

KIC 007211157

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})
007211157-01	OBS	No	560.826792	145.363128	6310.2	12.547	17.1	8.3	0.68	5220	6.64	0.23
007211157-02	OBS	No	573.275834	196.411121	3293.5	3.311	15.0	8.7	0.68	5220	3.93	0.22
007211157-03	OBS	No	382.537278	195.176026	2898.6	14.193	13.5	5.1	0.68	5220	4.04	0.38
007211157-04	OBS	No	309.782626	439.477226	1134.3	5.136	15.6	3.6	0.68	5220	2.41	0.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007211157-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007211157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007211157-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
007211157-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST

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

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

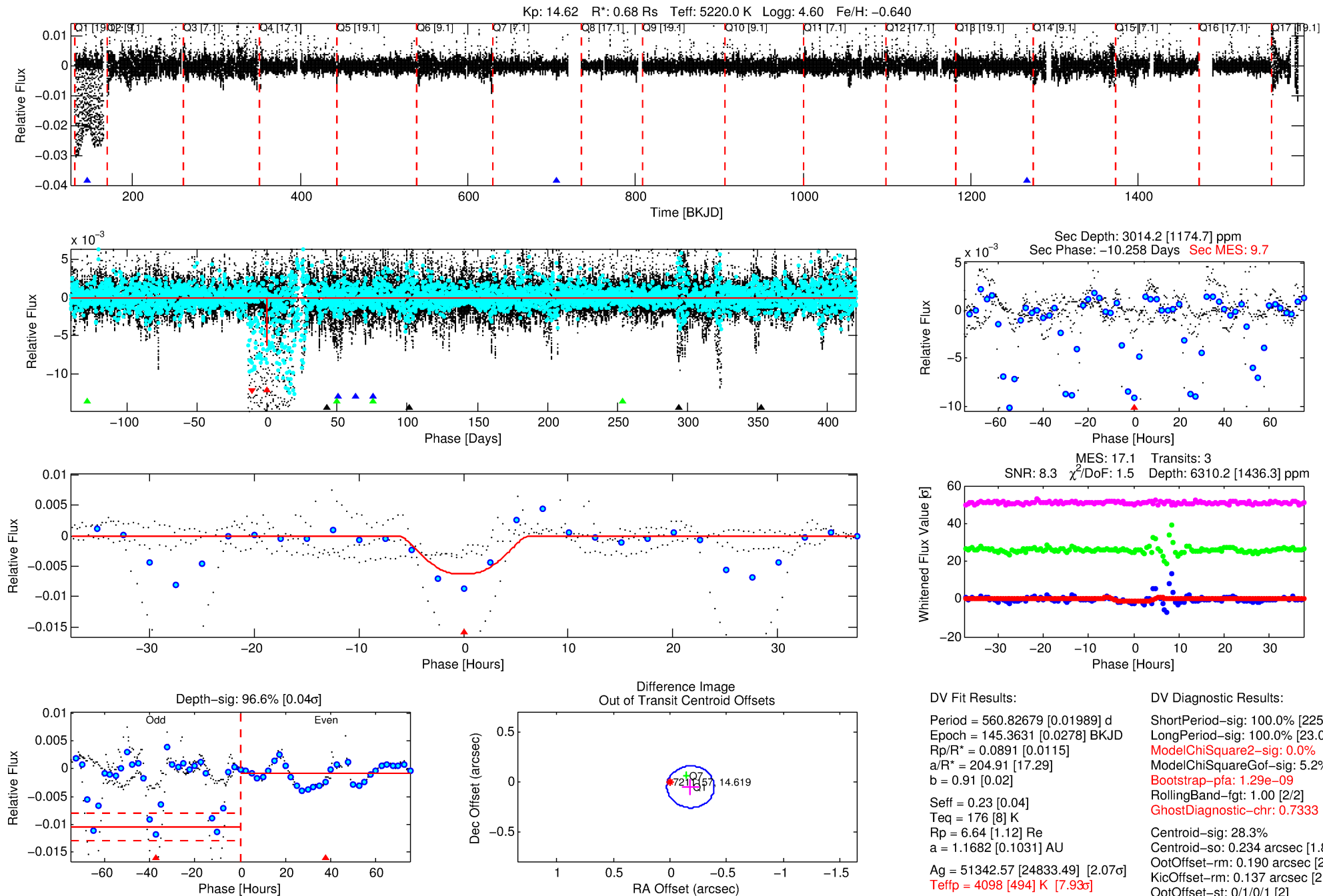
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007211157-01

No Significant Match Found

DV One-Page Summary

KIC: 7211157 Candidate: 1 of 4 Period: 560.827 d



DV Fit Results:

Period = 560.82679 [0.01989] d
Epoch = 145.3631 [0.0278] BKJD
Rp/R* = 0.0891 [0.0115]
a/R* = 204.91 [17.29]
b = 0.91 [0.02]
Seff = 0.23 [0.04]
Teq = 176 [8] K
Rp = 6.64 [1.12] Re
a = 1.1682 [0.1031] AU
Ag = 51342.57 [24833.49] [2.07σ]
Teff = 4098 [494] K [7.93σ]

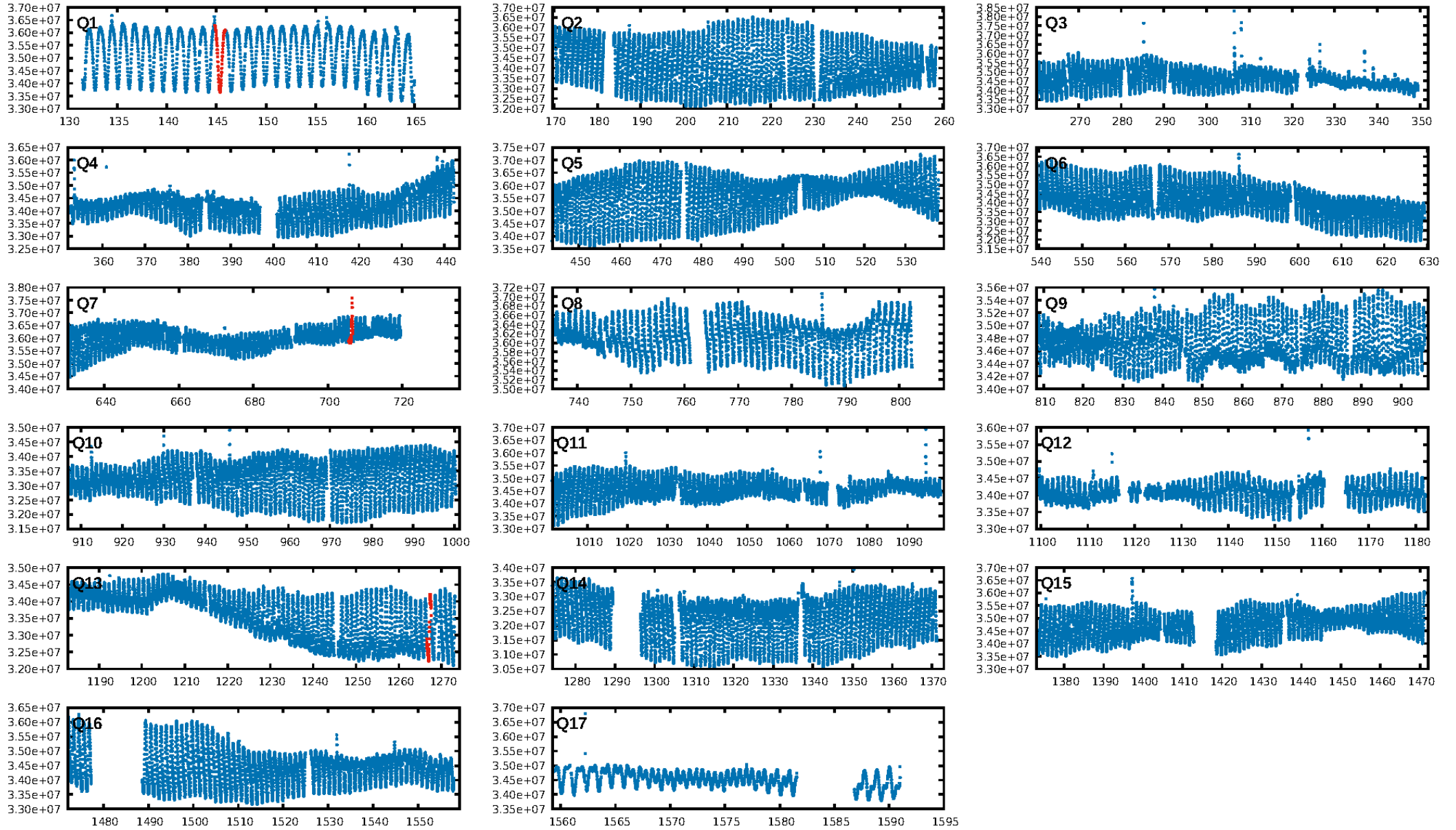
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [225.88σ]
LongPeriod-sig: 100.0% [23.03σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 5.2%
Bootstrap-pfa: 1.29e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.7333
Centroid-sig: 28.3%
Centroid-so: 0.234 arcsec [1.83σ]
OotOffset-rm: 0.190 arcsec [2.72σ]
KicOffset-rm: 0.137 arcsec [2.02σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

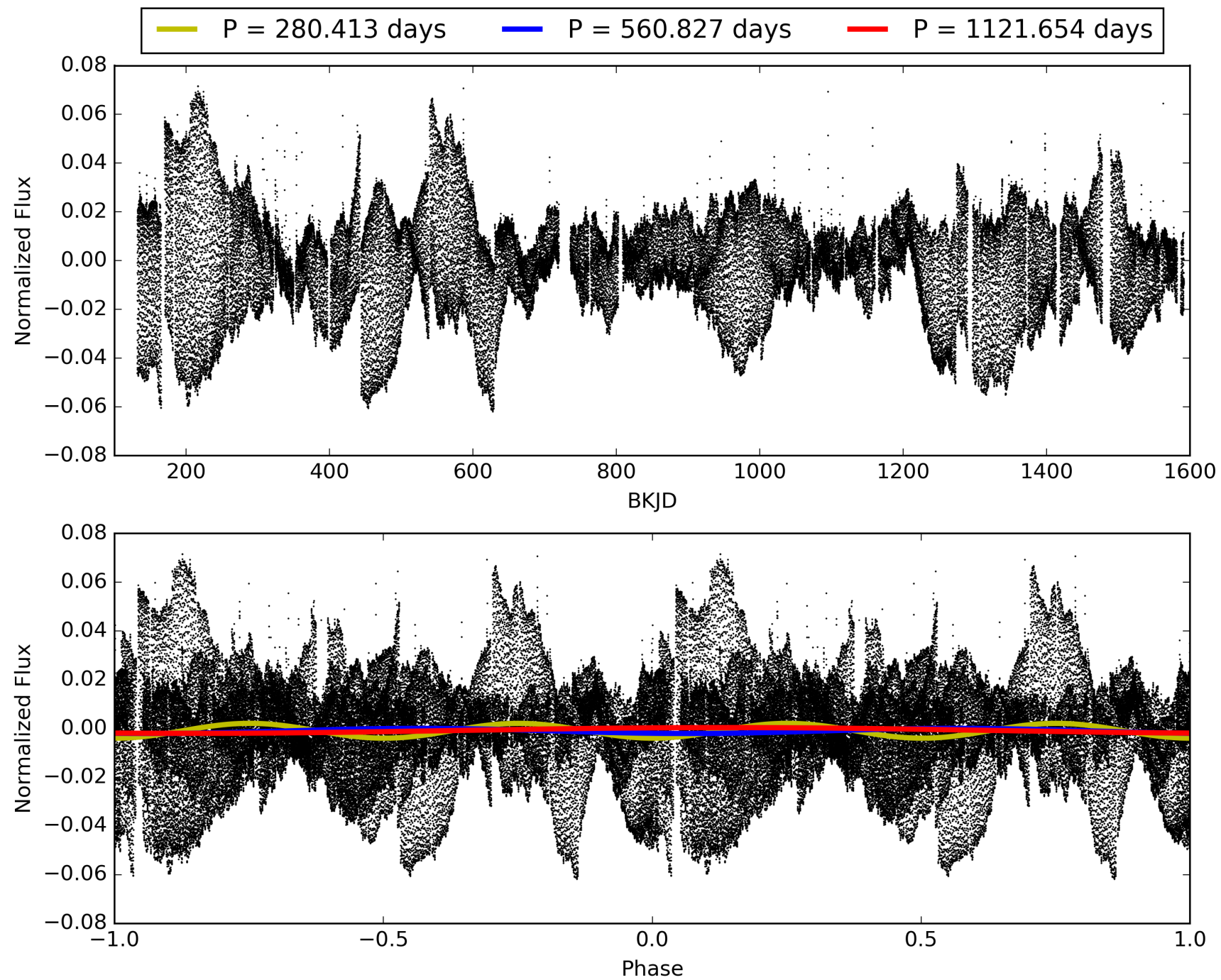
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:36:18 Z

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

TCE 007211157-01, PDC Light Curves

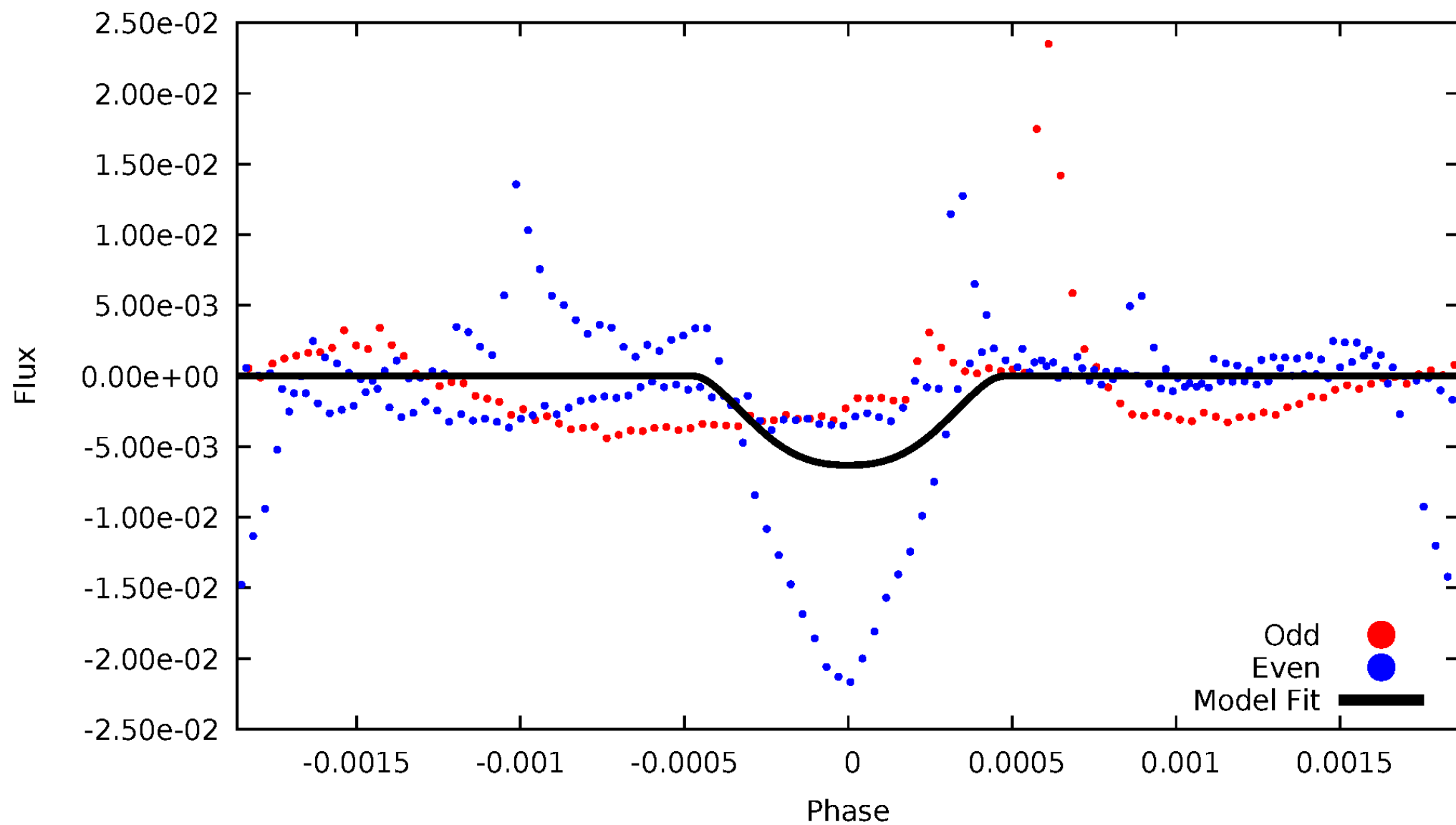


TCE 007211157-01



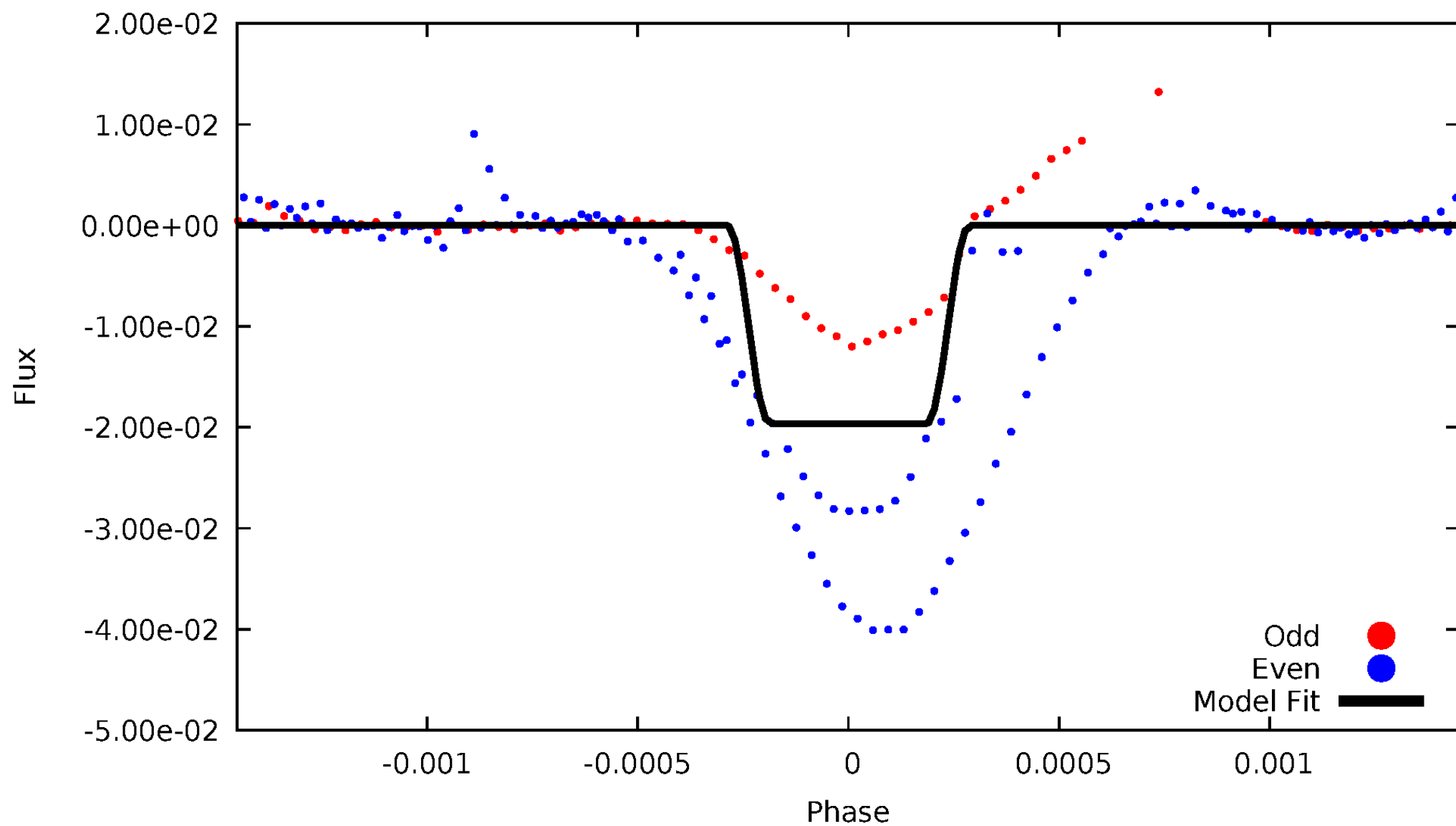
DV Odd/Even

TCE 007211157-01



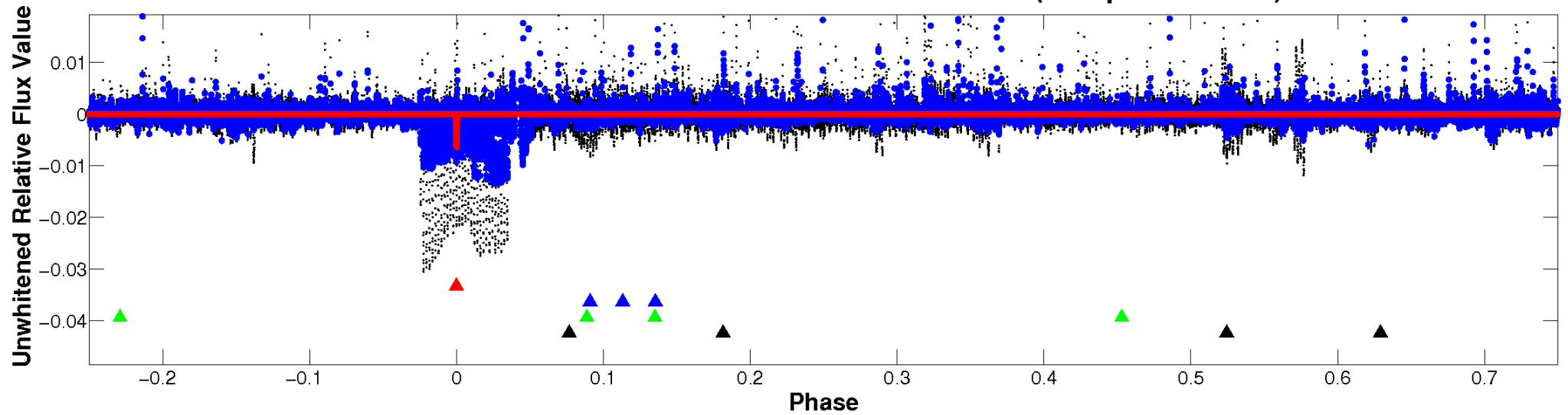
ALT Odd/Even

TCE 007211157-01

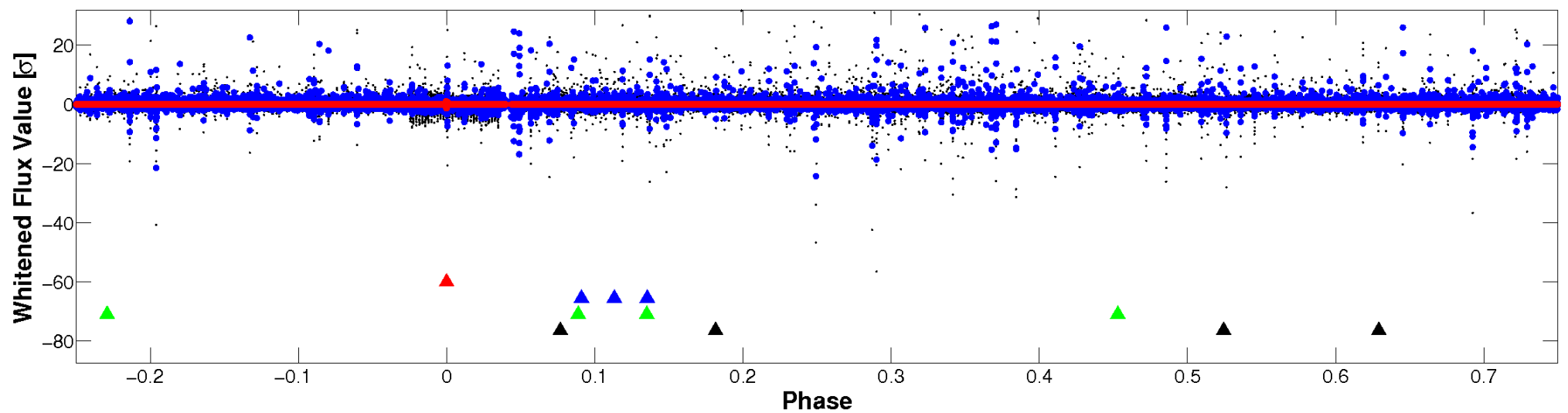


Non-Whitened Vs. Whitened Light Curve

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

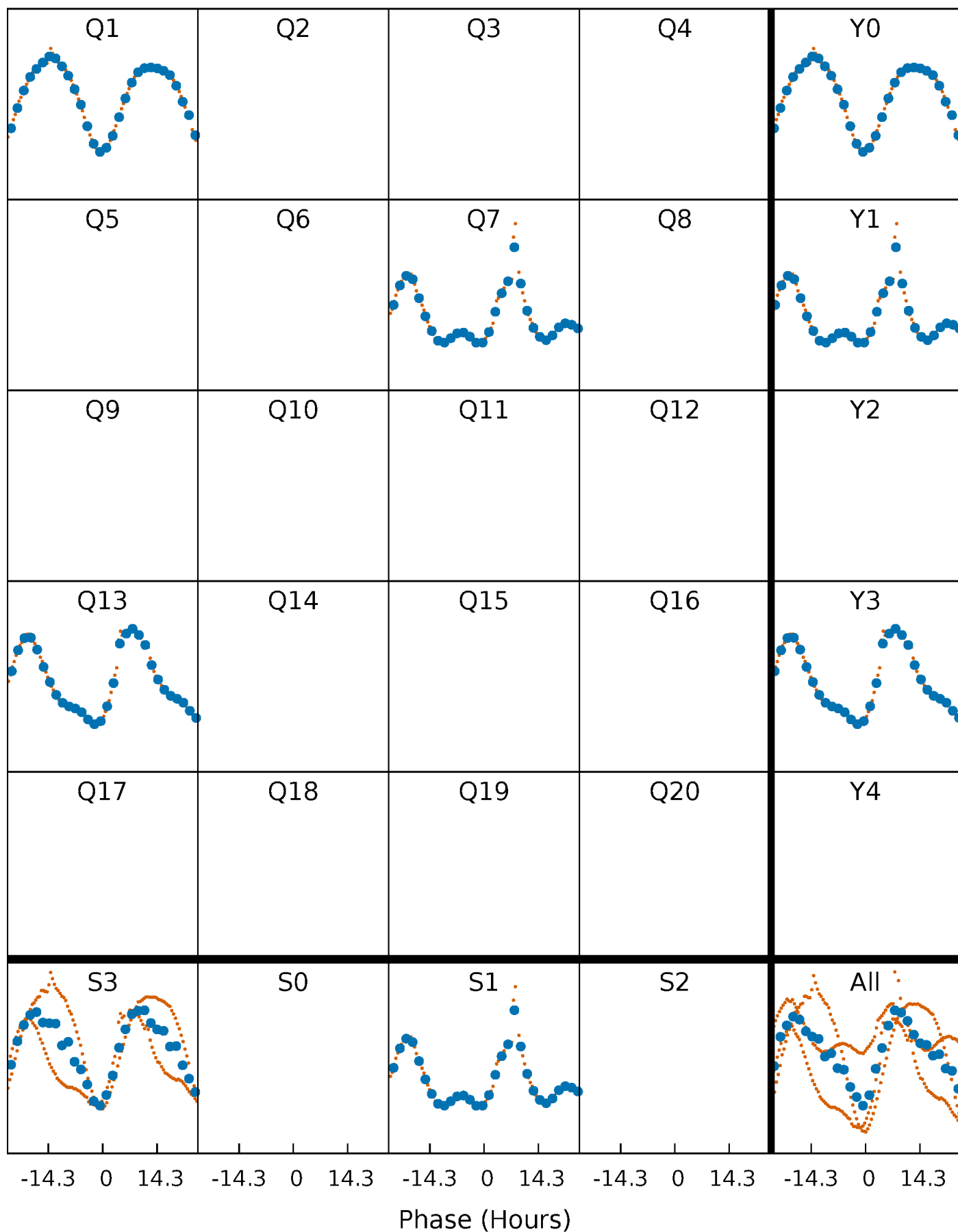


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



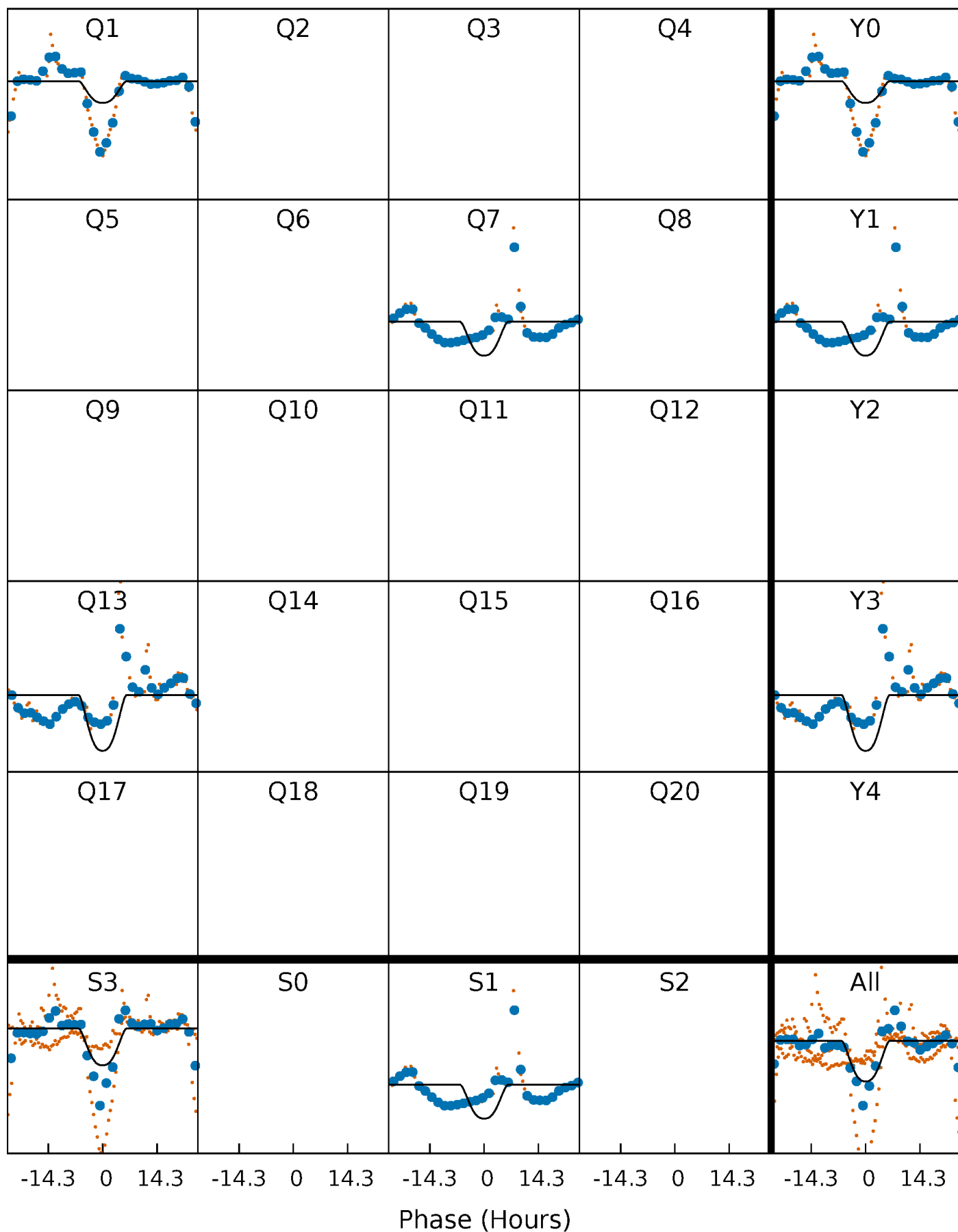
PDC Quarter-Phased Transit Curves

TCE 007211157-01 P=560.826792 Days $T_0=145.363128$ (BKJD)



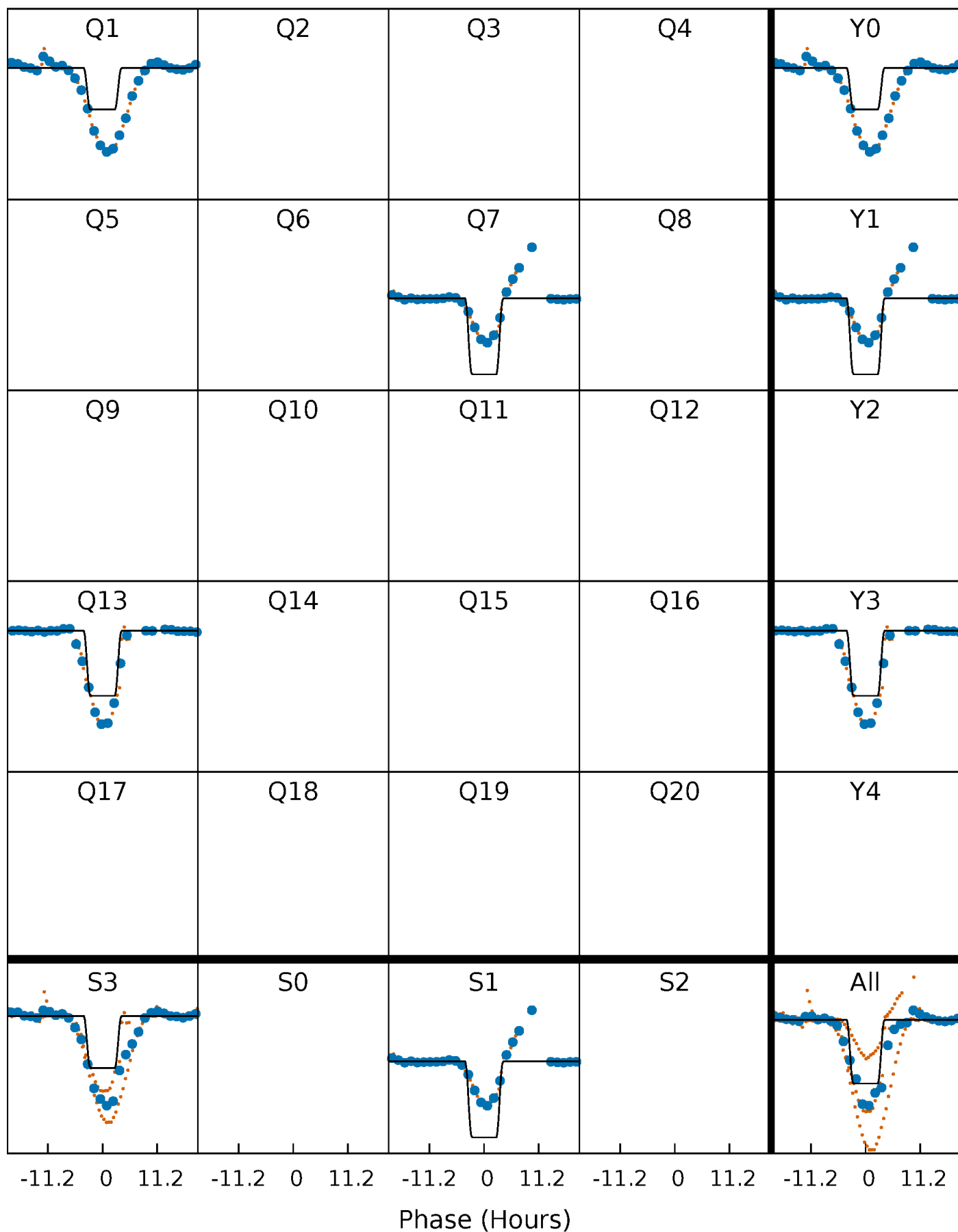
DV Quarter-Phased Transit Curves

TCE 007211157-01 P=560.826792 Days $T_0=145.363128$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

