

KIC 011409673

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})
011409673-01	OBS	No	12.310280	139.866789	41.3	10.835	14.0	9.5	1.88	7516	1.41	675.64
011409673-02	OBS	No	12.310705	138.226824	73.3	15.000	11.9	-1.0	1.88	7516	1.64	675.61
011409673-03	OBS	No	12.312956	132.178490	61.0	15.000	9.6	-1.0	1.88	7516	1.49	675.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011409673-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
011409673-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
011409673-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

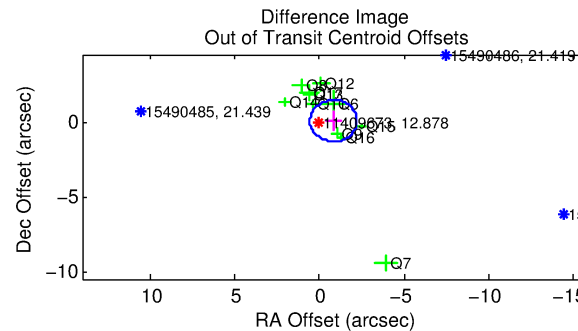
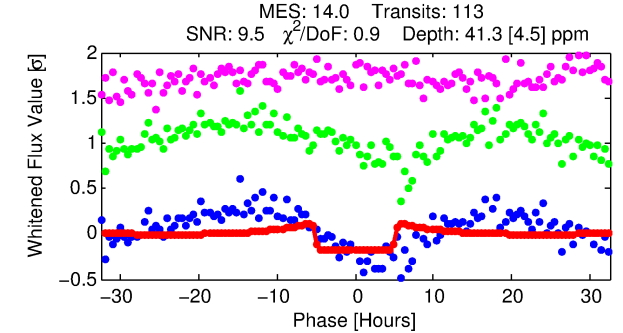
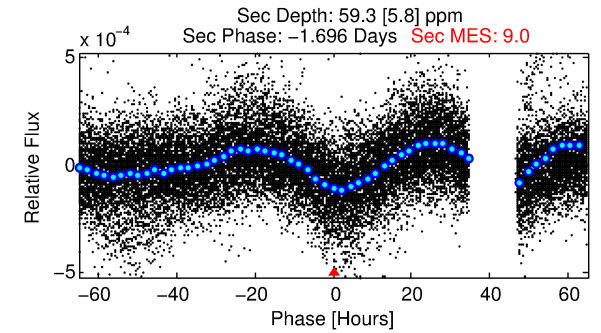
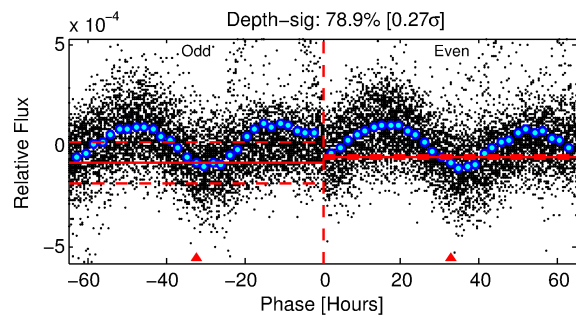
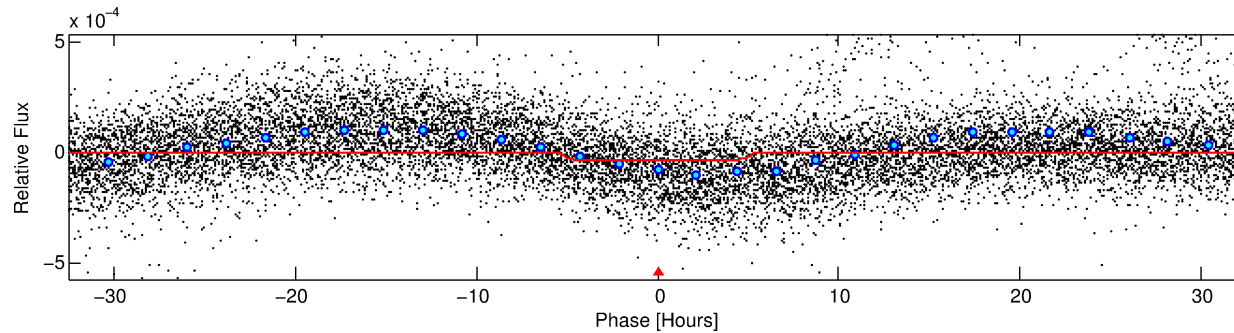
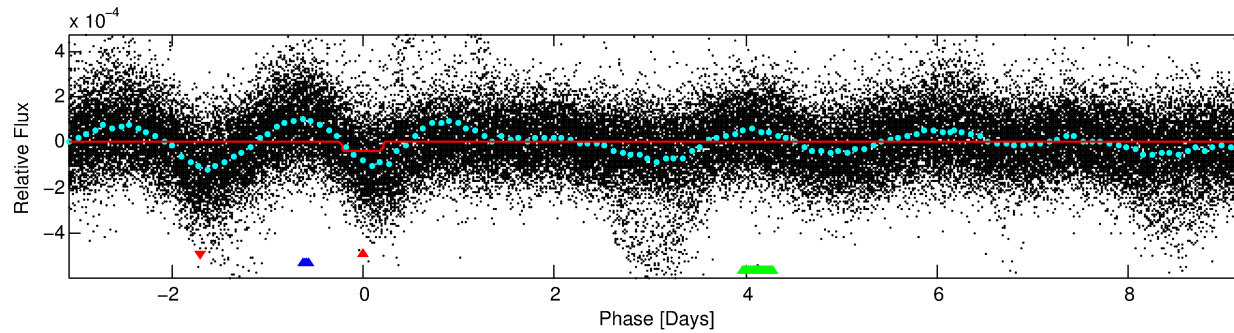
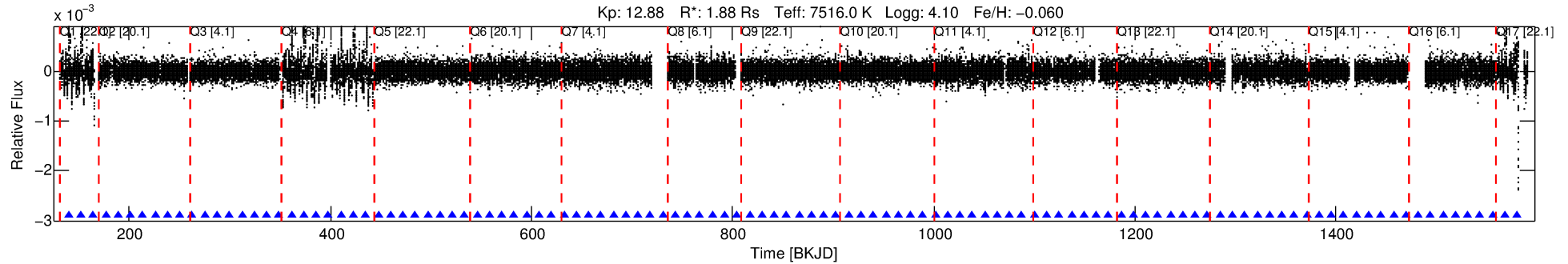
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011409673-01

No Significant Match Found

DV One-Page Summary

KIC: 11409673 Candidate: 1 of 3 Period: 12.310 d



DV Fit Results:

Period = 12.31028 [0.00017] d
Epoch = 139.8668 [0.0109] BKJD
Rp/R* = 0.0069 [0.0008]
a/R* = 3.77 [2.42]
b = 0.91 [0.12]
Seff = 675.64 [150.18]
Teq = 1300 [72] K
Rp = 1.41 [0.32] Re
a = 0.1225 [0.0189] AU
Ag = 244.92 [83.93] [2.91σ]
Teffp = 7952 [533] K [12.37σ]

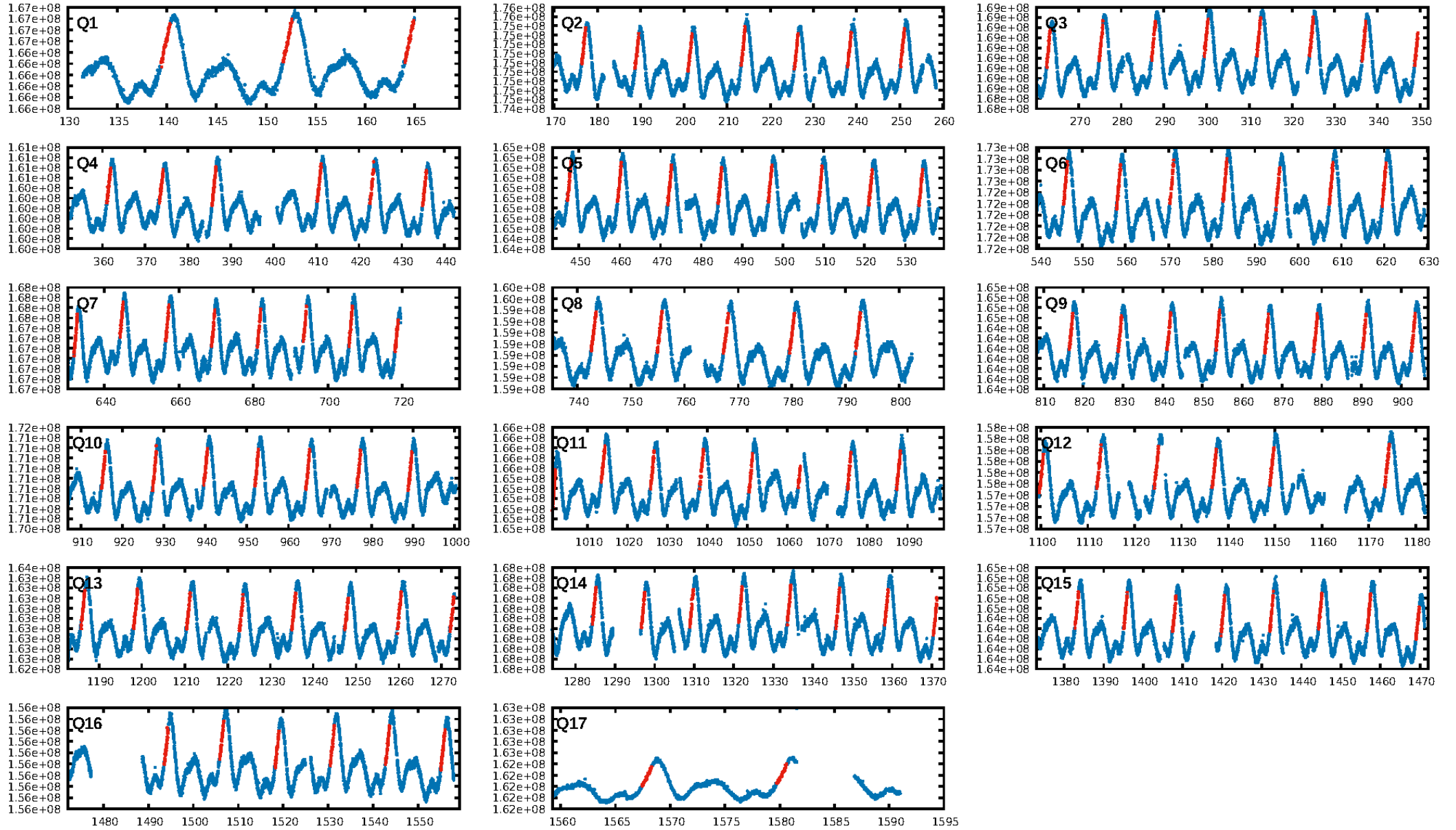
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 66.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.97e-32
RollingBand-fgt: 1.00 [108/108]
GhostDiagnostic-chr: -0.4337
Centroid-sig: 41.4%
Centroid-so: 0.848 arcsec [0.85σ]
OotOffset-rm: 0.817 arcsec [1.76σ]
OotOffset-st: 2/3/3/3 [11]
KicOffset-rm: 0.911 arcsec [1.57σ]
KicOffset-st: 2/3/3/3 [11]
DiffImageQuality-fgm: 0.82 [9/11]
DiffImageOverlap-fno: 0.00 [0/17]

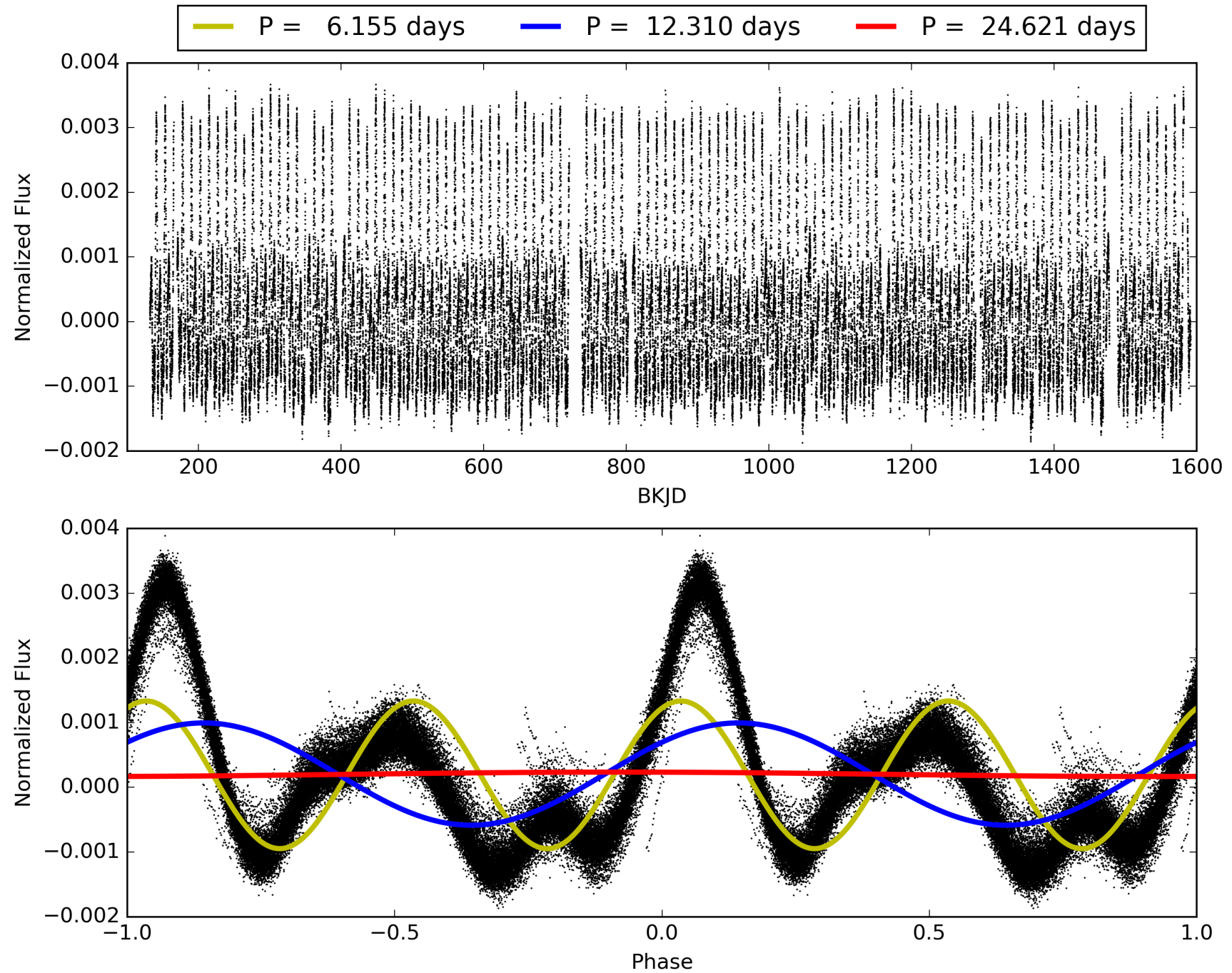
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:31:07 Z

