

KIC 009833625

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})
009833625-01	OBS	No	1.408618	131.858649	6532.5	5.029	479.0	224.2	1.12	6298	16.28	2572.90
009833625-02	OBS	No	1.408556	132.587161	17882.8	3.500	264.8	-1.0	1.12	6298	14.96	2573.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009833625-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
009833625-02	OBS	FP	0.00	1	0	0	1	LPP_DV—SAME_NTL_PERIOD—CENT_NOFITS—EPHEM_MATCH

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

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

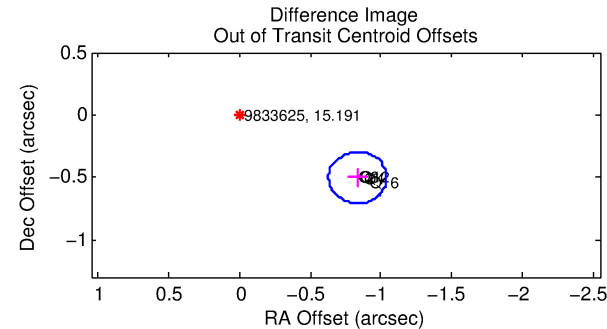
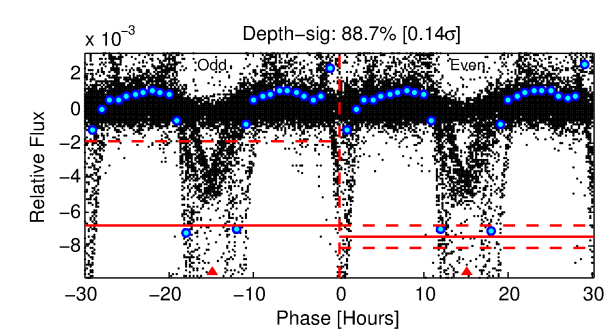
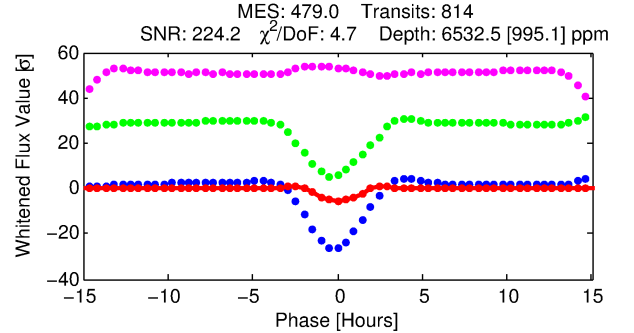
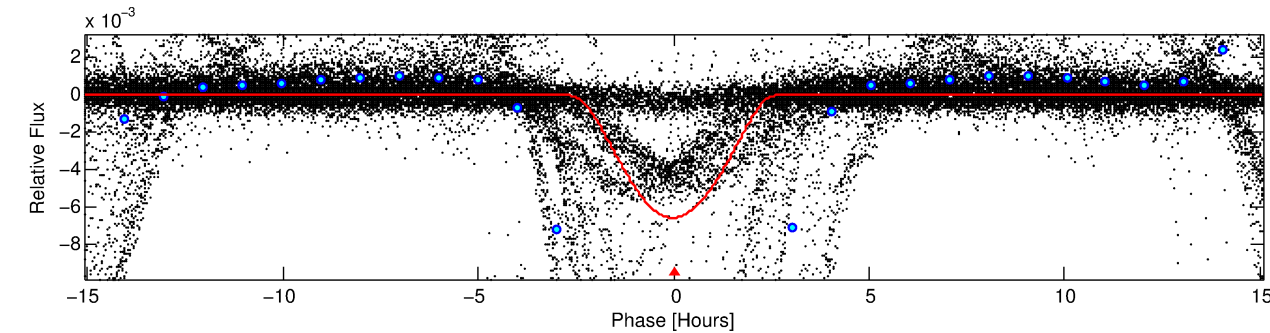
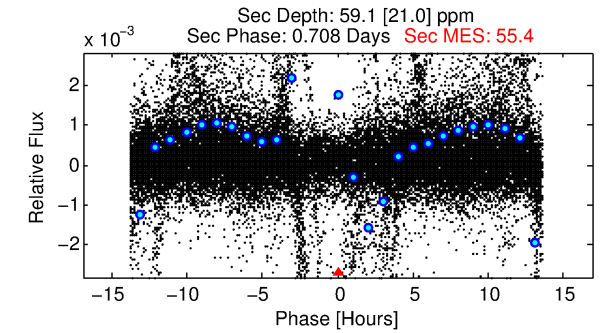
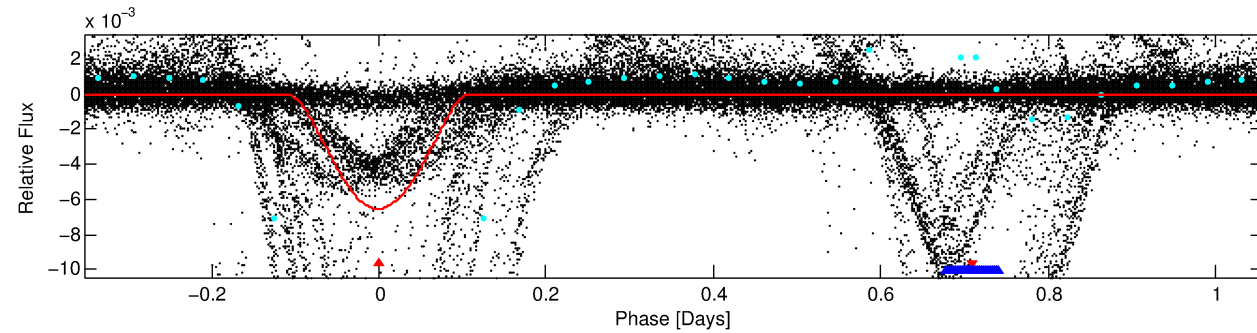
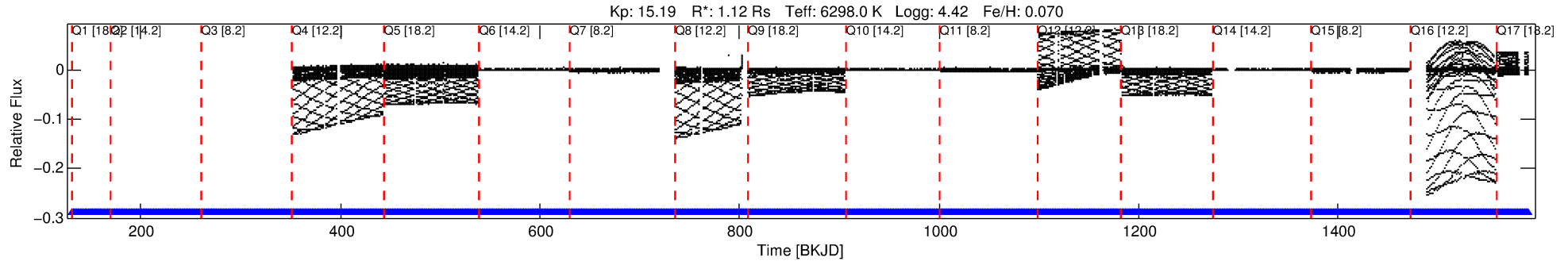
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009833625-01

No Significant Match Found

DV One-Page Summary

KIC: 9833625 Candidate: 1 of 2 Period: 1.409 d



DV Fit Results:

Period = 1.40862 [0.00000] d
Epoch = 131.8586 [0.0005] BKJD
Rp/R* = 0.1337 [0.0272]
a/R* = 1.55 [0.01]
b = 1.00 [0.05]
Seff = 2572.90 [1048.92]
Teq = 1816 [185] K
Rp = 16.28 [6.13] Re
a = 0.0261 [0.0068] AU
Ag = 0.08 [0.06] [-16.66σ]
Teff = 1511 [214] K [-1.08σ]

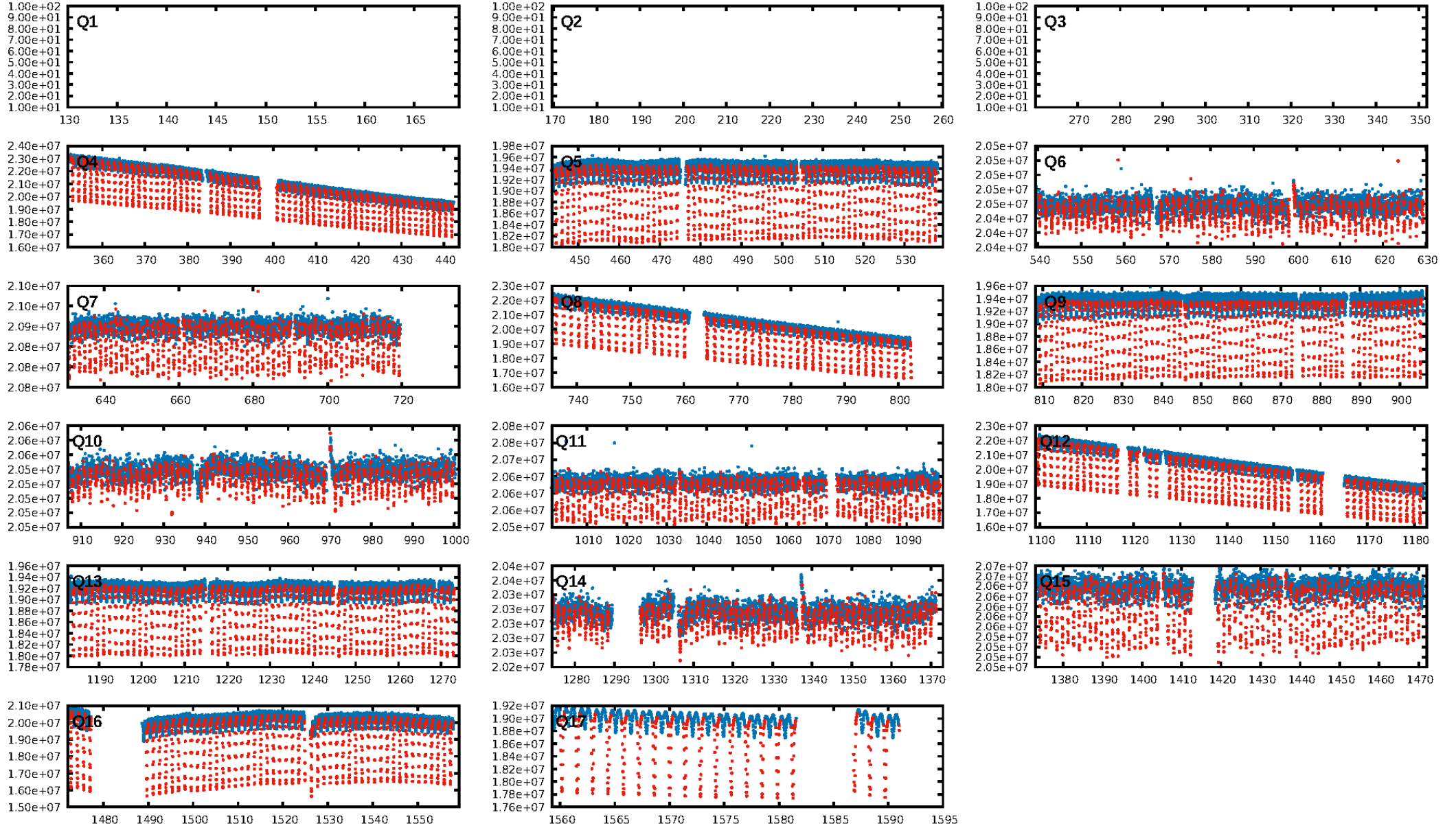
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [795/795]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 27.368 arcsec [552.65σ]
OotOffset-rm: 0.975 arcsec [14.22σ]
KicOffset-rm: 7.708 arcsec [111.73σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [14/14]

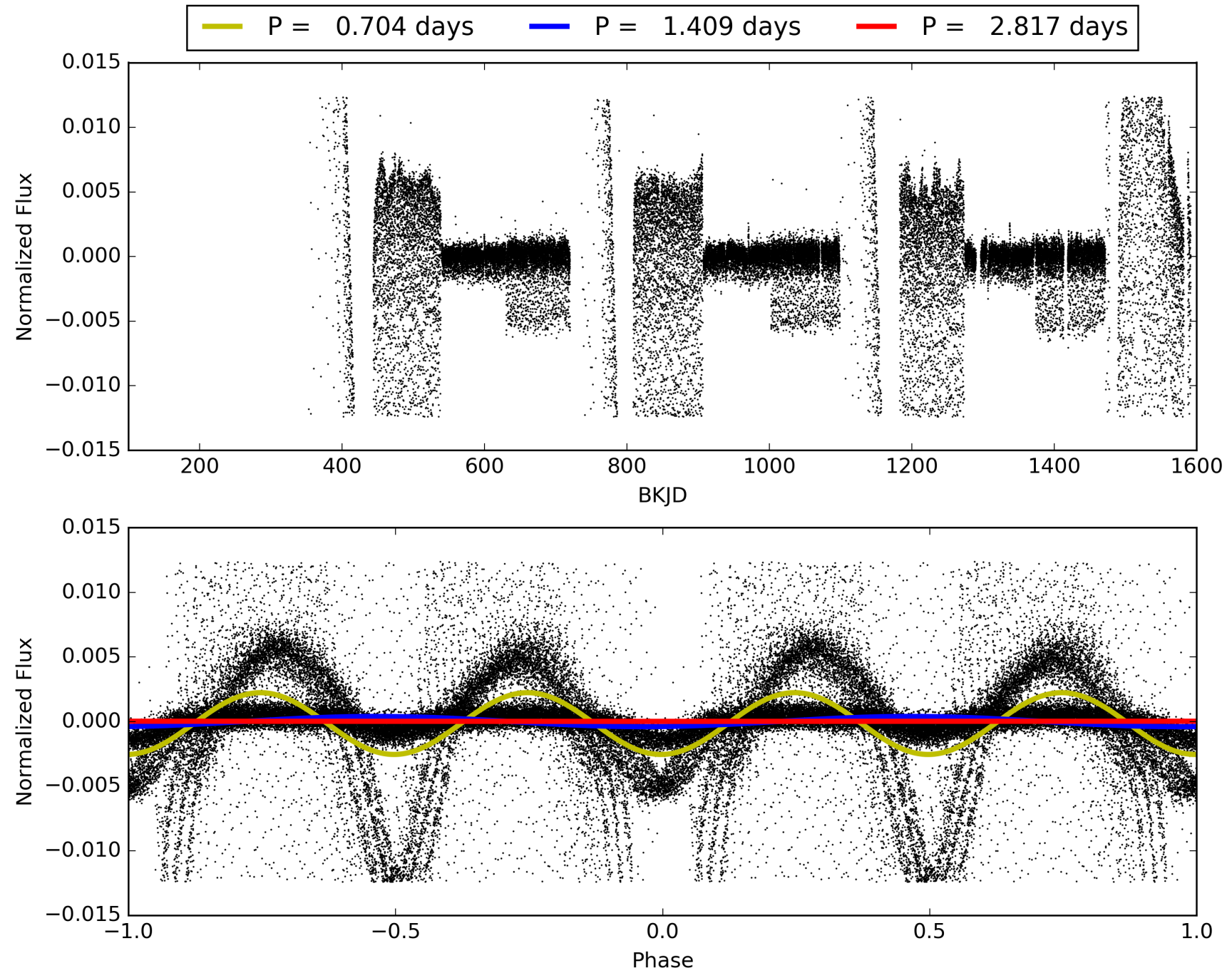
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009833625-01, PDC Light Curves

