

KIC 006668646

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})
006668646-01	OBS	No	290.814329	281.810555	2544.7	4.221	14.4	10.1	0.39	3591	1.95	0.06
006668646-02	OBS	No	177.086828	158.808828	861.0	4.666	12.9	4.3	0.39	3591	1.19	0.11
006668646-03	OBS	No	568.897181	363.037278	2566.8	14.531	11.4	9.0	0.39	3591	1.96	0.02
006668646-04	OBS	No	237.253769	363.065689	1304.9	7.516	13.2	5.4	0.39	3591	1.43	0.07
006668646-05	OBS	No	323.633285	419.053478	843.4	0.695	10.0	2.8	0.39	3591	1.16	0.05
006668646-06	OBS	No	333.152236	408.937825	1342.8	10.695	9.3	5.6	0.39	3591	1.42	0.05
006668646-07	OBS	No	255.872777	365.802934	1332.6	9.145	11.7	5.9	0.39	3591	1.42	0.07
006668646-08	OBS	No	297.666832	410.833923	1651.5	7.844	9.8	7.2	0.39	3591	1.57	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006668646-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
006668646-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006668646-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006668646-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
006668646-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006668646-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

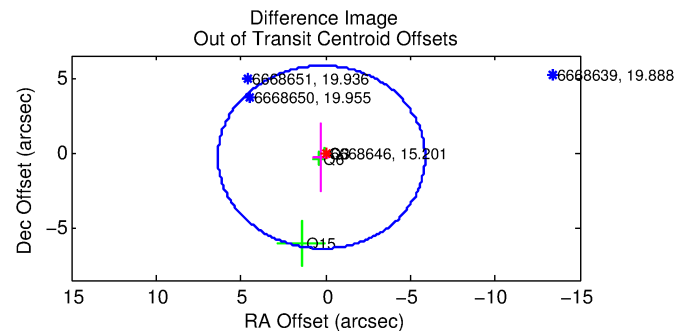
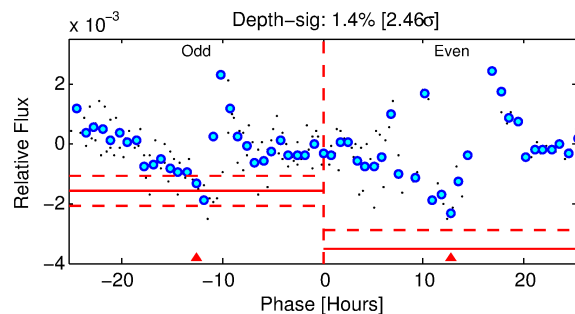
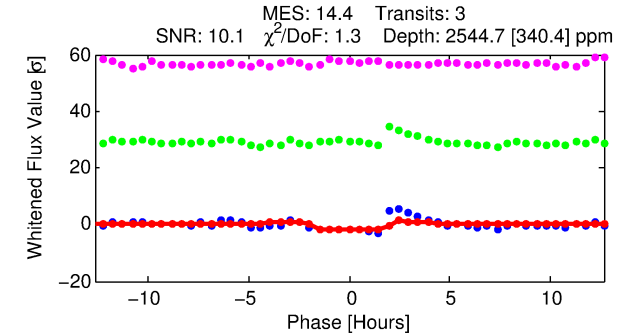
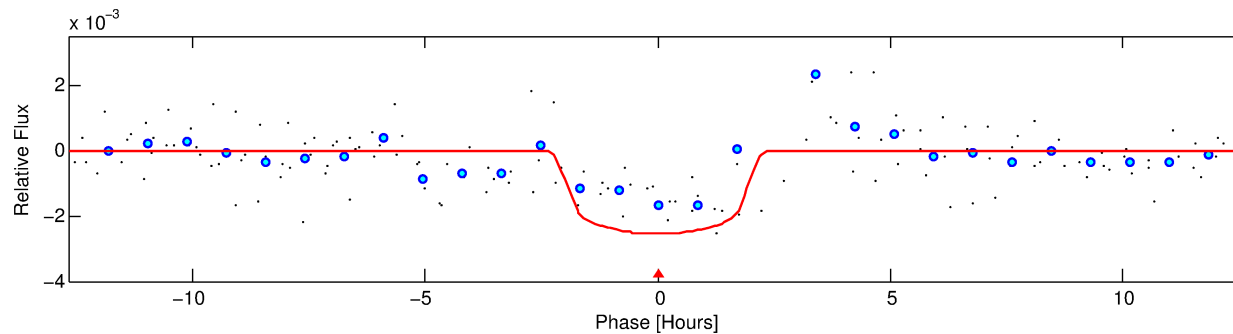
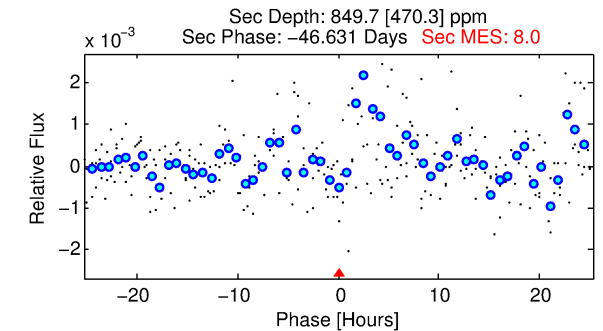
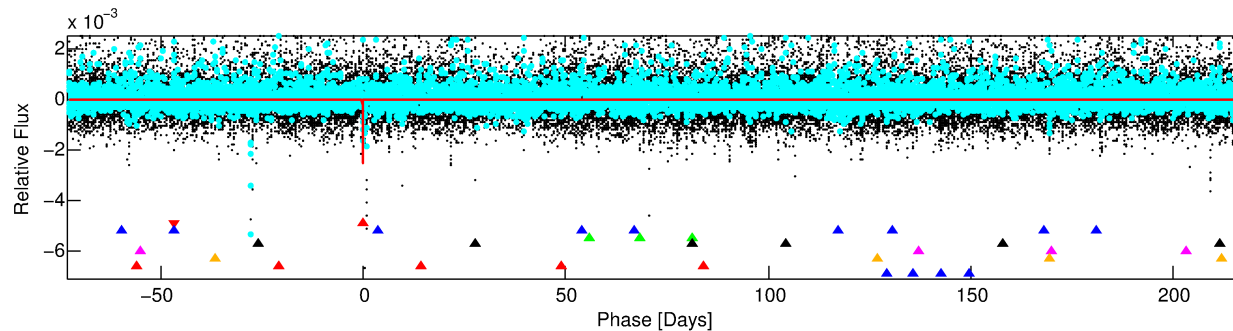
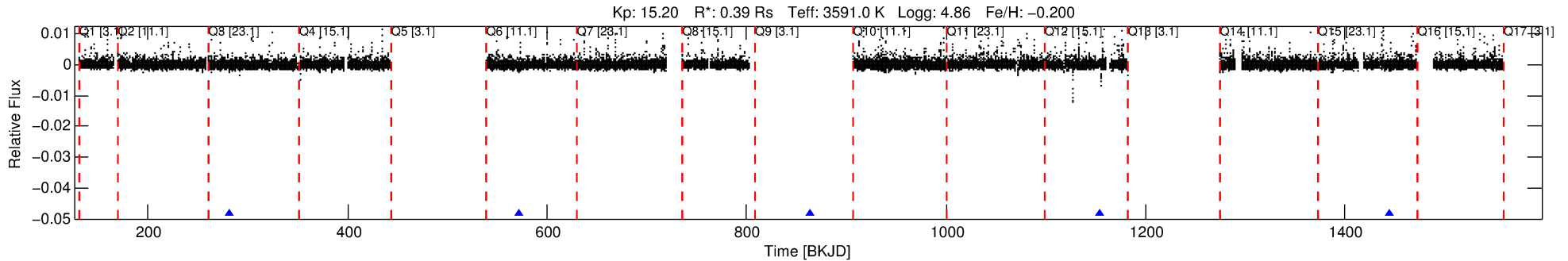
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006668646-01

No Significant Match Found

DV One-Page Summary

KIC: 6668646 Candidate: 1 of 8 Period: 290.814 d



DV Fit Results:

Period = 290.81433 [0.00233] d
Epoch = 281.8106 [0.0066] BKJD
Rp/R* = 0.0458 [0.0333]
a/R* = 550.42 [1792.50]
b = 0.02 [157.65]
Seff = 0.06 [0.01]
Teq = 124 [4] K
Rp = 1.95 [1.44] Re
a = 0.6351 [0.0536] AU
Ag = 49535.72 [77284.12] [0.64σ]
Teffp = 2864 [1116] K [2.46σ]

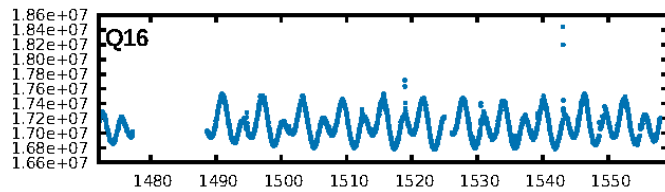
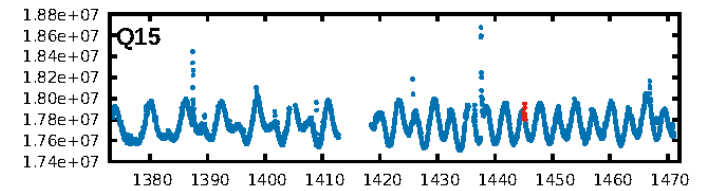
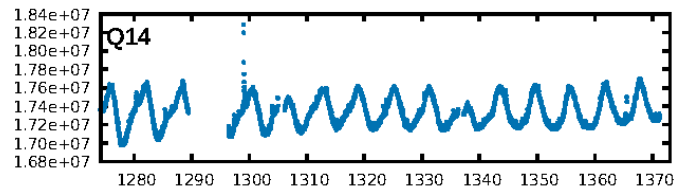
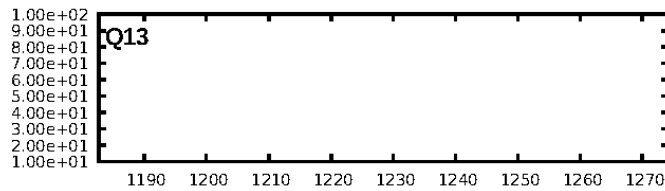
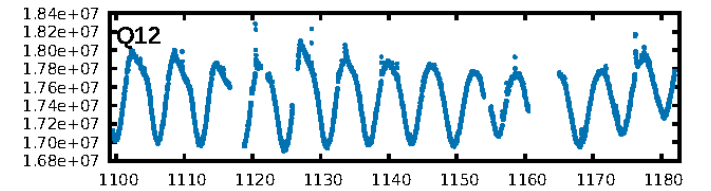
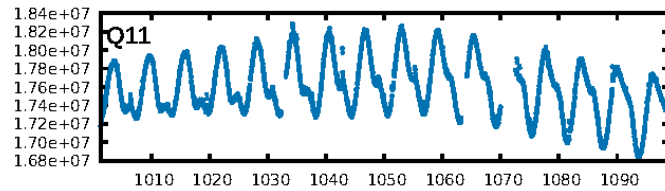
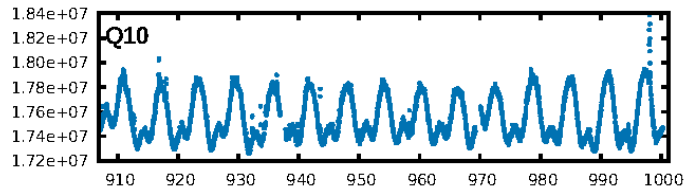
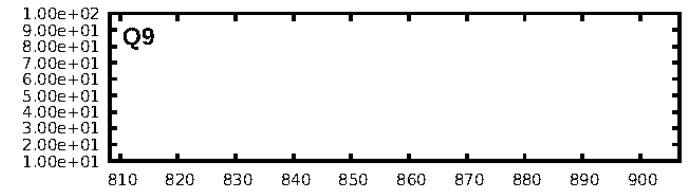
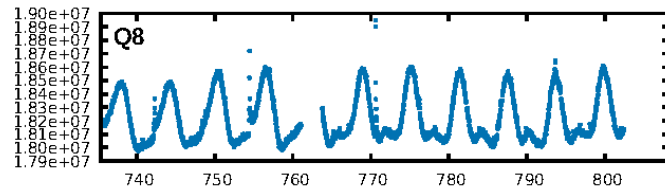
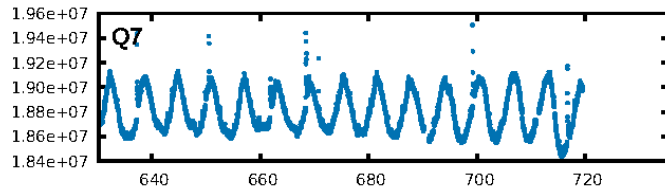
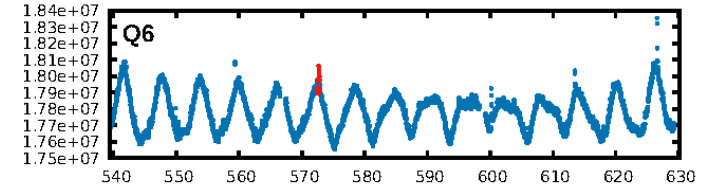
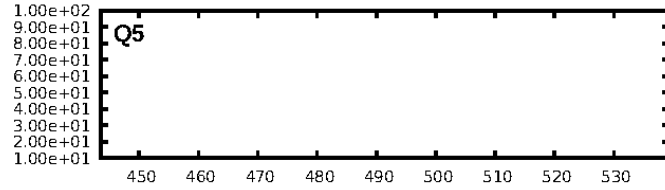
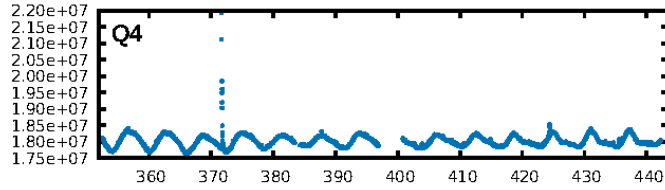
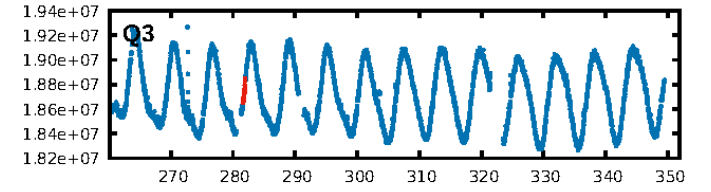
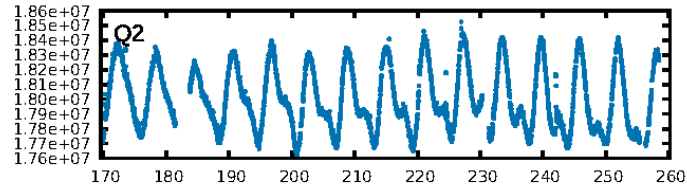
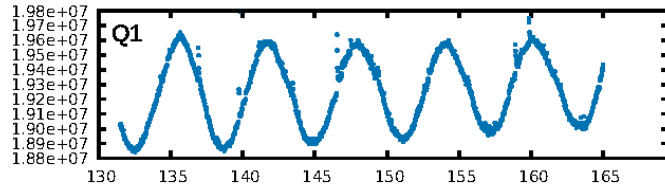
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [83.26σ]
LongPeriod-sig: 100.0% [18.46σ]
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 69.6%
Bootstrap-pfa: 1.11e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 20.99
Centroid-sig: 27.0%
Centroid-so: 0.595 arcsec [1.04σ]
OotOffset-rm: 0.380 arcsec [0.19σ]
KicOffset-rm: 0.239 arcsec [0.14σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

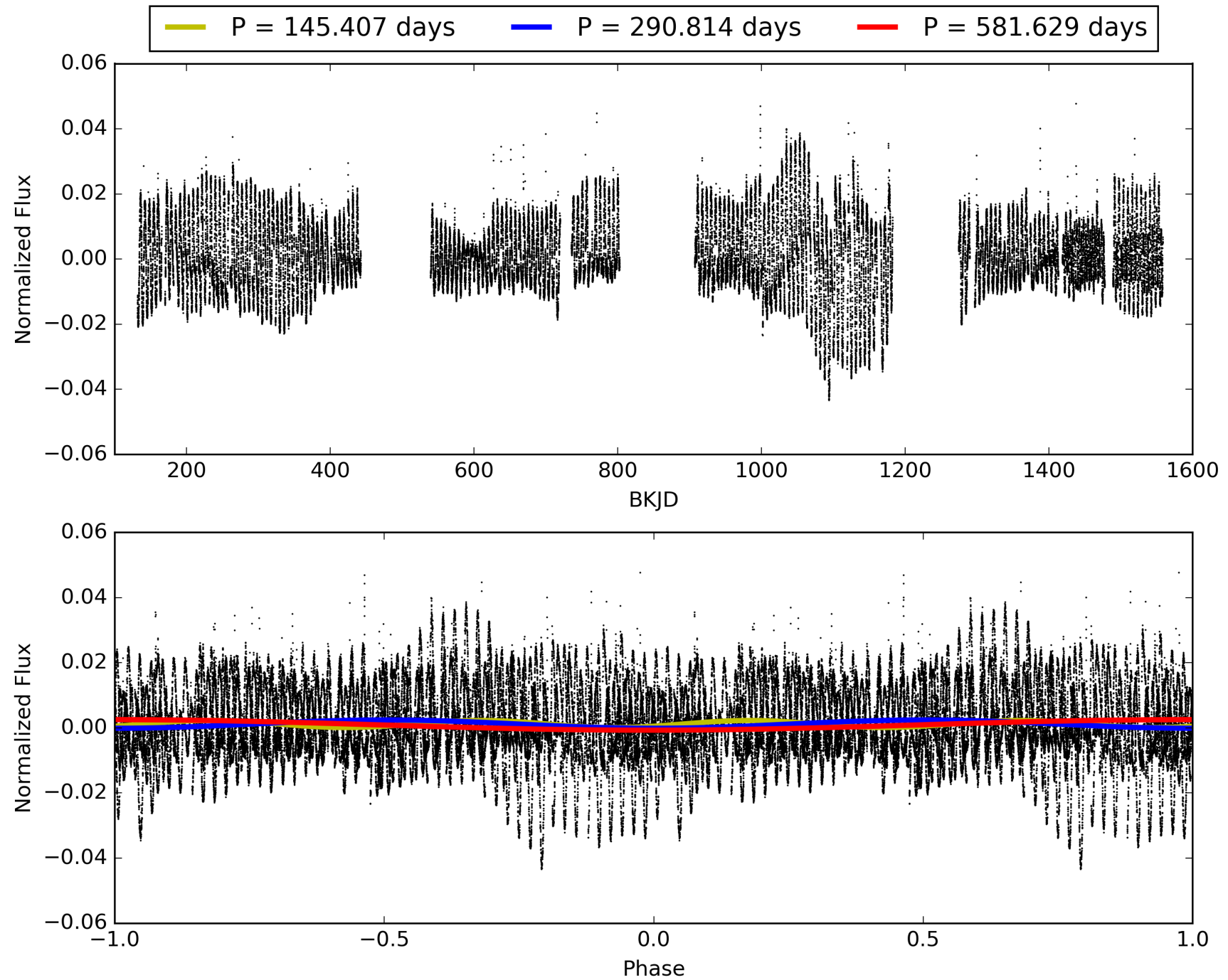
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 06:11:50 Z

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

TCE 006668646-01, PDC Light Curves

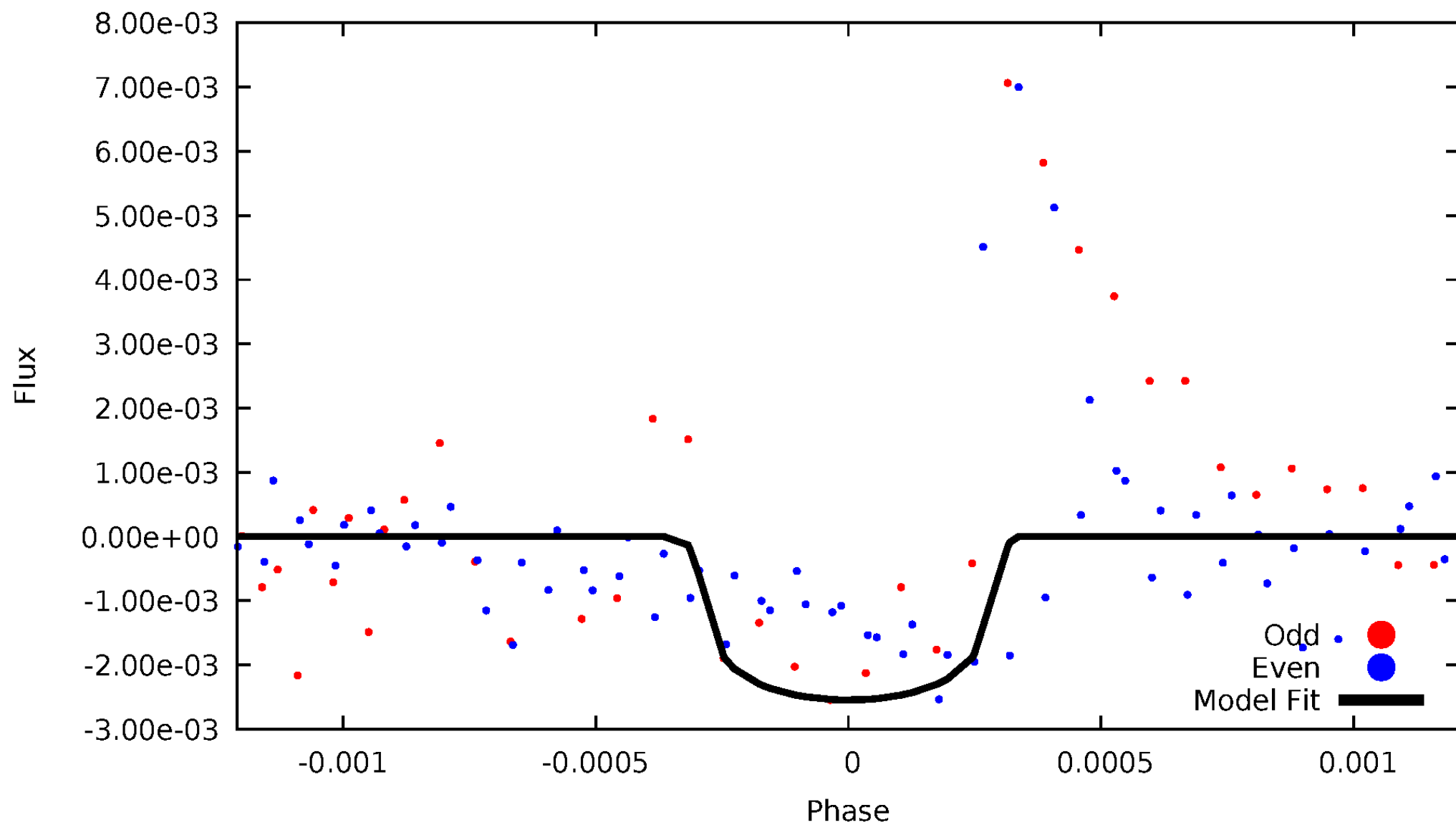


TCE 006668646-01



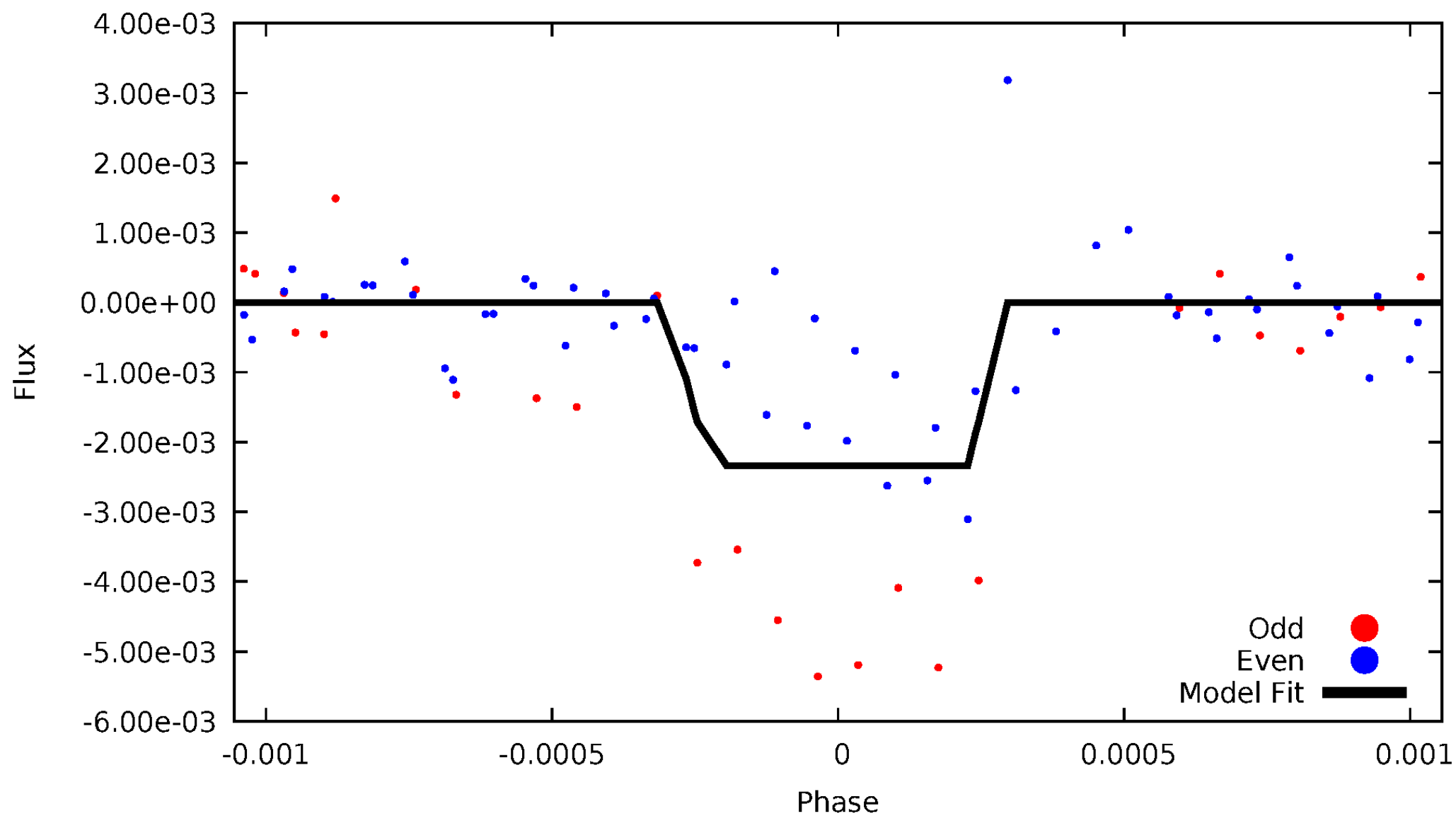
DV Odd/Even

TCE 006668646-01



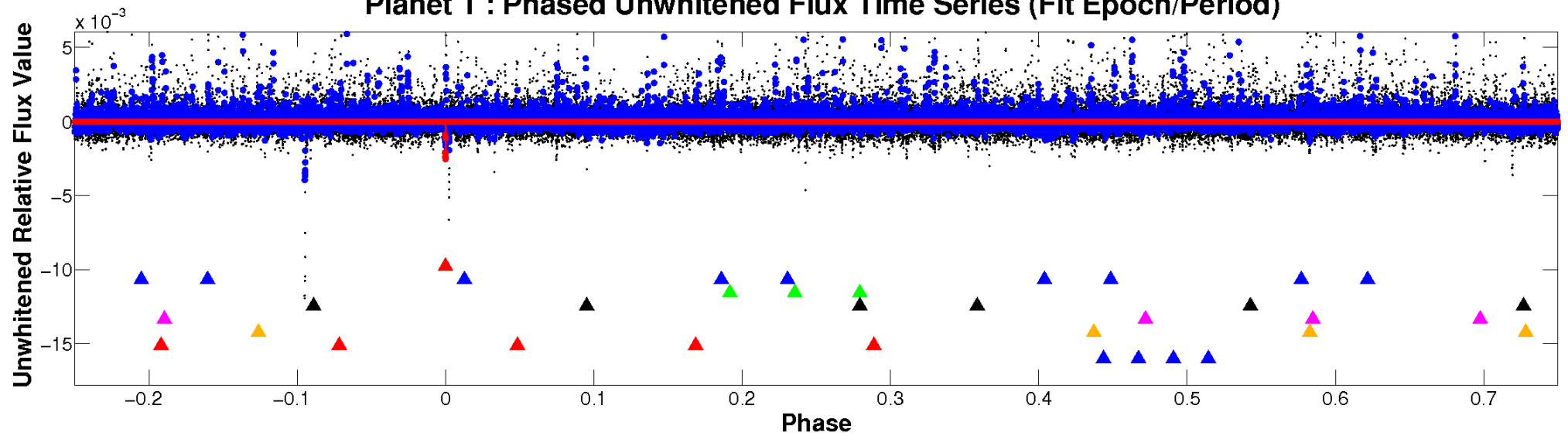
ALT Odd/Even

TCE 006668646-01

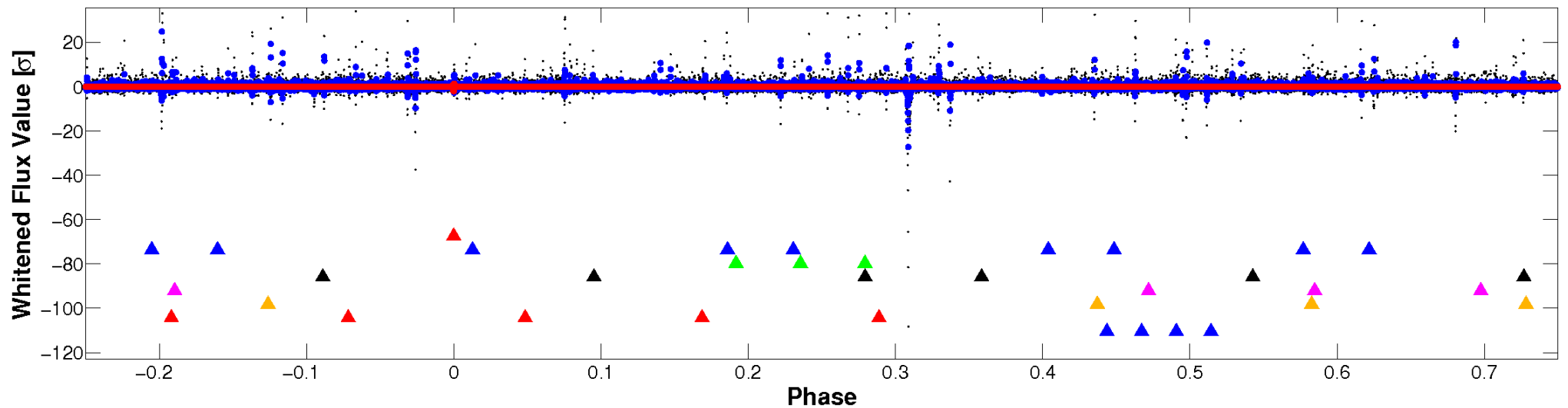


Non-Whitened Vs. Whitened Light Curve

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

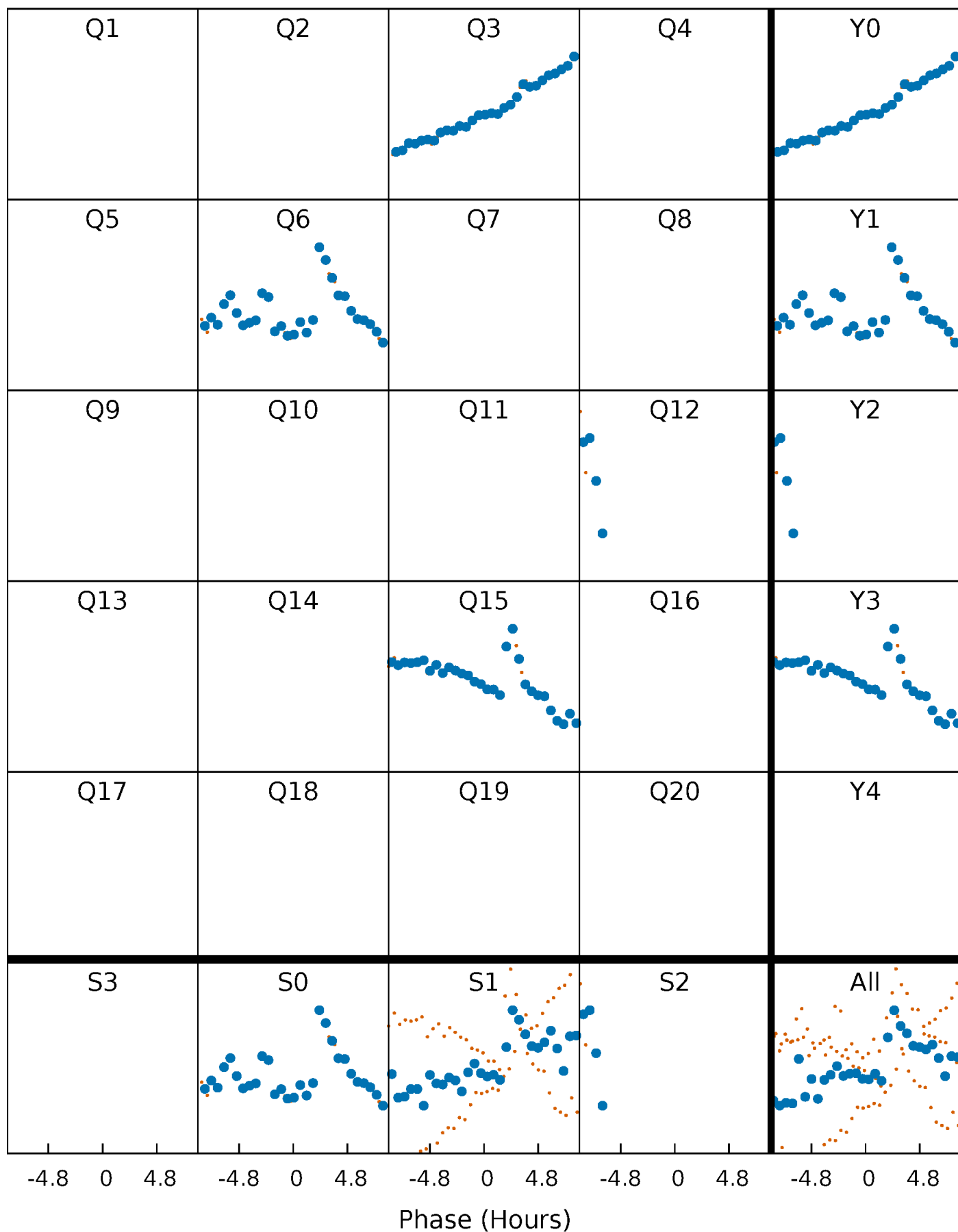


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



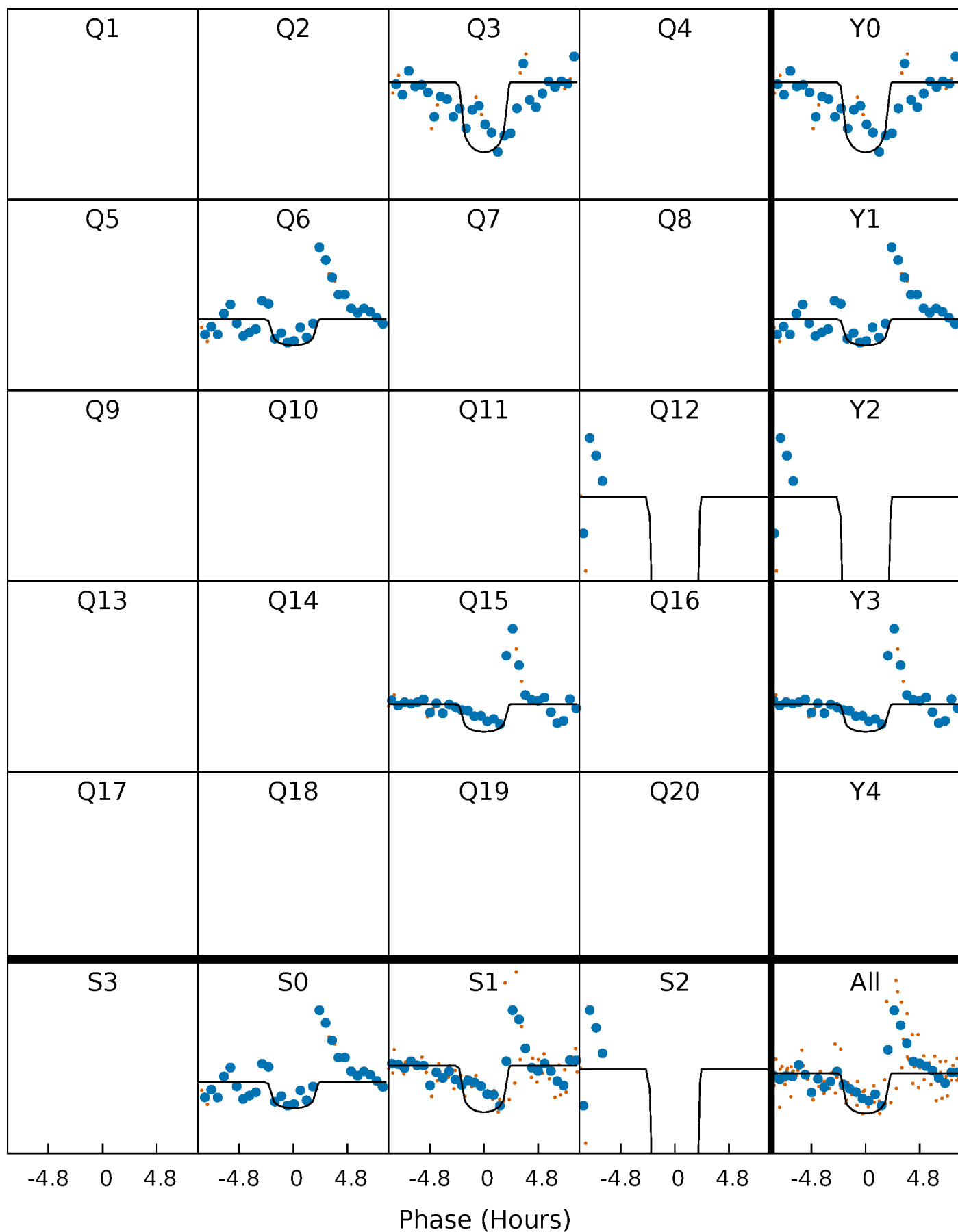
PDC Quarter-Phased Transit Curves

TCE 006668646-01 P=290.814329 Days $T_0=281.810555$ (BKJD)



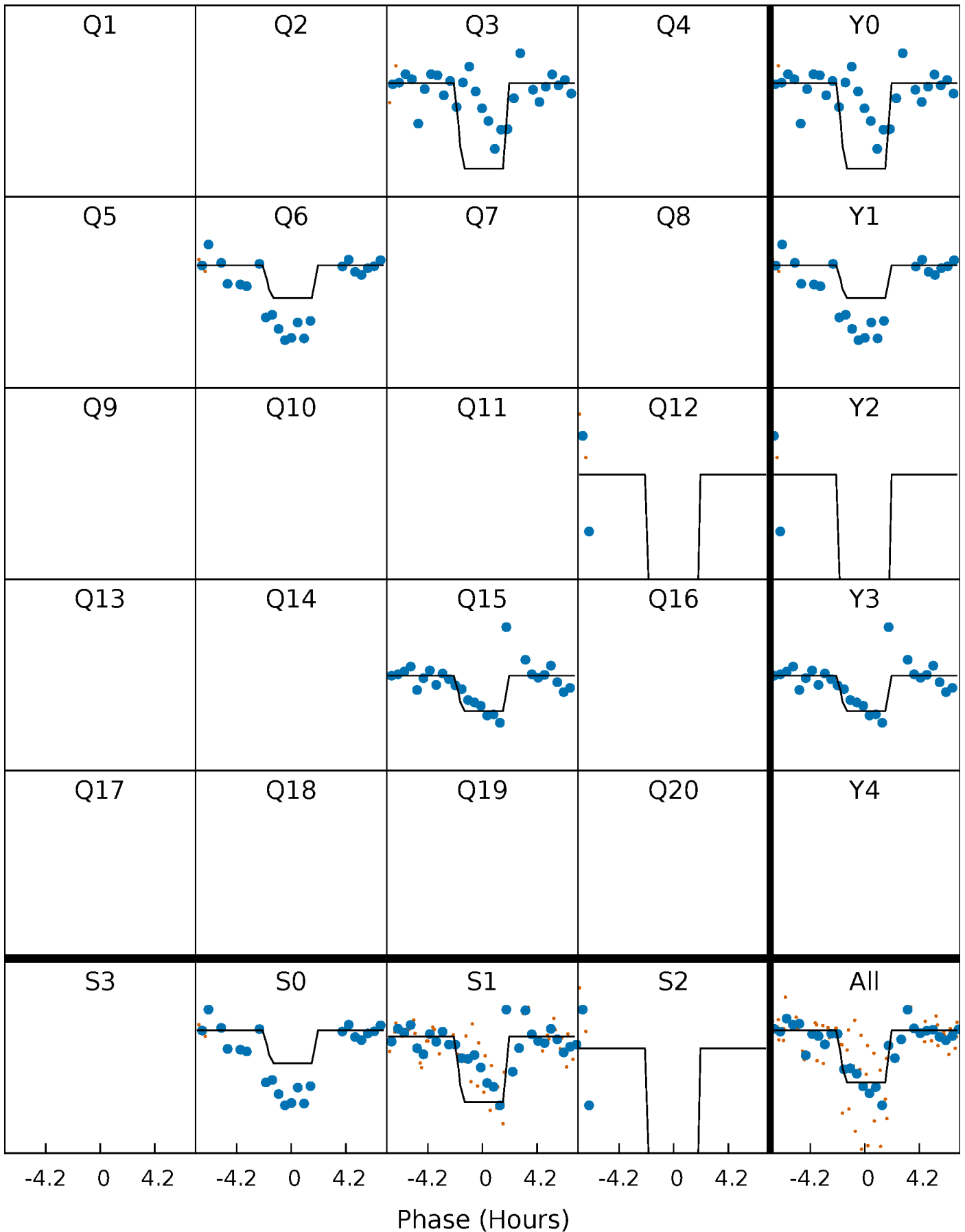
DV Quarter-Phased Transit Curves

TCE 006668646-01 P=290.814329 Days $T_0=281.810555$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

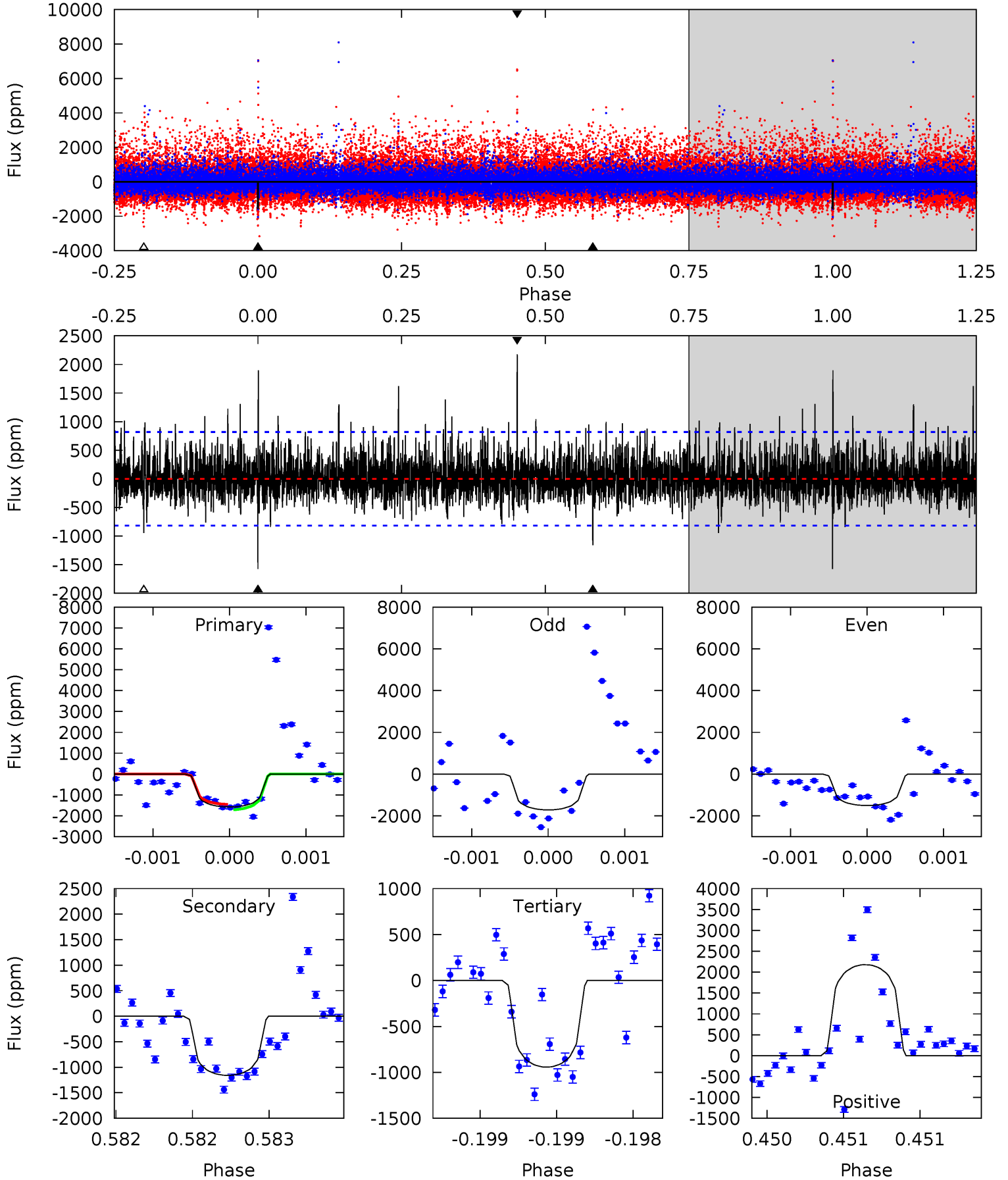
TCE 006668646-01 P=290.811503 Days $T_0=281.813177$ (BKJD)



DV Model-Shift Uniqueness Test

006668646-01, P = 290.814329 Days, E = 281.810555 Days

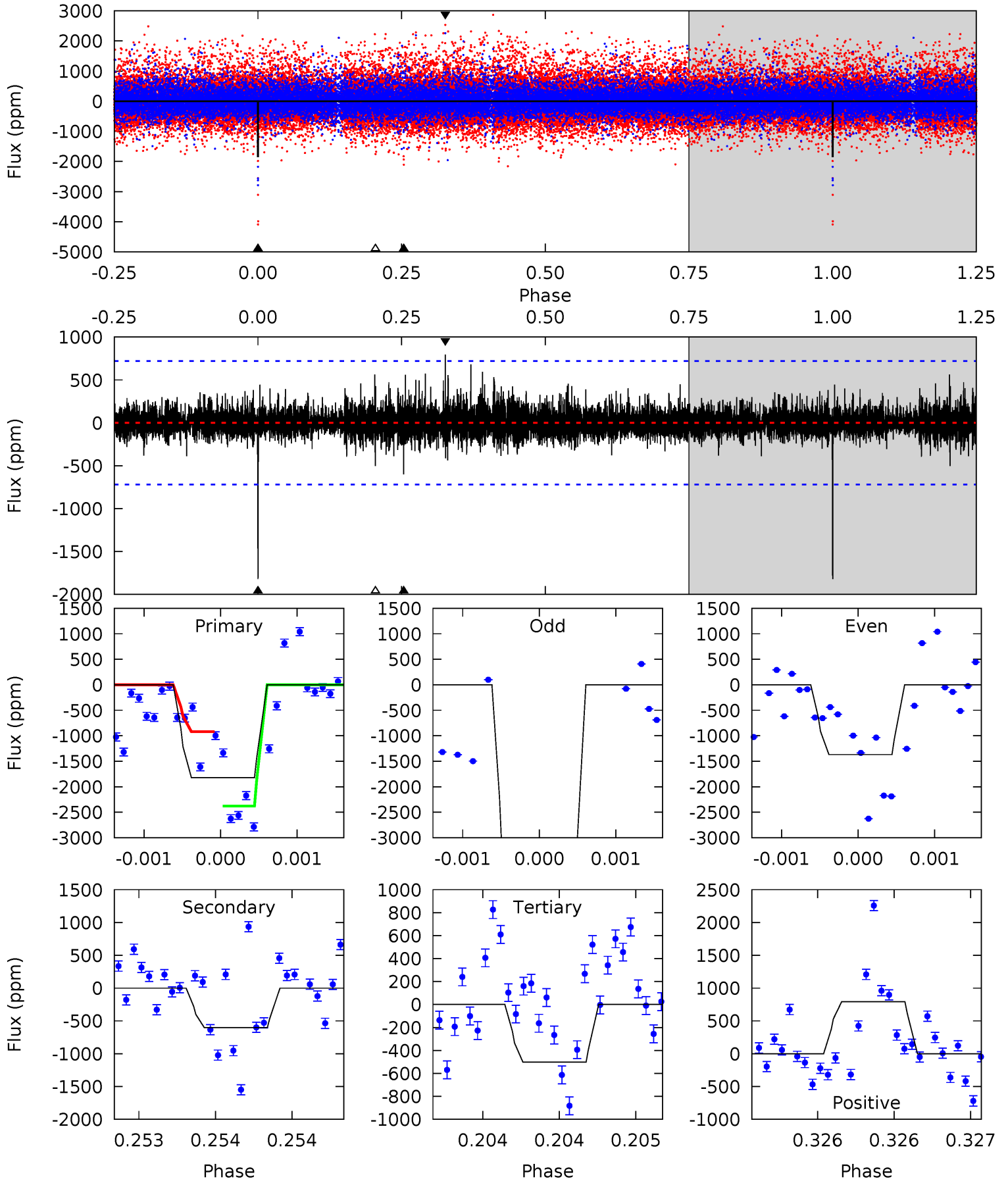
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	7.83	6.37	14.7	5.53	3.42	1.84	4.29	-4.07	1.46	-6.90	0.51	0.86	0.58	0.87



Alt Model-Shift Uniqueness Test

006668646-01, P = 290.811503 Days, E = 281.813177 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	4.64	3.89	6.14	5.57	3.47	0.88	10.2	7.96	0.75	-1.50	14.6	1.21	0.30	0



Stellar Parameters For KIC 006668646

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3591^{+65}_{-72}	$4.862^{+0.050}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.390^{+0.040}_{-0.044}$	$0.405^{+0.042}_{-0.052}$	$9.604^{+2.468}_{-1.640}$
	+2%/-2%	+1%/-1%	+50%/-50%	+10%/-11%	+10%/-13%	+26%/-17%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006668646-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1159 ± 148	$2.04^{+1.44}_{-1.15}$	172^{+5}_{-5}	3209^{+959}_{-437}	$61562^{+246813}_{-40553}$
Alt.	-600 ± 129	$2.12^{+1.28}_{-1.11}$	173^{+5}_{-5}	2903^{+764}_{-358}	$29800^{+111810}_{-19236}$

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

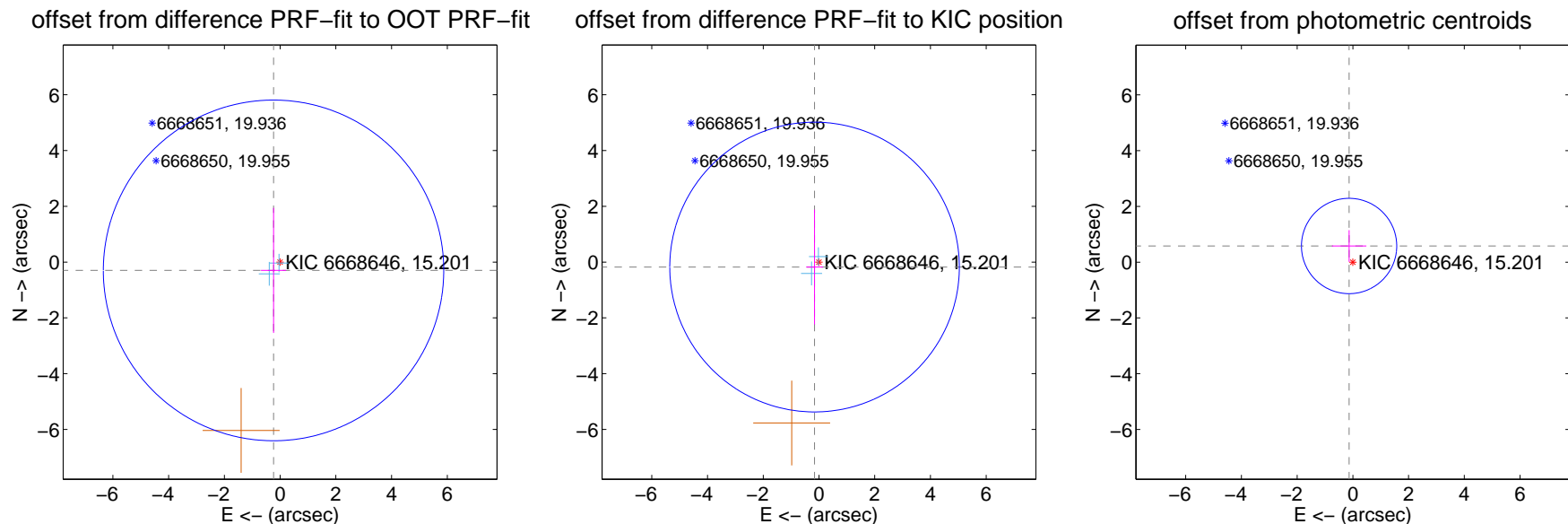
DV Centroid Data

Supplemental centroid analysis for 006668646-01. Kepler magnitude: 15.20. Transit SNR 10.13

There are 2 quarters with good PRF difference image offsets

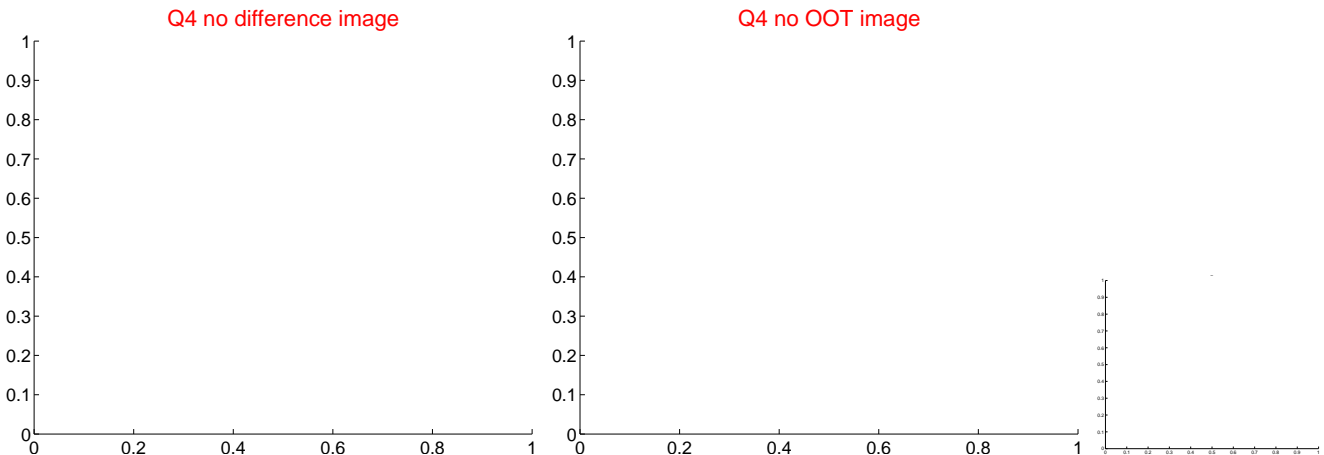
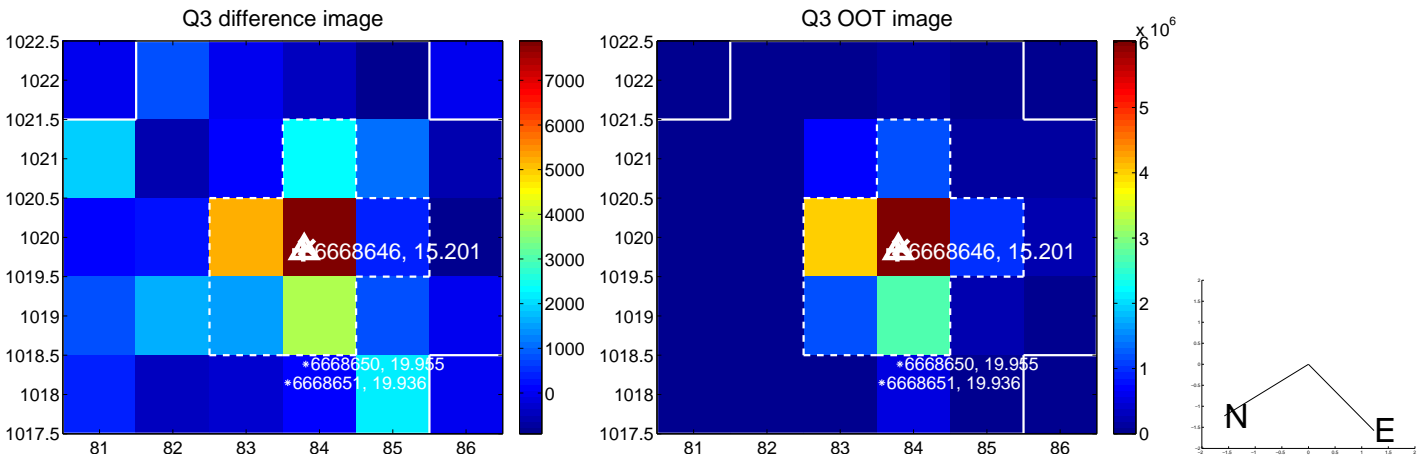
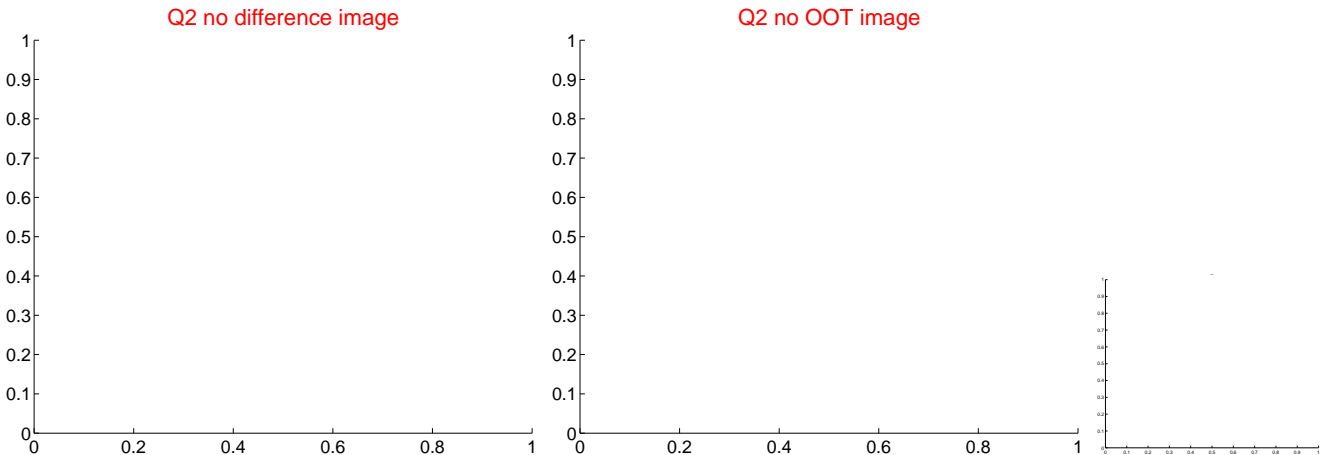
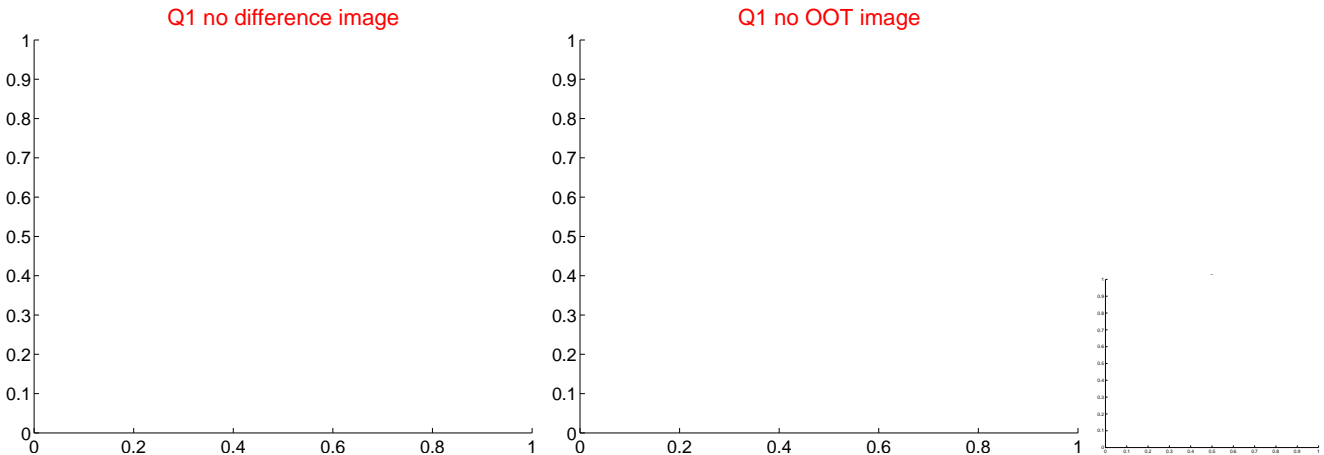
The direct PRF centroid is offset from the target star catalog position by about 0.50 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.380 ± 2.036	0.19	0.236 ± 0.452	-0.298 ± 2.242
PRF-fit source offset from KIC position	0.239 ± 1.731	0.14	0.159 ± 0.300	-0.178 ± 2.061
photometric centroid source offset	0.60 ± 0.57	1.04	0.13 ± 0.62	0.58 ± 0.57



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.

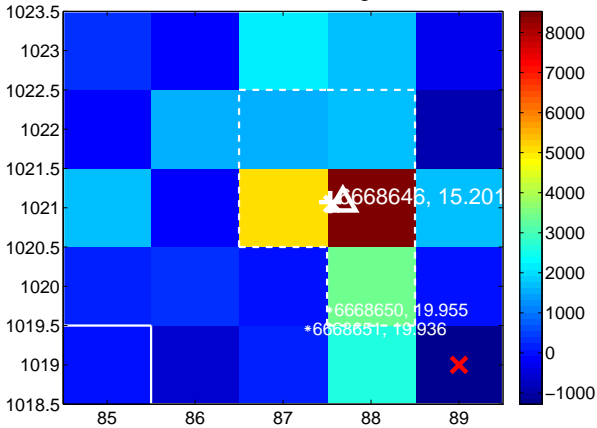
Q5 no difference image



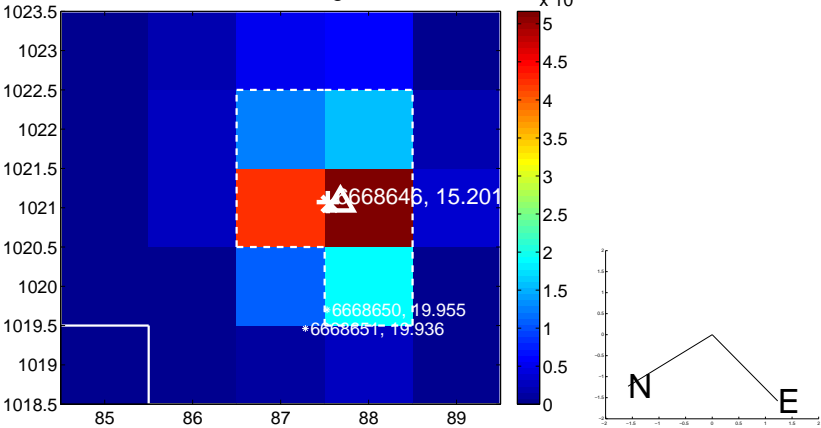
Q5 no OOT image



Q6 difference image



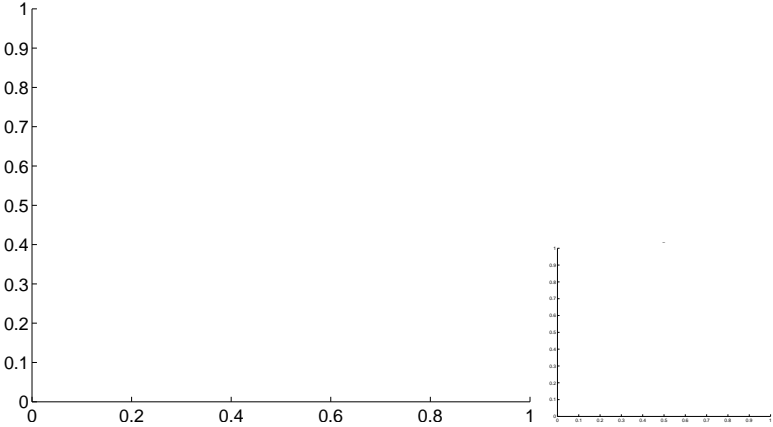
Q6 OOT image



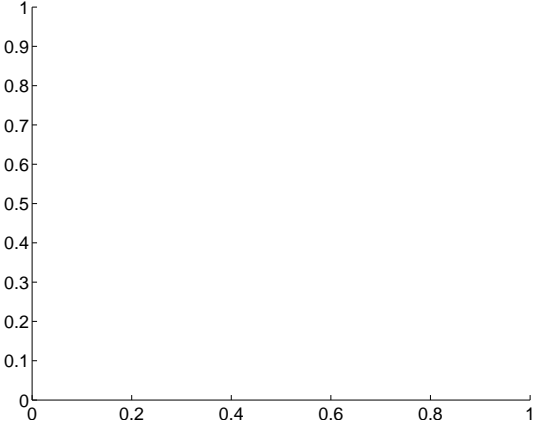
Q7 no difference image



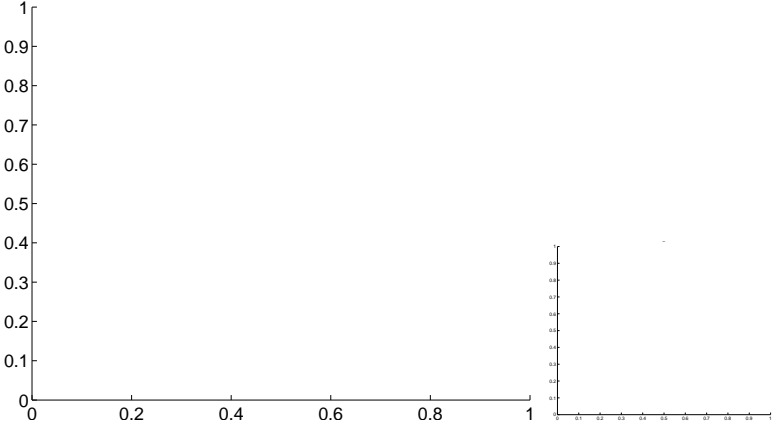
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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.