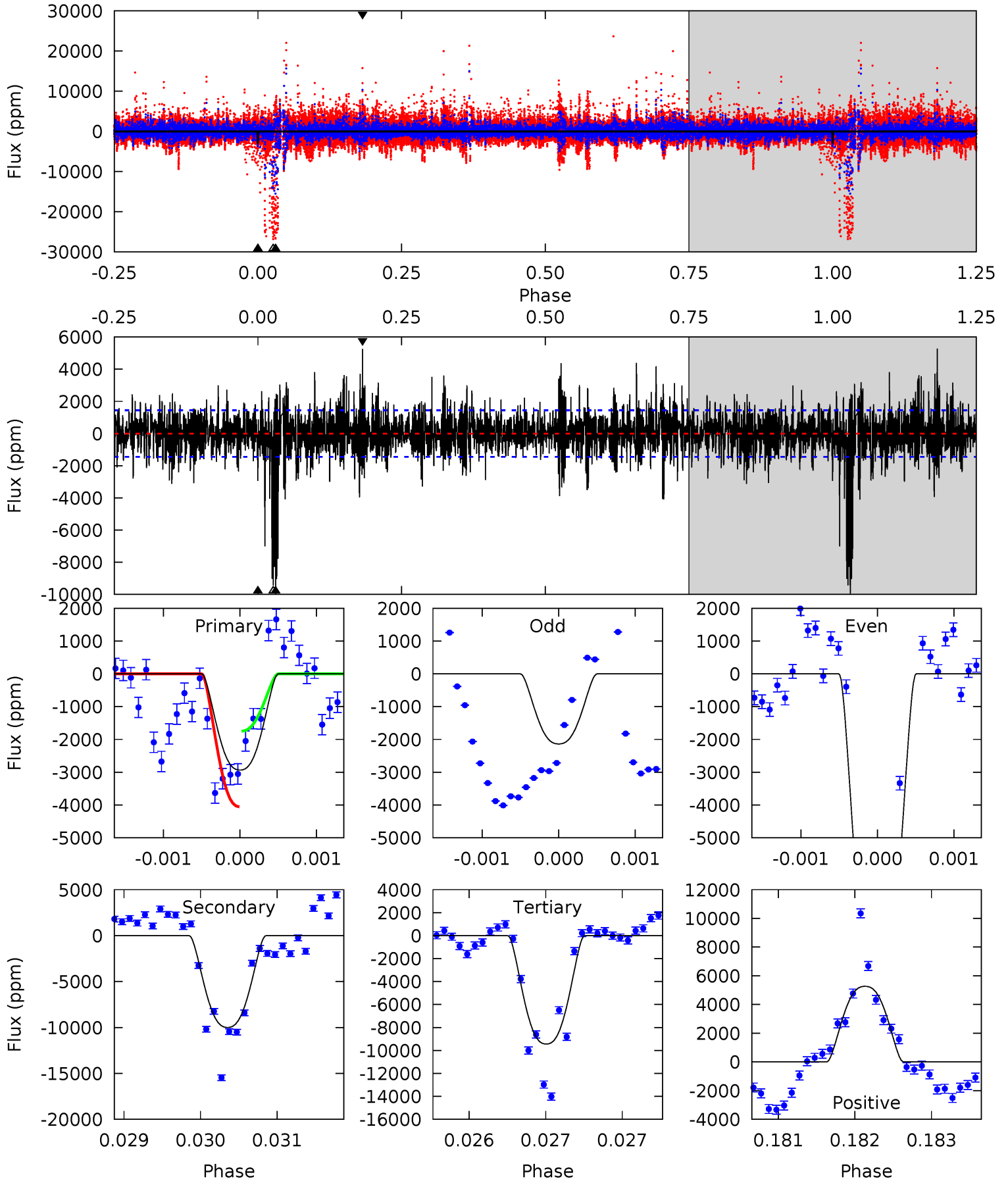
TCE 007211157-01 P=560.867166 Days $T_0=145.292982$ (BKJD)



DV Model-Shift Uniqueness Test

007211157-01, P = 560.826792 Days, E = 145.363128 Days

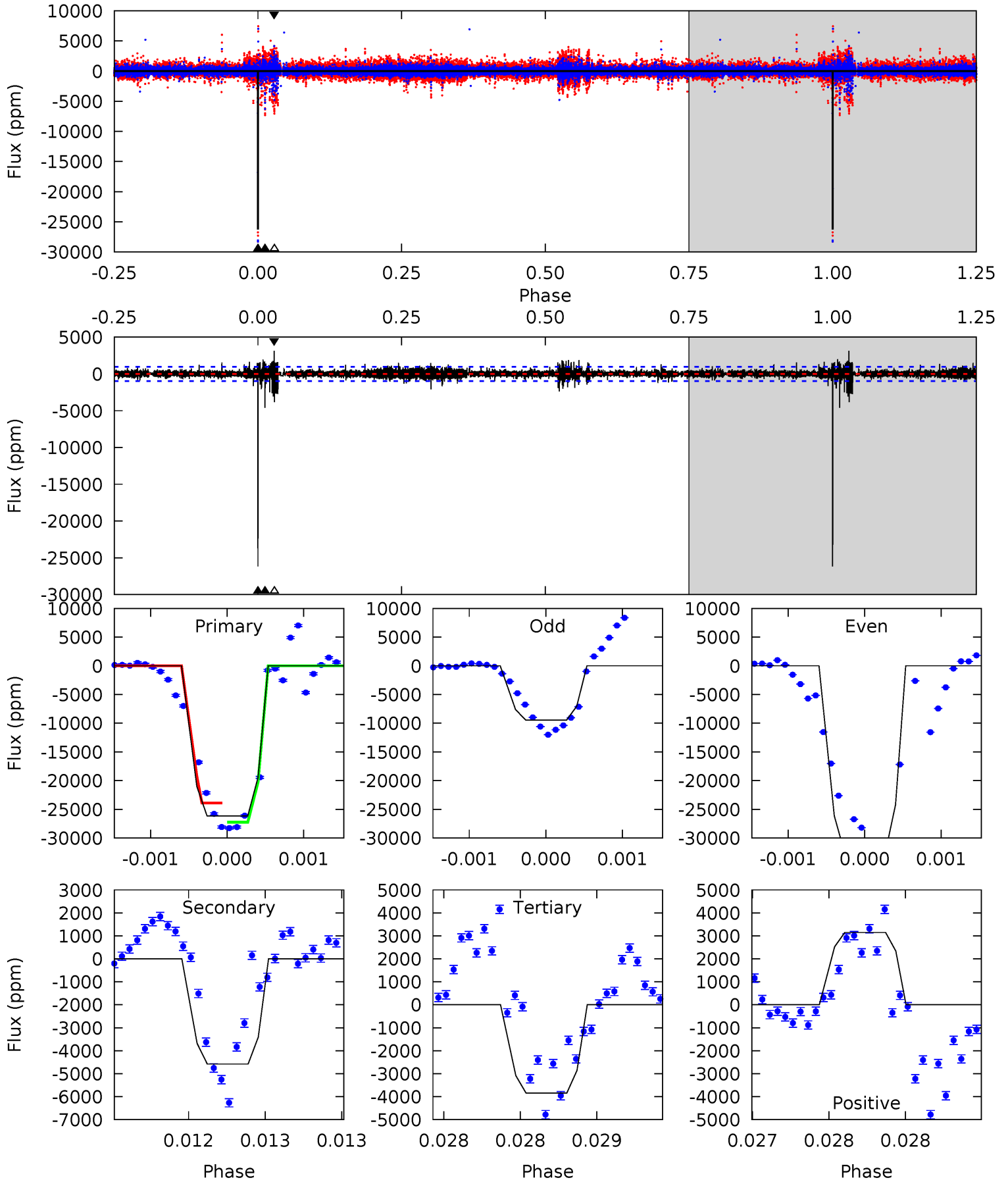
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	37.7	35.6	19.9	5.46	3.31	4.20	-24.5	-8.79	2.09	17.8	14.0	3.25	0.35	4.40



Alt Model-Shift Uniqueness Test

007211157-01, P = 560.867166 Days, E = 145.292982 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
150.4	26.4	22.1	18.1	5.56	3.46	2.03	128.3	132.3	4.26	8.27	88.3	0.93	0.11	0



Stellar Parameters For KIC 007211157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5220^{+157}_{-141}	$4.599^{+0.066}_{-0.055}$	$-0.640^{+0.300}_{-0.300}$	$0.683^{+0.074}_{-0.059}$	$0.675^{+0.076}_{-0.038}$	$2.989^{+0.774}_{-0.615}$
	+3%/-3%	+1%/-1%	+47%/-47%	+11%/-9%	+11%/-6%	+26%/-21%
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 007211157-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9990 ± 265	$6.69^{+0.97}_{-0.95}$	246^{+9}_{-9}	5515^{+406}_{-324}	170803^{+58298}_{-38688}
Alt.	-4581 ± 174	$10.44^{+1.10}_{-0.98}$	246^{+9}_{-9}	3938^{+155}_{-149}	31998^{+6919}_{-5397}

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 $A_{obs} \gg 1.0$

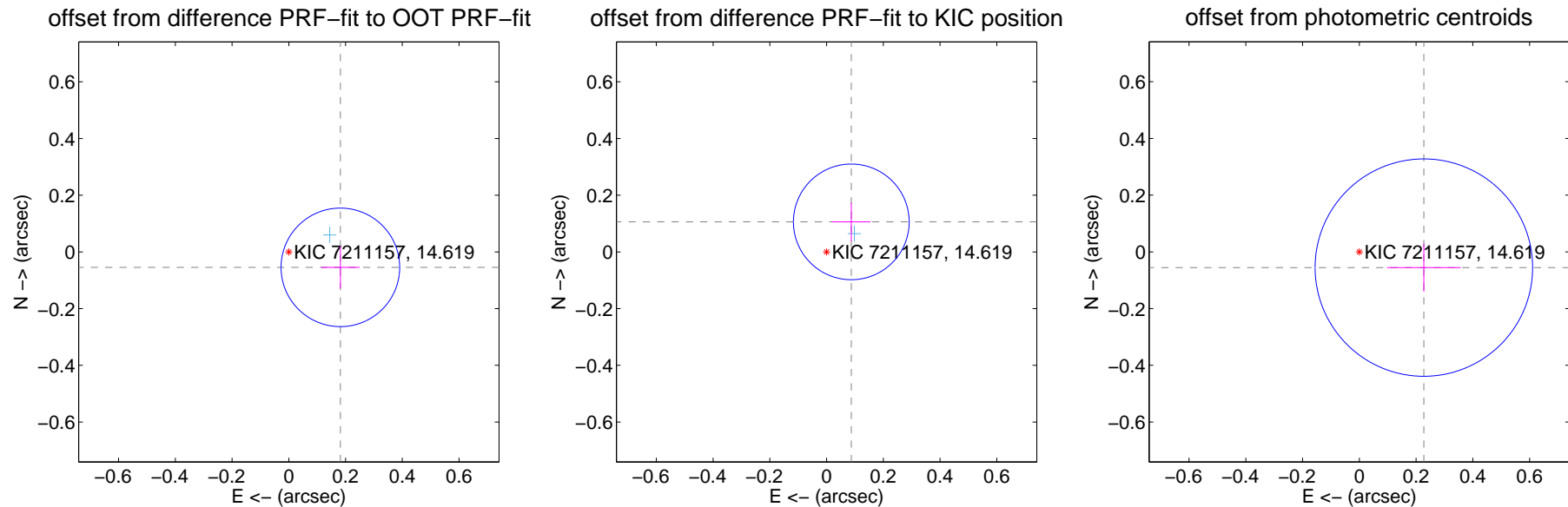
DV Centroid Data

Supplemental centroid analysis for 007211157-01. Kepler magnitude: 14.62. Transit SNR 8.26

There are 2 quarters with good PRF difference image offsets

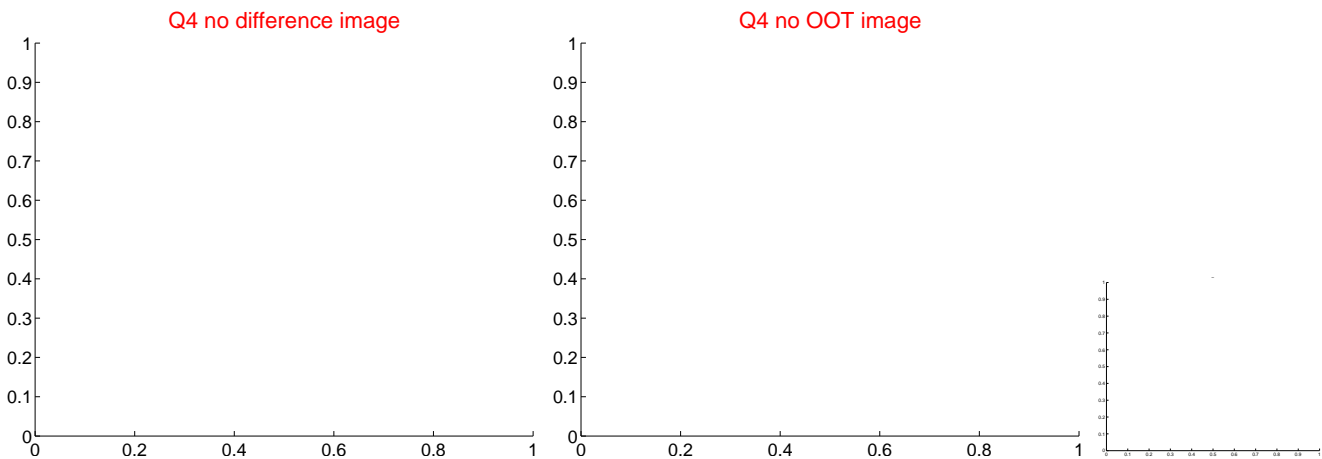
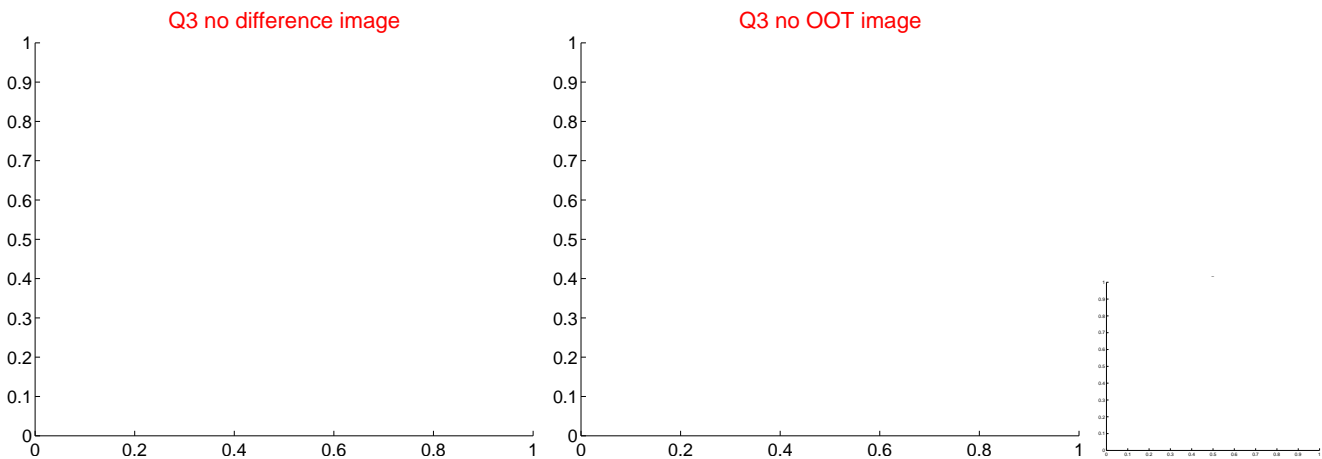
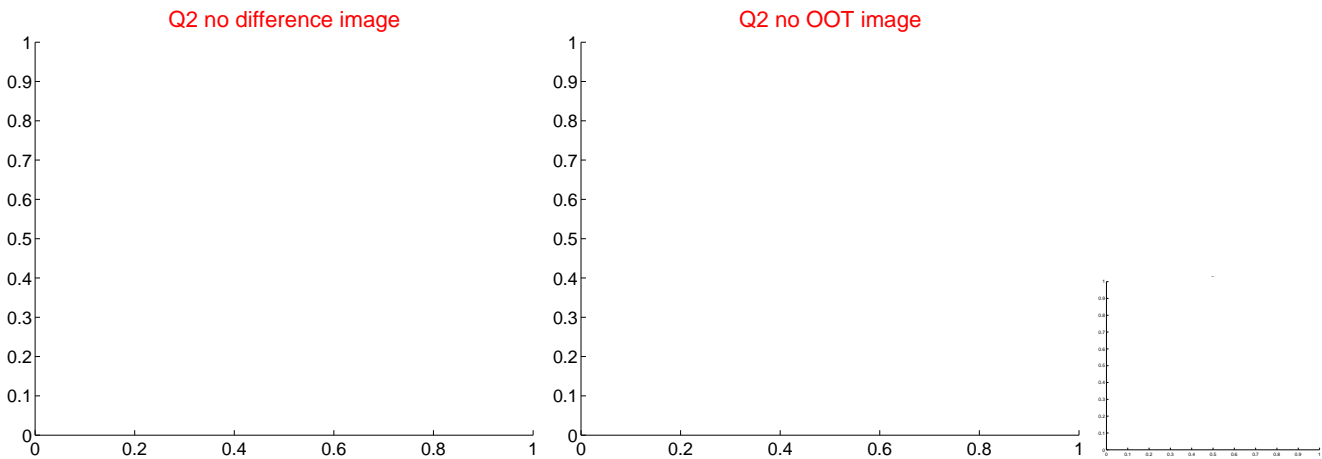
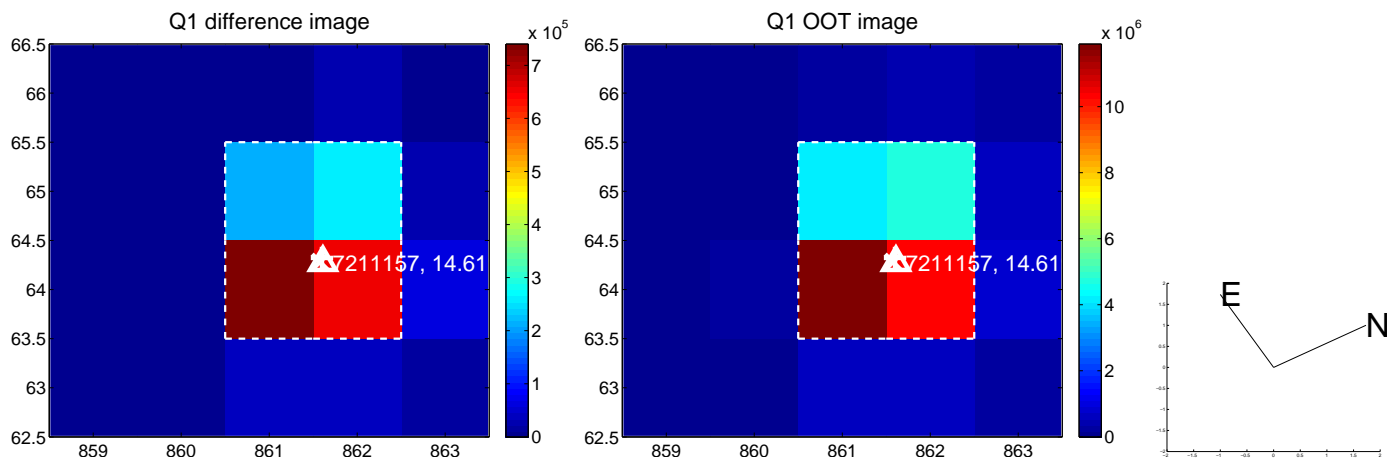
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.190 ± 0.070	2.72	-0.182 ± 0.068	-0.054 ± 0.075
PRF-fit source offset from KIC position	0.137 ± 0.068	2.02	-0.087 ± 0.068	0.106 ± 0.068
photometric centroid source offset	0.23 ± 0.13	1.83	-0.23 ± 0.13	-0.06 ± 0.08



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

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



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

Q5 no difference image



Q5 no OOT image



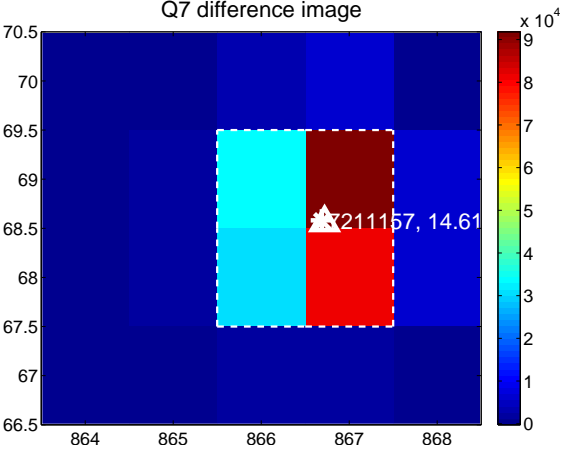
Q6 no difference image



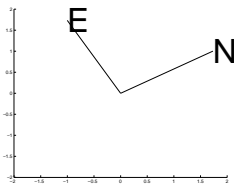
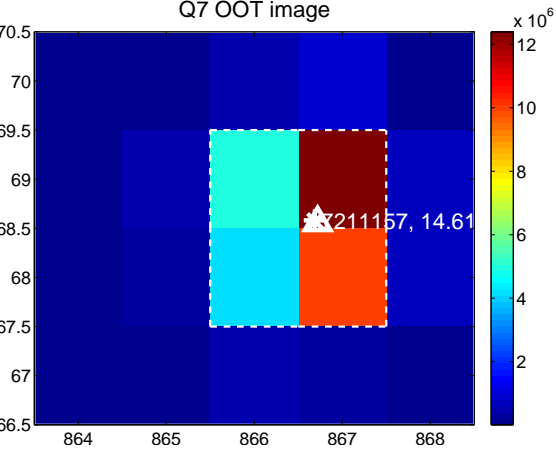
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



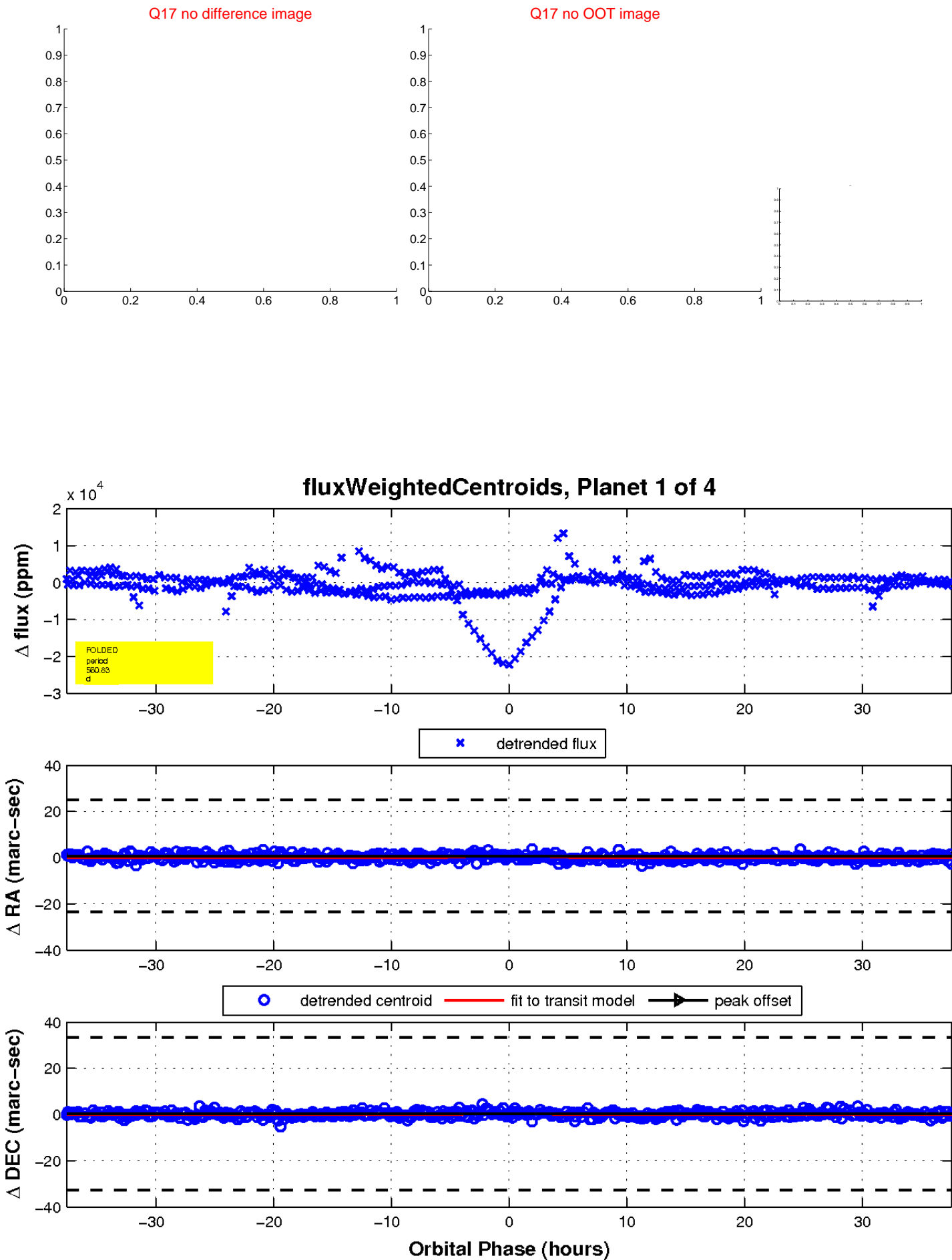
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

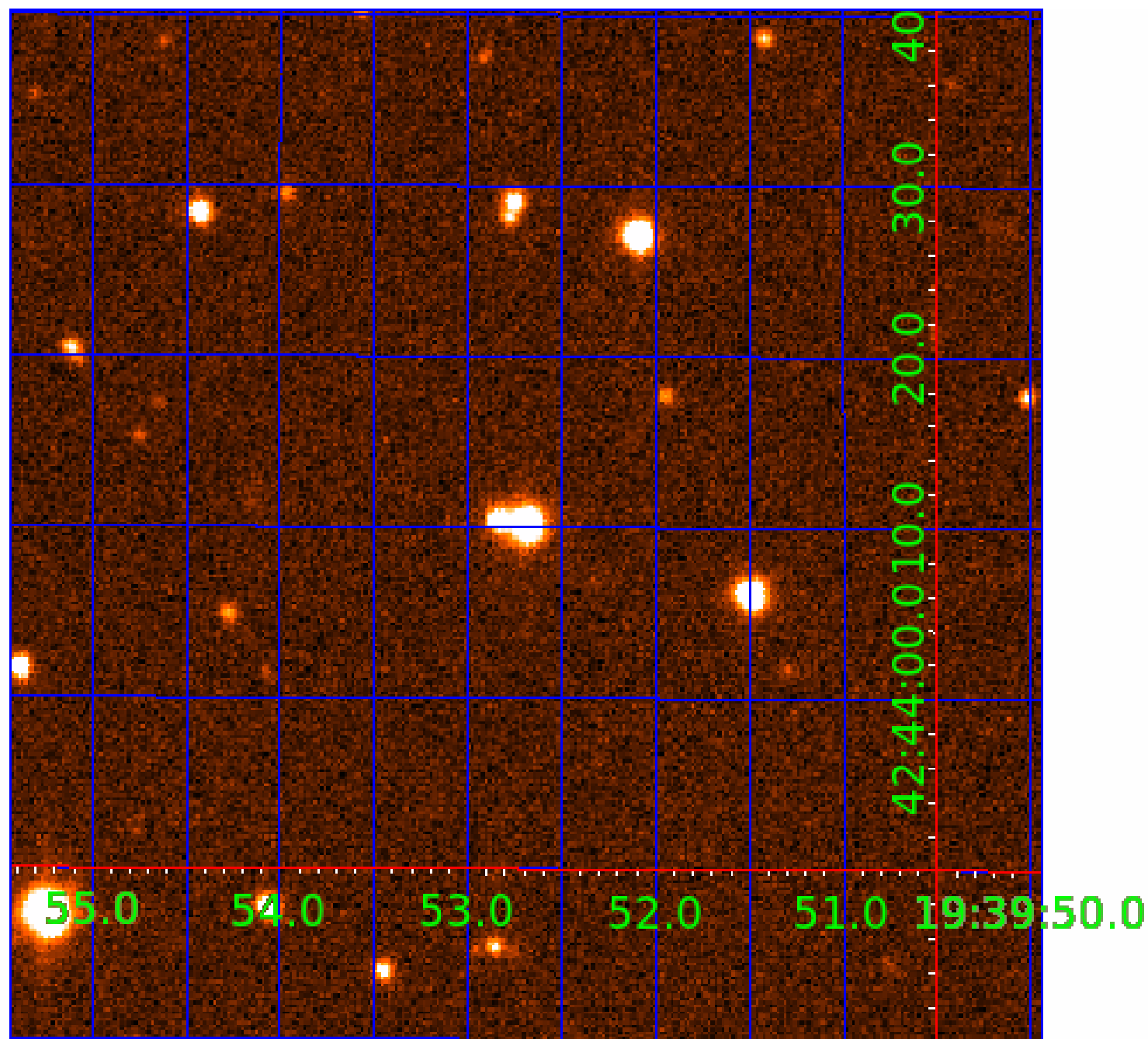


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007211157

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})
007211157-01	OBS	No	560.826792	145.363128	6310.2	12.547	17.1	8.3	0.68	5220	6.64	0.23
007211157-02	OBS	No	573.275834	196.411121	3293.5	3.311	15.0	8.7	0.68	5220	3.93	0.22
007211157-03	OBS	No	382.537278	195.176026	2898.6	14.193	13.5	5.1	0.68	5220	4.04	0.38
007211157-04	OBS	No	309.782626	439.477226	1134.3	5.136	15.6	3.6	0.68	5220	2.41	0.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007211157-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007211157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007211157-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
007211157-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST

