

KIC 006846570

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})
006846570-01	OBS	No	582.597917	134.148846	752.0	4.635	17.1	2.8	0.54	3833	1.53	0.05
006846570-02	OBS	No	516.937163	162.474077	703.7	2.644	16.1	2.8	0.54	3833	1.50	0.05
006846570-04	OBS	No	423.651424	260.115103	2126.2	6.872	14.3	7.6	0.54	3833	2.44	0.07
006846570-05	OBS	No	312.660813	367.289563	2033.7	6.413	14.6	6.6	0.54	3833	2.49	0.10
006846570-06	OBS	No	464.525730	358.180980	2198.8	3.611	14.8	8.5	0.54	3833	2.51	0.06
006846570-07	OBS	No	435.562645	414.230478	2025.6	4.147	13.9	7.4	0.54	3833	2.52	0.07
006846570-08	OBS	No	235.278821	358.143013	998.2	6.000	15.6	-1.0	0.54	3833	1.68	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006846570-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006846570-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006846570-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

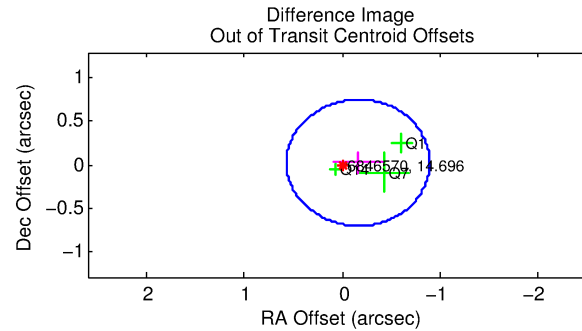
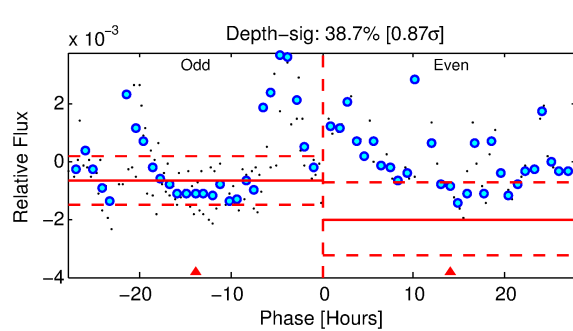
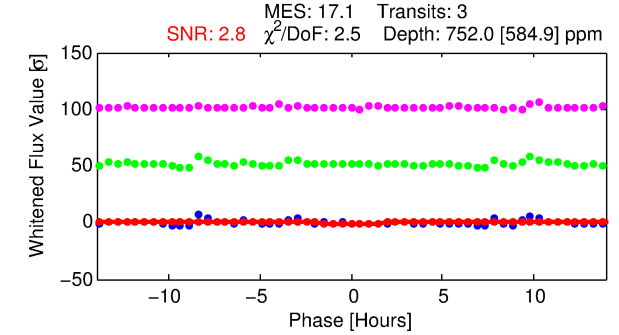
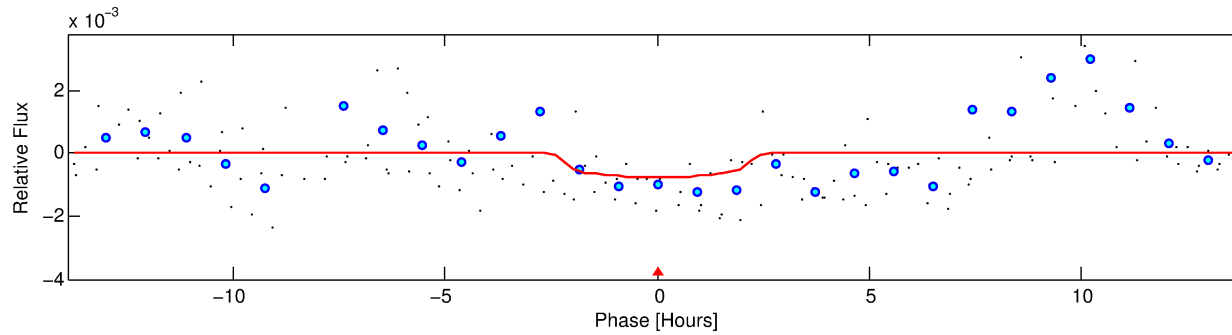
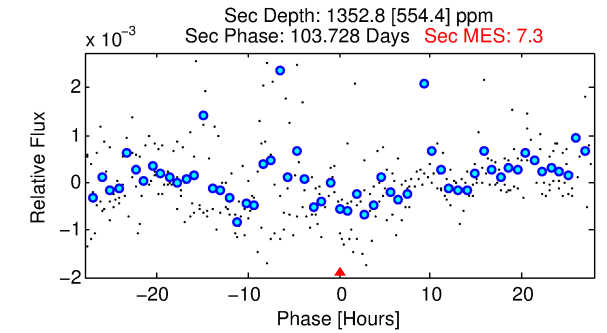
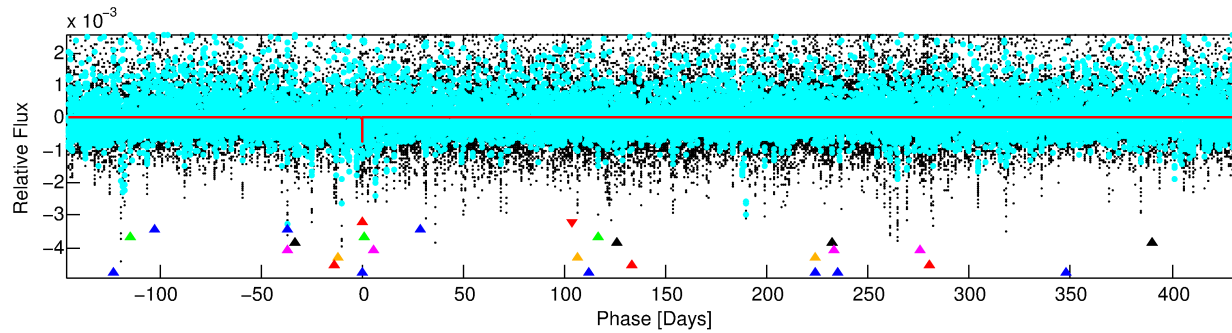
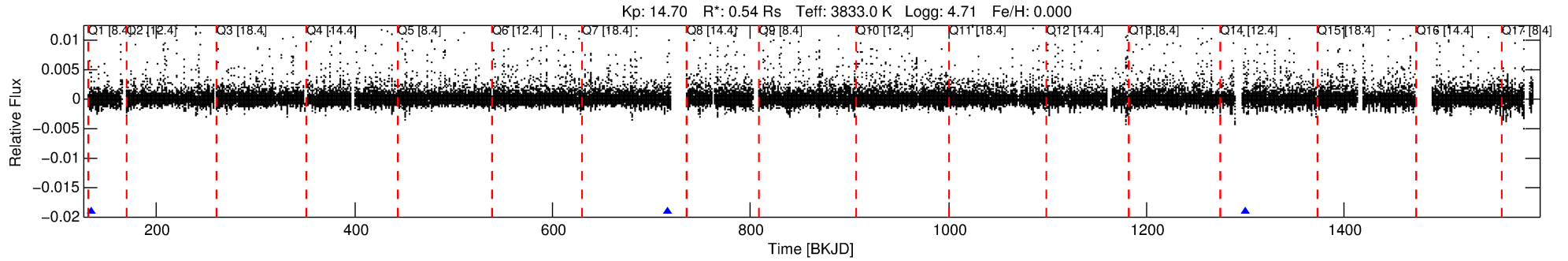
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006846570-01

No Significant Match Found

DV One-Page Summary

KIC: 6846570 Candidate: 1 of 8 Period: 582.598 d



DV Fit Results:

Period = 582.59792 [0.02171] d
Epoch = 134.1488 [0.0313] BKJD
Rp/R* = 0.0259 [0.0911]
a/R* = 811.76 [11107.72]
b = 0.58 [15.71]
Seff = 0.05 [0.00]
Teq = 118 [2] K
Rp = 1.53 [5.38] Re
a = 1.1153 [0.0440] AU
Ag = 394513.73 [2775975.04] [0.14σ]
Teff = 4563 [8027] K [0.55σ]

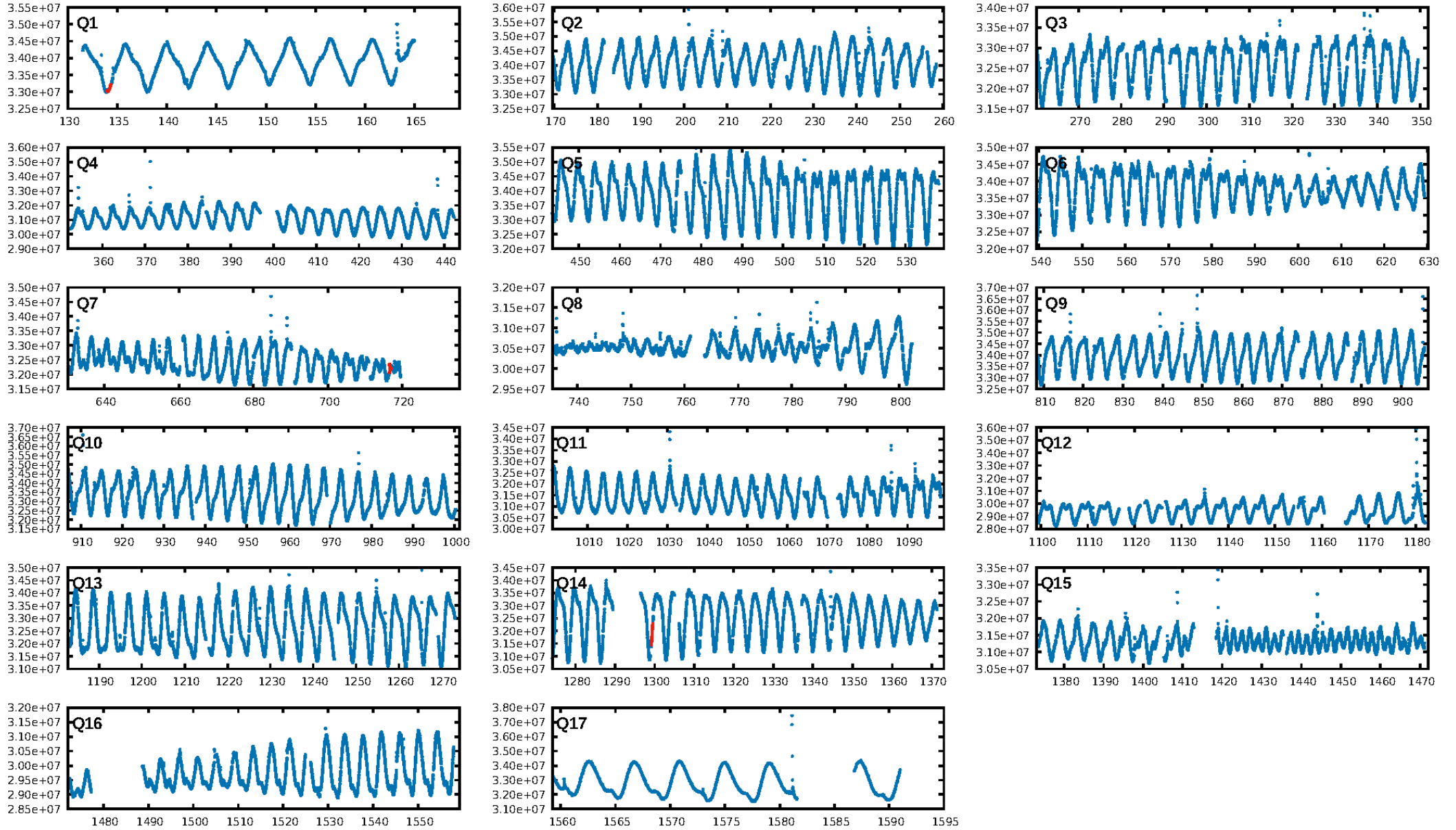
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [295.30σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.0%
ModelChiSquareGof-sig: 69.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.5964
Centroid-sig: 99.4%
Centroid-so: 0.364 arcsec [0.29σ]
OotOffset-rm: 0.164 arcsec [0.67σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

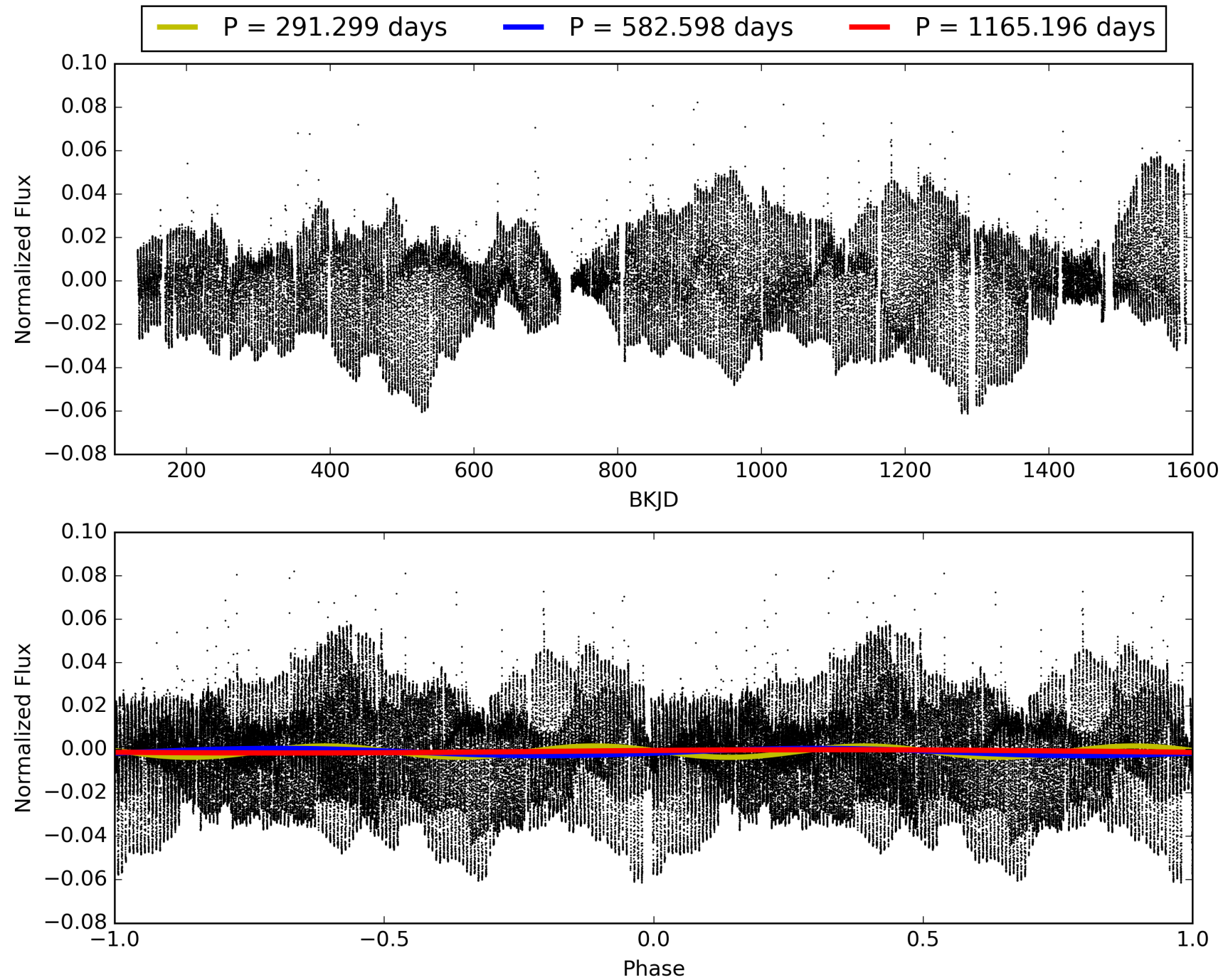
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:44:59 Z

