

KIC 006790451

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})
006790451-01	OBS	No	1.635036	132.078146	28.1	5.797	13.6	13.9	3.57	7084	1.93	24453.25
006790451-02	OBS	No	1.634610	133.055876	19.3	10.838	8.3	12.5	3.57	7084	1.60	24461.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006790451-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006790451-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

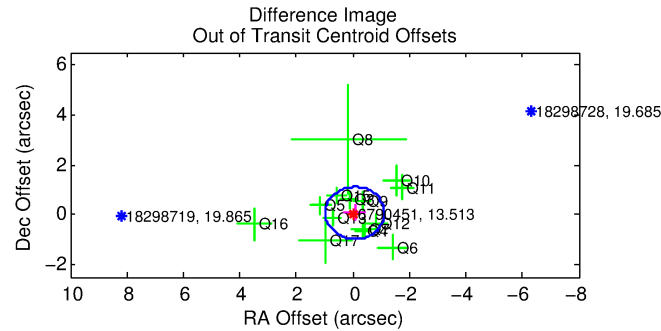
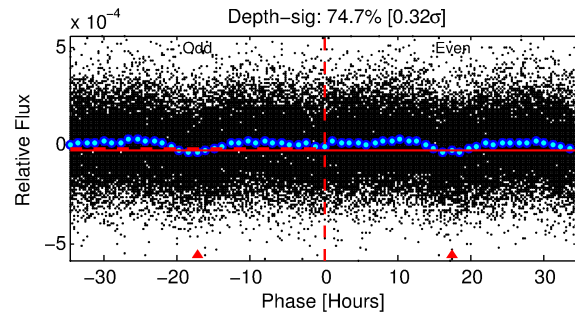
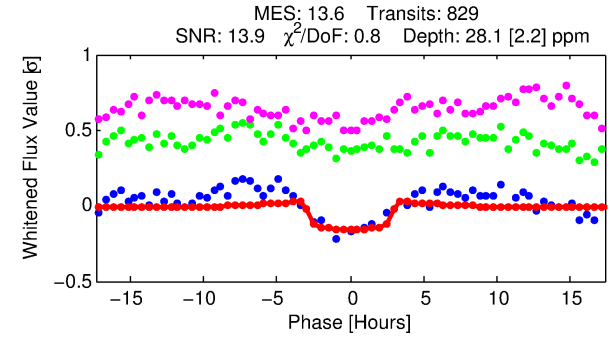
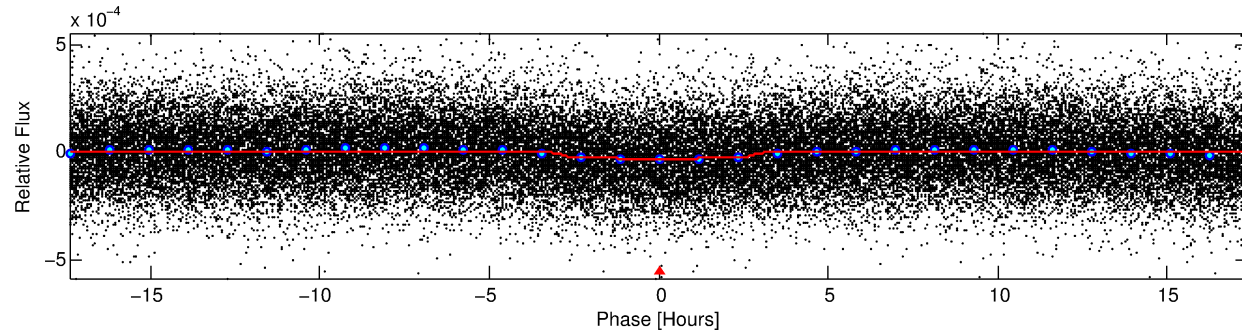
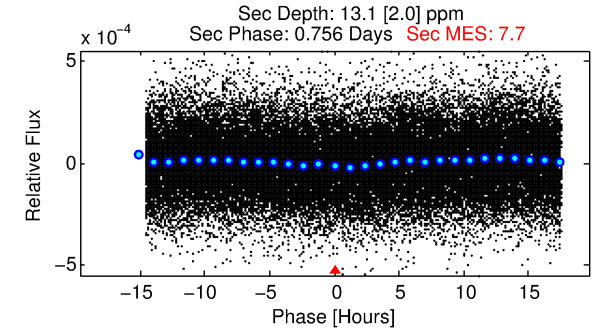
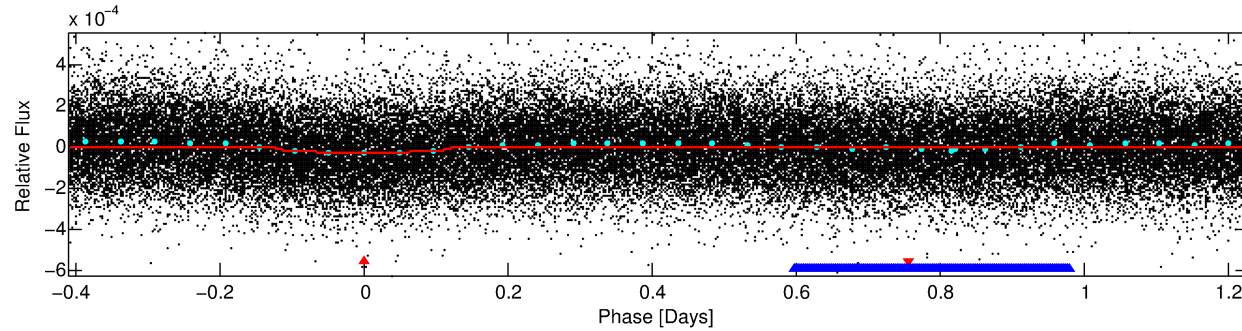
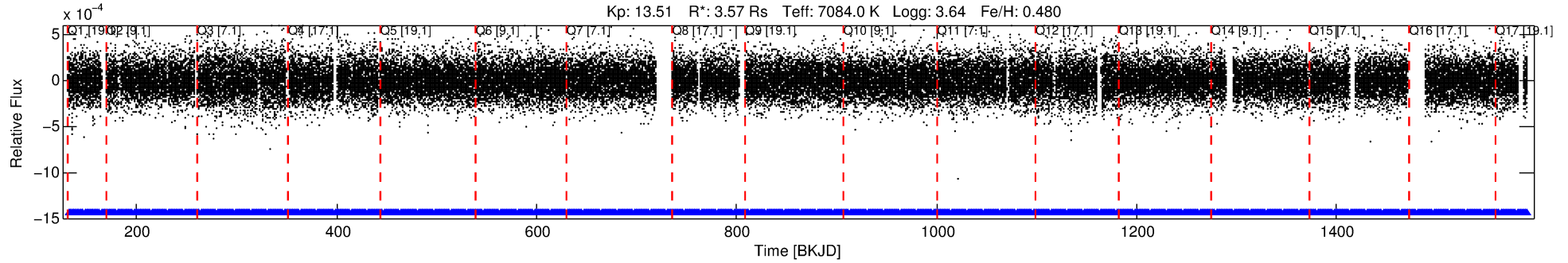
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006790451-01

No Significant Match Found

DV One-Page Summary

KIC: 6790451 Candidate: 1 of 2 Period: 1.635 d



DV Fit Results:

Period = 1.63504 [0.00001] d
Epoch = 132.0781 [0.0040] BKJD
Rp/R* = 0.0049 [0.0020]
a/R* = 2.17 [4.00]
b = 0.28 [7.65]
Seff = 24453.25 [9019.44]
Teff = 3189 [294] K
Rp = 1.93 [0.90] Re
a = 0.0343 [0.0077] AU
Ag = 2.29 [2.09] [0.62σ]
Teffp = 6063 [1269] K [2.21σ]

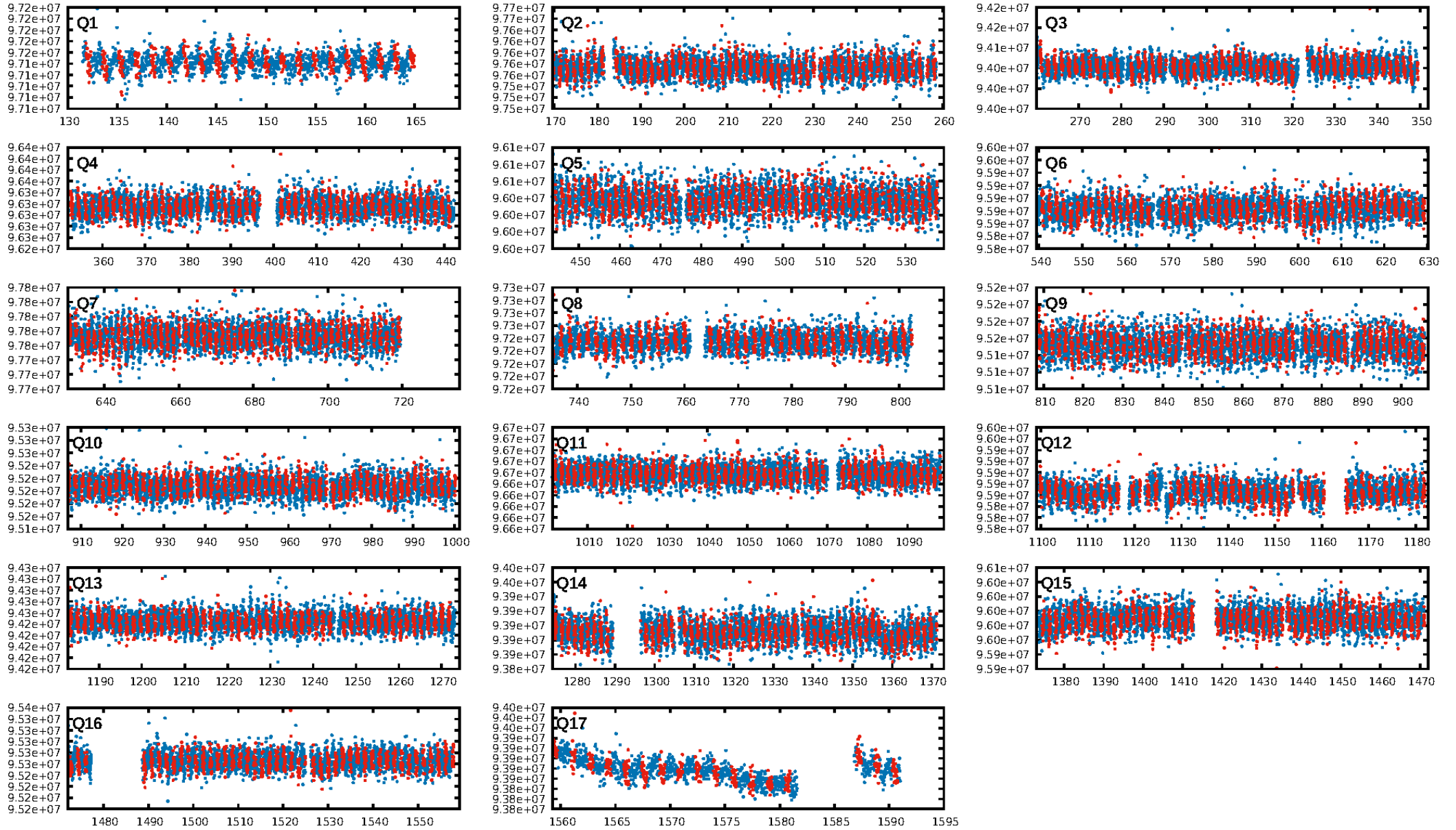
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [791/791]
GhostDiagnostic-chr: 6.359
Centroid-sig: 6.9%
Centroid-so: 0.871 arcsec [1.13σ]
OotOffset-rm: 0.088 arcsec [0.25σ]
KicOffset-rm: 0.209 arcsec [0.62σ]
OotOffset-st: 2/4/4/4 [14]
KicOffset-st: 2/4/4/4 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 0.47 [8/17]

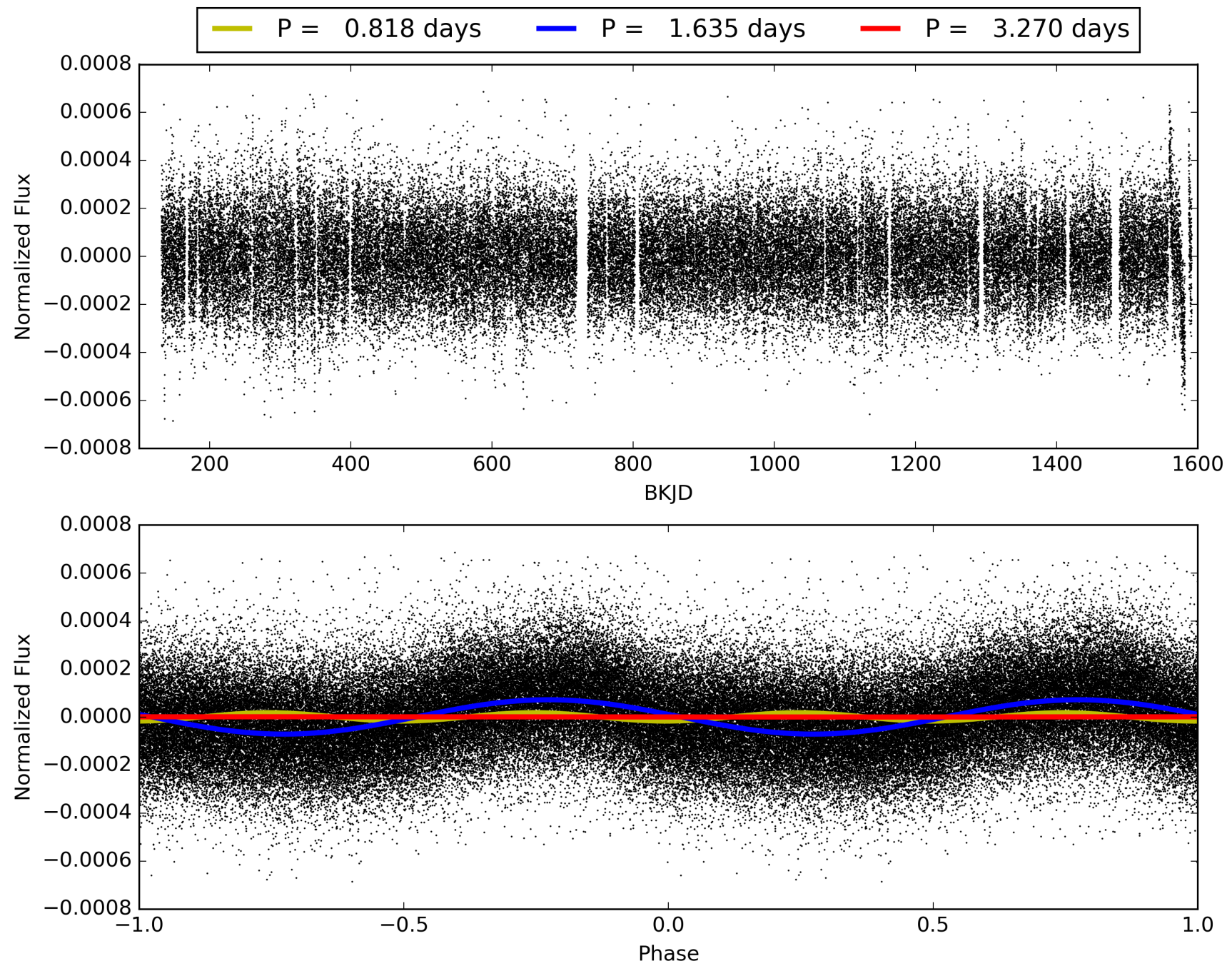
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:44:15 Z

