

KIC 007708215

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})
007708215-01	OBS	0894.01	7.942607	134.812055	1039.7	6.339	69.8	42.9	0.93	5811	3.68	140.72
007708215-02	OBS	No	3.971291	134.813362	635.3	6.567	27.4	25.3	0.93	5811	3.67	354.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007708215-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007708215-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 007708215-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
007708215-01	7708215	3666.01	7708193	1:1	11.1	3	0	15.99	15.26	96.91	Direct-PRF	0	0.13	0.18

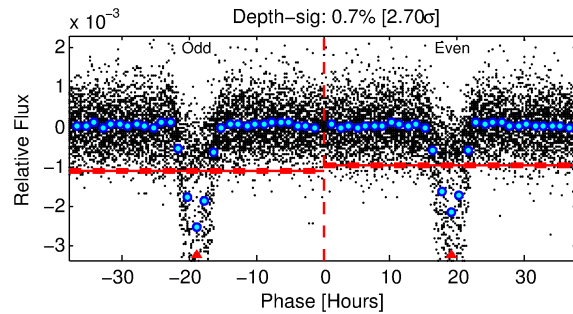
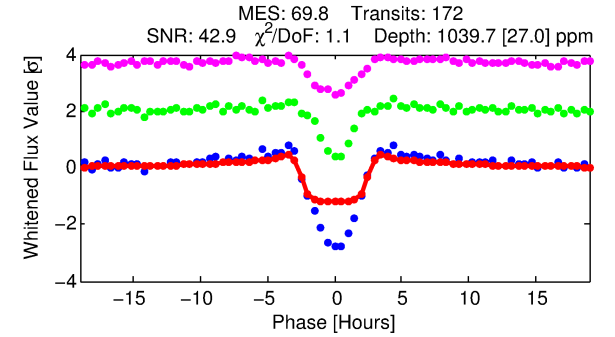
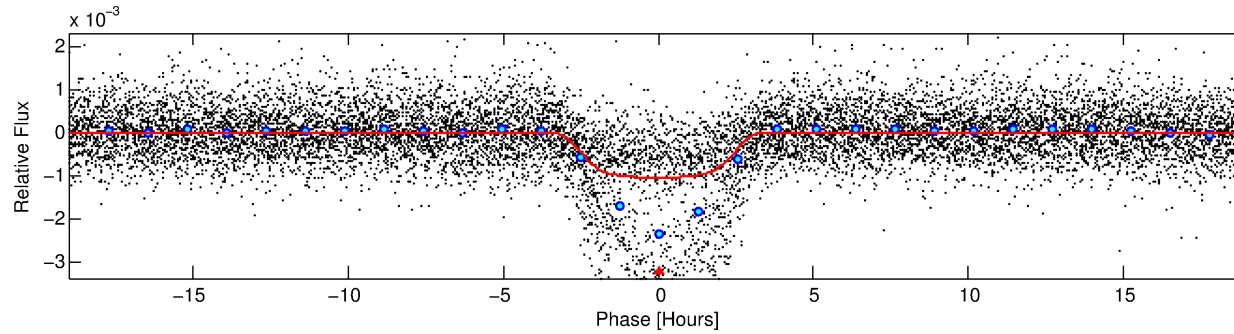
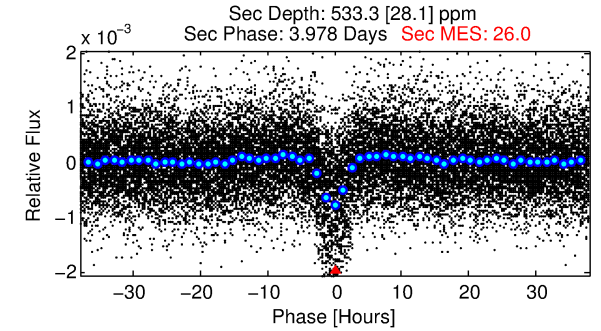
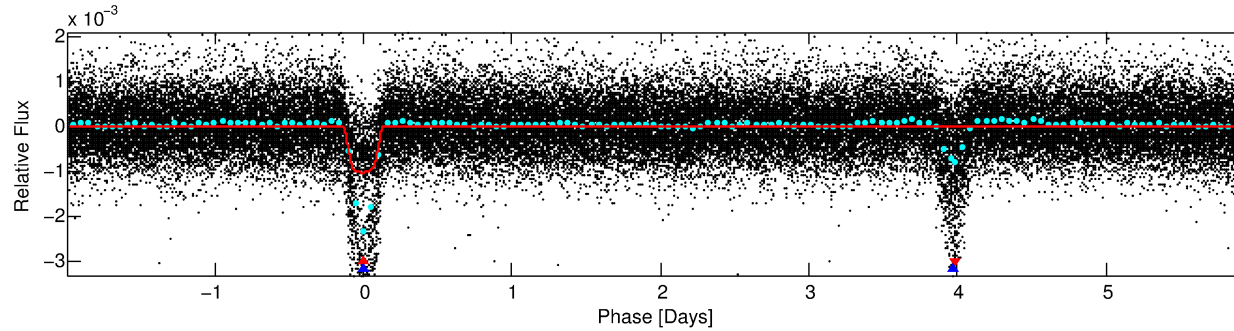
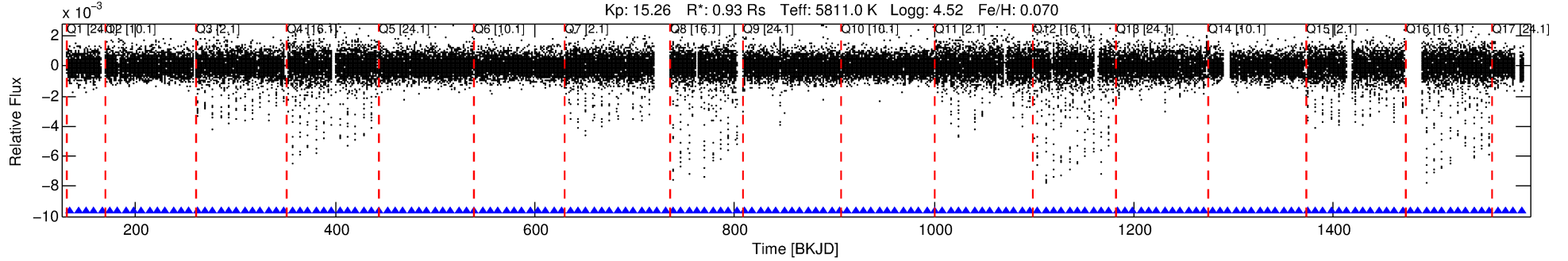
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7708215 Candidate: 1 of 2 Period: 7.943 d

KOI: K00894.01 Corr: 0.979

Kp: 15.26 R*: 0.93 Rs Teff: 5811.0 K Logg: 4.52 Fe/H: 0.070



DV Fit Results:

Period = 7.94261 [0.00003] d
Epoch = 134.8121 [0.0025] BKJD
Rp/R* = 0.0364 [0.0007]
a/R* = 4.49 [0.25]
b = 0.93 [0.01]
Seff = 140.72 [59.01]
Teq = 878 [92] K
Rp = 3.68 [1.15] Re
a = 0.0789 [0.0212] AU
Ag = 134.88 [54.42] [2.46σ]
Teffp = 4627 [171] K [19.30σ]

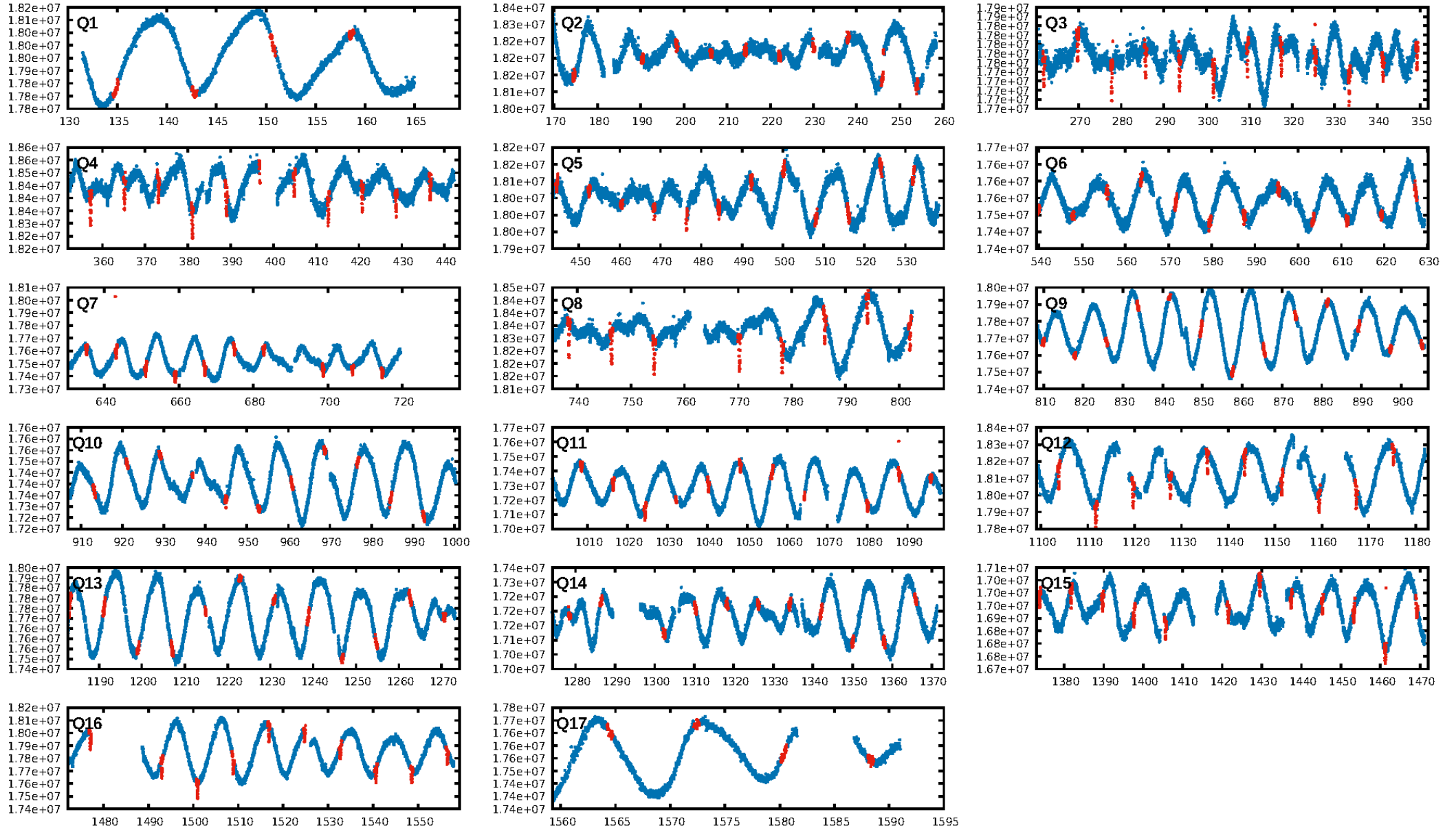
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.44σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [164/164]
GhostDiagnostic-chr: -0.1714
Centroid-sig: 0.0%
Centroid-so: 28.696 arcsec [75.44σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/17]

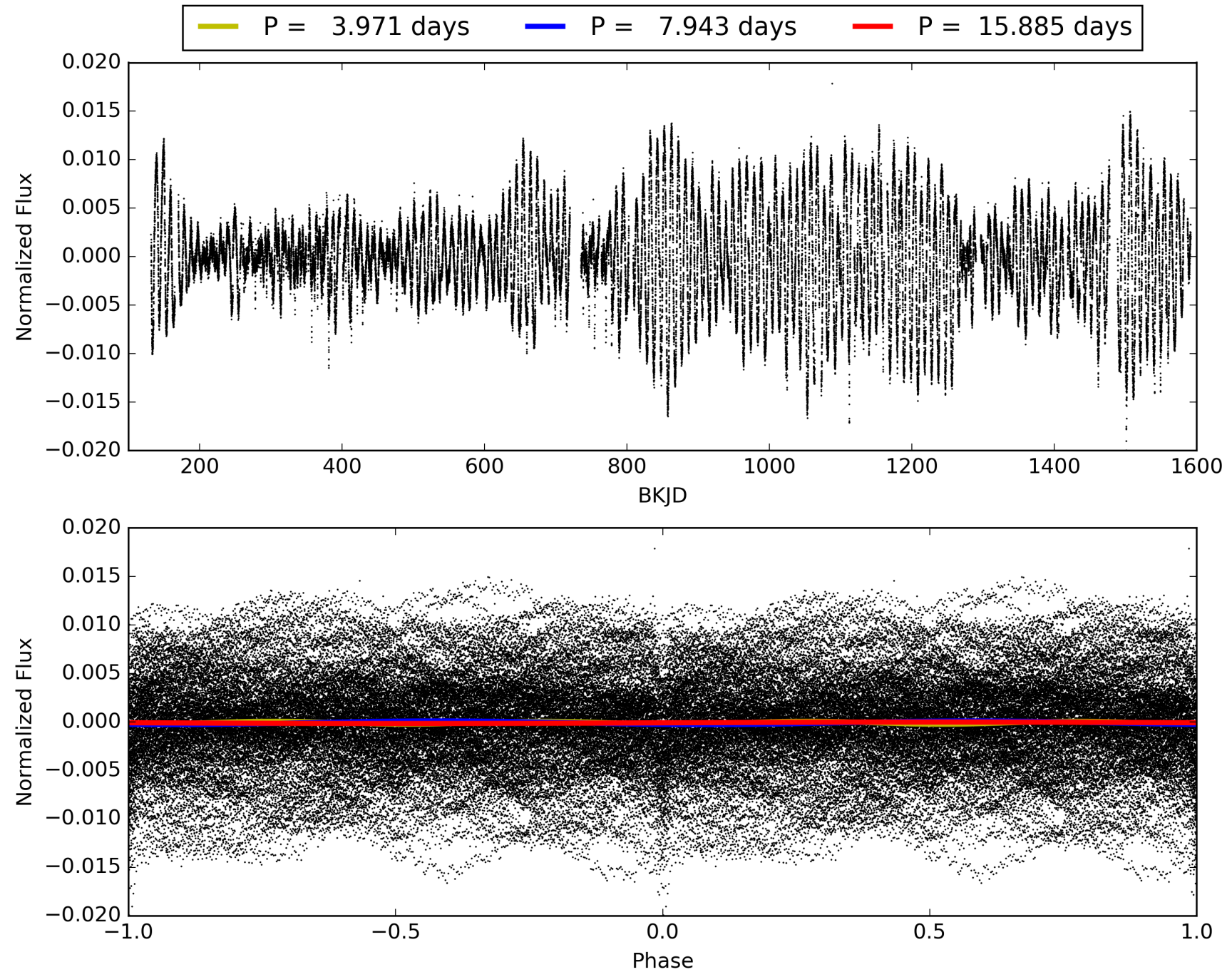
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:11:14 Z

