

KIC 010289211

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})
010289211-01	OBS	No	0.506121	131.639991	190.7	0.504	8.0	7.9	2.55	7895	3.71	95252.68
010289211-02	OBS	No	0.551866	131.922273	188.5	6.622	8.4	16.3	2.55	7895	3.63	84873.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010289211-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010289211-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—CENT_SATURATED

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

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

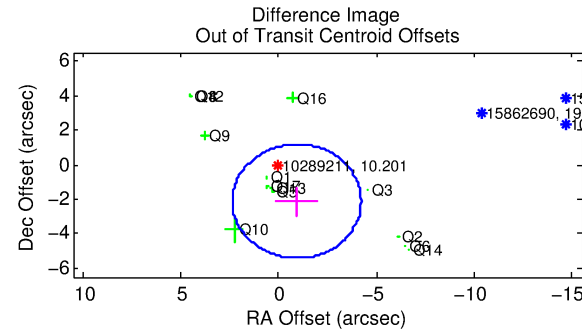
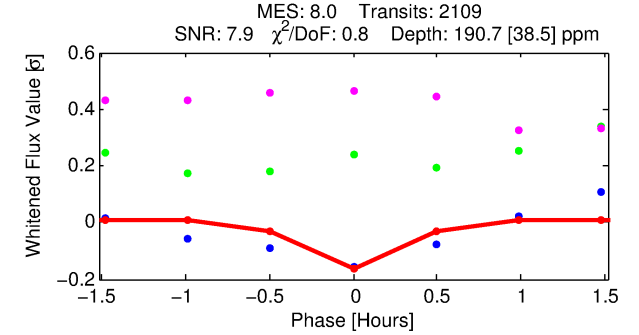
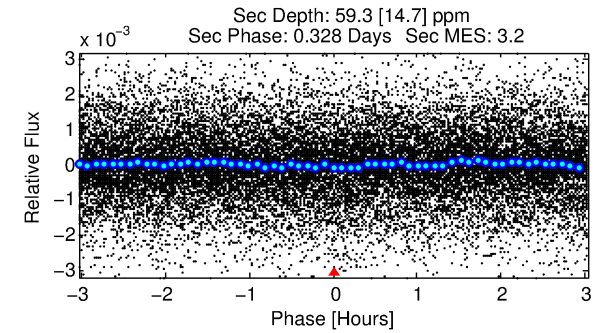
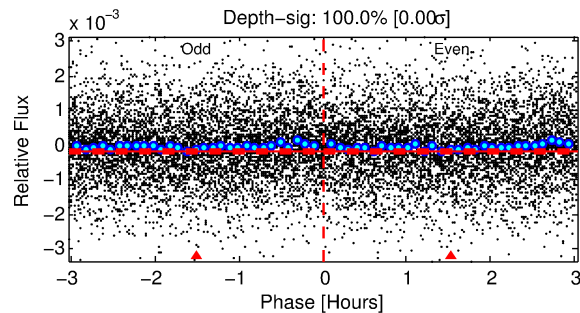
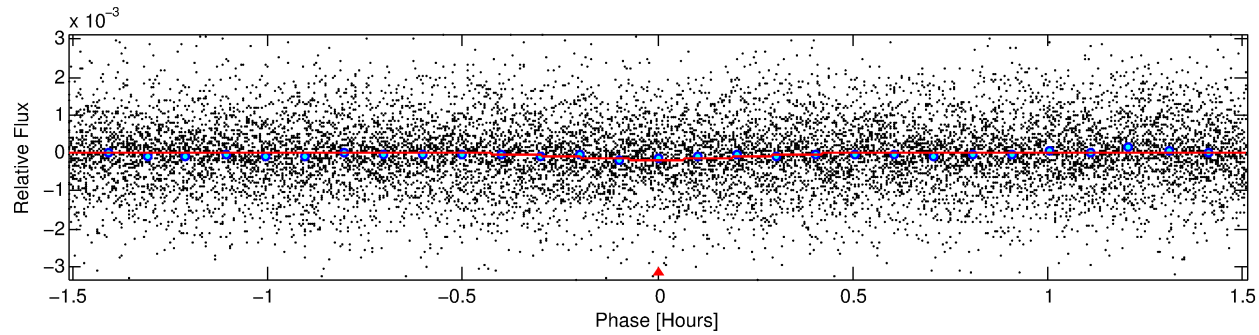
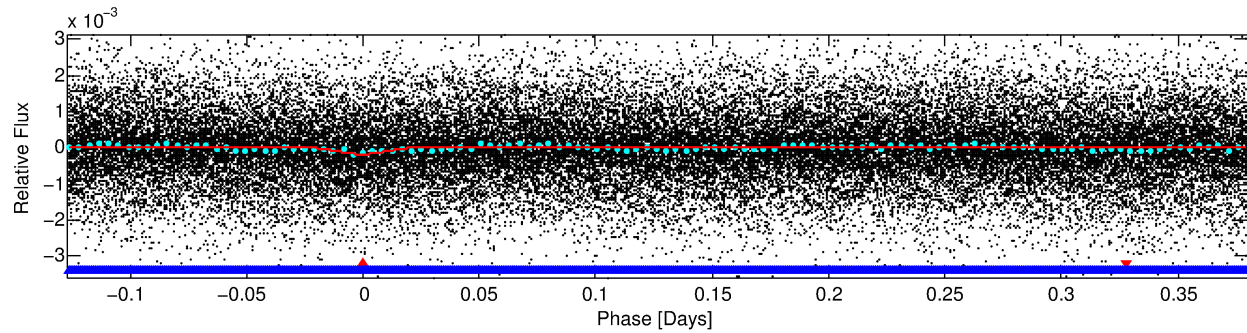
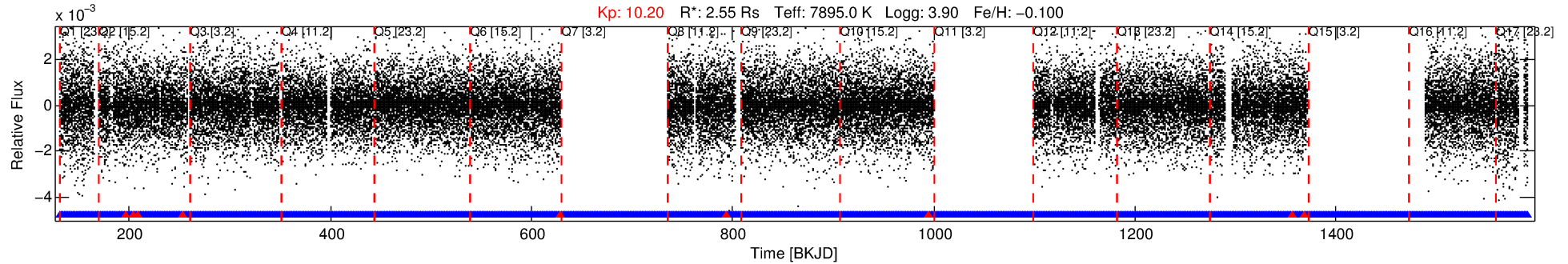
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010289211-01

No Significant Match Found

DV One-Page Summary

KIC: 10289211 Candidate: 1 of 2 Period: 0.506 d



DV Fit Results:

Period = 0.50612 [0.00001] d
Epoch = 131.6400 [0.0016] BKJD
Rp/R* = 0.0134 [0.0173]
a/R* = 7.76 [58.45]
b = 0.10 [78.25]
Seff = 95252.68 [26295.28]
Teq = 4480 [309] K
Rp = 3.72 [4.88] Re
a = 0.0154 [0.0028] AU
Ag = 0.56 [1.47] [-0.30σ]
Teffp = 5994 [3910] K [0.39σ]

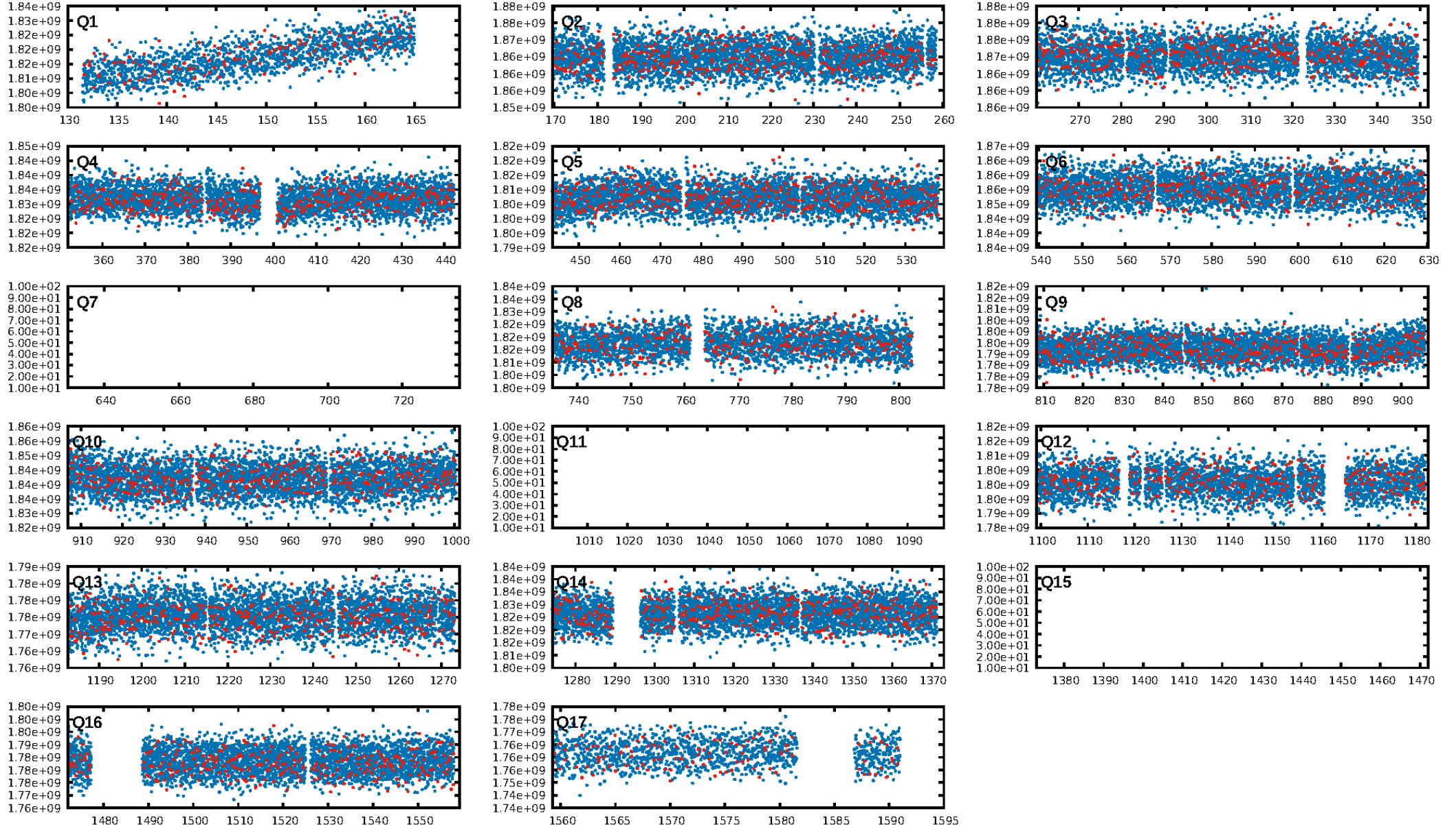
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 13.1% [0.17σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1982/1991]
GhostDiagnostic-chr: 1.251
Centroid-sig: 14.8%
Centroid-so: 0.805 arcsec [3.37σ]
OotOffset-rm: 2.310 arcsec [2.10σ]
KicOffset-rm: 2.364 arcsec [2.33σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 0.00 [0/14]

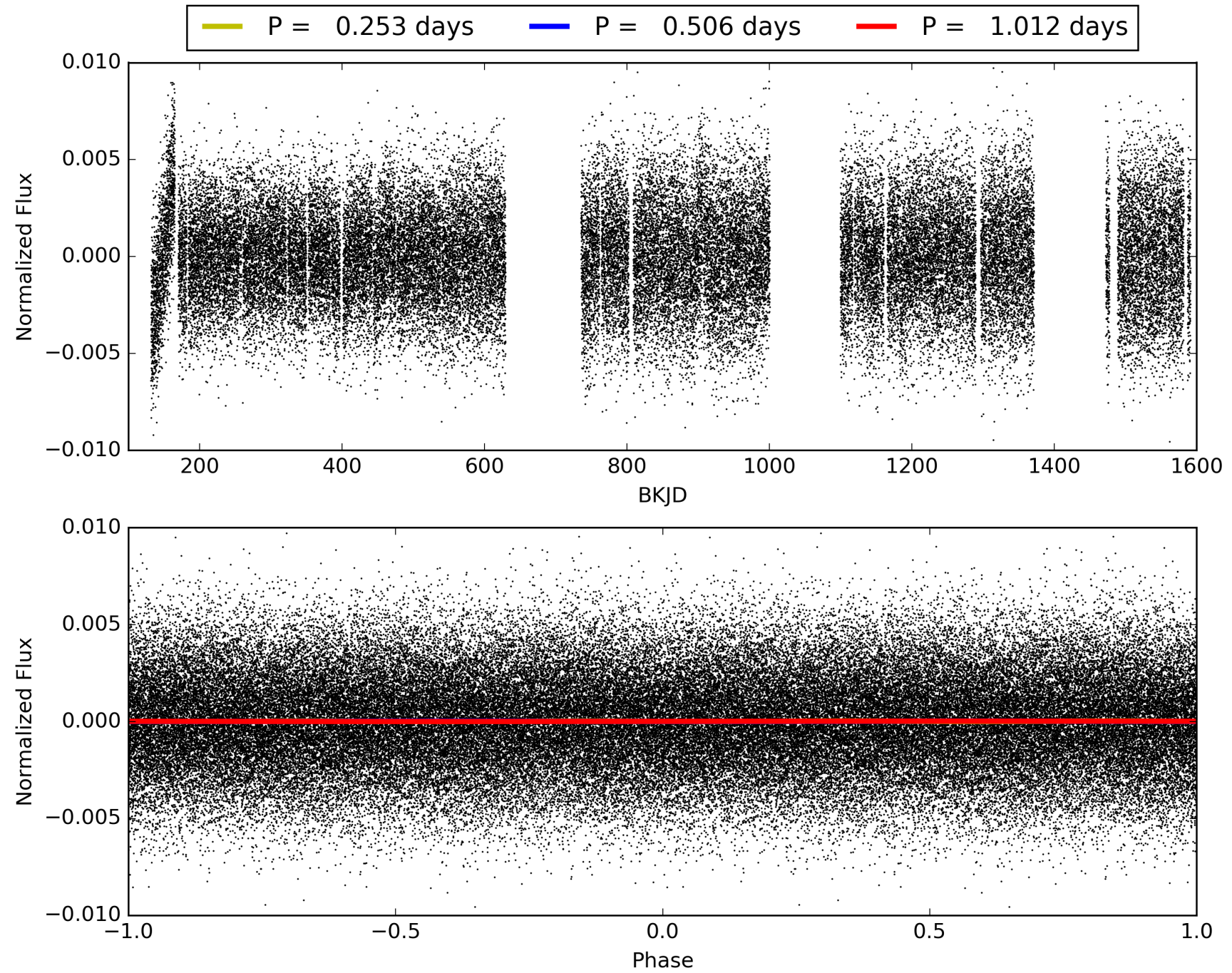
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:16:02 Z

