

KIC 007732964

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})
007732964-01	OBS	No	618.974049	331.733861	1453.0	5.158	24.3	7.3	0.69	4949	2.75	0.16
007732964-02	OBS	No	645.903968	206.952256	2478.7	12.460	15.6	9.4	0.69	4949	3.39	0.15
007732964-03	OBS	No	373.211794	455.685145	1368.1	9.805	18.8	6.7	0.69	4949	2.60	0.31
007732964-04	OBS	No	303.552228	299.231778	1039.4	6.143	16.2	5.1	0.69	4949	2.34	0.41
007732964-05	OBS	No	173.600024	212.195581	916.2	2.721	14.4	6.3	0.69	4949	2.05	0.86
007732964-06	OBS	No	328.182877	284.496606	57.9	3.184	13.9	0.3	0.69	4949	0.51	0.37
007732964-07	OBS	No	568.352660	211.808073	130.6	10.500	16.3	-1.0	0.69	4949	0.77	0.18
007732964-08	OBS	No	430.650899	449.355020	236.1	4.500	16.7	-1.0	0.69	4949	1.03	0.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007732964-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
007732964-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007732964-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
007732964-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

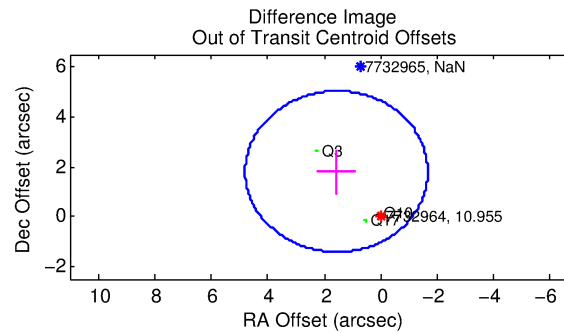
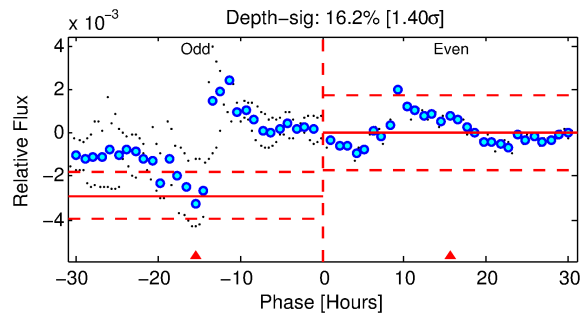
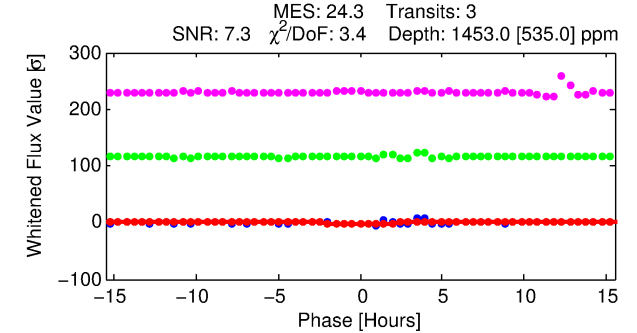
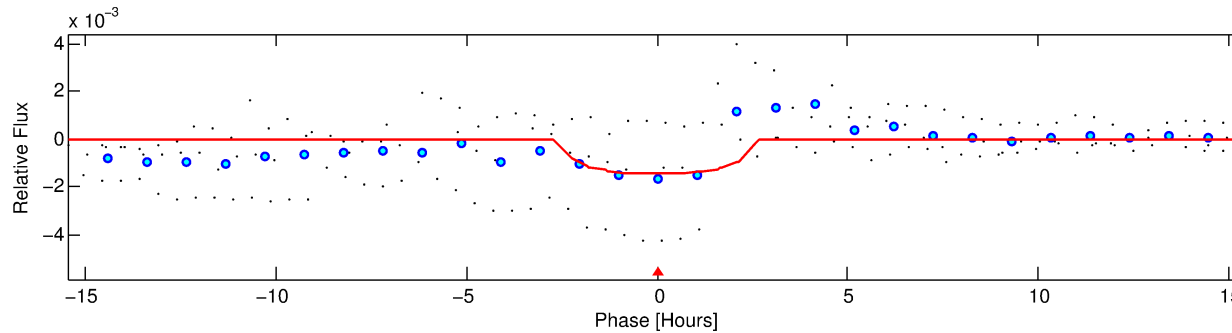
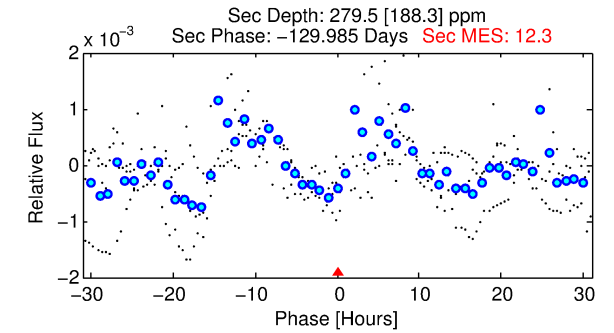
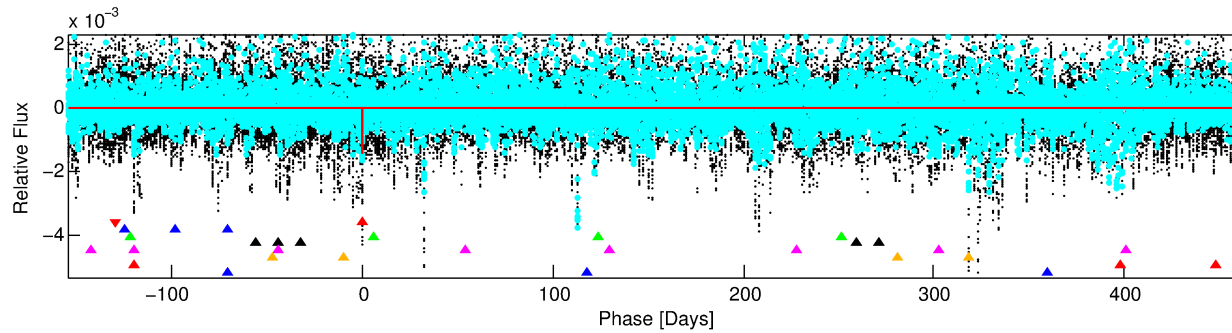
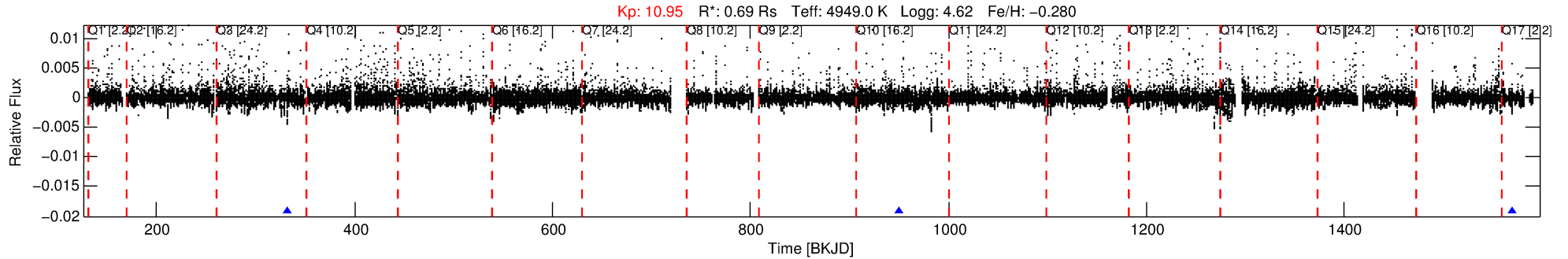
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007732964-01

No Significant Match Found

DV One-Page Summary

KIC: 7732964 Candidate: 1 of 8 Period: 618.974 d



DV Fit Results:

Period = 618.97405 [0.00689] d
Epoch = 331.7339 [0.0112] BKJD
Rp/R* = 0.0366 [0.0324]
a/R* = 742.13 [2096.84]
b = 0.65 [2.59]
Seff = 0.16 [0.03]
Teq = 161 [7] K
Rp = 2.75 [2.46] Re
a = 1.2746 [0.1096] AU
Ag = 32920.68 [62537.45] [0.53σ]
Teff = 3345 [1590] K [2.00σ]

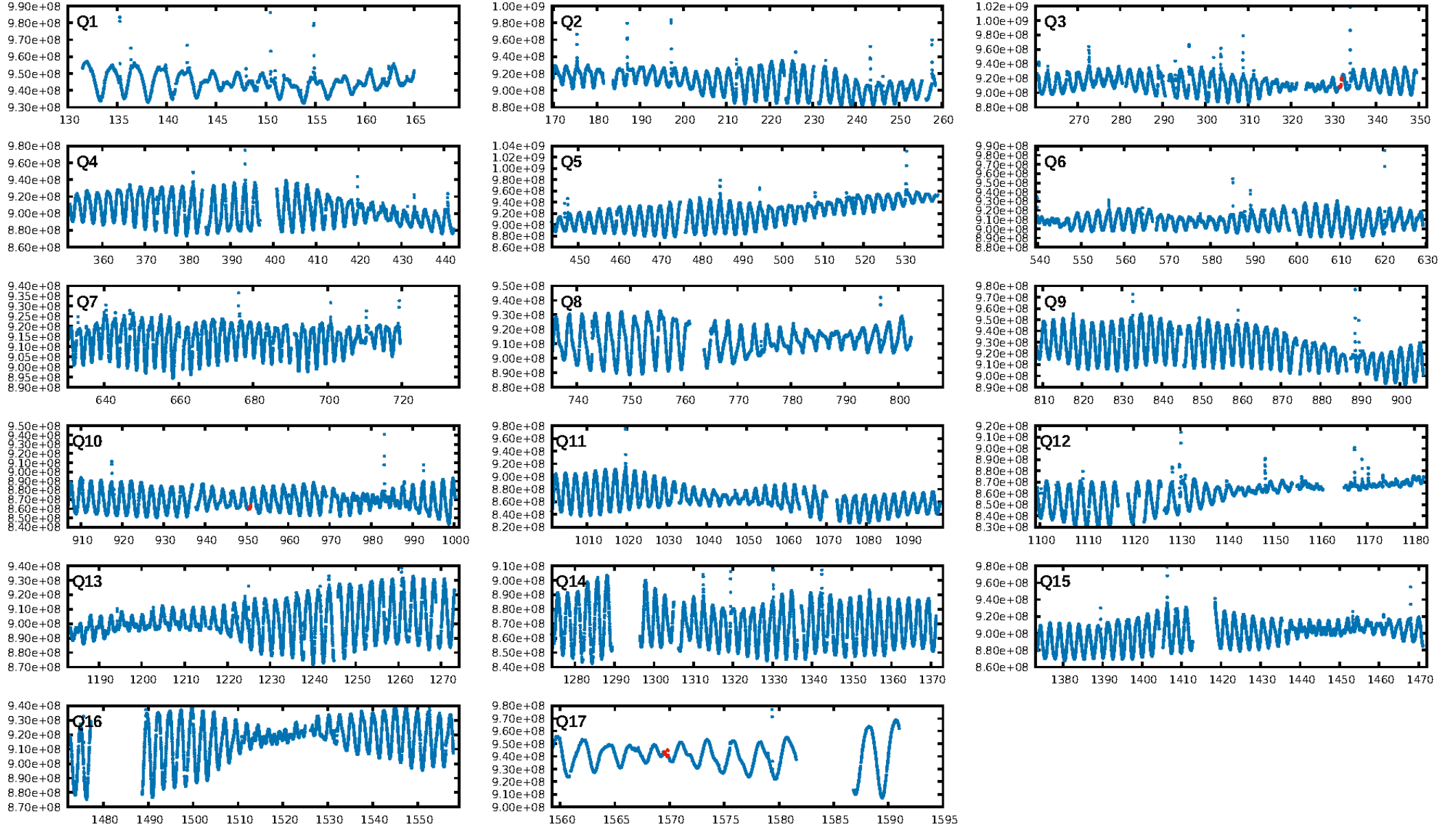
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [103.85σ]
LongPeriod-sig: 100.0% [47.93σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 4.237
Centroid-sig: 51.2%
Centroid-so: 0.321 arcsec [1.13σ]
OotOffset-rm: 2.389 arcsec [2.22σ]
KicOffset-rm: 2.044 arcsec [2.45σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

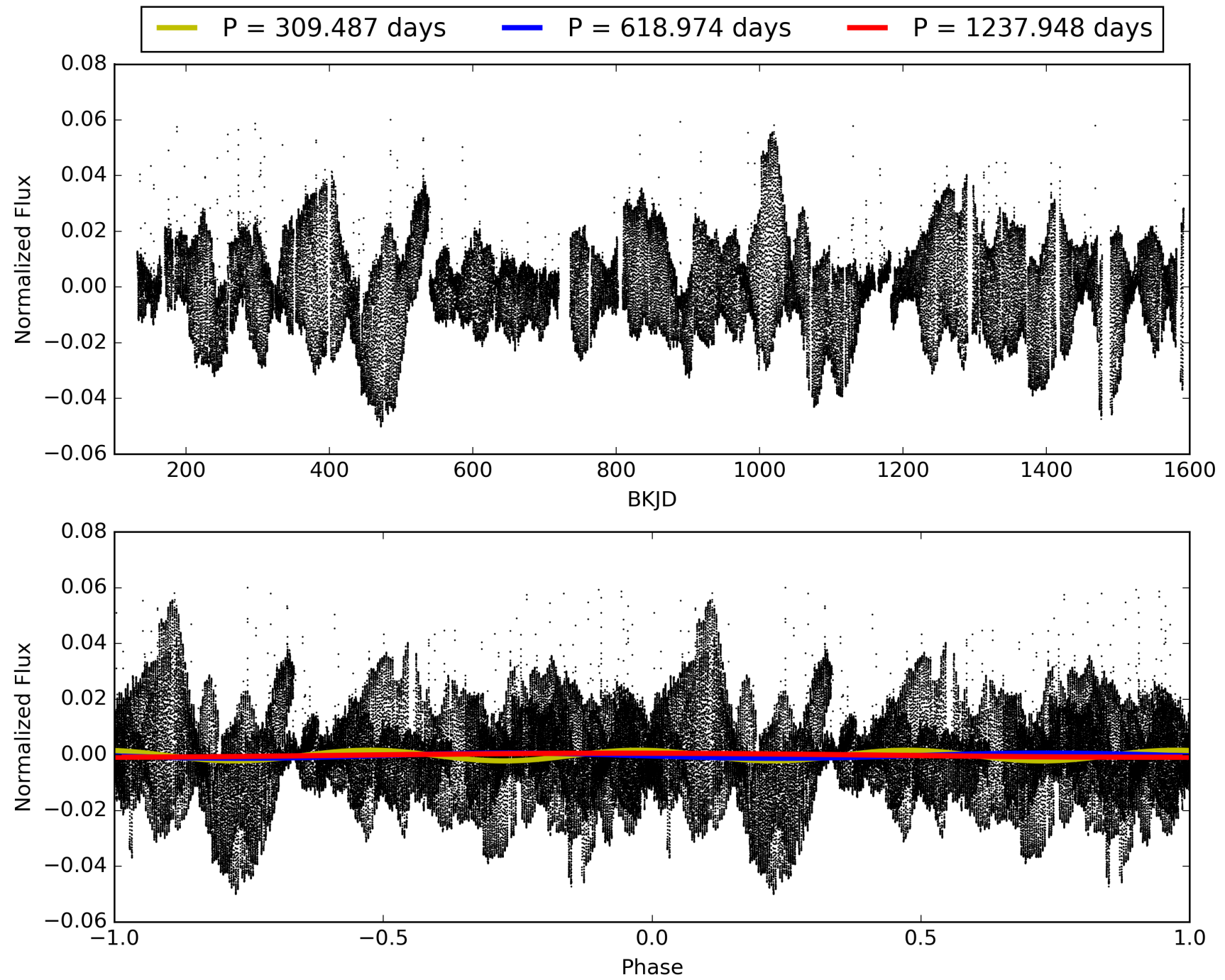
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:41:18 Z

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

TCE 007732964-01, PDC Light Curves

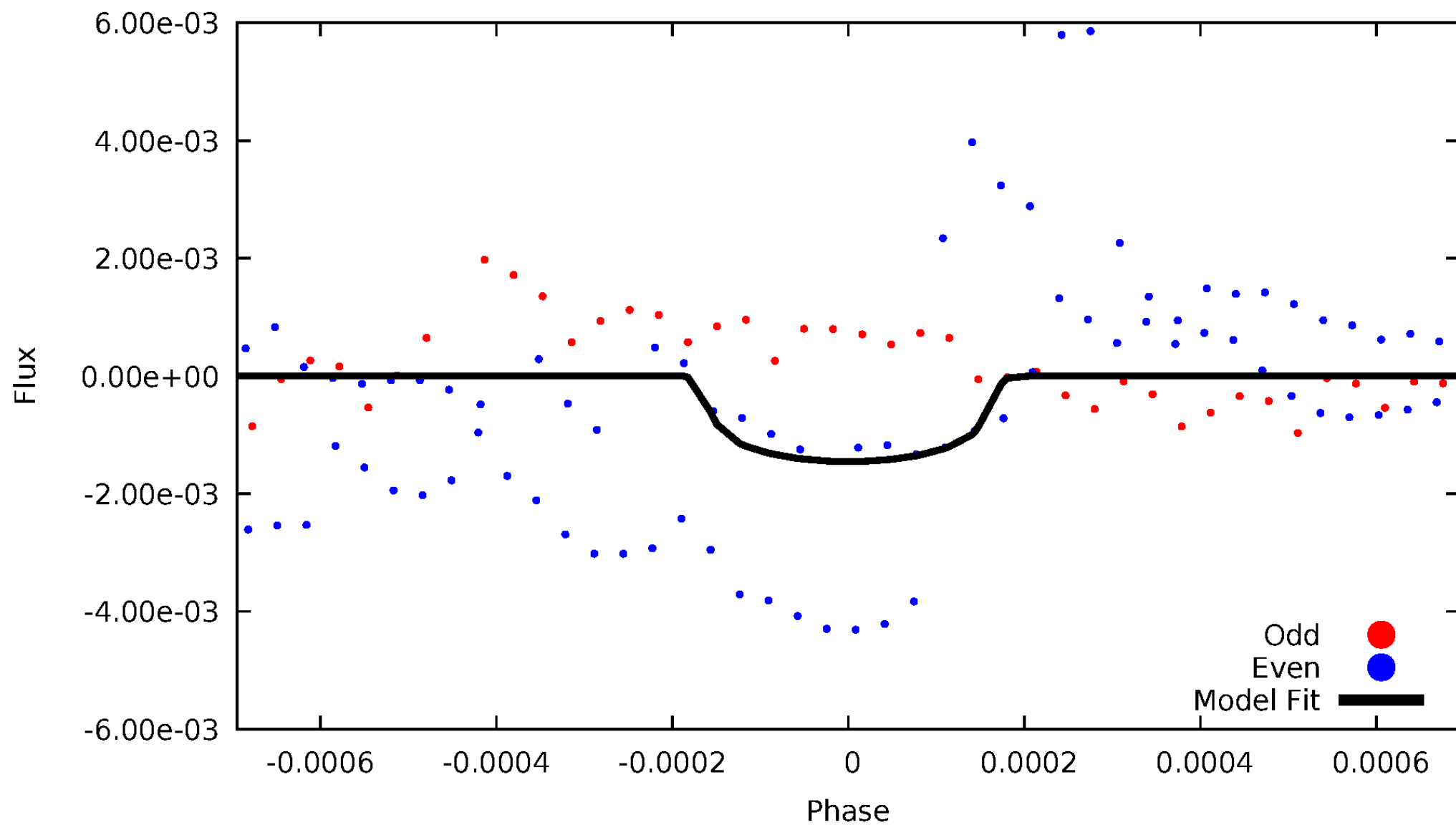


TCE 007732964-01



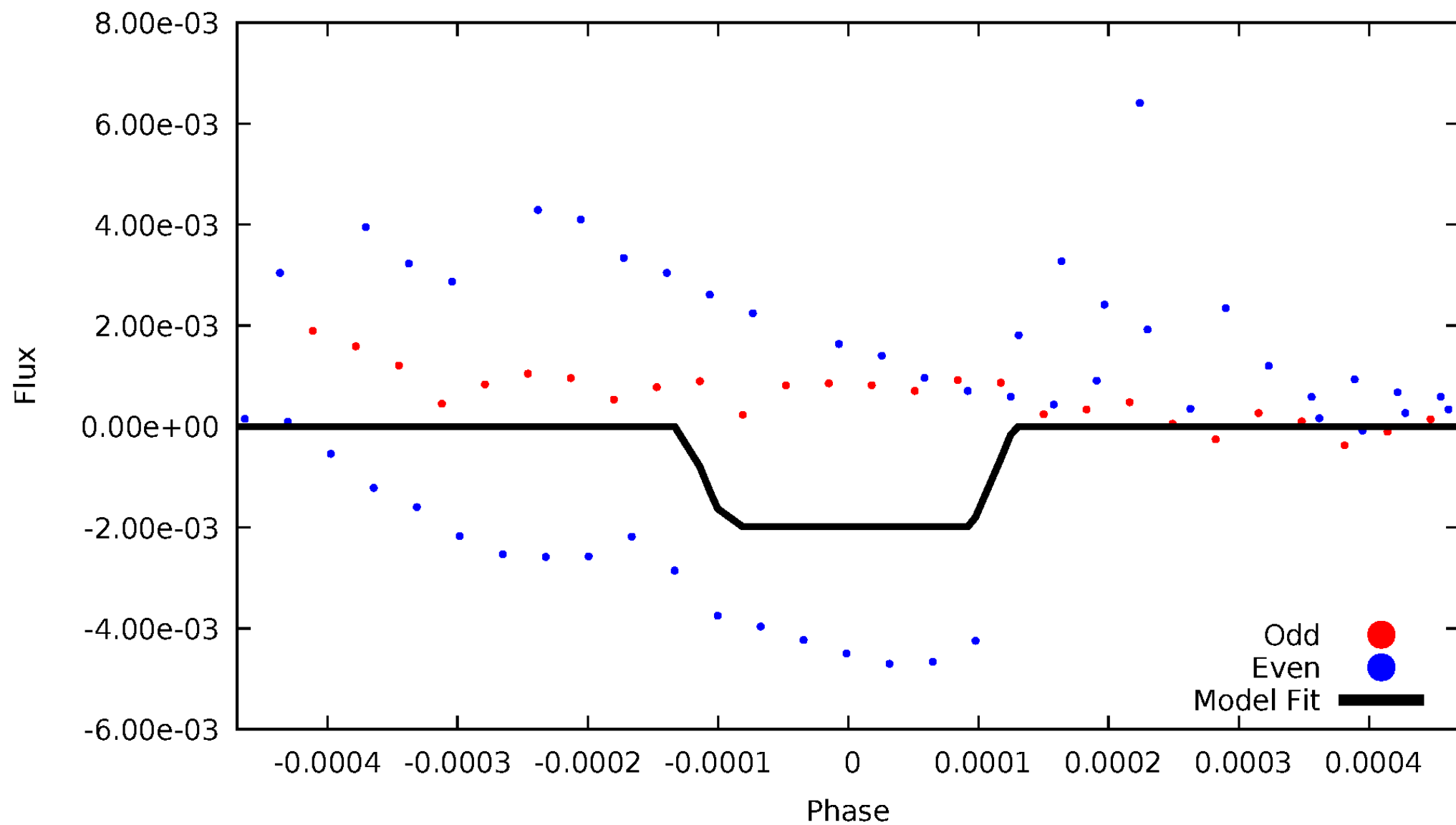
DV Odd/Even

TCE 007732964-01



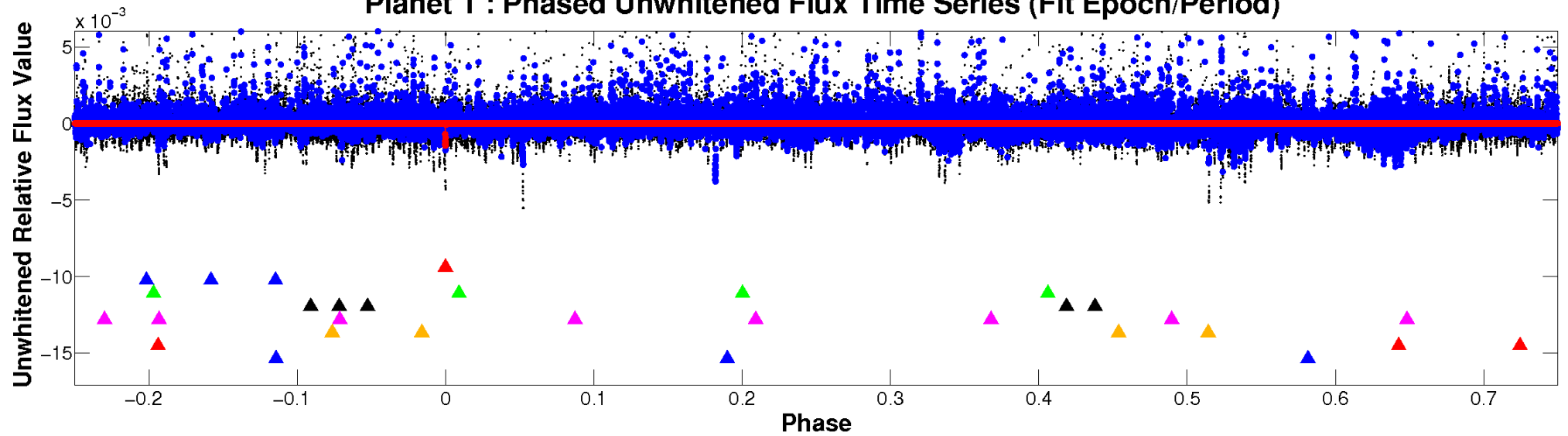
ALT Odd/Even

TCE 007732964-01

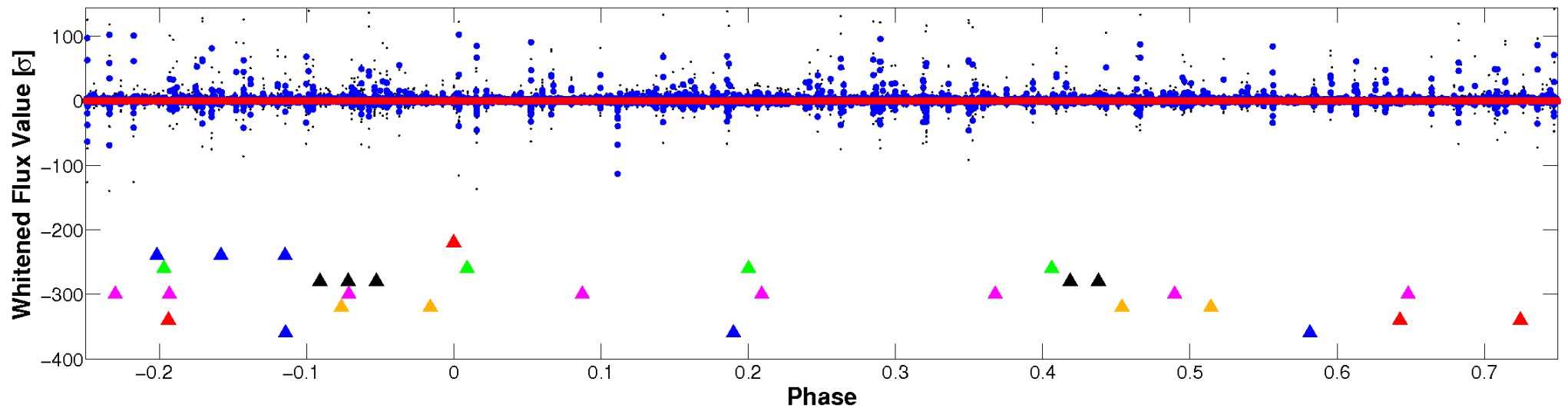


Non-Whitened Vs. Whitened Light Curve

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

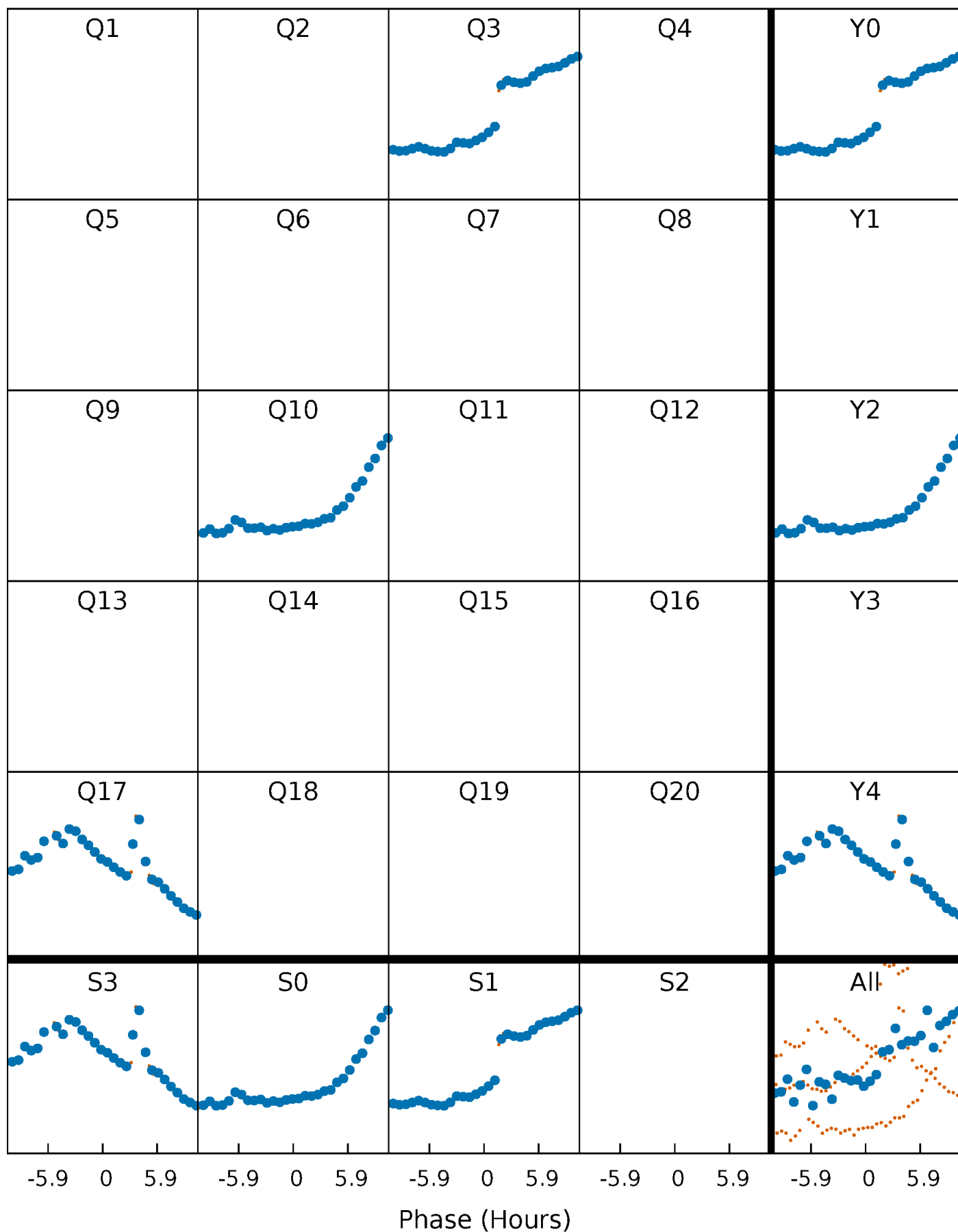


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



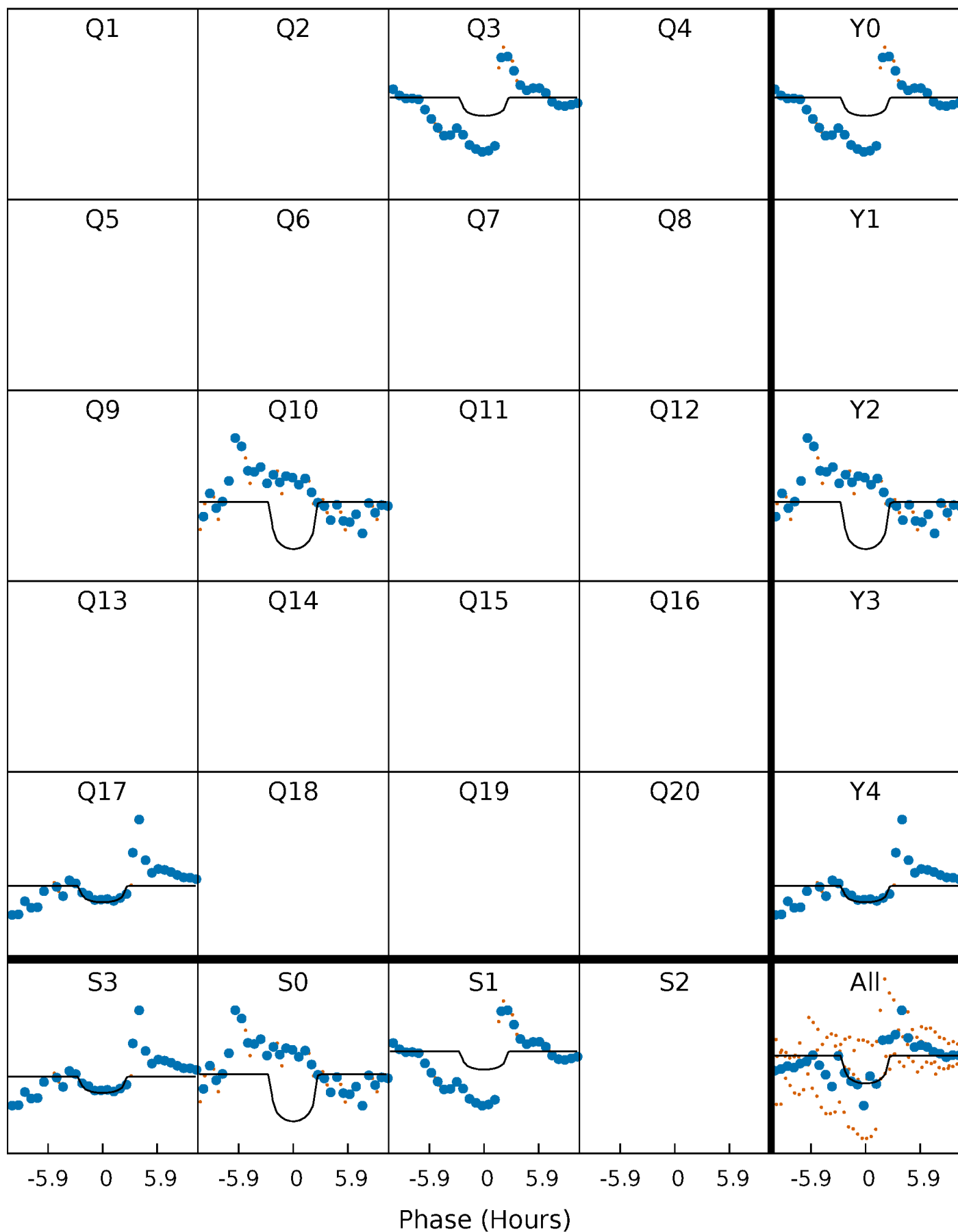
PDC Quarter-Phased Transit Curves

TCE 007732964-01 P=618.974049 Days $T_0=331.733861$ (BKJD)



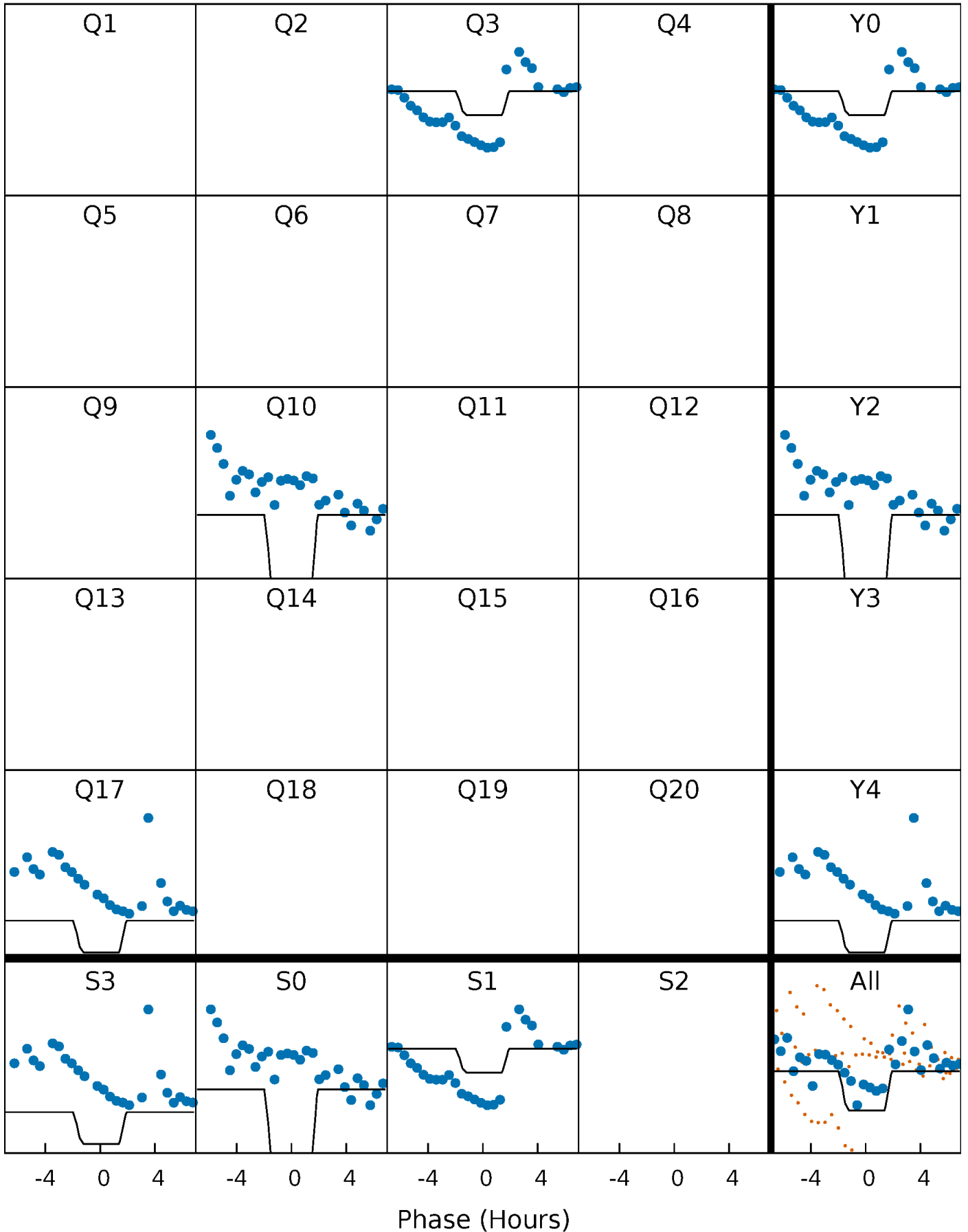
DV Quarter-Phased Transit Curves

TCE 007732964-01 P=618.974049 Days $T_0=331.733861$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

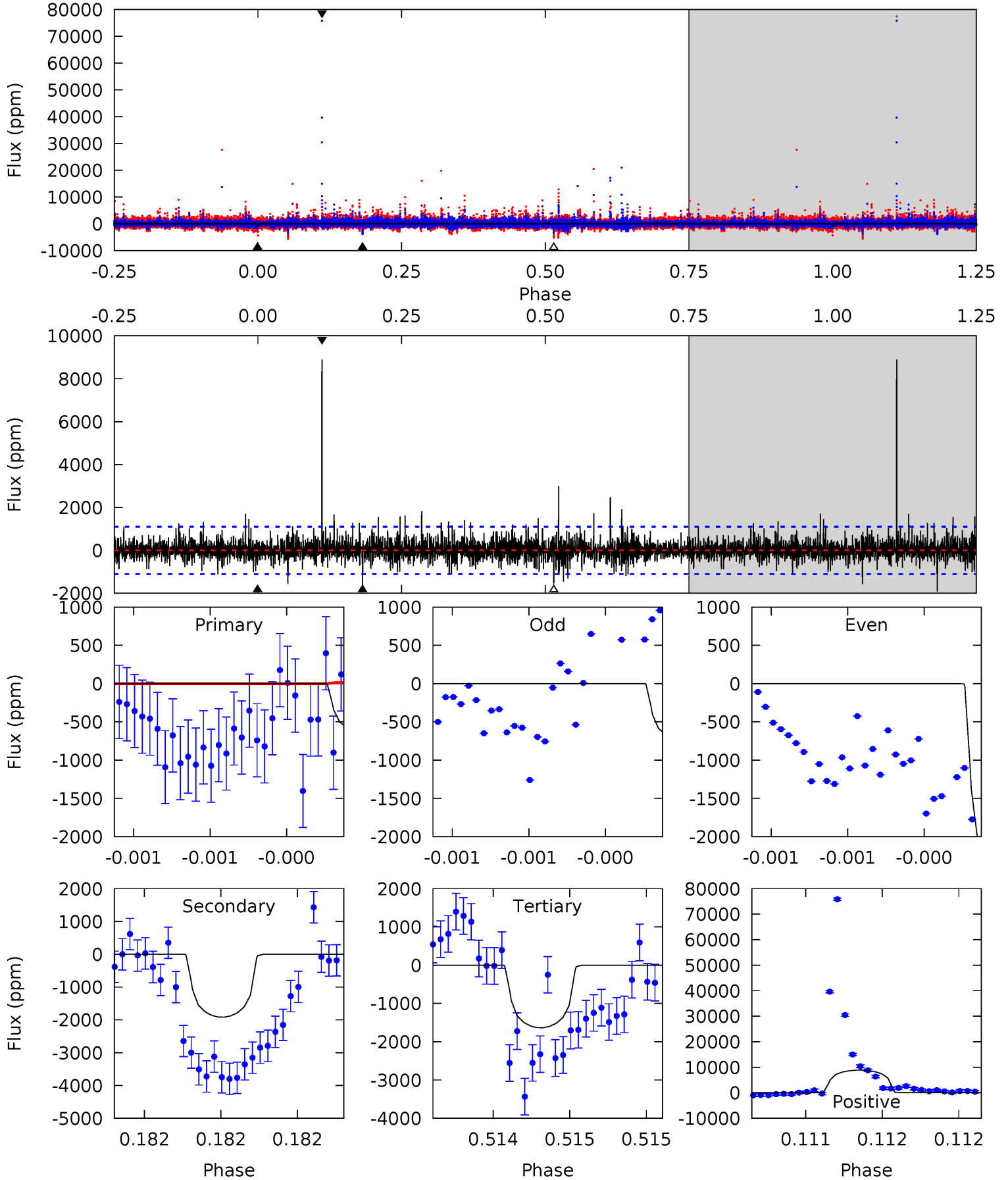
TCE 007732964-01 P=618.987022 Days $T_0=331.719453$ (BKJD)



DV Model-Shift Uniqueness Test

007732964-01, P = 618.974049 Days, E = 331.733861 Days

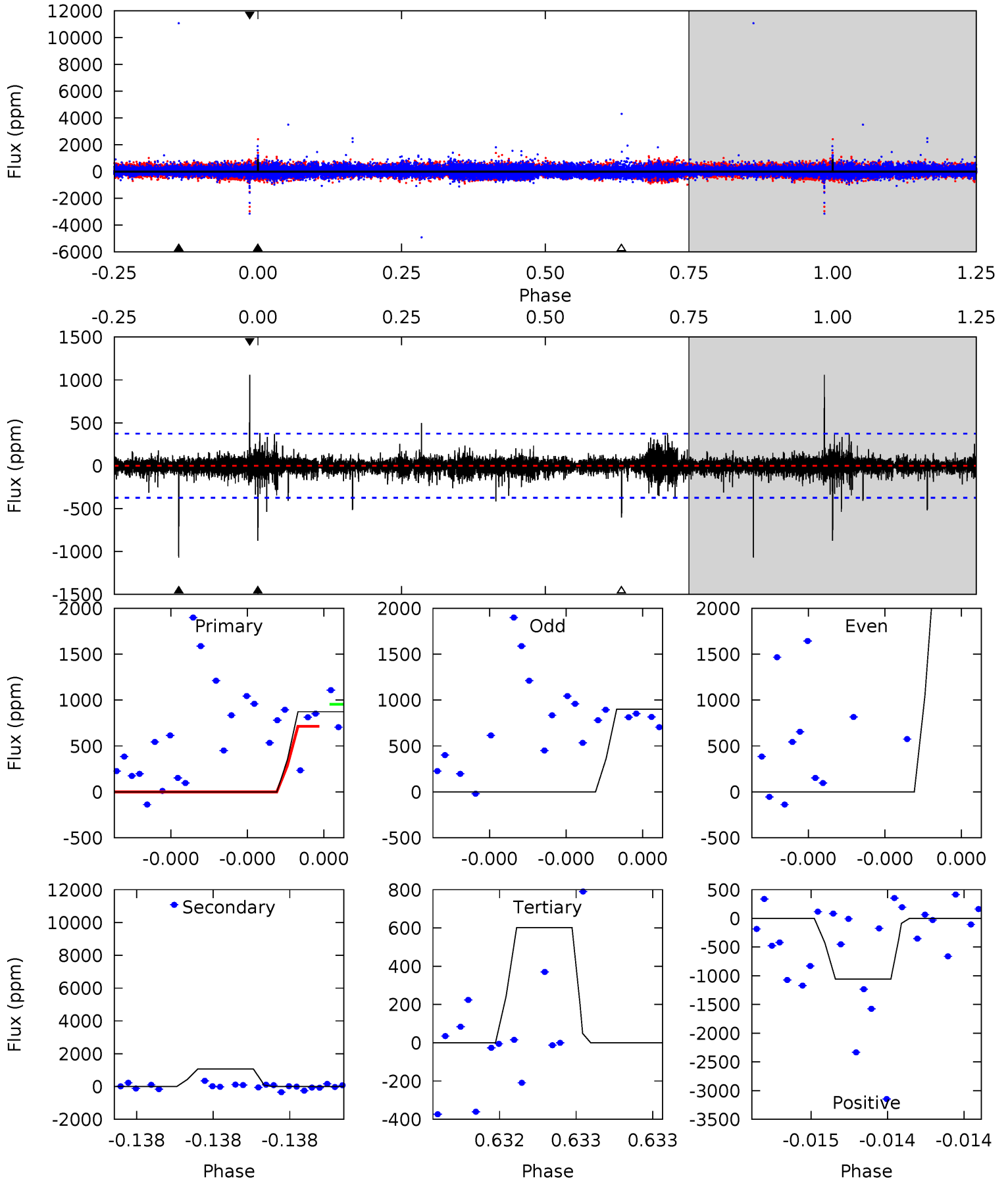
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.14	9.74	8.30	45.1	5.62	3.55	1.84	-5.15	-42.0	1.44	-35.4	3.30	0.94	0.82	1.29



Alt Model-Shift Uniqueness Test

007732964-01, P = 618.987022 Days, E = 331.719453 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	16.3	9.19	16.2	5.70	3.67	0.94	4.14	-2.84	7.14	0.16	12.2	-0.87	0.50	0



Stellar Parameters For KIC 007732964

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4949^{+176}_{-176}	$4.618^{+0.041}_{-0.054}$	$-0.280^{+0.300}_{-0.300}$	$0.690^{+0.078}_{-0.058}$	$0.720^{+0.078}_{-0.064}$	$3.093^{+0.632}_{-0.628}$
	+4%/-4%	+1%/-1%	+107%/-107%	+11%/-8%	+11%/-9%	+20%/-20%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007732964-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1917 ± 197	$3.24^{+2.26}_{-2.01}$	225^{+9}_{-10}	5046^{+3251}_{-976}	$165116^{+997267}_{-109011}$
Alt.	-1070 ± 66	$3.58^{+2.42}_{-2.09}$	225^{+9}_{-8}	4294^{+1918}_{-711}	$75198^{+367865}_{-48648}$

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

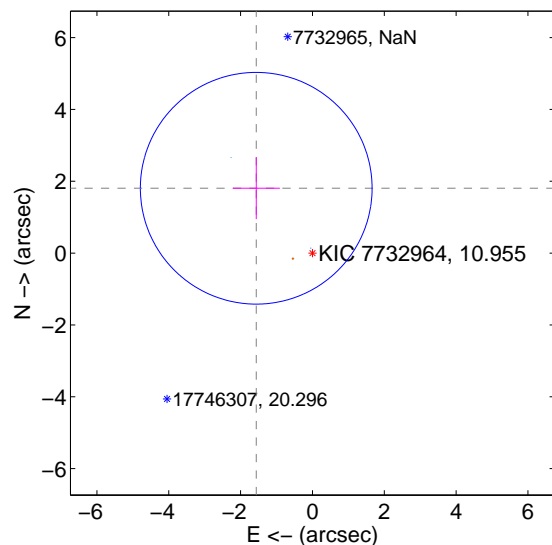
Supplemental centroid analysis for 007732964-01. **Kepler magnitude: 10.96.** Transit SNR 7.27

There are 2 quarters with good PRF difference image offsets

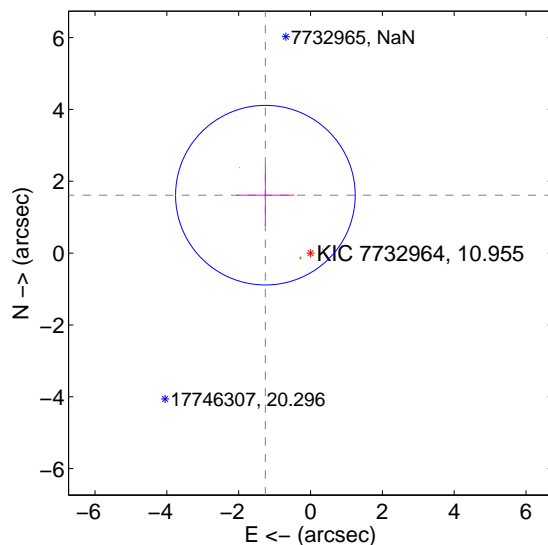
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.389 ± 1.075	2.22	1.565 ± 0.657	1.805 ± 0.860
PRF-fit source offset from KIC position	2.044 ± 0.833	2.45	1.256 ± 0.804	1.613 ± 0.851
photometric centroid source offset	0.32 ± 0.28	1.13	-0.29 ± 0.30	0.13 ± 0.15

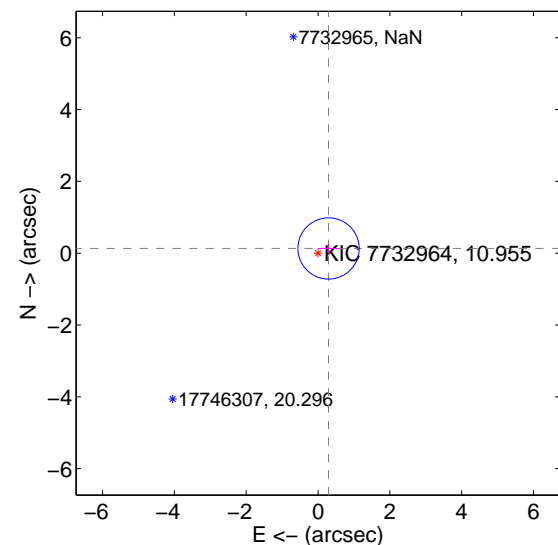
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

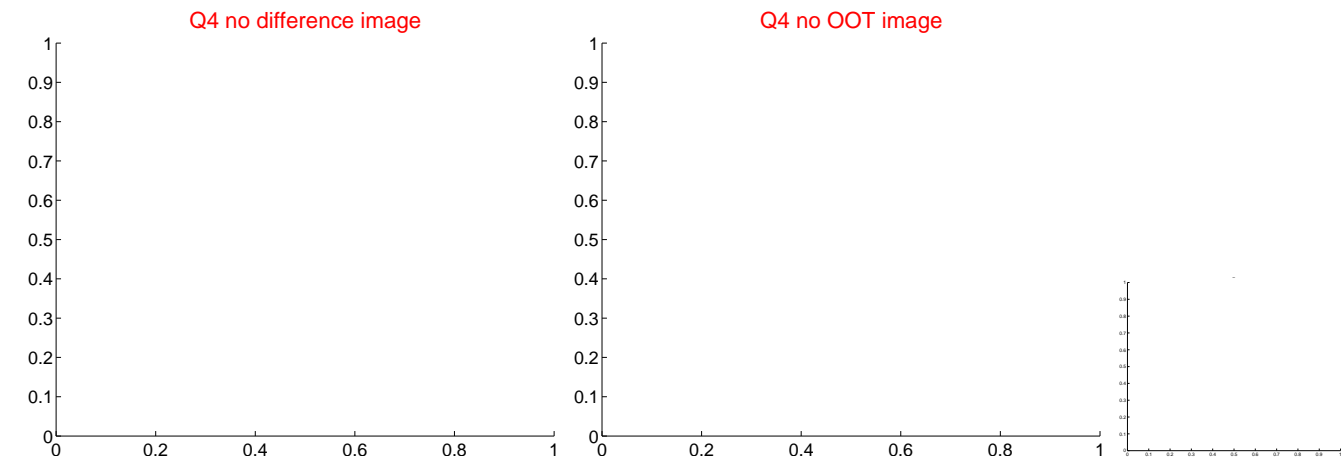
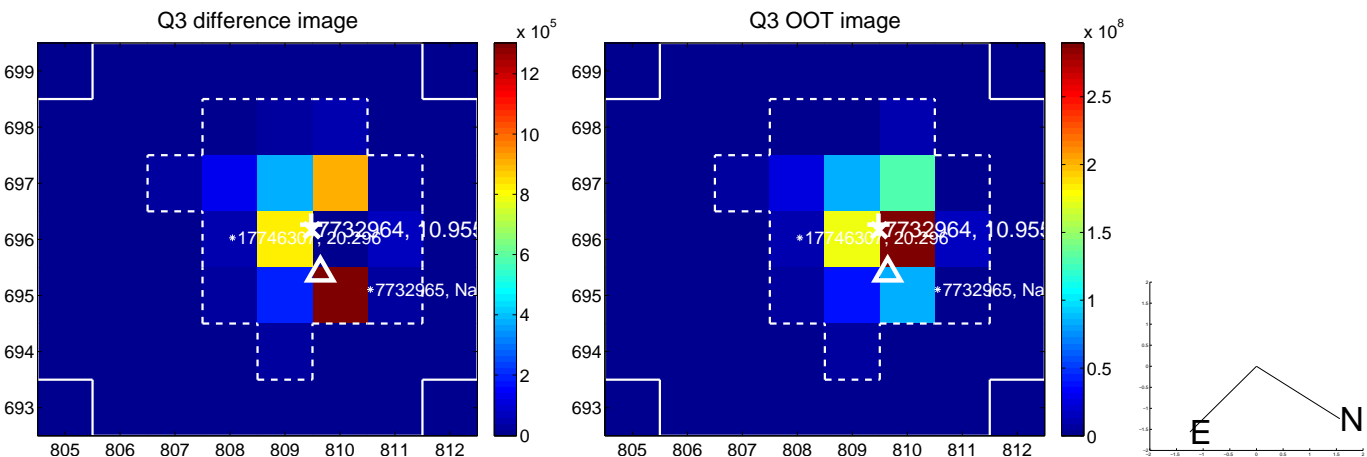
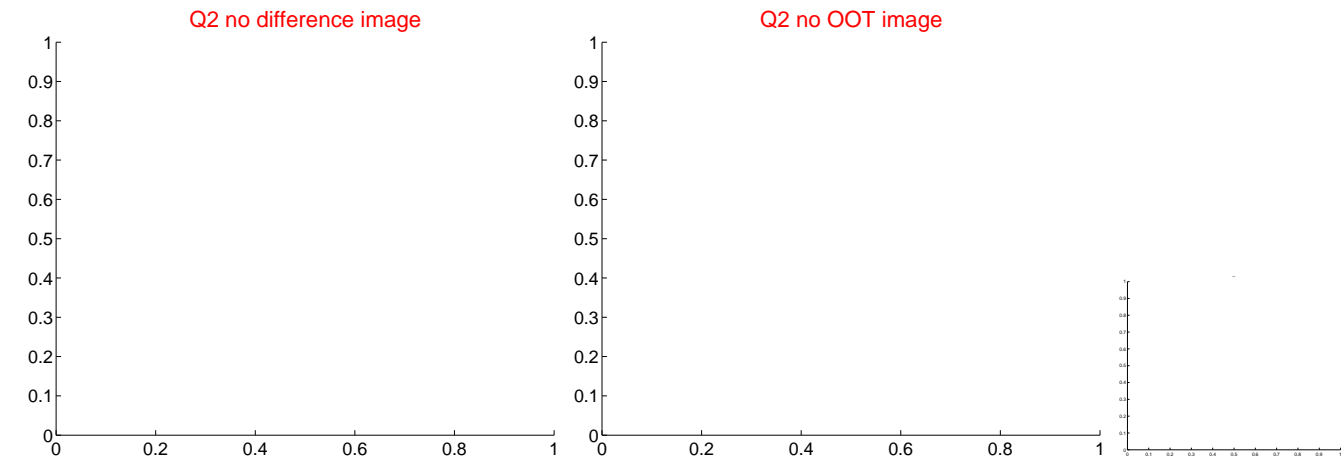


offset from photometric centroids



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.

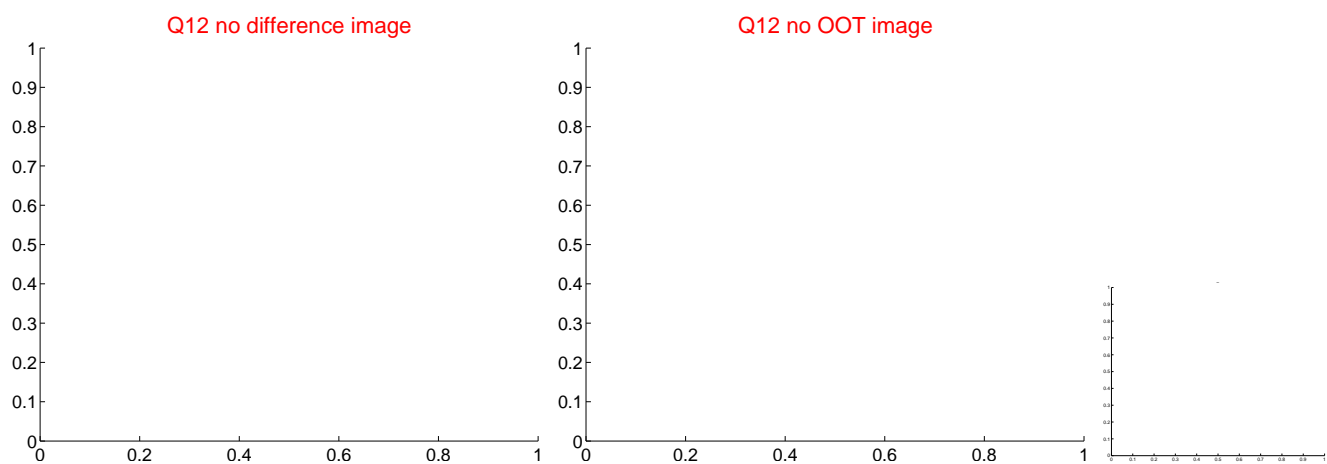
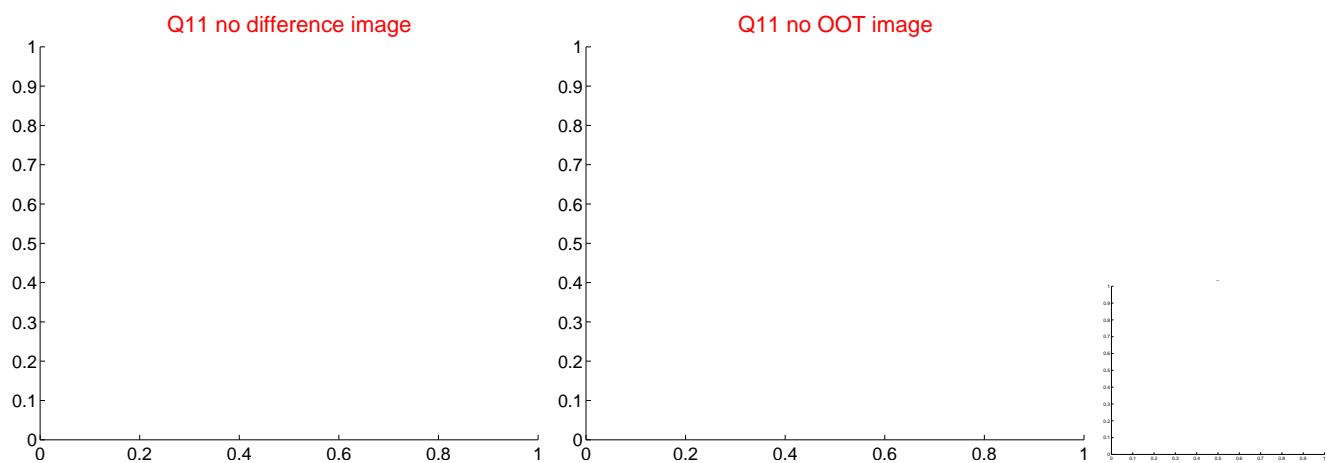
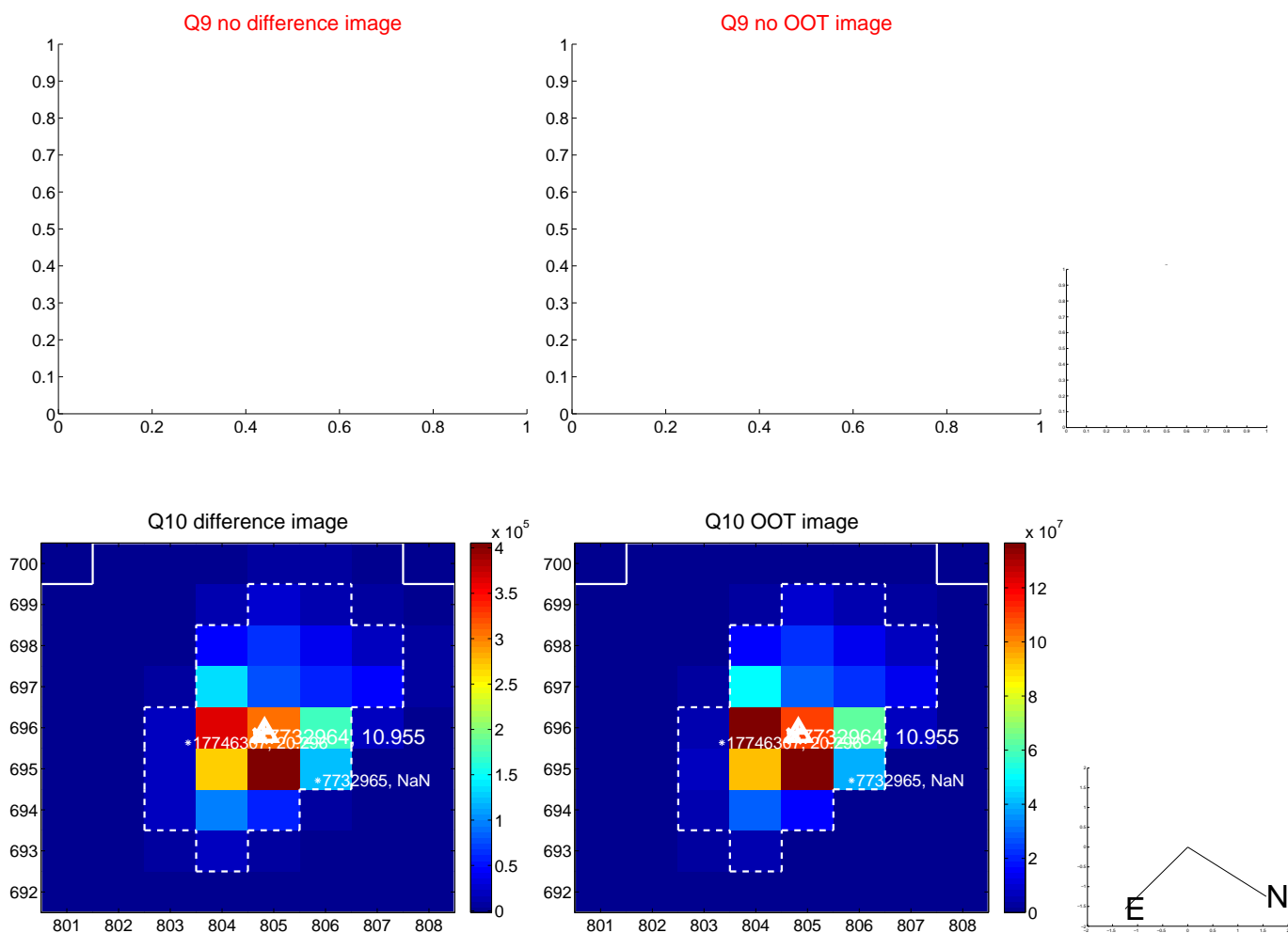
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



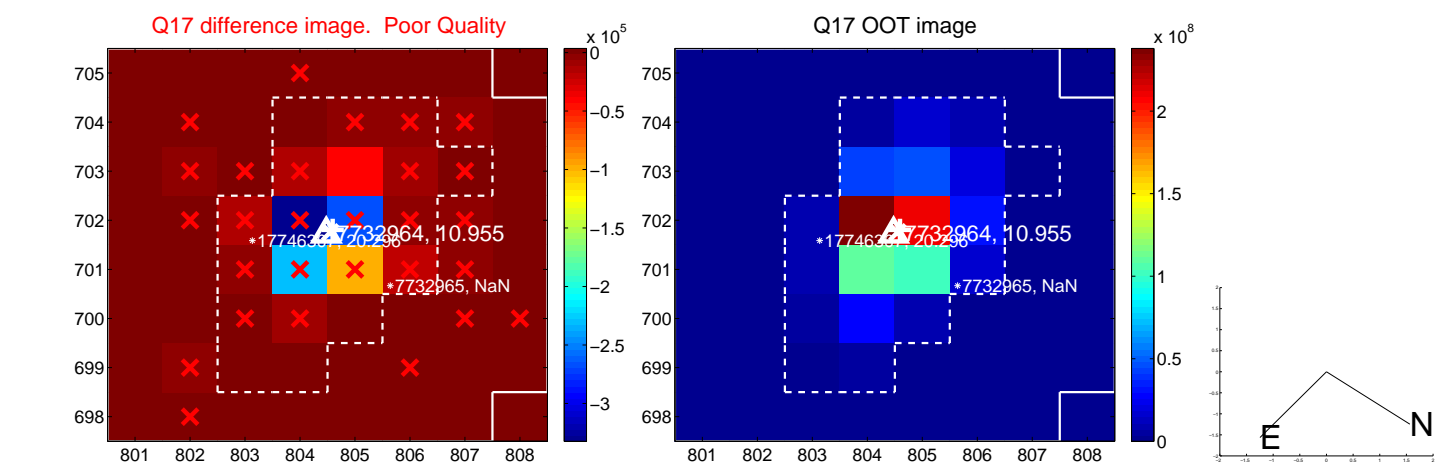
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



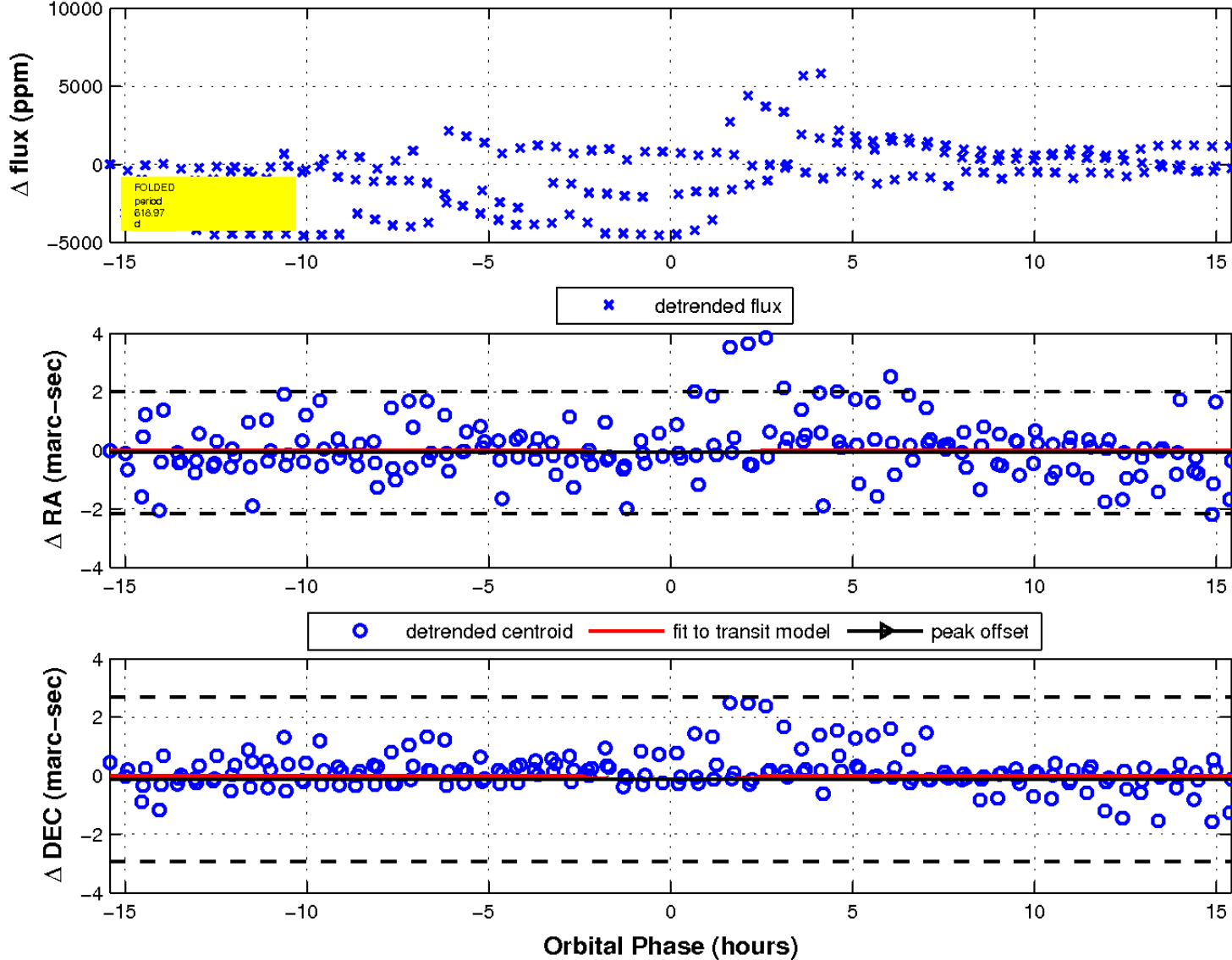
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

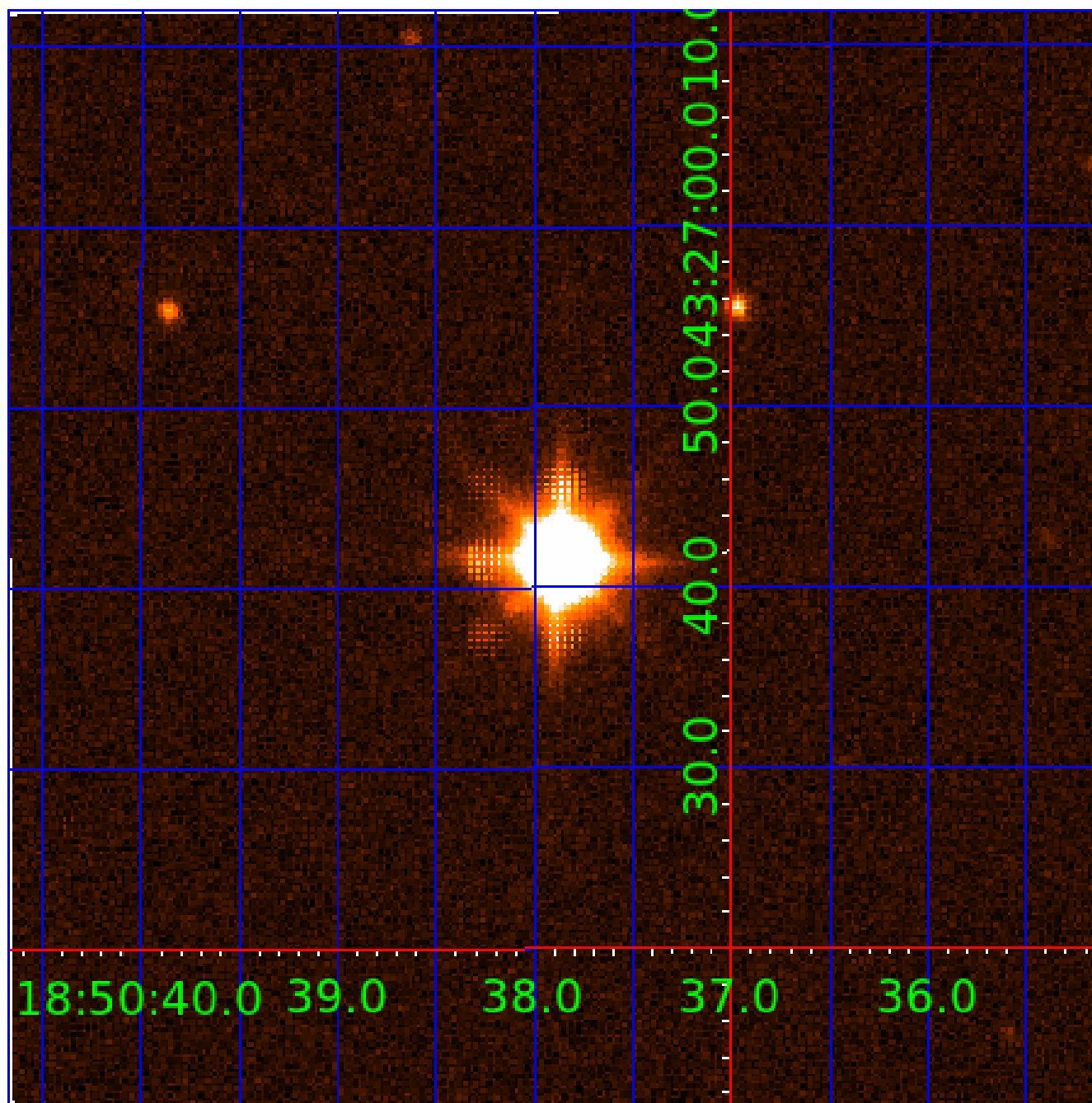


fluxWeightedCentroids, Planet 1 of 8



UKIRT Image

Declination



KIC 007732964

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})
007732964-01	OBS	No	618.974049	331.733861	1453.0	5.158	24.3	7.3	0.69	4949	2.75	0.16
007732964-02	OBS	No	645.903968	206.952256	2478.7	12.460	15.6	9.4	0.69	4949	3.39	0.15
007732964-03	OBS	No	373.211794	455.685145	1368.1	9.805	18.8	6.7	0.69	4949	2.60	0.31
007732964-04	OBS	No	303.552228	299.231778	1039.4	6.143	16.2	5.1	0.69	4949	2.34	0.41
007732964-05	OBS	No	173.600024	212.195581	916.2	2.721	14.4	6.3	0.69	4949	2.05	0.86
007732964-06	OBS	No	328.182877	284.496606	57.9	3.184	13.9	0.3	0.69	4949	0.51	0.37
007732964-07	OBS	No	568.352660	211.808073	130.6	10.500	16.3	-1.0	0.69	4949	0.77	0.18
007732964-08	OBS	No	430.650899	449.355020	236.1	4.500	16.7	-1.0	0.69	4949	1.03	0.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007732964-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
007732964-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007732964-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
007732964-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

