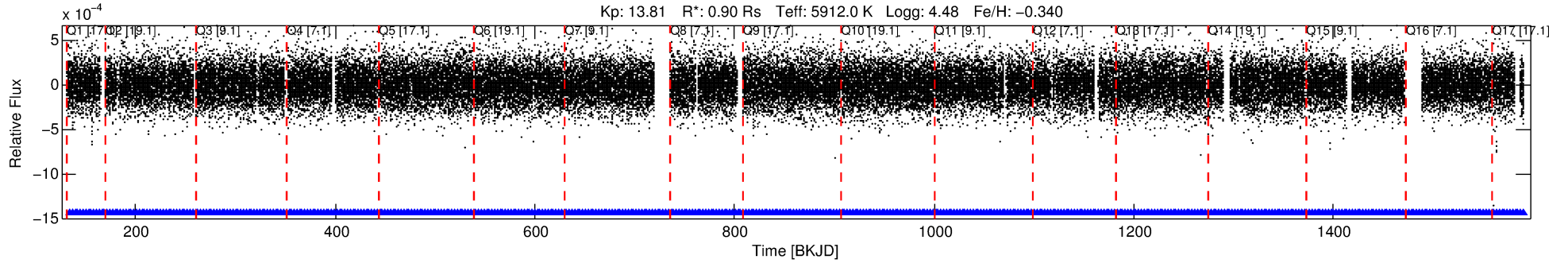
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011086639-01

No Significant Match Found

DV One-Page Summary

KIC: 11086639 Candidate: 1 of 6 Period: 2.677 d



DV Fit Results:

Period = 2.67665 [0.00008] d
Epoch = 134.3158 [0.0175] BKJD
Rp/R* = 0.0035 [0.0040]
a/R* = 1.17 [1.73]
b = 0.45 [9.96]
Seff = 669.11 [244.62]
Teq = 1297 [119] K
Rp = 0.35 [0.40] Re
a = 0.0365 [0.0085] AU
Ag = 23.35 [56.15] [0.40 σ]
Teffp = 4408 [2625] K [1.18 σ]

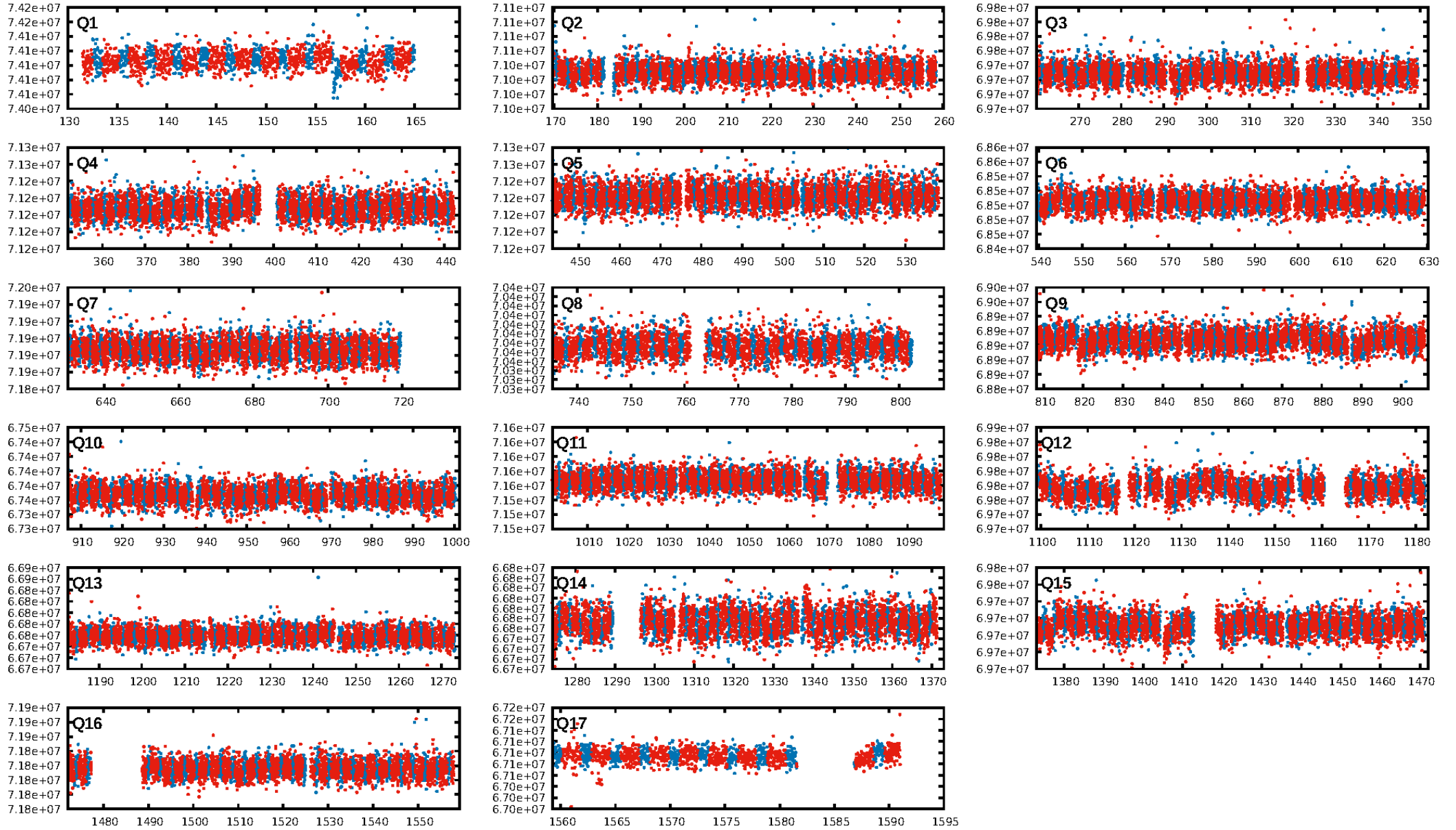
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [14.76 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [494/494]
GhostDiagnostic-chr: -1.135
Centroid-sig: 0.0%
Centroid-so: 6.108 arcsec [4.25 σ]
OotOffset-rm: 7.801 arcsec [56.12 σ]
KicOffset-rm: 6.972 arcsec [57.45 σ]
OotOffset-st: 2/3/3/2 [10]
KicOffset-st: 2/3/3/2 [10]
DiffImageQuality-fgm: 0.90 [9/10]
DiffImageOverlap-fno: 1.00 [17/17]

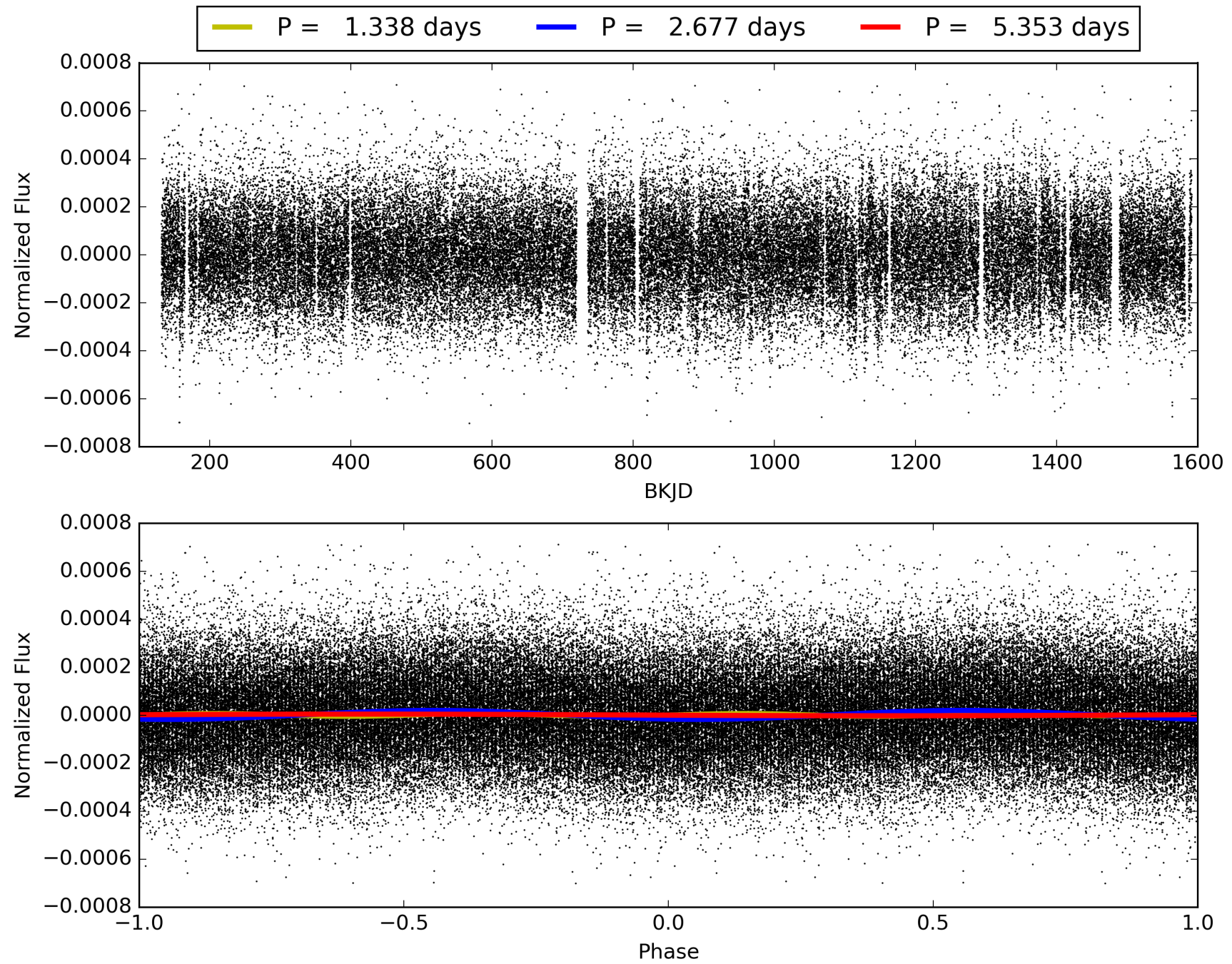
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011086639-01, PDC Light Curves

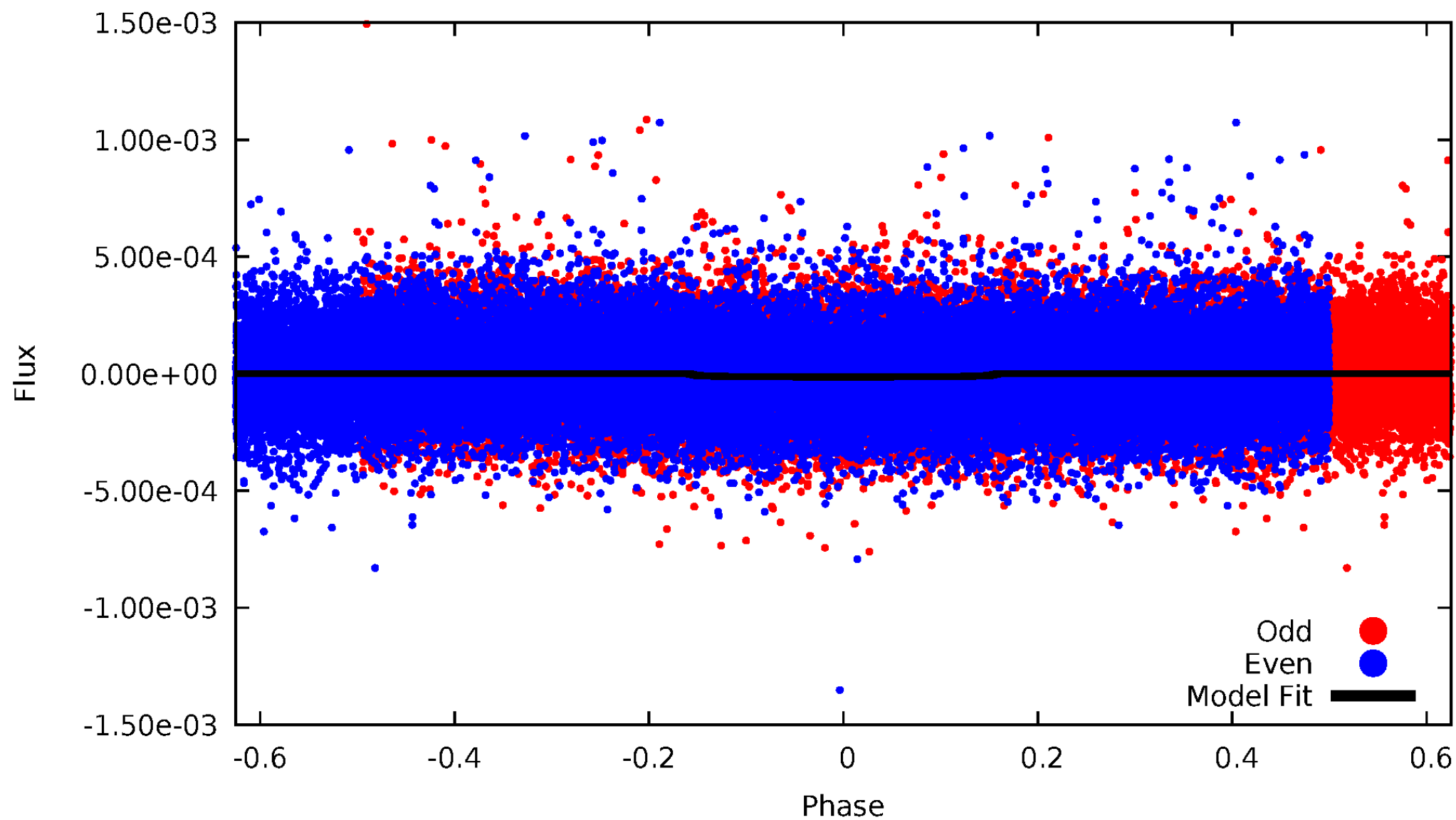


TCE 011086639-01



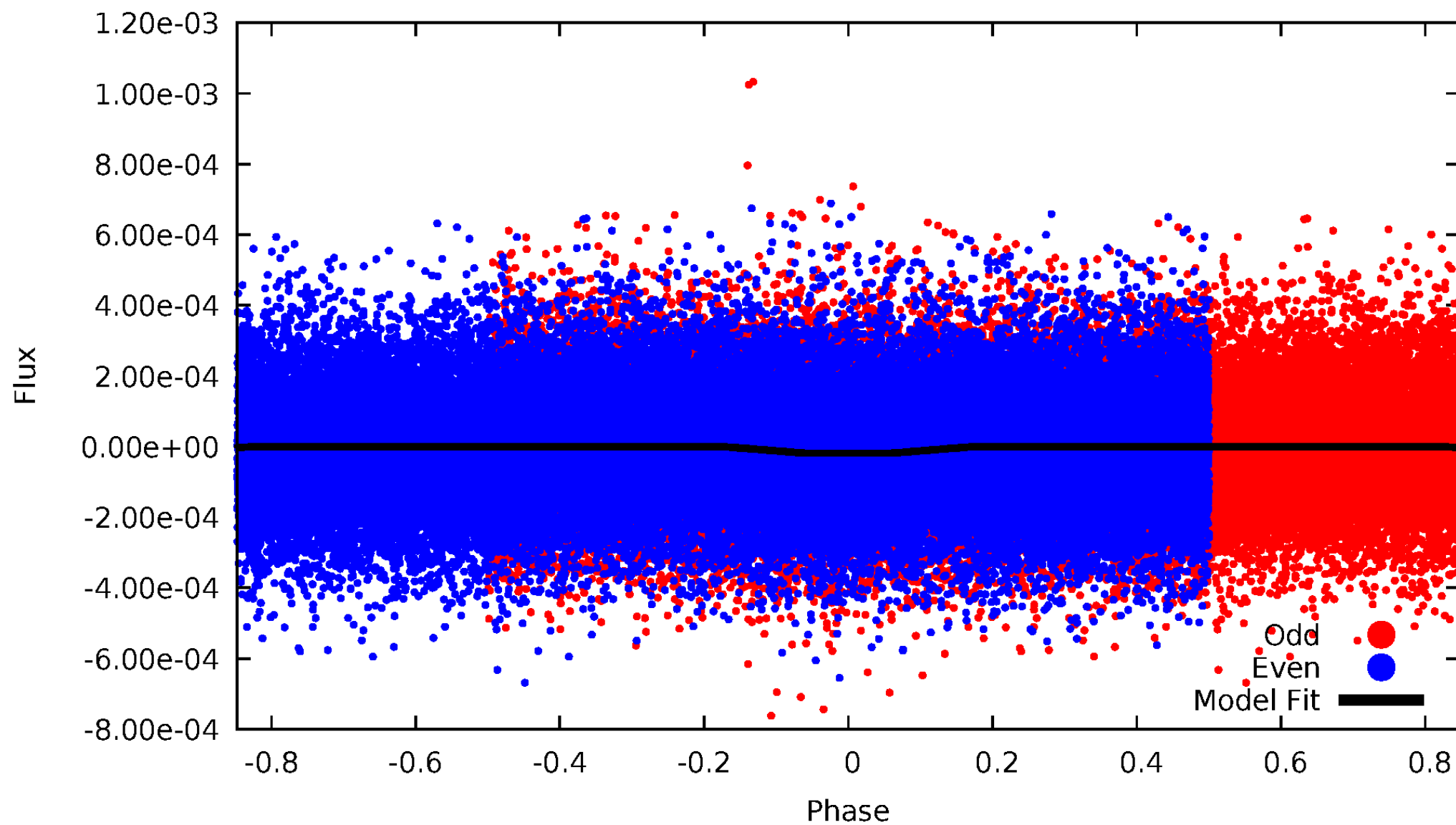
DV Odd/Even

TCE 011086639-01

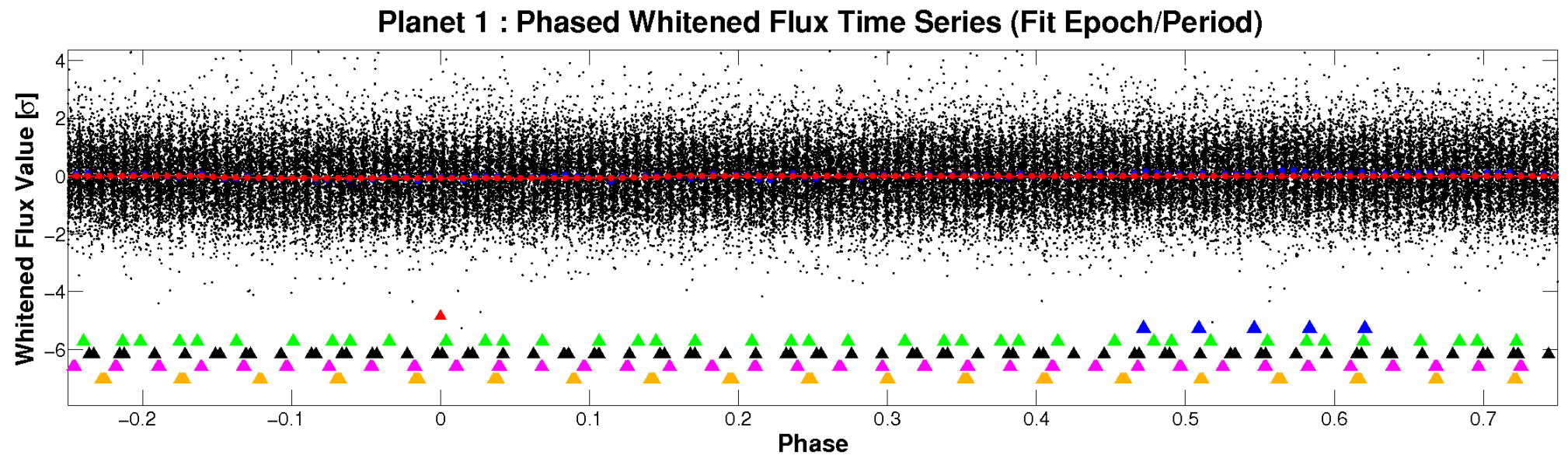
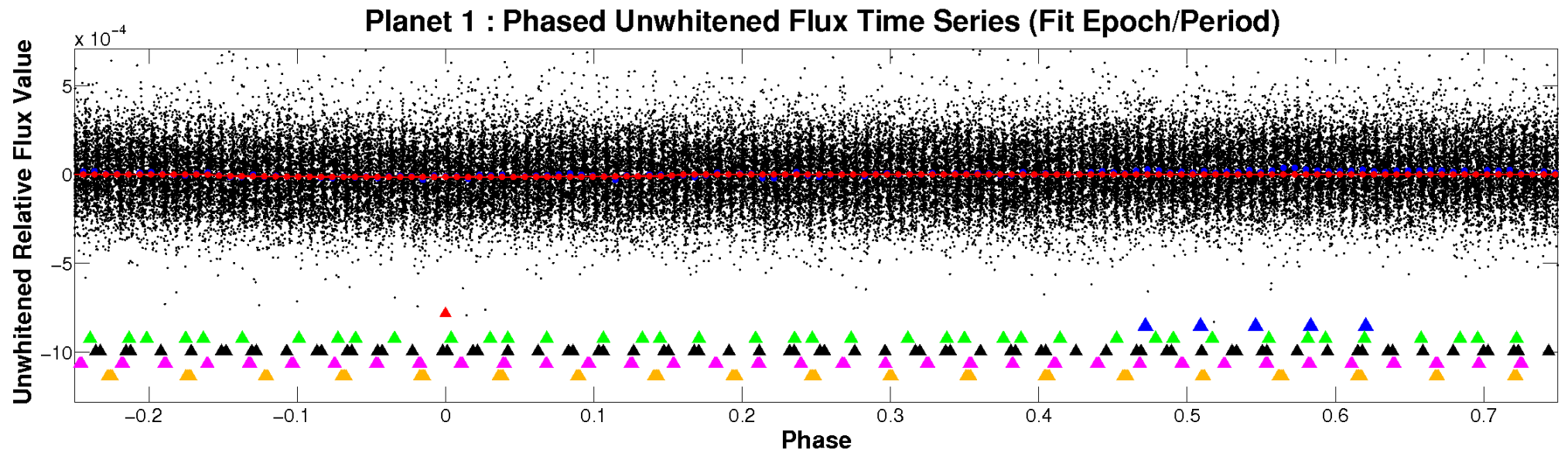


ALT Odd/Even

TCE 011086639-01

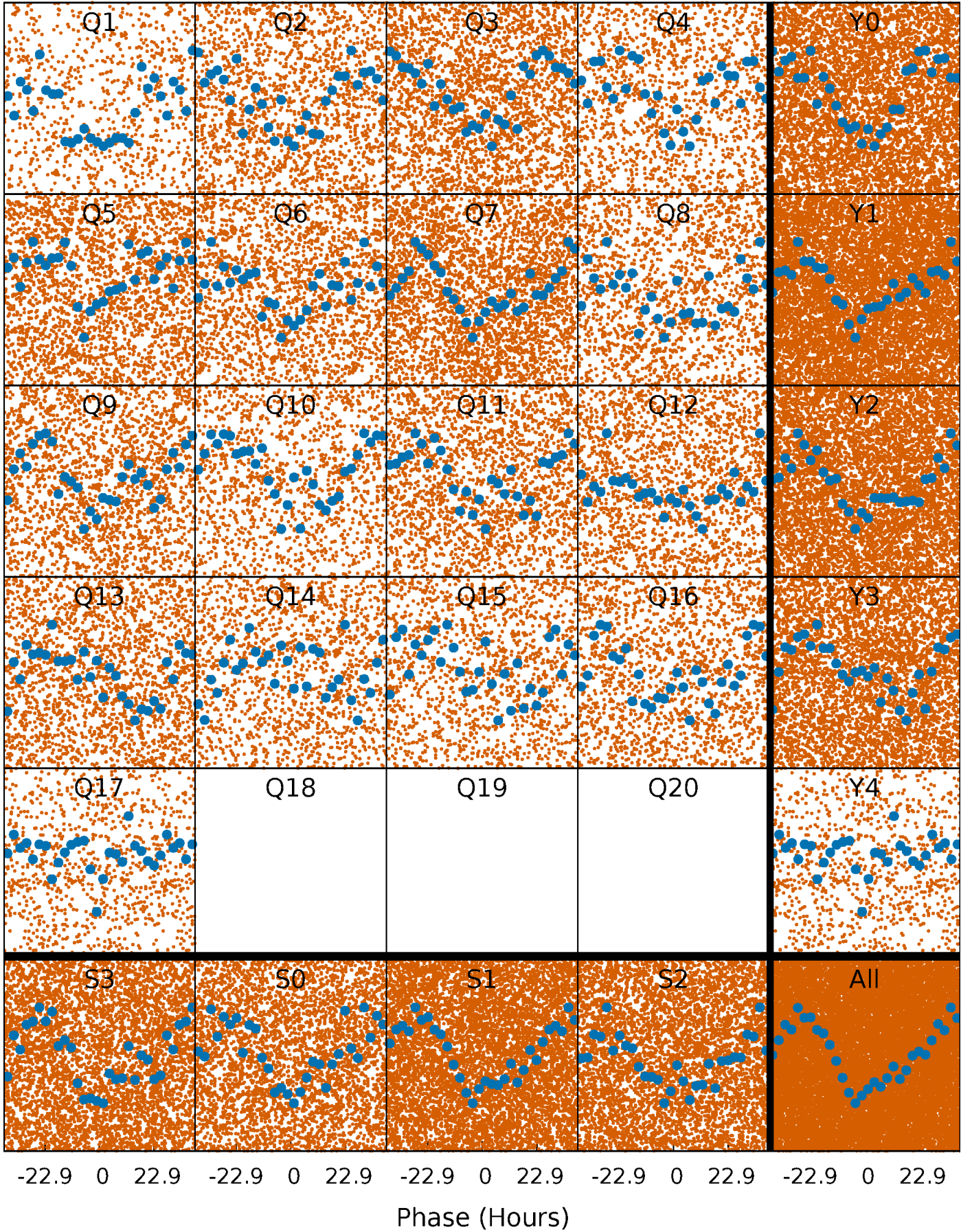


Non-Whitened Vs. Whitened Light Curve



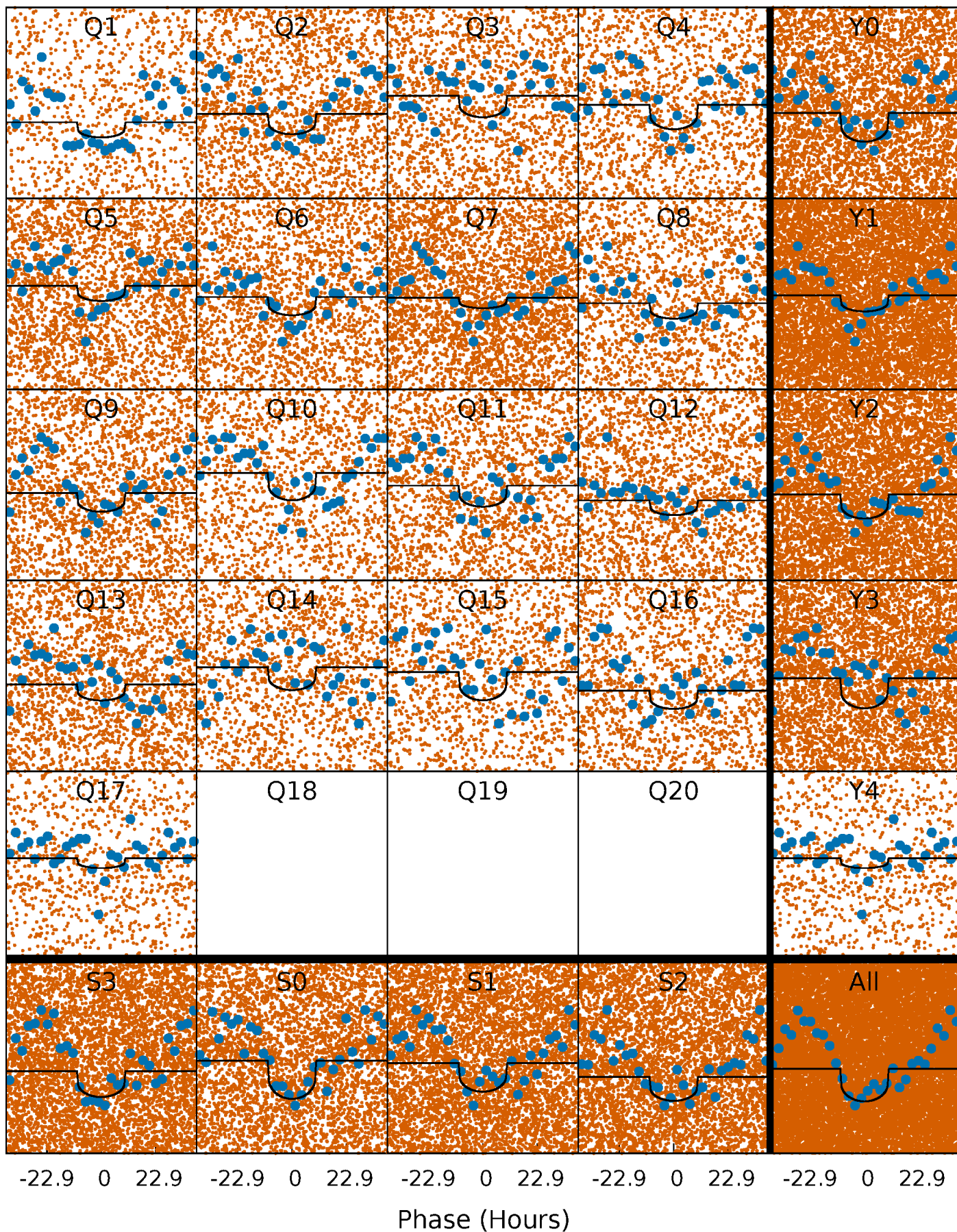
PDC Quarter-Phased Transit Curves

TCE 011086639-01 P= 2.676655 Days $T_0=134.315781$ (BKJD)



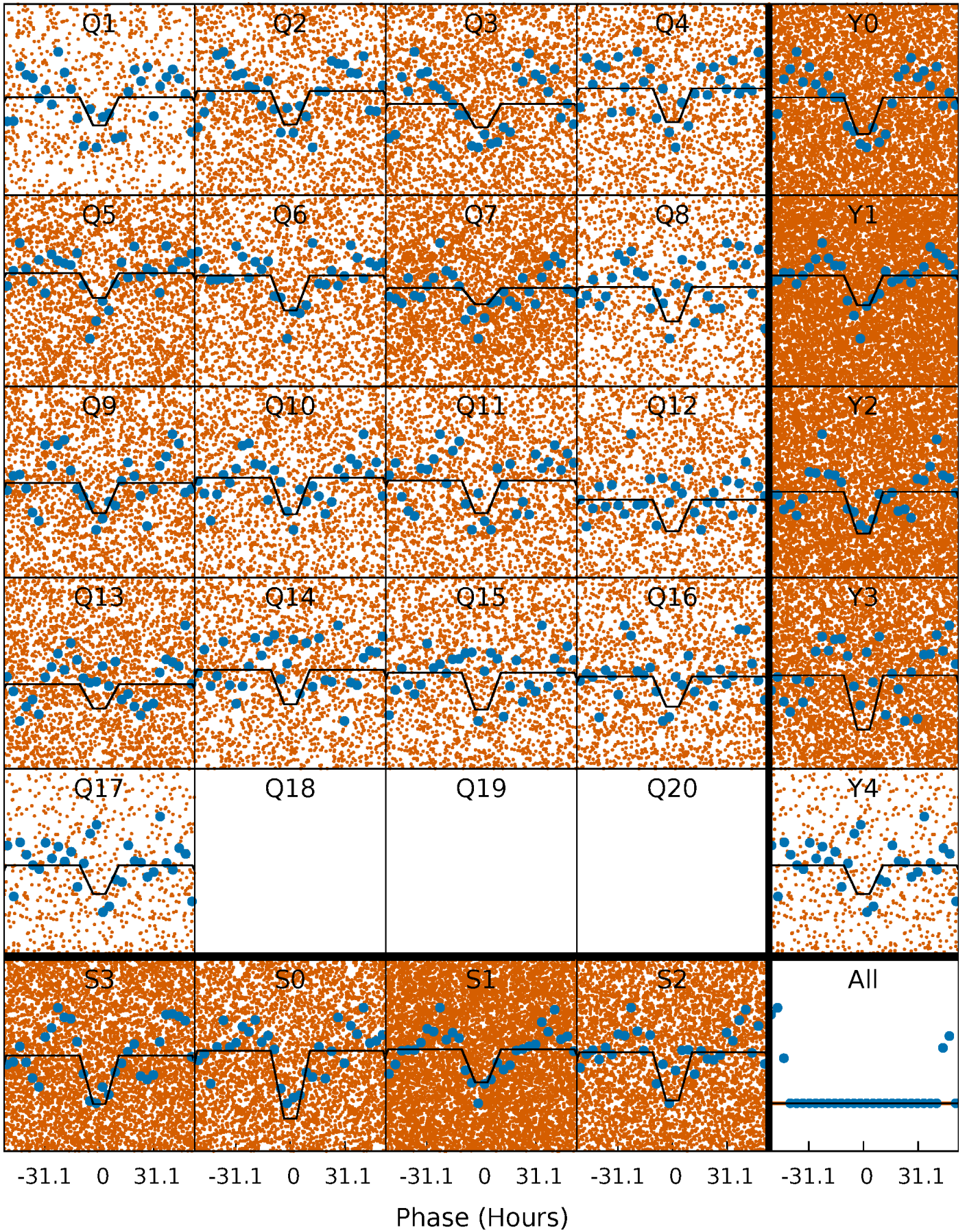
DV Quarter-Phased Transit Curves

TCE 011086639-01 P= 2.676655 Days $T_0=134.315781$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

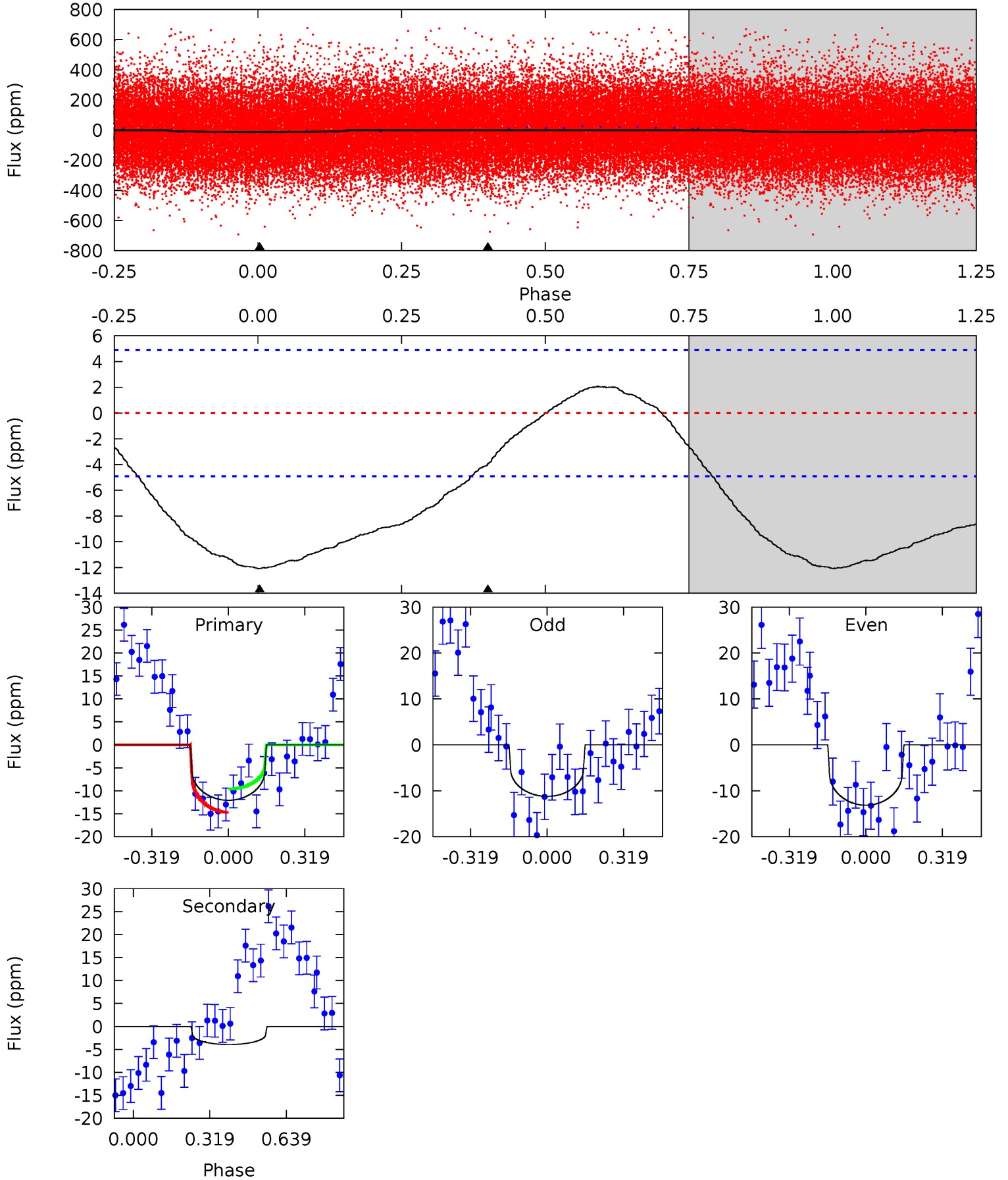
TCE 011086639-01 P= 2.676258 Days $T_0=134.283257$ (BKJD)



DV Model-Shift Uniqueness Test

011086639-01, P = 2.676655 Days, E = 128.962471 Days

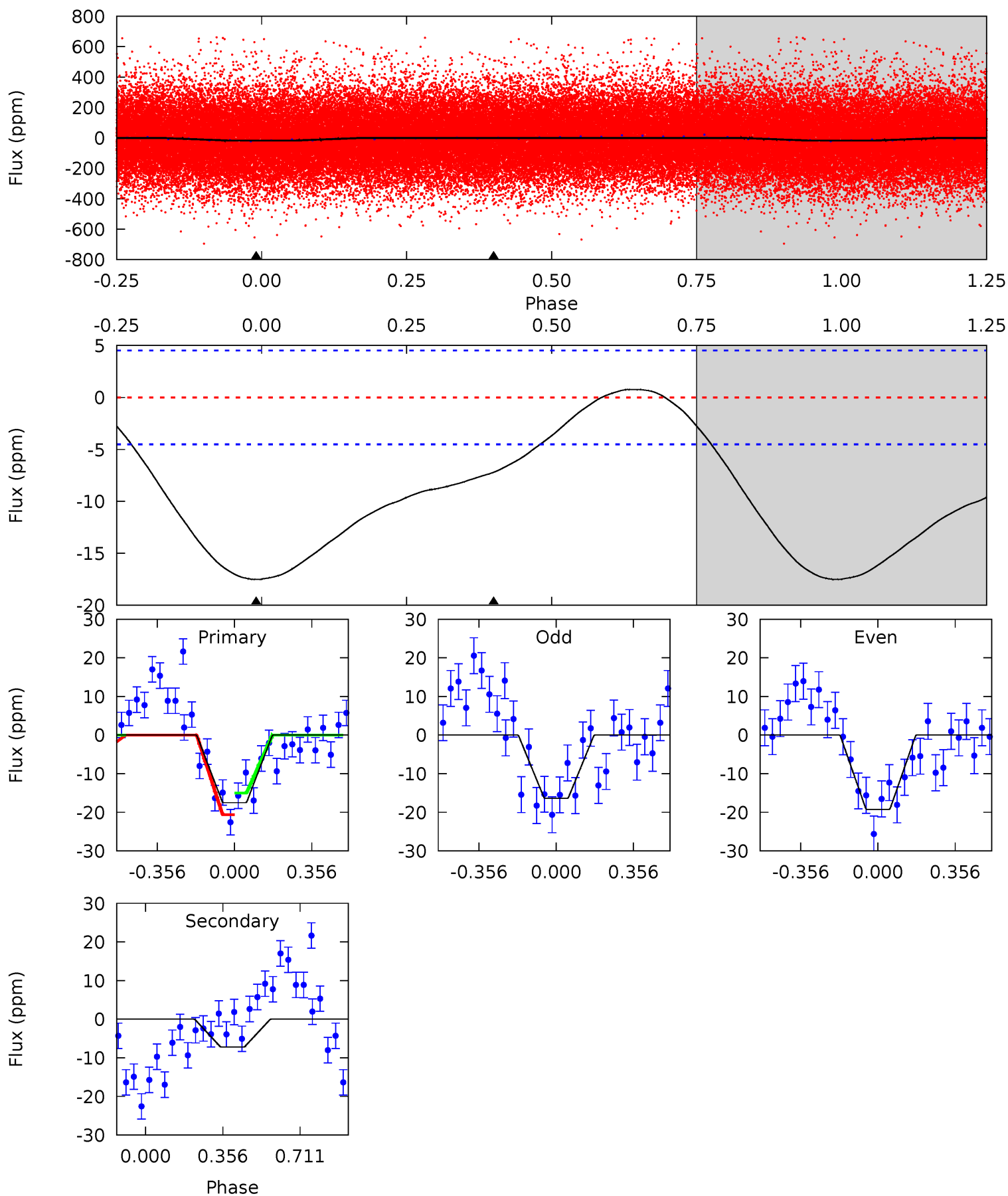
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	3.47	0	0	4.31	1.00	1.10	10.6	10.6	3.47	3.47	0.85	1.07	0.15	2.24



Alt Model-Shift Uniqueness Test

011086639-01, P = 2.676258 Days, E = 128.930741 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	6.84	0	0	4.29	0.92	0.95	16.6	16.6	6.84	6.84	1.37	1.35	0.04	2.59



Stellar Parameters For KIC 011086639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5912^{+146}_{-161}	$4.484^{+0.078}_{-0.195}$	$-0.340^{+0.300}_{-0.300}$	$0.903^{+0.243}_{-0.104}$	$0.906^{+0.109}_{-0.099}$	$1.735^{+0.575}_{-0.849}$
	+2%/-3%	+2%/-4%	+88%/-88%	+27%/-12%	+12%/-11%	+33%/-49%
Source	PHO1	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 011086639-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 1	$0.47^{+0.39}_{-0.29}$	1841^{+123}_{-91}	4070^{+2354}_{-733}	12^{+82}_{-8}
Alt.	-7 ± 1	$0.51^{+0.39}_{-0.32}$	1833^{+131}_{-82}	4453^{+2682}_{-785}	20^{+121}_{-13}

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

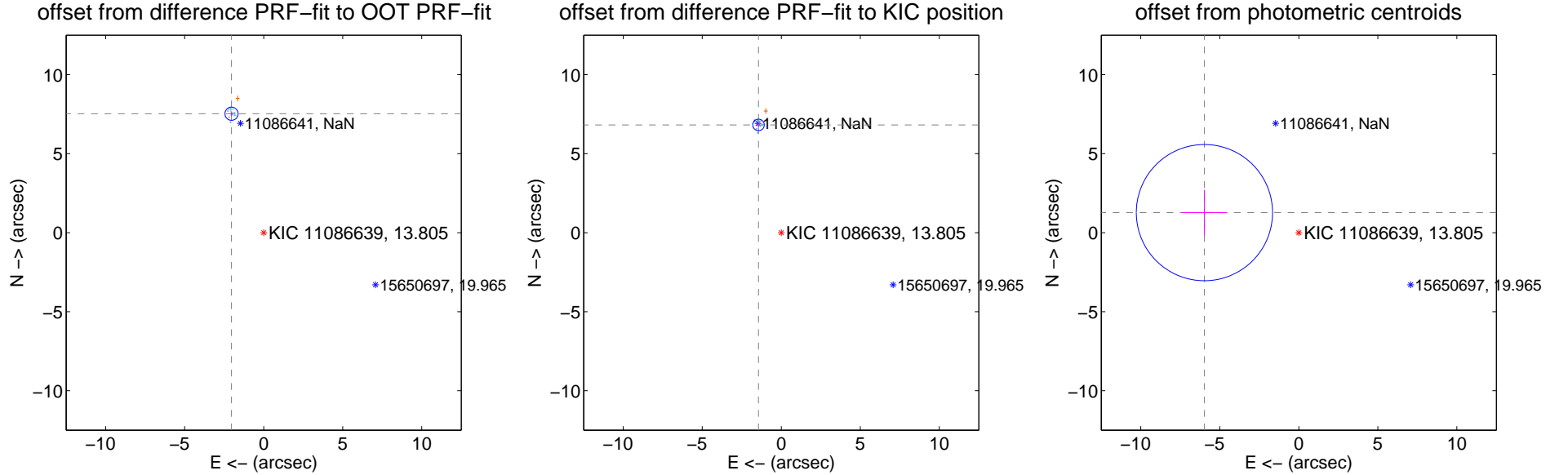
DV Centroid Data

Supplemental centroid analysis for 011086639-01. Kepler magnitude: 13.80. Transit SNR 8.86