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

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

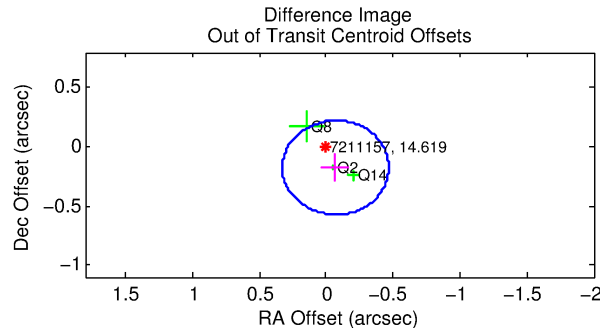
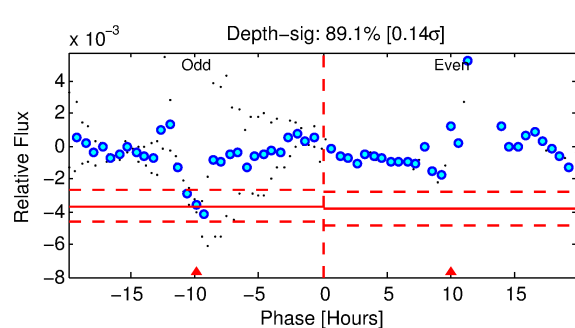
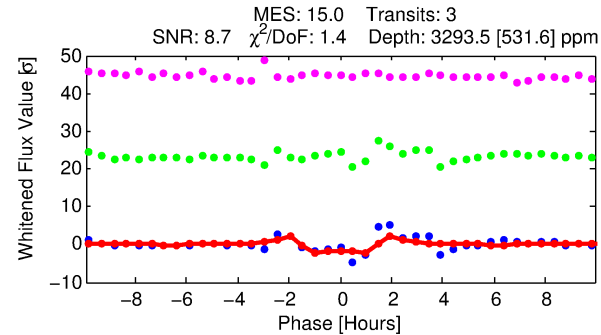
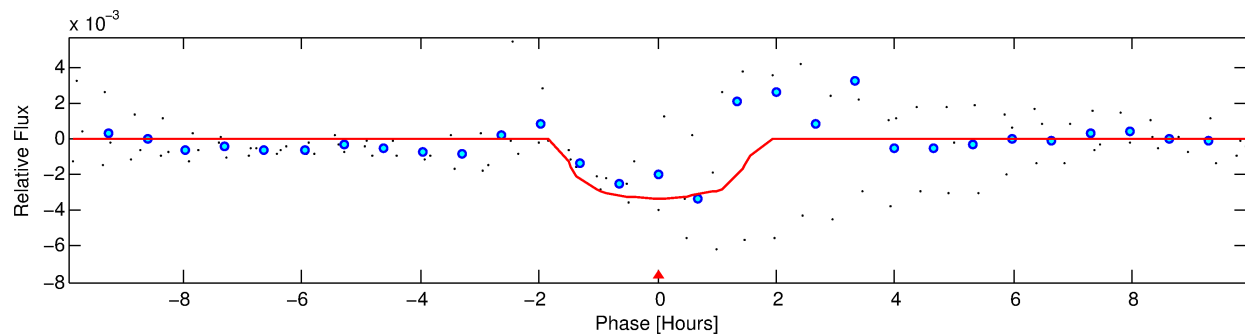
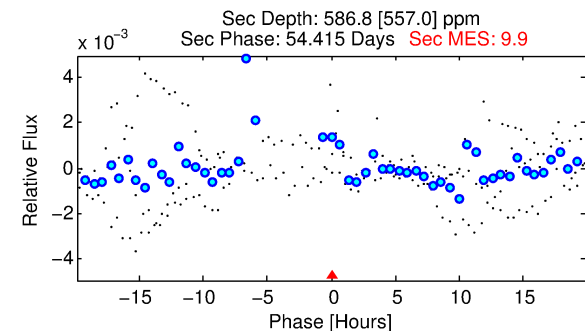
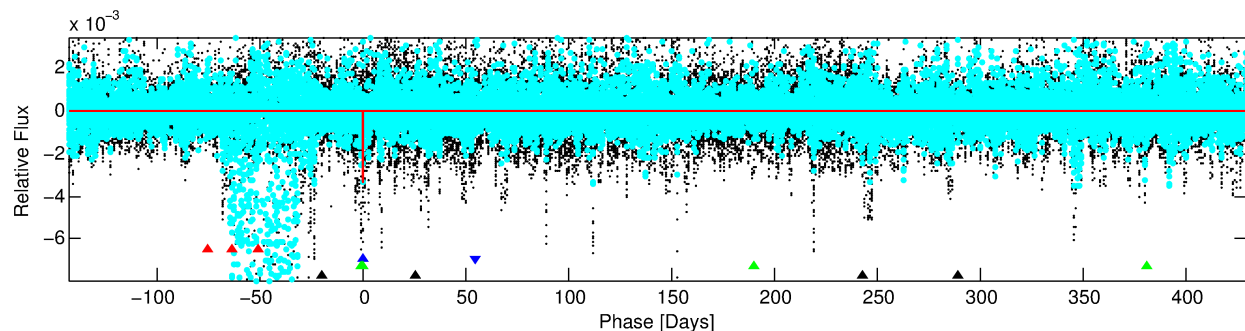
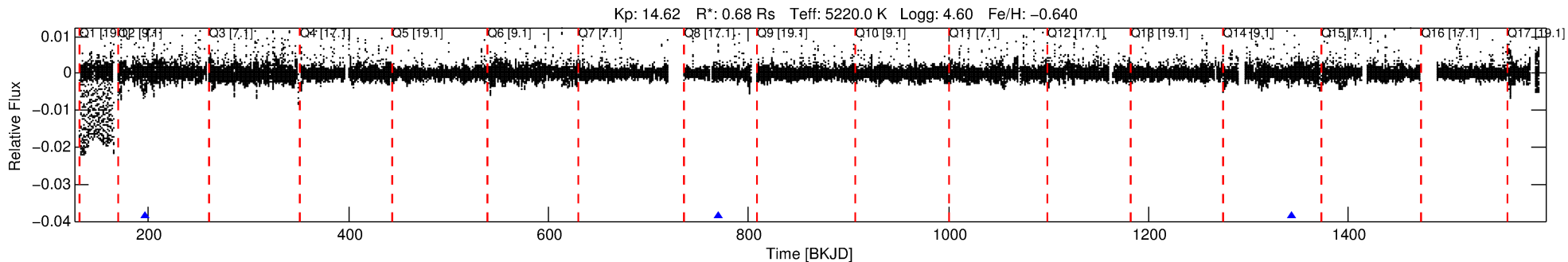
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007211157-02

No Significant Match Found

DV One-Page Summary

KIC: 7211157 Candidate: 2 of 4 Period: 573.276 d



DV Fit Results:

Period = 573.27583 [0.00334] d
Epoch = 196.4111 [0.0044] BKJD
Rp/R* = 0.0527 [0.0730]
a/R* = 1297.50 [7151.18]
b = 0.38 [12.42]
Seff = 0.22 [0.04]
Teq = 175 [8] K
Rp = 3.93 [5.46] Re
a = 1.1855 [0.1046] AU
Ag = 29376.13 [86097.18] [0.34σ]
Teffp = 3538 [2592] K [1.30σ]

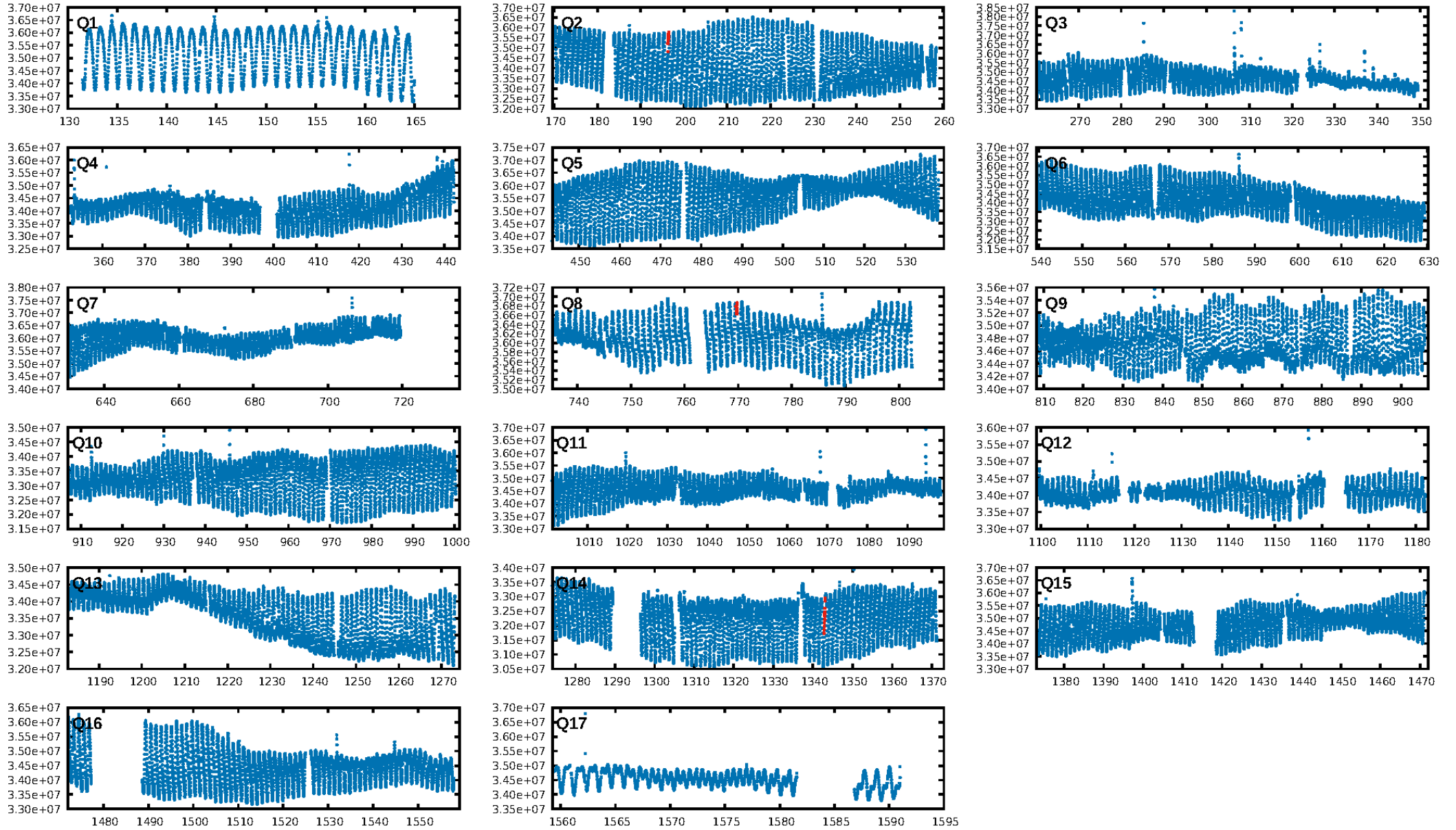
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.03σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 93.8%
ModelChiSquareGof-sig: 85.3%
Bootstrap-pfa: 1.68e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.3958
Centroid-sig: 86.3%
Centroid-so: 0.227 arcsec [0.64σ]
OotOffset-rm: 0.188 arcsec [1.42σ]
KicOffset-rm: 0.121 arcsec [1.50σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.67 [2/3]

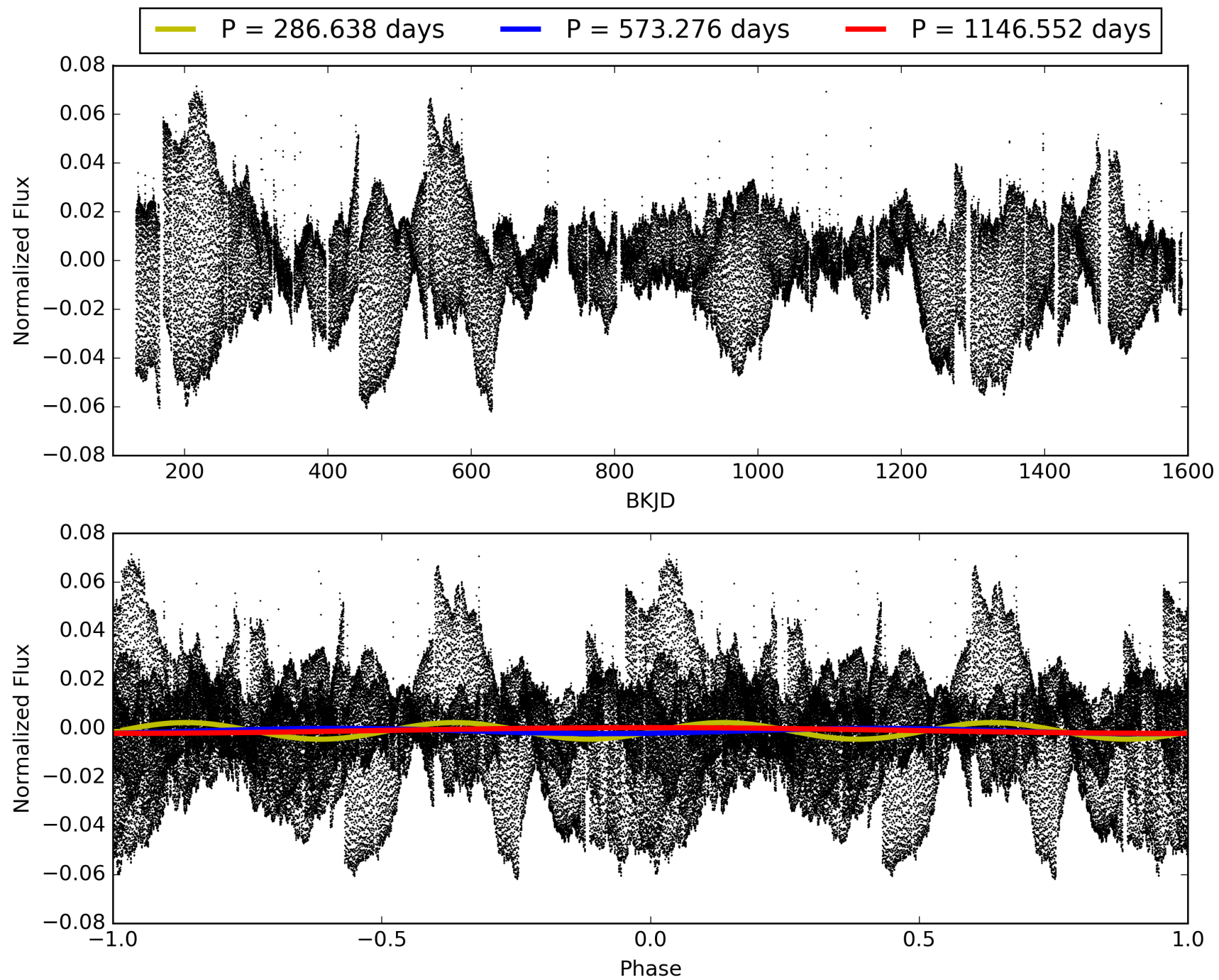
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:36:41 Z

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TCE 007211157-02, PDC Light Curves

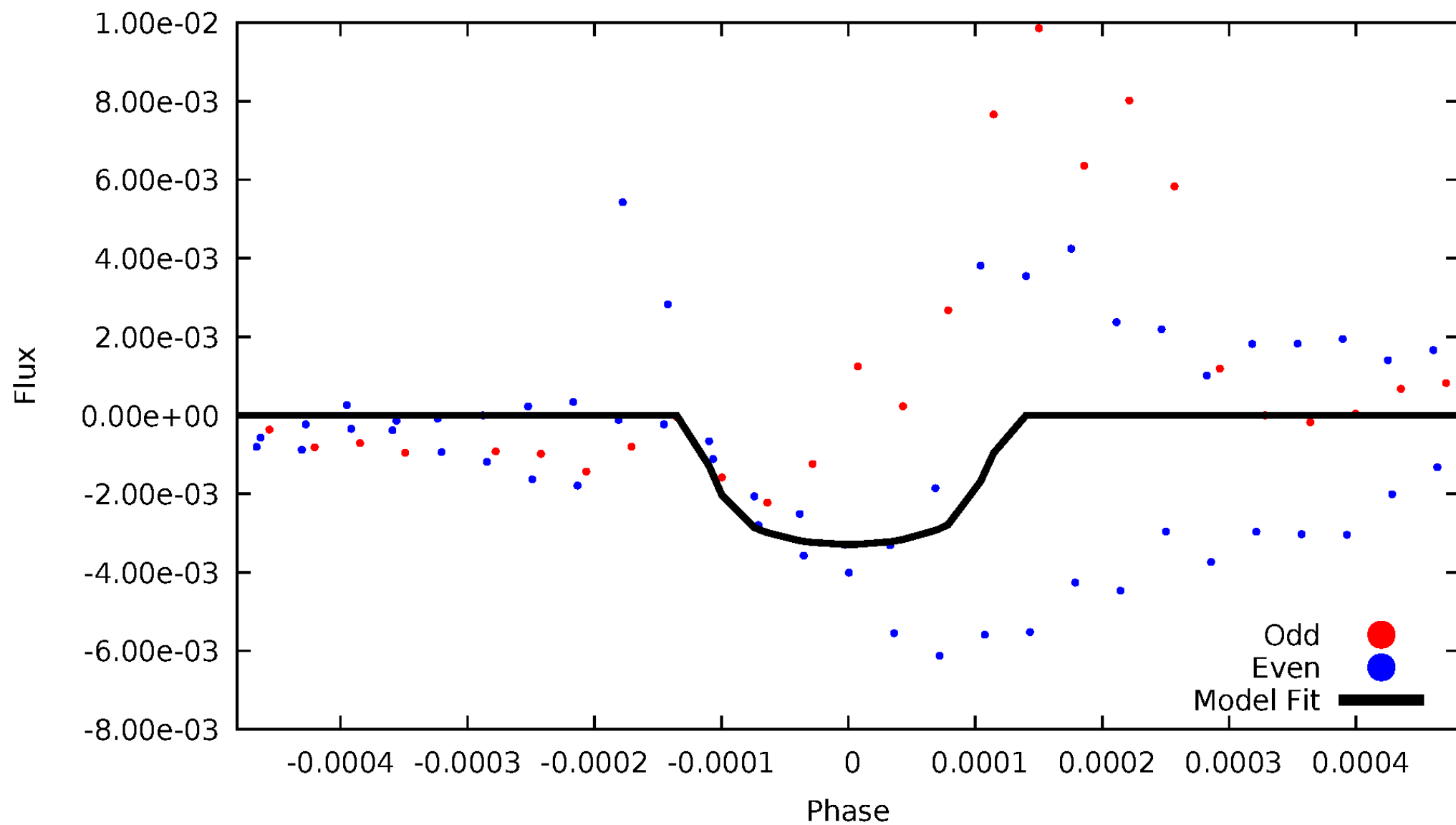


TCE 007211157-02



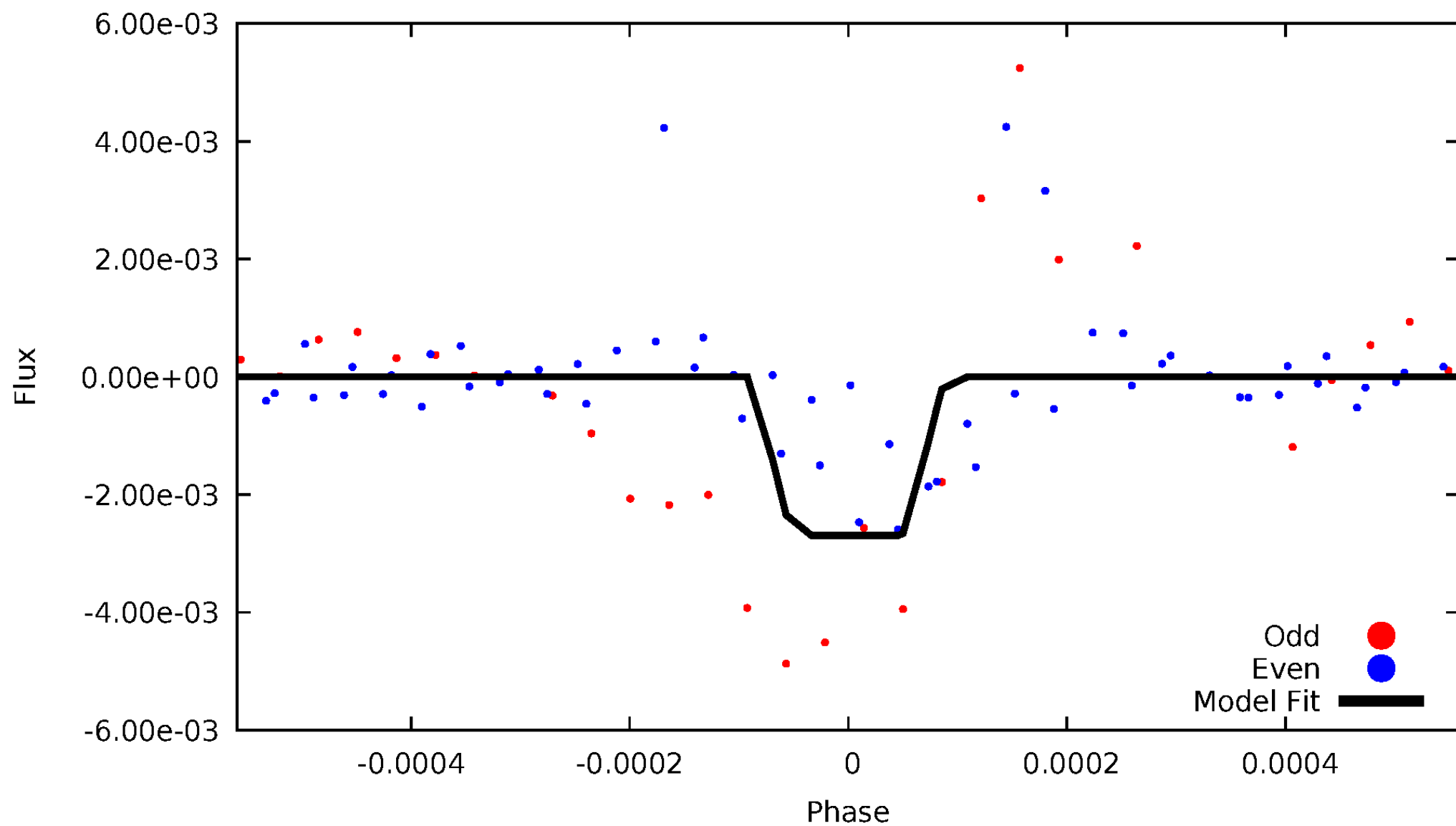
DV Odd/Even

TCE 007211157-02



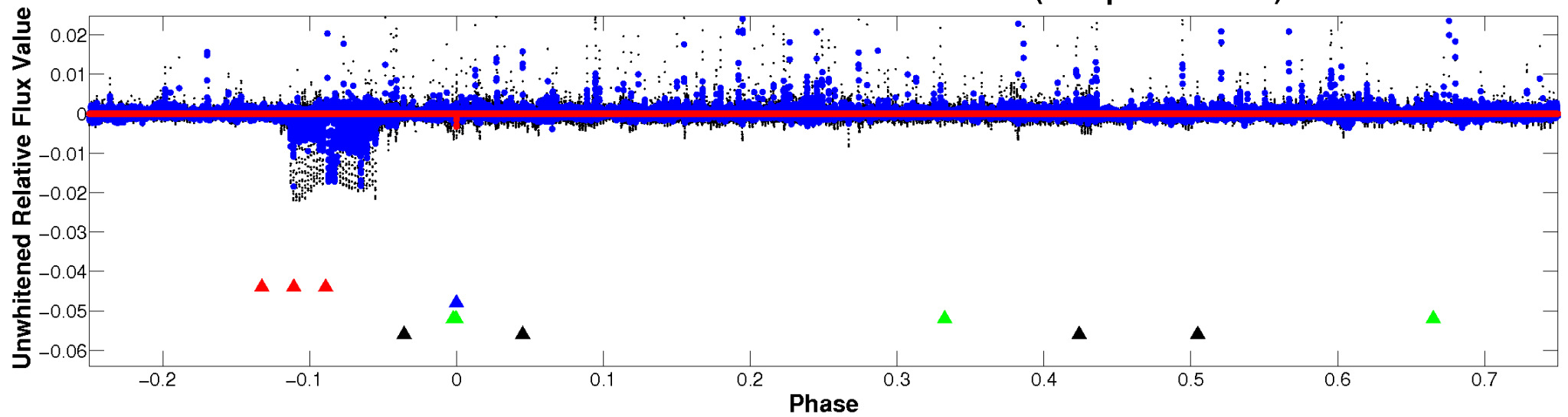
ALT Odd/Even

TCE 007211157-02

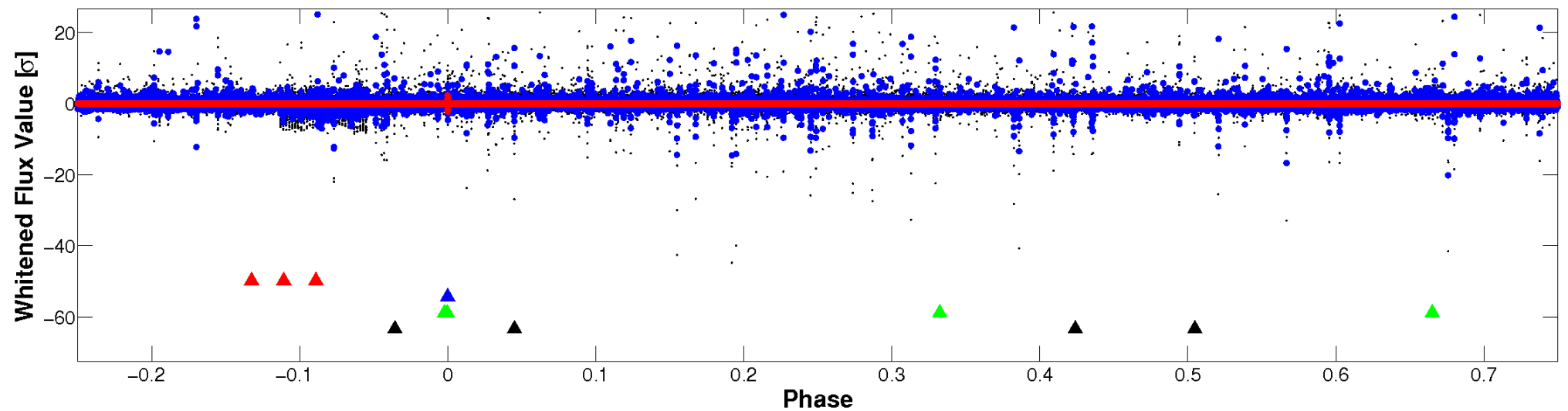


Non-Whitened Vs. Whitened Light Curve

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

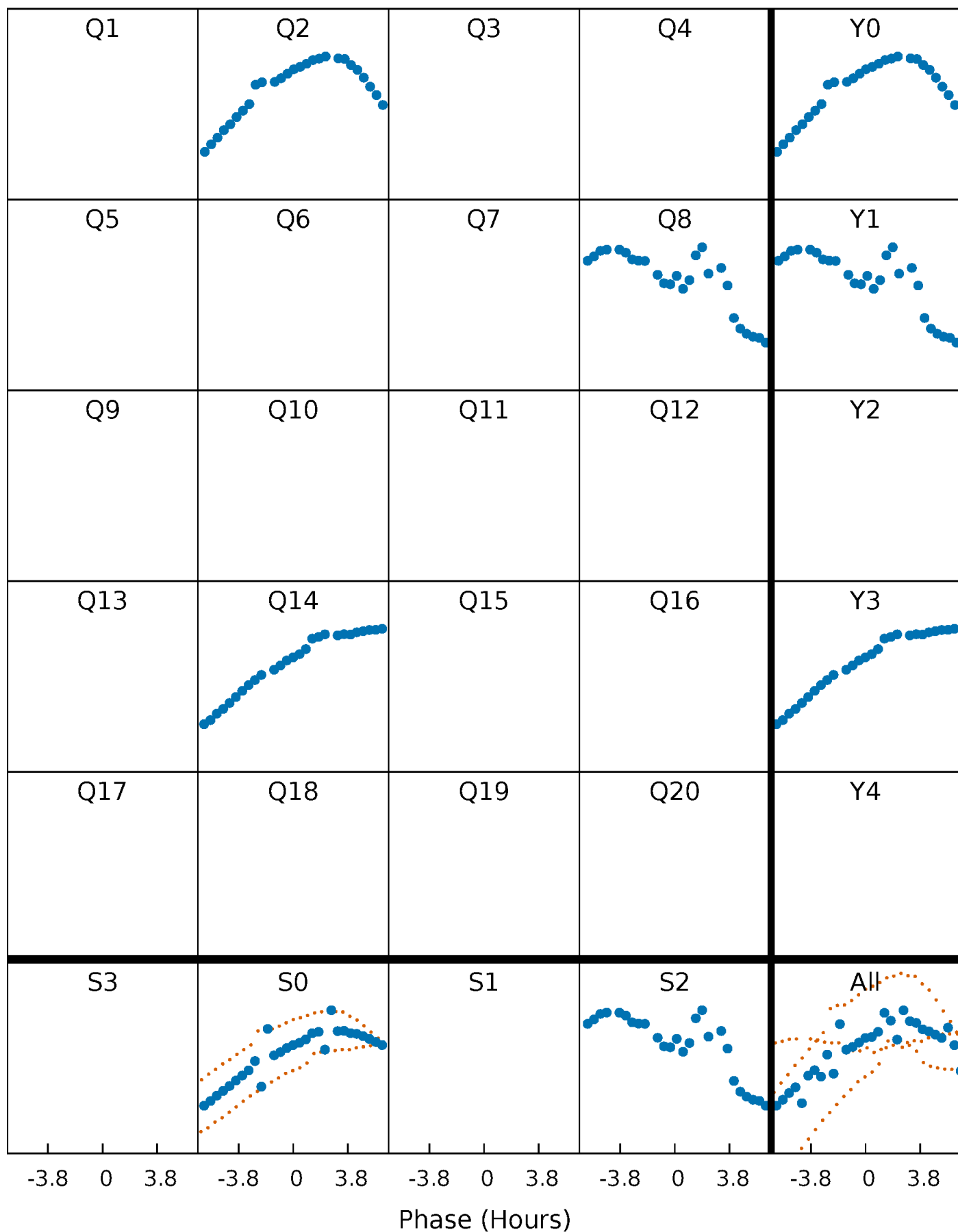


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



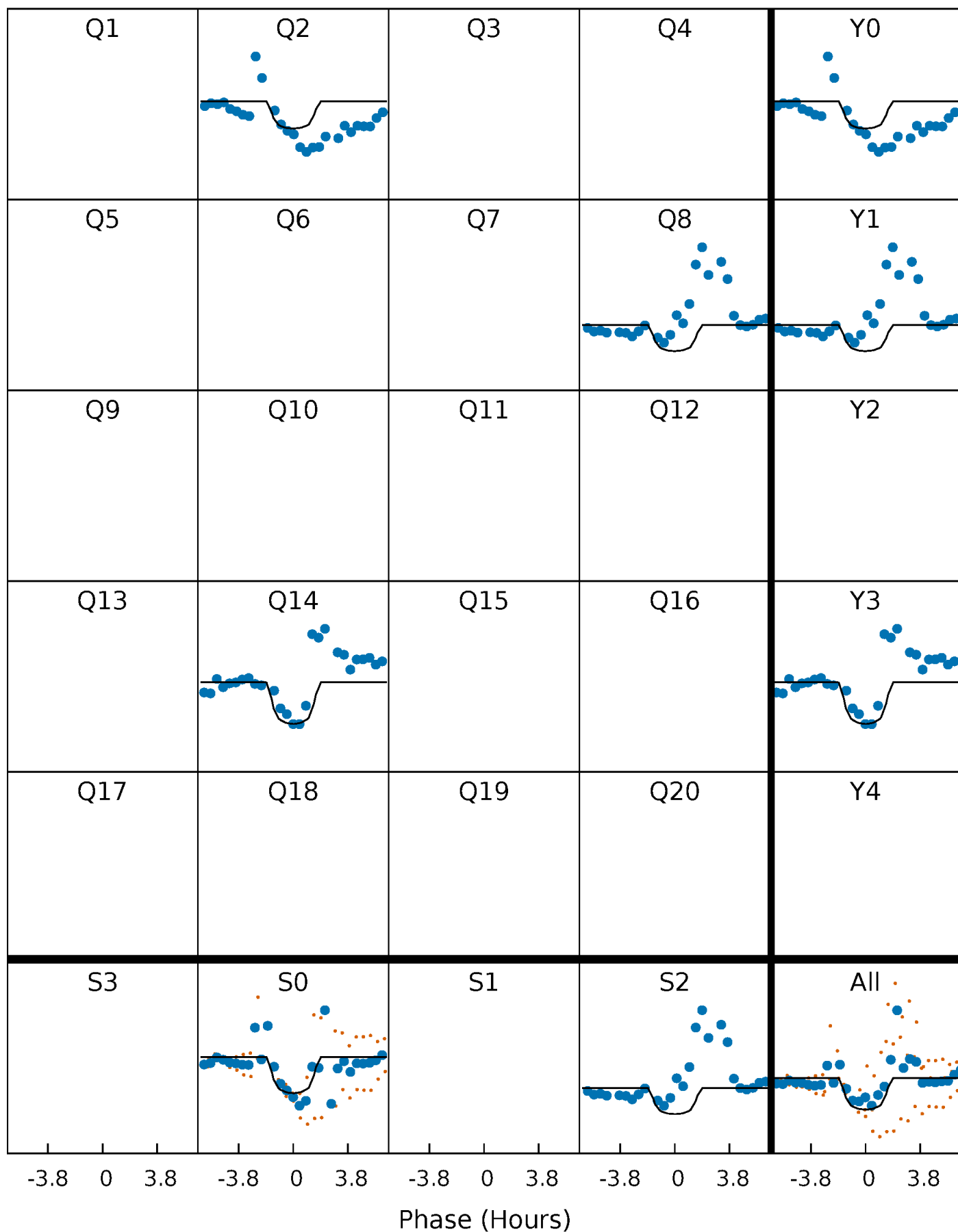
PDC Quarter-Phased Transit Curves

TCE 007211157-02 P=573.275834 Days $T_0=196.411122$ (BKJD)



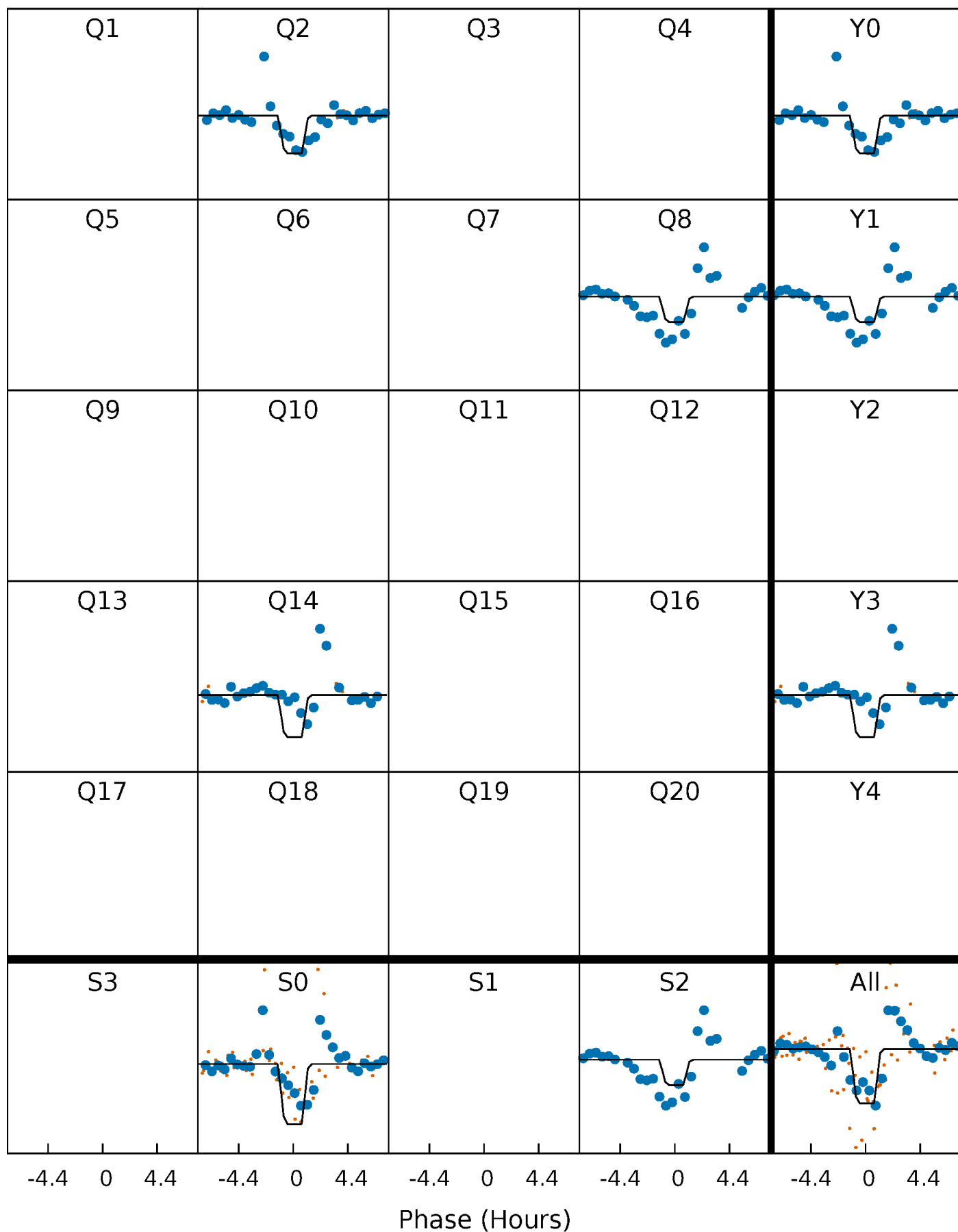
DV Quarter-Phased Transit Curves

TCE 007211157-02 P=573.275834 Days $T_0=196.411122$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