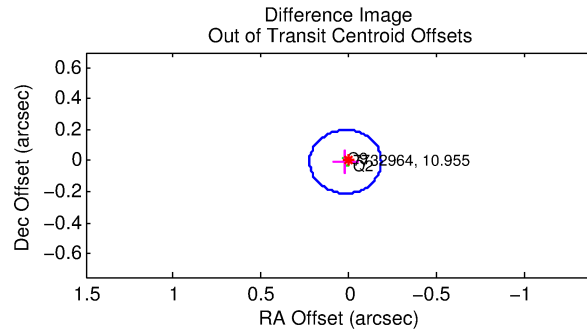
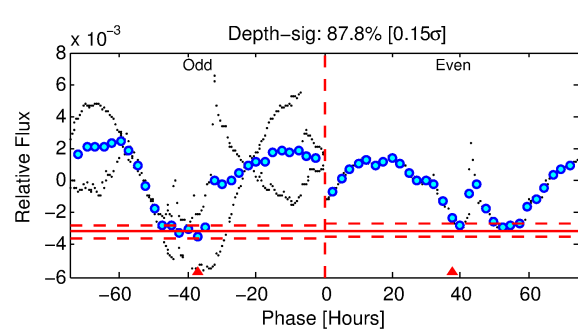
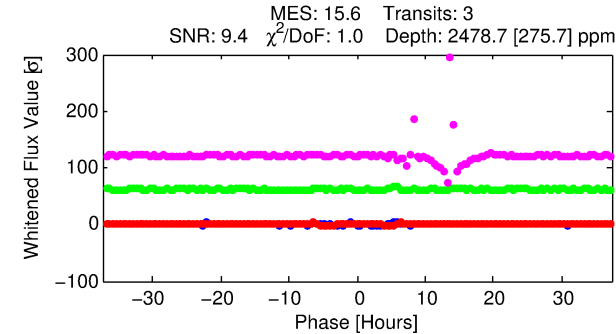
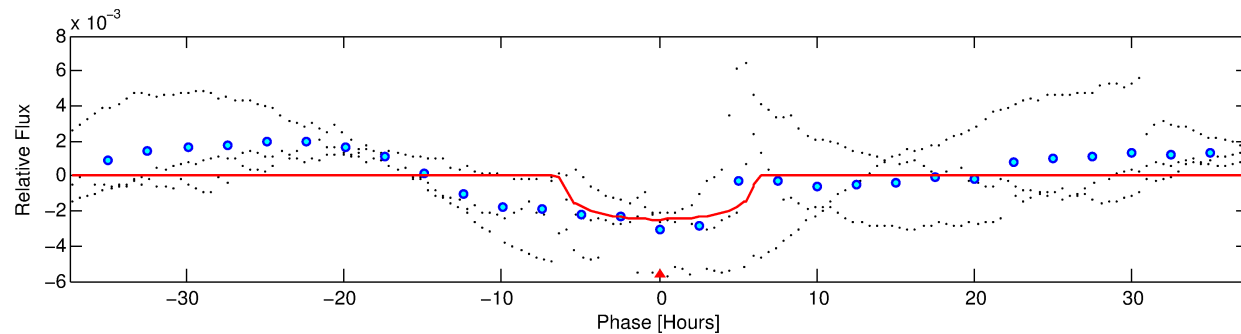
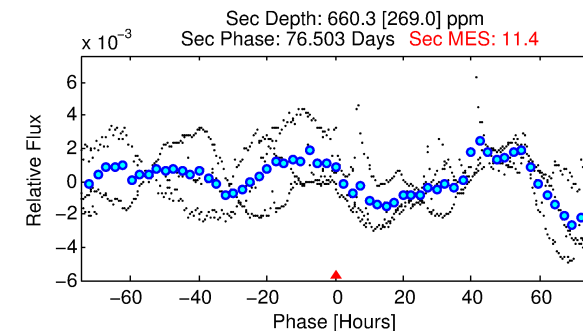
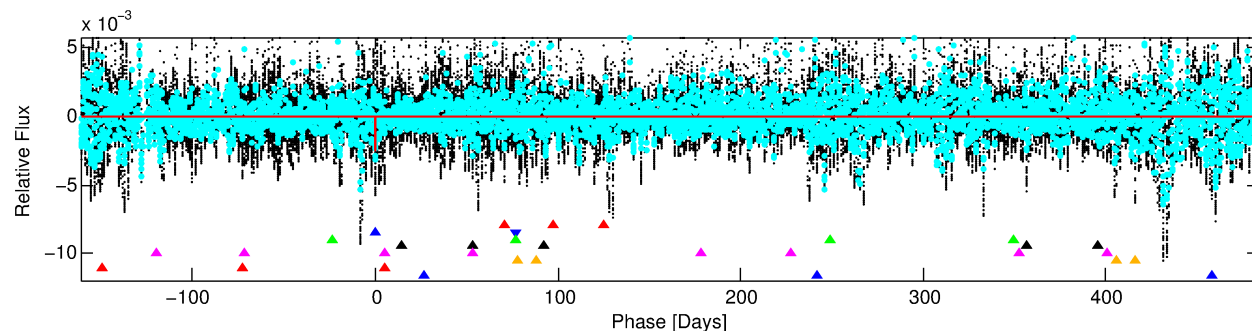
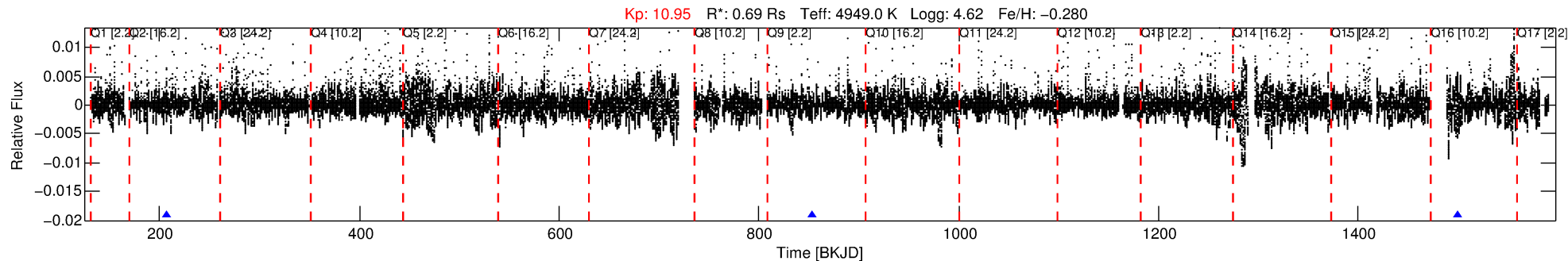
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007732964-02

No Significant Match Found

DV One-Page Summary

KIC: 7732964 Candidate: 2 of 8 Period: 645.904 d



DV Fit Results:

Period = 645.90397 [0.00232] d
Epoch = 206.9523 [0.0040] BKJD
Rp/R* = 0.0450 [0.0083]
a/R* = 391.05 [216.25]
b = 0.34 [1.44]
Seff = 0.15 [0.03]
Teq = 158 [7] K
Rp = 3.39 [0.73] Re
a = 1.3113 [0.1128] AU
Ag = 54465.74 [30503.52] [1.79σ]
Teff = 3741 [530] K [6.76σ]

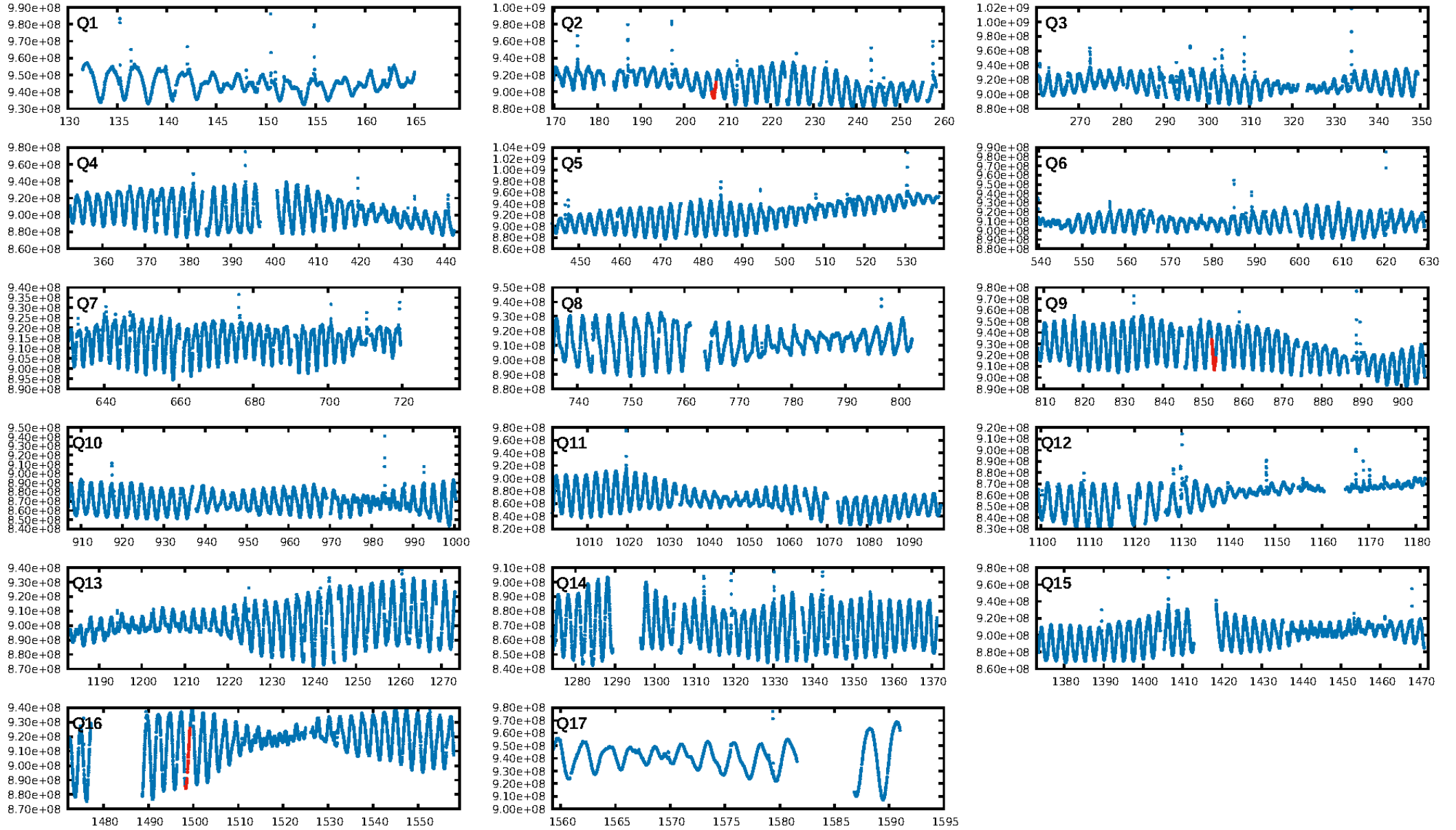
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.93σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 31.3%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.031
Centroid-sig: 41.1%
Centroid-so: 0.241 arcsec [1.61σ]
OotOffset-rm: 0.021 arcsec [0.31σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-rm: 0.309 arcsec [4.40σ]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

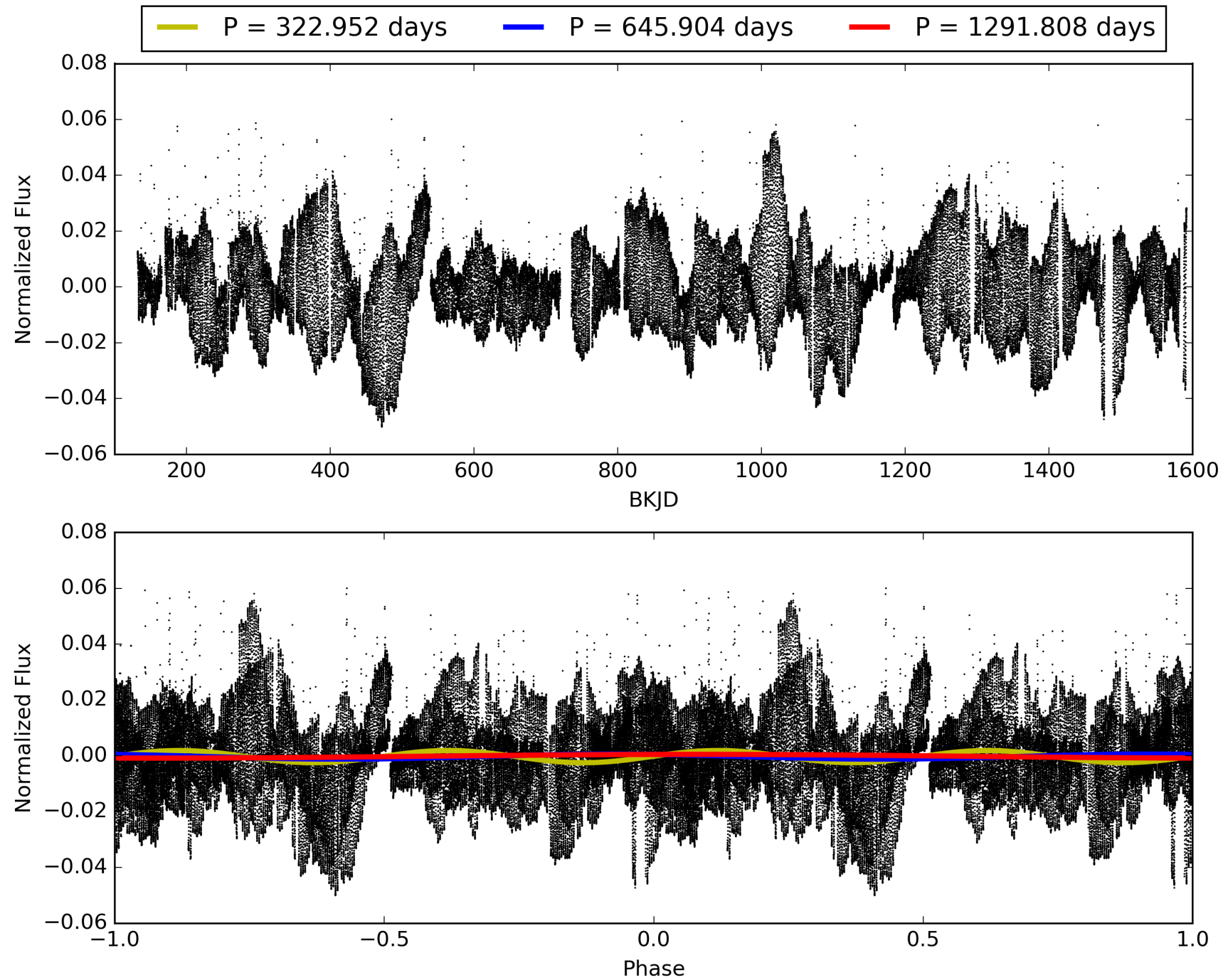
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:41:29 Z

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

TCE 007732964-02, PDC Light Curves

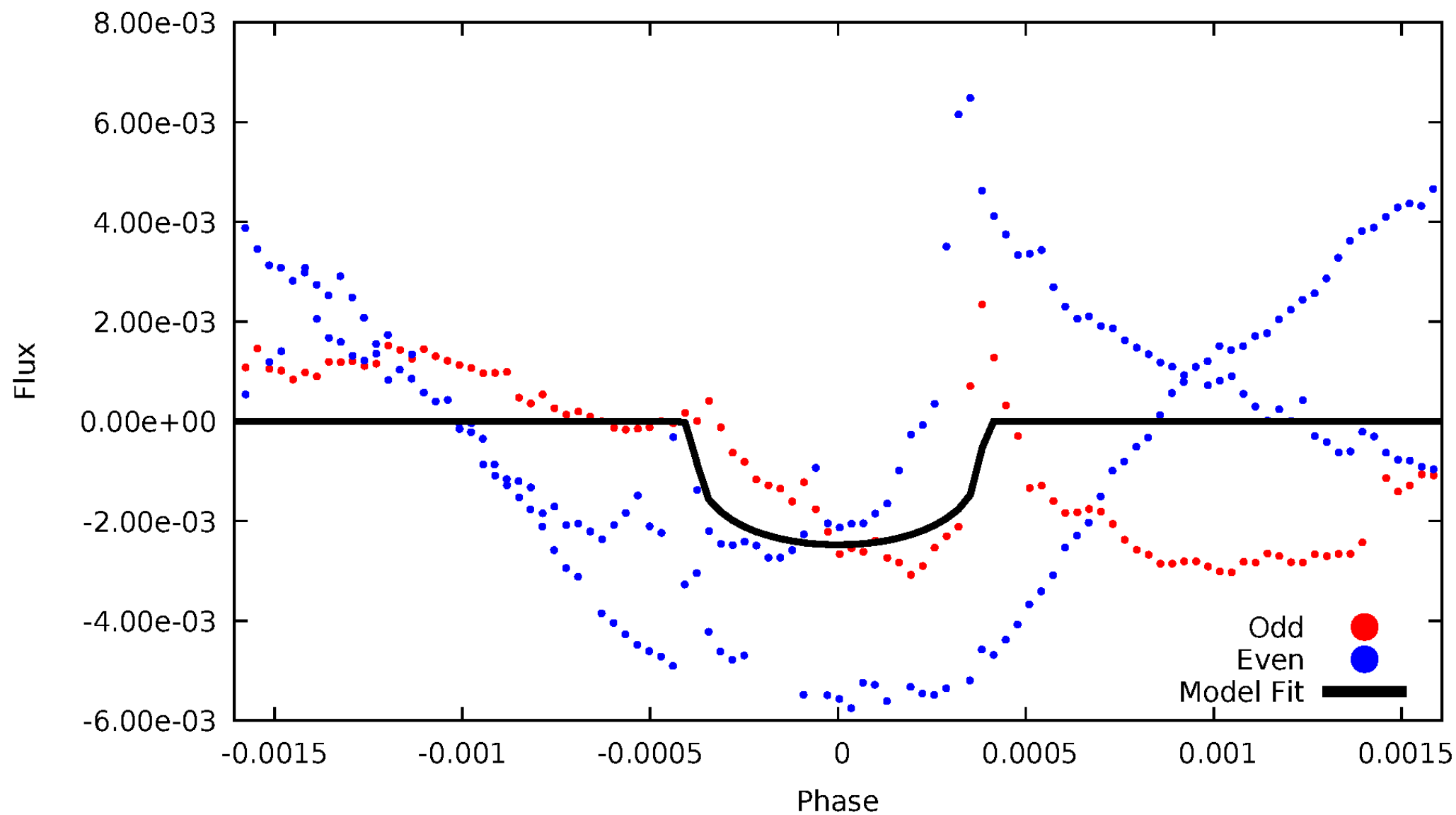


TCE 007732964-02



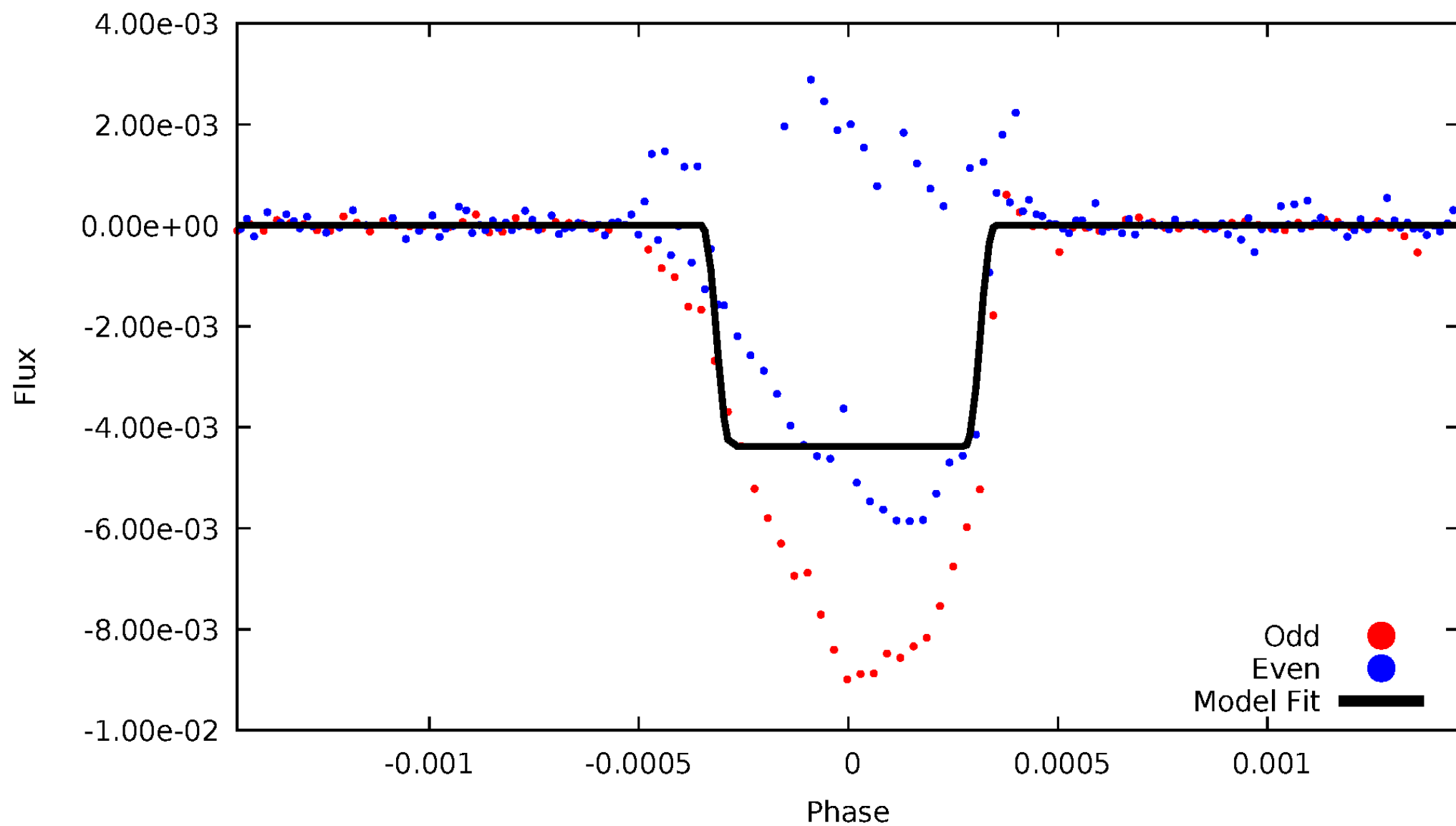
DV Odd/Even

TCE 007732964-02



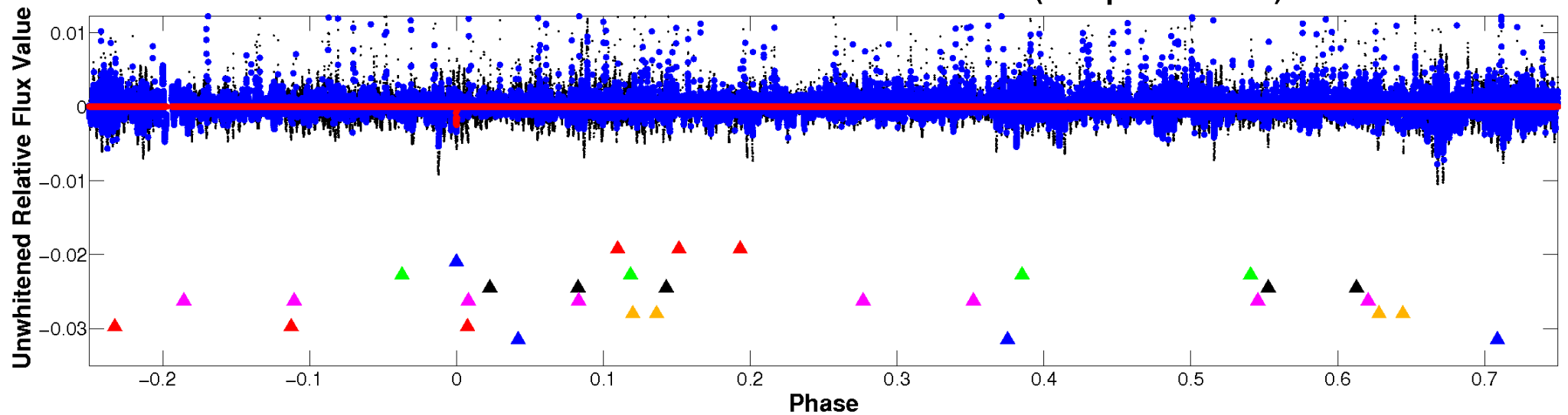
ALT Odd/Even

TCE 007732964-02

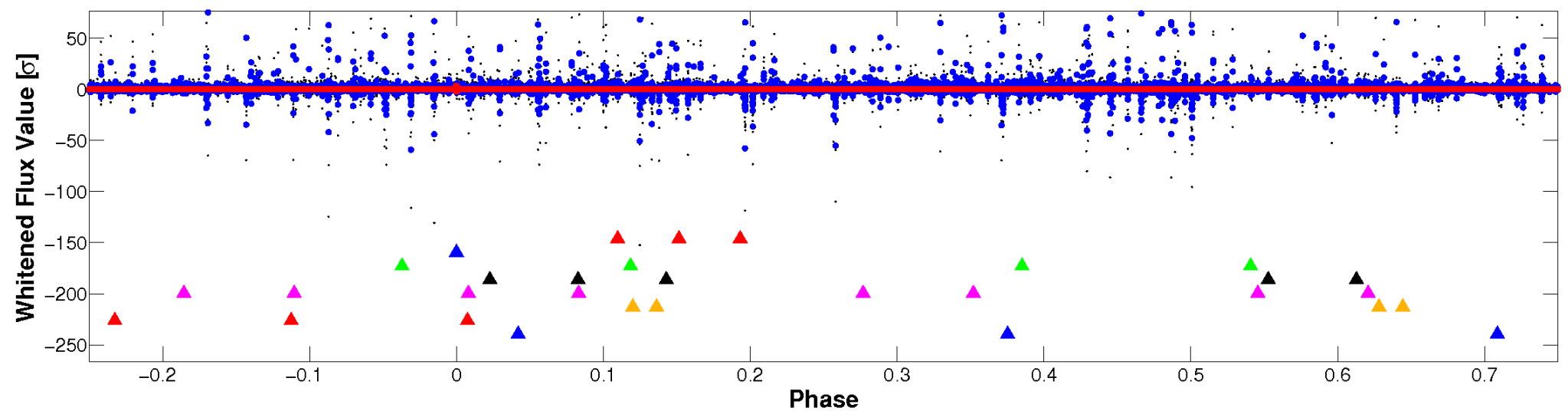


Non-Whitened Vs. Whitened Light Curve

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

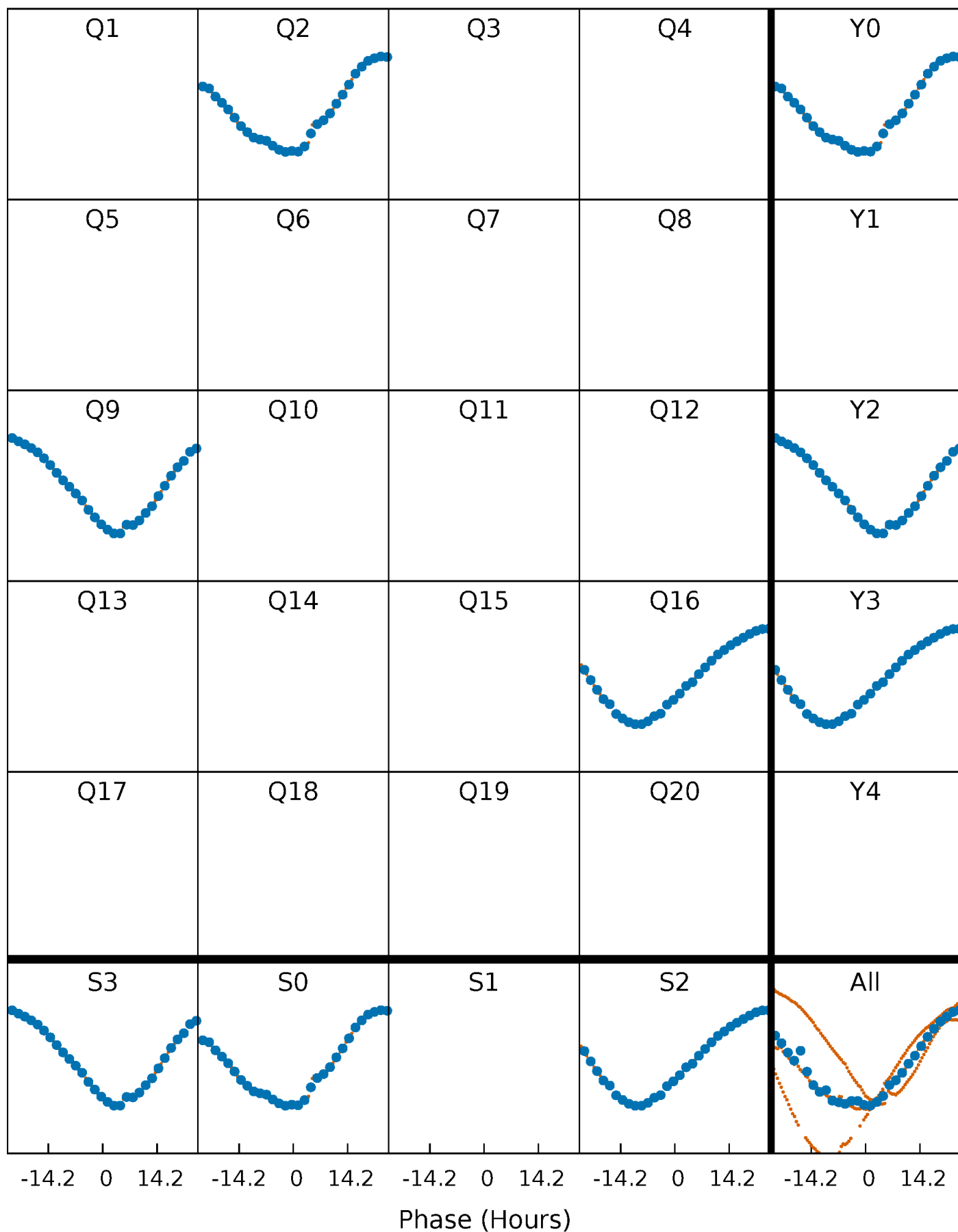


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



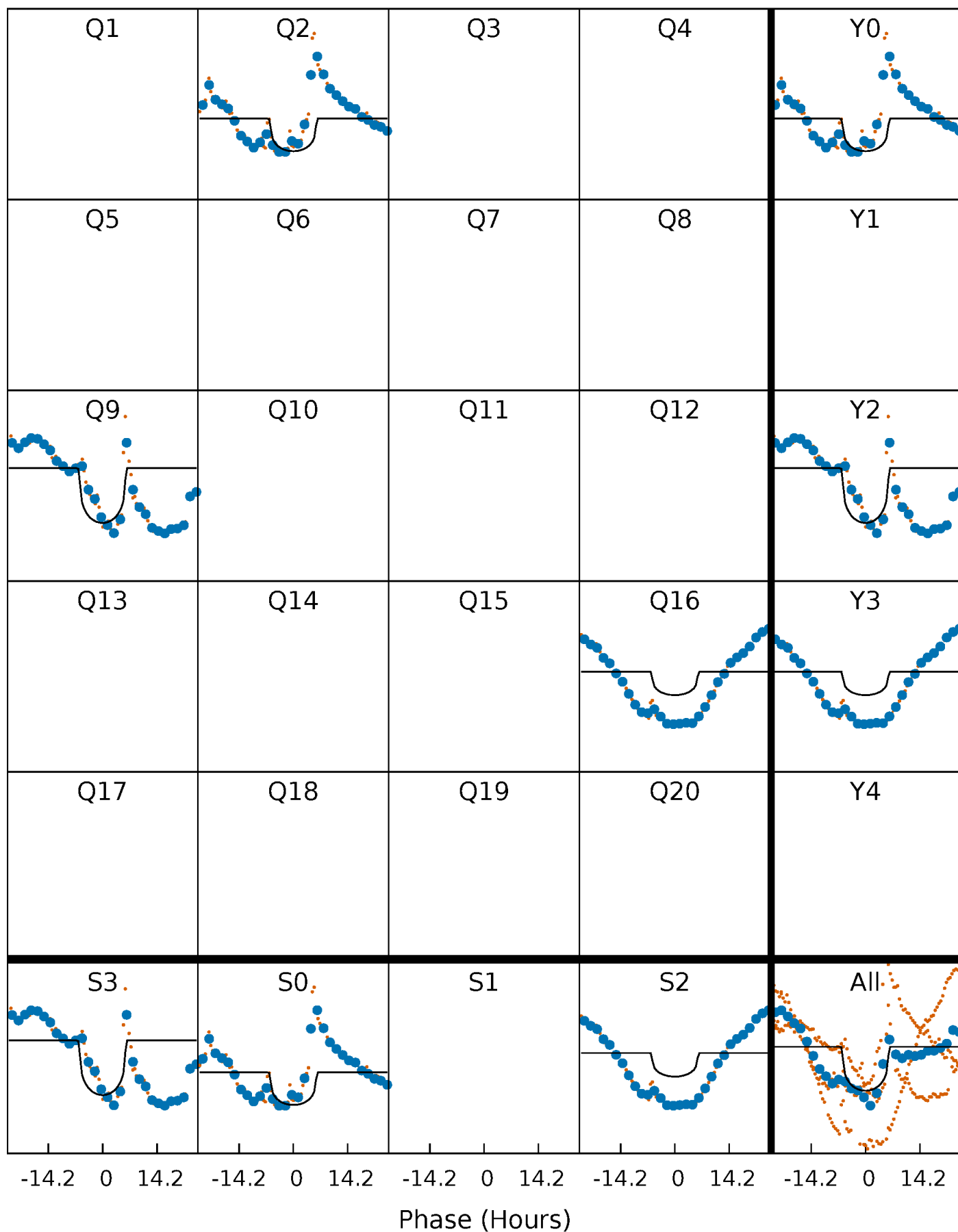
PDC Quarter-Phased Transit Curves

TCE 007732964-02 $P=645.903968$ Days $T_0=206.952256$ (BKJD)



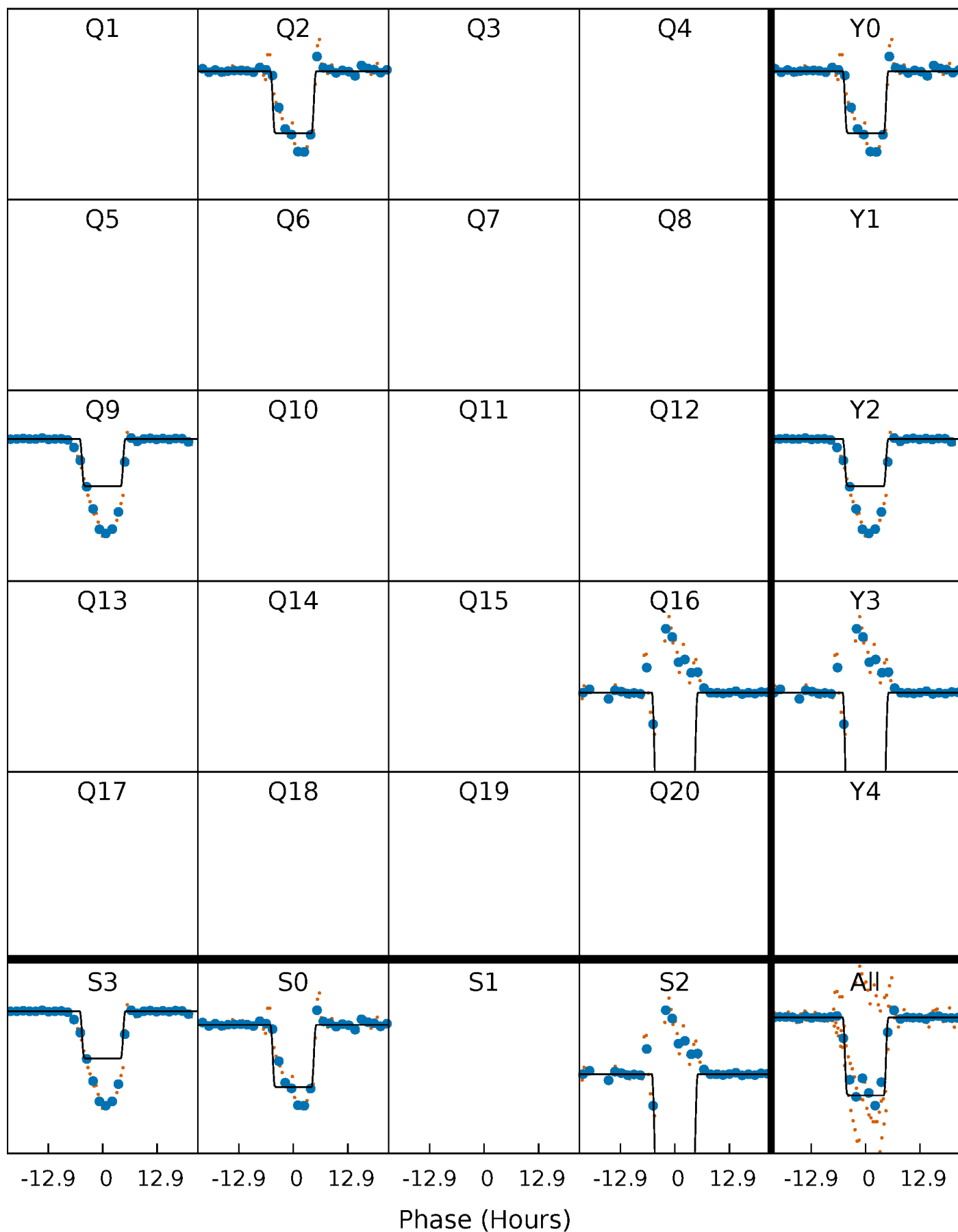
DV Quarter-Phased Transit Curves

TCE 007732964-02 P=645.903968 Days $T_0=206.952256$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

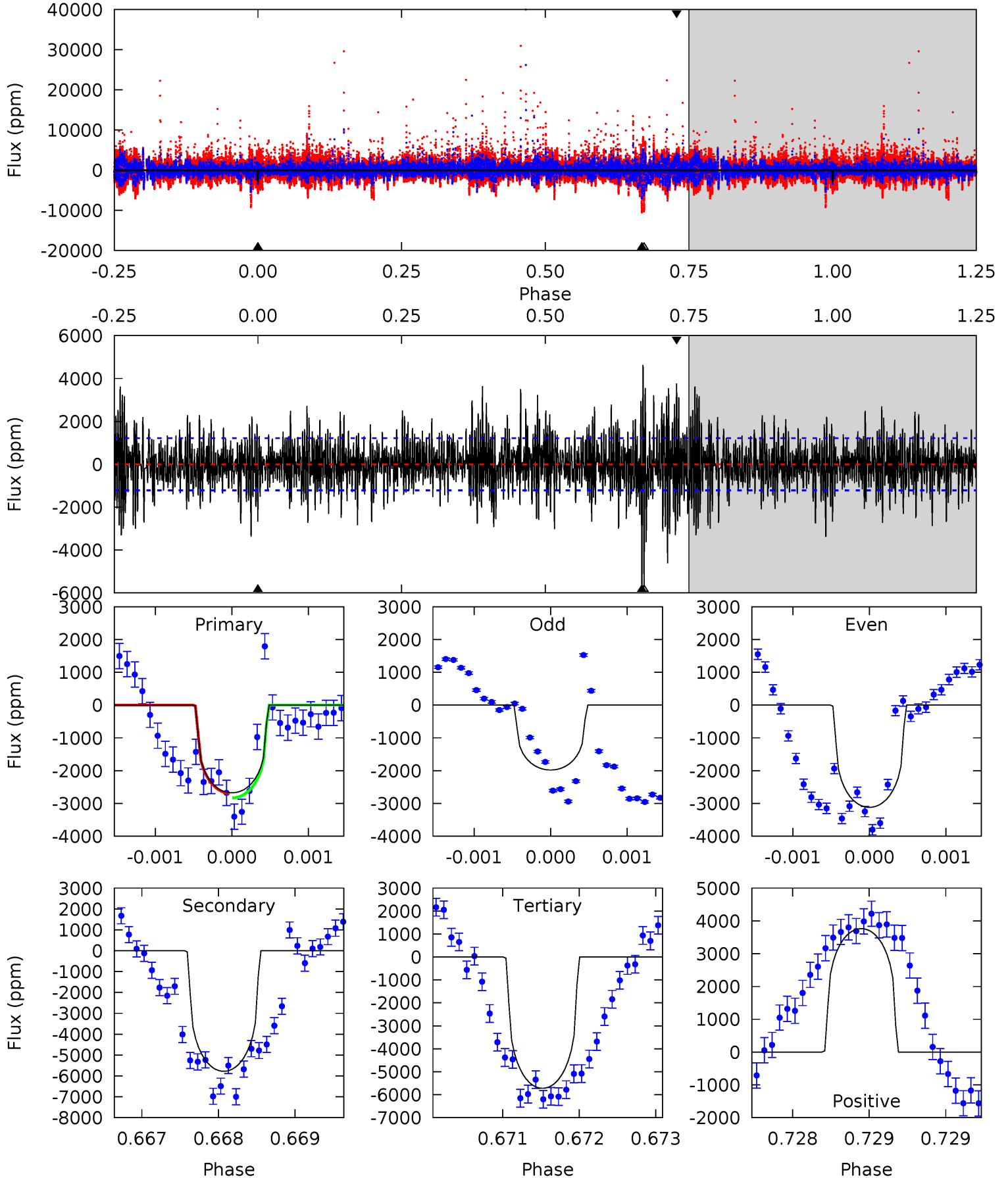
TCE 007732964-02 P=645.938887 Days $T_0=206.921747$ (BKJD)



DV Model-Shift Uniqueness Test

007732964-02, P = 645.903968 Days, E = 206.952256 Days

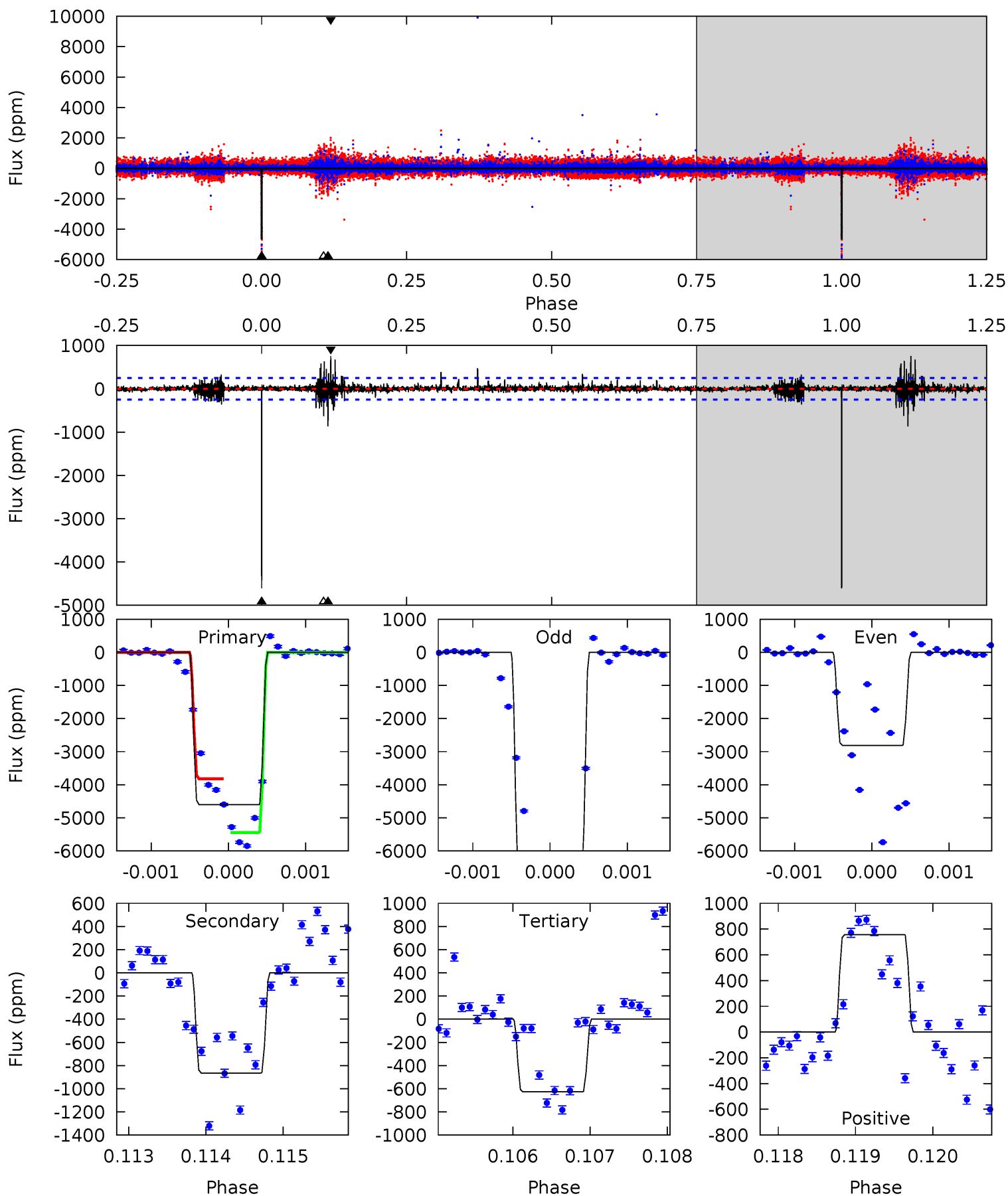
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	26.0	25.7	16.9	5.48	3.33	4.76	-13.7	-4.89	0.26	9.07	2.00	1.54	0.44	0.29



Alt Model-Shift Uniqueness Test

007732964-02, P = 645.938887 Days, E = 206.921747 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
101.9	19.1	13.9	16.7	5.52	3.39	1.36	88.0	85.1	5.27	2.39	49.0	0.77	0.14	0



Stellar Parameters For KIC 007732964

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4949^{+176}_{-176}	$4.618^{+0.041}_{-0.054}$	$-0.280^{+0.300}_{-0.300}$	$0.690^{+0.078}_{-0.058}$	$0.720^{+0.078}_{-0.064}$	$3.093^{+0.632}_{-0.628}$
	+4%/-4%	+1%/-1%	+107%/-107%	+11%/-8%	+11%/-9%	+20%/-20%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007732964-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-5779 ± 222	$3.39^{+0.61}_{-0.65}$	222^{+9}_{-9}	6354^{+815}_{-575}	$476237^{+251423}_{-131432}$
Alt.	-865 ± 45	$5.03^{+0.64}_{-0.65}$	222^{+10}_{-8}	3675^{+184}_{-186}	32660^{+10672}_{-7294}

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

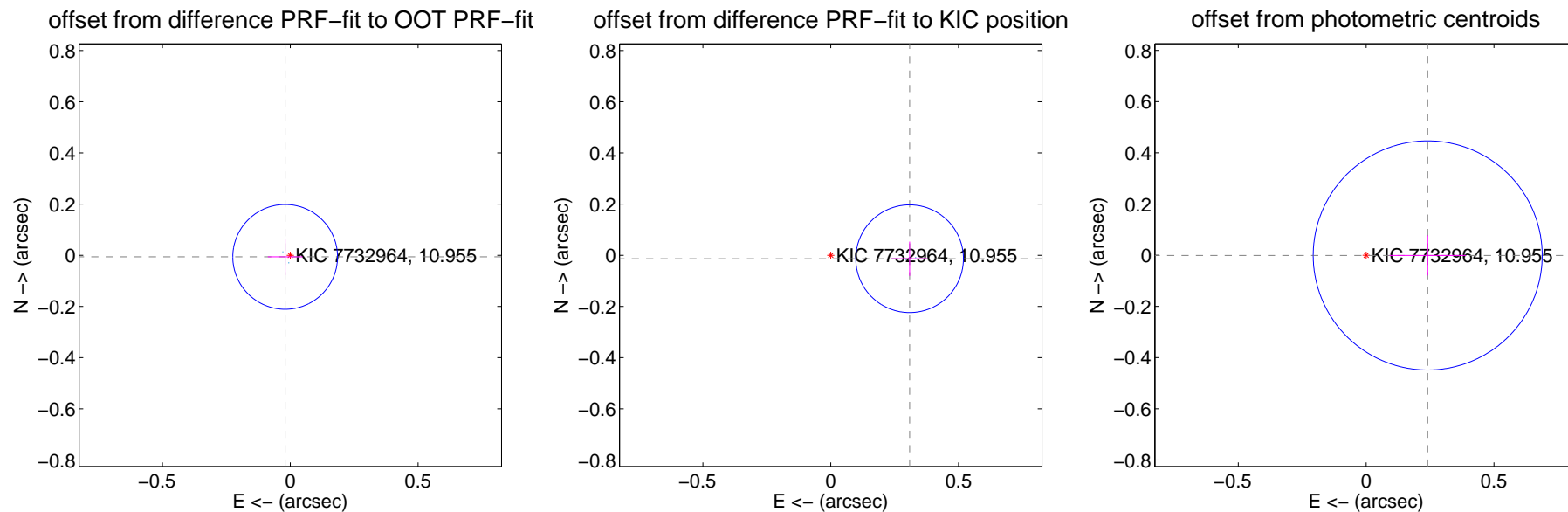
DV Centroid Data

Supplemental centroid analysis for 007732964-02. **Kepler magnitude: 10.96.** Transit SNR 9.38

There are 2 quarters with good PRF difference image offsets

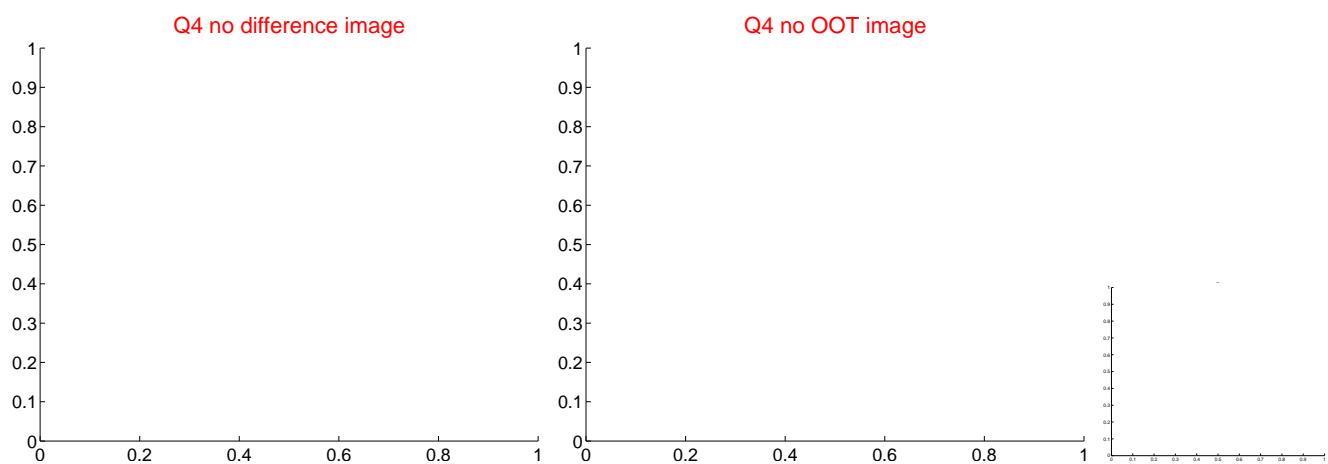
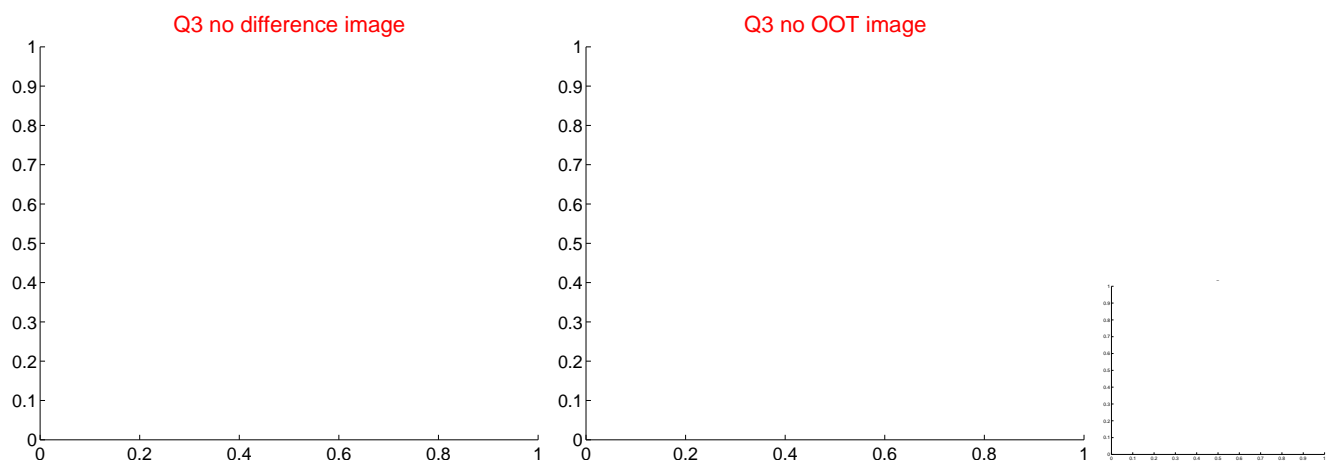
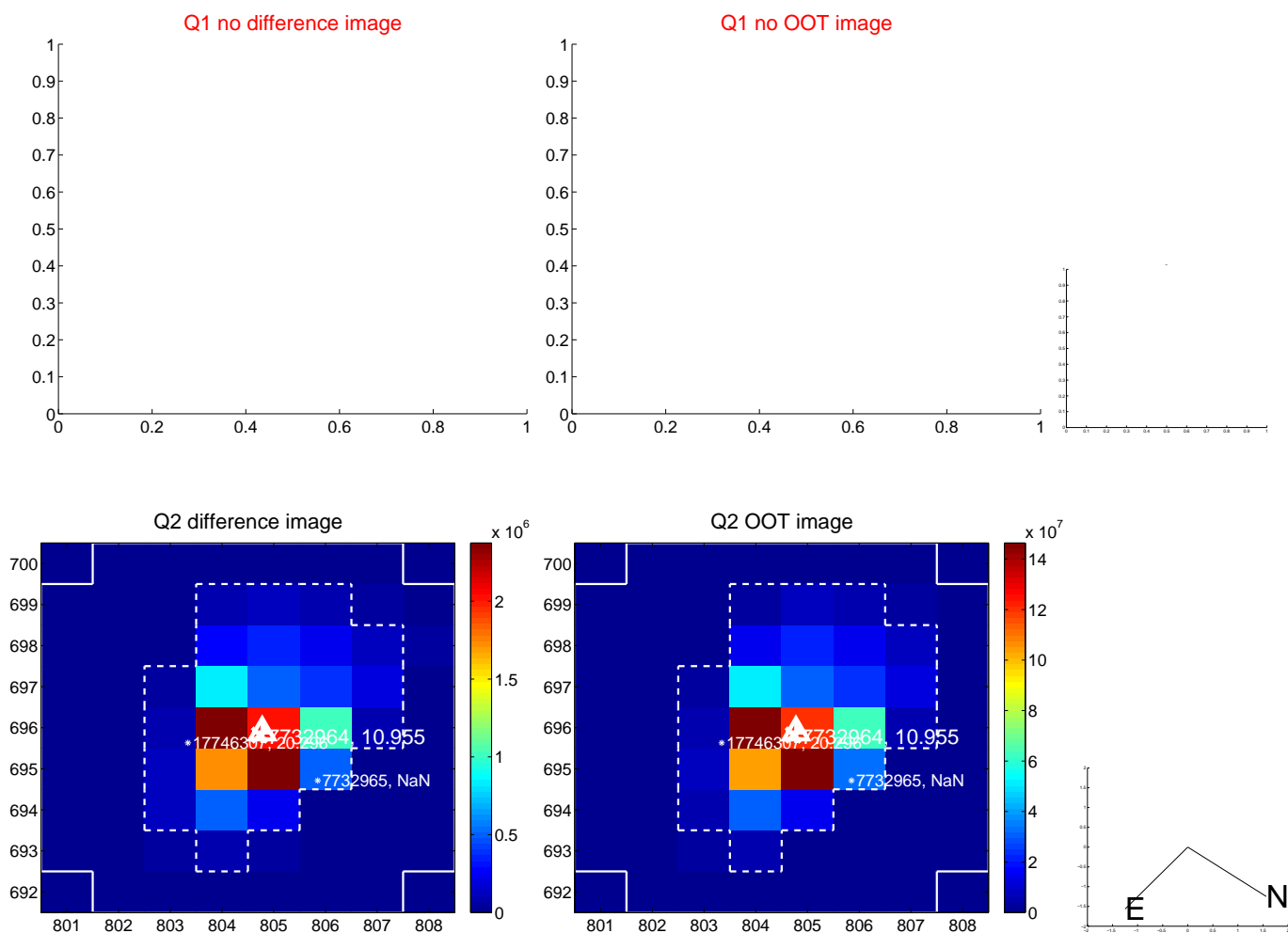
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.021 ± 0.068	0.31	0.020 ± 0.068	-0.006 ± 0.071
PRF-fit source offset from KIC position	0.309 ± 0.070	4.40	-0.309 ± 0.070	-0.013 ± 0.067
photometric centroid source offset	0.24 ± 0.15	1.61	-0.24 ± 0.15	-0.00 ± 0.08



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.

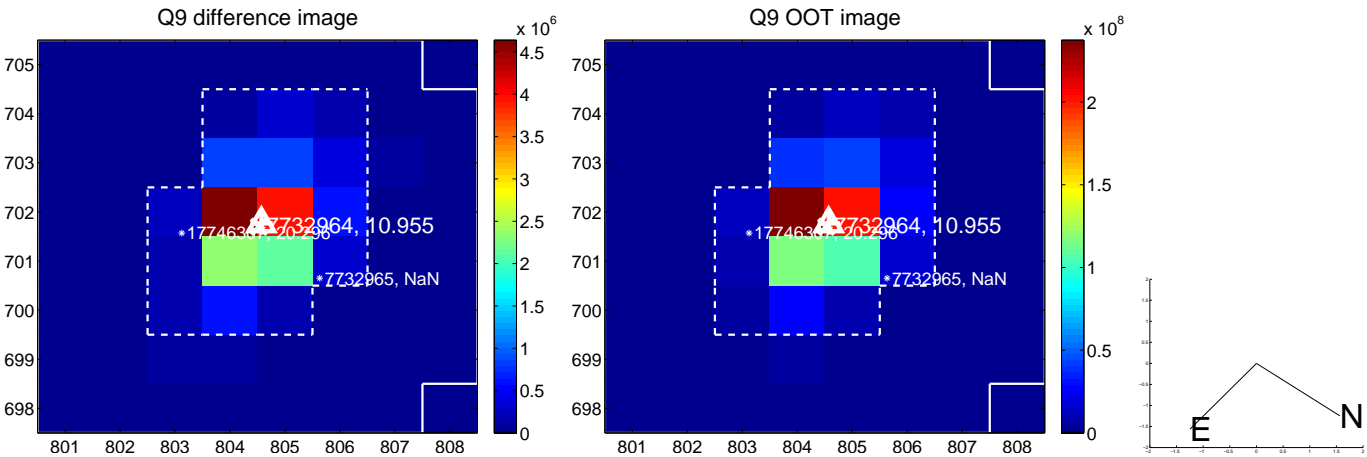
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



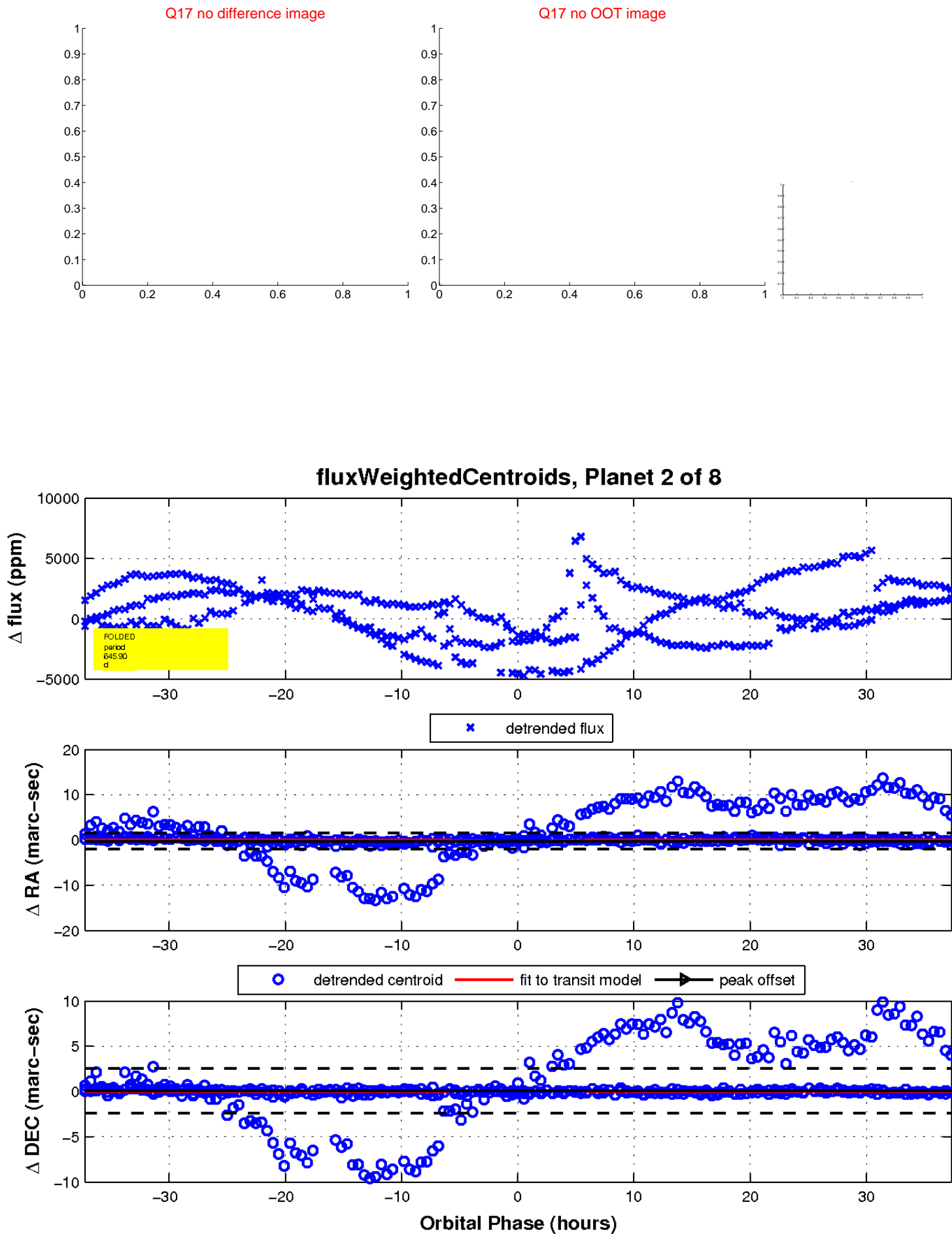
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

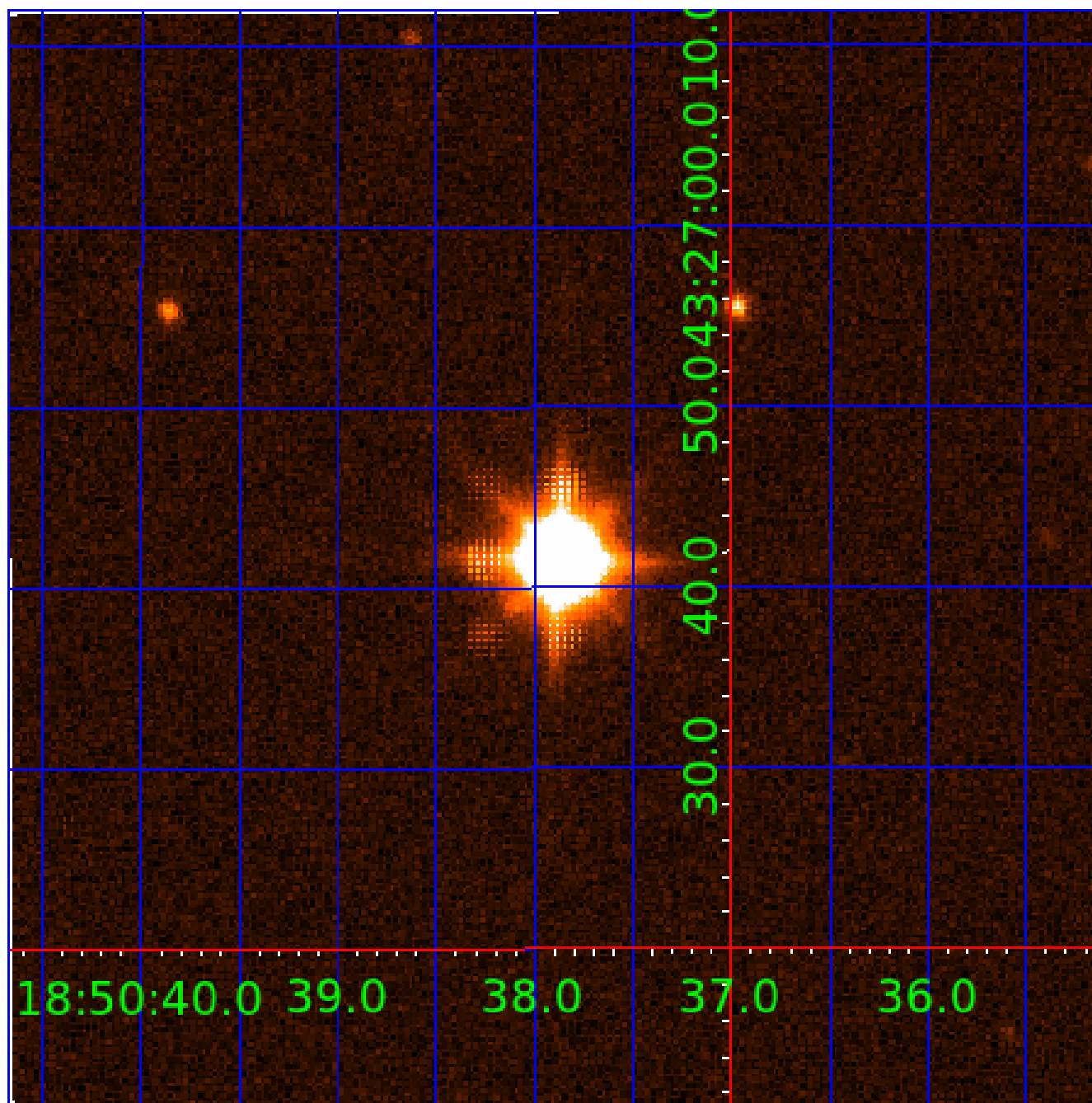


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007732964

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})
007732964-01	OBS	No	618.974049	331.733861	1453.0	5.158	24.3	7.3	0.69	4949	2.75	0.16
007732964-02	OBS	No	645.903968	206.952256	2478.7	12.460	15.6	9.4	0.69	4949	3.39	0.15
007732964-03	OBS	No	373.211794	455.685145	1368.1	9.805	18.8	6.7	0.69	4949	2.60	0.31
007732964-04	OBS	No	303.552228	299.231778	1039.4	6.143	16.2	5.1	0.69	4949	2.34	0.41
007732964-05	OBS	No	173.600024	212.195581	916.2	2.721	14.4	6.3	0.69	4949	2.05	0.86
007732964-06	OBS	No	328.182877	284.496606	57.9	3.184	13.9	0.3	0.69	4949	0.51	0.37
007732964-07	OBS	No	568.352660	211.808073	130.6	10.500	16.3	-1.0	0.69	4949	0.77	0.18
007732964-08	OBS	No	430.650899	449.355020	236.1	4.500	16.7	-1.0	0.69	4949	1.03	0.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007732964-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
007732964-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007732964-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
007732964-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

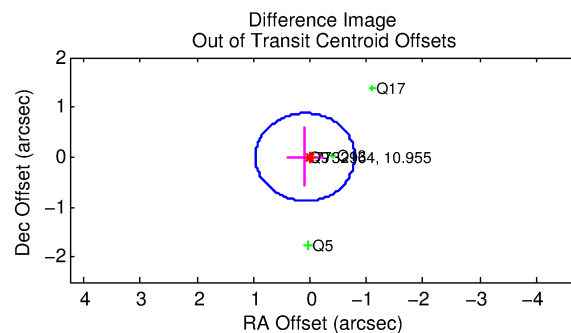
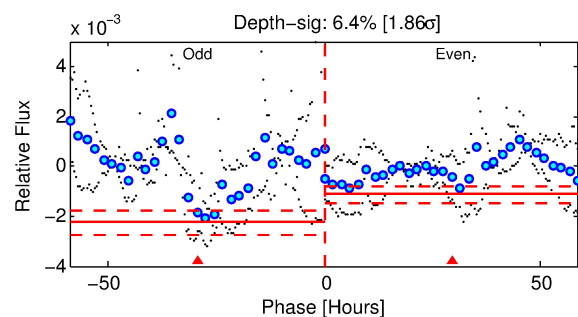
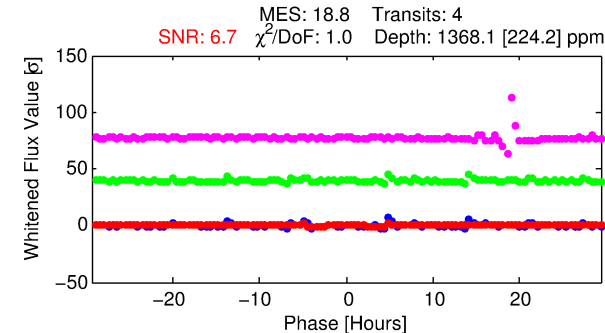
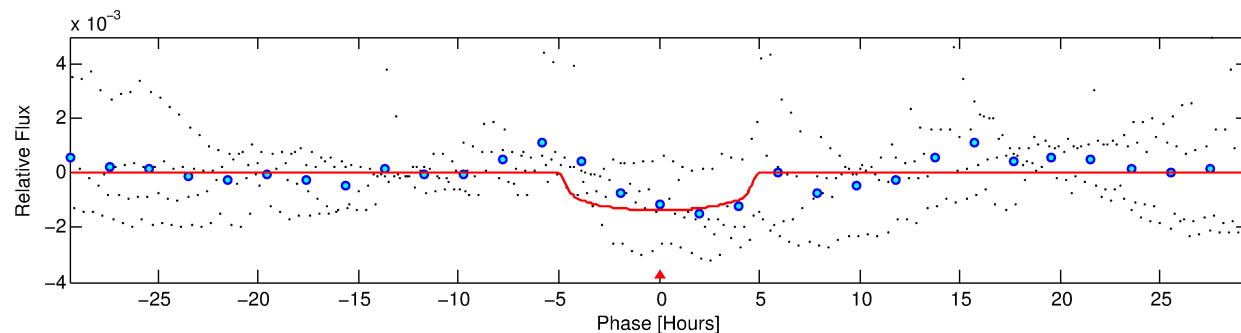
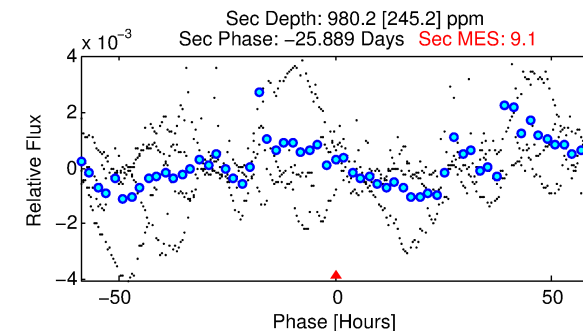
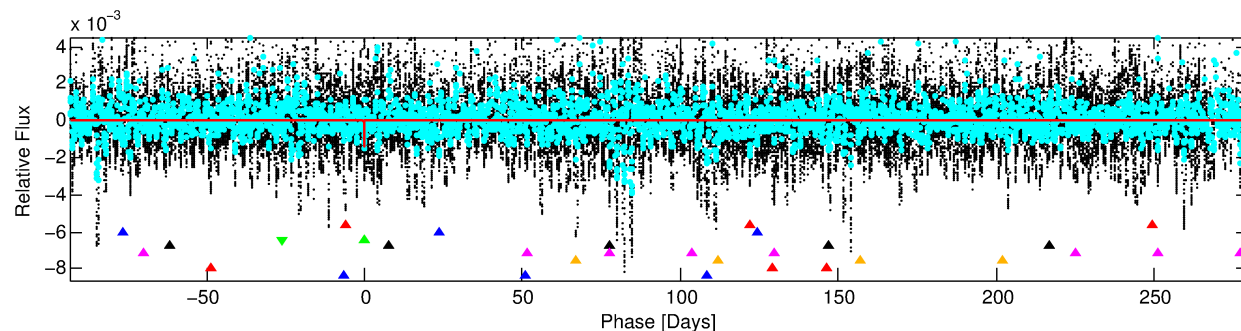
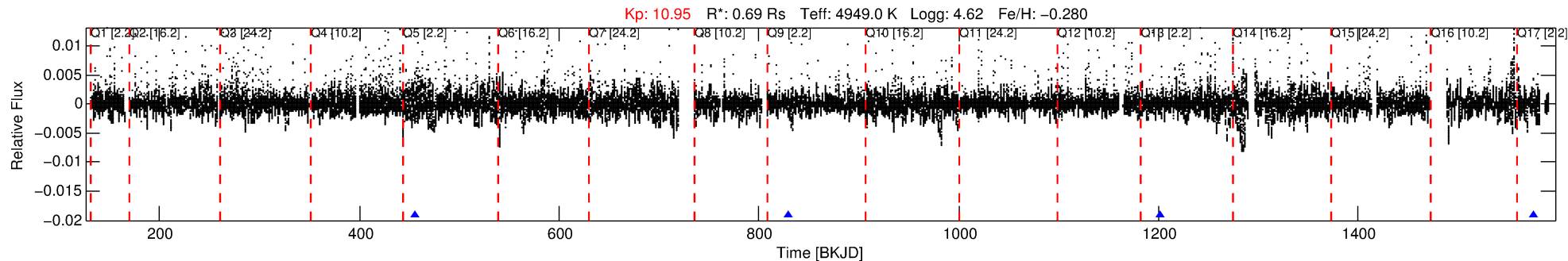
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007732964-03

No Significant Match Found

DV One-Page Summary

KIC: 7732964 Candidate: 3 of 8 Period: 373.212 d



DV Fit Results:

Period = 373.21179 [0.00207] d
Epoch = 455.6851 [0.0051] BKJD
Rp/R* = 0.0345 [0.0080]
a/R* = 256.16 [183.62]
b = 0.54 [0.94]
Seff = 0.31 [0.06]
Teq = 190 [9] K
Rp = 2.60 [0.67] Re
a = 0.9097 [0.0782] AU
Ag = 66121.87 [35699.86] [1.85σ]
Teffp = 4714 [645] K [7.02σ]