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

TCE 007708215-01, PDC Light Curves

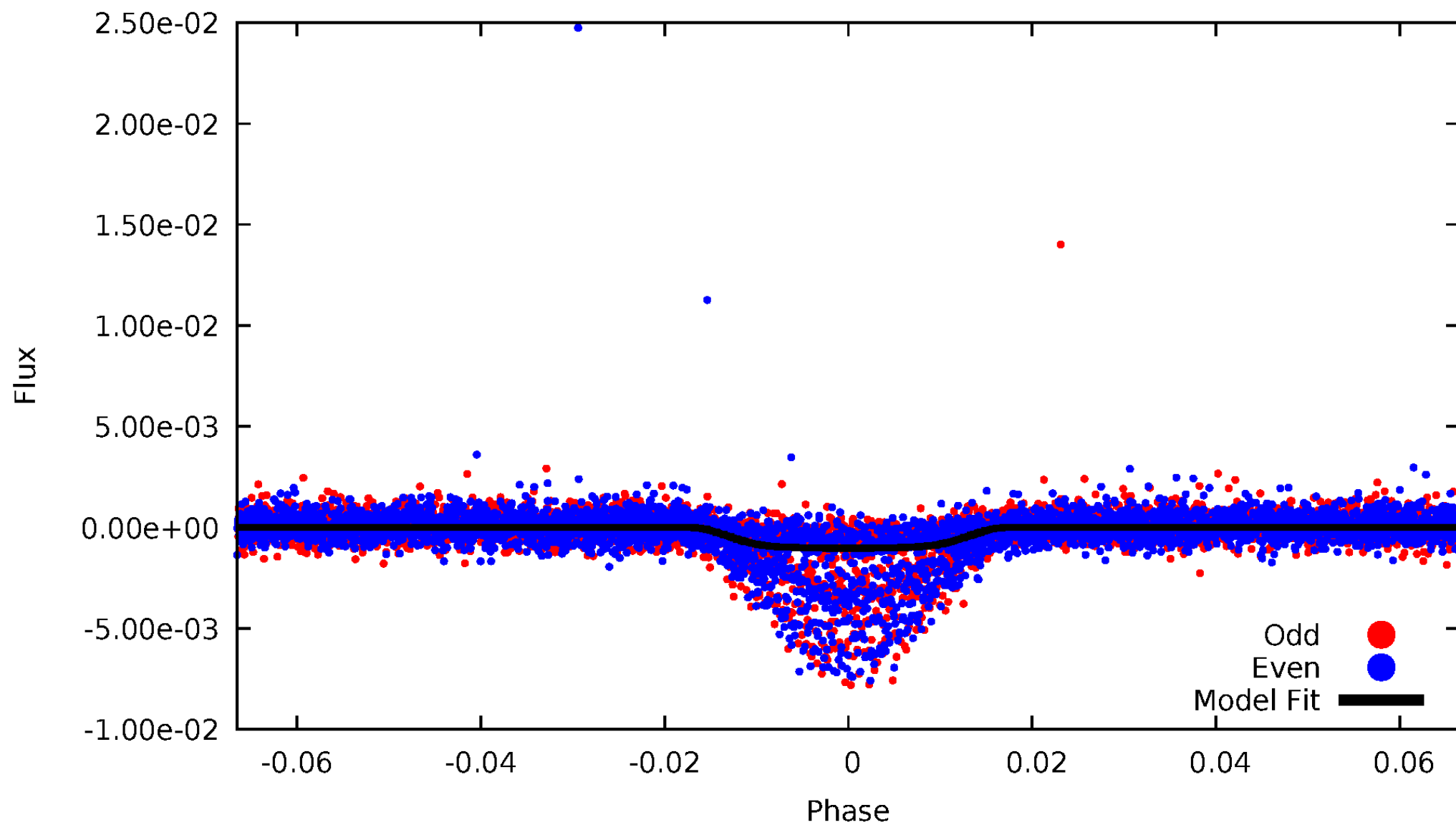


TCE 007708215-01



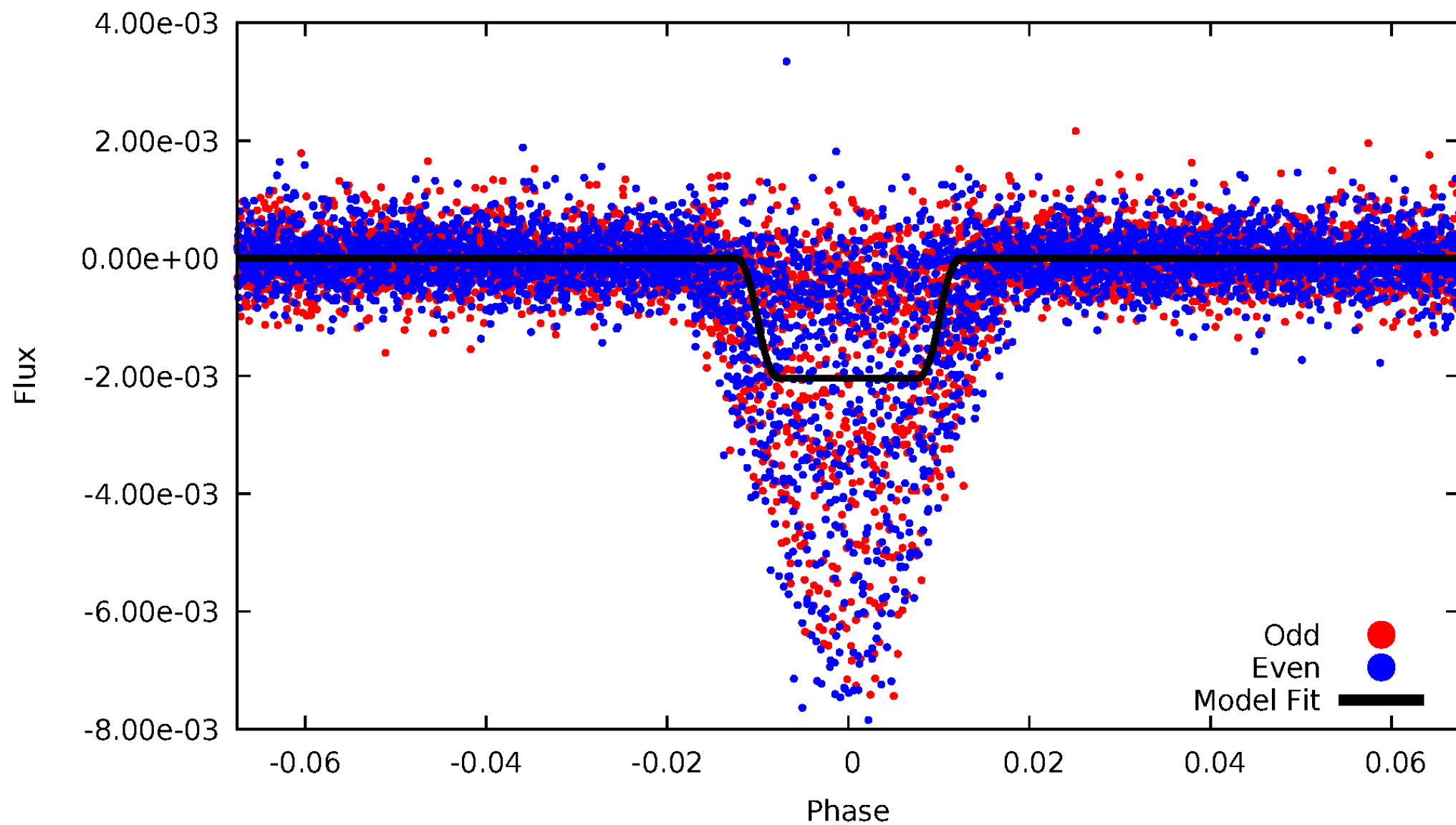
DV Odd/Even

TCE 007708215-01



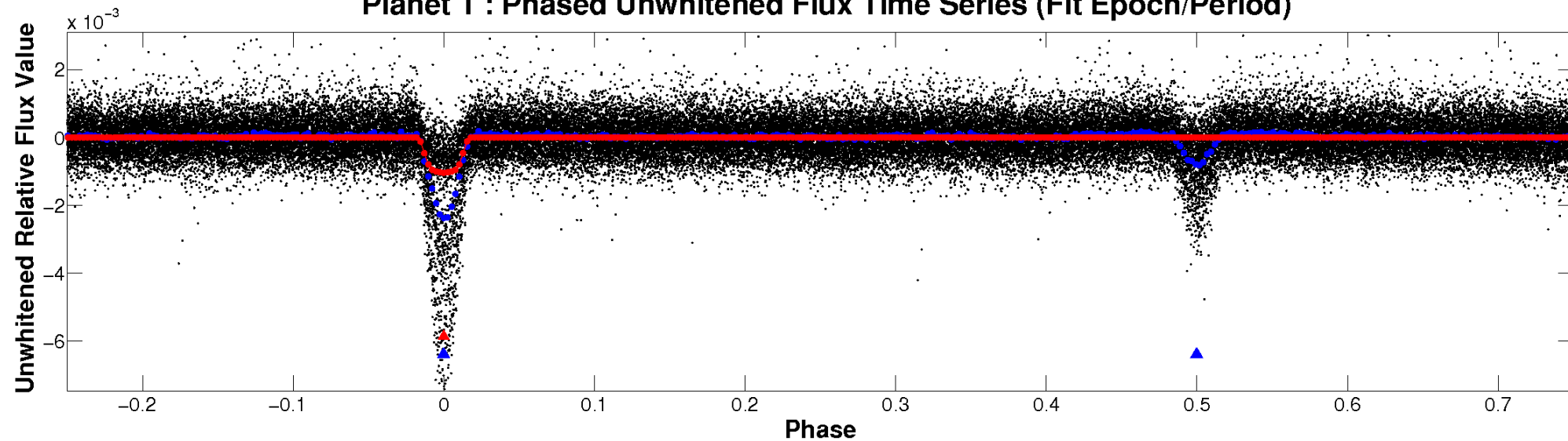
ALT Odd/Even

TCE 007708215-01

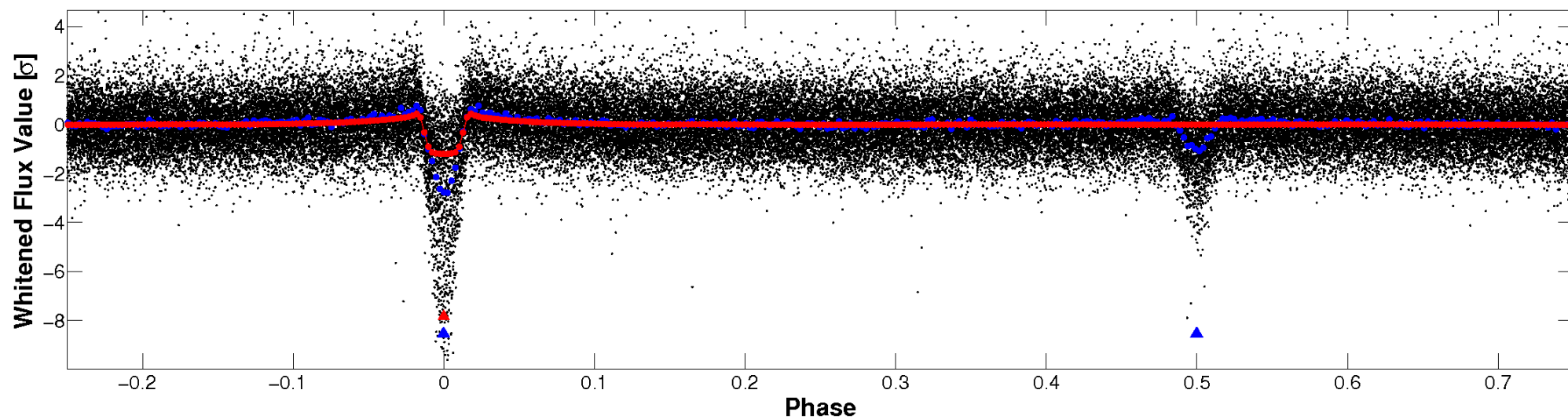


Non-Whitened Vs. Whitened Light Curve

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

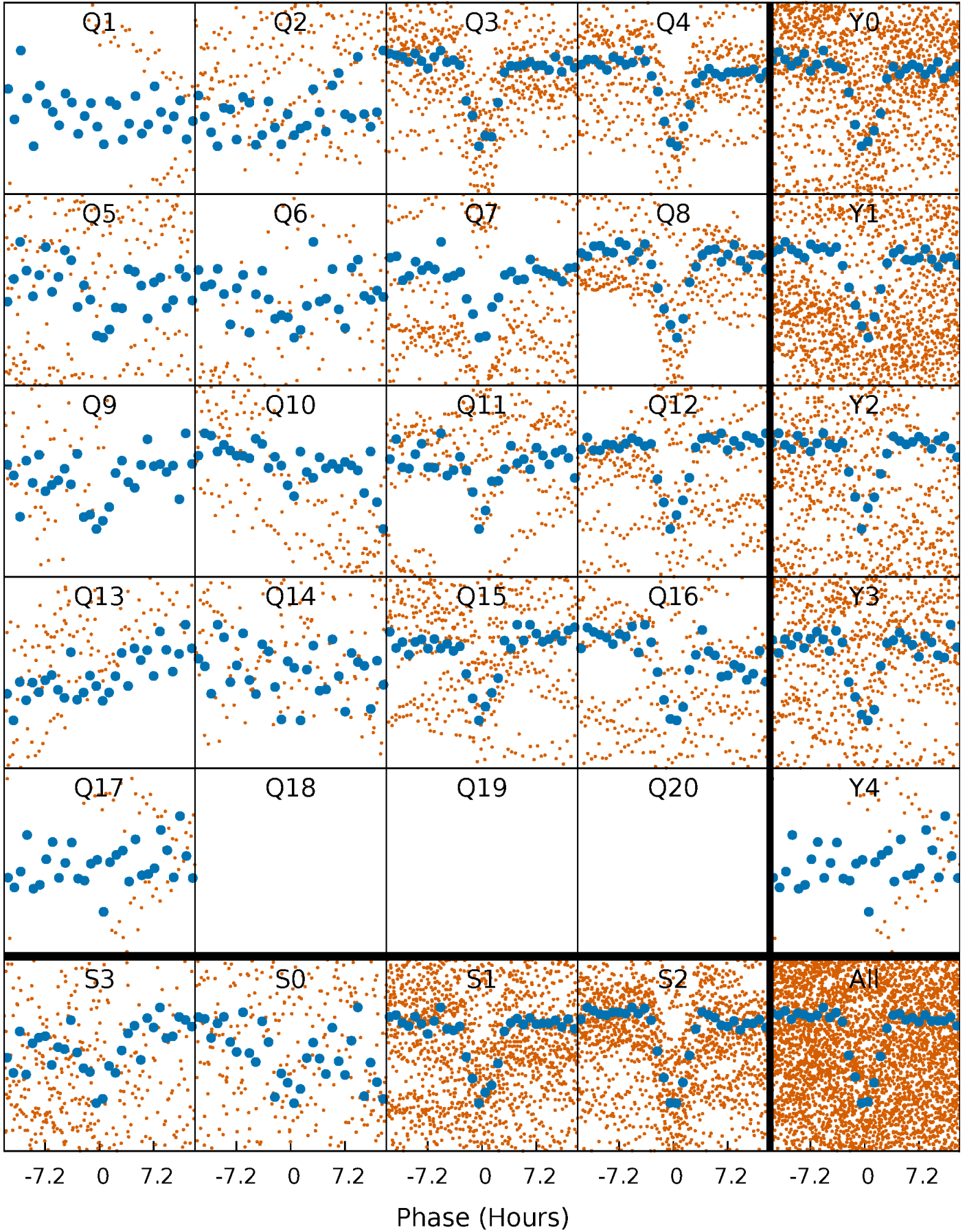


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



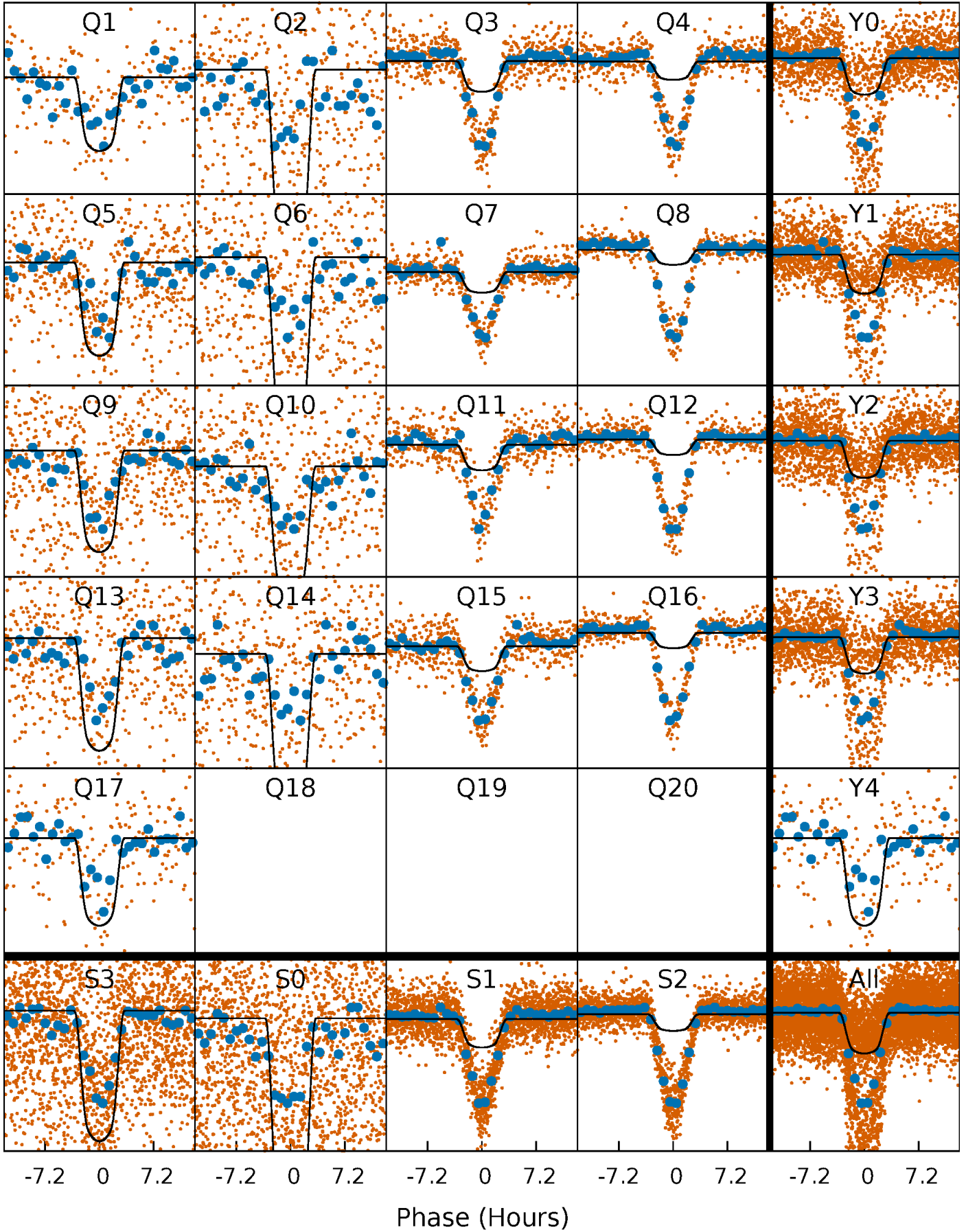
PDC Quarter-Phased Transit Curves

TCE 007708215-01 P= 7.942607 Days $T_0=134.812054$ (BKJD)



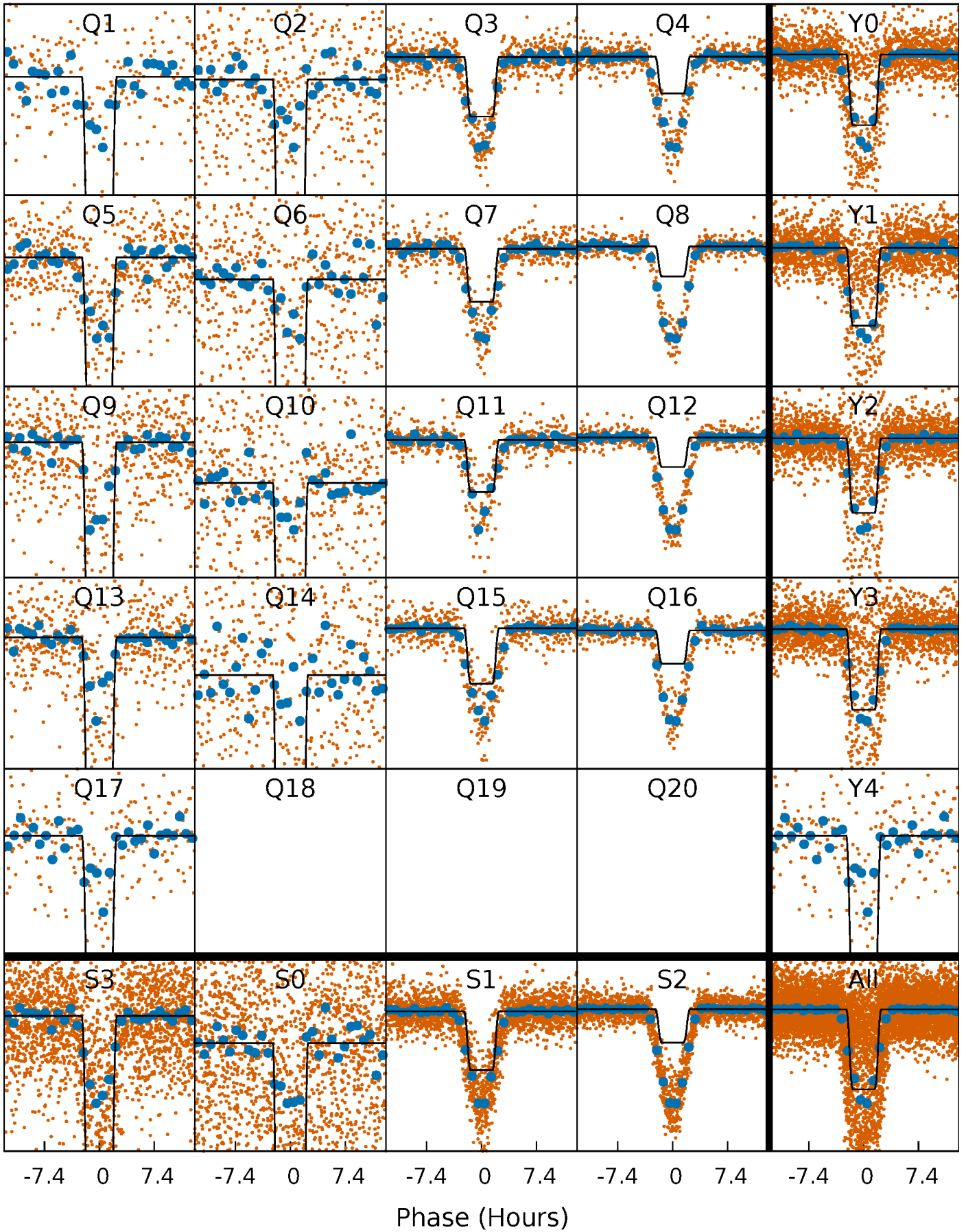
DV Quarter-Phased Transit Curves

TCE 007708215-01 P= 7.942607 Days $T_0=134.812054$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

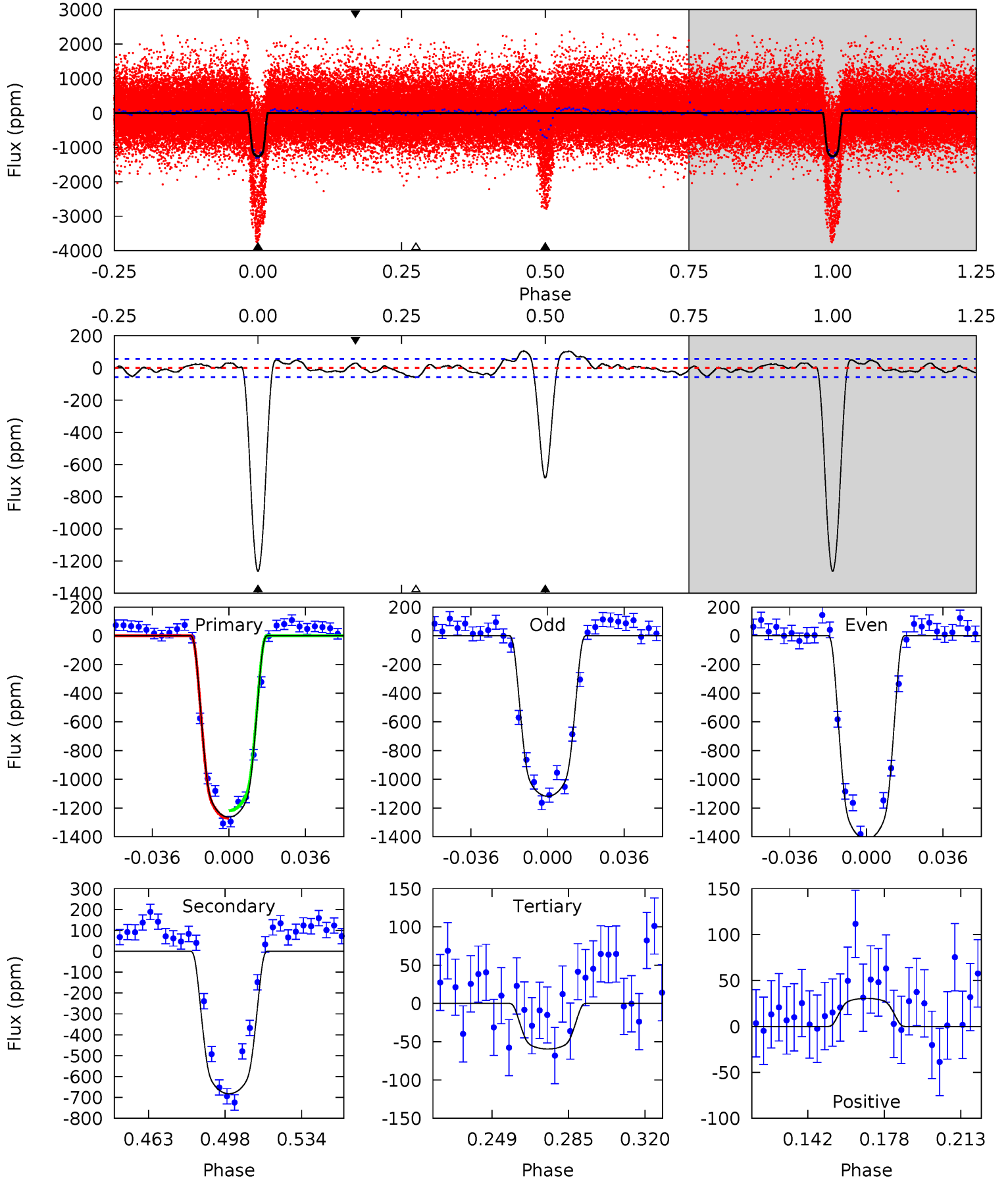
TCE 007708215-01 P= 7.942542 Days $T_0=134.818704$ (BKJD)



DV Model-Shift Uniqueness Test

007708215-01, P = 7.942607 Days, E = 126.869447 Days

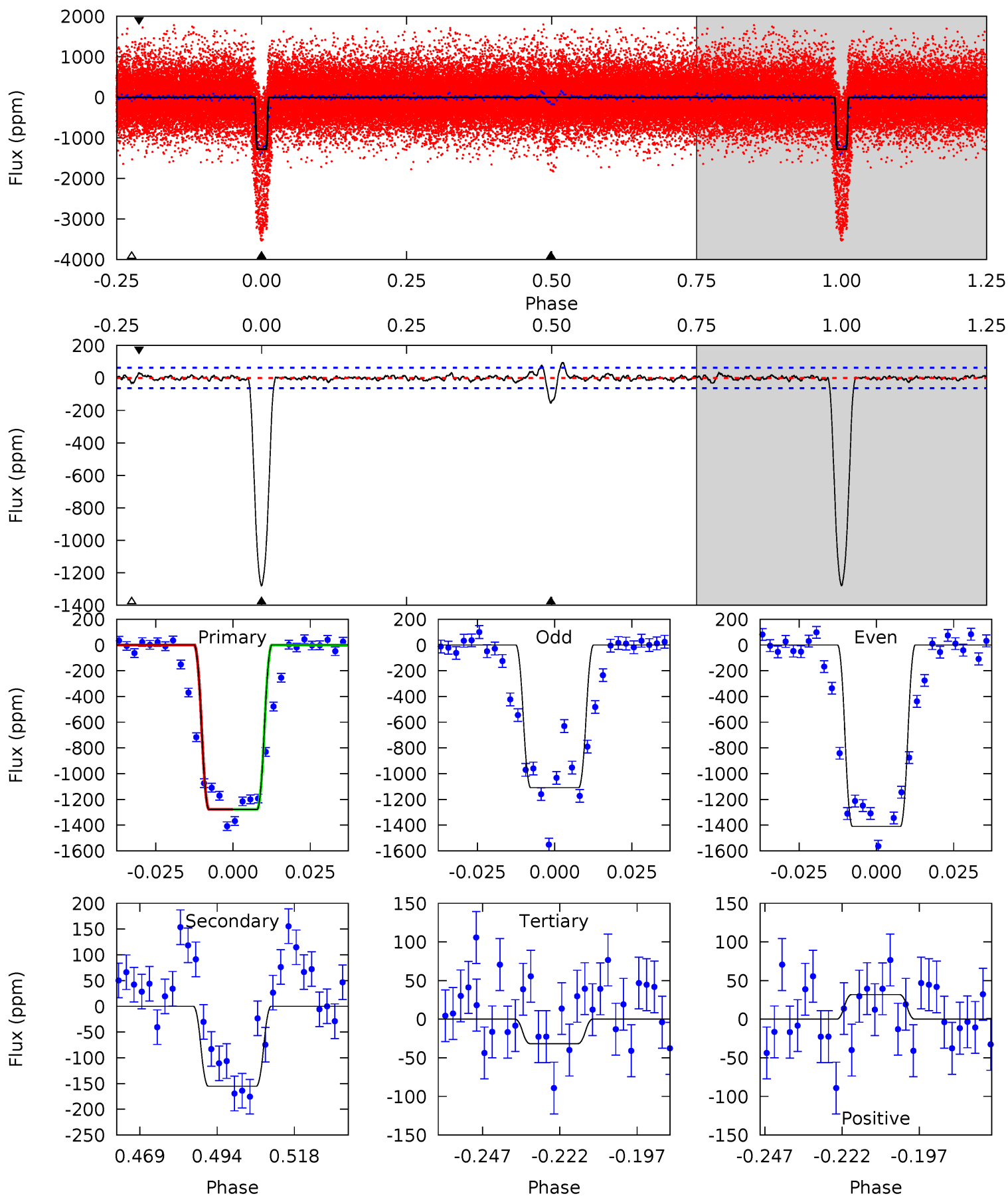
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
106.2	57.3	5.00	2.56	4.78	2.10	2.64	101.2	103.6	52.3	54.8	12.5	1.91	0.08	2.21