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

TCE 006790451-01, PDC Light Curves

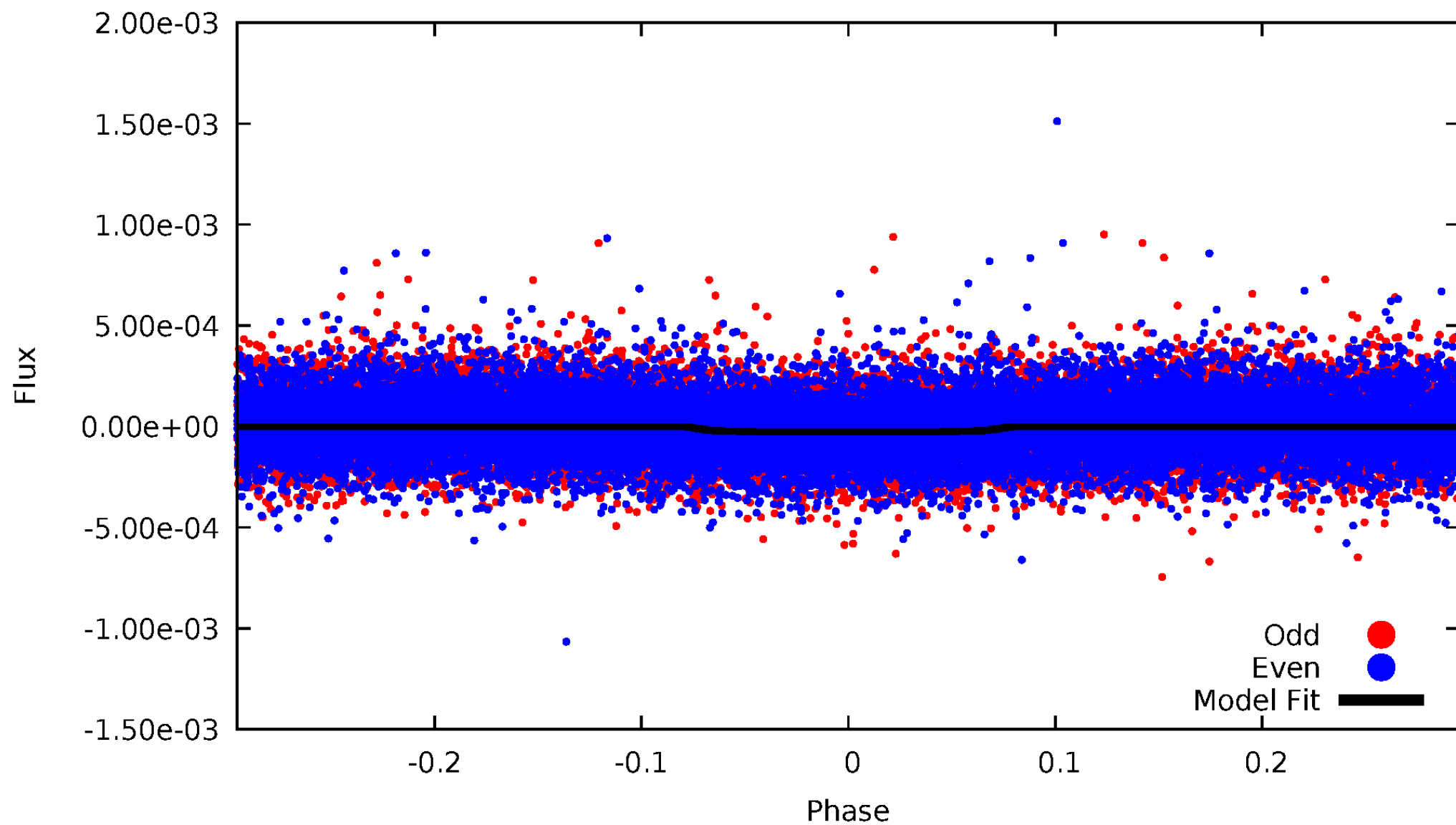


TCE 006790451-01



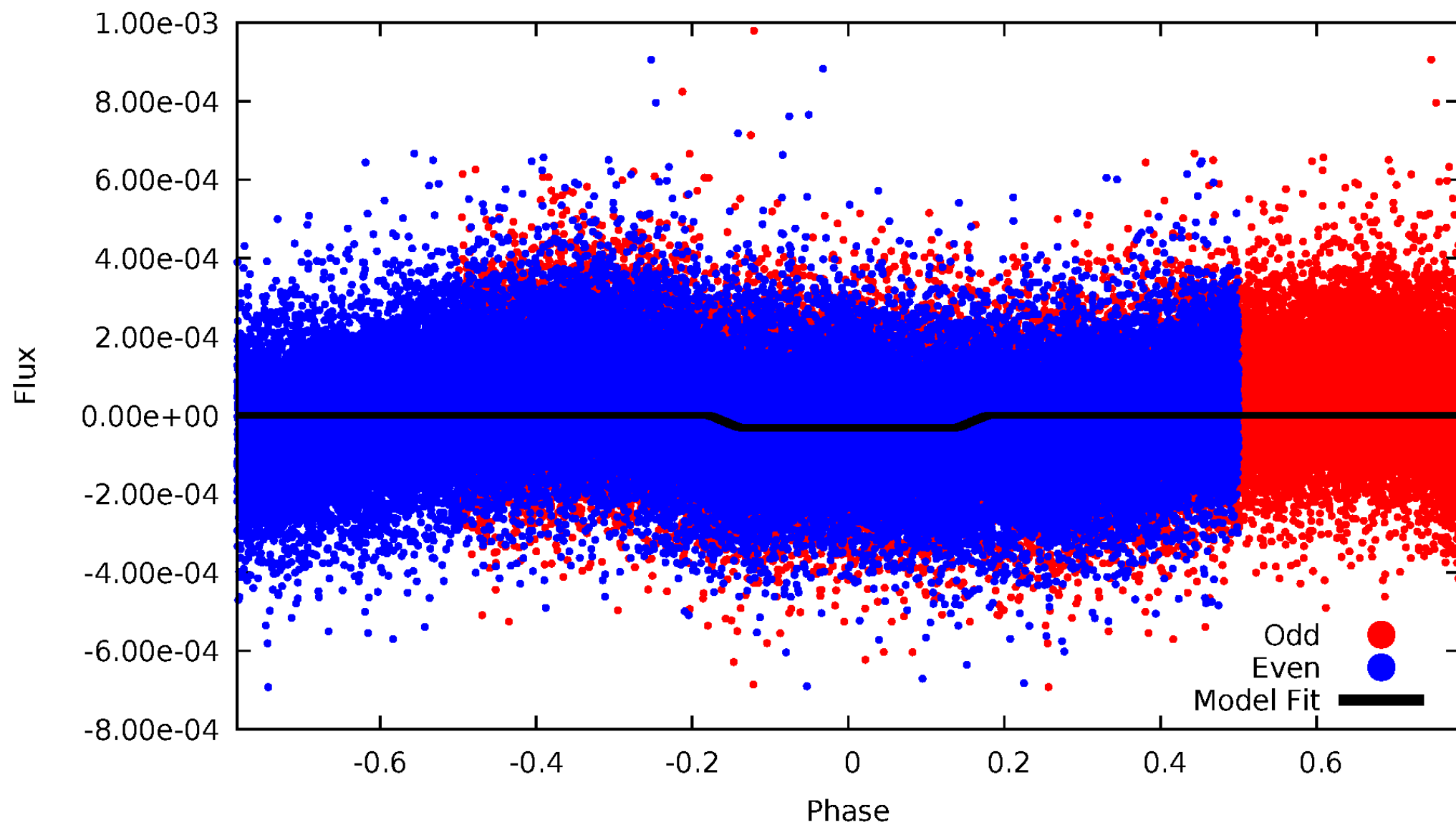
DV Odd/Even

TCE 006790451-01



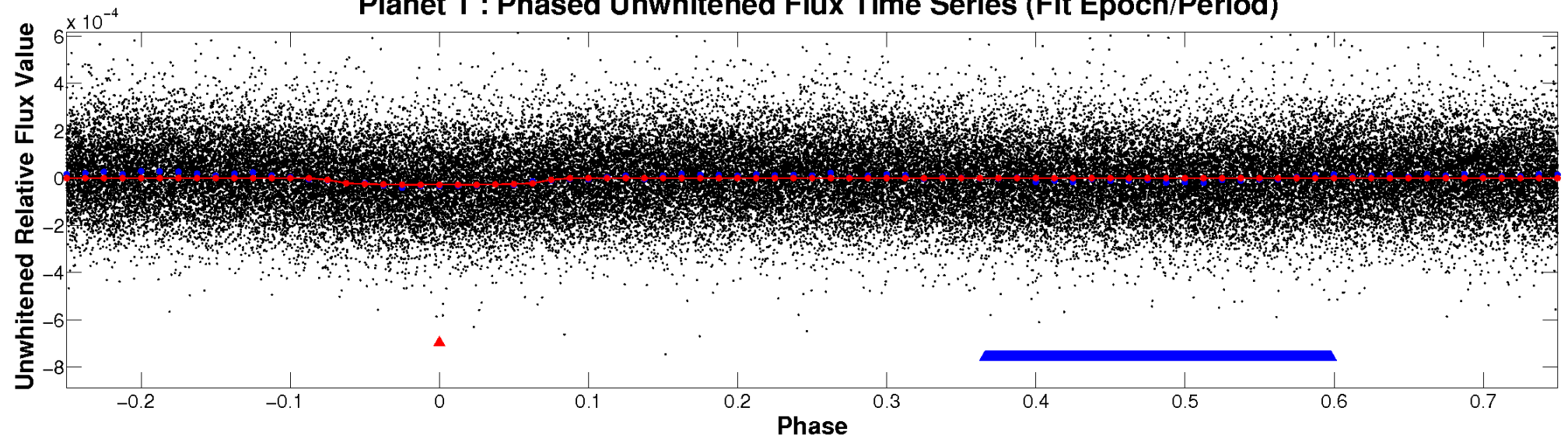
ALT Odd/Even

TCE 006790451-01

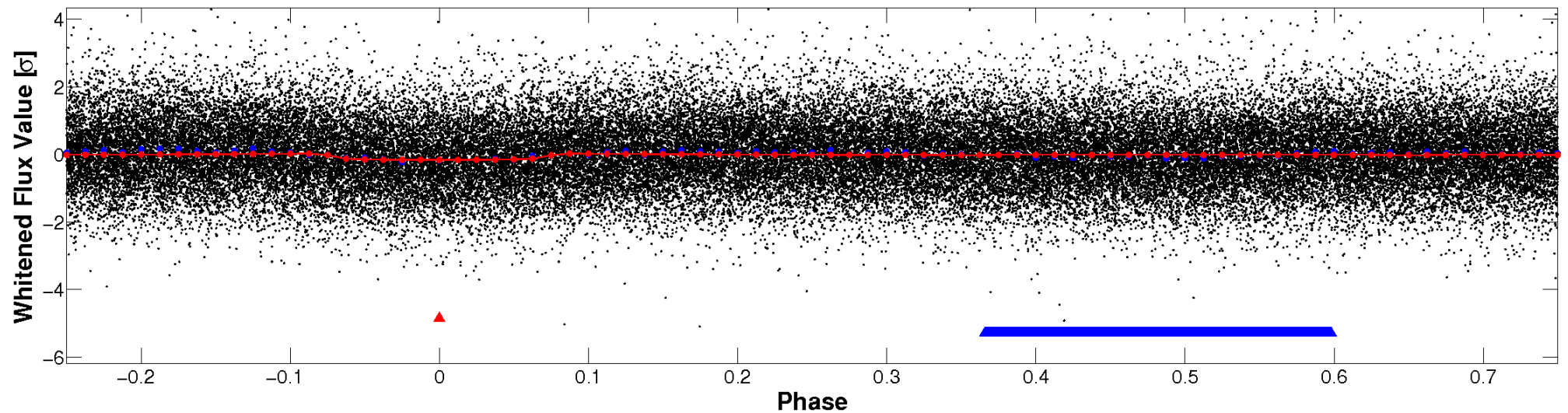


Non-Whitened Vs. Whitened Light Curve

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

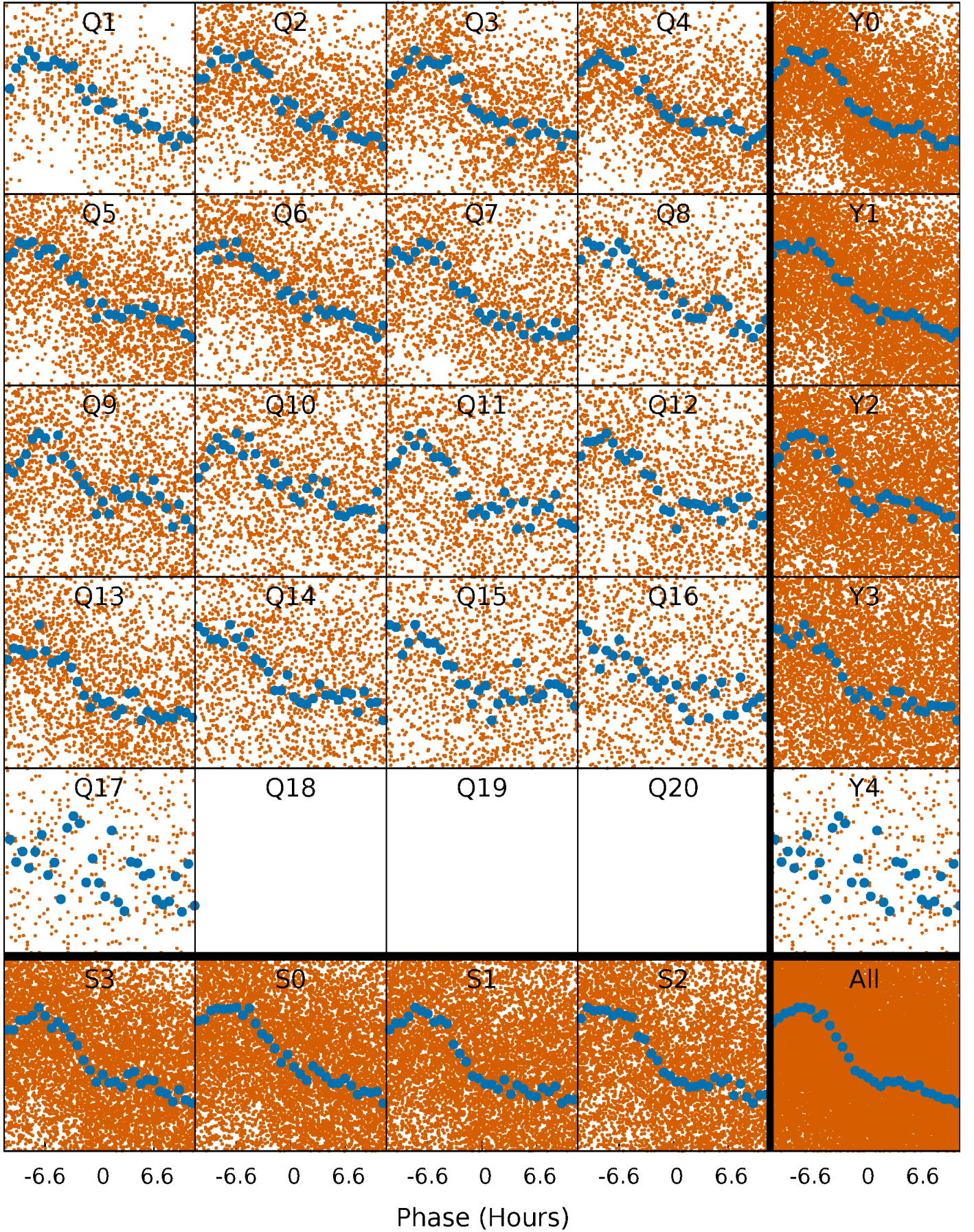


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



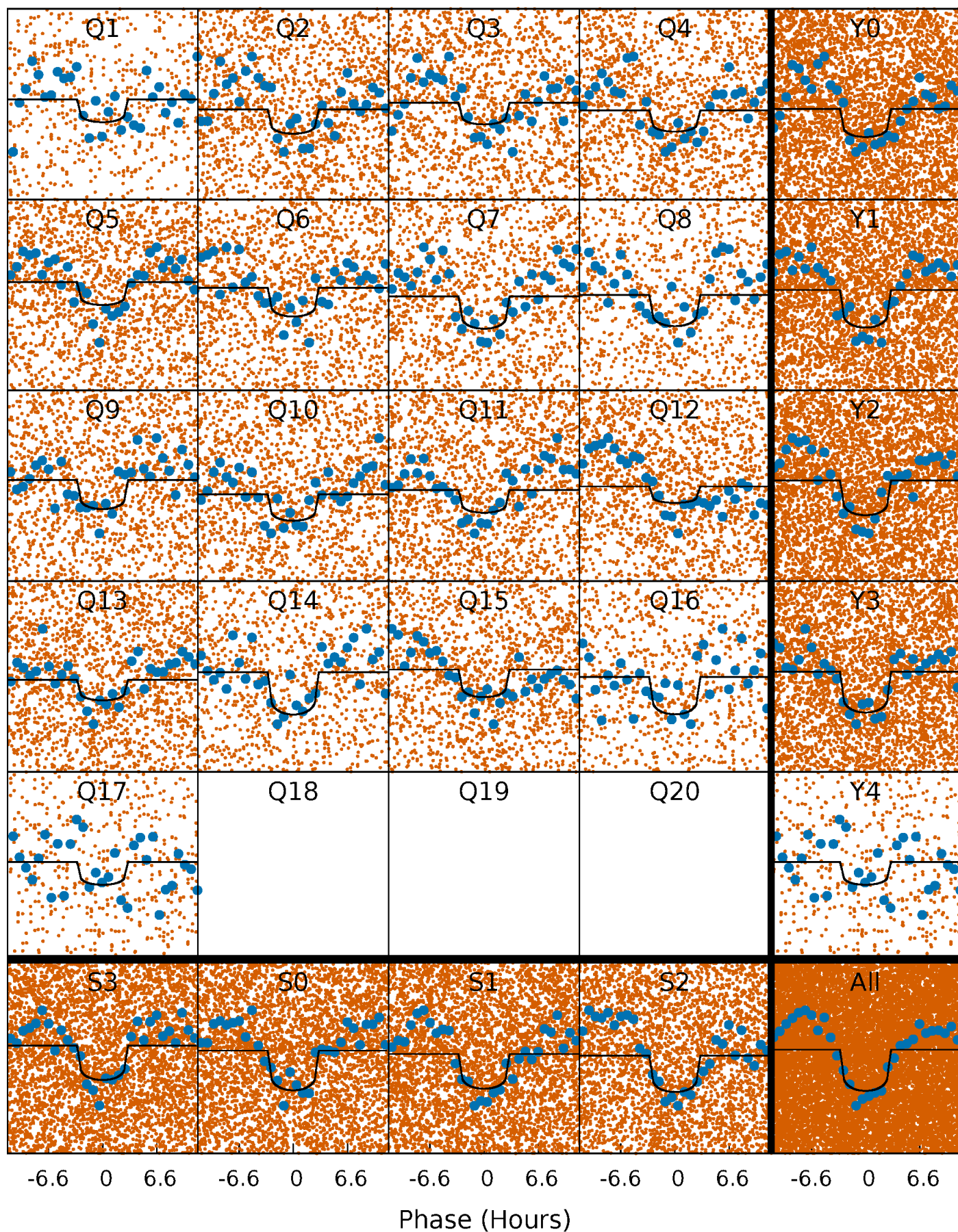
PDC Quarter-Phased Transit Curves

TCE 006790451-01 P= 1.635036 Days $T_0=132.078146$ (BKJD)



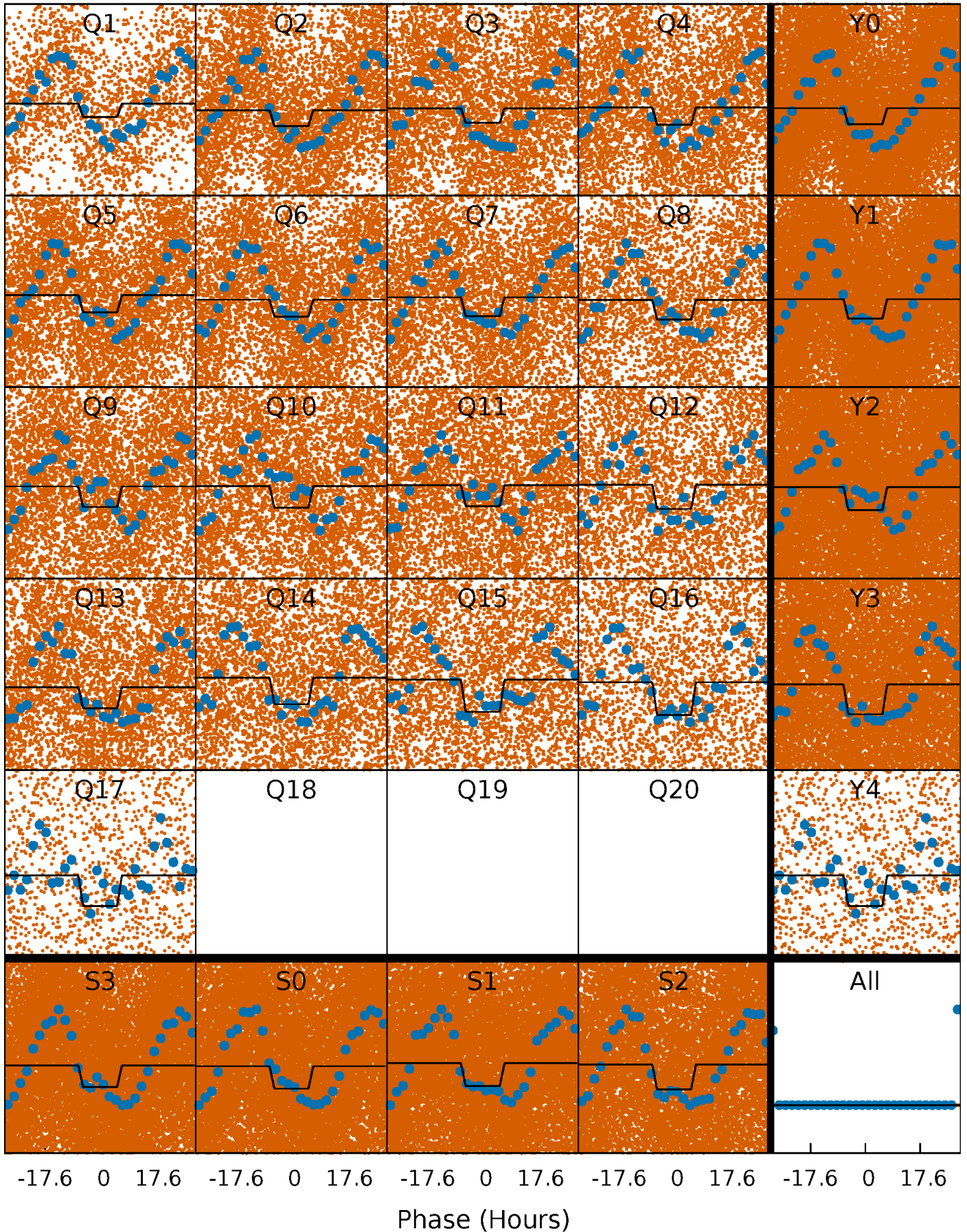
DV Quarter-Phased Transit Curves

TCE 006790451-01 P= 1.635036 Days $T_0=132.078146$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

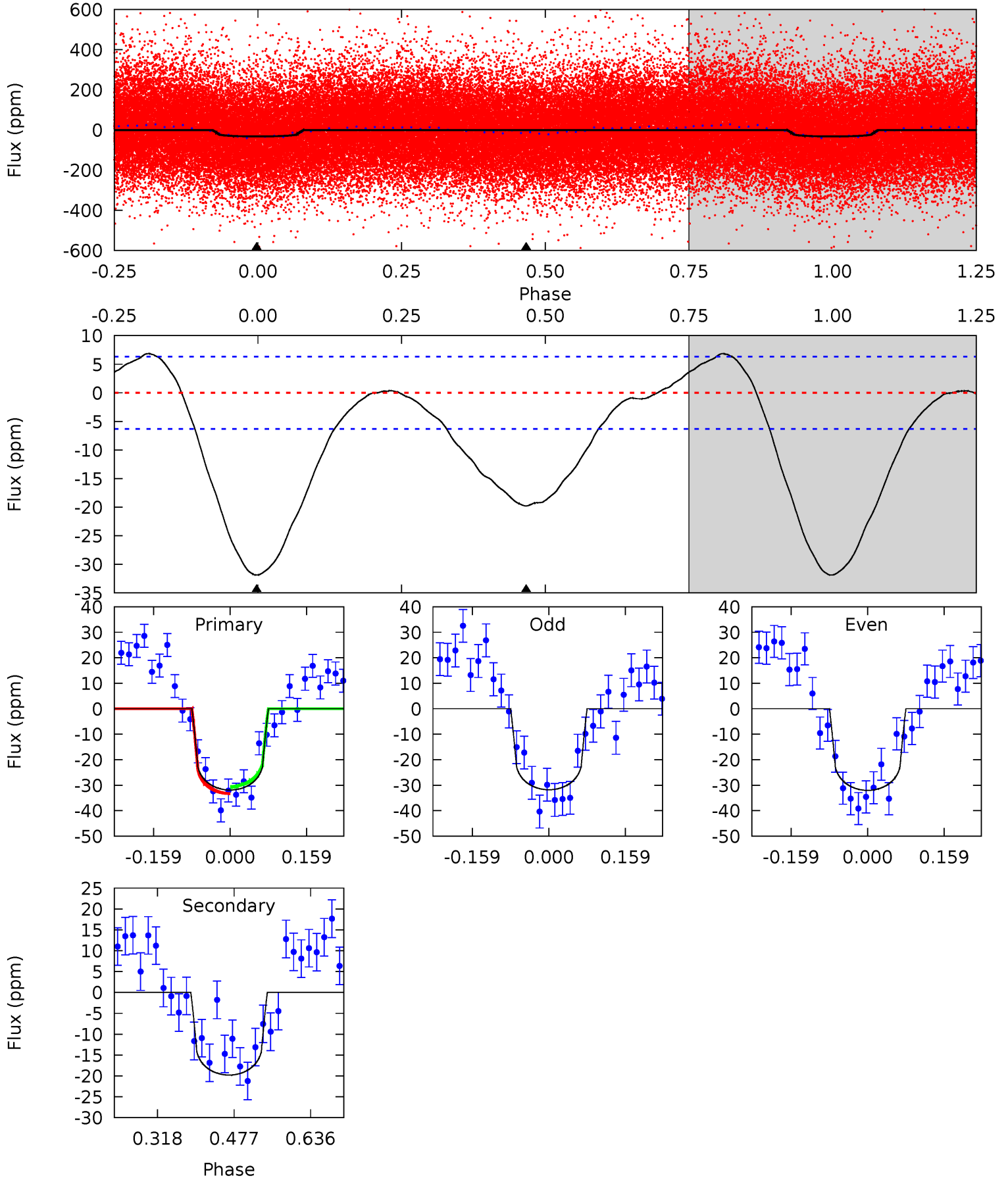
TCE 006790451-01 P= 1.635018 Days $T_0=132.316548$ (BKJD)