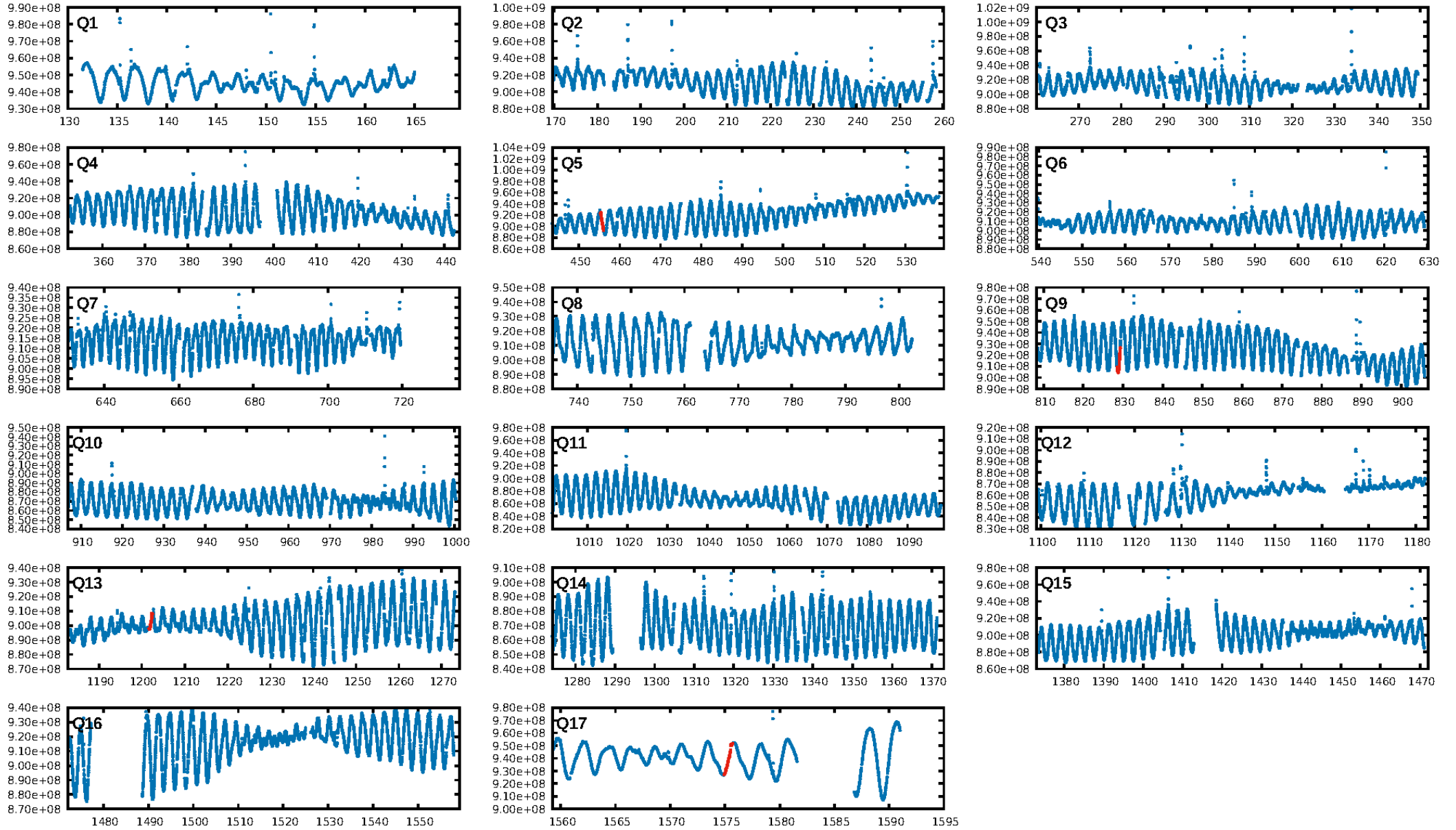
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [104.83σ]
LongPeriod-sig: 100.0% [127.79σ]
ModelChiSquare2-sig: 7.1%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 12.36
Centroid-sig: 0.2%
Centroid-so: 0.126 arcsec [1.08σ]
OotOffset-rm: 0.088 arcsec [0.30σ]
KicOffset-rm: 0.235 arcsec [1.06σ]
OotOffset-st: 0/0/0/4 [4]
KicOffset-st: 0/0/0/4 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

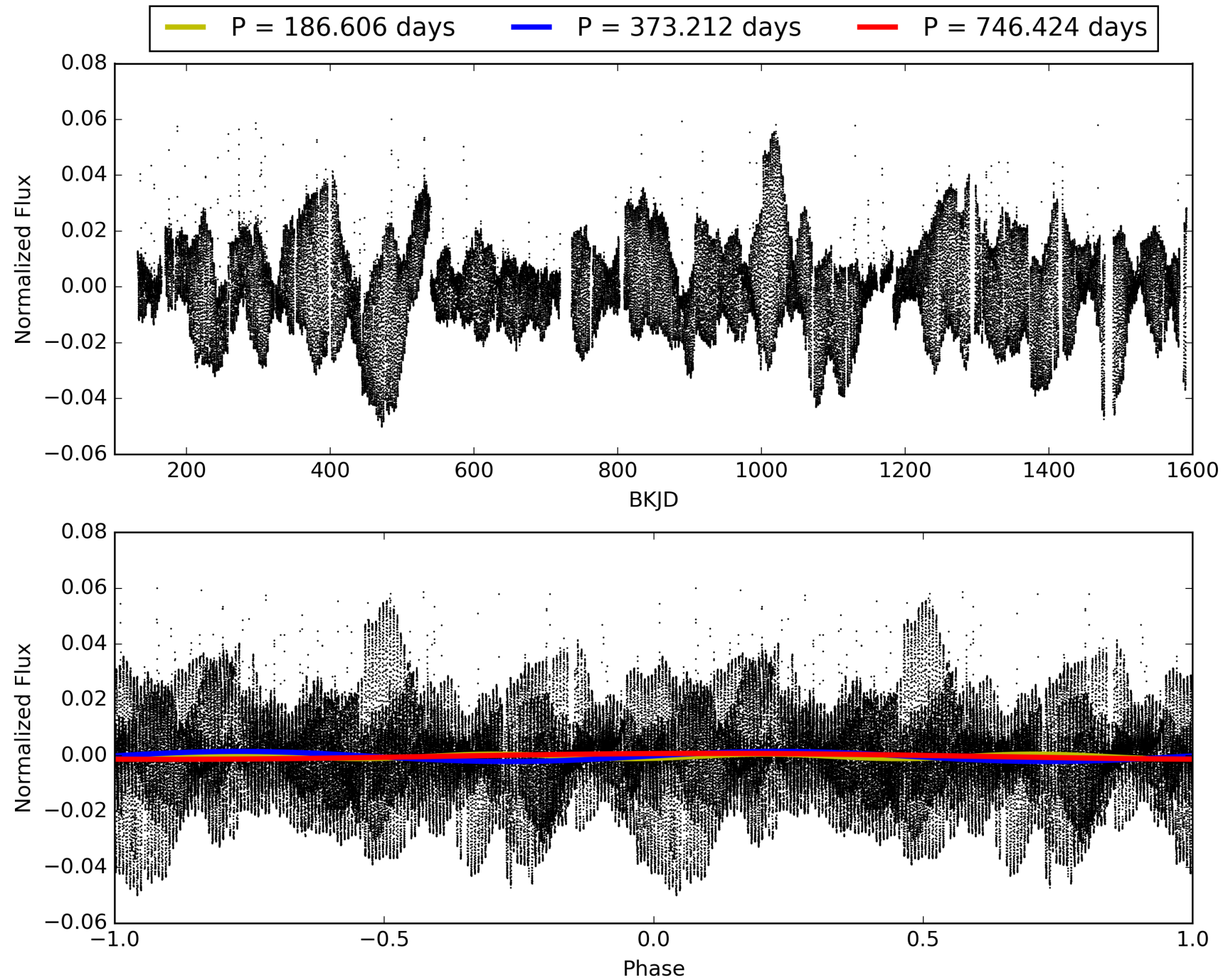
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:41:38 Z

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

TCE 007732964-03, PDC Light Curves

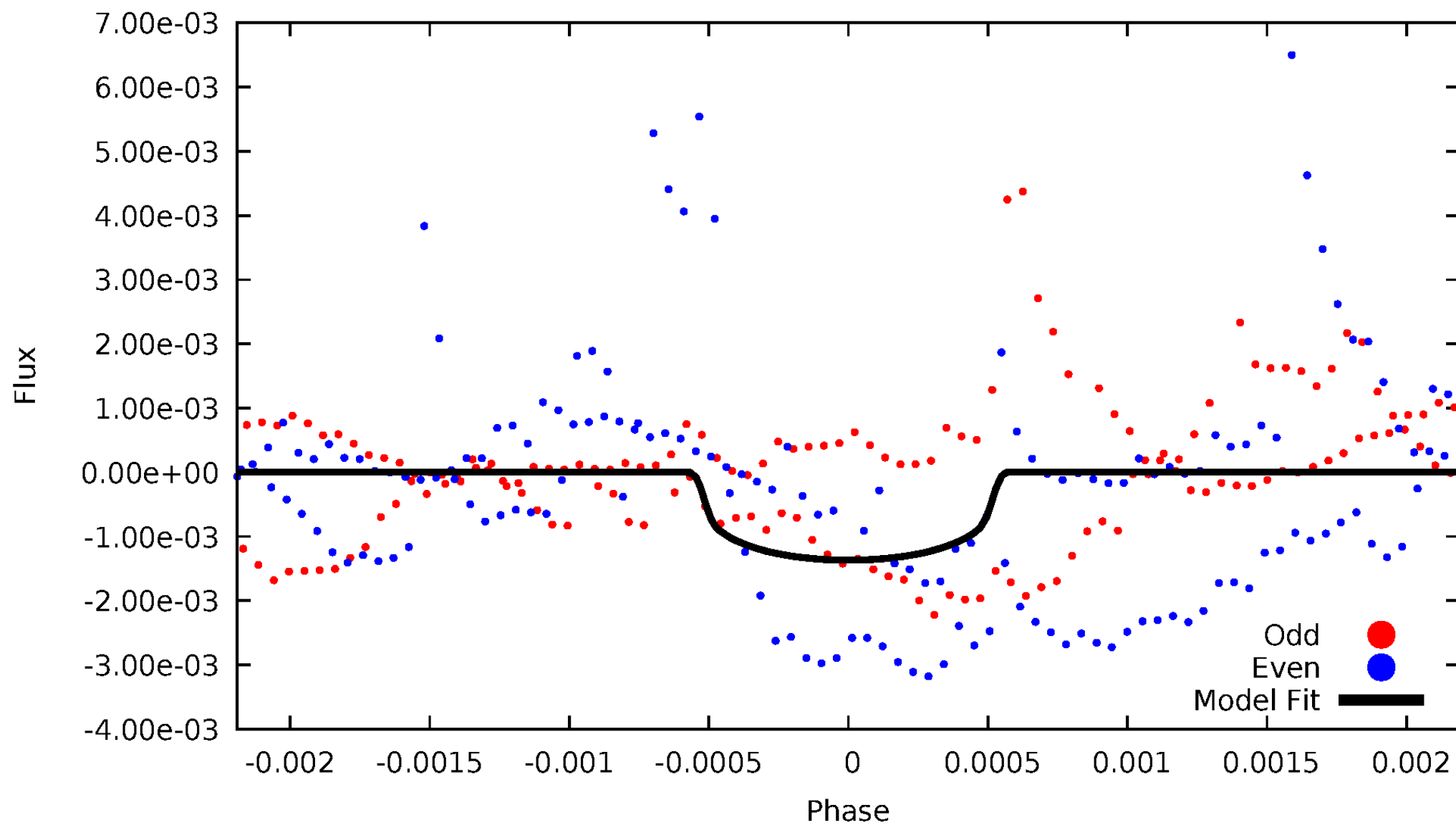


TCE 007732964-03



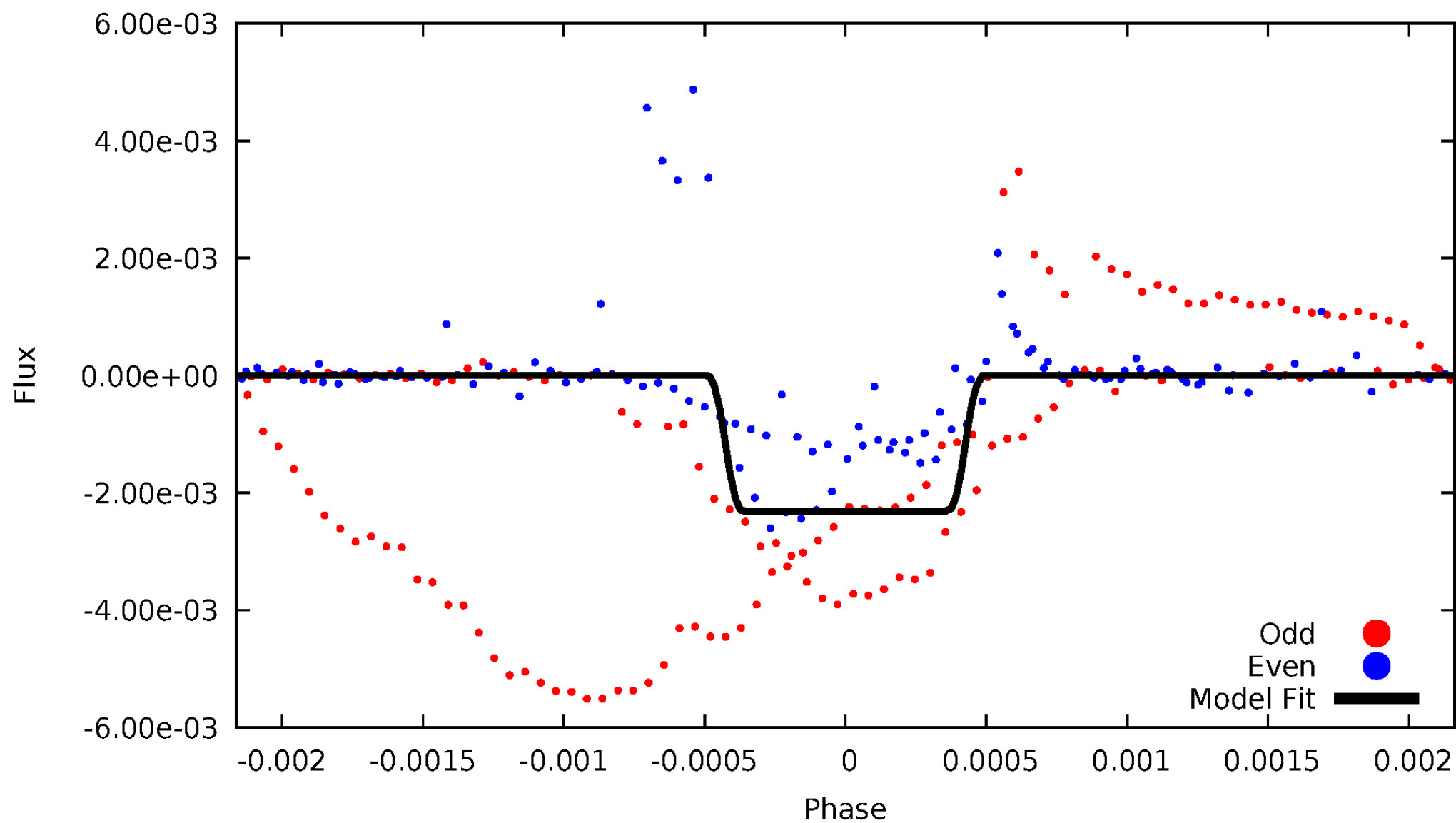
DV Odd/Even

TCE 007732964-03



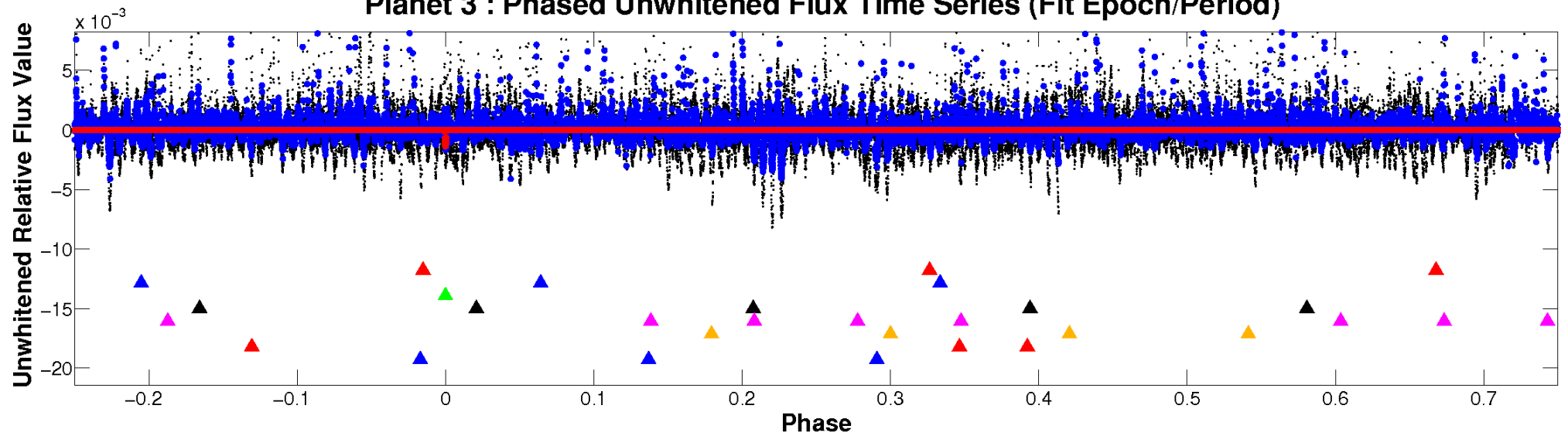
ALT Odd/Even

TCE 007732964-03

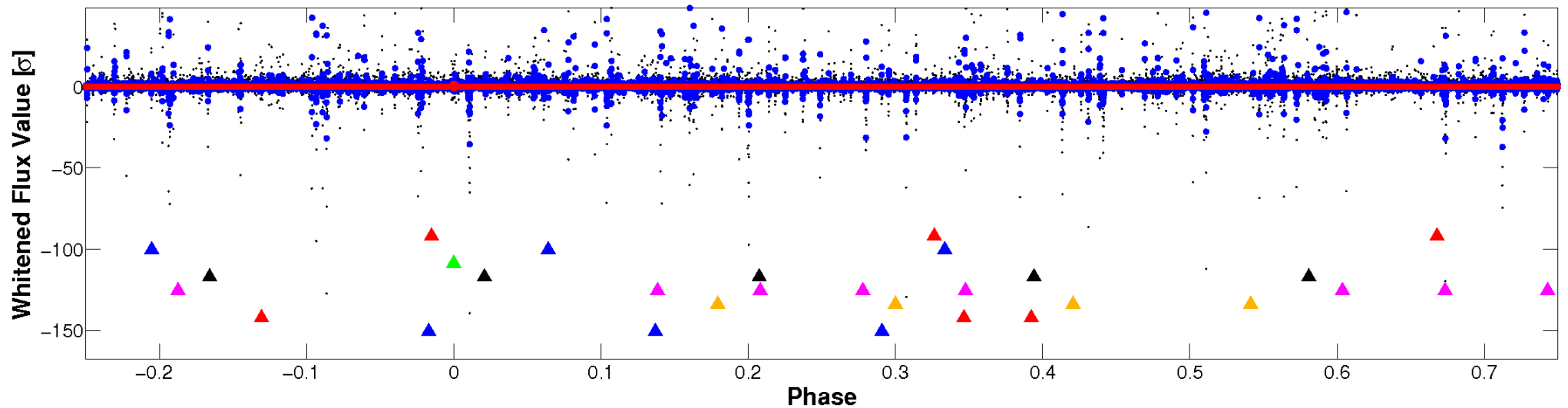


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

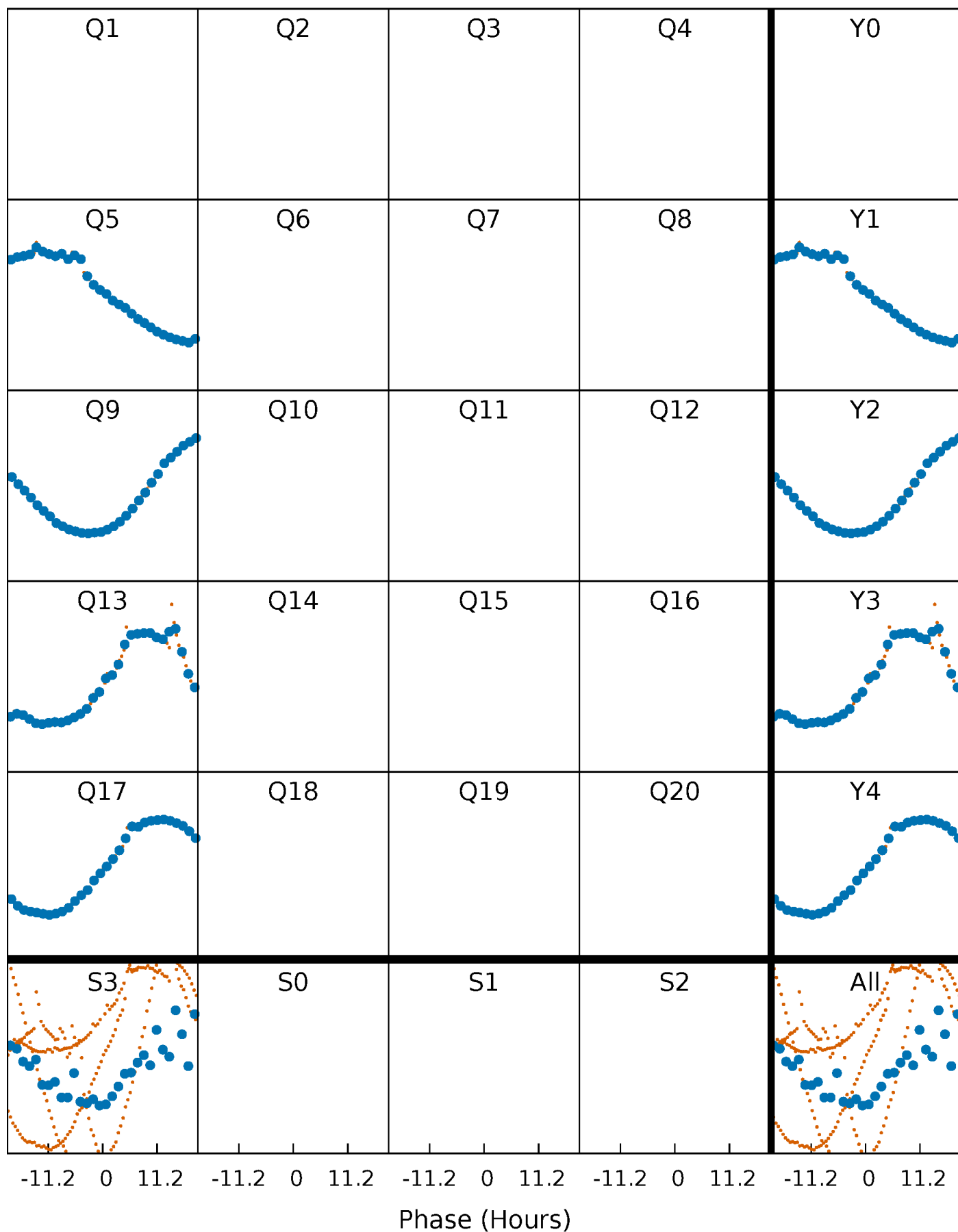


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



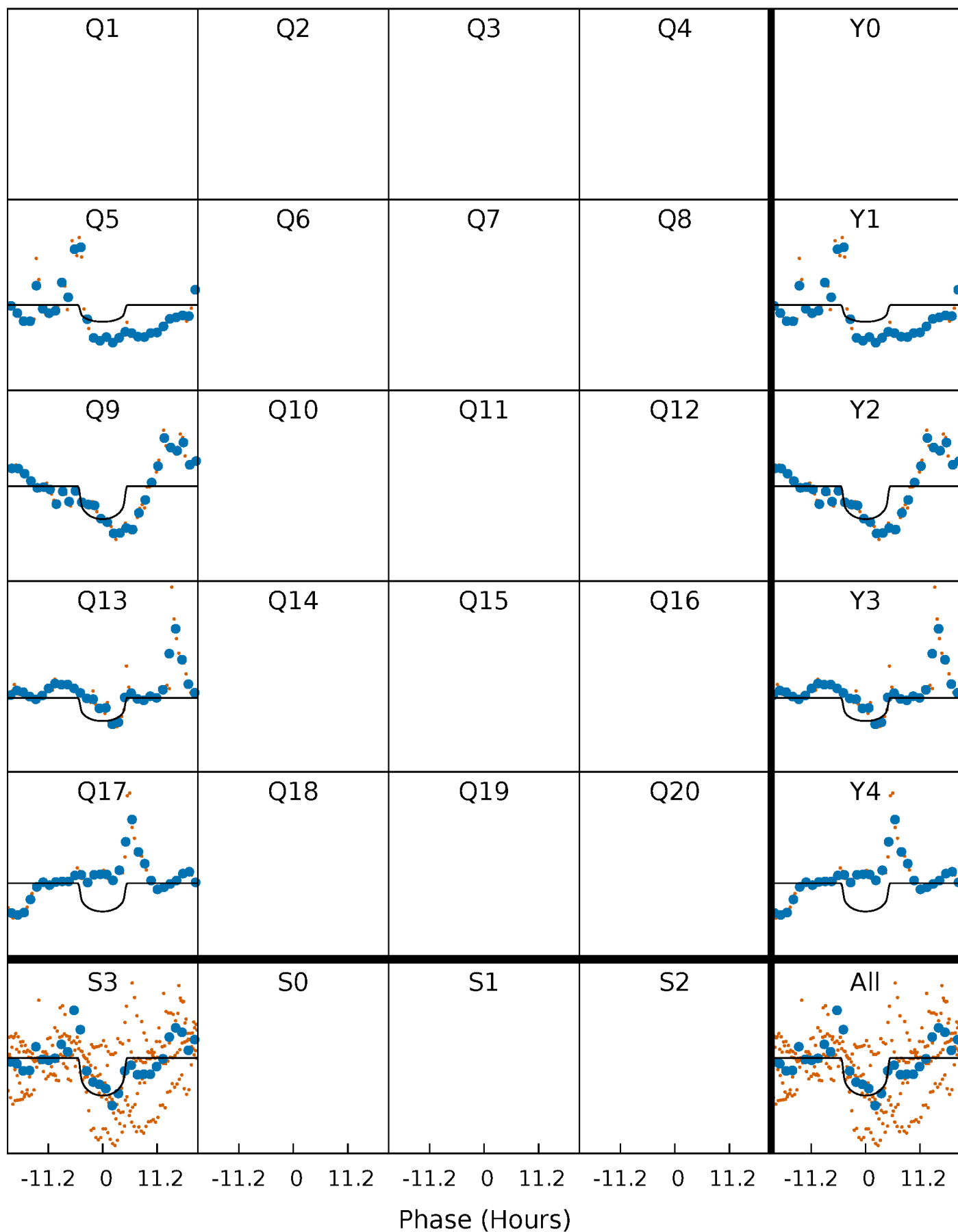
PDC Quarter-Phased Transit Curves

TCE 007732964-03 $P=373.211794$ Days $T_0=455.685145$ (BKJD)



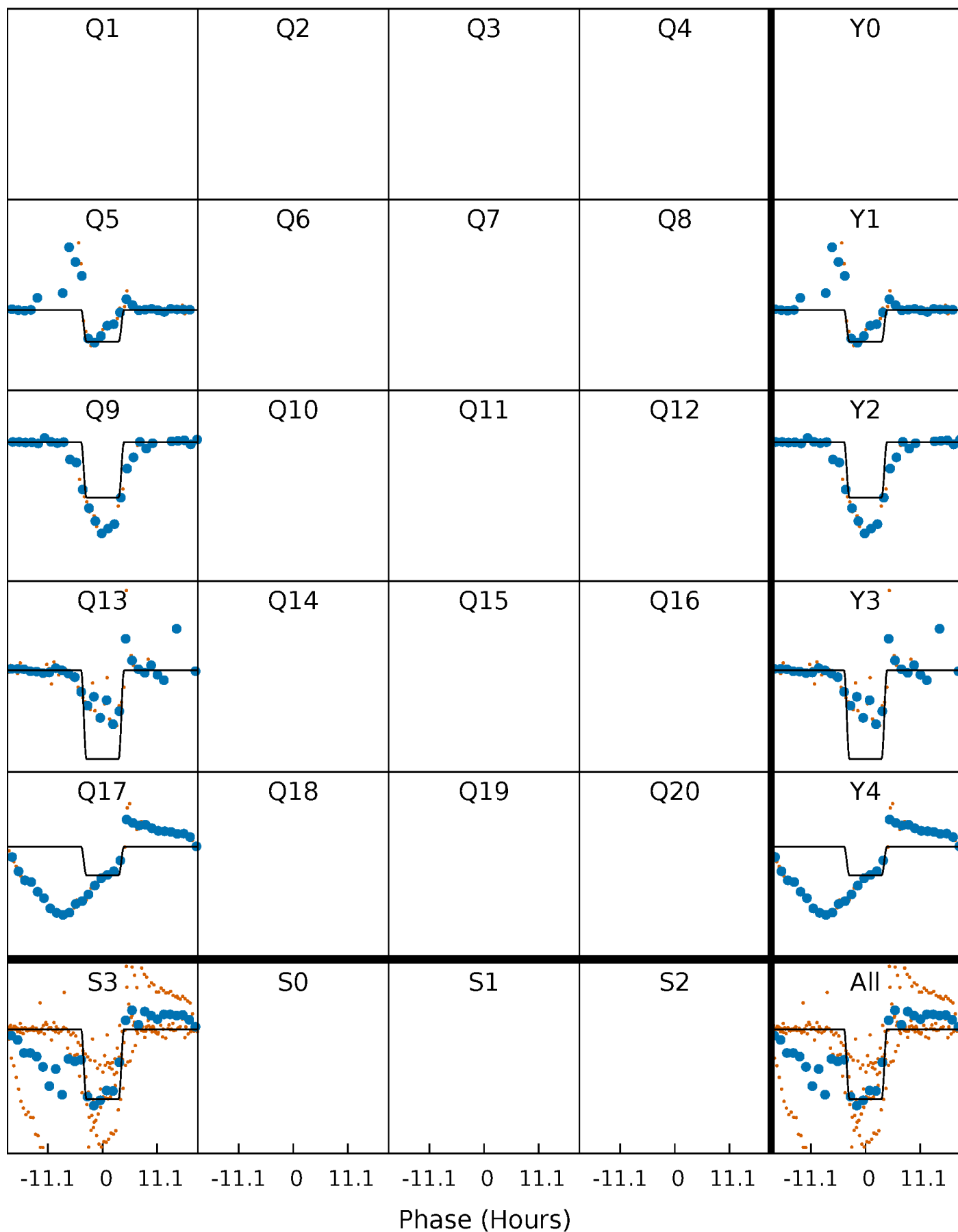
DV Quarter-Phased Transit Curves

TCE 007732964-03 $P=373.211794$ Days $T_0=455.685145$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

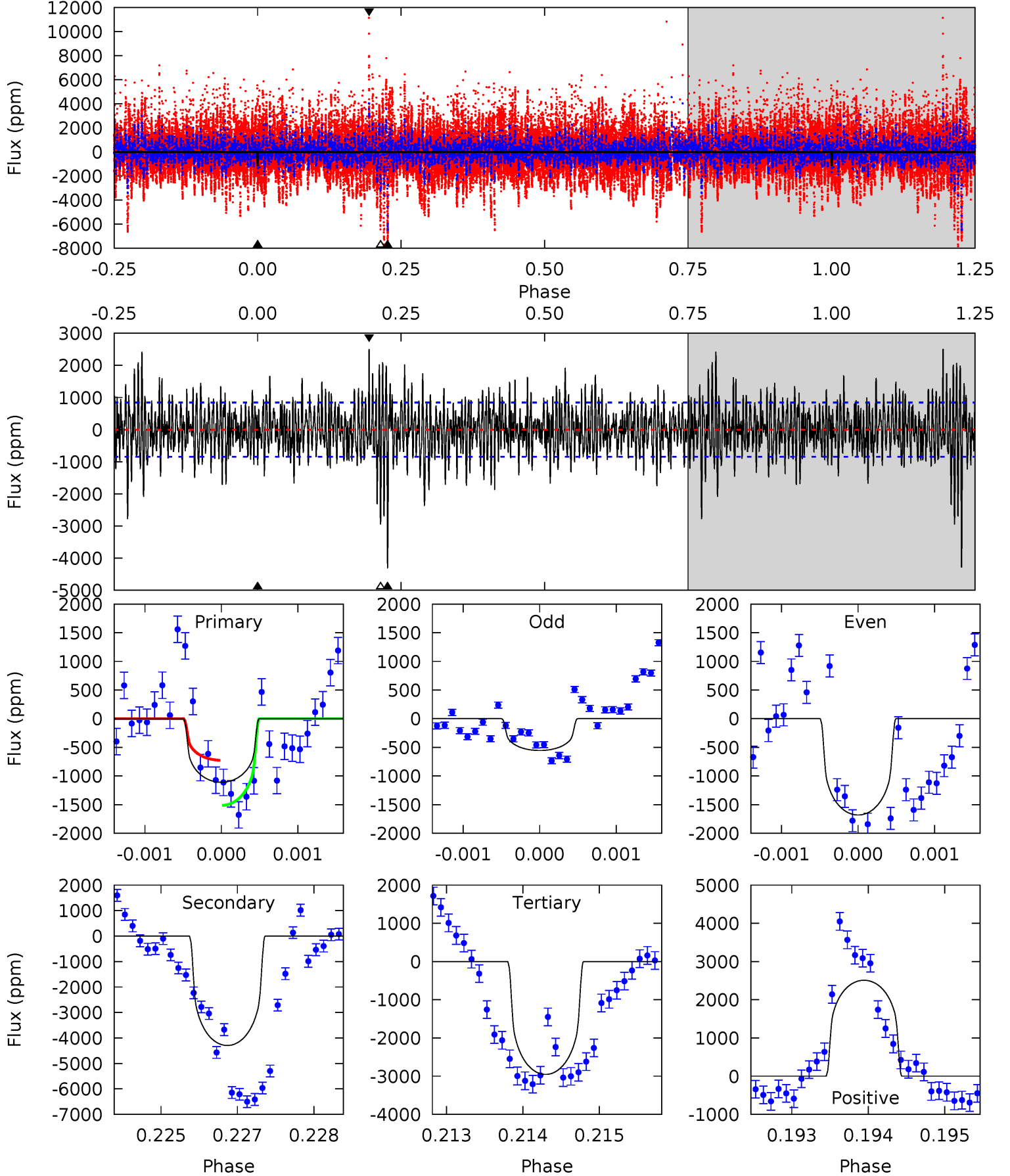
TCE 007732964-03 $P=373.212162$ Days $T_0=455.687476$ (BKJD)



DV Model-Shift Uniqueness Test

007732964-03, P = 373.211794 Days, E = 82.473351 Days

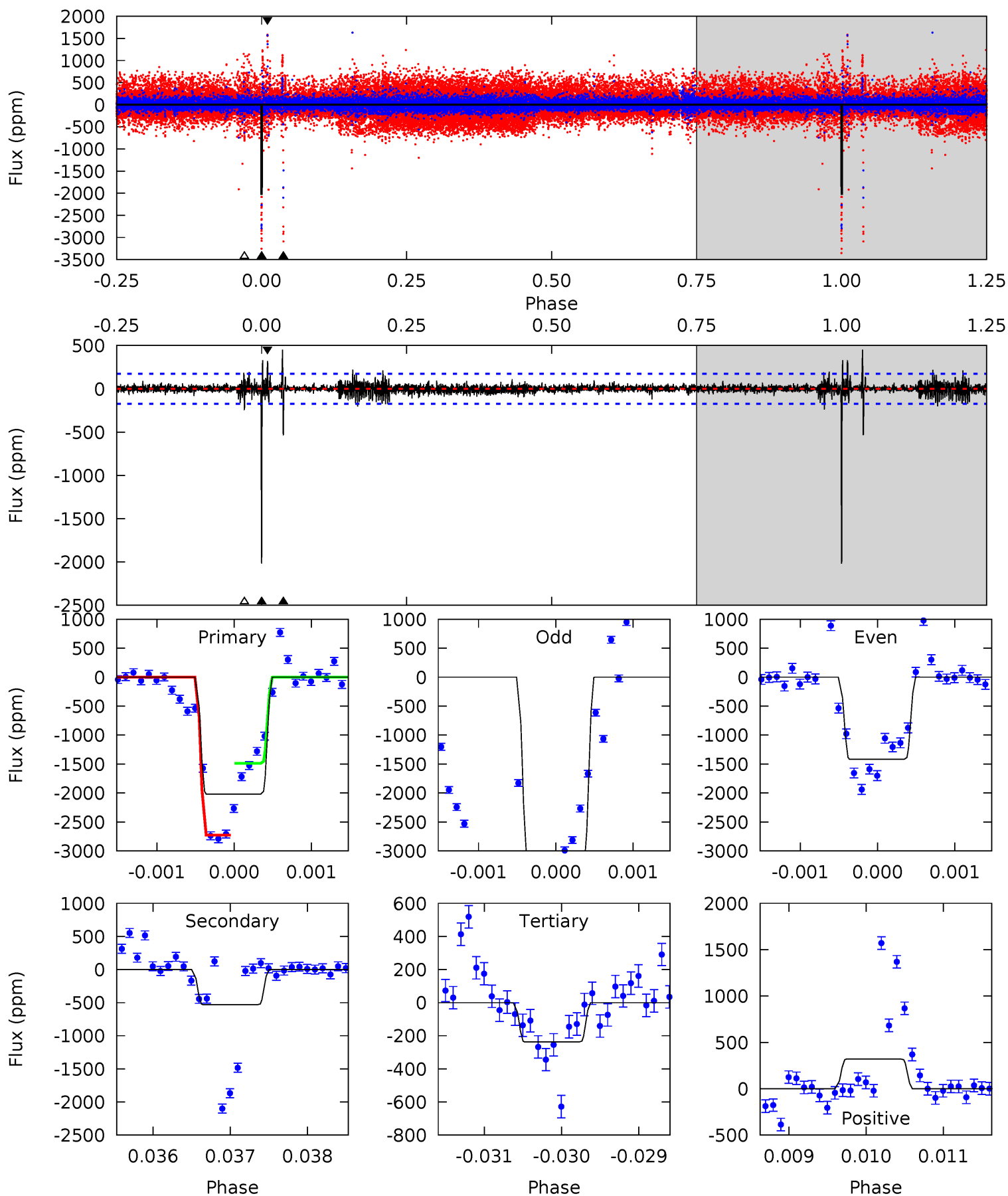
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.13	27.6	19.0	16.1	5.43	3.25	4.35	-11.9	-9.00	8.62	11.5	3.28	0.97	0.37	2.54



Alt Model-Shift Uniqueness Test

007732964-03, P = 373.212162 Days, E = 82.475314 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.6	16.7	7.48	10.1	5.45	3.29	1.14	56.1	53.5	9.27	6.66	23.5	1.01	0.18	0



Stellar Parameters For KIC 007732964

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4949^{+176}_{-176}	$4.618^{+0.041}_{-0.054}$	$-0.280^{+0.300}_{-0.300}$	$0.690^{+0.078}_{-0.058}$	$0.720^{+0.078}_{-0.064}$	$3.093^{+0.632}_{-0.628}$
	+4%/-4%	+1%/-1%	+107%/-107%	+11%/-8%	+11%/-9%	+20%/-20%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007732964-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4294 ± 156	$2.64^{+0.58}_{-0.69}$	266^{+11}_{-11}	6699^{+1317}_{-715}	$281886^{+240860}_{-95460}$
Alt.	-531 ± 32	$3.66^{+0.66}_{-0.65}$	266^{+12}_{-10}	3750^{+305}_{-211}	18087^{+8934}_{-4976}

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

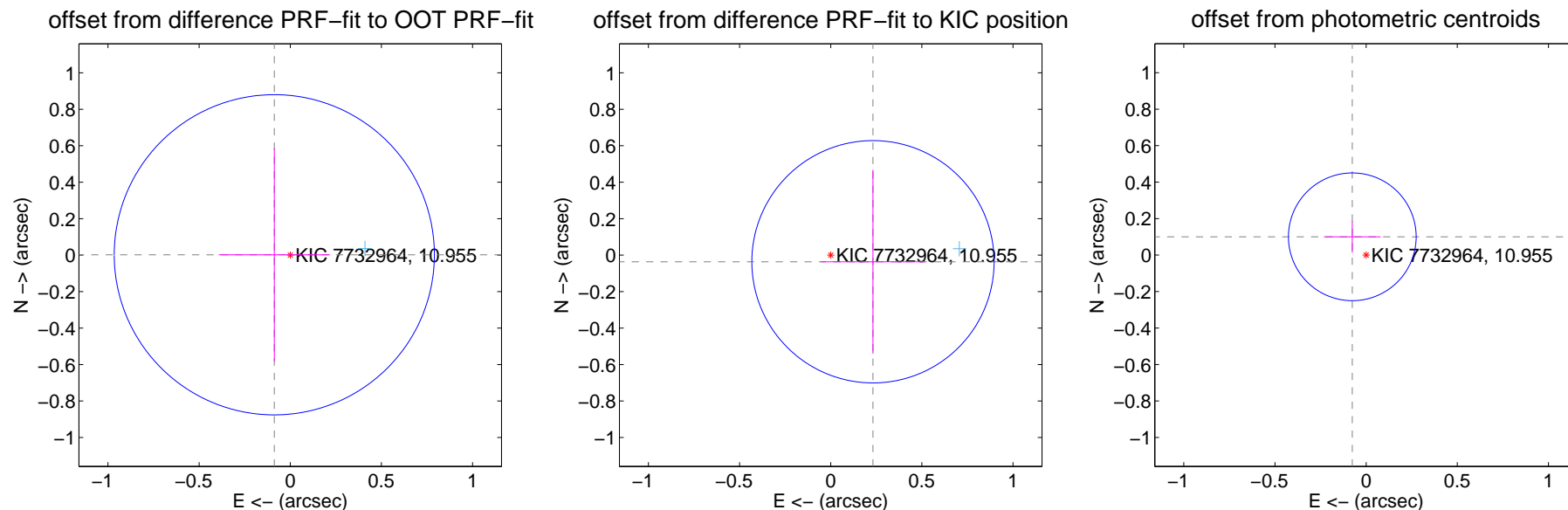
DV Centroid Data

Supplemental centroid analysis for 007732964-03. **Kepler magnitude: 10.96.** Transit SNR 6.73

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.088 ± 0.293	0.30	0.088 ± 0.305	0.002 ± 0.585
PRF-fit source offset from KIC position	0.235 ± 0.221	1.06	-0.232 ± 0.285	-0.036 ± 0.504
photometric centroid source offset	0.13 ± 0.12	1.08	0.08 ± 0.16	0.10 ± 0.09

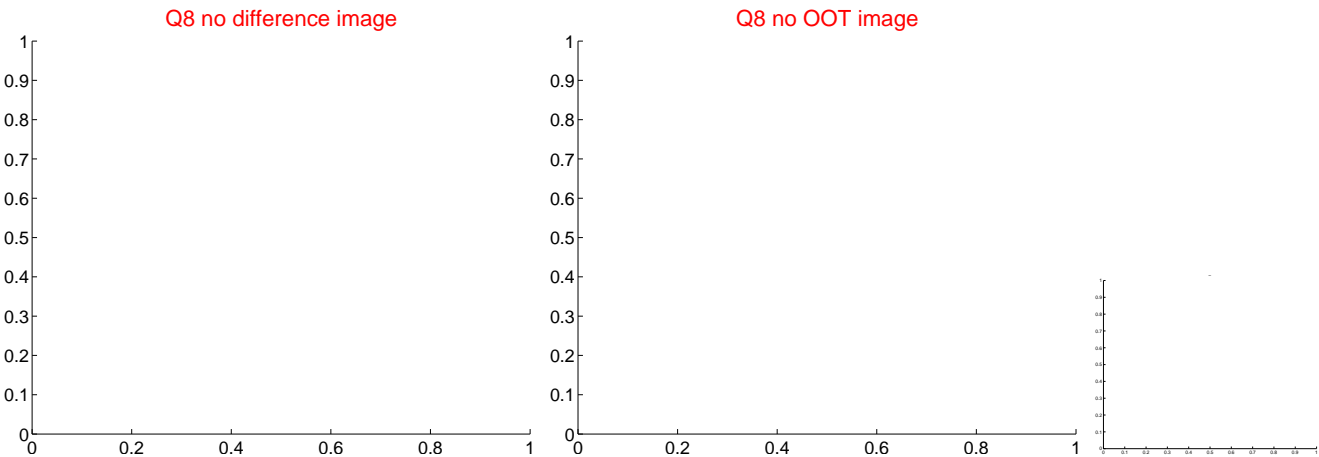
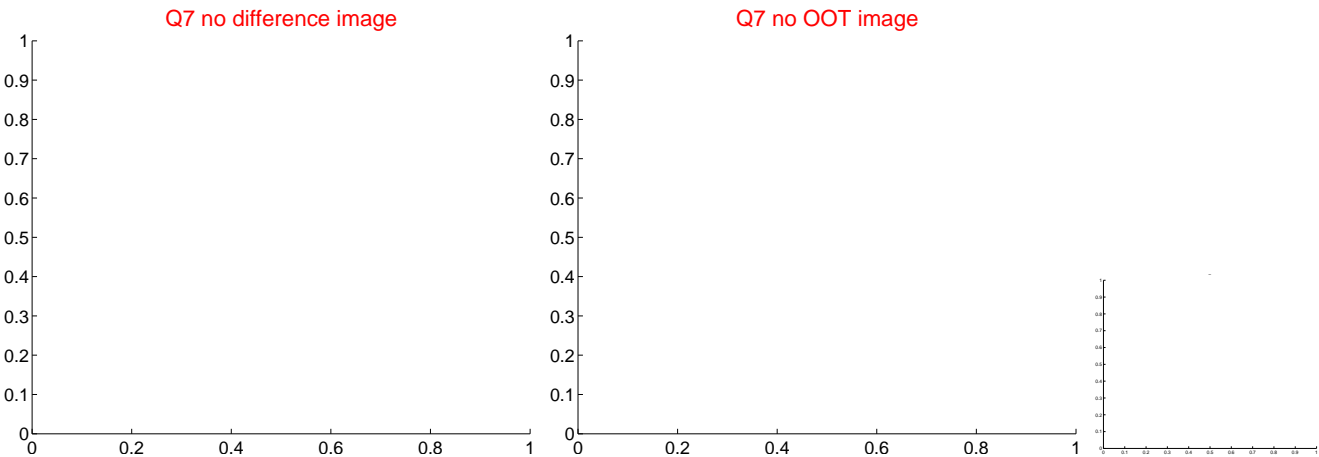
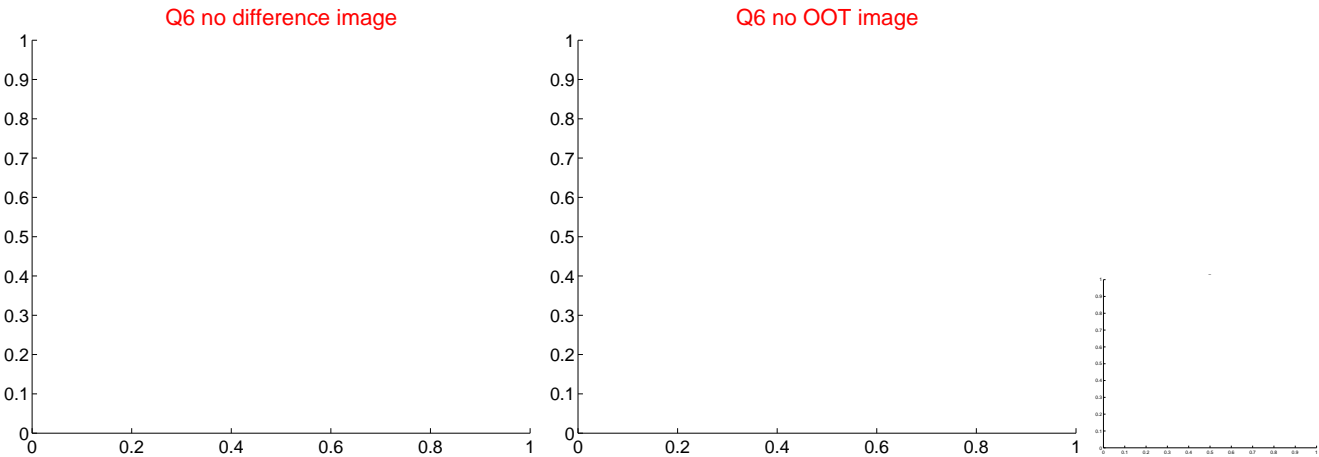
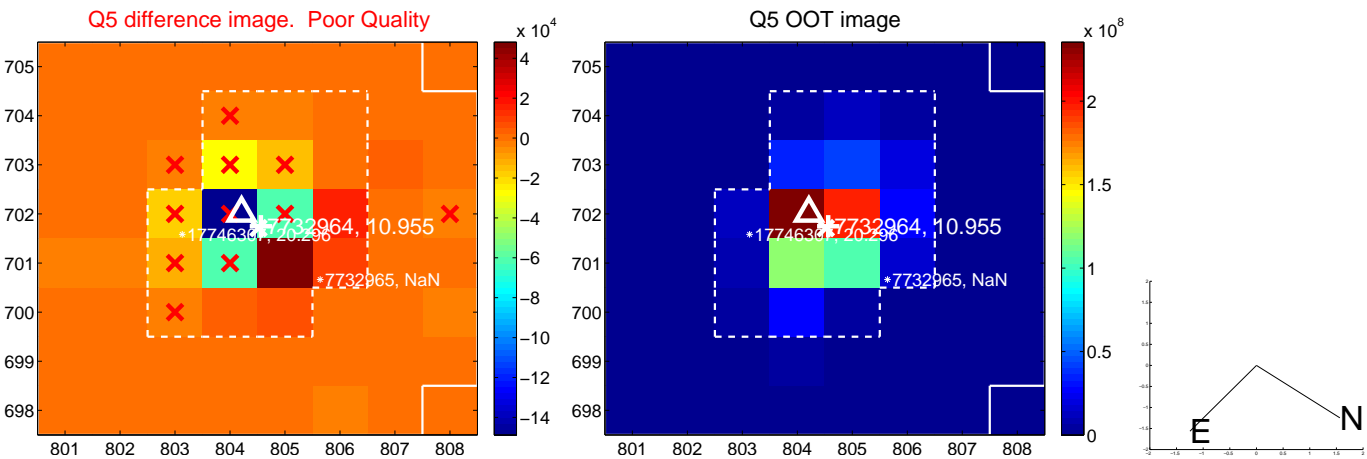


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

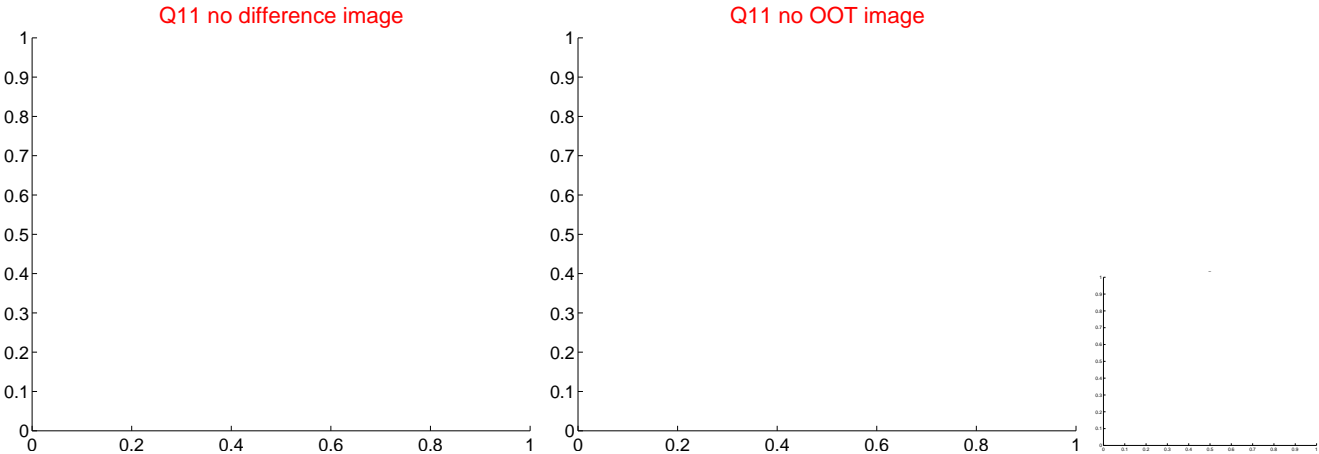
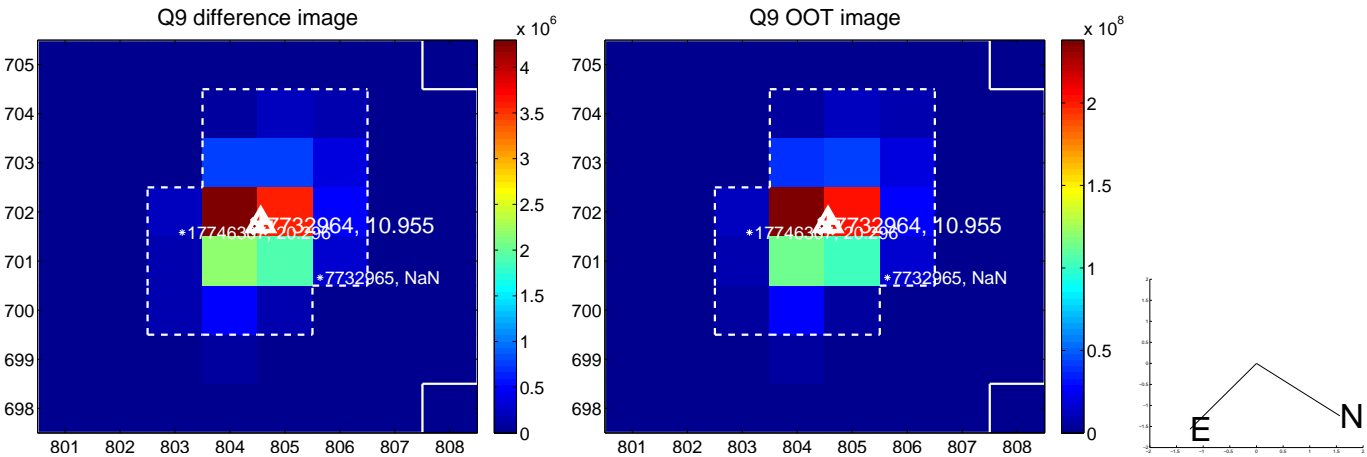
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



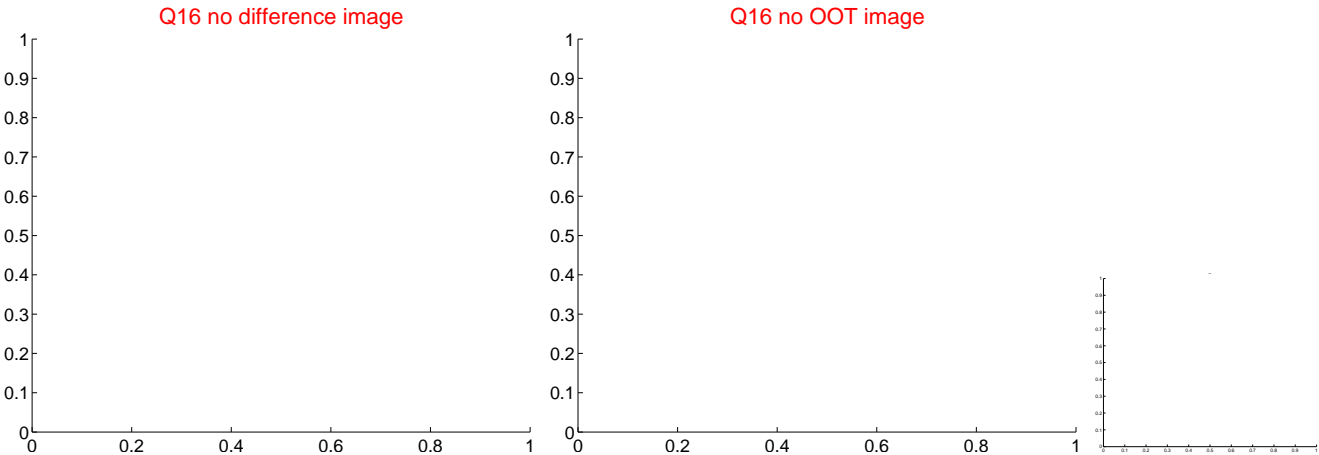
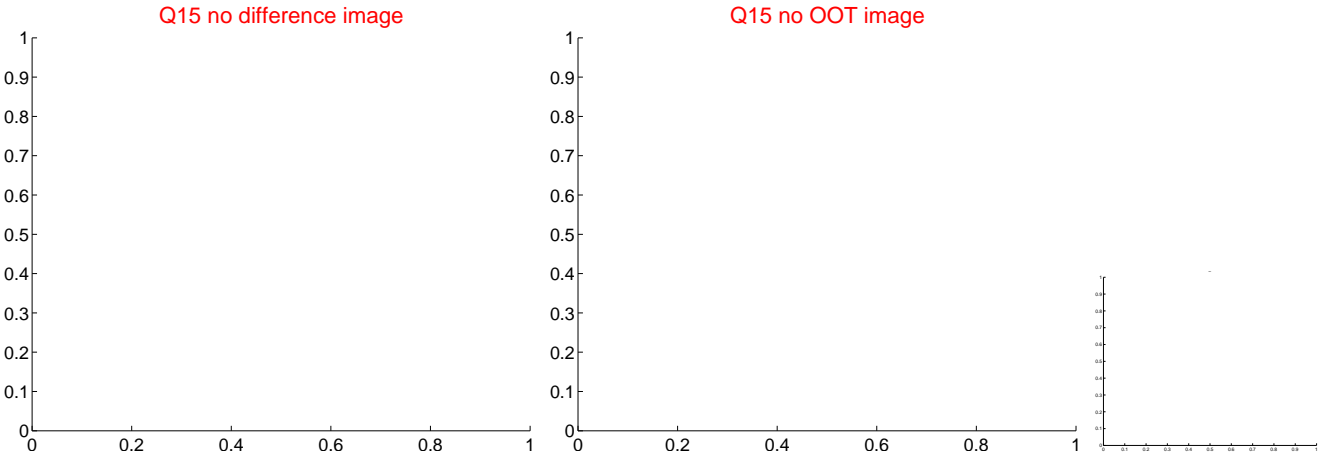
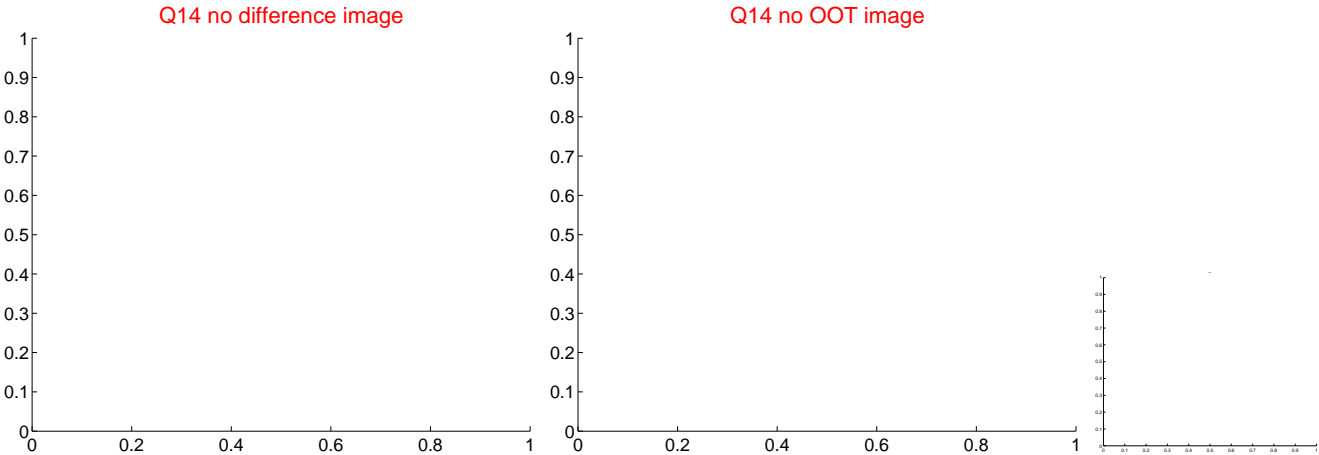
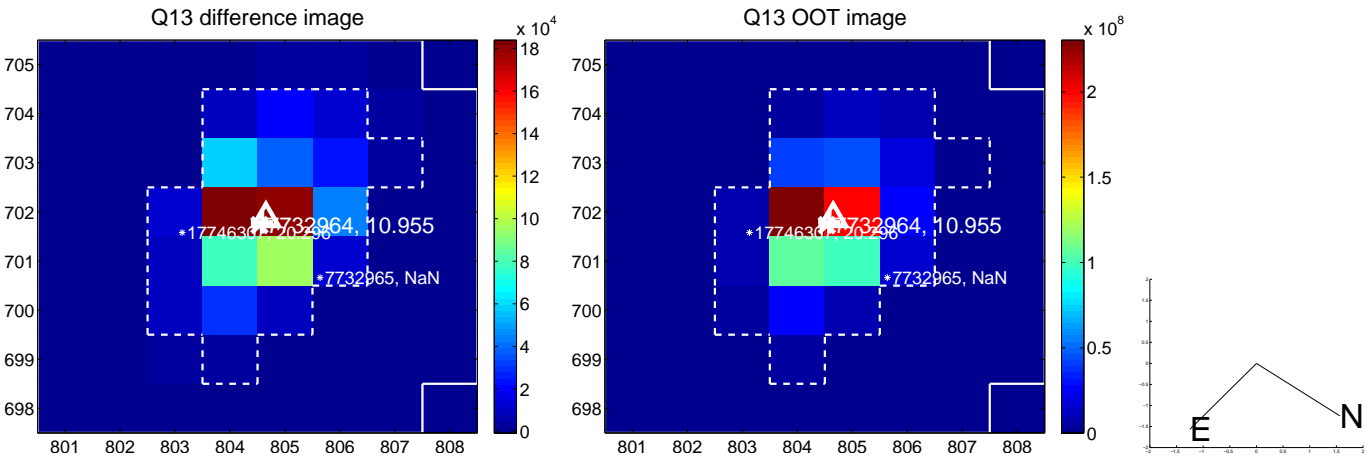
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



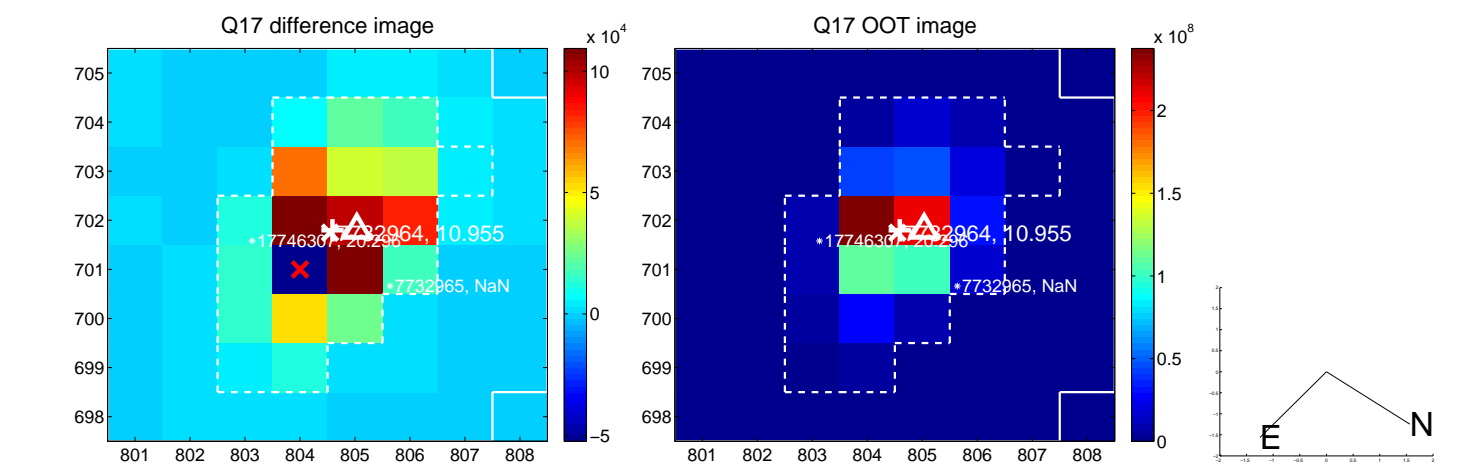
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



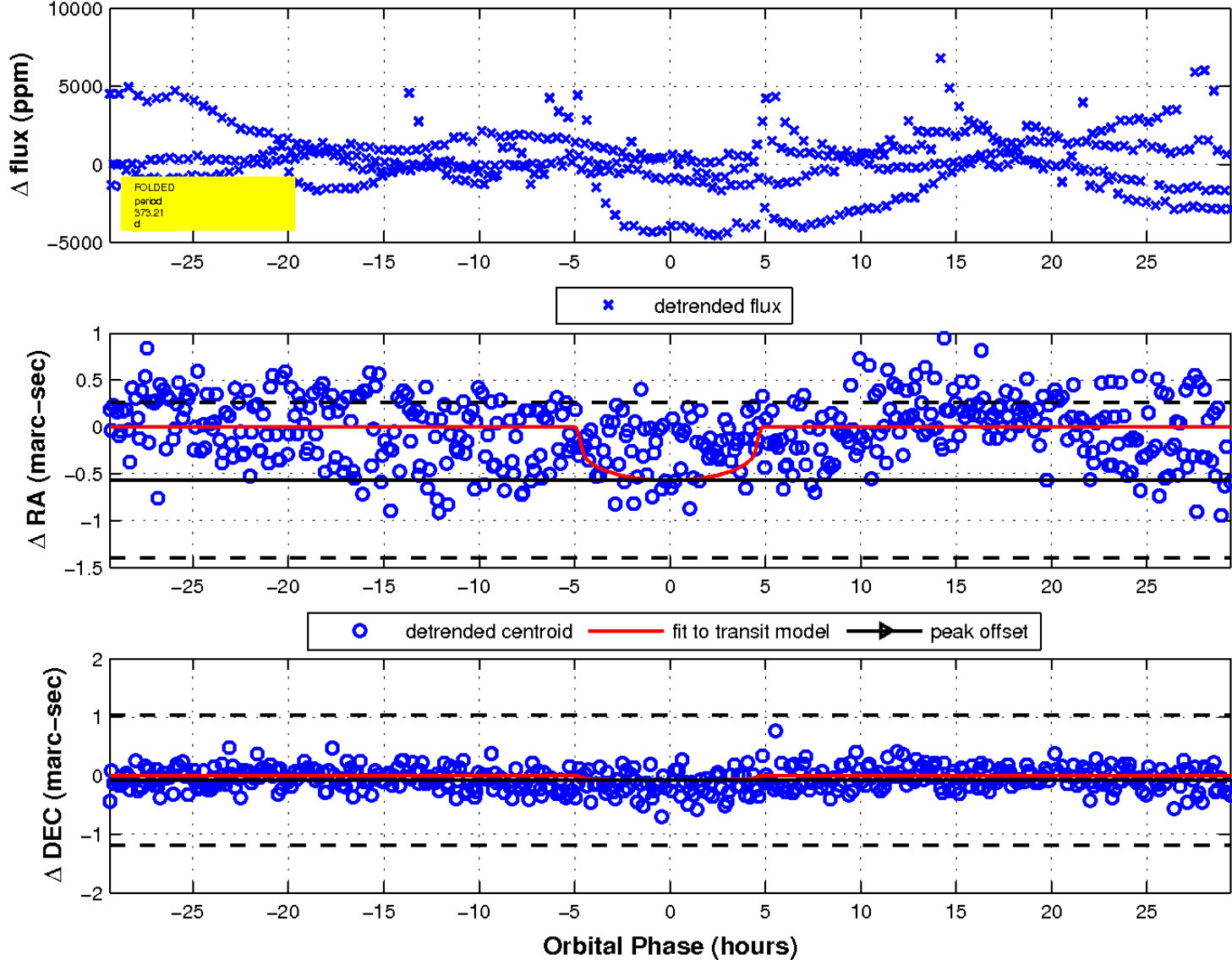
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

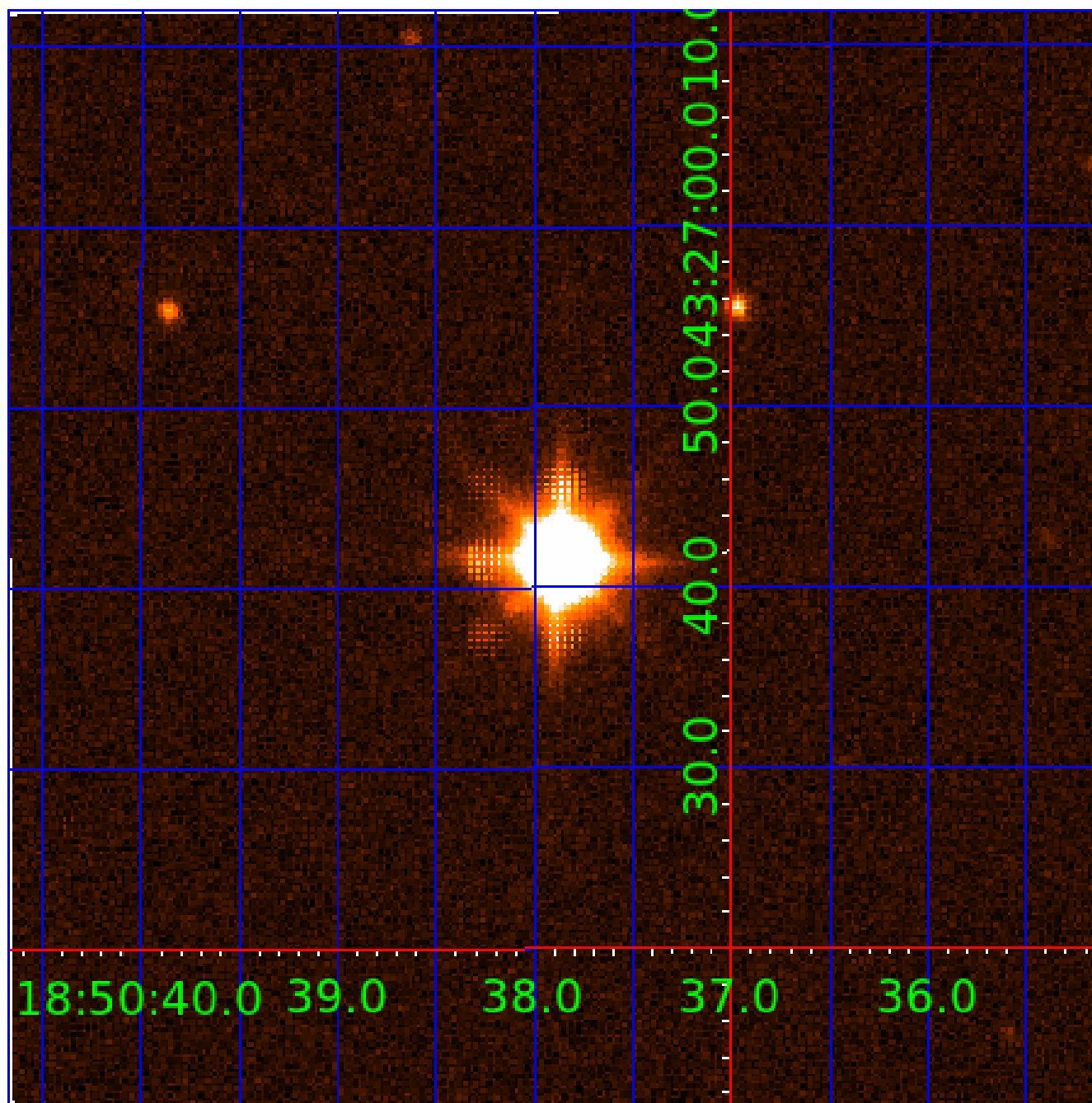


fluxWeightedCentroids, Planet 3 of 8



UKIRT Image

Declination



KIC 007732964

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})
007732964-01	OBS	No	618.974049	331.733861	1453.0	5.158	24.3	7.3	0.69	4949	2.75	0.16
007732964-02	OBS	No	645.903968	206.952256	2478.7	12.460	15.6	9.4	0.69	4949	3.39	0.15
007732964-03	OBS	No	373.211794	455.685145	1368.1	9.805	18.8	6.7	0.69	4949	2.60	0.31
007732964-04	OBS	No	303.552228	299.231778	1039.4	6.143	16.2	5.1	0.69	4949	2.34	0.41
007732964-05	OBS	No	173.600024	212.195581	916.2	2.721	14.4	6.3	0.69	4949	2.05	0.86
007732964-06	OBS	No	328.182877	284.496606	57.9	3.184	13.9	0.3	0.69	4949	0.51	0.37
007732964-07	OBS	No	568.352660	211.808073	130.6	10.500	16.3	-1.0	0.69	4949	0.77	0.18
007732964-08	OBS	No	430.650899	449.355020	236.1	4.500	16.7	-1.0	0.69	4949	1.03	0.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007732964-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
007732964-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007732964-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
007732964-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