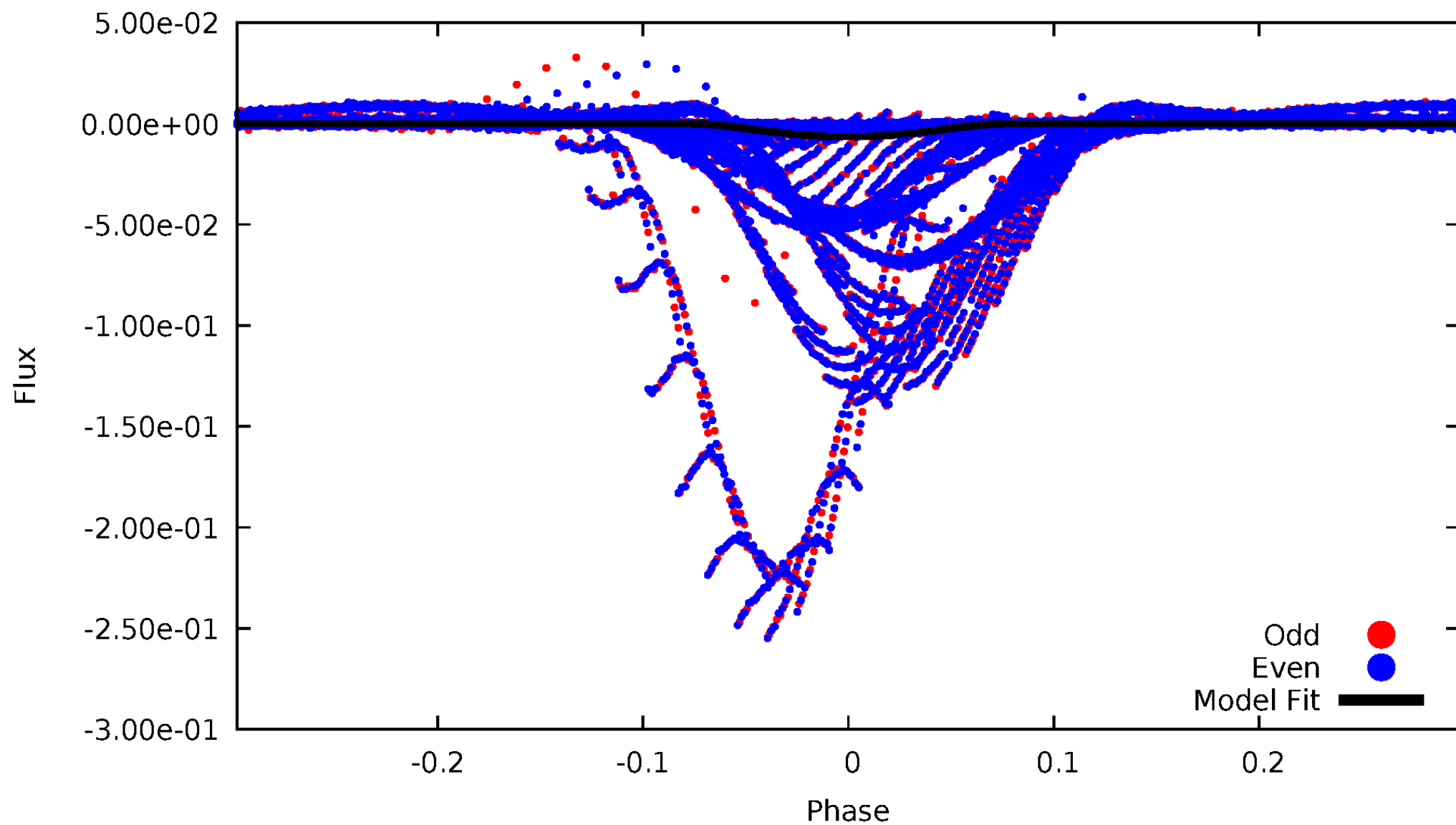


TCE 009833625-01



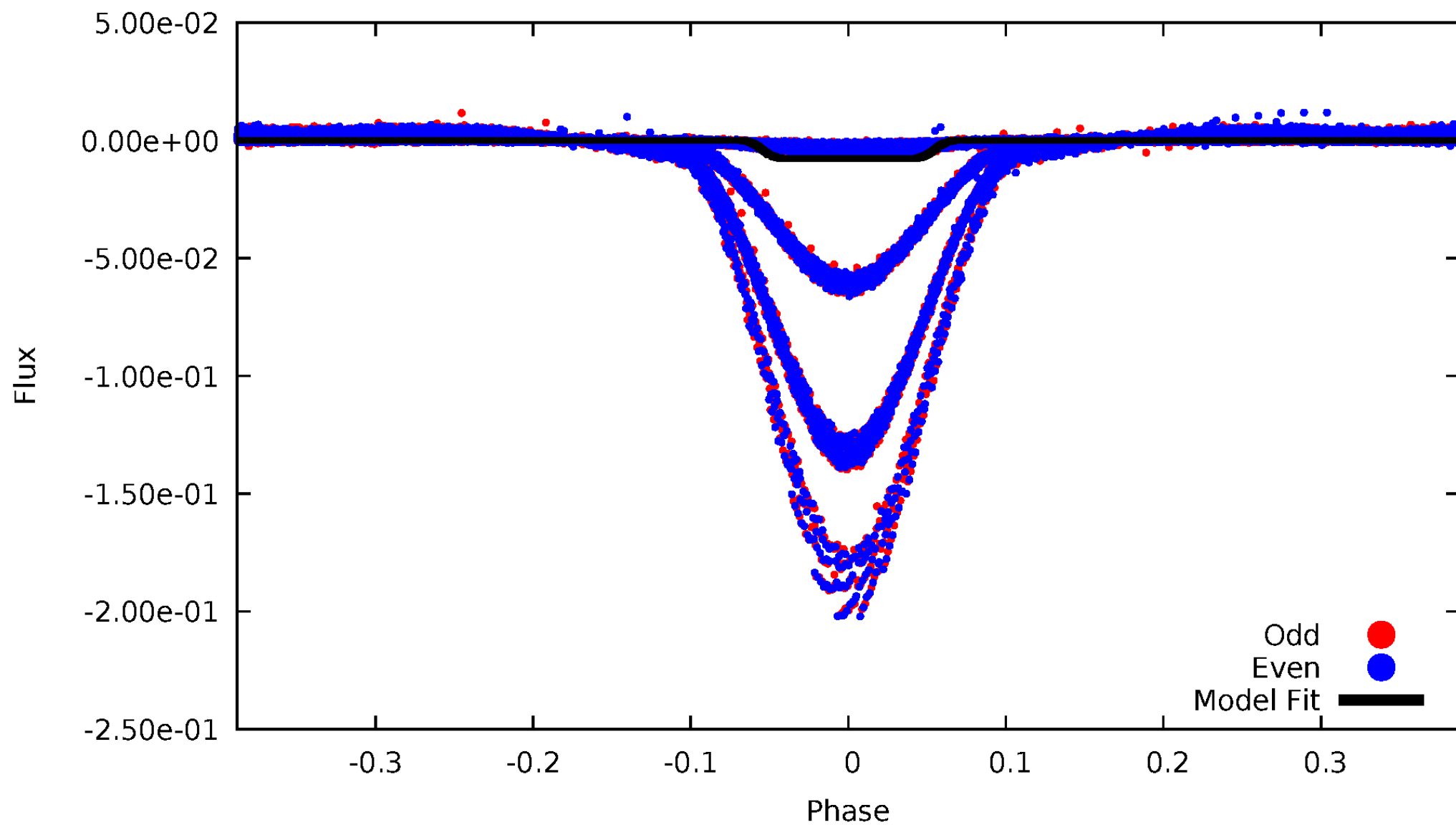
DV Odd/Even

TCE 009833625-01



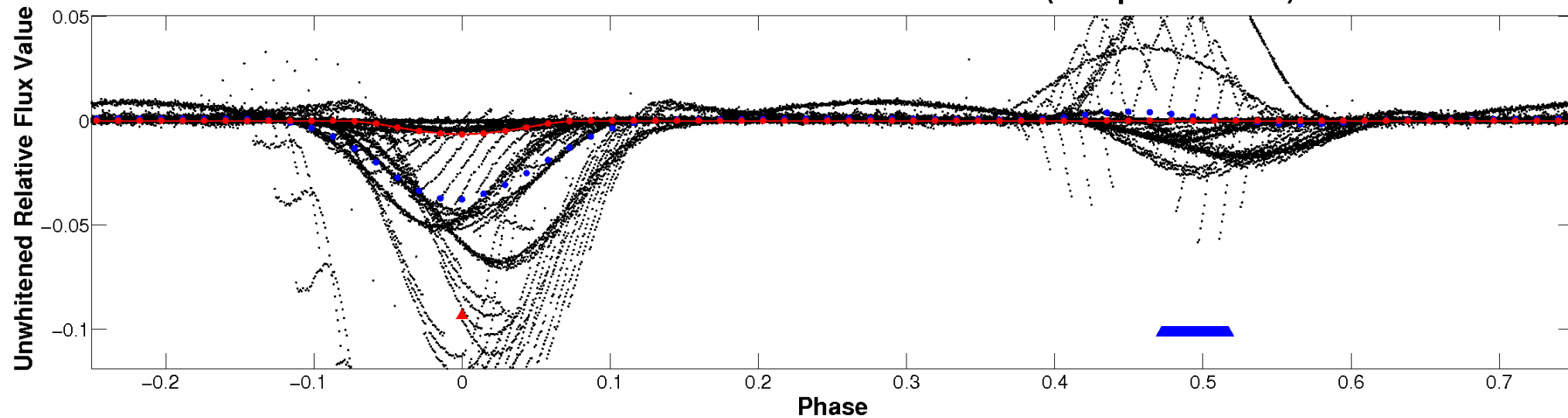
ALT Odd/Even

TCE 009833625-01

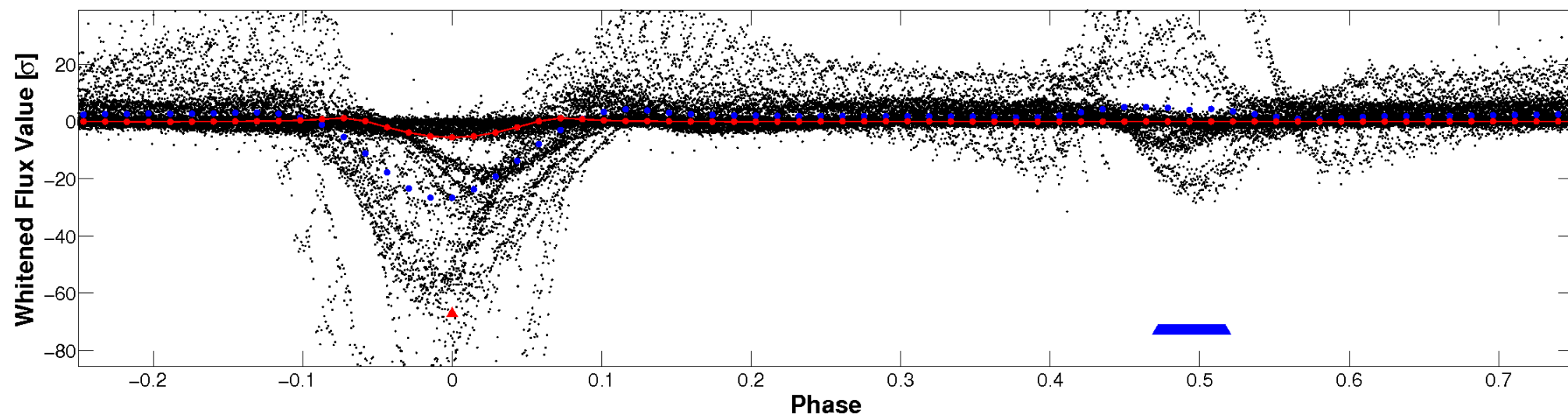


Non-Whitened Vs. Whitened Light Curve

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

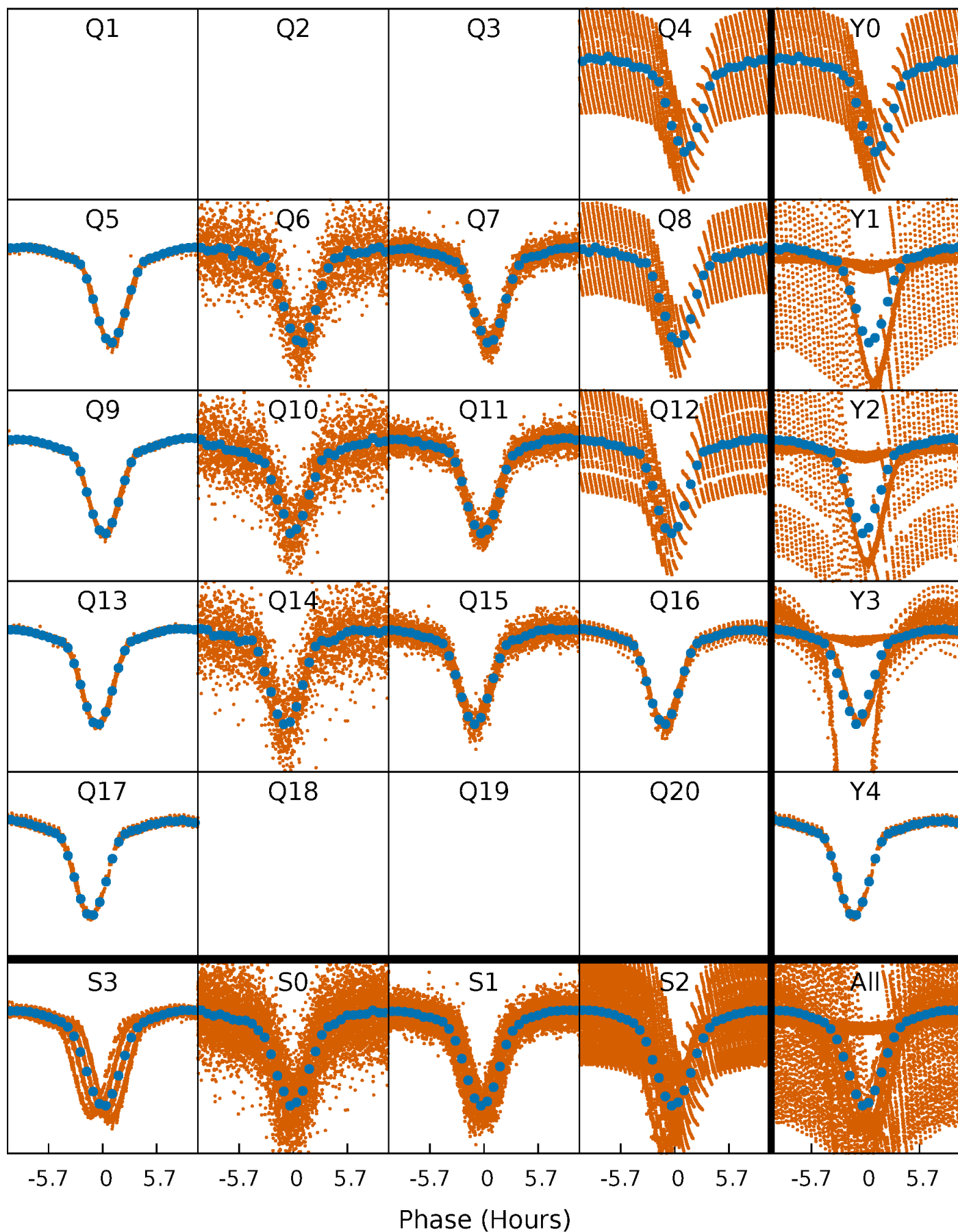


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



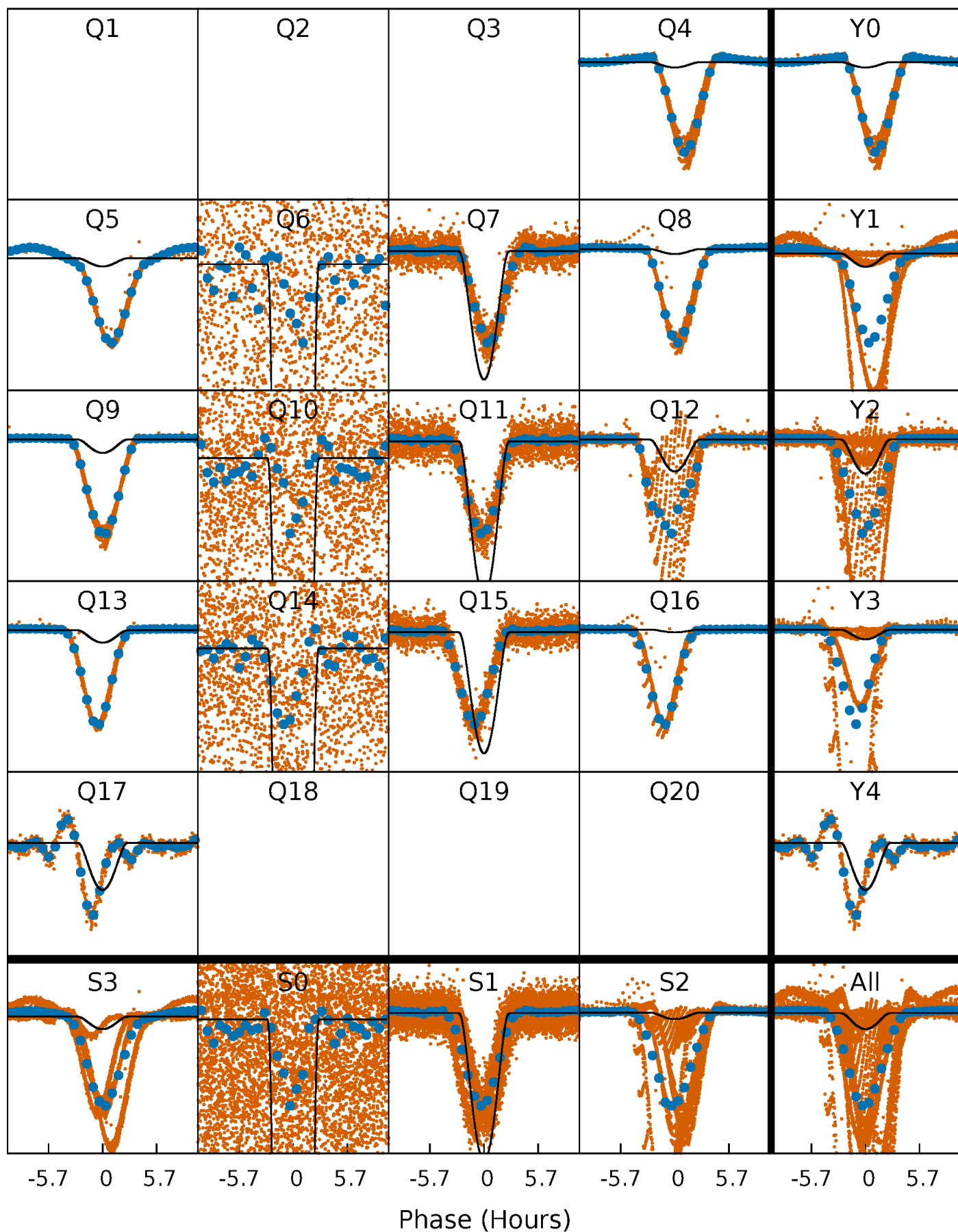
PDC Quarter-Phased Transit Curves

TCE 009833625-01 P= 1.408618 Days $T_0=131.858649$ (BKJD)



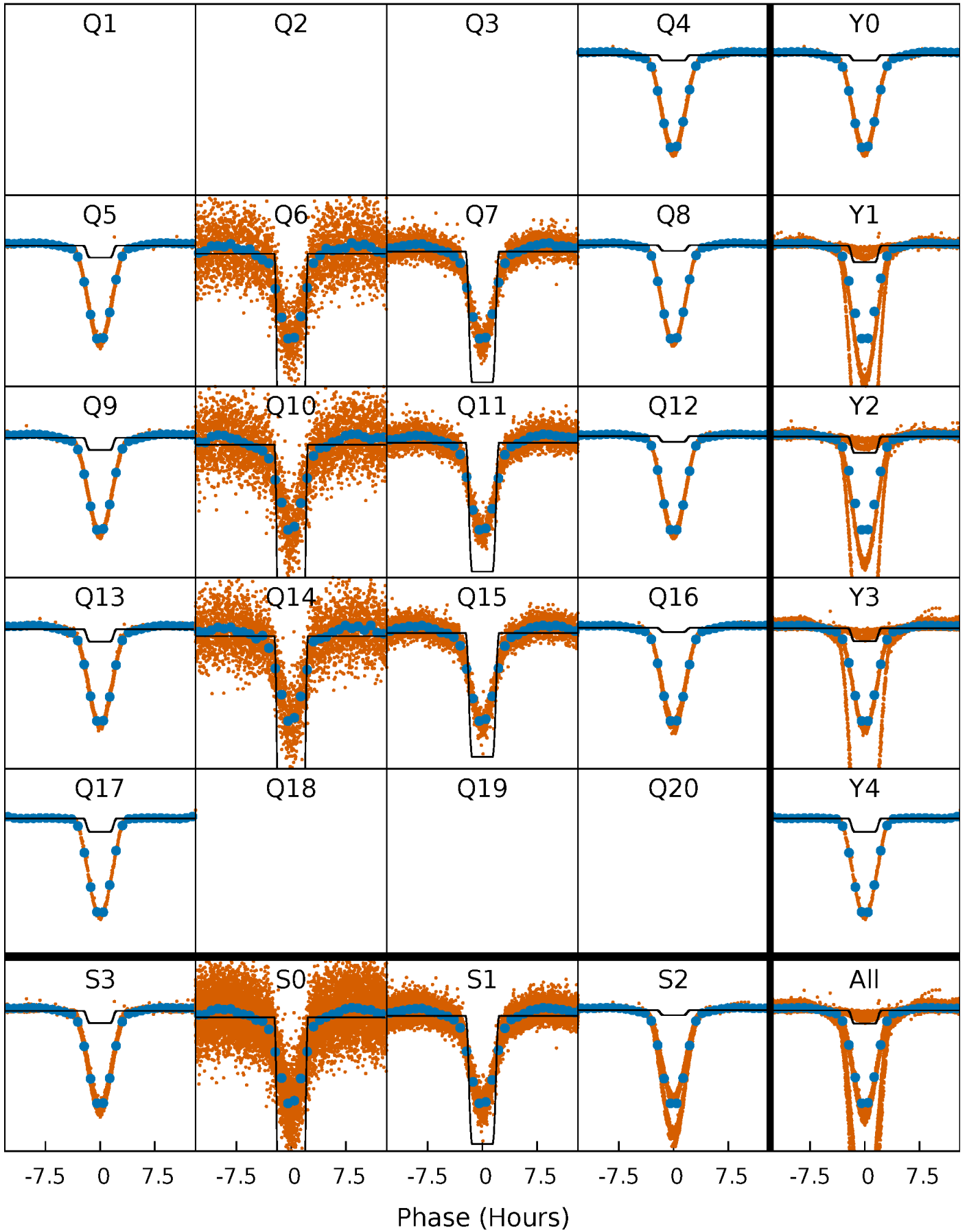
DV Quarter-Phased Transit Curves

TCE 009833625-01 P= 1.408618 Days $T_0=131.858649$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

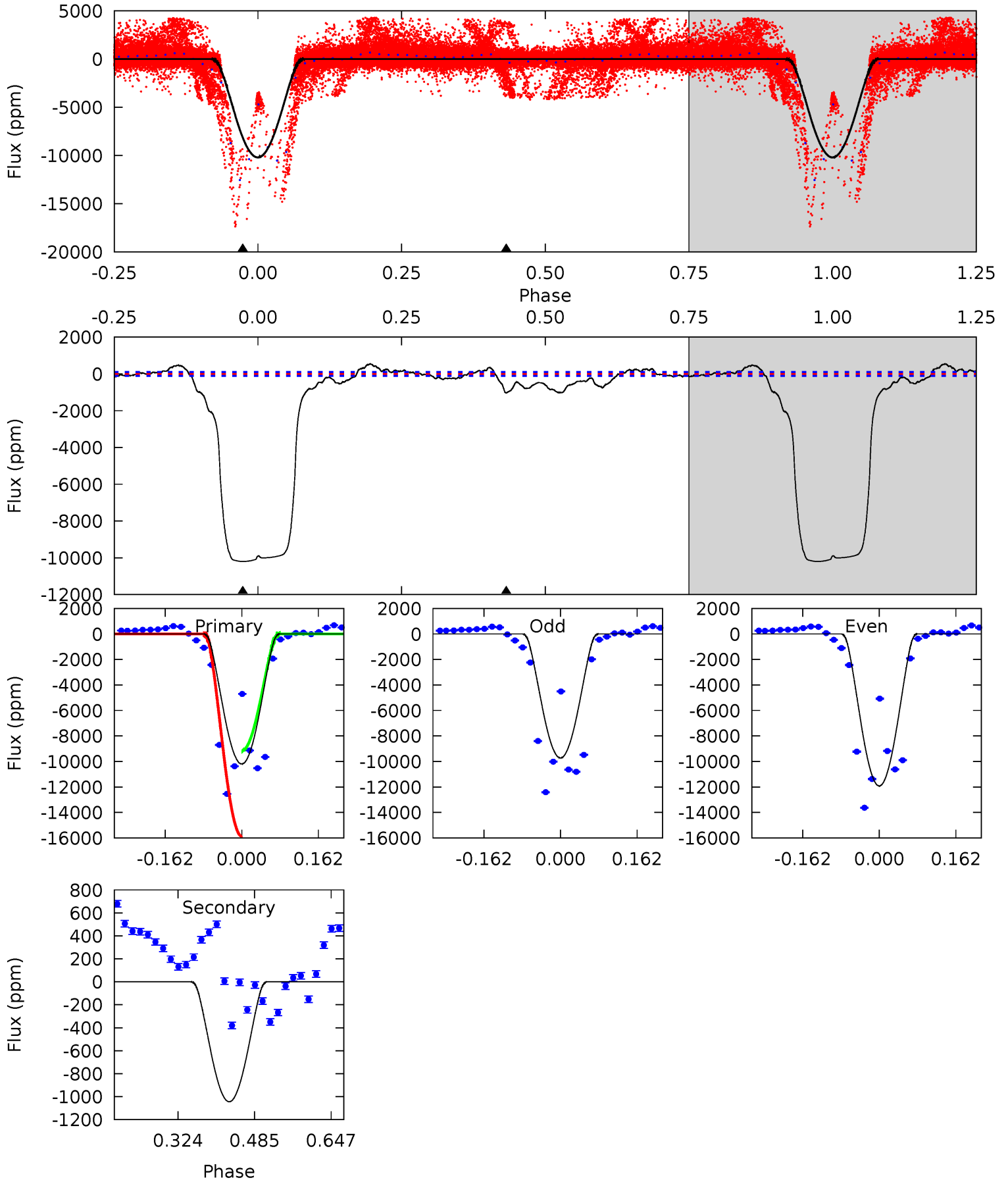
TCE 009833625-01 P= 1.408500 Days $T_0=131.926220$ (BKJD)