There are 9 quarters with good PRF difference image offsets

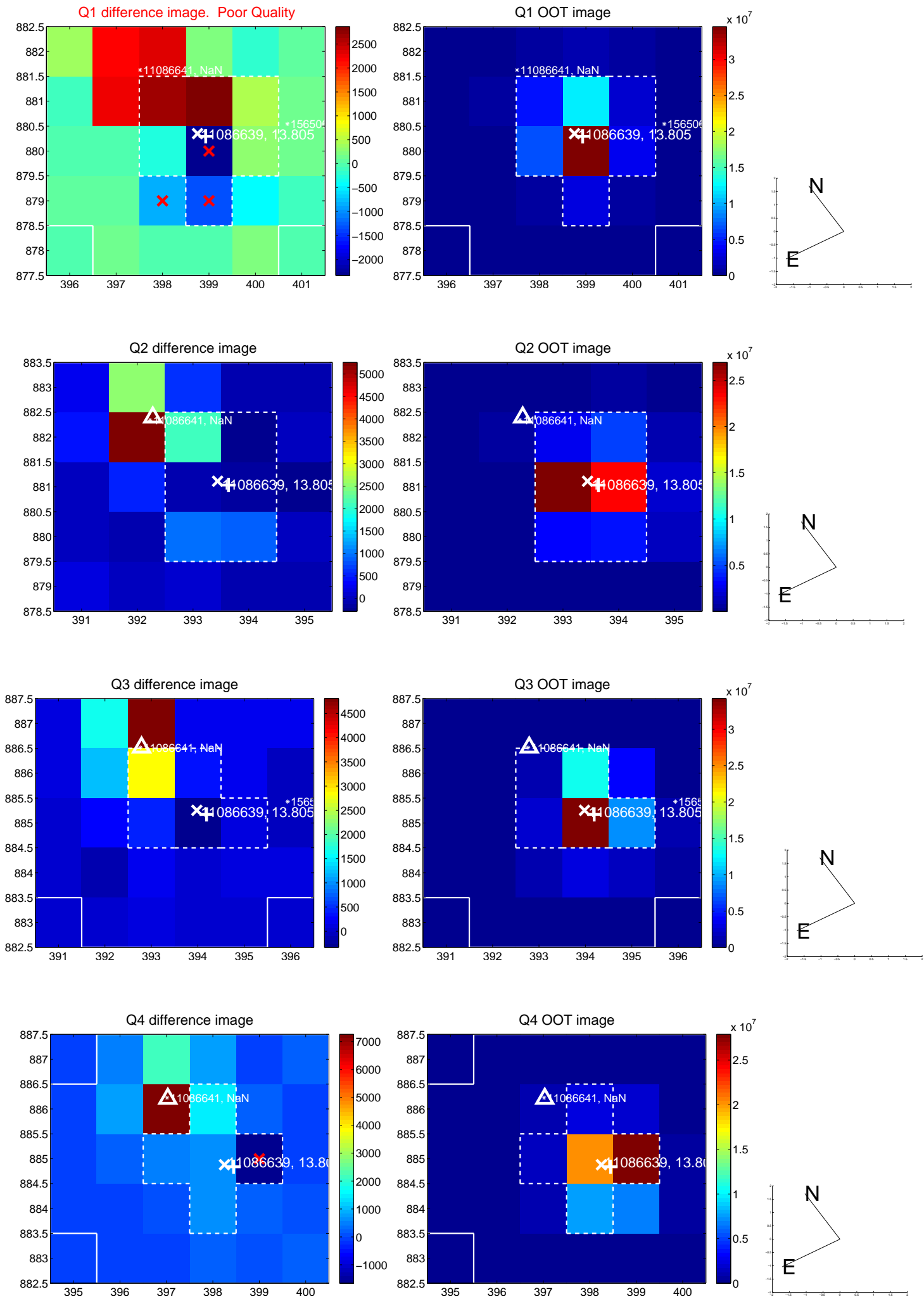
The direct PRF centroid is offset from the target star catalog position by about 0.98 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.801 \pm 0.139	56.12	2.038 \pm 0.086	7.531 \pm 0.149
PRF-fit source offset from KIC position	6.972 \pm 0.121	57.45	1.440 \pm 0.092	6.822 \pm 0.129
photometric centroid source offset	6.11 \pm 1.44	4.25	5.97 \pm 1.44	1.27 \pm 1.44

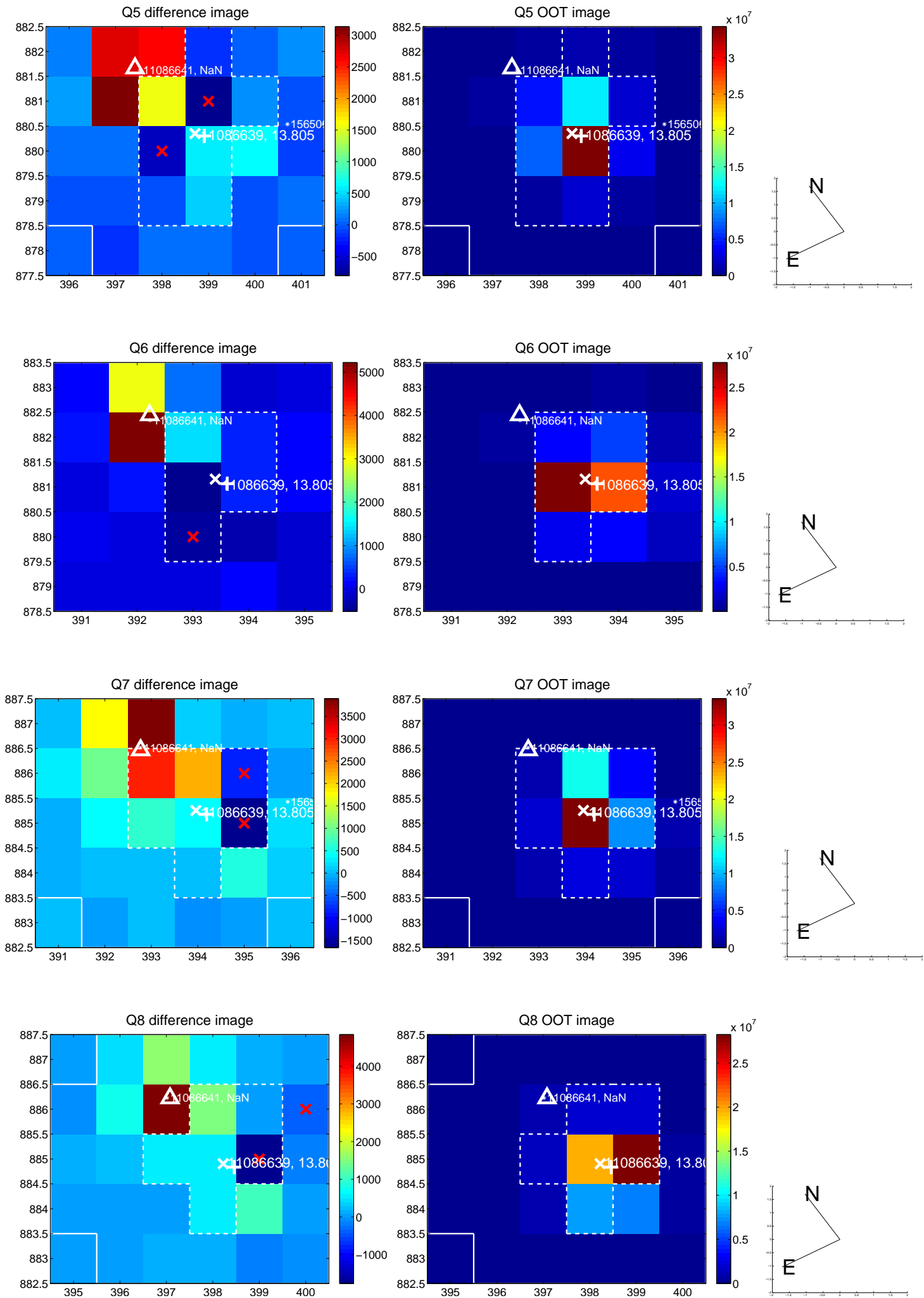


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

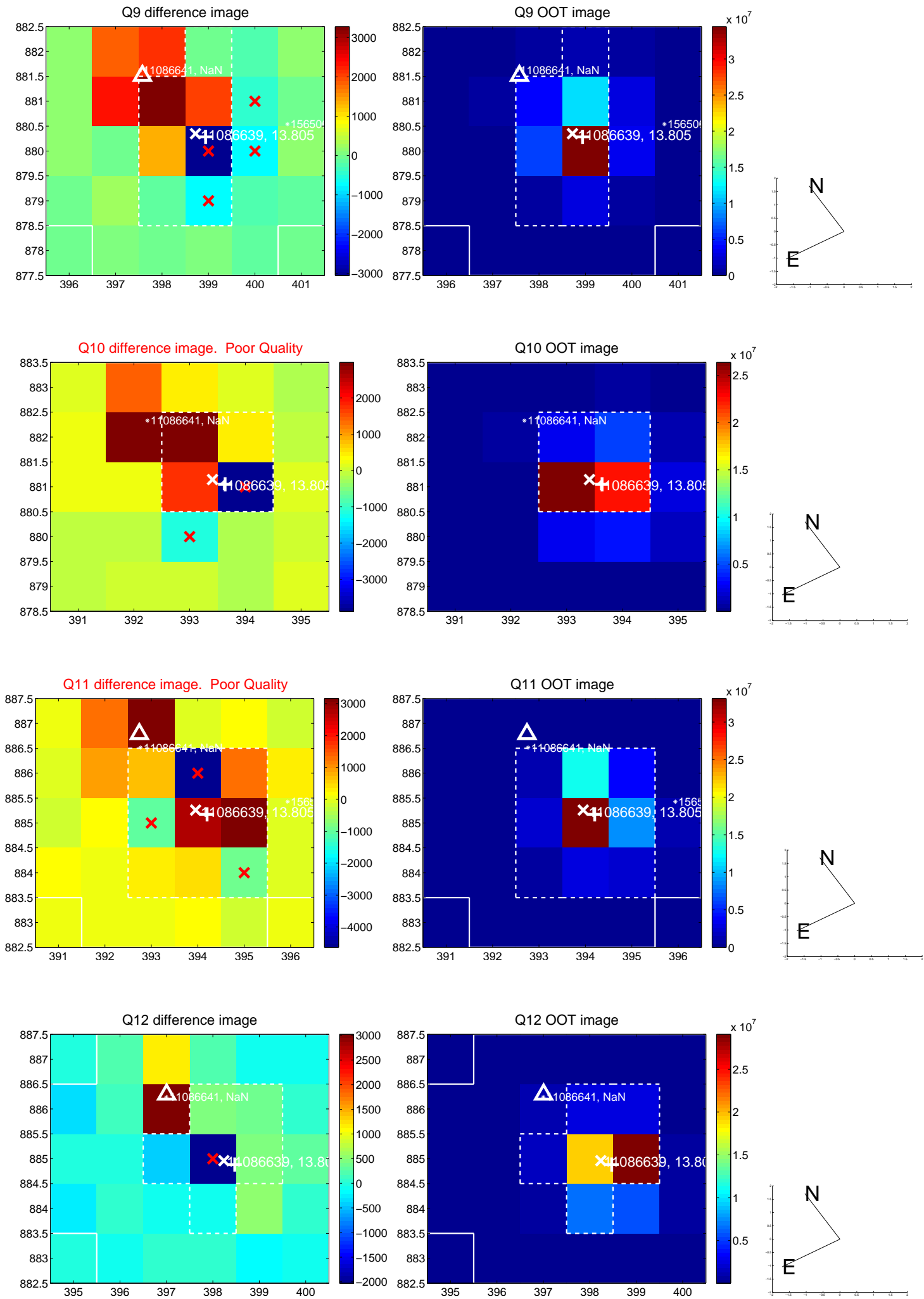
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



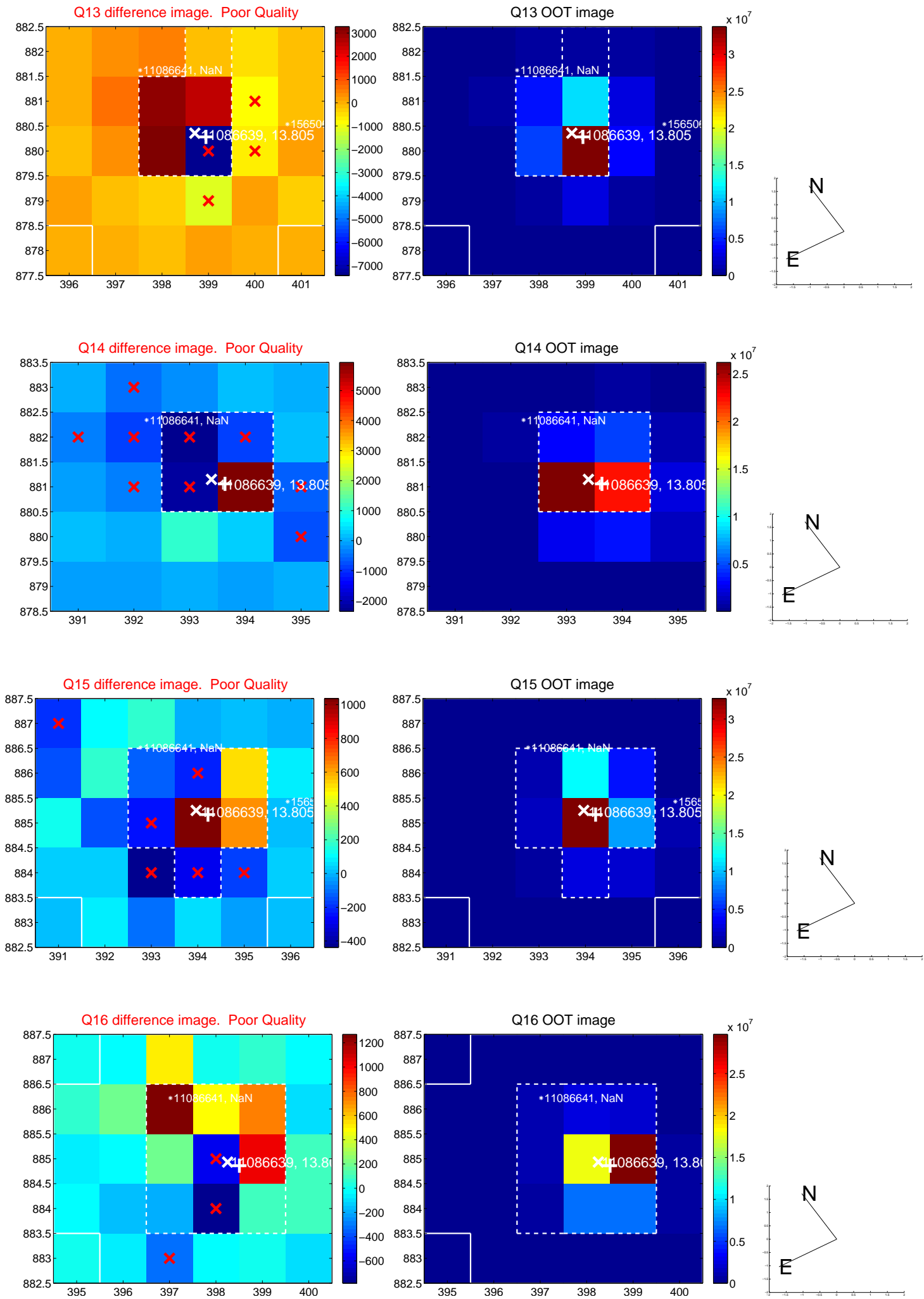
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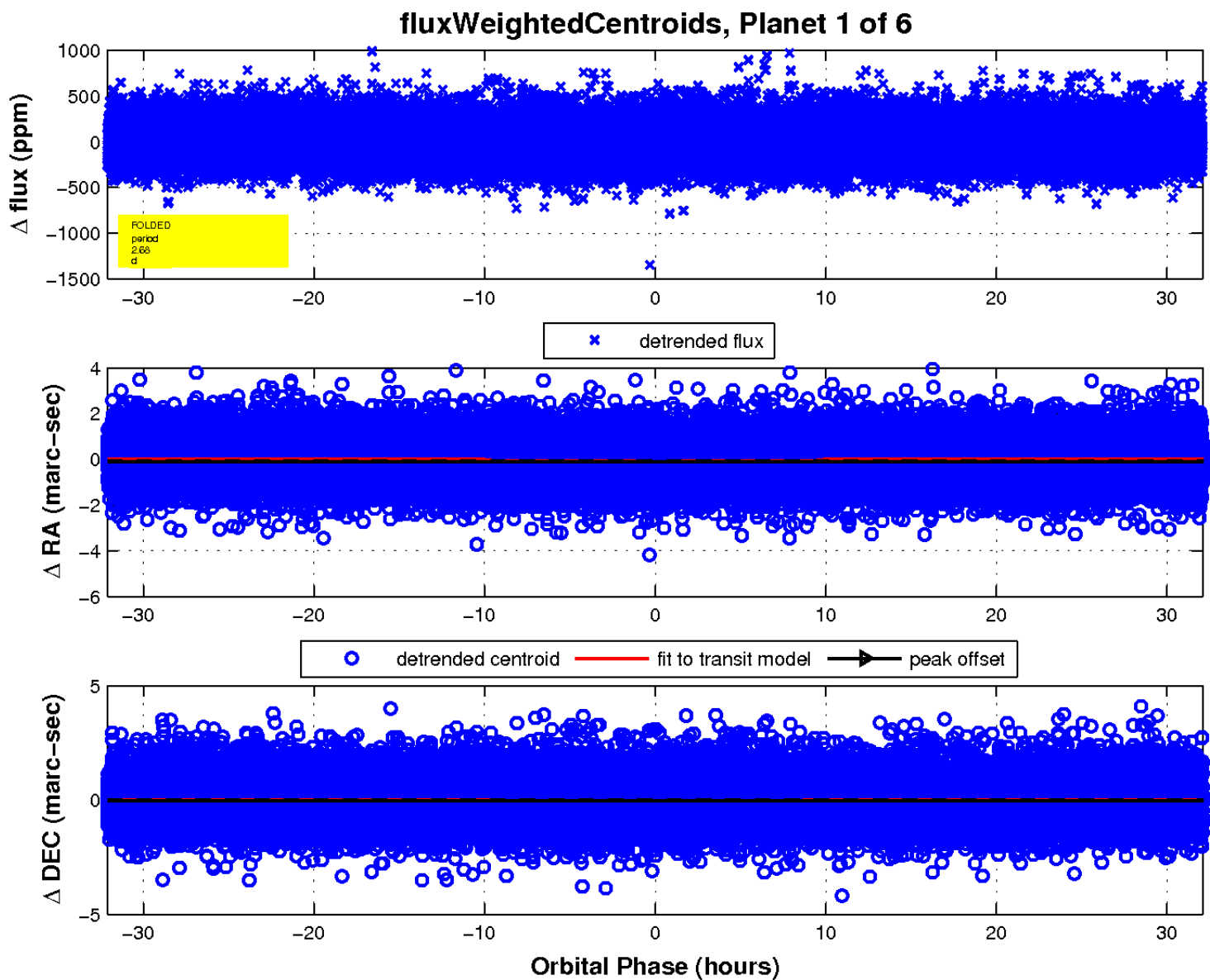
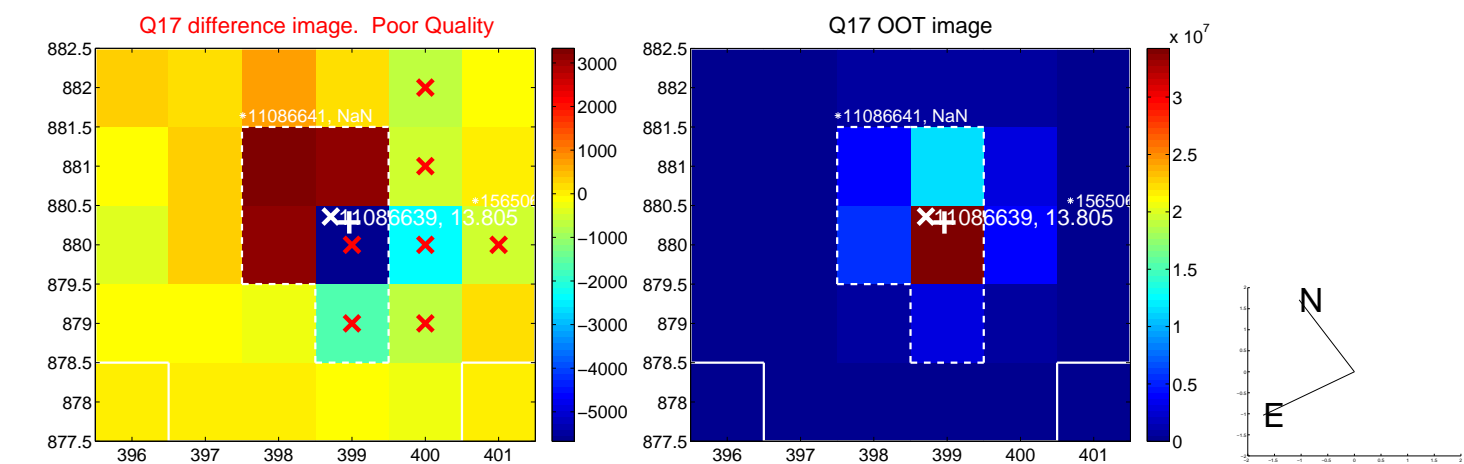
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

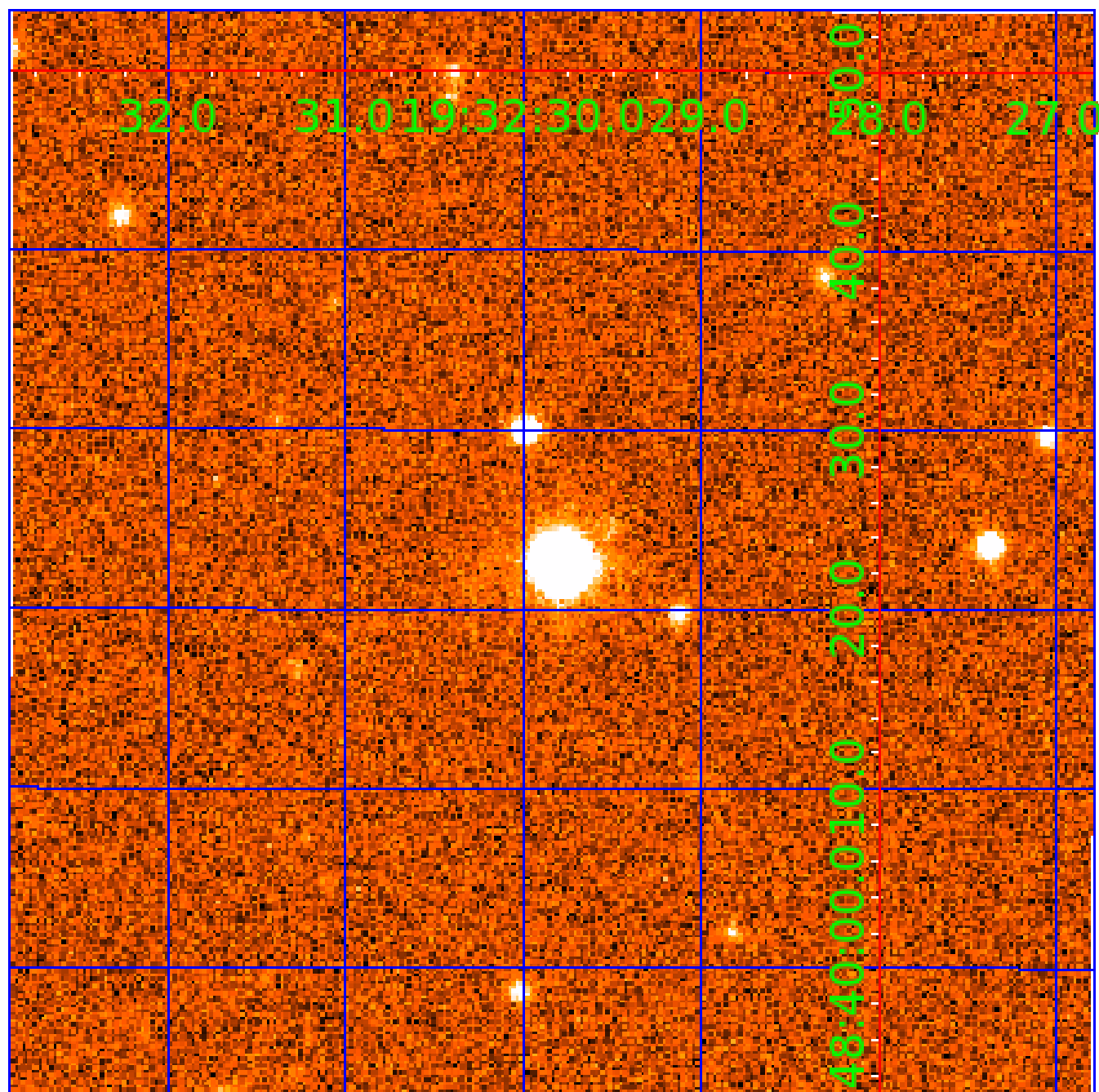


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011086639

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})
011086639-01	OBS	No	2.676655	134.315781	14.3	20.077	7.2	8.9	0.90	5912	0.35	669.12
011086639-02	OBS	No	294.531428	156.992257	247.3	7.712	17.3	16.5	0.90	5912	1.44	1.27
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011086639-04	OBS	No	19.761860	139.546505	330.5	0.886	13.8	12.0	0.90	5912	1.70	46.54
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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011086639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_MEAS
011086639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
011086639-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011086639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS—CENT_UNCERTAIN

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

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

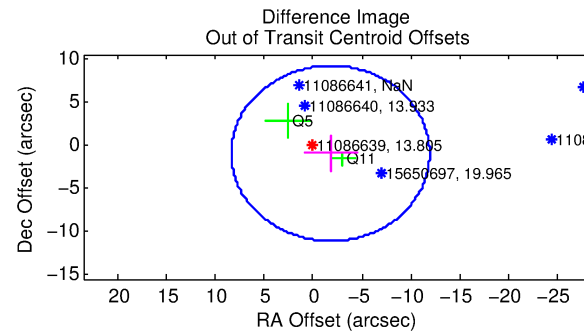
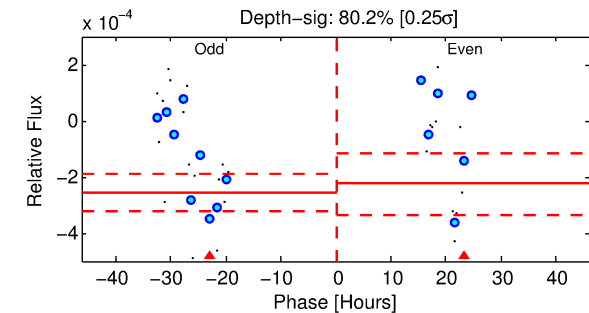
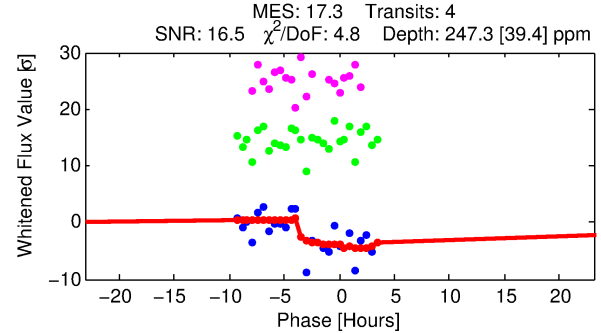
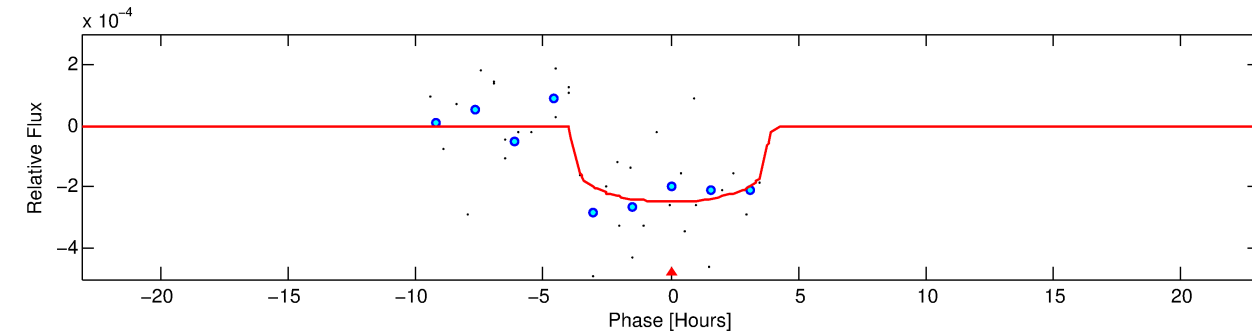
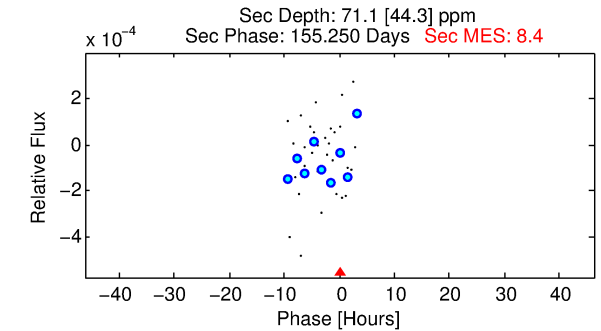
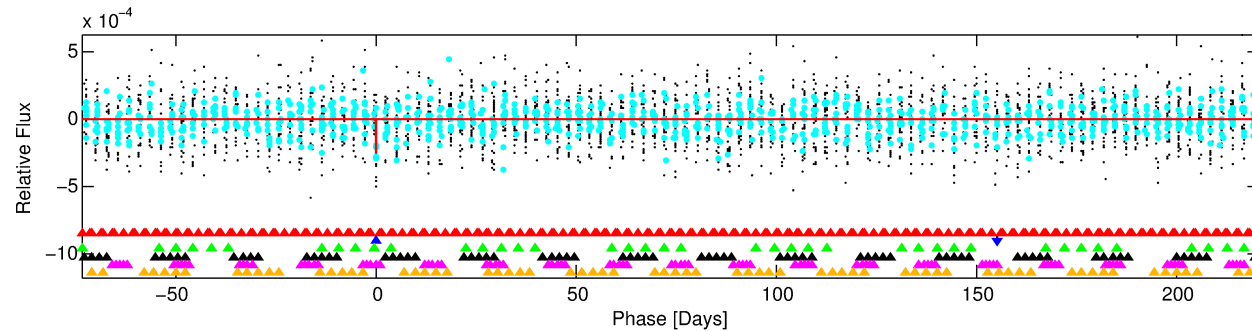
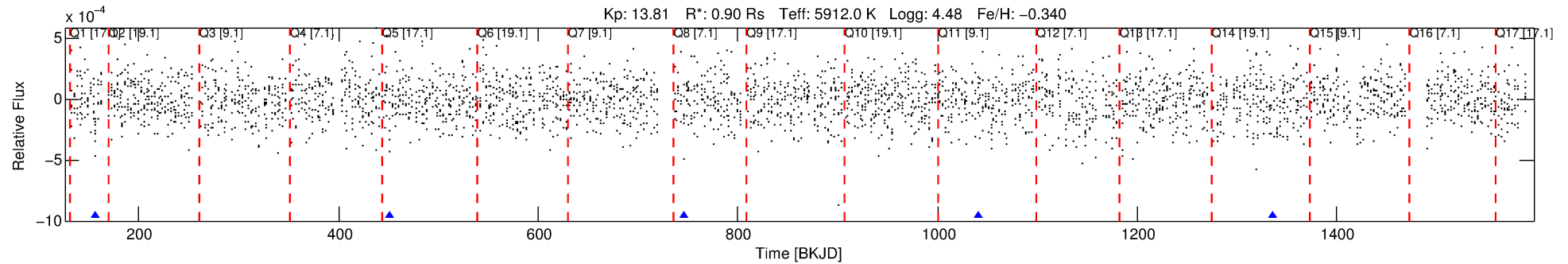
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011086639-02

No Significant Match Found

DV One-Page Summary

KIC: 11086639 Candidate: 2 of 6 Period: 294.531 d



DV Fit Results:

Period = 294.53143 [0.03812] d
Epoch = 156.9923 [0.0673] BKJD
Rp/R* = 0.0146 [0.0702]
a/R* = 270.14 [6269.92]
b = 0.42 [46.31]
Seff = 1.27 [0.46]
Teq = 271 [25] K
Rp = 1.44 [6.93] Re
a = 0.8386 [0.1959] AU
Ag = 13195.61 [126910.85] [0.10 σ]
Teffp = 4485 [10777] K [0.39 σ]

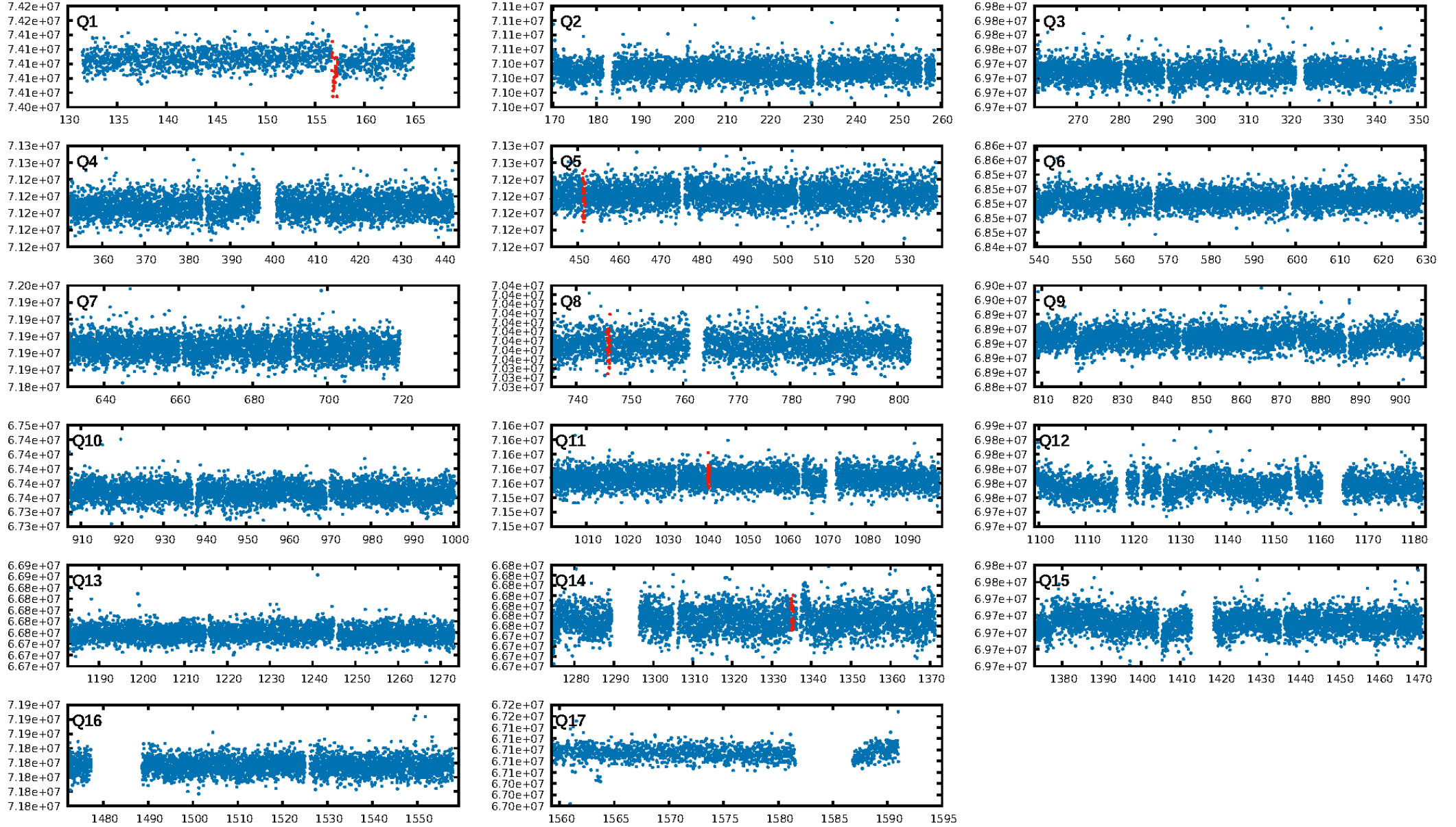
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [794.13 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 55.4%
ModelChiSquareGof-sig: 74.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.411
Centroid-sig: 4.5%
Centroid-so: 2.781 arcsec [2.10 σ]
OotOffset-rm: 2.012 arcsec [0.60 σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 2.977 arcsec [0.99 σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.60 [3/5]

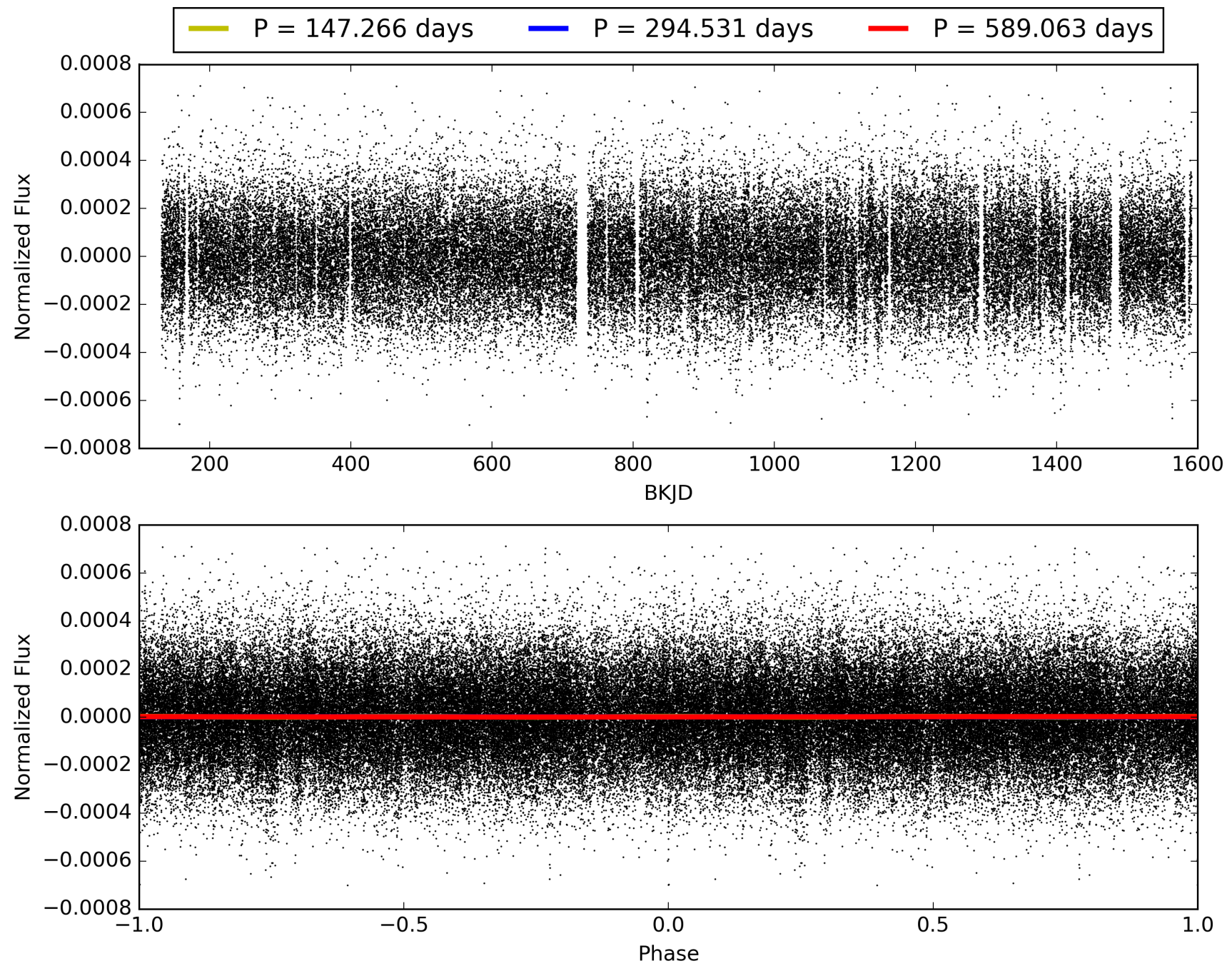
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:55:35 Z

