

KIC 011193046

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})
011193046-01	OBS	No	0.661117	131.804172	74.4	0.783	10.4	11.9	2.92	8037	2.57	95248.14
011193046-02	OBS	No	622.169988	218.808428	1925.8	4.459	7.5	7.8	2.92	8037	15.32	10.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011193046-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
011193046-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

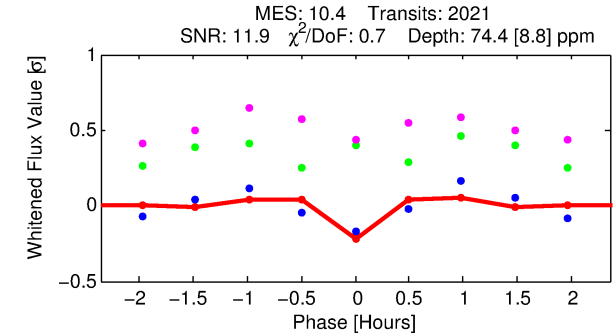
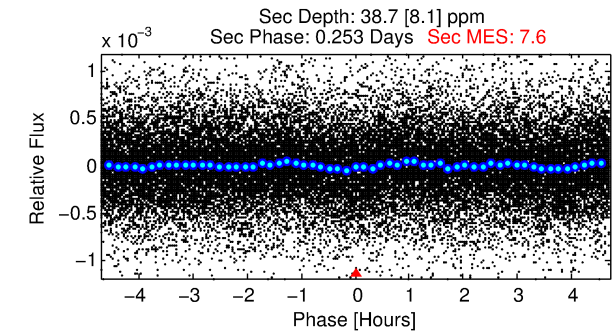
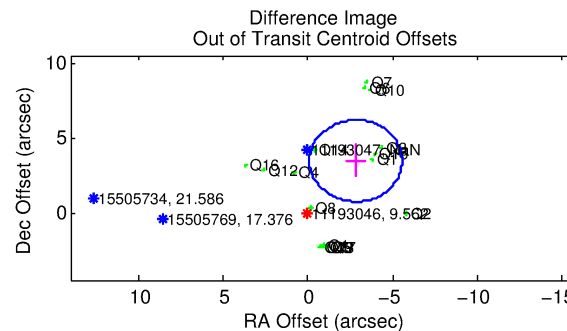
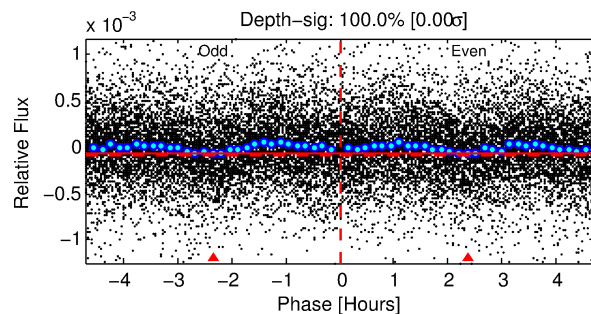
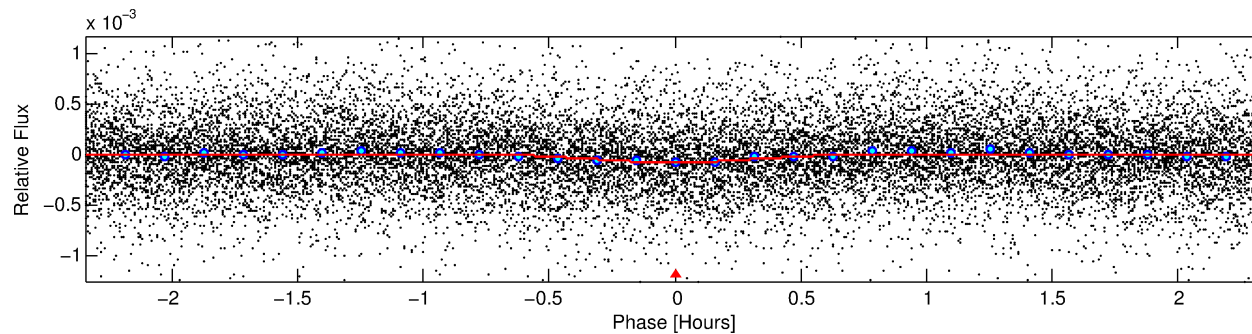
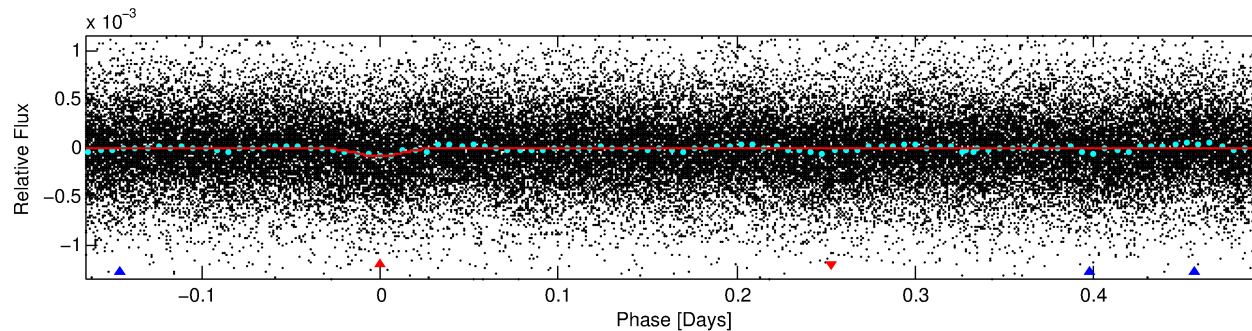
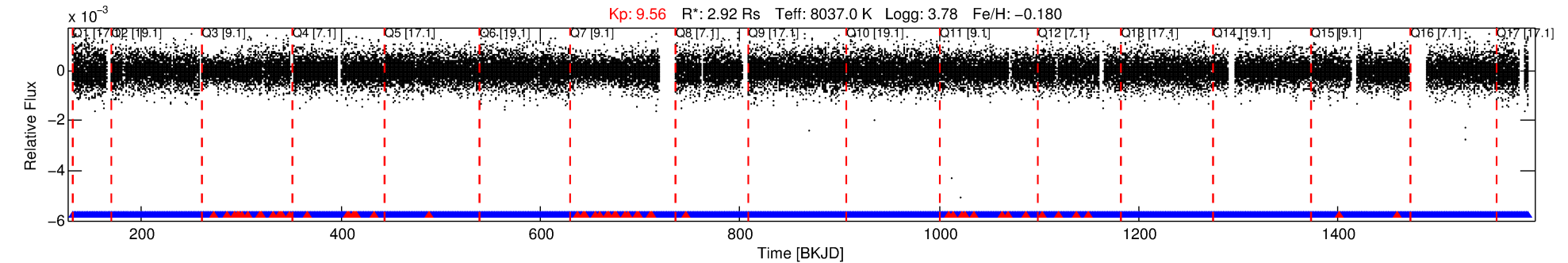
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011193046-01

No Significant Match Found

DV One-Page Summary

KIC: 11193046 Candidate: 1 of 2 Period: 0.661 d



DV Fit Results:

Period = 0.66112 [0.00001] d
Epoch = 131.8042 [0.0008] BKJD
Rp/R* = 0.0081 [0.0077]
a/R* = 6.49 [33.36]
b = 0.10 [52.21]
Seff = 95248.14 [37857.22]
Teq = 4480 [445] K
Rp = 2.57 [2.52] Re
a = 0.0183 [0.0045] AU
Ag = 1.08 [2.10] [0.04 σ]
Teffp = 7053 [3365] K [0.76 σ]

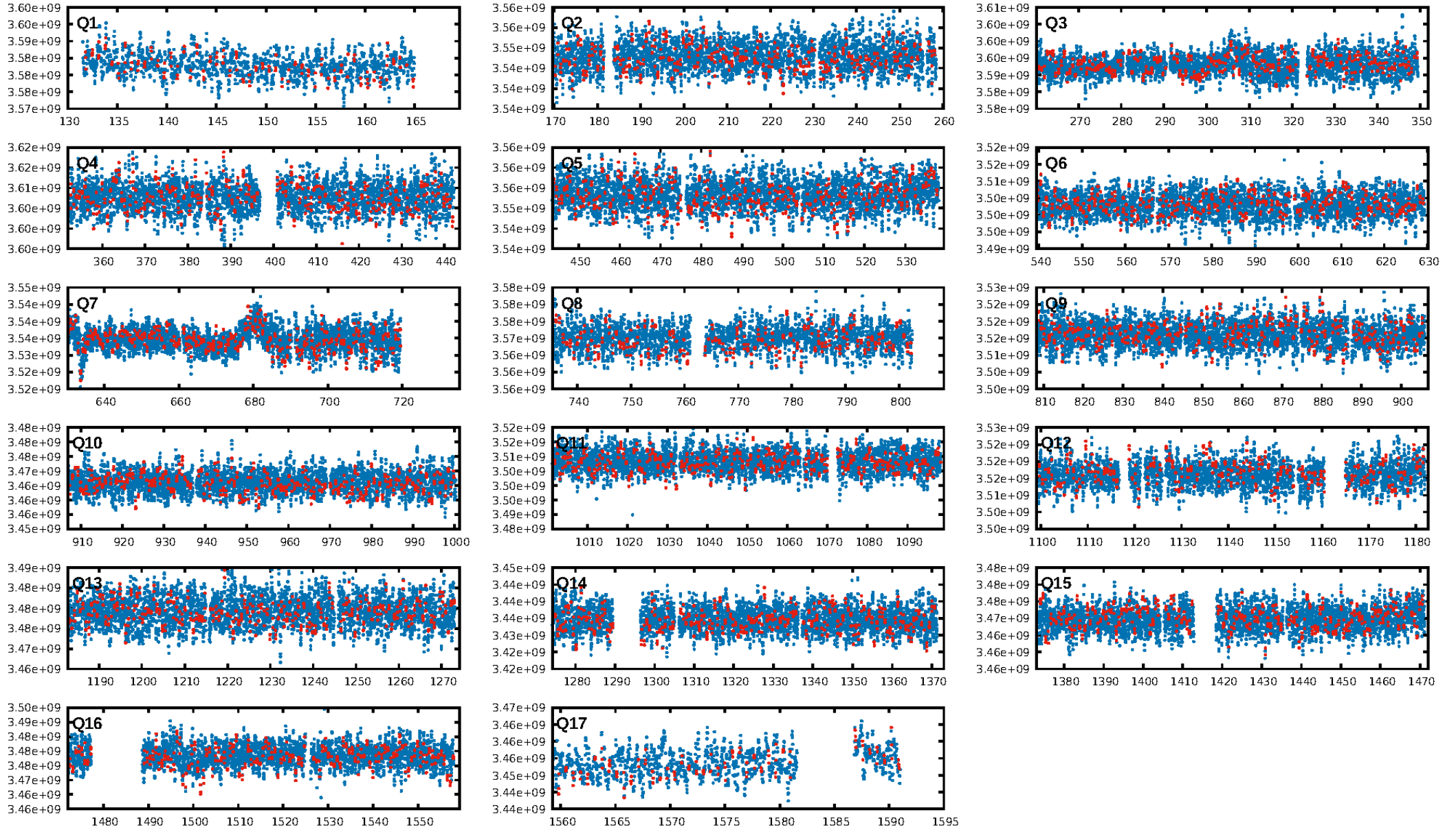
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3294.64 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.64e-32
RollingBand-fgt: 0.97 [1878/1930]
GhostDiagnostic-chr: N/A
Centroid-sig: 11.4%
Centroid-so: 0.310 arcsec [0.86 σ]
OotOffset-rm: 4.449 arcsec [4.89 σ]
KicOffset-rm: 4.562 arcsec [4.32 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.06 [1/17]
DiffImageOverlap-fno: 1.00 [17/17]

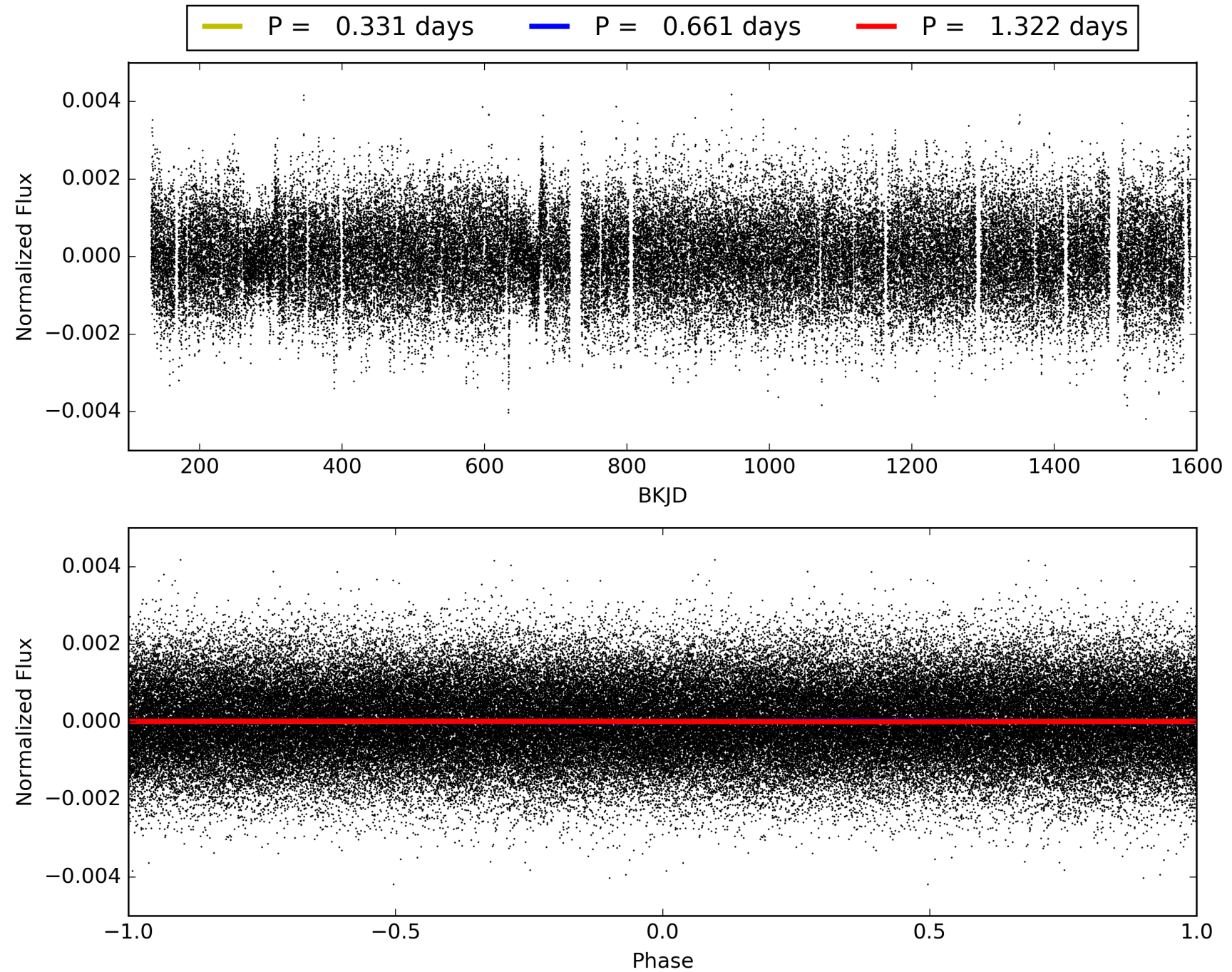
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:20:40 Z