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

TCE 006846570-01, PDC Light Curves

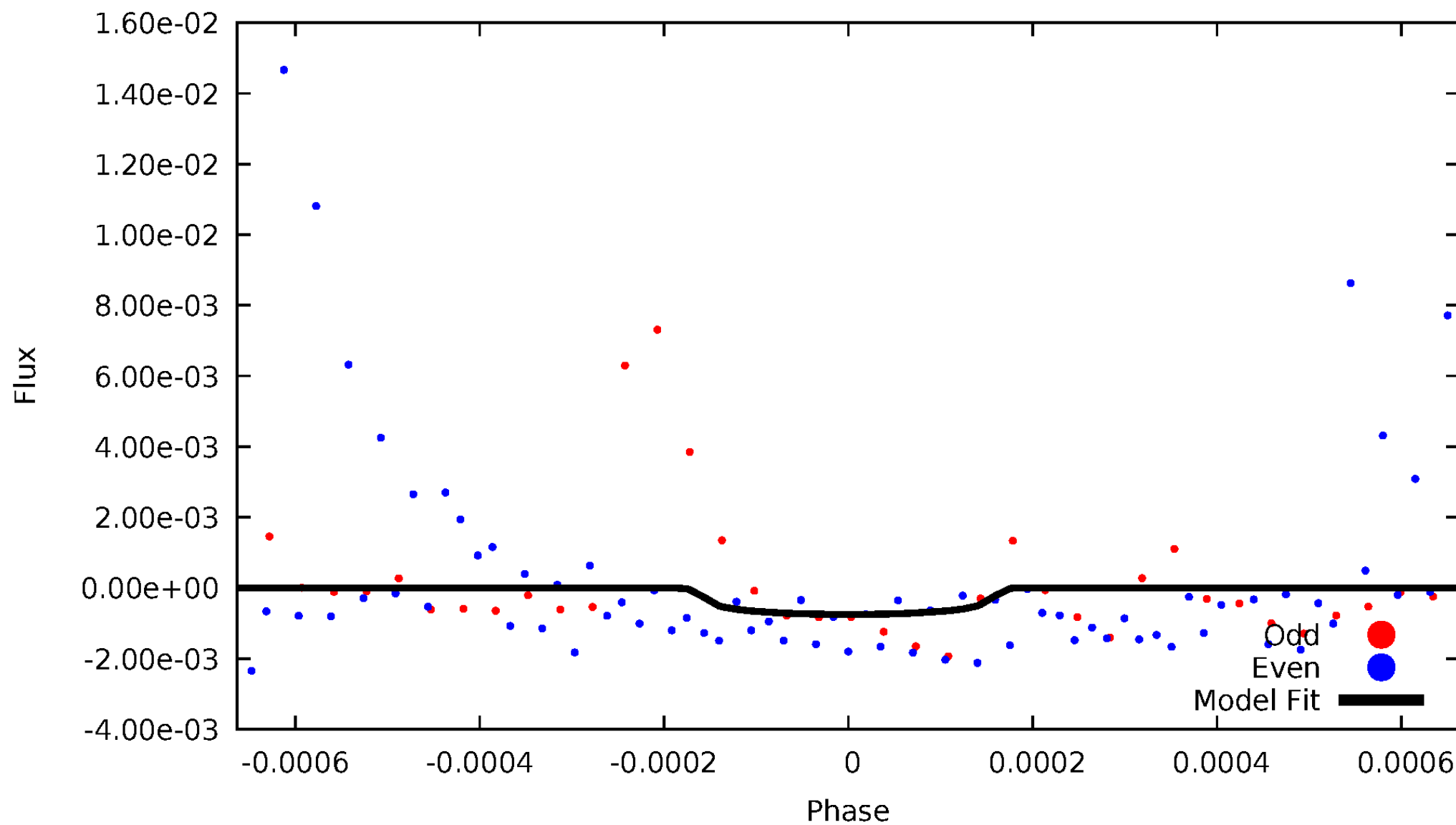


TCE 006846570-01



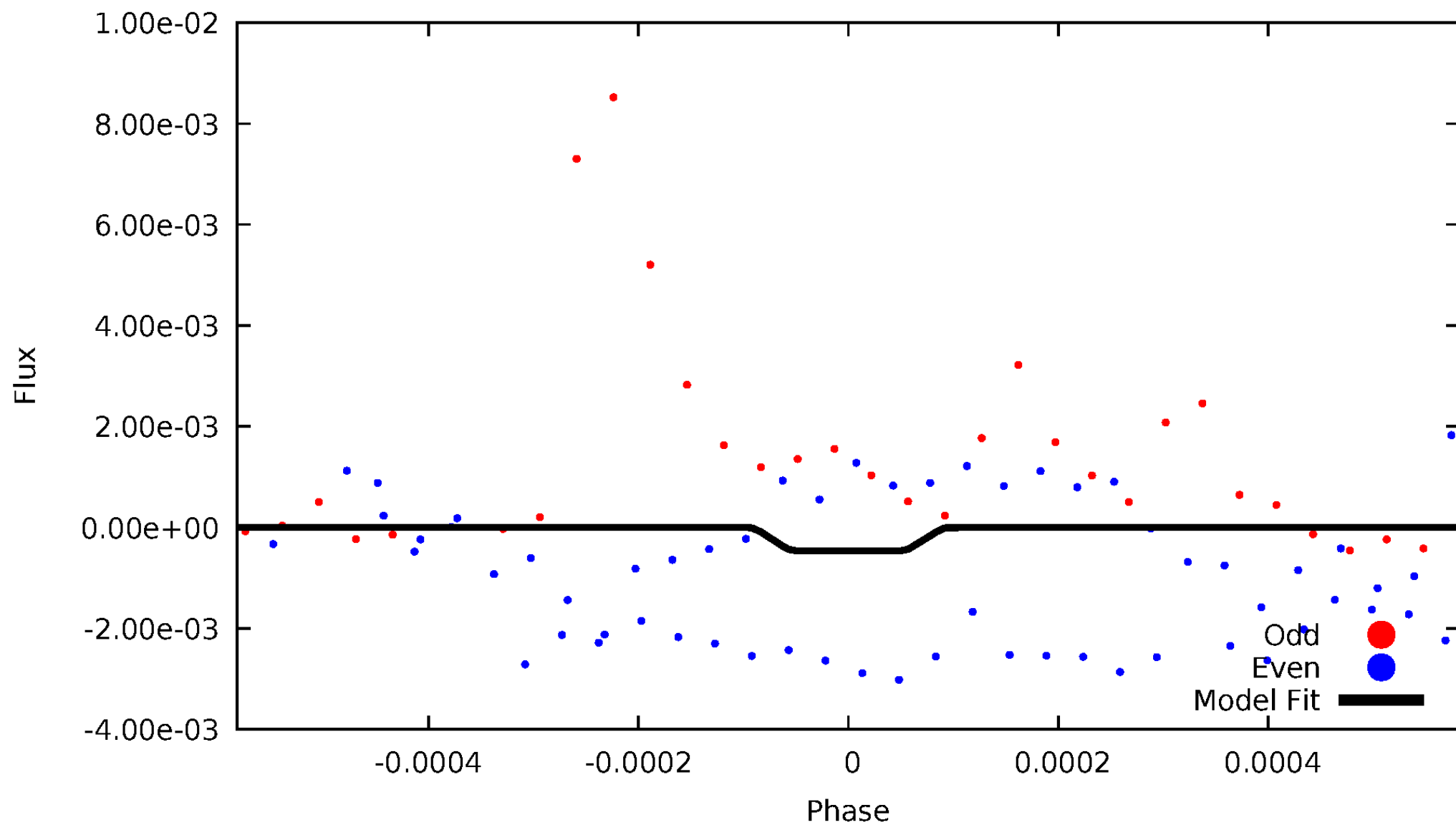
DV Odd/Even

TCE 006846570-01



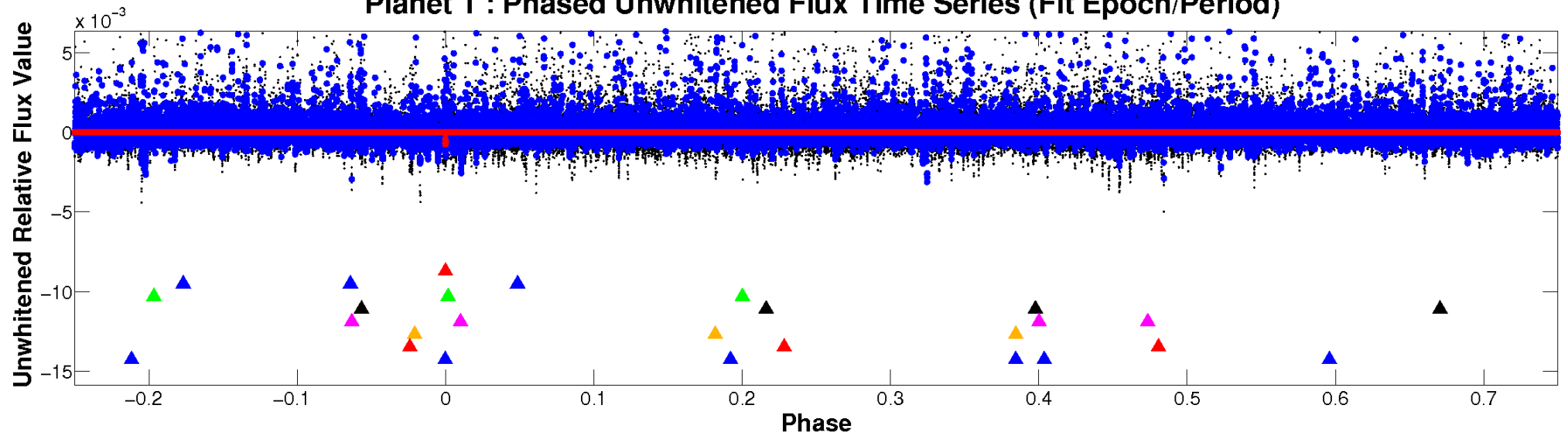
ALT Odd/Even

TCE 006846570-01

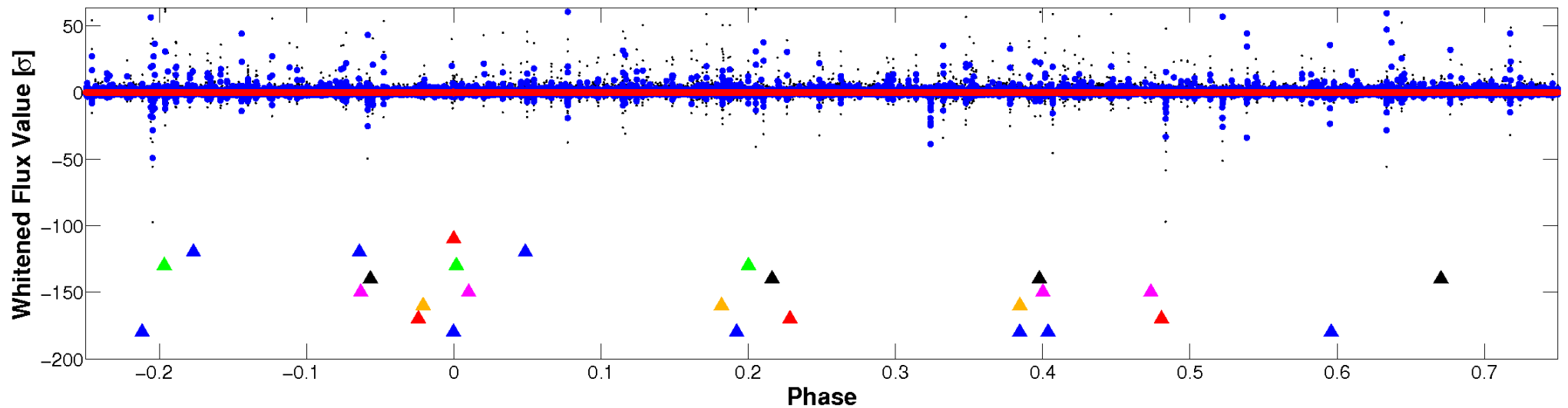


Non-Whitened Vs. Whitened Light Curve

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

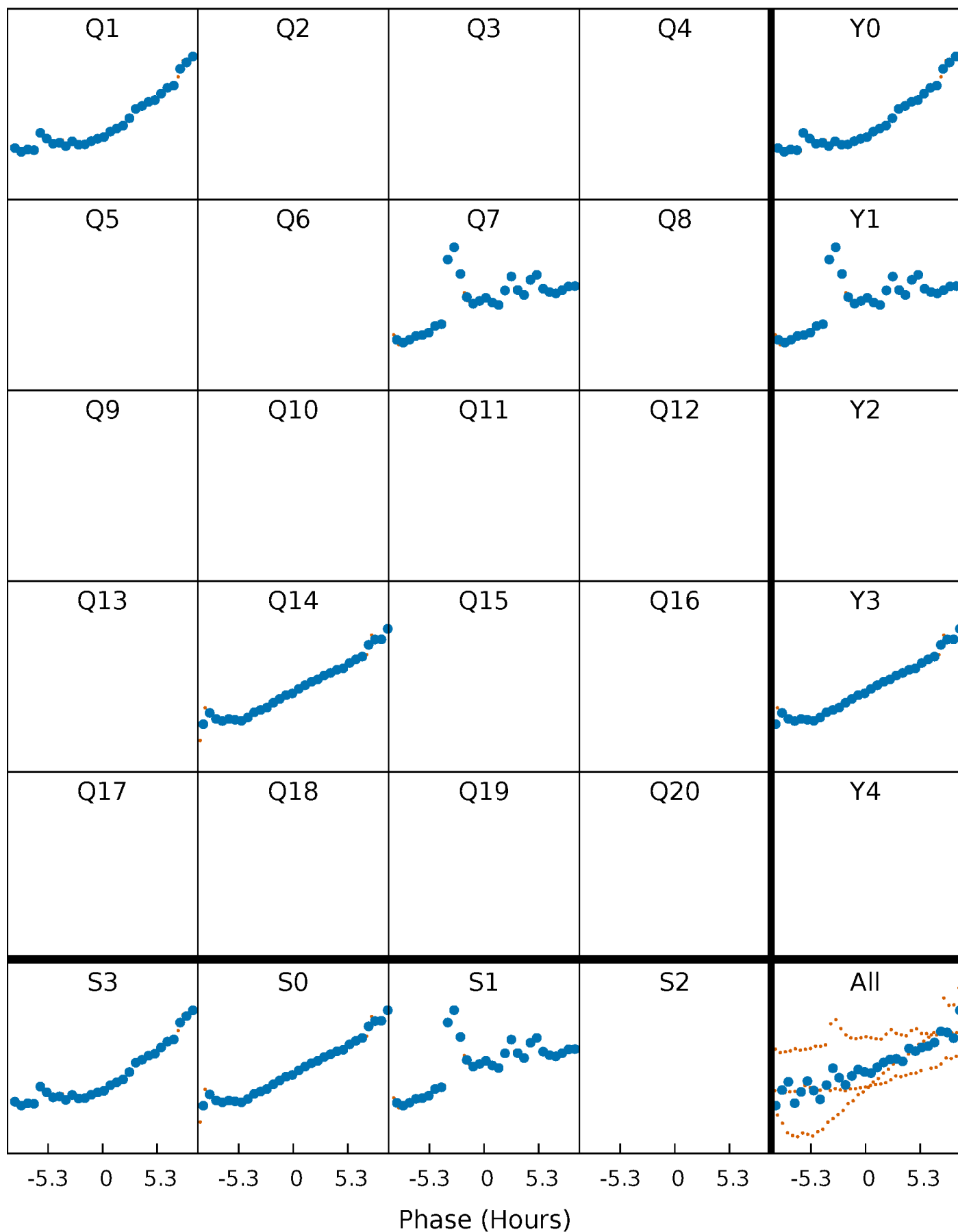


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



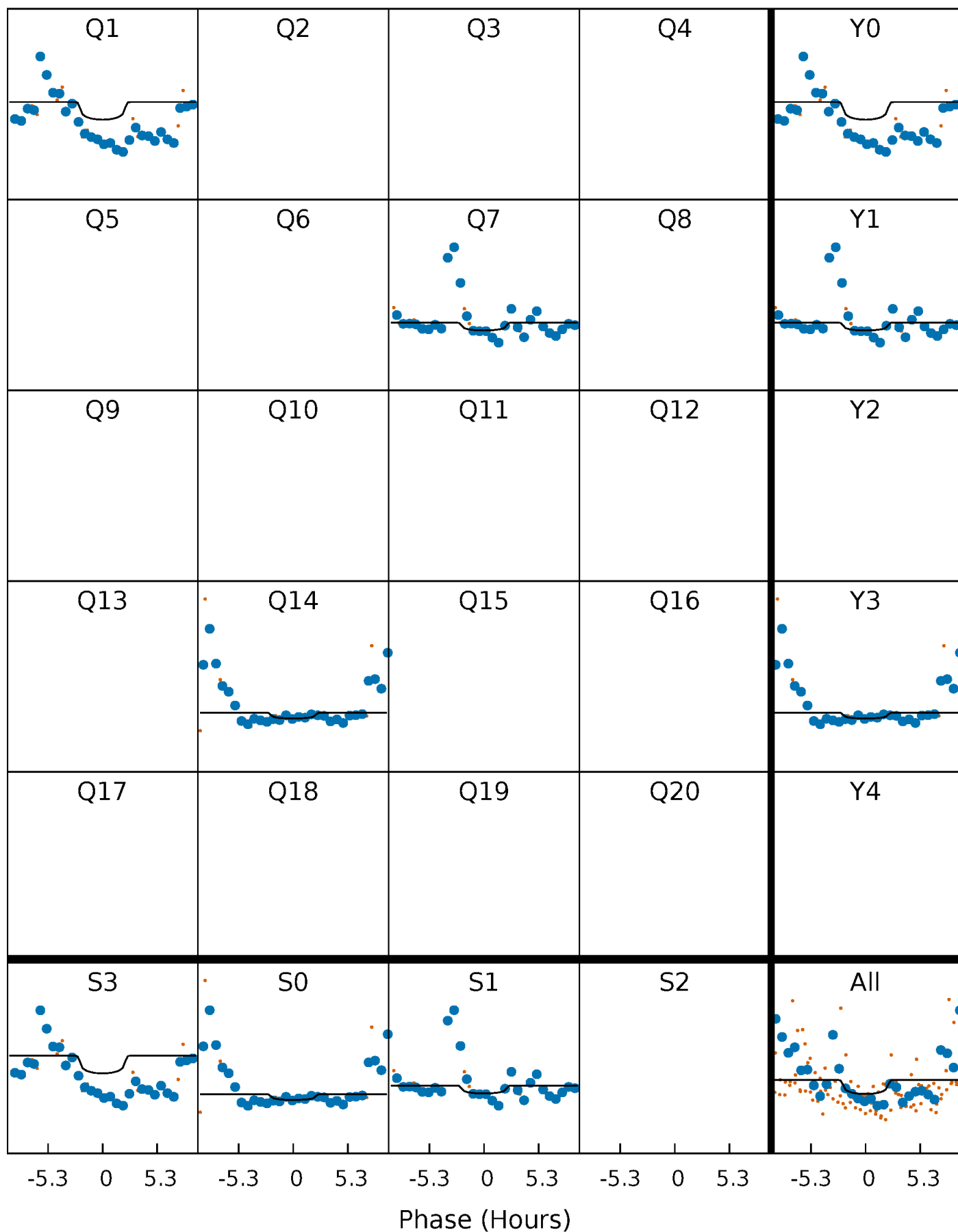
PDC Quarter-Phased Transit Curves

TCE 006846570-01 P=582.597916 Days $T_0=134.148846$ (BKJD)



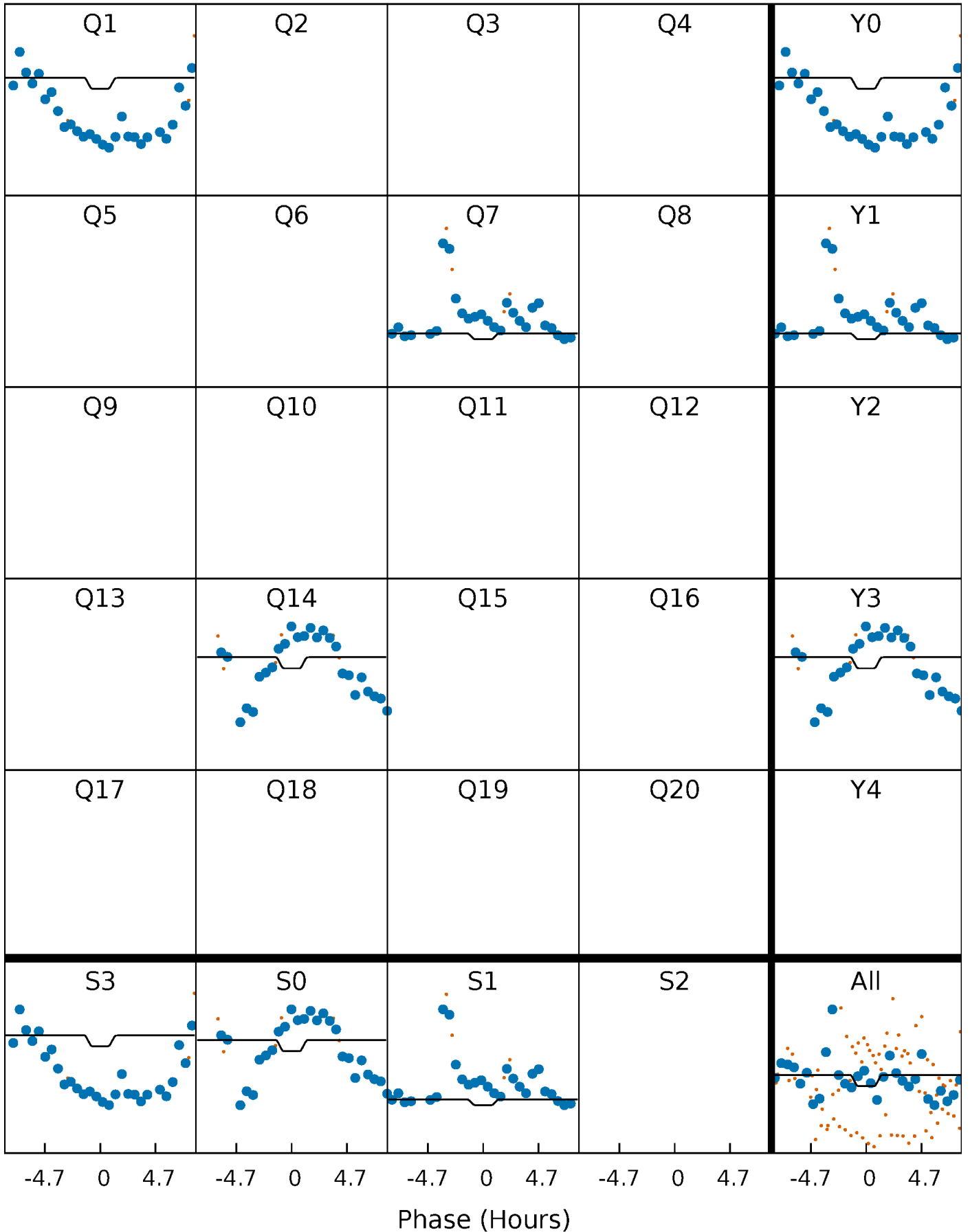
DV Quarter-Phased Transit Curves

TCE 006846570-01 P=582.597916 Days $T_0=134.148846$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

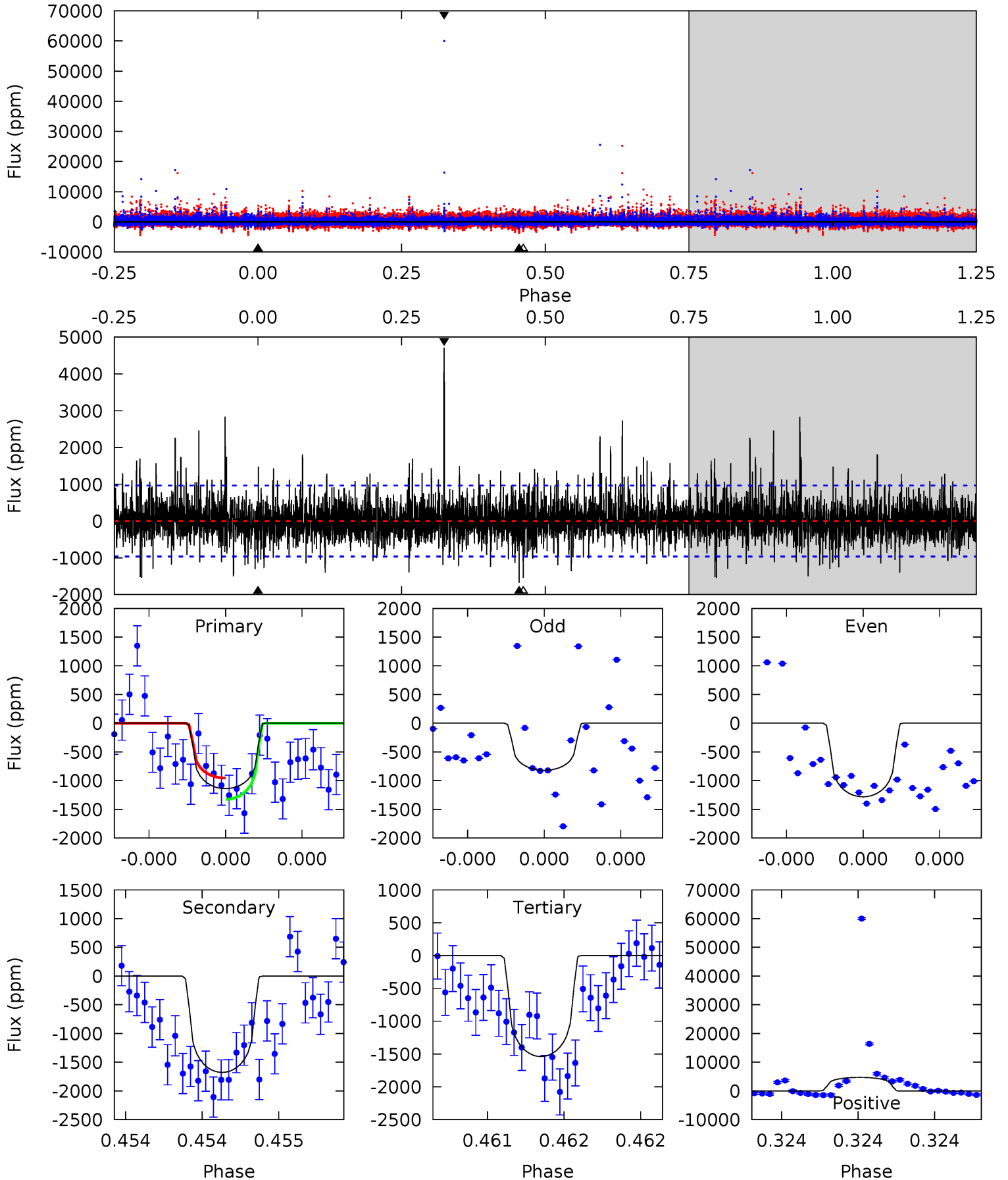
TCE 006846570-01 P=582.553984 Days $T_0=134.202365$ (BKJD)



DV Model-Shift Uniqueness Test

006846570-01, P = 582.597916 Days, E = 134.148846 Days

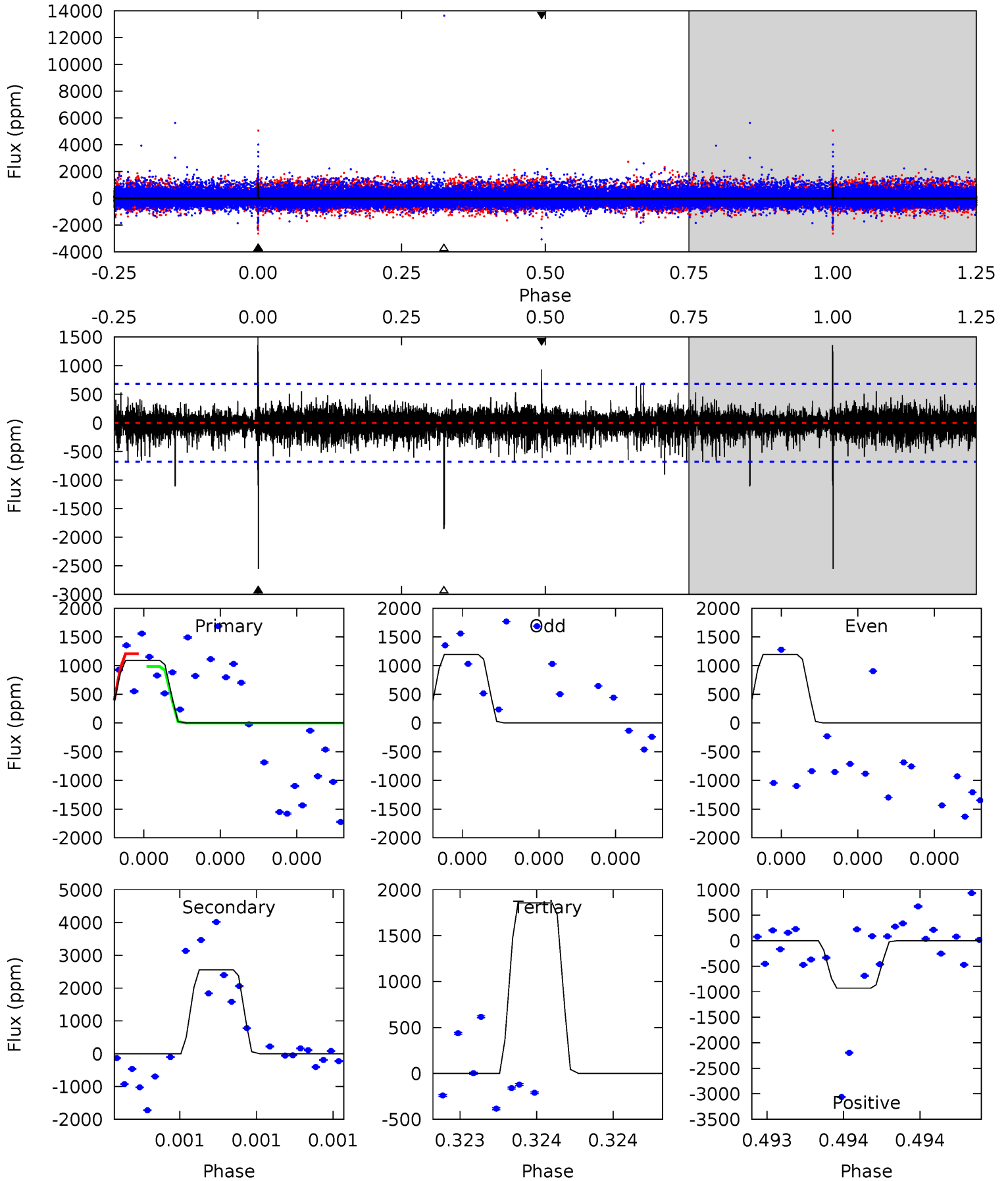
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.66	9.81	8.99	27.5	5.63	3.56	2.39	-2.33	-20.8	0.81	-17.7	0.76	1.37	0.74	1.09



Alt Model-Shift Uniqueness Test

006846570-01, P = 582.553984 Days, E = 134.202365 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.16	21.4	15.6	7.80	5.73	3.71	1.07	-6.41	1.36	5.85	13.6	0.00	-0.25	0.35	0.95



Stellar Parameters For KIC 006846570

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3833^{+50}_{-50}	$4.708^{+0.030}_{-0.014}$	$0.000^{+0.100}_{-0.100}$	$0.541^{+0.019}_{-0.026}$	$0.545^{+0.025}_{-0.020}$	$4.853^{+0.567}_{-0.303}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+12%/-6%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006846570-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1678 ± 171	$4.06^{+4.05}_{-2.89}$	164^{+2}_{-3}	3256^{+1837}_{-565}	$71471^{+783767}_{-53252}$
Alt.	-2555 ± 119	$4.27^{+4.01}_{-2.85}$	164^{+2}_{-3}	3413^{+1678}_{-598}	$96851^{+812377}_{-71203}$

