

KIC 009446742

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})
009446742-01	OBS	No	576.784489	271.020983	2032.0	14.093	19.7	8.5	2.02	5087	9.37	1.48
009446742-02	OBS	No	340.356830	432.526099	1181.3	9.170	17.3	6.2	2.02	5087	6.84	2.99
009446742-03	OBS	No	471.555815	524.297157	422.4	6.653	17.8	2.2	2.02	5087	4.35	1.94
009446742-04	OBS	No	394.145654	349.790556	1375.2	4.052	17.1	6.0	2.02	5087	8.12	2.46
009446742-05	OBS	No	497.855676	456.087069	1587.4	7.698	14.3	7.7	2.02	5087	7.89	1.80
009446742-06	OBS	No	572.133337	242.065863	5811.6	12.378	15.0	16.3	2.02	5087	28.99	1.50
009446742-07	OBS	No	320.365764	270.634269	558.5	11.538	12.9	2.6	2.02	5087	4.95	3.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009446742-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— CENT_FEW_DIFFS
009446742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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
009446742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009446742-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— INCONSISTENT_TRANS
009446742-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

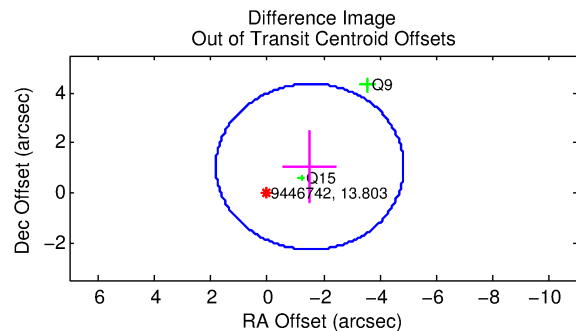
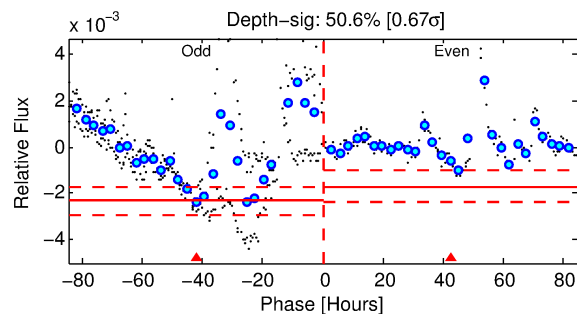
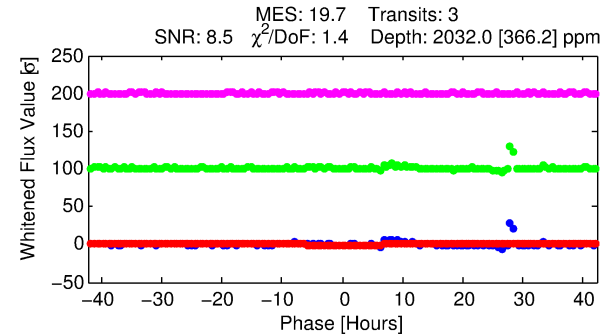
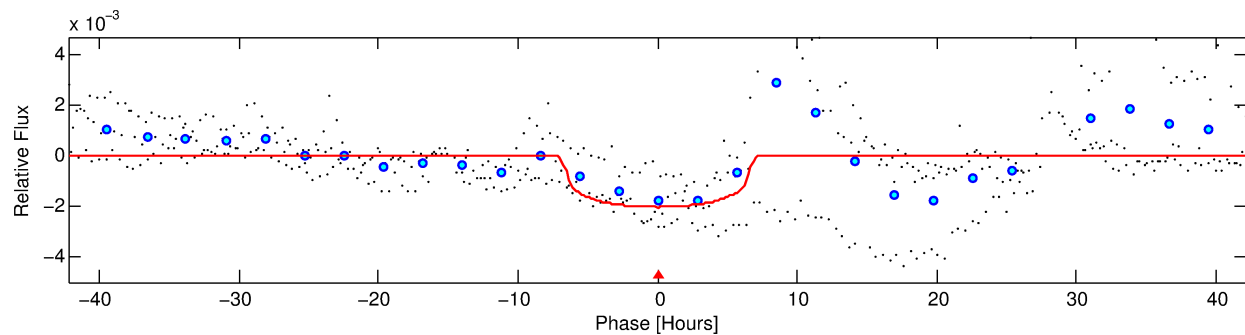
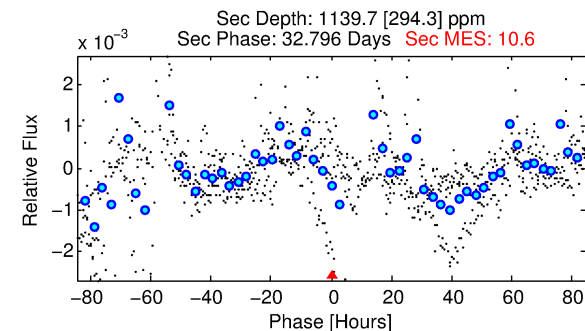
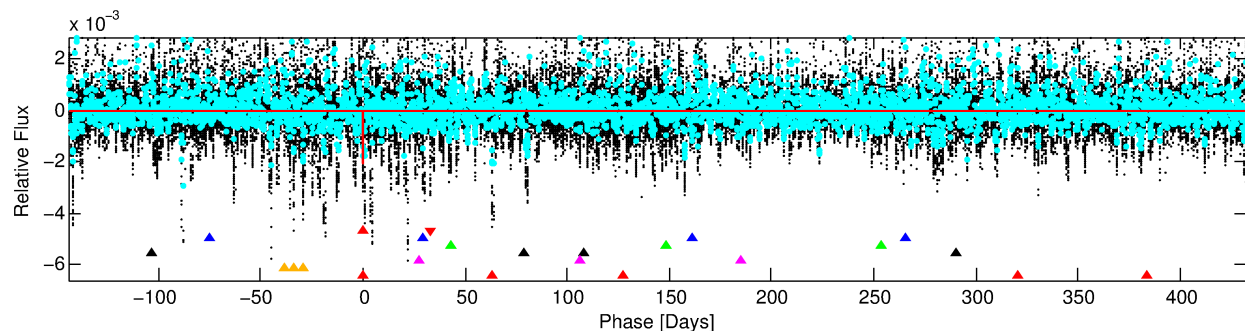
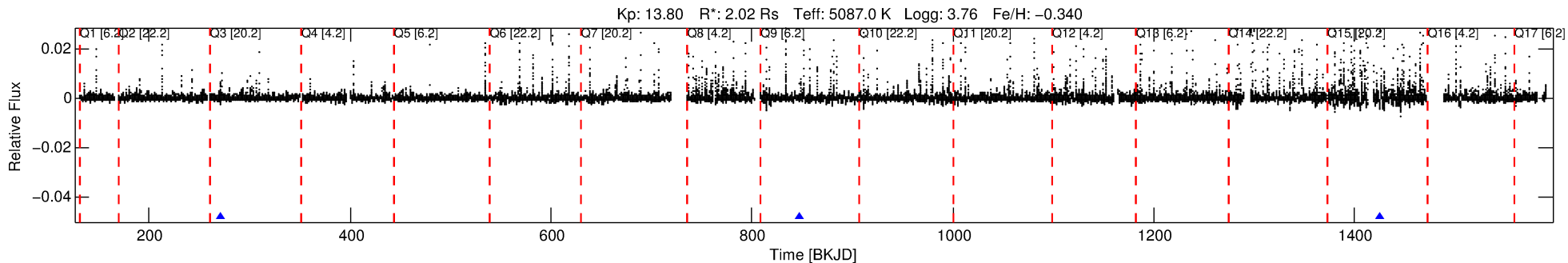
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009446742-01

No Significant Match Found

DV One-Page Summary

KIC: 9446742 Candidate: 1 of 7 Period: 576.784 d



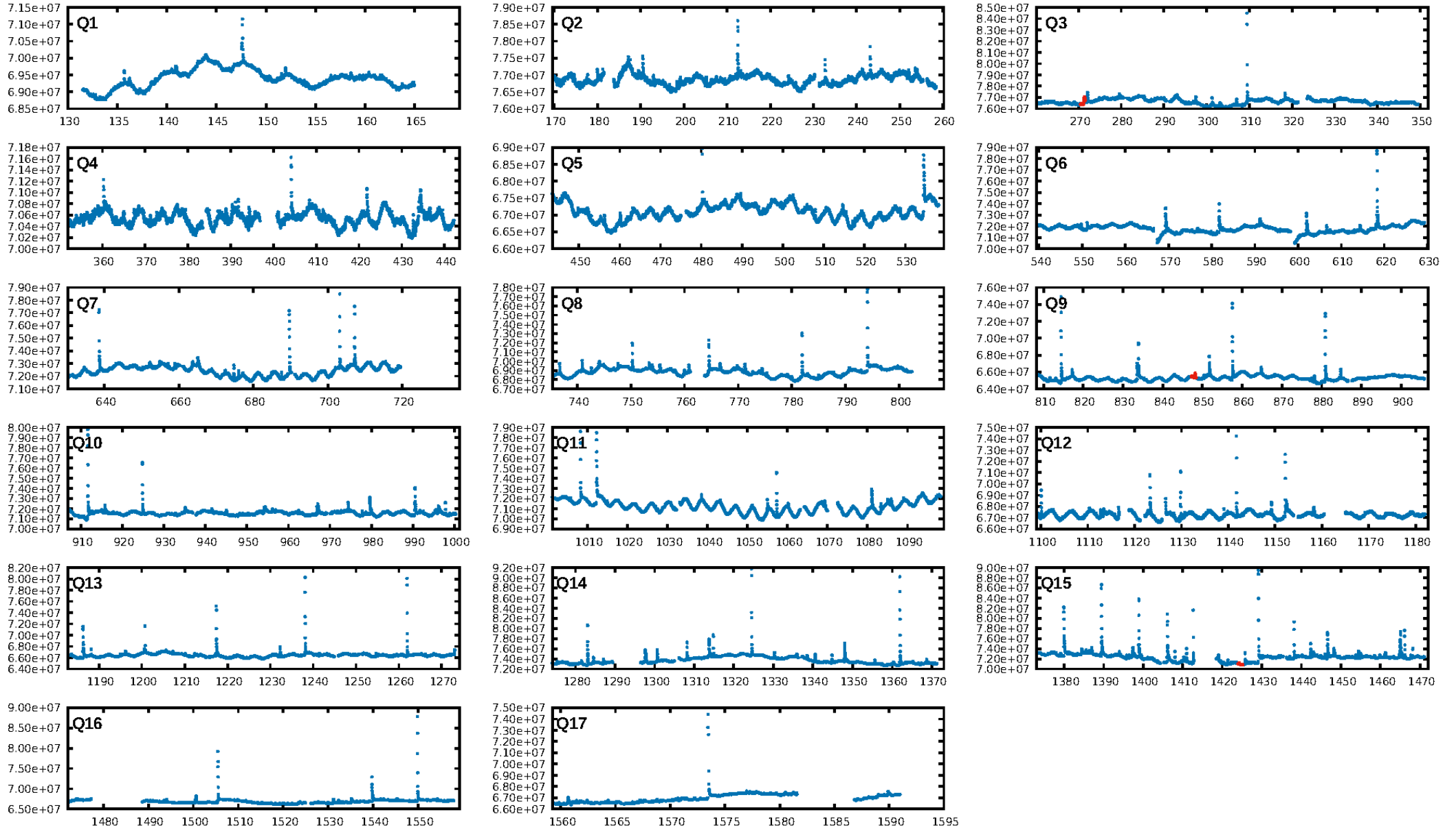
DV Fit Results:

Period = 576.78449 [0.00773] d
Epoch = 271.0210 [0.0086] BKJD
Rp/R* = 0.0424 [0.0064]
a/R* = 272.91 [107.05]
b = 0.57 [0.47]
Seff = 1.48 [2.00]
Teq = 281 [95] K
Rp = 9.37 [6.06] Re
a = 1.2888 [0.9851] AU
Ag = 11860.73 [16645.39] [0.71σ]
Teffp = 4538 [468] K [8.91σ]

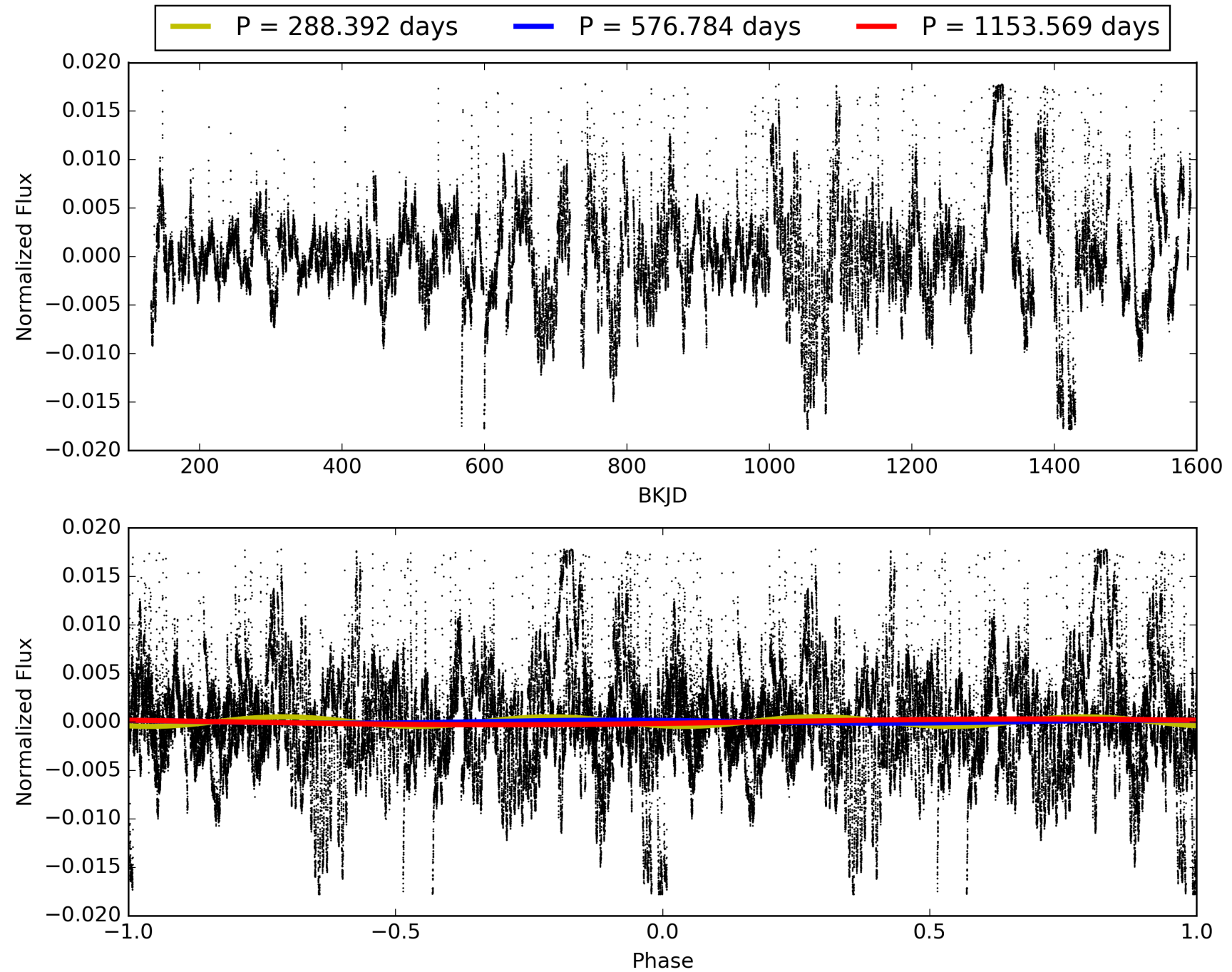
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.95σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.9%
ModelChiSquareGof-sig: 88.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.8309
Centroid-sig: 82.9%
Centroid-so: 0.221 arcsec [0.80σ]
OotOffset-rm: 1.840 arcsec [1.66σ]
KicOffset-rm: 1.853 arcsec [1.62σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 009446742-01, PDC Light Curves

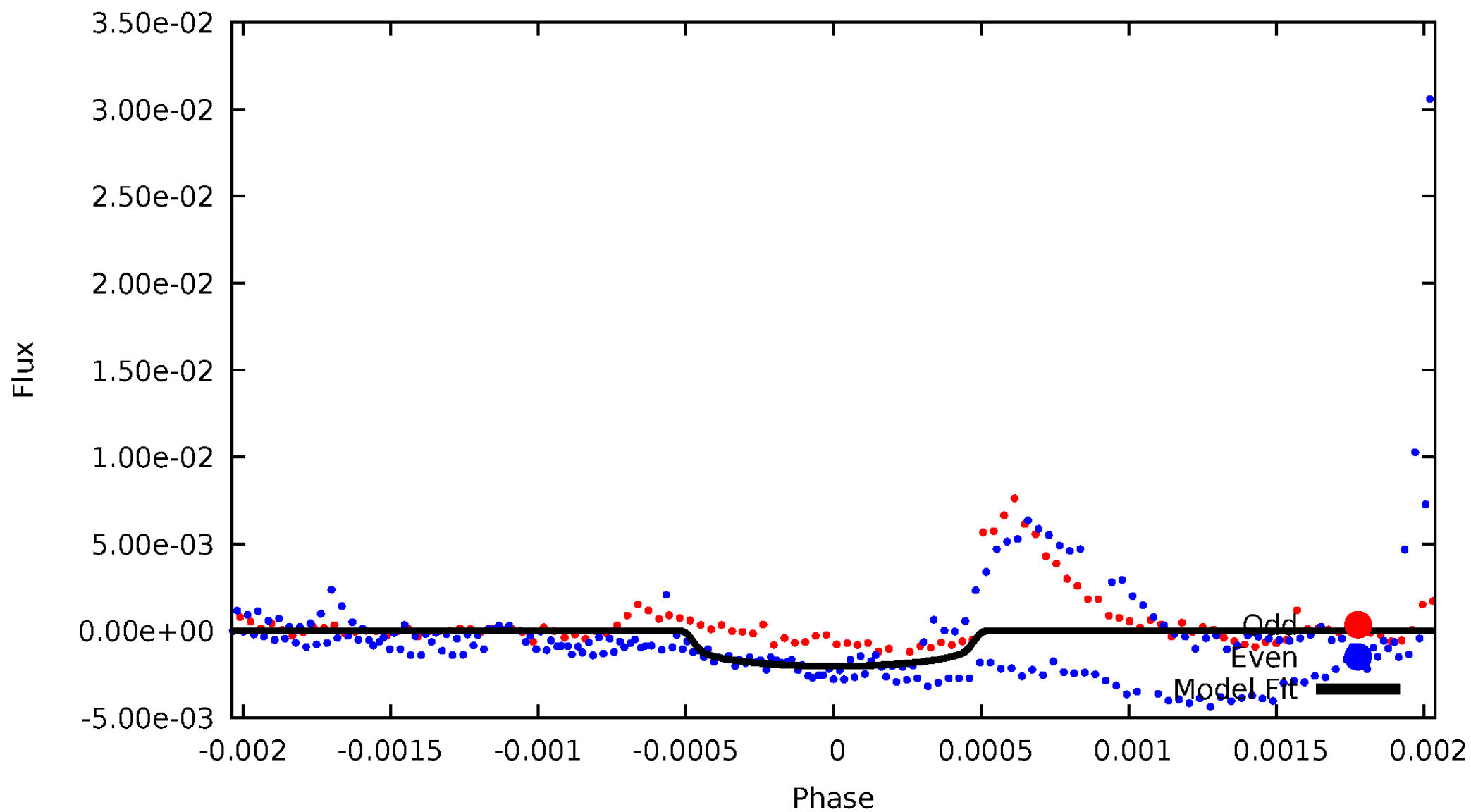


TCE 009446742-01



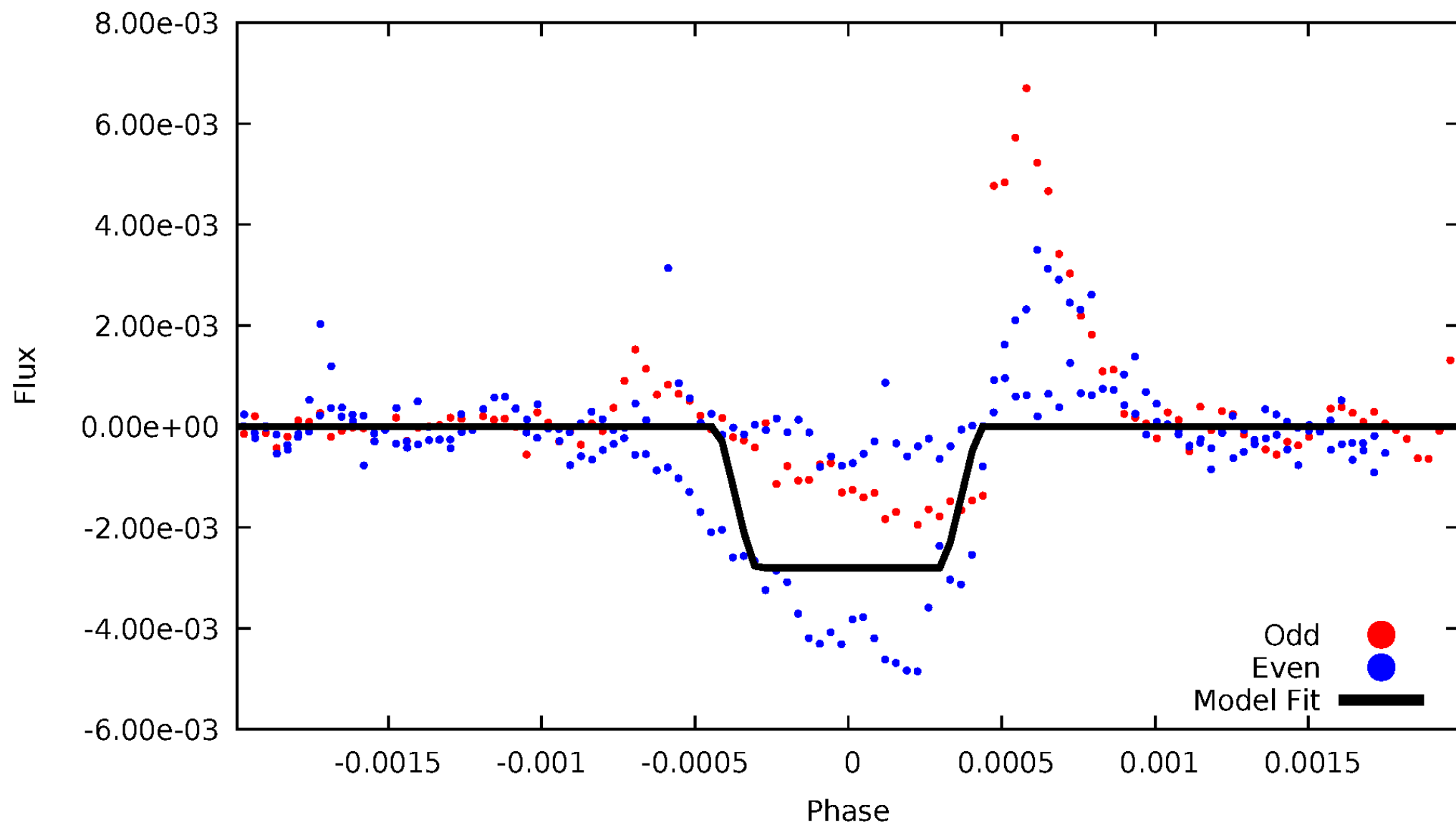
DV Odd/Even

TCE 009446742-01



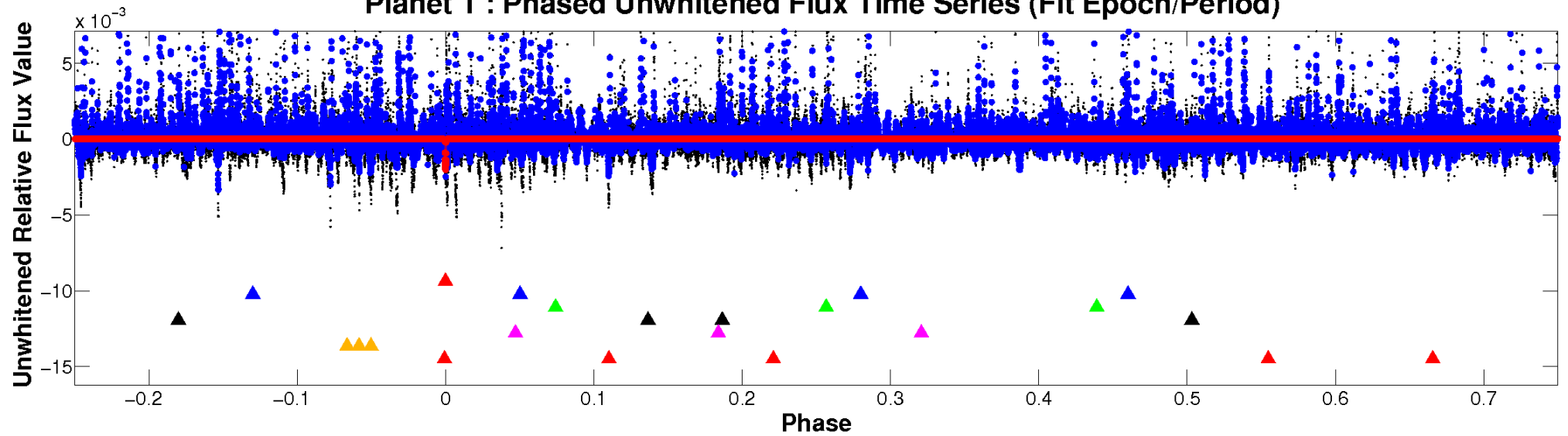
ALT Odd/Even

TCE 009446742-01

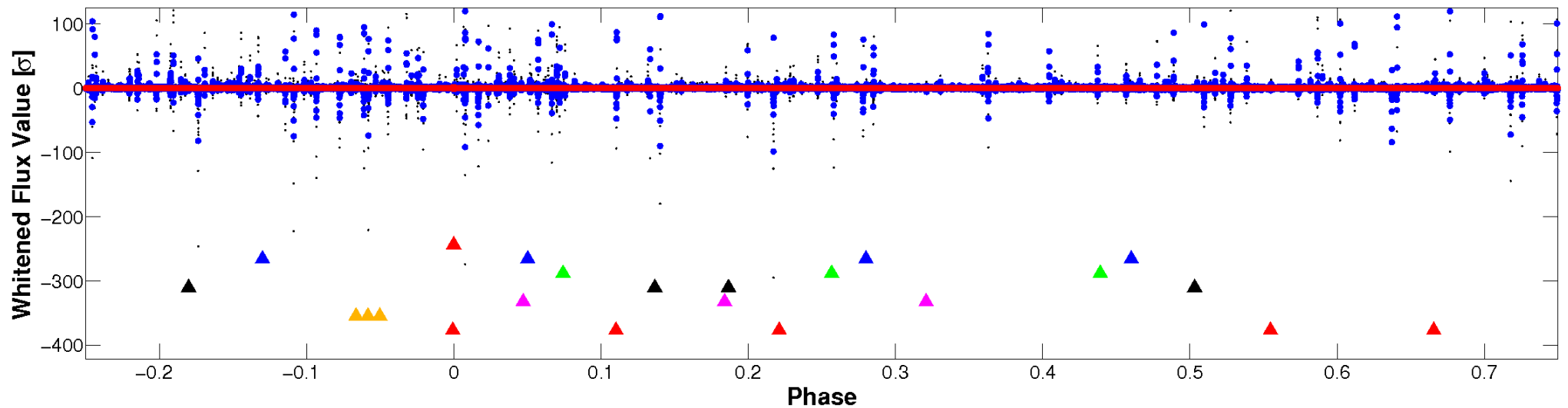


Non-Whitened Vs. Whitened Light Curve

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

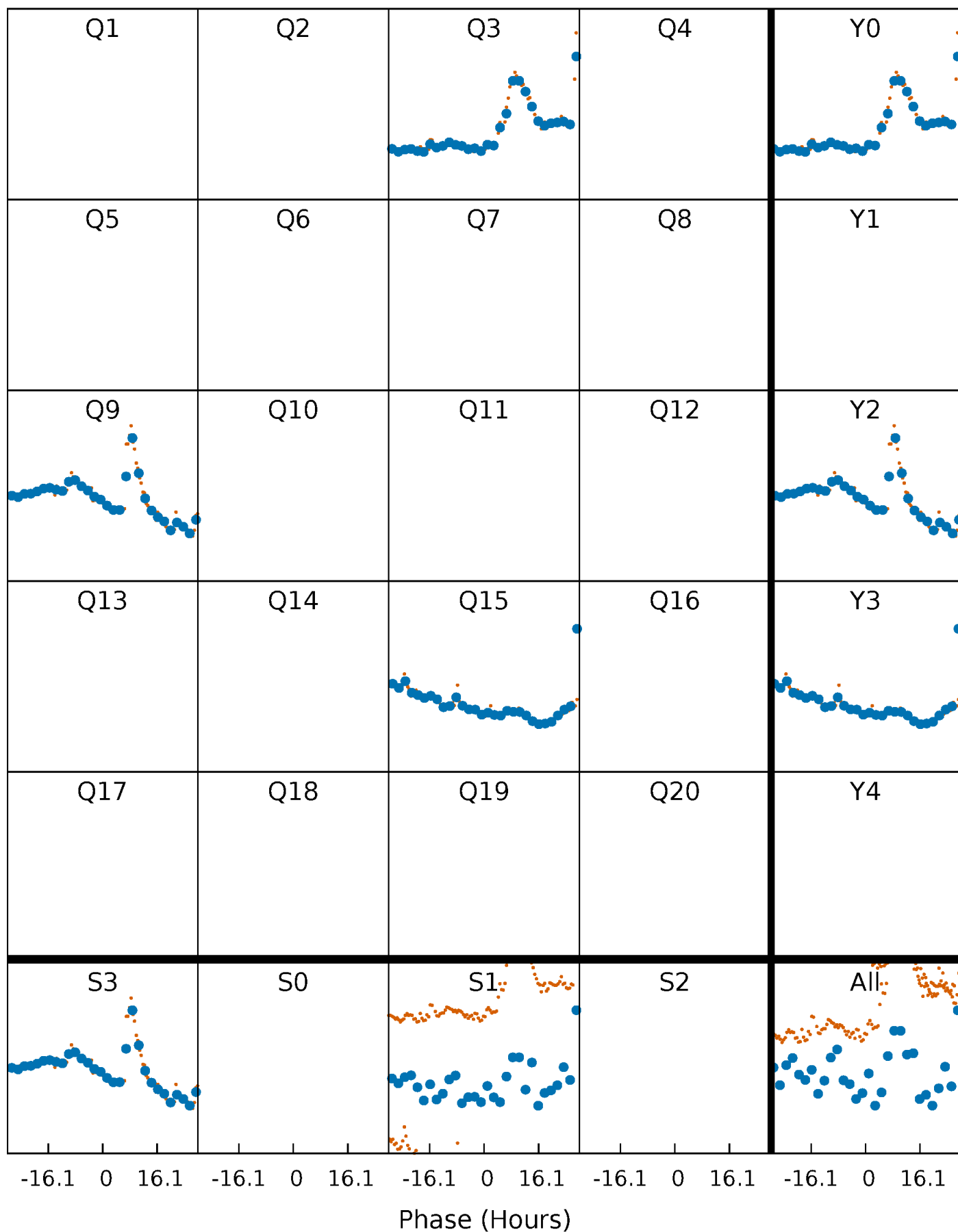


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



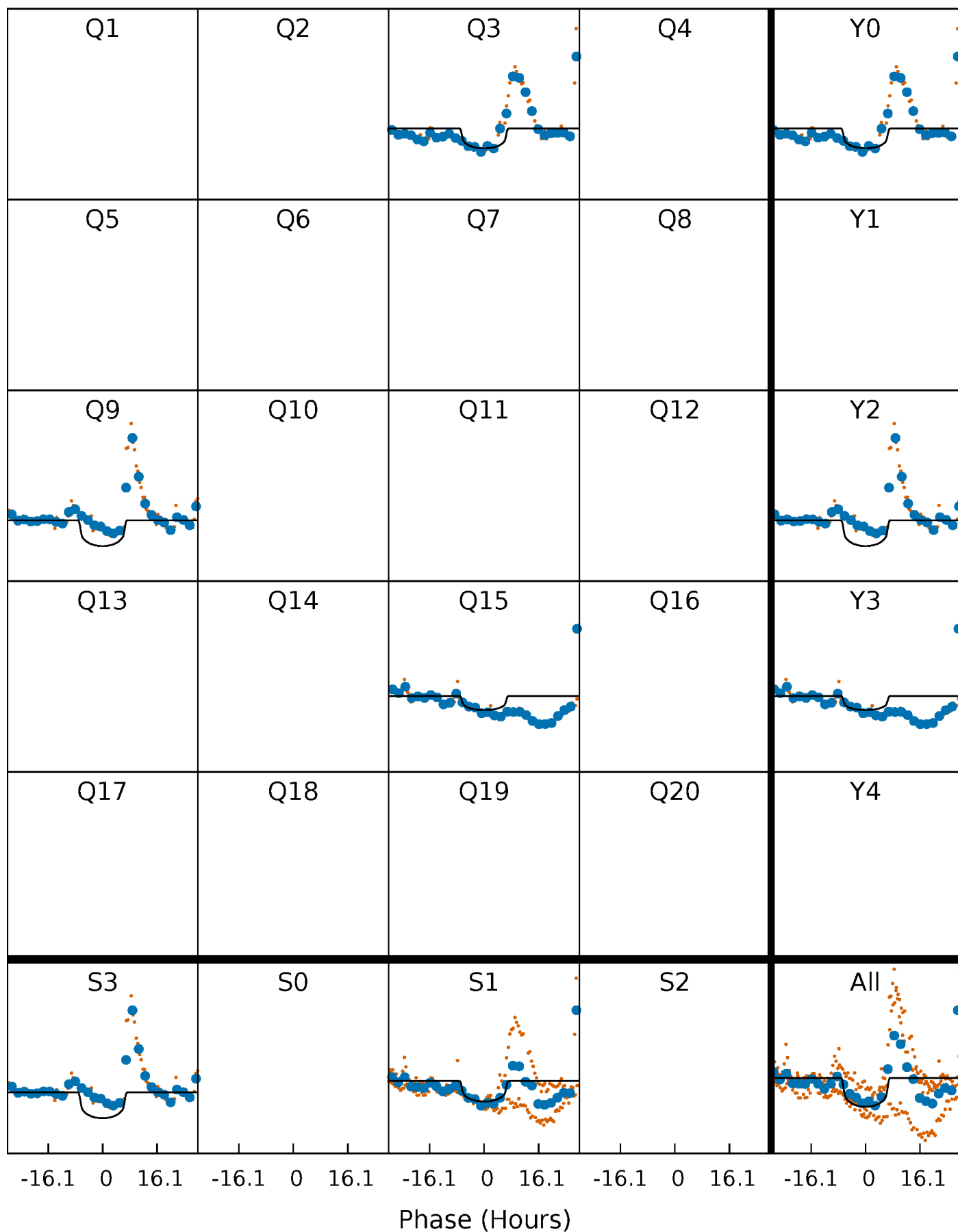
PDC Quarter-Phased Transit Curves

TCE 009446742-01 P=576.784489 Days $T_0=271.020983$ (BKJD)



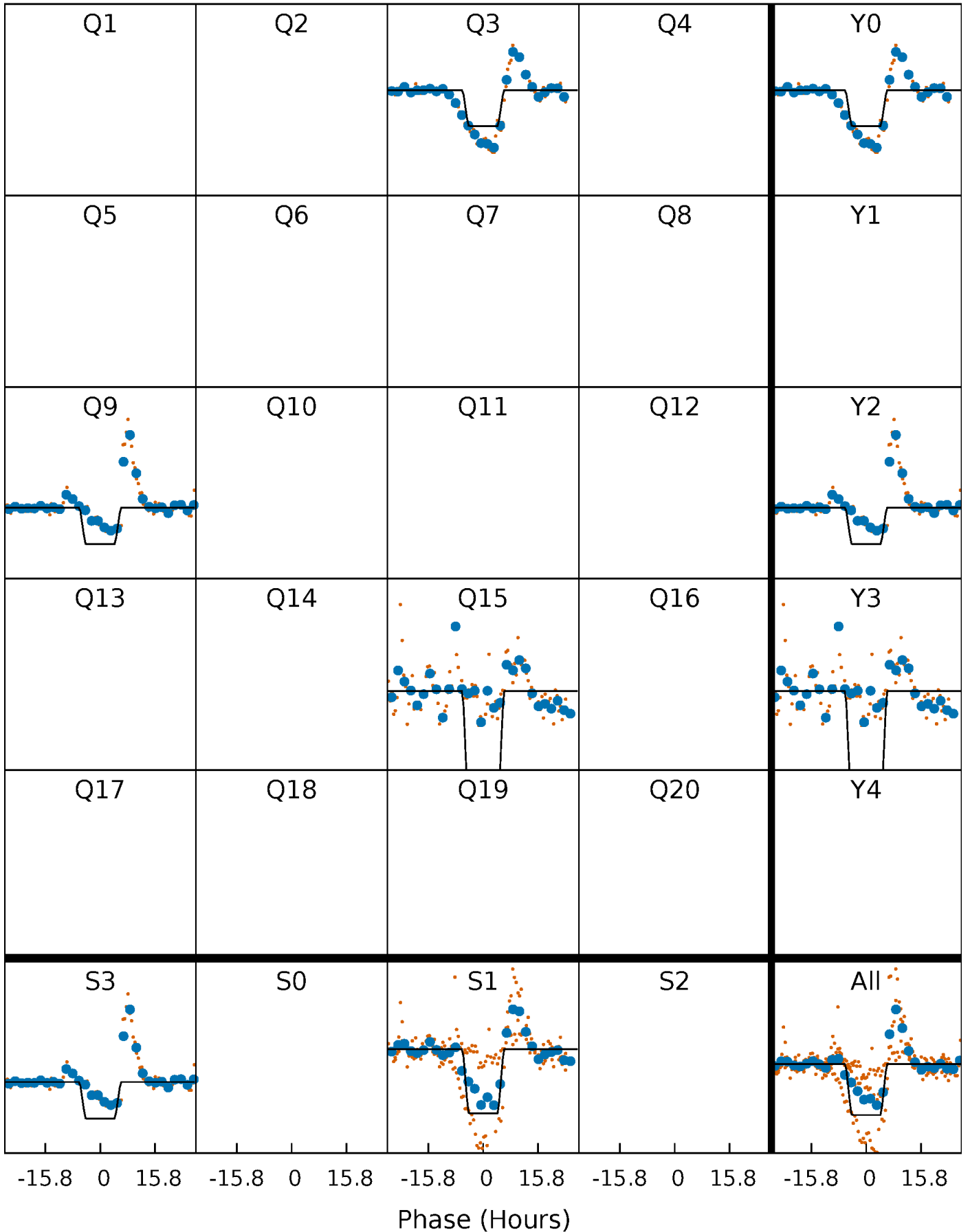
DV Quarter-Phased Transit Curves

TCE 009446742-01 P=576.784489 Days $T_0=271.020983$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

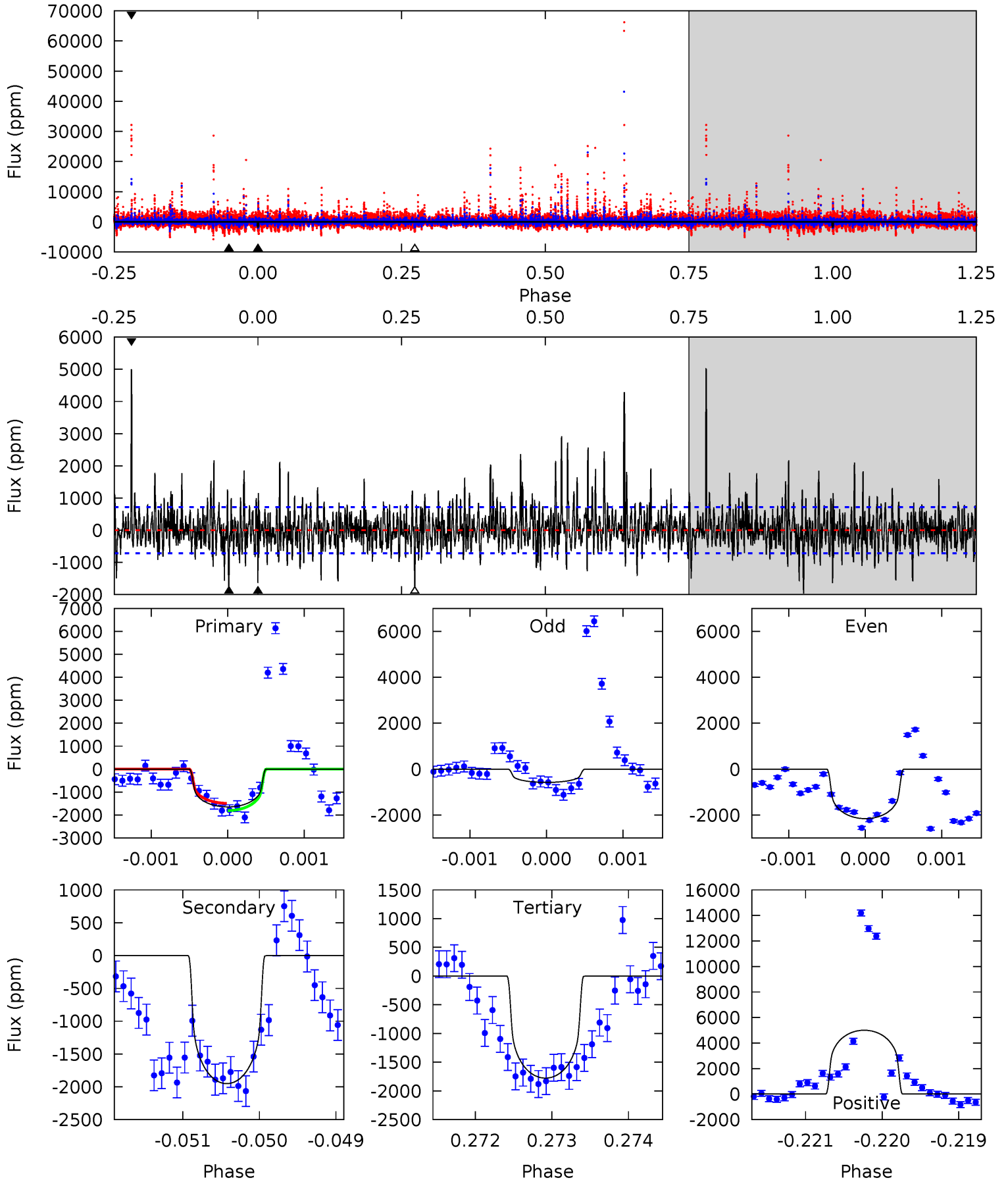
TCE 009446742-01 P=576.778098 Days $T_0=271.046023$ (BKJD)



DV Model-Shift Uniqueness Test

009446742-01, P = 576.784489 Days, E = 271.020983 Days

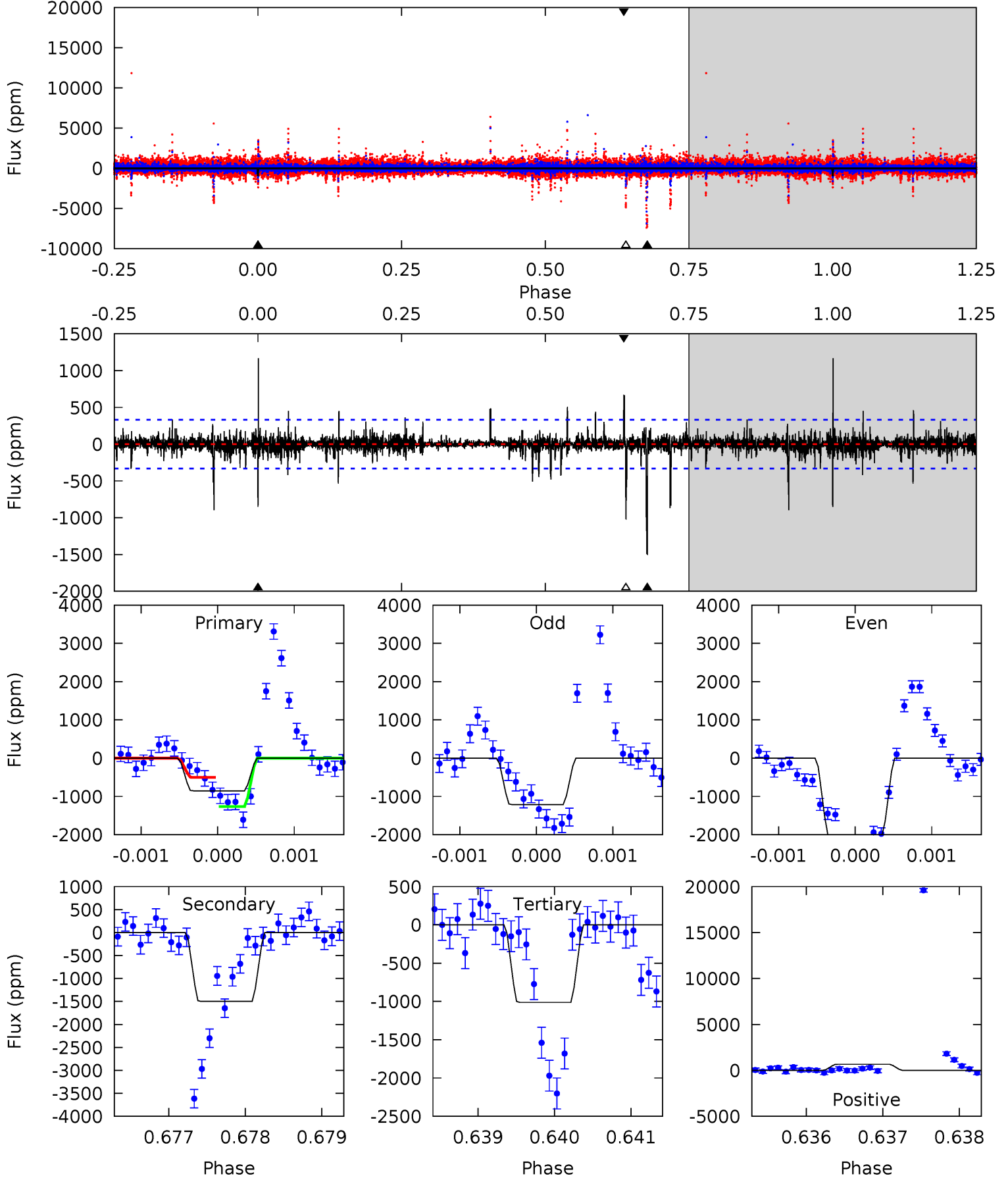
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	14.8	13.5	38.1	5.44	3.28	4.21	-1.00	-25.5	1.33	-23.2	2.04	0.91	0.72	1.19



Alt Model-Shift Uniqueness Test

009446742-01, P = 576.778098 Days, E = 271.046023 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	24.9	16.8	10.9	5.48	3.34	1.43	-2.64	3.22	8.09	14.0	5.49	1.49	0.44	6.27



Stellar Parameters For KIC 009446742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5087^{+136}_{-136}	$3.759^{+0.833}_{-0.357}$	$-0.340^{+0.300}_{-0.250}$	$2.024^{+1.272}_{-1.272}$	$0.857^{+0.228}_{-0.171}$	$0.146^{+3.412}_{-0.104}$
	+3%/-3%	+22%/-9%	+88%/-74%	+63%/-63%	+27%/-20%	+2343%/-71%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009446742-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1952 ± 131	$9.01^{+4.06}_{-3.45}$	388^{+63}_{-77}	5197^{+420}_{-363}	22533^{+36386}_{-11740}
Alt.	-1500 ± 60	$11.08^{+4.72}_{-3.86}$	385^{+62}_{-74}	4475^{+255}_{-217}	11131^{+14816}_{-5447}

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

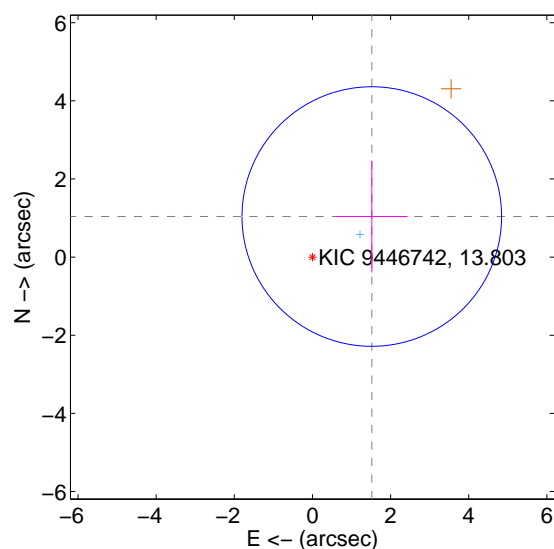
Supplemental centroid analysis for 009446742-01. Kepler magnitude: 13.80. Transit SNR 8.54

There are 1 quarters with good PRF difference image offsets

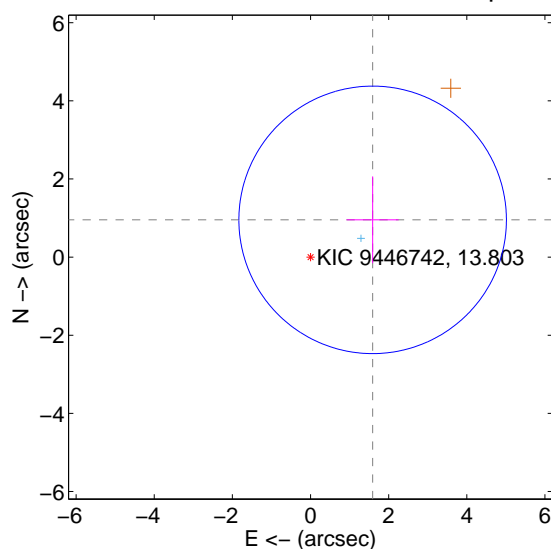
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.840 ± 1.107	1.66	-1.519 ± 0.917	1.038 ± 1.432
PRF-fit source offset from KIC position	1.853 ± 1.141	1.62	-1.590 ± 0.667	0.953 ± 1.111
photometric centroid source offset	0.22 ± 0.28	0.80	-0.20 ± 0.27	0.09 ± 0.31

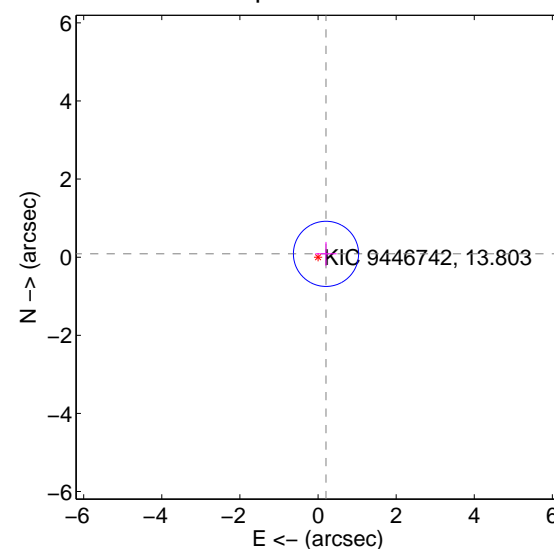
offset from difference PRF-fit to OOT PRF-fit



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 $> 15,000$ are from the UKIRT catalog.