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

TCE 011086639-02, PDC Light Curves

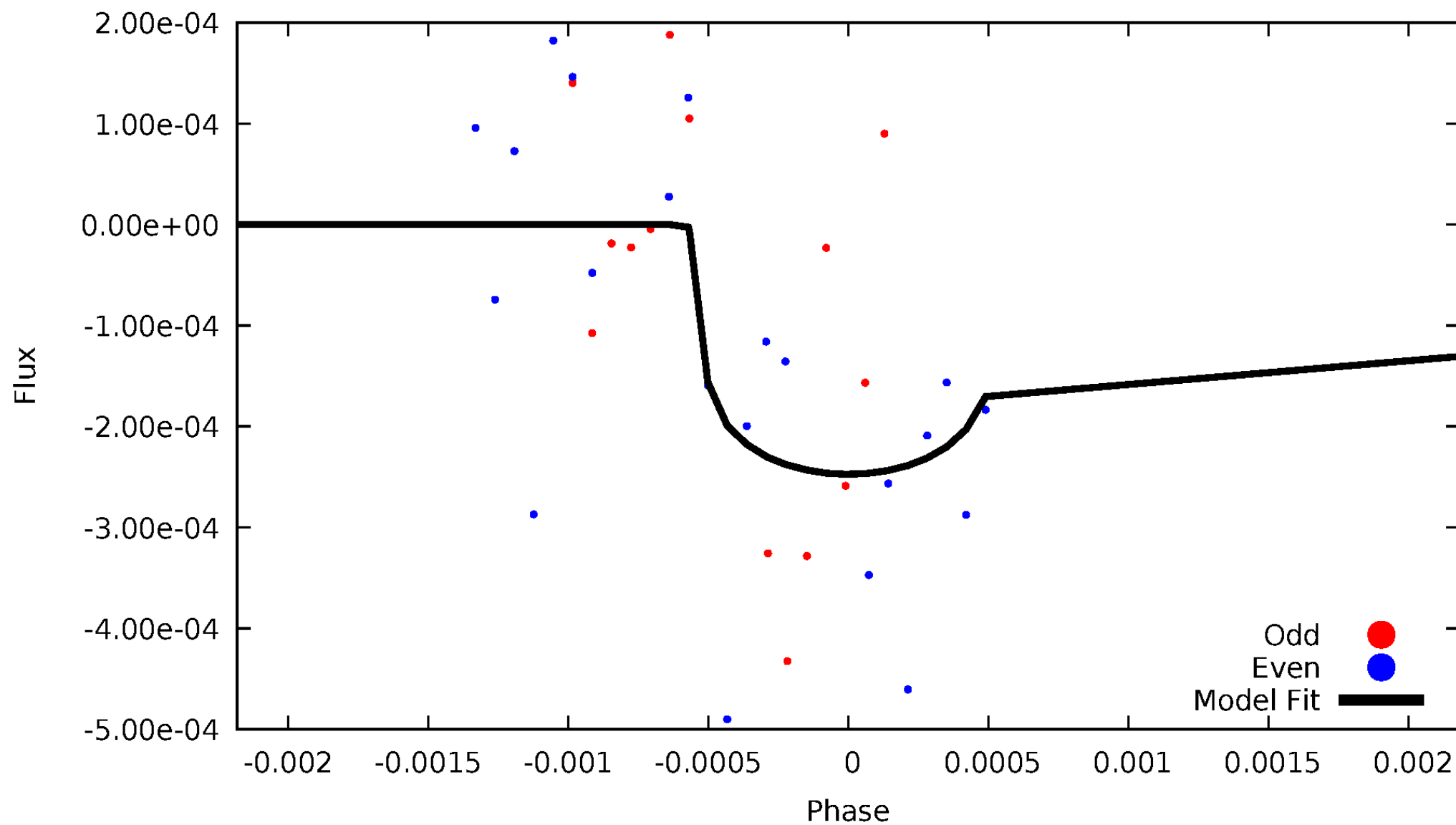


TCE 011086639-02



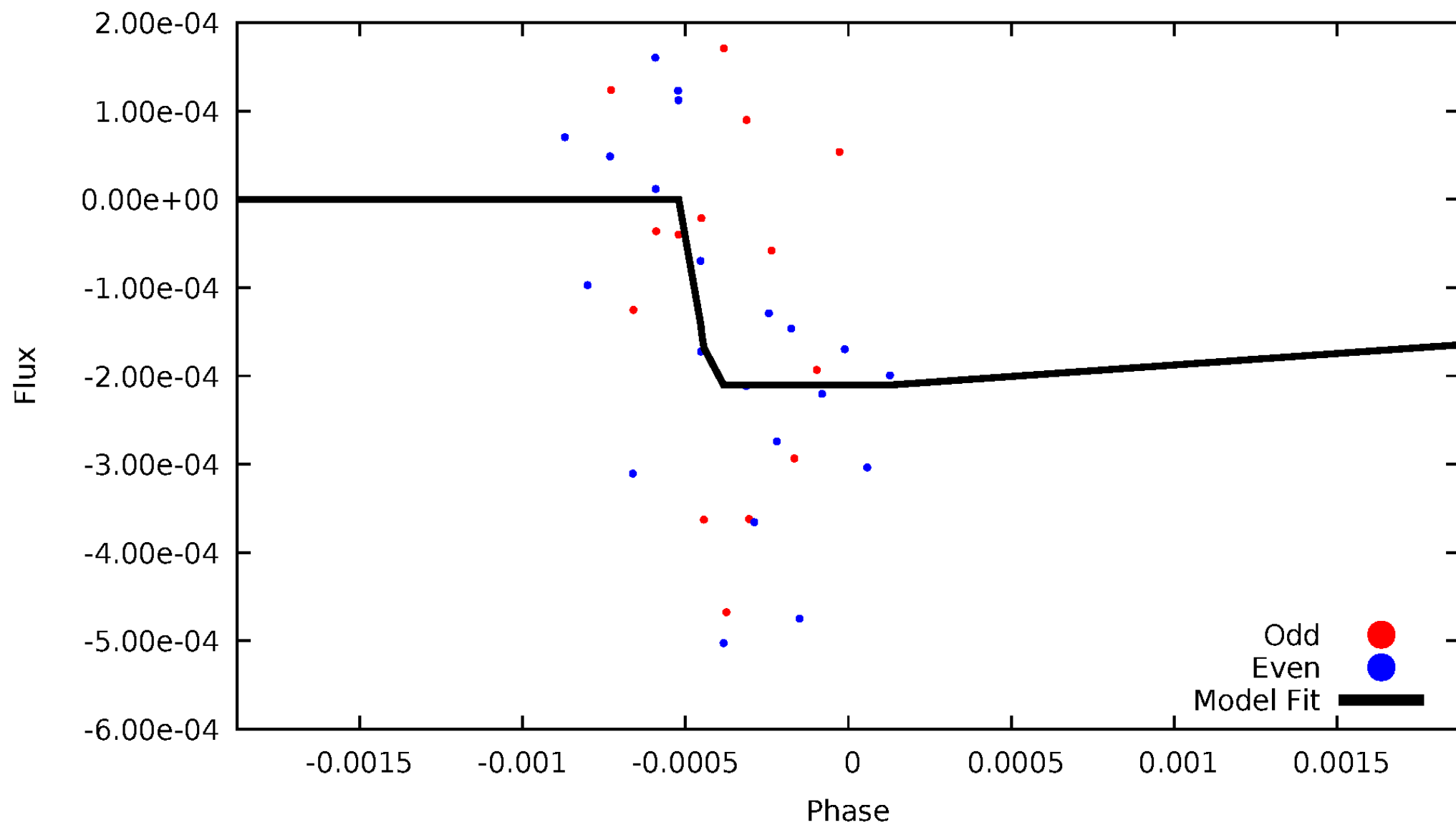
DV Odd/Even

TCE 011086639-02



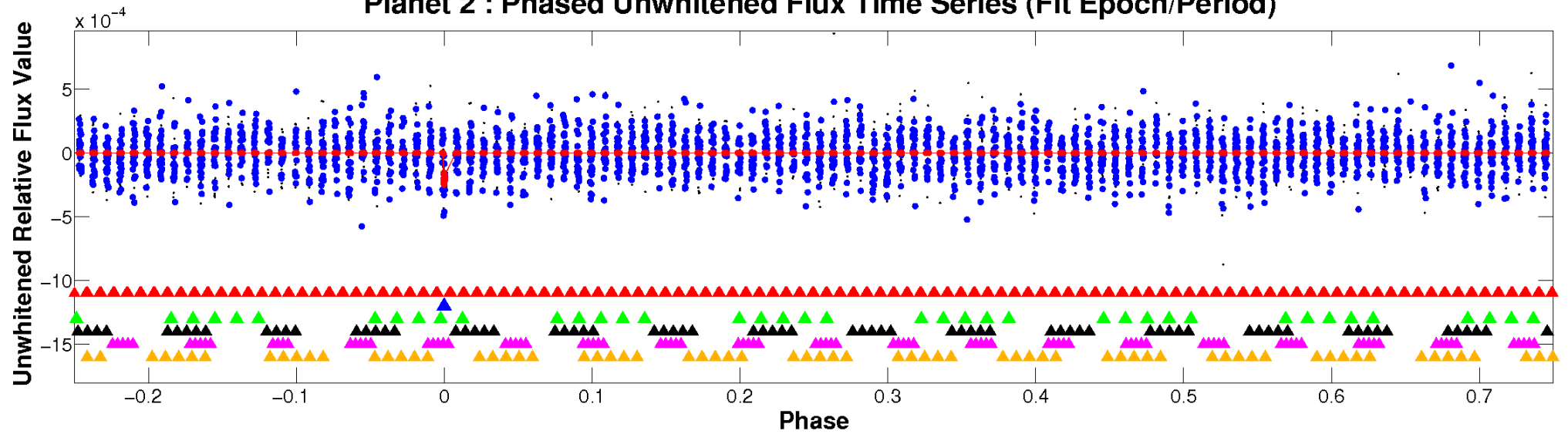
ALT Odd/Even

TCE 011086639-02

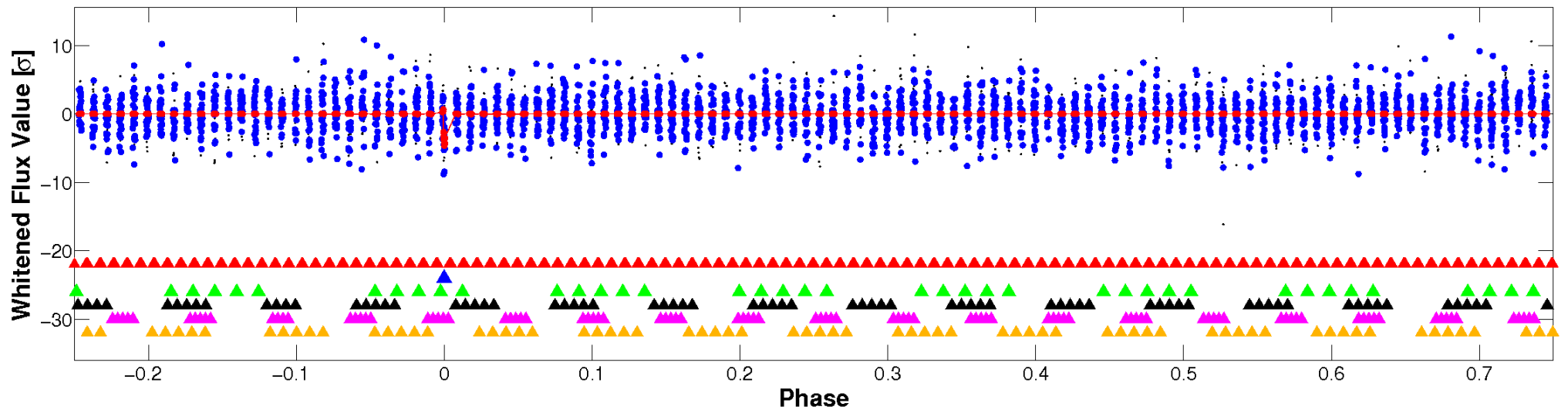


Non-Whitened Vs. Whitened Light Curve

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

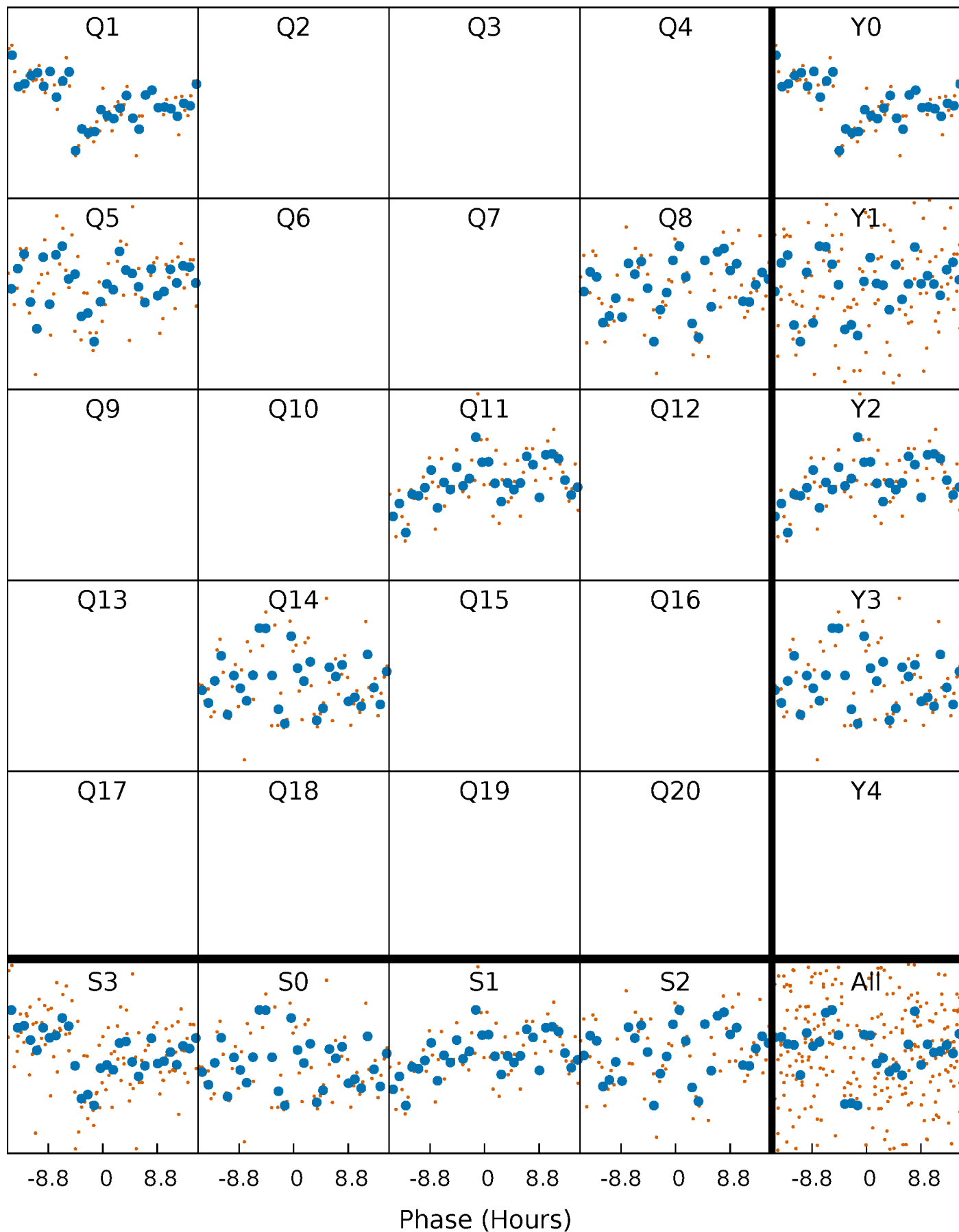


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



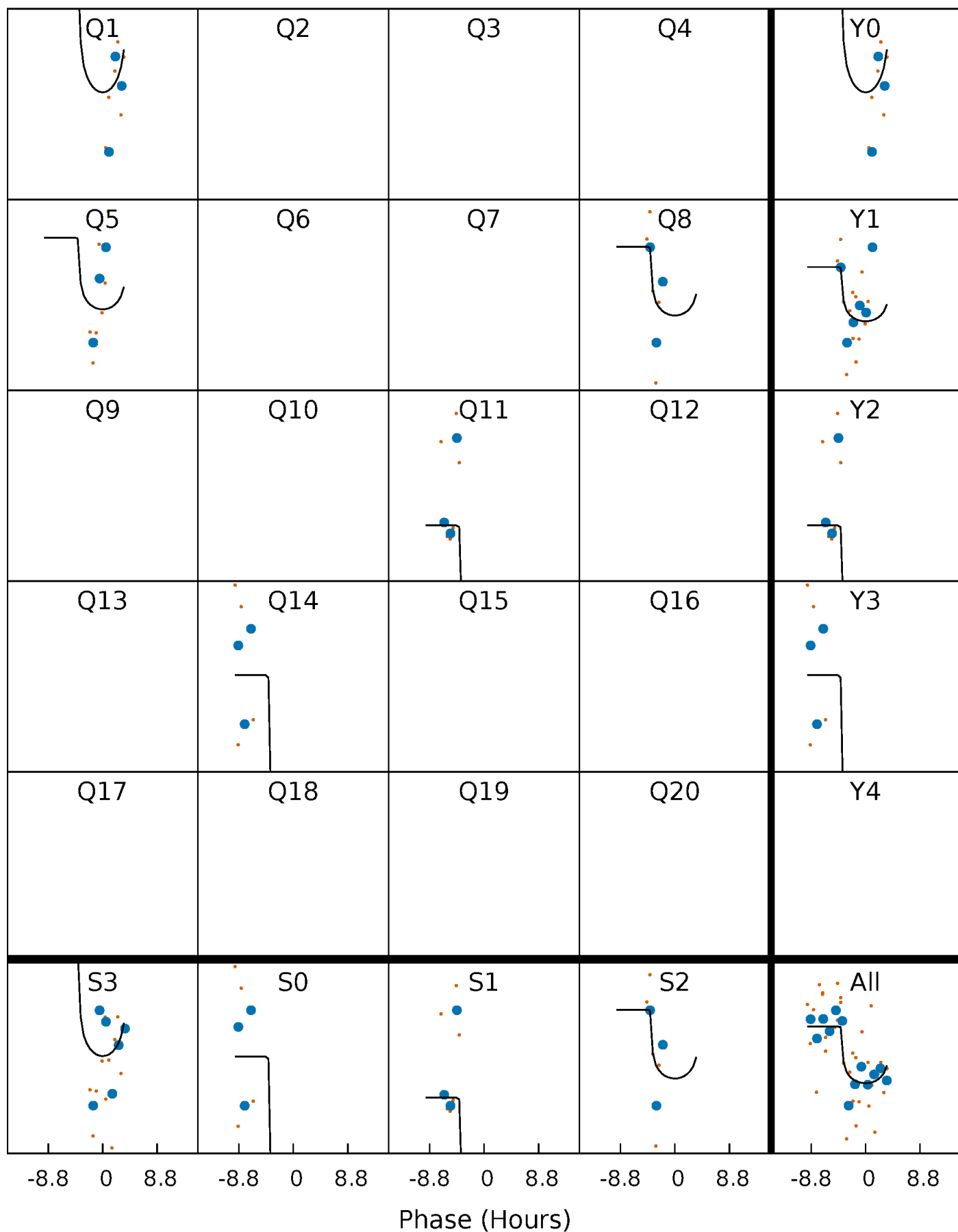
PDC Quarter-Phased Transit Curves

TCE 011086639-02 P=294.531428 Days $T_0=156.992257$ (BKJD)



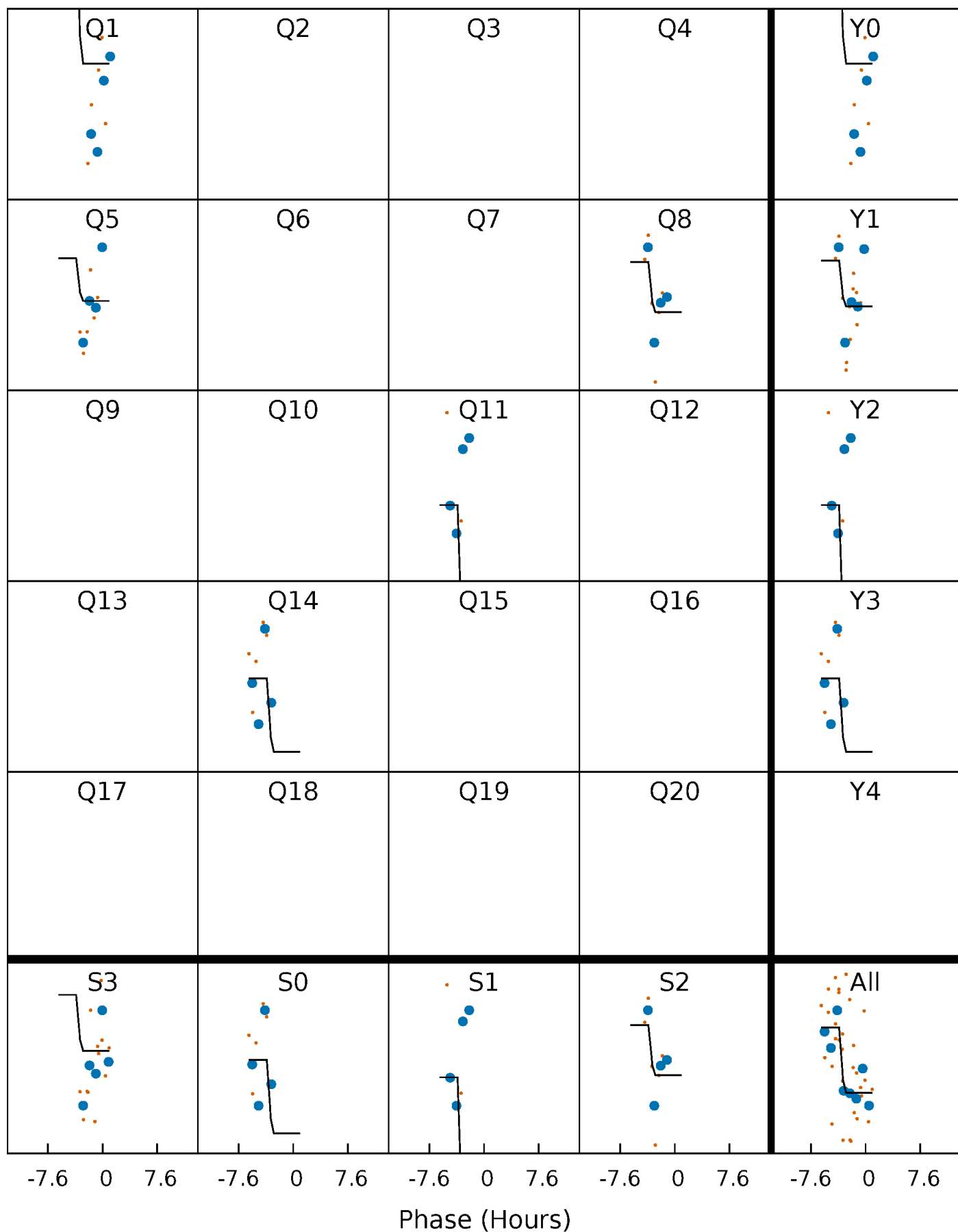
DV Quarter-Phased Transit Curves

TCE 011086639-02 $P=294.531428$ Days $T_0=156.992257$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

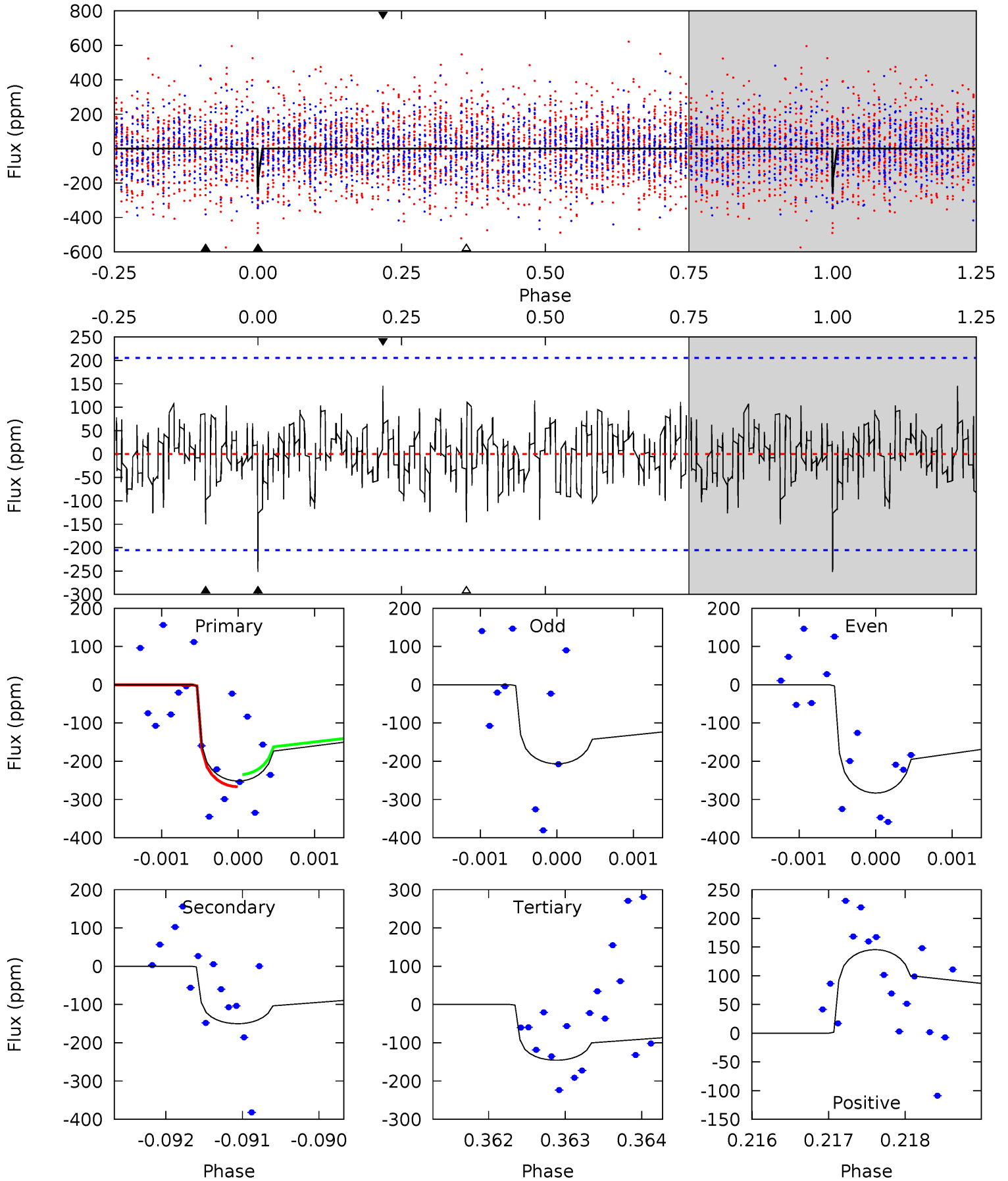
TCE 011086639-02 P=294.470799 Days $T_0=157.098929$ (BKJD)



DV Model-Shift Uniqueness Test

011086639-02, P = 294.531428 Days, E = 156.992257 Days

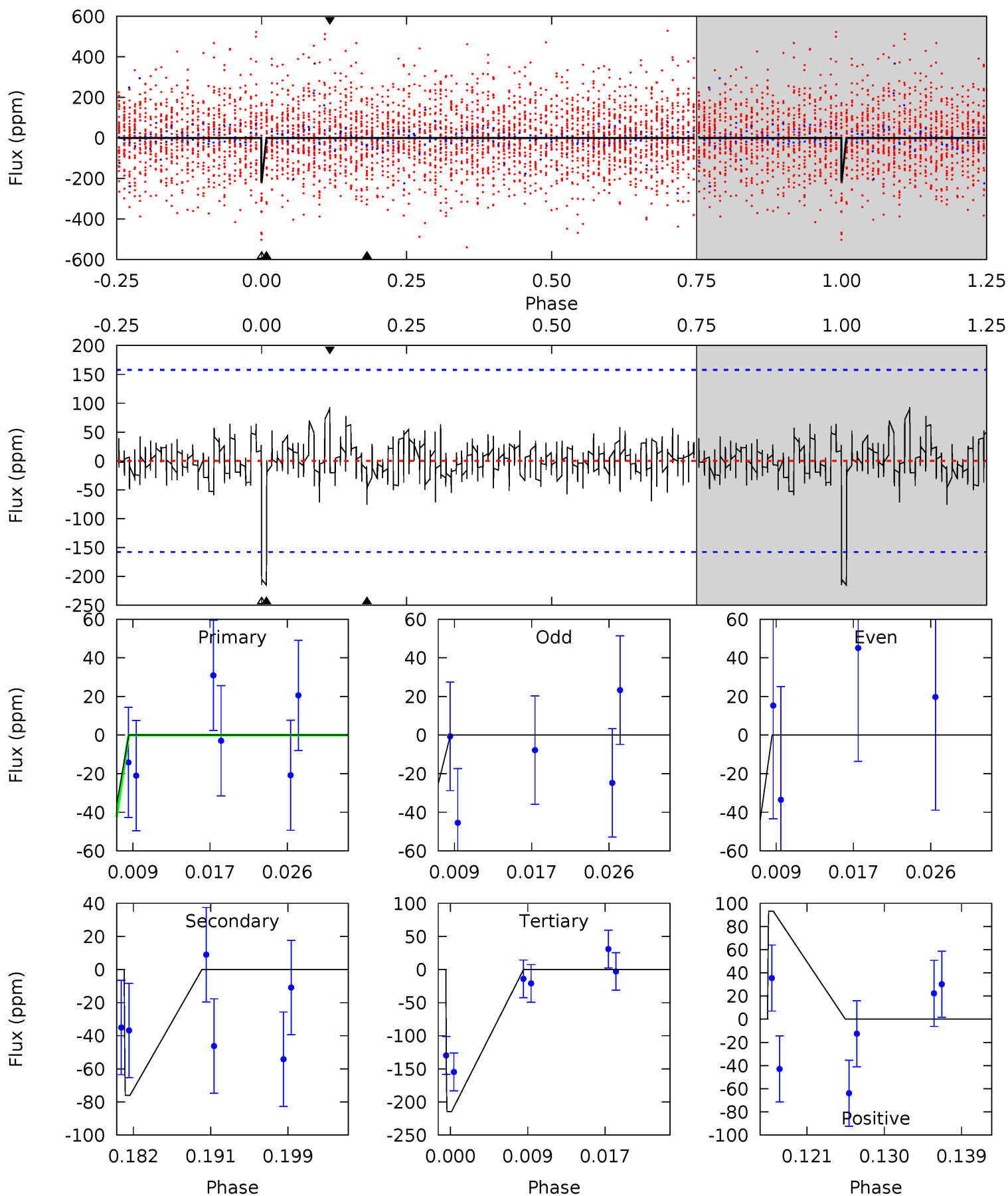
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.67	3.98	3.86	3.85	5.44	3.27	1.28	2.81	2.81	0.12	0.12	1.00	1.01	0.37	0.42



Alt Model-Shift Uniqueness Test

011086639-02, P = 294.470799 Days, E = 157.098929 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.89	2.44	6.87	2.99	5.05	2.62	0.86	0.02	3.90	-4.43	-0.55	1.87	0.69	0.30	0.37



Stellar Parameters For KIC 011086639

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5912^{+146}_{-161}	$4.484^{+0.078}_{-0.195}$	$-0.340^{+0.300}_{-0.300}$	$0.903^{+0.243}_{-0.104}$	$0.906^{+0.109}_{-0.099}$	$1.735^{+0.575}_{-0.849}$
	+2%/-3%	+2%/-4%	+88%/-88%	+27%/-12%	+12%/-11%	+33%/-49%
Source	PHO1	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 011086639-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-150 ± 38	$5.29^{+5.59}_{-3.56}$	383^{+27}_{-18}	3398^{+1617}_{-649}	2125^{+17327}_{-1657}
Alt.	-76 ± 31	$5.39^{+5.86}_{-3.82}$	383^{+25}_{-16}	3029^{+1512}_{-559}	963^{+9790}_{-763}

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

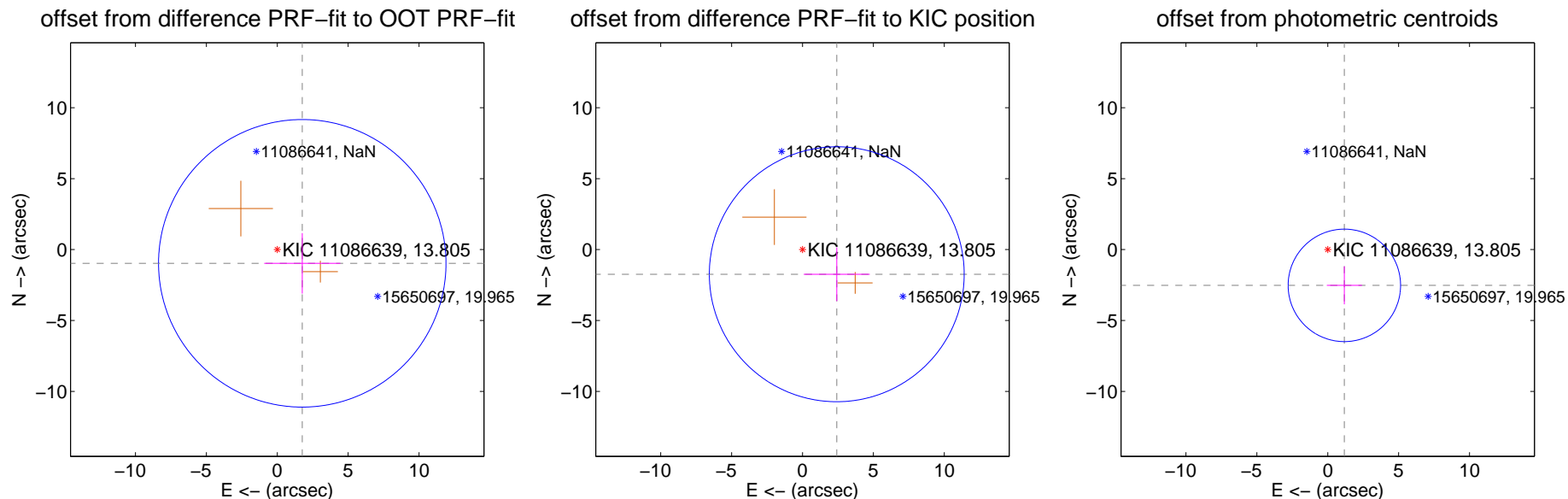
DV Centroid Data

Supplemental centroid analysis for 011086639-02. Kepler magnitude: 13.80. Transit SNR 16.55

There are 0 quarters with good PRF difference image offsets

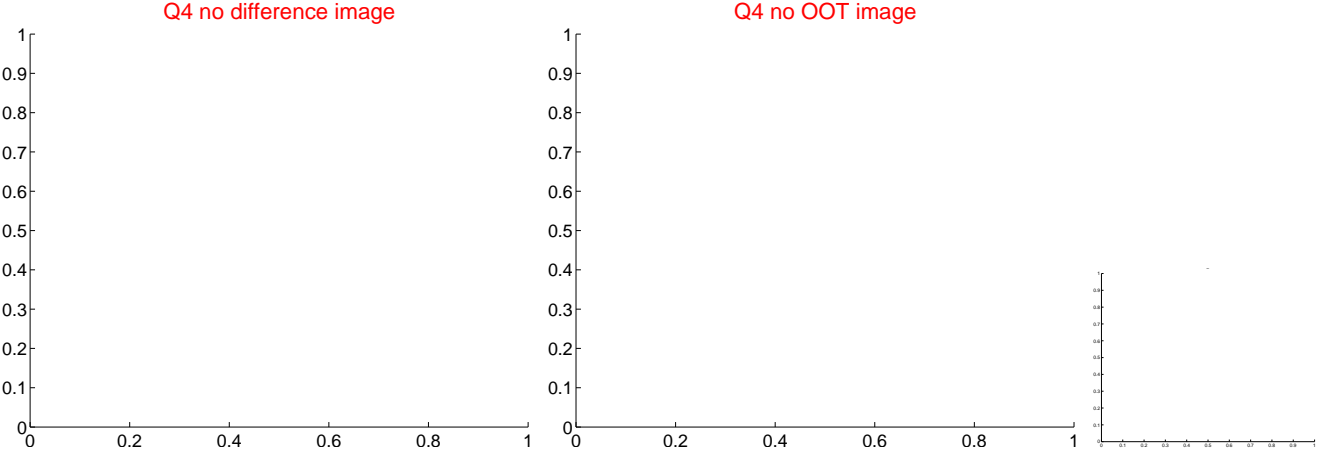
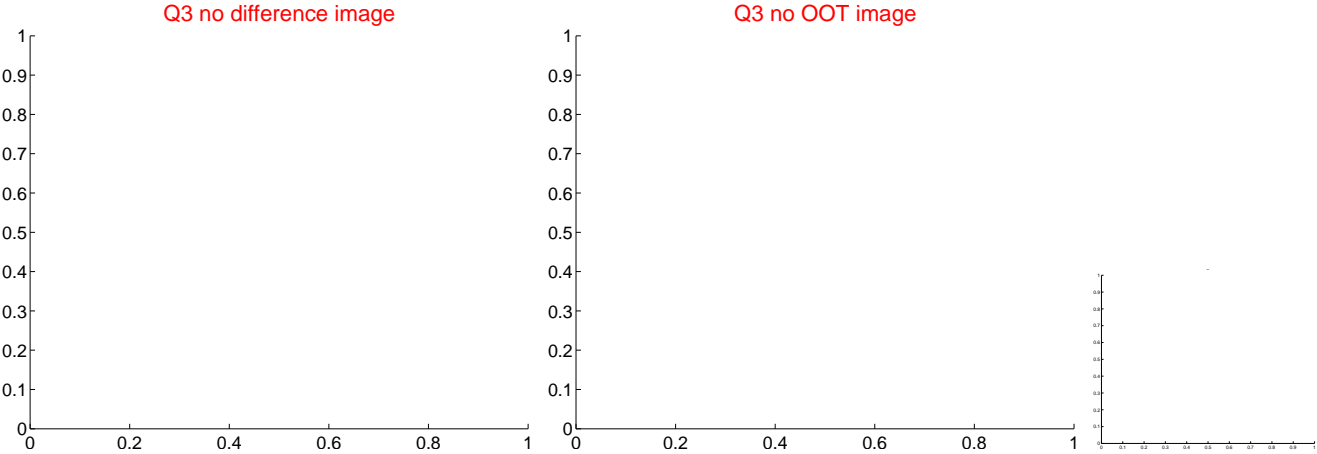
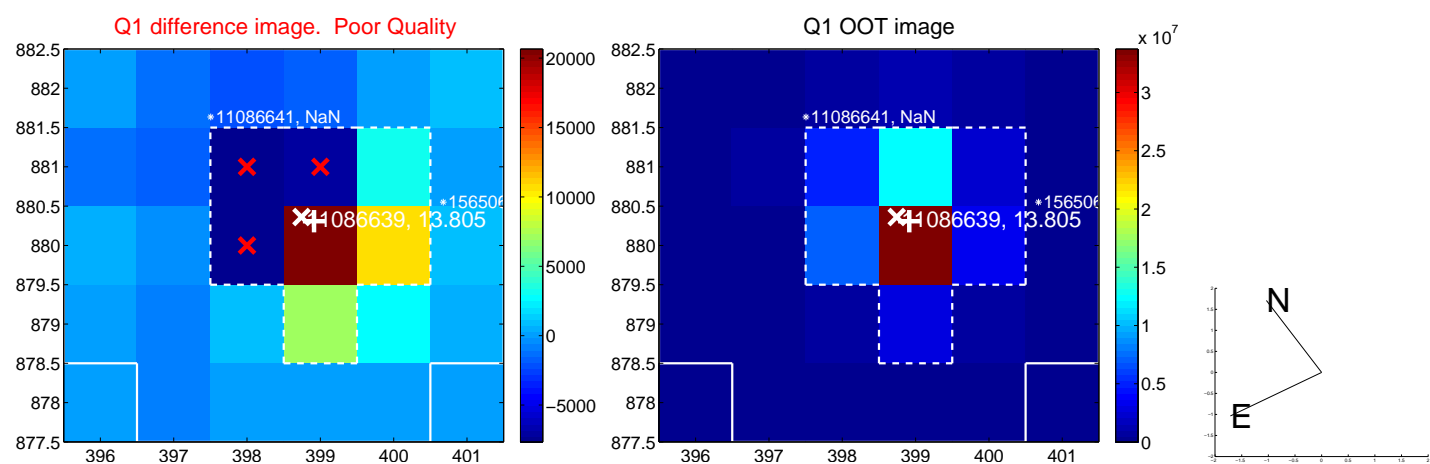
The direct PRF centroid is offset from the target star catalog position by about 1.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.012 ± 3.379	0.60	-1.763 ± 2.686	-0.969 ± 2.129
PRF-fit source offset from KIC position	2.977 ± 2.996	0.99	-2.416 ± 2.328	-1.739 ± 1.896
photometric centroid source offset	2.78 ± 1.32	2.10	-1.17 ± 1.24	-2.52 ± 1.34

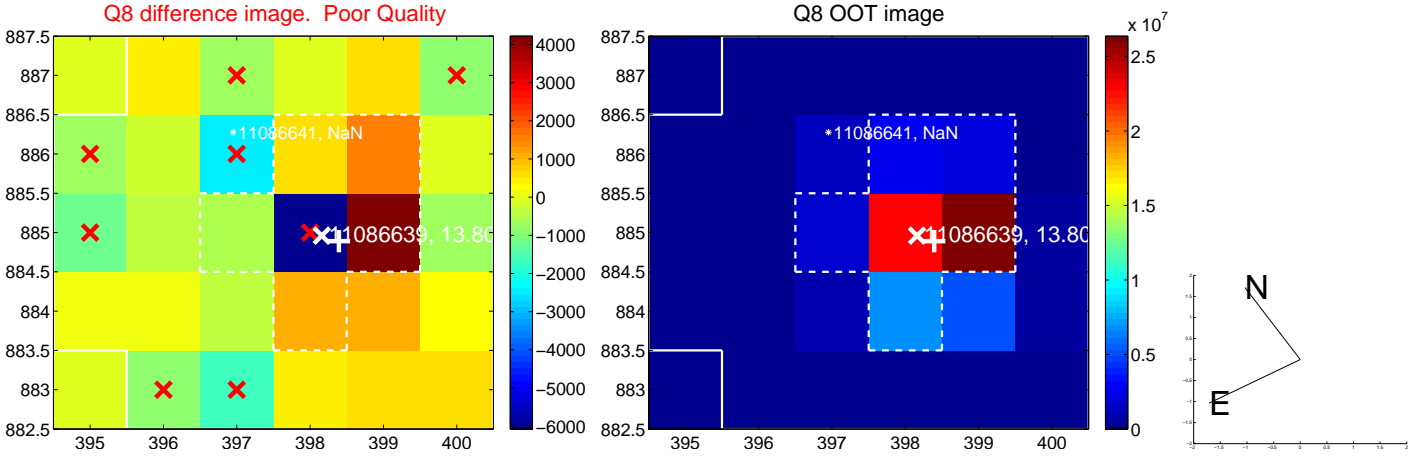
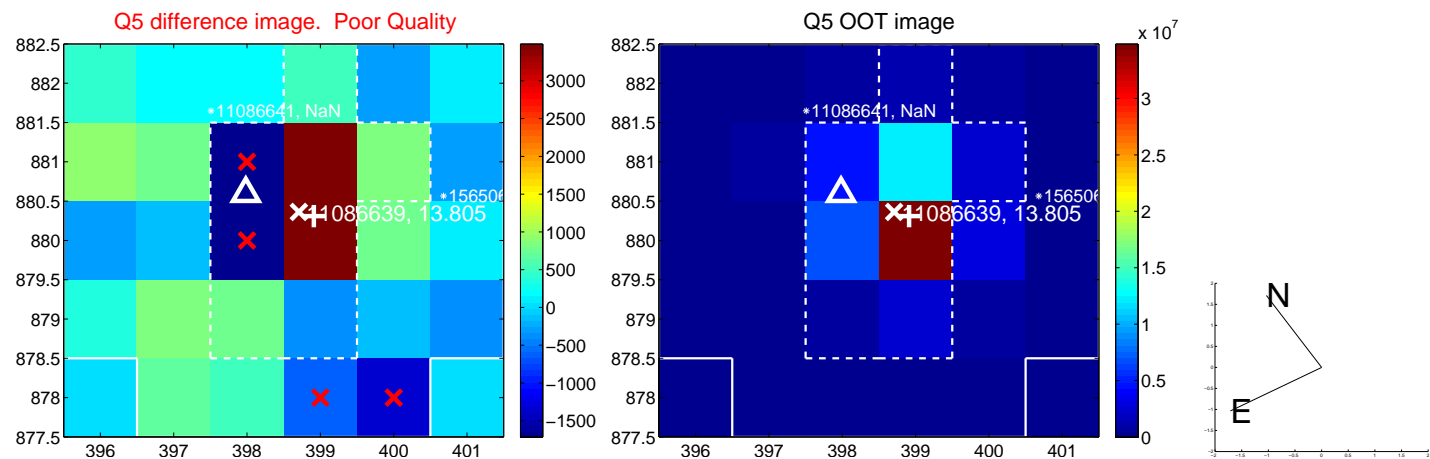