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

TCE 011409673-01, PDC Light Curves

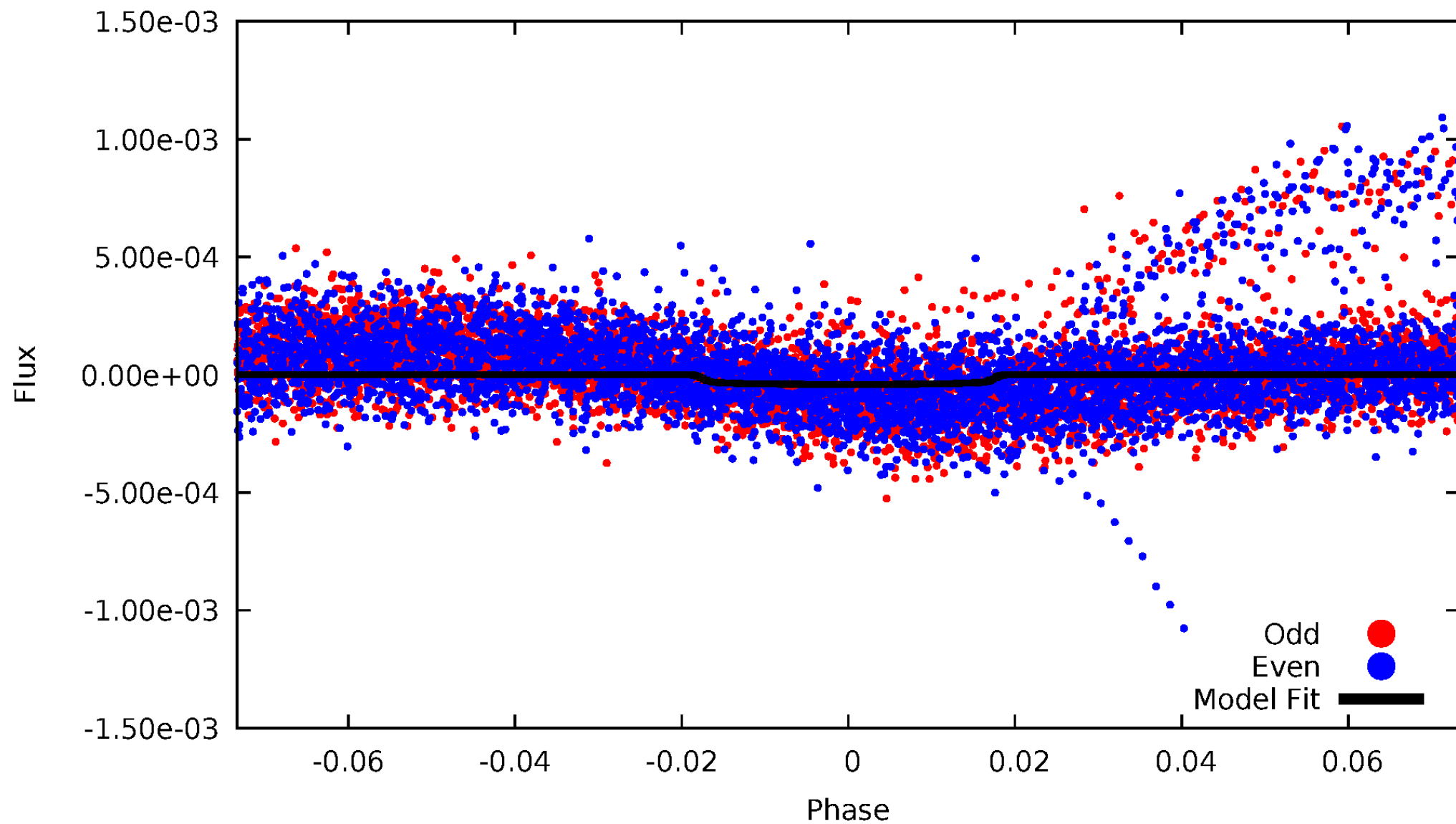


TCE 011409673-01



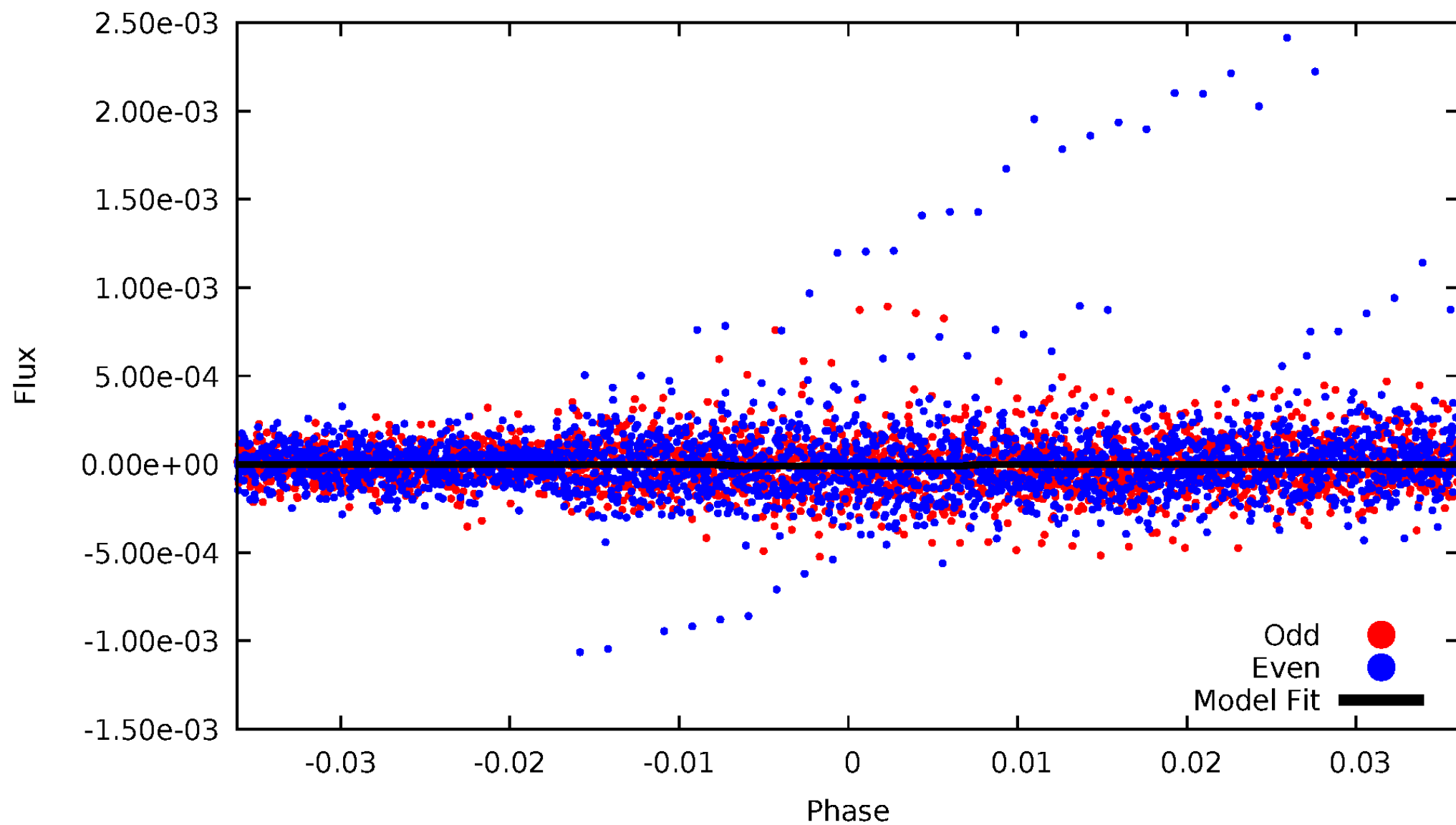
DV Odd/Even

TCE 011409673-01



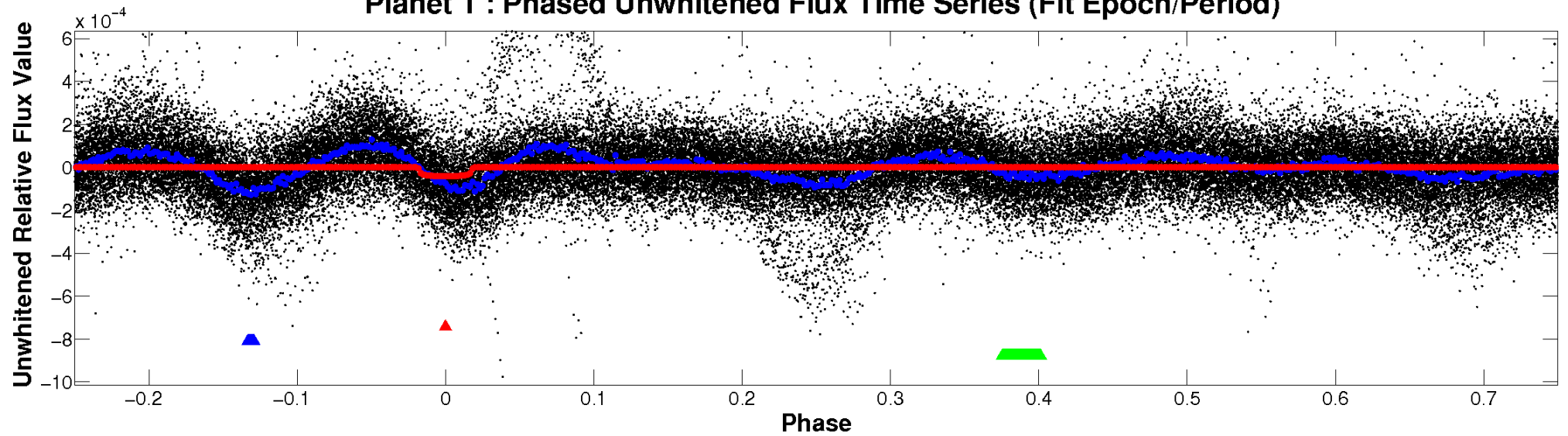
ALT Odd/Even

TCE 011409673-01

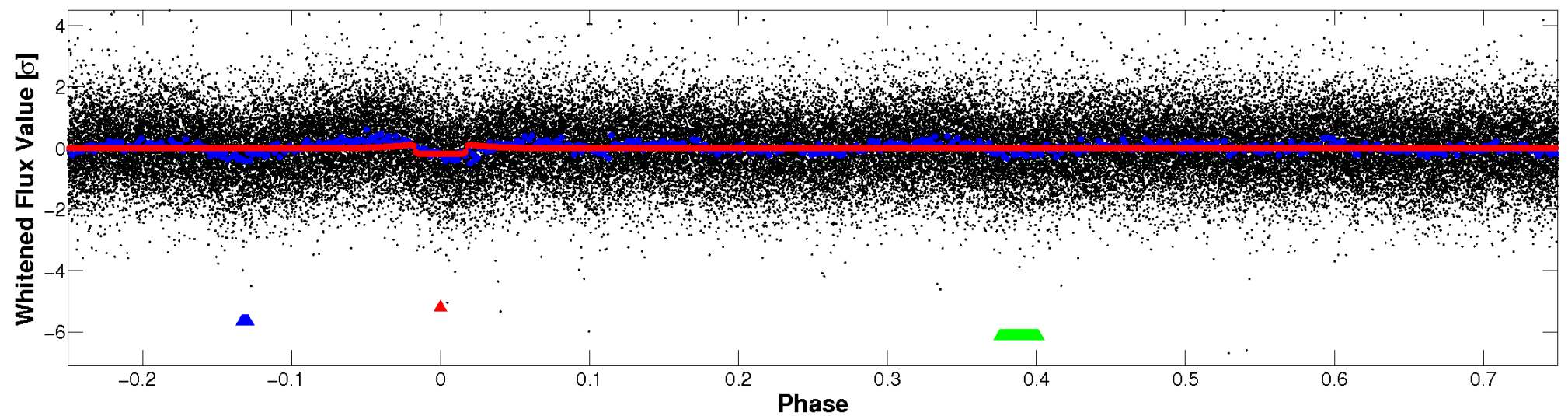


Non-Whitened Vs. Whitened Light Curve

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

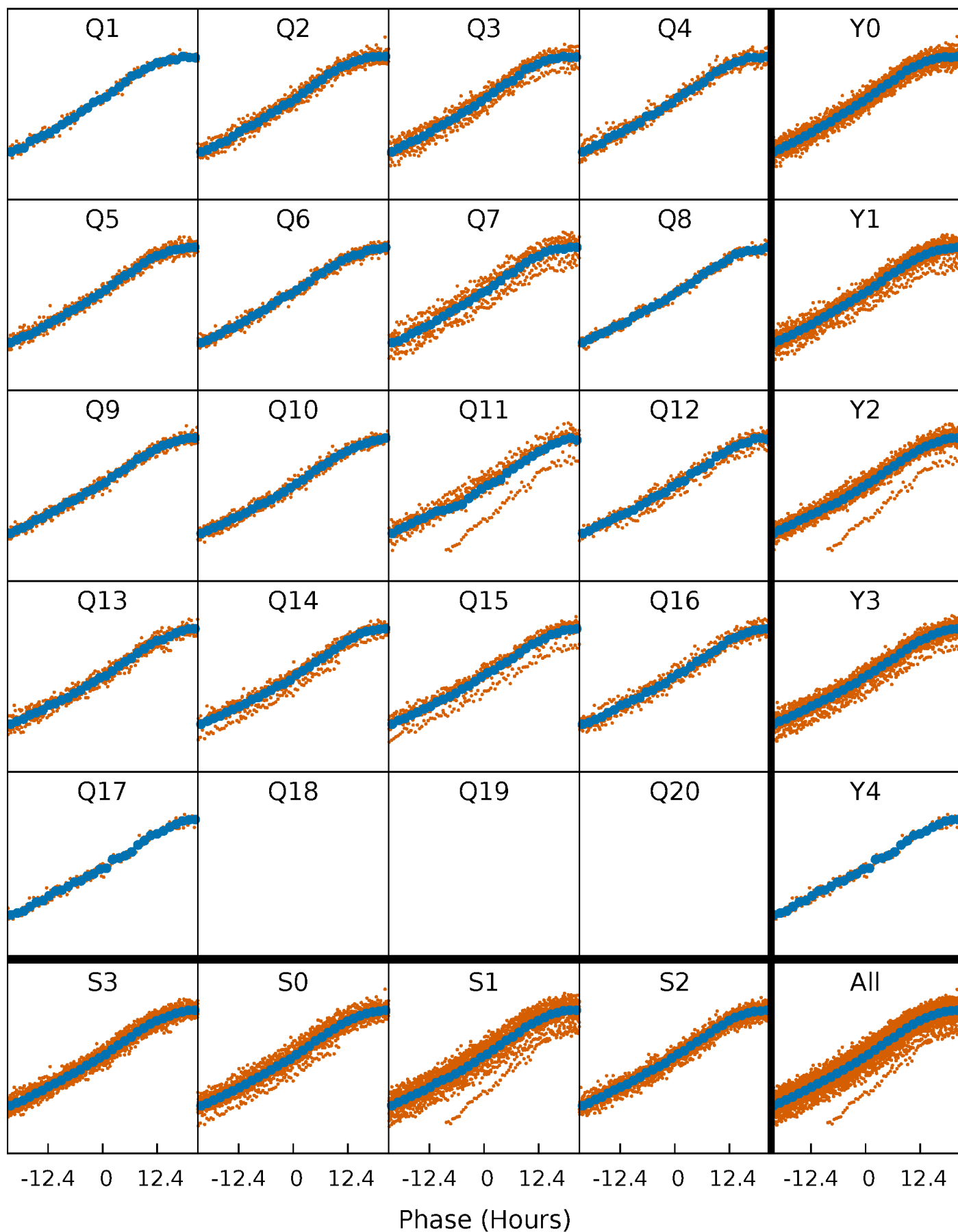


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



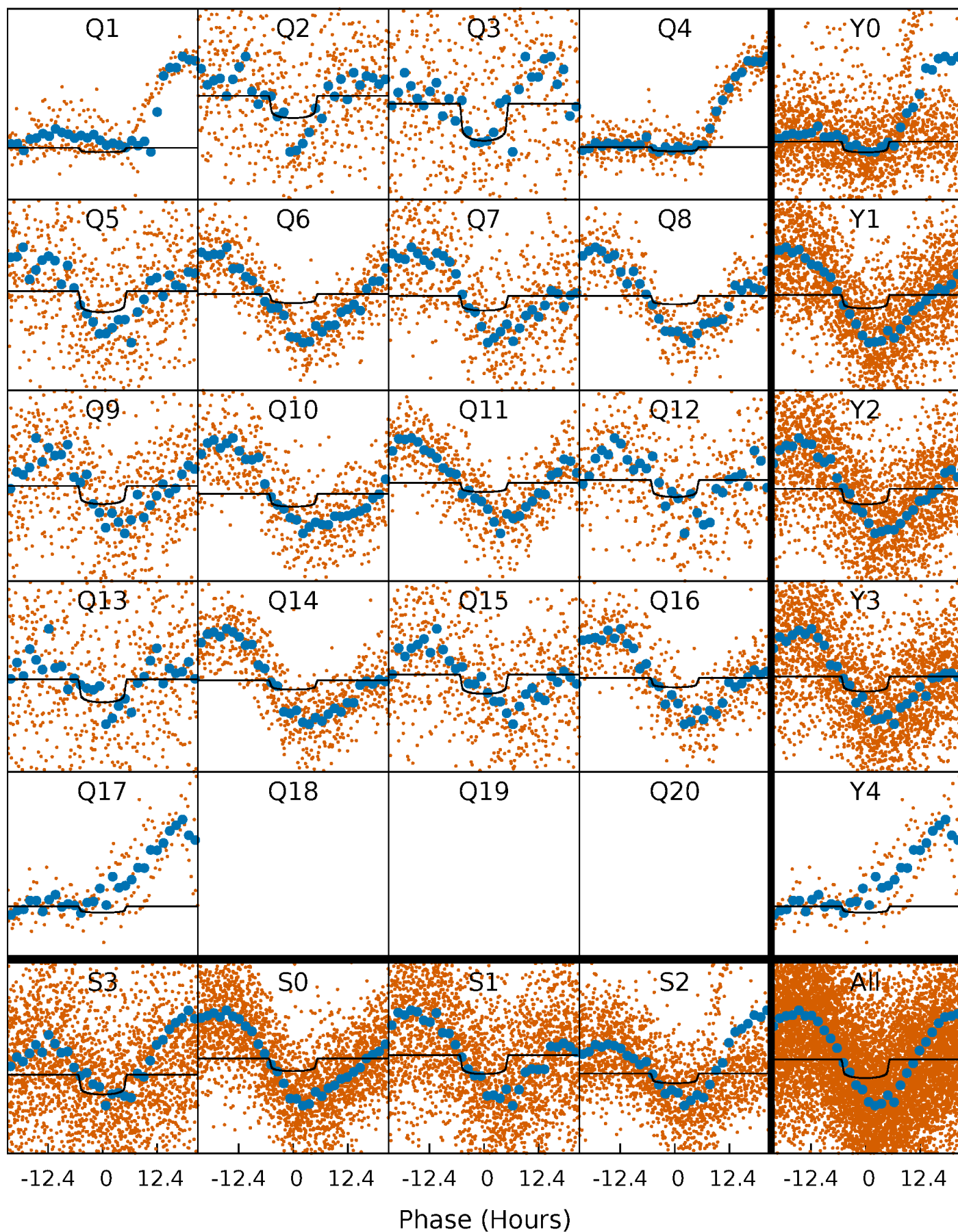
PDC Quarter-Phased Transit Curves

TCE 011409673-01 P= 12.310280 Days $T_0=139.866789$ (BKJD)



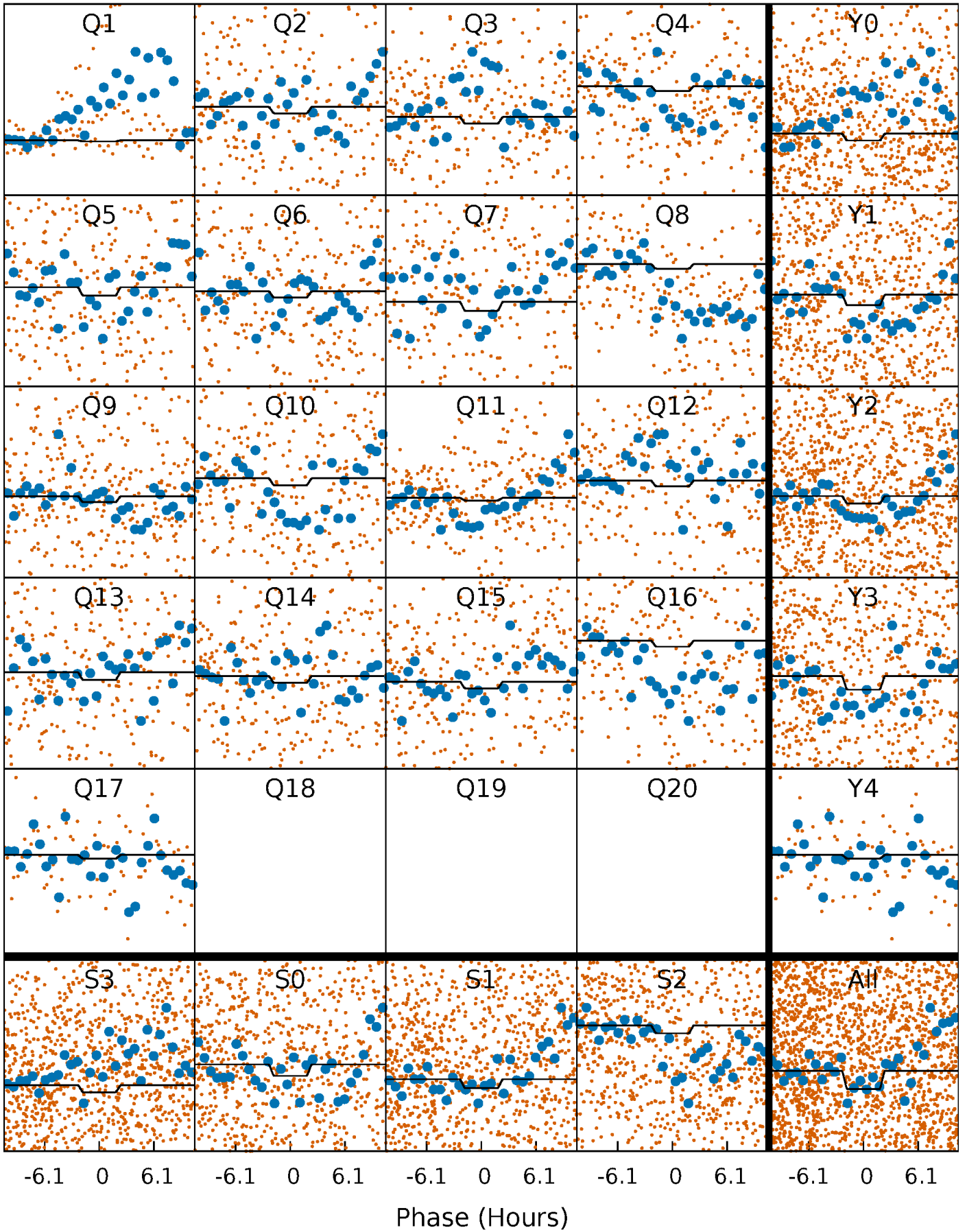
DV Quarter-Phased Transit Curves

TCE 011409673-01 P= 12.310280 Days $T_0=139.866789$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

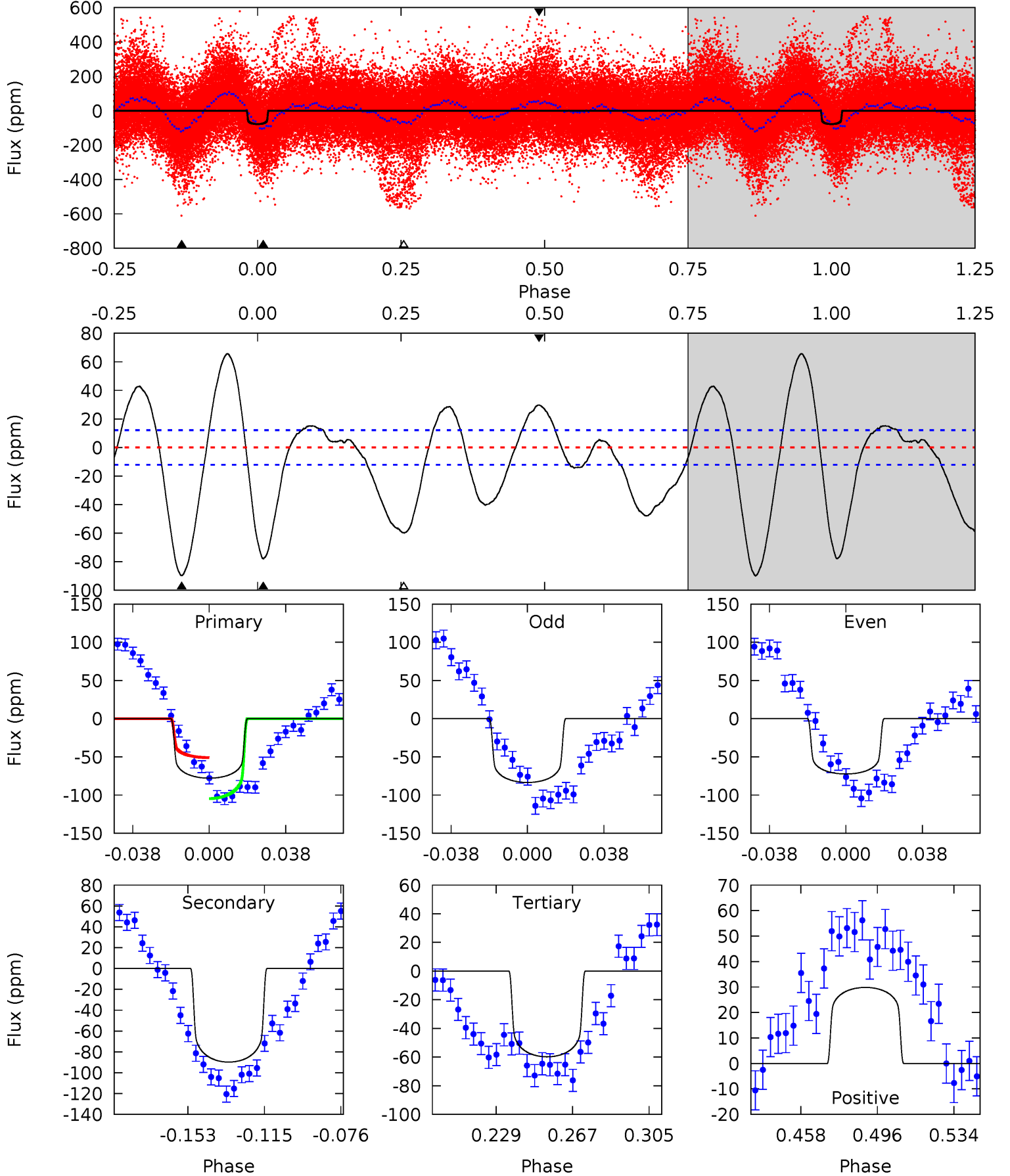
TCE 011409673-01 P= 12.310705 Days $T_0=139.674795$ (BKJD)



DV Model-Shift Uniqueness Test

011409673-01, P = 12.310280 Days, E = 127.556509 Days

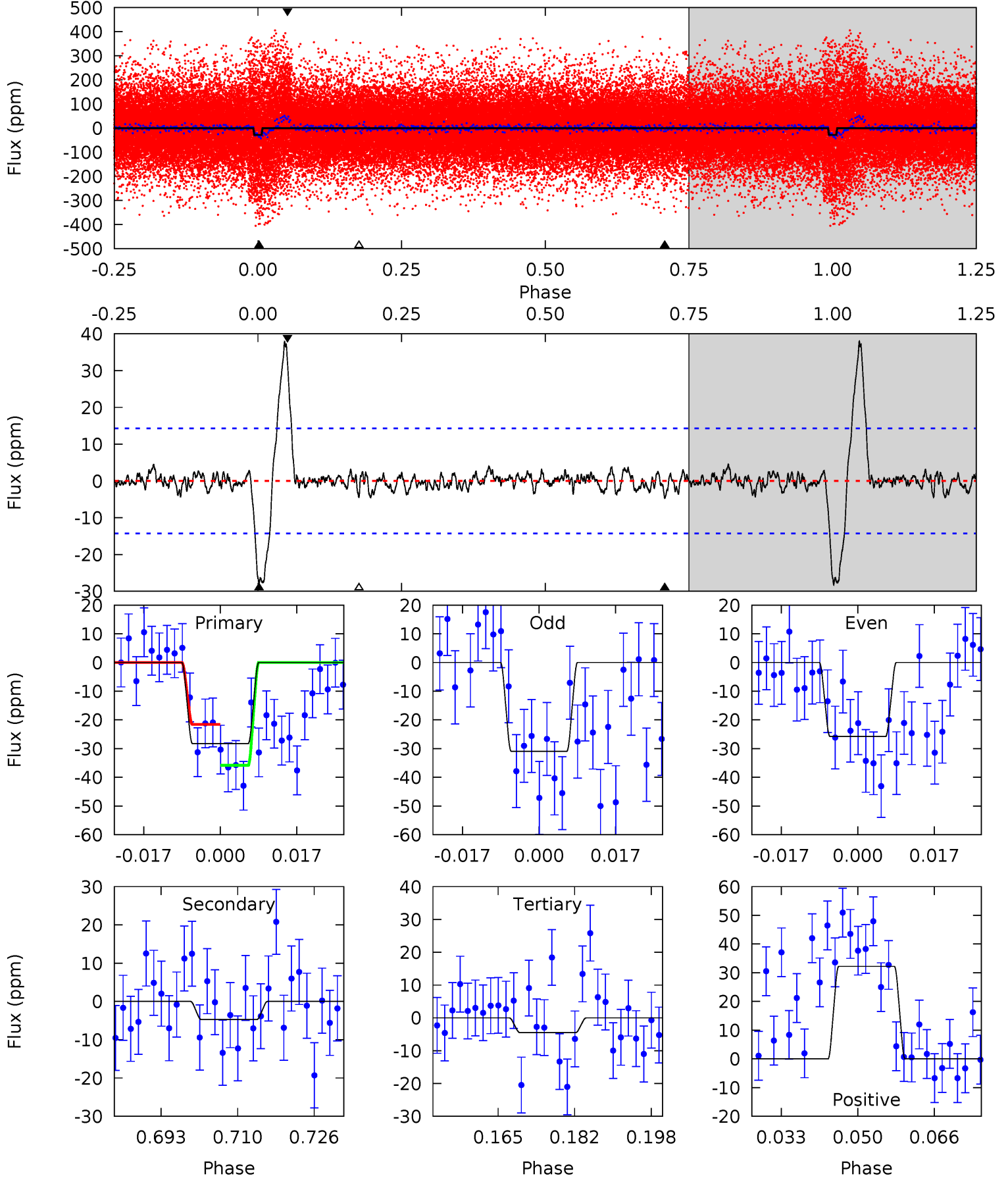
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.7	35.4	23.6	11.8	4.76	2.07	11.3	7.11	18.9	11.8	23.6	2.20	1.14	0.42	10.7



Alt Model-Shift Uniqueness Test

011409673-01, P = 12.310705 Days, E = 127.364090 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.76	1.62	1.55	11.1	4.93	2.40	1.75	8.21	-1.35	0.07	-9.49	0.89	0.47	0.57	2.45



Stellar Parameters For KIC 011409673

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7516^{+75}_{-82}	$4.097^{+0.095}_{-0.116}$	$-0.060^{+0.150}_{-0.150}$	$1.883^{+0.355}_{-0.236}$	$1.616^{+0.124}_{-0.124}$	$0.341^{+0.149}_{-0.122}$
	+1%/-1%	+2%/-3%	+250%/-250%	+19%/-13%	+8%/-8%	+44%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011409673-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-90 ± 3	$1.44^{+0.19}_{-0.22}$	1822^{+83}_{-66}	9203^{+962}_{-686}	361^{+136}_{-84}
Alt.	-5 ± 3	$0.70^{+0.20}_{-0.17}$	1817^{+89}_{-61}	5925^{+1272}_{-1164}	79^{+97}_{-51}

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 $A_{obs} \gg 1.0$

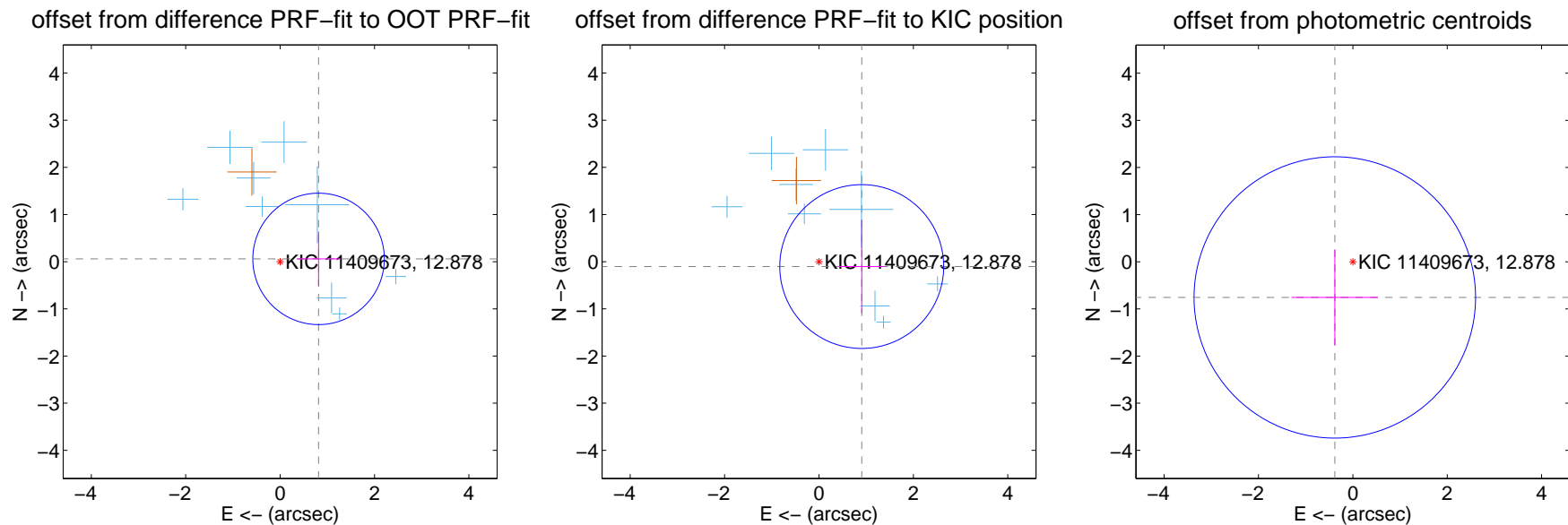
DV Centroid Data

Supplemental centroid analysis for 011409673-01. Kepler magnitude: 12.88. Transit SNR 9.46

There are 9 quarters with good PRF difference image offsets

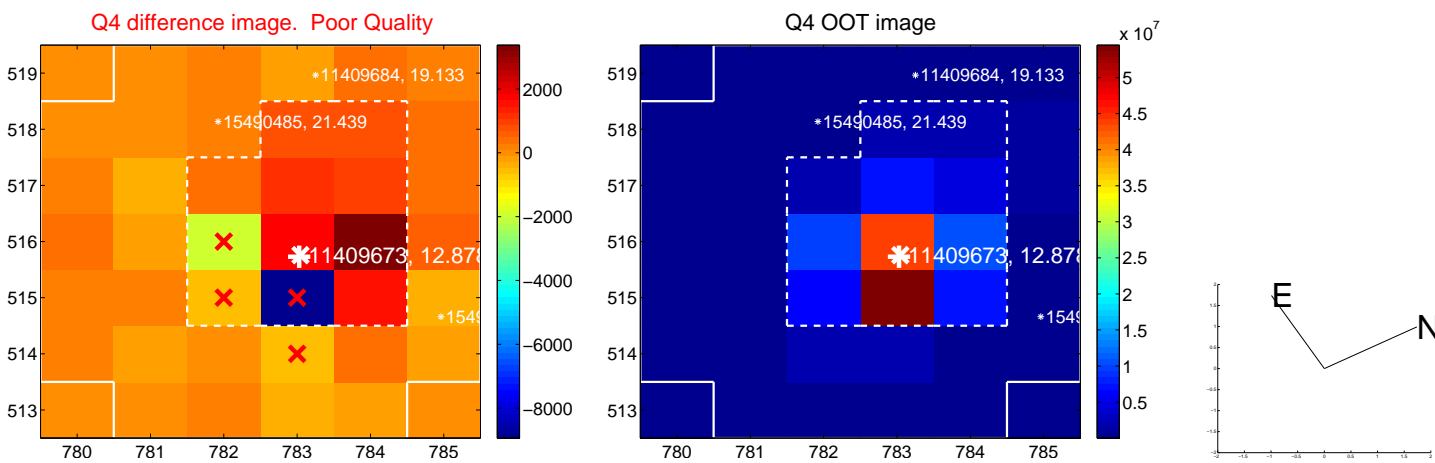
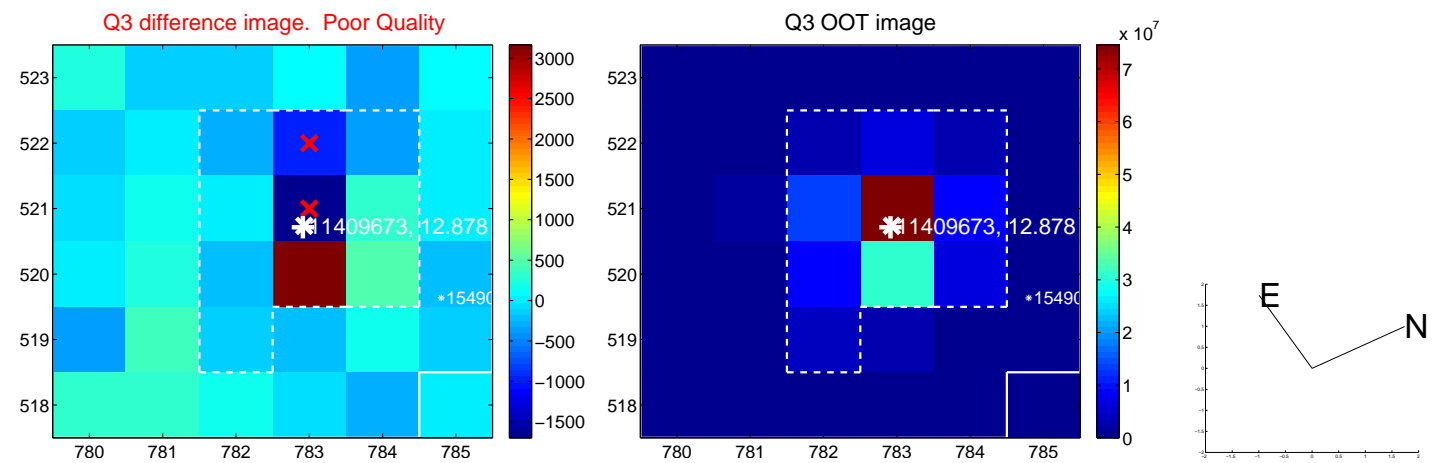
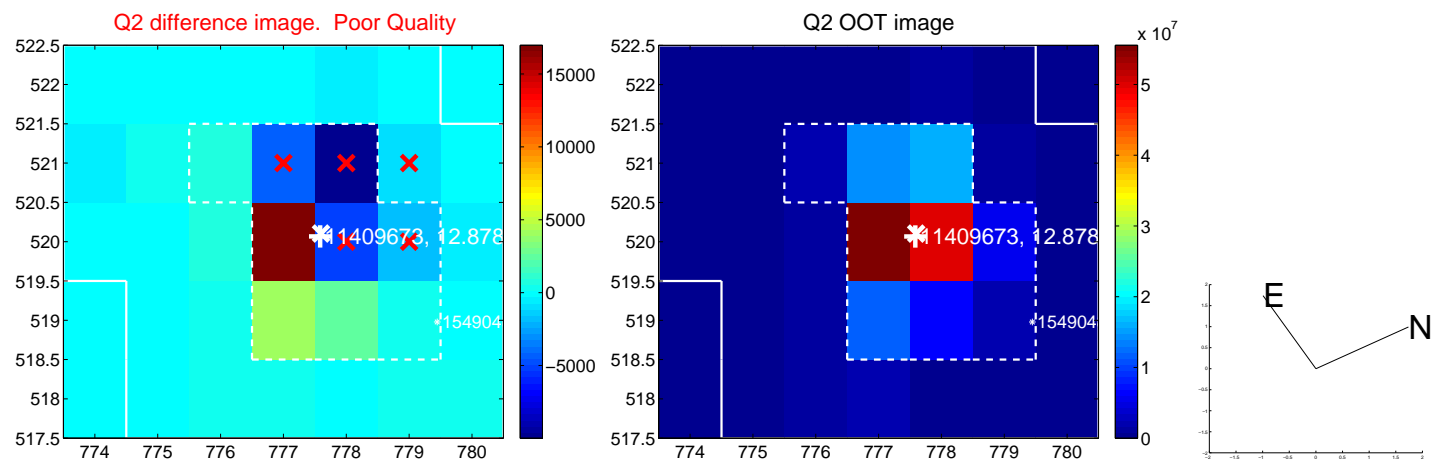
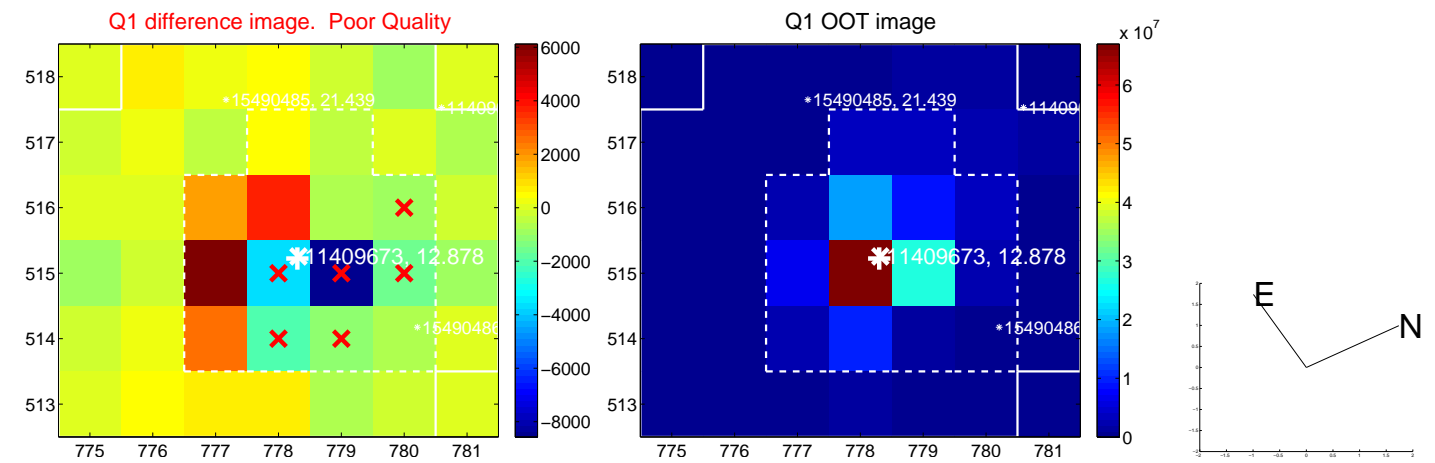
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.817 ± 0.464	1.76	-0.815 ± 0.464	0.059 ± 0.579
PRF-fit source offset from KIC position	0.911 ± 0.579	1.57	-0.906 ± 0.487	-0.103 ± 0.989
photometric centroid source offset	0.85 ± 0.99	0.85	0.38 ± 0.92	-0.76 ± 1.01