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

TCE 010289211-01, PDC Light Curves

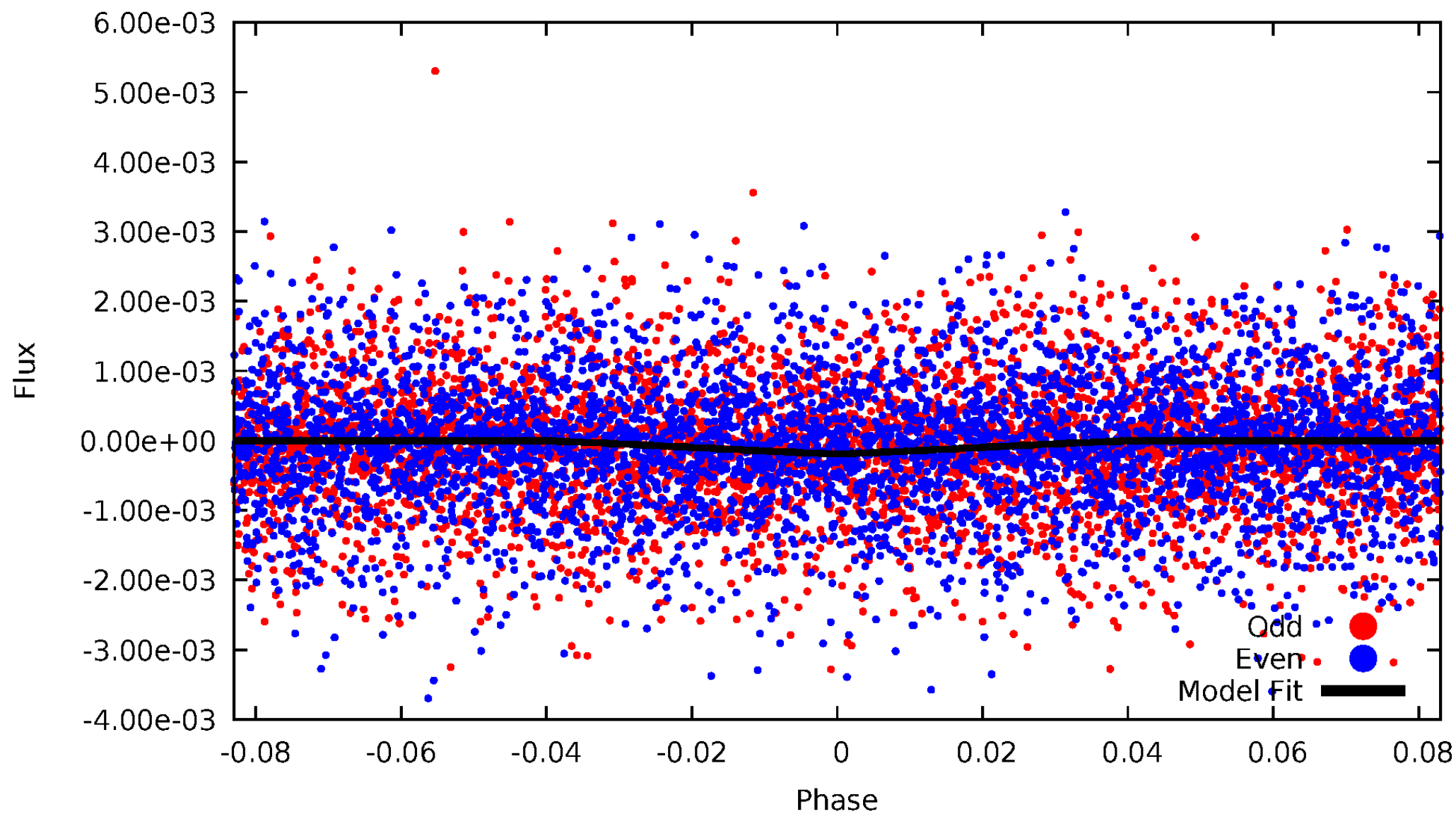


TCE 010289211-01



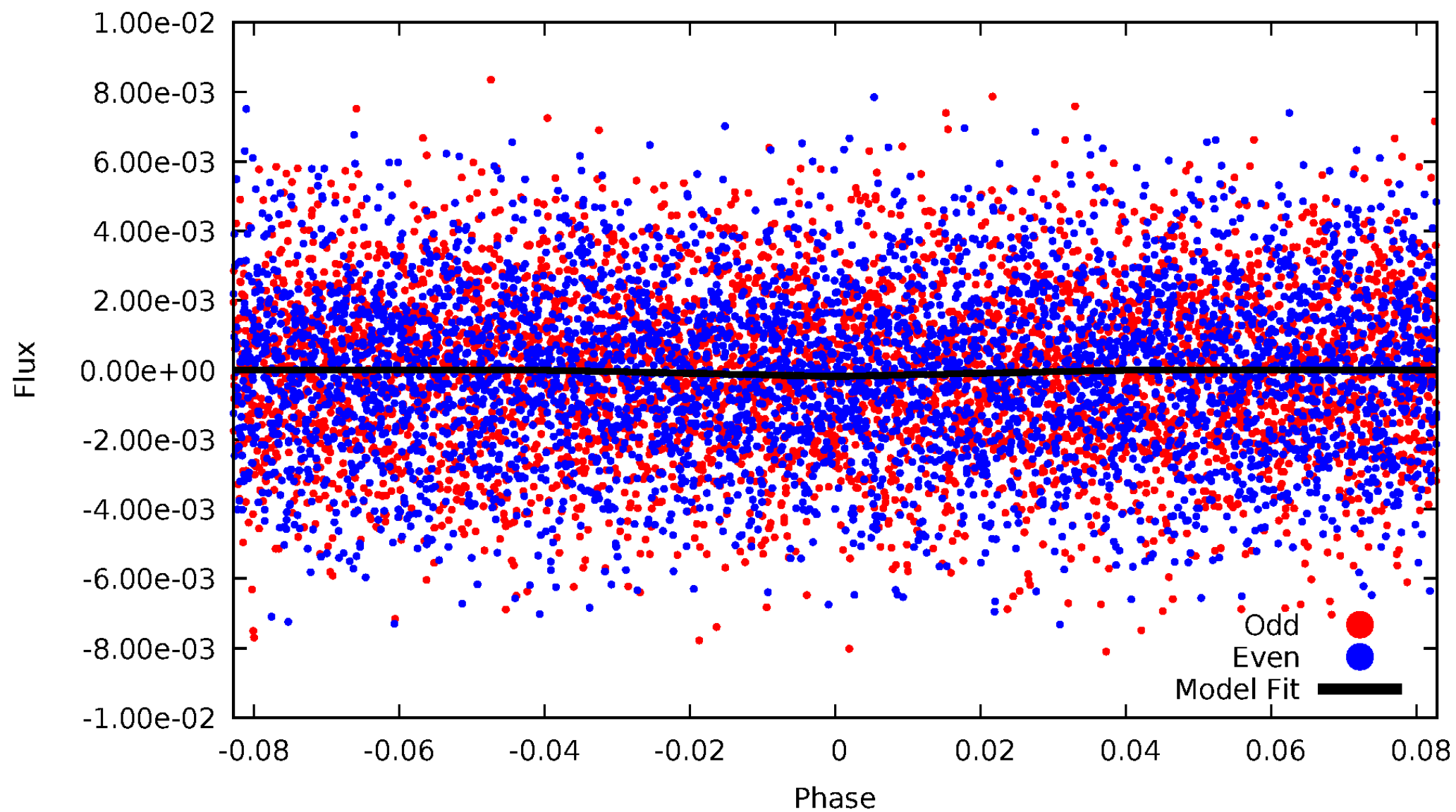
DV Odd/Even

TCE 010289211-01



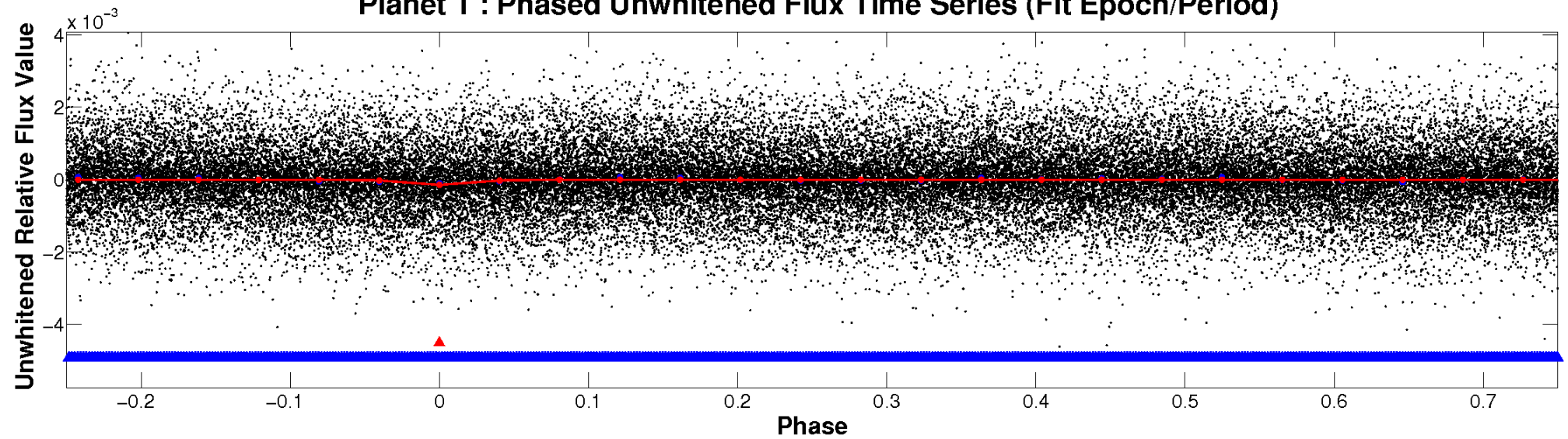
ALT Odd/Even

TCE 010289211-01

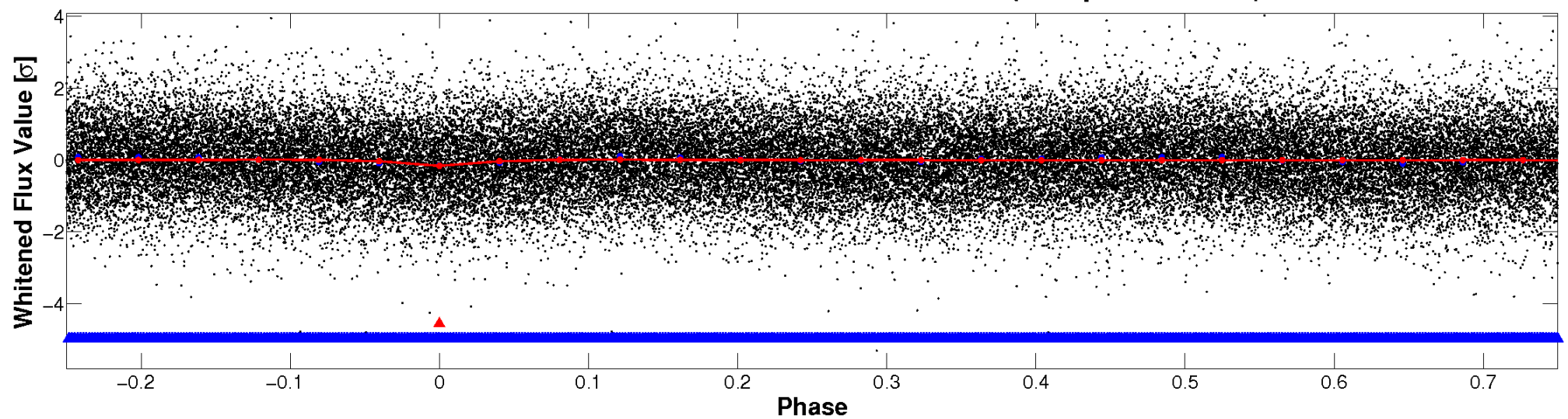


Non-Whitened Vs. Whitened Light Curve

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

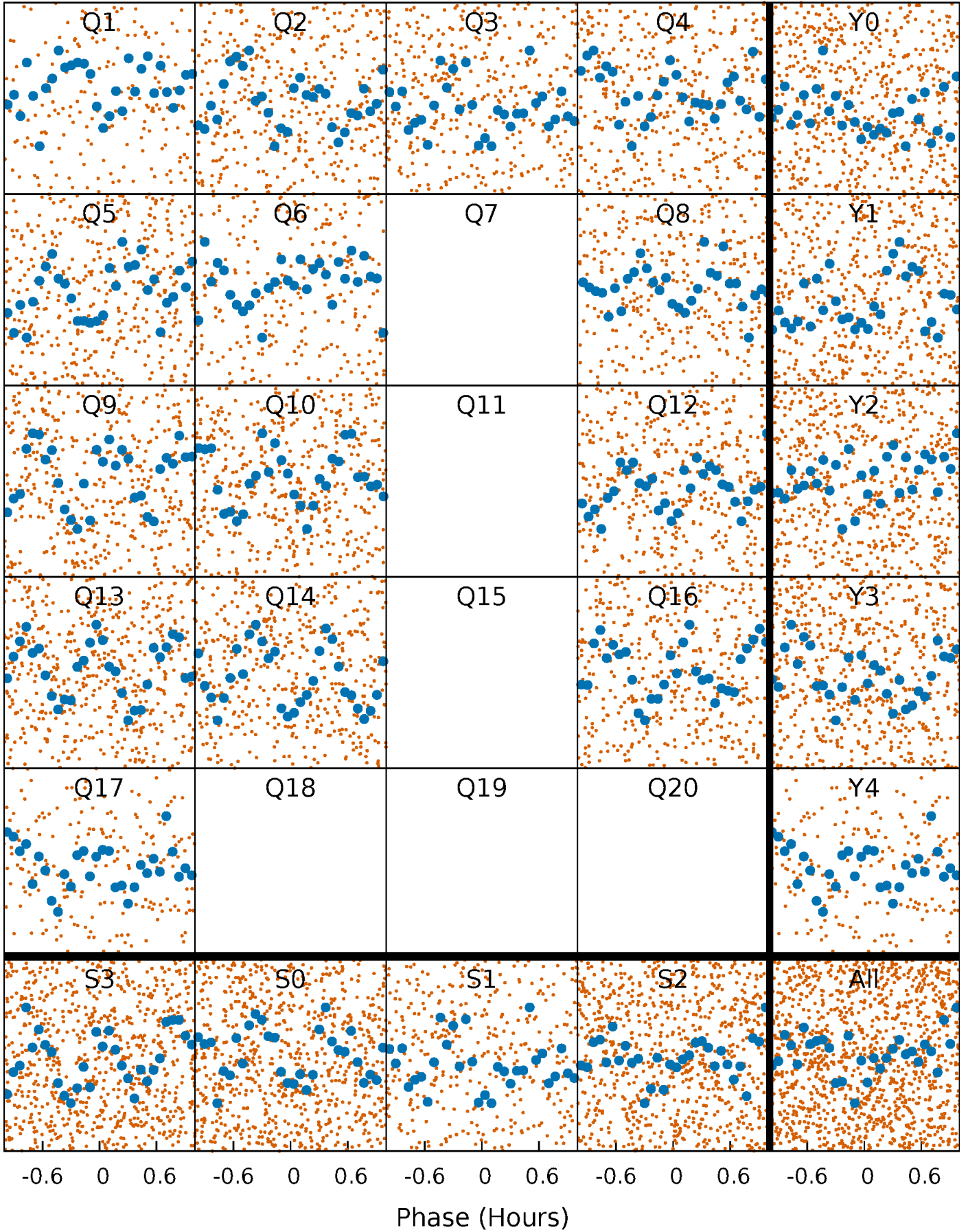


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



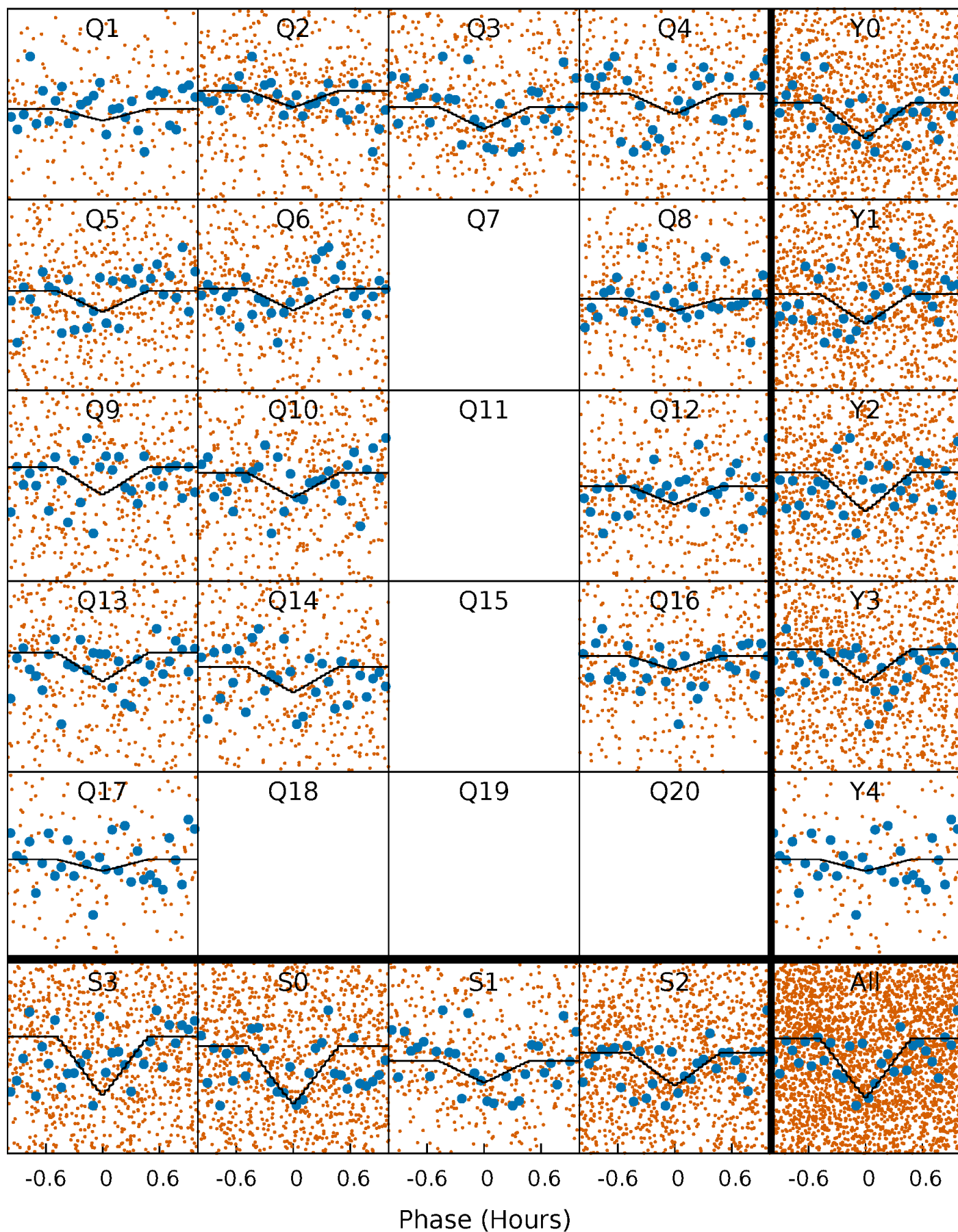
PDC Quarter-Phased Transit Curves

TCE 010289211-01 P= 0.506121 Days $T_0=131.639991$ (BKJD)



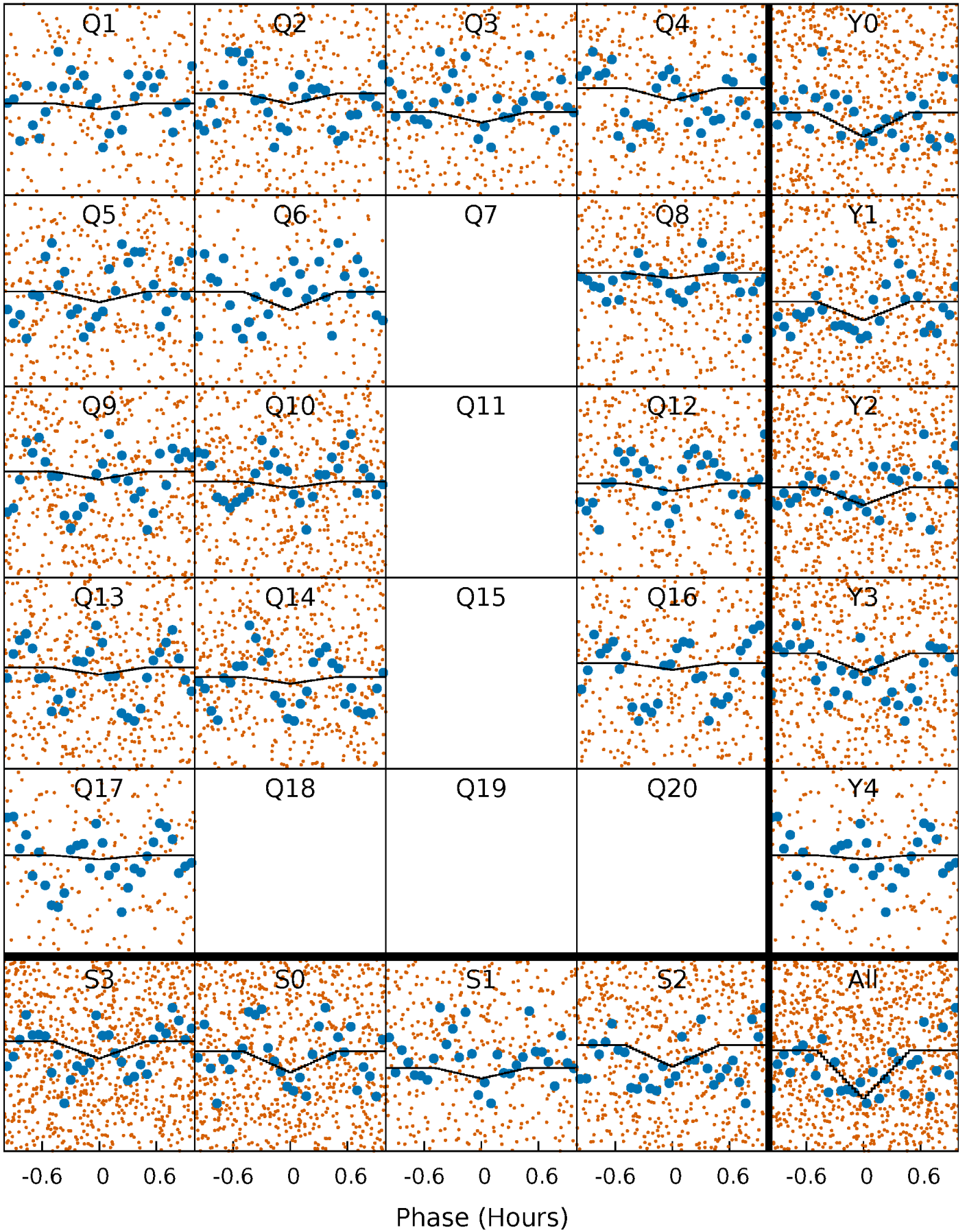
DV Quarter-Phased Transit Curves

TCE 010289211-01 P= 0.506121 Days $T_0=131.639991$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

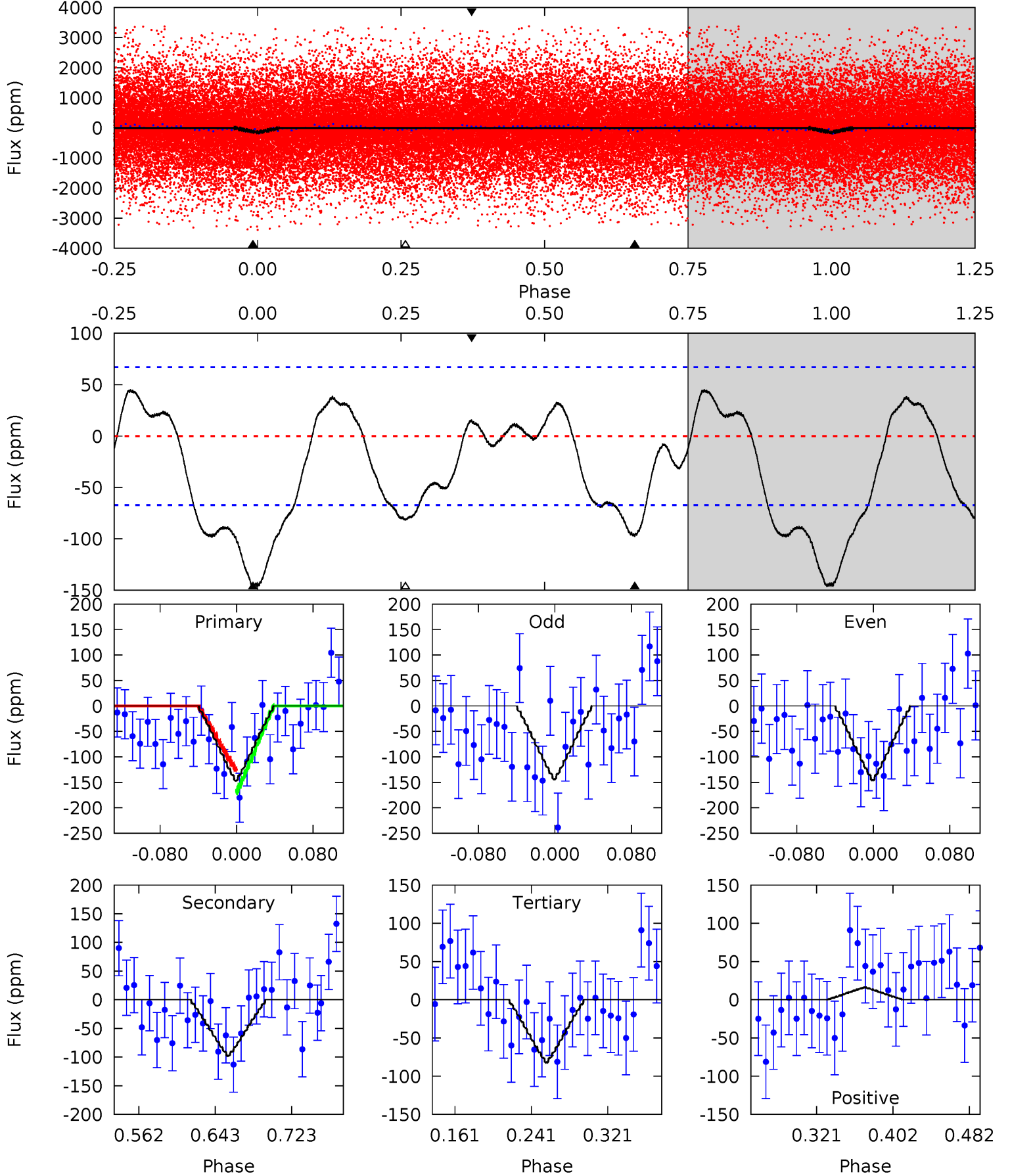
TCE 010289211-01 P= 0.506121 Days $T_0=131.639968$ (BKJD)