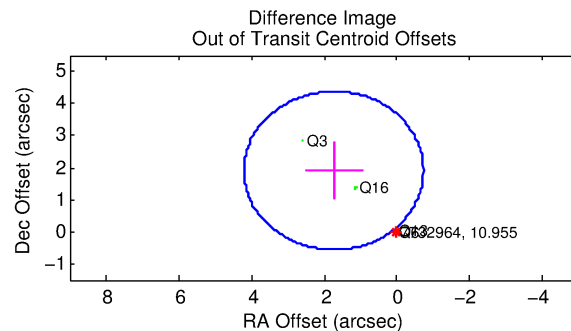
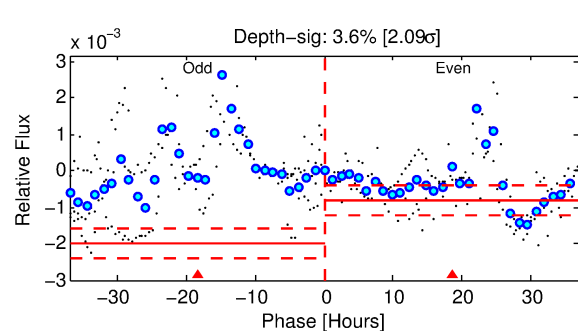
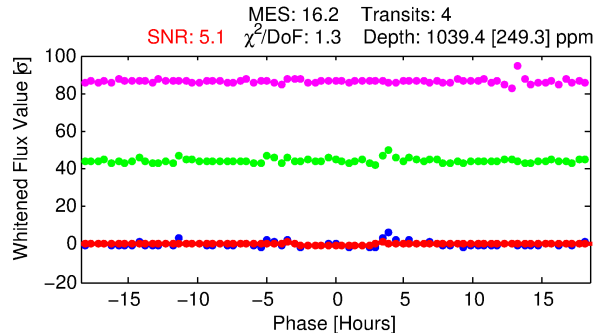
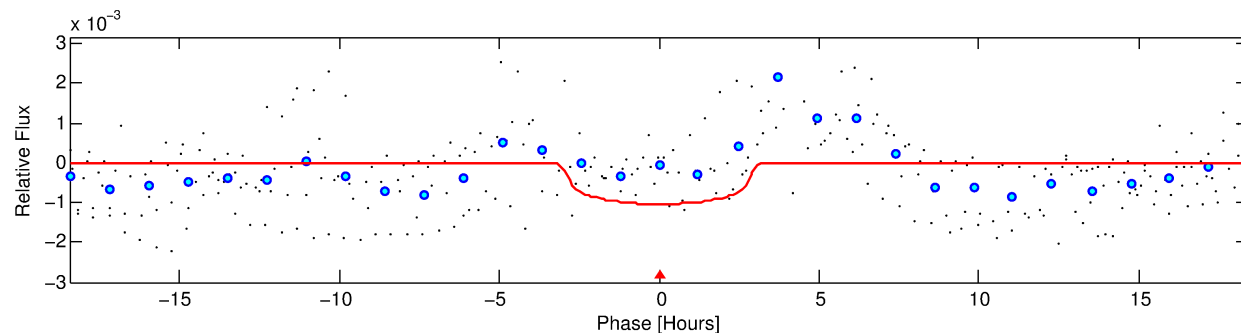
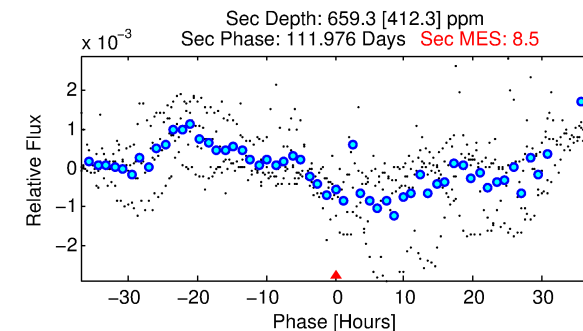
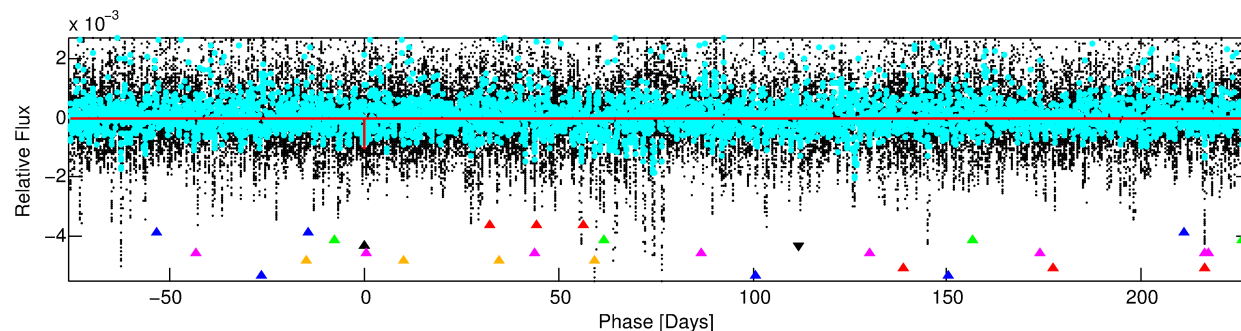
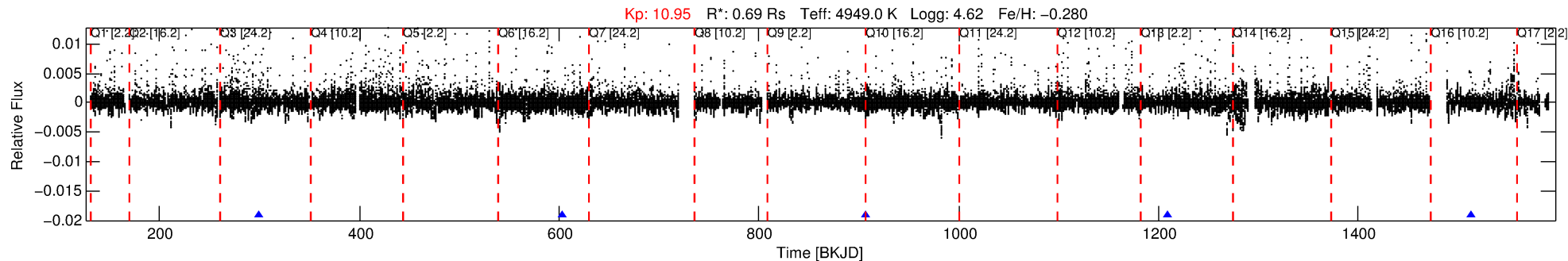
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007732964-04

No Significant Match Found

DV One-Page Summary

KIC: 7732964 Candidate: 4 of 8 Period: 303.552 d



DV Fit Results:

Period = 303.55223 [0.00246] d
Epoch = 299.2318 [0.0072] BKJD
Rp/R* = 0.0311 [0.0158]
a/R* = 298.79 [491.29]
b = 0.66 [1.42]
Seff = 0.41 [0.07]
Teq = 204 [9] K
Rp = 2.34 [1.22] Re
a = 0.7927 [0.0682] AU
Ag = 41657.62 [50020.82] [0.83σ]
Teff = 4499 [1354] K [3.17σ]

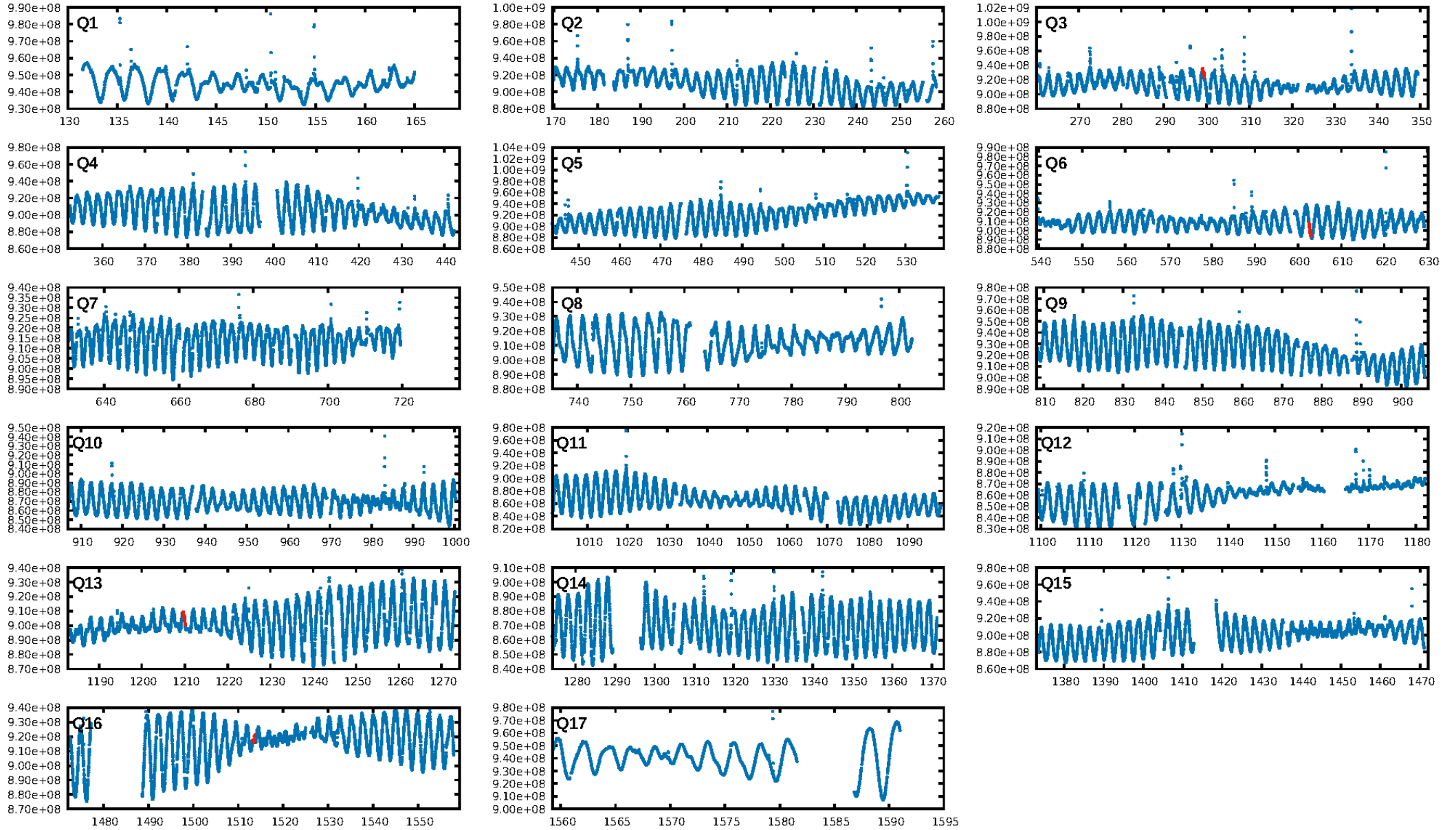
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [464.25σ]
LongPeriod-sig: 100.0% [85.44σ]
ModelChiSquare2-sig: 89.9%
ModelChiSquareGof-sig: 72.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.8325
Centroid-sig: 0.7%
Centroid-so: 0.254 arcsec [1.17σ]
OotOffset-rm: 2.580 arcsec [3.13σ]
KicOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 1.00 [4/4]

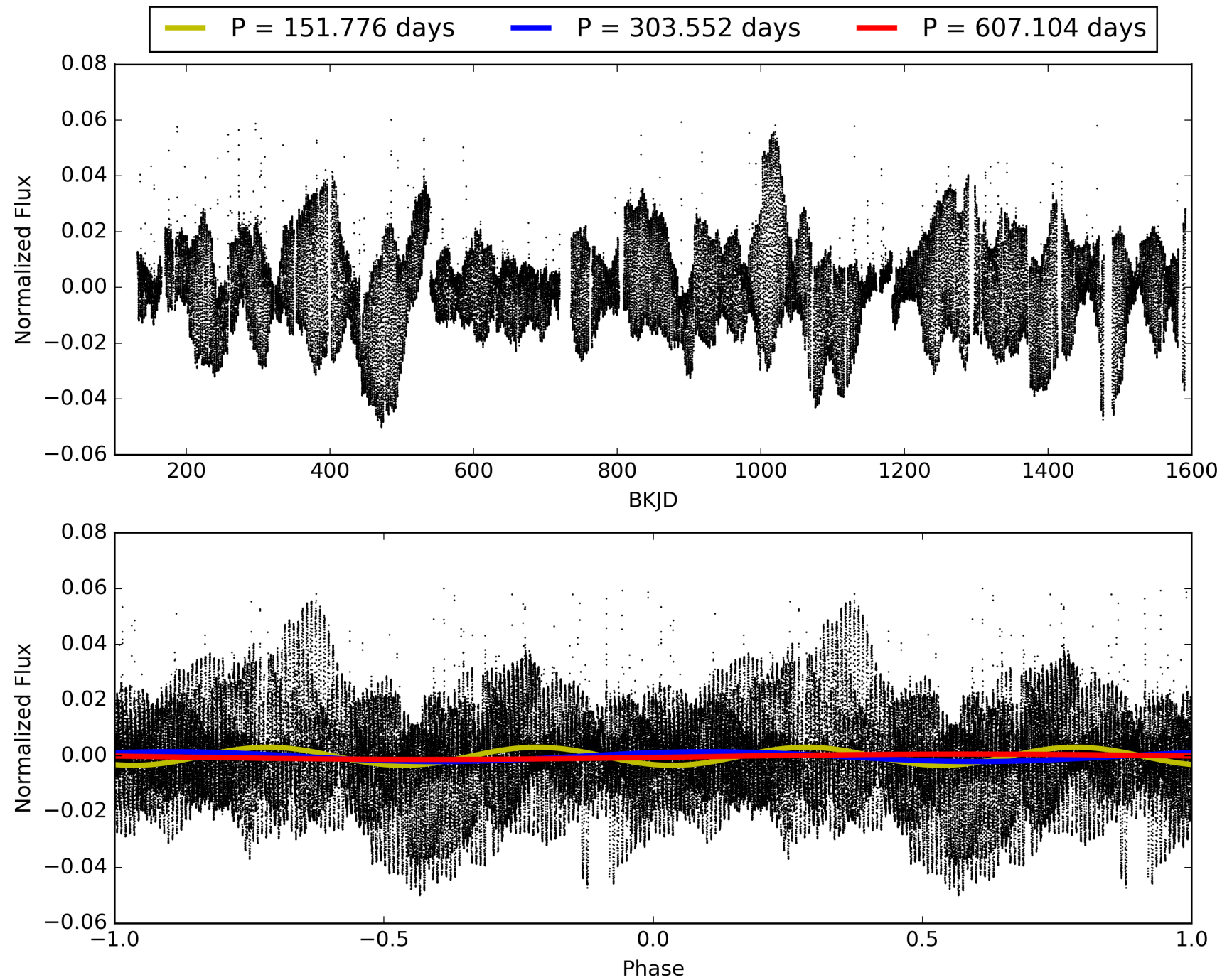
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:41:48 Z

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

TCE 007732964-04, PDC Light Curves

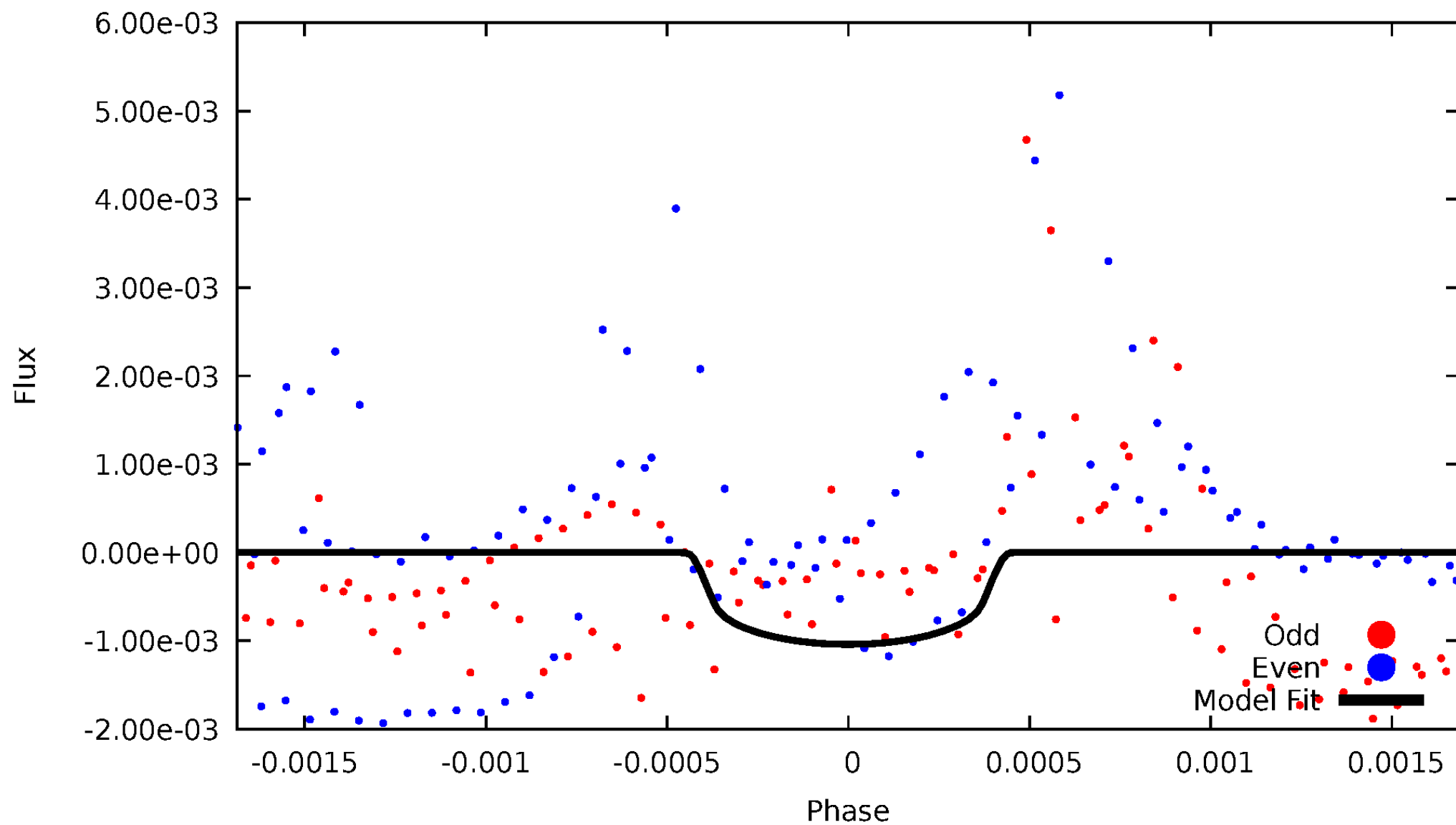


TCE 007732964-04



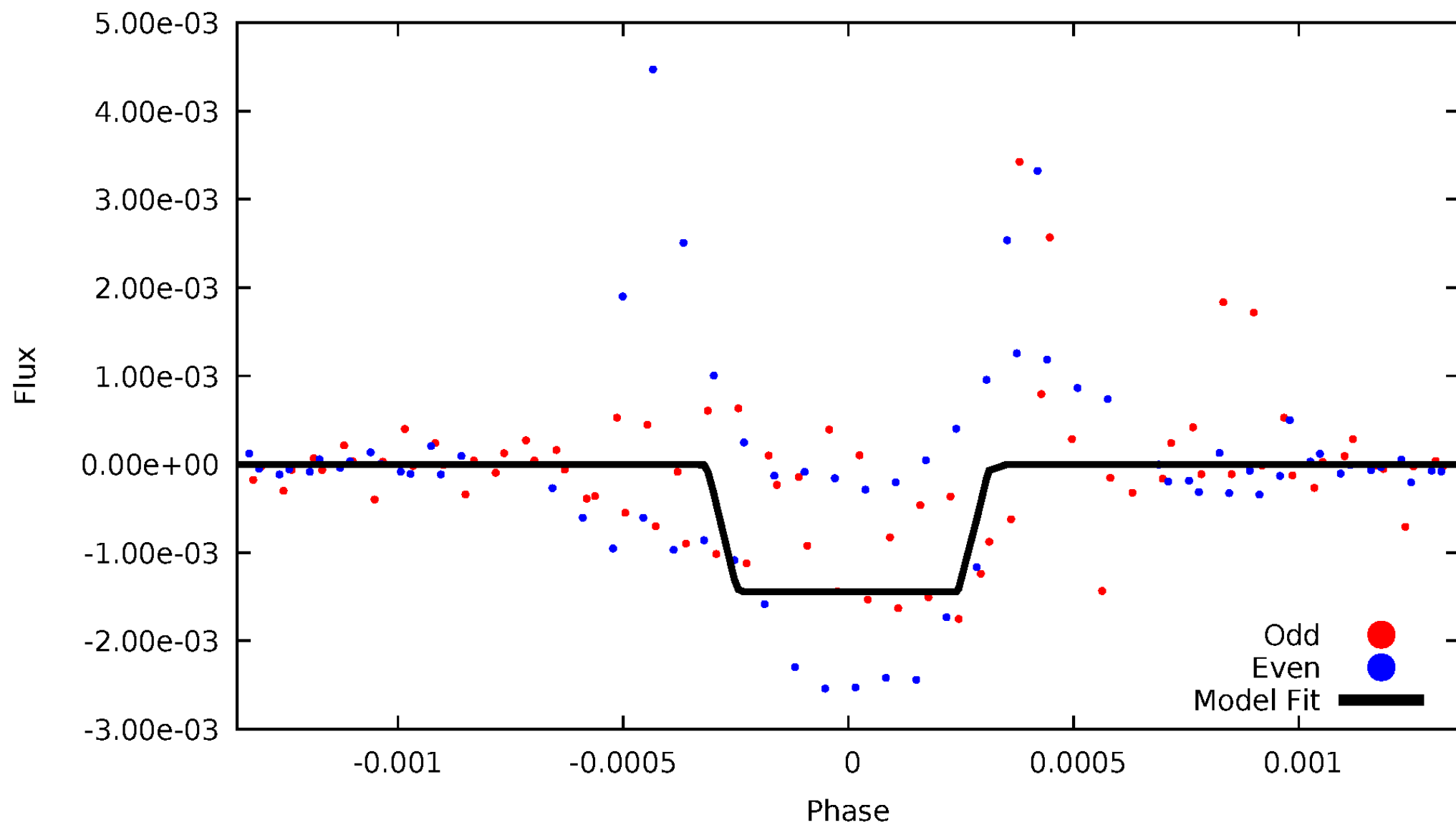
DV Odd/Even

TCE 007732964-04



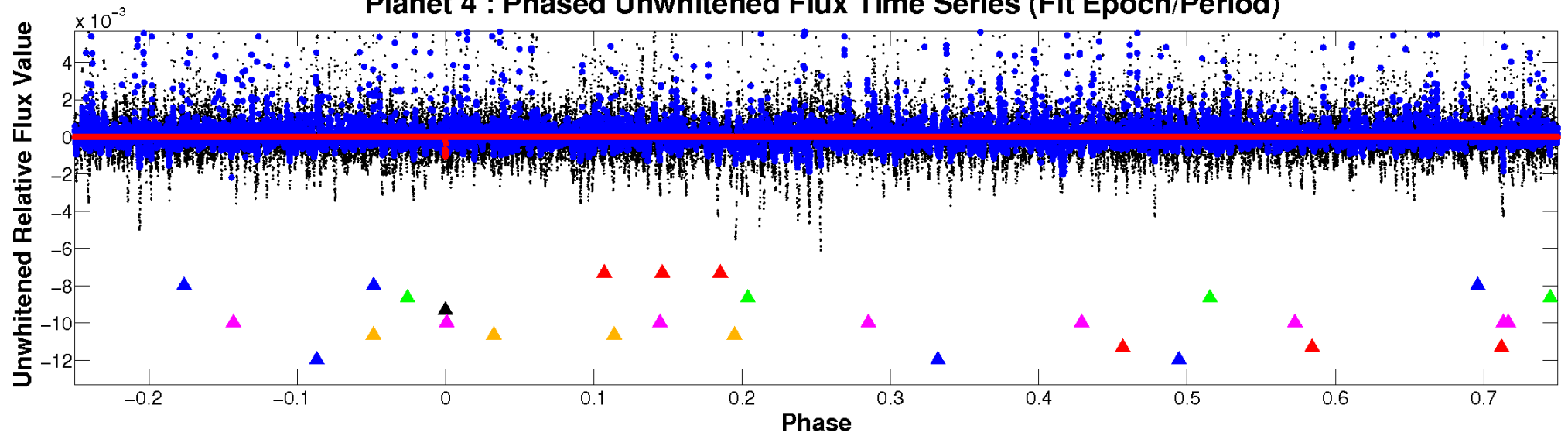
ALT Odd/Even

TCE 007732964-04

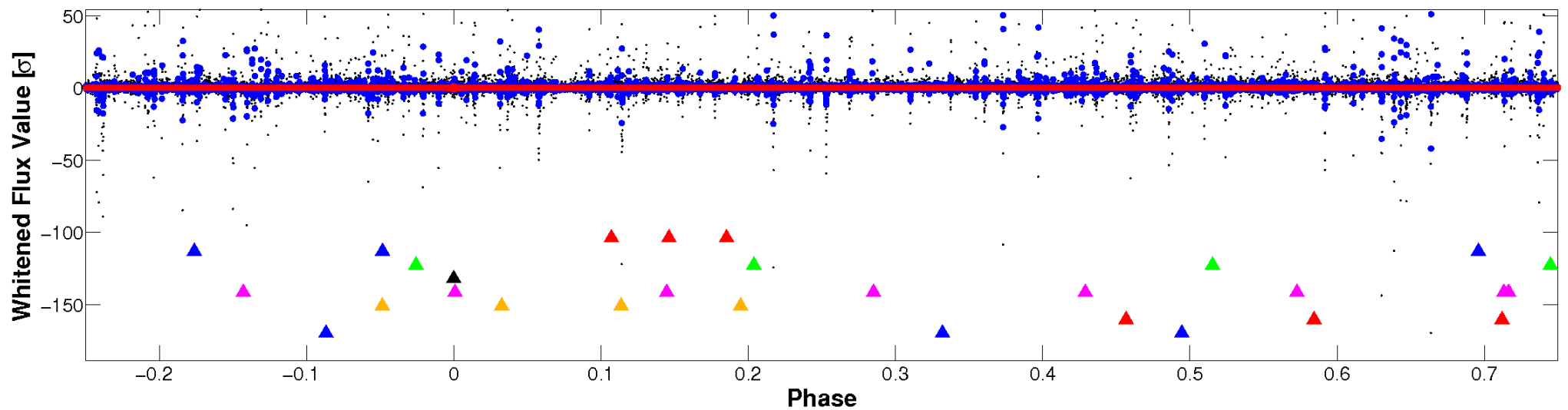


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

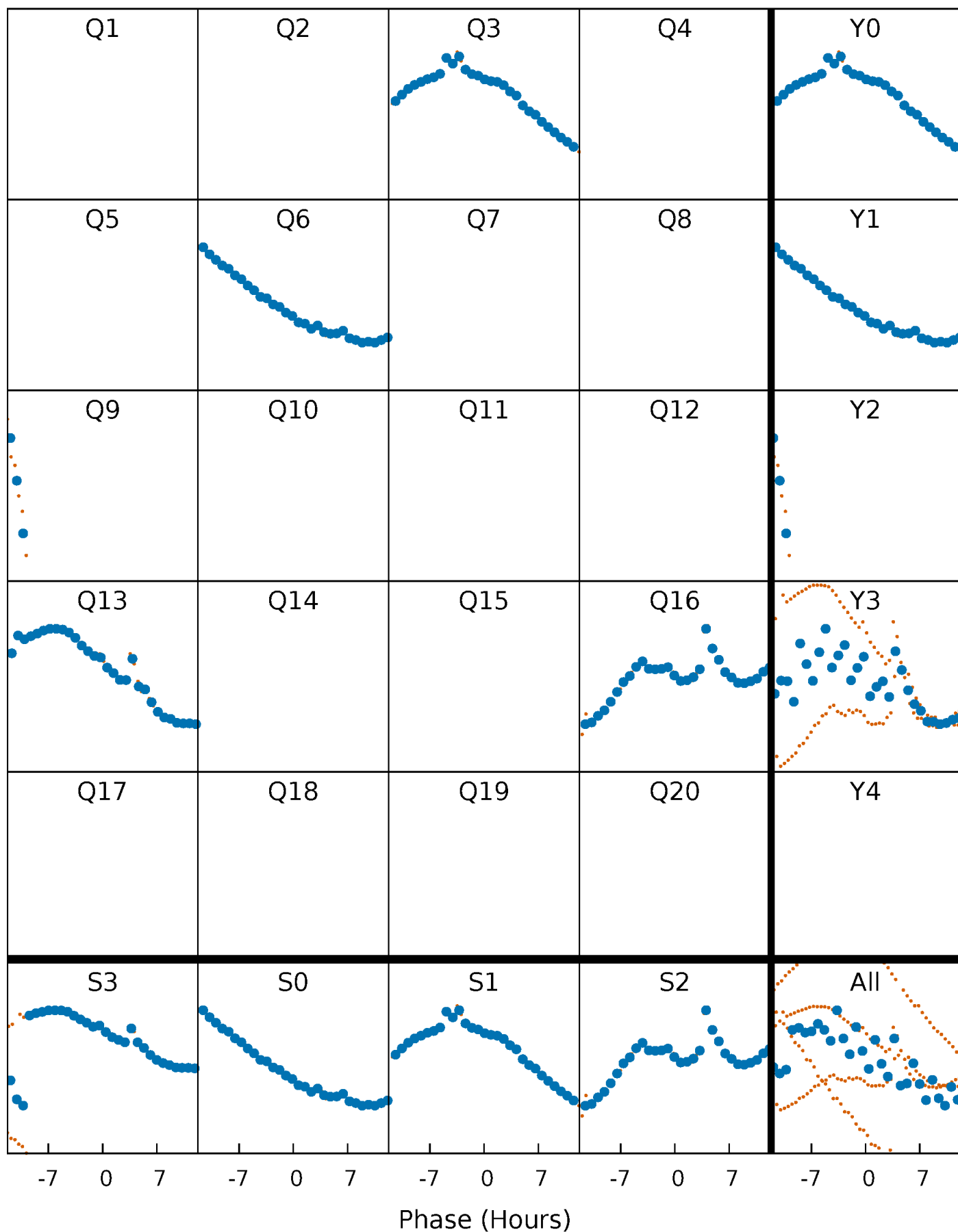


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



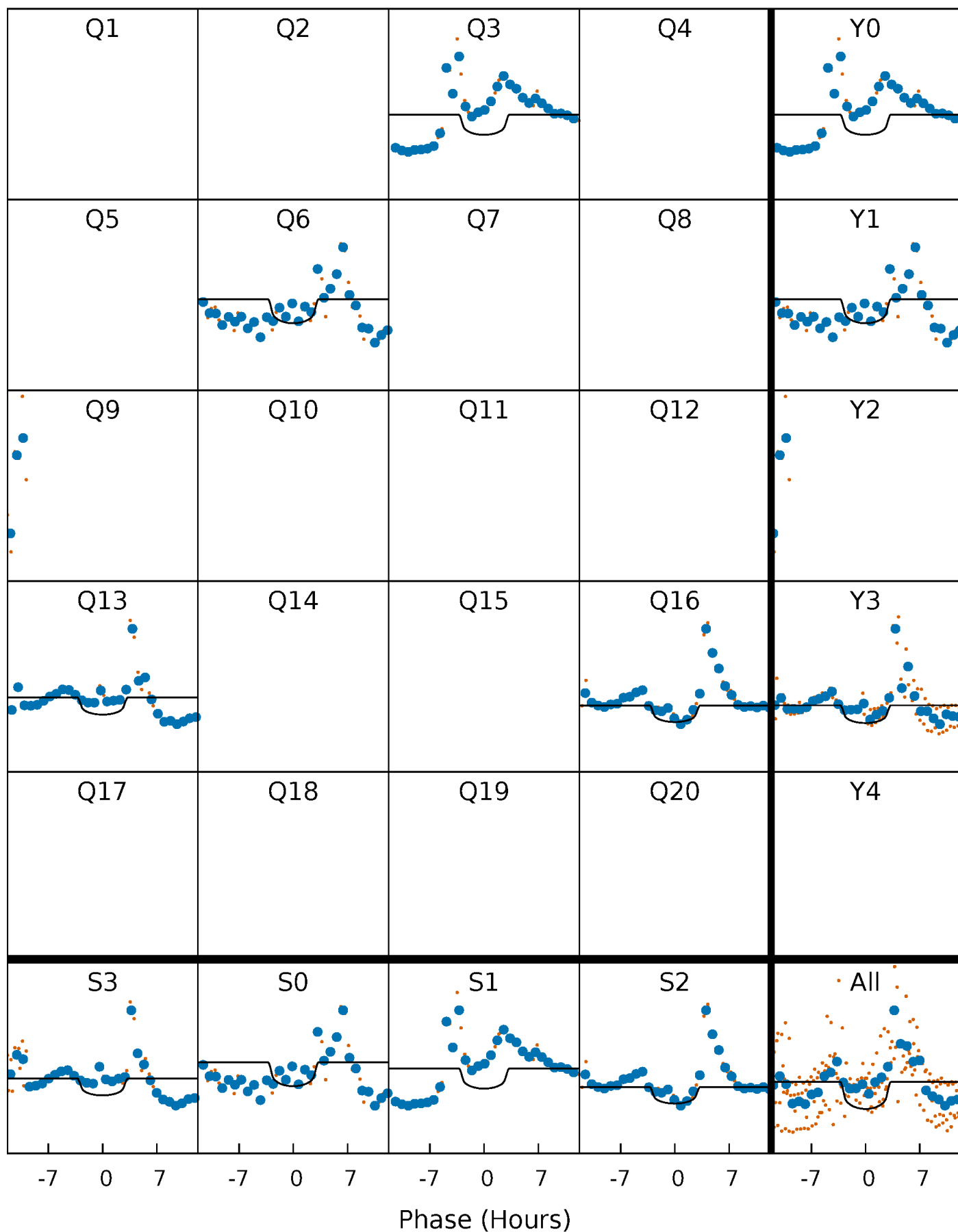
PDC Quarter-Phased Transit Curves

TCE 007732964-04 P=303.552228 Days $T_0=299.231778$ (BKJD)



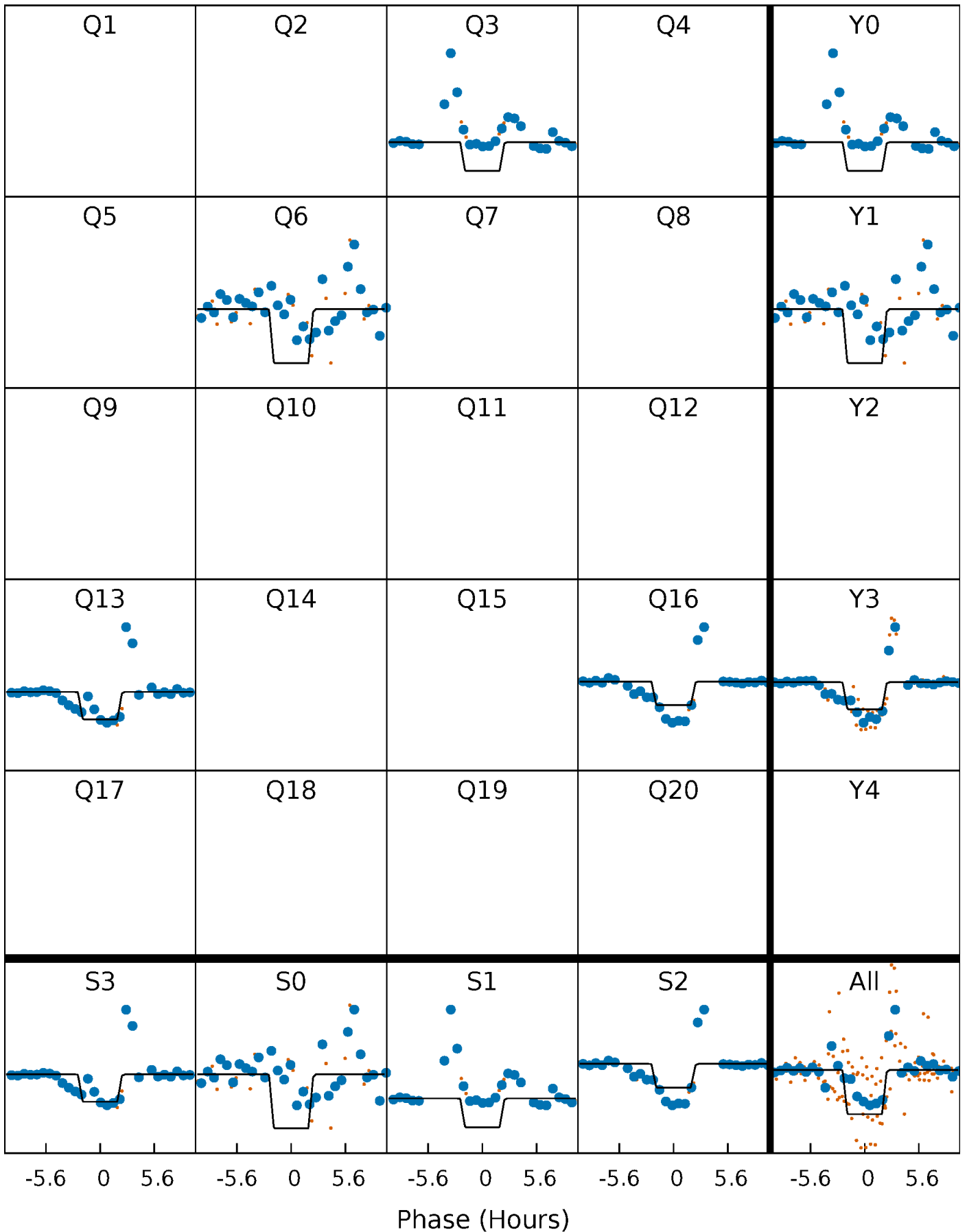
DV Quarter-Phased Transit Curves

TCE 007732964-04 $P=303.552228$ Days $T_0=299.231778$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

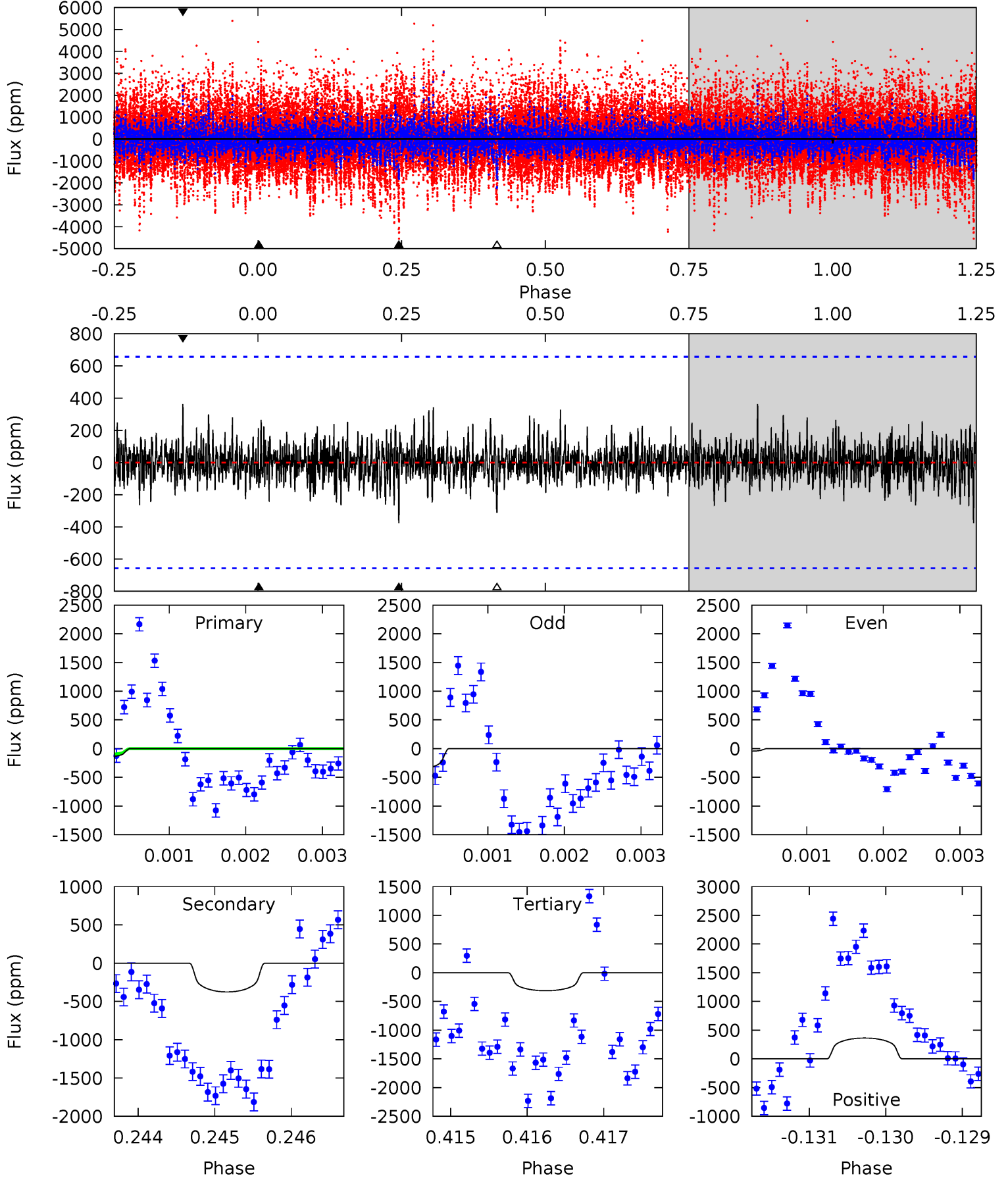
TCE 007732964-04 $P=303.567778$ Days $T_0=299.219028$ (BKJD)



DV Model-Shift Uniqueness Test

007732964-04, P = 303.552228 Days, E = 299.231778 Days

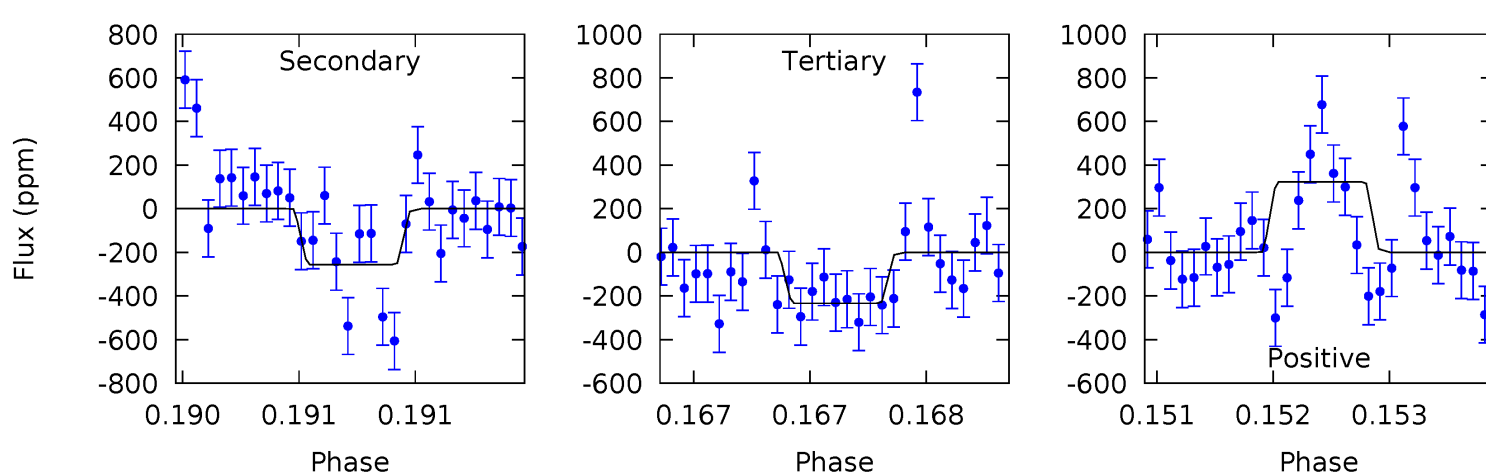
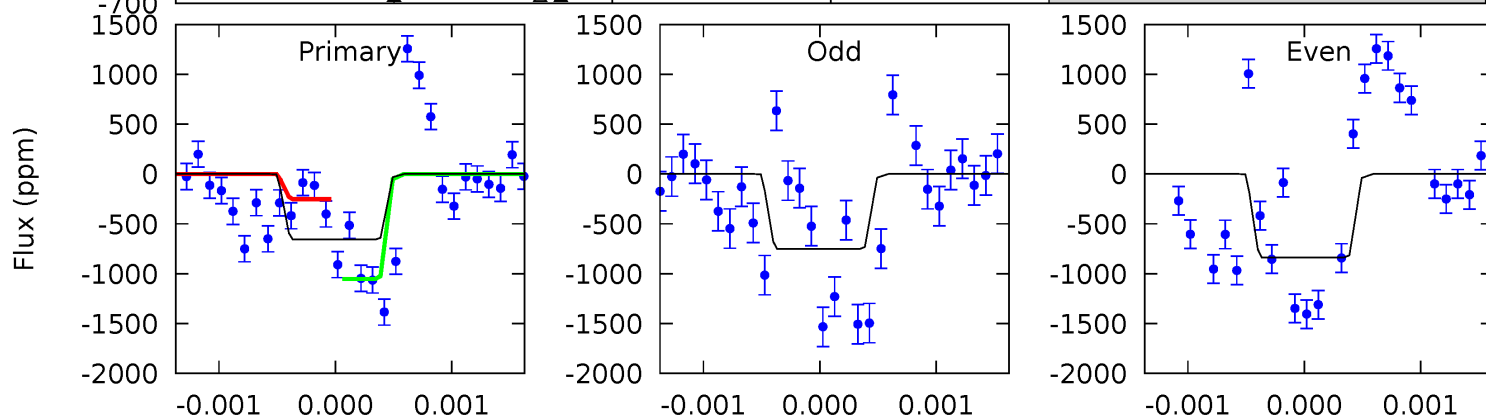
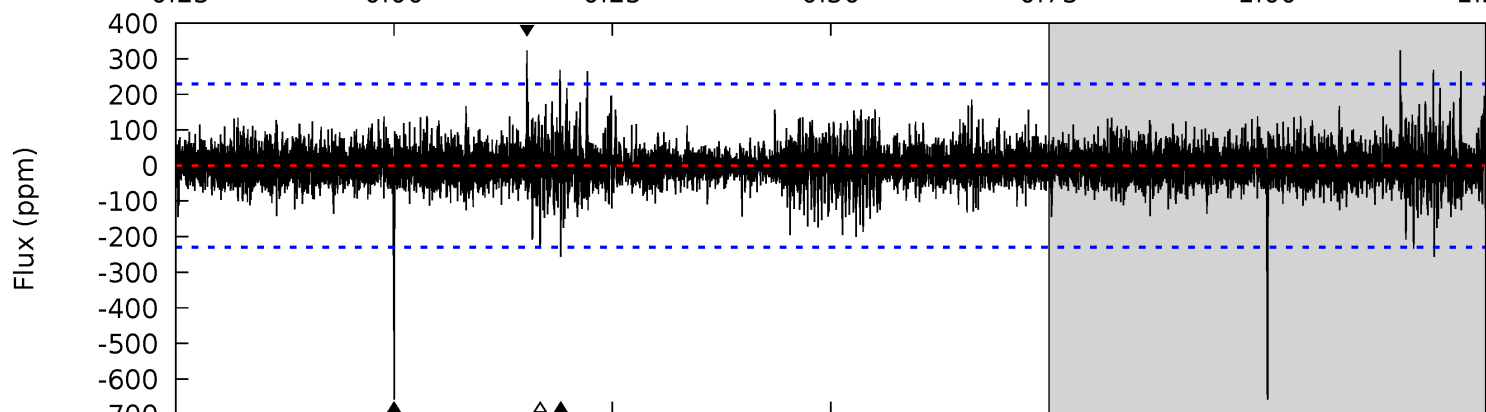
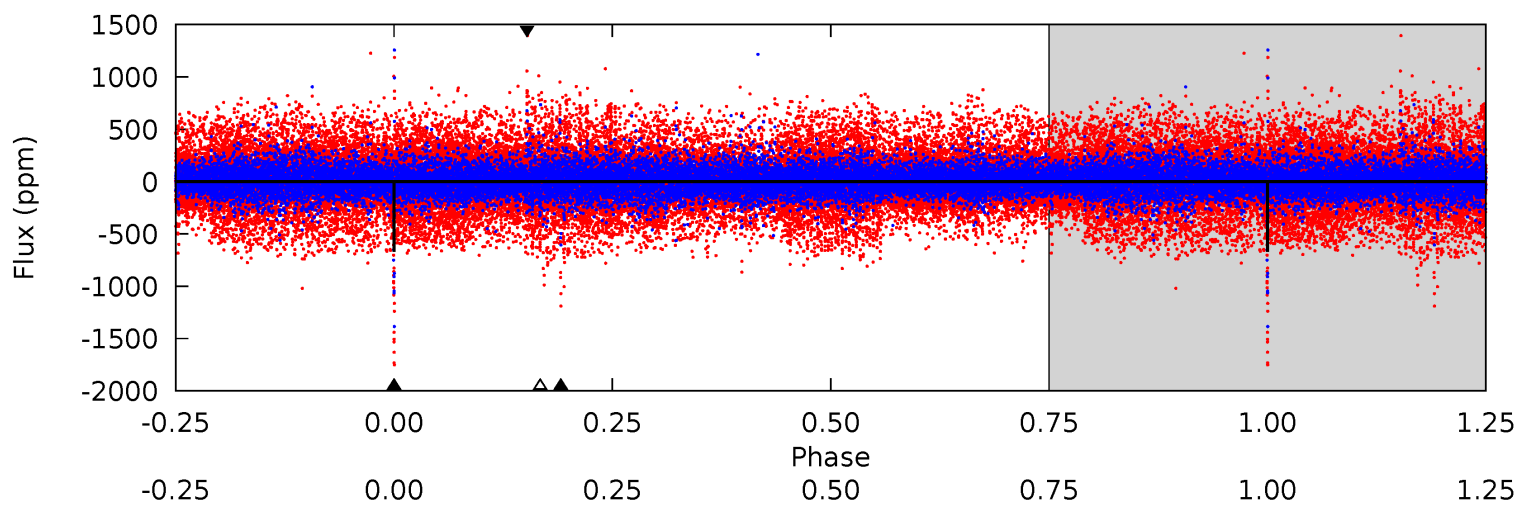
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.31	3.13	2.60	3.02	5.47	3.31	0.73	-1.29	-1.71	0.53	0.11	1.14	0.43	0.49	0.38



Alt Model-Shift Uniqueness Test

007732964-04, P = 303.567778 Days, E = 299.219028 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	6.17	5.63	7.81	5.53	3.42	1.06	10.2	8.05	0.54	-1.64	1.03	1.25	0.33	9.71



Stellar Parameters For KIC 007732964

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4949^{+176}_{-176}	$4.618^{+0.041}_{-0.054}$	$-0.280^{+0.300}_{-0.300}$	$0.690^{+0.078}_{-0.058}$	$0.720^{+0.078}_{-0.064}$	$3.093^{+0.632}_{-0.628}$
	+4%/-4%	+1%/-1%	+107%/-107%	+11%/-8%	+11%/-9%	+20%/-20%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007732964-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-376 ± 120	$2.37^{+1.14}_{-1.03}$	285^{+12}_{-10}	4092^{+1054}_{-549}	22576^{+49146}_{-12790}
Alt.	-256 ± 41	$2.92^{+1.17}_{-1.16}$	285^{+12}_{-11}	3567^{+737}_{-346}	10116^{+18298}_{-4829}

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

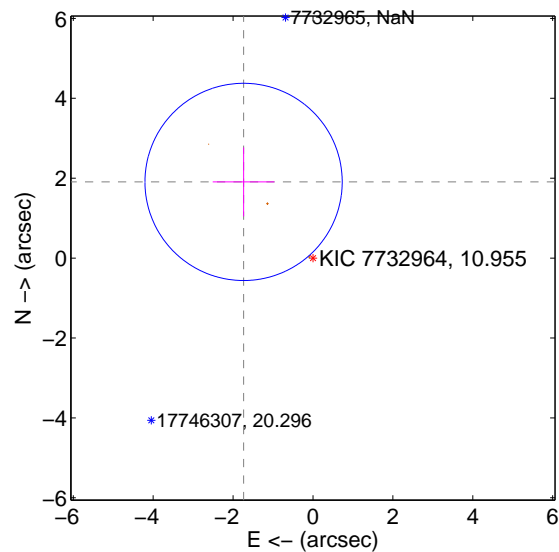
Supplemental centroid analysis for 007732964-04. **Kepler magnitude: 10.96.** Transit SNR 5.13

There are 1 quarters with good PRF difference image offsets

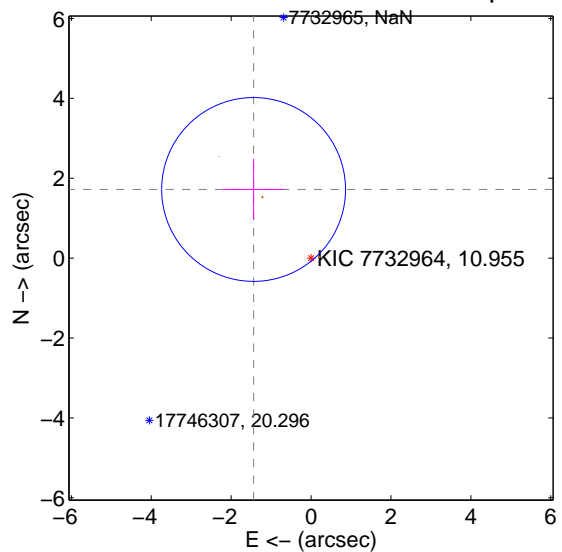
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.580 ± 0.823	3.13	1.737 ± 0.774	1.907 ± 0.862
PRF-fit source offset from KIC position	2.241 ± 0.767	2.92	1.439 ± 0.774	1.718 ± 0.762
photometric centroid source offset	0.25 ± 0.22	1.17	-0.10 ± 0.34	-0.23 ± 0.18

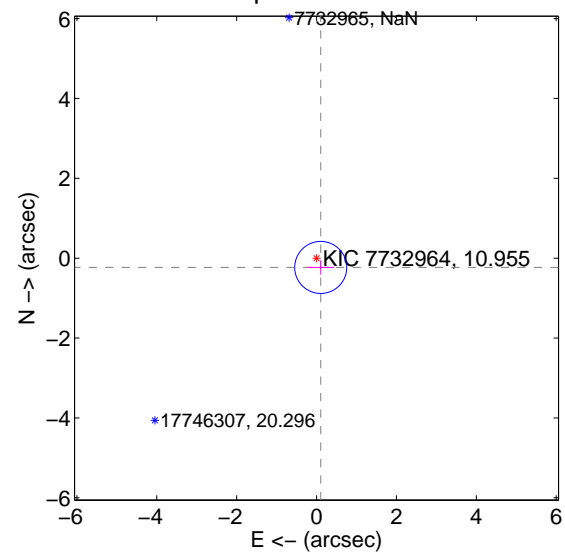
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

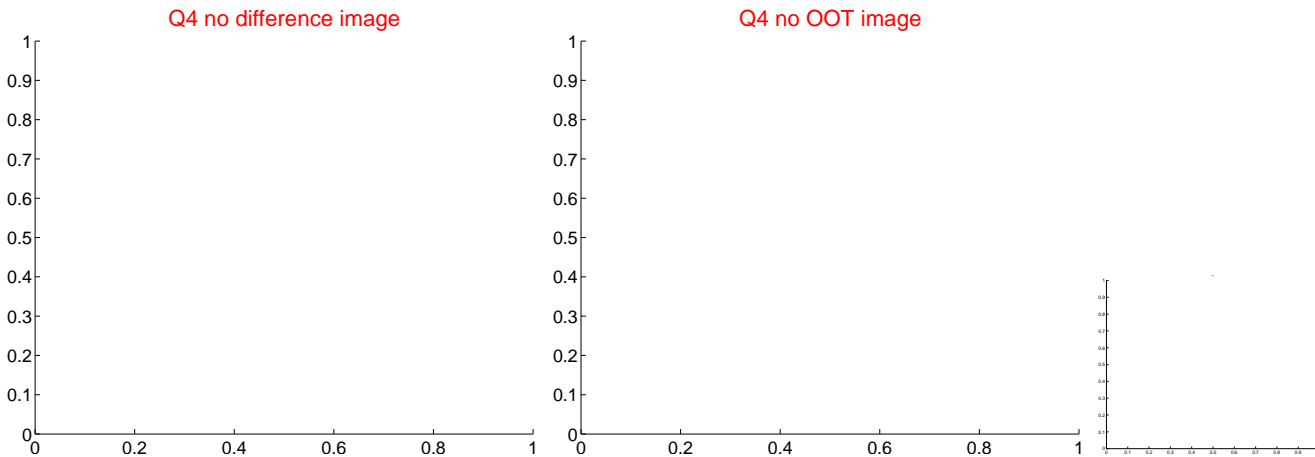
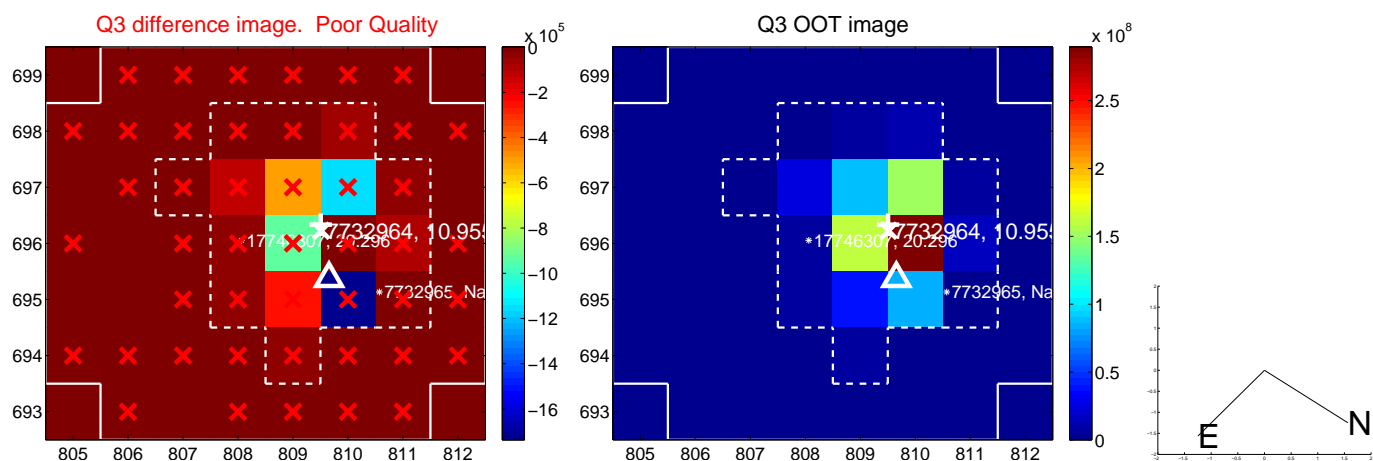
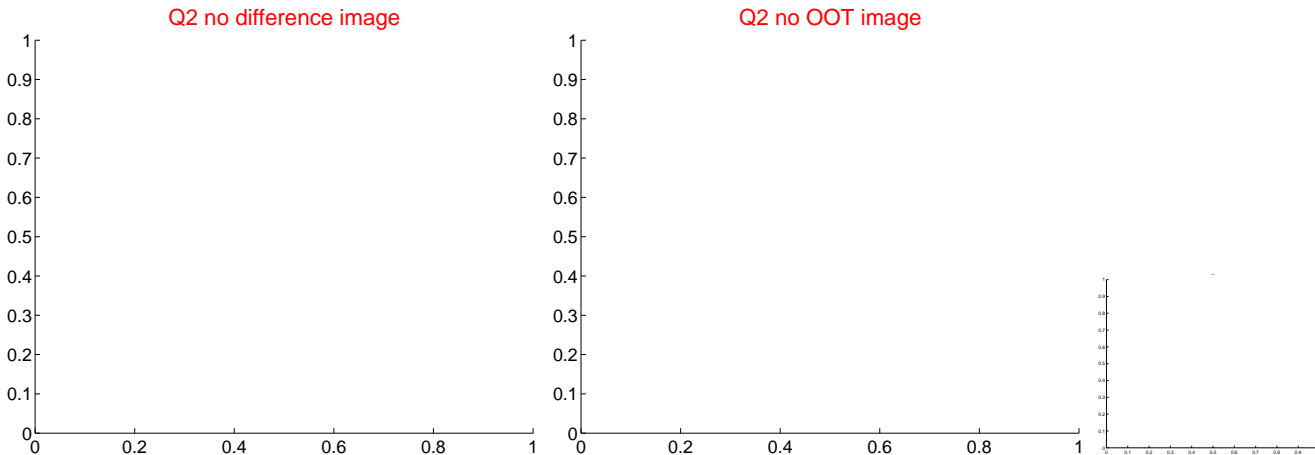
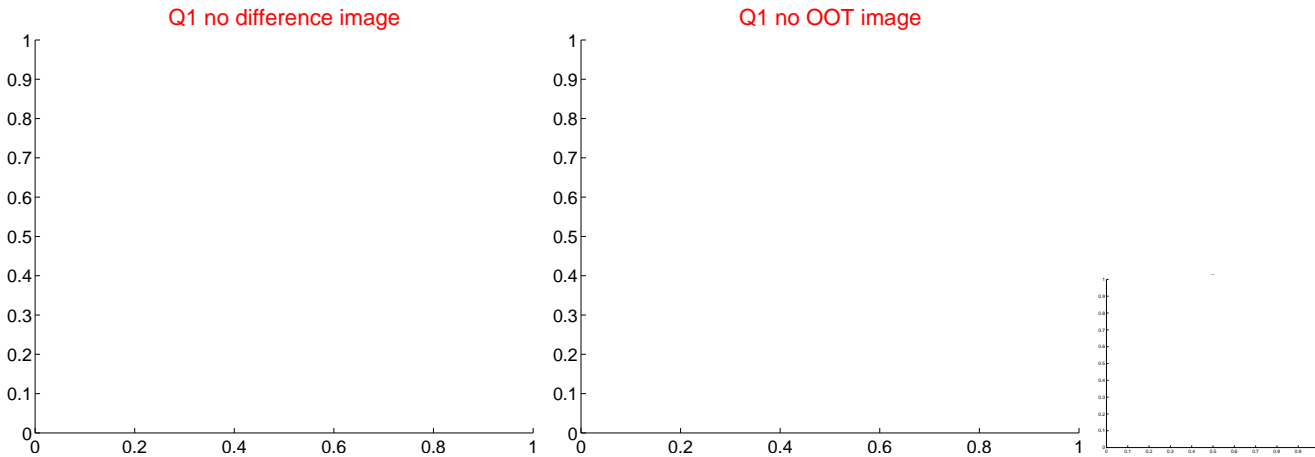


offset from photometric centroids

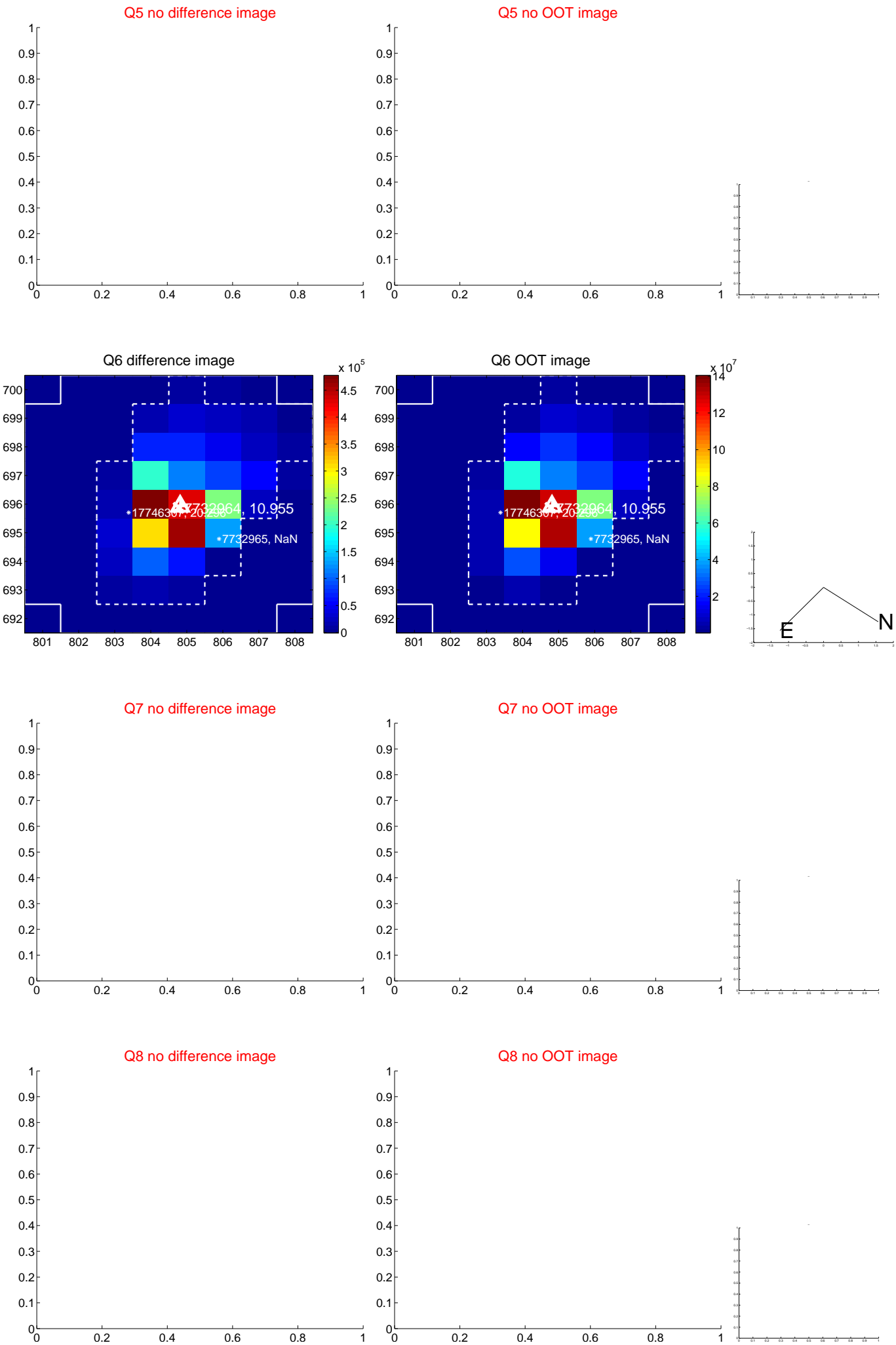


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



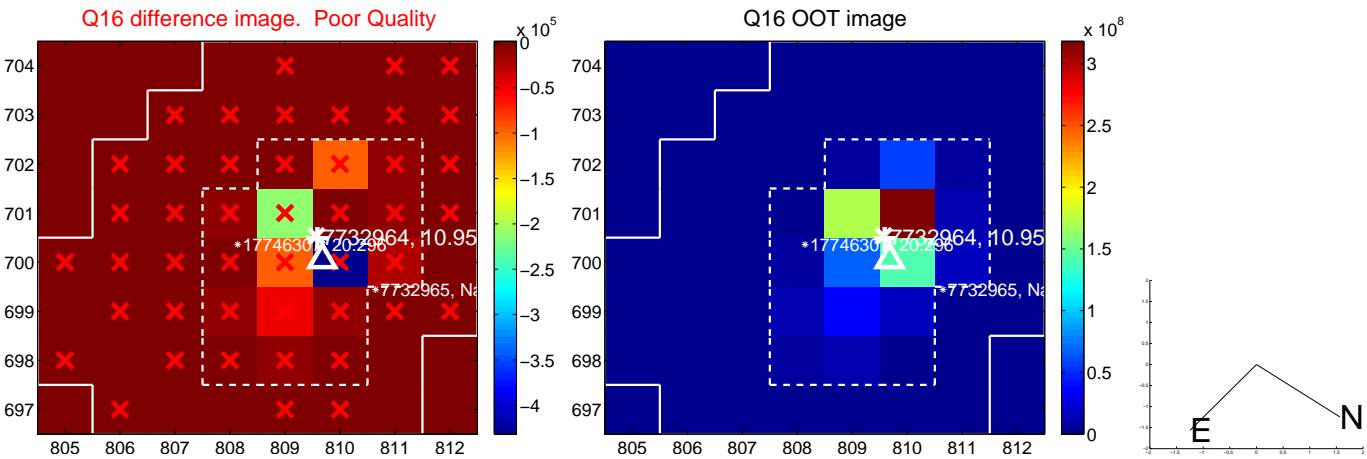
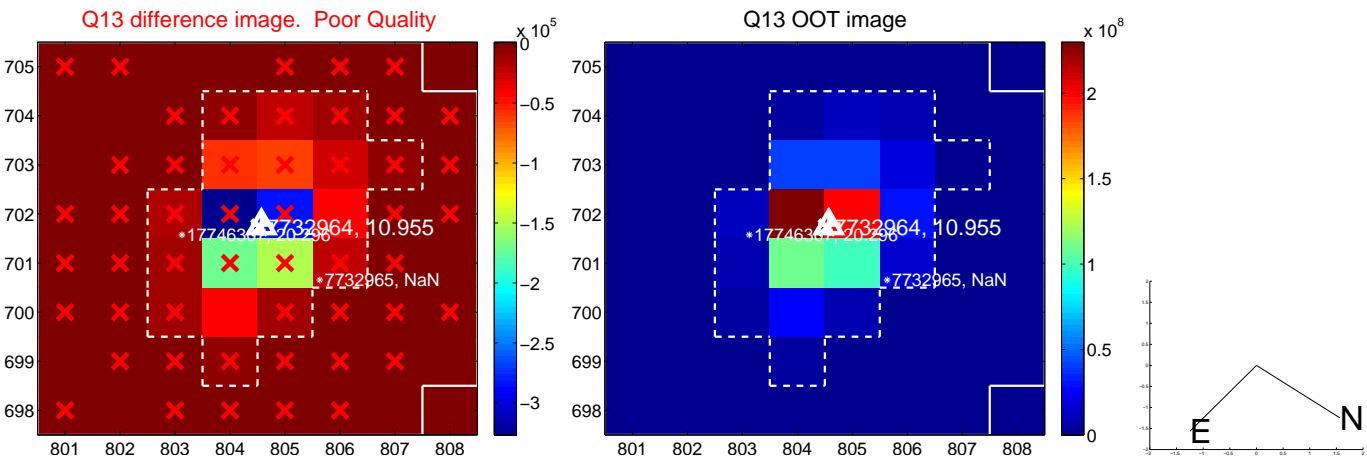
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



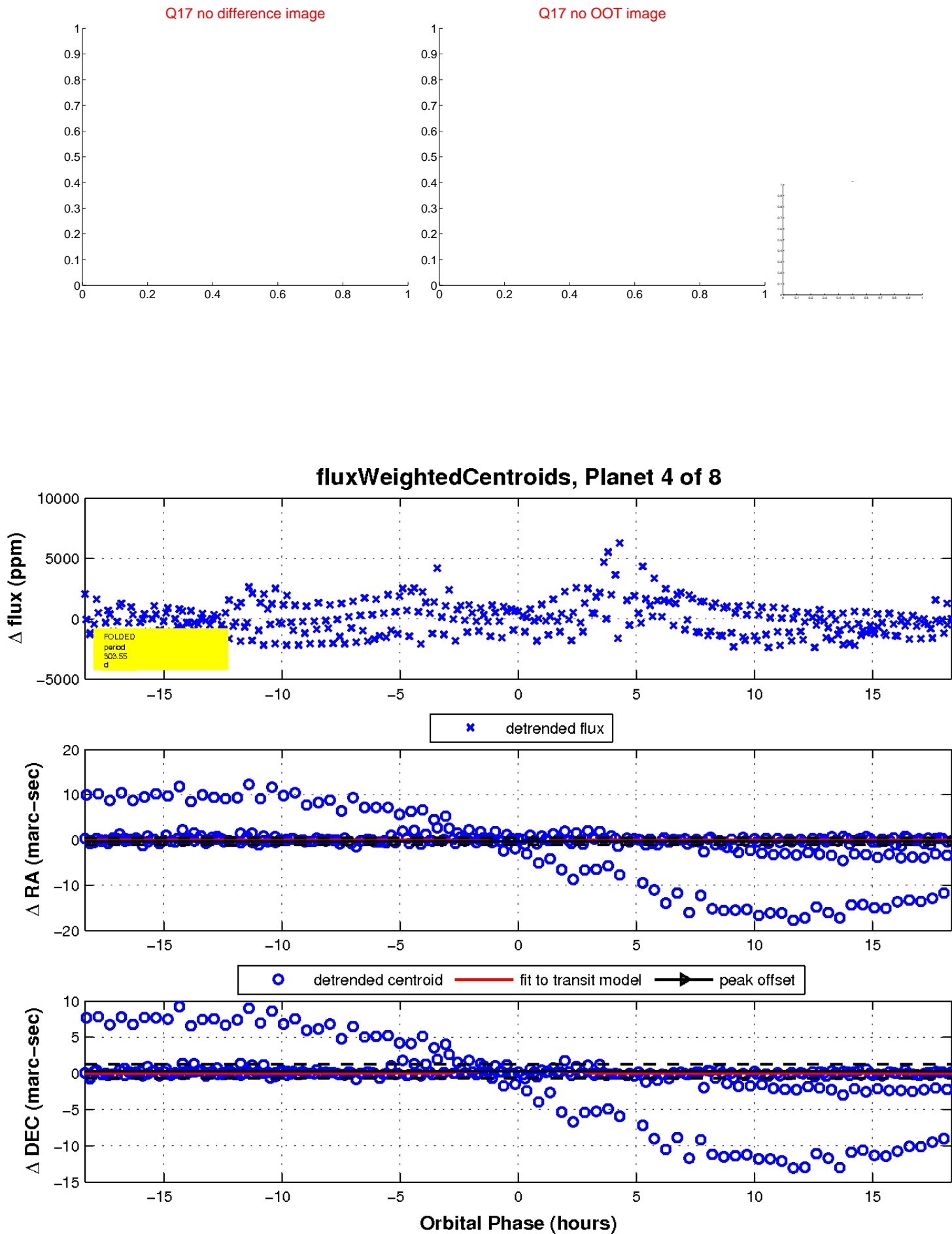
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

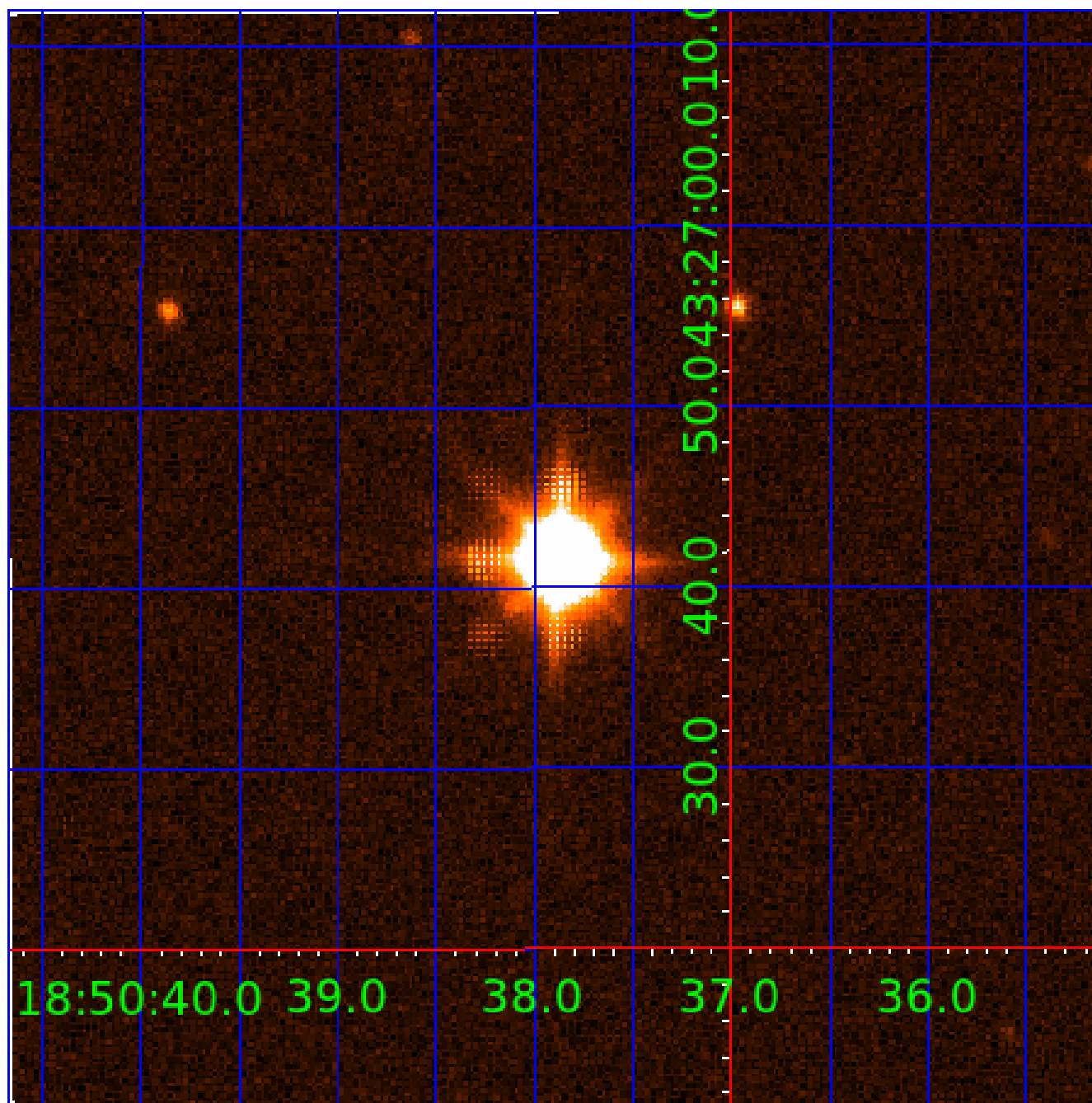


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007732964

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})
007732964-01	OBS	No	618.974049	331.733861	1453.0	5.158	24.3	7.3	0.69	4949	2.75	0.16
007732964-02	OBS	No	645.903968	206.952256	2478.7	12.460	15.6	9.4	0.69	4949	3.39	0.15
007732964-03	OBS	No	373.211794	455.685145	1368.1	9.805	18.8	6.7	0.69	4949	2.60	0.31
007732964-04	OBS	No	303.552228	299.231778	1039.4	6.143	16.2	5.1	0.69	4949	2.34	0.41
007732964-05	OBS	No	173.600024	212.195581	916.2	2.721	14.4	6.3	0.69	4949	2.05	0.86
007732964-06	OBS	No	328.182877	284.496606	57.9	3.184	13.9	0.3	0.69	4949	0.51	0.37
007732964-07	OBS	No	568.352660	211.808073	130.6	10.500	16.3	-1.0	0.69	4949	0.77	0.18
007732964-08	OBS	No	430.650899	449.355020	236.1	4.500	16.7	-1.0	0.69	4949	1.03	0.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007732964-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
007732964-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007732964-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
007732964-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