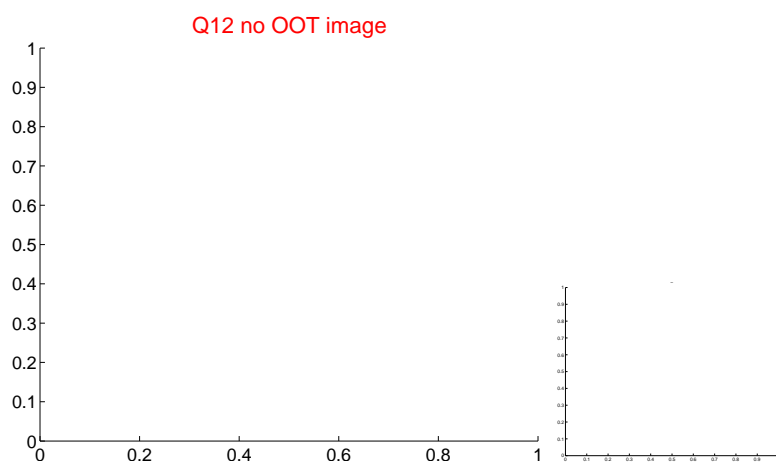
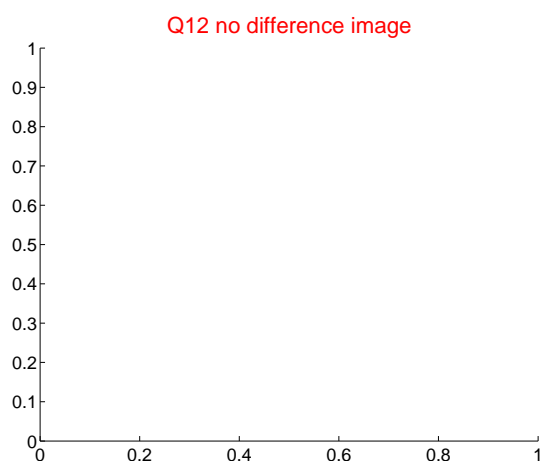
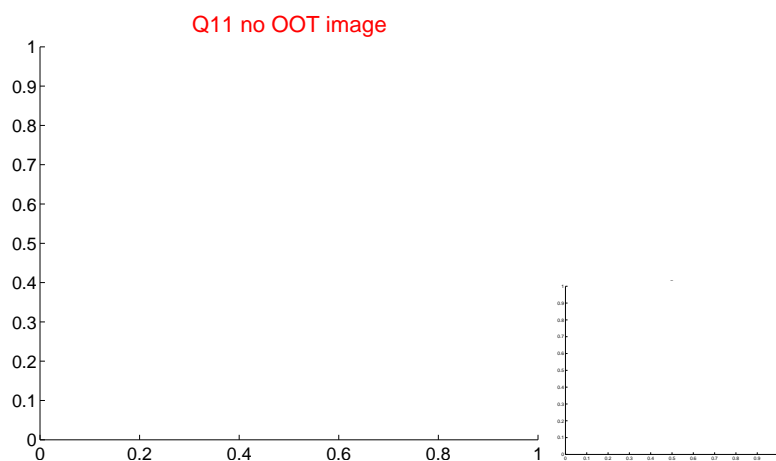
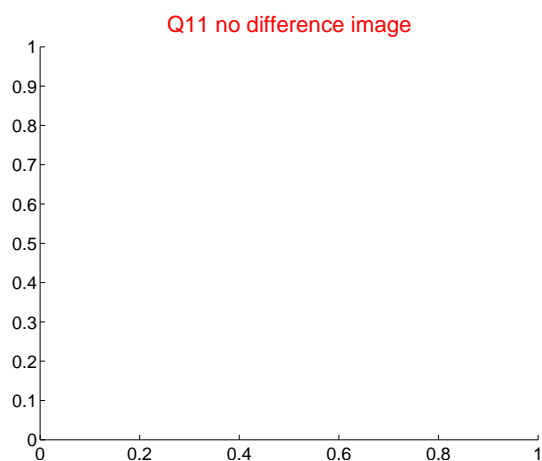
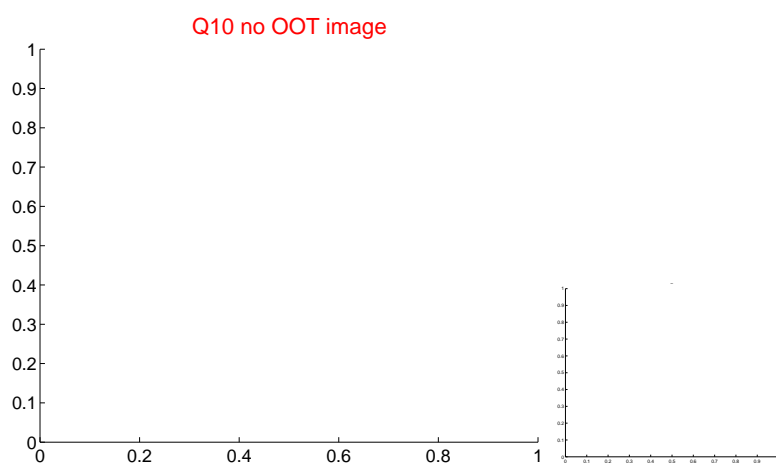
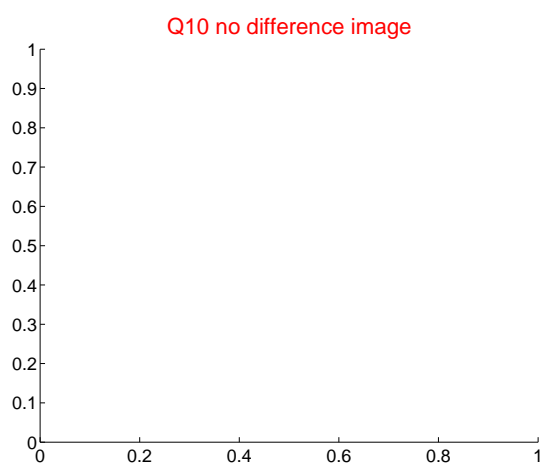
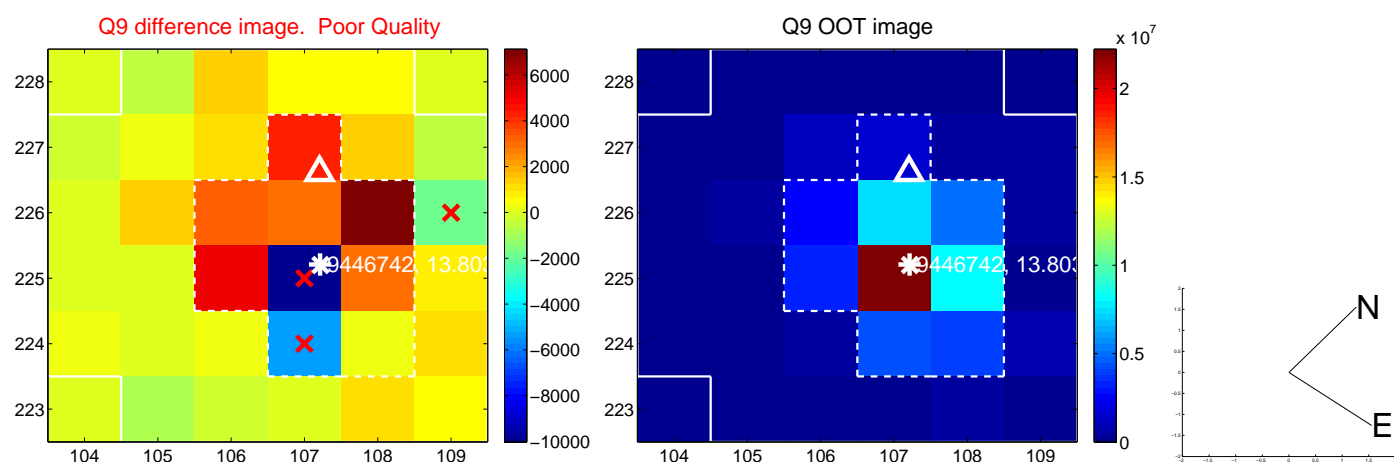
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Q13 no difference image



Q13 no OOT image



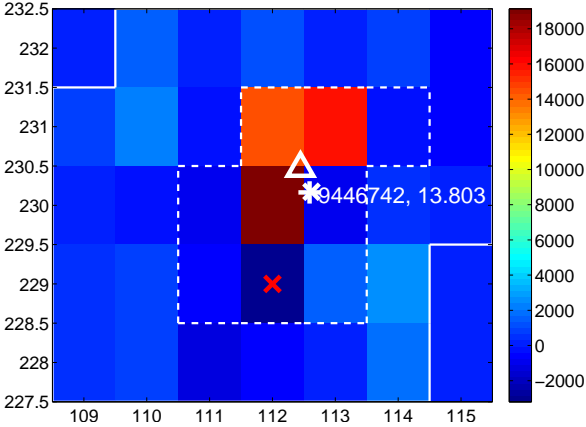
Q14 no difference image



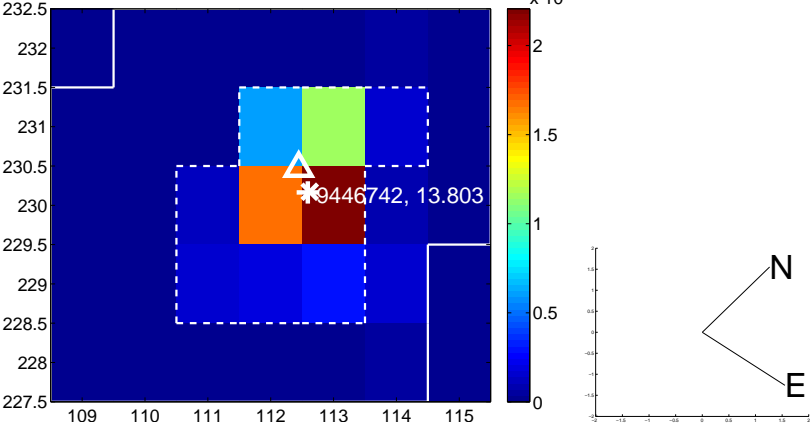
Q14 no OOT image



Q15 difference image



Q15 OOT image



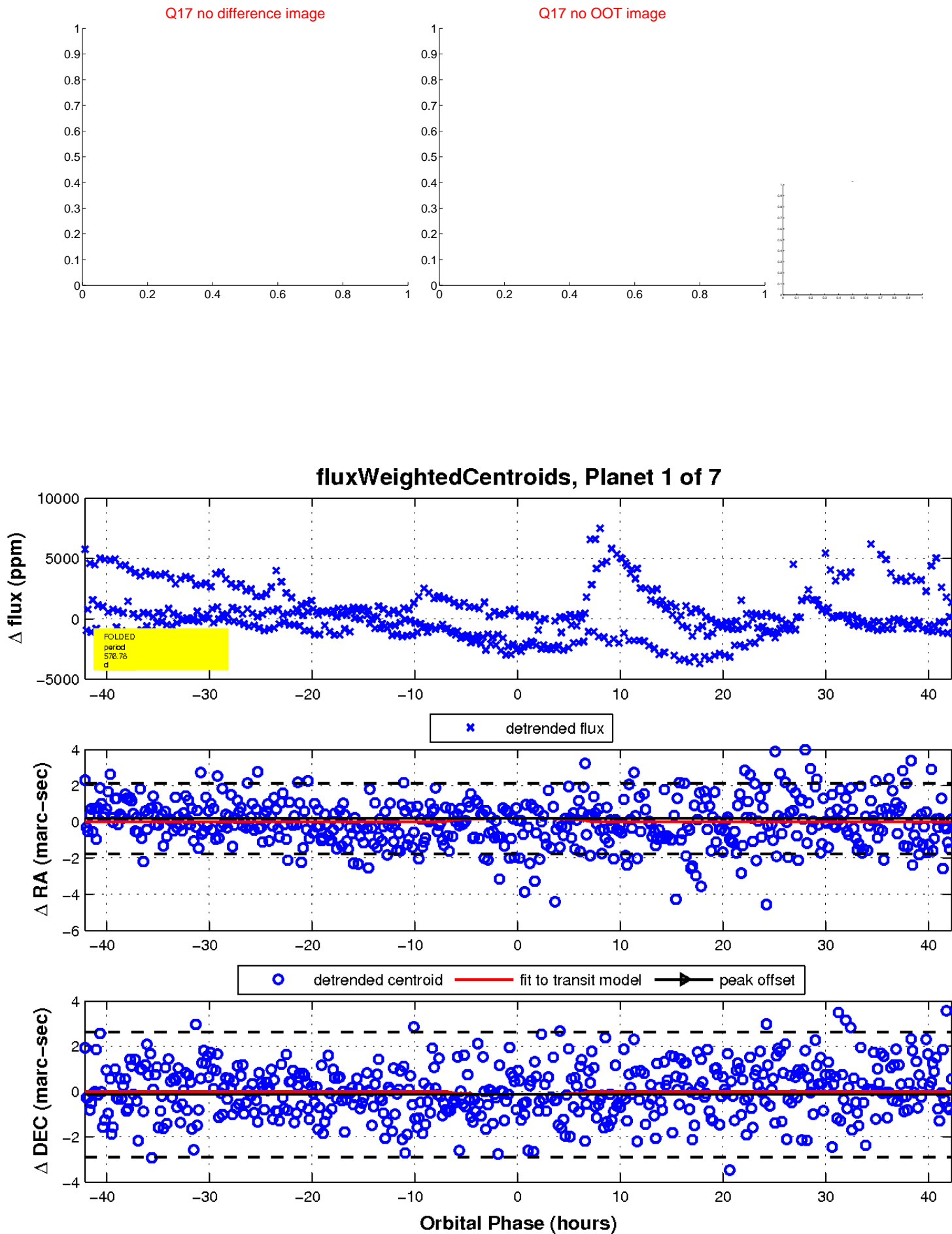
Q16 no difference image



Q16 no OOT image

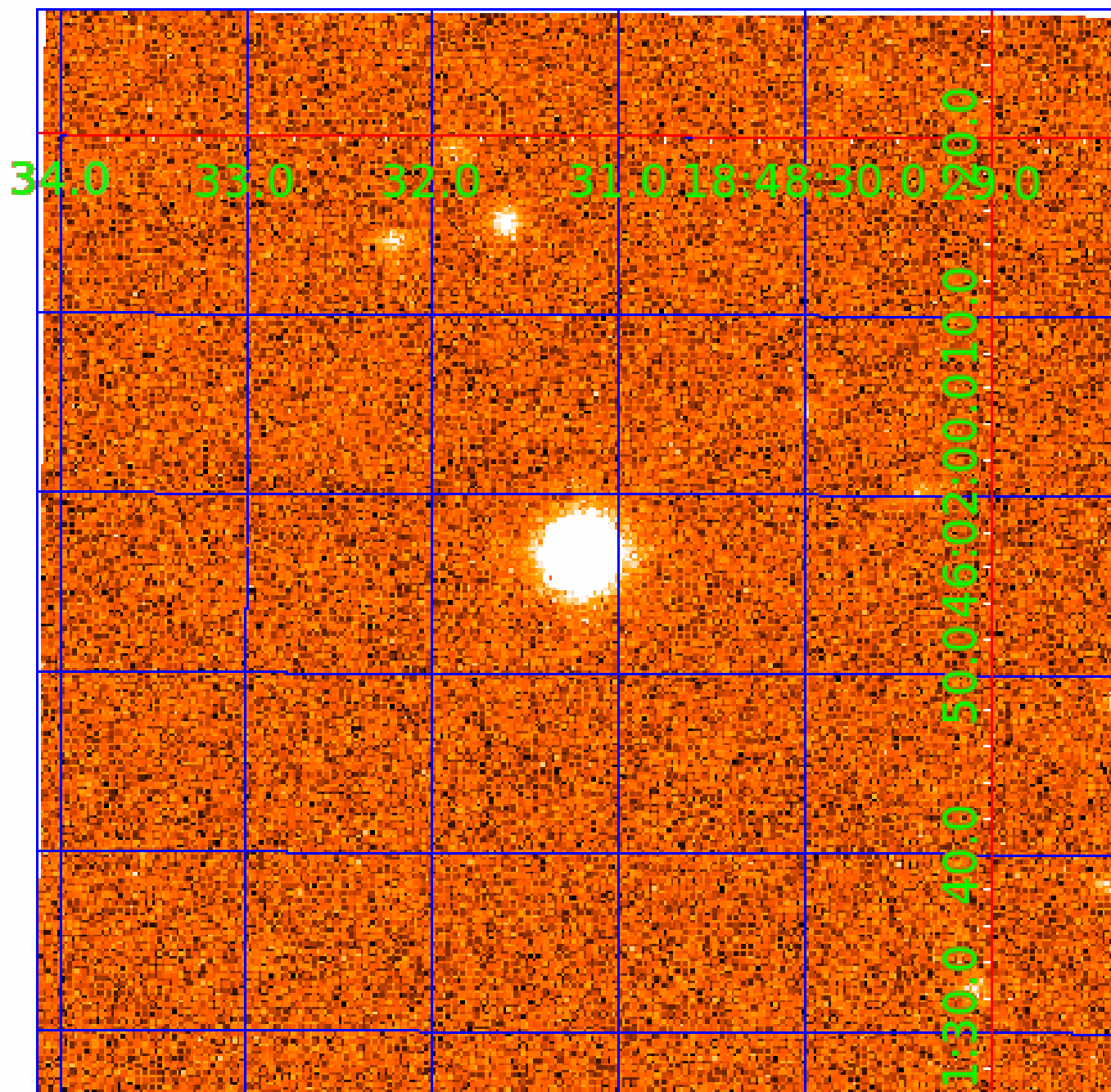


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009446742

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})
009446742-01	OBS	No	576.784489	271.020983	2032.0	14.093	19.7	8.5	2.02	5087	9.37	1.48
009446742-02	OBS	No	340.356830	432.526099	1181.3	9.170	17.3	6.2	2.02	5087	6.84	2.99
009446742-03	OBS	No	471.555815	524.297157	422.4	6.653	17.8	2.2	2.02	5087	4.35	1.94
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009446742-06	OBS	No	572.133337	242.065863	5811.6	12.378	15.0	16.3	2.02	5087	28.99	1.50
009446742-07	OBS	No	320.365764	270.634269	558.5	11.538	12.9	2.6	2.02	5087	4.95	3.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009446742-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— CENT_FEW_DIFFS
009446742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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
009446742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009446742-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— INCONSISTENT_TRANS
009446742-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

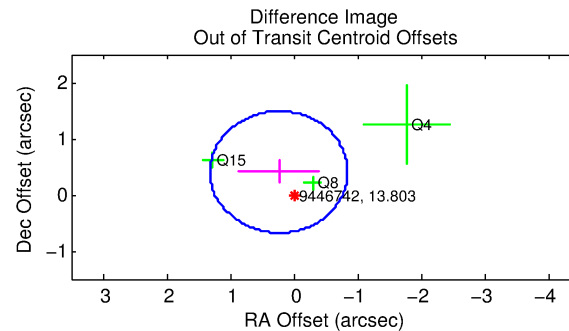
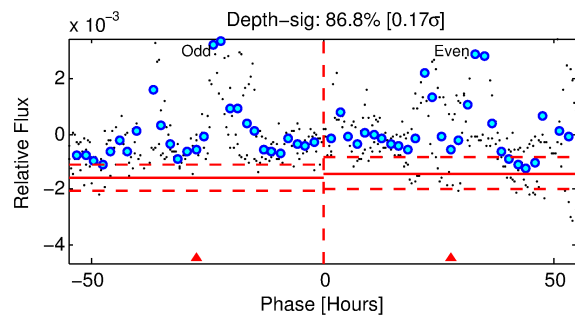
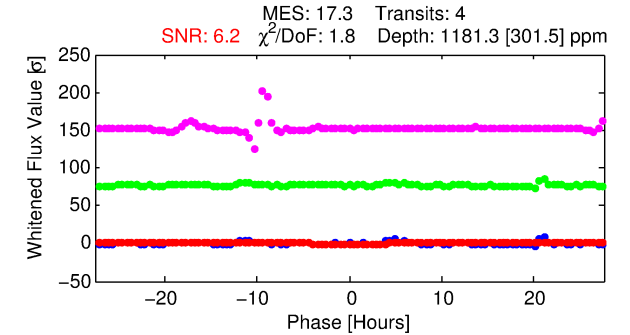
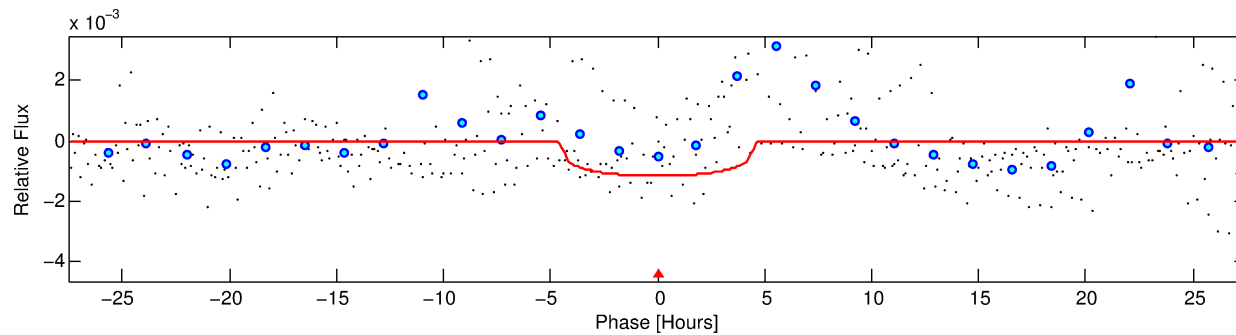
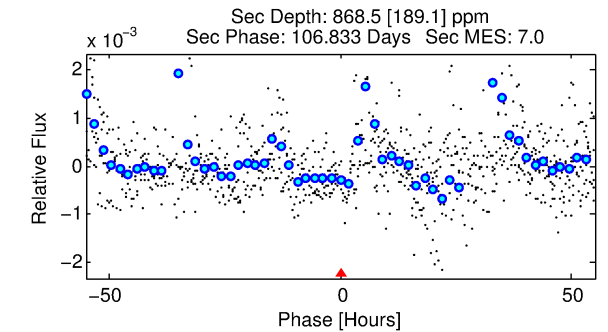
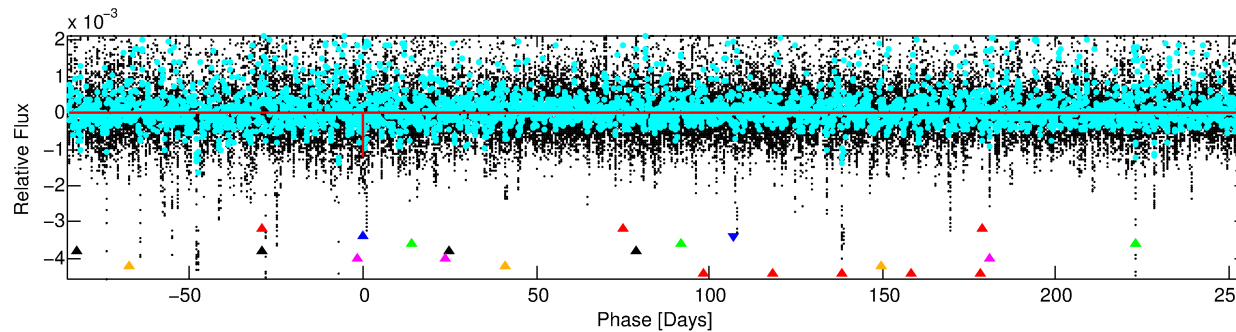
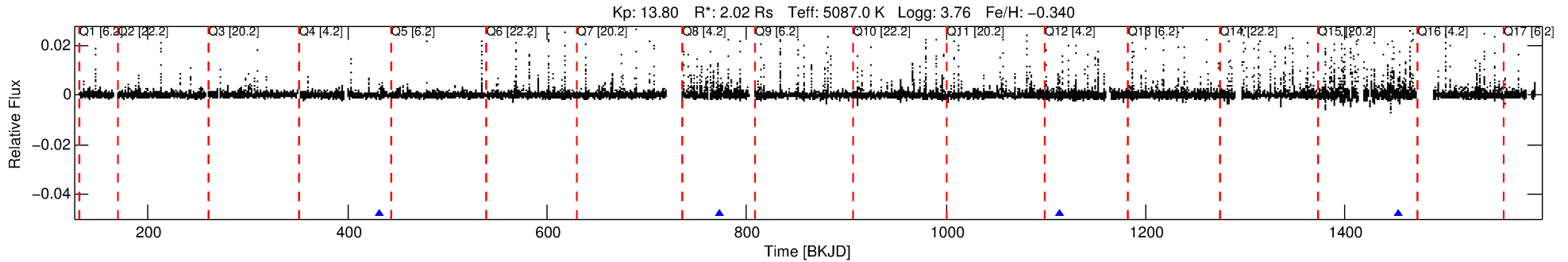
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009446742-02

No Significant Match Found

DV One-Page Summary

KIC: 9446742 Candidate: 2 of 7 Period: 340.357 d



DV Fit Results:

Period = 340.35683 [0.00776] d
Epoch = 432.5261 [0.0127] BKJD
Rp/R* = 0.0310 [0.0247]
a/R* = 283.66 [800.24]
b = 0.25 [10.71]
Seff = 2.99 [4.04]
Teq = 335 [113] K
Rp = 6.84 [6.94] Re
a = 0.9067 [0.6931] AU
Ag = 8404.51 [17621.84] [0.48σ]
Teffp = 4964 [2000] K [2.31σ]

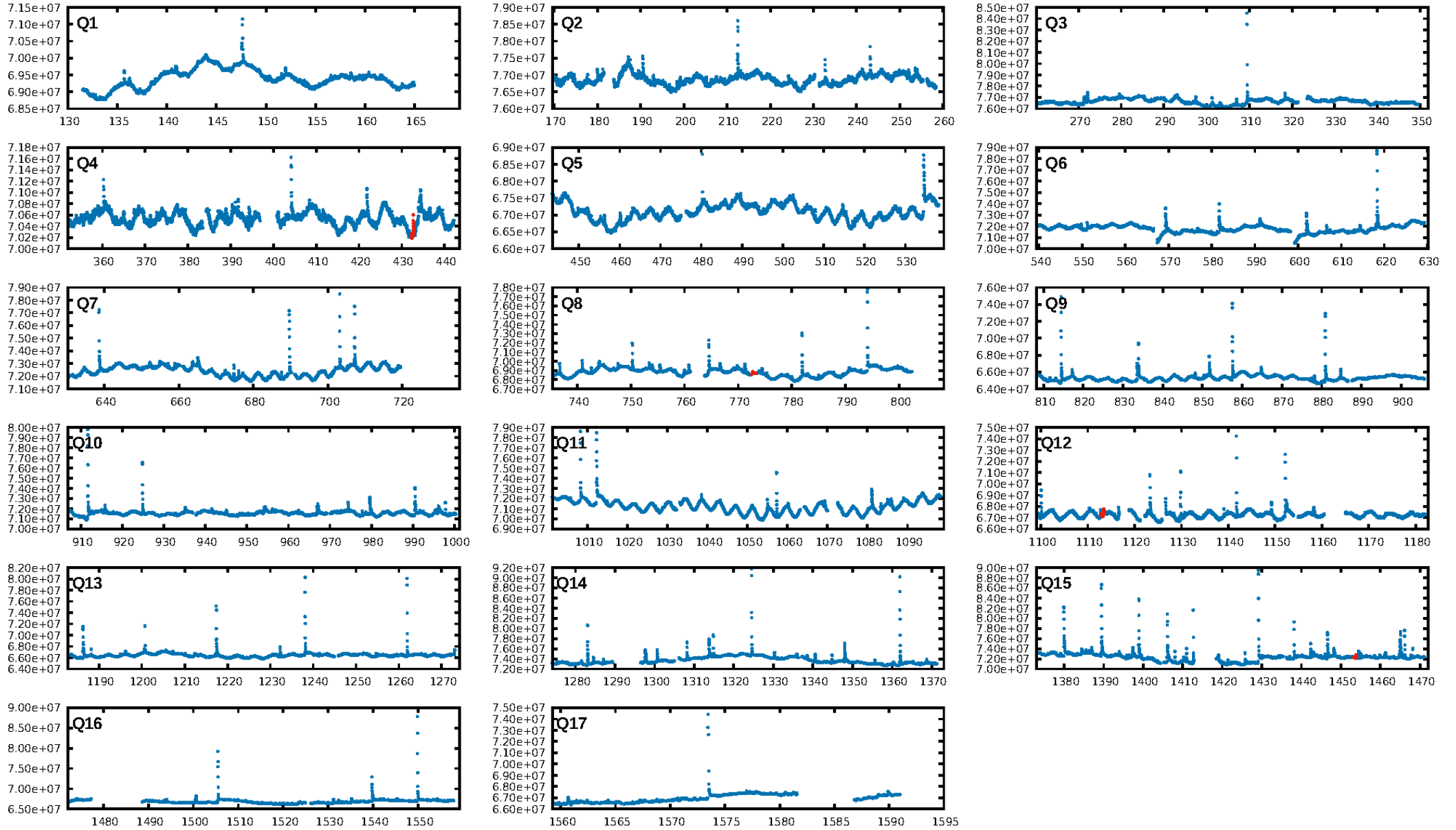
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.55σ]
LongPeriod-sig: 100.0% [128.76σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 44.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.6732
Centroid-sig: 2.4%
Centroid-so: 0.694 arcsec [1.67σ]
OotOffset-rm: 0.468 arcsec [1.30σ]
KicOffset-rm: 0.435 arcsec [1.24σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

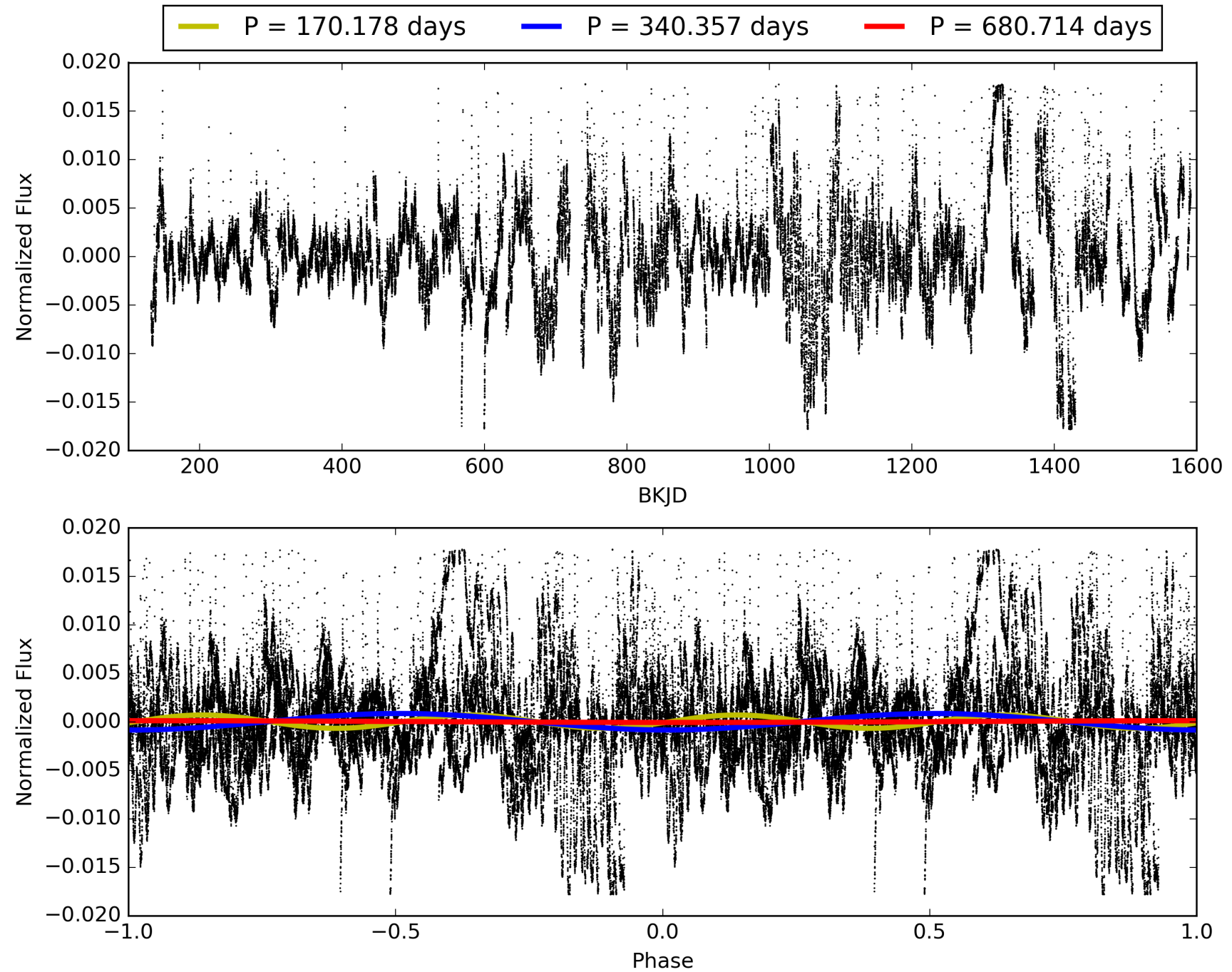
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:15 Z

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

TCE 009446742-02, PDC Light Curves

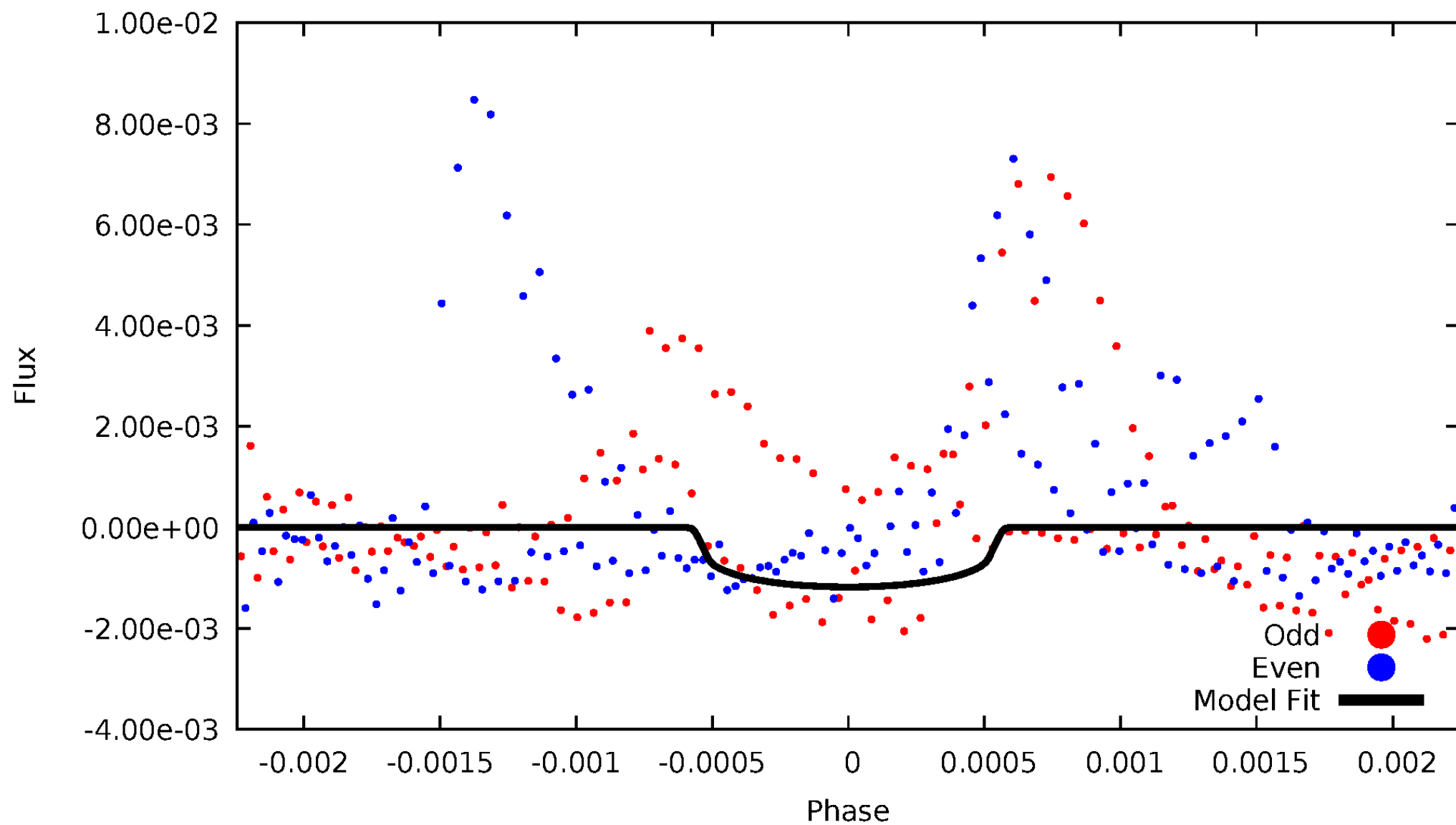


TCE 009446742-02



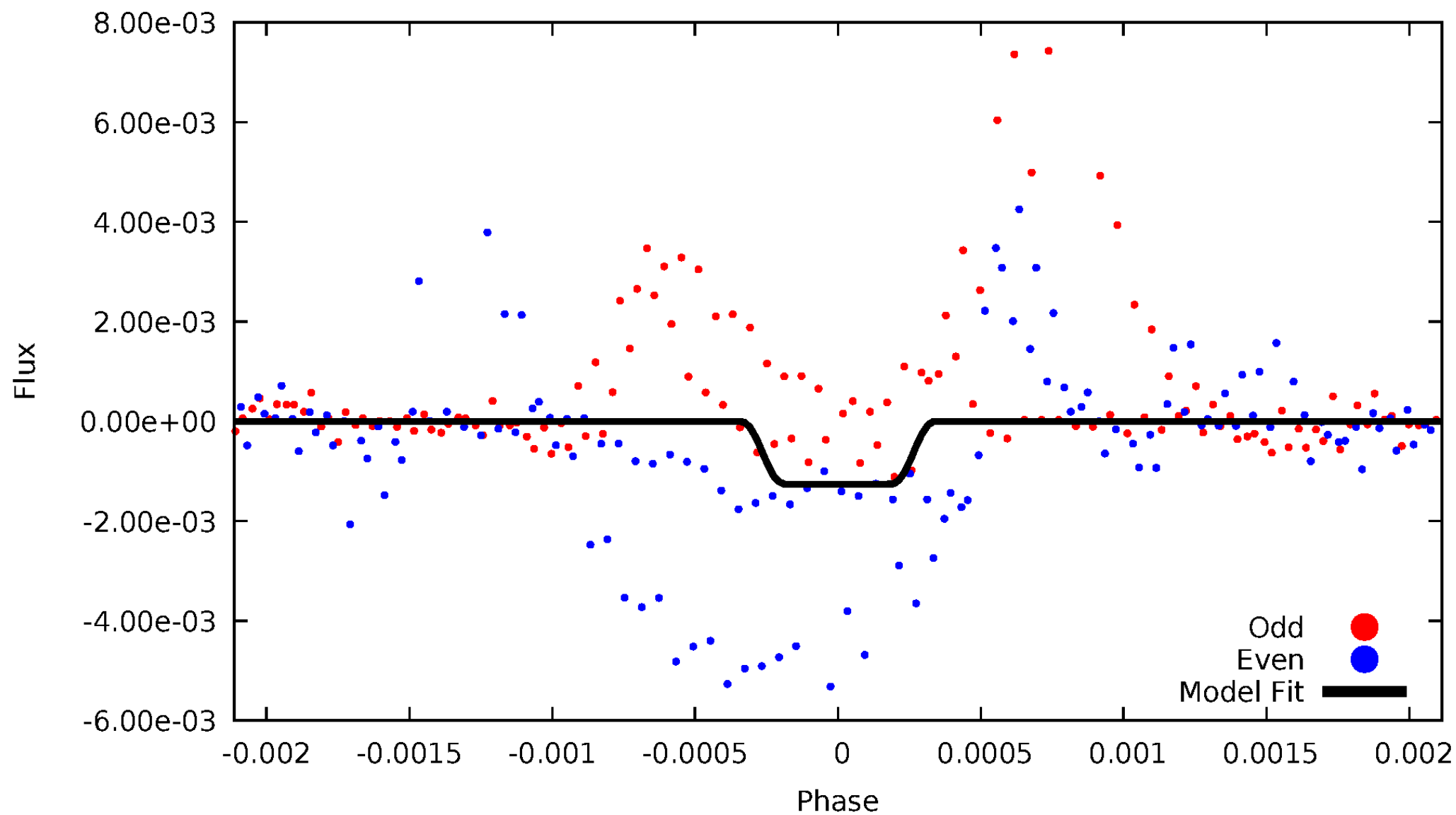
DV Odd/Even

TCE 009446742-02



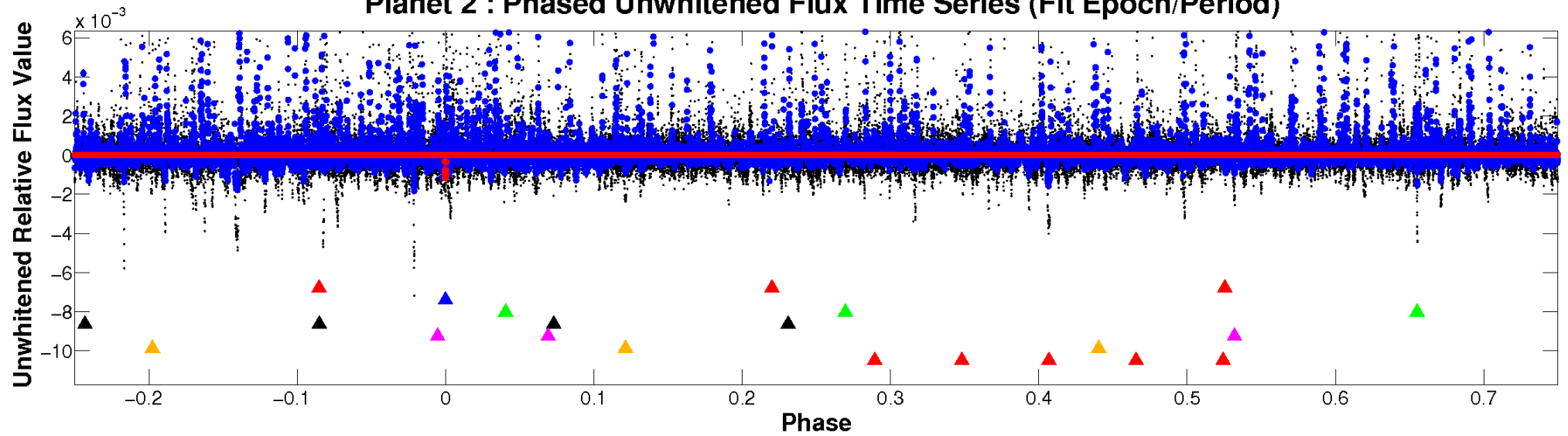
ALT Odd/Even

TCE 009446742-02

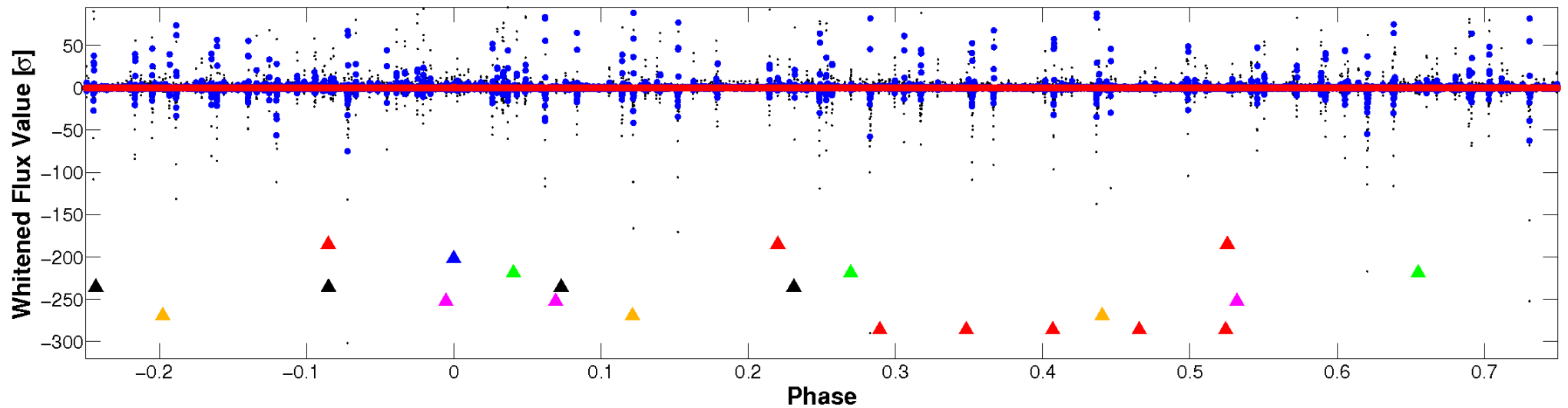


Non-Whitened Vs. Whitened Light Curve

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

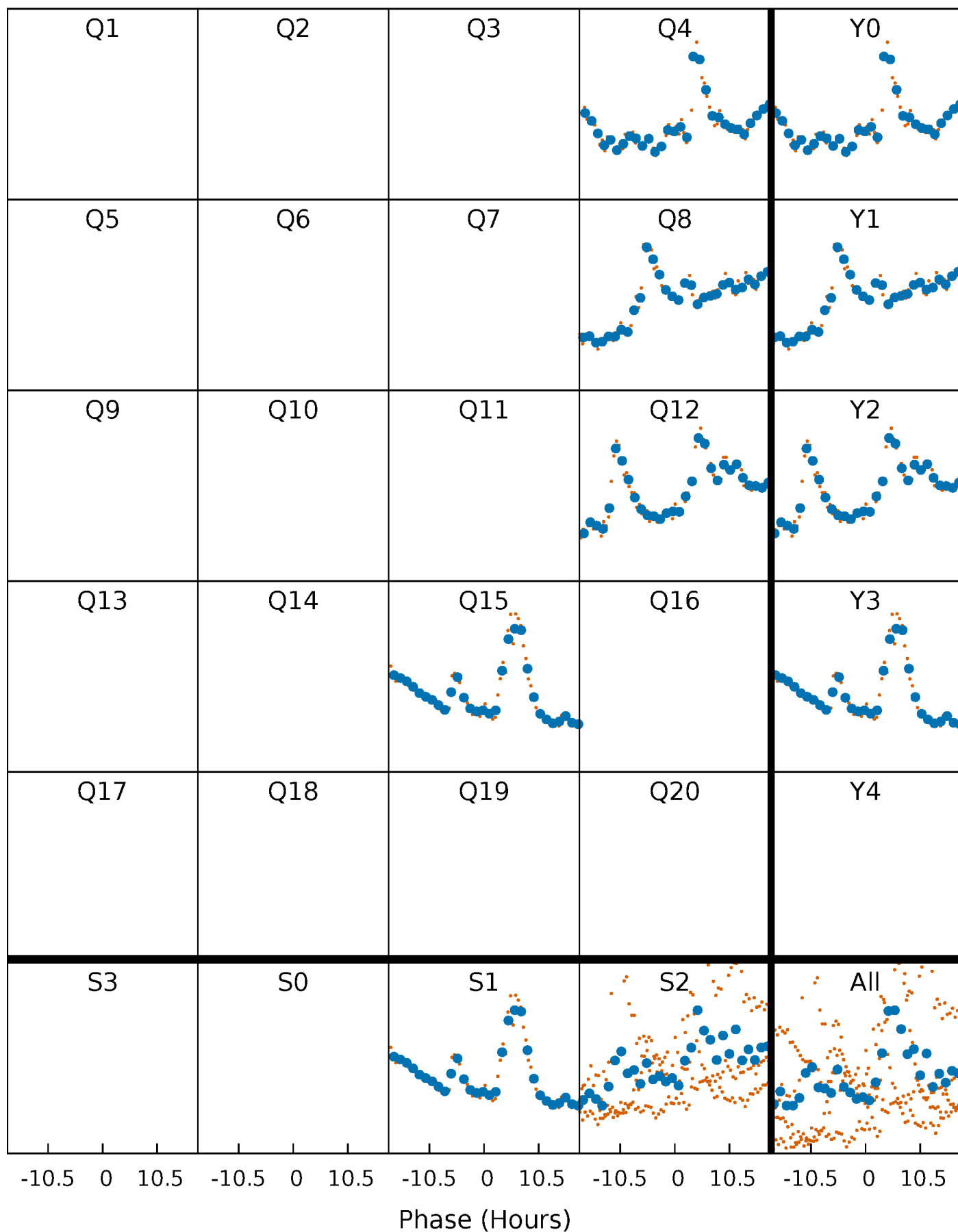


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



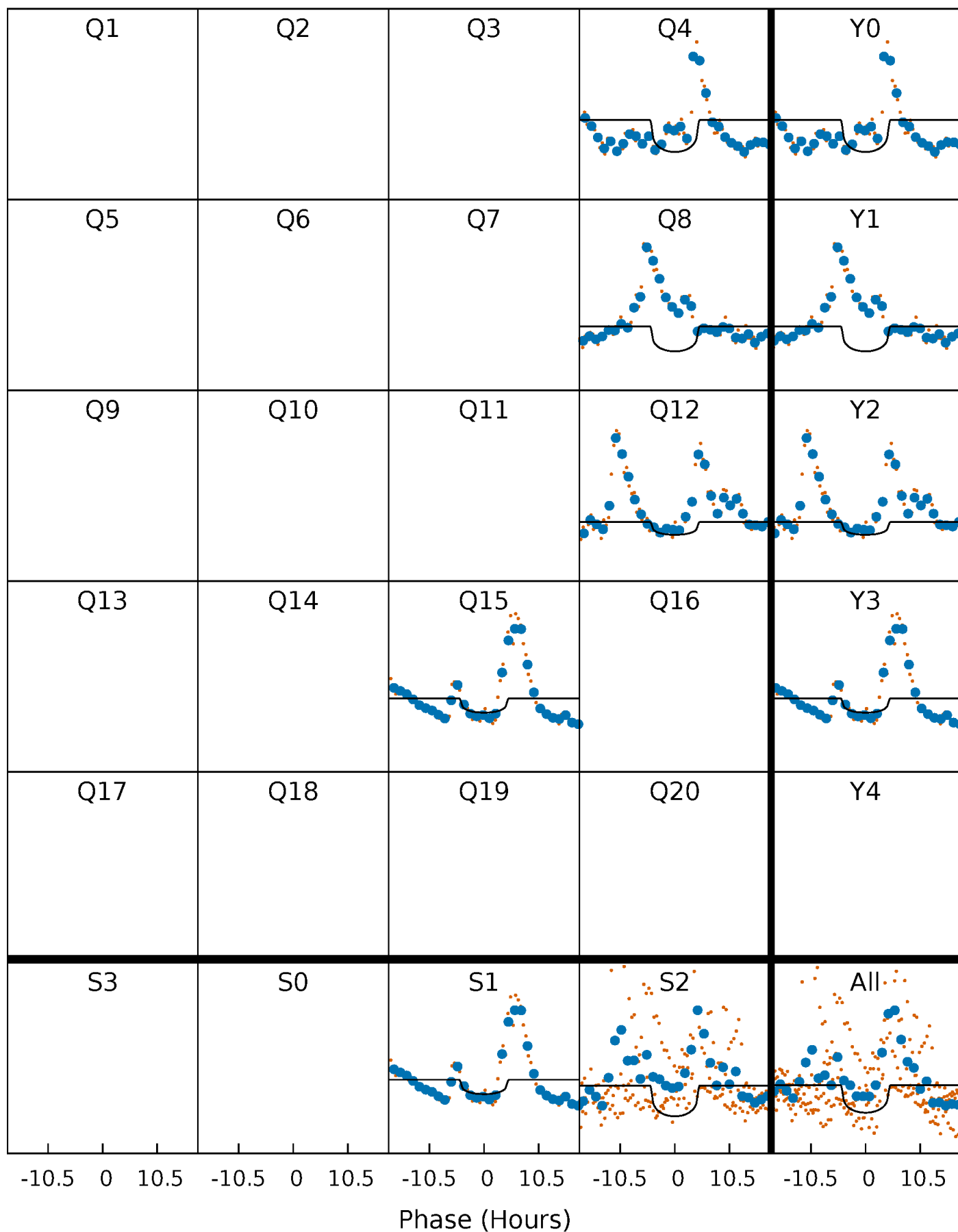
PDC Quarter-Phased Transit Curves

TCE 009446742-02 $P=340.356830$ Days $T_0=432.526099$ (BKJD)



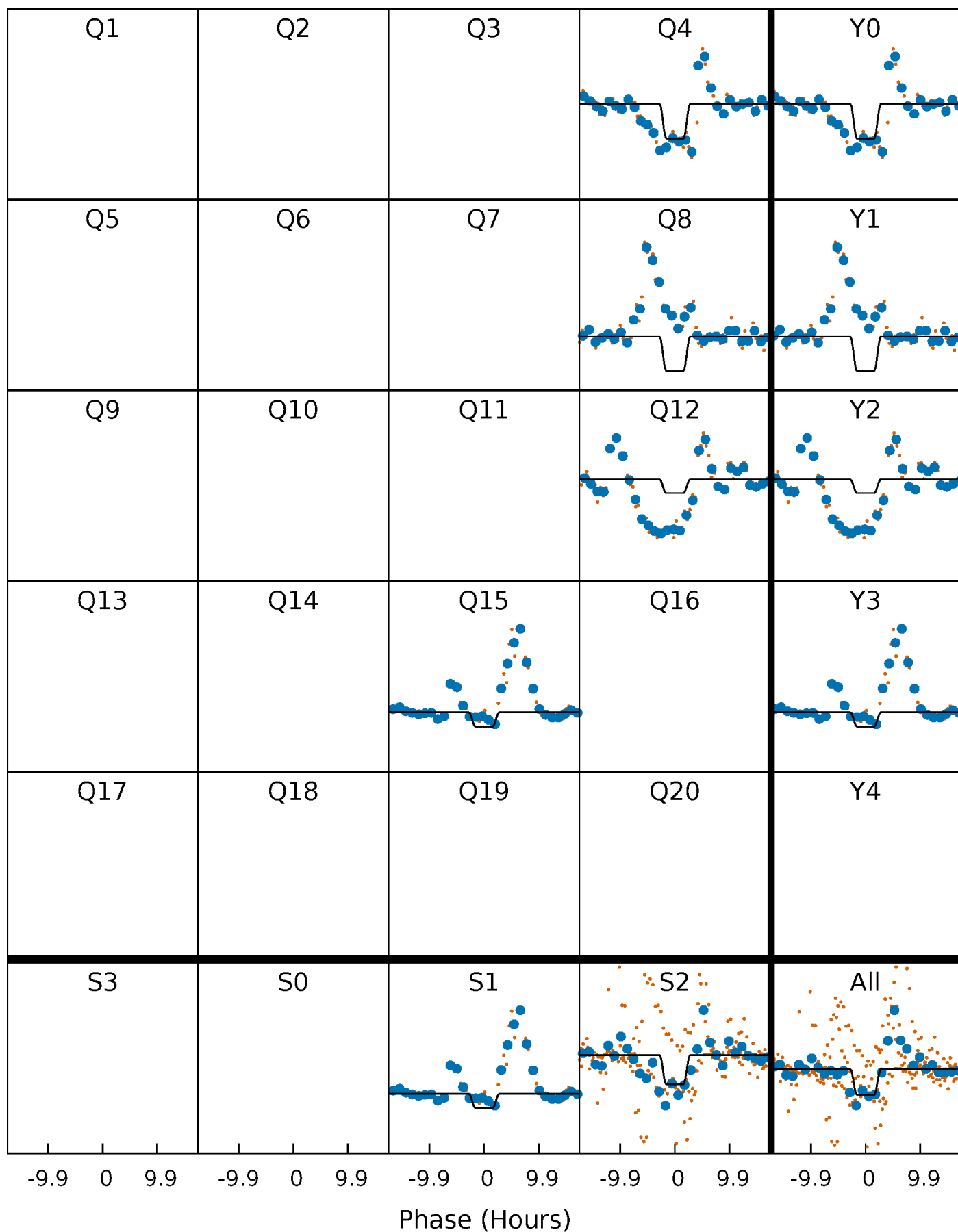
DV Quarter-Phased Transit Curves

TCE 009446742-02 $P=340.356830$ Days $T_0=432.526099$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

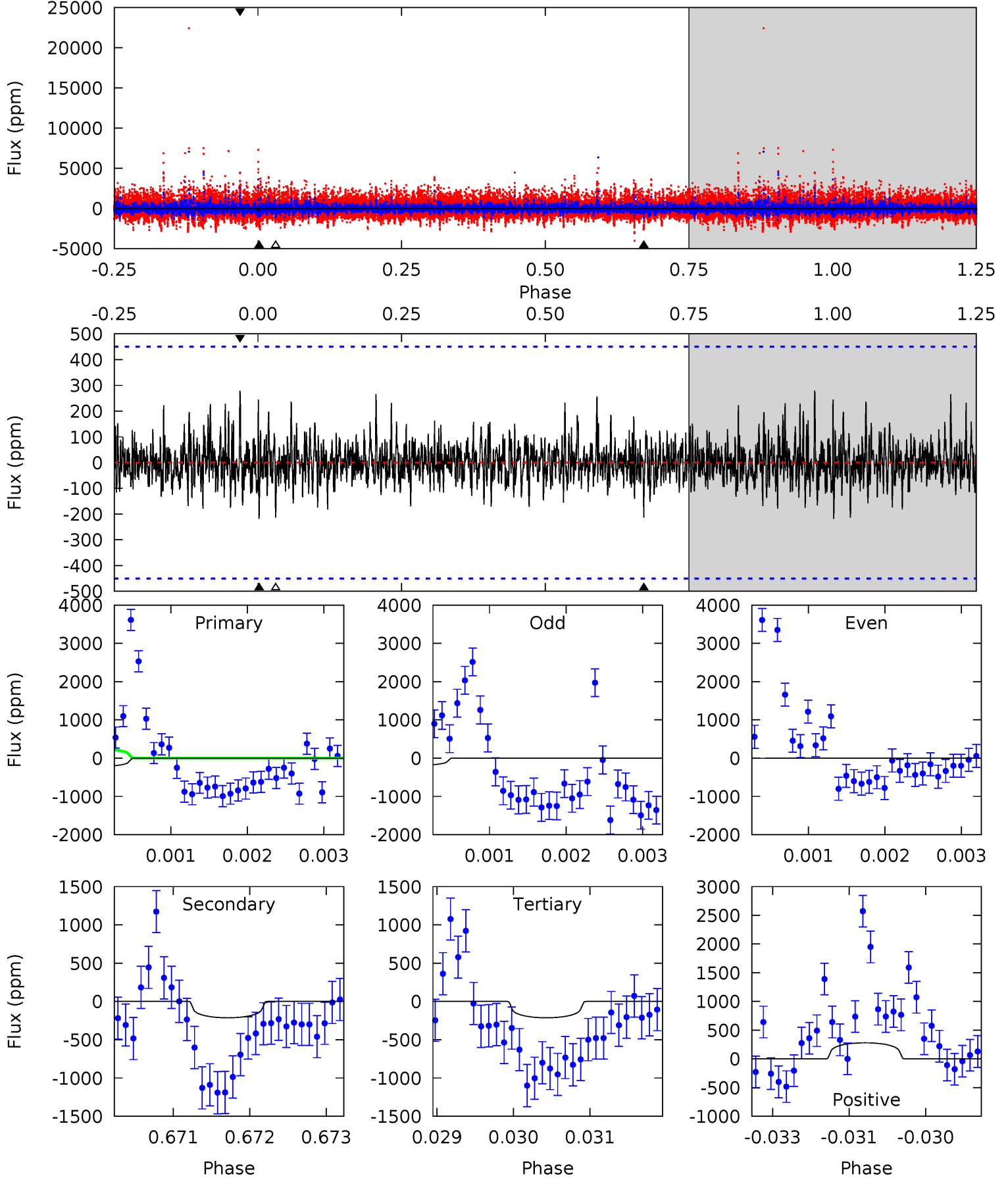
TCE 009446742-02 $P=340.368620$ Days $T_0=432.493248$ (BKJD)



DV Model-Shift Uniqueness Test

009446742-02, P = 340.356830 Days, E = 92.169269 Days

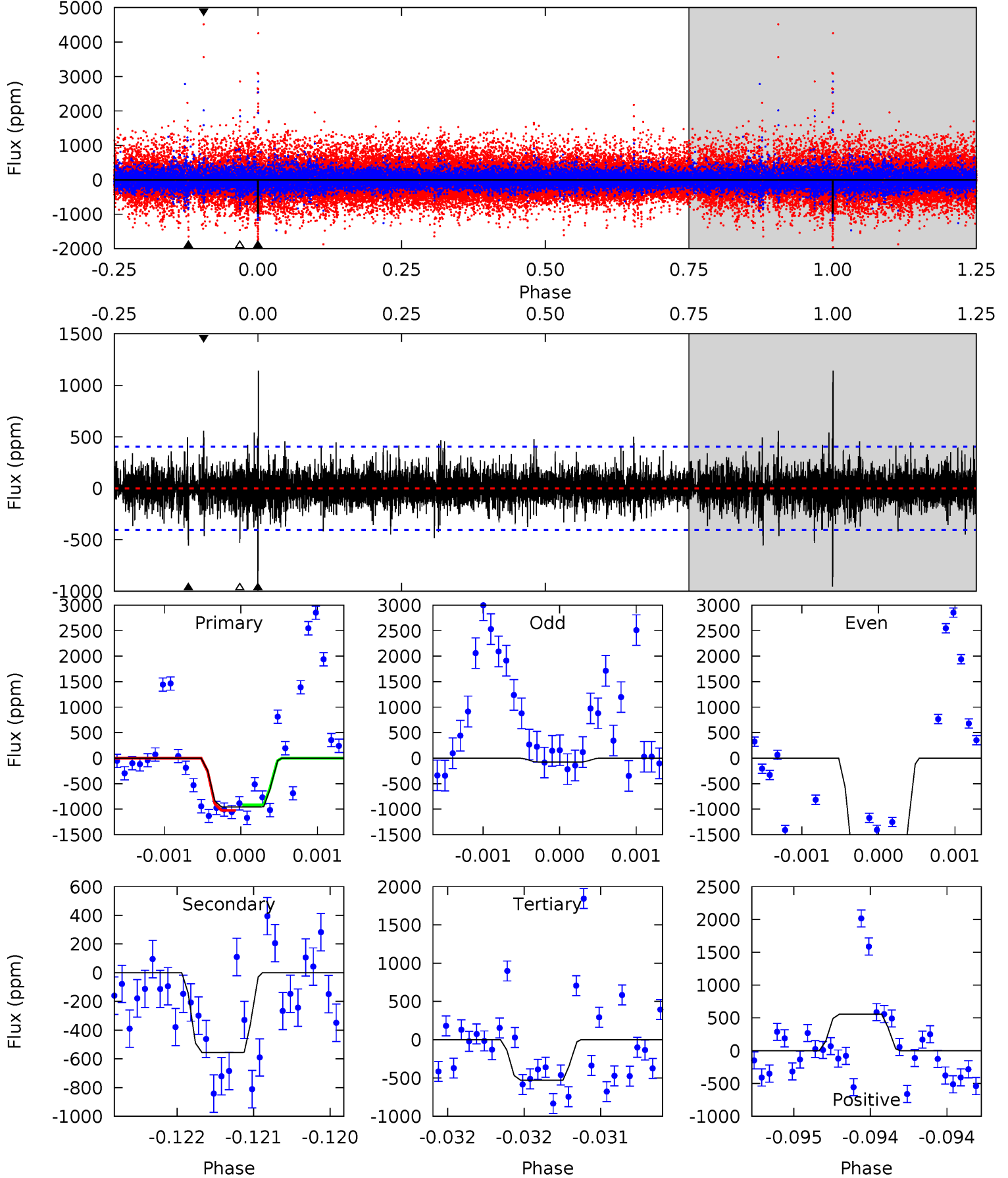
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.63	2.57	2.57	3.37	5.42	3.25	0.74	0.06	-0.74	0.00	-0.80	0.50	9.75	0.56	2.86



Alt Model-Shift Uniqueness Test

009446742-02, P = 340.368620 Days, E = 92.124628 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	7.60	7.26	7.63	5.52	3.41	1.46	5.80	5.43	0.34	-0.03	14.1	1.46	0.54	0



Stellar Parameters For KIC 009446742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5087^{+136}_{-136}	$3.759^{+0.833}_{-0.357}$	$-0.340^{+0.300}_{-0.250}$	$2.024^{+1.272}_{-1.272}$	$0.857^{+0.228}_{-0.171}$	$0.146^{+3.412}_{-0.104}$
	+3%/-3%	+22%/-9%	+88%/-74%	+63%/-63%	+27%/-20%	+2343%/-71%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009446742-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-213 ± 83	$6.60^{+6.70}_{-4.09}$	459^{+74}_{-92}	3661^{+1481}_{-604}	2150^{+13699}_{-1697}
Alt.	-556 ± 73	$7.54^{+6.22}_{-4.41}$	456^{+82}_{-82}	4207^{+1704}_{-624}	4496^{+21211}_{-3197}

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 $A_{obs} \gg 1.0$

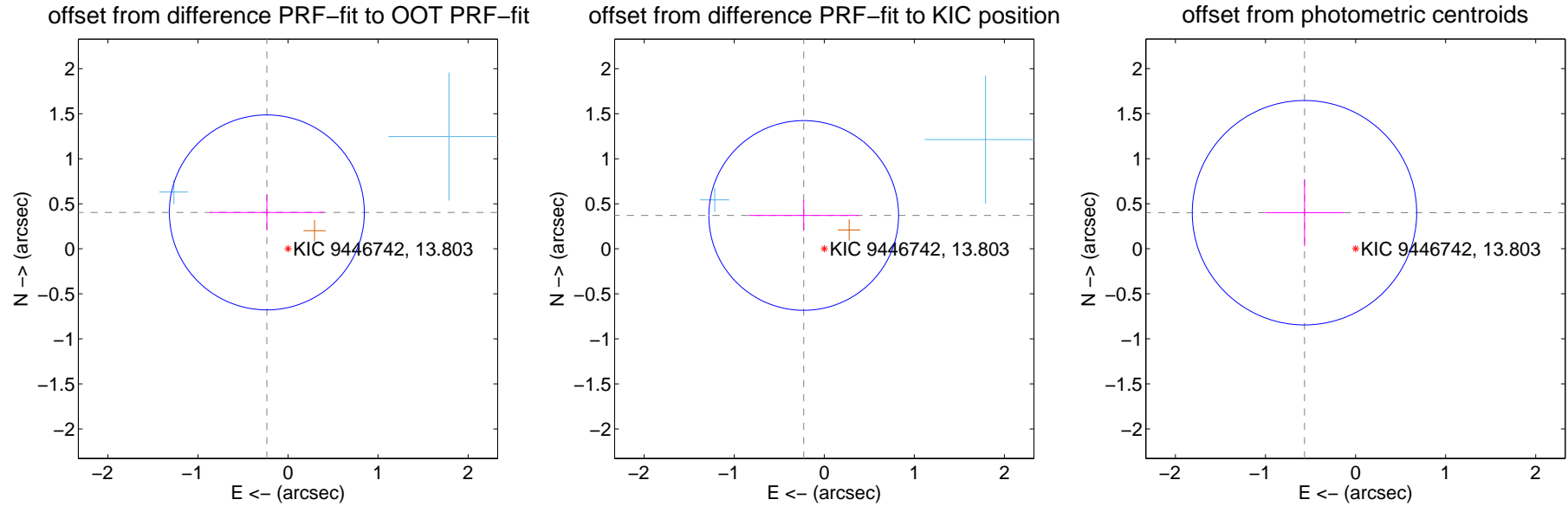
DV Centroid Data

Supplemental centroid analysis for 009446742-02. Kepler magnitude: 13.80. Transit SNR 6.16