DV Model-Shift Uniqueness Test

009833625-01, P = 1.408618 Days, E = 131.858649 Days

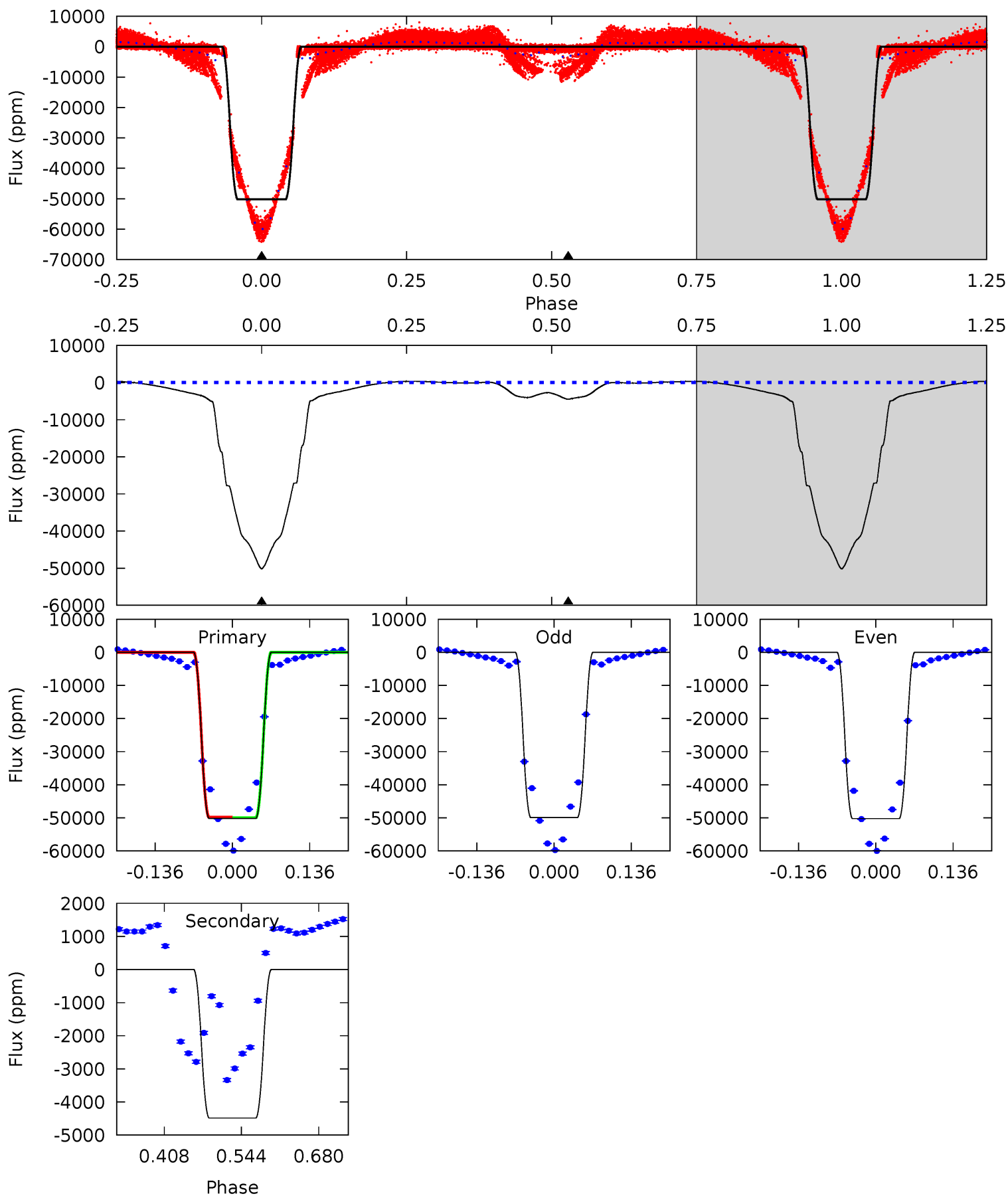
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
419.2	42.9	0	0	4.46	1.40	10.8	419.2	419.2	42.9	42.9	45.4	6.91	0.05	0



Alt Model-Shift Uniqueness Test

009833625-01, P = 1.408500 Days, E = 131.926220 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1169	104.4	0	0	4.50	1.49	16.9	1169	1169	104.4	104.4	3.85	0.96	0.01	0



Stellar Parameters For KIC 009833625

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6298^{+196}_{-261}	$4.421^{+0.050}_{-0.200}$	$0.070^{+0.250}_{-0.300}$	$1.116^{+0.353}_{-0.118}$	$1.198^{+0.157}_{-0.157}$	$1.214^{+0.324}_{-0.618}$
	+3%/-4%	+1%/-5%	+357%/-429%	+32%/-11%	+13%/-13%	+27%/-51%
Source	KIC0	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 009833625-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1044 ± 24	$17.18^{+4.11}_{-3.95}$	2585^{+194}_{-140}	3409^{+328}_{-255}	$1.333^{+0.827}_{-0.461}$
Alt.	-4485 ± 43	$11.37^{+3.97}_{-3.66}$	2592^{+186}_{-133}	5463^{+1155}_{-645}	13^{+15}_{-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 $A_{\text{obs}} \gg 1.0$

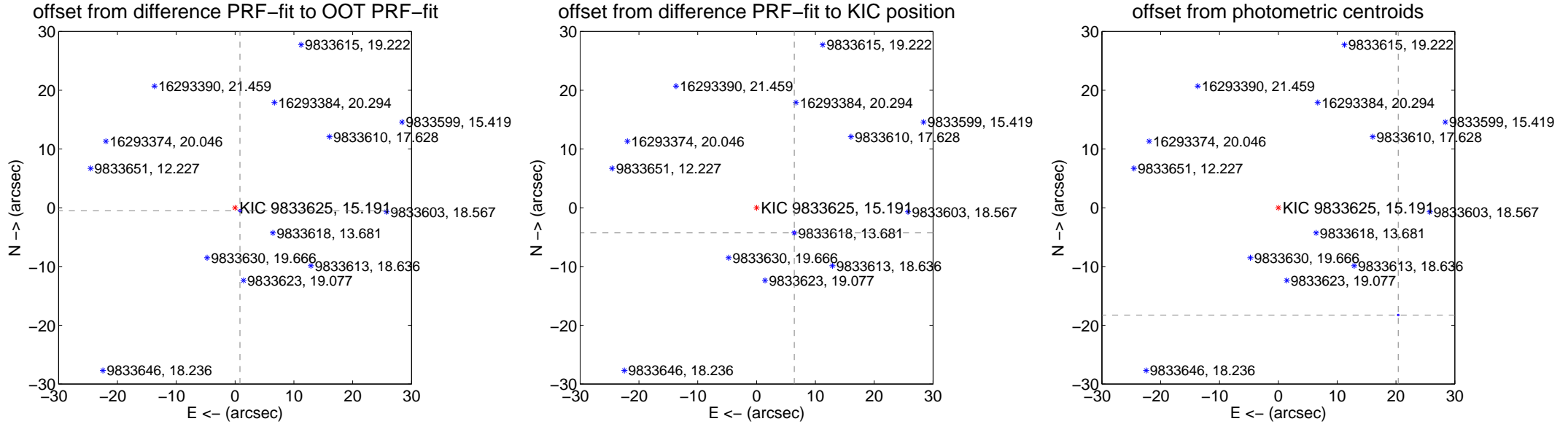
DV Centroid Data

Supplemental centroid analysis for 009833625-01. Kepler magnitude: 15.19. Transit SNR 224.21

There are 4 quarters with good PRF difference image offsets

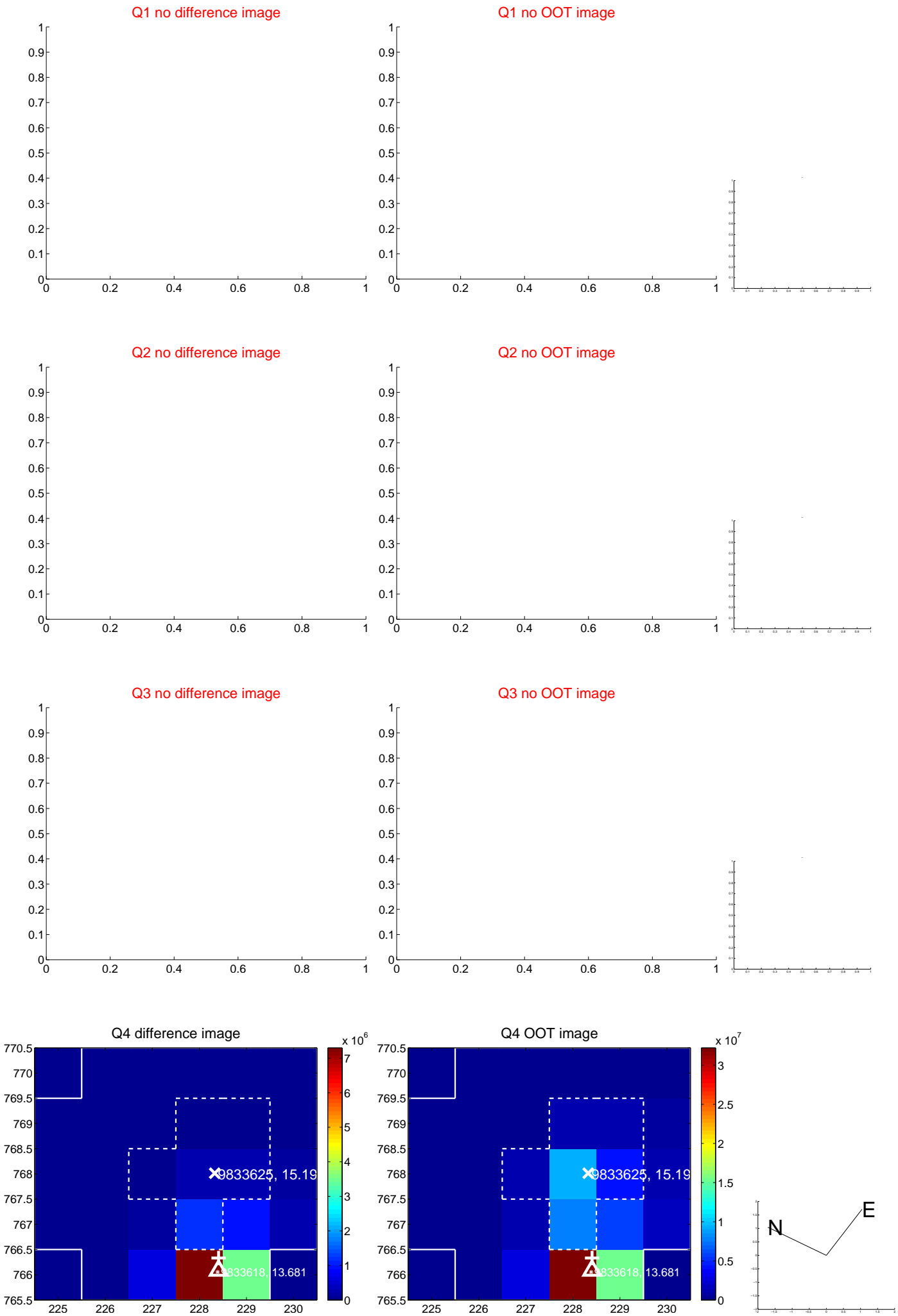
The OOT PRF centroid is offset from the target star catalog position by about 6.69 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.975 ± 0.069	14.22	-0.834 ± 0.069	-0.504 ± 0.067
PRF-fit source offset from KIC position	7.708 ± 0.069	111.73	-6.415 ± 0.069	-4.274 ± 0.069
photometric centroid source offset	27.37 ± 0.05	552.62	-20.38 ± 0.06	-18.26 ± 0.03

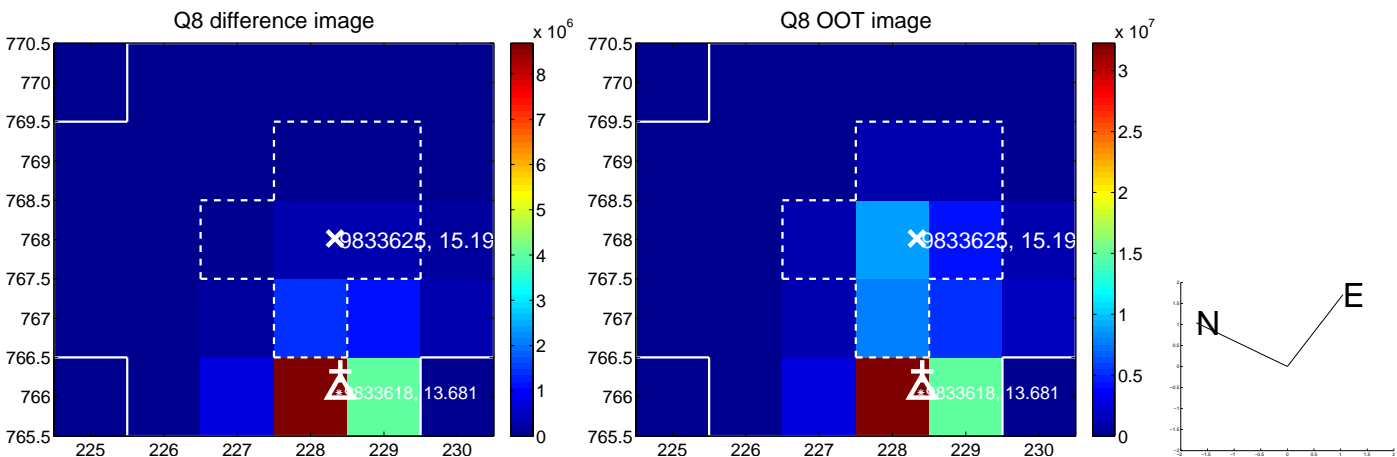
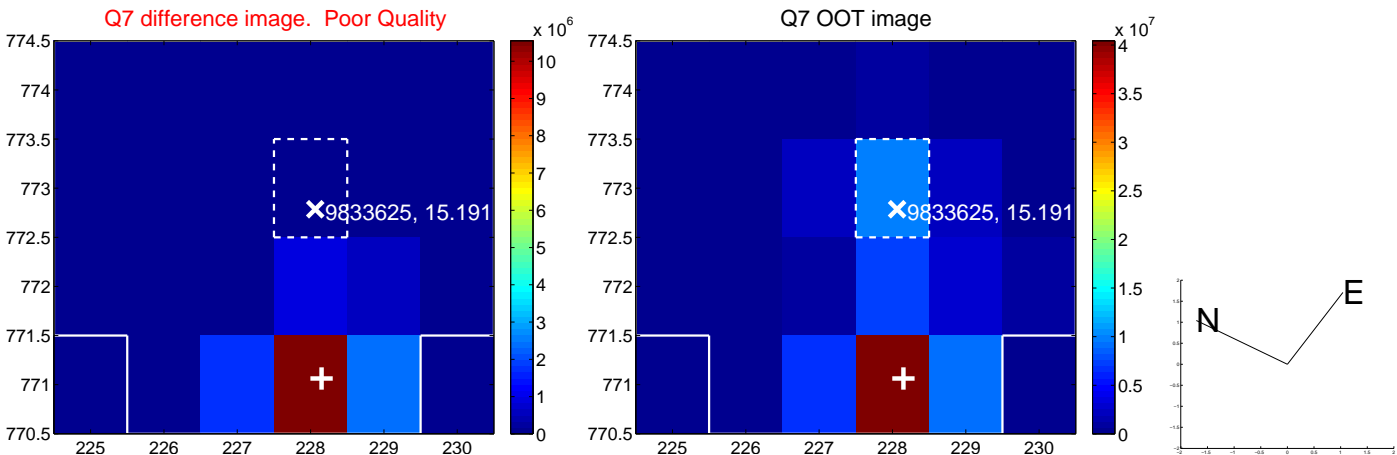
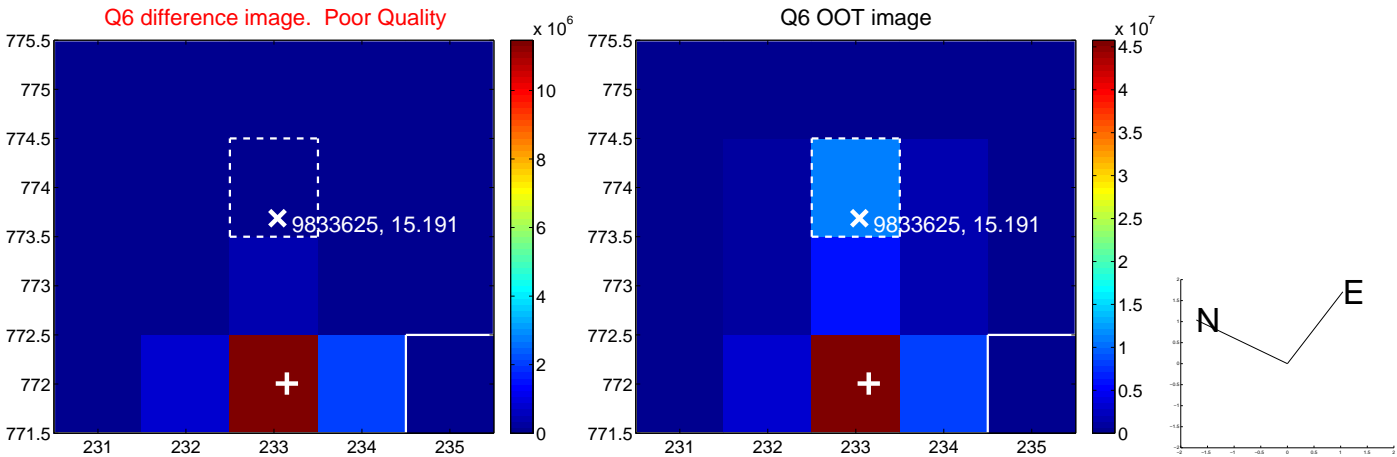
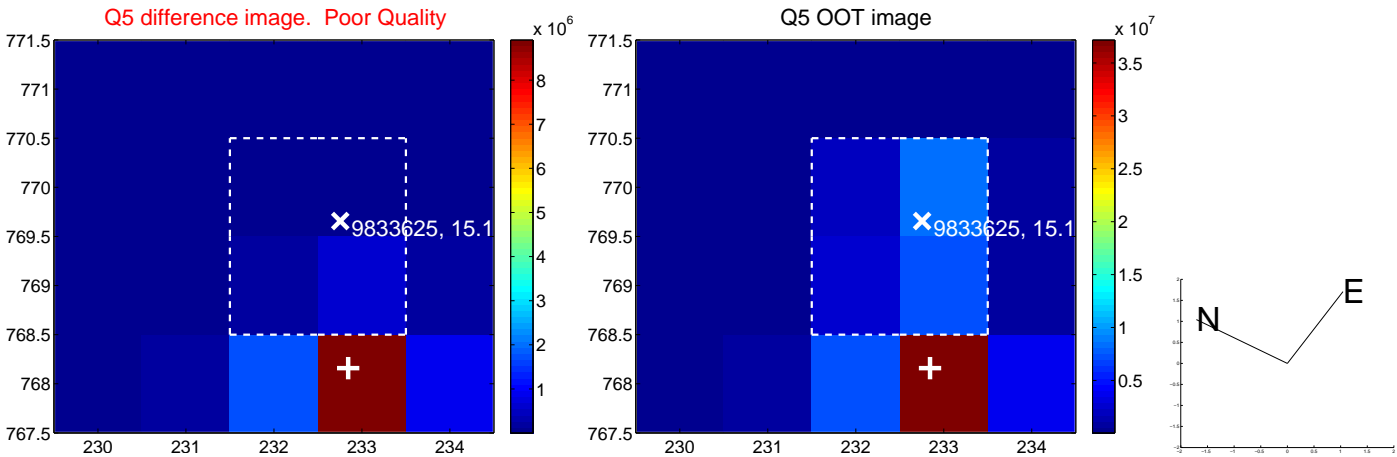