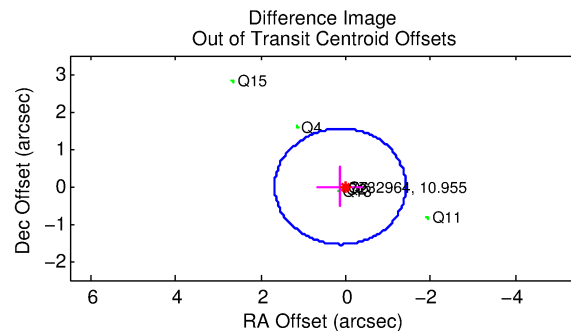
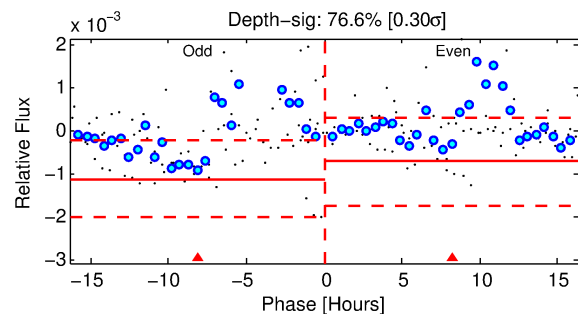
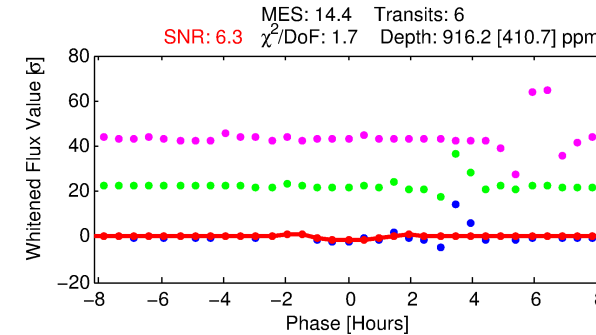
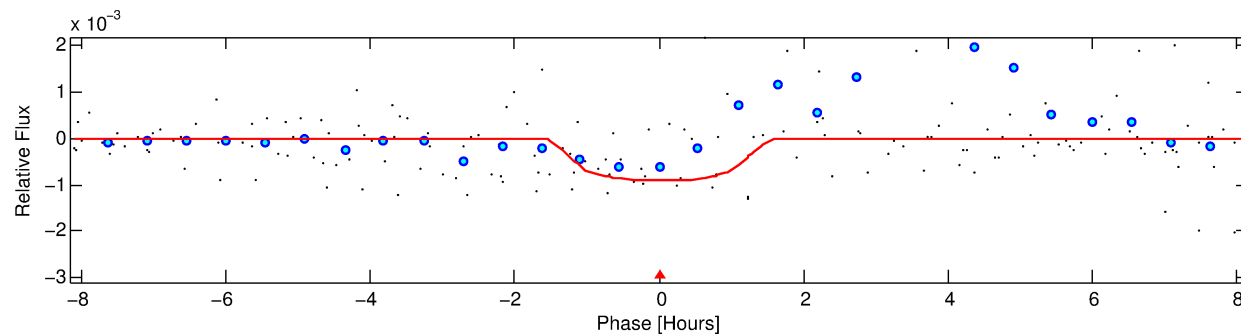
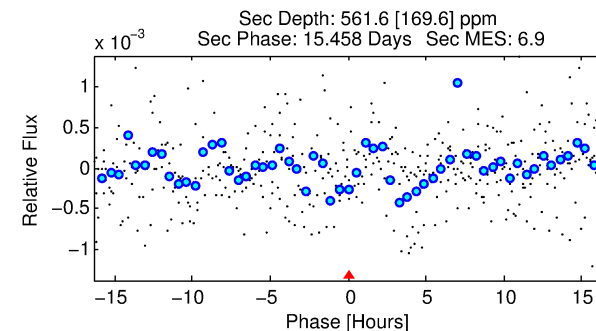
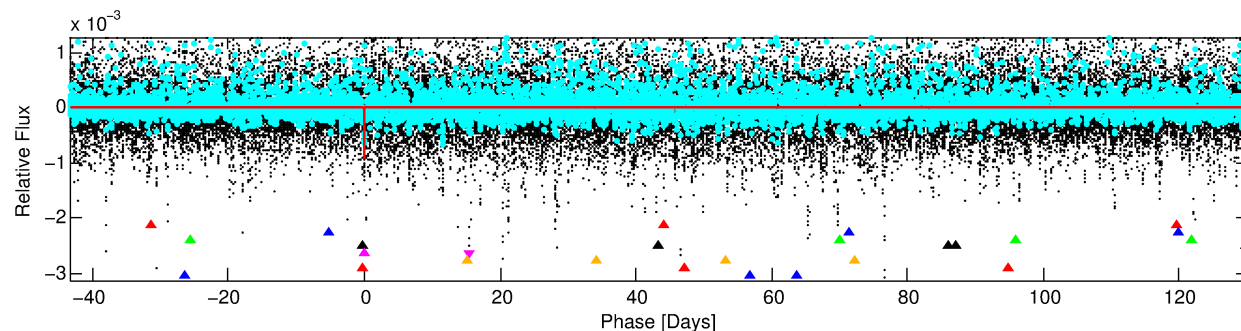
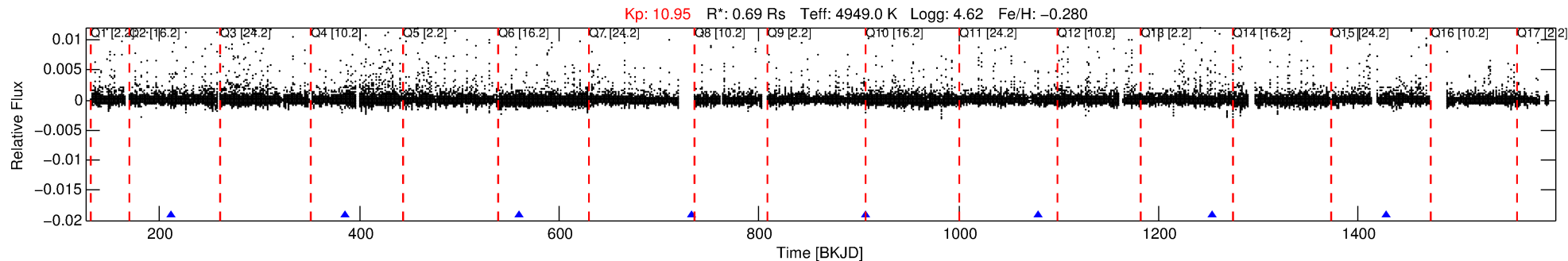
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007732964-05

No Significant Match Found

DV One-Page Summary

KIC: 7732964 Candidate: 5 of 8 Period: 173.600 d



DV Fit Results:

Period = 173.60002 [0.00265] d
Epoch = 212.1956 [0.0132] BKJD
Rp/R* = 0.0272 [0.2498]
a/R* = 483.34 [15262.37]
b = 0.27 [111.29]
Seff = 0.86 [0.16]
Teq = 245 [11] K
Rp = 2.05 [18.81] Re
a = 0.5461 [0.0470] AU
Ag = 21975.12 [403799.69] [0.05σ]
Teff = 4620 [21222] K [0.21σ]

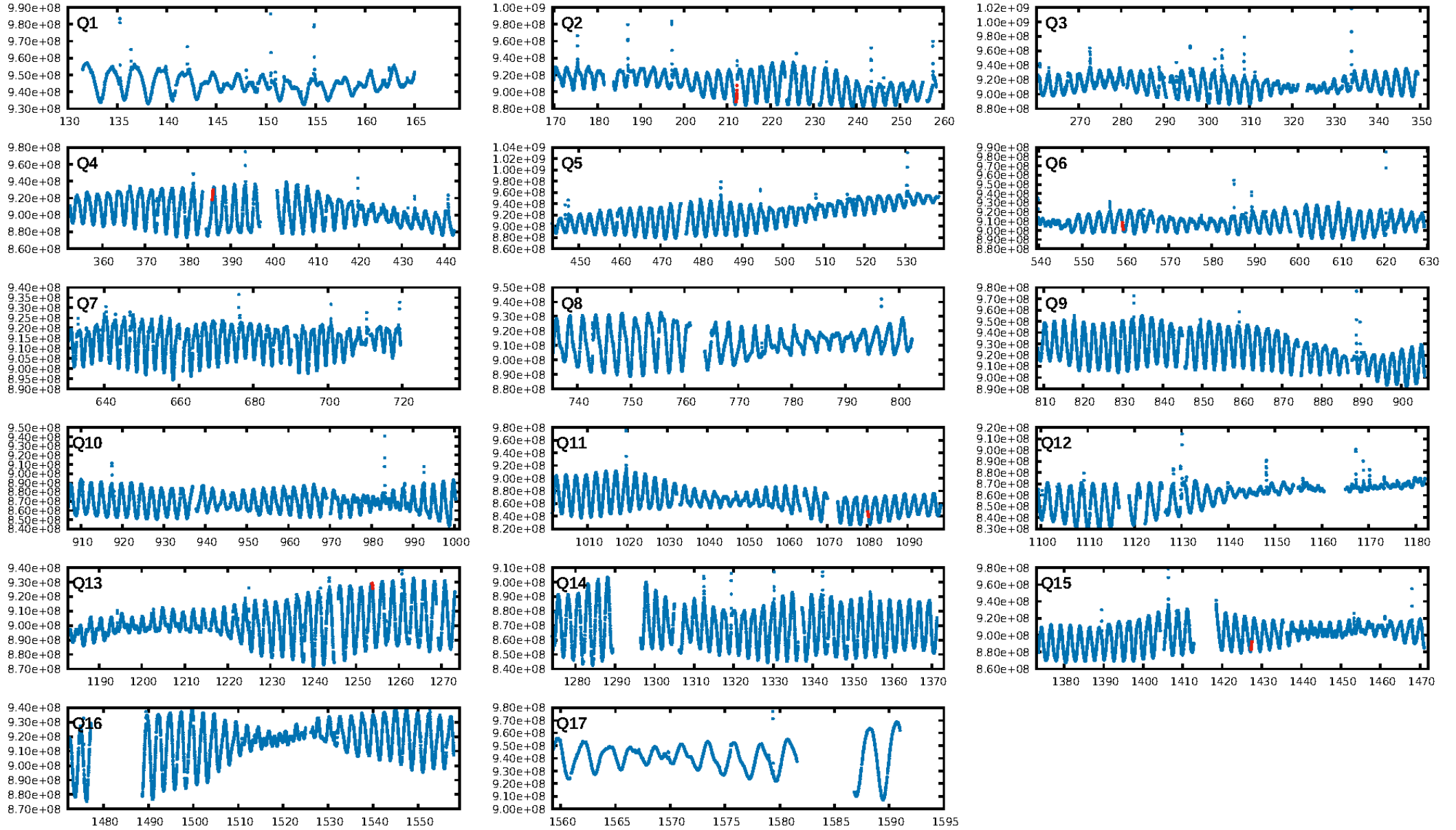
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [464.25σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 28.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 1.597
Centroid-sig: 81.2%
Centroid-so: 0.366 arcsec [0.96σ]
OotOffset-rm: 0.120 arcsec [0.23σ]
OotOffset-st: 2/2/1/1 [6]
KicOffset-rm: 0.190 arcsec [0.36σ]
KicOffset-st: 2/2/1/1 [6]
DiffImageQuality-fgm: 0.67 [4/6]
DiffImageOverlap-fno: 0.83 [5/6]

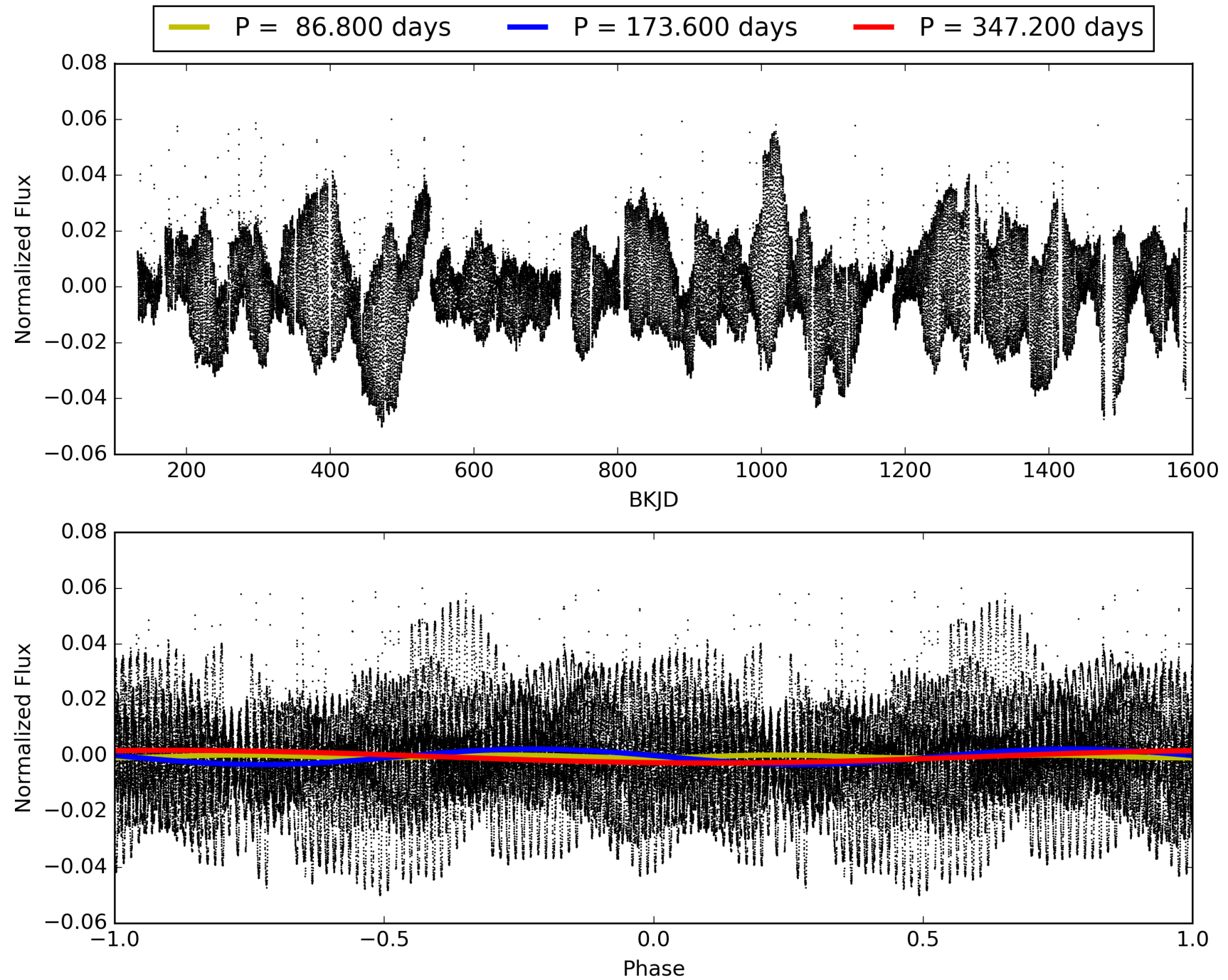
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:41:59 Z

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

TCE 007732964-05, PDC Light Curves

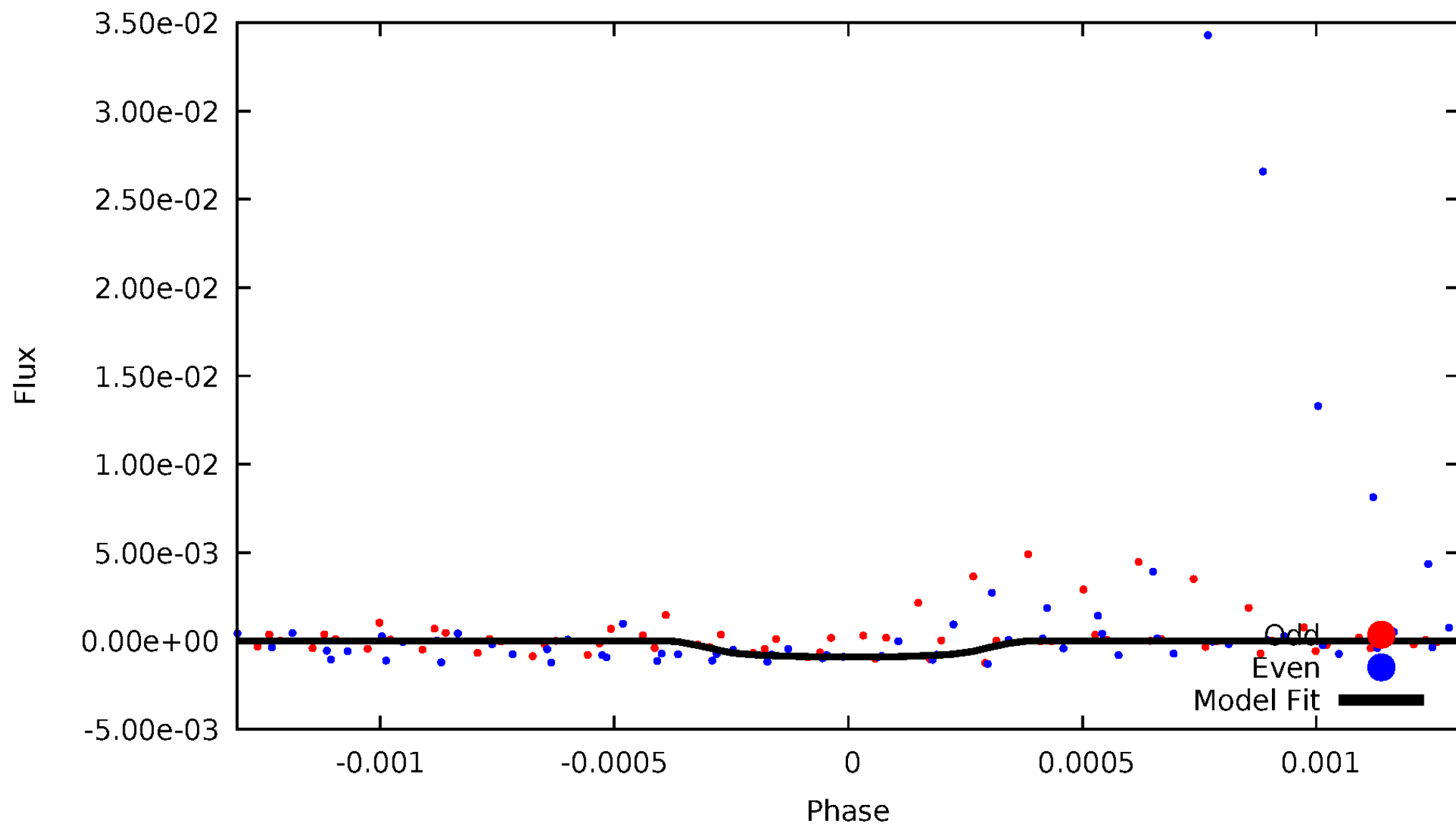


TCE 007732964-05



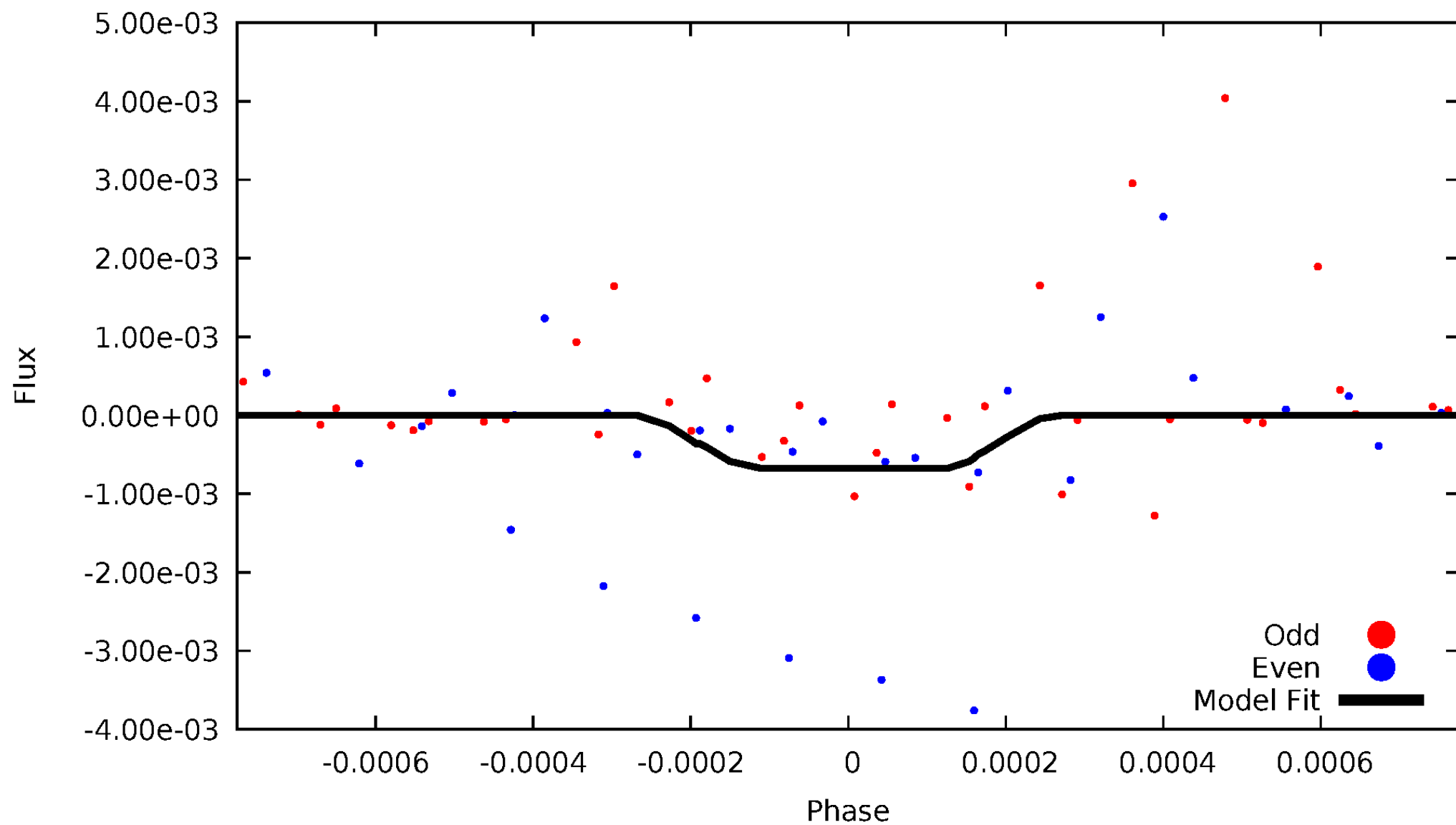
DV Odd/Even

TCE 007732964-05



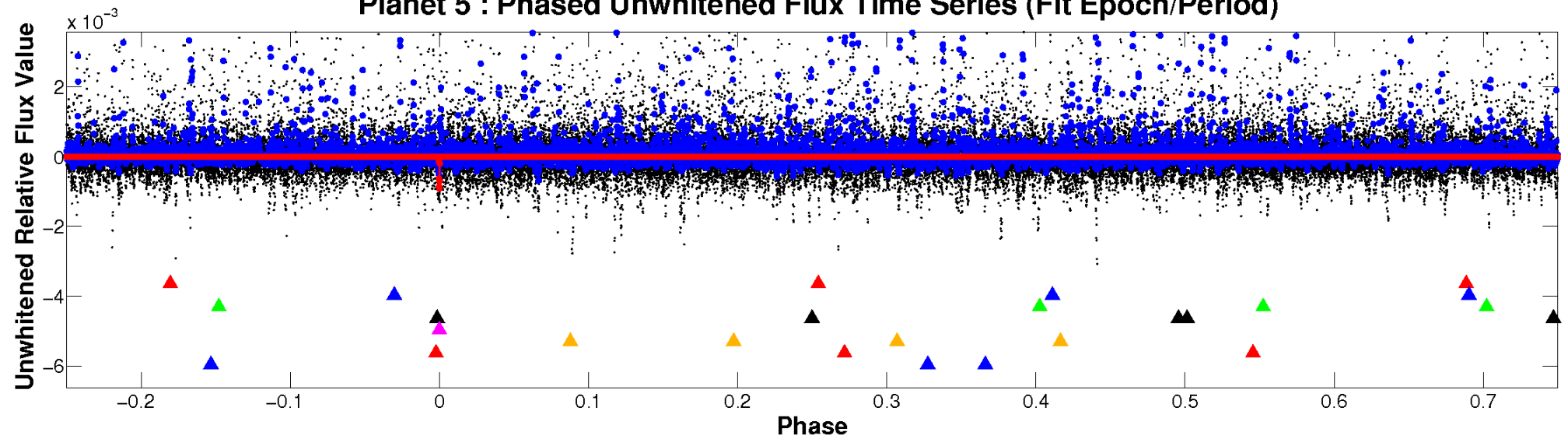
ALT Odd/Even

TCE 007732964-05

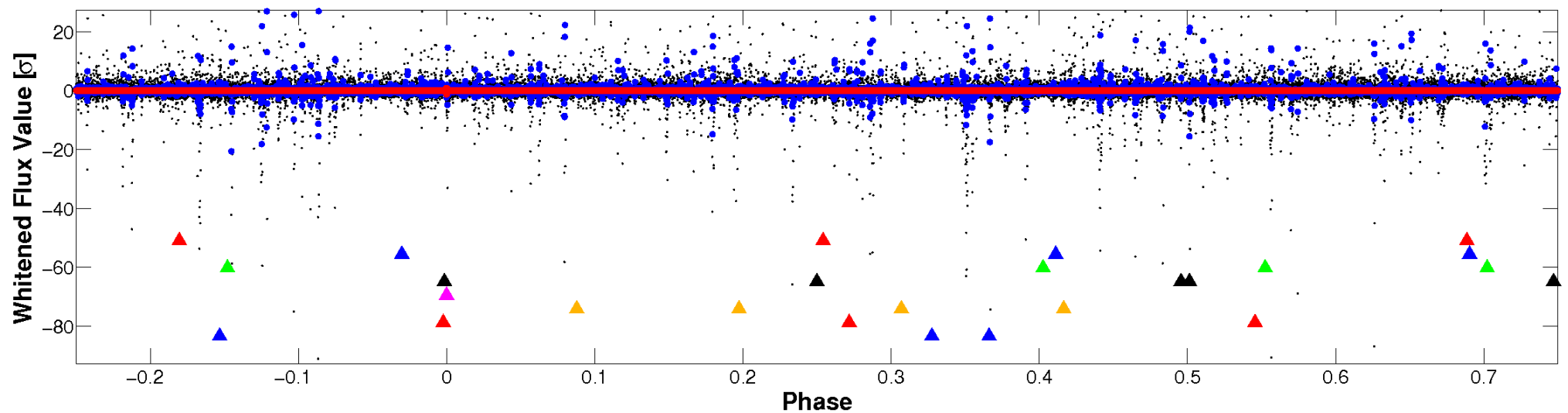


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

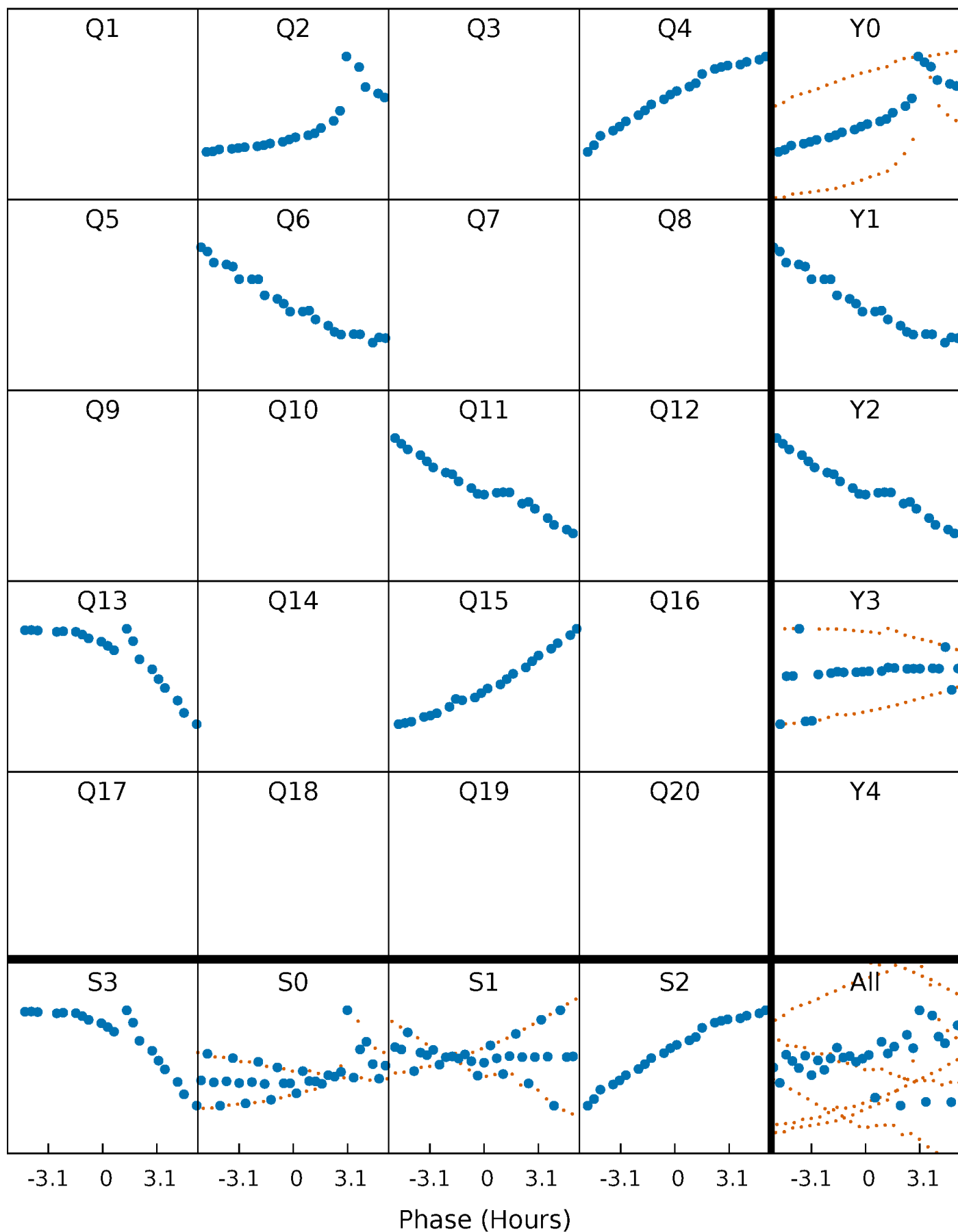


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



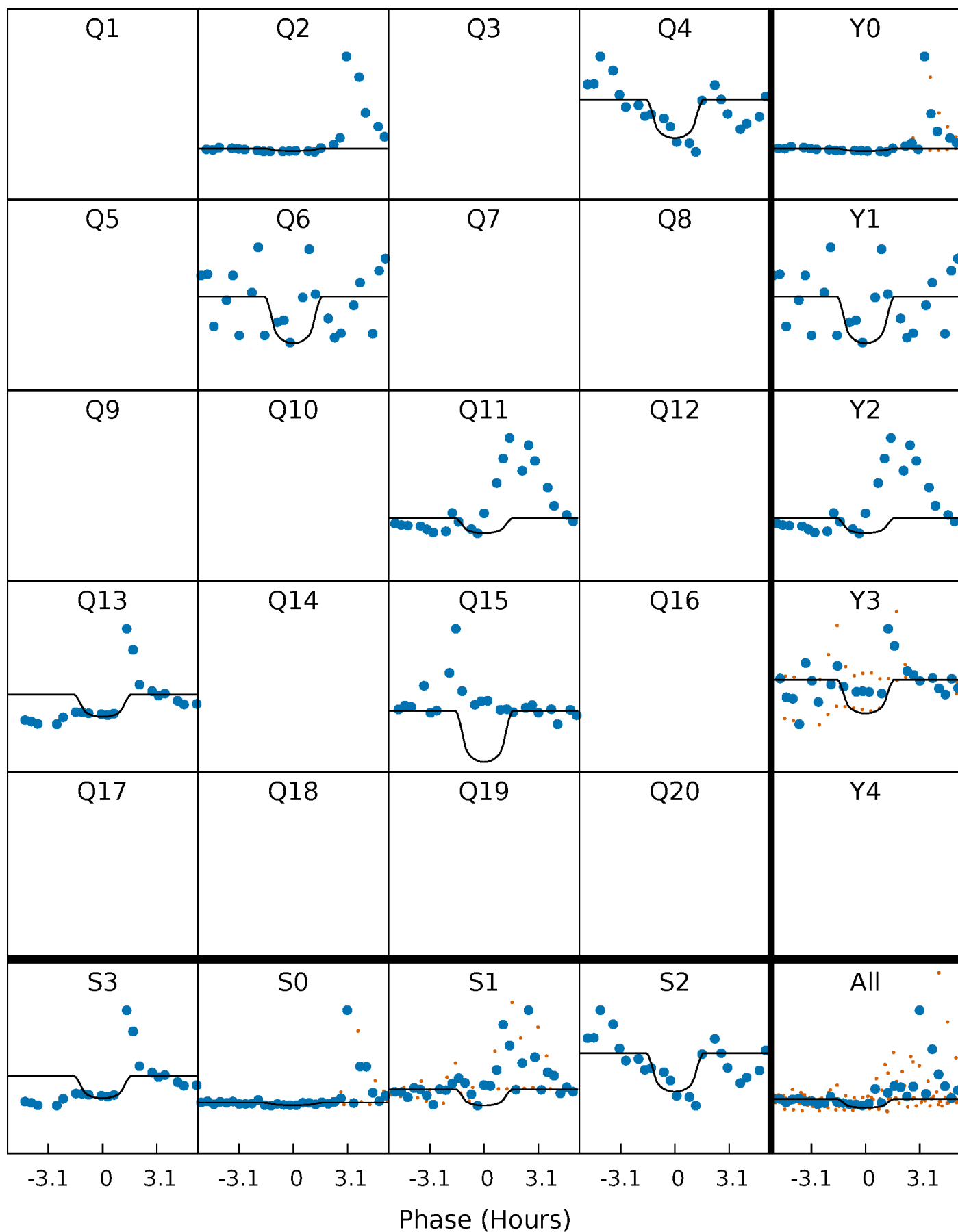
PDC Quarter-Phased Transit Curves

TCE 007732964-05 $P=173.600024$ Days $T_0=212.195581$ (BKJD)



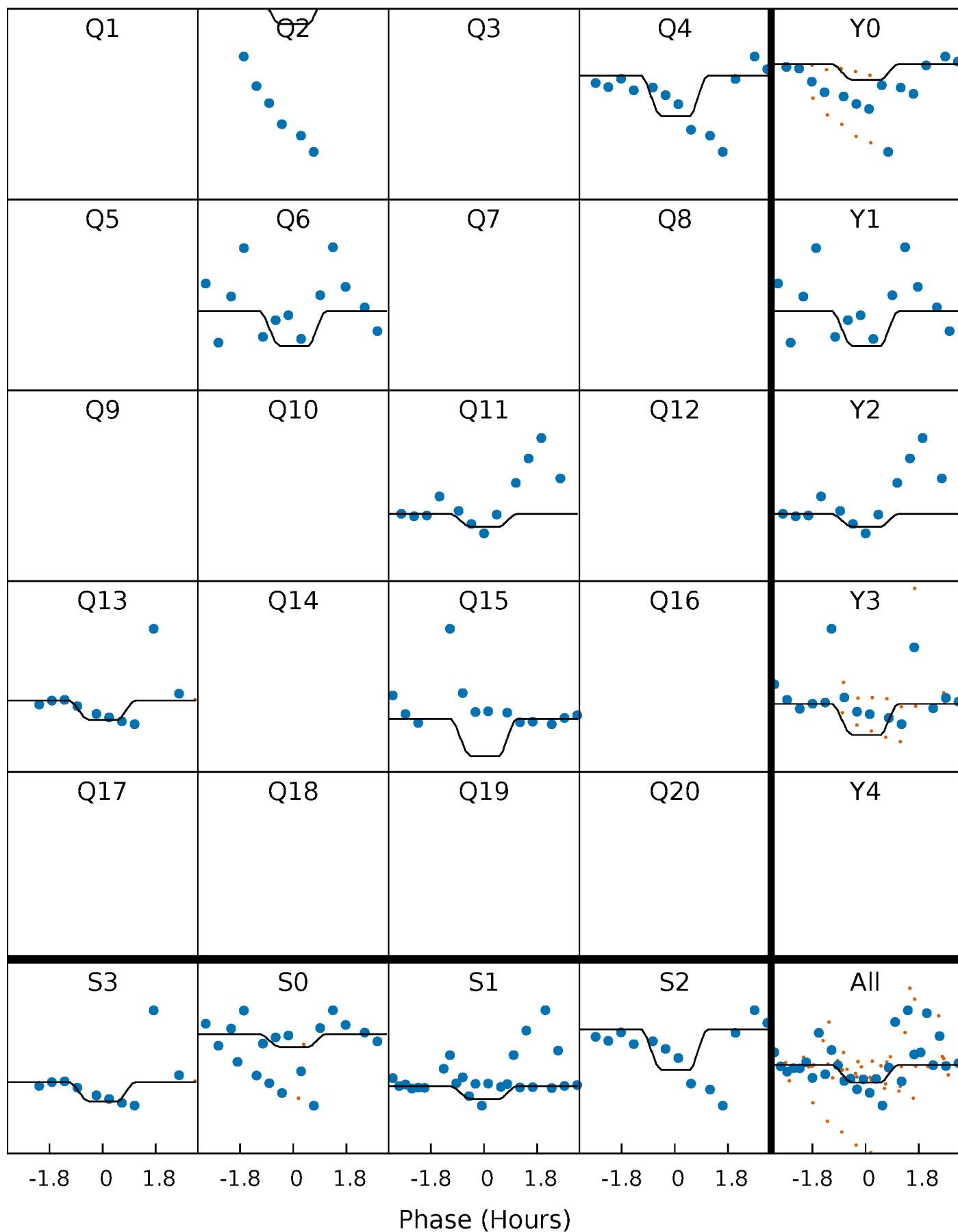
DV Quarter-Phased Transit Curves

TCE 007732964-05 $P=173.600024$ Days $T_0=212.195581$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

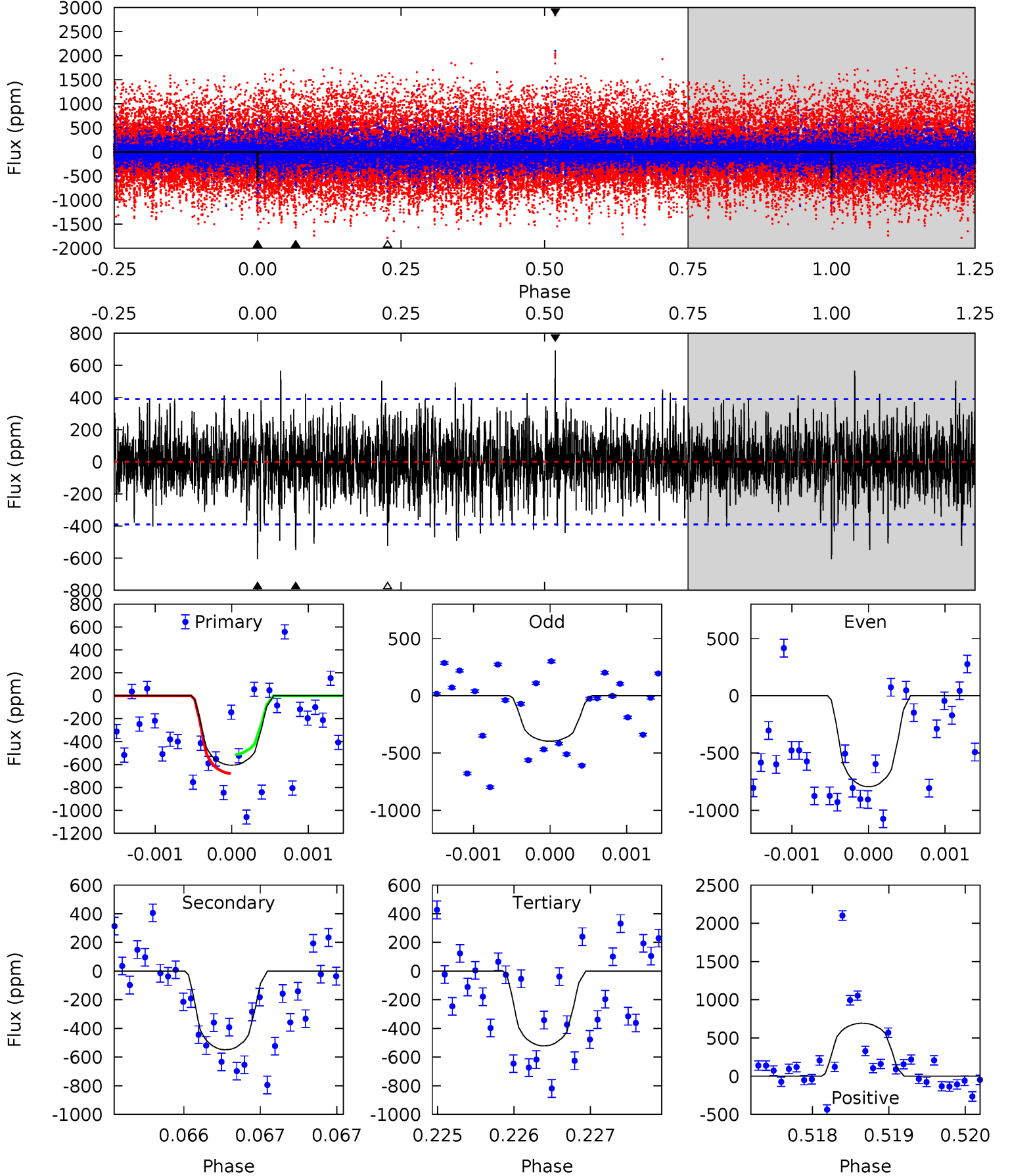
TCE 007732964-05 P=173.600145 Days $T_0=212.178689$ (BKJD)



DV Model-Shift Uniqueness Test

007732964-05, $P = 173.600024$ Days, $E = 38.595557$ Days

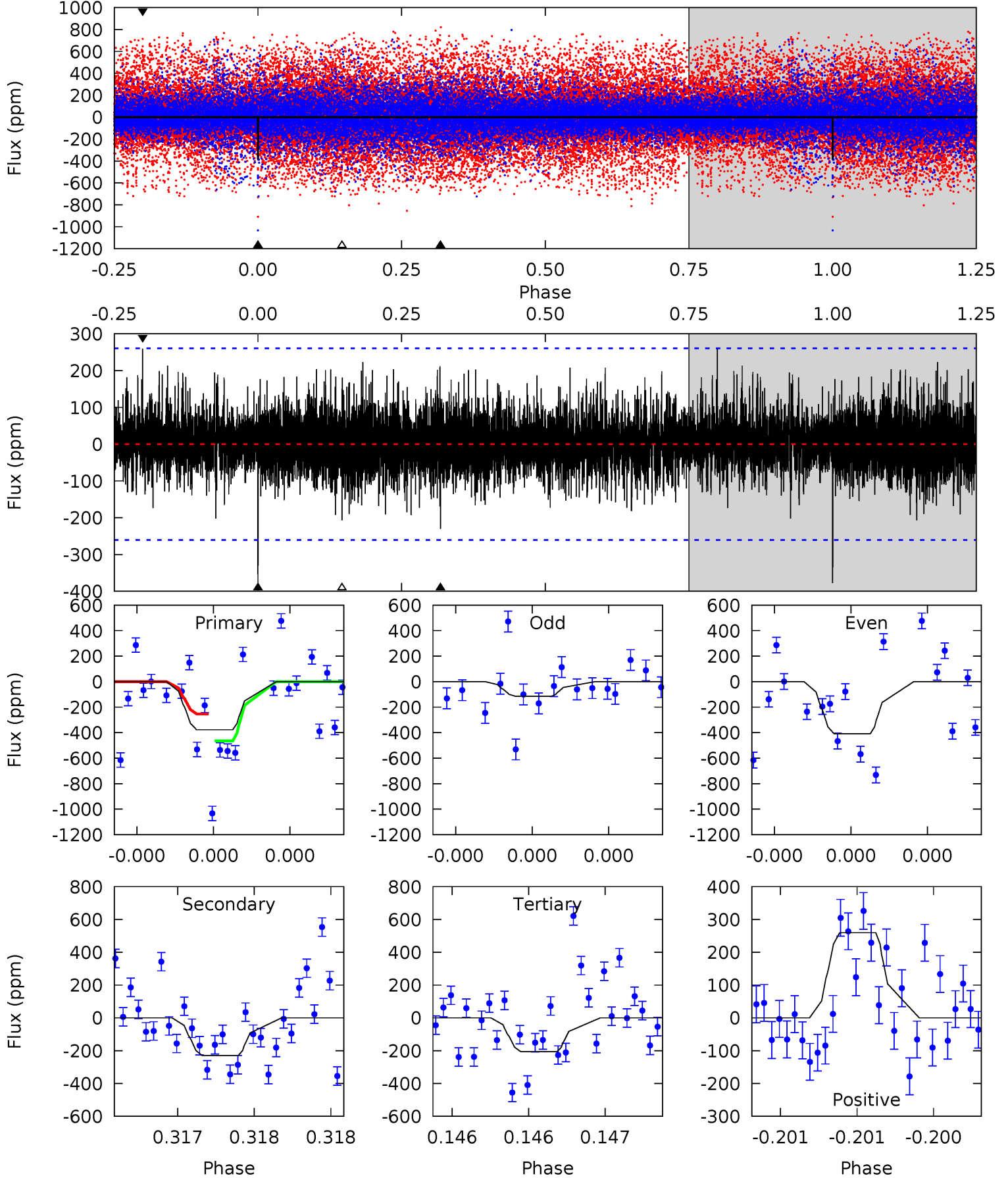
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.55	7.75	7.37	9.78	5.50	3.37	1.93	1.18	-1.23	0.38	-2.03	2.75	0.82	0.53	1.13



Alt Model-Shift Uniqueness Test

007732964-05, P = 173.600145 Days, E = 38.578544 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.07	4.91	4.42	5.54	5.57	3.48	1.20	3.65	2.53	0.49	-0.63	2.95	1.71	0.41	2.28



Stellar Parameters For KIC 007732964

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4949^{+176}_{-176}	$4.618^{+0.041}_{-0.054}$	$-0.280^{+0.300}_{-0.300}$	$0.690^{+0.078}_{-0.058}$	$0.720^{+0.078}_{-0.064}$	$3.093^{+0.632}_{-0.628}$
	+4%/-4%	+1%/-1%	+107%/-107%	+11%/-8%	+11%/-9%	+20%/-20%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007732964-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-549 ± 71	$14.38^{+14.96}_{-10.40}$	344^{+13}_{-13}	2549^{+1097}_{-382}	442^{+5234}_{-338}
Alt.	-230 ± 47	$13.89^{+15.20}_{-9.82}$	343^{+13}_{-13}	2314^{+855}_{-349}	194^{+1970}_{-152}

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

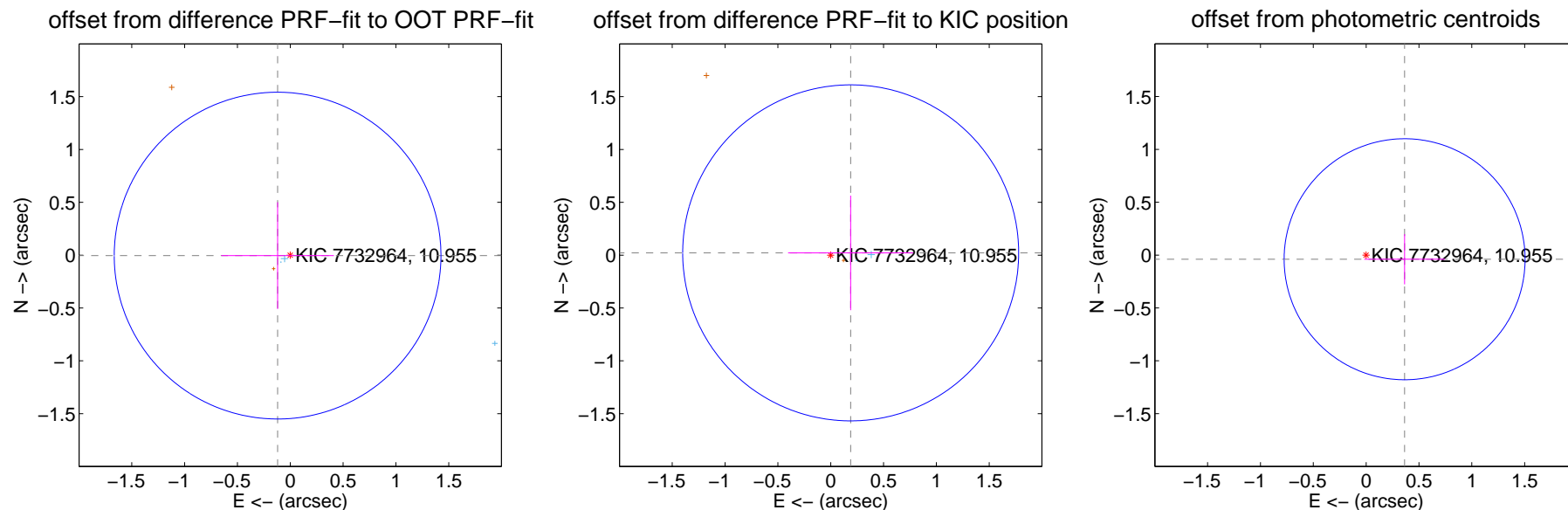
DV Centroid Data

Supplemental centroid analysis for 007732964-05. **Kepler magnitude: 10.96.** Transit SNR 6.31

There are 4 quarters with good PRF difference image offsets

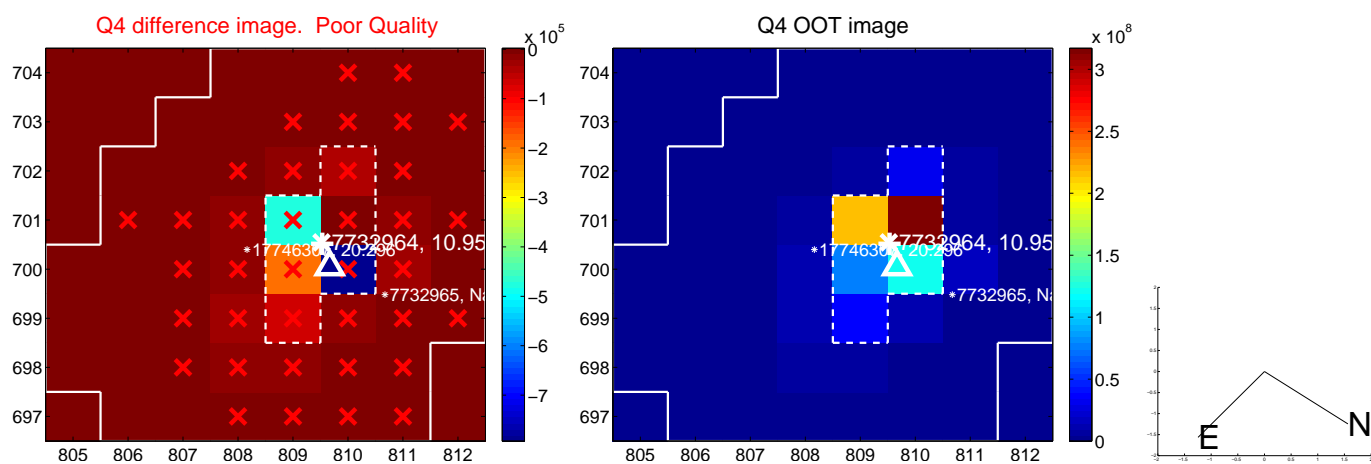
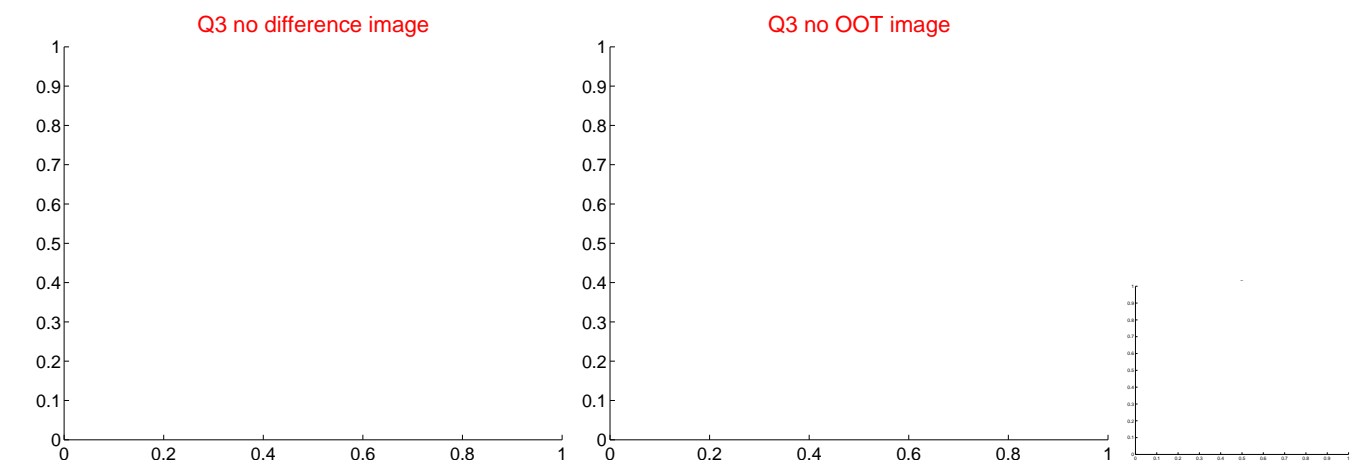
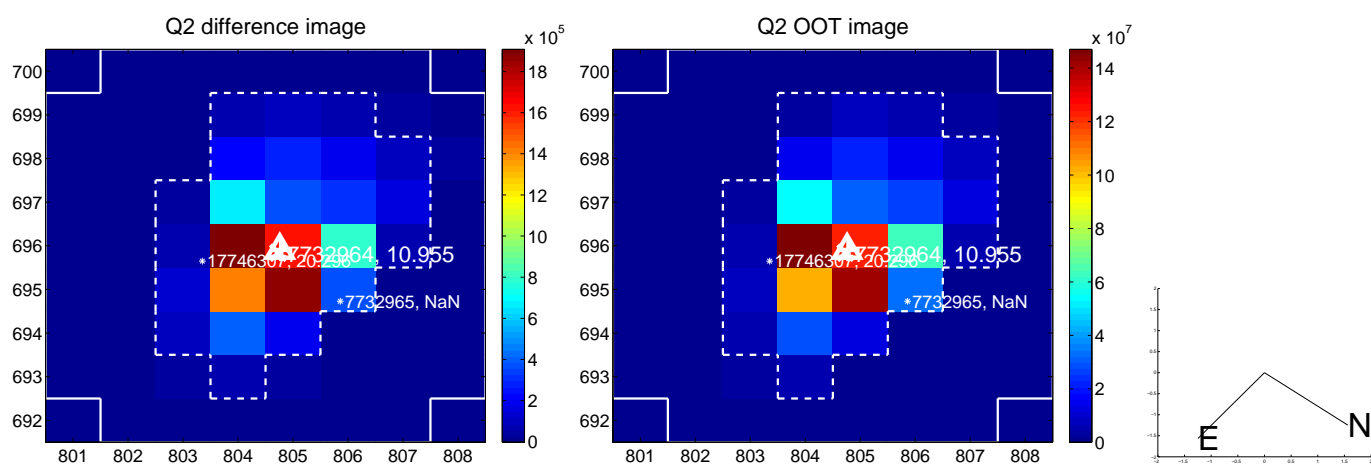
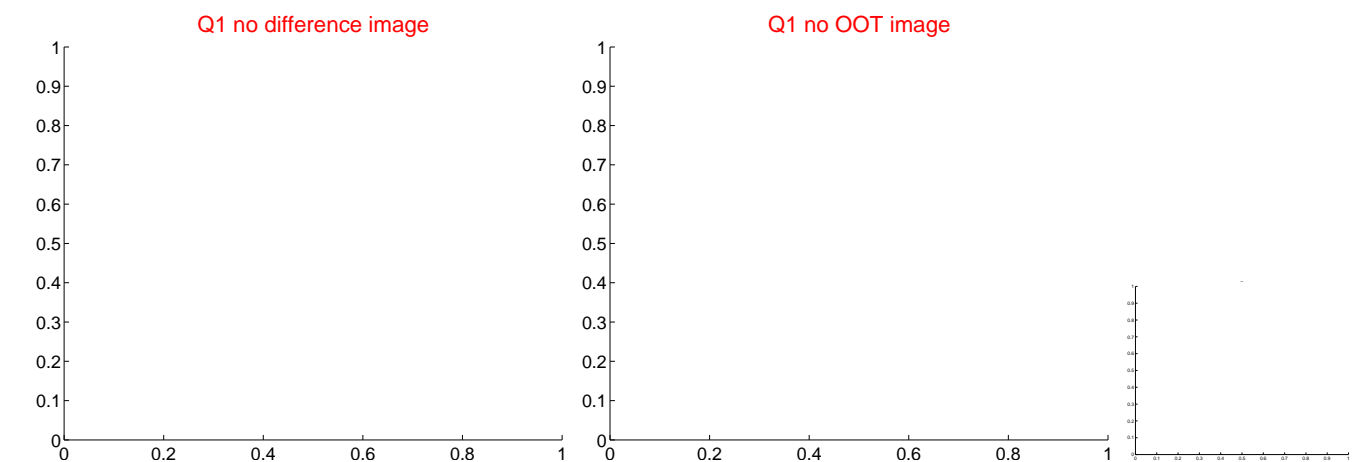
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.120 ± 0.515	0.23	0.120 ± 0.533	-0.004 ± 0.505
PRF-fit source offset from KIC position	0.190 ± 0.530	0.36	-0.189 ± 0.592	0.022 ± 0.542
photometric centroid source offset	0.37 ± 0.38	0.96	-0.36 ± 0.38	-0.04 ± 0.24

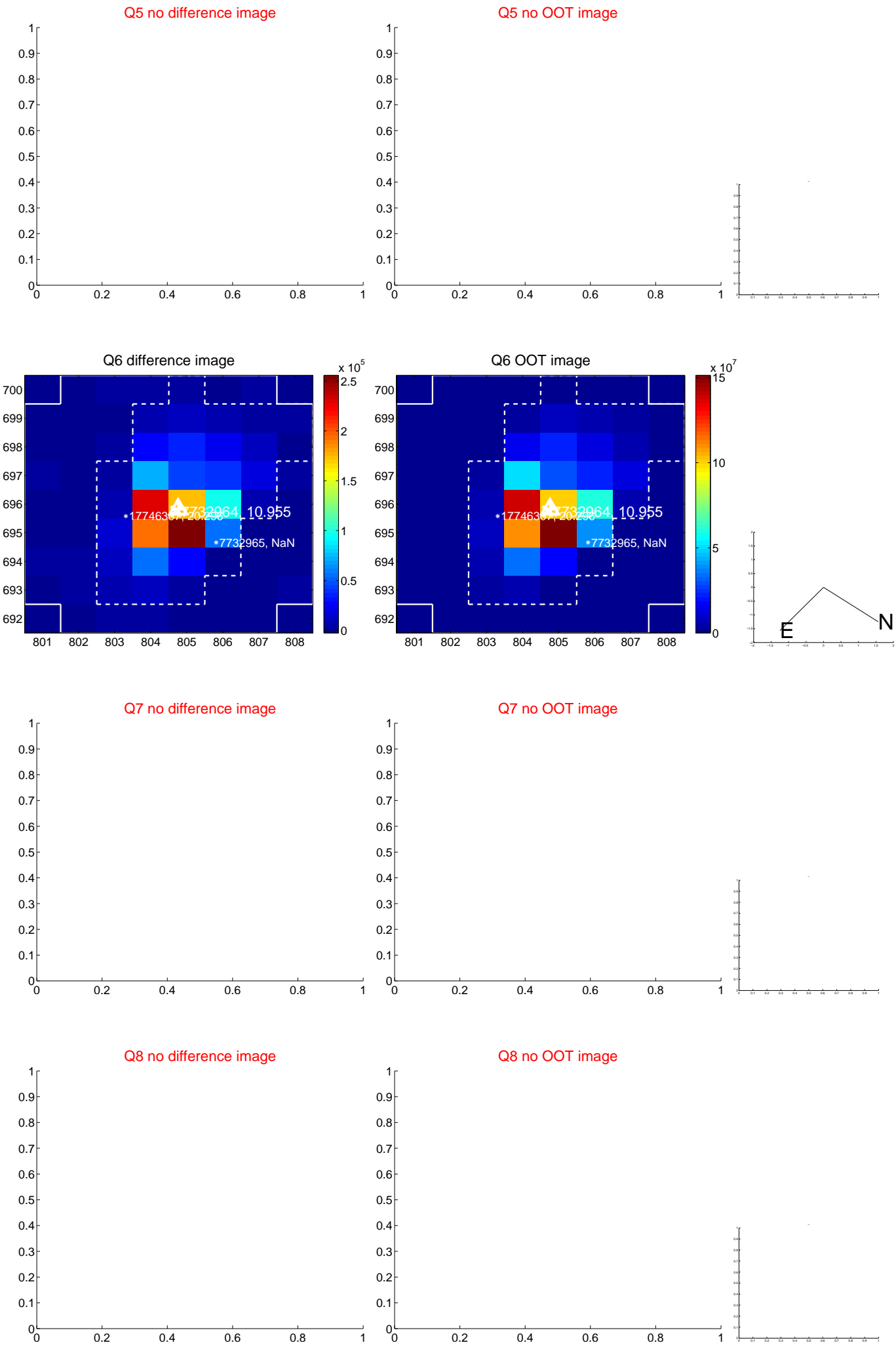


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

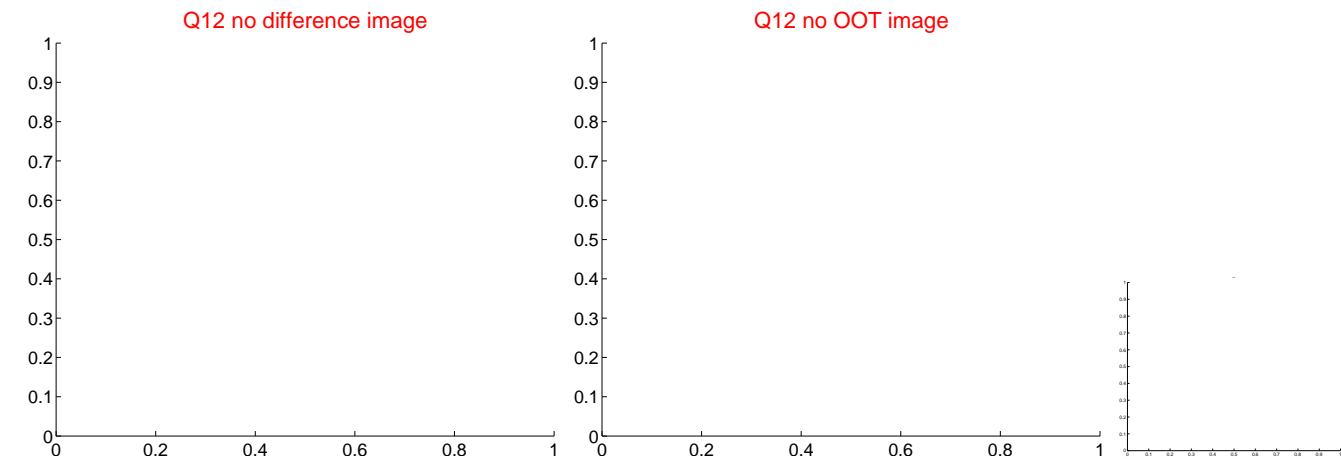
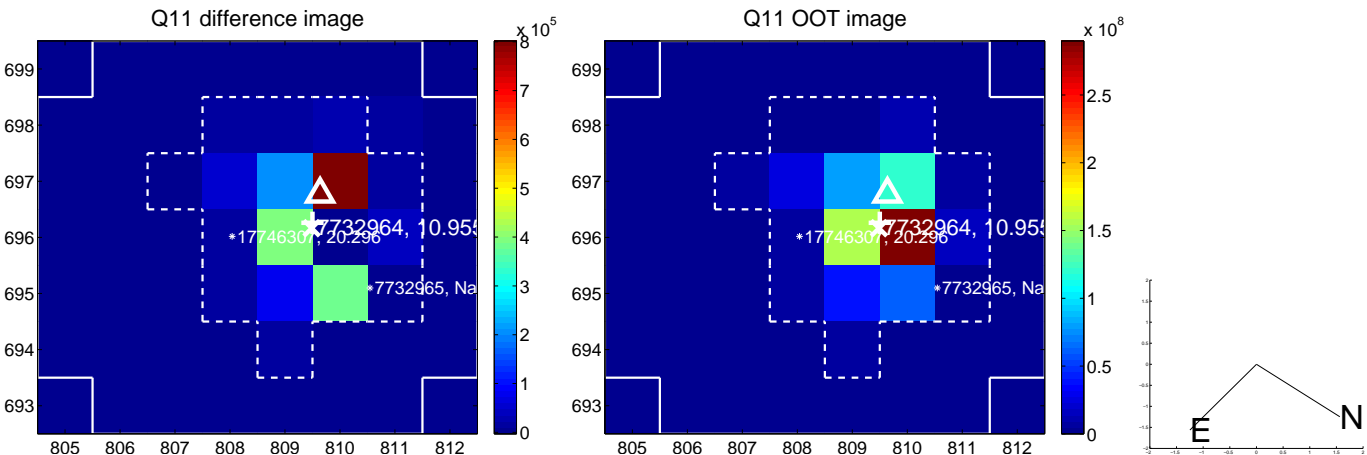
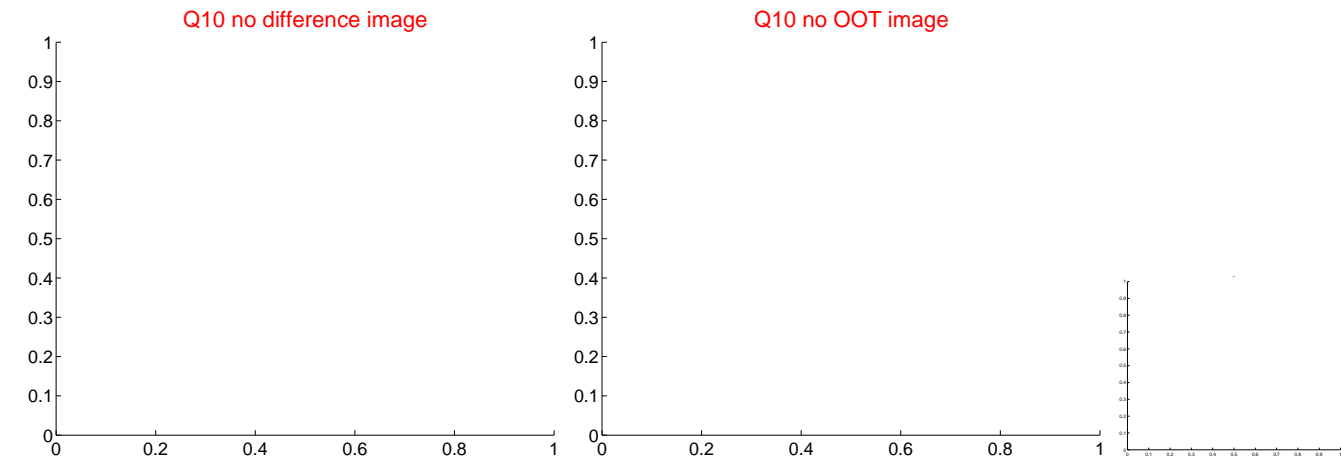
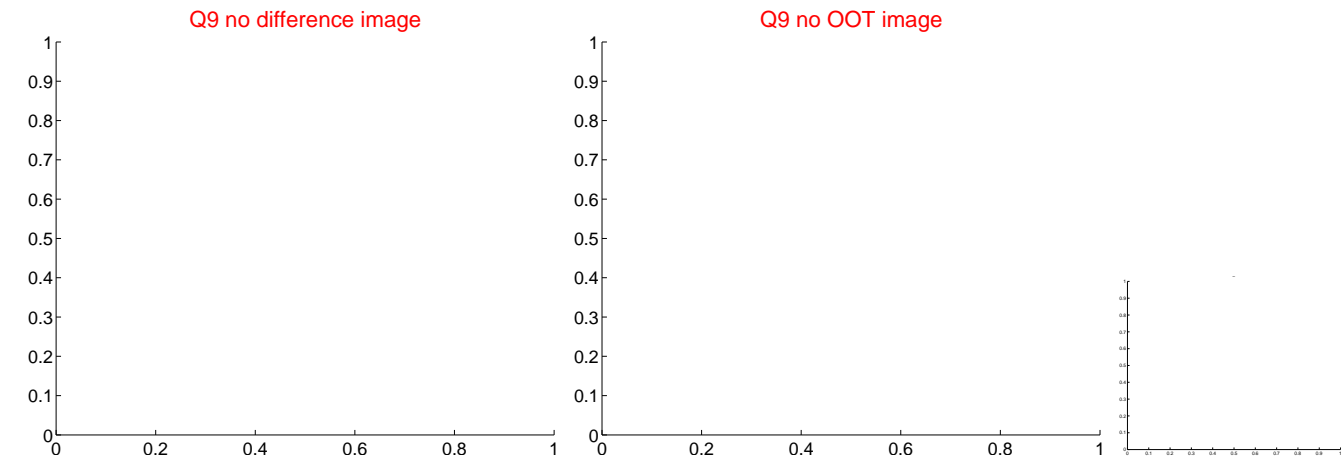
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



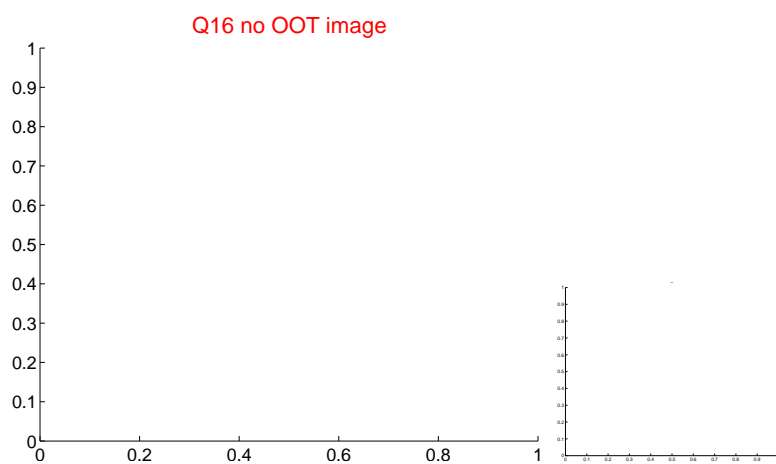
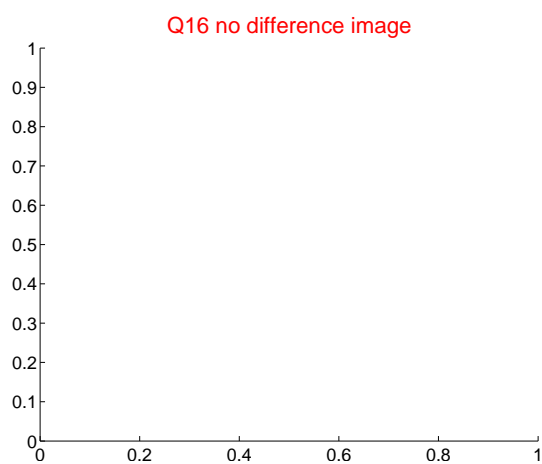
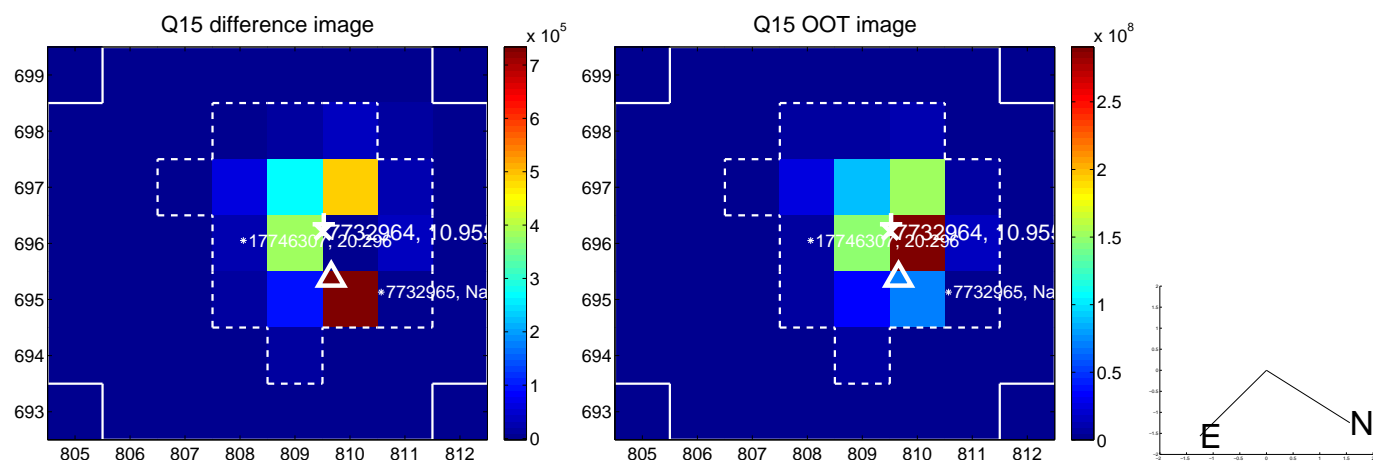
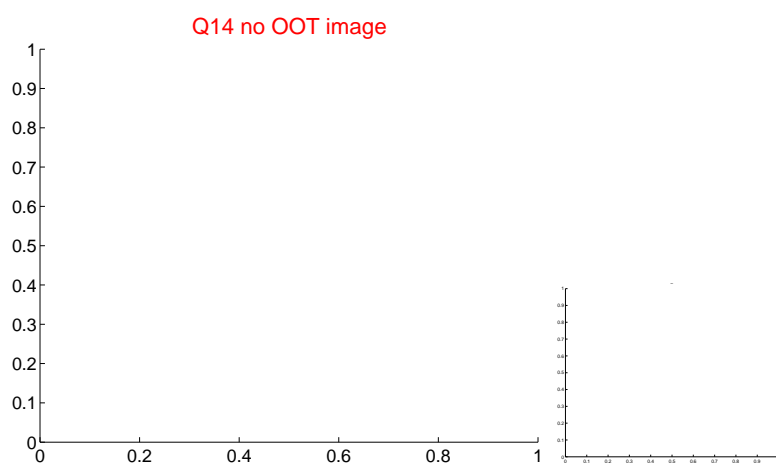
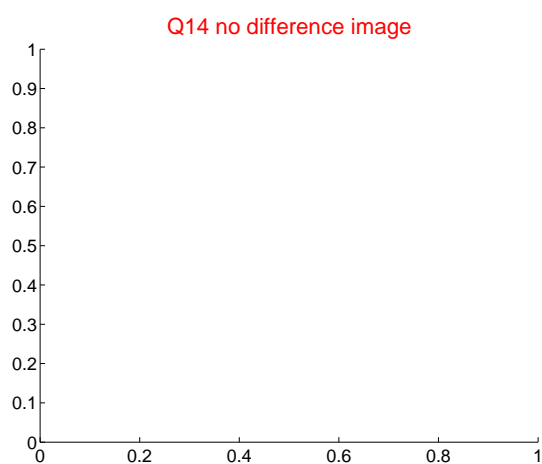
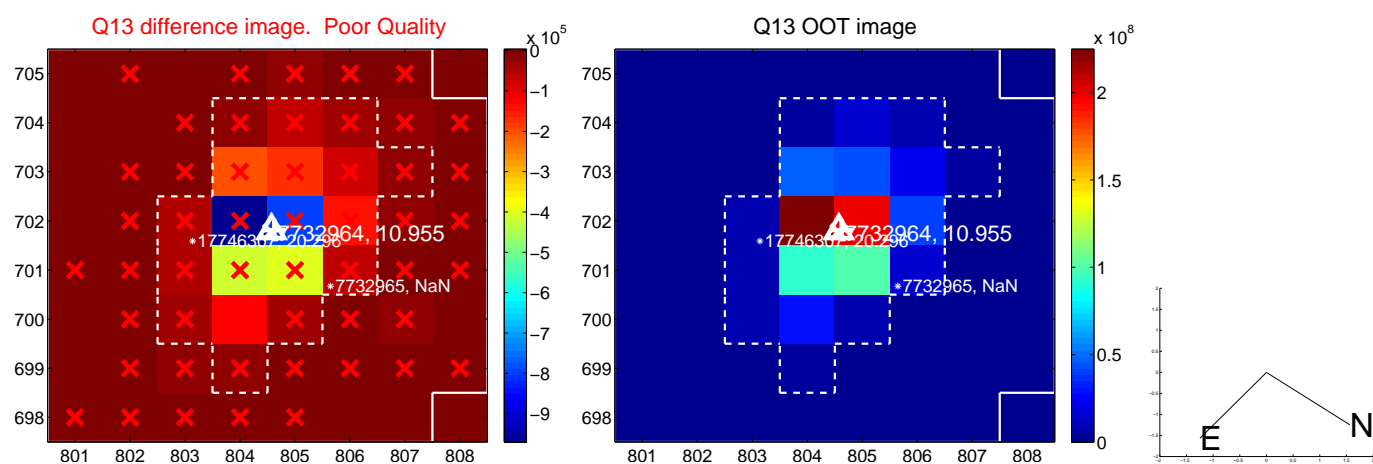
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