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 $A_{obs} \gg 1.0$

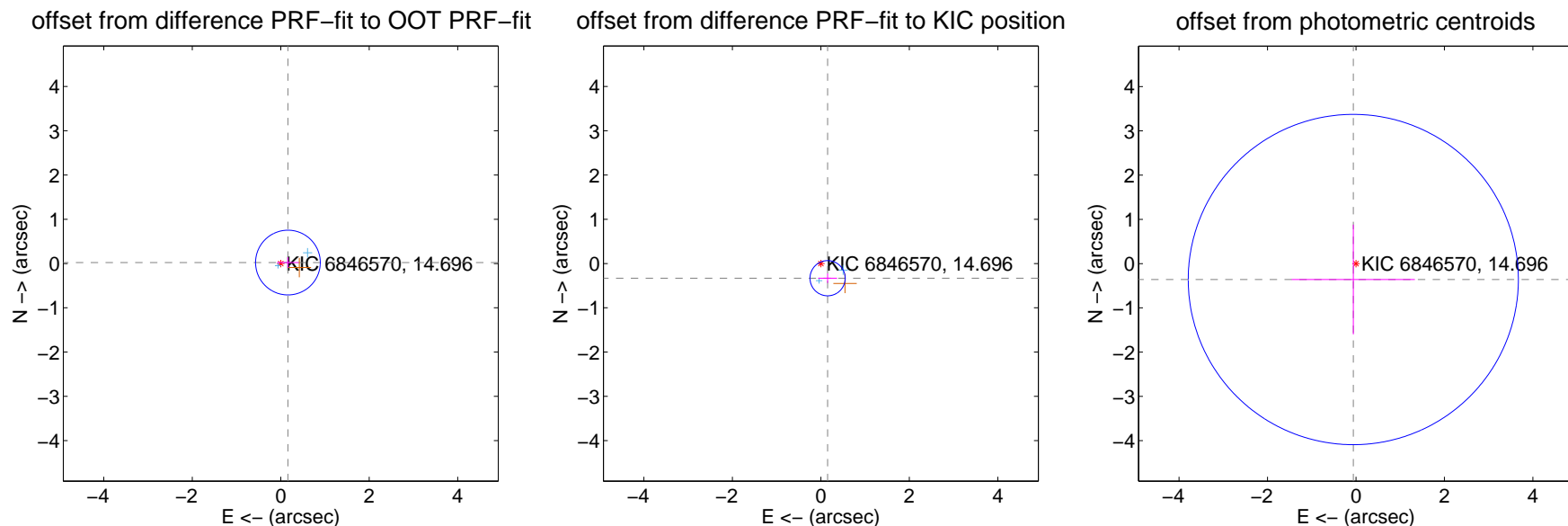
DV Centroid Data

Supplemental centroid analysis for 006846570-01. Kepler magnitude: 14.70. Transit SNR 2.78

There are 2 quarters with good PRF difference image offsets

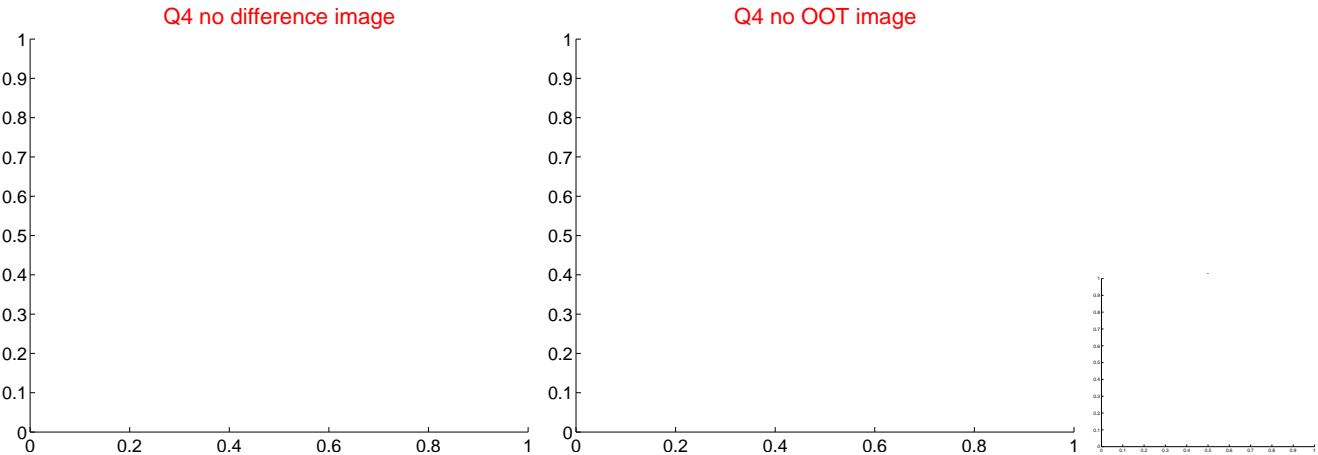
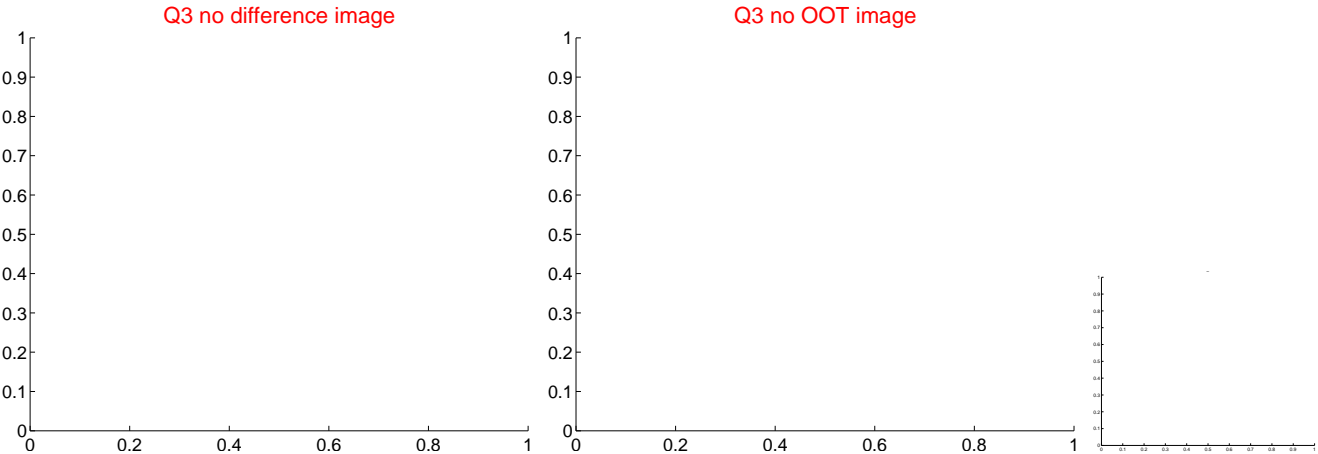
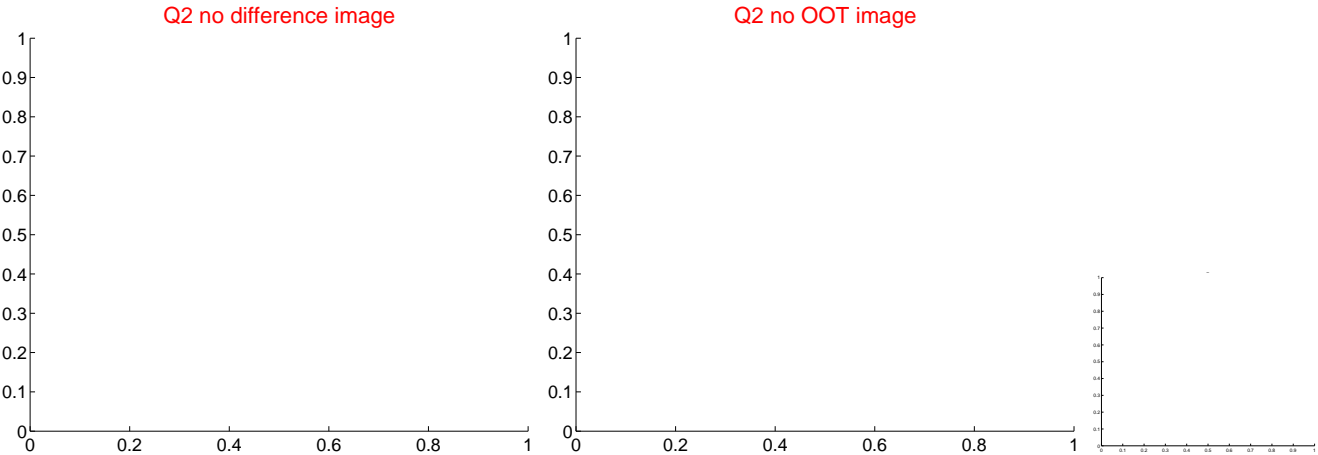
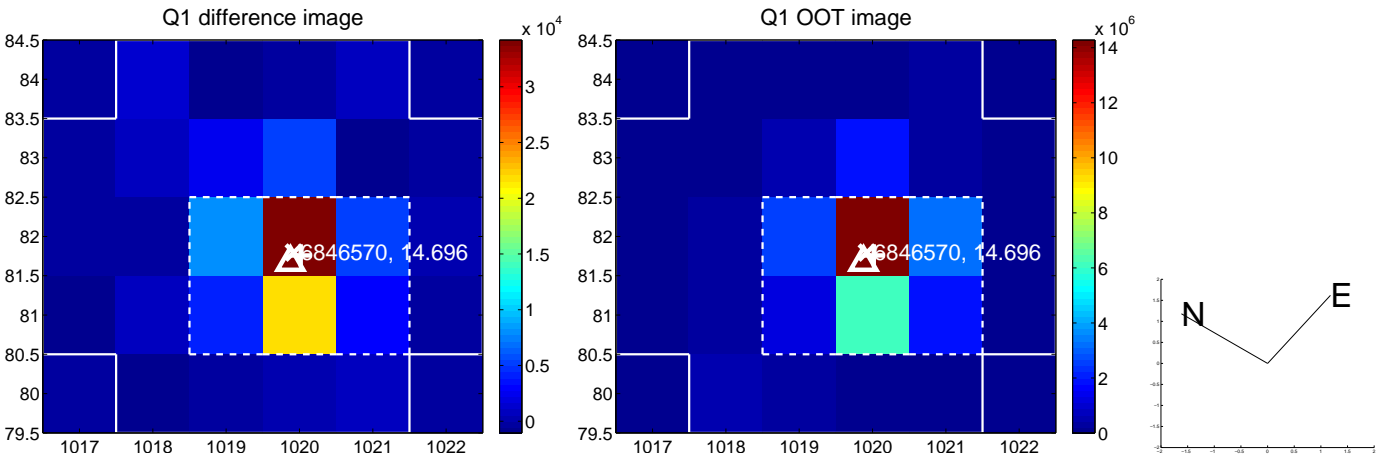
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.164 ± 0.244	0.67	-0.162 ± 0.245	0.022 ± 0.120
PRF-fit source offset from KIC position	0.365 ± 0.133	2.75	-0.152 ± 0.215	-0.331 ± 0.108
photometric centroid source offset	0.36 ± 1.24	0.29	0.06 ± 1.39	-0.36 ± 1.24



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

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



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

Q5 no difference image



Q5 no OOT image



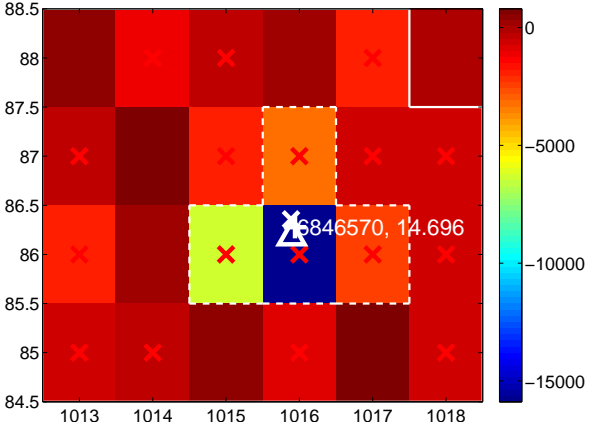
Q6 no difference image



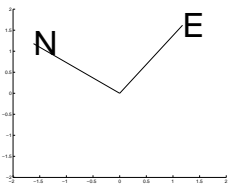
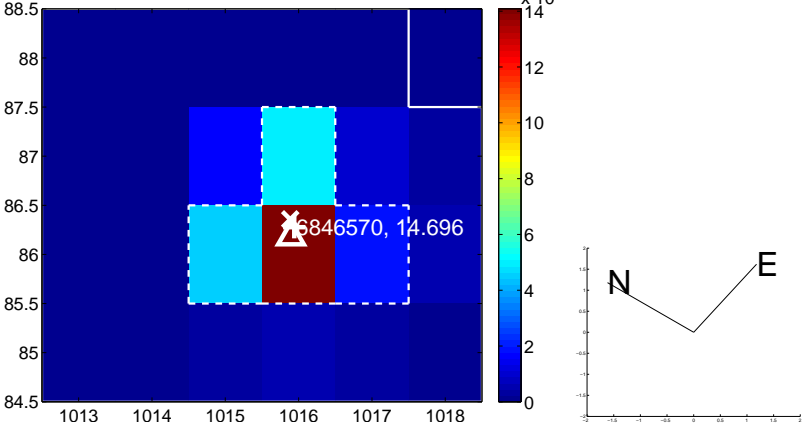
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



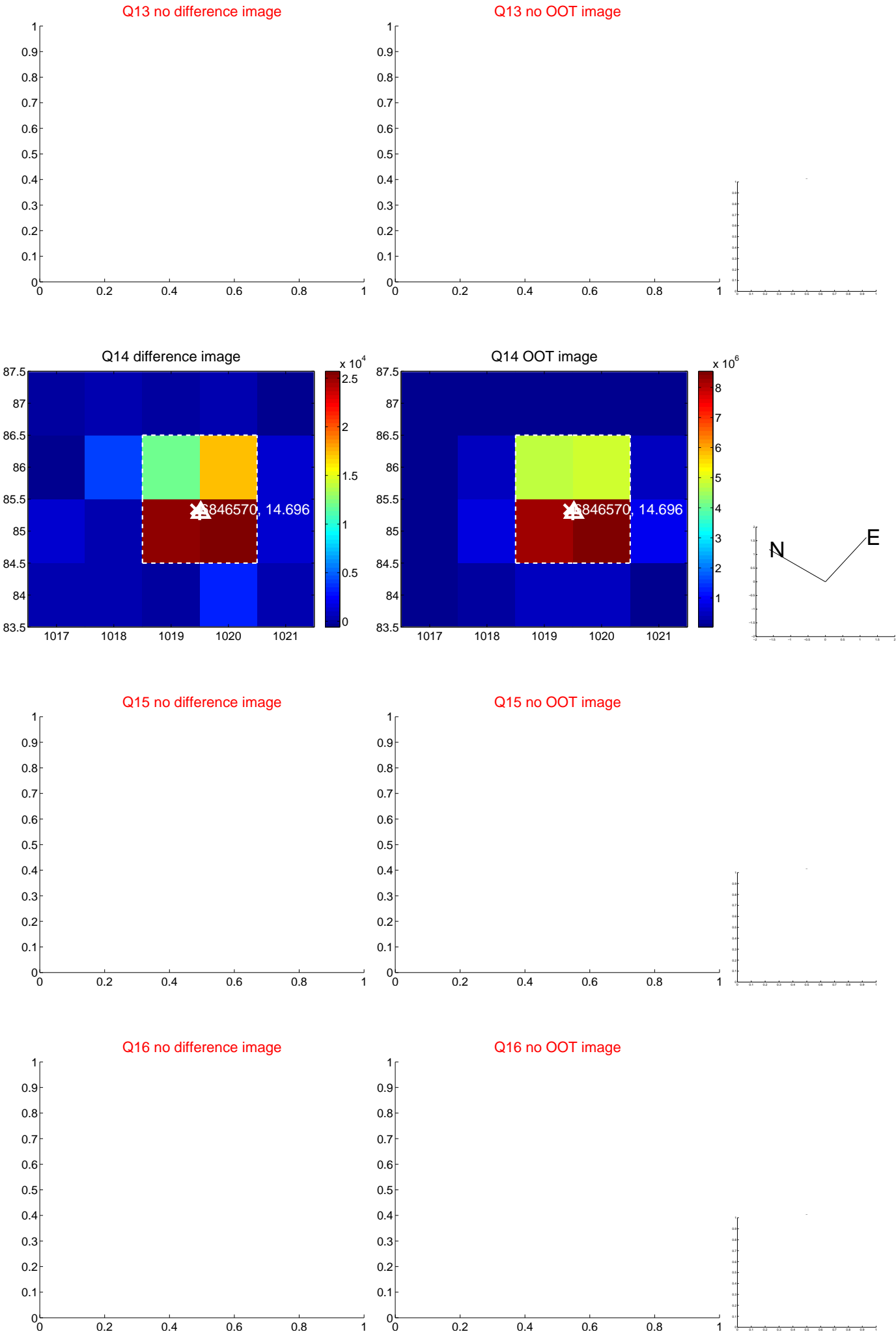
Q8 no OOT image



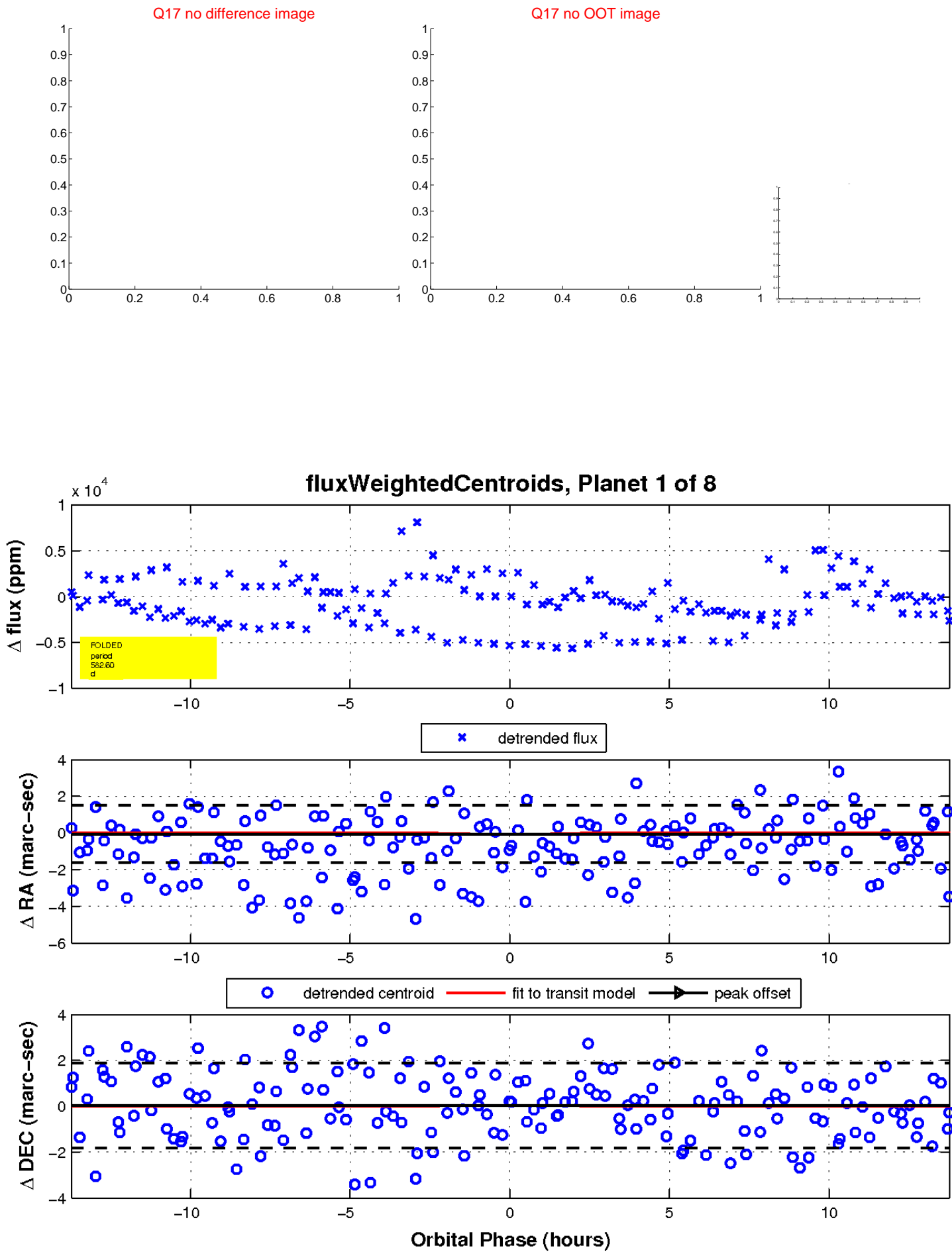
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

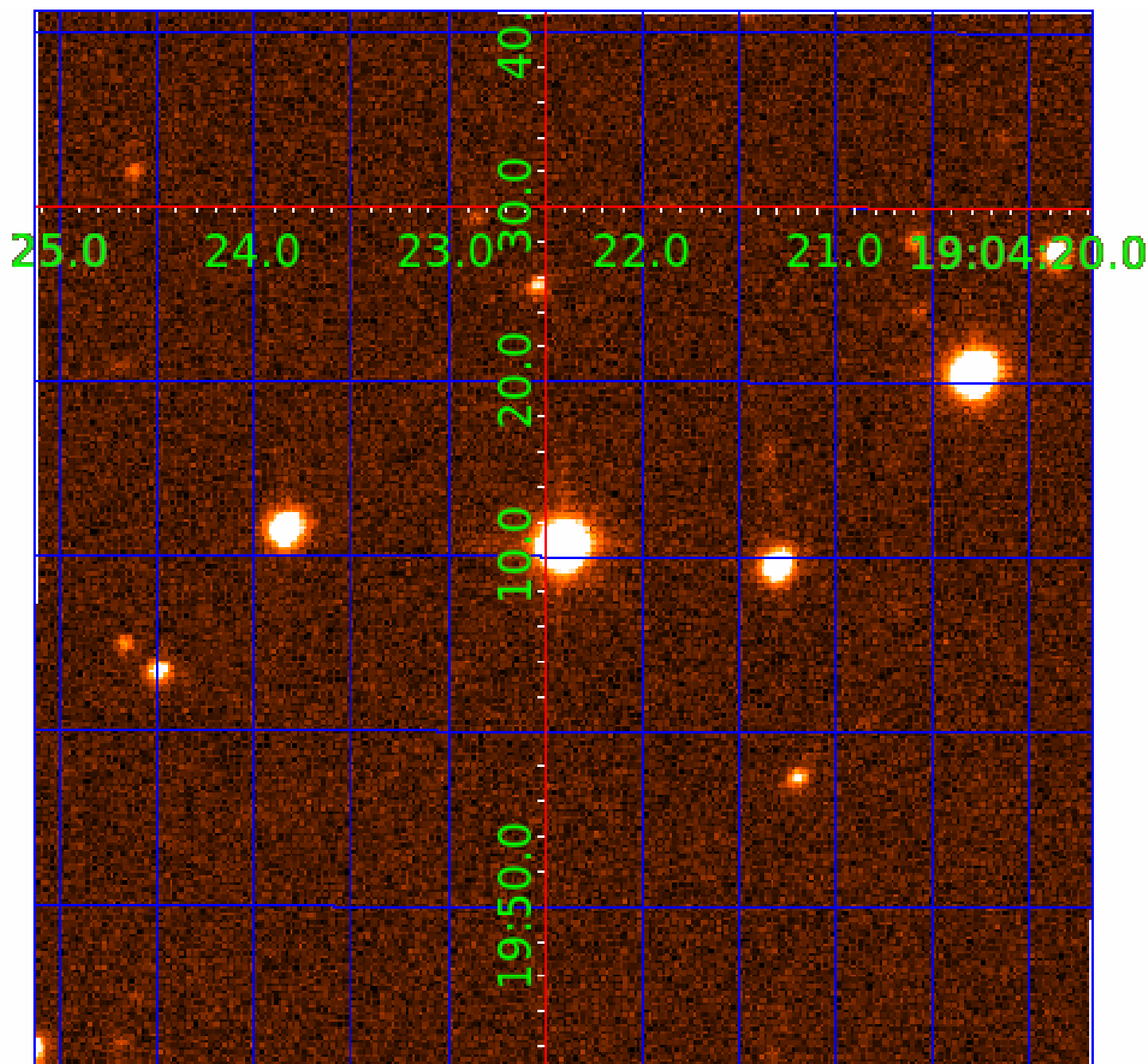


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006846570

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})
006846570-01	OBS	No	582.597917	134.148846	752.0	4.635	17.1	2.8	0.54	3833	1.53	0.05
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006846570-04	OBS	No	423.651424	260.115103	2126.2	6.872	14.3	7.6	0.54	3833	2.44	0.07
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006846570-06	OBS	No	464.525730	358.180980	2198.8	3.611	14.8	8.5	0.54	3833	2.51	0.06
006846570-07	OBS	No	435.562645	414.230478	2025.6	4.147	13.9	7.4	0.54	3833	2.52	0.07
006846570-08	OBS	No	235.278821	358.143013	998.2	6.000	15.6	-1.0	0.54	3833	1.68	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006846570-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006846570-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006846570-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