There are 2 quarters with good PRF difference image offsets

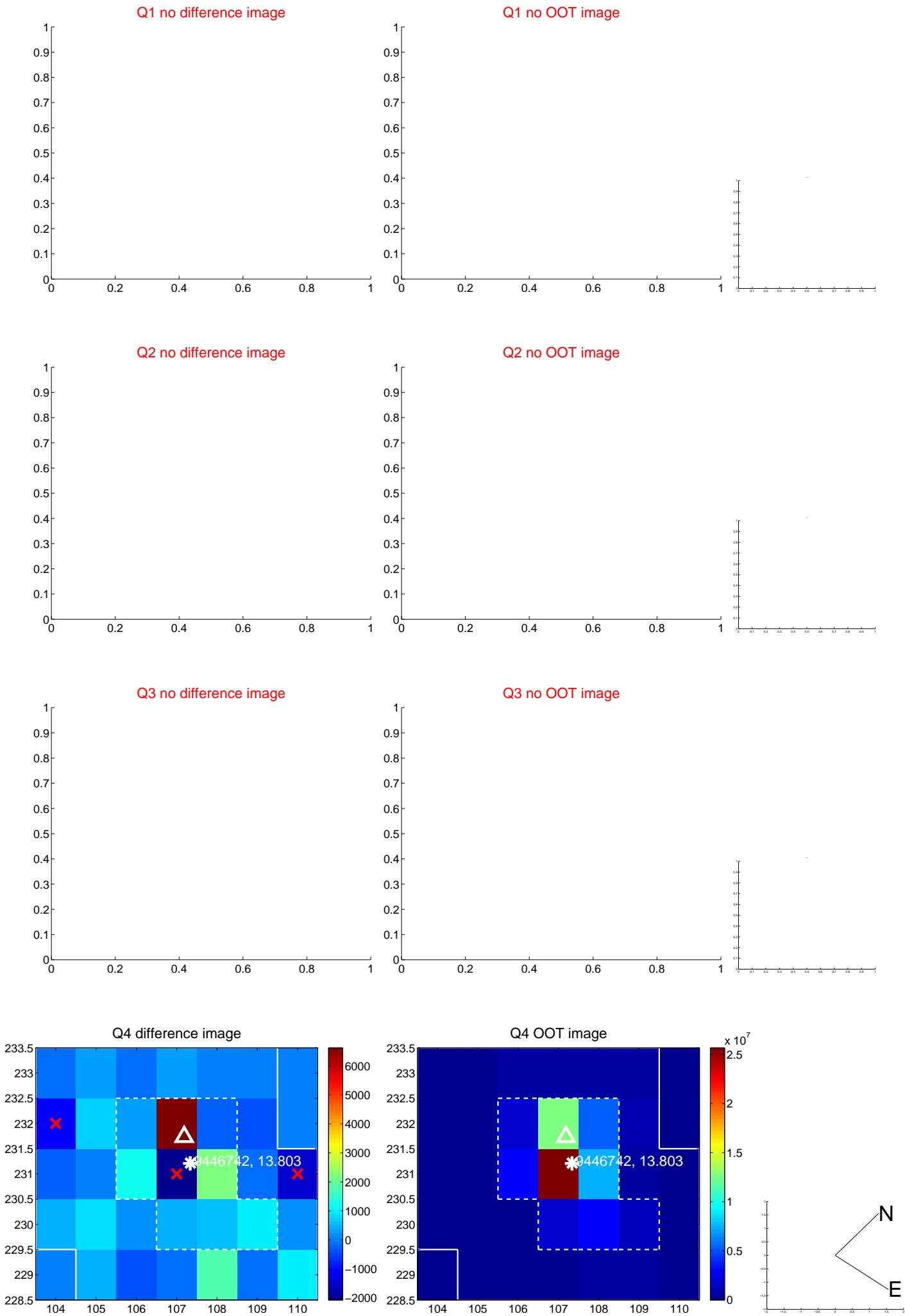
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.468 ± 0.361	1.30	0.235 ± 0.632	0.404 ± 0.198
PRF-fit source offset from KIC position	0.435 ± 0.351	1.24	0.229 ± 0.609	0.371 ± 0.170
photometric centroid source offset	0.69 ± 0.42	1.67	0.57 ± 0.43	0.40 ± 0.37

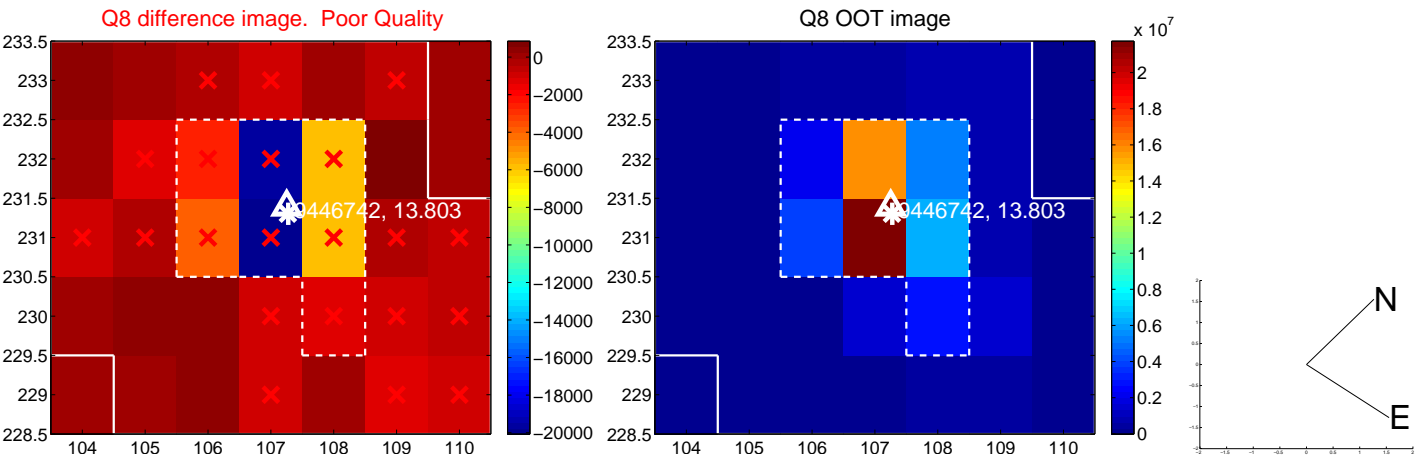


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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

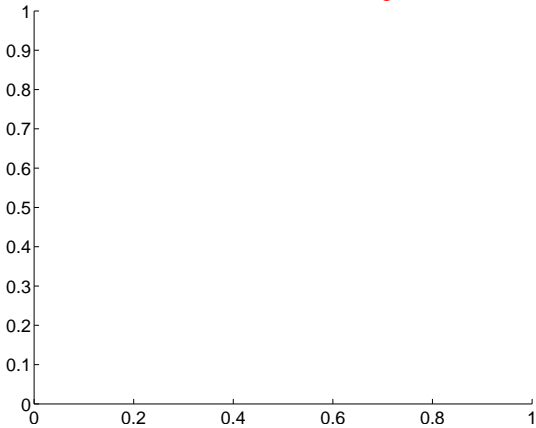


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

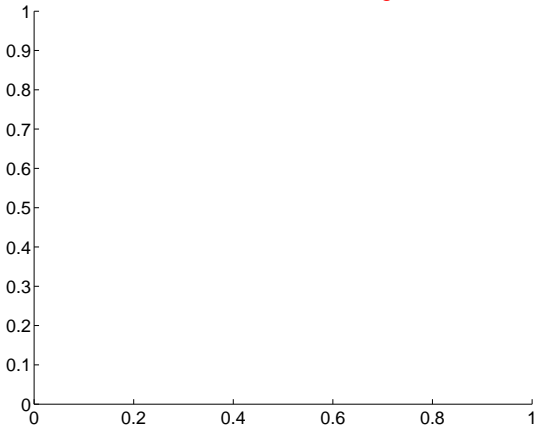
Q13 no difference image



Q13 no OOT image



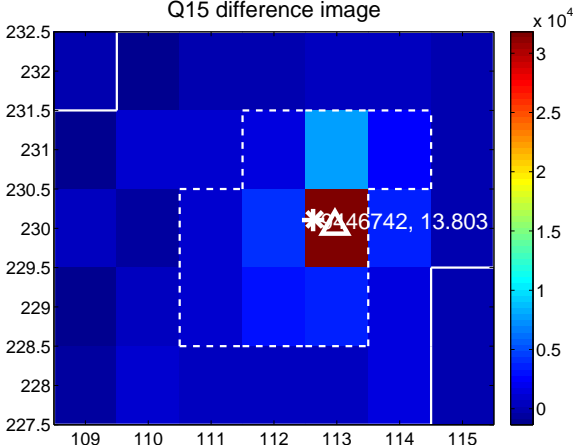
Q14 no difference image



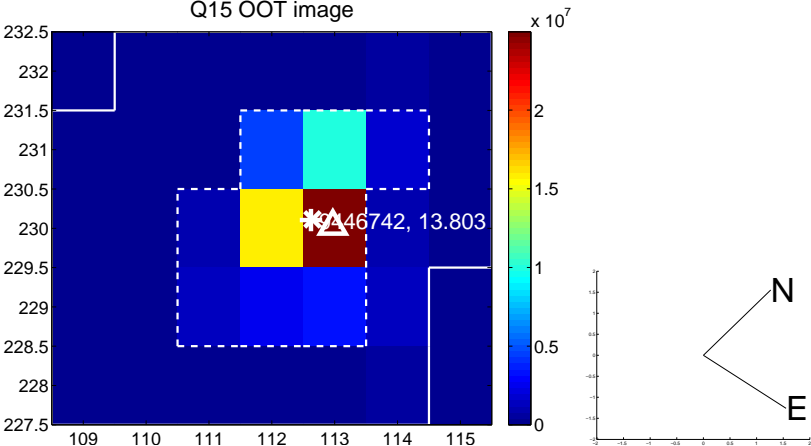
Q14 no OOT image



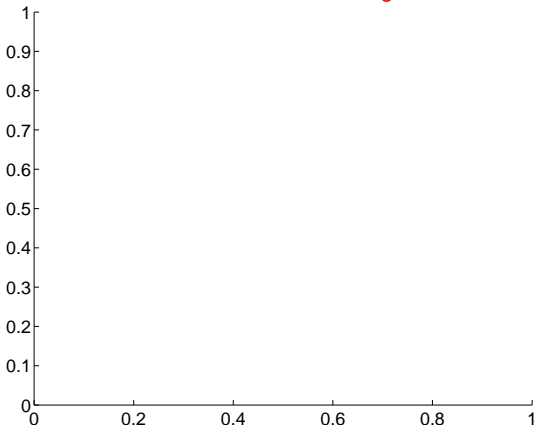
Q15 difference image



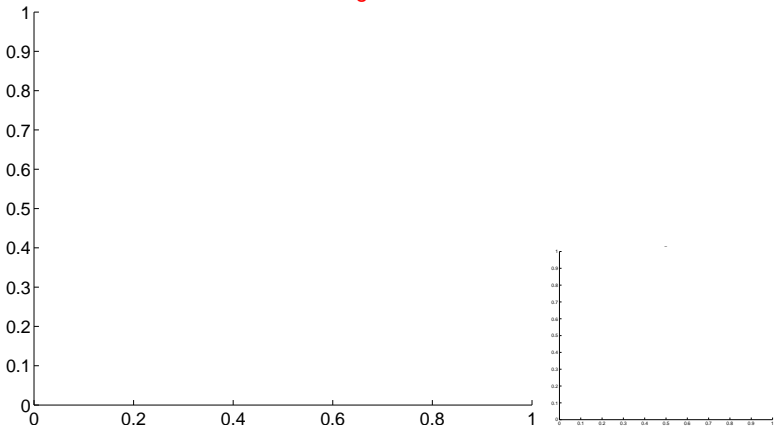
Q15 OOT image



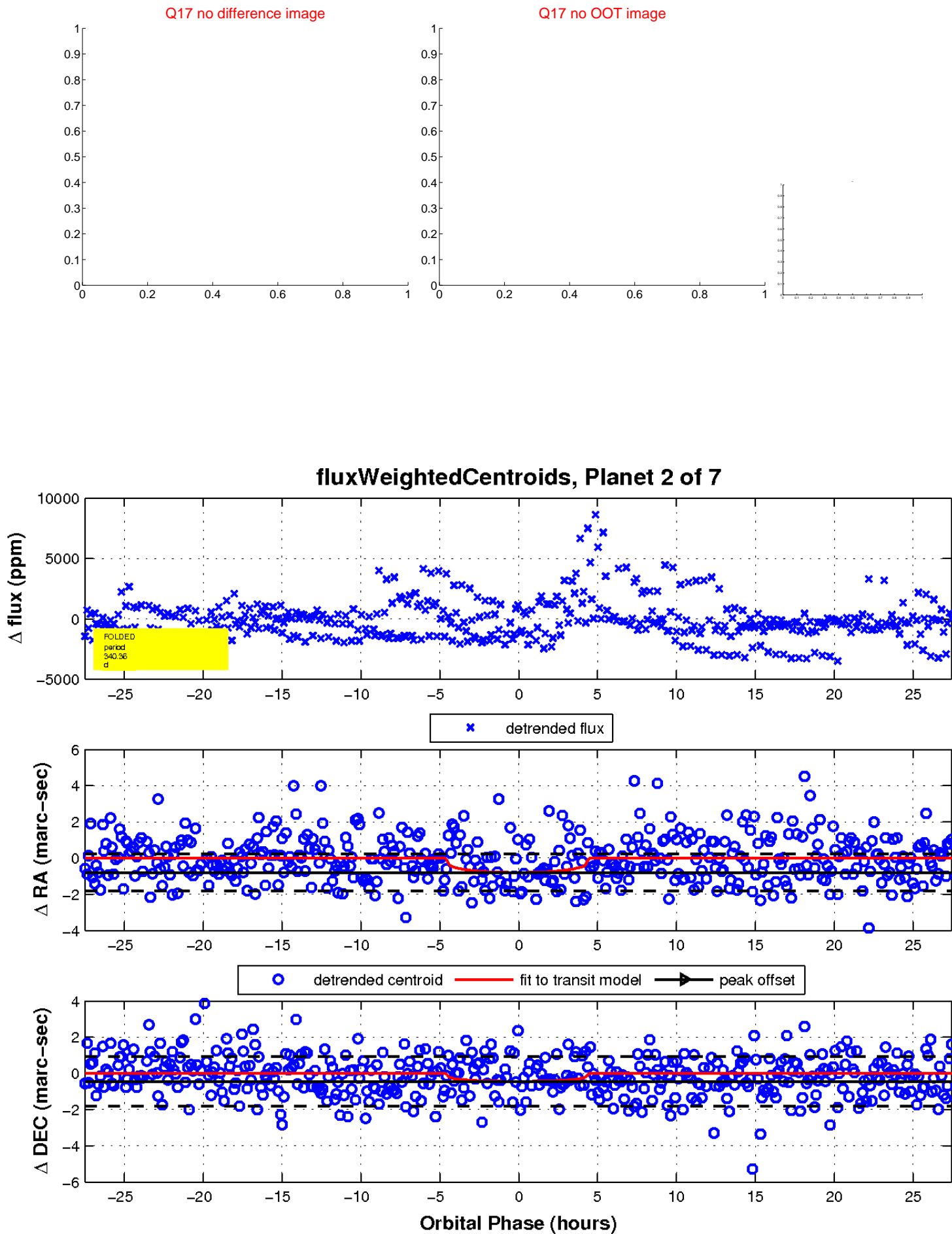
Q16 no difference image



Q16 no OOT image

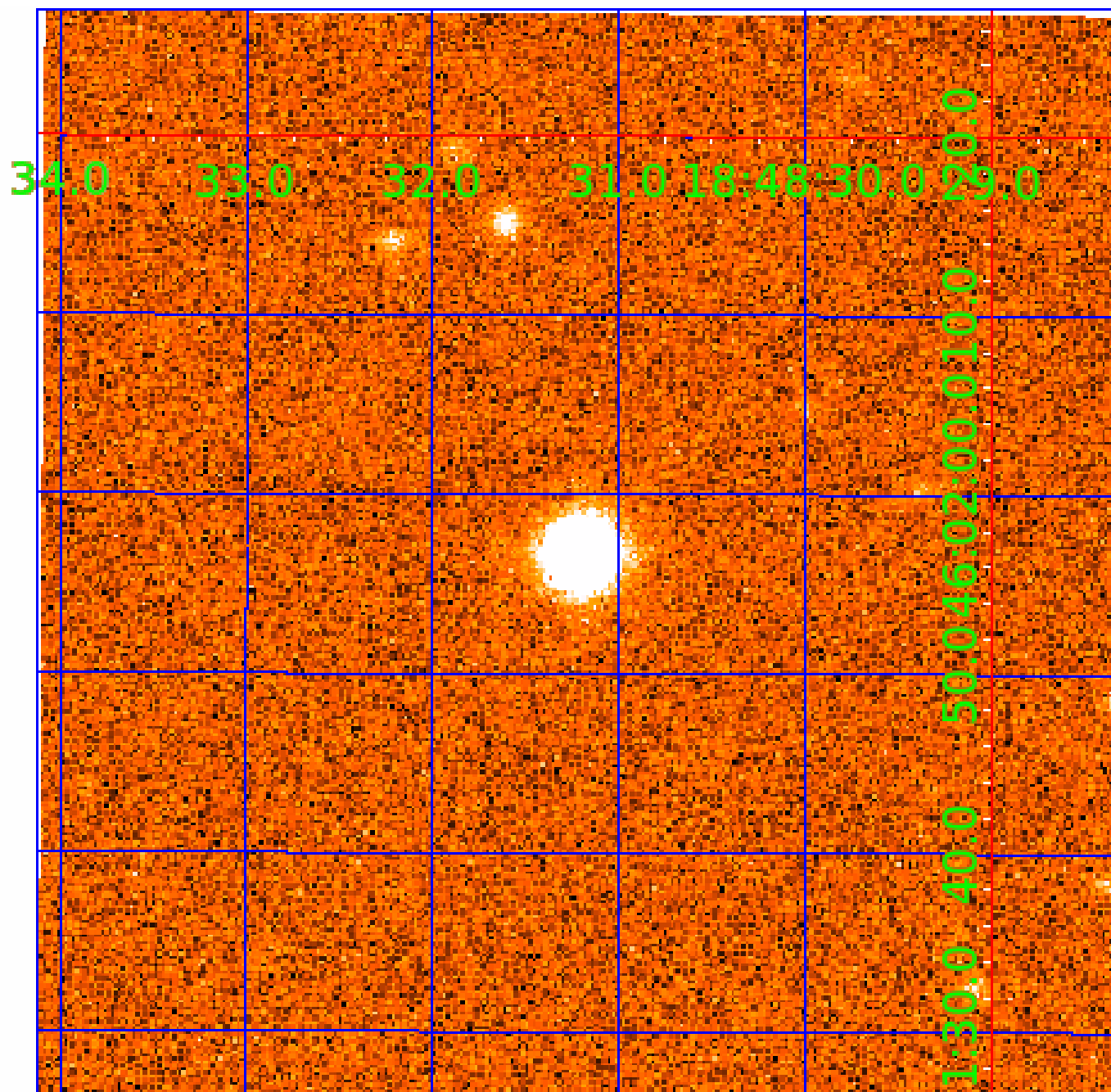


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009446742

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})
009446742-01	OBS	No	576.784489	271.020983	2032.0	14.093	19.7	8.5	2.02	5087	9.37	1.48
009446742-02	OBS	No	340.356830	432.526099	1181.3	9.170	17.3	6.2	2.02	5087	6.84	2.99
009446742-03	OBS	No	471.555815	524.297157	422.4	6.653	17.8	2.2	2.02	5087	4.35	1.94
009446742-04	OBS	No	394.145654	349.790556	1375.2	4.052	17.1	6.0	2.02	5087	8.12	2.46
009446742-05	OBS	No	497.855676	456.087069	1587.4	7.698	14.3	7.7	2.02	5087	7.89	1.80
009446742-06	OBS	No	572.133337	242.065863	5811.6	12.378	15.0	16.3	2.02	5087	28.99	1.50
009446742-07	OBS	No	320.365764	270.634269	558.5	11.538	12.9	2.6	2.02	5087	4.95	3.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009446742-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009446742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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
009446742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009446742-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS
009446742-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

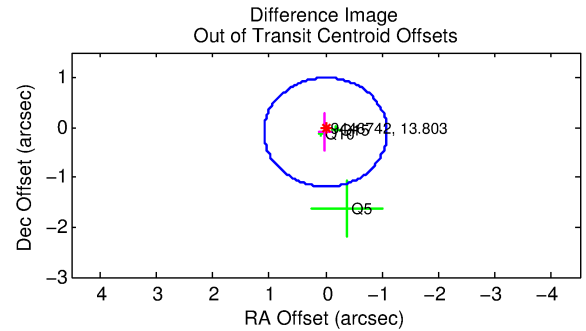
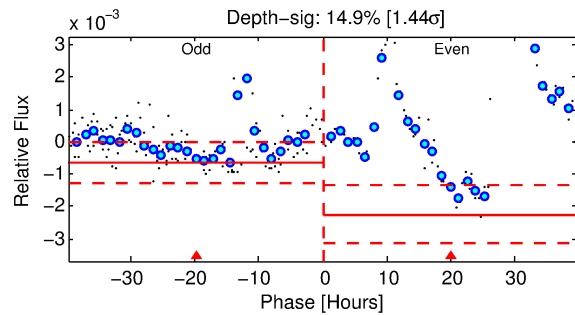
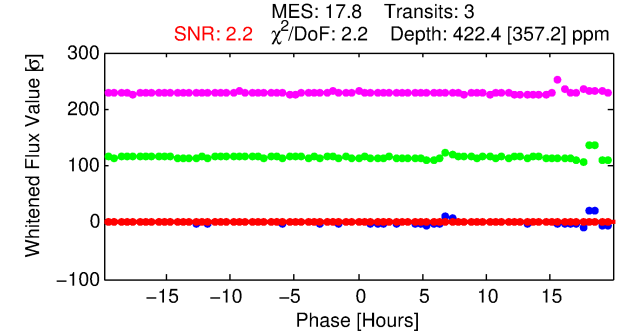
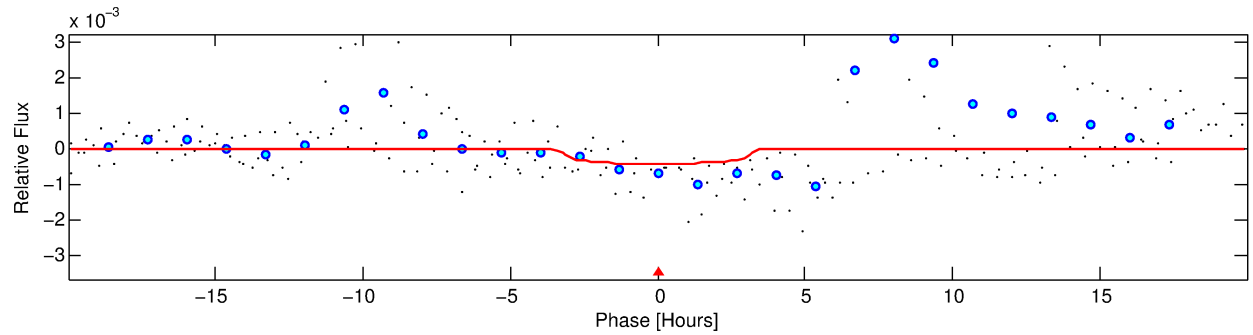
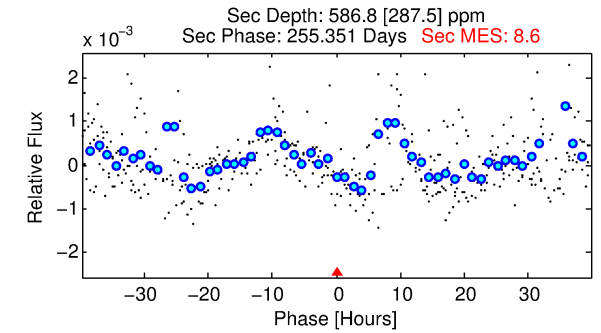
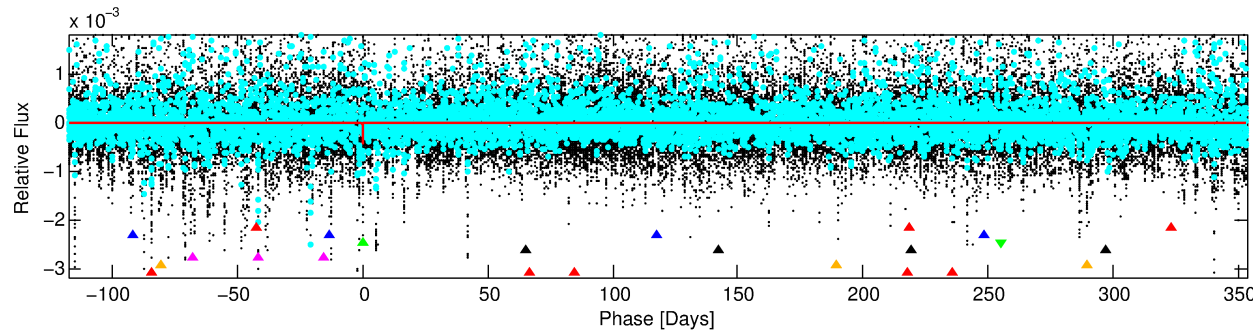
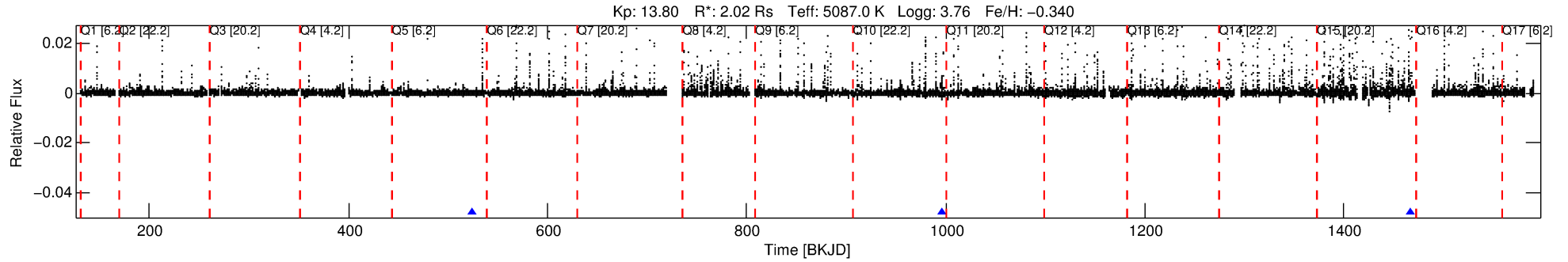
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009446742-03

No Significant Match Found

DV One-Page Summary

KIC: 9446742 Candidate: 3 of 7 Period: 471.556 d



DV Fit Results:

Period = 471.55581 [0.02030] d
Epoch = 524.2972 [0.0265] BKJD
Rp/R* = 0.0197 [0.0556]
a/R* = 428.92 [4525.40]
b = 0.64 [9.75]
Seff = 1.94 [2.61]
Teq = 301 [101] K
Rp = 4.35 [12.58] Re
a = 1.1268 [0.8614] AU
Ag = 21638.48 [125991.16] [0.17 σ]
Teffp = 5640 [7989] K [0.67 σ]

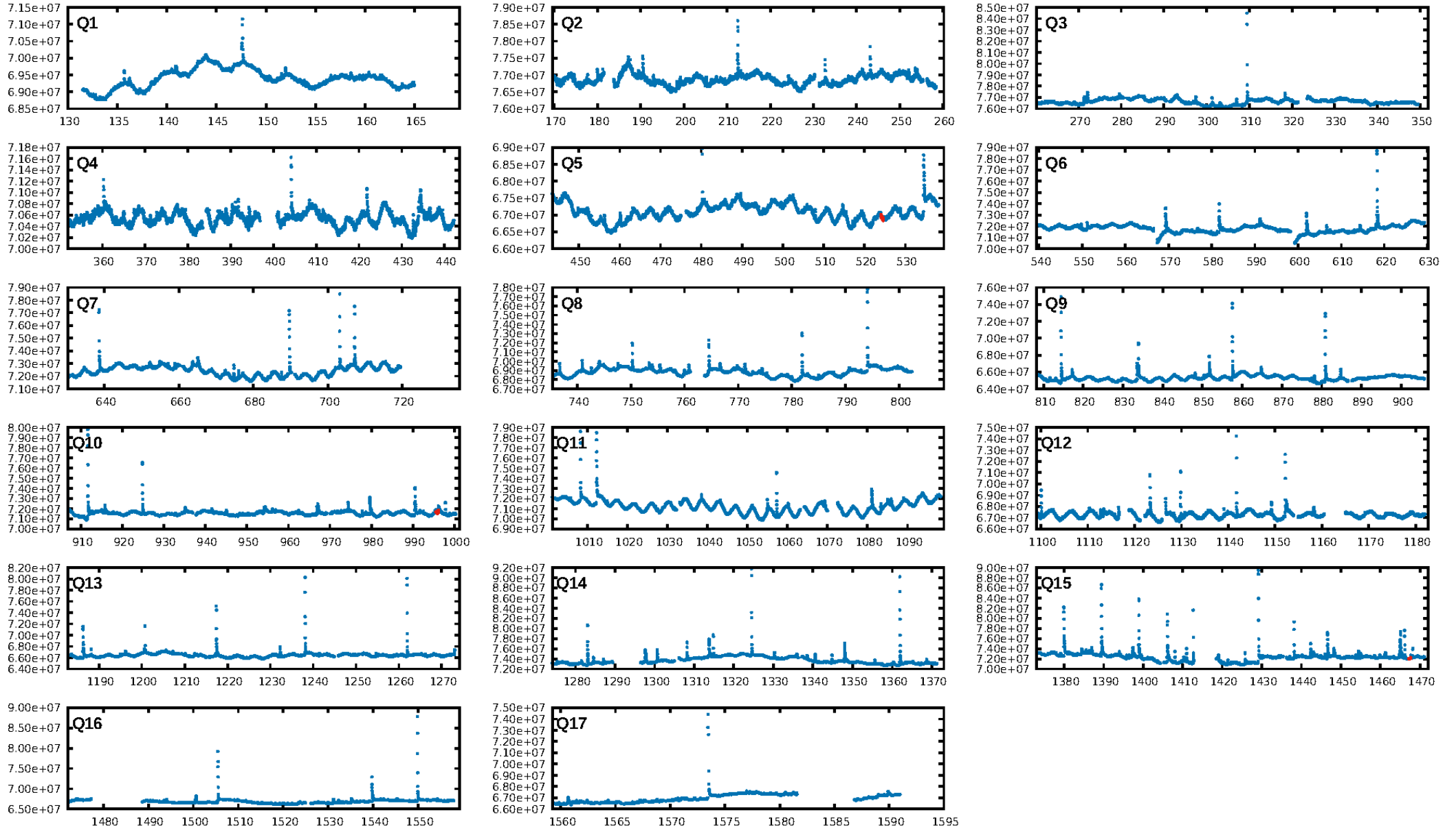
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [238.50 σ]
LongPeriod-sig: 100.0% [62.04 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 29.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.66
Centroid-sig: 1.6%
Centroid-so: 3.396 arcsec [2.11 σ]
OotOffset-rm: 0.101 arcsec [0.28 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.223 arcsec [0.67 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

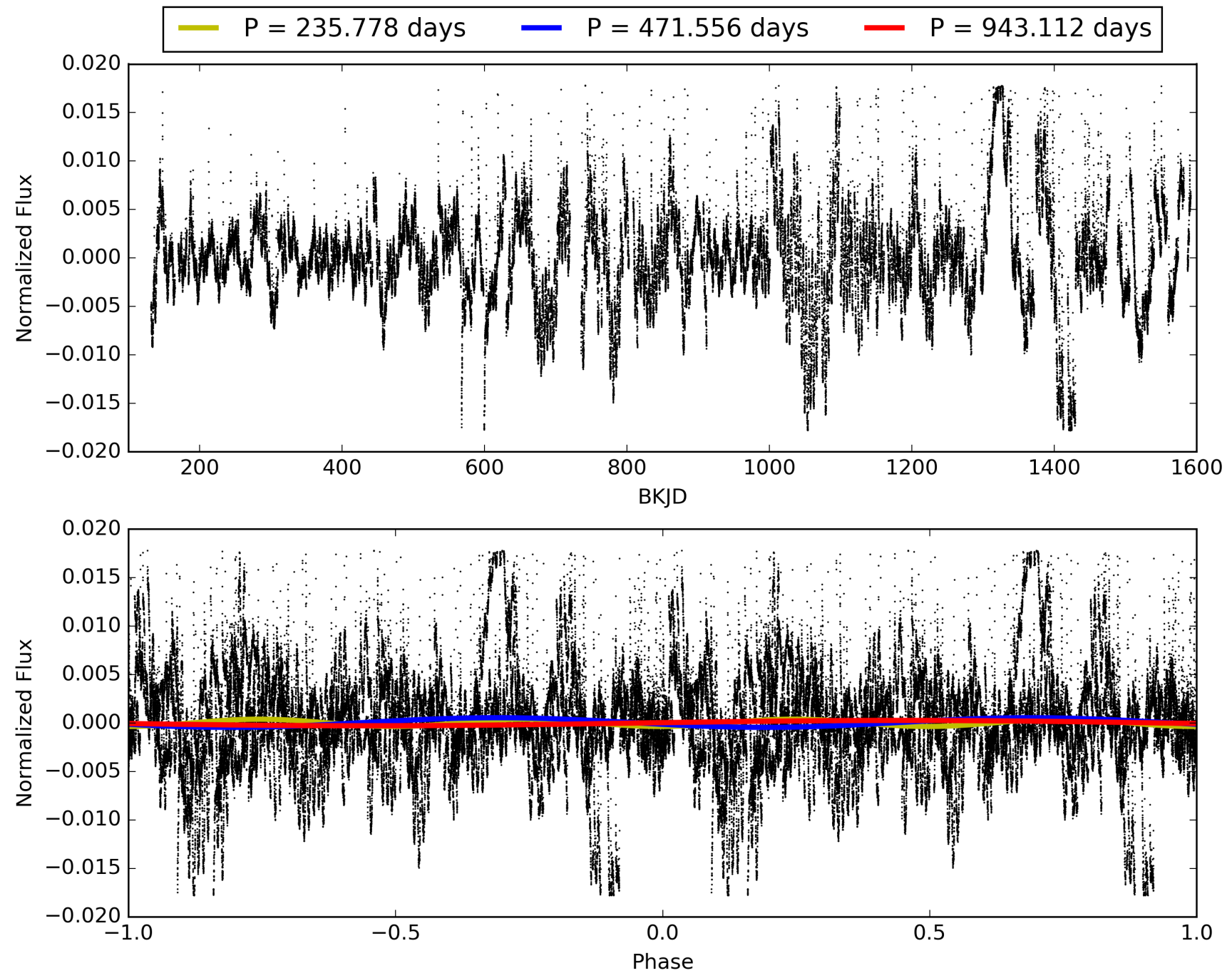
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:27 Z

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

TCE 009446742-03, PDC Light Curves

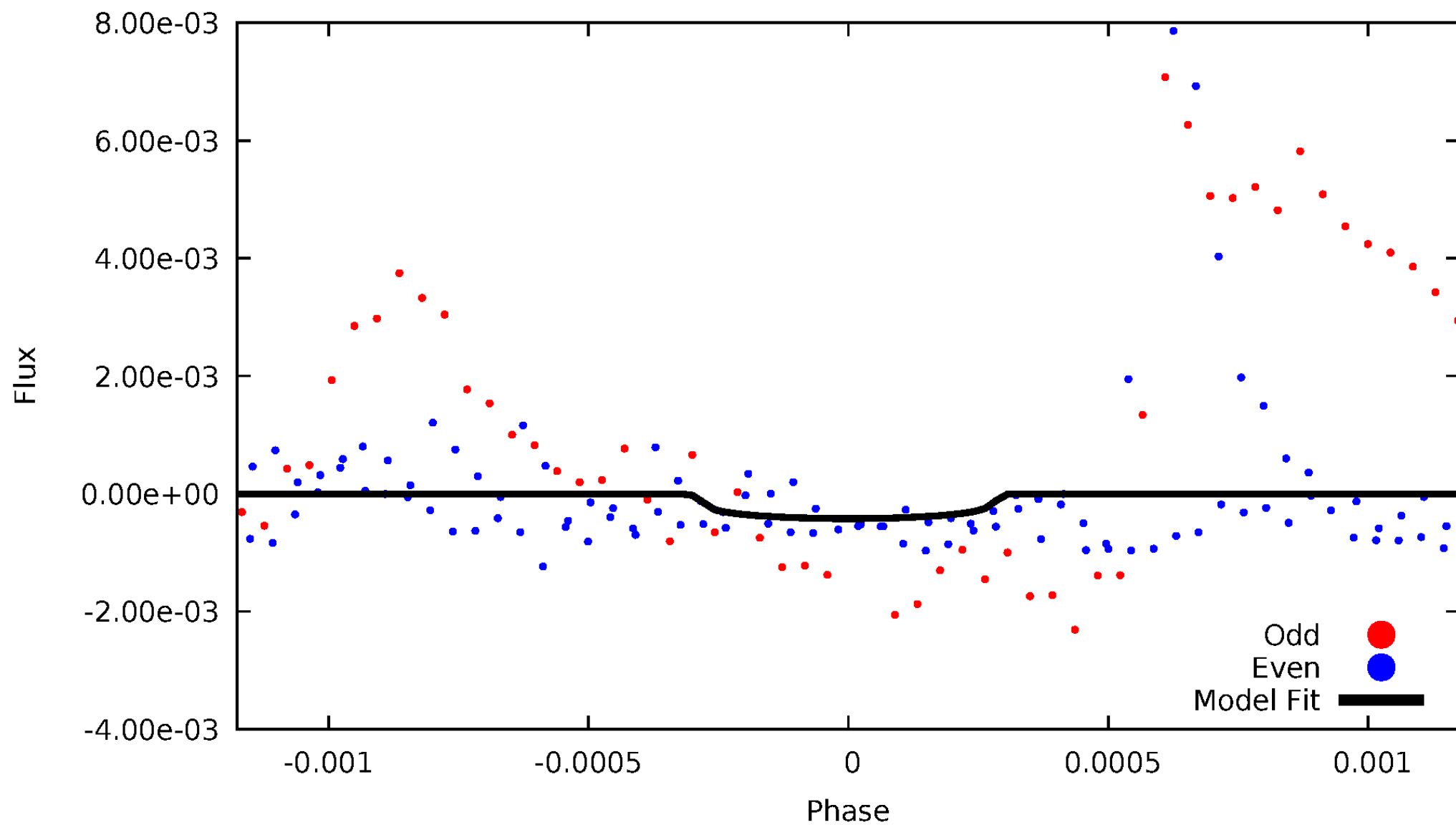


TCE 009446742-03



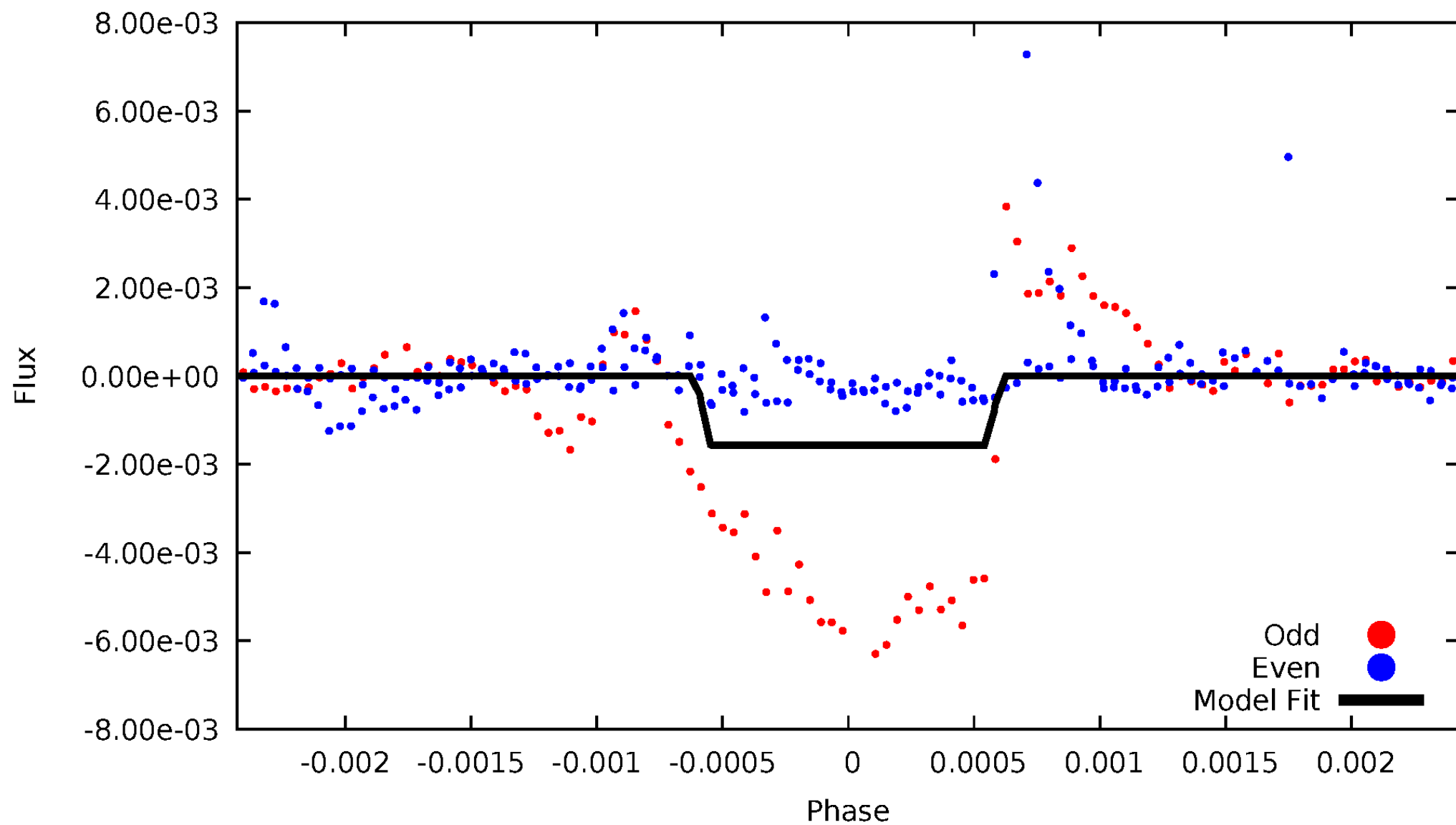
DV Odd/Even

TCE 009446742-03



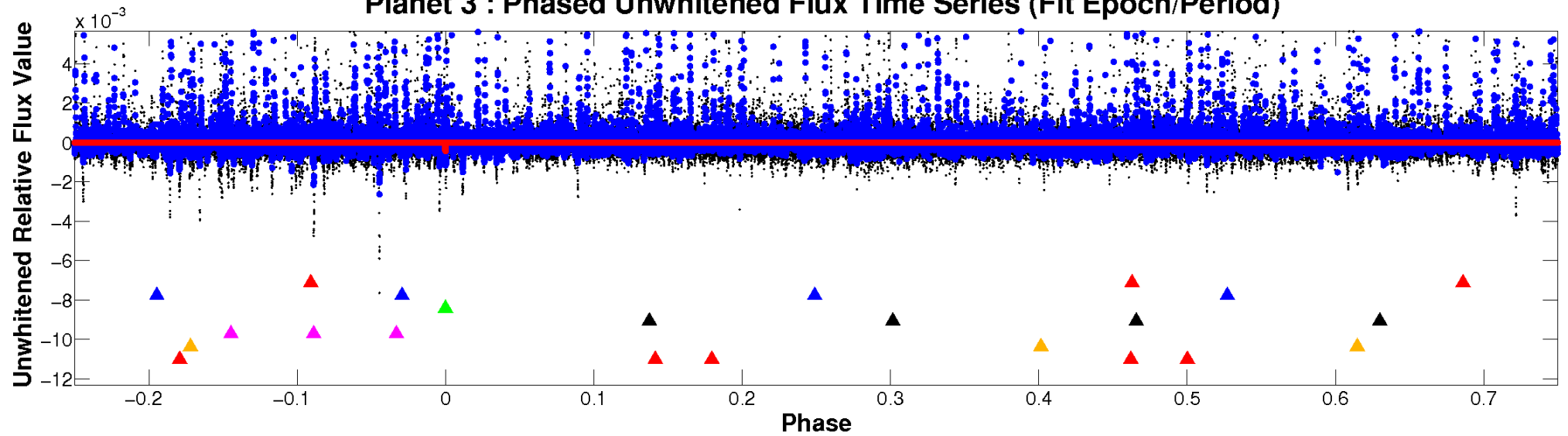
ALT Odd/Even

TCE 009446742-03

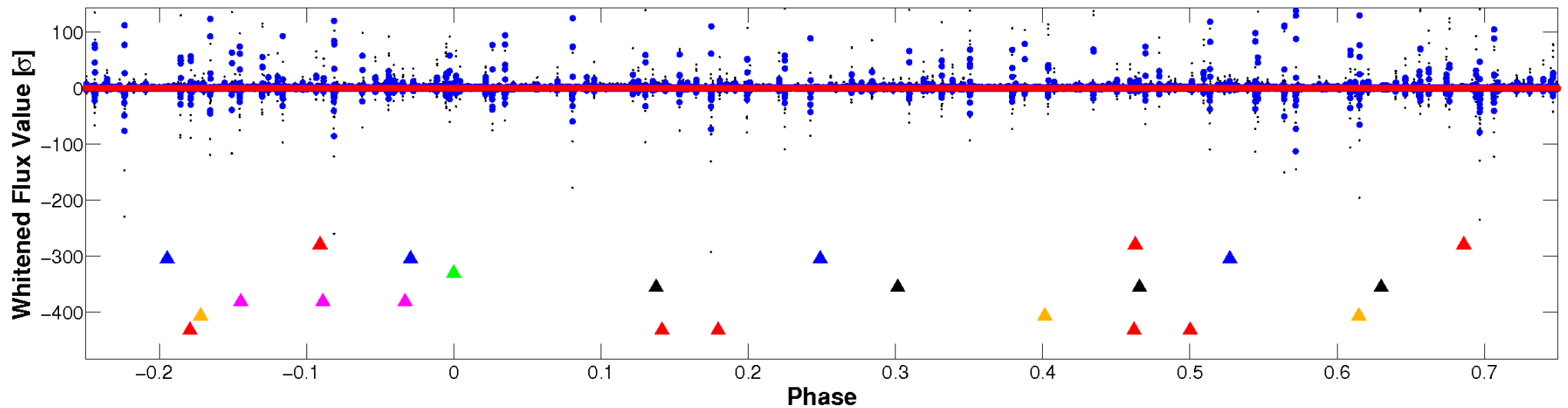


Non-Whitened Vs. Whitened Light Curve

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

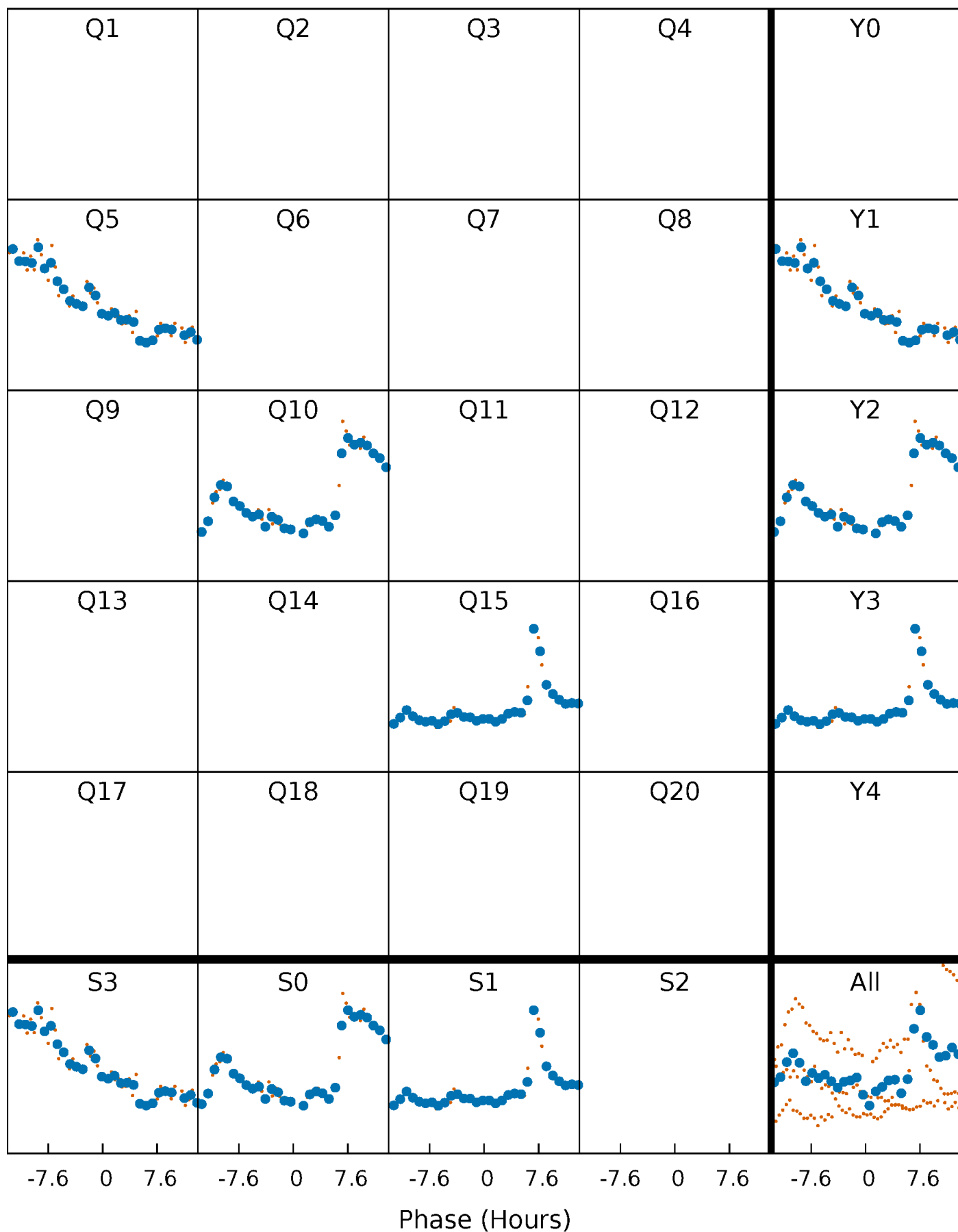


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



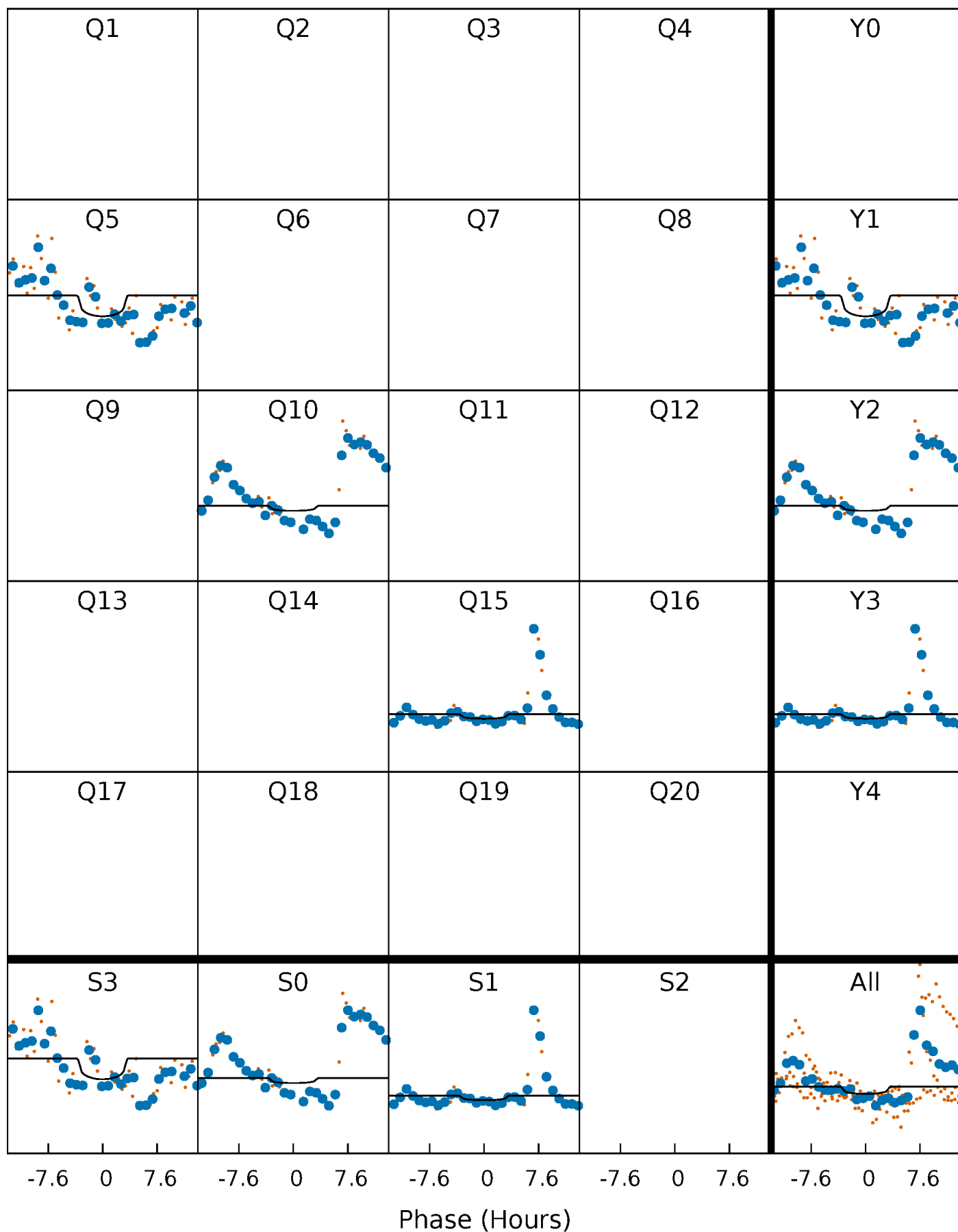
PDC Quarter-Phased Transit Curves

TCE 009446742-03 P=471.555815 Days $T_0=524.297157$ (BKJD)



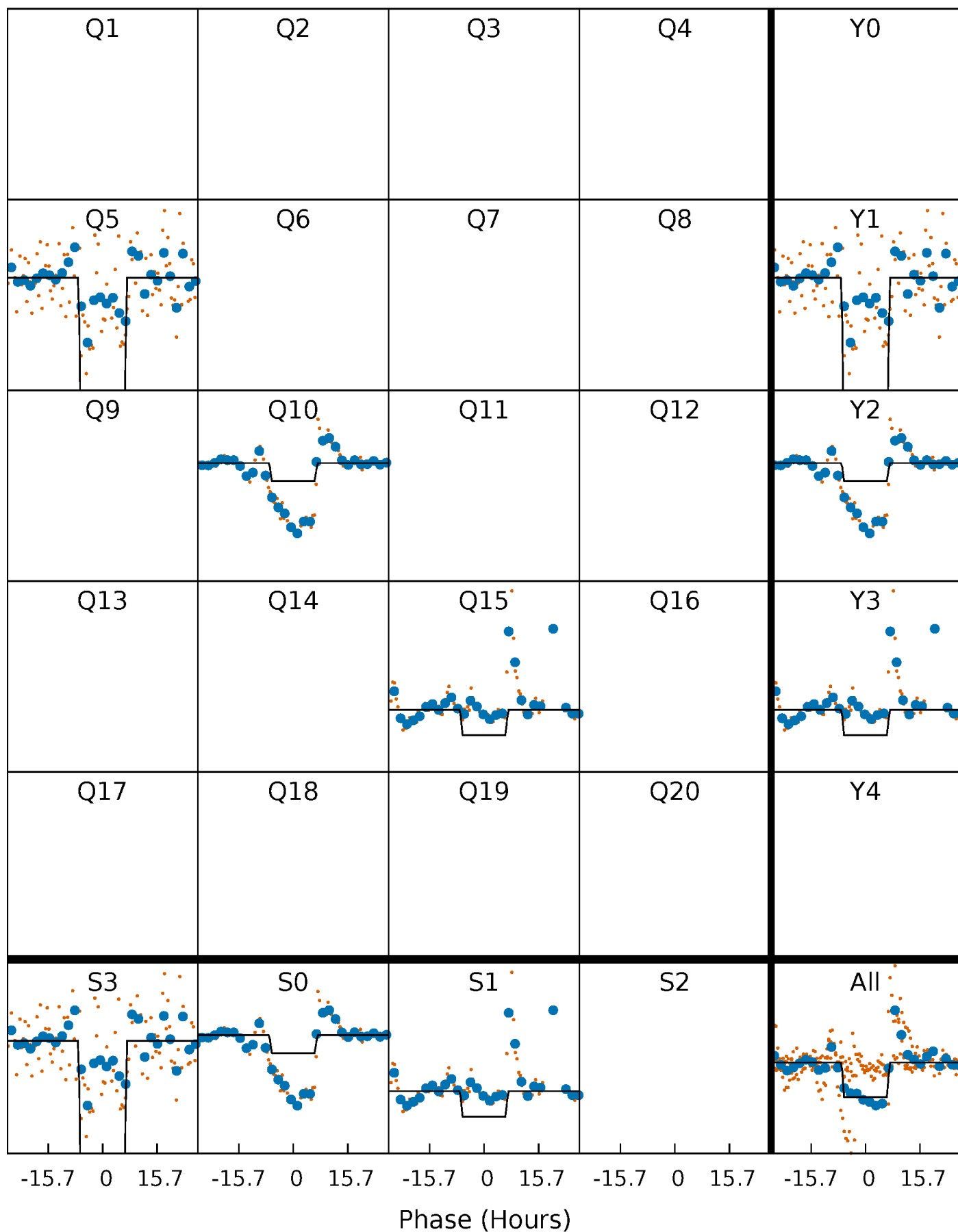
DV Quarter-Phased Transit Curves

TCE 009446742-03 $P=471.555815$ Days $T_0=524.297157$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

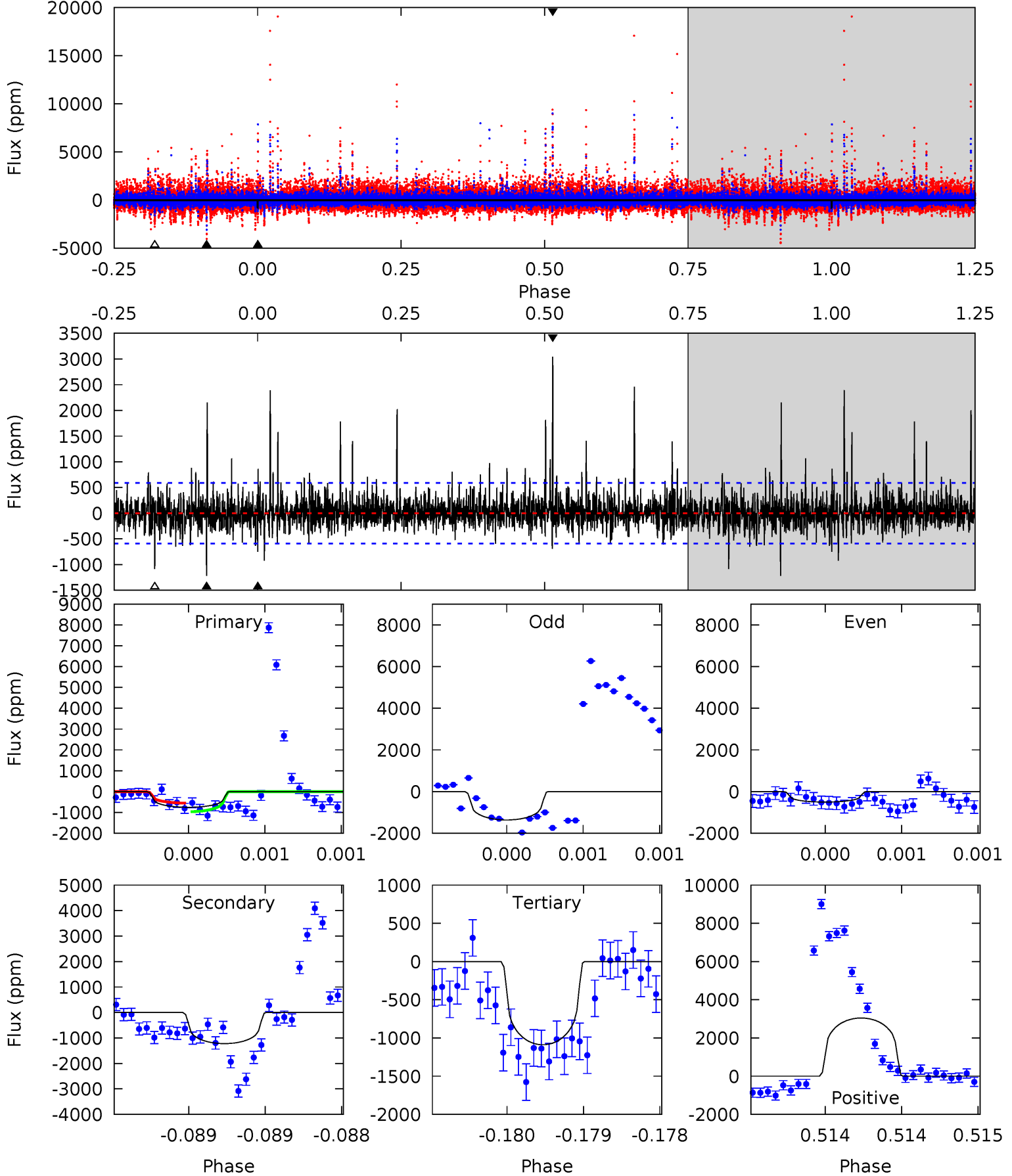
TCE 009446742-03 $P=471.545264$ Days $T_0=524.299238$ (BKJD)