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

TCE 011193046-01, PDC Light Curves

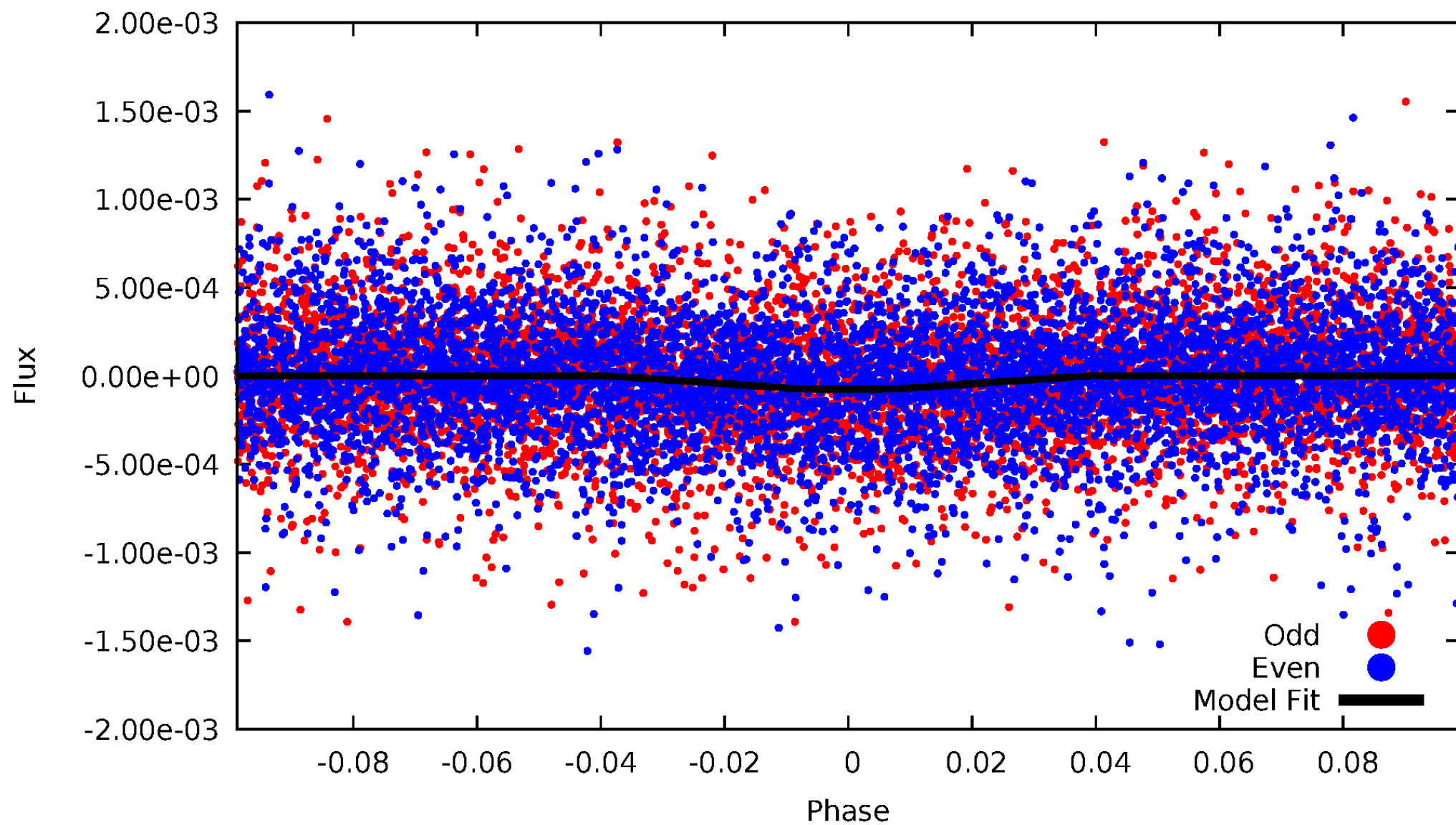


TCE 011193046-01



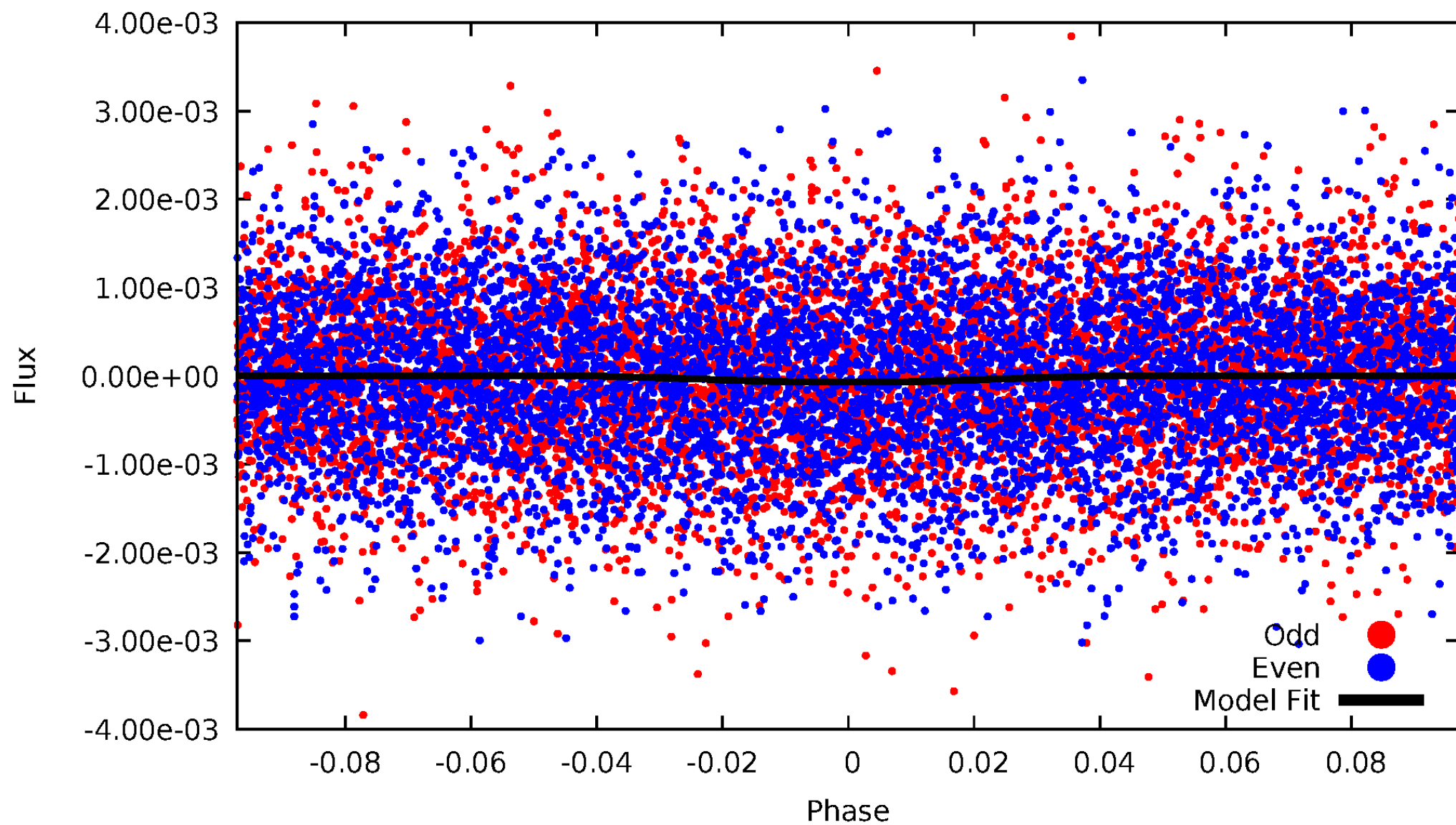
DV Odd/Even

TCE 011193046-01



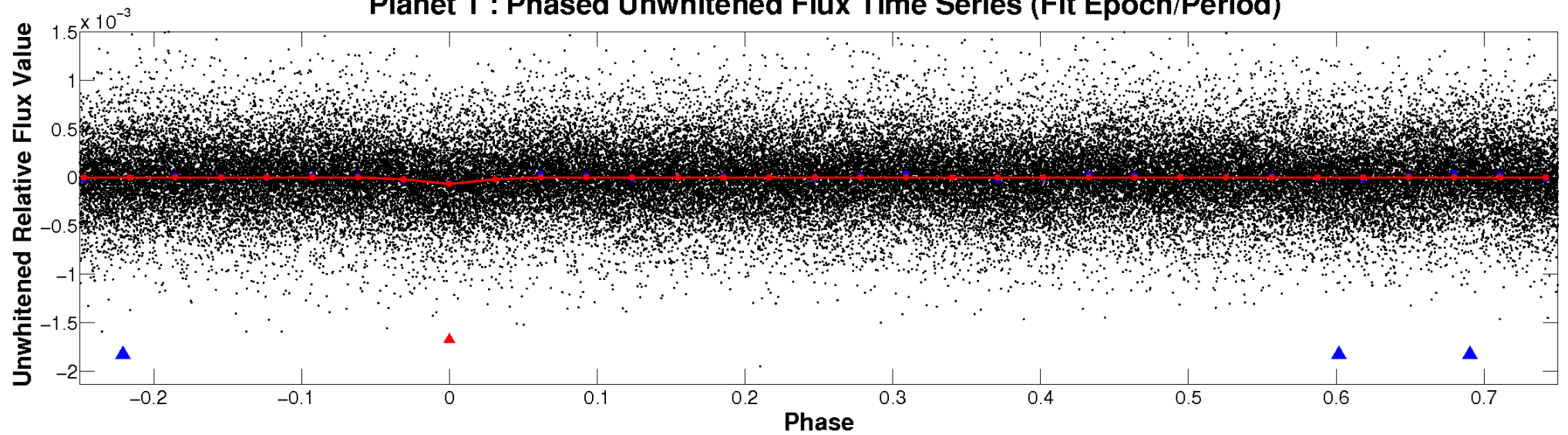
ALT Odd/Even

TCE 011193046-01

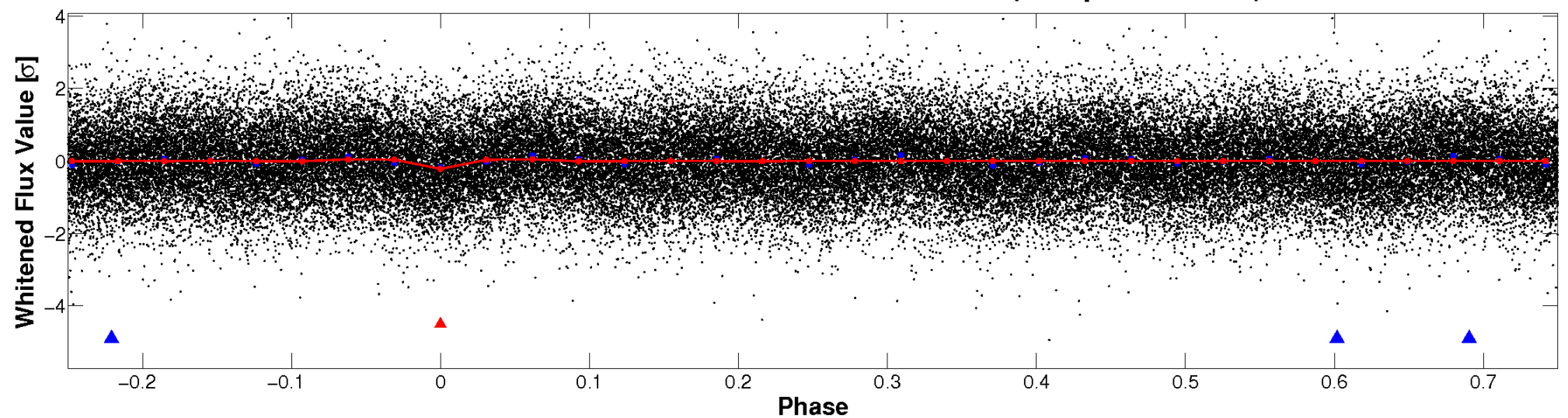


Non-Whitened Vs. Whitened Light Curve

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

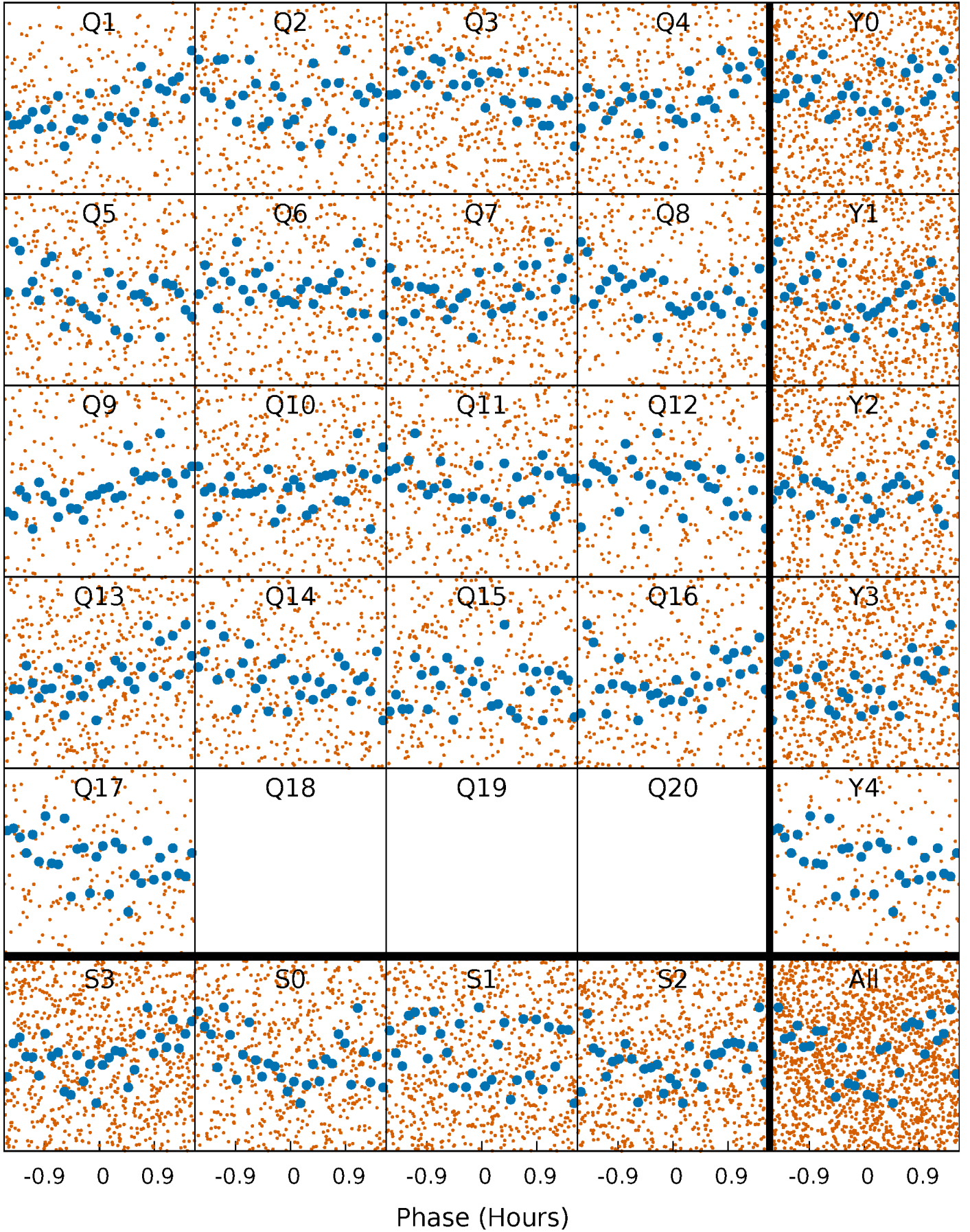


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



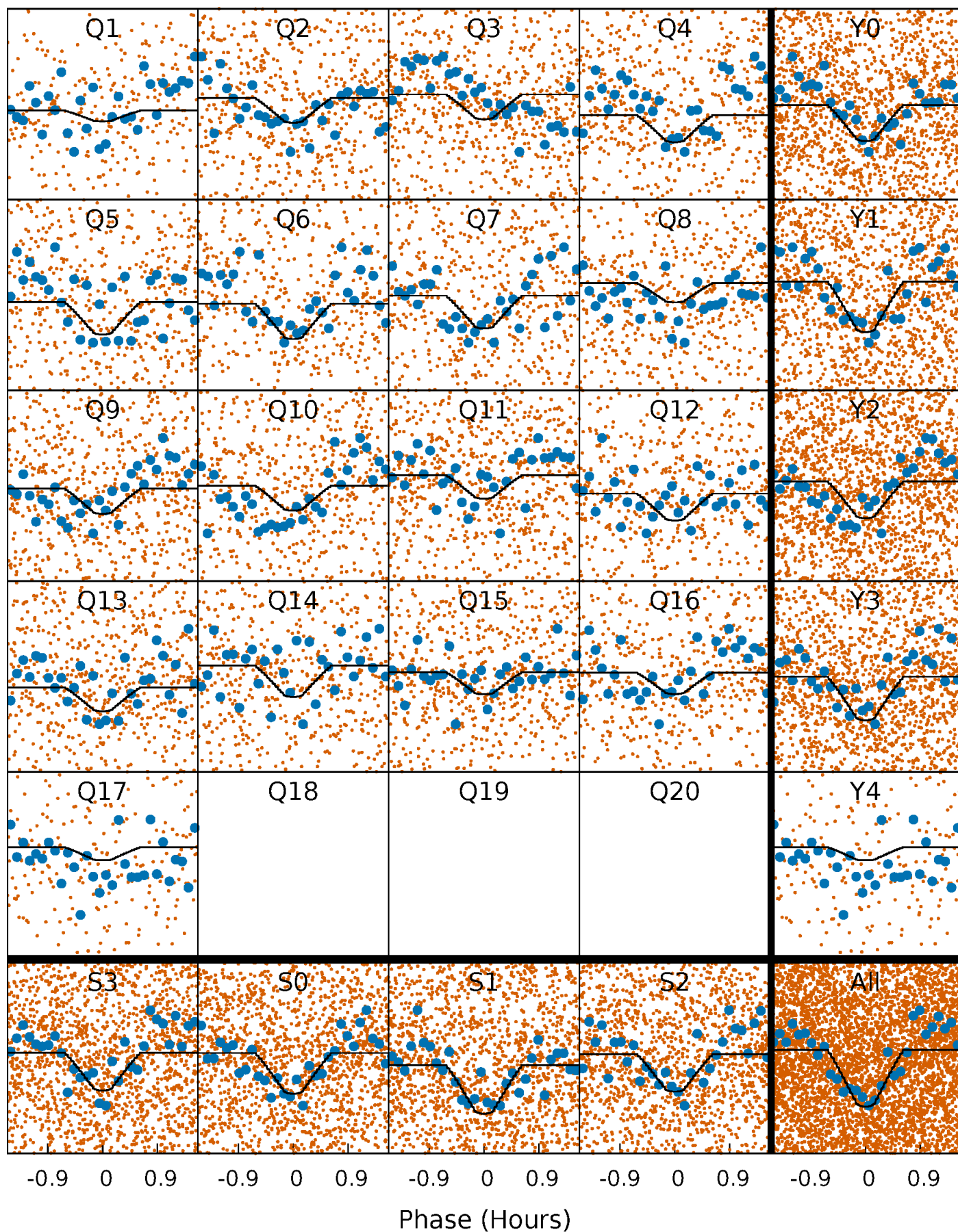
PDC Quarter-Phased Transit Curves

TCE 011193046-01 P= 0.661117 Days $T_0=131.804172$ (BKJD)