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

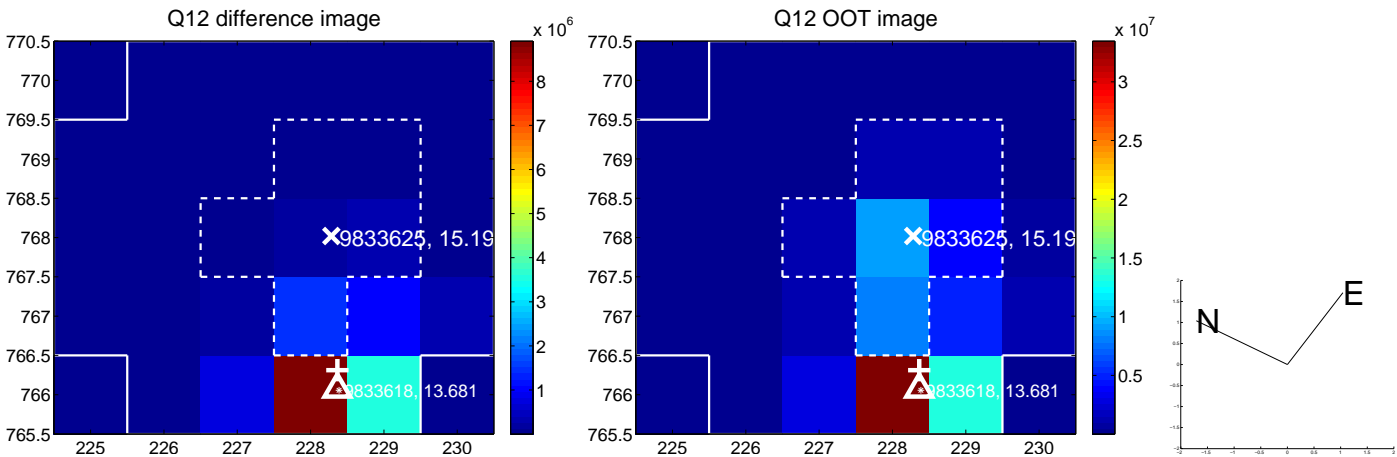
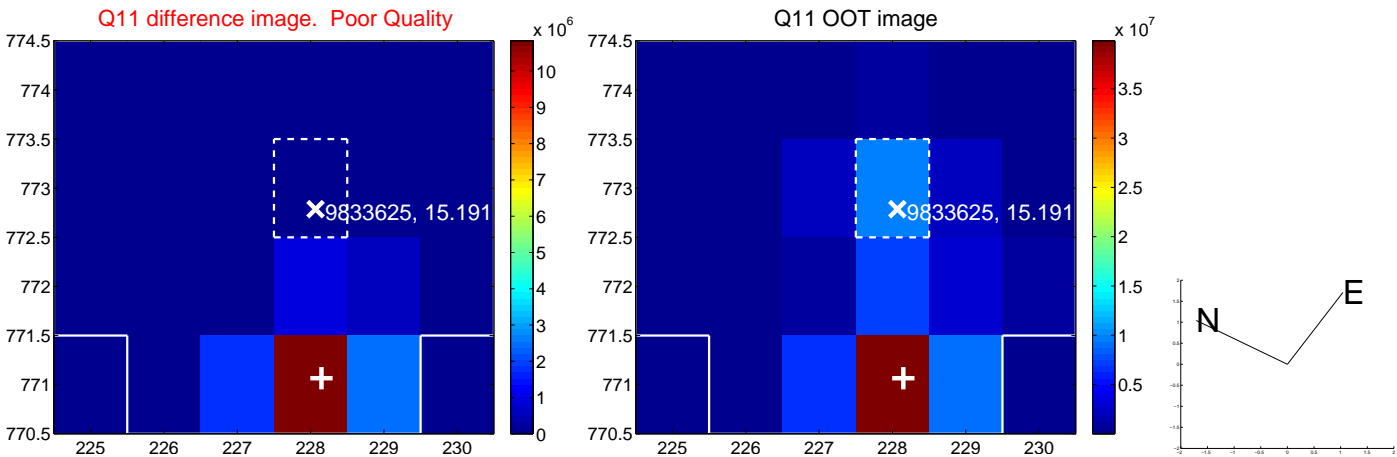
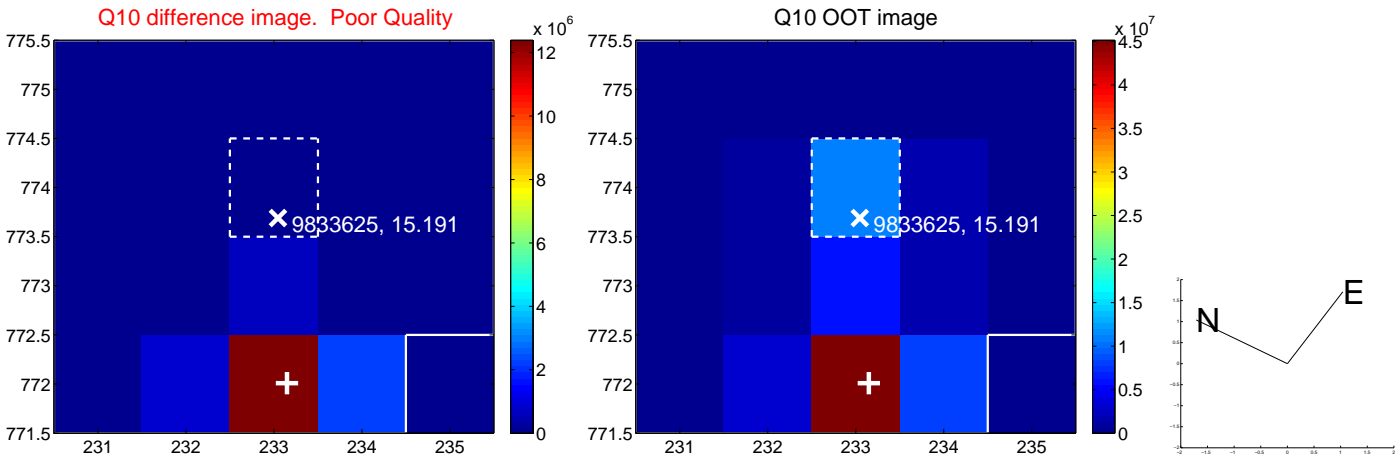
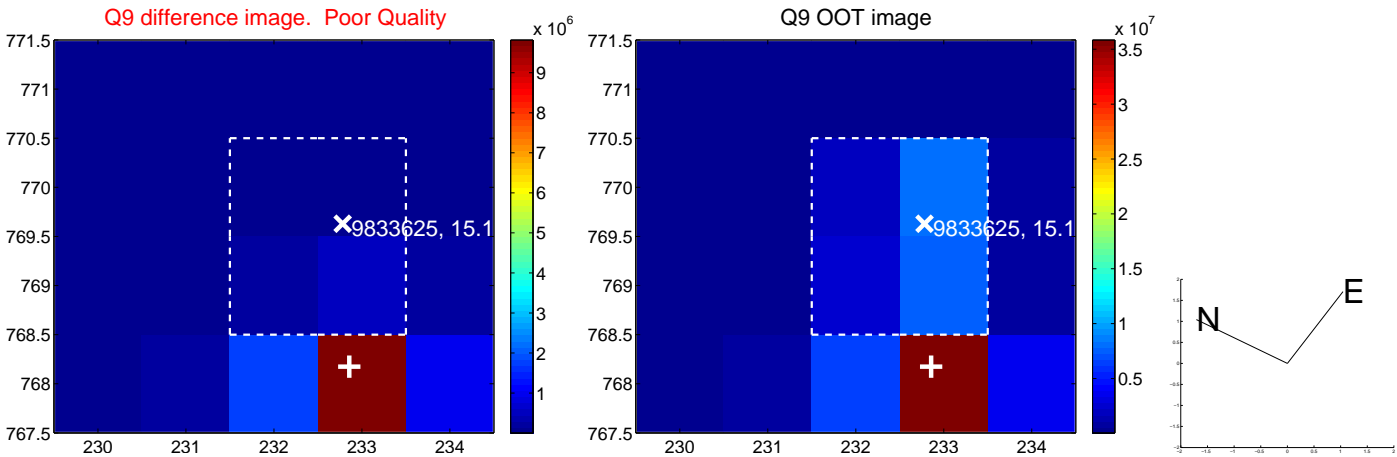
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



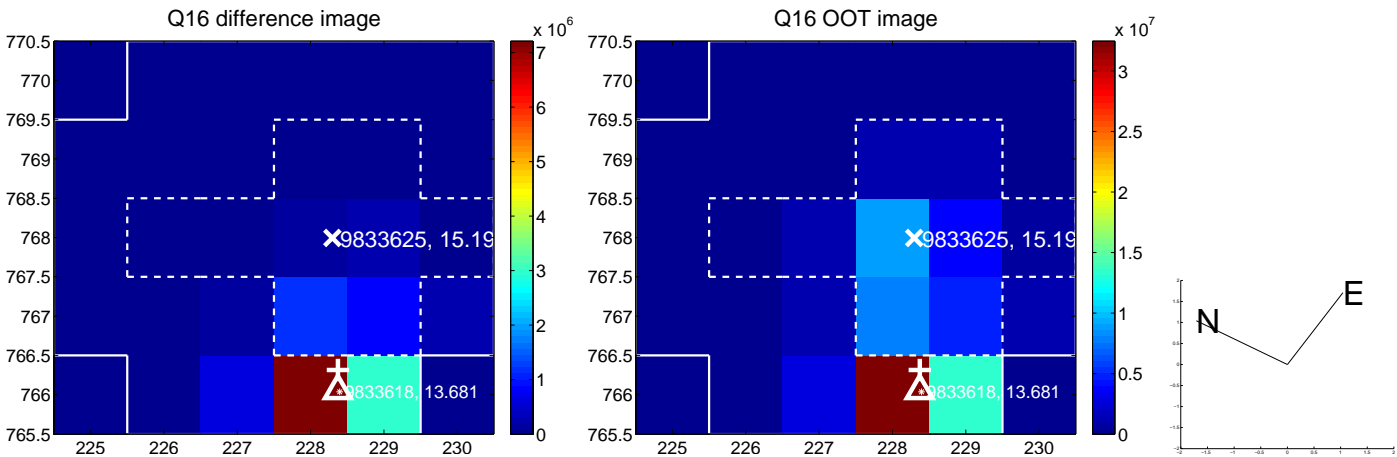
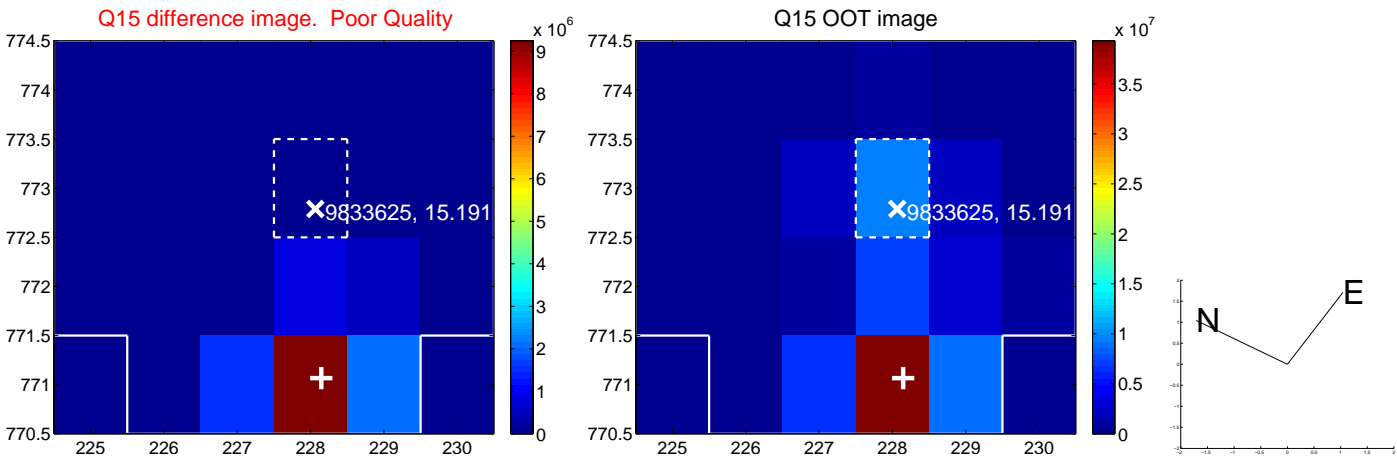
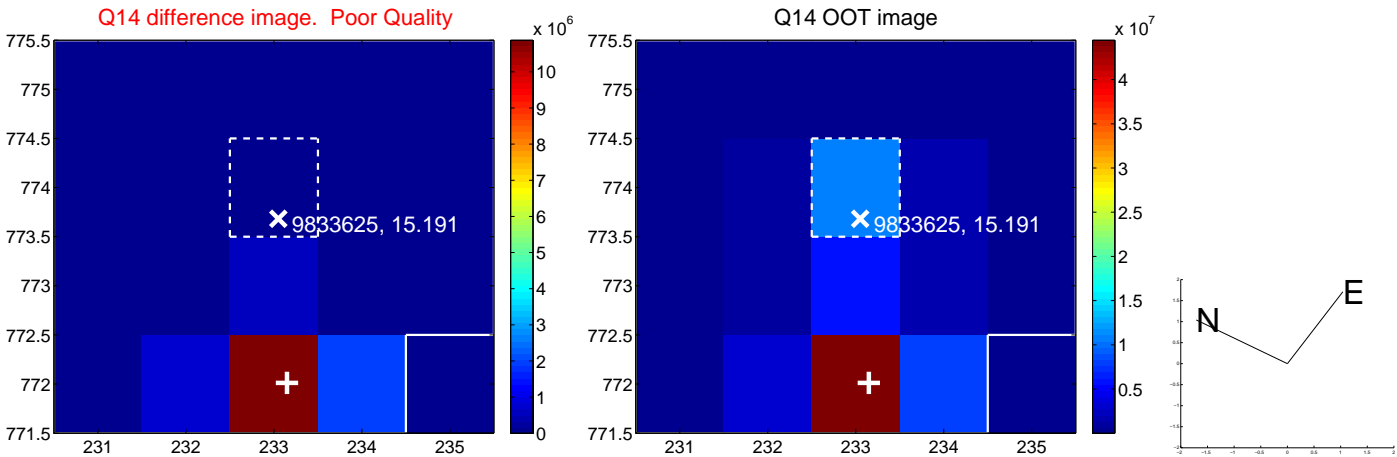
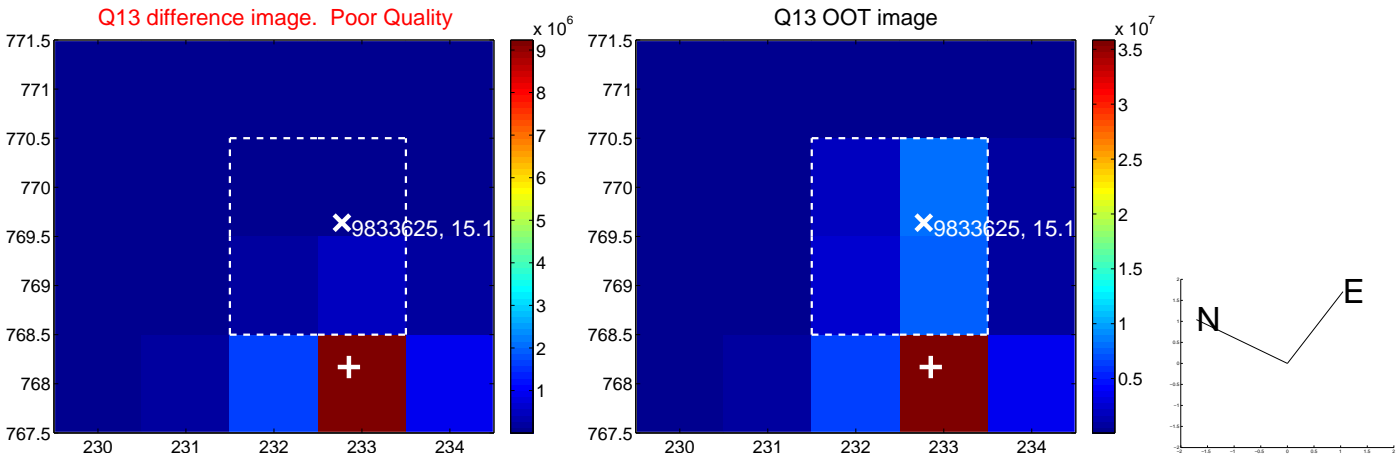
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



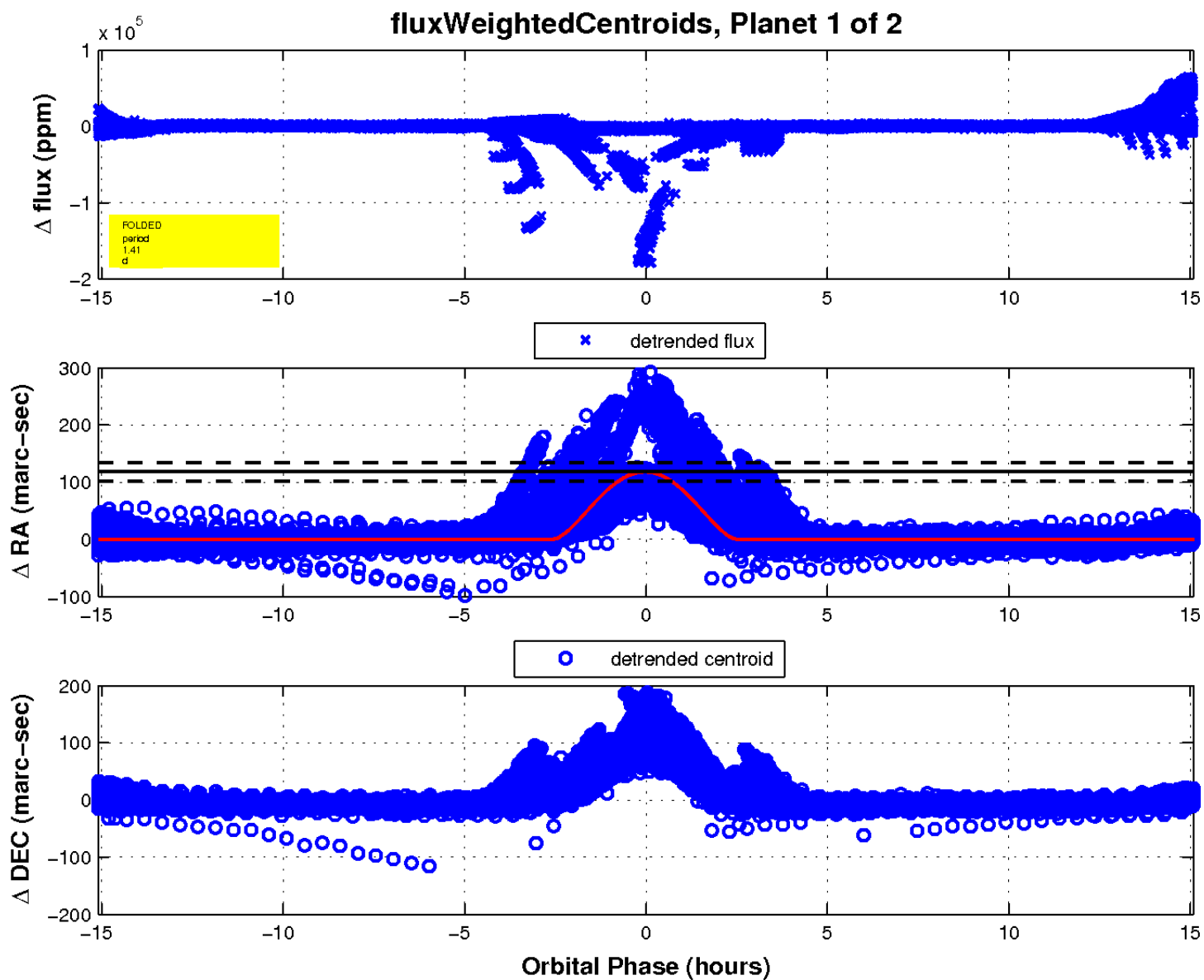
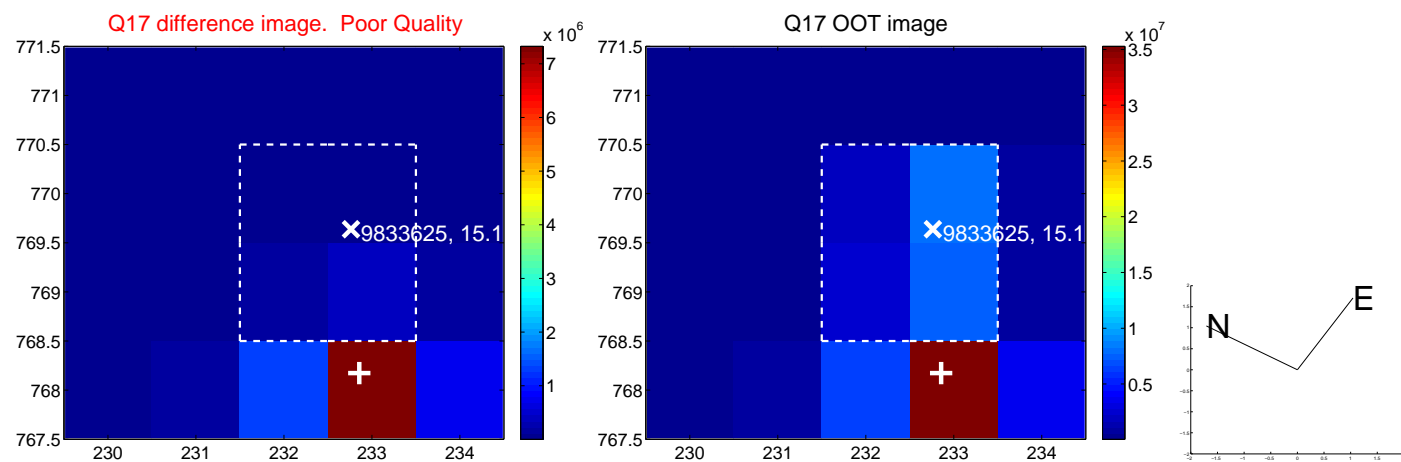
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