DV Model-Shift Uniqueness Test

006790451-01, P = 1.635036 Days, E = 130.443110 Days

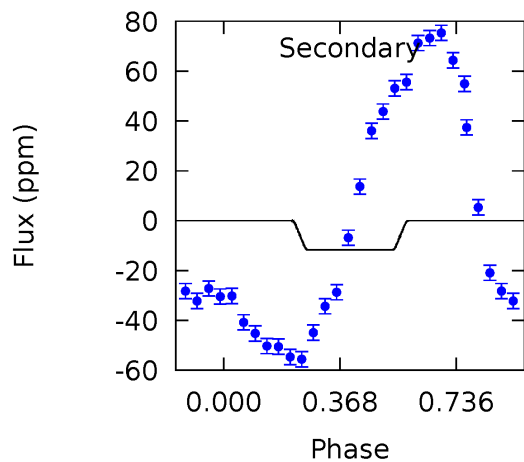
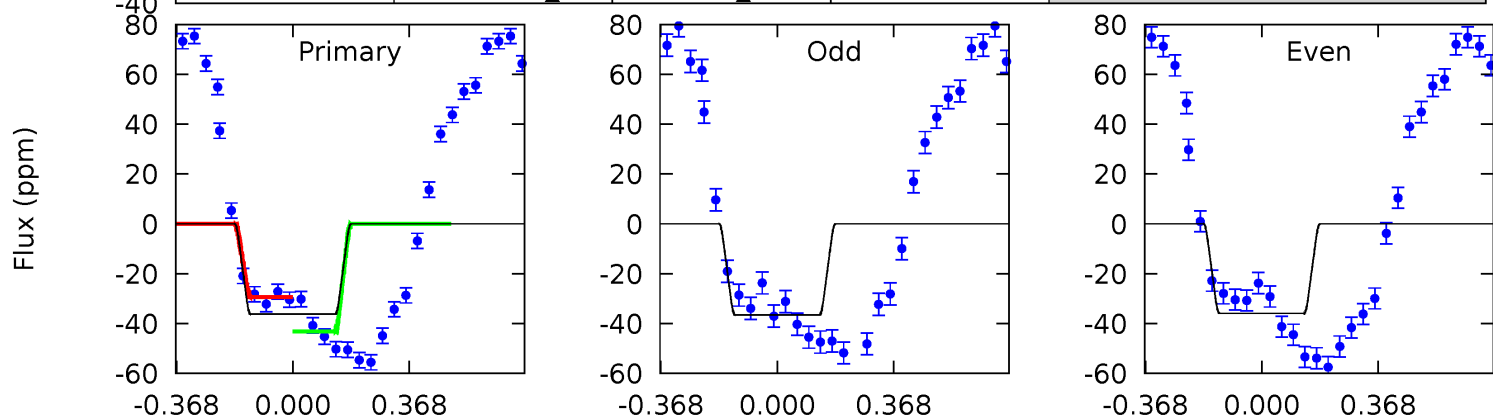
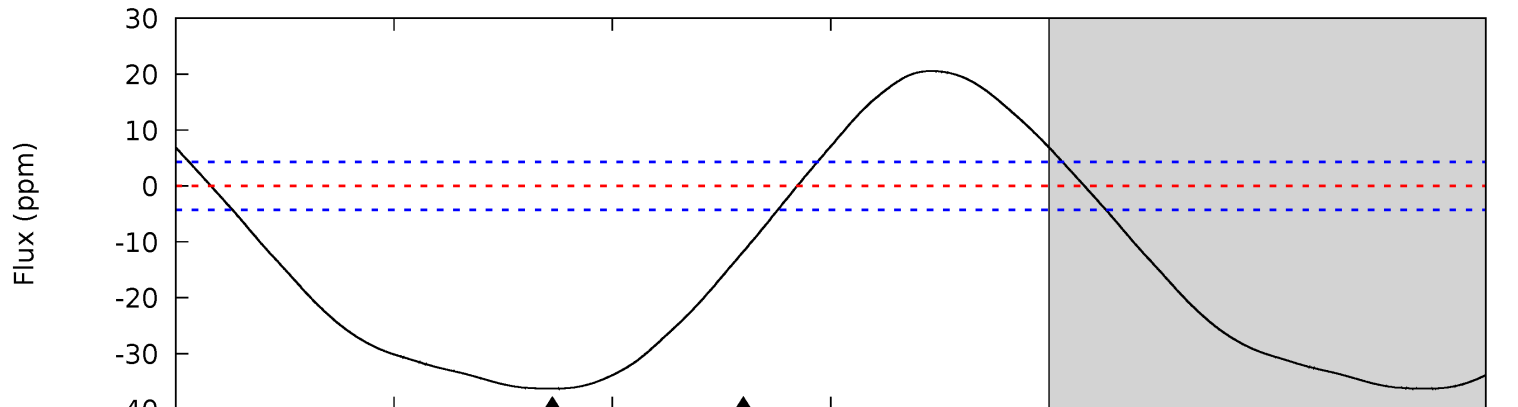
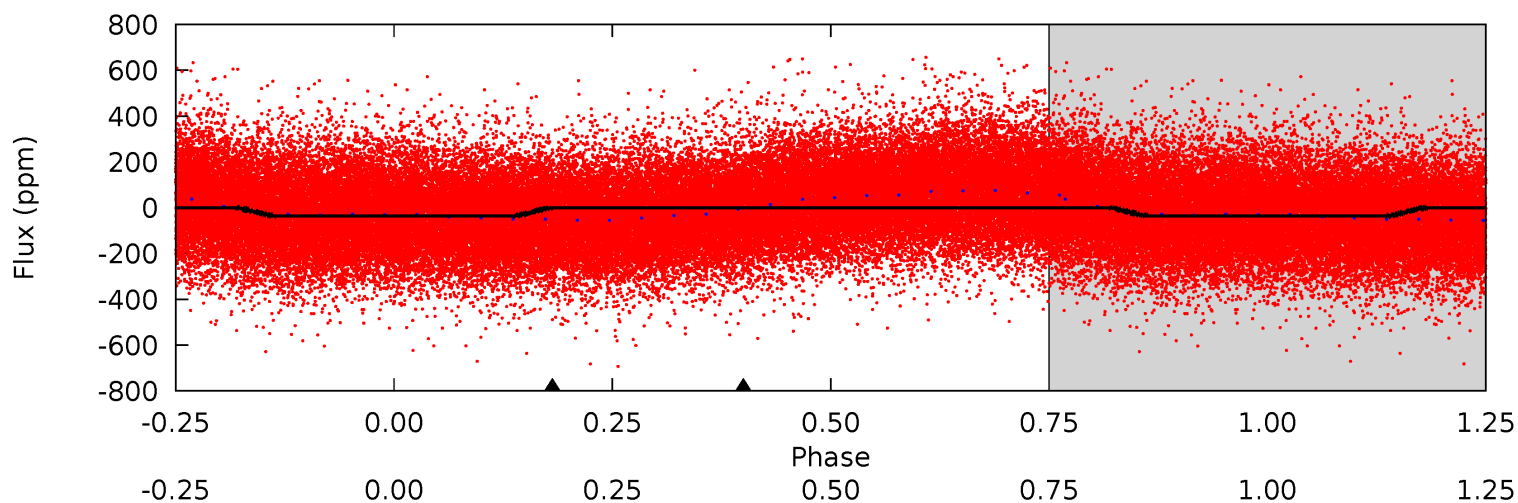
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.6	14.0	0	0	4.47	1.41	2.13	22.6	22.6	14.0	14.0	0.08	0.97	0.18	1.00



Alt Model-Shift Uniqueness Test

006790451-01, P = 1.635018 Days, E = 130.681530 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.4	11.8	0	0	4.28	0.90	5.02	36.4	36.4	11.8	11.8	0.29	1.00	0.36	6.93



Stellar Parameters For KIC 006790451

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7084^{+73}_{-84}	$3.636^{+0.217}_{-0.093}$	$0.480^{+0.050}_{-0.150}$	$3.569^{+0.662}_{-0.809}$	$2.009^{+0.202}_{-0.124}$	$0.062^{+0.071}_{-0.021}$
	+1%/-1%	+6%/-3%	+10%/-31%	+19%/-23%	+10%/-6%	+114%/-34%
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 006790451-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-20 ± 1	$1.87^{+0.76}_{-0.78}$	4388^{+212}_{-278}	6527^{+2401}_{-1122}	$3.731^{+7.287}_{-1.865}$
Alt.	-12 ± 1	$2.13^{+0.79}_{-0.78}$	4414^{+210}_{-265}	5250^{+1415}_{-803}	$1.678^{+2.510}_{-0.775}$

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

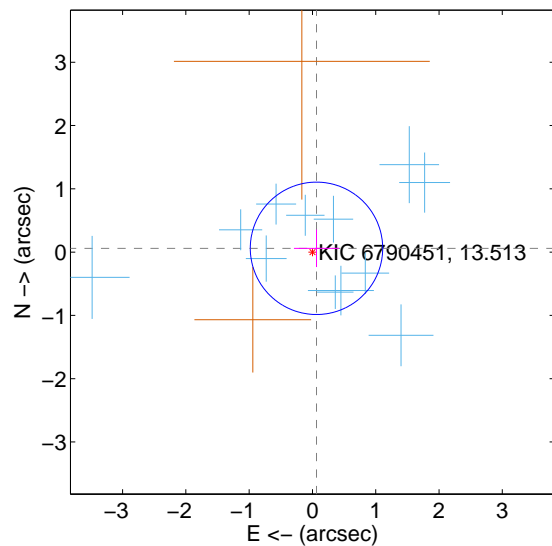
Supplemental centroid analysis for 006790451-01. Kepler magnitude: 13.51. Transit SNR 13.93

There are 12 quarters with good PRF difference image offsets

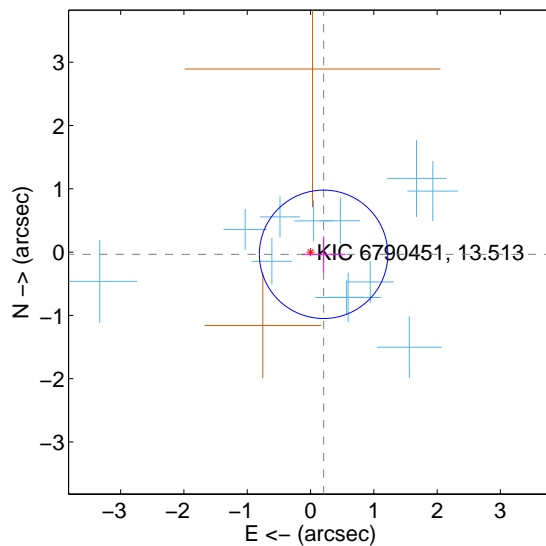
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.088 ± 0.349	0.25	-0.064 ± 0.357	0.060 ± 0.296
PRF-fit source offset from KIC position	0.209 ± 0.338	0.62	-0.206 ± 0.345	-0.035 ± 0.283
photometric centroid source offset	0.87 ± 0.77	1.13	-0.05 ± 0.67	0.87 ± 0.77

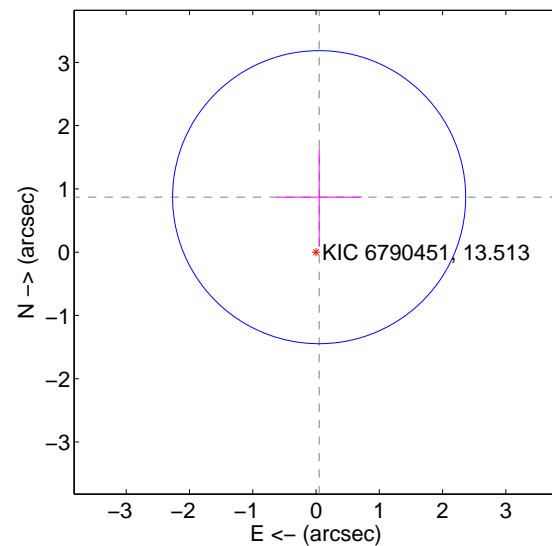
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

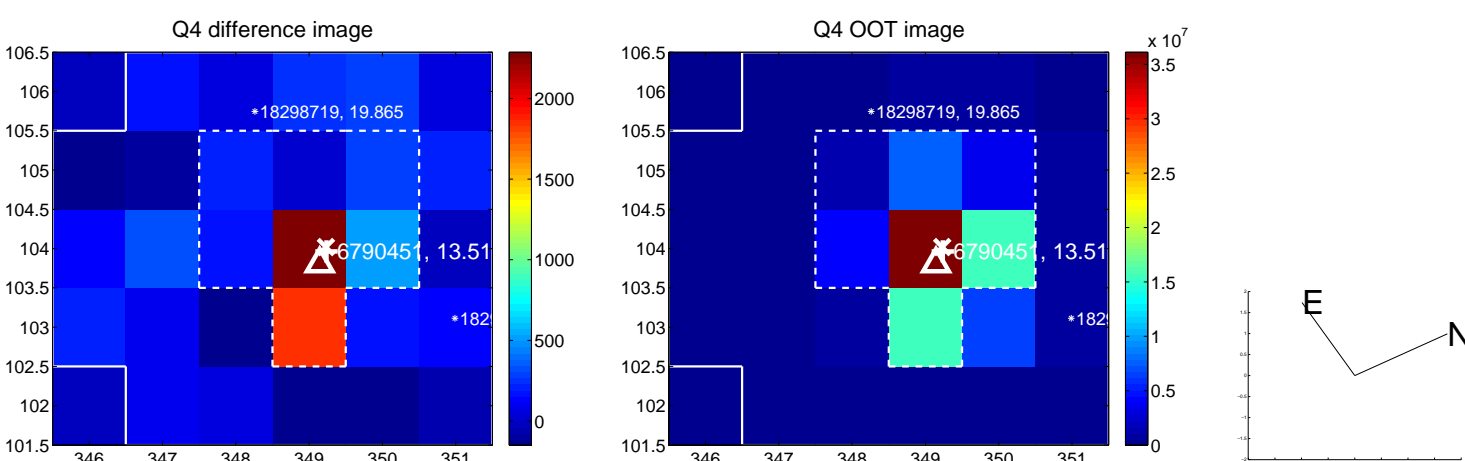
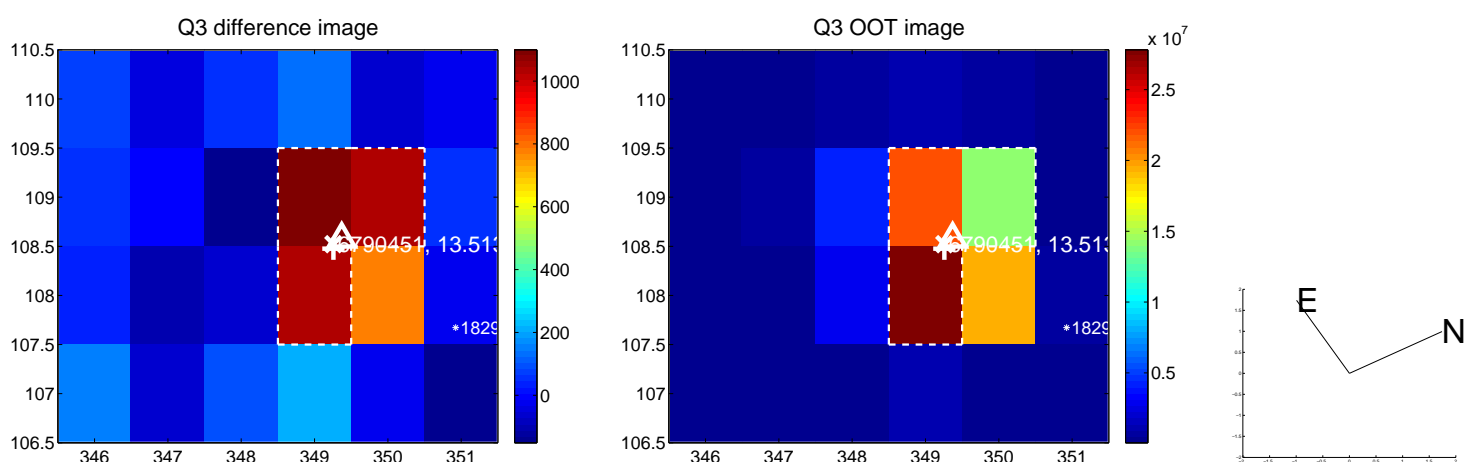
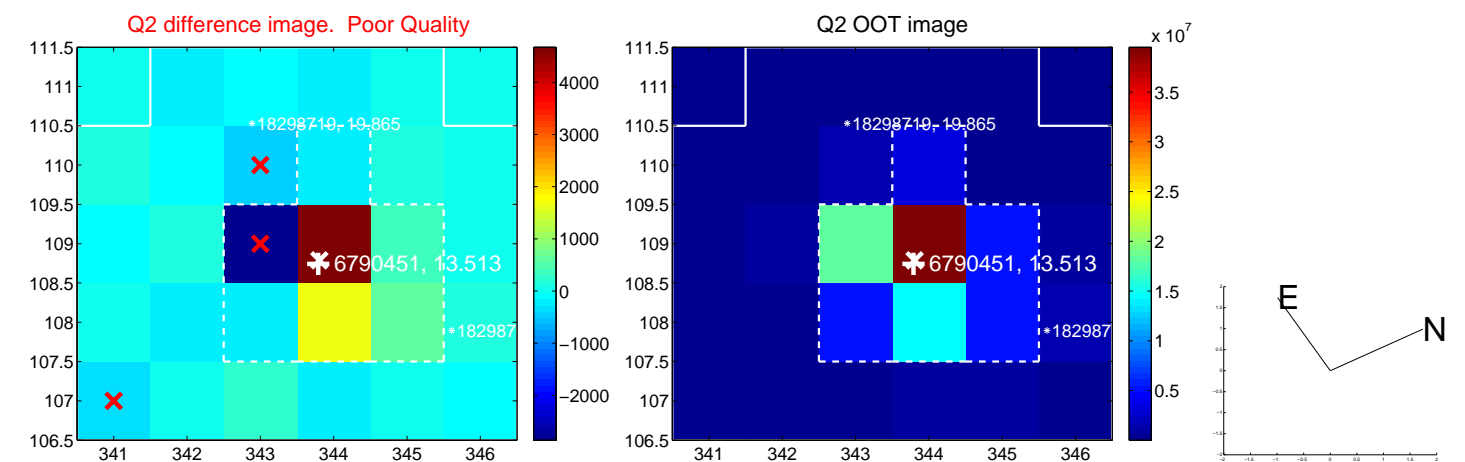
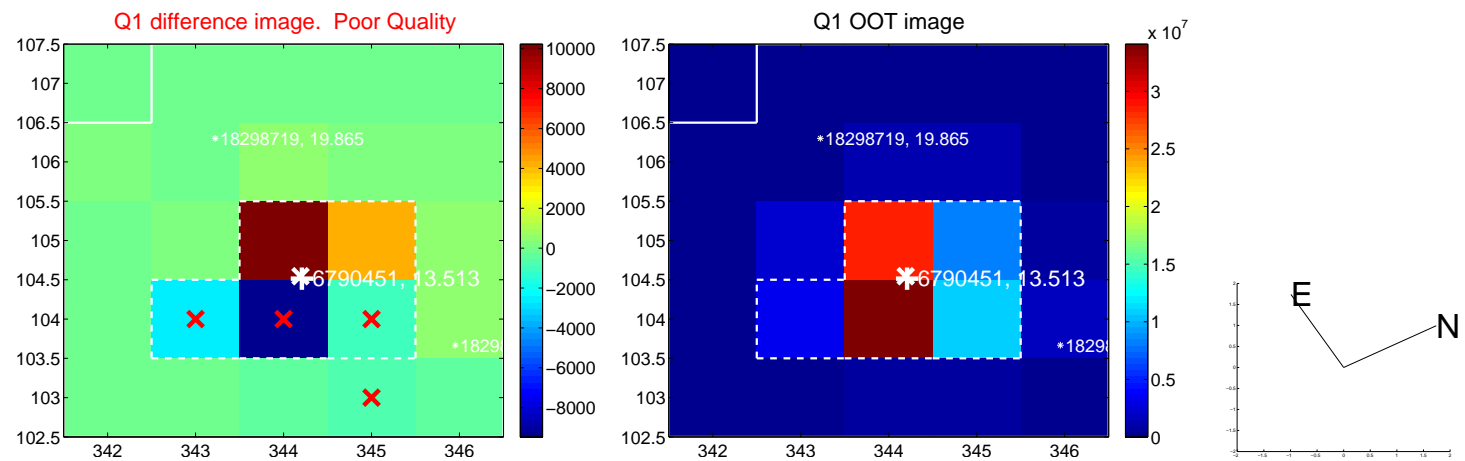


offset from photometric centroids

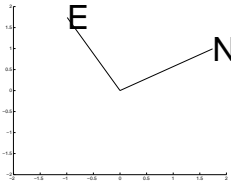
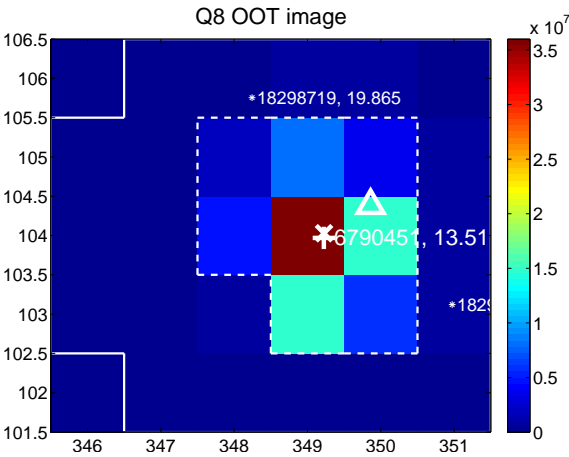
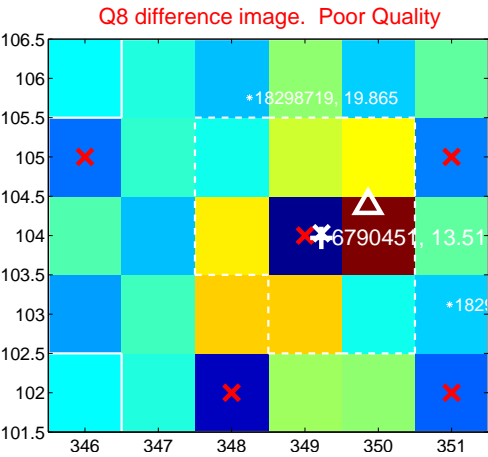
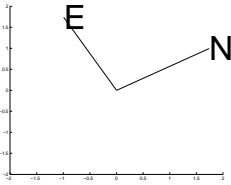
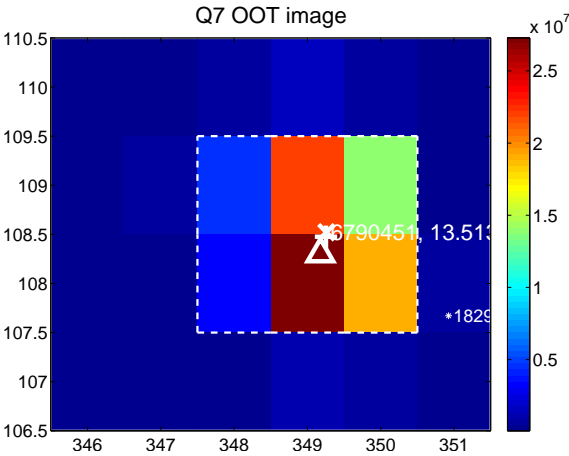
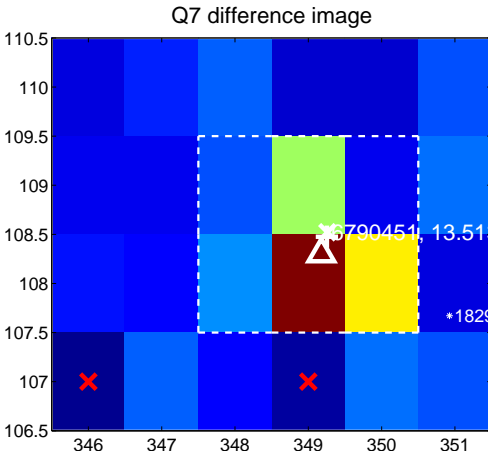
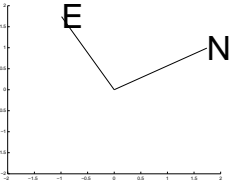
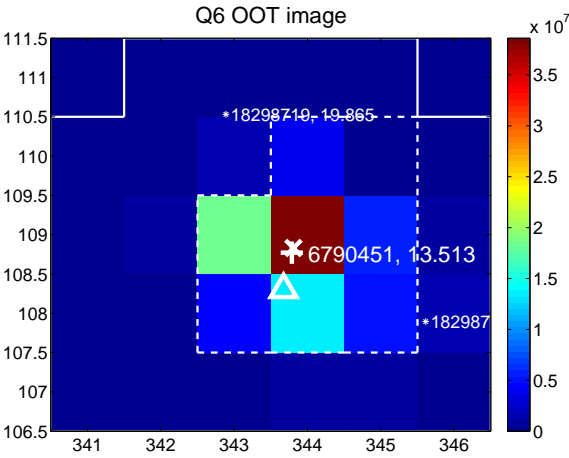
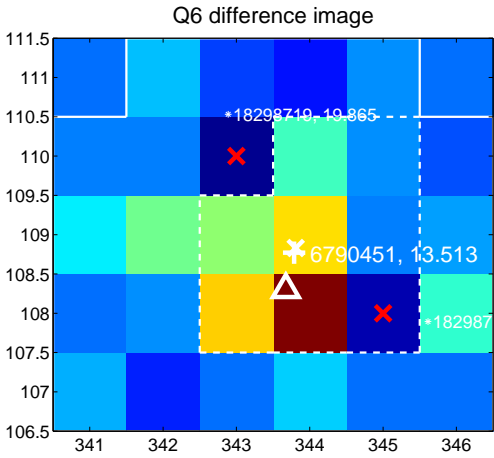
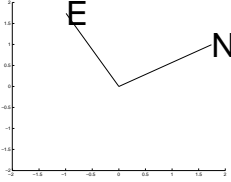
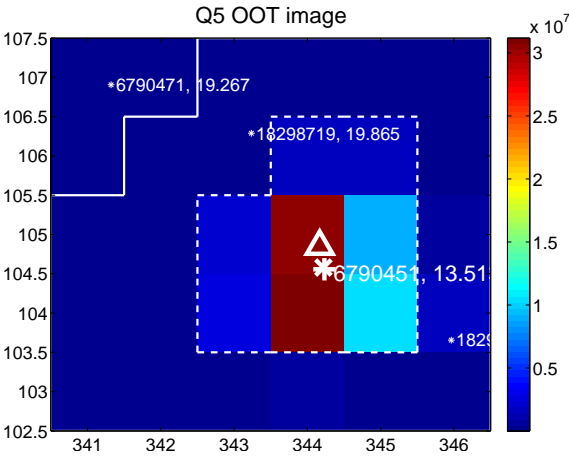
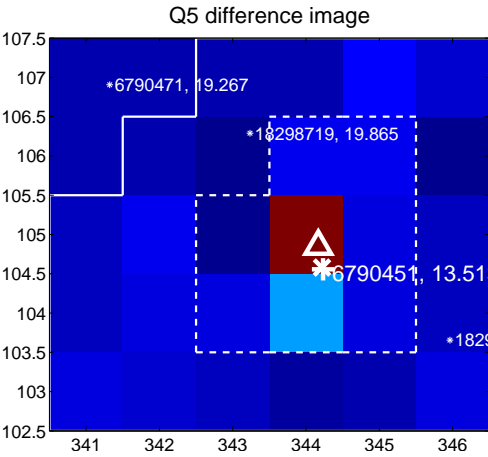