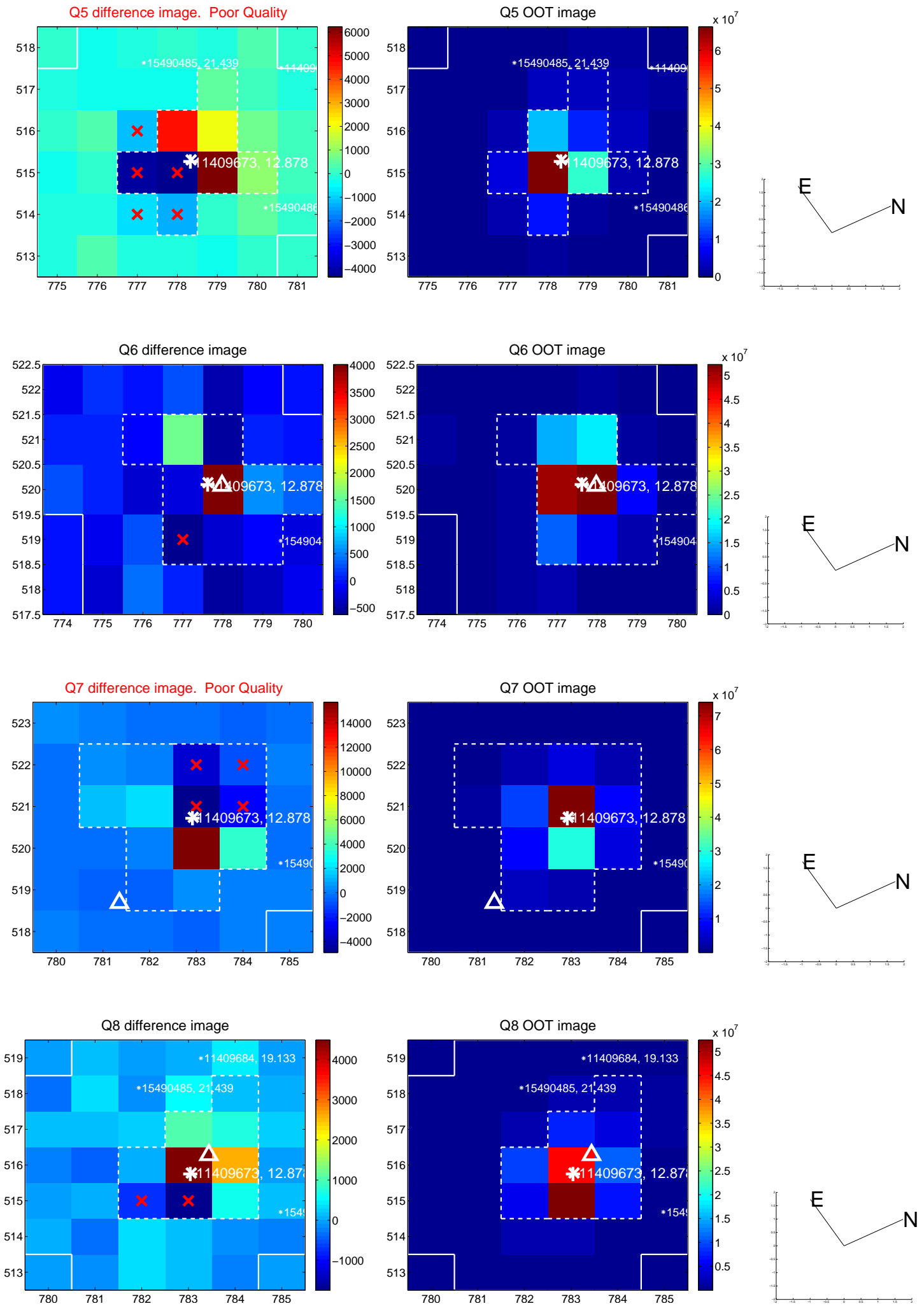


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

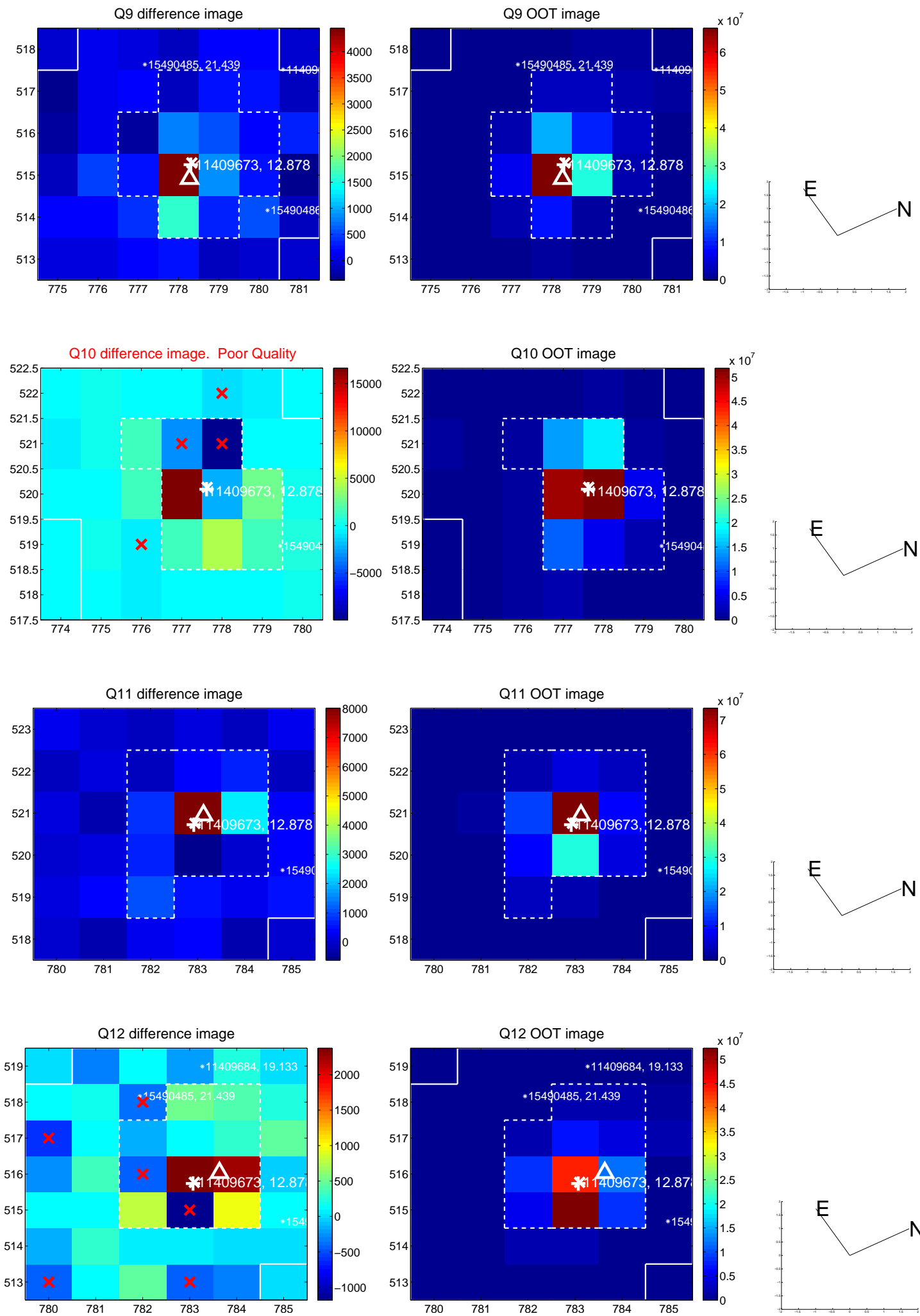
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



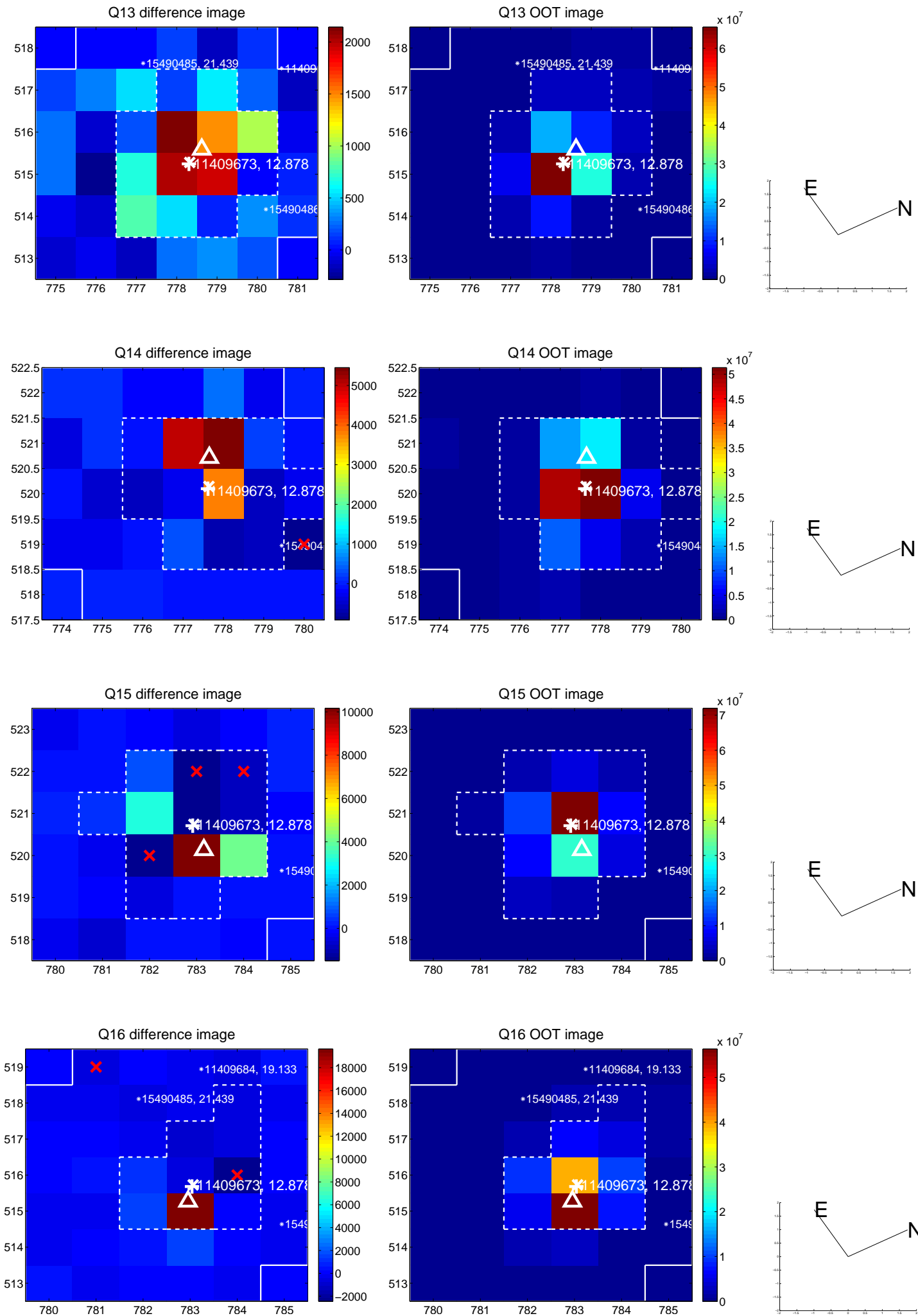
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



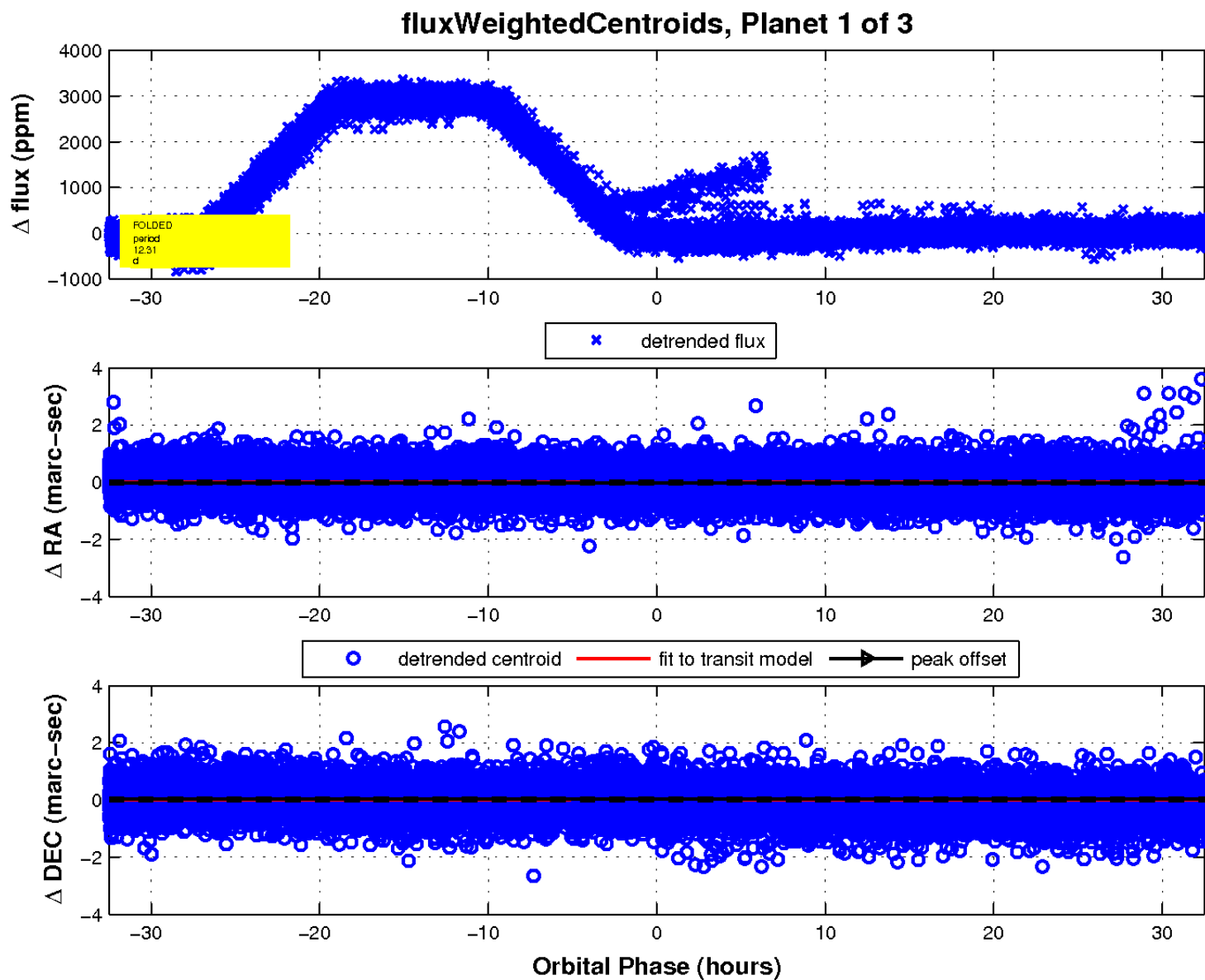
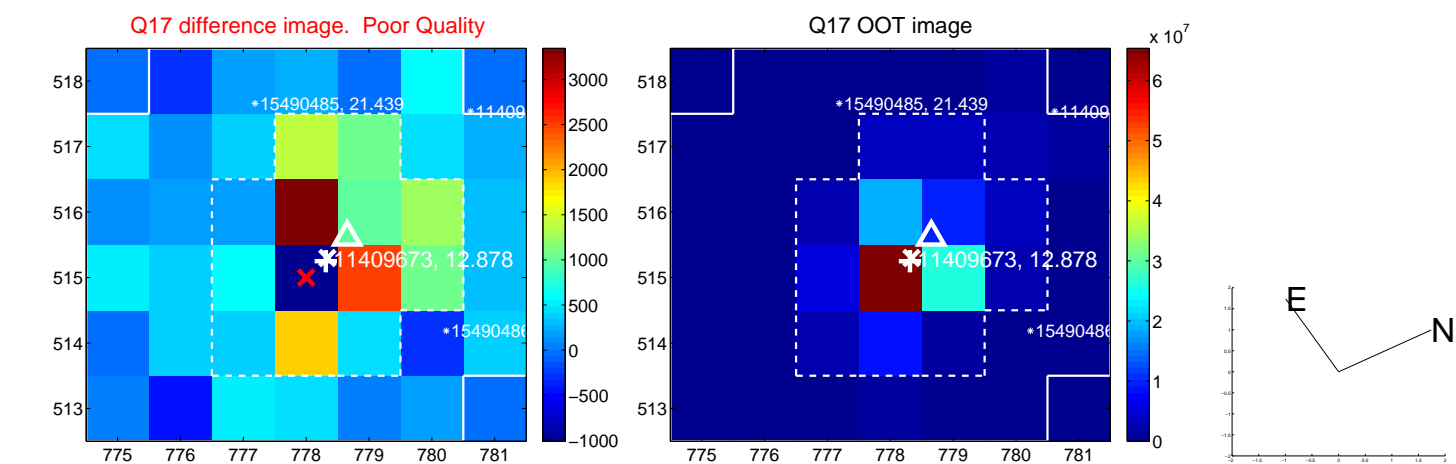
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

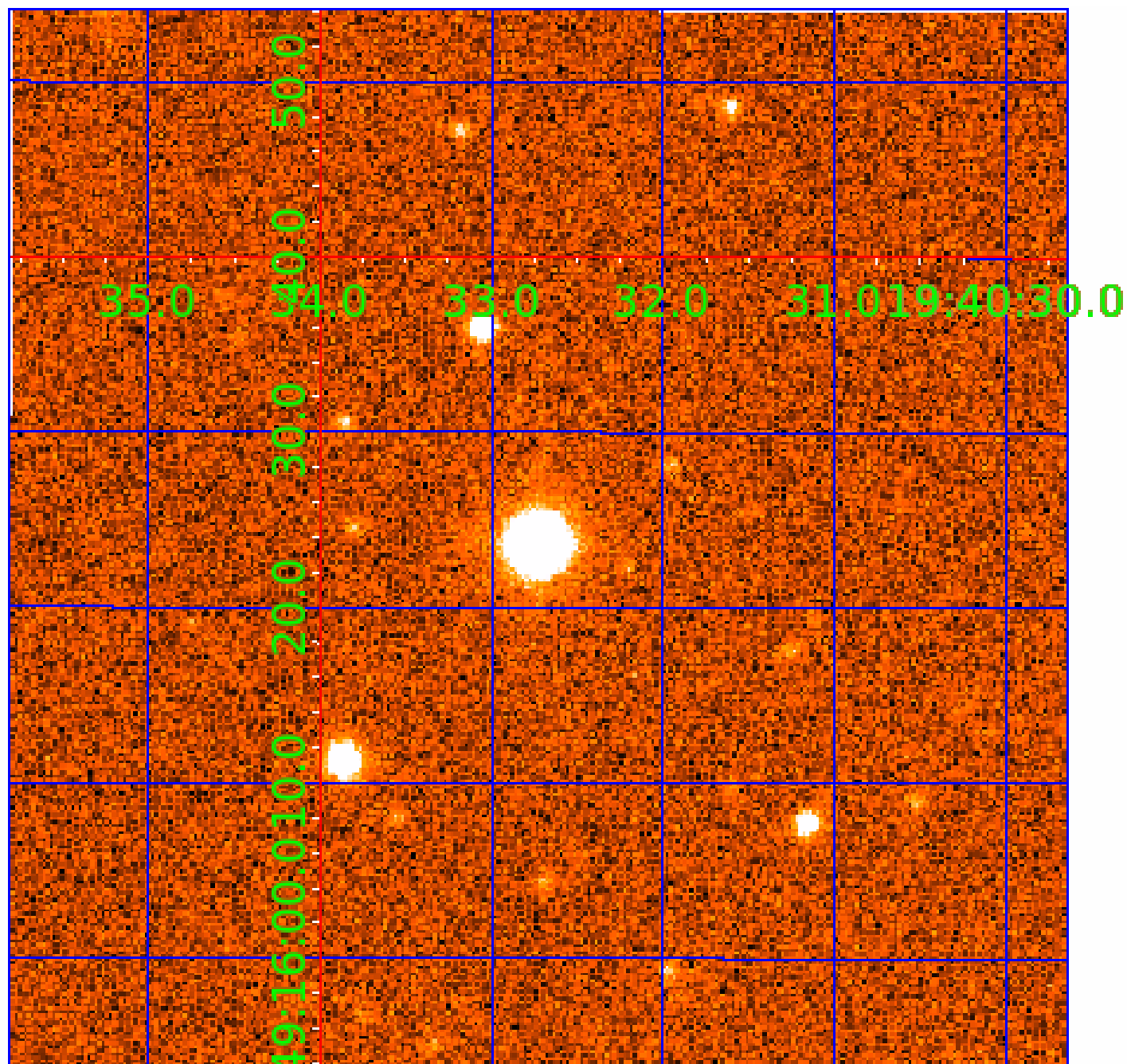


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011409673

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})
011409673-01	OBS	No	12.310280	139.866789	41.3	10.835	14.0	9.5	1.88	7516	1.41	675.64
011409673-02	OBS	No	12.310705	138.226824	73.3	15.000	11.9	-1.0	1.88	7516	1.64	675.61
011409673-03	OBS	No	12.312956	132.178490	61.0	15.000	9.6	-1.0	1.88	7516	1.49	675.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011409673-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
011409673-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
011409673-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

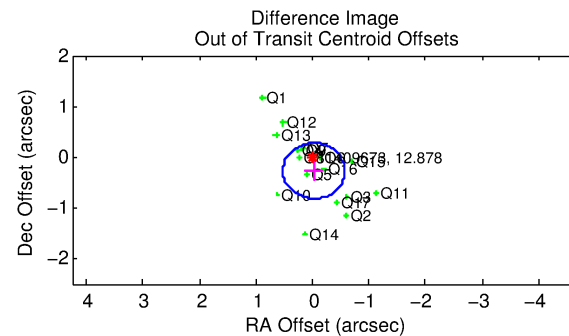
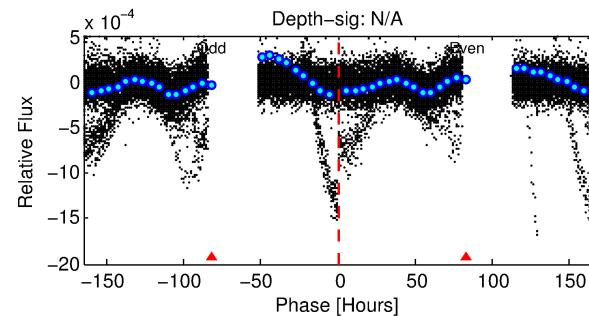
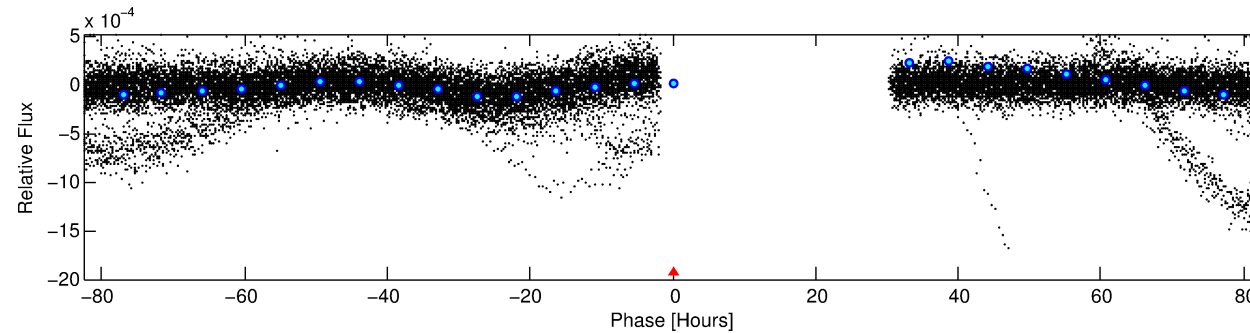
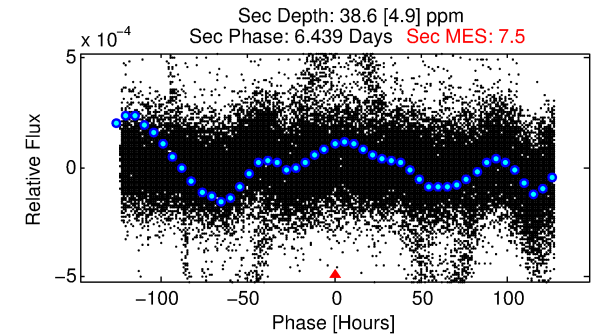
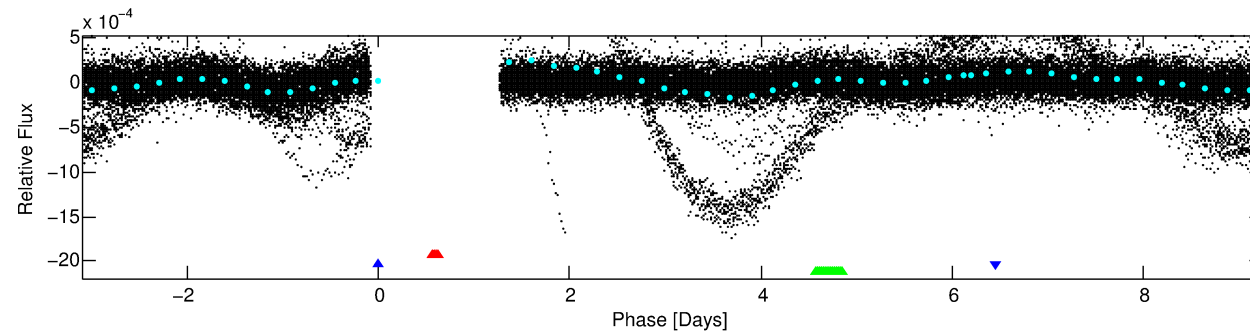
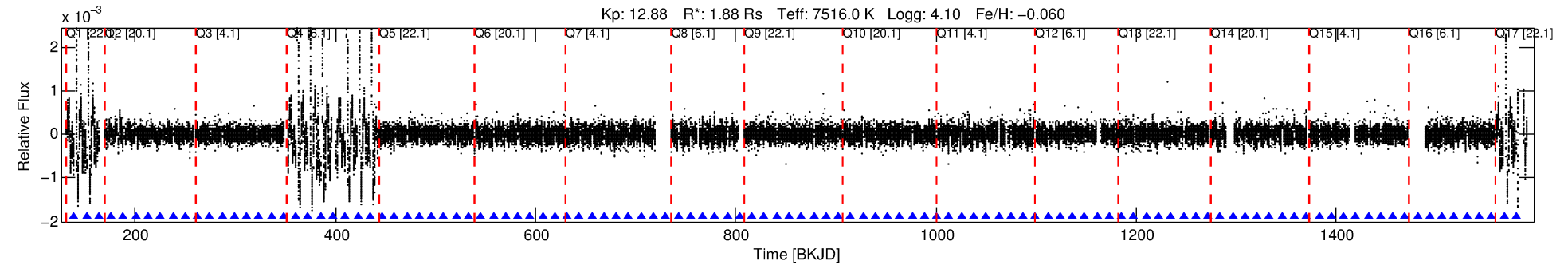
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011409673-02