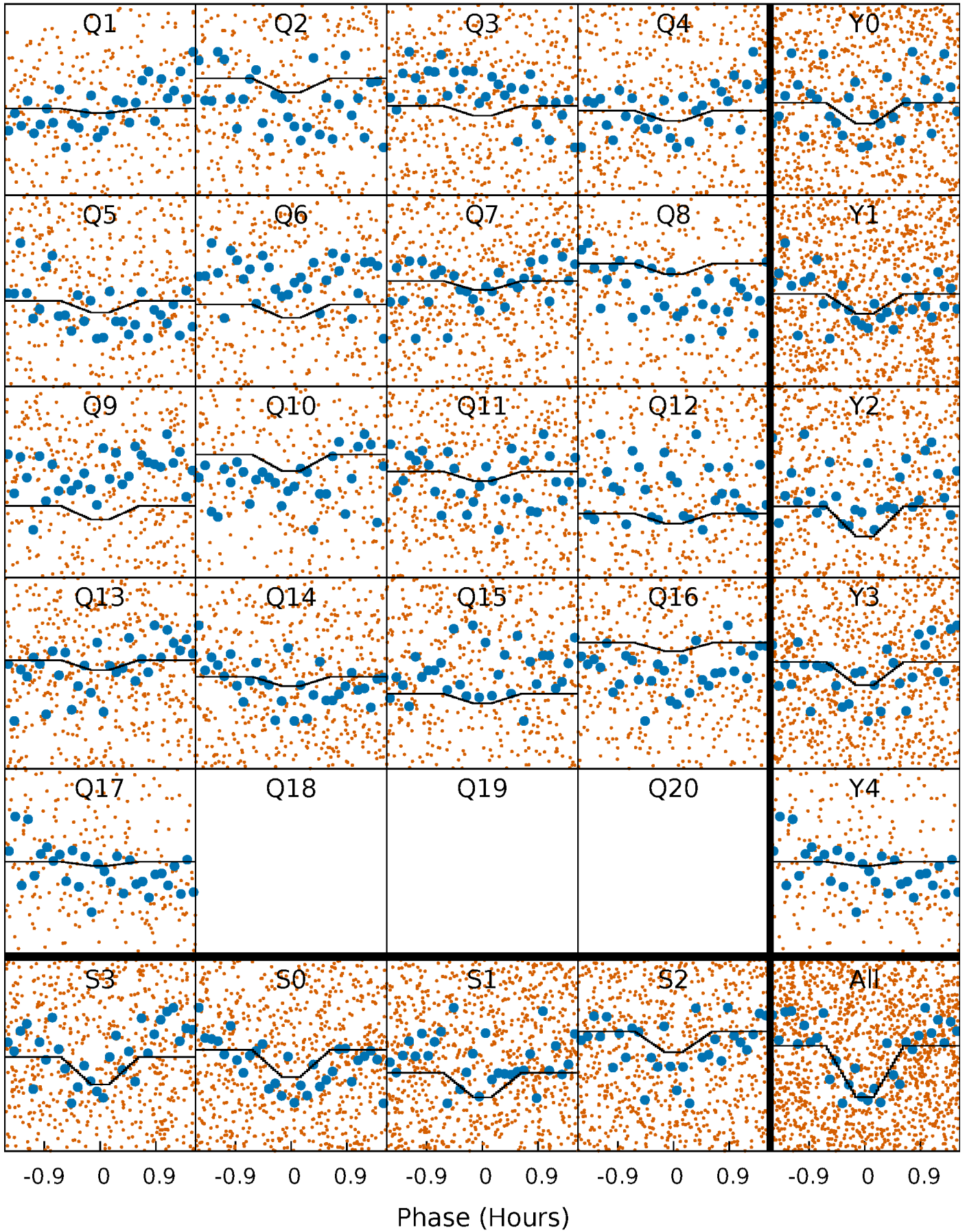
DV Quarter-Phased Transit Curves

TCE 011193046-01 P= 0.661117 Days $T_0=131.804172$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

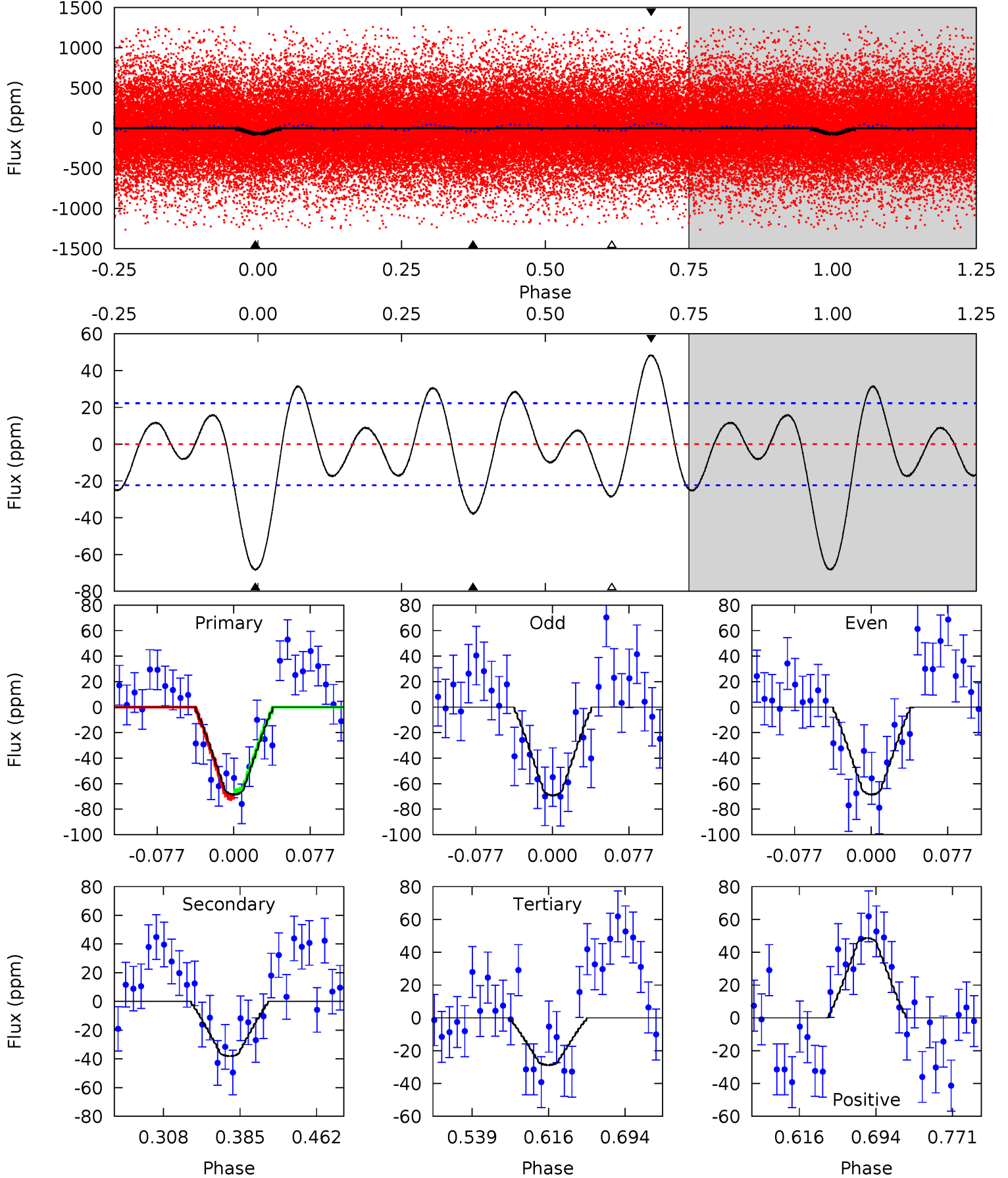
TCE 011193046-01 P= 0.661114 Days $T_0=131.803801$ (BKJD)



DV Model-Shift Uniqueness Test

011193046-01, P = 0.661117 Days, E = 131.143055 Days

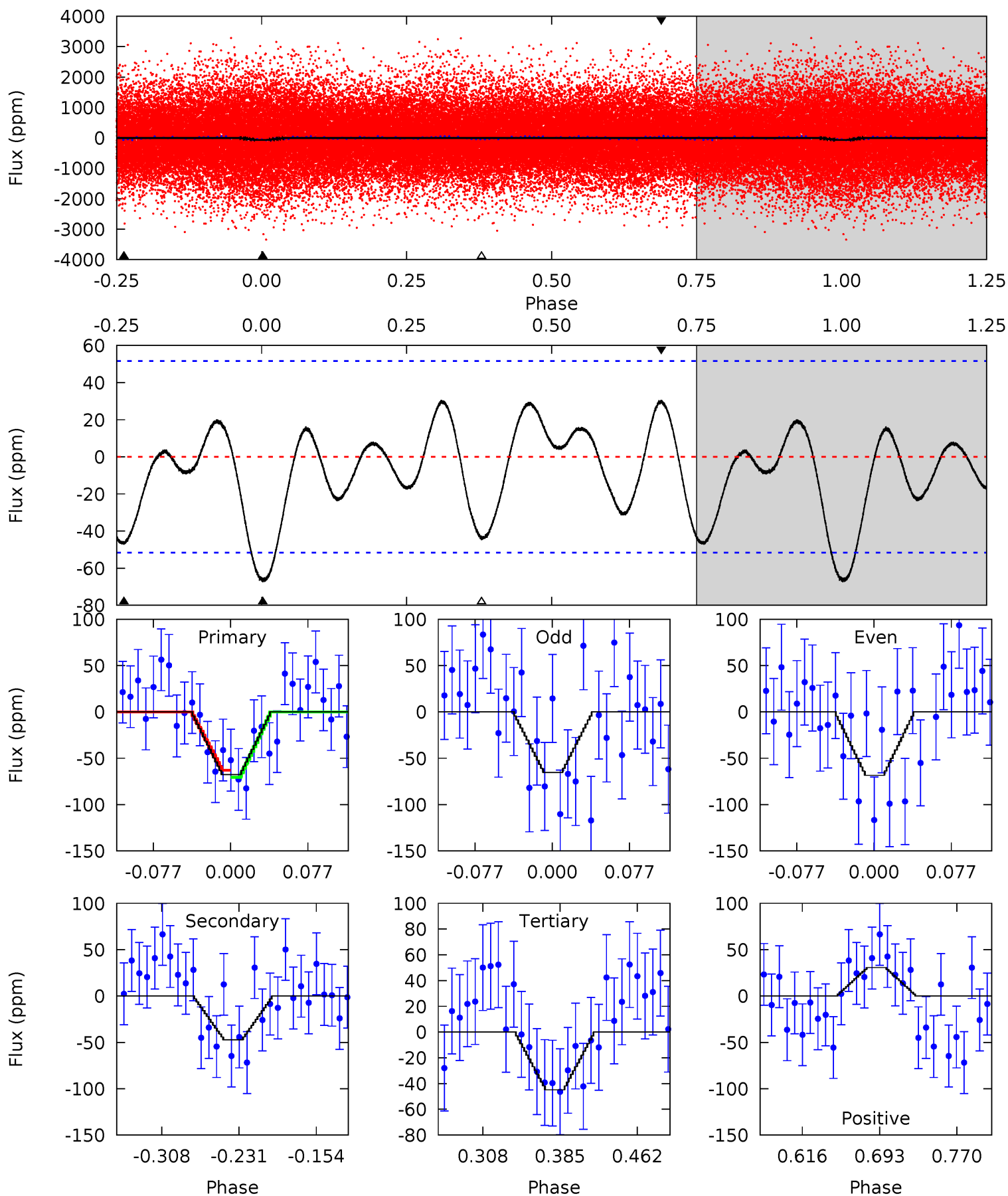
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	7.89	5.94	10.1	4.62	1.77	3.54	8.24	4.12	1.94	-2.18	0.08	0.95	0.42	0.53



Alt Model-Shift Uniqueness Test

011193046-01, P = 0.661114 Days, E = 131.142687 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.05	4.23	4.01	2.75	4.62	1.77	1.68	2.04	3.30	0.22	1.49	0.14	0.93	0.31	0.35



Stellar Parameters For KIC 011193046

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8037^{+72}_{-88}	$3.778^{+0.232}_{-0.062}$	$-0.180^{+0.100}_{-0.150}$	$2.917^{+0.374}_{-0.748}$	$1.863^{+0.045}_{-0.180}$	$0.106^{+0.141}_{-0.026}$
	+1%/-1%	+6%/-2%	+56%/-83%	+13%/-26%	+2%/-10%	+133%/-25%
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 011193046-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-38 ± 5	$2.76^{+2.26}_{-1.70}$	6150^{+228}_{-411}	5771^{+5811}_{-9059}	$0.947^{+5.455}_{-0.676}$
Alt.	-47 ± 11	$2.82^{+2.11}_{-1.77}$	6133^{+257}_{-398}	6056^{+6344}_{-2583}	$1.020^{+6.419}_{-0.679}$

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

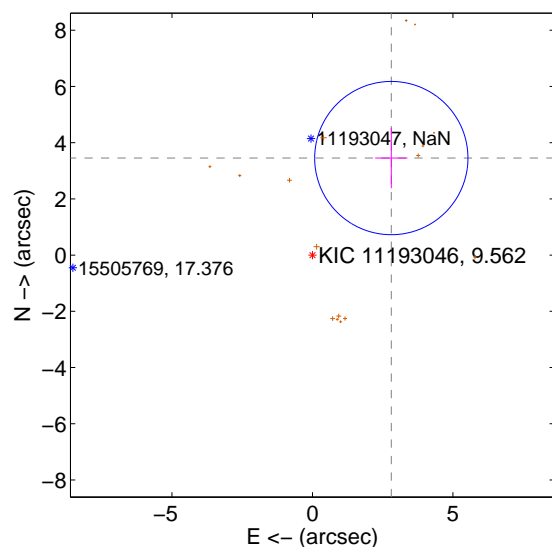
Supplemental centroid analysis for 011193046-01. **Kepler magnitude: 9.56.** Transit SNR 11.88

There are 1 quarters with good PRF difference image offsets

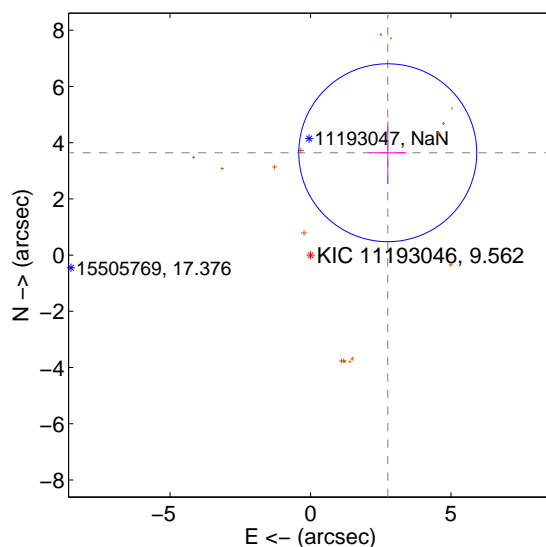
The direct PRF centroid is offset from the target star catalog position by about 1.55 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.449 \pm 0.909	4.89	-2.806 \pm 0.575	3.452 \pm 1.074
PRF-fit source offset from KIC position	4.562 \pm 1.055	4.32	-2.748 \pm 0.671	3.642 \pm 1.114
photometric centroid source offset	0.31 \pm 0.36	0.86	-0.25 \pm 0.30	-0.18 \pm 0.45

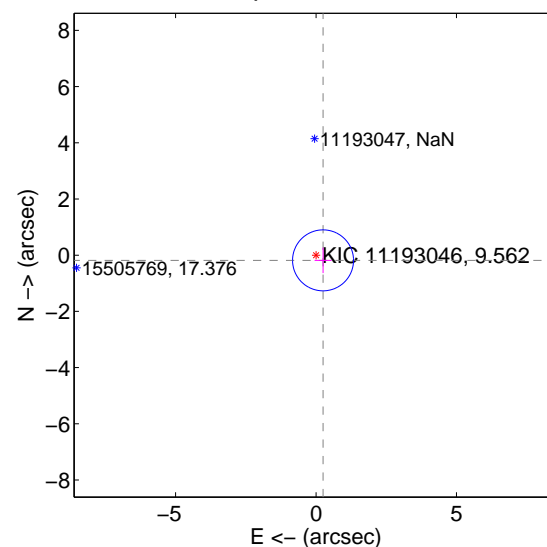
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