DV Model-Shift Uniqueness Test

010289211-01, P = 0.506121 Days, E = 131.133870 Days

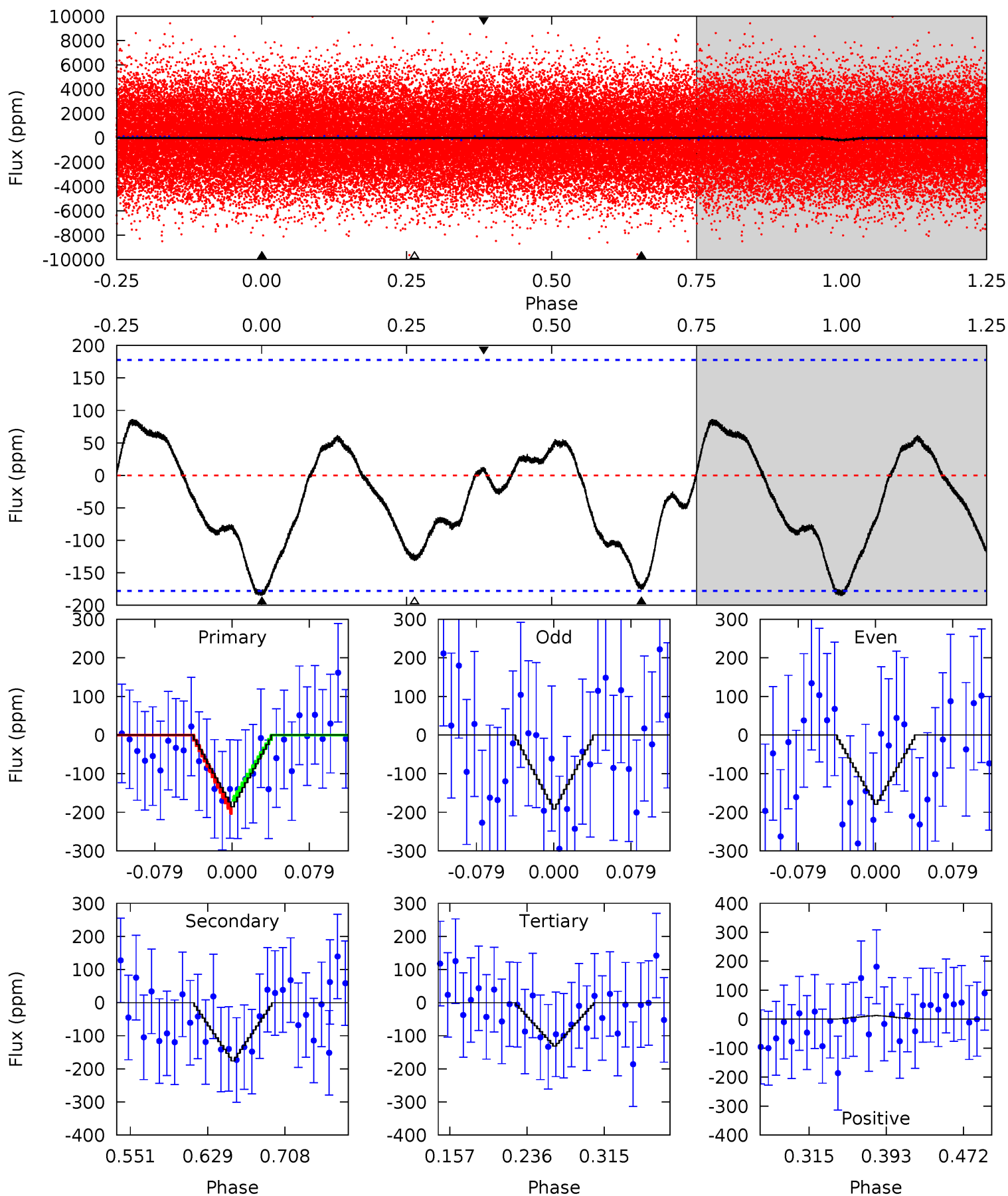
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	6.73	5.65	1.11	4.61	1.75	2.51	4.43	8.97	1.08	5.62	0.08	0.97	0.24	1.57



Alt Model-Shift Uniqueness Test

010289211-01, P = 0.506121 Days, E = 131.133847 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.81	4.58	3.42	0.33	4.61	1.76	1.42	1.39	4.48	1.16	4.24	0.16	0.89	0.32	0.44



Stellar Parameters For KIC 010289211

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7895^{+71}_{-86}	$3.905^{+0.154}_{-0.077}$	$-0.100^{+0.100}_{-0.150}$	$2.549^{+0.240}_{-0.519}$	$1.902^{+0.023}_{-0.205}$	$0.162^{+0.121}_{-0.037}$
	+1%/-1%	+4%/-2%	+100%/-150%	+9%/-20%	+1%/-11%	+75%/-23%
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 010289211-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-98 ± 15	$5.24^{+4.06}_{-3.35}$	6239^{+196}_{-299}	4480^{+4843}_{-8940}	$0.461^{+2.943}_{-0.320}$
Alt.	-176 ± 39	$4.89^{+4.09}_{-3.13}$	6238^{+206}_{-309}	5911^{+7119}_{-9083}	$0.934^{+6.082}_{-0.652}$

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

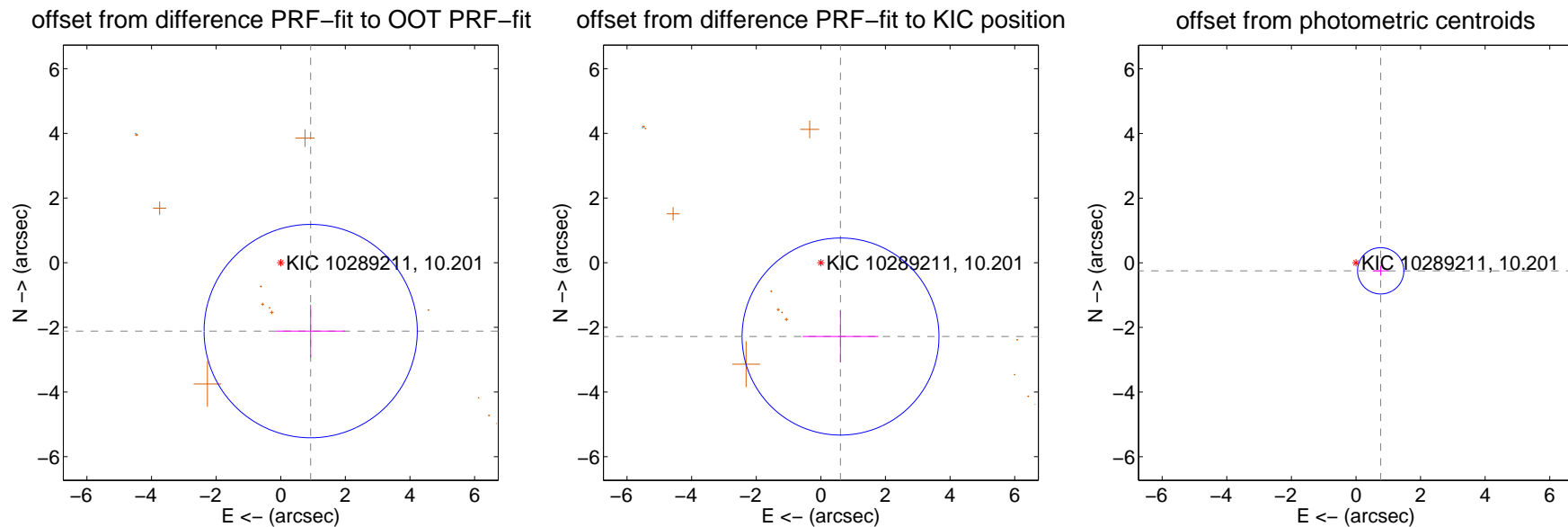
DV Centroid Data

Supplemental centroid analysis for 010289211-01. **Kepler magnitude: 10.20.** Transit SNR 7.94

There are 1 quarters with good PRF difference image offsets

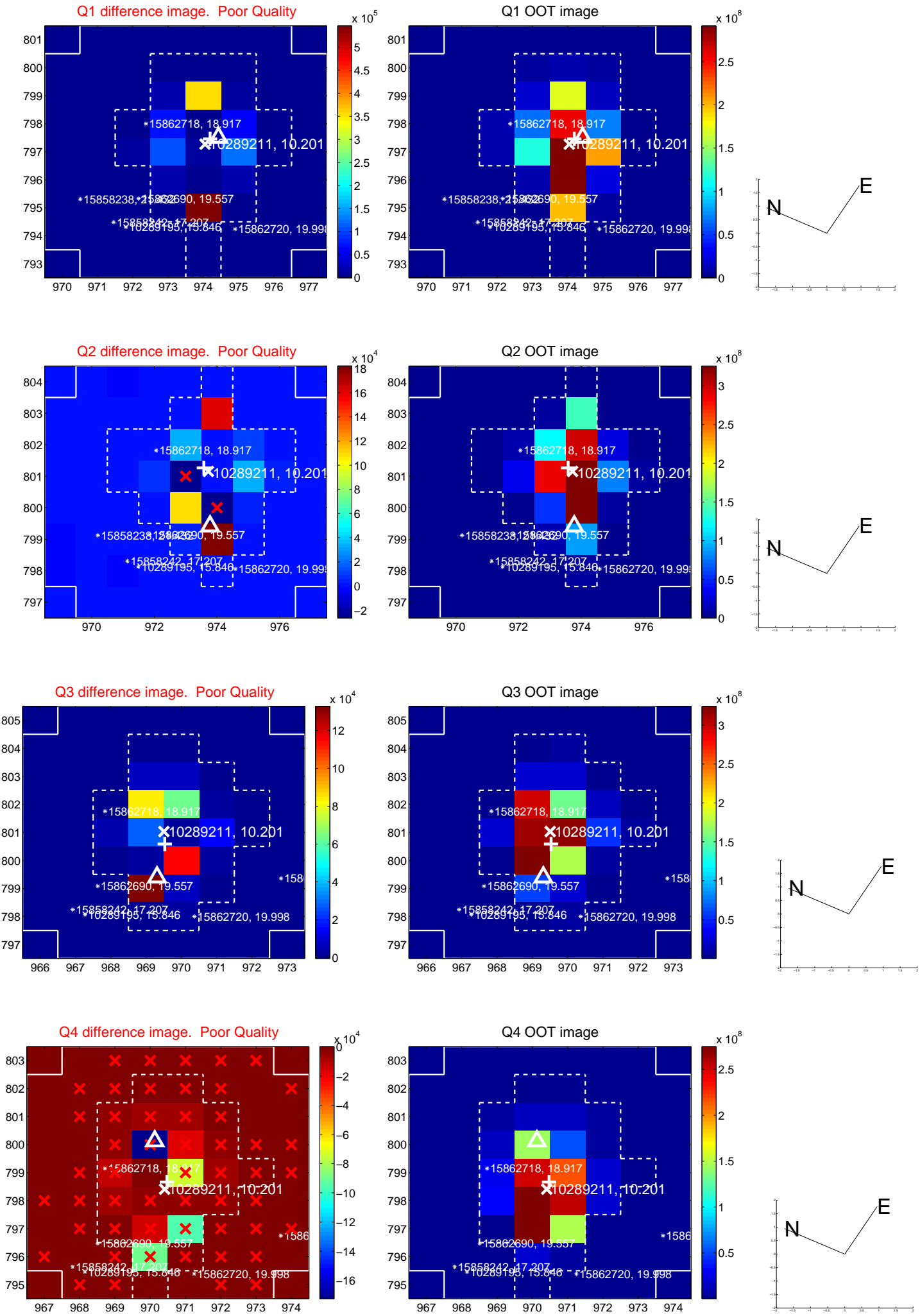
The direct PRF centroid is offset from the target star catalog position by about 0.78 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.310 ± 1.100	2.10	-0.927 ± 1.071	-2.116 ± 0.814
PRF-fit source offset from KIC position	2.364 ± 1.016	2.33	-0.609 ± 1.172	-2.284 ± 0.802
photometric centroid source offset	0.81 ± 0.24	3.37	-0.77 ± 0.25	-0.25 ± 0.15

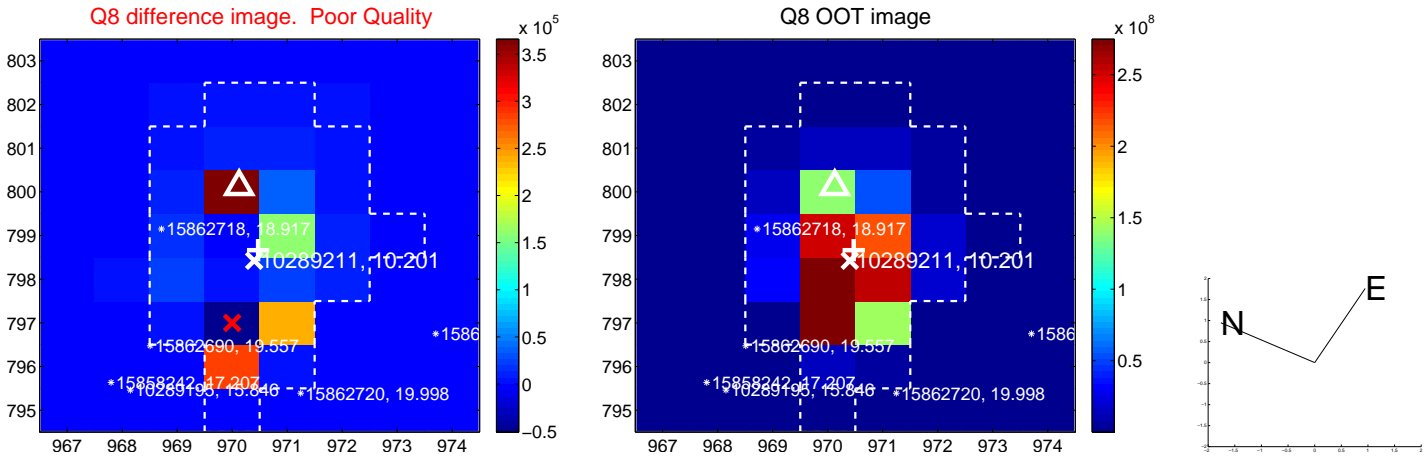
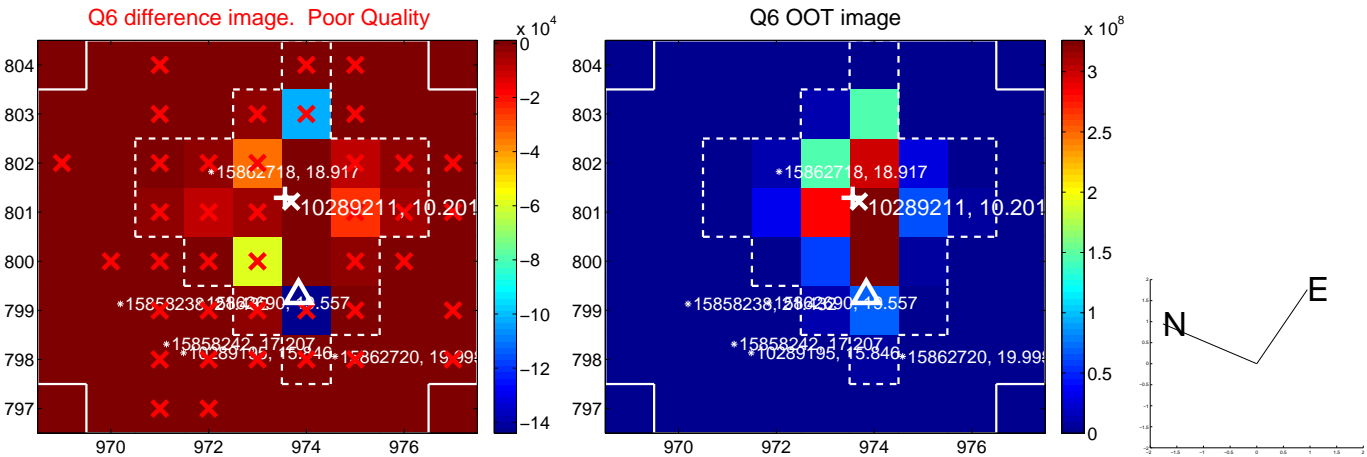
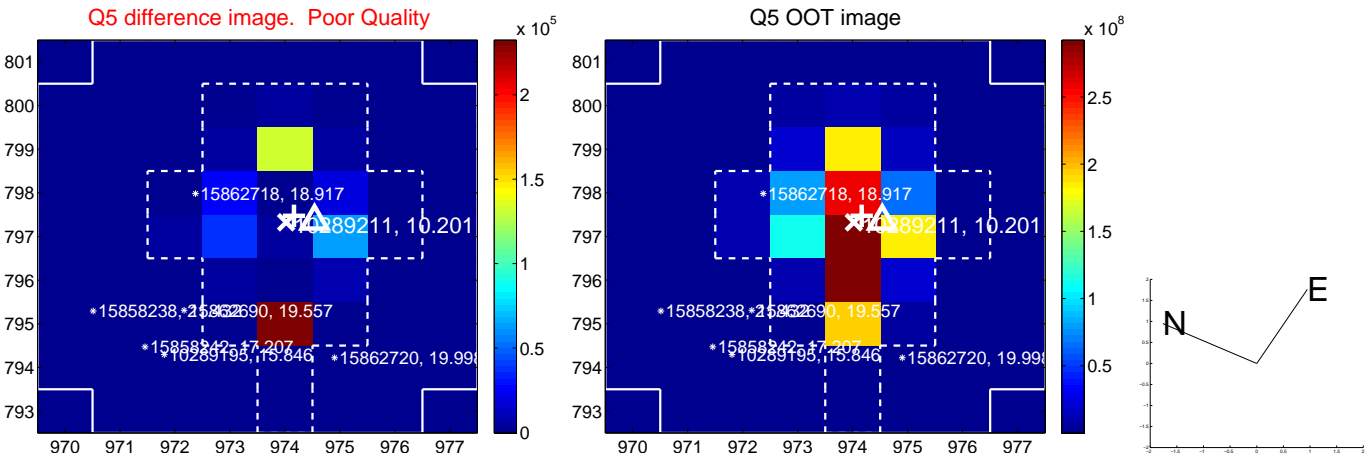