DV Model-Shift Uniqueness Test

009446742-03, P = 471.555815 Days, E = 52.741342 Days

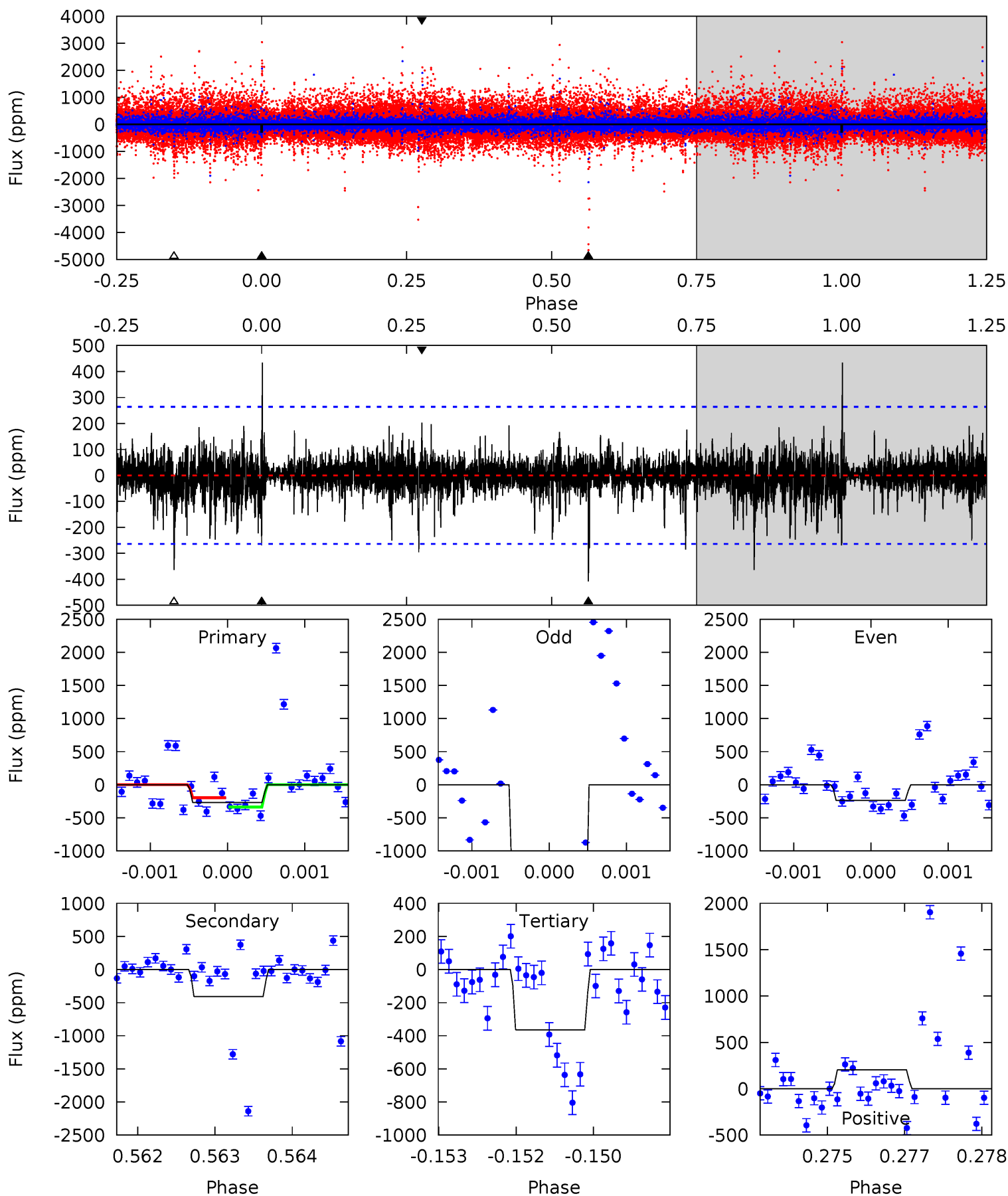
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.06	11.5	10.2	28.6	5.54	3.44	2.34	-3.16	-21.5	1.25	-17.1	0.91	1.24	0.71	1.96



Alt Model-Shift Uniqueness Test

009446742-03, P = 471.545264 Days, E = 52.753974 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.53	8.36	7.48	4.16	5.42	3.24	1.06	-1.94	1.37	0.88	4.20	43.2	5.79	0.52	0



Stellar Parameters For KIC 009446742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5087^{+136}_{-136}	$3.759^{+0.833}_{-0.357}$	$-0.340^{+0.300}_{-0.250}$	$2.024^{+1.272}_{-1.272}$	$0.857^{+0.228}_{-0.171}$	$0.146^{+3.412}_{-0.104}$
	+3%/-3%	+22%/-9%	+88%/-74%	+63%/-63%	+27%/-20%	+2343%/-71%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009446742-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1220 ± 106	$9.24^{+10.43}_{-6.78}$	411^{+67}_{-79}	4536^{+3815}_{-949}	$10566^{+121099}_{-8355}$
Alt.	-407 ± 49	$11.27^{+12.61}_{-7.83}$	412^{+67}_{-77}	3494^{+1656}_{-591}	2233^{+22921}_{-1719}

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

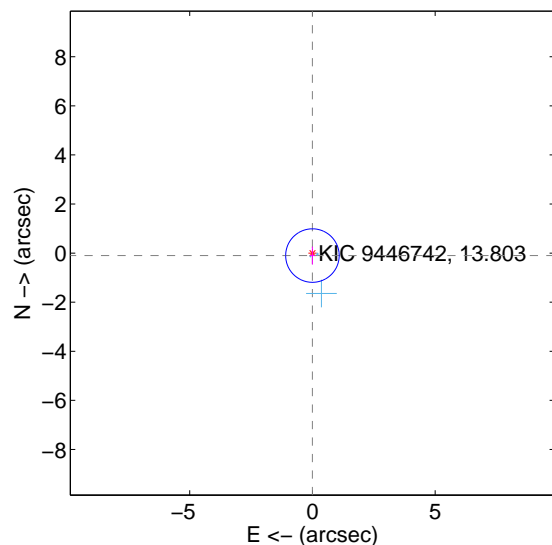
Supplemental centroid analysis for 009446742-03. Kepler magnitude: 13.80. Transit SNR 2.23

There are 3 quarters with good PRF difference image offsets

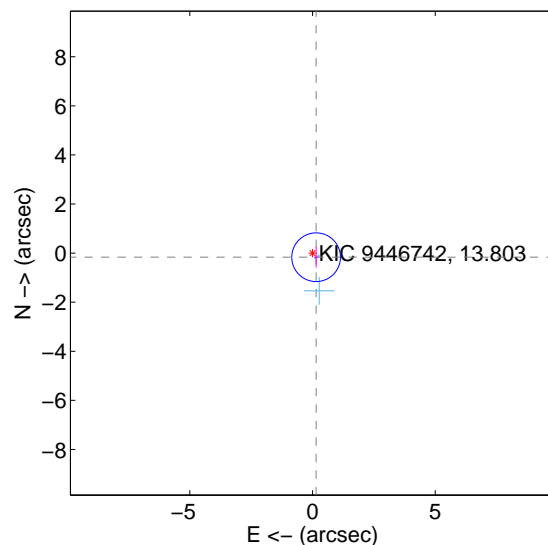
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.101 ± 0.363	0.28	0.001 ± 0.101	-0.101 ± 0.364
PRF-fit source offset from KIC position	0.223 ± 0.331	0.67	-0.146 ± 0.075	-0.168 ± 0.419
photometric centroid source offset	3.40 ± 1.61	2.11	-3.15 ± 1.62	1.27 ± 1.50

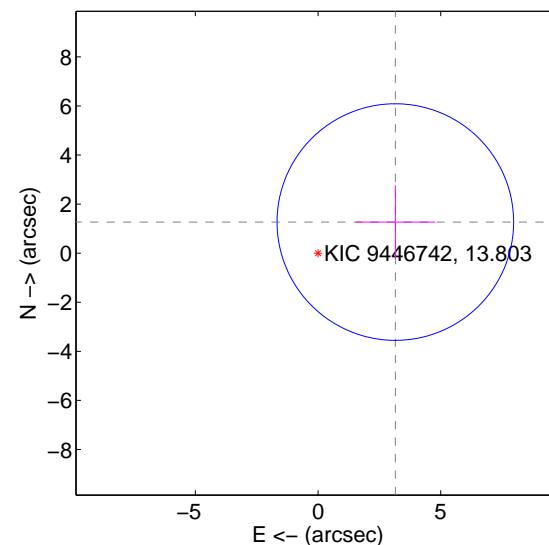
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

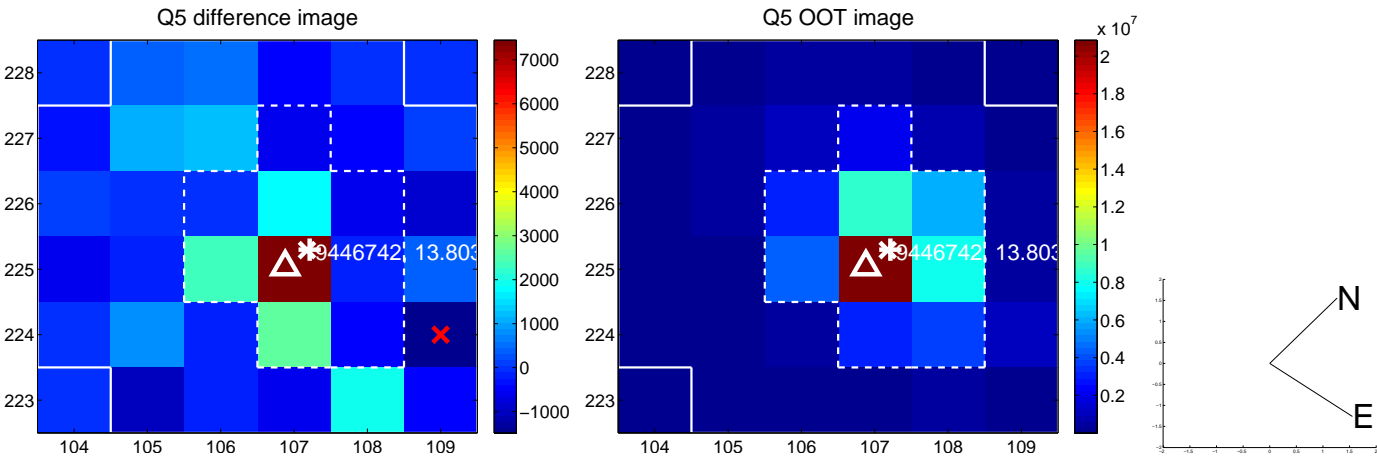


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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



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

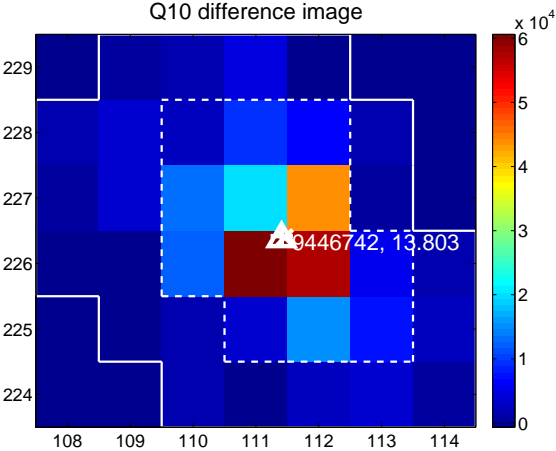
Q9 no difference image



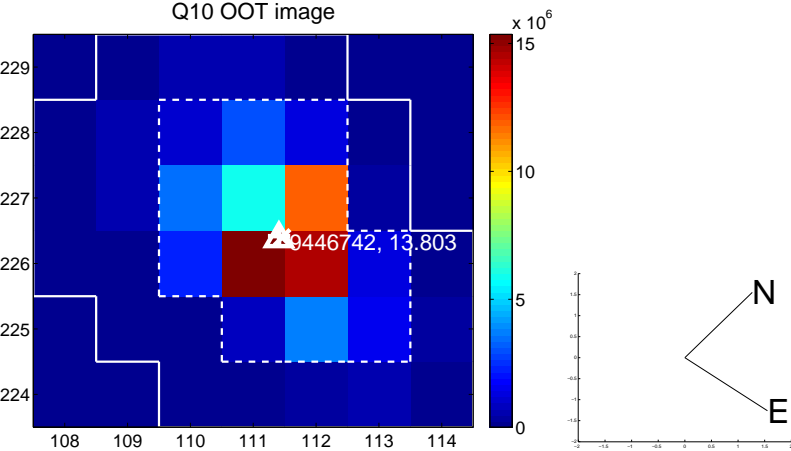
Q9 no OOT image



Q10 difference image



Q10 OOT image



Q11 no difference image



Q11 no 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



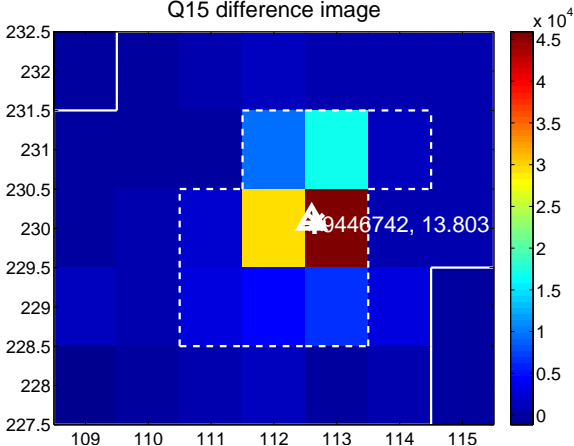
Q14 no difference image



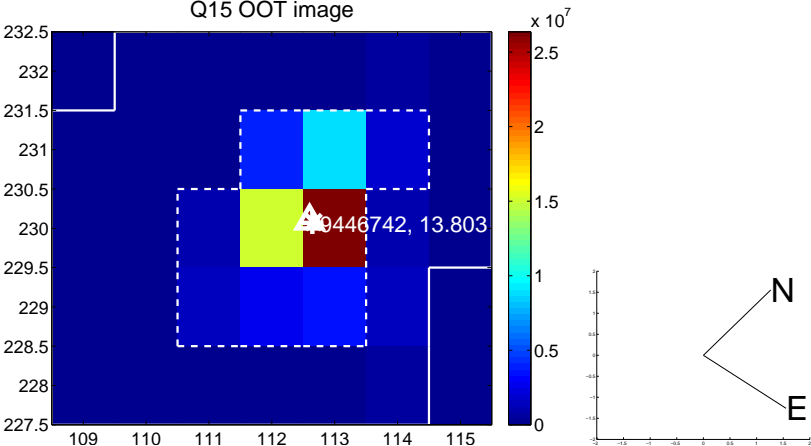
Q14 no OOT image



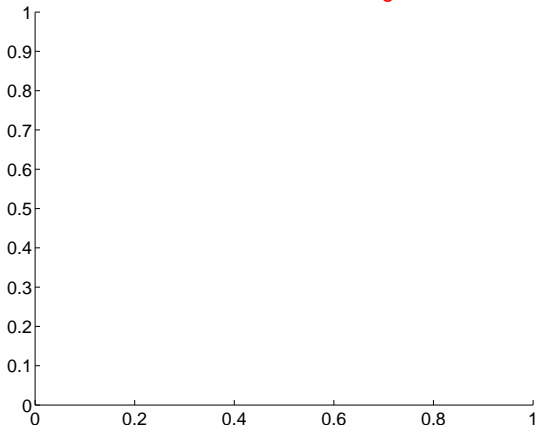
Q15 difference image



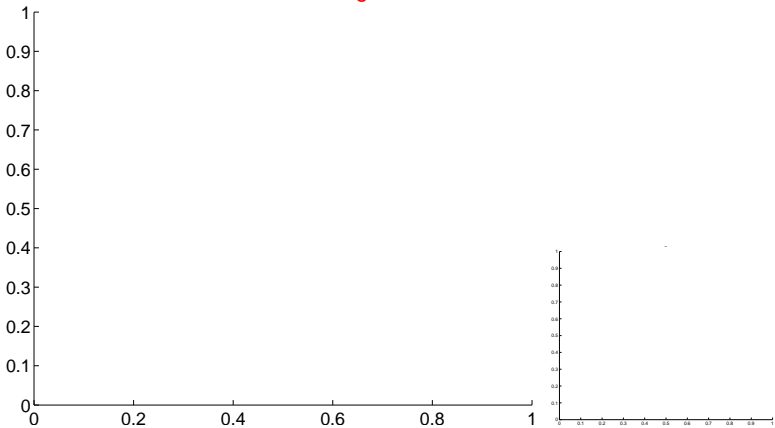
Q15 OOT image



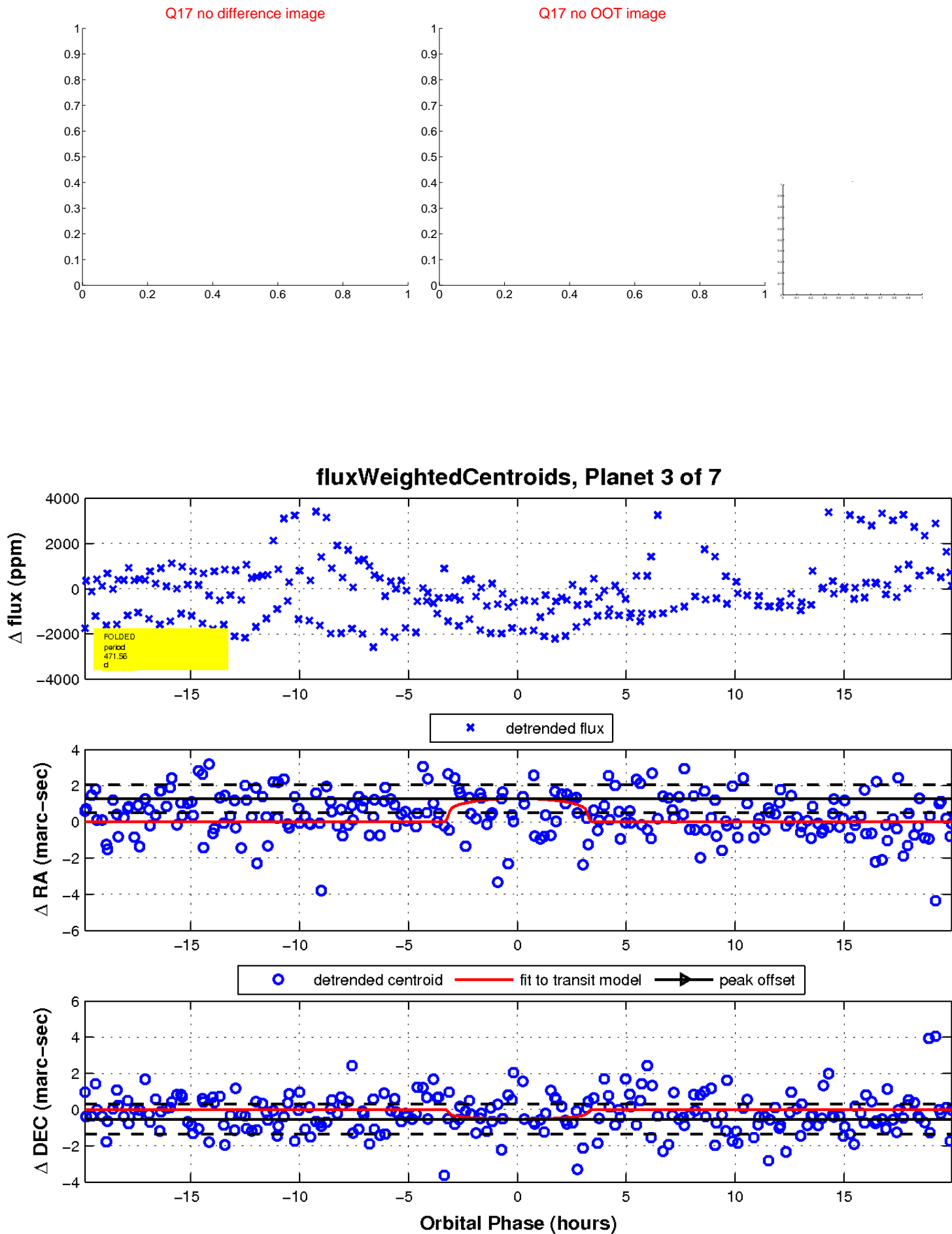
Q16 no difference image



Q16 no OOT image

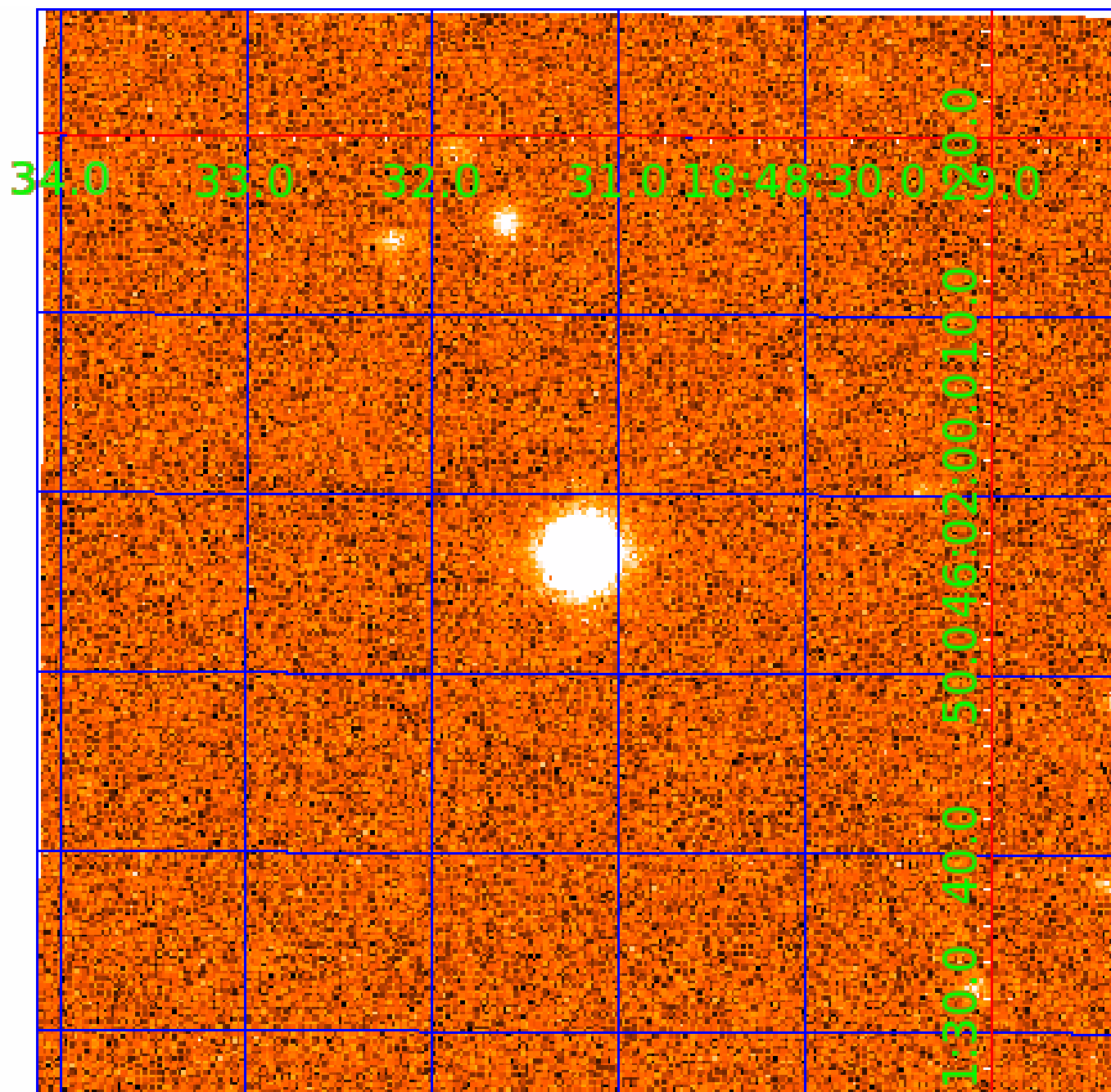


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009446742

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})
009446742-01	OBS	No	576.784489	271.020983	2032.0	14.093	19.7	8.5	2.02	5087	9.37	1.48
009446742-02	OBS	No	340.356830	432.526099	1181.3	9.170	17.3	6.2	2.02	5087	6.84	2.99
009446742-03	OBS	No	471.555815	524.297157	422.4	6.653	17.8	2.2	2.02	5087	4.35	1.94
009446742-04	OBS	No	394.145654	349.790556	1375.2	4.052	17.1	6.0	2.02	5087	8.12	2.46
009446742-05	OBS	No	497.855676	456.087069	1587.4	7.698	14.3	7.7	2.02	5087	7.89	1.80
009446742-06	OBS	No	572.133337	242.065863	5811.6	12.378	15.0	16.3	2.02	5087	28.99	1.50
009446742-07	OBS	No	320.365764	270.634269	558.5	11.538	12.9	2.6	2.02	5087	4.95	3.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009446742-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009446742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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
009446742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009446742-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS
009446742-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

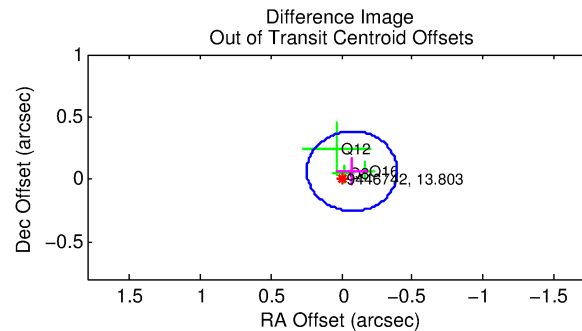
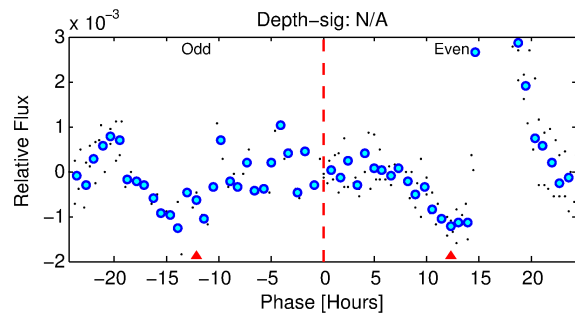
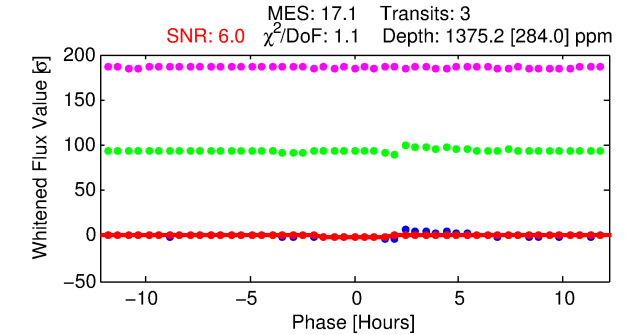
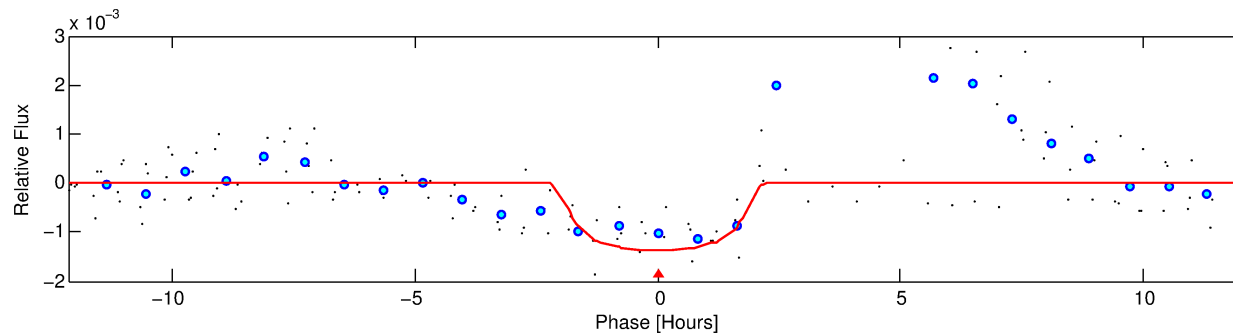
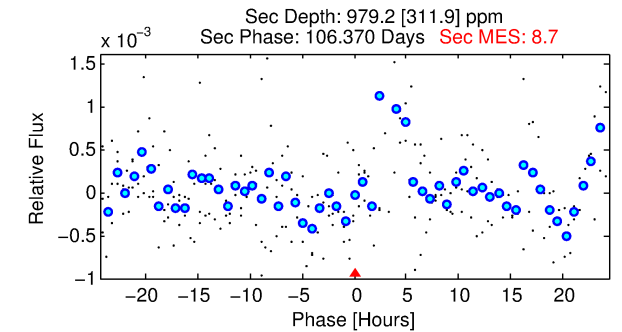
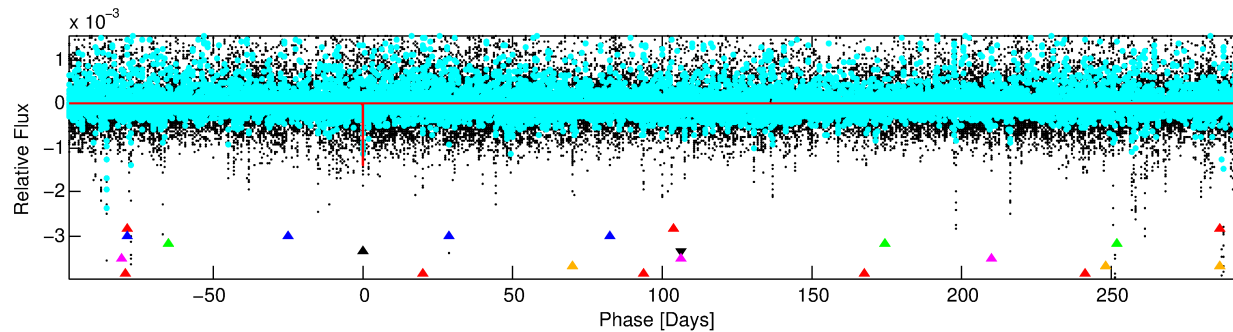
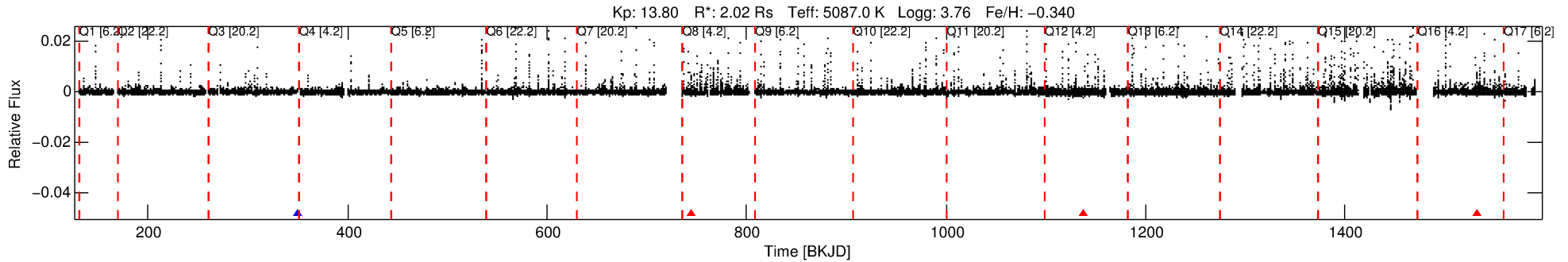
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009446742-04

No Significant Match Found

DV One-Page Summary

KIC: 9446742 Candidate: 4 of 7 Period: 394.146 d



DV Fit Results:

Period = 394.14565 [0.00455] d
Epoch = 349.7906 [0.0101] BKJD
Rp/R* = 0.0368 [0.0190]
a/R* = 544.71 [990.95]
b = 0.73 [1.16]
Seff = 2.46 [3.32]
Teq = 319 [108] K
Rp = 8.12 [6.60] Re
a = 0.9999 [0.7643] AU
Ag = 8169.87 [14094.05] [0.58σ]
Teffp = 4693 [1273] K [3.42σ]

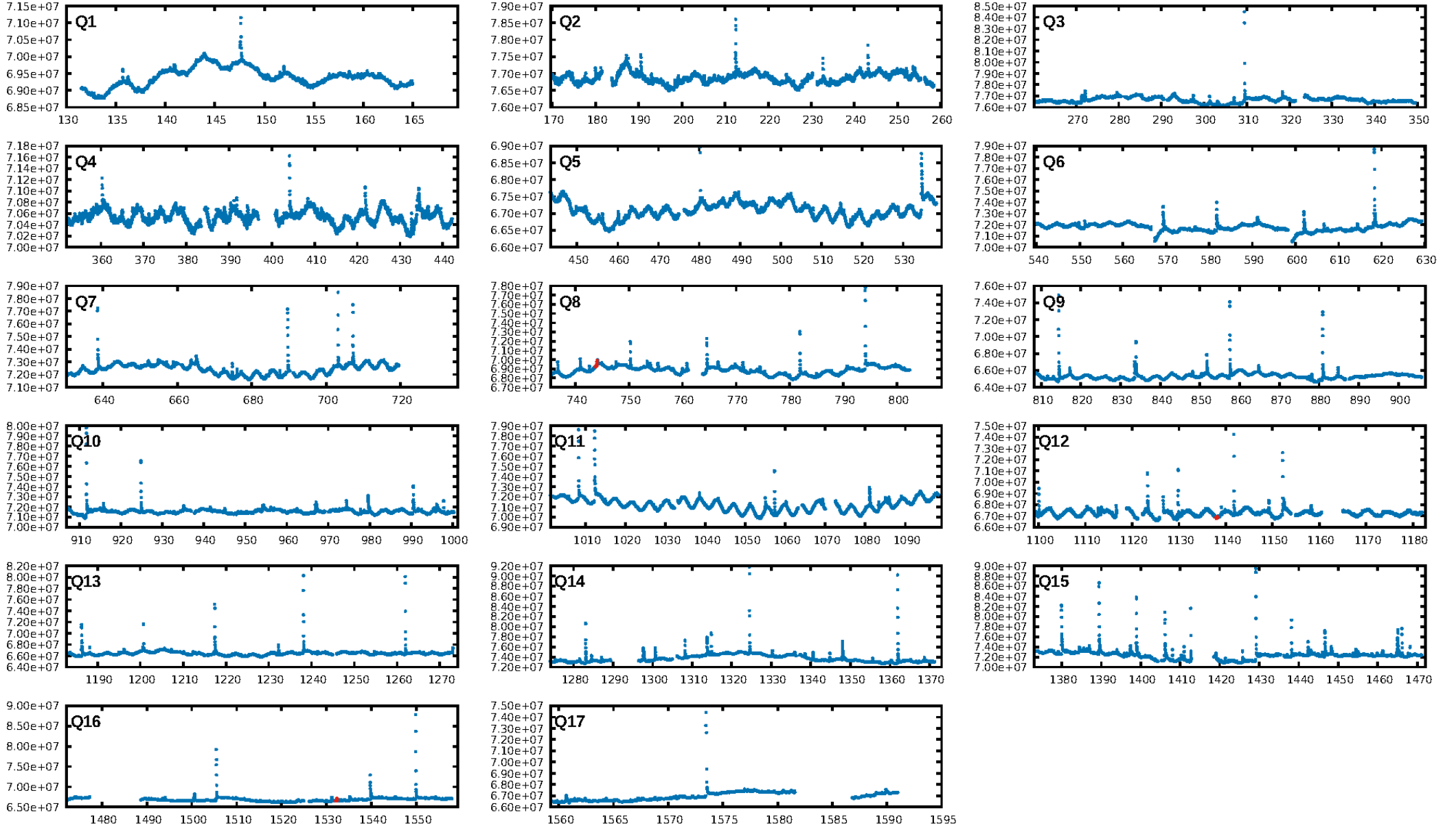
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [128.76σ]
LongPeriod-sig: 100.0% [238.50σ]
ModelChiSquare2-sig: 19.2%
ModelChiSquareGof-sig: 77.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.00 [0/3]
GhostDiagnostic-chr: 1.615
Centroid-sig: 14.3%
Centroid-so: 0.749 arcsec [1.52σ]
OotOffset-rm: 0.098 arcsec [0.92σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-rm: 0.127 arcsec [1.20σ]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

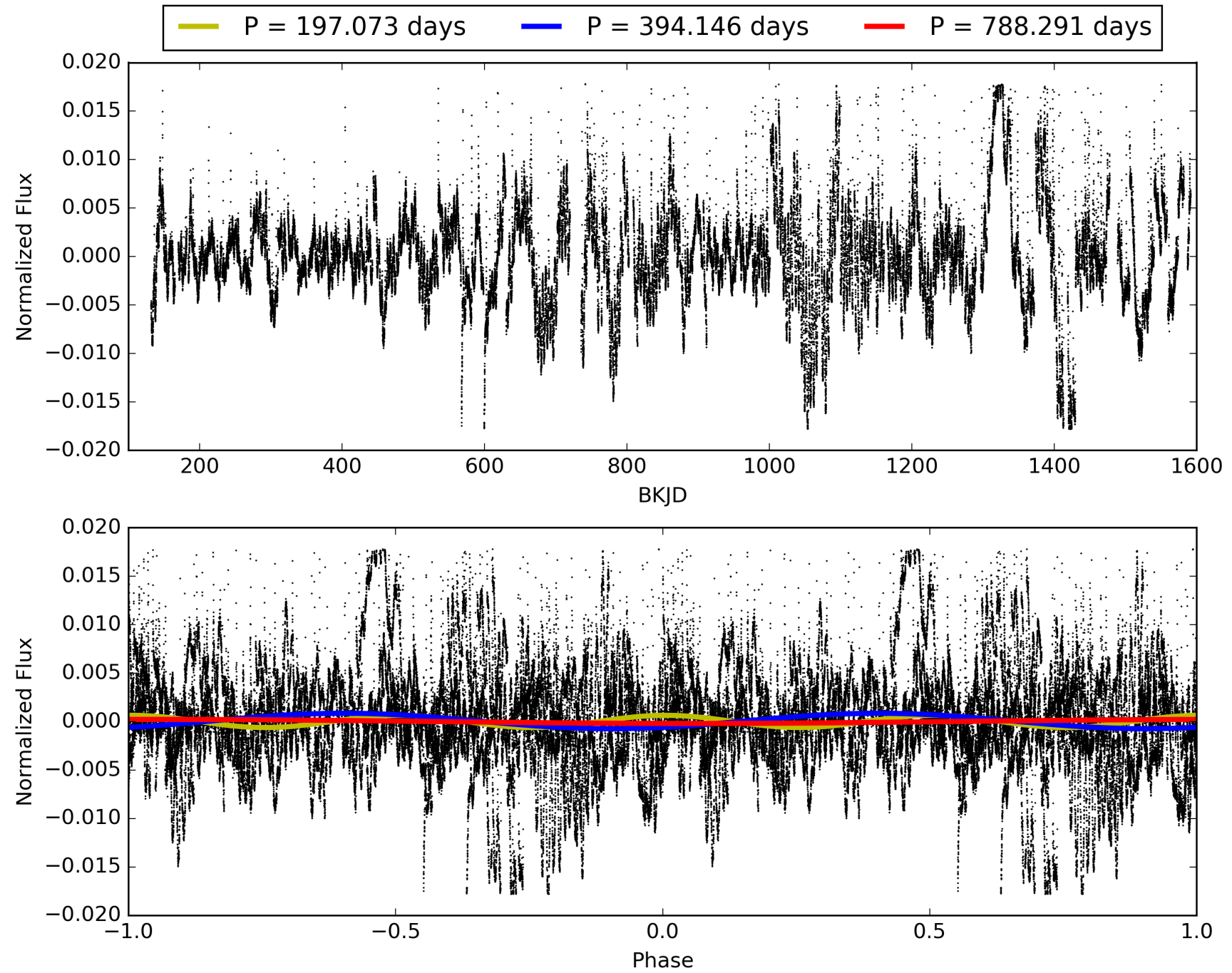
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:41 Z

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

TCE 009446742-04, PDC Light Curves

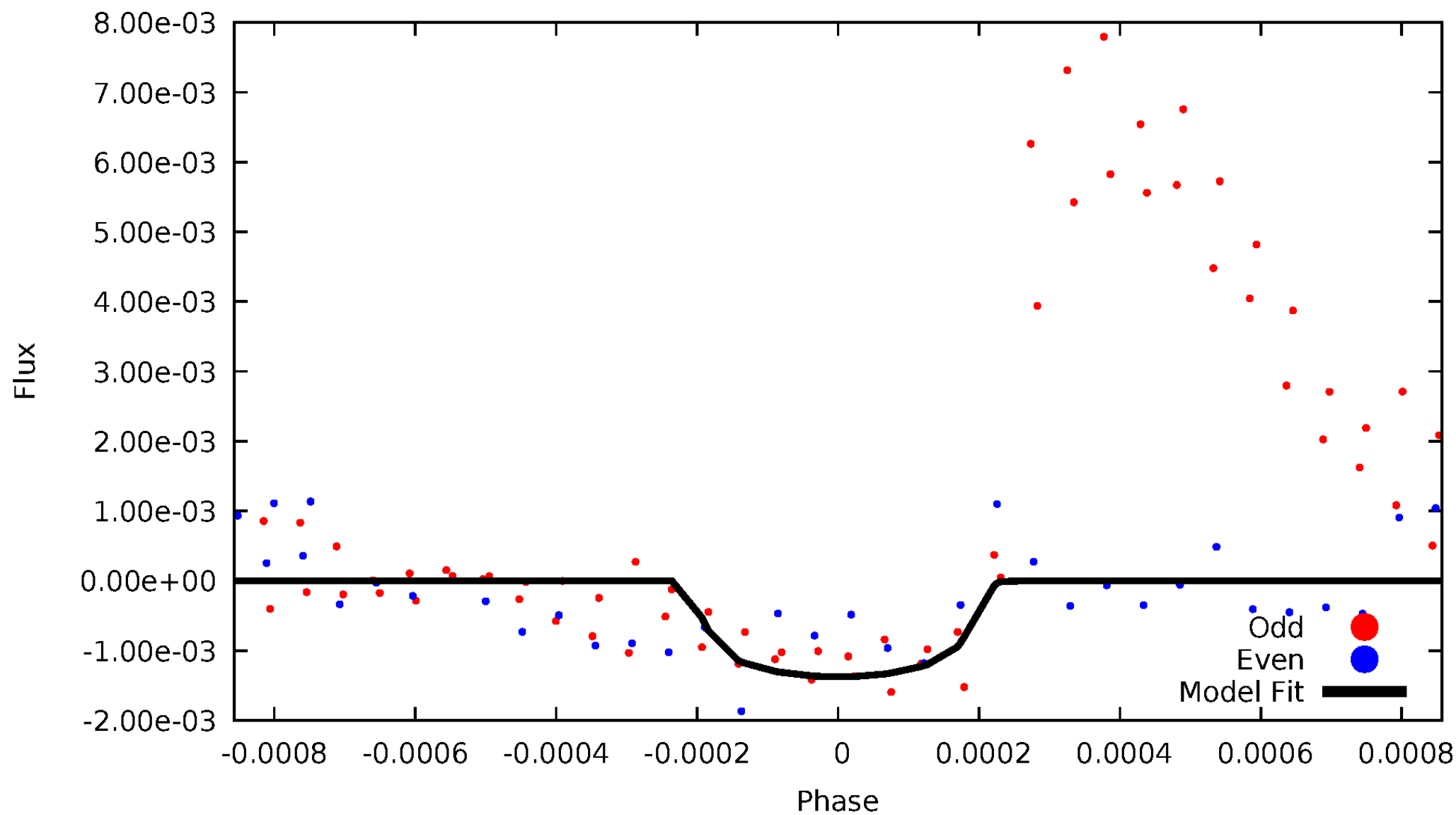


TCE 009446742-04



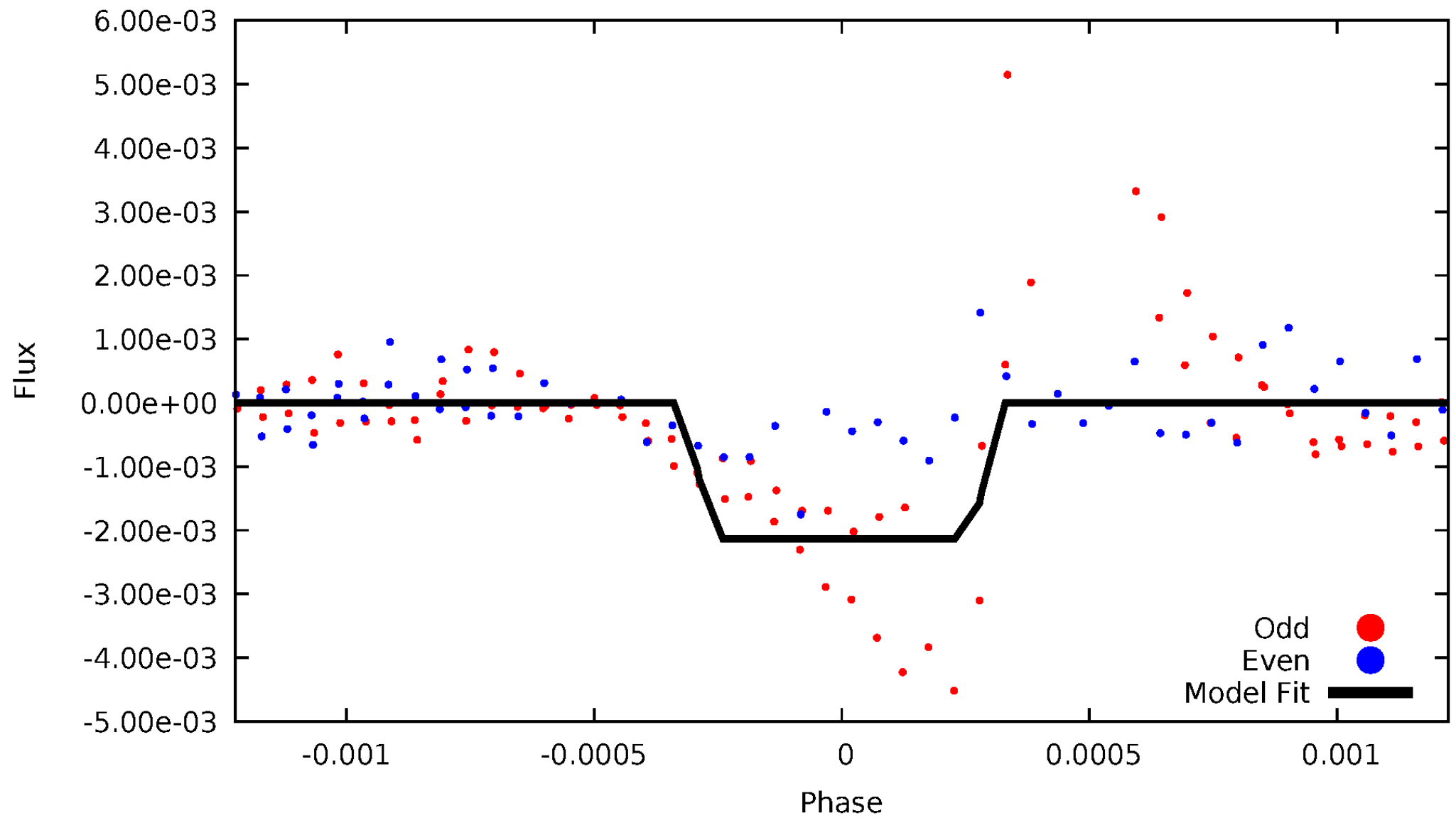
DV Odd/Even

TCE 009446742-04



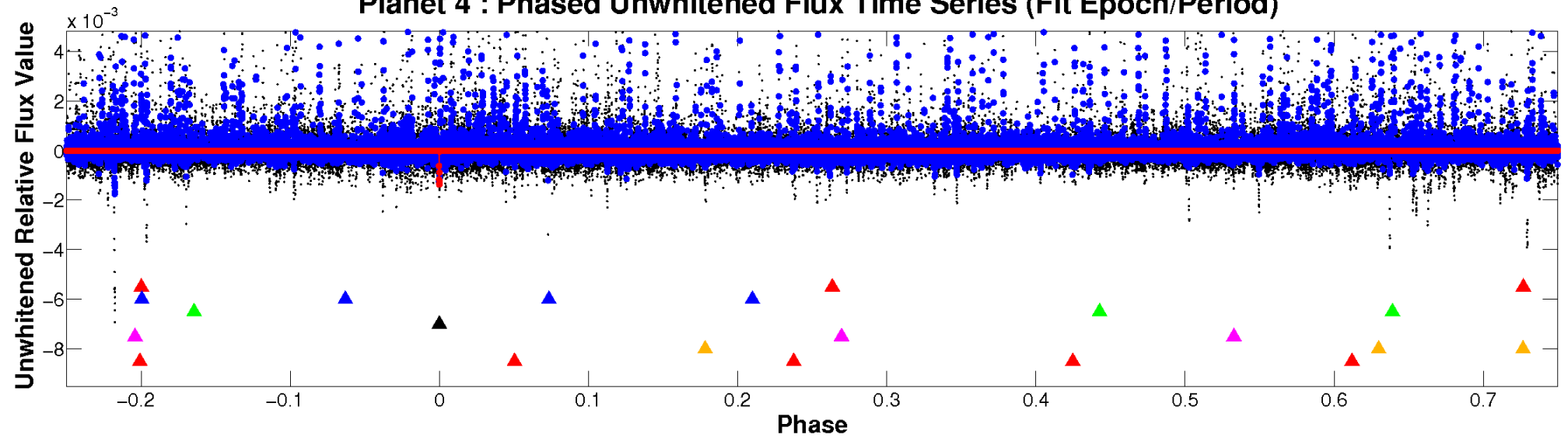
ALT Odd/Even

TCE 009446742-04

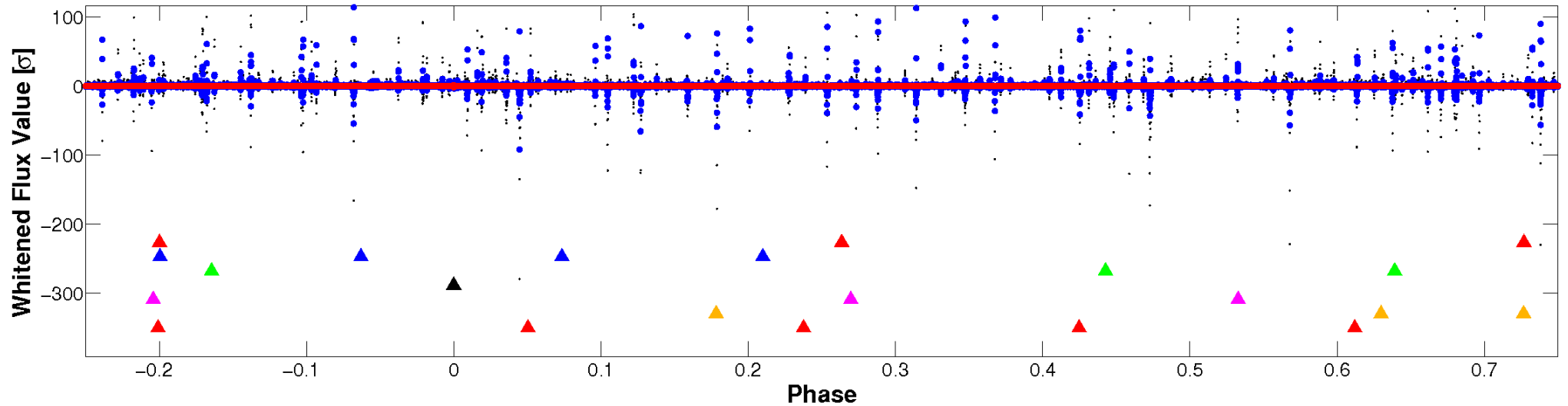


Non-Whitened Vs. Whitened Light Curve

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

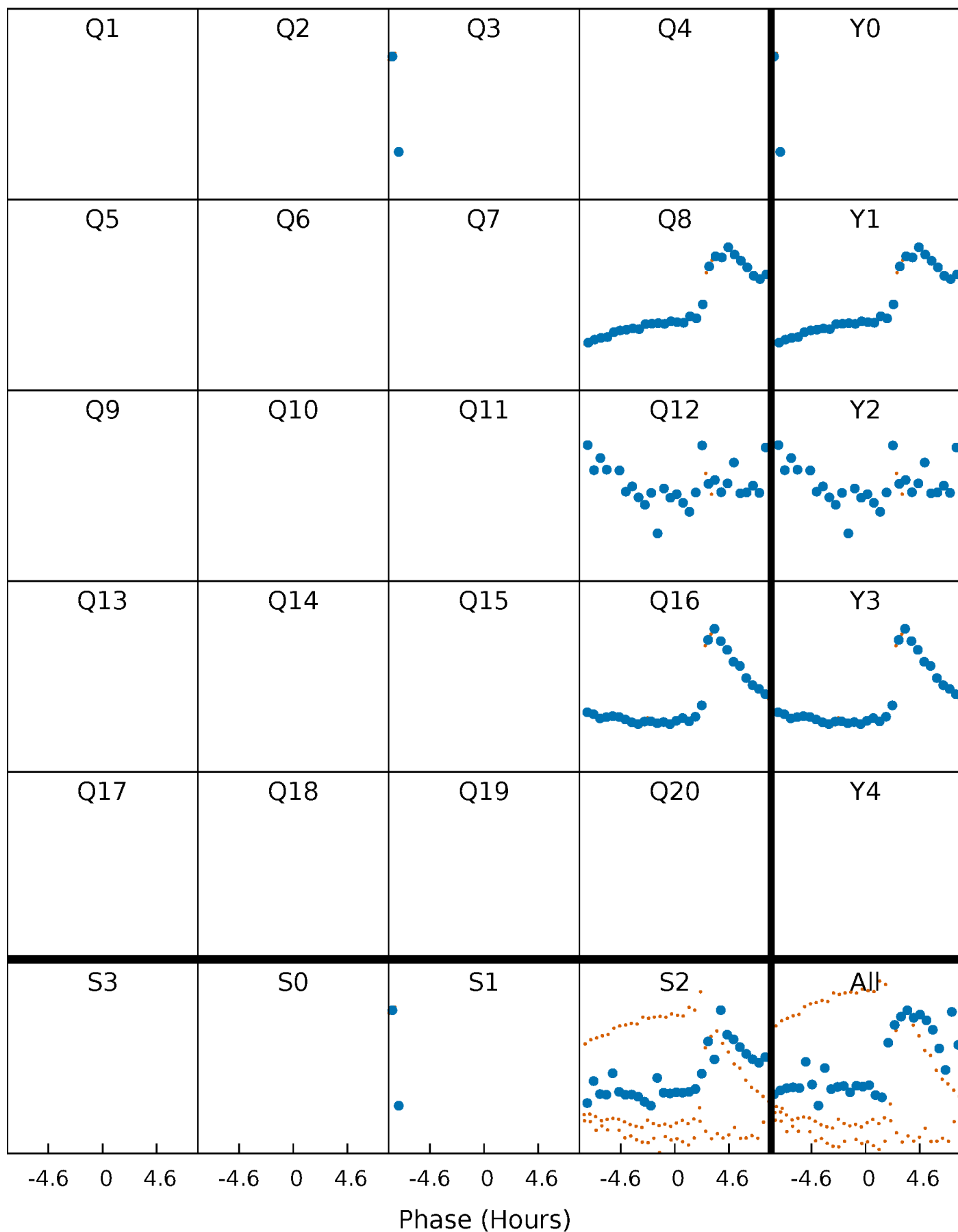


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



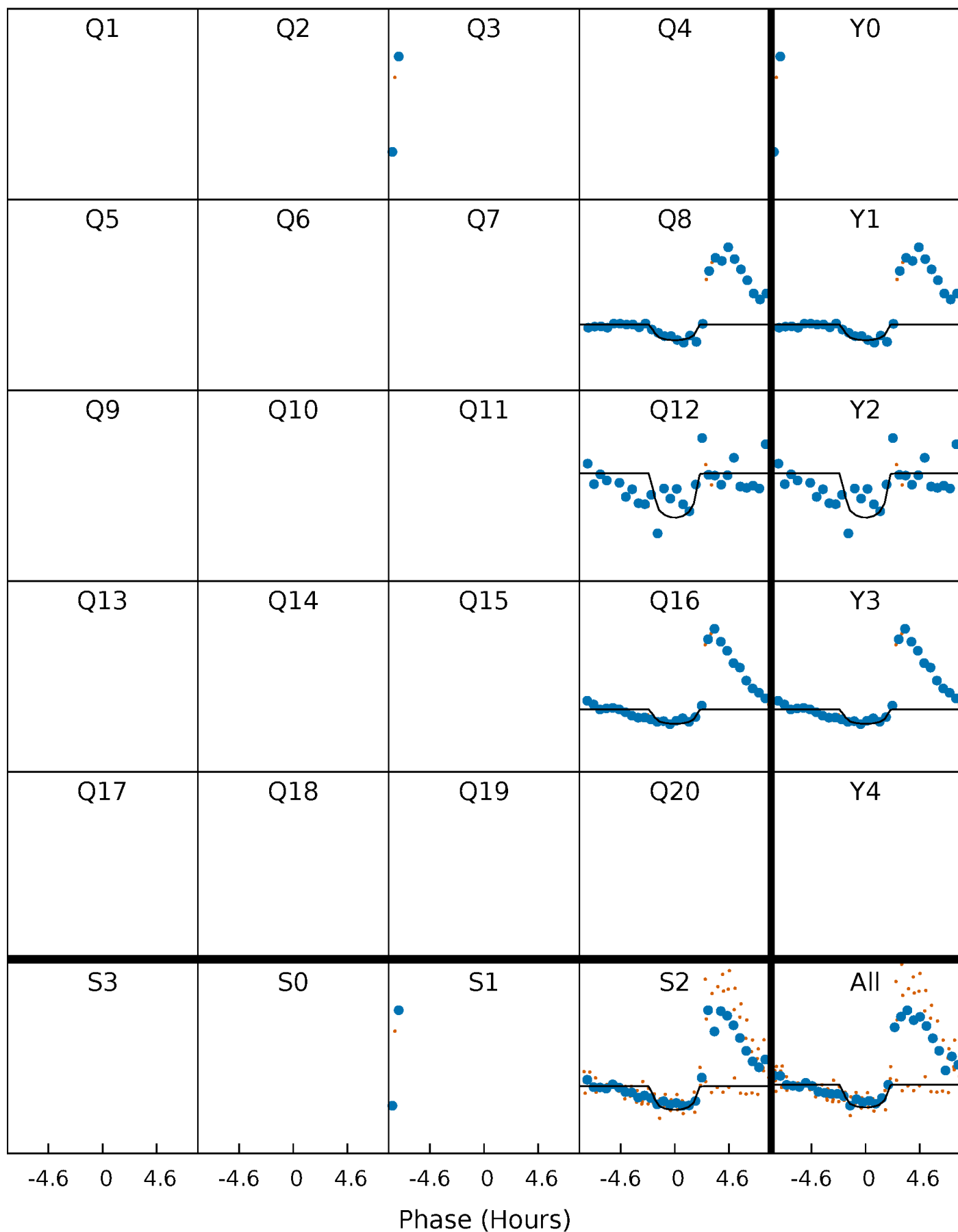
PDC Quarter-Phased Transit Curves

TCE 009446742-04 $P=394.145654$ Days $T_0=349.790556$ (BKJD)