Alt Model-Shift Uniqueness Test

007708215-01, P = 7.942542 Days, E = 126.876162 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
99.1	12.0	2.45	2.47	4.85	2.25	0.86	96.6	96.6	9.56	9.55	11.5	1.60	0.07	0.01



Stellar Parameters For KIC 007708215

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5811^{+157}_{-192}	$4.521^{+0.039}_{-0.221}$	$0.070^{+0.250}_{-0.300}$	$0.926^{+0.289}_{-0.096}$	$1.036^{+0.113}_{-0.139}$	$1.839^{+0.391}_{-0.987}$
	+3%/-3%	+1%/-5%	+357%/-429%	+31%/-10%	+11%/-13%	+21%/-54%
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 007708215-01 / KOI 0894.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-682 ± 12	$3.81^{+0.64}_{-0.31}$	1259^{+97}_{-60}	4997^{+134}_{-139}	158^{+23}_{-38}
Alt.	-155 ± 13	$4.74^{+0.81}_{-0.39}$	1260^{+99}_{-61}	3522^{+79}_{-92}	23^{+5}_{-6}

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

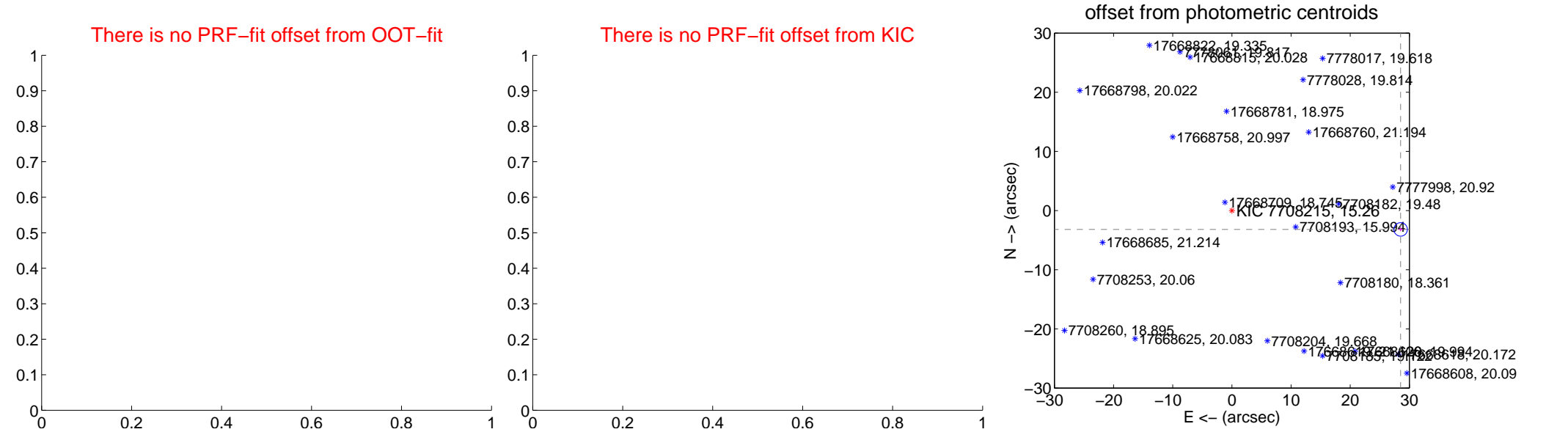
DV Centroid Data

Supplemental centroid analysis for 007708215-01. Kepler magnitude: 15.26. Transit SNR 42.94

There are 0 quarters with good PRF difference image offsets

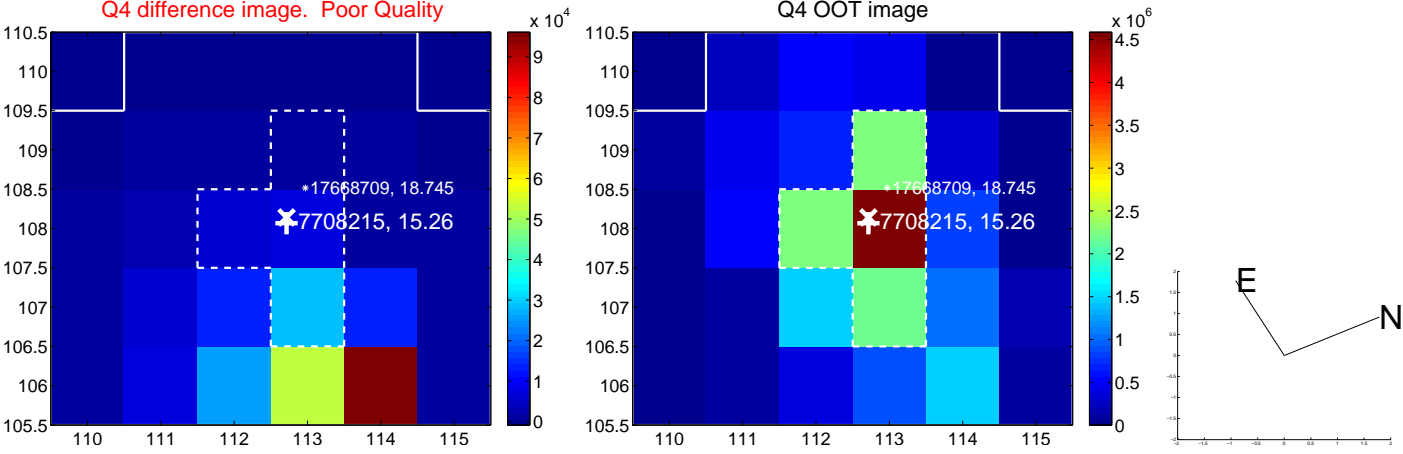
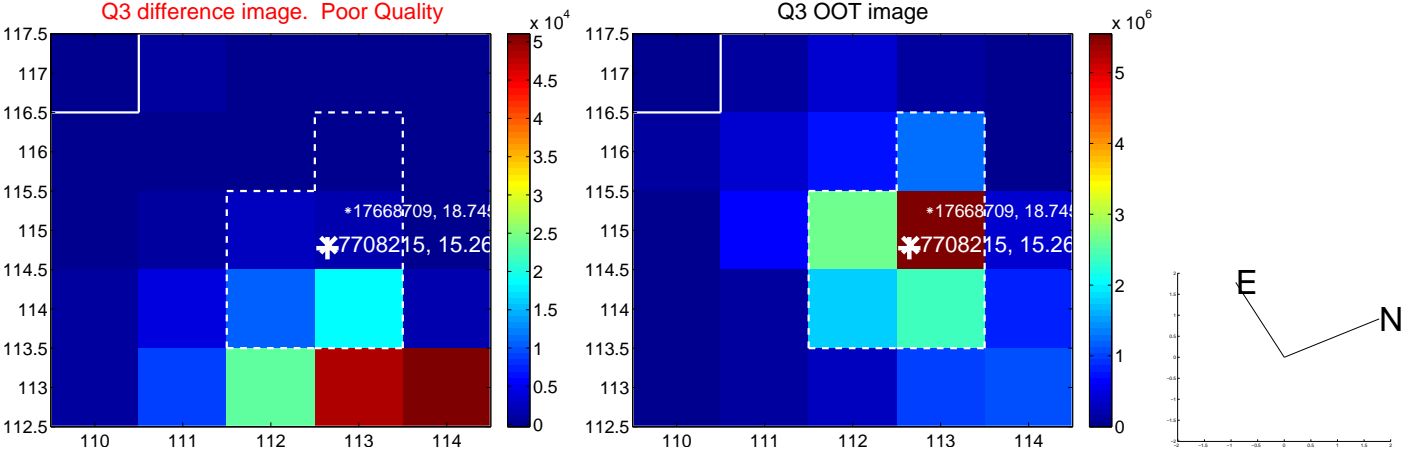
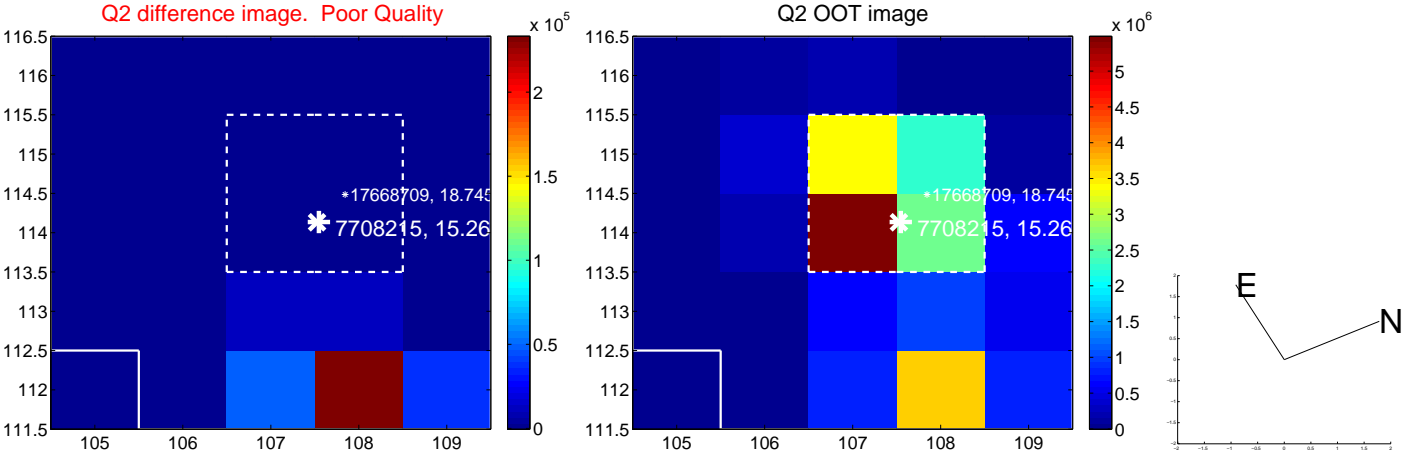
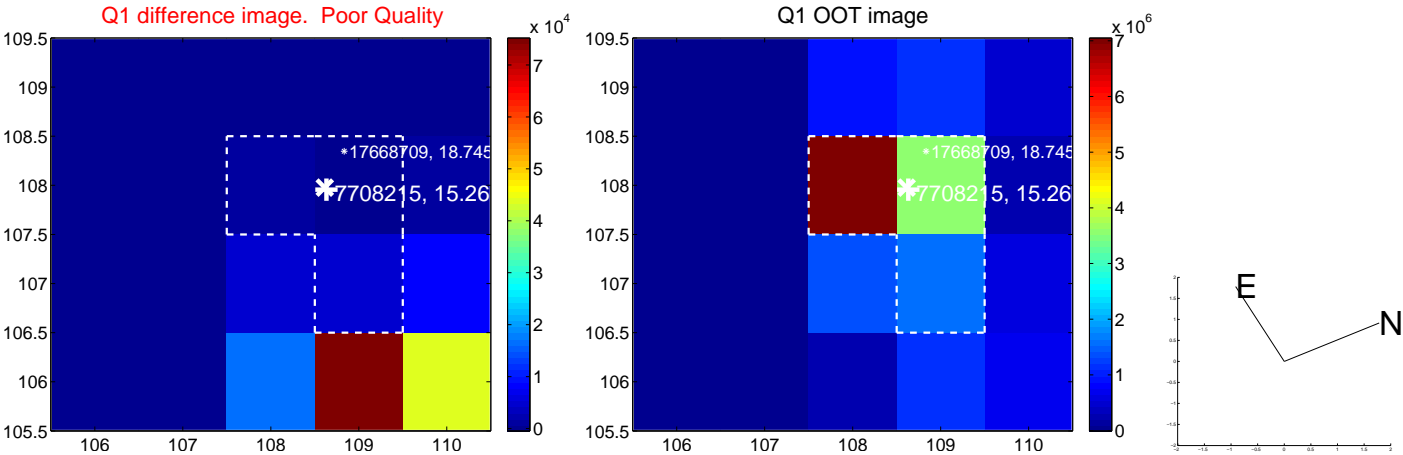
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	28.70 ± 0.38	75.44	-28.52 ± 0.38	-3.19 ± 0.32

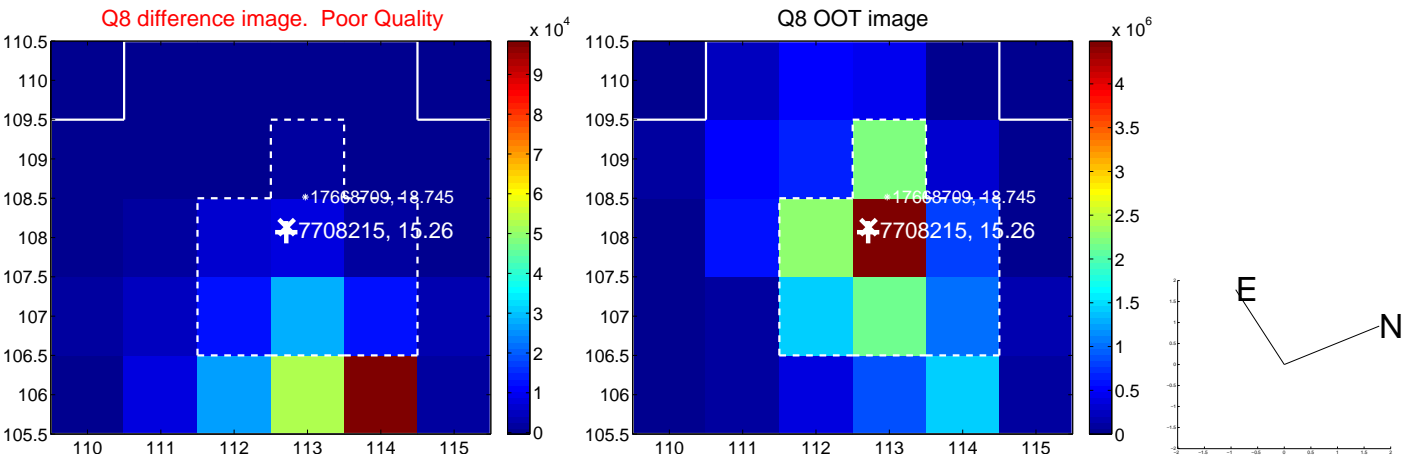
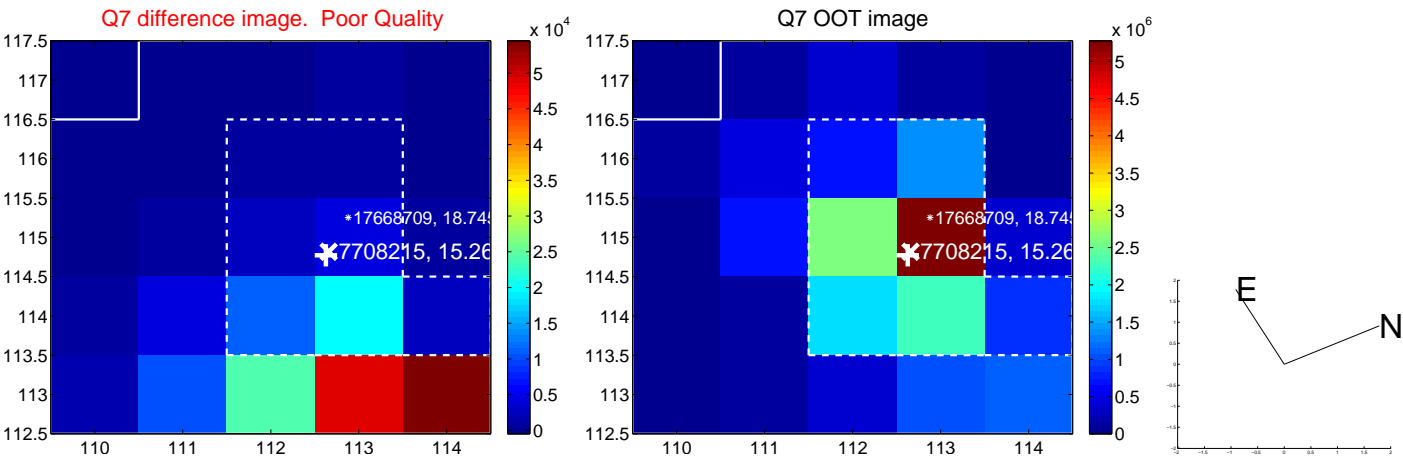
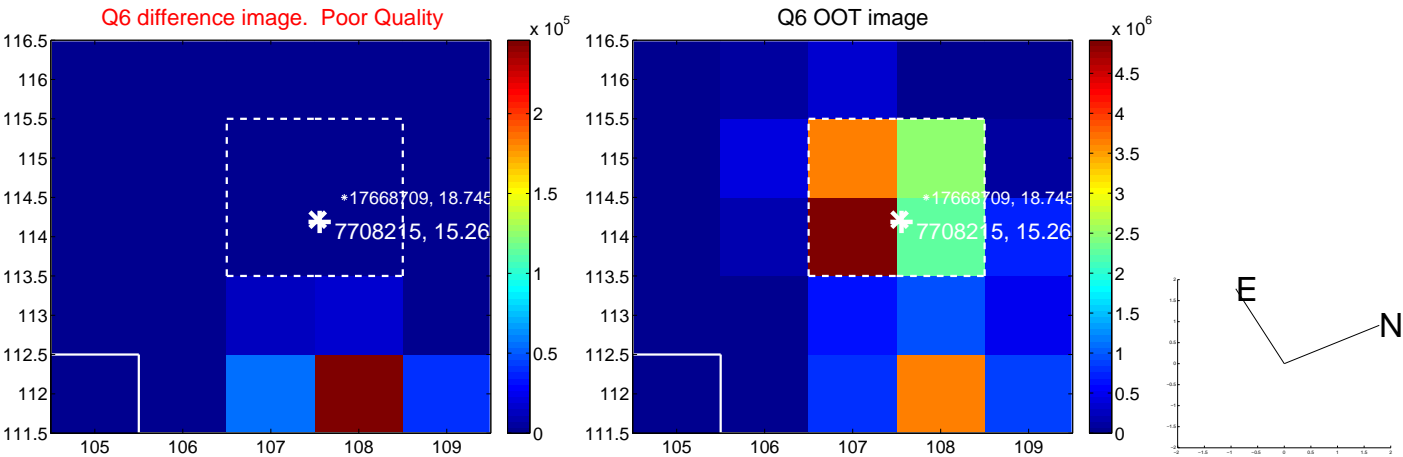
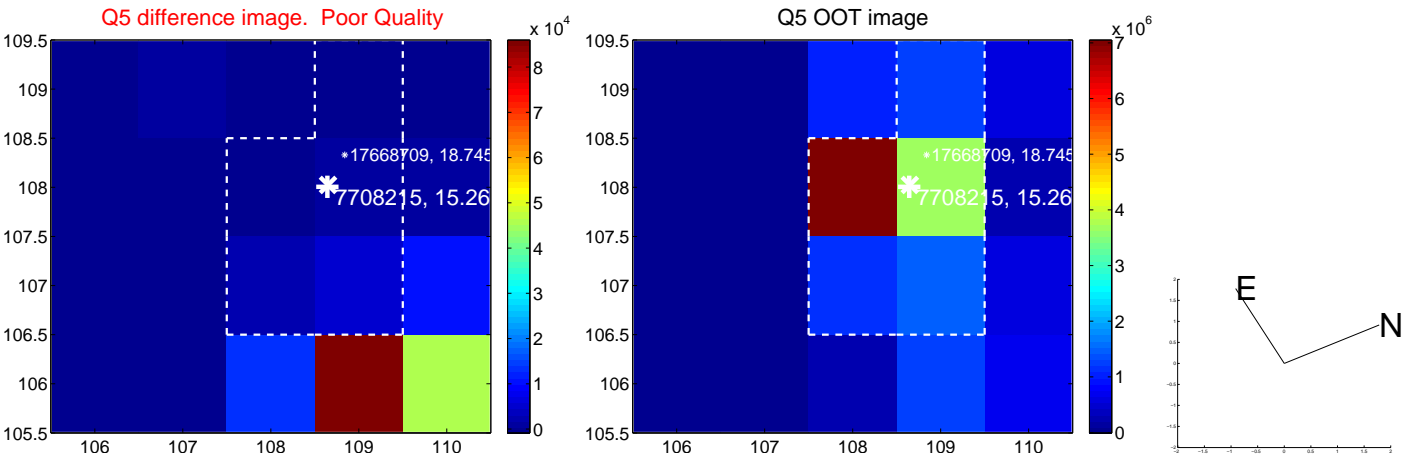