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

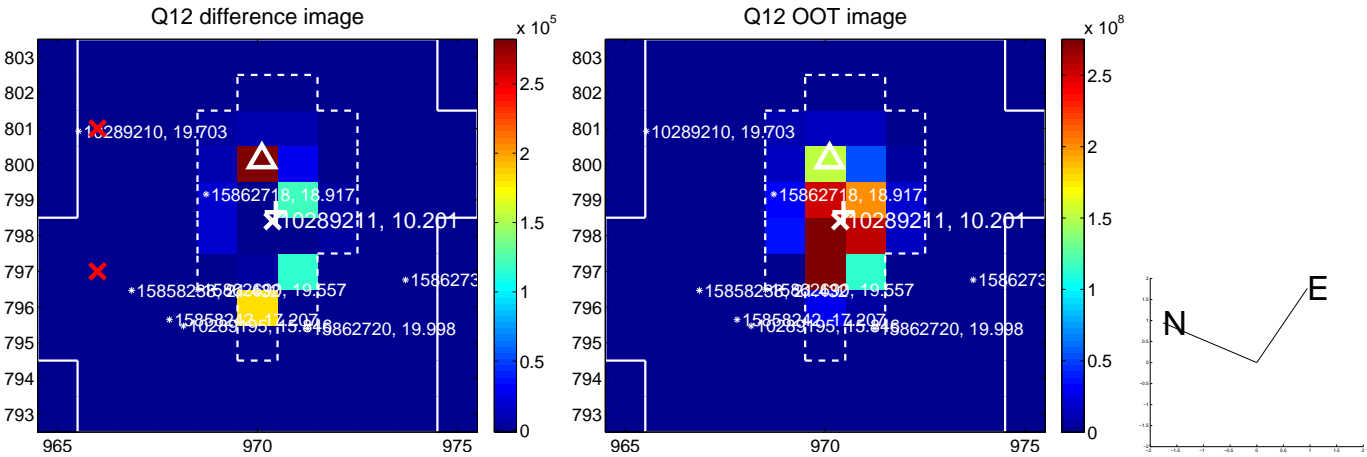
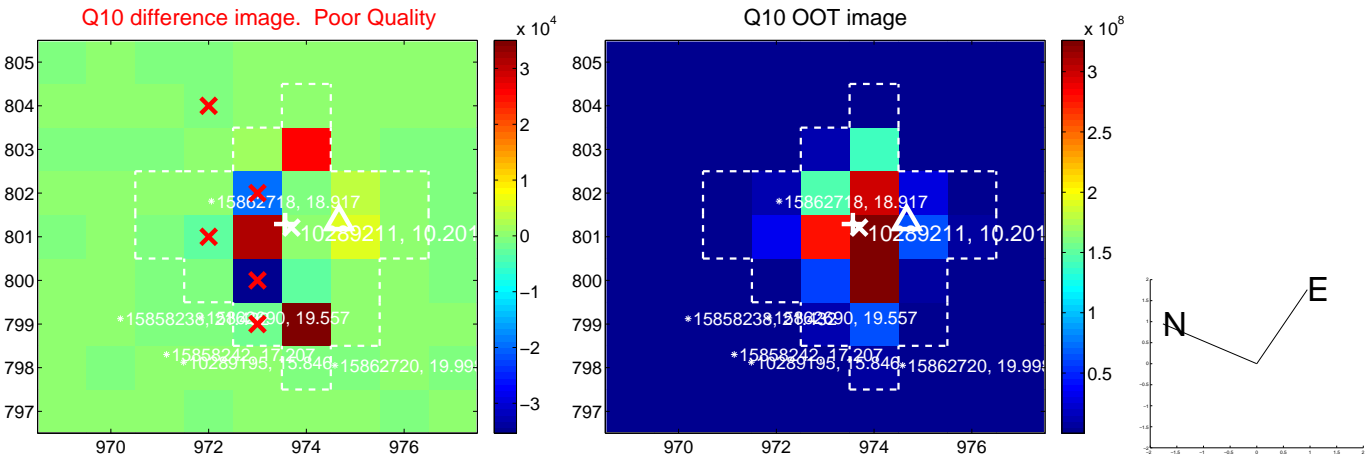
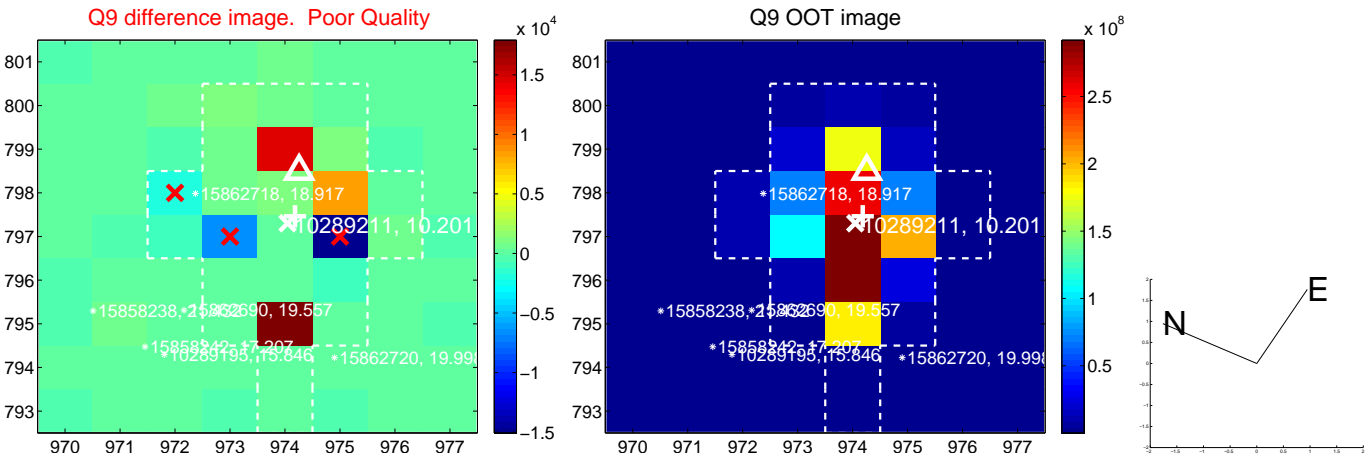
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



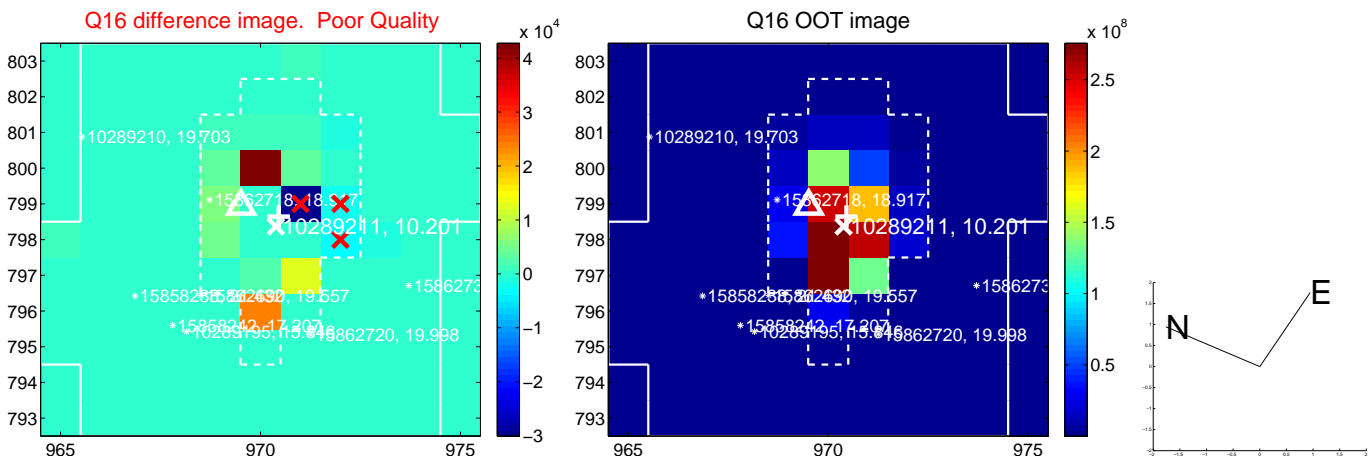
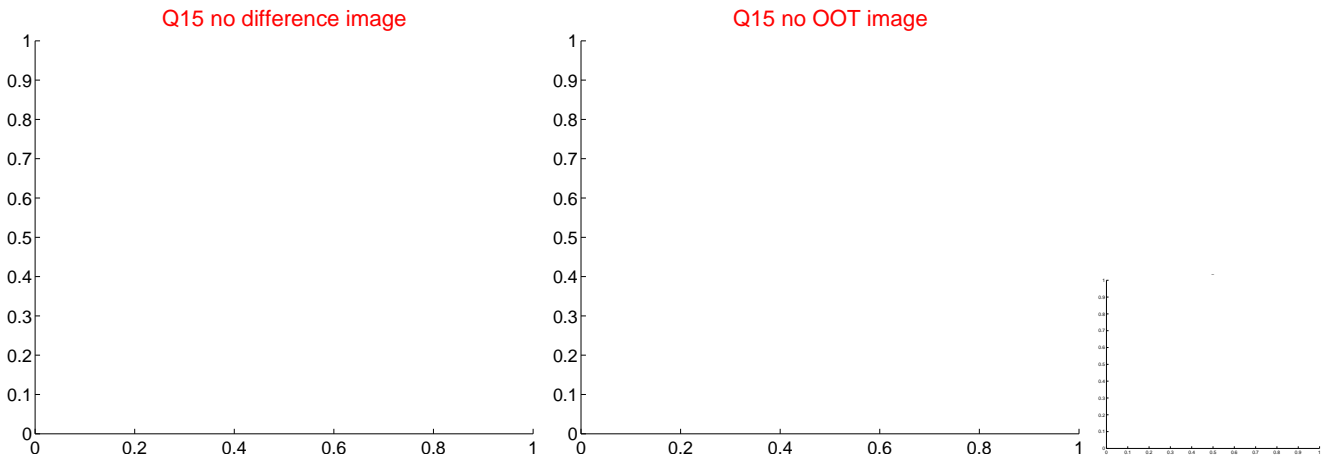
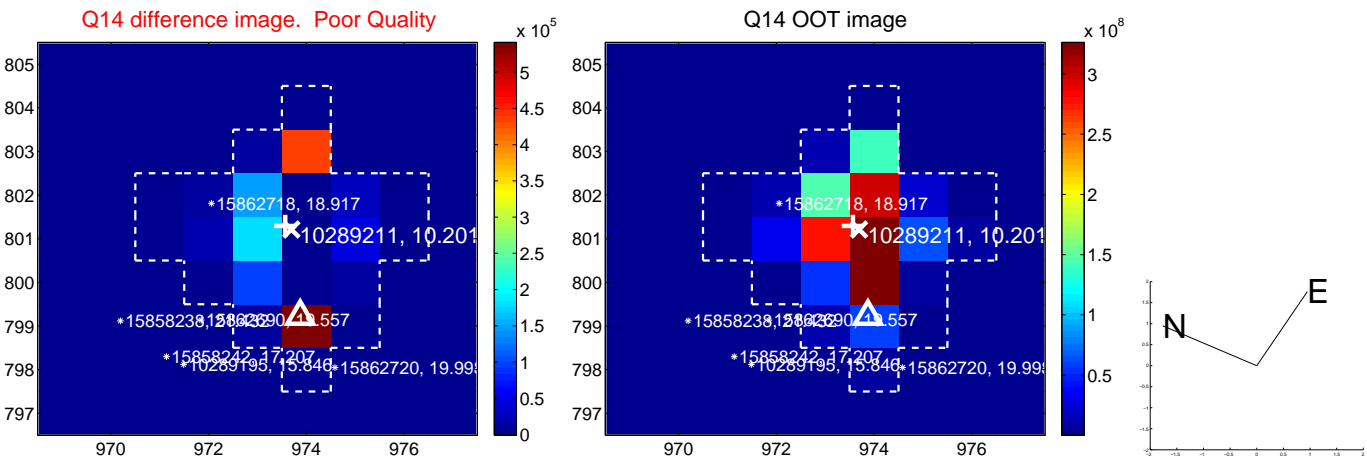
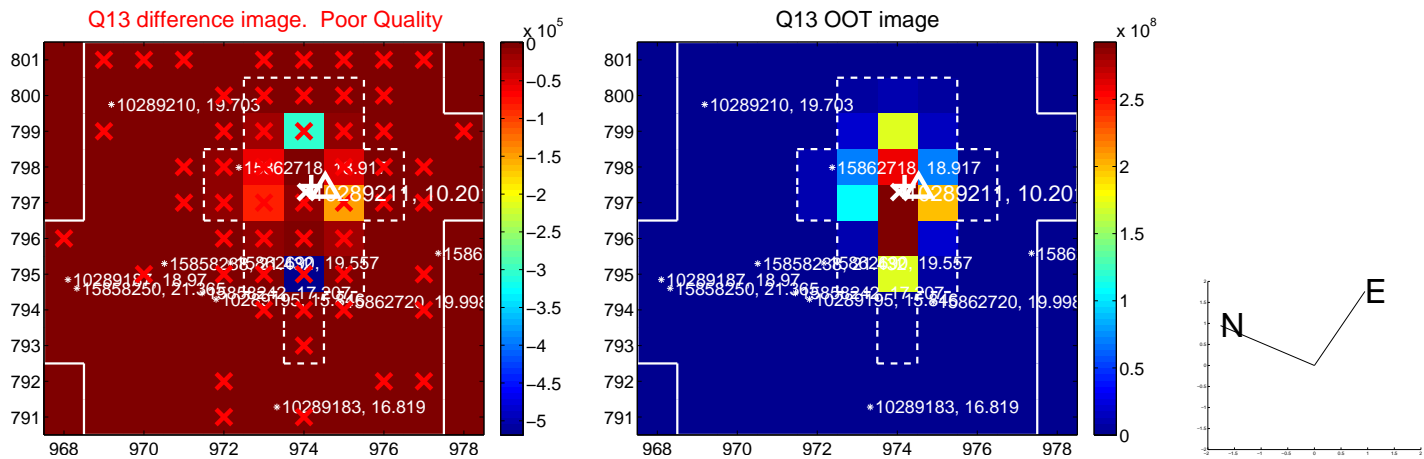
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



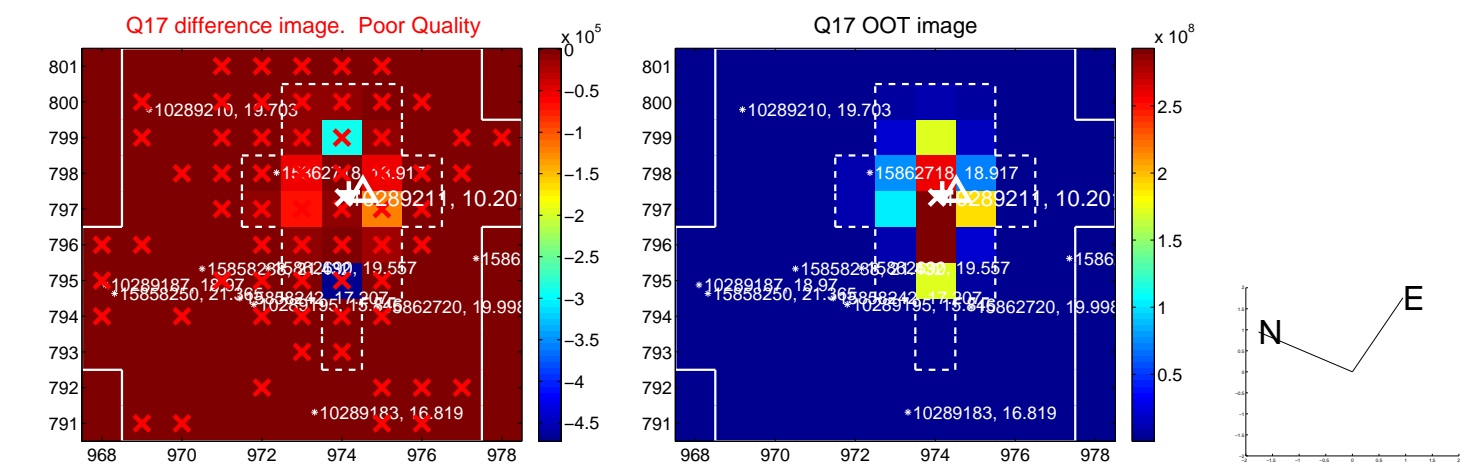
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



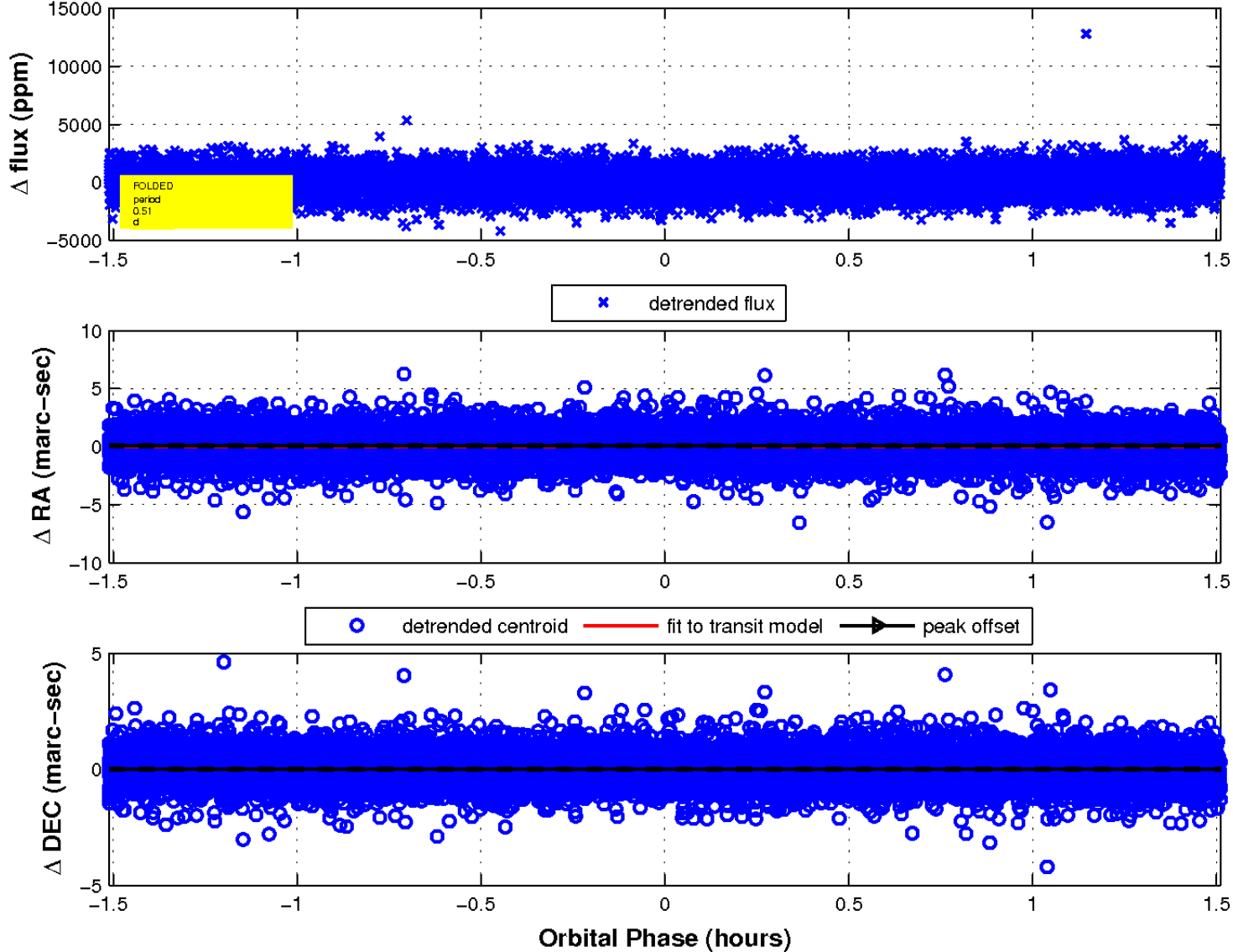
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