No Significant Match Found

DV One-Page Summary

KIC: 11409673 Candidate: 2 of 3 Period: 12.311 d



TPS TCE Results:

Period = 12.31070 d
Epoch = 138.2268 BKJD

DV fit results are unavailable

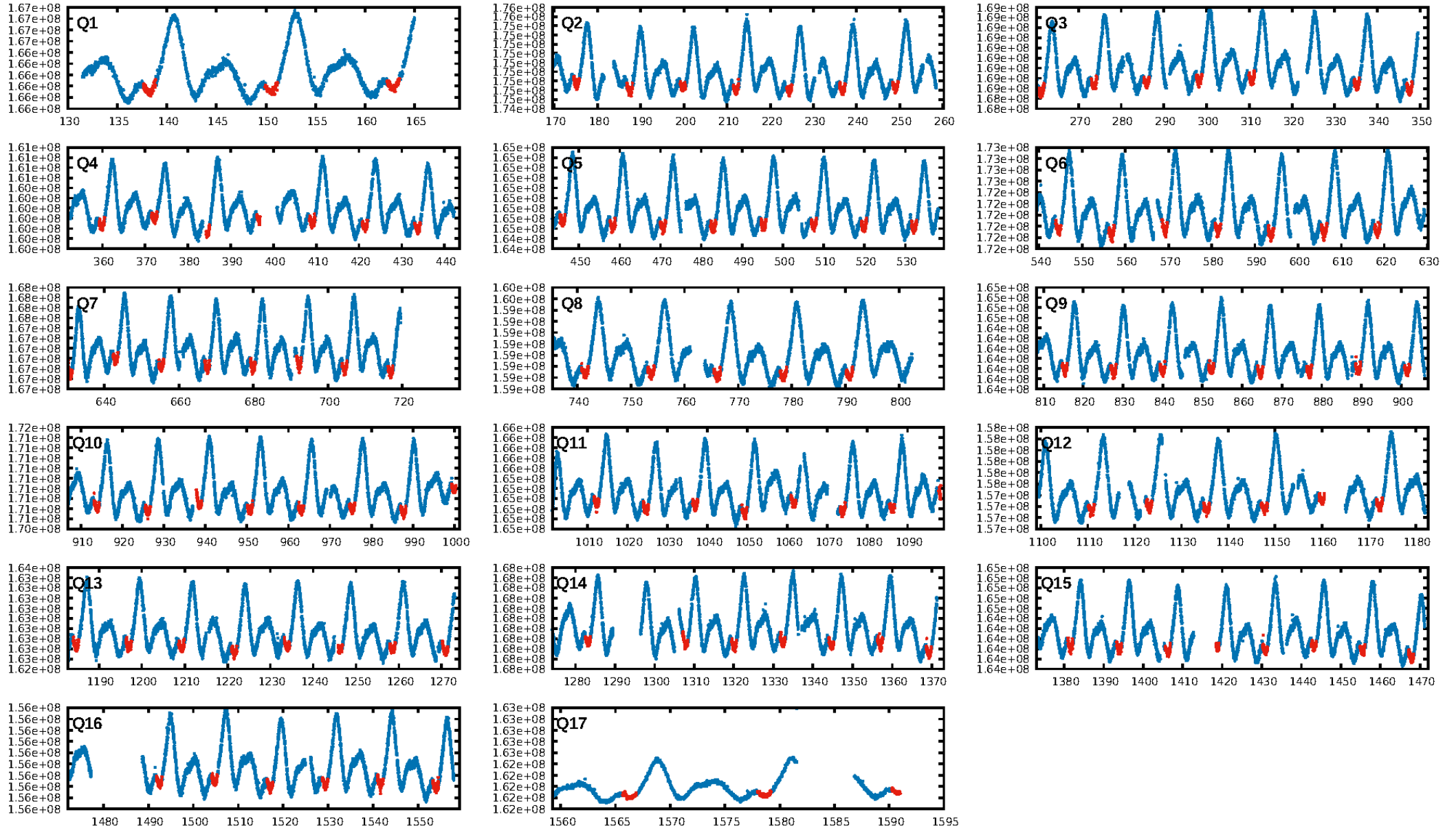
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 0.2% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.13e-24
RollingBand-fgt: 1.00 [106/106]
GhostDiagnostic-chr: -3.066
Centroid-sig: 0.0%
Centroid-so: 0.166 arcsec [11.96 σ]
OotOffset-rm: 0.272 arcsec [1.49 σ]
KicOffset-rm: 0.423 arcsec [2.13 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
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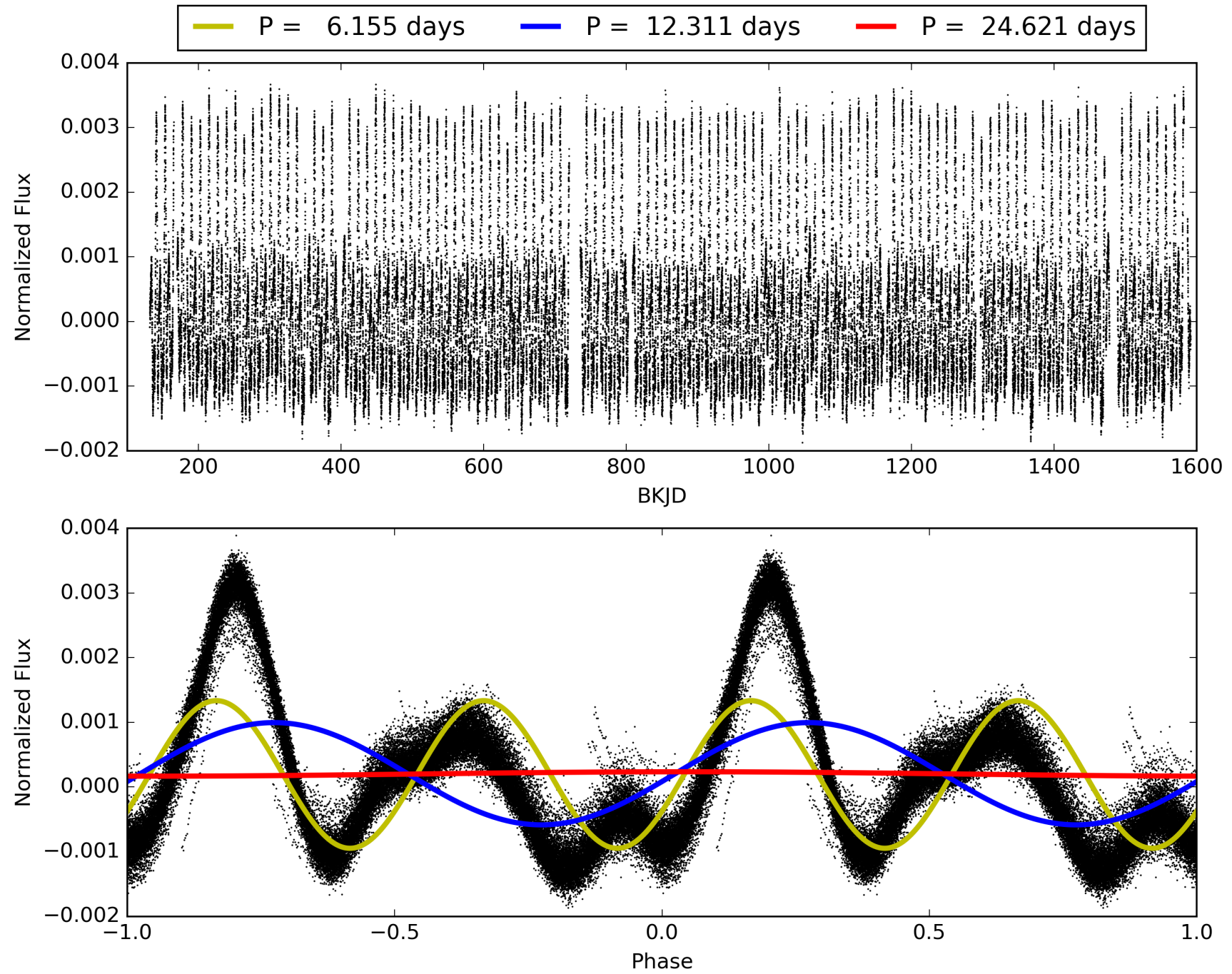
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:31:16 Z

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

TCE 011409673-02, PDC Light Curves

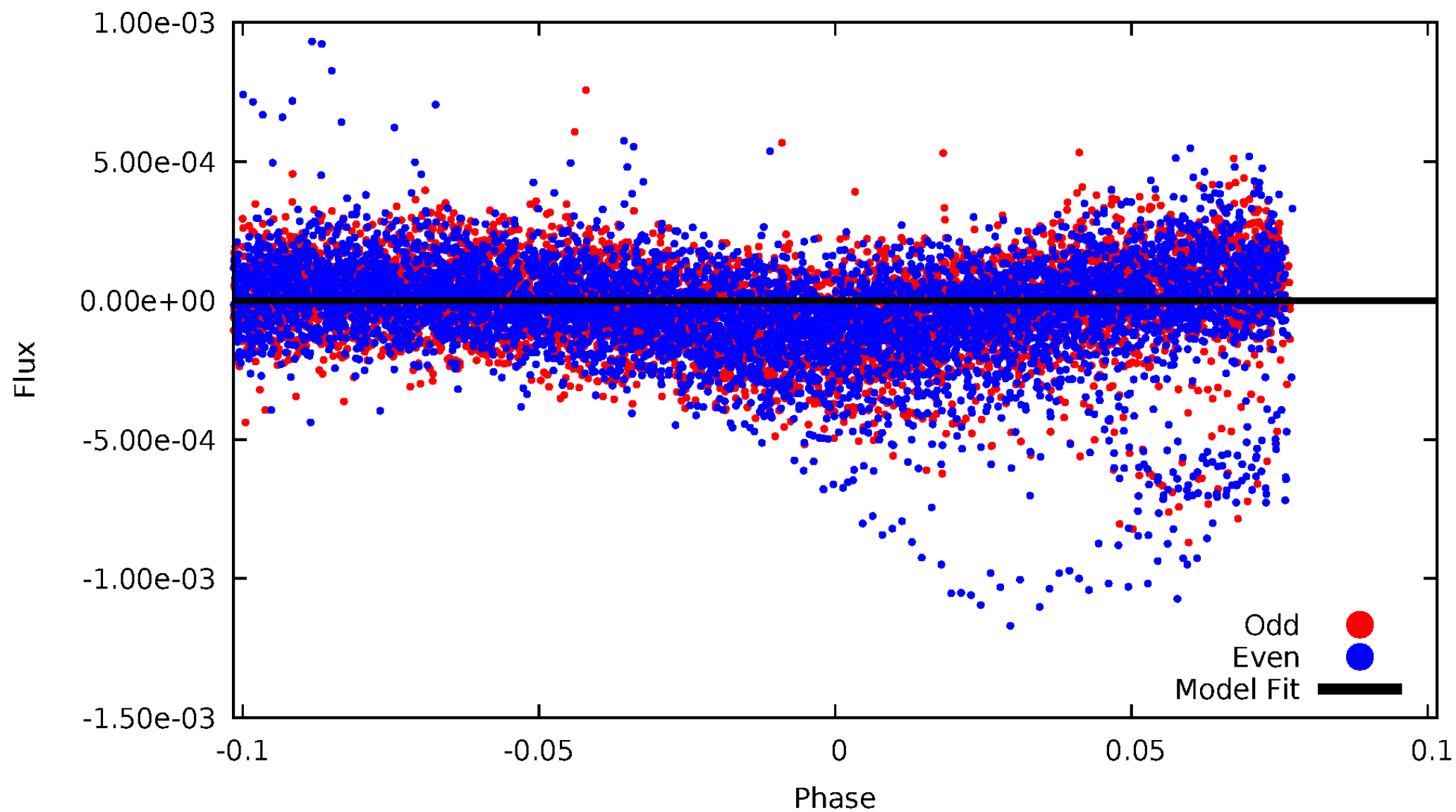


TCE 011409673-02



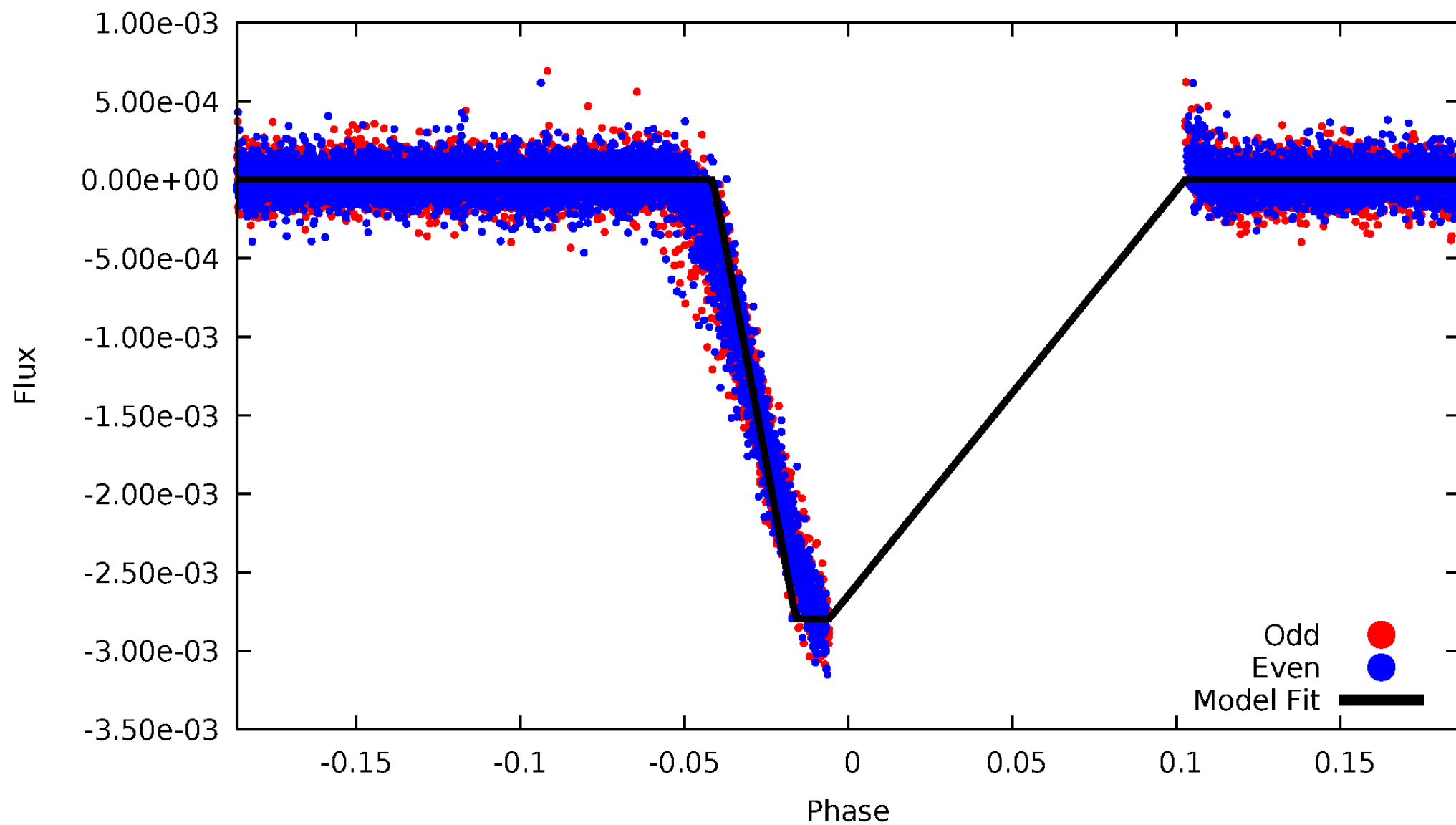
DV Odd/Even

TCE 011409673-02



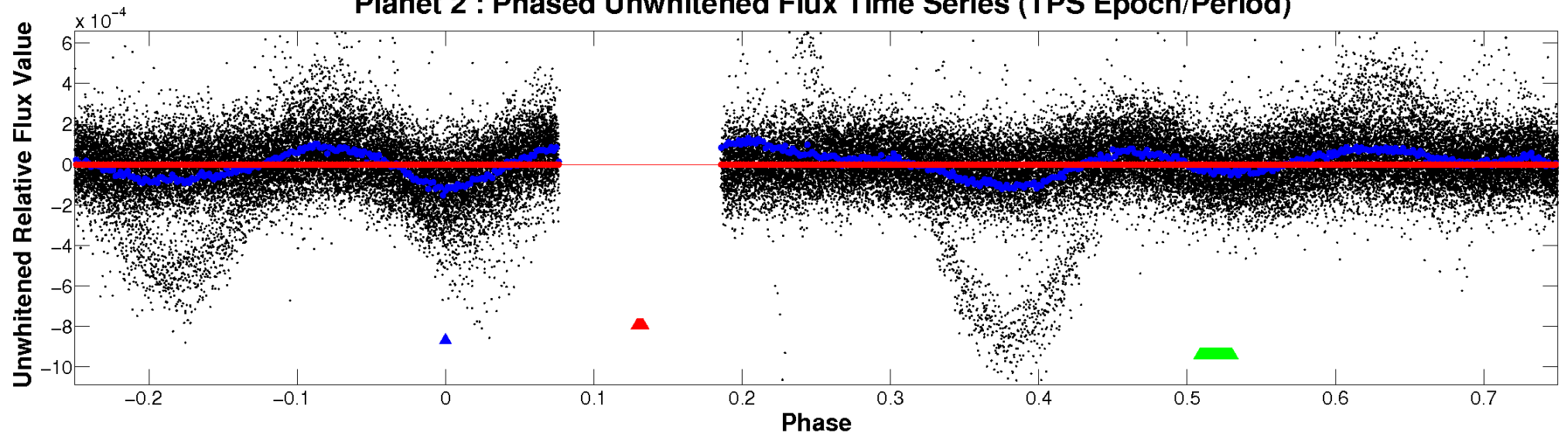
ALT Odd/Even

TCE 011409673-02

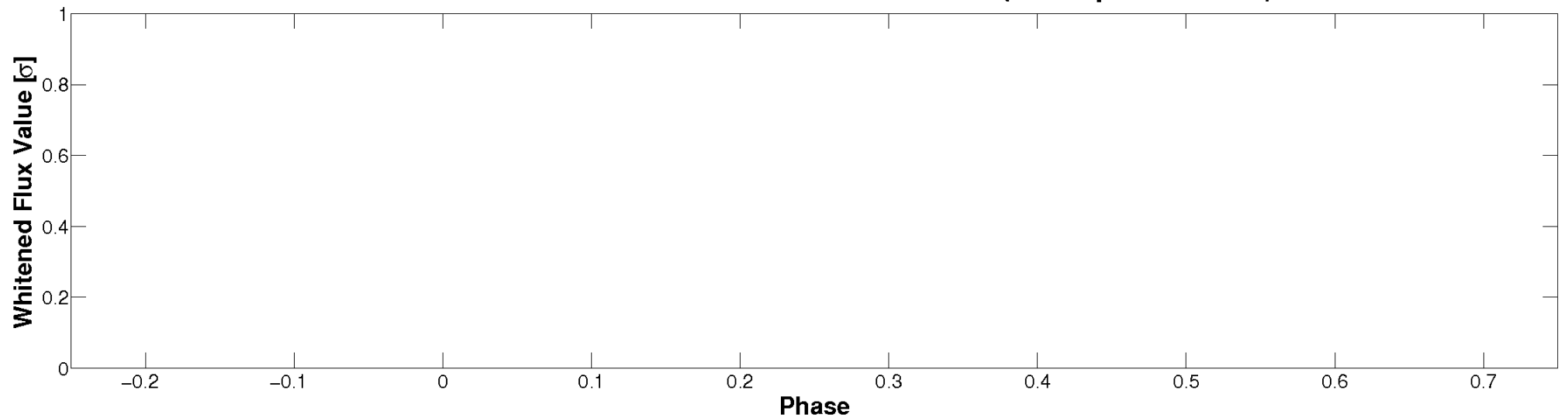


Non-Whitened Vs. Whitened Light Curve

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

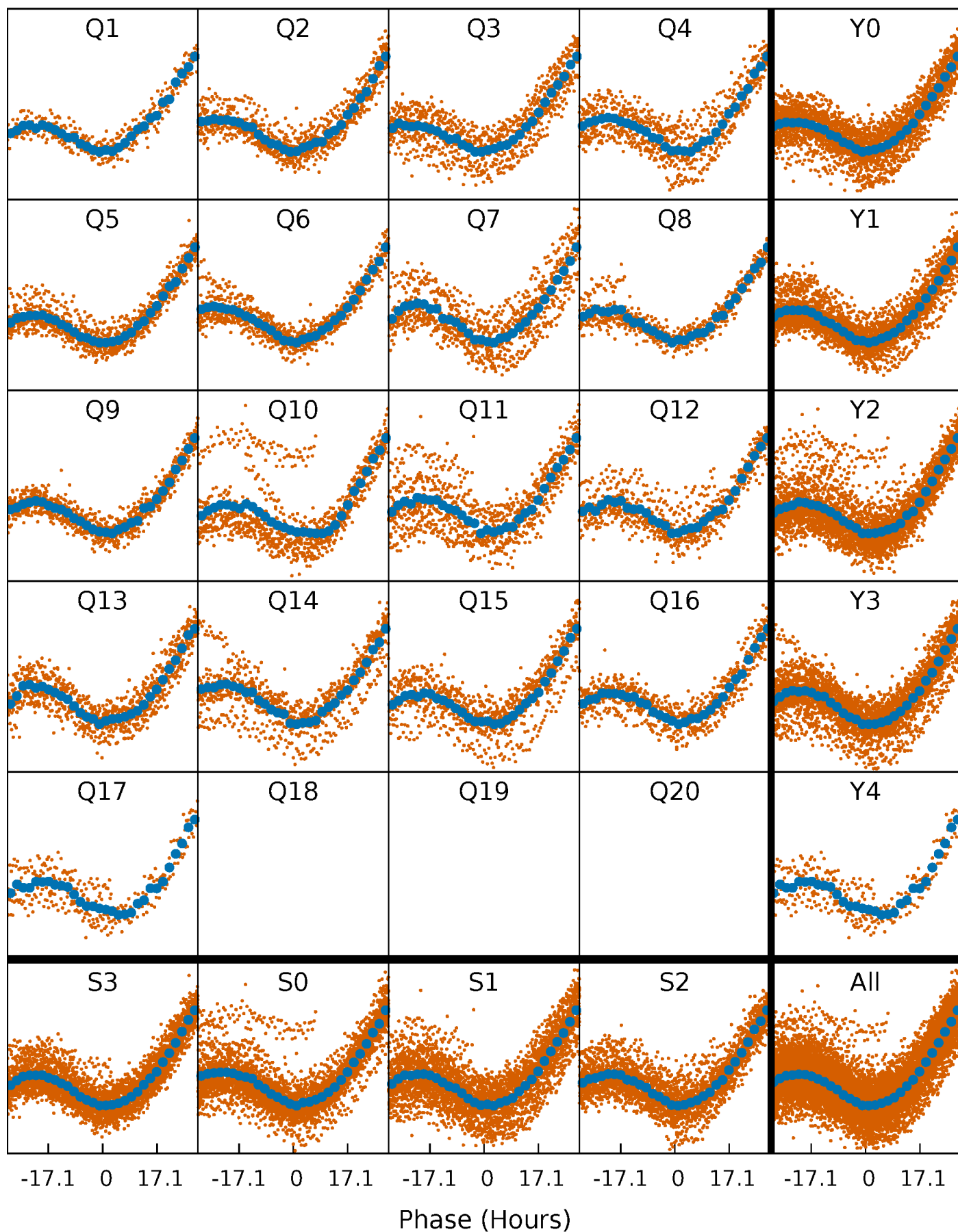


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



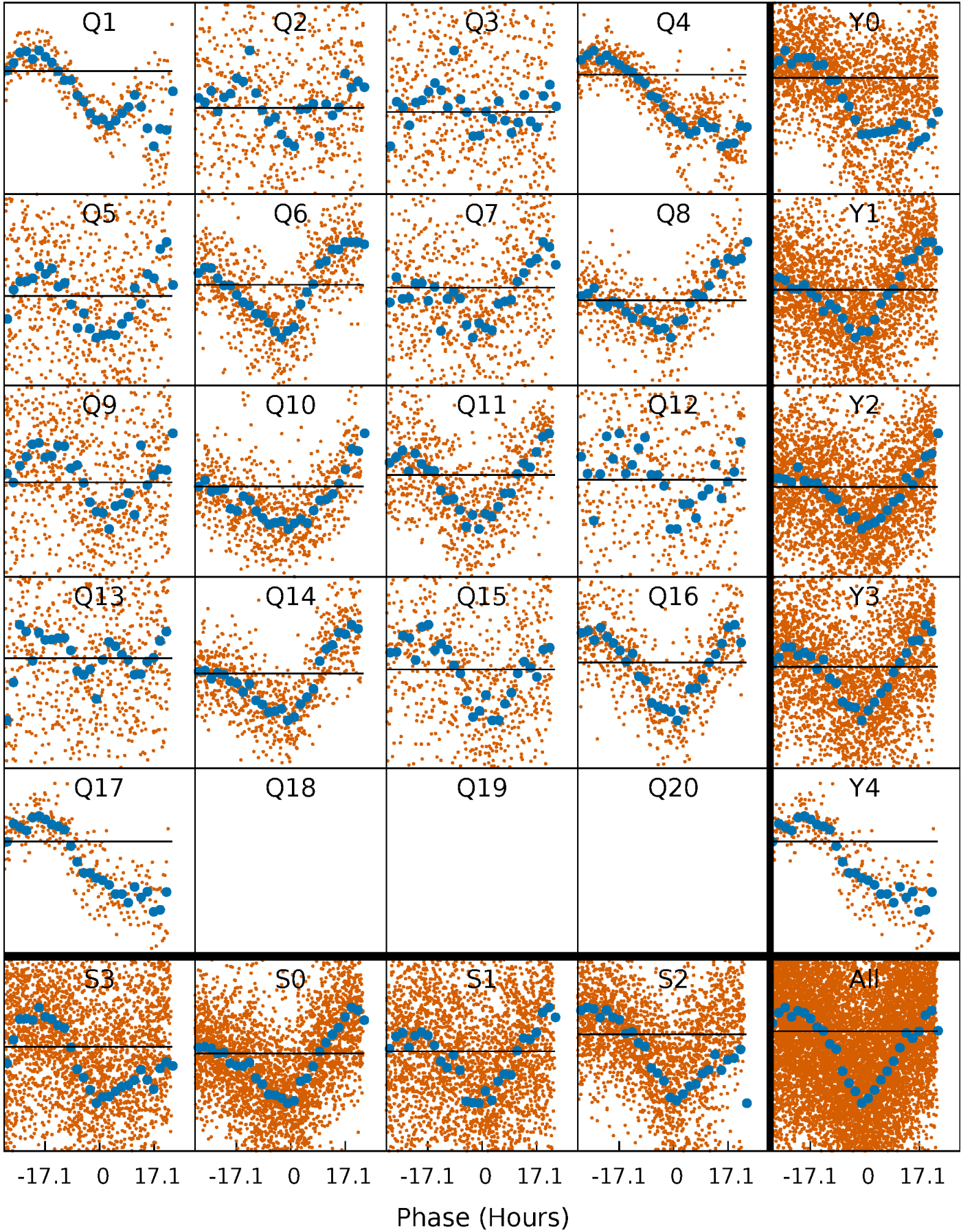
PDC Quarter-Phased Transit Curves

TCE 011409673-02 P= 12.310705 Days $T_0=138.226824$ (BKJD)