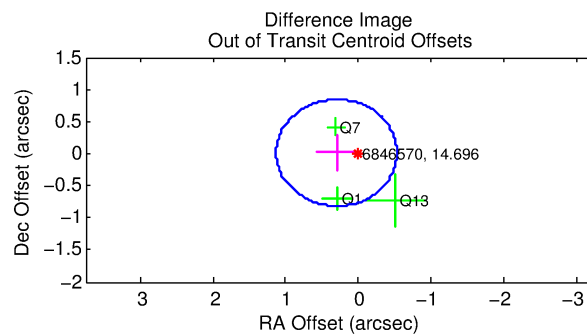
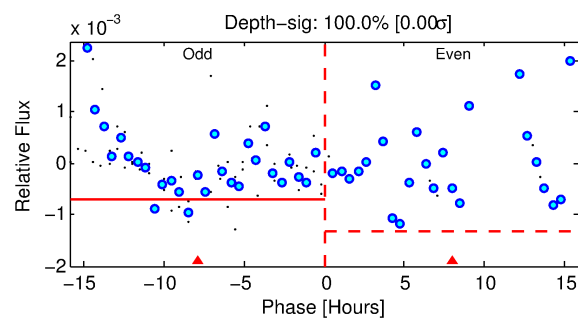
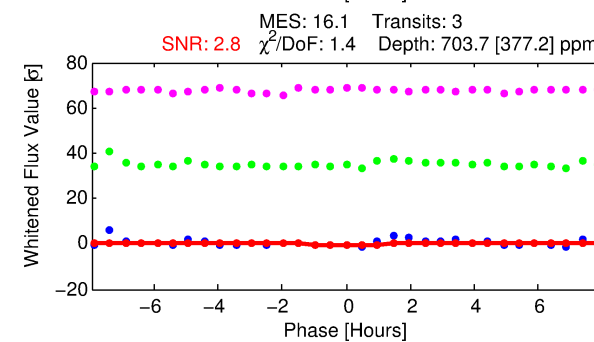
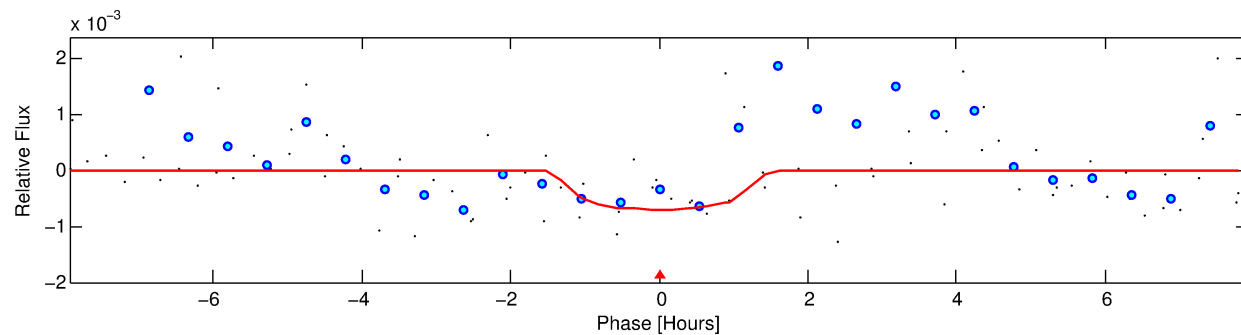
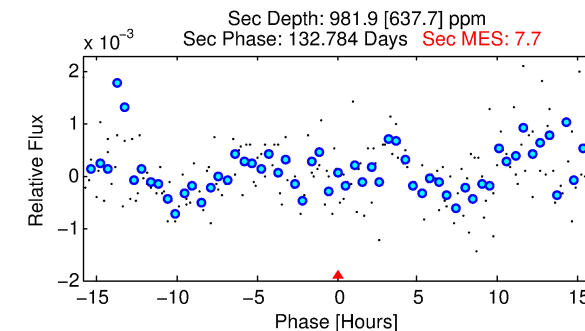
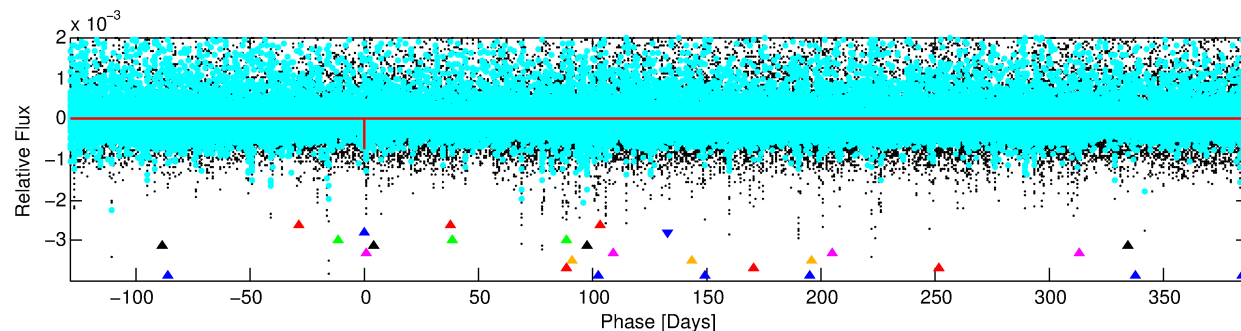
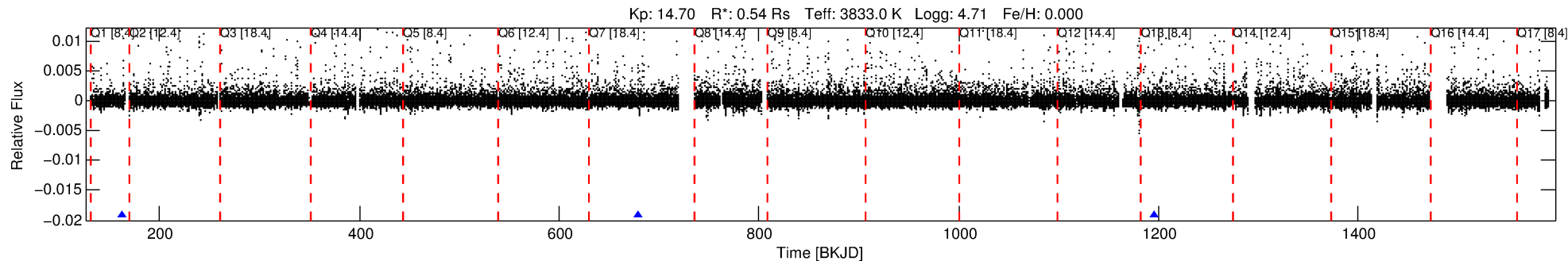
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006846570-02

No Significant Match Found

DV One-Page Summary

KIC: 6846570 Candidate: 2 of 8 Period: 516.937 d



DV Fit Results:

Period = 516.93716 [0.01661] d
Epoch = 162.4741 [0.0205] BKJD
Rp/R* = 0.0254 [0.1565]
a/R* = 1209.57 [29965.01]
b = 0.63 [24.08]
Seff = 0.05 [0.00]
Teq = 123 [2] K
Rp = 1.50 [9.24] Re
a = 1.0299 [0.0406] AU
Ag = 254451.29 [3137275.65] [0.08σ]
Teff = 4256 [13118] K [0.32σ]

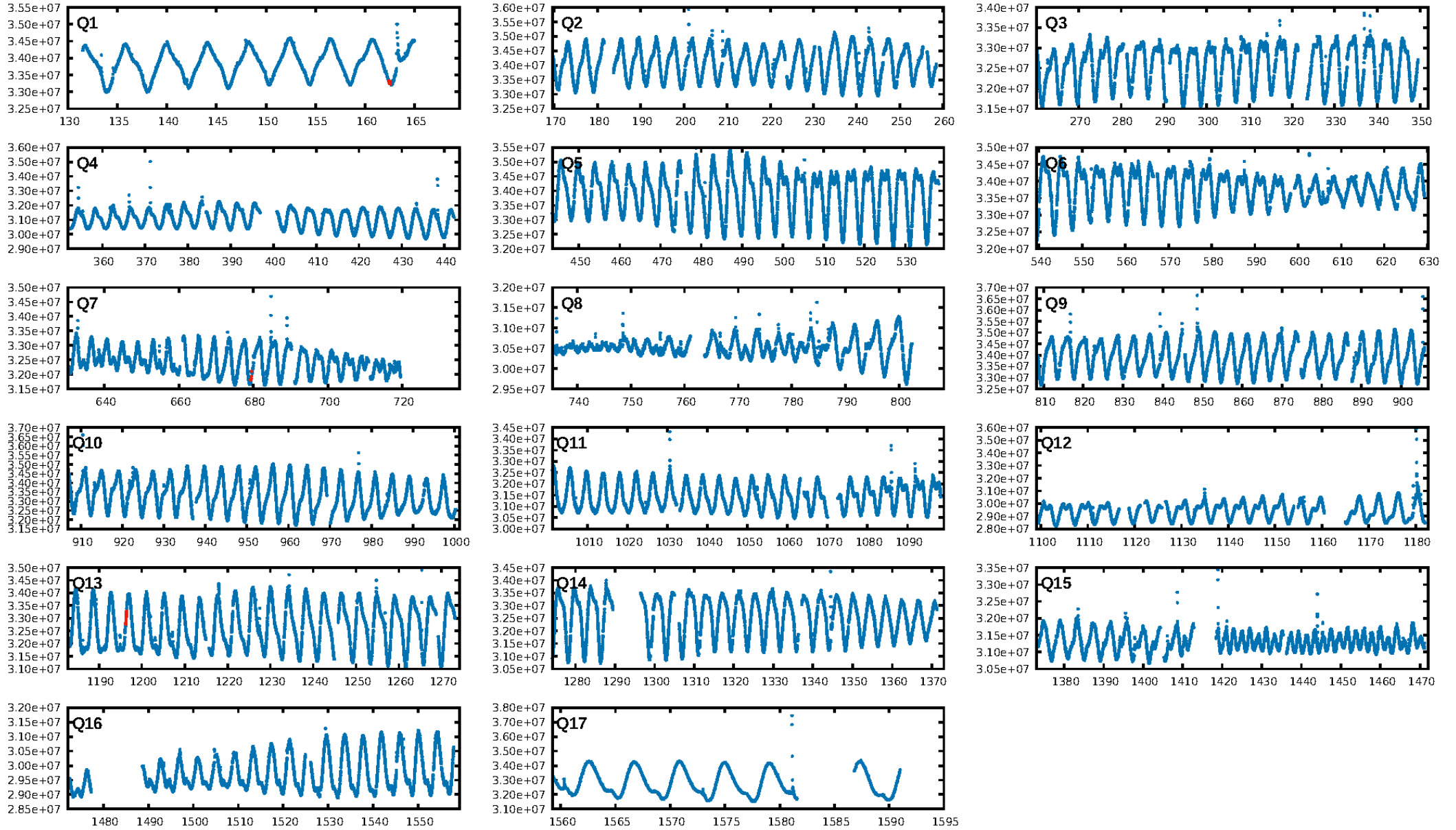
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [438.26σ]
LongPeriod-sig: 100.0% [295.30σ]
ModelChiSquare2-sig: 22.2%
ModelChiSquareGof-sig: 88.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -2.807
Centroid-sig: 55.6%
Centroid-so: 1.288 arcsec [0.68σ]
OotOffset-rm: 0.301 arcsec [1.09σ]
KicOffset-rm: 0.426 arcsec [1.02σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-st: 0/1/0/2 [3]
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DiffImageOverlap-fno: 1.00 [3/3]

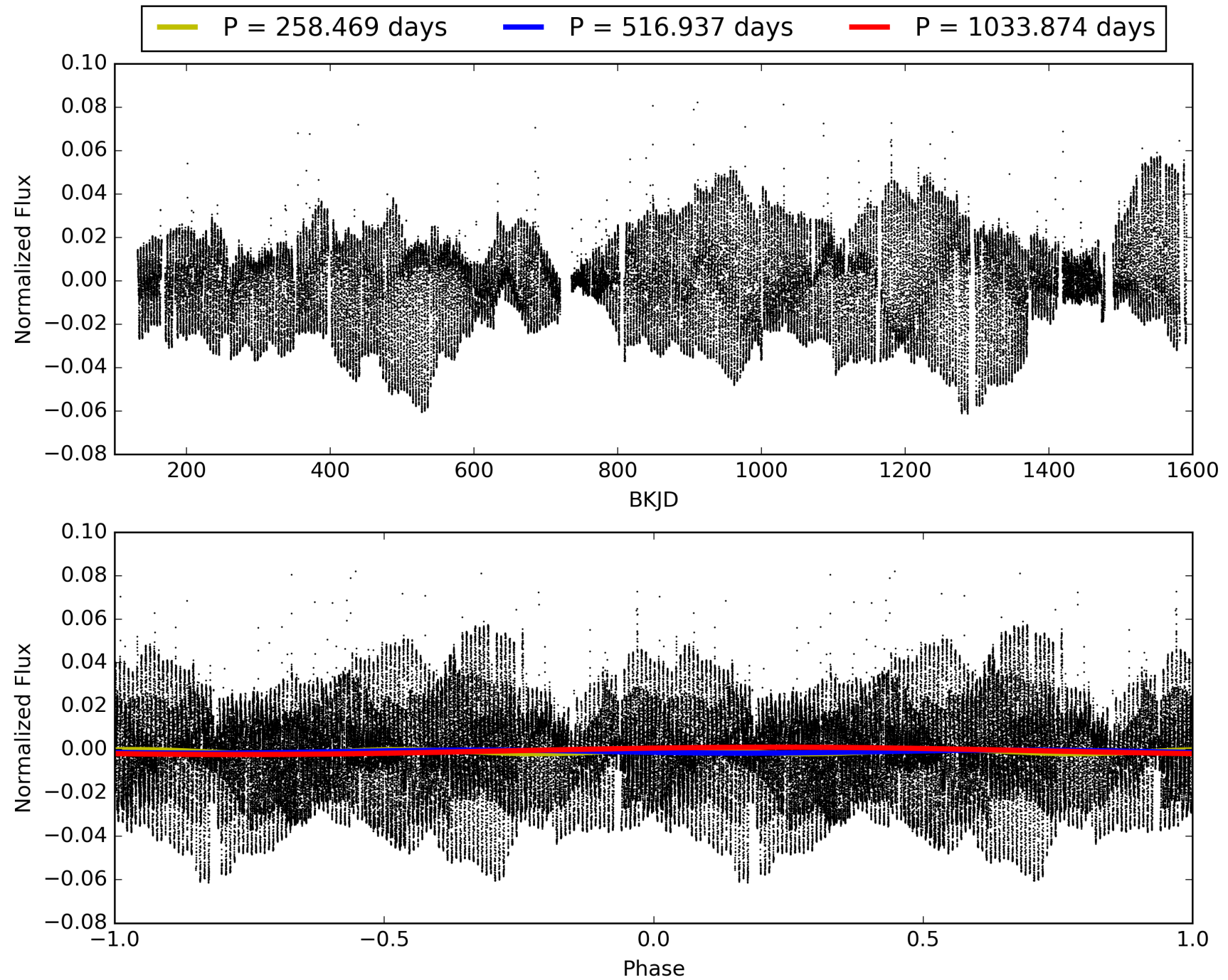
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:45:24 Z