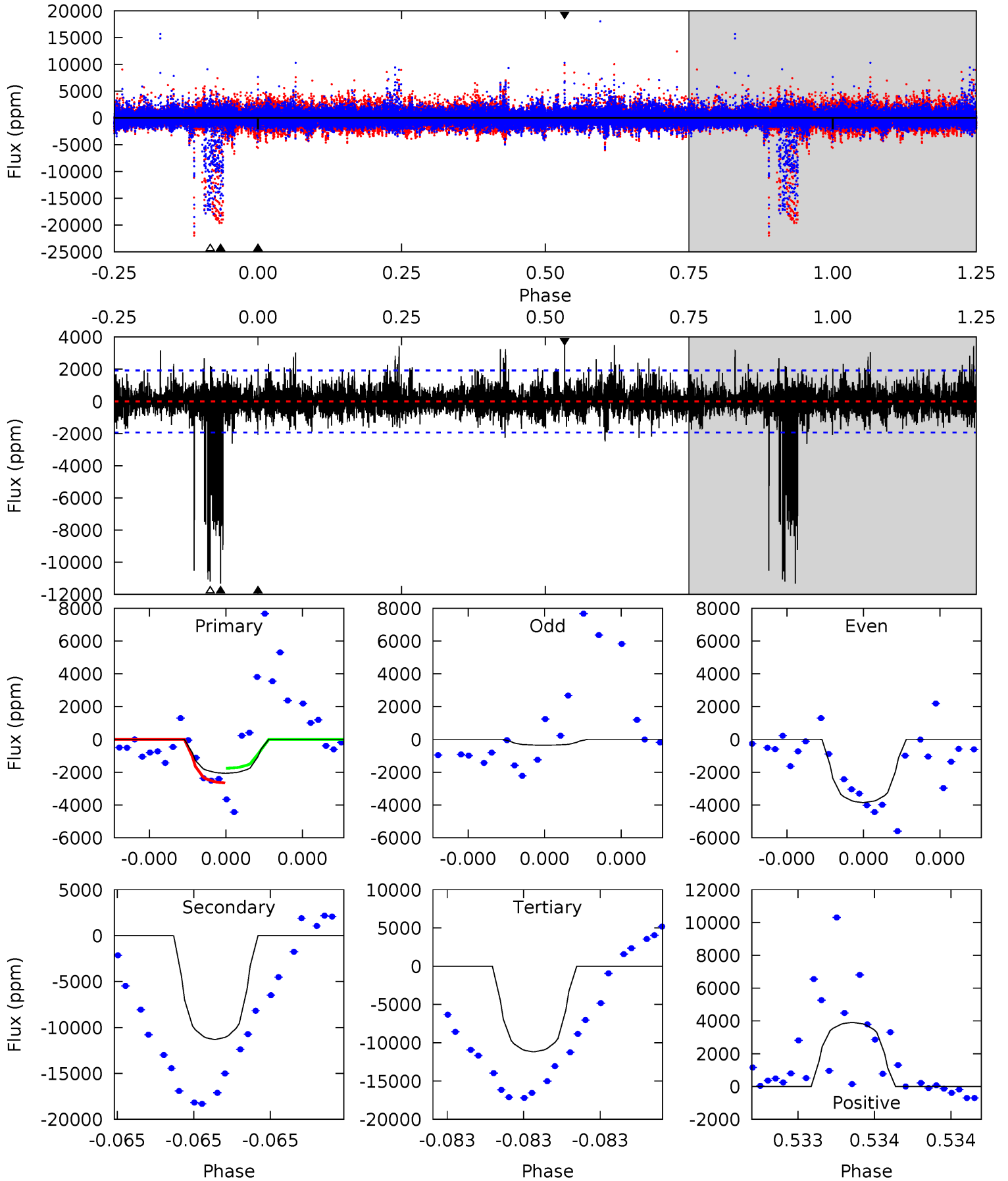
TCE 007211157-02 P=573.256715 Days $T_0=196.426266$ (BKJD)



DV Model-Shift Uniqueness Test

007211157-02, P = 573.275834 Days, E = 196.411122 Days

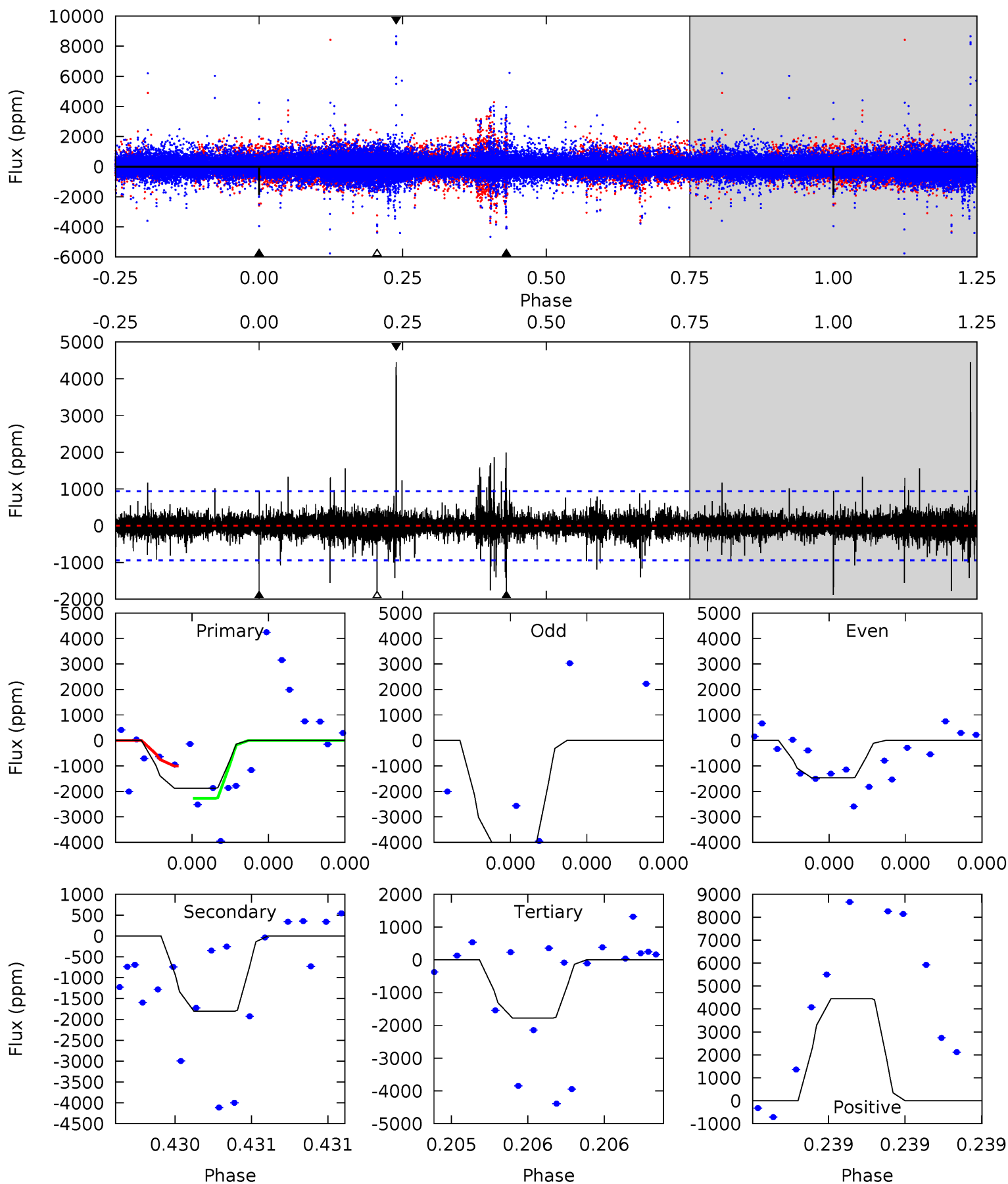
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.10	33.4	33.0	11.5	5.69	3.66	2.35	-26.9	-5.44	0.38	21.9	4.61	1.02	0.26	1.27



Alt Model-Shift Uniqueness Test

007211157-02, P = 573.256715 Days, E = 196.426266 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	11.1	10.9	27.4	5.78	3.80	1.25	0.63	-15.8	0.18	-16.3	7.55	1.06	0.70	0



Stellar Parameters For KIC 007211157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5220^{+157}_{-141}	$4.599^{+0.066}_{-0.055}$	$-0.640^{+0.300}_{-0.300}$	$0.683^{+0.074}_{-0.059}$	$0.675^{+0.076}_{-0.038}$	$2.989^{+0.774}_{-0.615}$
	+3%/-3%	+1%/-1%	+47%/-47%	+11%/-9%	+11%/-6%	+26%/-21%
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 007211157-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11315 ± 339	$5.54^{+4.78}_{-3.57}$	244^{+9}_{-8}	6189^{+5994}_{-1499}	$291492^{+1944029}_{-208235}$
Alt.	-1804 ± 163	$5.59^{+4.68}_{-3.64}$	244^{+9}_{-9}	4172^{+2382}_{-795}	$44662^{+295272}_{-31380}$

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

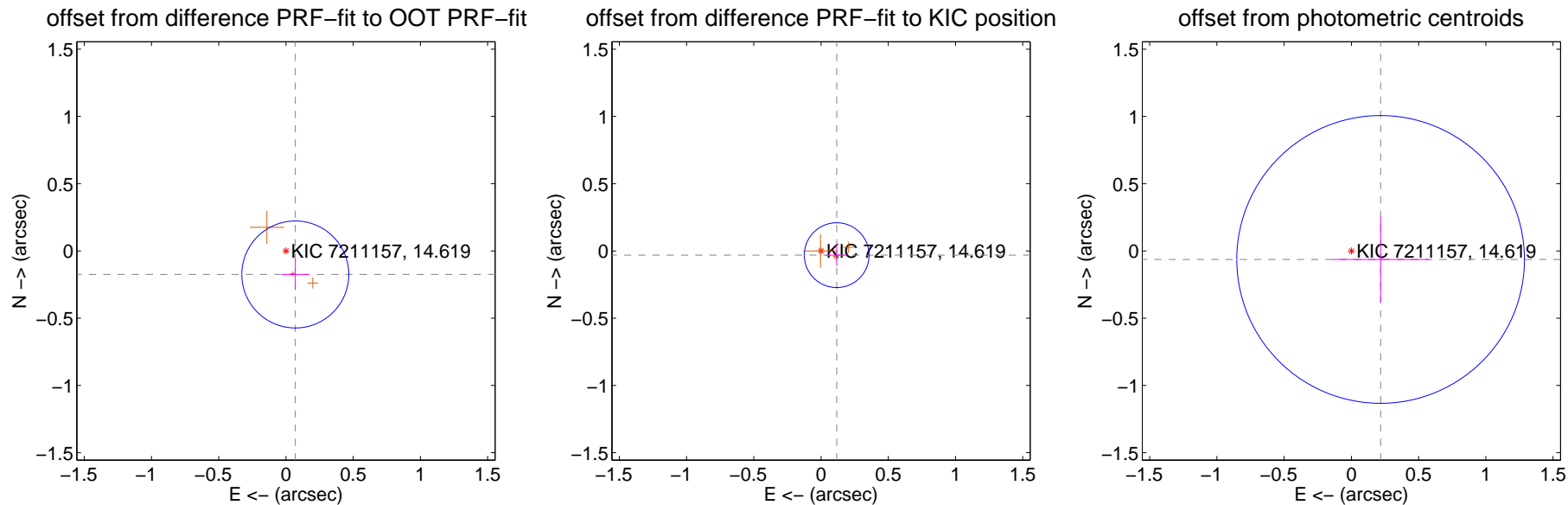
DV Centroid Data

Supplemental centroid analysis for 007211157-02. Kepler magnitude: 14.62. Transit SNR 8.70

There are 0 quarters with good PRF difference image offsets

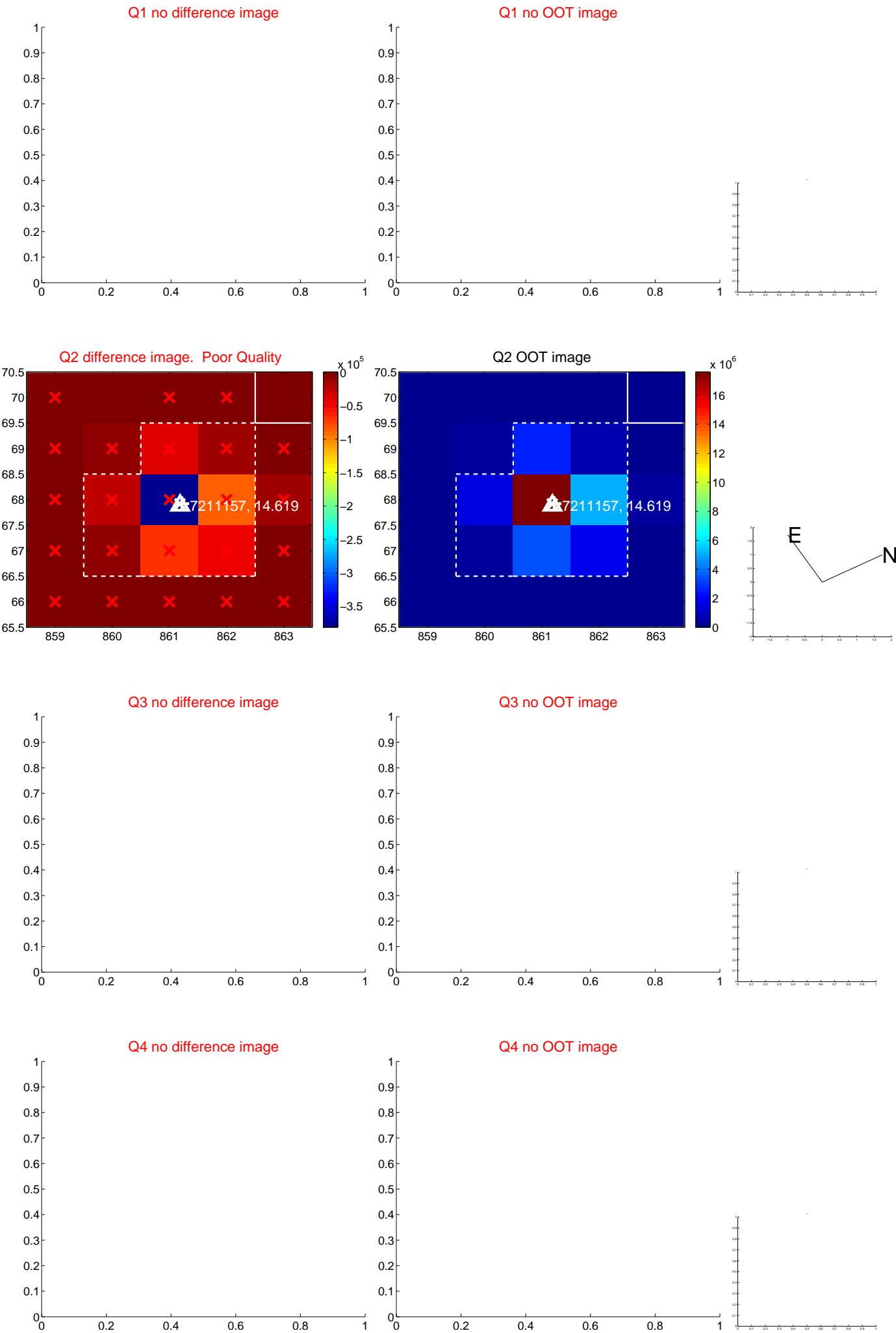
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.188 ± 0.133	1.42	-0.070 ± 0.100	-0.175 ± 0.115
PRF-fit source offset from KIC position	0.121 ± 0.080	1.50	-0.116 ± 0.080	-0.032 ± 0.080
photometric centroid source offset	0.23 ± 0.36	0.64	-0.22 ± 0.36	-0.06 ± 0.32

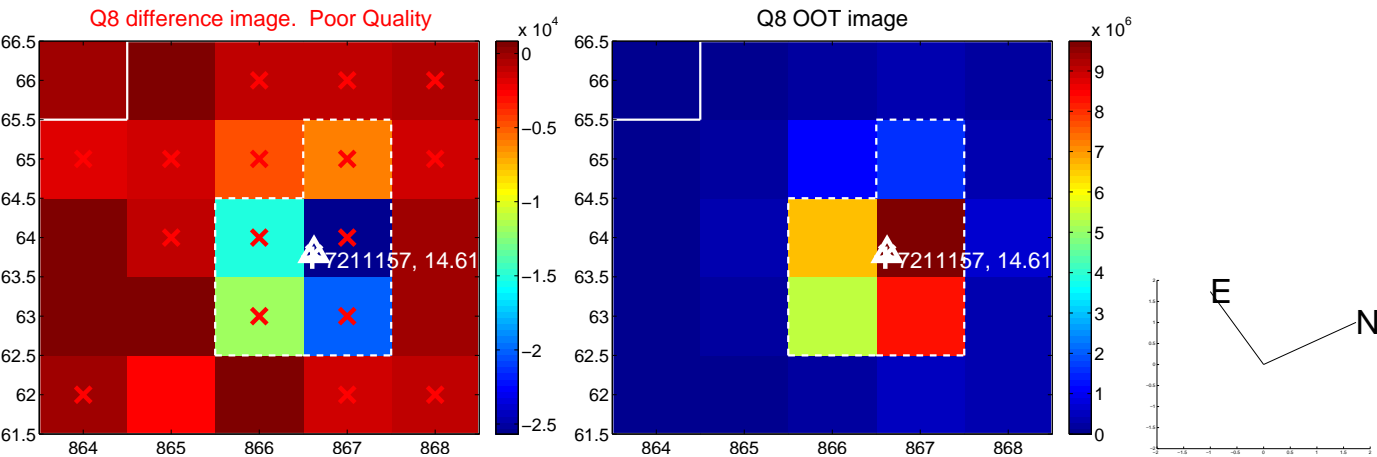


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



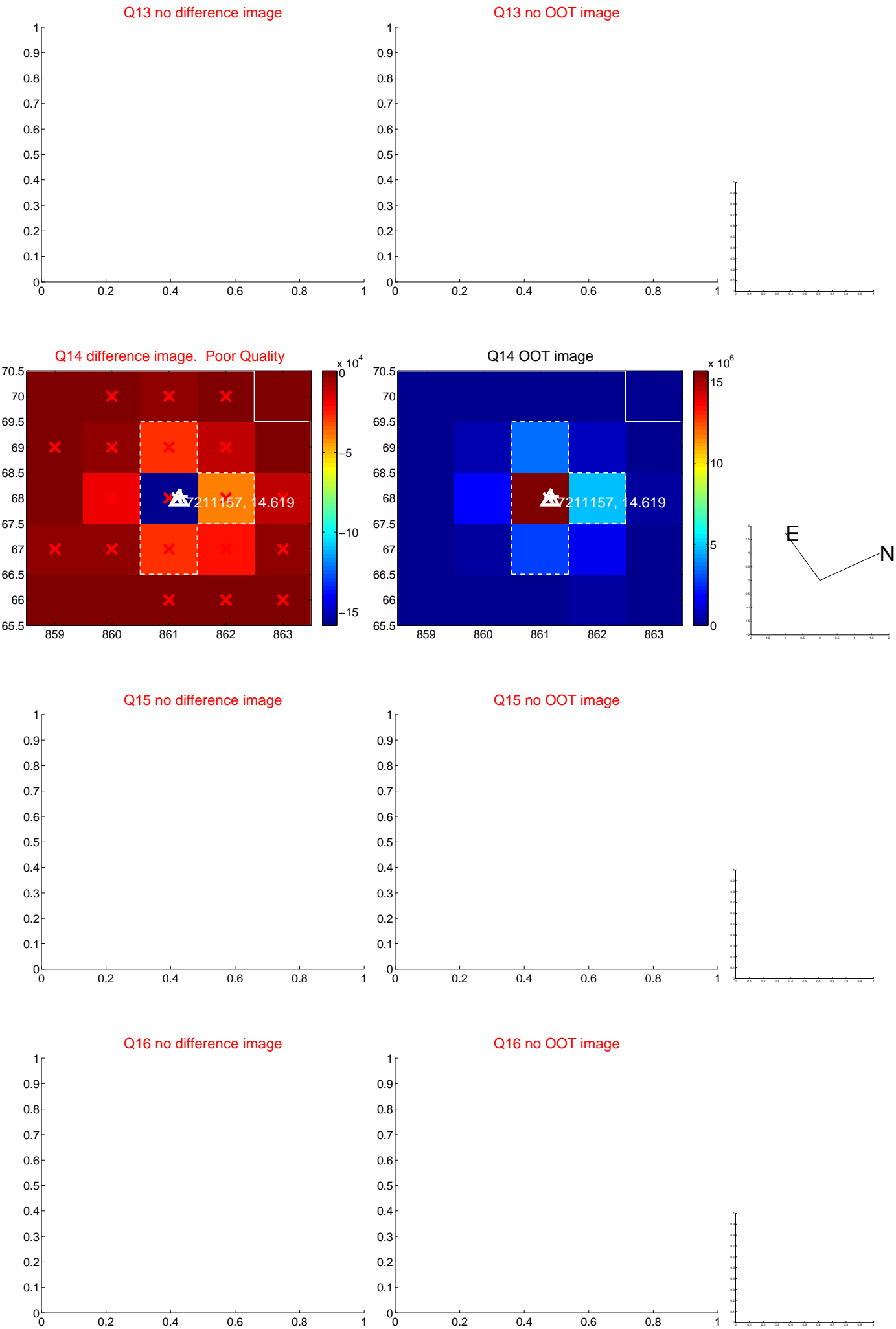
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



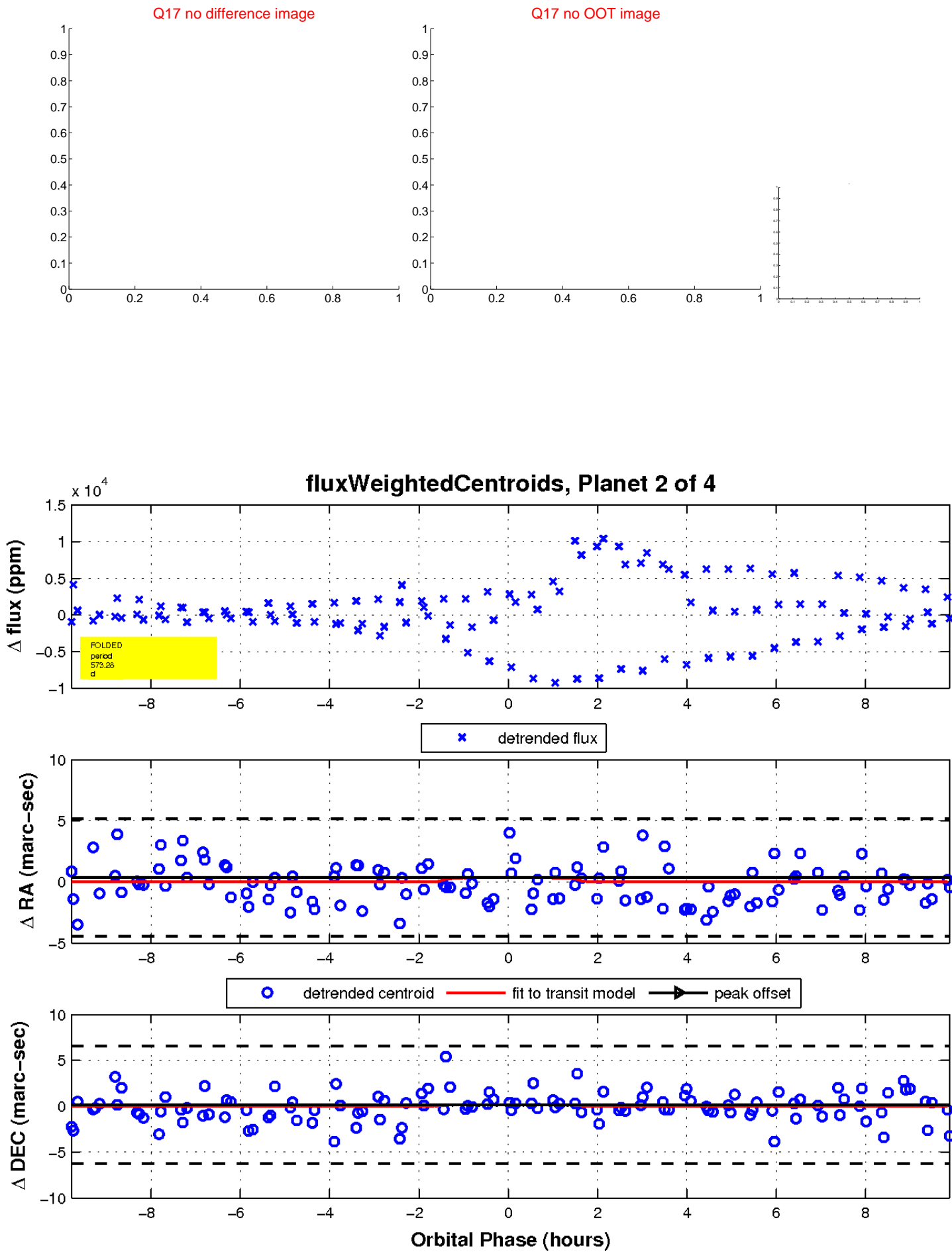
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

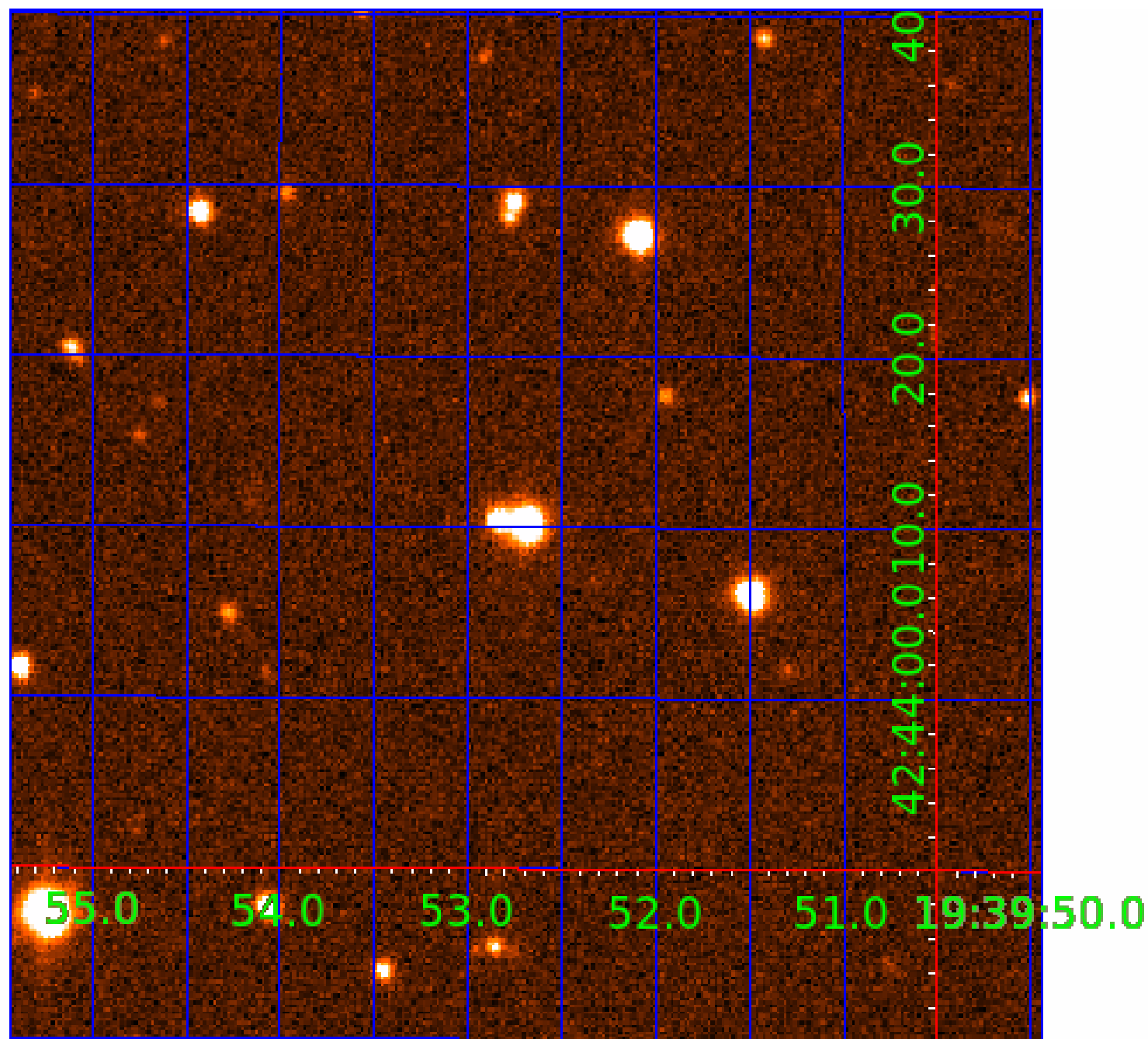


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007211157

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})
007211157-01	OBS	No	560.826792	145.363128	6310.2	12.547	17.1	8.3	0.68	5220	6.64	0.23
007211157-02	OBS	No	573.275834	196.411121	3293.5	3.311	15.0	8.7	0.68	5220	3.93	0.22
007211157-03	OBS	No	382.537278	195.176026	2898.6	14.193	13.5	5.1	0.68	5220	4.04	0.38
007211157-04	OBS	No	309.782626	439.477226	1134.3	5.136	15.6	3.6	0.68	5220	2.41	0.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007211157-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007211157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007211157-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
007211157-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST

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

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

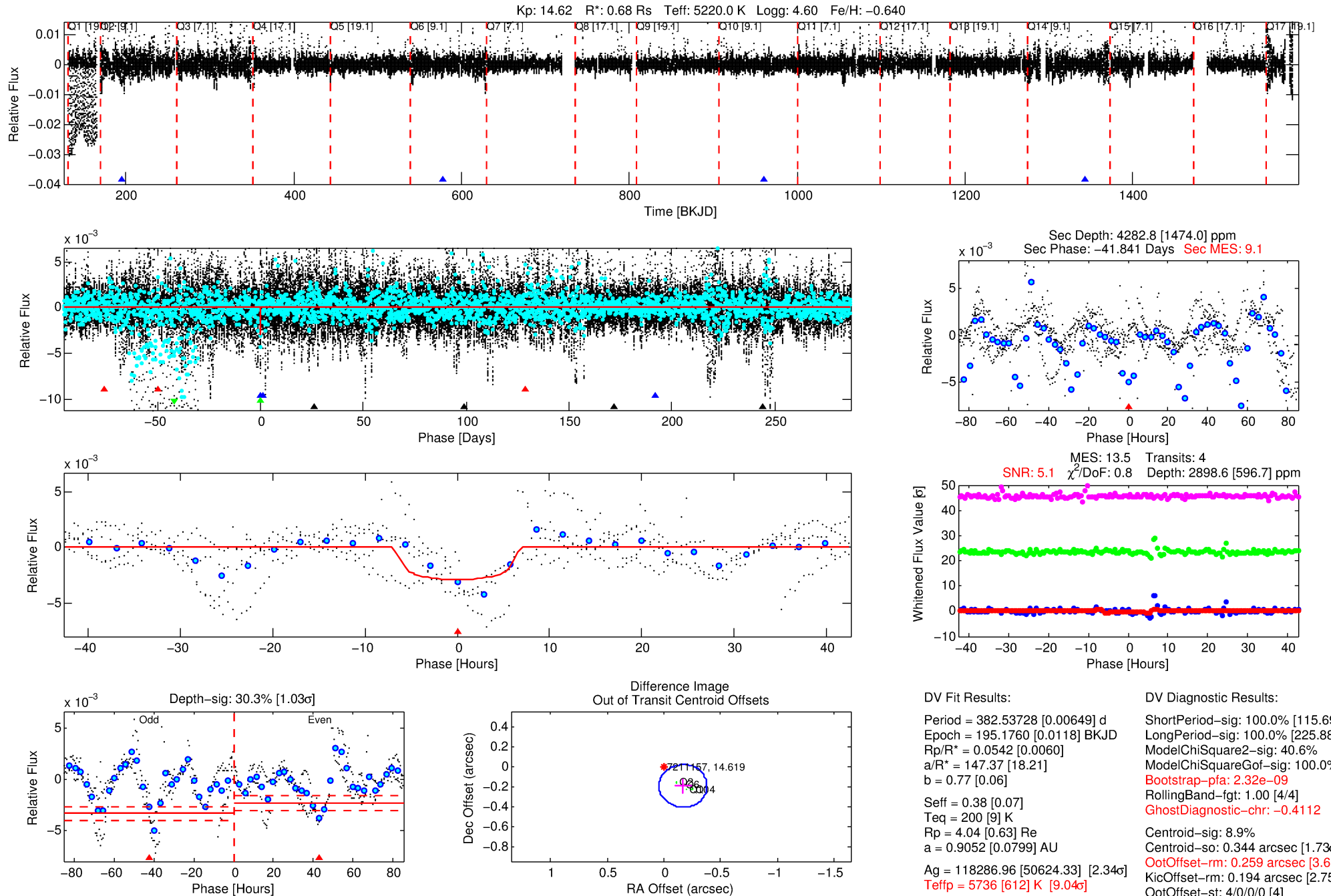
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007211157-03