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

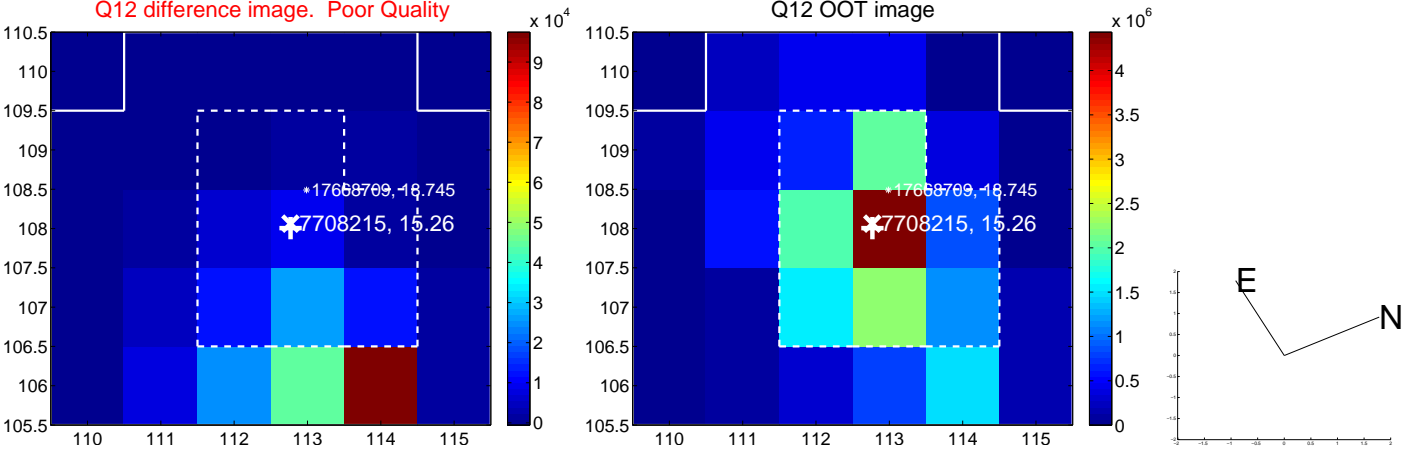
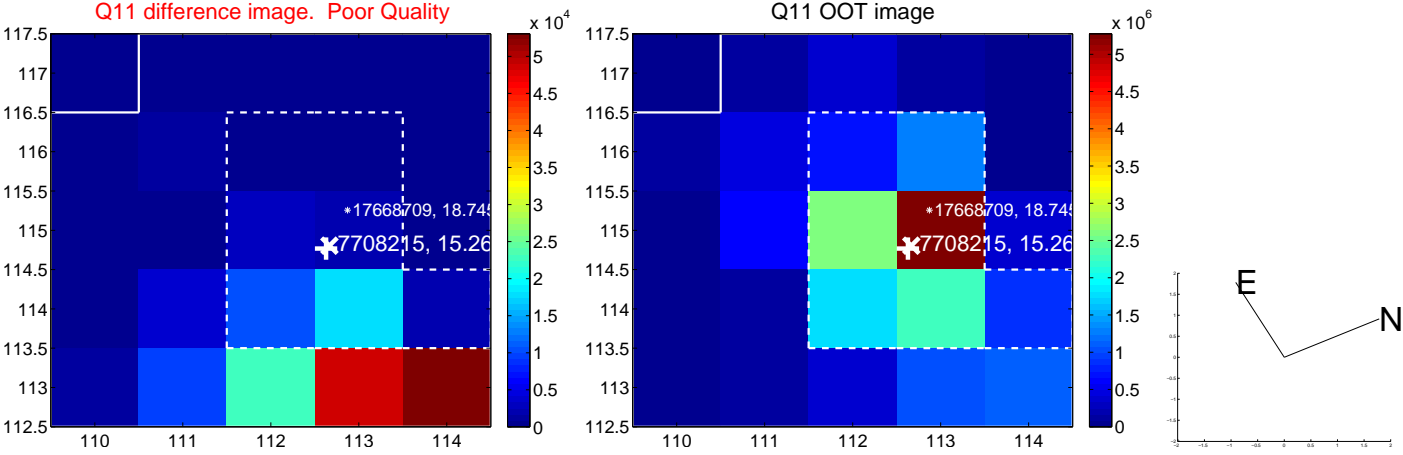
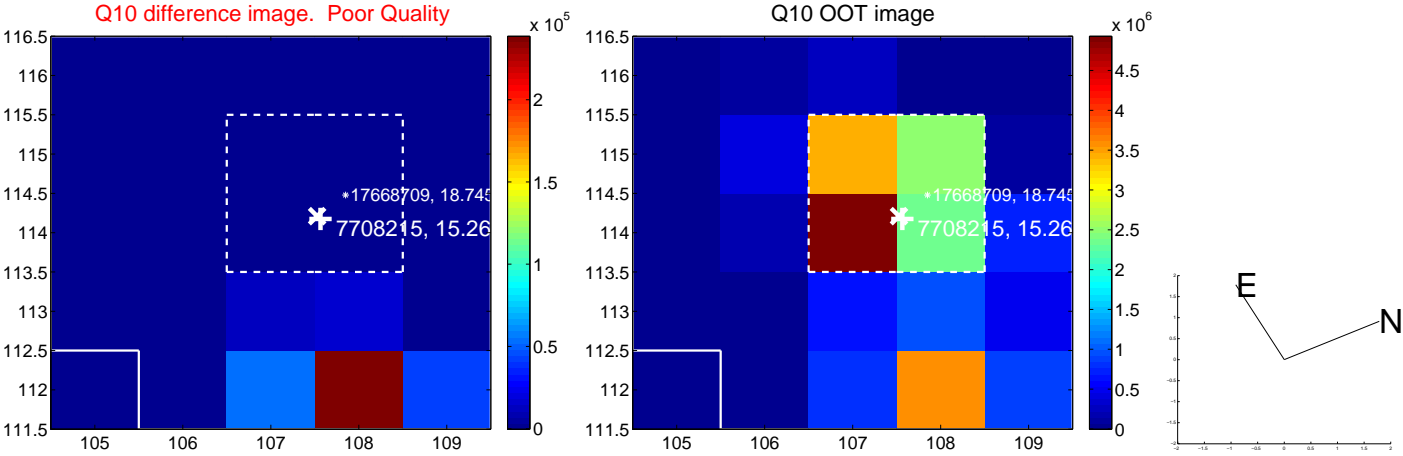
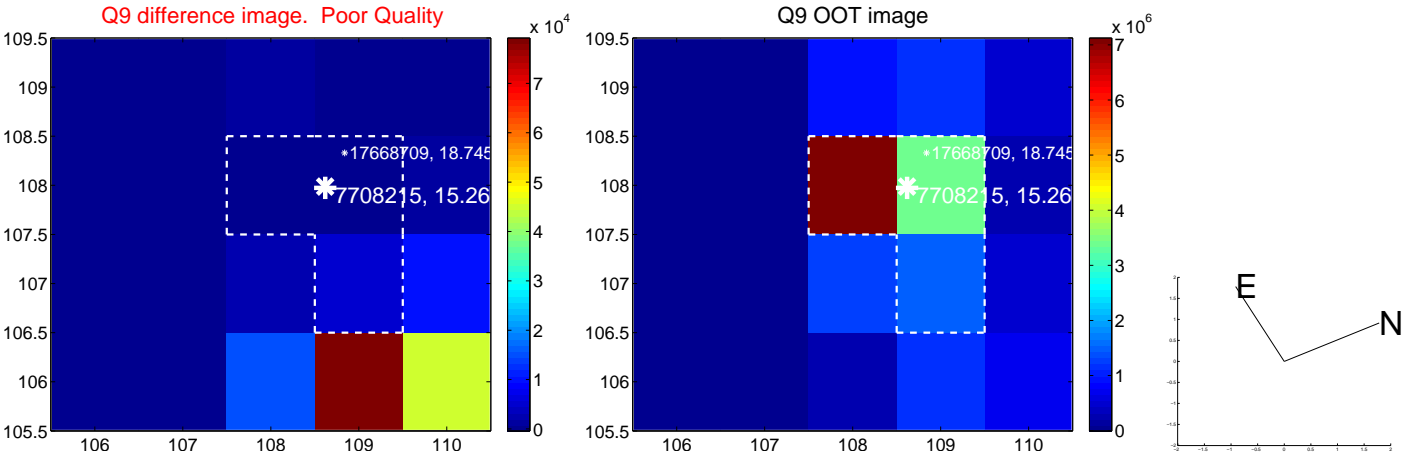
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



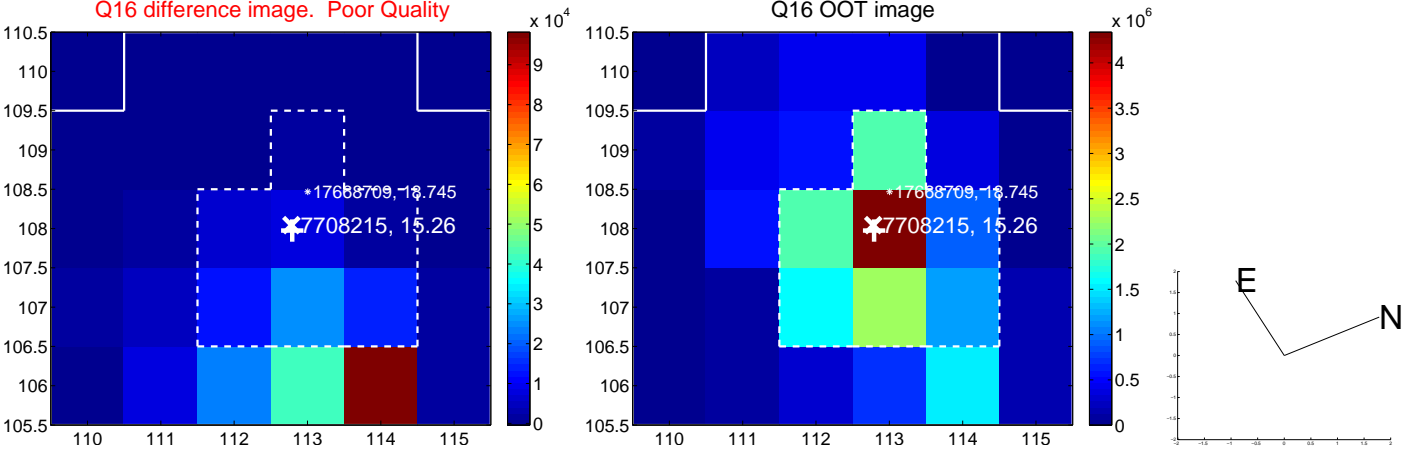
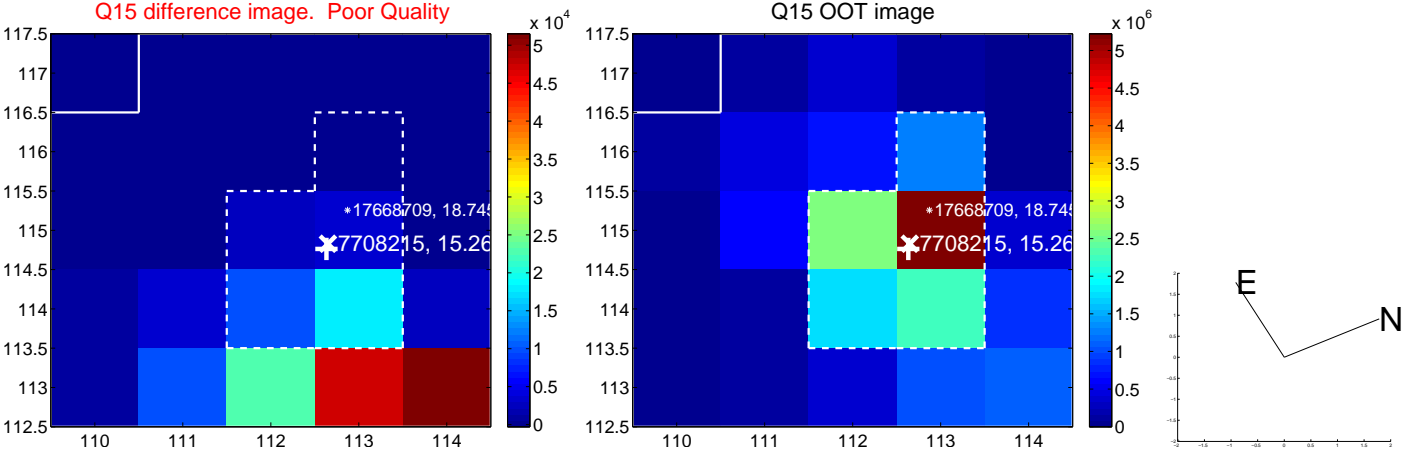
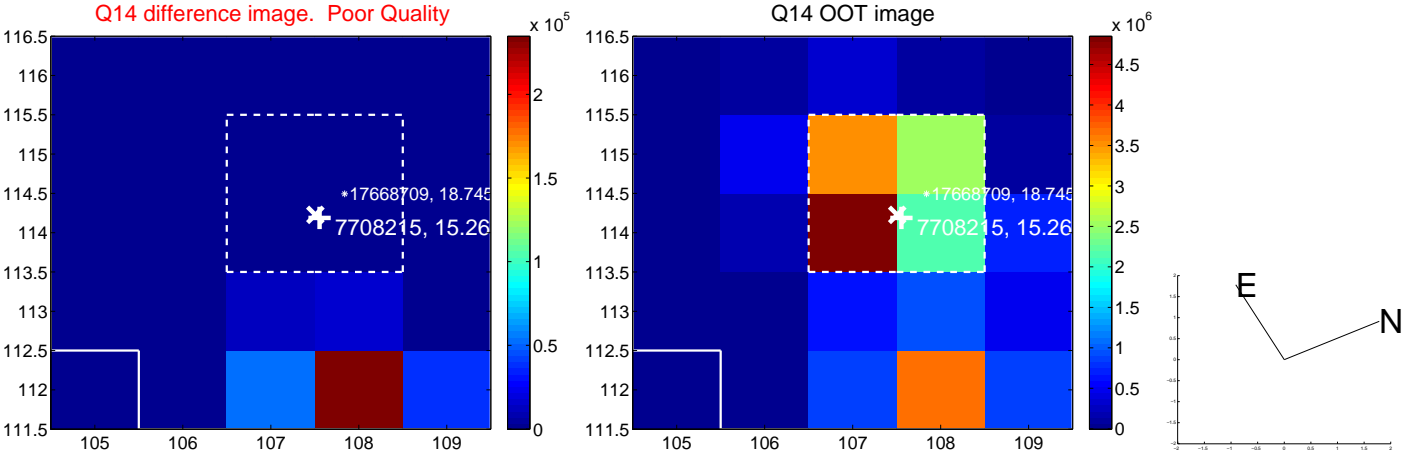
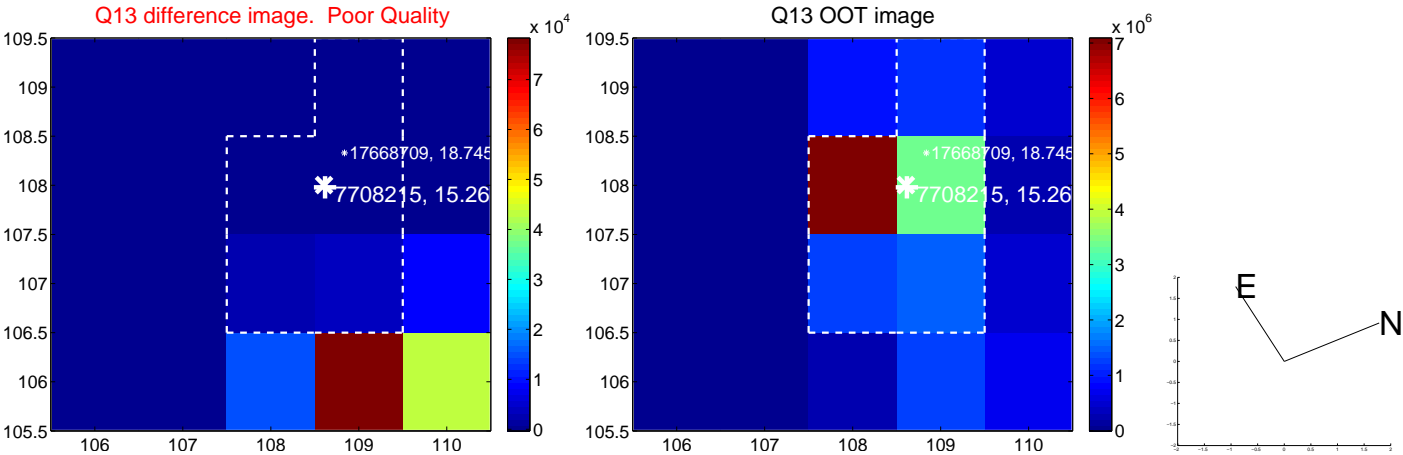
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



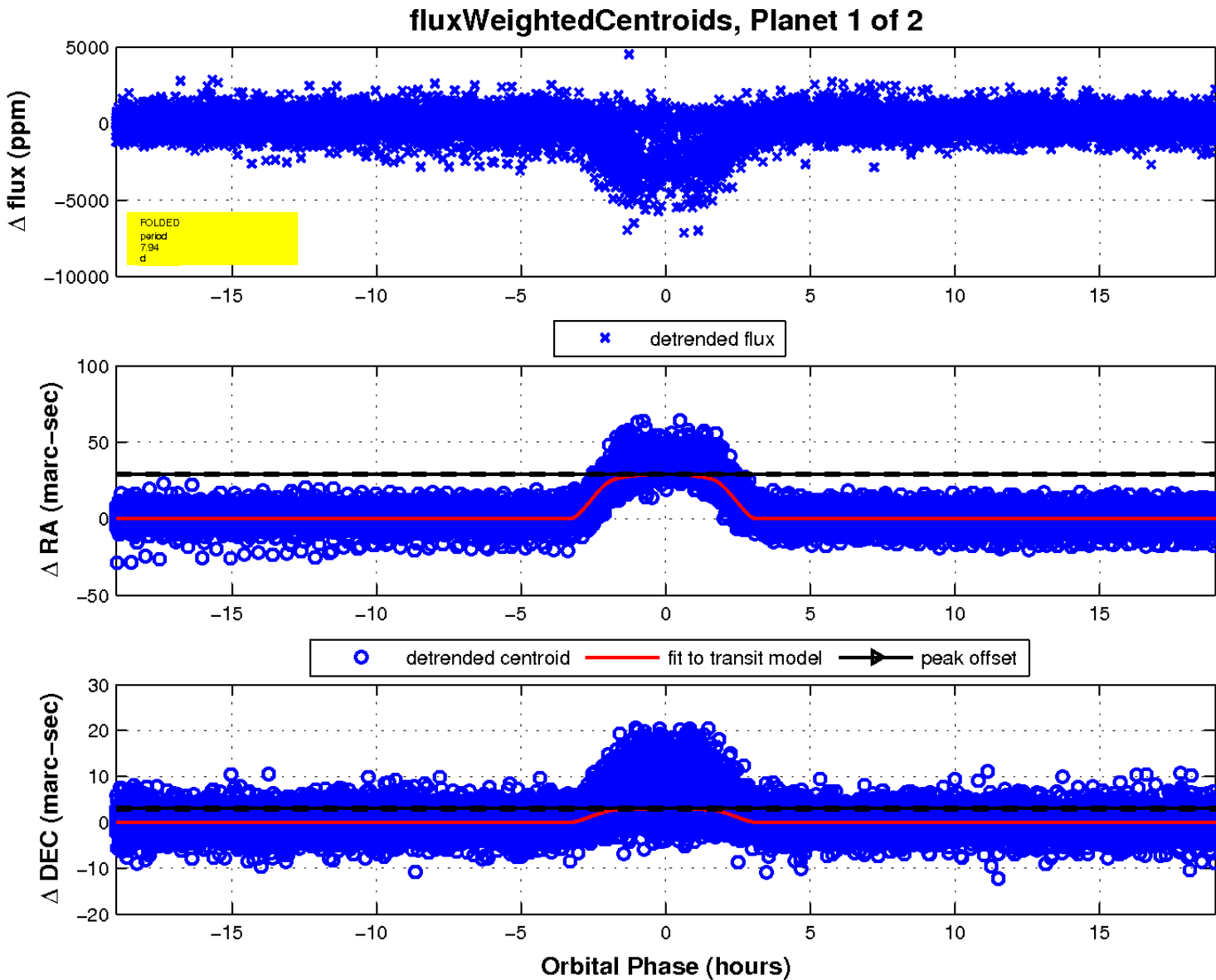
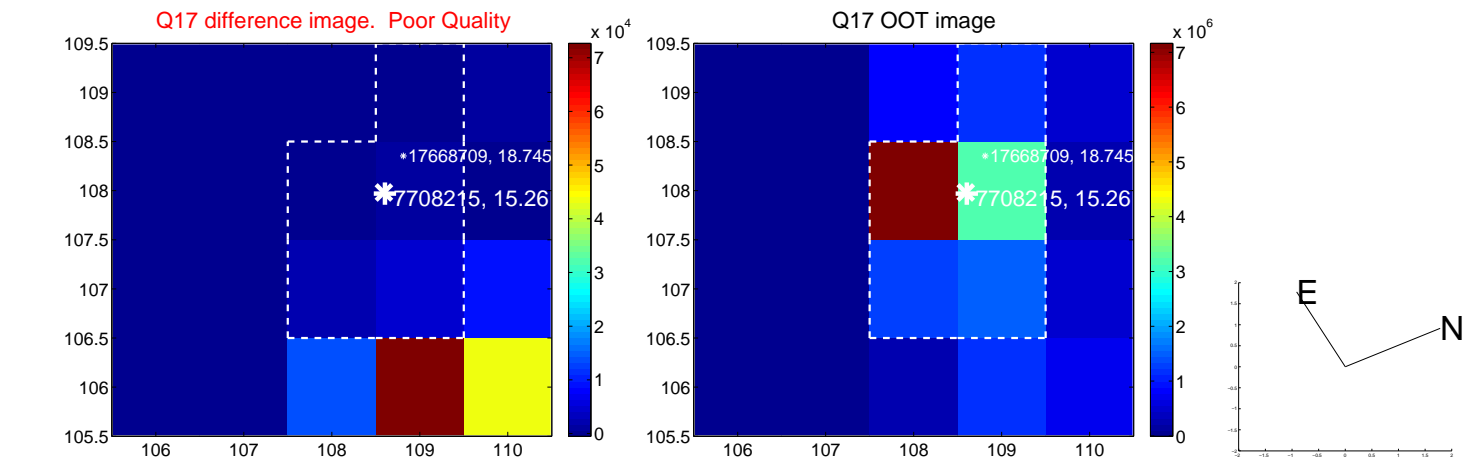
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