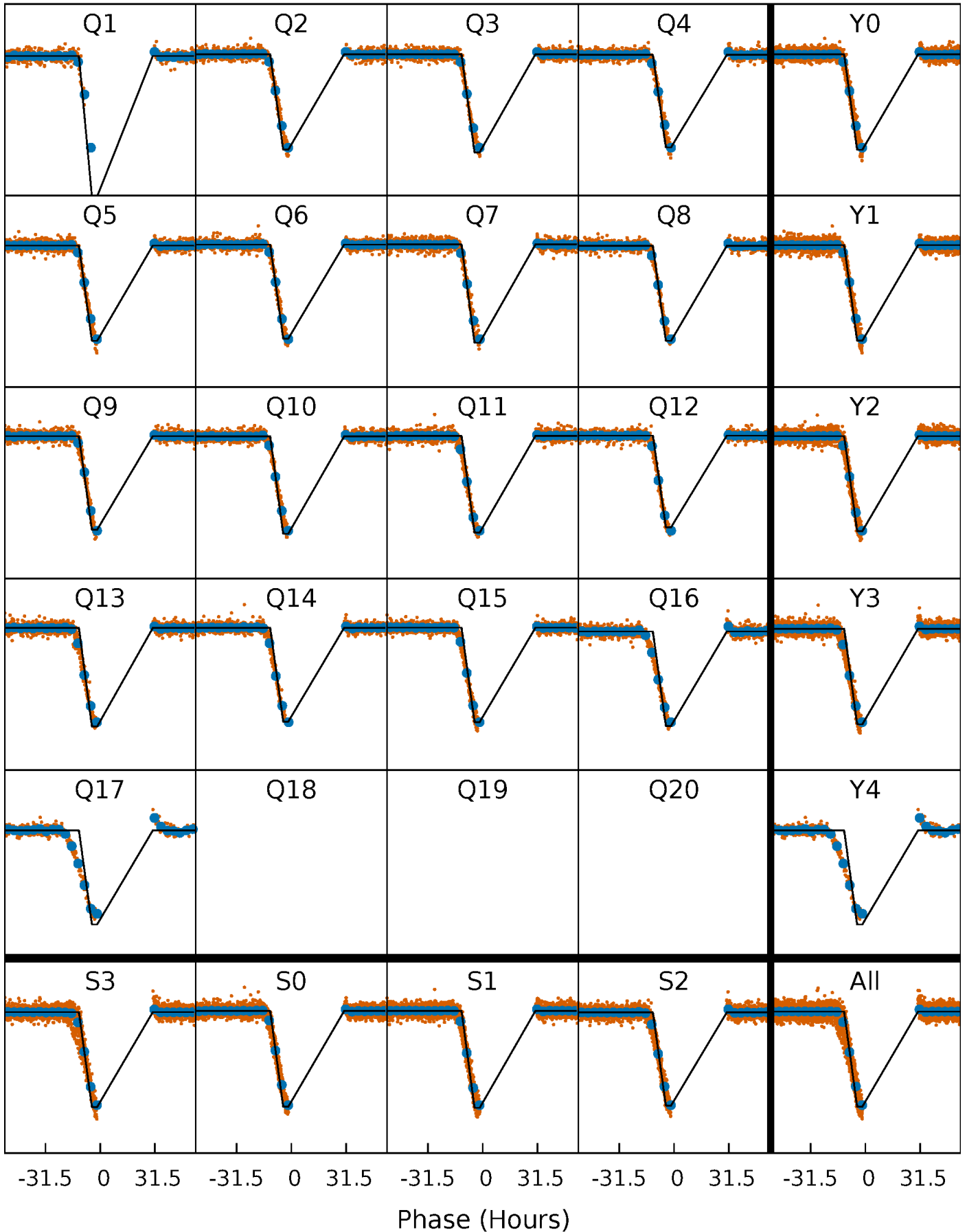
DV Quarter-Phased Transit Curves

TCE 011409673-02 P= 12.310705 Days $T_0=138.226824$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

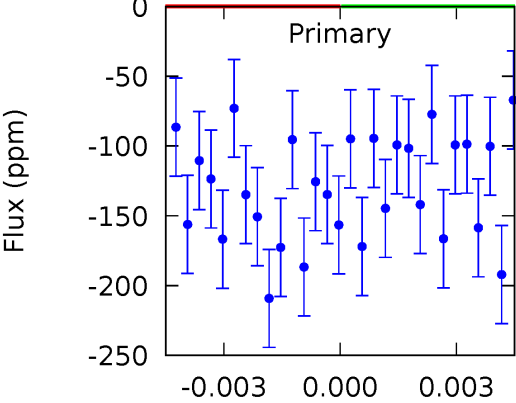
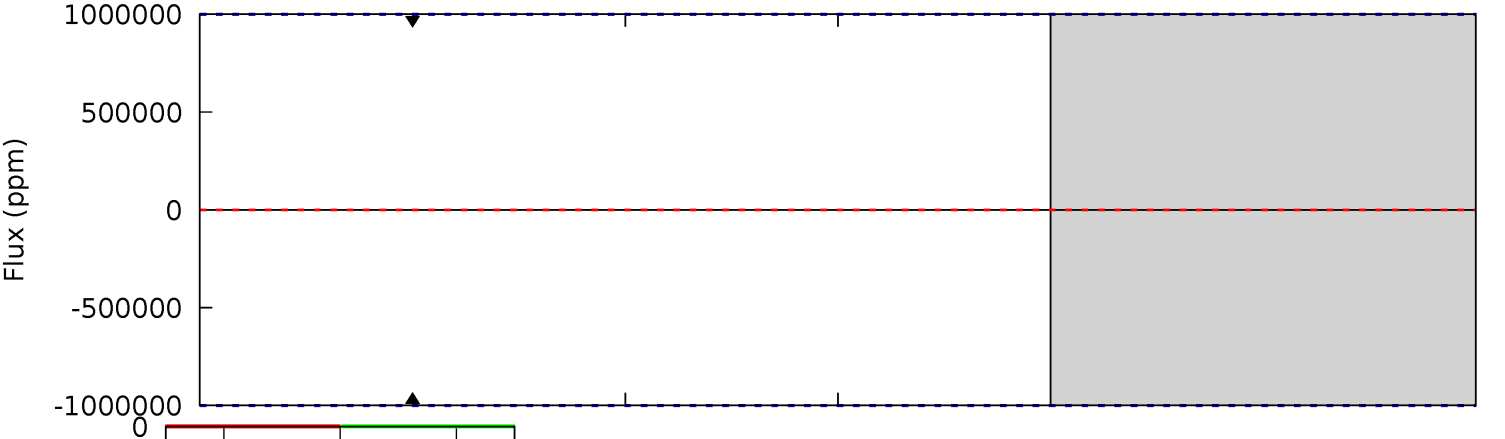
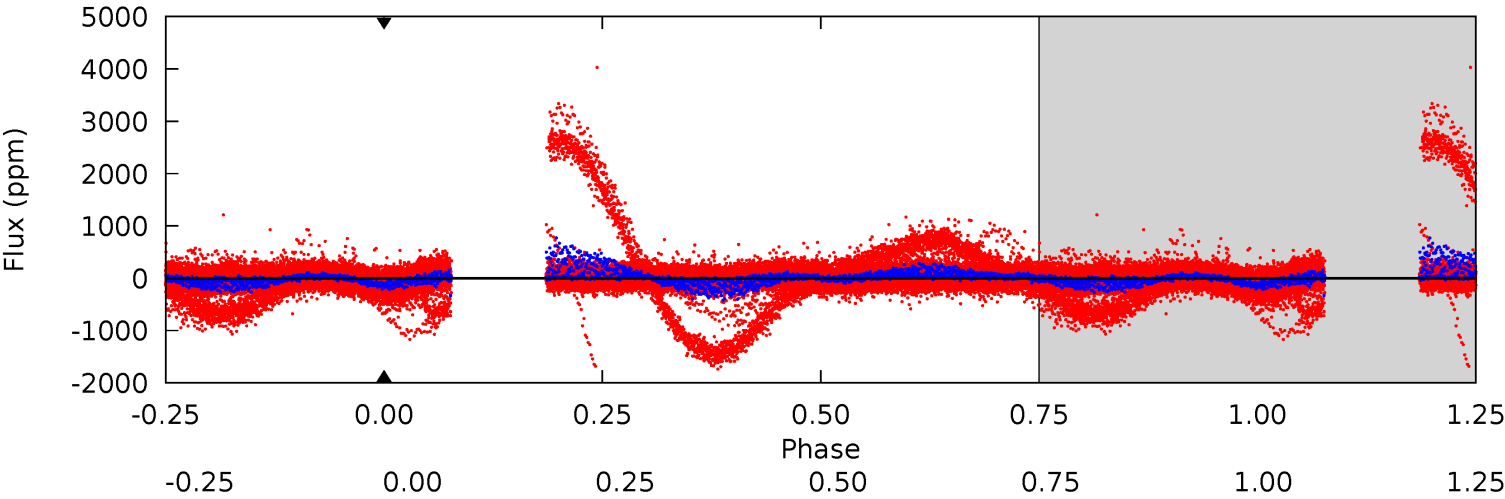
TCE 011409673-02 $P = 12.310705$ Days $T_0 = 139.244978$ (BKJD)



DV Model-Shift Uniqueness Test

011409673-02, P = 12.310705 Days, E = 125.916119 Days

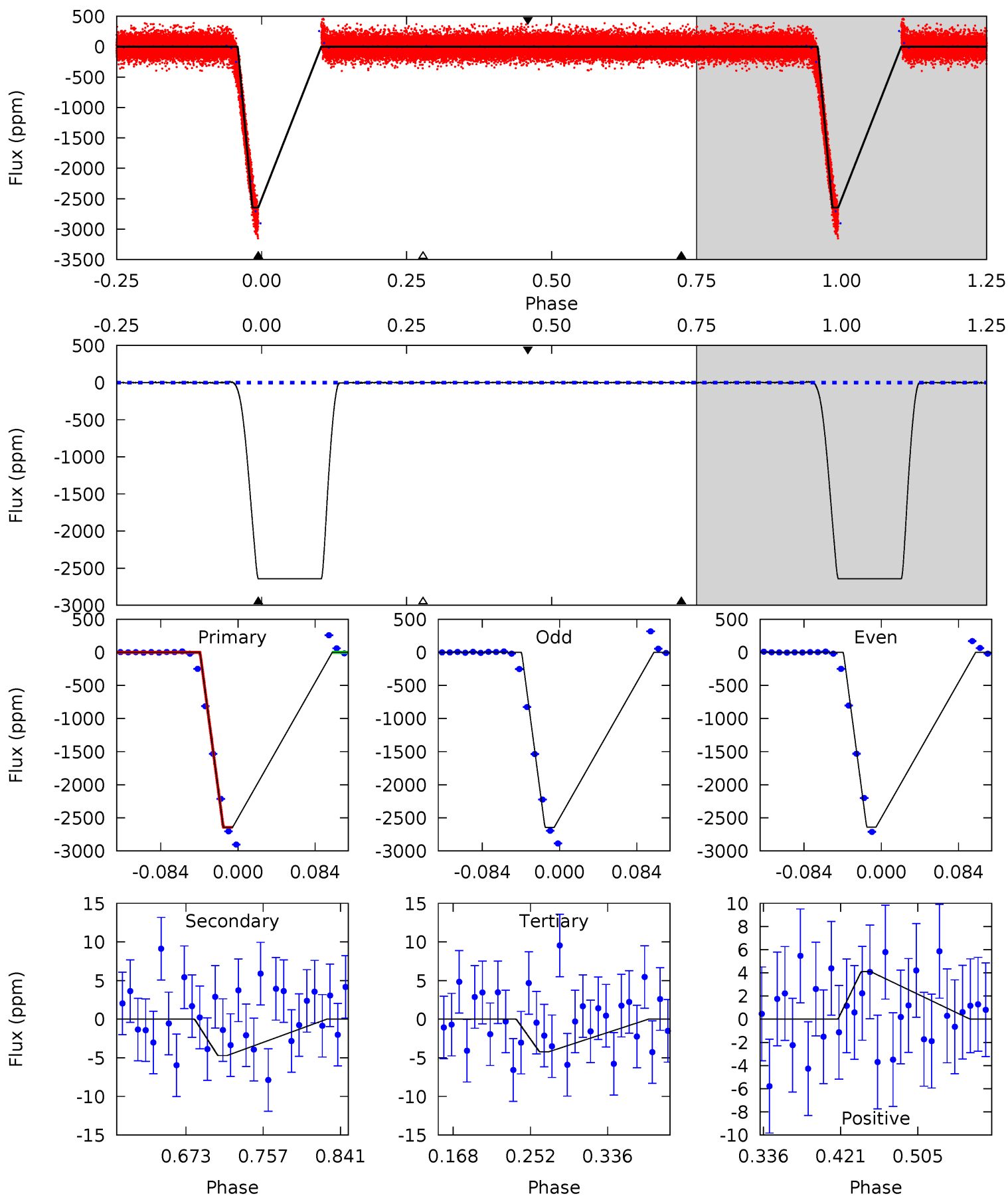
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011409673-02, P = 12.310705 Days, E = 126.934273 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1247	2.22	1.99	1.94	4.60	1.73	132.9	1245	1245	0.23	0.29	0.43	0	0.00	0



Stellar Parameters For KIC 011409673

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7516^{+75}_{-82}	$4.097^{+0.095}_{-0.116}$	$-0.060^{+0.150}_{-0.150}$	$1.883^{+0.355}_{-0.236}$	$1.616^{+0.124}_{-0.124}$	$0.341^{+0.149}_{-0.122}$
	+1%/-1%	+2%/-3%	+250%/-250%	+19%/-13%	+8%/-8%	+44%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011409673-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$14.99^{+15.08}_{-11.05}$	1812^{+78}_{-67}	5313^{+44451}_{-38828}	50^{+9114}_{-4732}
Alt.	-5 ± 2	$18.27^{+17.44}_{-11.64}$	1821^{+72}_{-66}	-2238^{+4844}_{-119}	$0.111^{+0.839}_{-0.087}$

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

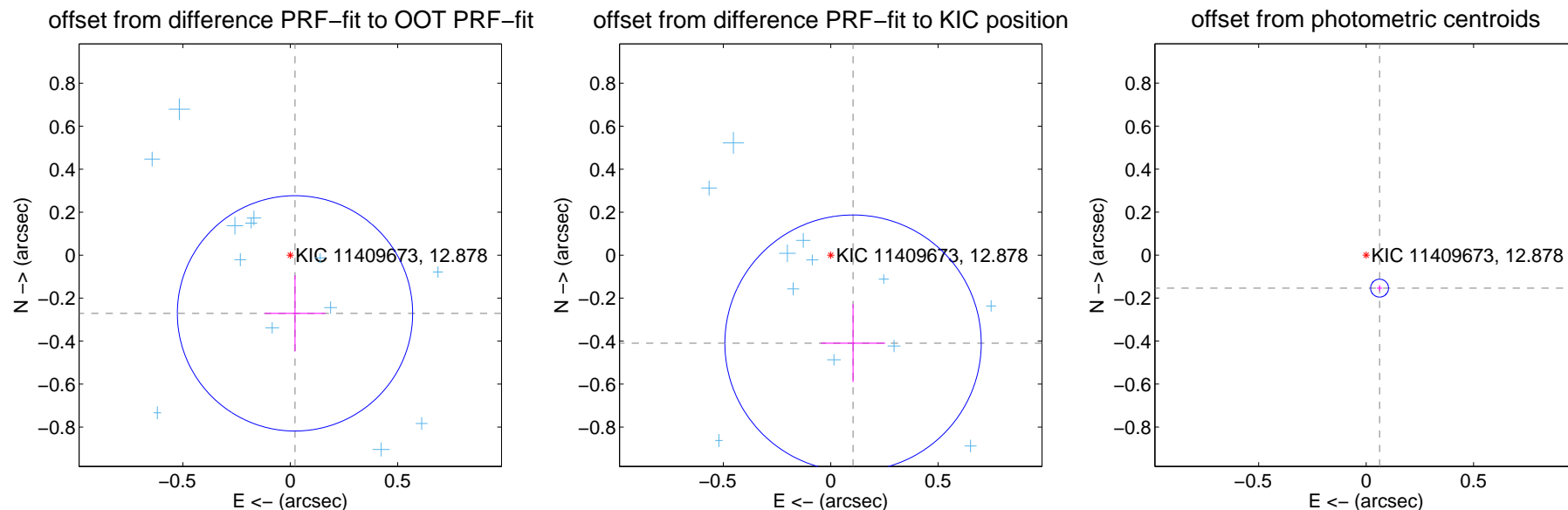
DV Centroid Data

Supplemental centroid analysis for 011409673-02. Kepler magnitude: 12.88. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

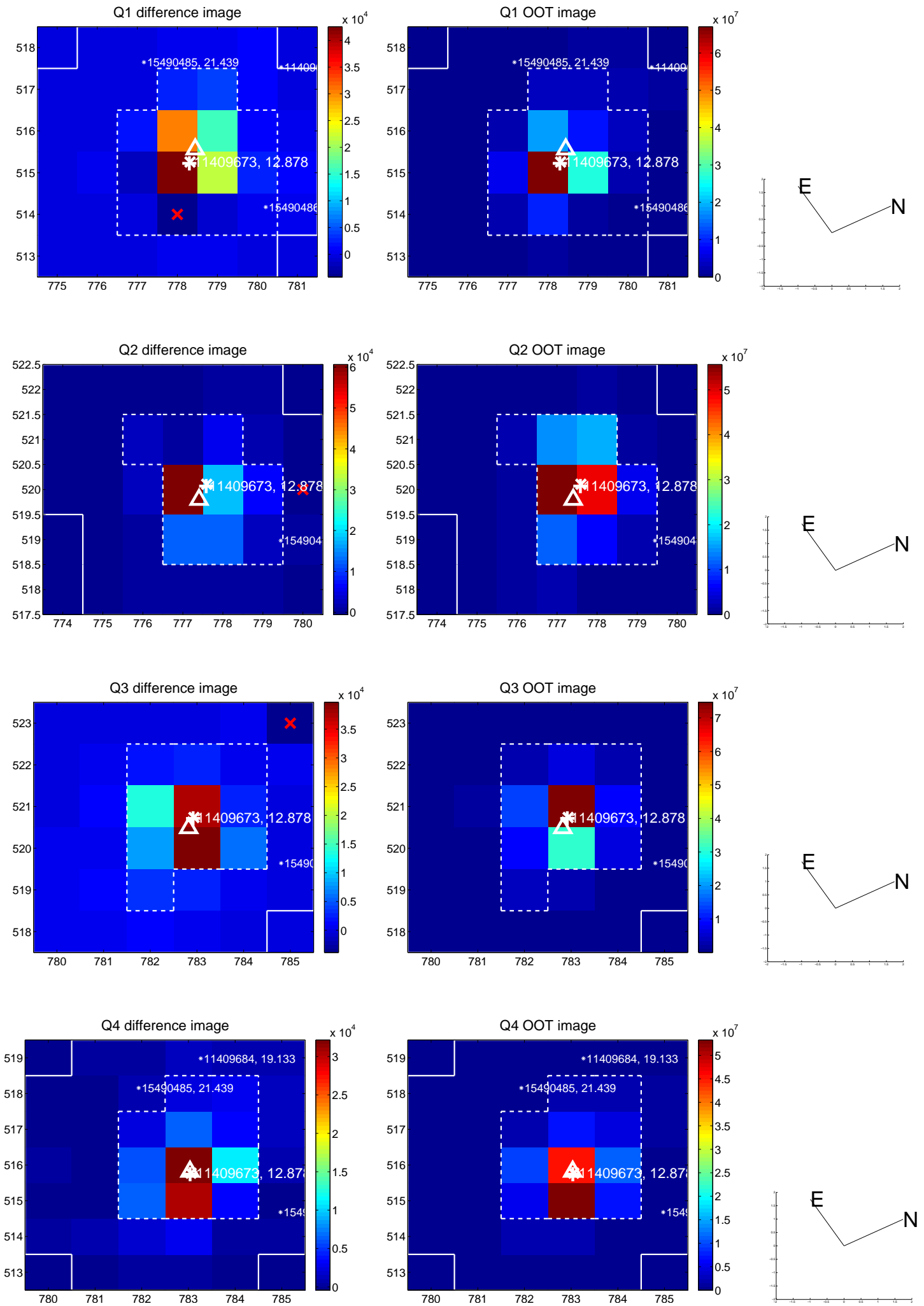
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.272 ± 0.182	1.49	-0.022 ± 0.141	-0.271 ± 0.177
PRF-fit source offset from KIC position	0.423 ± 0.199	2.13	-0.104 ± 0.150	-0.410 ± 0.181
photometric centroid source offset	0.17 ± 0.01	11.96	-0.06 ± 0.01	-0.15 ± 0.01

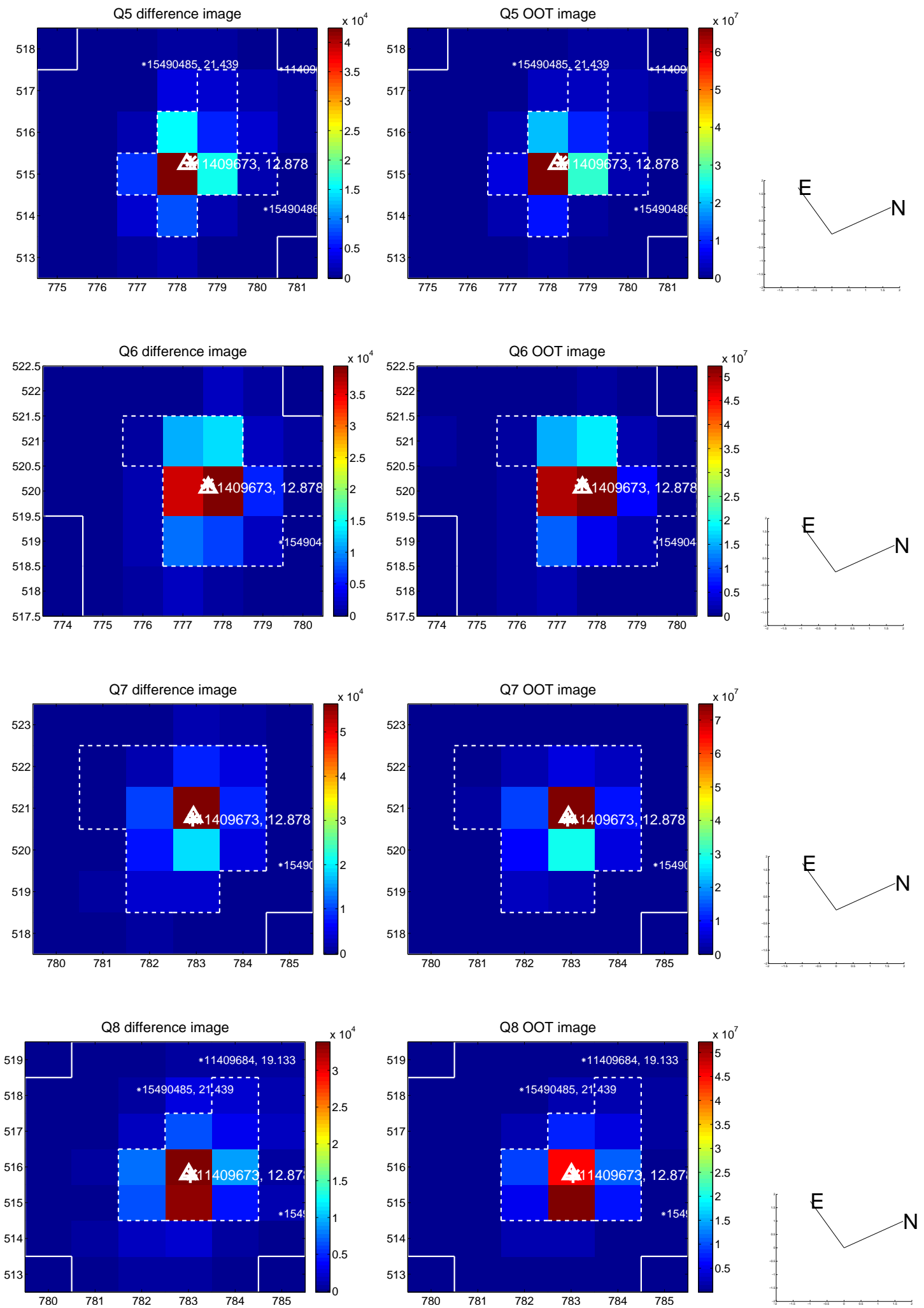


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

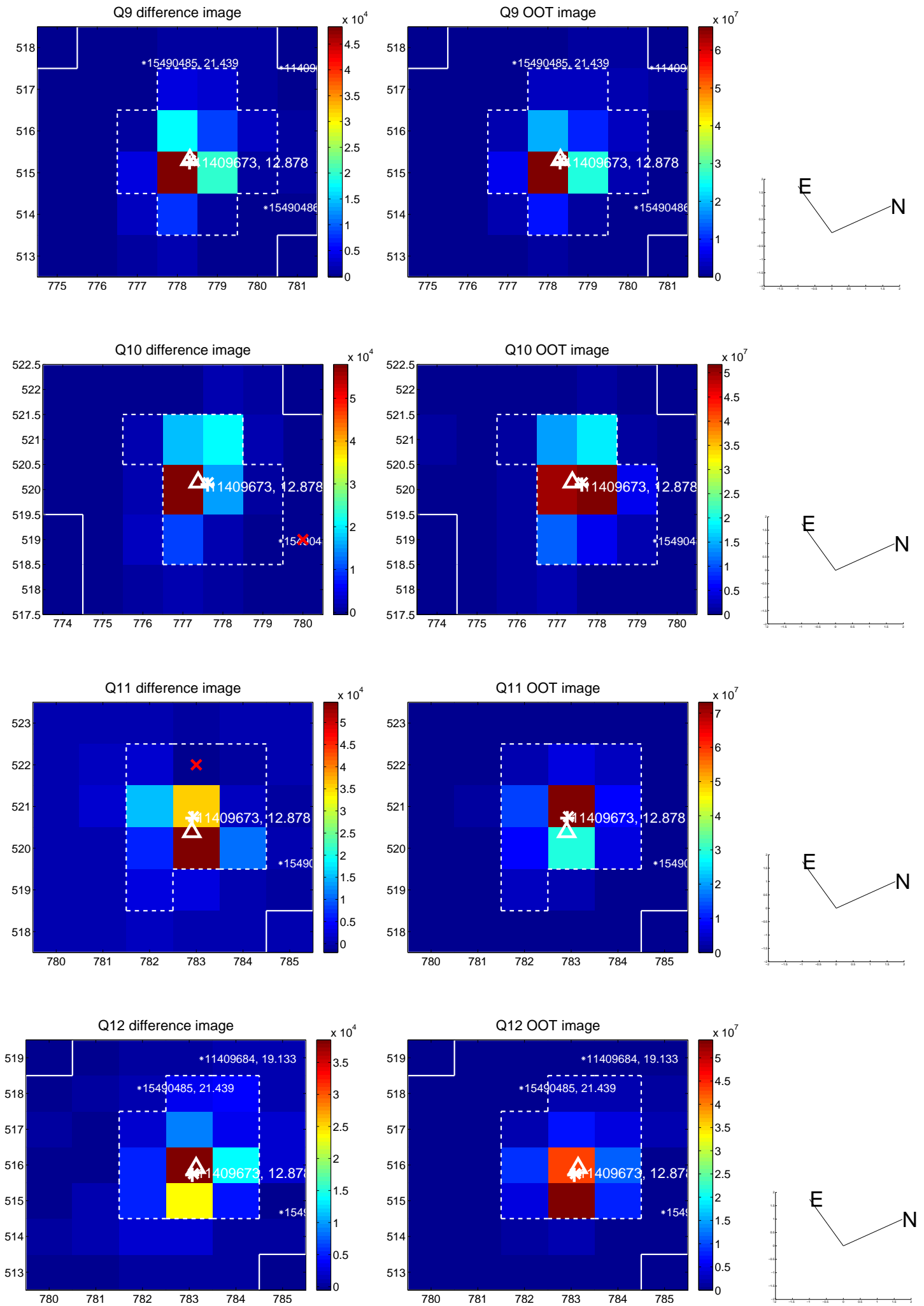
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