No Significant Match Found

DV One-Page Summary

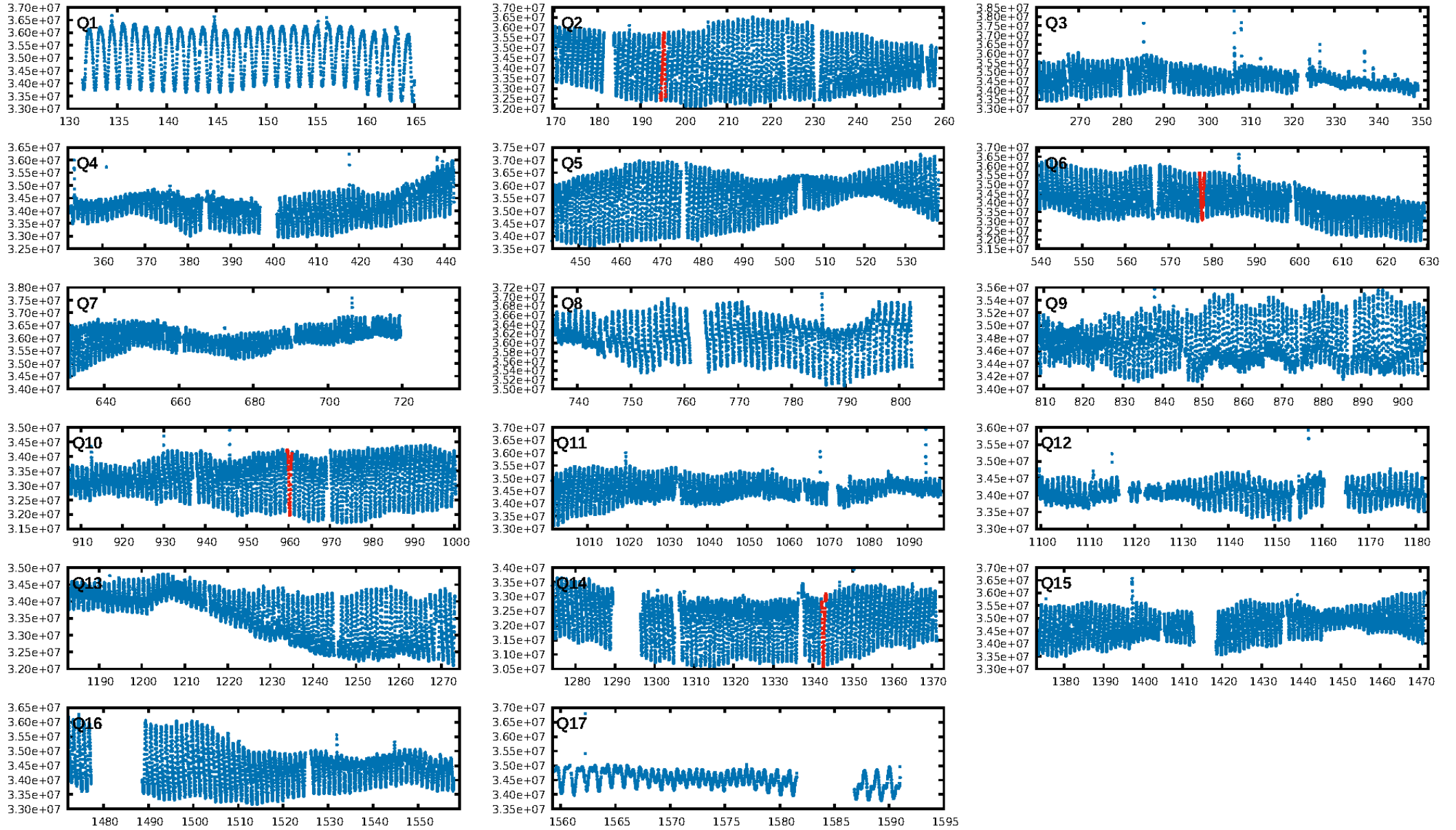
KIC: 7211157 Candidate: 3 of 4 Period: 382.537 d



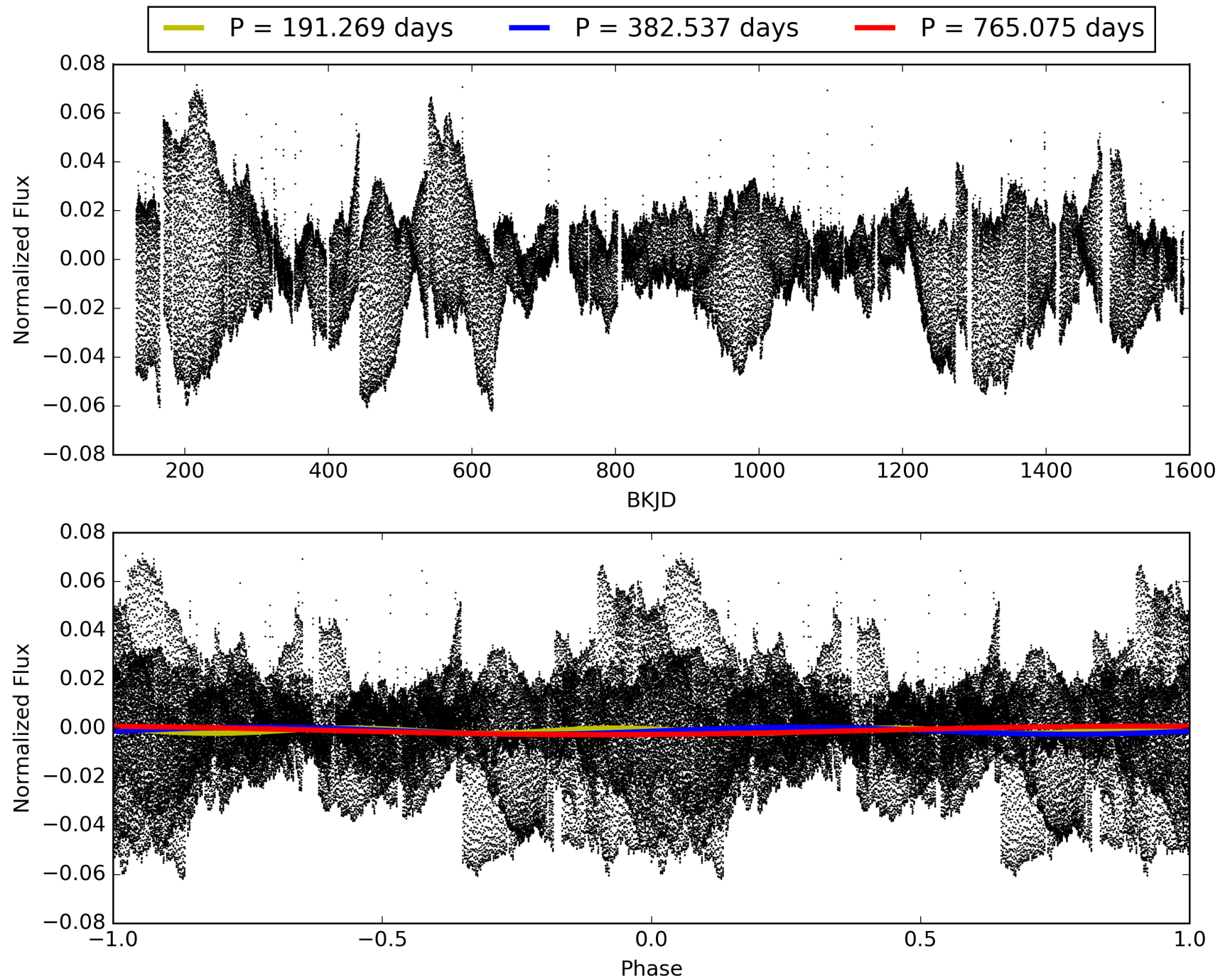
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:36:50 Z

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

TCE 007211157-03, PDC Light Curves

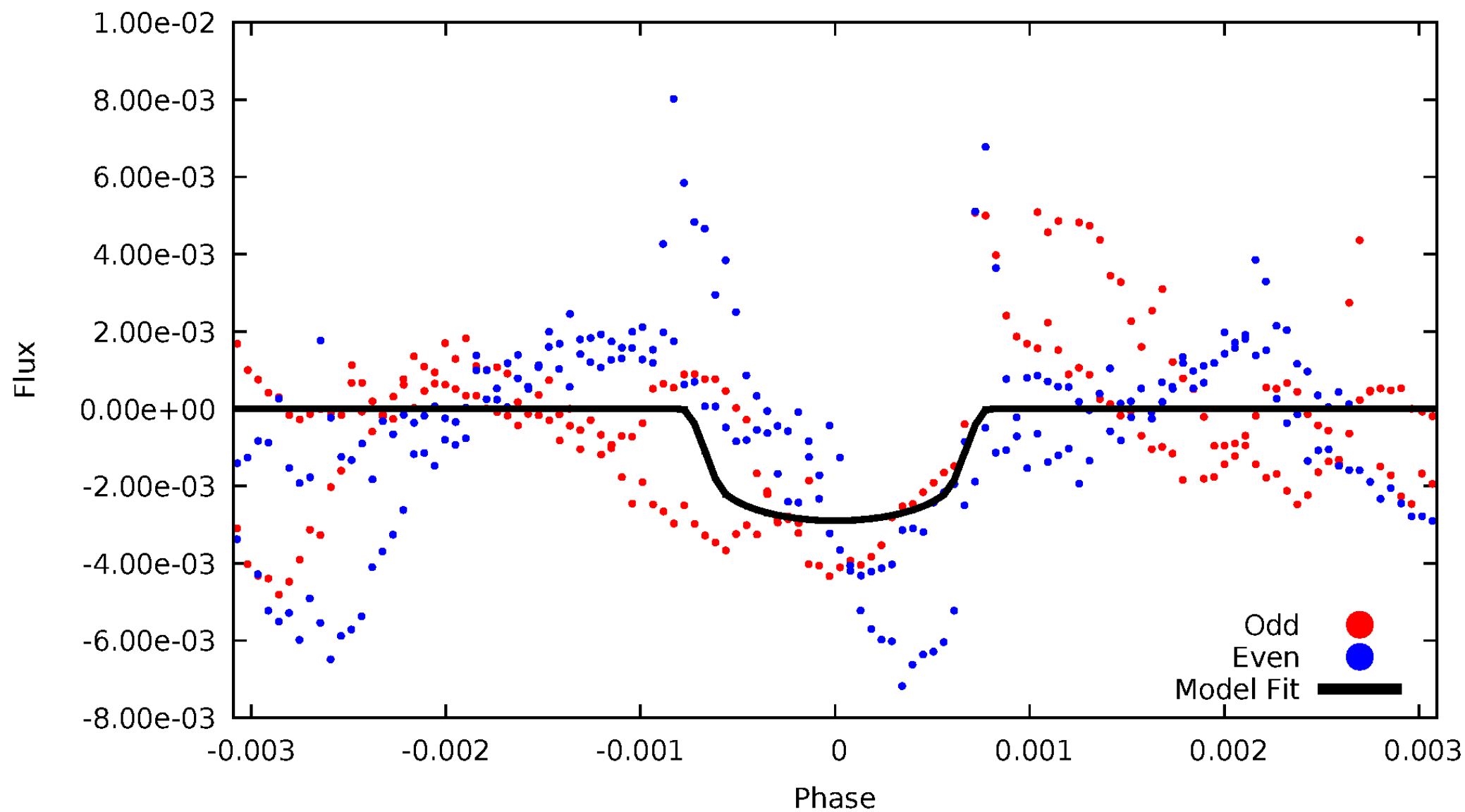


TCE 007211157-03



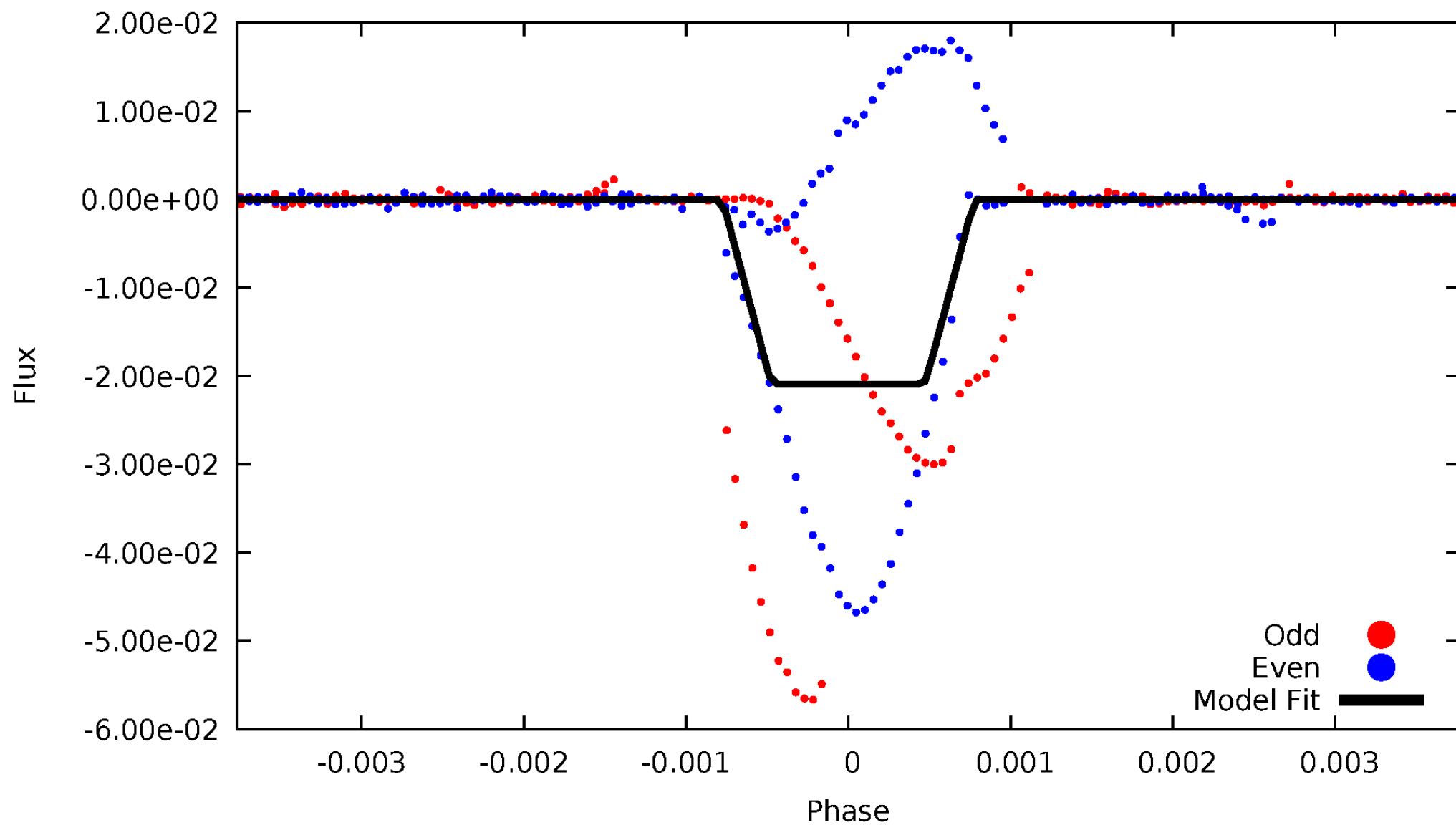
DV Odd/Even

TCE 007211157-03



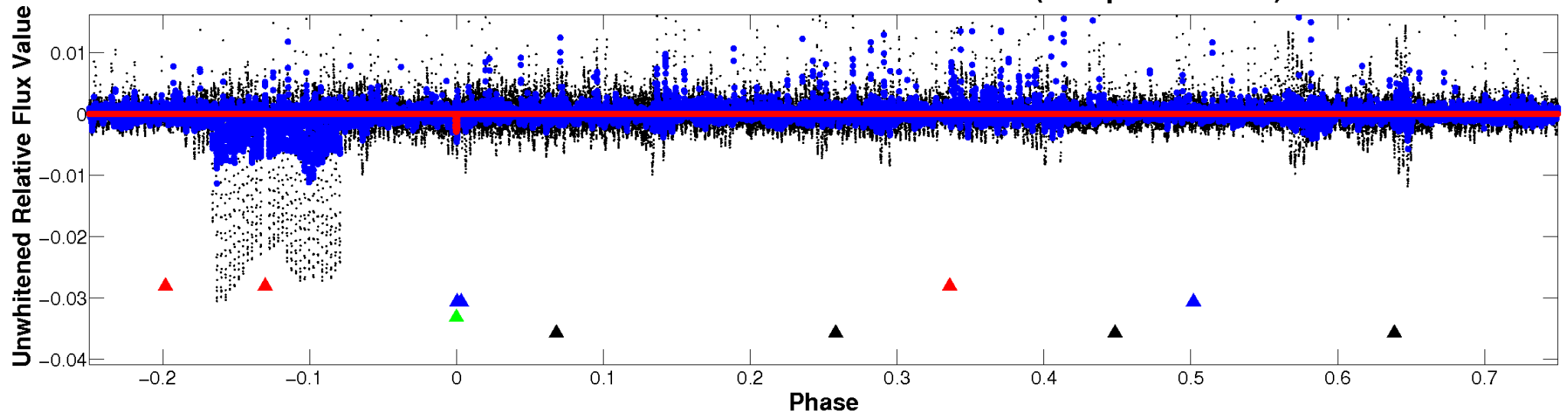
ALT Odd/Even

TCE 007211157-03

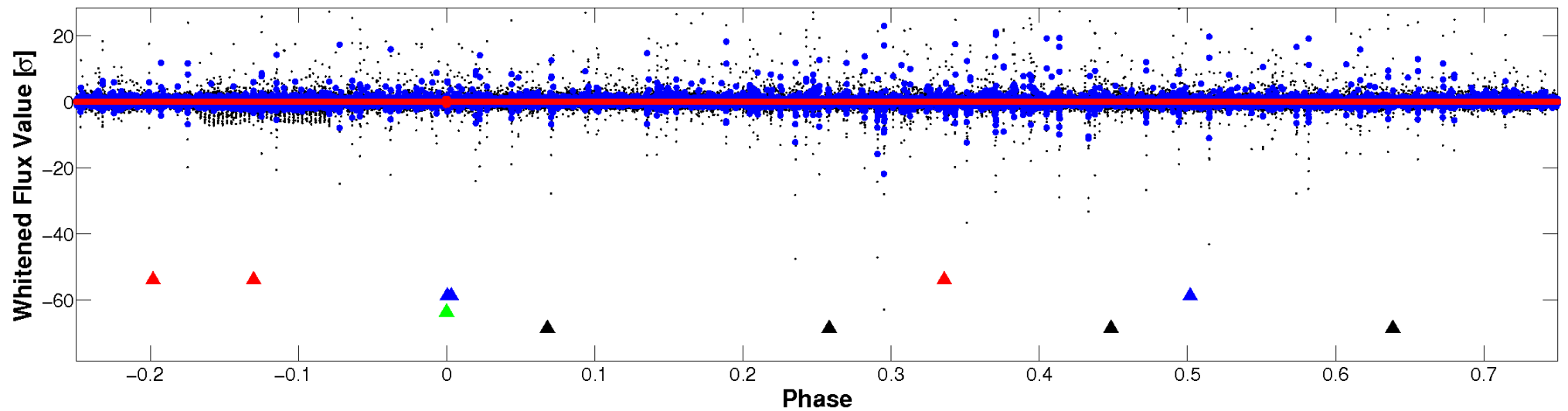


Non-Whitened Vs. Whitened Light Curve

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

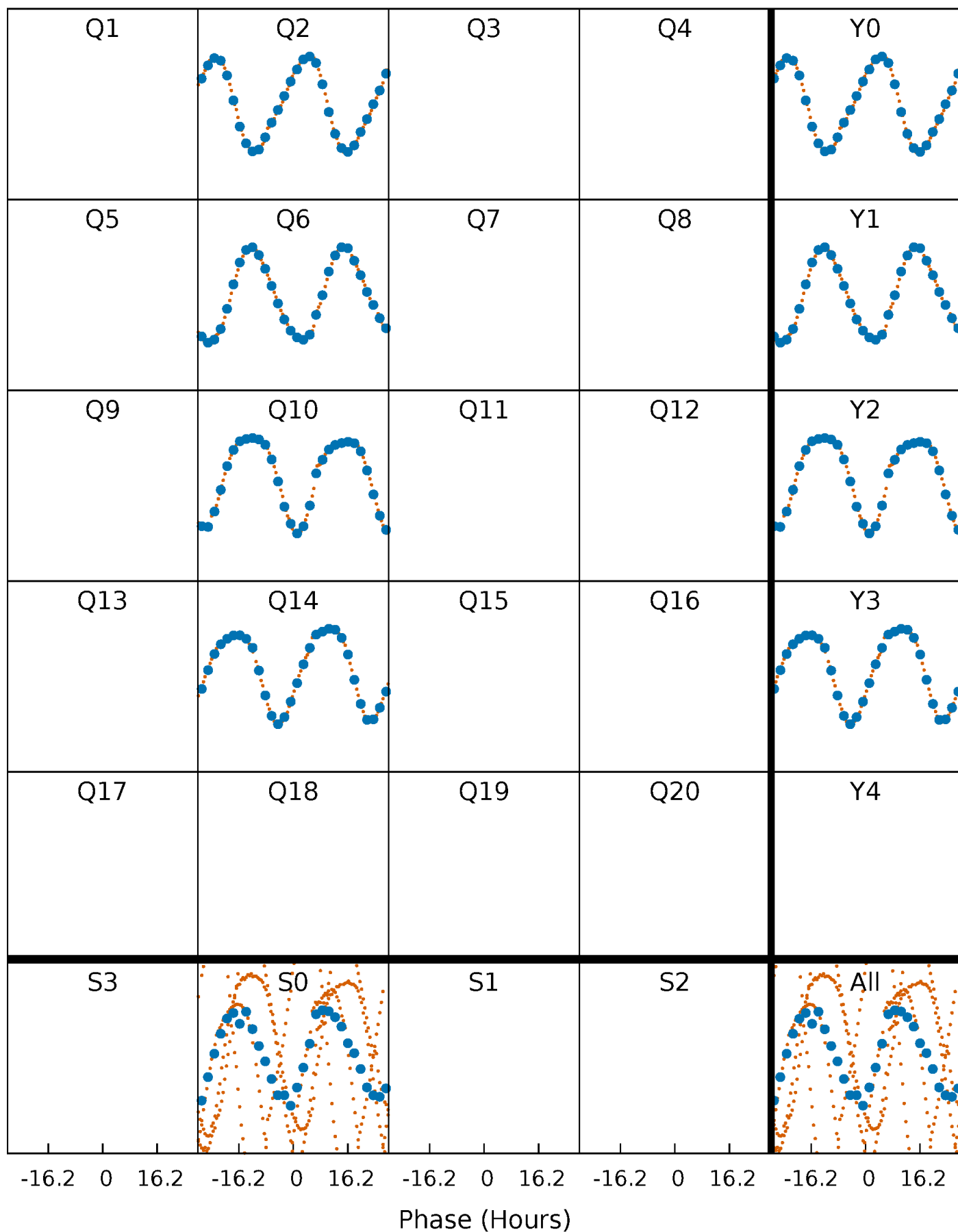


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



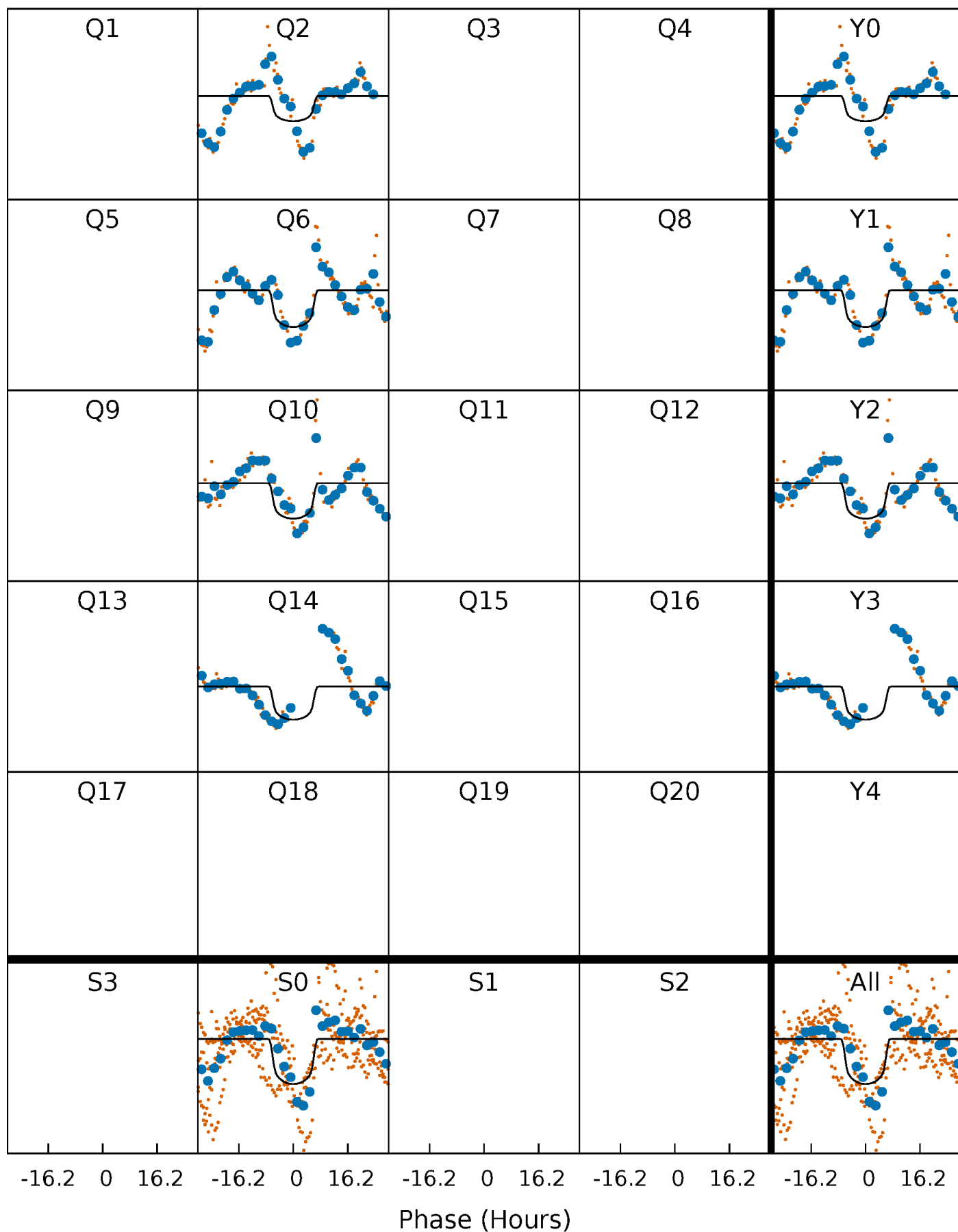
PDC Quarter-Phased Transit Curves

TCE 007211157-03 P=382.537278 Days $T_0=195.176026$ (BKJD)



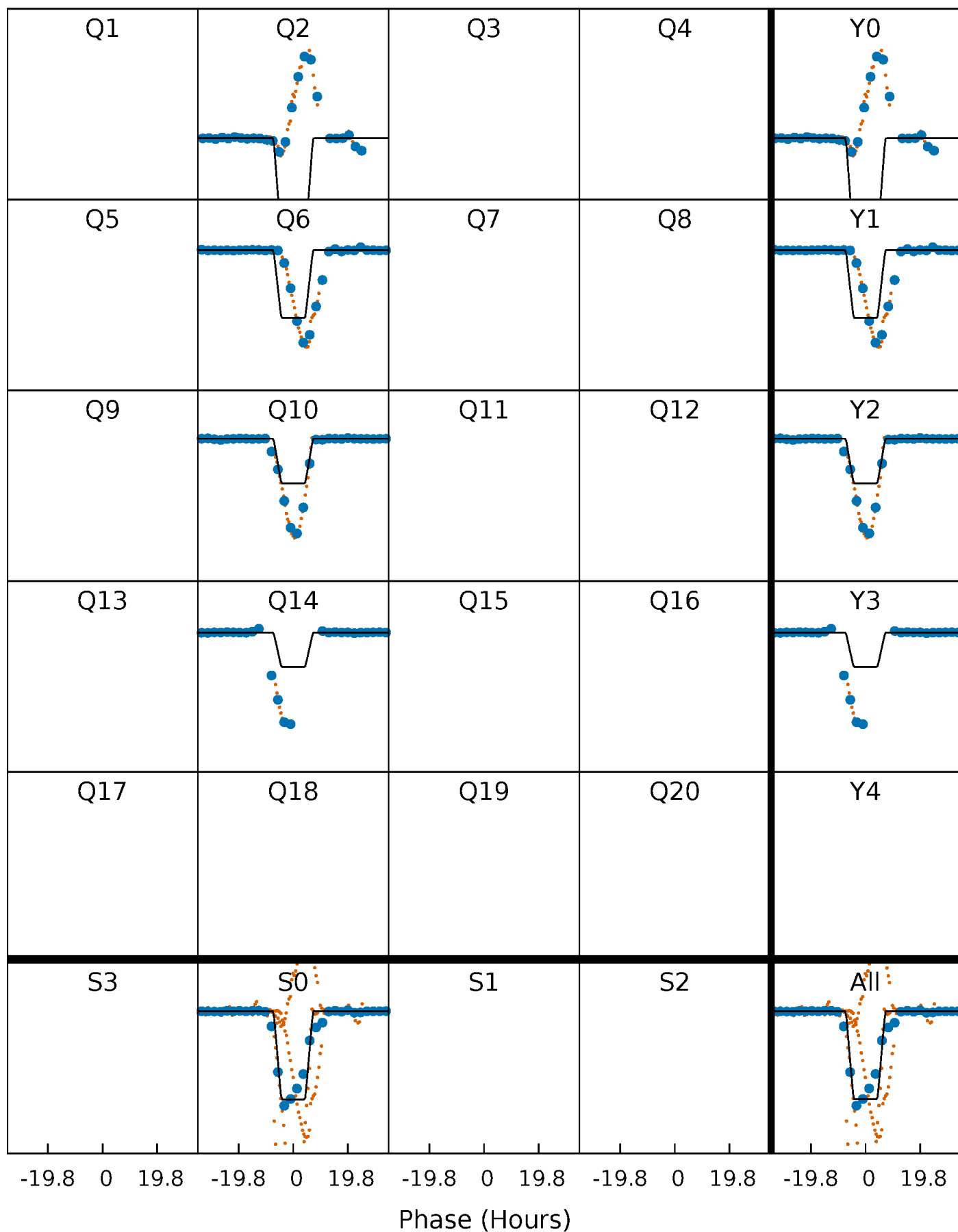
DV Quarter-Phased Transit Curves

TCE 007211157-03 P=382.537278 Days $T_0=195.176026$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

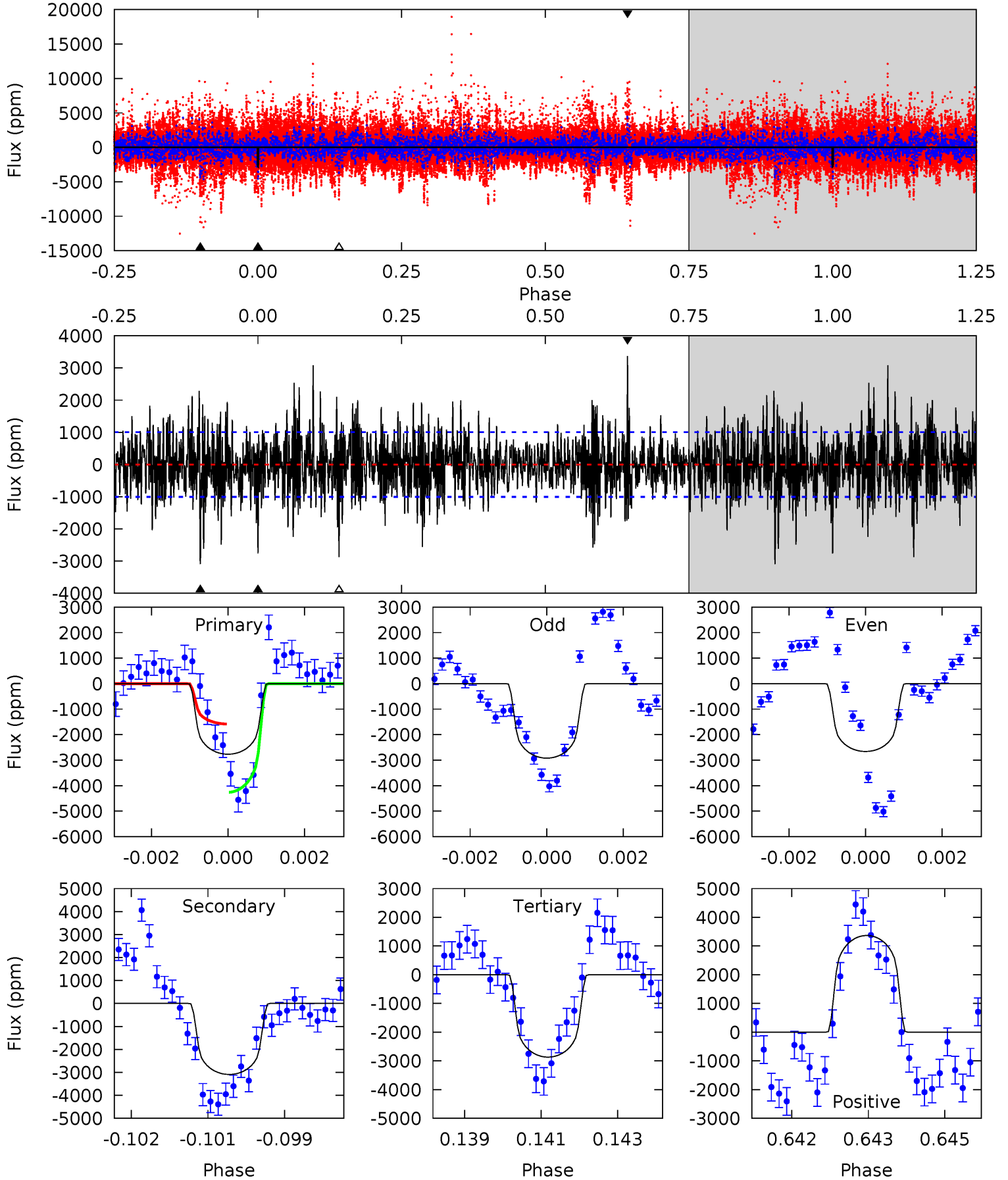
TCE 007211157-03 P=382.536677 Days $T_0=195.188934$ (BKJD)