Q13 no difference image



Q13 no OOT image



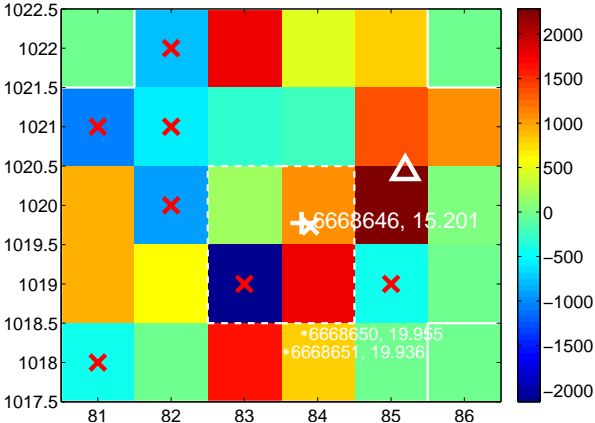
Q14 no difference image



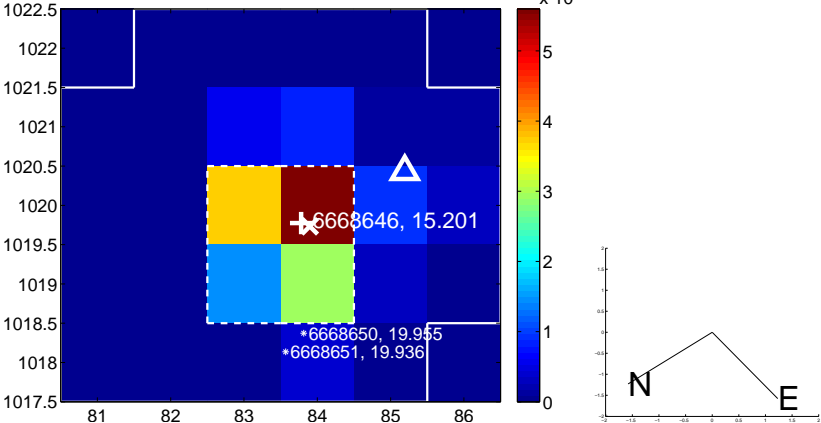
Q14 no OOT image



Q15 difference image. Poor Quality



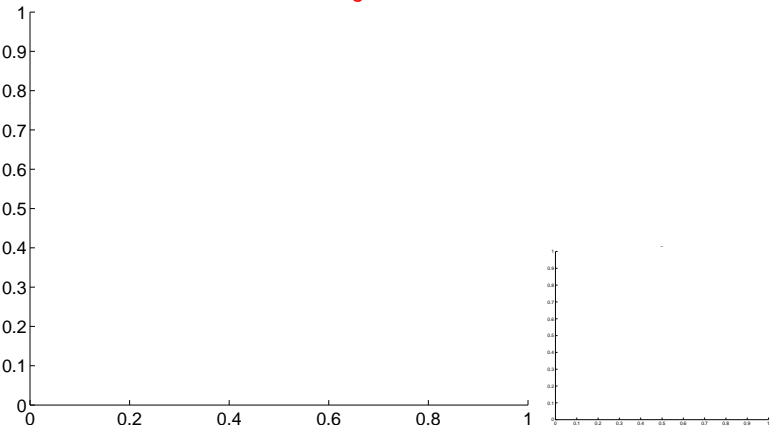
Q15 OOT image



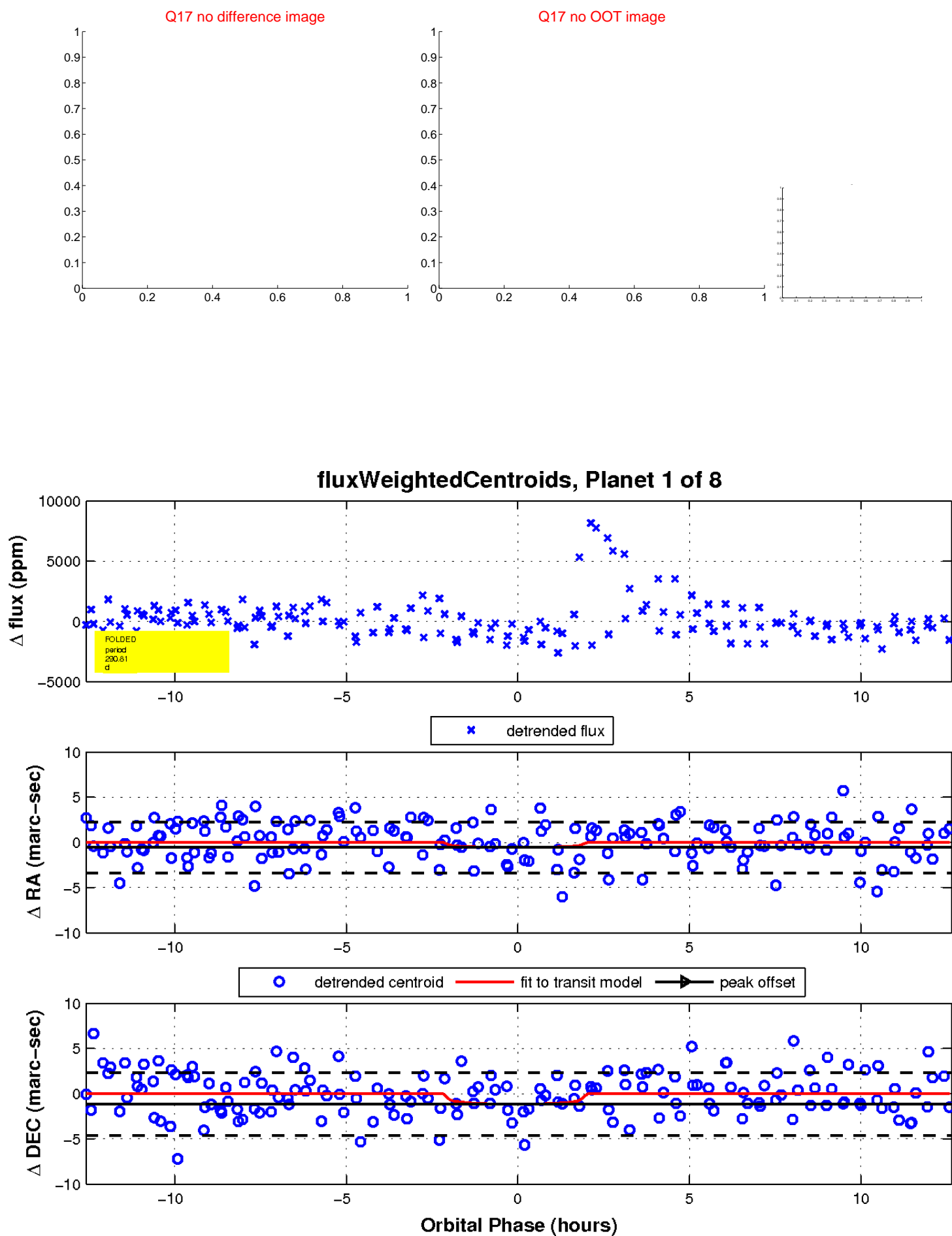
Q16 no difference image



Q16 no OOT image

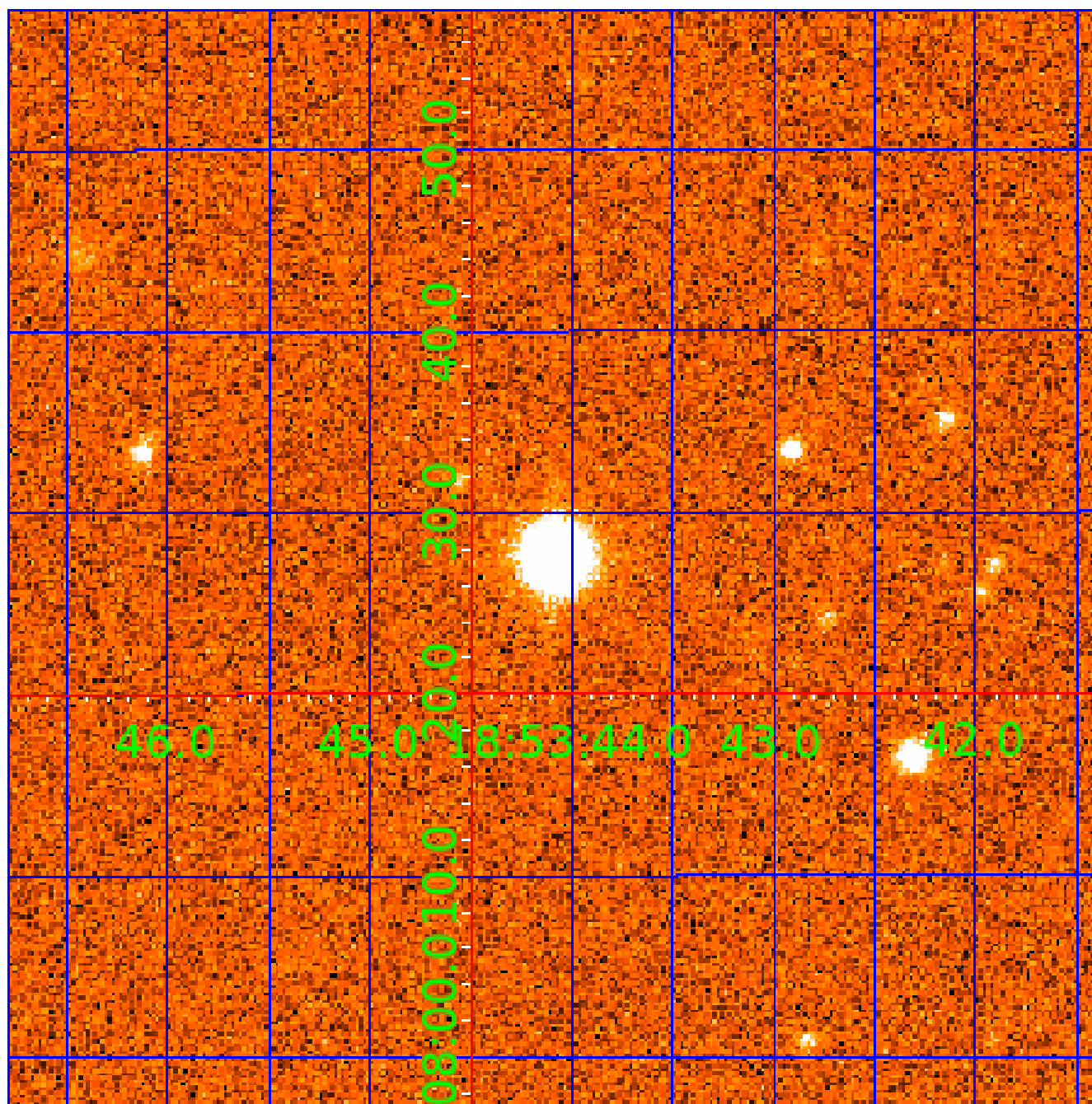


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006668646

Q1-17 DR25 TCE Parameters

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Robovetter Results

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006668646-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
006668646-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006668646-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006668646-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
006668646-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006668646-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

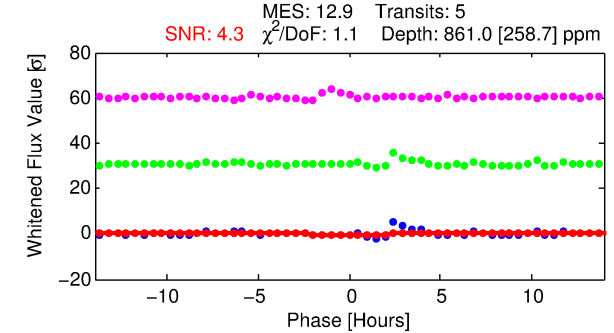
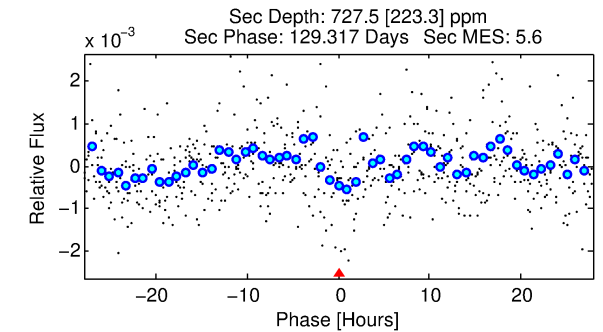
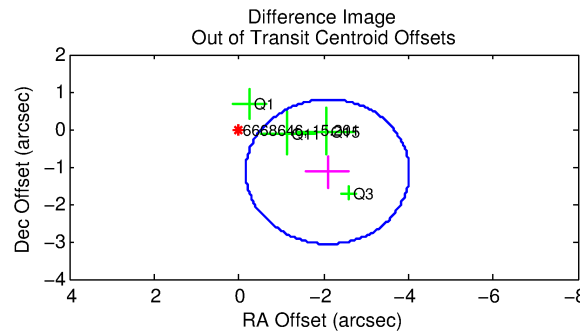
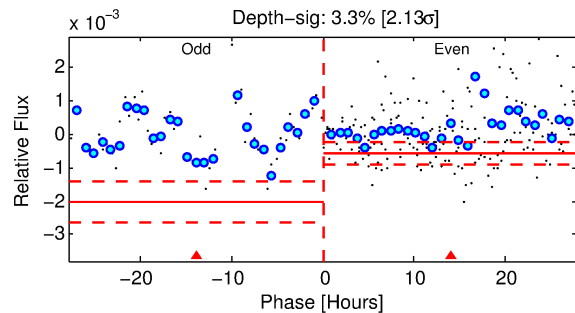
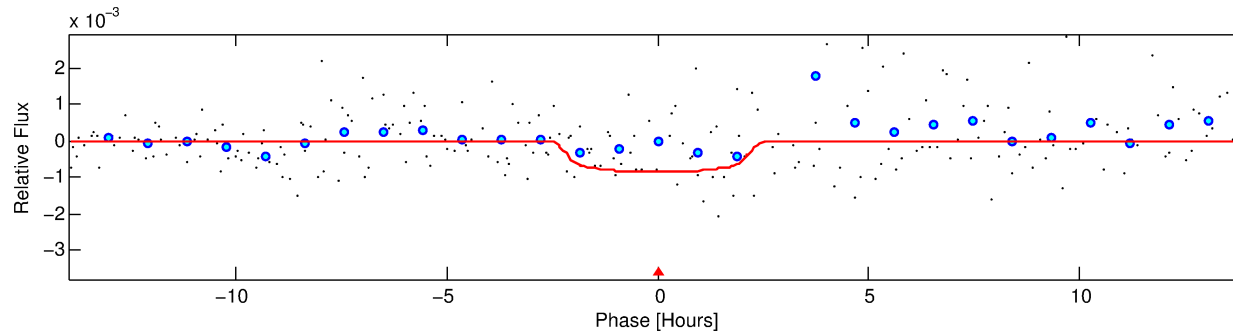
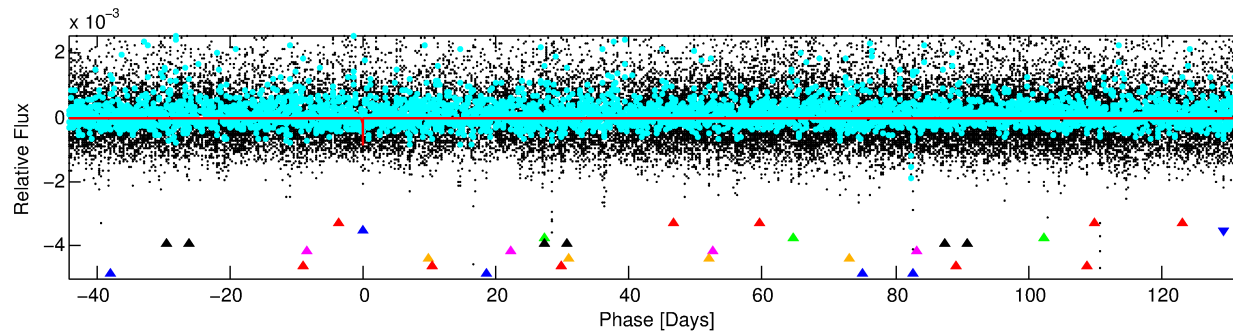
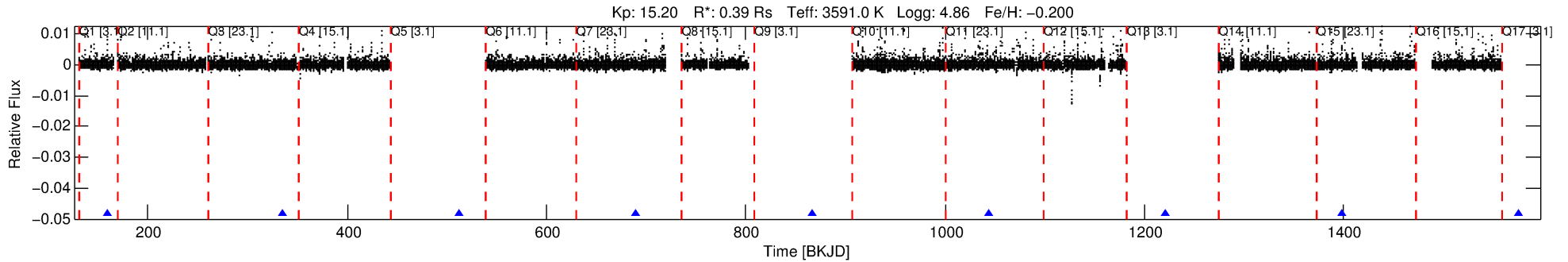
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006668646-02

No Significant Match Found

DV One-Page Summary

KIC: 6668646 Candidate: 2 of 8 Period: 177.087 d



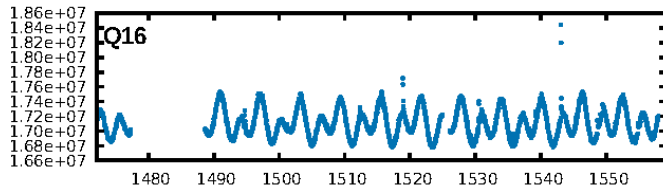
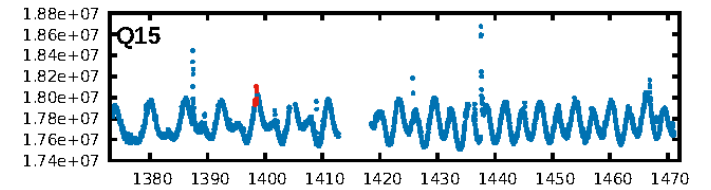
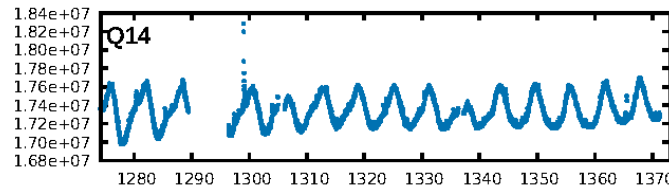
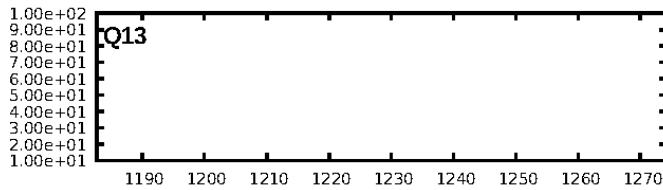
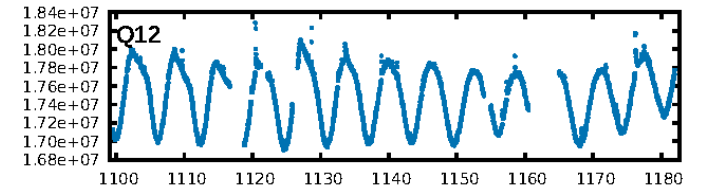
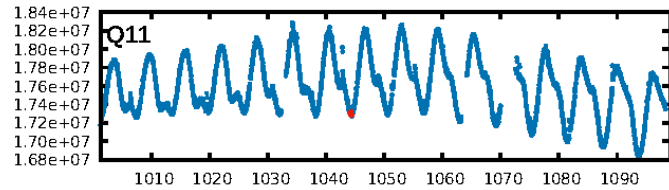
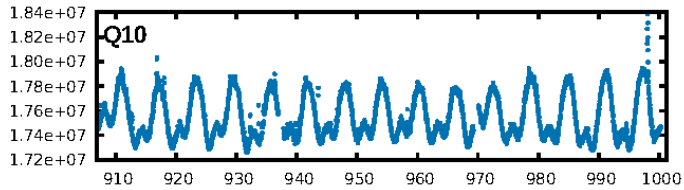
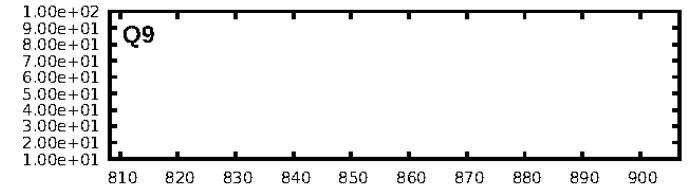
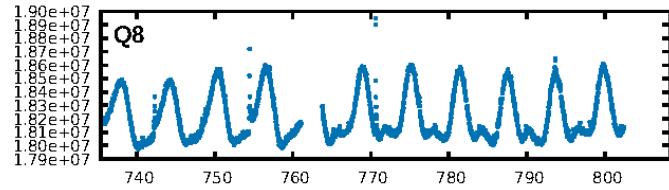
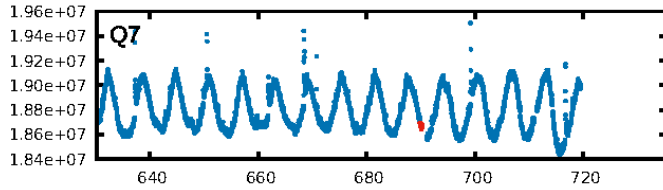
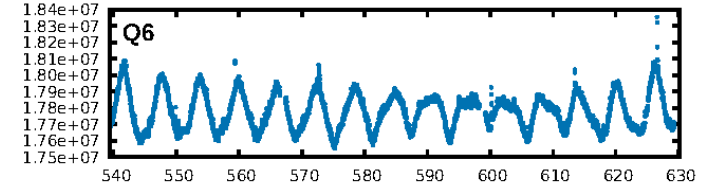
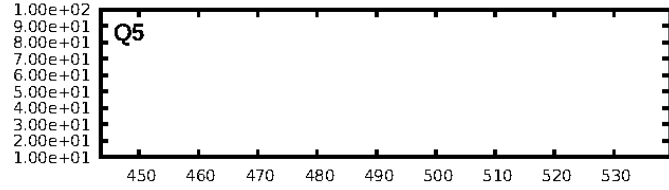
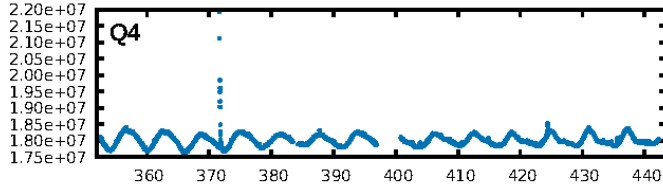
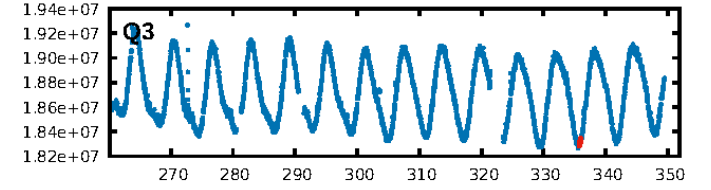
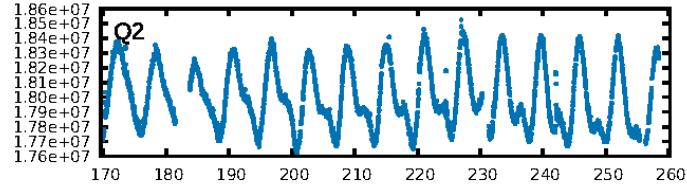
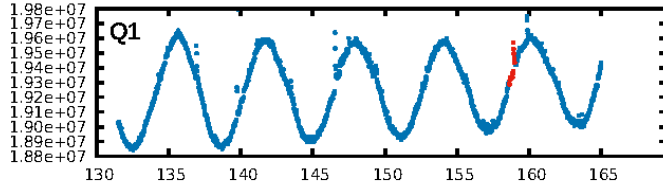
DV Fit Results:

Period = 177.08683 [0.00352] d
Epoch = 158.8088 [0.0124] BKJD
Rp/R* = 0.0279 [0.0596]
a/R* = 245.55 [2371.00]
b = 0.58 [10.98]
Seff = 0.11 [0.01]
Teq = 146 [5] K
Rp = 1.19 [2.54] Re
a = 0.4562 [0.0385] AU
Ag = 59208.11 [253790.48] [0.23 σ]
Teffp = 3533 [3785] K [0.89 σ]

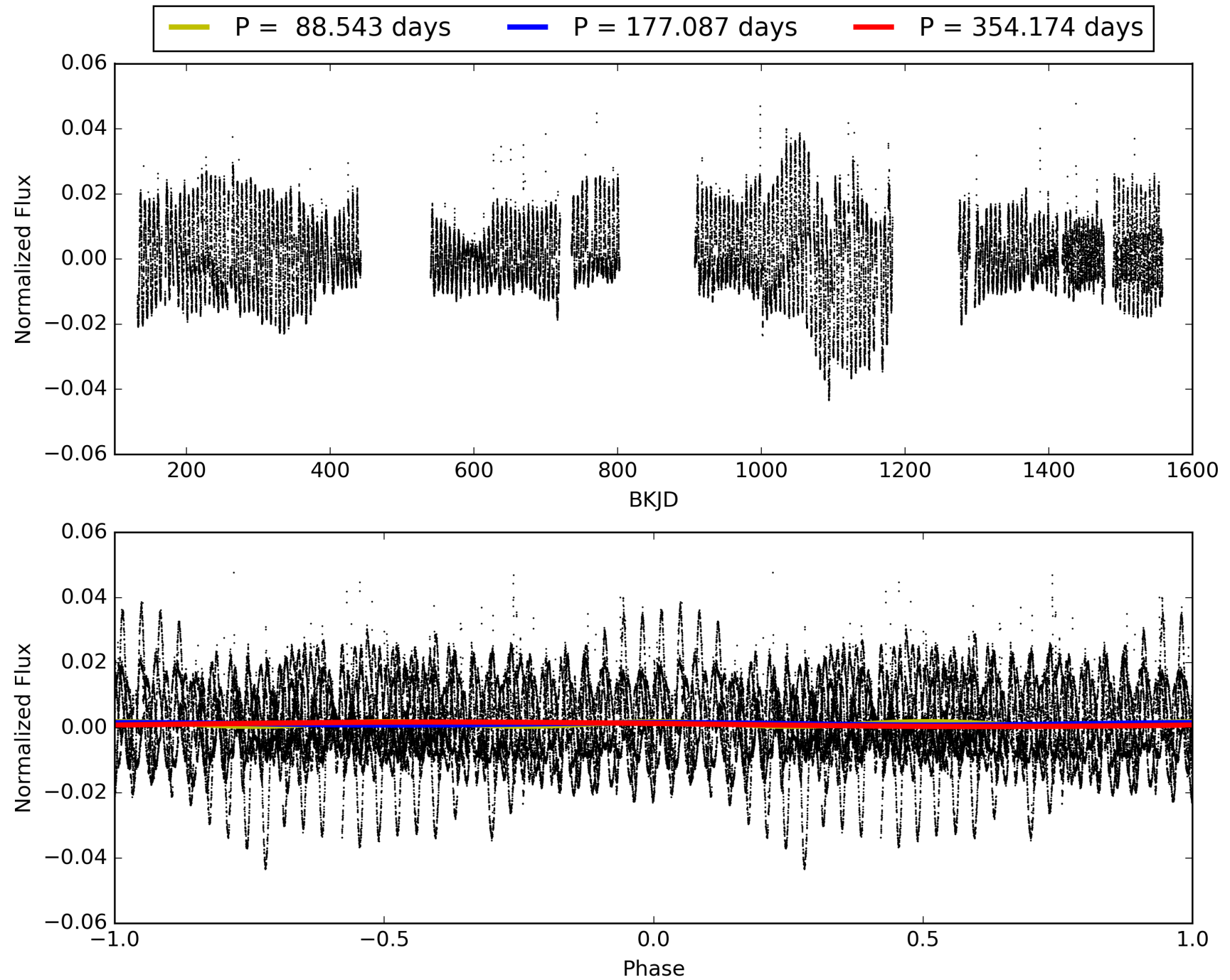
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [163.23 σ]
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 88.2%
Bootstrap-pfa: 1.93e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 4.135
Centroid-sig: 77.4%
Centroid-so: 0.649 arcsec [0.52 σ]
OotOffset-rm: 2.382 arcsec [3.70 σ]
KicOffset-rm: 2.308 arcsec [3.73 σ]
OotOffset-st: 0/3/0/1 [4]
KicOffset-st: 0/3/0/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 006668646-02, PDC Light Curves

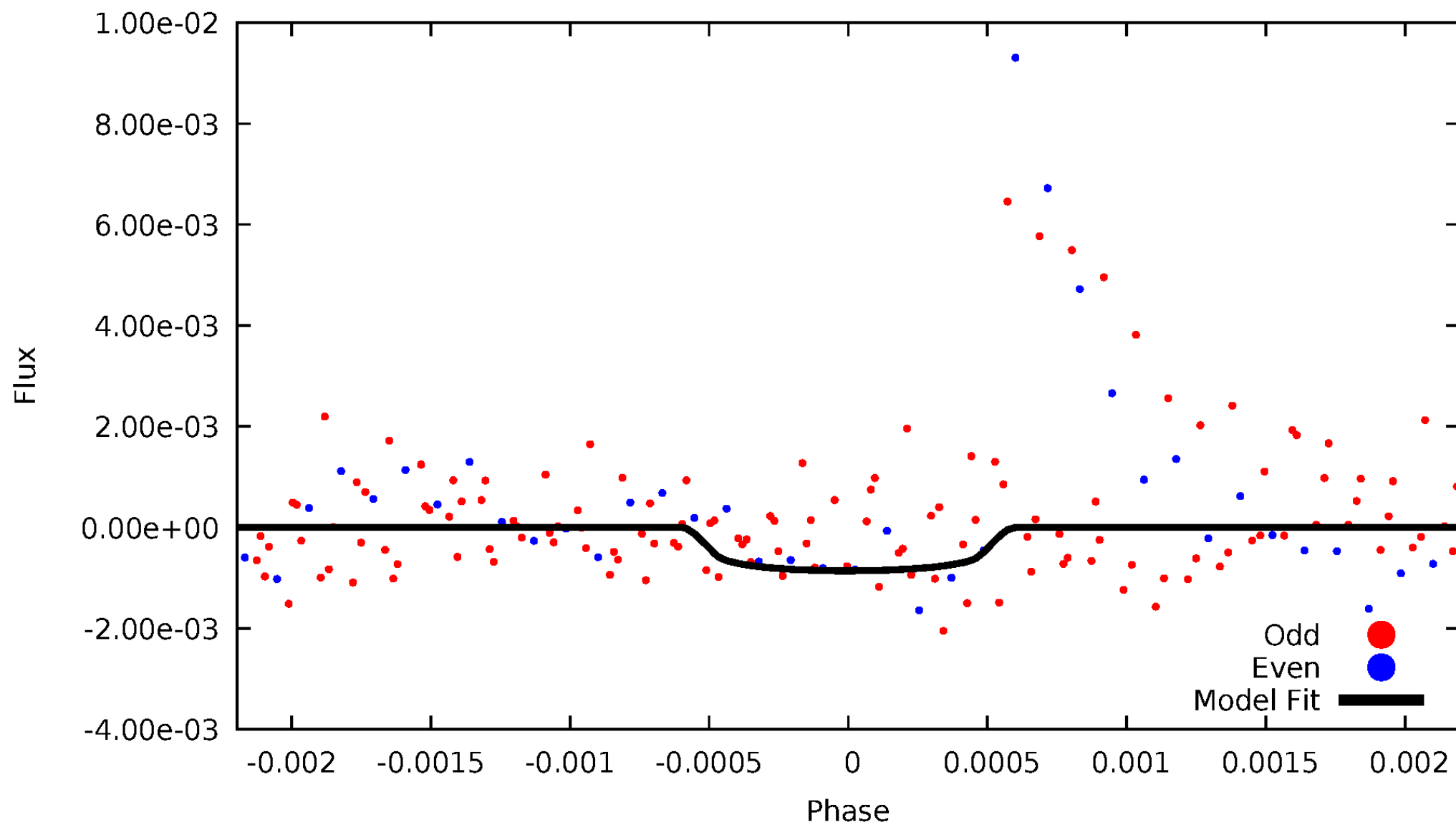


TCE 006668646-02



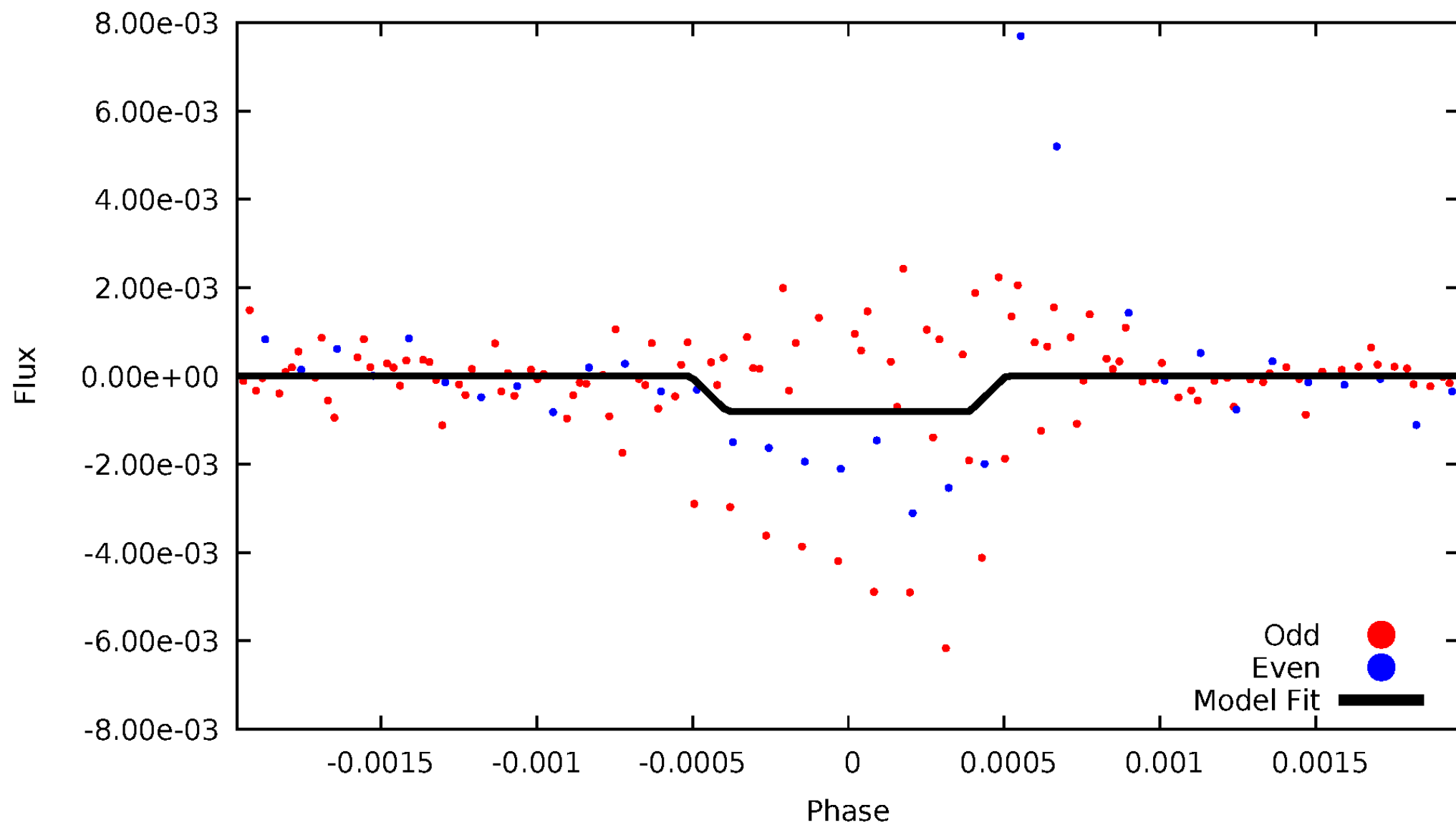
DV Odd/Even

TCE 006668646-02



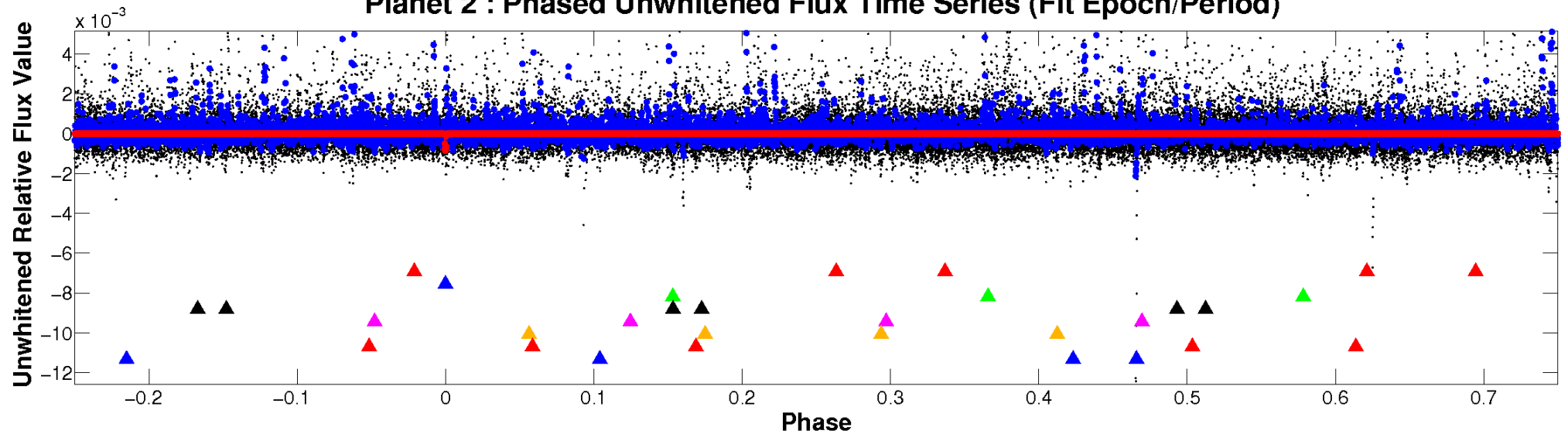
ALT Odd/Even

TCE 006668646-02

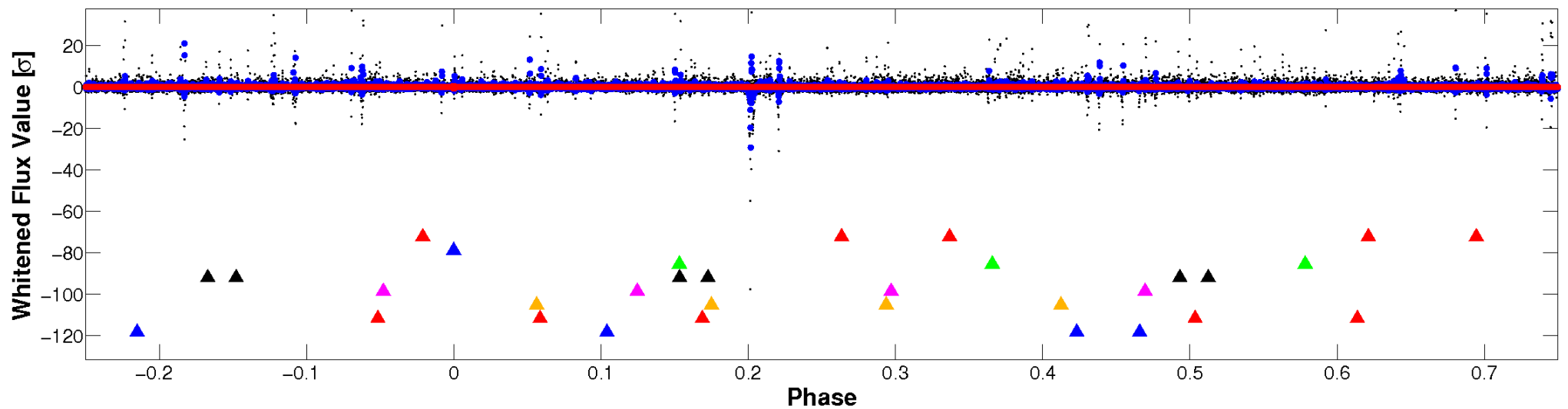


Non-Whitened Vs. Whitened Light Curve

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

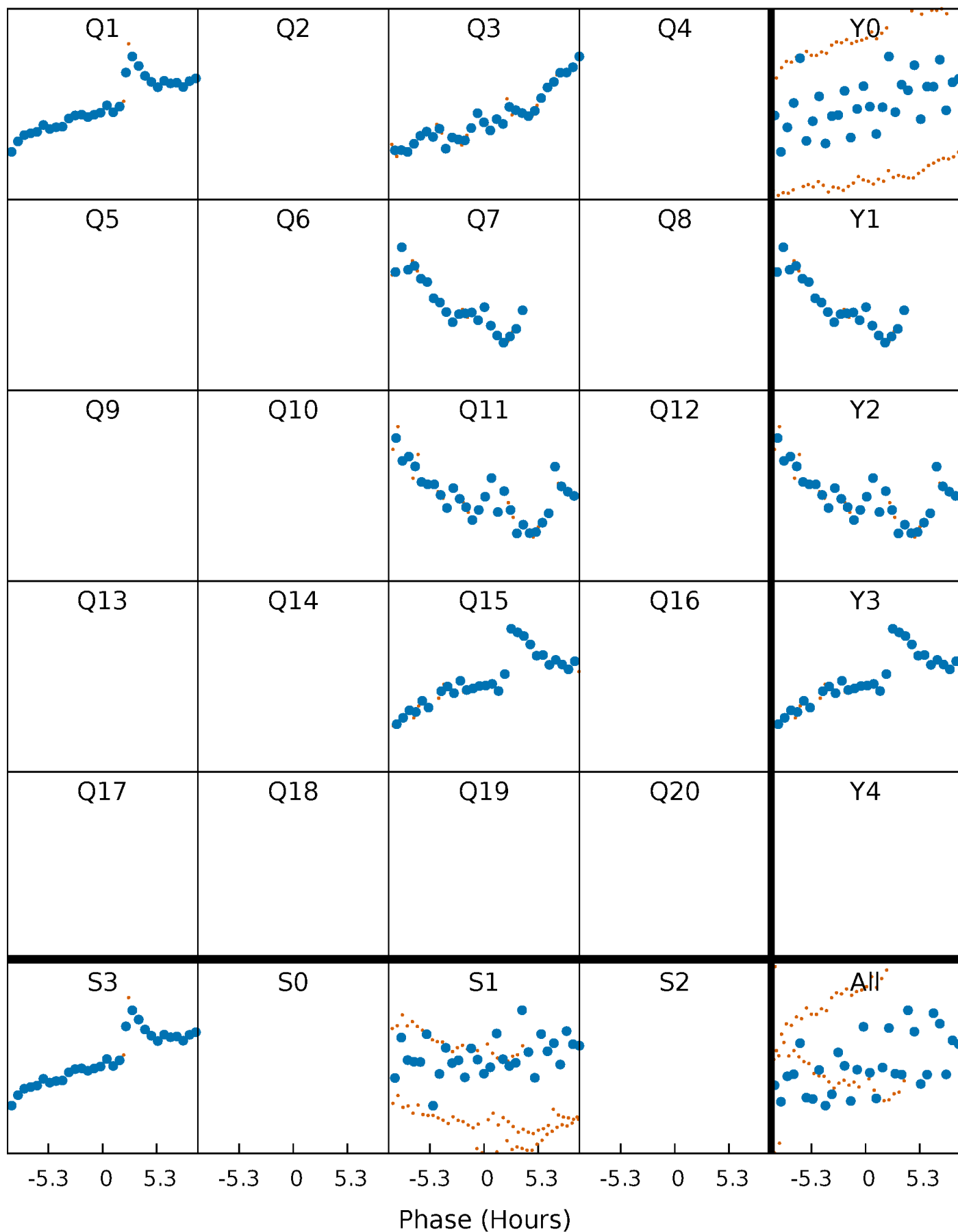


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



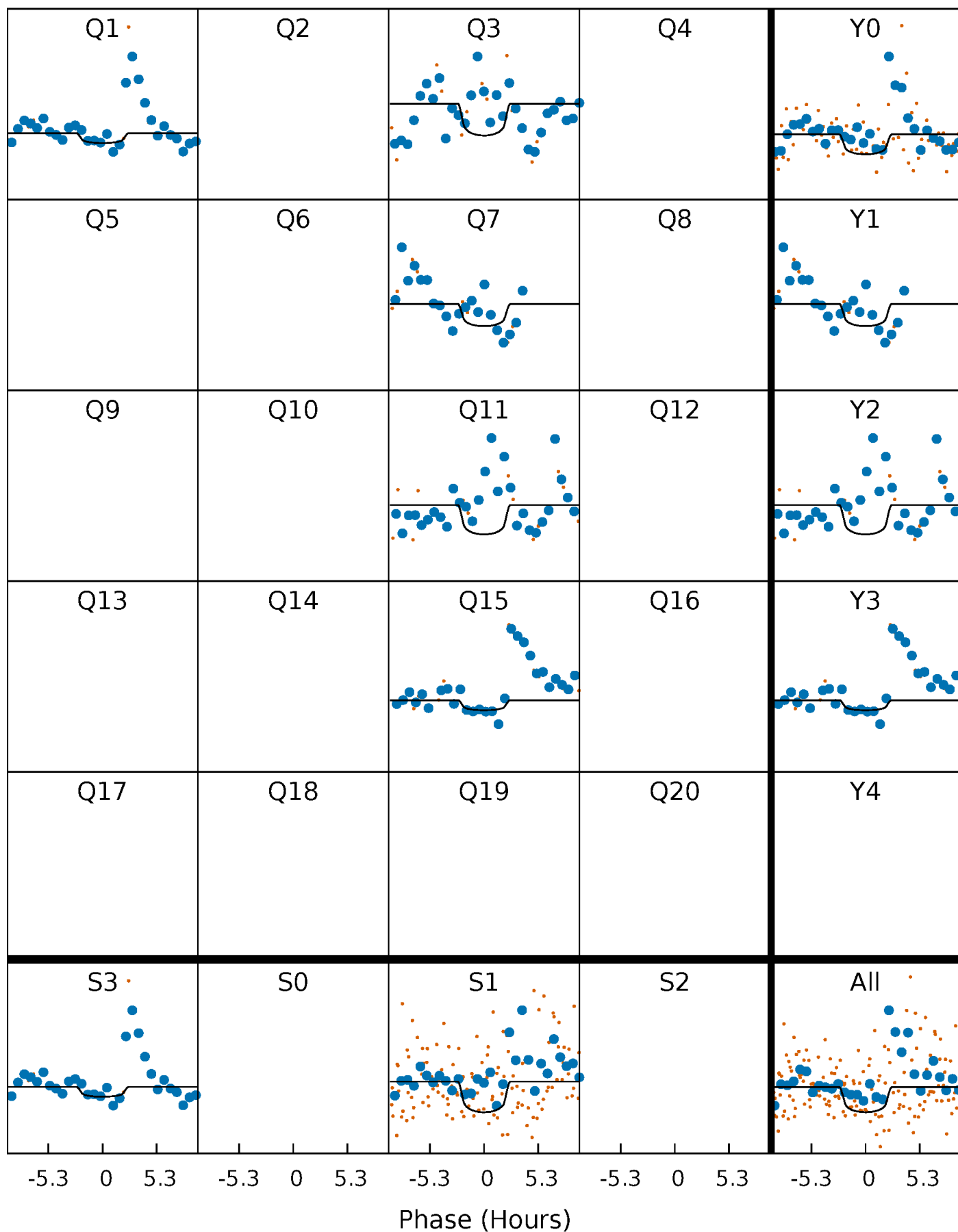
PDC Quarter-Phased Transit Curves

TCE 006668646-02 P=177.086828 Days $T_0=158.808828$ (BKJD)



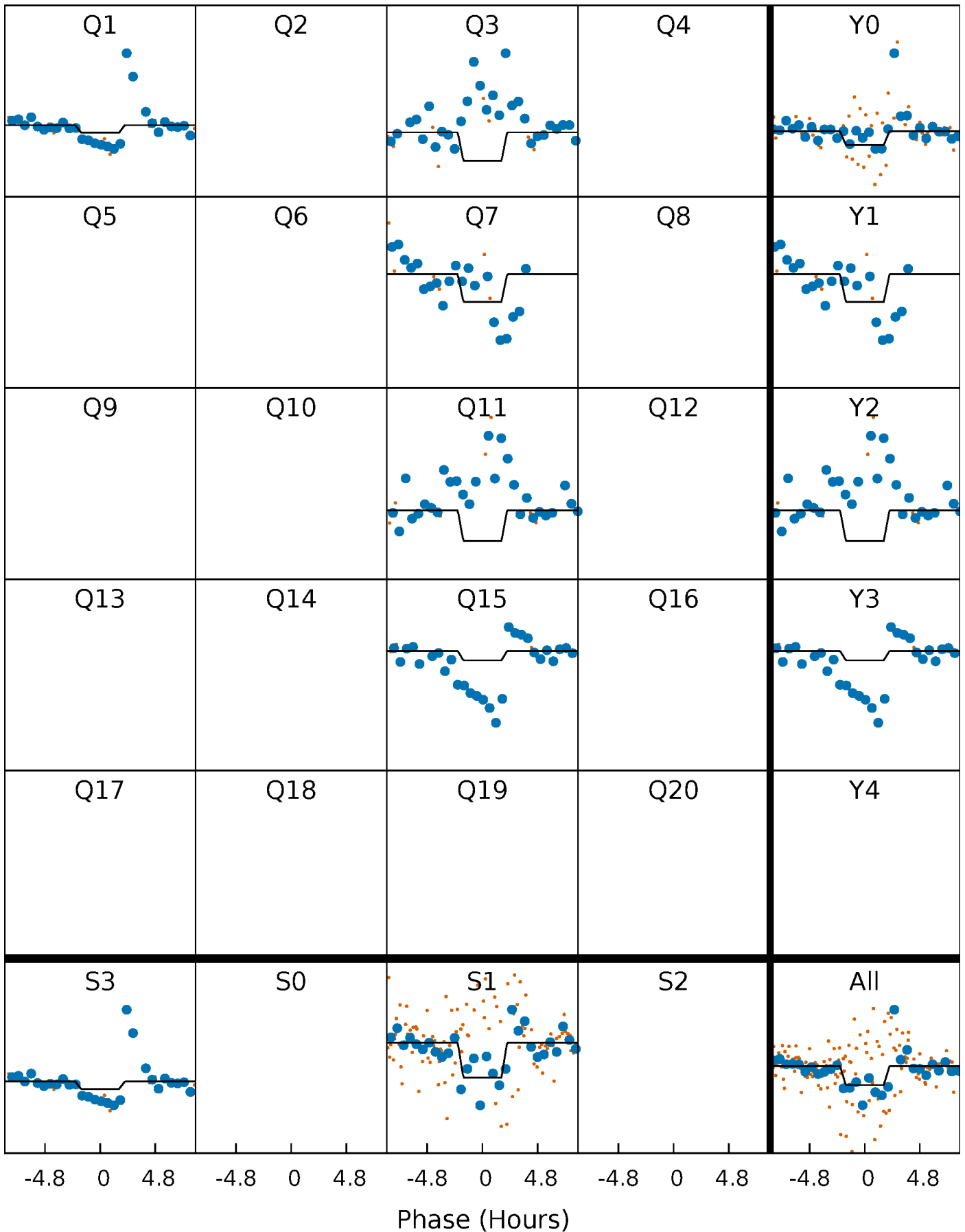
DV Quarter-Phased Transit Curves

TCE 006668646-02 P=177.086828 Days $T_0=158.808828$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

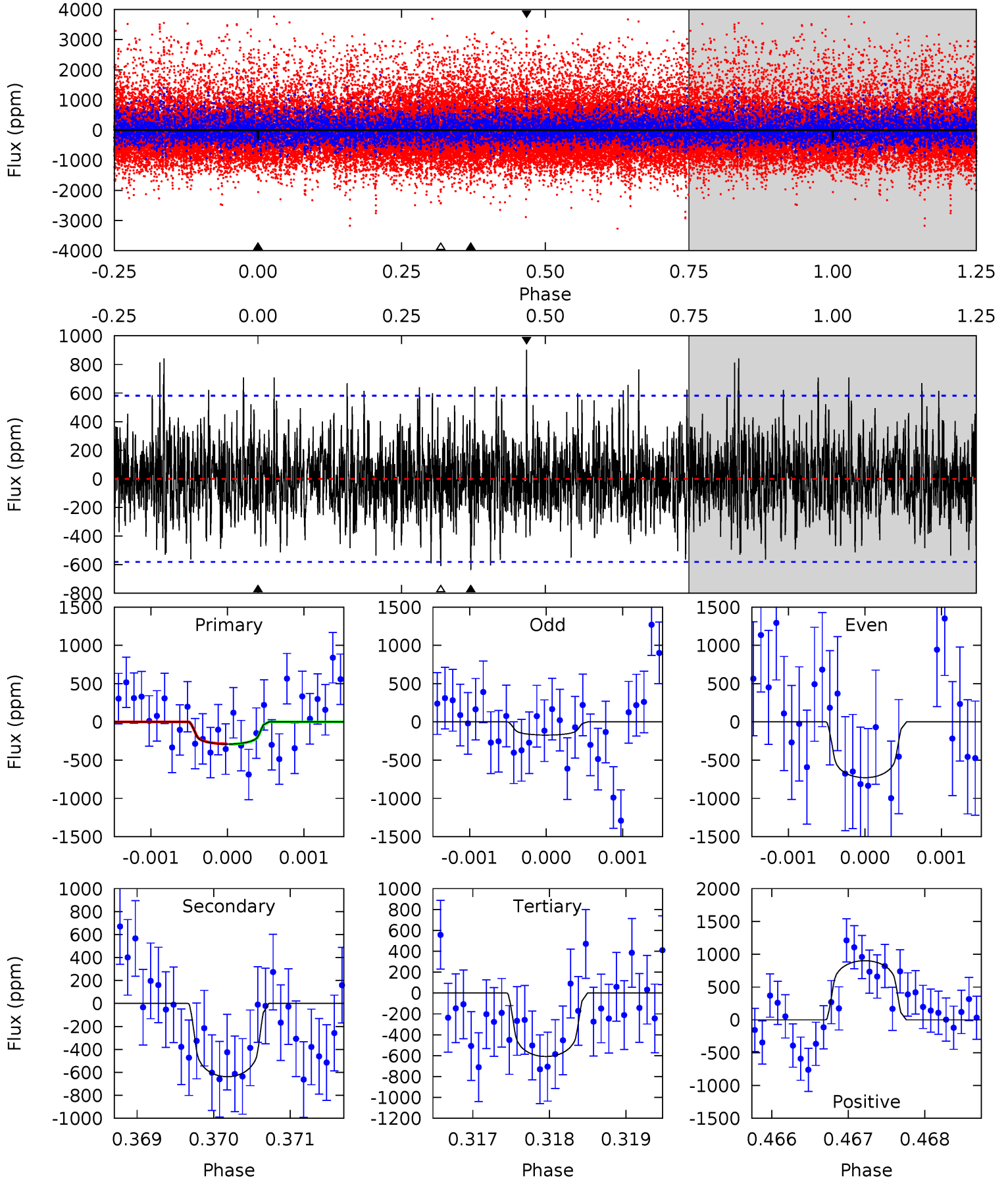
TCE 006668646-02 P=177.086326 Days $T_0=158.817352$ (BKJD)



DV Model-Shift Uniqueness Test

006668646-02, P = 177.086828 Days, E = 158.808828 Days

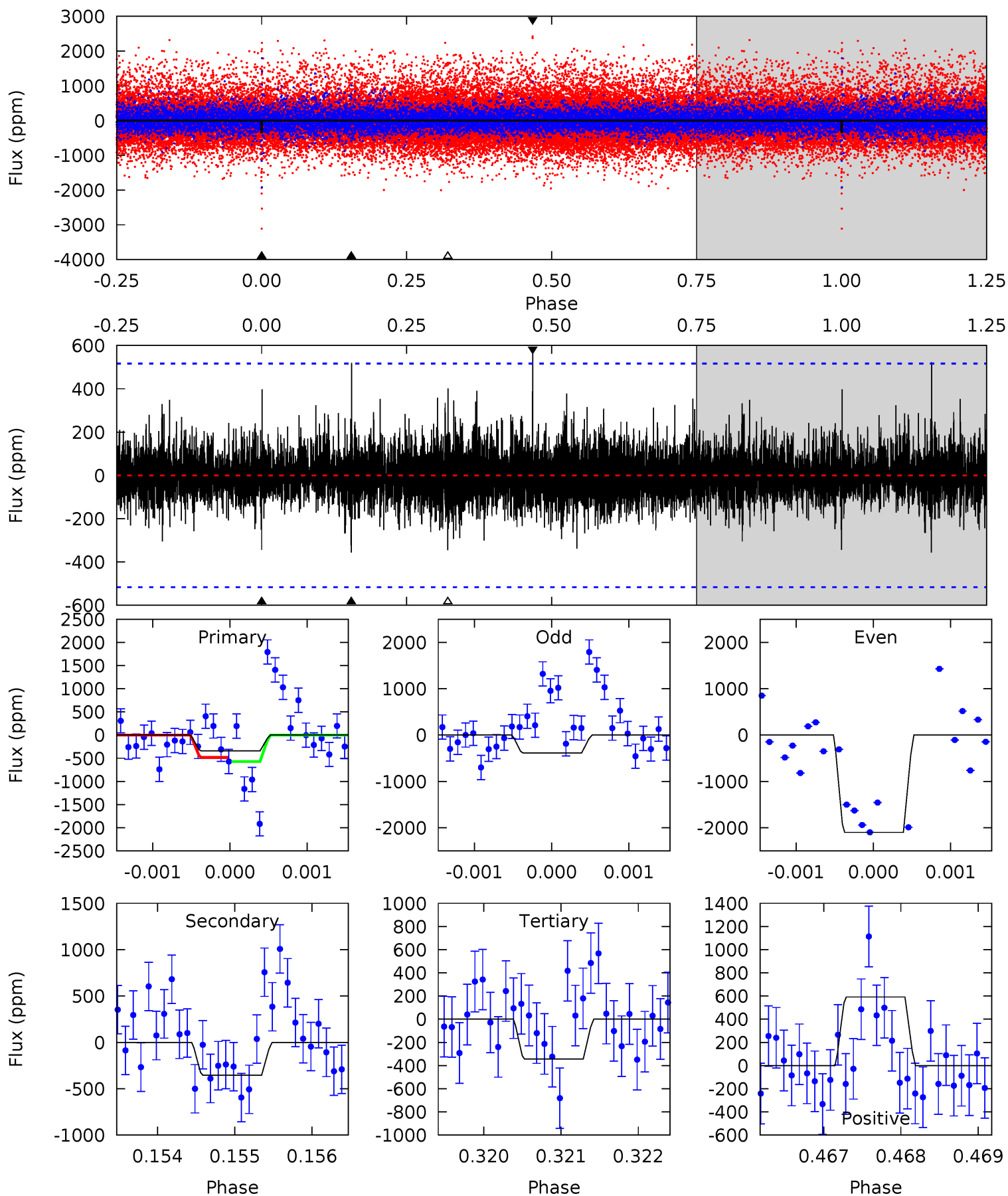
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.71	5.95	5.67	8.41	5.42	3.24	1.83	-2.97	-5.71	0.27	-2.47	1.69	0.64	0.59	0.03



Alt Model-Shift Uniqueness Test

006668646-02, P = 177.086326 Days, E = 158.817352 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.62	3.75	3.63	6.25	5.45	3.29	0.95	-0.01	-2.62	0.12	-2.49	8.60	1.72	0.62	0.44



Stellar Parameters For KIC 006668646

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3591^{+65}_{-72}	$4.862^{+0.050}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.390^{+0.040}_{-0.044}$	$0.405^{+0.042}_{-0.052}$	$9.604^{+2.468}_{-1.640}$
	+2%/-2%	+1%/-1%	+50%/-50%	+10%/-11%	+10%/-13%	+26%/-17%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006668646-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-638 ± 107	$2.10^{+2.20}_{-1.37}$	204^{+5}_{-6}	2942^{+1169}_{-506}	$16693^{+131787}_{-12867}$
Alt.	-356 ± 95	$2.17^{+2.07}_{-1.47}$	204^{+5}_{-6}	2696^{+1015}_{-409}	8667^{+70108}_{-6399}

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

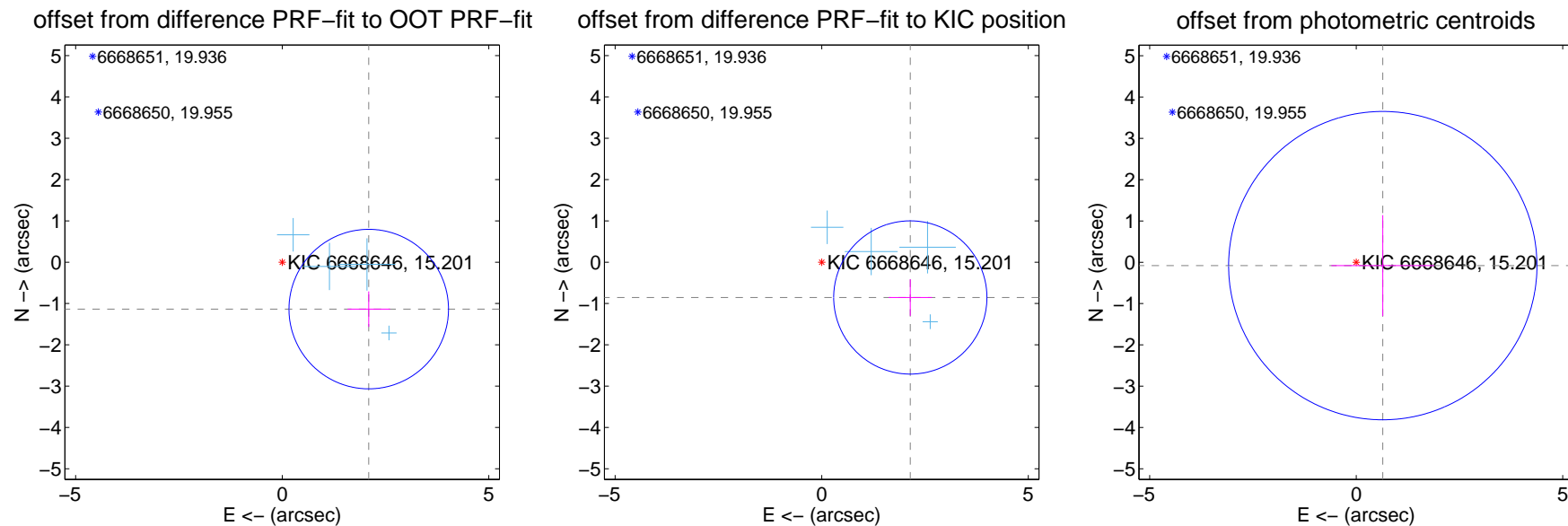
DV Centroid Data

Supplemental centroid analysis for 006668646-02. Kepler magnitude: 15.20. Transit SNR 4.26

There are 4 quarters with good PRF difference image offsets

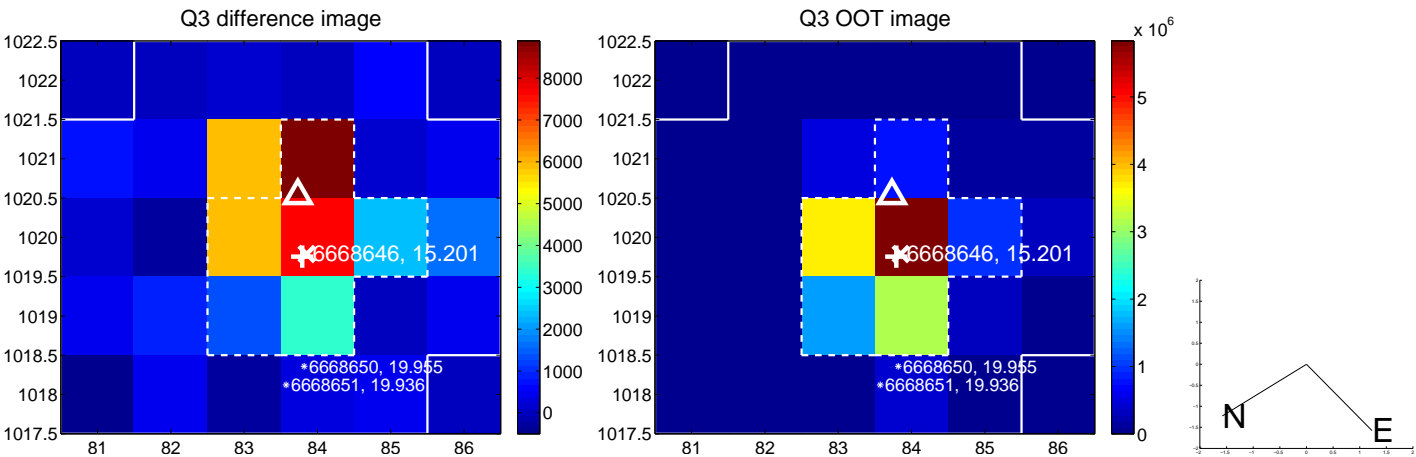
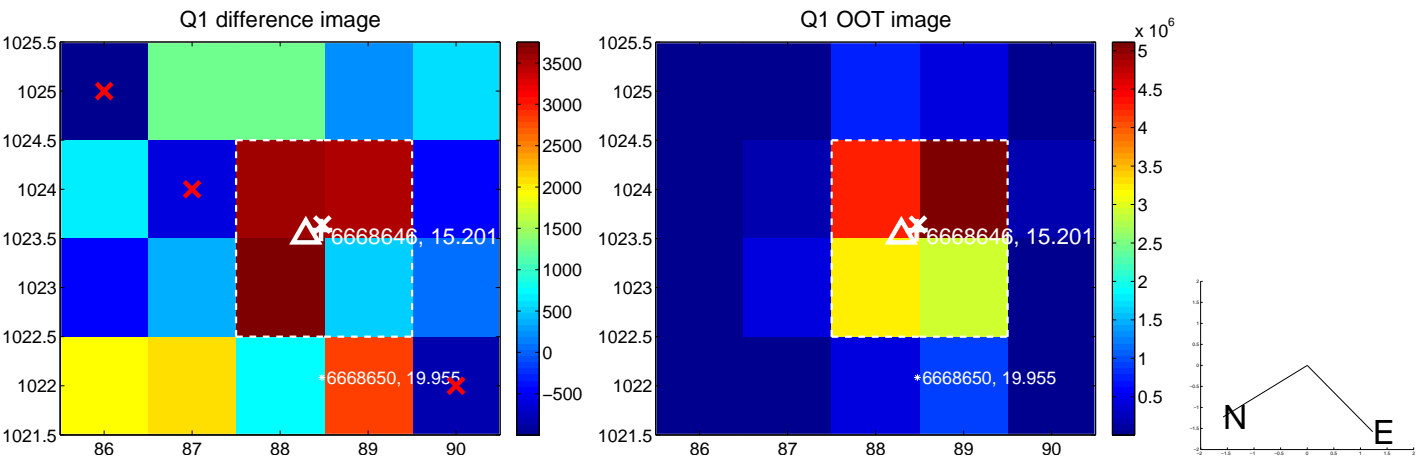
The direct PRF centroid is offset from the target star catalog position by about 0.66 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.382 ± 0.643	3.70	-2.094 ± 0.513	-1.135 ± 0.428
PRF-fit source offset from KIC position	2.308 ± 0.618	3.73	-2.144 ± 0.524	-0.854 ± 0.444
photometric centroid source offset	0.65 ± 1.24	0.52	-0.64 ± 1.24	-0.08 ± 1.22



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.