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

TCE 006846570-02, PDC Light Curves

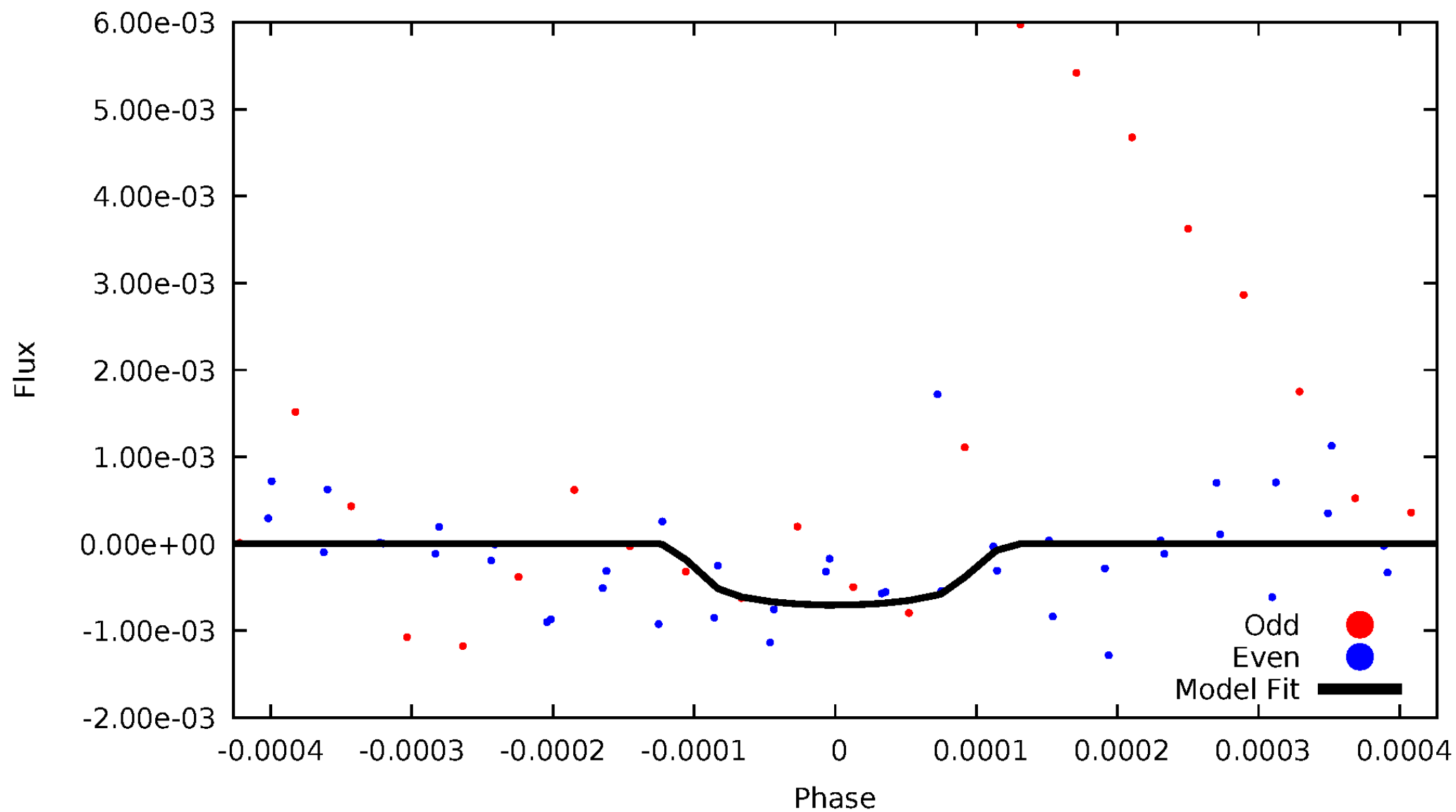


TCE 006846570-02



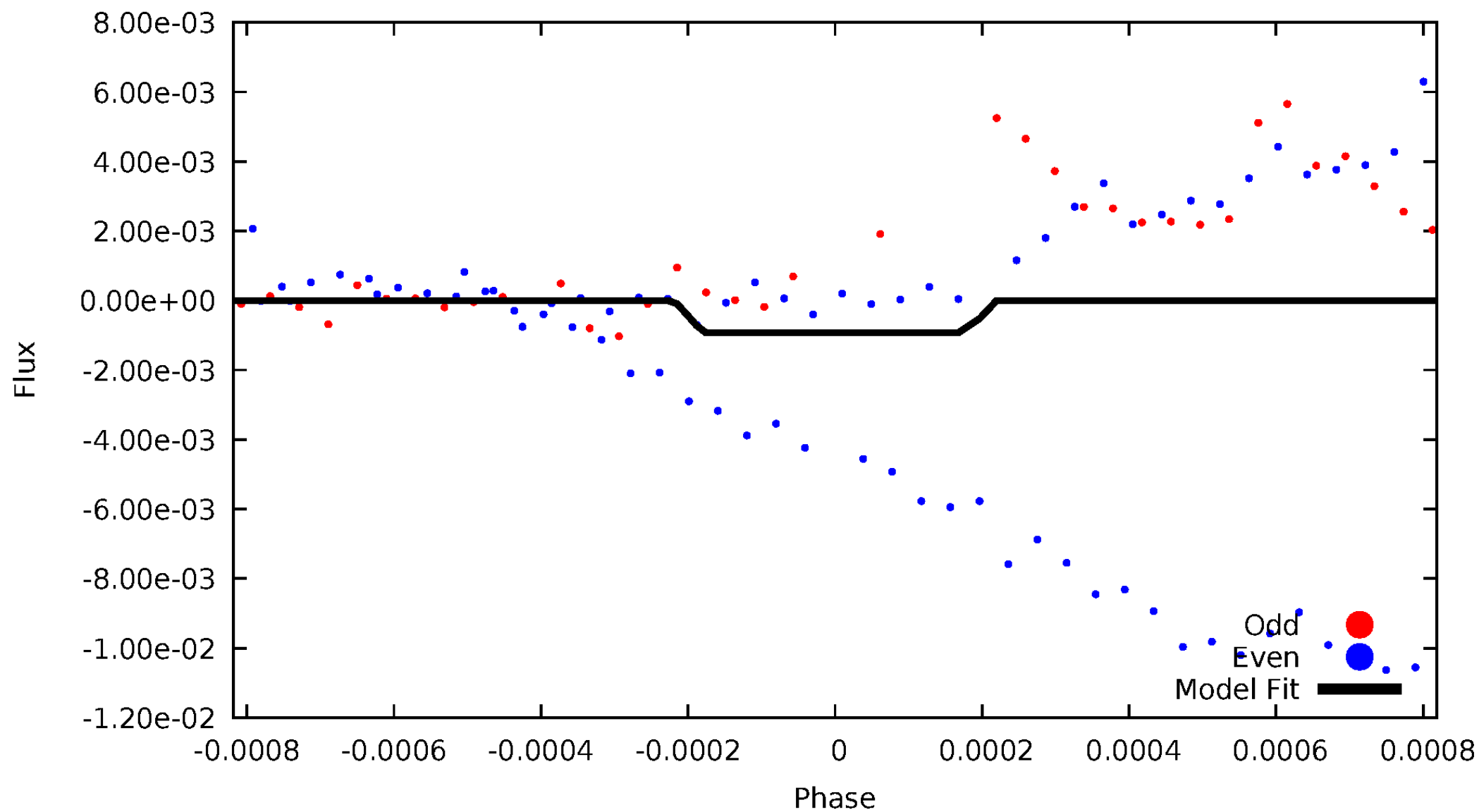
DV Odd/Even

TCE 006846570-02



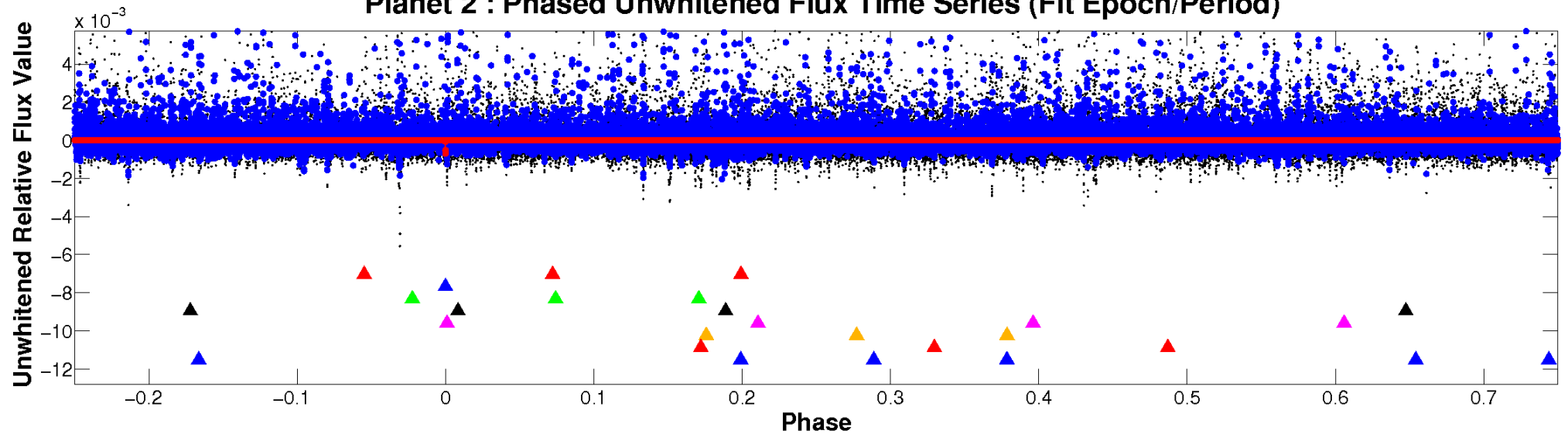
ALT Odd/Even

TCE 006846570-02

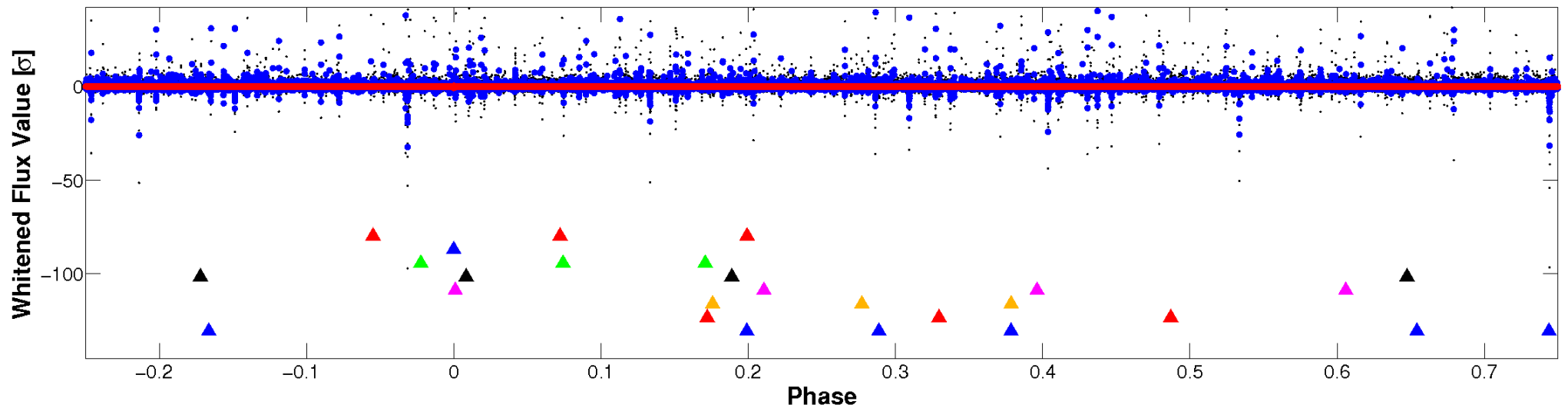


Non-Whitened Vs. Whitened Light Curve

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

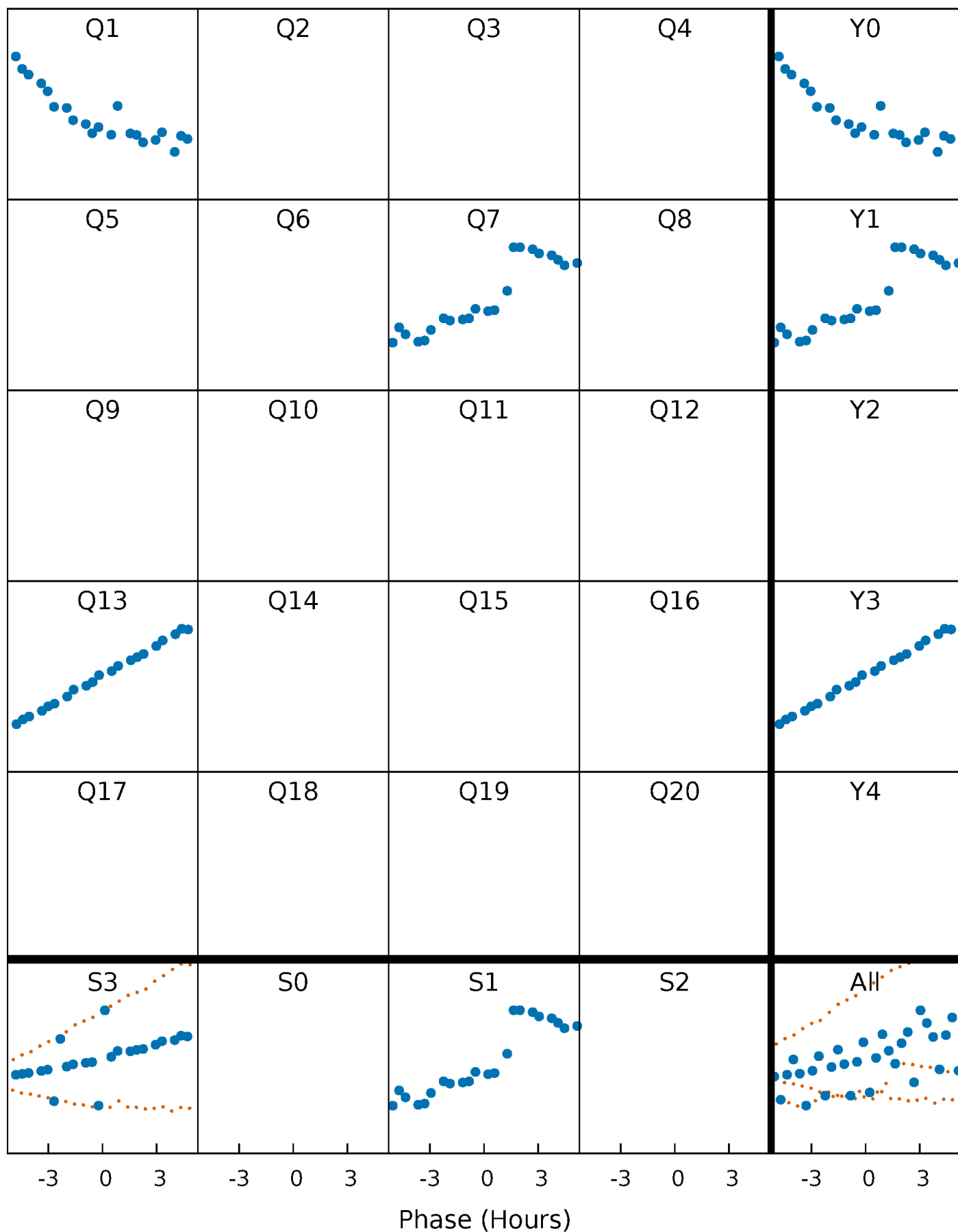


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



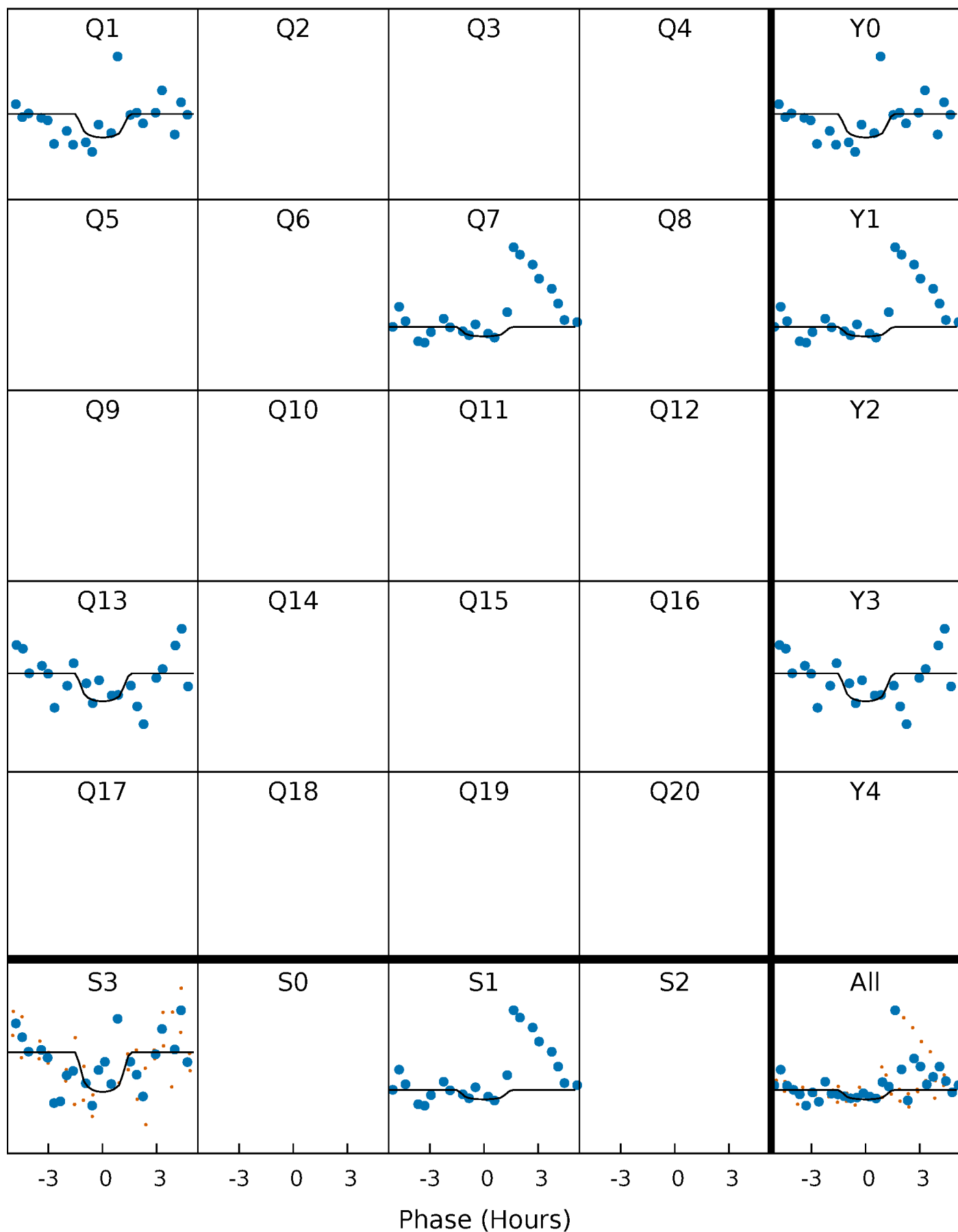
PDC Quarter-Phased Transit Curves

TCE 006846570-02 $P=516.937163$ Days $T_0=162.474077$ (BKJD)



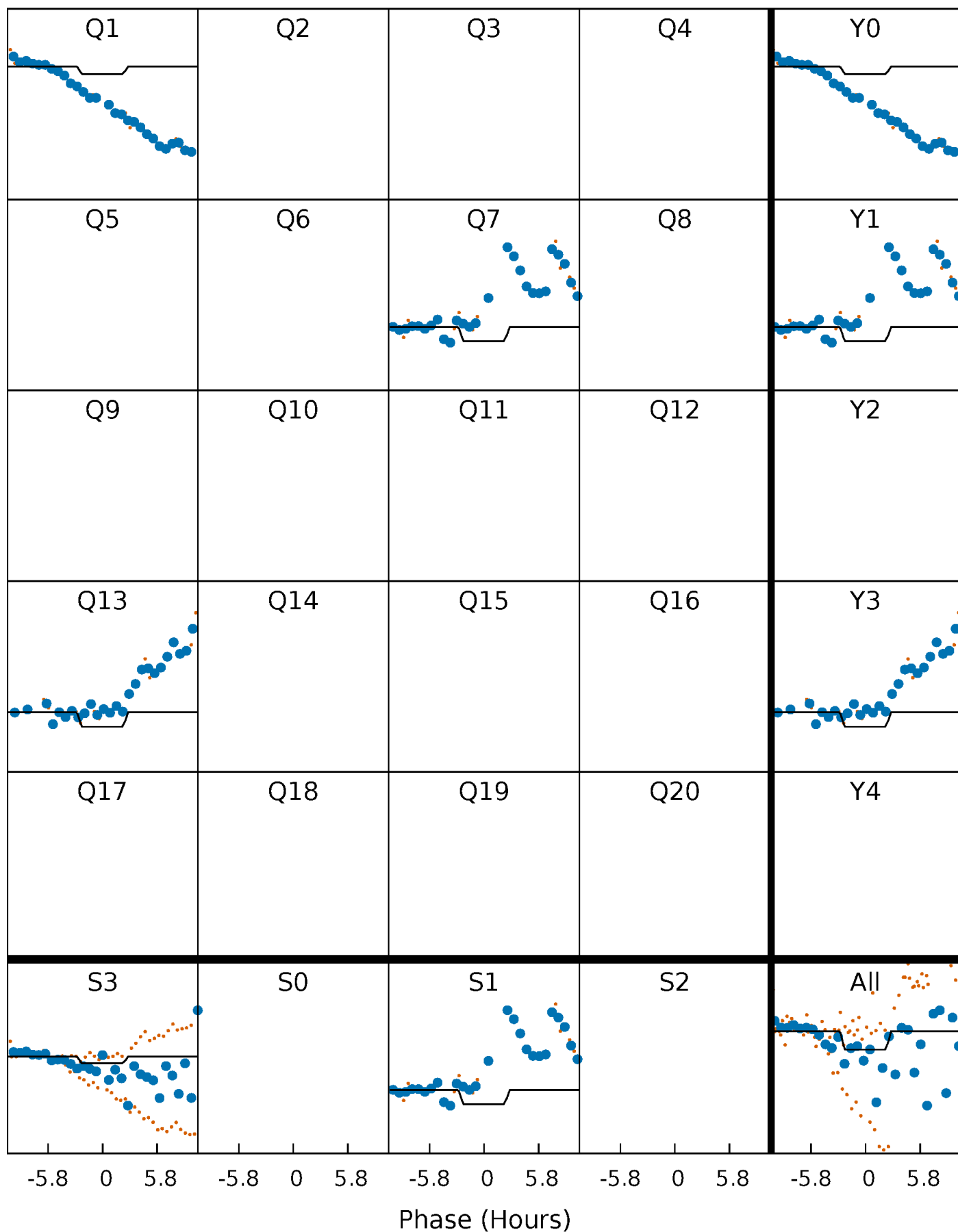
DV Quarter-Phased Transit Curves

TCE 006846570-02 P=516.937163 Days $T_0=162.474077$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

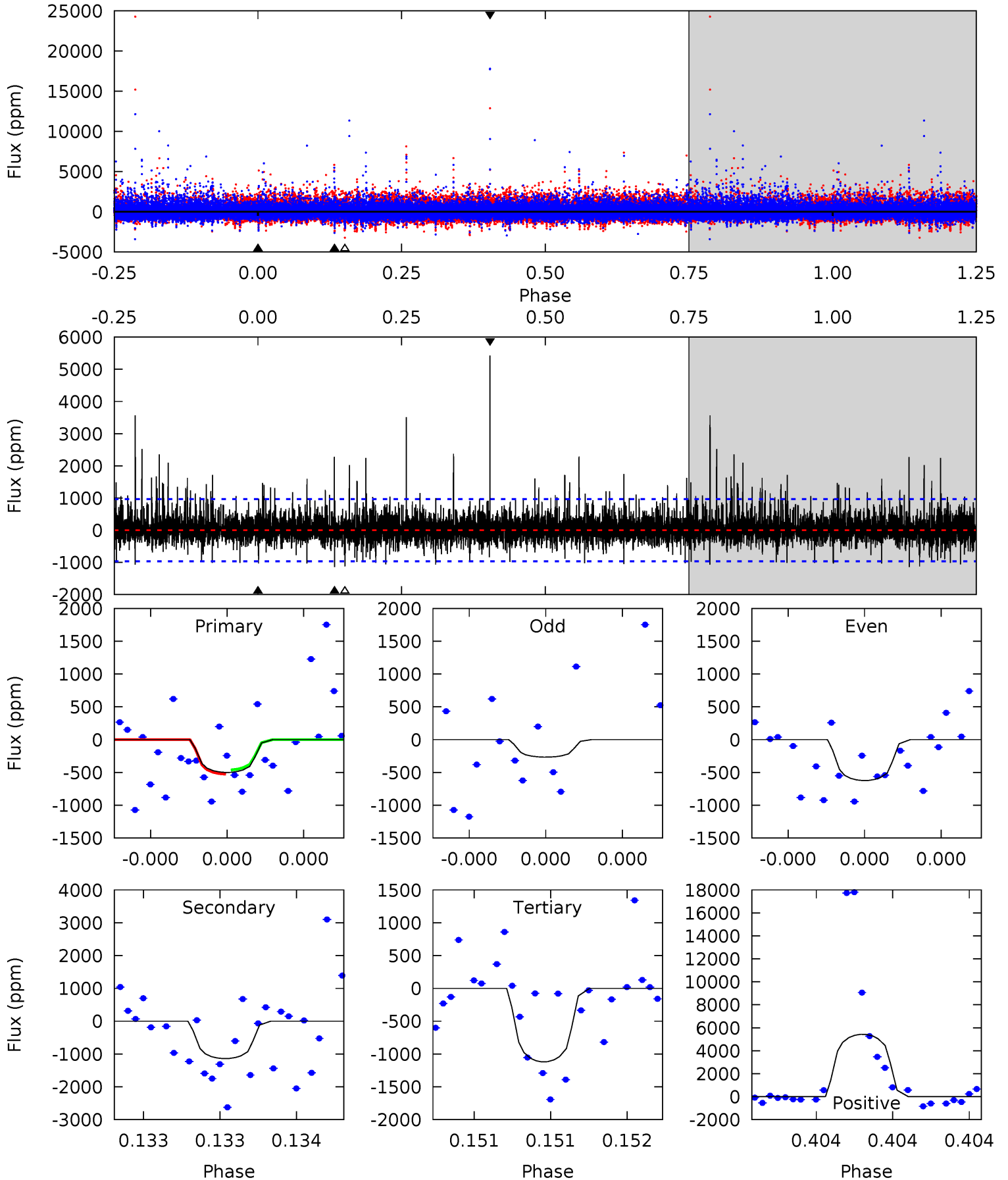
TCE 006846570-02 P=516.914578 Days $T_0=162.512190$ (BKJD)



DV Model-Shift Uniqueness Test

006846570-02, P = 516.937163 Days, E = 162.474077 Days

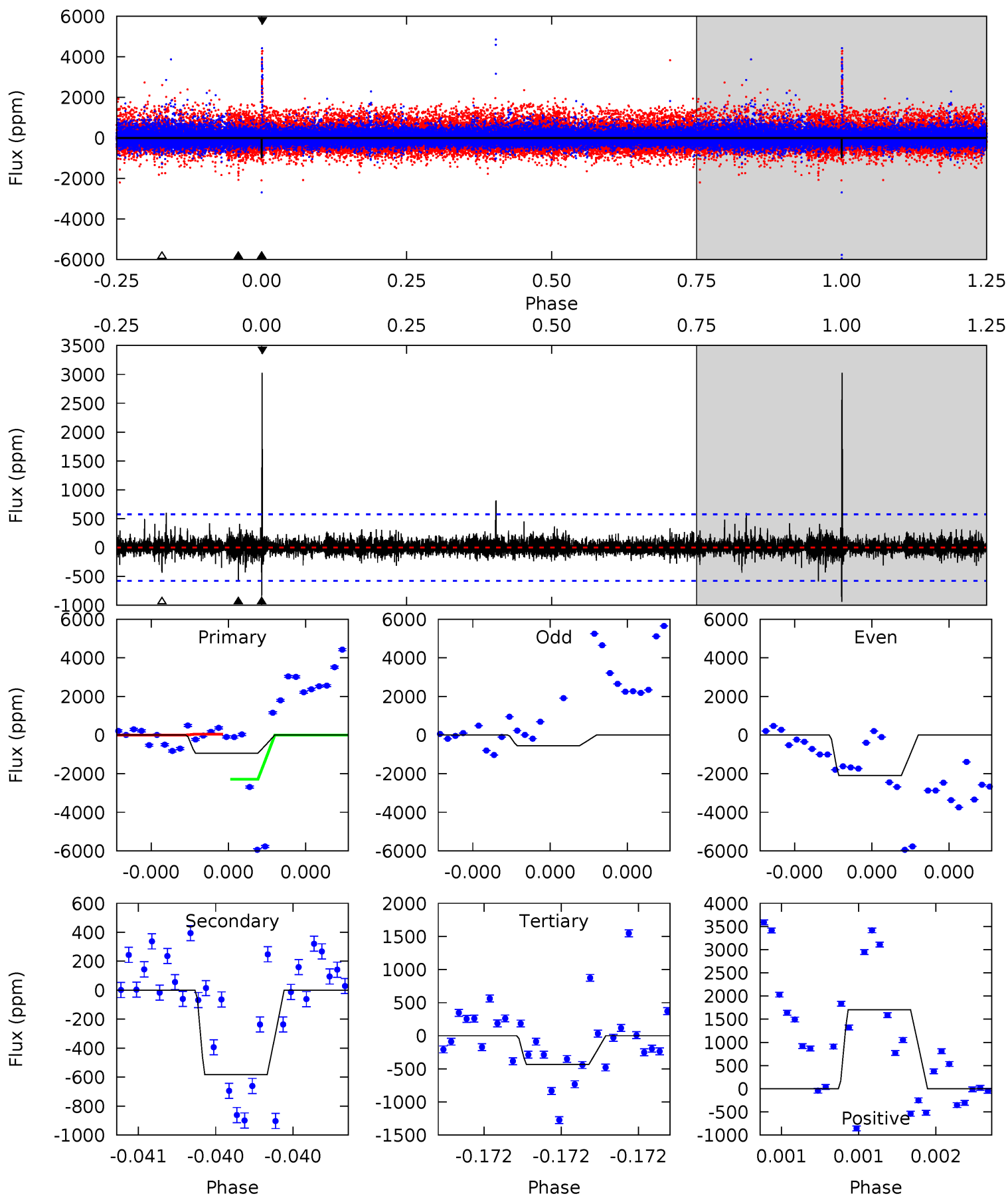
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.94	6.71	6.59	31.9	5.69	3.66	1.83	-3.65	-29.0	0.12	-25.2	0.56	1.29	0.83	0.19



Alt Model-Shift Uniqueness Test

006846570-02, P = 516.914578 Days, E = 162.512190 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.14	5.66	4.21	16.6	5.61	3.53	0.91	4.92	-7.41	1.44	-10.9	7.03	-98.4	0.76	10.8



Stellar Parameters For KIC 006846570

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3833^{+50}_{-50}	$4.708^{+0.030}_{-0.014}$	$0.000^{+0.100}_{-0.100}$	$0.541^{+0.019}_{-0.026}$	$0.545^{+0.025}_{-0.020}$	$4.853^{+0.567}_{-0.303}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+12%/-6%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006846570-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1141 ± 170	$6.87^{+6.87}_{-4.64}$	171^{+3}_{-3}	2660^{+1053}_{-410}	$13758^{+119600}_{-10237}$
Alt.	-582 ± 103	$7.09^{+6.70}_{-5.03}$	171^{+3}_{-3}	2429^{+954}_{-340}	6799^{+68805}_{-5036}