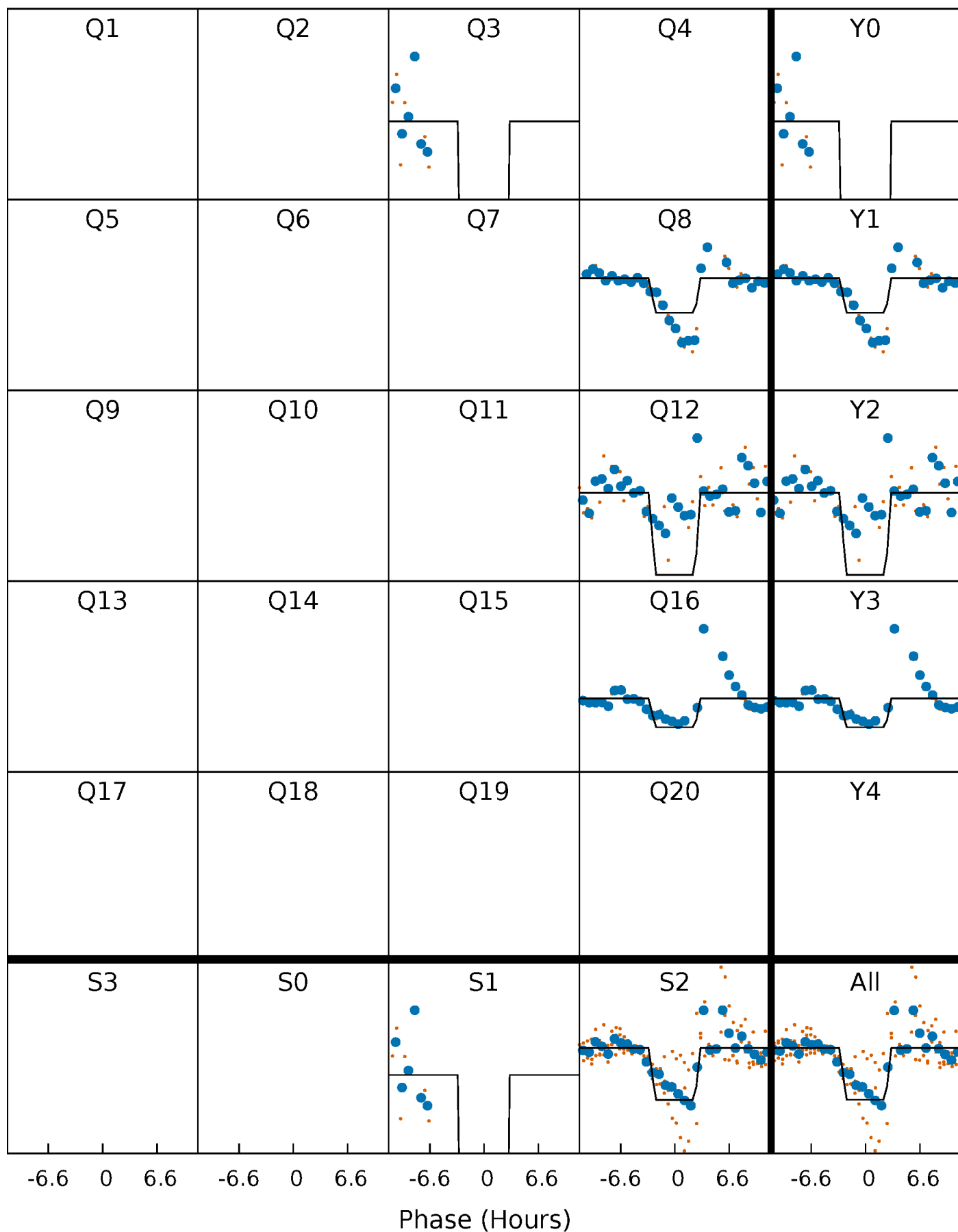
DV Quarter-Phased Transit Curves

TCE 009446742-04 $P=394.145654$ Days $T_0=349.790556$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

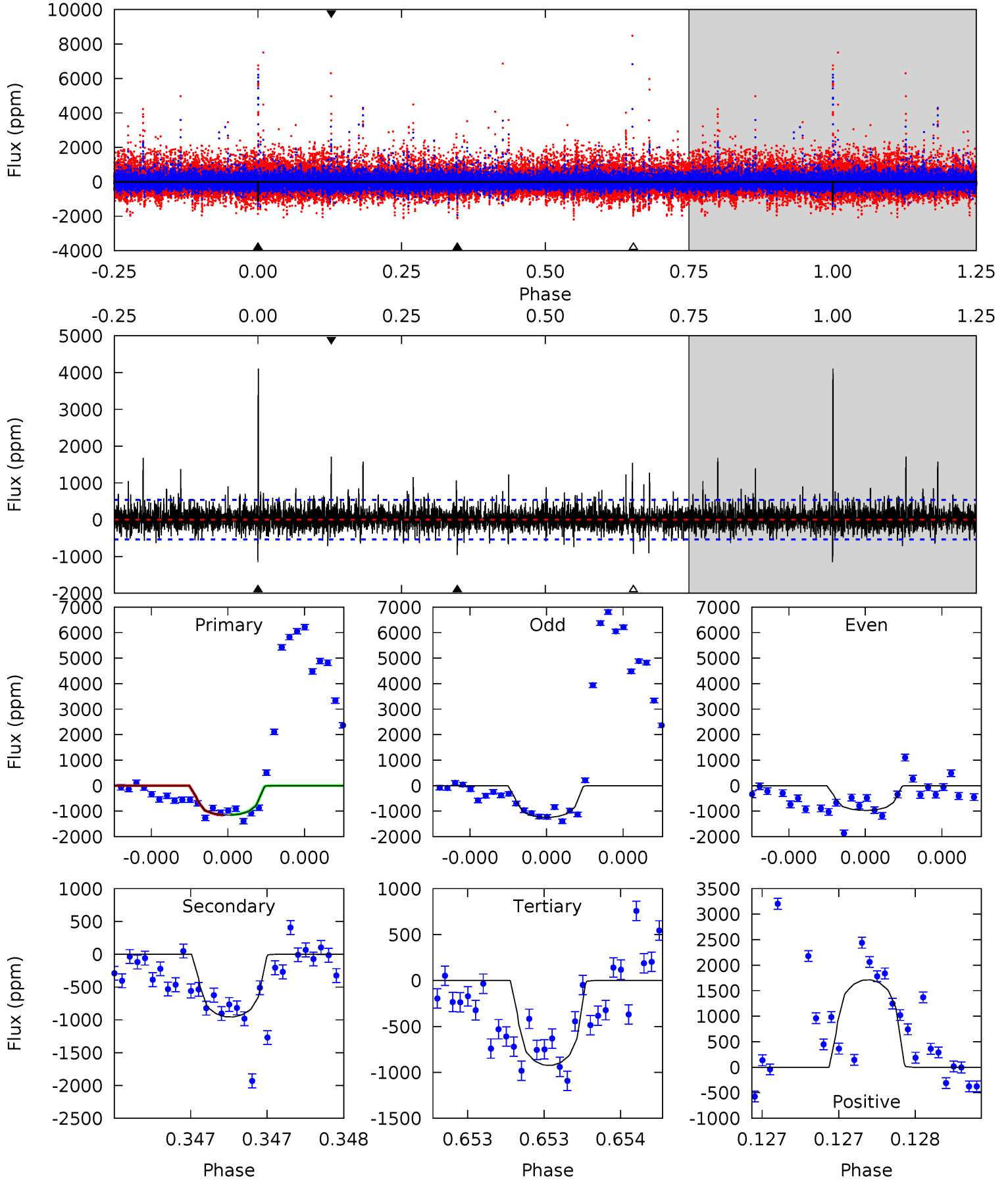
TCE 009446742-04 $P=394.142939$ Days $T_0=349.774522$ (BKJD)



DV Model-Shift Uniqueness Test

009446742-04, P = 394.145654 Days, E = 349.790556 Days

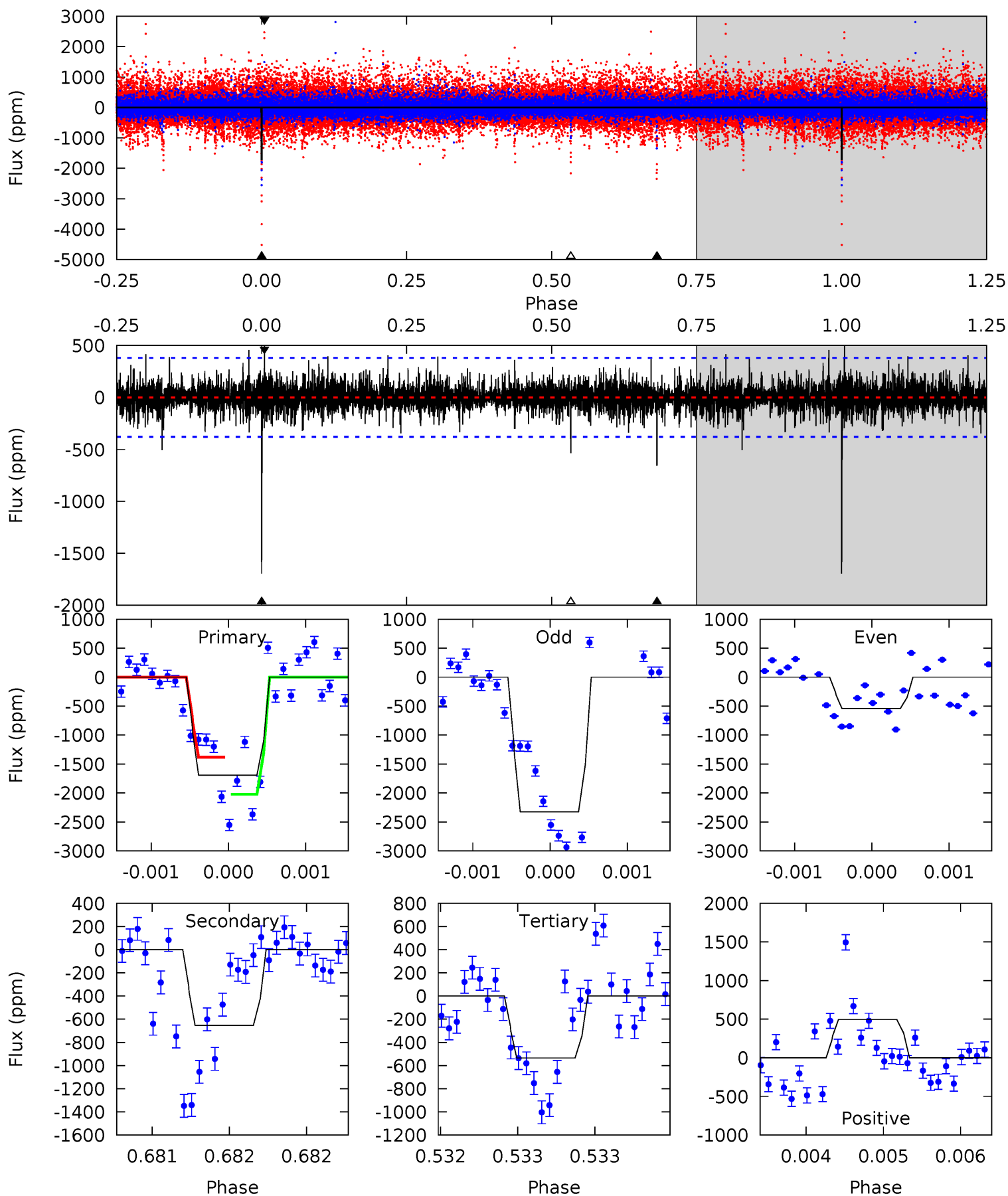
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	9.89	9.56	17.7	5.59	3.50	2.32	2.36	-5.79	0.32	-7.82	0.31	0.94	0.78	0.04



Alt Model-Shift Uniqueness Test

009446742-04, P = 394.142939 Days, E = 349.774522 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.7	9.54	7.81	7.24	5.54	3.42	1.31	16.9	17.5	1.73	2.30	10.4	1.07	0.23	4.53



Stellar Parameters For KIC 009446742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5087^{+136}_{-136}	$3.759^{+0.833}_{-0.357}$	$-0.340^{+0.300}_{-0.250}$	$2.024^{+1.272}_{-1.272}$	$0.857^{+0.228}_{-0.171}$	$0.146^{+3.412}_{-0.104}$
	+3%/-3%	+22%/-9%	+88%/-74%	+63%/-63%	+27%/-20%	+2343%/-71%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009446742-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-956 ± 97	$7.68^{+5.75}_{-4.11}$	437^{+78}_{-83}	4699^{+1337}_{-717}	9086^{+31843}_{-6124}
Alt.	-653 ± 69	$9.49^{+6.09}_{-4.76}$	442^{+73}_{-82}	4065^{+887}_{-480}	4079^{+12216}_{-2548}

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

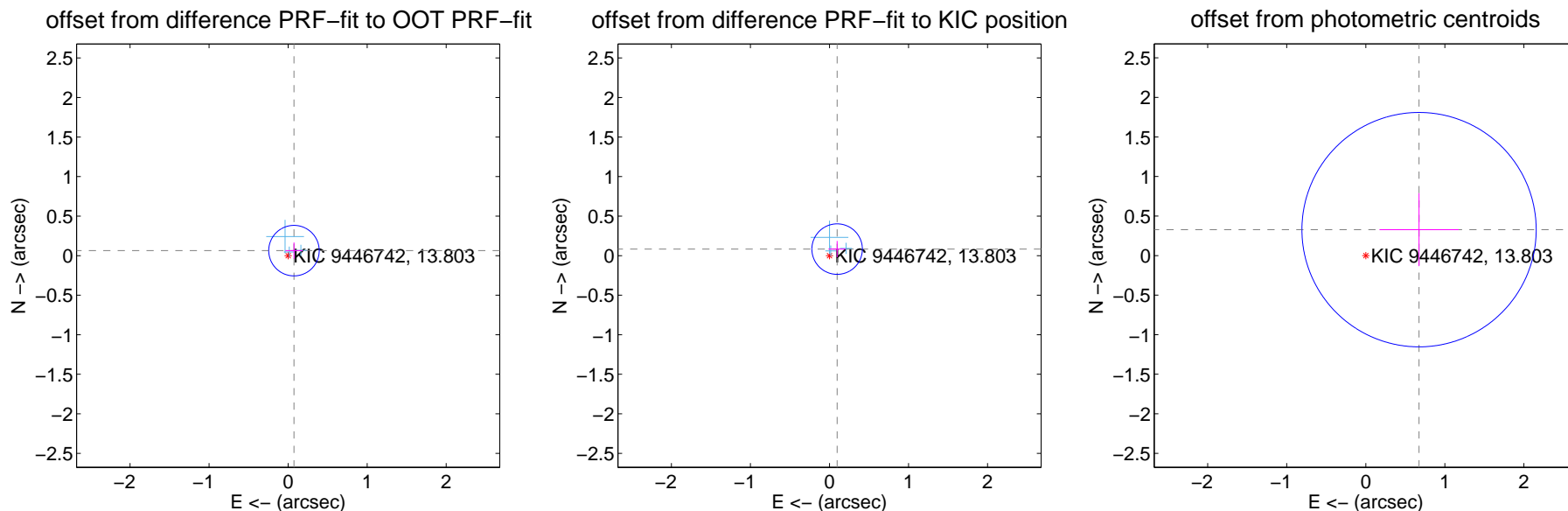
DV Centroid Data

Supplemental centroid analysis for 009446742-04. Kepler magnitude: 13.80. Transit SNR 5.98

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.098 ± 0.106	0.92	-0.074 ± 0.109	0.064 ± 0.103
PRF-fit source offset from KIC position	0.127 ± 0.106	1.20	-0.097 ± 0.109	0.083 ± 0.103
photometric centroid source offset	0.75 ± 0.49	1.52	-0.67 ± 0.50	0.33 ± 0.46

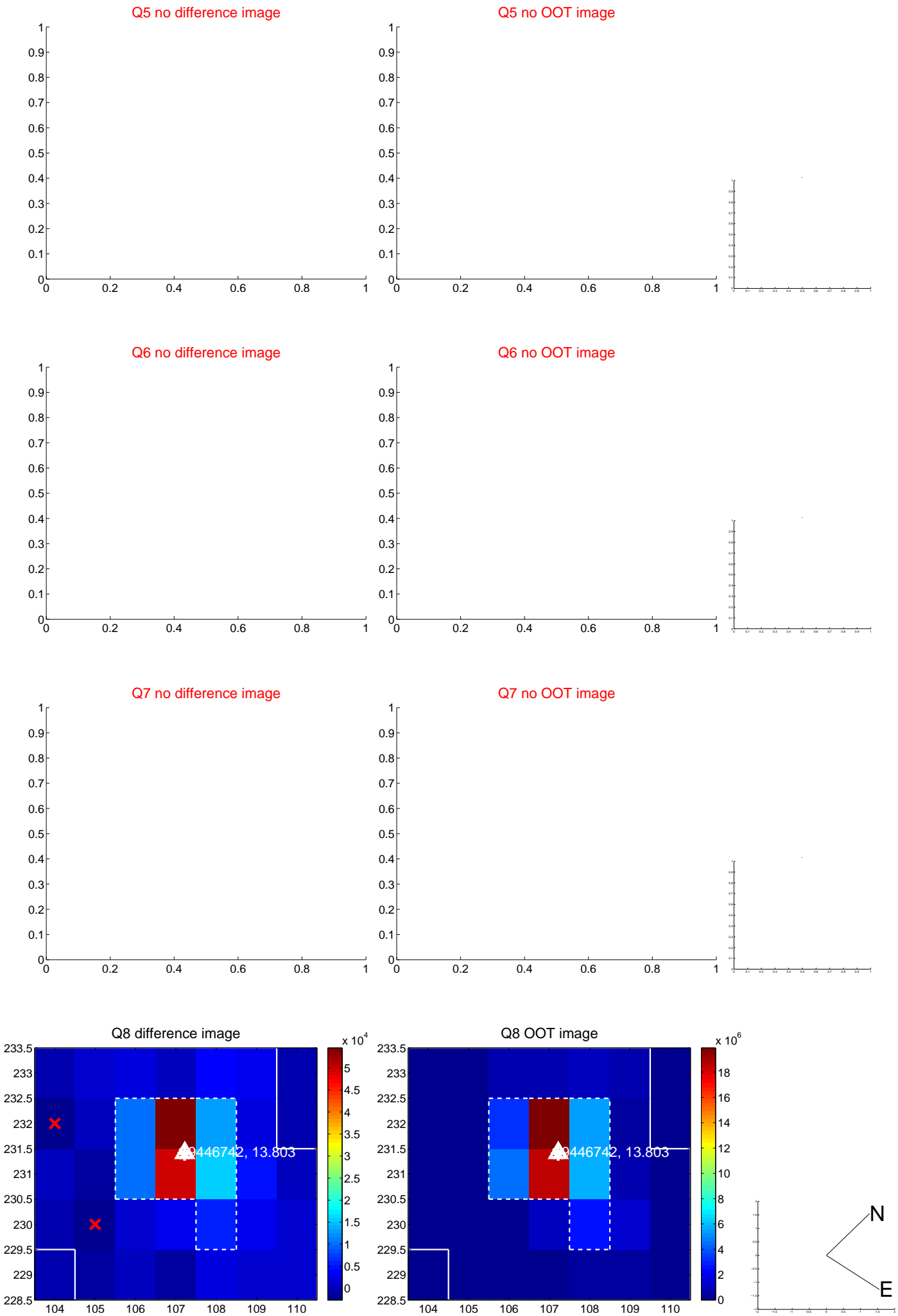


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

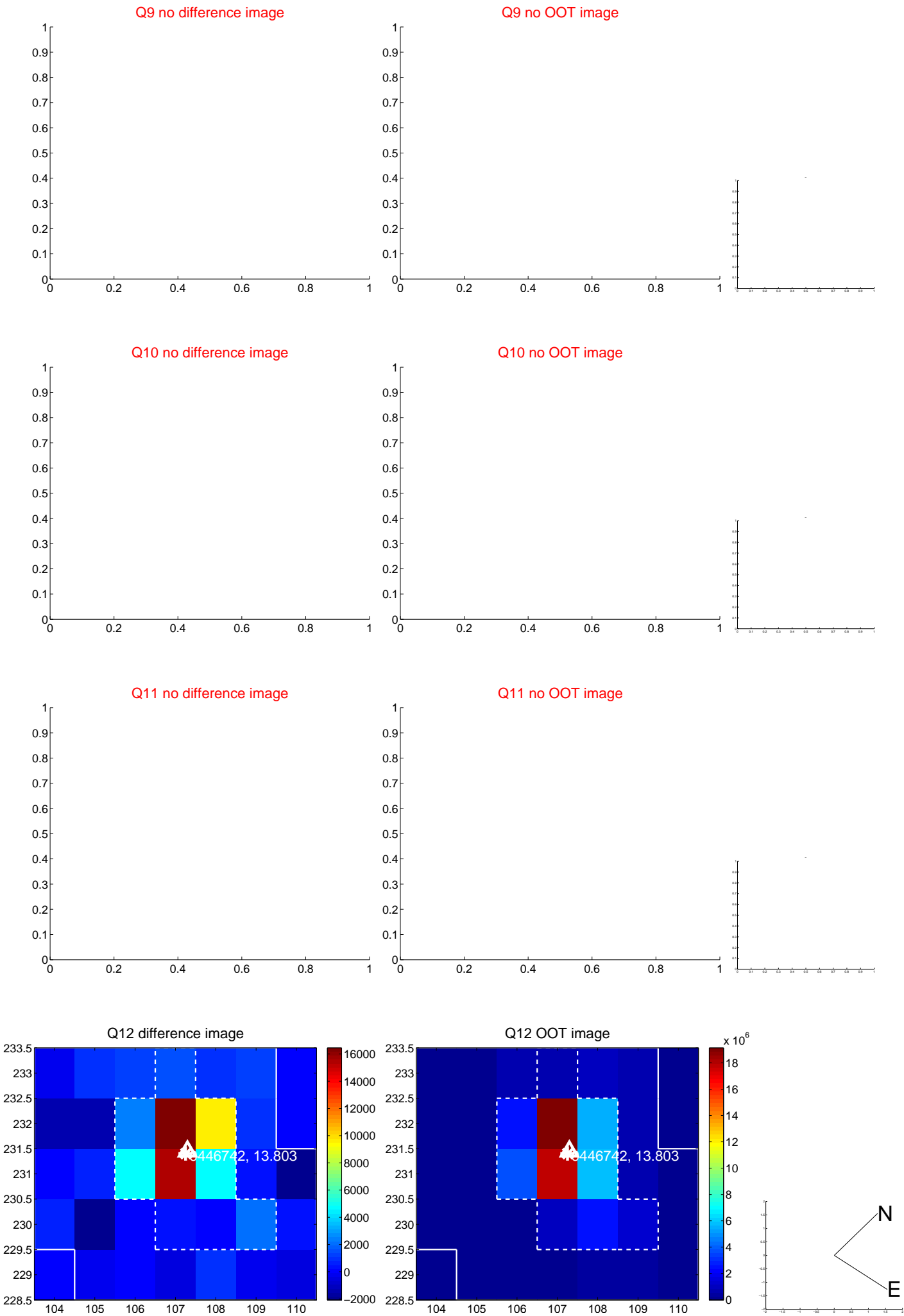
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



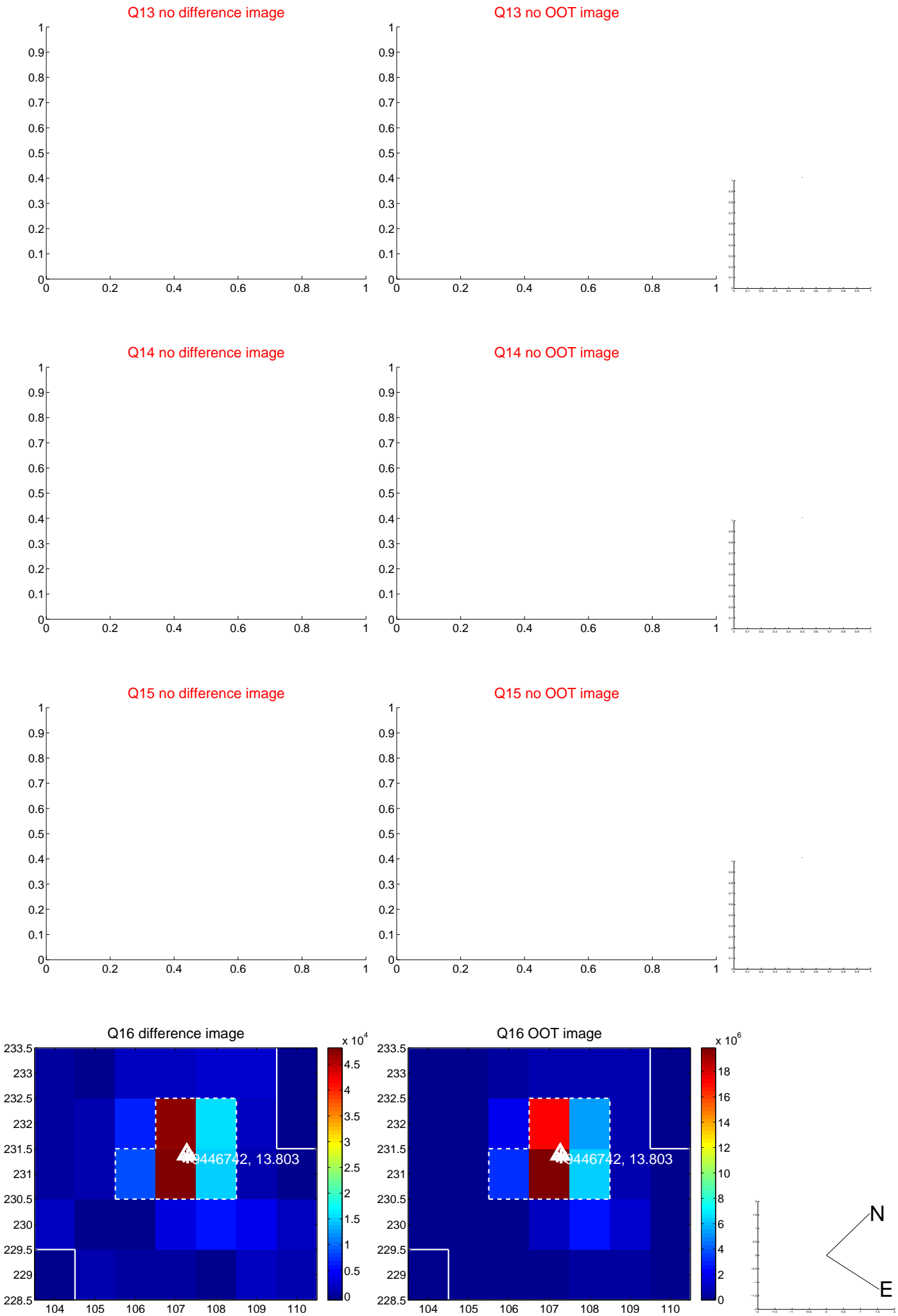
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



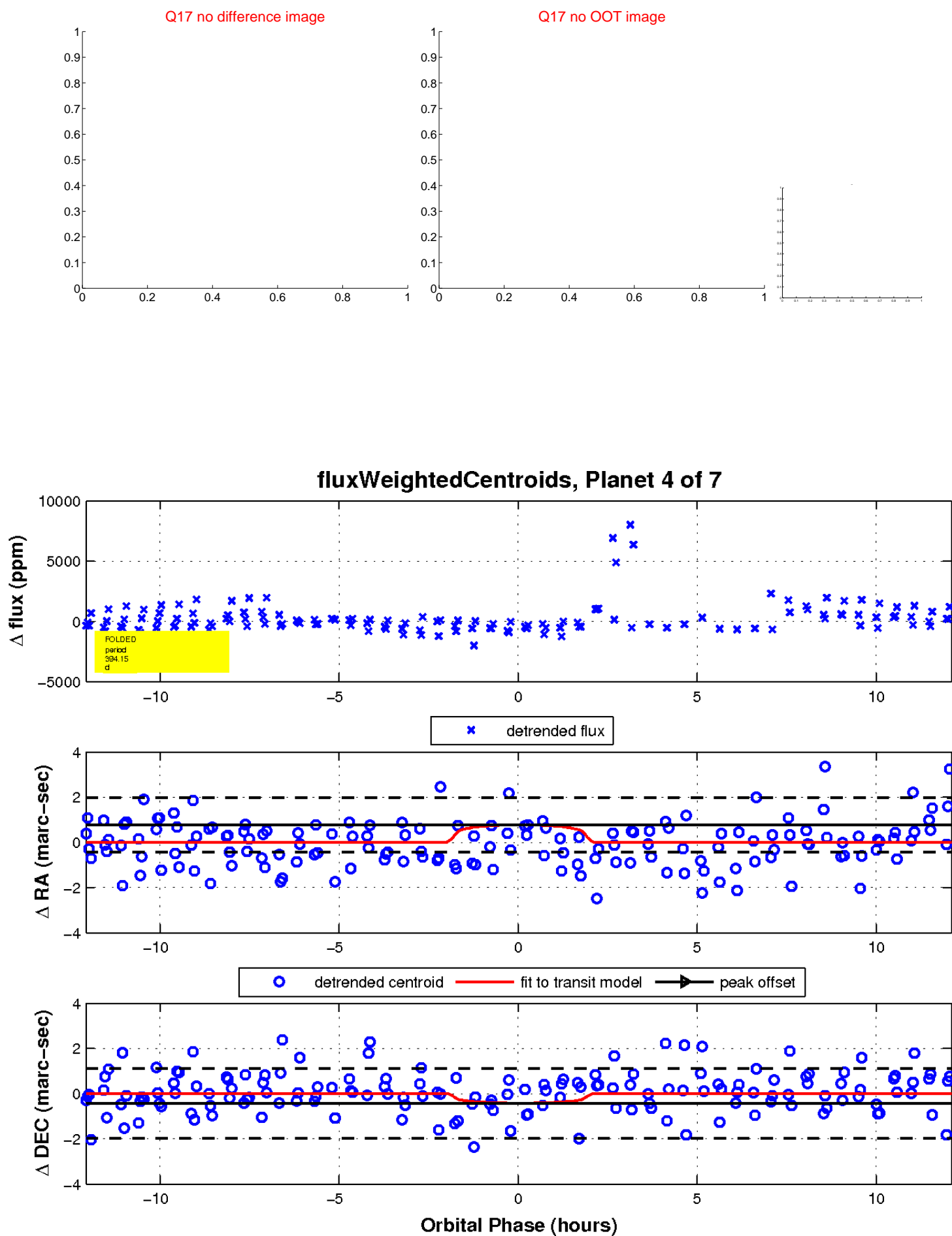
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

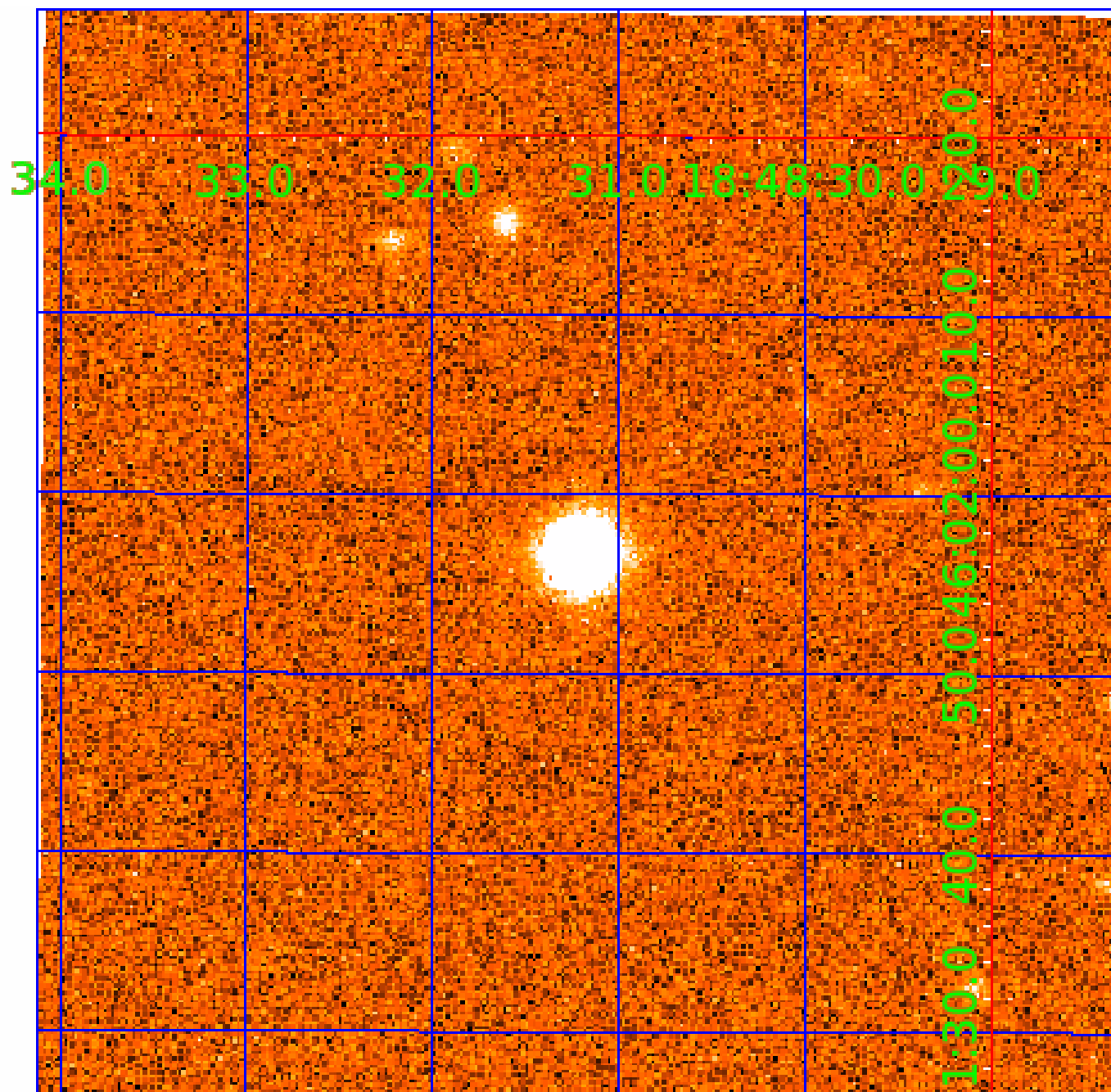


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009446742

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})
009446742-01	OBS	No	576.784489	271.020983	2032.0	14.093	19.7	8.5	2.02	5087	9.37	1.48
009446742-02	OBS	No	340.356830	432.526099	1181.3	9.170	17.3	6.2	2.02	5087	6.84	2.99
009446742-03	OBS	No	471.555815	524.297157	422.4	6.653	17.8	2.2	2.02	5087	4.35	1.94
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009446742-06	OBS	No	572.133337	242.065863	5811.6	12.378	15.0	16.3	2.02	5087	28.99	1.50
009446742-07	OBS	No	320.365764	270.634269	558.5	11.538	12.9	2.6	2.02	5087	4.95	3.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009446742-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009446742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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
009446742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009446742-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS
009446742-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

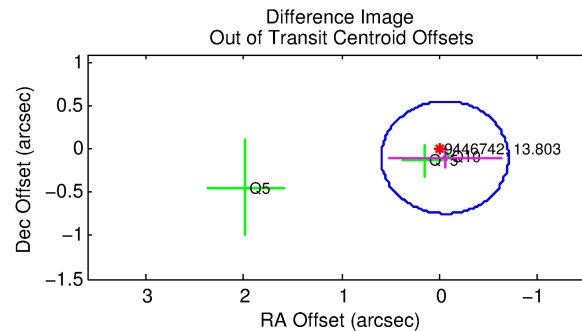
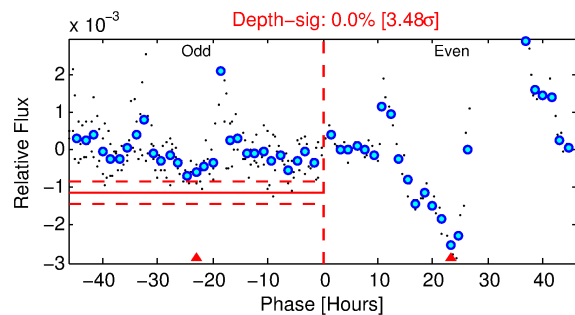
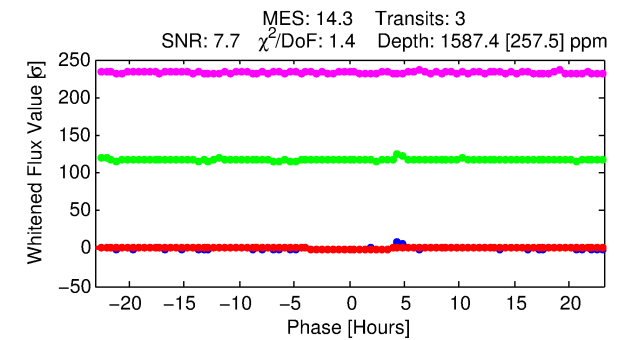
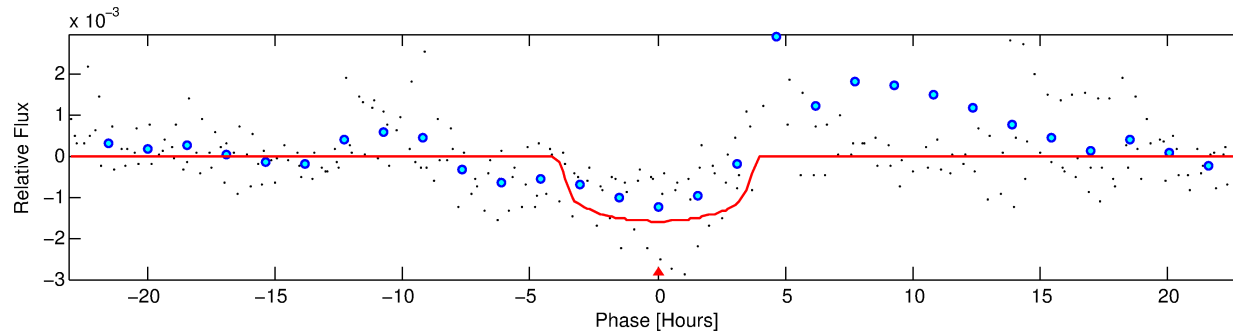
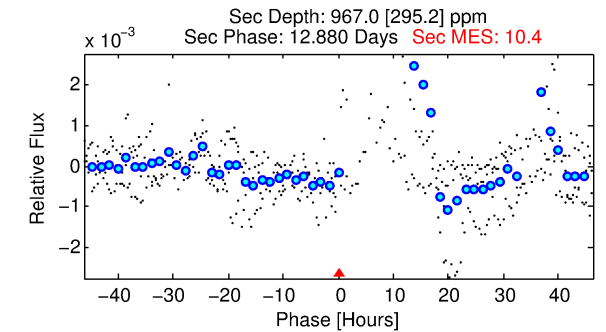
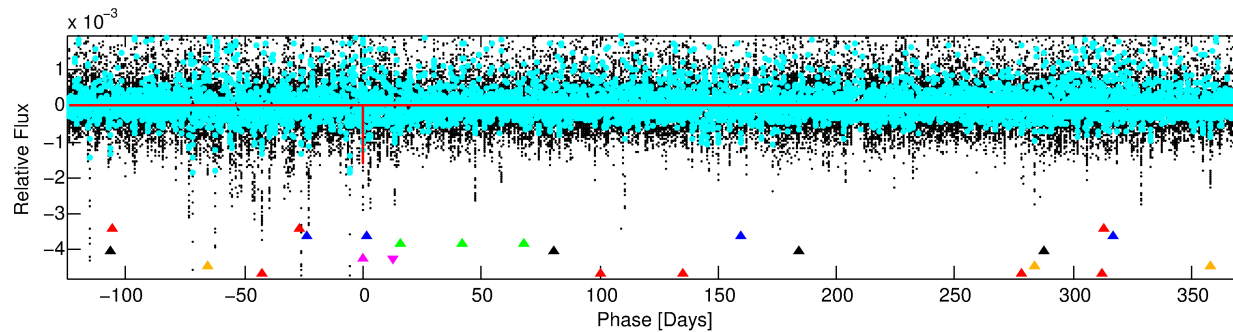
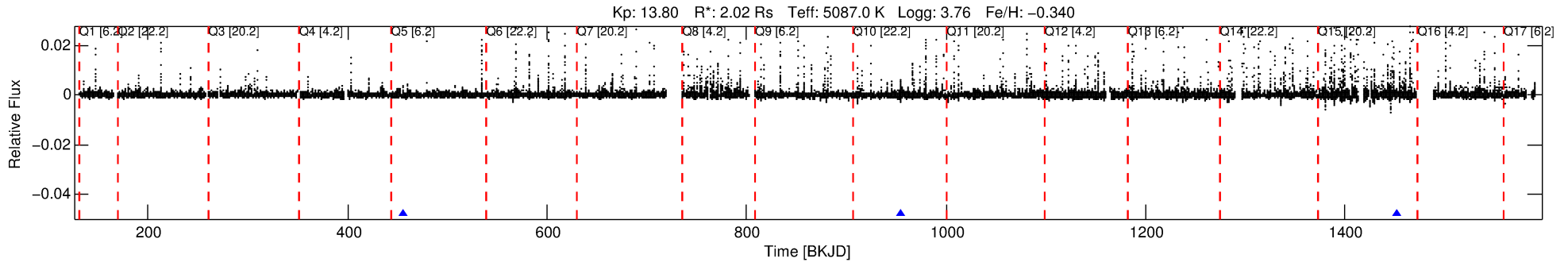
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009446742-05

No Significant Match Found

DV One-Page Summary

KIC: 9446742 Candidate: 5 of 7 Period: 497.856 d



DV Fit Results:

Period = 497.85568 [0.00480] d
Epoch = 456.0871 [0.0062] BKJD
Rp/R* = 0.0357 [0.0305]
a/R* = 505.20 [1583.22]
b = 0.16 [18.63]
Seff = 1.80 [2.43]
Teq = 295 [100] K
Rp = 7.89 [8.37] Re
a = 1.1684 [0.8931] AU
Ag = 11673.17 [25654.30] [0.45σ]
Teffp = 4747 [2066] K [2.15σ]

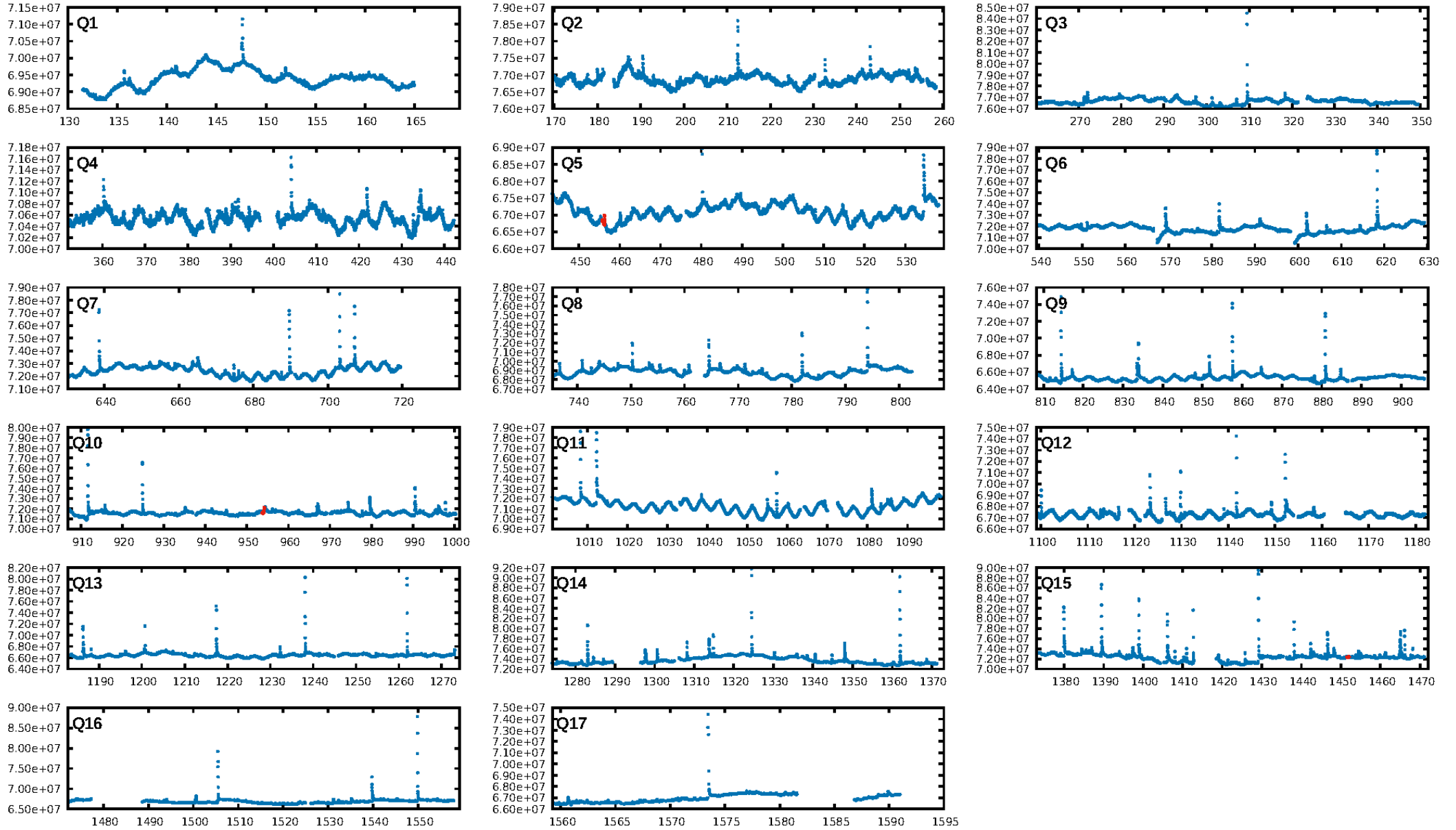
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [62.04σ]
LongPeriod-sig: 100.0% [122.30σ]
ModelChiSquare2-sig: 1.7%
ModelChiSquareGof-sig: 39.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.766
Centroid-sig: 0.5%
Centroid-so: 0.618 arcsec [1.66σ]
OotOffset-rm: 0.108 arcsec [0.50σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.392 arcsec [1.26σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

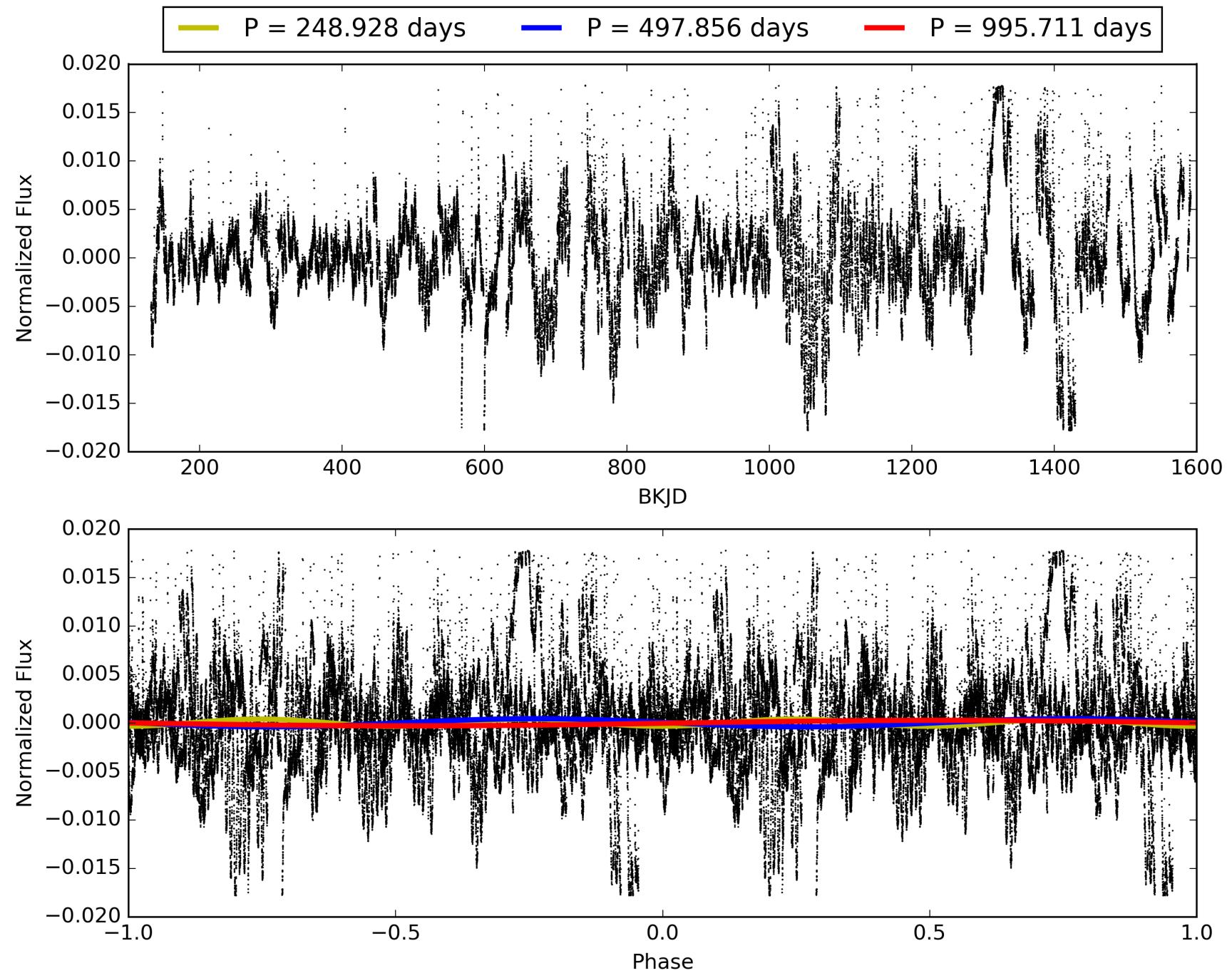
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:53 Z