Q9 no difference image



Q9 no OOT image



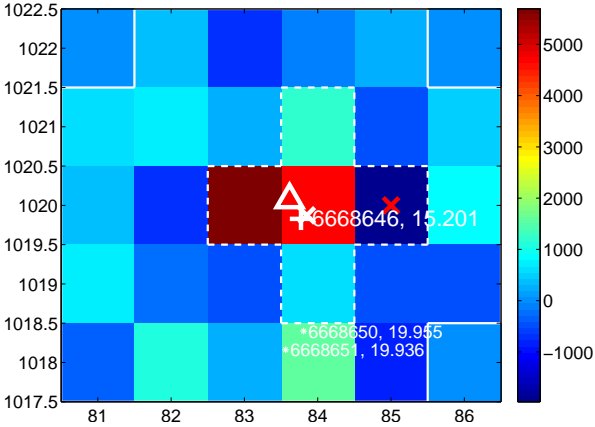
Q10 no difference image



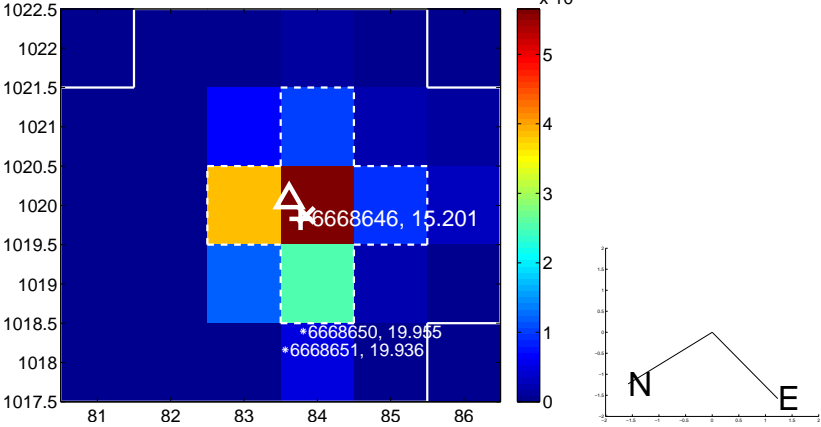
Q10 no OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

Q13 no difference image



Q13 no OOT image



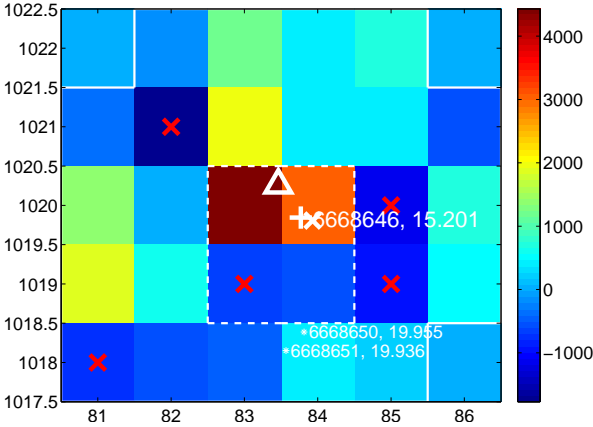
Q14 no difference image



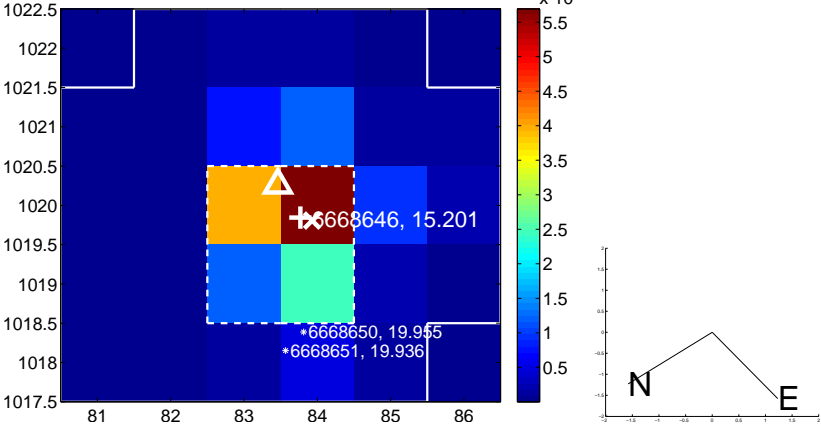
Q14 no OOT image



Q15 difference image



Q15 OOT image



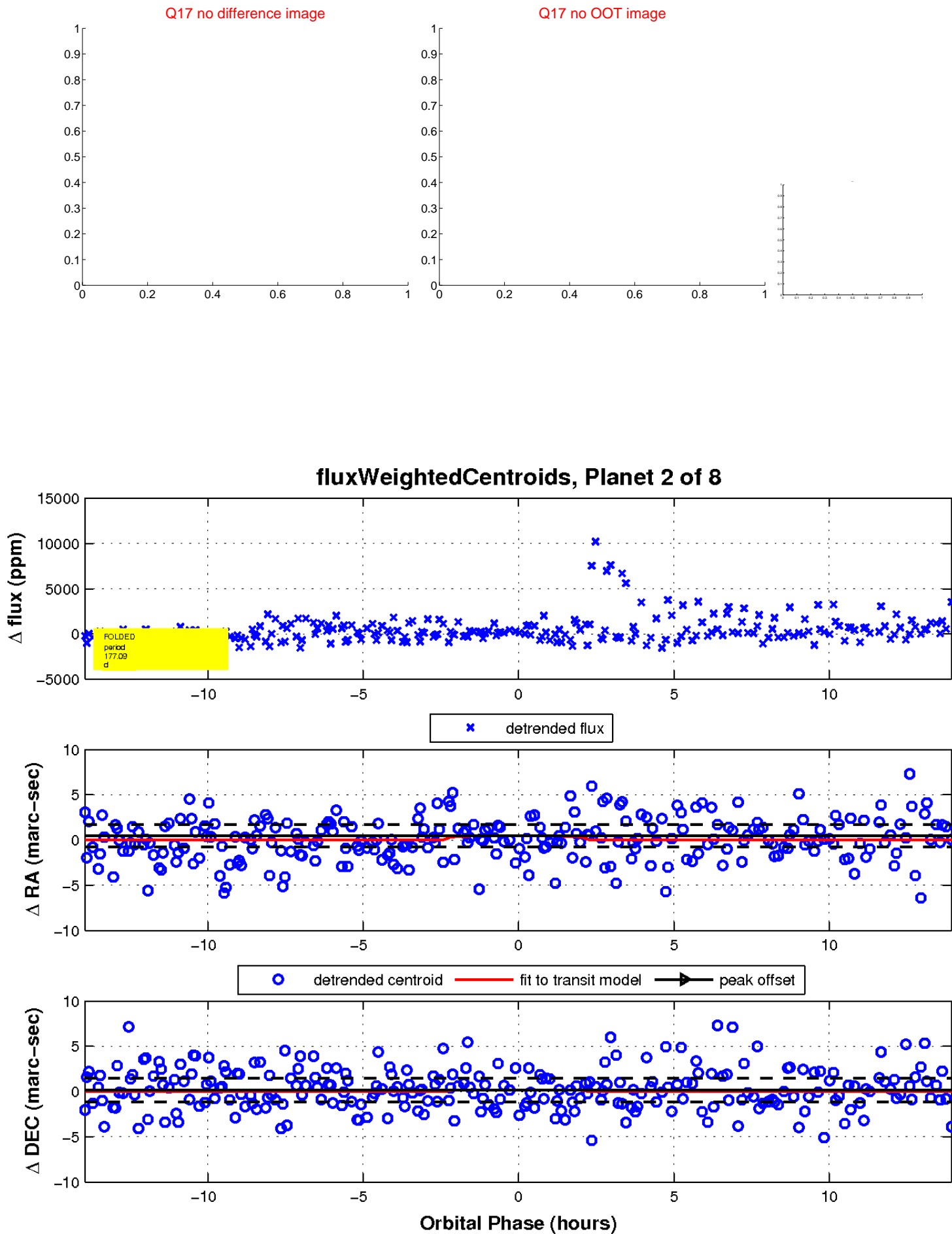
Q16 no difference image



Q16 no OOT image

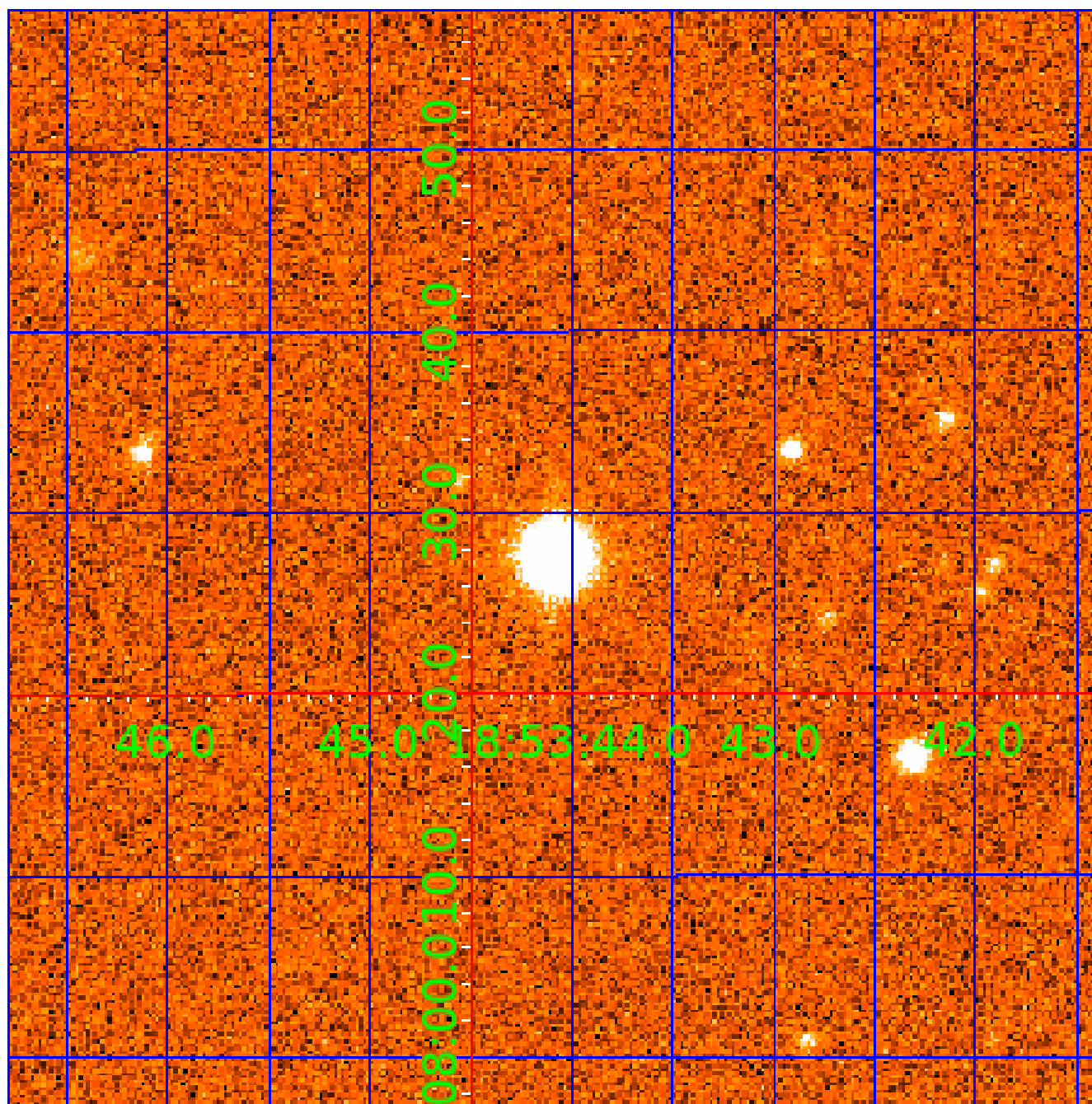


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006668646

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})
006668646-01	OBS	No	290.814329	281.810555	2544.7	4.221	14.4	10.1	0.39	3591	1.95	0.06
006668646-02	OBS	No	177.086828	158.808828	861.0	4.666	12.9	4.3	0.39	3591	1.19	0.11
006668646-03	OBS	No	568.897181	363.037278	2566.8	14.531	11.4	9.0	0.39	3591	1.96	0.02
006668646-04	OBS	No	237.253769	363.065689	1304.9	7.516	13.2	5.4	0.39	3591	1.43	0.07
006668646-05	OBS	No	323.633285	419.053478	843.4	0.695	10.0	2.8	0.39	3591	1.16	0.05
006668646-06	OBS	No	333.152236	408.937825	1342.8	10.695	9.3	5.6	0.39	3591	1.42	0.05
006668646-07	OBS	No	255.872777	365.802934	1332.6	9.145	11.7	5.9	0.39	3591	1.42	0.07
006668646-08	OBS	No	297.666832	410.833923	1651.5	7.844	9.8	7.2	0.39	3591	1.57	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006668646-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
006668646-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006668646-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006668646-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
006668646-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006668646-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

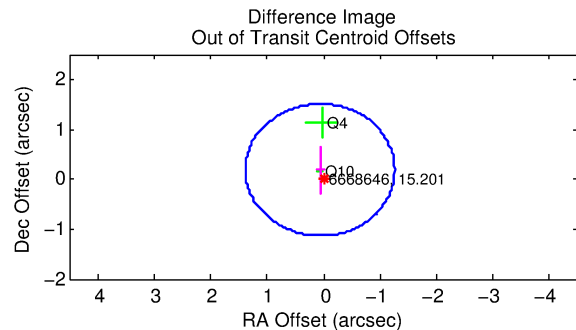
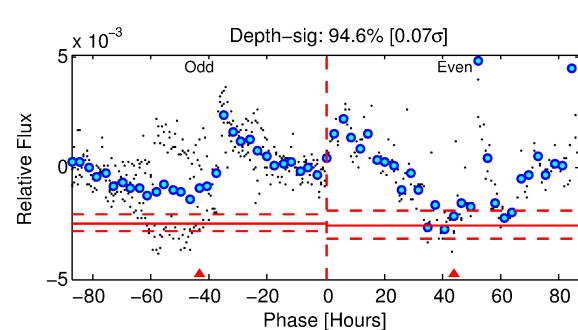
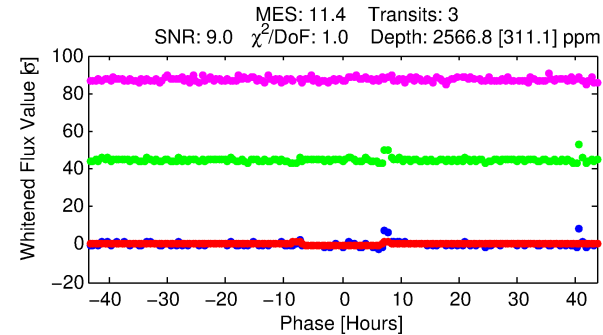
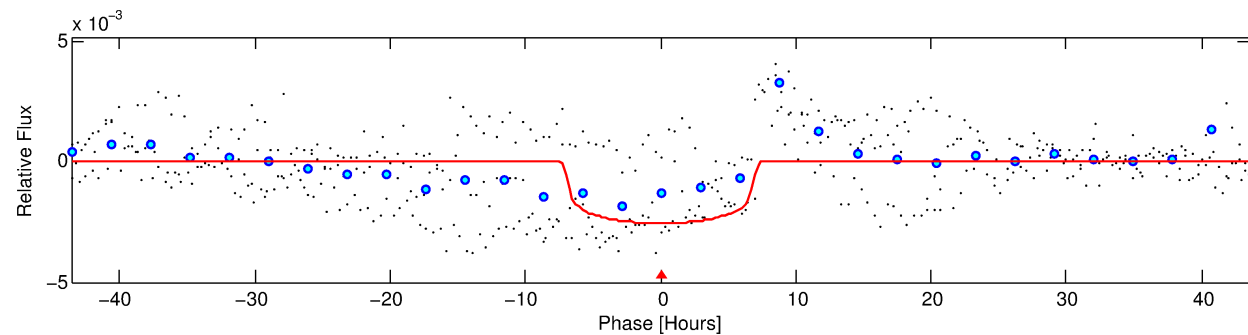
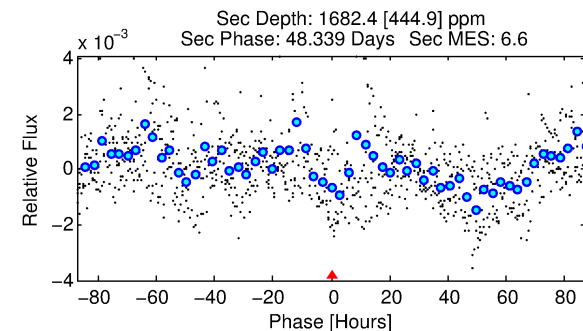
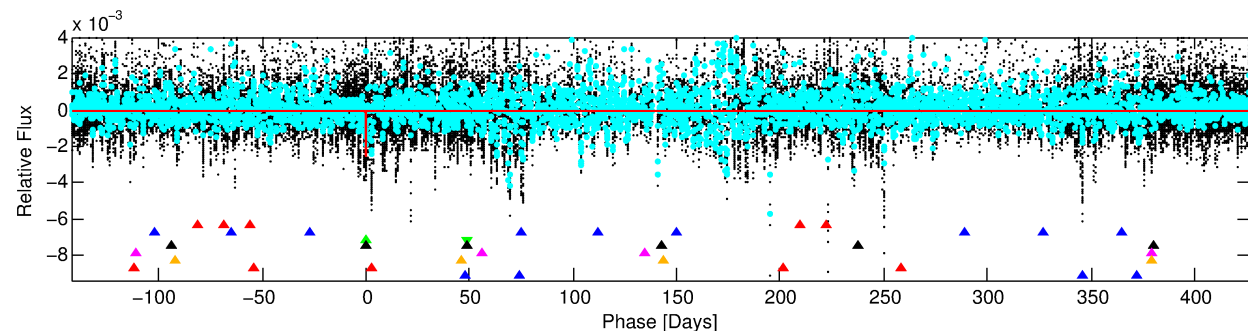
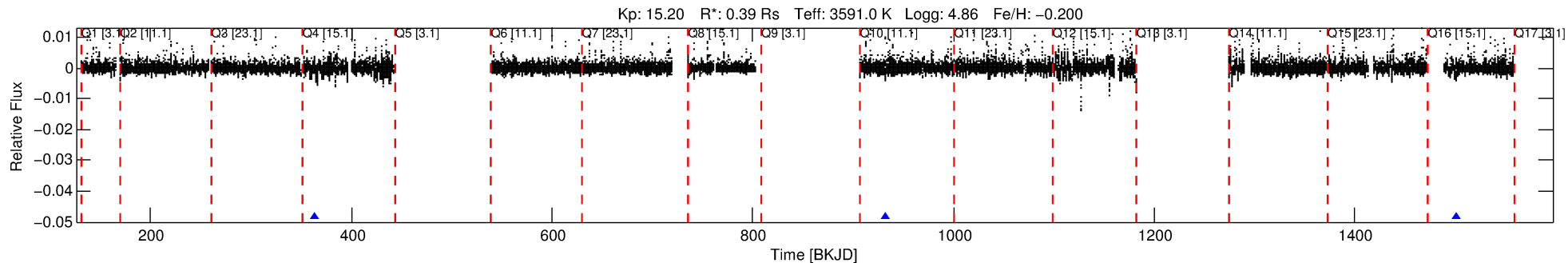
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006668646-03

No Significant Match Found

DV One-Page Summary

KIC: 6668646 Candidate: 3 of 8 Period: 568.897 d



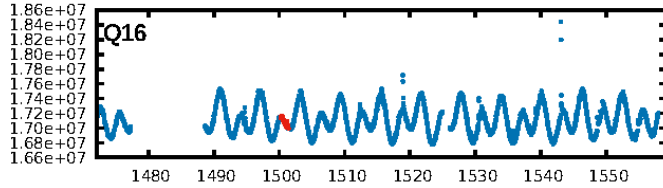
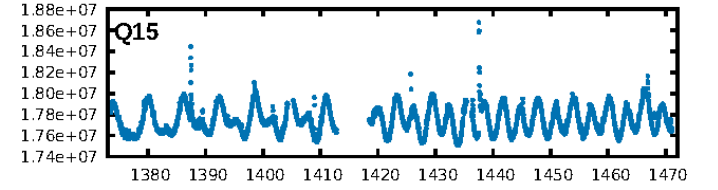
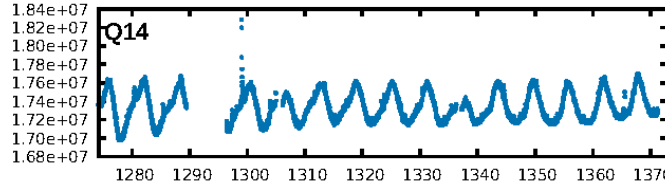
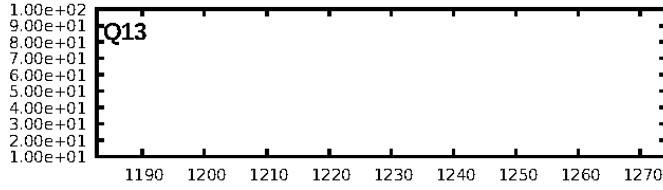
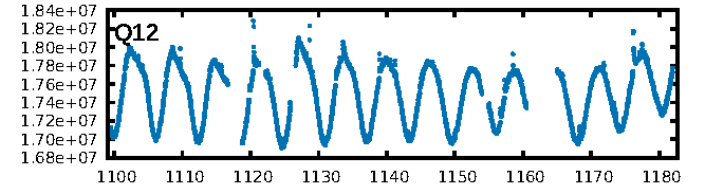
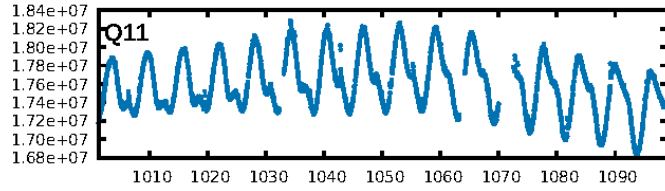
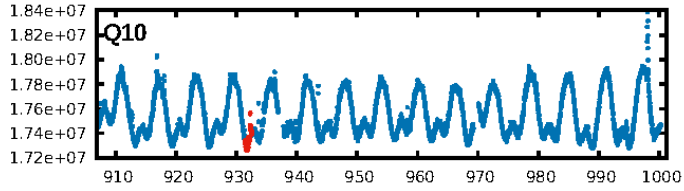
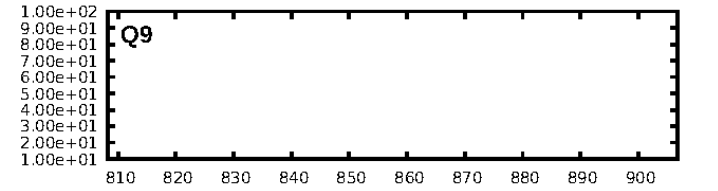
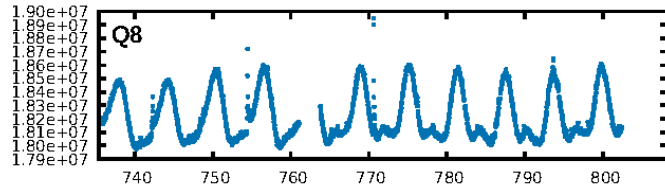
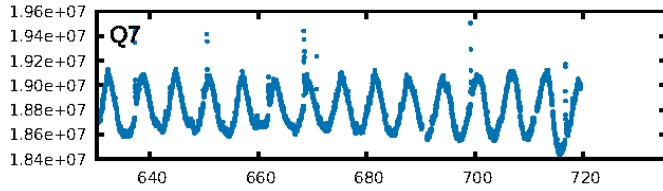
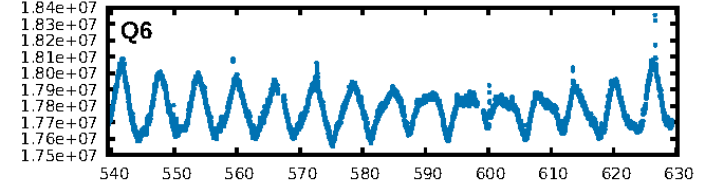
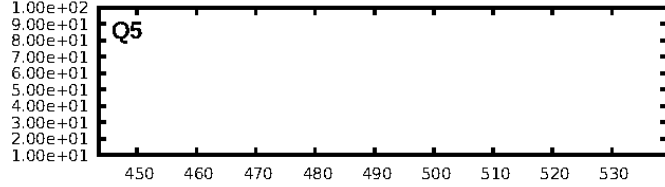
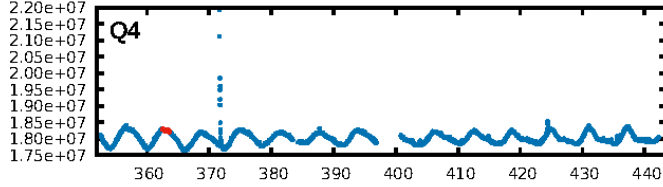
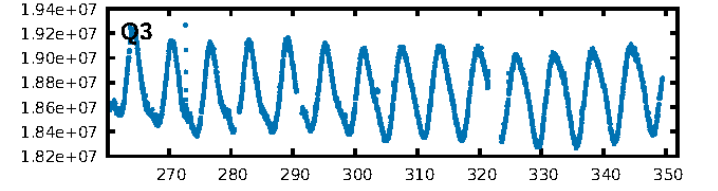
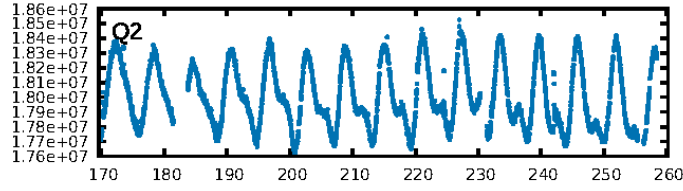
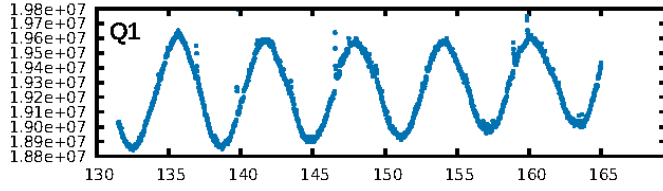
DV Fit Results:

Period = 568.89718 [0.00614] d
Epoch = 363.0373 [0.0084] BKJD
Rp/R* = 0.0460 [0.0074]
a/R* = 312.85 [197.32]
b = 0.00 [253.01]
Seff = 0.02 [0.00]
Teq = 99 [3] K
Rp = 1.96 [0.38] Re
a = 0.9933 [0.0839] AU
Ag = 238141.37 [102412.65] [2.33σ]
Teffp = 3390 [359] K [9.16σ]

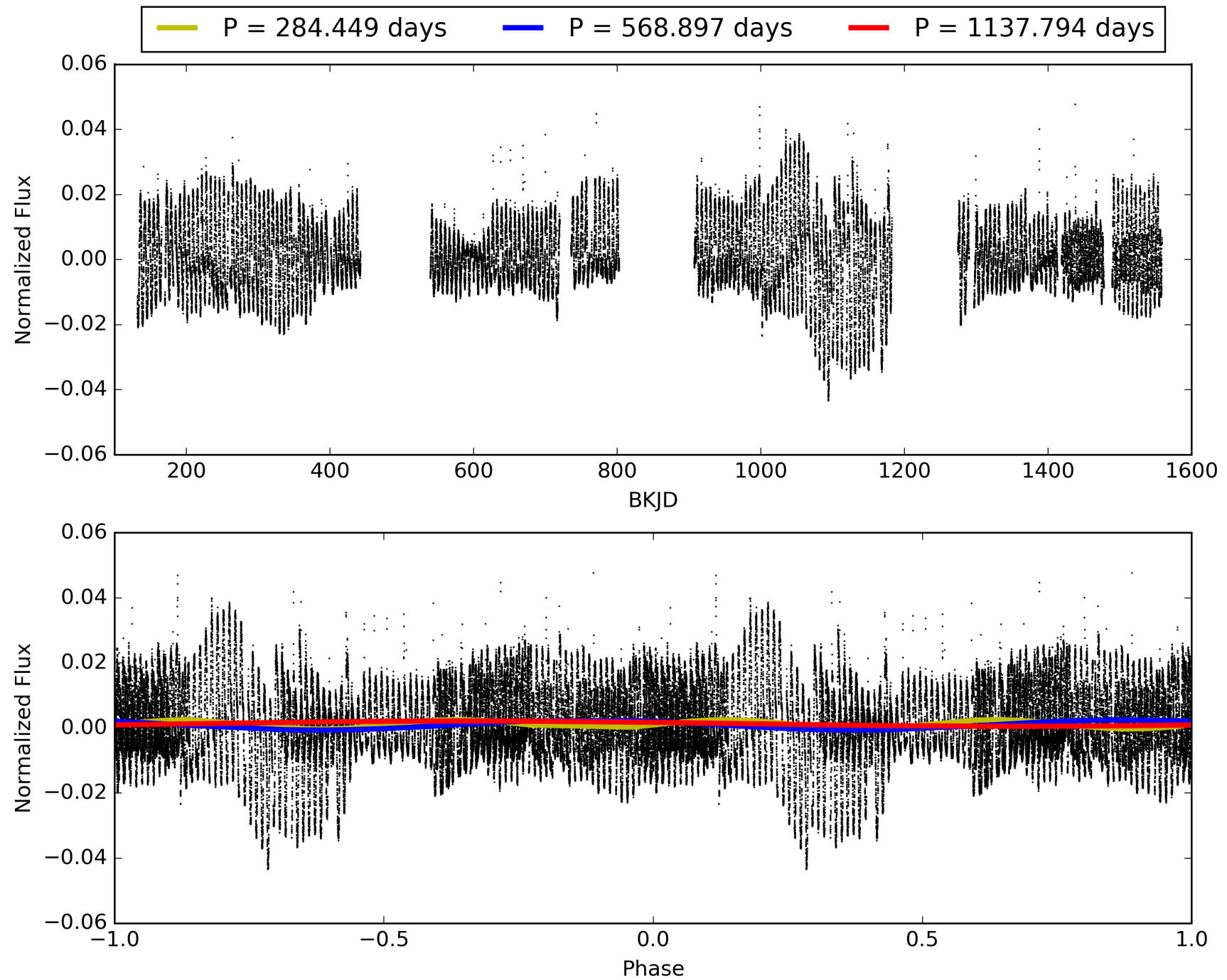
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [313.59σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 18.1%
ModelChiSquareGof-sig: 98.4%
Bootstrap-pfa: 4.61e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.91
Centroid-sig: 27.6%
Centroid-so: 0.277 arcsec [0.68σ]
OotOffset-rm: 0.196 arcsec [0.44σ]
KicOffset-rm: 0.380 arcsec [1.25σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.67 [2/3]

TCE 006668646-03, PDC Light Curves

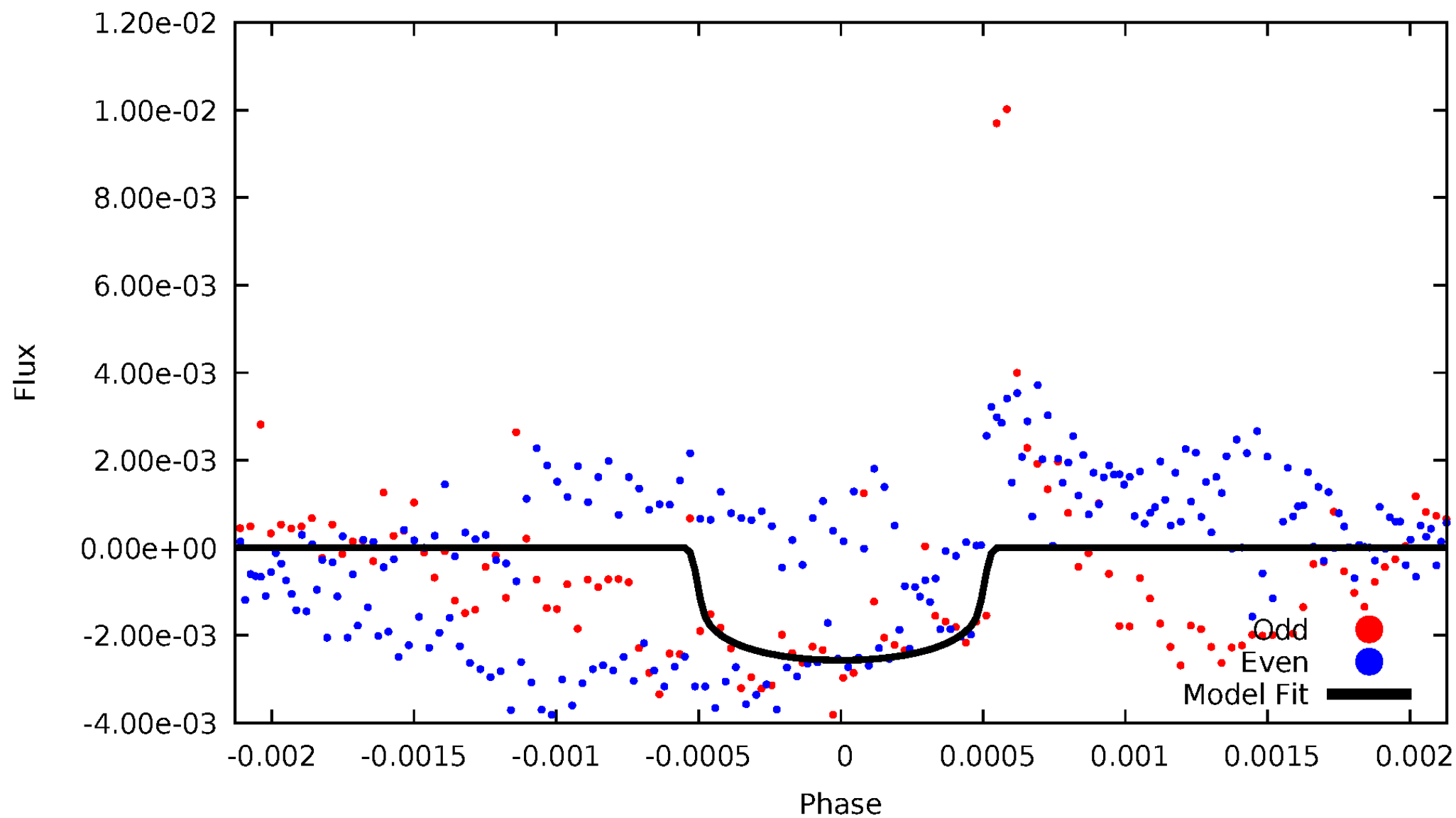


TCE 006668646-03



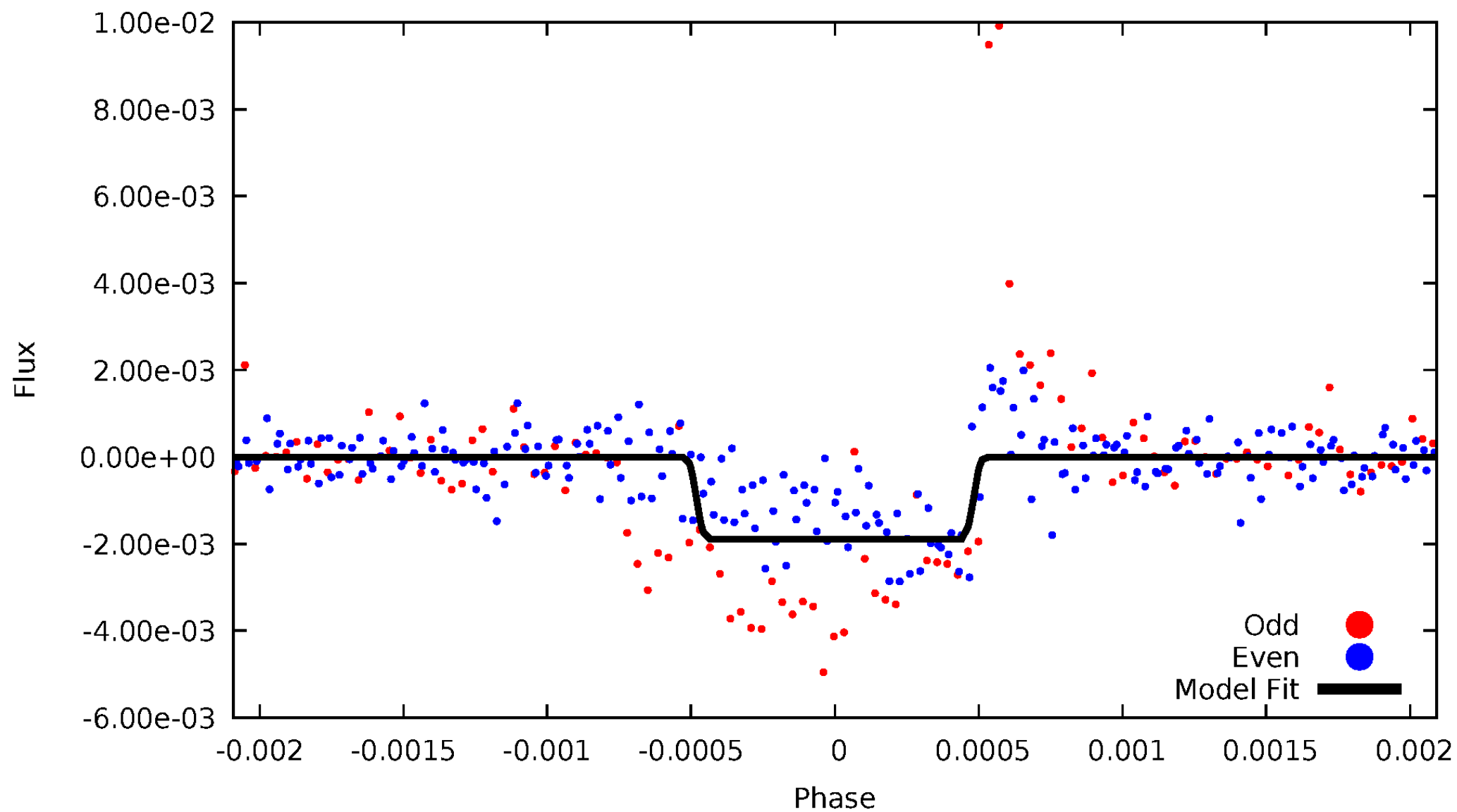
DV Odd/Even

TCE 006668646-03



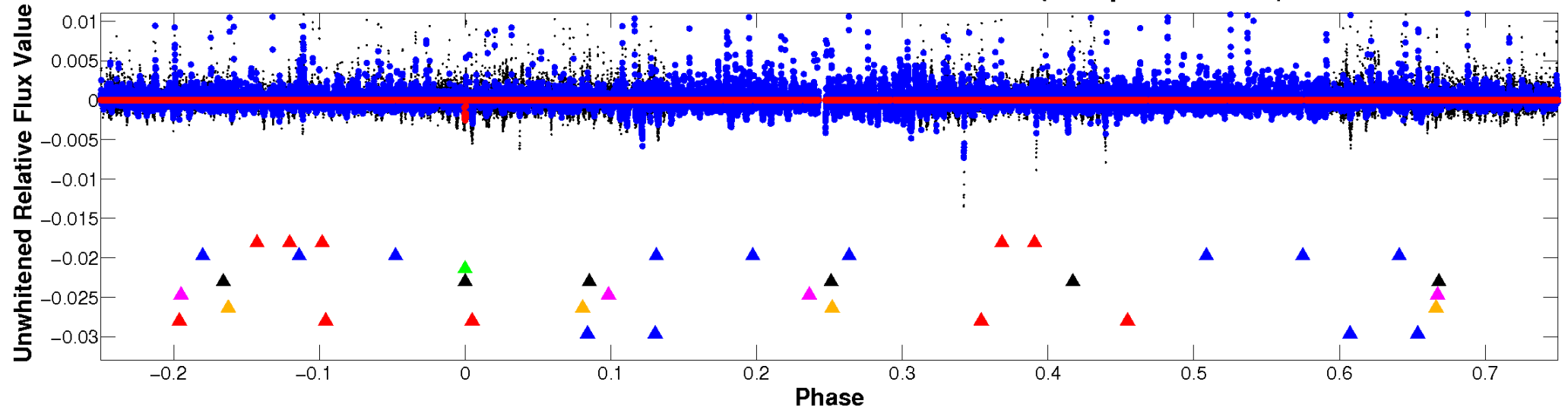
ALT Odd/Even

TCE 006668646-03

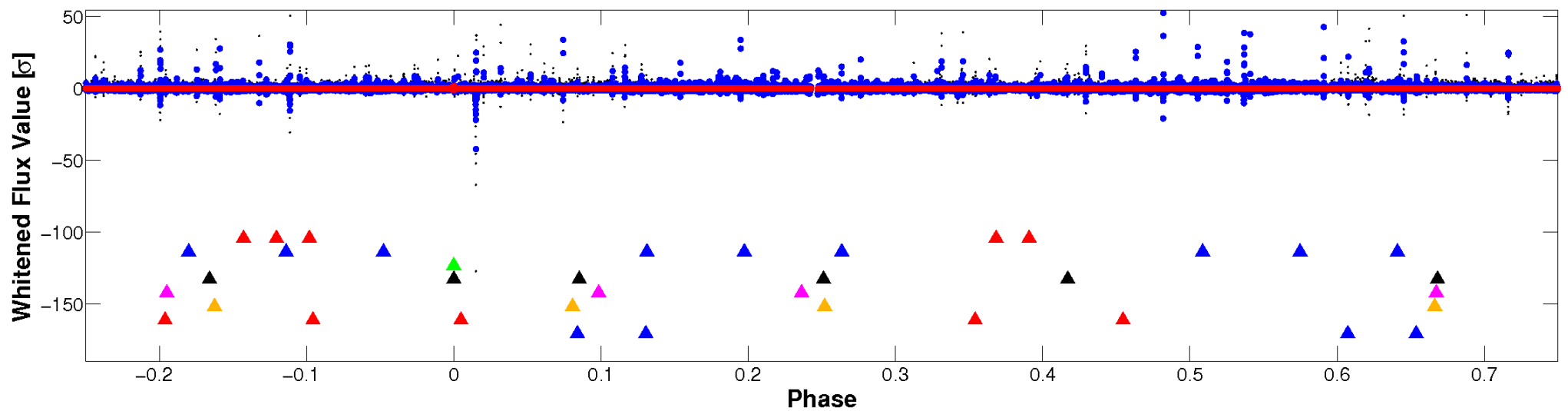


Non-Whitened Vs. Whitened Light Curve

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

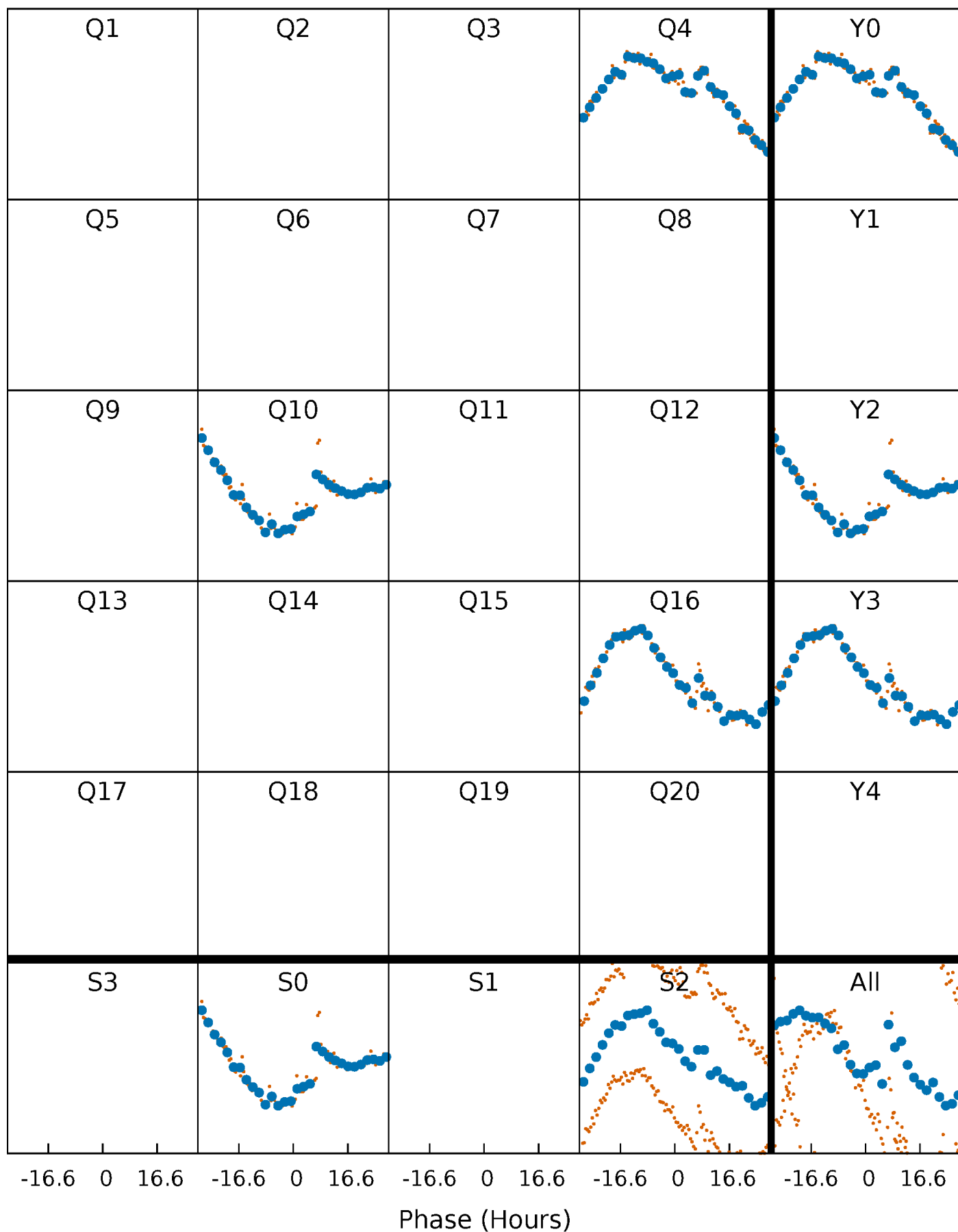


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



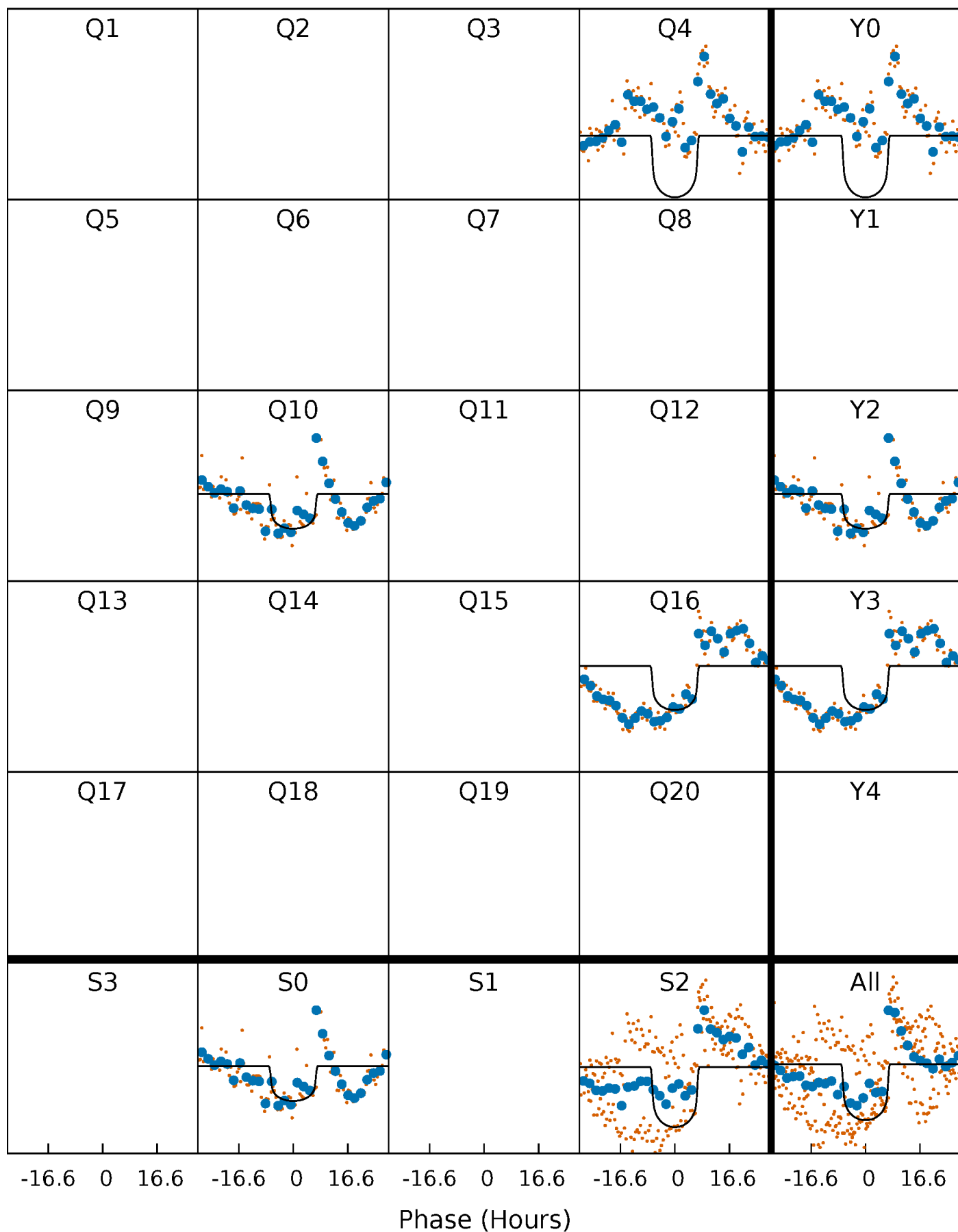
PDC Quarter-Phased Transit Curves

TCE 006668646-03 P=568.897181 Days $T_0=363.037278$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 006668646-03 P=568.897181 Days $T_0=363.037278$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

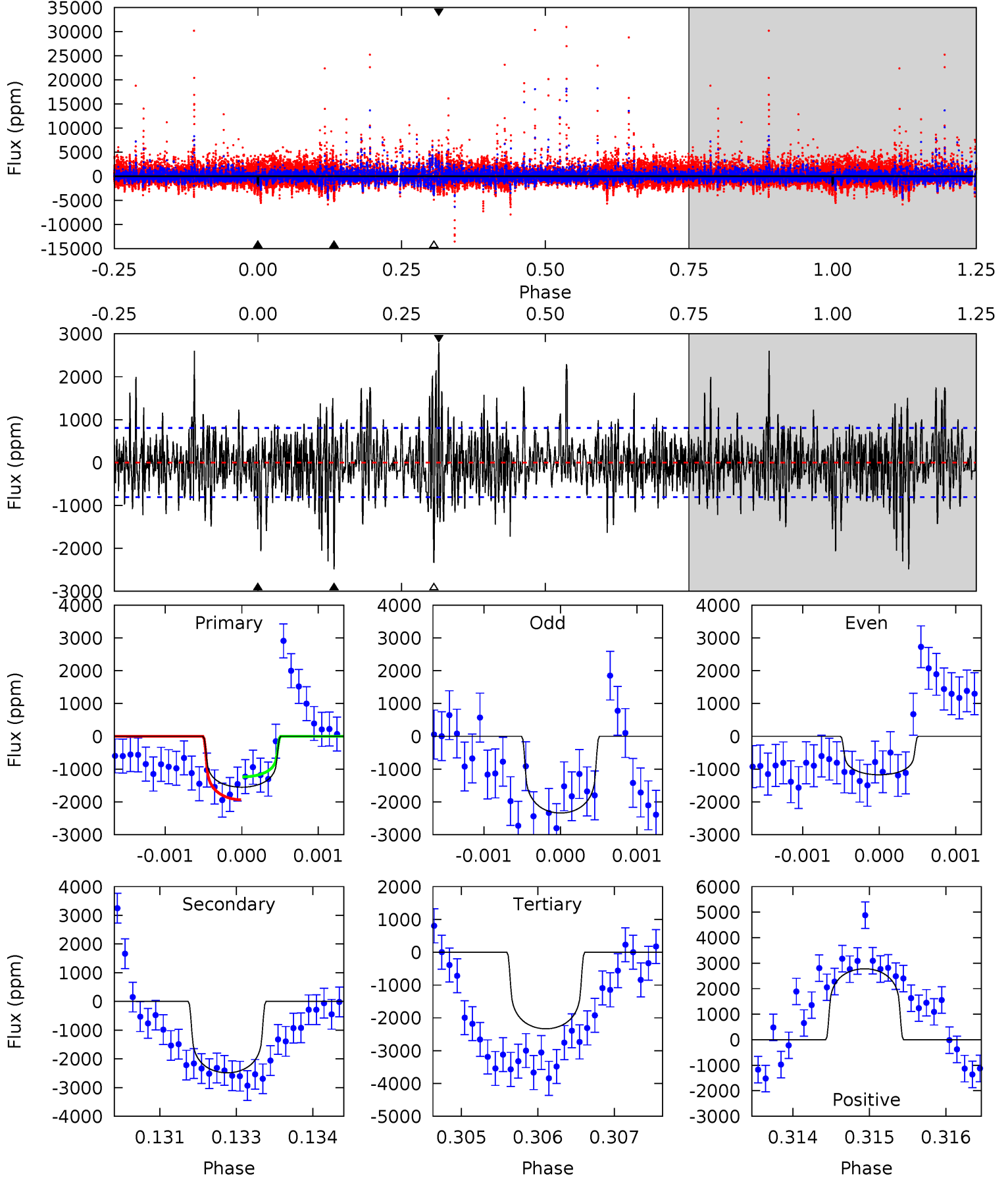
TCE 006668646-03 $P=568.883933$ Days $T_0=363.057583$ (BKJD)



DV Model-Shift Uniqueness Test

006668646-03, P = 568.897181 Days, E = 363.037278 Days

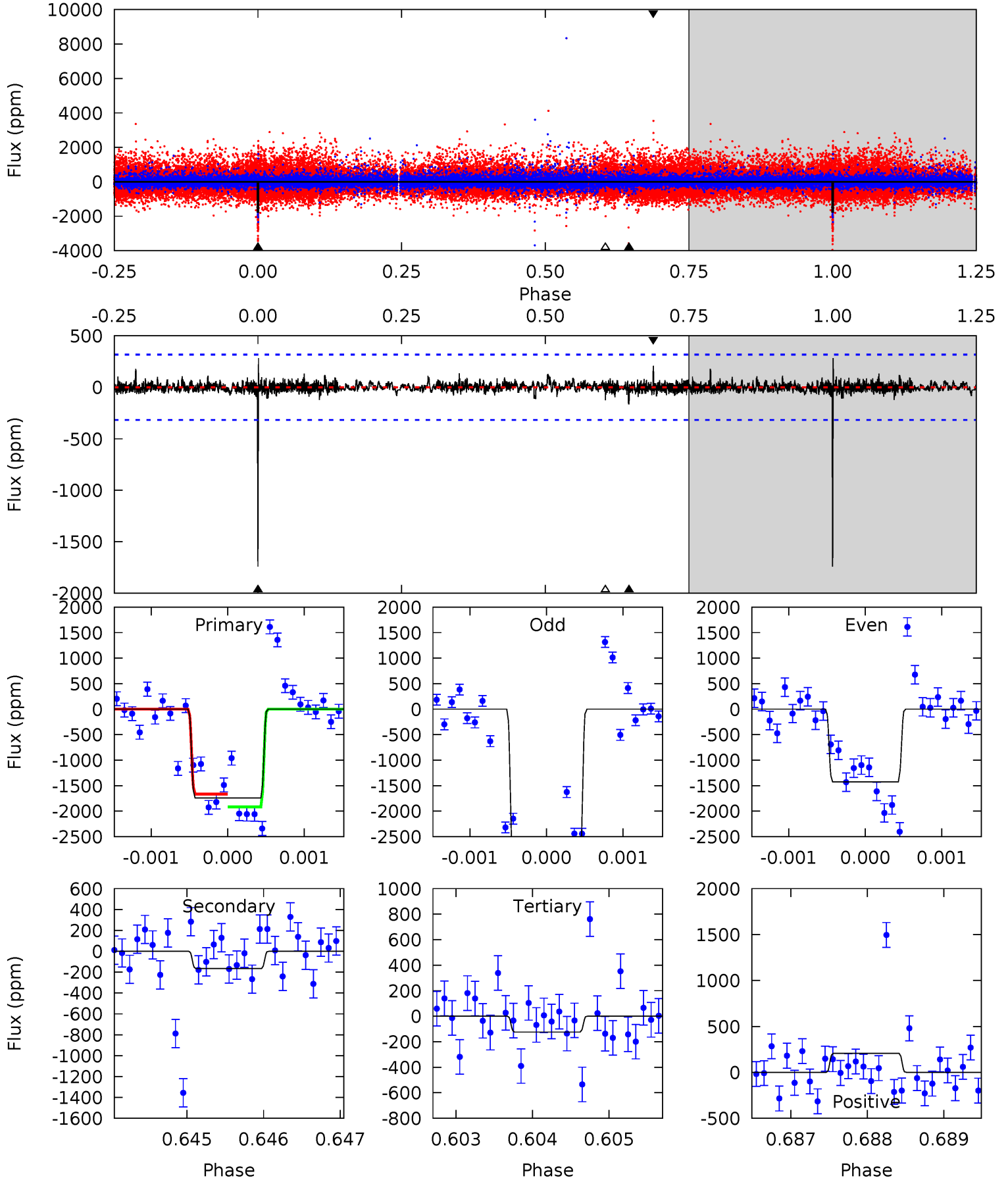
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	16.7	15.7	18.7	5.44	3.27	3.73	-5.26	-8.28	1.02	-2.00	3.08	0.67	0.53	2.33



Alt Model-Shift Uniqueness Test

006668646-03, P = 568.883933 Days, E = 363.057583 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.9	2.86	2.14	3.57	5.45	3.29	0.52	27.8	26.4	0.72	-0.72	13.7	1.13	0.14	2.16



Stellar Parameters For KIC 006668646

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3591^{+65}_{-72}	$4.862^{+0.050}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.390^{+0.040}_{-0.044}$	$0.405^{+0.042}_{-0.052}$	$9.604^{+2.468}_{-1.640}$
	+2%/-2%	+1%/-1%	+50%/-50%	+10%/-11%	+10%/-13%	+26%/-17%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006668646-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2484 ± 148	$1.96^{+0.35}_{-0.35}$	138^{+4}_{-4}	3678^{+247}_{-190}	$352629^{+163437}_{-93879}$
Alt.	-166 ± 58	$1.83^{+0.37}_{-0.31}$	138^{+4}_{-4}	2542^{+174}_{-163}	25988^{+17140}_{-10719}

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

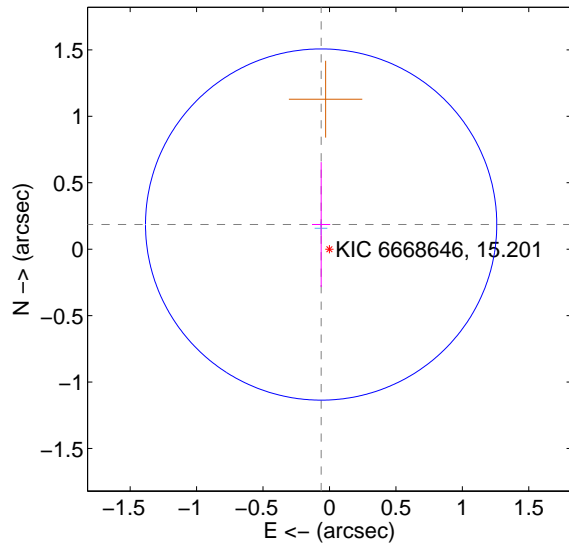
Supplemental centroid analysis for 006668646-03. Kepler magnitude: 15.20. Transit SNR 8.97

There are 1 quarters with good PRF difference image offsets

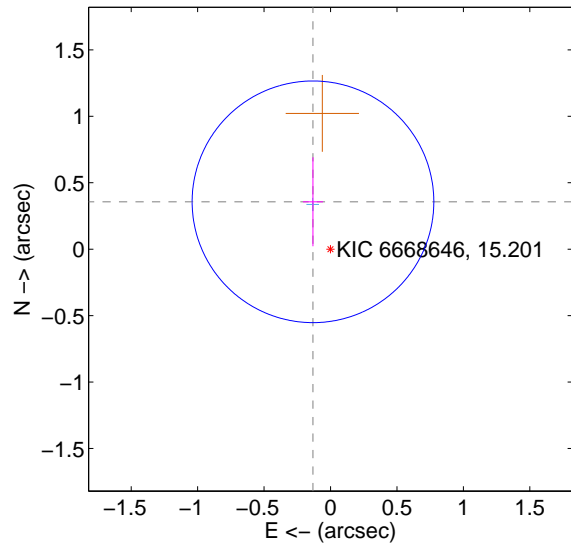
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.196 ± 0.441	0.44	0.063 ± 0.069	0.185 ± 0.470
PRF-fit source offset from KIC position	0.380 ± 0.303	1.25	0.132 ± 0.075	0.356 ± 0.335
photometric centroid source offset	0.28 ± 0.41	0.68	0.25 ± 0.40	-0.12 ± 0.43

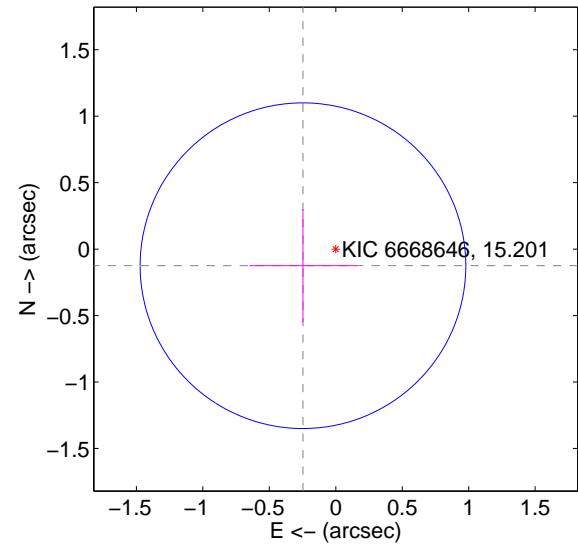
offset from difference PRF-fit to OOT PRF-fit



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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



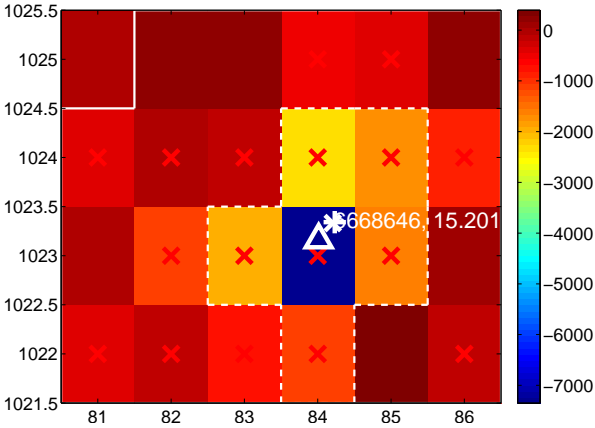
Q3 no difference image



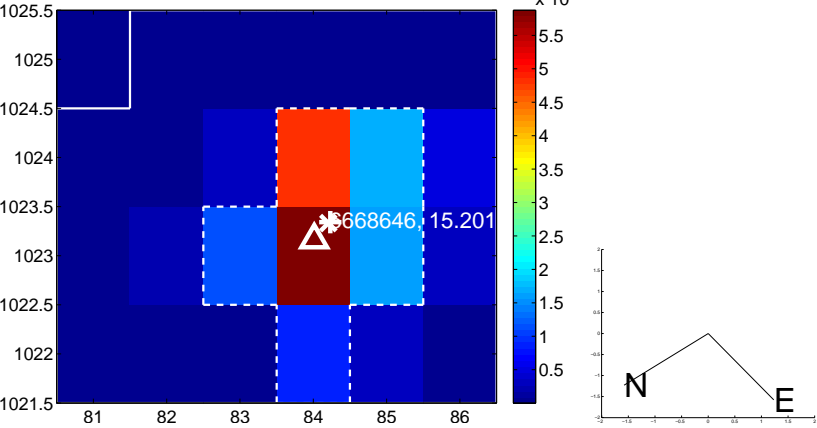
Q3 no OOT image



Q4 difference image. Poor Quality



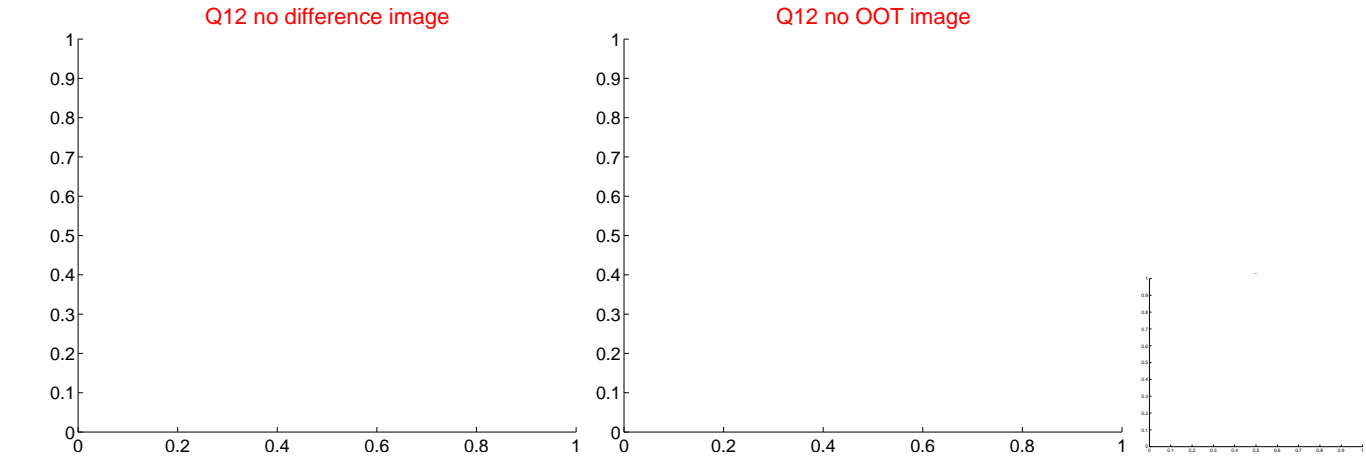
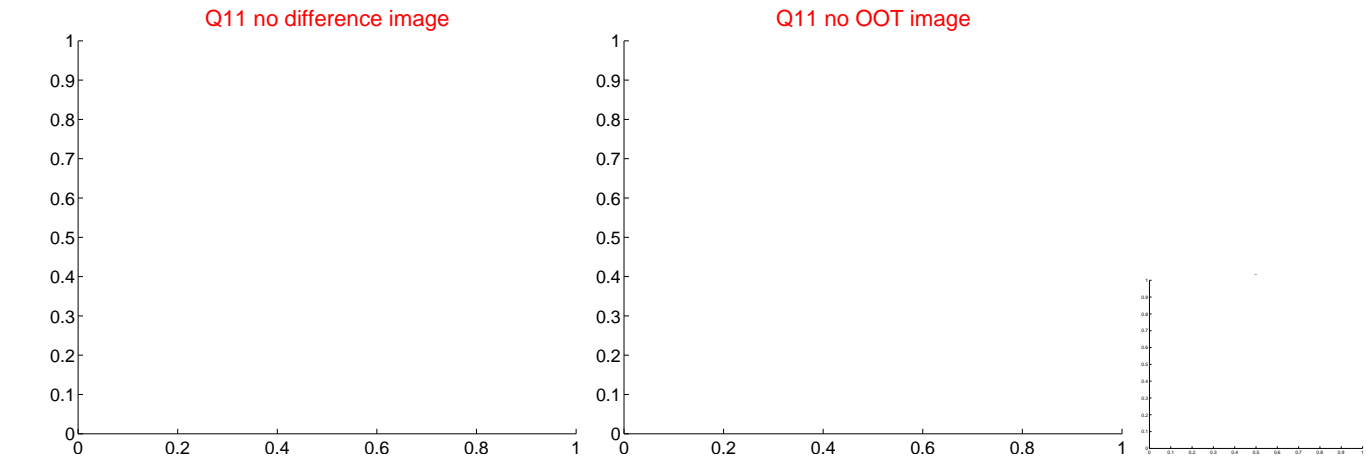
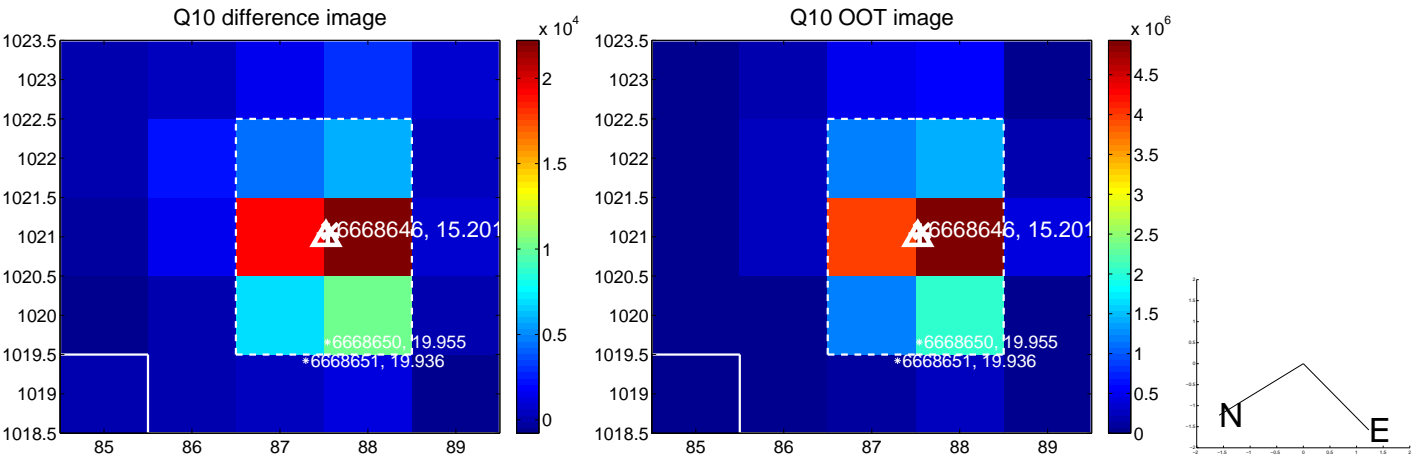
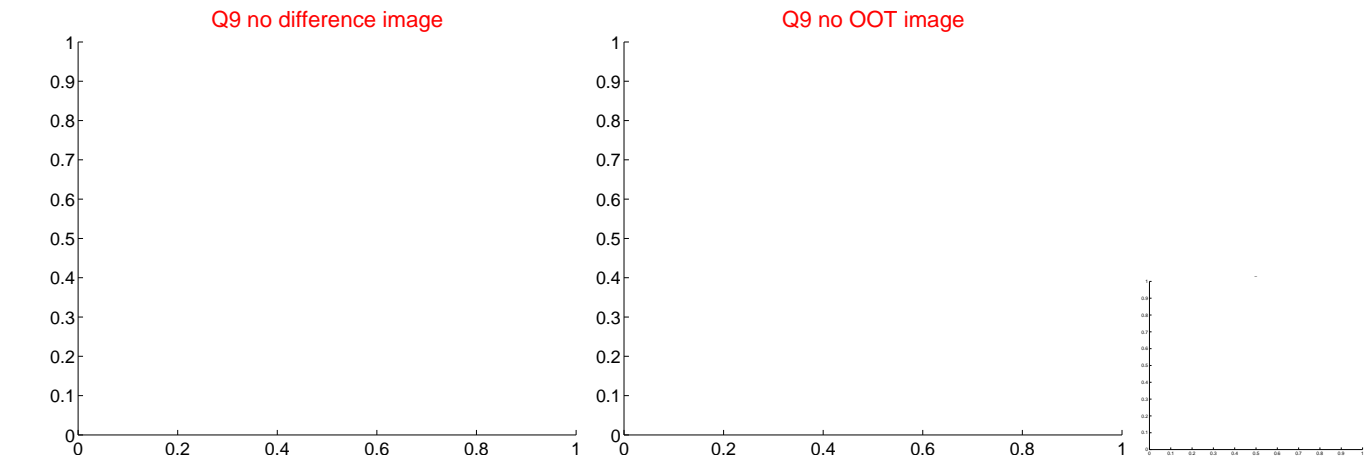
Q4 OOT image



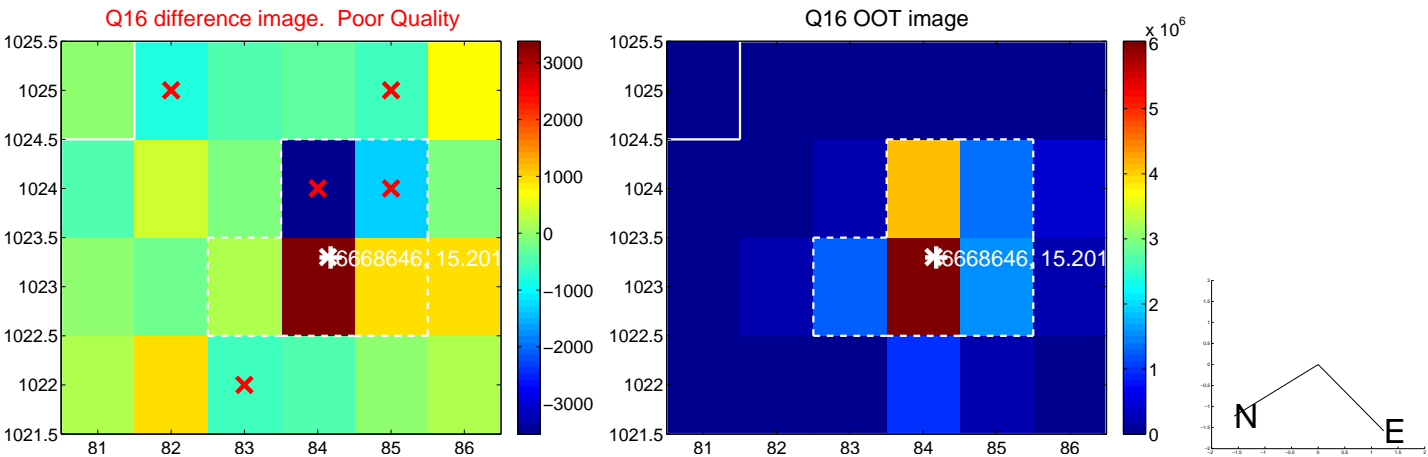
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



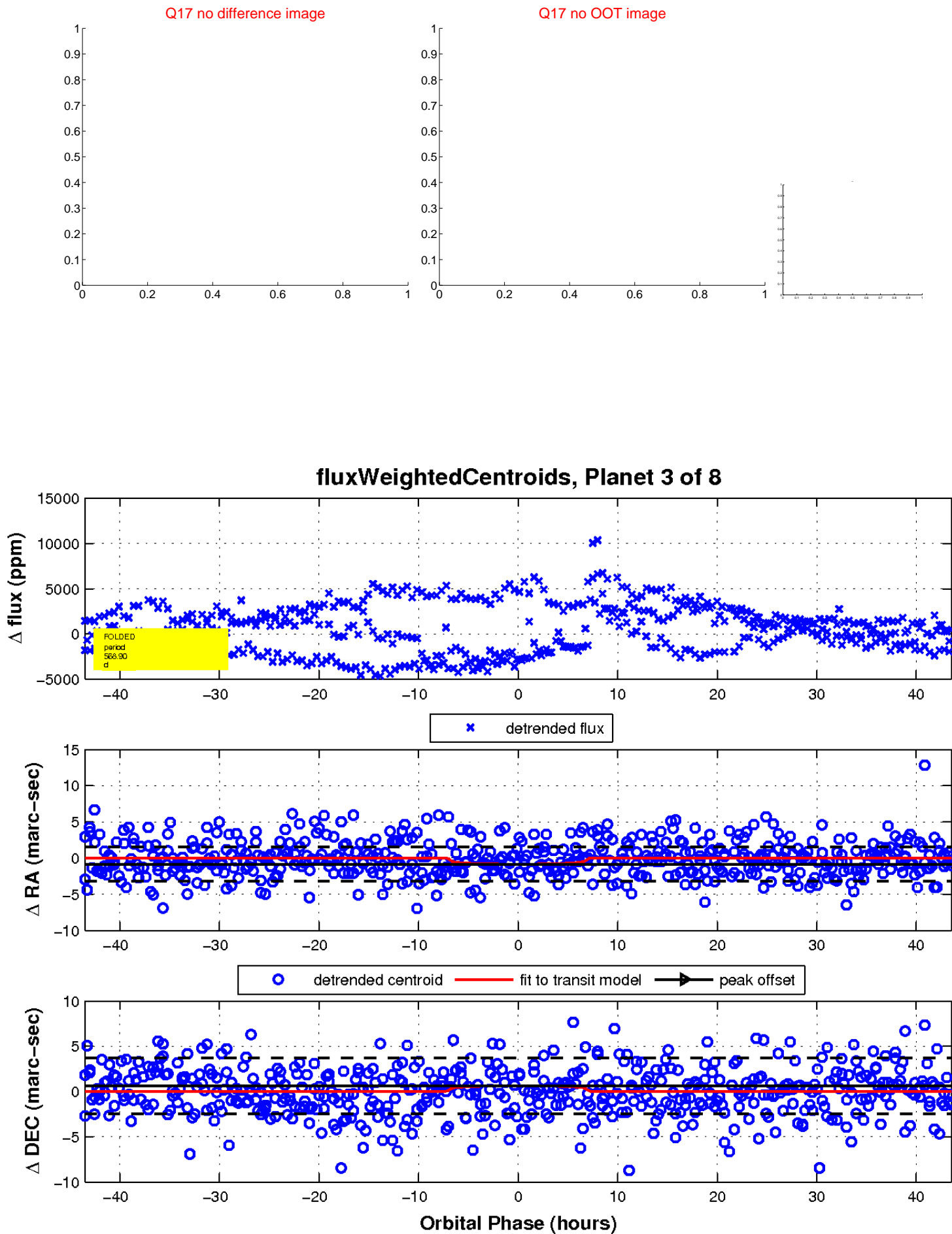
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