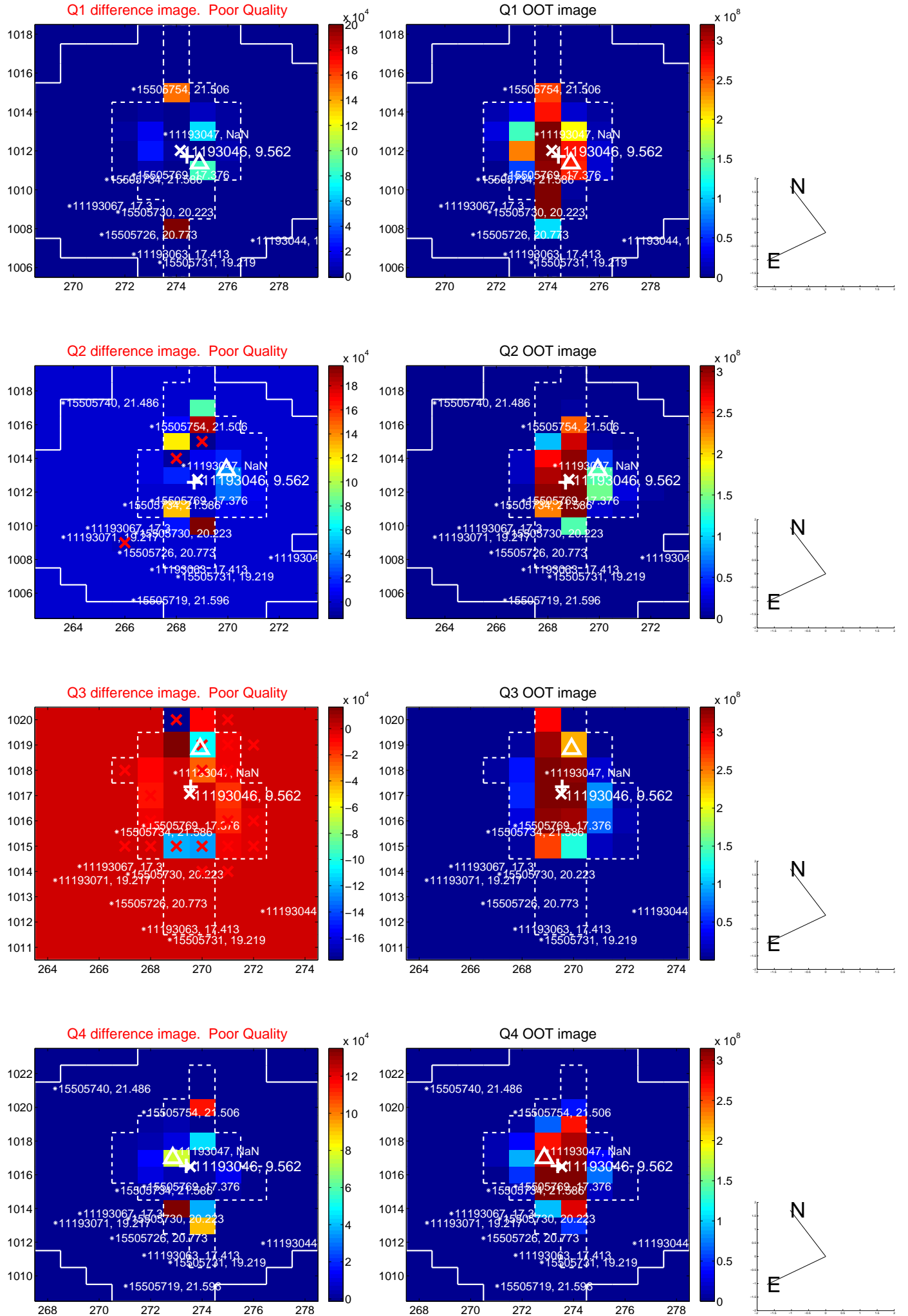


offset from photometric centroids

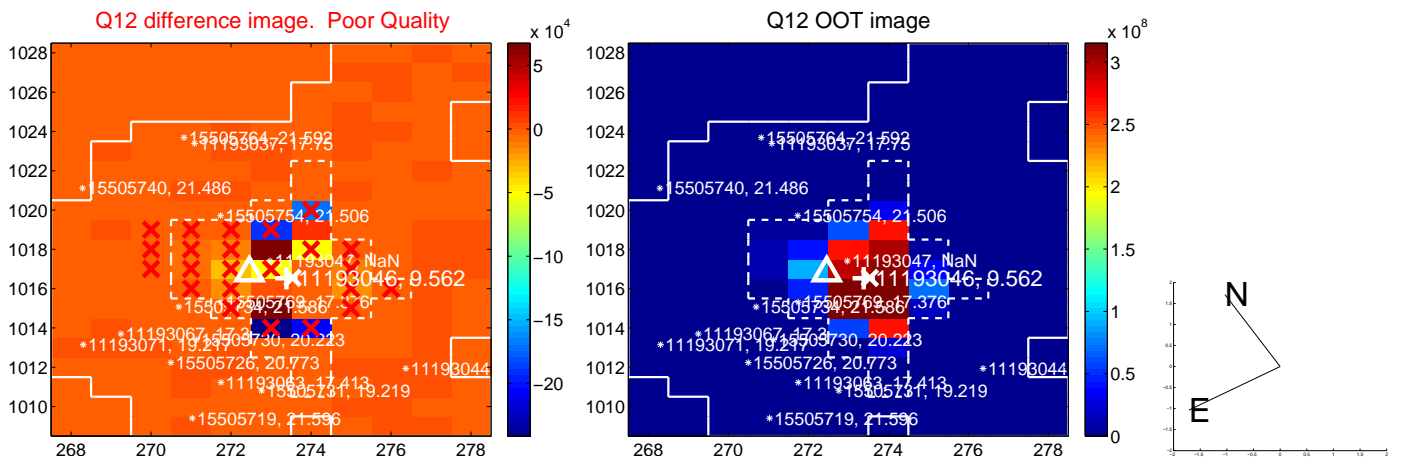
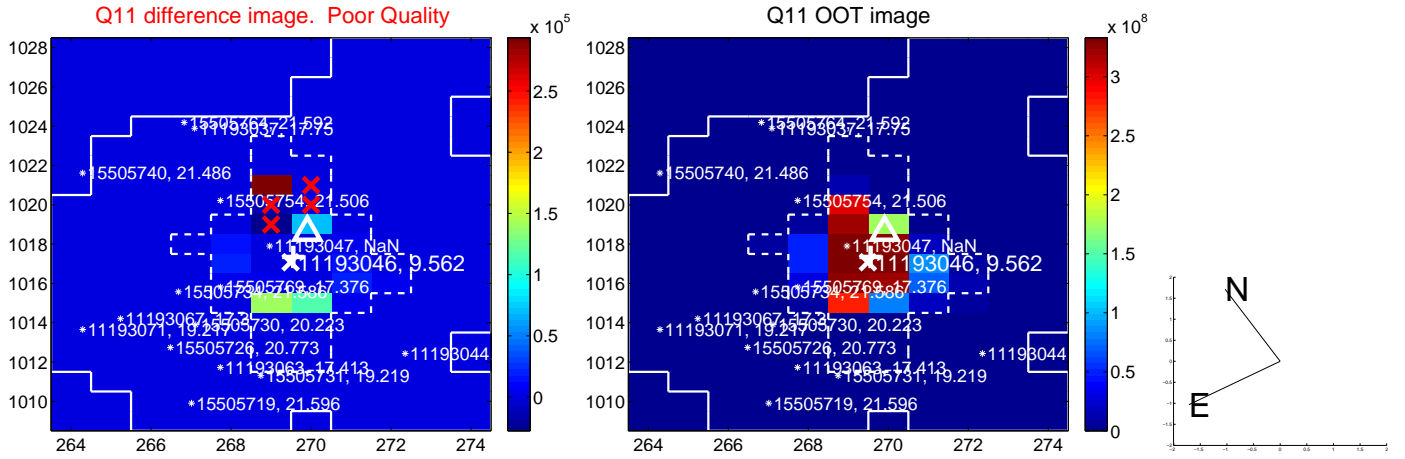
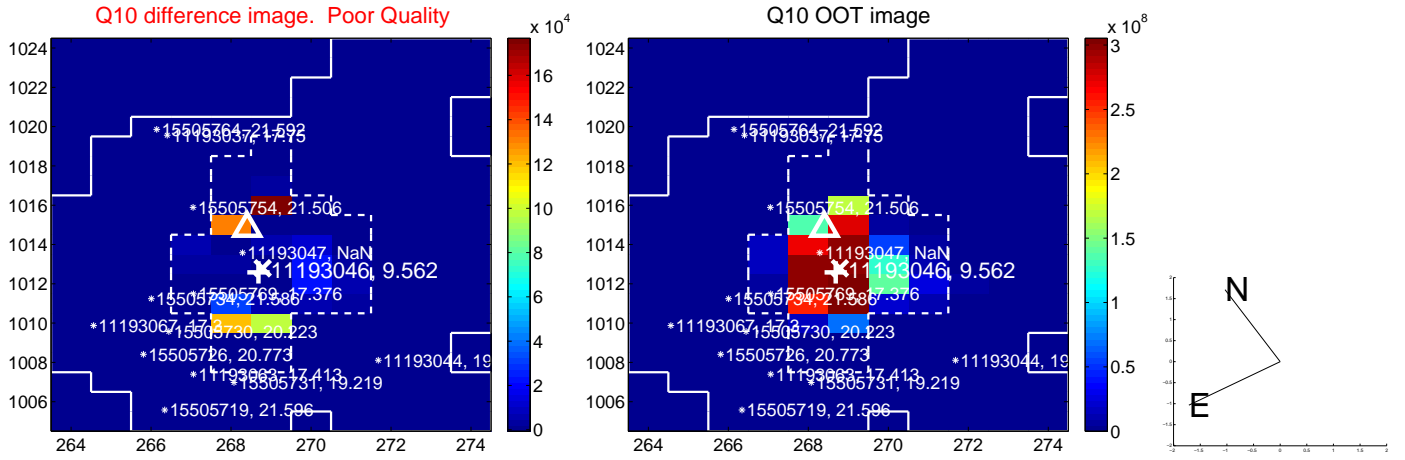
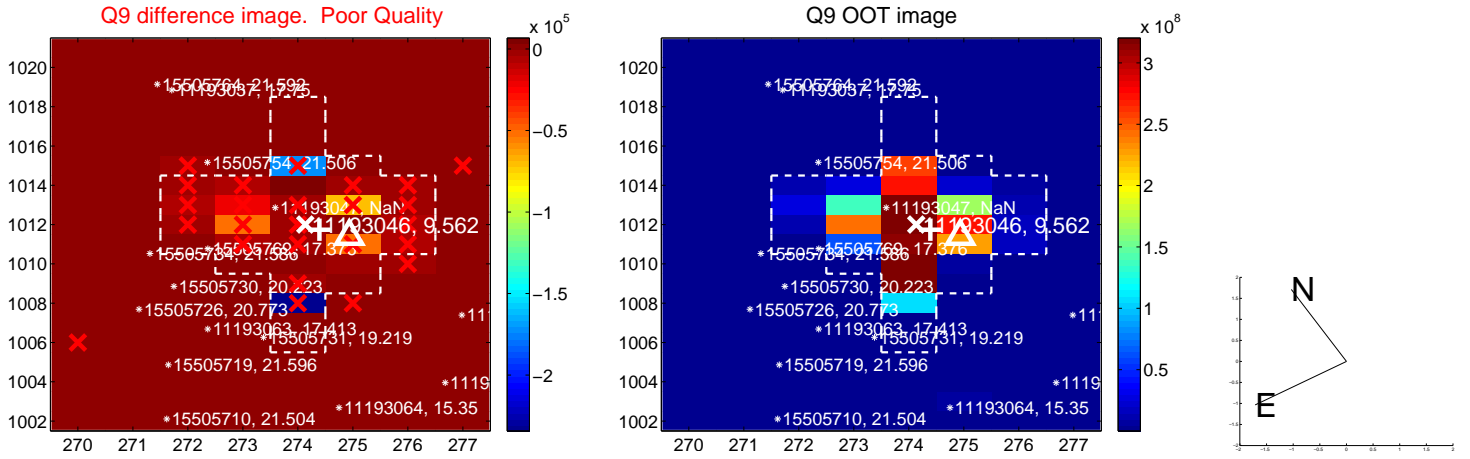


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

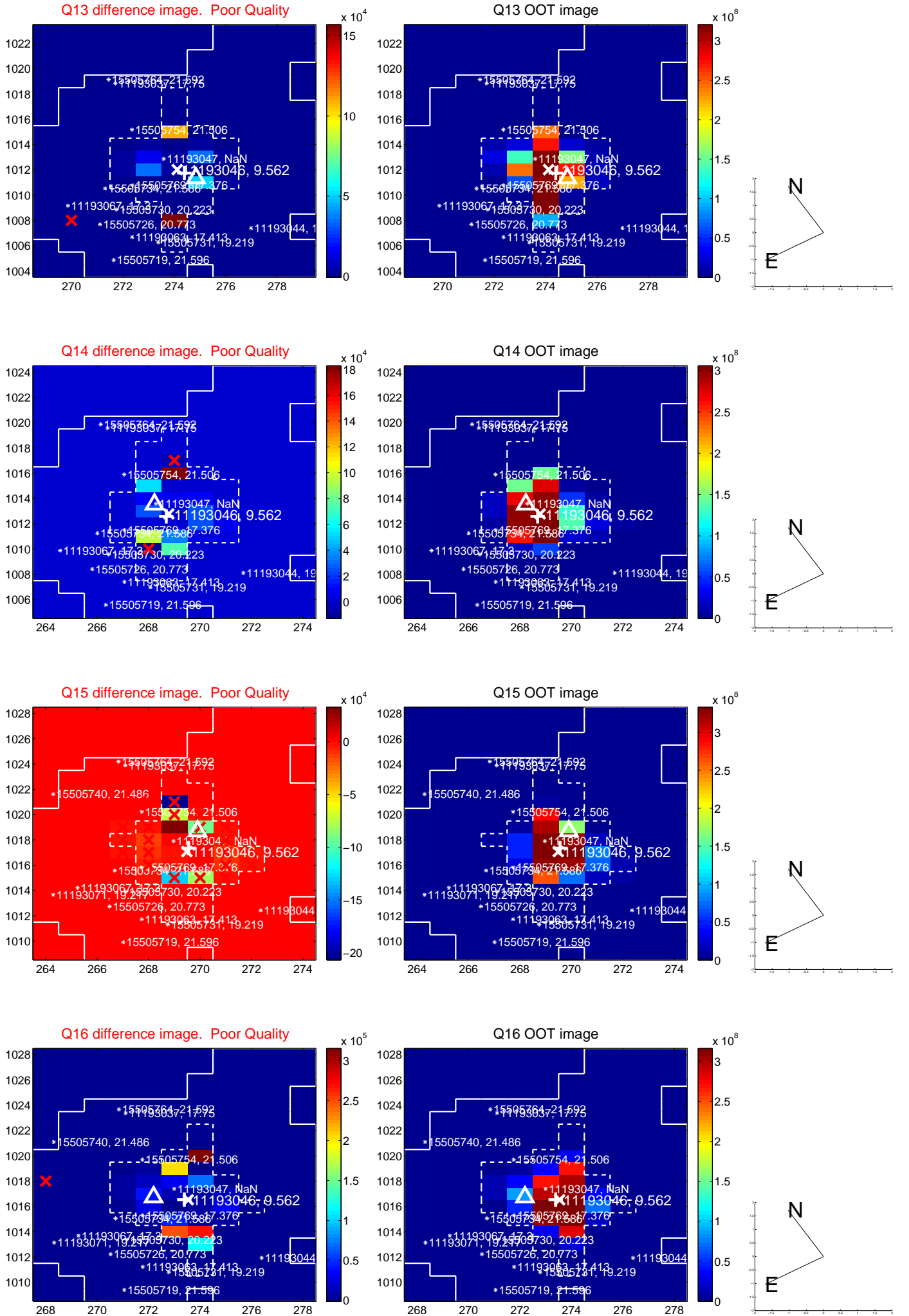
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



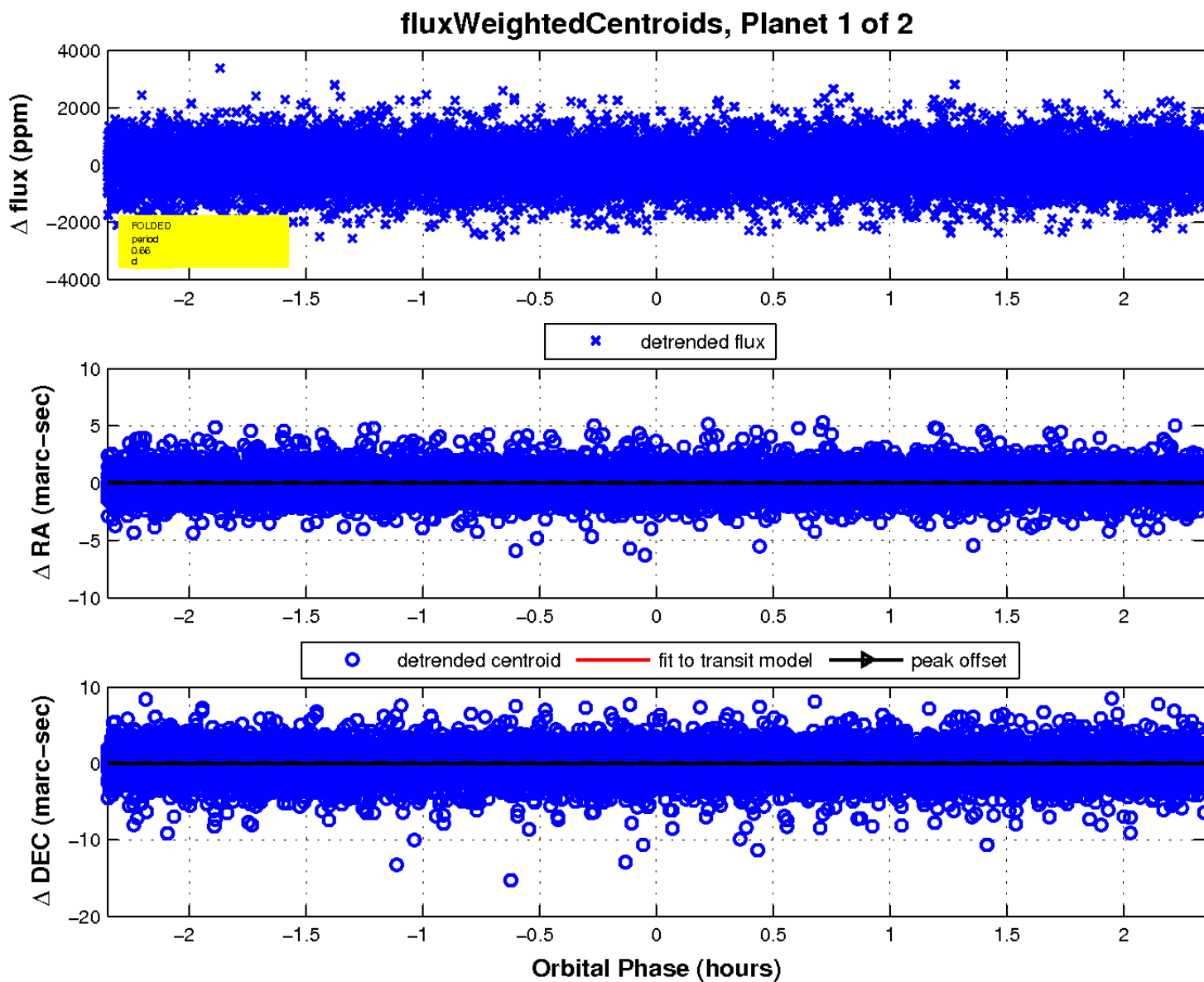
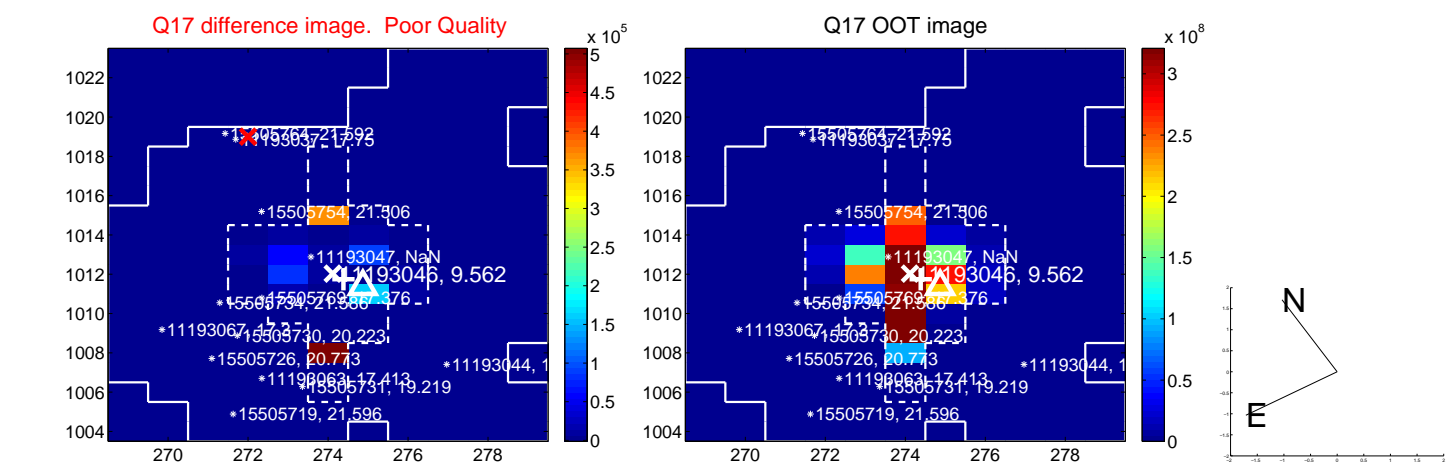
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