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

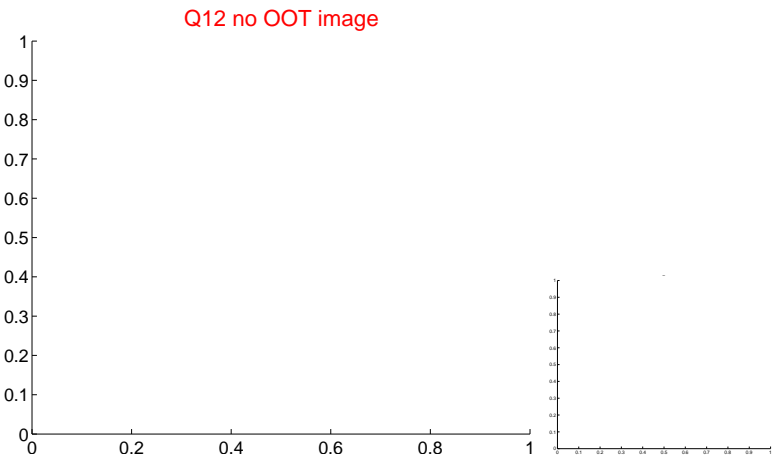
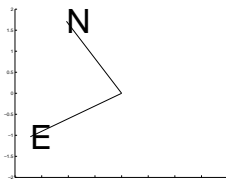
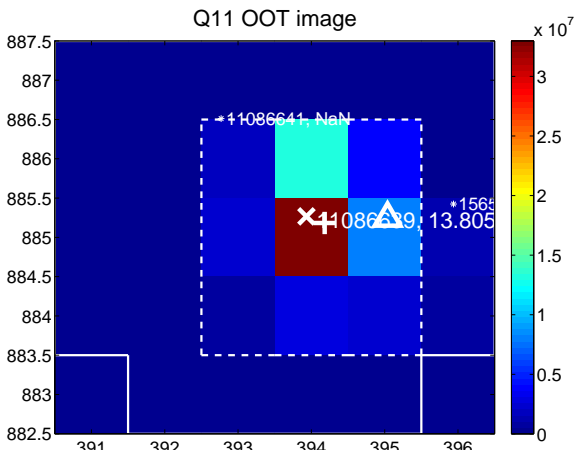
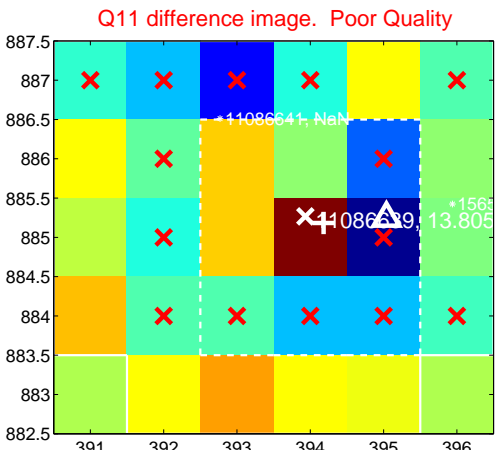
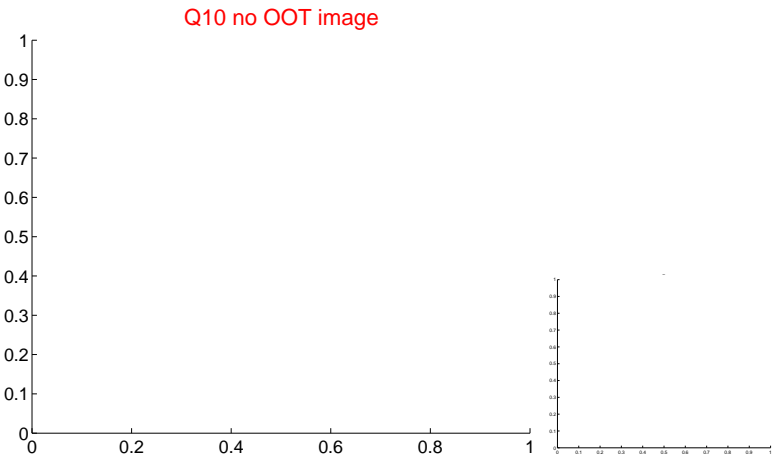
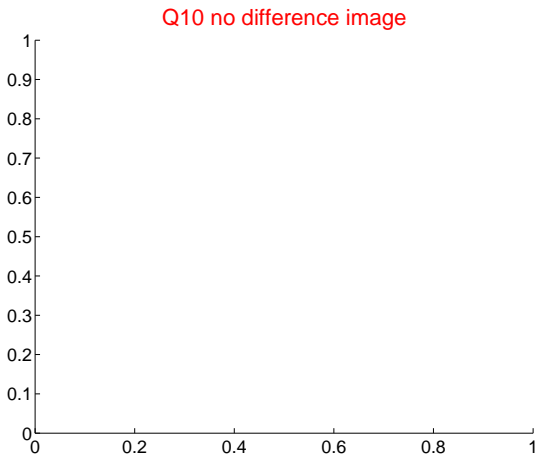
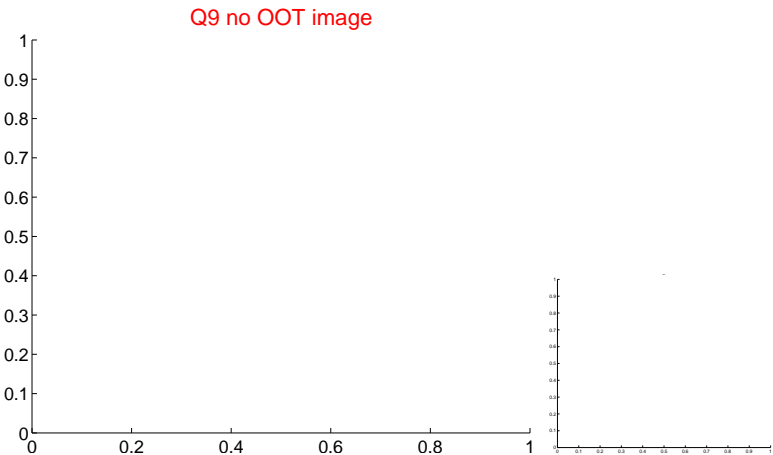
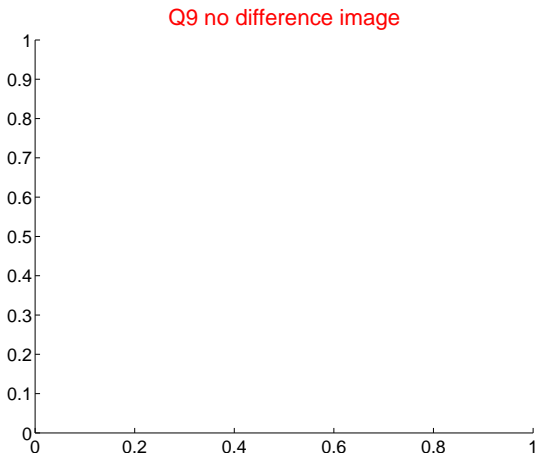
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



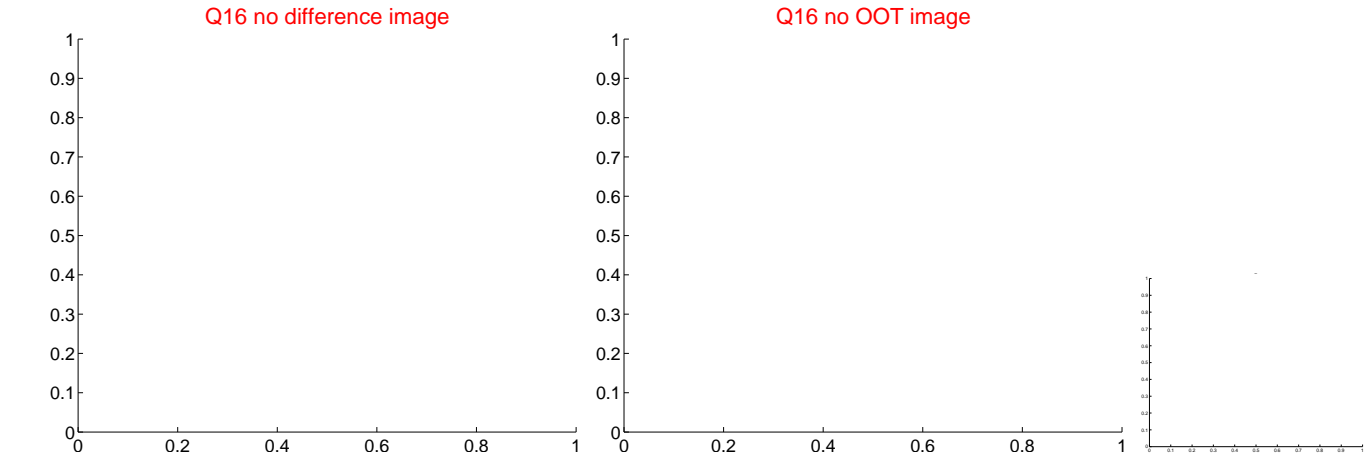
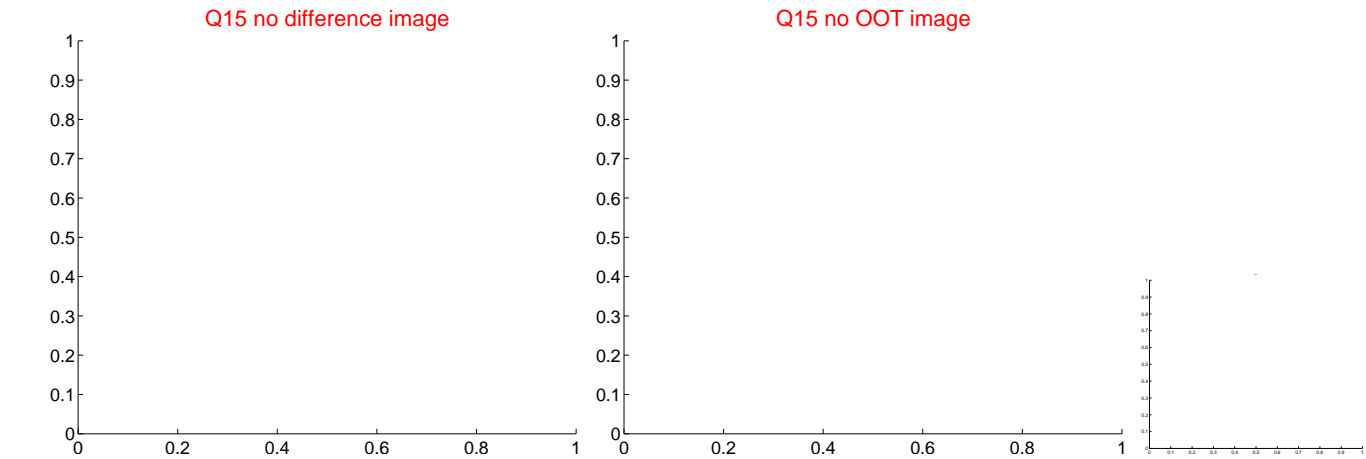
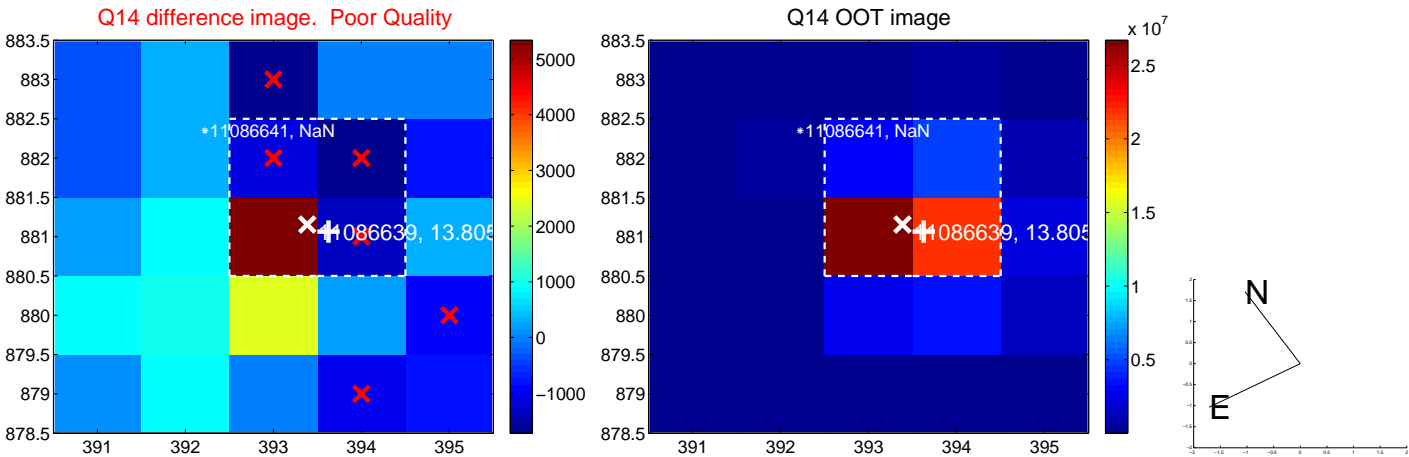
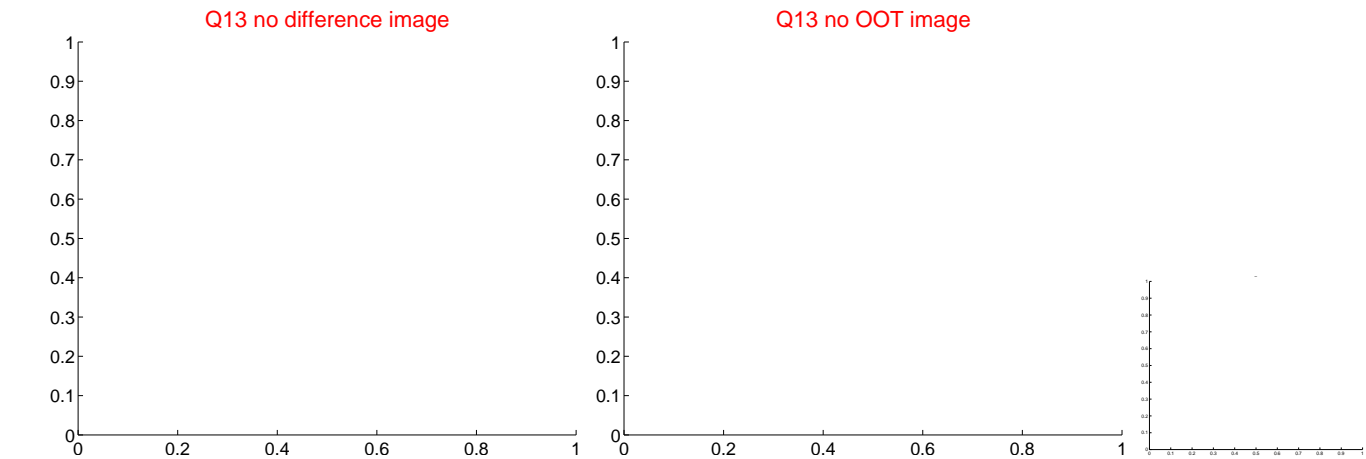
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



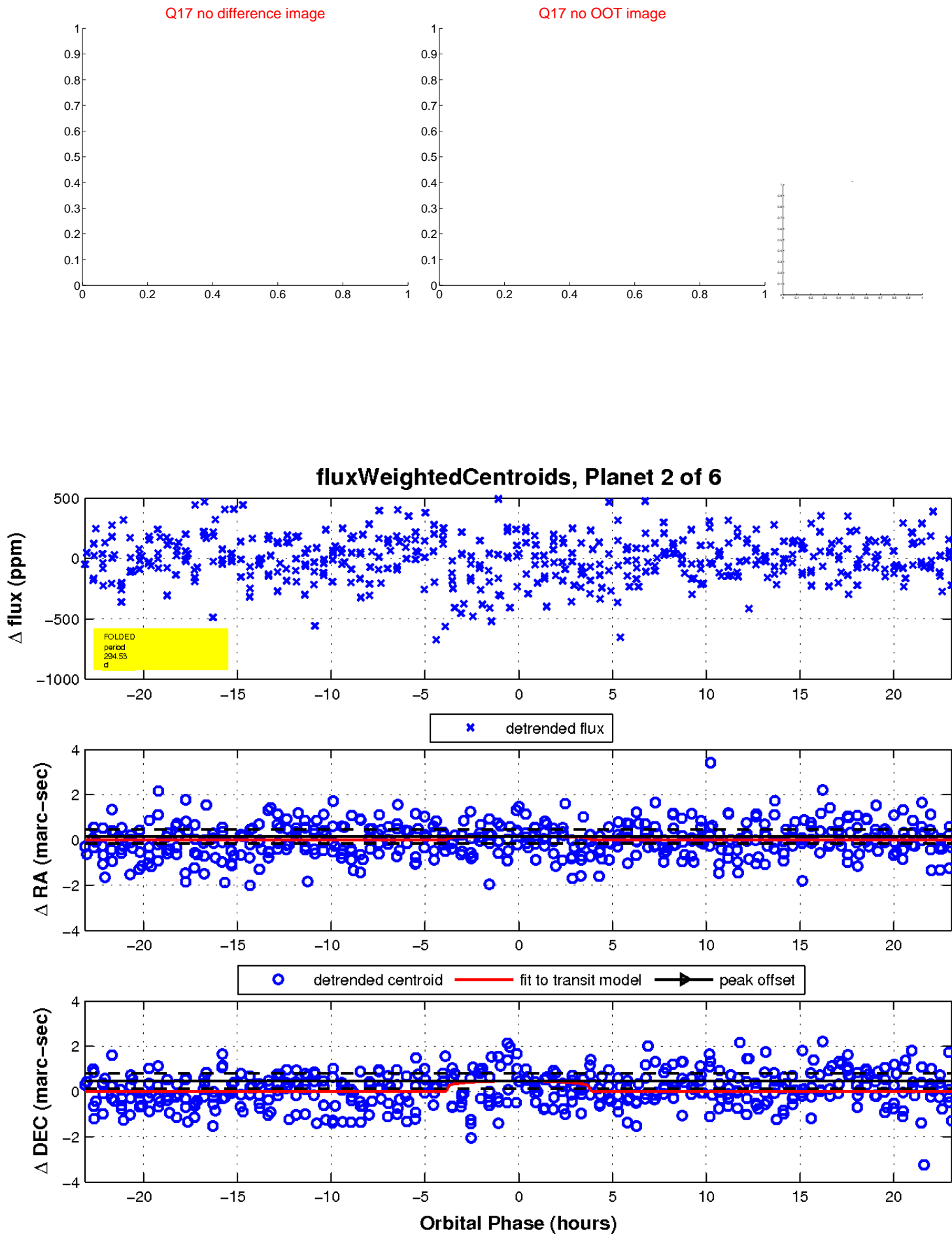
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

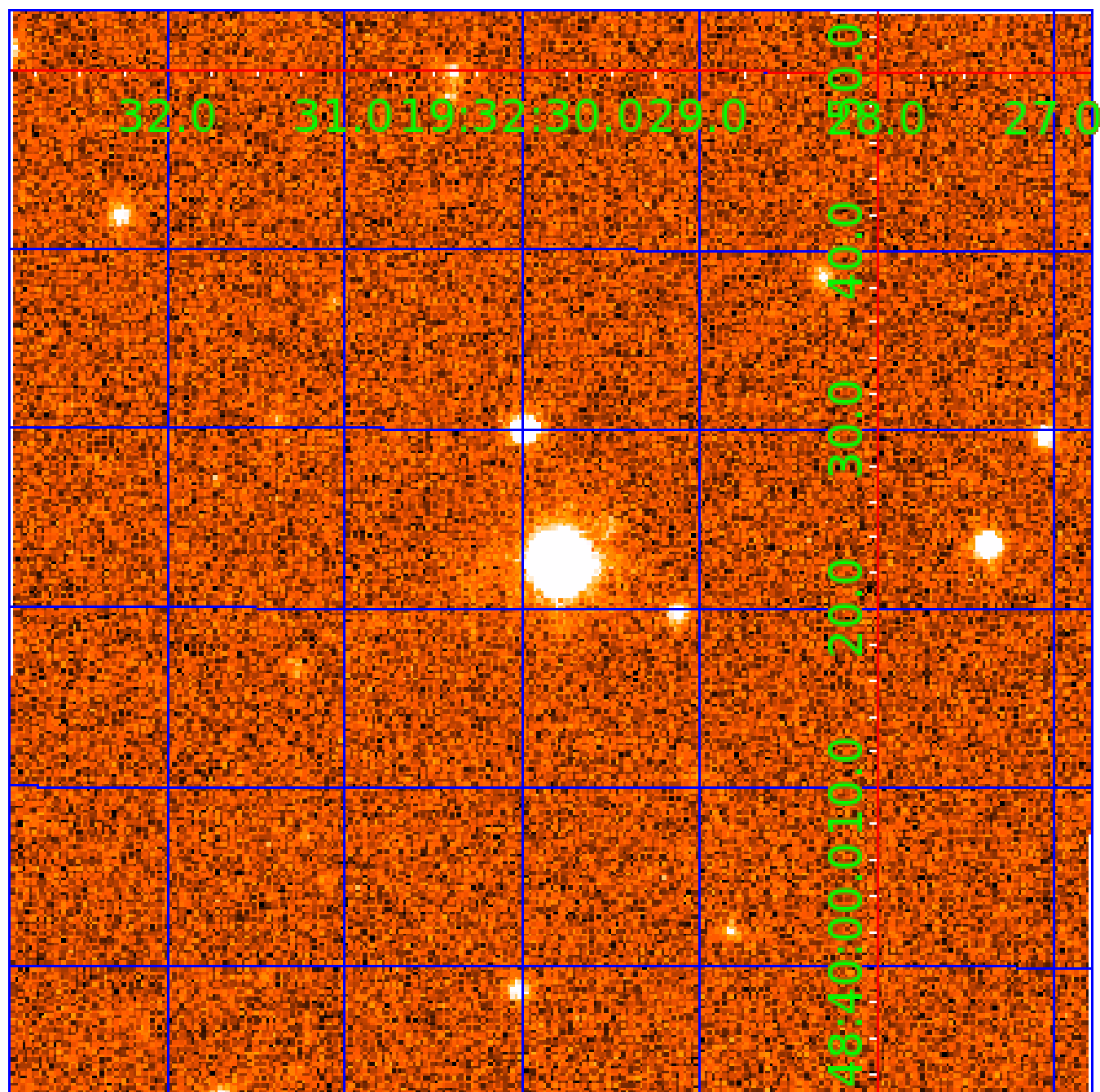


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011086639

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})
011086639-01	OBS	No	2.676655	134.315781	14.3	20.077	7.2	8.9	0.90	5912	0.35	669.12
011086639-02	OBS	No	294.531428	156.992257	247.3	7.712	17.3	16.5	0.90	5912	1.44	1.27
011086639-03	OBS	No	36.272190	160.645379	337.0	1.205	15.2	15.9	0.90	5912	1.78	20.71
011086639-04	OBS	No	19.761860	139.546505	330.5	0.886	13.8	12.0	0.90	5912	1.70	46.54
011086639-05	OBS	No	15.448184	142.372145	98.5	5.319	12.8	9.7	0.90	5912	1.05	64.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011086639-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
011086639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_MEAS
011086639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
011086639-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011086639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS—CENT_UNCERTAIN

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

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

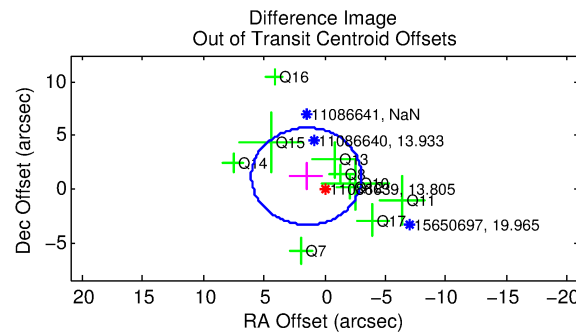
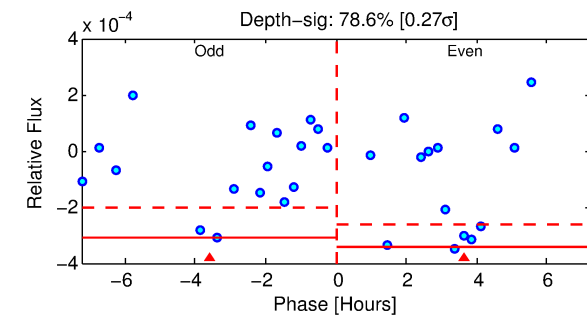
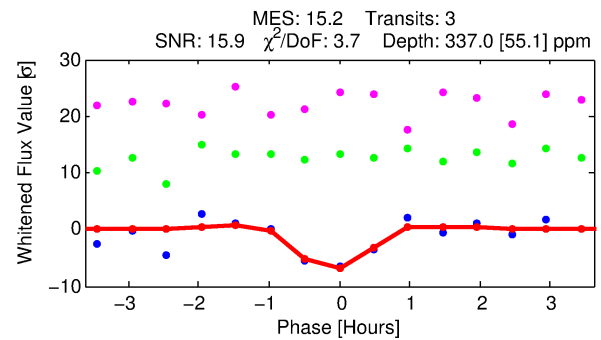
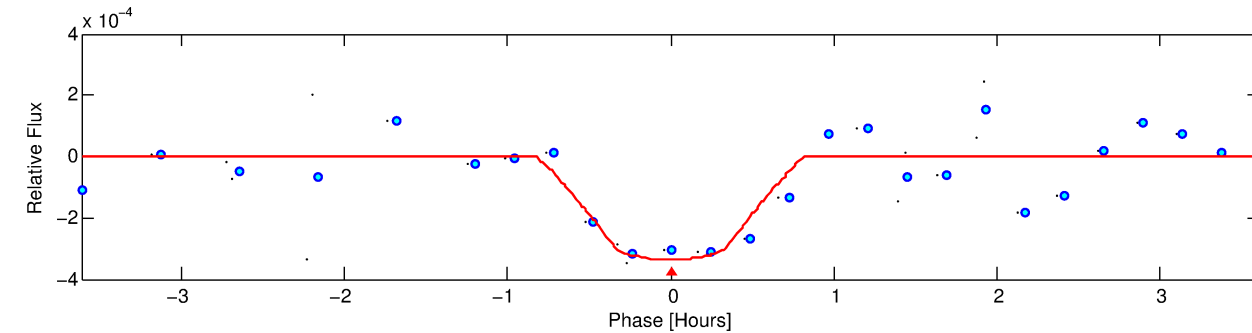
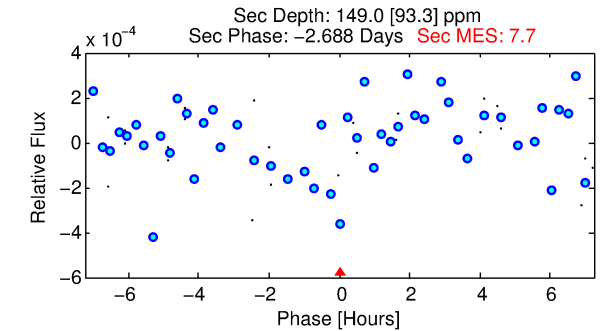
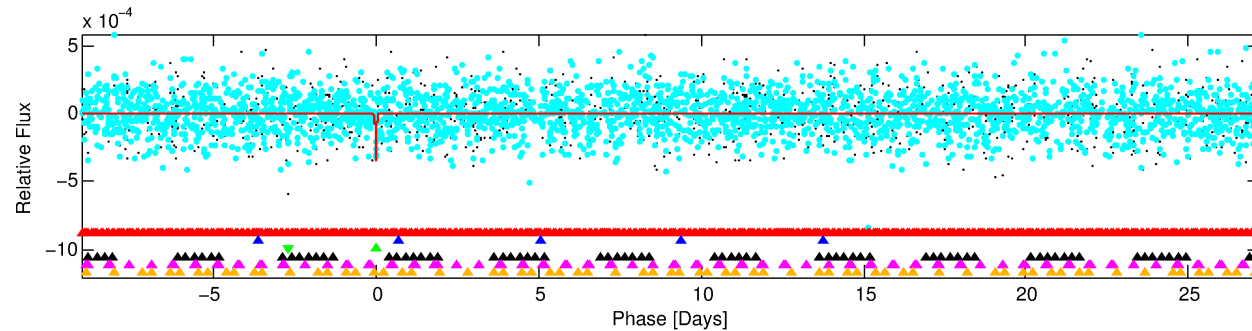
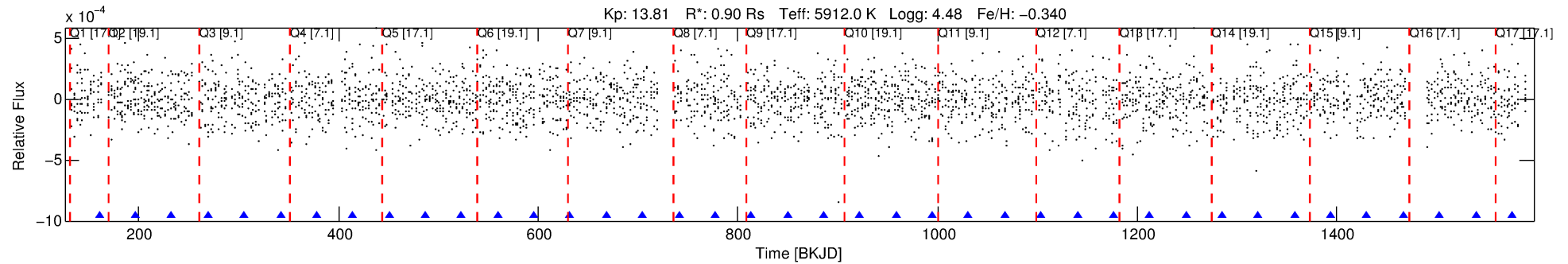
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011086639-03

No Significant Match Found

DV One-Page Summary

KIC: 11086639 Candidate: 3 of 6 Period: 36.272 d



DV Fit Results:

Period = 36.27219 [0.00069] d
Epoch = 160.6454 [0.0128] BKJD
Rp/R* = 0.0181 [0.0557]
a/R* = 170.15 [2583.53]
b = 0.70 [11.11]
Seff = 20.71 [7.57]
Teq = 544 [50] K
Rp = 1.78 [5.51] Re
a = 0.2076 [0.0485] AU
Ag = 1112.54 [6902.28] [0.16 σ]
Teffp = 4857 [7523] K [0.57 σ]

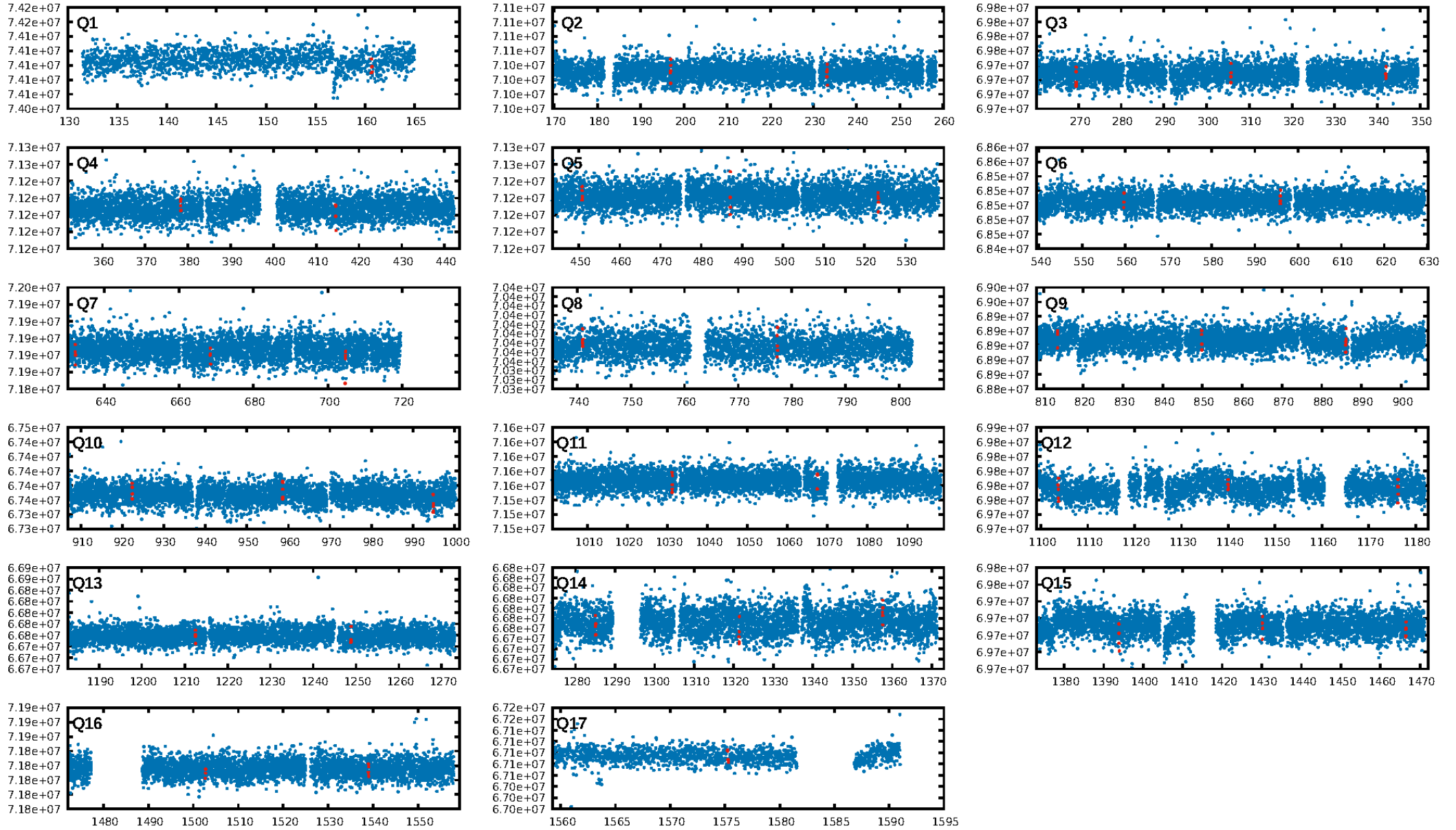
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [192.39 σ]
LongPeriod-sig: 100.0% [794.13 σ]
ModelChiSquare2-sig: 69.0%
ModelChiSquareGof-sig: 96.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.176
Centroid-sig: 41.1%
Centroid-so: 0.441 arcsec [0.59 σ]
OotOffset-rm: 1.912 arcsec [1.26 σ]
OotOffset-st: 2/3/3/2 [10]
KicOffset-rm: 0.935 arcsec [0.71 σ]
KicOffset-st: 2/3/3/2 [10]
DiffImageQuality-fgm: 0.00 [0/10]
DiffImageOverlap-fno: 0.88 [15/17]

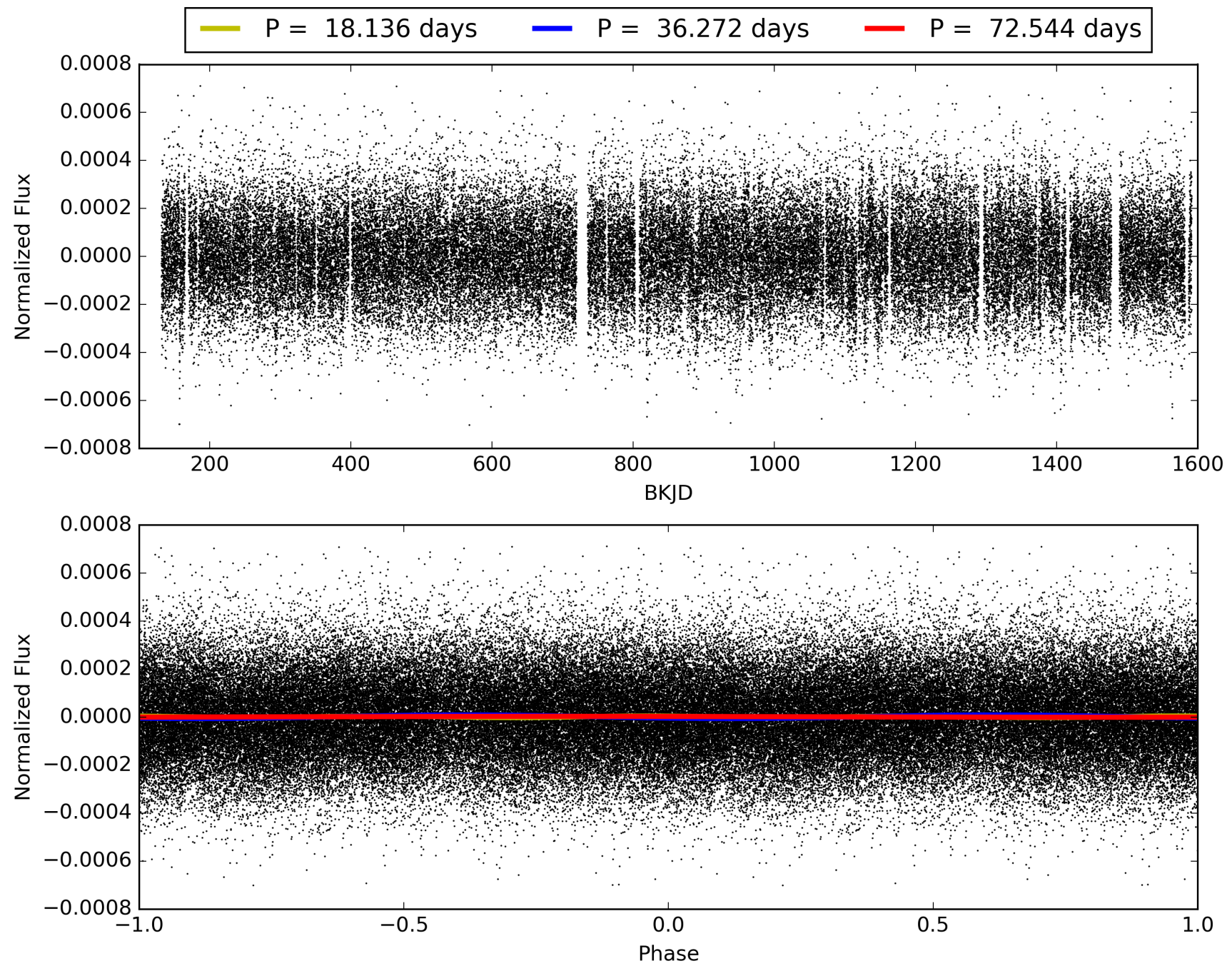
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:55:38 Z

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

TCE 011086639-03, PDC Light Curves

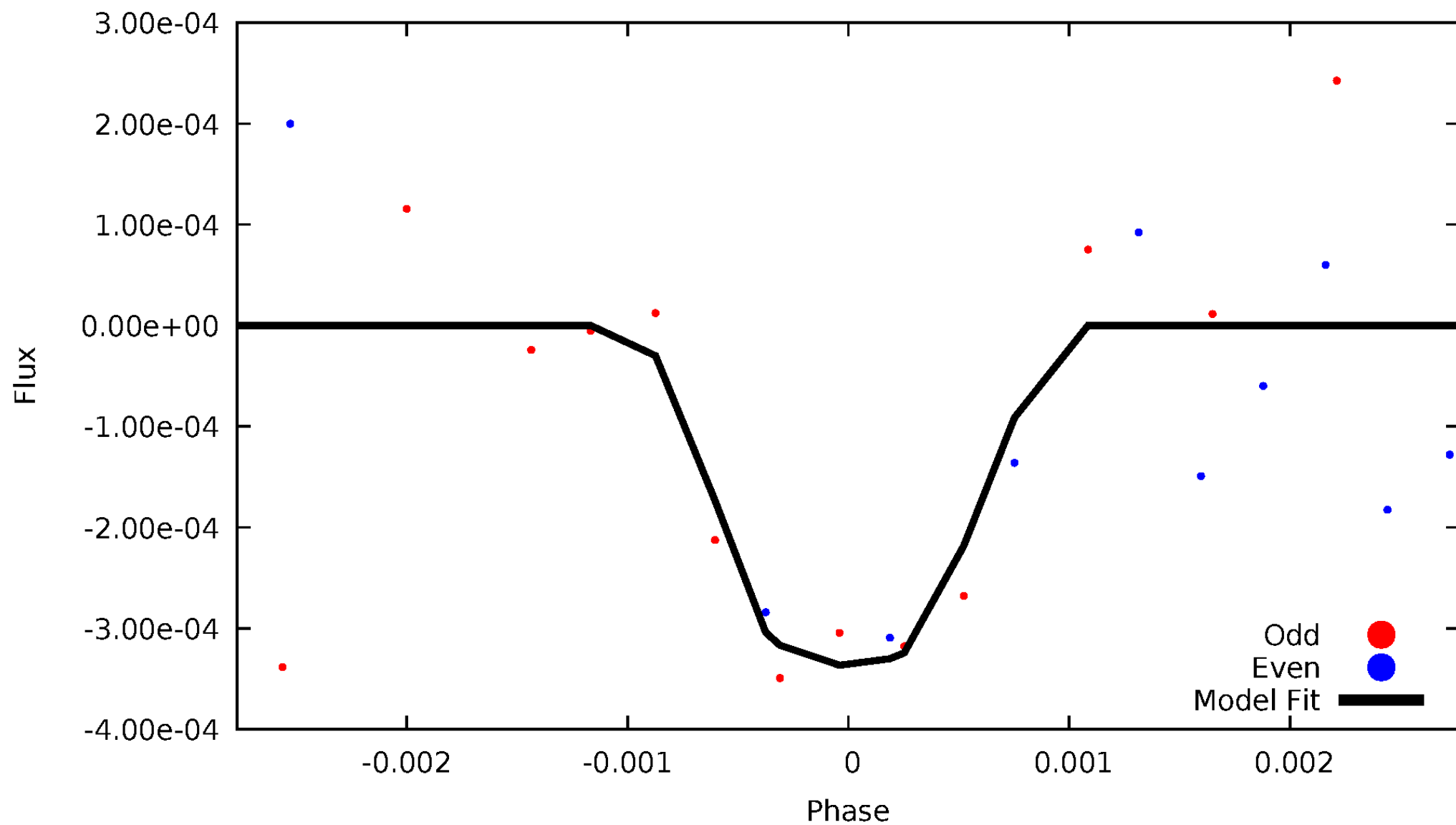


TCE 011086639-03



DV Odd/Even

TCE 011086639-03

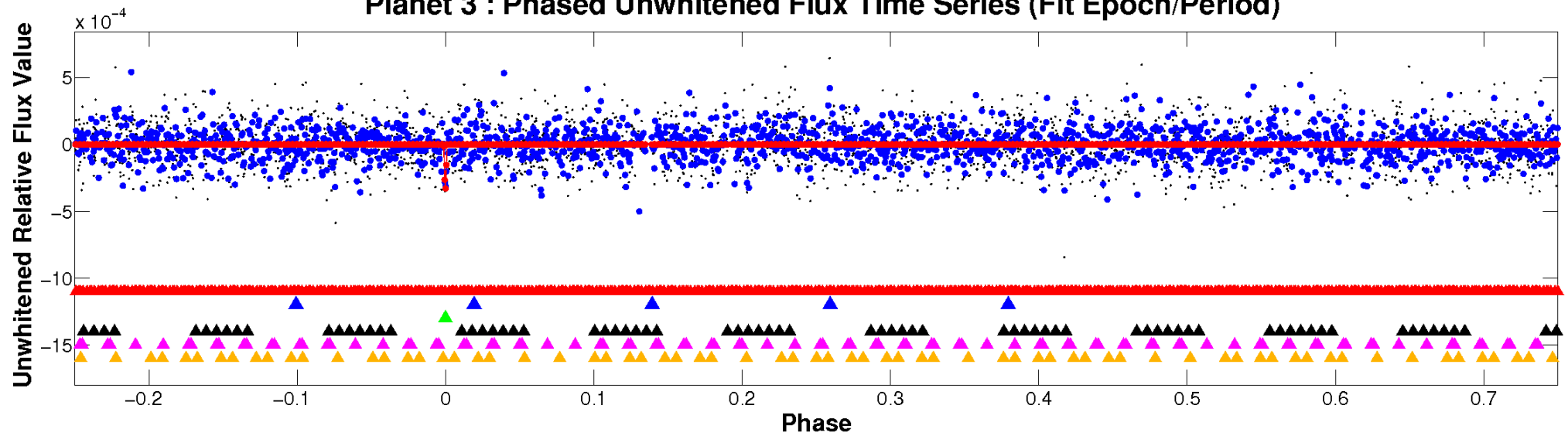


ALT Odd/Even

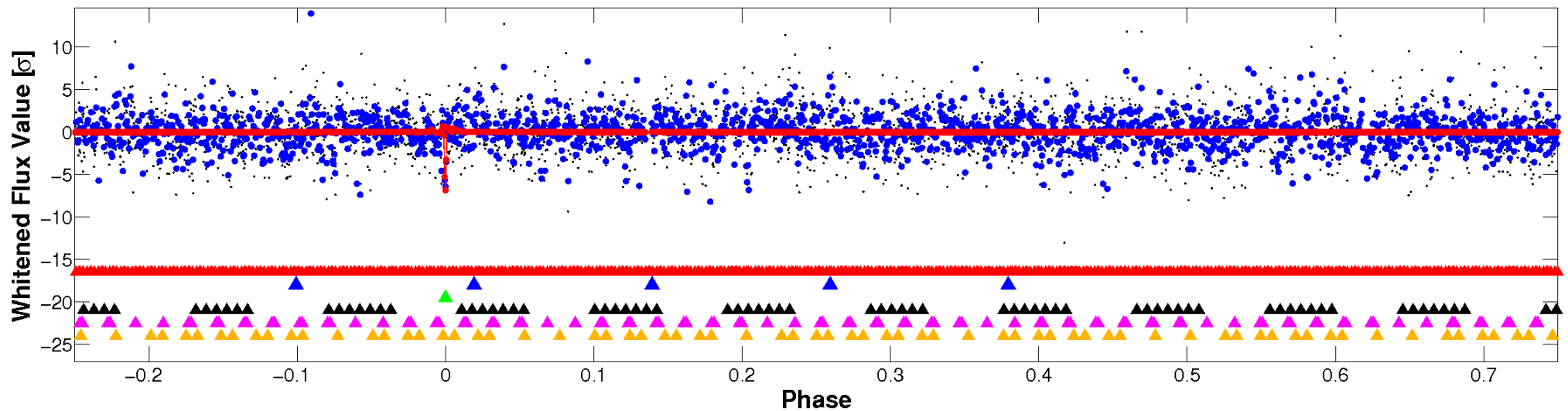
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