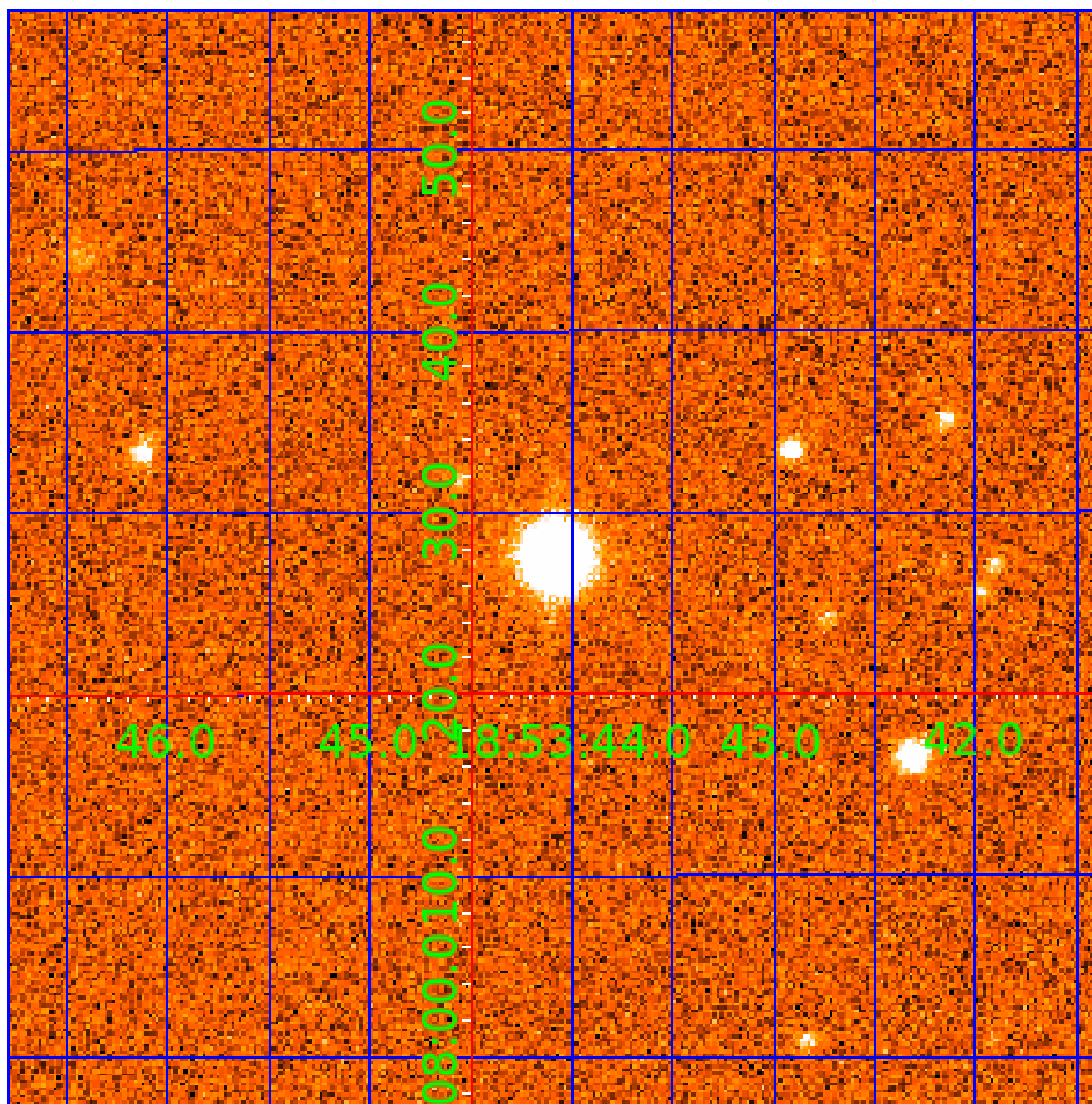


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006668646

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})
006668646-01	OBS	No	290.814329	281.810555	2544.7	4.221	14.4	10.1	0.39	3591	1.95	0.06
006668646-02	OBS	No	177.086828	158.808828	861.0	4.666	12.9	4.3	0.39	3591	1.19	0.11
006668646-03	OBS	No	568.897181	363.037278	2566.8	14.531	11.4	9.0	0.39	3591	1.96	0.02
006668646-04	OBS	No	237.253769	363.065689	1304.9	7.516	13.2	5.4	0.39	3591	1.43	0.07
006668646-05	OBS	No	323.633285	419.053478	843.4	0.695	10.0	2.8	0.39	3591	1.16	0.05
006668646-06	OBS	No	333.152236	408.937825	1342.8	10.695	9.3	5.6	0.39	3591	1.42	0.05
006668646-07	OBS	No	255.872777	365.802934	1332.6	9.145	11.7	5.9	0.39	3591	1.42	0.07
006668646-08	OBS	No	297.666832	410.833923	1651.5	7.844	9.8	7.2	0.39	3591	1.57	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006668646-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
006668646-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006668646-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006668646-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
006668646-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006668646-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

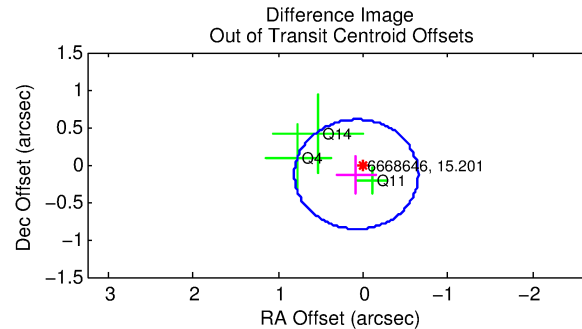
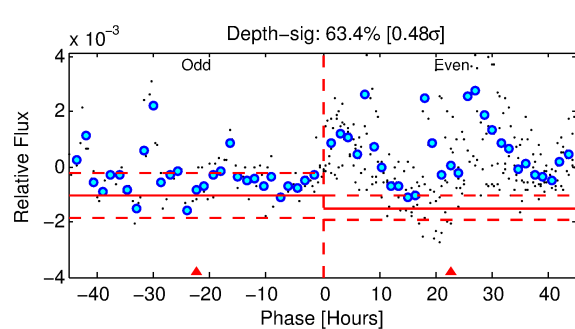
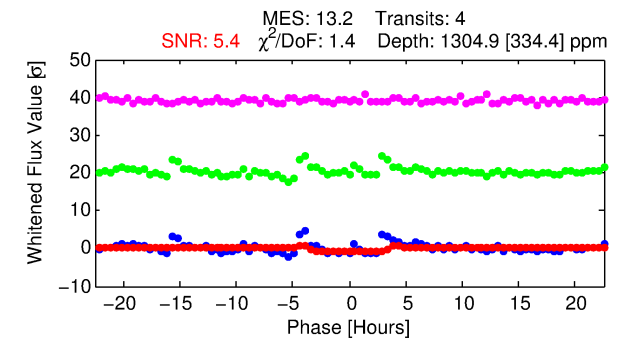
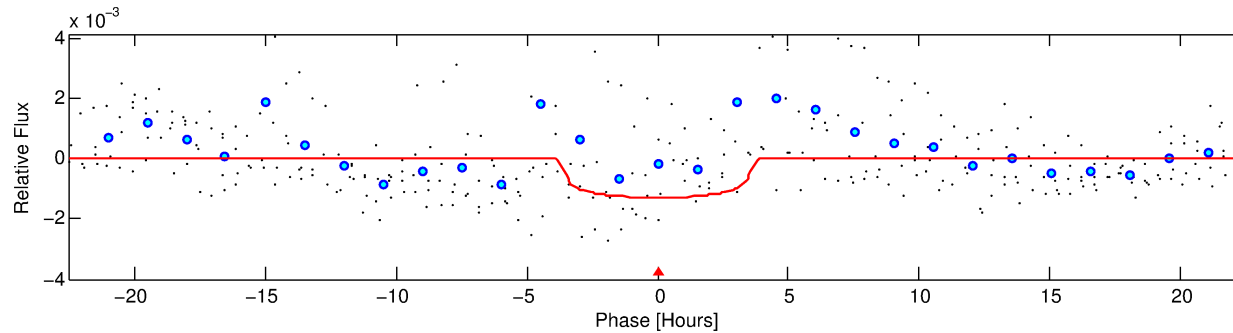
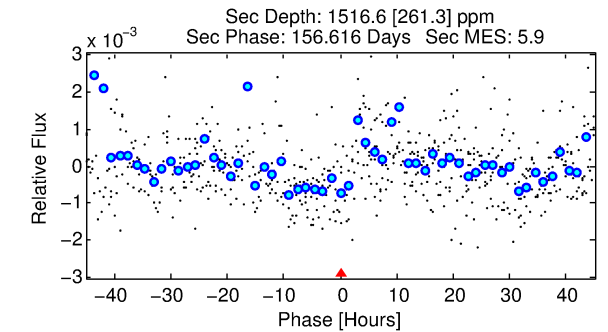
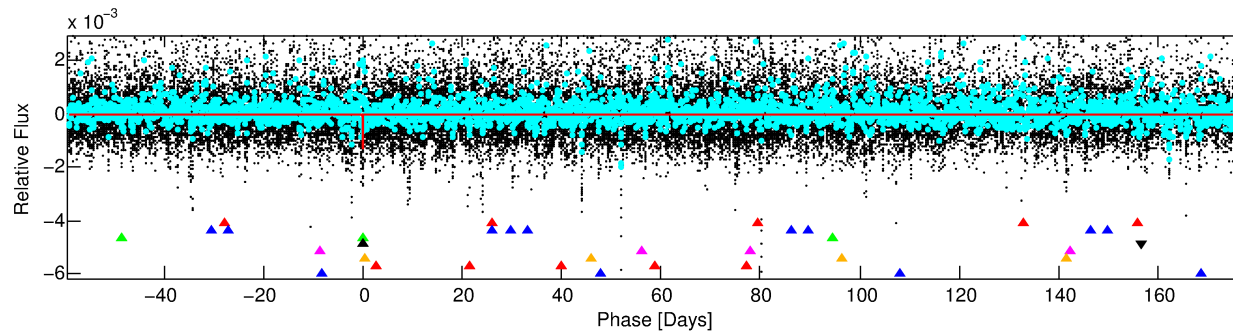
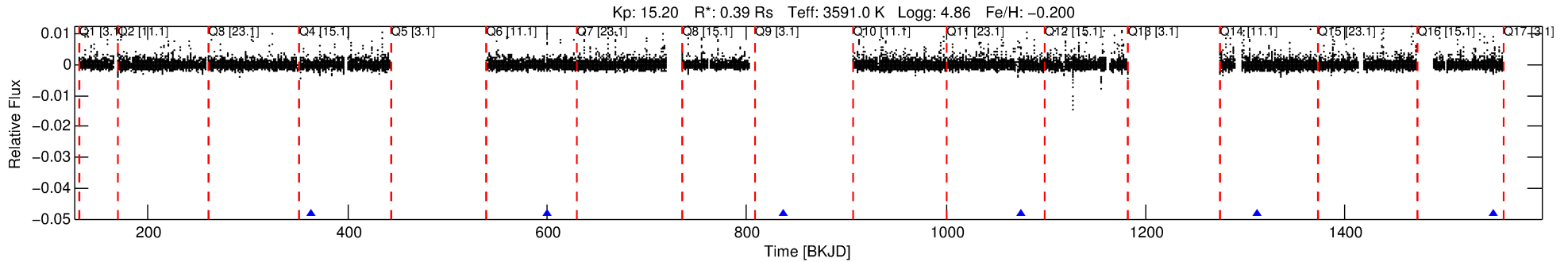
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006668646-04

No Significant Match Found

DV One-Page Summary

KIC: 6668646 Candidate: 4 of 8 Period: 237.254 d



DV Fit Results:

Period = 237.25377 [0.00538] d
Epoch = 363.0657 [0.0204] BKJD
Rp/R* = 0.0337 [0.0267]
a/R* = 223.05 [781.58]
b = 0.46 [5.95]
Seff = 0.07 [0.01]
Teq = 133 [4] K
Rp = 1.43 [1.15] Re
a = 0.5545 [0.0468] AU
Ag = 124961.26 [199702.13] [0.63σ]
Teffp = 3862 [1542] K [2.42σ]

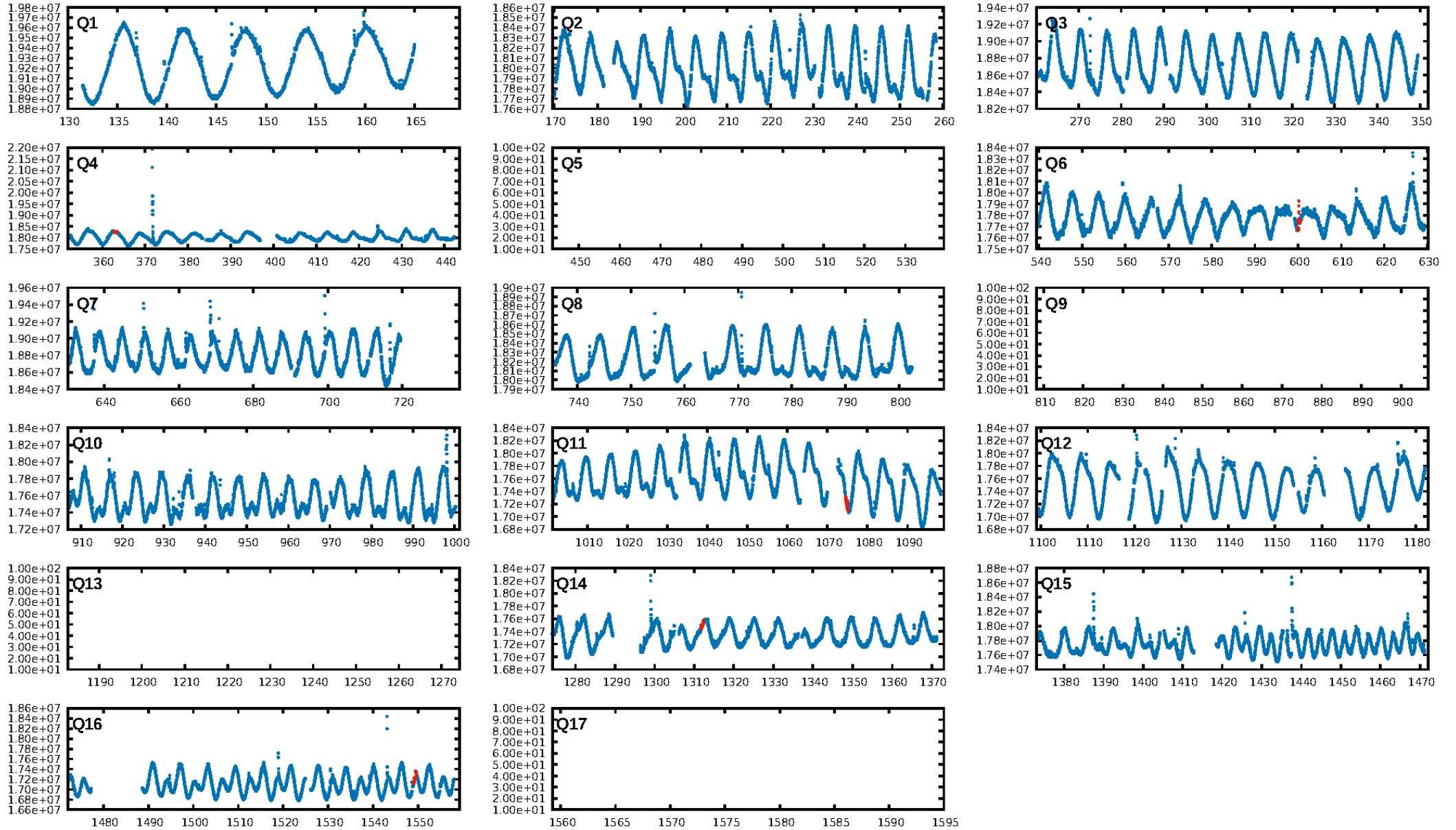
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [163.23σ]
LongPeriod-sig: 100.0% [37.75σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 78.0%
Bootstrap-pfa: 8.75e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.1719
Centroid-sig: 1.7%
Centroid-so: 1.474 arcsec [1.97σ]
OotOffset-rm: 0.150 arcsec [0.61σ]
KicOffset-rm: 0.145 arcsec [0.59σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.33 [1/3]

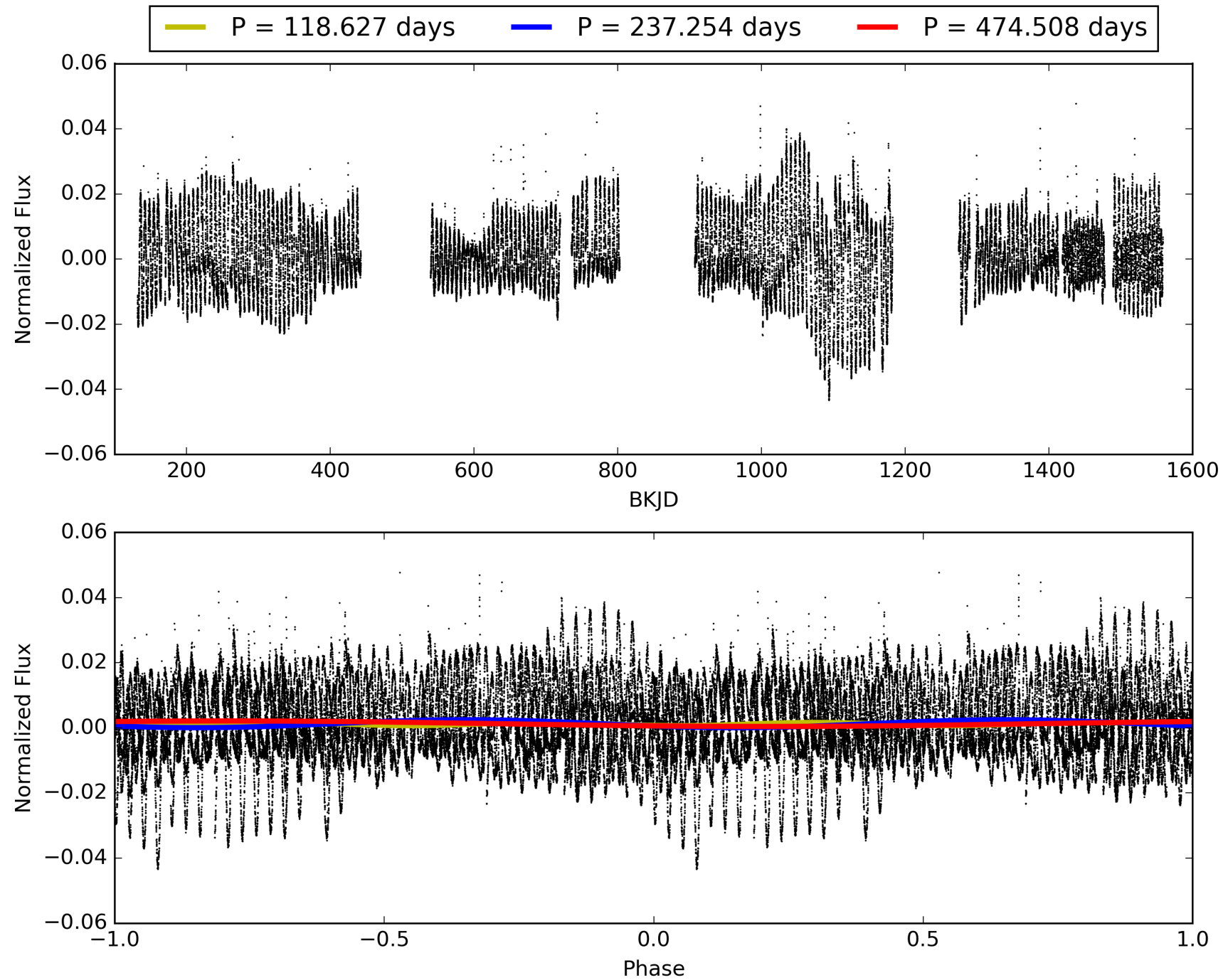
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 06:12:14 Z

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

TCE 006668646-04, PDC Light Curves

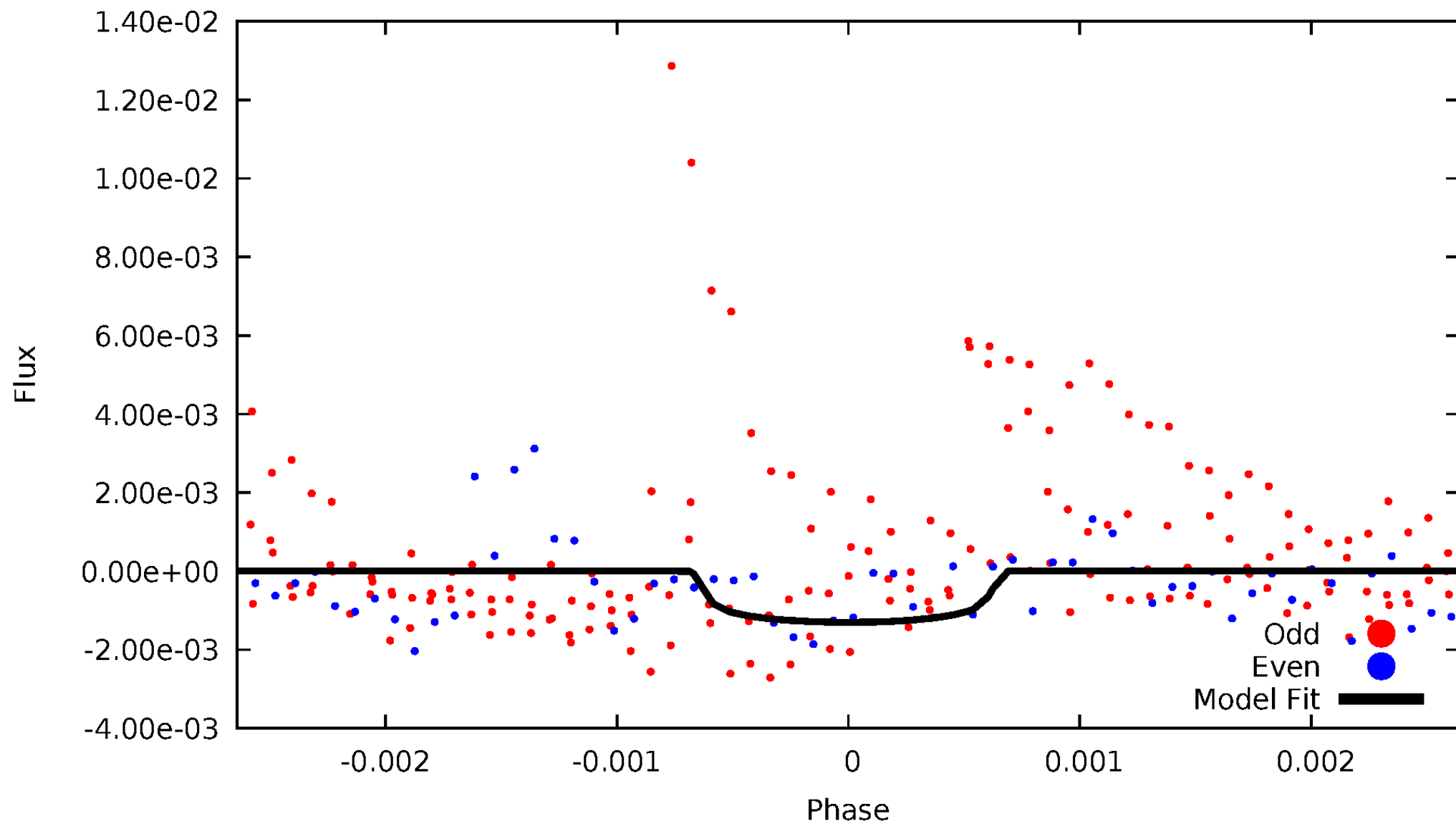


TCE 006668646-04



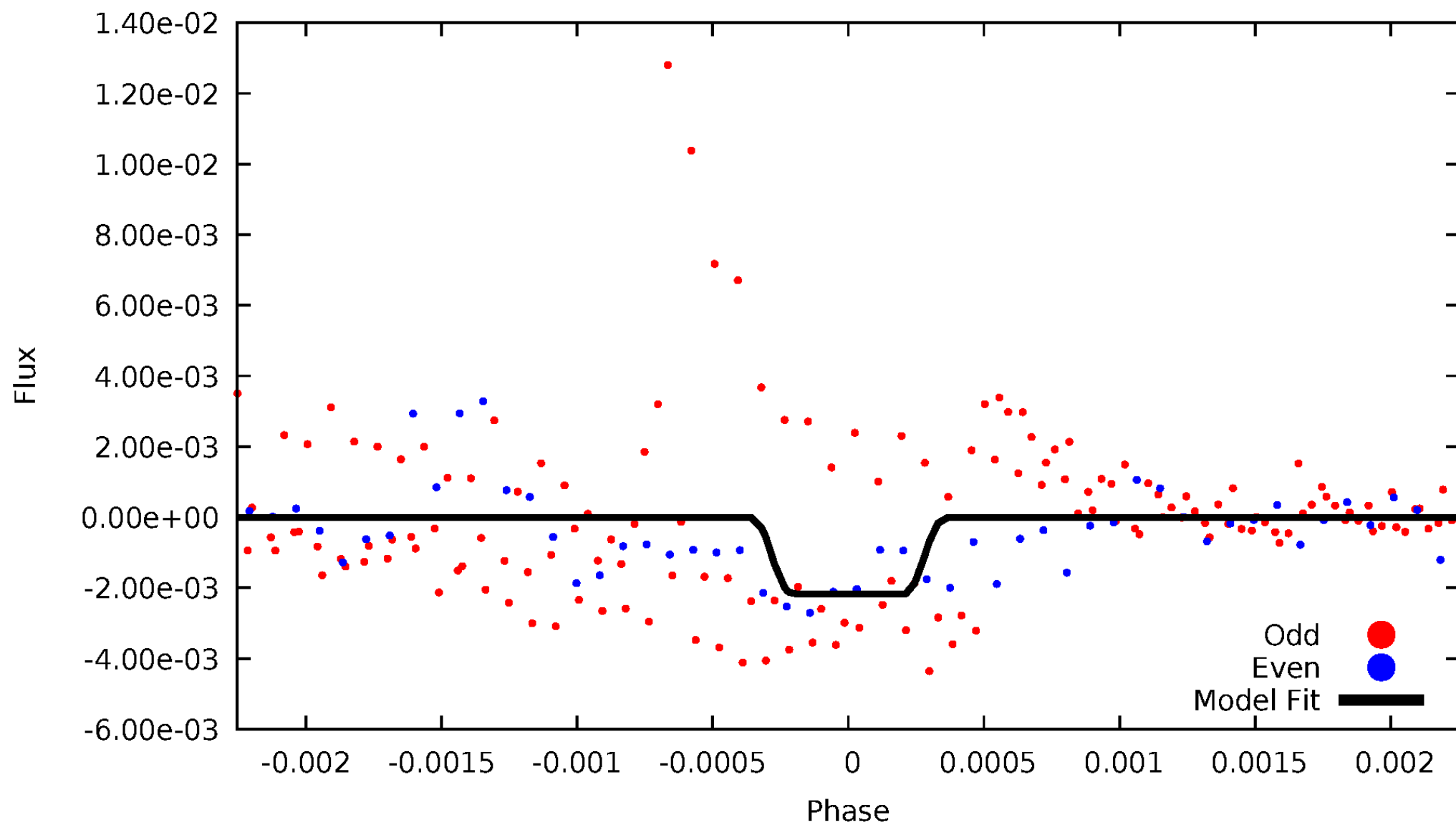
DV Odd/Even

TCE 006668646-04



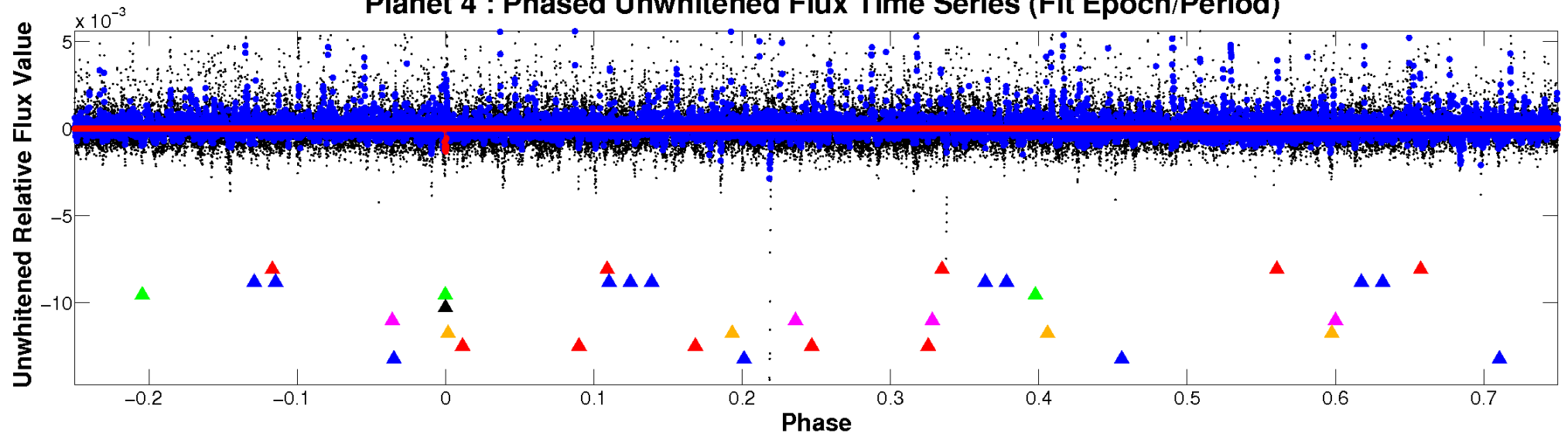
ALT Odd/Even

TCE 006668646-04

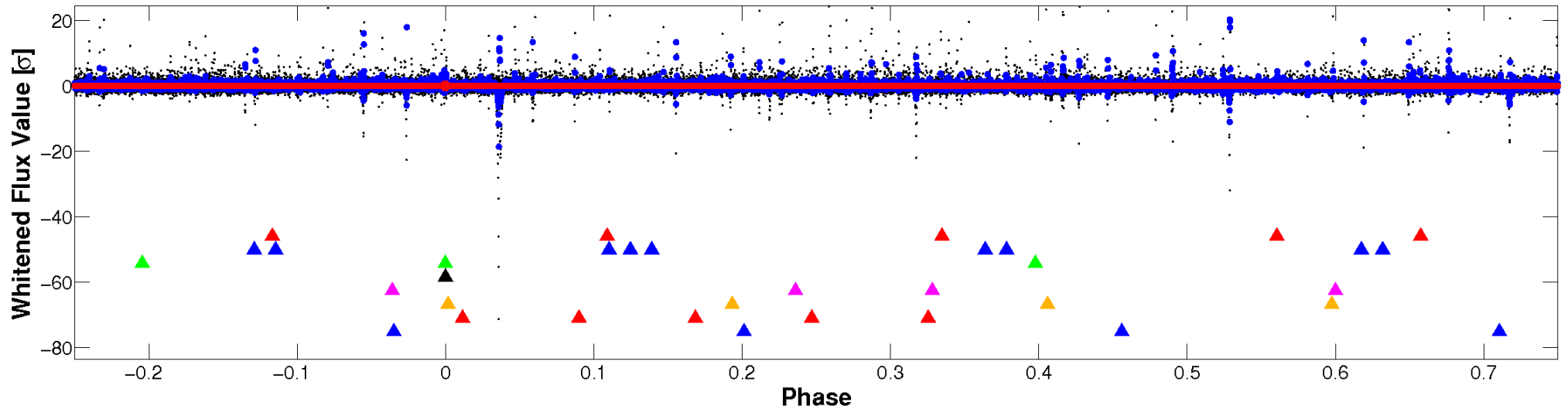


Non-Whitened Vs. Whitened Light Curve

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

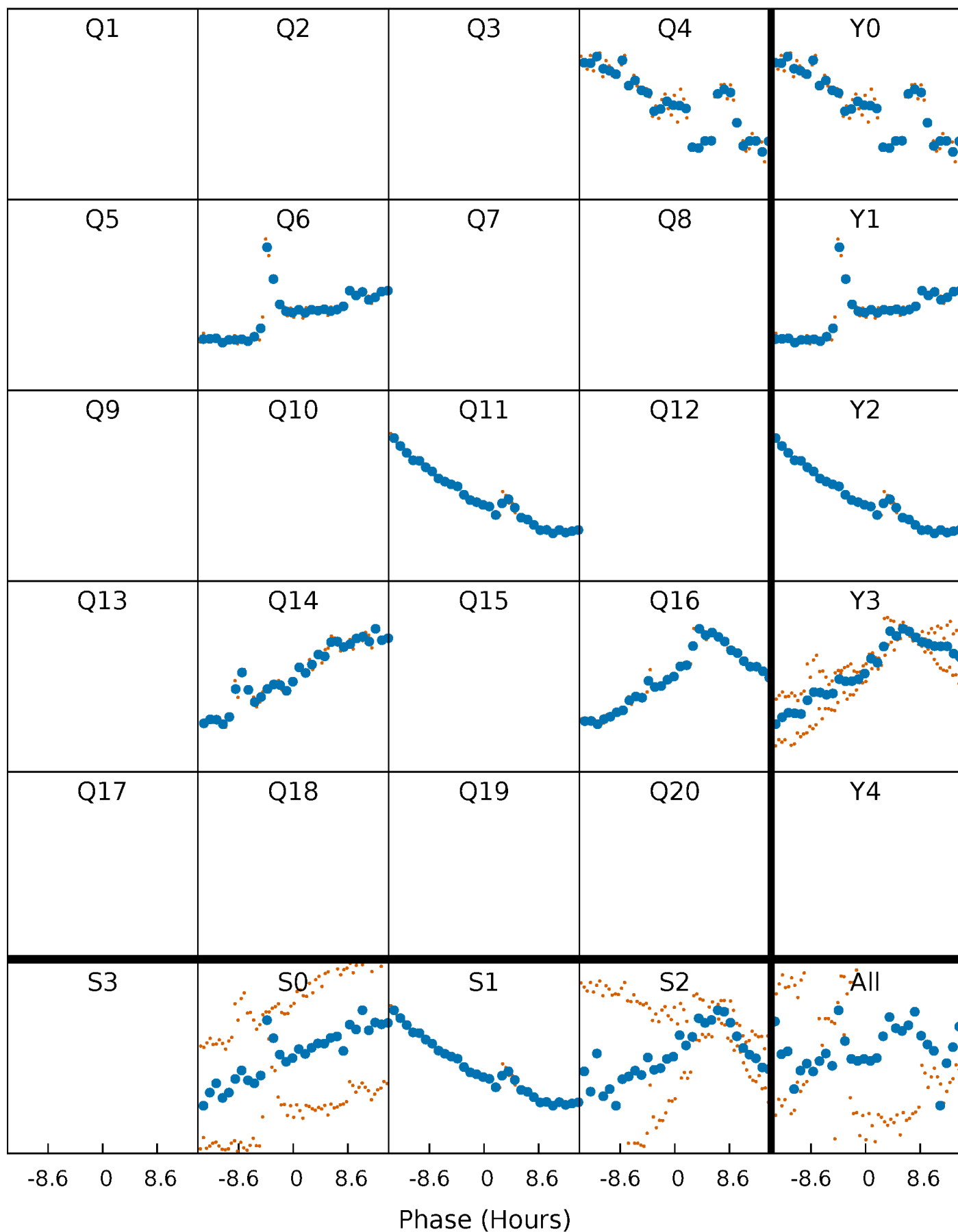


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



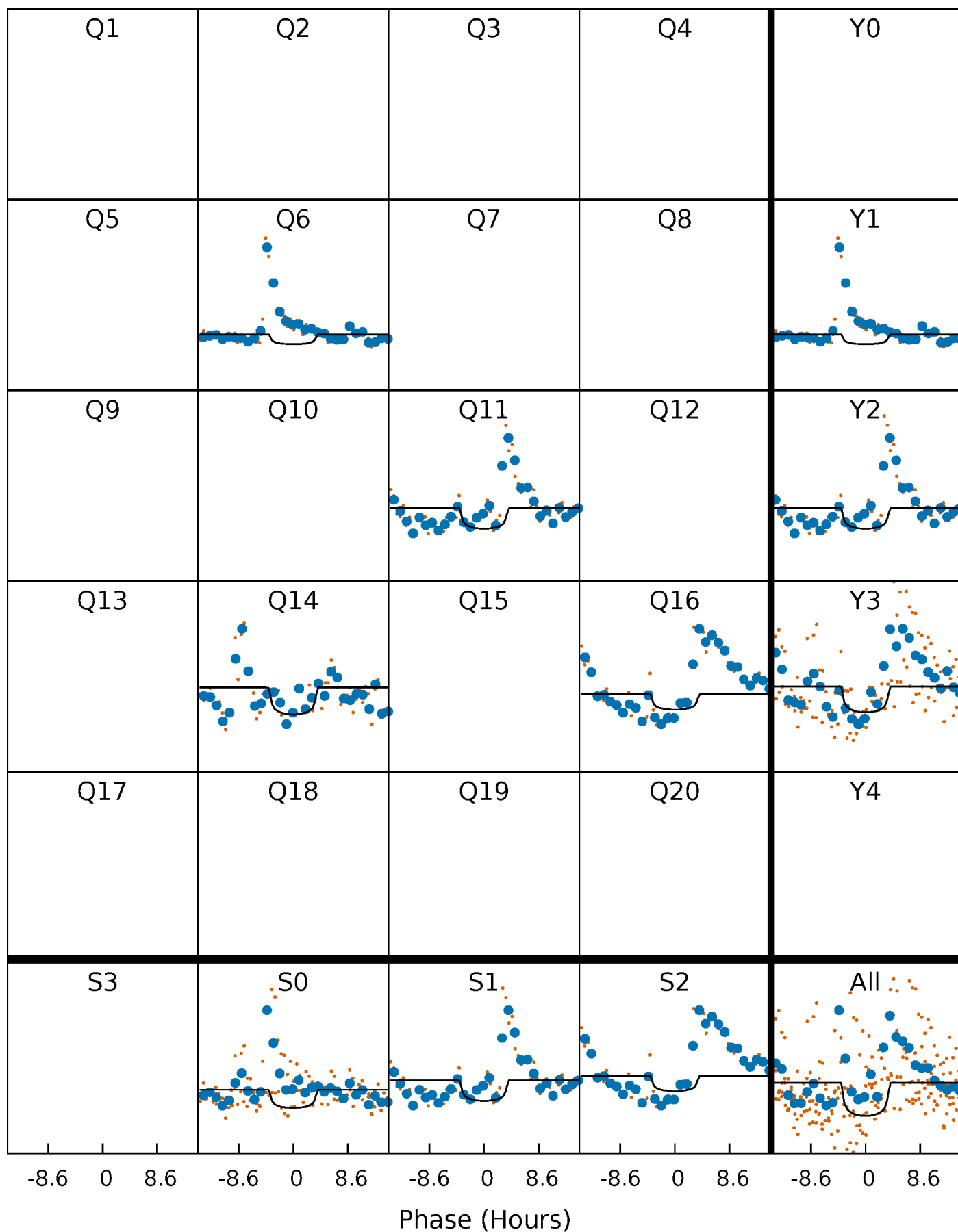
PDC Quarter-Phased Transit Curves

TCE 006668646-04 P=237.253769 Days $T_0=363.065689$ (BKJD)



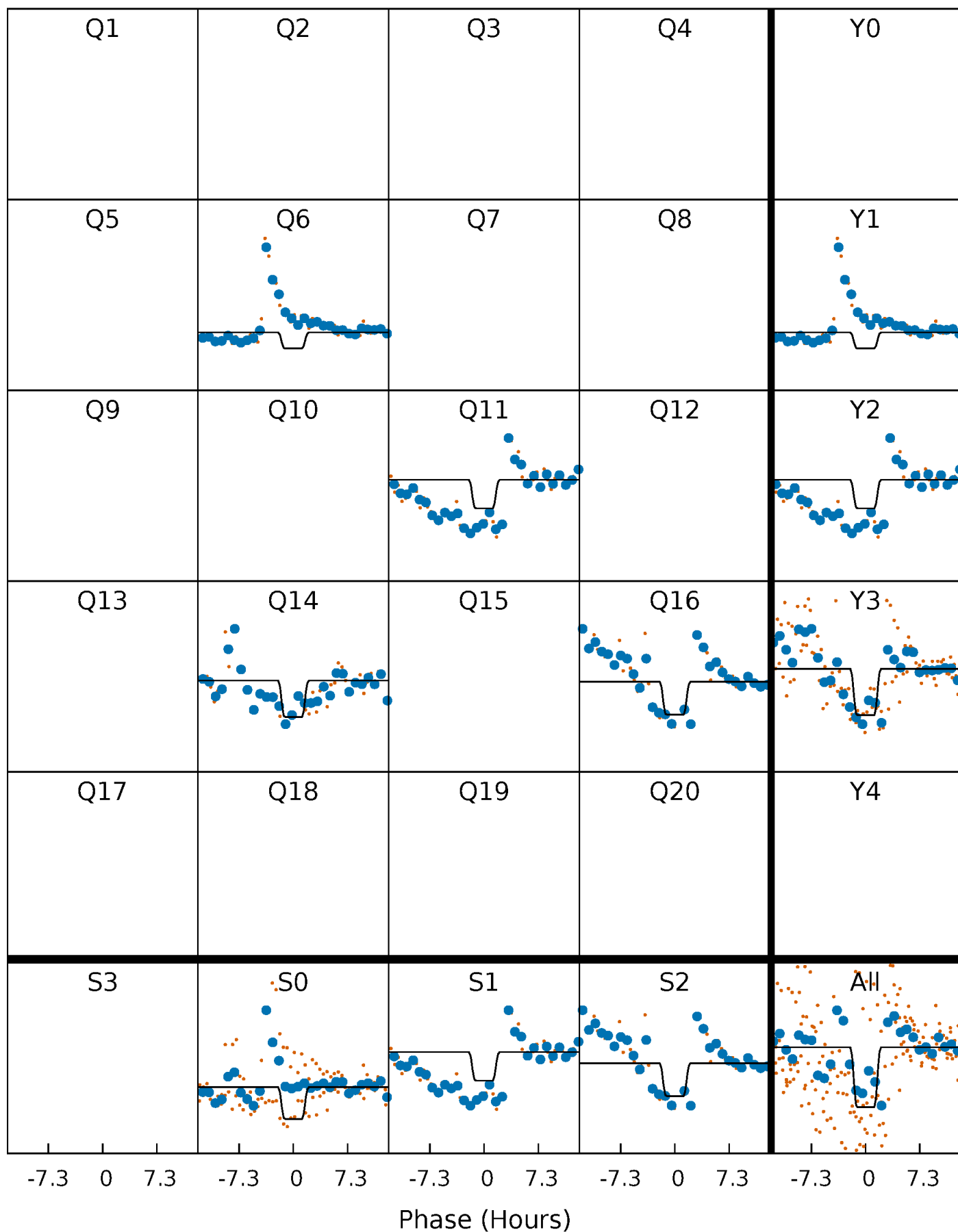
DV Quarter-Phased Transit Curves

TCE 006668646-04 P=237.253769 Days $T_0=363.065689$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

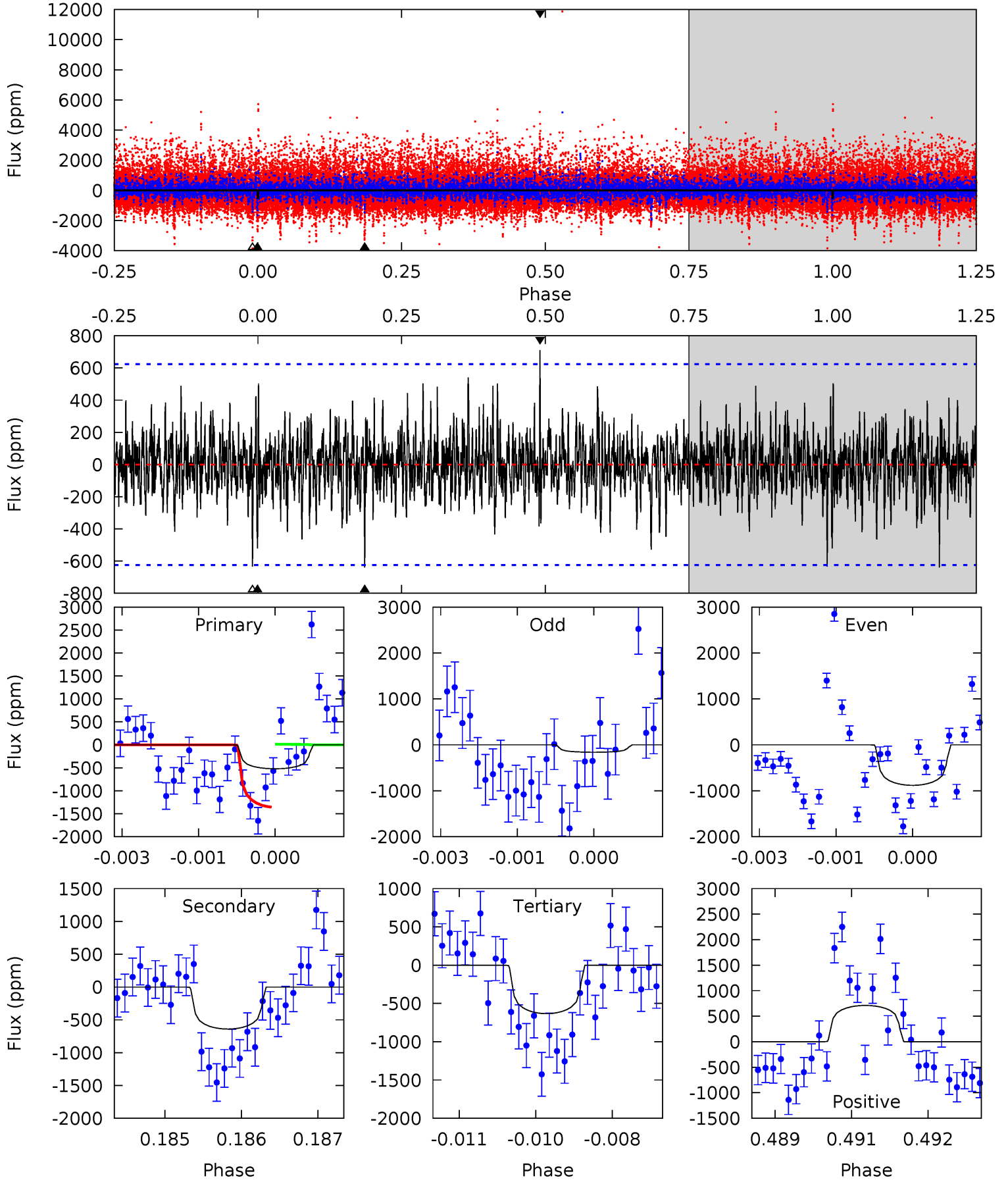
TCE 006668646-04 $P=237.260876$ Days $T_0=363.035136$ (BKJD)



DV Model-Shift Uniqueness Test

006668646-04, P = 237.253769 Days, E = 125.811920 Days

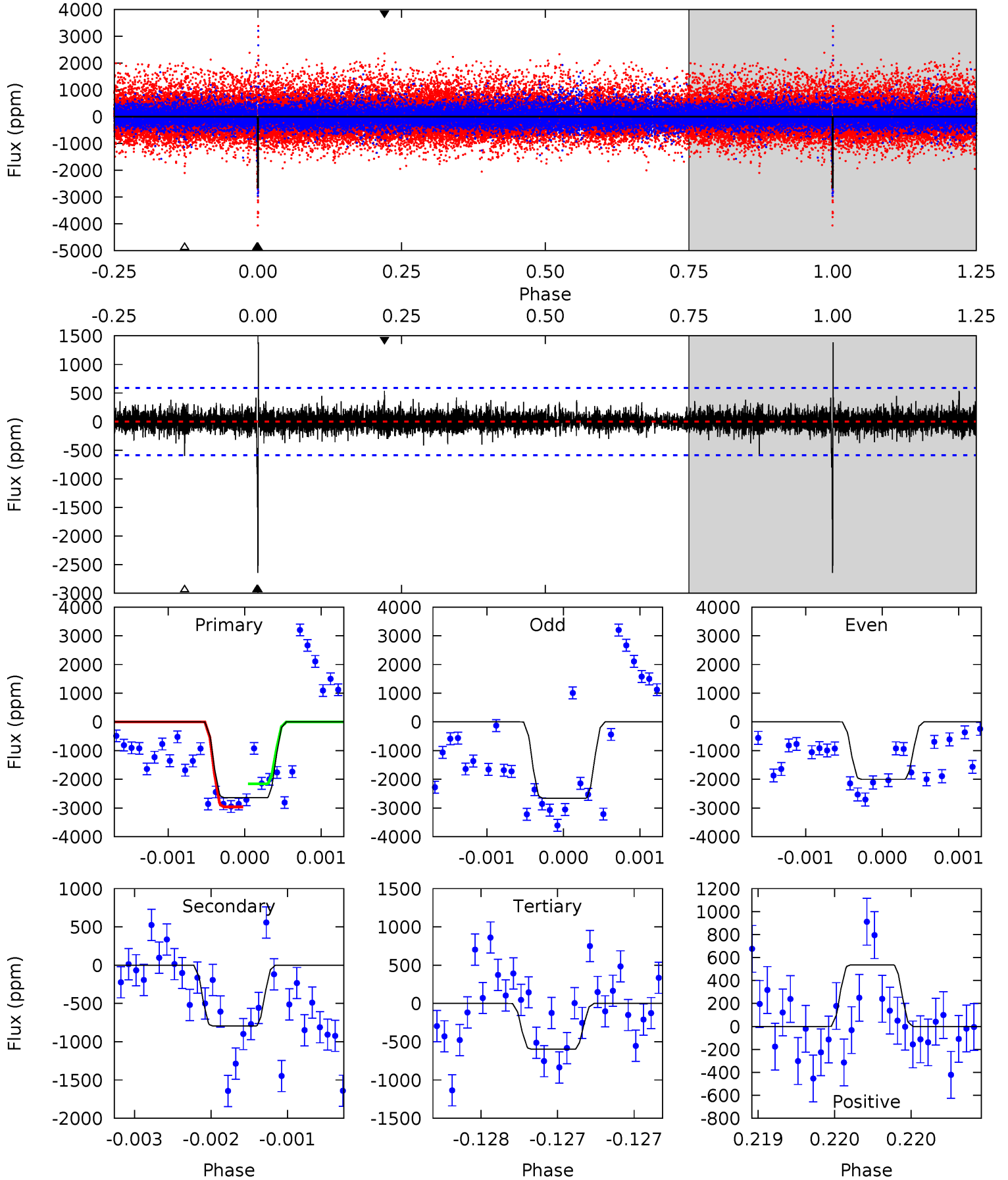
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.50	5.53	5.47	6.14	5.39	3.20	1.28	-0.97	-1.64	0.06	-0.61	2.20	-0.19	0.53	5.85



Alt Model-Shift Uniqueness Test

006668646-04, P = 237.260876 Days, E = 125.774260 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.8	7.46	5.62	5.02	5.52	3.39	0.98	19.2	19.8	1.85	2.44	2.99	0.65	0.34	3.69



Stellar Parameters For KIC 006668646

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3591^{+65}_{-72}	$4.862^{+0.050}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.390^{+0.040}_{-0.044}$	$0.405^{+0.042}_{-0.052}$	$9.604^{+2.468}_{-1.640}$
	+2%/-2%	+1%/-1%	+50%/-50%	+10%/-11%	+10%/-13%	+26%/-17%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006668646-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-640 ± 116	$1.66^{+1.00}_{-1.05}$	185^{+5}_{-5}	3142^{+1185}_{-399}	$39437^{+244548}_{-24805}$
Alt.	-795 ± 107	$2.04^{+1.19}_{-1.03}$	185^{+5}_{-5}	3039^{+797}_{-350}	$32235^{+103062}_{-19402}$

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

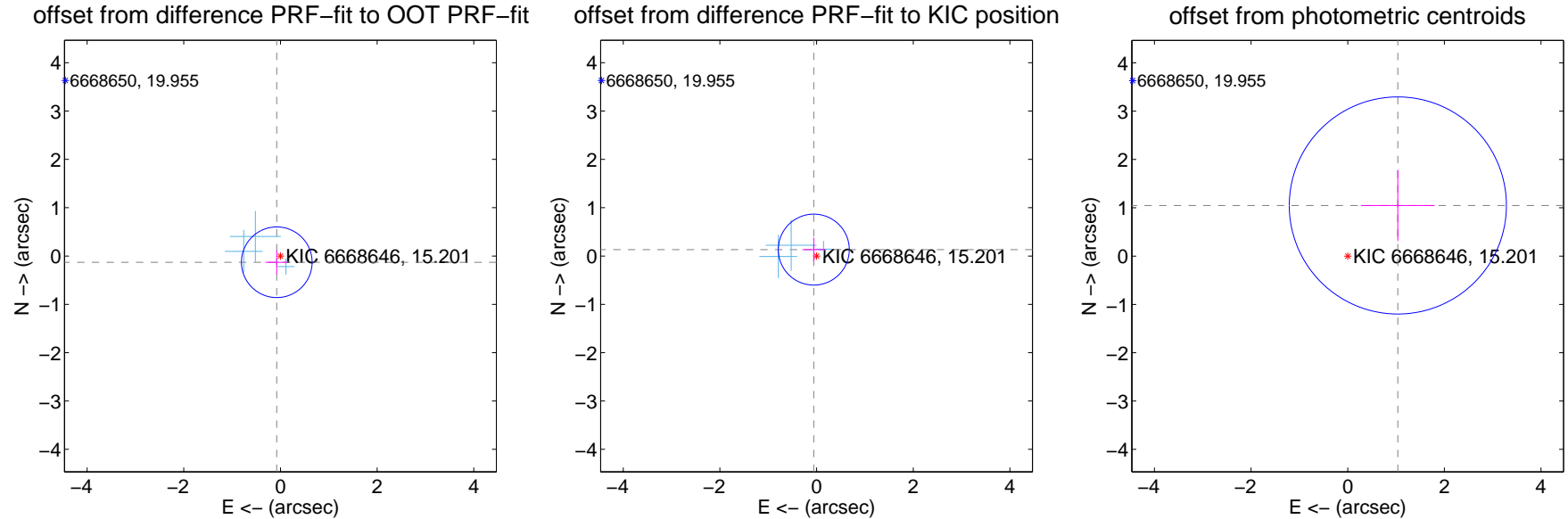
DV Centroid Data

Supplemental centroid analysis for 006668646-04. Kepler magnitude: 15.20. Transit SNR 5.41

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.150 ± 0.244	0.61	0.076 ± 0.236	-0.129 ± 0.246
PRF-fit source offset from KIC position	0.145 ± 0.245	0.59	0.057 ± 0.236	0.133 ± 0.246
photometric centroid source offset	1.47 ± 0.75	1.97	-1.04 ± 0.76	1.05 ± 0.73



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



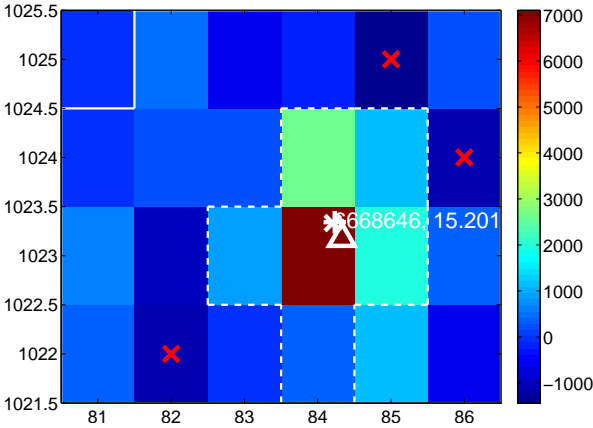
Q3 no difference image



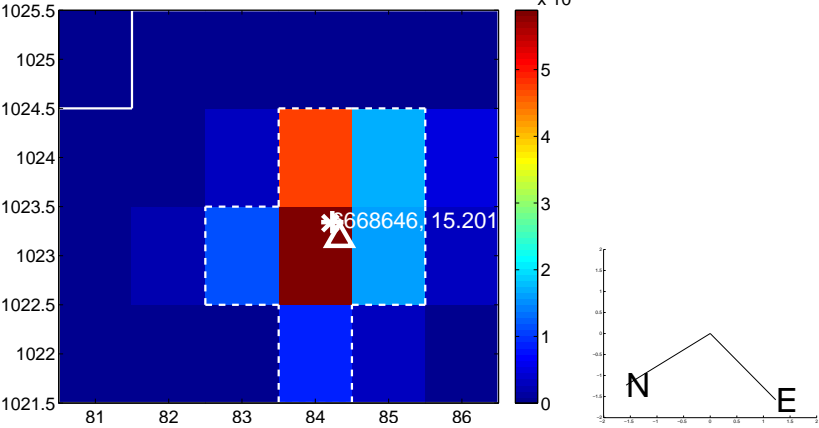
Q3 no OOT image



Q4 difference image



Q4 OOT image



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.

Q9 no difference image



Q9 no OOT image



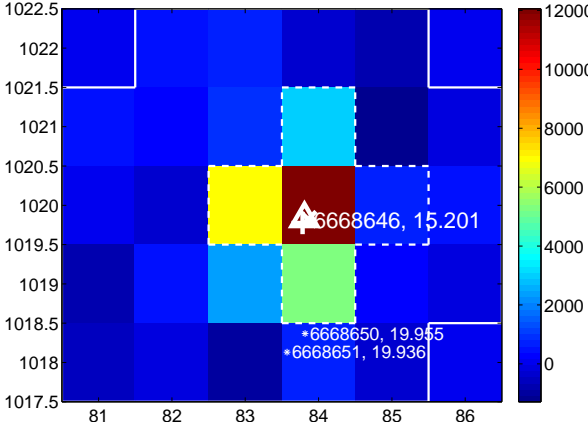
Q10 no difference image



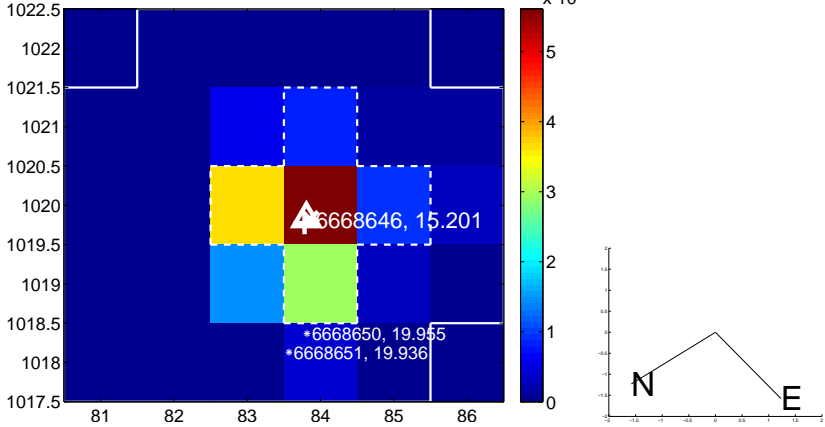
Q10 no OOT image



Q11 difference image



Q11 OOT image



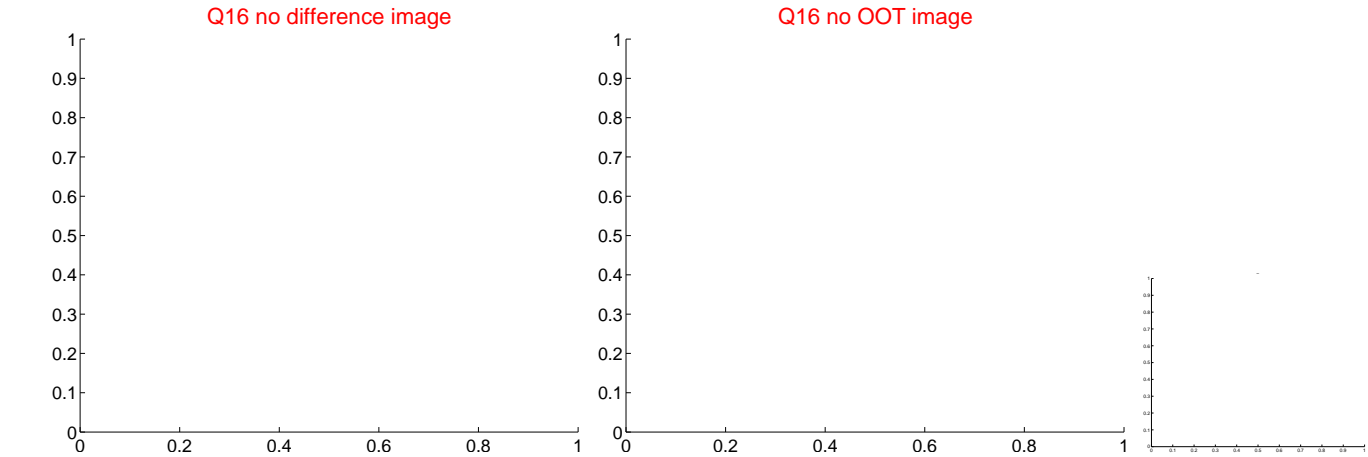
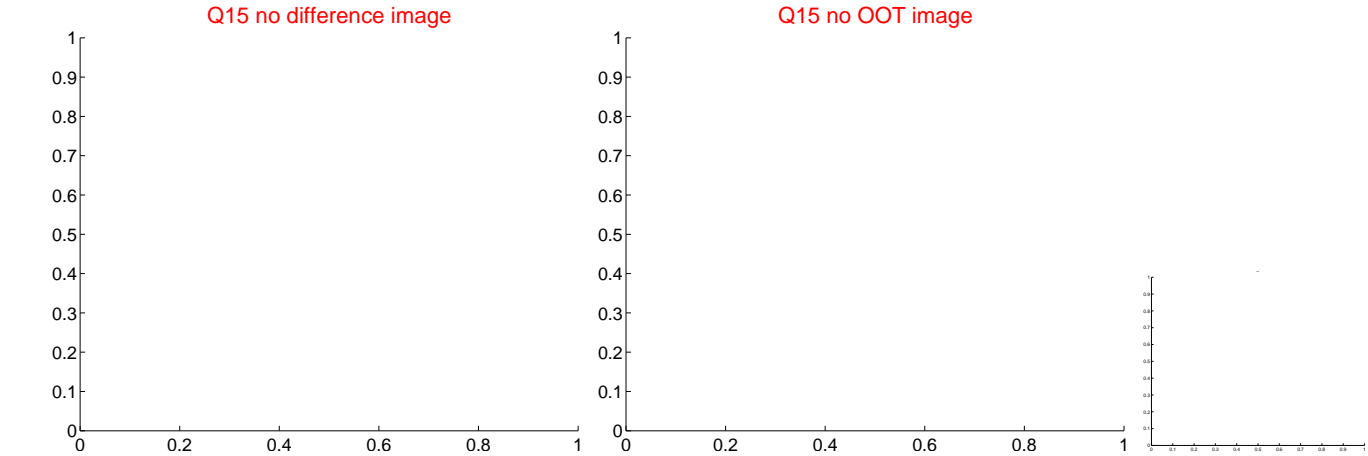
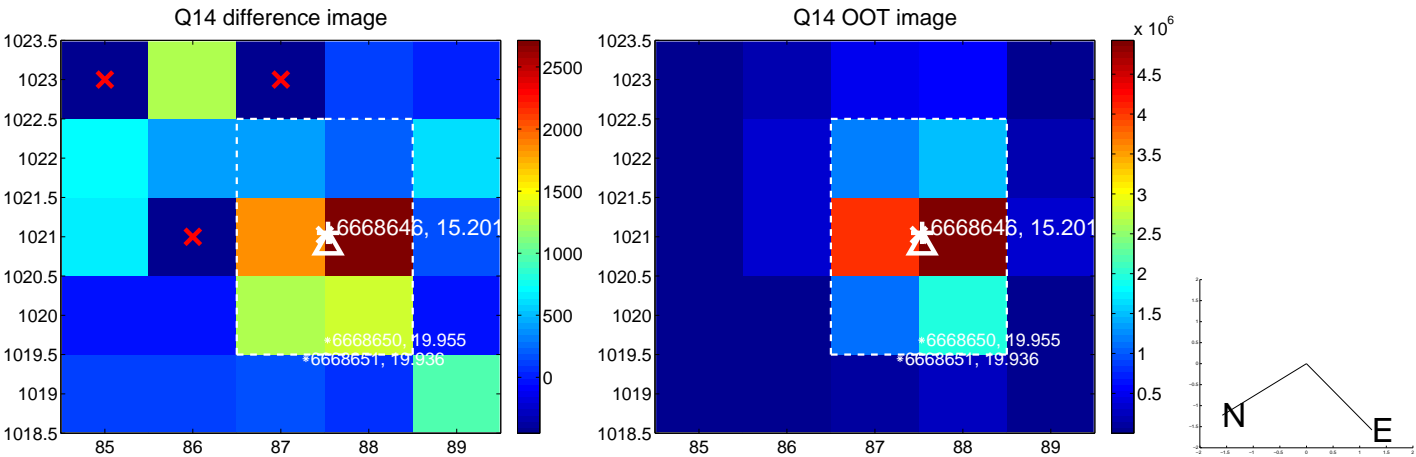
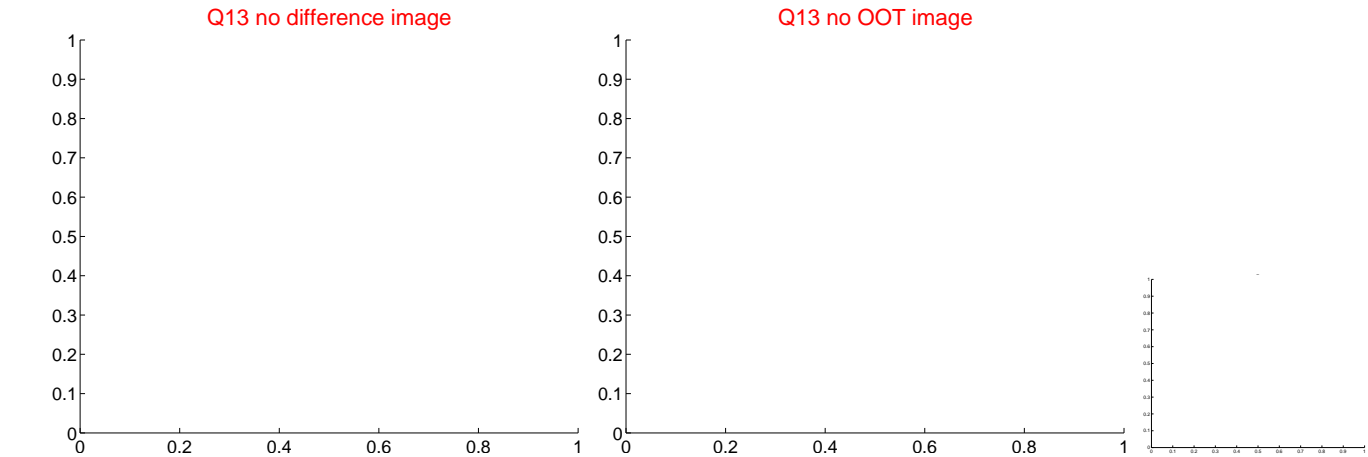
Q12 no difference image