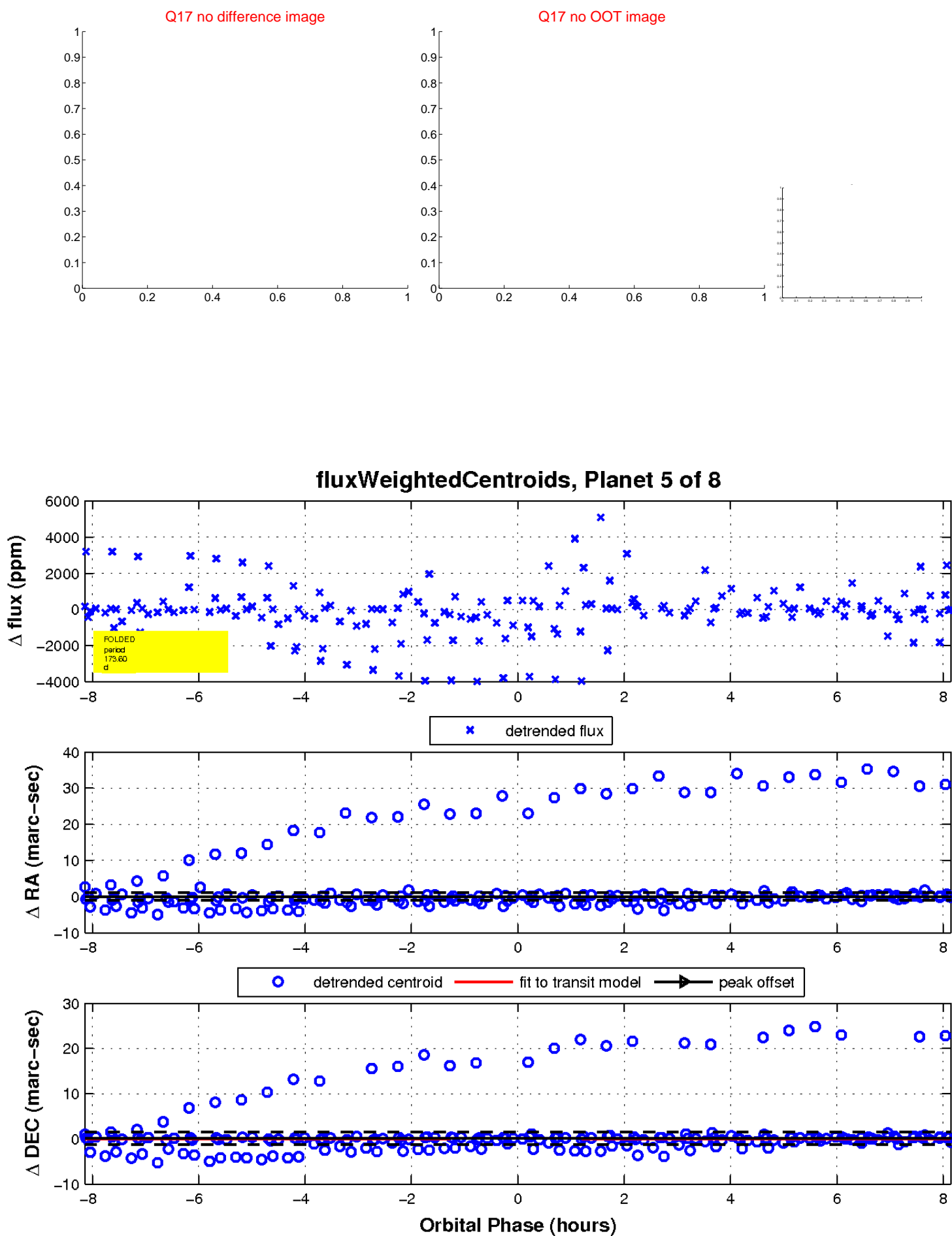
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

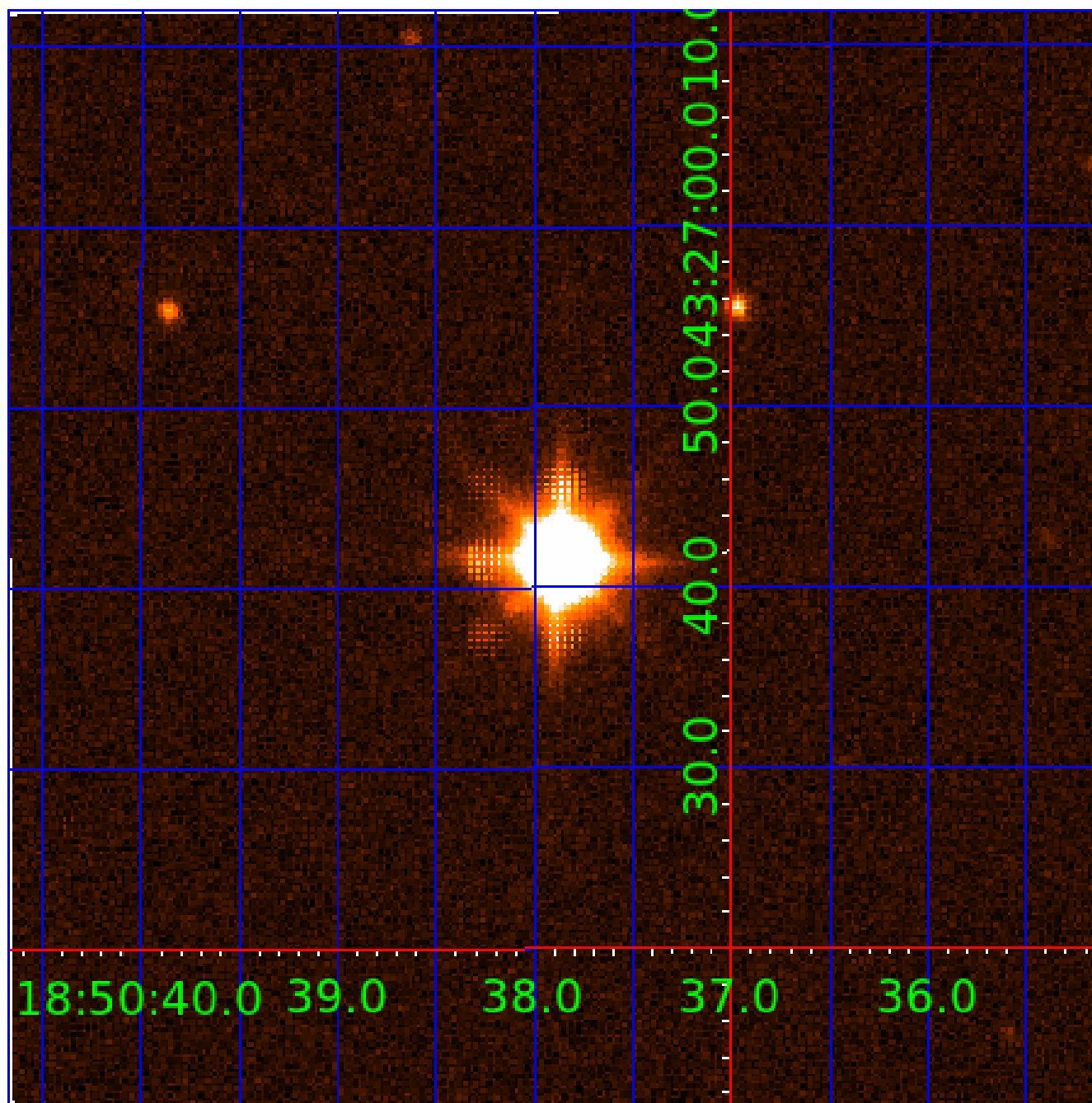


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007732964

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})
007732964-01	OBS	No	618.974049	331.733861	1453.0	5.158	24.3	7.3	0.69	4949	2.75	0.16
007732964-02	OBS	No	645.903968	206.952256	2478.7	12.460	15.6	9.4	0.69	4949	3.39	0.15
007732964-03	OBS	No	373.211794	455.685145	1368.1	9.805	18.8	6.7	0.69	4949	2.60	0.31
007732964-04	OBS	No	303.552228	299.231778	1039.4	6.143	16.2	5.1	0.69	4949	2.34	0.41
007732964-05	OBS	No	173.600024	212.195581	916.2	2.721	14.4	6.3	0.69	4949	2.05	0.86
007732964-06	OBS	No	328.182877	284.496606	57.9	3.184	13.9	0.3	0.69	4949	0.51	0.37
007732964-07	OBS	No	568.352660	211.808073	130.6	10.500	16.3	-1.0	0.69	4949	0.77	0.18
007732964-08	OBS	No	430.650899	449.355020	236.1	4.500	16.7	-1.0	0.69	4949	1.03	0.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007732964-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
007732964-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007732964-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
007732964-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

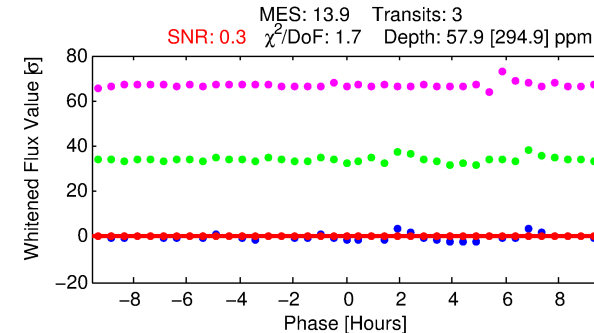
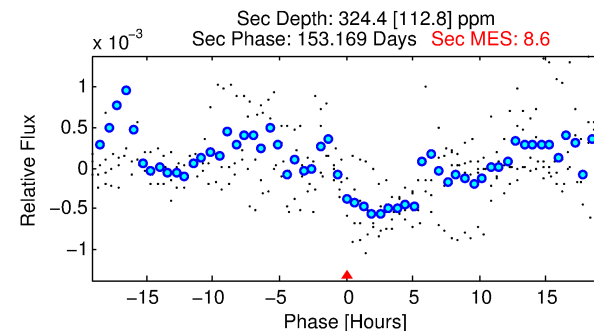
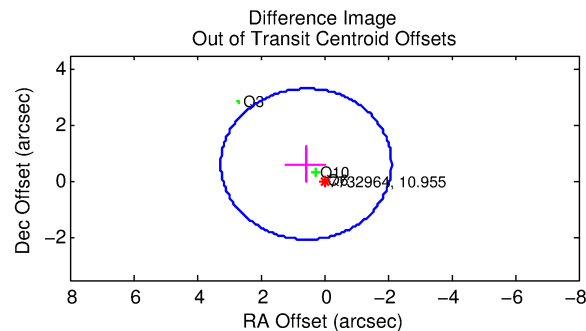
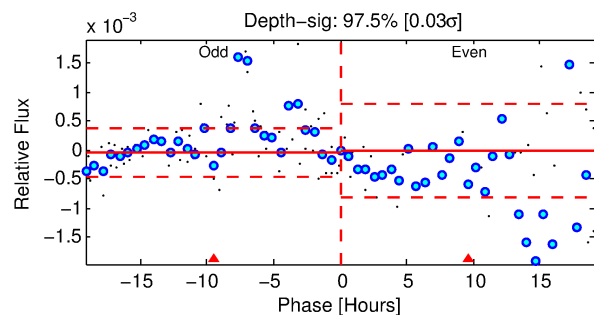
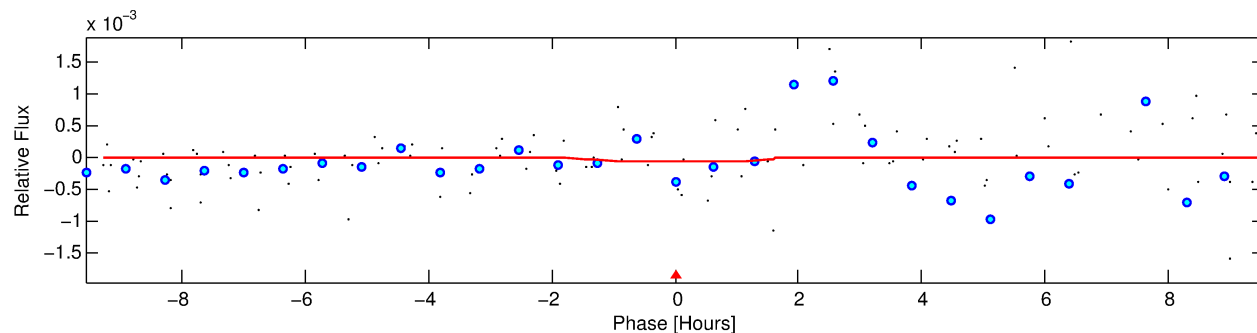
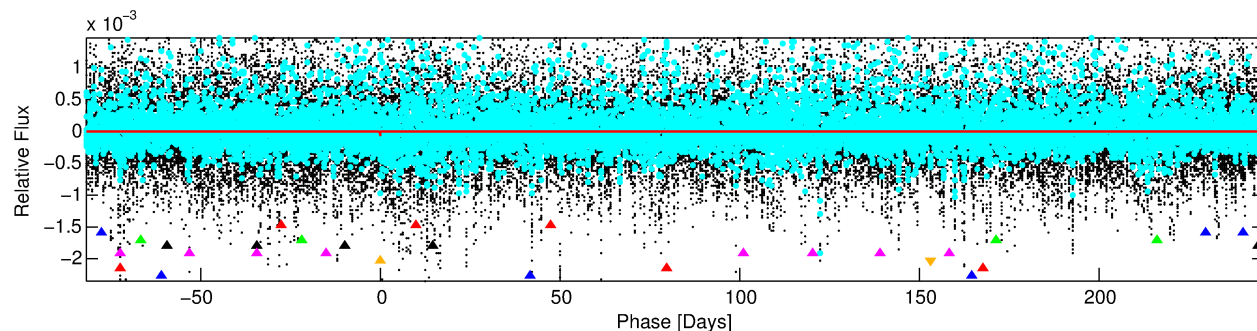
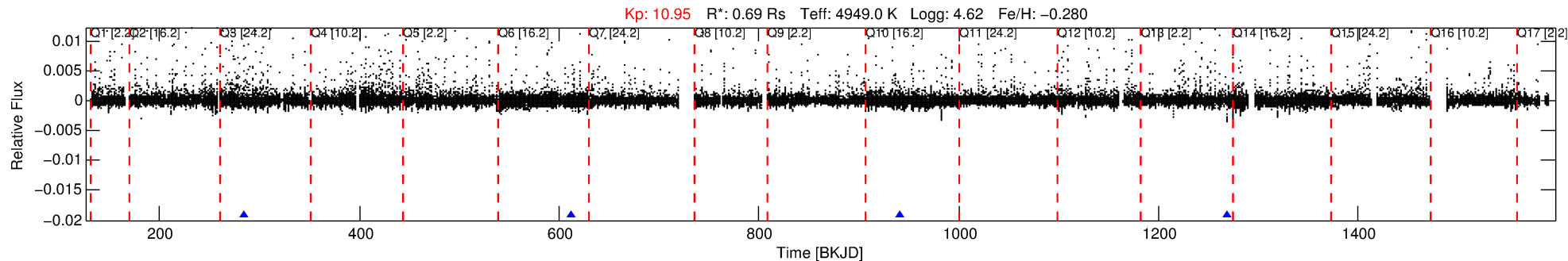
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007732964-06

No Significant Match Found

DV One-Page Summary

KIC: 7732964 Candidate: 6 of 8 Period: 328.183 d



DV Fit Results:

Period = 328.18288 [0.11020] d
Epoch = 284.4966 [0.1523] BKJD
Rp/R* = 0.0068 [0.4242]
a/R* = 788.42 [171622.50]
b = 0.10 [2101.75]
Seff = 0.37 [0.07]
Teq = 198 [9] K
Rp = 0.51 [31.94] Re
a = 0.8350 [0.0718] AU
Ag = 479028.35 [60035633.36] [0.01σ]
Teff = 8073 [252943] K [0.03σ]

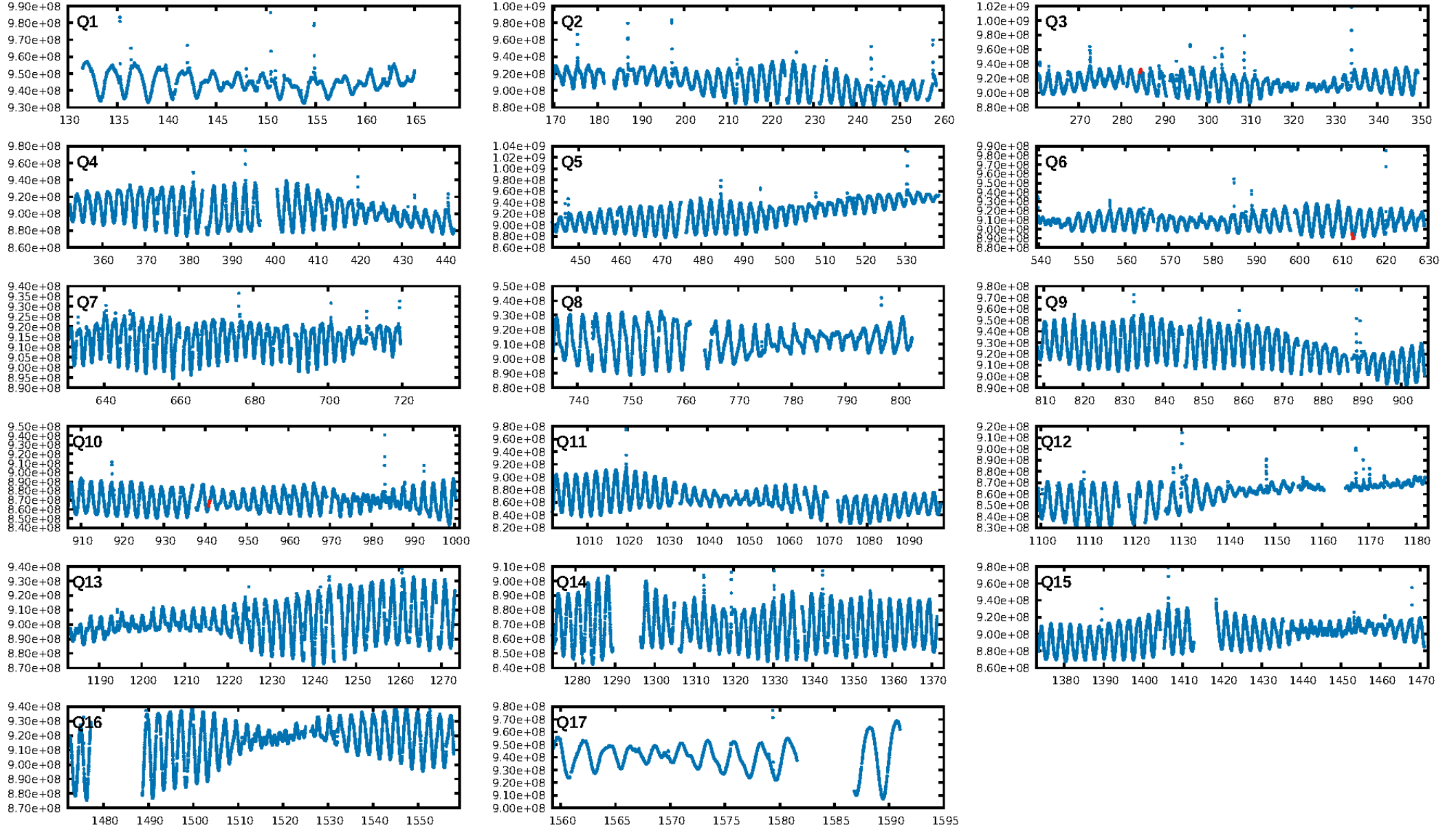
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [85.44σ]
LongPeriod-sig: 100.0% [104.83σ]
ModelChiSquare2-sig: 61.3%
ModelChiSquareGof-sig: 28.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.206
Centroid-sig: 37.6%
Centroid-so: 11.410 arcsec [1.04σ]
QotOffset-rm: 0.842 arcsec [0.94σ]
QotOffset-st: 2/1/0/0 [3]
KicOffset-rm: 0.609 arcsec [0.62σ]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

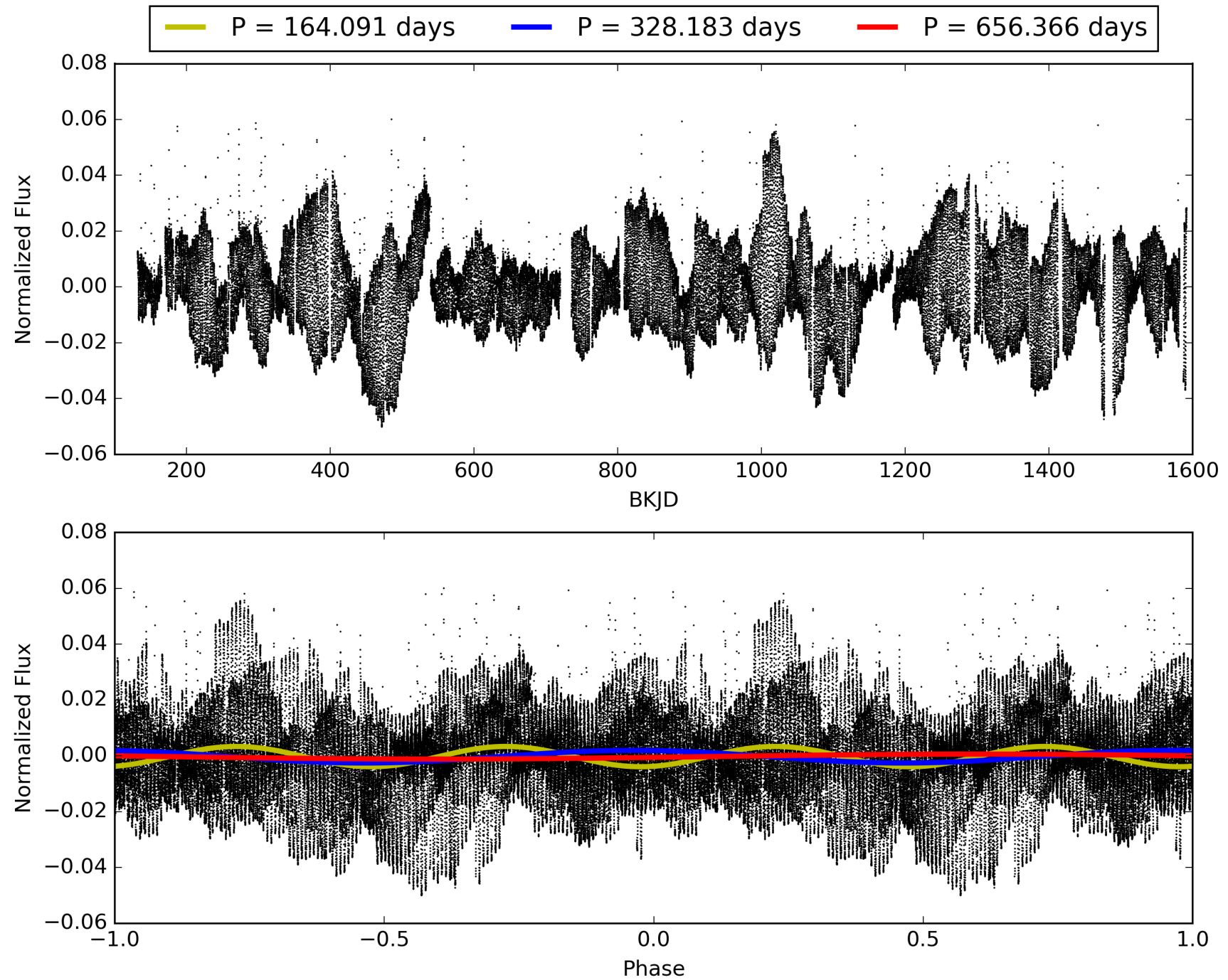
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:42:15 Z

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

TCE 007732964-06, PDC Light Curves

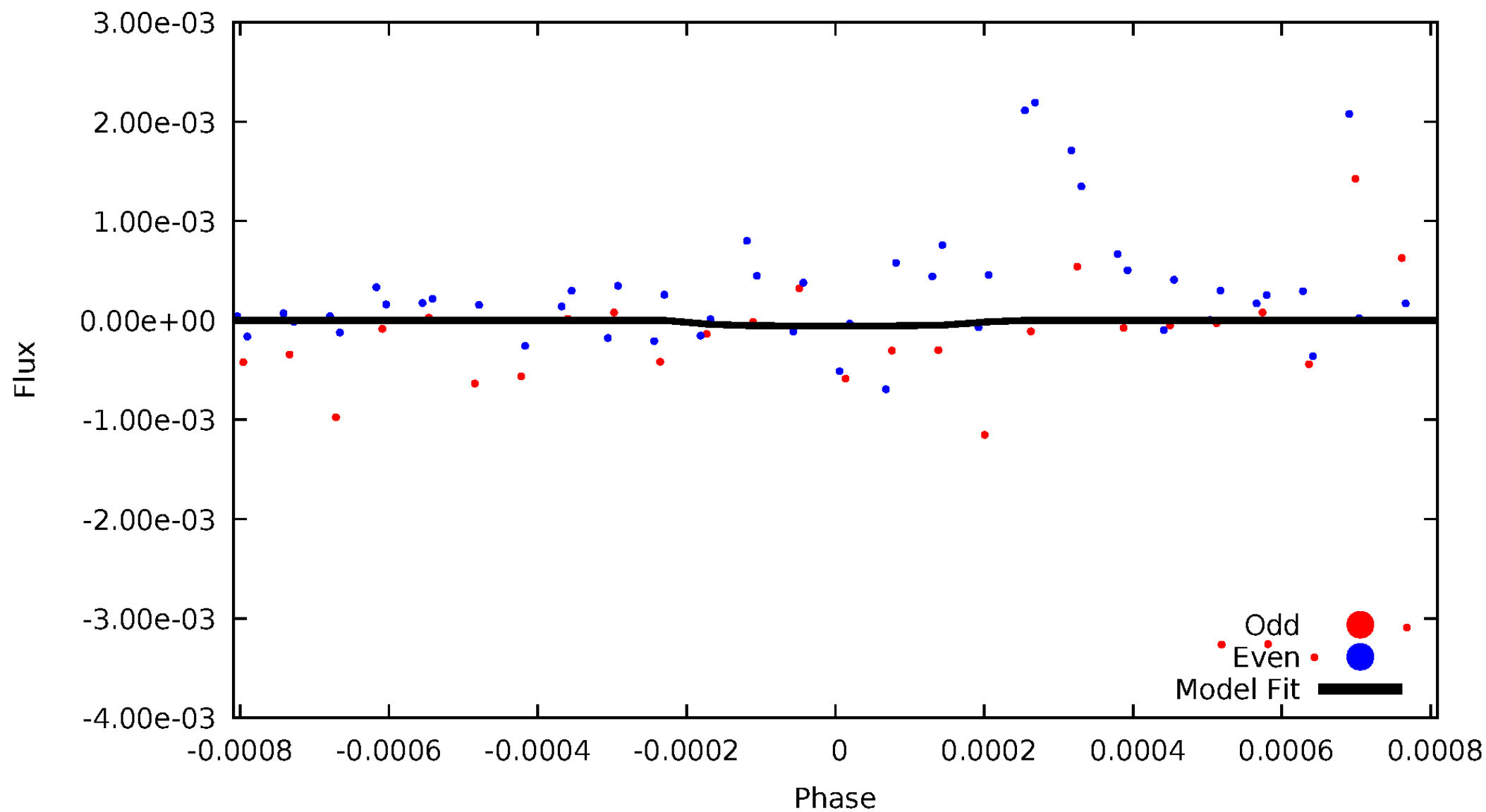


TCE 007732964-06



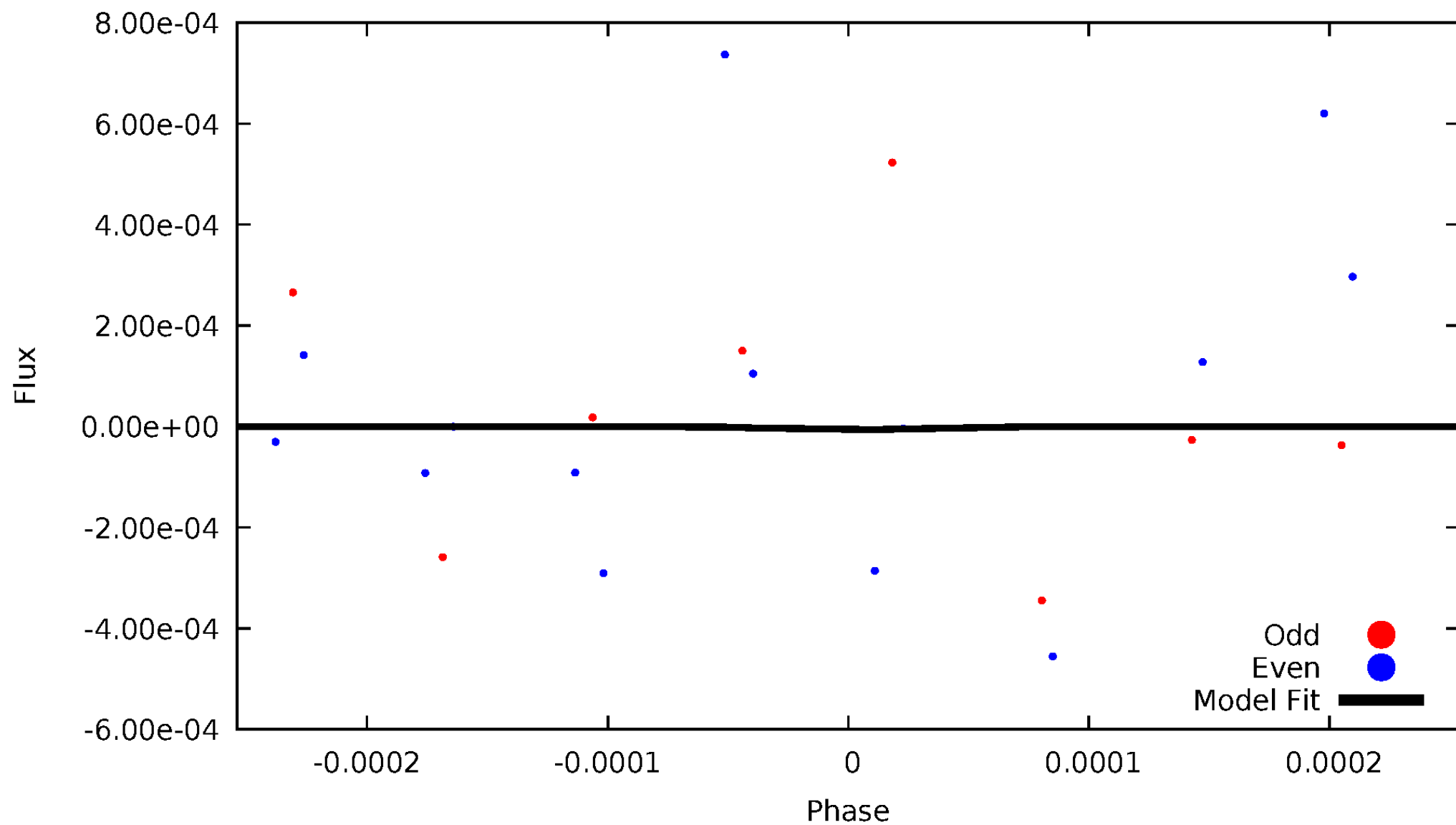
DV Odd/Even

TCE 007732964-06



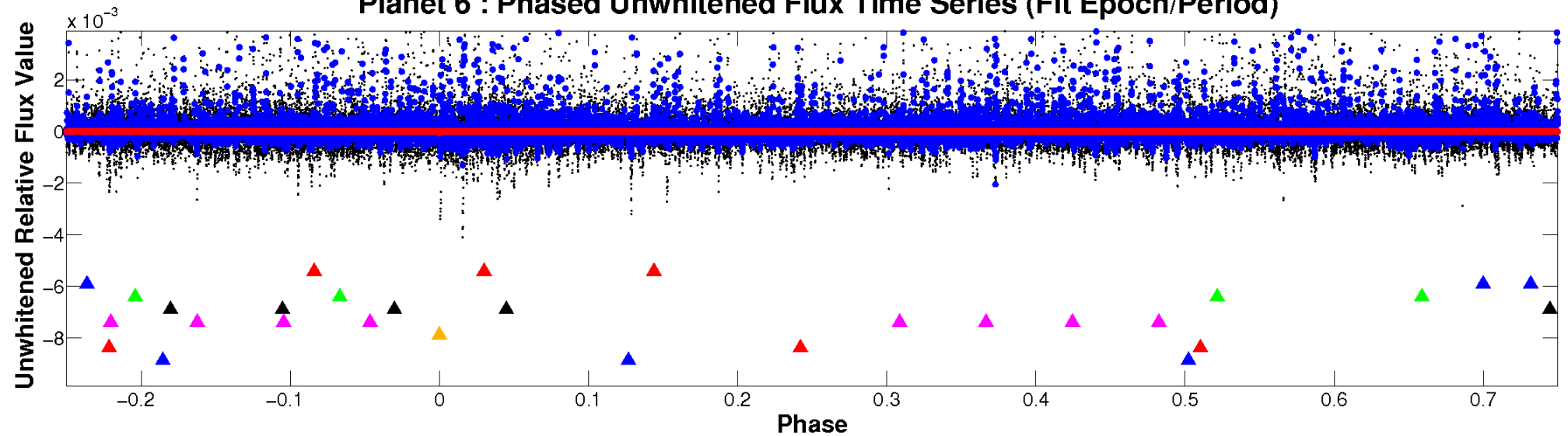
ALT Odd/Even

TCE 007732964-06

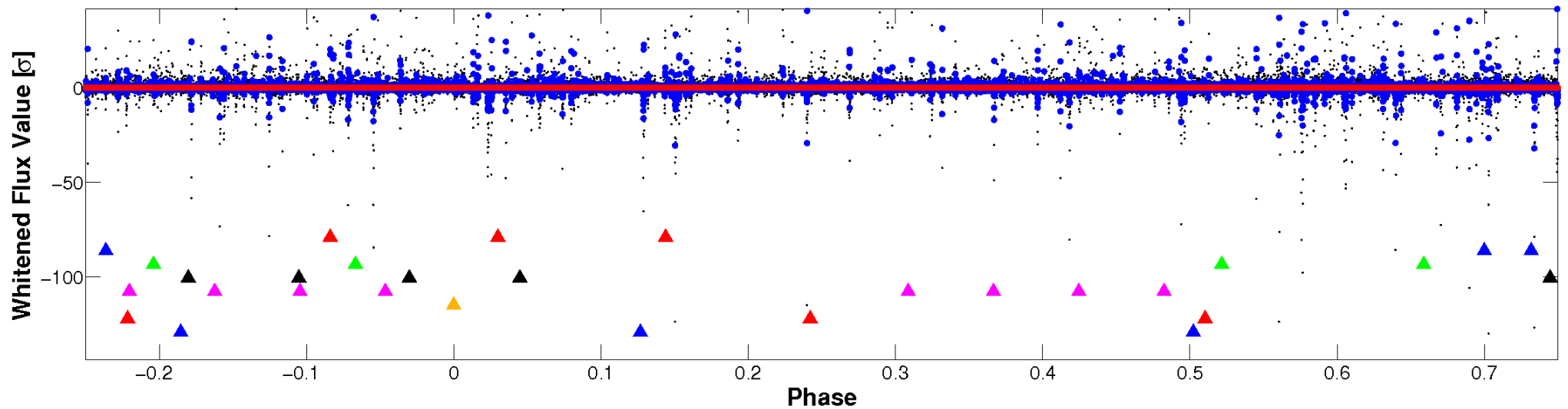


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

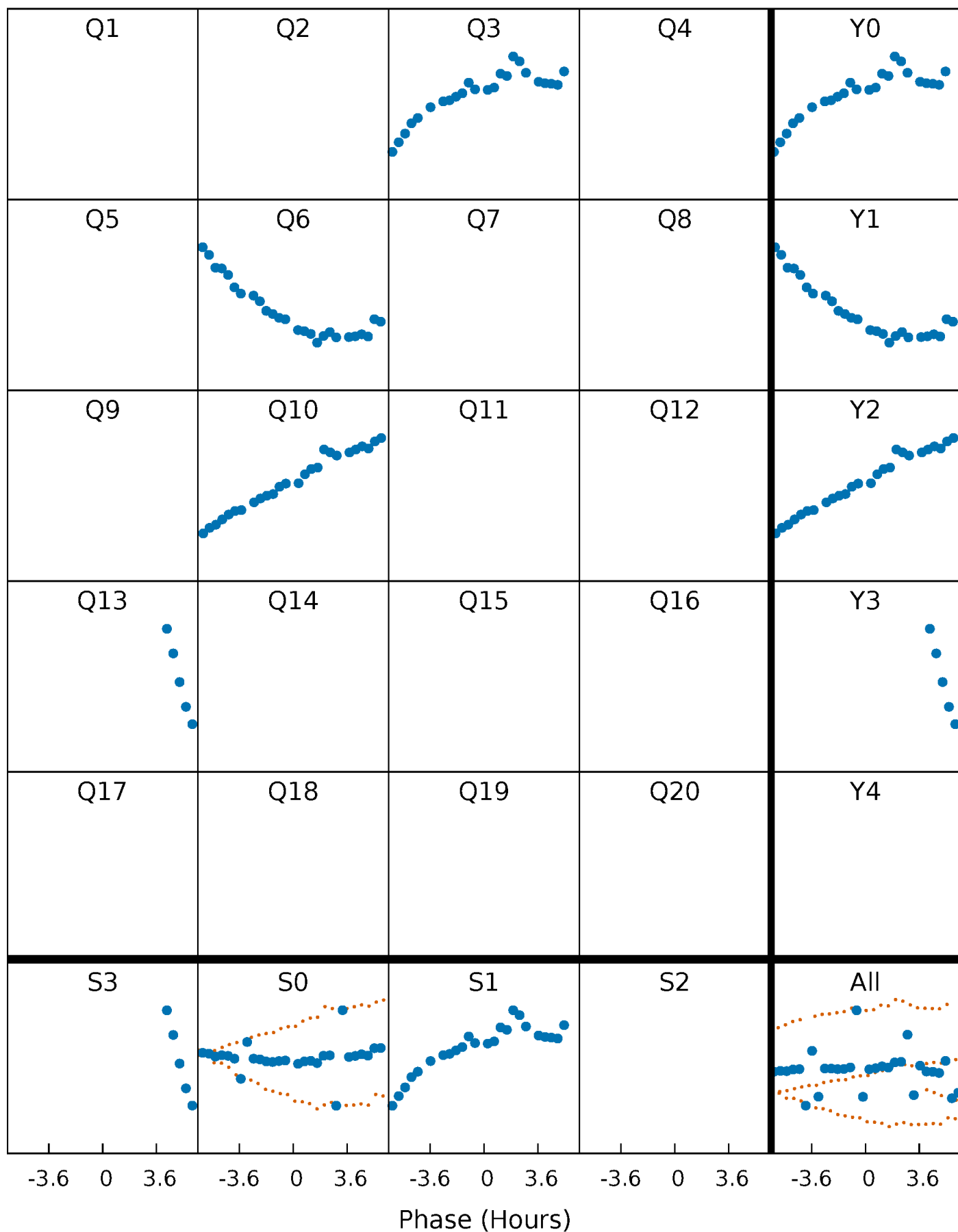


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



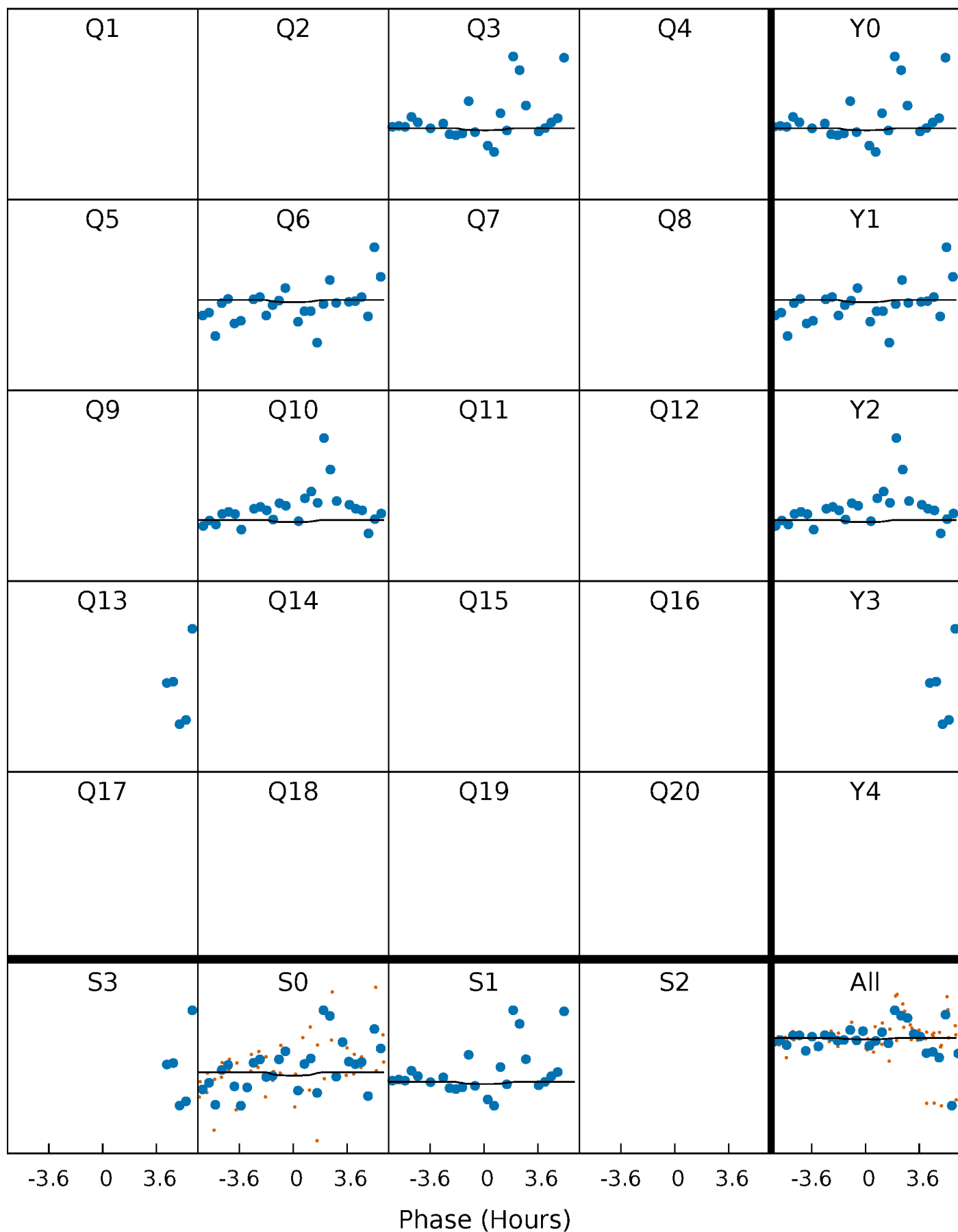
PDC Quarter-Phased Transit Curves

TCE 007732964-06 $P=328.182877$ Days $T_0=284.496606$ (BKJD)



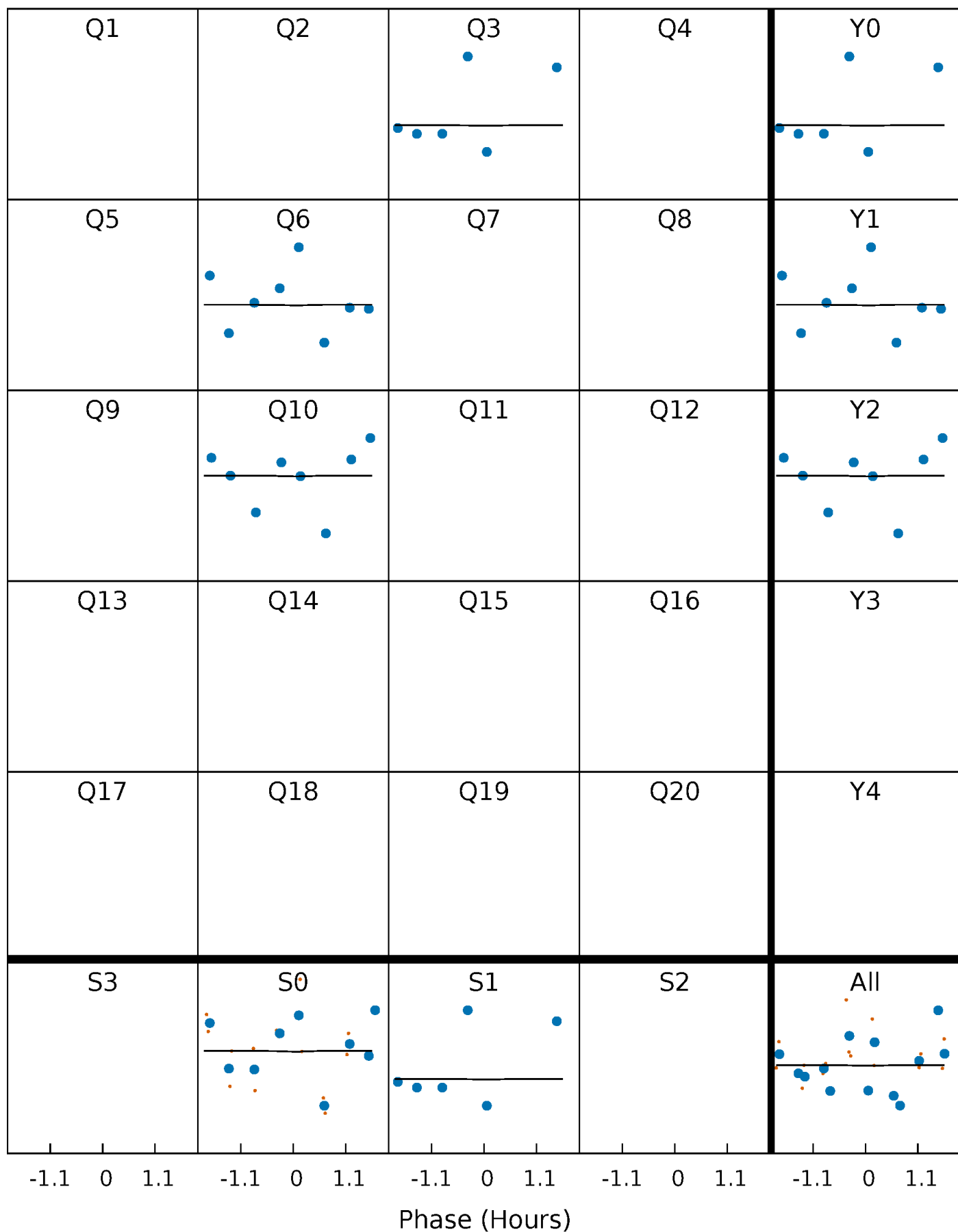
DV Quarter-Phased Transit Curves

TCE 007732964-06 $P=328.182877$ Days $T_0=284.496606$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

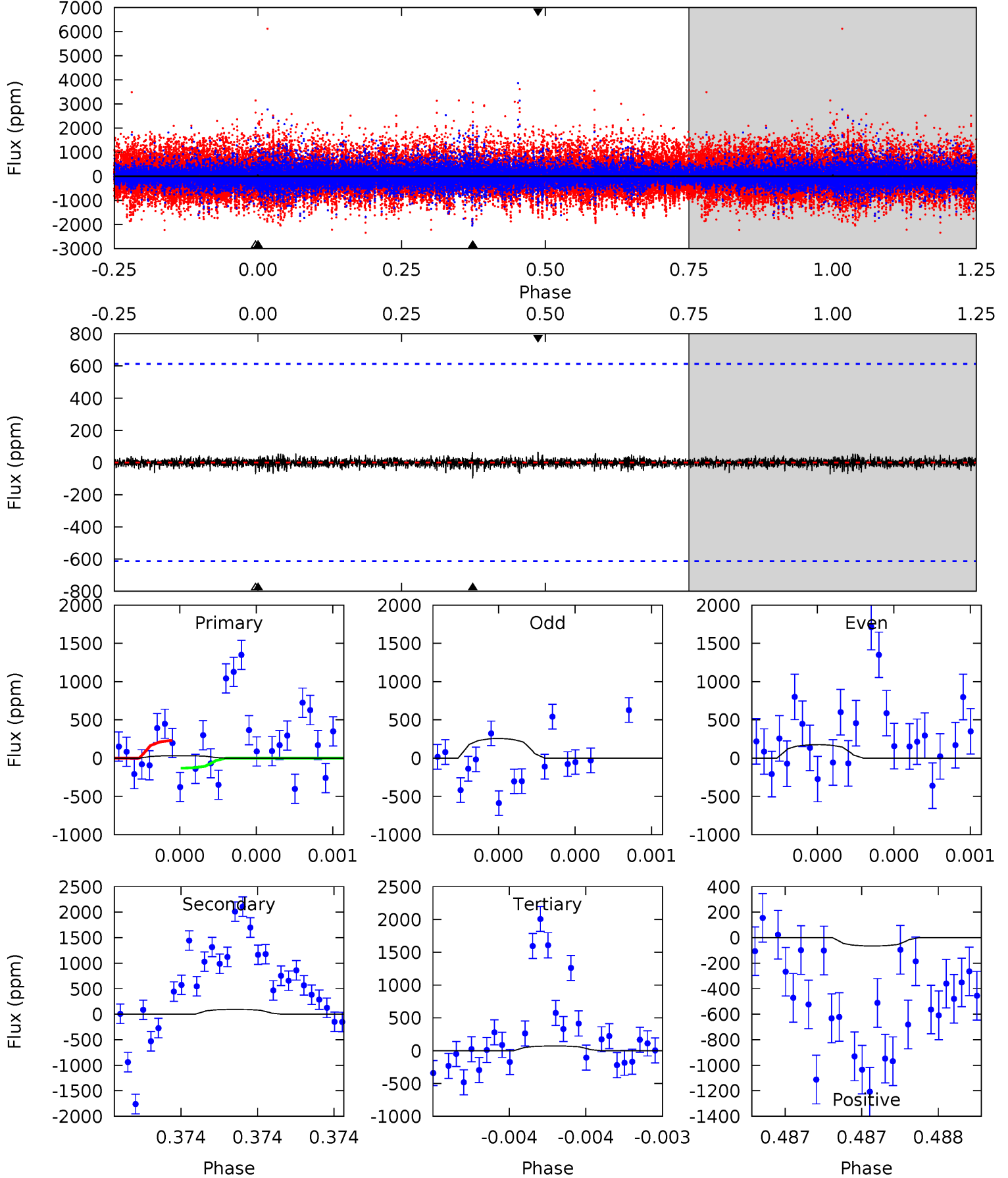
TCE 007732964-06 P=328.183178 Days $T_0=284.474401$ (BKJD)



DV Model-Shift Uniqueness Test

007732964-06, $P = 328.182877$ Days, $E = 284.496606$ Days

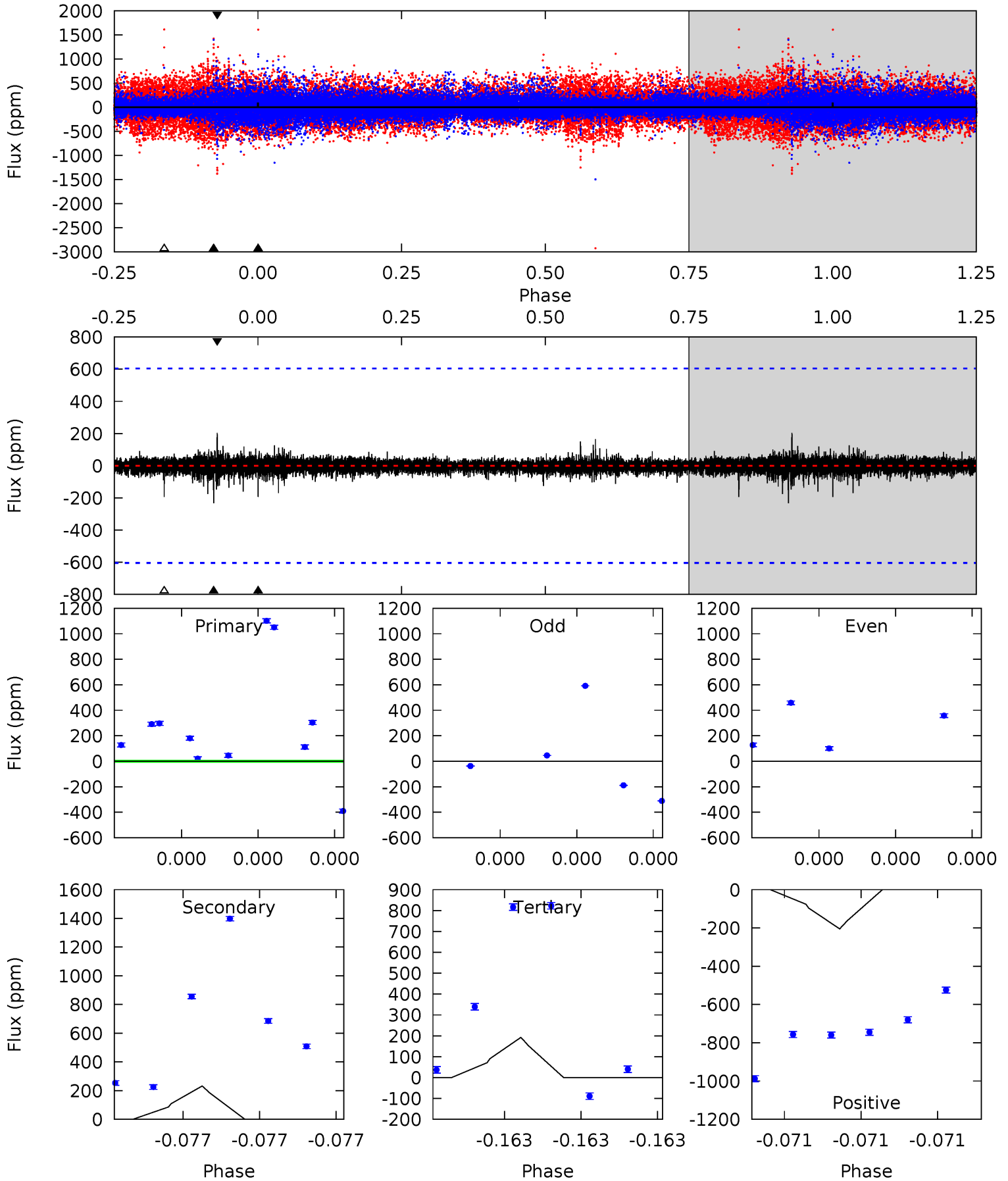
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.29	0.86	0.66	0.60	5.60	3.52	0.13	-0.36	-0.31	0.20	0.26	0.27	-0.47	0.41	0.47



Alt Model-Shift Uniqueness Test

007732964-06, P = 328.183178 Days, E = 284.474401 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.96	2.23	1.85	1.97	5.81	3.84	0.23	-0.89	-1.01	0.38	0.26	1.41	3.22	0.47	0.15



Stellar Parameters For KIC 007732964

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4949^{+176}_{-176}	$4.618^{+0.041}_{-0.054}$	$-0.280^{+0.300}_{-0.300}$	$0.690^{+0.078}_{-0.058}$	$0.720^{+0.078}_{-0.064}$	$3.093^{+0.632}_{-0.628}$
	+4%/-4%	+1%/-1%	+107%/-107%	+11%/-8%	+11%/-9%	+20%/-20%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007732964-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-94 ± 109	$20.96^{+26.46}_{-15.25}$	278^{+12}_{-11}	1845^{+616}_{-3337}	54^{+786}_{-58}
Alt.	-232 ± 104	$20.15^{+24.69}_{-14.02}$	278^{+12}_{-11}	2102^{+722}_{-331}	191^{+2086}_{-158}

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

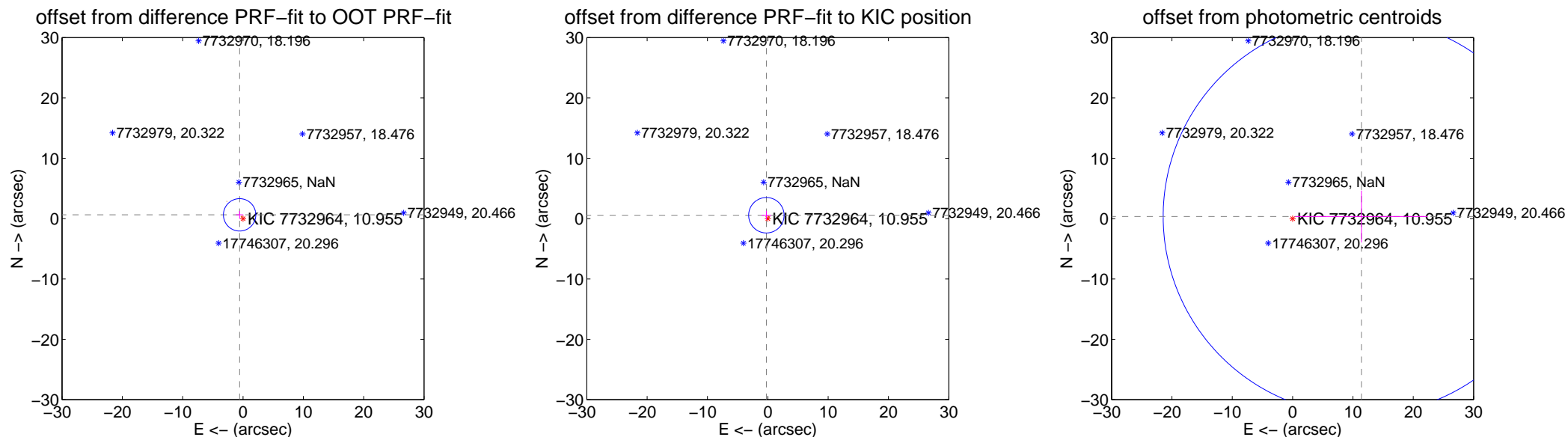
DV Centroid Data

Supplemental centroid analysis for 007732964-06. **Kepler magnitude: 10.96.** Transit SNR 0.30

There are 1 quarters with good PRF difference image offsets

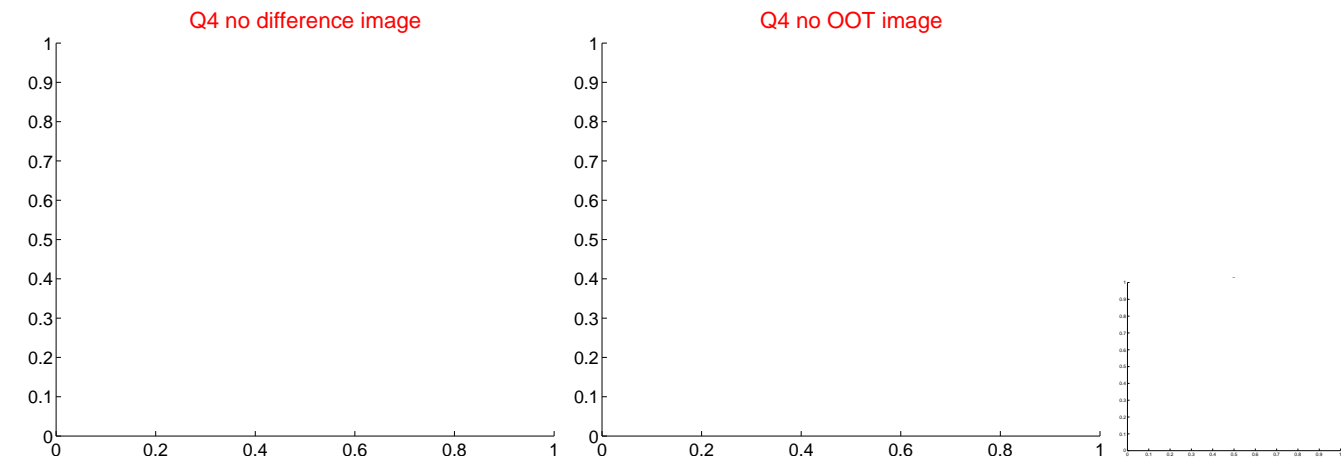
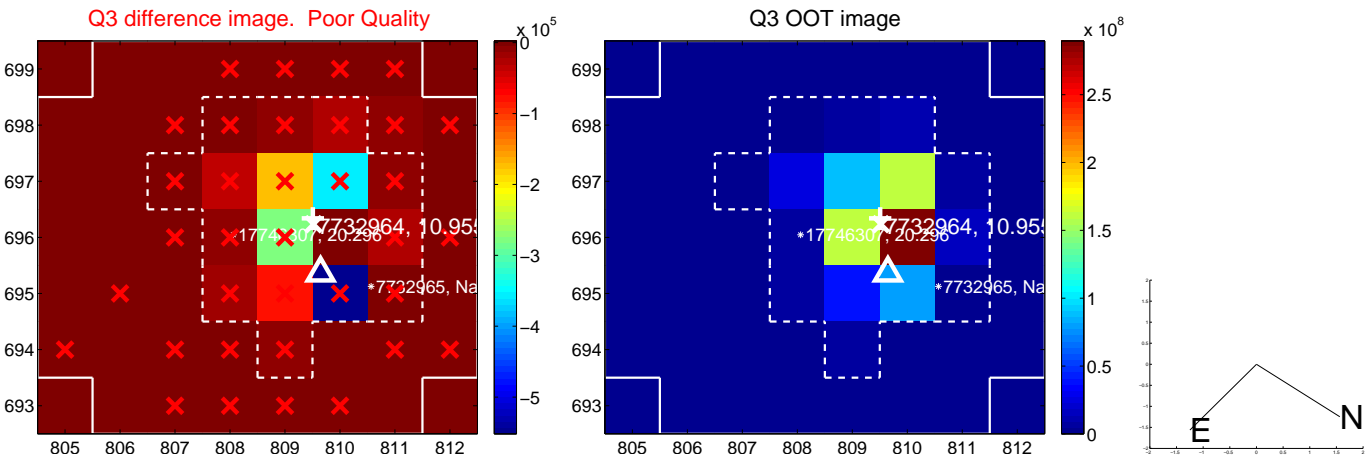
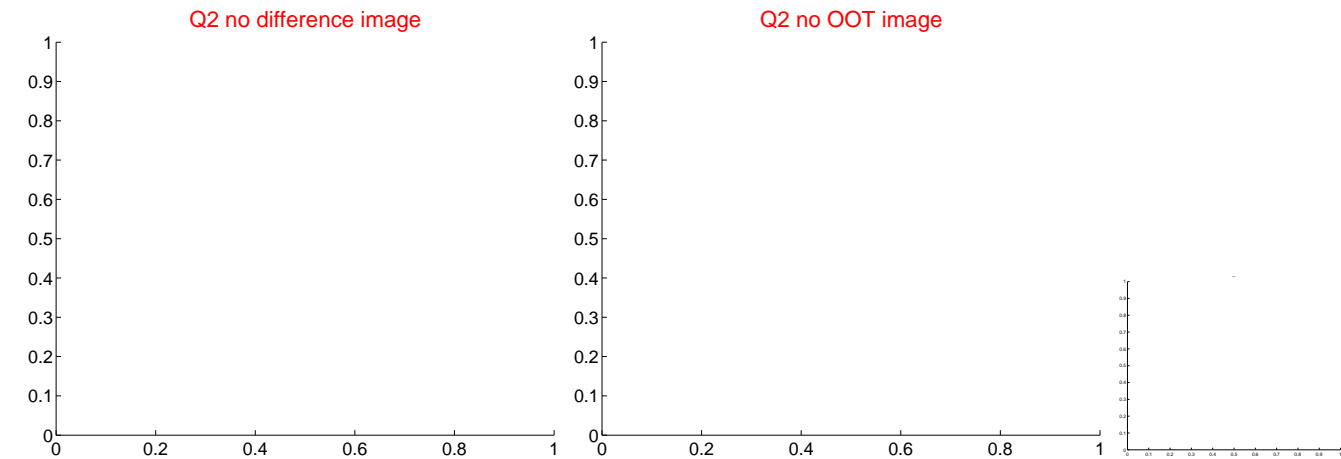
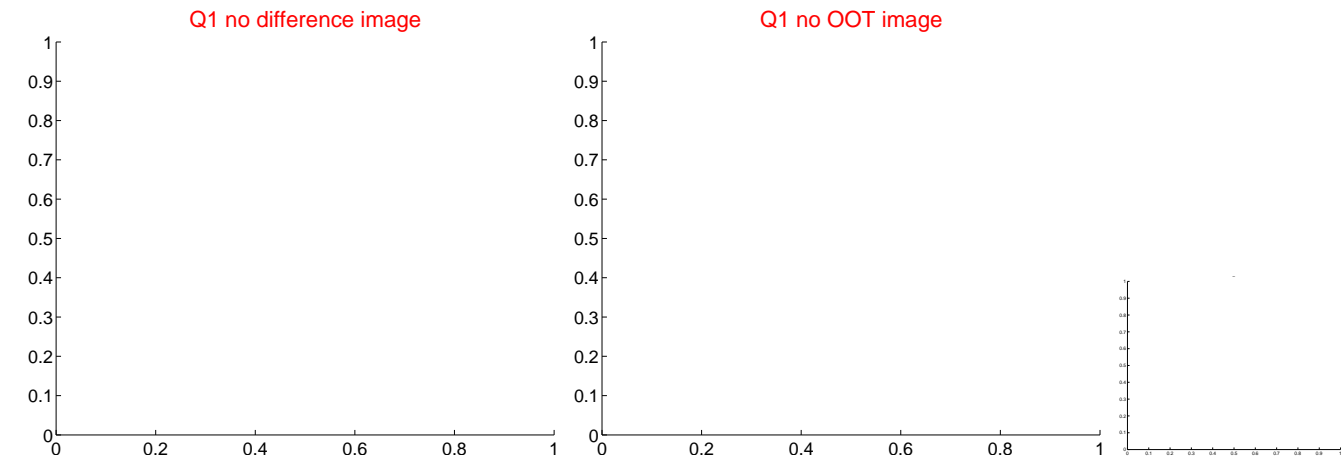
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.842 ± 0.894	0.94	0.562 ± 0.619	0.626 ± 0.650
PRF-fit source offset from KIC position	0.609 ± 0.979	0.62	0.237 ± 0.804	0.561 ± 0.725
photometric centroid source offset	11.41 ± 10.95	1.04	-11.40 ± 10.96	0.35 ± 4.29

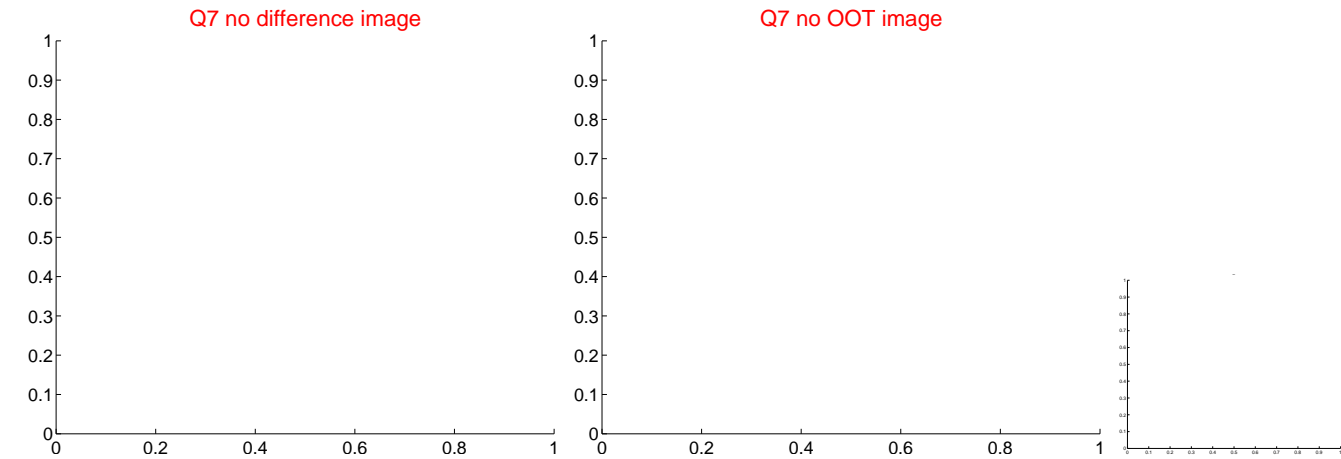
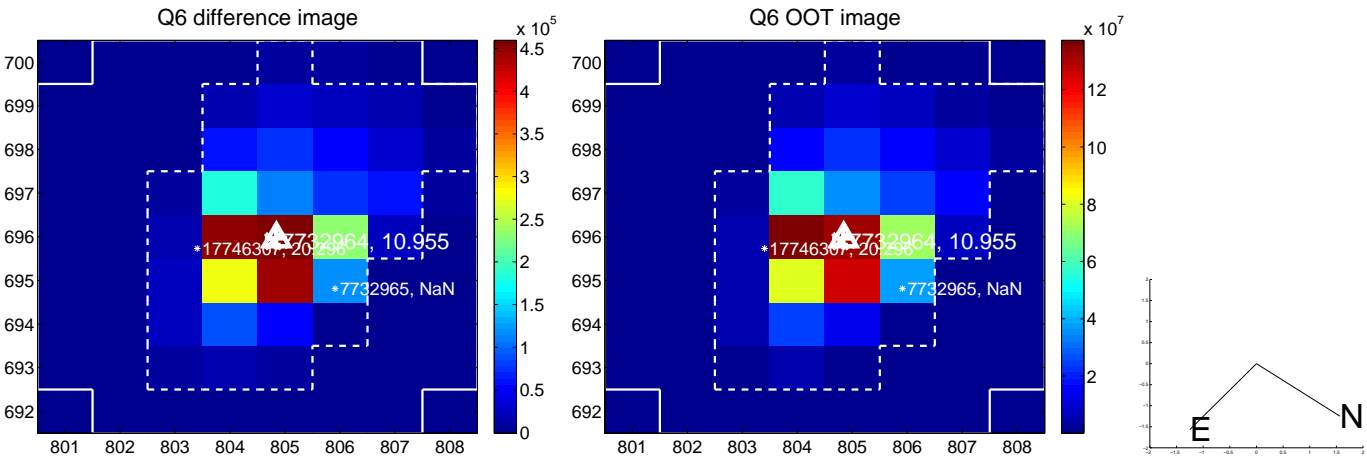