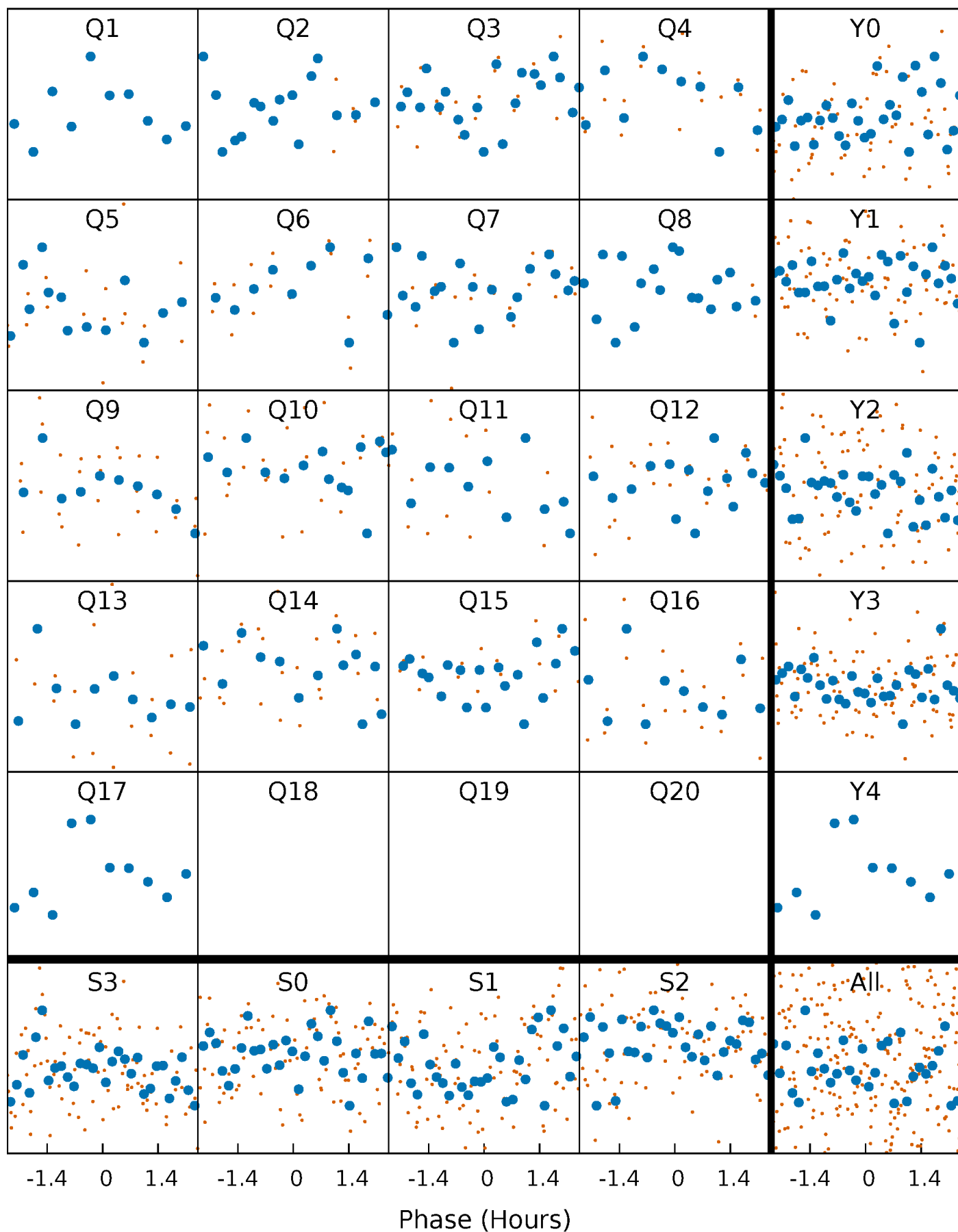


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



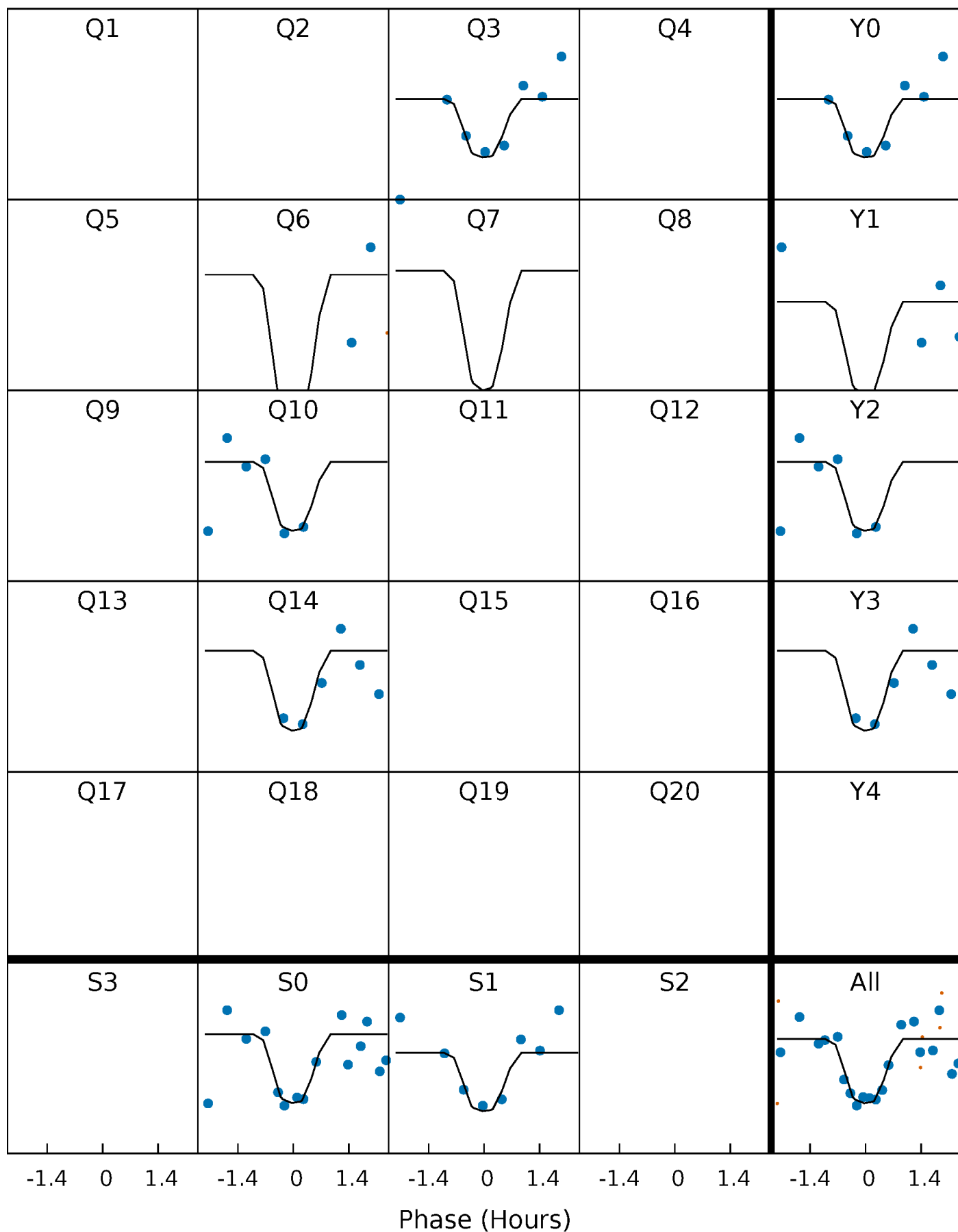
PDC Quarter-Phased Transit Curves

TCE 011086639-03 P= 36.272190 Days $T_0=160.645379$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 011086639-03 P= 36.272190 Days $T_0=160.645379$ (BKJD)

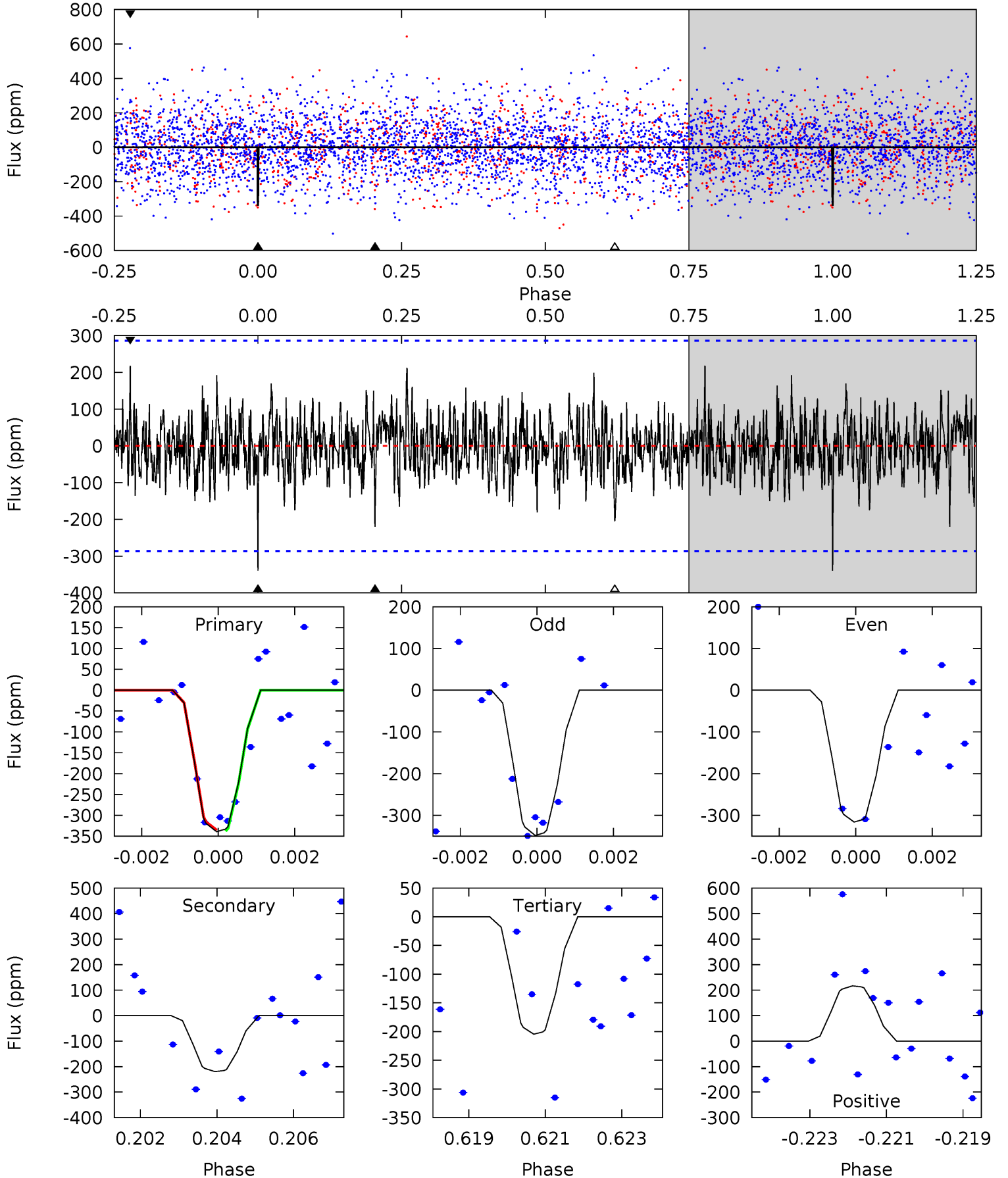


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

011086639-03, P = 36.272190 Days, E = 124.373189 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.33	4.09	3.81	4.04	5.33	3.10	1.16	2.51	2.29	0.28	0.05	0.29	0.98	0.39	0.02



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 011086639

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5912^{+146}_{-161}	$4.484^{+0.078}_{-0.195}$	$-0.340^{+0.300}_{-0.300}$	$0.903^{+0.243}_{-0.104}$	$0.906^{+0.109}_{-0.099}$	$1.735^{+0.575}_{-0.849}$
	+2%/-3%	+2%/-4%	+88%/-88%	+27%/-12%	+12%/-11%	+33%/-49%
Source	PHO1	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 011086639-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-219 ± 54	$4.59^{+4.31}_{-3.23}$	770^{+53}_{-38}	3810^{+2216}_{-756}	268^{+2368}_{-204}
Alt.	N/A	N/A	N/A	N/A	N/A

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

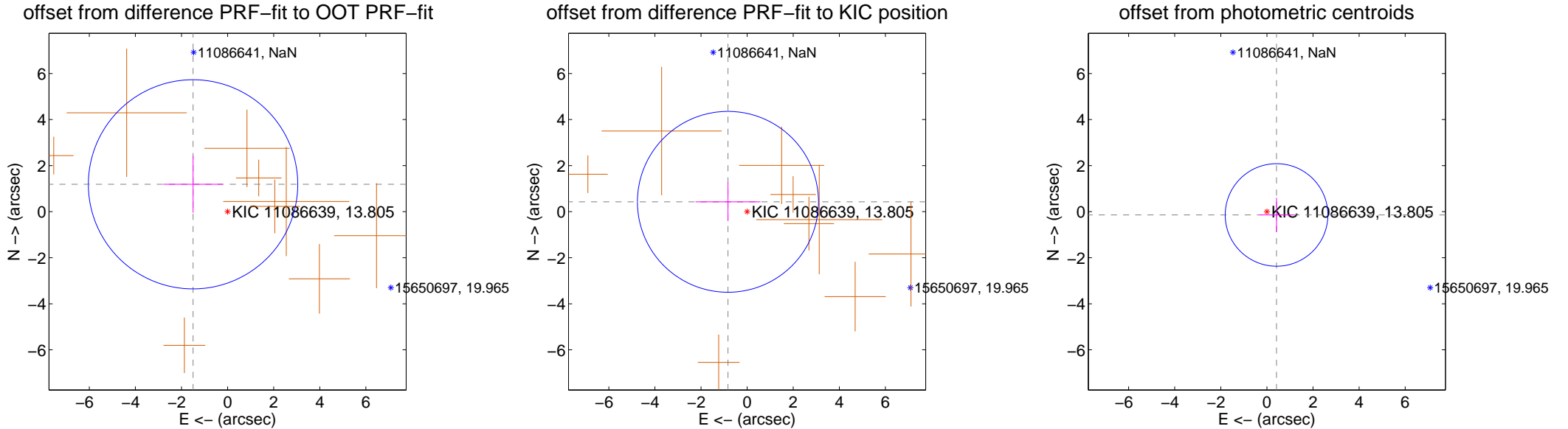
DV Centroid Data

Supplemental centroid analysis for 011086639-03. Kepler magnitude: 13.80. Transit SNR 15.86

There are 0 quarters with good PRF difference image offsets

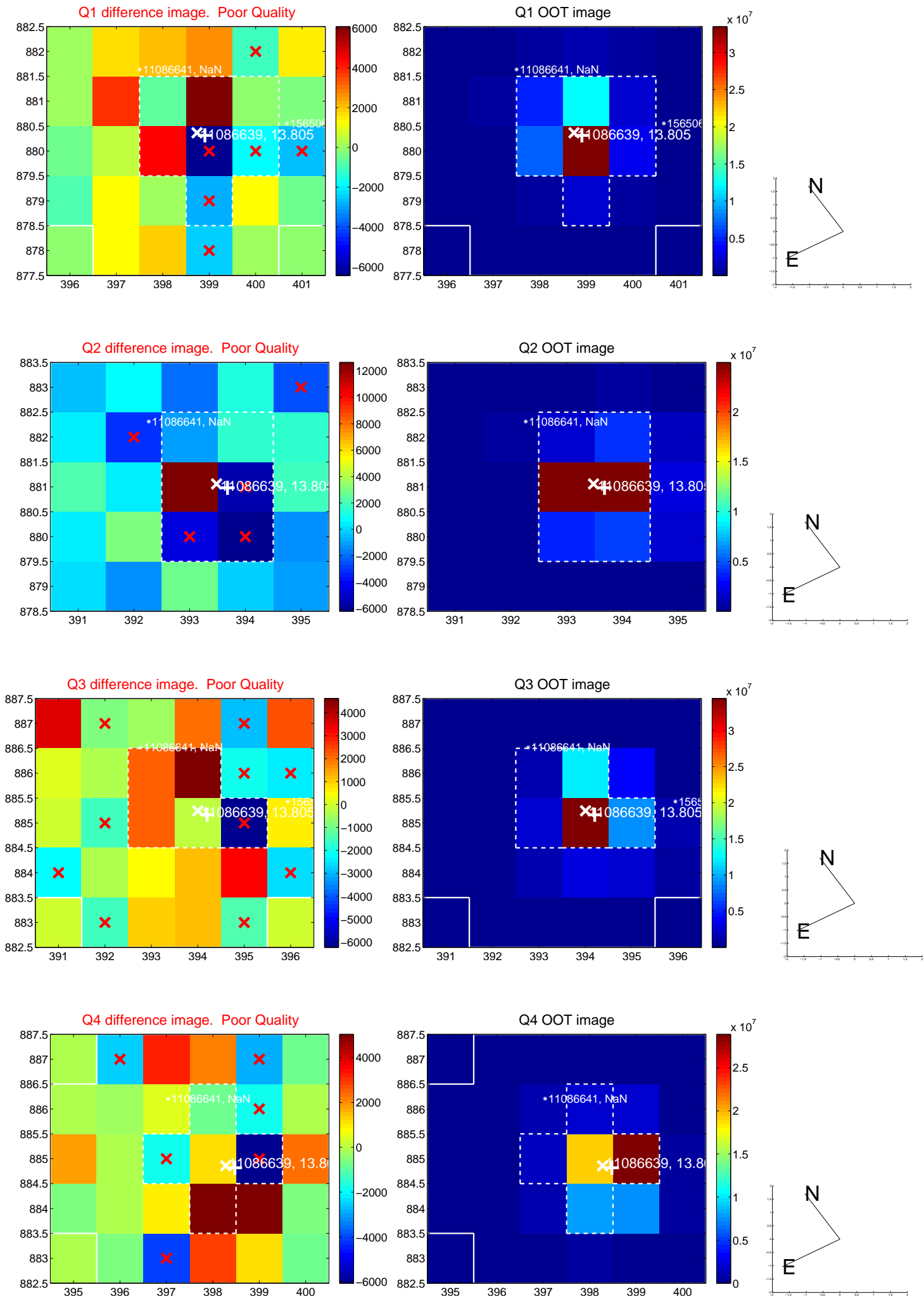
The direct PRF centroid is offset from the target star catalog position by about 1.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.912 ± 1.514	1.26	1.499 ± 1.288	1.188 ± 1.232
PRF-fit source offset from KIC position	0.935 ± 1.309	0.71	0.831 ± 1.407	0.428 ± 0.840
photometric centroid source offset	0.44 ± 0.74	0.59	-0.42 ± 0.74	-0.14 ± 0.75

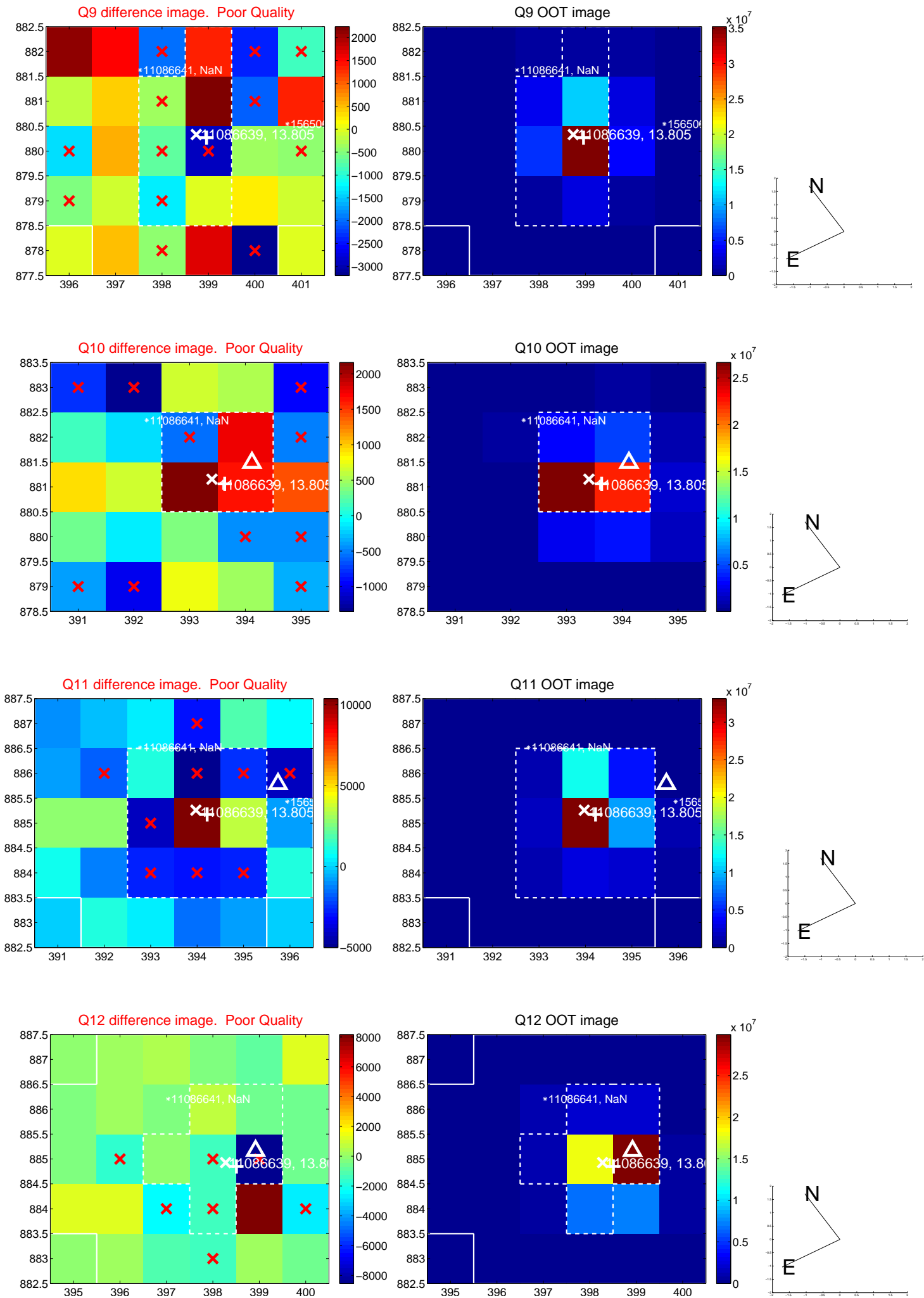


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

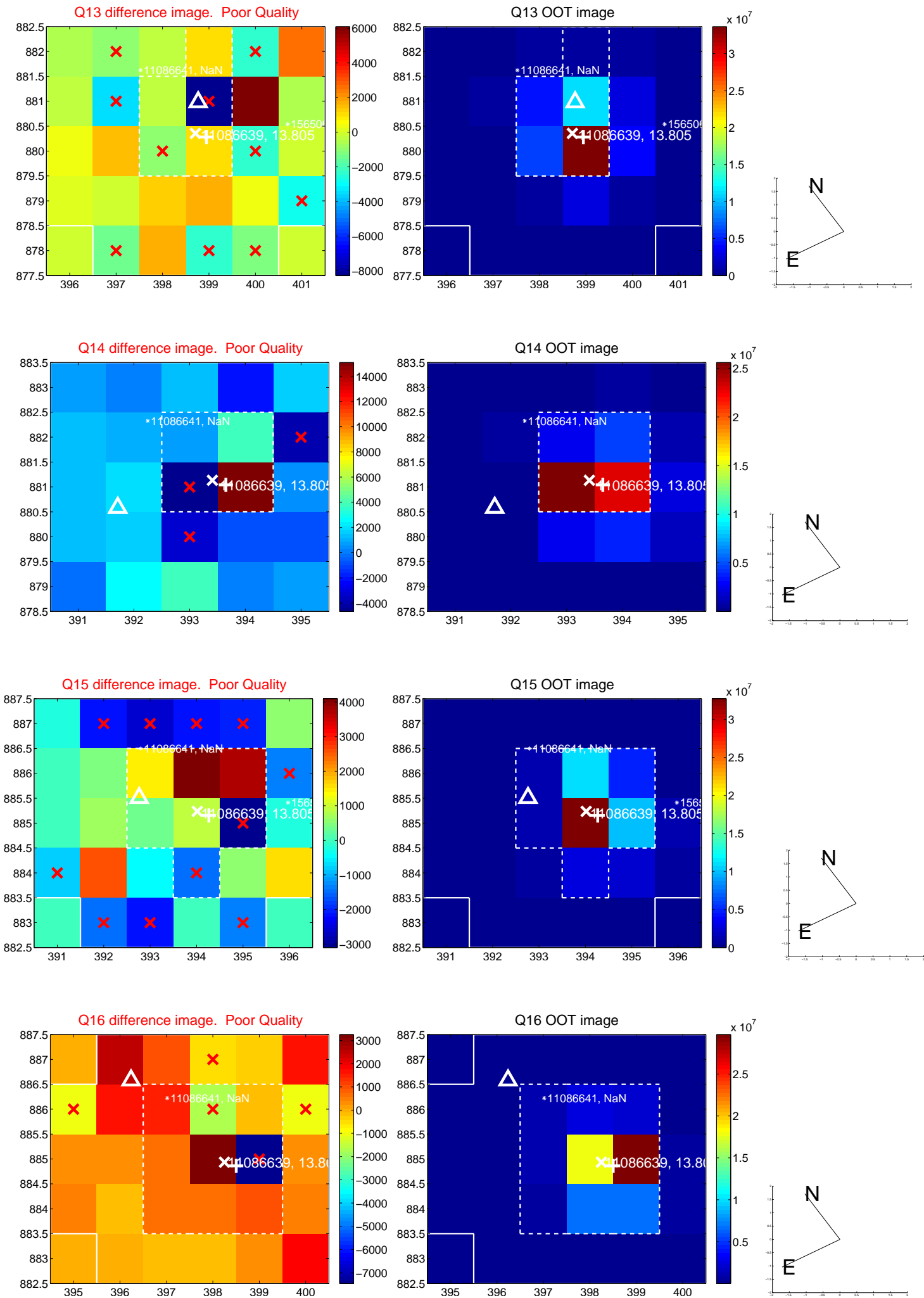
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



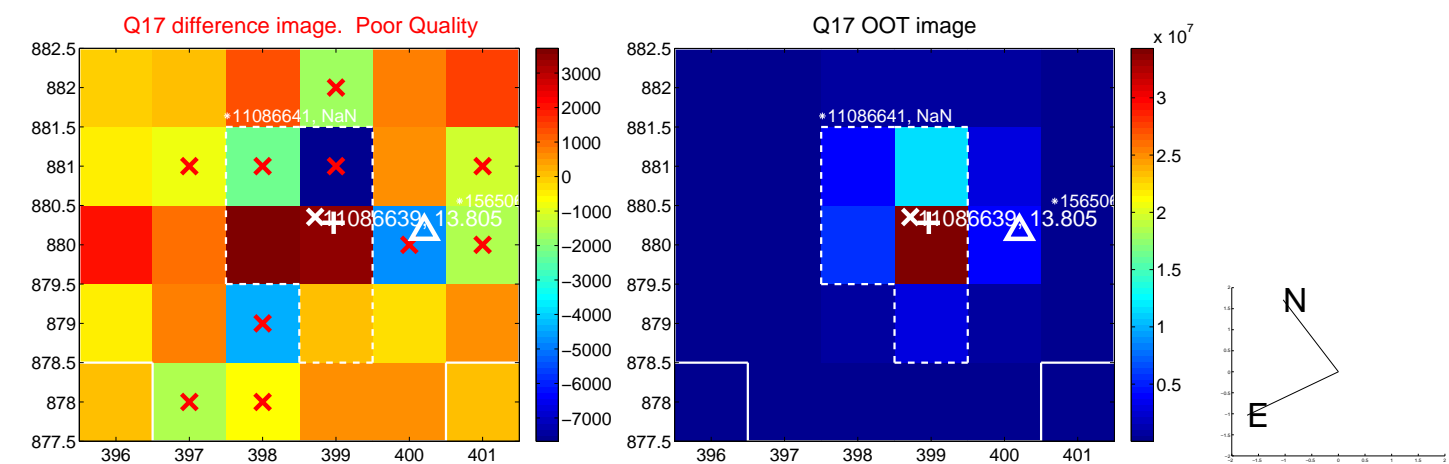
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



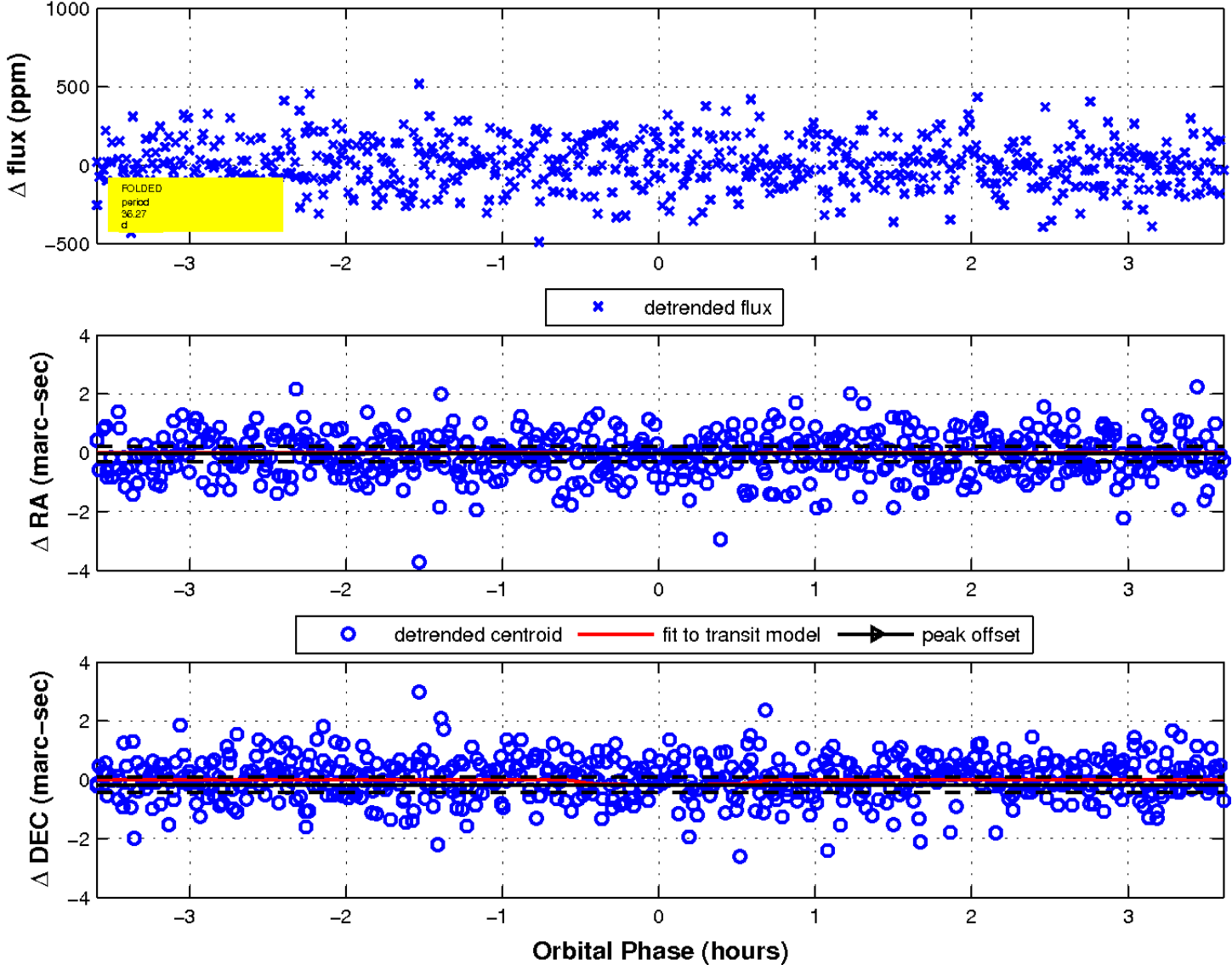
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

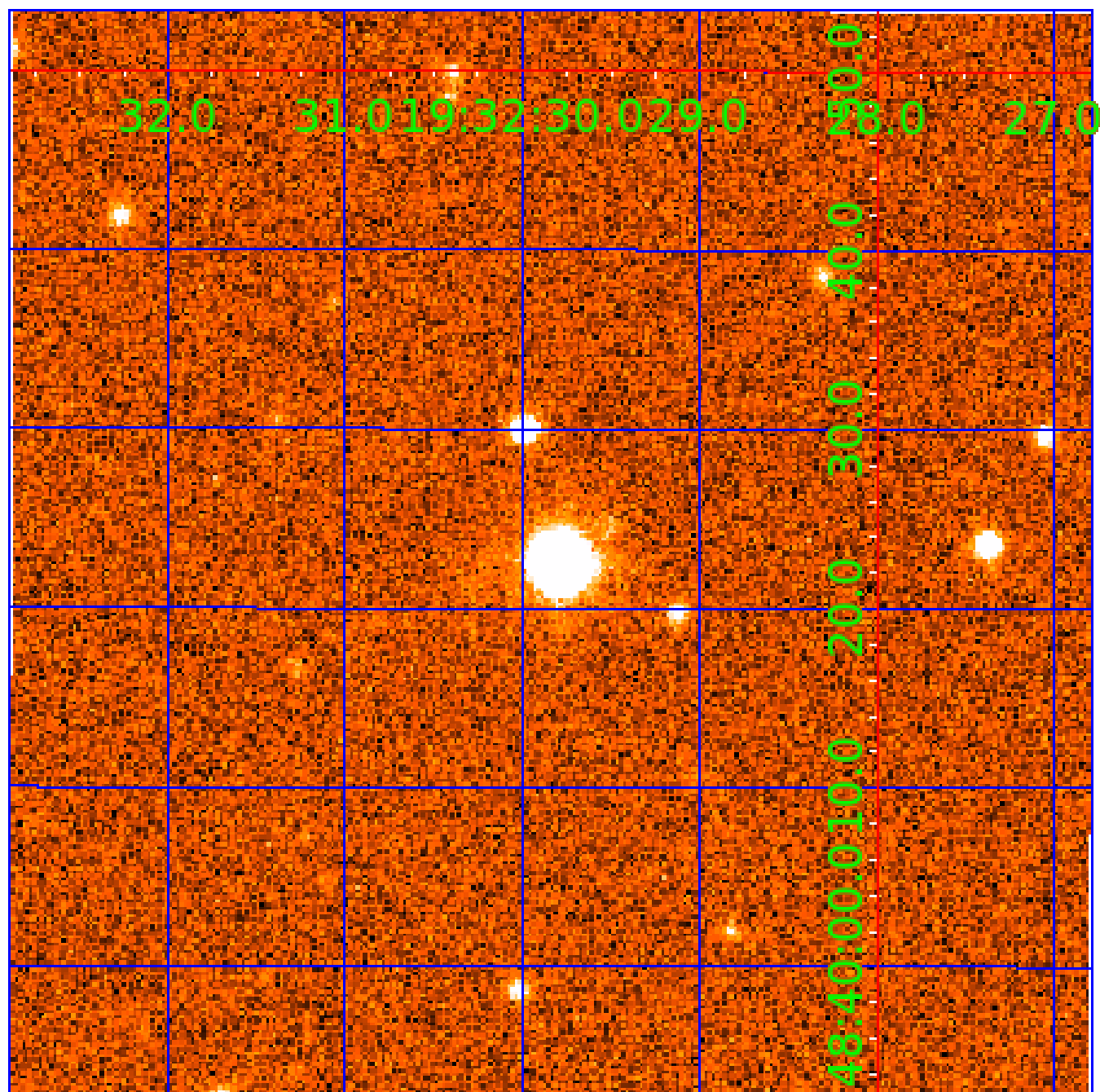


fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination



KIC 011086639

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})
011086639-01	OBS	No	2.676655	134.315781	14.3	20.077	7.2	8.9	0.90	5912	0.35	669.12
011086639-02	OBS	No	294.531428	156.992257	247.3	7.712	17.3	16.5	0.90	5912	1.44	1.27
011086639-03	OBS	No	36.272190	160.645379	337.0	1.205	15.2	15.9	0.90	5912	1.78	20.71
011086639-04	OBS	No	19.761860	139.546505	330.5	0.886	13.8	12.0	0.90	5912	1.70	46.54
011086639-05	OBS	No	15.448184	142.372145	98.5	5.319	12.8	9.7	0.90	5912	1.05	64.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011086639-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
011086639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_MEAS
011086639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
011086639-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011086639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS—CENT_UNCERTAIN

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

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

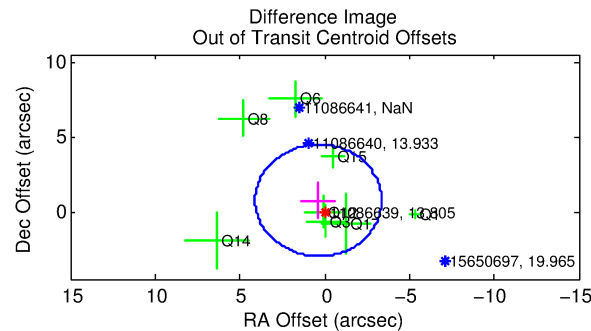
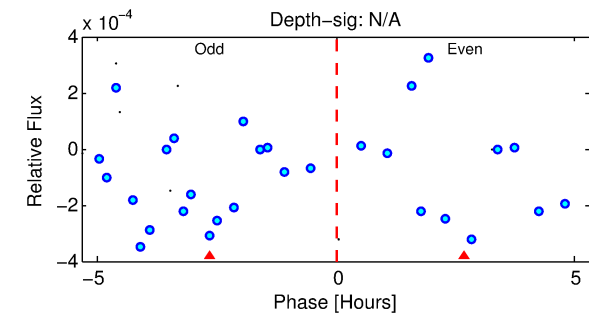
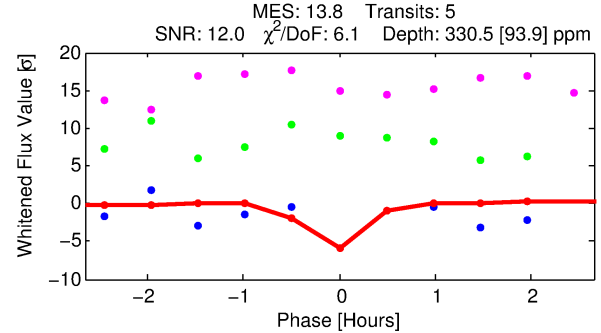
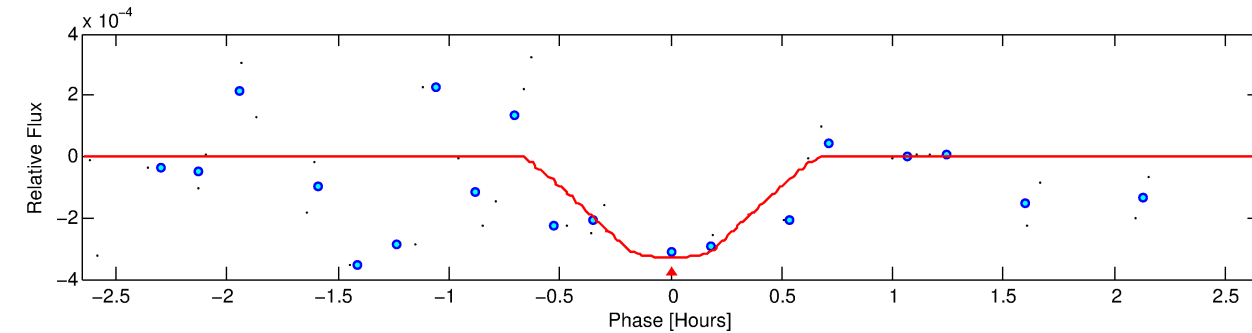
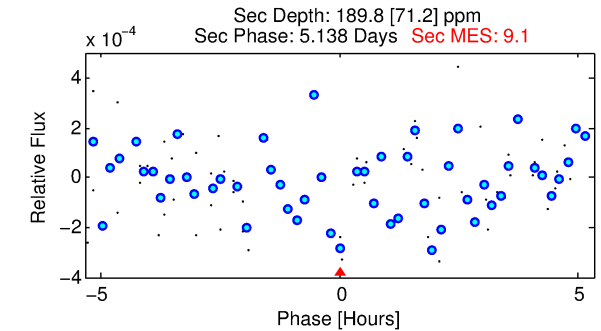
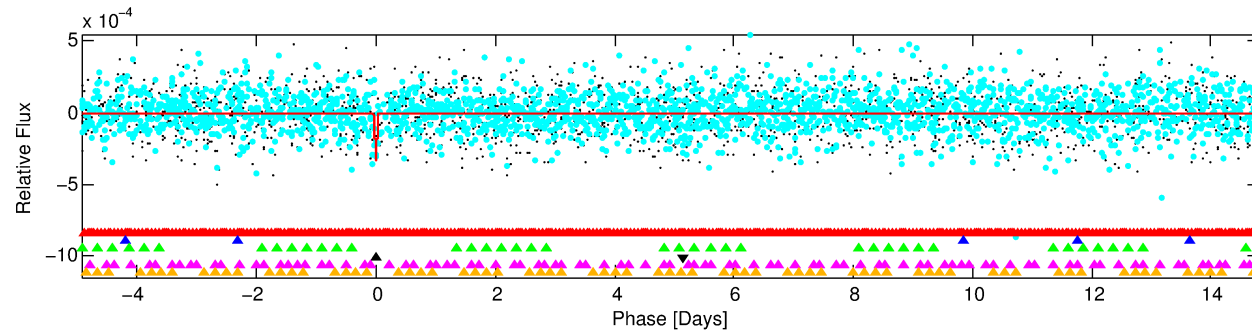
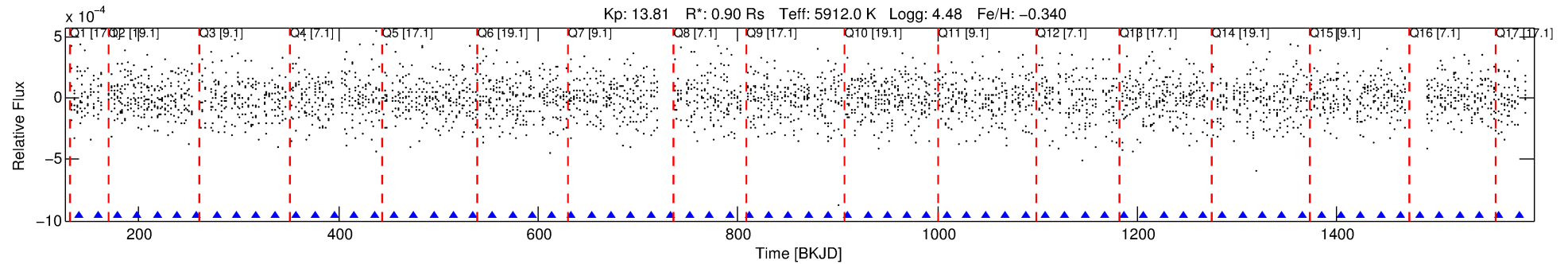
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011086639-04