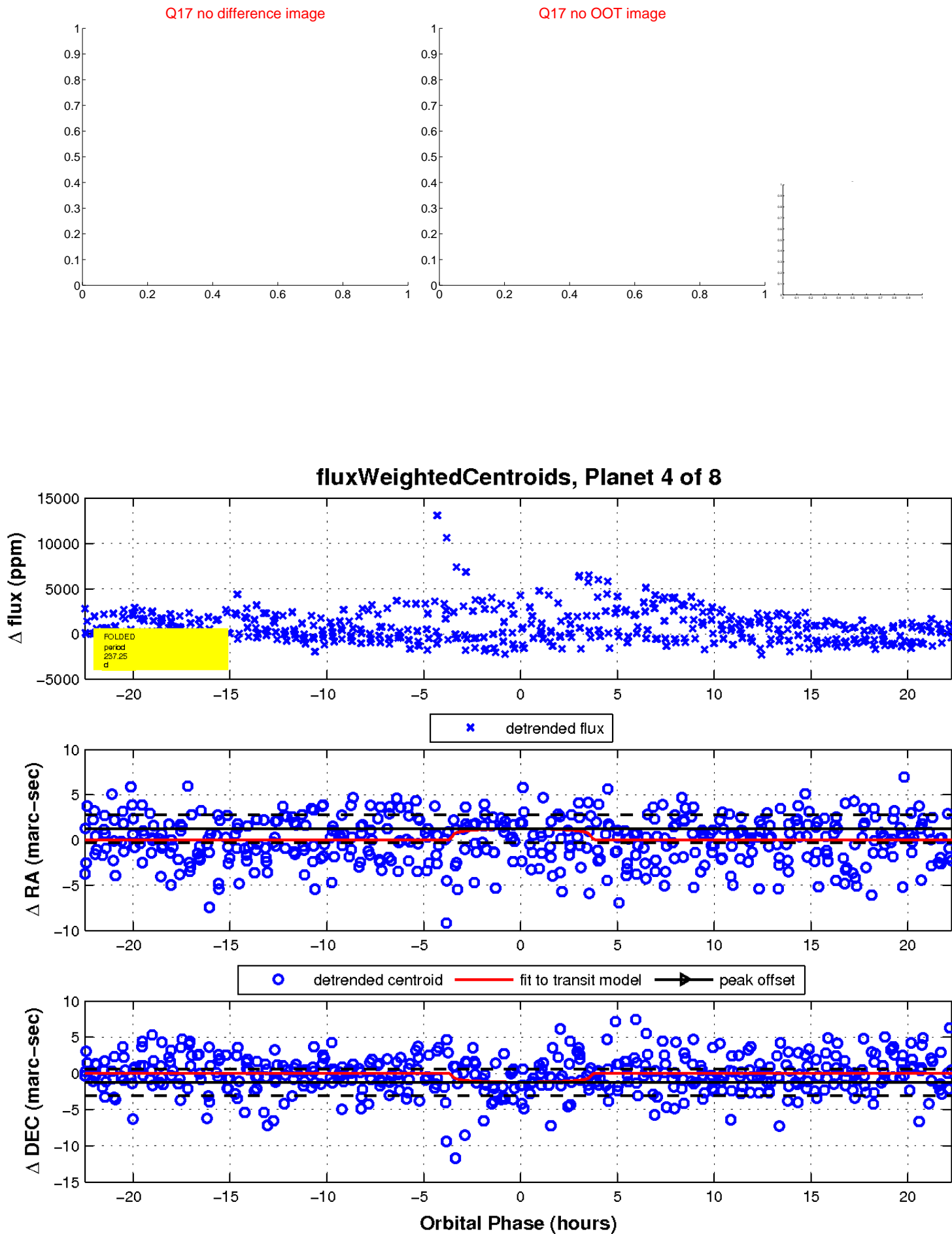
Q12 no OOT image



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

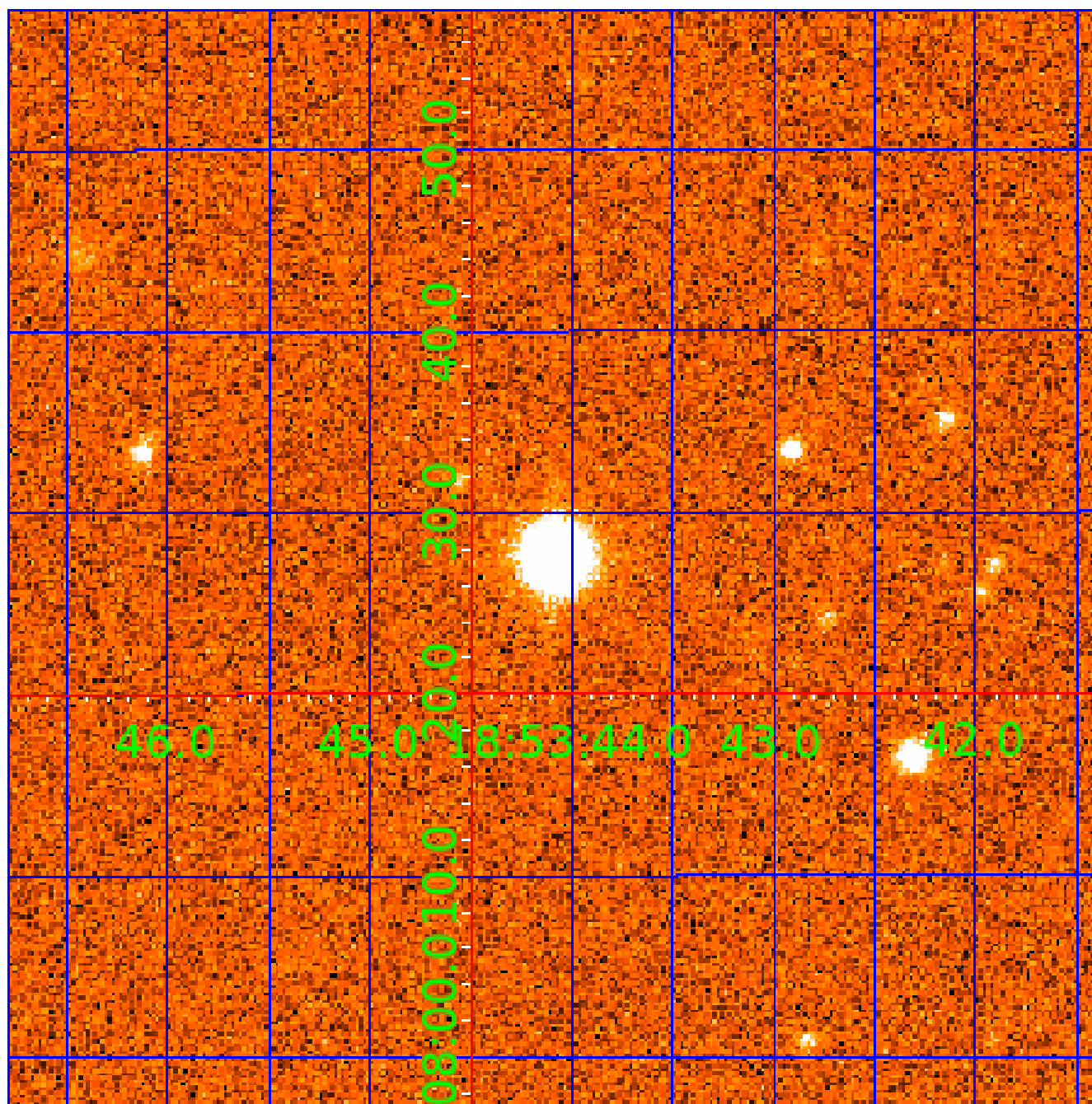


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006668646

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})
006668646-01	OBS	No	290.814329	281.810555	2544.7	4.221	14.4	10.1	0.39	3591	1.95	0.06
006668646-02	OBS	No	177.086828	158.808828	861.0	4.666	12.9	4.3	0.39	3591	1.19	0.11
006668646-03	OBS	No	568.897181	363.037278	2566.8	14.531	11.4	9.0	0.39	3591	1.96	0.02
006668646-04	OBS	No	237.253769	363.065689	1304.9	7.516	13.2	5.4	0.39	3591	1.43	0.07
006668646-05	OBS	No	323.633285	419.053478	843.4	0.695	10.0	2.8	0.39	3591	1.16	0.05
006668646-06	OBS	No	333.152236	408.937825	1342.8	10.695	9.3	5.6	0.39	3591	1.42	0.05
006668646-07	OBS	No	255.872777	365.802934	1332.6	9.145	11.7	5.9	0.39	3591	1.42	0.07
006668646-08	OBS	No	297.666832	410.833923	1651.5	7.844	9.8	7.2	0.39	3591	1.57	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006668646-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
006668646-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006668646-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006668646-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
006668646-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006668646-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

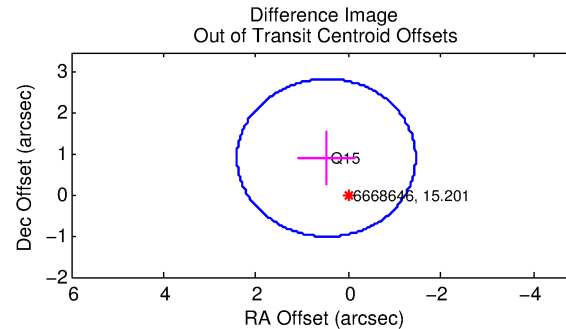
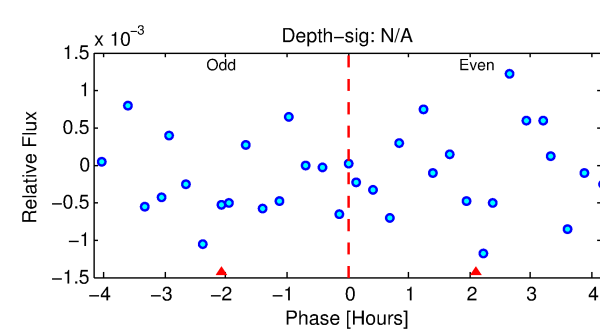
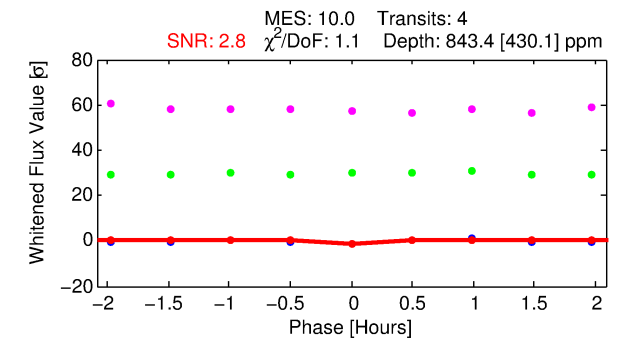
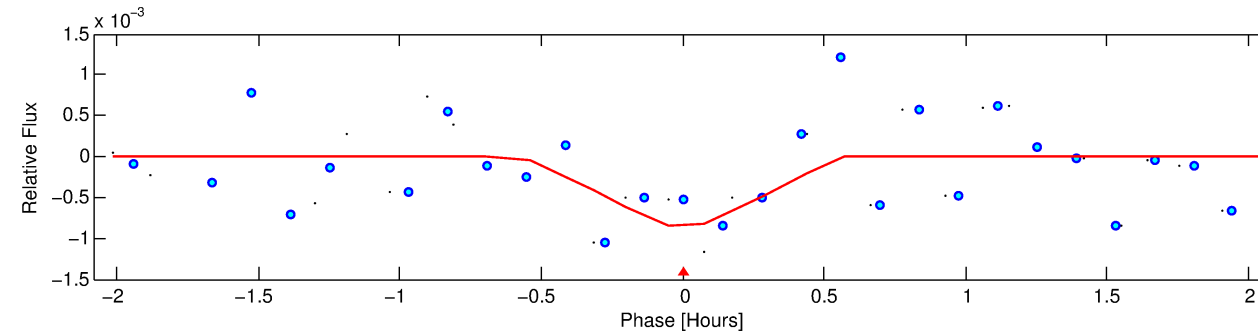
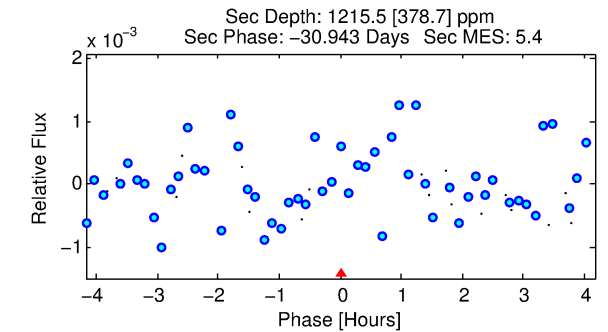
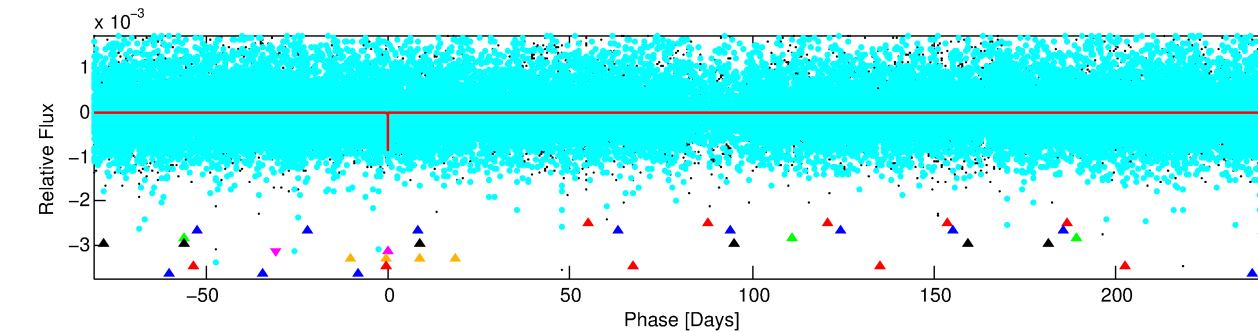
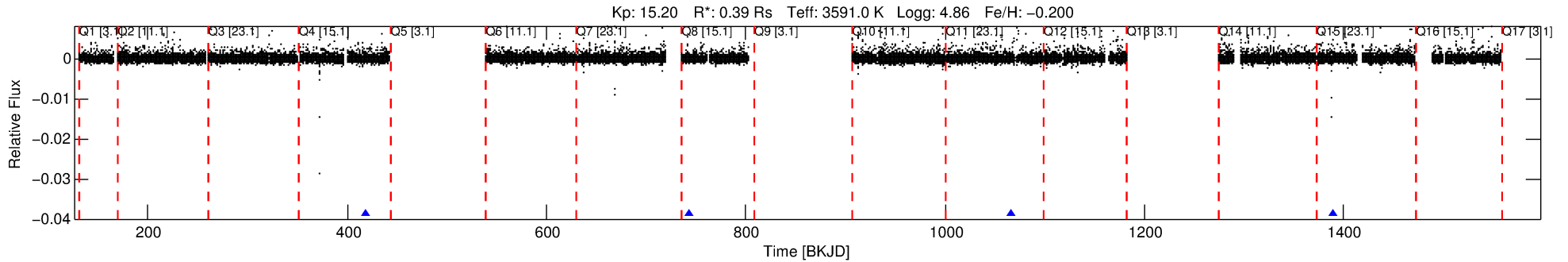
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006668646-05

No Significant Match Found

DV One-Page Summary

KIC: 6668646 Candidate: 5 of 8 Period: 323.633 d



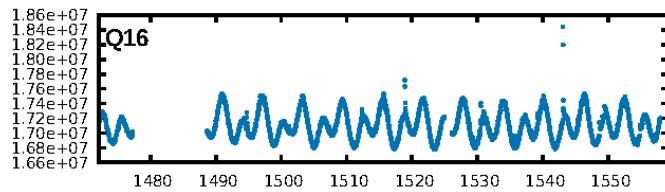
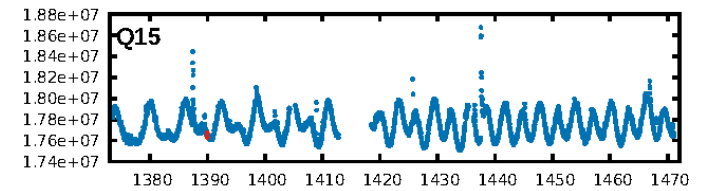
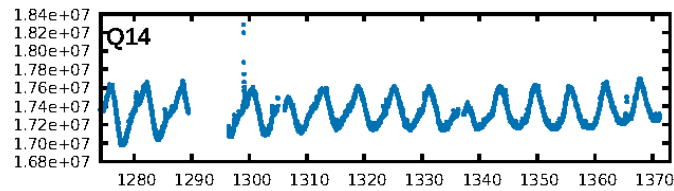
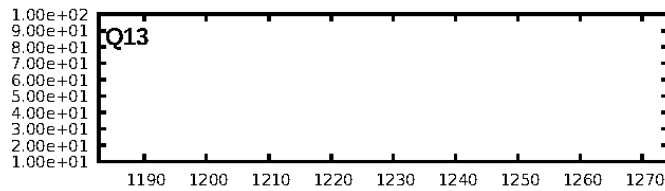
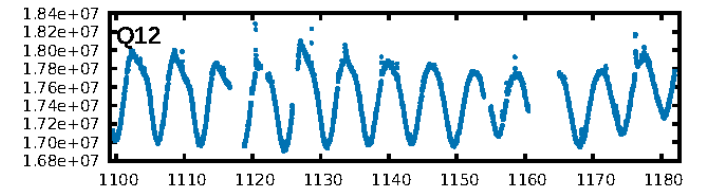
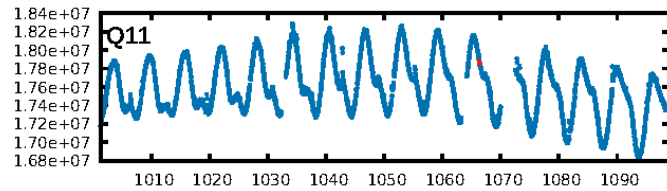
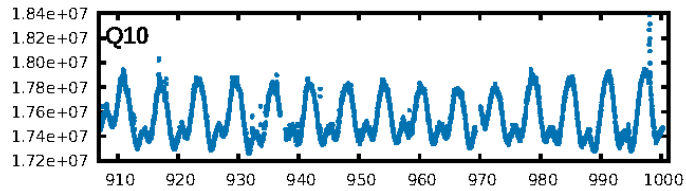
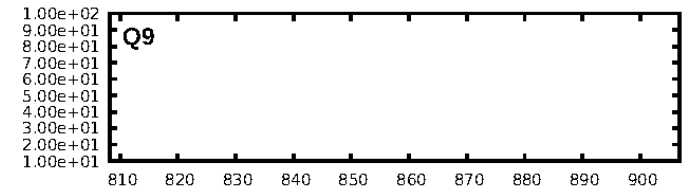
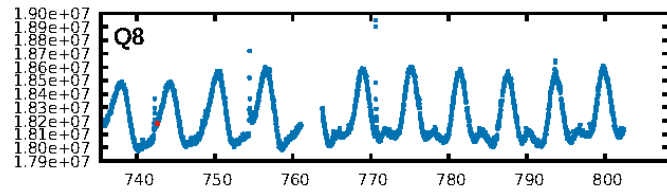
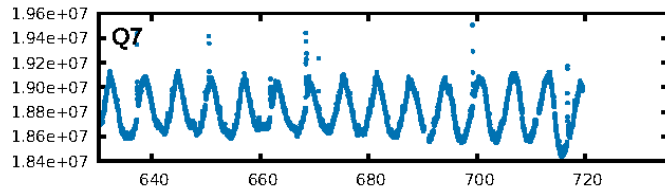
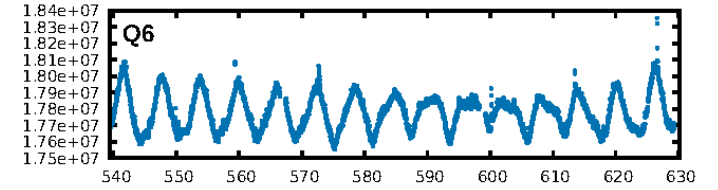
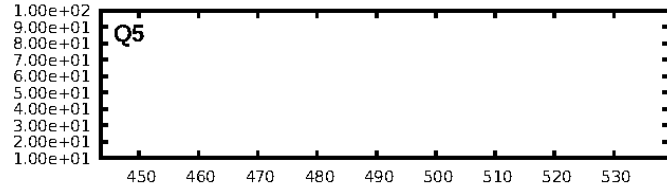
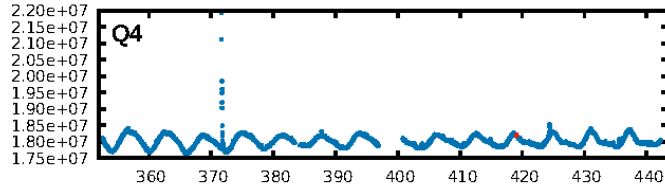
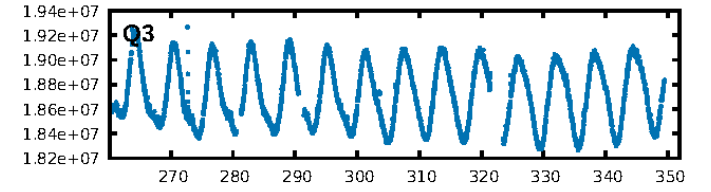
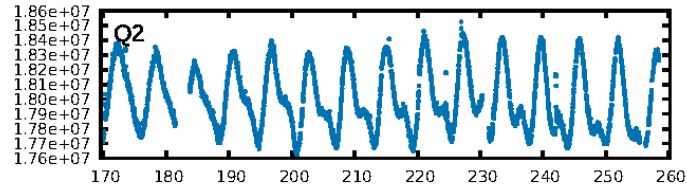
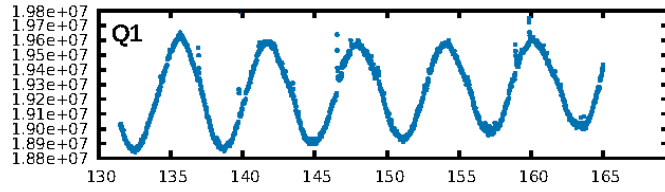
DV Fit Results:

Period = 323.63328 [0.00508] d
Epoch = 419.0535 [0.0101] BKJD
Rp/R* = 0.0272 [0.1290]
a/R* = 3606.81 [78736.17]
b = 0.17 [126.60]
Seff = 0.05 [0.01]
Teq = 120 [4] K
Rp = 1.16 [5.49] Re
a = 0.6820 [0.0576] AU
Ag = 232490.76 [2209130.41] [0.11σ]
Teffp = 4067 [9661] K [0.41σ]

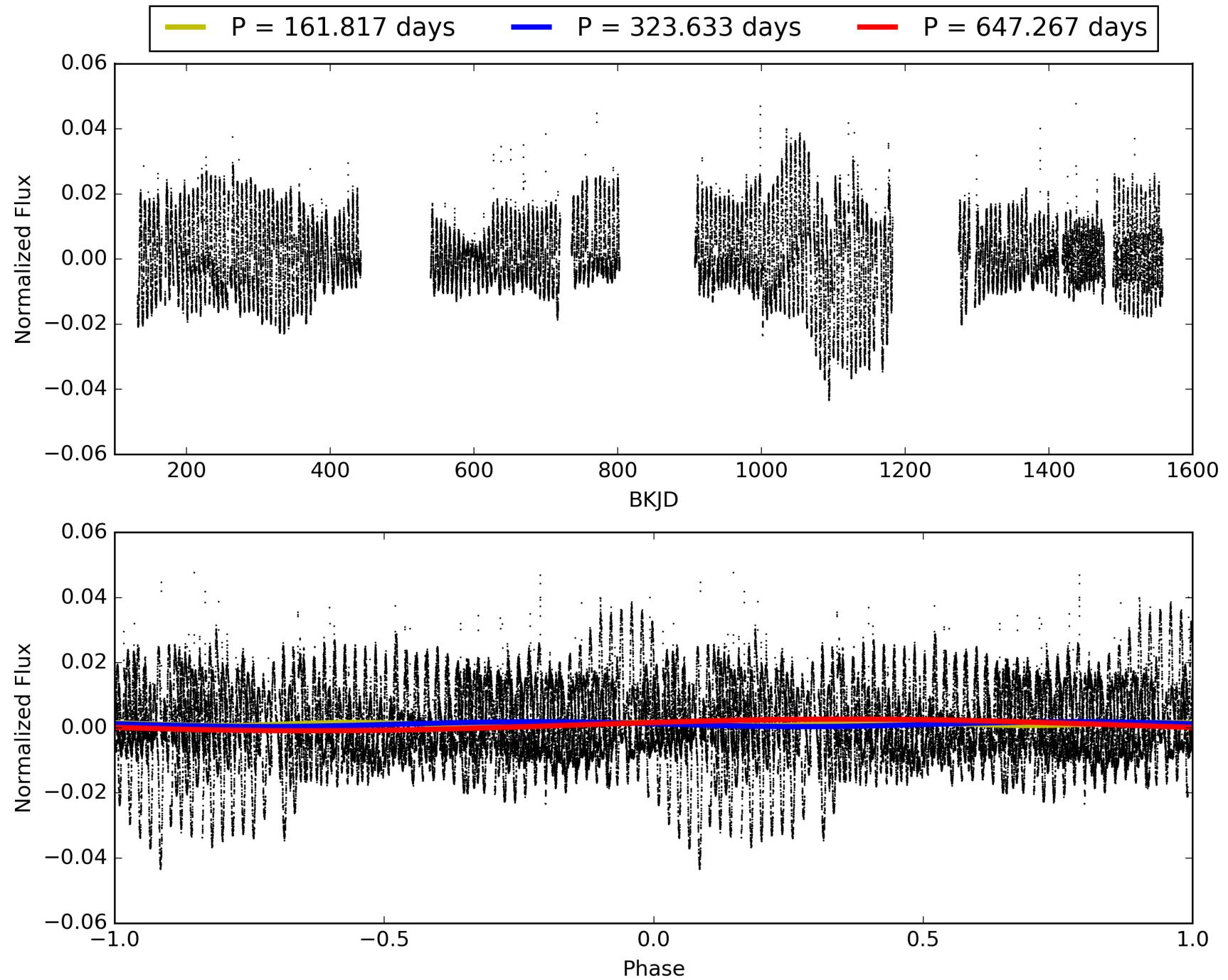
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [79.14σ]
LongPeriod-sig: 100.0% [21.32σ]
ModelChiSquare2-sig: 54.1%
ModelChiSquareGof-sig: 67.7%
Bootstrap-pfa: 1.49e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -11.68
Centroid-sig: 73.4%
Centroid-so: 2.183 arcsec [0.55σ]
OotOffset-rm: 1.037 arcsec [1.61σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-rm: 1.361 arcsec [2.09σ]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 006668646-05, PDC Light Curves

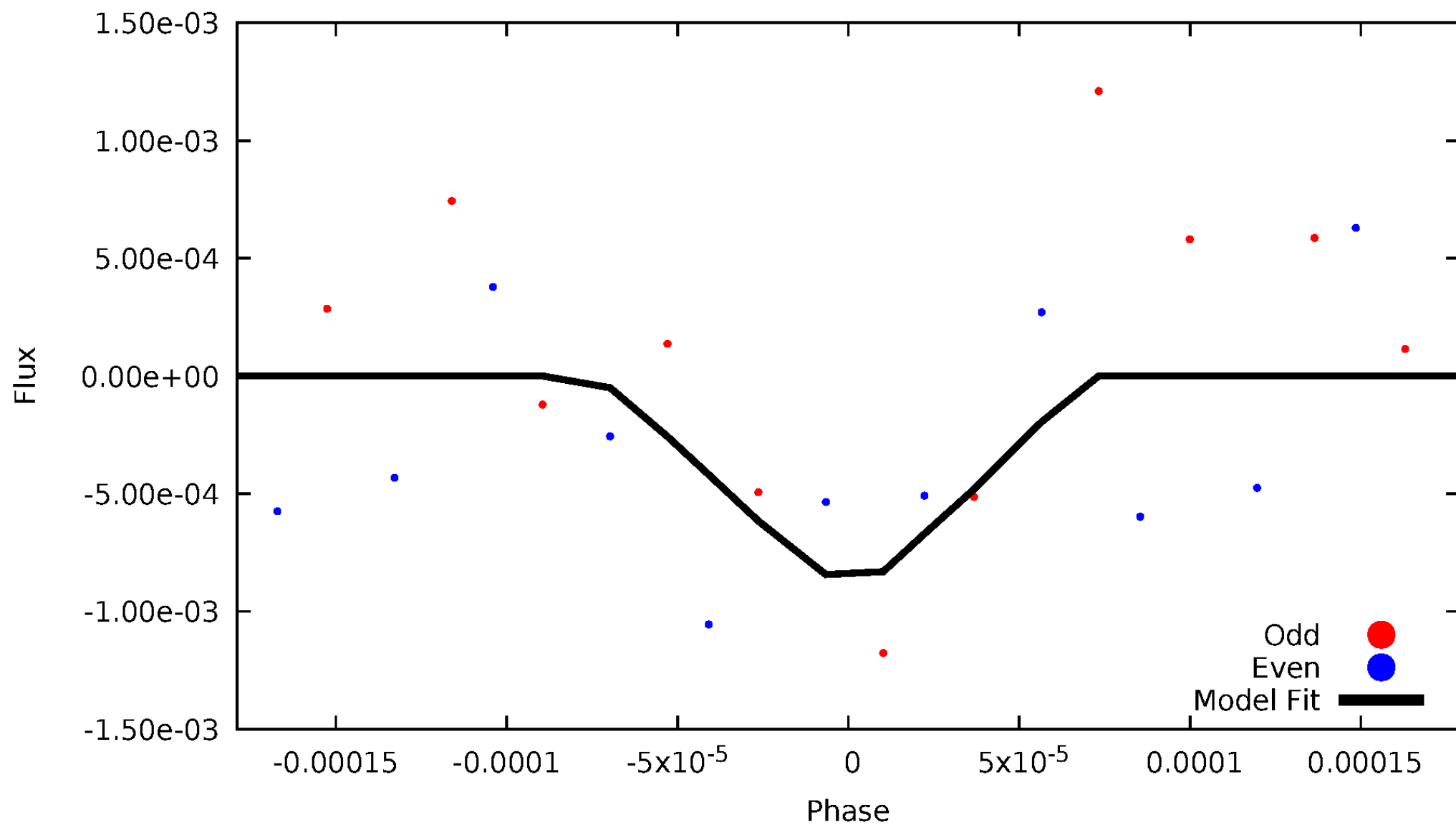


TCE 006668646-05



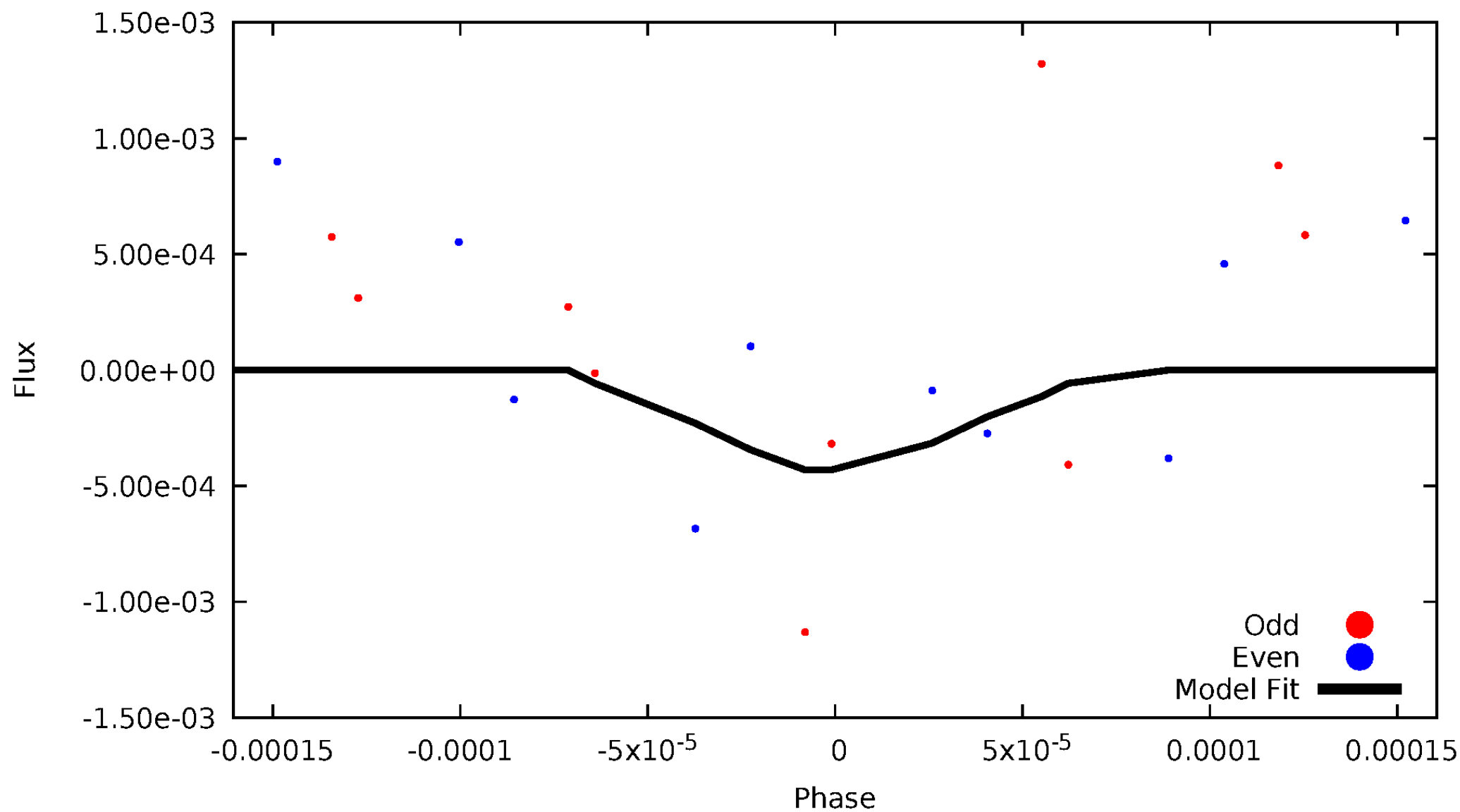
DV Odd/Even

TCE 006668646-05



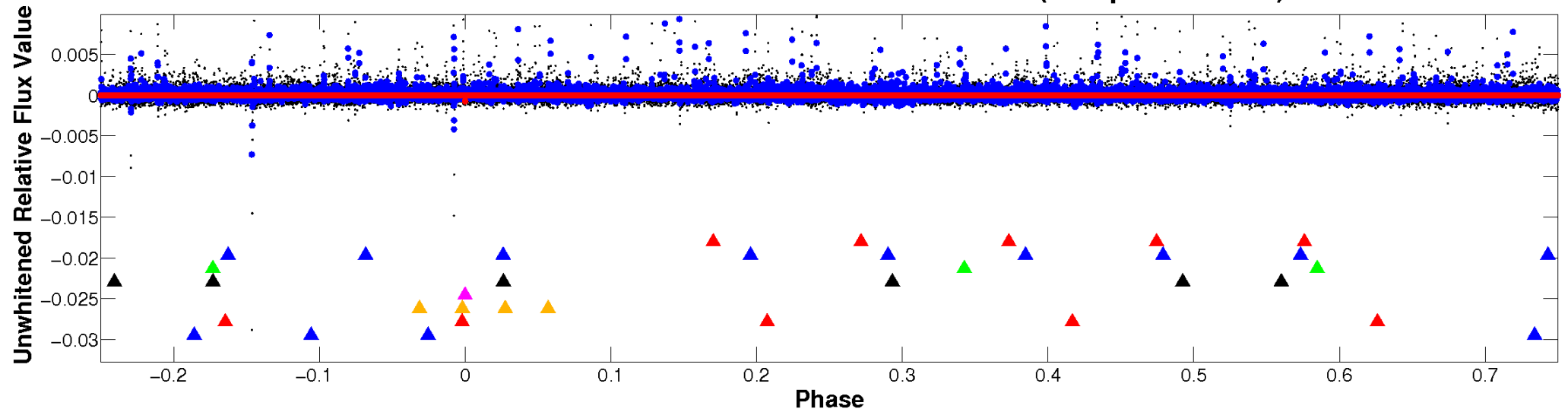
ALT Odd/Even

TCE 006668646-05

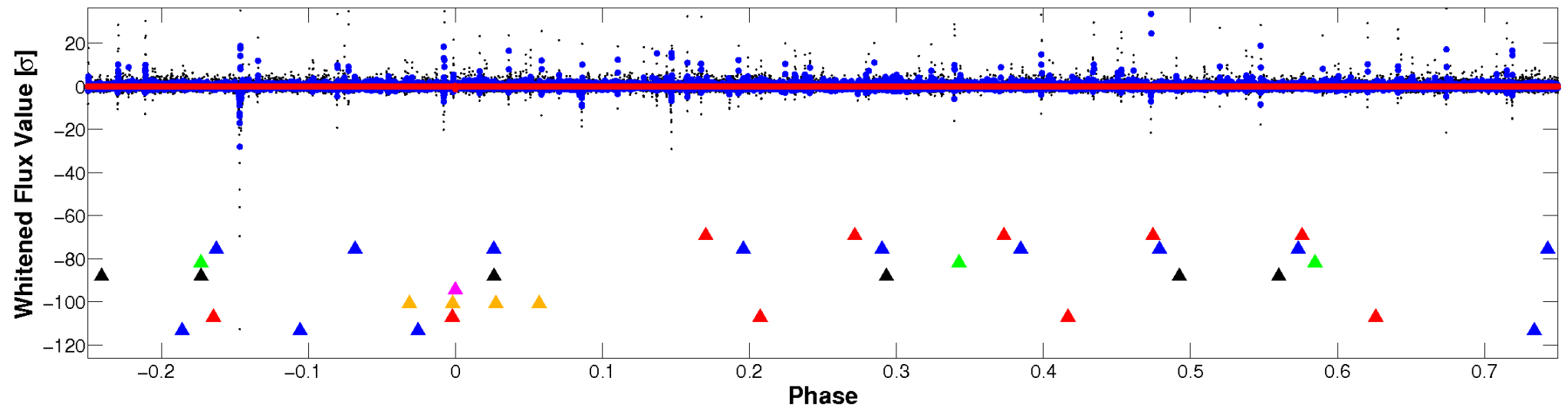


Non-Whitened Vs. Whitened Light Curve

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

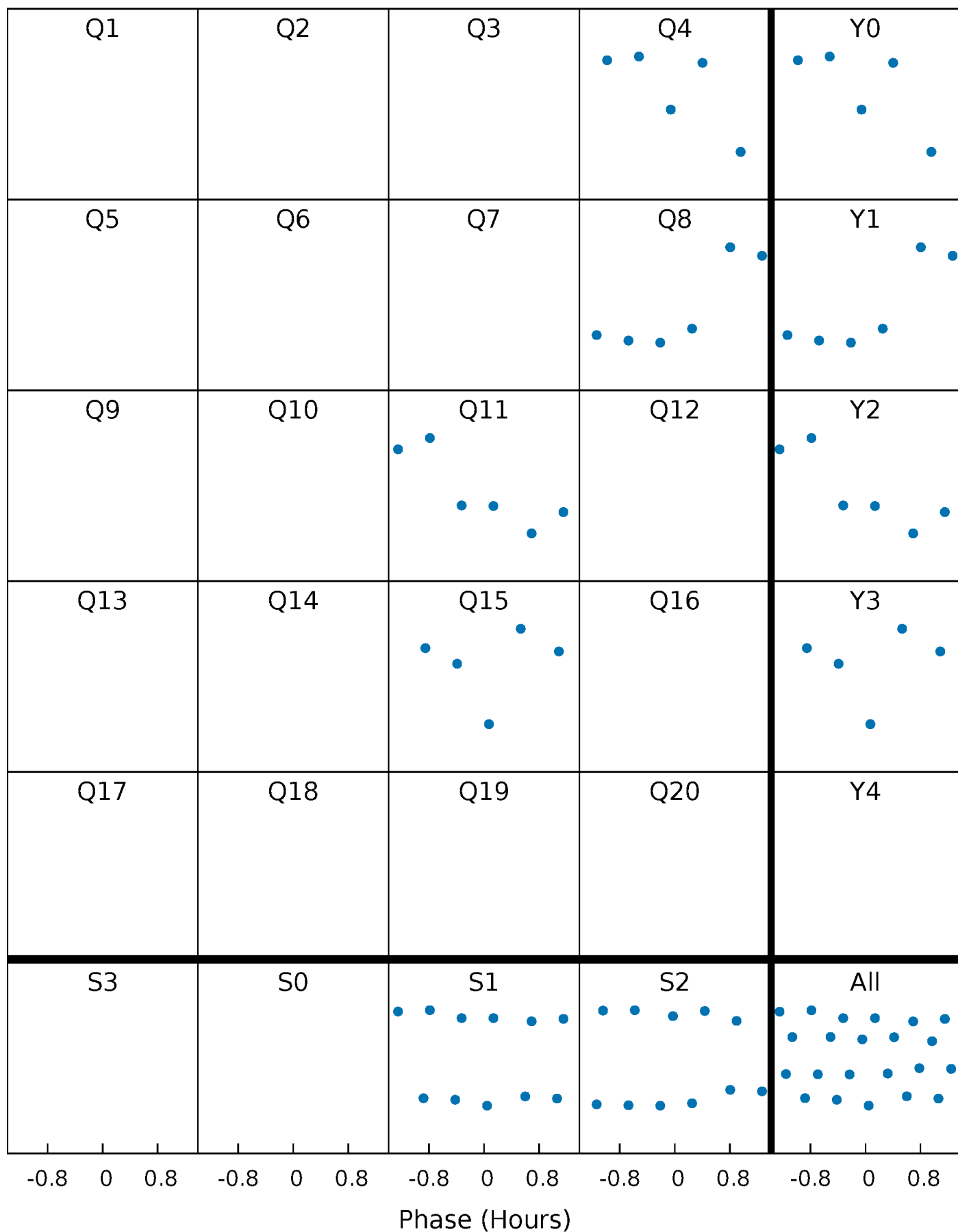


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



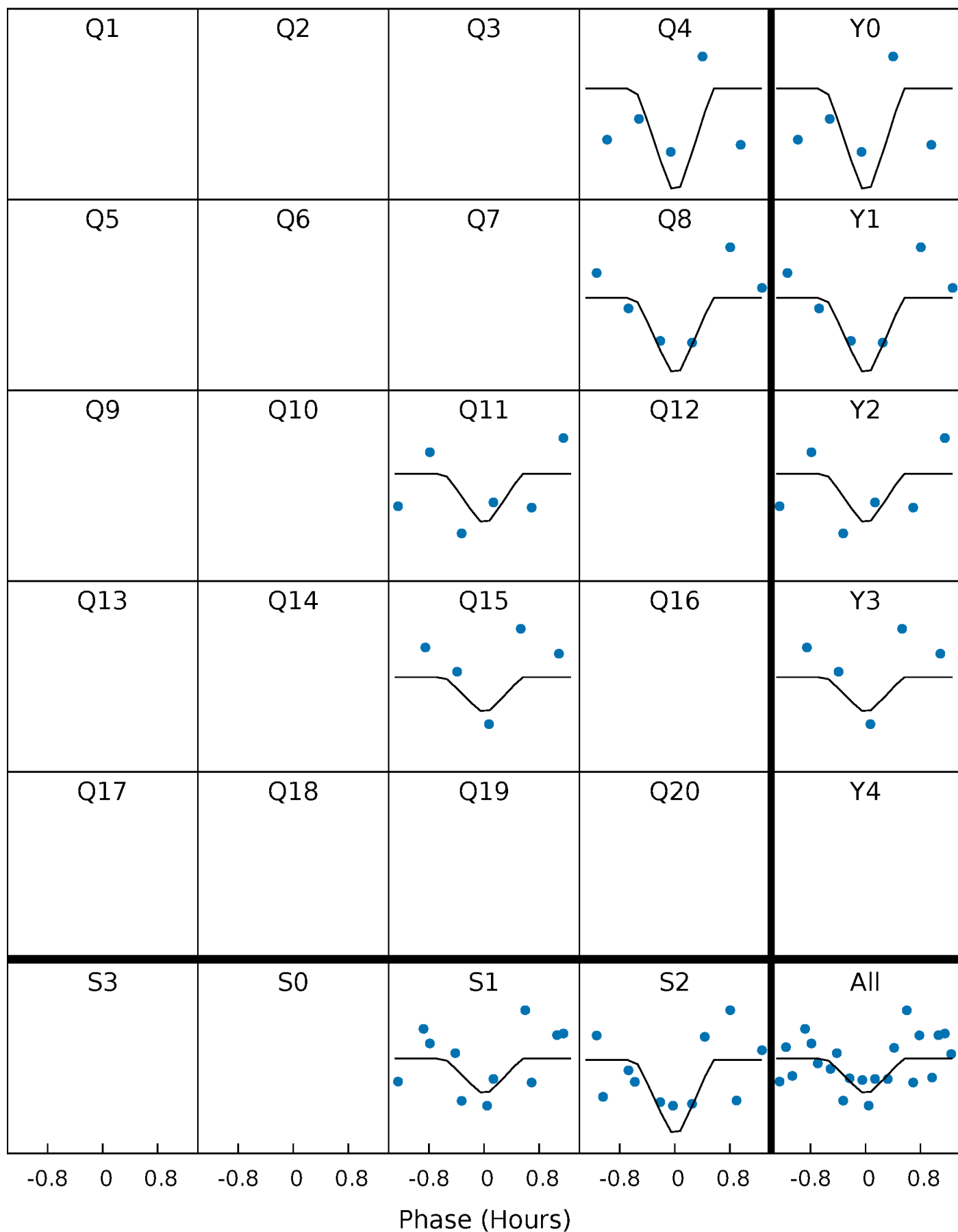
PDC Quarter-Phased Transit Curves

TCE 006668646-05 $P=323.633285$ Days $T_0=419.053477$ (BKJD)



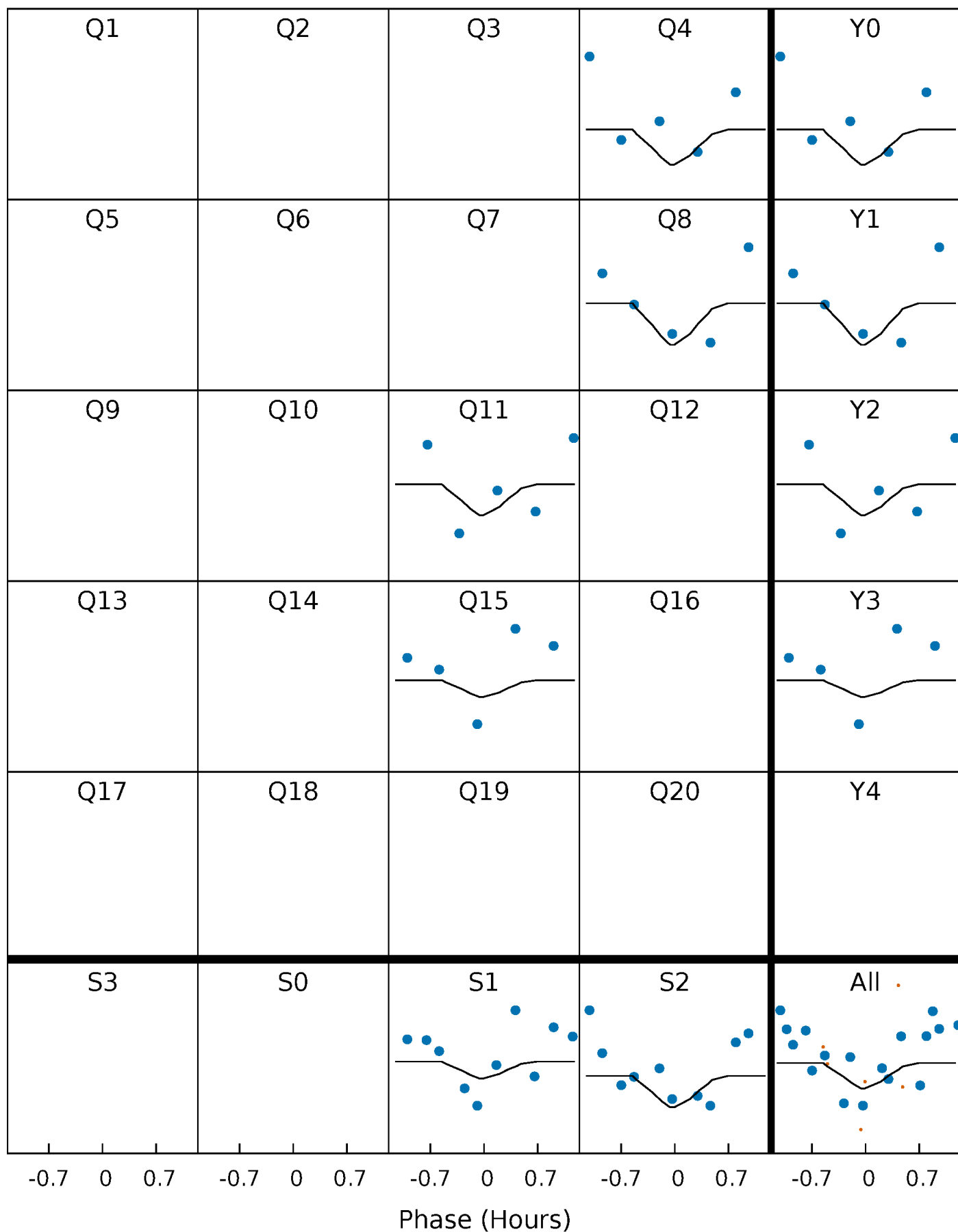
DV Quarter-Phased Transit Curves

TCE 006668646-05 $P=323.633285$ Days $T_0=419.053477$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

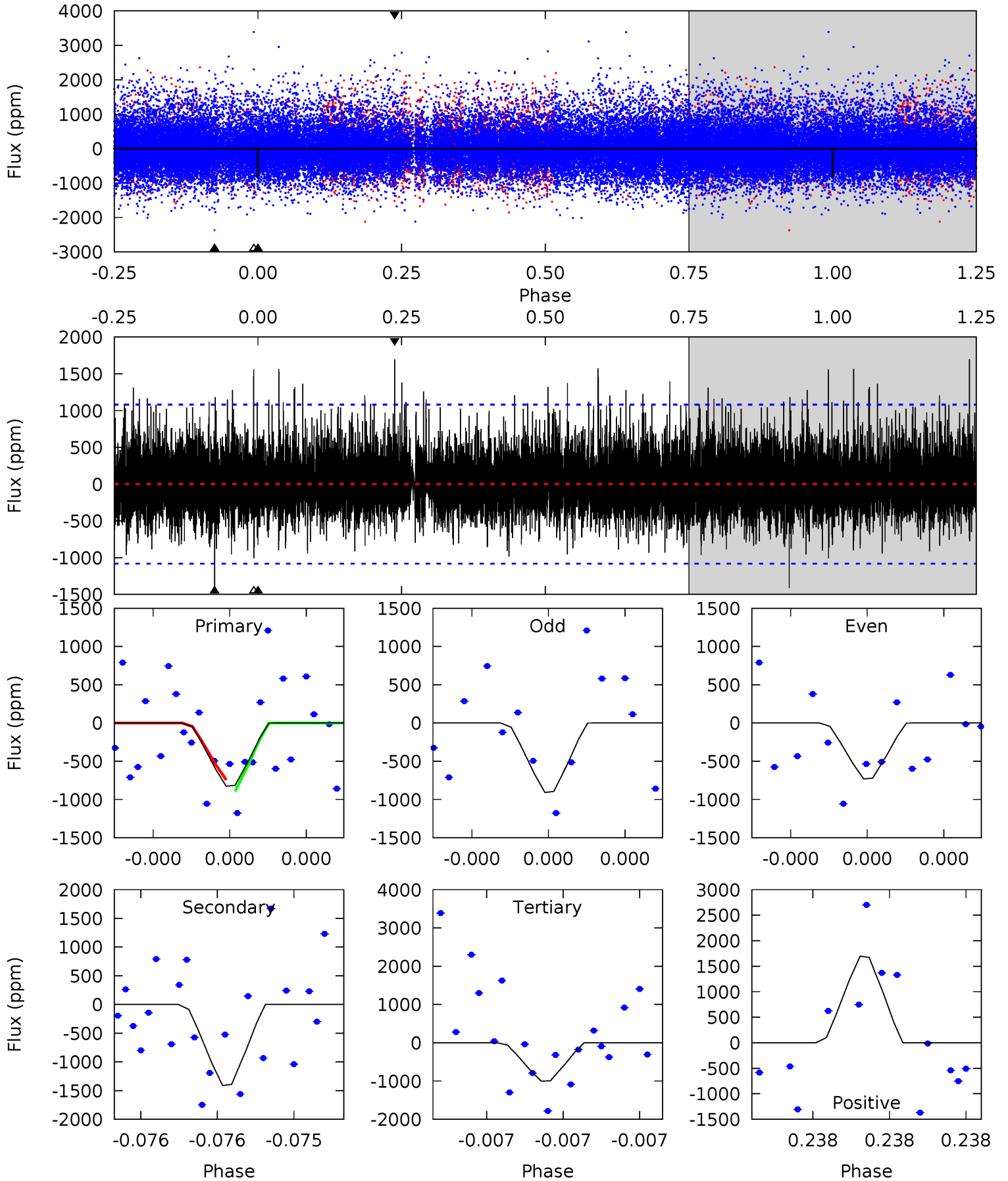
TCE 006668646-05 P=323.640346 Days $T_0=419.038188$ (BKJD)



DV Model-Shift Uniqueness Test

006668646-05, P = 323.633285 Days, E = 95.420192 Days

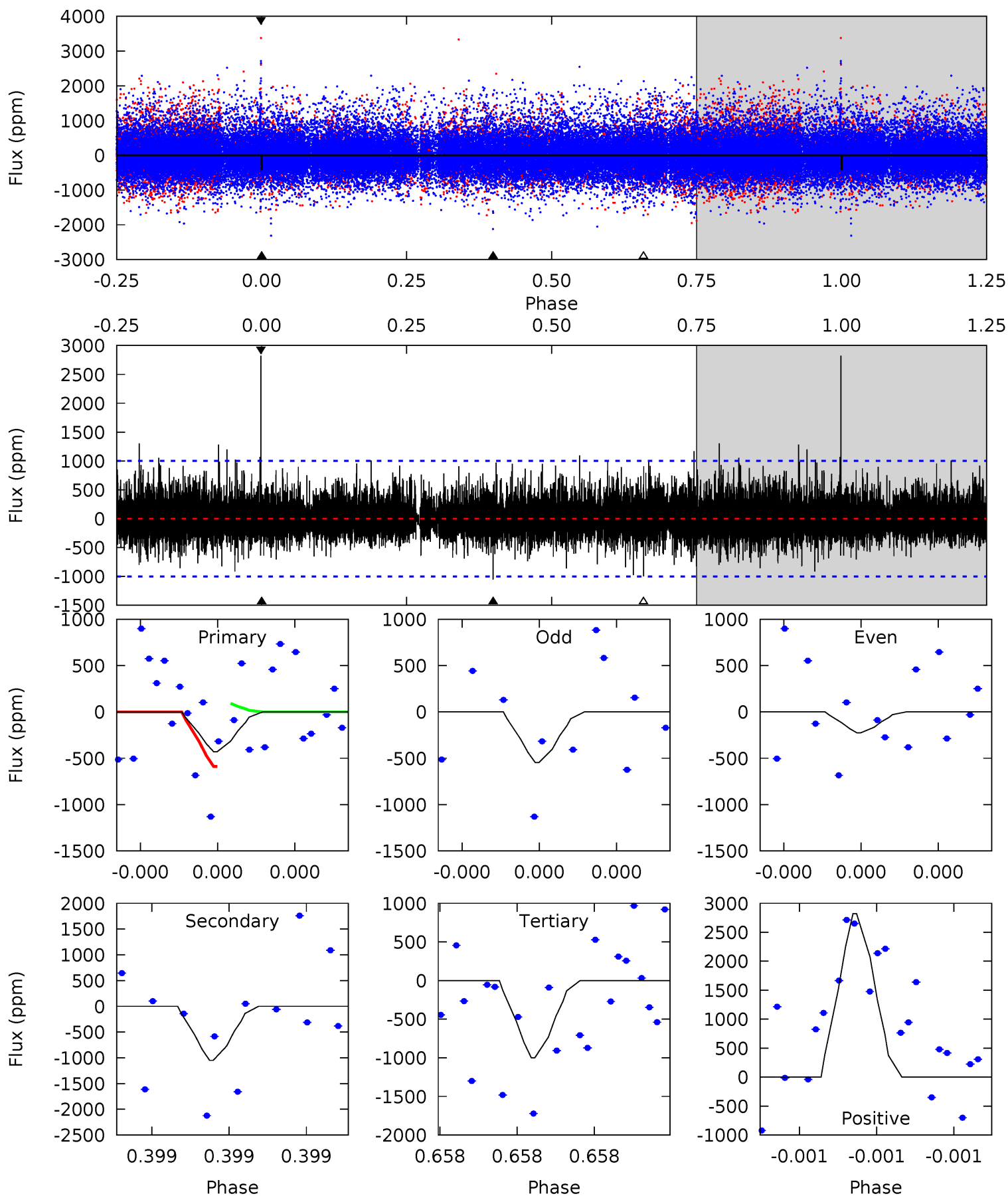
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.42	7.55	5.38	9.08	5.79	3.80	1.51	-0.96	-4.66	2.17	-1.53	0.43	0.92	0.55	0.40



Alt Model-Shift Uniqueness Test

006668646-05, P = 323.640346 Days, E = 95.397842 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.48	6.07	5.77	16.3	5.78	3.79	1.37	-3.29	-13.8	0.30	-10.2	0.91	0.94	0.73	1.45



Stellar Parameters For KIC 006668646

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3591^{+65}_{-72}	$4.862^{+0.050}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.390^{+0.040}_{-0.044}$	$0.405^{+0.042}_{-0.052}$	$9.604^{+2.468}_{-1.640}$
	+2%/-2%	+1%/-1%	+50%/-50%	+10%/-11%	+10%/-13%	+26%/-17%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006668646-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1412 ± 187	$4.12^{+4.56}_{-2.95}$	167^{+5}_{-5}	2716^{+1228}_{-451}	$21534^{+244592}_{-16898}$
Alt.	-1050 ± 173	$4.20^{+4.32}_{-3.00}$	167^{+5}_{-4}	2593^{+1180}_{-401}	$14905^{+182148}_{-11375}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

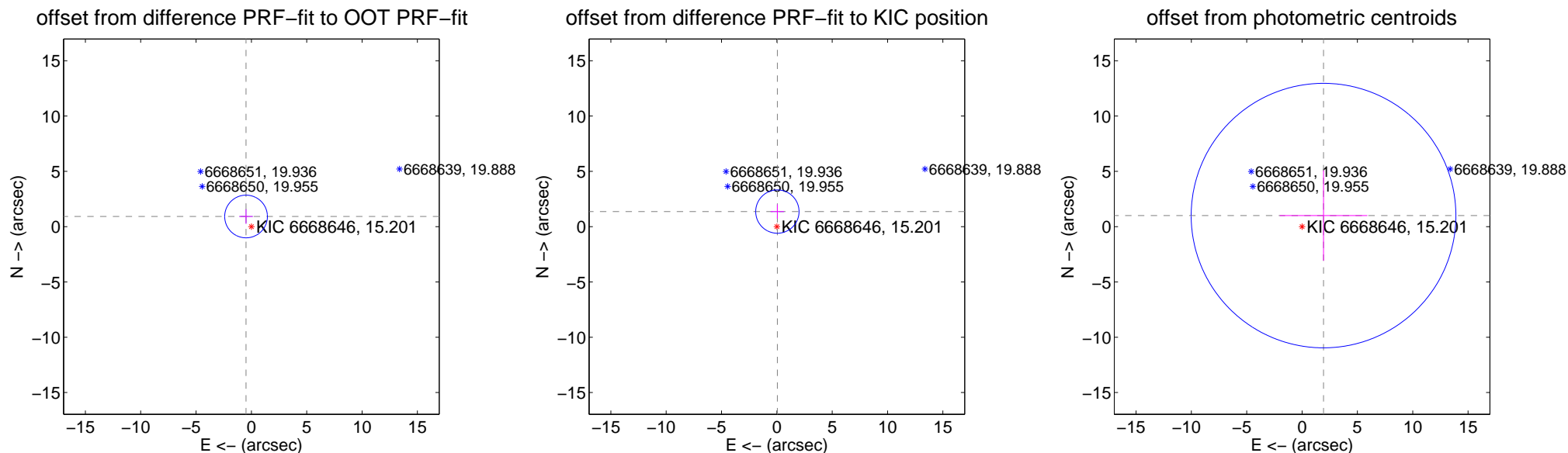
DV Centroid Data

Supplemental centroid analysis for 006668646-05. Kepler magnitude: 15.20. Transit SNR 2.79

There are 1 quarters with good PRF difference image offsets

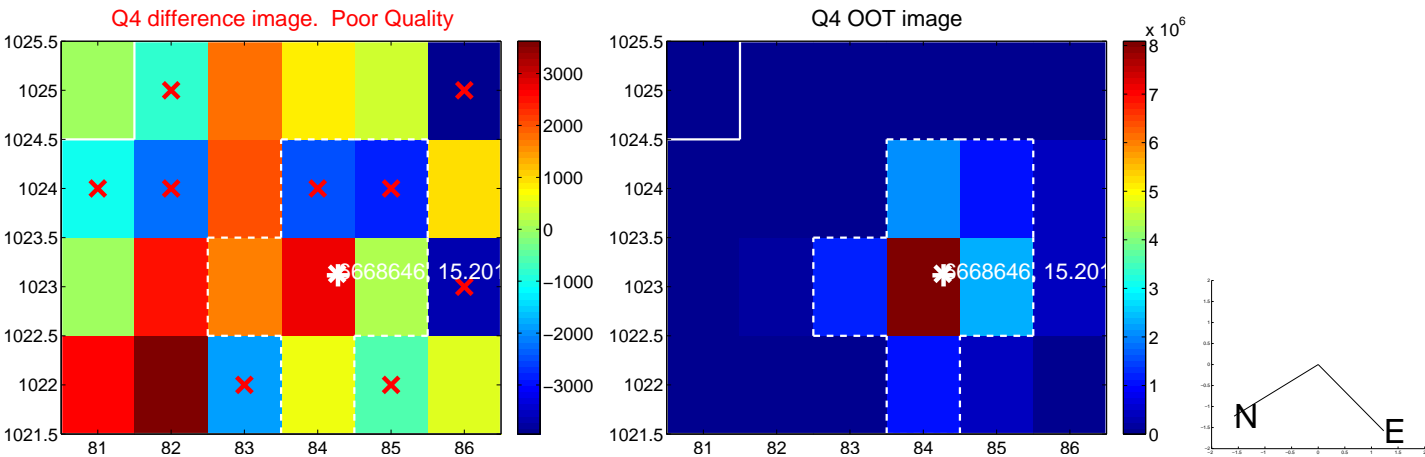
The direct PRF centroid is offset from the target star catalog position by about 0.69 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.037 ± 0.643	1.61	0.483 ± 0.609	0.917 ± 0.653
PRF-fit source offset from KIC position	1.361 ± 0.653	2.09	-0.046 ± 0.609	1.361 ± 0.653
photometric centroid source offset	2.18 ± 3.99	0.55	-1.94 ± 3.96	1.00 ± 4.09



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 ×: 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.