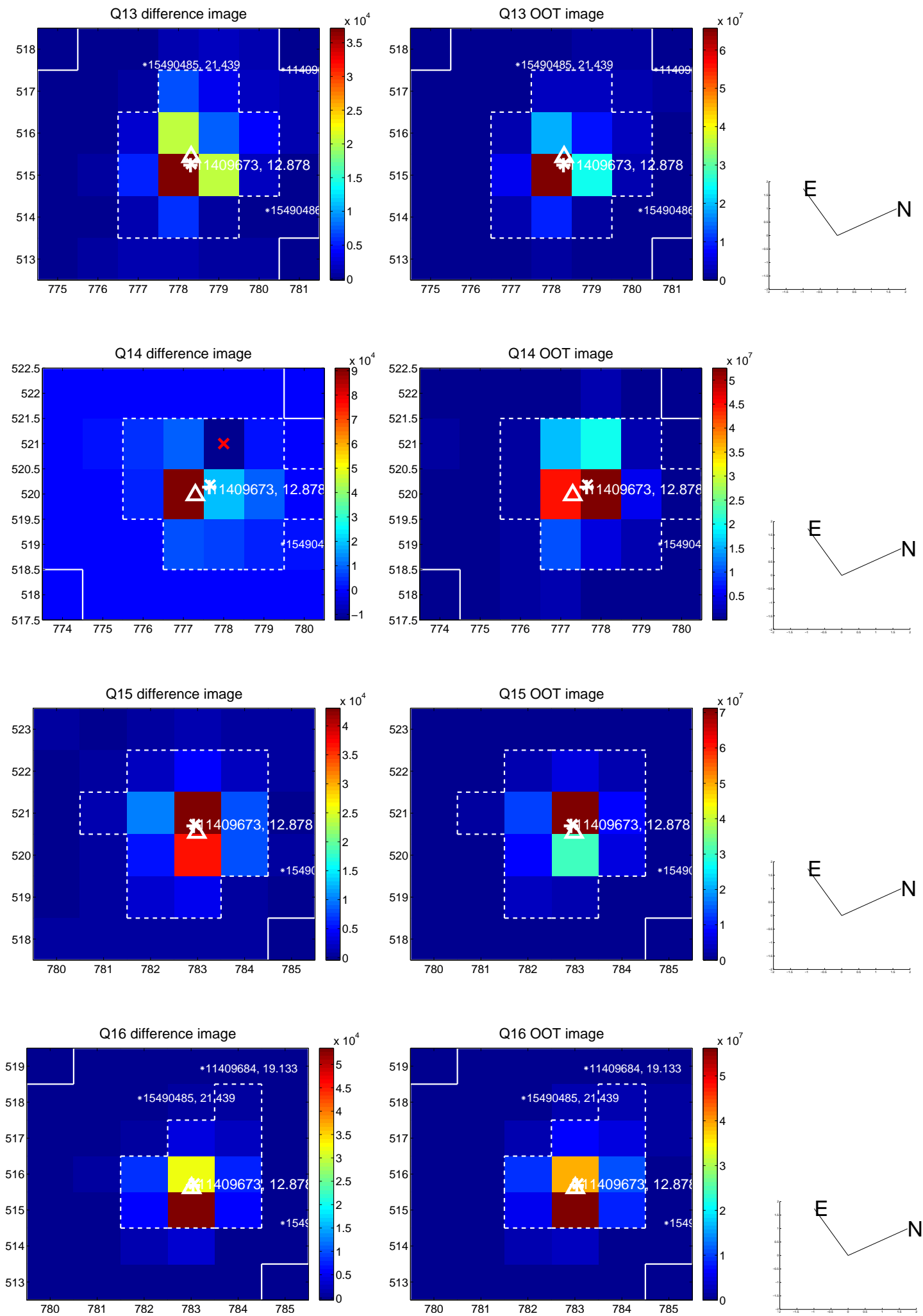
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



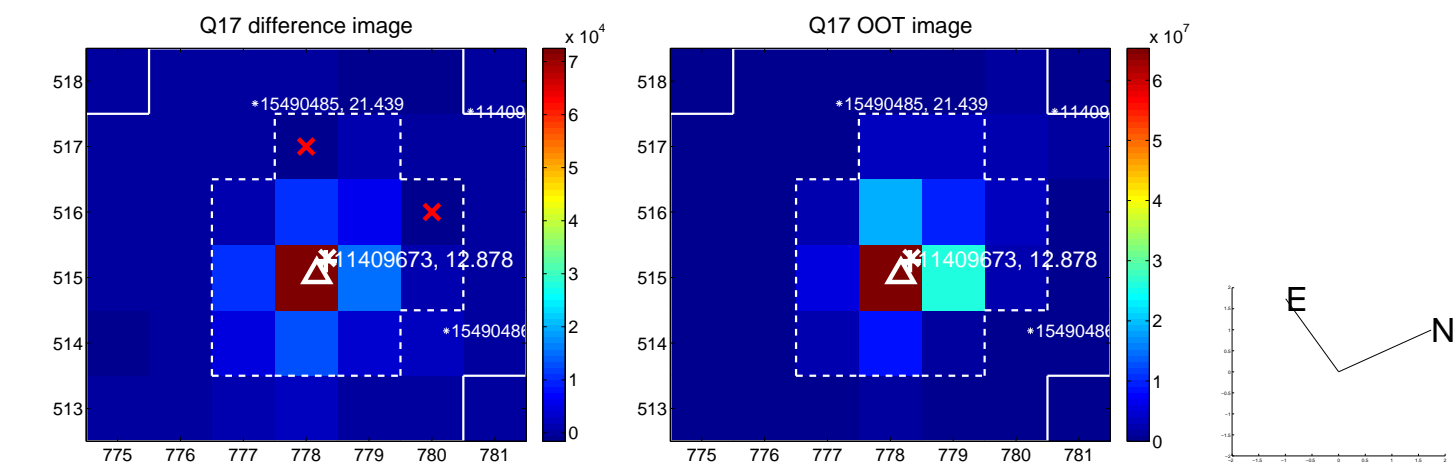
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



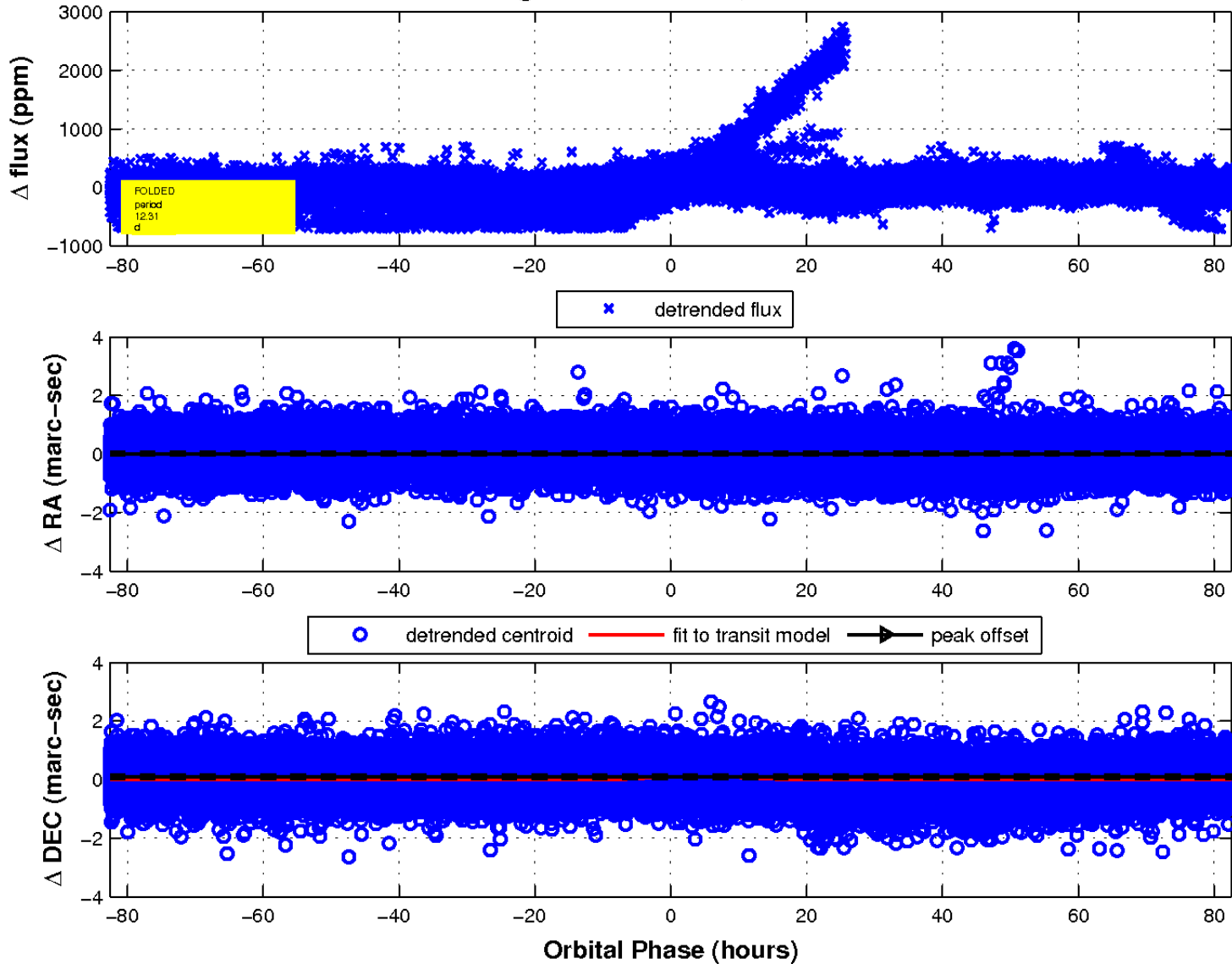
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

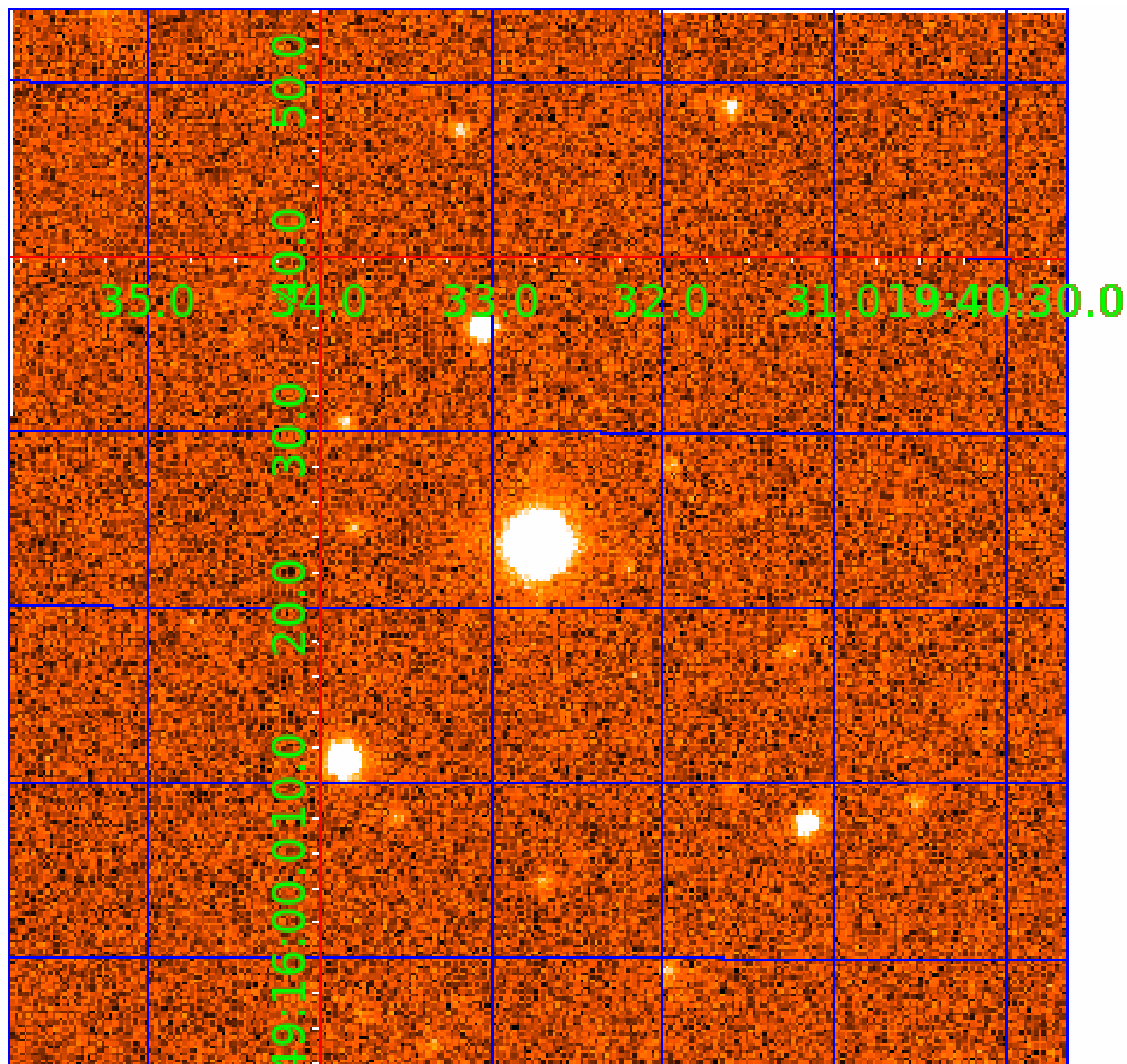


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 011409673

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})
011409673-01	OBS	No	12.310280	139.866789	41.3	10.835	14.0	9.5	1.88	7516	1.41	675.64
011409673-02	OBS	No	12.310705	138.226824	73.3	15.000	11.9	-1.0	1.88	7516	1.64	675.61
011409673-03	OBS	No	12.312956	132.178490	61.0	15.000	9.6	-1.0	1.88	7516	1.49	675.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011409673-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
011409673-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
011409673-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

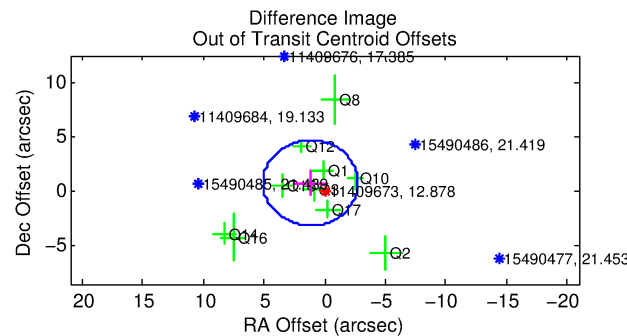
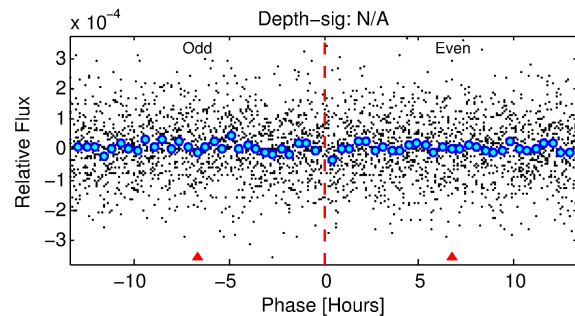
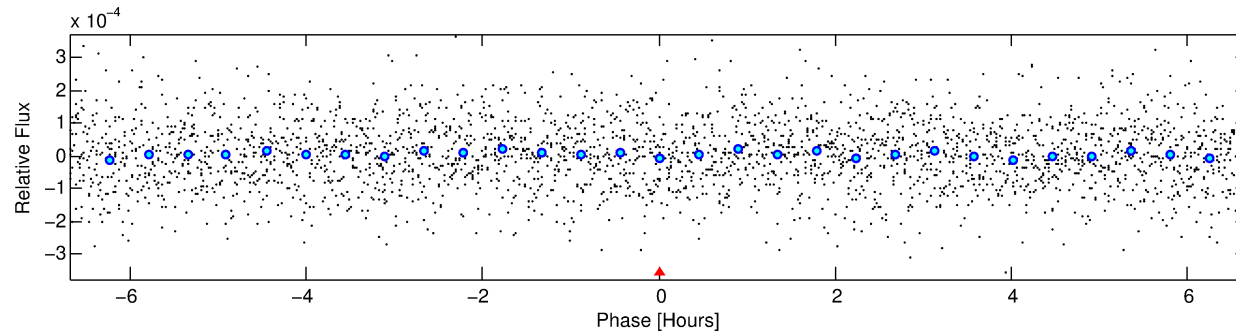
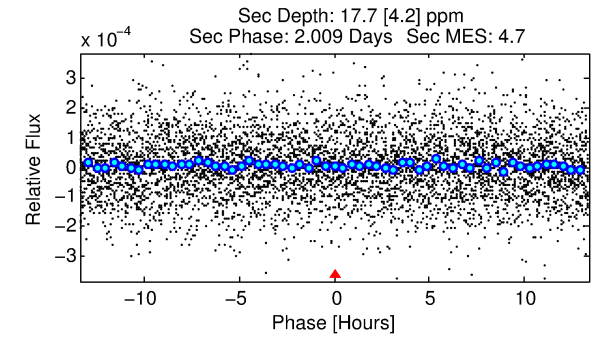
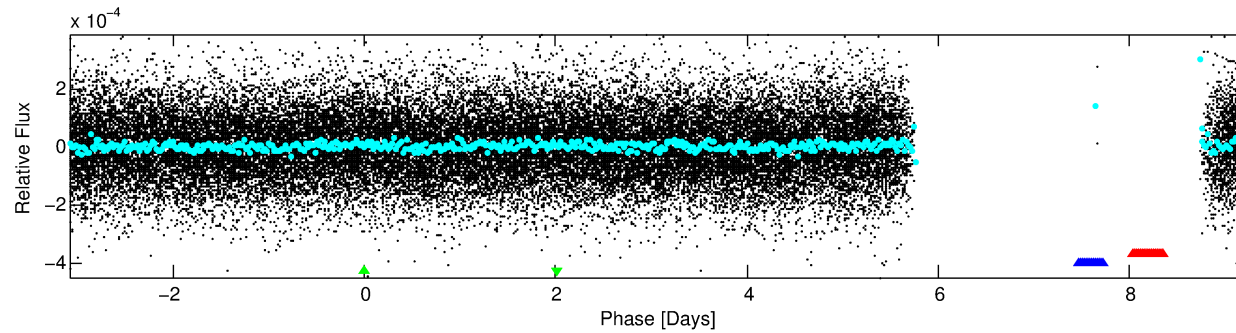
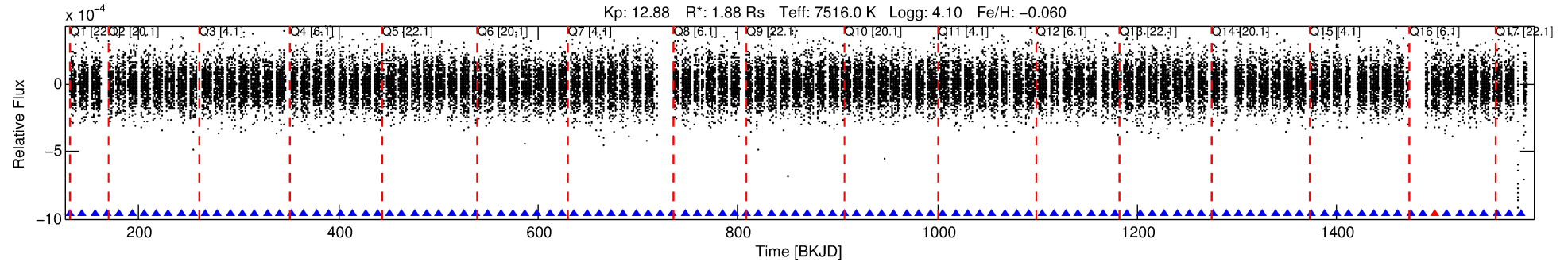
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011409673-03

No Significant Match Found

DV One-Page Summary

KIC: 11409673 Candidate: 3 of 3 Period: 12.313 d



TPS TCE Results:

Period = 12.31296 d
Epoch = 132.1785 BKJD

DV fit results are unavailable

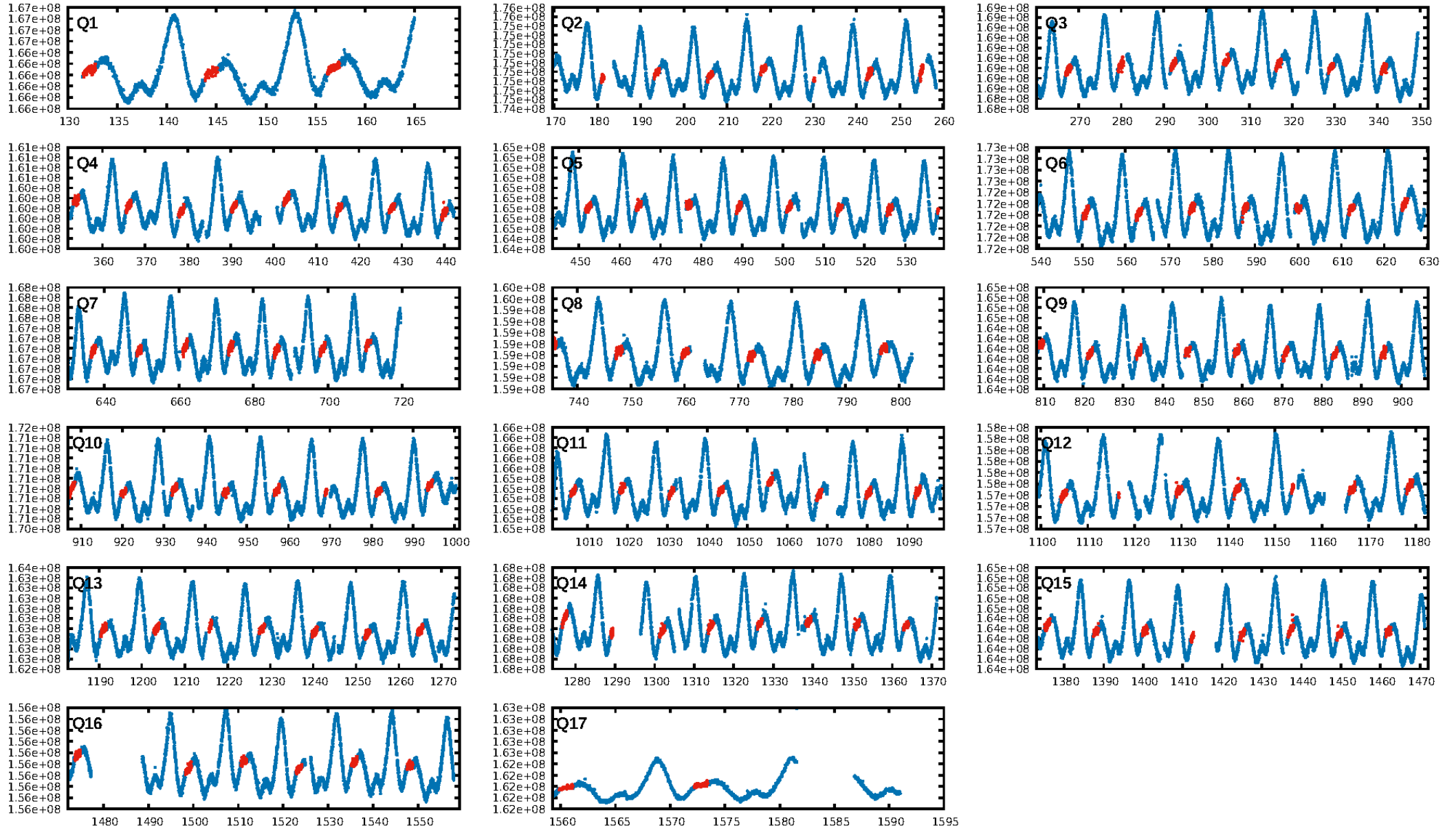
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.47e-16
RollingBand-fgt: 0.99 [105/106]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.416 arcsec [1.08 σ]
KicOffset-rm: 1.276 arcsec [0.97 σ]
OotOffset-st: 3/2/3/2 [10]
KicOffset-st: 3/2/3/2 [10]
DiffImageQuality-fgm: 0.10 [1/10]
DiffImageOverlap-fno: 1.00 [17/17]

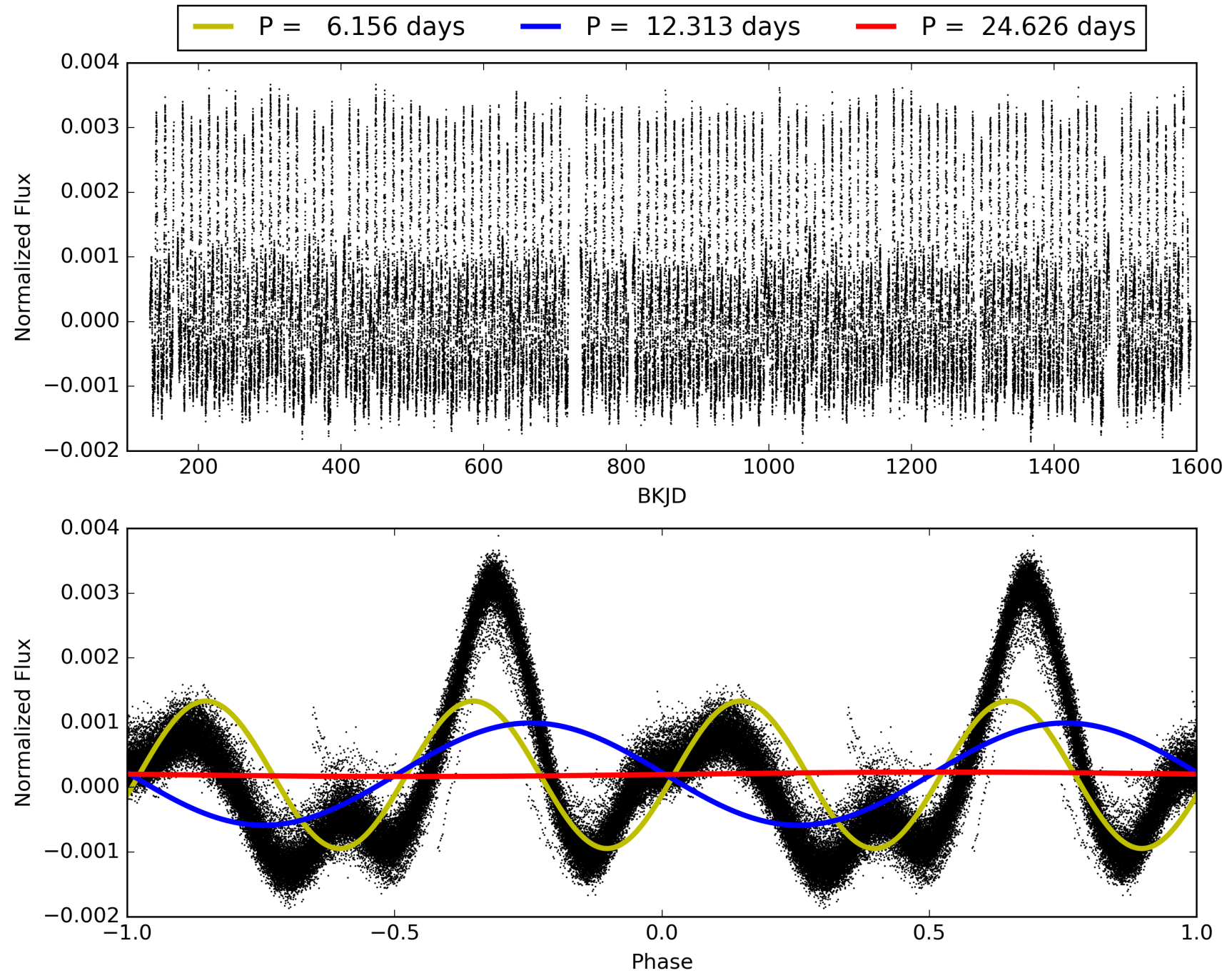
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:31:24 Z