No Significant Match Found

DV One-Page Summary

KIC: 11086639 Candidate: 4 of 6 Period: 19.762 d



DV Fit Results:

Period = 19.76186 [0.00024] d
Epoch = 139.5465 [0.0097] BKJD
Rp/R* = 0.0173 [0.0419]
a/R* = 152.36 [1759.76]
b = 0.49 [18.30]
Seff = 46.54 [17.02]
Teq = 666 [61] K
Rp = 1.70 [4.16] Re
a = 0.1385 [0.0324] AU
Ag = 690.86 [3370.85] [0.20 σ]
Teffp = 5279 [6425] K [0.72 σ]

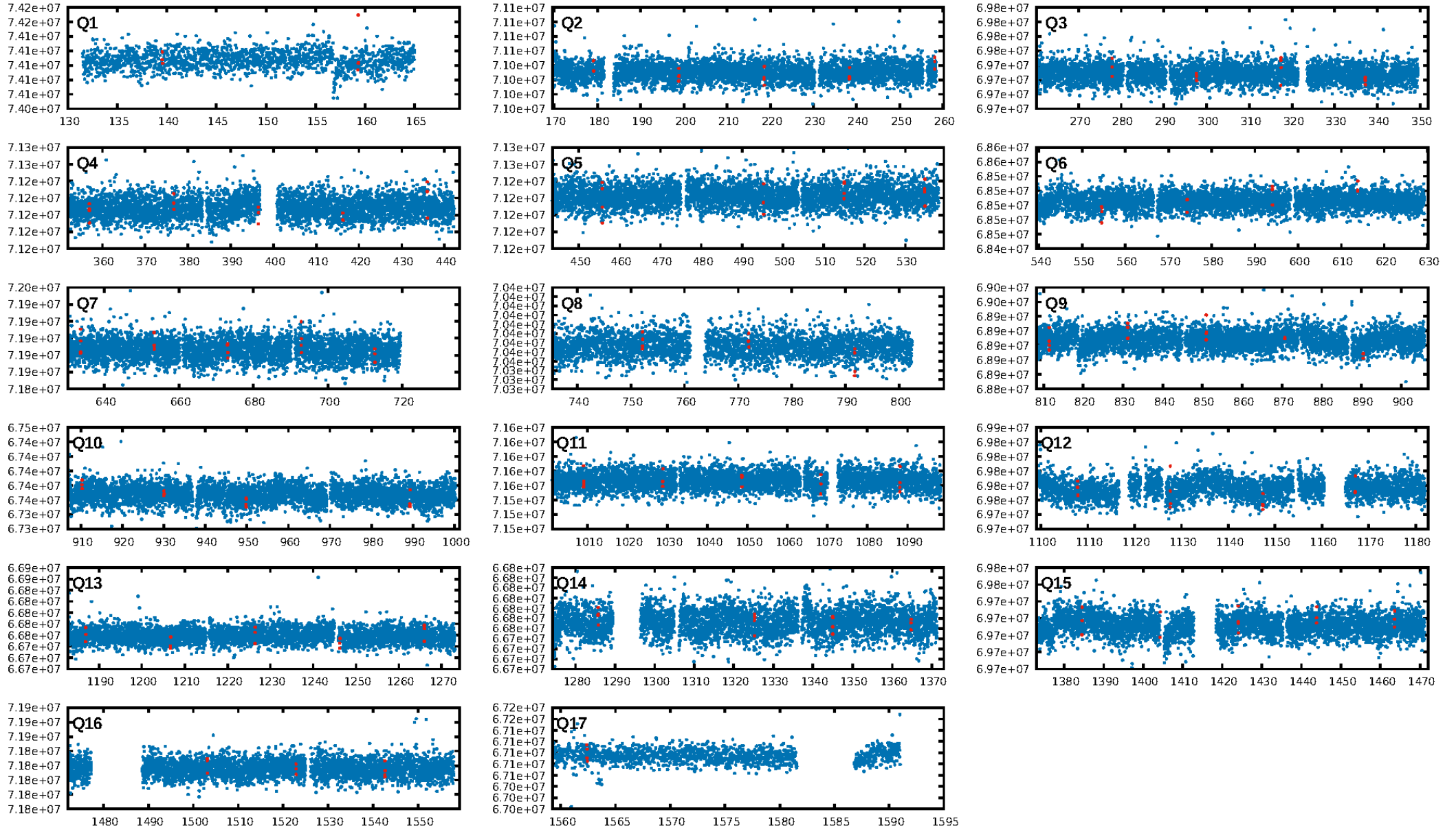
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.20 σ]
LongPeriod-sig: 100.0% [14.99 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 6.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.2611
Centroid-sig: 28.8%
Centroid-so: 0.218 arcsec [0.32 σ]
OotOffset-rm: 0.834 arcsec [0.67 σ]
OotOffset-st: 2/2/2 [8]
KicOffset-rm: 0.285 arcsec [0.29 σ]
KicOffset-st: 2/2/2 [8]
DiffImageQuality-fgm: 0.00 [0/8]
DiffImageOverlap-fno: 1.00 [17/17]

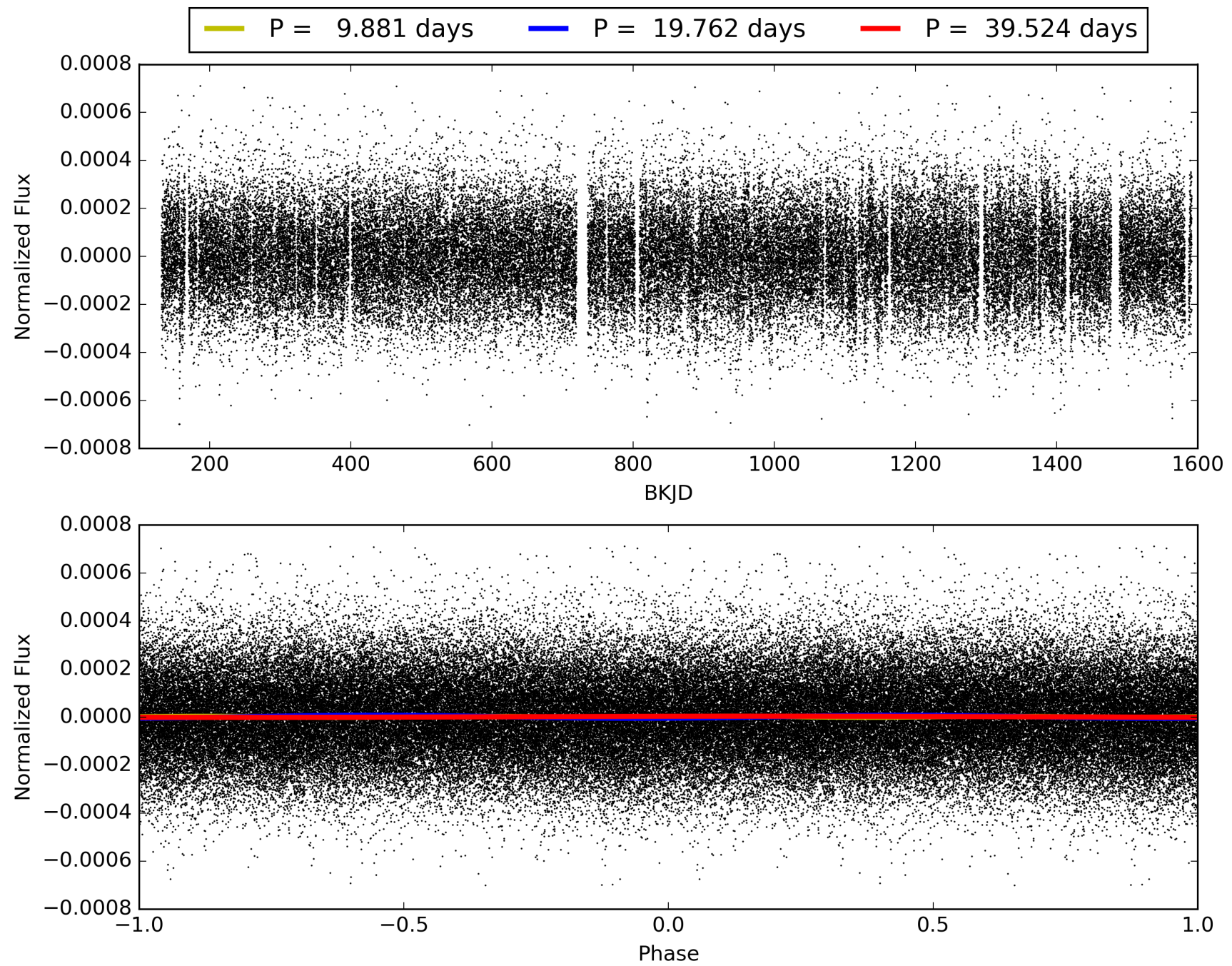
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:55:41 Z

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

TCE 011086639-04, PDC Light Curves

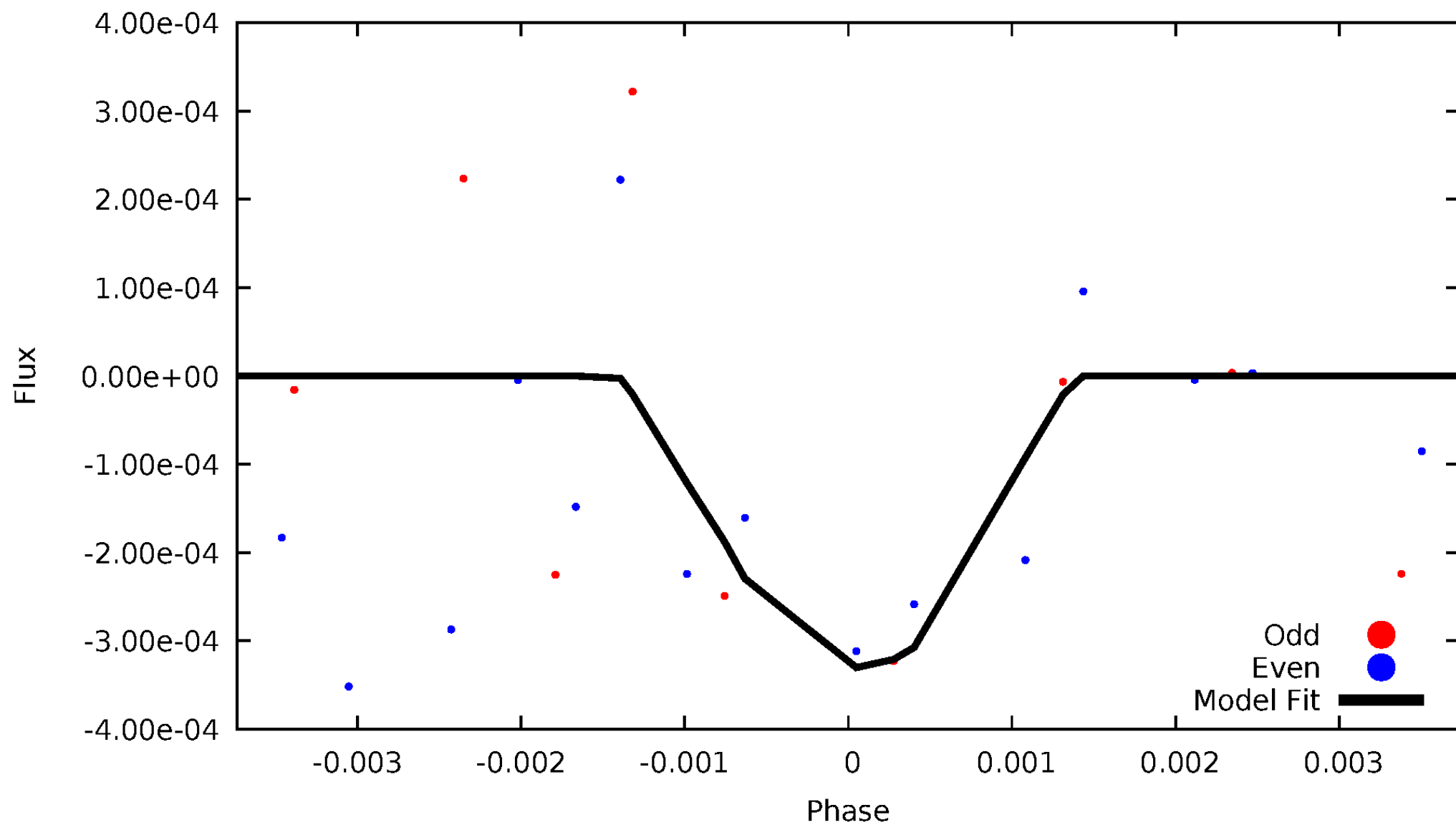


TCE 011086639-04



DV Odd/Even

TCE 011086639-04

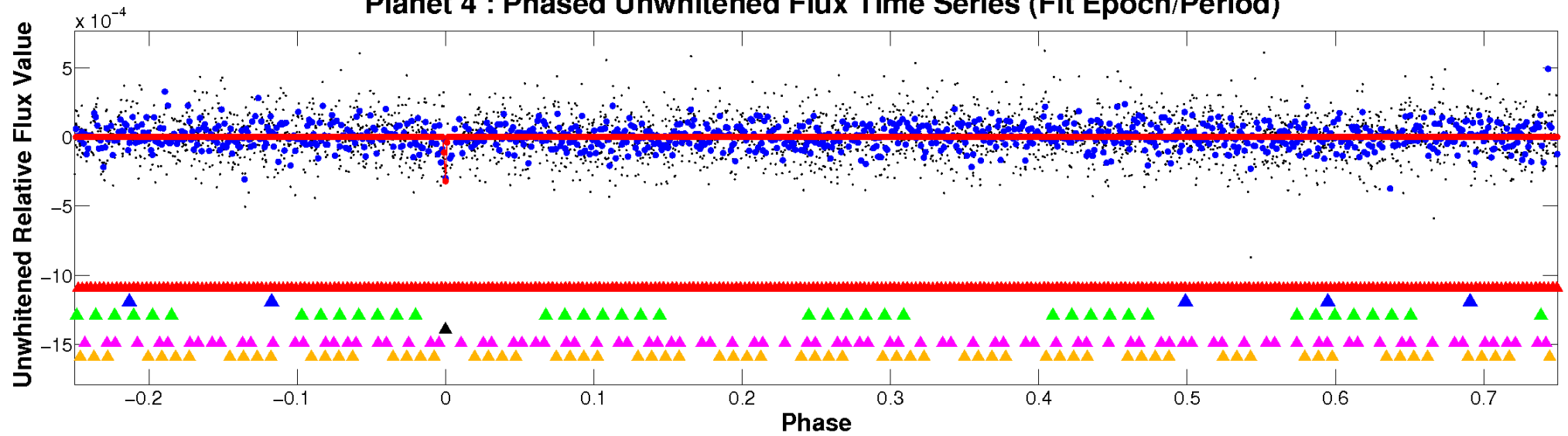


ALT Odd/Even

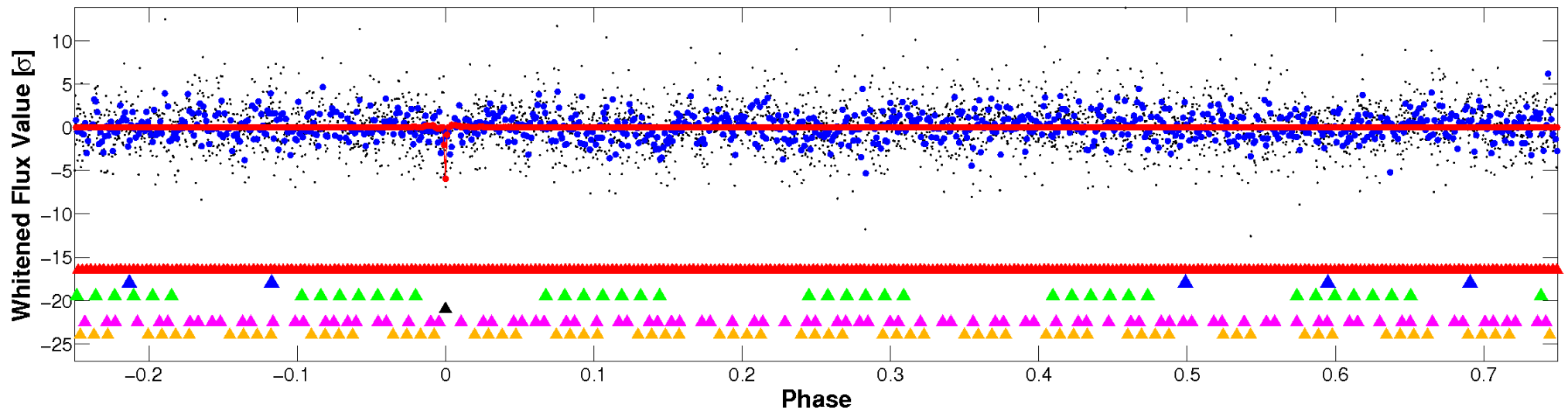
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

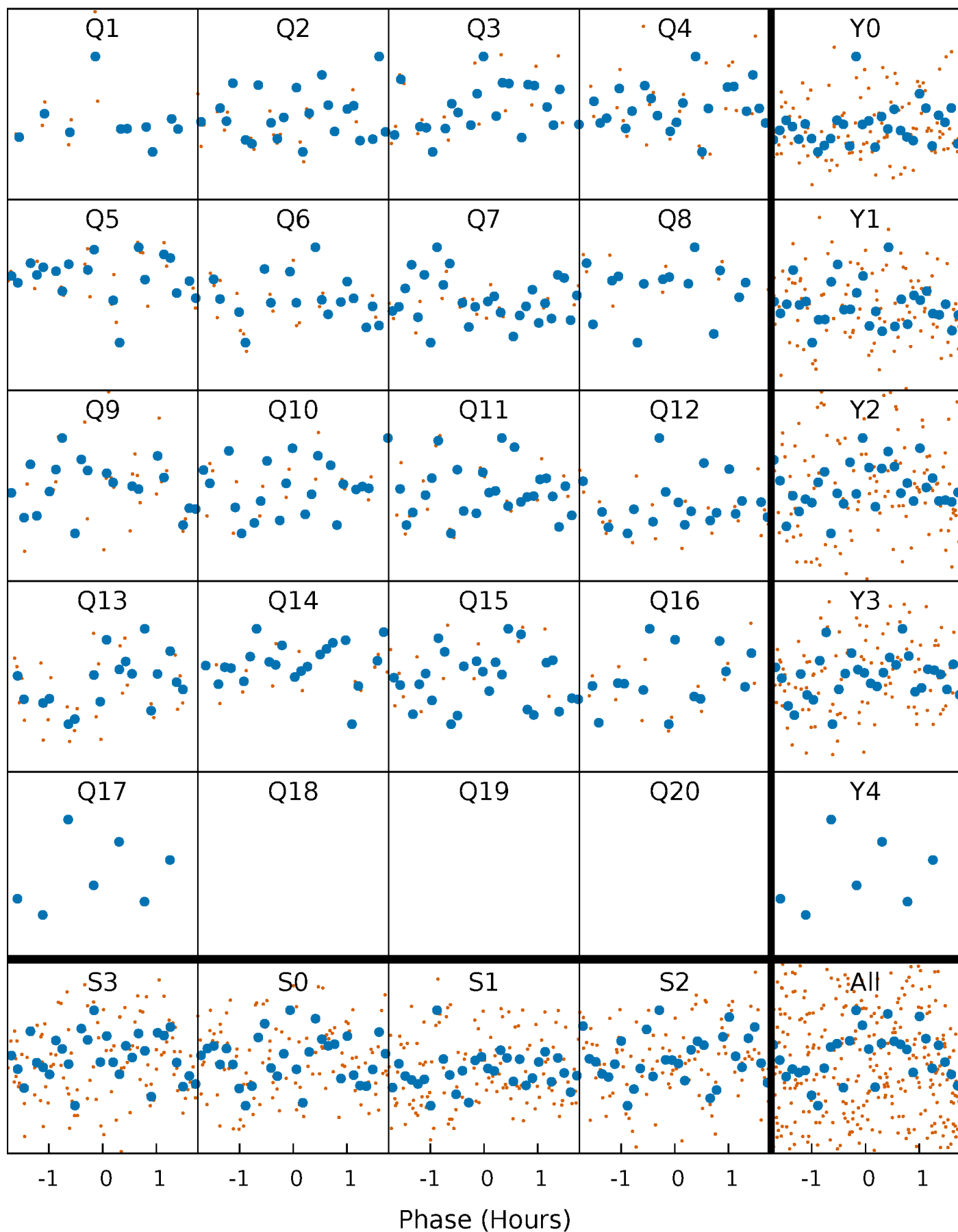


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



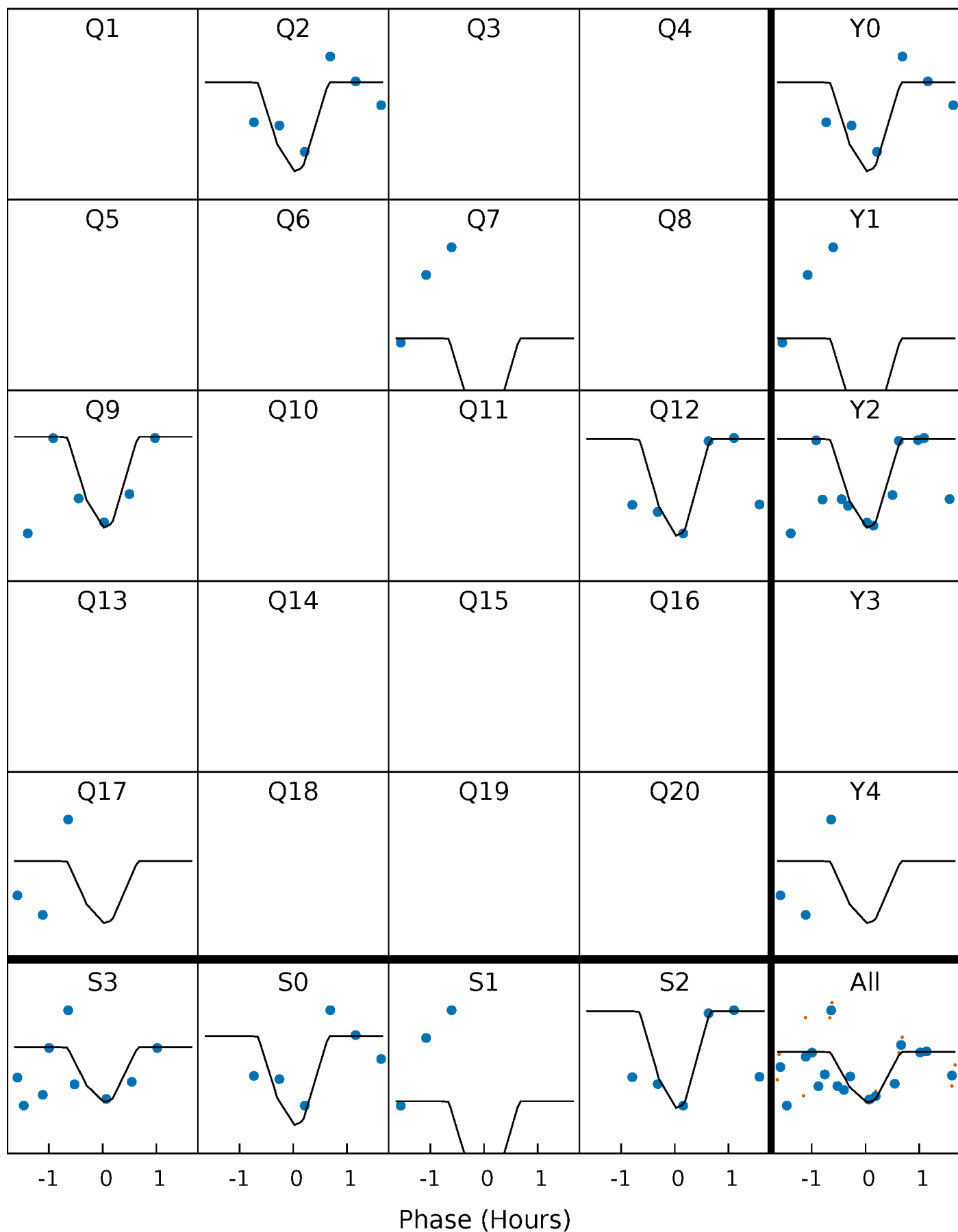
PDC Quarter-Phased Transit Curves

TCE 011086639-04 P= 19.761860 Days $T_0=139.546505$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 011086639-04 P= 19.761860 Days $T_0=139.546505$ (BKJD)

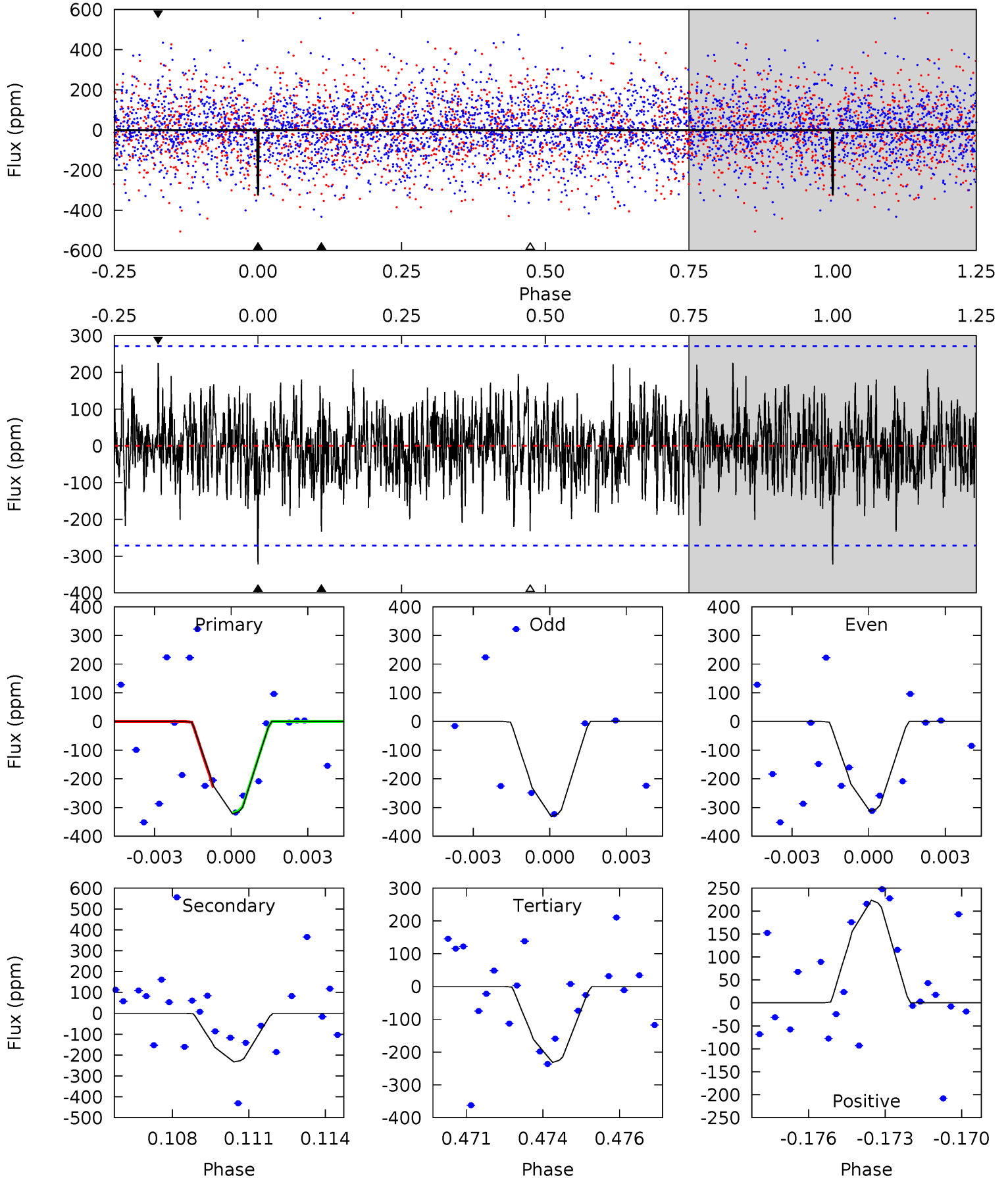


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

011086639-04, P = 19.761860 Days, E = 119.784645 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.27	4.54	4.50	4.35	5.27	3.00	1.41	1.77	1.92	0.03	0.18	0.17	0.92	0.41	0.87



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 011086639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5912^{+146}_{-161}	$4.484^{+0.078}_{-0.195}$	$-0.340^{+0.300}_{-0.300}$	$0.903^{+0.243}_{-0.104}$	$0.906^{+0.109}_{-0.099}$	$1.735^{+0.575}_{-0.849}$
	+2%/-3%	+2%/-4%	+88%/-88%	+27%/-12%	+12%/-11%	+33%/-49%
Source	PHO1	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 011086639-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-233±51	$3.40^{+3.37}_{-2.39}$	944^{+60}_{-45}	4240^{+3146}_{-897}	209^{+2137}_{-158}
Alt.	N/A	N/A	N/A	N/A	N/A

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

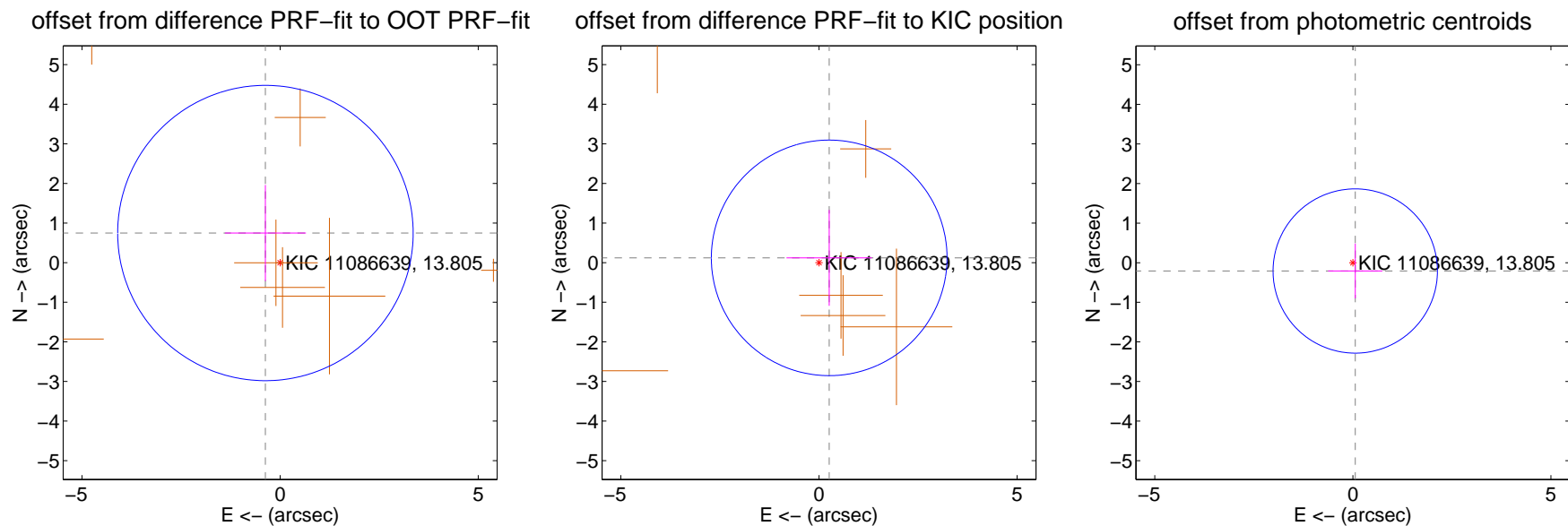
DV Centroid Data

Supplemental centroid analysis for 011086639-04. Kepler magnitude: 13.80. Transit SNR 12.02

There are 0 quarters with good PRF difference image offsets

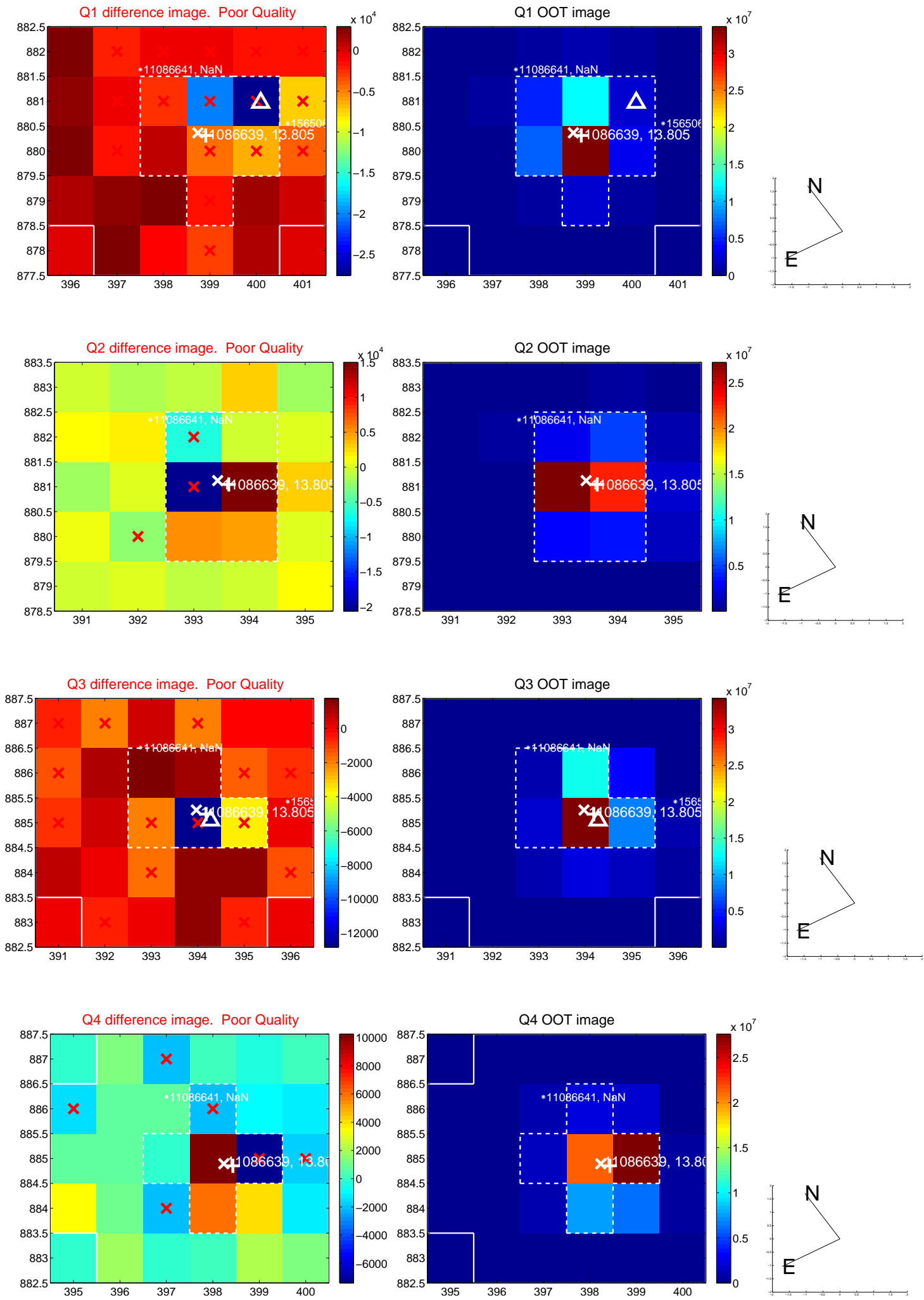
The direct PRF centroid is offset from the target star catalog position by about 1.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.834 ± 1.243	0.67	0.371 ± 1.022	0.748 ± 1.212
PRF-fit source offset from KIC position	0.285 ± 0.991	0.29	-0.258 ± 1.077	0.121 ± 1.210
photometric centroid source offset	0.22 ± 0.69	0.32	-0.06 ± 0.68	-0.21 ± 0.69

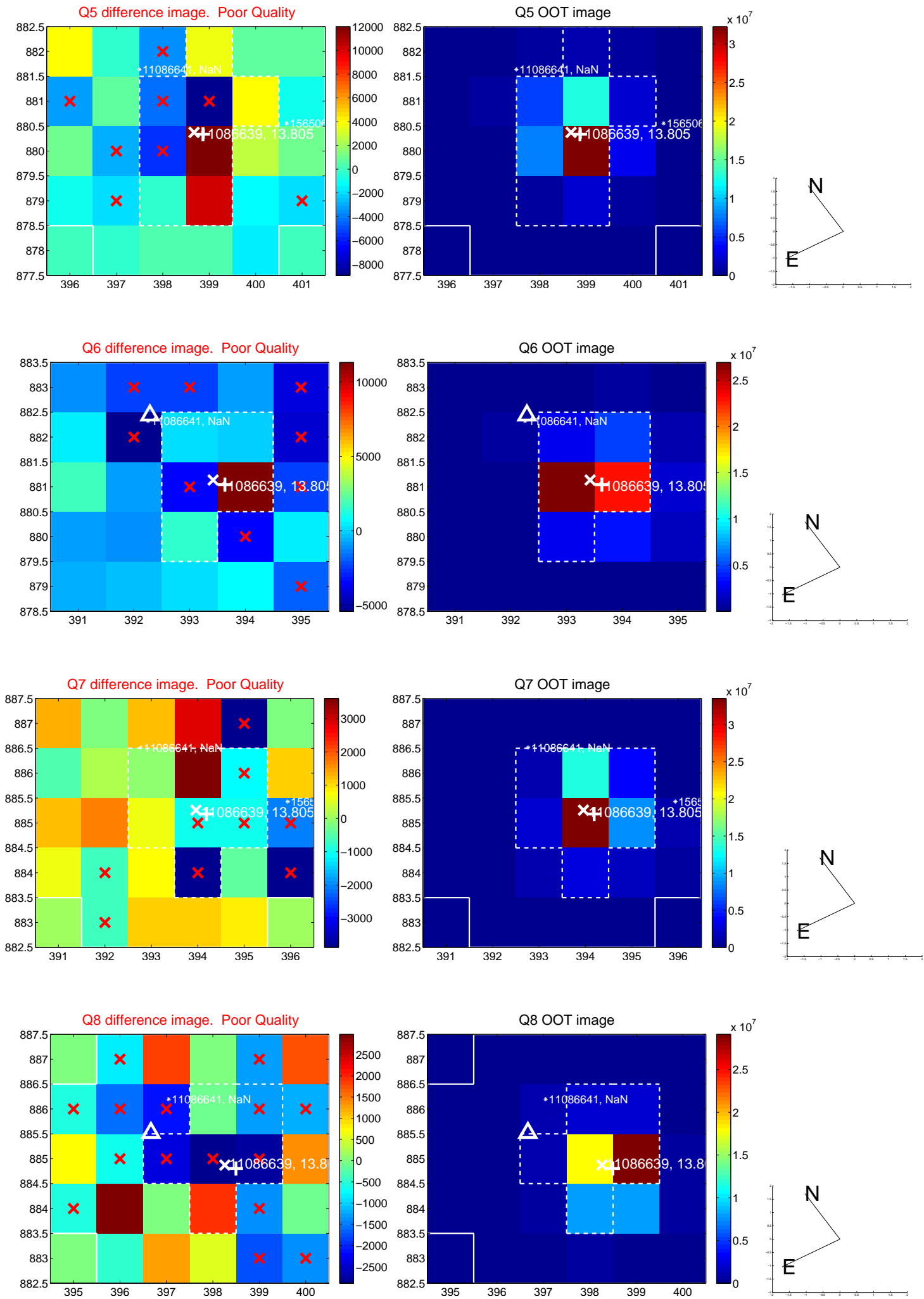


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

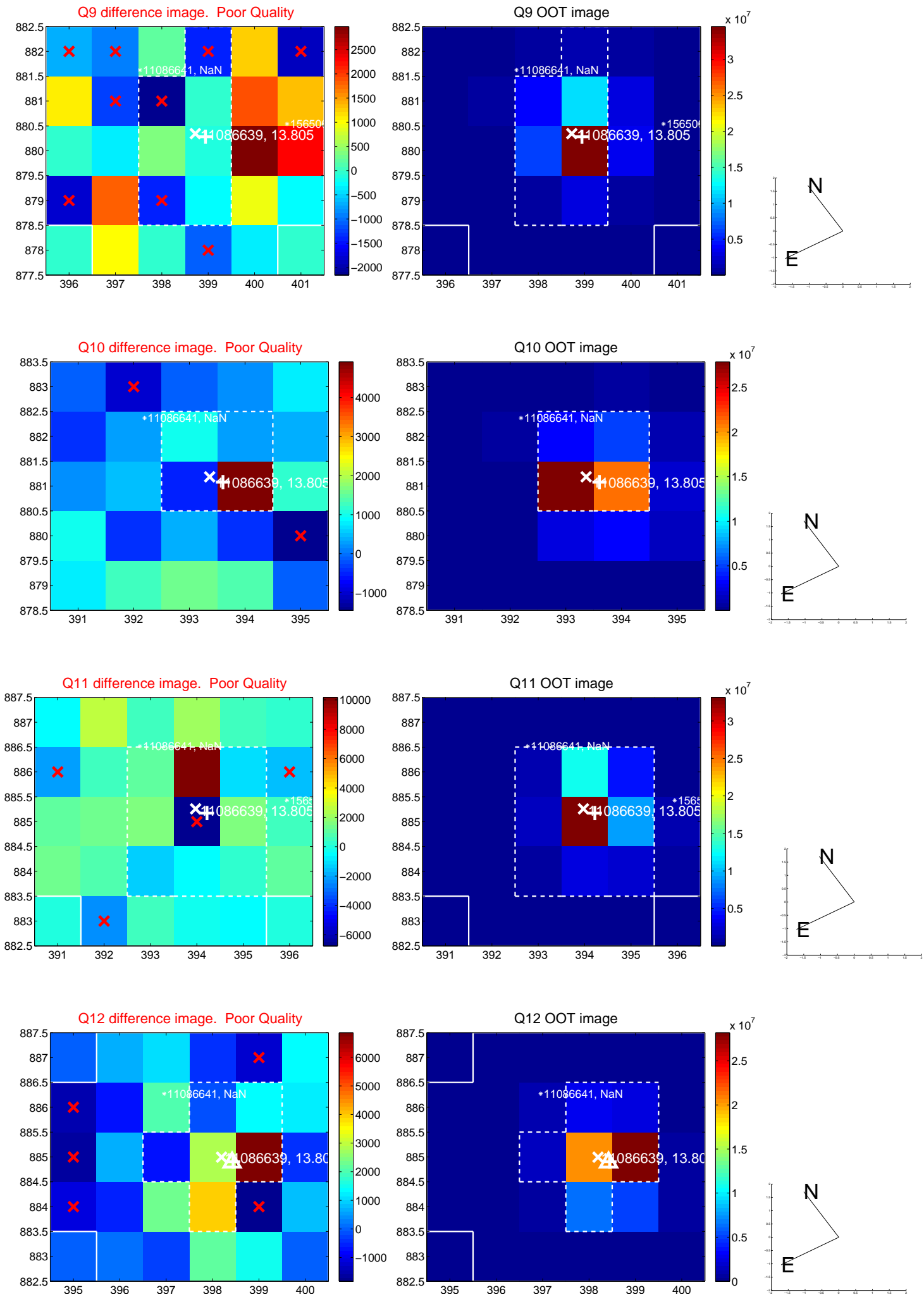
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