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

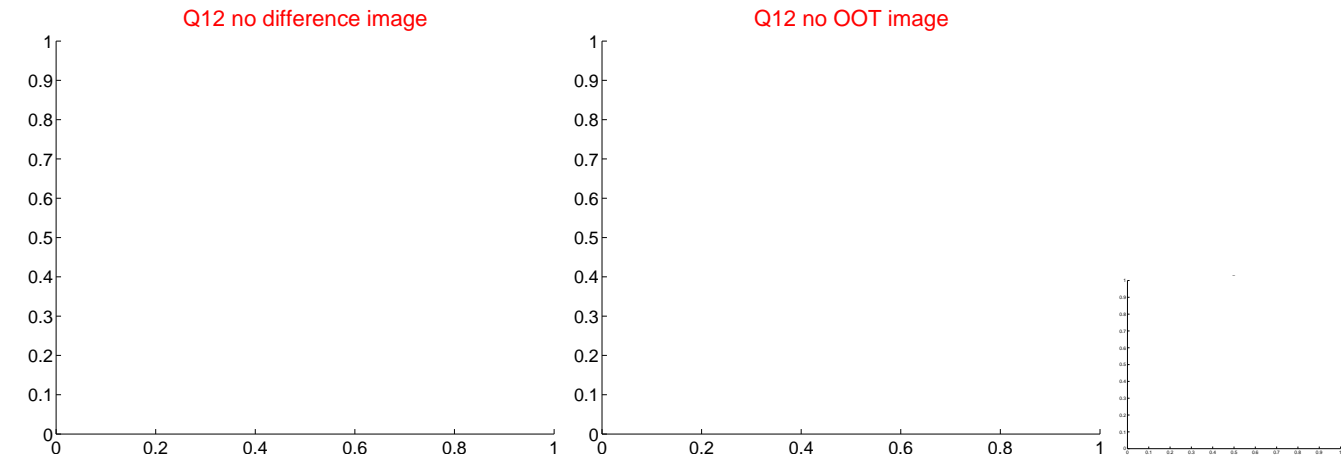
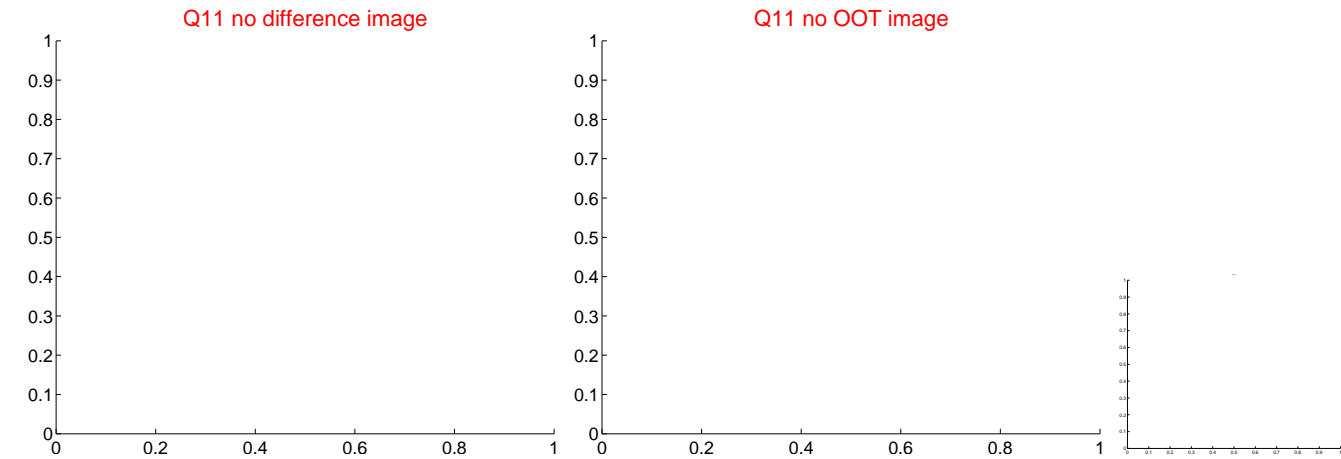
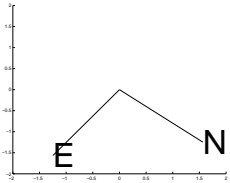
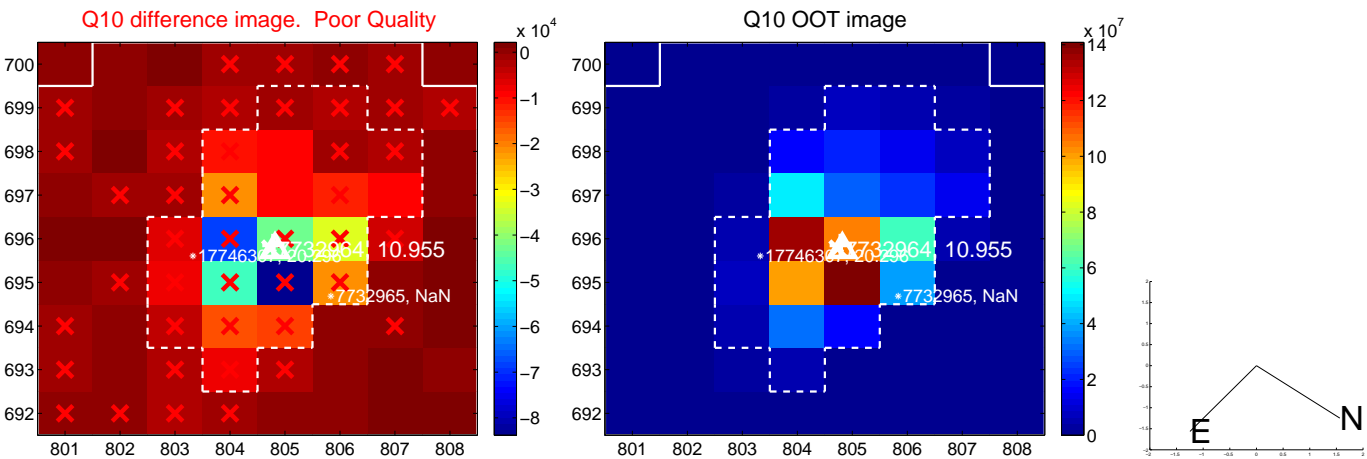
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



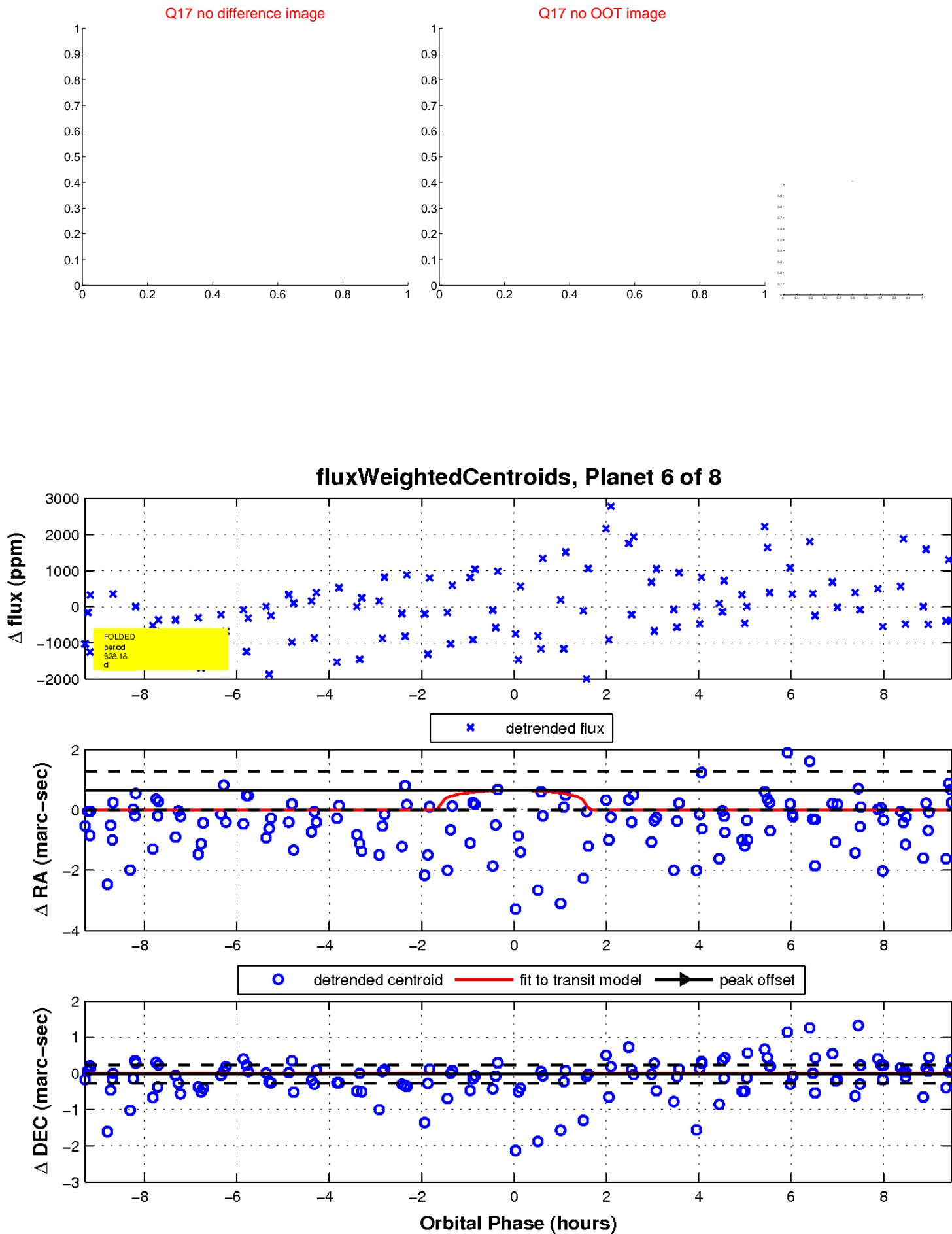
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

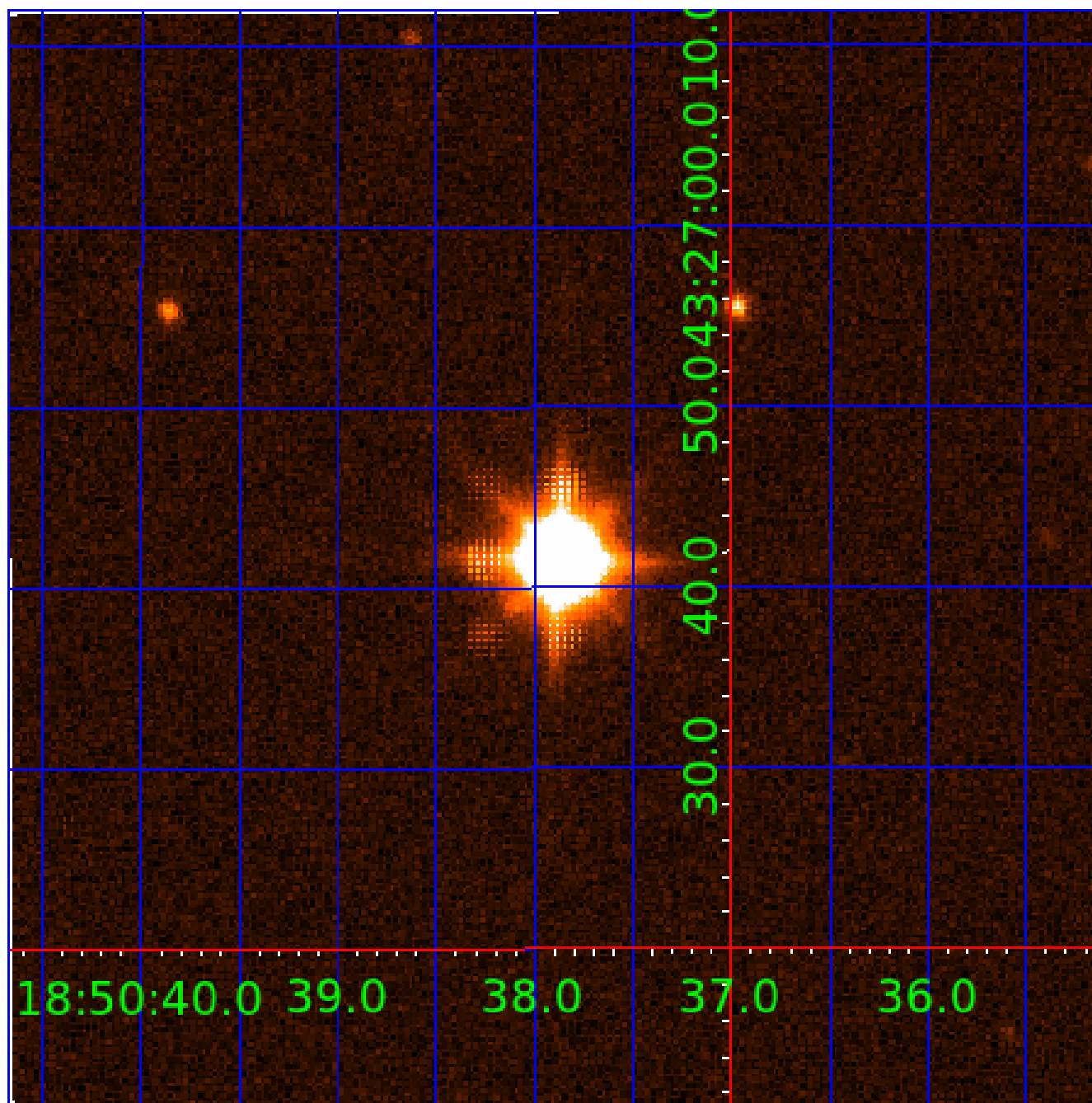


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007732964

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})
007732964-01	OBS	No	618.974049	331.733861	1453.0	5.158	24.3	7.3	0.69	4949	2.75	0.16
007732964-02	OBS	No	645.903968	206.952256	2478.7	12.460	15.6	9.4	0.69	4949	3.39	0.15
007732964-03	OBS	No	373.211794	455.685145	1368.1	9.805	18.8	6.7	0.69	4949	2.60	0.31
007732964-04	OBS	No	303.552228	299.231778	1039.4	6.143	16.2	5.1	0.69	4949	2.34	0.41
007732964-05	OBS	No	173.600024	212.195581	916.2	2.721	14.4	6.3	0.69	4949	2.05	0.86
007732964-06	OBS	No	328.182877	284.496606	57.9	3.184	13.9	0.3	0.69	4949	0.51	0.37
007732964-07	OBS	No	568.352660	211.808073	130.6	10.500	16.3	-1.0	0.69	4949	0.77	0.18
007732964-08	OBS	No	430.650899	449.355020	236.1	4.500	16.7	-1.0	0.69	4949	1.03	0.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007732964-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
007732964-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007732964-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
007732964-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

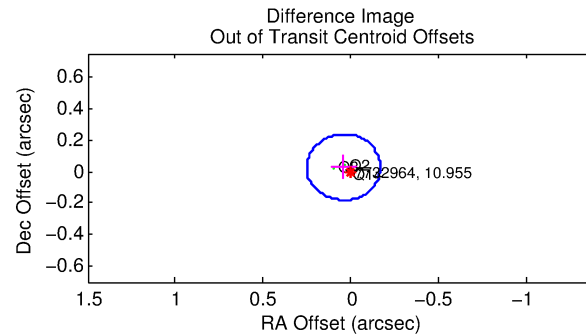
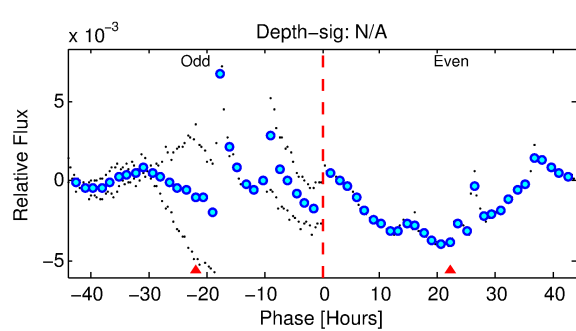
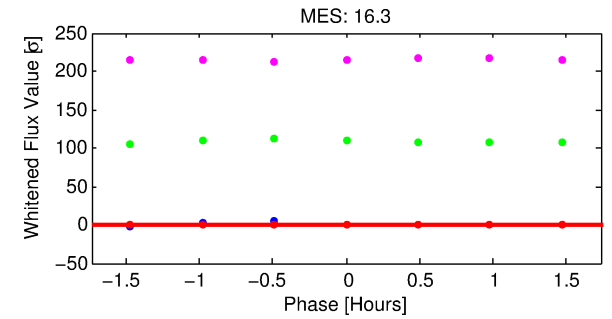
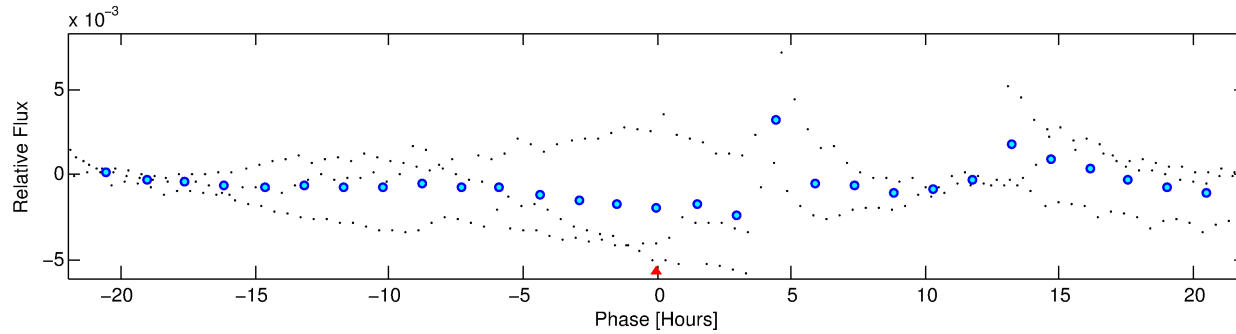
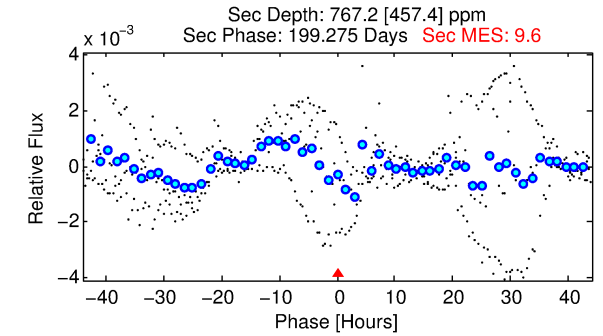
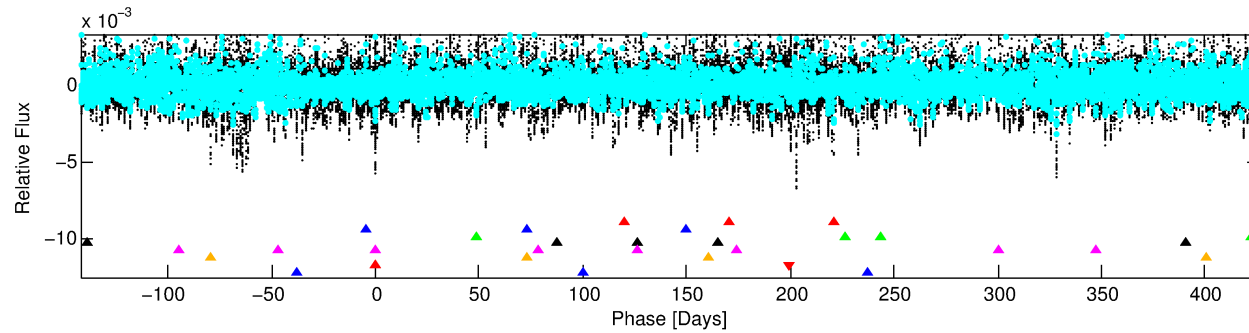
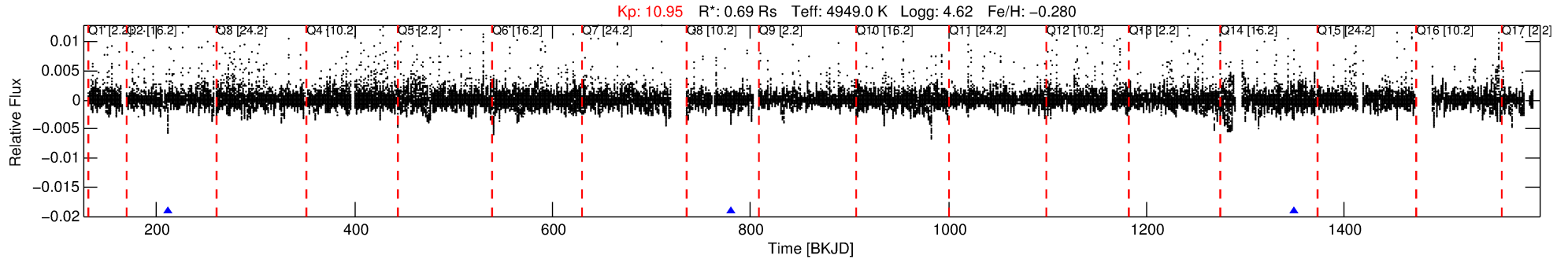
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007732964-07

No Significant Match Found

DV One-Page Summary

KIC: 7732964 Candidate: 7 of 8 Period: 568.353 d



TPS TCE Results:

Period = 568.35266 d
Epoch = 211.8081 BKJD

DV fit results are unavailable

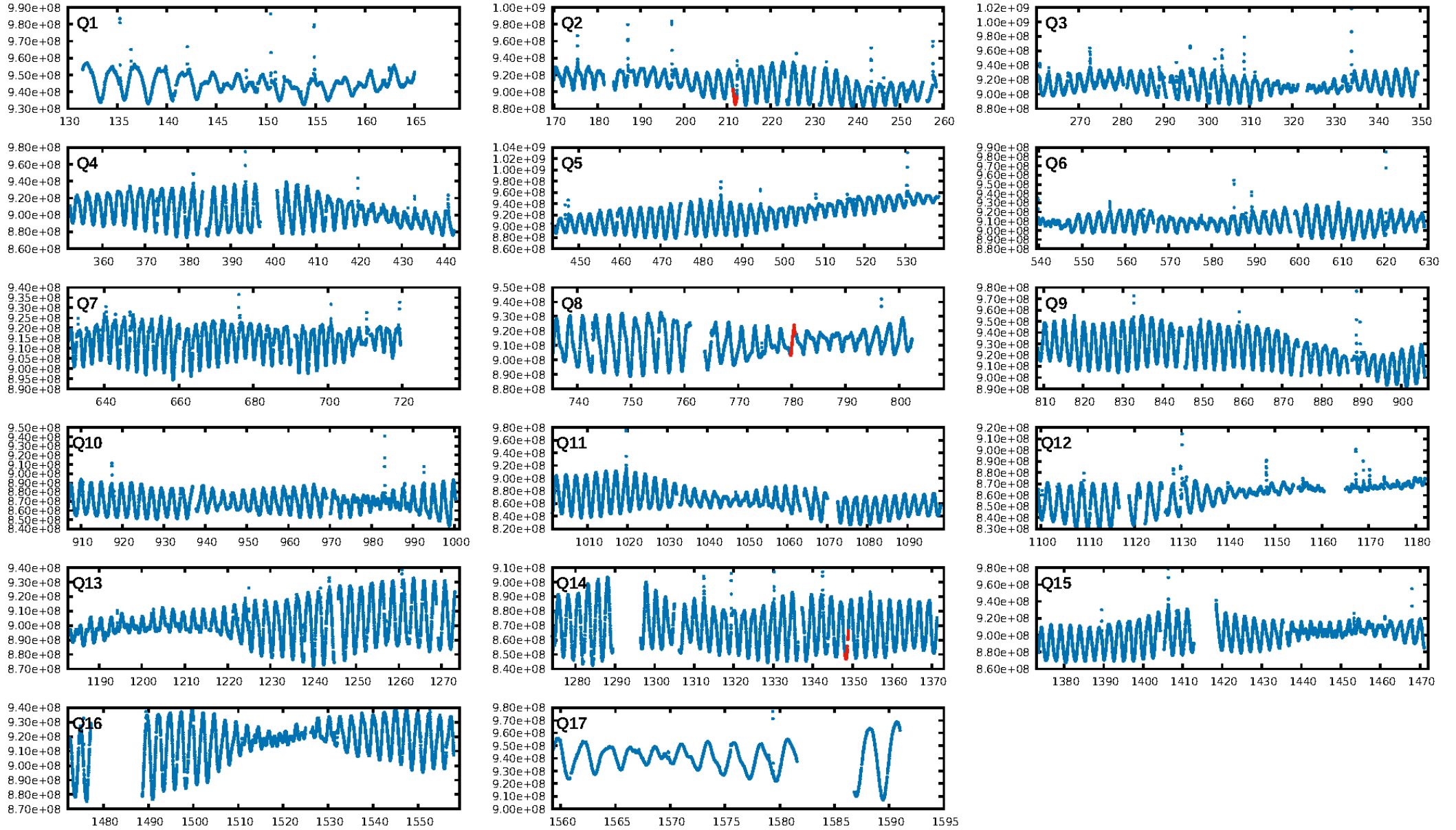
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [289.30 σ]
LongPeriod-sig: 100.0% [103.85 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.862
Centroid-sig: 31.5%
Centroid-so: 0.337 arcsec [3.87 σ]
OotOffset-rm: 0.051 arcsec [0.73 σ]
KicOffset-rm: 0.281 arcsec [3.00 σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

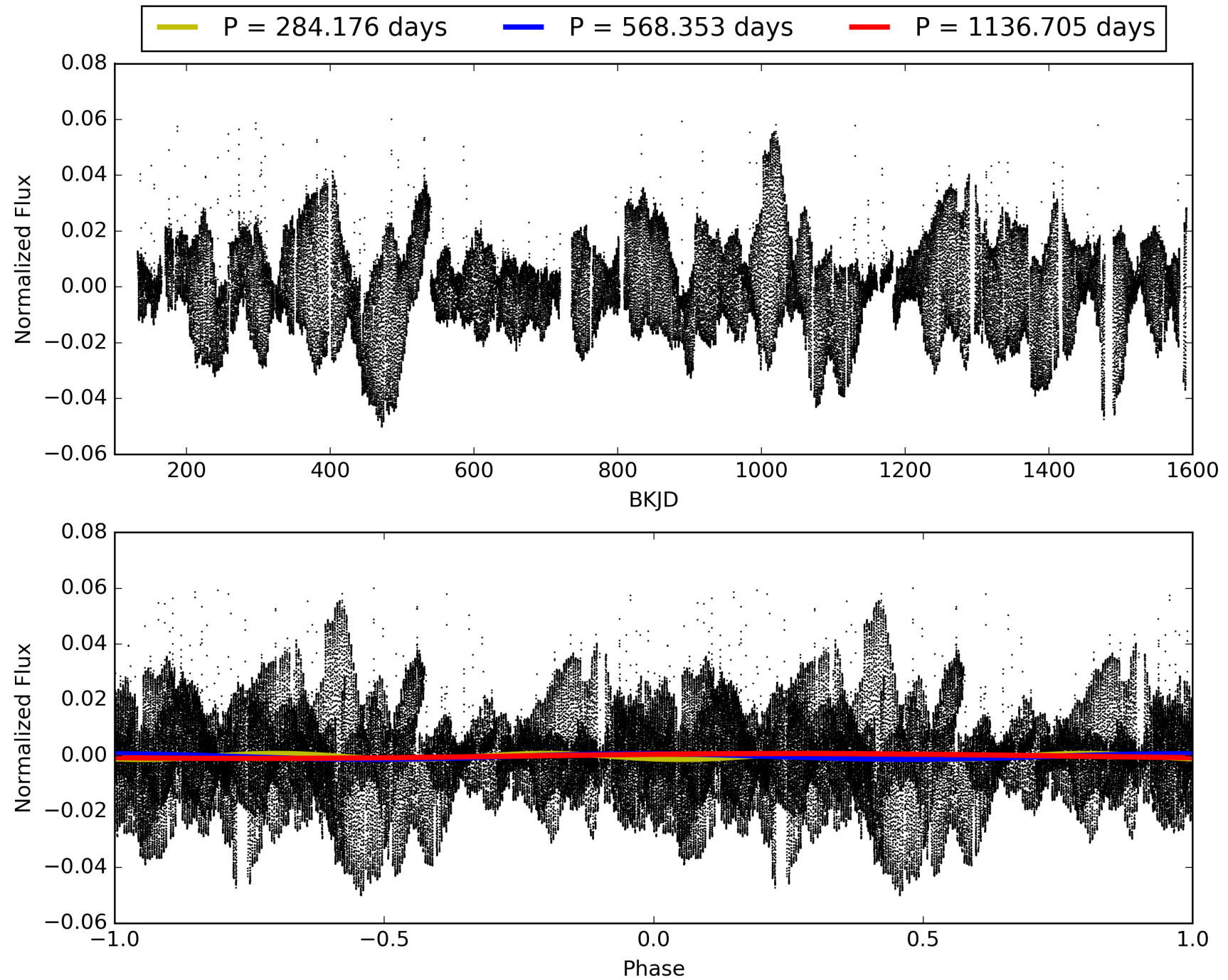
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:42:28 Z

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

TCE 007732964-07, PDC Light Curves

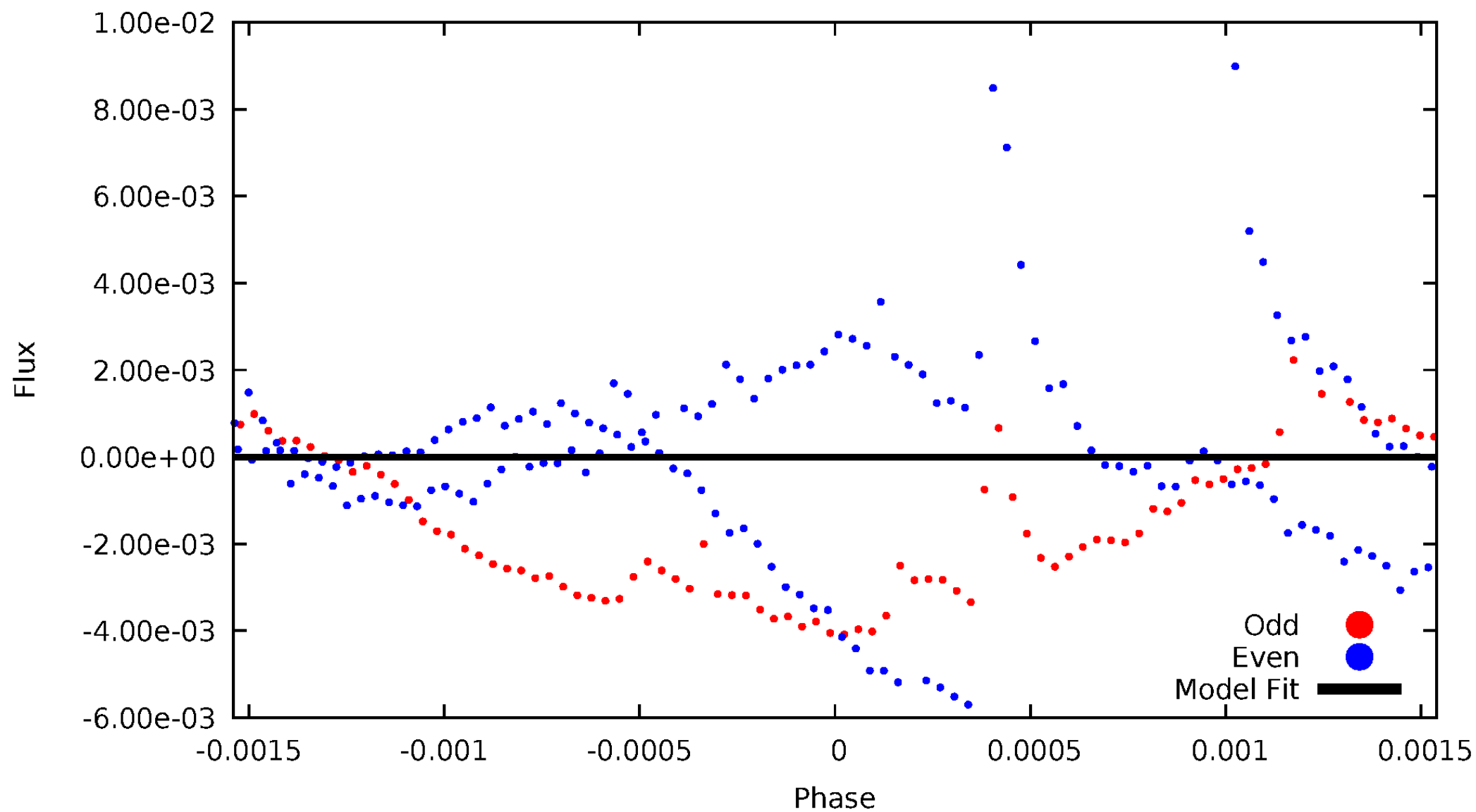


TCE 007732964-07



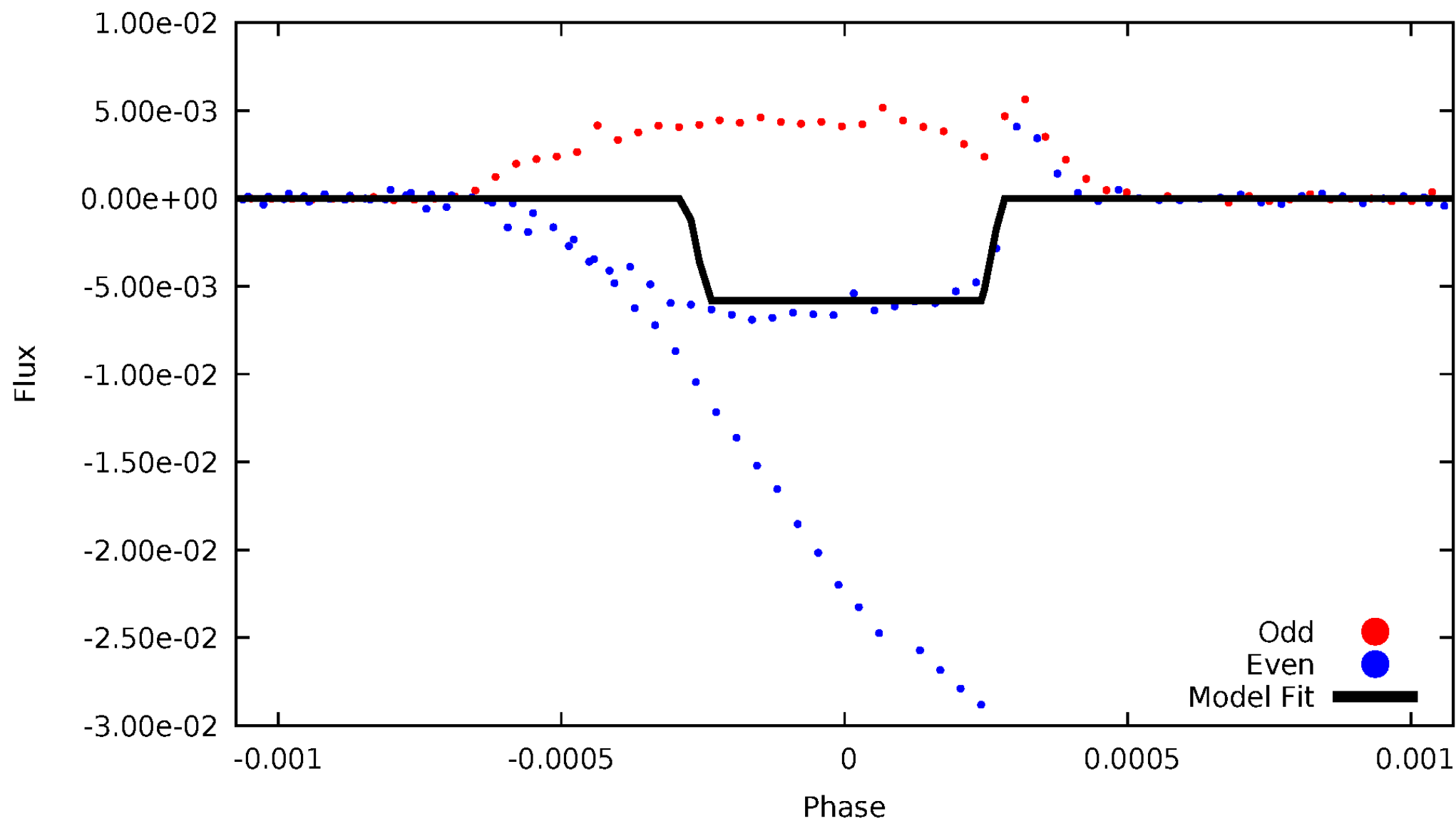
DV Odd/Even

TCE 007732964-07

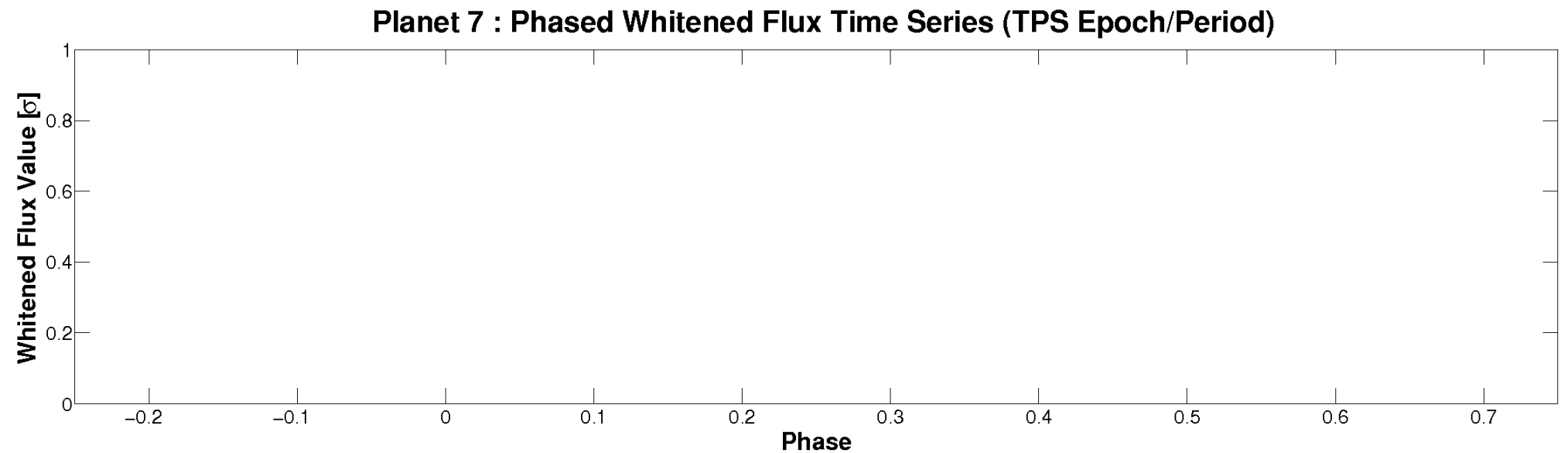
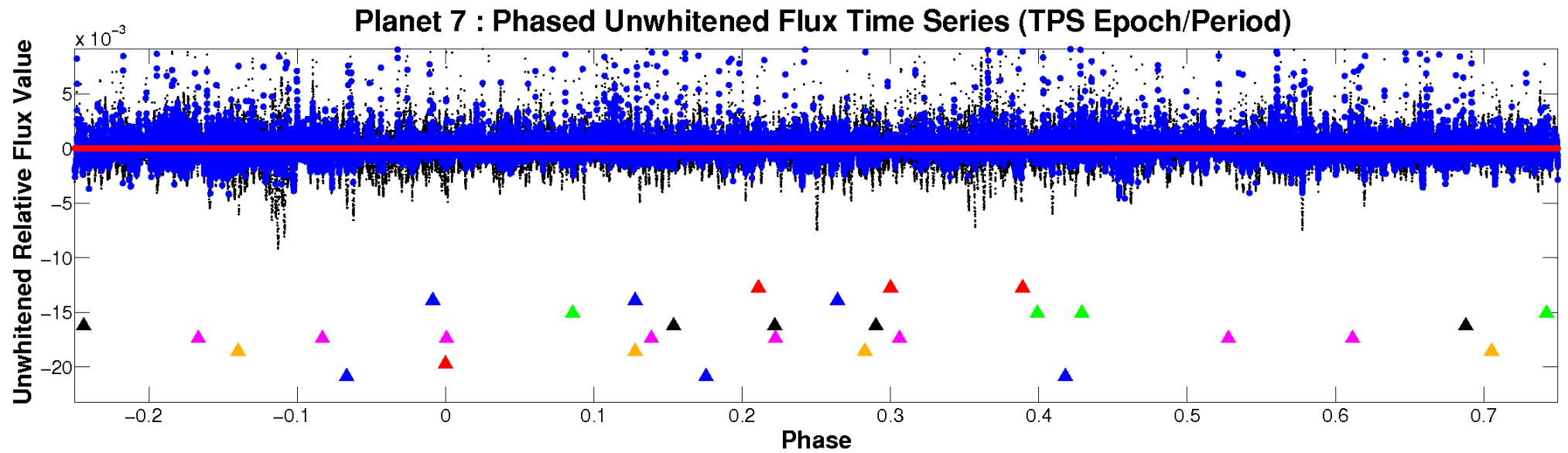


ALT Odd/Even

TCE 007732964-07

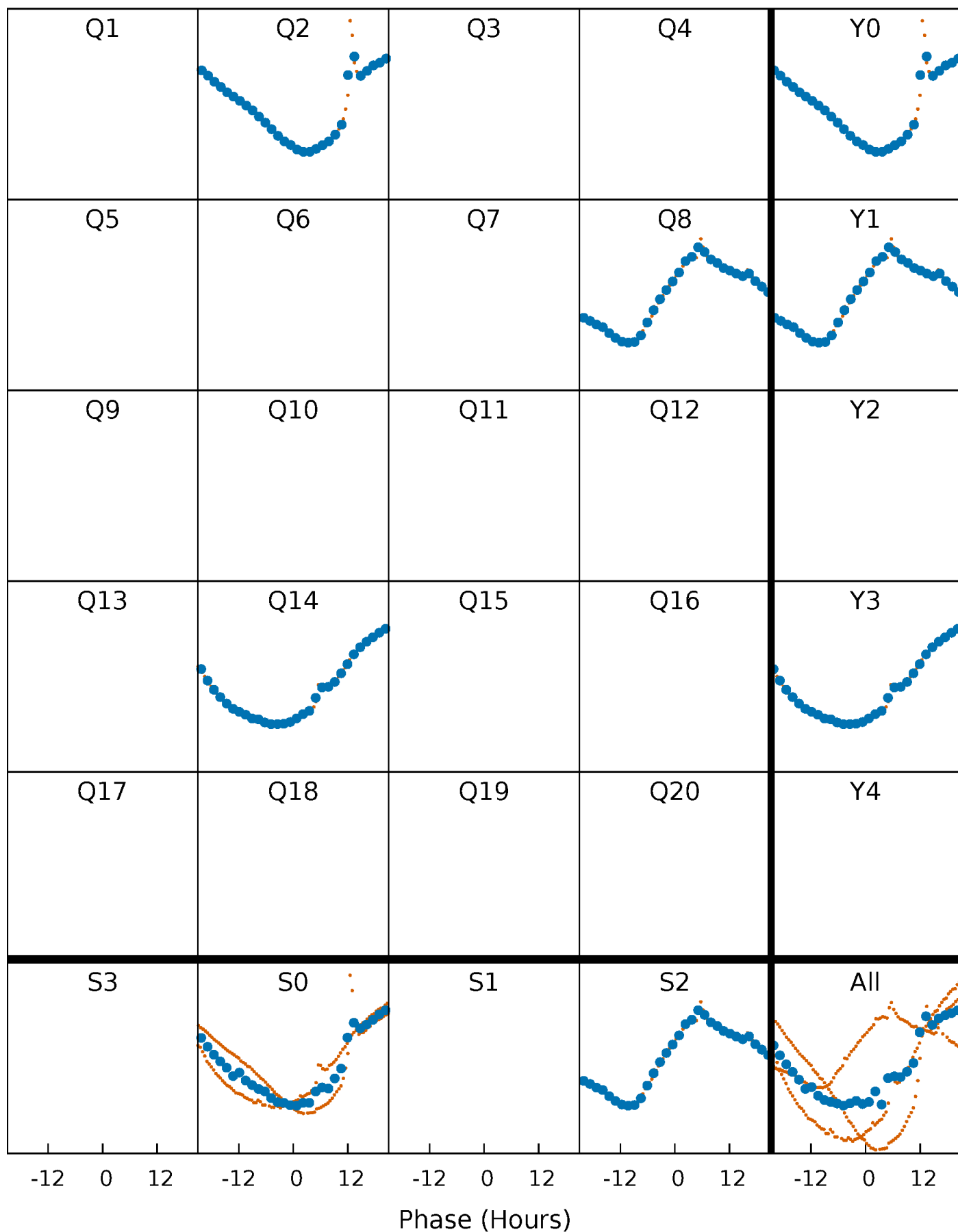


Non-Whitened Vs. Whitened Light Curve



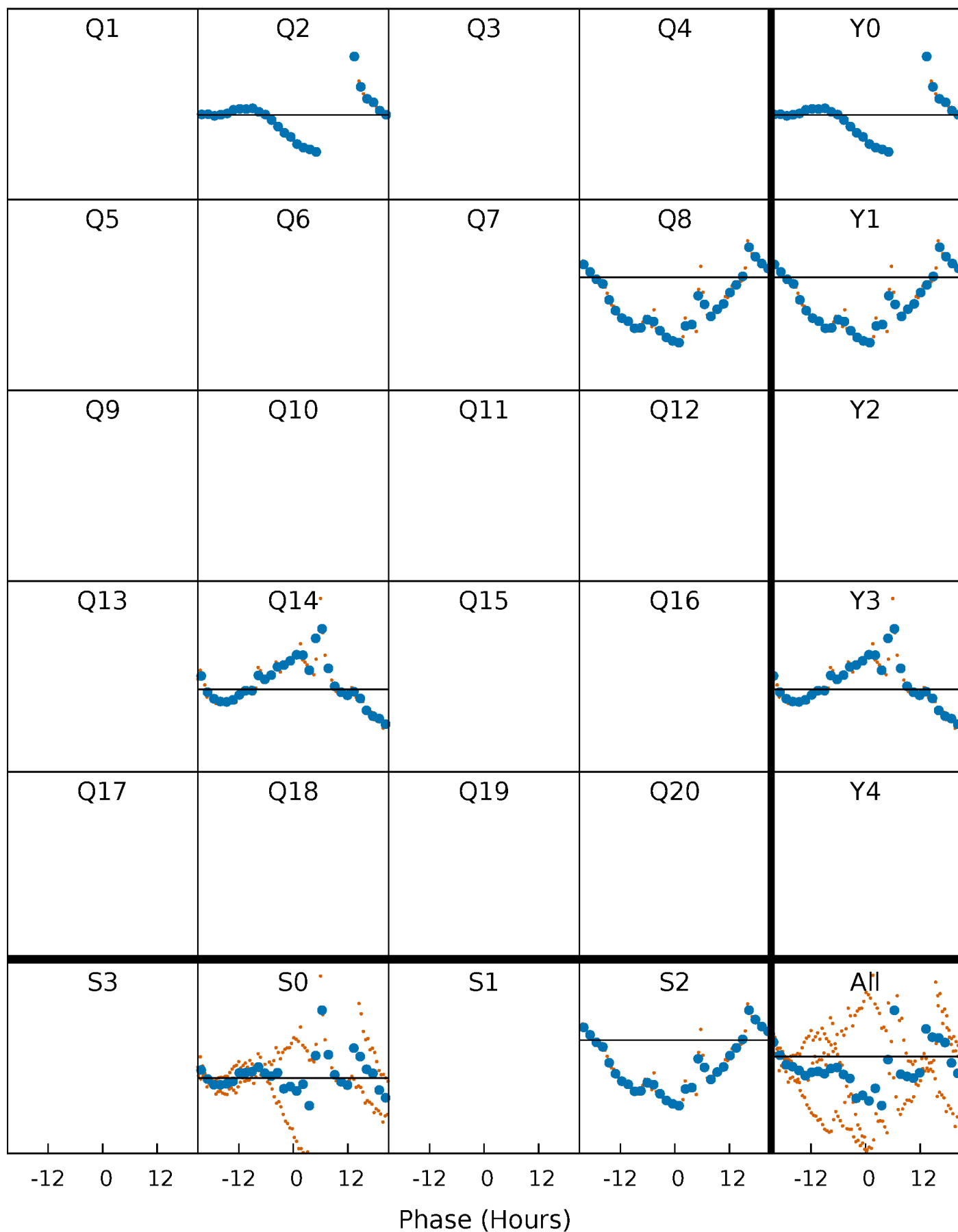
PDC Quarter-Phased Transit Curves

TCE 007732964-07 P=568.352660 Days $T_0=211.808073$ (BKJD)



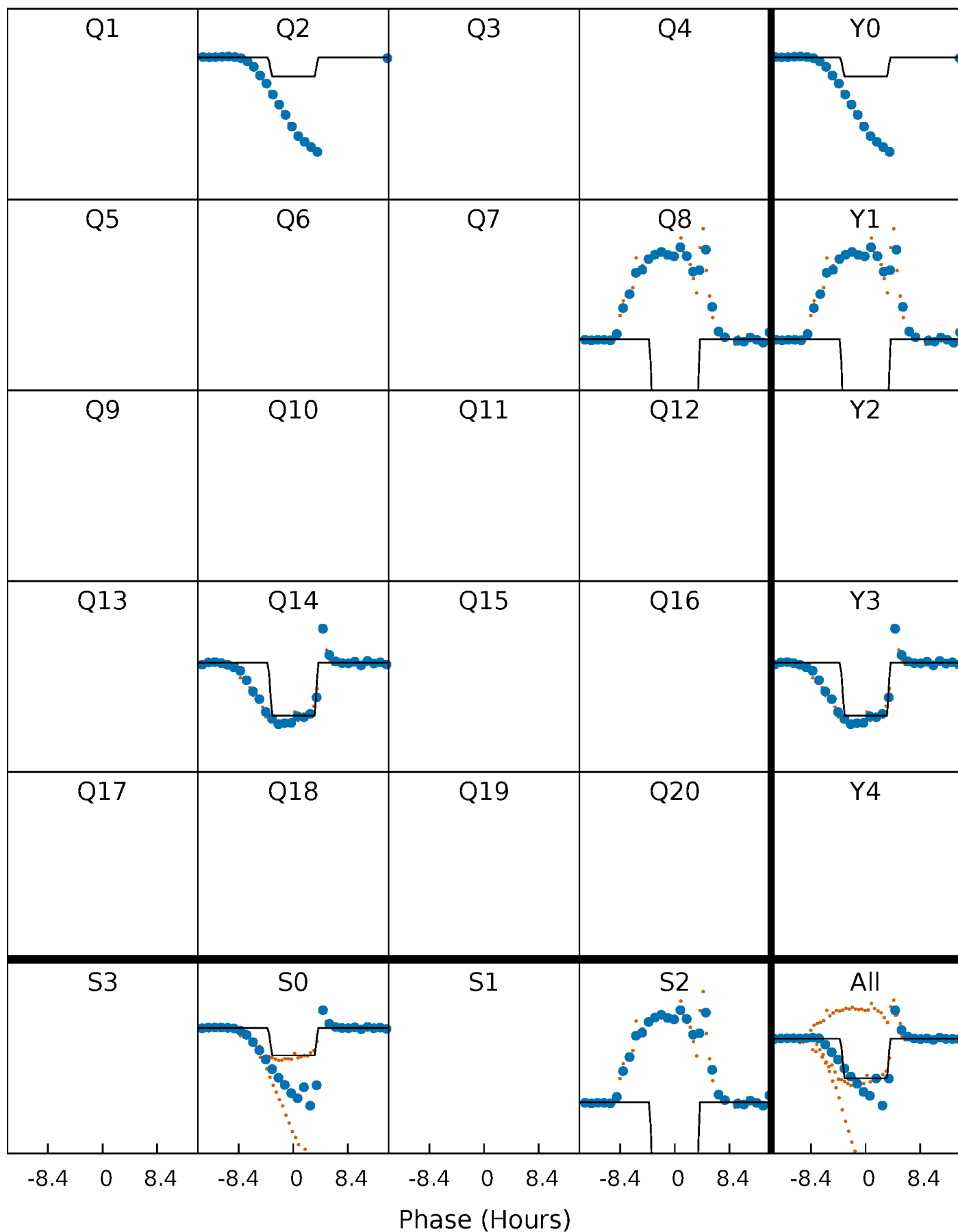
DV Quarter-Phased Transit Curves

TCE 007732964-07 $P=568.352660$ Days $T_0=211.808073$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

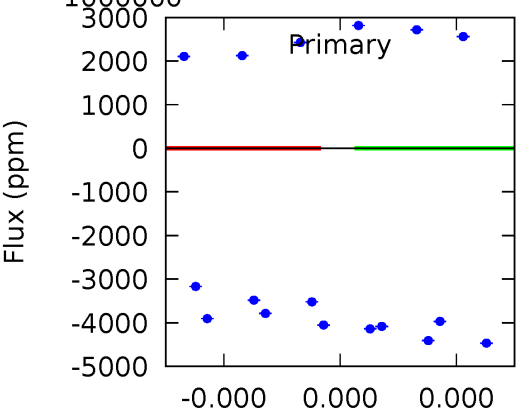
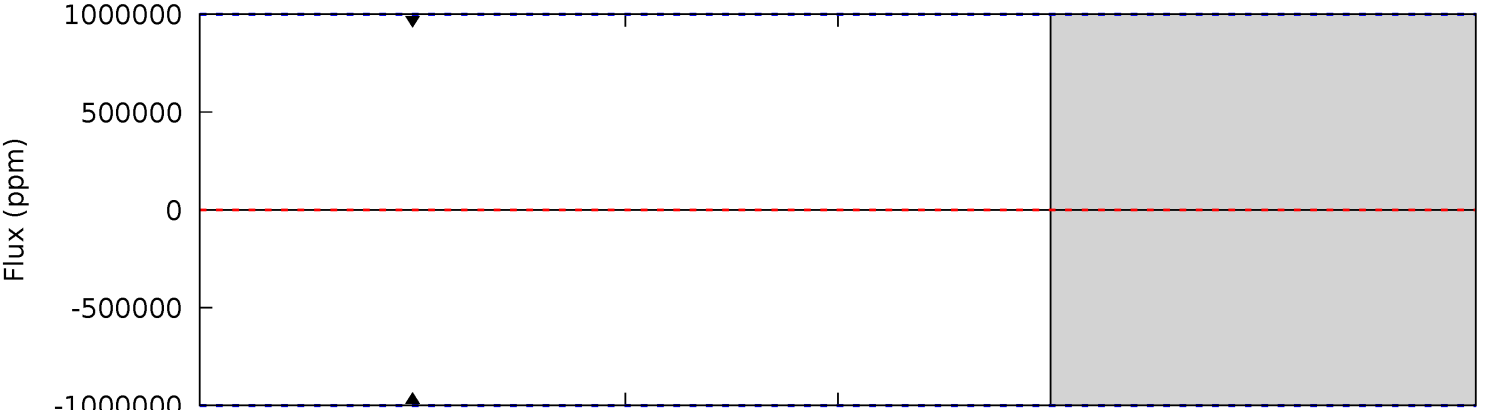
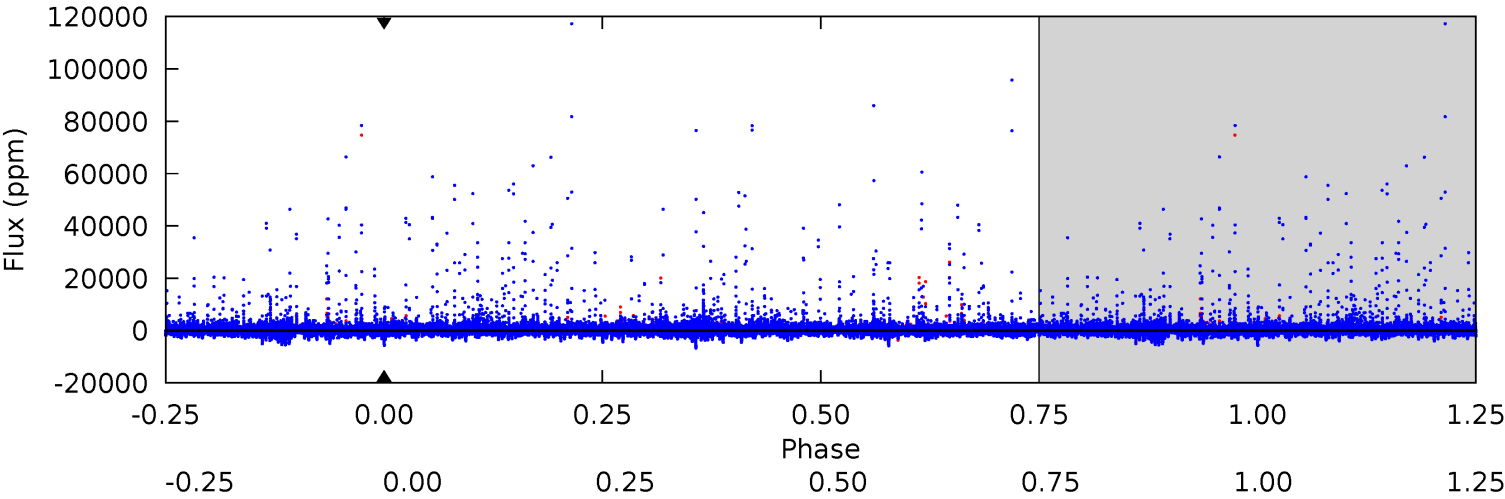
TCE 007732964-07 $P=568.352660$ Days $T_0=211.865203$ (BKJD)



DV Model-Shift Uniqueness Test

007732964-07, P = 568.352660 Days, E = 211.808073 Days

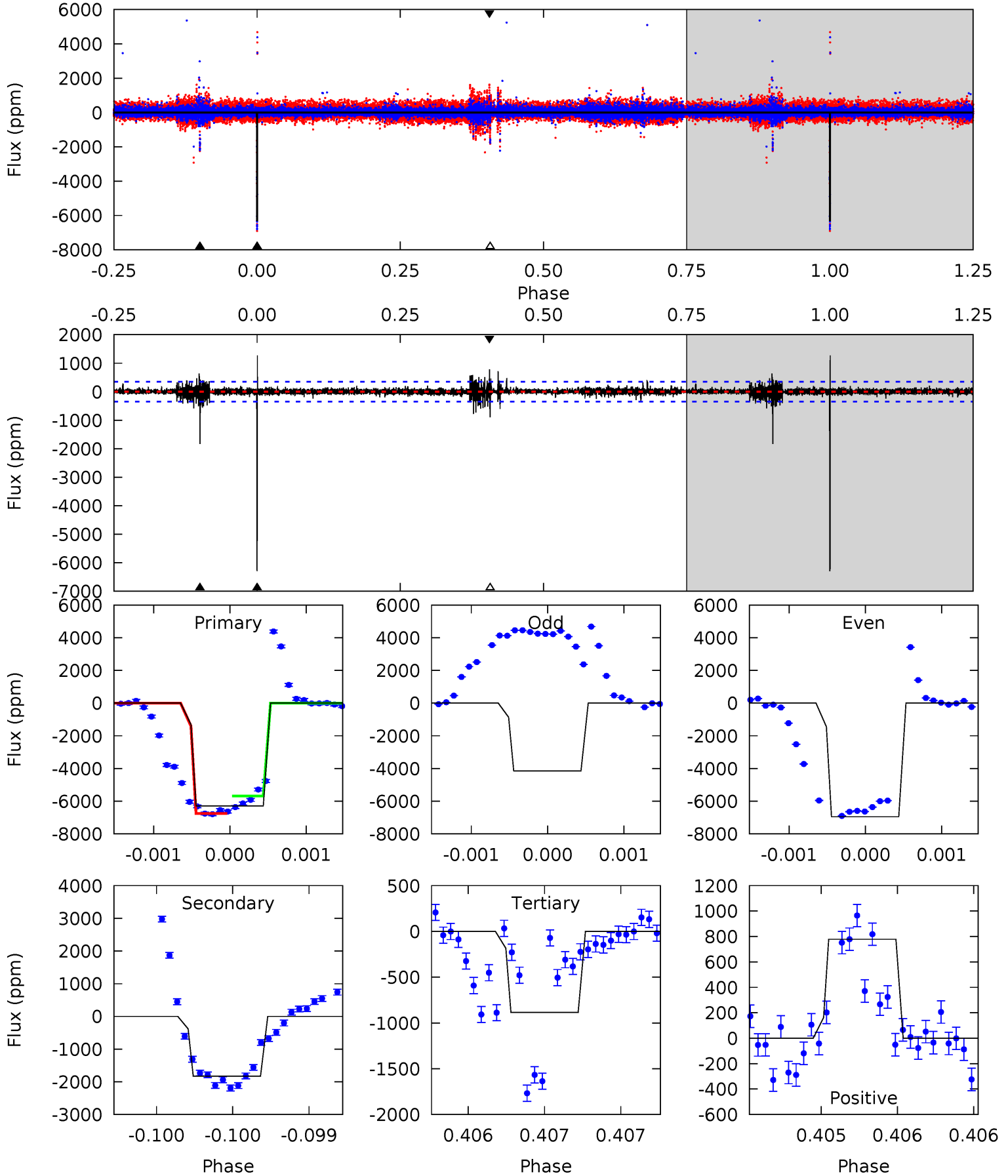
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007732964-07, P = 568.352660 Days, E = 211.865203 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
100.1	29.1	14.1	12.4	5.56	3.46	1.24	86.0	87.7	15.1	16.8	24.3	1.24	0.17	0



Stellar Parameters For KIC 007732964

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4949^{+176}_{-176}	$4.618^{+0.041}_{-0.054}$	$-0.280^{+0.300}_{-0.300}$	$0.690^{+0.078}_{-0.058}$	$0.720^{+0.078}_{-0.064}$	$3.093^{+0.632}_{-0.628}$
	+4%/-4%	+1%/-1%	+107%/-107%	+11%/-8%	+11%/-9%	+20%/-20%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007732964-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$4.87^{+5.75}_{-3.43}$	231^{+10}_{-8}	3956^{+15420}_{-19965}	$54130^{+7621056}_{-5463725}$
Alt.	-1831 ± 63	$7.96^{+6.75}_{-5.07}$	231^{+9}_{-9}	3558^{+1656}_{-601}	$22842^{+155526}_{-16037}$

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

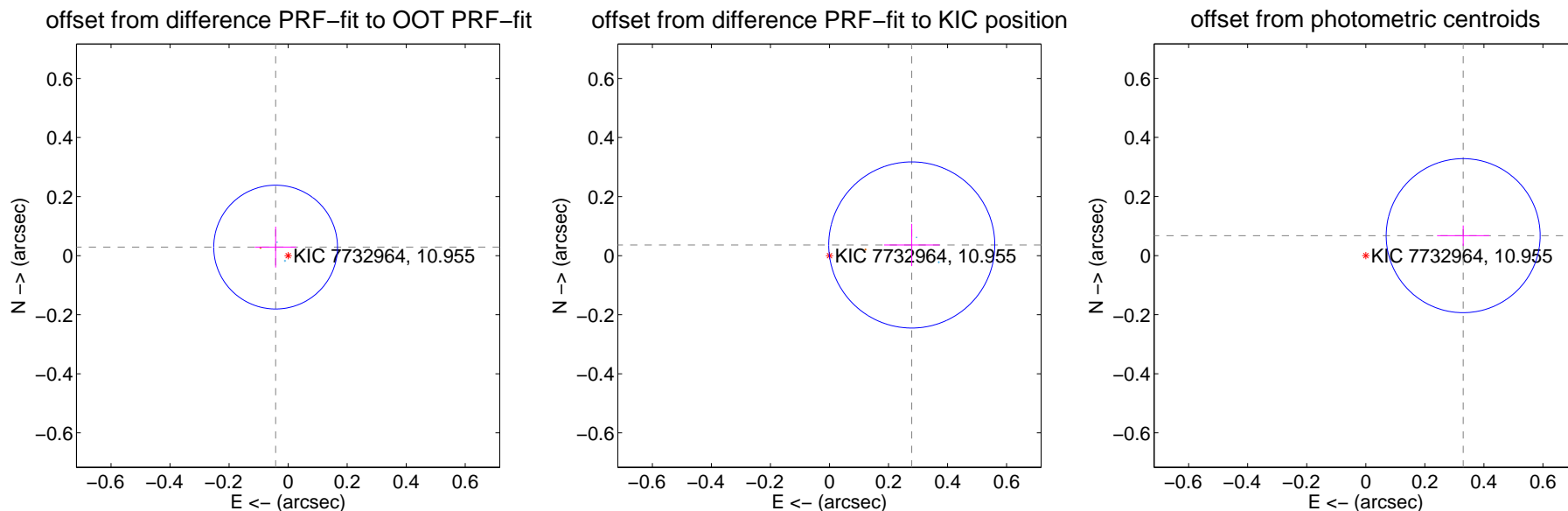
DV Centroid Data

Supplemental centroid analysis for 007732964-07. **Kepler magnitude: 10.96.** Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

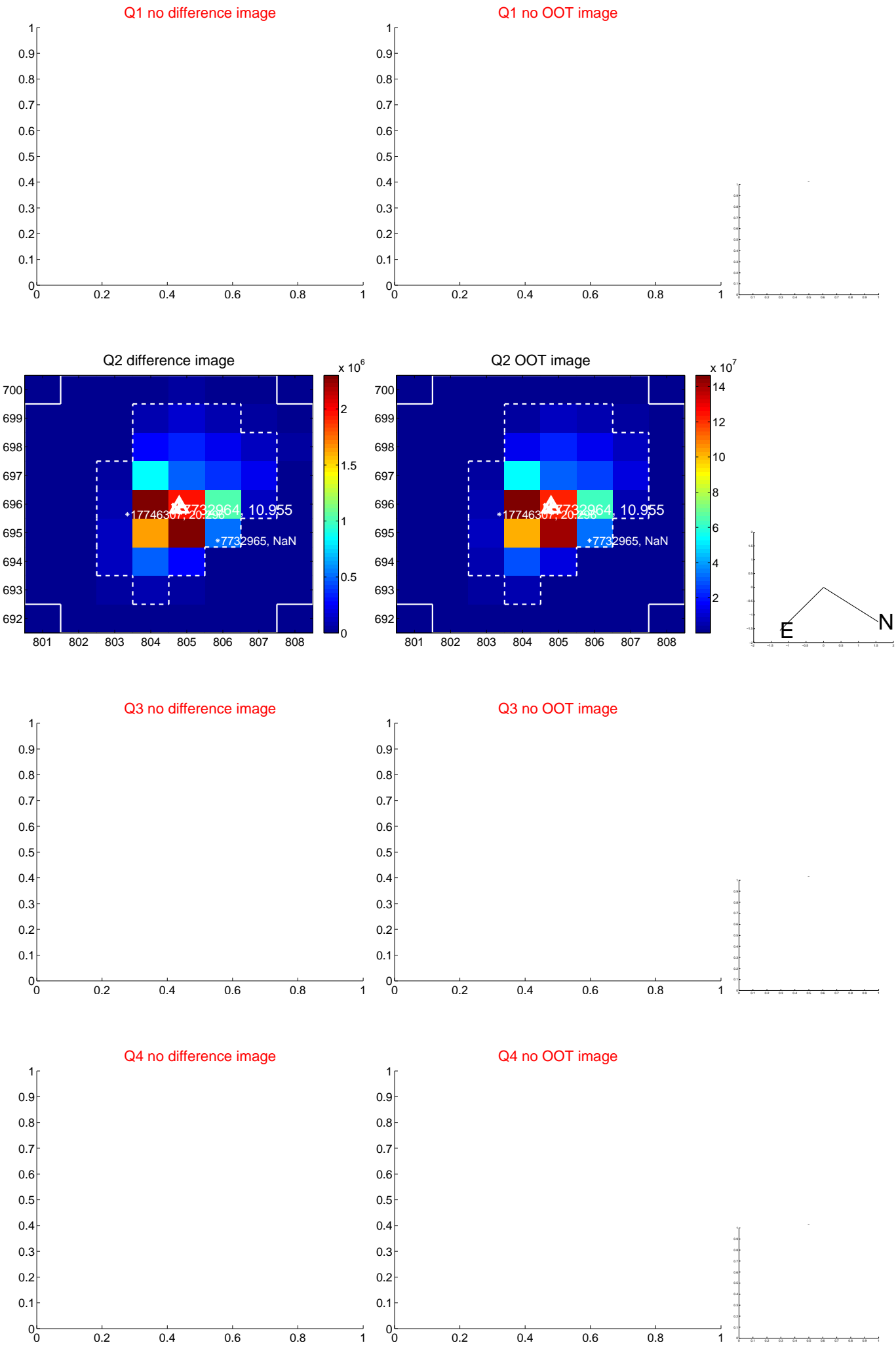
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.051 ± 0.070	0.73	0.042 ± 0.070	0.029 ± 0.069
PRF-fit source offset from KIC position	0.281 ± 0.094	3.00	-0.279 ± 0.094	0.036 ± 0.072
photometric centroid source offset	0.34 ± 0.09	3.87	-0.33 ± 0.09	0.07 ± 0.03

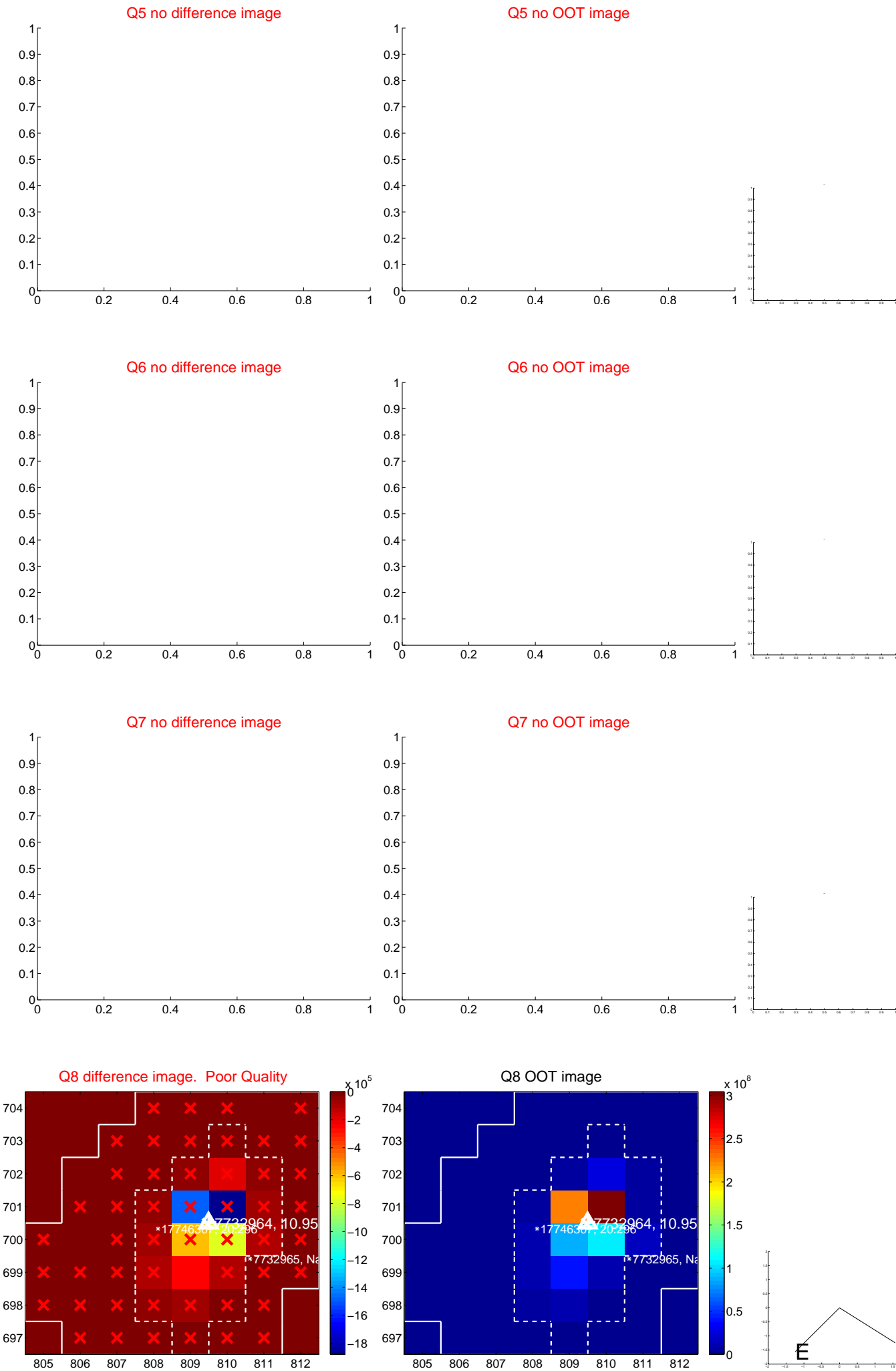


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



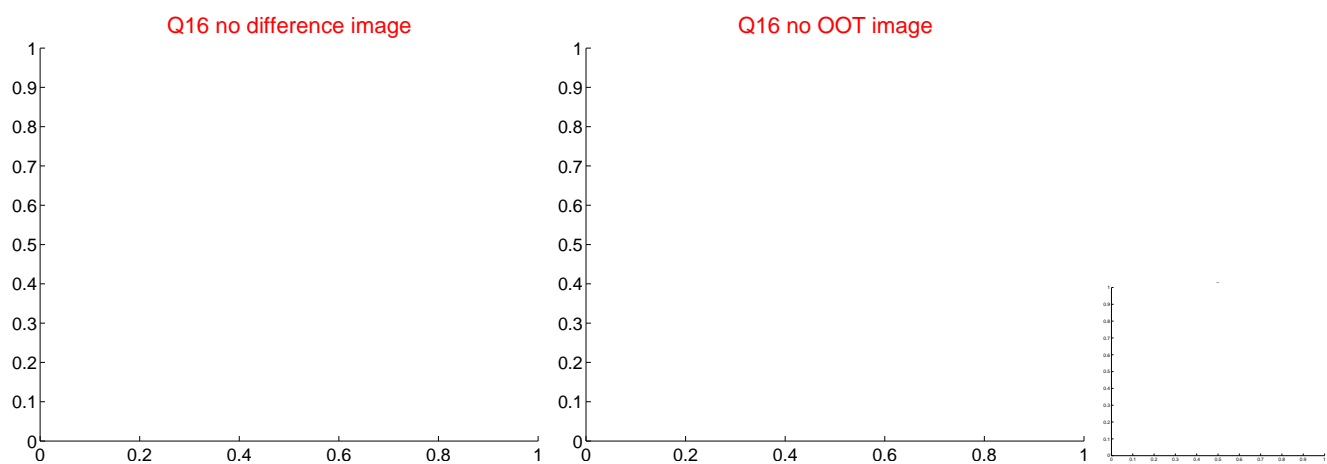
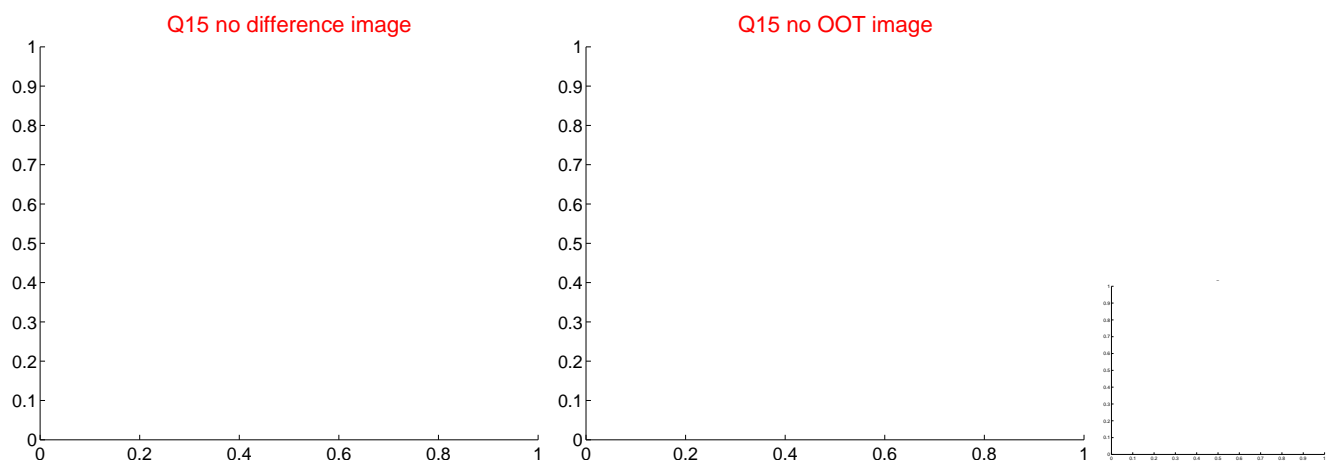
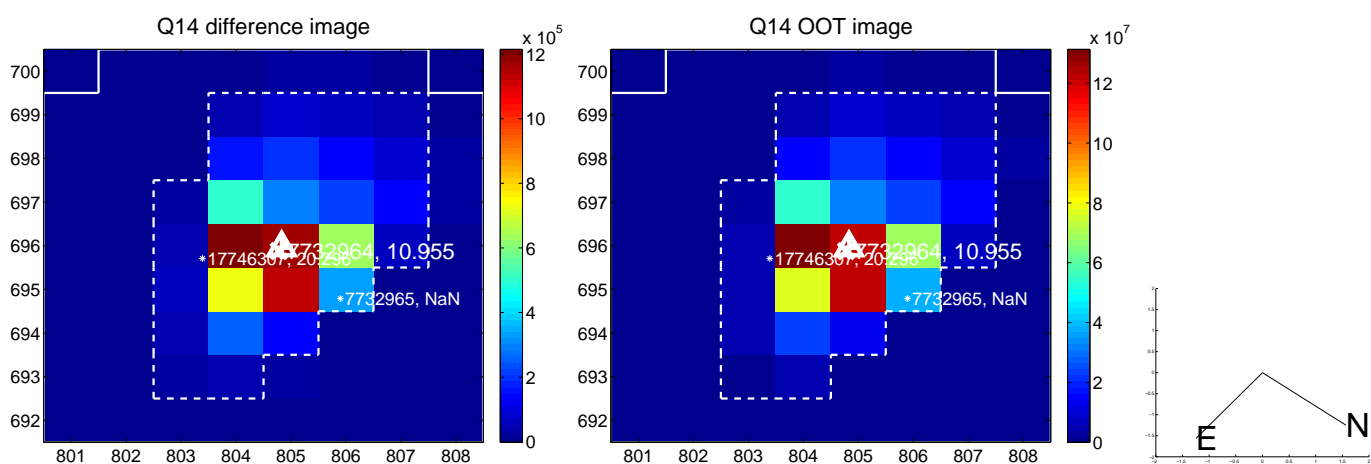
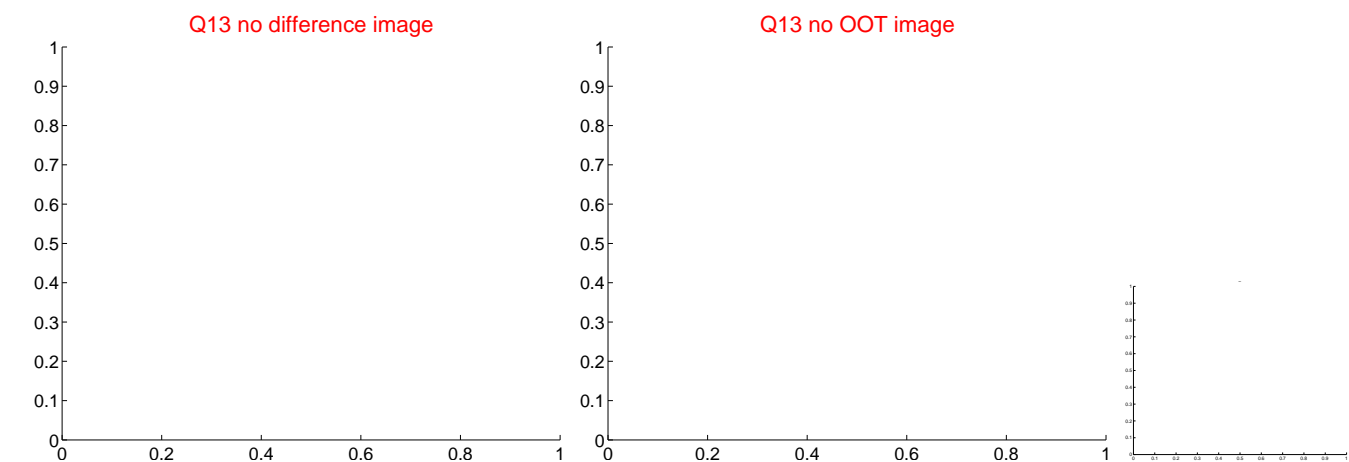
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