Q9 no difference image



Q9 no OOT image



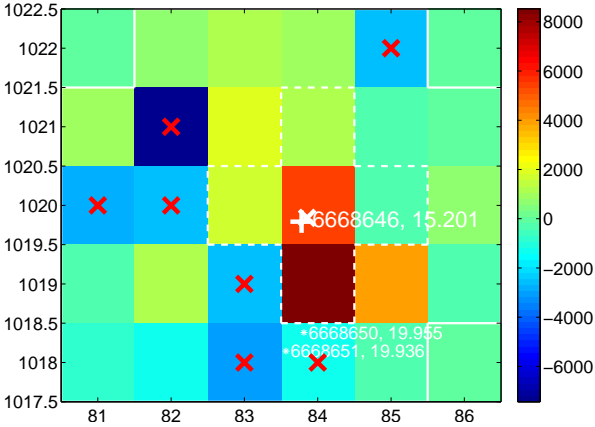
Q10 no difference image



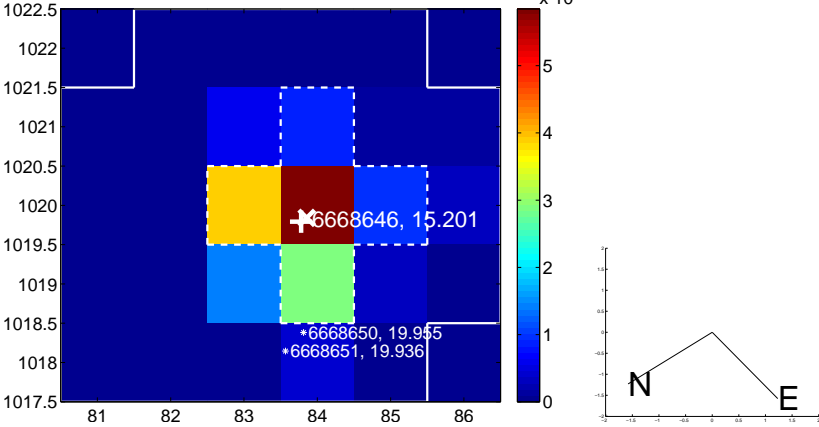
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

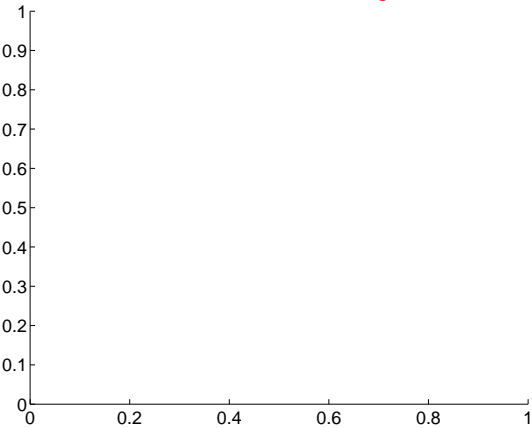
Q13 no difference image



Q13 no OOT image



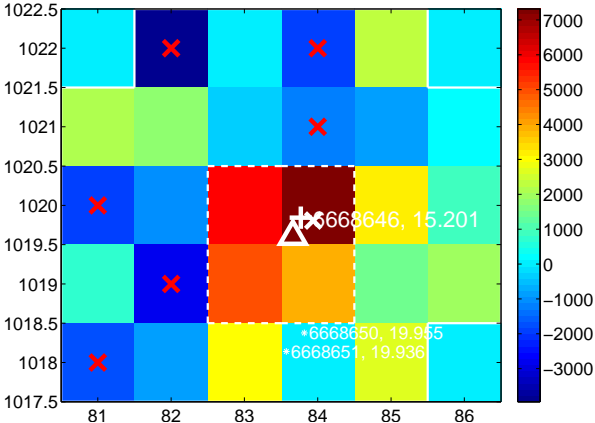
Q14 no difference image



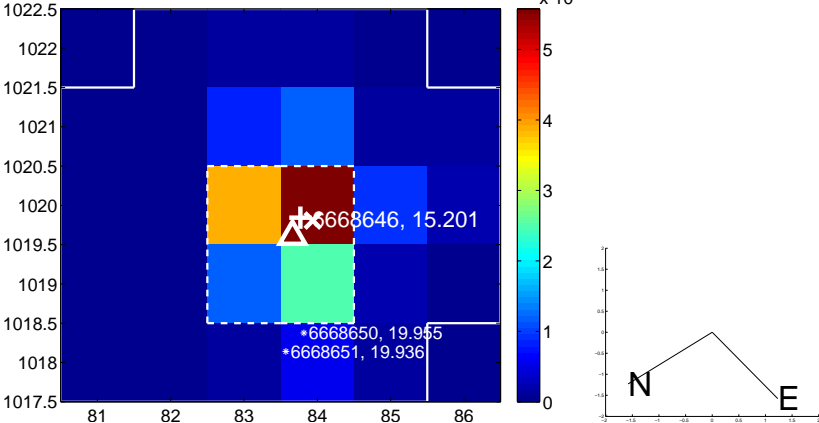
Q14 no OOT image



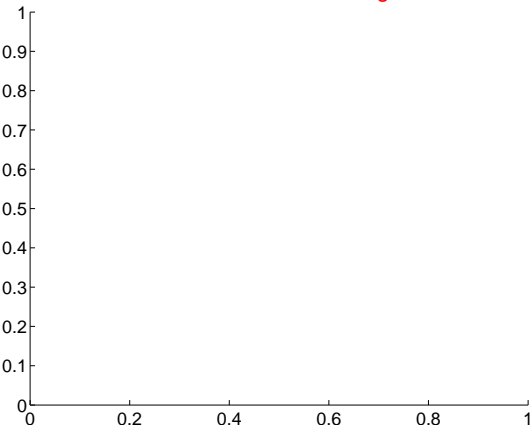
Q15 difference image



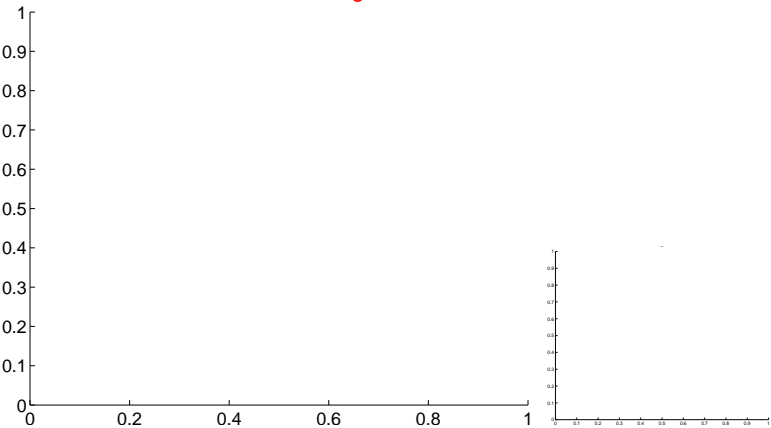
Q15 OOT image



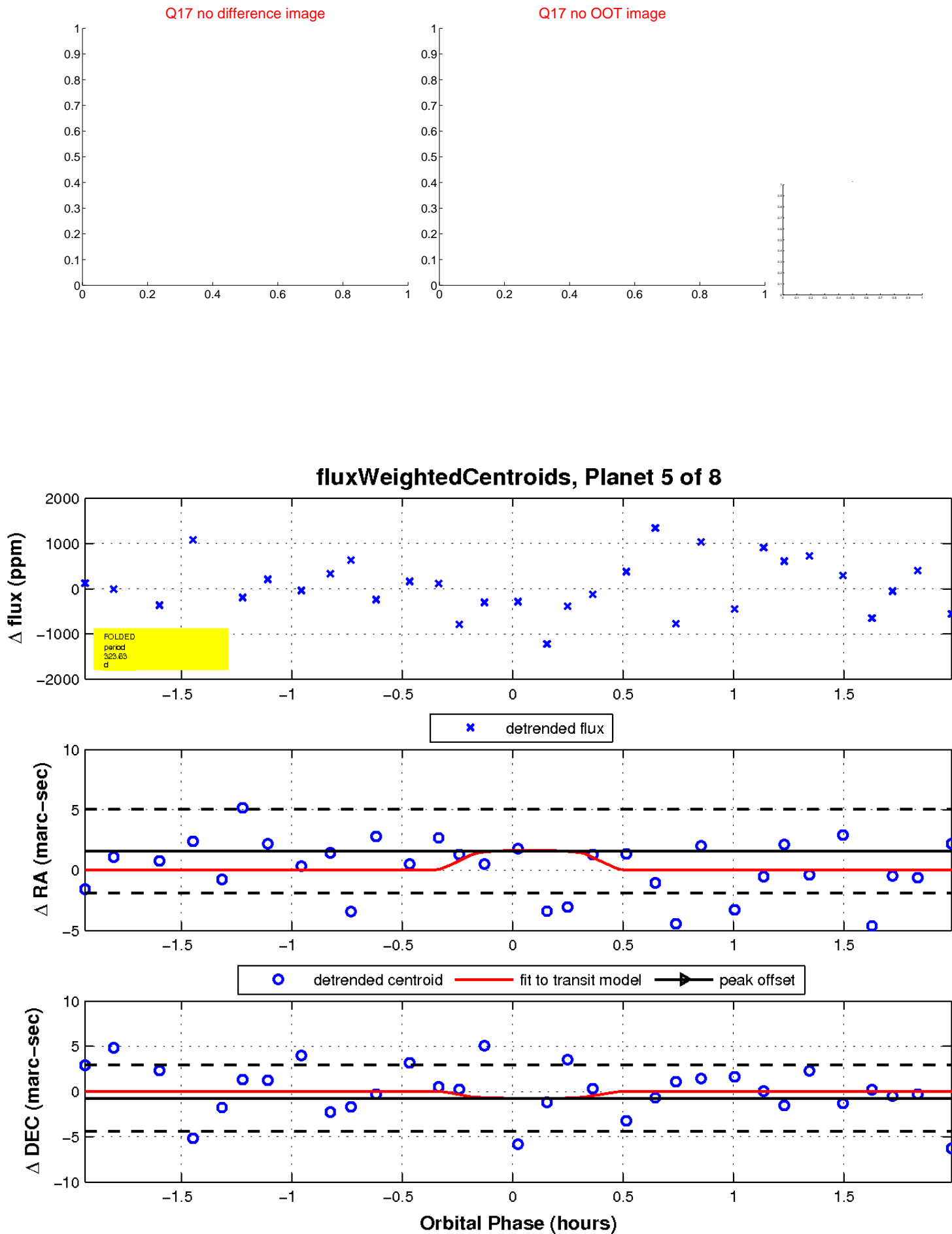
Q16 no difference image



Q16 no OOT image

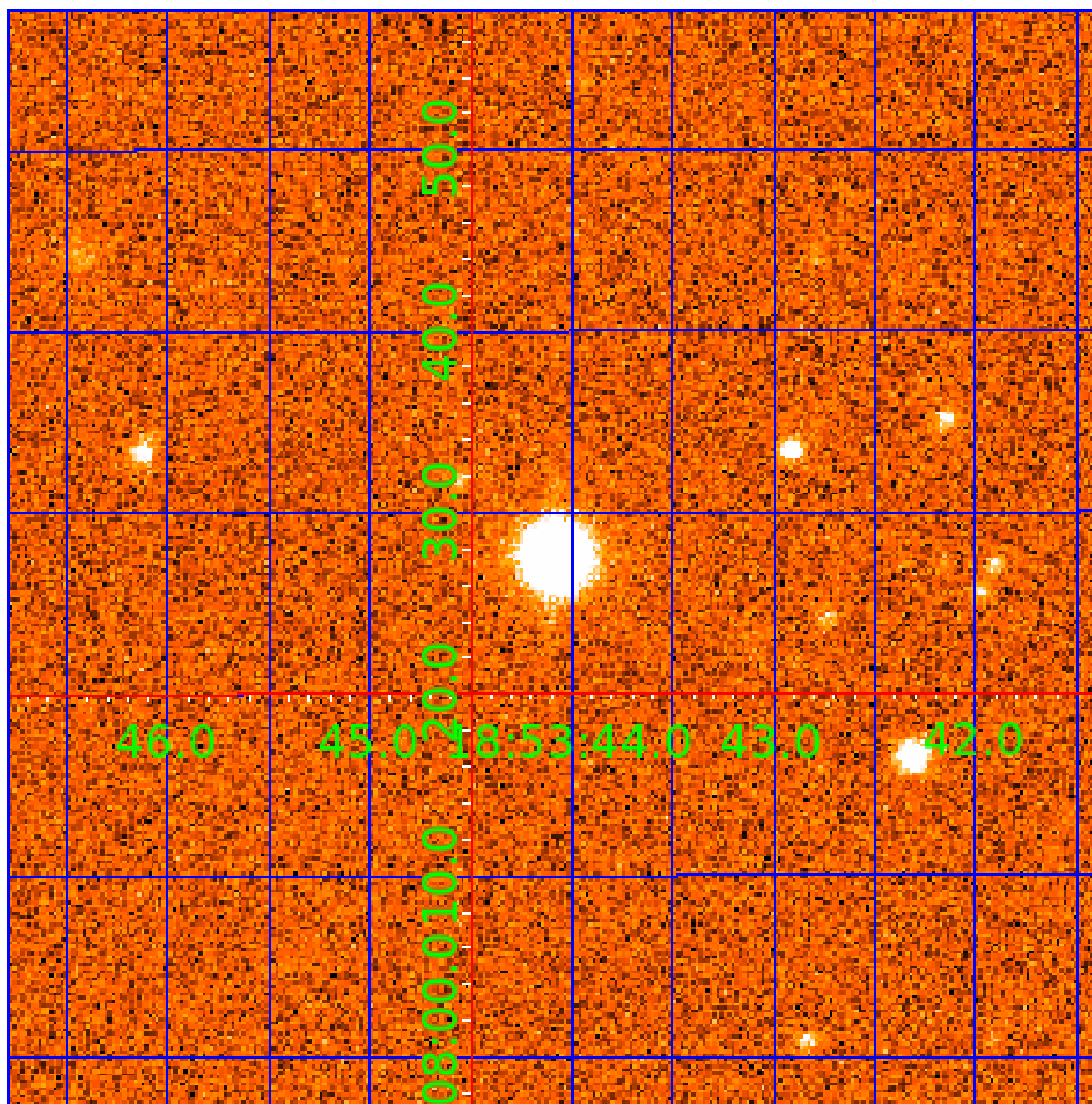


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006668646

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})
006668646-01	OBS	No	290.814329	281.810555	2544.7	4.221	14.4	10.1	0.39	3591	1.95	0.06
006668646-02	OBS	No	177.086828	158.808828	861.0	4.666	12.9	4.3	0.39	3591	1.19	0.11
006668646-03	OBS	No	568.897181	363.037278	2566.8	14.531	11.4	9.0	0.39	3591	1.96	0.02
006668646-04	OBS	No	237.253769	363.065689	1304.9	7.516	13.2	5.4	0.39	3591	1.43	0.07
006668646-05	OBS	No	323.633285	419.053478	843.4	0.695	10.0	2.8	0.39	3591	1.16	0.05
006668646-06	OBS	No	333.152236	408.937825	1342.8	10.695	9.3	5.6	0.39	3591	1.42	0.05
006668646-07	OBS	No	255.872777	365.802934	1332.6	9.145	11.7	5.9	0.39	3591	1.42	0.07
006668646-08	OBS	No	297.666832	410.833923	1651.5	7.844	9.8	7.2	0.39	3591	1.57	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006668646-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
006668646-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006668646-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006668646-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
006668646-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006668646-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

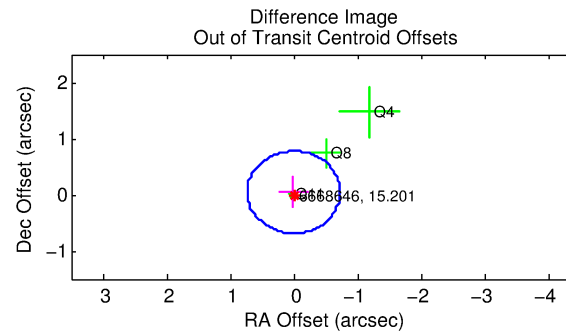
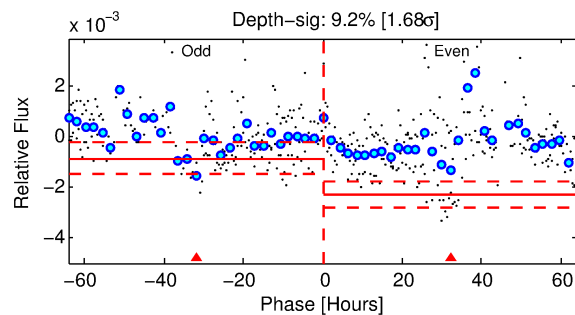
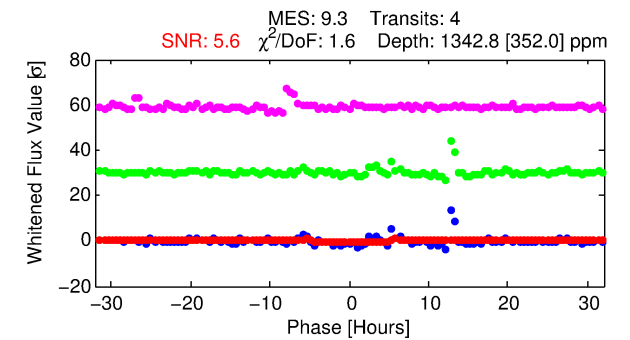
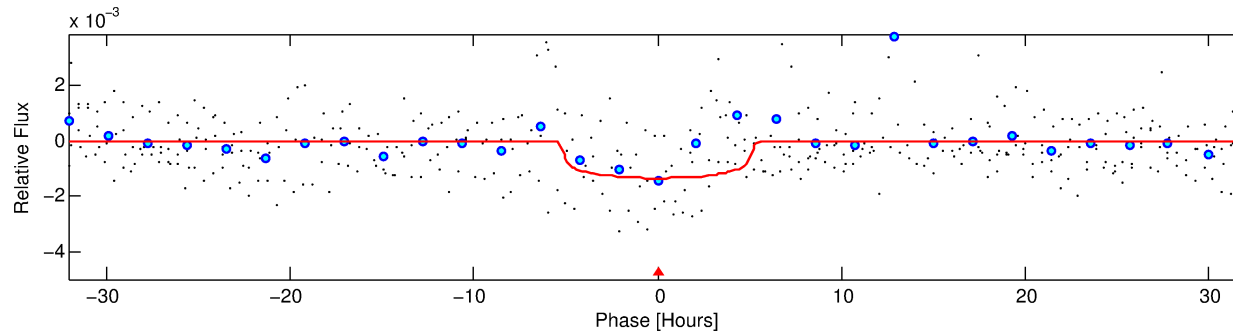
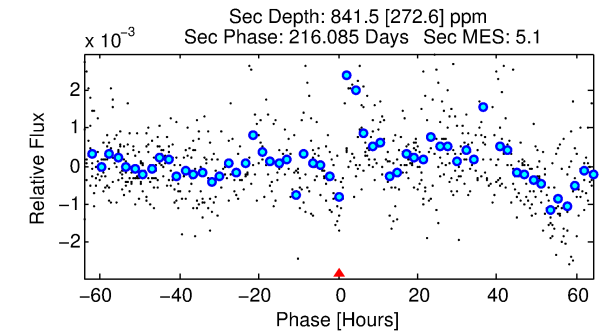
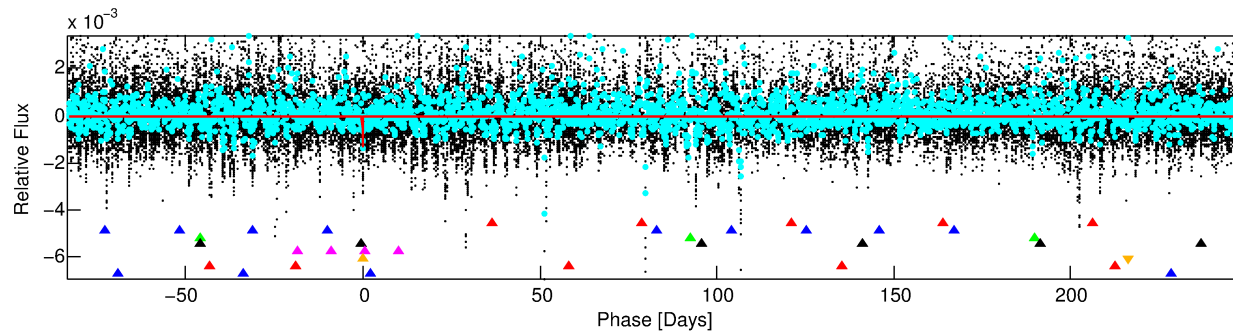
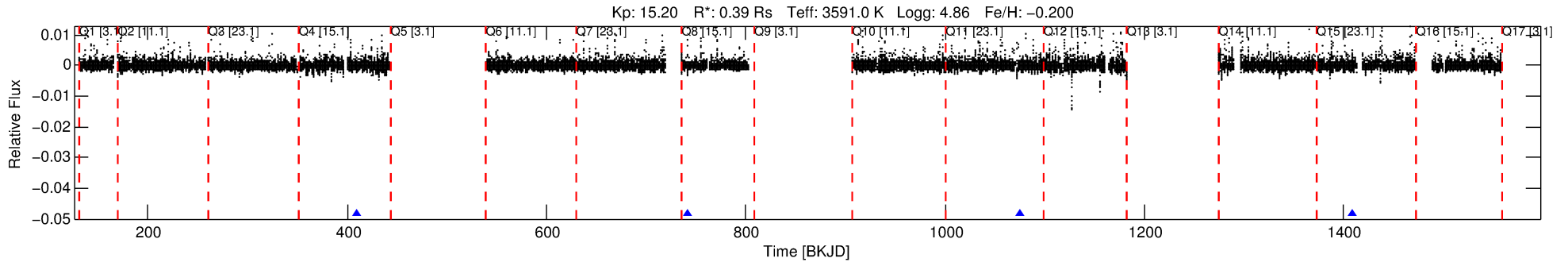
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006668646-06

No Significant Match Found

DV One-Page Summary

KIC: 6668646 Candidate: 6 of 8 Period: 333.152 d



DV Fit Results:

Period = 333.15224 [0.00815] d
Epoch = 408.9378 [0.0176] BKJD
Rp/R* = 0.0333 [0.0309]
a/R* = 245.88 [1014.79]
b = 0.01 [415.00]
Seff = 0.05 [0.01]
Teq = 119 [4] K
Rp = 1.42 [1.33] Re
a = 0.6953 [0.0587] AU
Ag = 111557.46 [210850.42] [0.53σ]
Teffp = 3353 [1583] K [2.04σ]

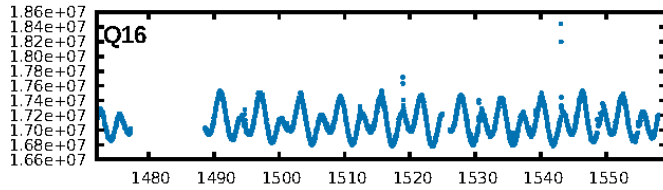
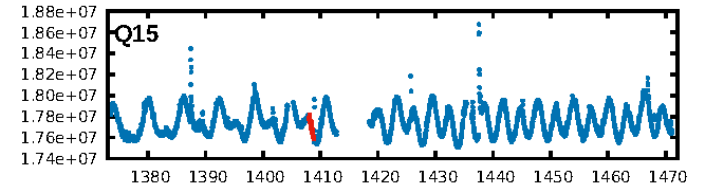
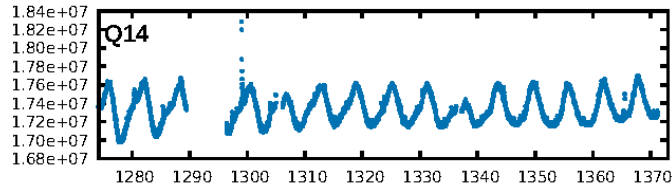
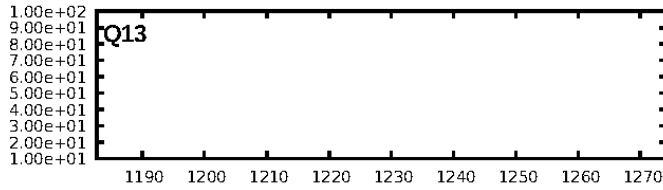
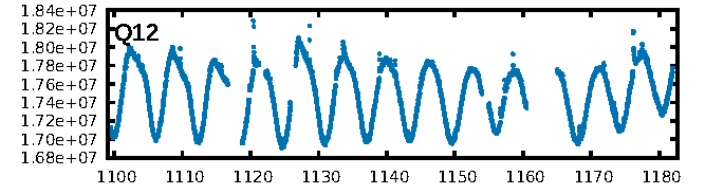
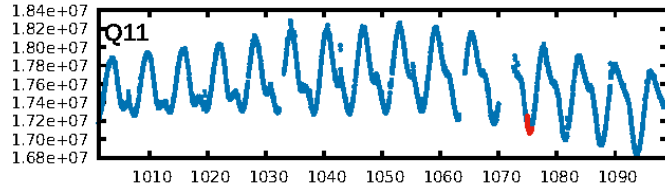
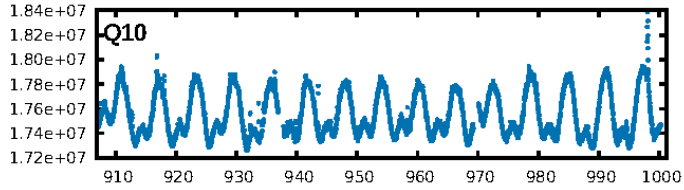
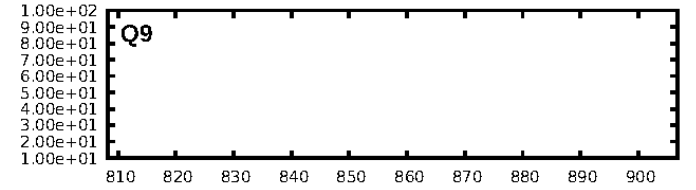
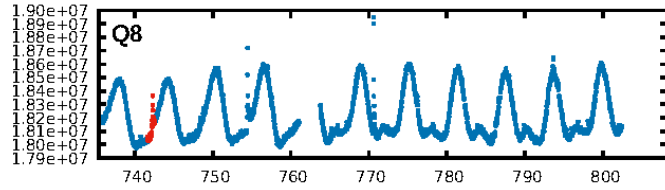
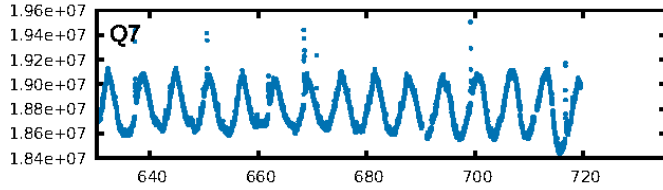
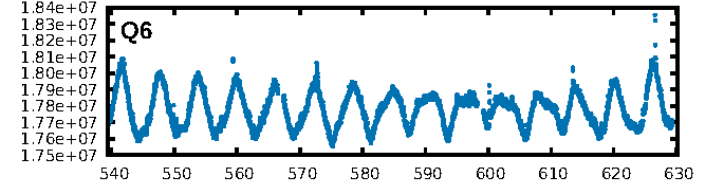
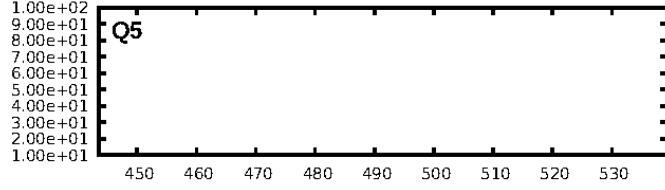
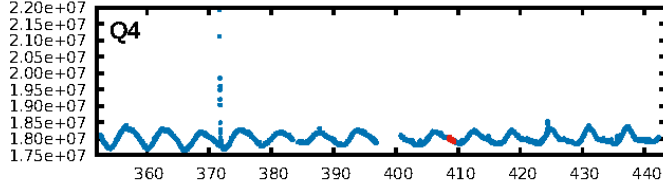
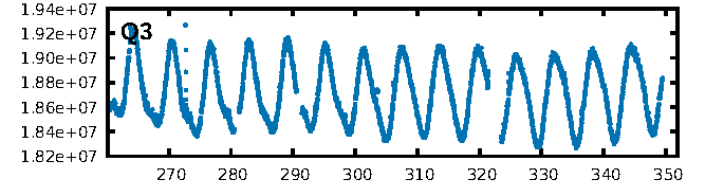
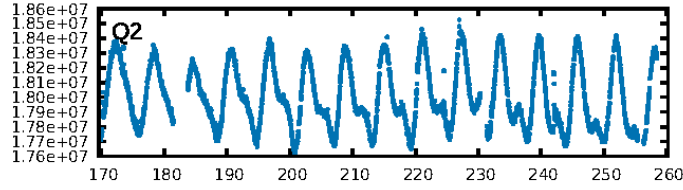
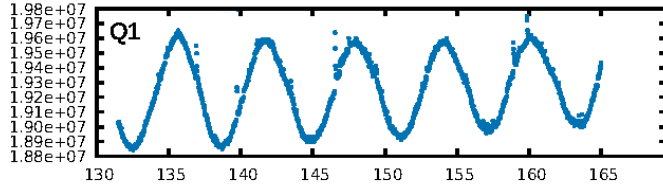
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.32σ]
LongPeriod-sig: 100.0% [313.59σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 42.6%
Bootstrap-pfa: 1.81e-07
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -3.143
Centroid-sig: 28.1%
Centroid-so: 0.689 arcsec [1.04σ]
OotOffset-rm: 0.043 arcsec [0.18σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-rm: 0.387 arcsec [1.05σ]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.50 [2/4]

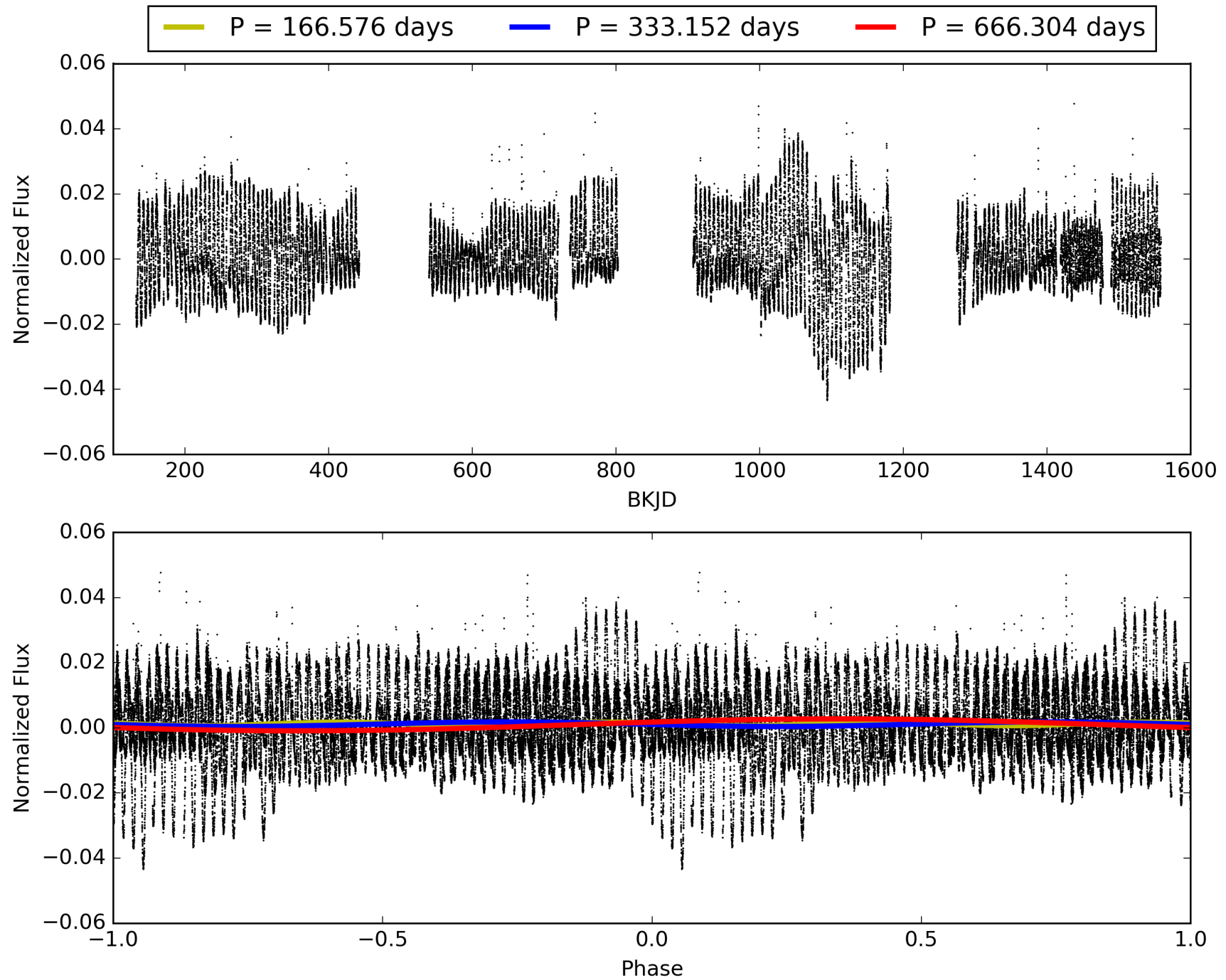
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 06:13:03 Z

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

TCE 006668646-06, PDC Light Curves

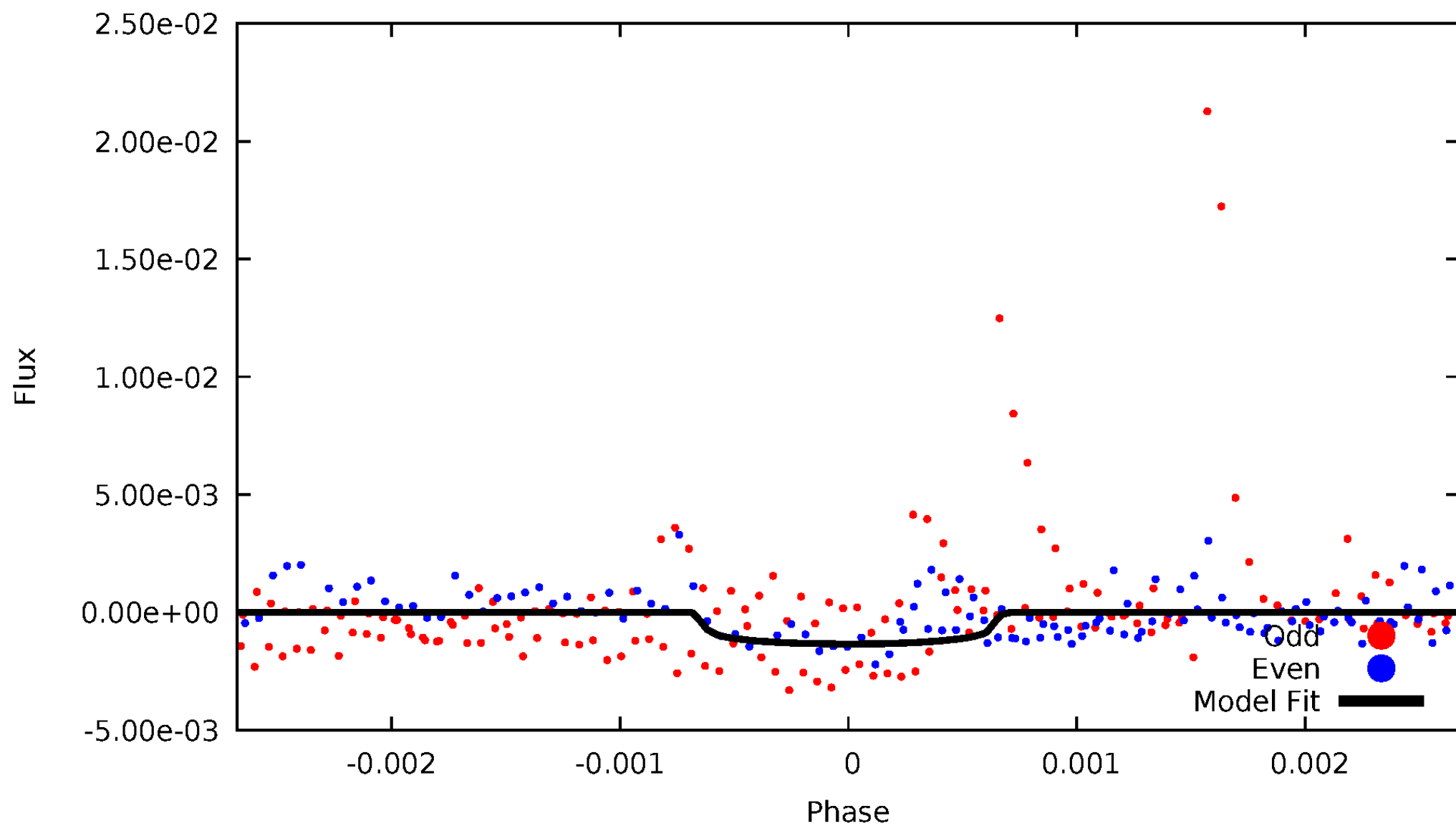


TCE 006668646-06



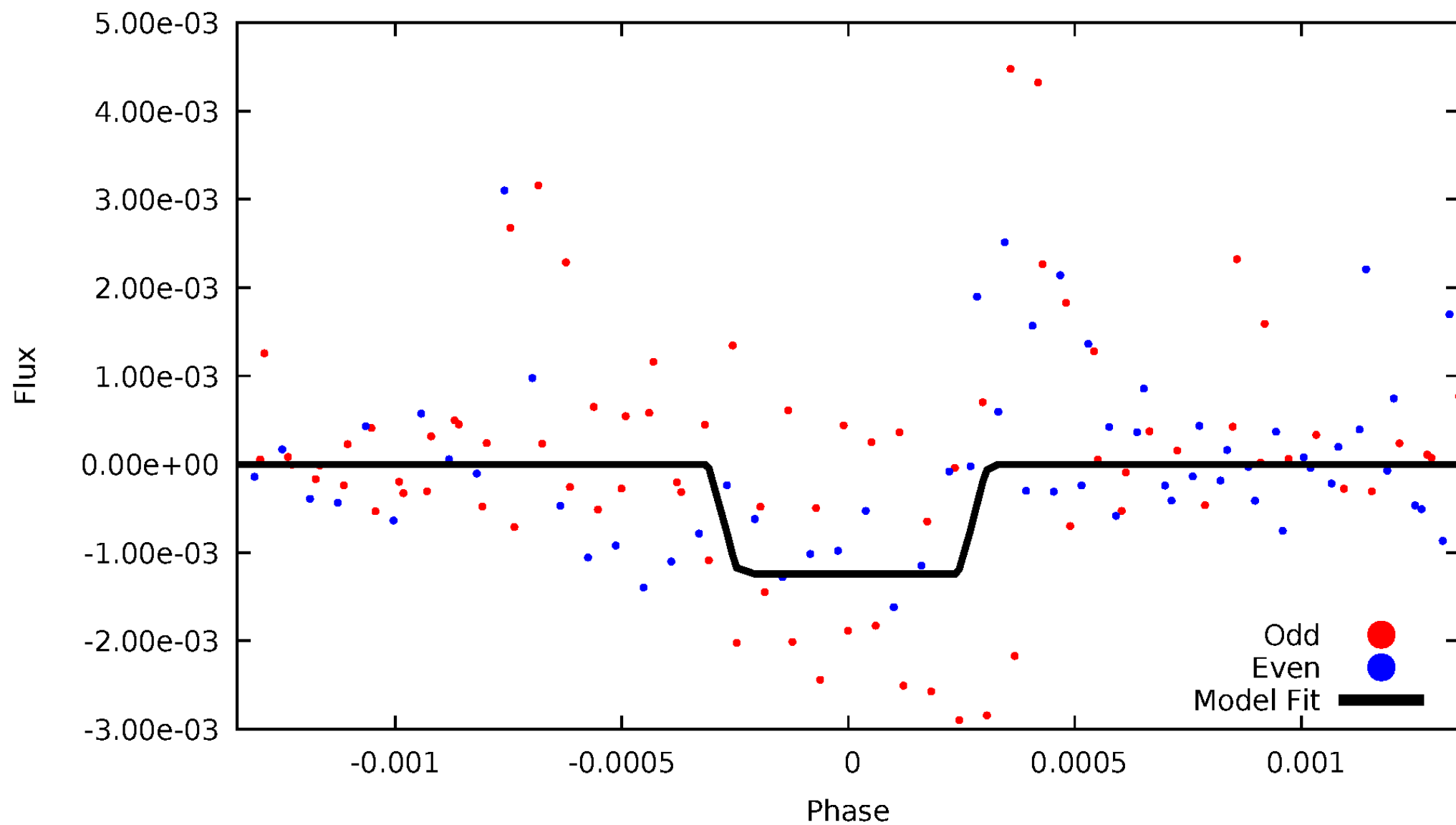
DV Odd/Even

TCE 006668646-06



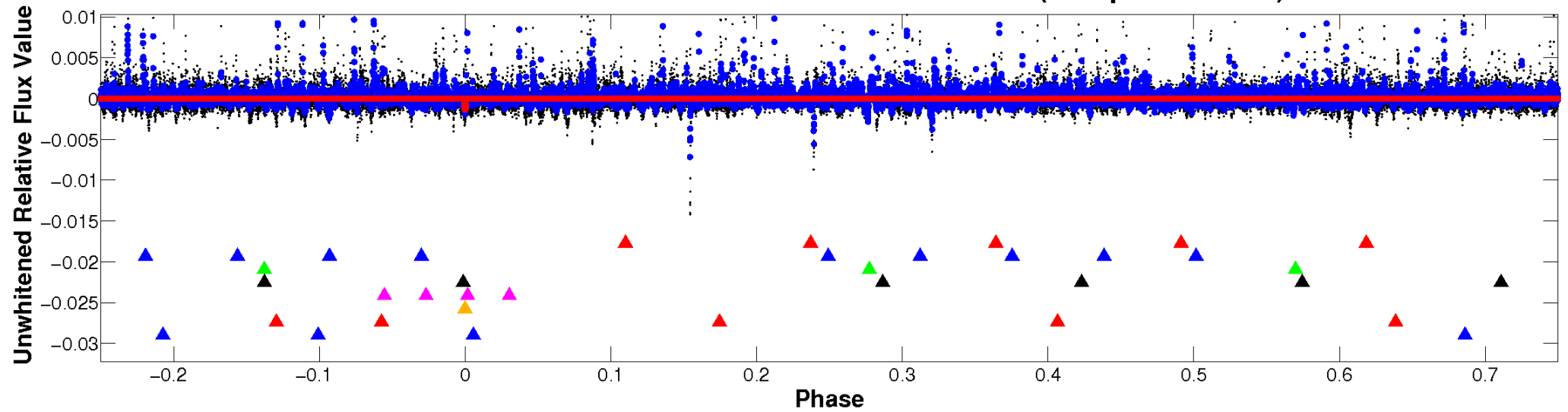
ALT Odd/Even

TCE 006668646-06

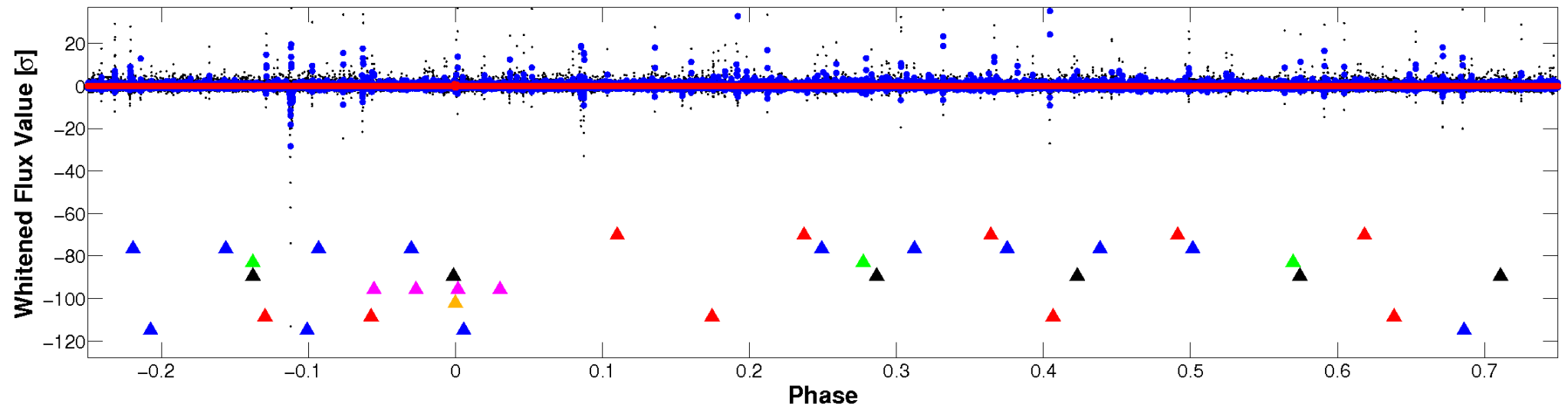


Non-Whitened Vs. Whitened Light Curve

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

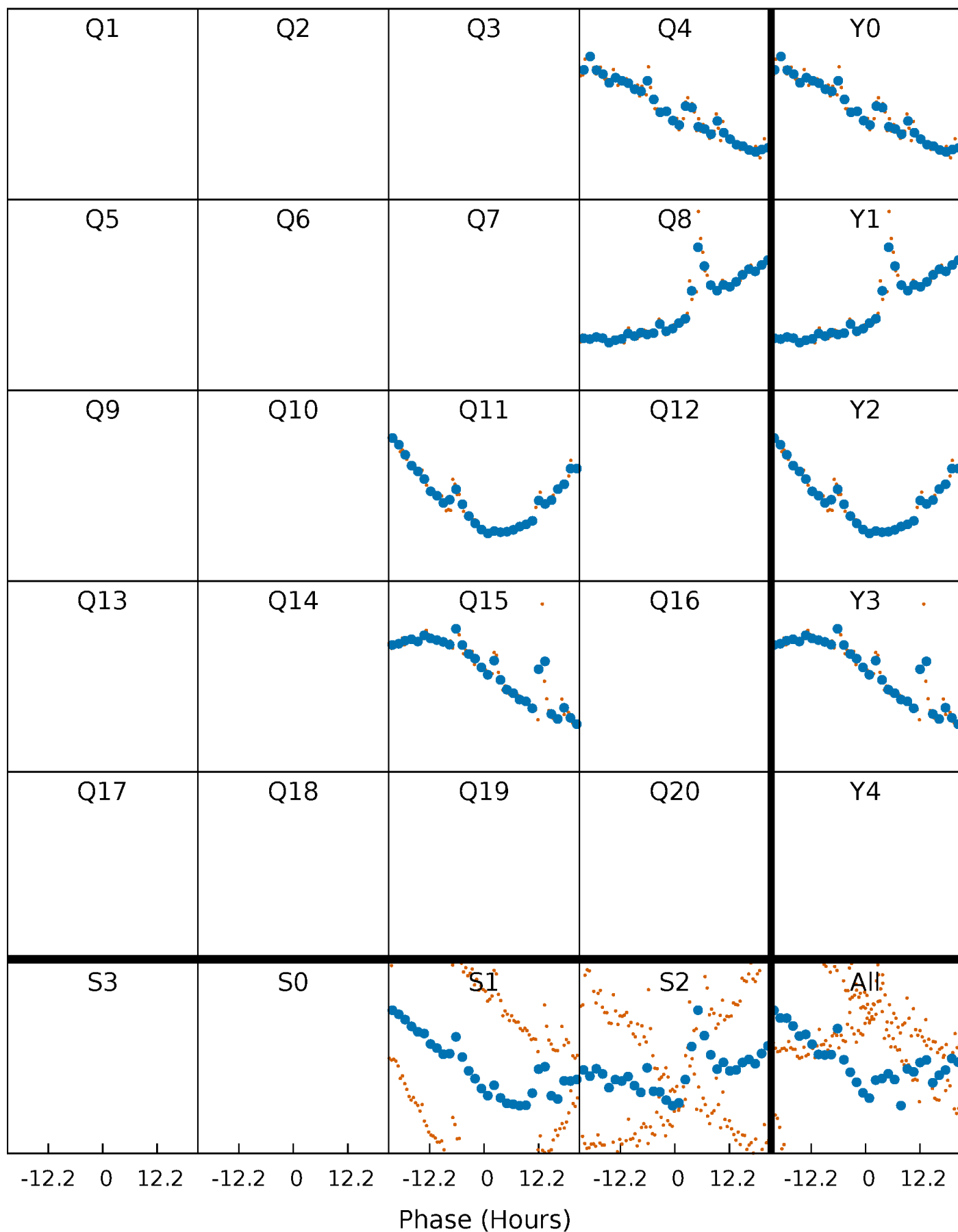


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



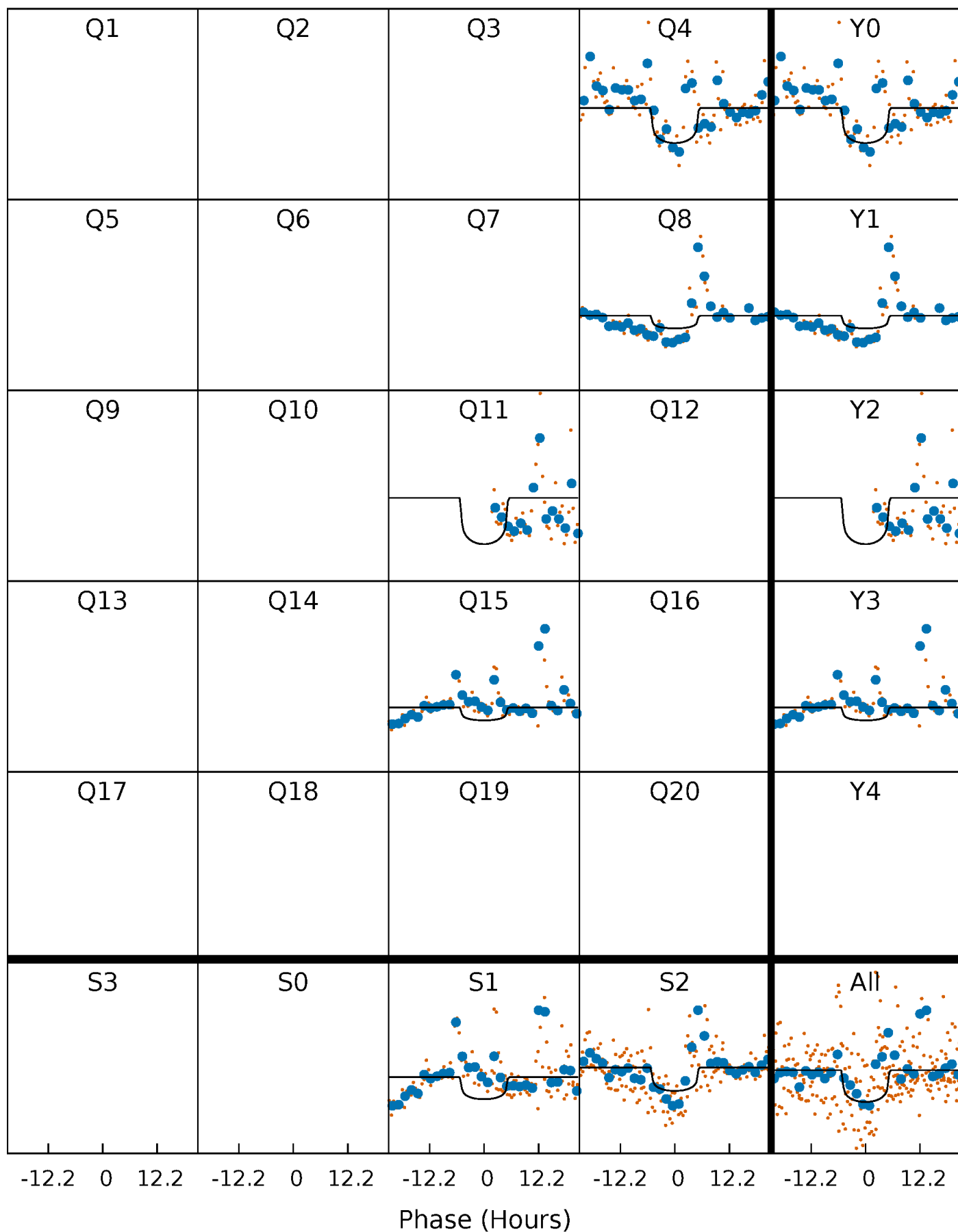
PDC Quarter-Phased Transit Curves

TCE 006668646-06 P=333.152236 Days $T_0=408.937825$ (BKJD)



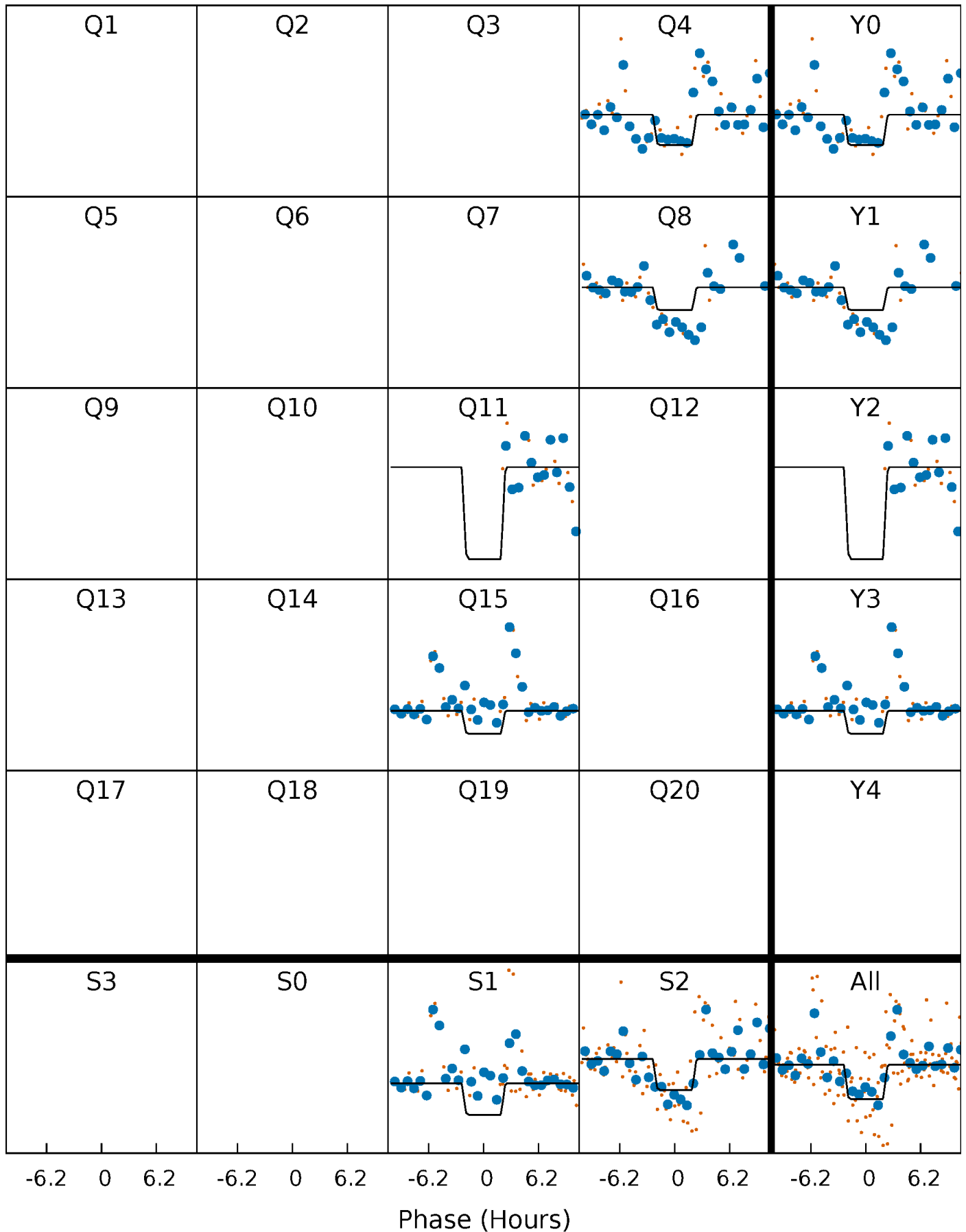
DV Quarter-Phased Transit Curves

TCE 006668646-06 P=333.152236 Days $T_0=408.937825$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

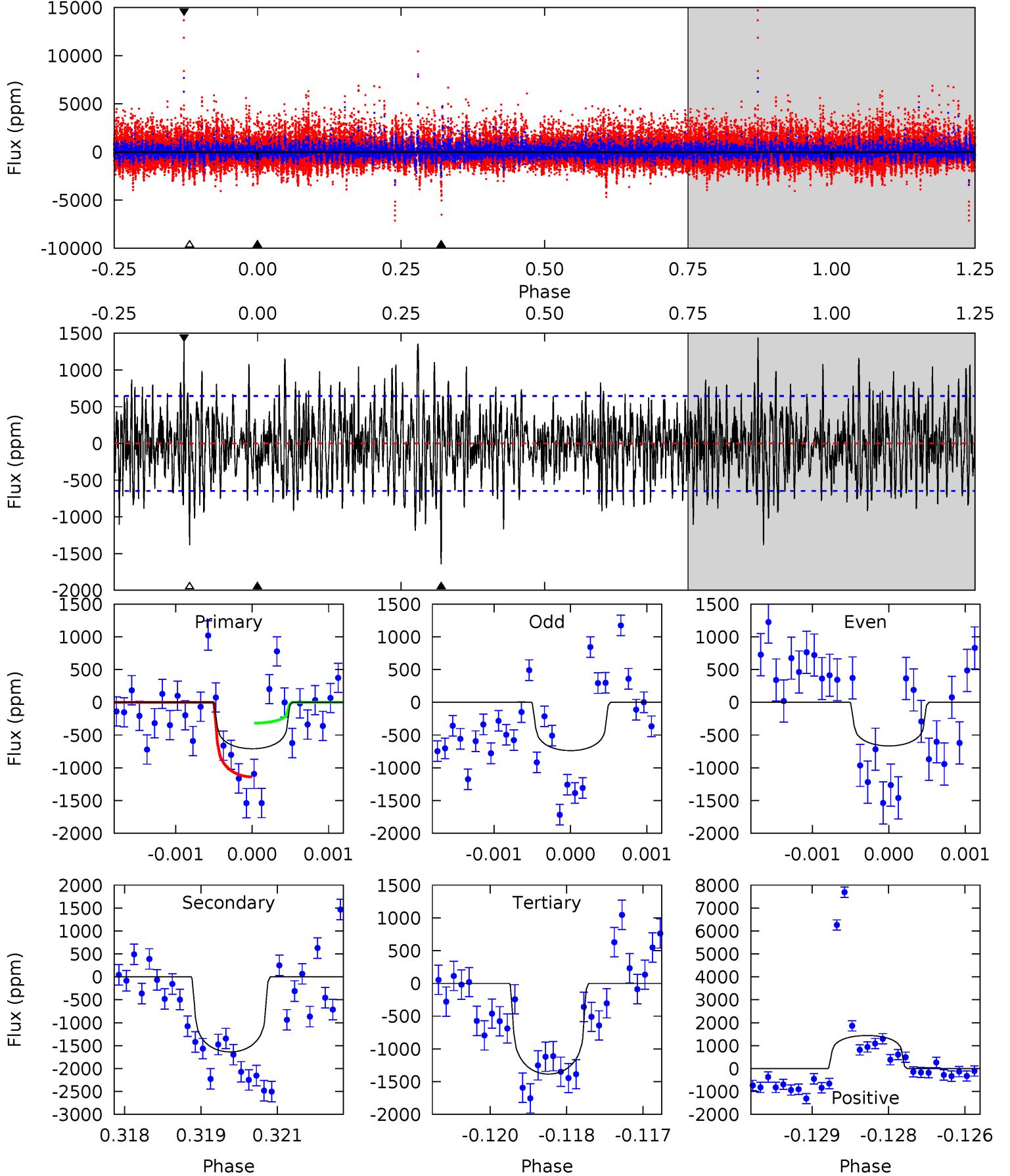
TCE 006668646-06 P=333.141951 Days $T_0=408.944025$ (BKJD)



DV Model-Shift Uniqueness Test

006668646-06, P = 333.152236 Days, E = 75.785589 Days

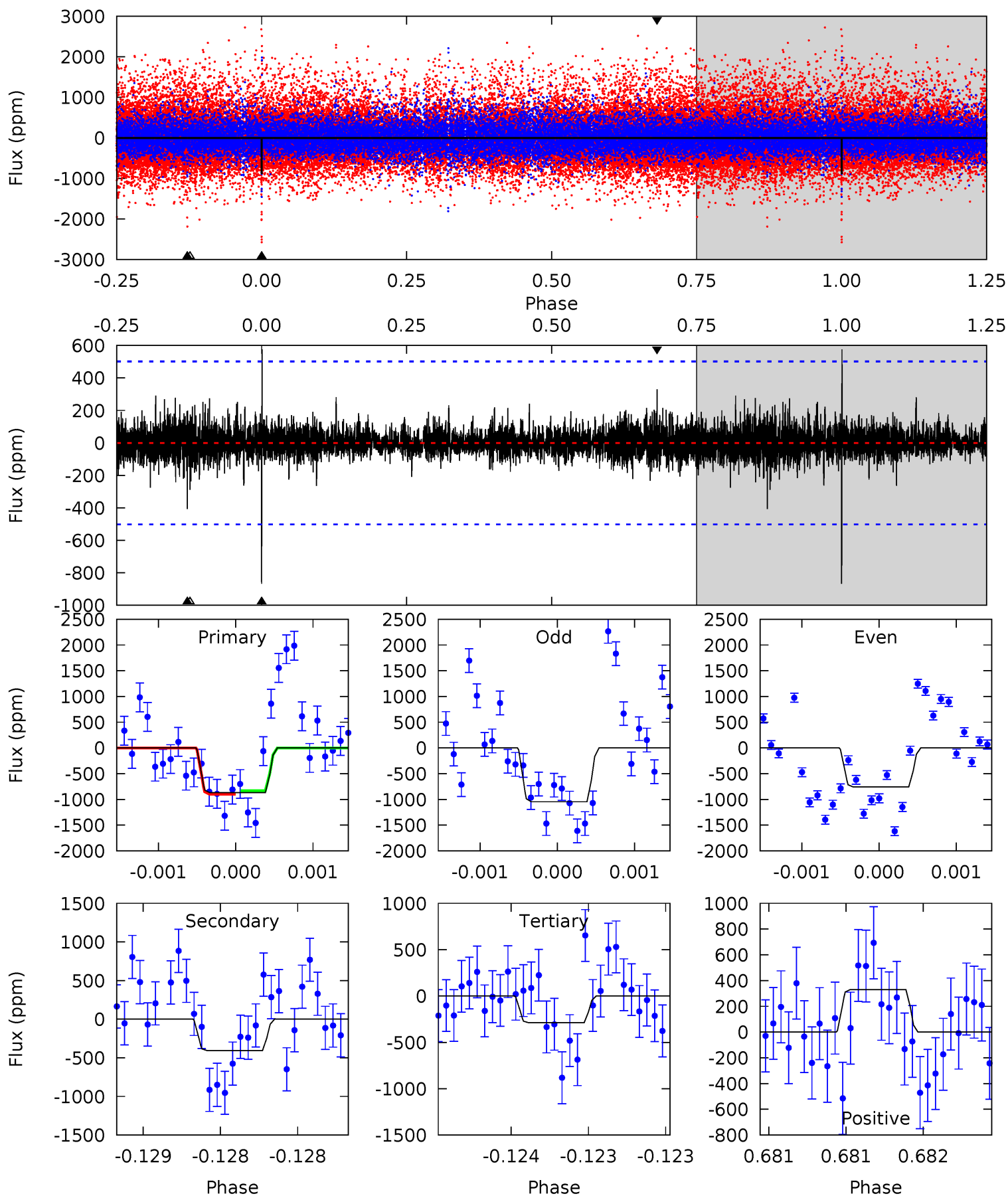
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.92	13.7	11.6	12.0	5.40	3.20	3.13	-5.65	-6.11	2.11	1.65	0.24	0.95	0.47	3.44



Alt Model-Shift Uniqueness Test

006668646-06, P = 333.141951 Days, E = 75.802074 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.58	4.48	3.17	3.64	5.54	3.43	0.68	6.41	5.94	1.31	0.85	1.54	1.21	0.40	0.39



Stellar Parameters For KIC 006668646

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3591^{+65}_{-72}	$4.862^{+0.050}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.390^{+0.040}_{-0.044}$	$0.405^{+0.042}_{-0.052}$	$9.604^{+2.468}_{-1.640}$
	+2%/-2%	+1%/-1%	+50%/-50%	+10%/-11%	+10%/-13%	+26%/-17%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006668646-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1638 ± 120	$1.65^{+1.23}_{-1.03}$	165^{+5}_{-5}	3619^{+1580}_{-535}	$160258^{+940955}_{-107533}$
Alt.	-406 ± 91	$1.67^{+1.20}_{-0.98}$	165^{+4}_{-5}	2941^{+936}_{-410}	$39421^{+196096}_{-27145}$

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

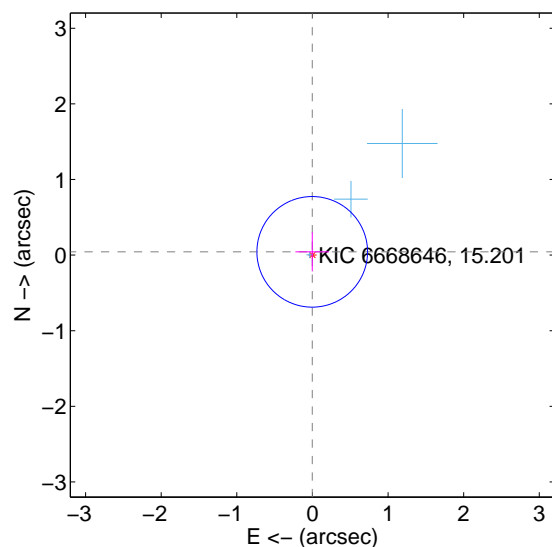
Supplemental centroid analysis for 006668646-06. Kepler magnitude: 15.20. Transit SNR 5.64

There are 3 quarters with good PRF difference image offsets

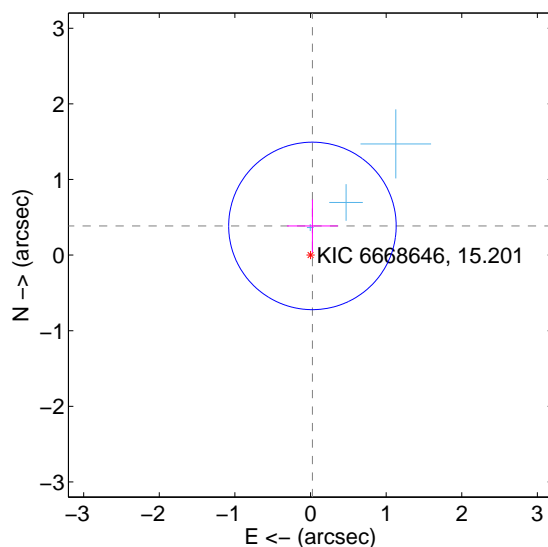
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.043 ± 0.244	0.18	0.003 ± 0.222	0.043 ± 0.258
PRF-fit source offset from KIC position	0.387 ± 0.369	1.05	-0.025 ± 0.337	0.386 ± 0.349
photometric centroid source offset	0.69 ± 0.66	1.04	-0.57 ± 0.66	-0.39 ± 0.65

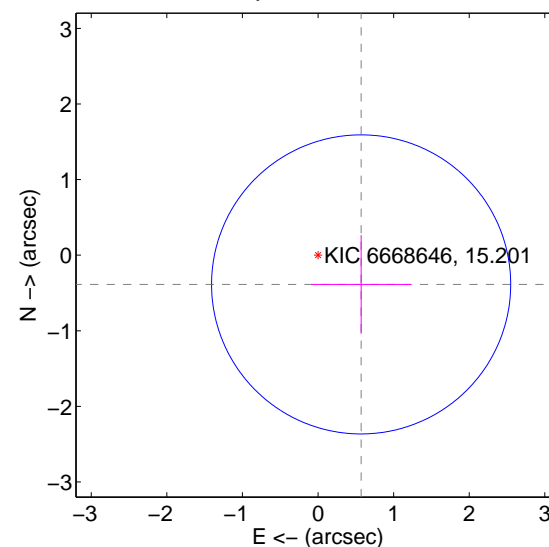
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

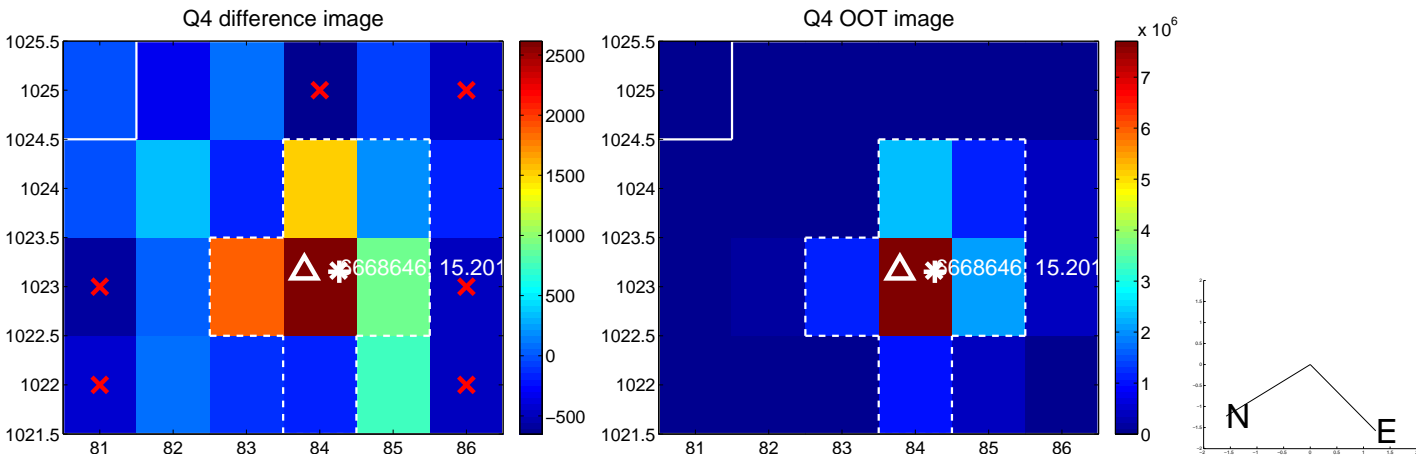


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



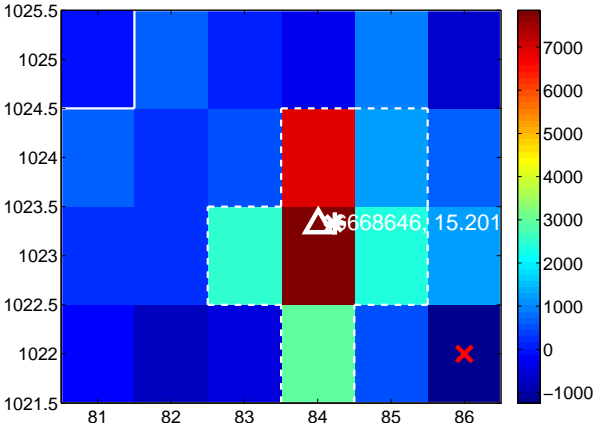
Q7 no difference image



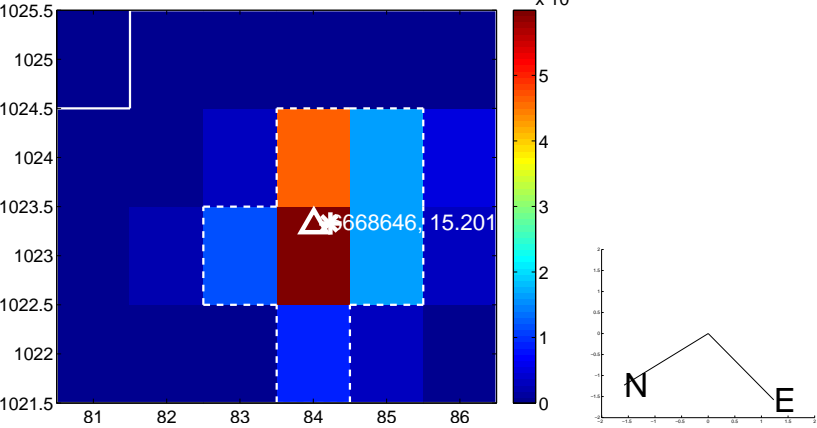
Q7 no OOT image



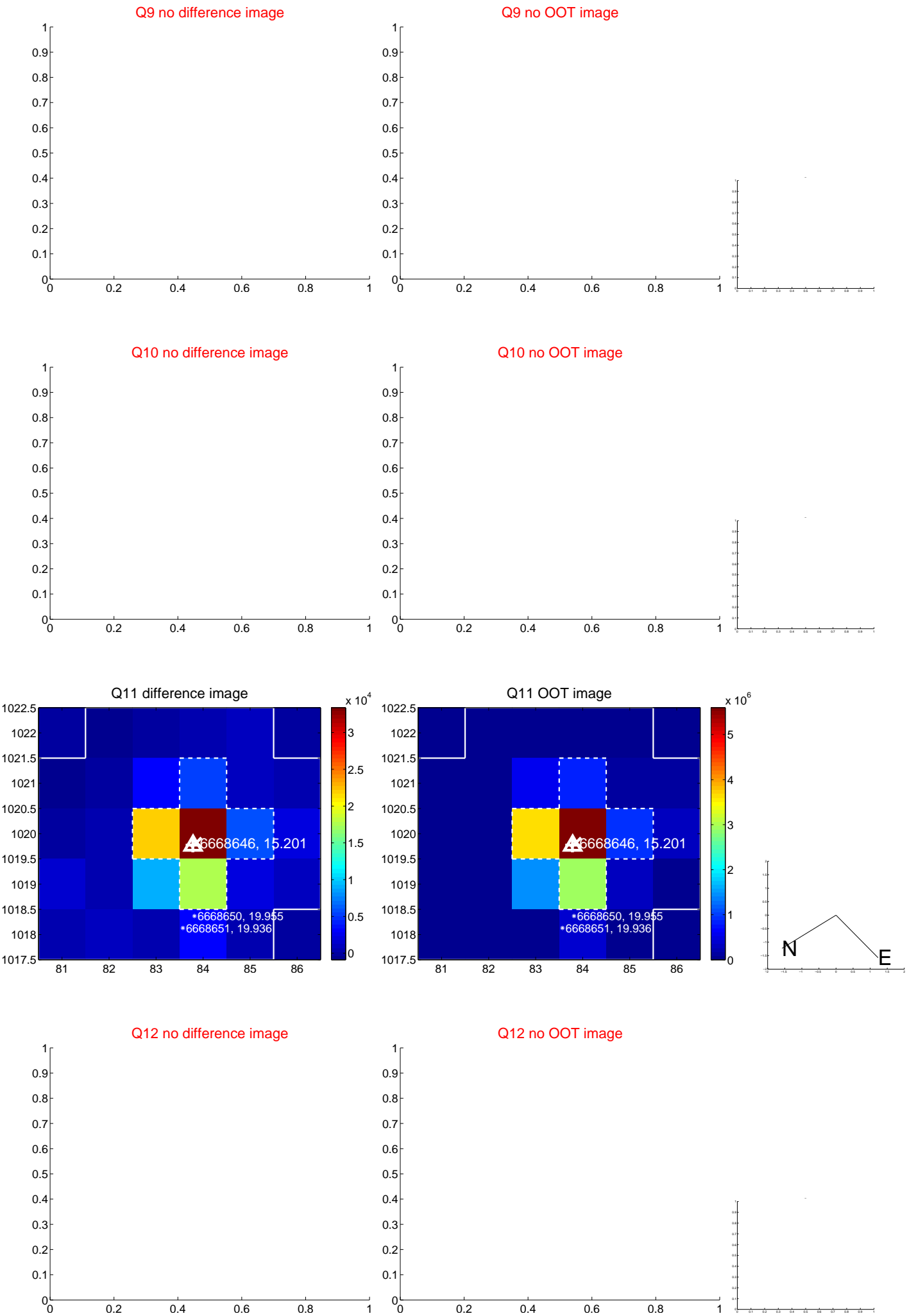
Q8 difference image



Q8 OOT image



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.