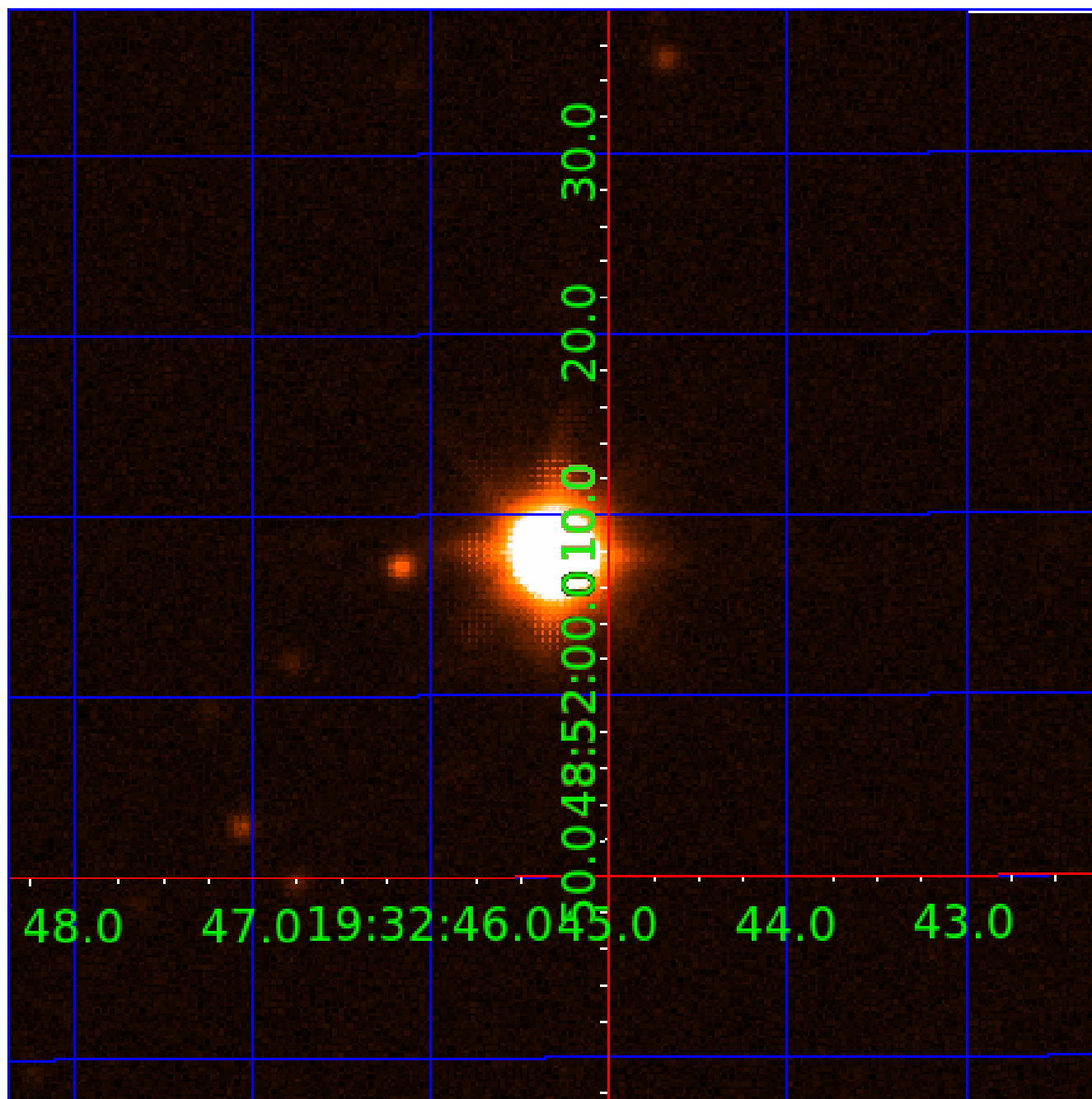


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011193046

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})
011193046-01	OBS	No	0.661117	131.804172	74.4	0.783	10.4	11.9	2.92	8037	2.57	95248.14
011193046-02	OBS	No	622.169988	218.808428	1925.8	4.459	7.5	7.8	2.92	8037	15.32	10.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011193046-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
011193046-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

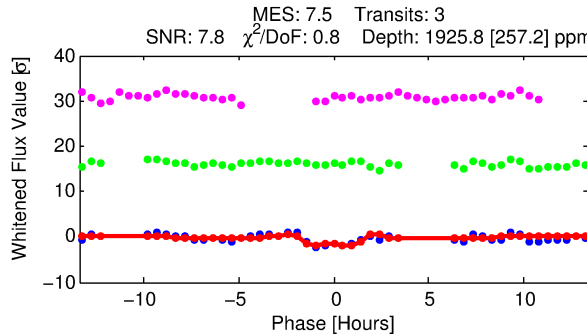
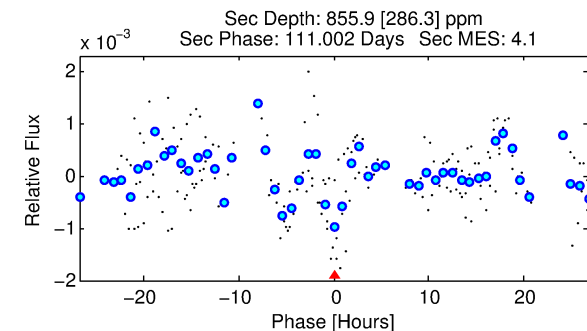
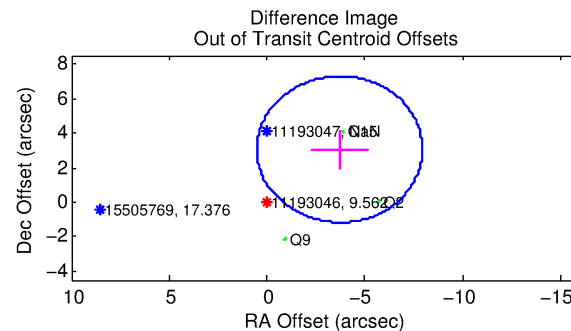
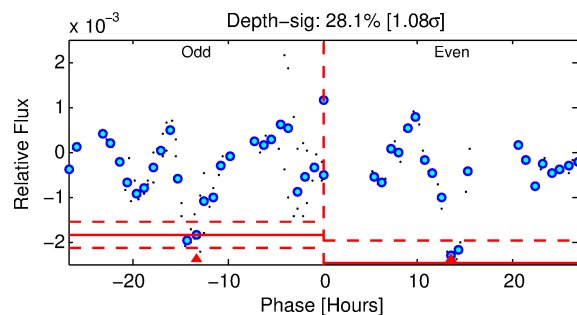
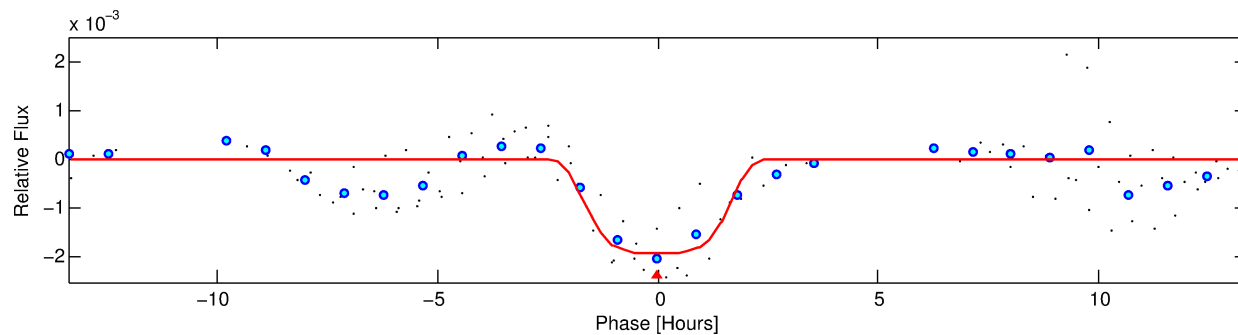
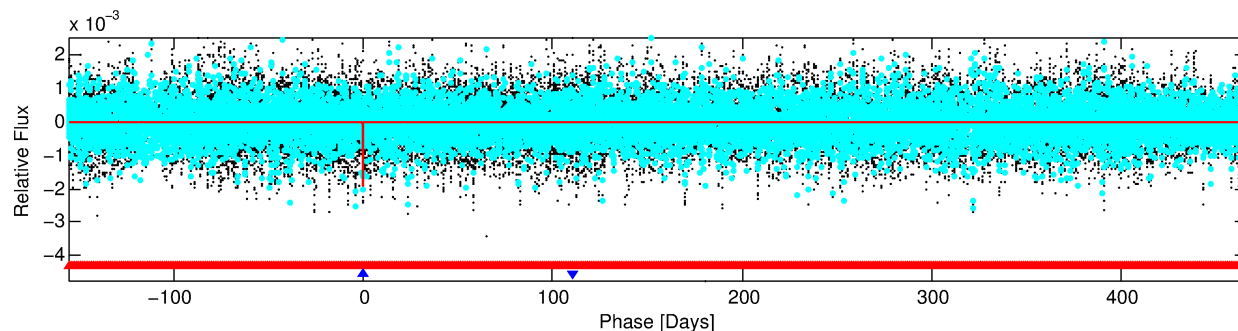
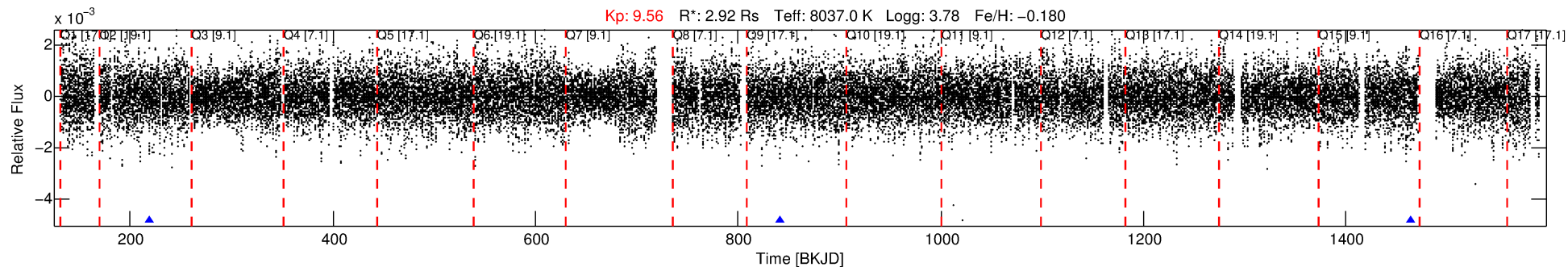
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011193046-02

No Significant Match Found

DV One-Page Summary

KIC: 11193046 Candidate: 2 of 2 Period: 622.170 d



DV Fit Results:

Period = 622.16999 [0.00536] d
Epoch = 218.8084 [0.0059] BKJD
Rp/R* = 0.0481 [0.0036]
a/R* = 526.36 [67.61]
b = 0.92 [0.02]
Seff = 10.33 [4.10]
Teq = 457 [45] K
Rp = 15.32 [4.09] Re
a = 1.7549 [0.4332] AU
Ag = 6176.97 [3329.21] [1.86 σ]
Teff = 6266 [578] K [10.01 σ]

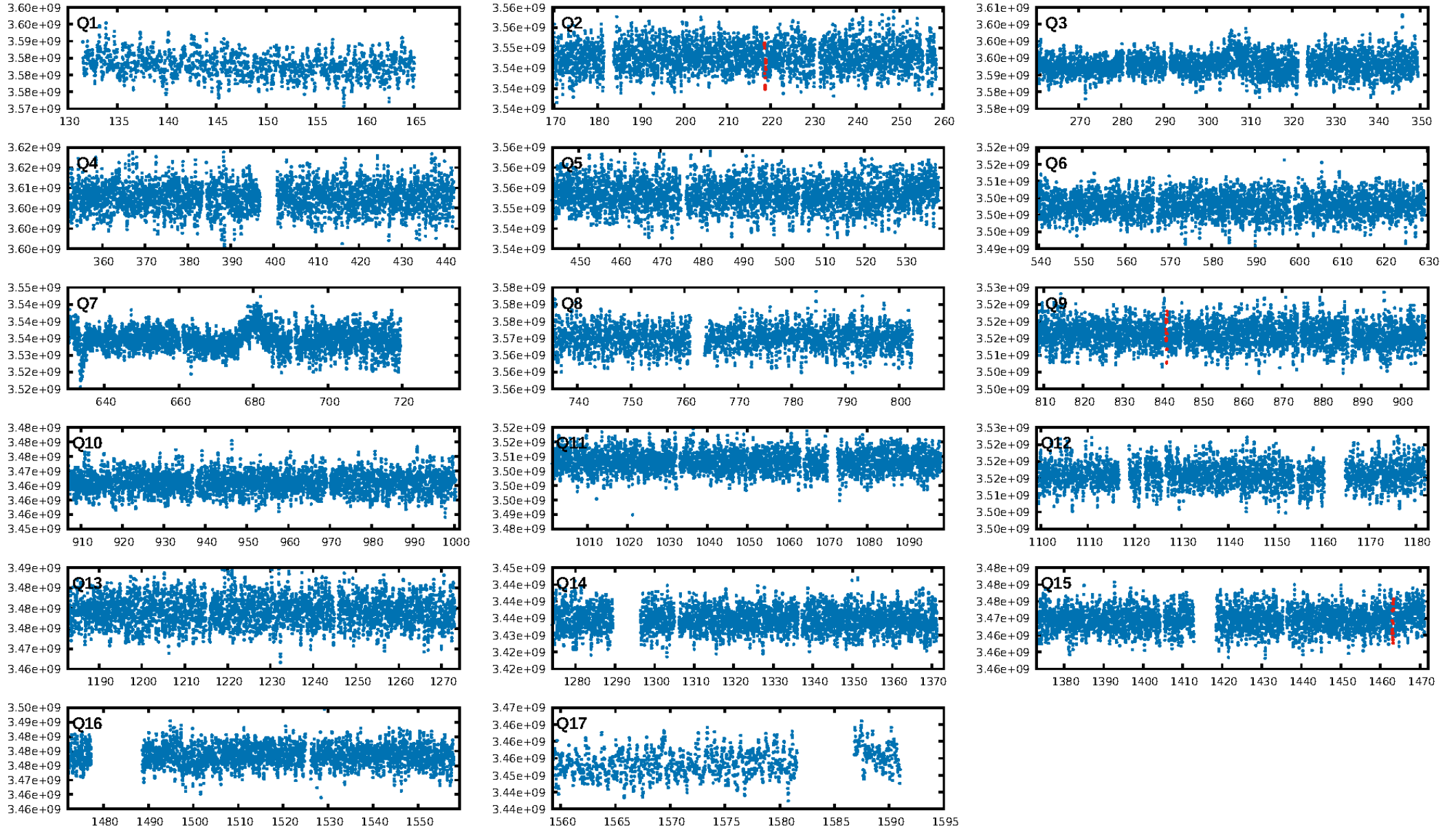
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3294.64 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 71.8%
ModelChiSquareGoF-sig: 93.8%
Bootstrap-pfa: 9.15e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 1.7%
Centroid-so: 1.224 arcsec [3.01 σ]
OotOffset-rm: 4.804 arcsec [3.41 σ]
KicOffset-rm: 5.578 arcsec [3.47 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/3]

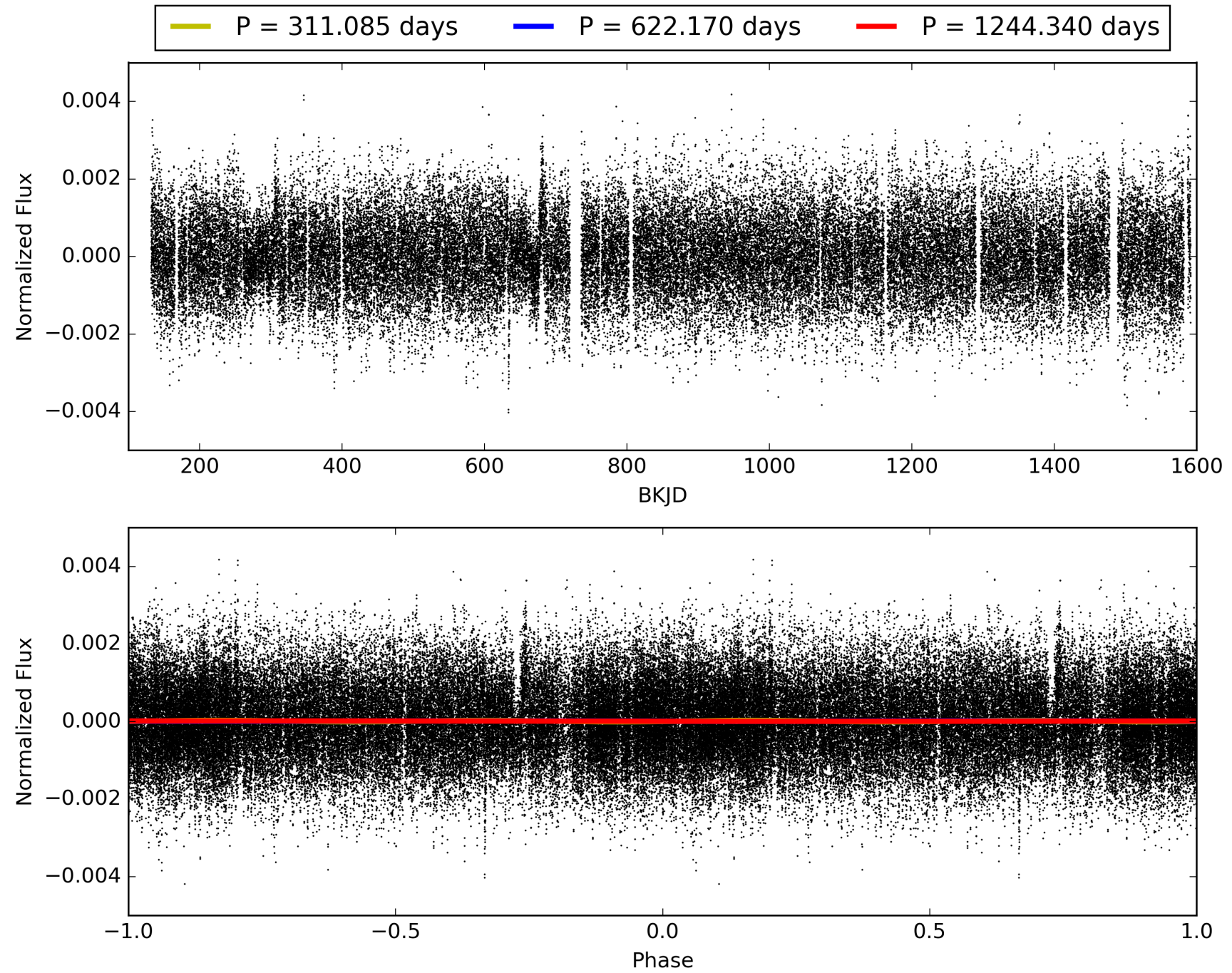
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:20:57 Z