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

TCE 009446742-05, PDC Light Curves

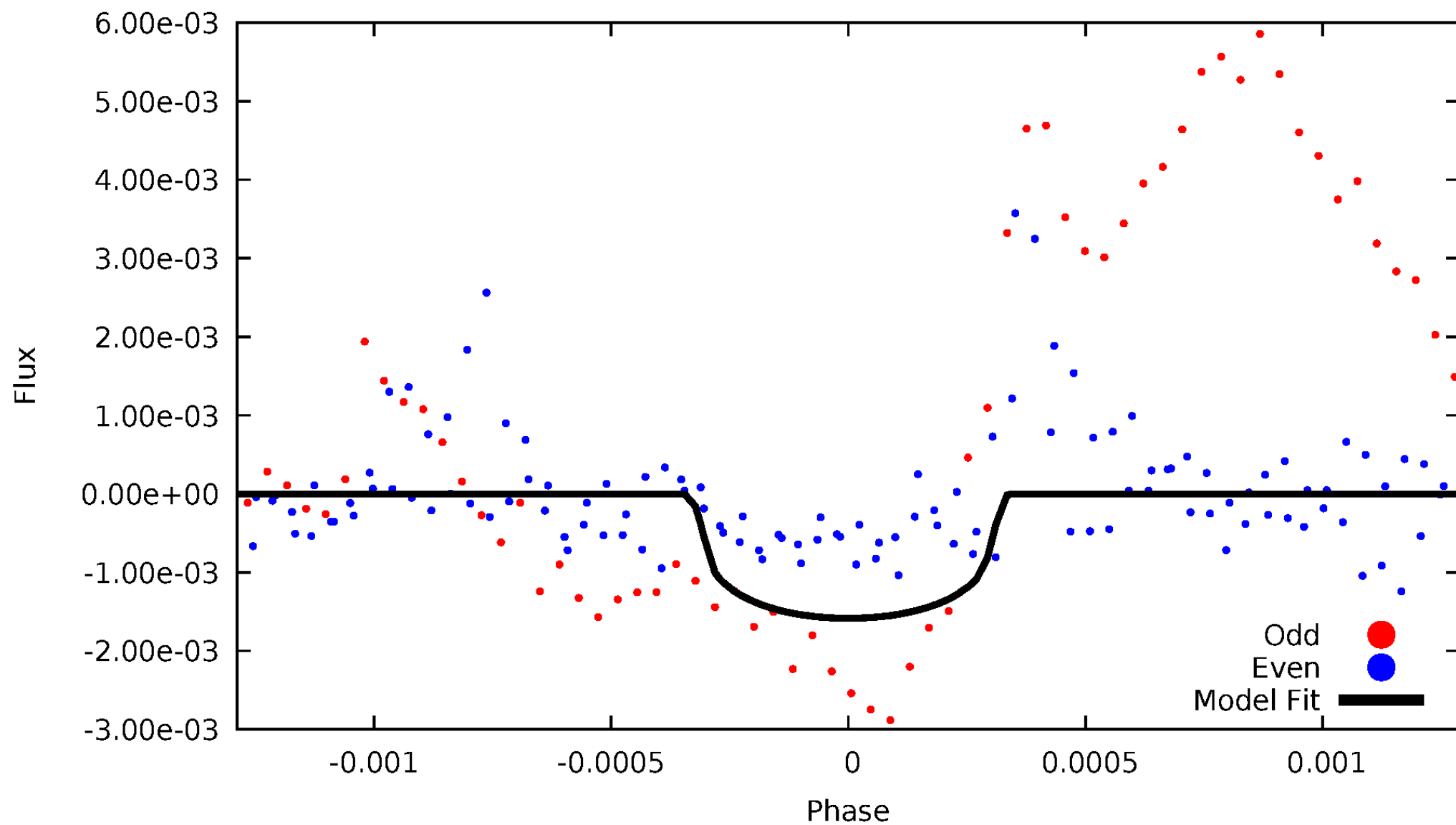


TCE 009446742-05



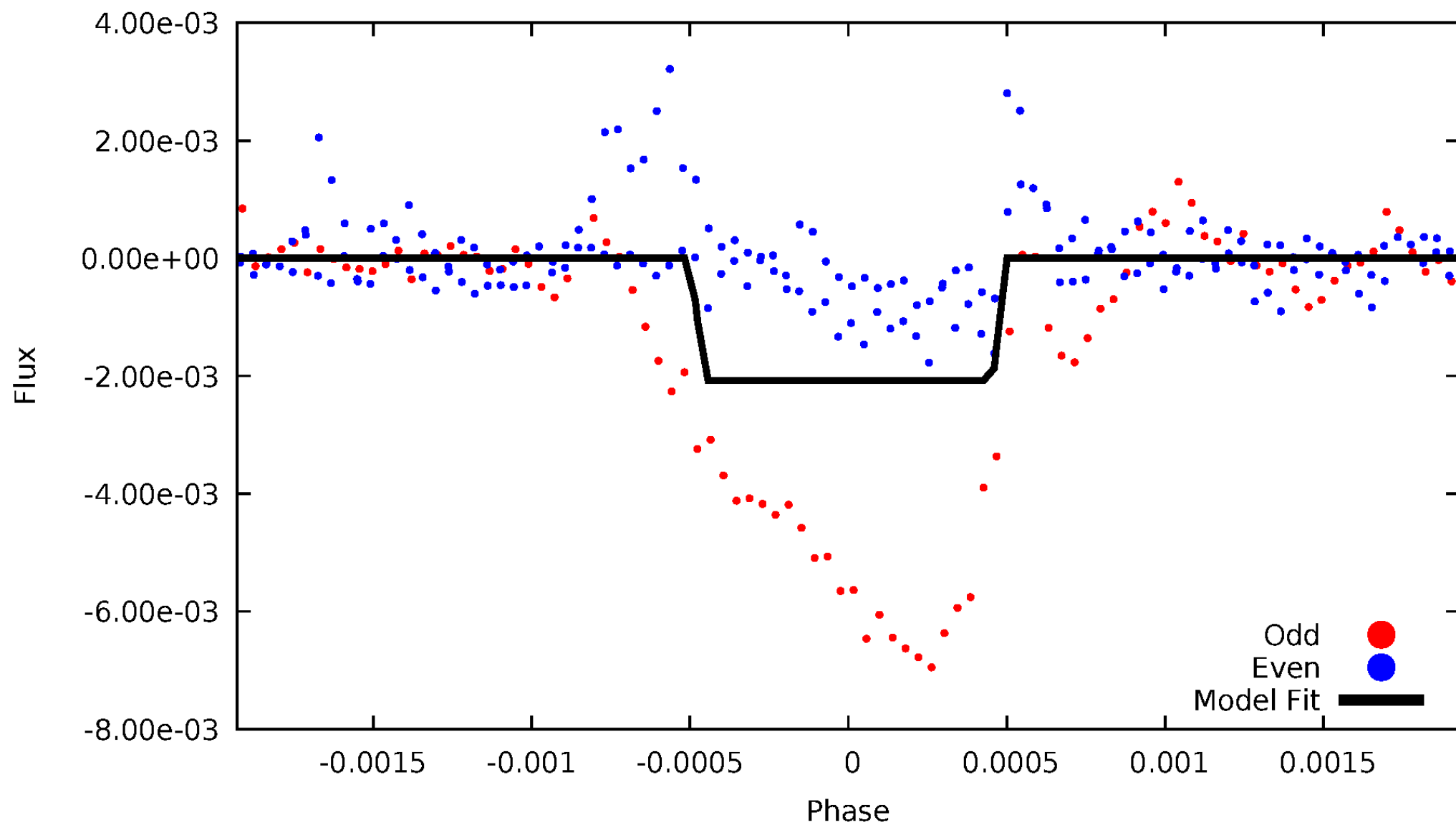
DV Odd/Even

TCE 009446742-05



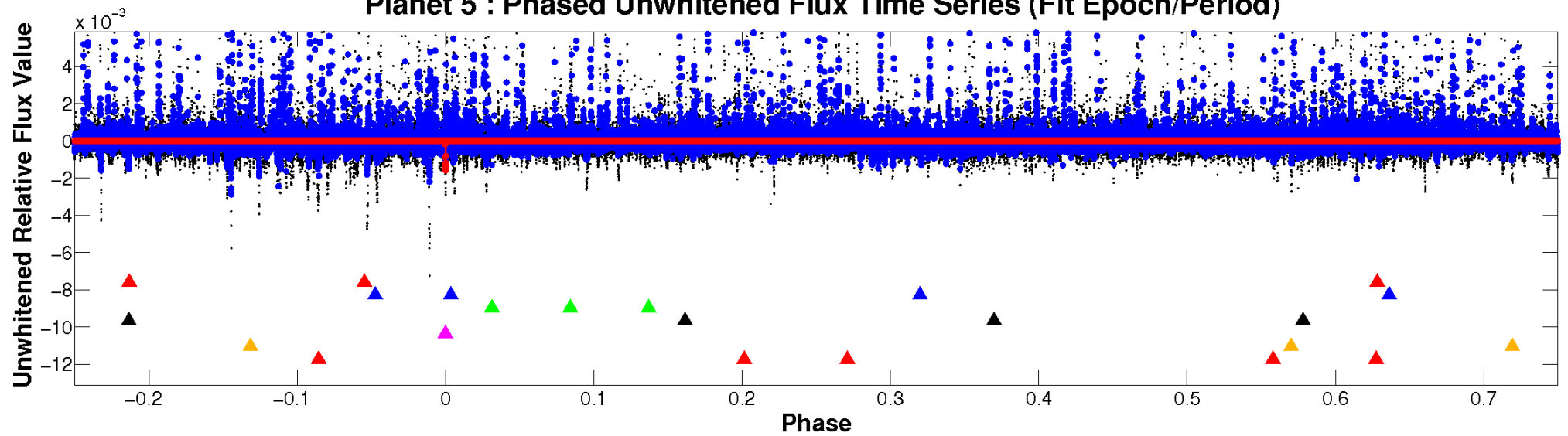
ALT Odd/Even

TCE 009446742-05

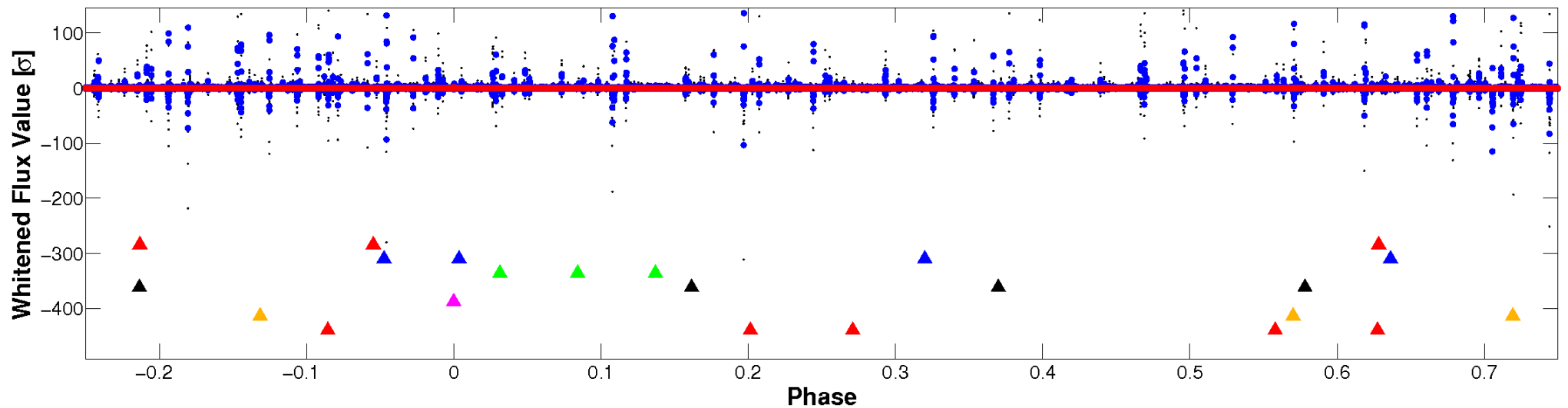


Non-Whitened Vs. Whitened Light Curve

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

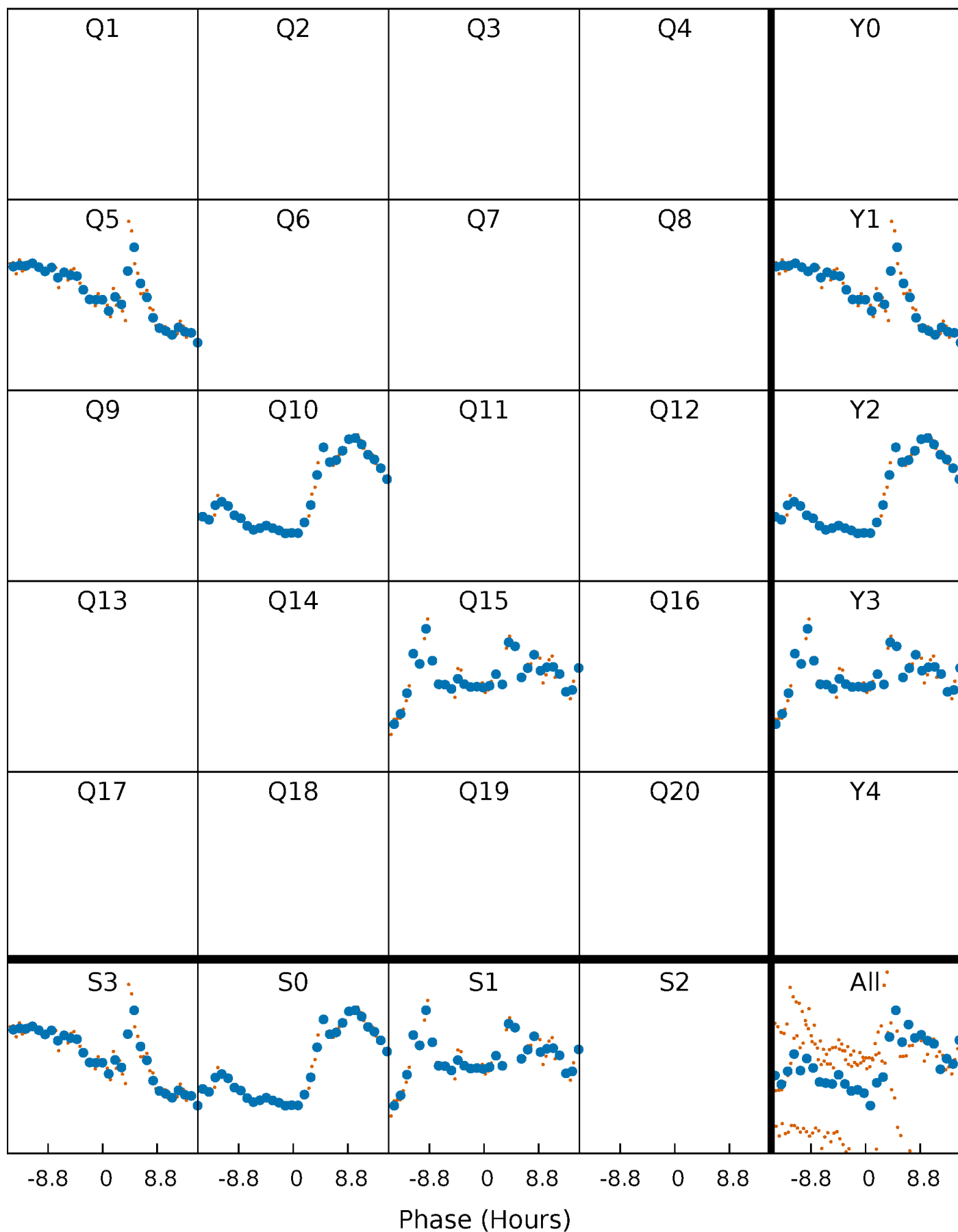


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



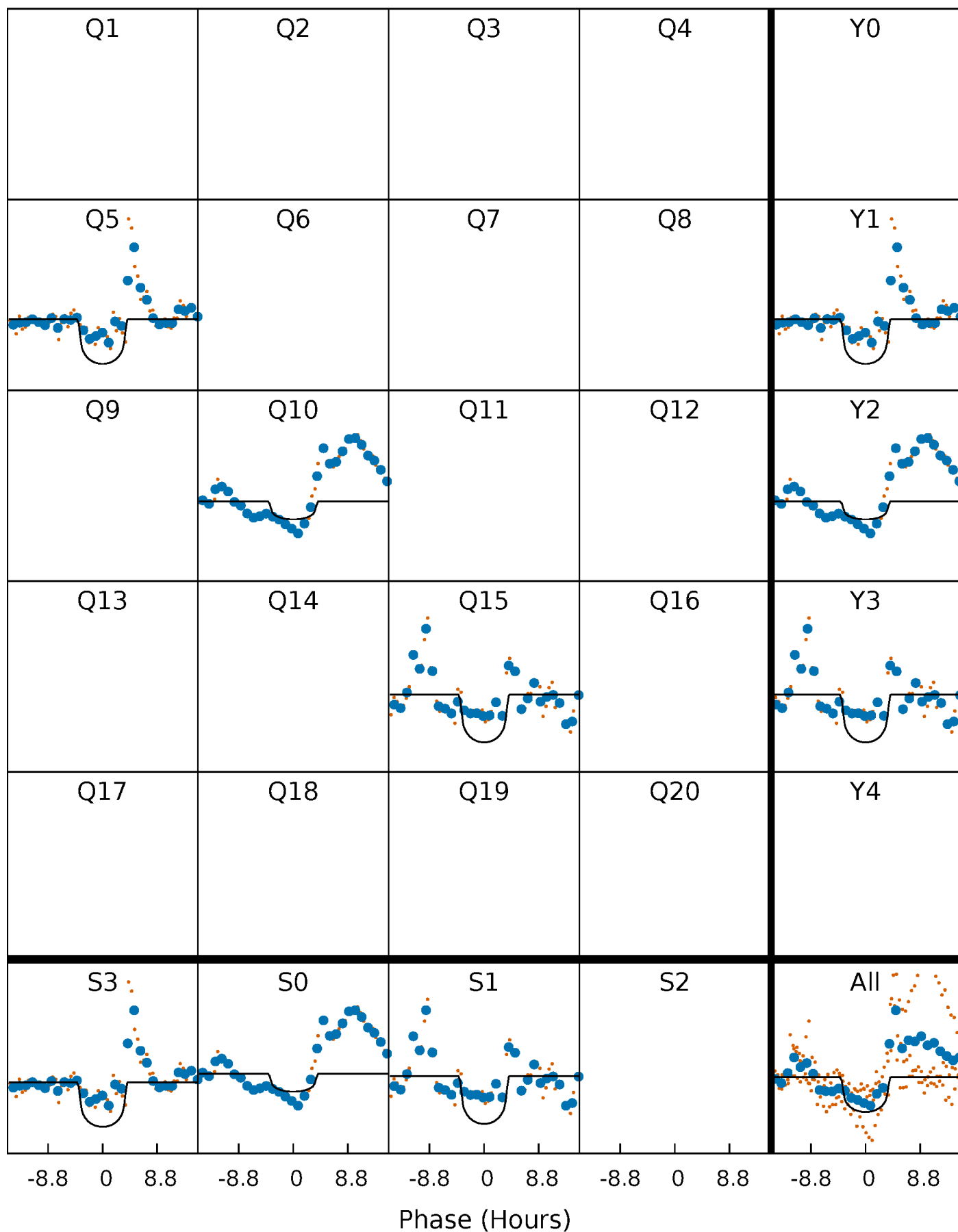
PDC Quarter-Phased Transit Curves

TCE 009446742-05 $P=497.855676$ Days $T_0=456.087069$ (BKJD)



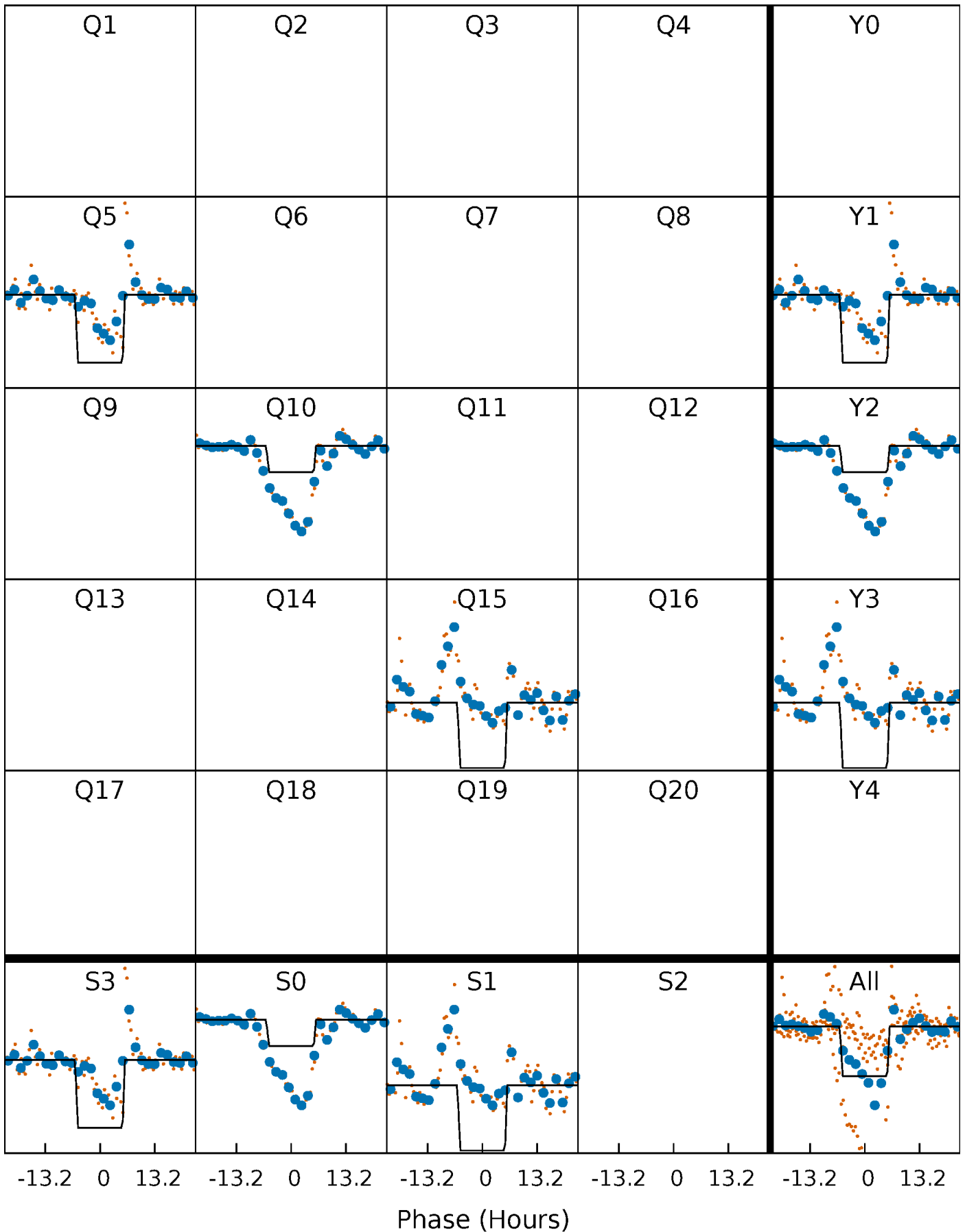
DV Quarter-Phased Transit Curves

TCE 009446742-05 $P=497.855676$ Days $T_0=456.087069$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

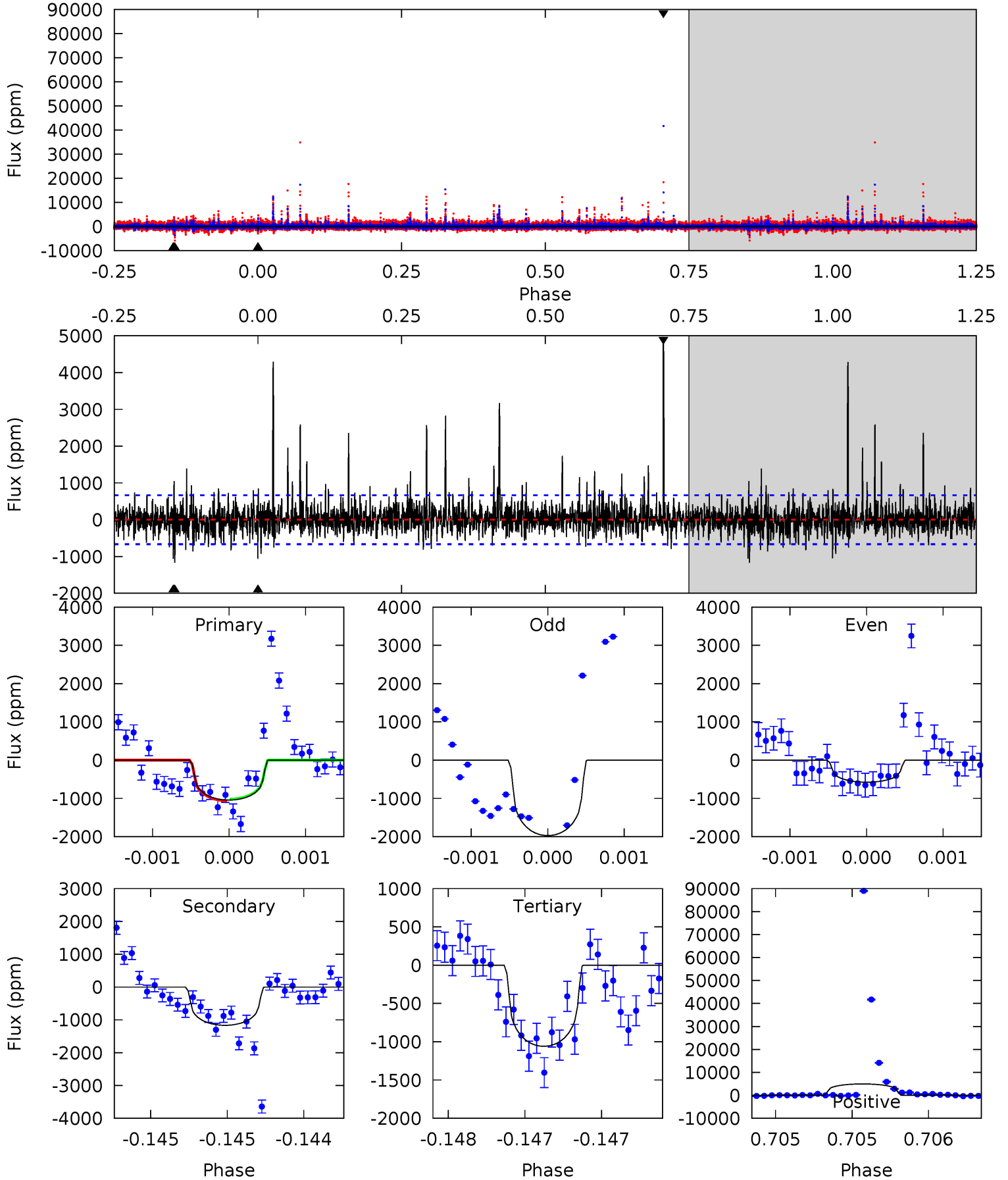
TCE 009446742-05 $P=497.843256$ Days $T_0=456.012696$ (BKJD)



DV Model-Shift Uniqueness Test

009446742-05, P = 497.855676 Days, E = 456.087069 Days

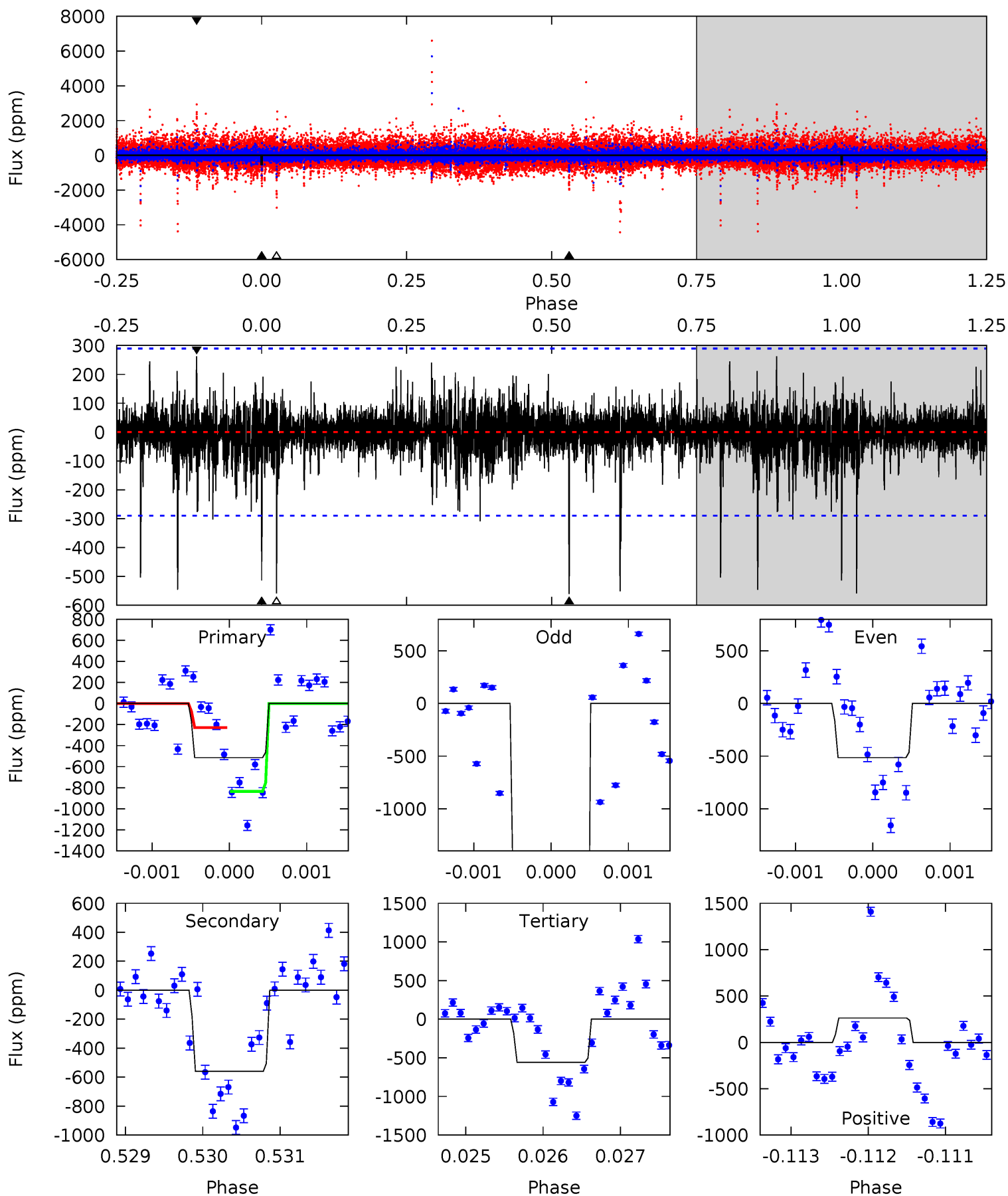
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.65	9.67	8.79	41.0	5.52	3.40	2.86	-0.14	-32.4	0.88	-31.4	1.58	1.70	0.81	0.18



Alt Model-Shift Uniqueness Test

009446742-05, P = 497.843256 Days, E = 456.012696 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.68	10.6	10.5	4.94	5.45	3.30	1.18	-0.84	4.74	0.04	5.62	35.7	2.45	0.32	0



Stellar Parameters For KIC 009446742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5087^{+136}_{-136}	$3.759^{+0.833}_{-0.357}$	$-0.340^{+0.300}_{-0.250}$	$2.024^{+1.272}_{-1.272}$	$0.857^{+0.228}_{-0.171}$	$0.146^{+3.412}_{-0.104}$
	+3%/-3%	+22%/-9%	+88%/-74%	+63%/-63%	+27%/-20%	+2343%/-71%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009446742-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1166 ± 121	$8.28^{+7.70}_{-5.18}$	408^{+64}_{-79}	4649^{+2645}_{-827}	12400^{+82237}_{-8752}
Alt.	-561 ± 53	$9.34^{+9.26}_{-5.88}$	408^{+66}_{-80}	3896^{+1544}_{-585}	4903^{+28366}_{-3648}

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

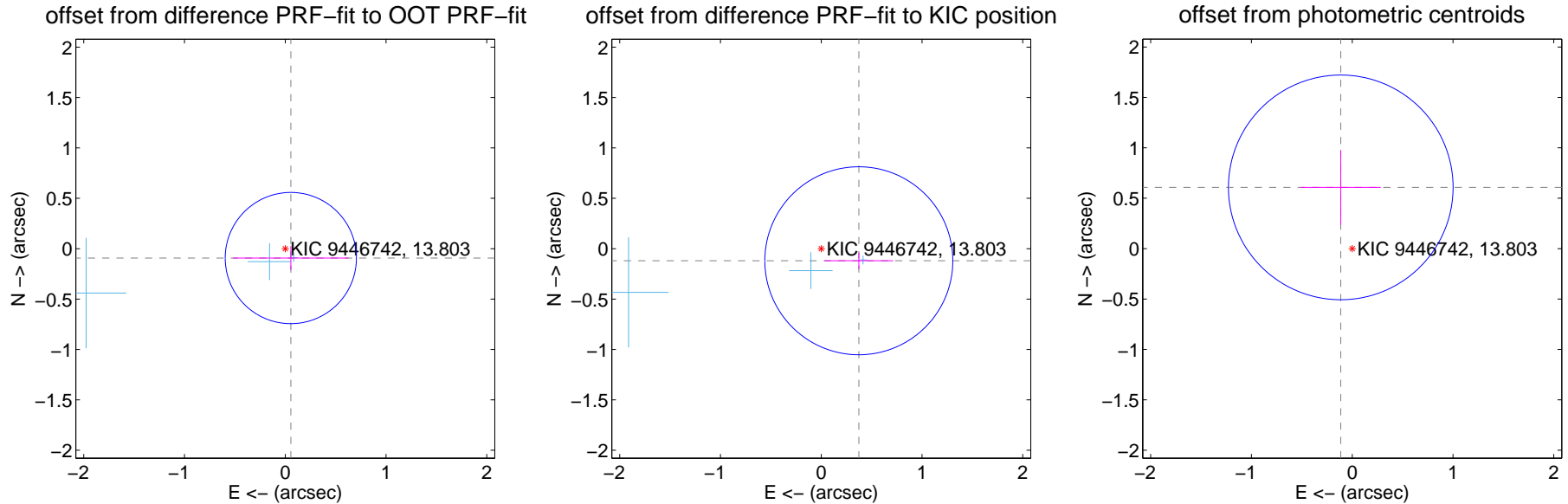
DV Centroid Data

Supplemental centroid analysis for 009446742-05. Kepler magnitude: 13.80. Transit SNR 7.72

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.108 ± 0.217	0.50	-0.055 ± 0.573	-0.093 ± 0.118
PRF-fit source offset from KIC position	0.392 ± 0.311	1.26	-0.373 ± 0.341	-0.120 ± 0.082
photometric centroid source offset	0.62 ± 0.37	1.66	0.11 ± 0.40	0.61 ± 0.37

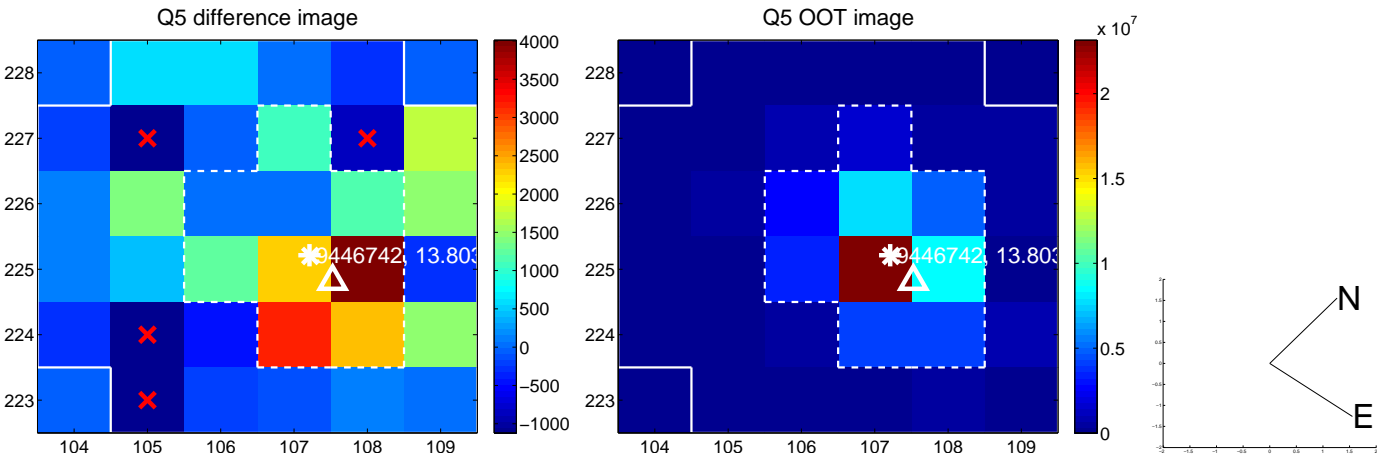


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

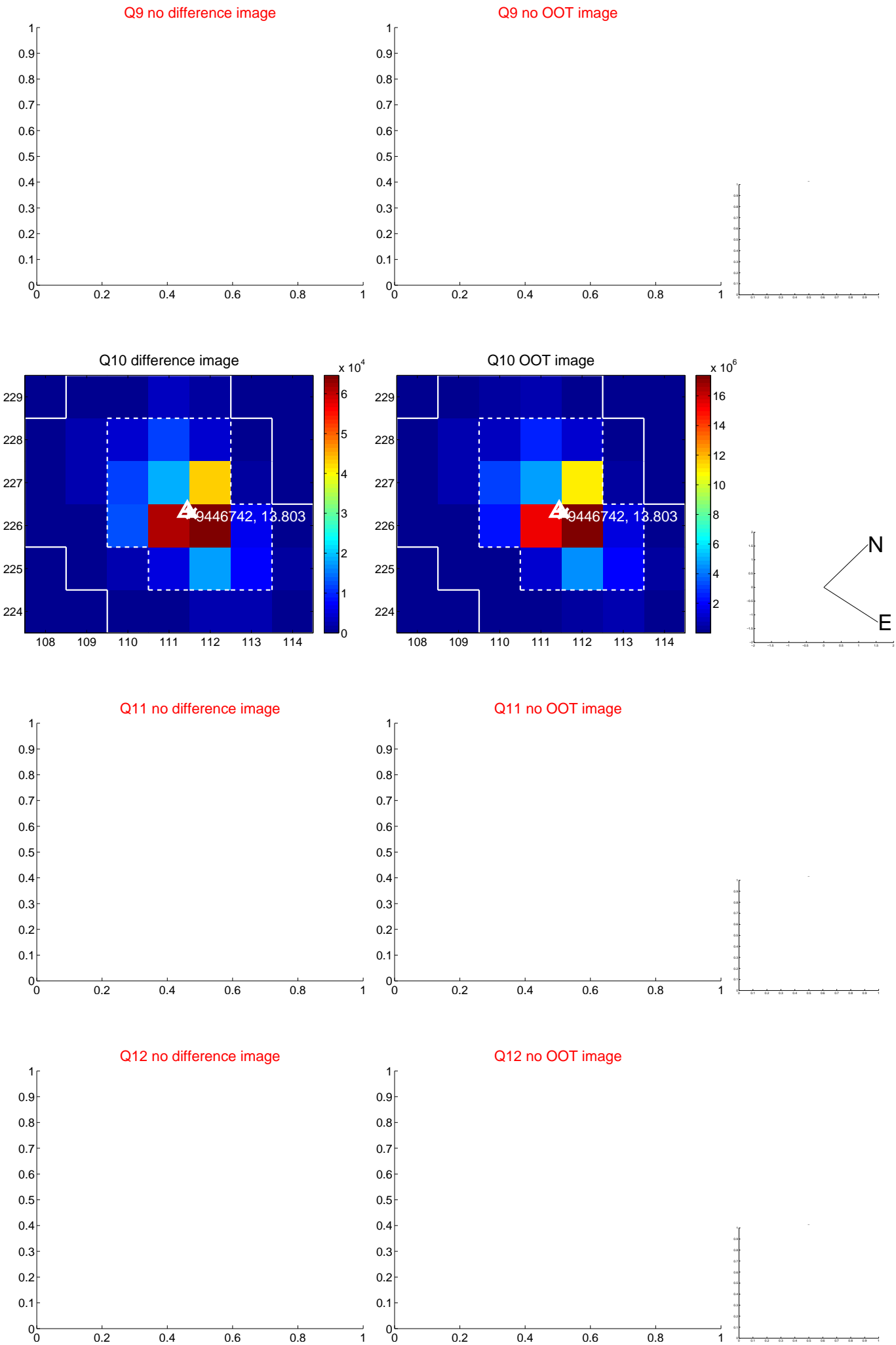
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



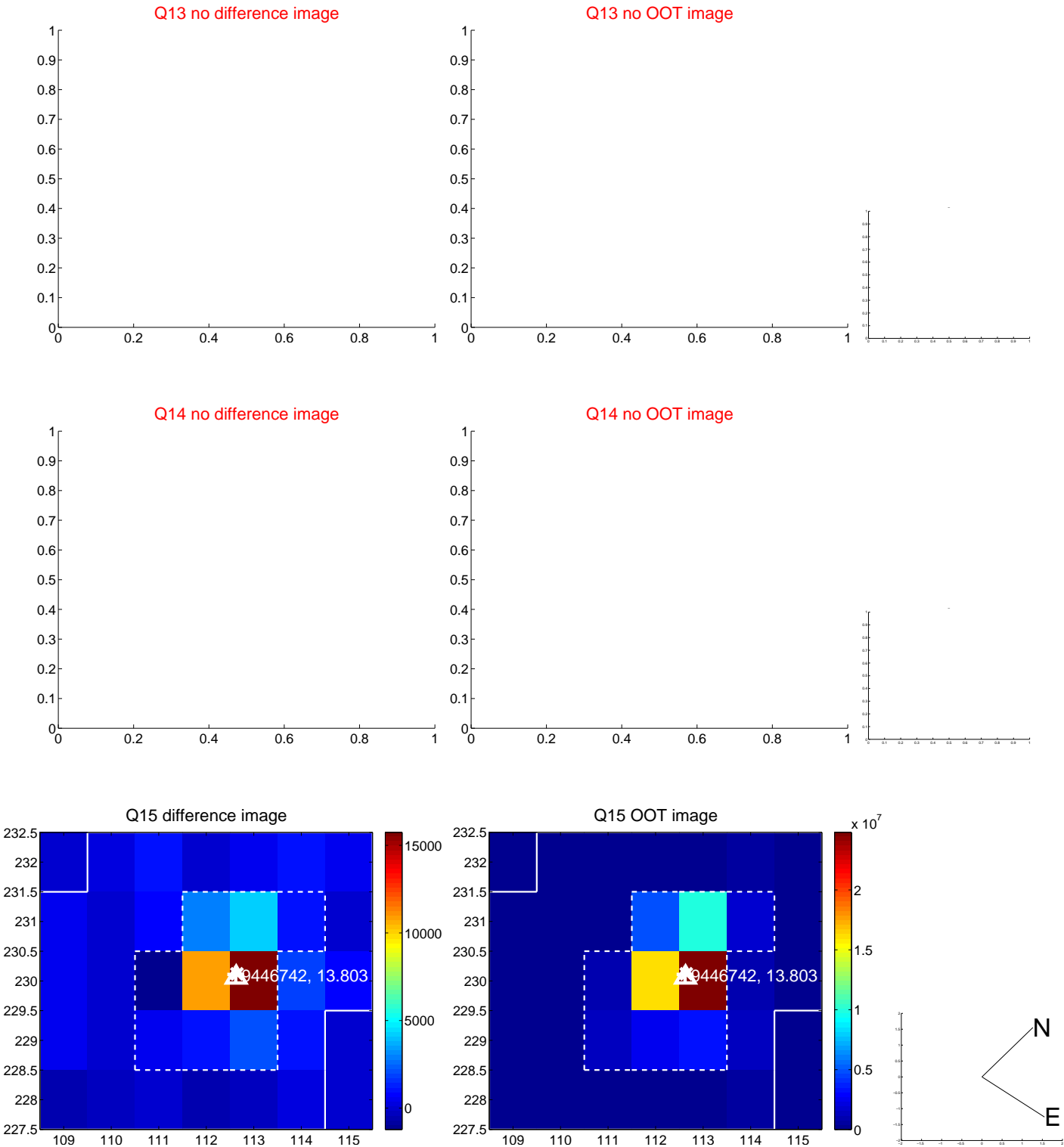
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



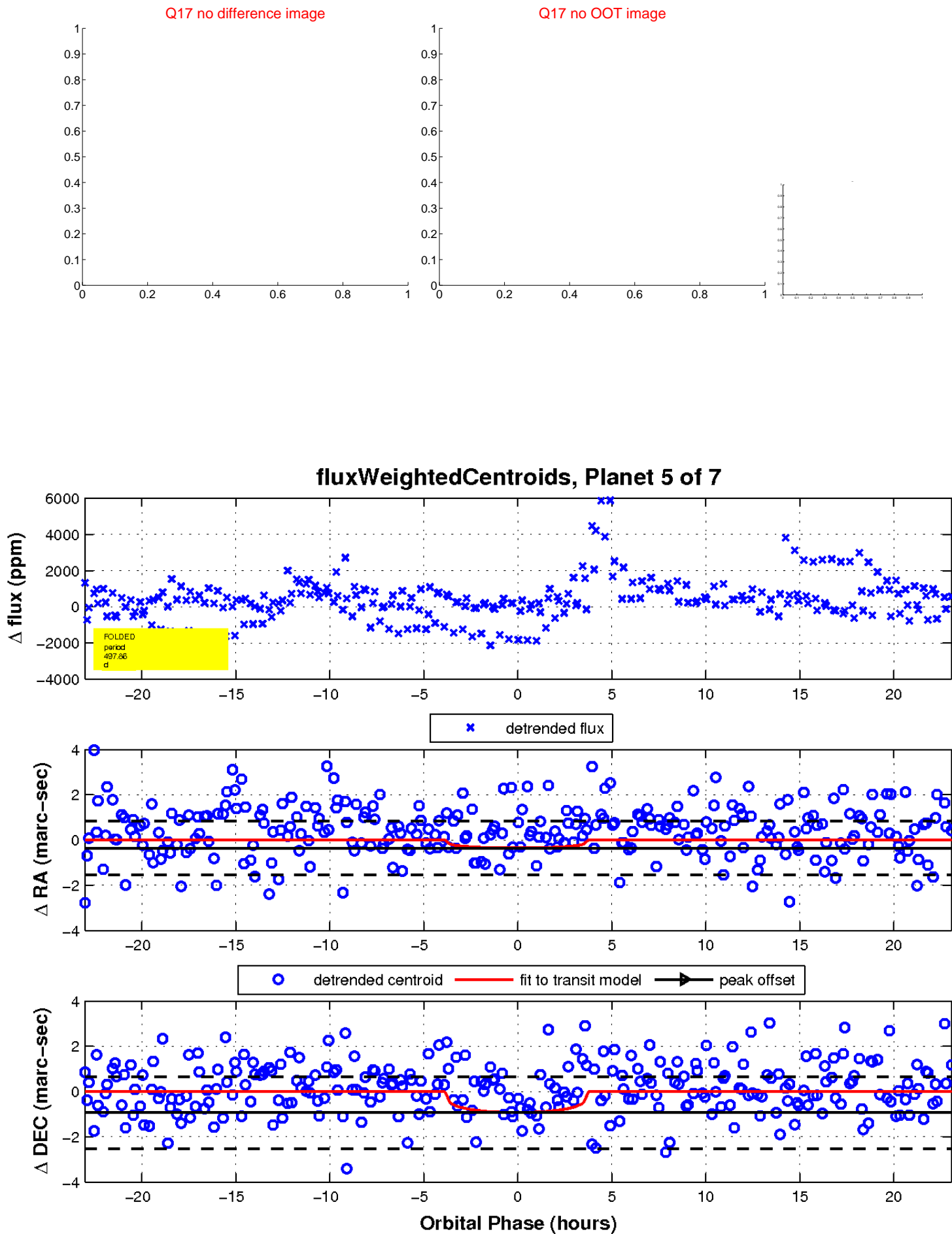
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

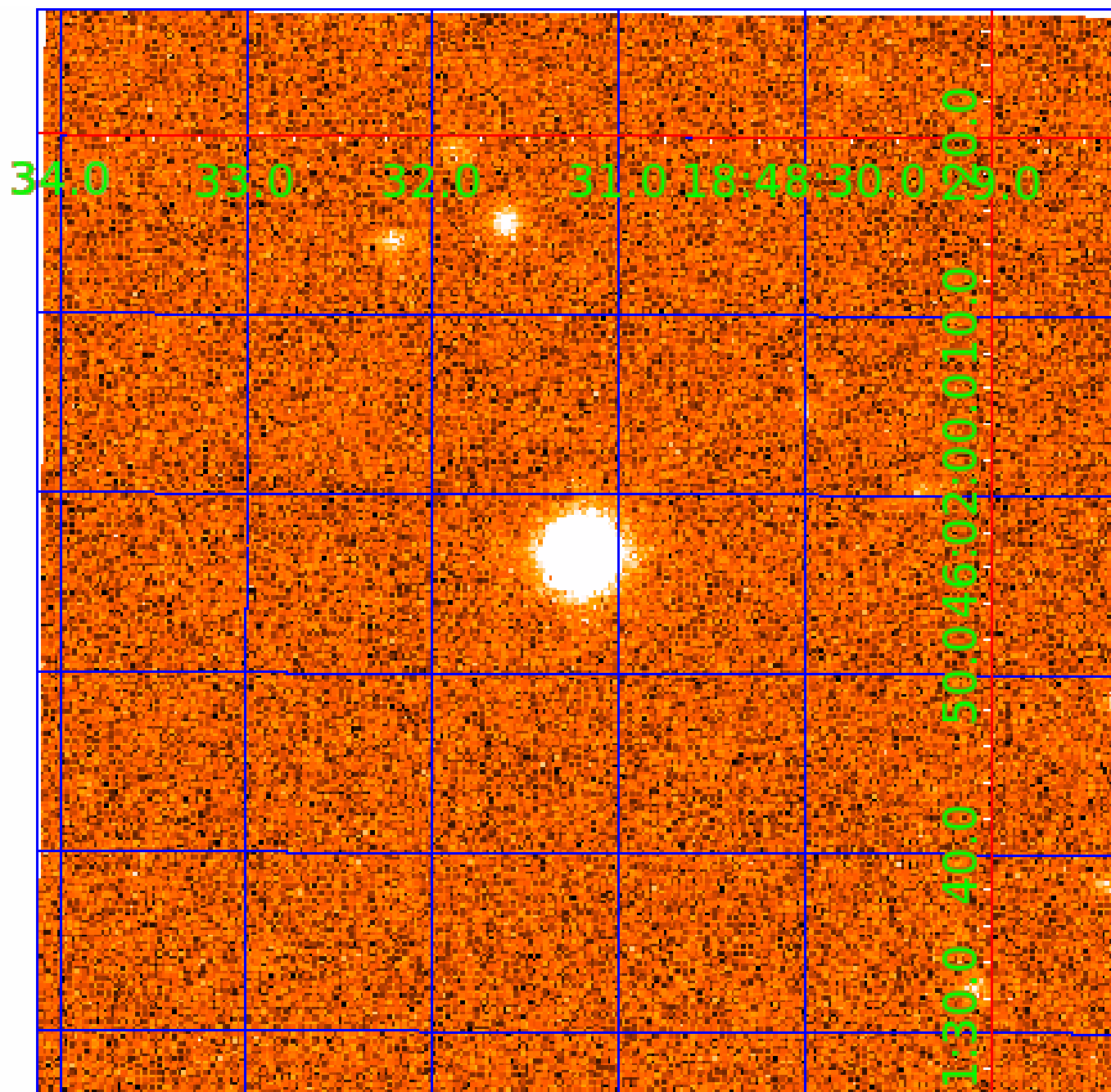


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009446742

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})
009446742-01	OBS	No	576.784489	271.020983	2032.0	14.093	19.7	8.5	2.02	5087	9.37	1.48
009446742-02	OBS	No	340.356830	432.526099	1181.3	9.170	17.3	6.2	2.02	5087	6.84	2.99
009446742-03	OBS	No	471.555815	524.297157	422.4	6.653	17.8	2.2	2.02	5087	4.35	1.94
009446742-04	OBS	No	394.145654	349.790556	1375.2	4.052	17.1	6.0	2.02	5087	8.12	2.46
009446742-05	OBS	No	497.855676	456.087069	1587.4	7.698	14.3	7.7	2.02	5087	7.89	1.80
009446742-06	OBS	No	572.133337	242.065863	5811.6	12.378	15.0	16.3	2.02	5087	28.99	1.50
009446742-07	OBS	No	320.365764	270.634269	558.5	11.538	12.9	2.6	2.02	5087	4.95	3.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009446742-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009446742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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
009446742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009446742-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS
009446742-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

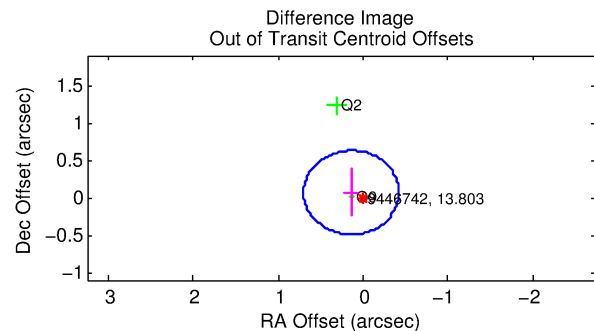
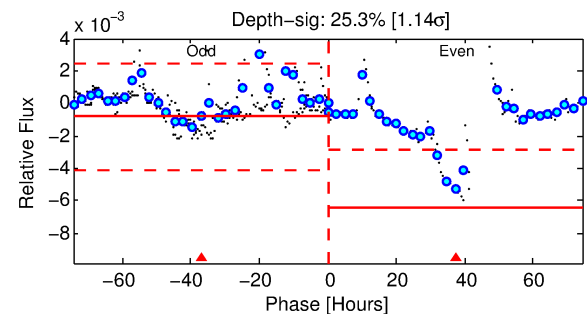
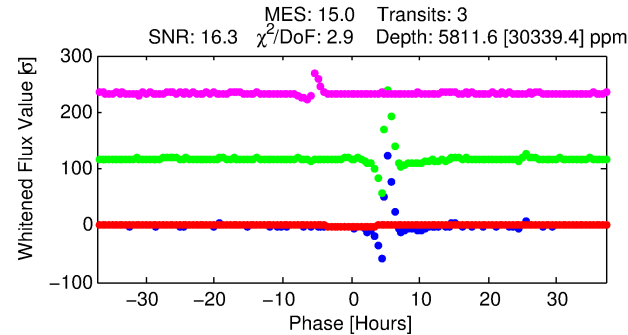
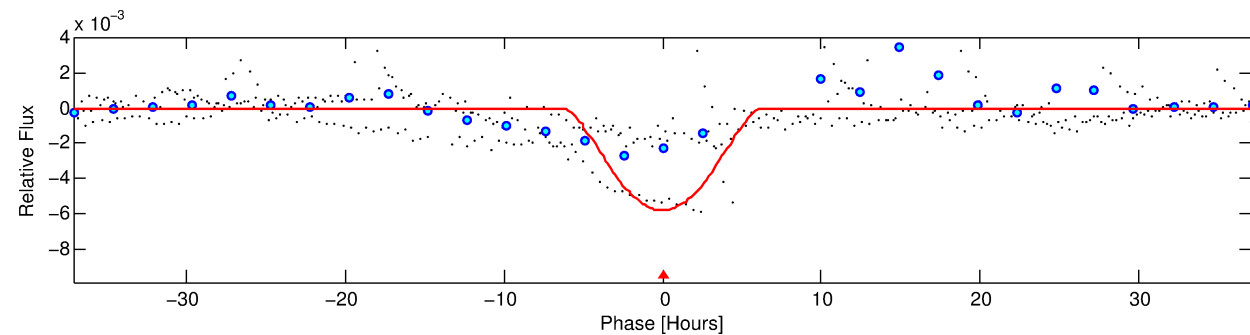
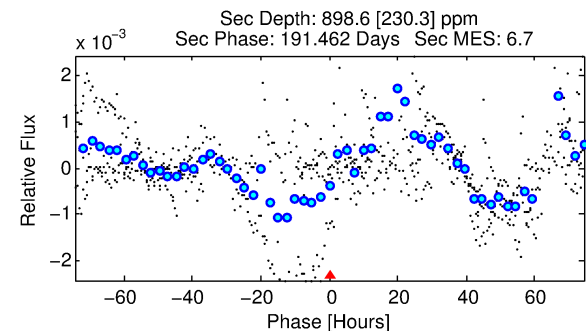
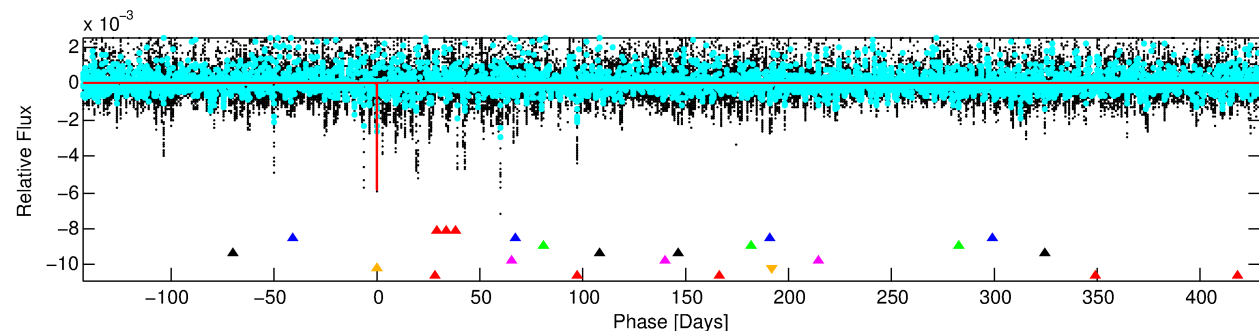
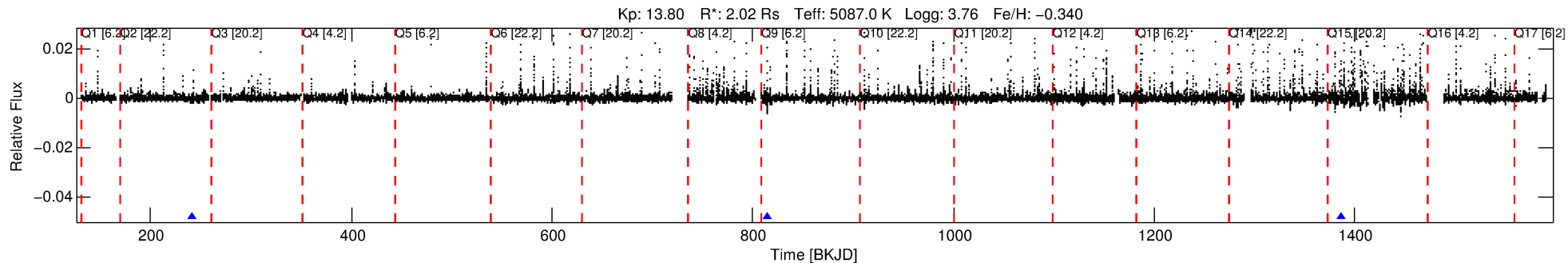
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009446742-06

No Significant Match Found

DV One-Page Summary

KIC: 9446742 Candidate: 6 of 7 Period: 572.133 d



DV Fit Results:

Period = 572.13334 [0.04100] d
Epoch = 242.0659 [0.0414] BKJD
Rp/R* = 0.1313 [0.6526]
a/R* = 186.77 [148.76]
b = 1.00 [0.47]
Seff = 1.50 [2.02]
Teq = 282 [95] K
Rp = 28.99 [145.28] Re
a = 1.2818 [0.9798] AU
Ag = 966.49 [9700.79] [0.10 σ]
Teffp = 2431 [6045] K [0.36 σ]

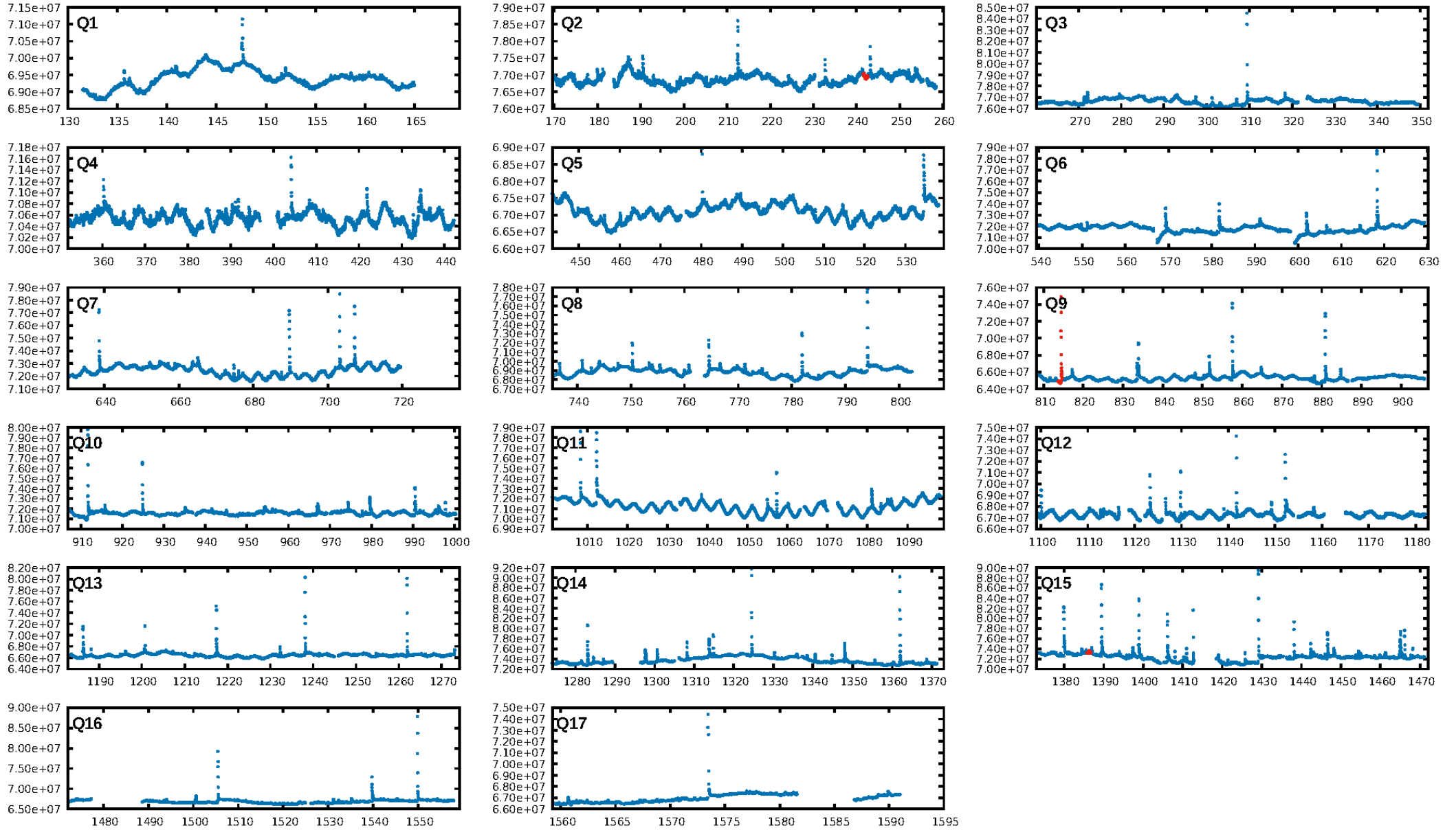
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [122.30 σ]
LongPeriod-sig: 100.0% [5.95 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.6694
Centroid-sig: 2.6%
Centroid-so: 0.179 arcsec [1.36 σ]
OotOffset-rm: 0.153 arcsec [0.82 σ]
KicOffset-rm: 0.106 arcsec [0.36 σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

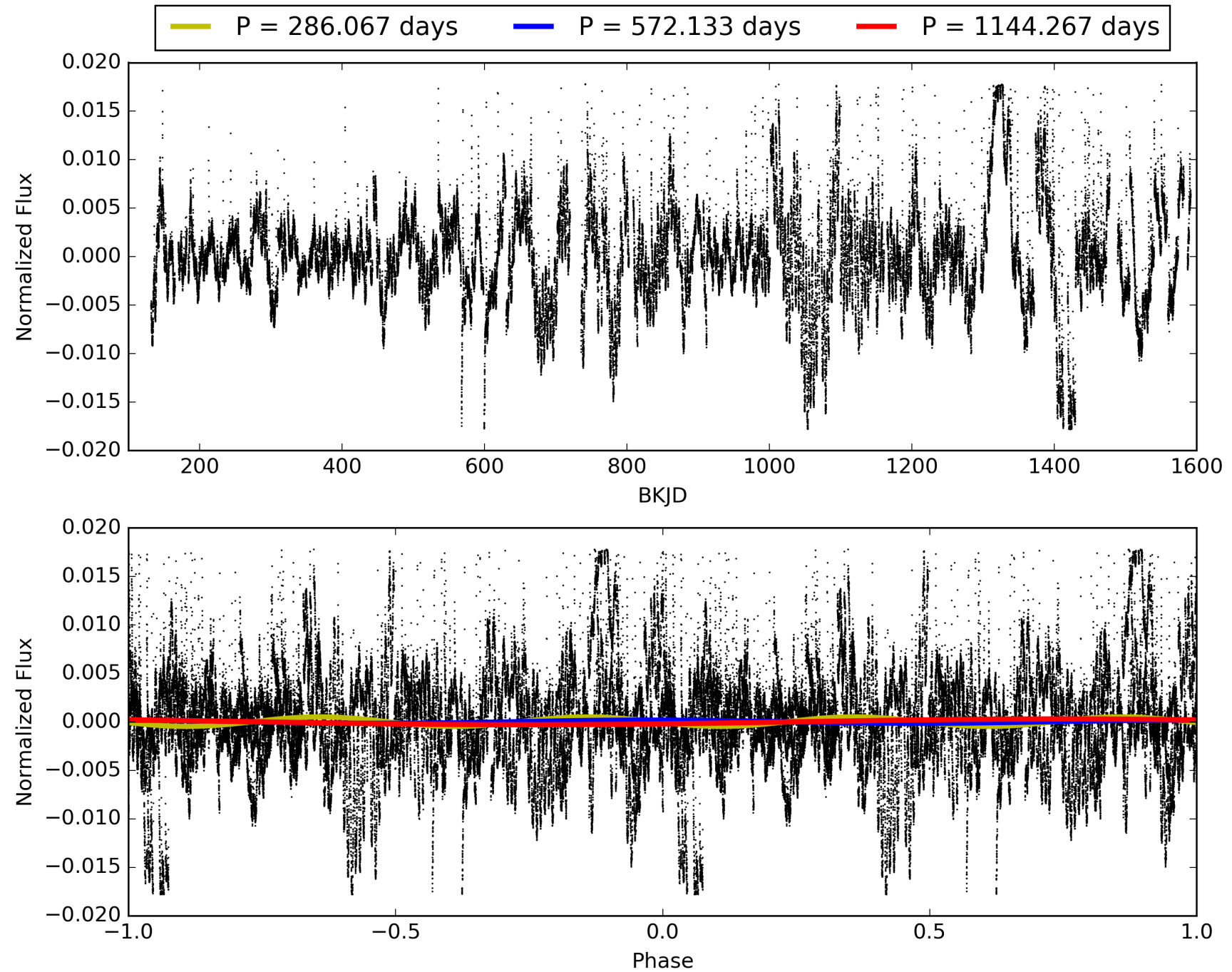
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:53:03 Z