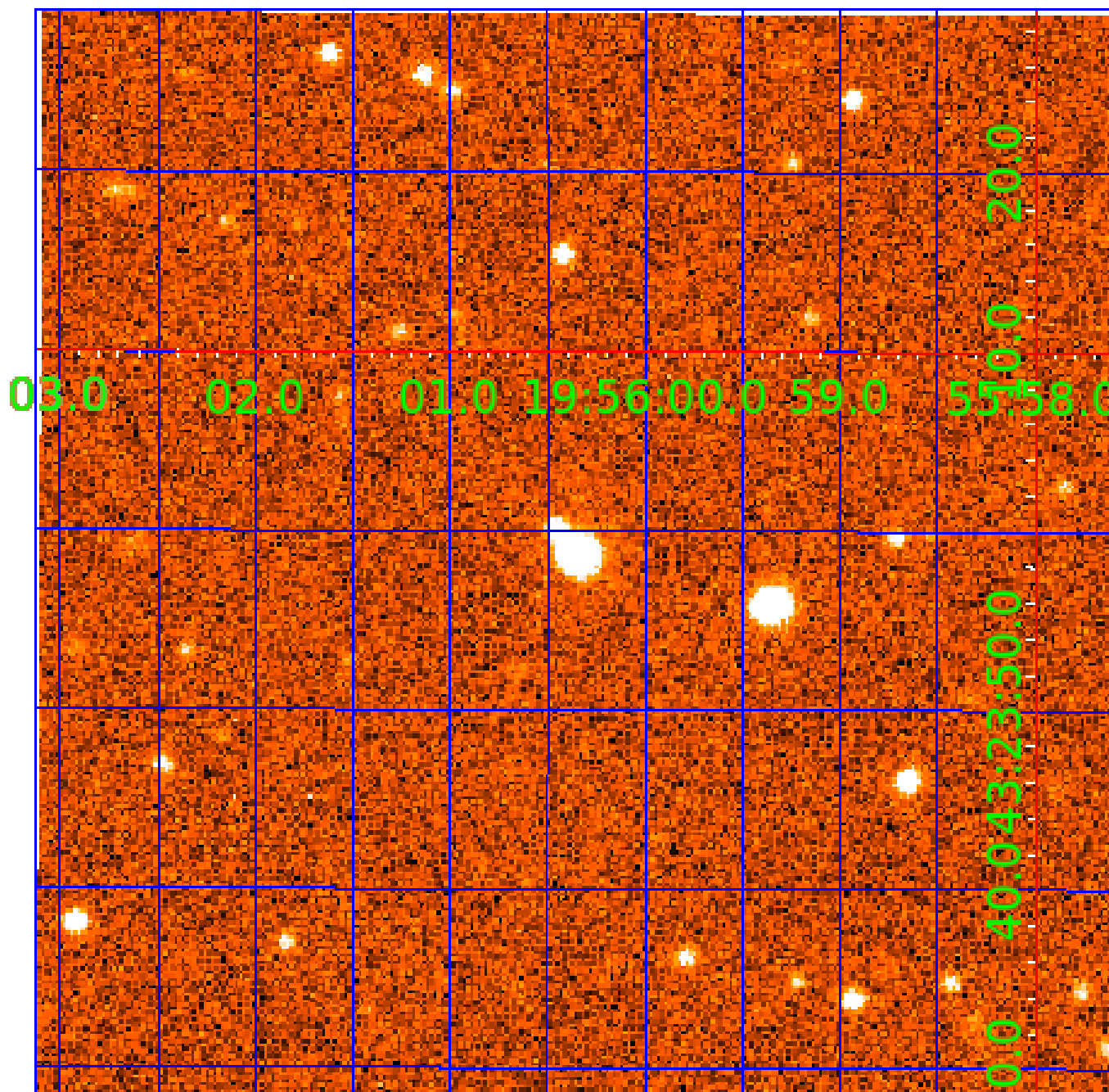


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007708215

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})
007708215-01	OBS	0894.01	7.942607	134.812055	1039.7	6.339	69.8	42.9	0.93	5811	3.68	140.72
007708215-02	OBS	No	3.971291	134.813362	635.3	6.567	27.4	25.3	0.93	5811	3.67	354.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007708215-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007708215-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 007708215-02

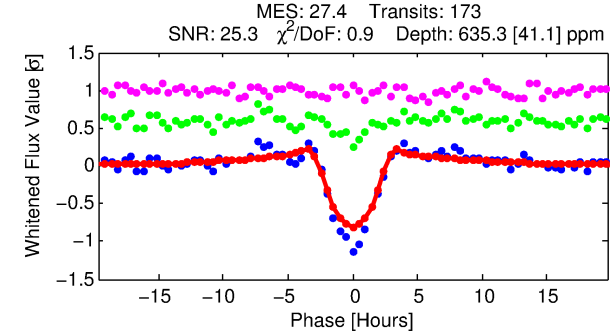
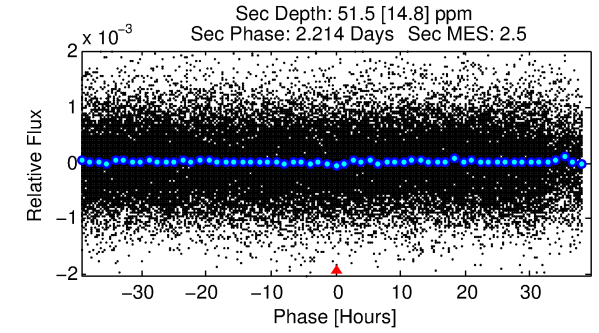
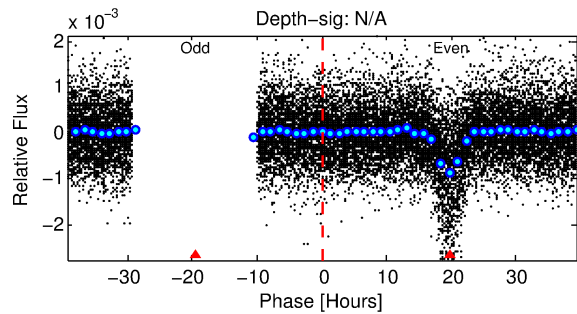
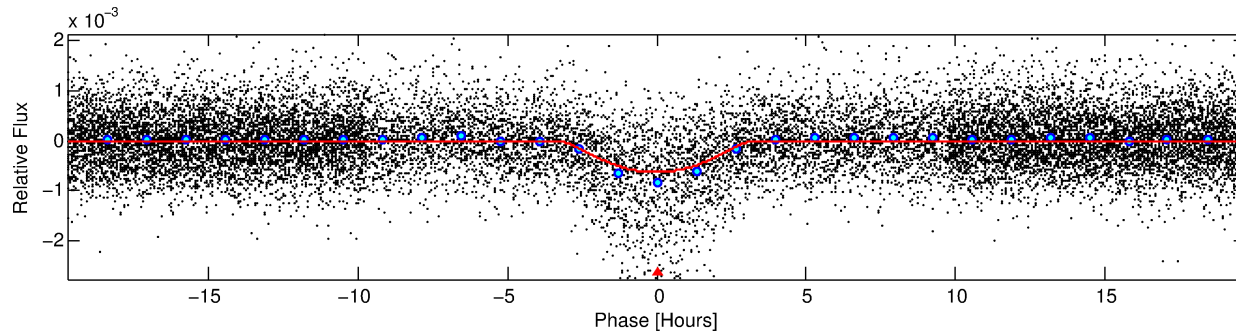
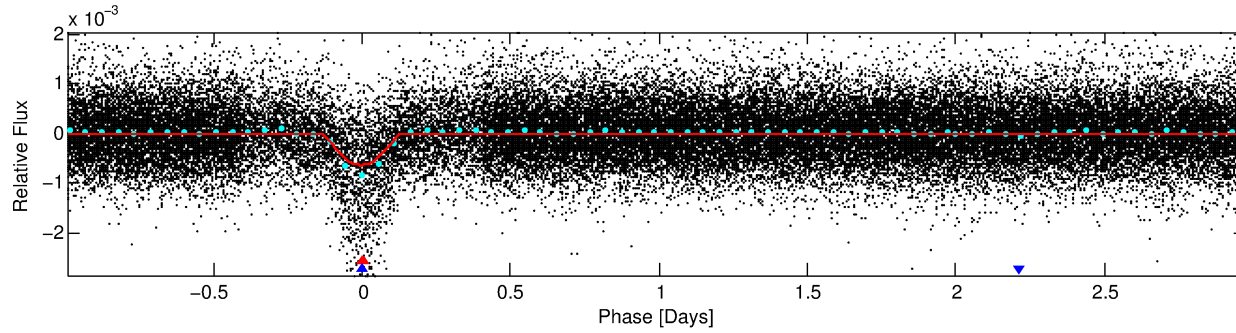
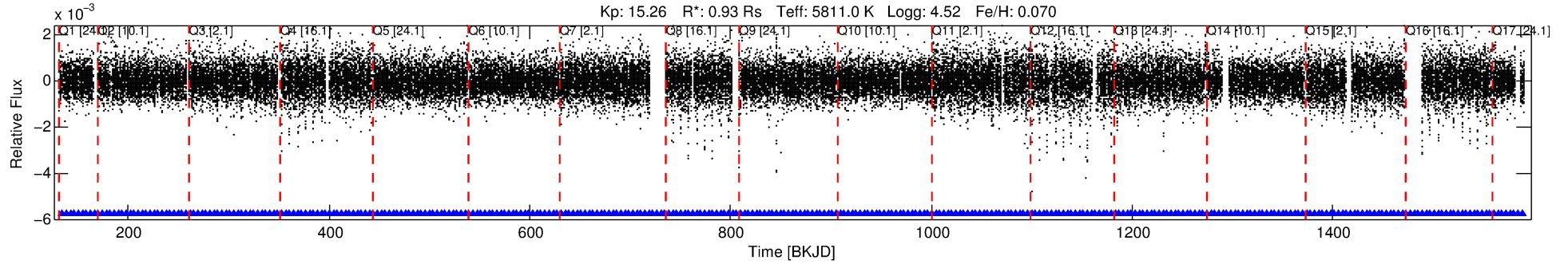
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
007708215-02	7708215	3666.01	7708193	1:2	11.1	3	0	15.99	15.26	158.72	Direct-PRF	0	0.01	0.17

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7708215 Candidate: 2 of 2 Period: 3.971 d
KOI: K00894 Corr: No Ephemeris Match

Kp: 15.26 R*: 0.93 Rs Teff: 5811.0 K Logg: 4.52 Fe/H: 0.070



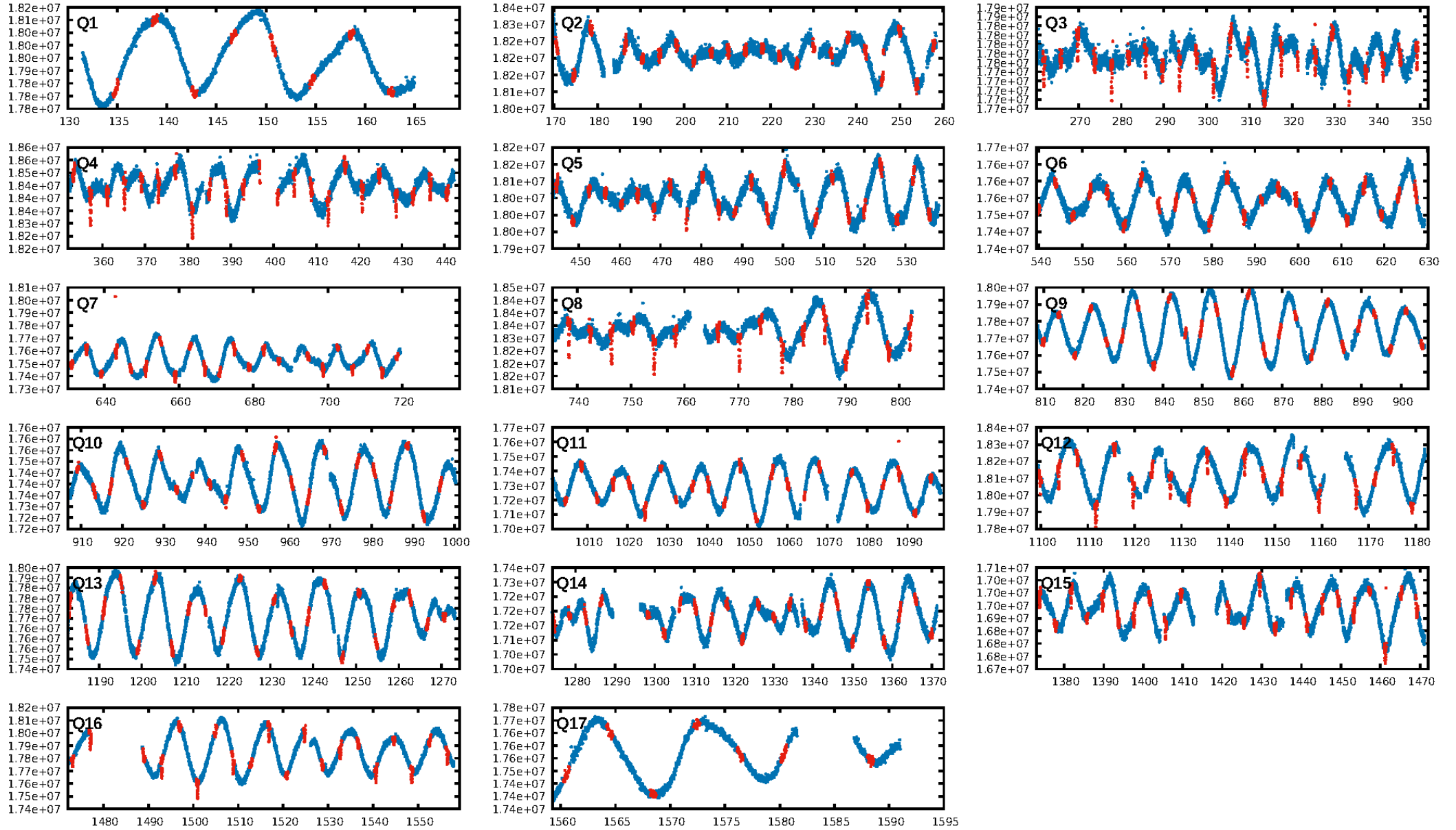
DV Fit Results:

Period = 3.97129 [0.00002] d
Epoch = 134.8134 [0.0046] BKJD
Rp/R* = 0.0363 [0.0143]
a/R* = 1.80 [0.18]
b = 0.98 [0.03]
Seff = 354.59 [148.69]
Teq = 1107 [116] K
Rp = 3.67 [1.84] Re
a = 0.0497 [0.0133] AU
Ag = 5.20 [4.83] [0.87σ]
Teffp = 2584 [548] K [2.64σ]

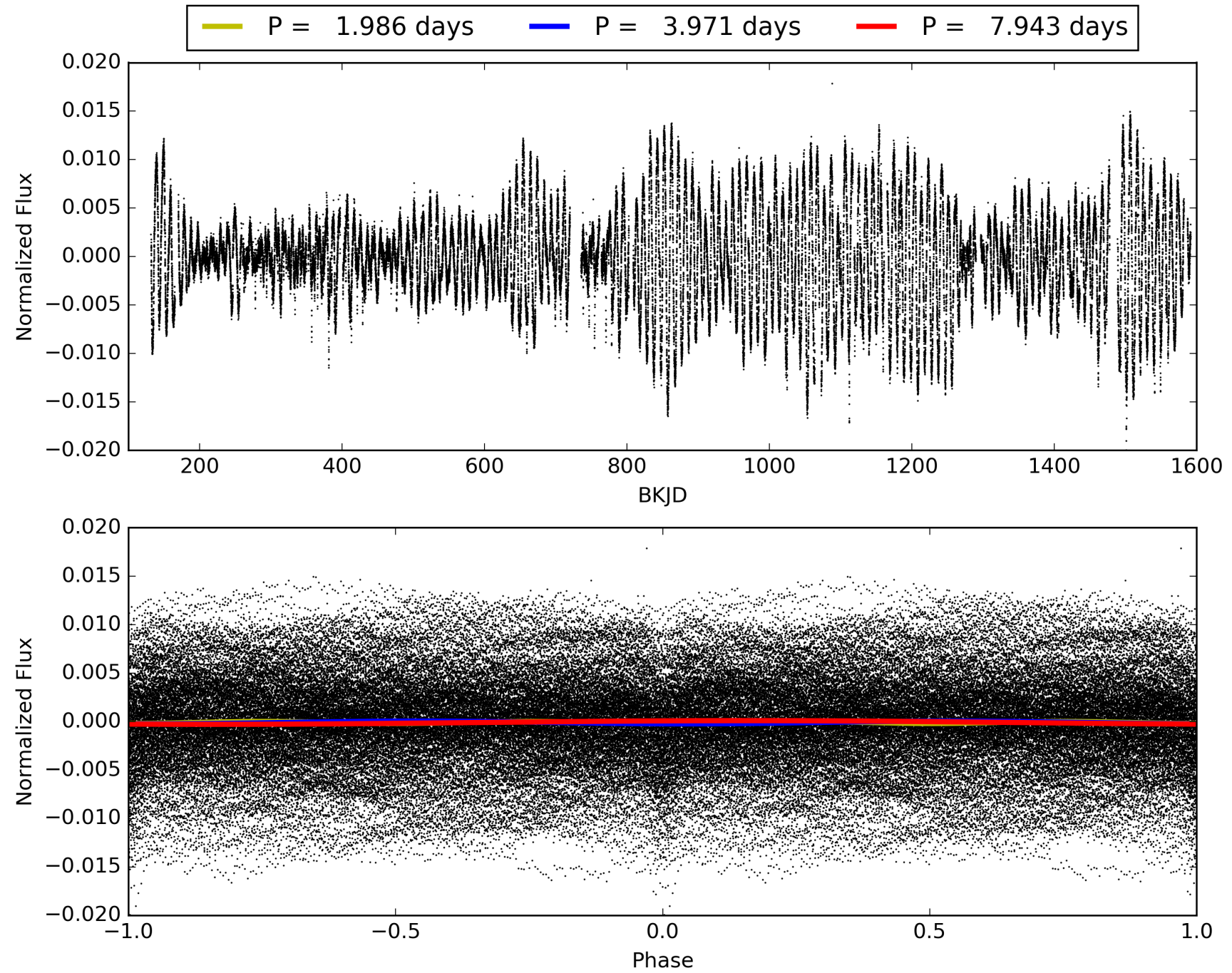
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [10.44σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 3.62e-149
RollingBand-fgt: 1.00 [166/166]
GhostDiagnostic-chr: -0.199
Centroid-sig: 0.0%
Centroid-so: 37.602 arcsec [77.48σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007708215-02, PDC Light Curves