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 $A_{obs} \gg 1.0$

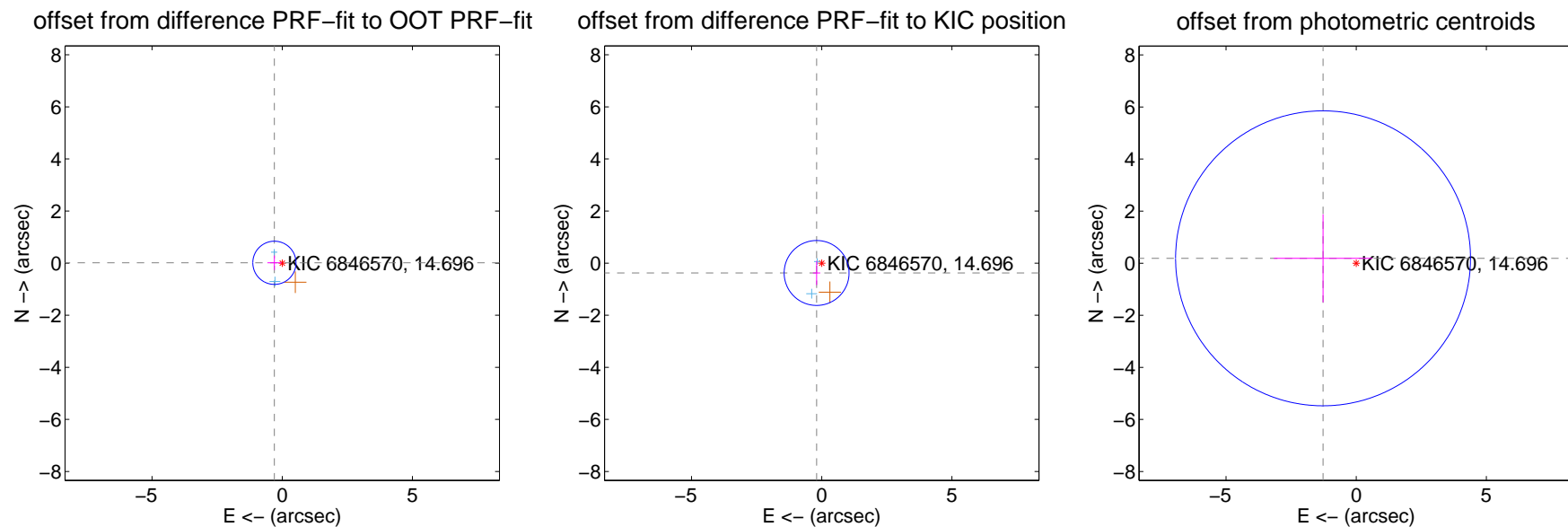
DV Centroid Data

Supplemental centroid analysis for 006846570-02. Kepler magnitude: 14.70. Transit SNR 2.77

There are 2 quarters with good PRF difference image offsets

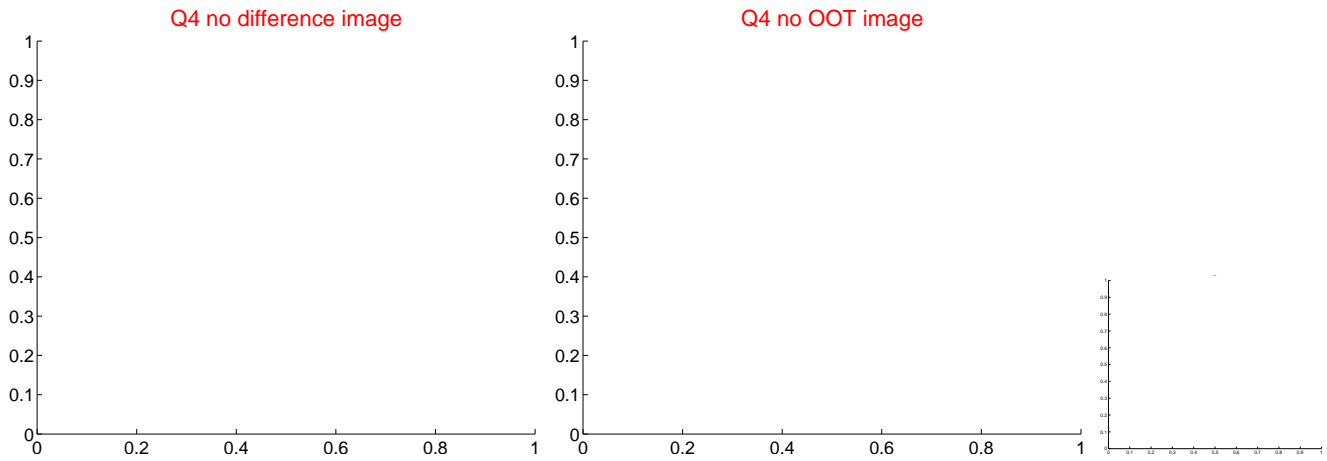
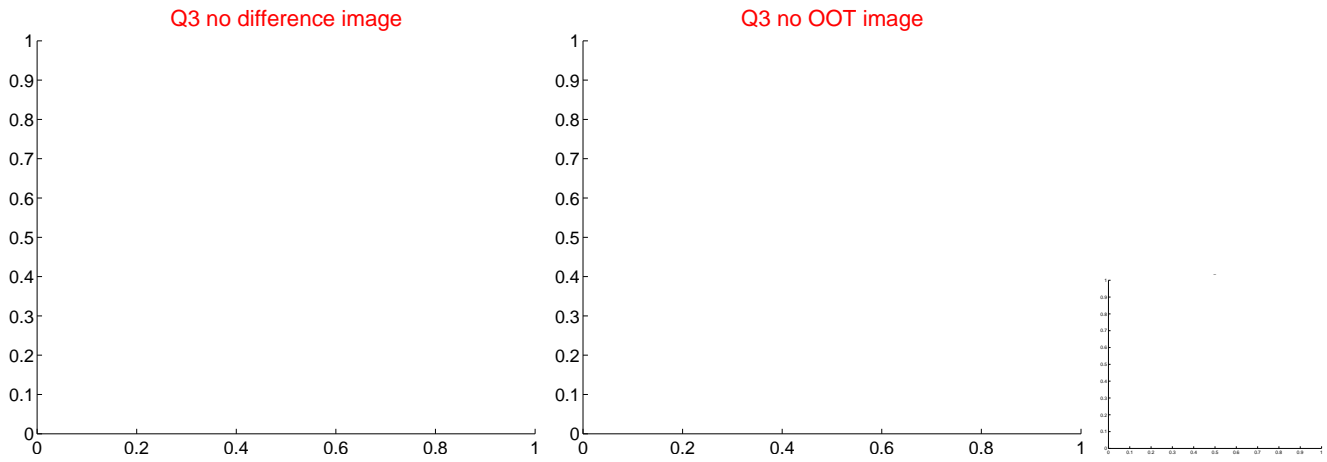
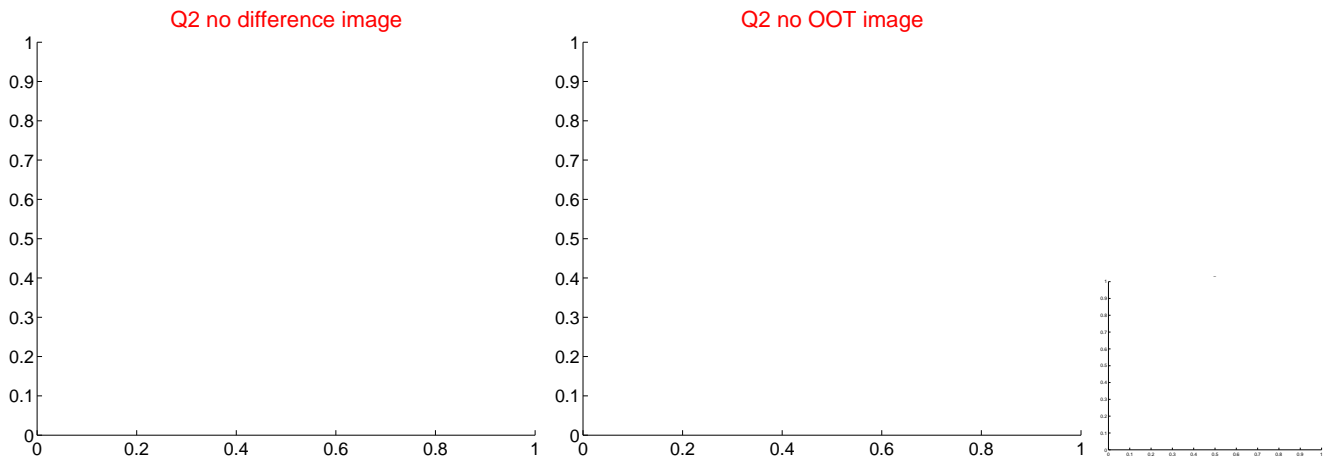
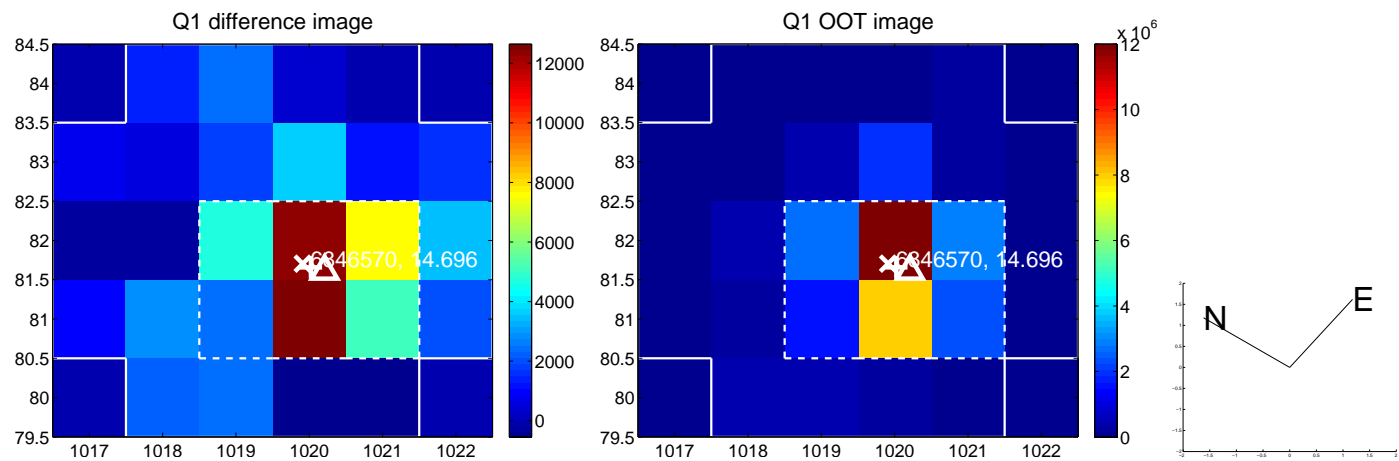
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.301 ± 0.276	1.09	0.300 ± 0.272	0.013 ± 0.276
PRF-fit source offset from KIC position	0.426 ± 0.416	1.02	0.196 ± 0.137	-0.378 ± 0.463
photometric centroid source offset	1.29 ± 1.89	0.68	1.27 ± 1.89	0.19 ± 1.69

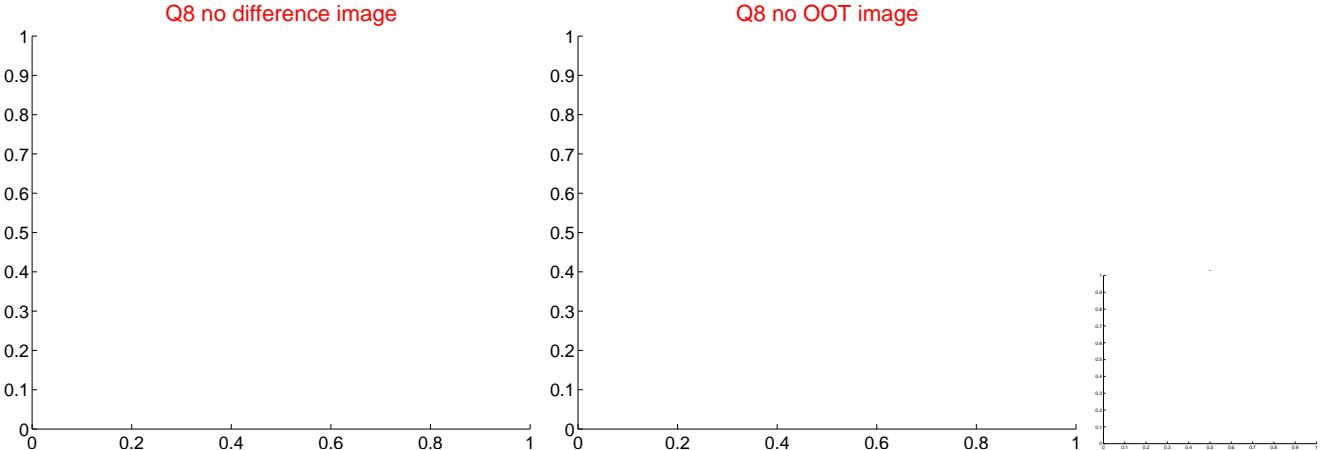
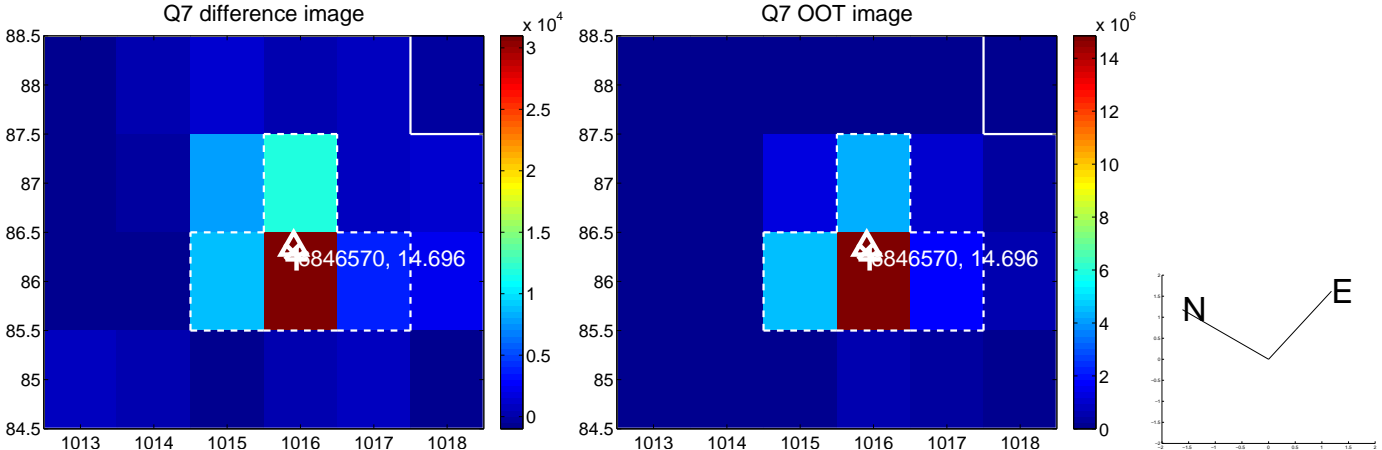
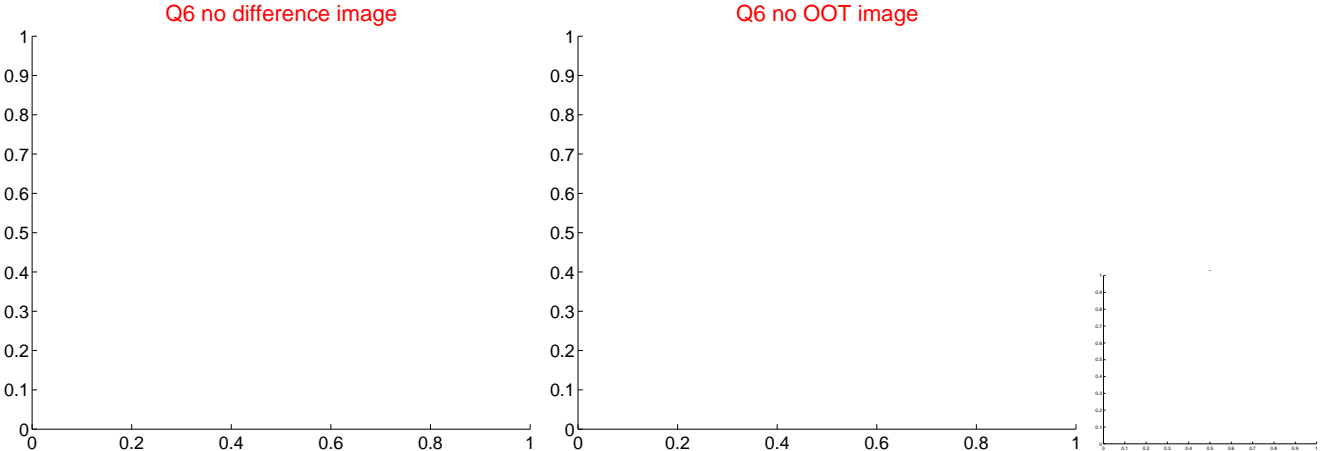
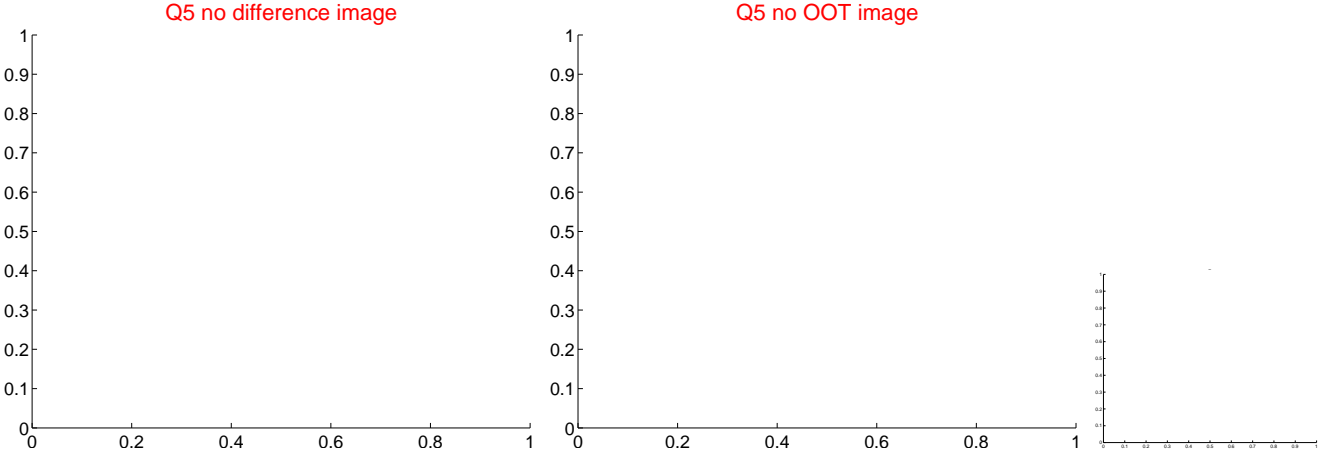


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



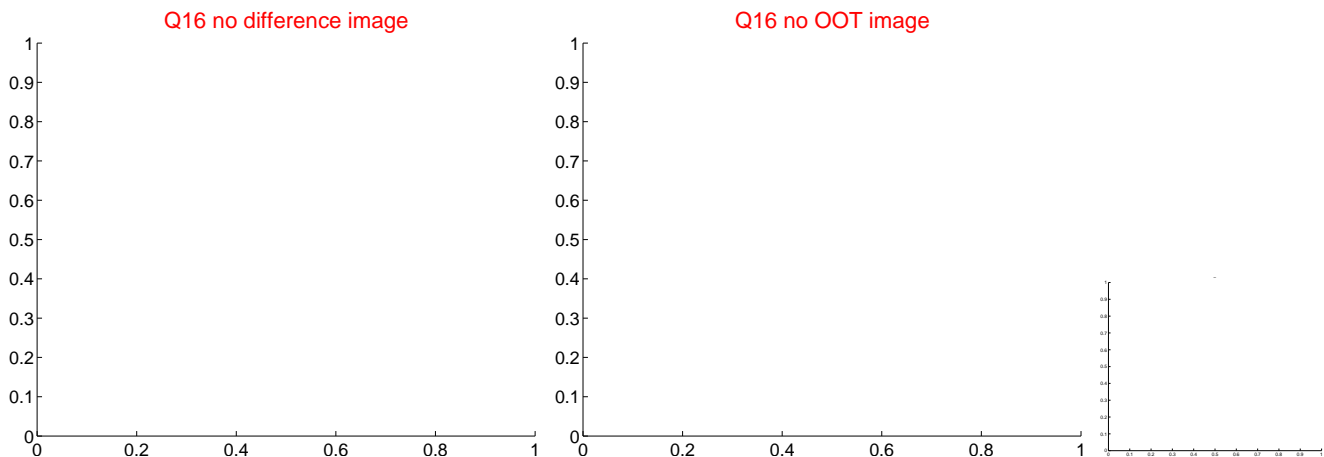
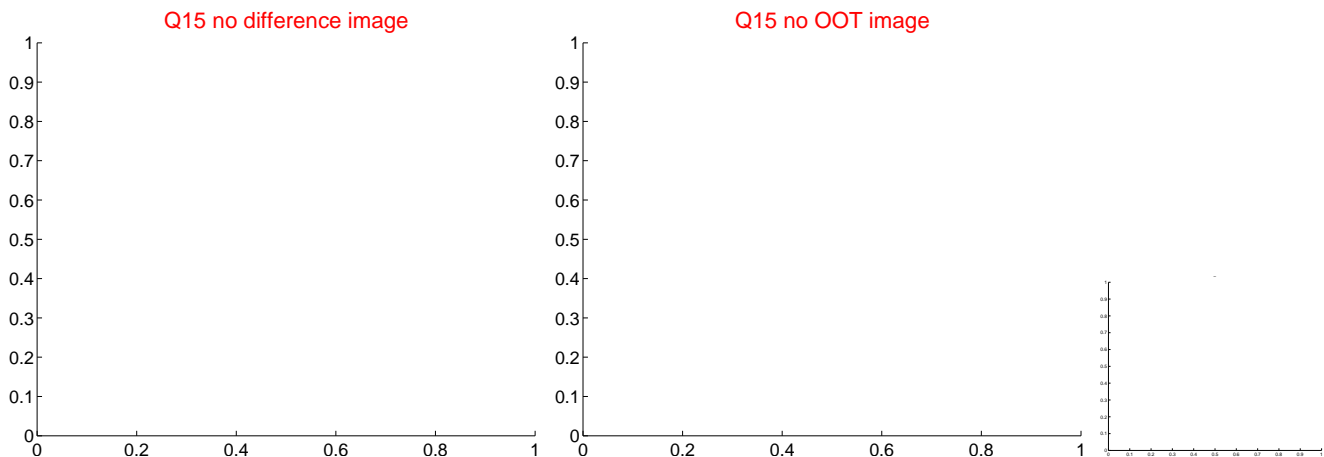
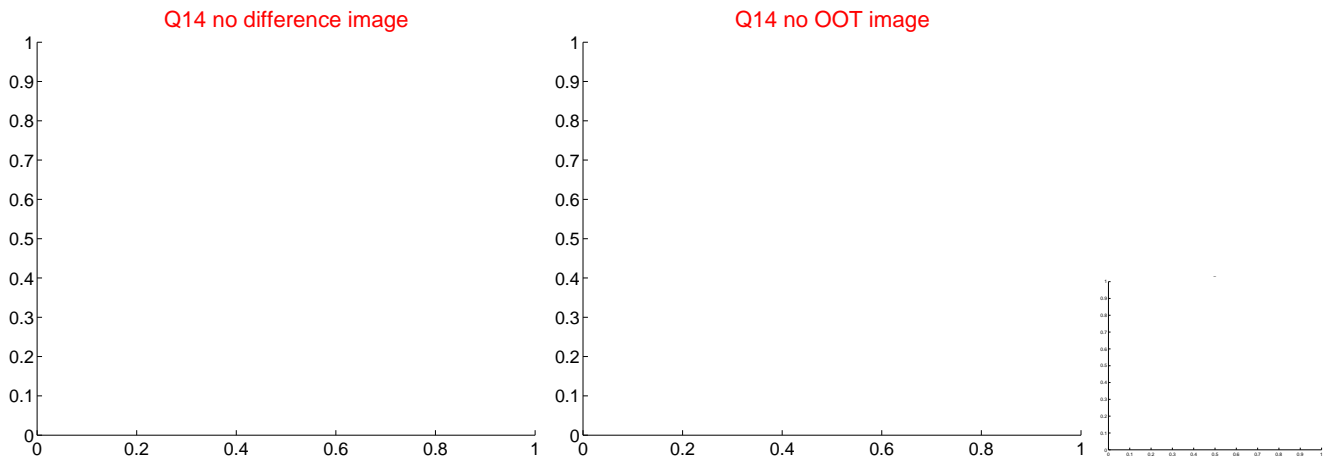
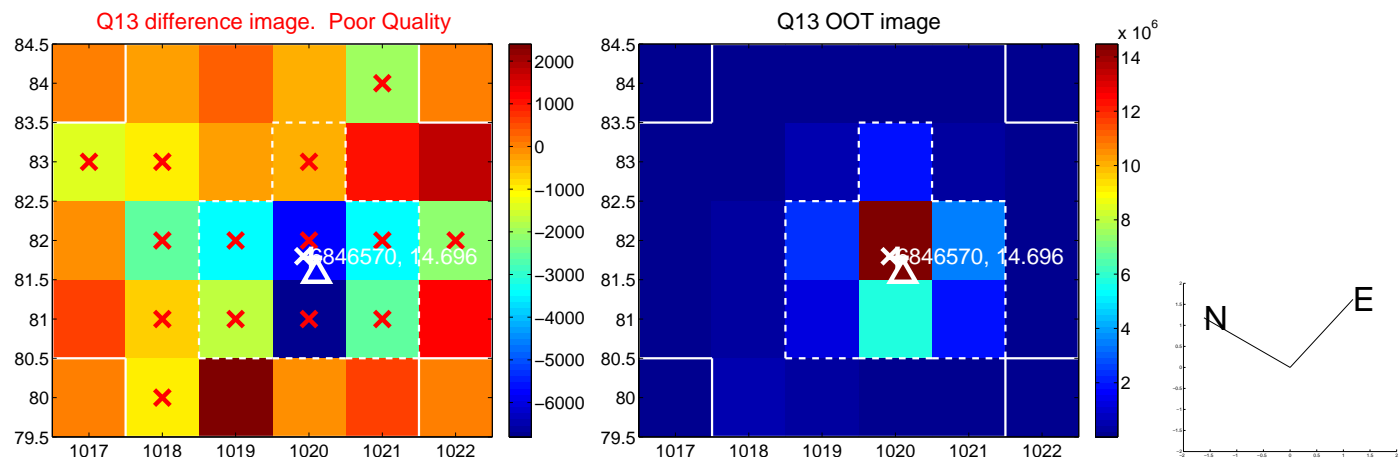
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