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

TCE 011409673-03, PDC Light Curves

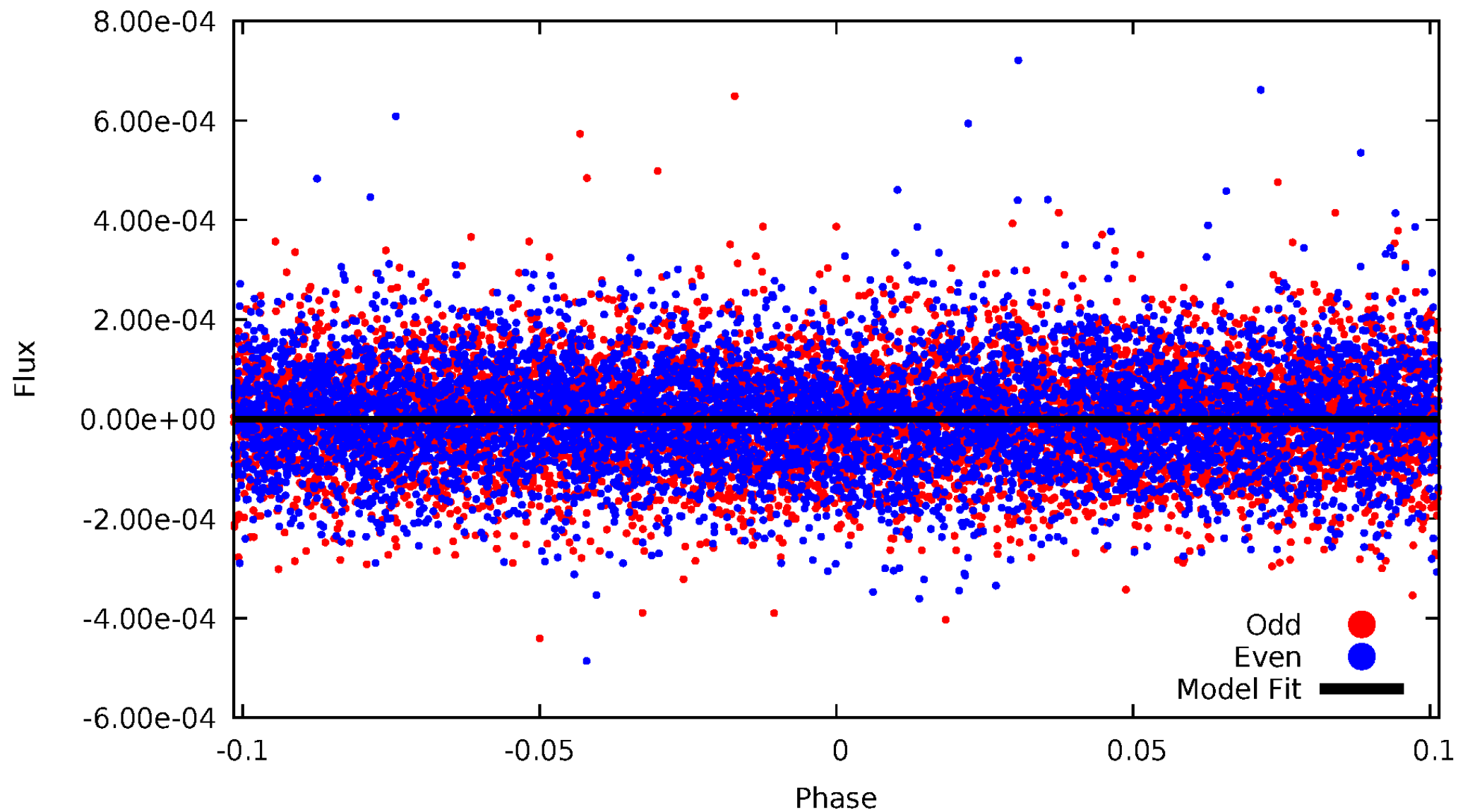


TCE 011409673-03



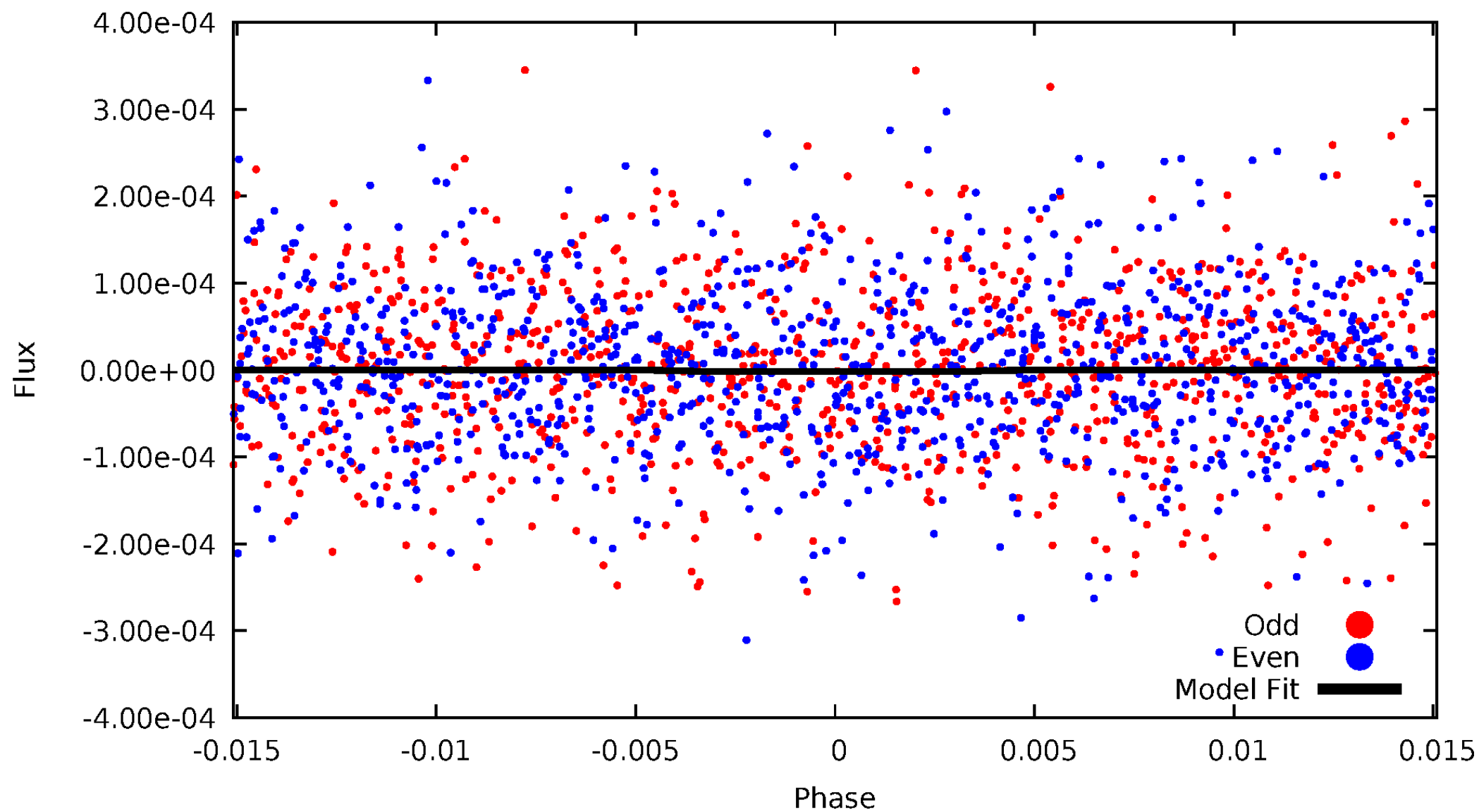
DV Odd/Even

TCE 011409673-03

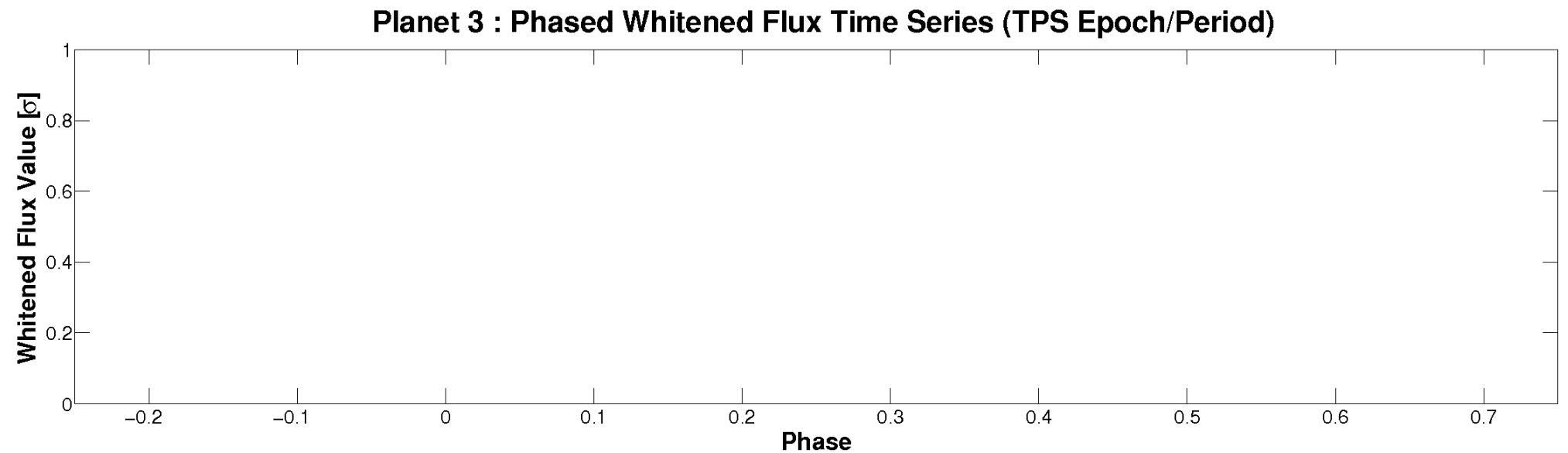
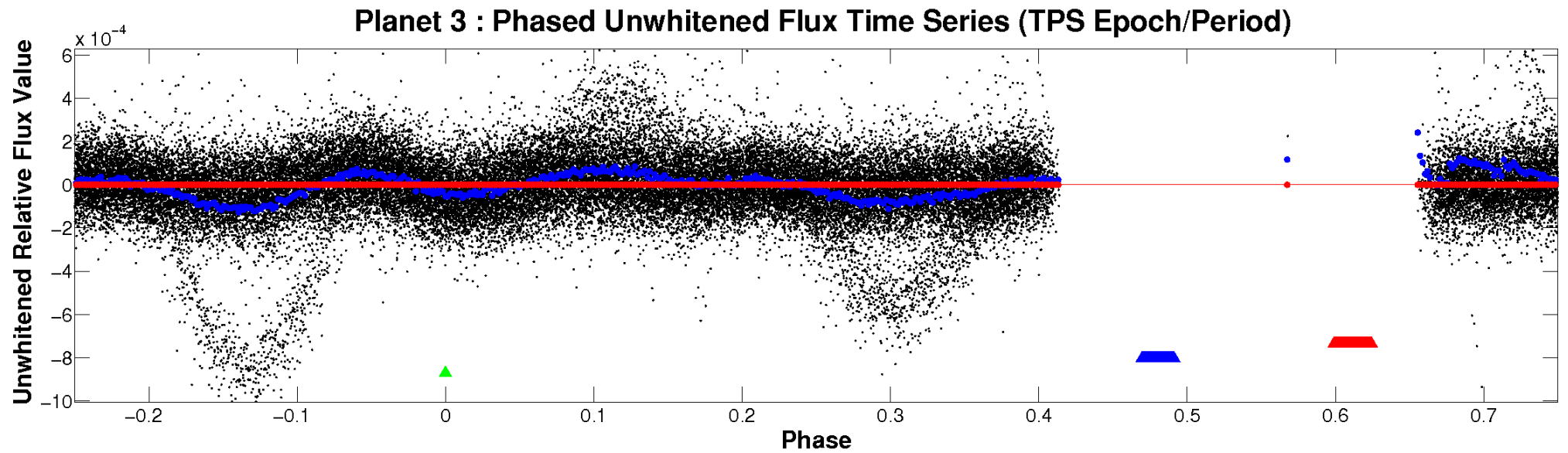


ALT Odd/Even

TCE 011409673-03

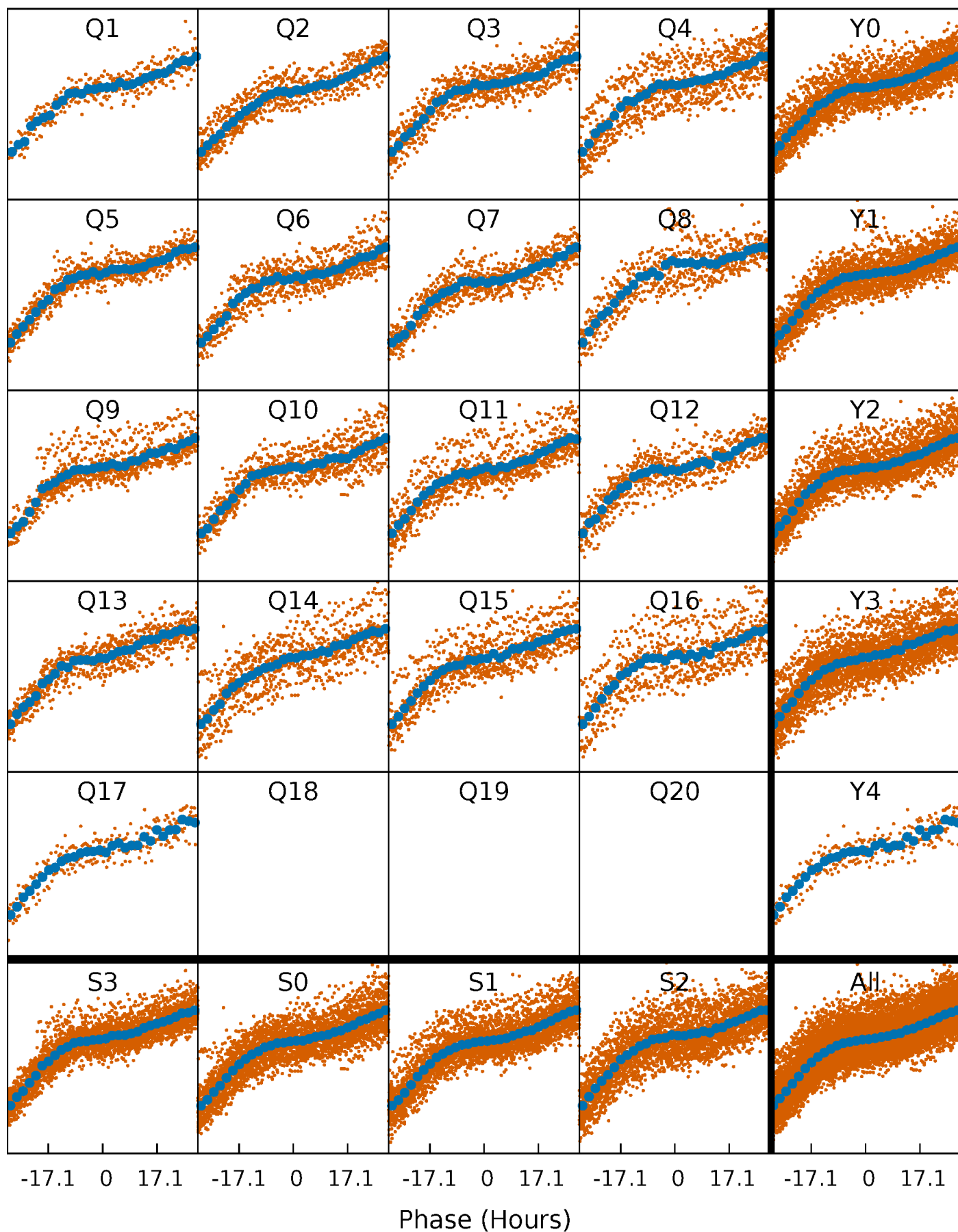


Non-Whitened Vs. Whitened Light Curve



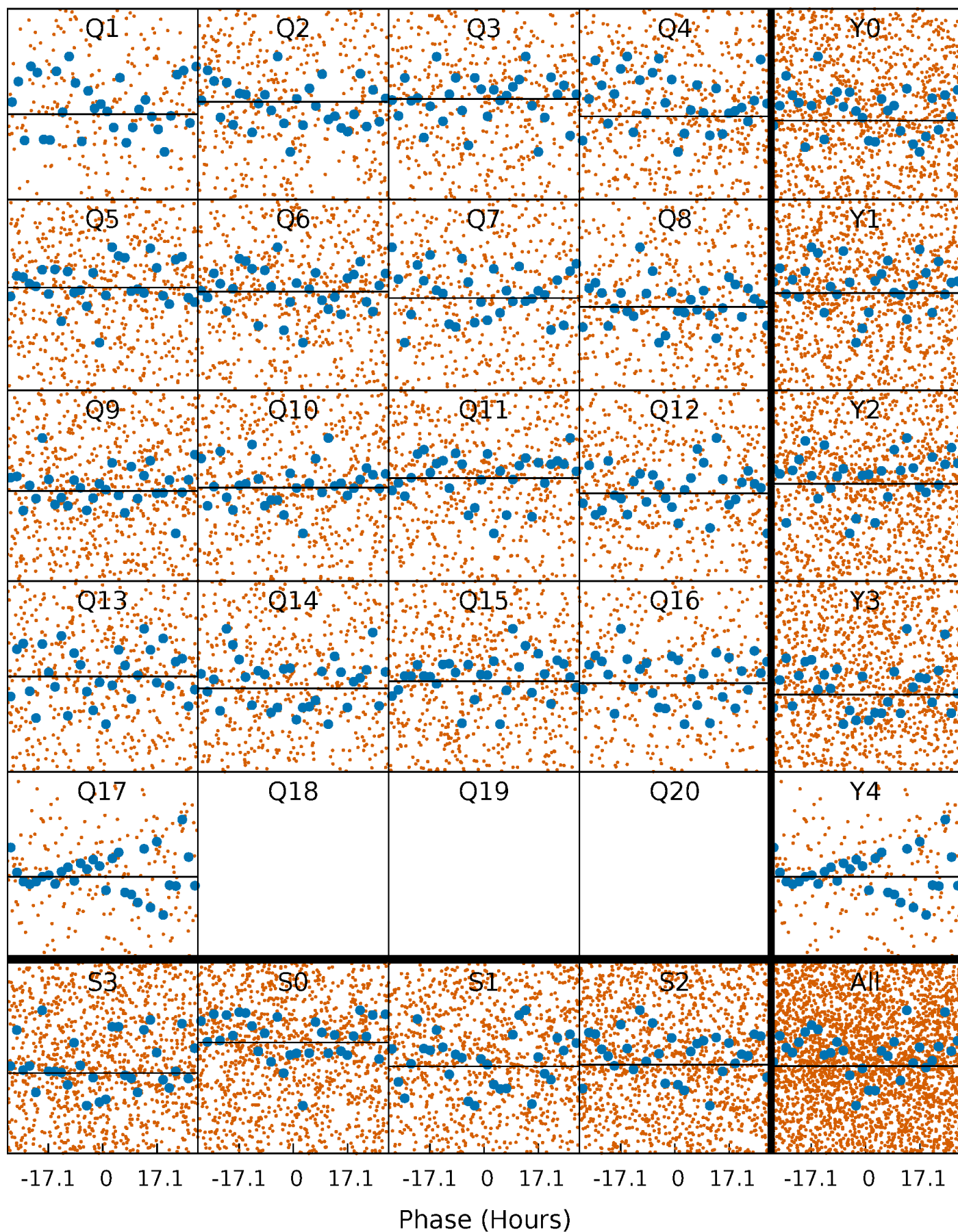
PDC Quarter-Phased Transit Curves

TCE 011409673-03 P= 12.312956 Days $T_0=132.178490$ (BKJD)



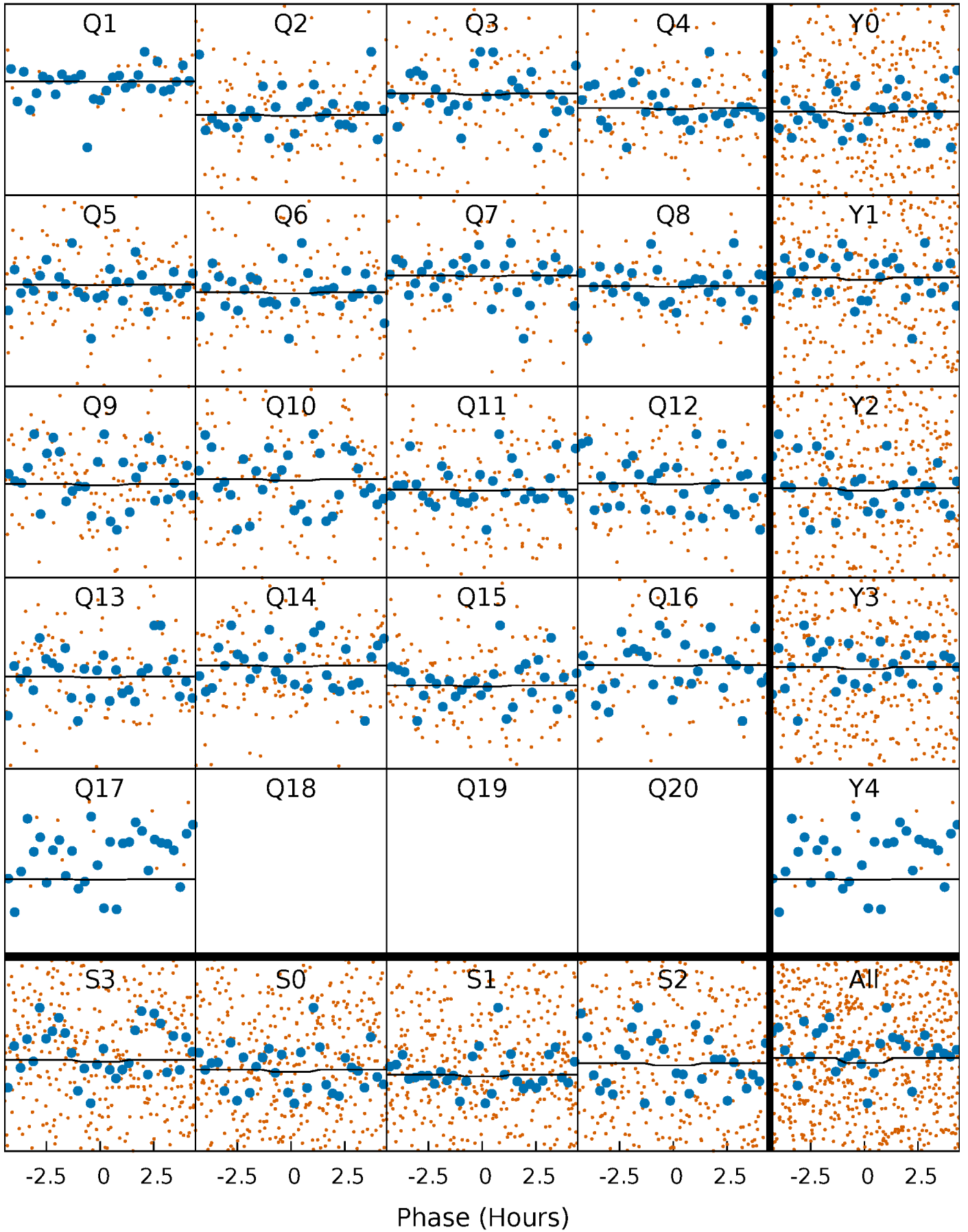
DV Quarter-Phased Transit Curves

TCE 011409673-03 P= 12.312956 Days $T_0=132.178490$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

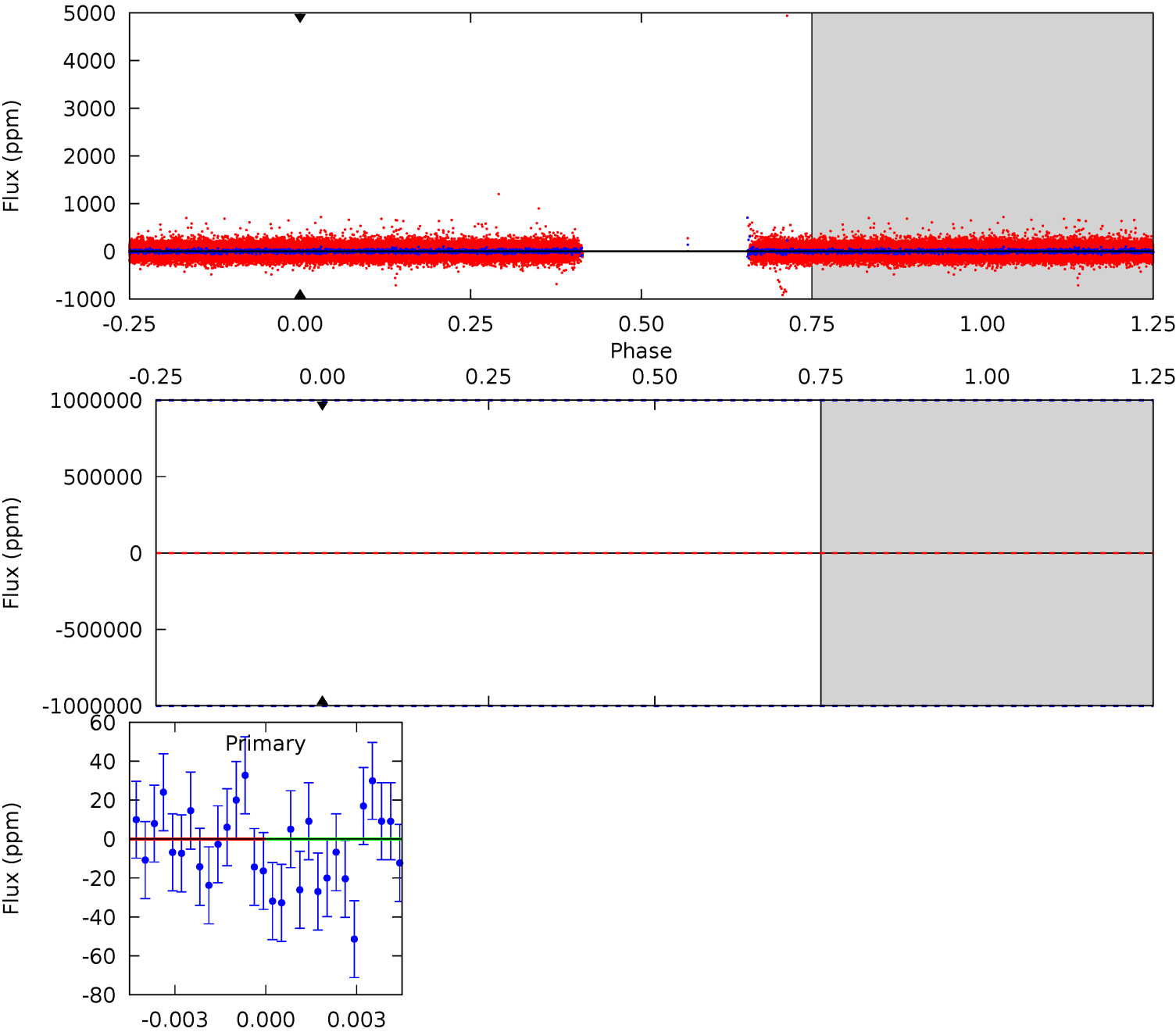
TCE 011409673-03 P= 12.312956 Days $T_0=131.516144$ (BKJD)