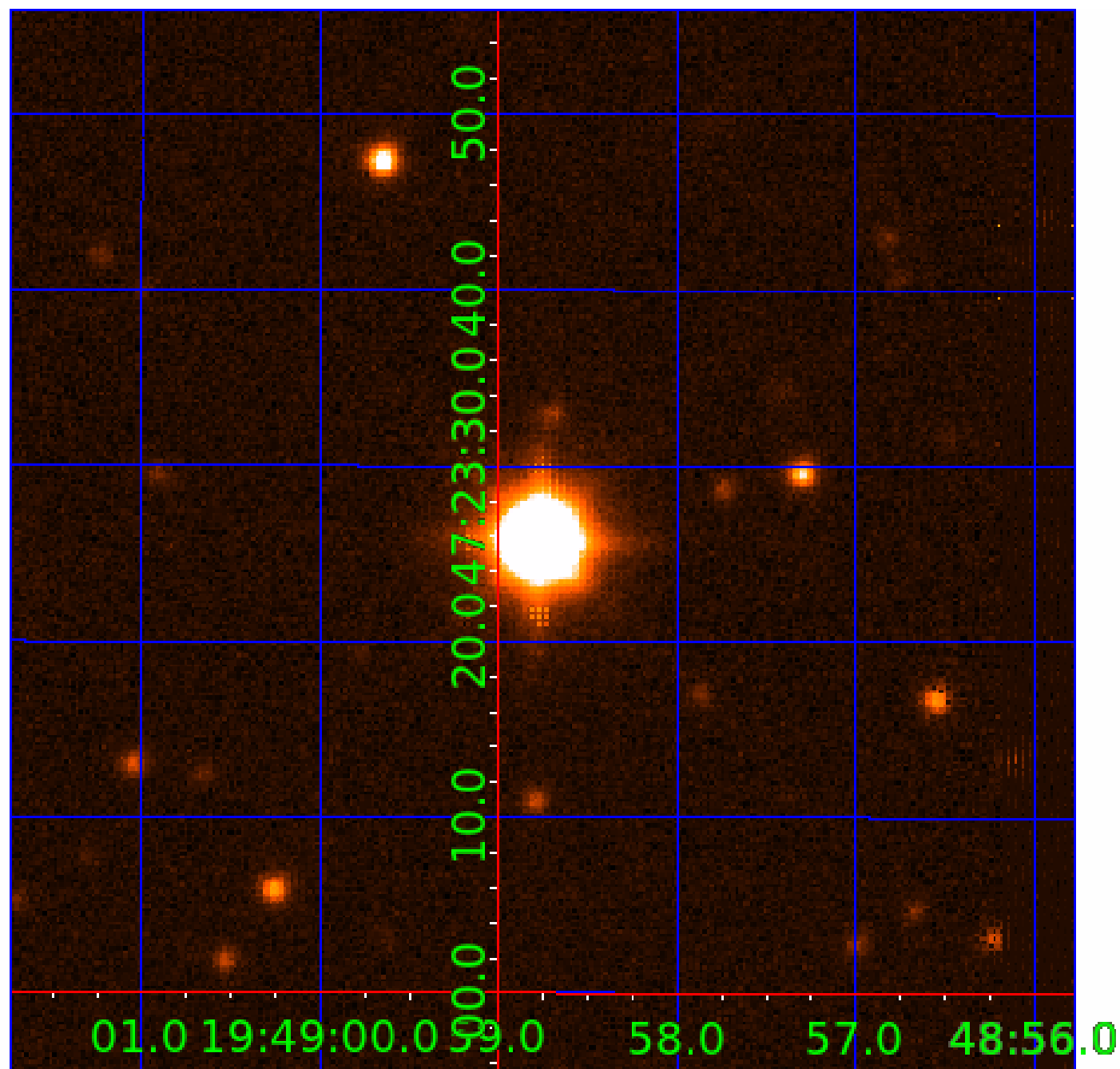


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010289211

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})
010289211-01	OBS	No	0.506121	131.639991	190.7	0.504	8.0	7.9	2.55	7895	3.71	95252.68
010289211-02	OBS	No	0.551866	131.922273	188.5	6.622	8.4	16.3	2.55	7895	3.63	84873.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010289211-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010289211-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—CENT_SATURATED

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

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

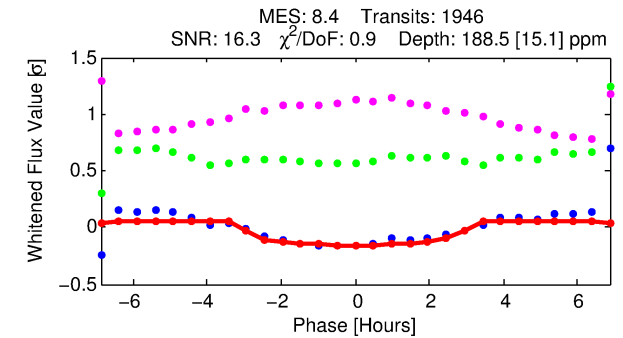
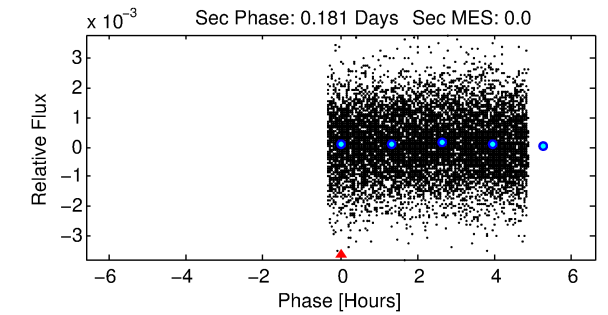
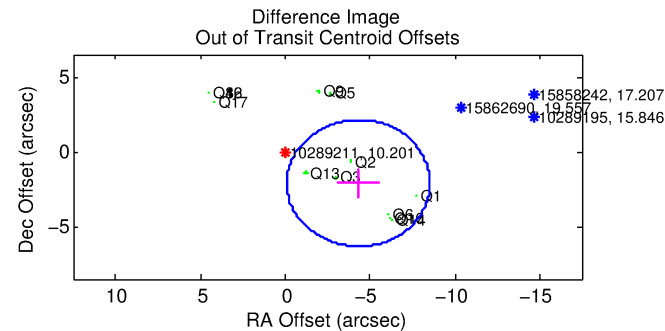
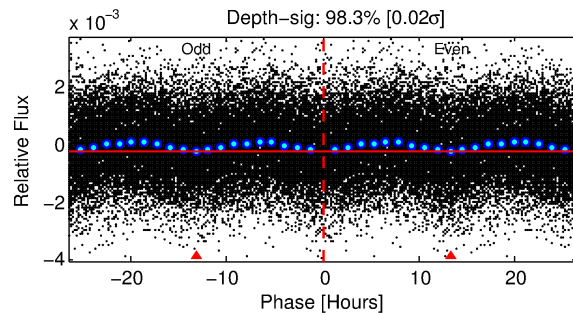
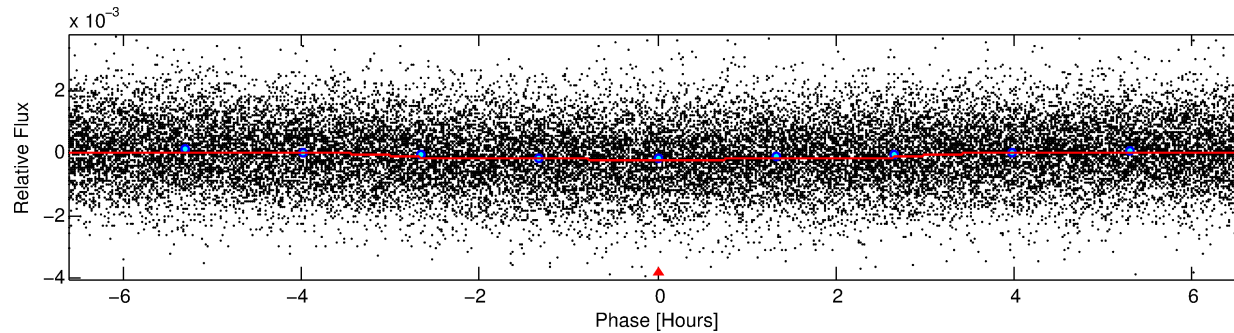
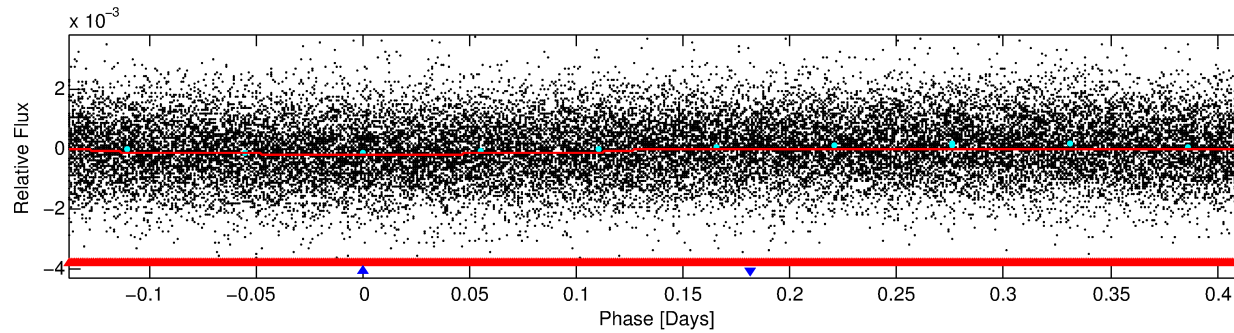
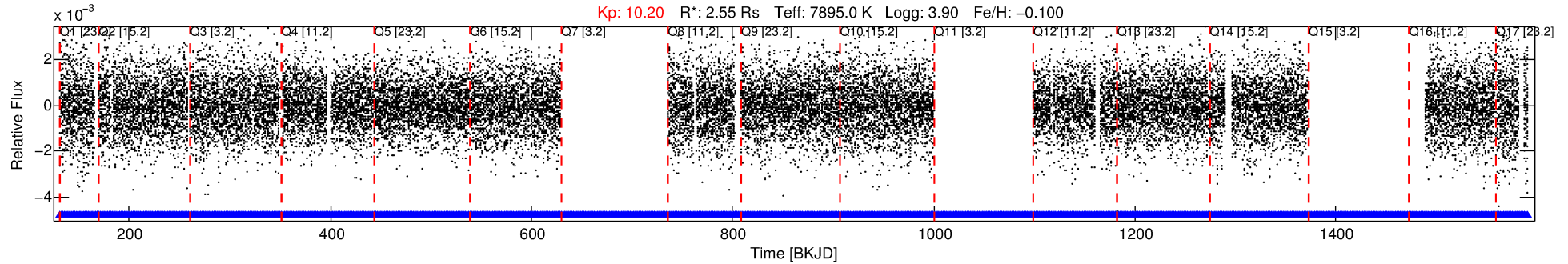
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010289211-02

No Significant Match Found

DV One-Page Summary

KIC: 10289211 Candidate: 2 of 2 Period: 0.552 d



DV Fit Results:

Period = 0.55187 [0.00001] d
Epoch = 131.9223 [0.0040] BKJD
 R_p/R^* = 0.0131 [0.0024]
 a/R^* = 1.01 [0.01]
 b = 0.50 [1.55]
 S_{eff} = 84873.29 [23429.96]
 T_{eq} = 4352 [300] K
 R_p = 3.63 [0.99] R_{e}
 a = 0.0163 [0.0029] AU
 A_g = N/A
 T_{eff} = N/A

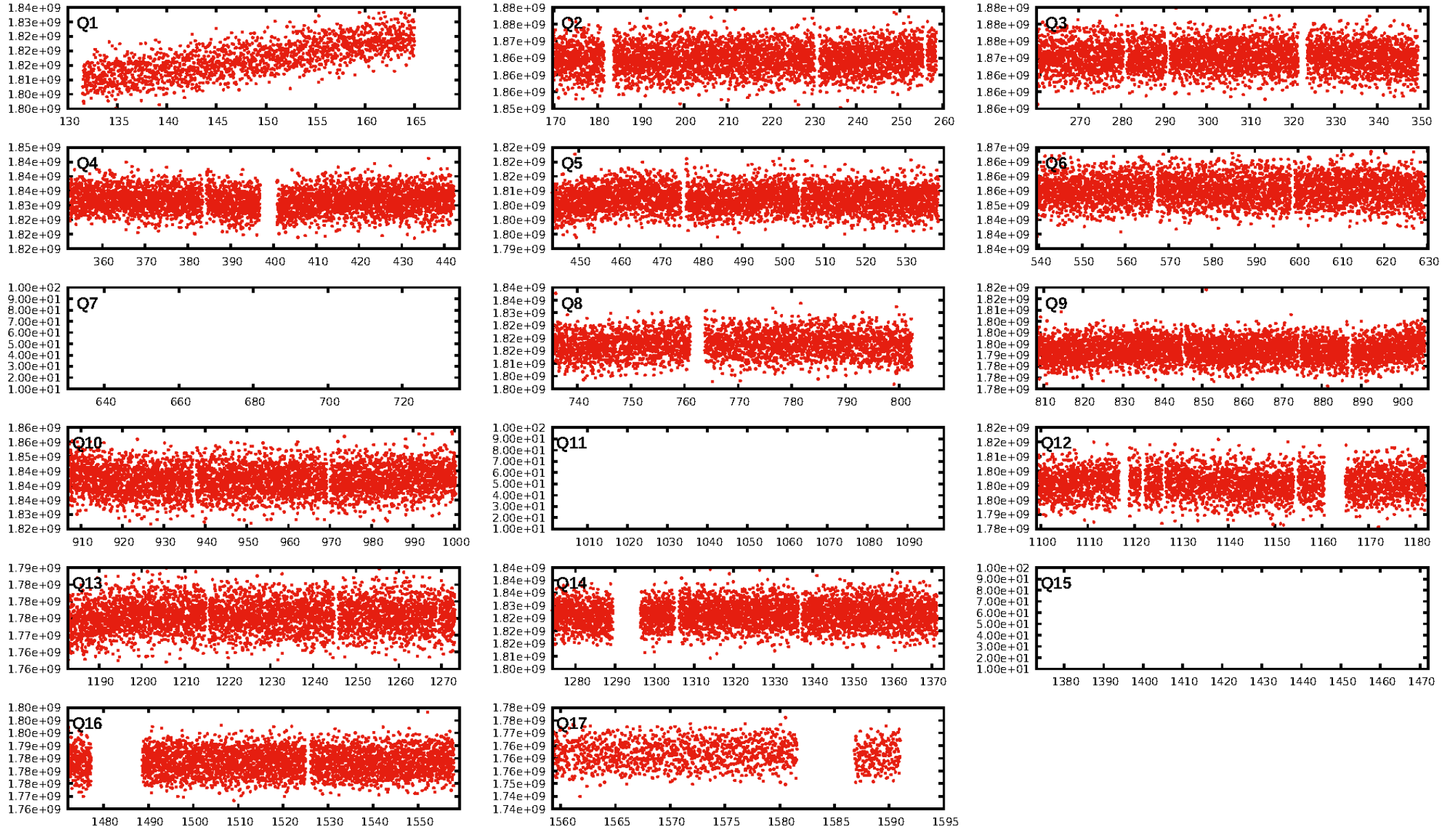
DV Diagnostic Results:

ShortPeriod-sig: 13.1% [0.17 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1835/1835]
GhostDiagnostic-chr: 1.215
Centroid-sig: 1.6%
Centroid-so: 0.560 arcsec [6.88 σ]
OotOffset-rm: 4.801 arcsec [3.41 σ]
KicOffset-rm: 4.552 arcsec [3.15 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.29 [4/14]
DiffImageOverlap-fno: 0.00 [0/14]

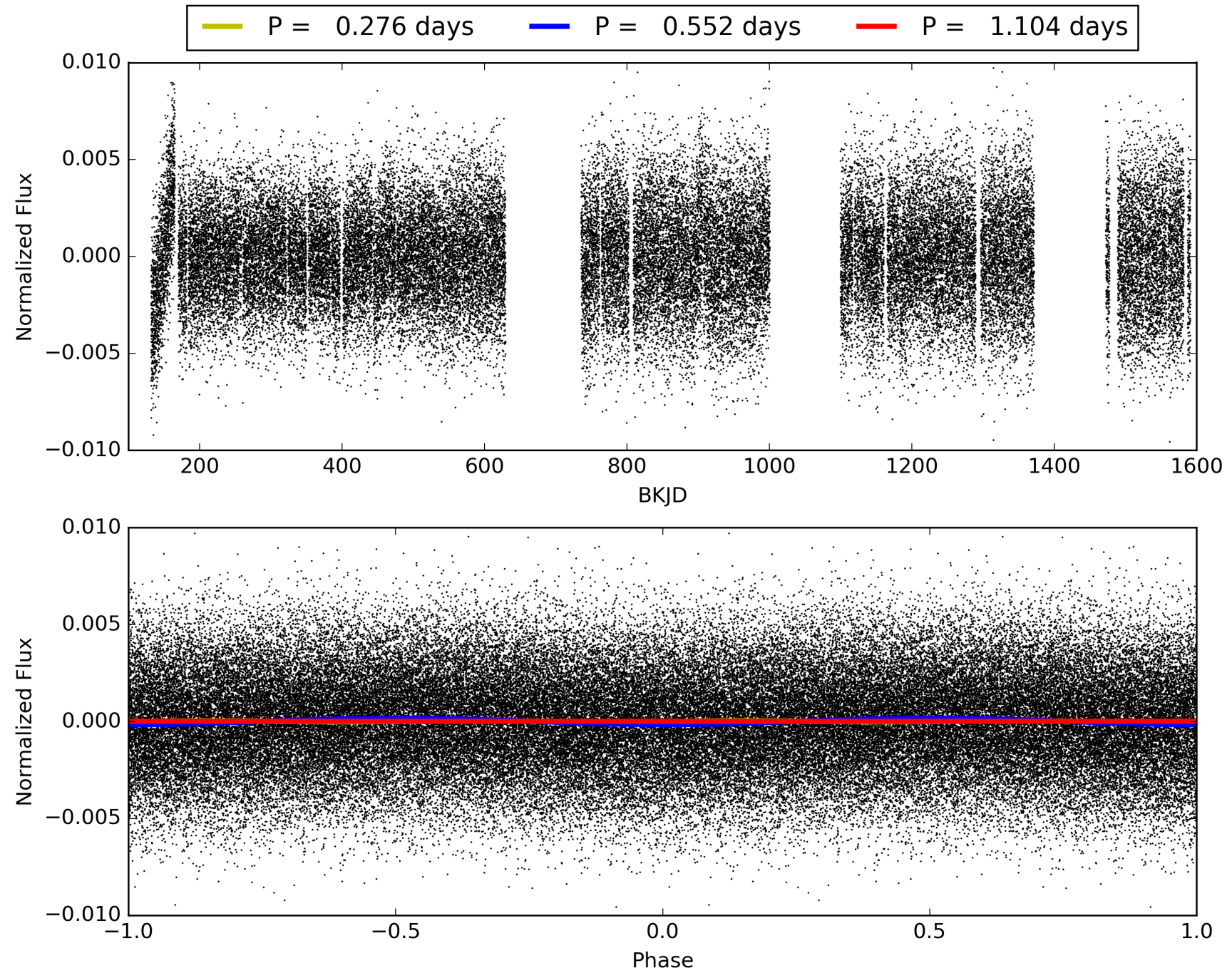
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:16:16 Z