DV Model-Shift Uniqueness Test

007211157-03, P = 382.537278 Days, E = 195.176026 Days

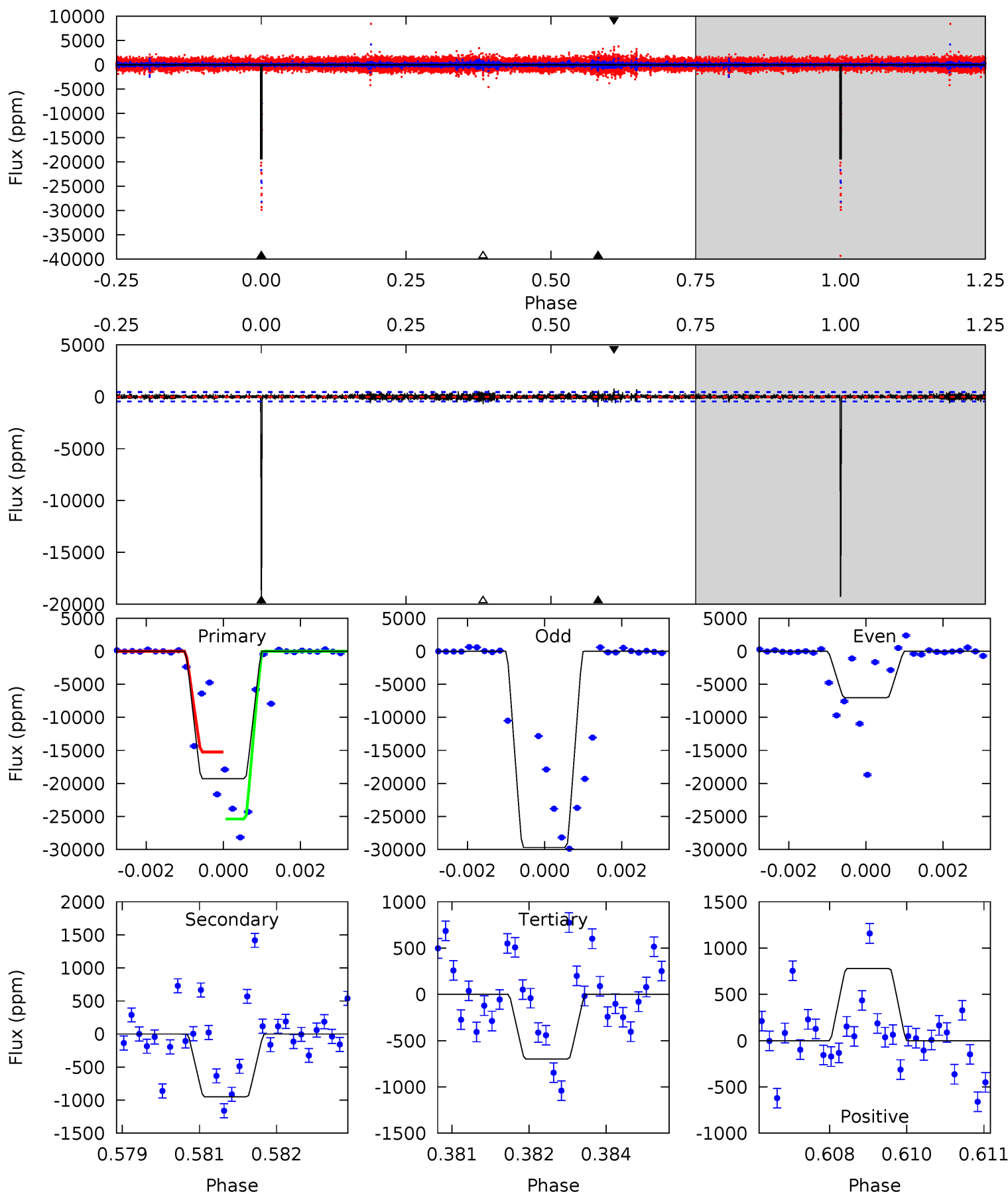
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	16.5	15.3	18.0	5.37	3.17	3.87	-0.54	-3.20	1.19	-1.47	0.51	1.05	0.52	7.12



Alt Model-Shift Uniqueness Test

007211157-03, P = 382.536677 Days, E = 195.188934 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
223.6	11.0	8.12	9.05	5.37	3.16	1.38	215.5	214.6	2.92	1.99	144.2	0.96	0.04	0



Stellar Parameters For KIC 007211157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5220^{+157}_{-141}	$4.599^{+0.066}_{-0.055}$	$-0.640^{+0.300}_{-0.300}$	$0.683^{+0.074}_{-0.059}$	$0.675^{+0.076}_{-0.038}$	$2.989^{+0.774}_{-0.615}$
	+3%/-3%	+1%/-1%	+47%/-47%	+11%/-9%	+11%/-6%	+26%/-21%
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 007211157-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3091 ± 187	$4.02^{+0.53}_{-0.46}$	279^{+11}_{-10}	5303^{+349}_{-317}	87081^{+24018}_{-19654}
Alt.	-951 ± 86	$10.74^{+0.80}_{-0.69}$	279^{+10}_{-10}	3042^{+91}_{-79}	3760^{+651}_{-585}

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 $A_{obs} \gg 1.0$

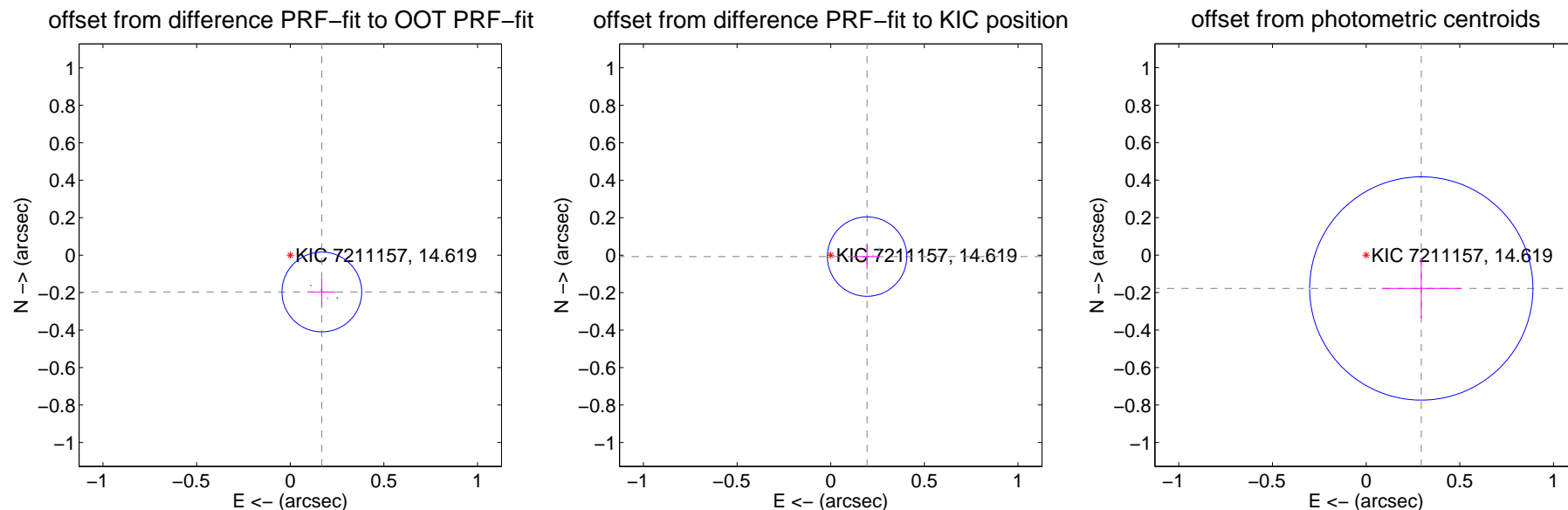
DV Centroid Data

Supplemental centroid analysis for 007211157-03. Kepler magnitude: 14.62. Transit SNR 5.09

There are 3 quarters with good PRF difference image offsets

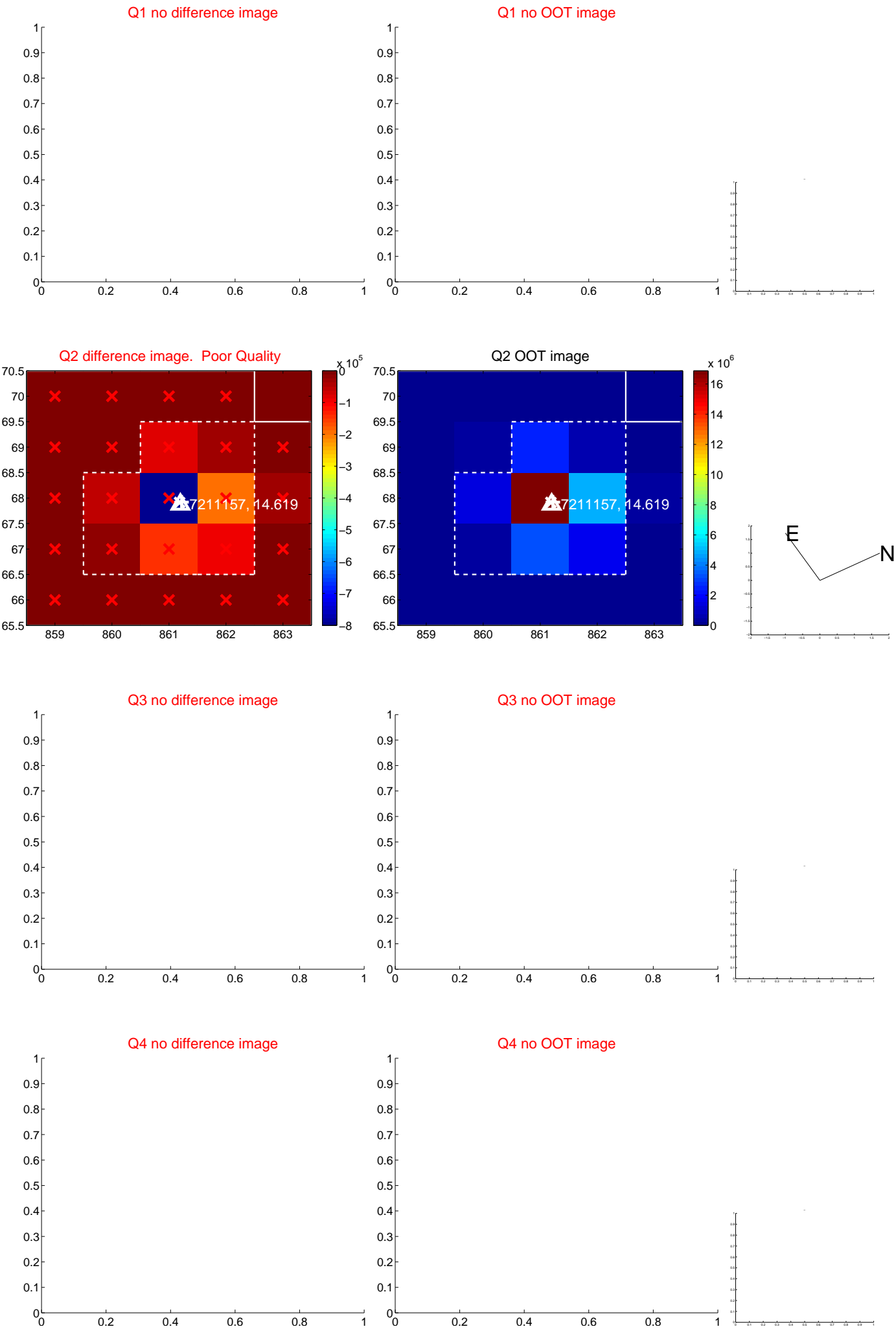
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.259 ± 0.071	3.65	-0.169 ± 0.073	-0.197 ± 0.069
PRF-fit source offset from KIC position	0.194 ± 0.071	2.75	-0.194 ± 0.071	-0.008 ± 0.068
photometric centroid source offset	0.34 ± 0.20	1.73	-0.29 ± 0.21	-0.18 ± 0.16



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

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



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

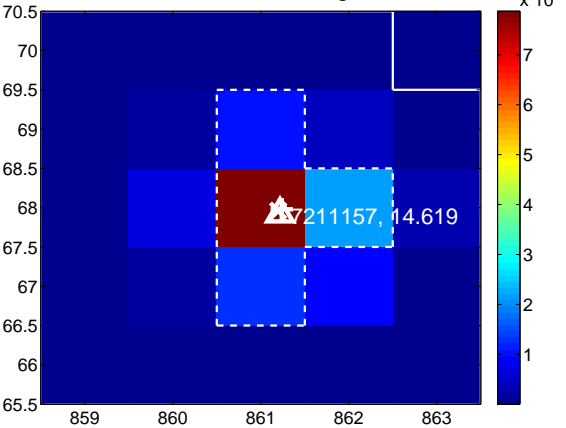
Q5 no difference image



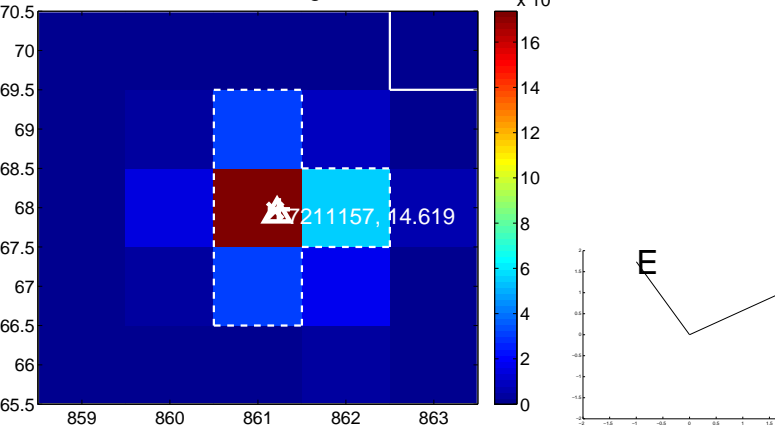
Q5 no OOT image



Q6 difference image



Q6 OOT image

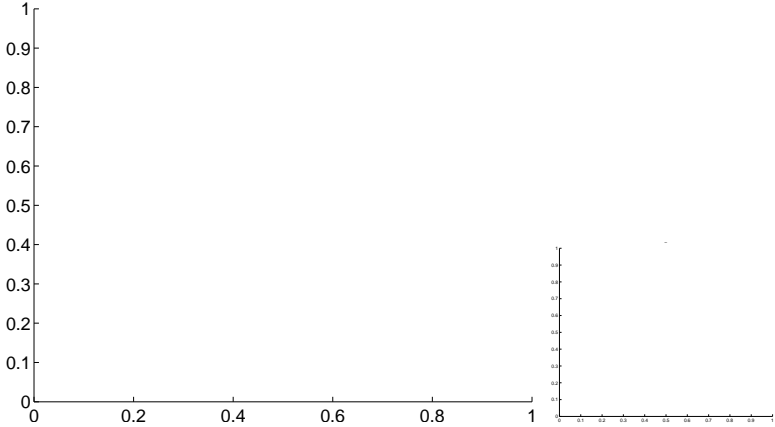


E N

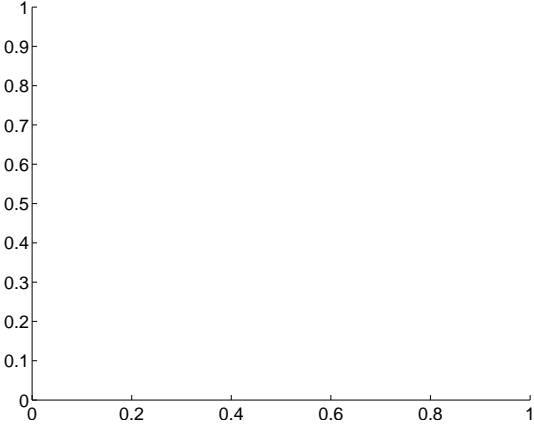
Q7 no difference image



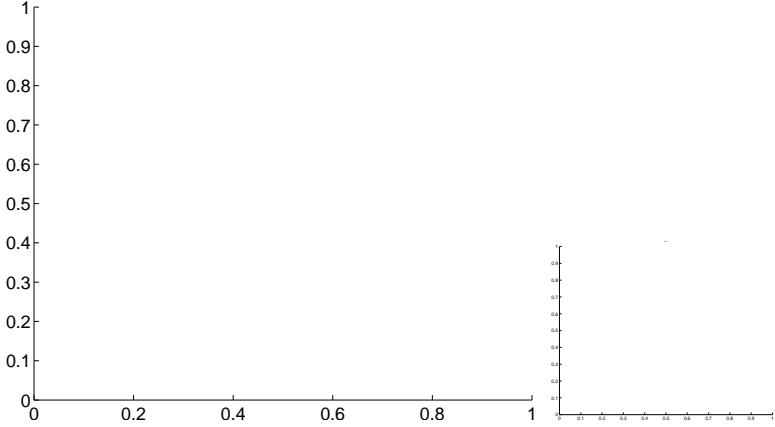
Q7 no OOT image



Q8 no difference image



Q8 no OOT image

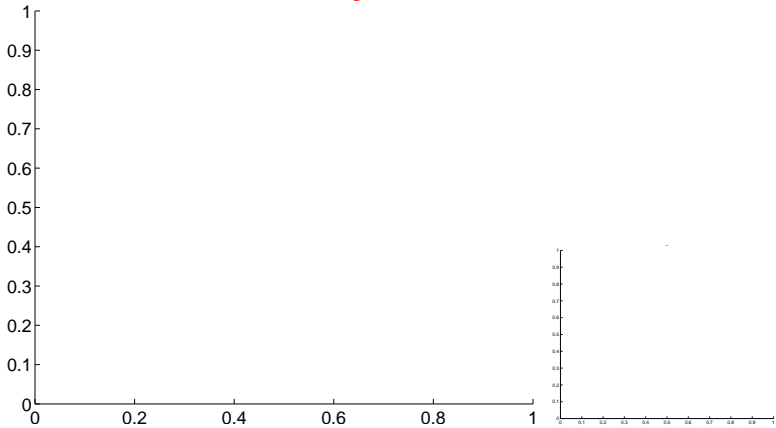


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

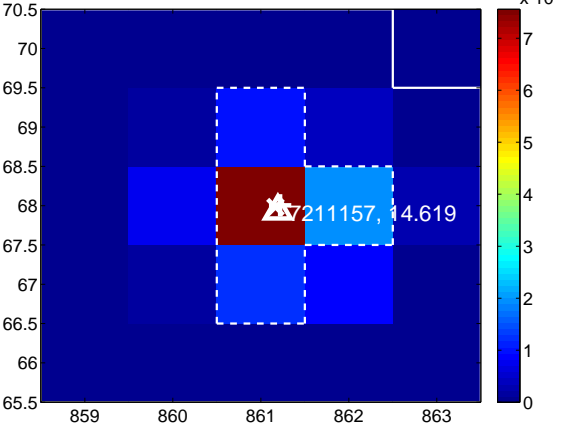
Q9 no difference image



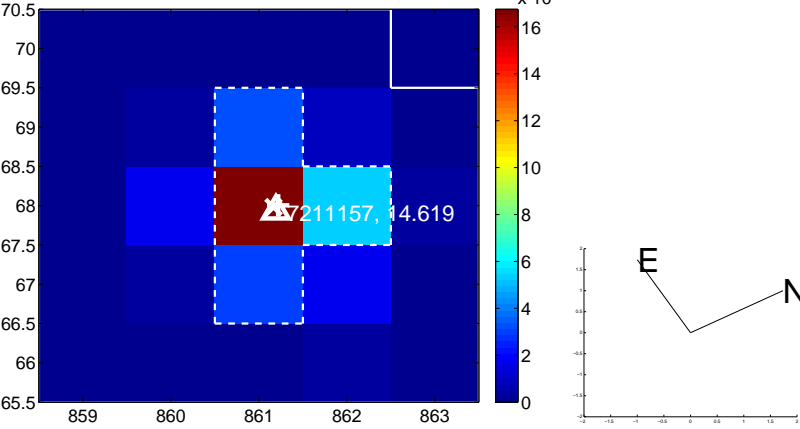
Q9 no OOT image



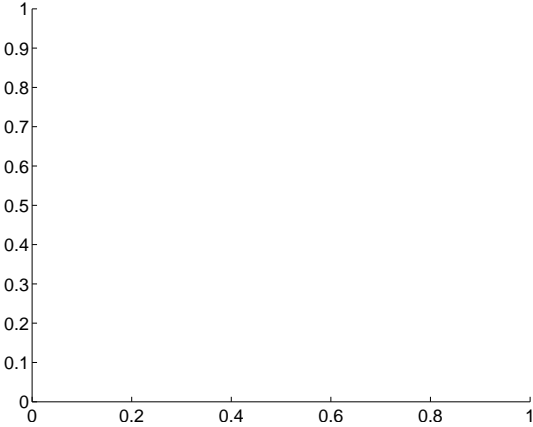
Q10 difference image



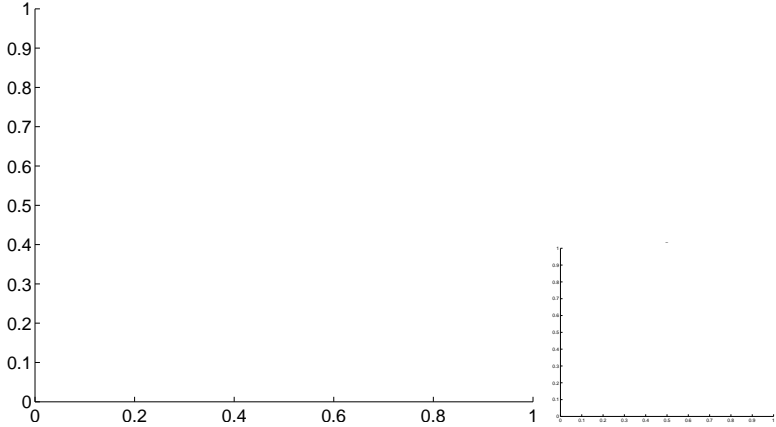
Q10 OOT image



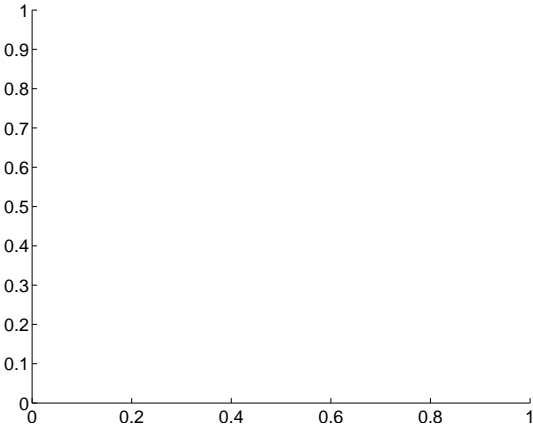
Q11 no difference image



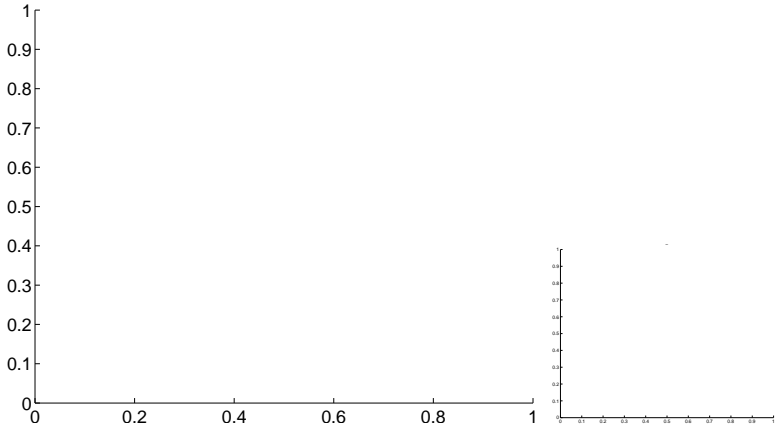
Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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

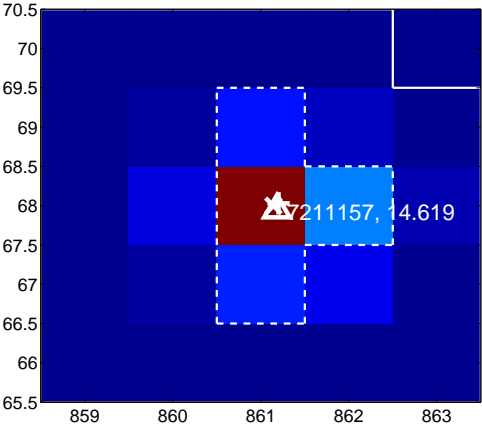
Q13 no difference image



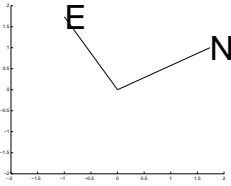
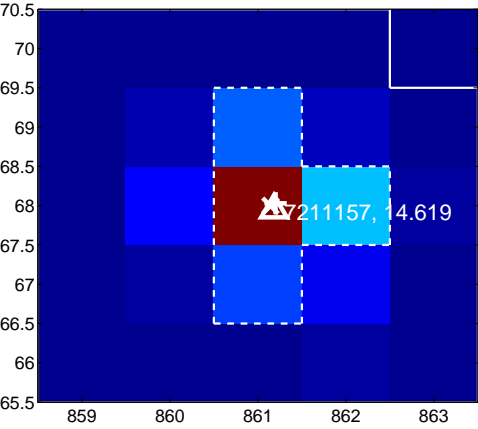
Q13 no OOT image



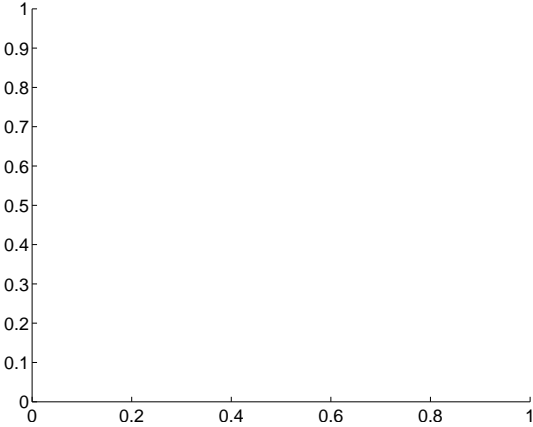
Q14 difference image



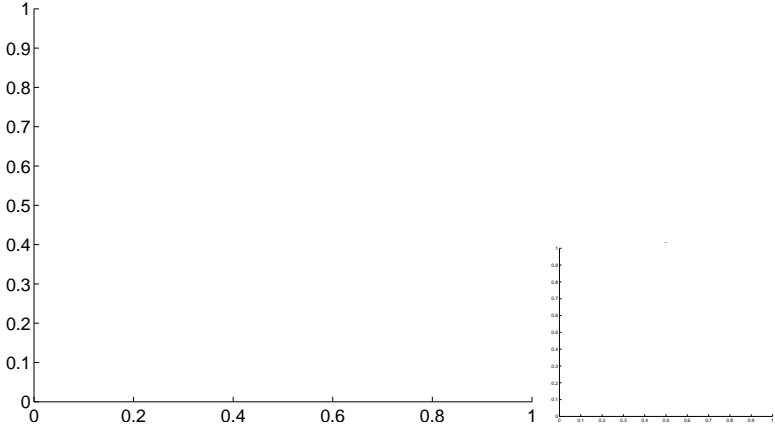
Q14 OOT image



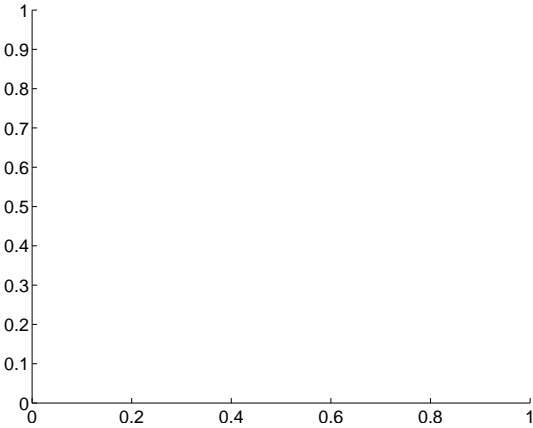
Q15 no difference image



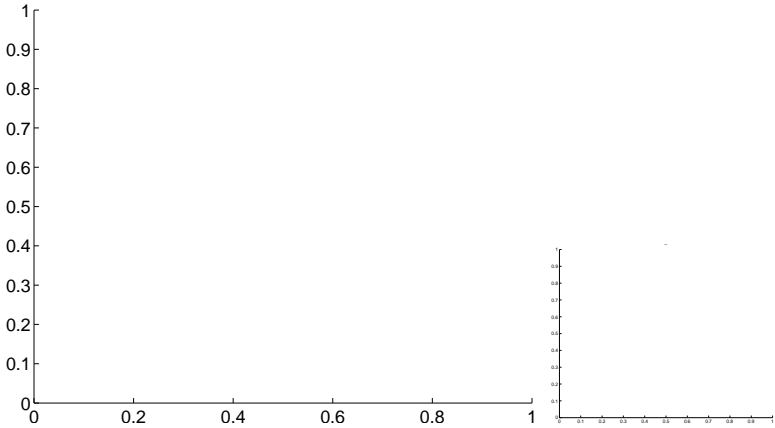
Q15 no OOT image



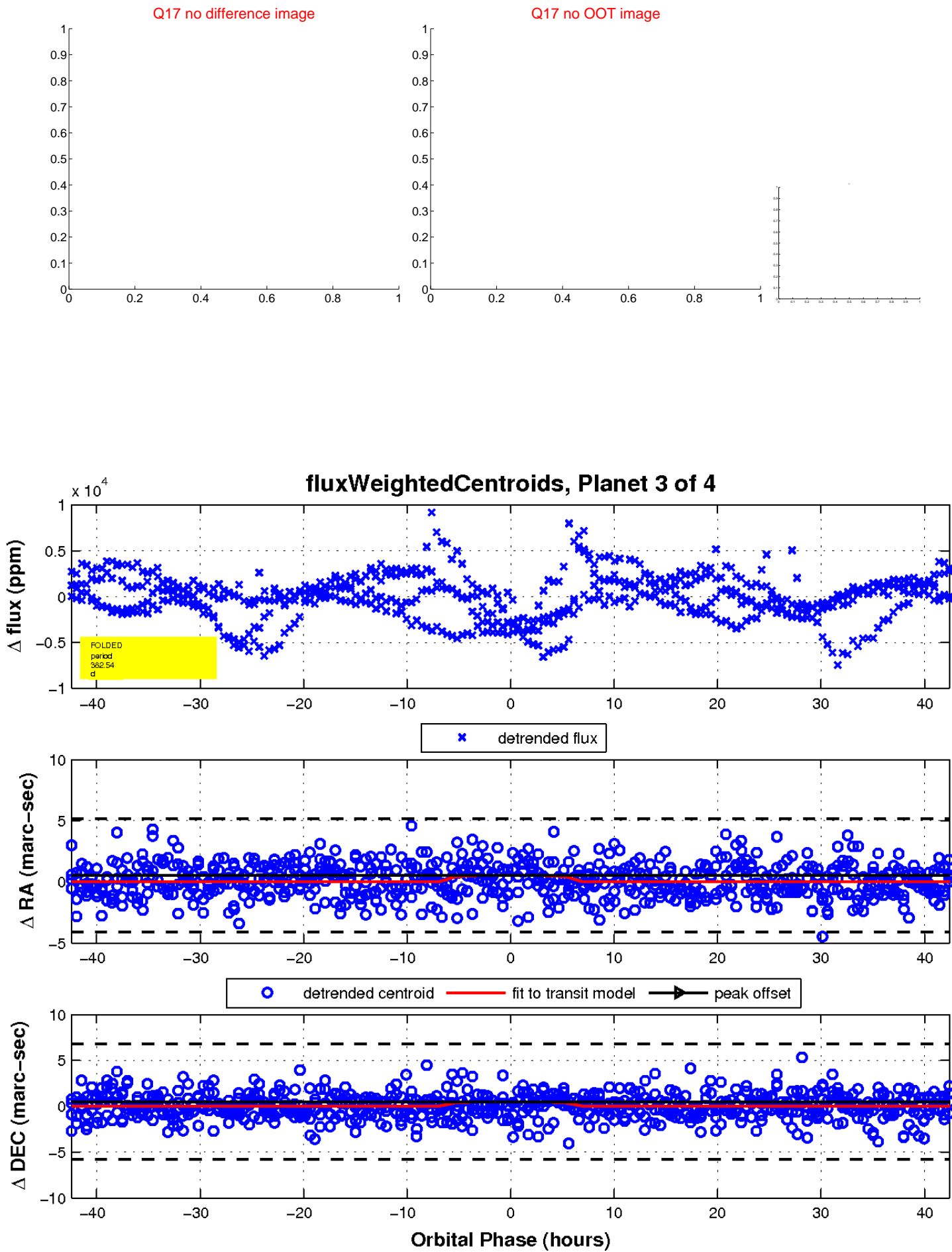
Q16 no difference image



Q16 no OOT image

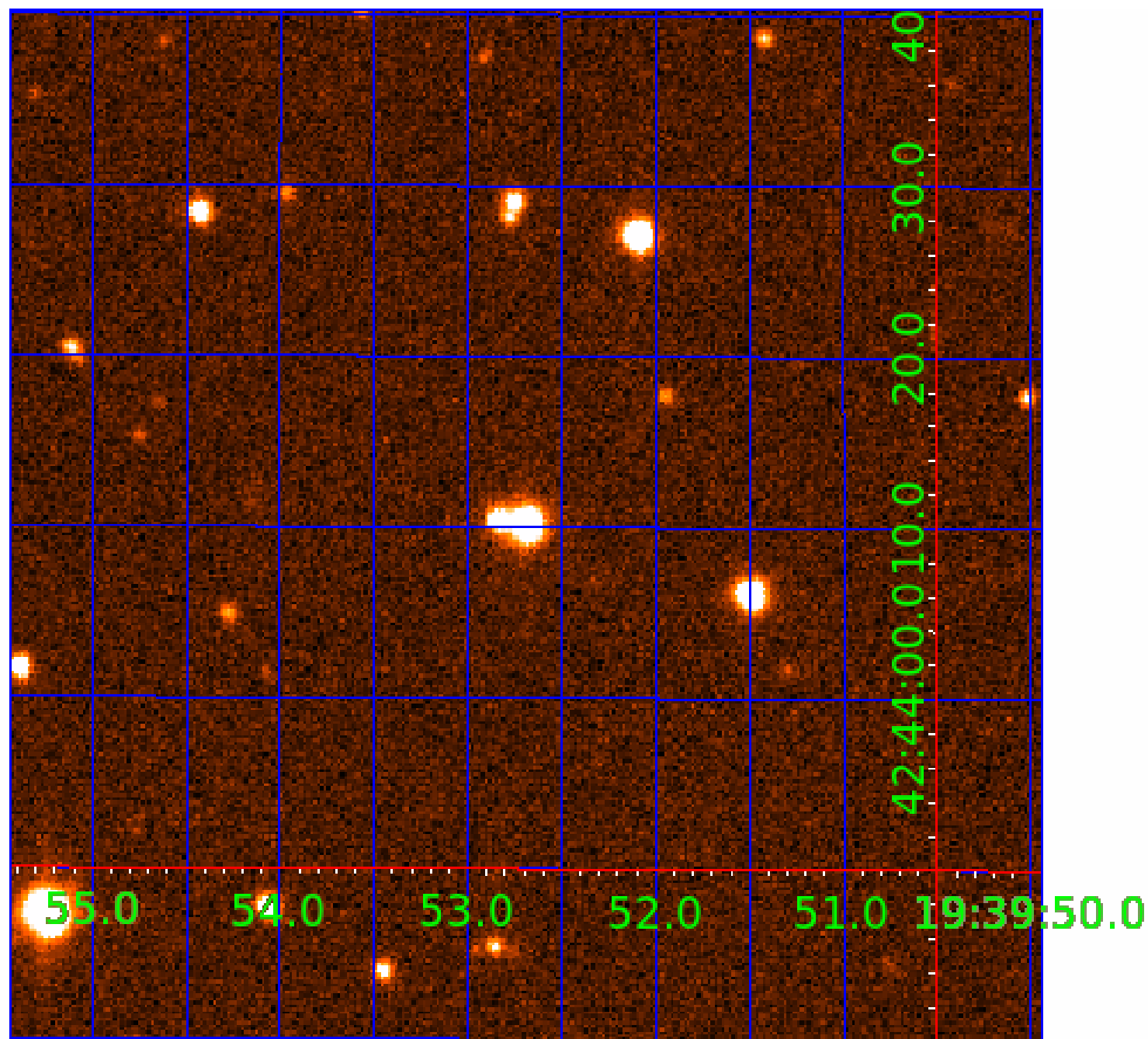


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007211157

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})
007211157-01	OBS	No	560.826792	145.363128	6310.2	12.547	17.1	8.3	0.68	5220	6.64	0.23
007211157-02	OBS	No	573.275834	196.411121	3293.5	3.311	15.0	8.7	0.68	5220	3.93	0.22
007211157-03	OBS	No	382.537278	195.176026	2898.6	14.193	13.5	5.1	0.68	5220	4.04	0.38
007211157-04	OBS	No	309.782626	439.477226	1134.3	5.136	15.6	3.6	0.68	5220	2.41	0.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007211157-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007211157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007211157-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
007211157-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST

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

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

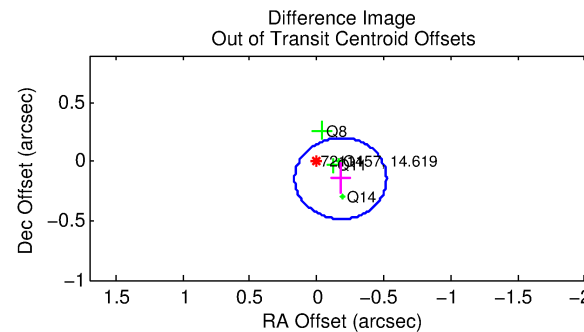
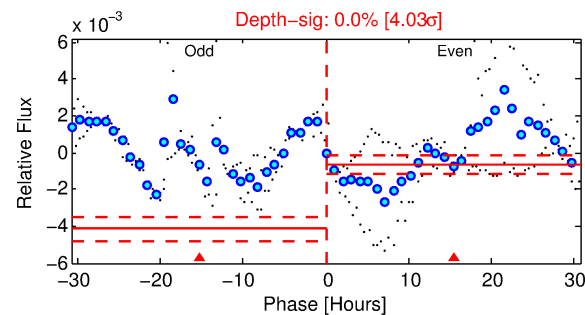
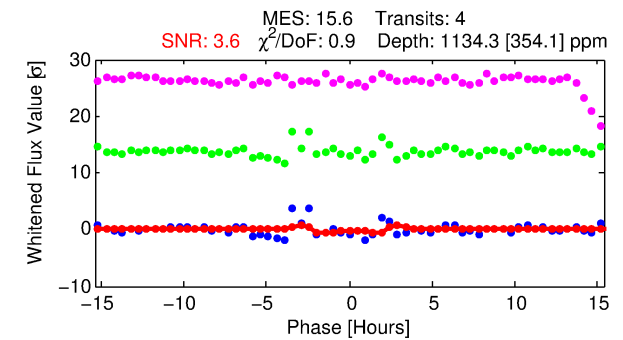
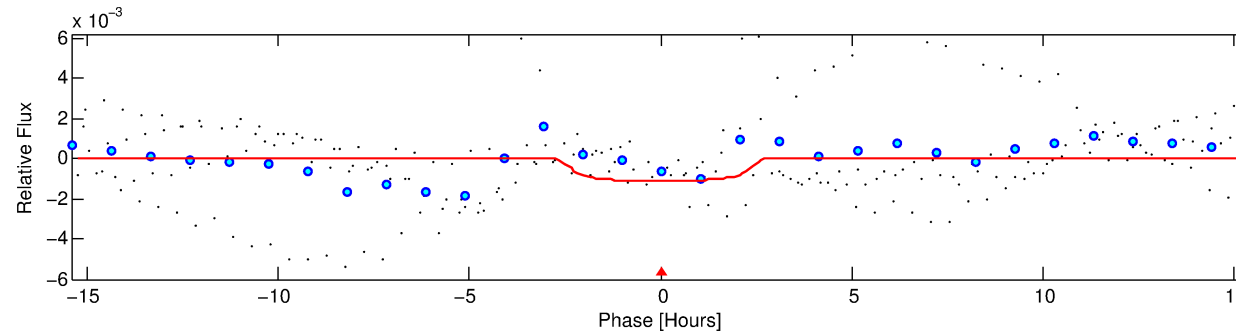
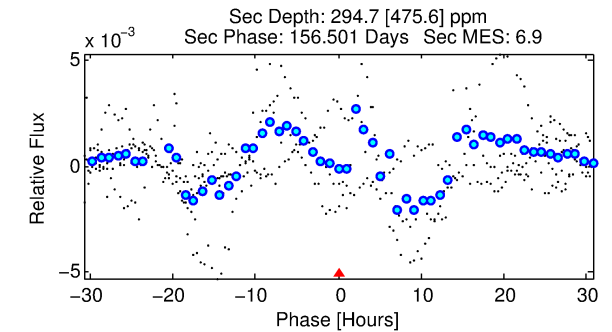
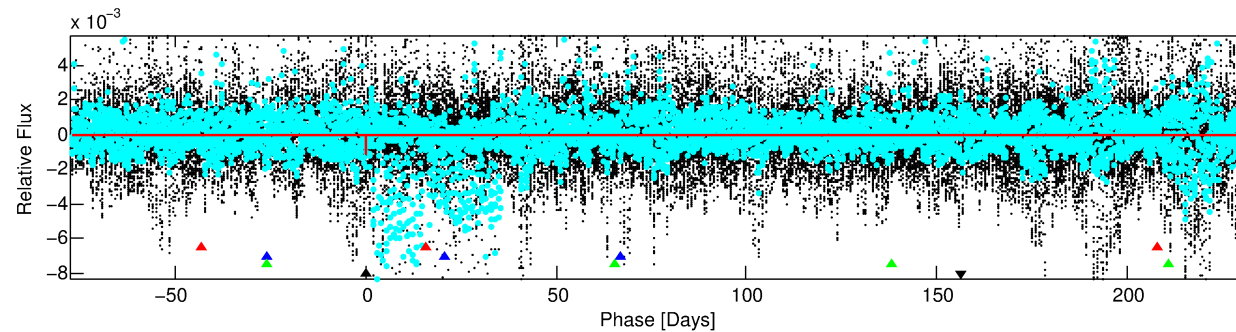
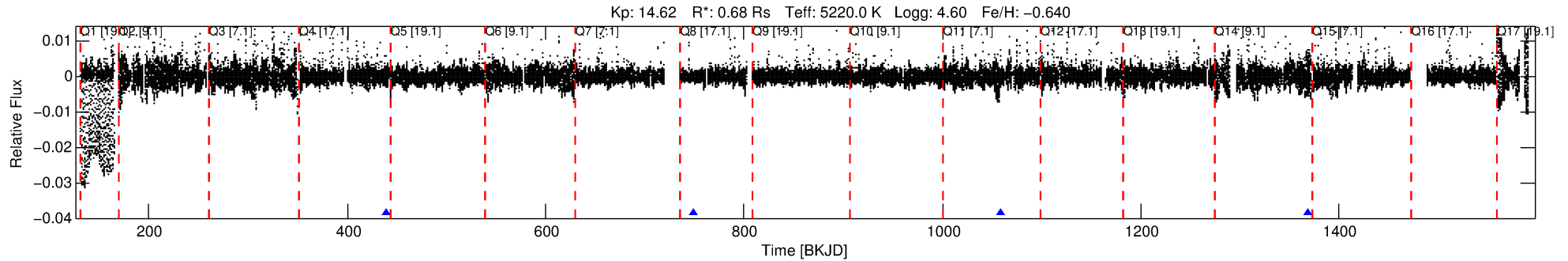
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007211157-04

No Significant Match Found

DV One-Page Summary

KIC: 7211157 Candidate: 4 of 4 Period: 309.783 d



DV Fit Results:

Period = 309.78263 [0.00599] d
Epoch = 439.4772 [0.0090] BKJD
Rp/R* = 0.0323 [0.0252]
a/R* = 374.93 [1116.55]
b = 0.64 [2.82]
Seff = 0.50 [0.09]
Teq = 215 [9] K
Rp = 2.41 [1.90] Re
a = 0.7865 [0.0694] AU
Ag = 17301.36 [38921.38] [0.44σ]
Teffp = 3805 [2140] K [1.68σ]

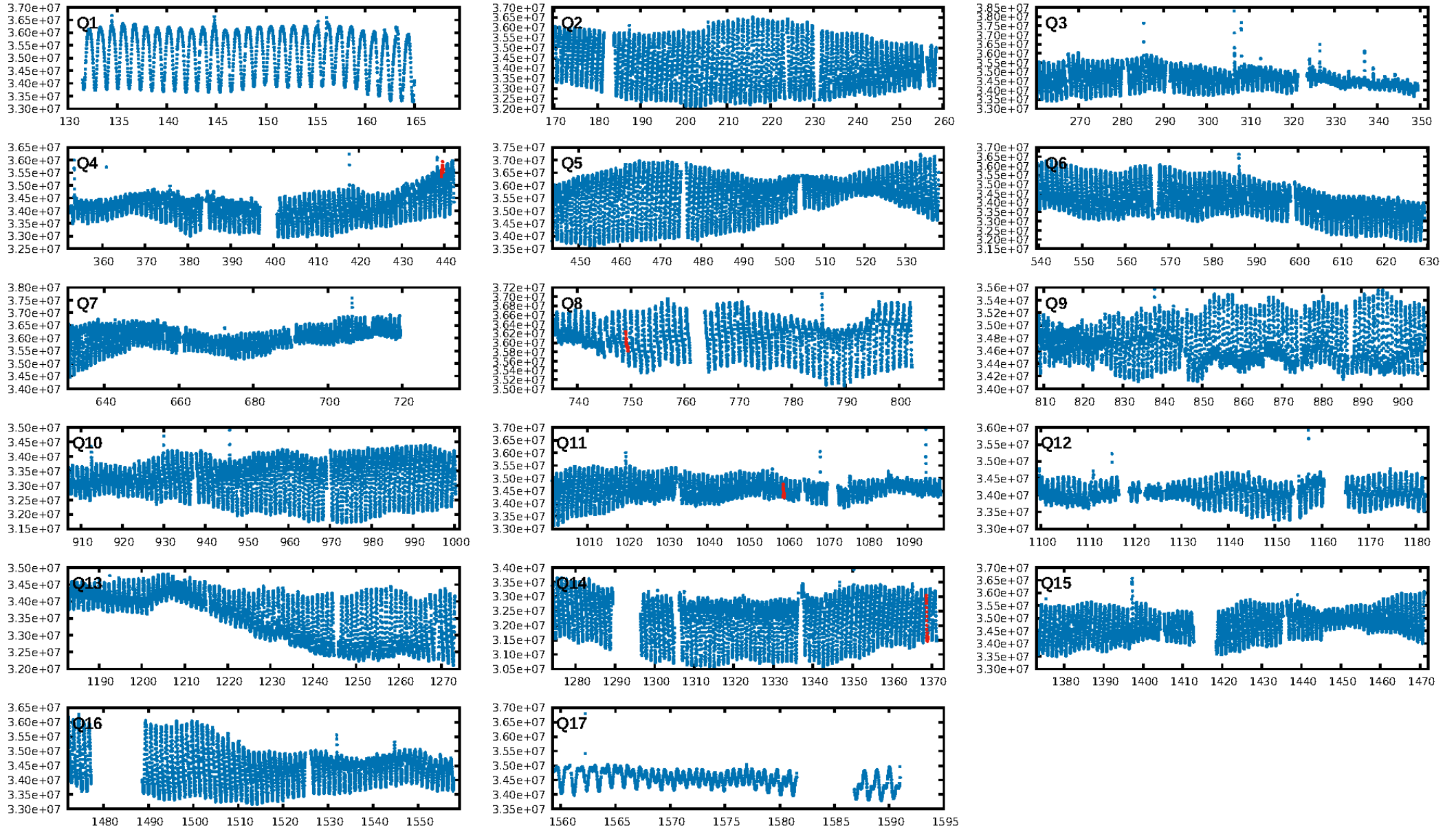
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [115.69σ]
ModelChiSquare2-sig: 1.8%
ModelChiSquareGof-sig: 98.8%
Bootstrap-pfa: 4.03e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.1023
Centroid-sig: 51.2%
Centroid-so: 0.469 arcsec [0.79σ]
OotOffset-rm: 0.228 arcsec [2.00σ]
KicOffset-rm: 0.187 arcsec [2.41σ]
OotOffset-st: 1/1/2/0 [4]
KicOffset-st: 1/1/2/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

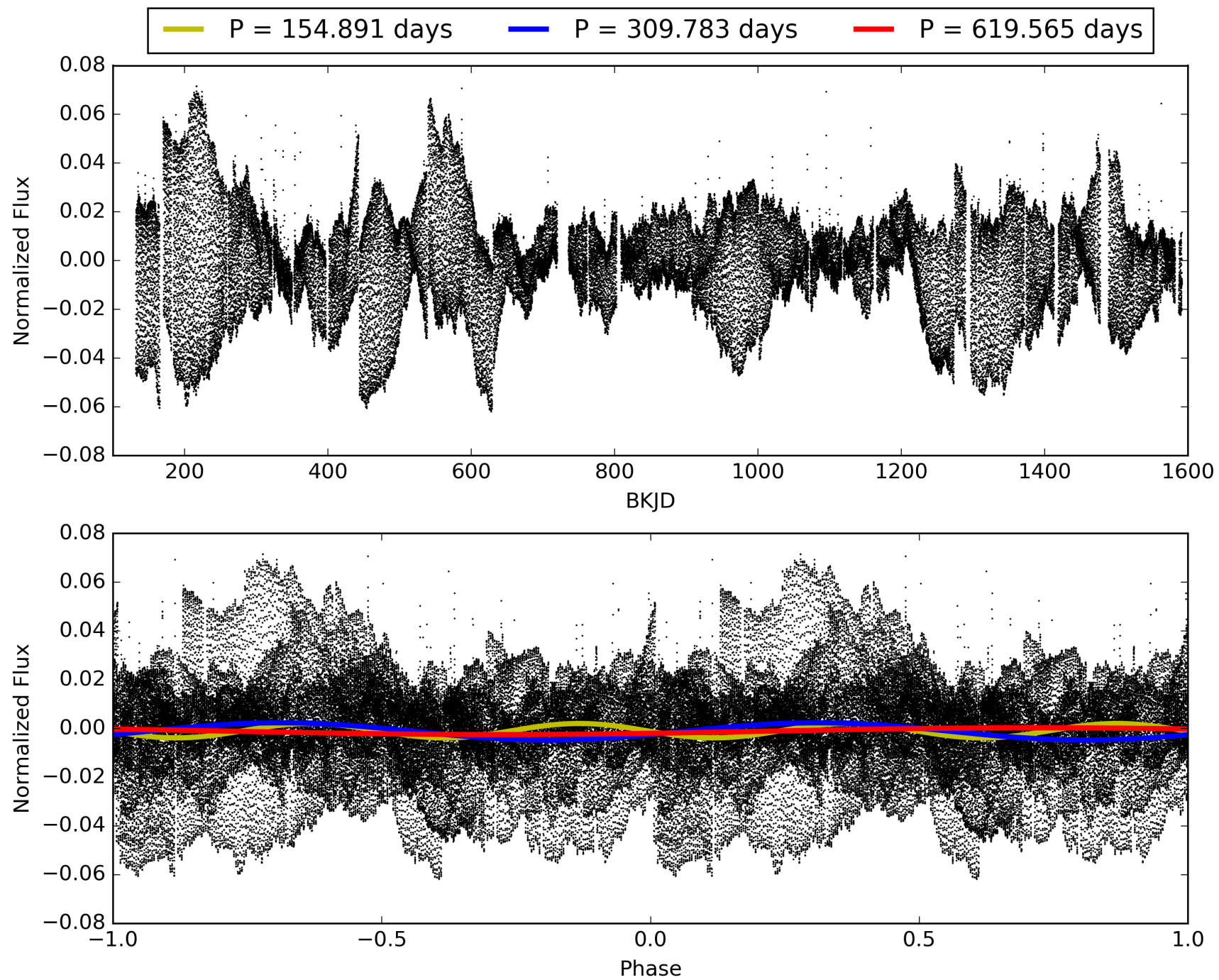
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:37:01 Z

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

TCE 007211157-04, PDC Light Curves

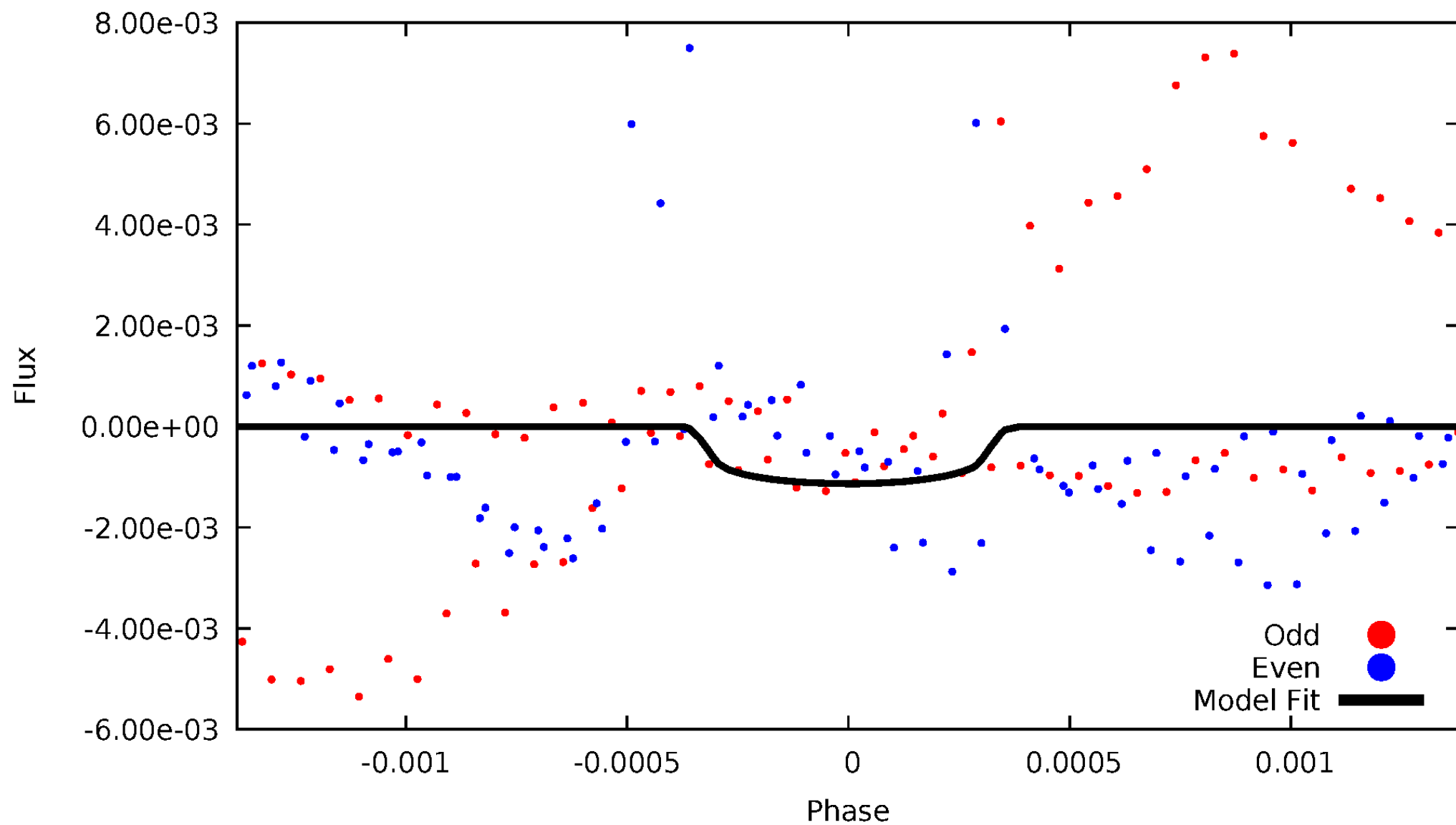


TCE 007211157-04



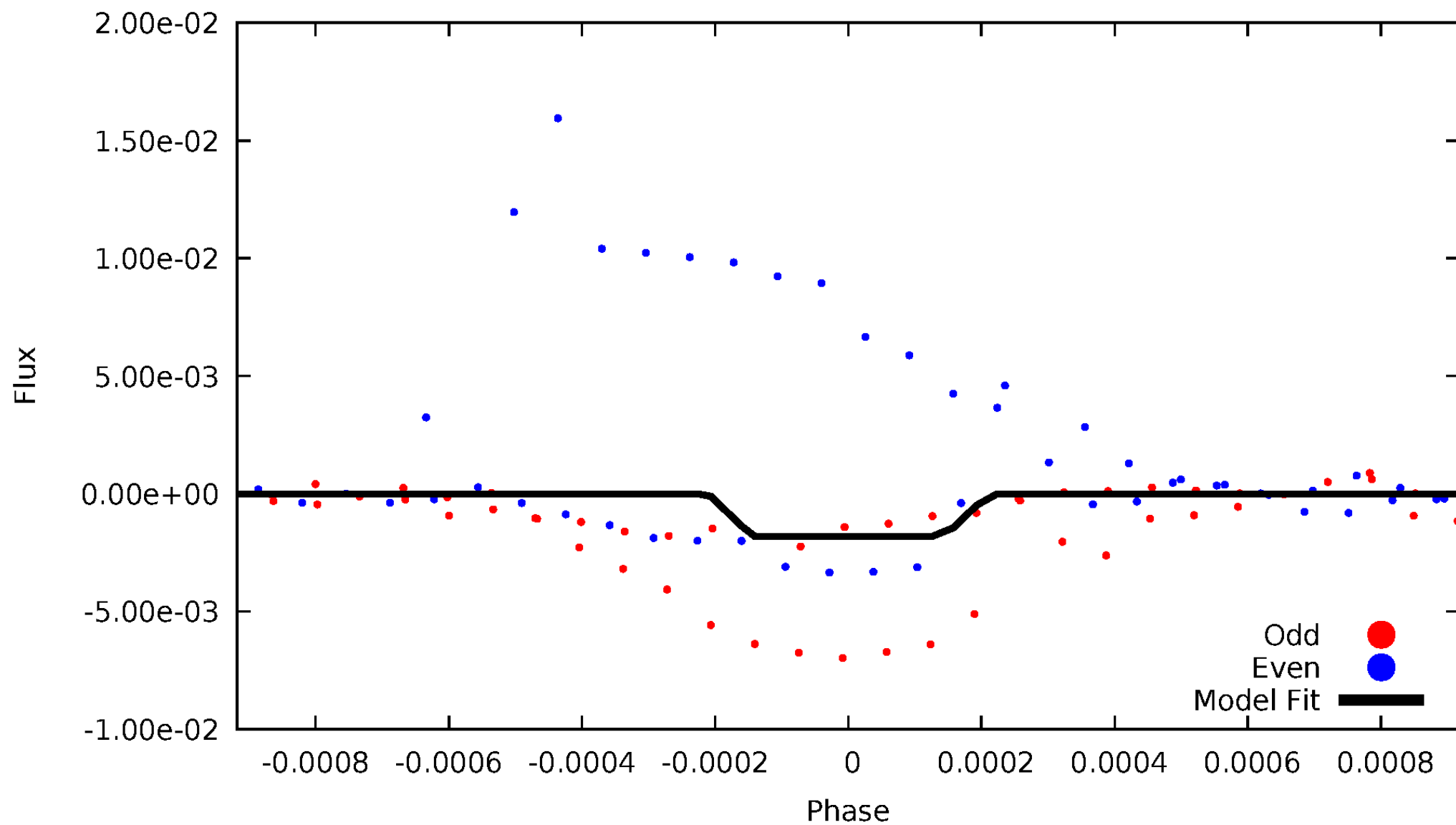
DV Odd/Even

TCE 007211157-04



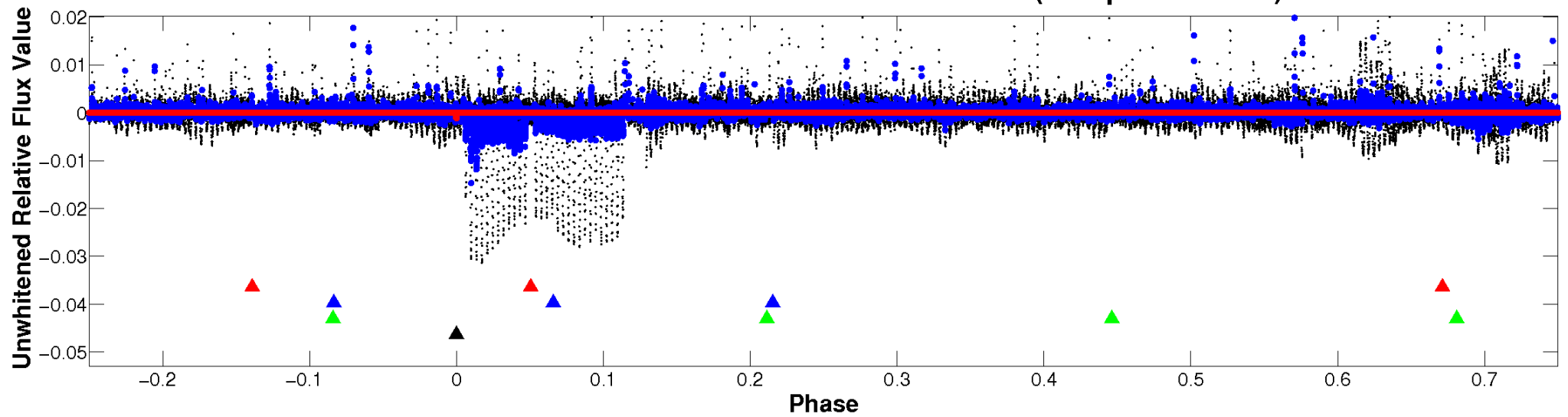
ALT Odd/Even

TCE 007211157-04

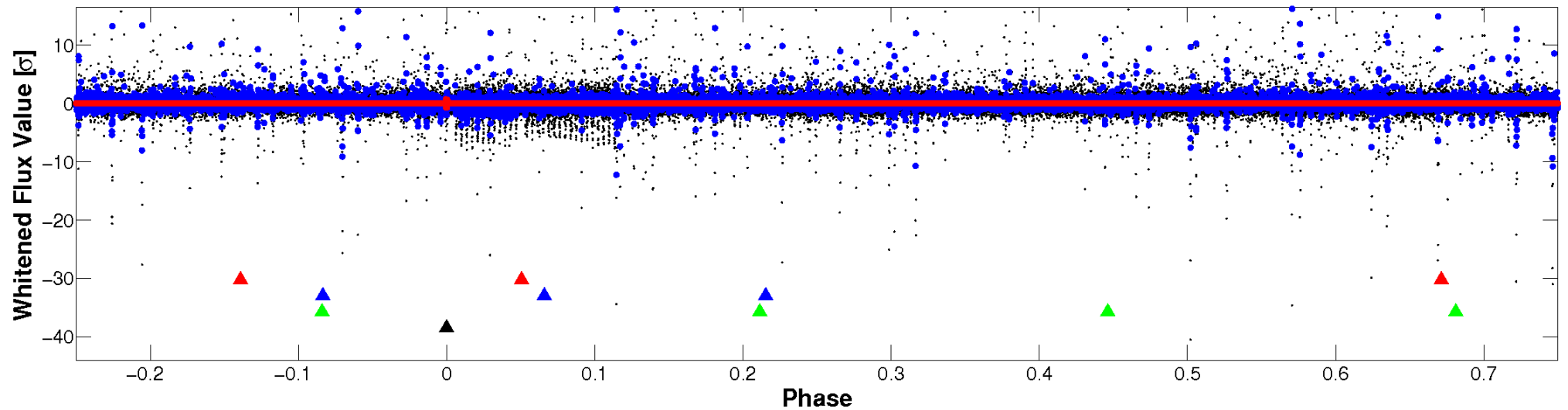


Non-Whitened Vs. Whitened Light Curve

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

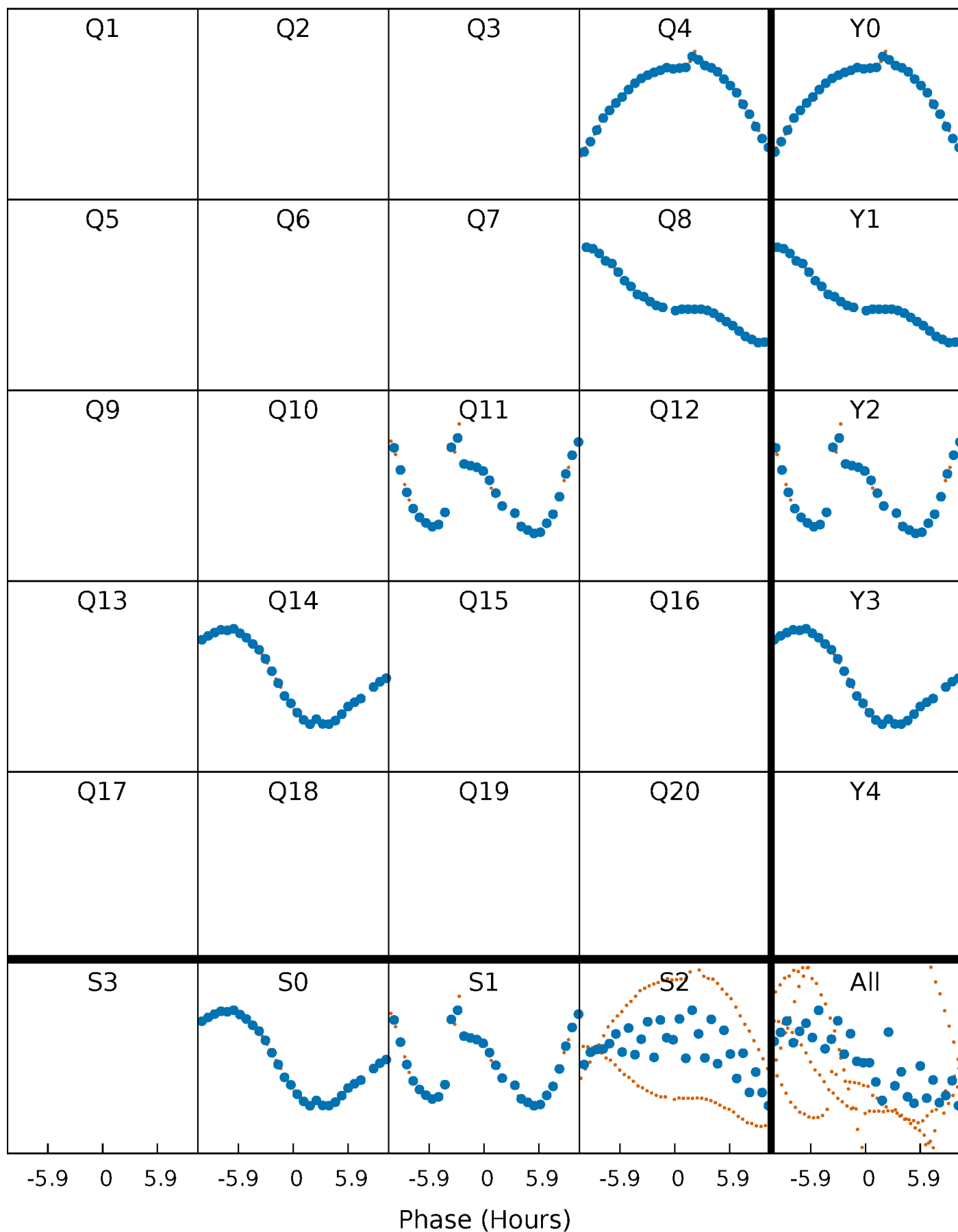


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



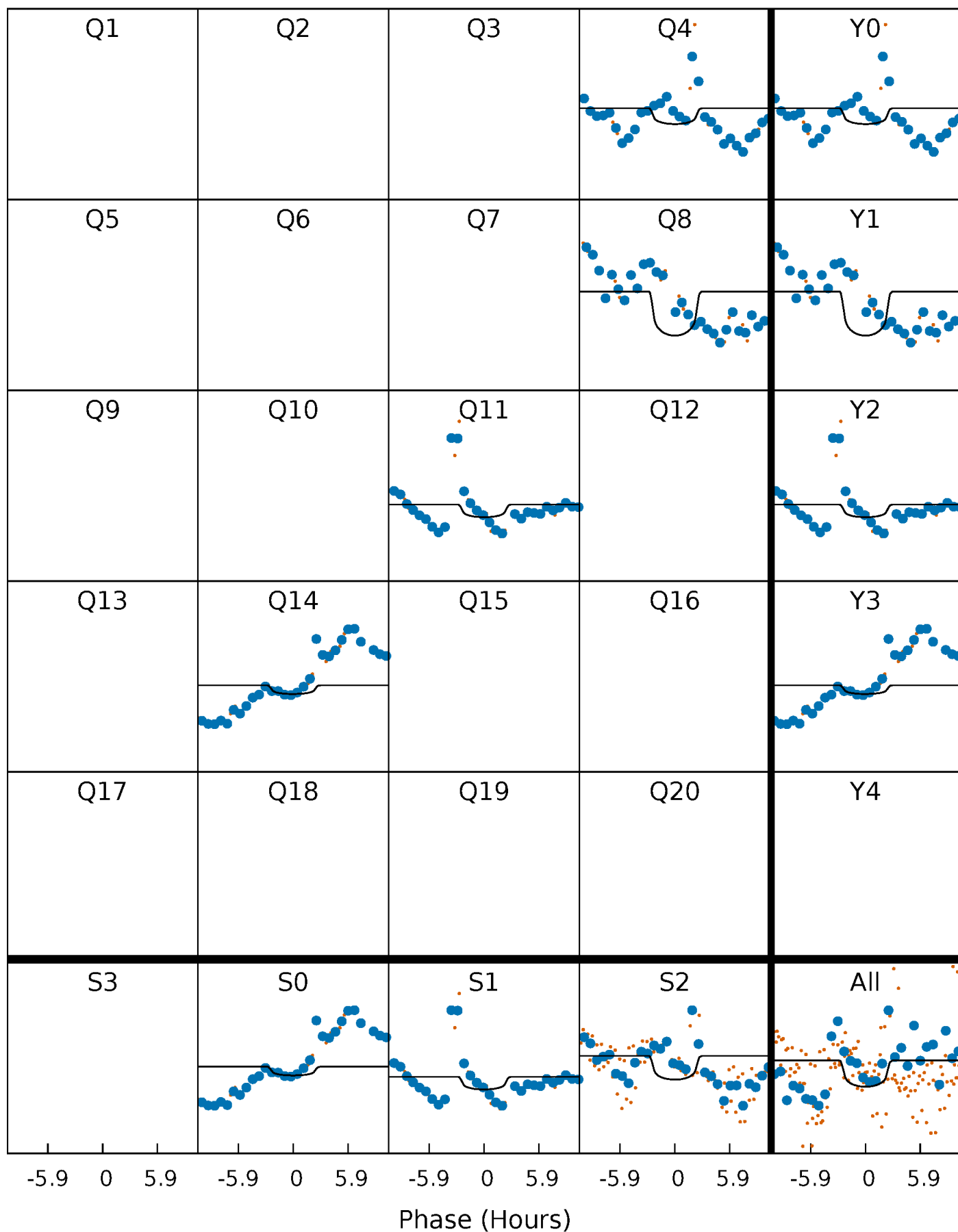
PDC Quarter-Phased Transit Curves

TCE 007211157-04 P=309.782626 Days $T_0=439.477226$ (BKJD)