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

TCE 011193046-02, PDC Light Curves

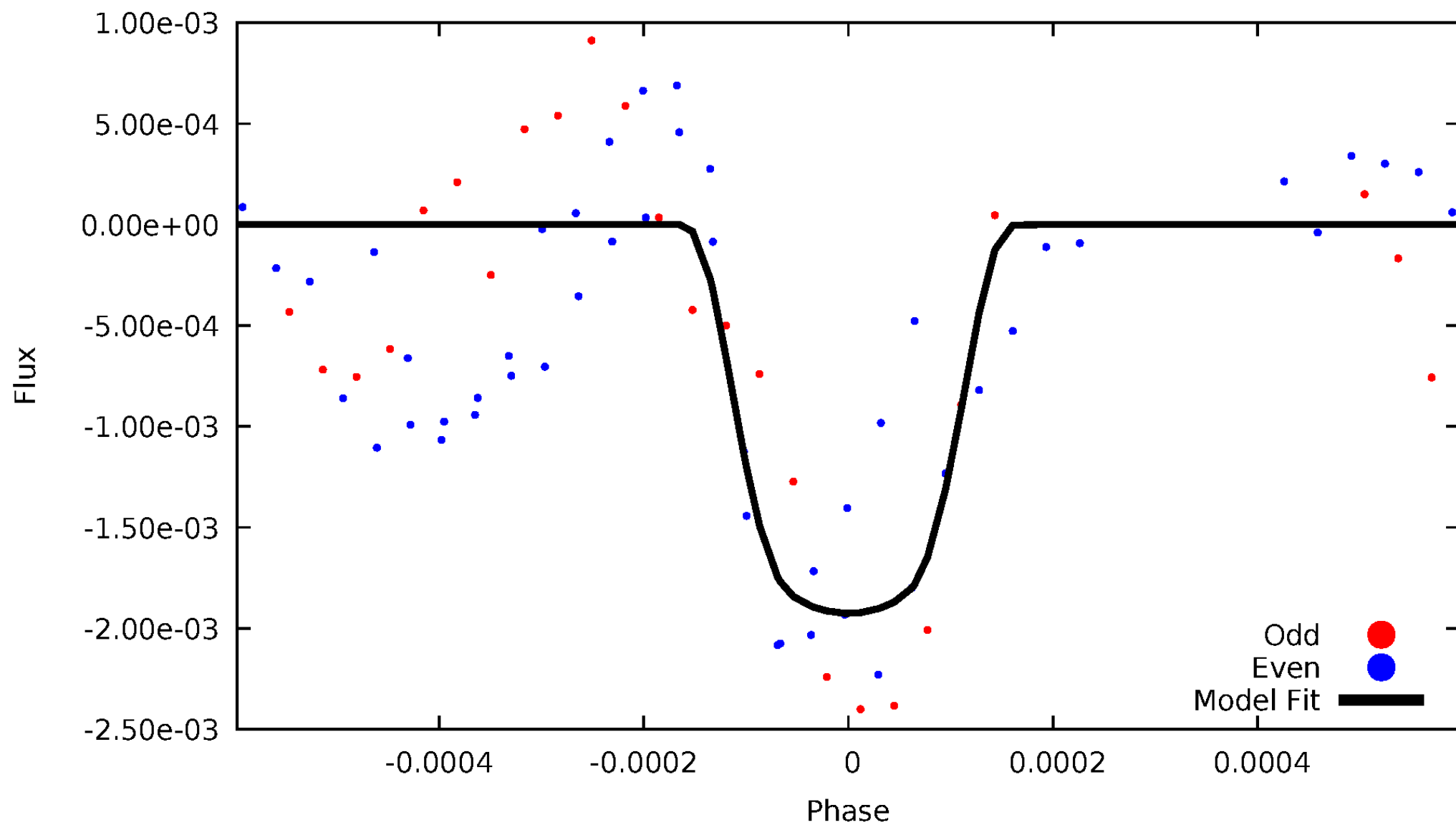


TCE 011193046-02



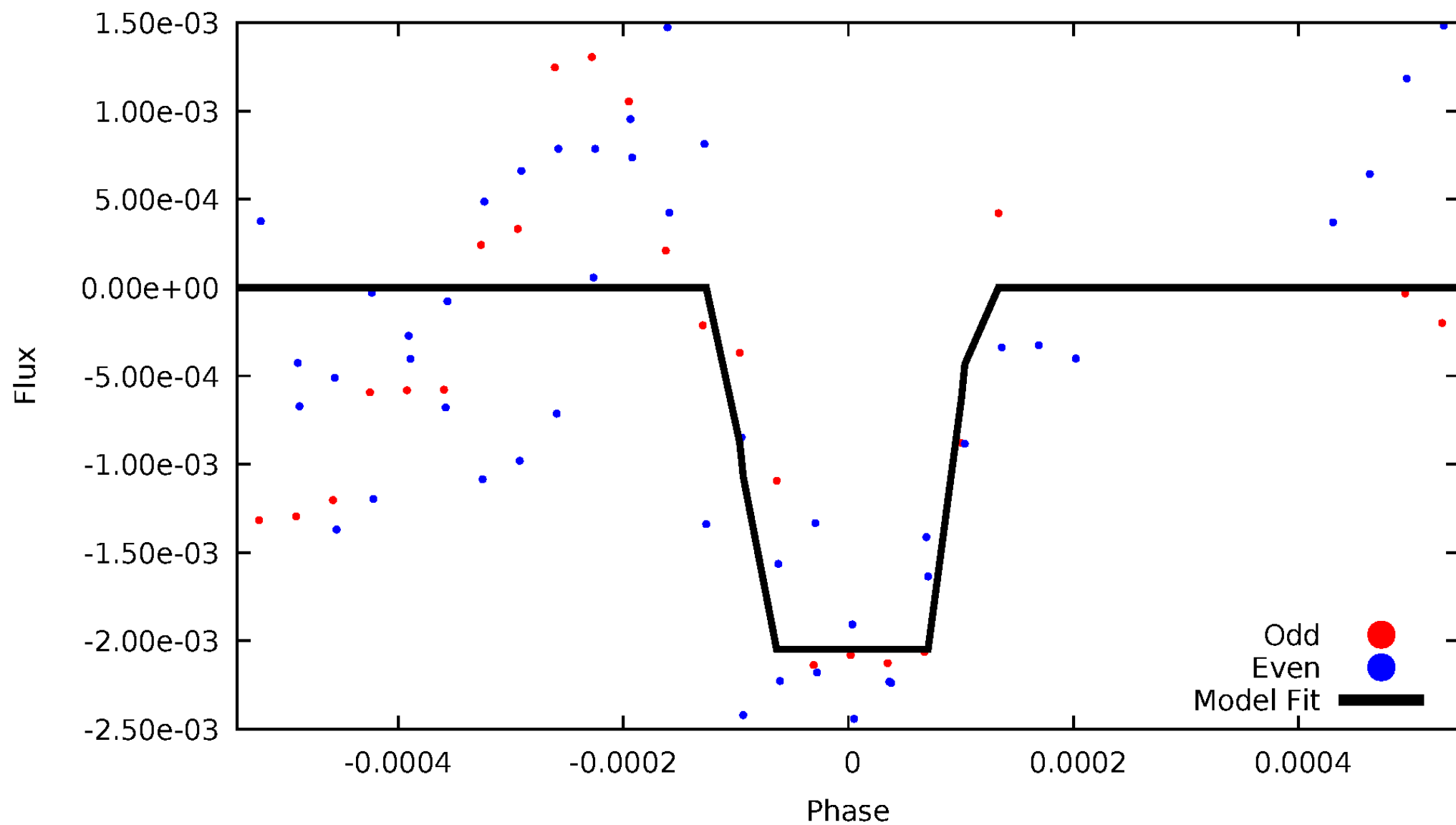
DV Odd/Even

TCE 011193046-02



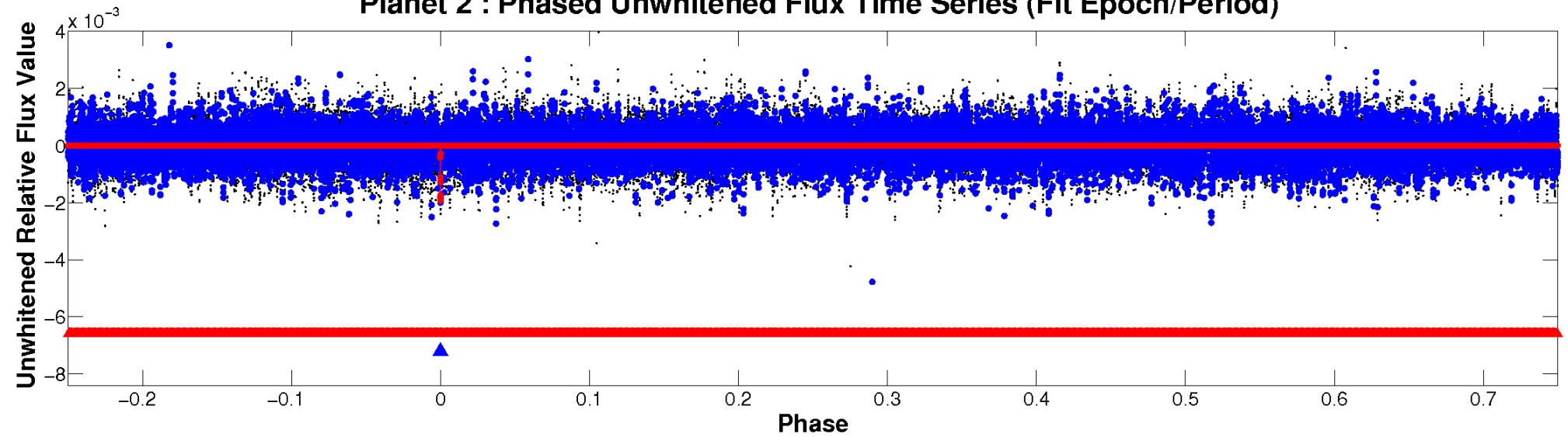
ALT Odd/Even

TCE 011193046-02

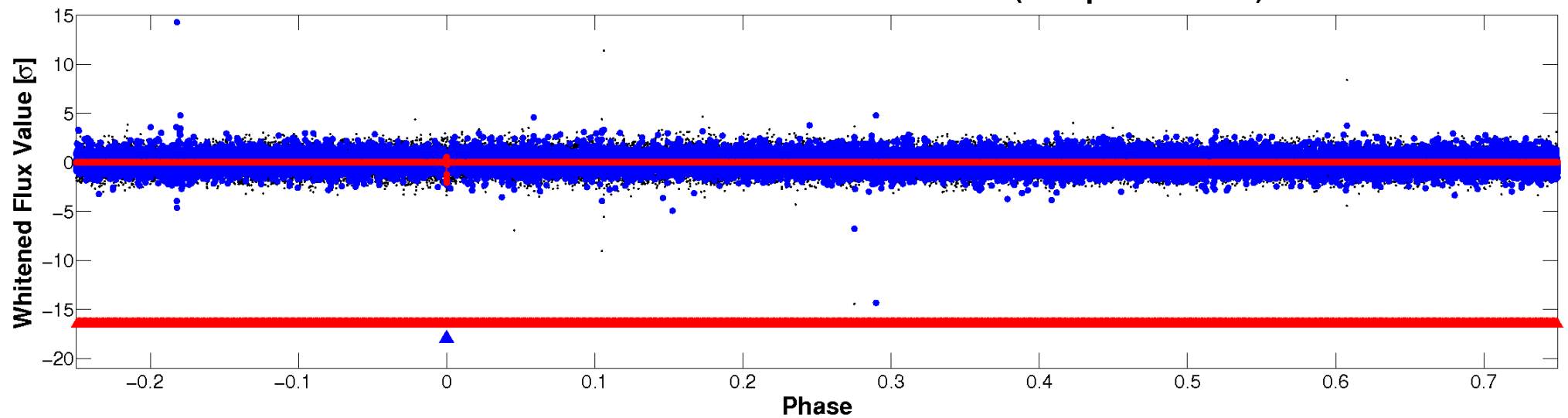


Non-Whitened Vs. Whitened Light Curve

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

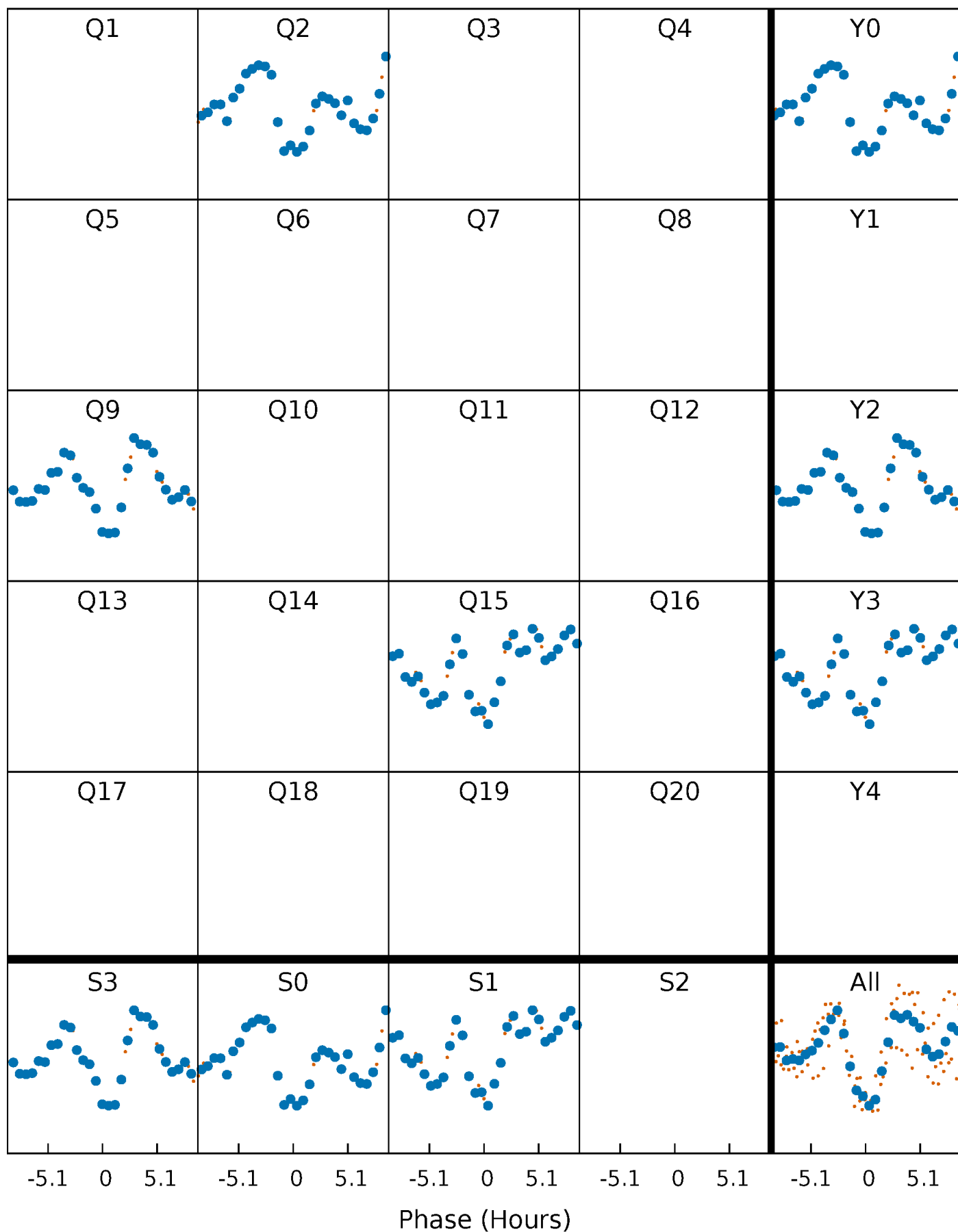


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



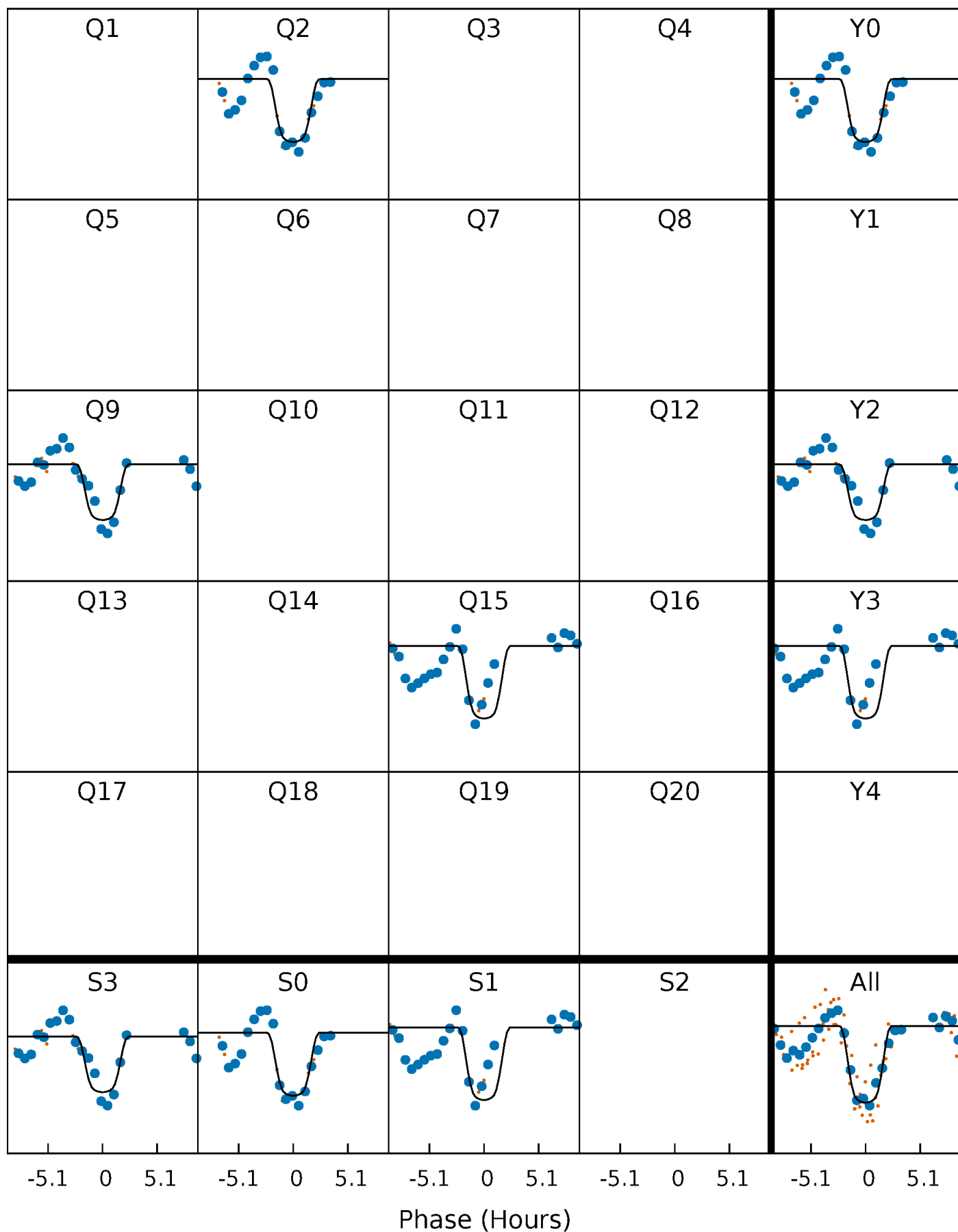
PDC Quarter-Phased Transit Curves

TCE 011193046-02 $P=622.169988$ Days $T_0=218.808428$ (BKJD)