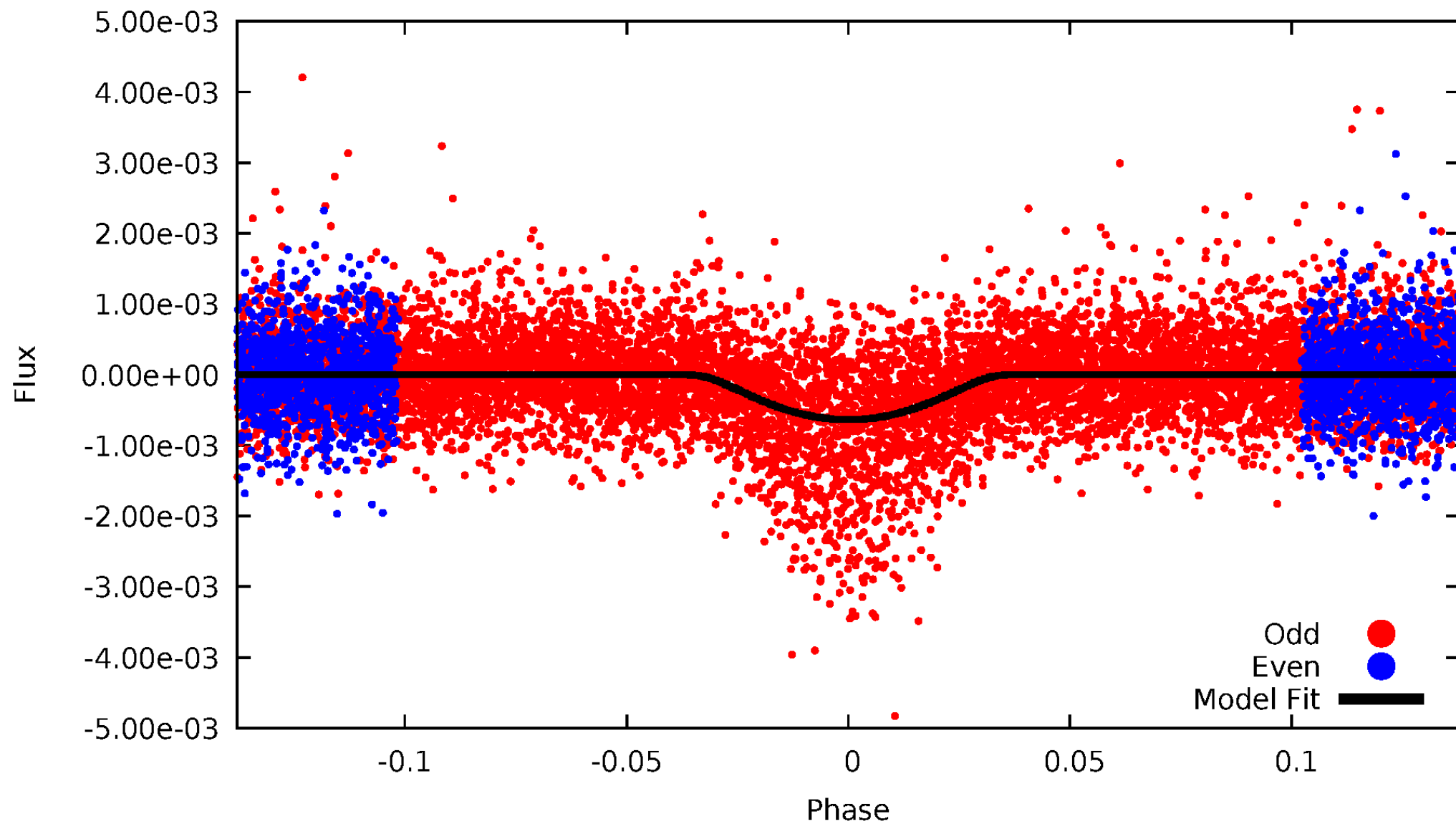


TCE 007708215-02



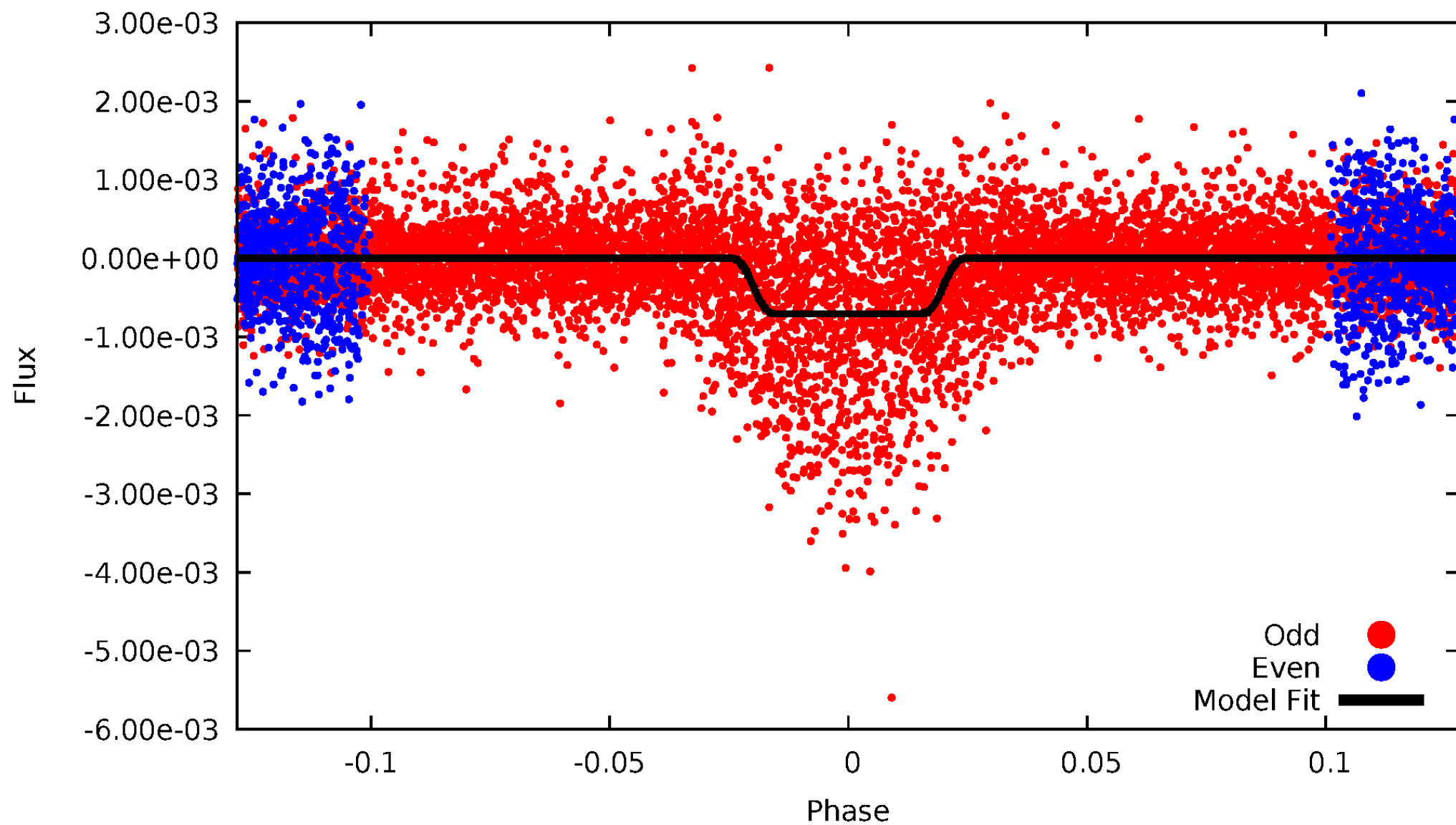
DV Odd/Even

TCE 007708215-02



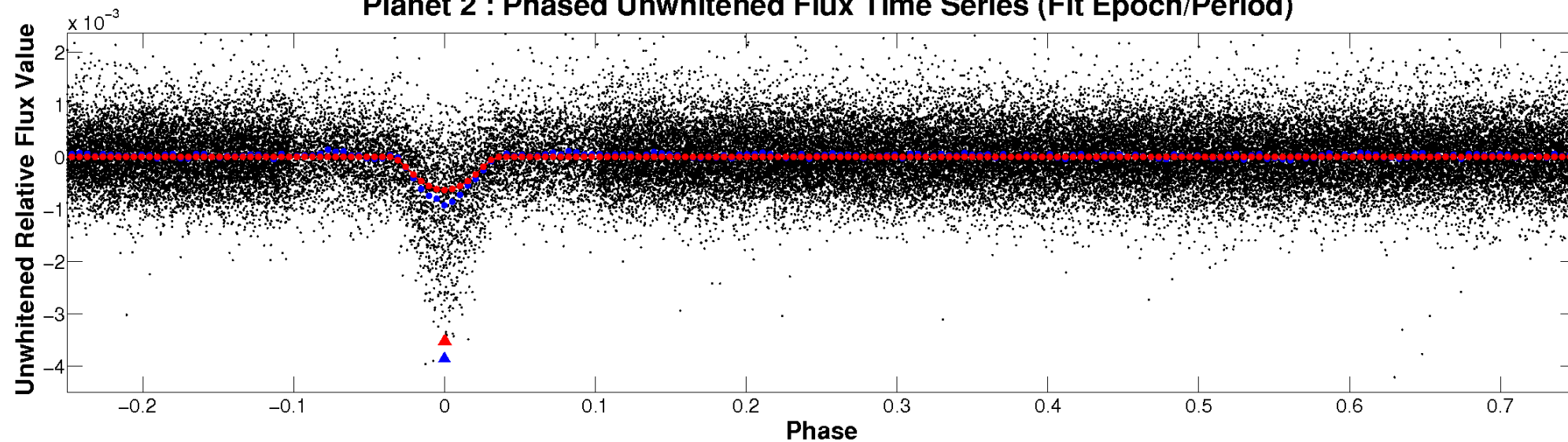
ALT Odd/Even

TCE 007708215-02

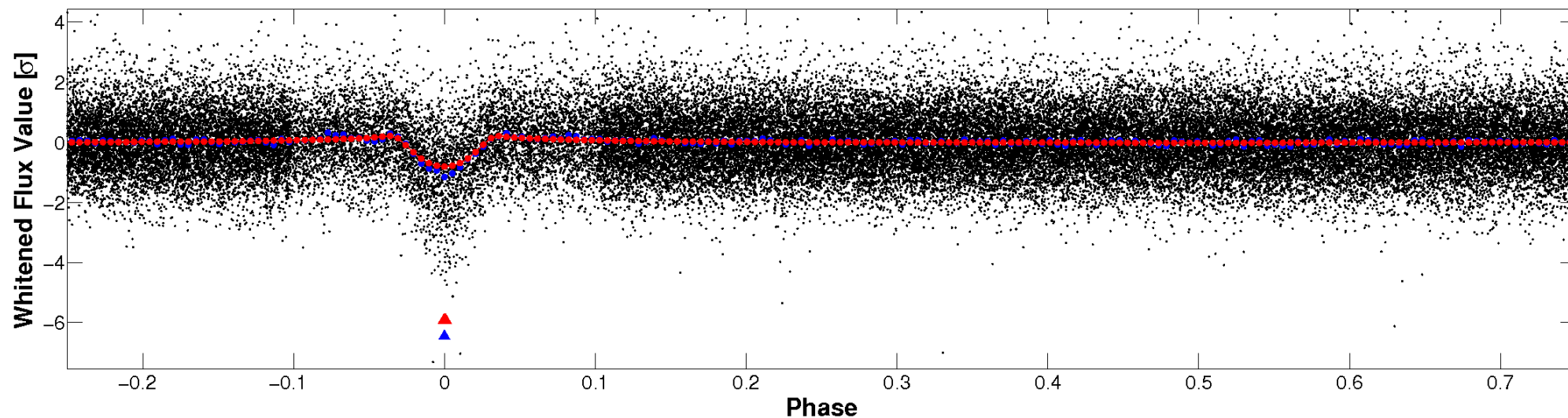


Non-Whitened Vs. Whitened Light Curve

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

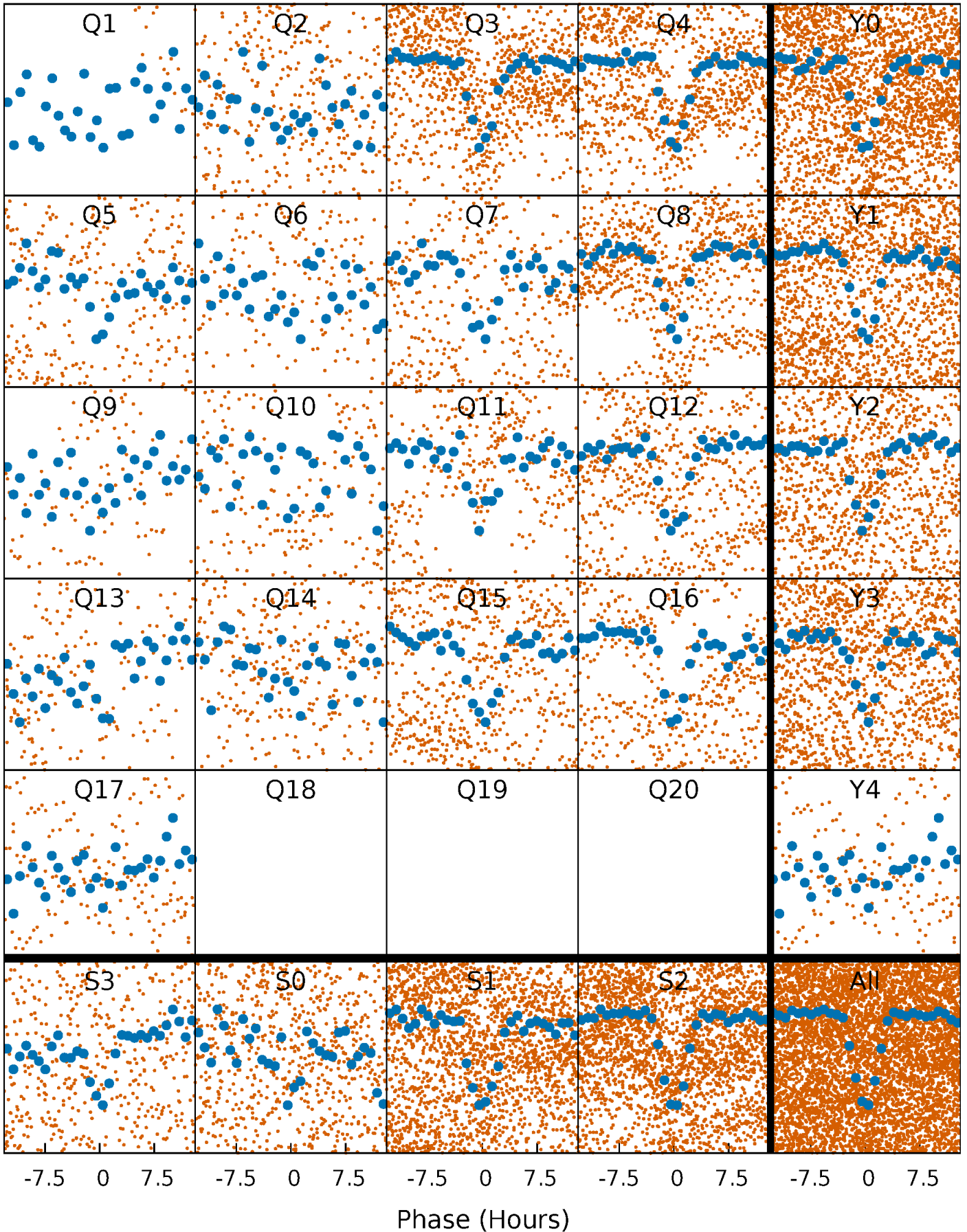


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



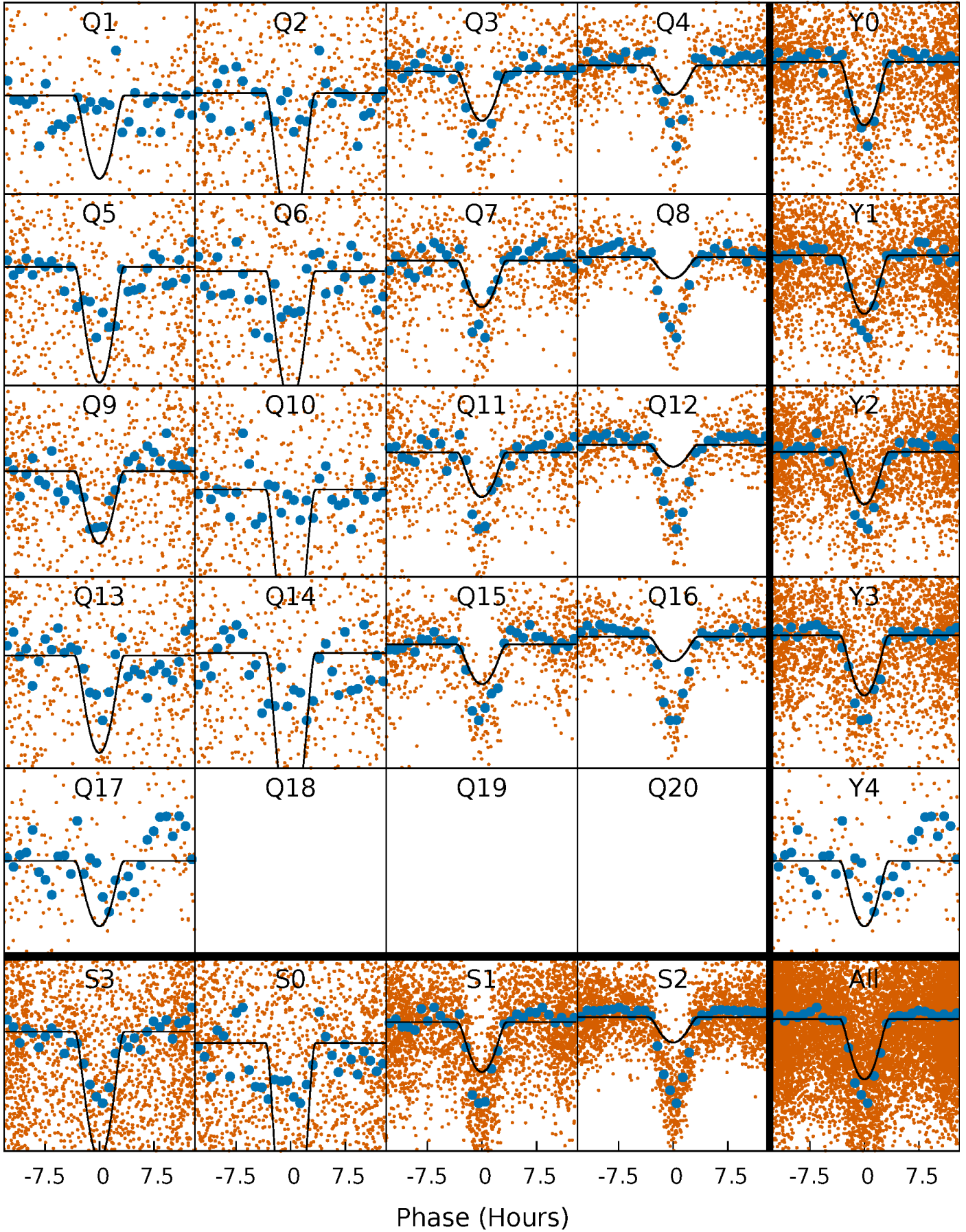
PDC Quarter-Phased Transit Curves

TCE 007708215-02 P= 3.971291 Days $T_0=134.813362$ (BKJD)



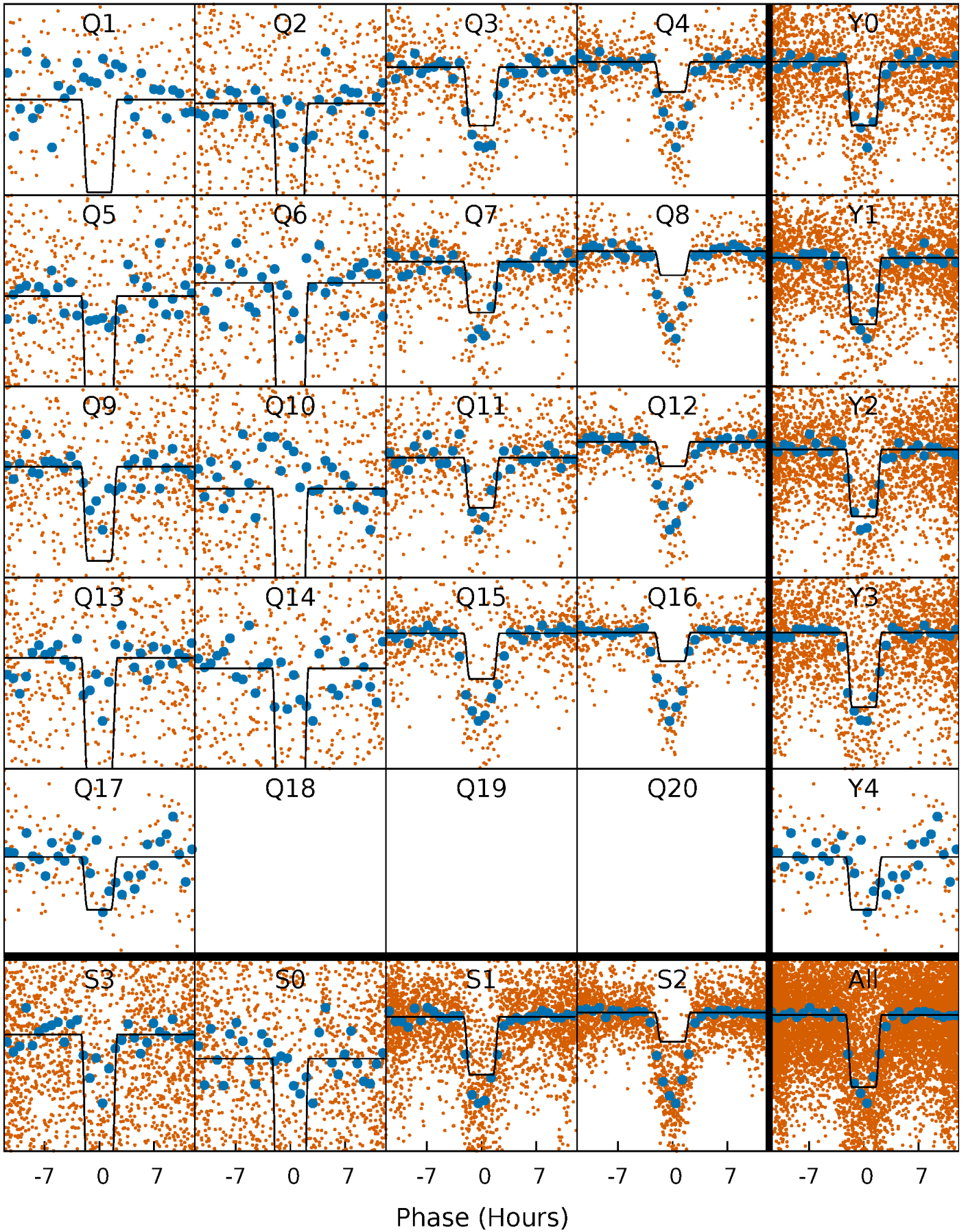
DV Quarter-Phased Transit Curves

TCE 007708215-02 P= 3.971291 Days $T_0=134.813362$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

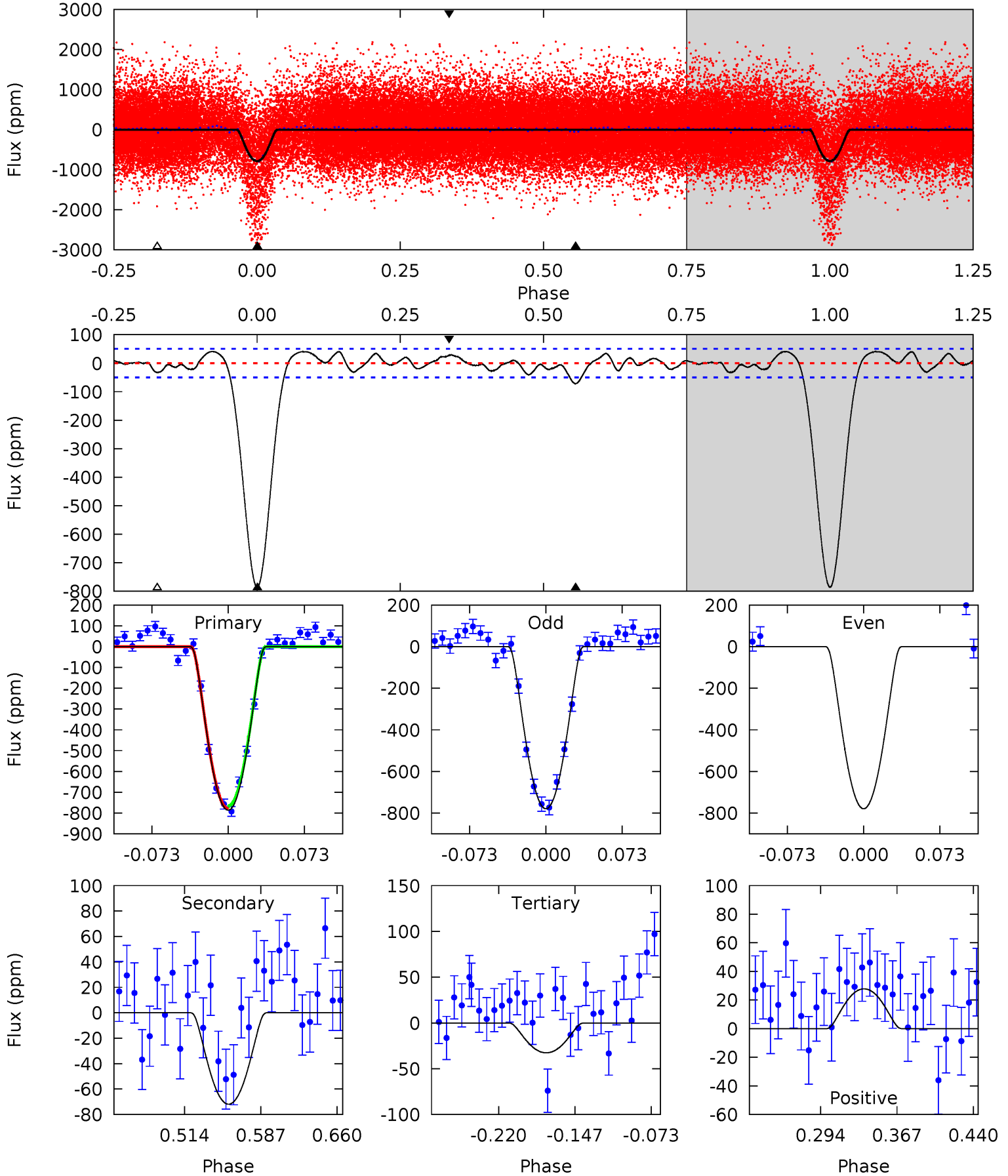
TCE 007708215-02 P= 3.971358 Days $T_0=134.802561$ (BKJD)