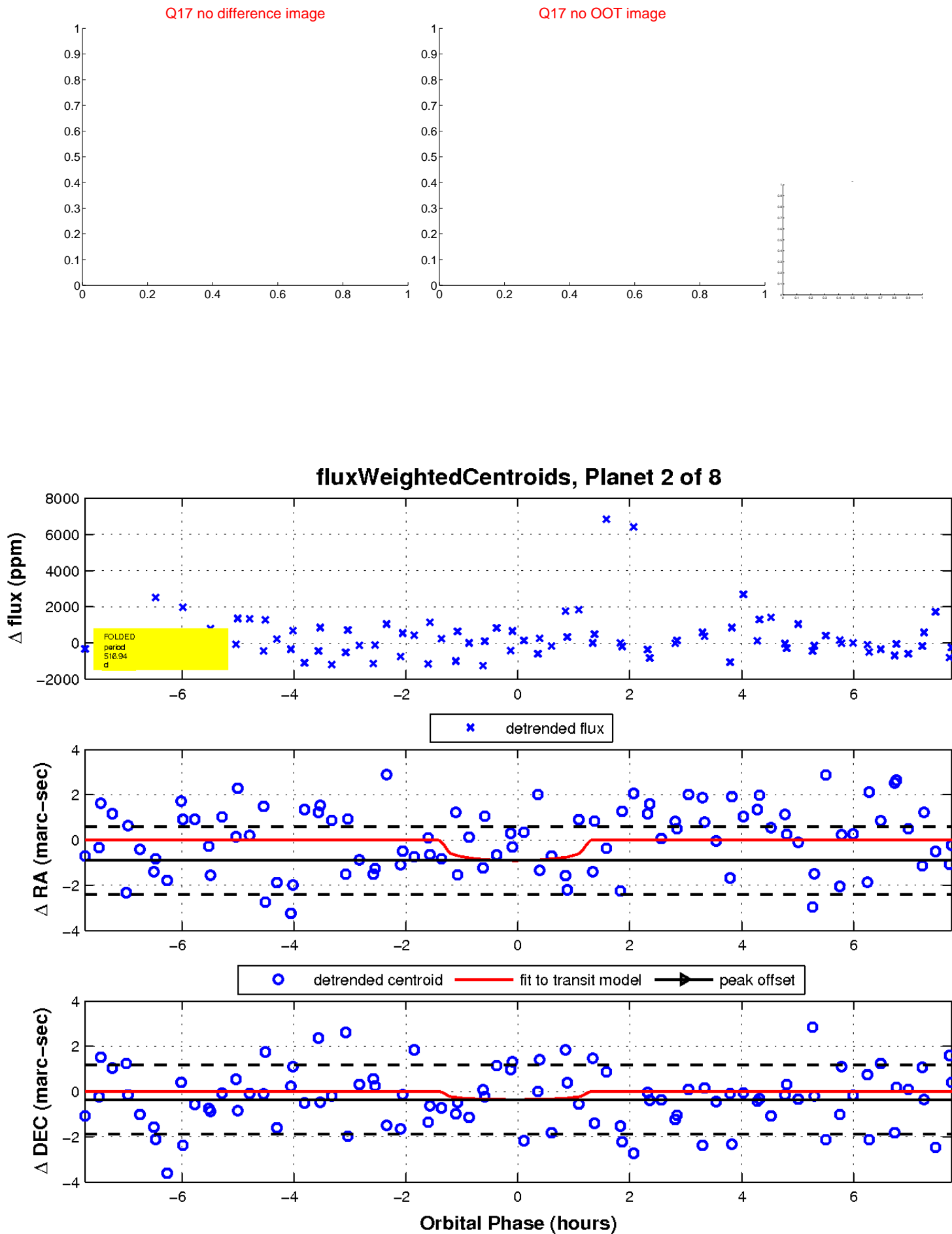
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

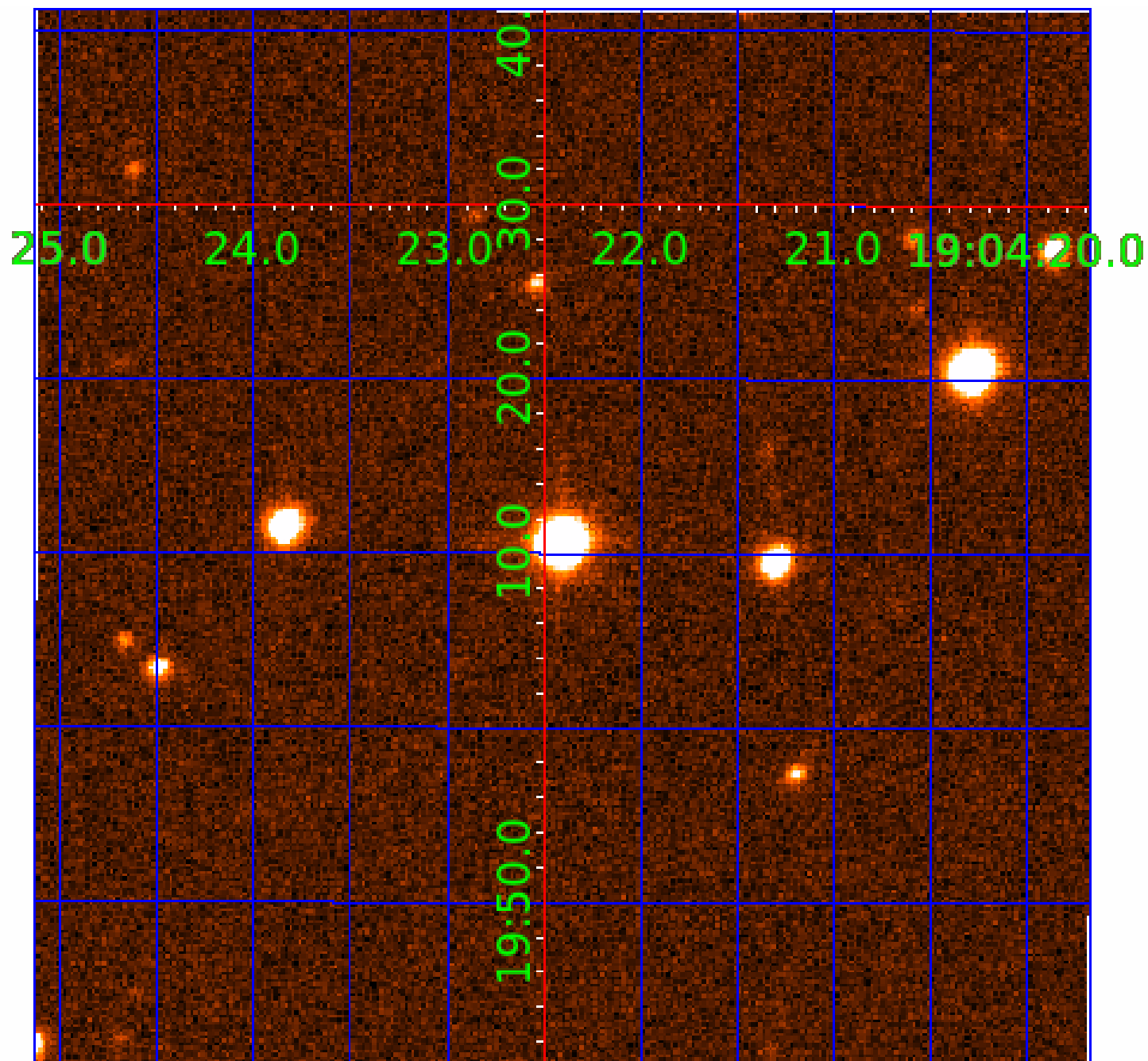


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006846570

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})
006846570-01	OBS	No	582.597917	134.148846	752.0	4.635	17.1	2.8	0.54	3833	1.53	0.05
006846570-02	OBS	No	516.937163	162.474077	703.7	2.644	16.1	2.8	0.54	3833	1.50	0.05
006846570-04	OBS	No	423.651424	260.115103	2126.2	6.872	14.3	7.6	0.54	3833	2.44	0.07
006846570-05	OBS	No	312.660813	367.289563	2033.7	6.413	14.6	6.6	0.54	3833	2.49	0.10
006846570-06	OBS	No	464.525730	358.180980	2198.8	3.611	14.8	8.5	0.54	3833	2.51	0.06
006846570-07	OBS	No	435.562645	414.230478	2025.6	4.147	13.9	7.4	0.54	3833	2.52	0.07
006846570-08	OBS	No	235.278821	358.143013	998.2	6.000	15.6	-1.0	0.54	3833	1.68	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006846570-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006846570-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006846570-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

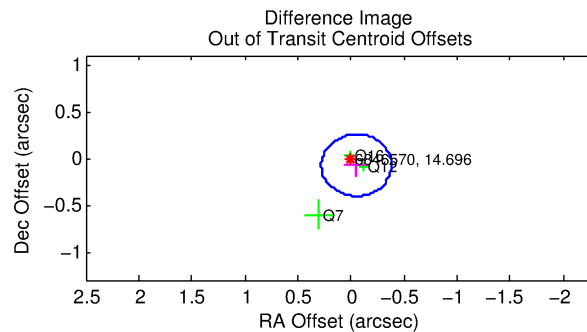
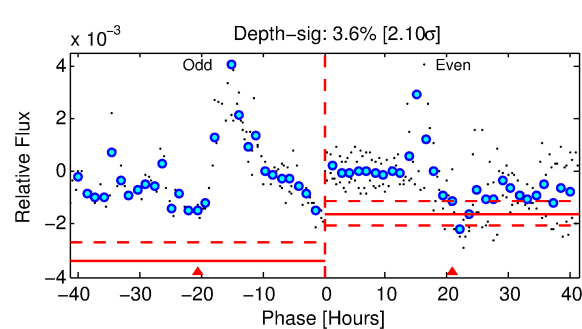
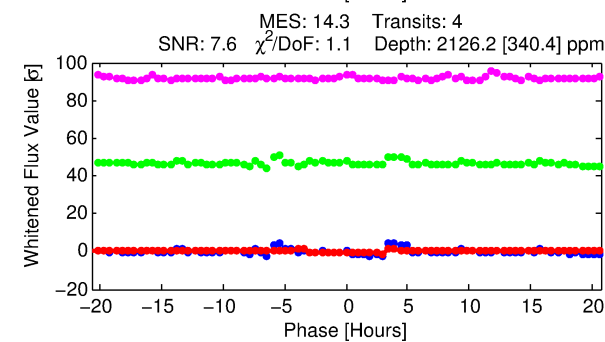
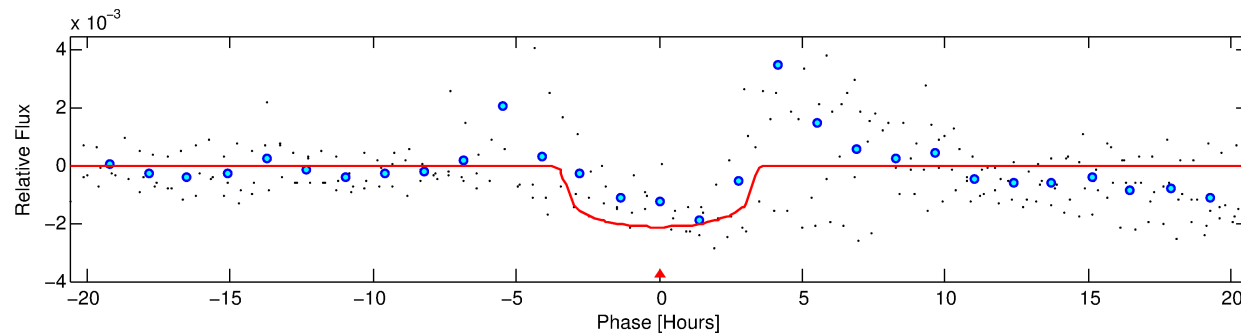
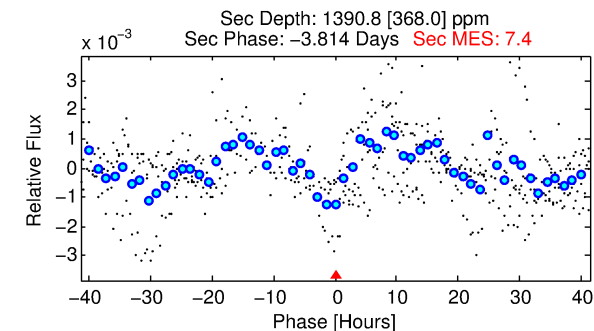
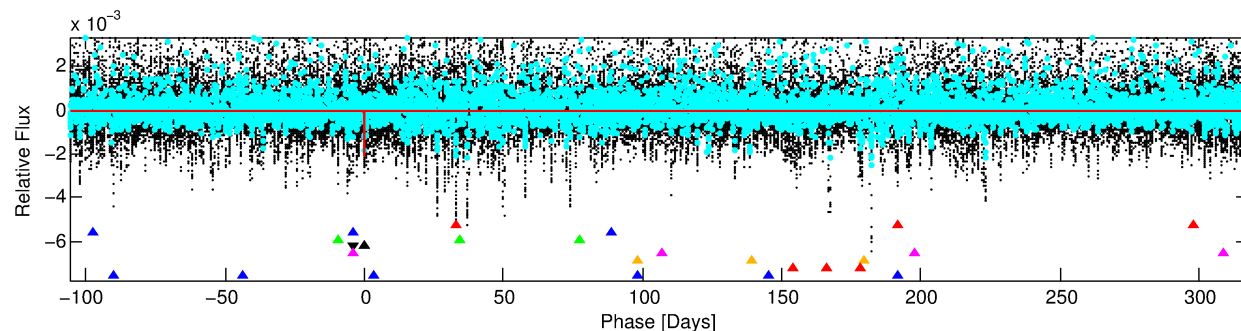
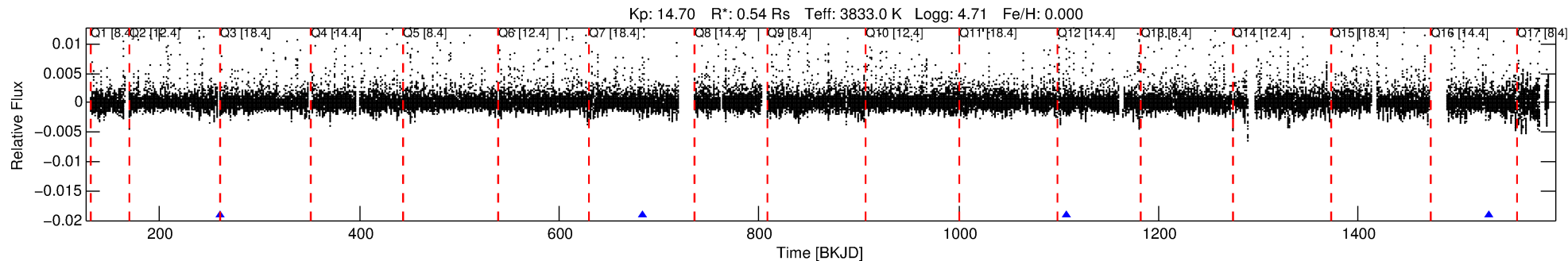
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006846570-04

No Significant Match Found

DV One-Page Summary

KIC: 6846570 Candidate: 4 of 8 Period: 423.651 d



DV Fit Results:

Period = 423.65142 [0.00450] d
Epoch = 260.1151 [0.0081] BKJD
Rp/R* = 0.0414 [0.0272]
a/R* = 490.32 [1222.63]
b = 0.02 [101.17]
Seff = 0.07 [0.01]
Teq = 131 [3] K
Rp = 2.45 [1.61] Re
a = 0.9019 [0.0356] AU
Ag = 104086.38 [139774.74] [0.74 σ]
Teffp = 3637 [1221] K [2.87 σ]

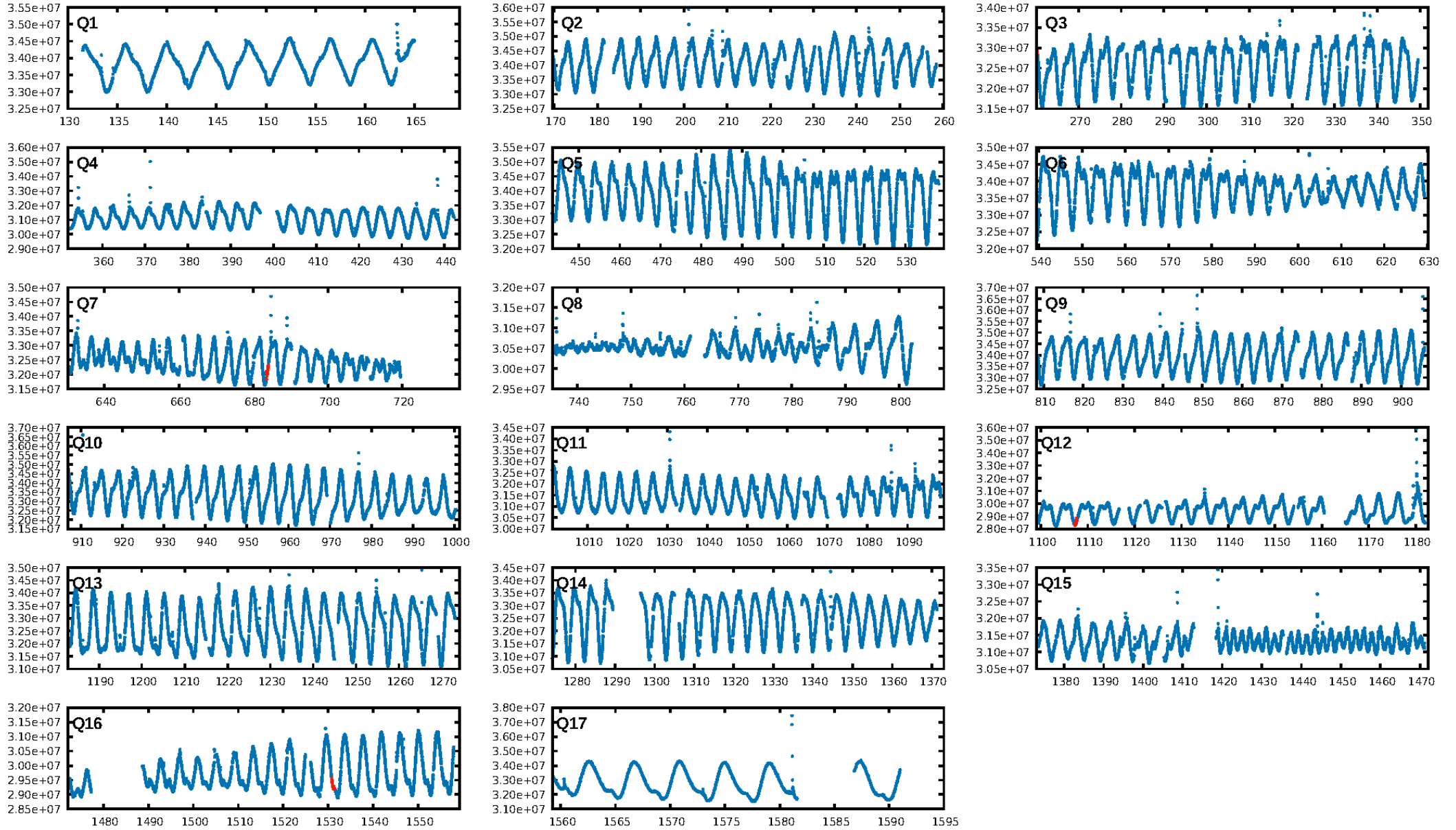
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [283.39 σ]
LongPeriod-sig: 100.0% [35.62 σ]
ModelChiSquare2-sig: 26.1%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.3321
Centroid-sig: 11.8%
Centroid-so: 0.087 arcsec [0.23 σ]
OotOffset-rm: 0.091 arcsec [0.82 σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-rm: 0.315 arcsec [2.27 σ]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

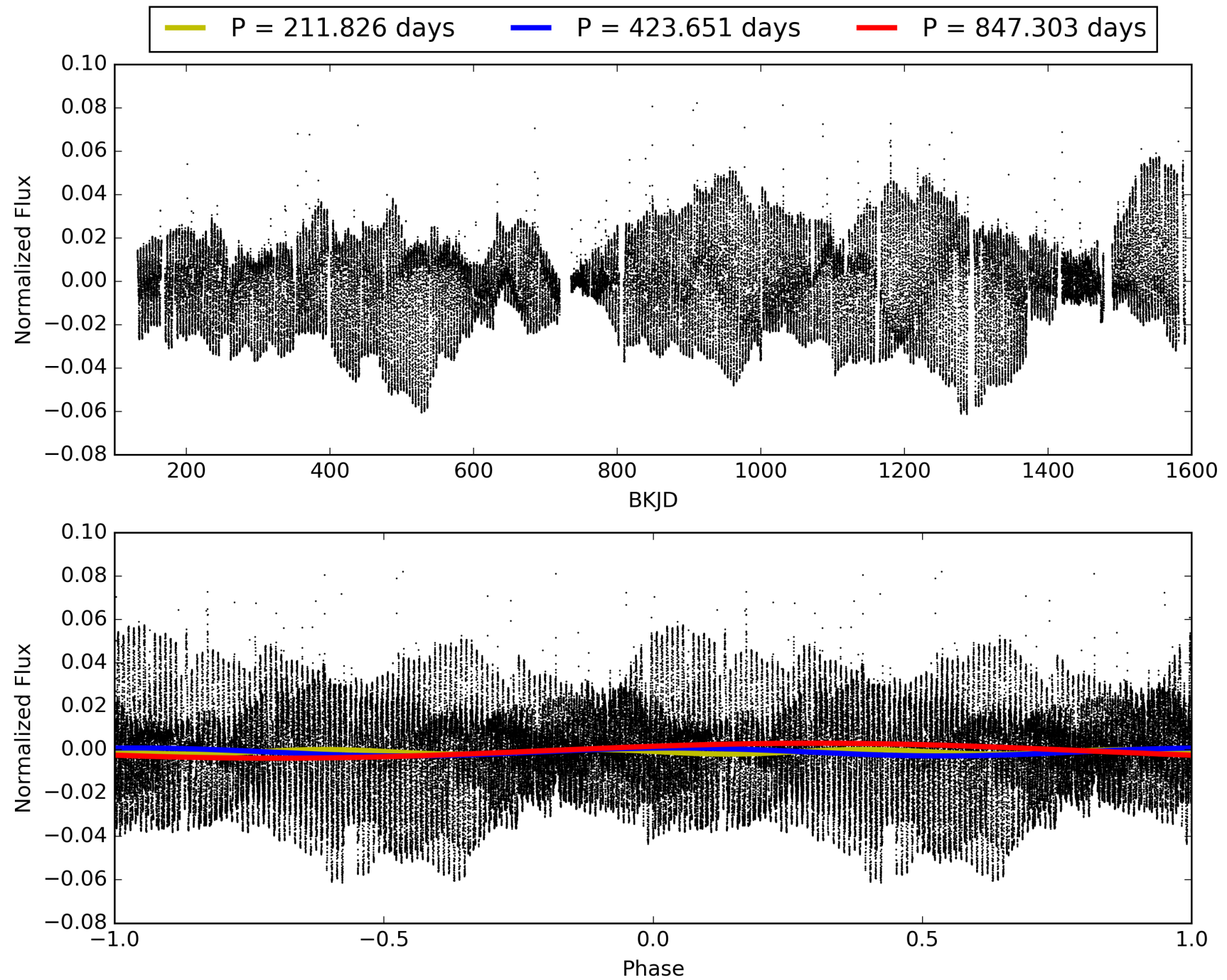
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:46:50 Z