Q13 no difference image



Q13 no OOT image



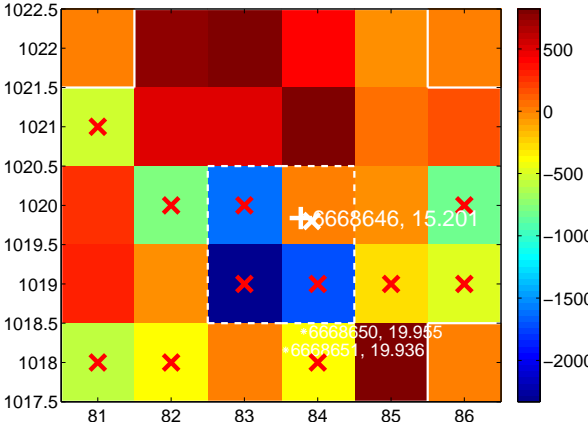
Q14 no difference image



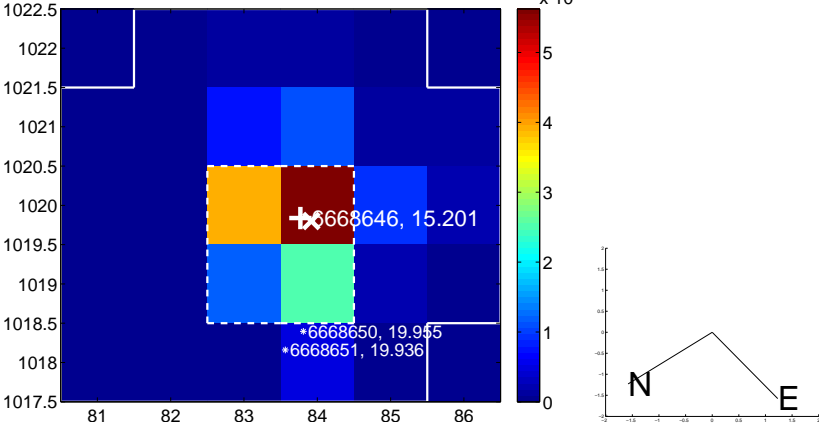
Q14 no OOT image



Q15 difference image. Poor Quality



Q15 OOT image



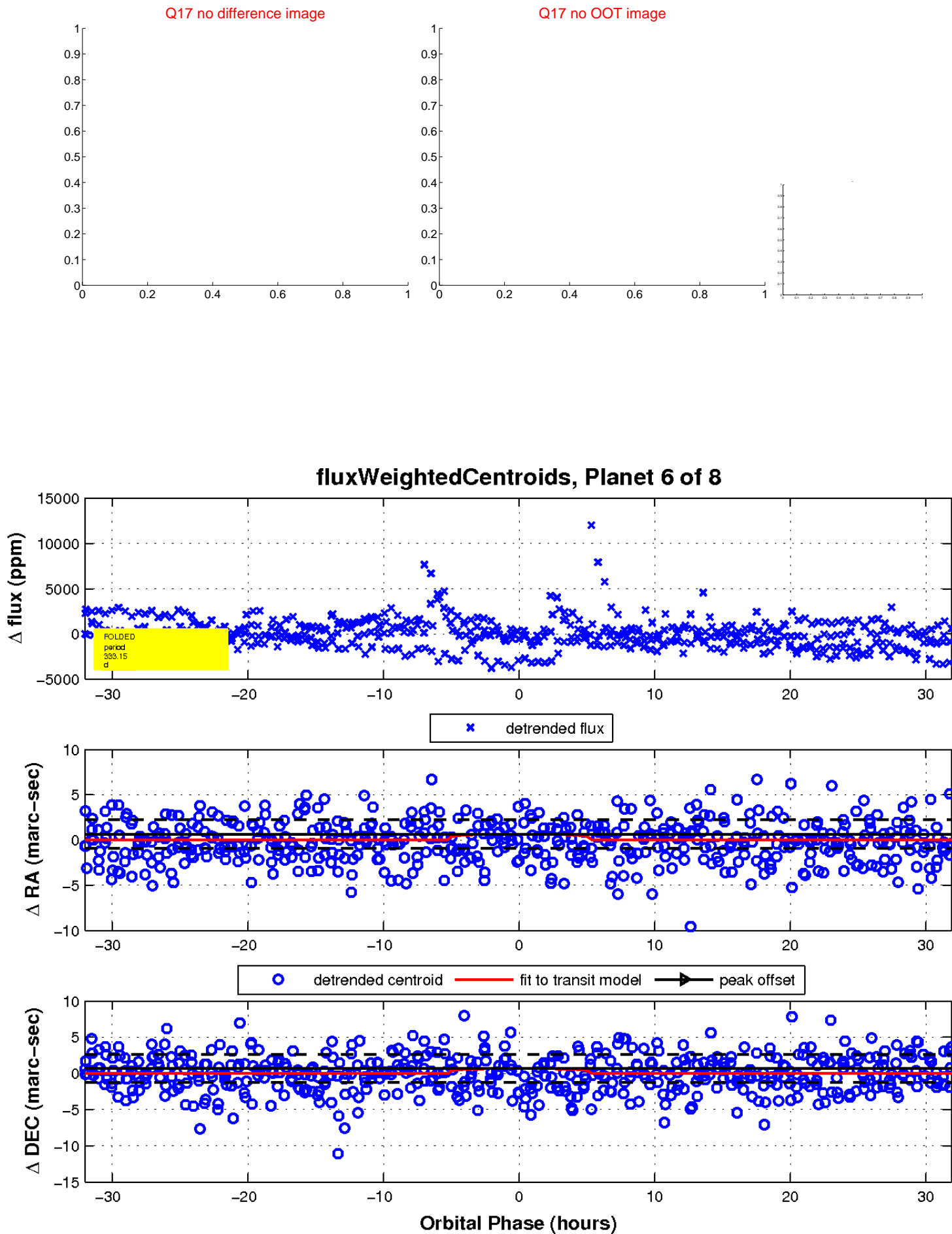
Q16 no difference image



Q16 no OOT image

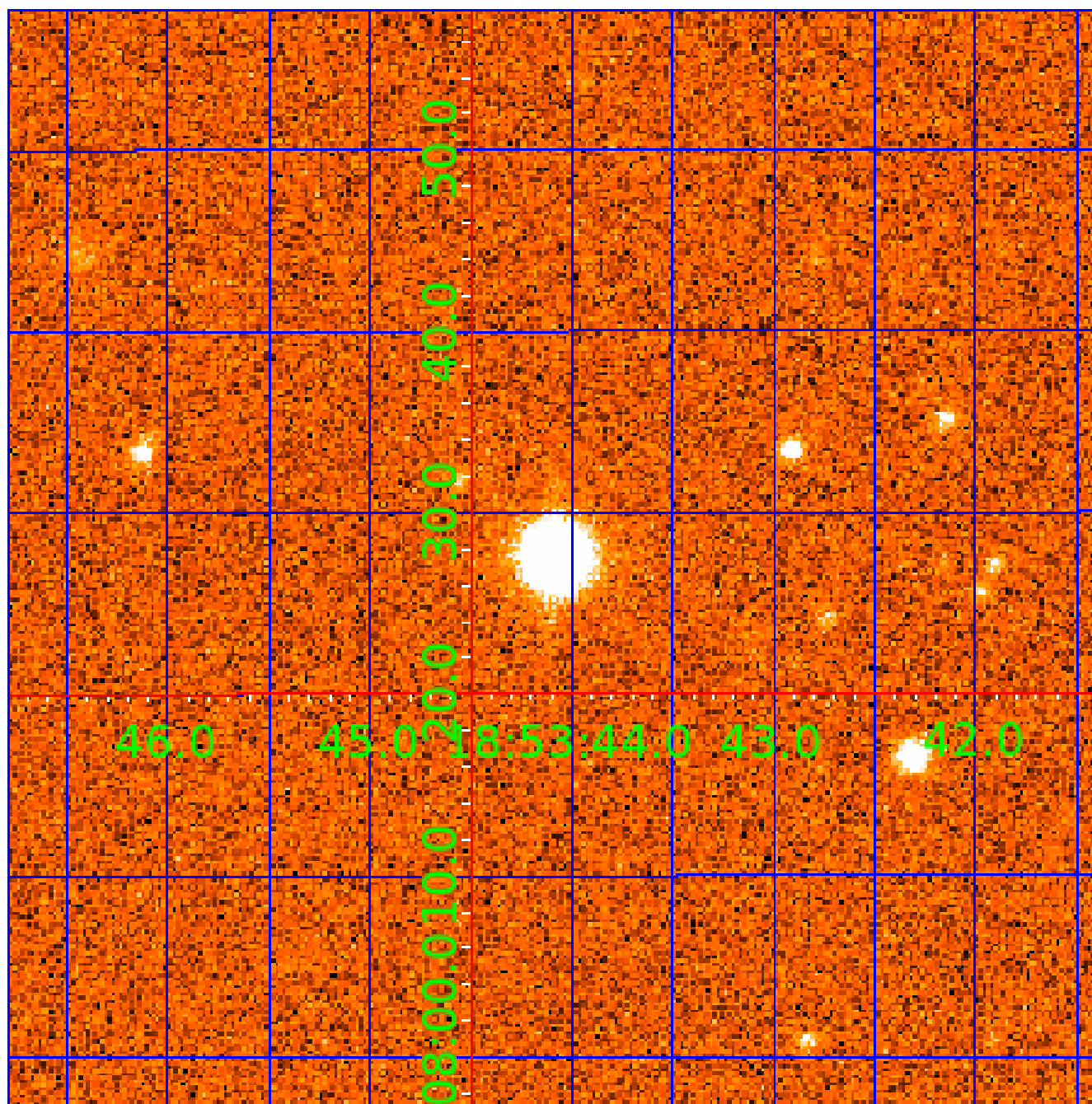


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006668646

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})
006668646-01	OBS	No	290.814329	281.810555	2544.7	4.221	14.4	10.1	0.39	3591	1.95	0.06
006668646-02	OBS	No	177.086828	158.808828	861.0	4.666	12.9	4.3	0.39	3591	1.19	0.11
006668646-03	OBS	No	568.897181	363.037278	2566.8	14.531	11.4	9.0	0.39	3591	1.96	0.02
006668646-04	OBS	No	237.253769	363.065689	1304.9	7.516	13.2	5.4	0.39	3591	1.43	0.07
006668646-05	OBS	No	323.633285	419.053478	843.4	0.695	10.0	2.8	0.39	3591	1.16	0.05
006668646-06	OBS	No	333.152236	408.937825	1342.8	10.695	9.3	5.6	0.39	3591	1.42	0.05
006668646-07	OBS	No	255.872777	365.802934	1332.6	9.145	11.7	5.9	0.39	3591	1.42	0.07
006668646-08	OBS	No	297.666832	410.833923	1651.5	7.844	9.8	7.2	0.39	3591	1.57	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006668646-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
006668646-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006668646-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006668646-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
006668646-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006668646-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

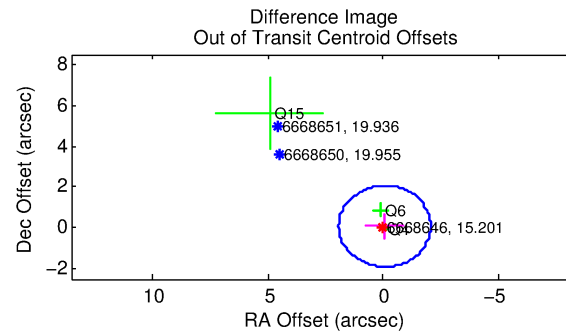
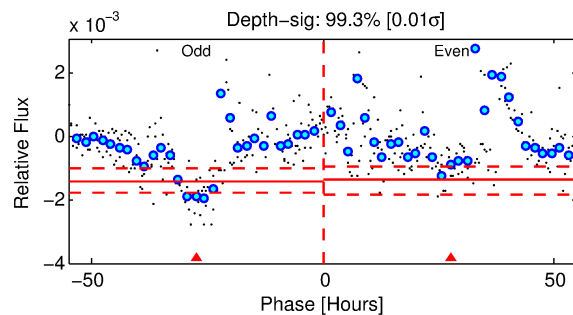
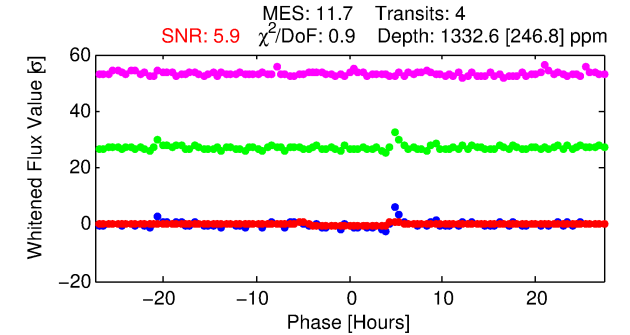
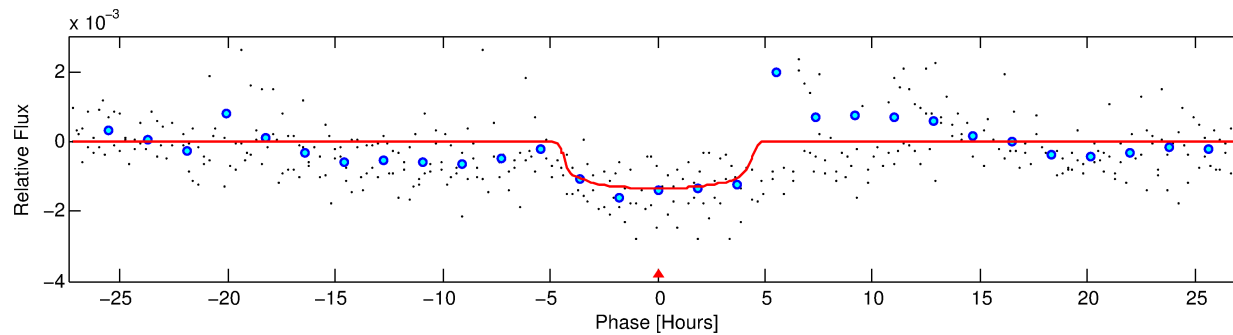
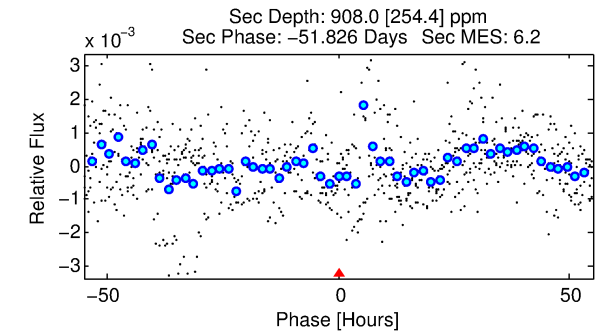
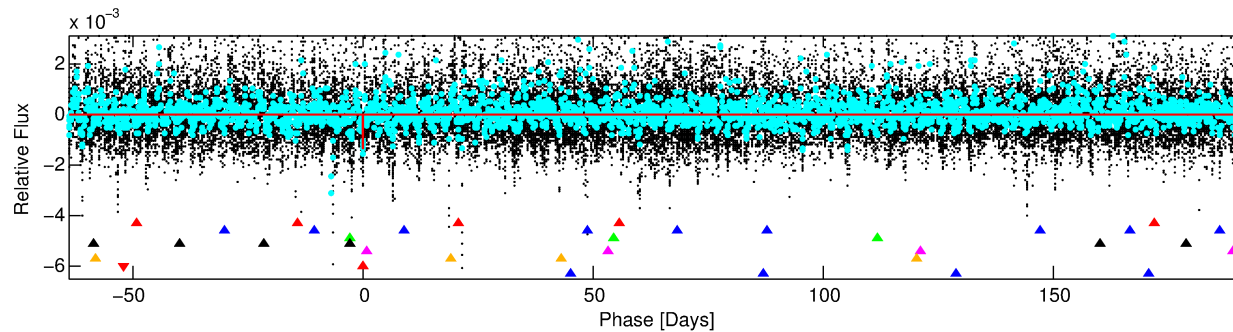
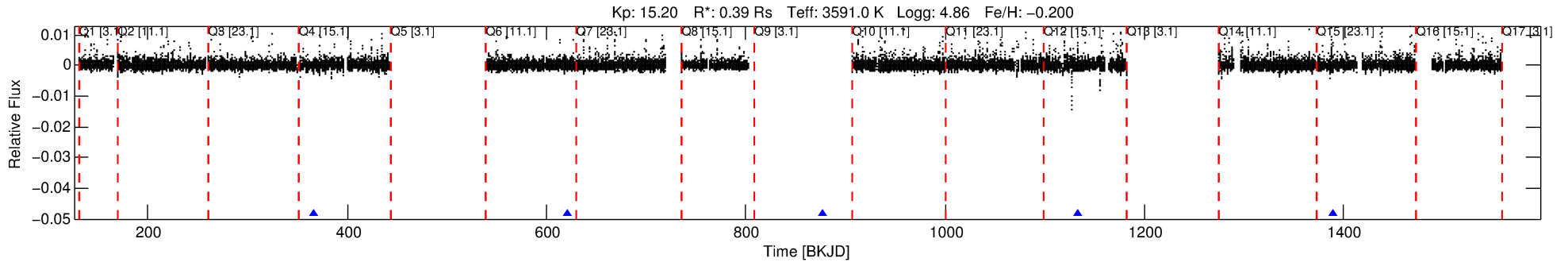
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006668646-07

No Significant Match Found

DV One-Page Summary

KIC: 6668646 Candidate: 7 of 8 Period: 255.873 d



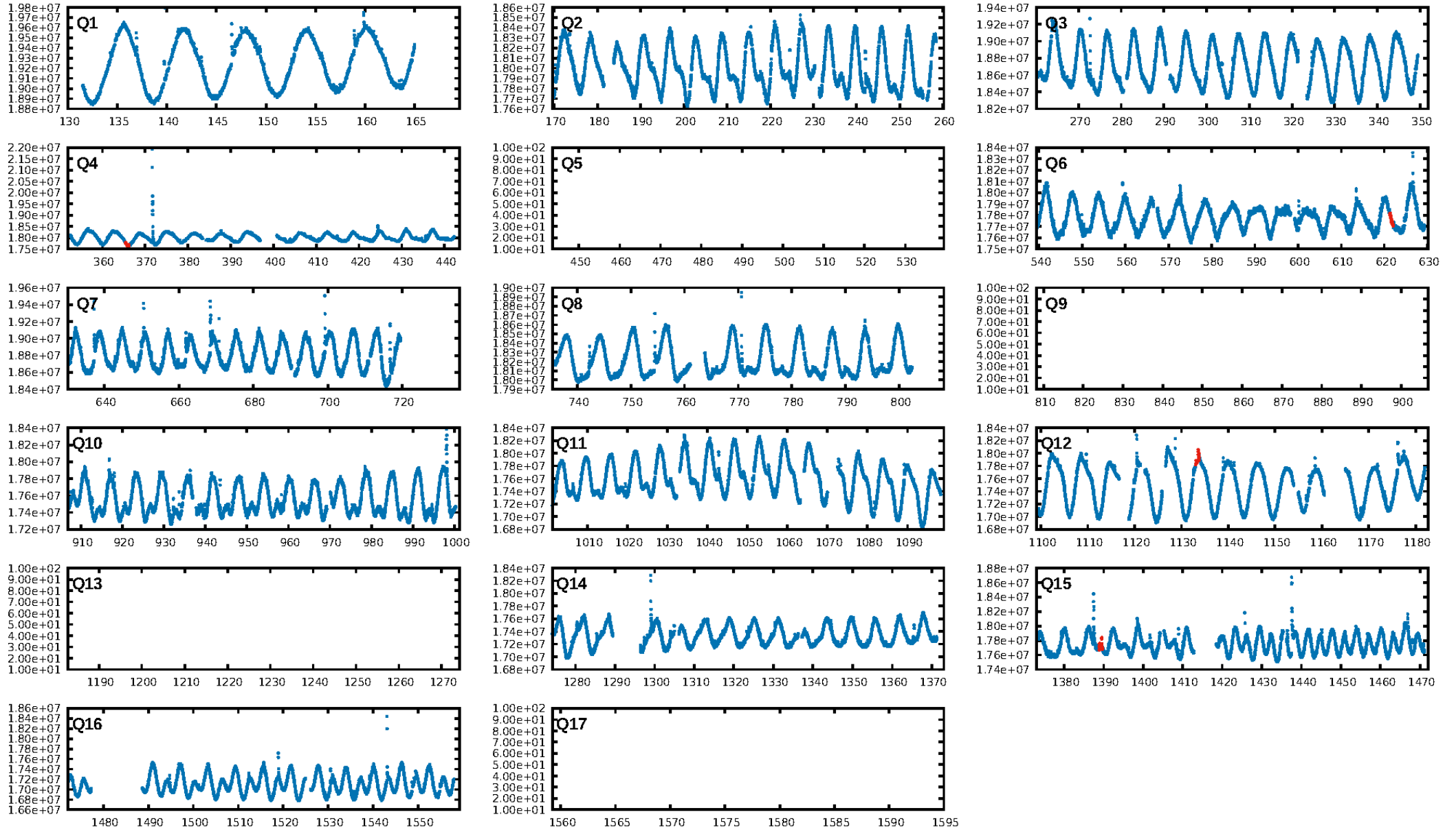
DV Fit Results:

Period = 255.87278 [0.00389] d
Epoch = 365.8029 [0.0088] BKJD
Rp/R* = 0.0333 [0.0173]
a/R* = 217.02 [489.74]
b = 0.19 [11.34]
Seff = 0.07 [0.01]
Teq = 130 [4] K
Rp = 1.42 [0.75] Re
a = 0.5831 [0.0492] AU
Ag = 84633.09 [91372.19] [0.93σ]
Teffp = 3417 [920] K [3.57σ]

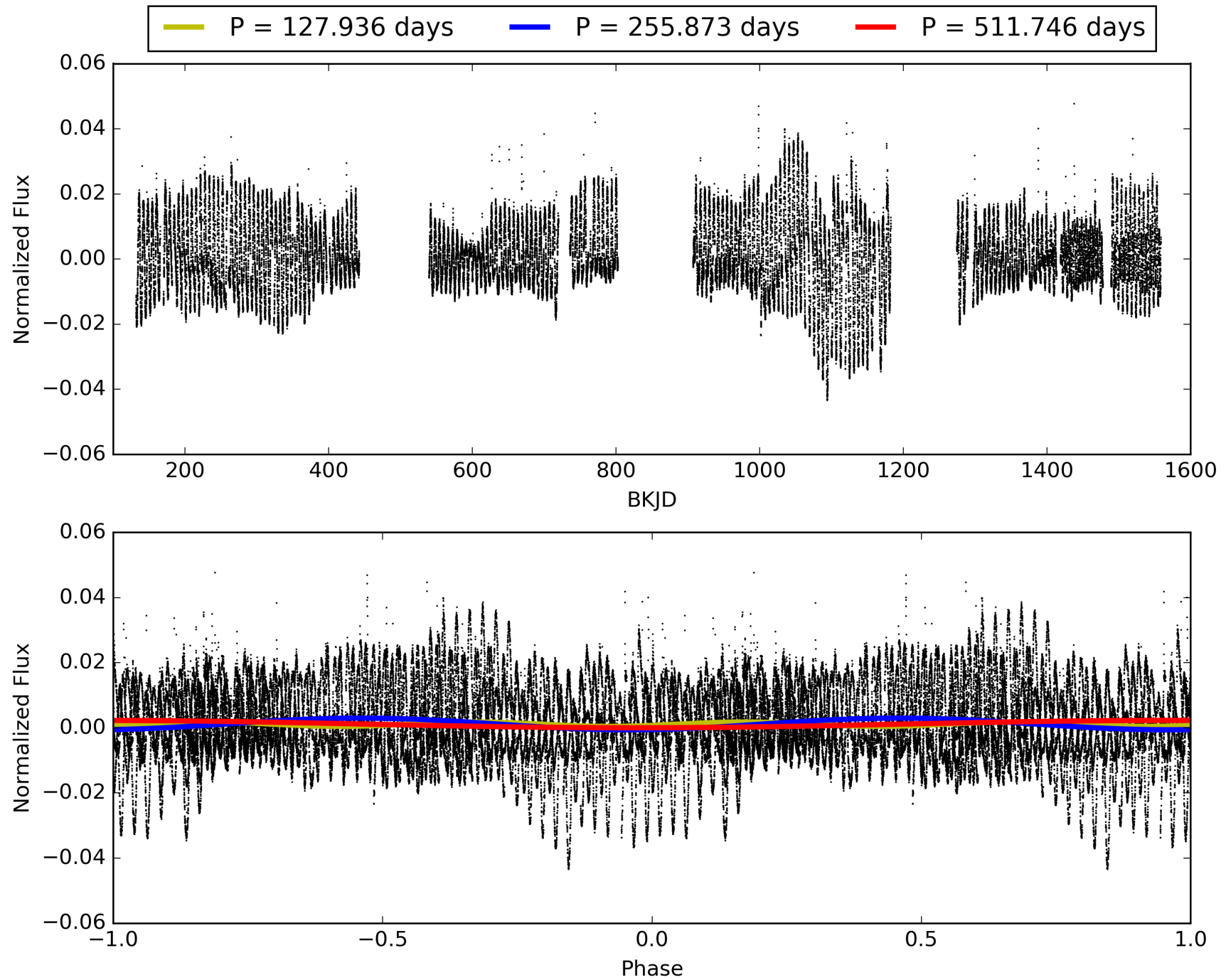
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.75σ]
LongPeriod-sig: 100.0% [83.26σ]
ModelChiSquare2-sig: 7.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 7.46e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.942
Centroid-sig: 7.1%
Centroid-so: 1.036 arcsec [1.43σ]
OotOffset-rm: 0.100 arcsec [0.15σ]
KicOffset-rm: 0.056 arcsec [0.04σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

TCE 006668646-07, PDC Light Curves

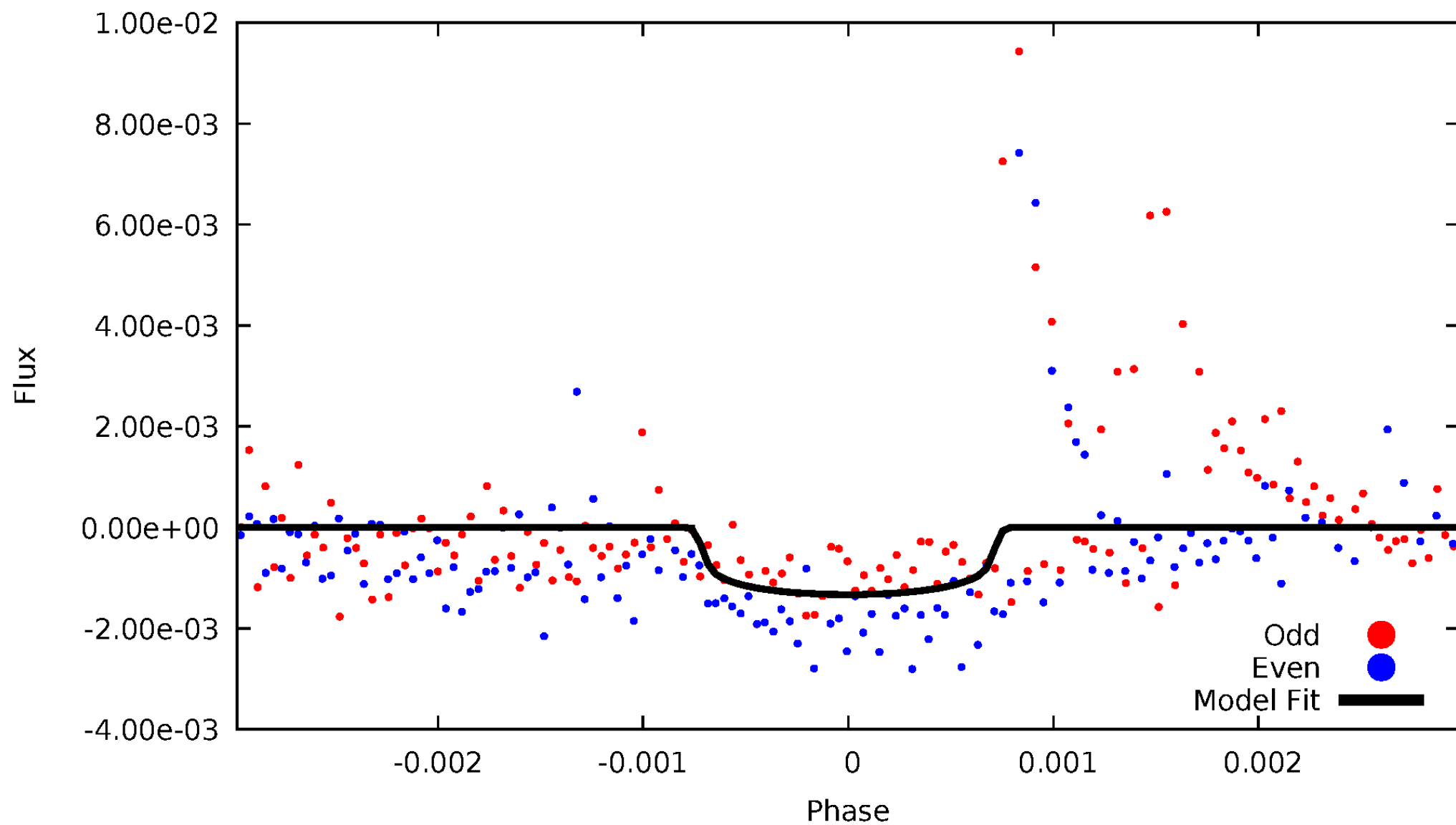


TCE 006668646-07



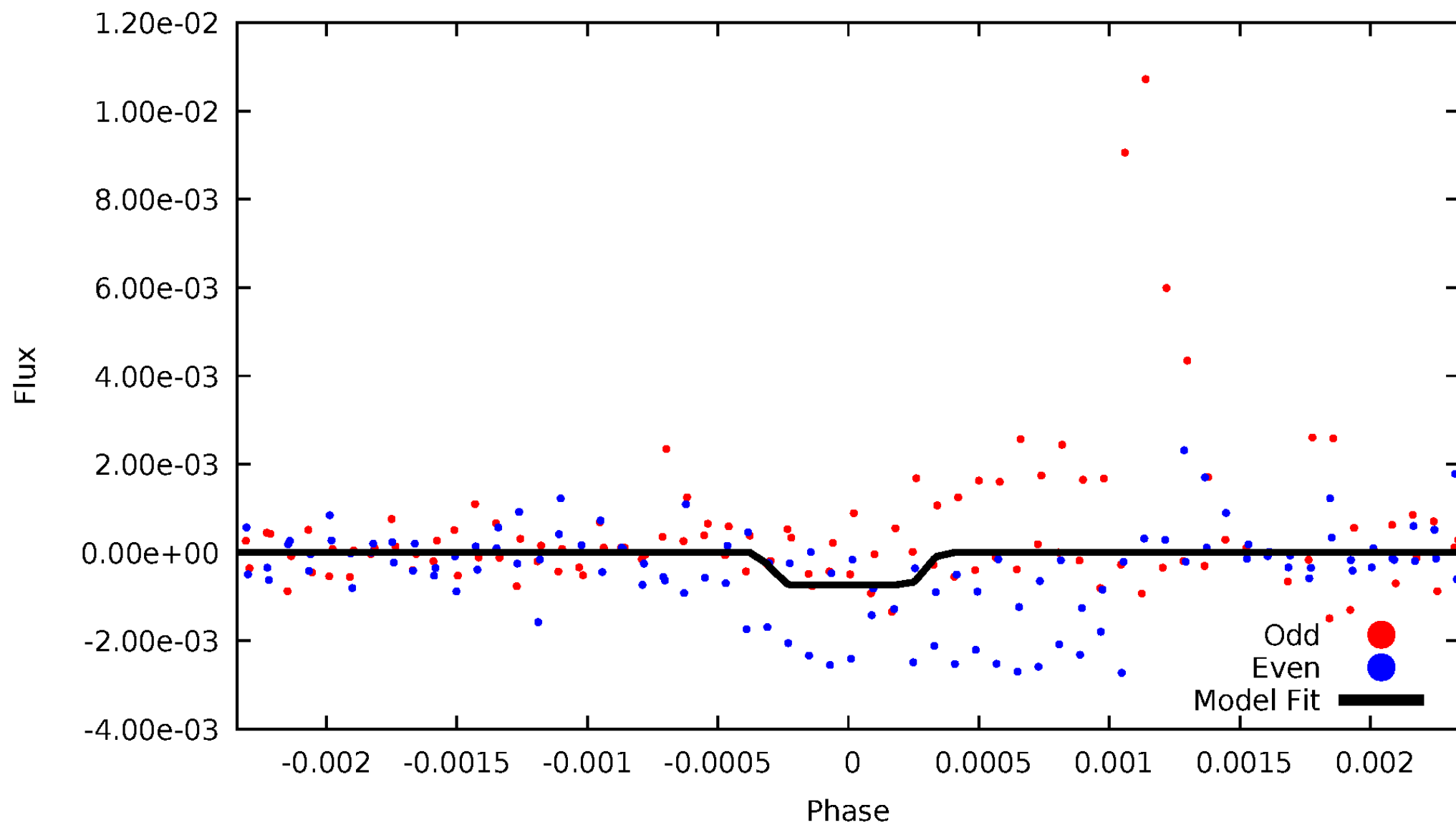
DV Odd/Even

TCE 006668646-07



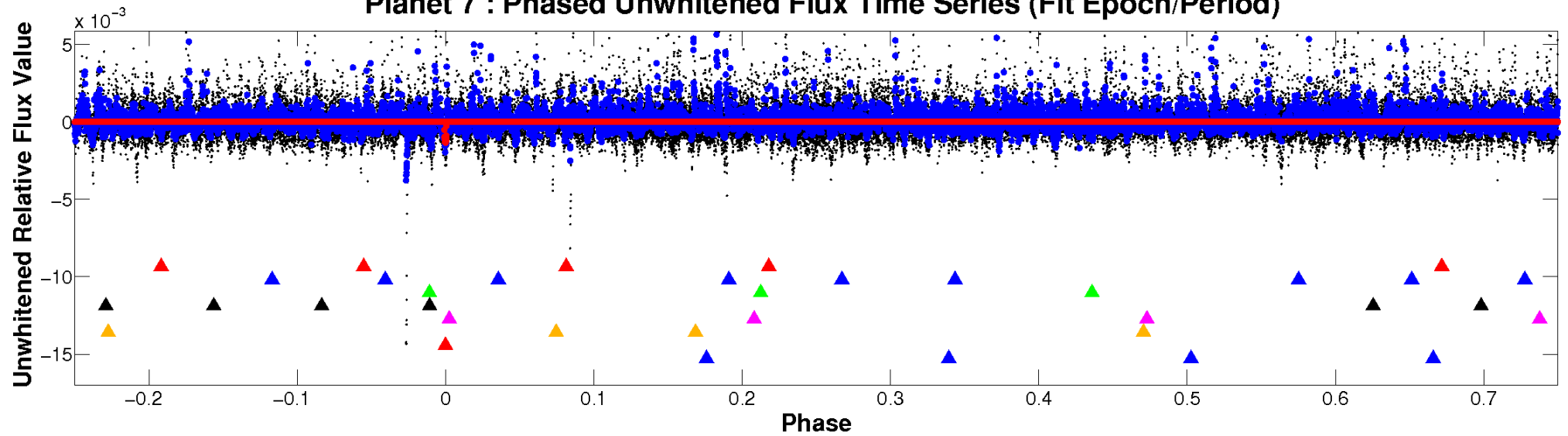
ALT Odd/Even

TCE 006668646-07

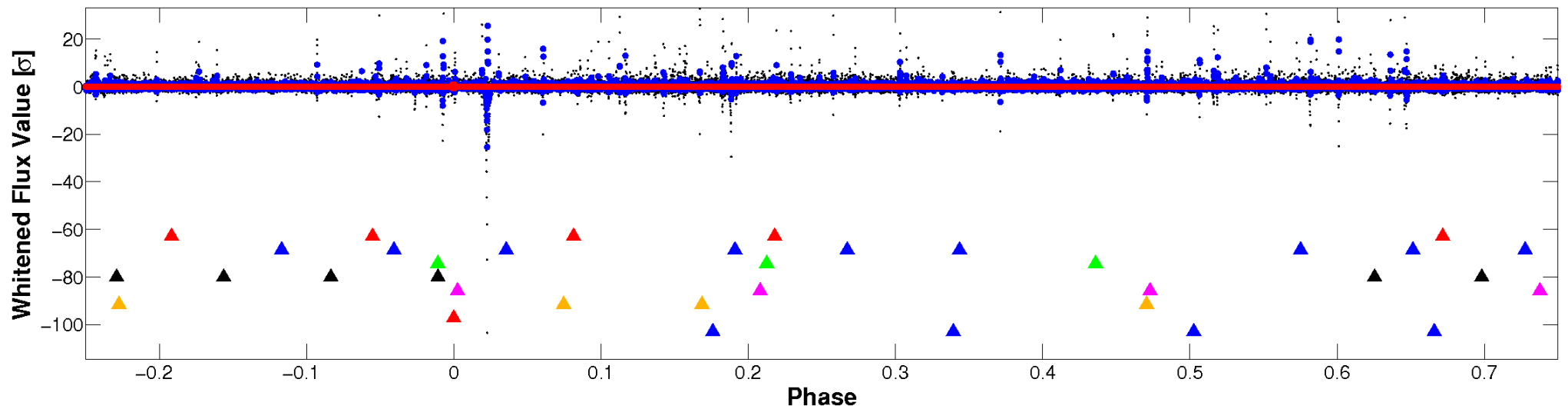


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

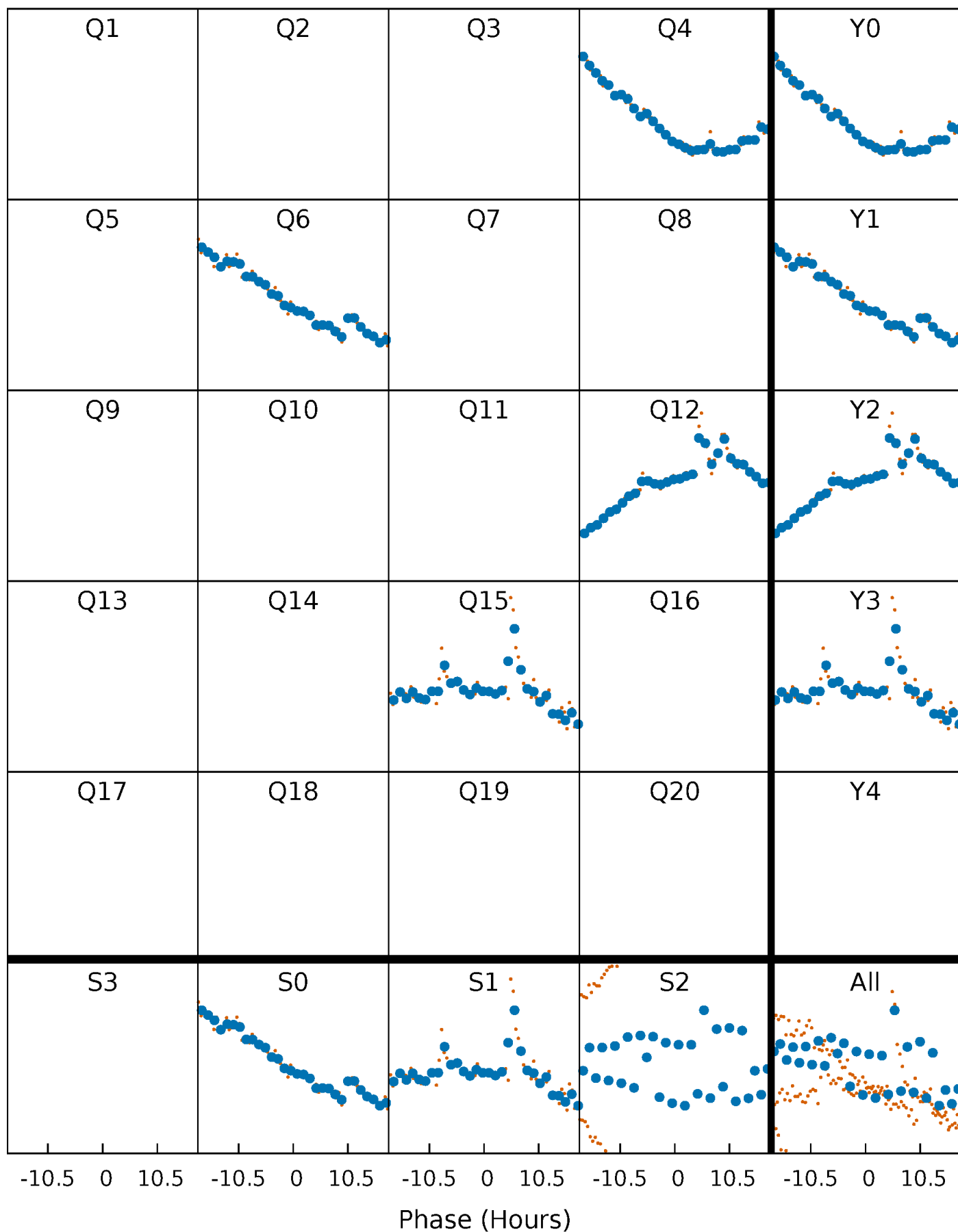


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



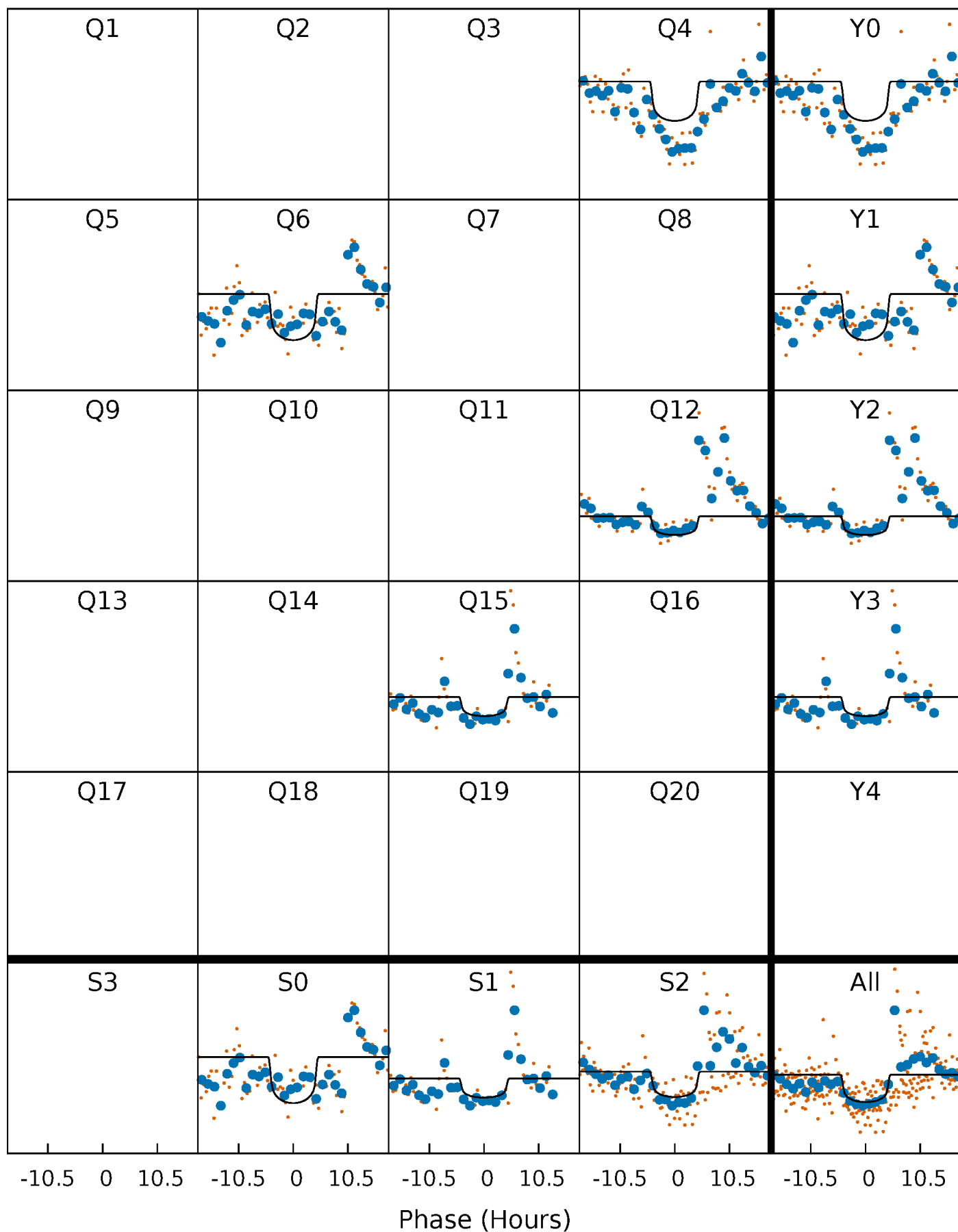
PDC Quarter-Phased Transit Curves

TCE 006668646-07 $P=255.872777$ Days $T_0=365.802934$ (BKJD)



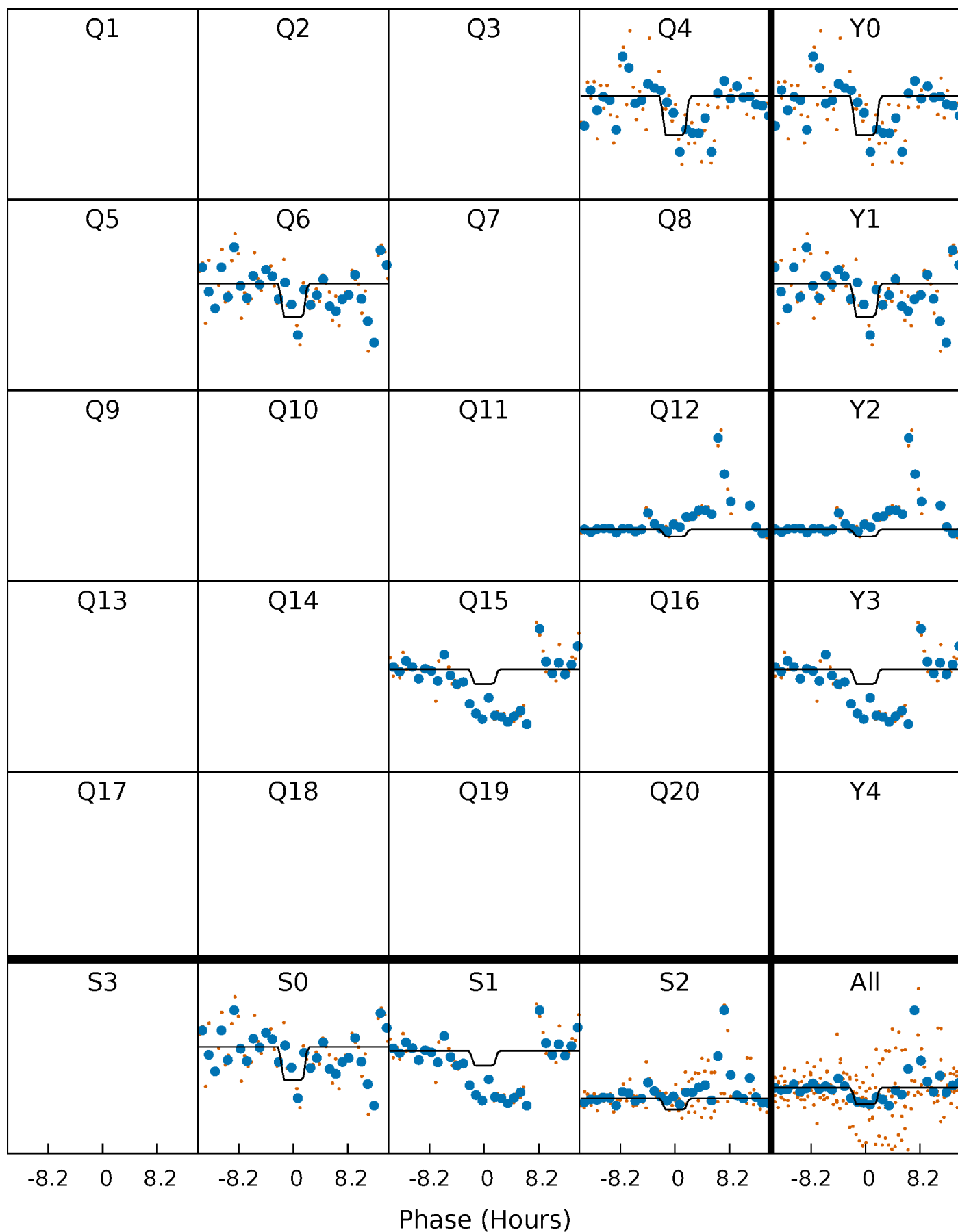
DV Quarter-Phased Transit Curves

TCE 006668646-07 $P=255.872777$ Days $T_0=365.802934$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

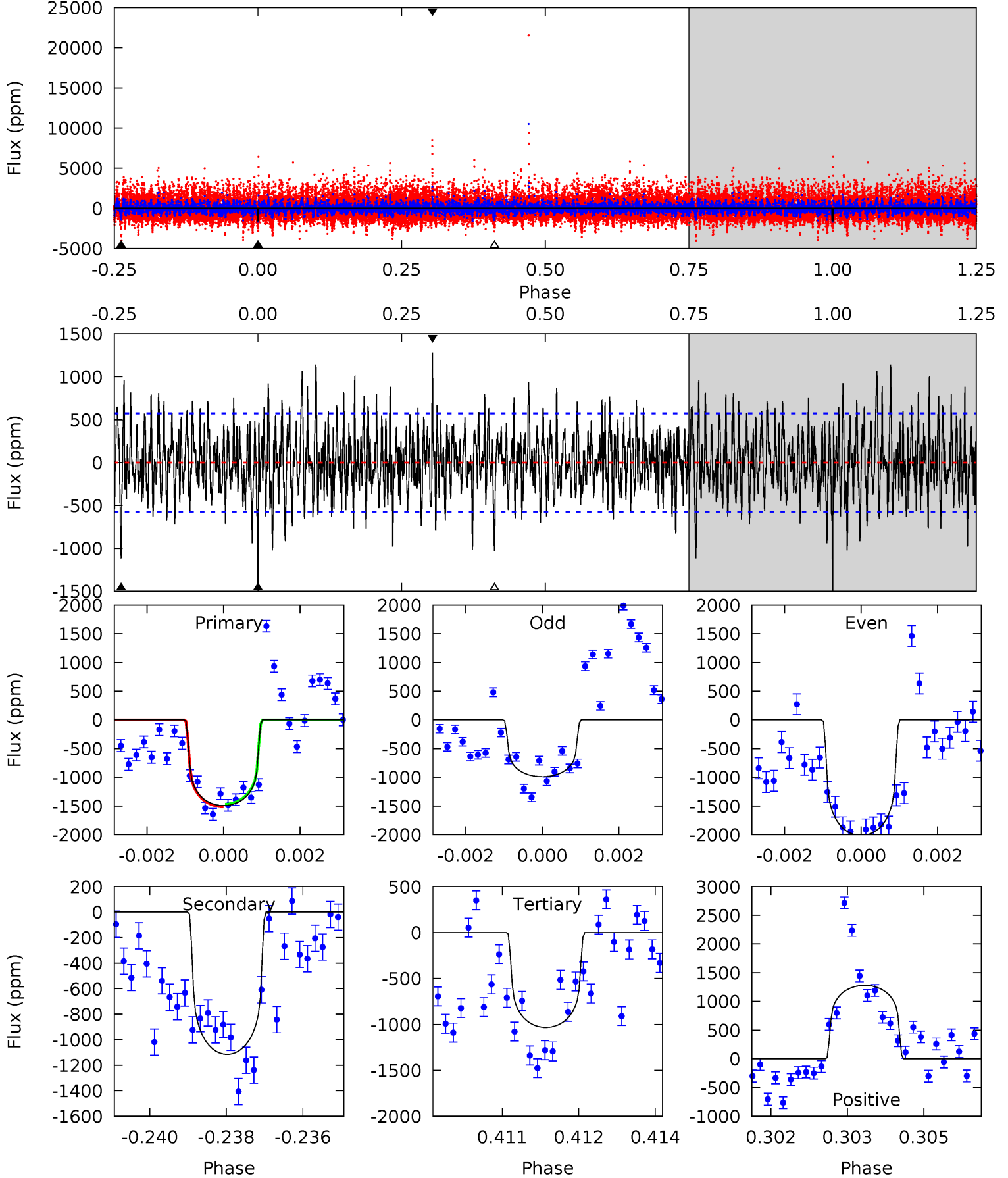
TCE 006668646-07 P=255.875849 Days $T_0=365.715242$ (BKJD)



DV Model-Shift Uniqueness Test

006668646-07, P = 255.872777 Days, E = 109.930157 Days

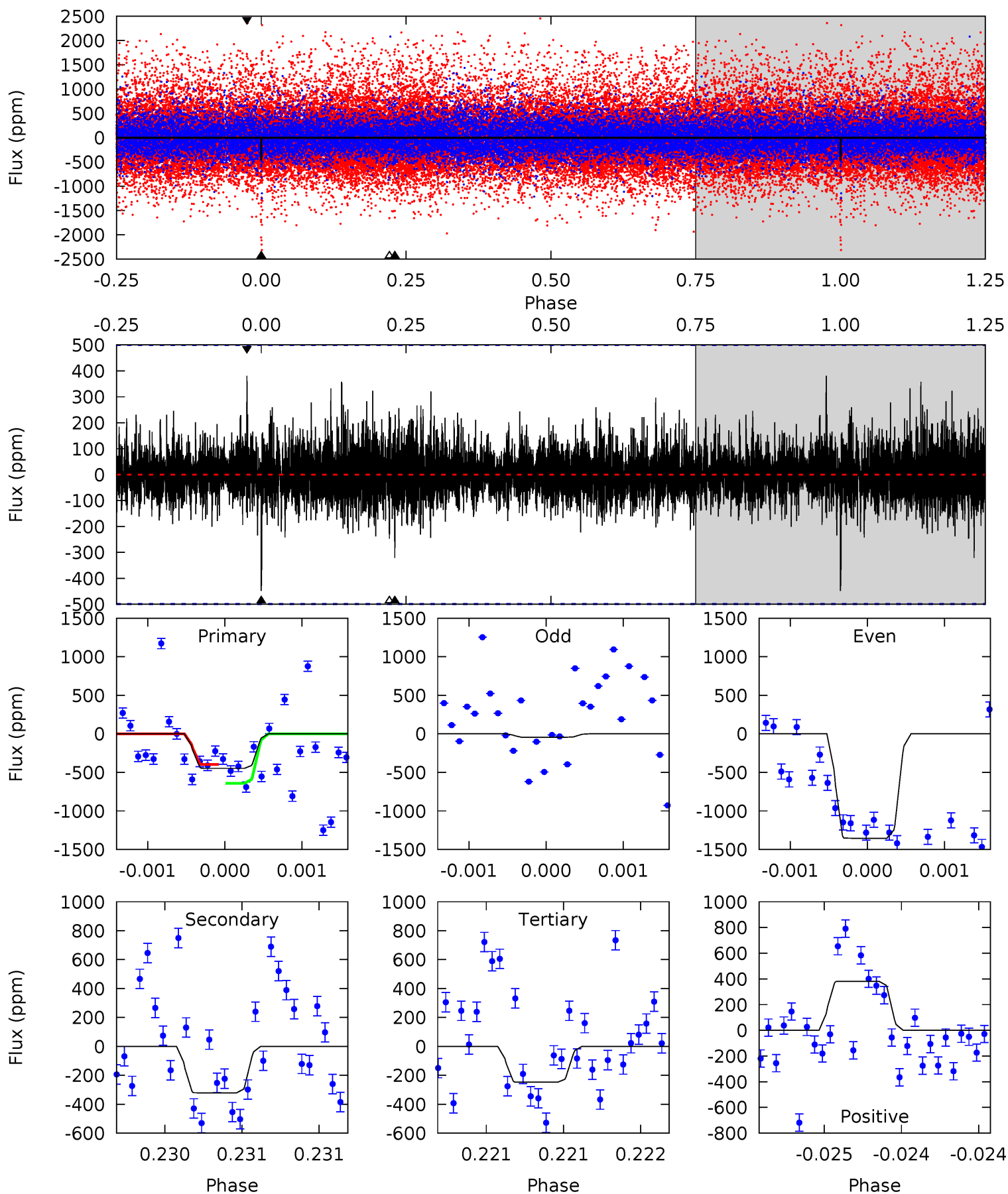
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	10.5	9.69	12.0	5.37	3.16	2.96	4.32	2.00	0.76	-1.56	4.19	1.08	0.46	0.20



Alt Model-Shift Uniqueness Test

006668646-07, P = 255.875849 Days, E = 109.839393 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.94	3.54	2.73	4.20	5.51	3.38	0.79	2.21	0.74	0.81	-0.66	7.72	1.51	0.46	1.39



Stellar Parameters For KIC 006668646

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3591^{+65}_{-72}	$4.862^{+0.050}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.390^{+0.040}_{-0.044}$	$0.405^{+0.042}_{-0.052}$	$9.604^{+2.468}_{-1.640}$
	+2%/-2%	+1%/-1%	+50%/-50%	+10%/-11%	+10%/-13%	+26%/-17%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006668646-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1114 ± 107	$1.46^{+0.74}_{-0.66}$	180^{+4}_{-5}	3537^{+875}_{-405}	$96085^{+237113}_{-52857}$
Alt.	-321 ± 91	$1.19^{+0.69}_{-0.65}$	180^{+4}_{-5}	3125^{+891}_{-412}	$41956^{+159330}_{-26905}$

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

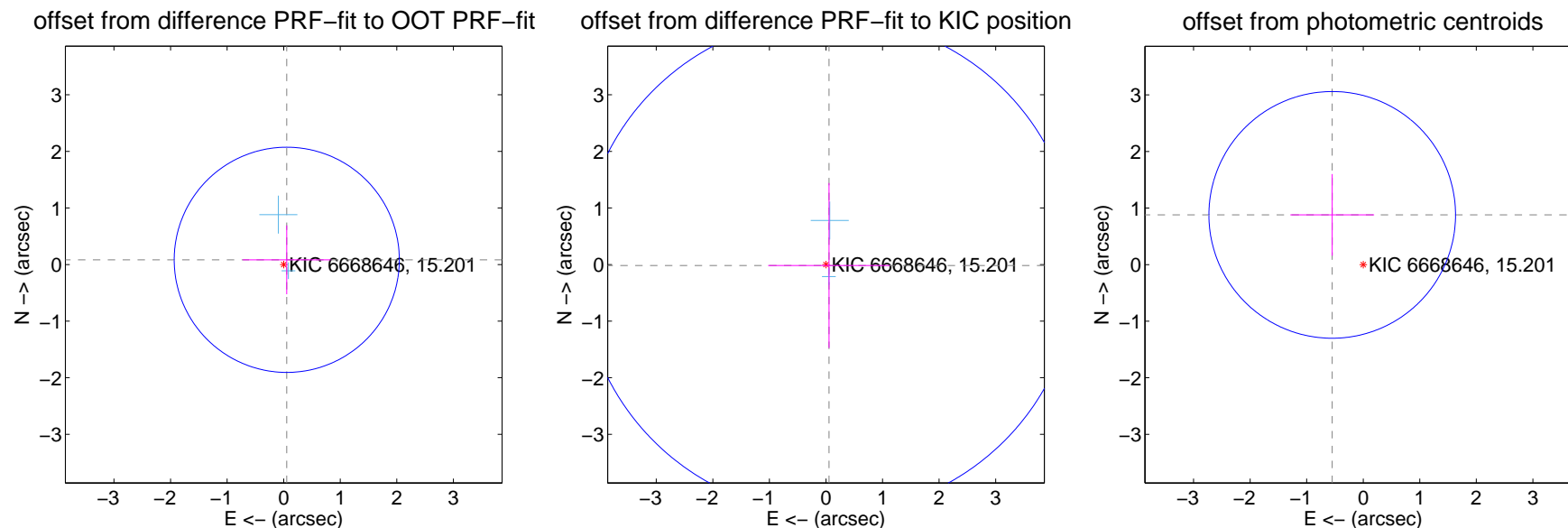
DV Centroid Data

Supplemental centroid analysis for 006668646-07. Kepler magnitude: 15.20. Transit SNR 5.89

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.69 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.100 ± 0.663	0.15	-0.054 ± 0.778	0.084 ± 0.608
PRF-fit source offset from KIC position	0.056 ± 1.461	0.04	-0.053 ± 1.075	-0.017 ± 1.457
photometric centroid source offset	1.04 ± 0.73	1.43	0.55 ± 0.74	0.88 ± 0.72



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



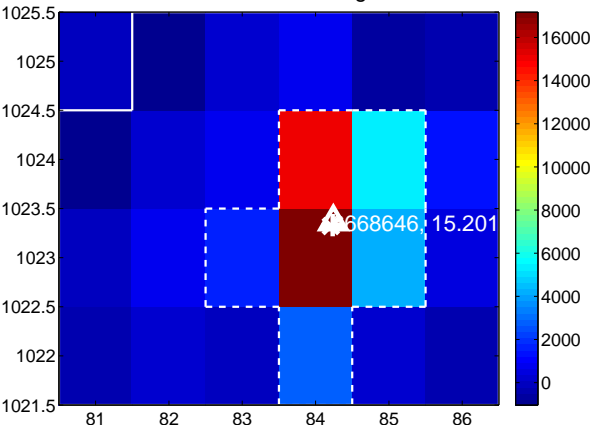
Q3 no difference image



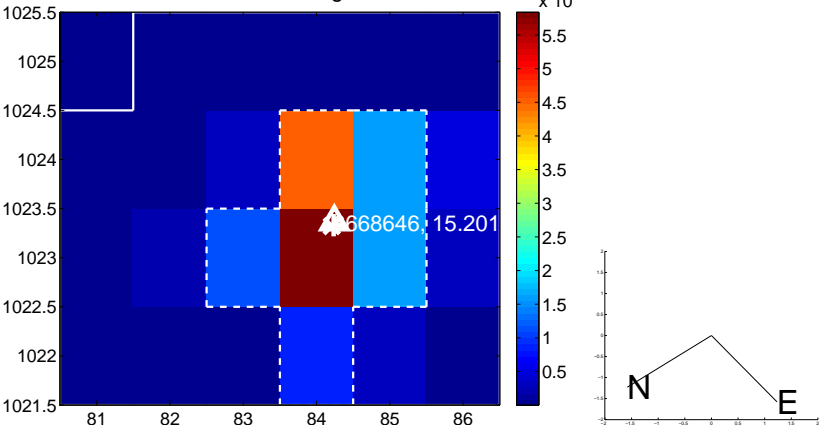
Q3 no OOT image



Q4 difference image



Q4 OOT image



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

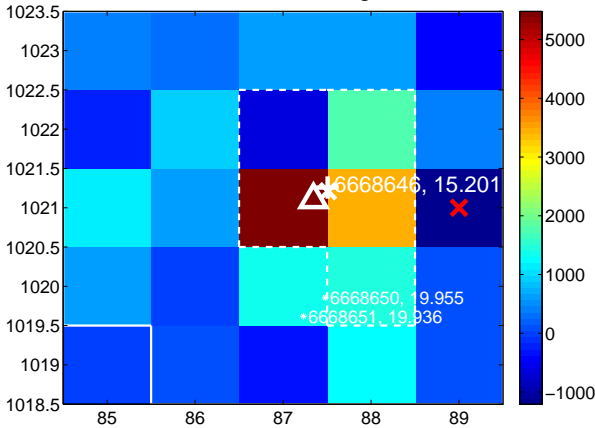
Q5 no difference image



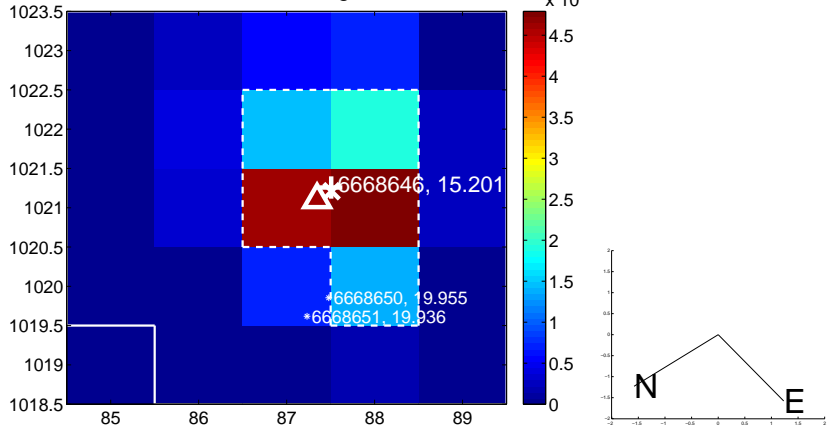
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



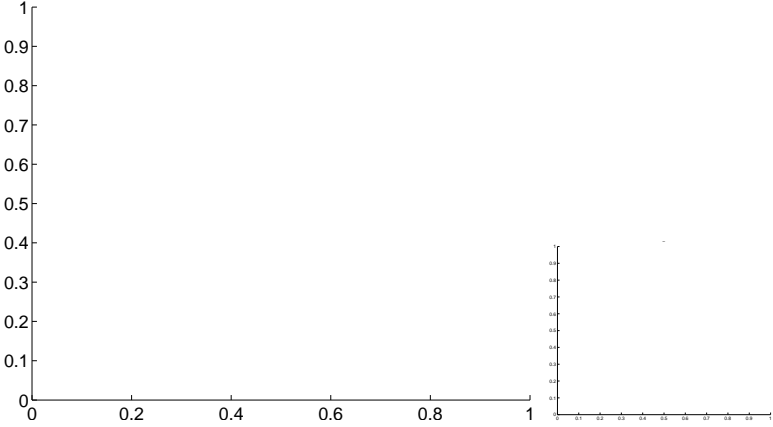
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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.