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

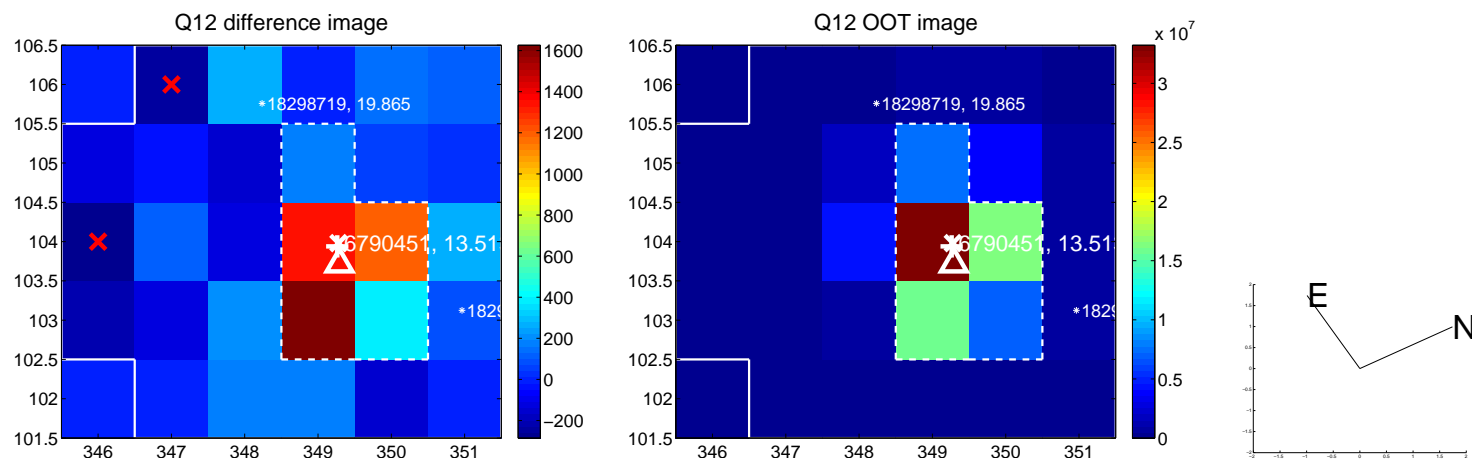
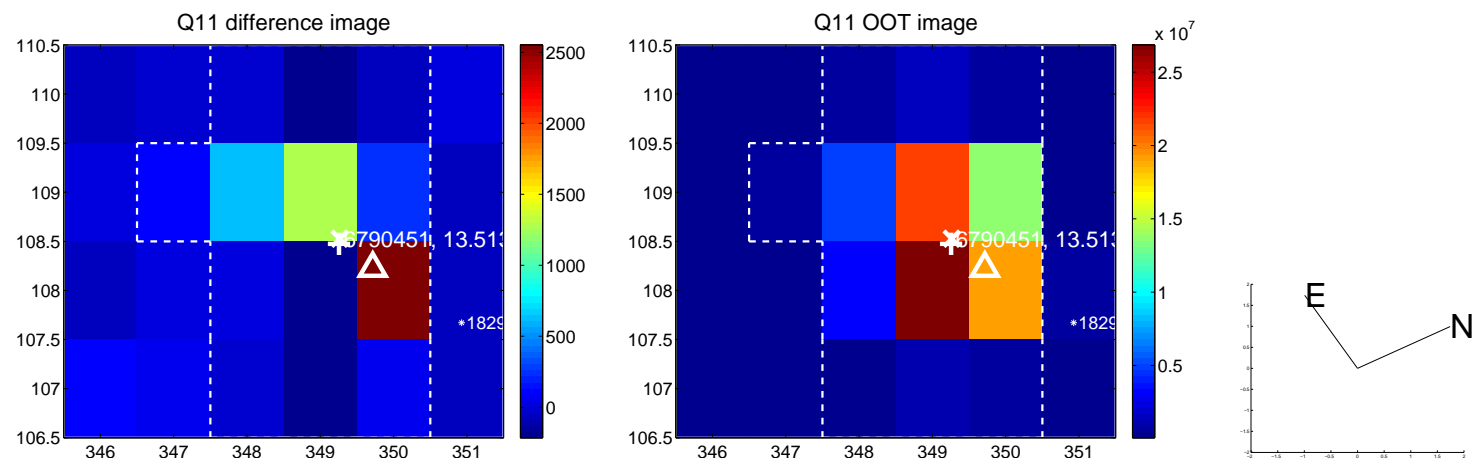
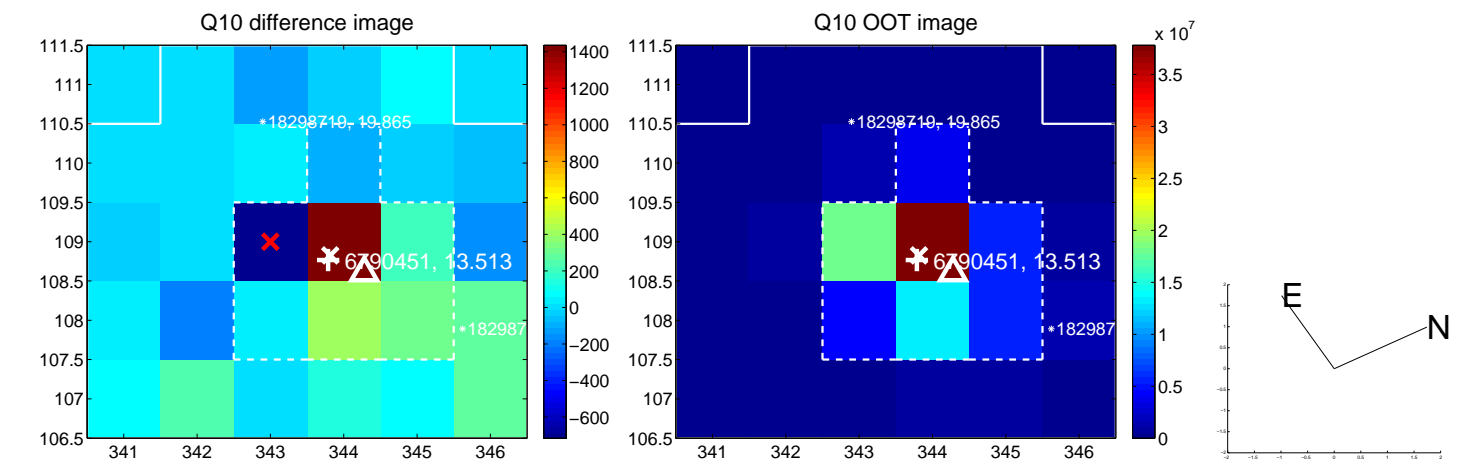
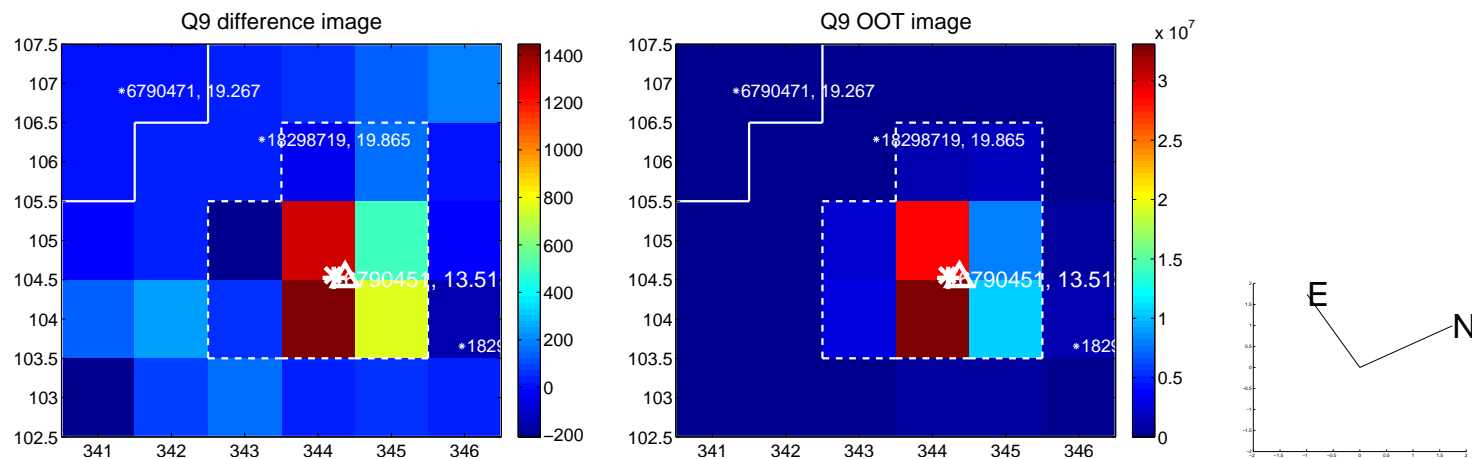
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



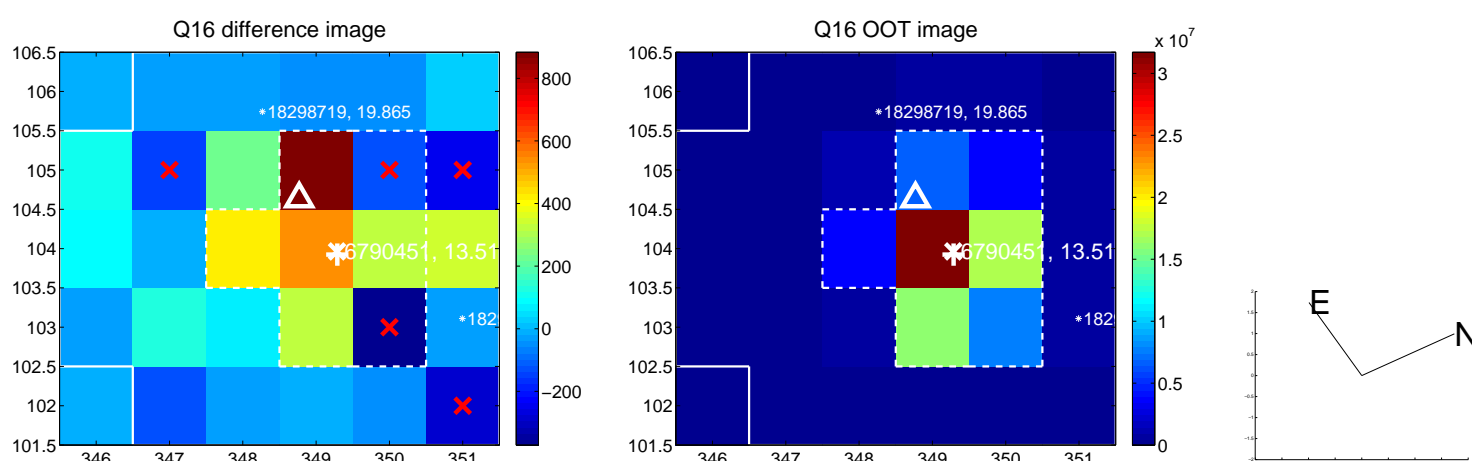
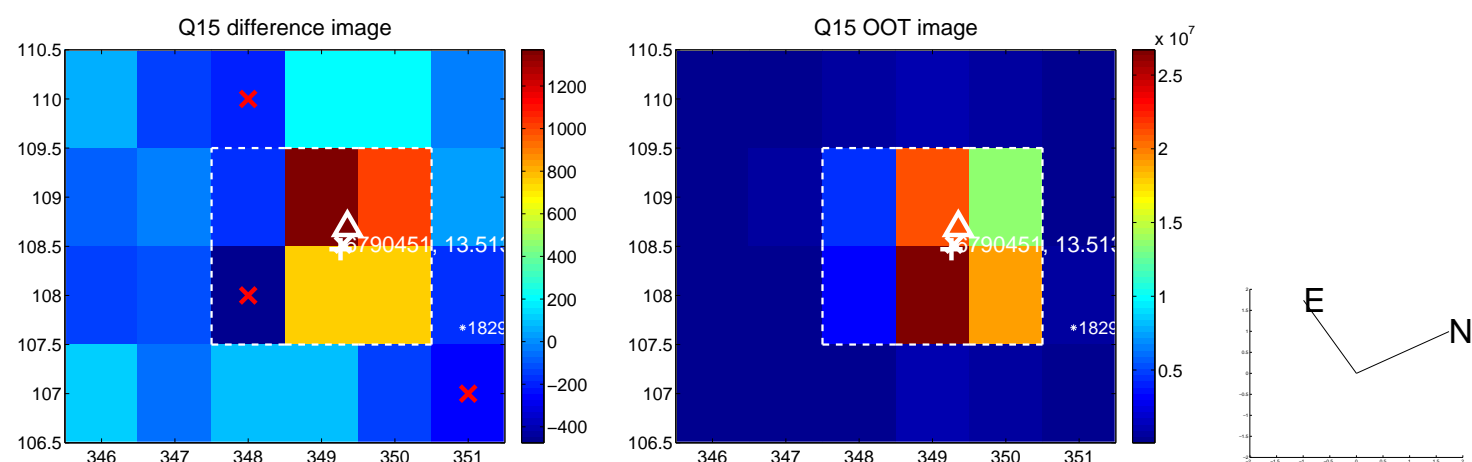
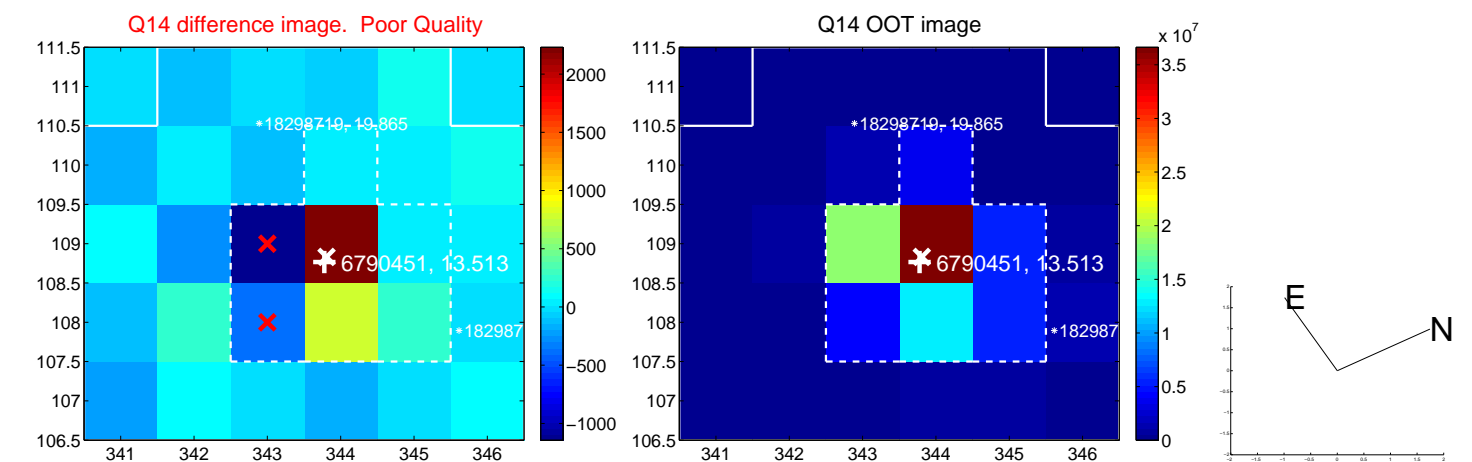
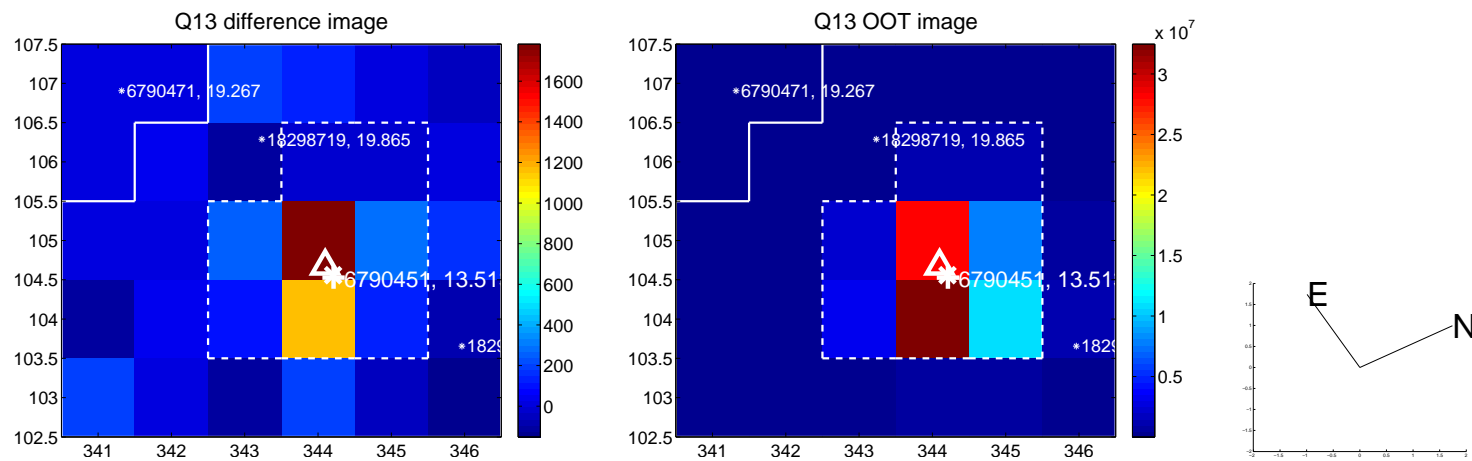
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