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

TCE 010289211-02, PDC Light Curves

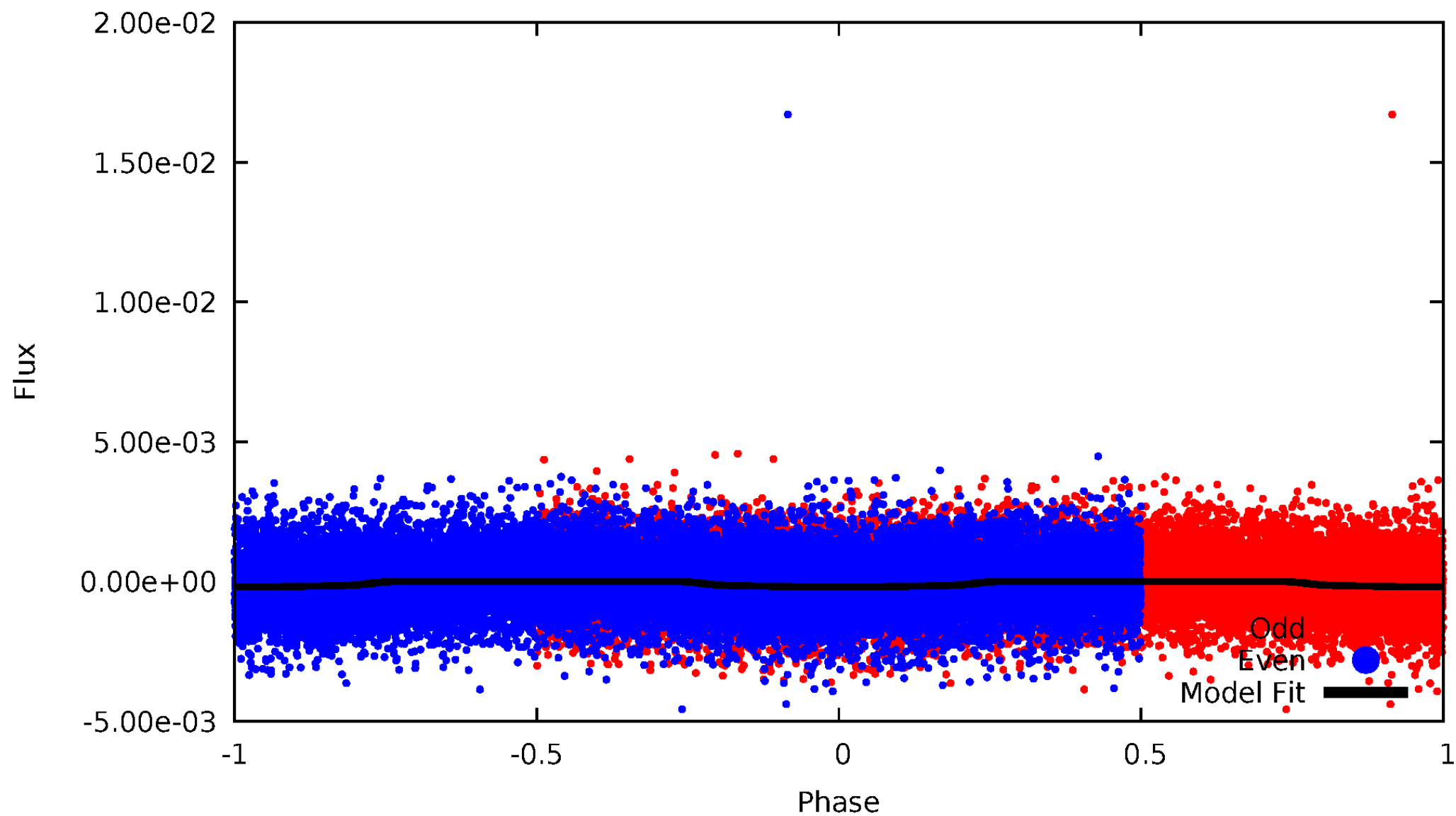


TCE 010289211-02



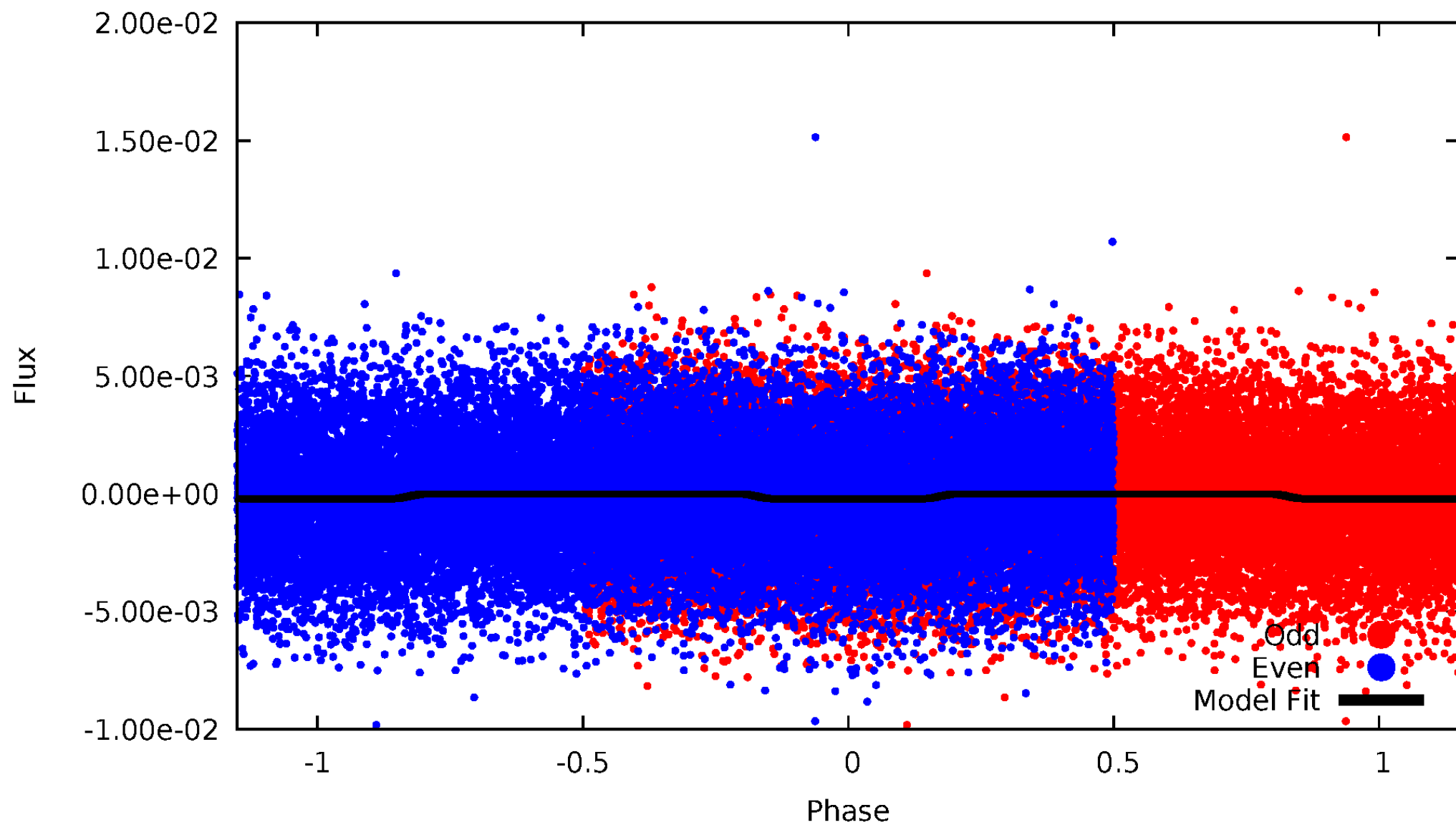
DV Odd/Even

TCE 010289211-02



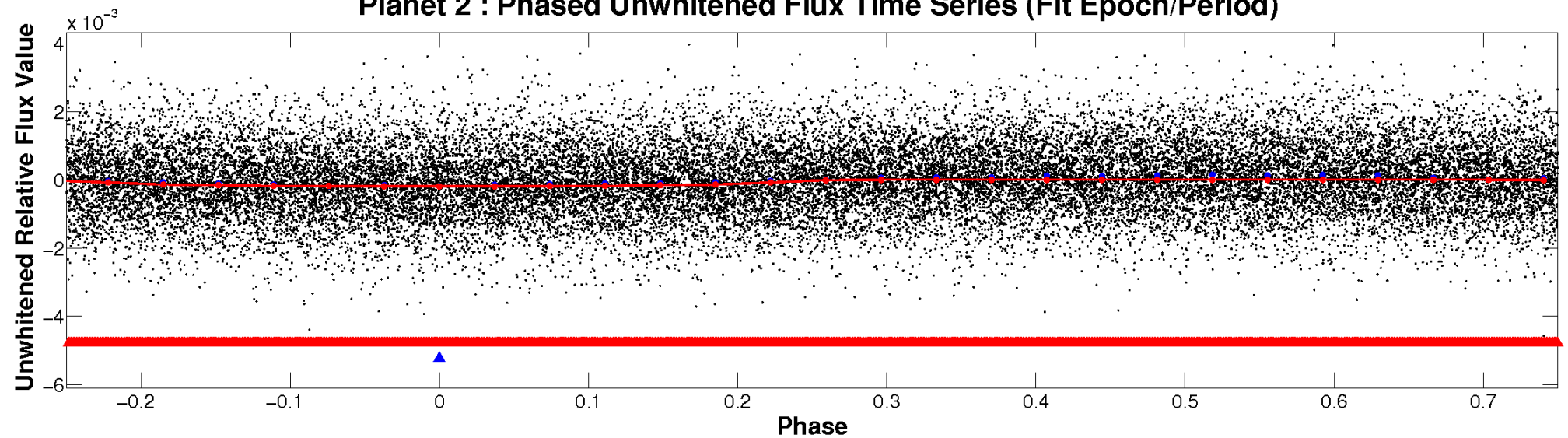
ALT Odd/Even

TCE 010289211-02

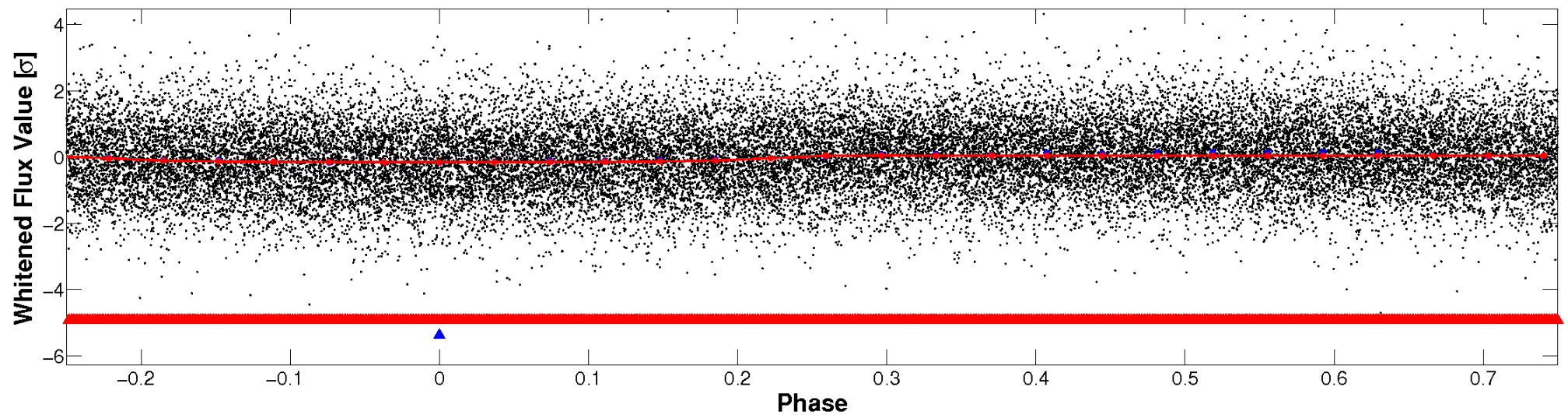


Non-Whitened Vs. Whitened Light Curve

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

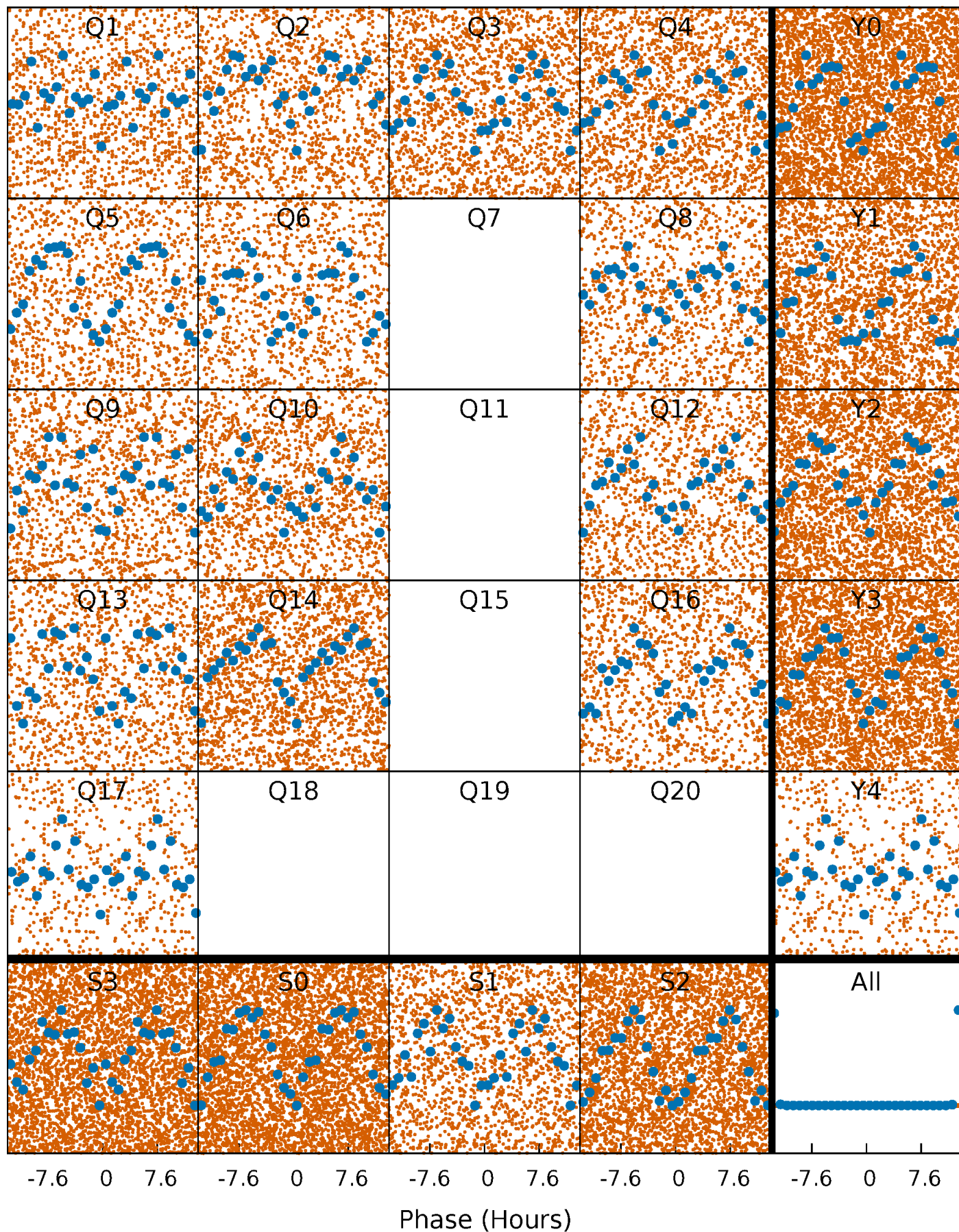


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



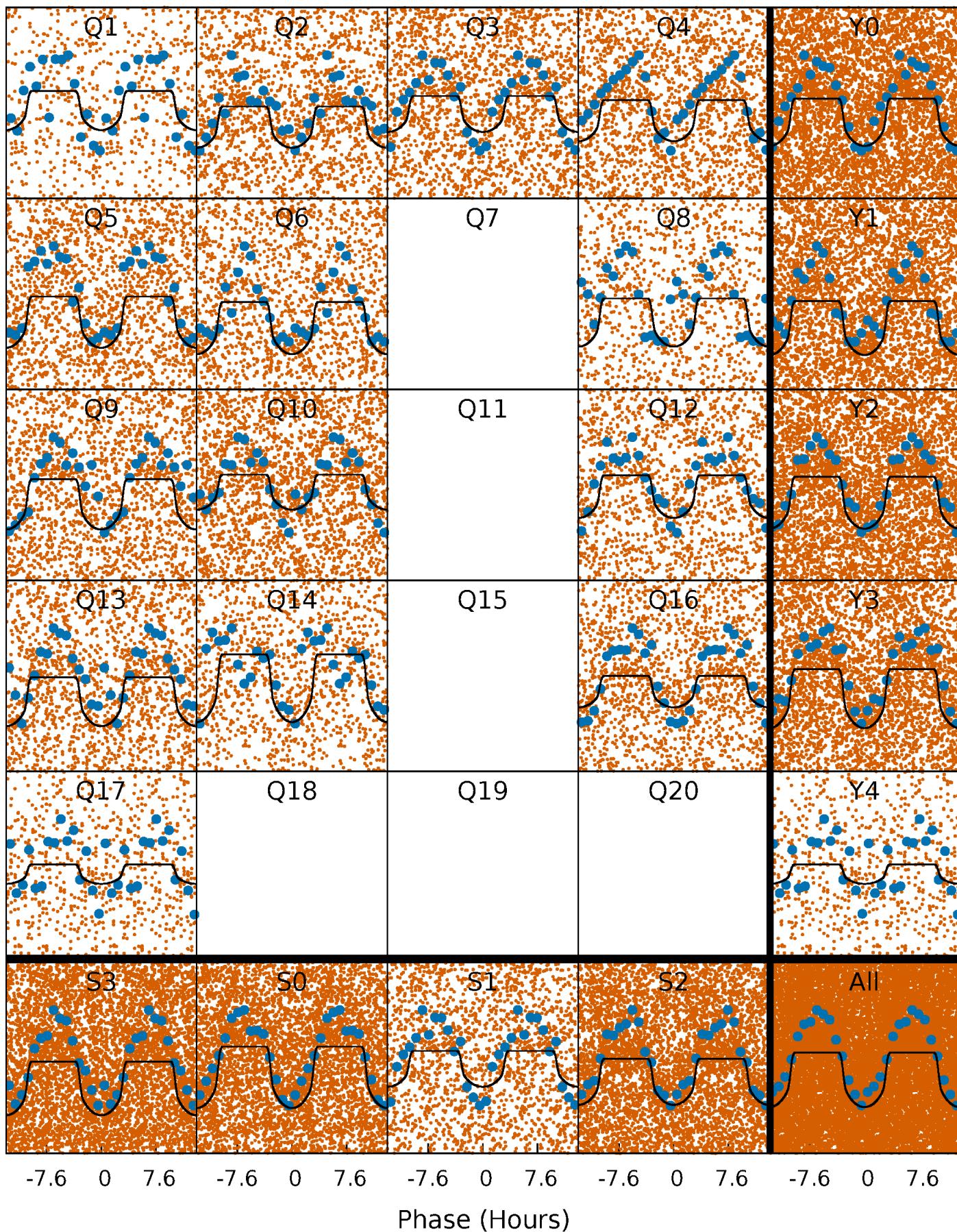
PDC Quarter-Phased Transit Curves

TCE 010289211-02 P= 0.551866 Days $T_0=131.922273$ (BKJD)



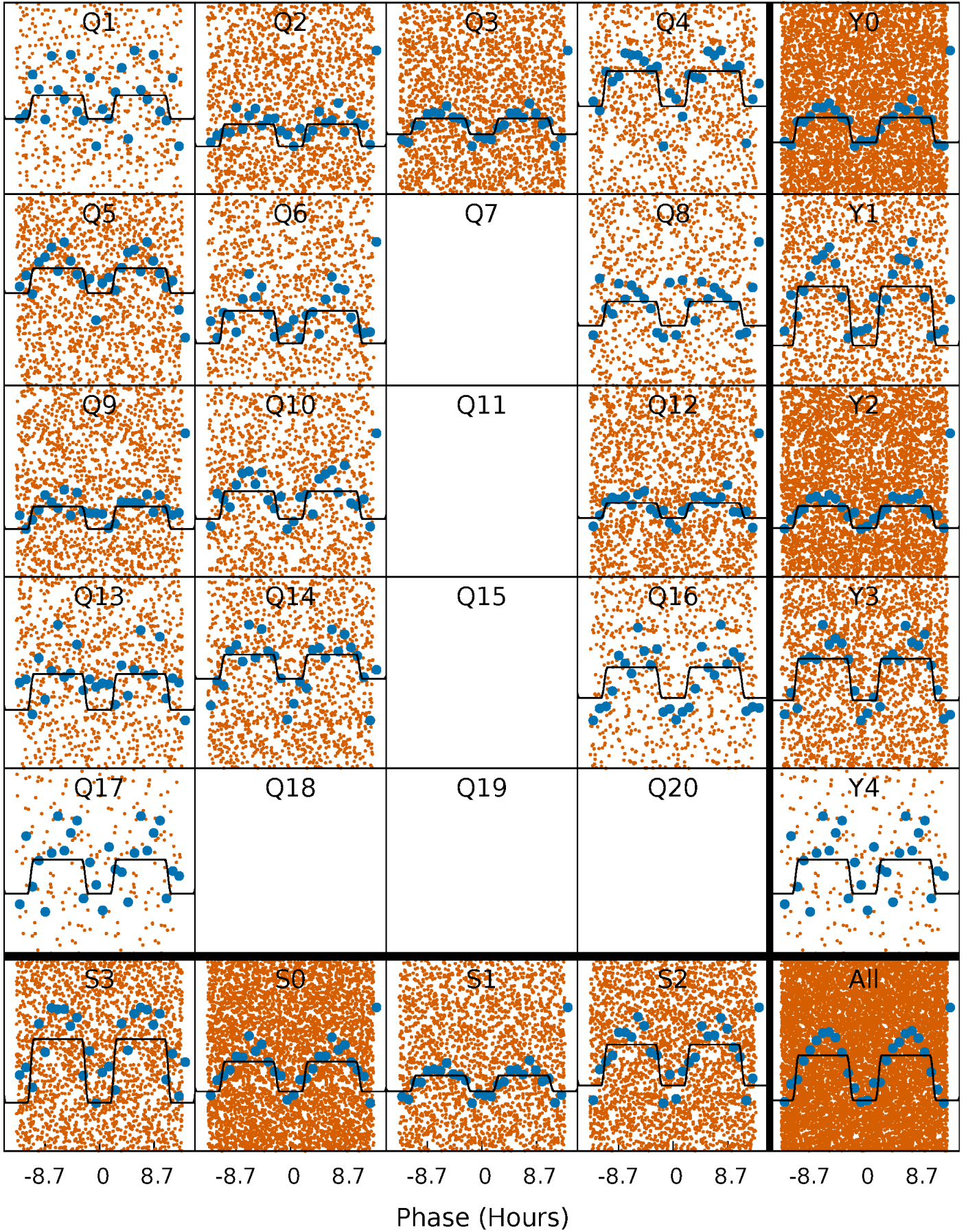
DV Quarter-Phased Transit Curves

TCE 010289211-02 P= 0.551866 Days $T_0=131.922273$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