Q13 no difference image



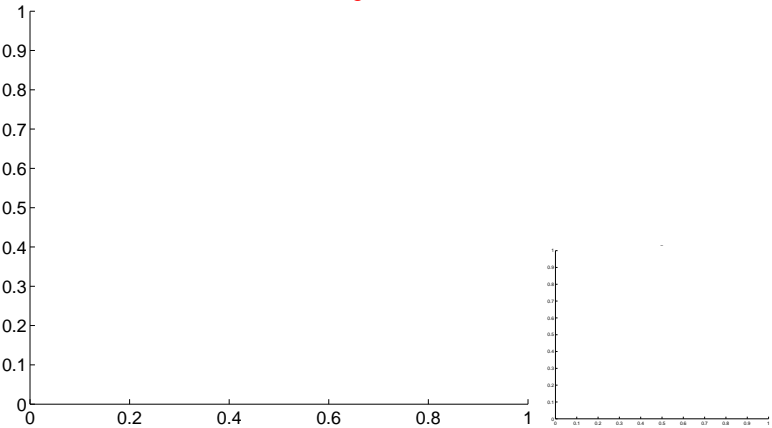
Q13 no OOT image



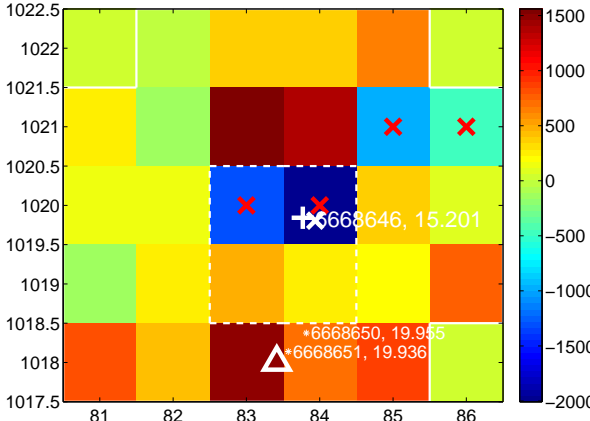
Q14 no difference image



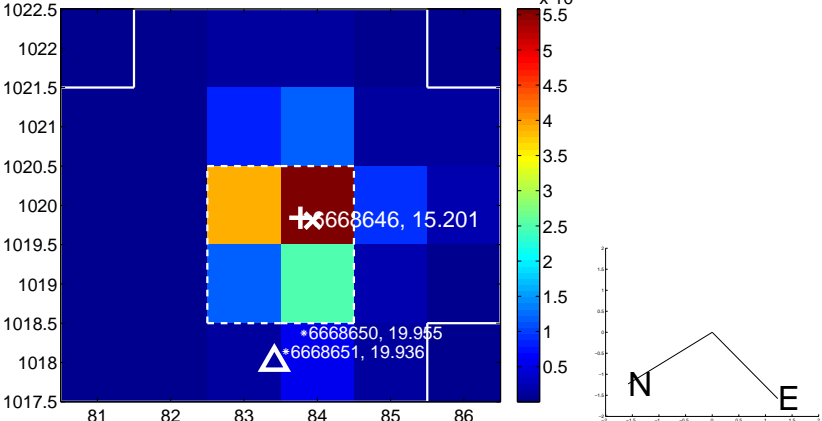
Q14 no OOT image



Q15 difference image. Poor Quality



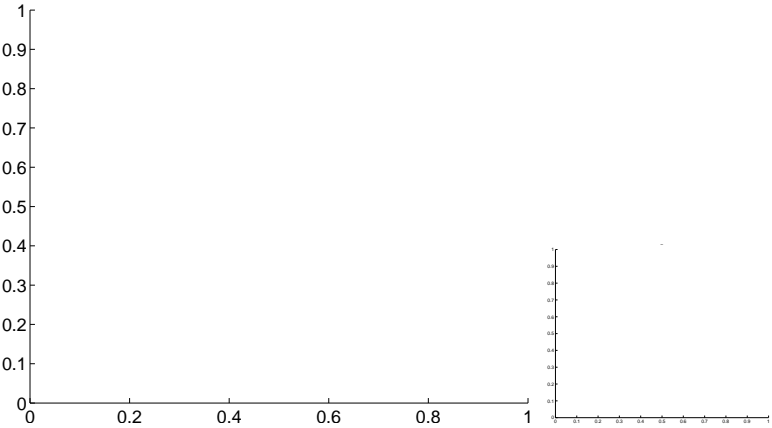
Q15 OOT image



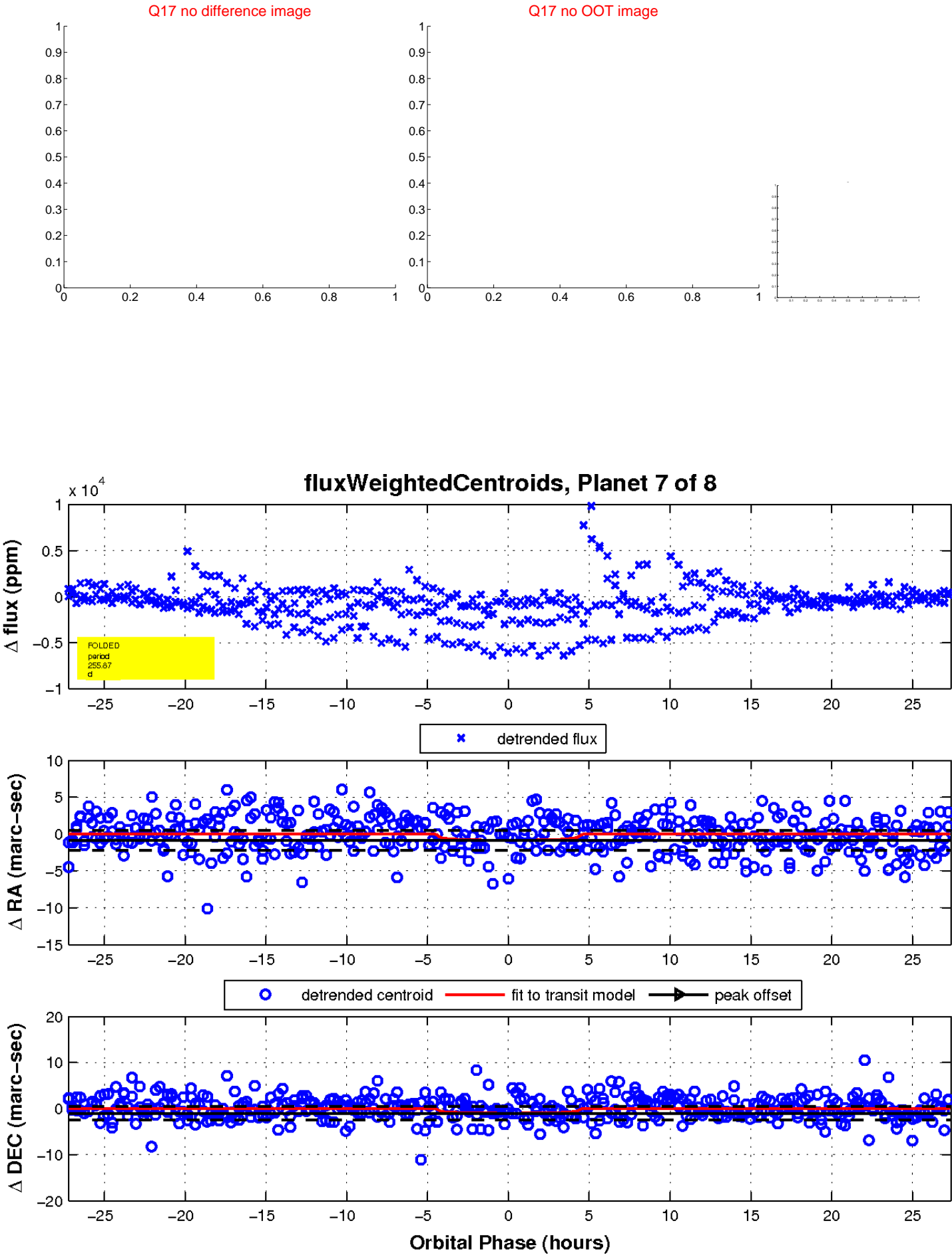
Q16 no difference image



Q16 no OOT image

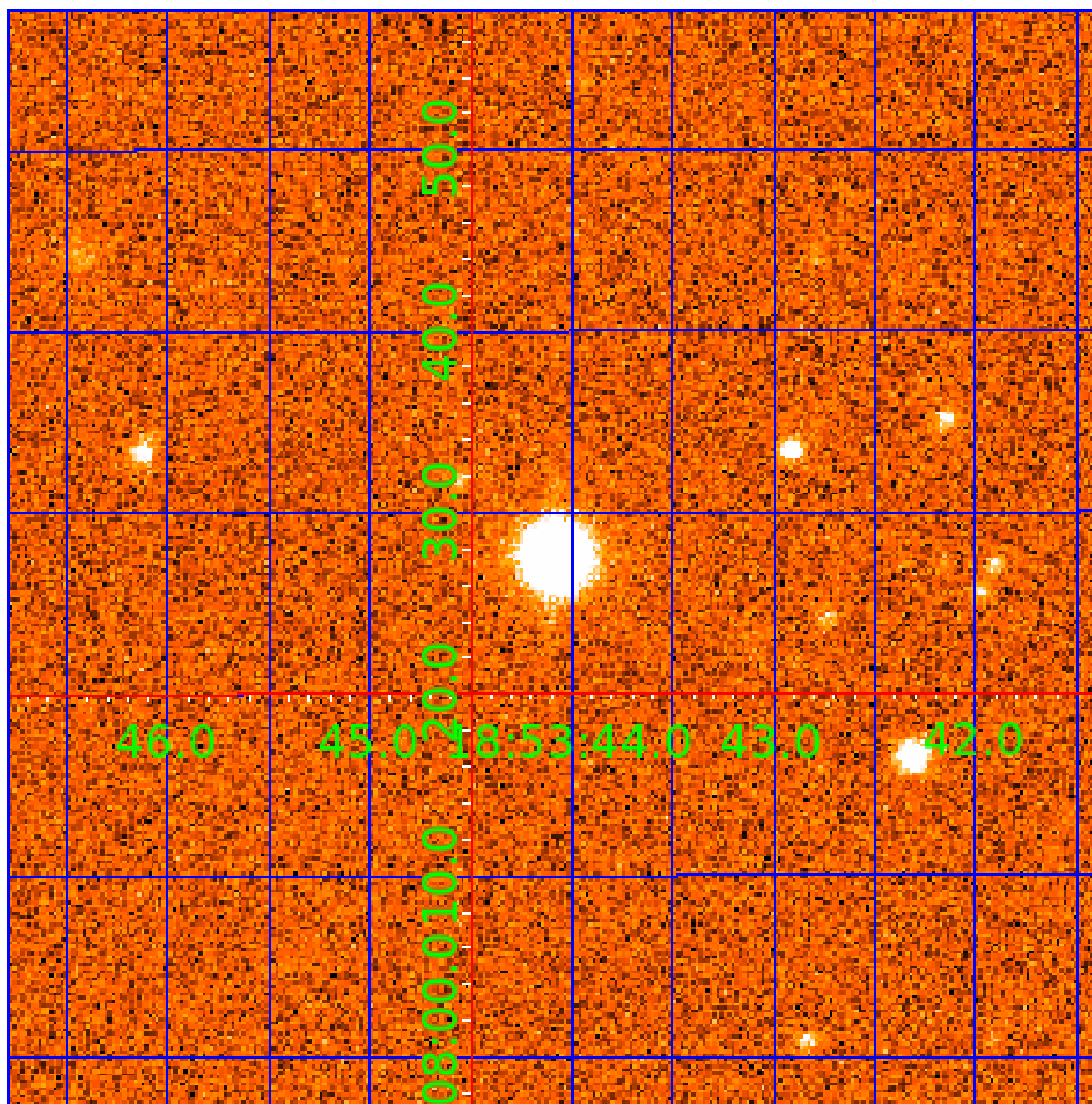


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006668646

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})
006668646-01	OBS	No	290.814329	281.810555	2544.7	4.221	14.4	10.1	0.39	3591	1.95	0.06
006668646-02	OBS	No	177.086828	158.808828	861.0	4.666	12.9	4.3	0.39	3591	1.19	0.11
006668646-03	OBS	No	568.897181	363.037278	2566.8	14.531	11.4	9.0	0.39	3591	1.96	0.02
006668646-04	OBS	No	237.253769	363.065689	1304.9	7.516	13.2	5.4	0.39	3591	1.43	0.07
006668646-05	OBS	No	323.633285	419.053478	843.4	0.695	10.0	2.8	0.39	3591	1.16	0.05
006668646-06	OBS	No	333.152236	408.937825	1342.8	10.695	9.3	5.6	0.39	3591	1.42	0.05
006668646-07	OBS	No	255.872777	365.802934	1332.6	9.145	11.7	5.9	0.39	3591	1.42	0.07
006668646-08	OBS	No	297.666832	410.833923	1651.5	7.844	9.8	7.2	0.39	3591	1.57	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006668646-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
006668646-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006668646-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006668646-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
006668646-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006668646-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006668646-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

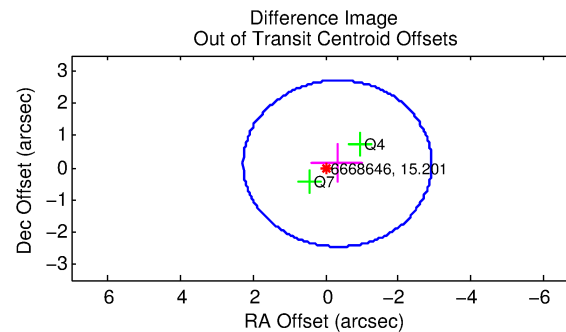
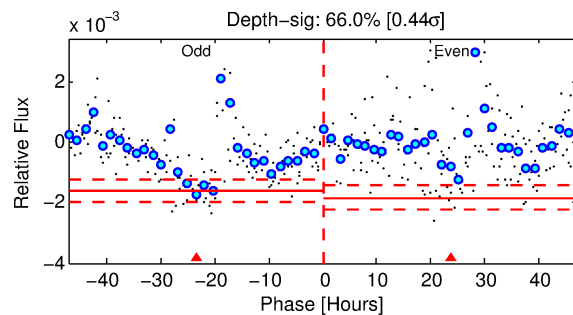
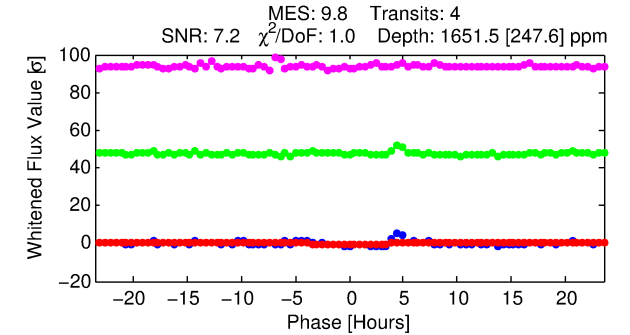
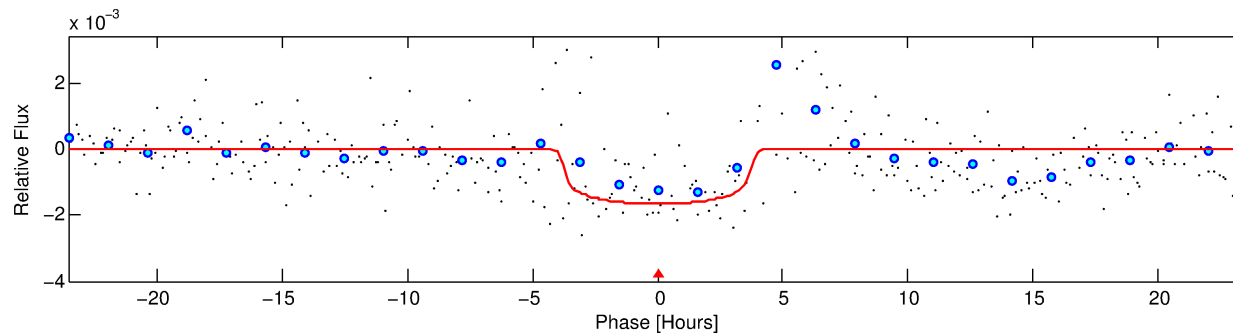
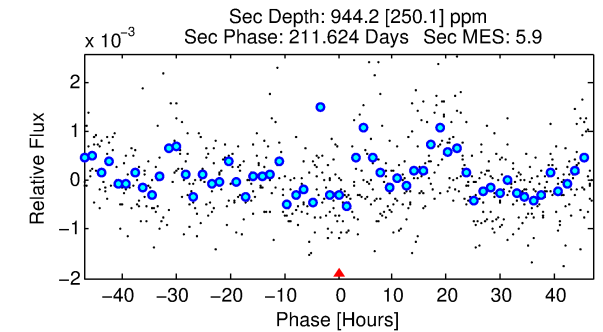
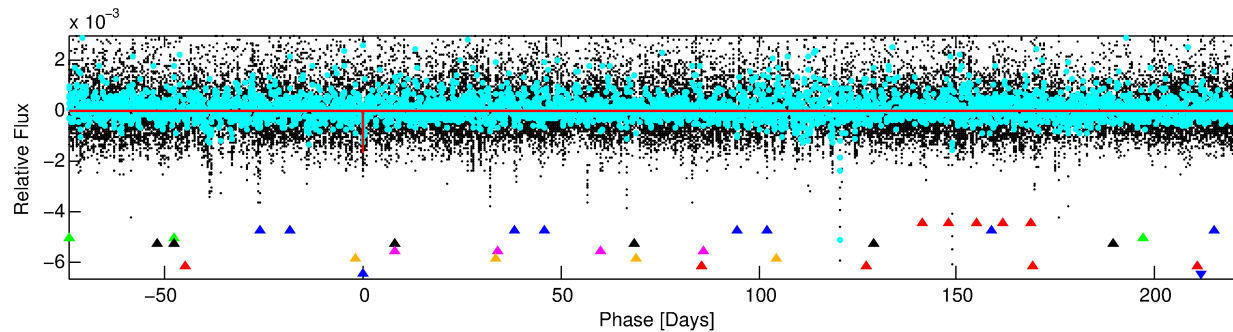
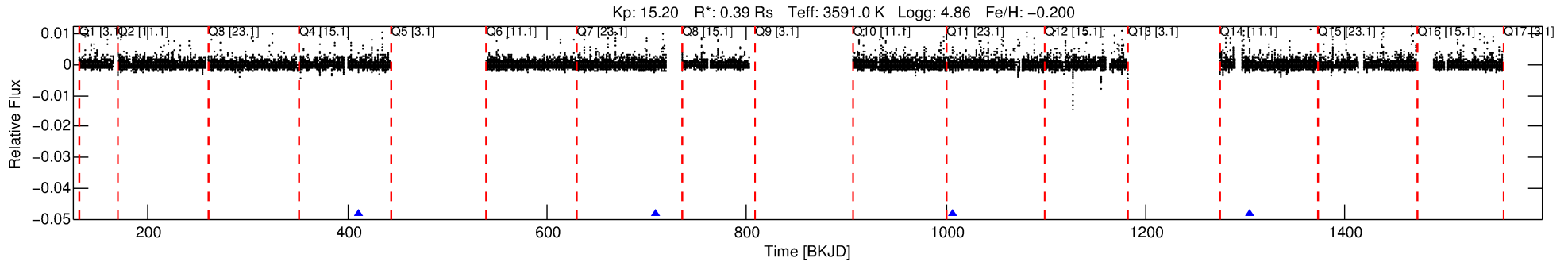
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006668646-08

No Significant Match Found

DV One-Page Summary

KIC: 6668646 Candidate: 8 of 8 Period: 297.667 d



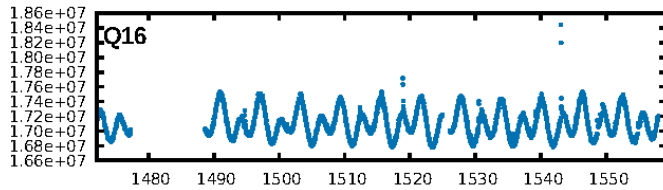
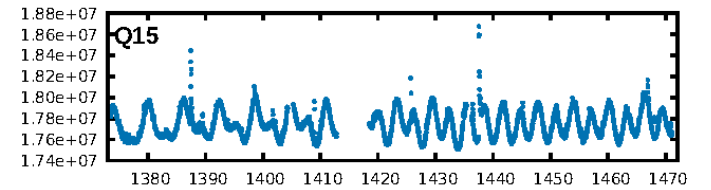
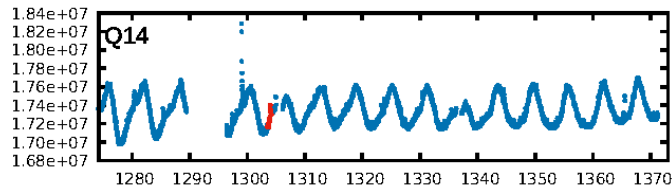
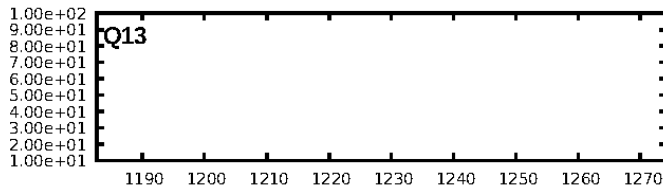
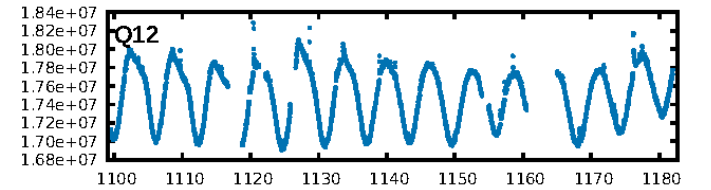
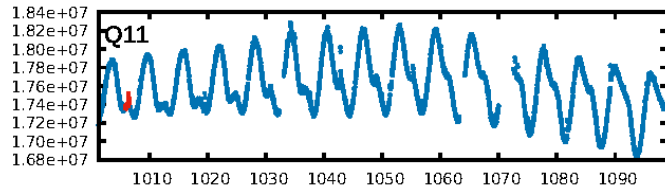
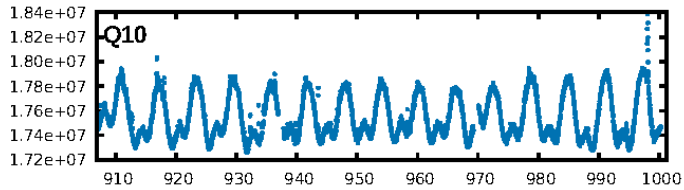
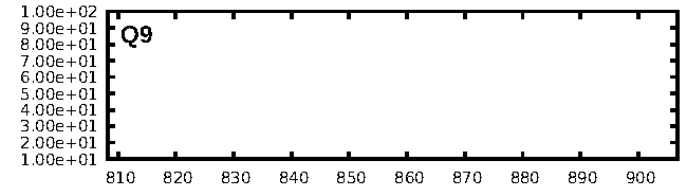
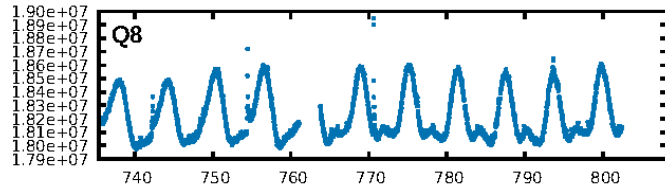
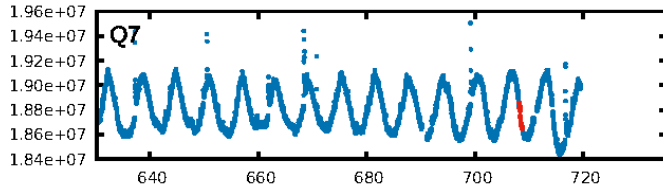
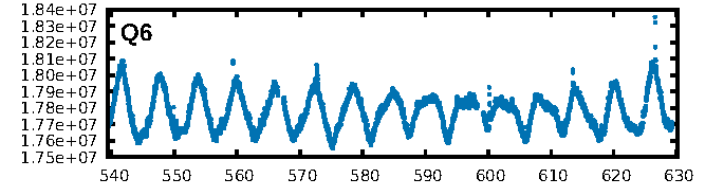
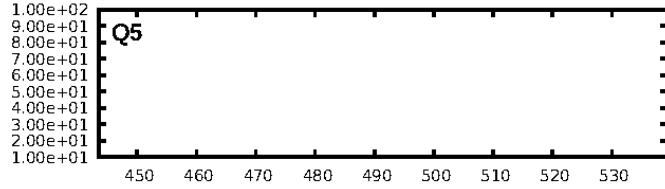
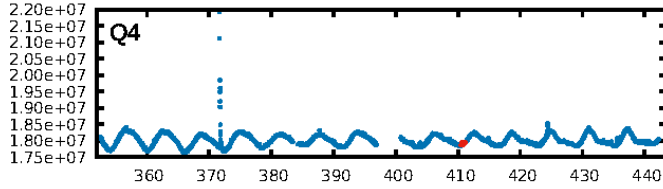
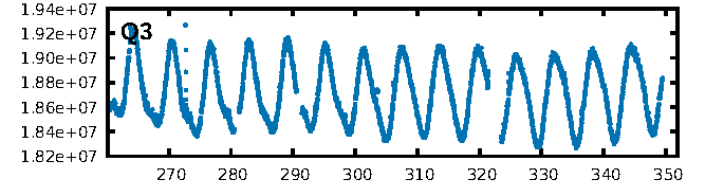
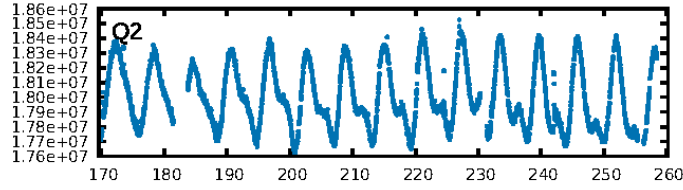
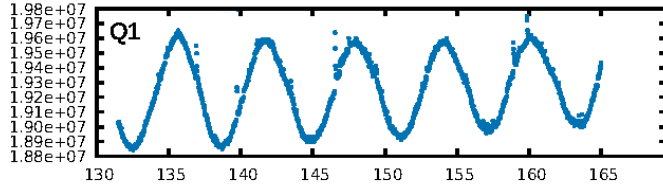
DV Fit Results:

Period = 297.66683 [0.00488] d
Epoch = 410.8339 [0.0088] BKJD
Rp/R* = 0.0369 [0.0210]
a/R* = 300.61 [763.29]
b = 0.01 [253.70]
Seff = 0.05 [0.01]
Teq = 123 [4] K
Rp = 1.57 [0.91] Re
a = 0.6450 [0.0545] AU
Ag = 87564.29 [102937.12] [0.85σ]
Teffp = 3276 [961] K [3.28σ]

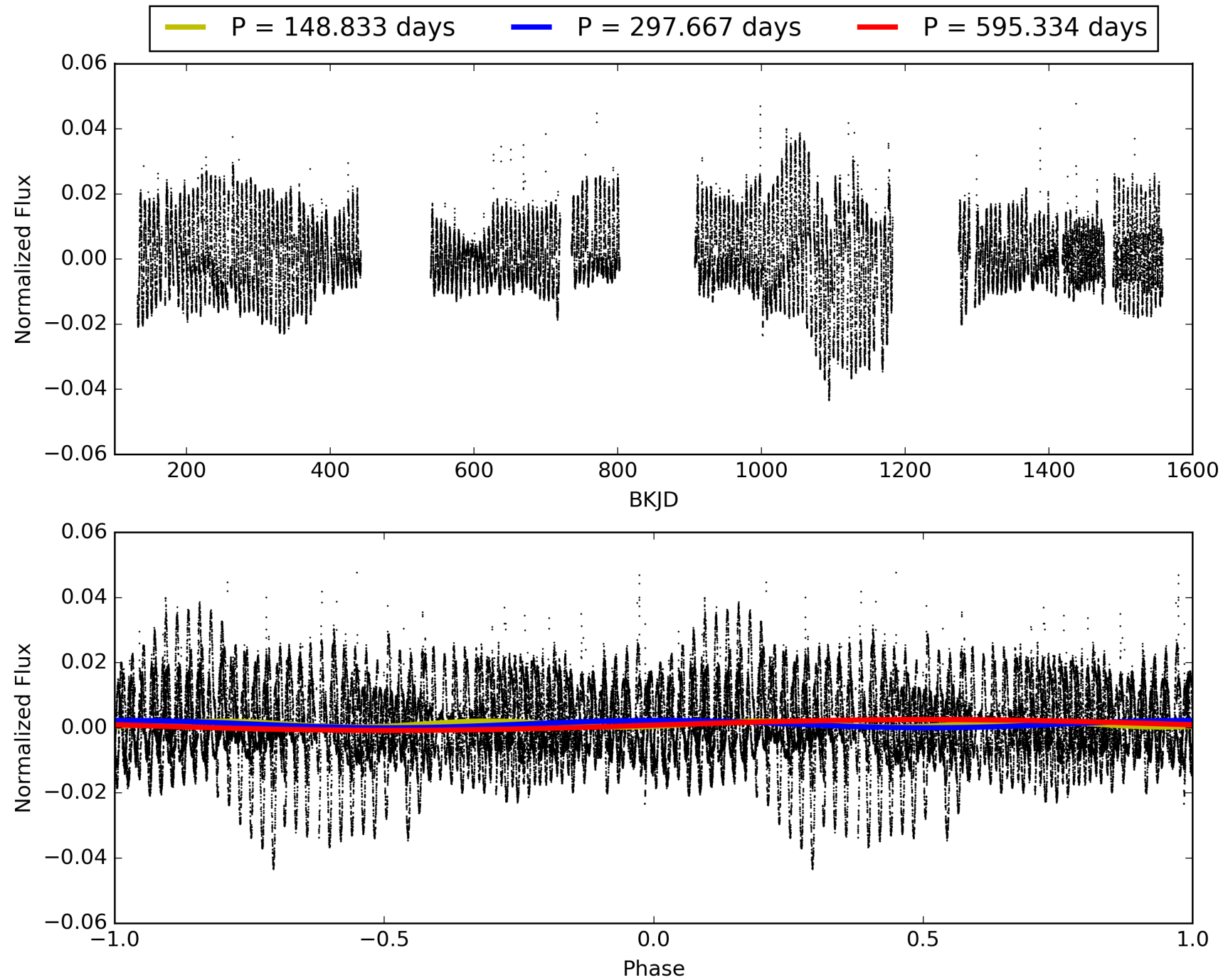
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.46σ]
LongPeriod-sig: 100.0% [79.14σ]
ModelChiSquare2-sig: 81.7%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 5.49e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 12.19
Centroid-sig: 36.6%
Centroid-so: 0.744 arcsec [1.21σ]
OotOffset-rm: 0.351 arcsec [0.41σ]
KicOffset-rm: 0.409 arcsec [0.62σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 006668646-08, PDC Light Curves

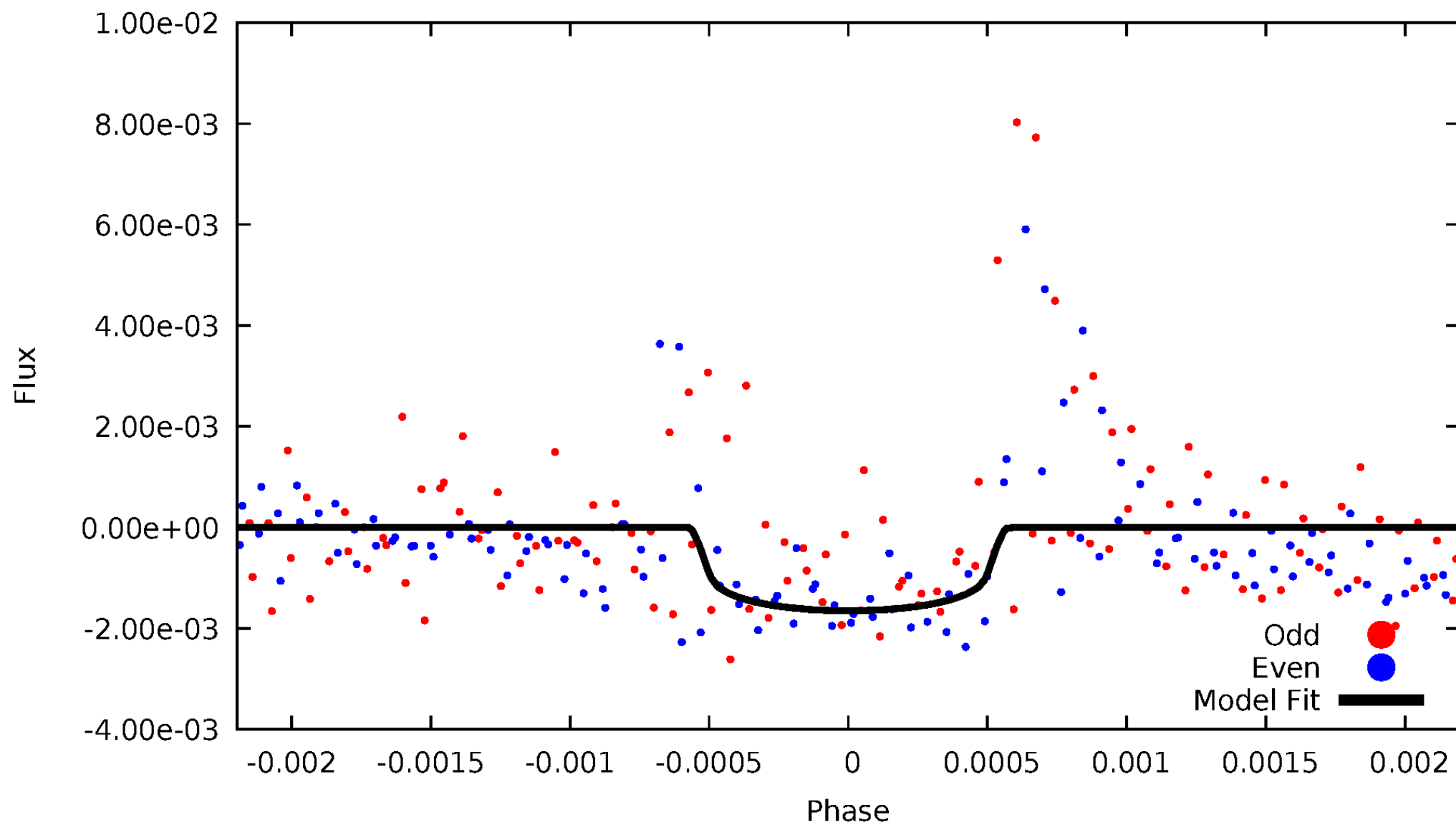


TCE 006668646-08



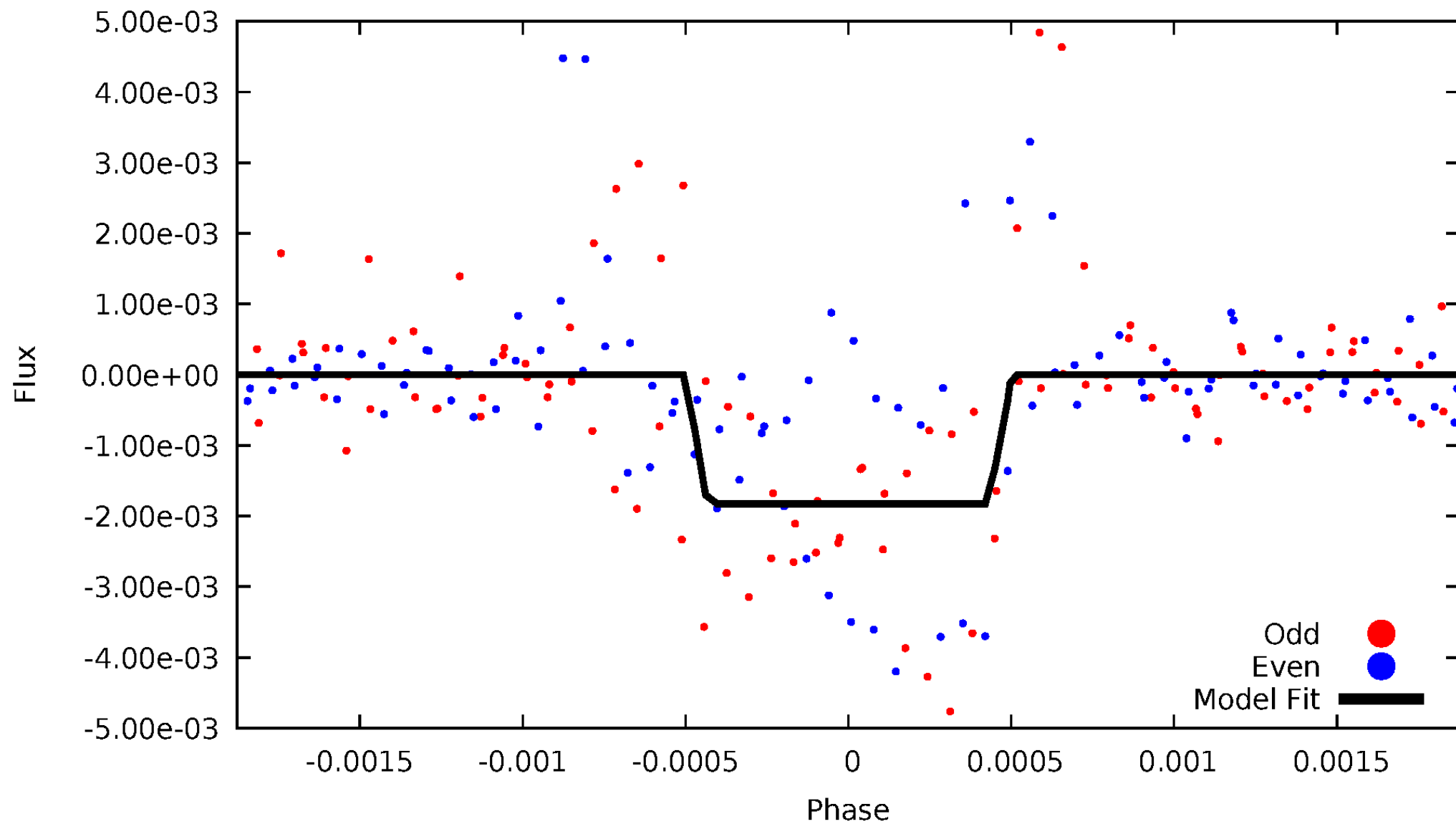
DV Odd/Even

TCE 006668646-08



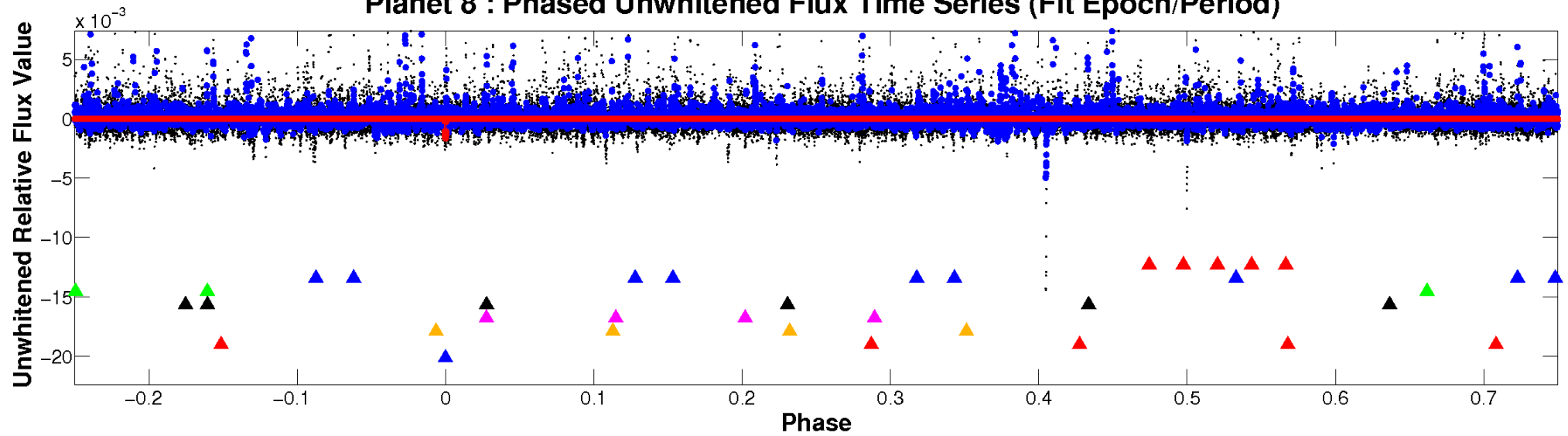
ALT Odd/Even

TCE 006668646-08

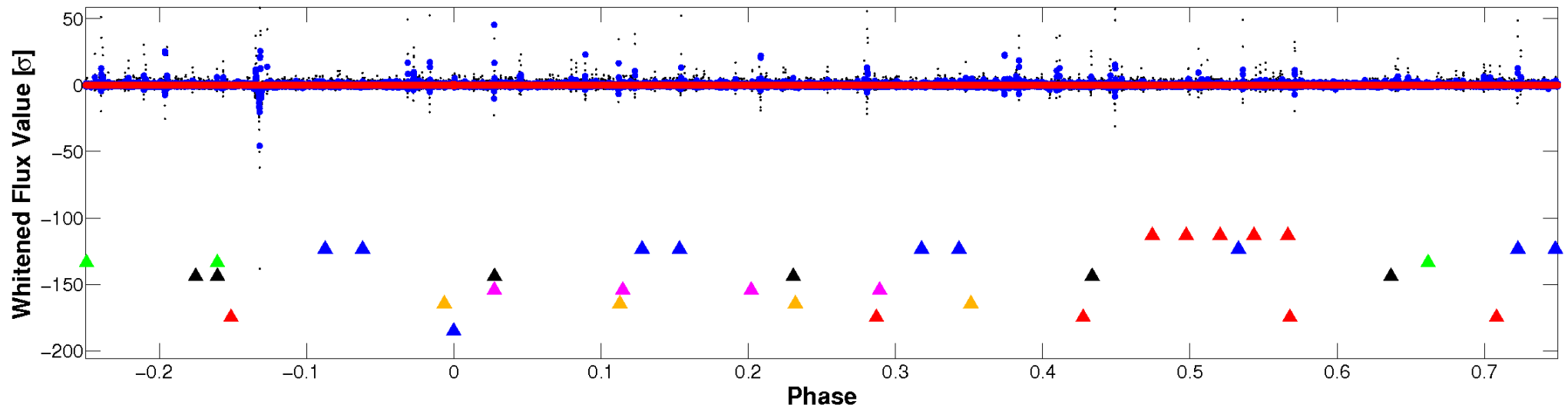


Non-Whitened Vs. Whitened Light Curve

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

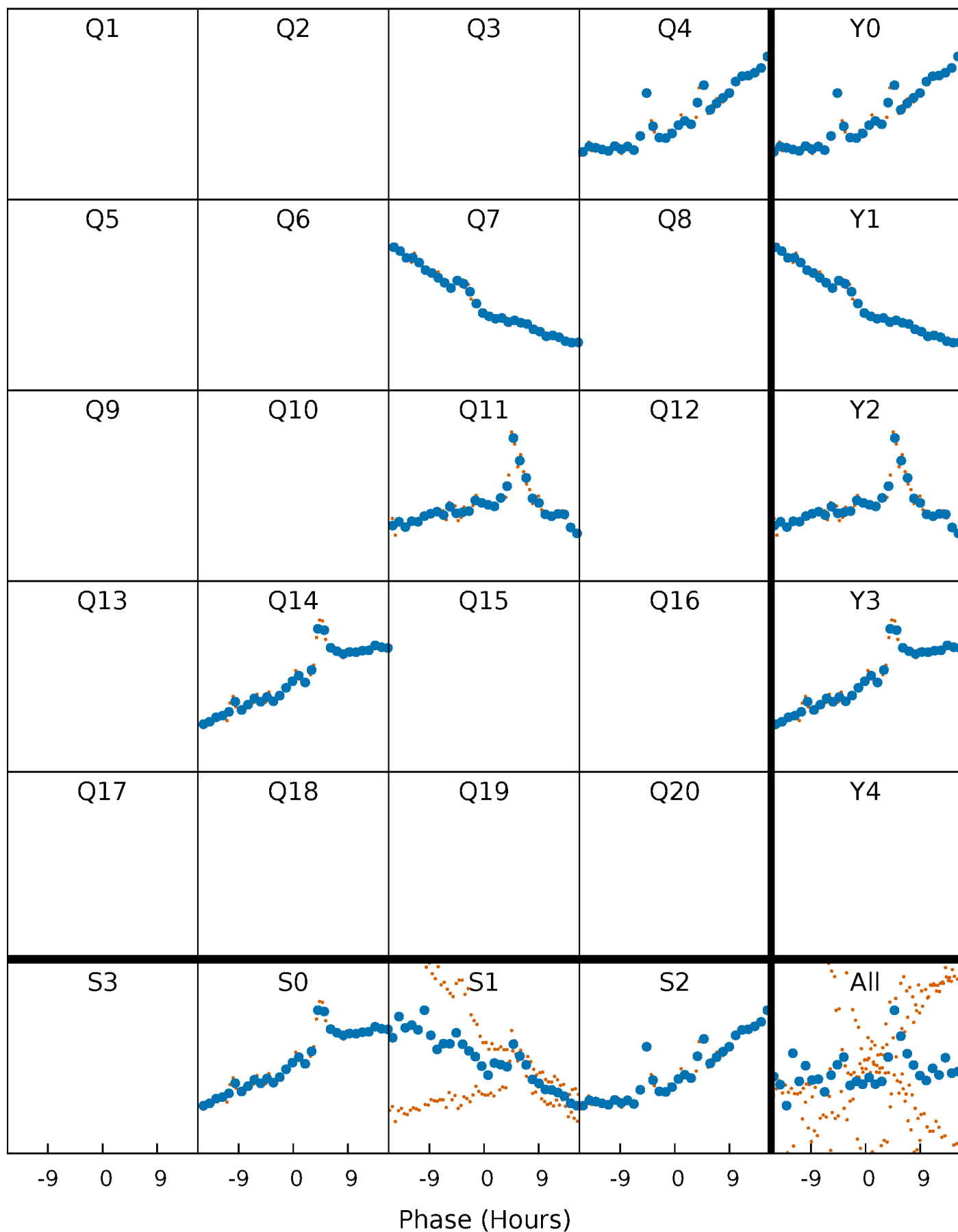


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



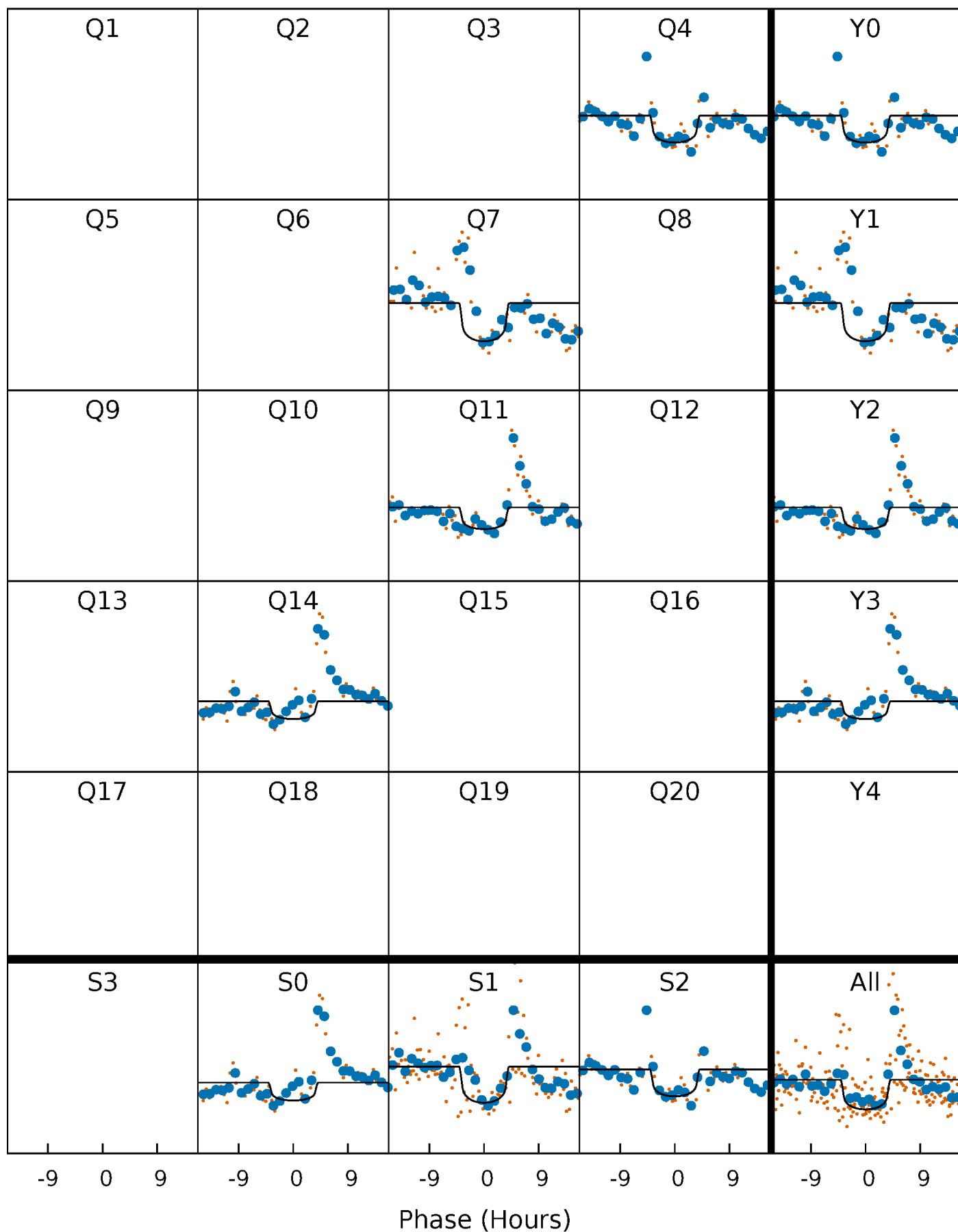
PDC Quarter-Phased Transit Curves

TCE 006668646-08 P=297.666832 Days $T_0=410.833923$ (BKJD)



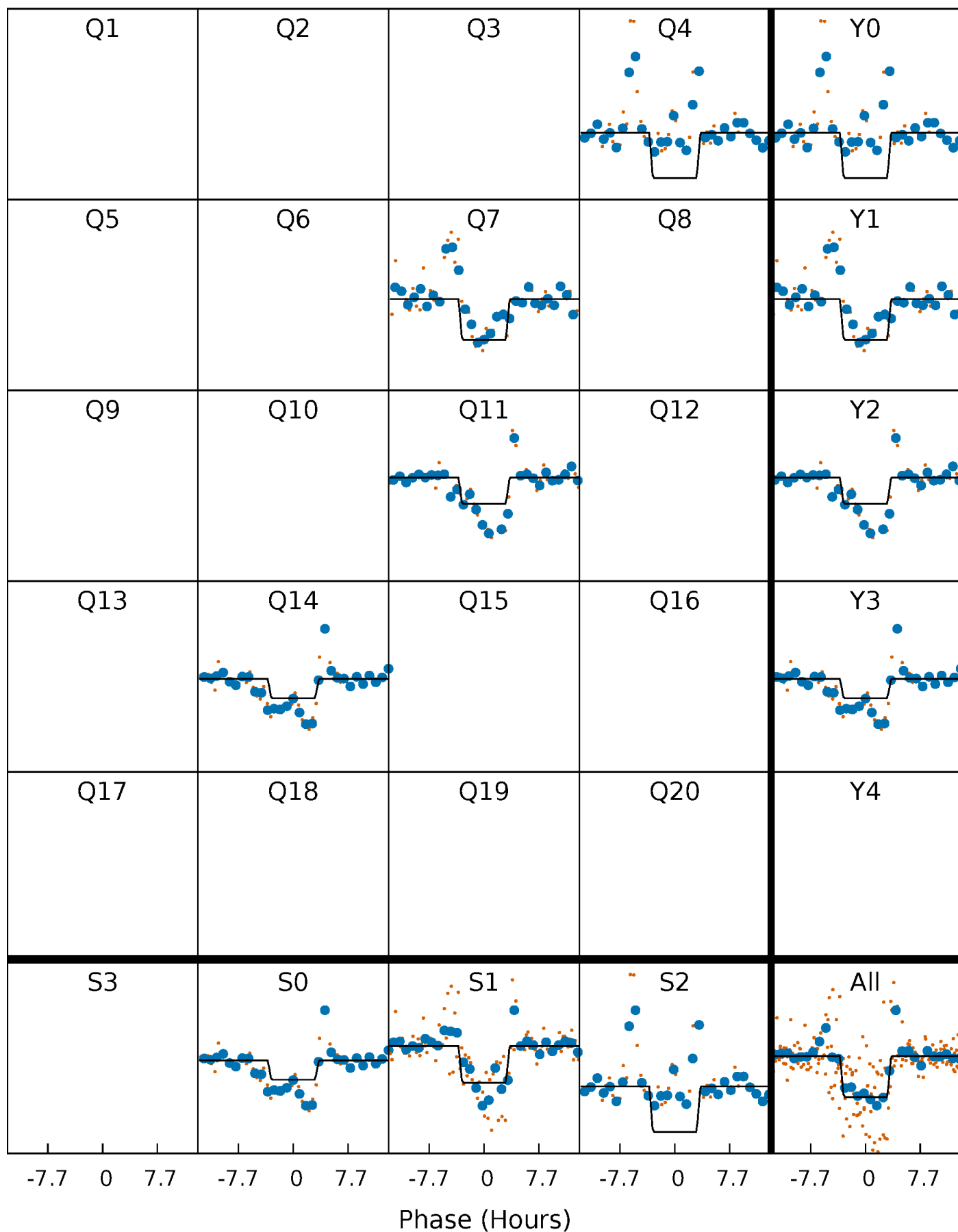
DV Quarter-Phased Transit Curves

TCE 006668646-08 $P=297.666832$ Days $T_0=410.833923$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

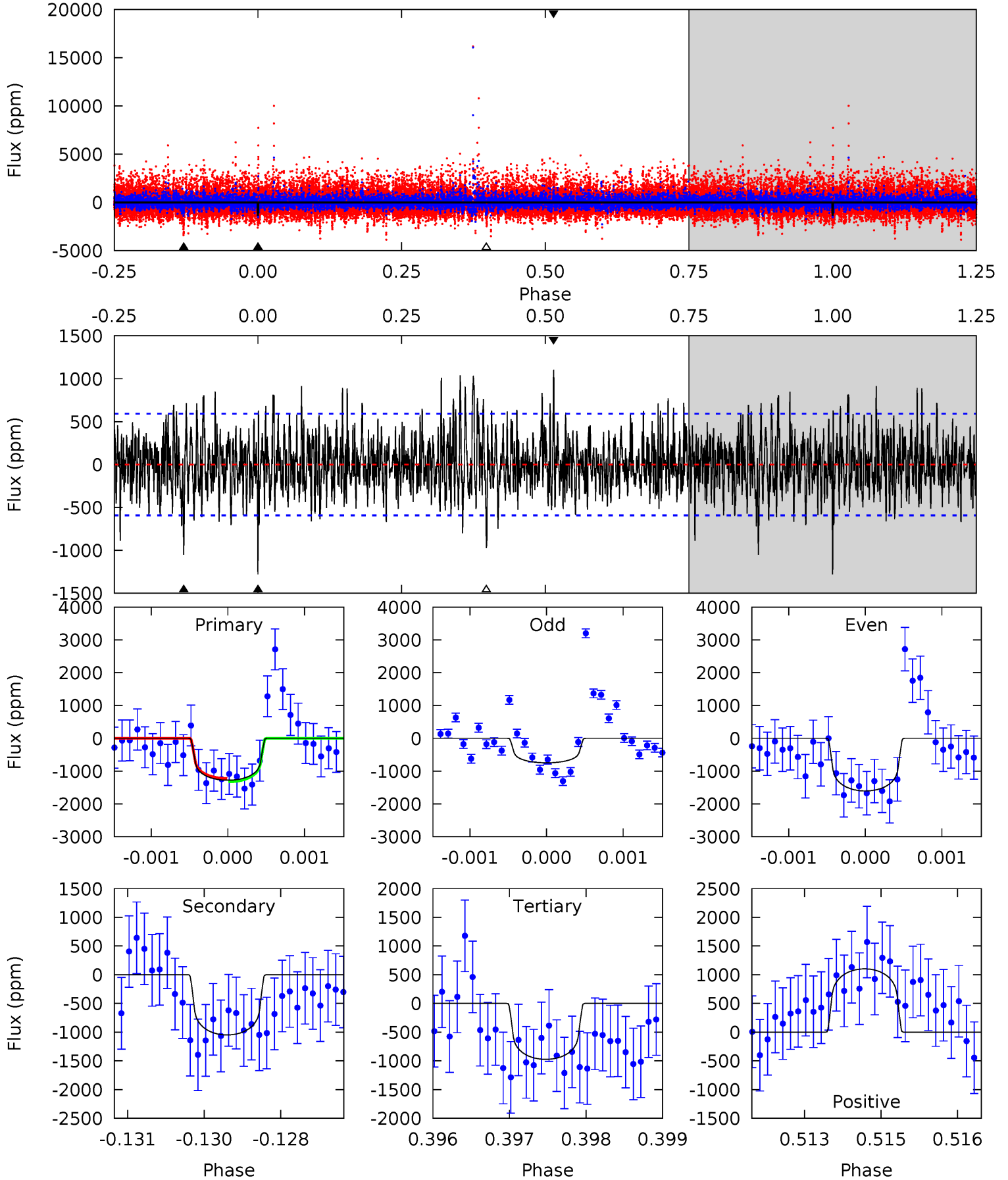
TCE 006668646-08 P=297.648857 Days $T_0=410.893371$ (BKJD)



DV Model-Shift Uniqueness Test

006668646-08, P = 297.666832 Days, E = 113.167091 Days

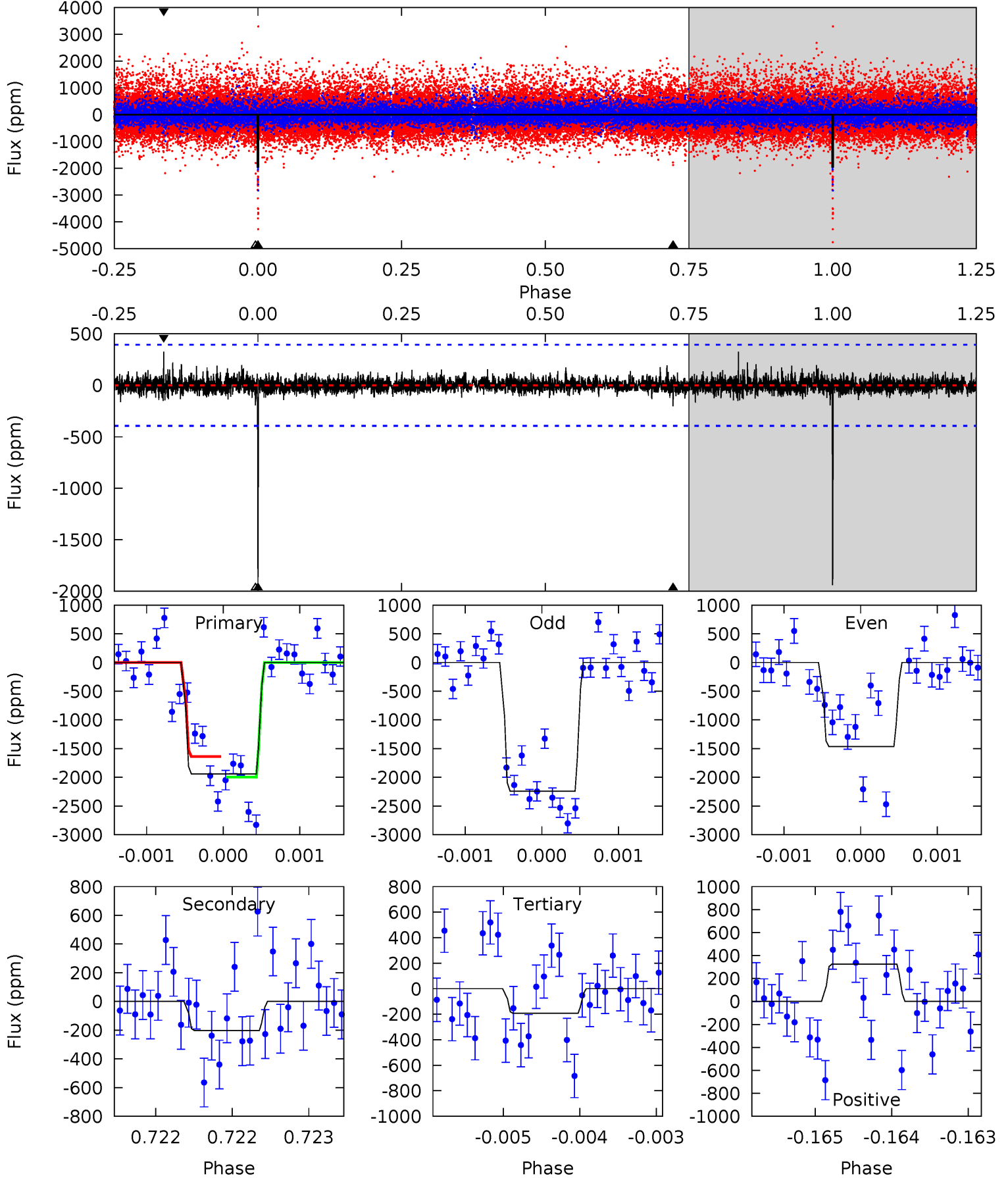
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	9.60	8.91	10.1	5.42	3.25	2.50	2.80	1.62	0.69	-0.49	3.07	0.97	0.46	0.45



Alt Model-Shift Uniqueness Test

006668646-08, P = 297.648857 Days, E = 113.244514 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	2.80	2.68	4.50	5.46	3.30	0.58	24.2	22.4	0.13	-1.70	5.60	0.88	0.14	2.39



Stellar Parameters For KIC 006668646

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3591^{+65}_{-72}	$4.862^{+0.050}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.390^{+0.040}_{-0.044}$	$0.405^{+0.042}_{-0.052}$	$9.604^{+2.468}_{-1.640}$
	+2%/-2%	+1%/-1%	+50%/-50%	+10%/-11%	+10%/-13%	+26%/-17%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006668646-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1048 ± 109	$1.61^{+0.92}_{-0.87}$	172^{+4}_{-5}	3412^{+1058}_{-419}	$95444^{+333773}_{-57158}$
Alt.	-202 ± 72	$1.84^{+0.81}_{-0.88}$	172^{+5}_{-5}	2607^{+497}_{-273}	13682^{+37132}_{-8100}

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

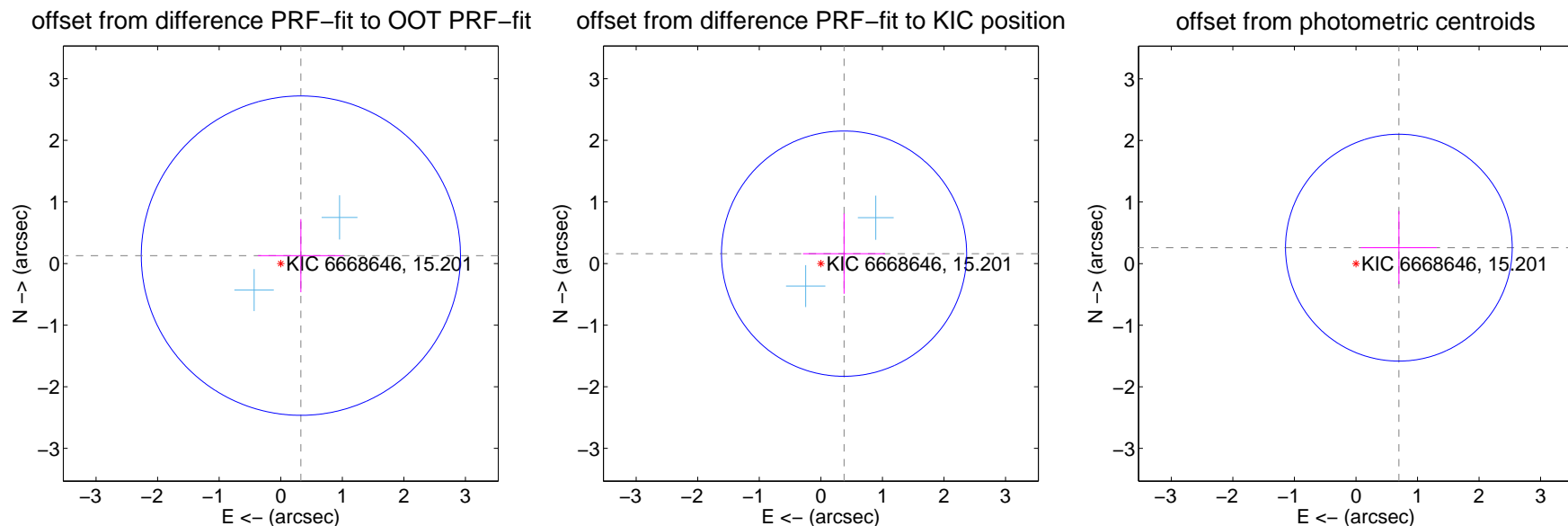
DV Centroid Data

Supplemental centroid analysis for 006668646-08. Kepler magnitude: 15.20. Transit SNR 7.19

There are 2 quarters with good PRF difference image offsets

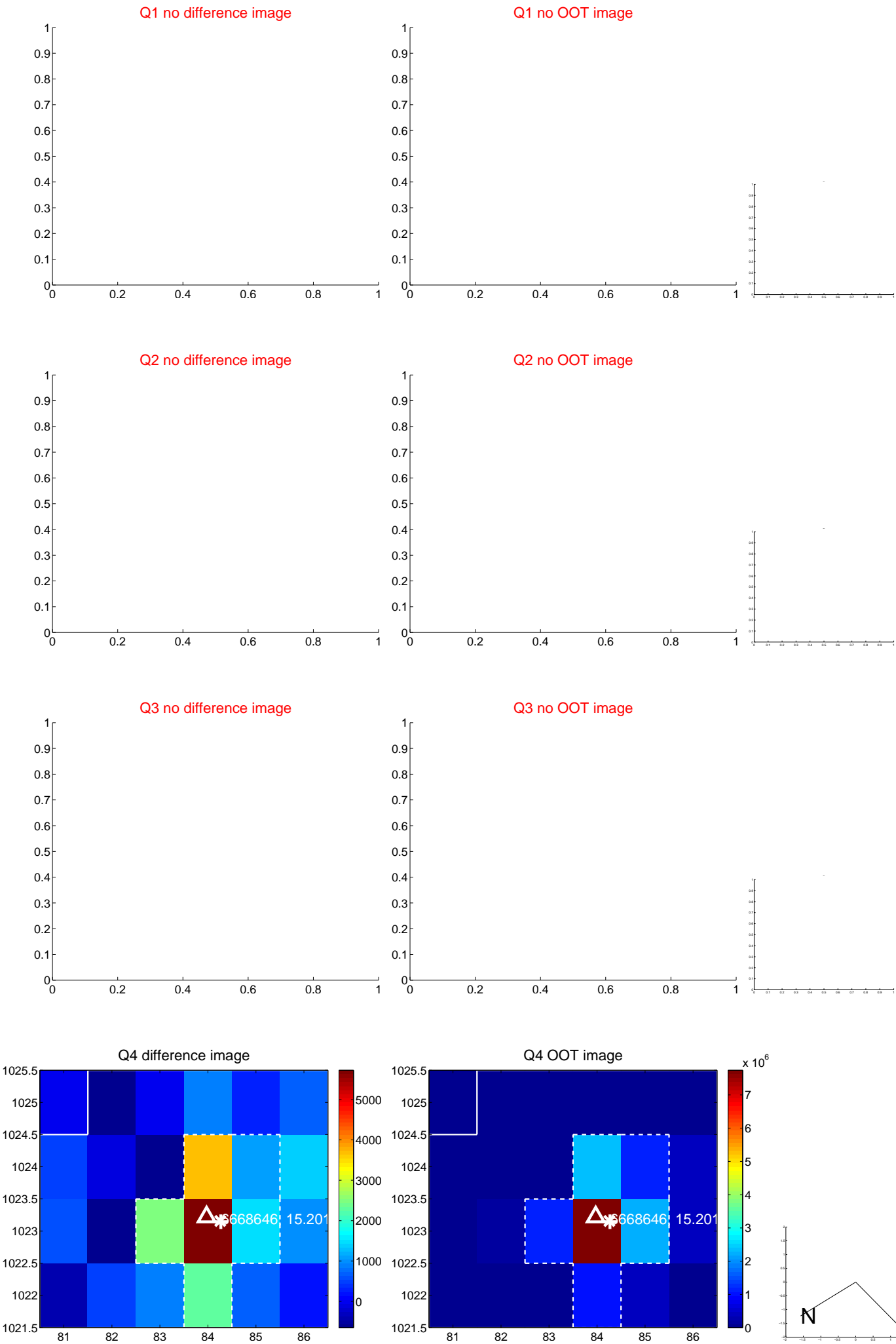
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.351 ± 0.864	0.41	-0.327 ± 0.697	0.129 ± 0.593
PRF-fit source offset from KIC position	0.409 ± 0.664	0.62	-0.377 ± 0.666	0.161 ± 0.651
photometric centroid source offset	0.74 ± 0.61	1.21	-0.70 ± 0.62	0.26 ± 0.59



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.

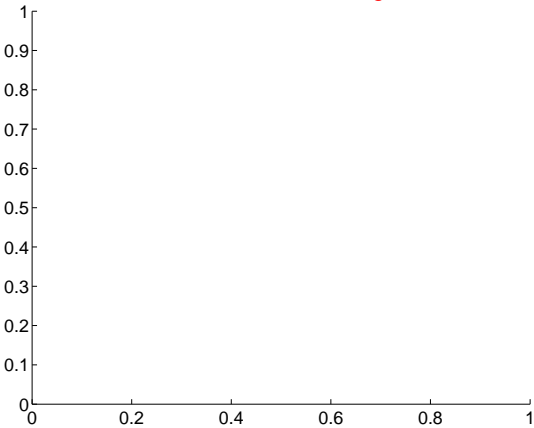
Q5 no difference image



Q5 no OOT image



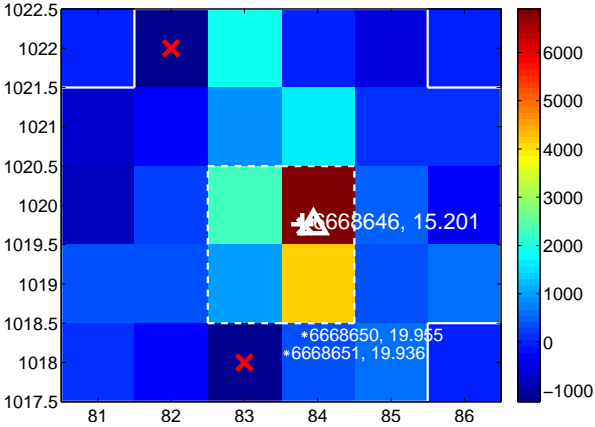
Q6 no difference image



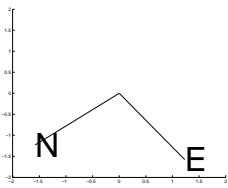
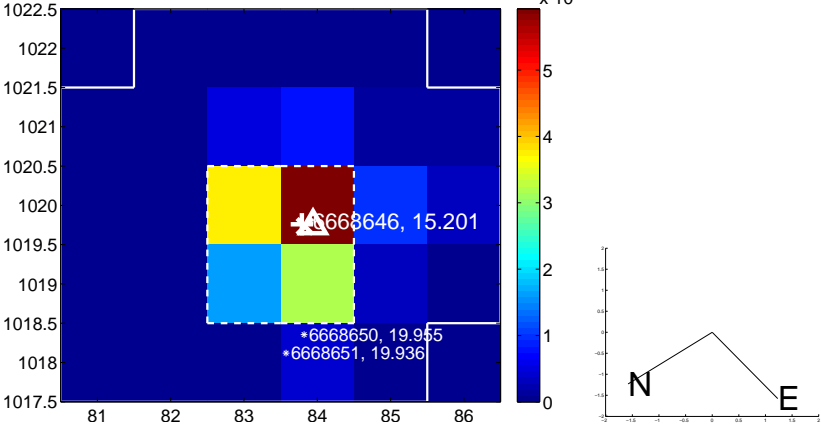
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



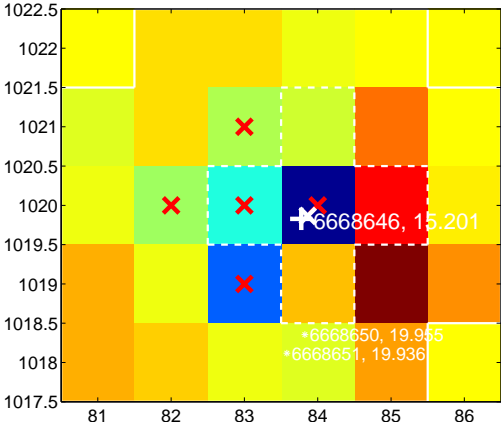
Q10 no difference image



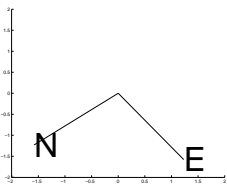
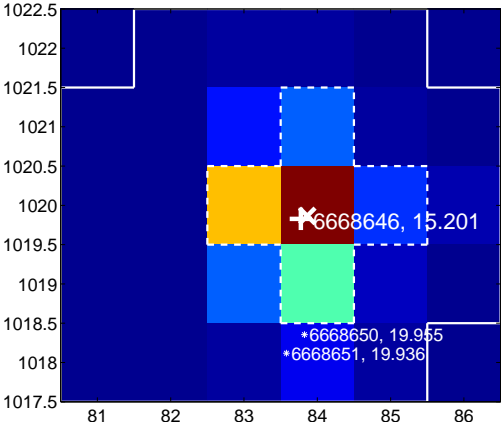
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

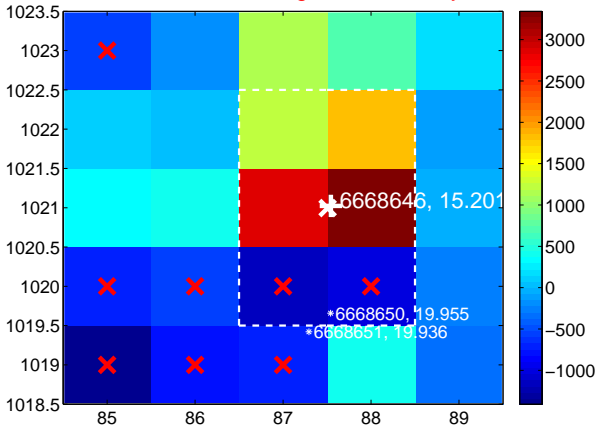
Q13 no difference image



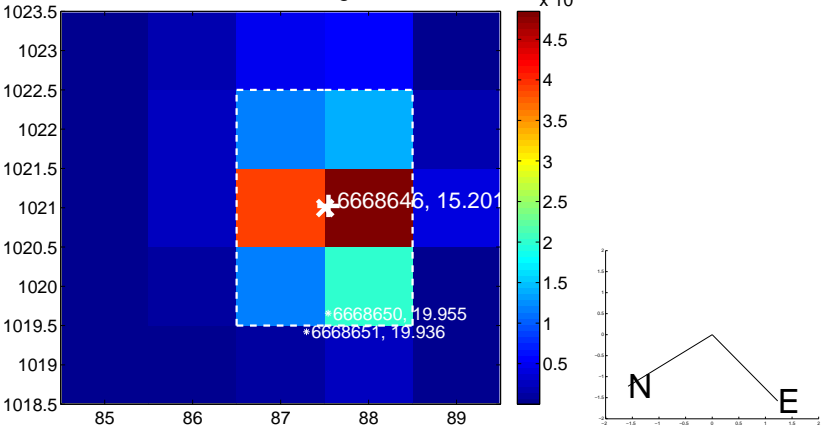
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



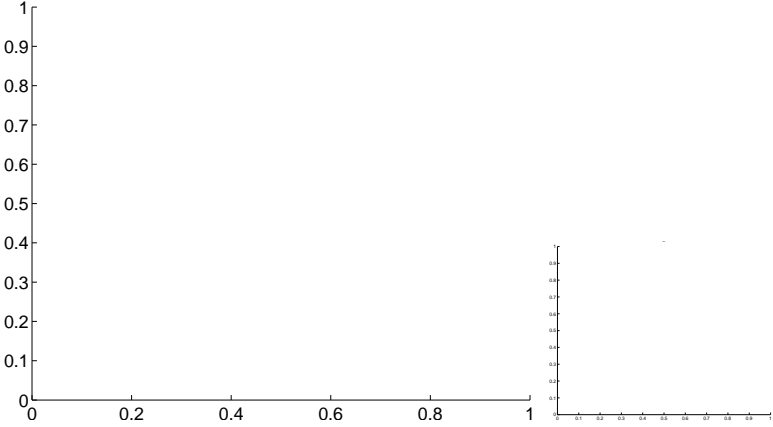
Q15 no OOT image



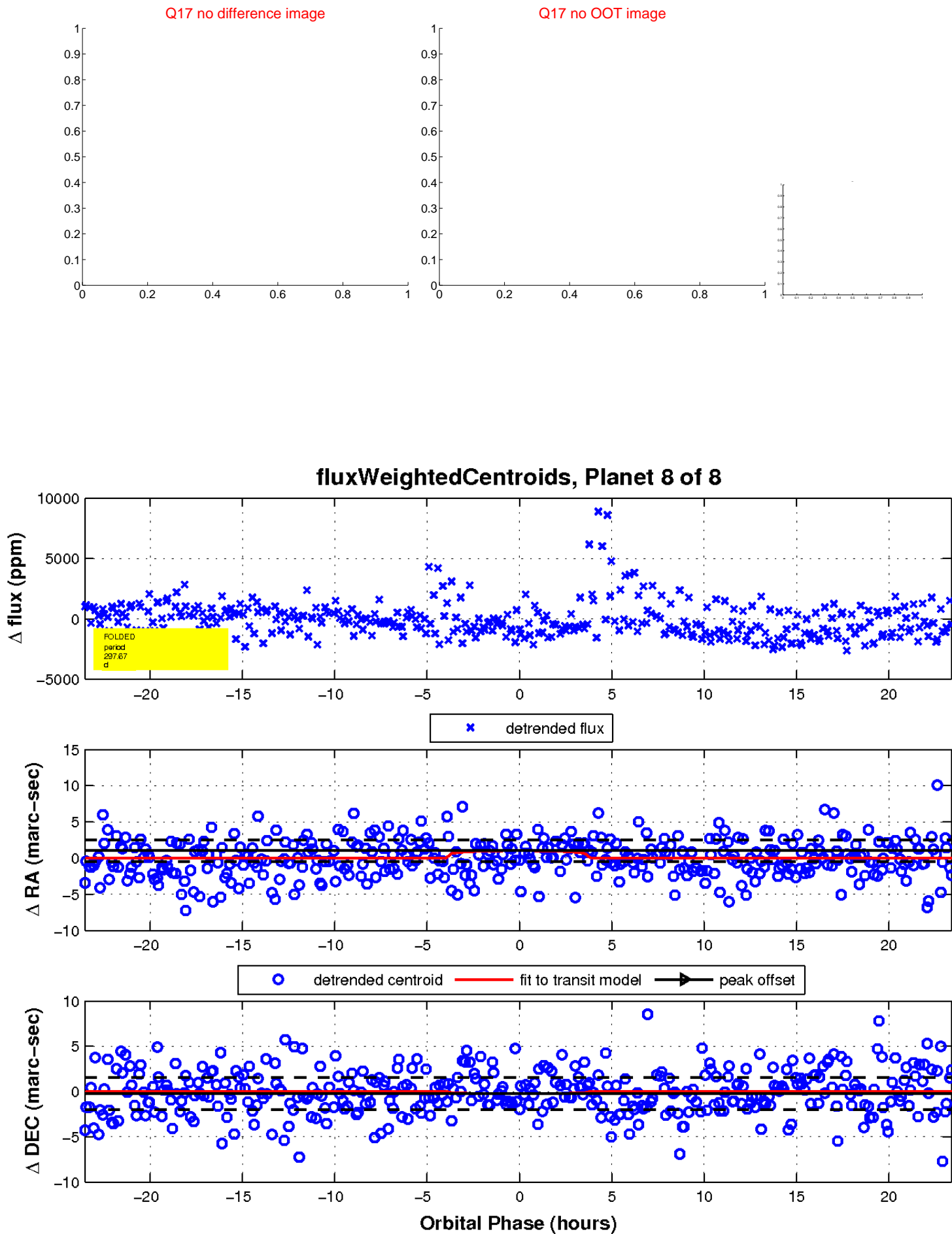
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