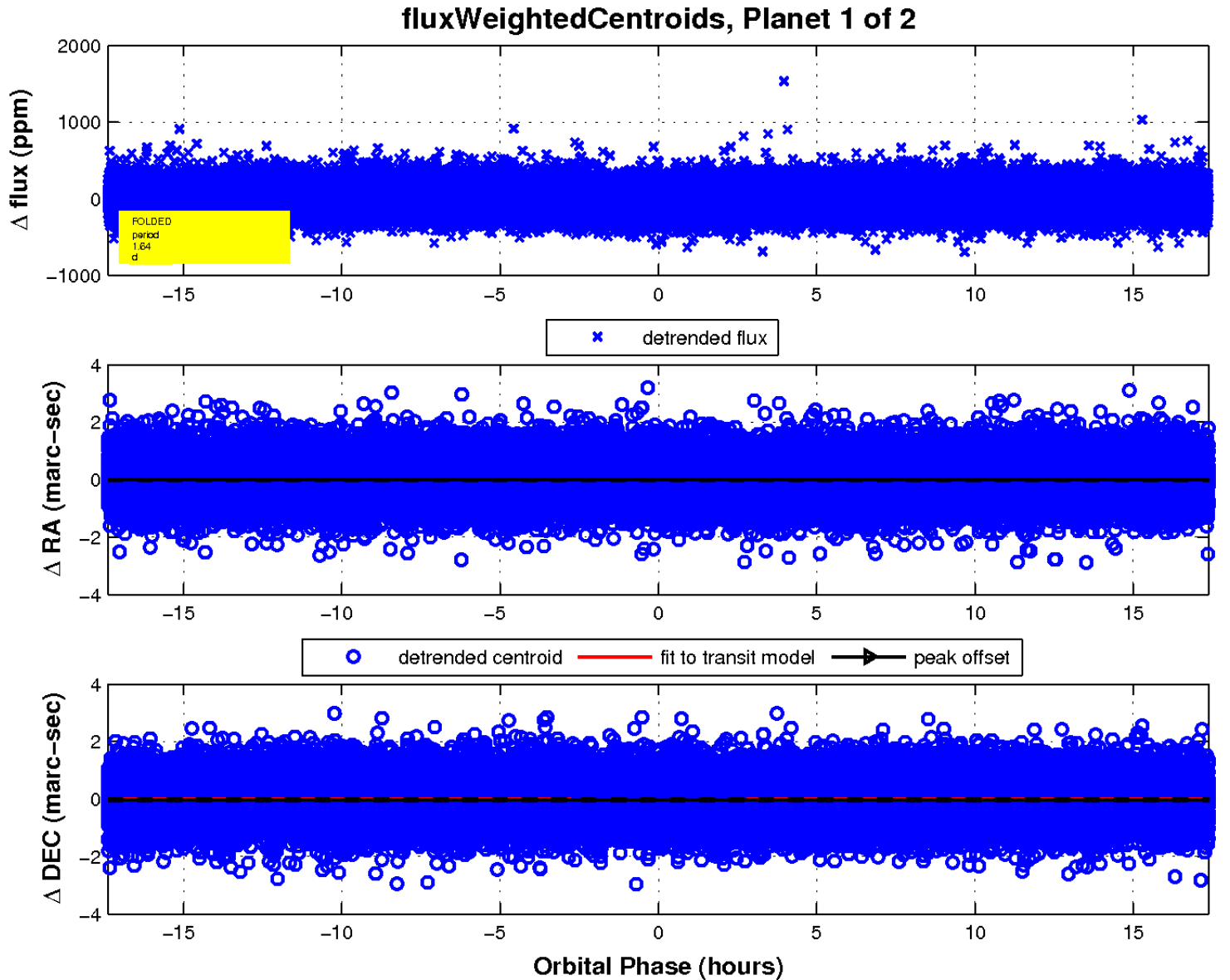
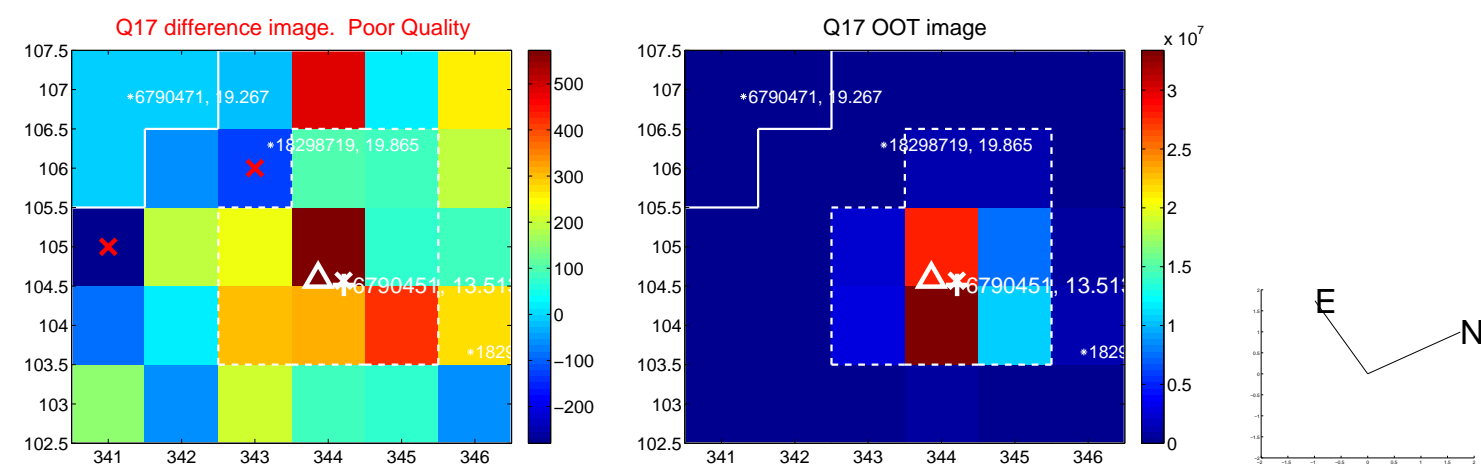
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

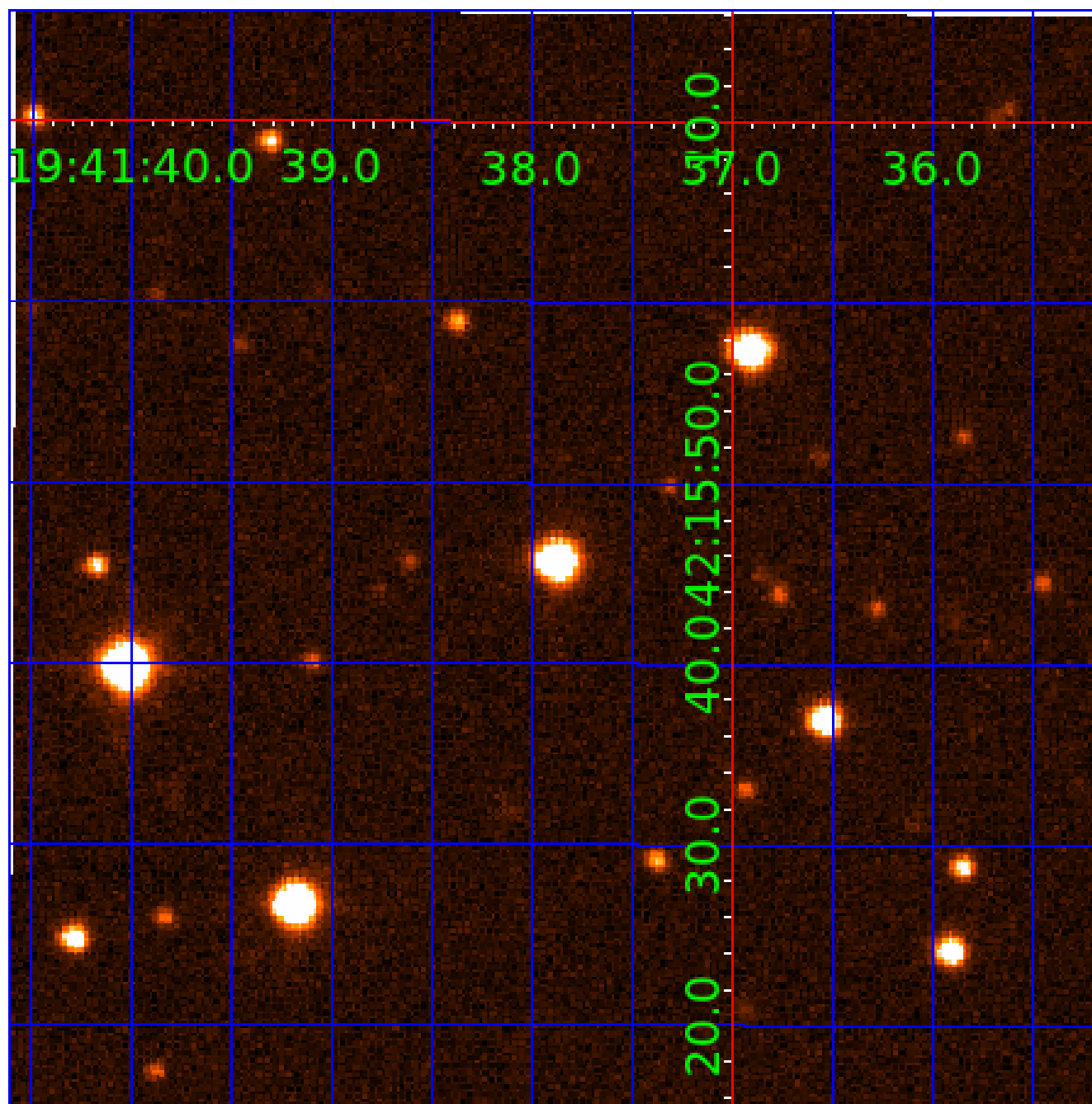


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006790451

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006790451-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006790451-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

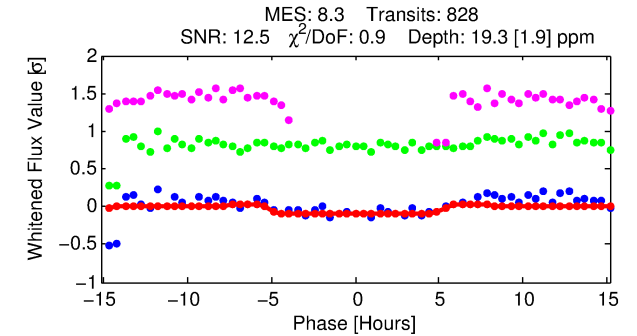
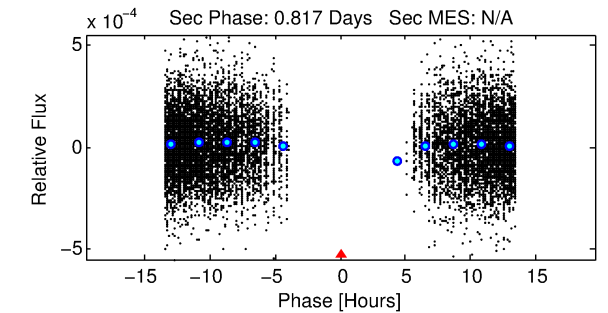
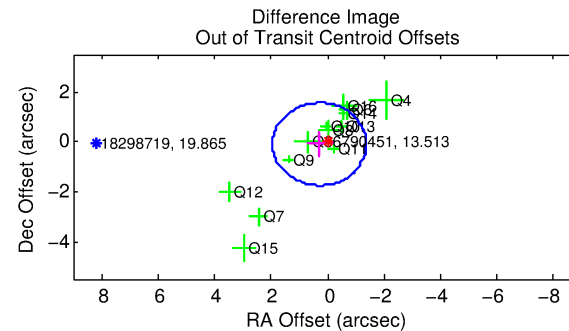
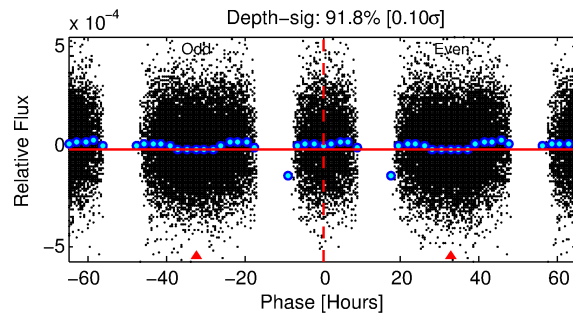
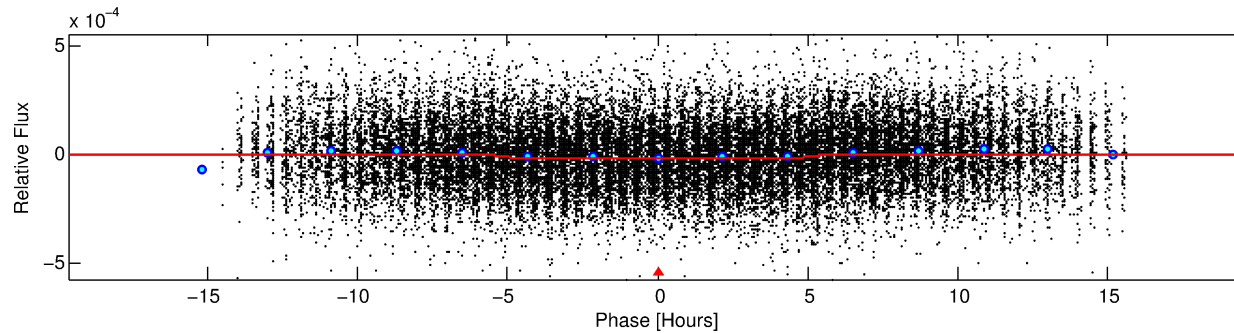
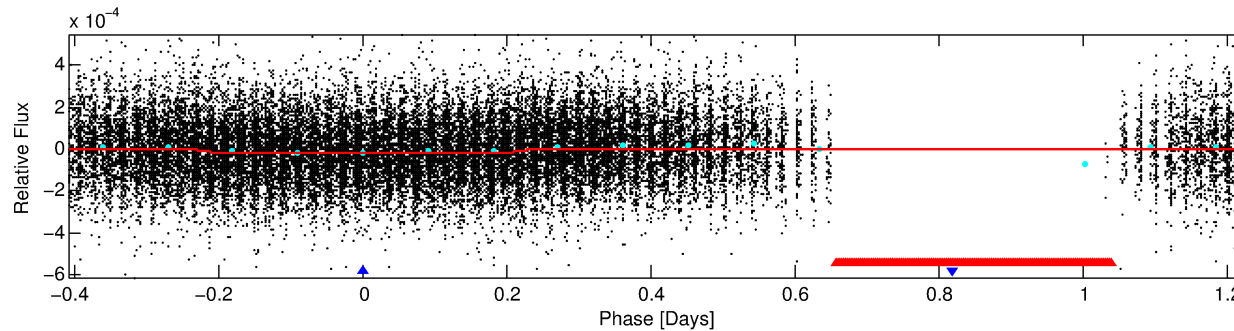
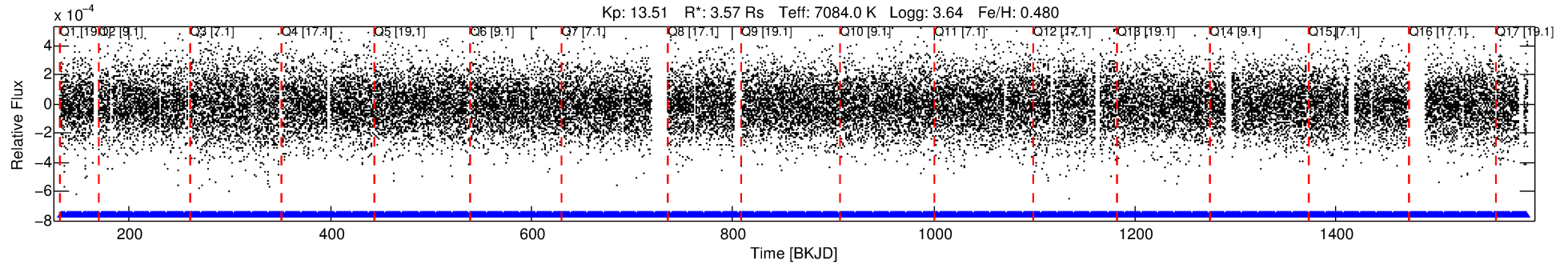
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006790451-02

No Significant Match Found

DV One-Page Summary

KIC: 6790451 Candidate: 2 of 2 Period: 1.635 d



DV Fit Results:

Period = 1.63461 [0.00002] d
Epoch = 133.0559 [0.0067] BKJD
Rp/R* = 0.0041 [0.0030]
a/R* = 1.29 [2.19]
b = 0.30 [12.97]
Seff = 24461.74 [9022.58]
Teq = 3189 [294] K
Rp = 1.60 [1.24] Re
a = 0.0343 [0.0077] AU

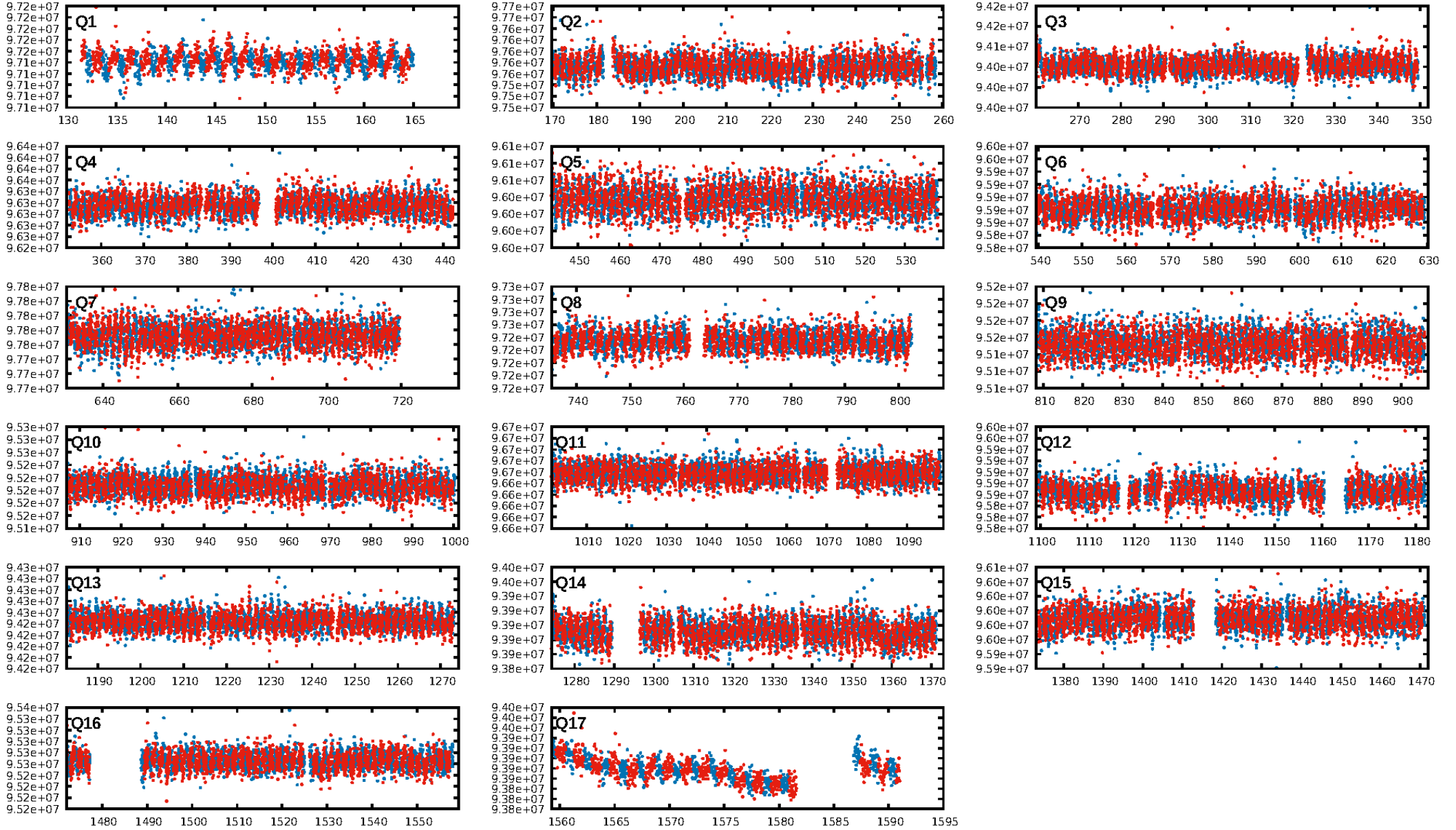
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [790/790]
GhostDiagnostic-chr: 21.16
Centroid-sig: 2.7%
Centroid-so: 1.205 arcsec [1.60 σ]
OotOffset-rm: 0.304 arcsec [0.55 σ]
KicOffset-rm: 0.256 arcsec [0.41 σ]
OotOffset-st: 3/4/4/2 [13]
KicOffset-st: 3/4/4/2 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 0.00 [0/17]

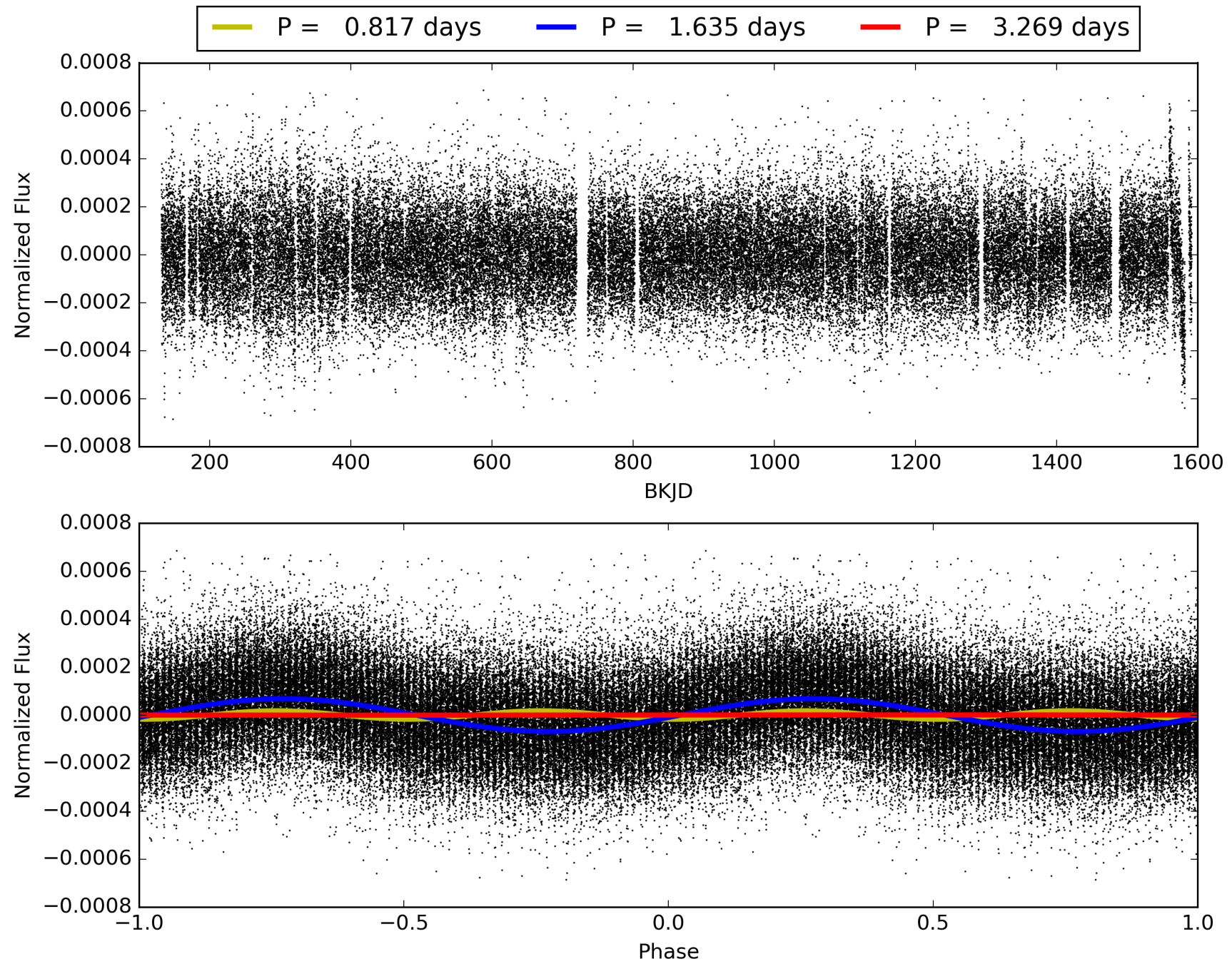
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:44:29 Z