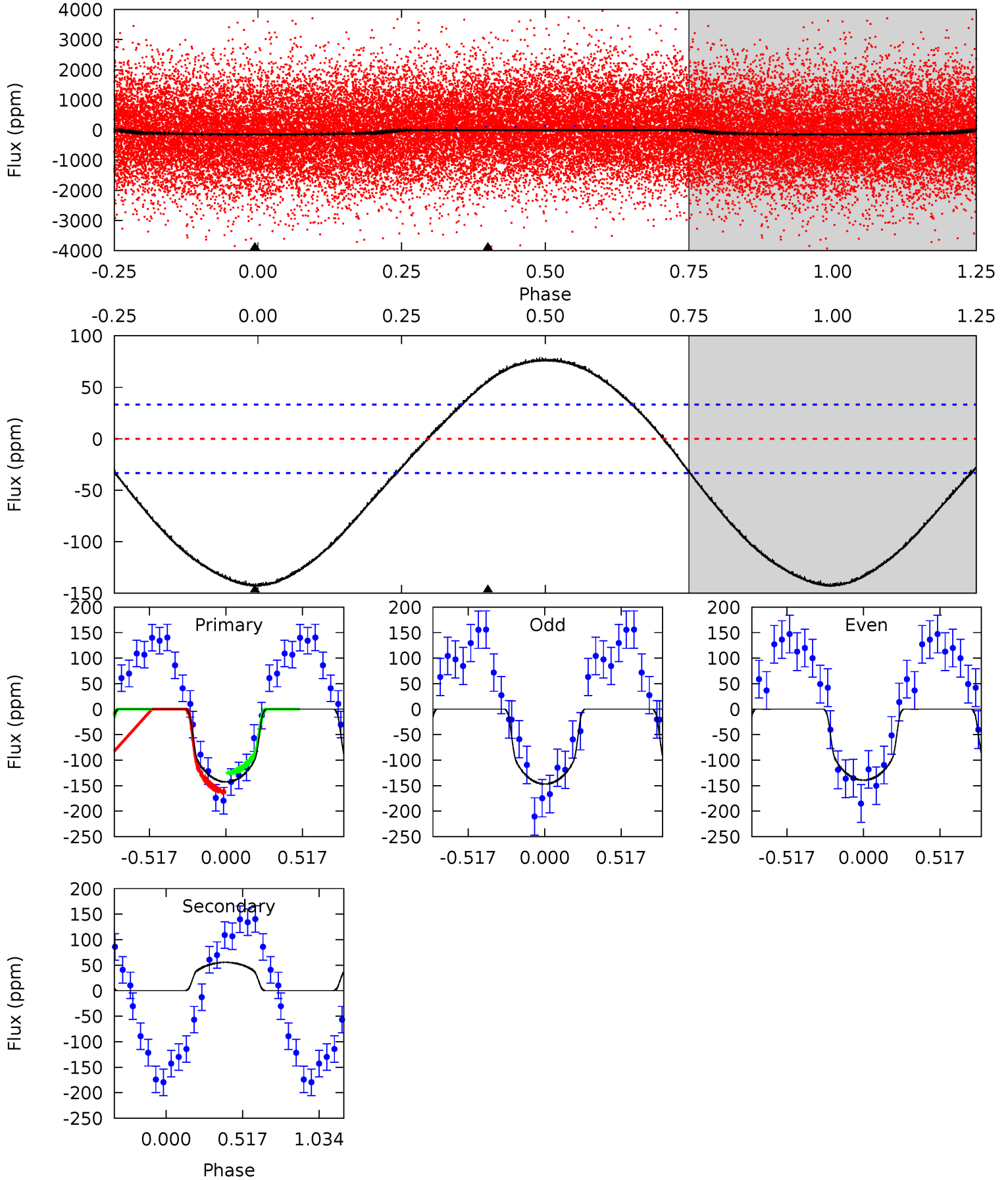
TCE 010289211-02 P= 0.551865 Days $T_0=131.911081$ (BKJD)



DV Model-Shift Uniqueness Test

010289211-02, P = 0.551866 Days, E = 131.370407 Days

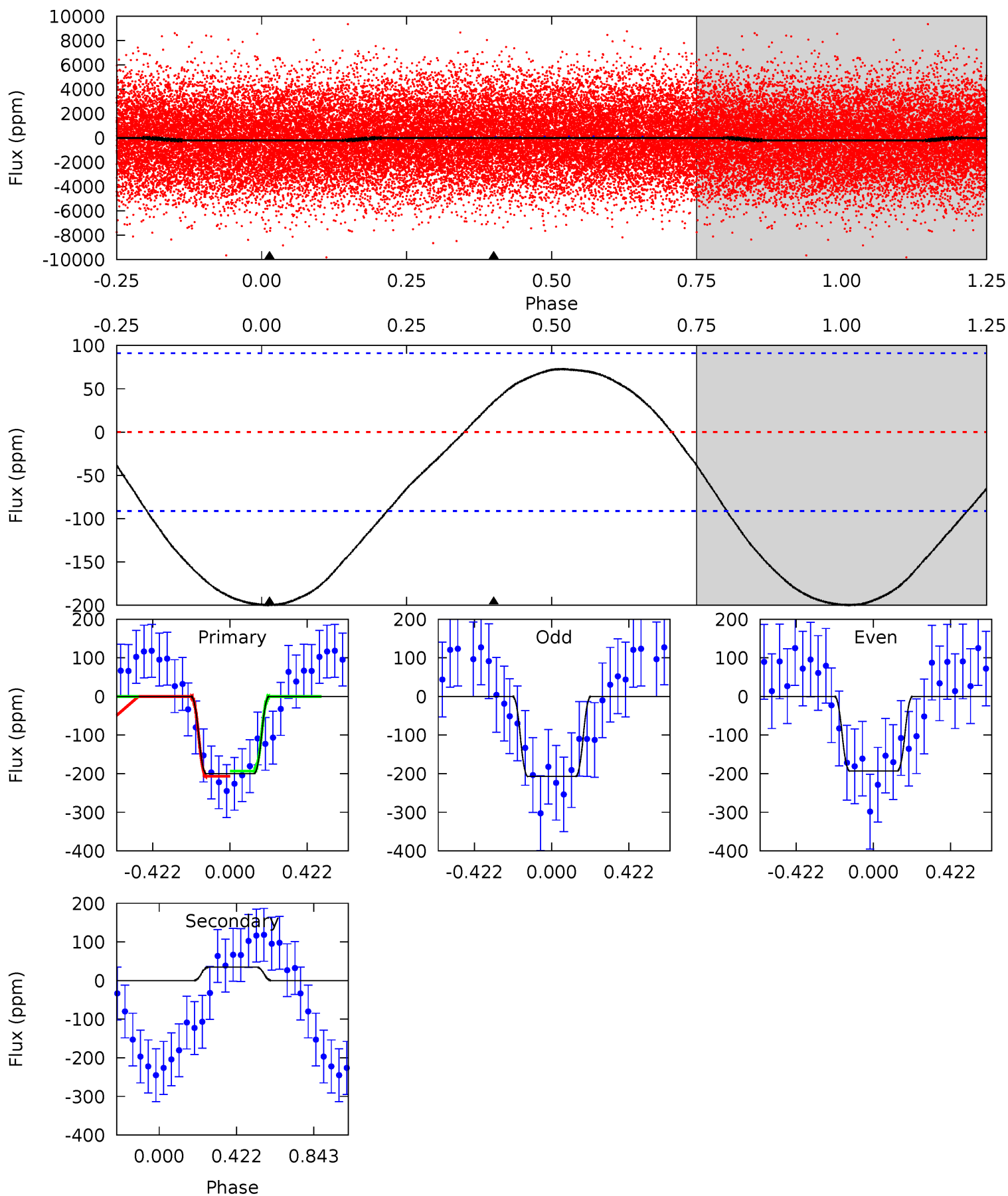
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	-7.03	0	0	4.21	0.65	2.55	18.1	18.1	-7.03	-7.03	0.48	0.67	0.36	2.23



Alt Model-Shift Uniqueness Test

010289211-02, $P = 0.551865$ Days, $E = 131.359216$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.33	-1.63	0	0	4.25	0.80	1.16	9.33	9.33	-1.63	-1.63	0.33	0.72	0.27	0.31



Stellar Parameters For KIC 010289211

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7895^{+71}_{-86}	$3.905^{+0.154}_{-0.077}$	$-0.100^{+0.100}_{-0.150}$	$2.549^{+0.240}_{-0.519}$	$1.902^{+0.023}_{-0.205}$	$0.162^{+0.121}_{-0.037}$
	+1%/-1%	+4%/-2%	+100%/-150%	+9%/-20%	+1%/-11%	+75%/-23%
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 010289211-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	56 ± 8	$3.56^{+0.72}_{-0.67}$	6079^{+195}_{-293}	-6406^{+369}_{-513}	$-0.618^{+0.198}_{-0.353}$
Alt.	35 ± 21	$4.09^{+0.74}_{-0.81}$	6071^{+190}_{-306}	-5748^{+509}_{-570}	$-0.299^{+0.197}_{-0.277}$

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

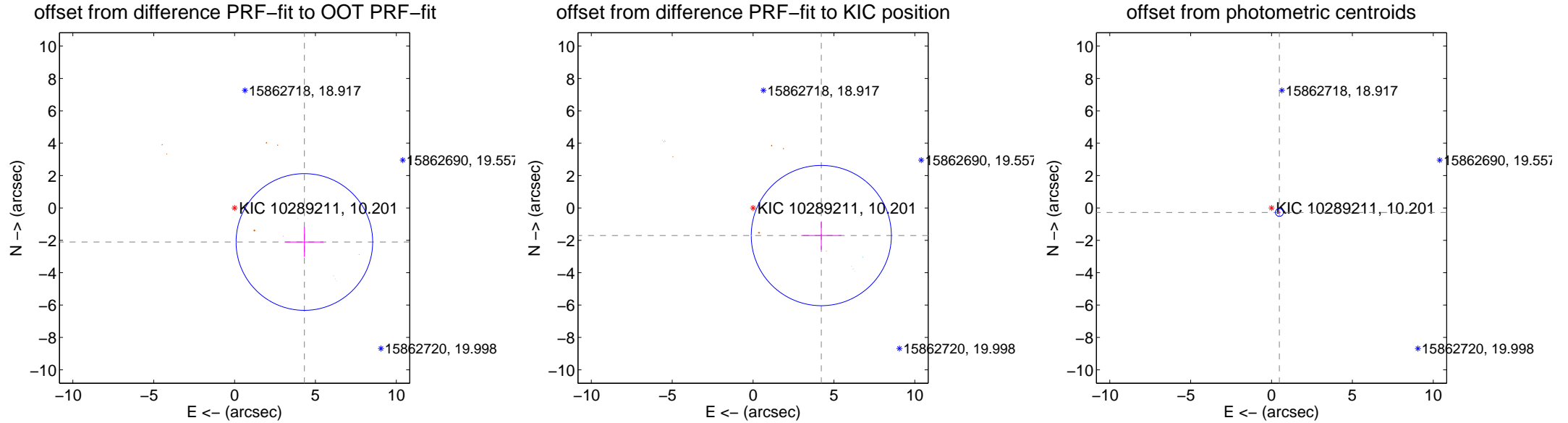
DV Centroid Data

Supplemental centroid analysis for 010289211-02. **Kepler magnitude: 10.20.** Transit SNR 16.34

There are 4 quarters with good PRF difference image offsets

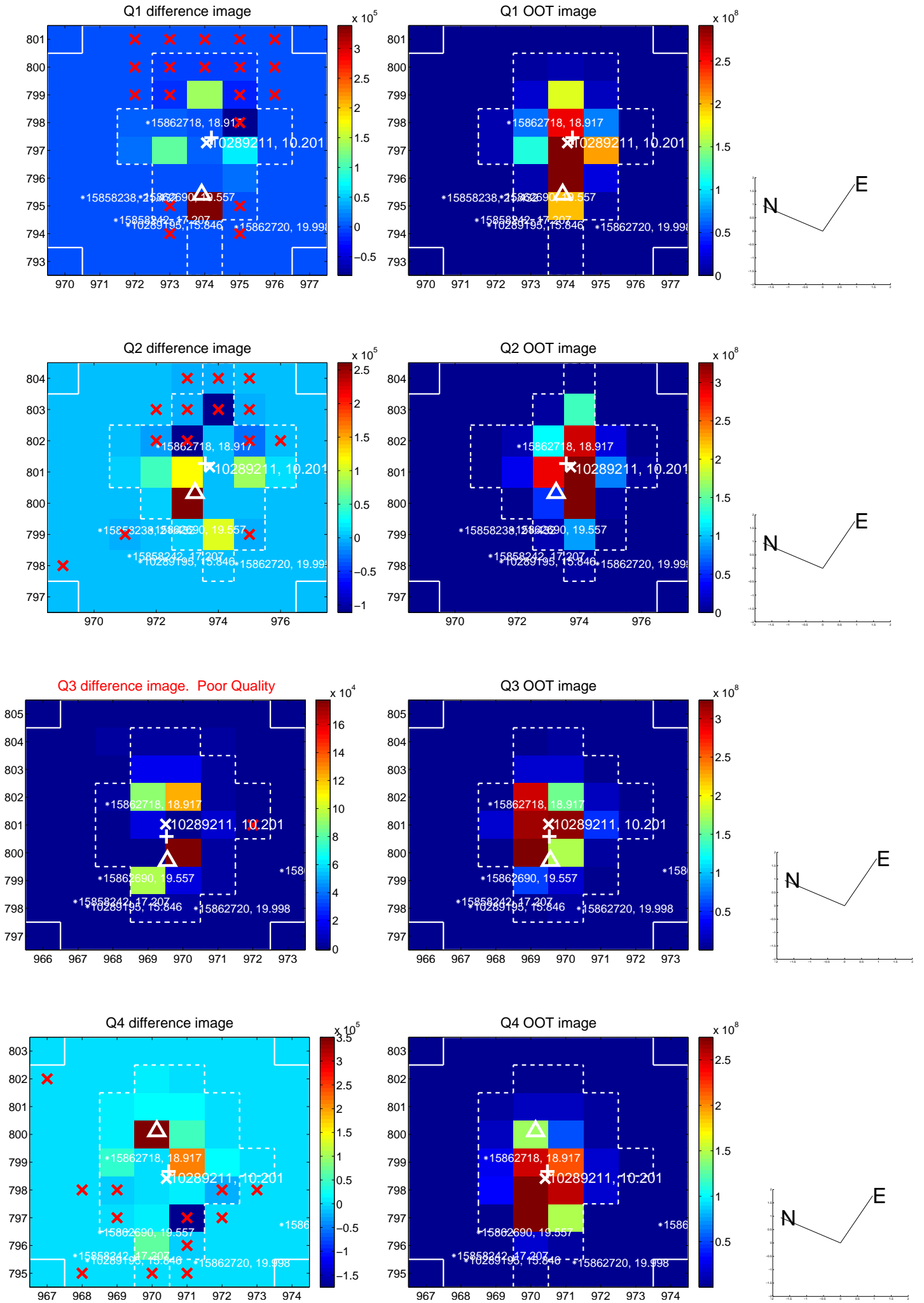
The direct PRF centroid is offset from the target star catalog position by about 0.78 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.801 ± 1.408	3.41	-4.317 ± 1.182	-2.103 ± 0.918
PRF-fit source offset from KIC position	4.552 ± 1.445	3.15	-4.221 ± 1.242	-1.705 ± 0.877
photometric centroid source offset	0.56 ± 0.08	6.88	-0.49 ± 0.09	-0.28 ± 0.06

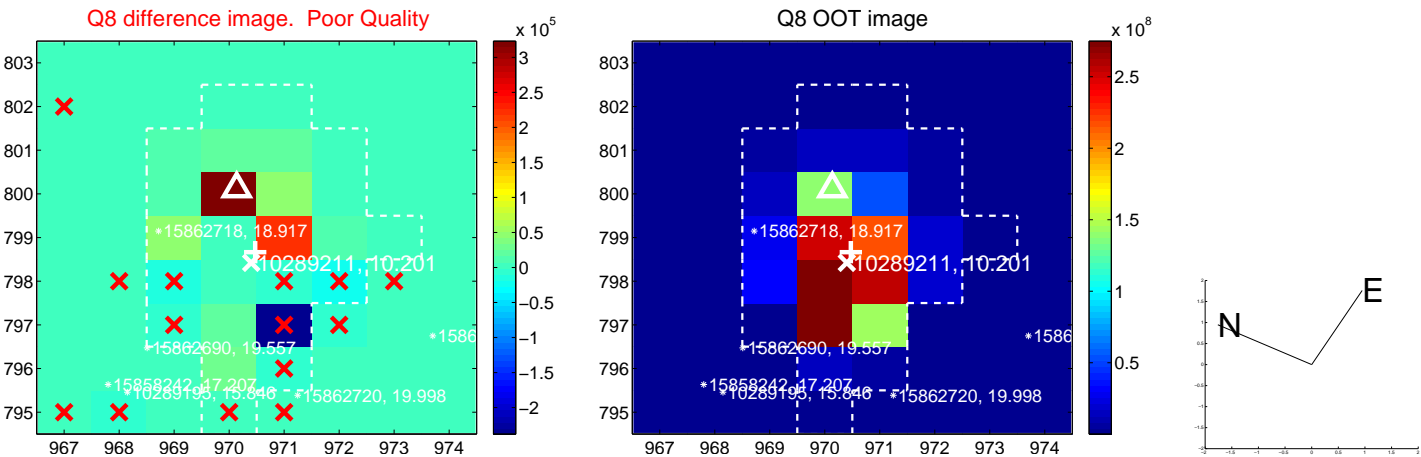
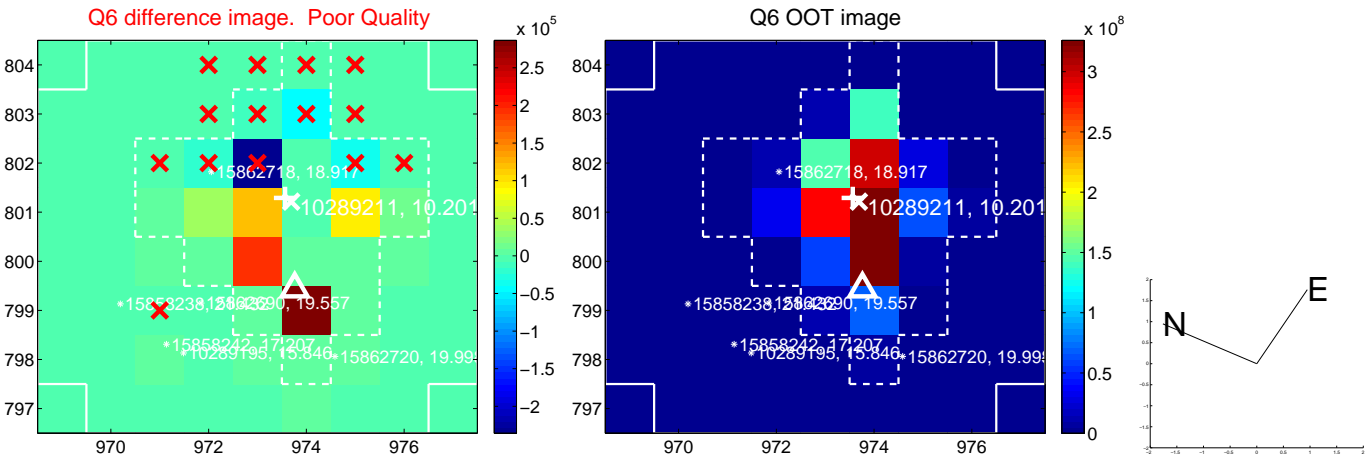
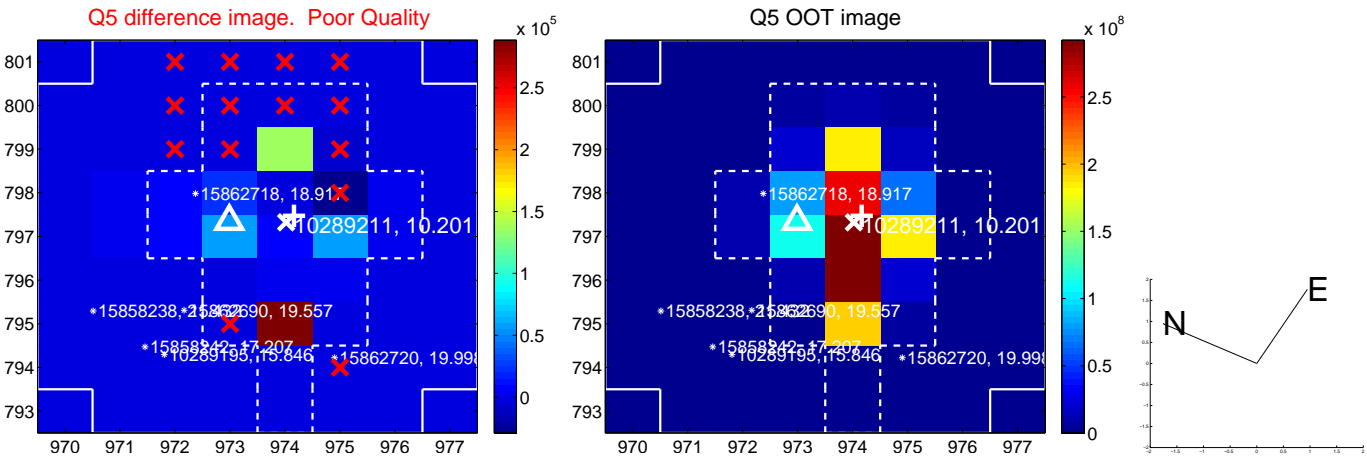