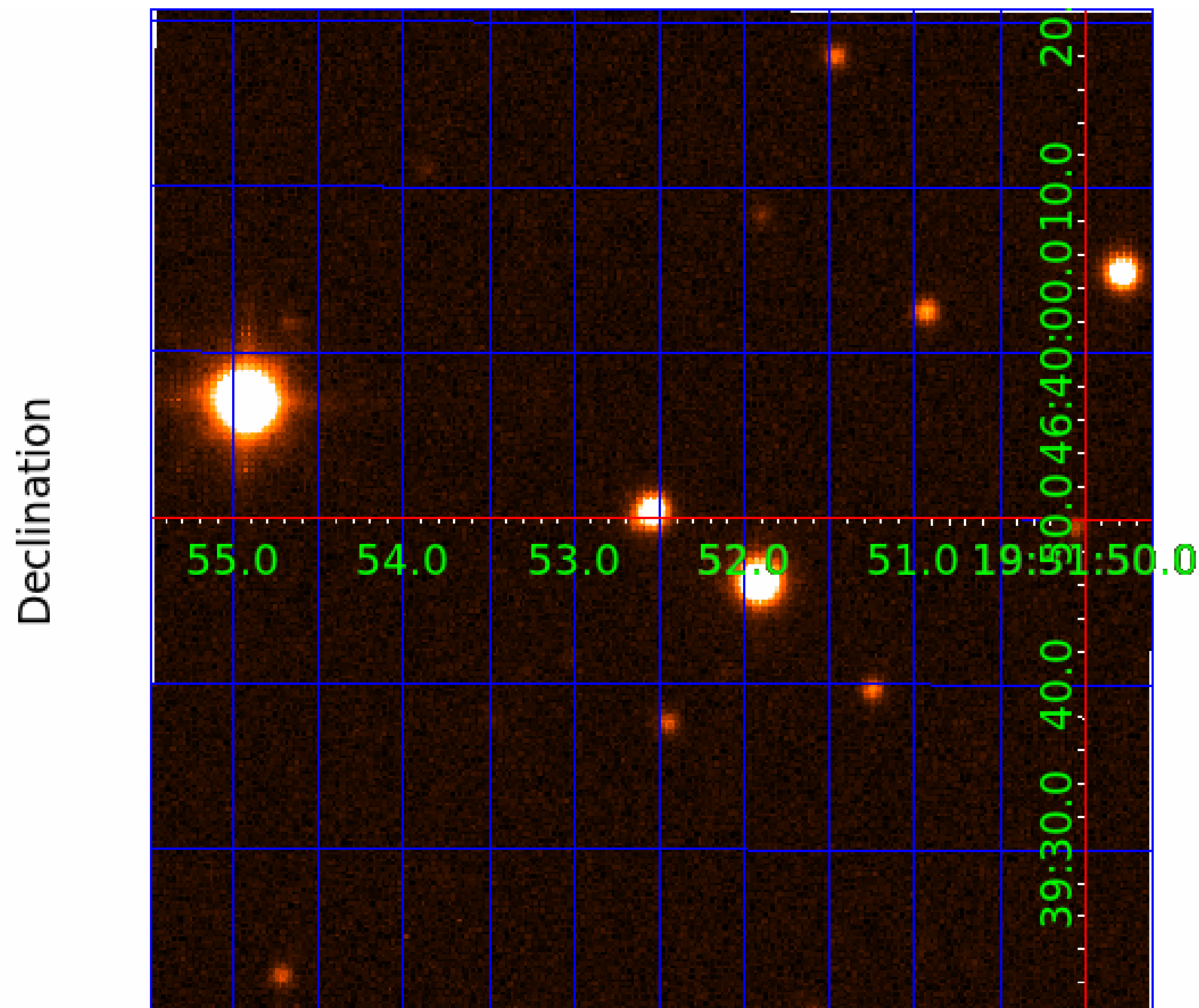
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009833625

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})
009833625-01	OBS	No	1.408618	131.858649	6532.5	5.029	479.0	224.2	1.12	6298	16.28	2572.90
009833625-02	OBS	No	1.408556	132.587161	17882.8	3.500	264.8	-1.0	1.12	6298	14.96	2573.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009833625-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
009833625-02	OBS	FP	0.00	1	0	0	1	LPP_DV—SAME_NTL_PERIOD—CENT_NOFITS—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.

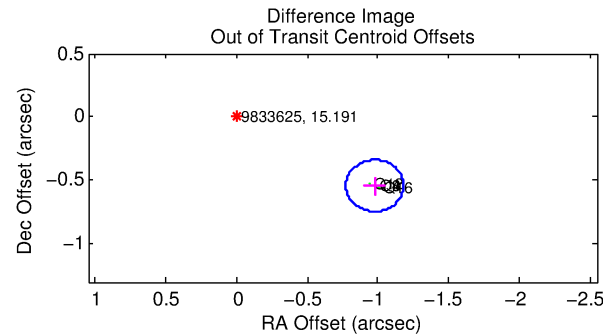
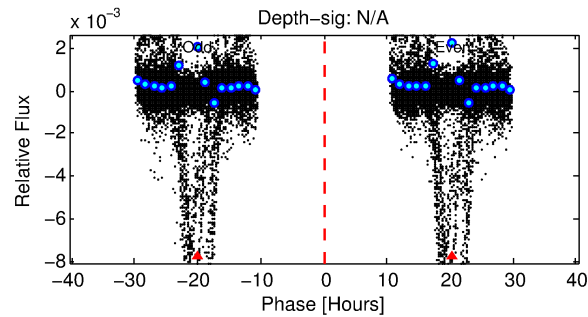
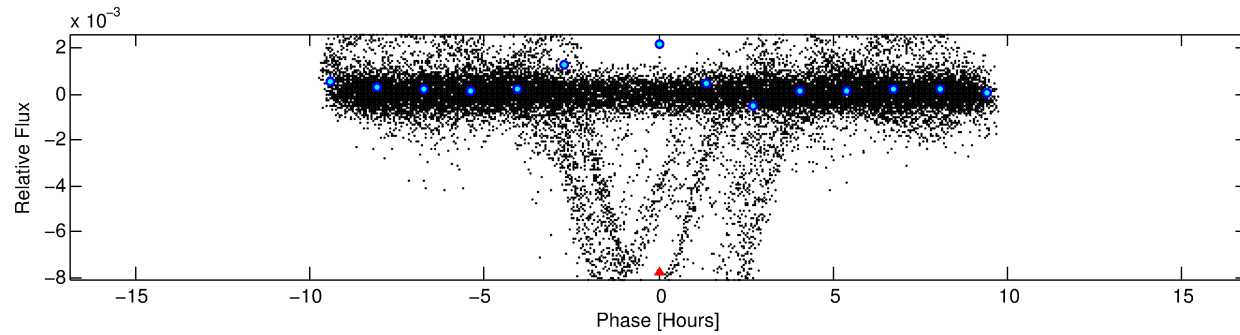
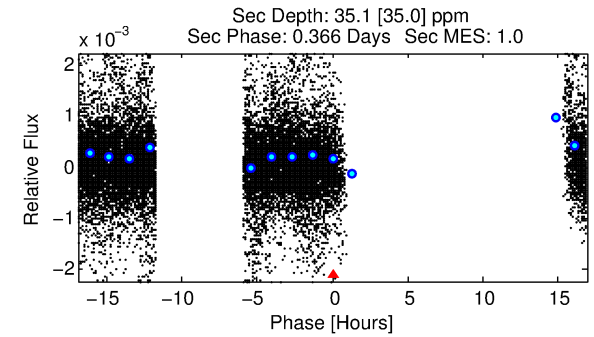
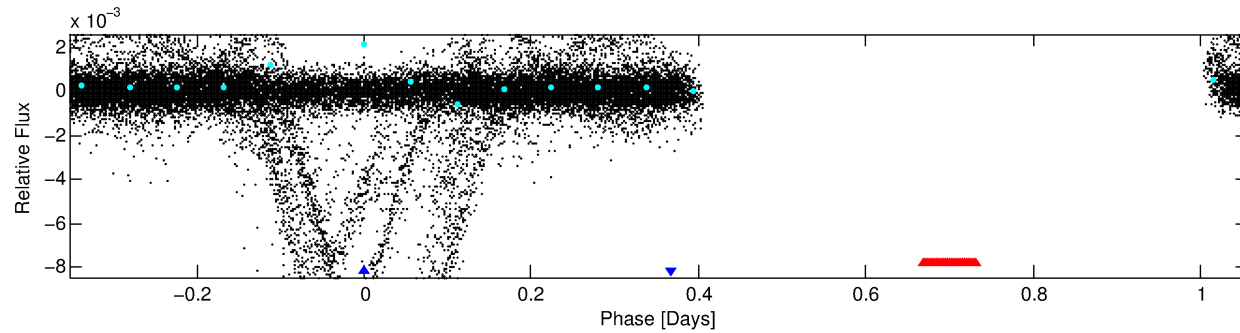
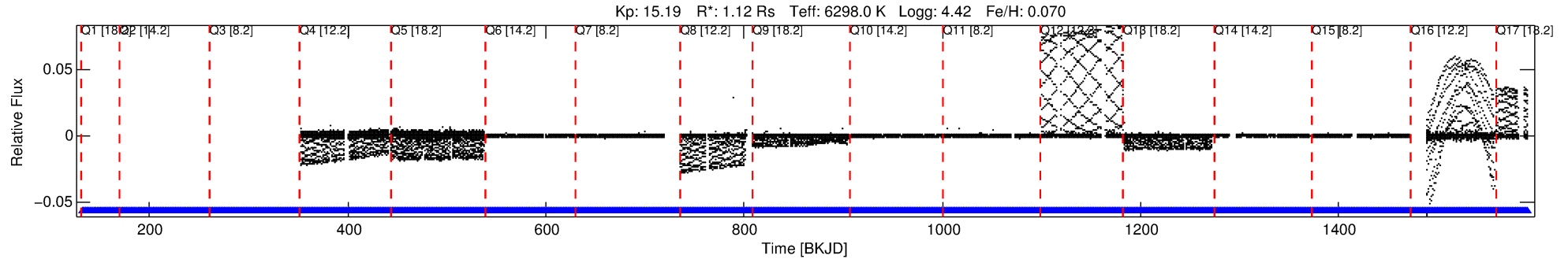
Ephemeris Match Information For 009833625-02

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
009833625-02	9833625	009833618-sec	9833618	1:1	7.7	2	0	13.68	15.19	4.45	Direct-PRF	0	3.14	2.67

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: 9833625 Candidate: 2 of 2 Period: 1.409 d



TPS TCE Results:

Period = 1.40856 d
Epoch = 132.5872 BKJD

DV fit results are unavailable

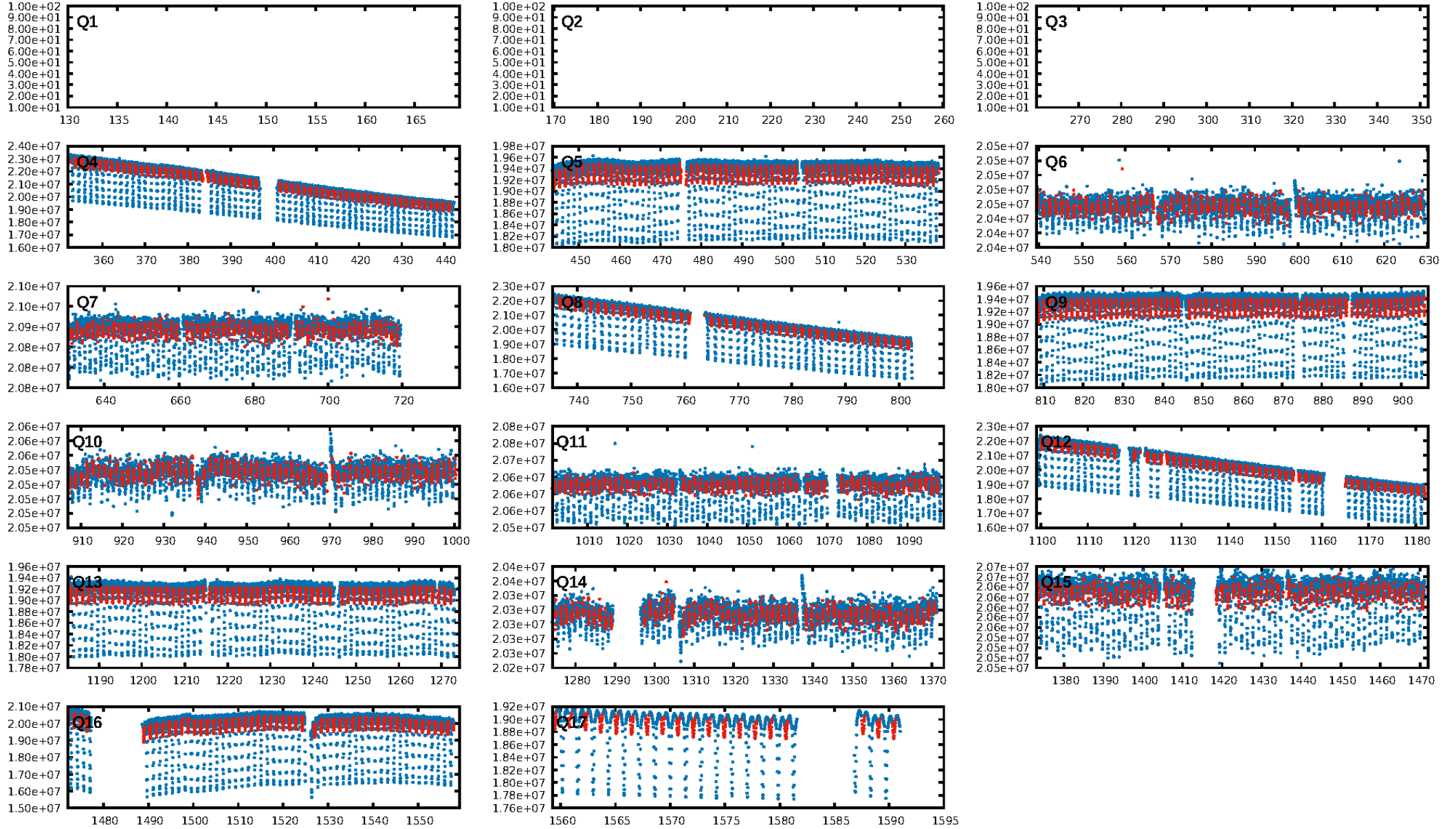
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [793/793]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 3.694 arcsec [98.06σ]
OotOffset-rm: 1.115 arcsec [16.45σ]
KicOffset-rm: 7.849 arcsec [114.32σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [14/14]

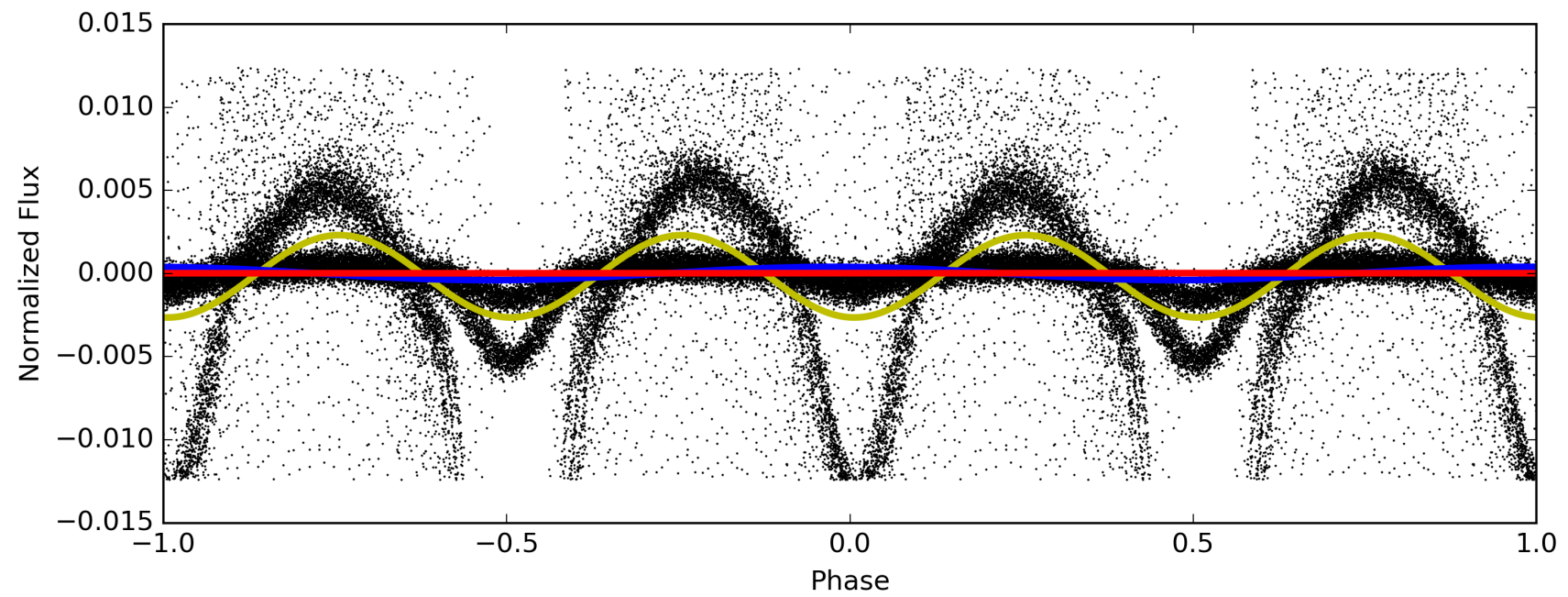
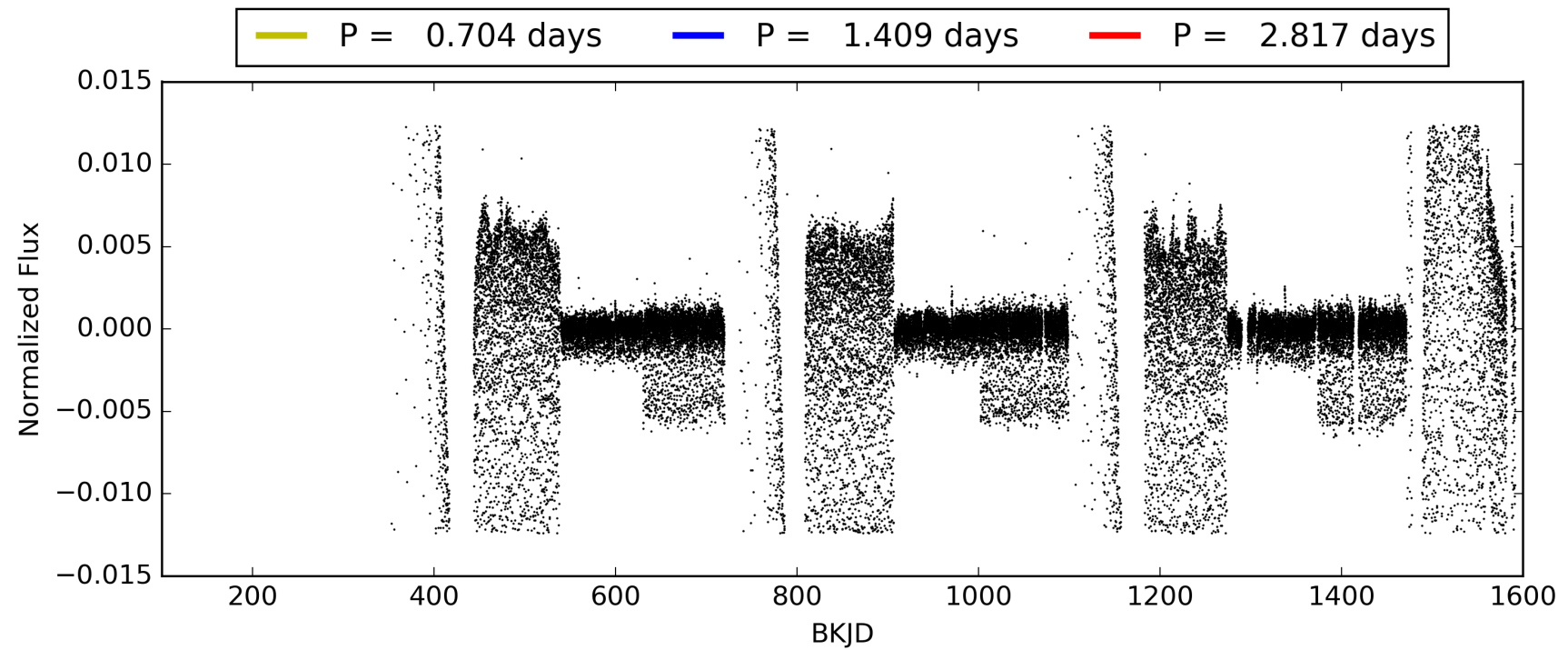
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:18:17 Z