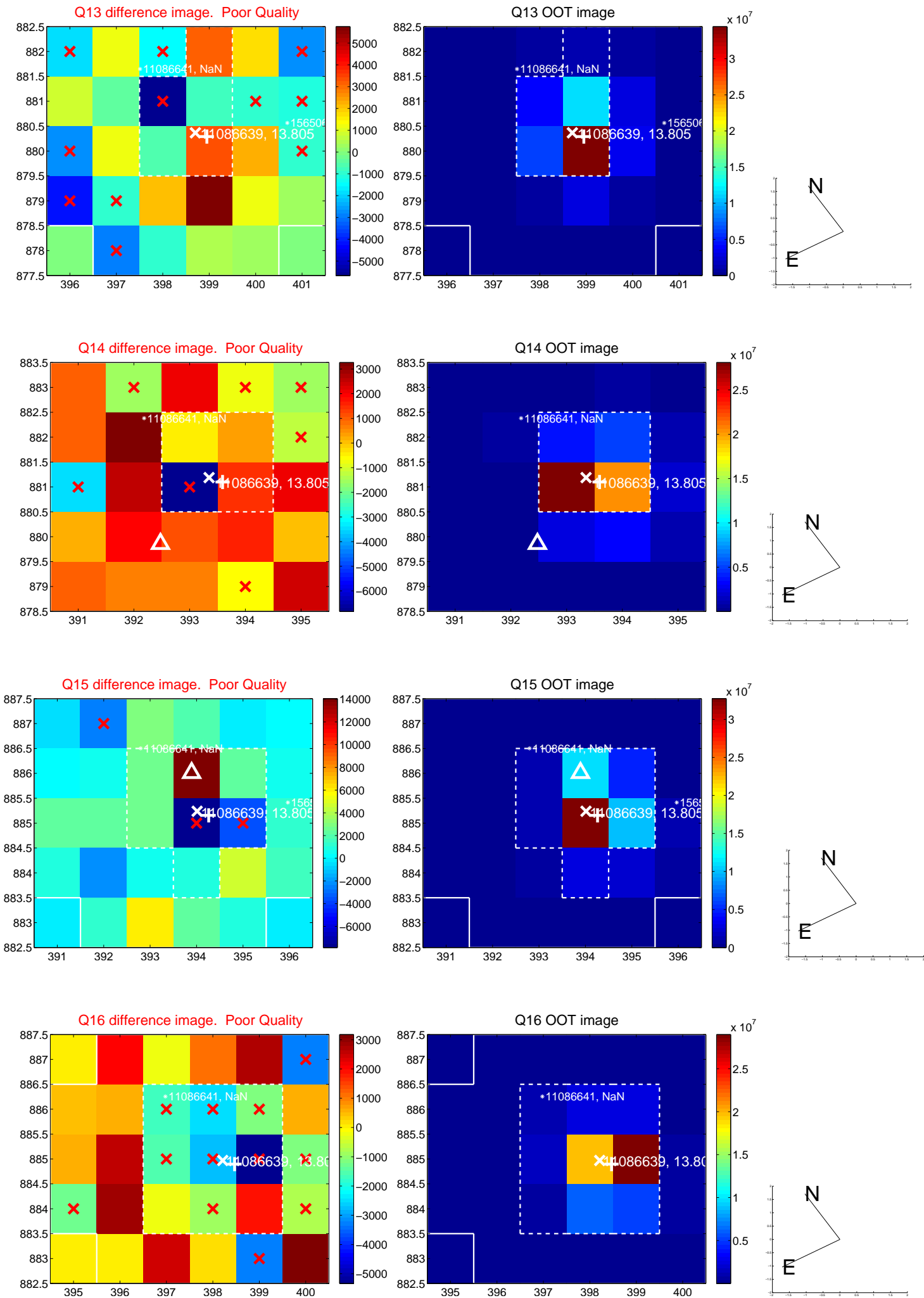
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



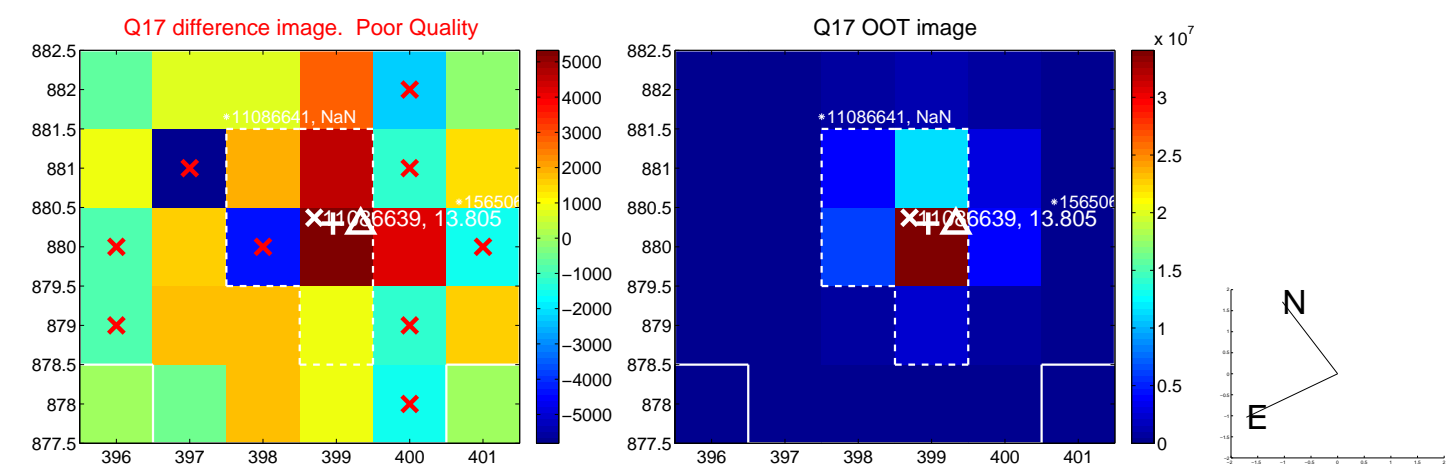
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



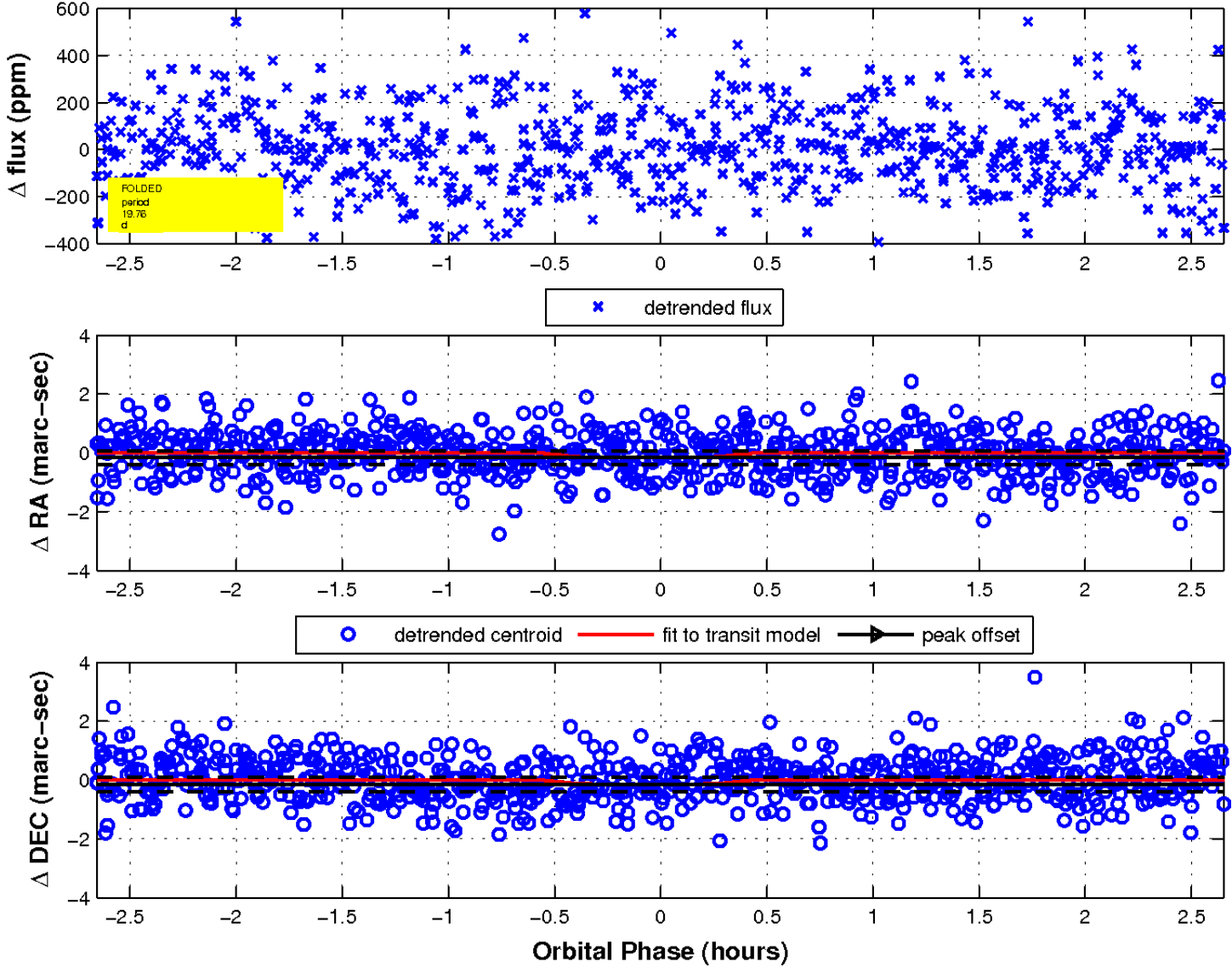
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

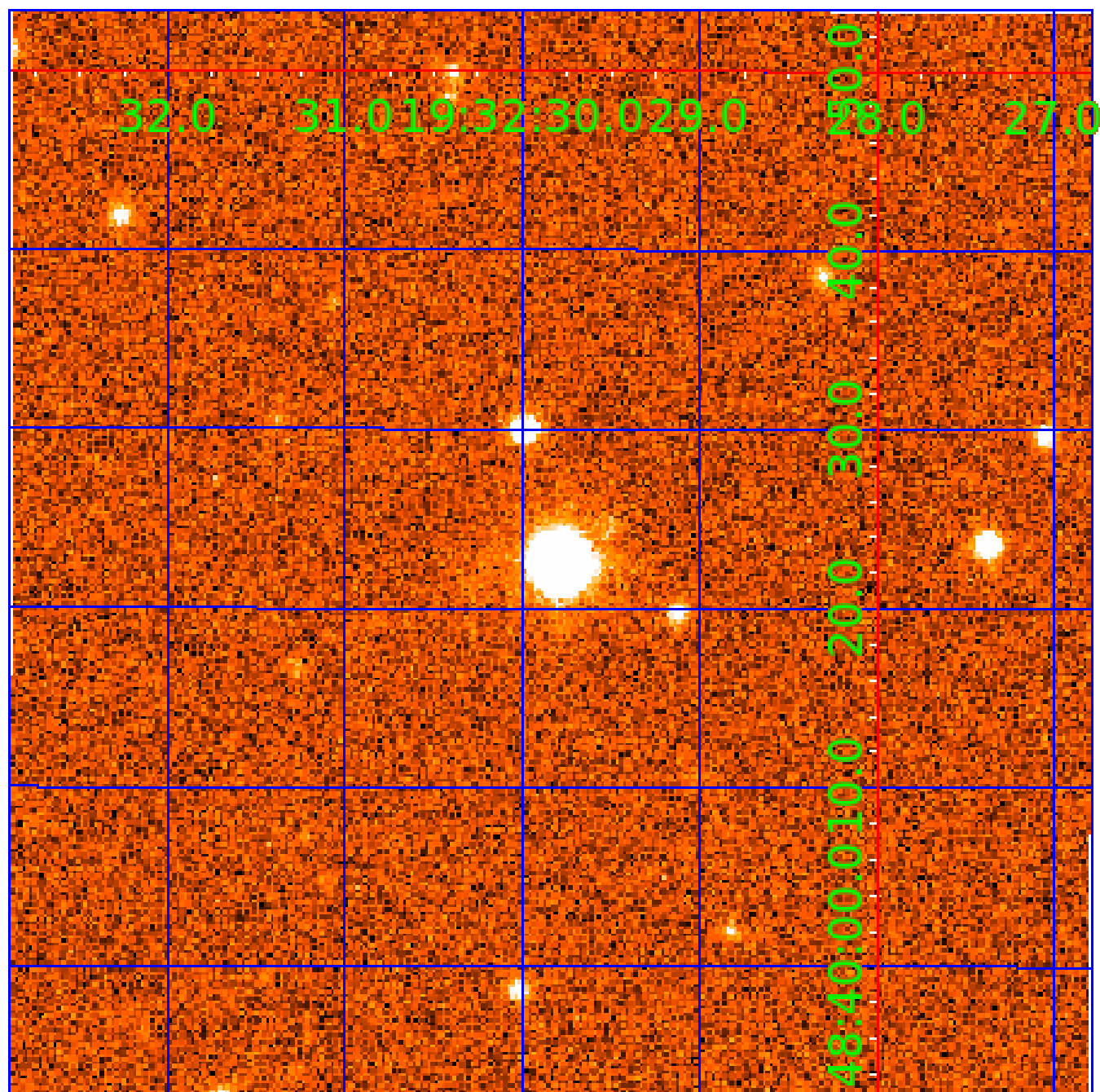


fluxWeightedCentroids, Planet 4 of 6



UKIRT Image

Declination



KIC 011086639

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})
011086639-01	OBS	No	2.676655	134.315781	14.3	20.077	7.2	8.9	0.90	5912	0.35	669.12
011086639-02	OBS	No	294.531428	156.992257	247.3	7.712	17.3	16.5	0.90	5912	1.44	1.27
011086639-03	OBS	No	36.272190	160.645379	337.0	1.205	15.2	15.9	0.90	5912	1.78	20.71
011086639-04	OBS	No	19.761860	139.546505	330.5	0.886	13.8	12.0	0.90	5912	1.70	46.54
011086639-05	OBS	No	15.448184	142.372145	98.5	5.319	12.8	9.7	0.90	5912	1.05	64.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011086639-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
011086639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_MEAS
011086639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
011086639-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
011086639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS—CENT_UNCERTAIN

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

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

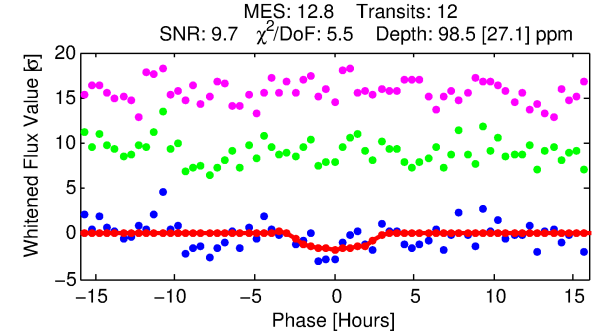
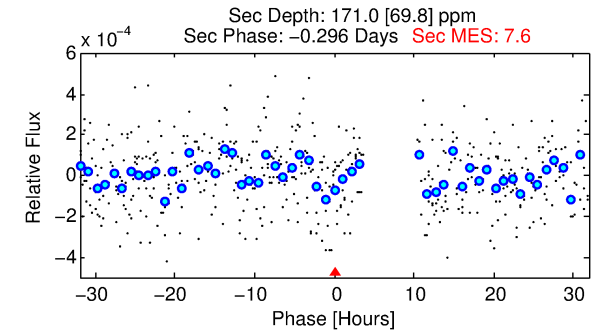
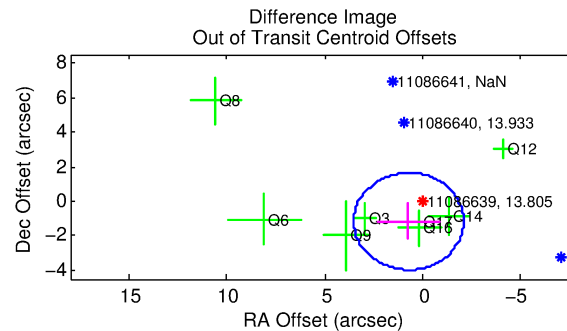
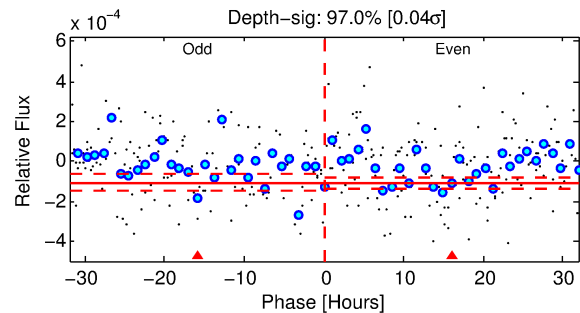
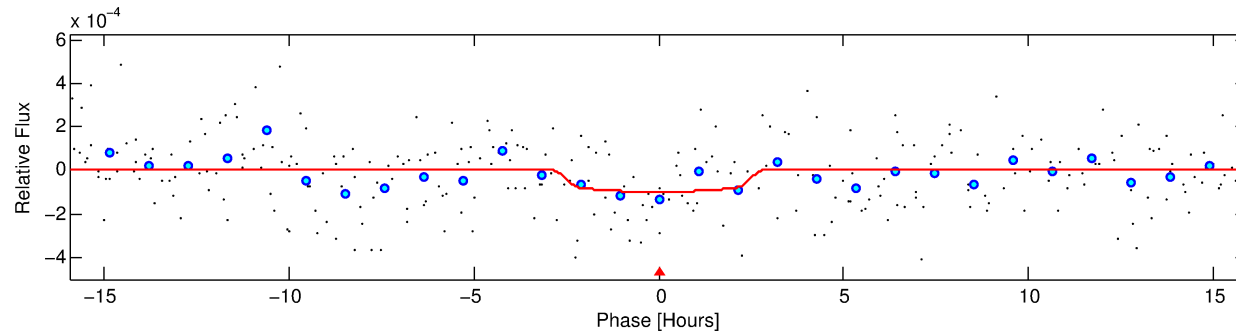
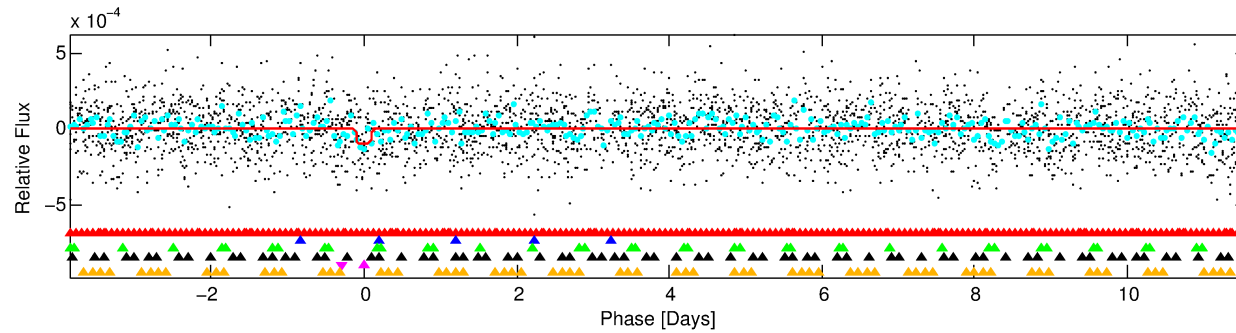
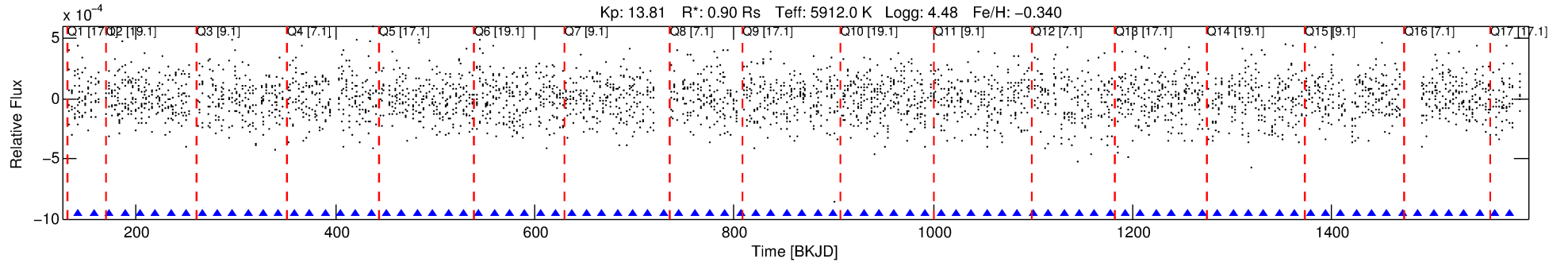
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011086639-05

No Significant Match Found

DV One-Page Summary

KIC: 11086639 Candidate: 5 of 6 Period: 15.448 d



DV Fit Results:

Period = 15.44818 [0.00079] d
Epoch = 142.3721 [0.0440] BKJD
Rp/R* = 0.0106 [0.0154]
a/R* = 10.57 [78.00]
b = 0.89 [1.72]
Seff = 64.63 [23.63]
Teff = 723 [66] K
Rp = 1.05 [1.54] Re
a = 0.1175 [0.0275] AU
Ag = 1180.72 [3466.17] [0.34 σ]
Teffp = 6553 [4778] K [1.22 σ]

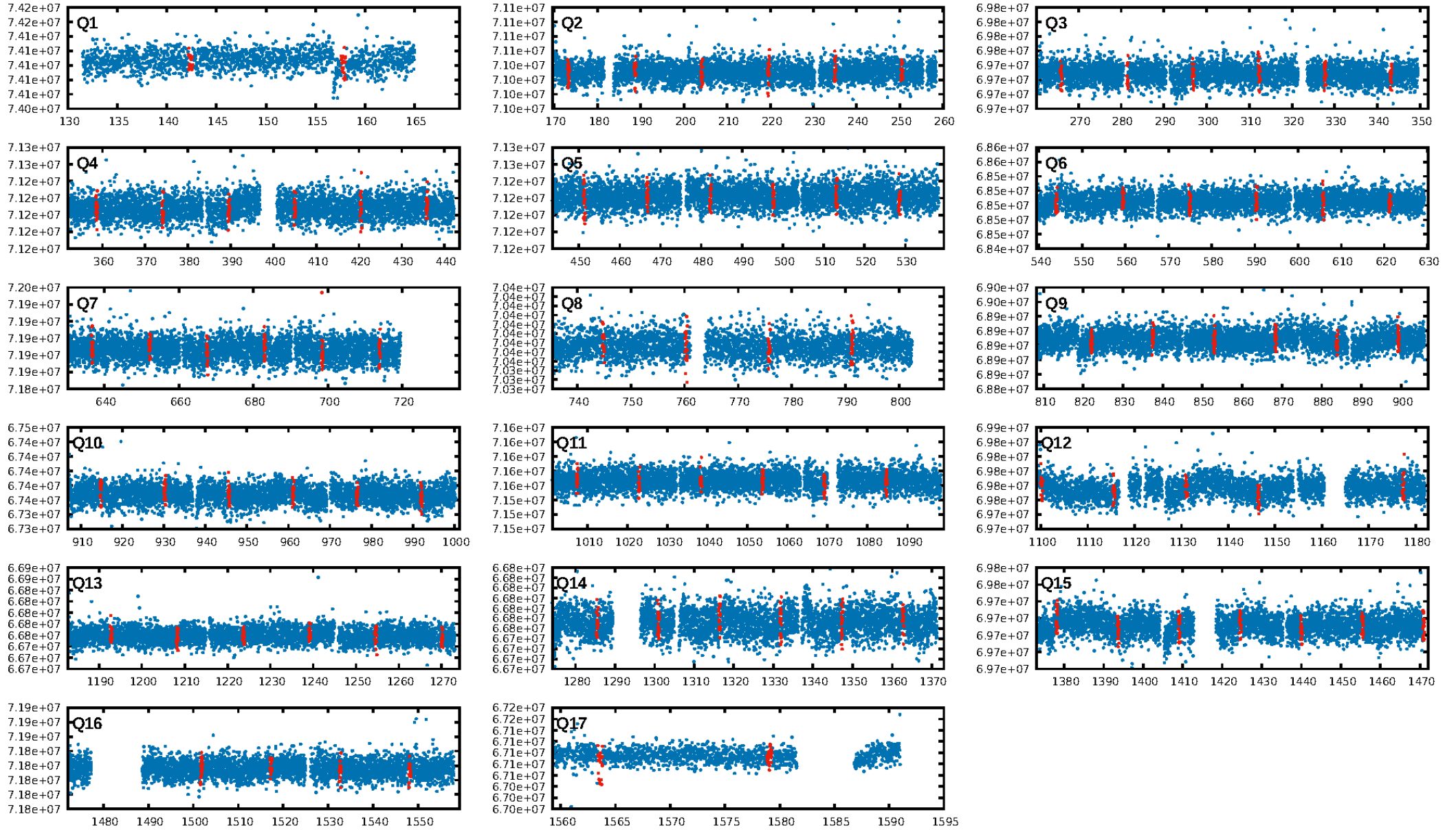
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.76 σ]
LongPeriod-sig: 100.0% [19.20 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: -3.266
Centroid-sig: 58.6%
Centroid-so: 1.149 arcsec [1.26 σ]
OotOffset-rm: 1.367 arcsec [1.46 σ]
KicOffset-rm: 1.933 arcsec [2.17 σ]
OotOffset-st: 2/1/3/2 [8]
KicOffset-st: 2/1/3/2 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.88 [15/17]

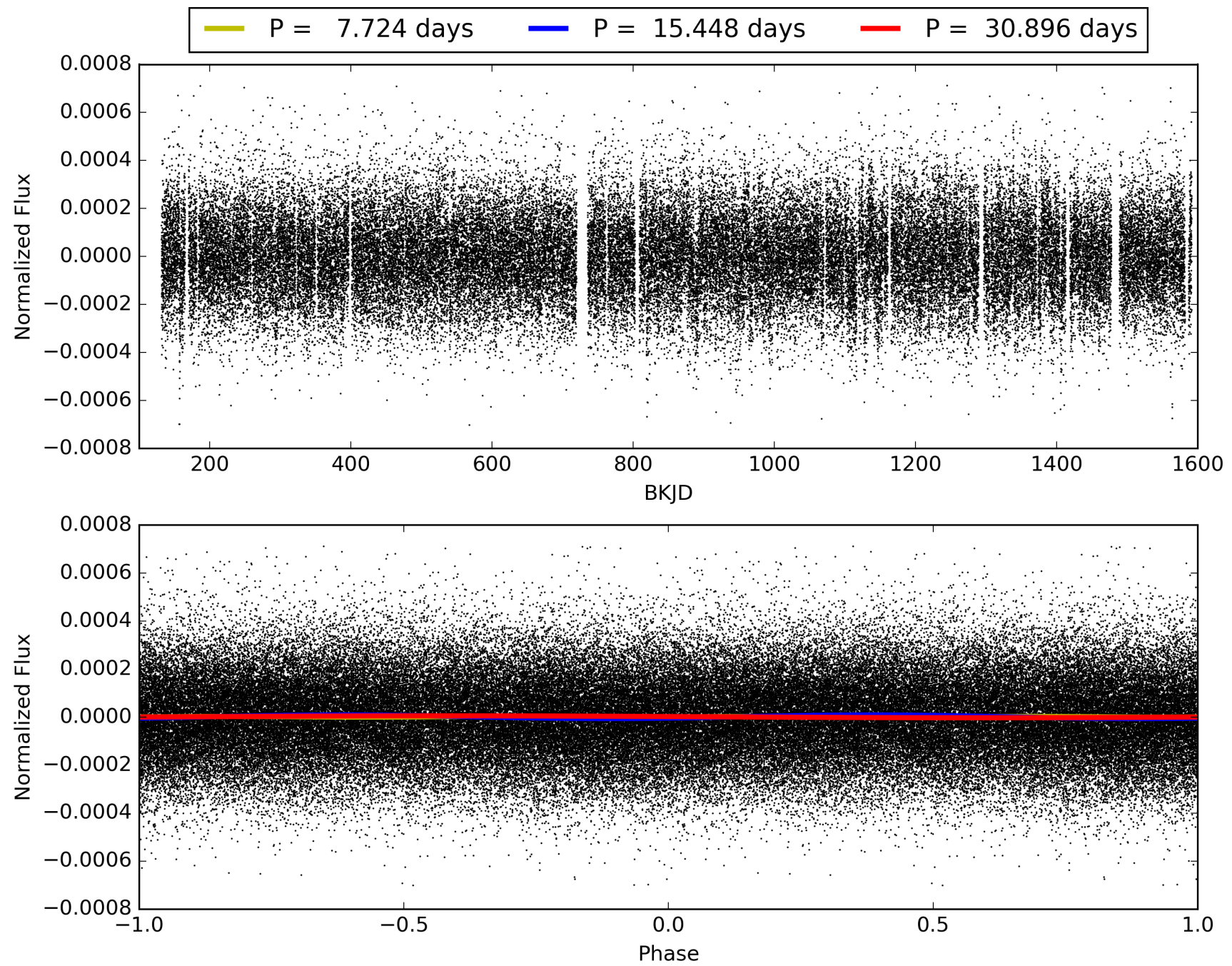
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:55:44 Z