DV Model-Shift Uniqueness Test

007708215-02, P = 3.971291 Days, E = 130.842071 Days

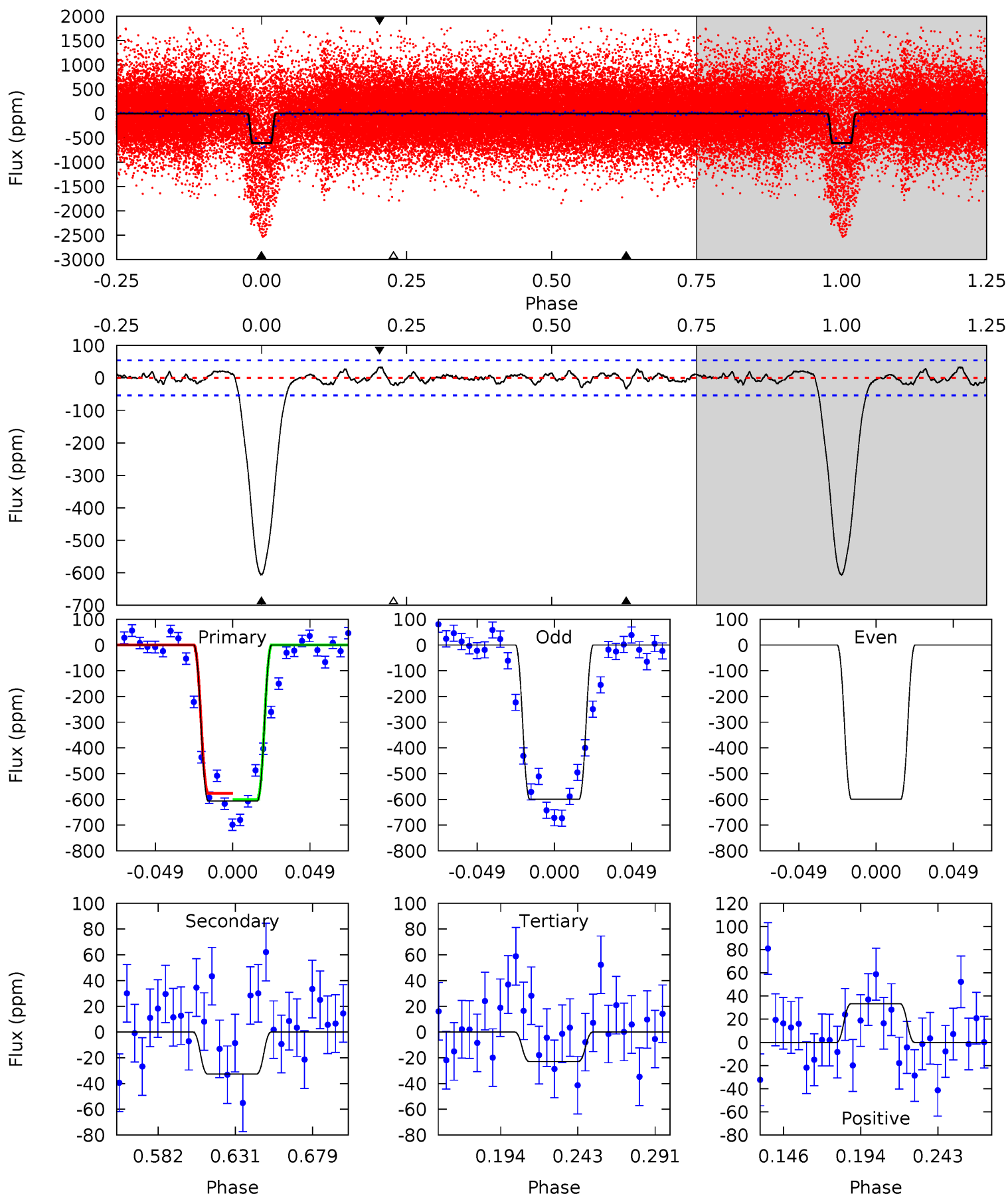
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
72.4	6.62	3.00	2.56	4.63	1.79	1.63	69.4	69.8	3.62	4.06	0	1.24	0.05	0.62



Alt Model-Shift Uniqueness Test

007708215-02, P = 3.971358 Days, E = 130.831203 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
53.0	2.85	2.00	2.92	4.71	1.97	0.97	51.0	50.1	0.85	-0.07	0	1.25	0.05	1.09



Stellar Parameters For KIC 007708215

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5811^{+157}_{-192}	$4.521^{+0.039}_{-0.221}$	$0.070^{+0.250}_{-0.300}$	$0.926^{+0.289}_{-0.096}$	$1.036^{+0.113}_{-0.139}$	$1.839^{+0.391}_{-0.987}$
	+3%/-3%	+1%/-5%	+357%/-429%	+31%/-10%	+11%/-13%	+21%/-54%
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 007708215-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-72 ± 11	$3.84^{+1.73}_{-1.42}$	1591^{+115}_{-74}	3317^{+608}_{-343}	$6.323^{+10.668}_{-3.347}$
Alt.	-33 ± 11	$2.88^{+1.63}_{-1.48}$	1586^{+115}_{-78}	3196^{+910}_{-469}	$4.942^{+16.322}_{-3.178}$

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 $A_{obs} \gg 1.0$

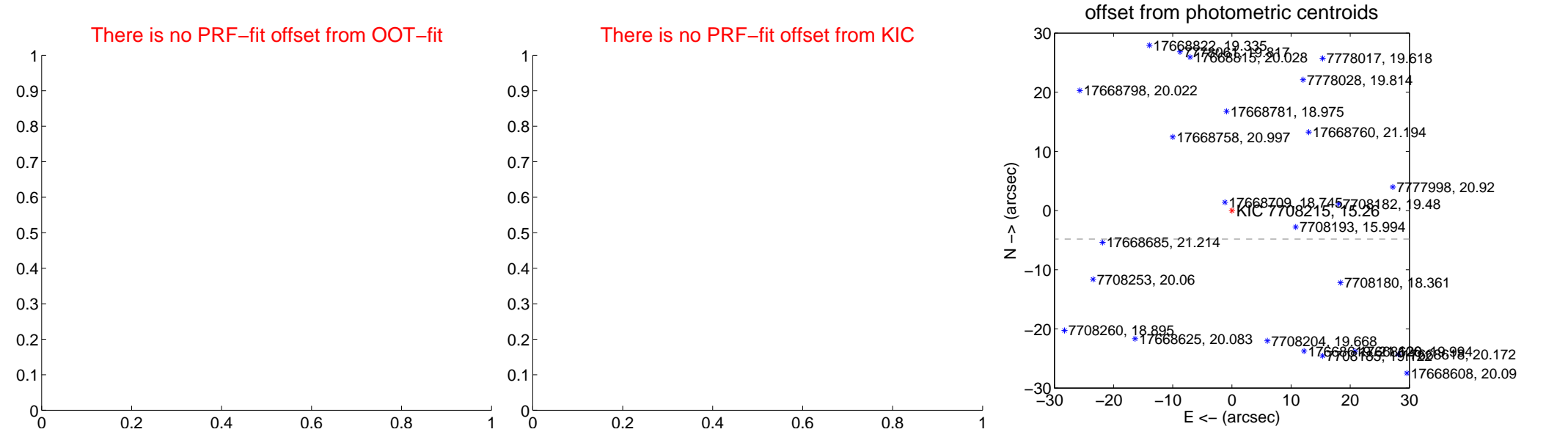
DV Centroid Data

Supplemental centroid analysis for 007708215-02. Kepler magnitude: 15.26. Transit SNR 25.29

There are 0 quarters with good PRF difference image offsets

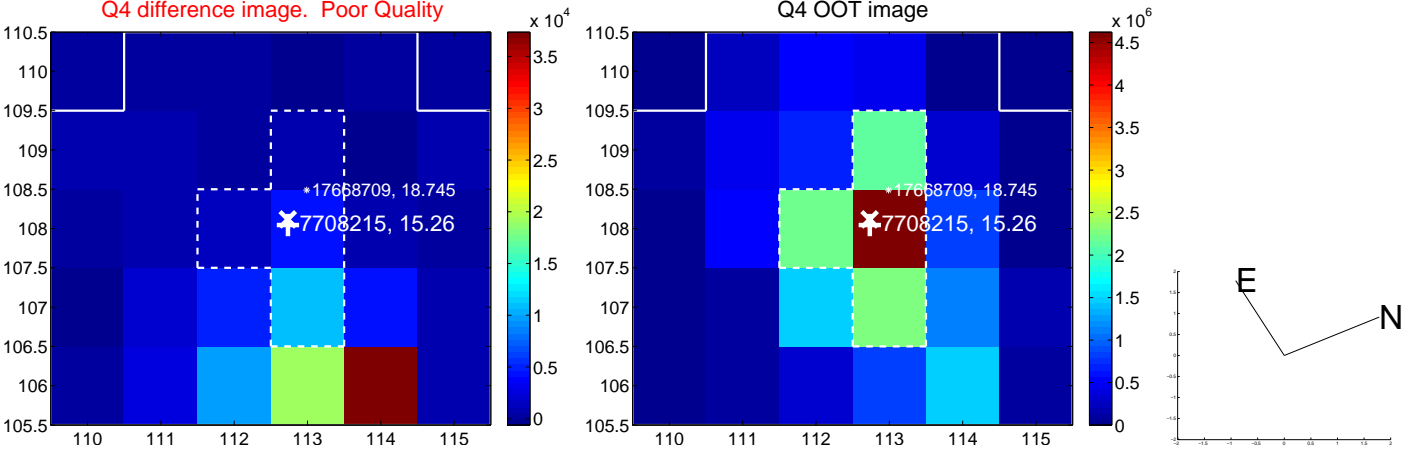
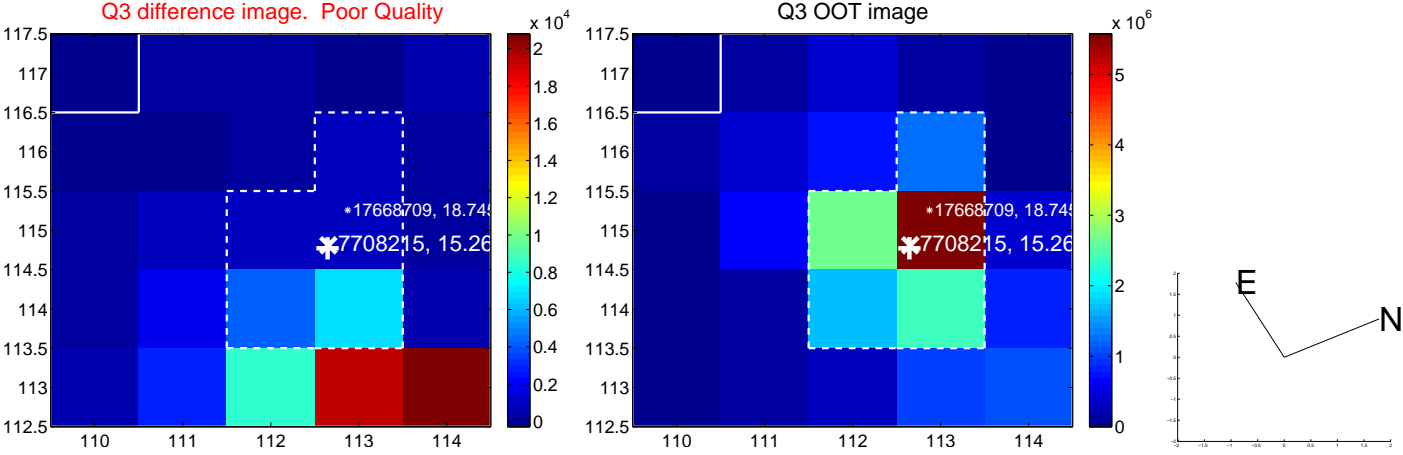
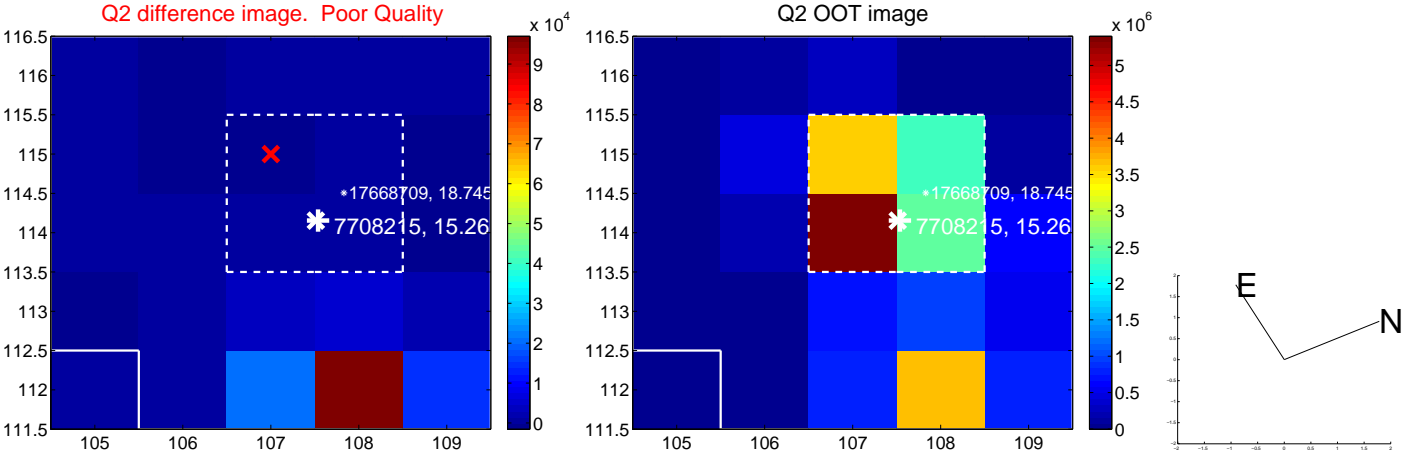
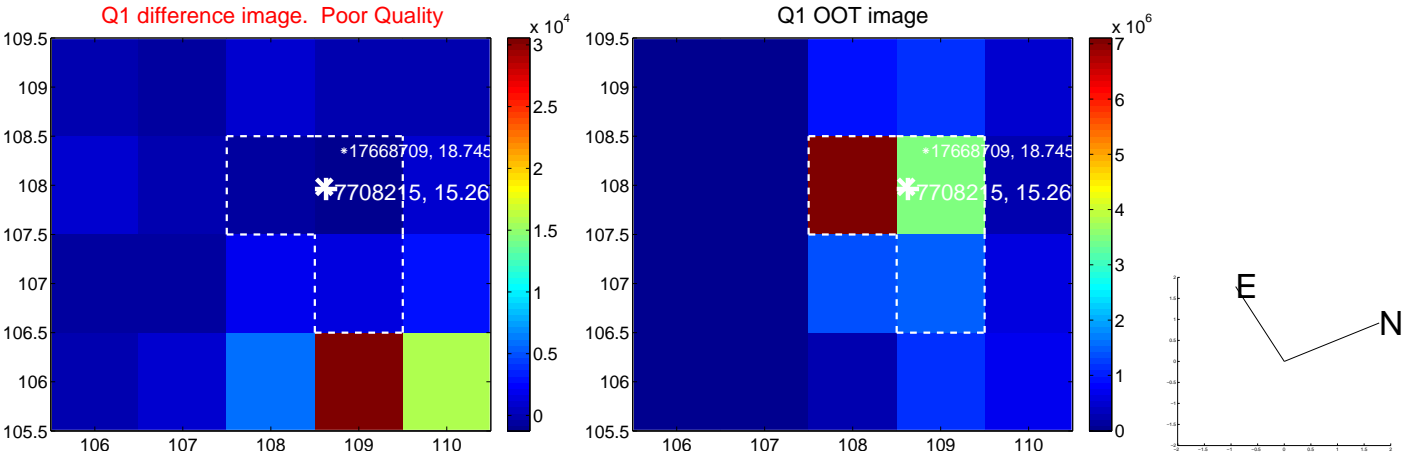
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	37.60 ± 0.49	77.48	-37.29 ± 0.49	-4.82 ± 0.41

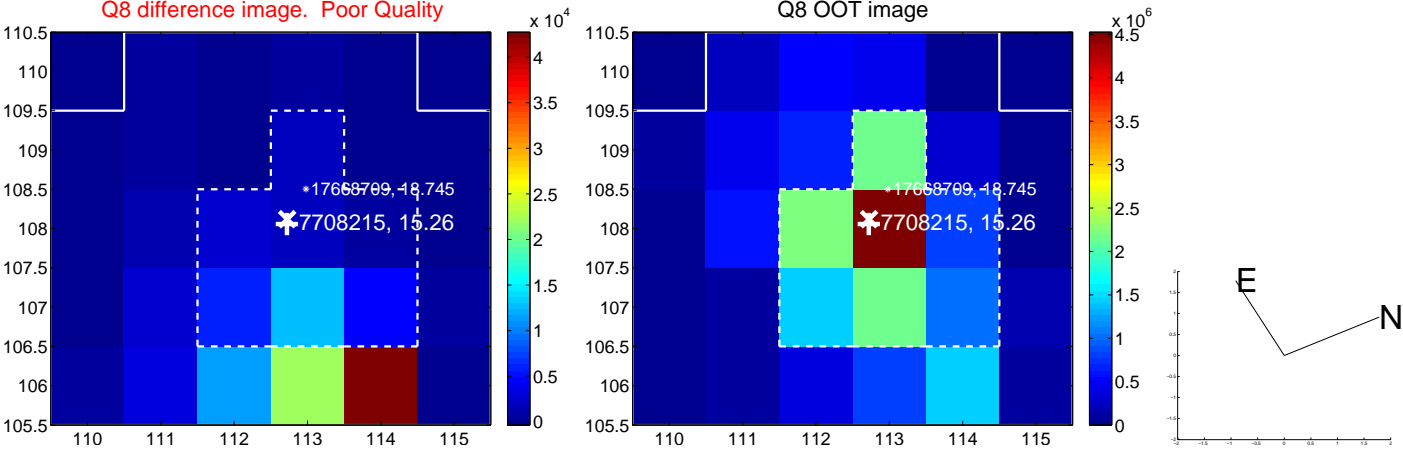
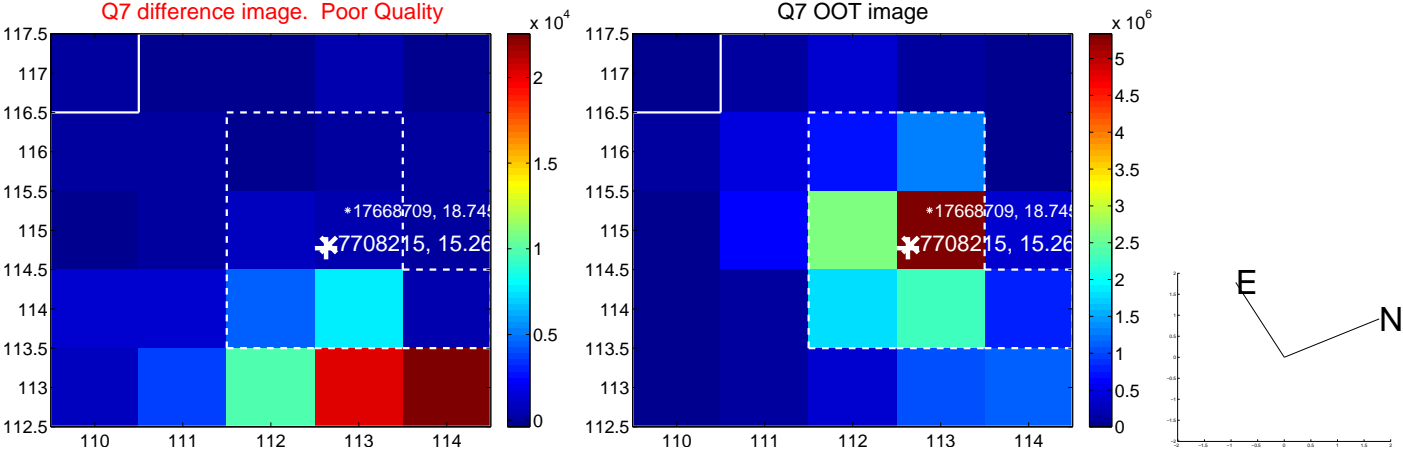
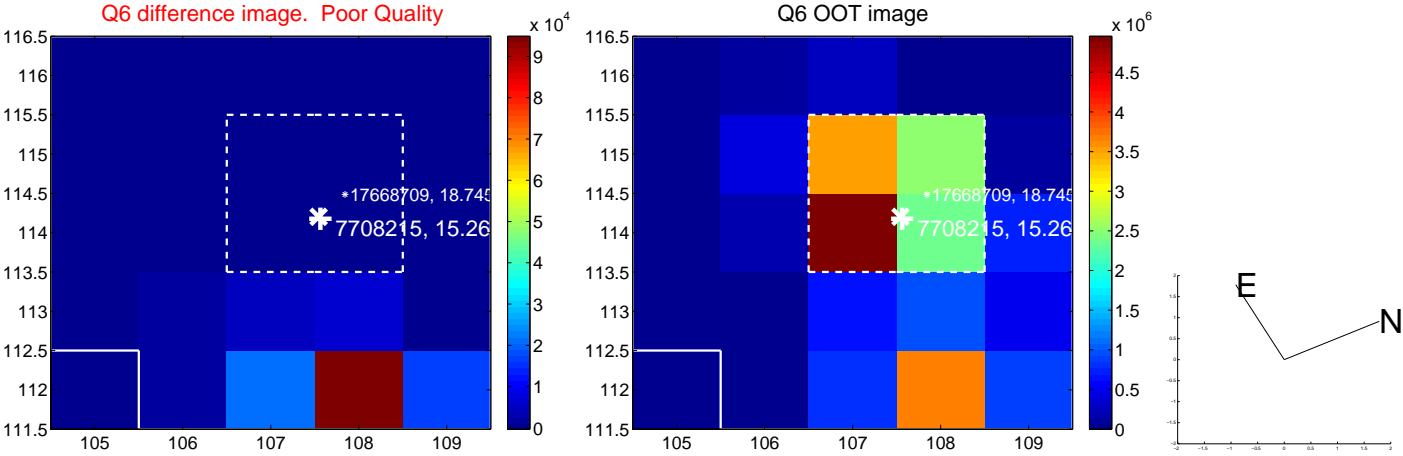
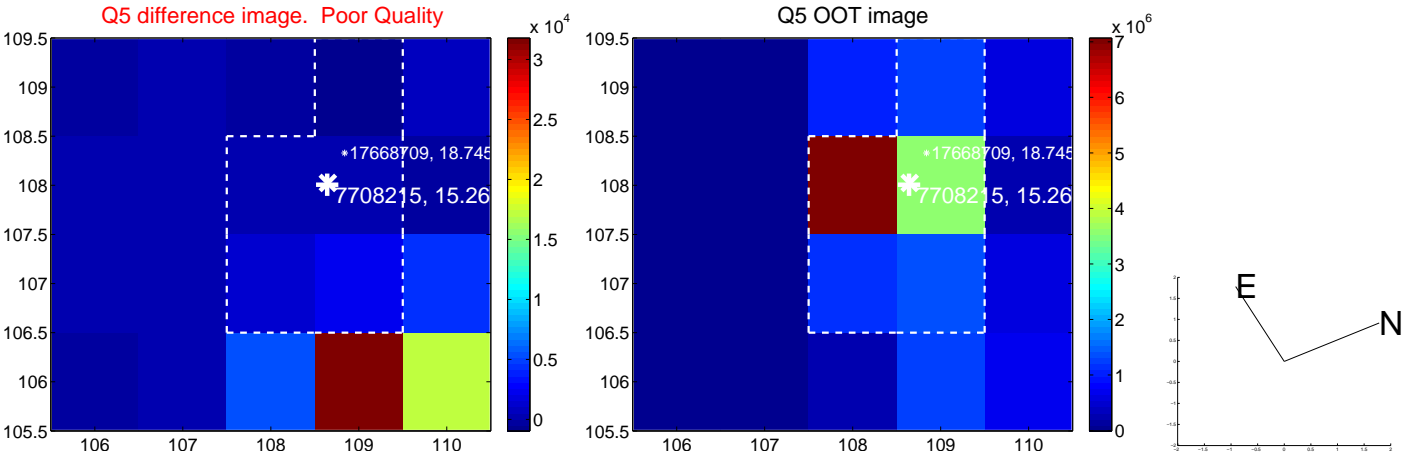