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TCE 009833625-02, PDC Light Curves

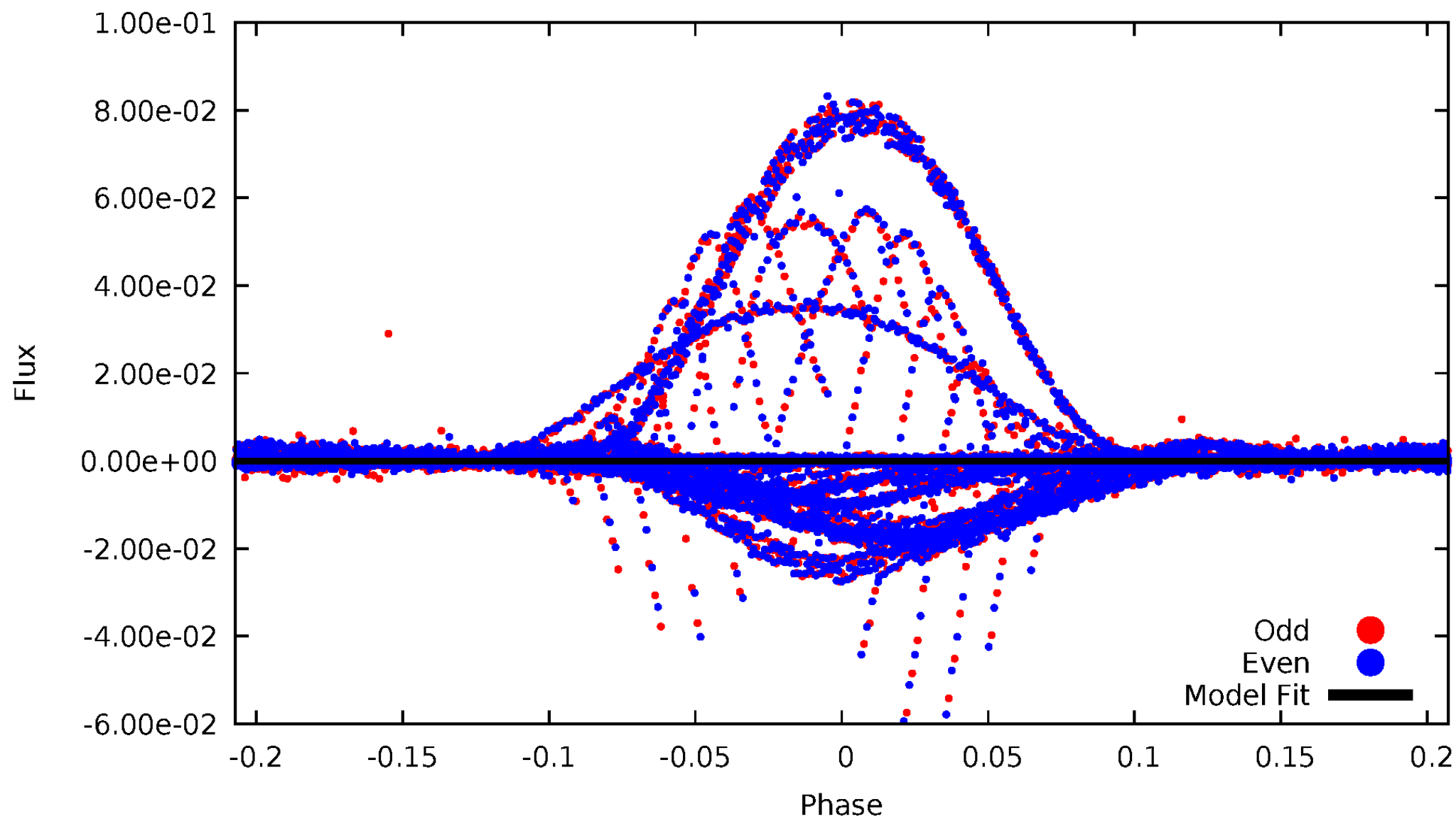


TCE 009833625-02



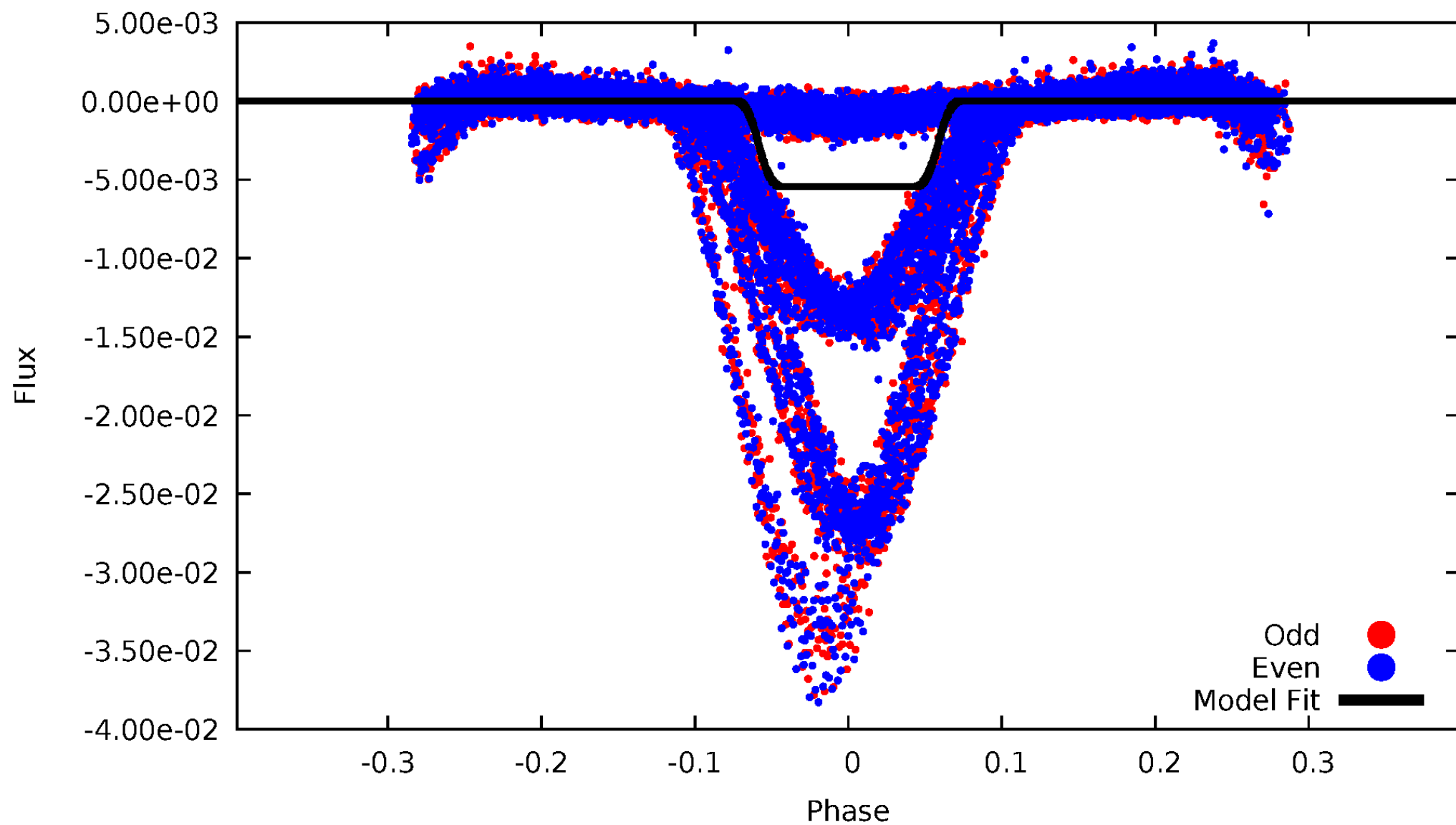
DV Odd/Even

TCE 009833625-02



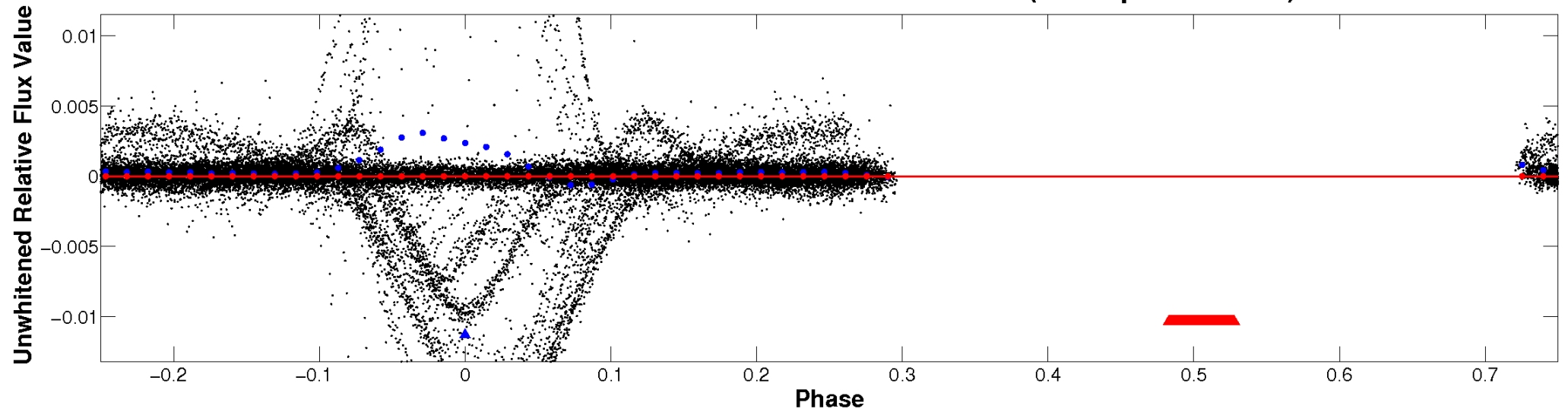
ALT Odd/Even

TCE 009833625-02

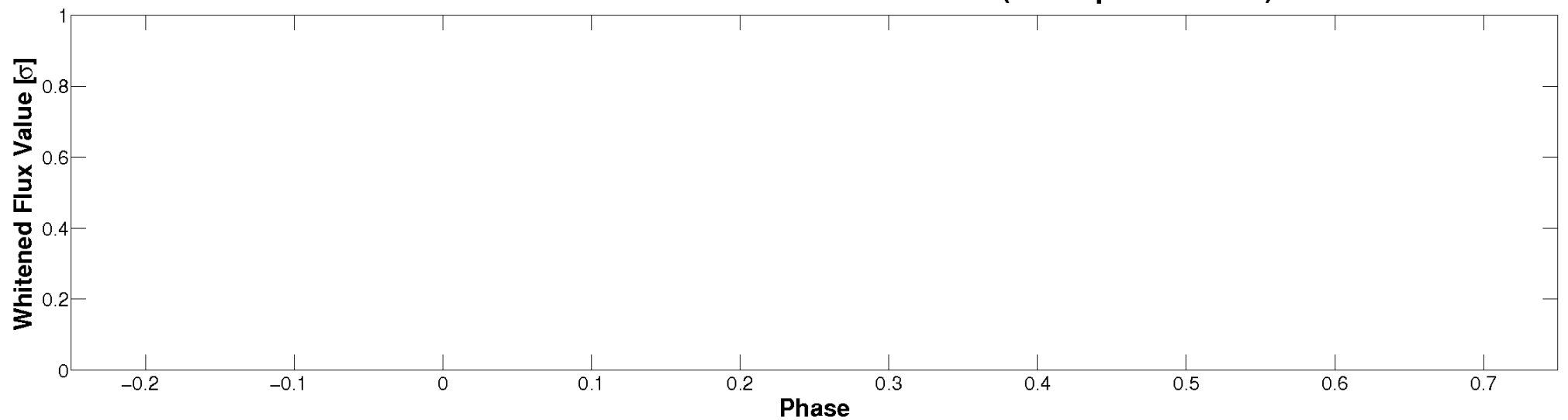


Non-Whitened Vs. Whitened Light Curve

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

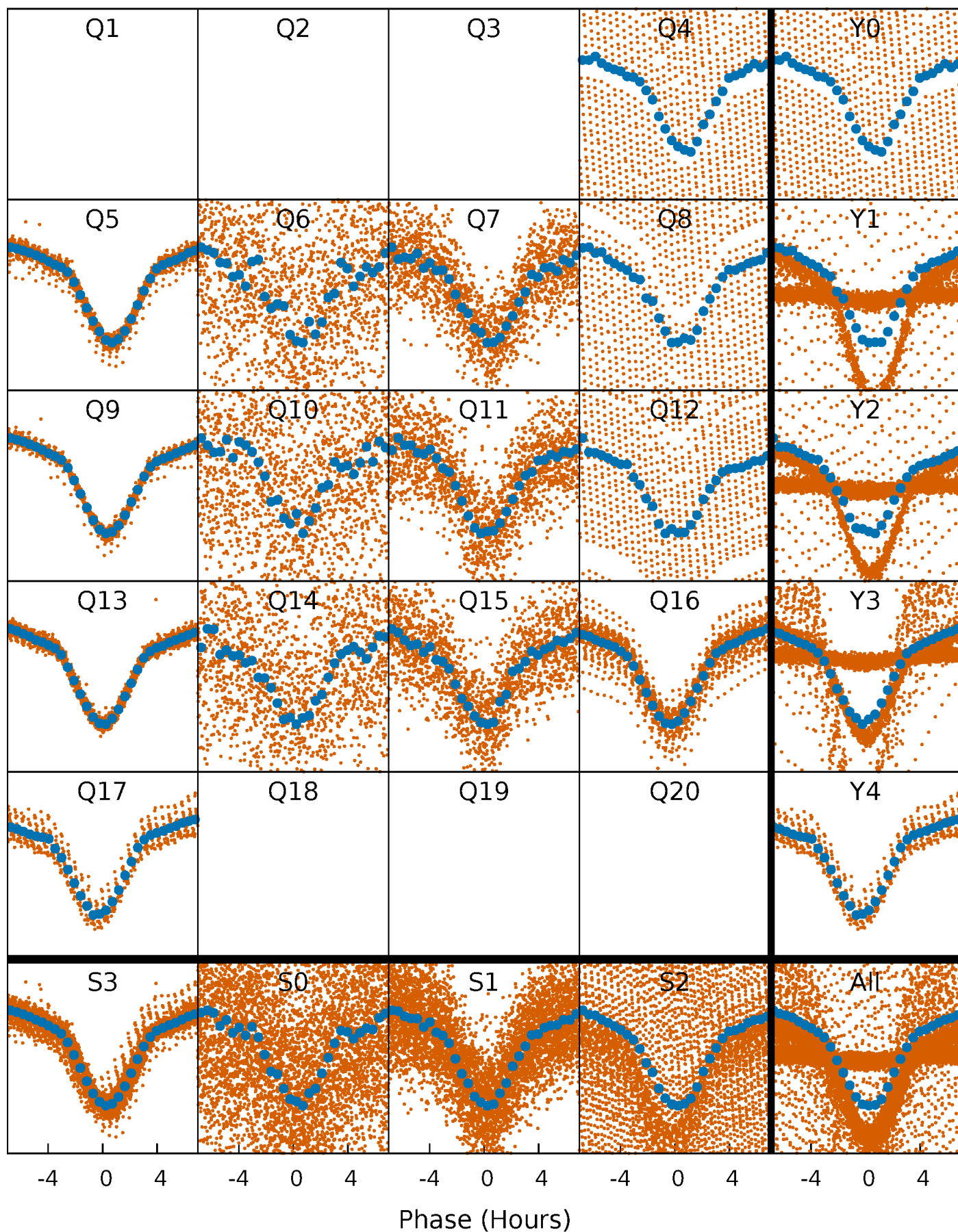


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



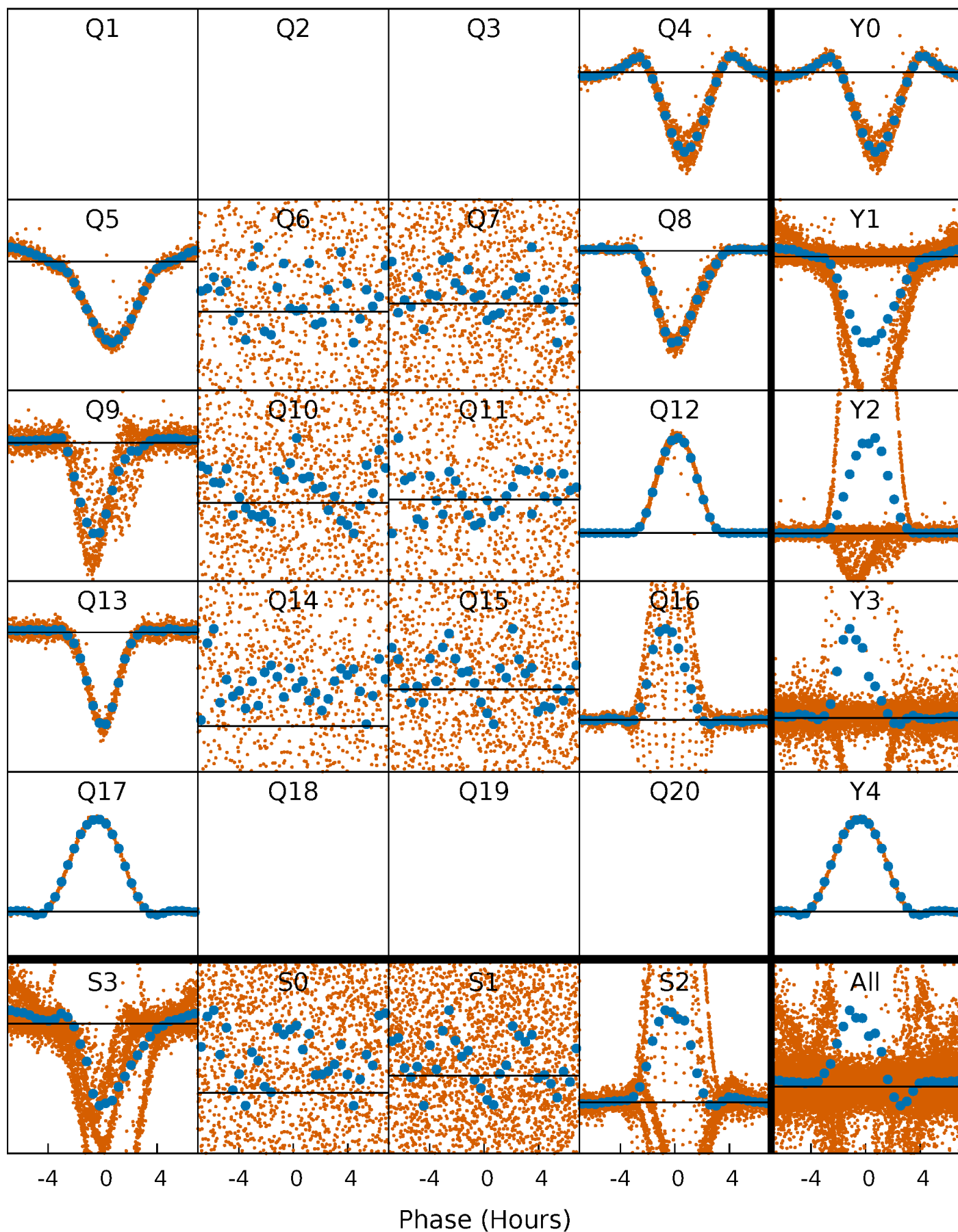
PDC Quarter-Phased Transit Curves

TCE 009833625-02 P= 1.408556 Days $T_0=132.587161$ (BKJD)