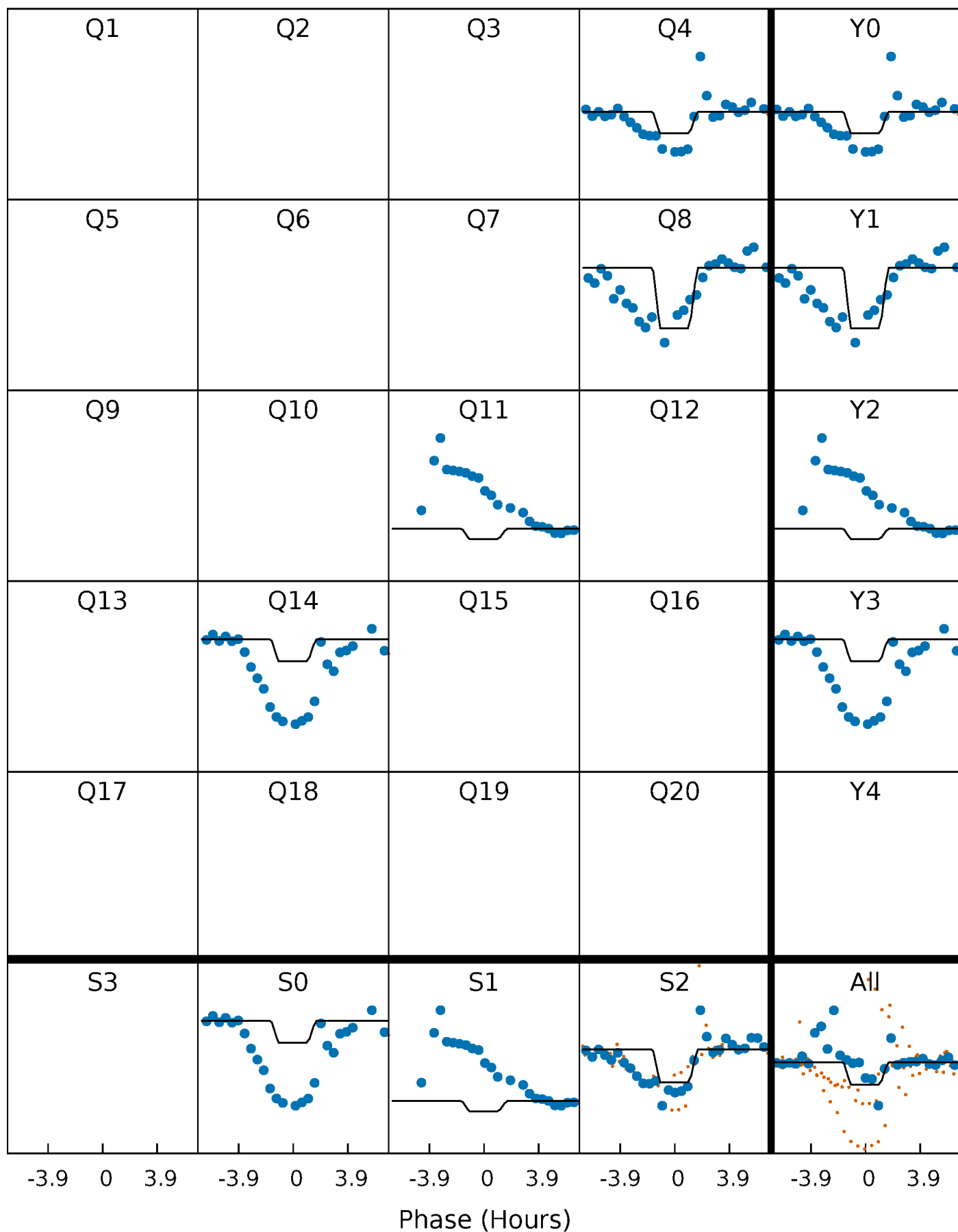
DV Quarter-Phased Transit Curves

TCE 007211157-04 P=309.782626 Days $T_0=439.477226$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

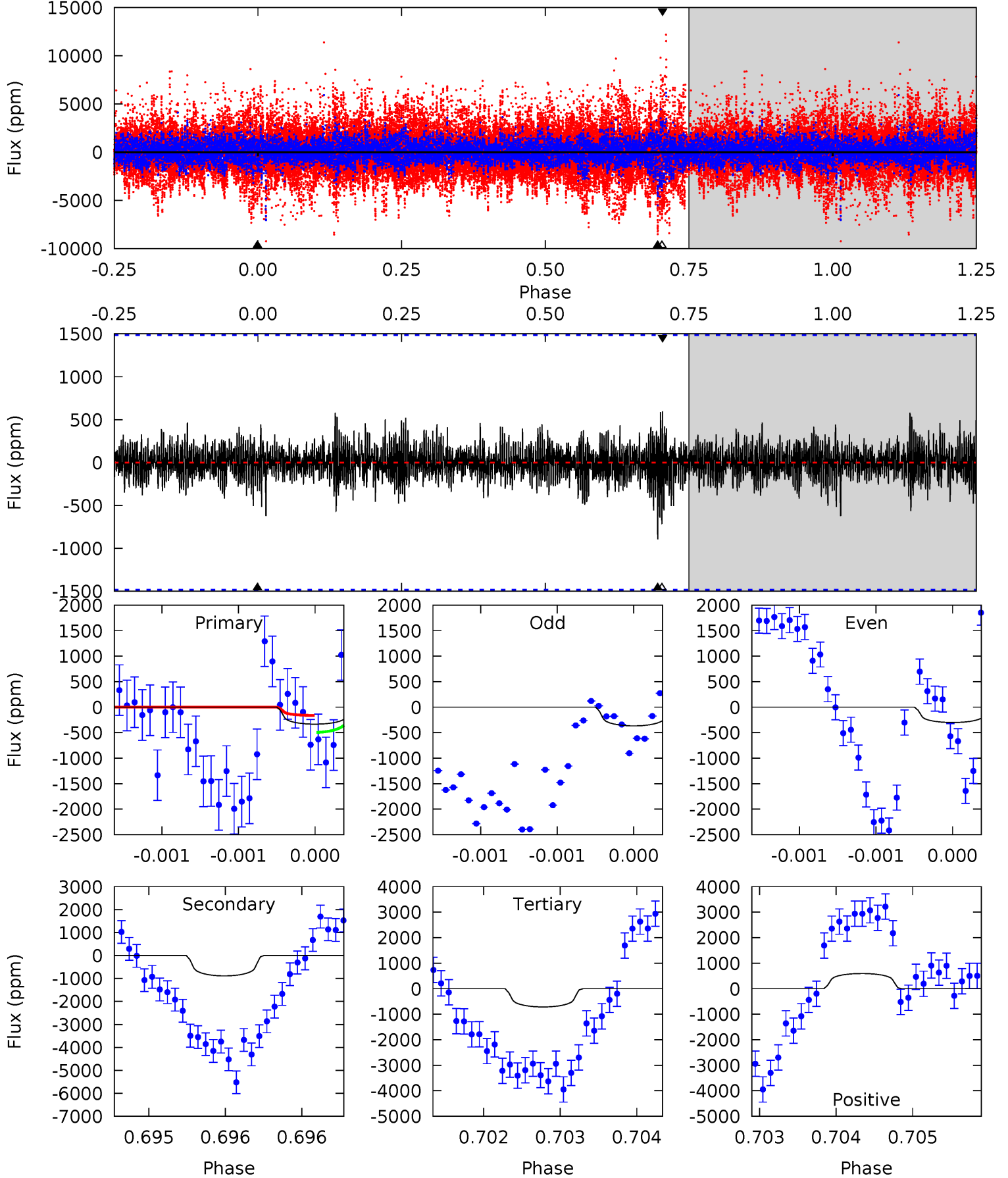
TCE 007211157-04 P=309.786392 Days $T_0=439.493662$ (BKJD)



DV Model-Shift Uniqueness Test

007211157-04, P = 309.782626 Days, E = 129.694600 Days

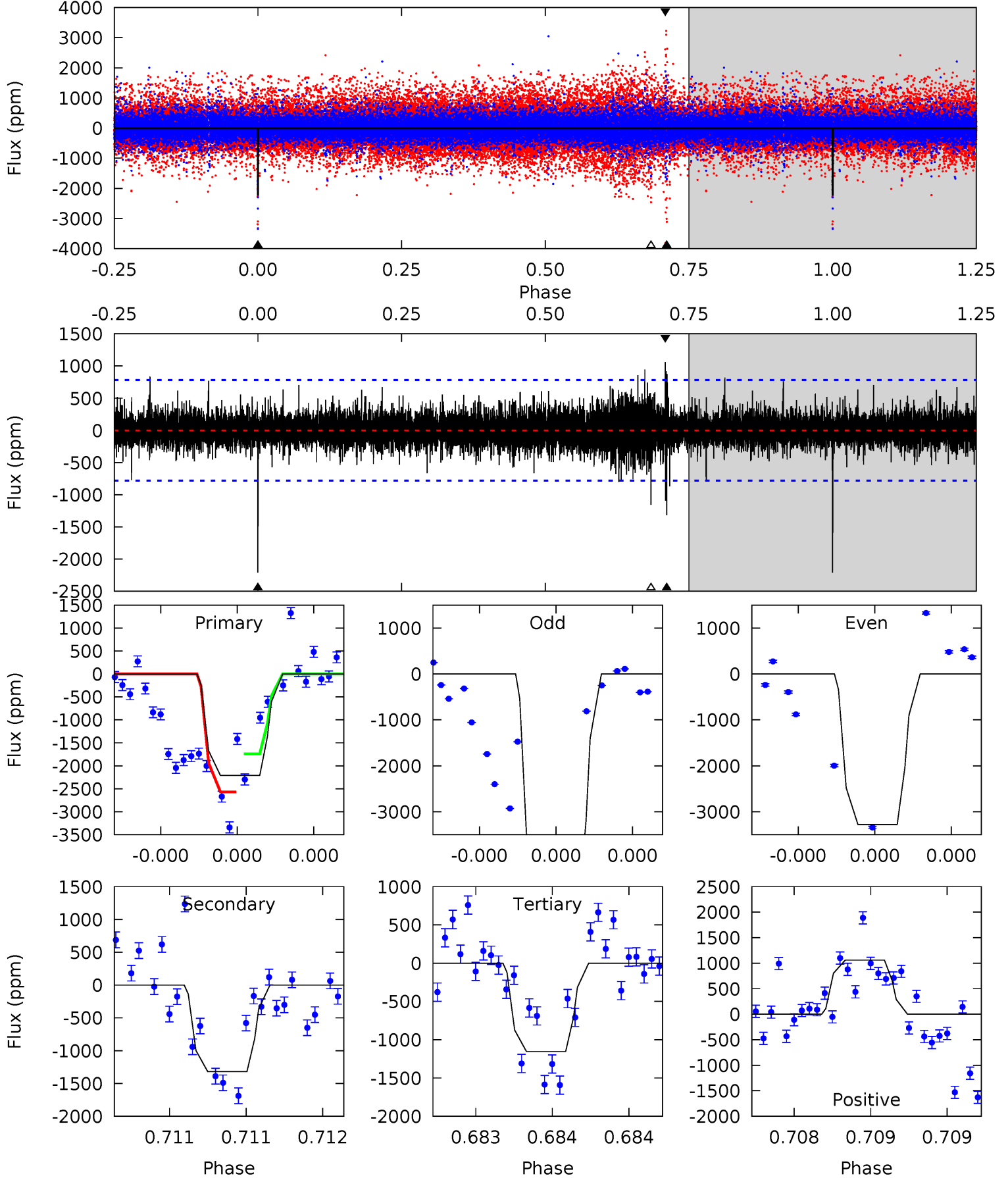
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.24	3.29	2.65	2.20	5.50	3.37	0.63	-1.42	-0.97	0.64	1.09	0.11	0.90	0.40	0.62



Alt Model-Shift Uniqueness Test

007211157-04, P = 309.786392 Days, E = 129.707270 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	9.45	8.27	7.60	5.60	3.52	1.22	7.58	8.24	1.18	1.84	6.52	0.38	0.32	2.98



Stellar Parameters For KIC 007211157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5220^{+157}_{-141}	$4.599^{+0.066}_{-0.055}$	$-0.640^{+0.300}_{-0.300}$	$0.683^{+0.074}_{-0.059}$	$0.675^{+0.076}_{-0.038}$	$2.989^{+0.774}_{-0.615}$
	+3%/-3%	+1%/-1%	+47%/-47%	+11%/-9%	+11%/-6%	+26%/-21%
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 007211157-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-888 ± 270	$2.70^{+1.80}_{-1.61}$	299^{+11}_{-11}	4802^{+2630}_{-852}	$41377^{+211979}_{-26629}$
Alt.	-1318 ± 140	$3.31^{+1.91}_{-1.63}$	299^{+12}_{-11}	4762^{+1807}_{-739}	$40582^{+121260}_{-23838}$

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 $A_{obs} \gg 1.0$

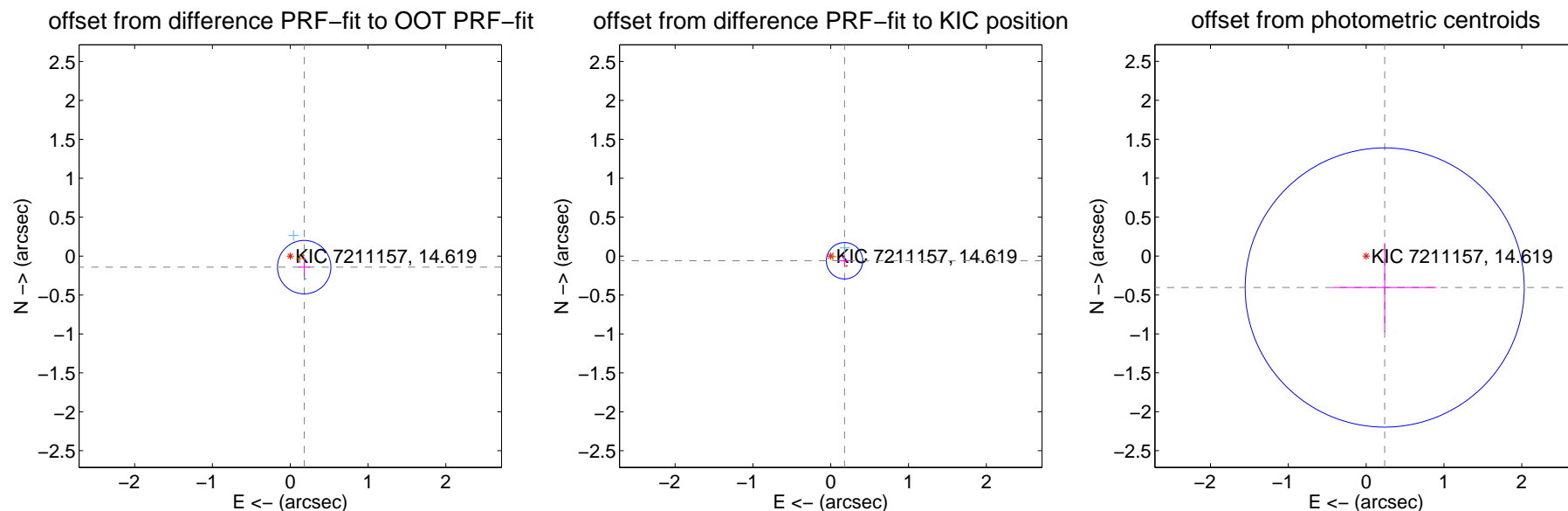
DV Centroid Data

Supplemental centroid analysis for 007211157-04. Kepler magnitude: 14.62. Transit SNR 3.64

There are 2 quarters with good PRF difference image offsets

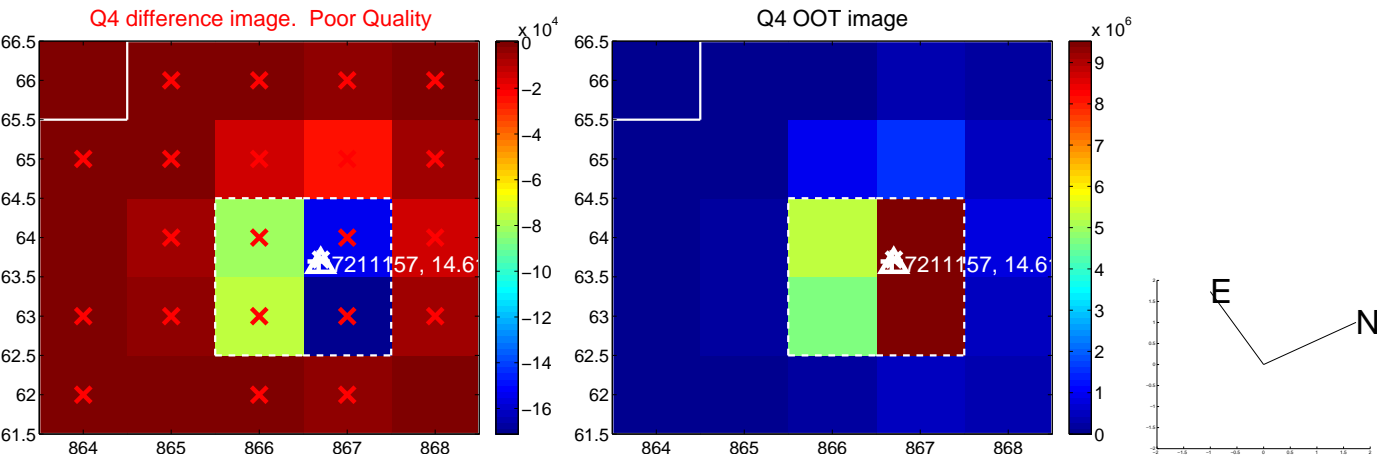
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.228 ± 0.114	2.00	-0.179 ± 0.076	-0.142 ± 0.125
PRF-fit source offset from KIC position	0.187 ± 0.078	2.41	-0.178 ± 0.075	-0.060 ± 0.082
photometric centroid source offset	0.47 ± 0.60	0.79	-0.24 ± 0.67	-0.40 ± 0.57

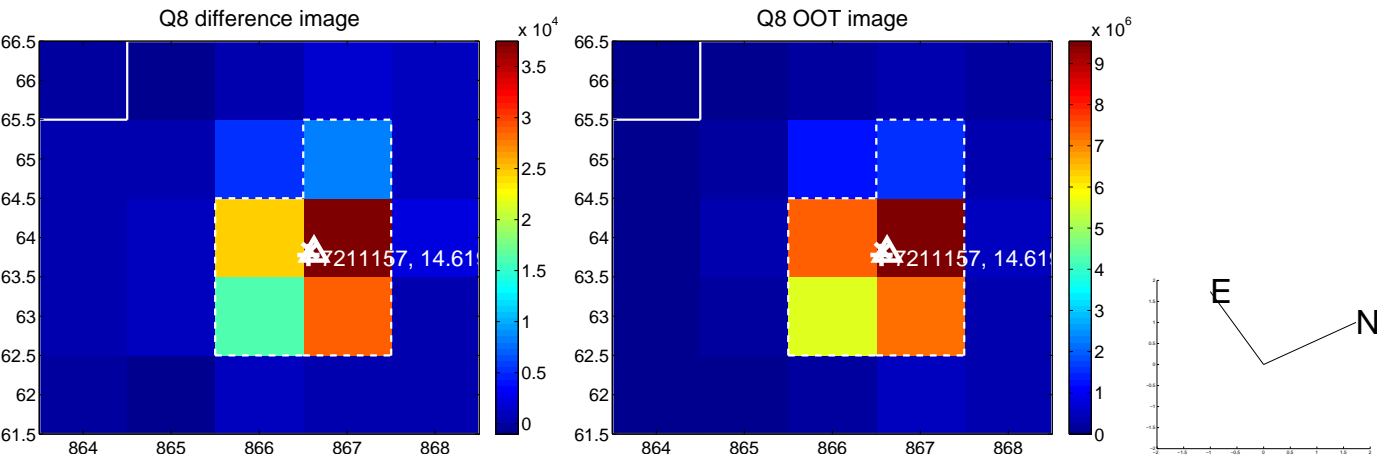


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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



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

Q9 no difference image



Q9 no OOT image



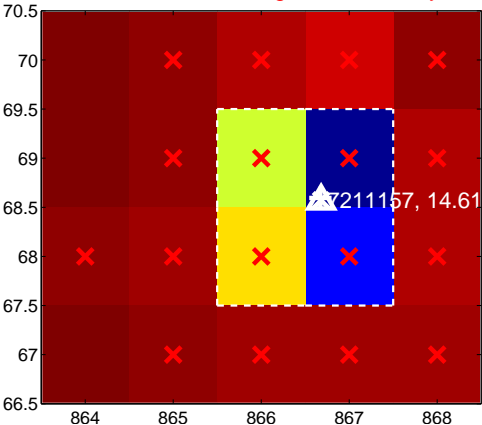
Q10 no difference image



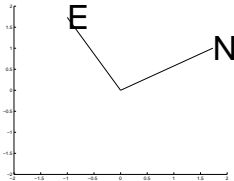
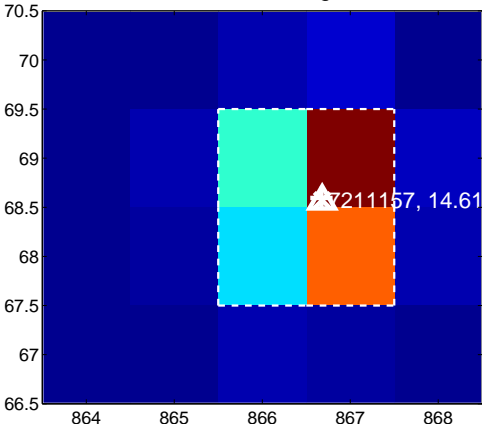
Q10 no OOT image



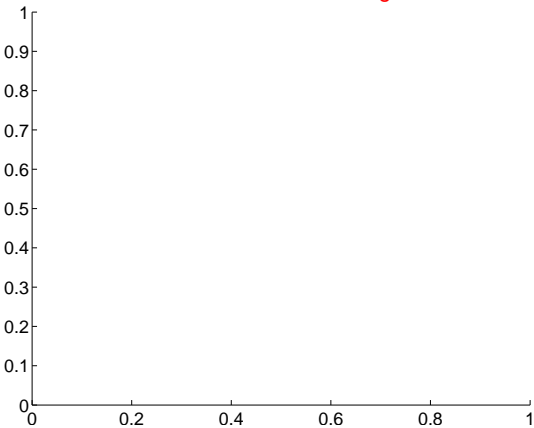
Q11 difference image. Poor Quality



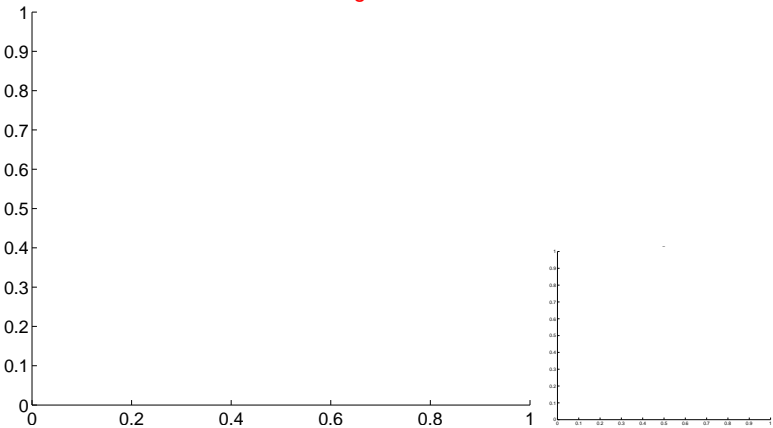
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

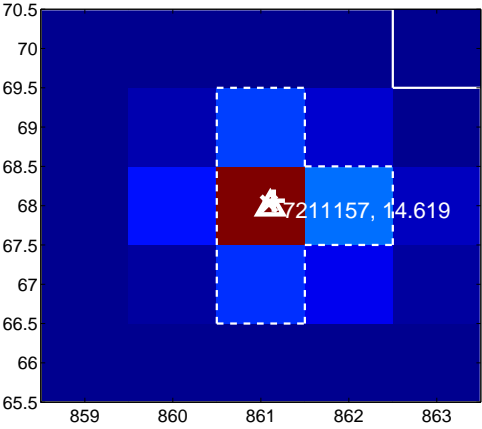
Q13 no difference image



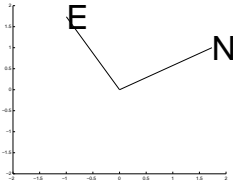
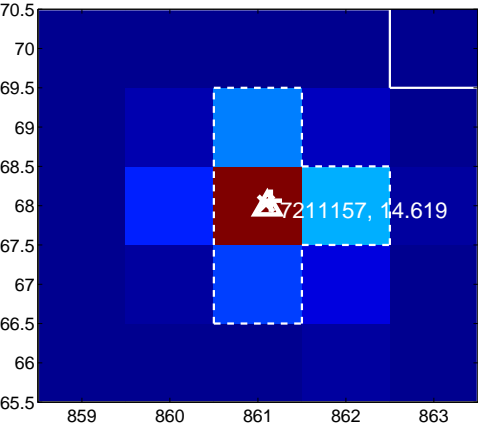
Q13 no OOT image



Q14 difference image



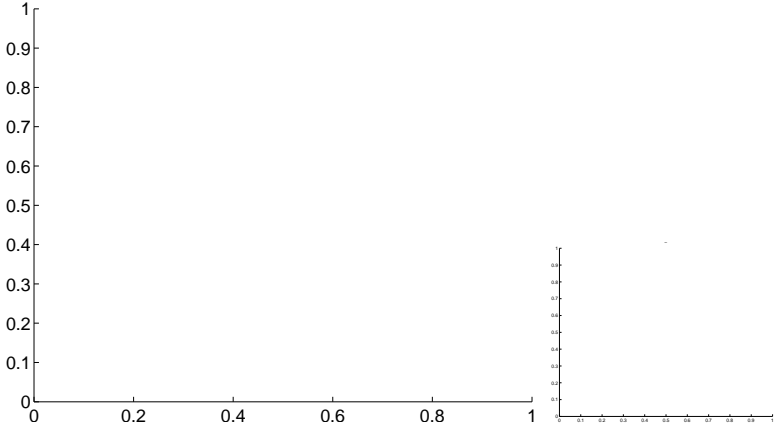
Q14 OOT image



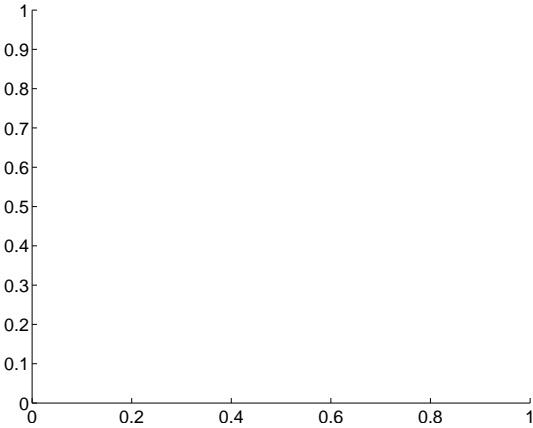
Q15 no difference image



Q15 no OOT image



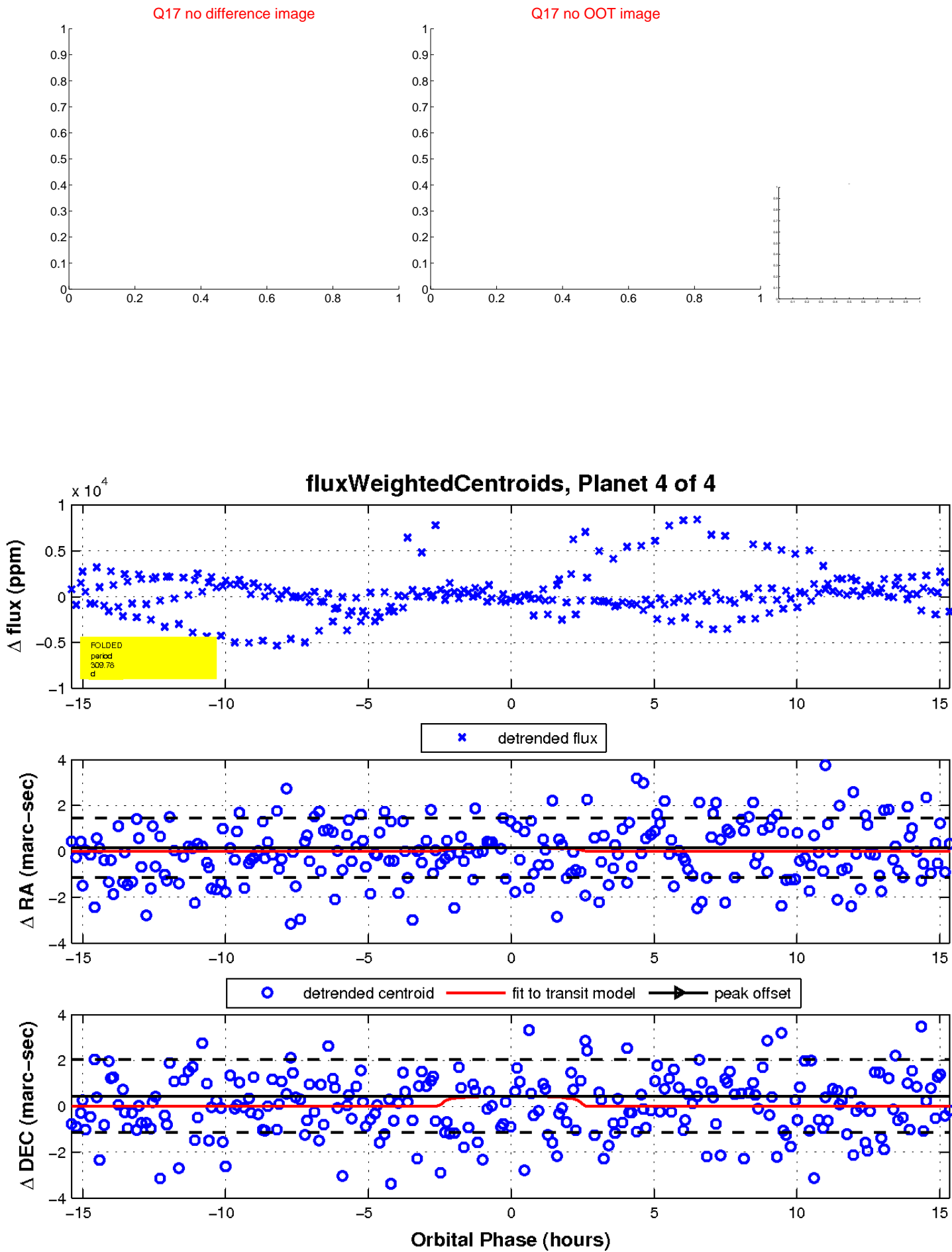
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