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

TCE 006790451-02, PDC Light Curves

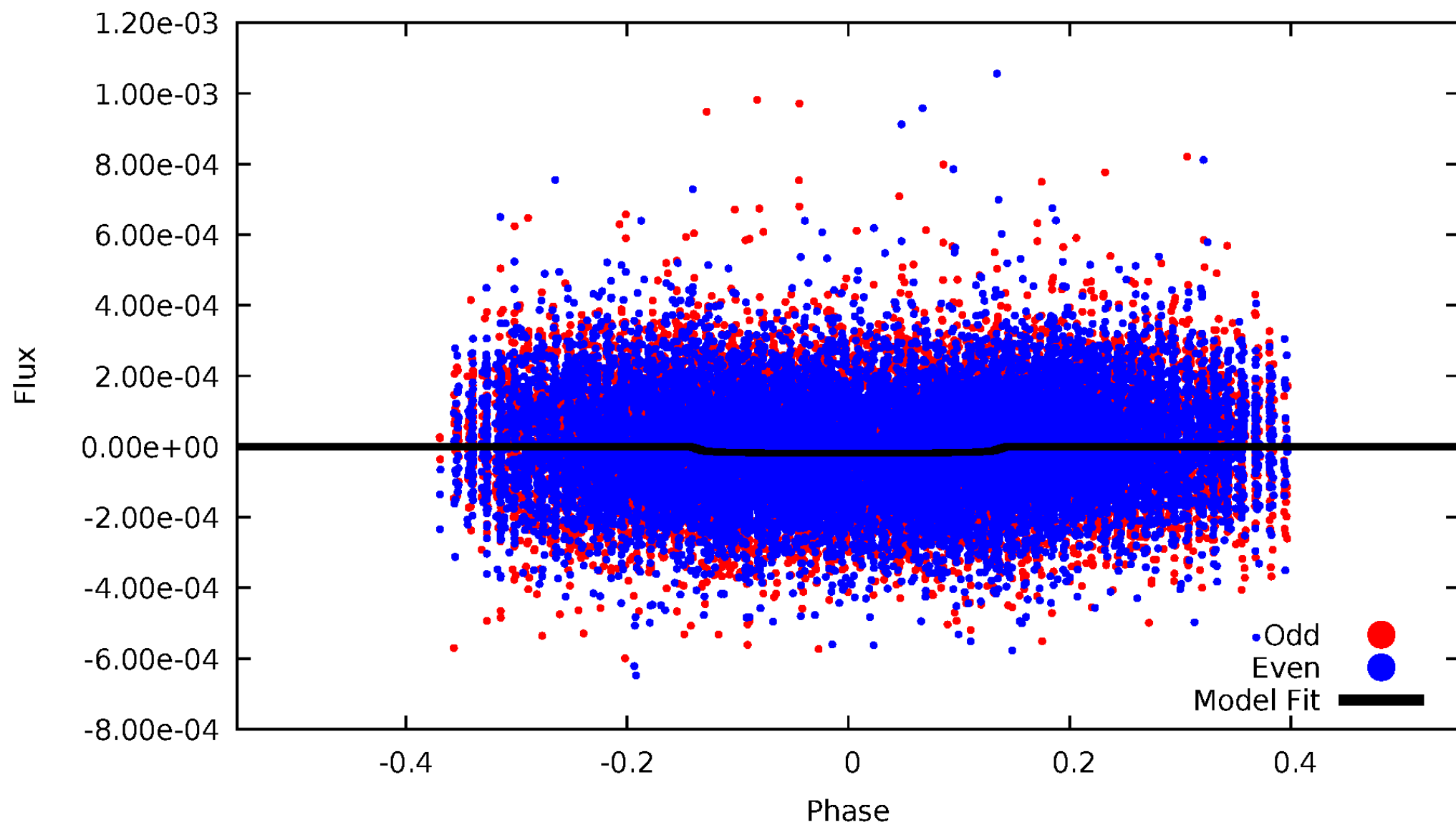


TCE 006790451-02



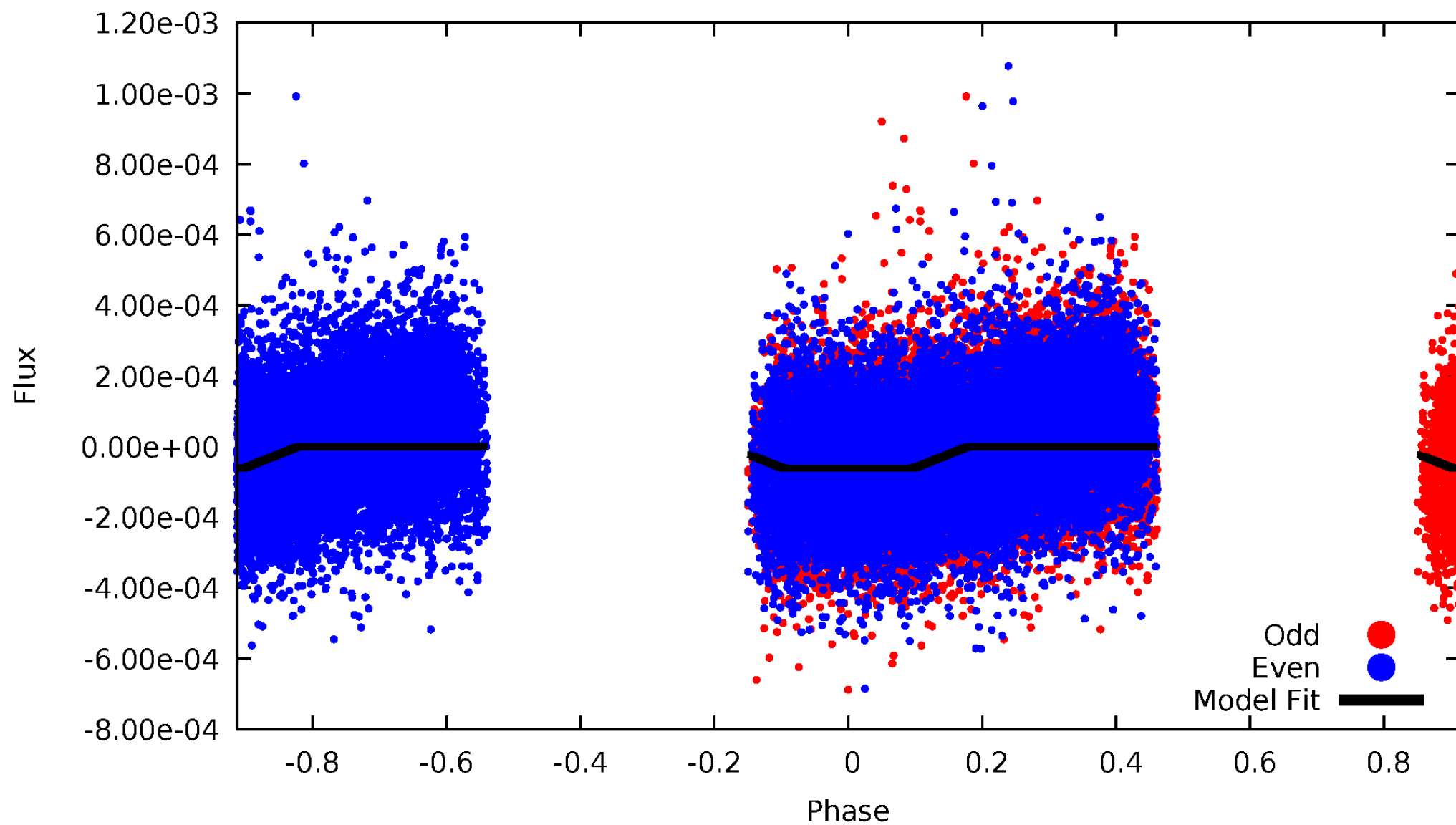
DV Odd/Even

TCE 006790451-02



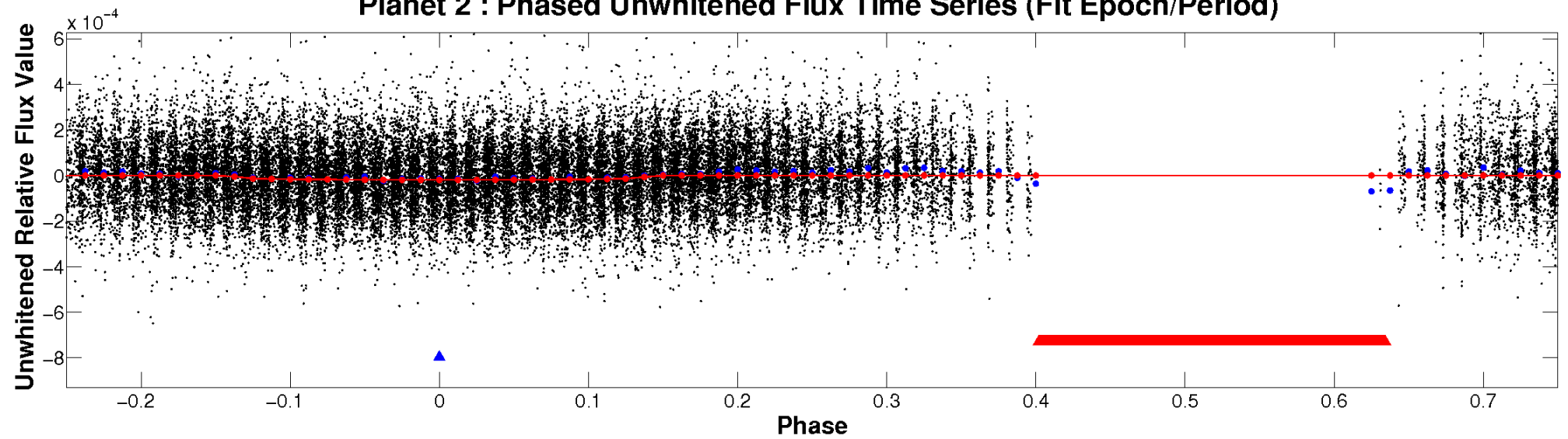
ALT Odd/Even

TCE 006790451-02

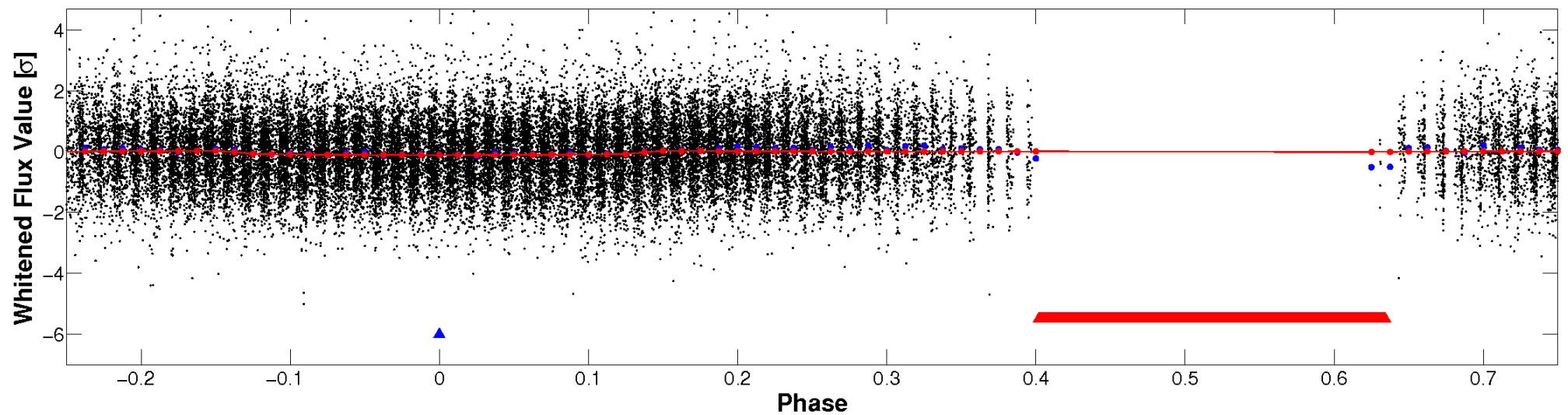


Non-Whitened Vs. Whitened Light Curve

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

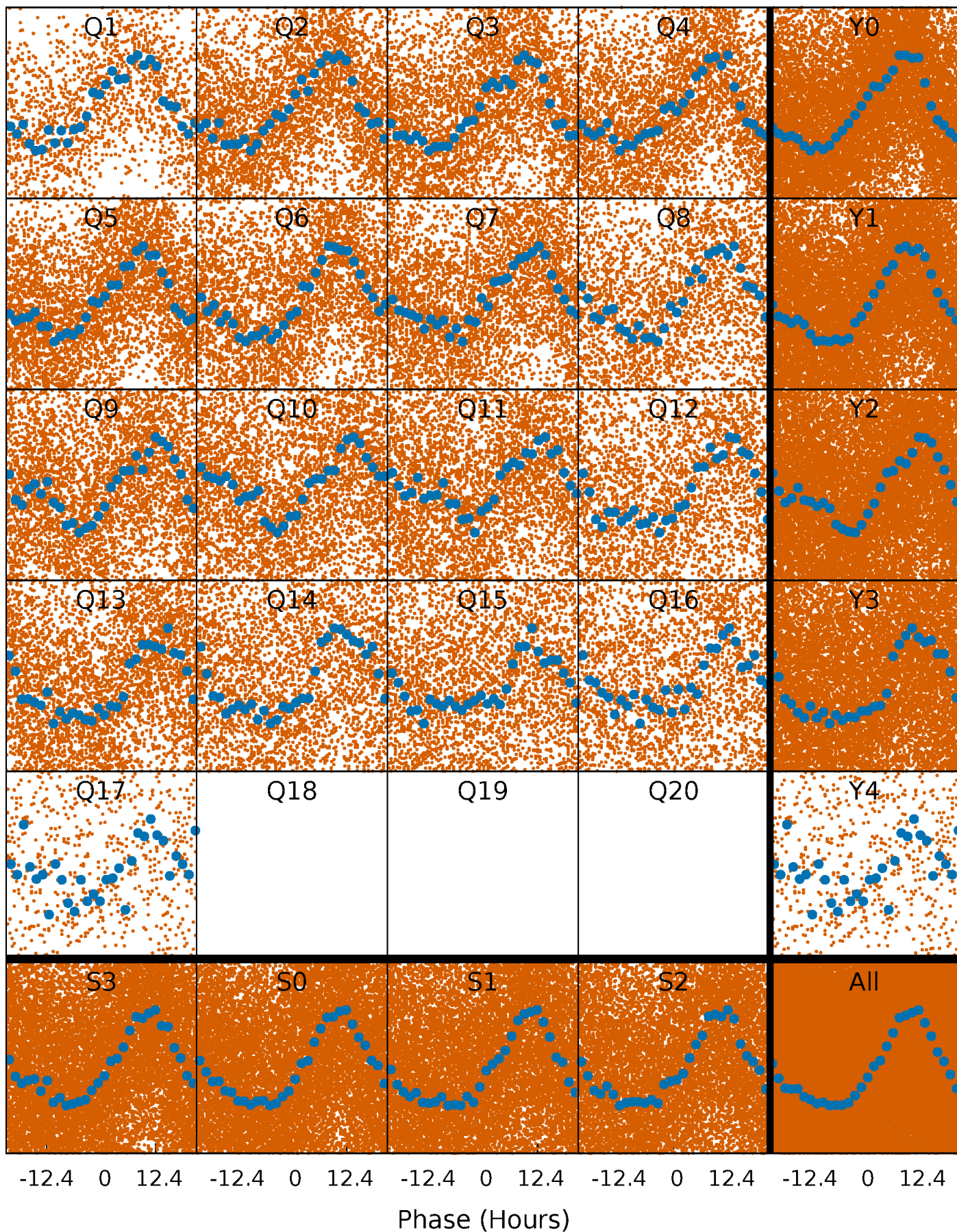


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



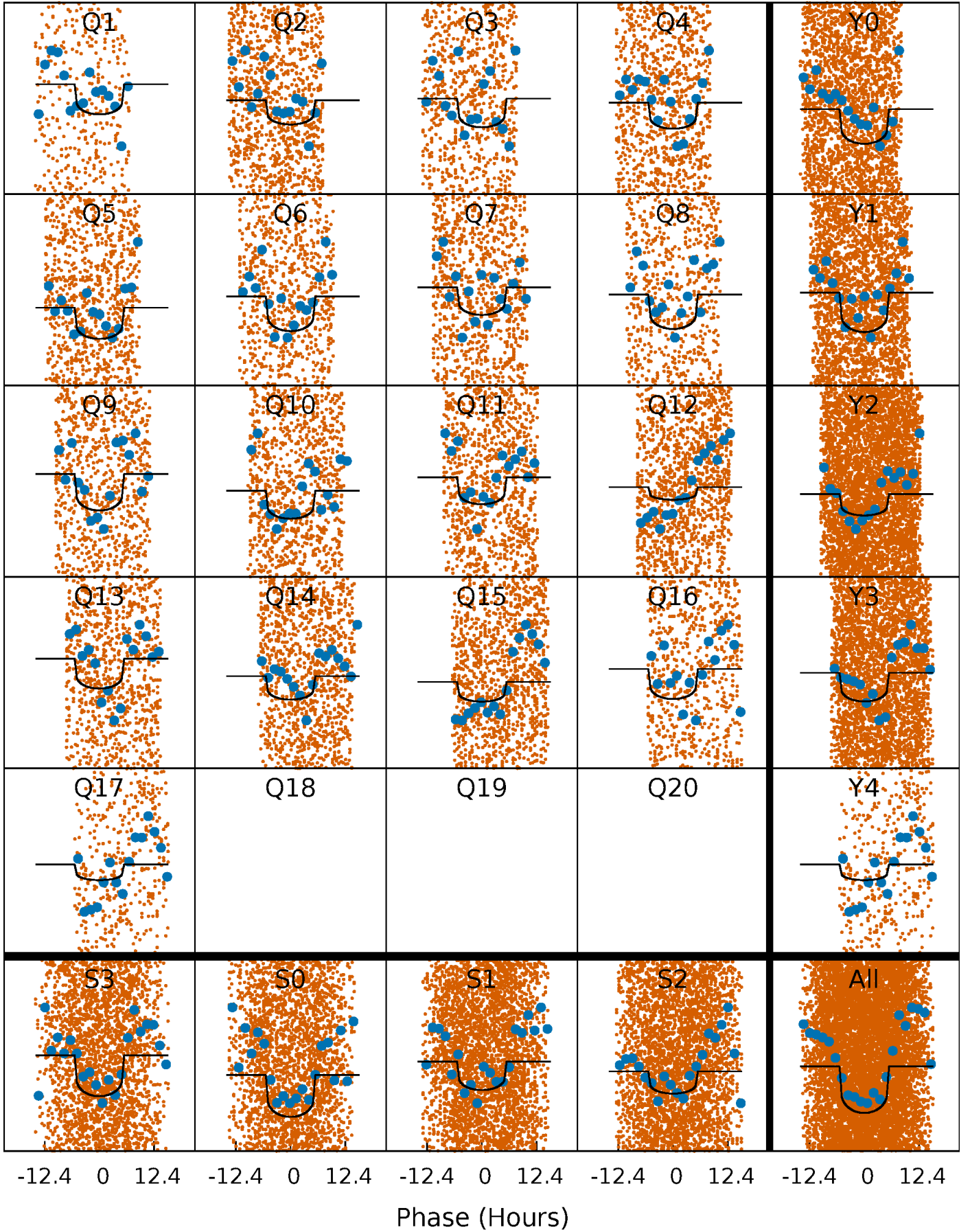
PDC Quarter-Phased Transit Curves

TCE 006790451-02 P= 1.634610 Days $T_0=133.055876$ (BKJD)



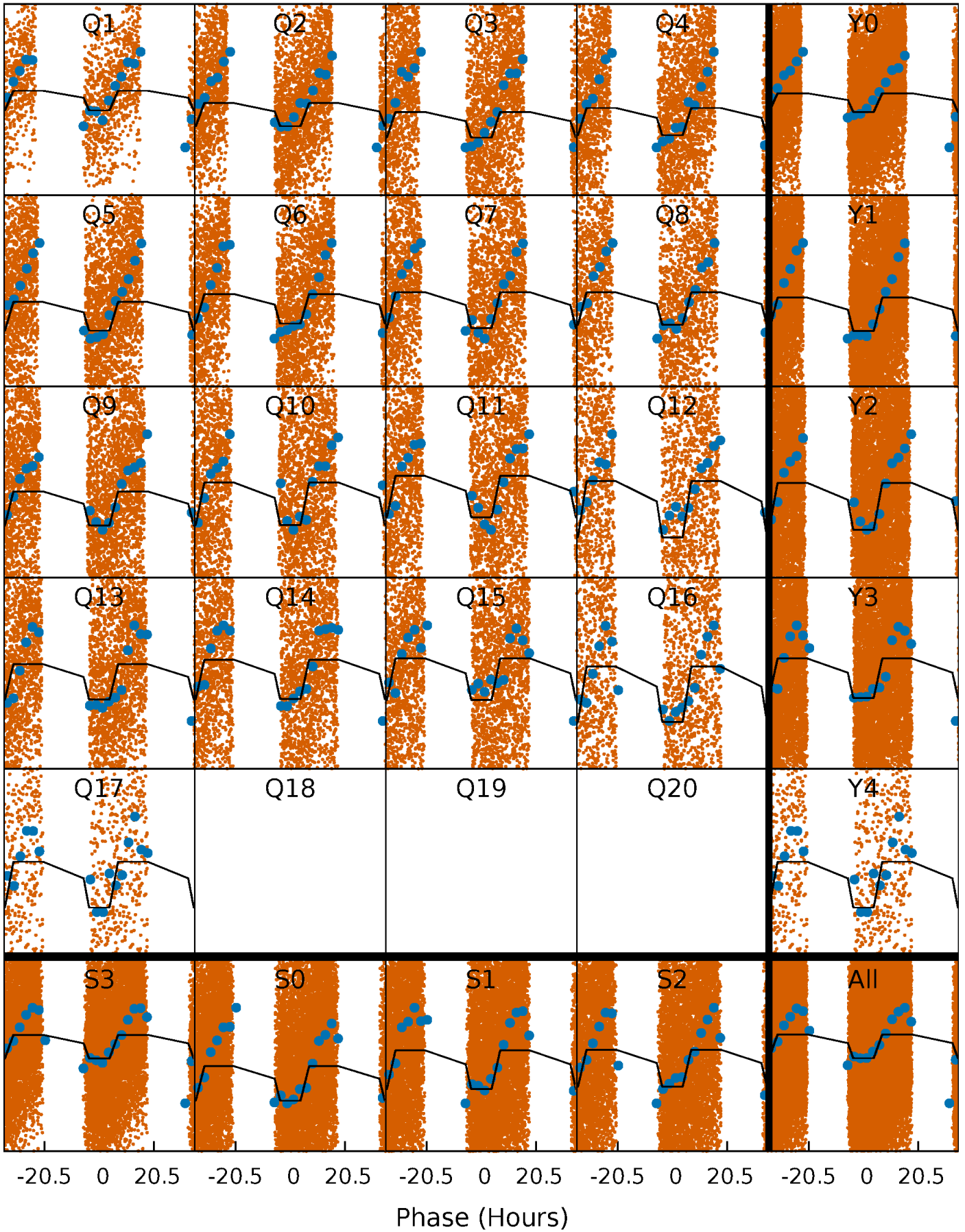
DV Quarter-Phased Transit Curves

TCE 006790451-02 $P = 1.634610$ Days $T_0 = 133.055876$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