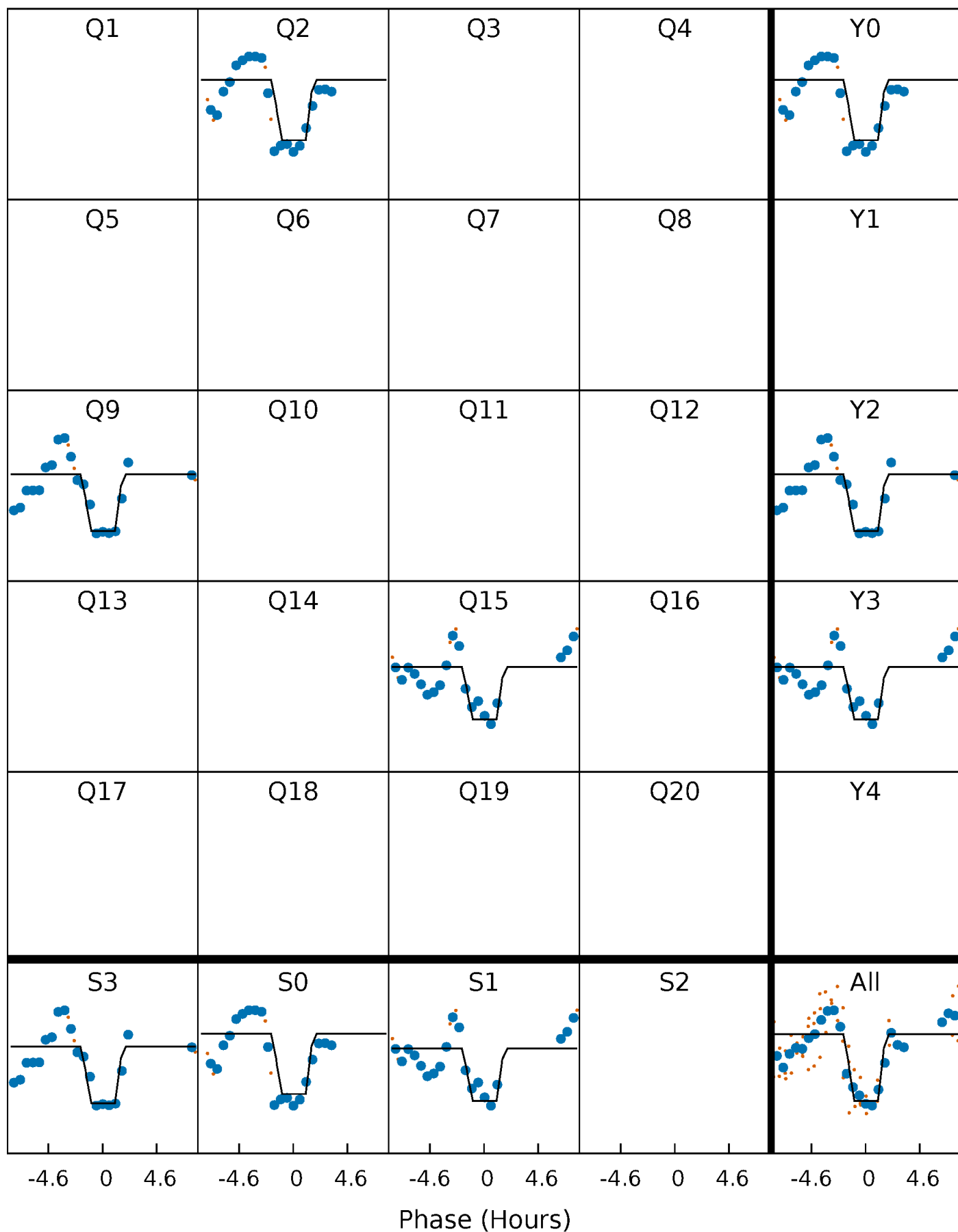
DV Quarter-Phased Transit Curves

TCE 011193046-02 $P=622.169988$ Days $T_0=218.808428$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

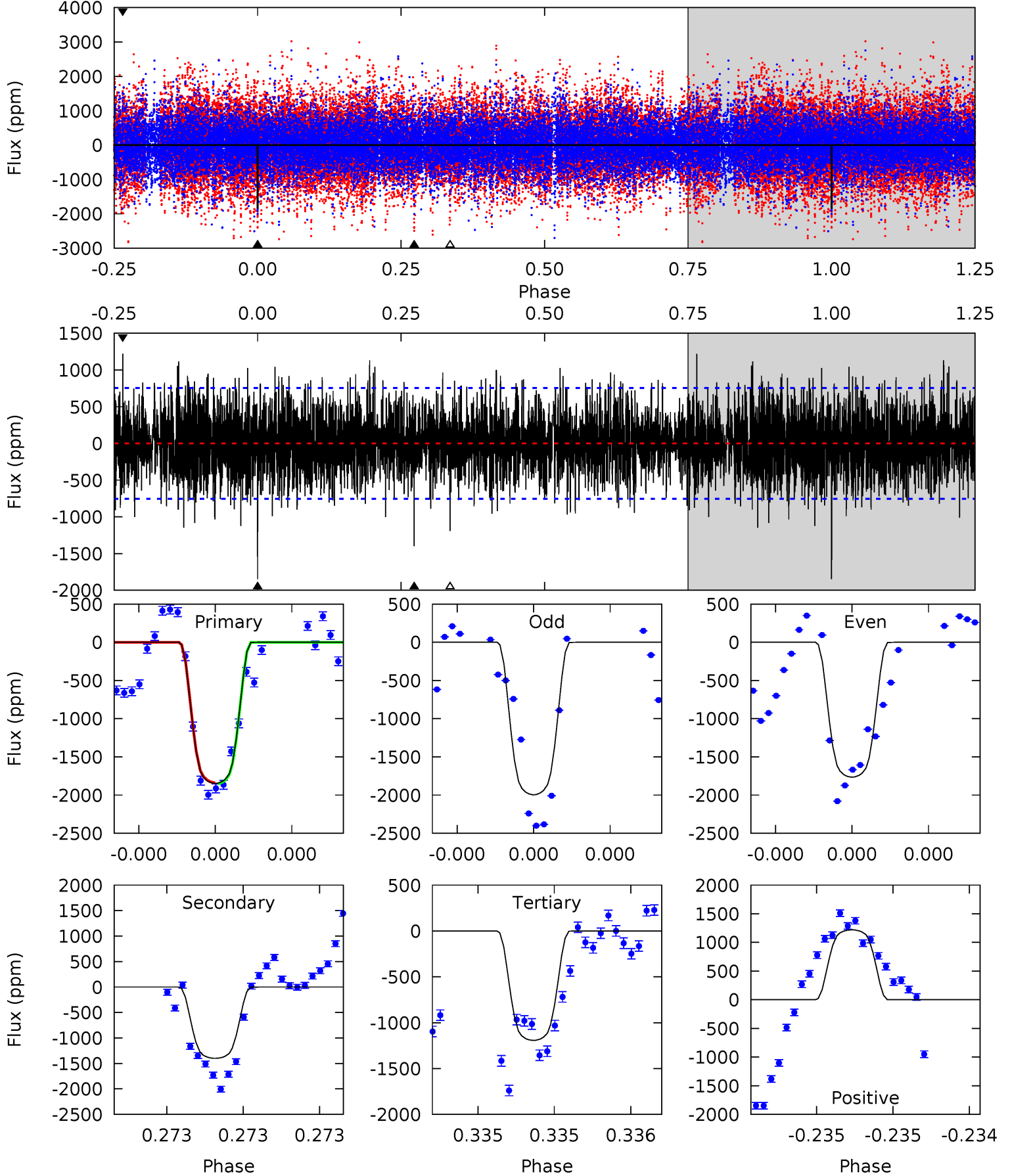
TCE 011193046-02 P=622.161035 Days $T_0=218.823509$ (BKJD)



DV Model-Shift Uniqueness Test

011193046-02, P = 622.169988 Days, E = 218.808428 Days

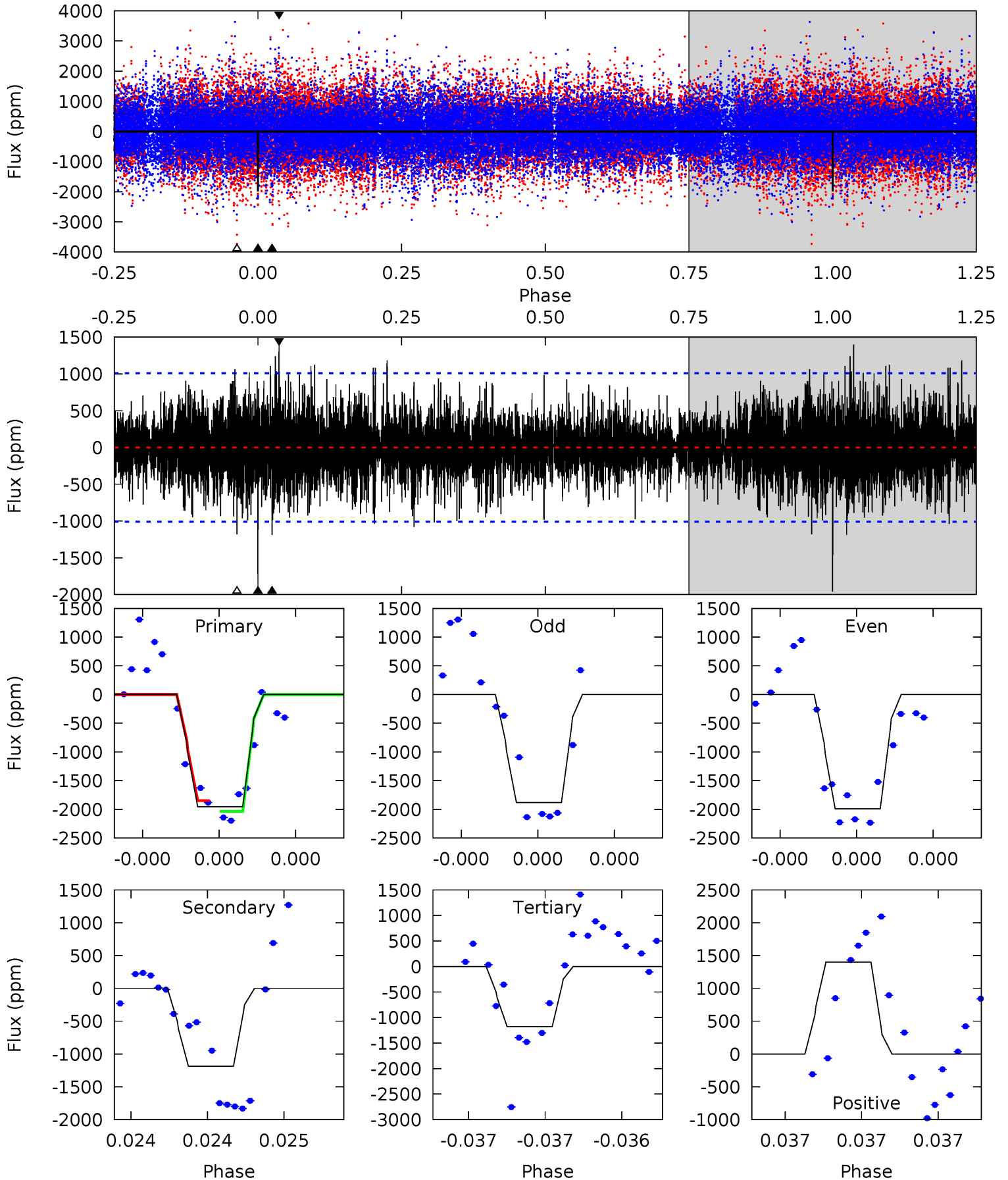
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	10.5	8.92	9.12	5.64	3.58	2.44	4.88	4.68	1.55	1.35	0.83	0.92	0.40	0.05



Alt Model-Shift Uniqueness Test

011193046-02, P = 622.161035 Days, E = 218.823509 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	6.72	6.67	7.92	5.71	3.69	1.66	4.40	3.15	0.05	-1.20	0.30	1.04	0.42	0.51



Stellar Parameters For KIC 011193046

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8037^{+72}_{-88}	$3.778^{+0.232}_{-0.062}$	$-0.180^{+0.100}_{-0.150}$	$2.917^{+0.374}_{-0.748}$	$1.863^{+0.045}_{-0.180}$	$0.106^{+0.141}_{-0.026}$
	+1%/-1%	+6%/-2%	+56%/-83%	+13%/-26%	+2%/-10%	+133%/-25%
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 011193046-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1400 ± 134	$14.48^{+1.82}_{-2.13}$	626^{+25}_{-44}	6933^{+370}_{-327}	11205^{+4014}_{-2412}
Alt.	-1188 ± 177	$13.57^{+1.74}_{-1.90}$	626^{+26}_{-41}	6855^{+471}_{-405}	10593^{+4463}_{-2484}

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

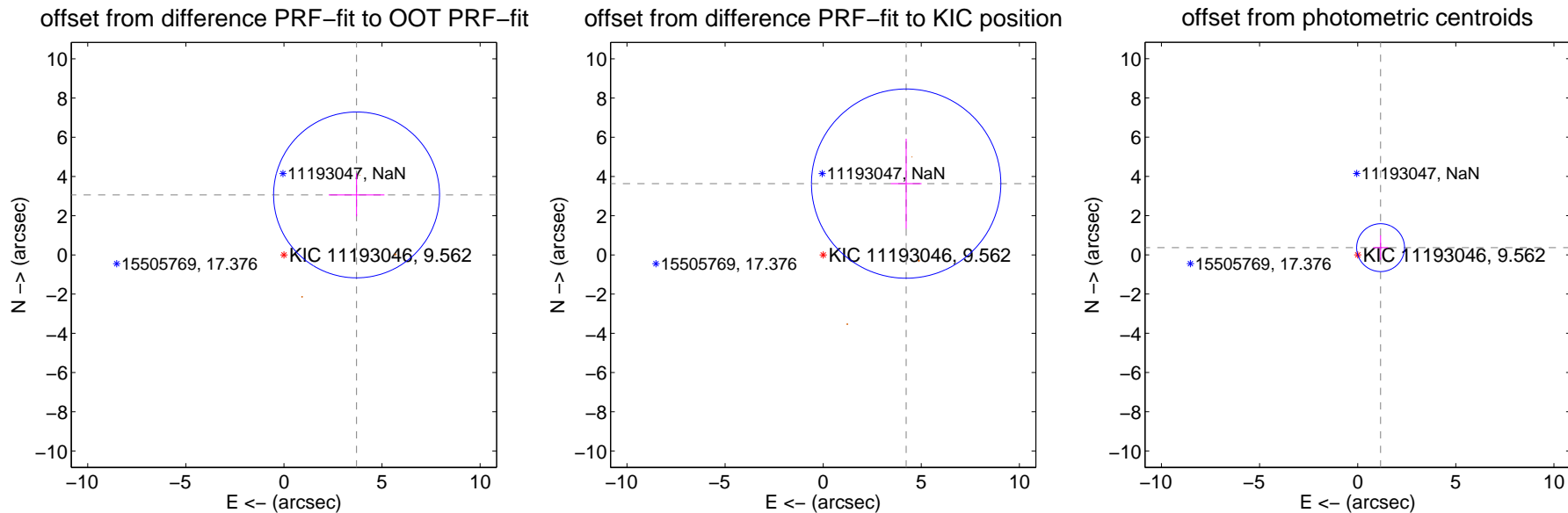
DV Centroid Data

Supplemental centroid analysis for 011193046-02. **Kepler magnitude: 9.56.** Transit SNR 7.83

There are 0 quarters with good PRF difference image offsets

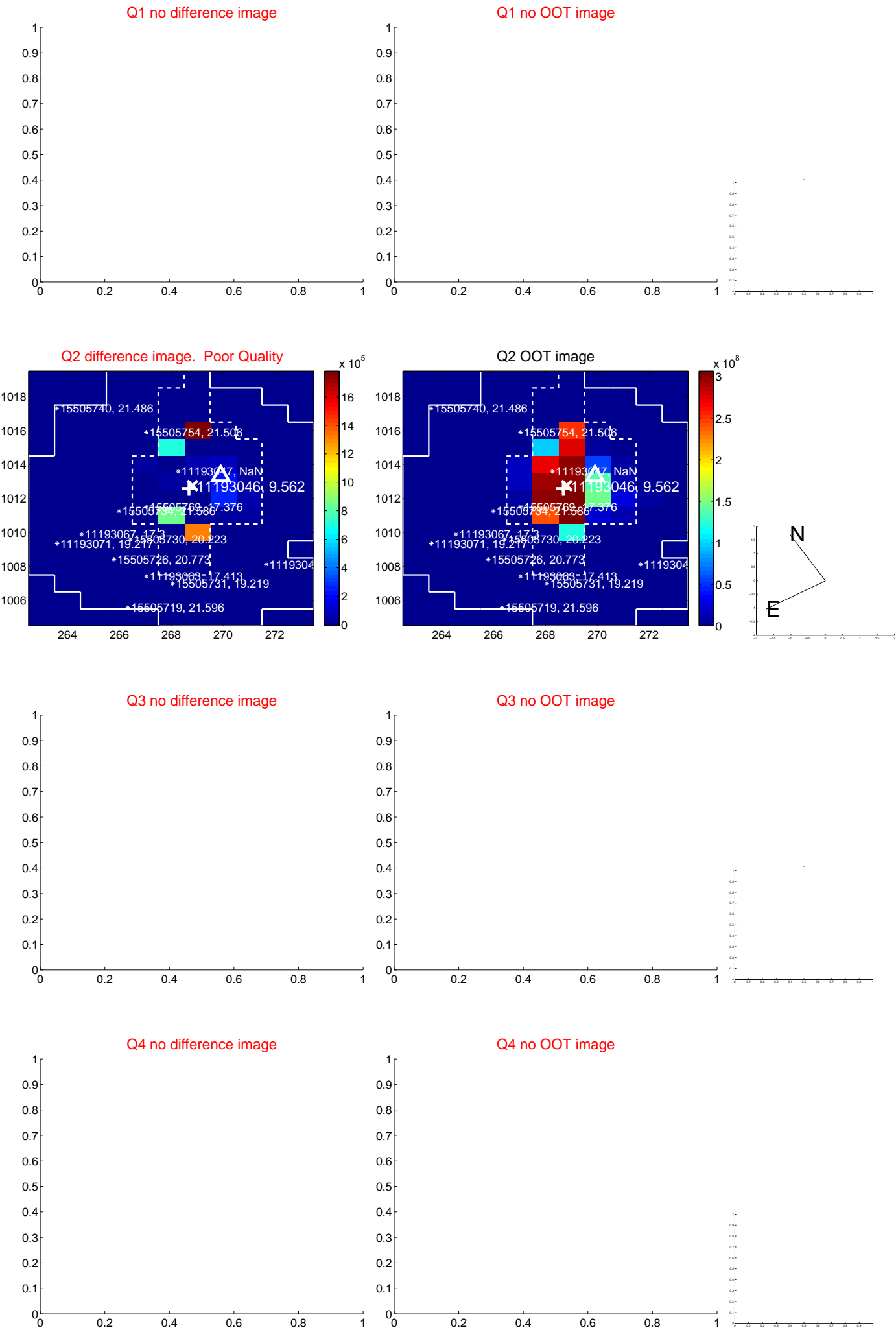
The direct PRF centroid is offset from the target star catalog position by about 1.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.804 ± 1.410	3.41	-3.703 ± 1.420	3.060 ± 1.091
PRF-fit source offset from KIC position	5.578 ± 1.609	3.47	-4.229 ± 0.784	3.637 ± 2.293
photometric centroid source offset	1.22 ± 0.41	3.01	-1.17 ± 0.38	0.37 ± 0.63



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.