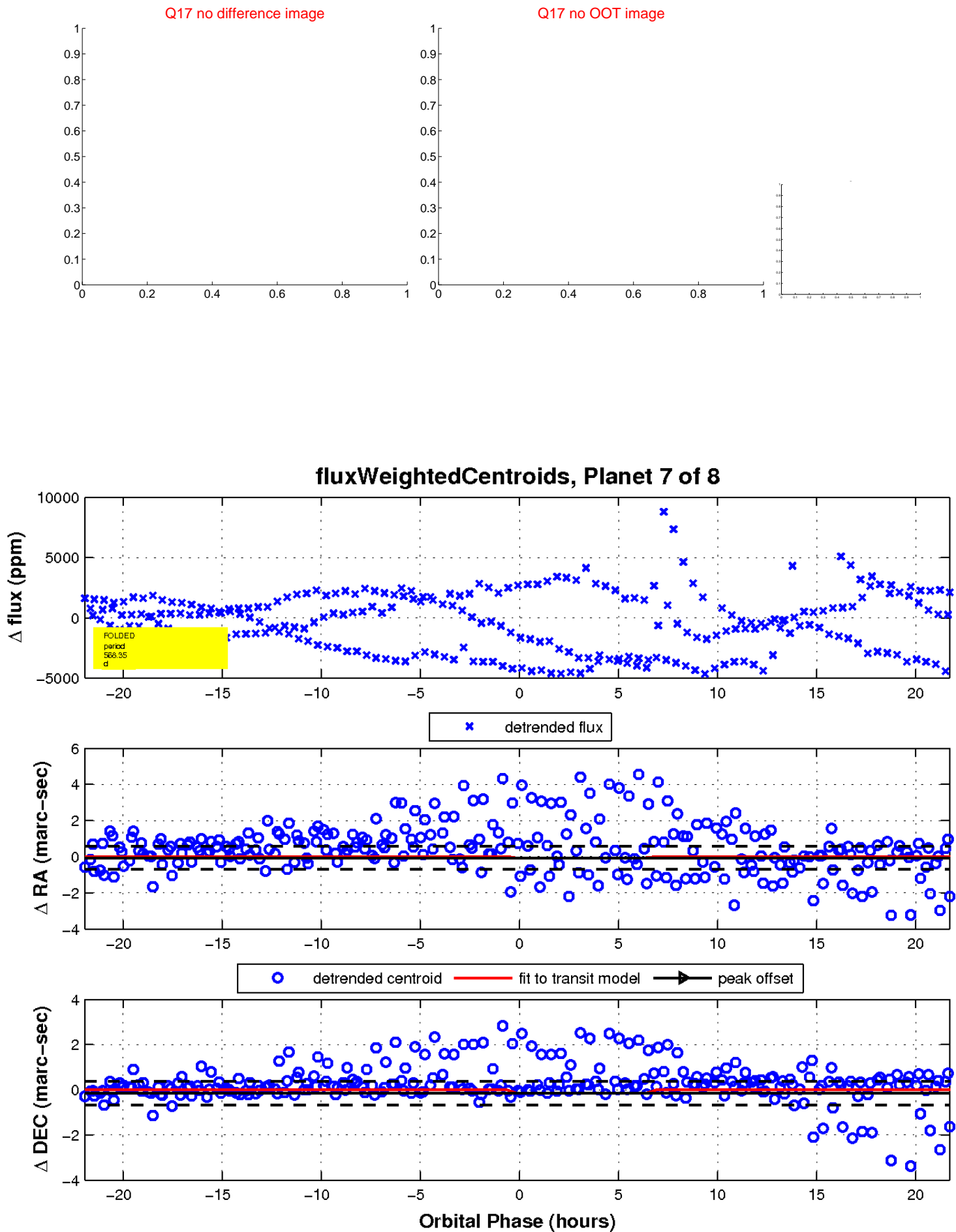
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

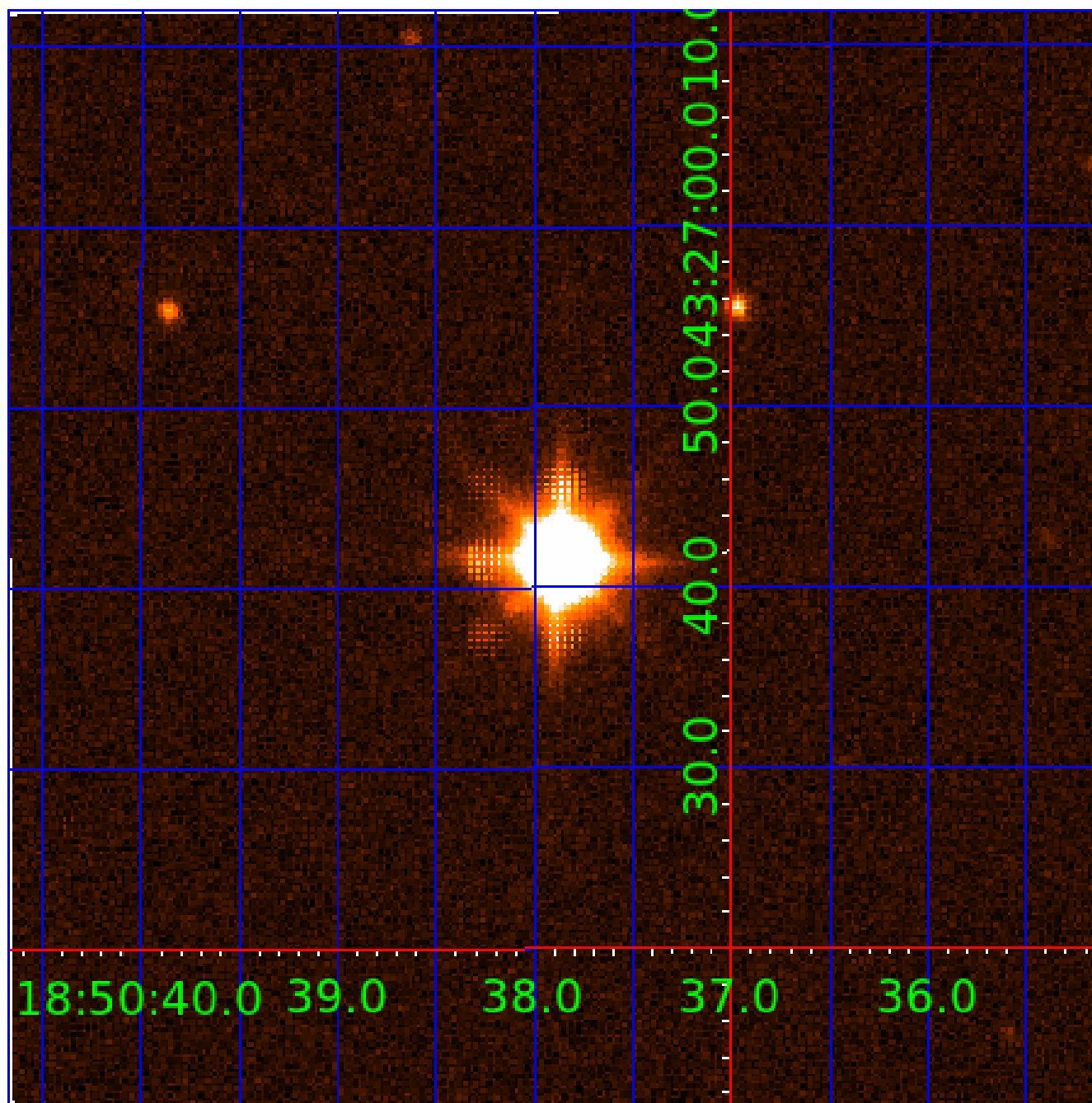


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007732964

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})
007732964-01	OBS	No	618.974049	331.733861	1453.0	5.158	24.3	7.3	0.69	4949	2.75	0.16
007732964-02	OBS	No	645.903968	206.952256	2478.7	12.460	15.6	9.4	0.69	4949	3.39	0.15
007732964-03	OBS	No	373.211794	455.685145	1368.1	9.805	18.8	6.7	0.69	4949	2.60	0.31
007732964-04	OBS	No	303.552228	299.231778	1039.4	6.143	16.2	5.1	0.69	4949	2.34	0.41
007732964-05	OBS	No	173.600024	212.195581	916.2	2.721	14.4	6.3	0.69	4949	2.05	0.86
007732964-06	OBS	No	328.182877	284.496606	57.9	3.184	13.9	0.3	0.69	4949	0.51	0.37
007732964-07	OBS	No	568.352660	211.808073	130.6	10.500	16.3	-1.0	0.69	4949	0.77	0.18
007732964-08	OBS	No	430.650899	449.355020	236.1	4.500	16.7	-1.0	0.69	4949	1.03	0.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007732964-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
007732964-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
007732964-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007732964-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007732964-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
007732964-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

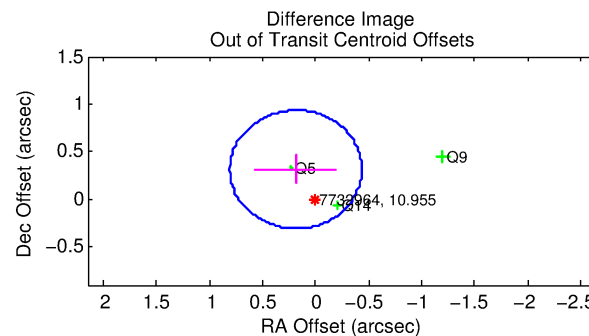
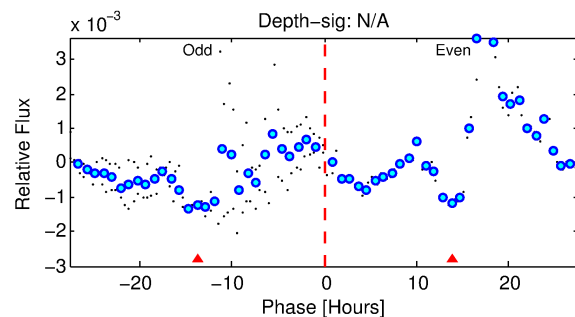
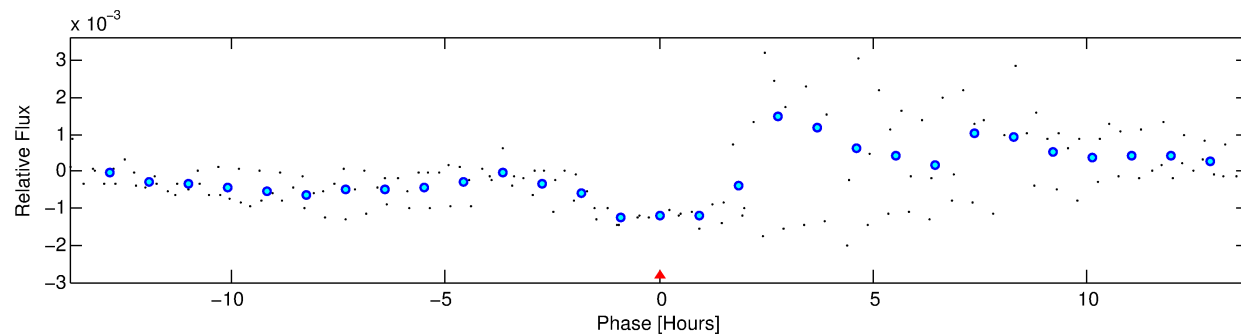
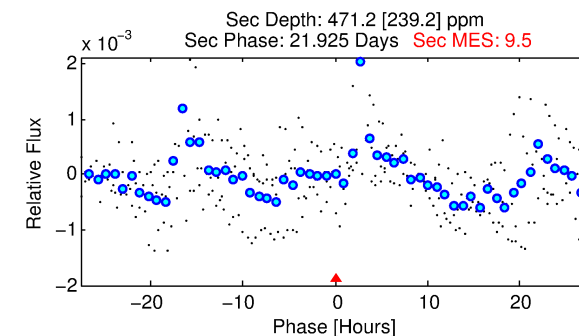
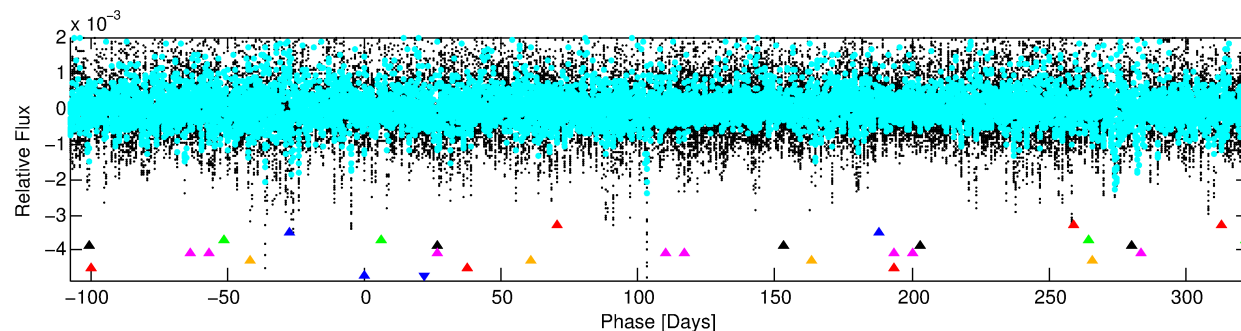
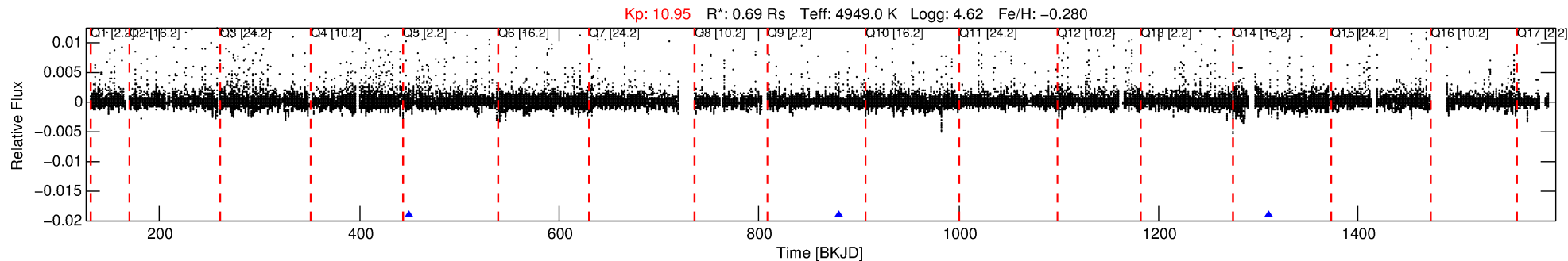
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007732964-08

No Significant Match Found

DV One-Page Summary

KIC: 7732964 Candidate: 8 of 8 Period: 430.651 d



TPS TCE Results:

Period = 430.65090 d
Epoch = 449.3550 BKJD

DV fit results are unavailable

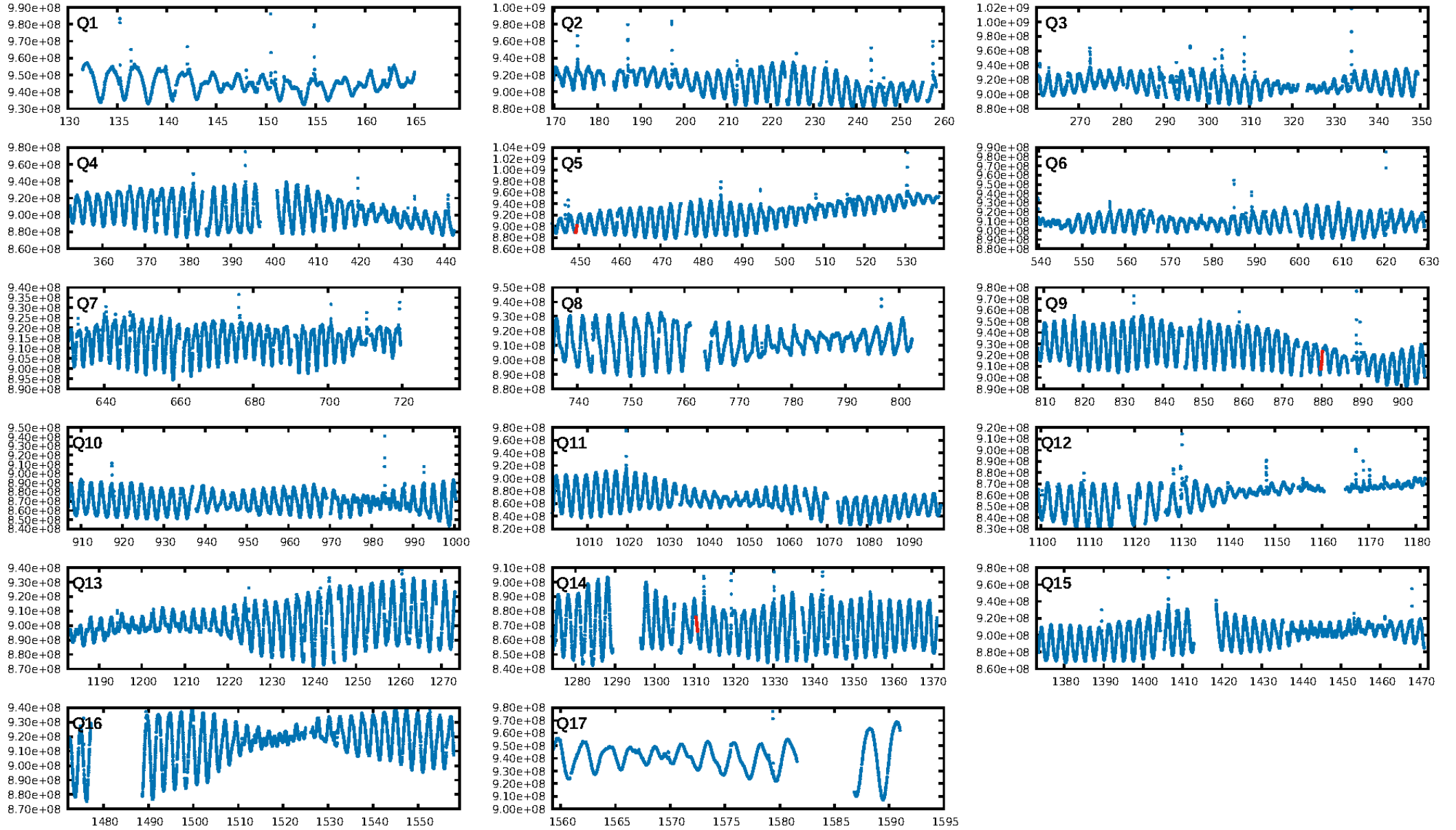
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [127.79σ]
LongPeriod-sig: 100.0% [289.30σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.148
Centroid-sig: 80.3%
Centroid-so: 0.323 arcsec [1.75σ]
OotOffset-rm: 0.366 arcsec [1.76σ]
KicOffset-rm: 0.358 arcsec [2.59σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

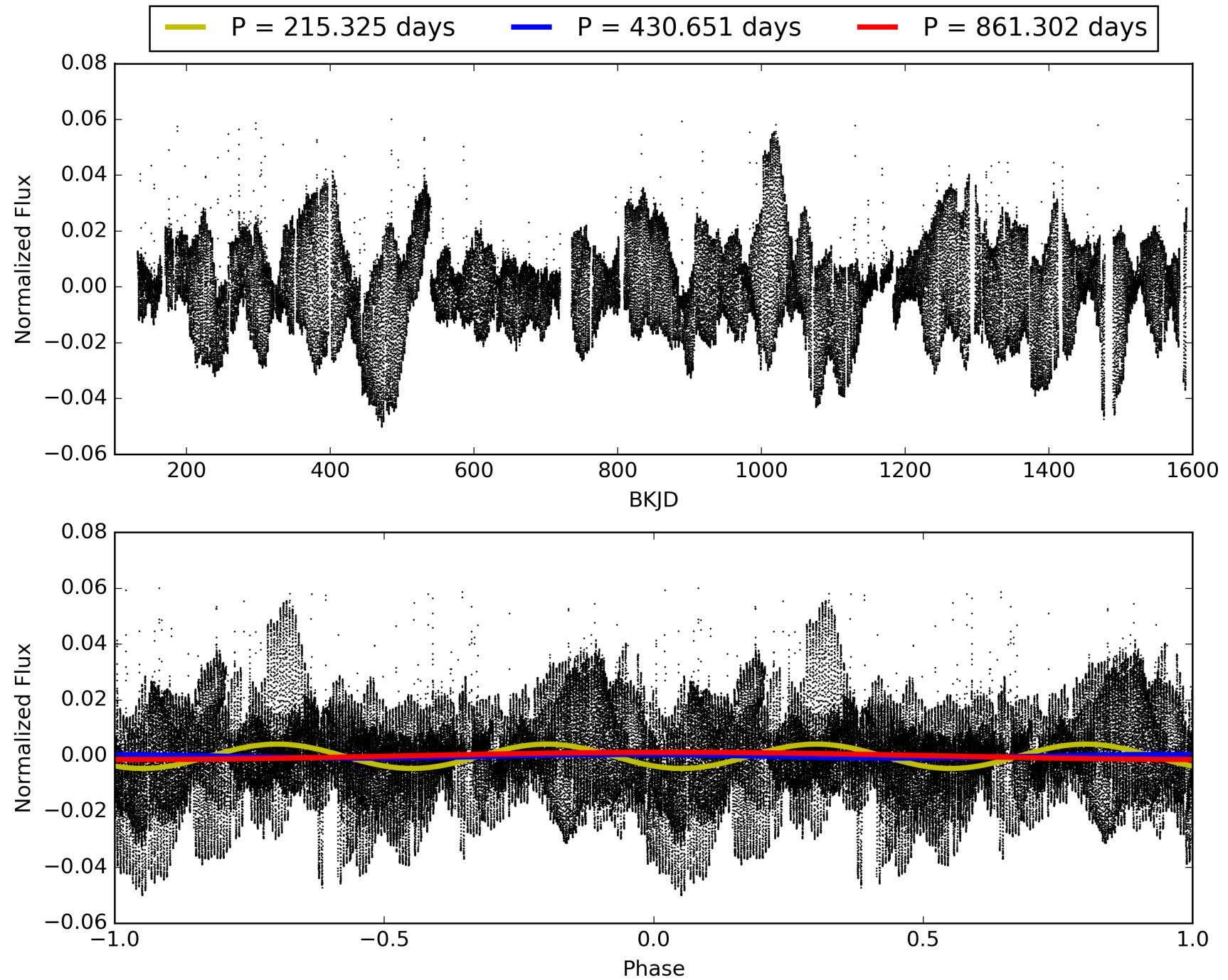
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:42:42 Z

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

TCE 007732964-08, PDC Light Curves

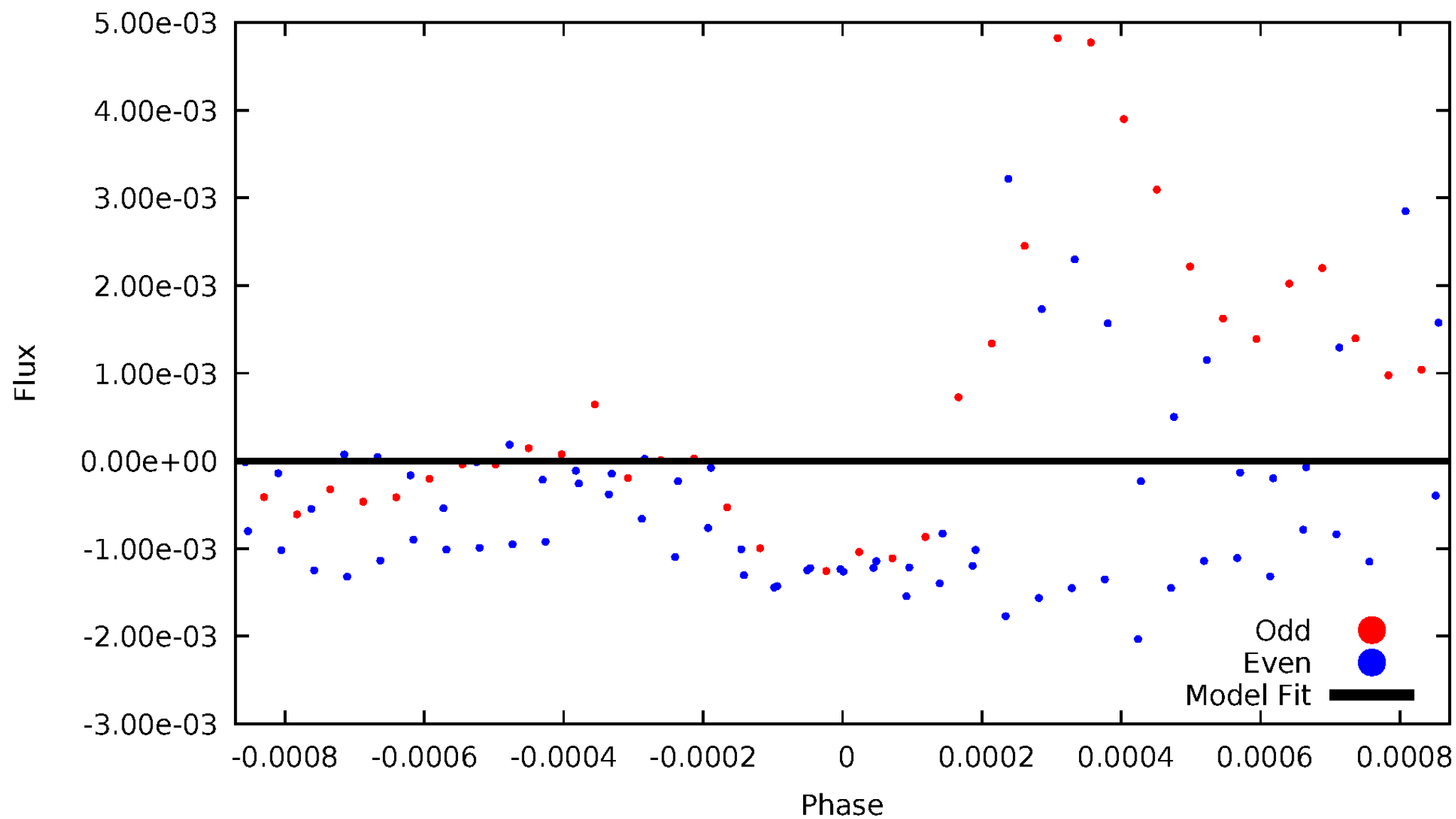


TCE 007732964-08



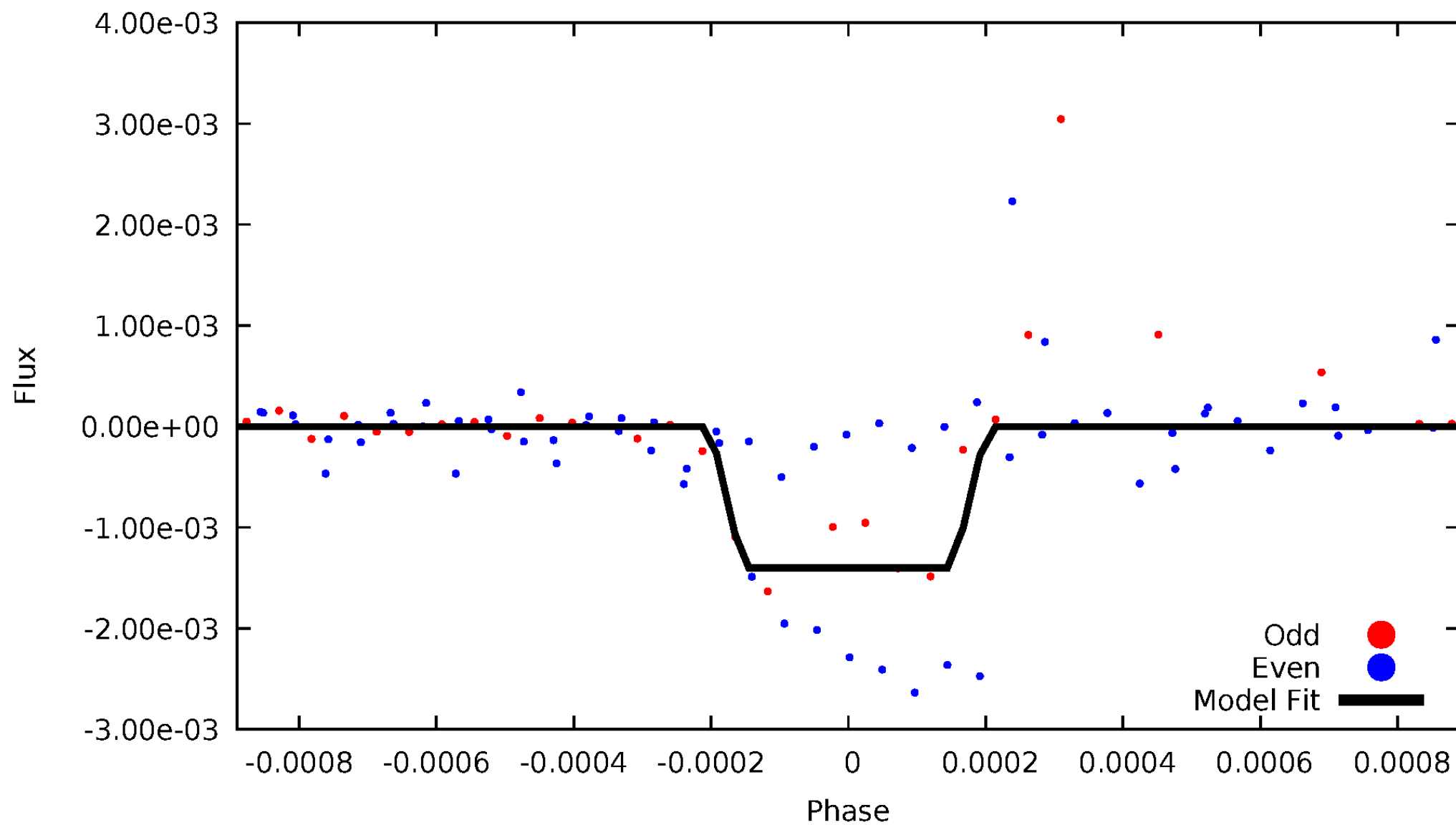
DV Odd/Even

TCE 007732964-08



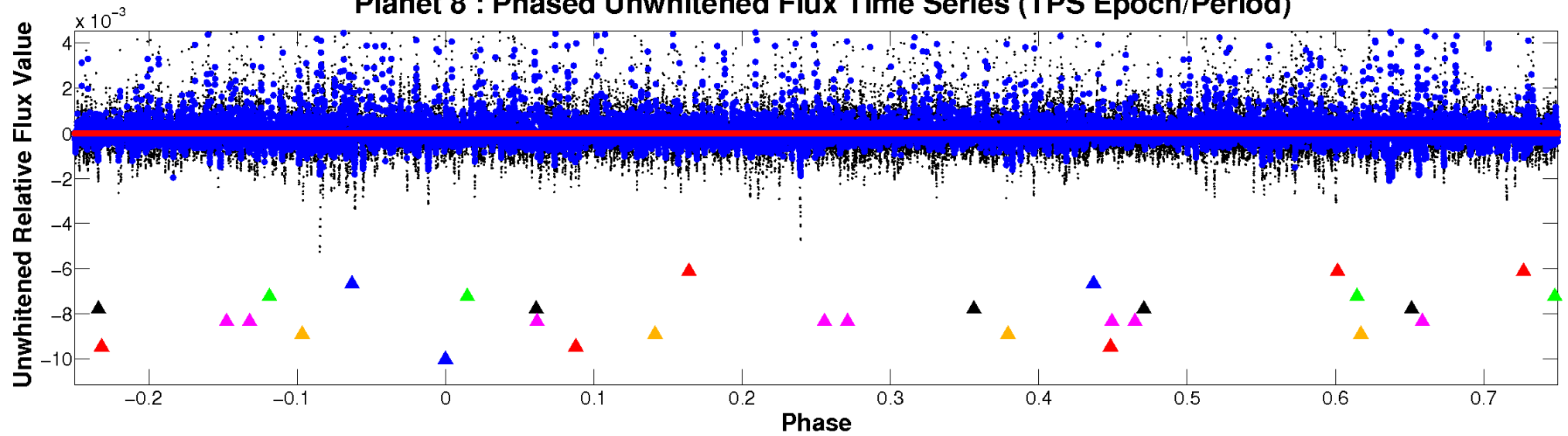
ALT Odd/Even

TCE 007732964-08

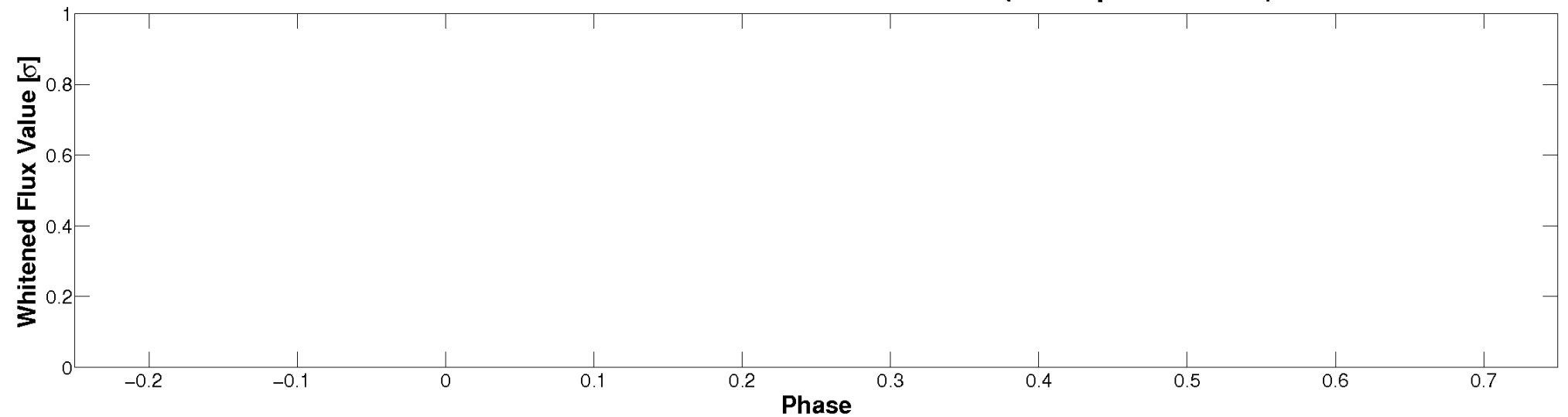


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

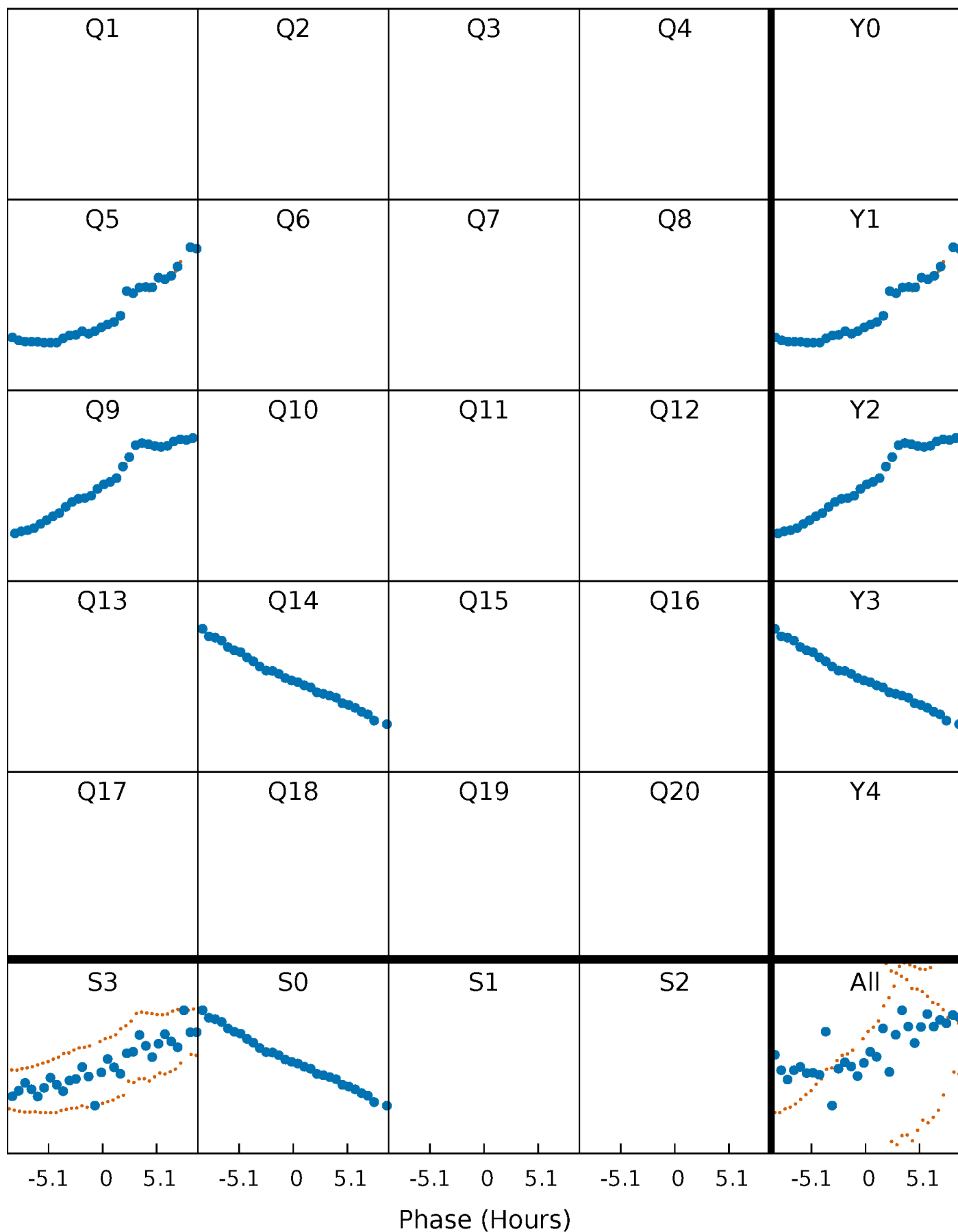


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



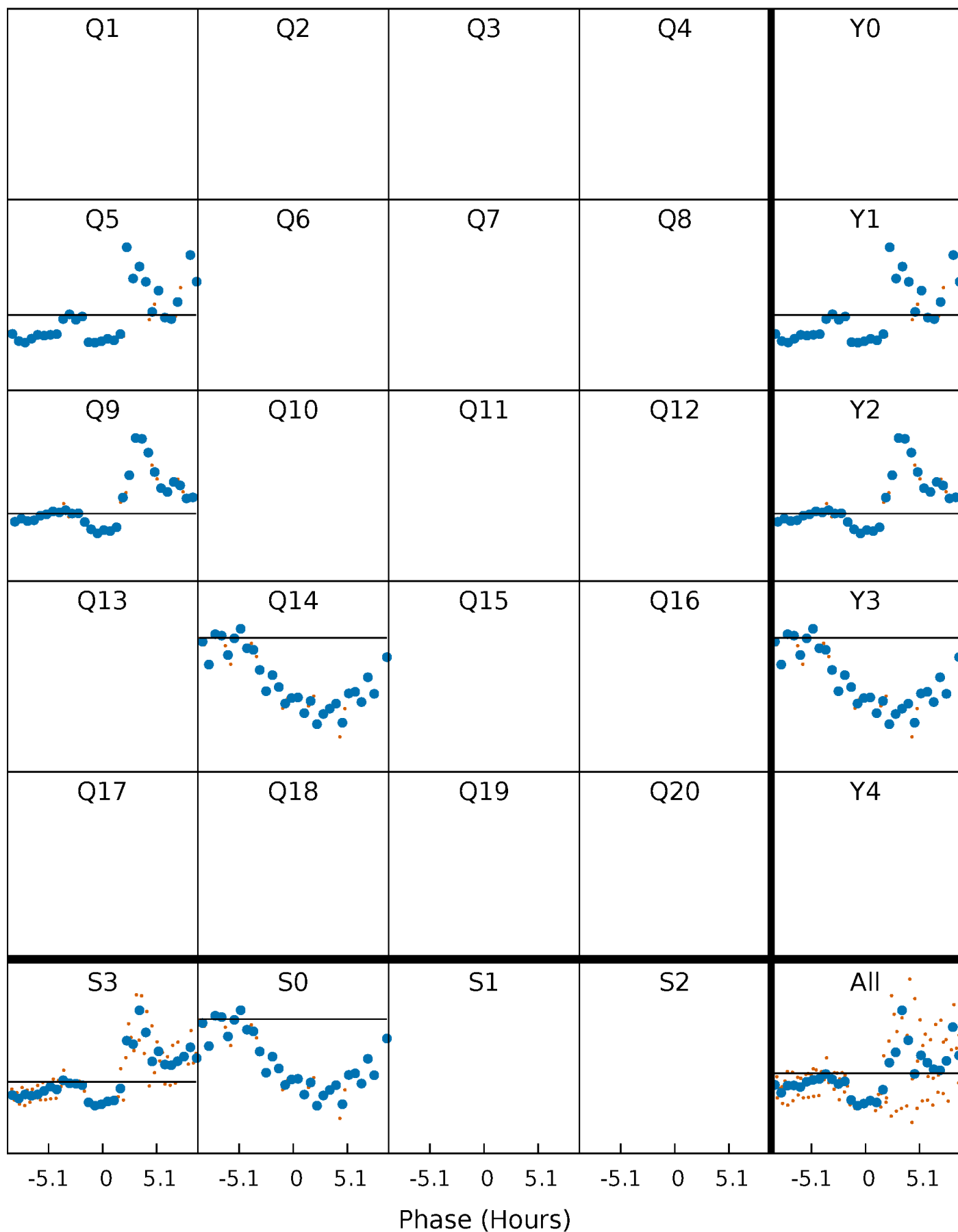
PDC Quarter-Phased Transit Curves

TCE 007732964-08 $P=430.650899$ Days $T_0=449.355020$ (BKJD)



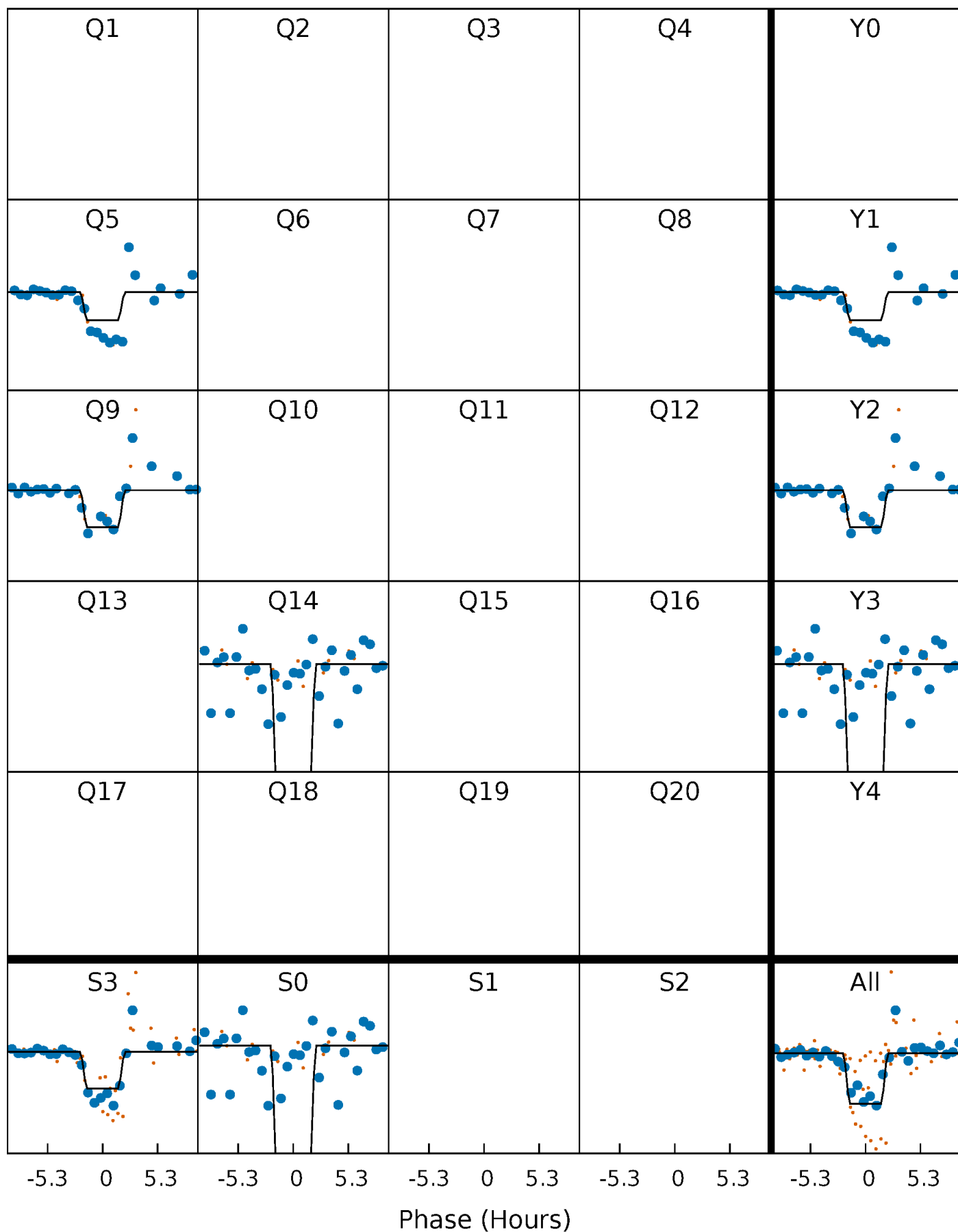
DV Quarter-Phased Transit Curves

TCE 007732964-08 $P=430.650899$ Days $T_0=449.355020$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

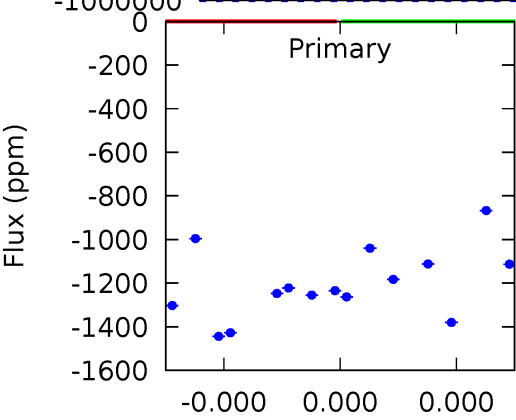
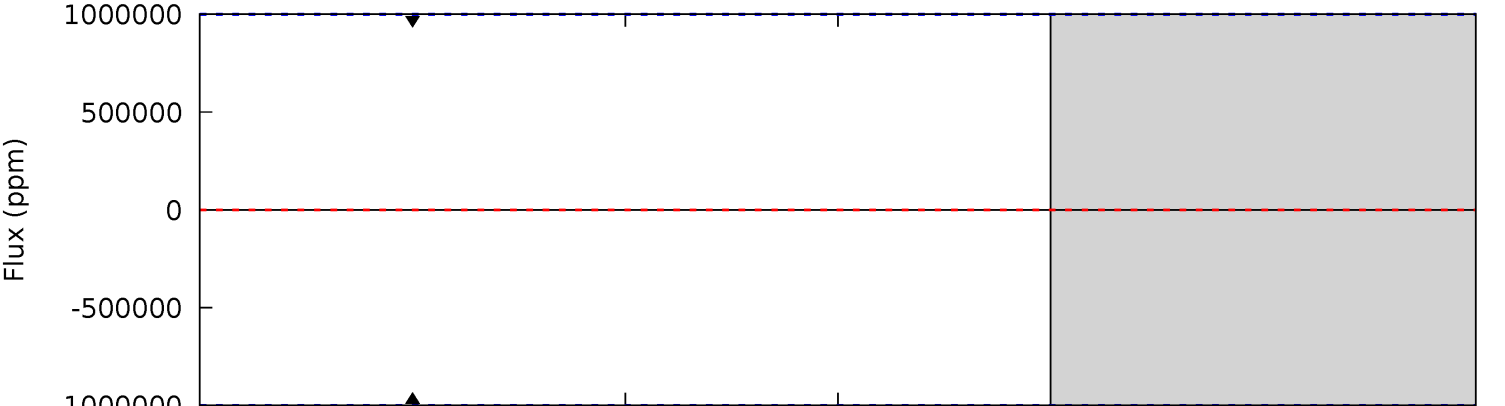
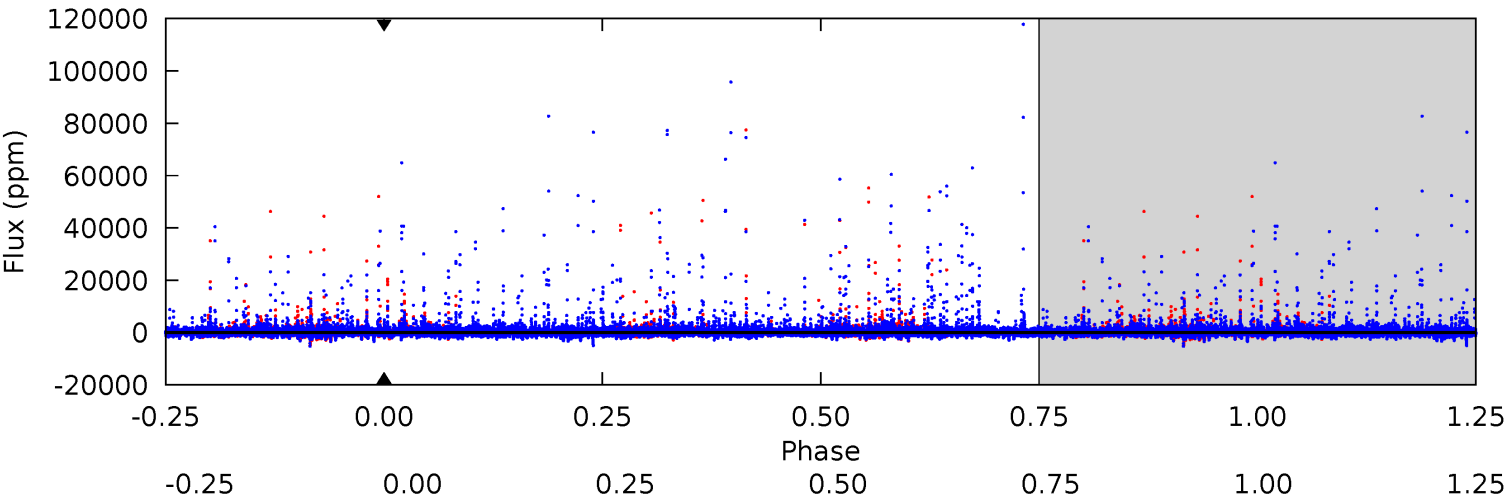
TCE 007732964-08 $P=430.650899$ Days $T_0=449.354696$ (BKJD)



DV Model-Shift Uniqueness Test

007732964-08, P = 430.650899 Days, E = 18.704121 Days

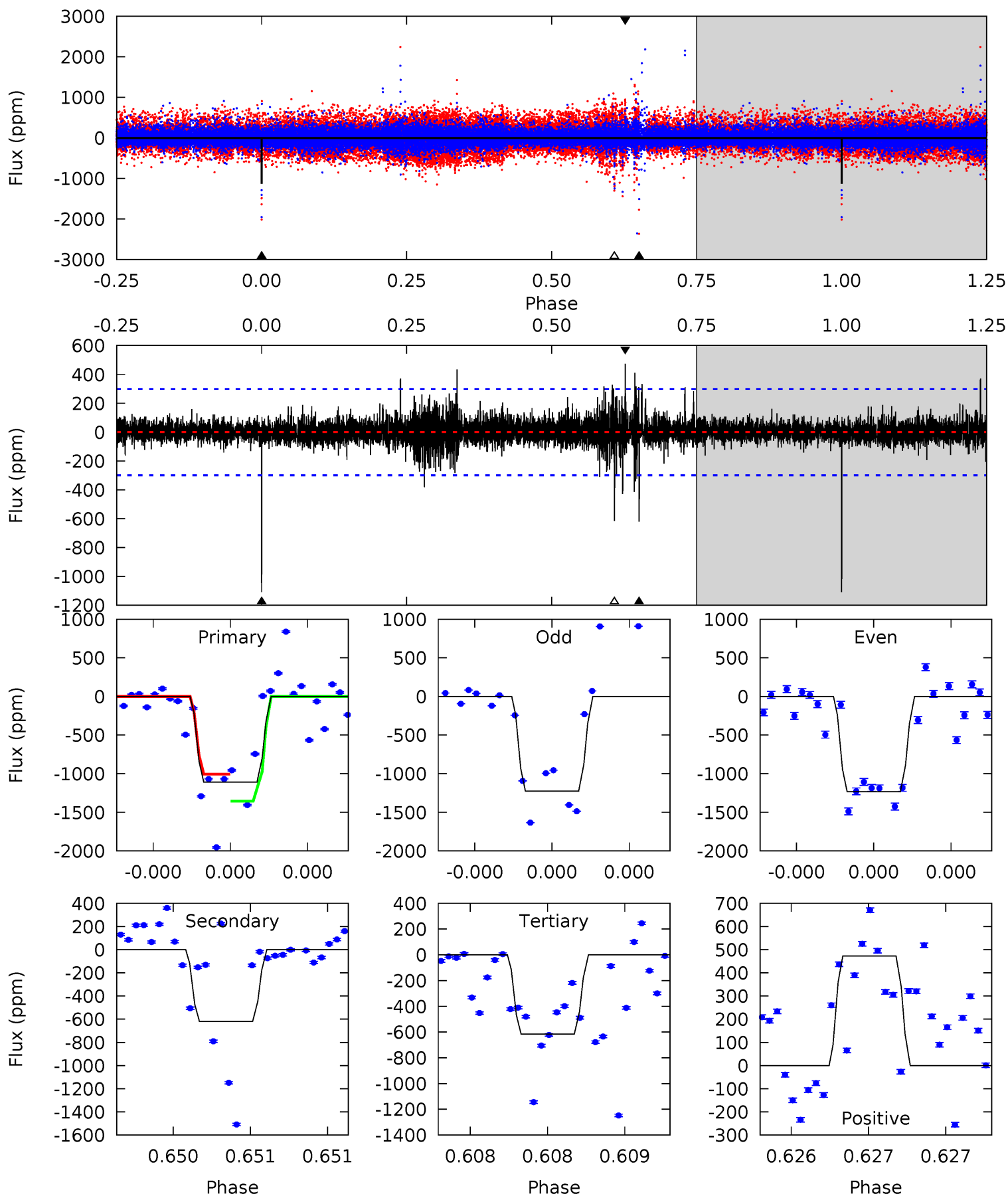
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007732964-08, P = 430.650899 Days, E = 18.703797 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	11.6	11.5	8.87	5.61	3.54	1.16	9.25	11.9	0.07	2.75	0.06	0.97	0.30	3.19



Stellar Parameters For KIC 007732964

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4949^{+176}_{-176}	$4.618^{+0.041}_{-0.054}$	$-0.280^{+0.300}_{-0.300}$	$0.690^{+0.078}_{-0.058}$	$0.720^{+0.078}_{-0.064}$	$3.093^{+0.632}_{-0.628}$
	+4%/-4%	+1%/-1%	+107%/-107%	+11%/-8%	+11%/-9%	+20%/-20%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007732964-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$5.75^{+5.34}_{-4.01}$	254^{+11}_{-11}	2414^{+12748}_{-15771}	$650^{+3429941}_{-2508450}$
Alt.	-619 ± 53	$6.49^{+6.51}_{-4.32}$	254^{+10}_{-10}	3215^{+1489}_{-557}	8176^{+63263}_{-6121}

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

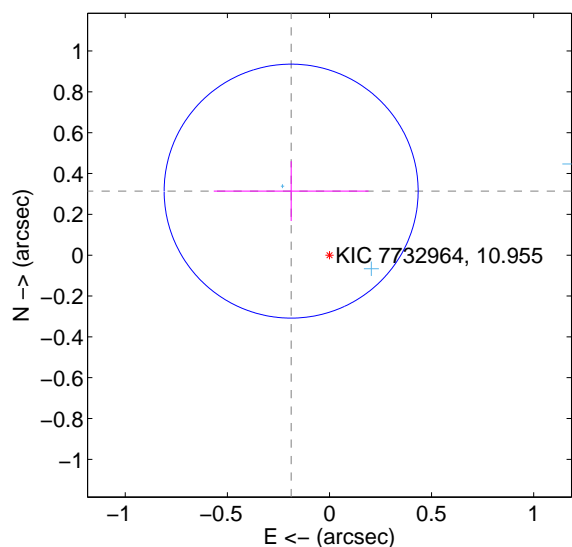
Supplemental centroid analysis for 007732964-08. **Kepler magnitude: 10.96.** Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

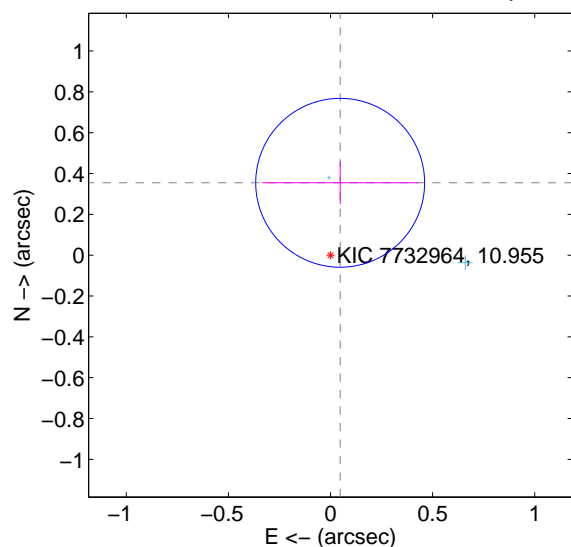
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.366 ± 0.207	1.76	0.188 ± 0.379	0.314 ± 0.146
PRF-fit source offset from KIC position	0.358 ± 0.138	2.59	-0.047 ± 0.384	0.354 ± 0.105
photometric centroid source offset	0.32 ± 0.18	1.75	-0.32 ± 0.18	0.00 ± 0.11

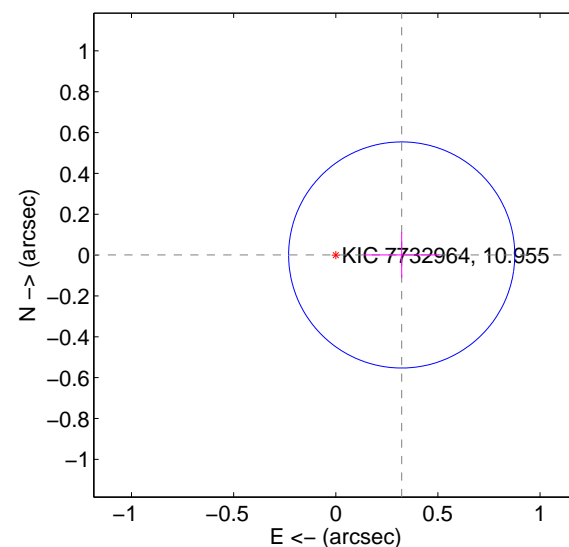
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

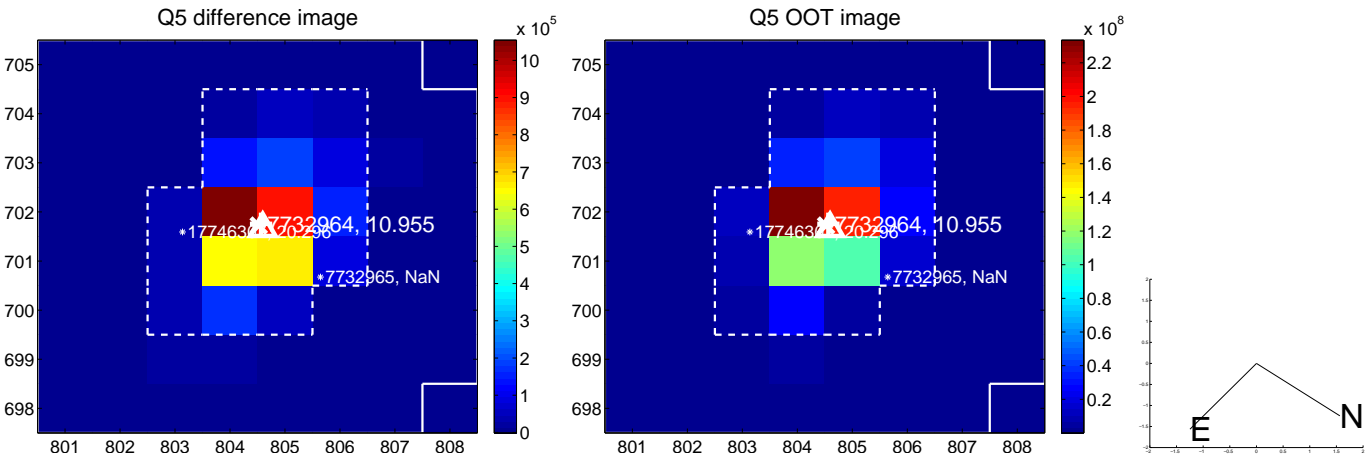


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

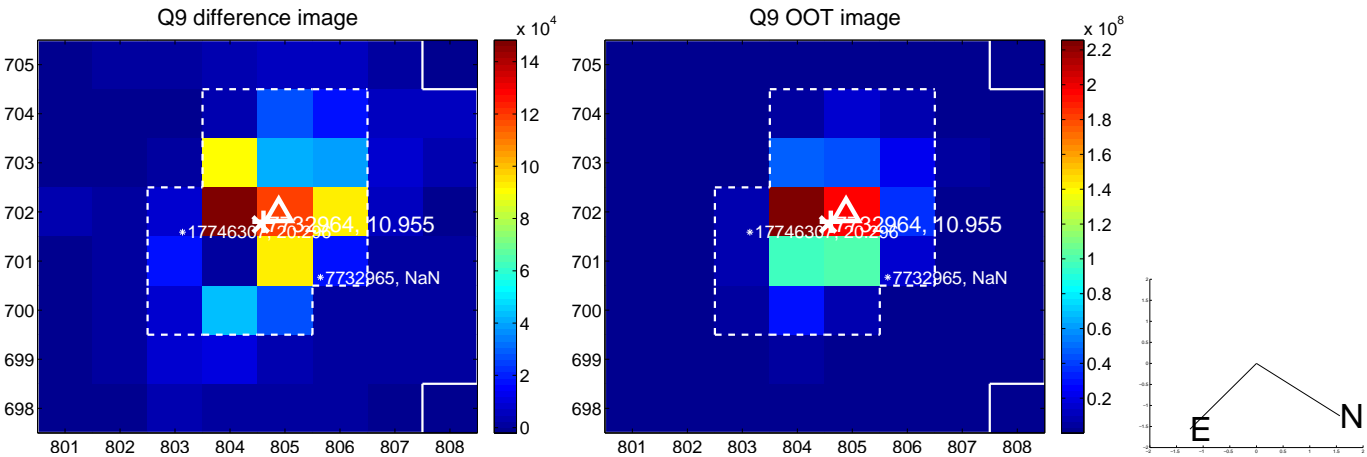
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



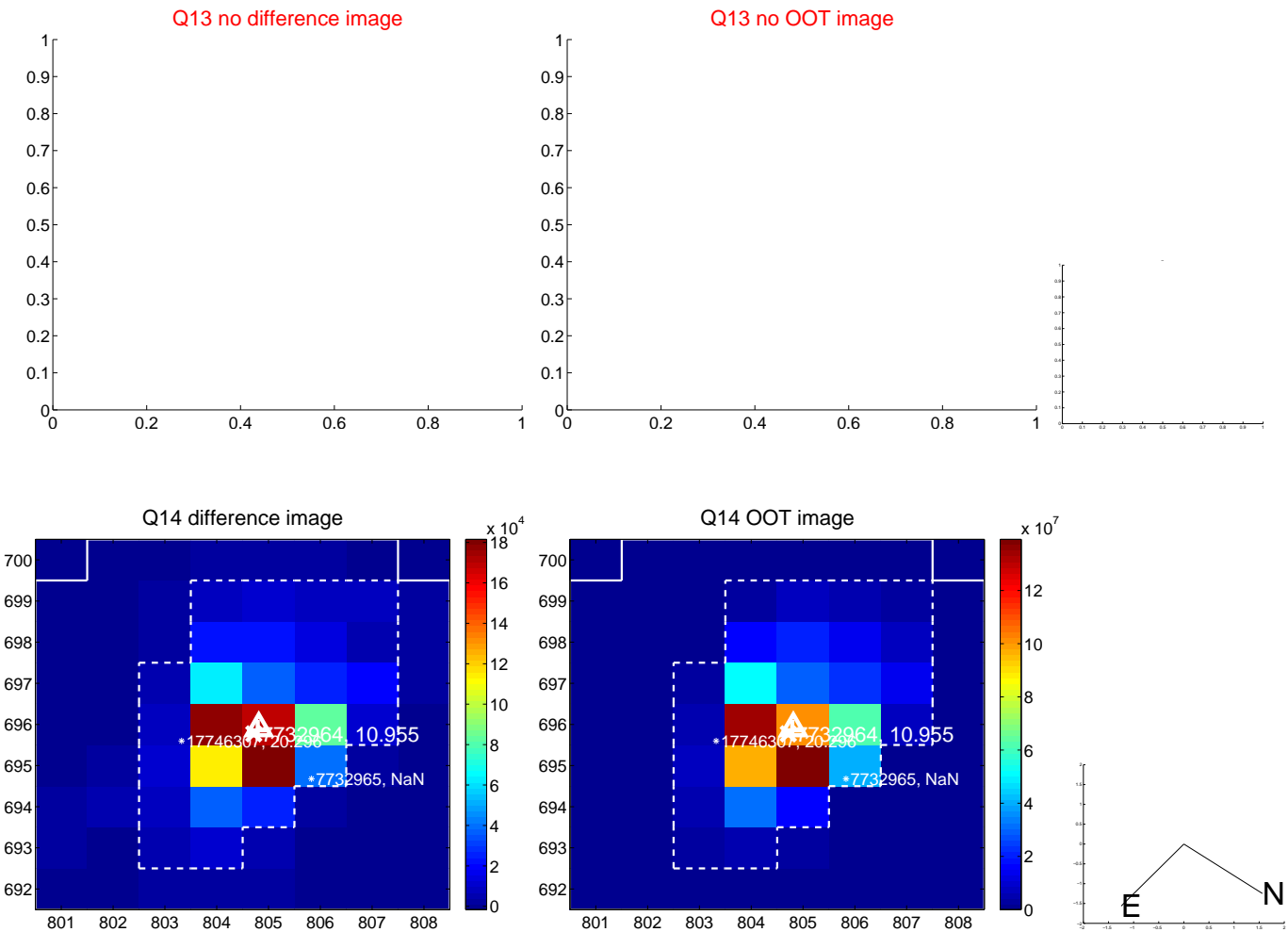
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

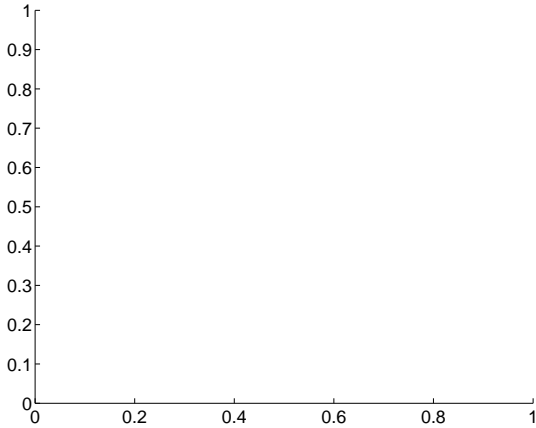


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

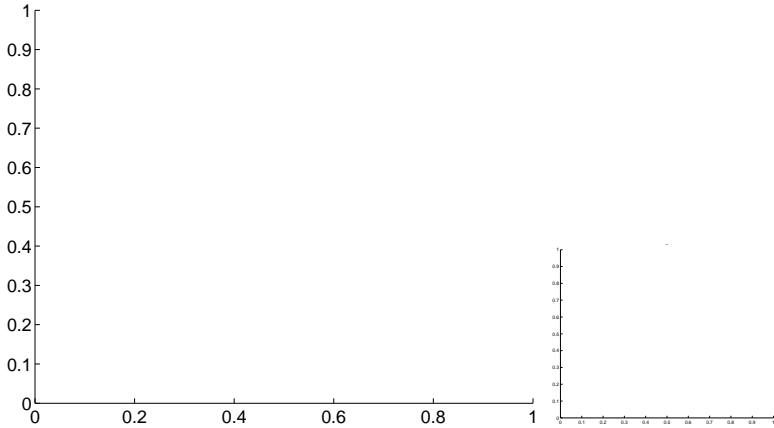


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

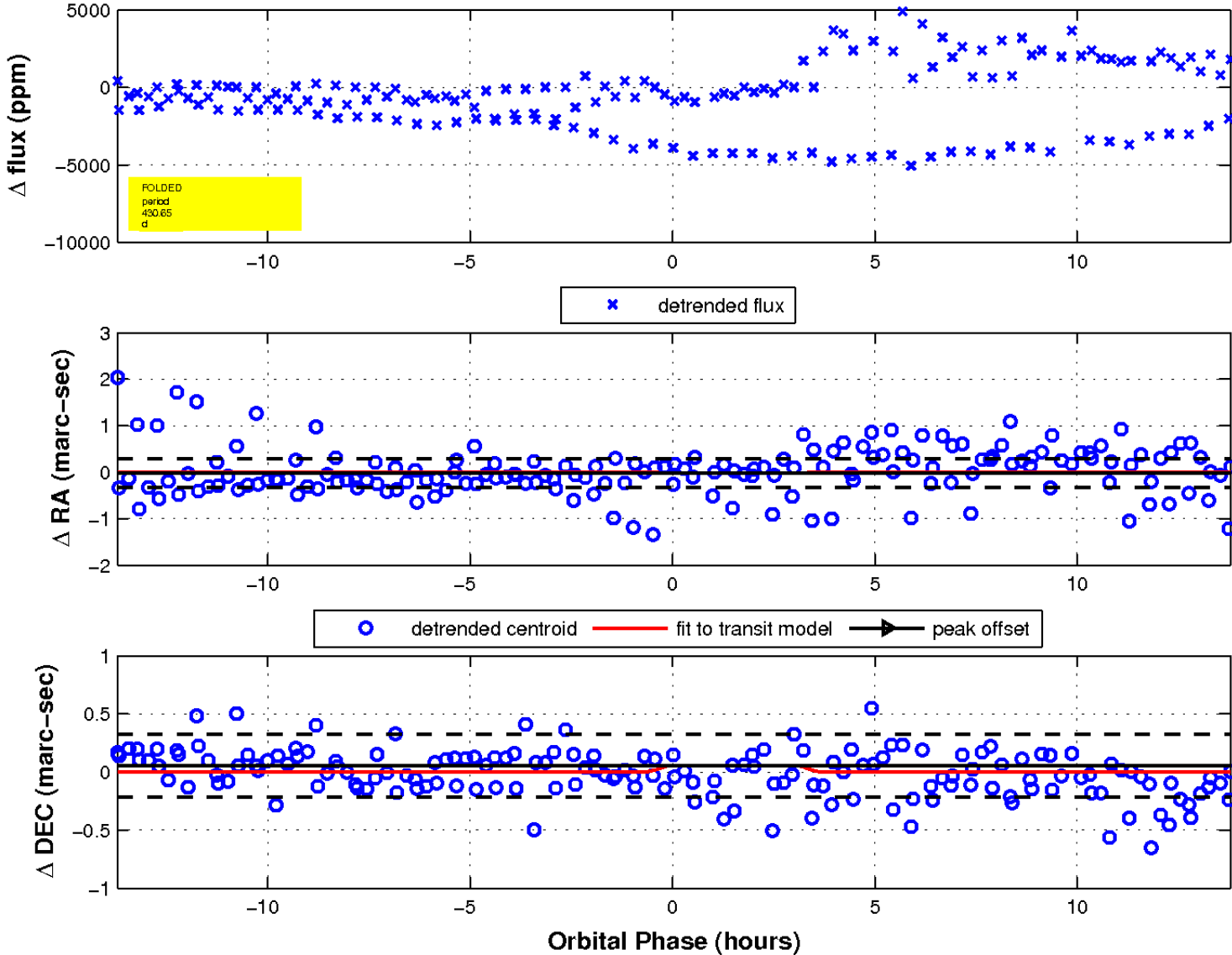
Q17 no difference image



Q17 no OOT image



fluxWeightedCentroids, Planet 8 of 8



UKIRT Image

Declination