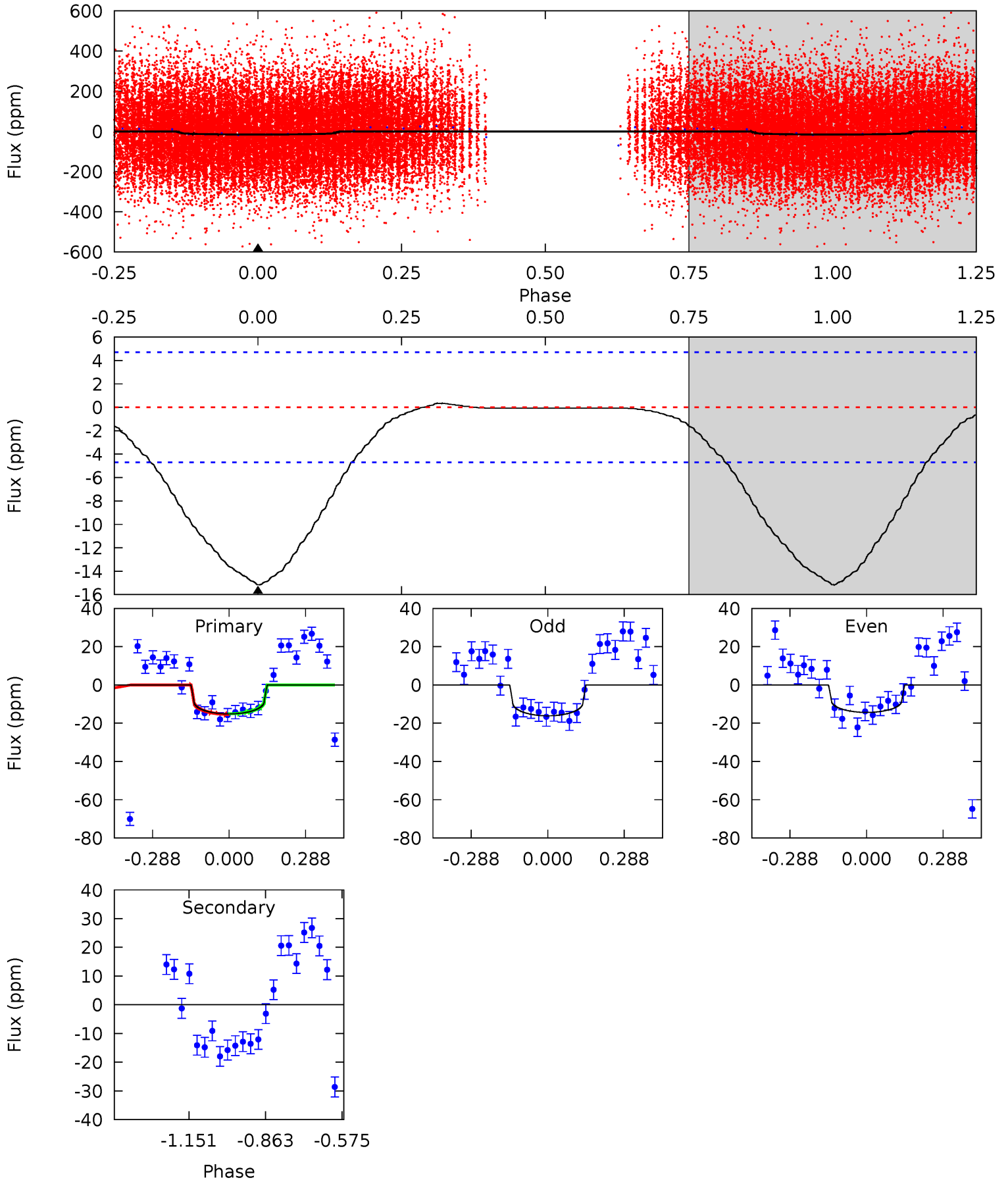
TCE 006790451-02 P= 1.634906 Days $T_0=132.696219$ (BKJD)



DV Model-Shift Uniqueness Test

006790451-02, P = 1.634610 Days, E = 131.421266 Days

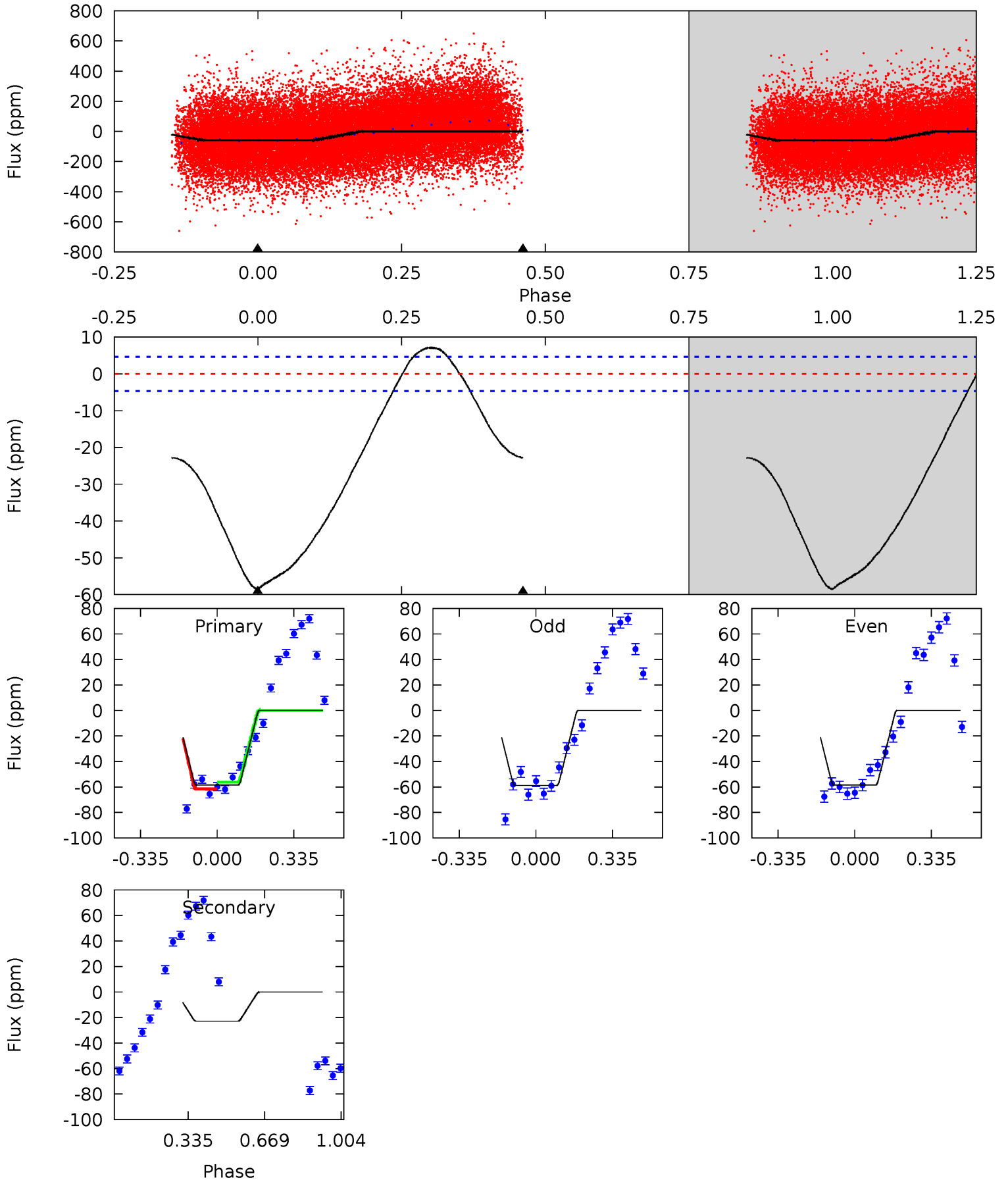
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	0	0	0	4.34	1.06	0.32	14.0	14.0	0	0	0.82	0.92	0.02	0.17



Alt Model-Shift Uniqueness Test

006790451-02, P = 1.634906 Days, E = 131.061313 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.2	21.1	0	0	4.30	0.97	4.01	54.2	54.2	21.1	21.1	0.14	1.03	0.11	2.45



Stellar Parameters For KIC 006790451

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7084^{+73}_{-84}	$3.636^{+0.217}_{-0.093}$	$0.480^{+0.050}_{-0.150}$	$3.569^{+0.662}_{-0.809}$	$2.009^{+0.202}_{-0.124}$	$0.062^{+0.071}_{-0.021}$
	+1%/-1%	+6%/-3%	+10%/-31%	+19%/-23%	+10%/-6%	+114%/-34%
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 006790451-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1	$1.69^{+1.06}_{-0.93}$	4386^{+215}_{-253}	-3904^{+6883}_{-628}	$0.002^{+0.353}_{-0.367}$
Alt.	-23 ± 1	$2.95^{+1.20}_{-1.16}$	4411^{+214}_{-278}	5276^{+1666}_{-863}	$1.701^{+2.983}_{-0.842}$

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

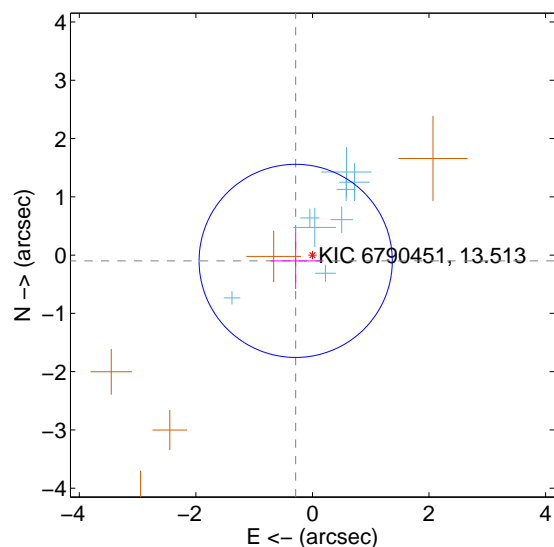
Supplemental centroid analysis for 006790451-02. Kepler magnitude: 13.51. Transit SNR 12.45

There are 8 quarters with good PRF difference image offsets

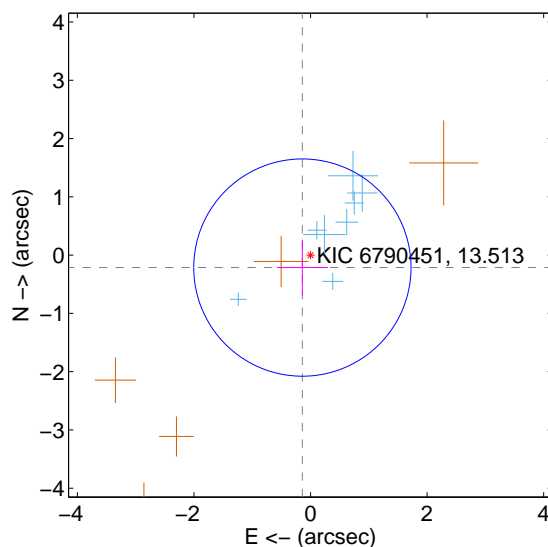
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.304 ± 0.552	0.55	0.287 ± 0.431	-0.099 ± 0.482
PRF-fit source offset from KIC position	0.256 ± 0.621	0.41	0.140 ± 0.438	-0.214 ± 0.479
photometric centroid source offset	1.20 ± 0.75	1.60	1.14 ± 0.74	-0.39 ± 0.84

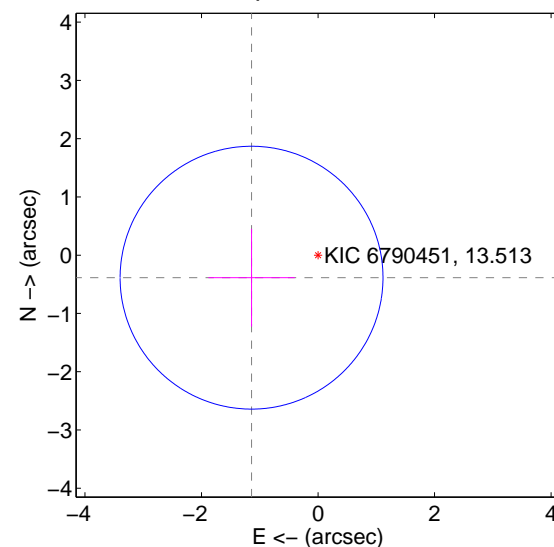
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

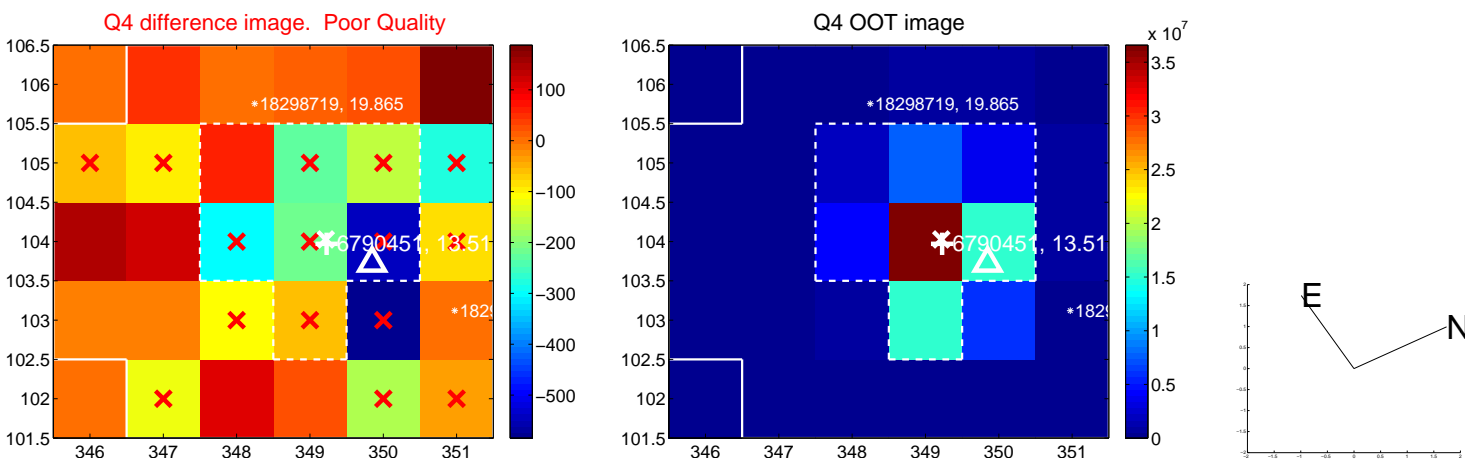
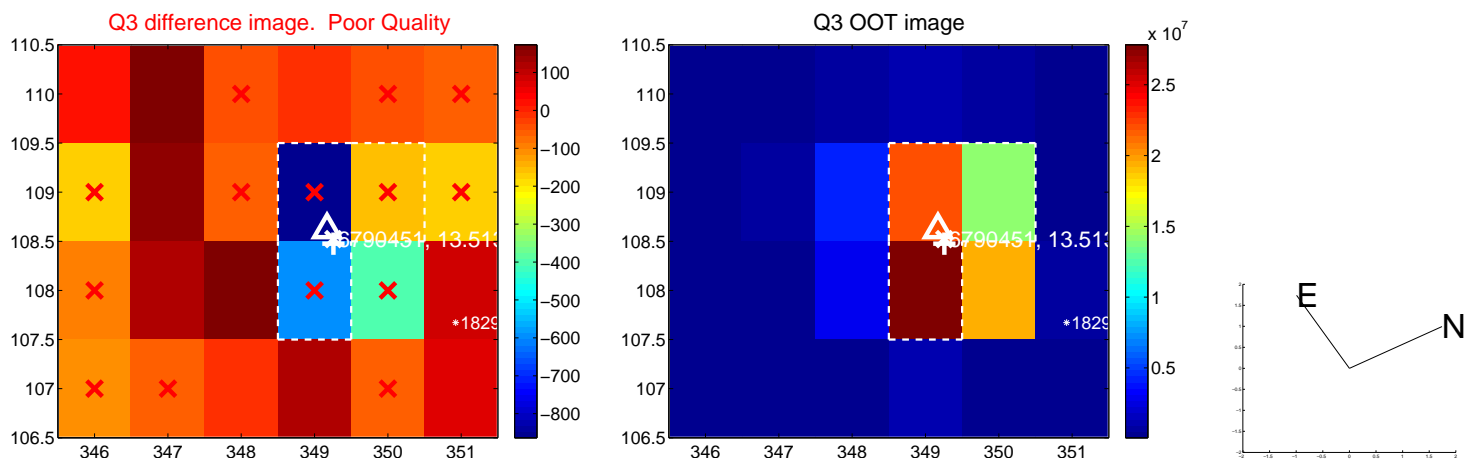
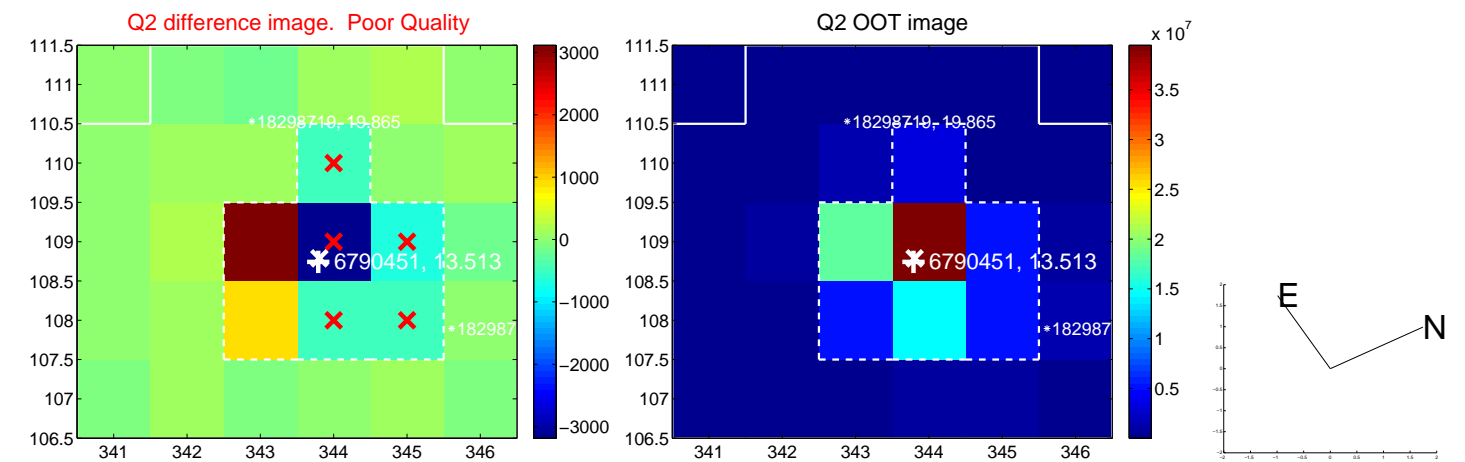
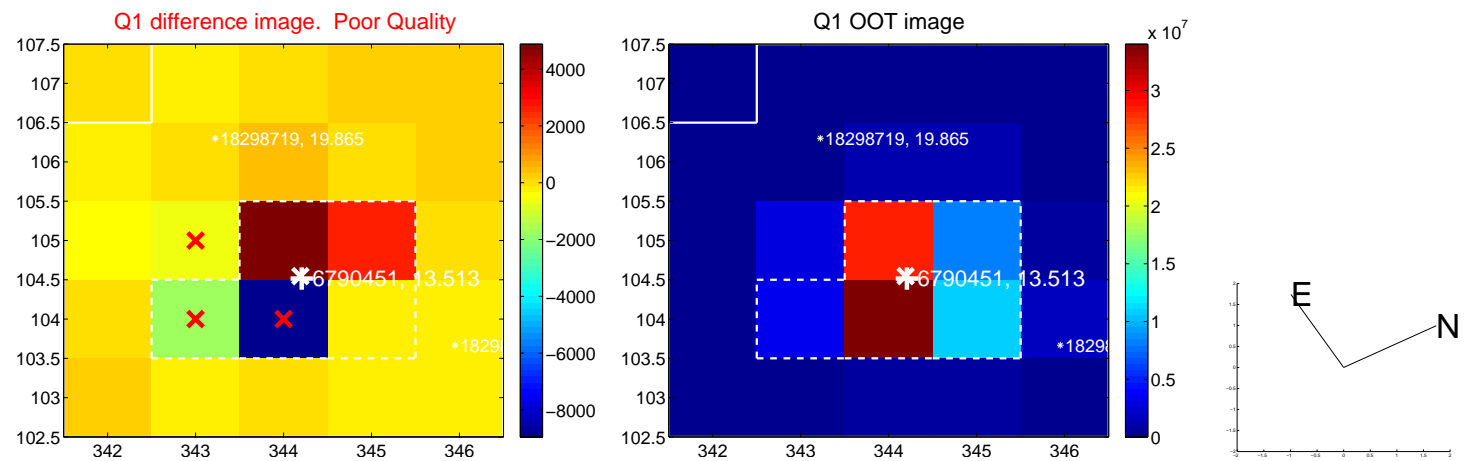