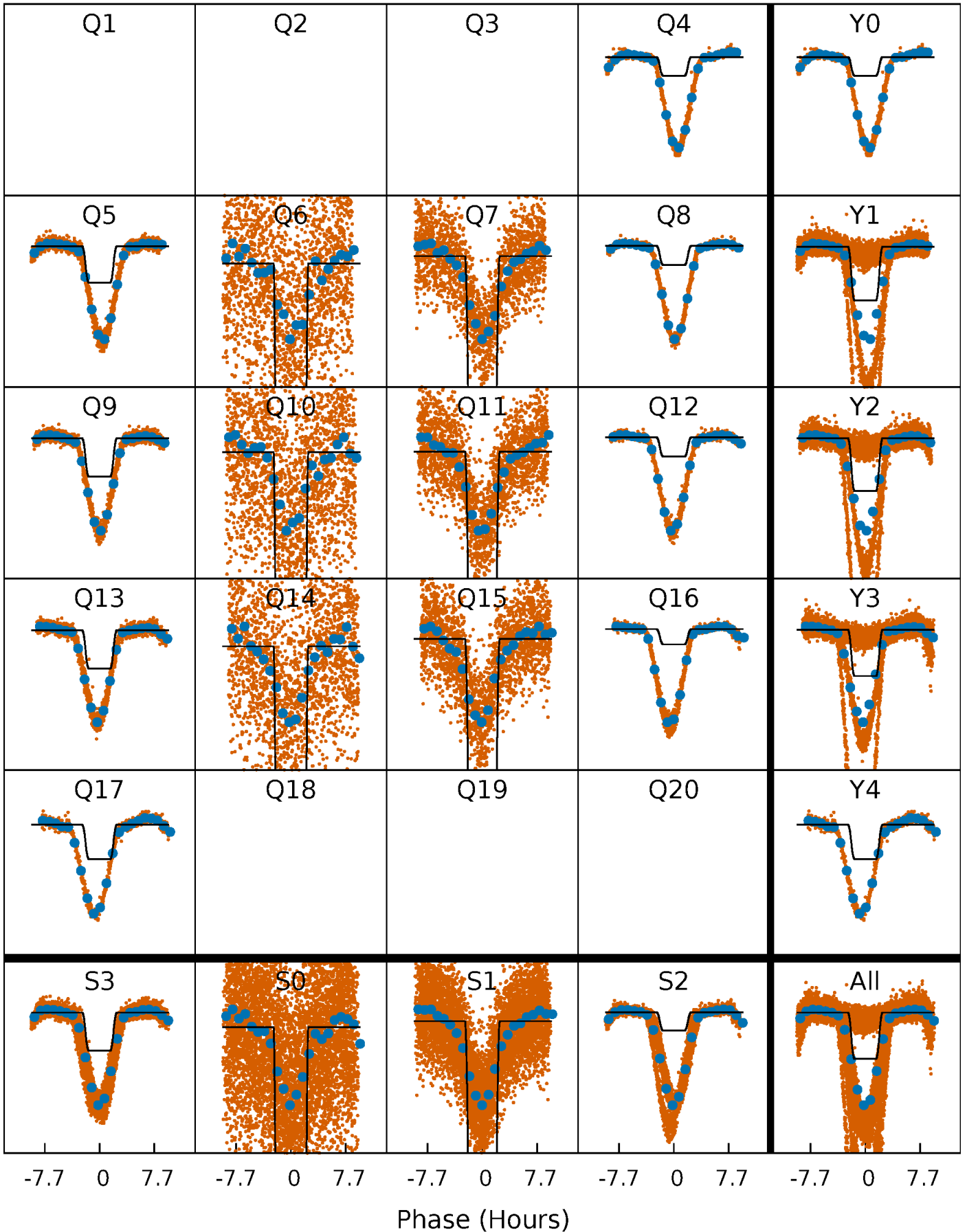
DV Quarter-Phased Transit Curves

TCE 009833625-02 P= 1.408556 Days $T_0=132.587161$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

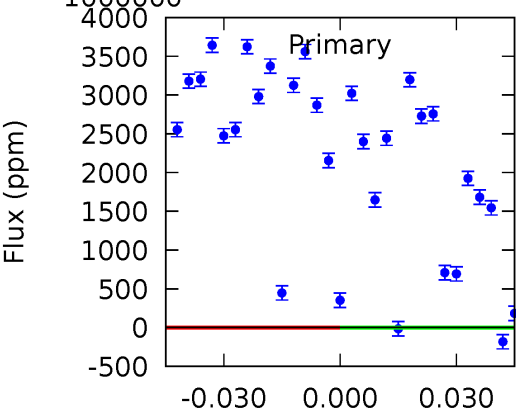
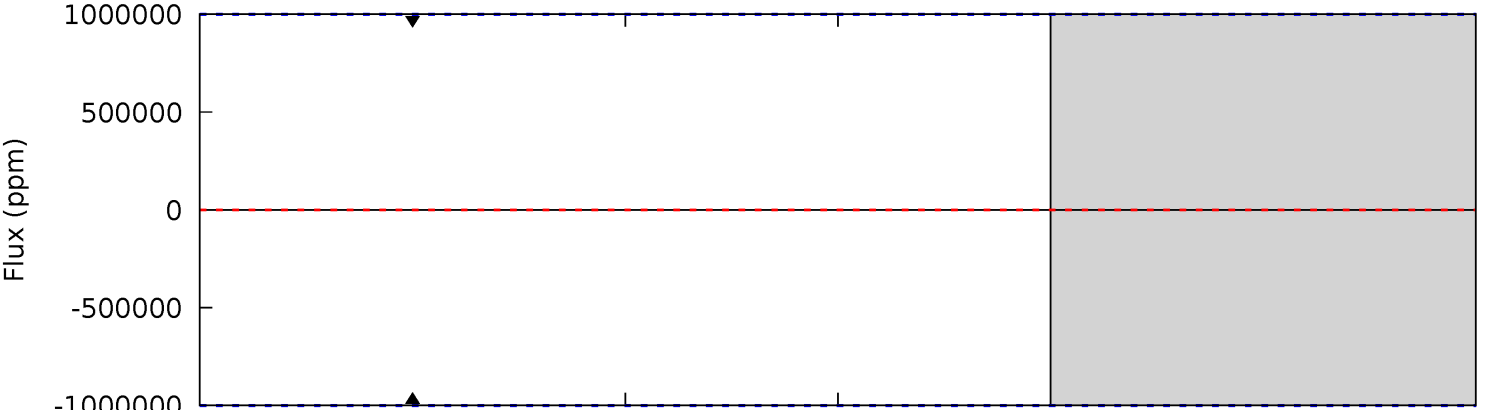
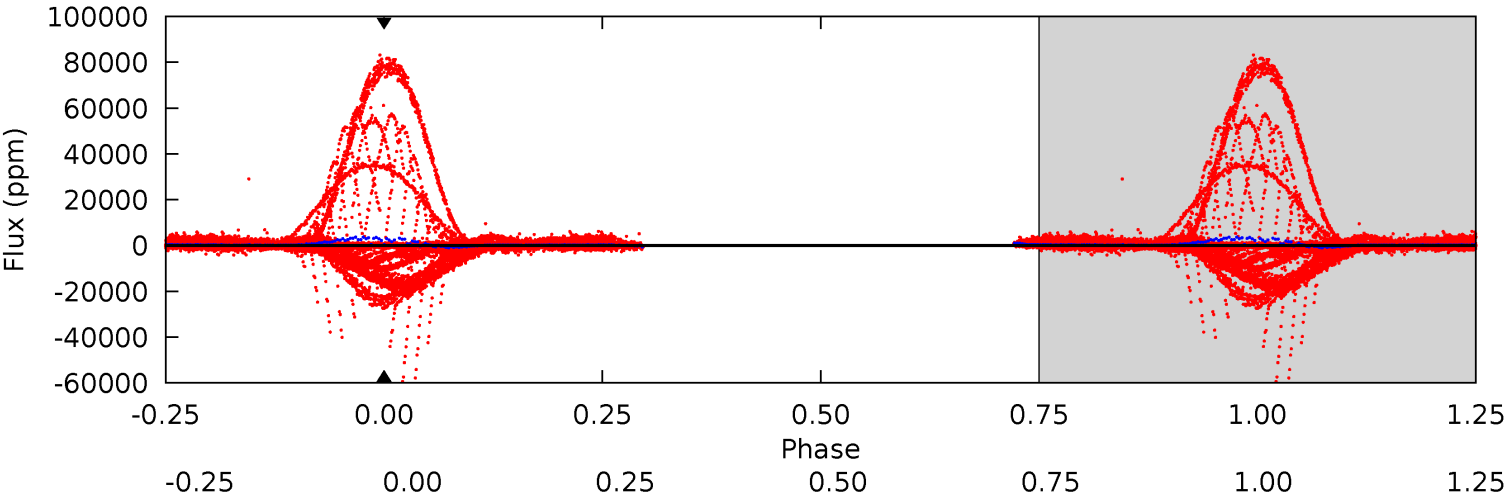
TCE 009833625-02 P= 1.408556 Days $T_0=132.599239$ (BKJD)



DV Model-Shift Uniqueness Test

009833625-02, P = 1.408556 Days, E = 132.587161 Days

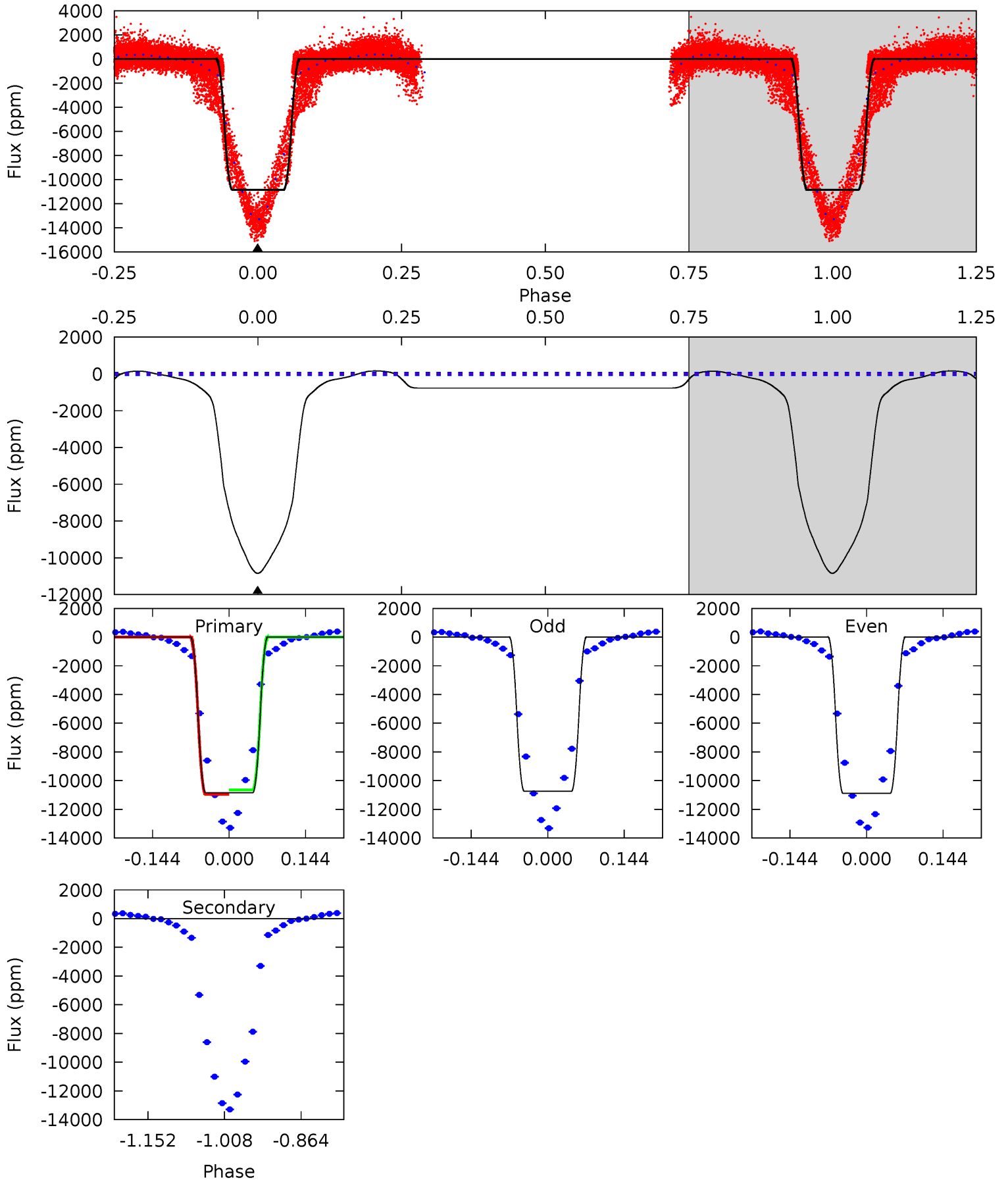
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009833625-02, P = 1.408556 Days, E = 132.599239 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
786.1	0	0	0	4.49	1.46	18.2	786.1	786.1	0	0	4.92	0.90	0.01	0



Stellar Parameters For KIC 009833625

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6298^{+196}_{-261}	$4.421^{+0.050}_{-0.200}$	$0.070^{+0.250}_{-0.300}$	$1.116^{+0.353}_{-0.118}$	$1.198^{+0.157}_{-0.157}$	$1.214^{+0.324}_{-0.618}$
	+3%/-4%	+1%/-5%	+357%/-429%	+32%/-11%	+13%/-13%	+27%/-51%
Source	KIC0	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 009833625-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$17.07^{+13.39}_{-10.20}$	2592^{+197}_{-134}	3076^{+10817}_{-14655}	$0.861^{+219.719}_{-152.588}$
Alt.	0 ± 14	$13.38^{+11.44}_{-9.46}$	2593^{+182}_{-140}	-2852^{+139}_{-175}	$0.001^{+0.048}_{-0.053}$

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 $A_{obs} \gg 1.0$

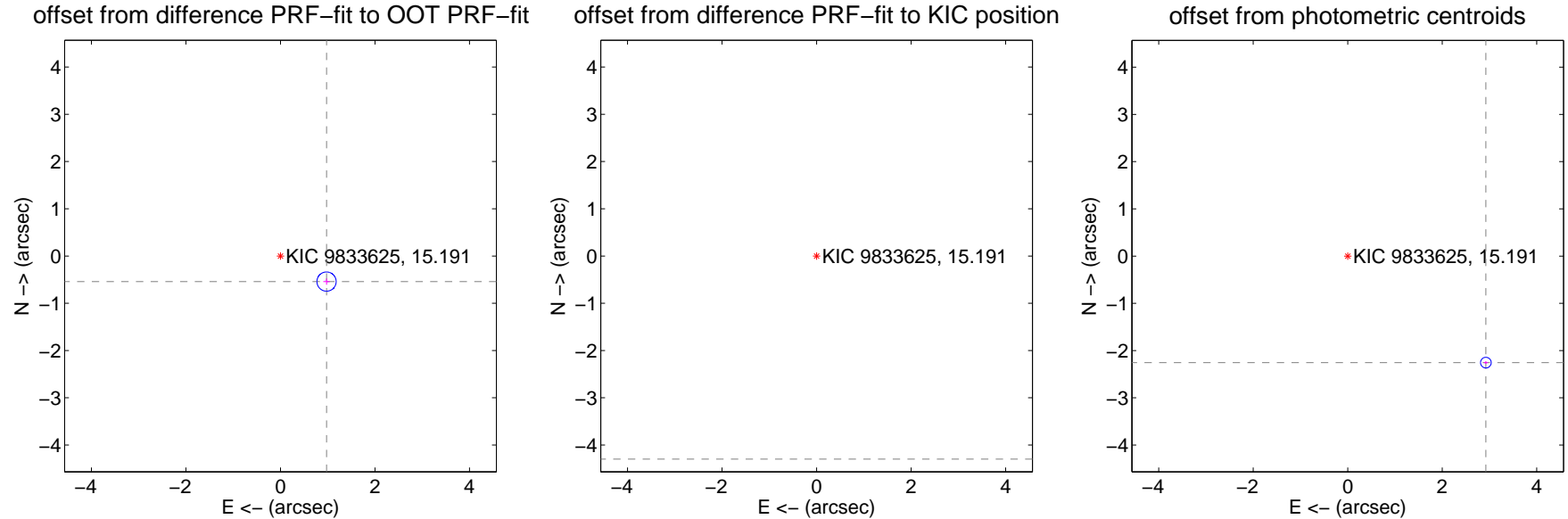
DV Centroid Data

Supplemental centroid analysis for 009833625-02. Kepler magnitude: 15.19. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

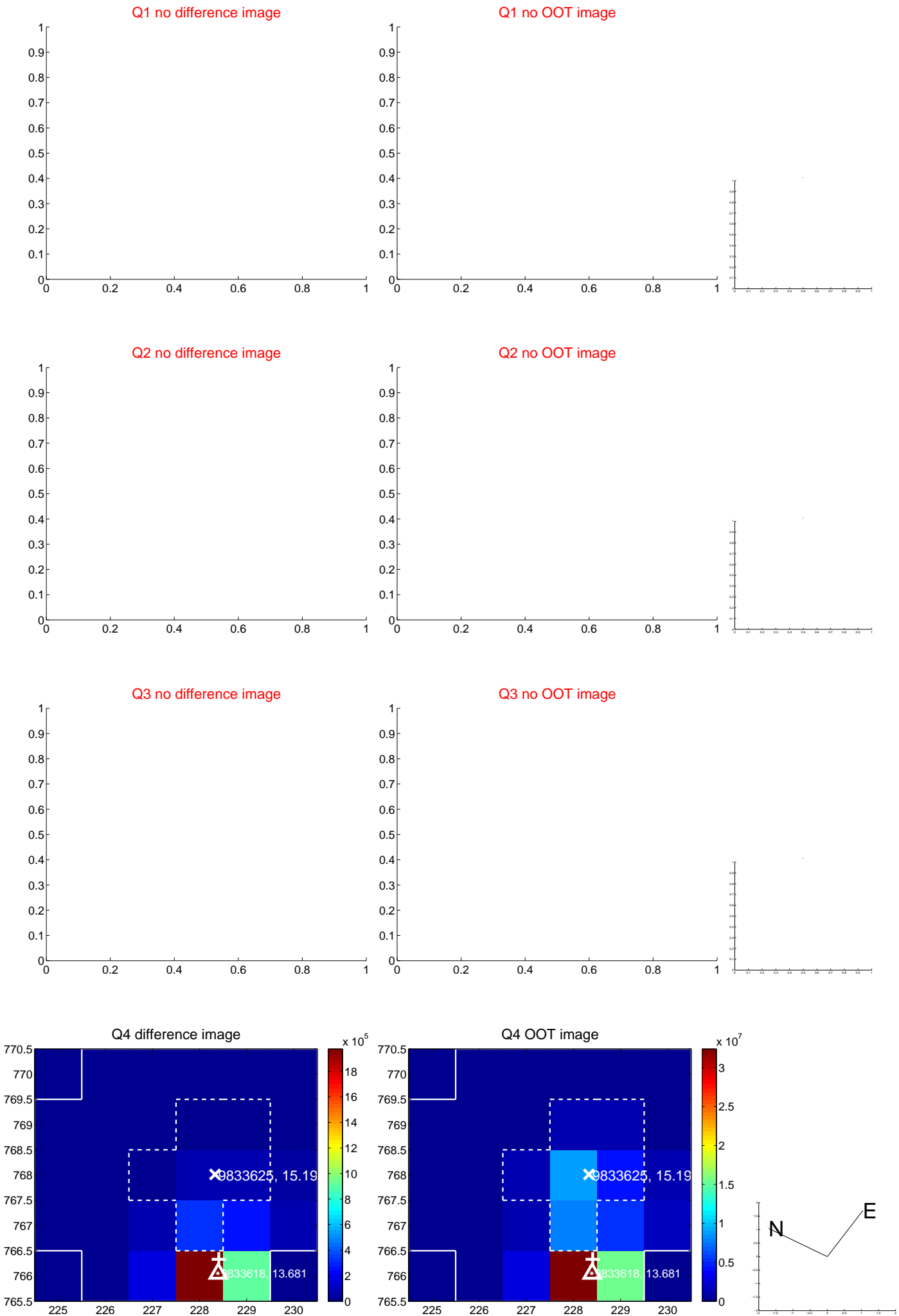
The OOT PRF centroid is offset from the target star catalog position by about 6.70 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.115 ± 0.068	16.45	-0.975 ± 0.067	-0.541 ± 0.067
PRF-fit source offset from KIC position	7.849 ± 0.069	114.32	-6.567 ± 0.069	-4.300 ± 0.067
photometric centroid source offset	3.69 ± 0.04	98.06	-2.92 ± 0.04	-2.26 ± 0.03