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

TCE 009446742-06, PDC Light Curves

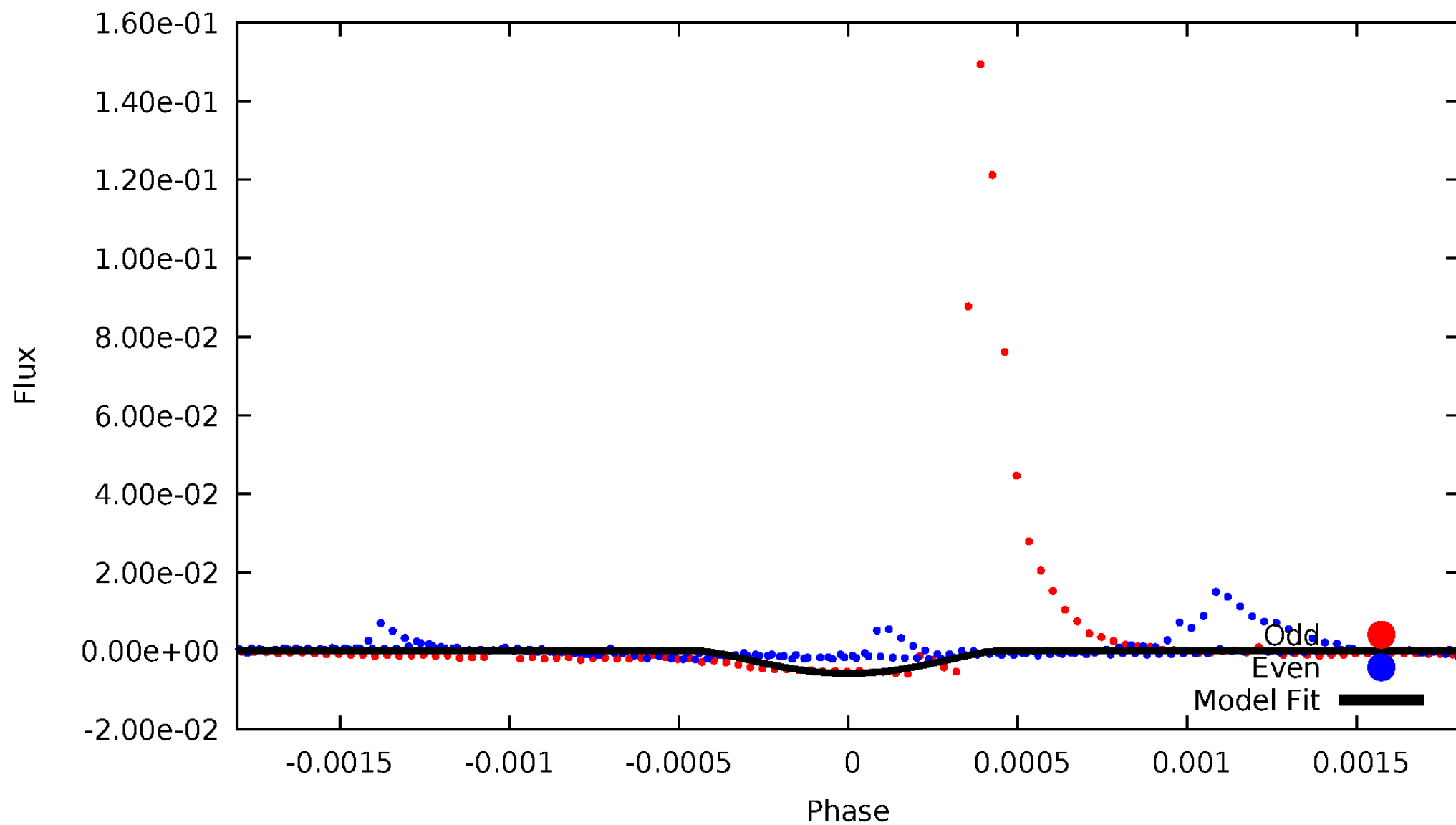


TCE 009446742-06



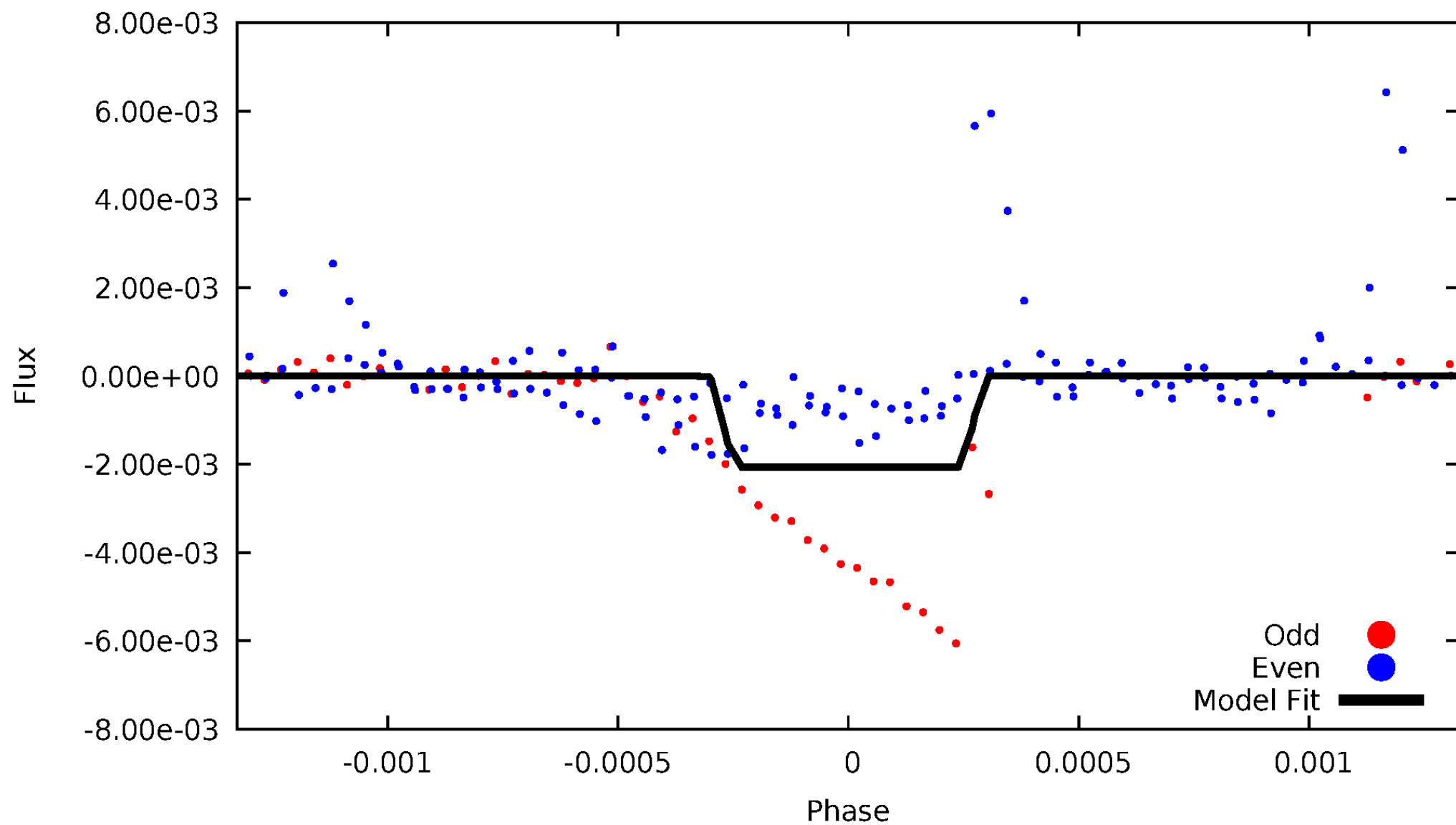
DV Odd/Even

TCE 009446742-06



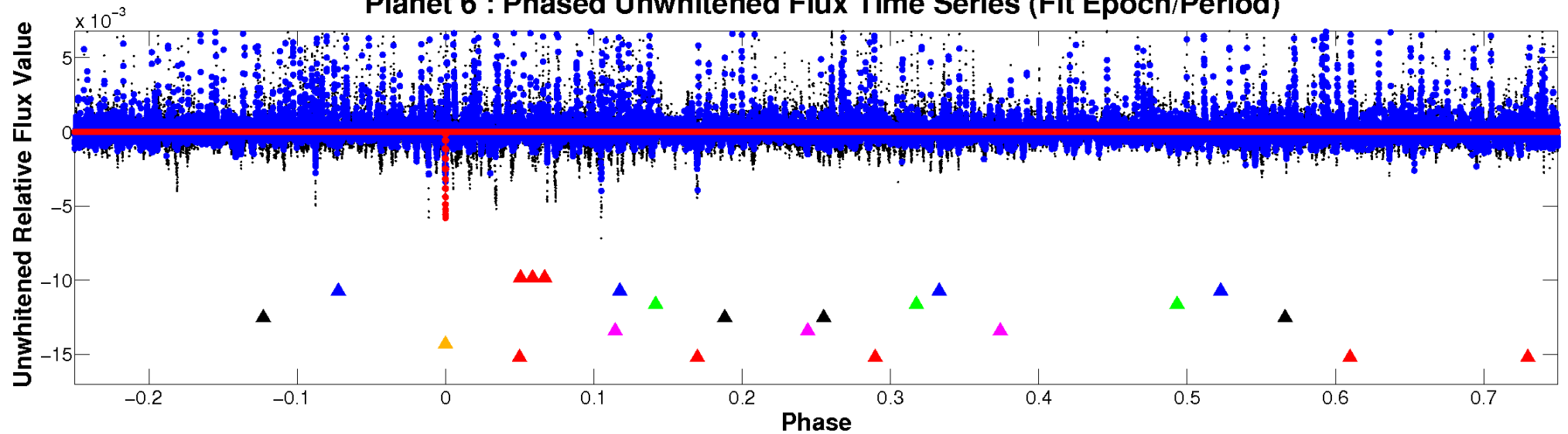
ALT Odd/Even

TCE 009446742-06

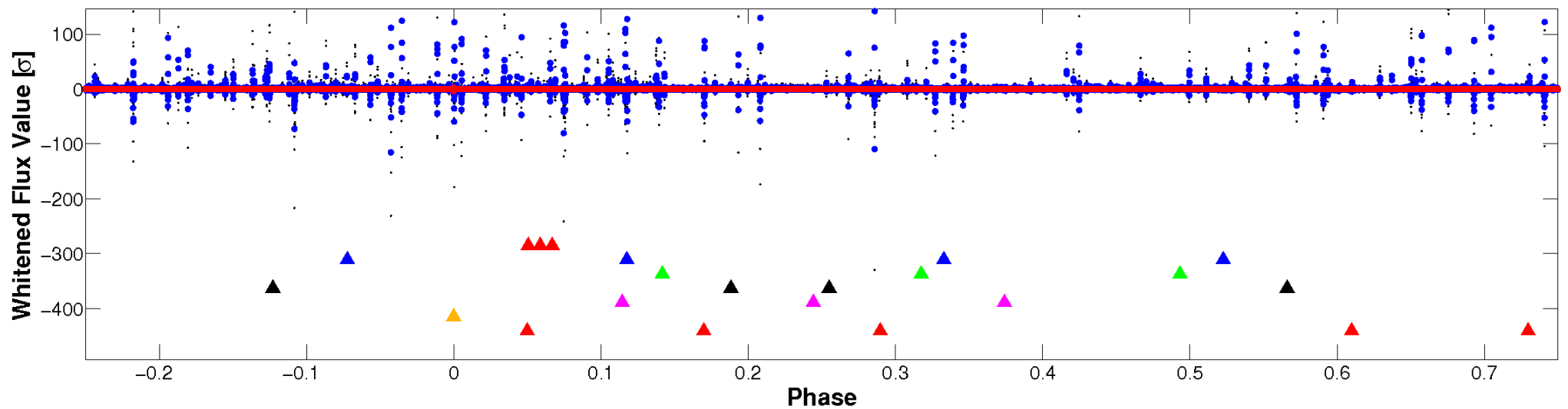


Non-Whitened Vs. Whitened Light Curve

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

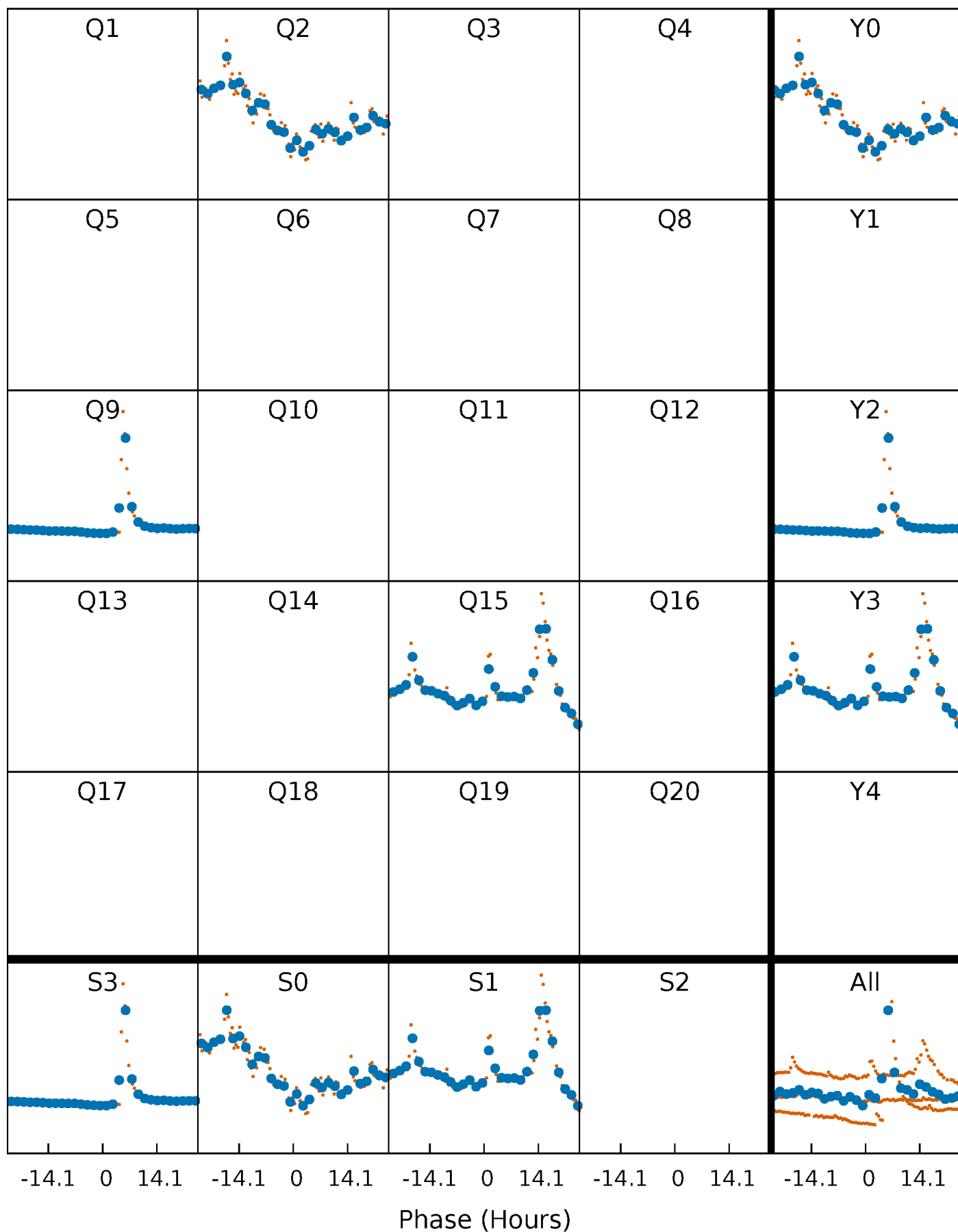


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



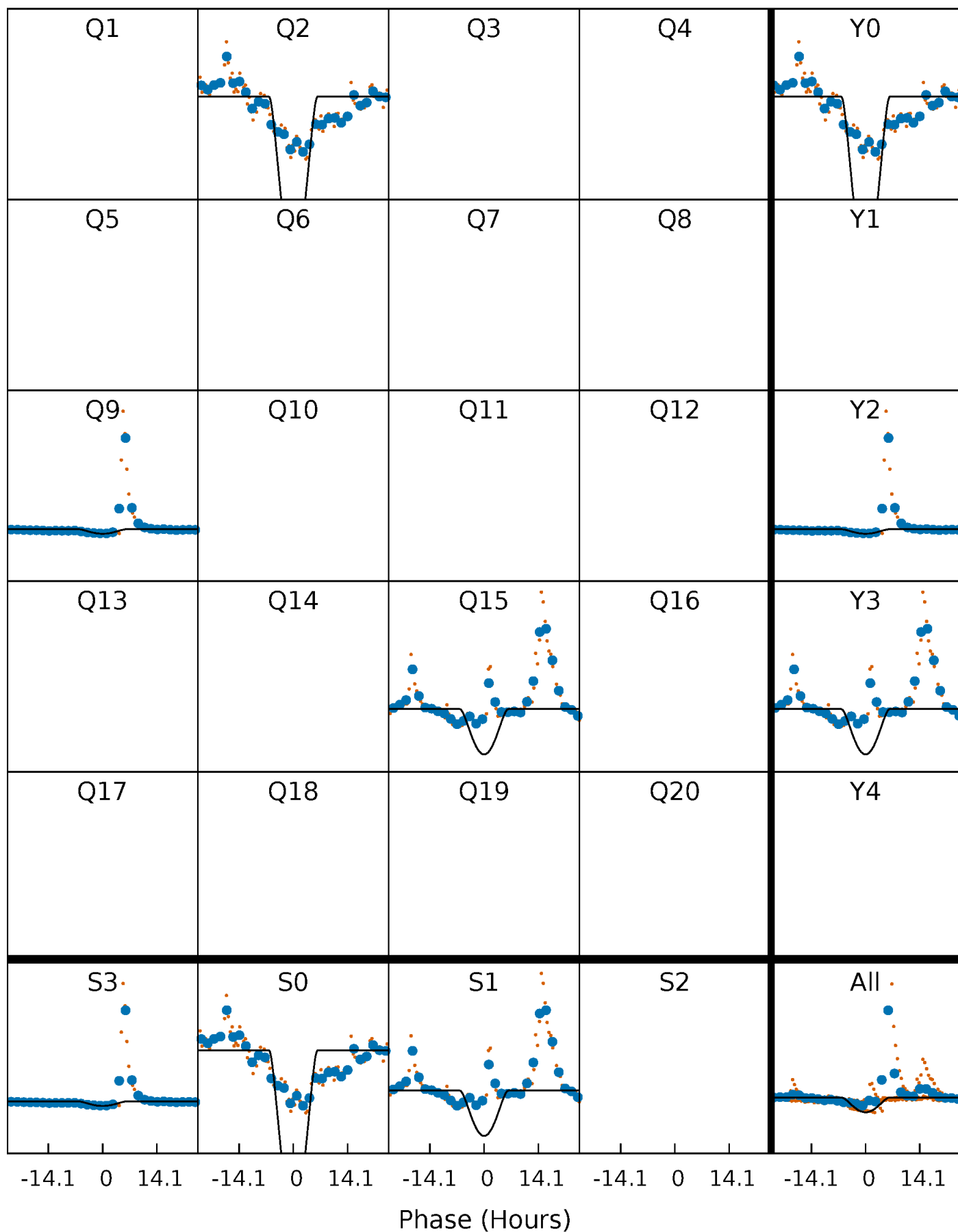
PDC Quarter-Phased Transit Curves

TCE 009446742-06 P=572.133337 Days $T_0=242.065863$ (BKJD)



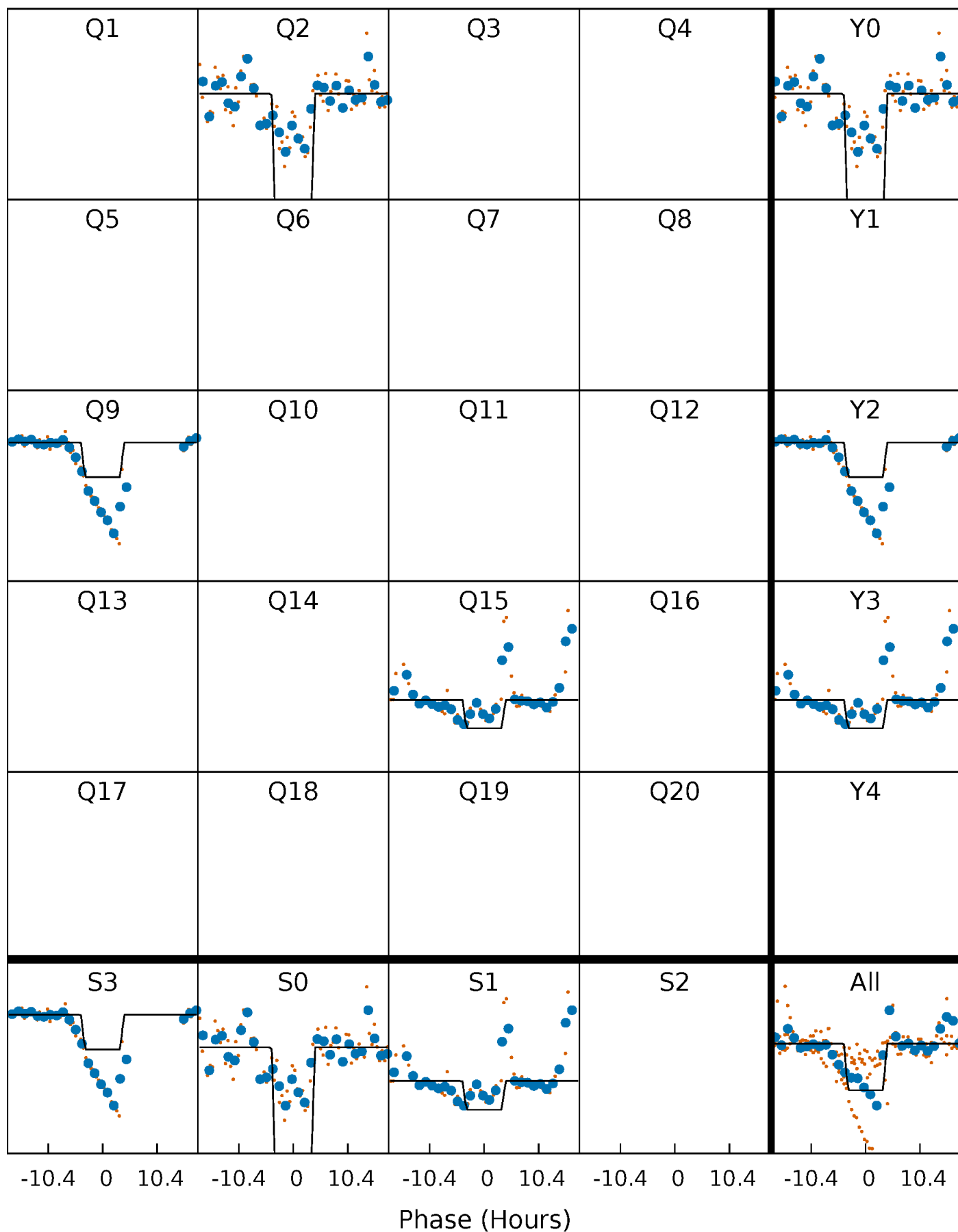
DV Quarter-Phased Transit Curves

TCE 009446742-06 P=572.133337 Days $T_0=242.065863$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

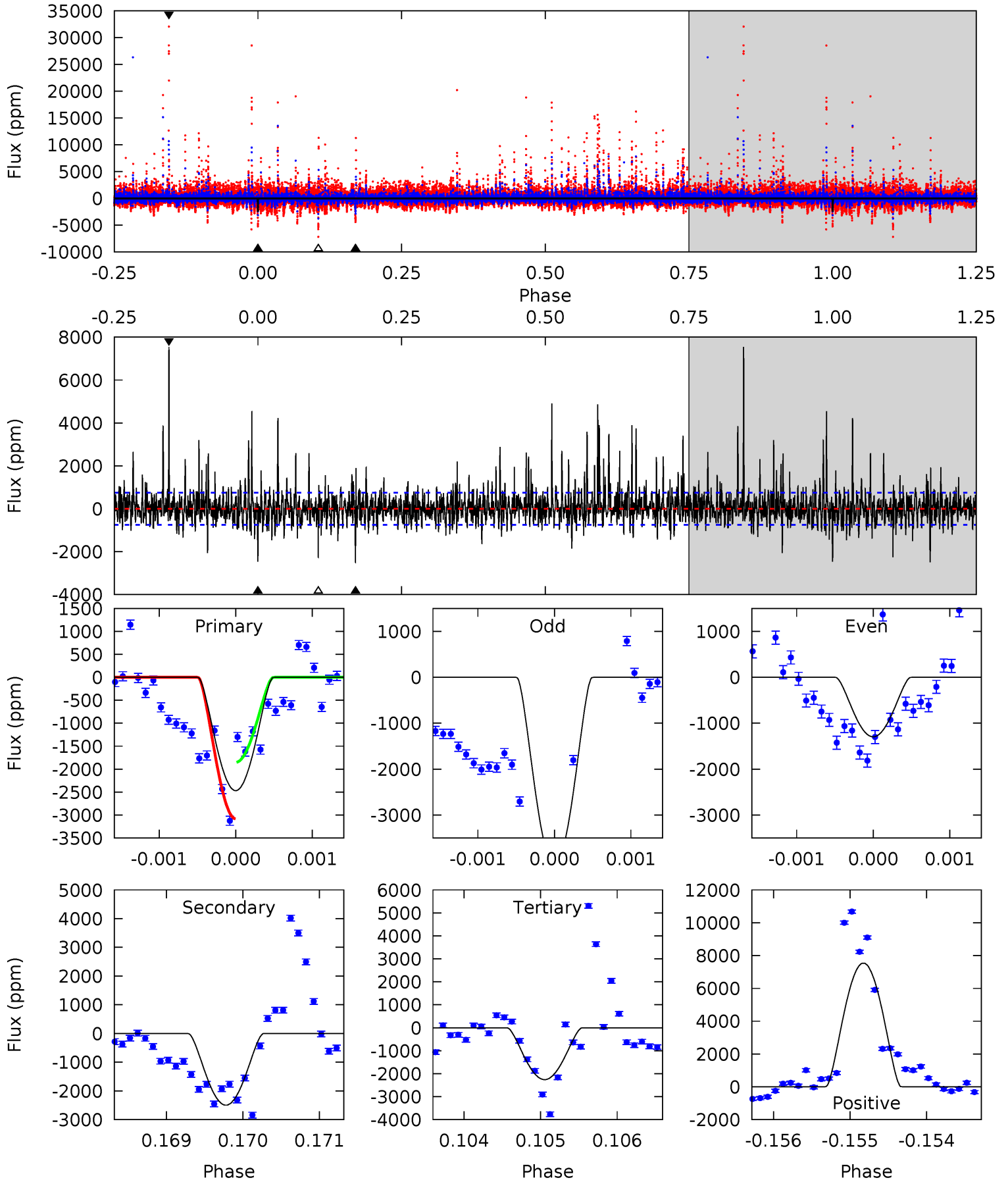
TCE 009446742-06 P=572.057946 Days $T_0=242.107890$ (BKJD)



DV Model-Shift Uniqueness Test

009446742-06, P = 572.133337 Days, E = 242.065863 Days

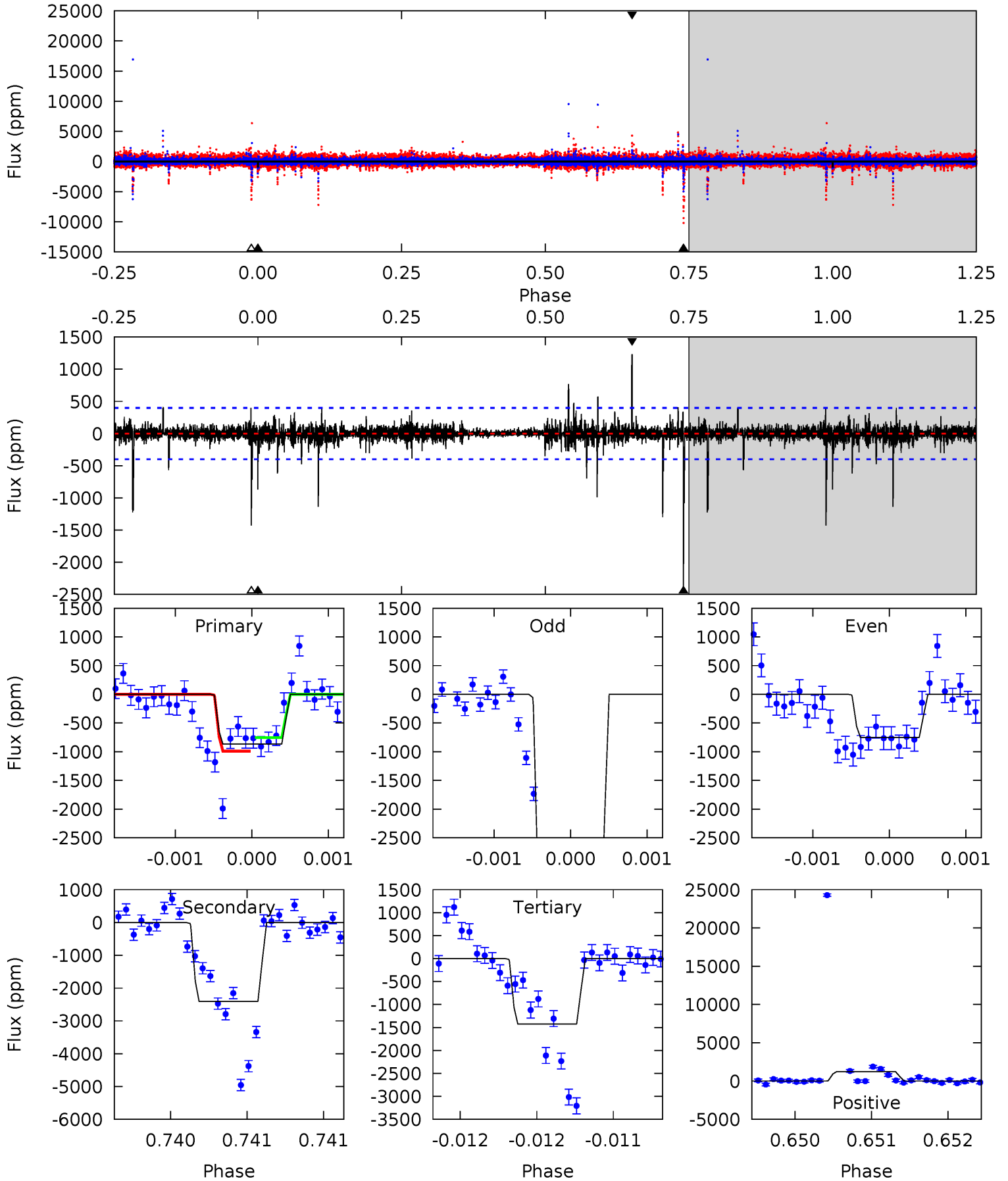
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	18.2	16.5	55.1	5.46	3.31	4.67	1.53	-37.0	1.74	-36.8	3.71	0.73	0.75	4.56



Alt Model-Shift Uniqueness Test

009446742-06, P = 572.057946 Days, E = 242.107890 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	33.5	19.8	17.2	5.54	3.43	1.40	-7.78	-5.09	13.6	16.3	21.3	2.79	0.34	1.62



Stellar Parameters For KIC 009446742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5087^{+136}_{-136}	$3.759^{+0.833}_{-0.357}$	$-0.340^{+0.300}_{-0.250}$	$2.024^{+1.272}_{-1.272}$	$0.857^{+0.228}_{-0.171}$	$0.146^{+3.412}_{-0.104}$
	+3%/-3%	+22%/-9%	+88%/-74%	+63%/-63%	+27%/-20%	+2343%/-71%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009446742-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2495 ± 137	$97.58^{+120.23}_{-70.14}$	384^{+62}_{-69}	2483^{+925}_{-384}	248^{+3023}_{-199}
Alt.	-2407 ± 72	$86.86^{+121.85}_{-62.25}$	387^{+63}_{-77}	2493^{+1047}_{-382}	291^{+3407}_{-240}

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

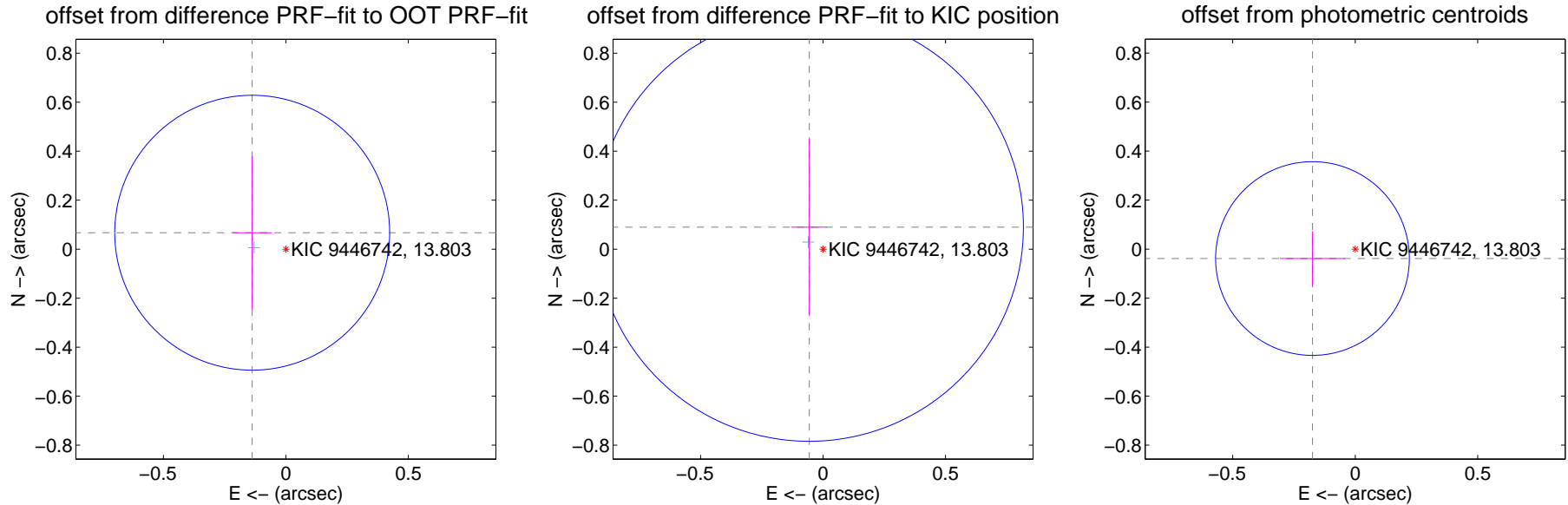
DV Centroid Data

Supplemental centroid analysis for 009446742-06. Kepler magnitude: 13.80. Transit SNR 16.25

There are 2 quarters with good PRF difference image offsets

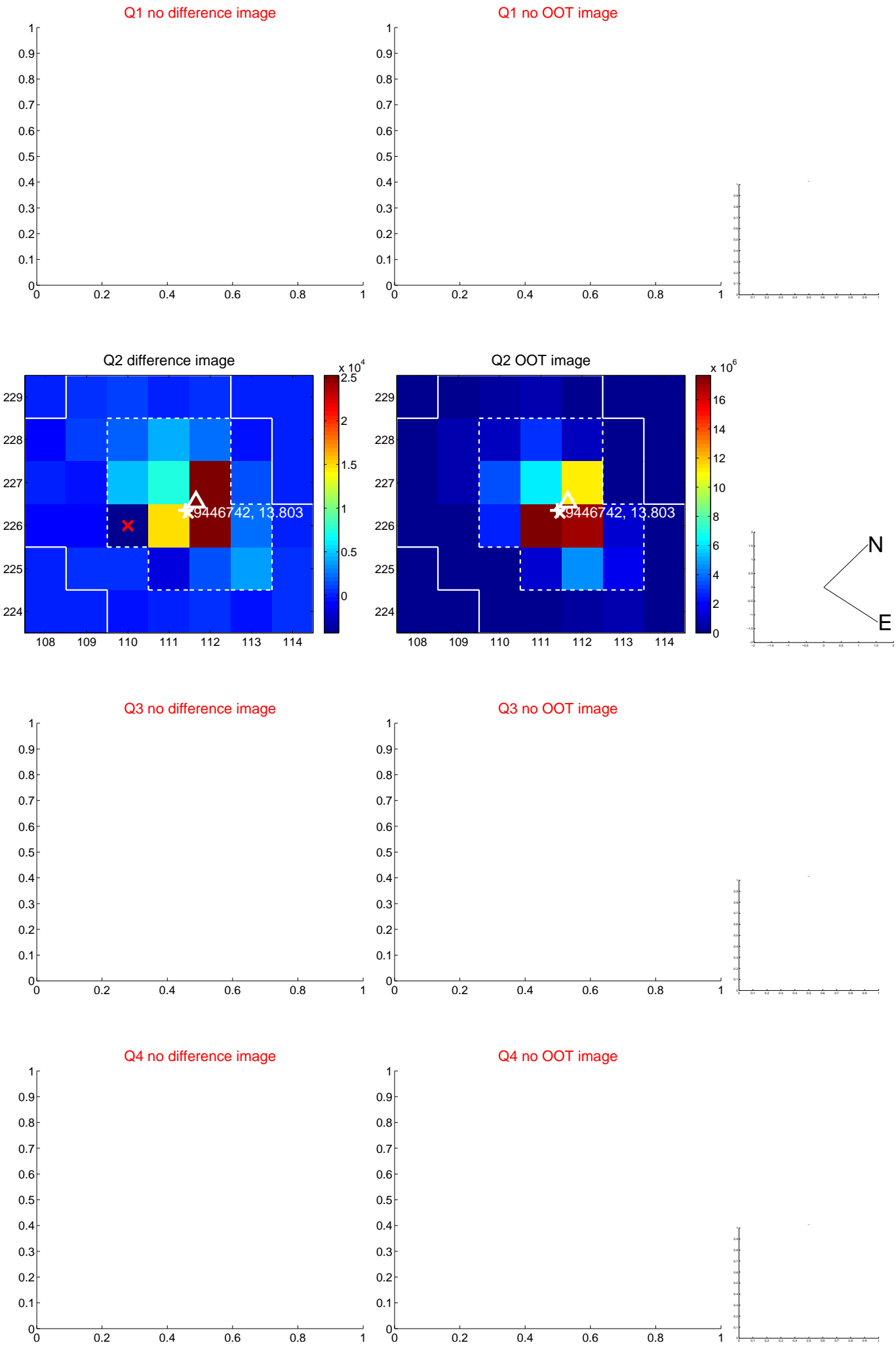
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.153 ± 0.187	0.82	0.138 ± 0.080	0.067 ± 0.313
PRF-fit source offset from KIC position	0.106 ± 0.291	0.36	0.056 ± 0.073	0.090 ± 0.359
photometric centroid source offset	0.18 ± 0.13	1.36	0.17 ± 0.13	-0.04 ± 0.11



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

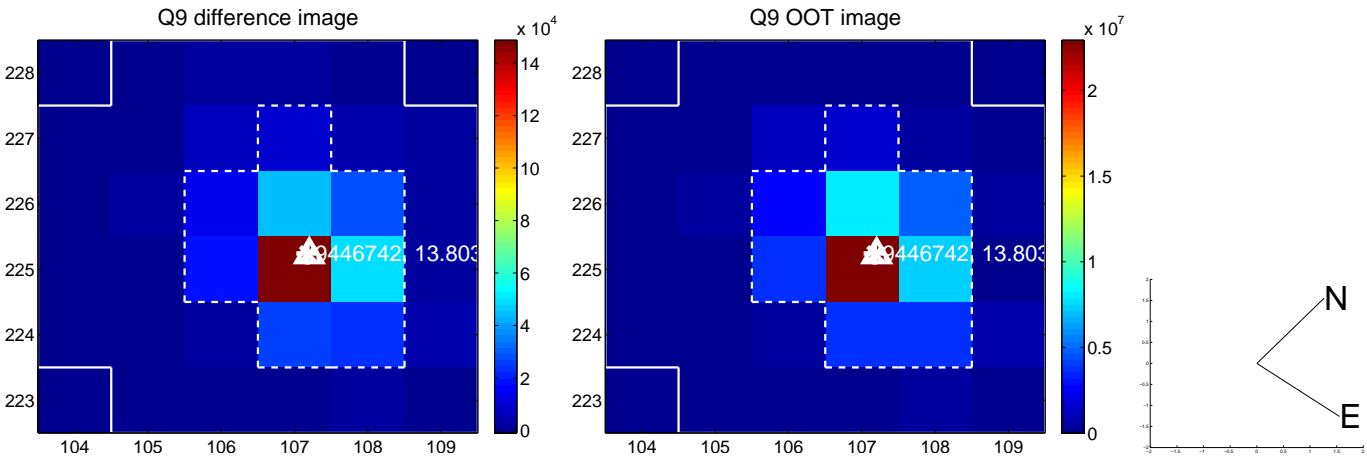
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



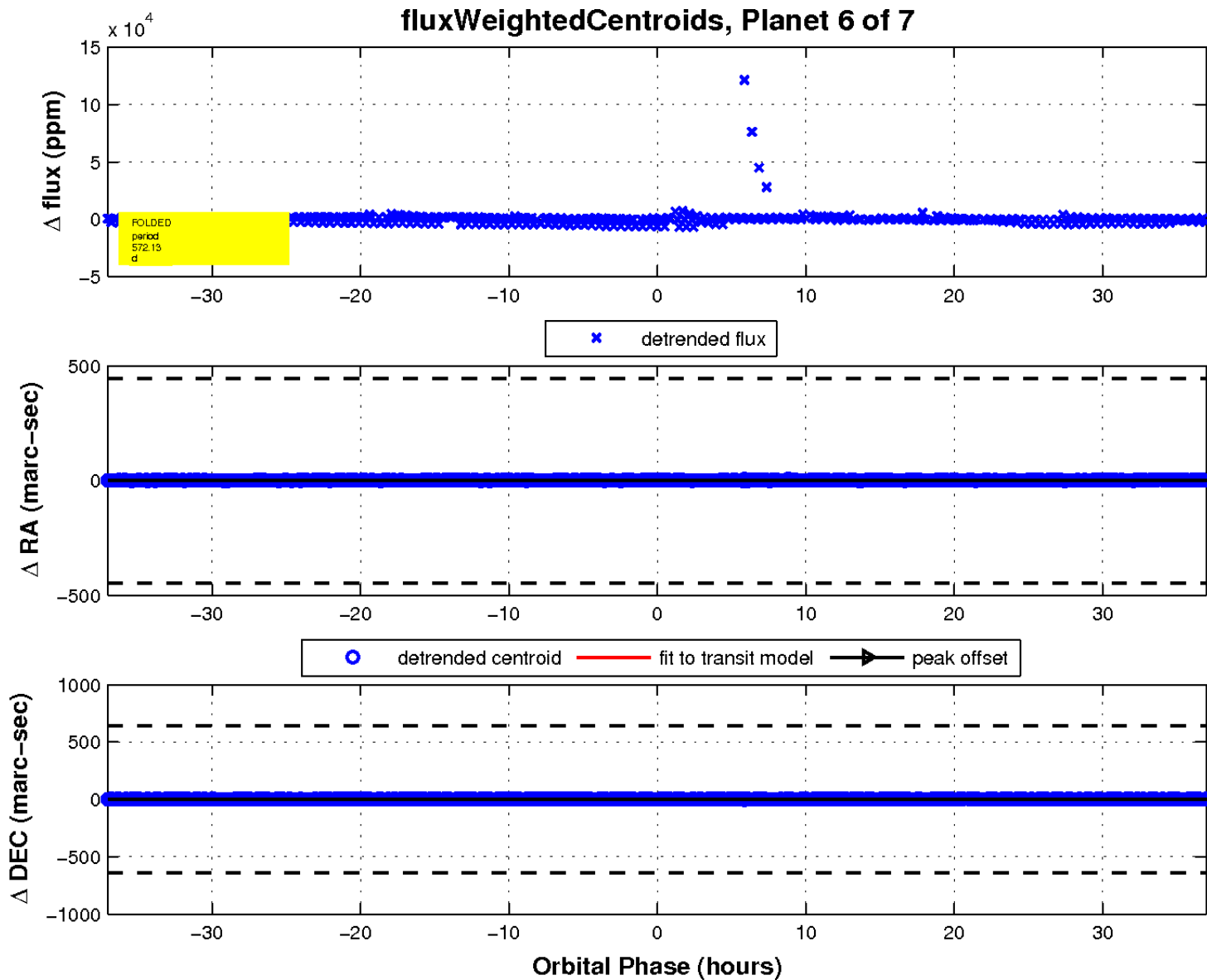
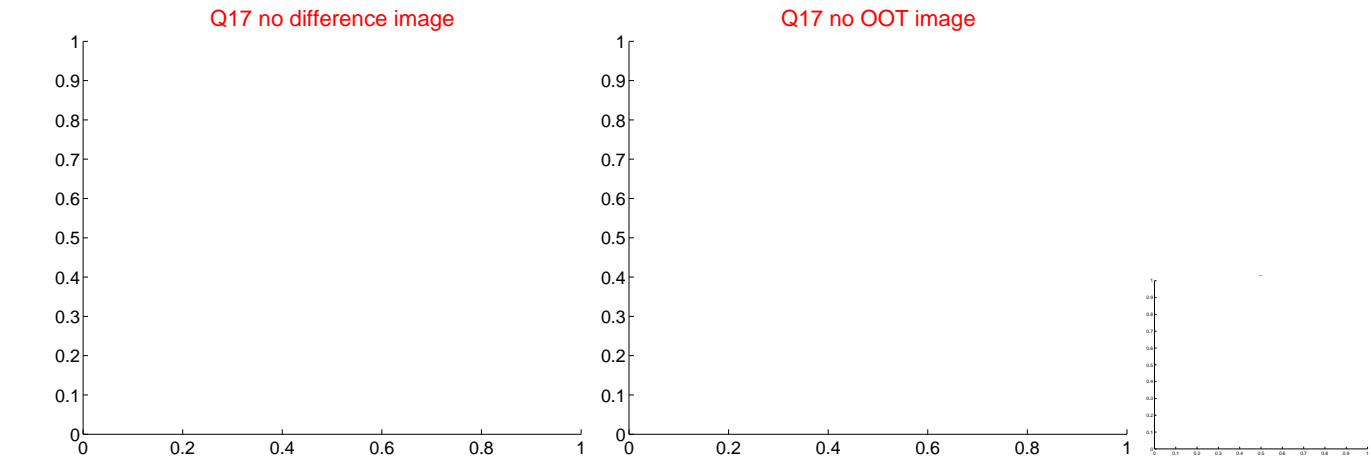
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

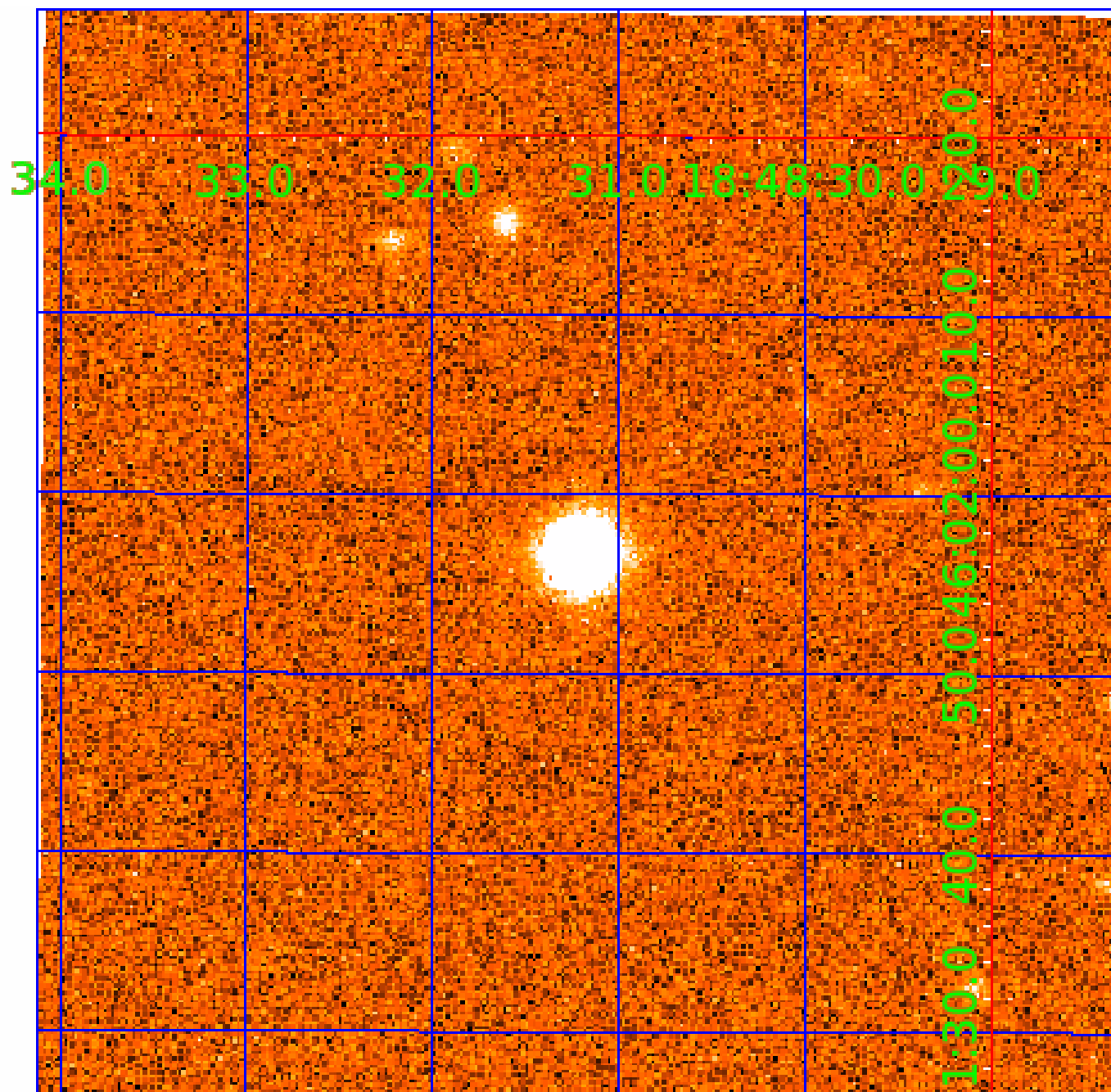


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009446742

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})
009446742-01	OBS	No	576.784489	271.020983	2032.0	14.093	19.7	8.5	2.02	5087	9.37	1.48
009446742-02	OBS	No	340.356830	432.526099	1181.3	9.170	17.3	6.2	2.02	5087	6.84	2.99
009446742-03	OBS	No	471.555815	524.297157	422.4	6.653	17.8	2.2	2.02	5087	4.35	1.94
009446742-04	OBS	No	394.145654	349.790556	1375.2	4.052	17.1	6.0	2.02	5087	8.12	2.46
009446742-05	OBS	No	497.855676	456.087069	1587.4	7.698	14.3	7.7	2.02	5087	7.89	1.80
009446742-06	OBS	No	572.133337	242.065863	5811.6	12.378	15.0	16.3	2.02	5087	28.99	1.50
009446742-07	OBS	No	320.365764	270.634269	558.5	11.538	12.9	2.6	2.02	5087	4.95	3.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009446742-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009446742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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
009446742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS
009446742-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS
009446742-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009446742-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

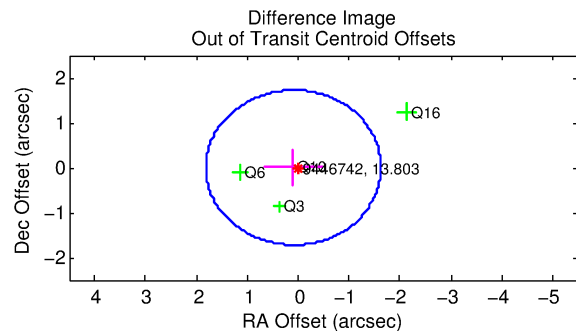
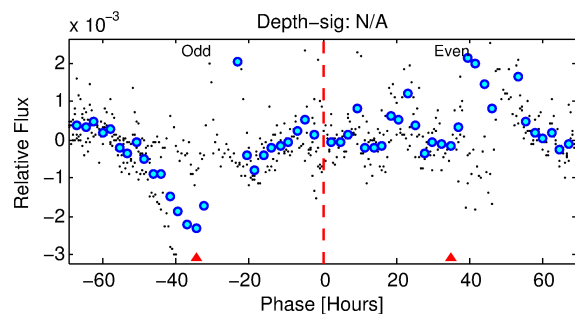
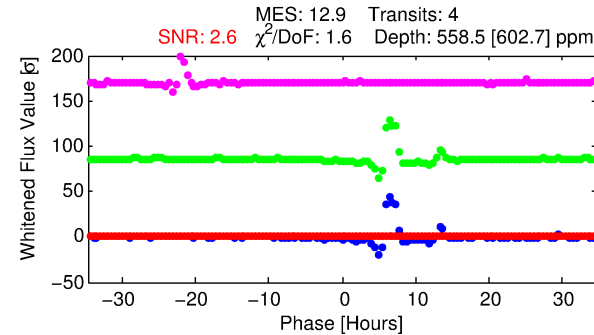
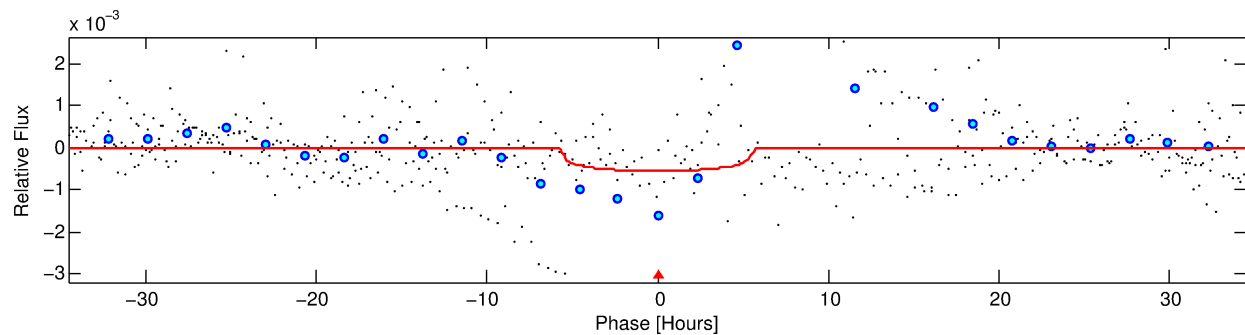
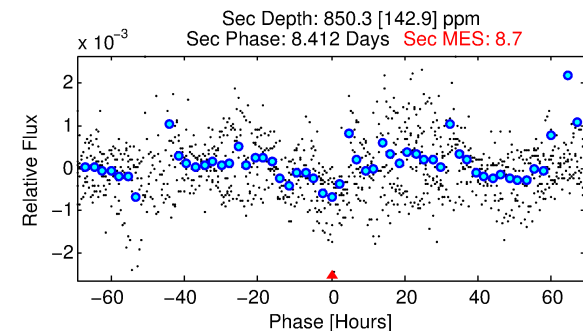
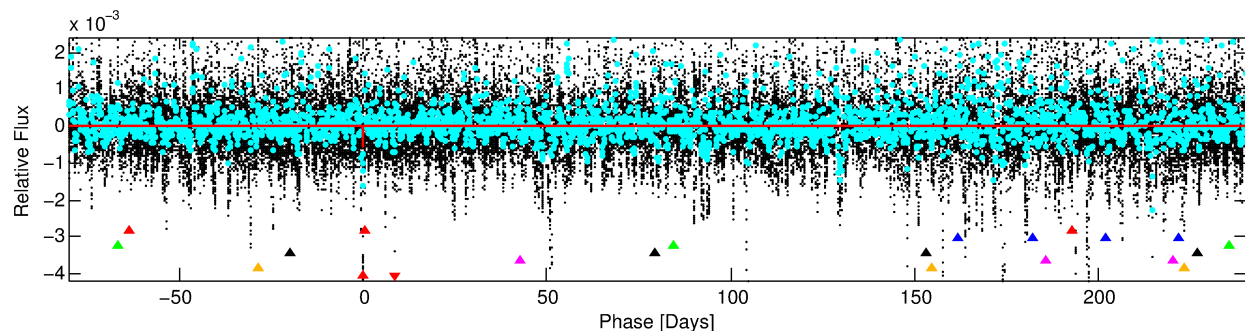
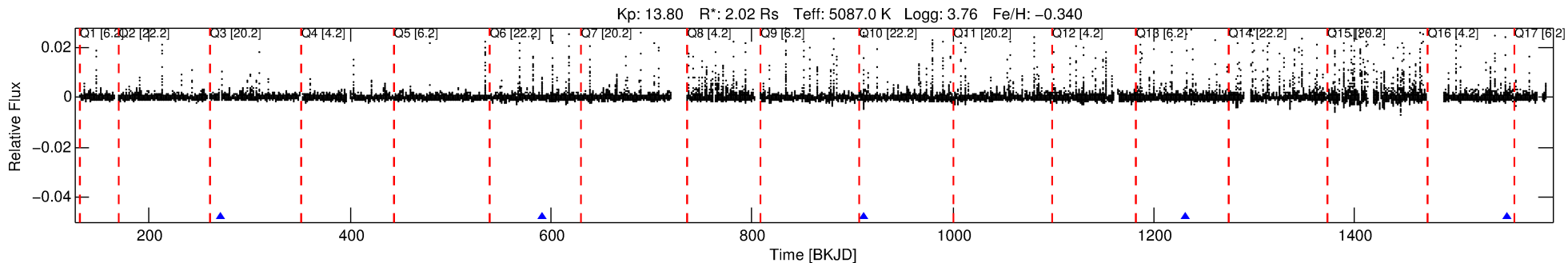
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009446742-07

No Significant Match Found

DV One-Page Summary

KIC: 9446742 Candidate: 7 of 7 Period: 320.366 d



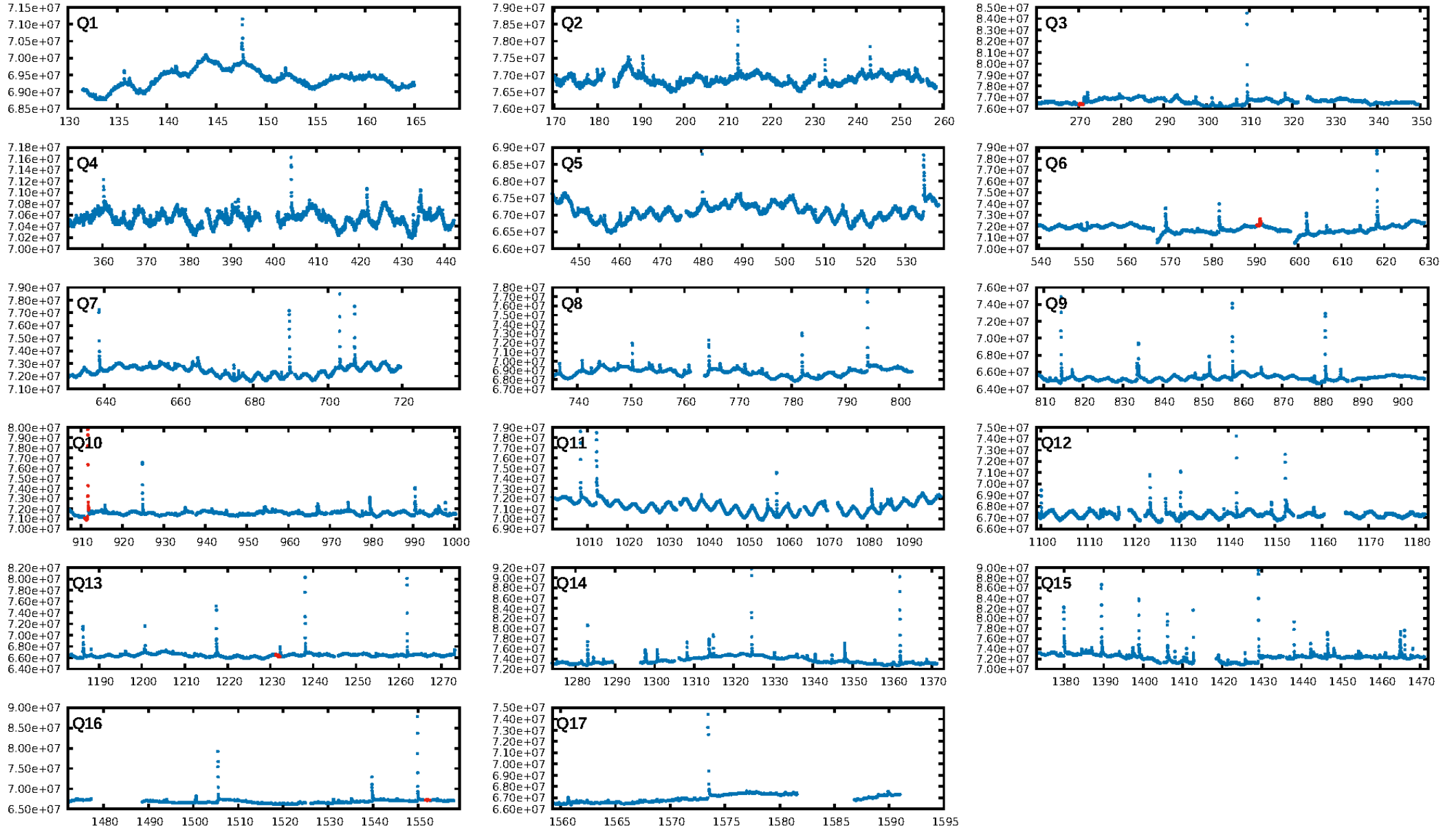
DV Fit Results:

Period = 320.36576 [0.02562] d
Epoch = 270.6343 [0.0732] BKJD
Rp/R* = 0.0224 [0.0445]
a/R* = 175.46 [1214.71]
b = 0.60 [7.39]
Seff = 3.24 [4.37]
Teq = 342 [115] K
Rp = 4.95 [10.30] Re
a = 0.8708 [0.6657] AU
Ag = 14486.96 [60784.43] [0.24σ]
Teffp = 5803 [5768] K [0.95σ]

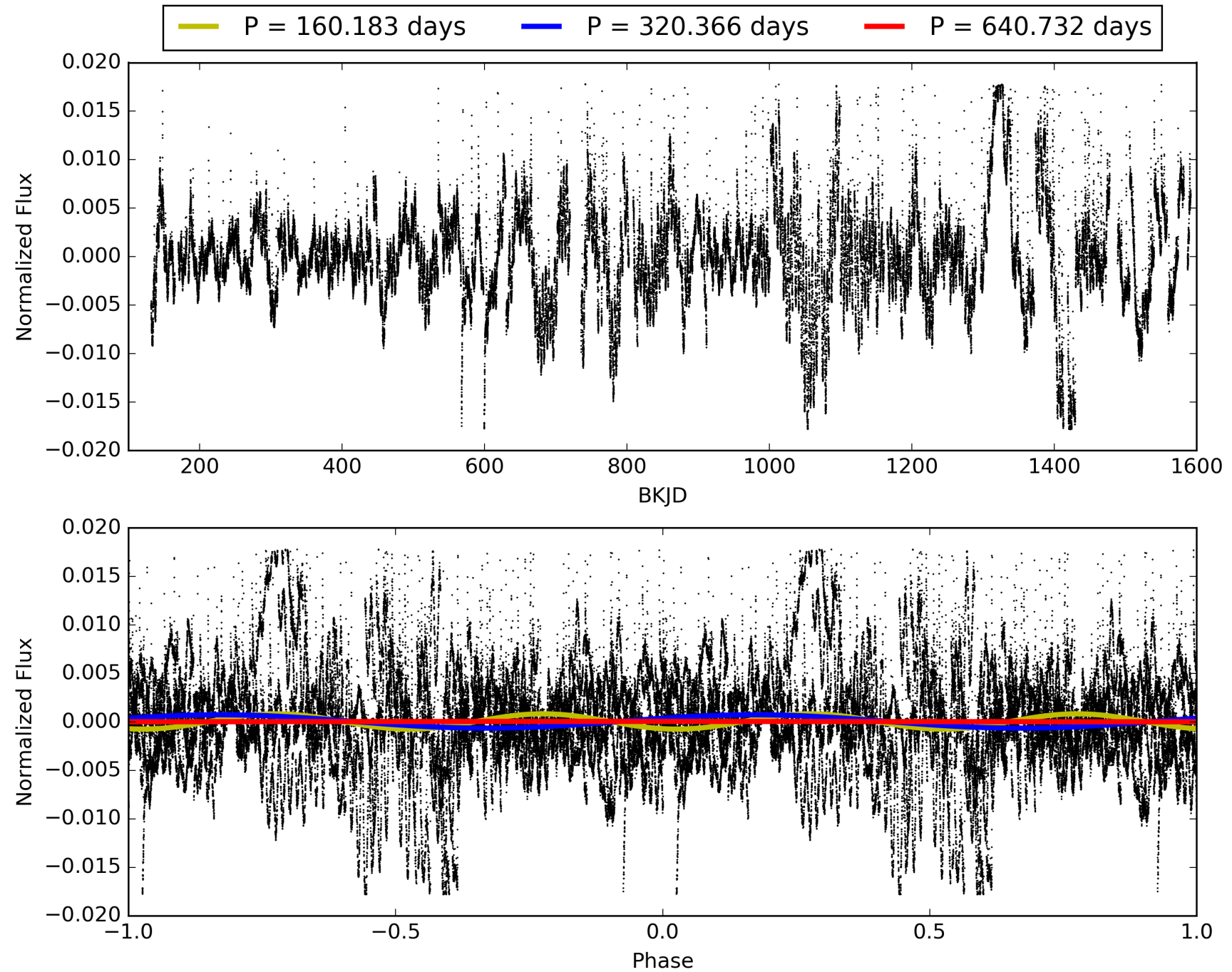
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [32.55σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 73.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.8263
Centroid-sig: 2.2%
Centroid-so: 1.323 arcsec [2.03σ]
OotOffset-rm: 0.092 arcsec [0.16σ]
KicOffset-rm: 0.217 arcsec [0.73σ]
OotOffset-st: 2/1/1/0 [4]
KicOffset-st: 2/1/1/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.75 [3/4]

TCE 009446742-07, PDC Light Curves

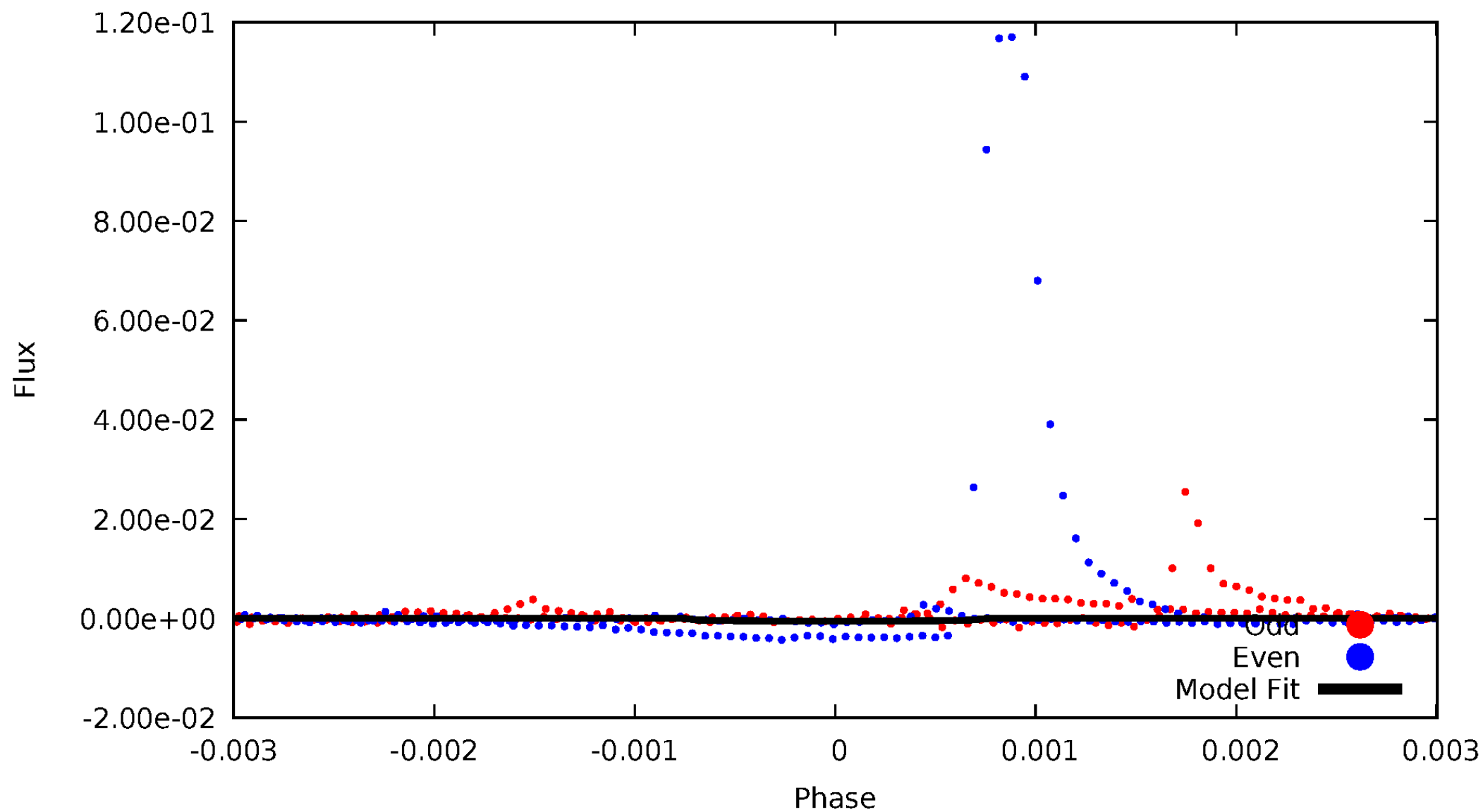


TCE 009446742-07



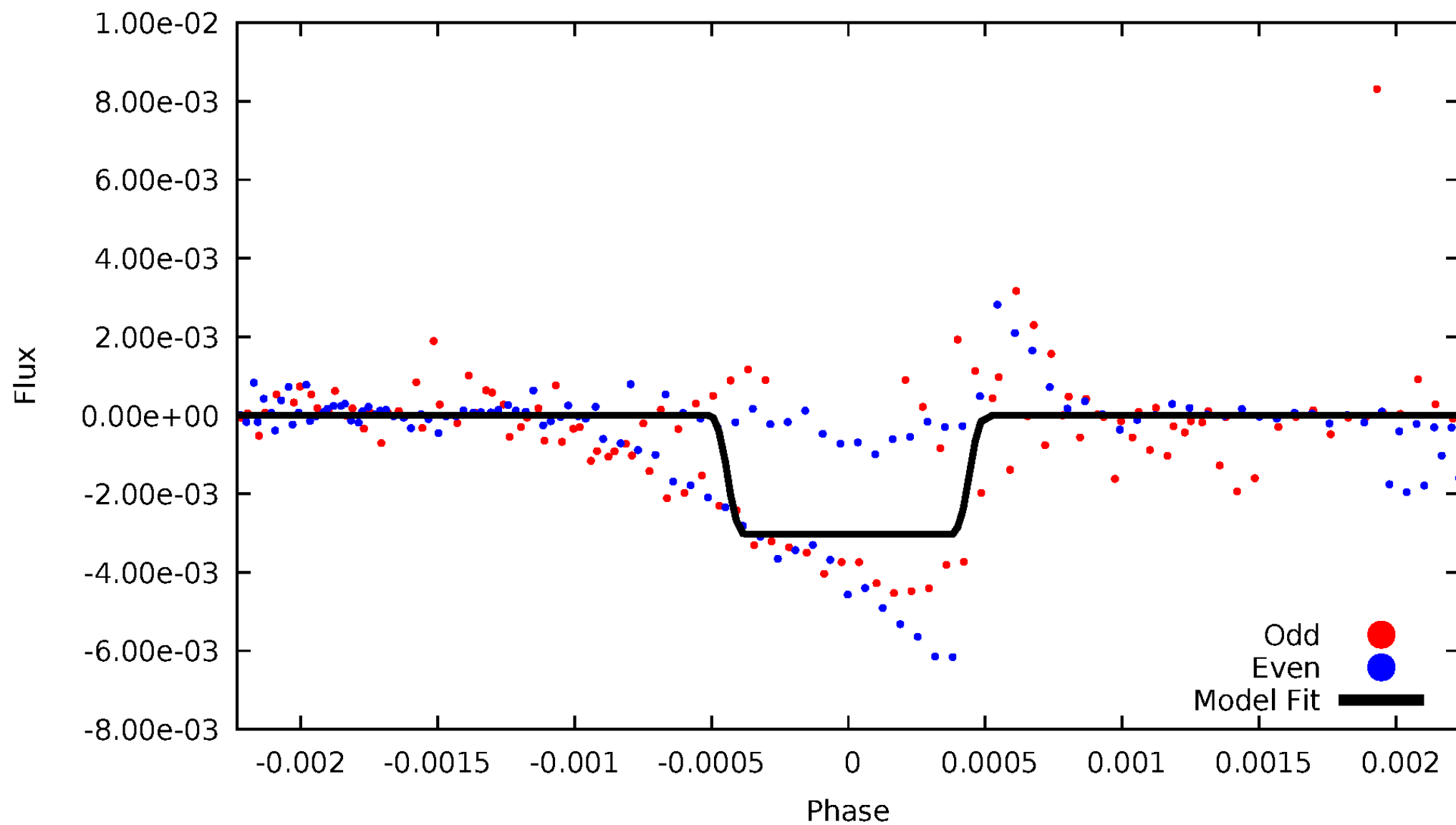
DV Odd/Even

TCE 009446742-07



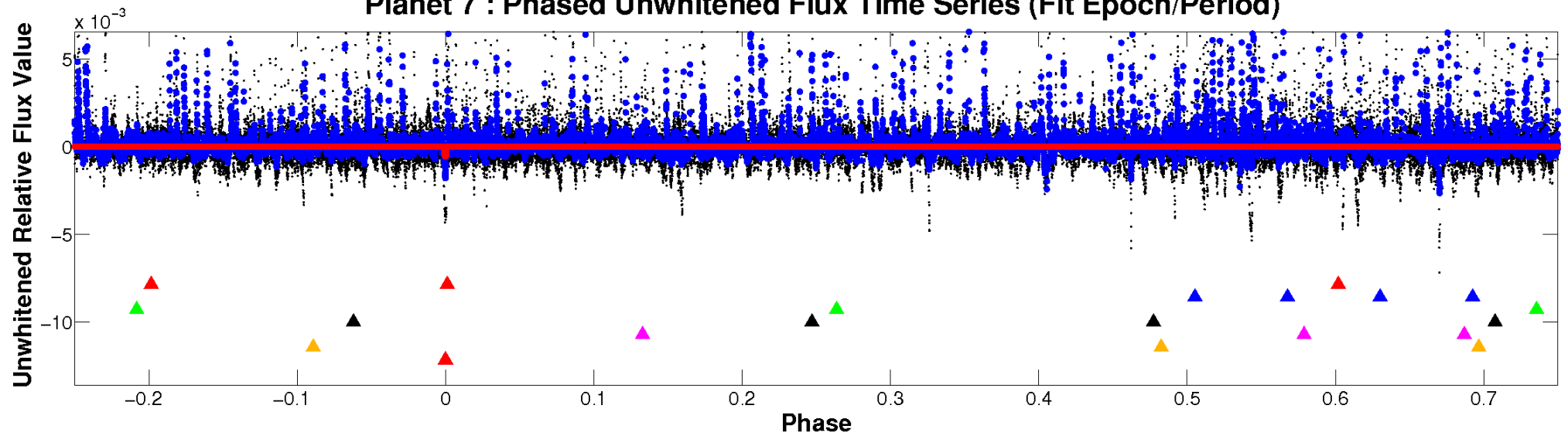
ALT Odd/Even

TCE 009446742-07

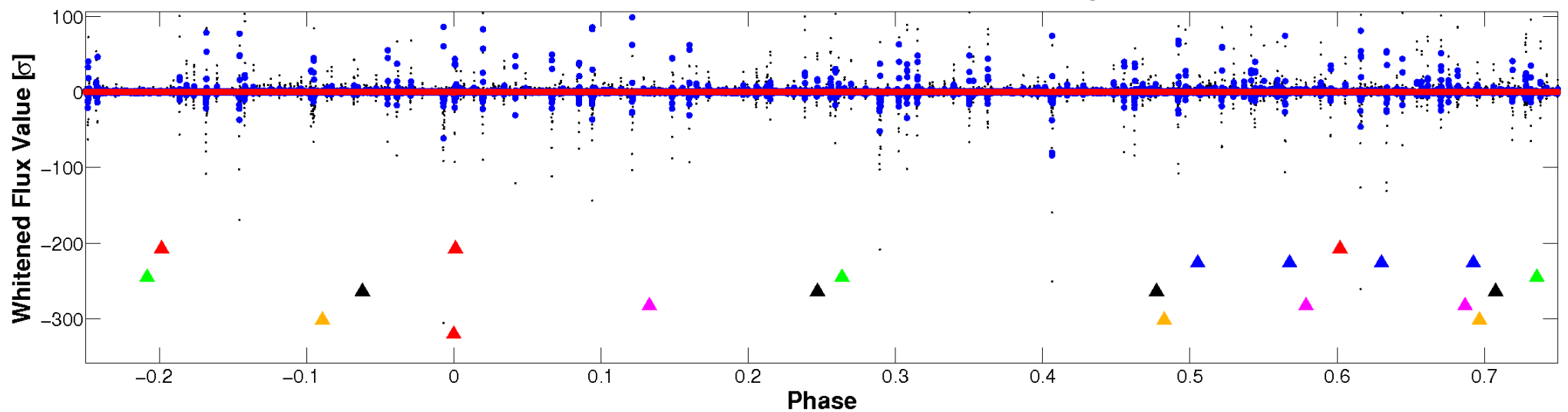


Non-Whitened Vs. Whitened Light Curve

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

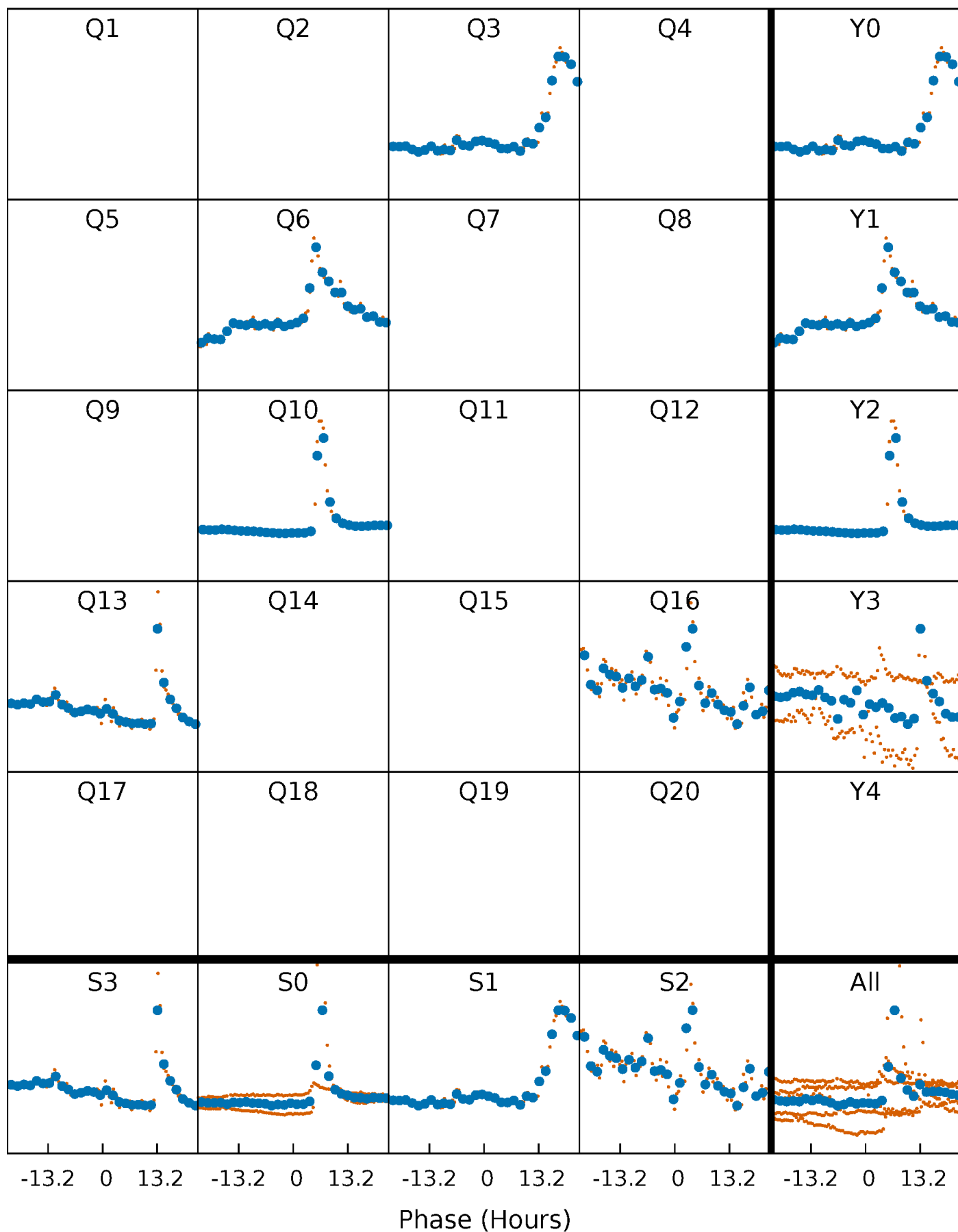


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



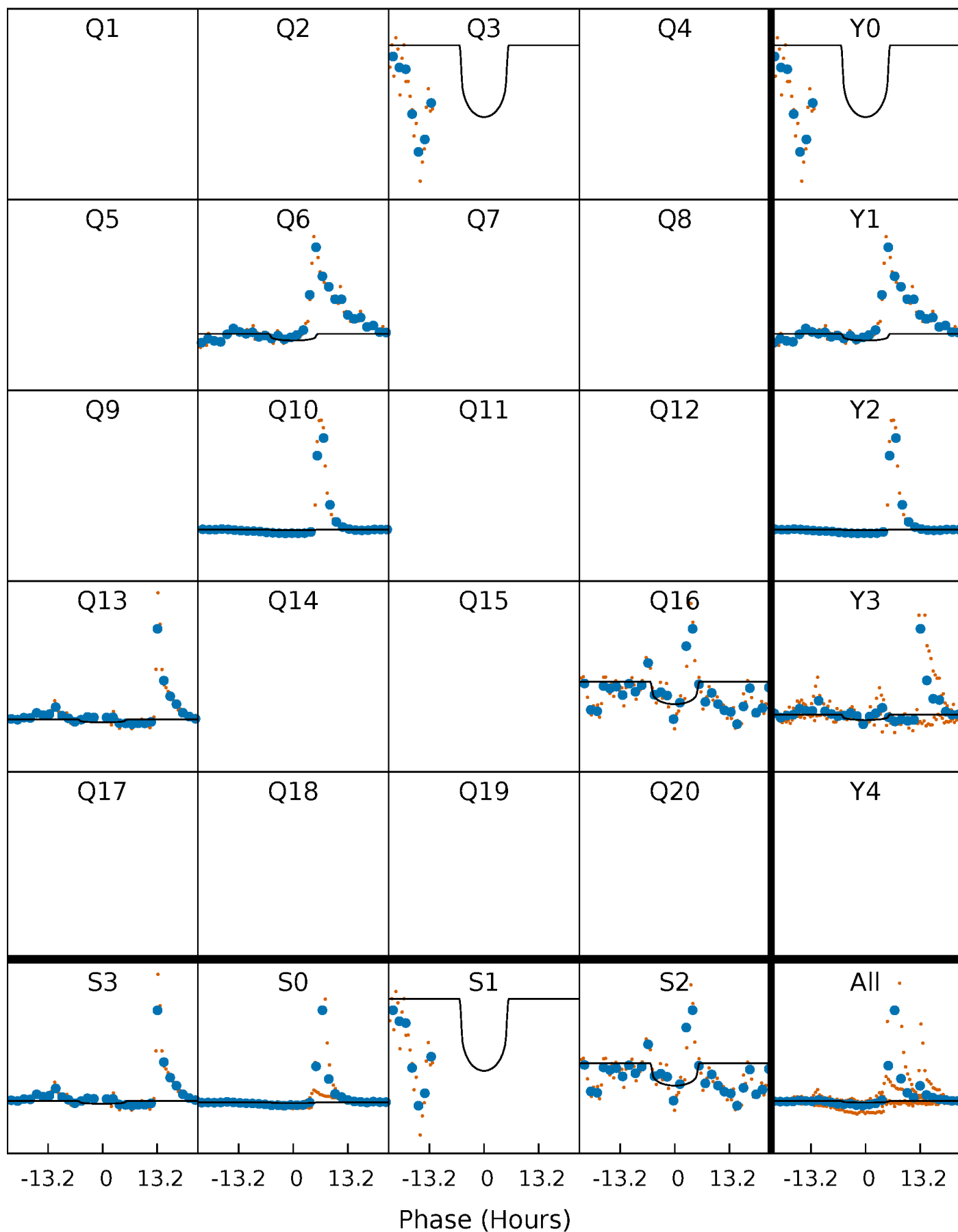
PDC Quarter-Phased Transit Curves

TCE 009446742-07 P=320.365764 Days $T_0=270.634270$ (BKJD)



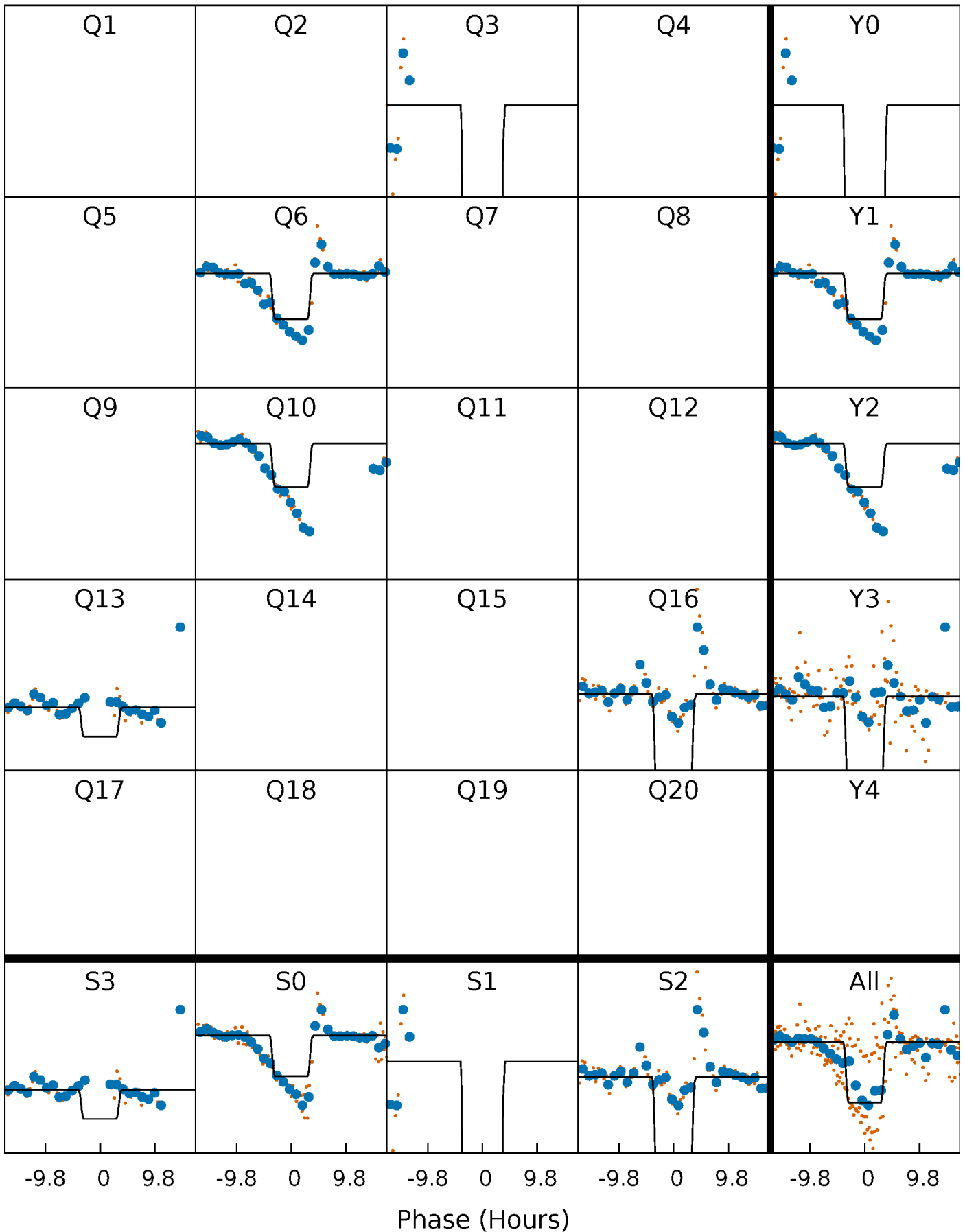
DV Quarter-Phased Transit Curves

TCE 009446742-07 $P=320.365764$ Days $T_0=270.634270$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

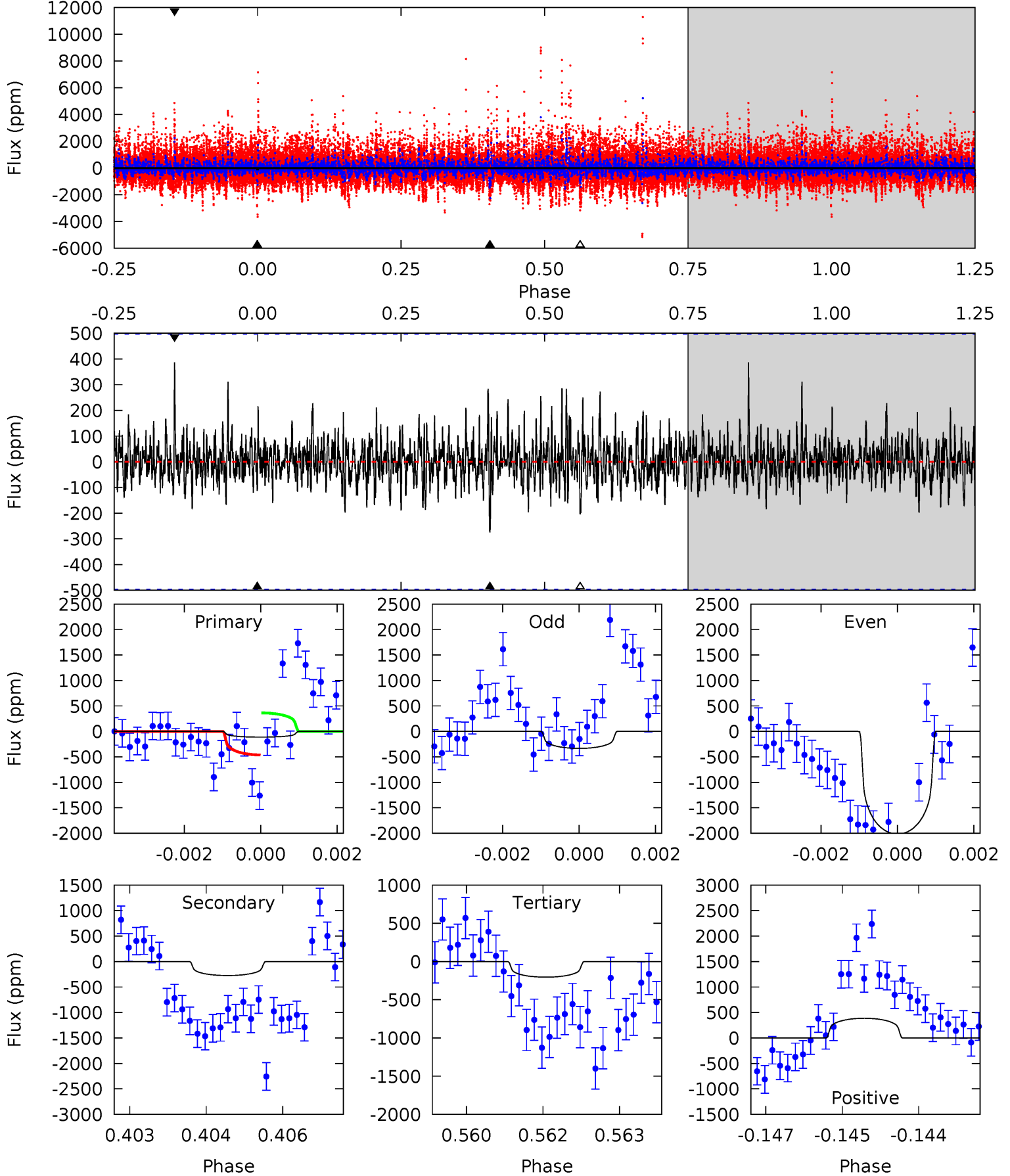
TCE 009446742-07 $P=320.350543$ Days $T_0=270.661565$ (BKJD)



DV Model-Shift Uniqueness Test

009446742-07, P = 320.365764 Days, E = 270.634270 Days

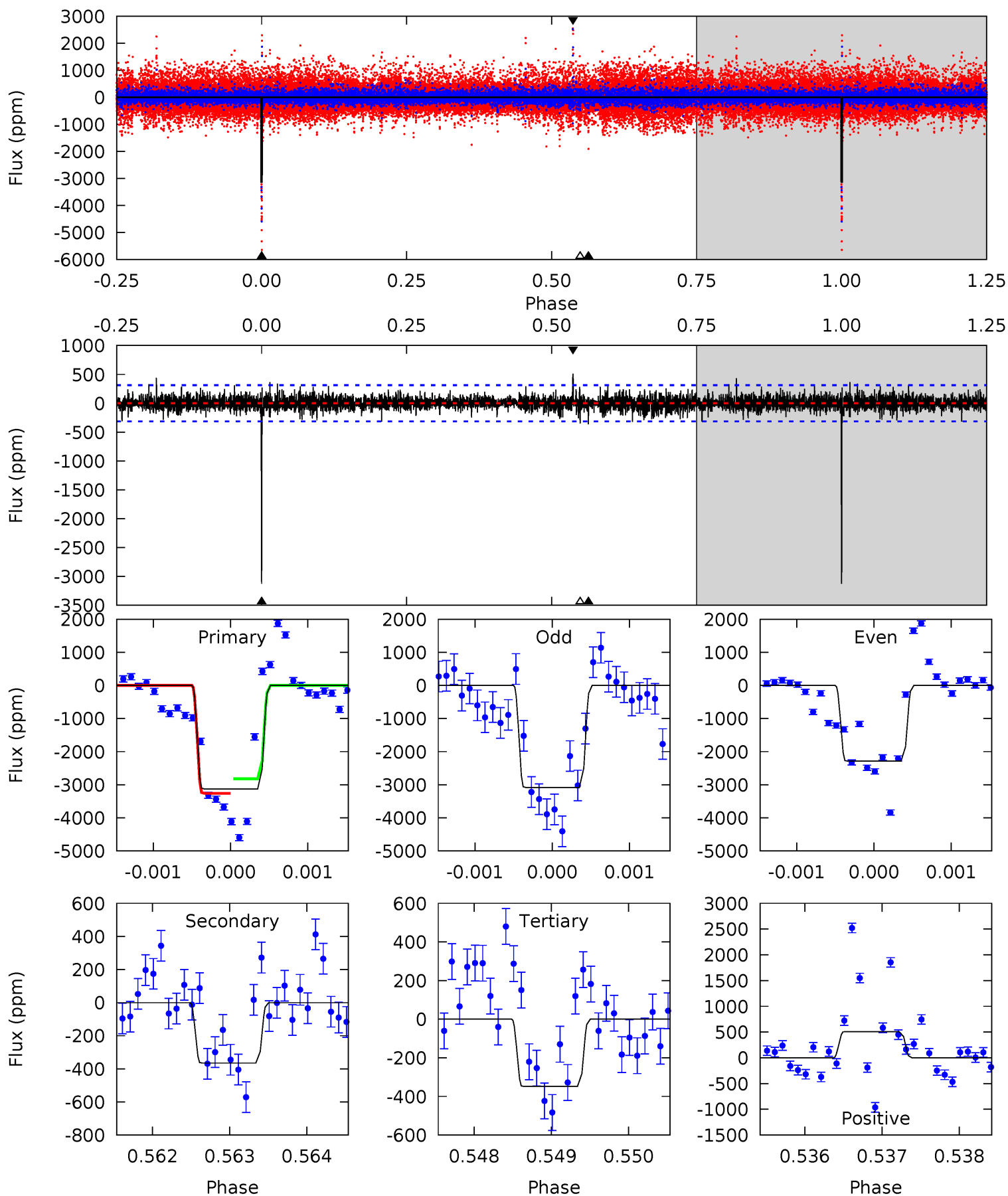
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.21	2.96	2.21	4.17	5.37	3.16	0.76	-0.99	-2.96	0.76	-1.21	5.58	-441.0	0.58	0.53



Alt Model-Shift Uniqueness Test

009446742-07, P = 320.350543 Days, E = 270.661565 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.3	6.34	6.05	8.81	5.45	3.28	1.41	48.2	45.5	0.29	-2.47	6.18	0.93	0.14	3.77



Stellar Parameters For KIC 009446742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5087^{+136}_{-136}	$3.759^{+0.833}_{-0.357}$	$-0.340^{+0.300}_{-0.250}$	$2.024^{+1.272}_{-1.272}$	$0.857^{+0.228}_{-0.171}$	$0.146^{+3.412}_{-0.104}$
	+3%/-3%	+22%/-9%	+88%/-74%	+63%/-63%	+27%/-20%	+2343%/-71%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009446742-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-275 ± 93	$7.45^{+10.10}_{-5.21}$	469^{+81}_{-91}	3708^{+2132}_{-780}	2100^{+19071}_{-1748}
Alt.	-365 ± 58	$12.35^{+11.42}_{-8.03}$	476^{+78}_{-89}	3341^{+1314}_{-450}	1014^{+7630}_{-738}

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 $A_{obs} \gg 1.0$

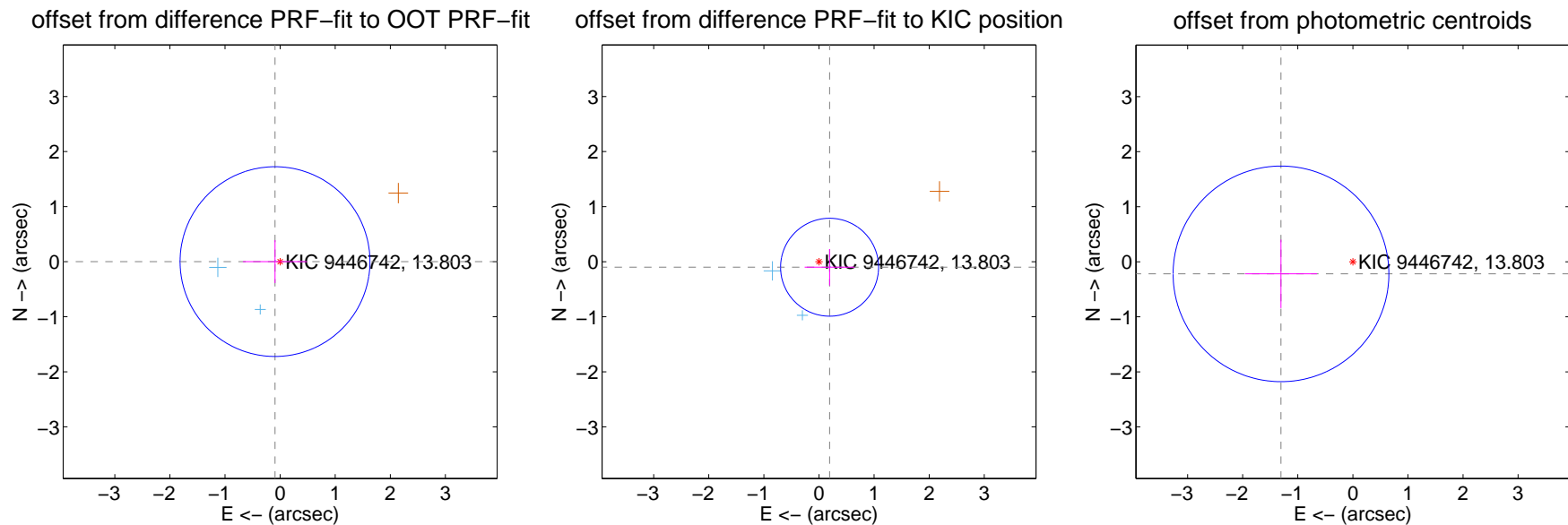
DV Centroid Data

Supplemental centroid analysis for 009446742-07. Kepler magnitude: 13.80. Transit SNR 2.58

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.092 ± 0.574	0.16	0.092 ± 0.581	0.002 ± 0.390
PRF-fit source offset from KIC position	0.217 ± 0.296	0.73	-0.192 ± 0.453	-0.100 ± 0.331
photometric centroid source offset	1.32 ± 0.65	2.03	1.30 ± 0.65	-0.22 ± 0.62



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



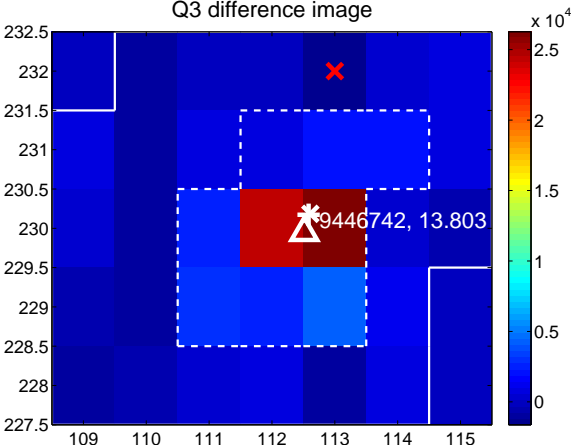
Q2 no difference image



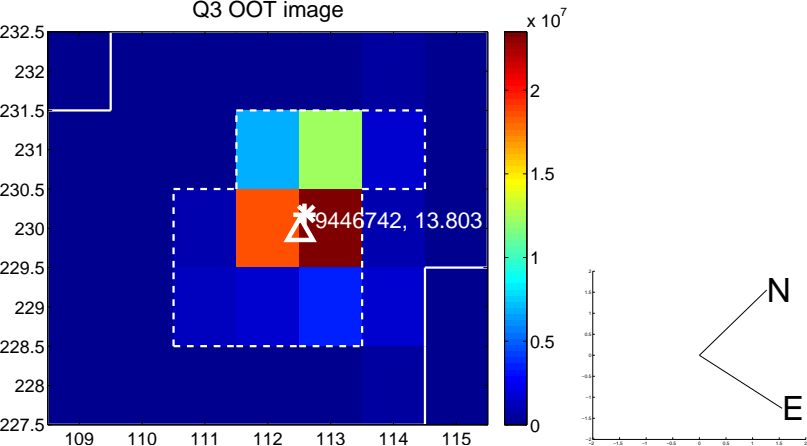
Q2 no OOT image



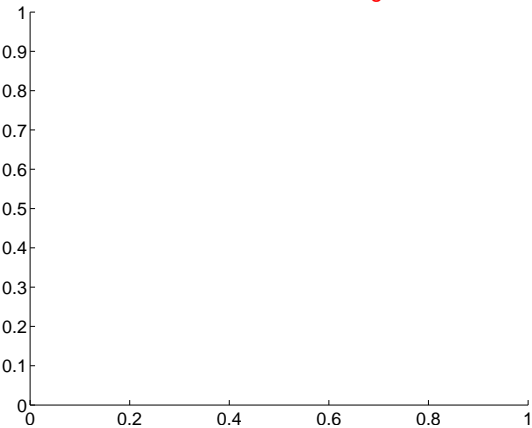
Q3 difference image



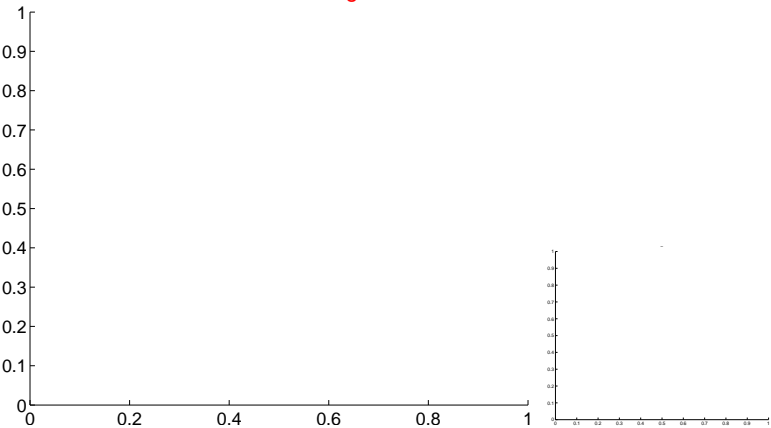
Q3 OOT image



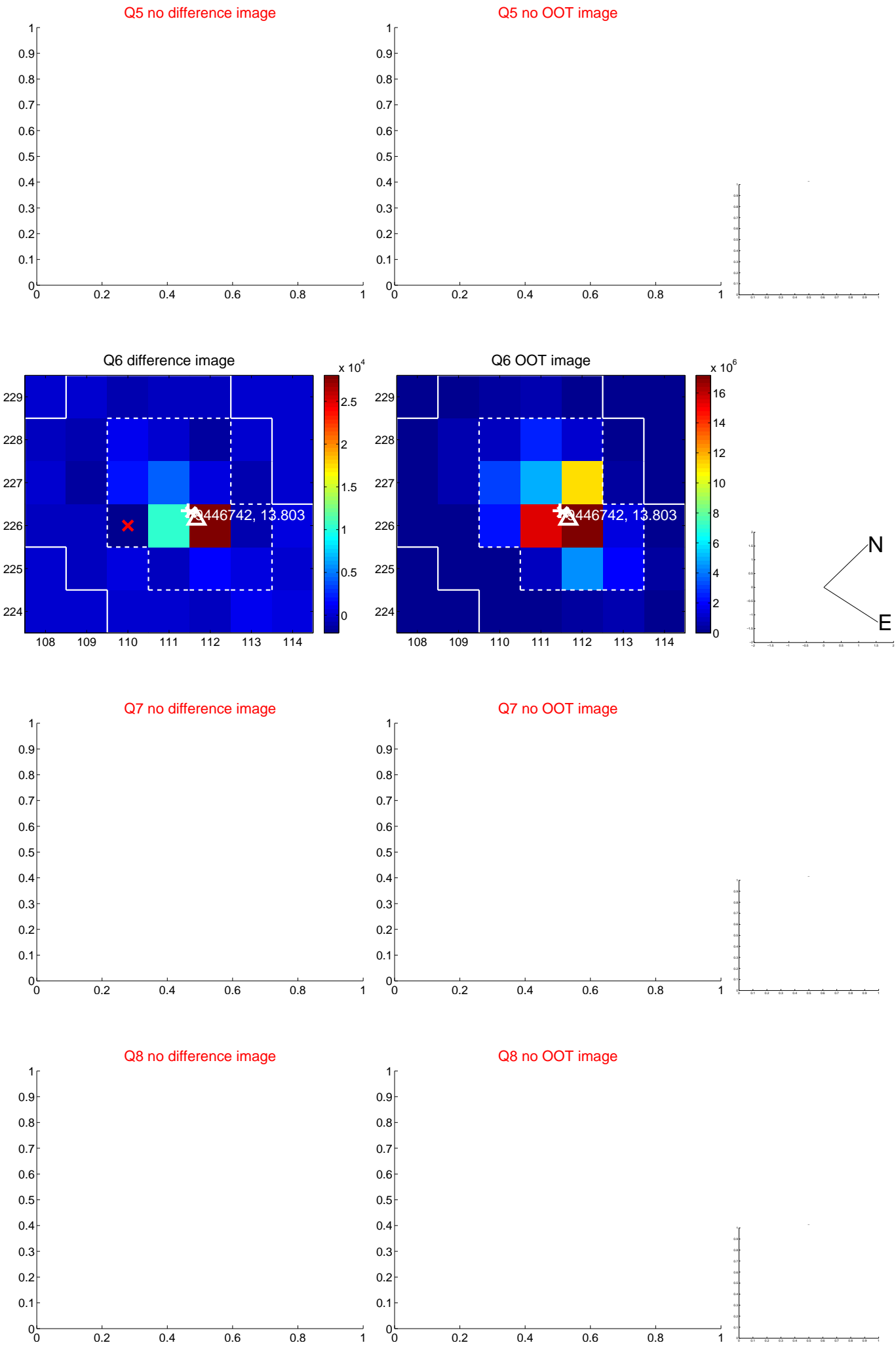
Q4 no difference image



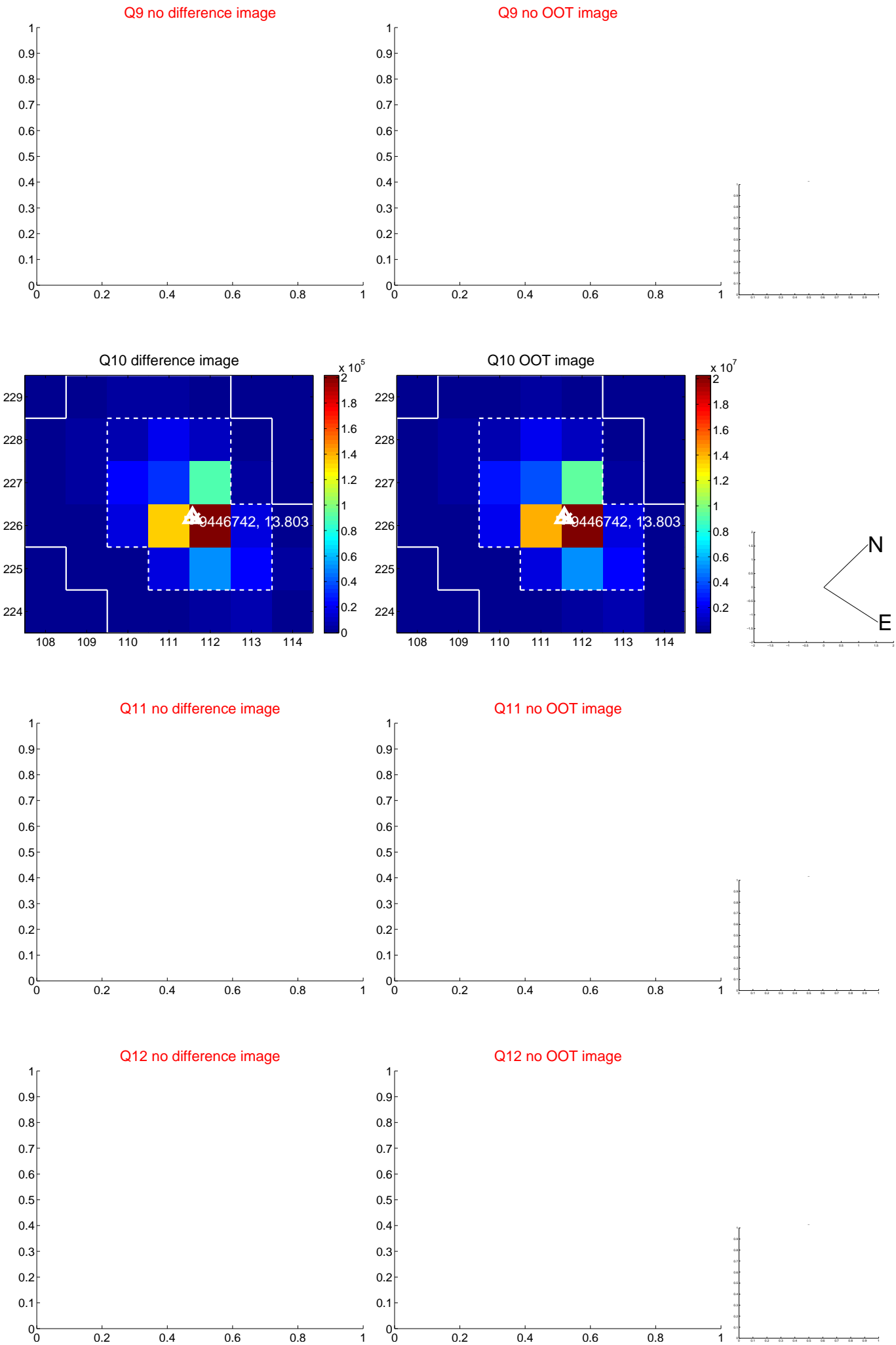
Q4 no OOT image



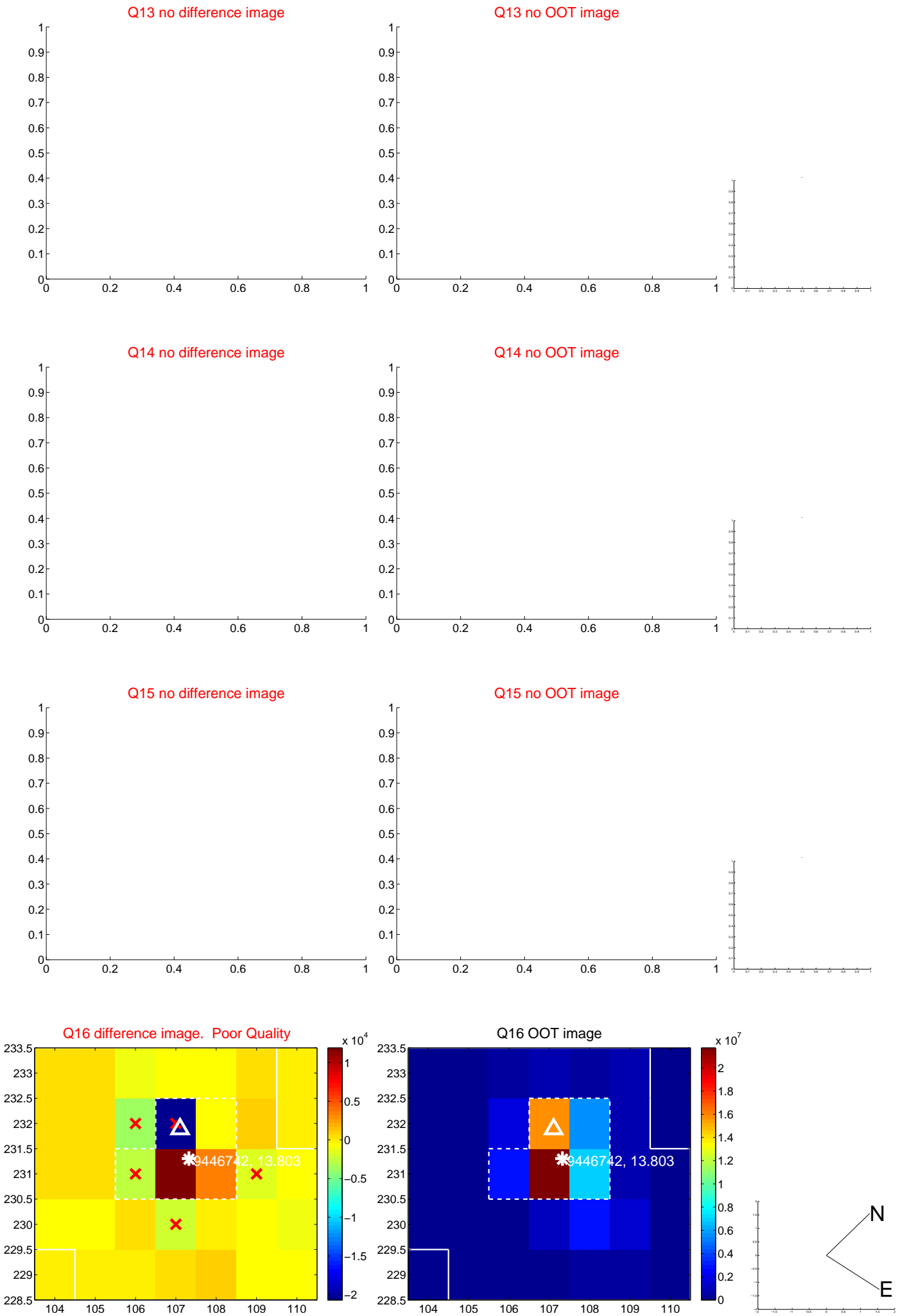
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



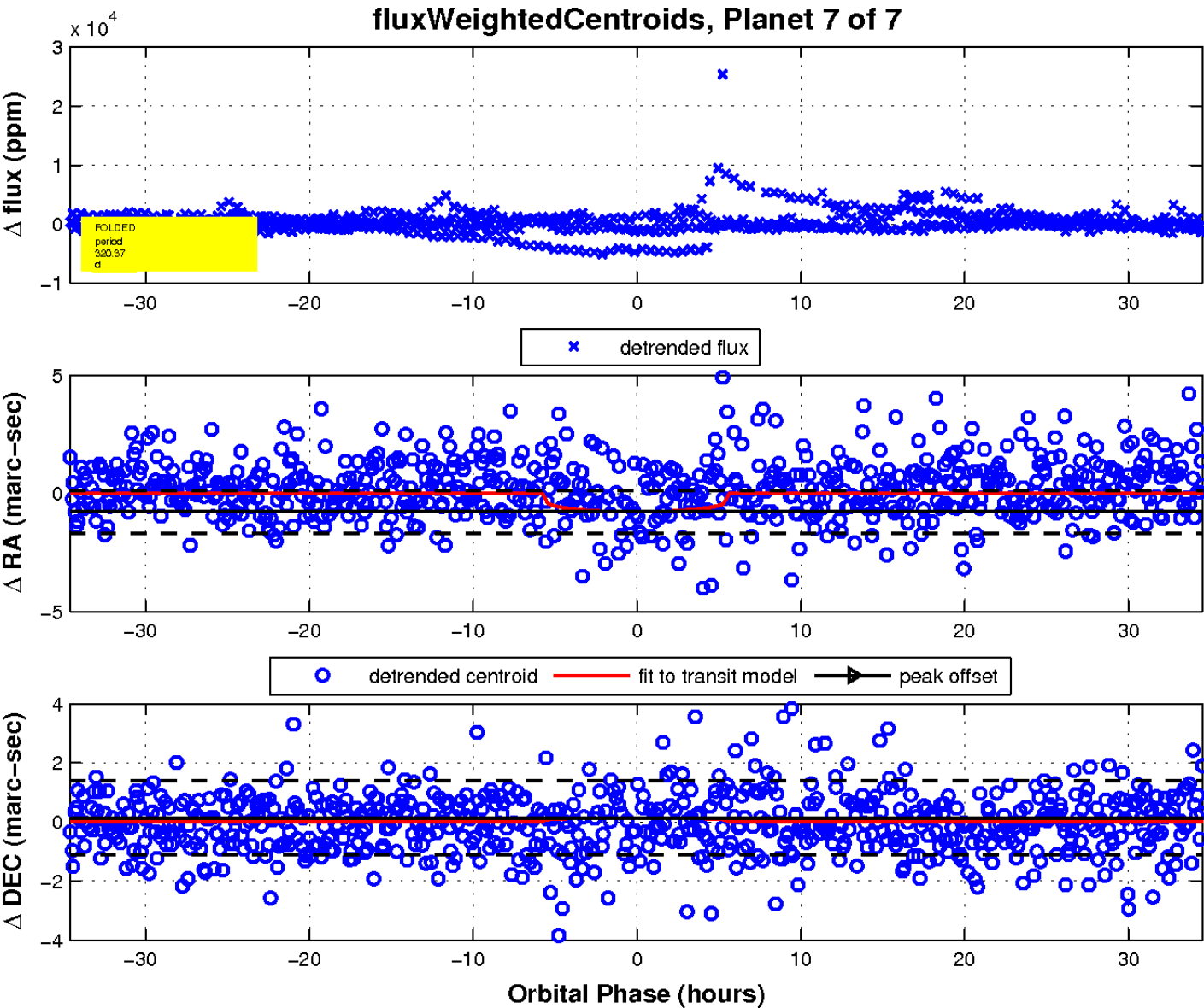
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