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

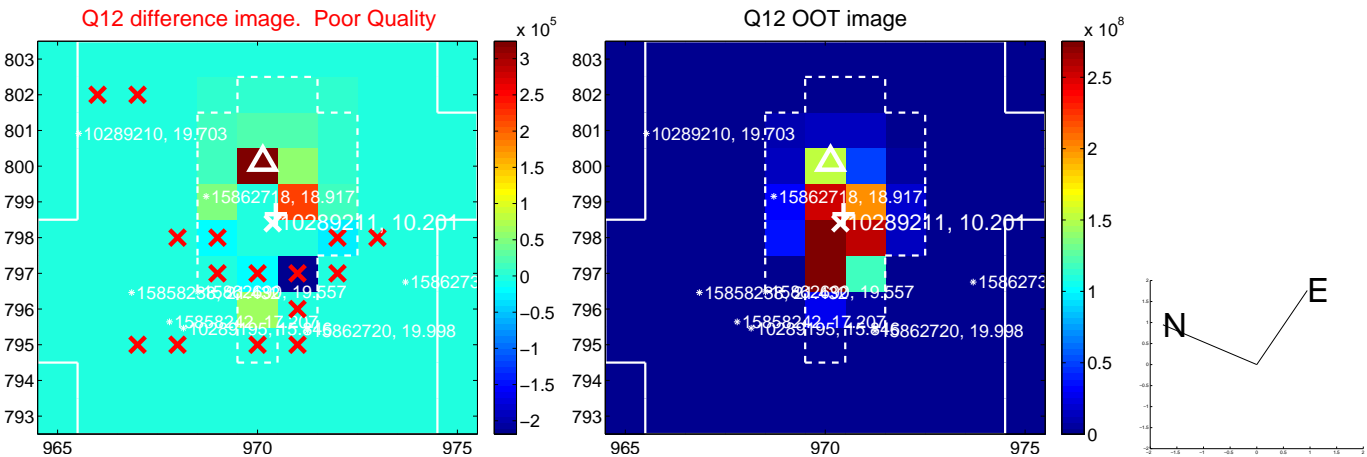
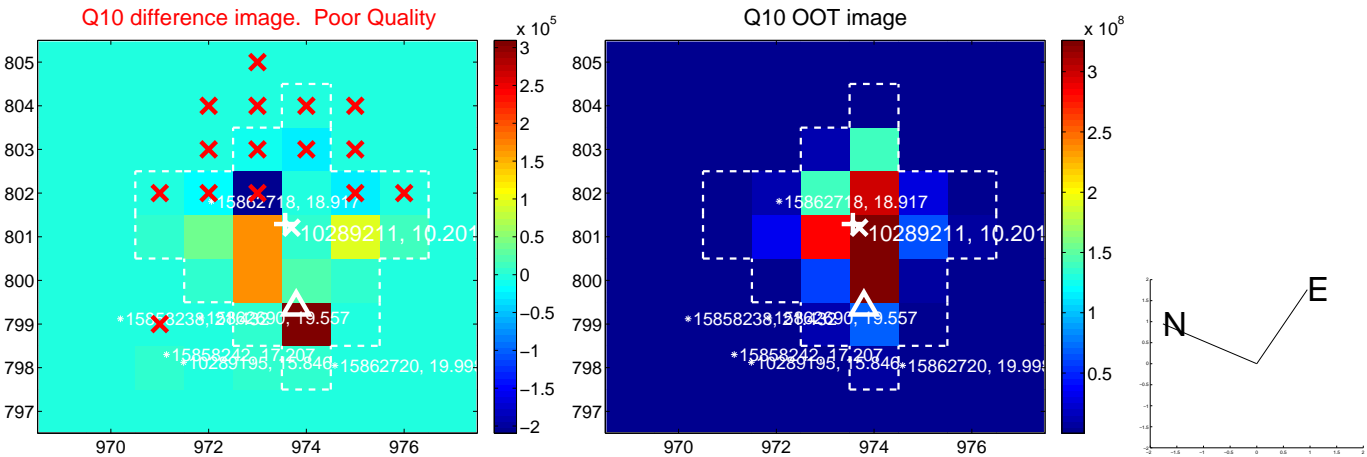
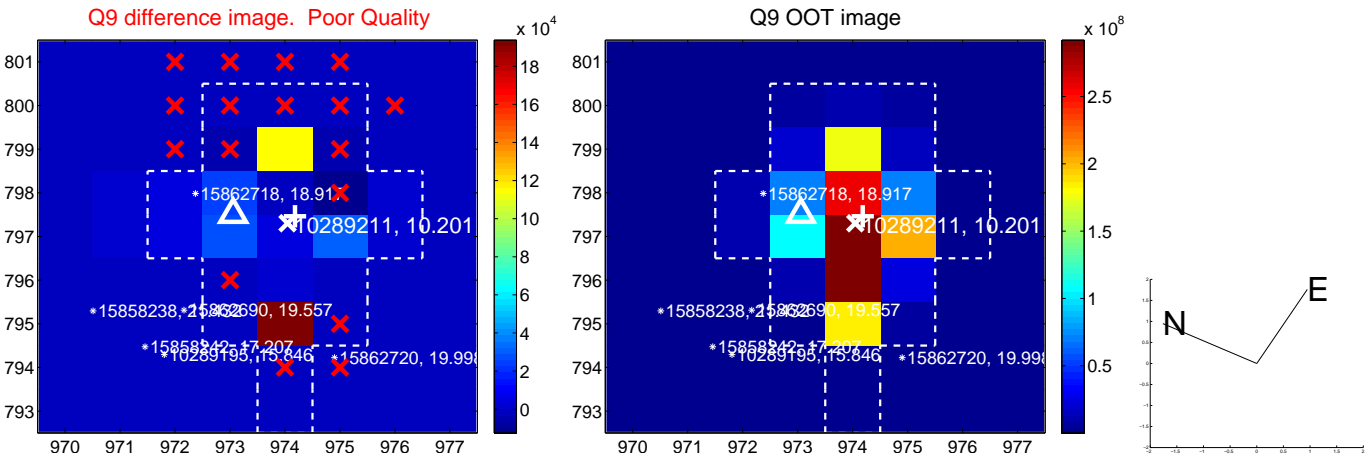
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



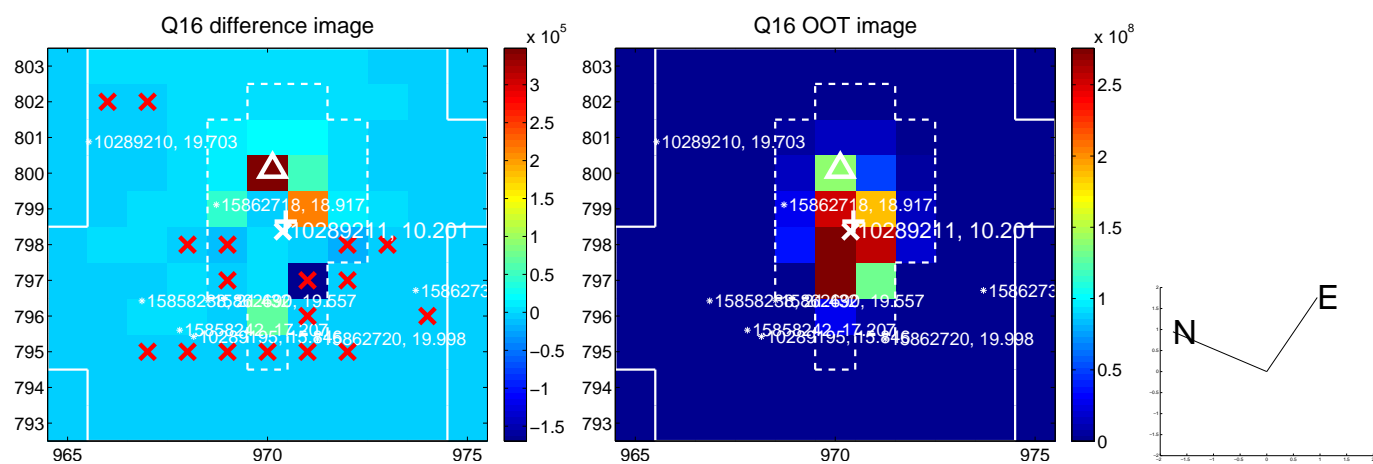
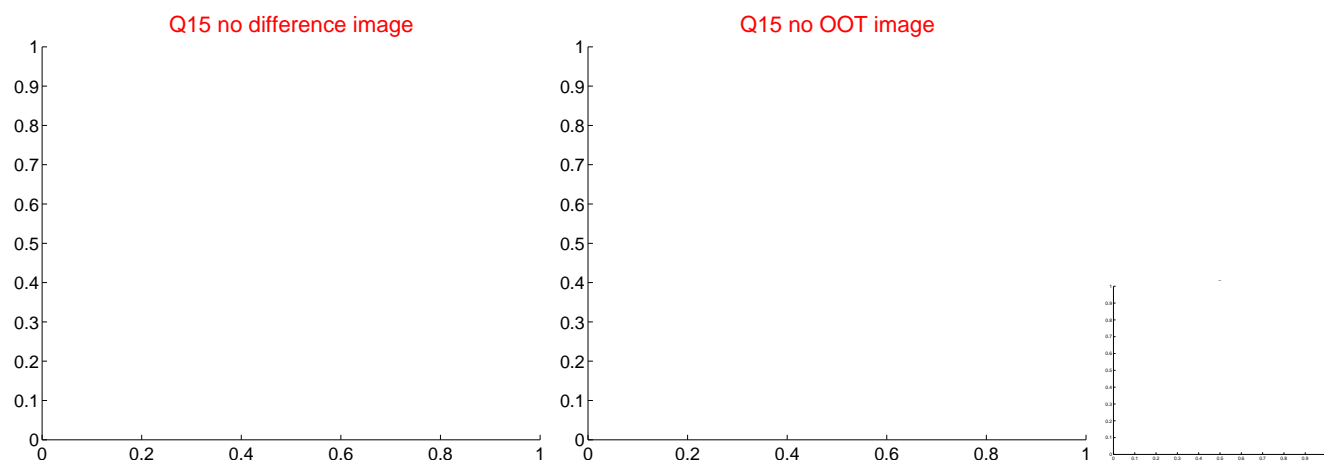
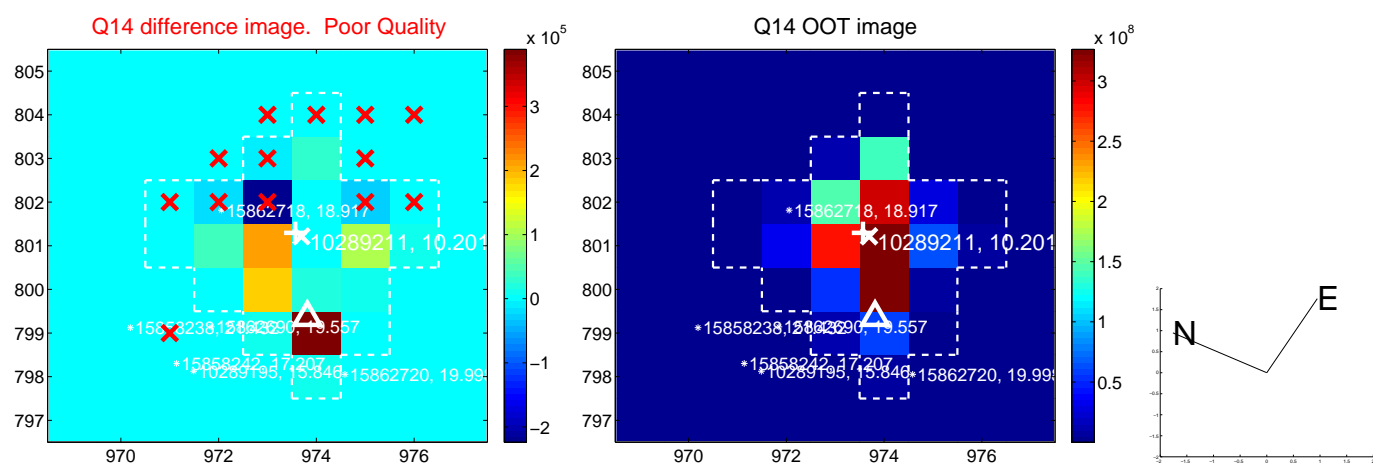
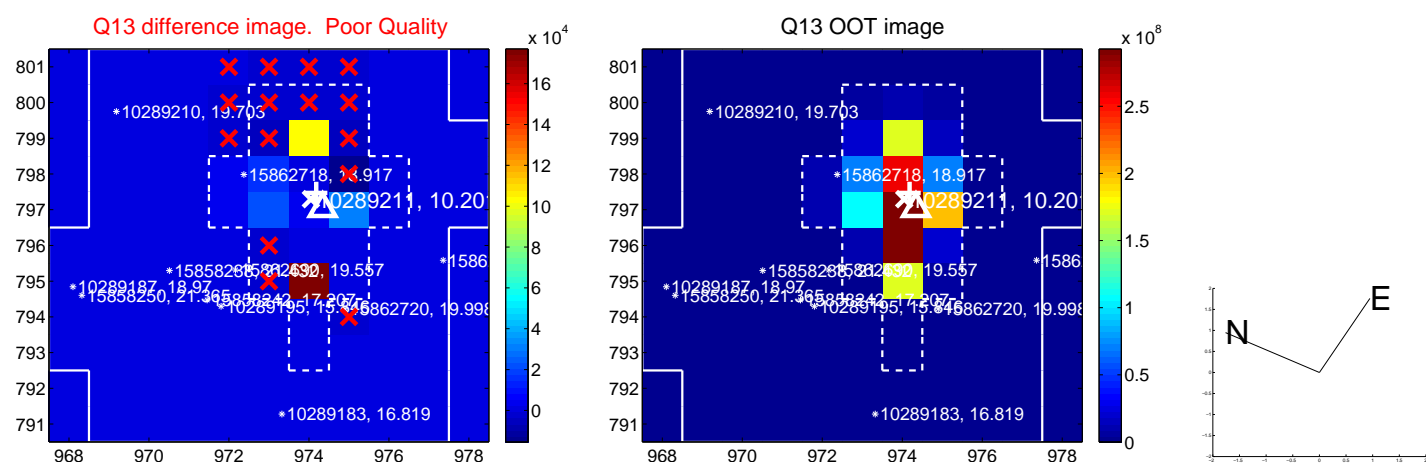
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



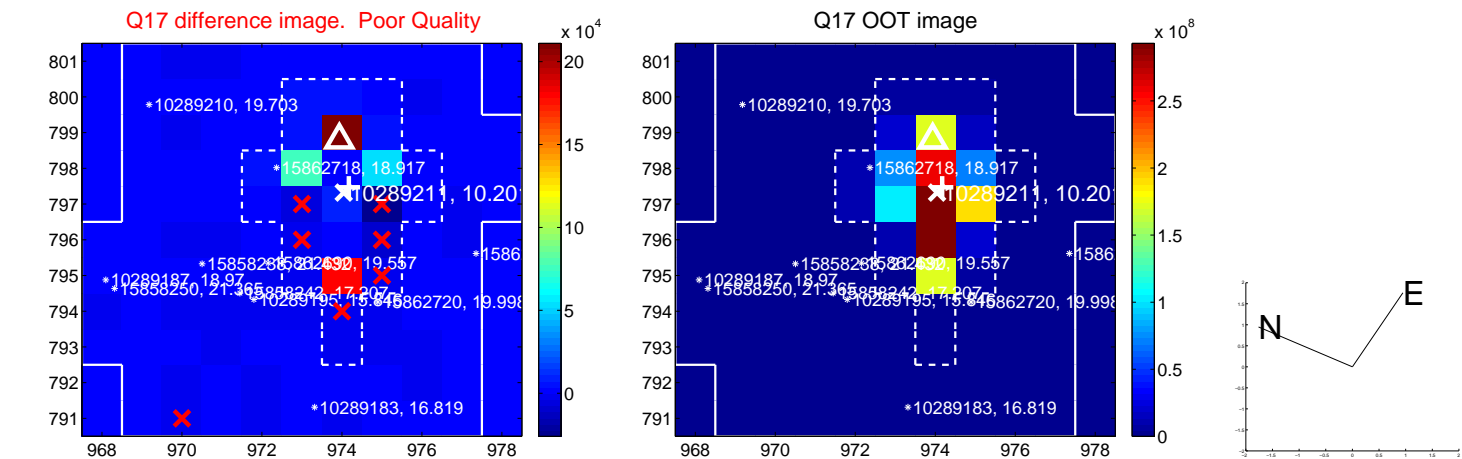
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



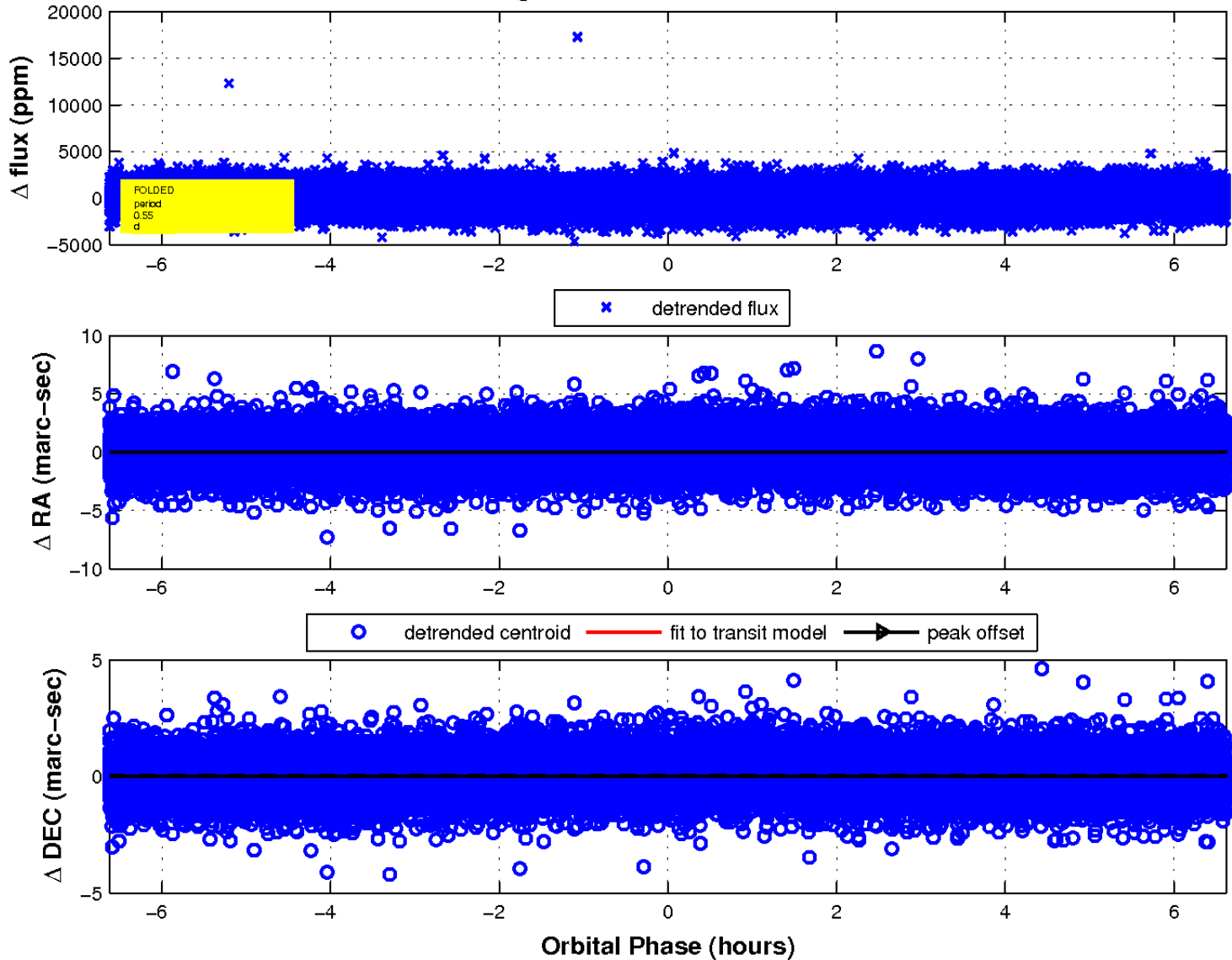
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