offset from photometric centroids

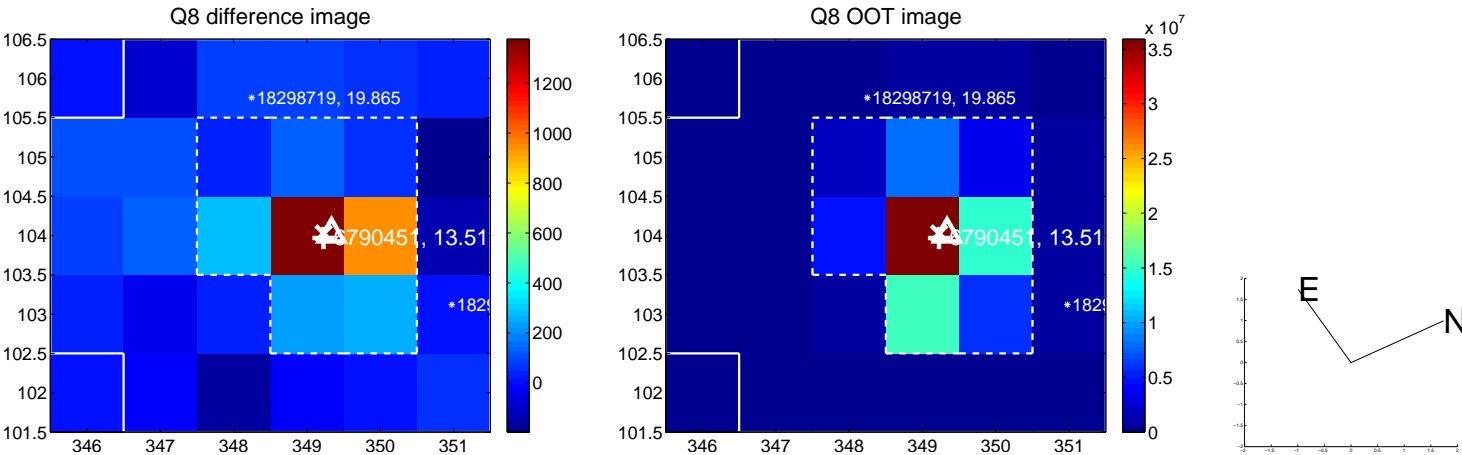
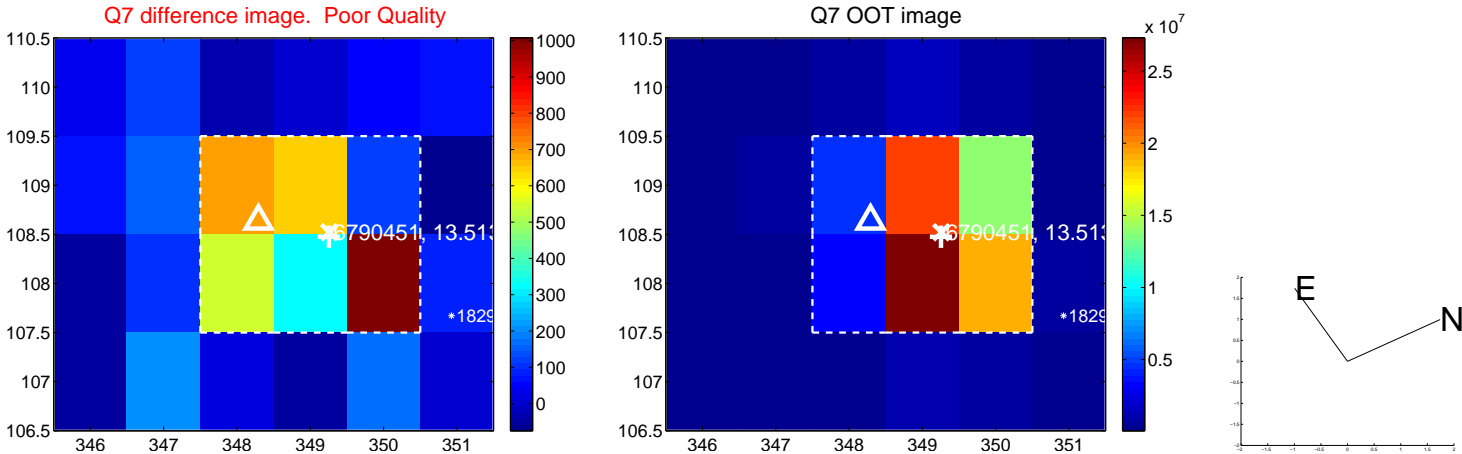
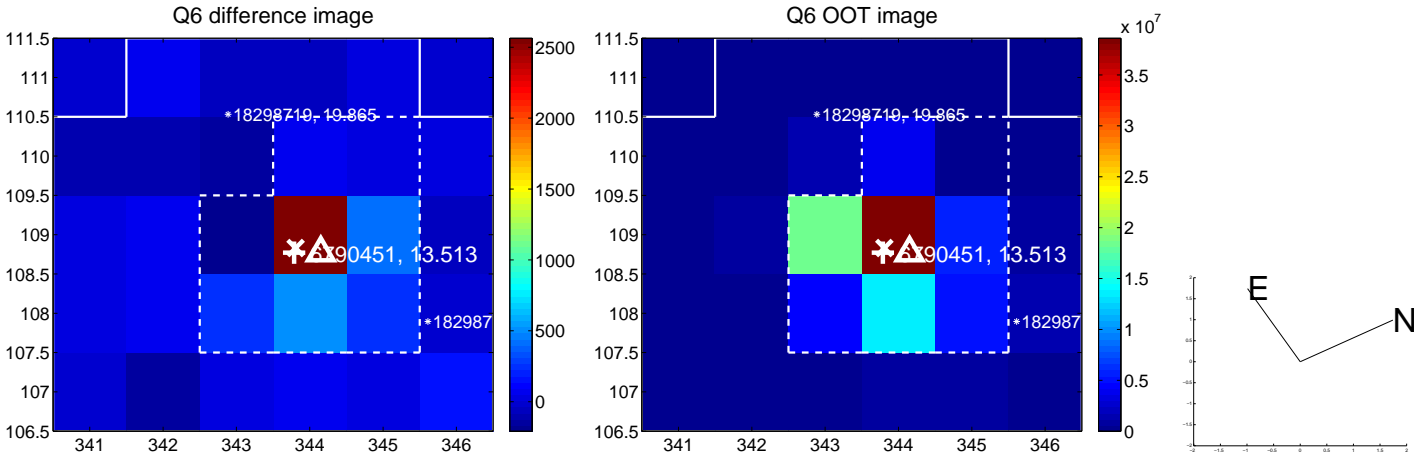
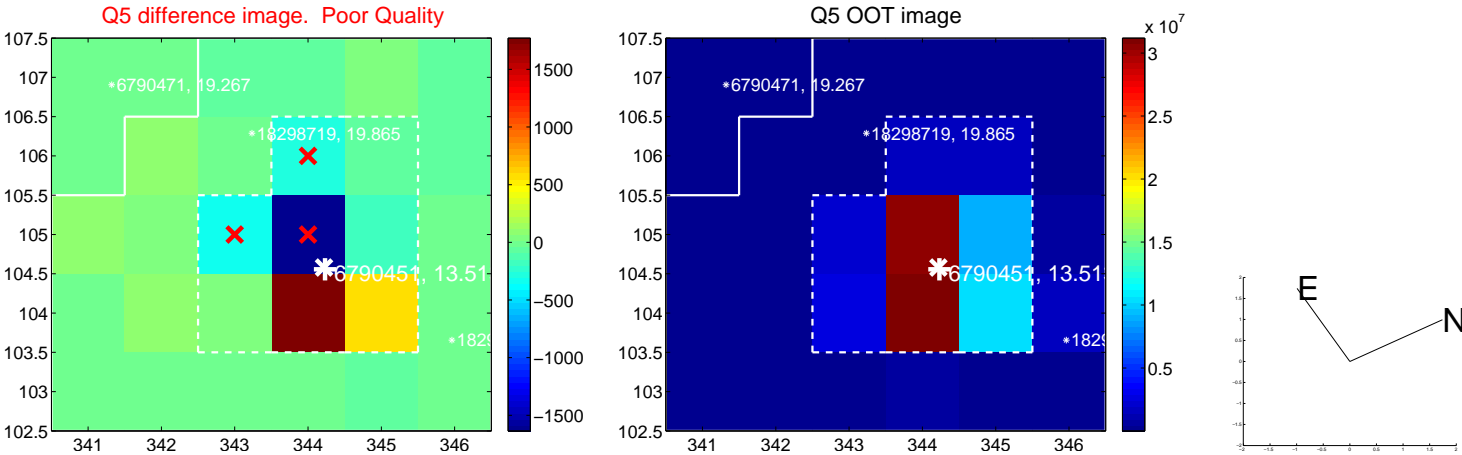


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

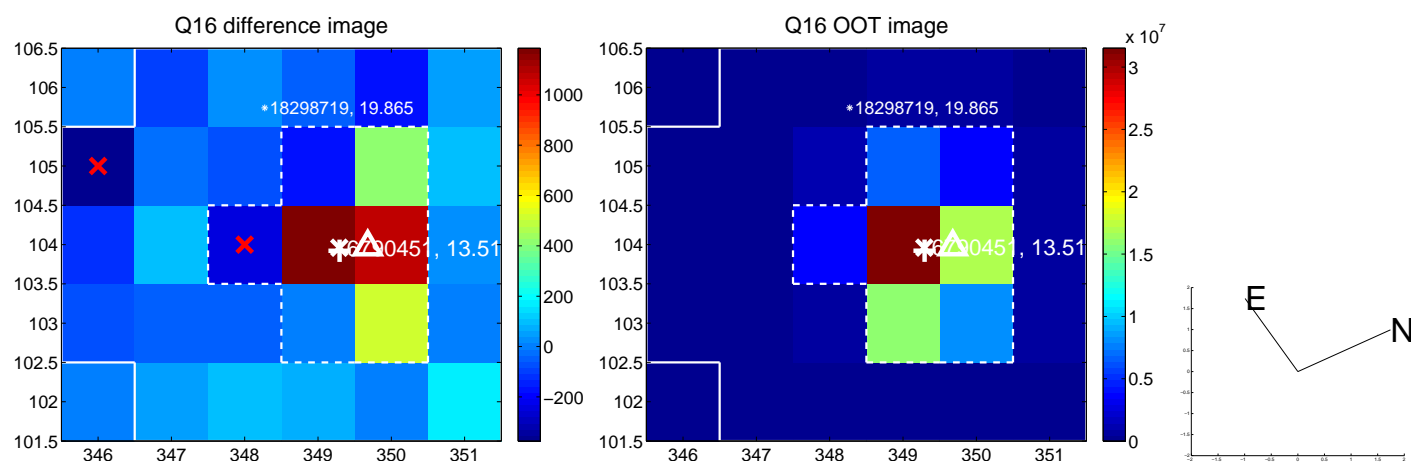
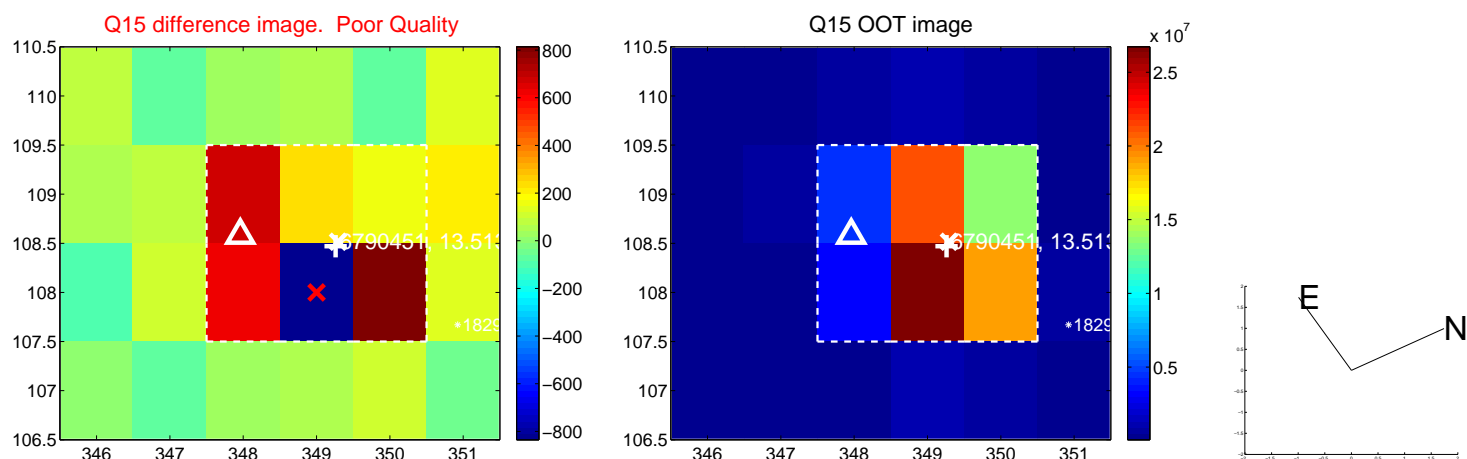
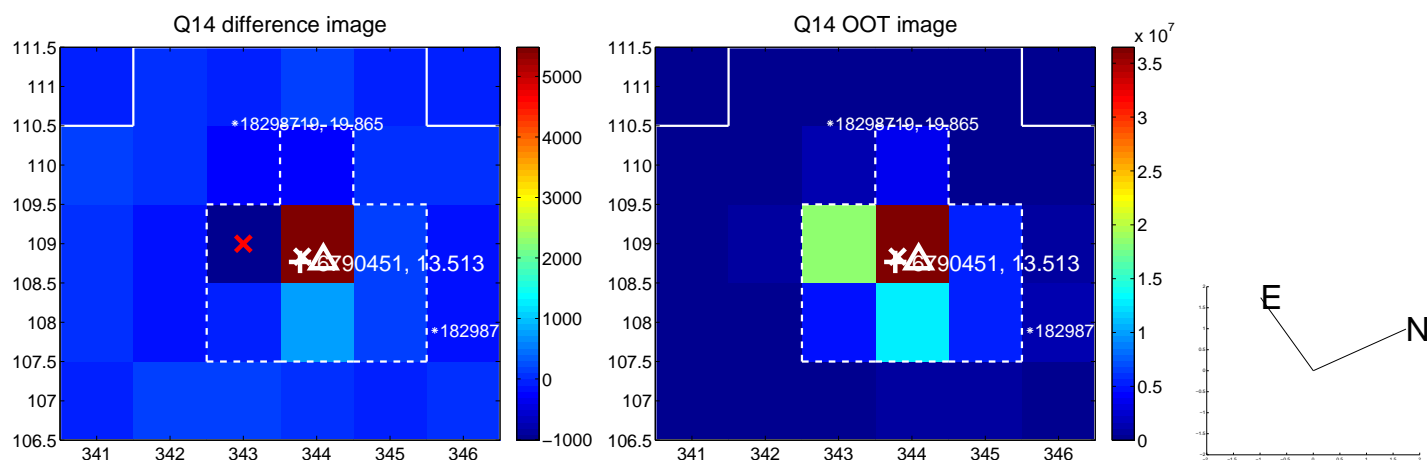
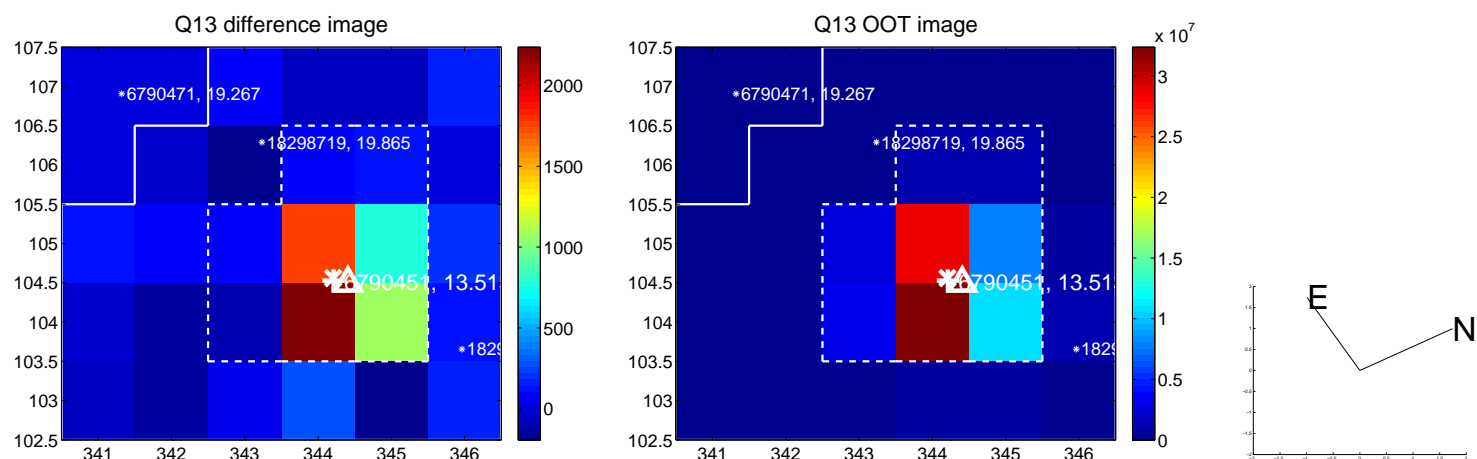
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



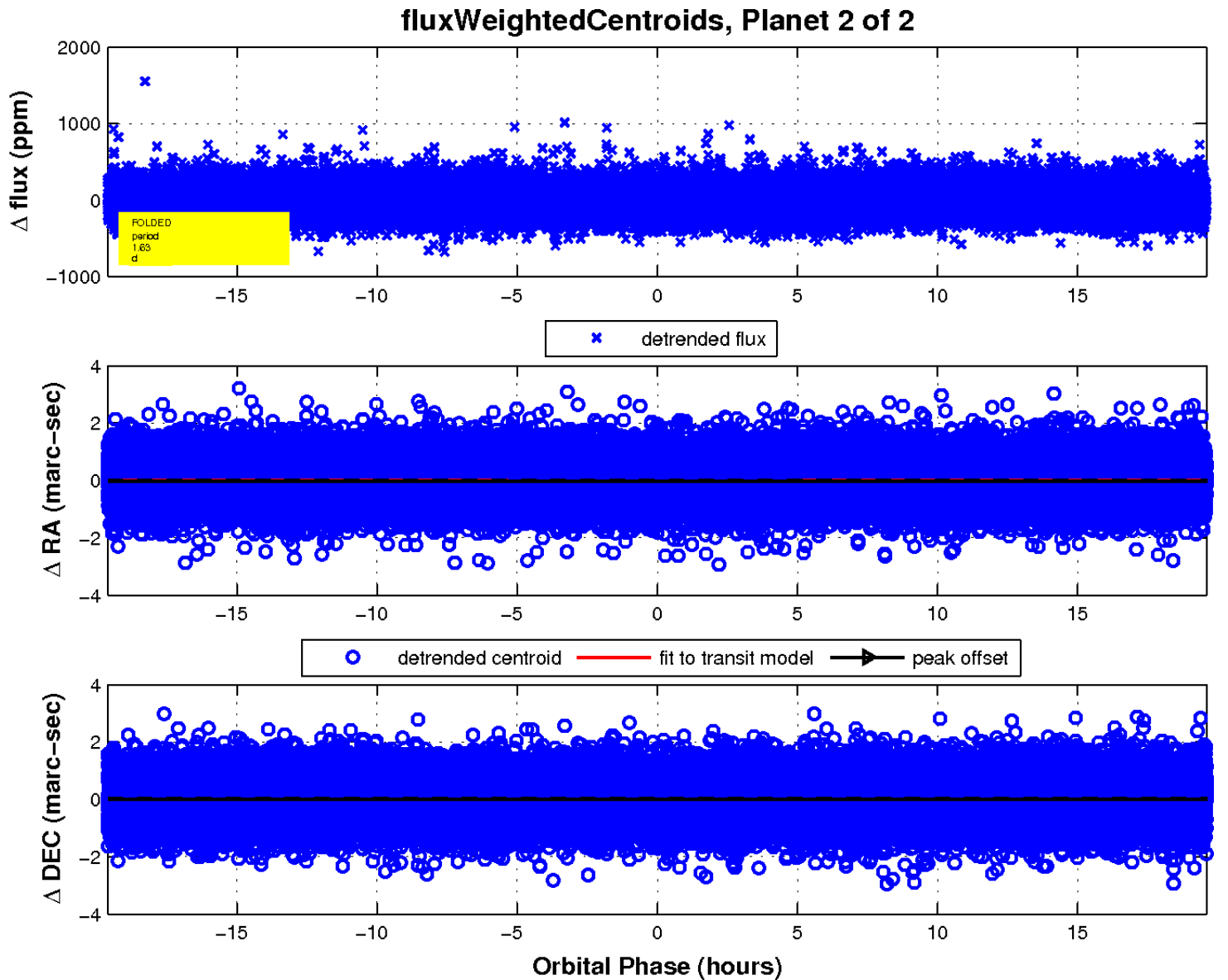
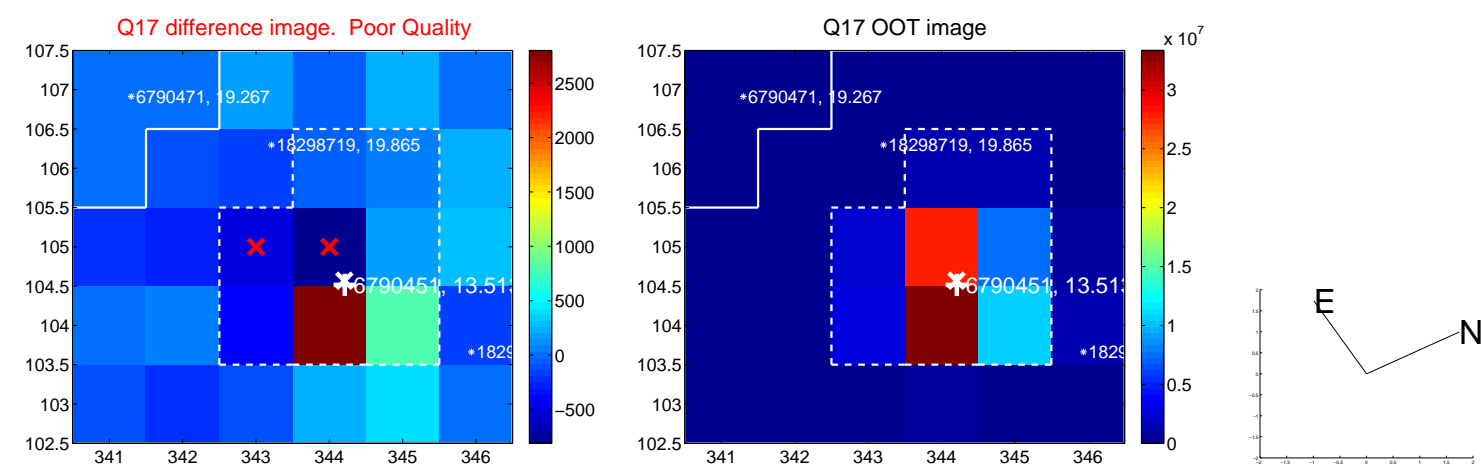
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