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

TCE 011086639-05, PDC Light Curves

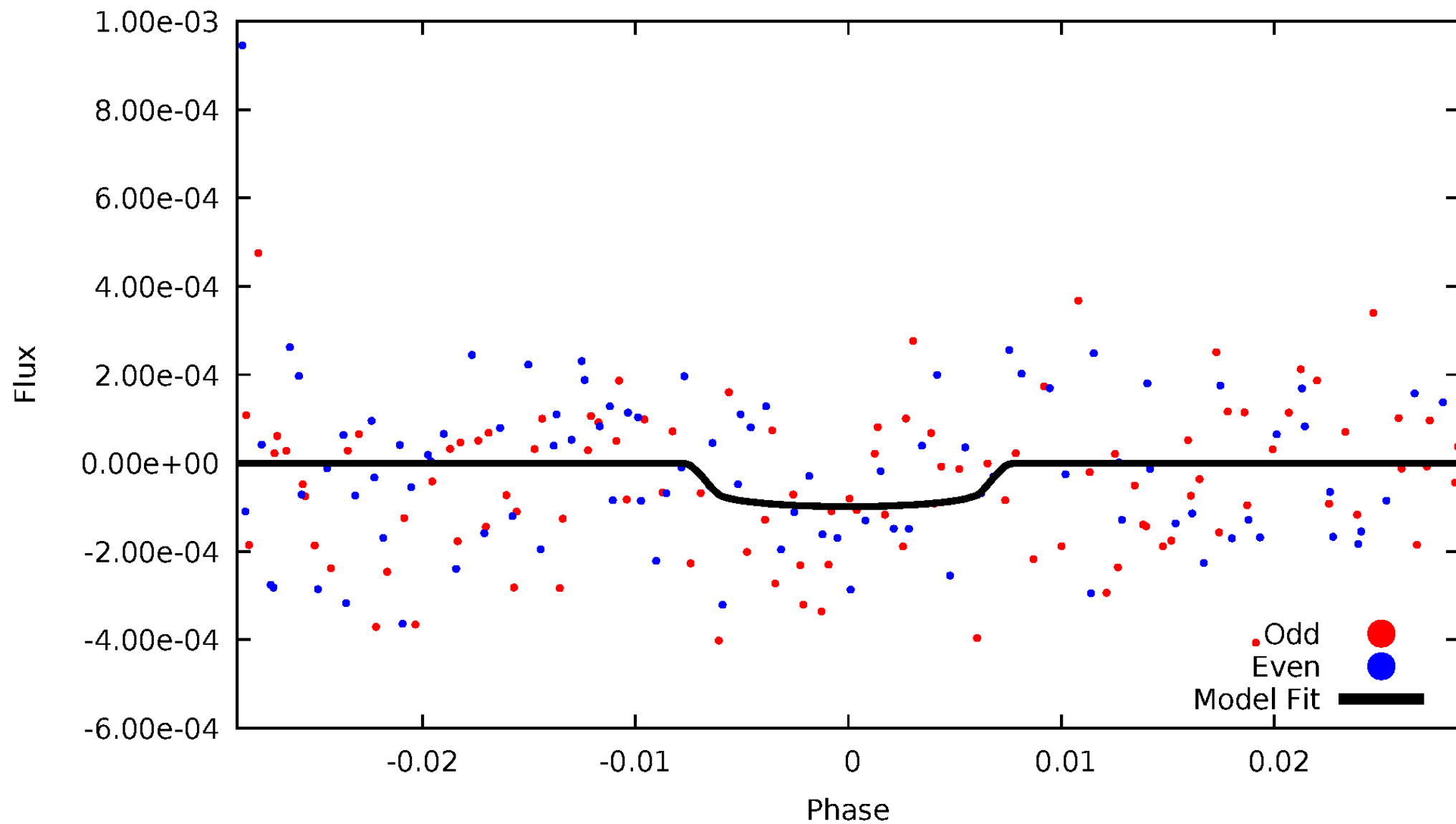


TCE 011086639-05



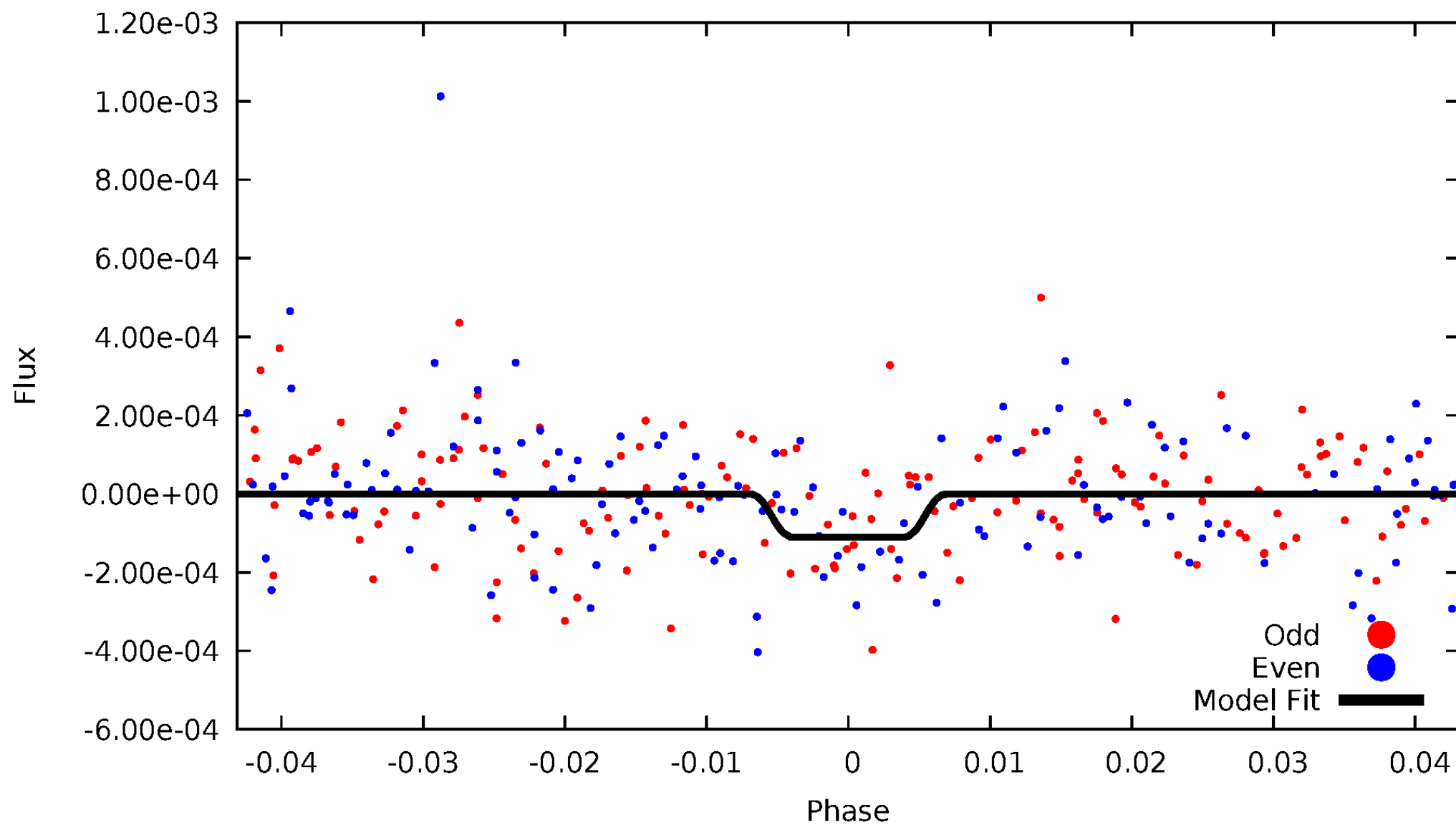
DV Odd/Even

TCE 011086639-05



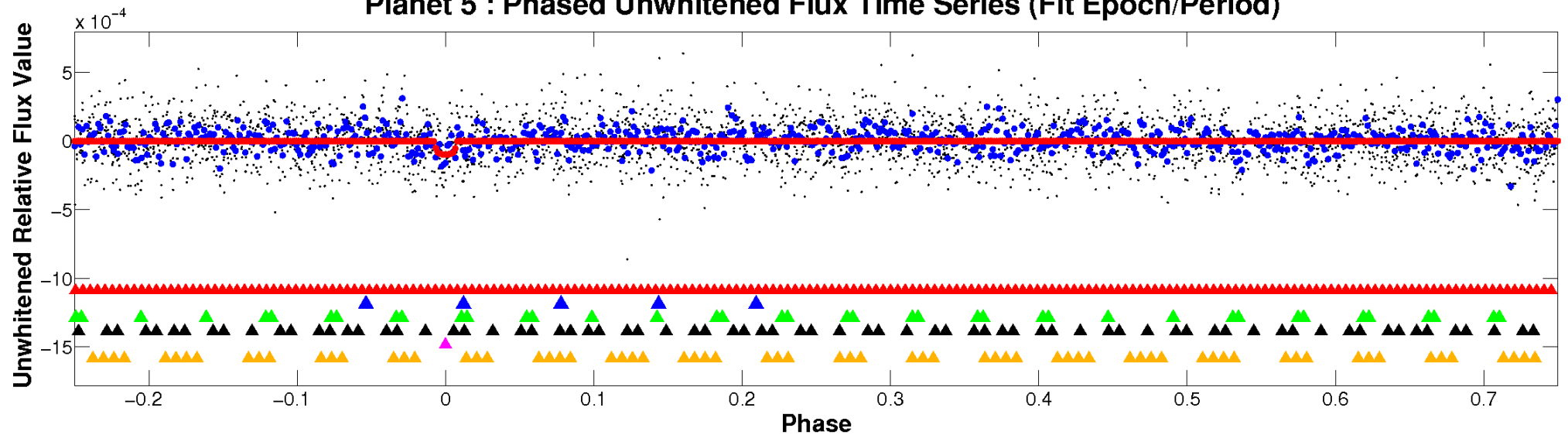
ALT Odd/Even

TCE 011086639-05

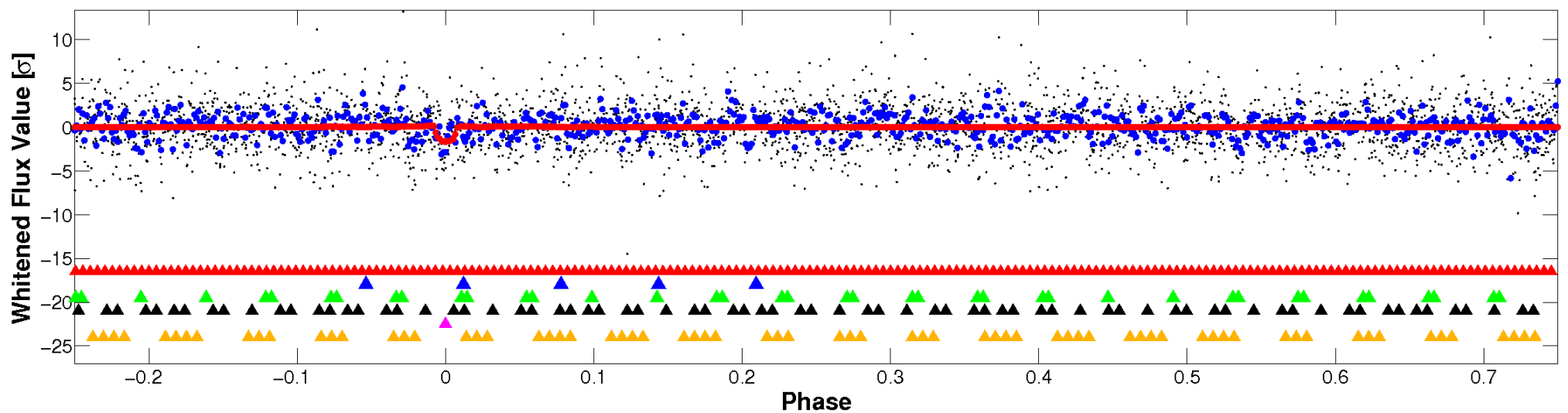


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

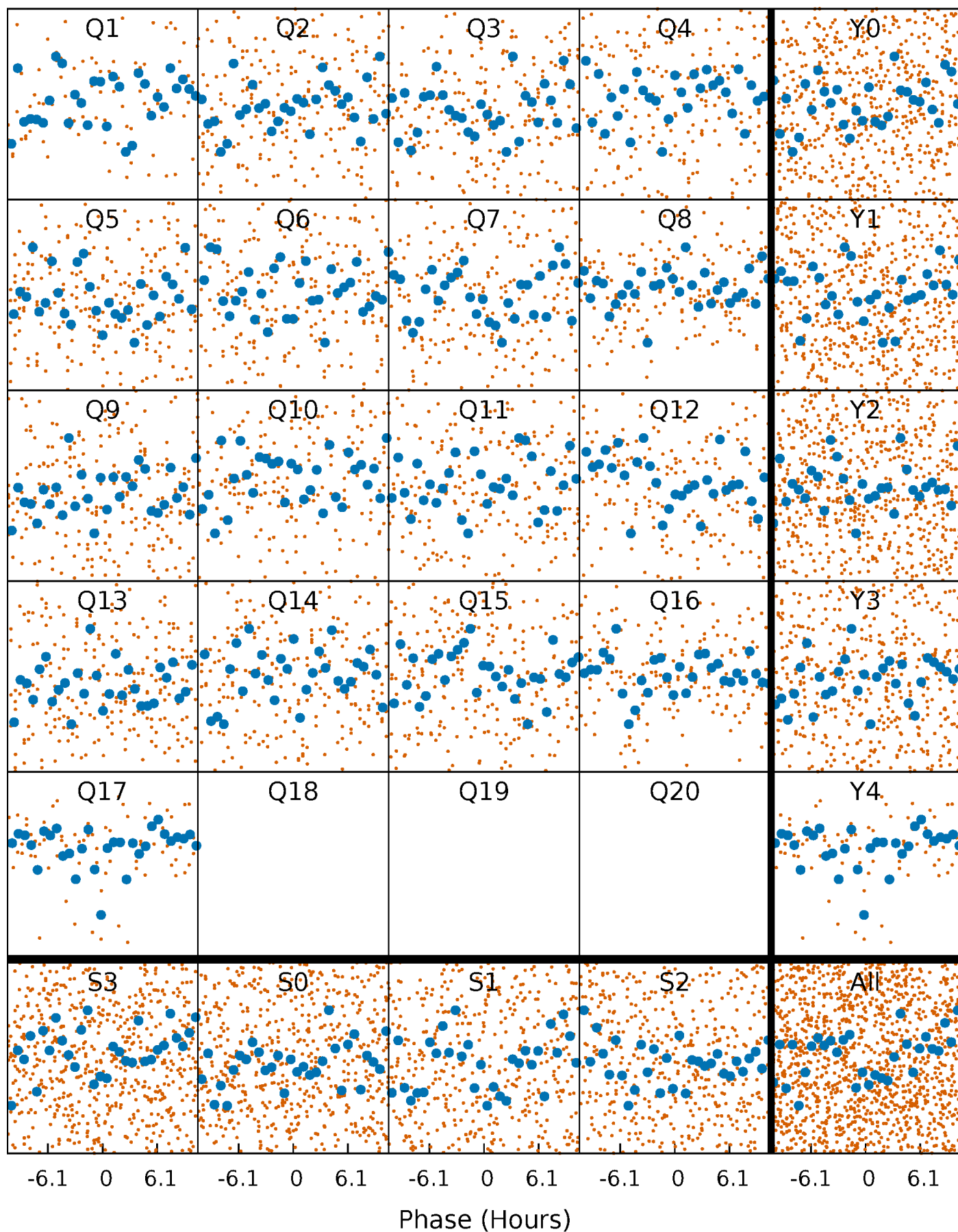


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



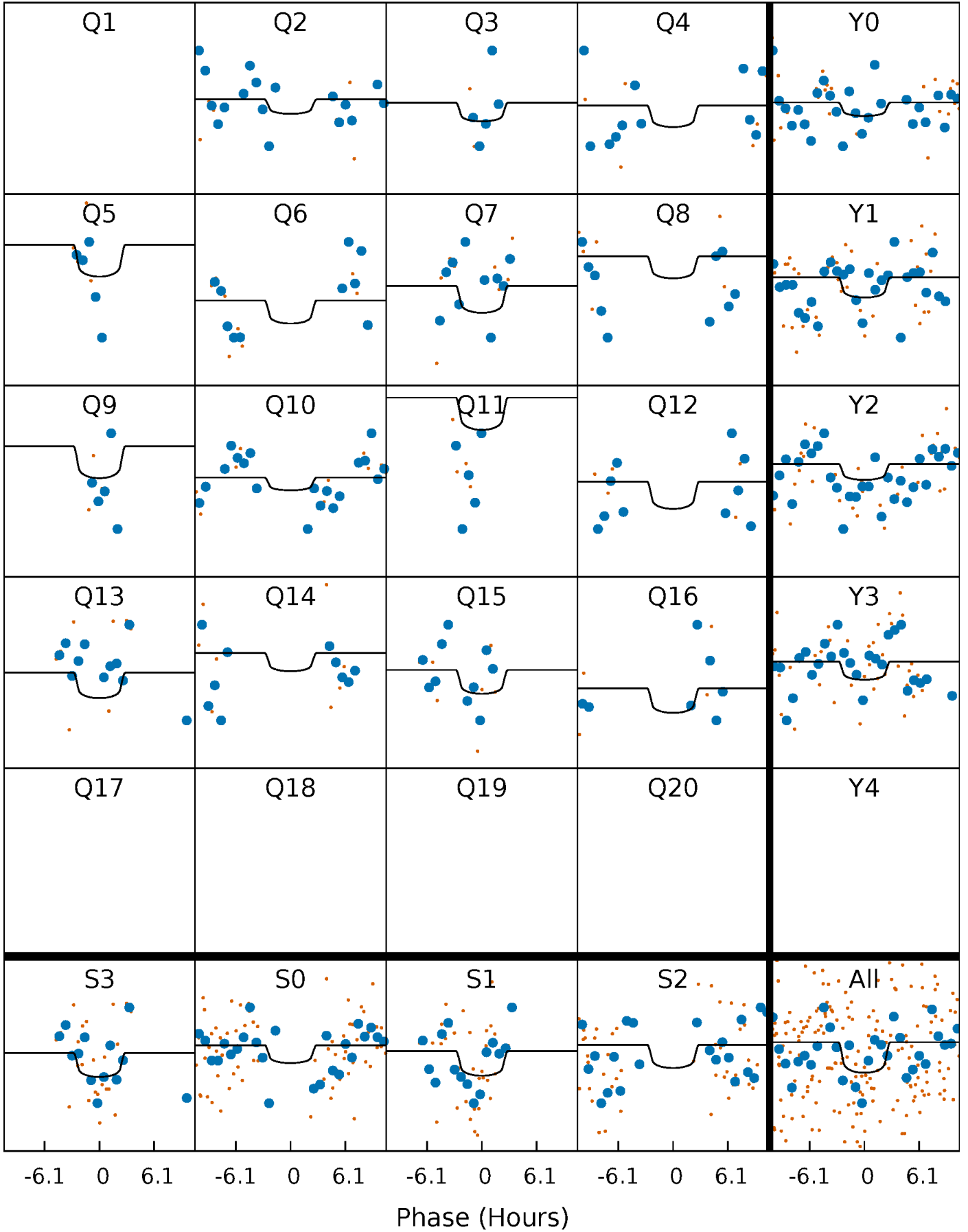
PDC Quarter-Phased Transit Curves

TCE 011086639-05 P= 15.448184 Days $T_0=142.372145$ (BKJD)



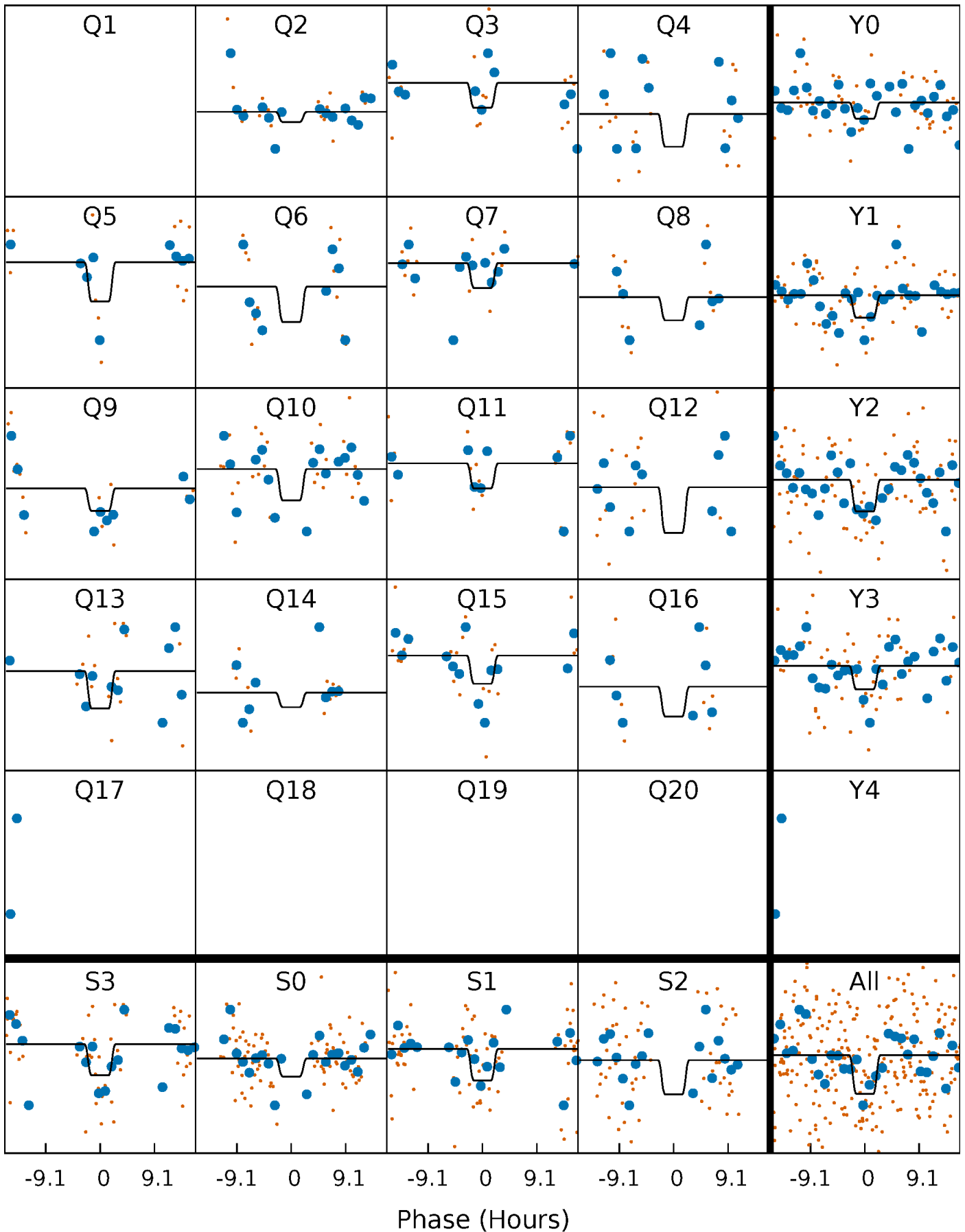
DV Quarter-Phased Transit Curves

TCE 011086639-05 P= 15.448184 Days $T_0=142.372145$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

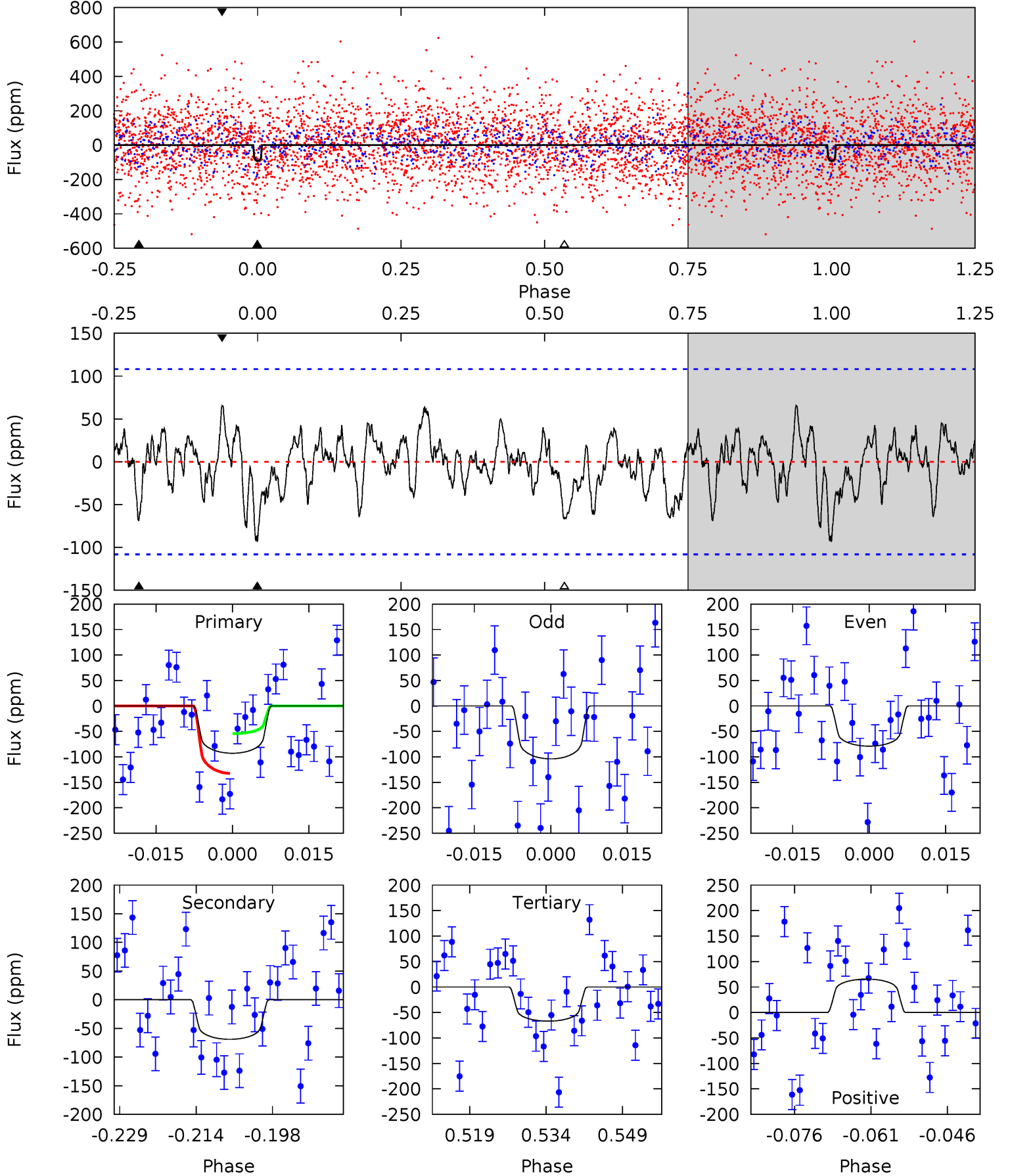
TCE 011086639-05 P= 15.447507 Days $T_0=142.381137$ (BKJD)



DV Model-Shift Uniqueness Test

011086639-05, $P = 15.448184$ Days, $E = 126.923961$ Days

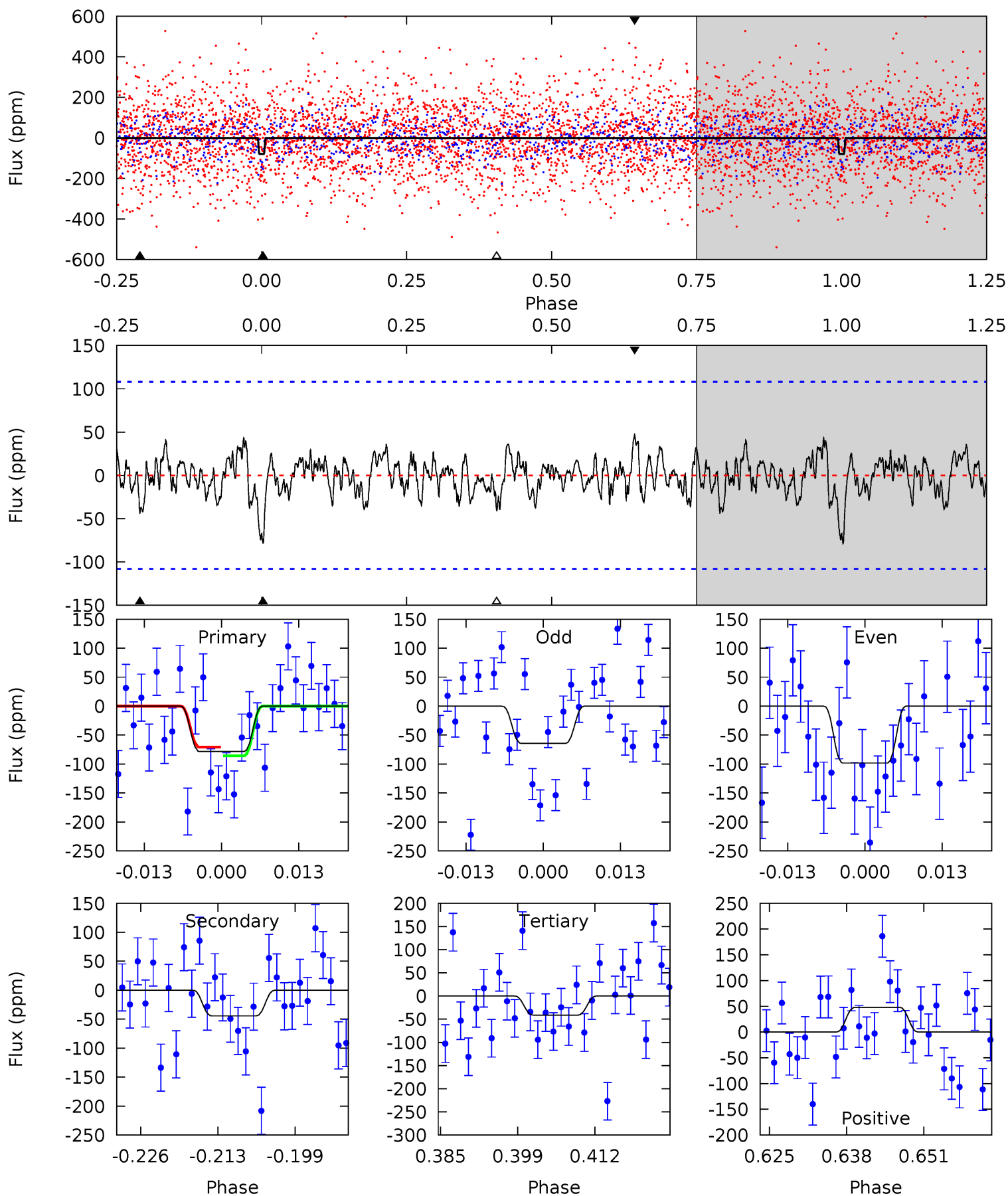
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.25	3.15	3.06	3.00	4.94	2.43	1.20	1.18	1.25	0.09	0.16	0.57	1.14	0.41	1.80



Alt Model-Shift Uniqueness Test

011086639-05, $P = 15.447507$ Days, $E = 126.933630$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.61	2.04	1.90	2.22	4.97	2.48	0.79	1.71	1.39	0.14	-0.18	0.78	0.94	0.38	0.35



Stellar Parameters For KIC 011086639

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5912^{+146}_{-161}	$4.484^{+0.078}_{-0.195}$	$-0.340^{+0.300}_{-0.300}$	$0.903^{+0.243}_{-0.104}$	$0.906^{+0.109}_{-0.099}$	$1.735^{+0.575}_{-0.849}$
	+2%/-3%	+2%/-4%	+88%/-88%	+27%/-12%	+12%/-11%	+33%/-49%
Source	PHO1	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 011086639-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-69 ± 22	$1.55^{+1.41}_{-1.00}$	1025^{+73}_{-49}	4491^{+2760}_{-923}	200^{+1356}_{-146}
Alt.	-44 ± 22	$1.62^{+1.26}_{-1.01}$	1021^{+73}_{-46}	4050^{+1885}_{-768}	117^{+620}_{-83}

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

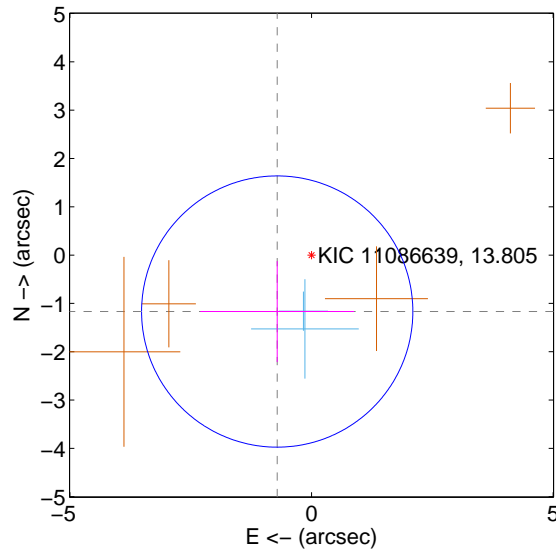
Supplemental centroid analysis for 011086639-05. Kepler magnitude: 13.80. Transit SNR 9.73

There are 2 quarters with good PRF difference image offsets

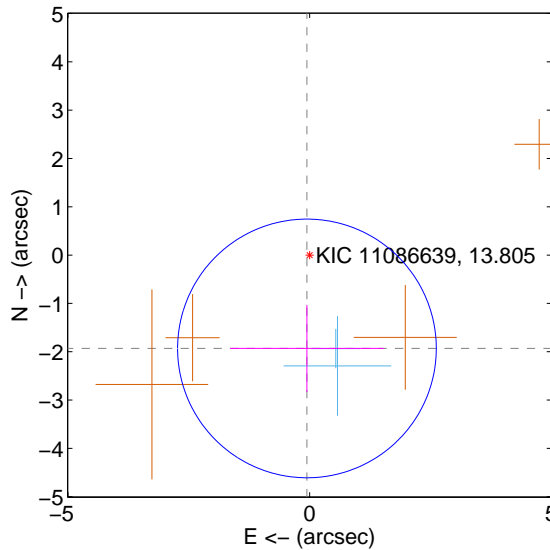
The direct PRF centroid is offset from the target star catalog position by about 1.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.367 ± 0.936	1.46	0.710 ± 1.591	-1.168 ± 1.045
PRF-fit source offset from KIC position	1.933 ± 0.892	2.17	0.055 ± 1.589	-1.932 ± 0.899
photometric centroid source offset	1.15 ± 0.91	1.26	-0.26 ± 0.84	-1.12 ± 0.91

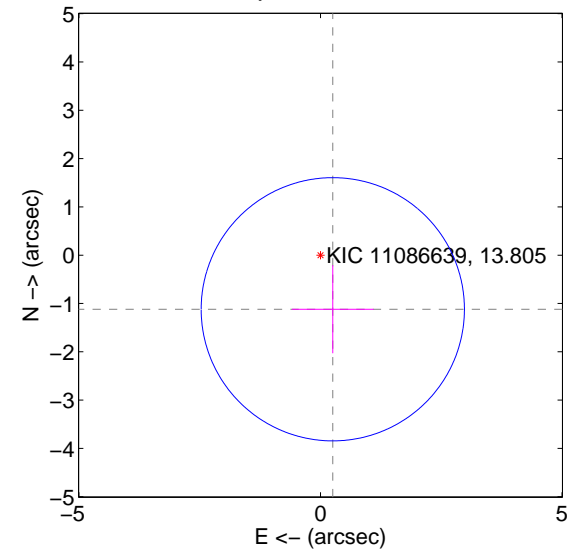
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

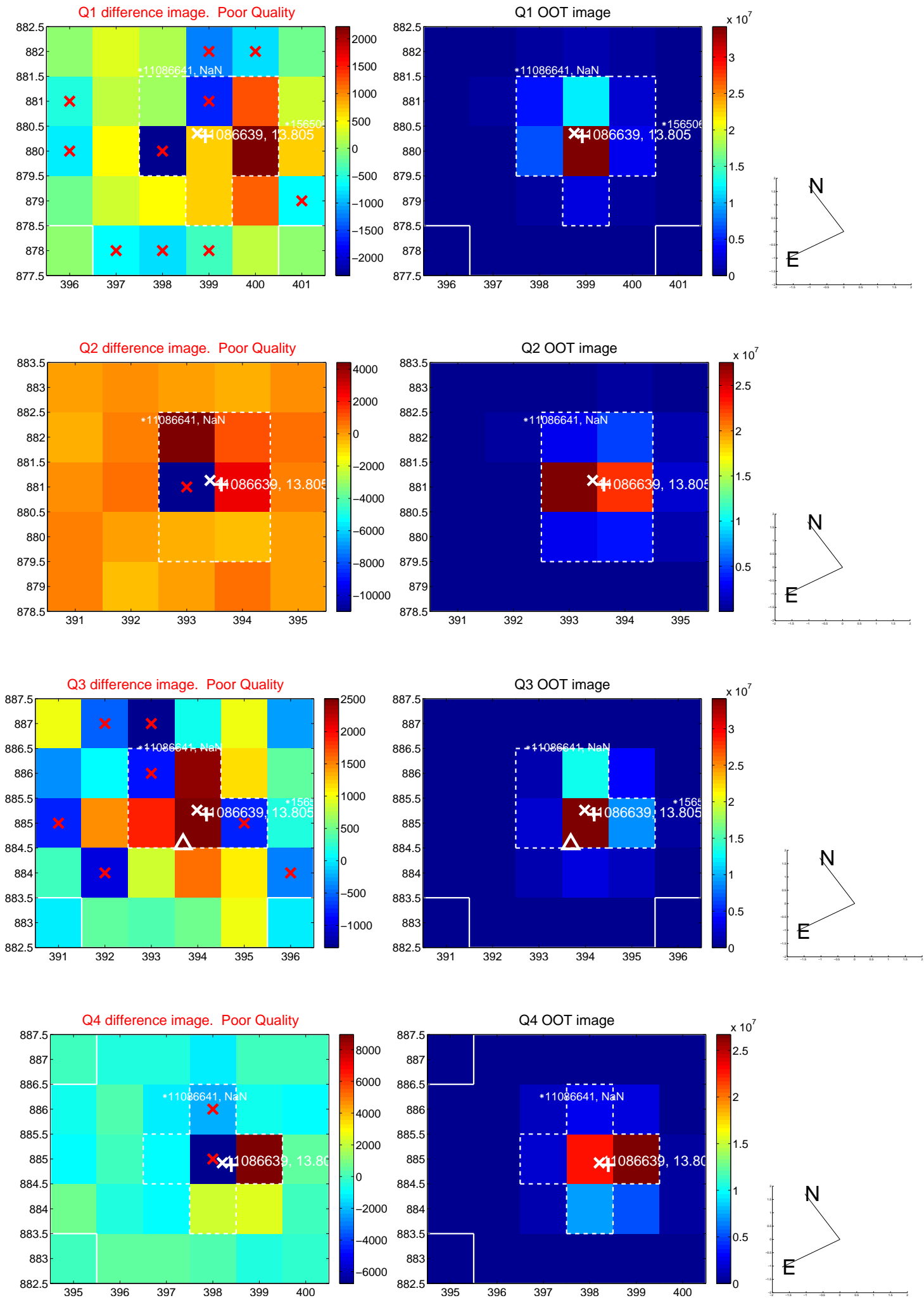


offset from photometric centroids

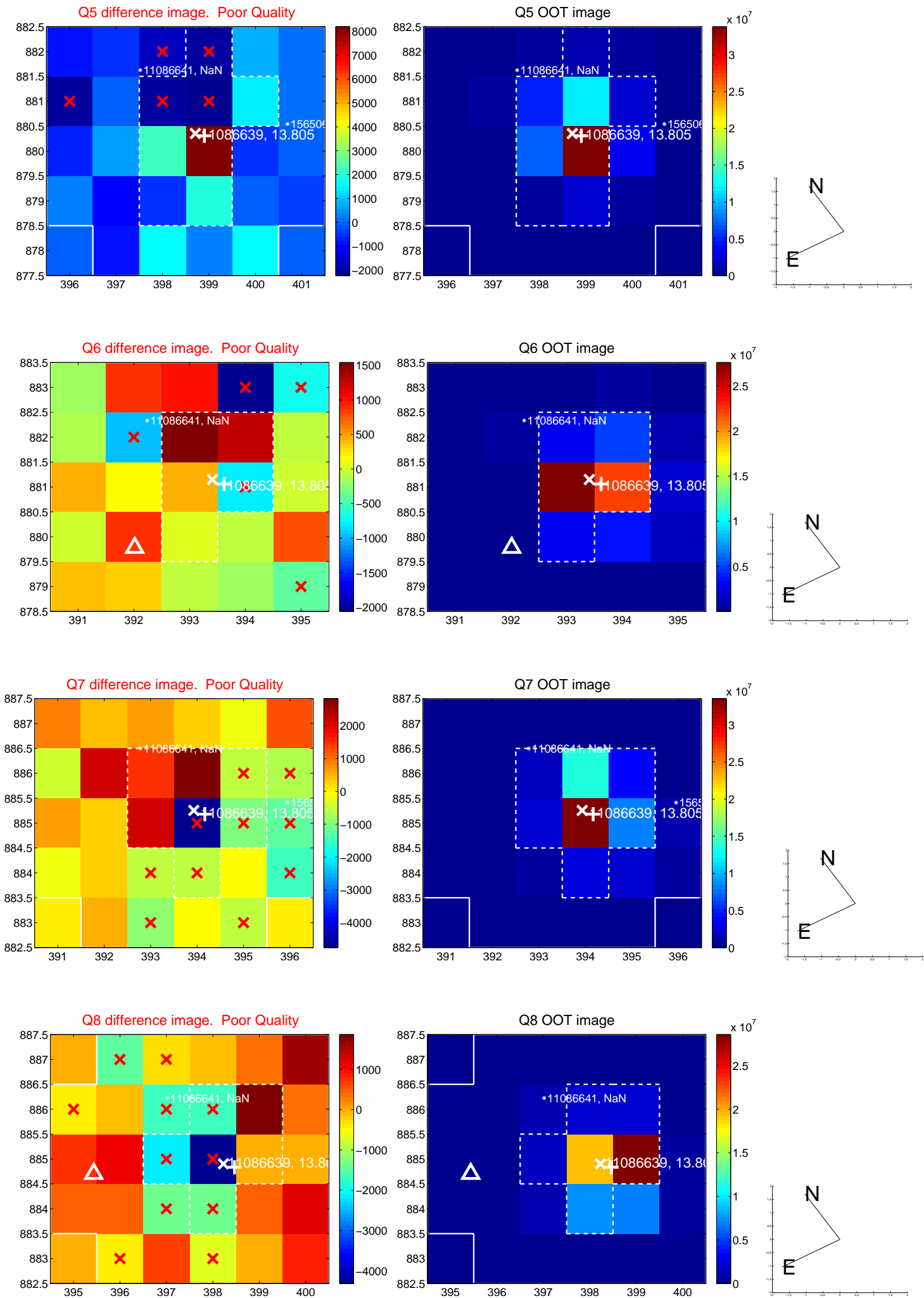


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

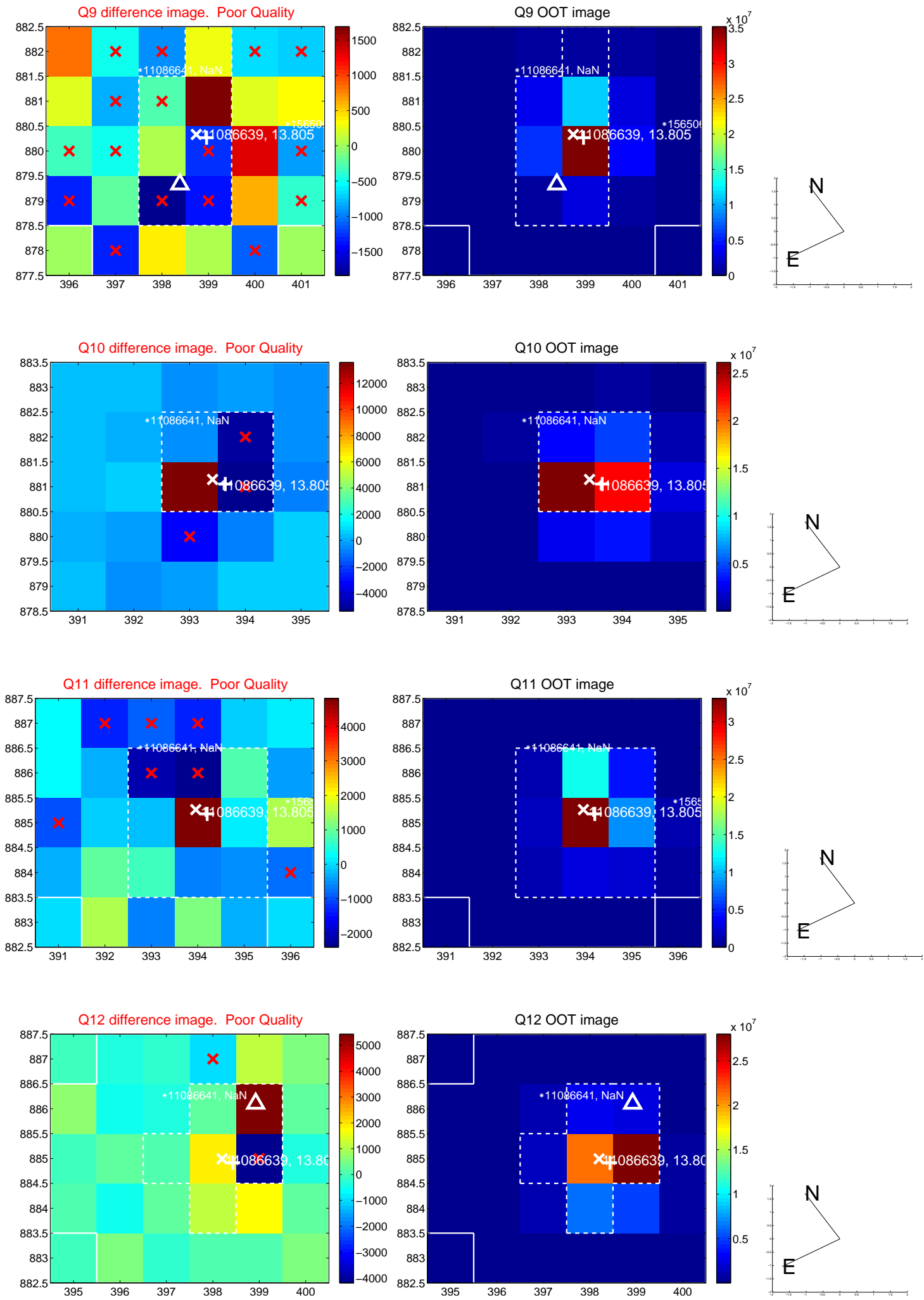
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



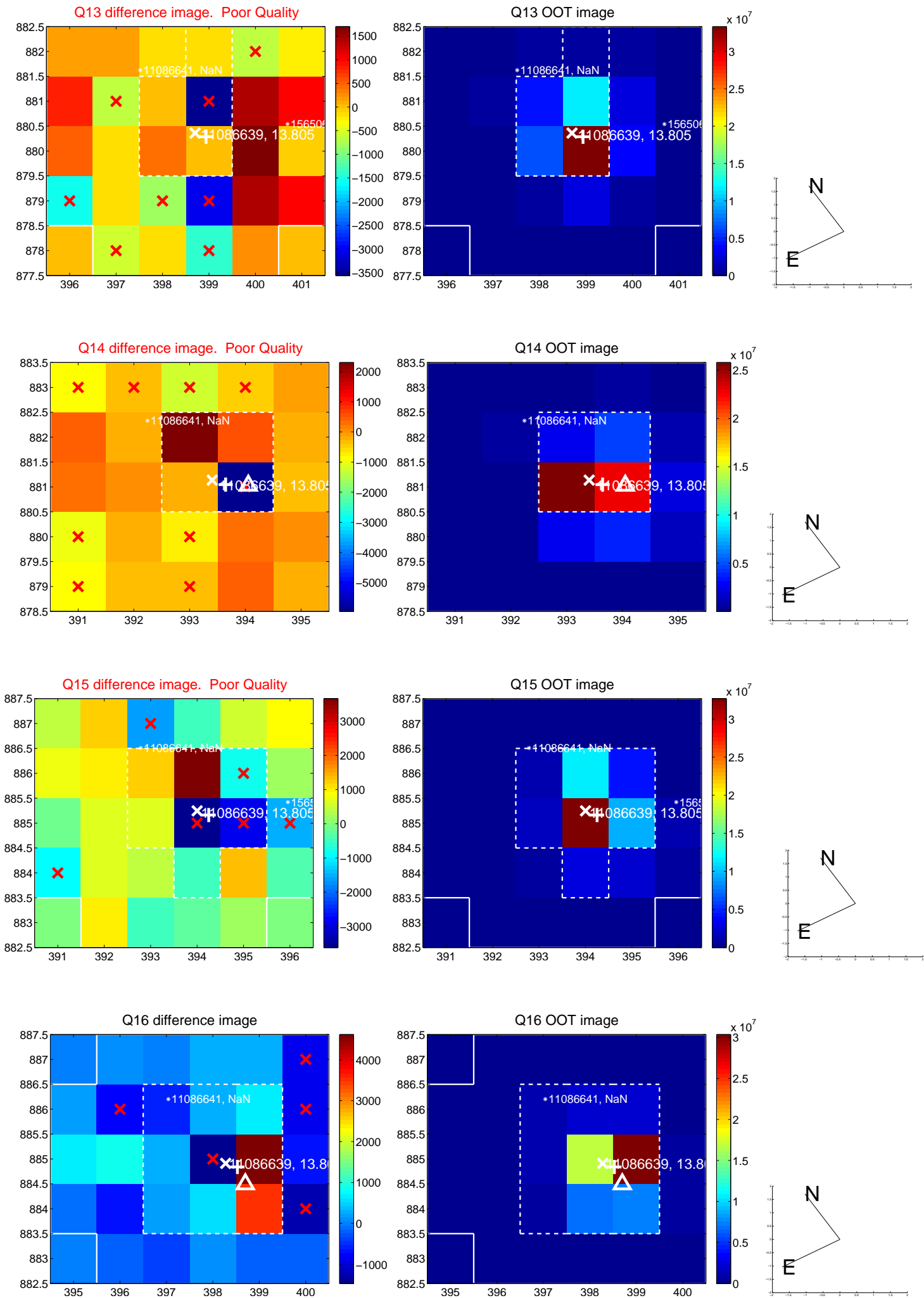
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



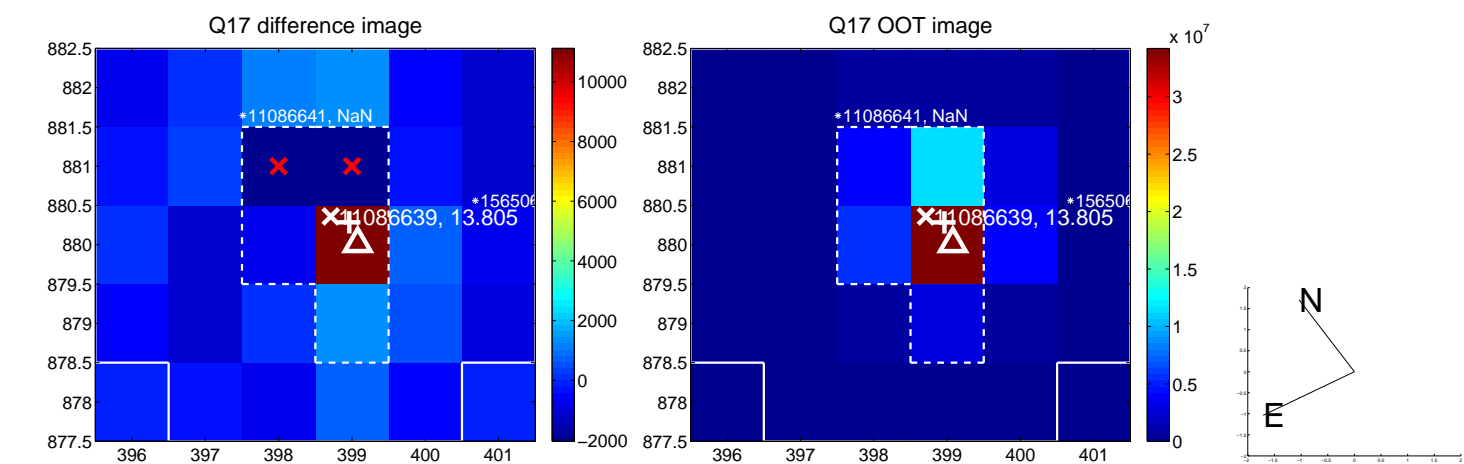
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



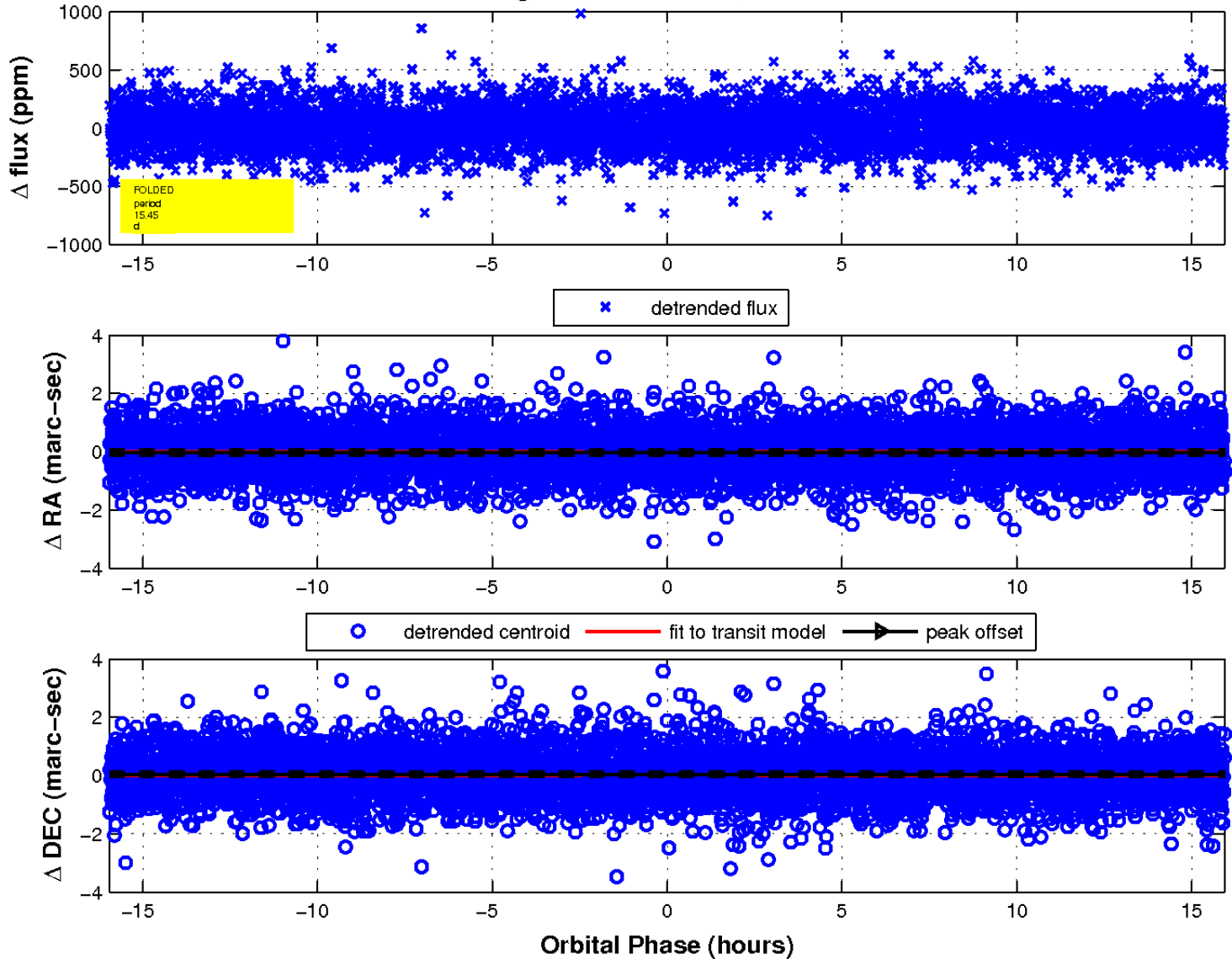
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

Declination