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

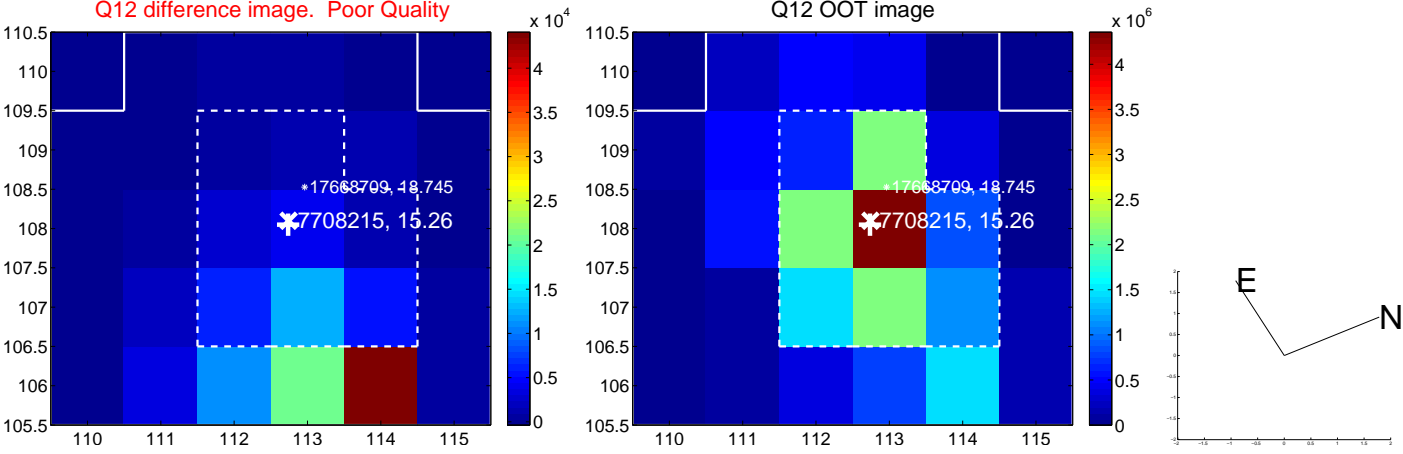
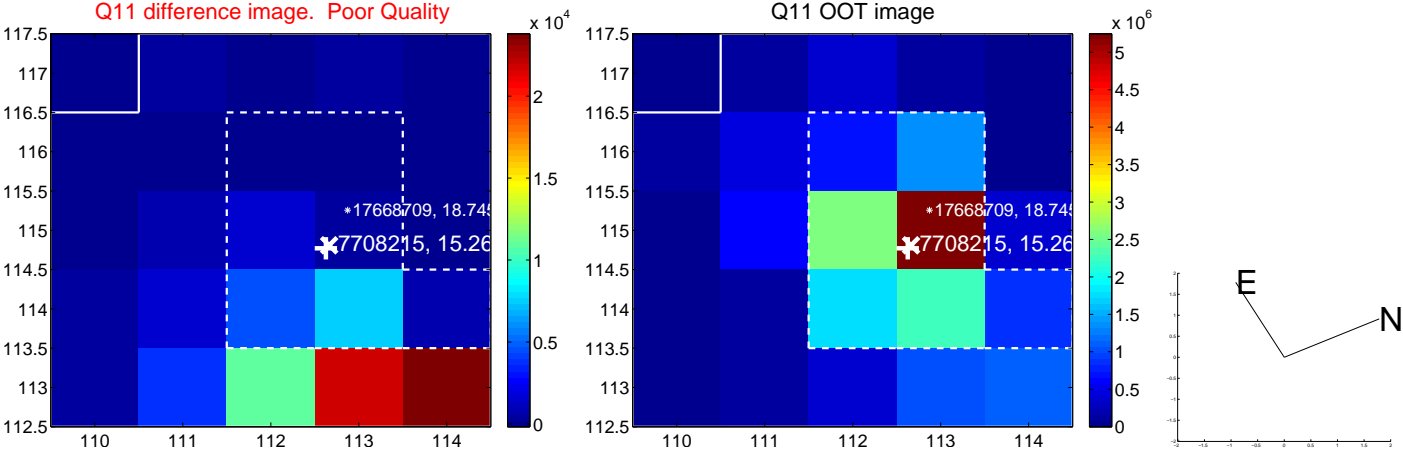
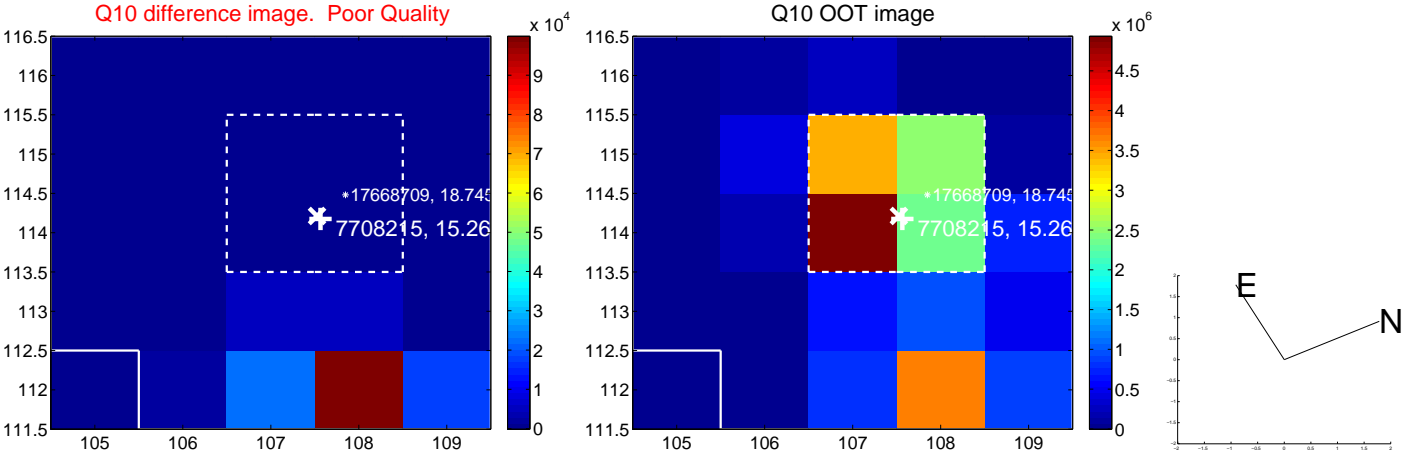
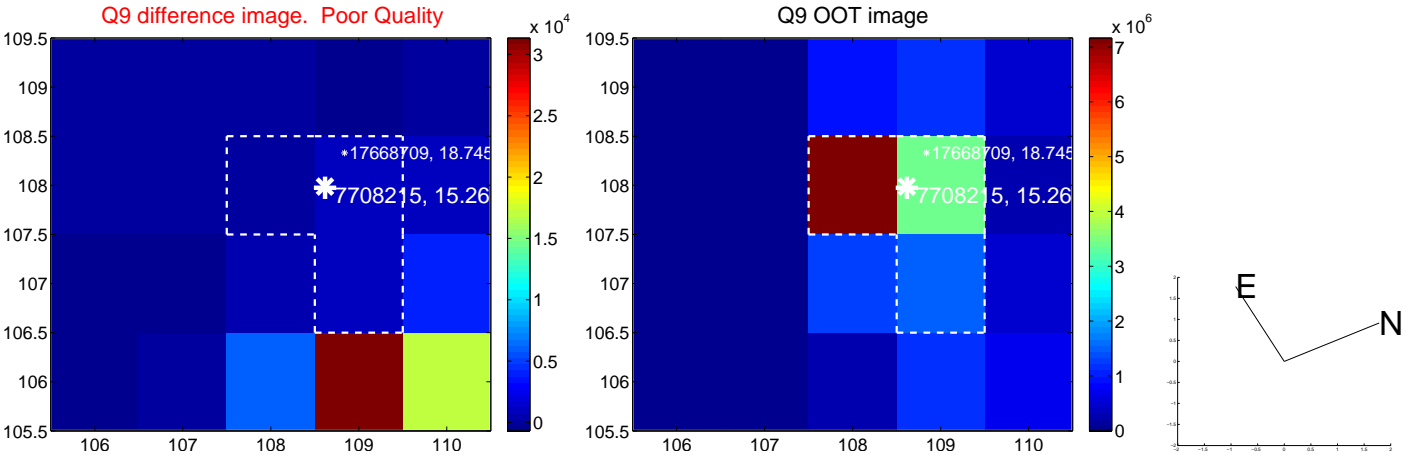
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



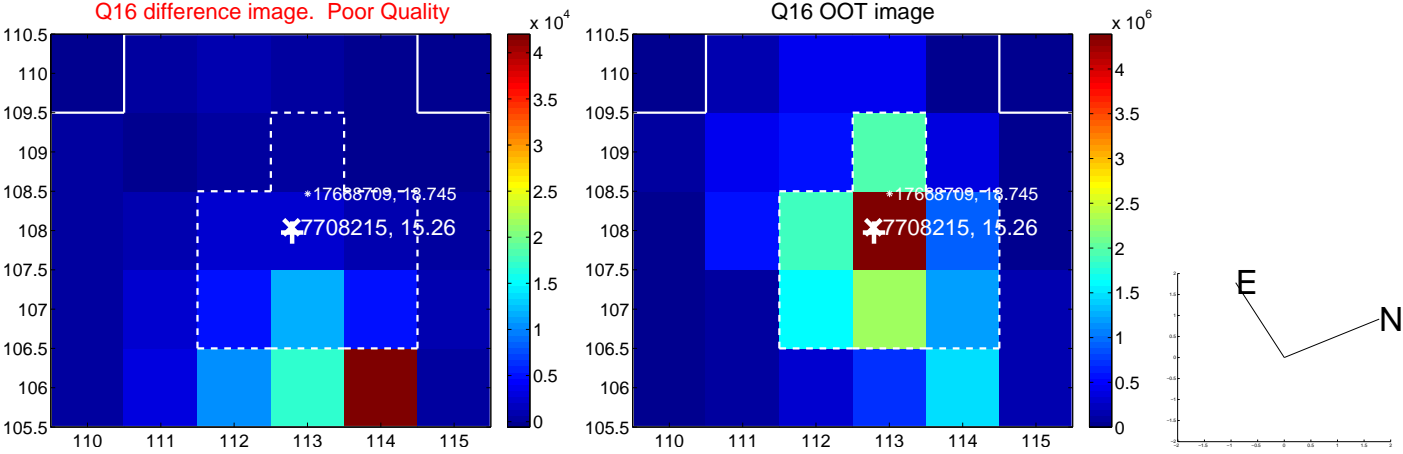
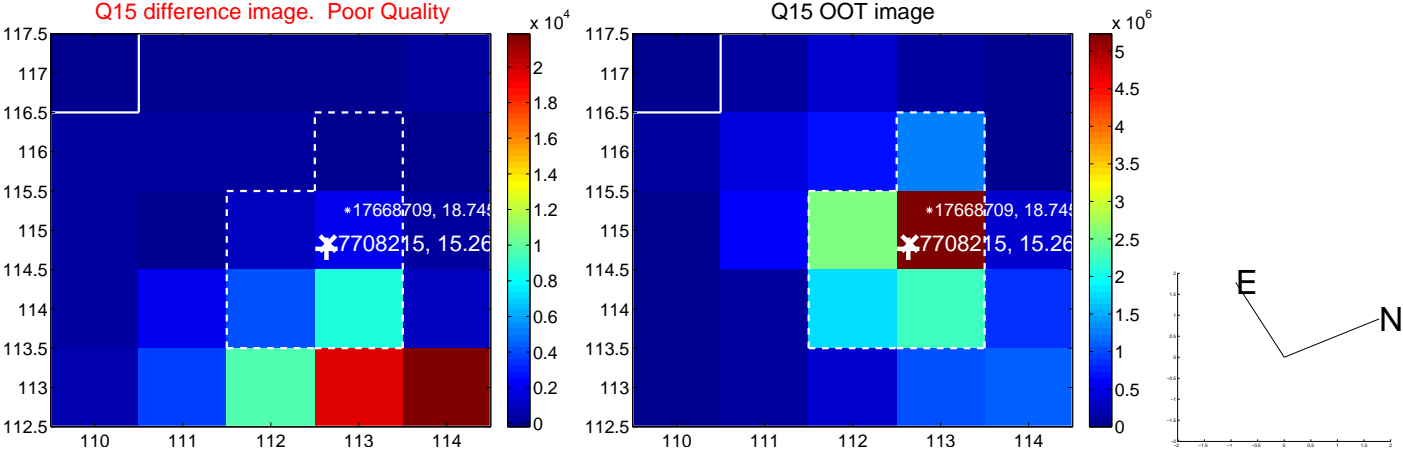
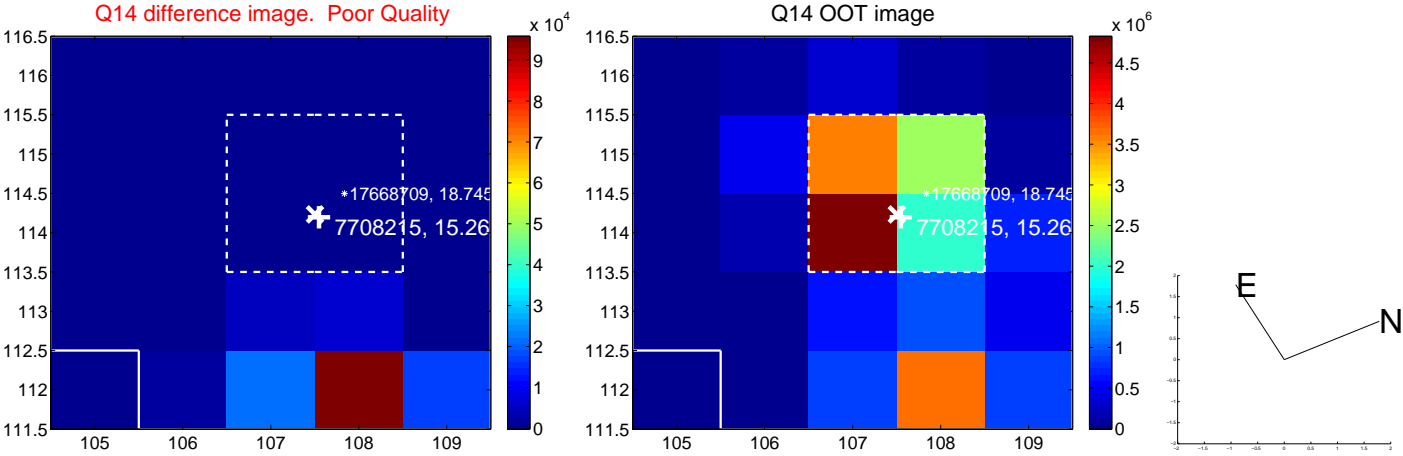
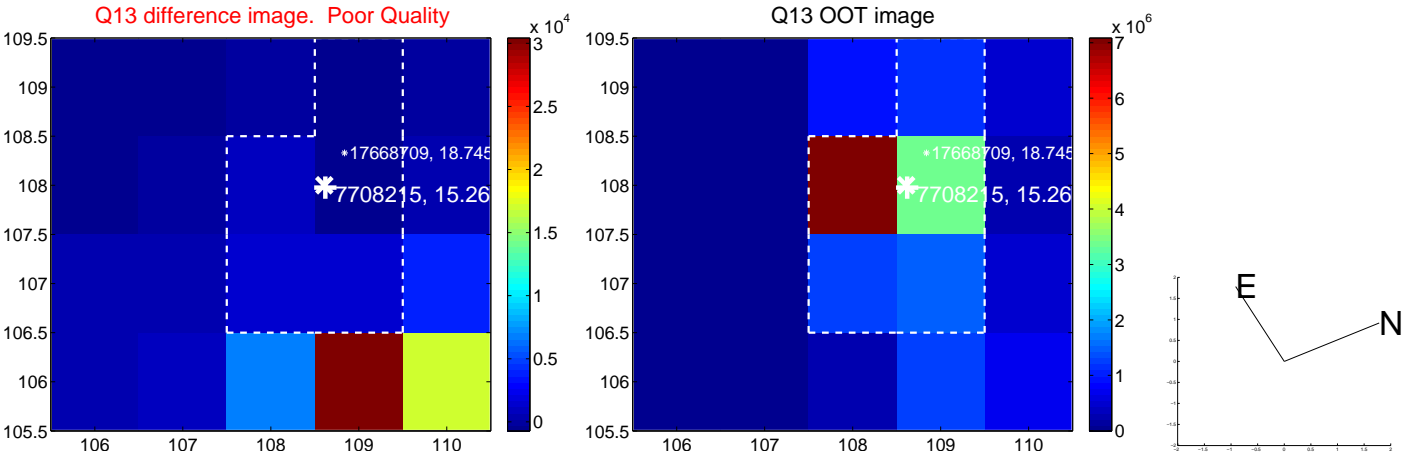
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



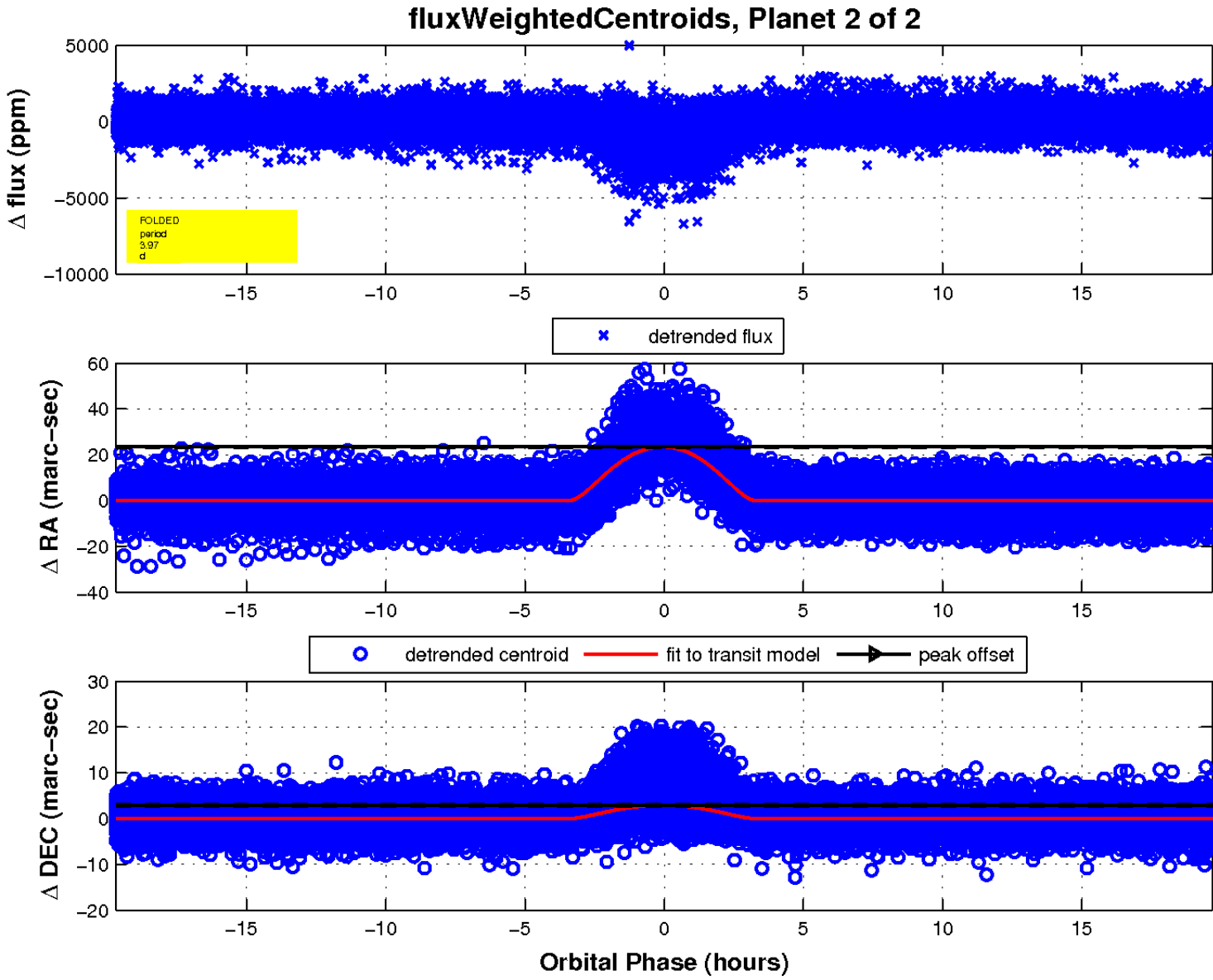
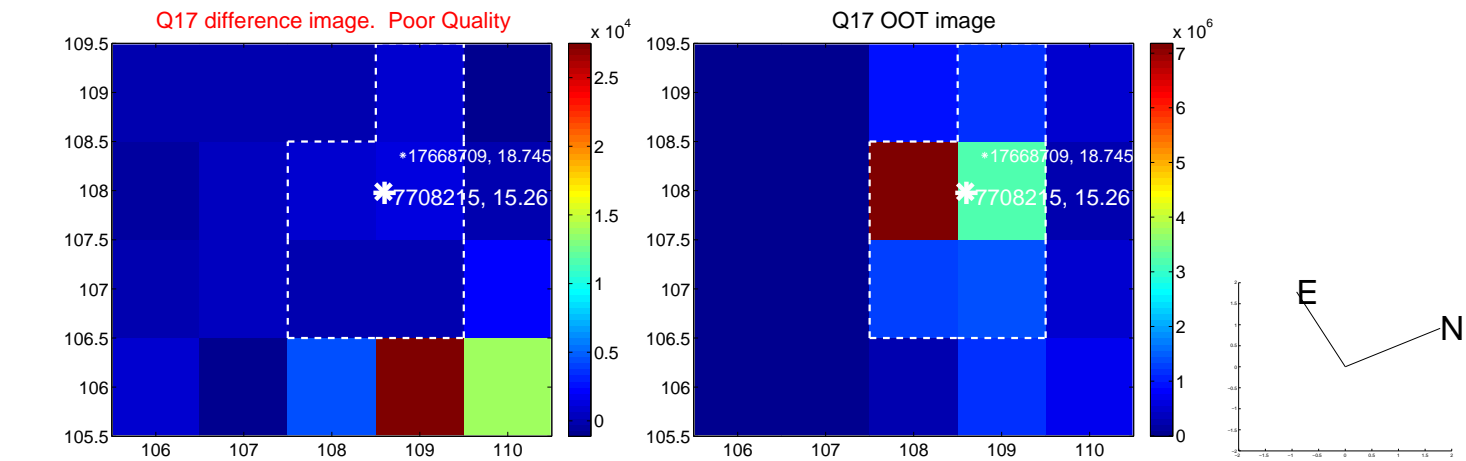
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