DV Model-Shift Uniqueness Test

011409673-03, P = 12.312956 Days, E = 119.865534 Days

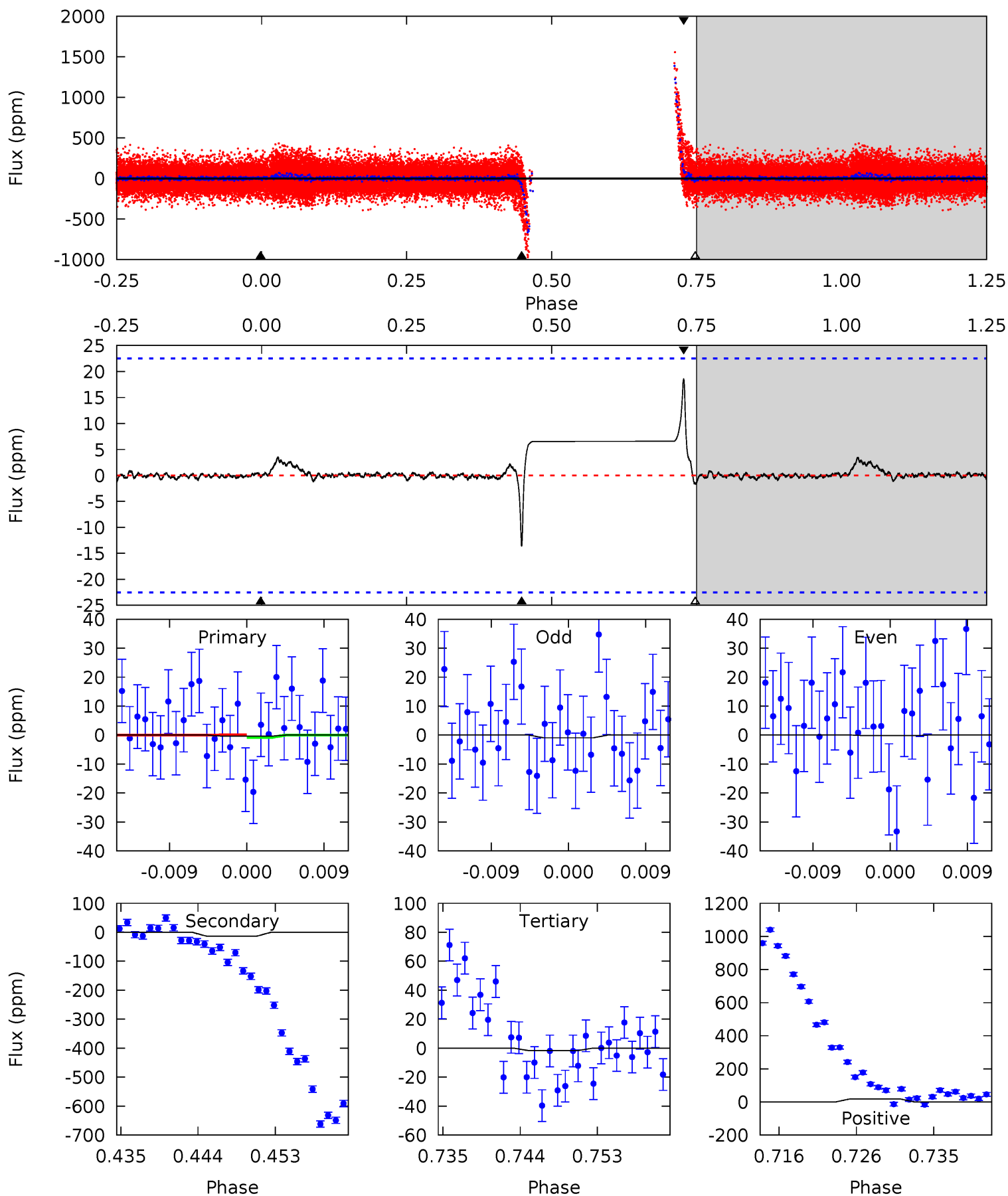
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011409673-03, P = 12.312956 Days, E = 119.203188 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.08	3.06	0.37	4.15	5.05	2.61	0.32	-0.28	-4.06	2.69	-1.09	0.09	0.36	0.58	0.09



Stellar Parameters For KIC 011409673

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7516^{+75}_{-82}	$4.097^{+0.095}_{-0.116}$	$-0.060^{+0.150}_{-0.150}$	$1.883^{+0.355}_{-0.236}$	$1.616^{+0.124}_{-0.124}$	$0.341^{+0.149}_{-0.122}$
	+1%/-1%	+2%/-3%	+250%/-250%	+19%/-13%	+8%/-8%	+44%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011409673-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$15.20^{+14.97}_{-10.77}$	1814^{+80}_{-64}	6527^{+36884}_{-44489}	119^{+7021}_{-5949}
Alt.	-14 ± 4	$14.12^{+15.98}_{-9.32}$	1820^{+77}_{-71}	2308^{+1119}_{-4545}	$0.538^{+4.472}_{-0.424}$

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

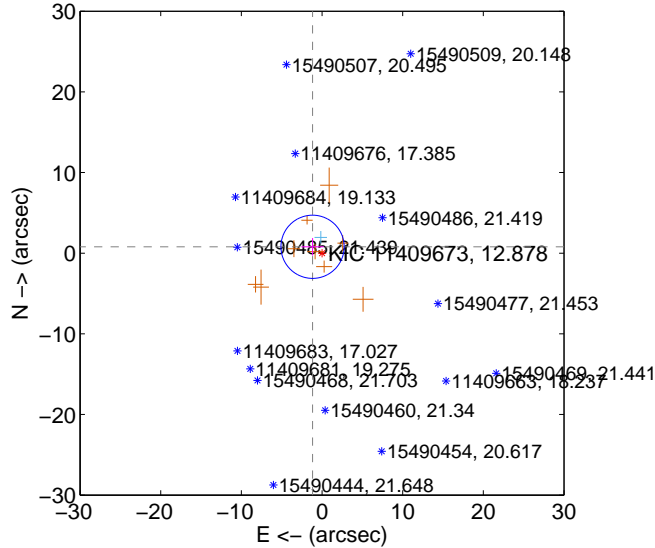
Supplemental centroid analysis for 011409673-03. Kepler magnitude: 12.88. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

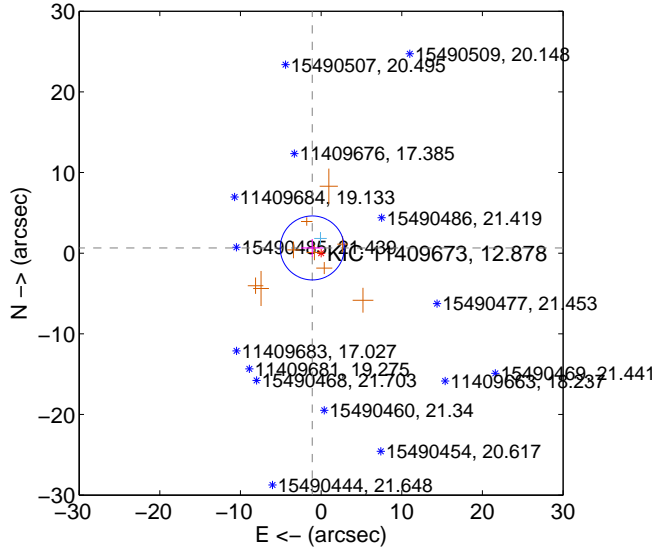
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.416 ± 1.306	1.08	1.175 ± 1.393	0.791 ± 1.090
PRF-fit source offset from KIC position	1.276 ± 1.323	0.97	1.099 ± 1.394	0.648 ± 1.092
photometric centroid source offset	—	—	—	—

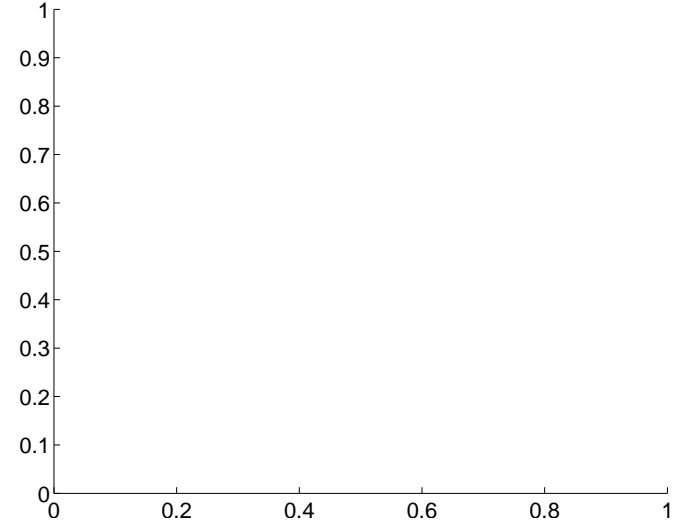
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

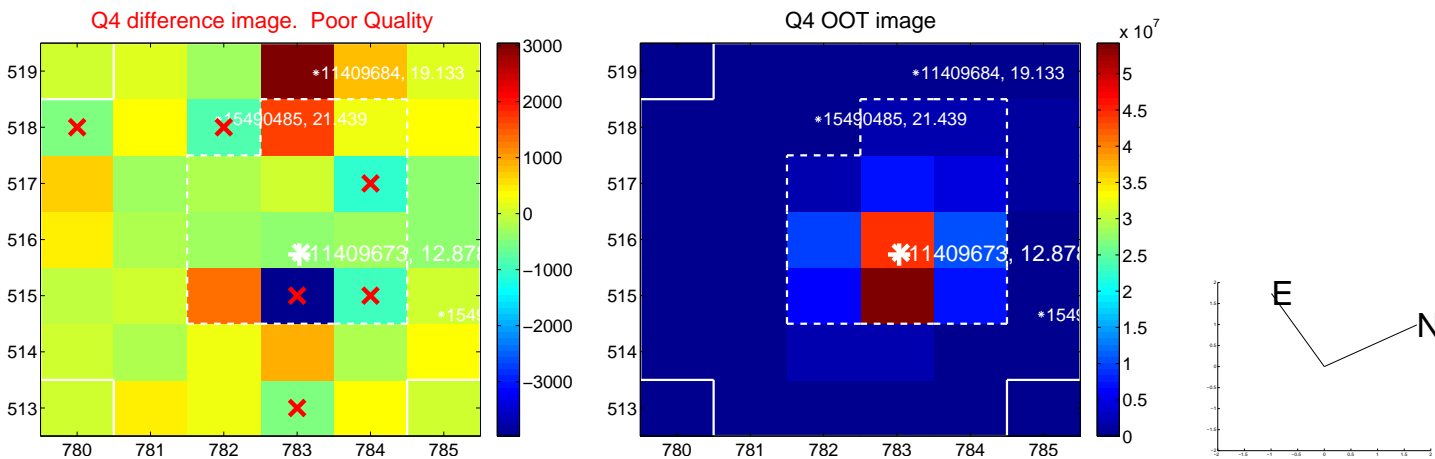
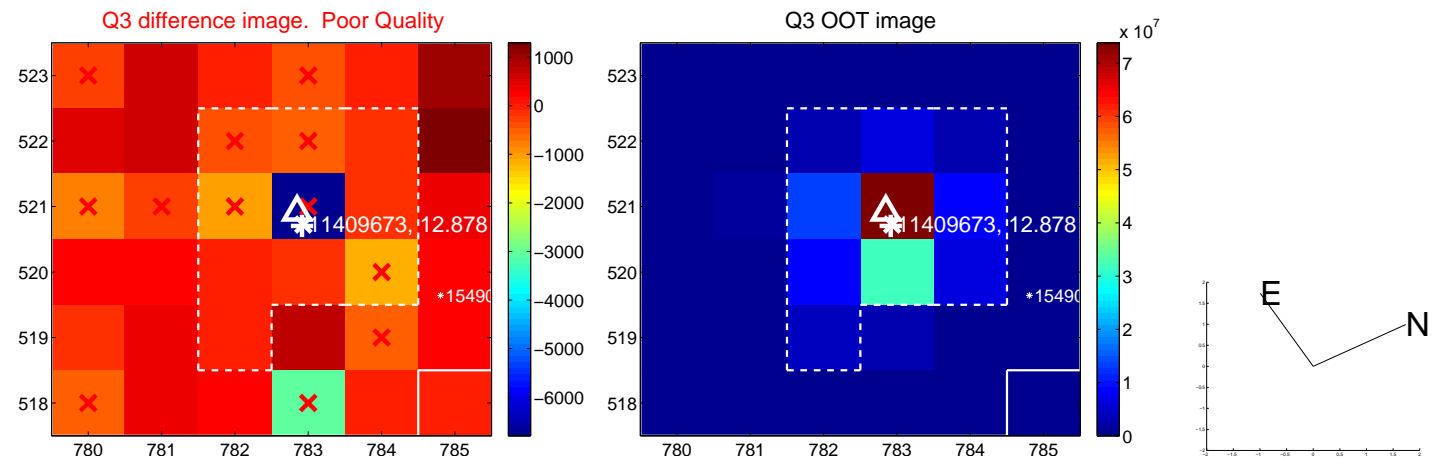
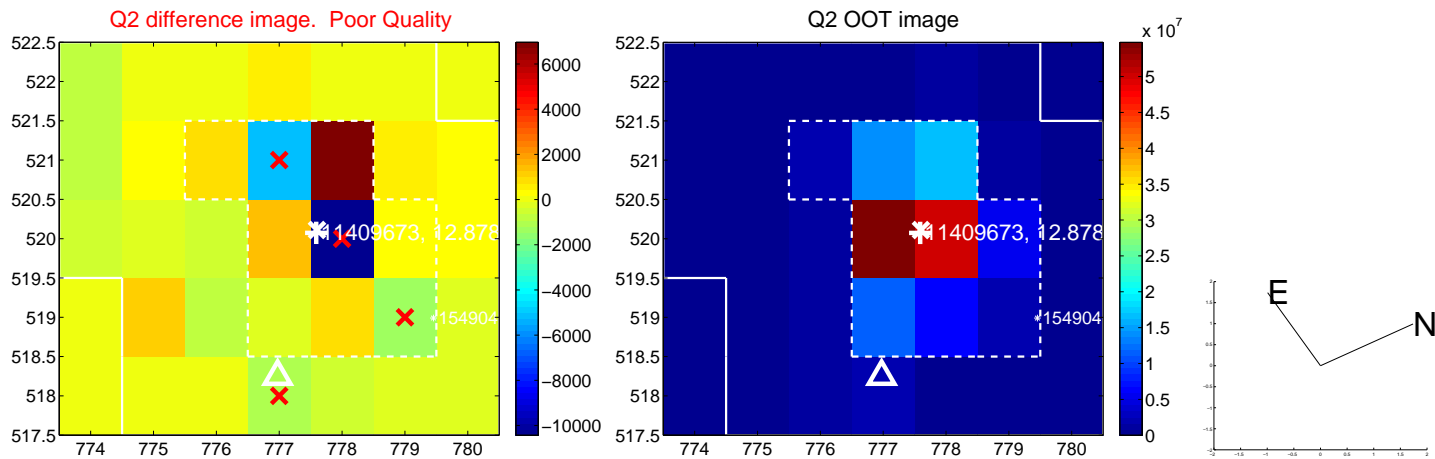
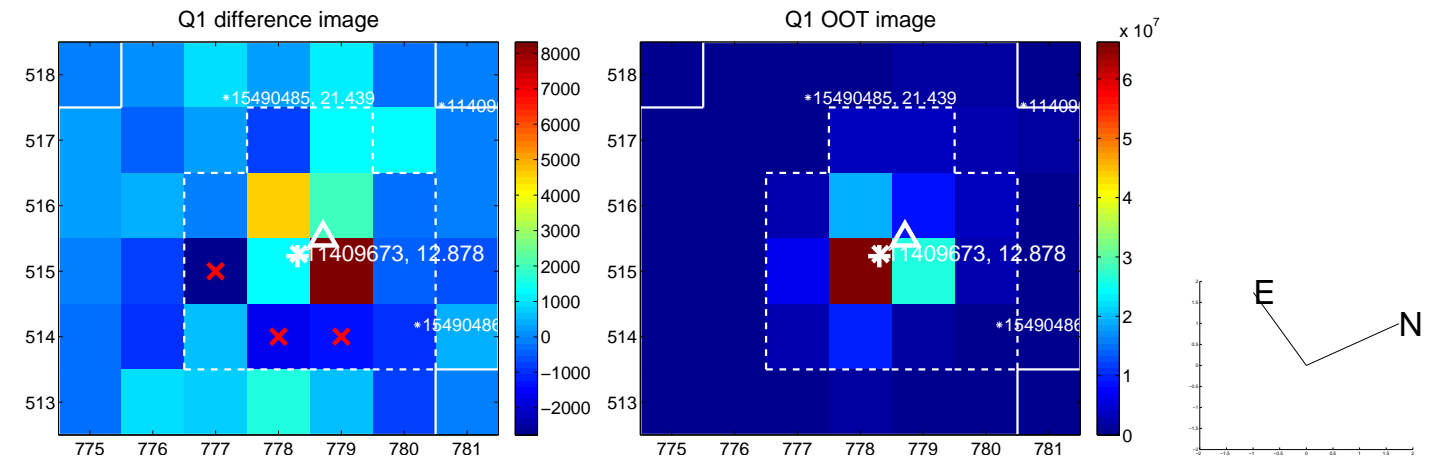


There are no photometric centroids

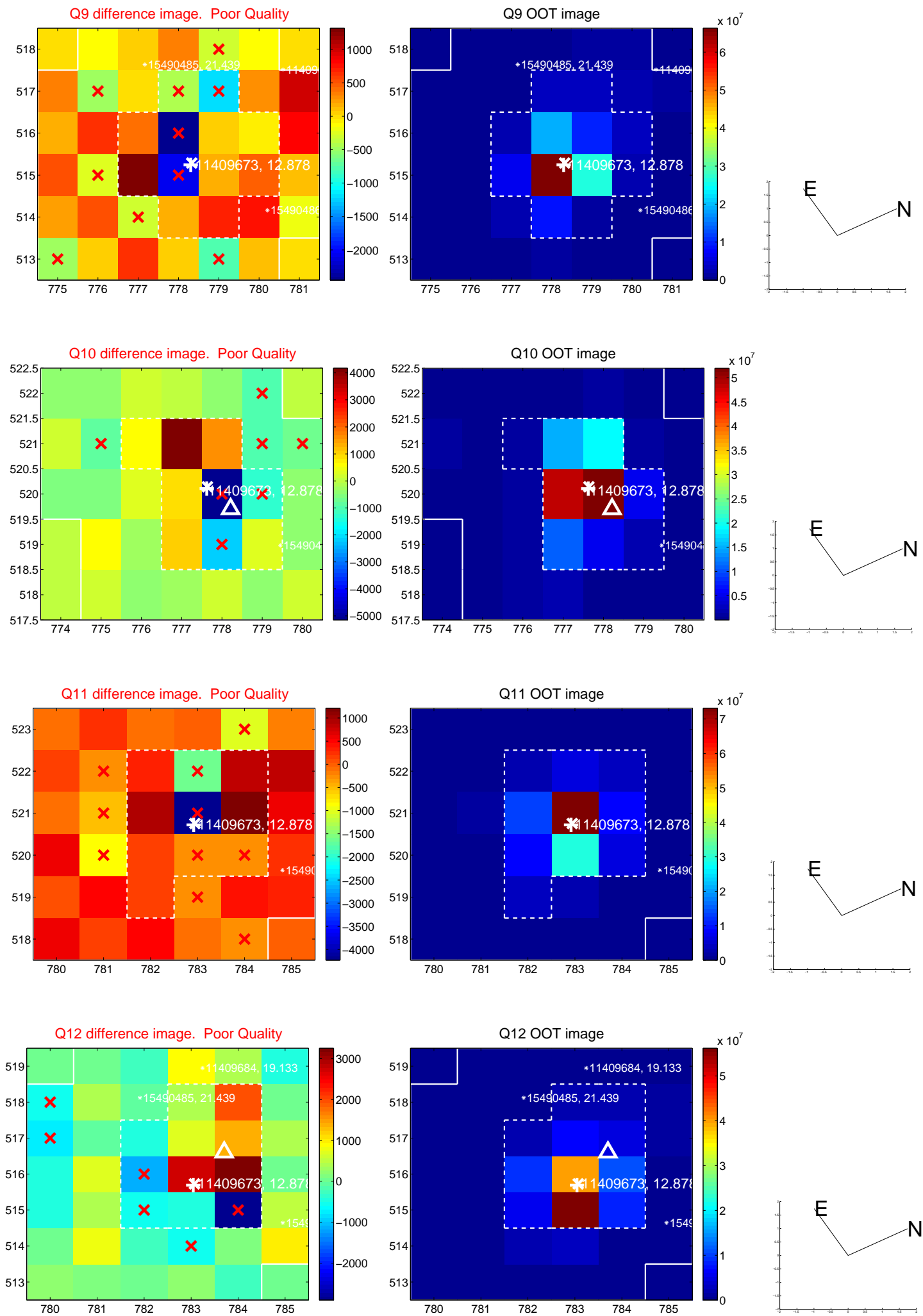


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

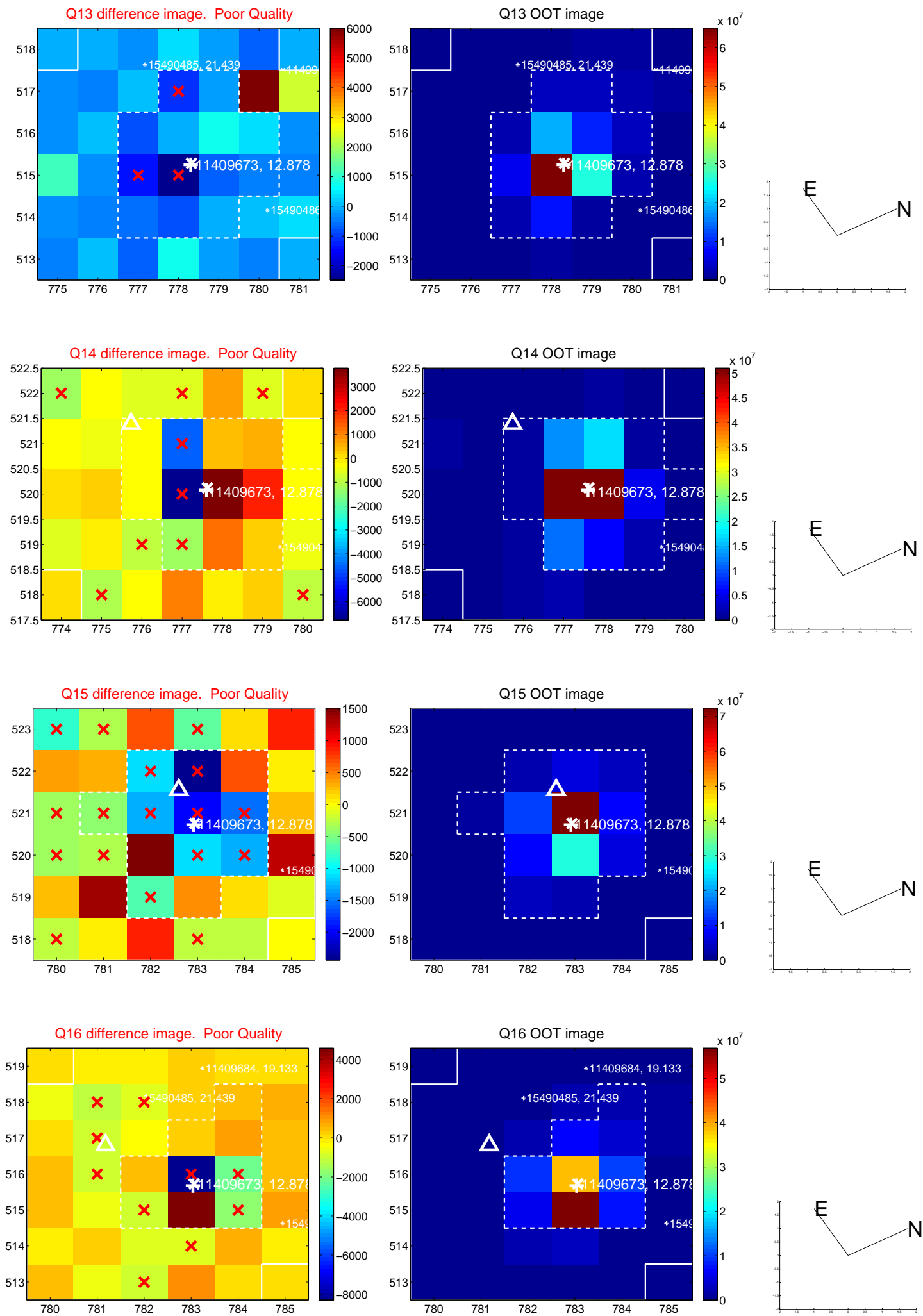
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



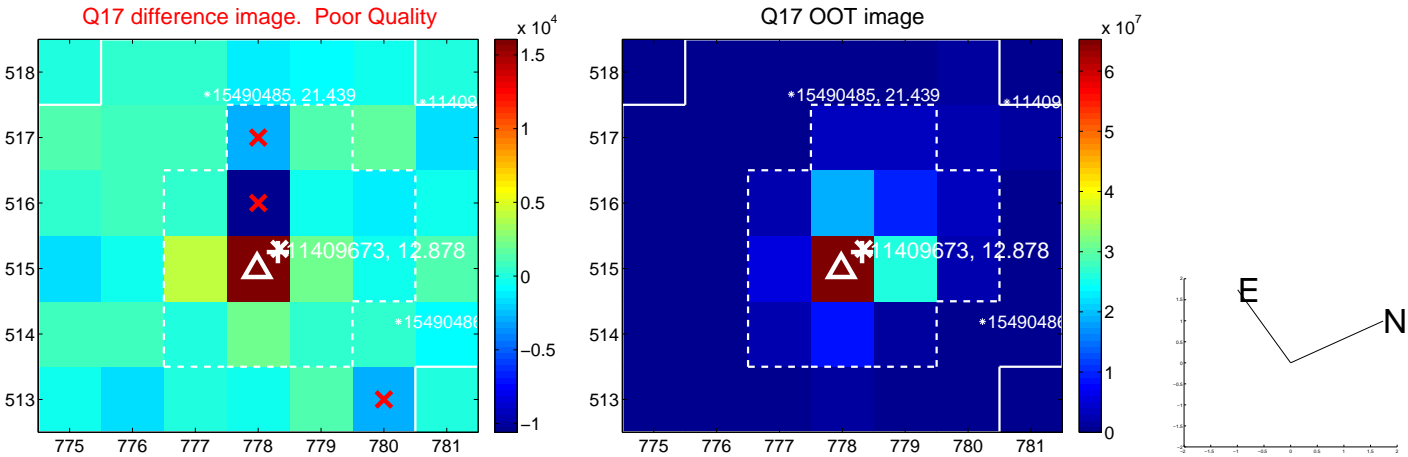
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