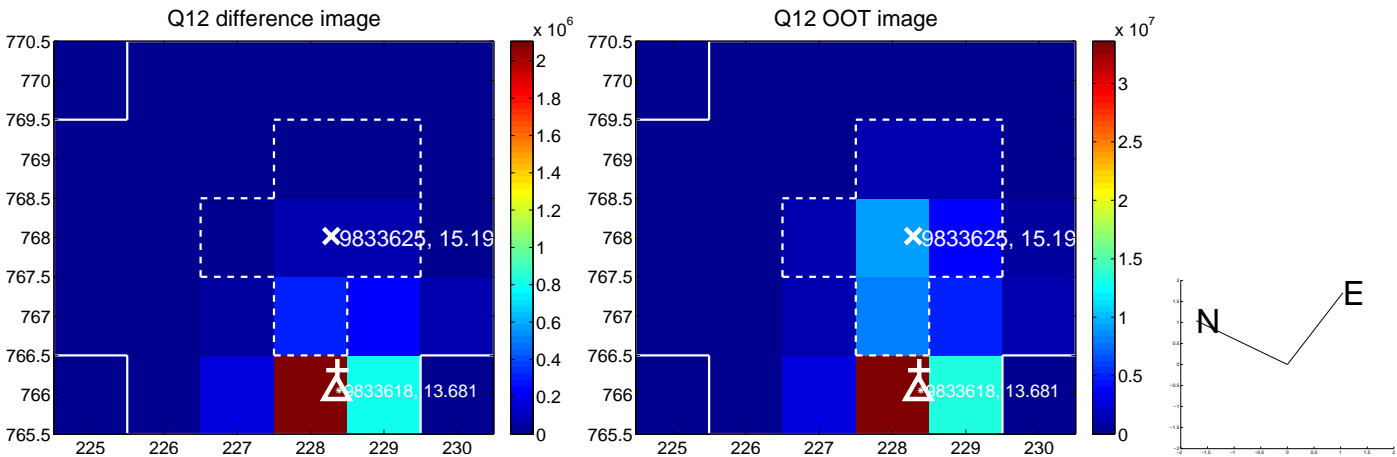
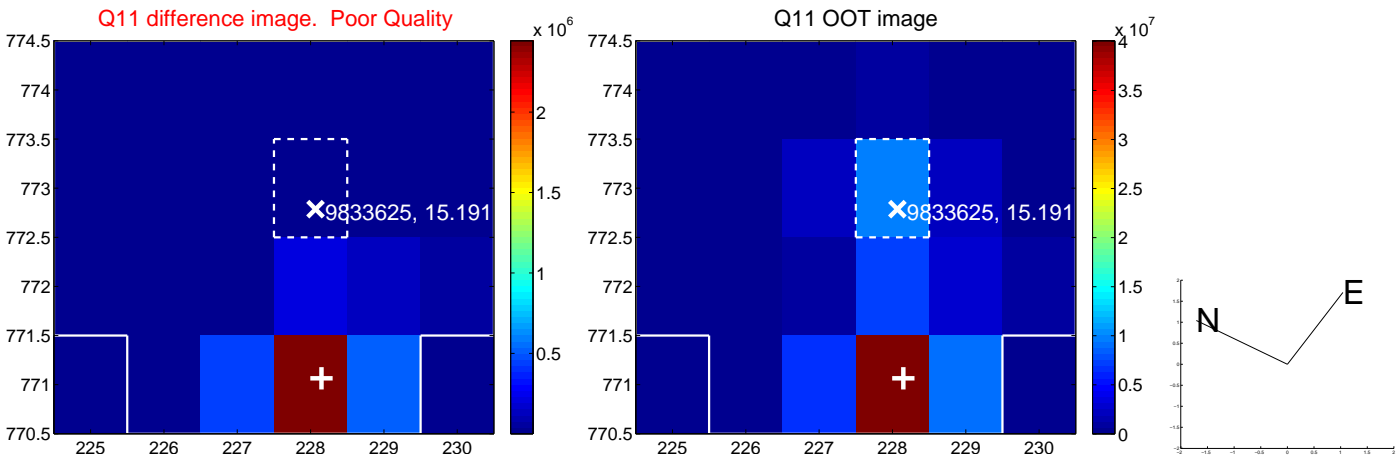
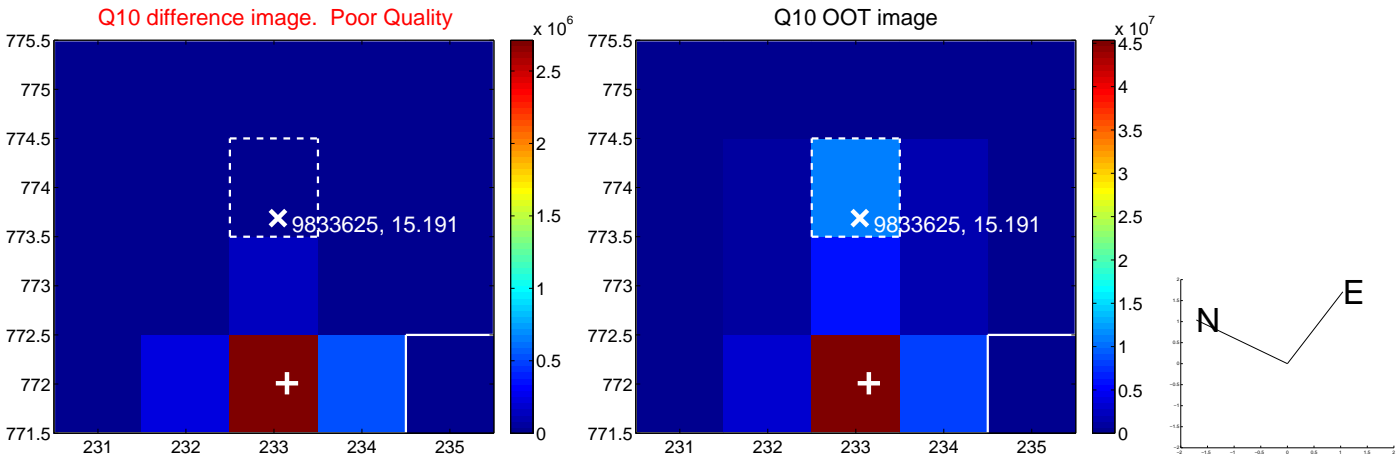
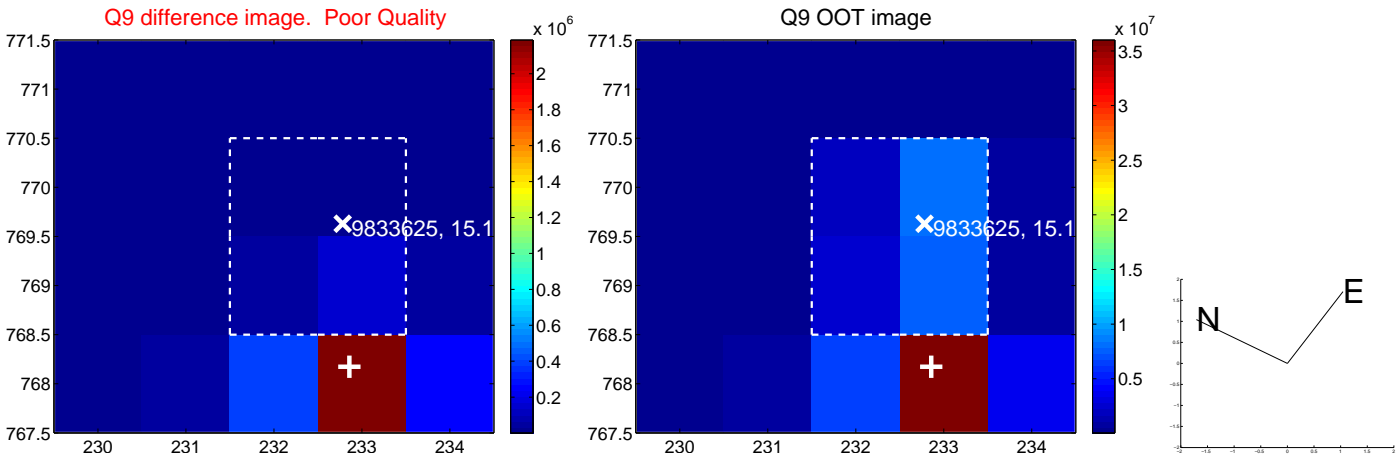


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

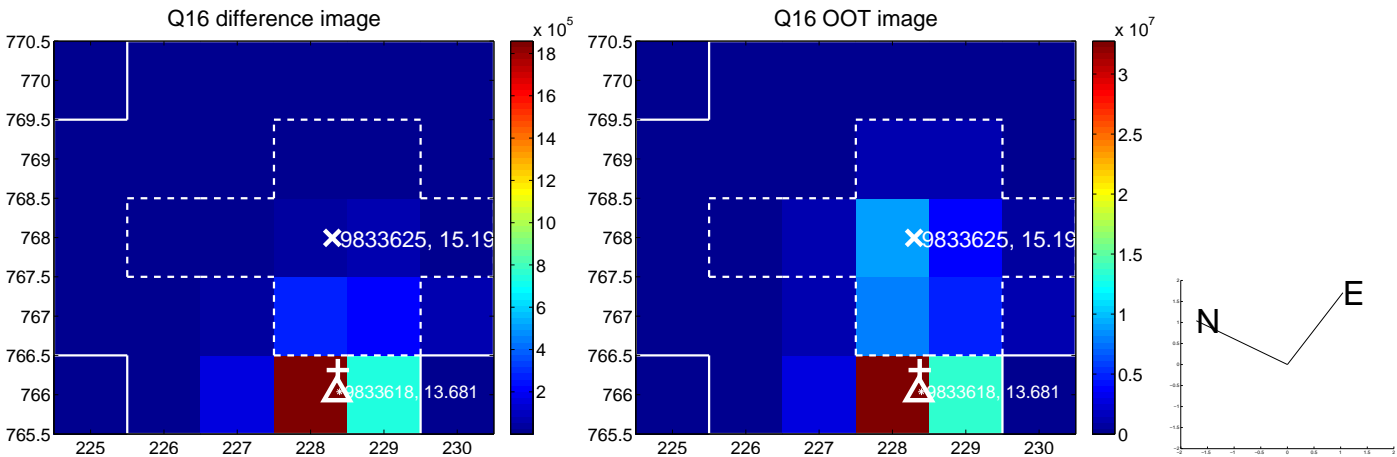
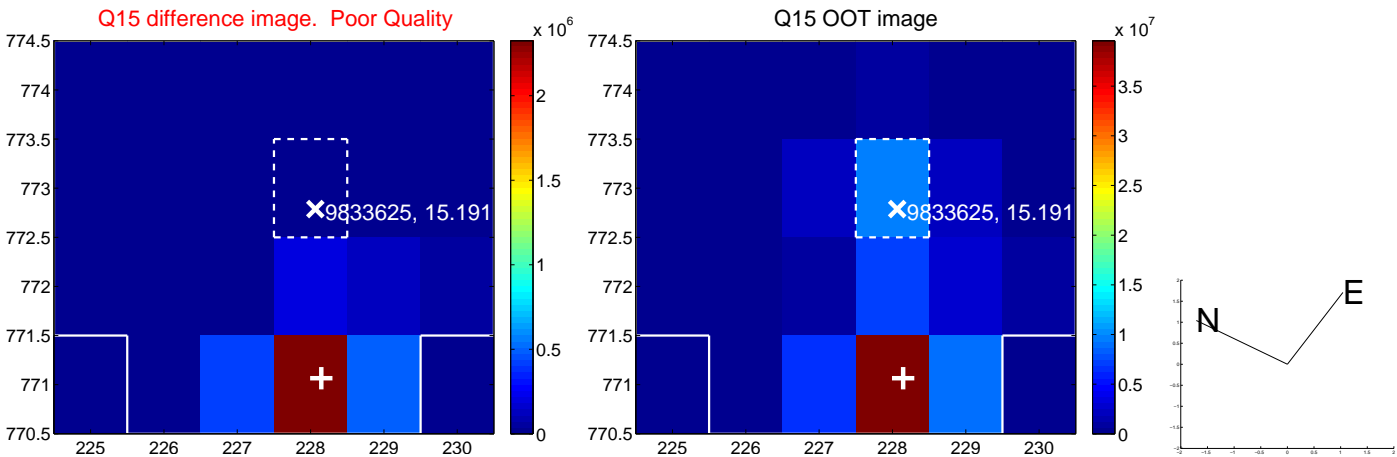
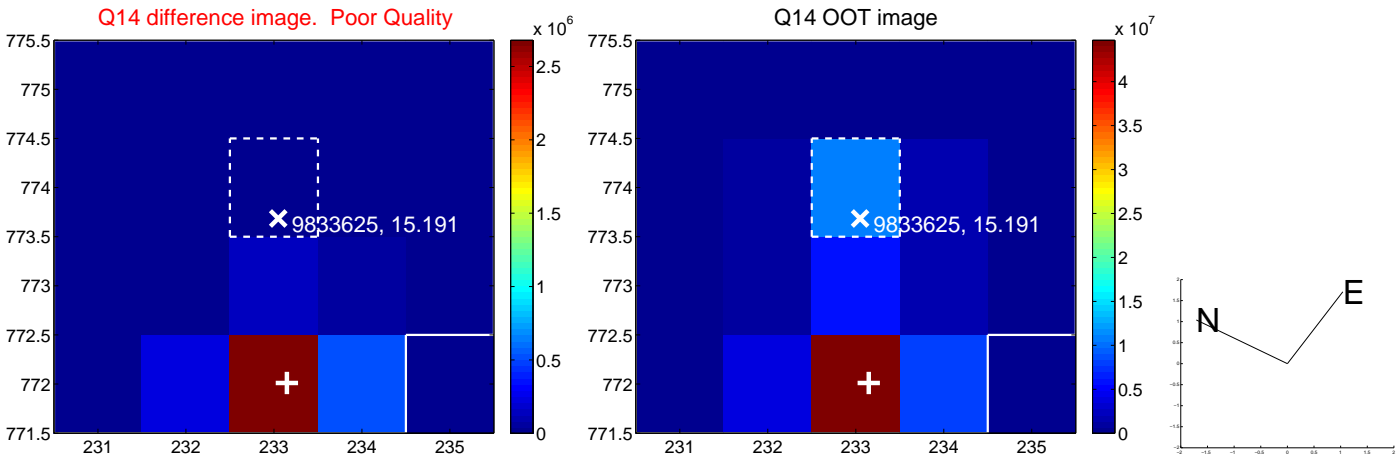
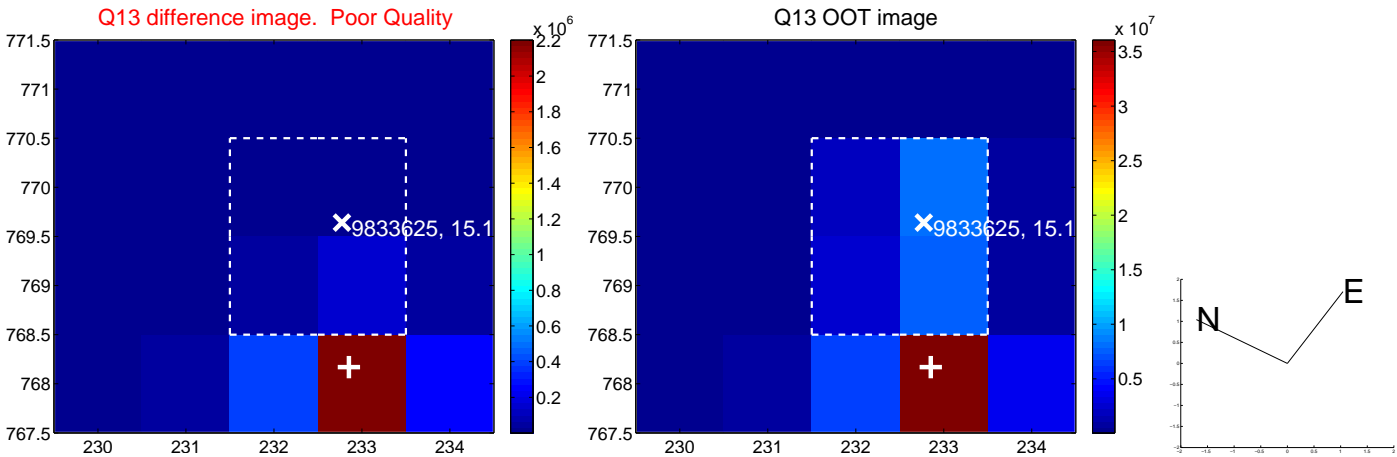
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



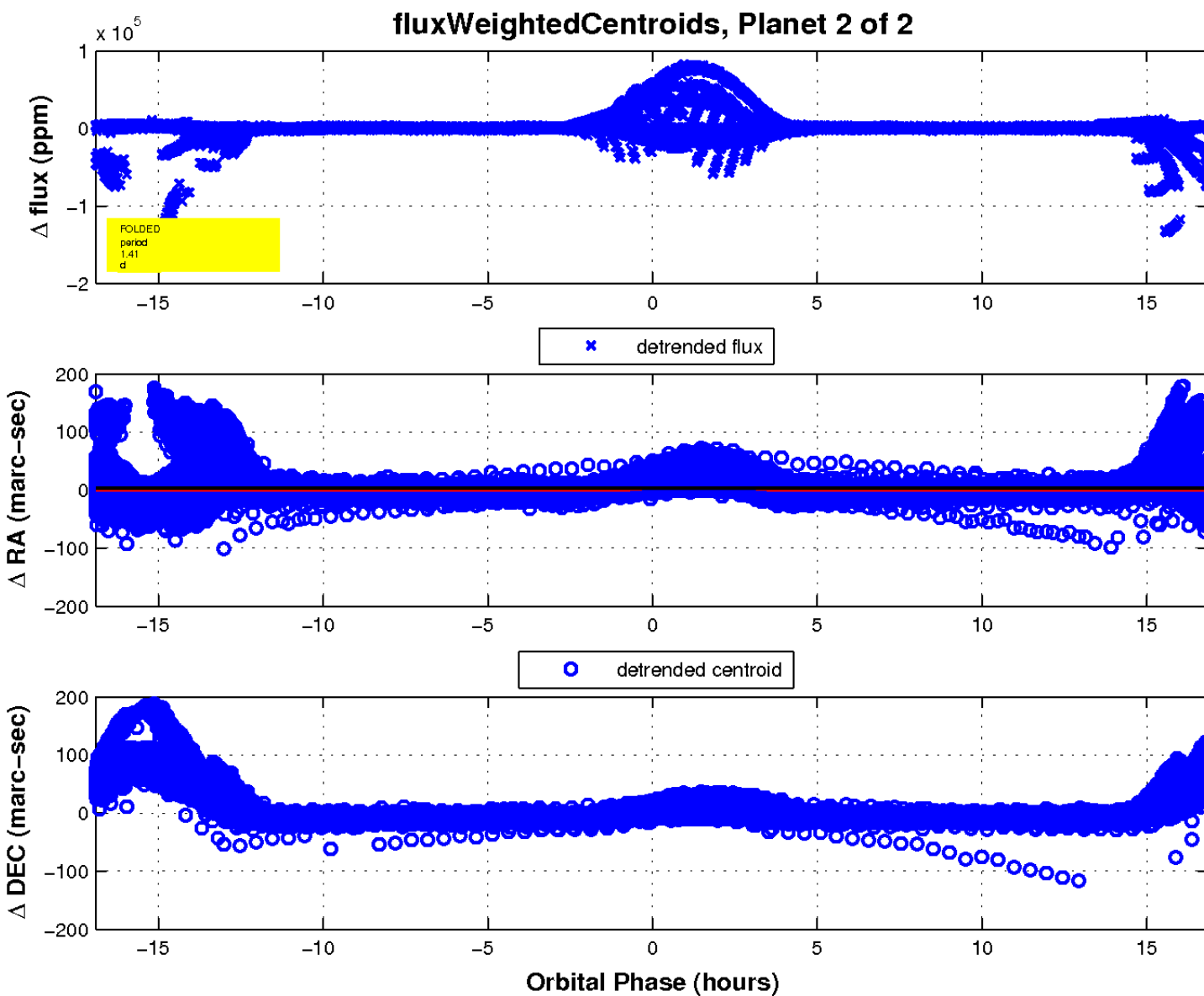
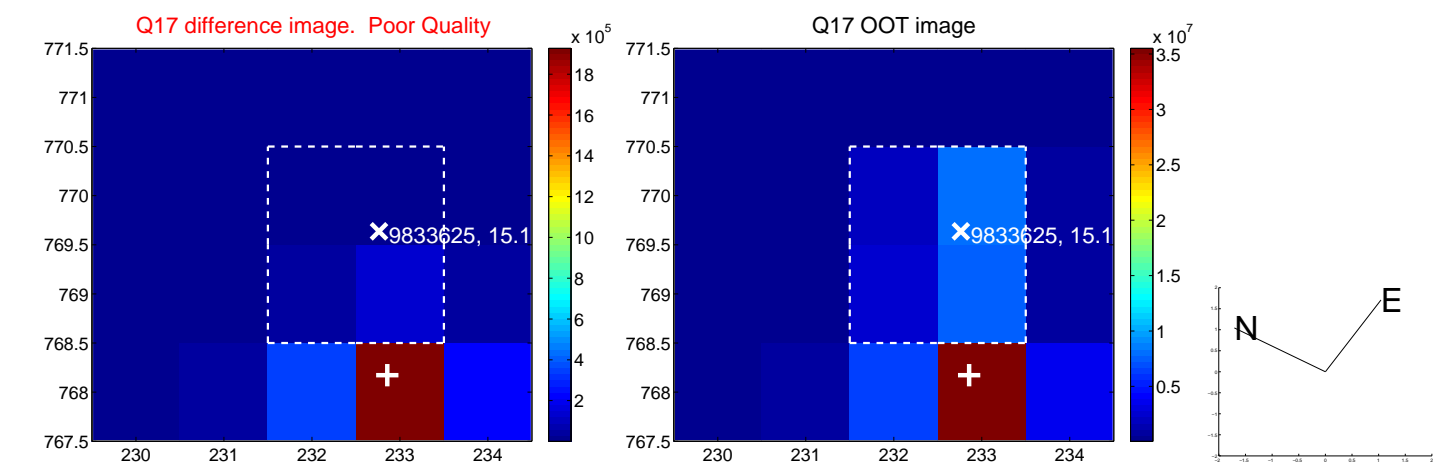
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