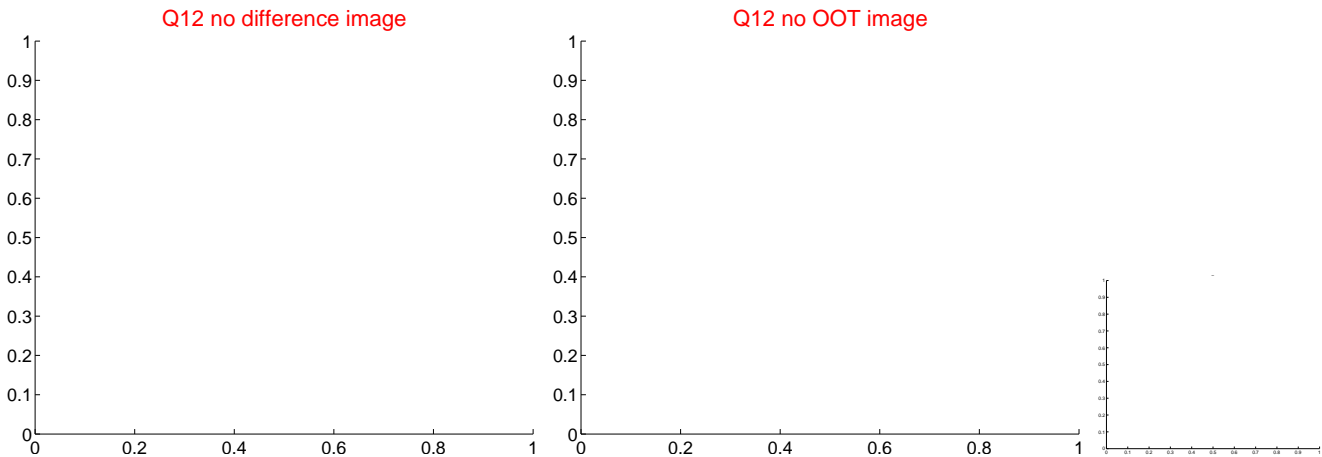
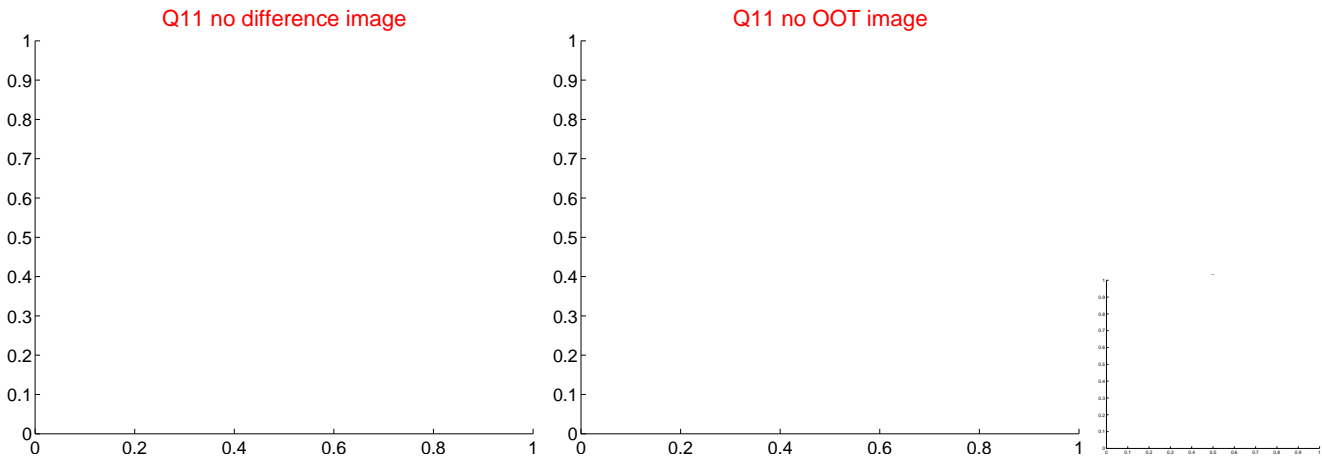
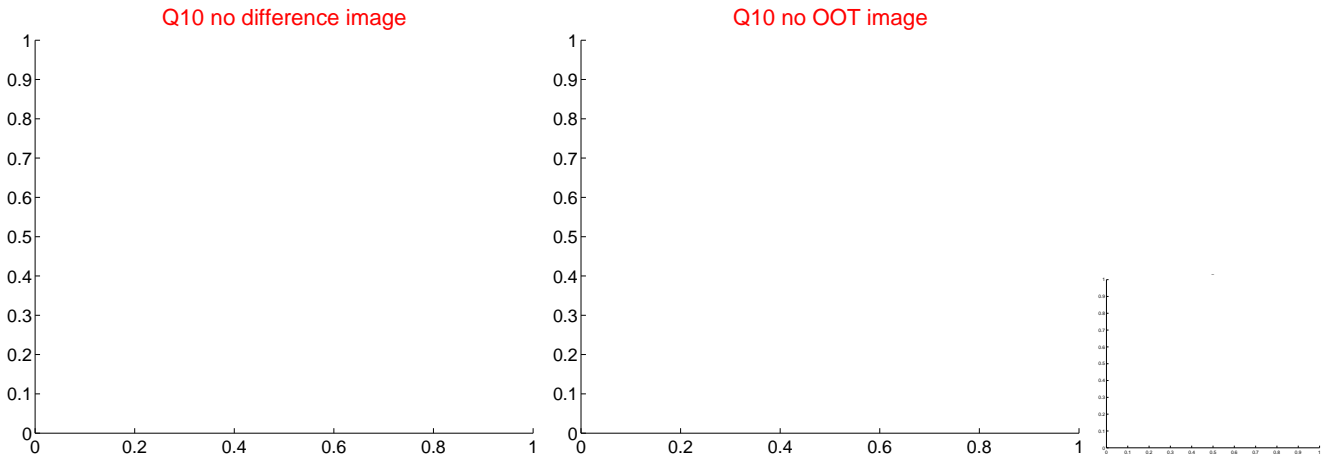
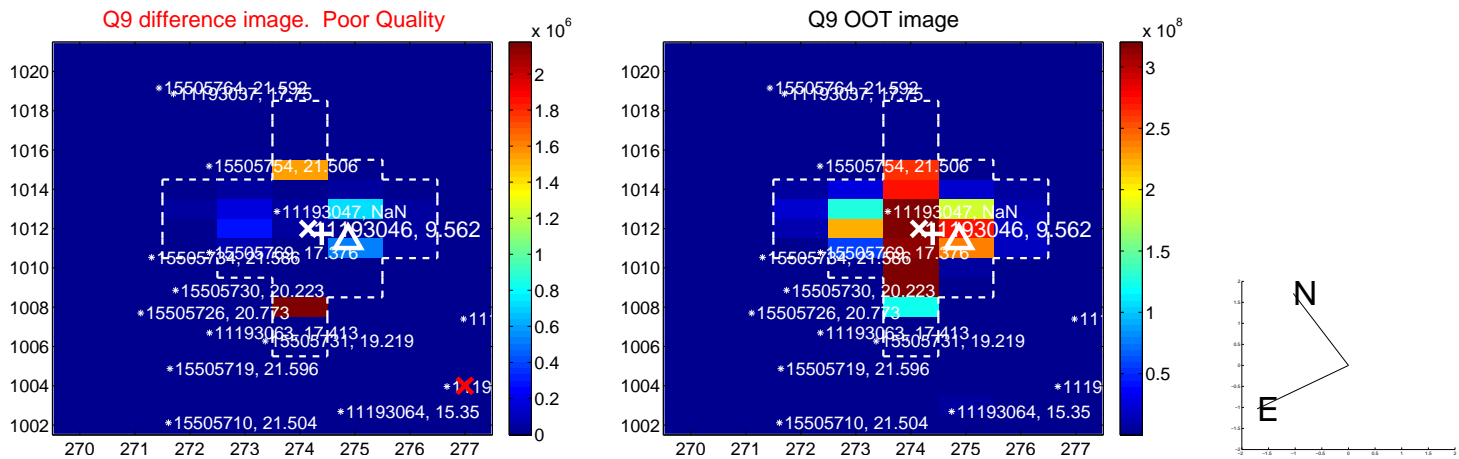
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



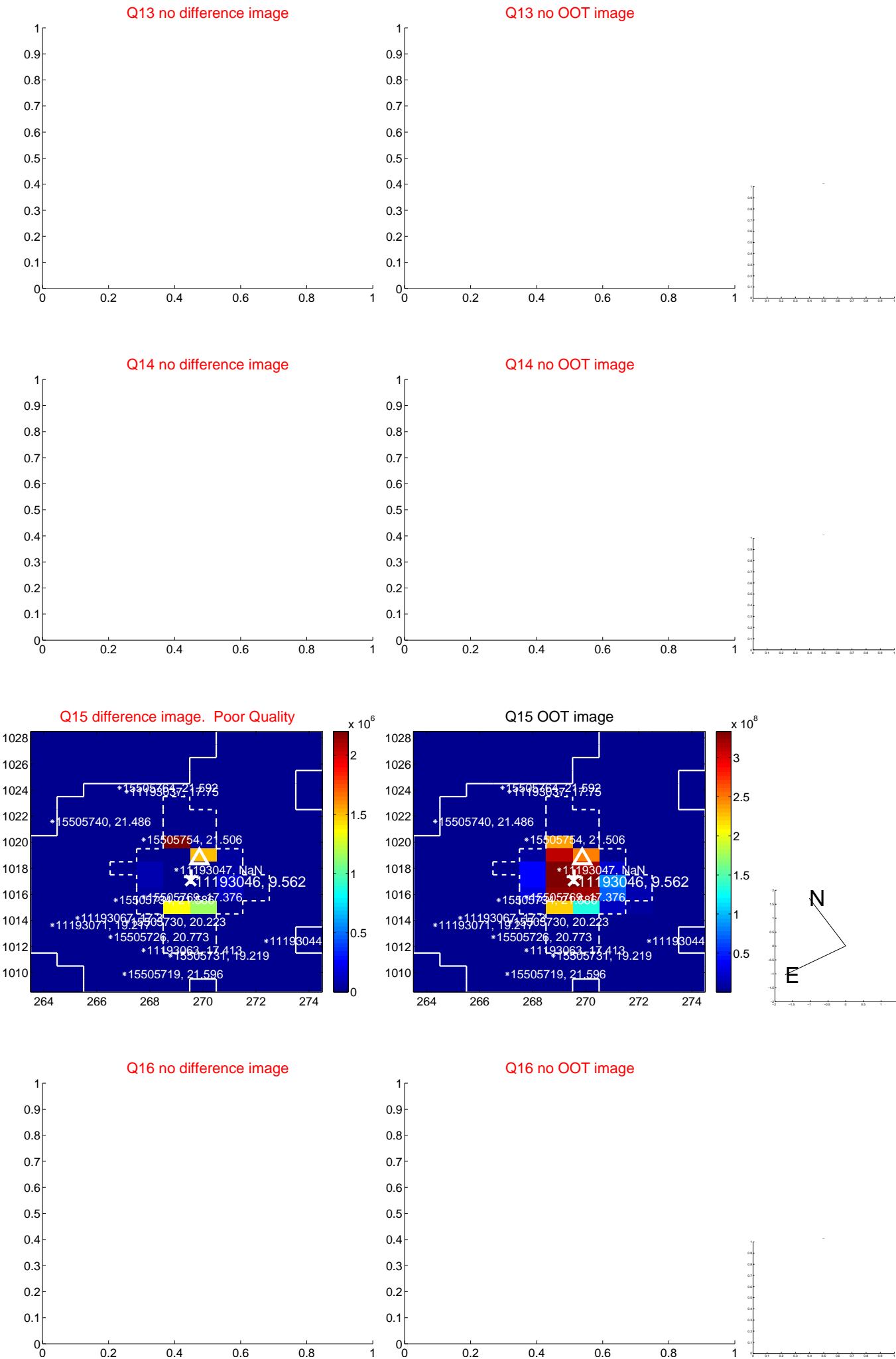
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



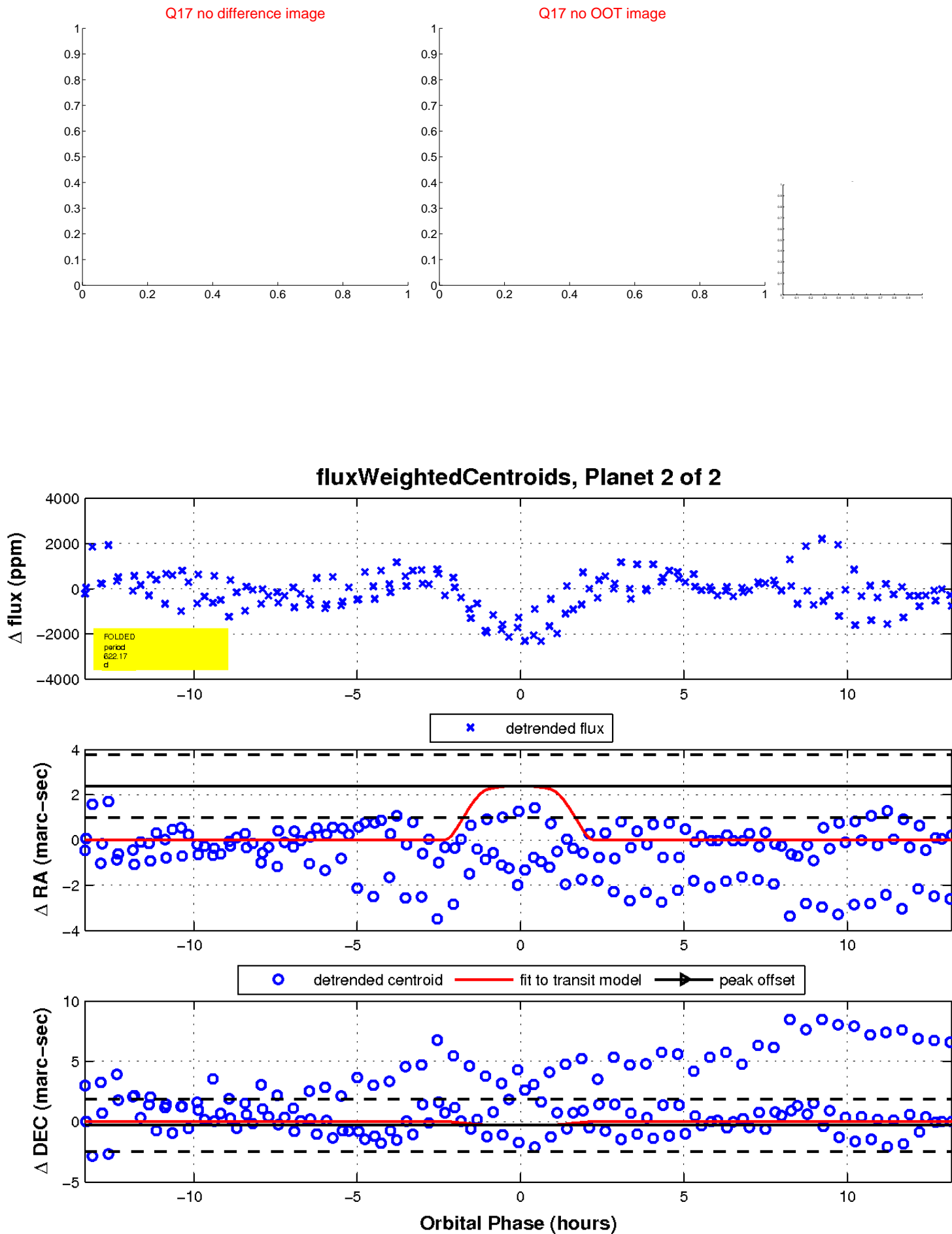
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