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

TCE 006846570-04, PDC Light Curves

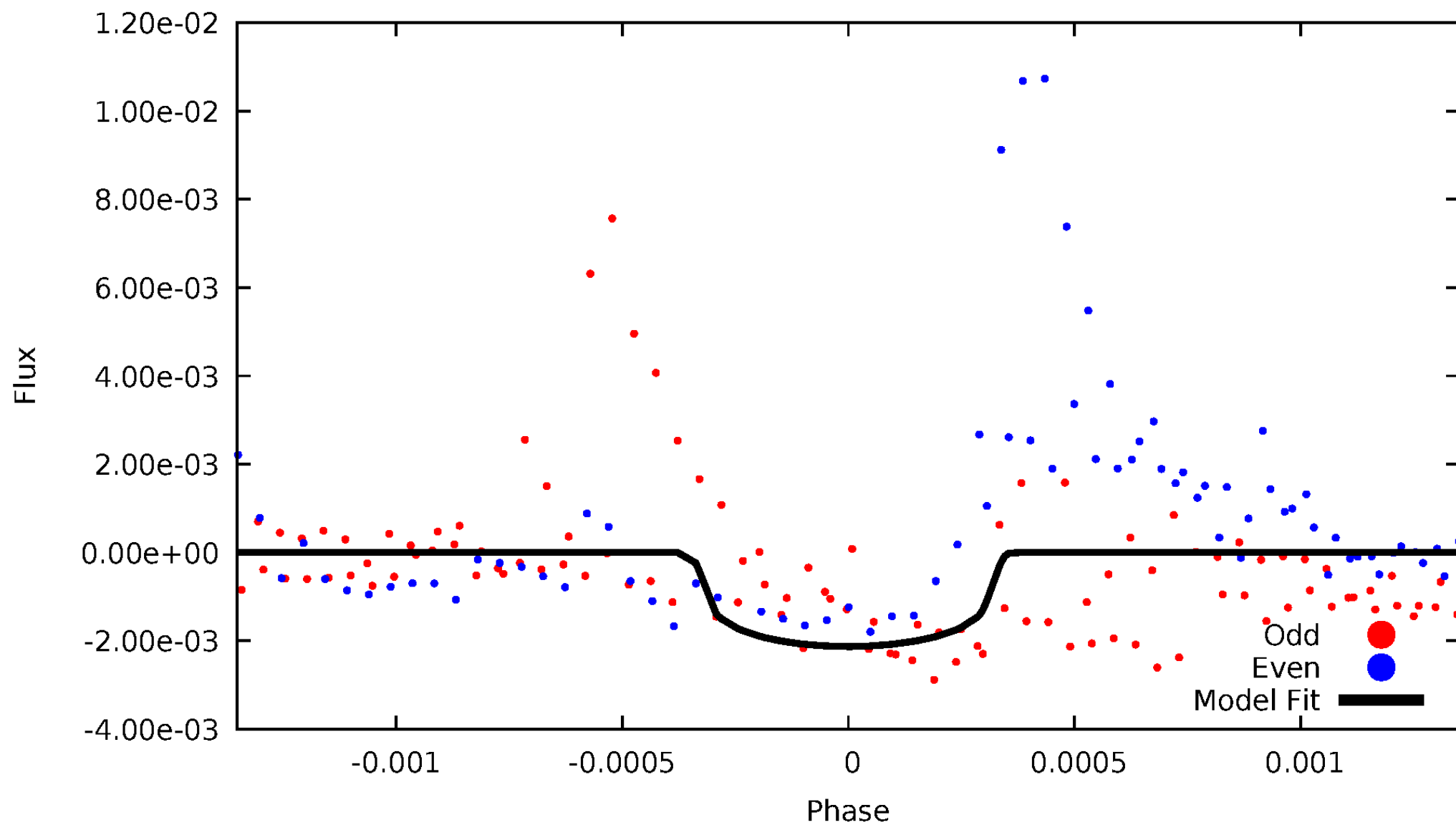


TCE 006846570-04



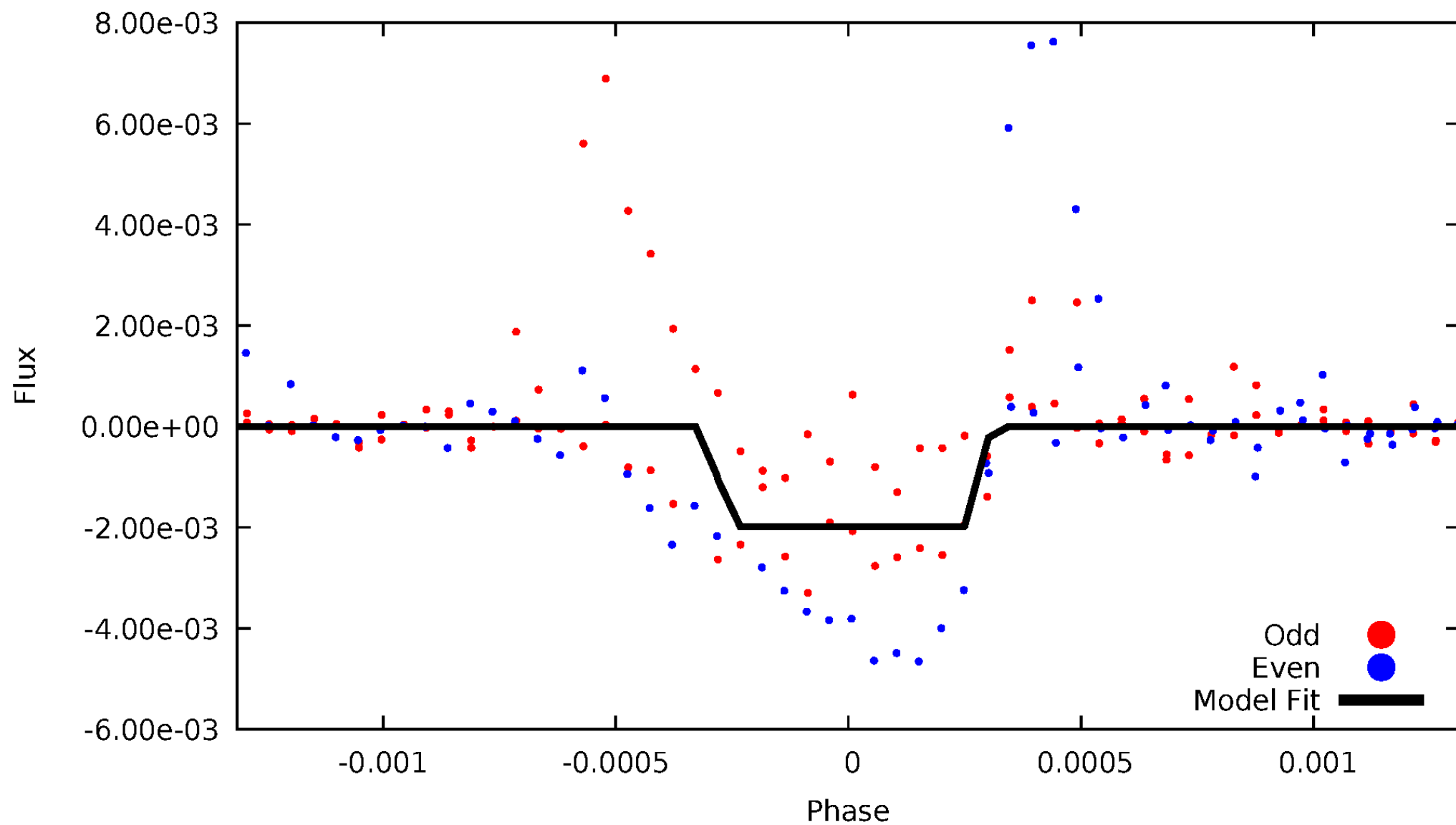
DV Odd/Even

TCE 006846570-04



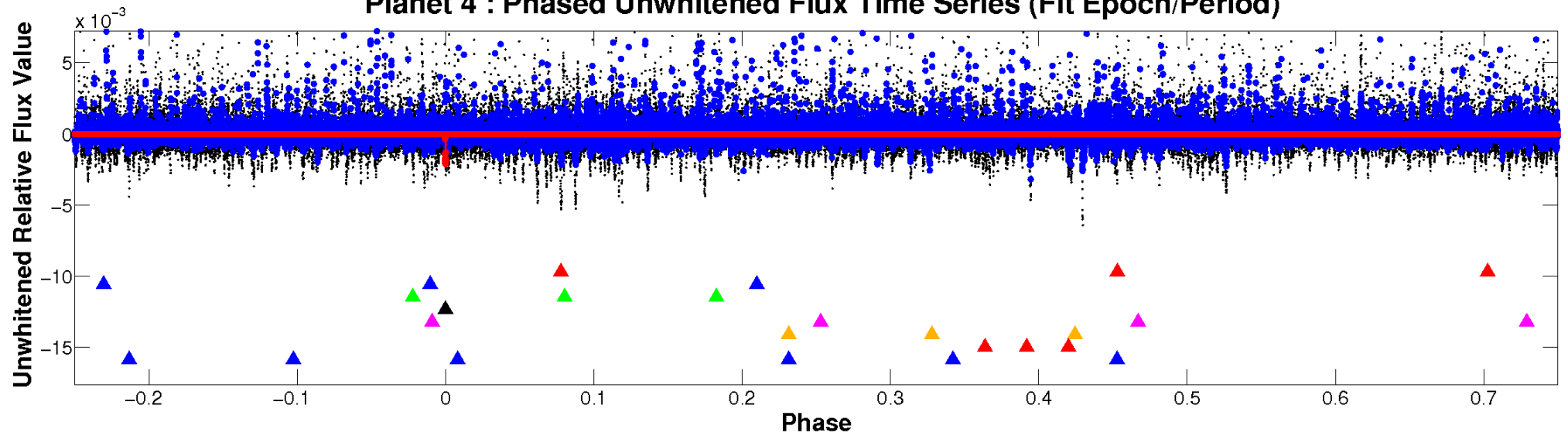
ALT Odd/Even

TCE 006846570-04

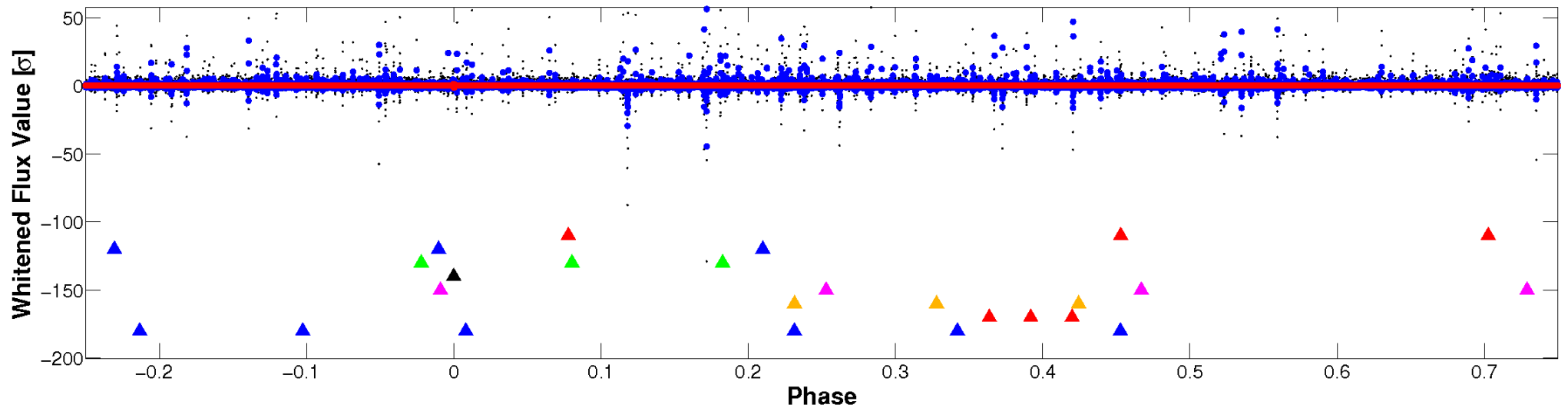


Non-Whitened Vs. Whitened Light Curve

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

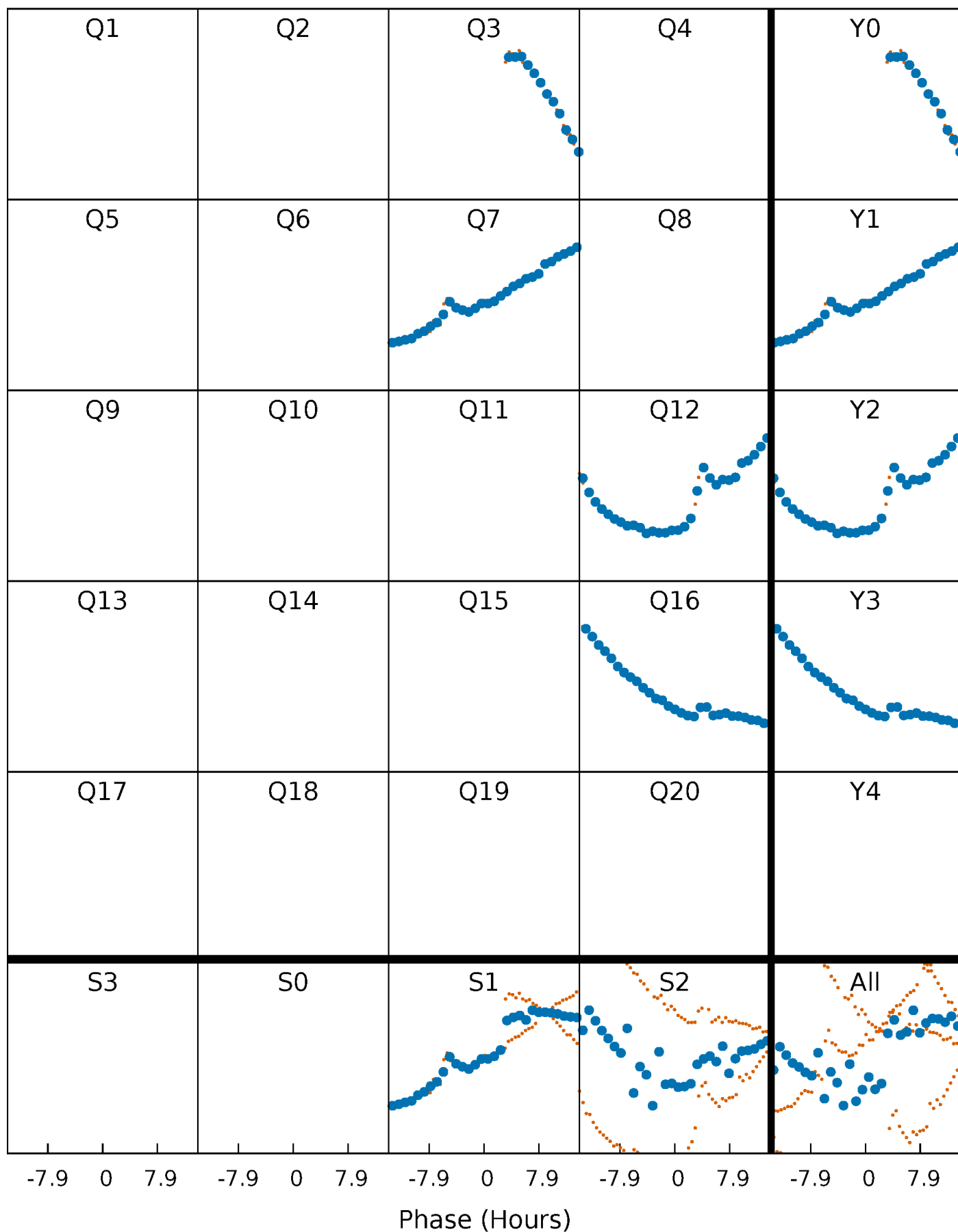


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



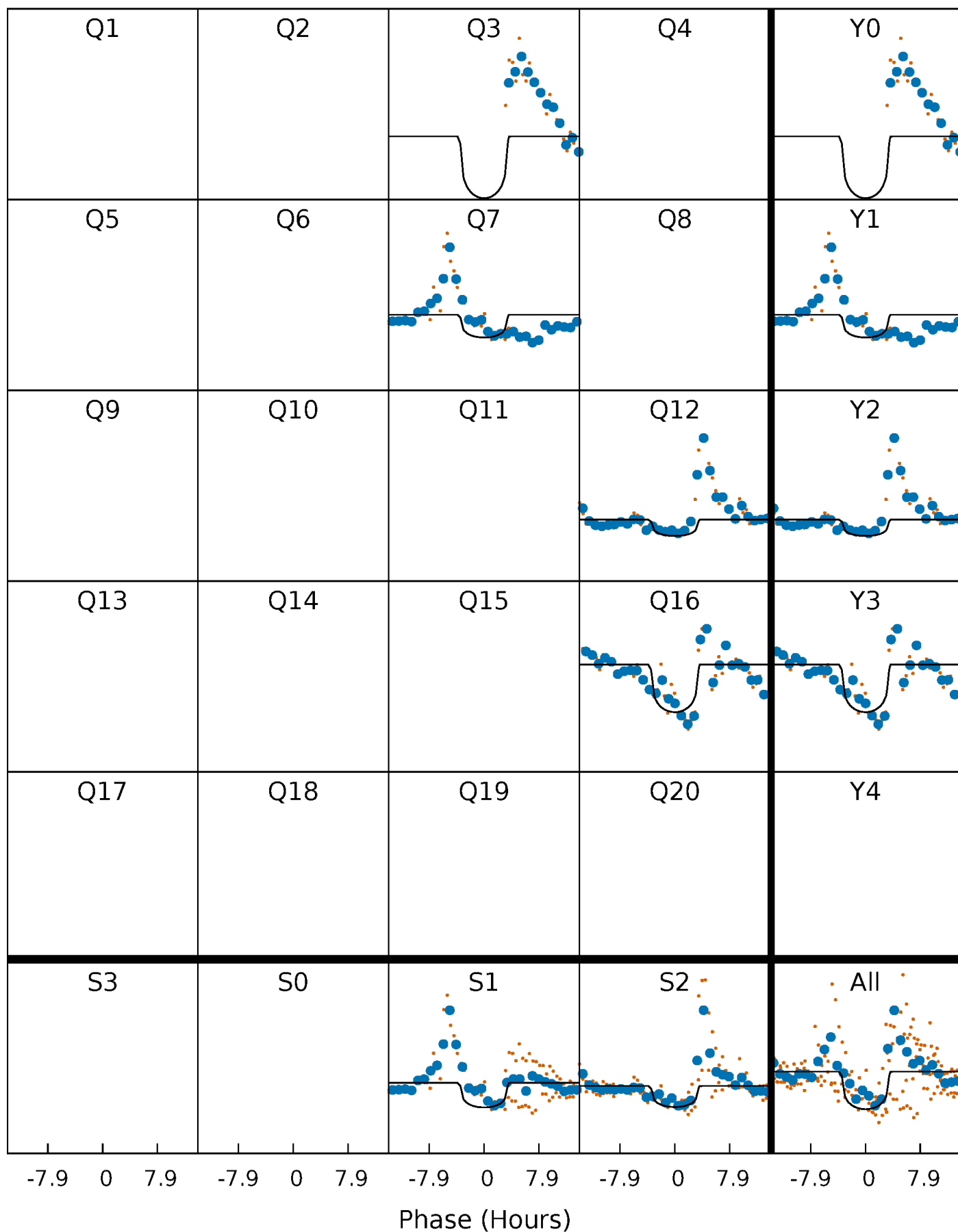
PDC Quarter-Phased Transit Curves

TCE 006846570-04 P=423.651424 Days $T_0=260.115103$ (BKJD)



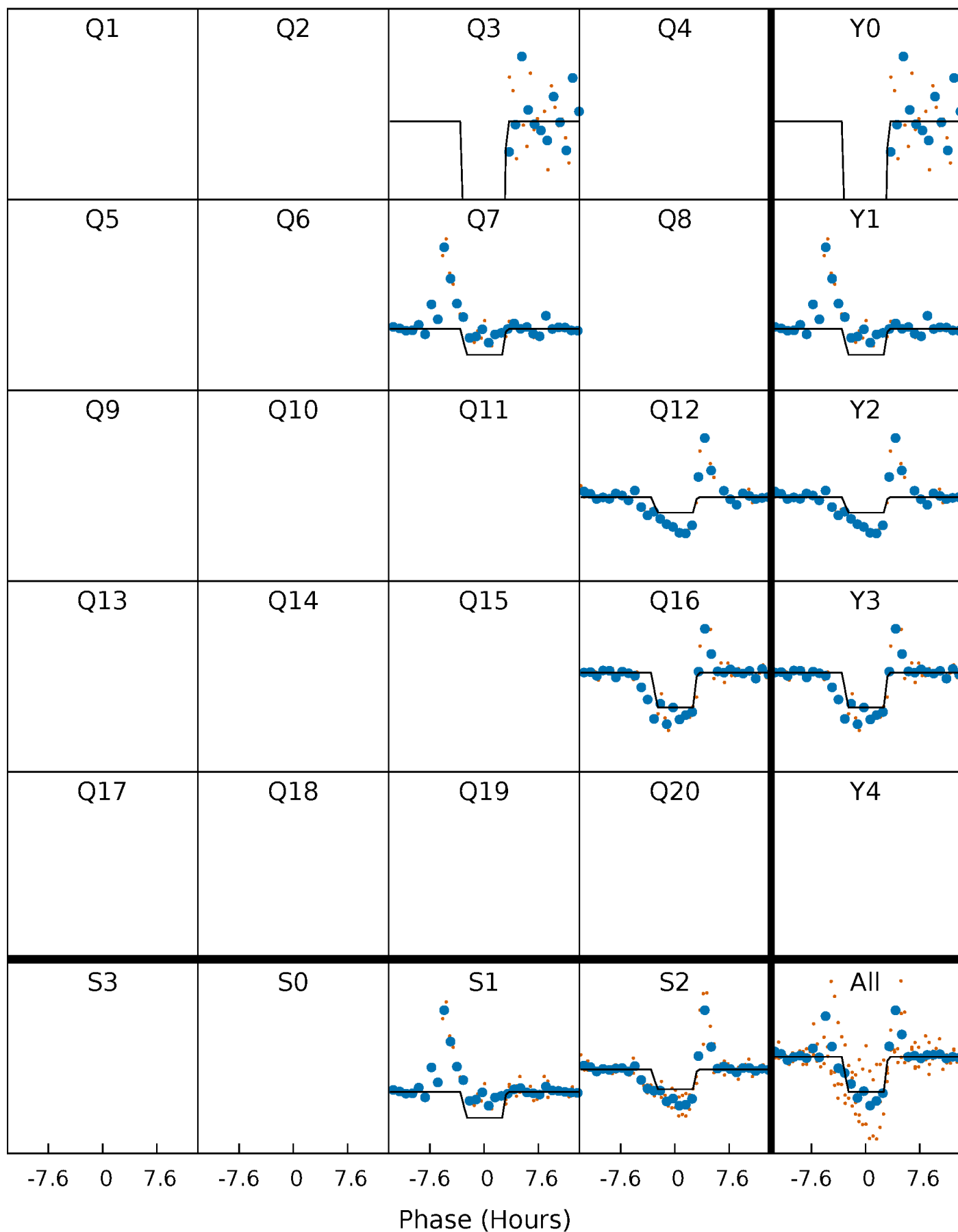
DV Quarter-Phased Transit Curves

TCE 006846570-04 $P=423.651424$ Days $T_0=260.115103$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

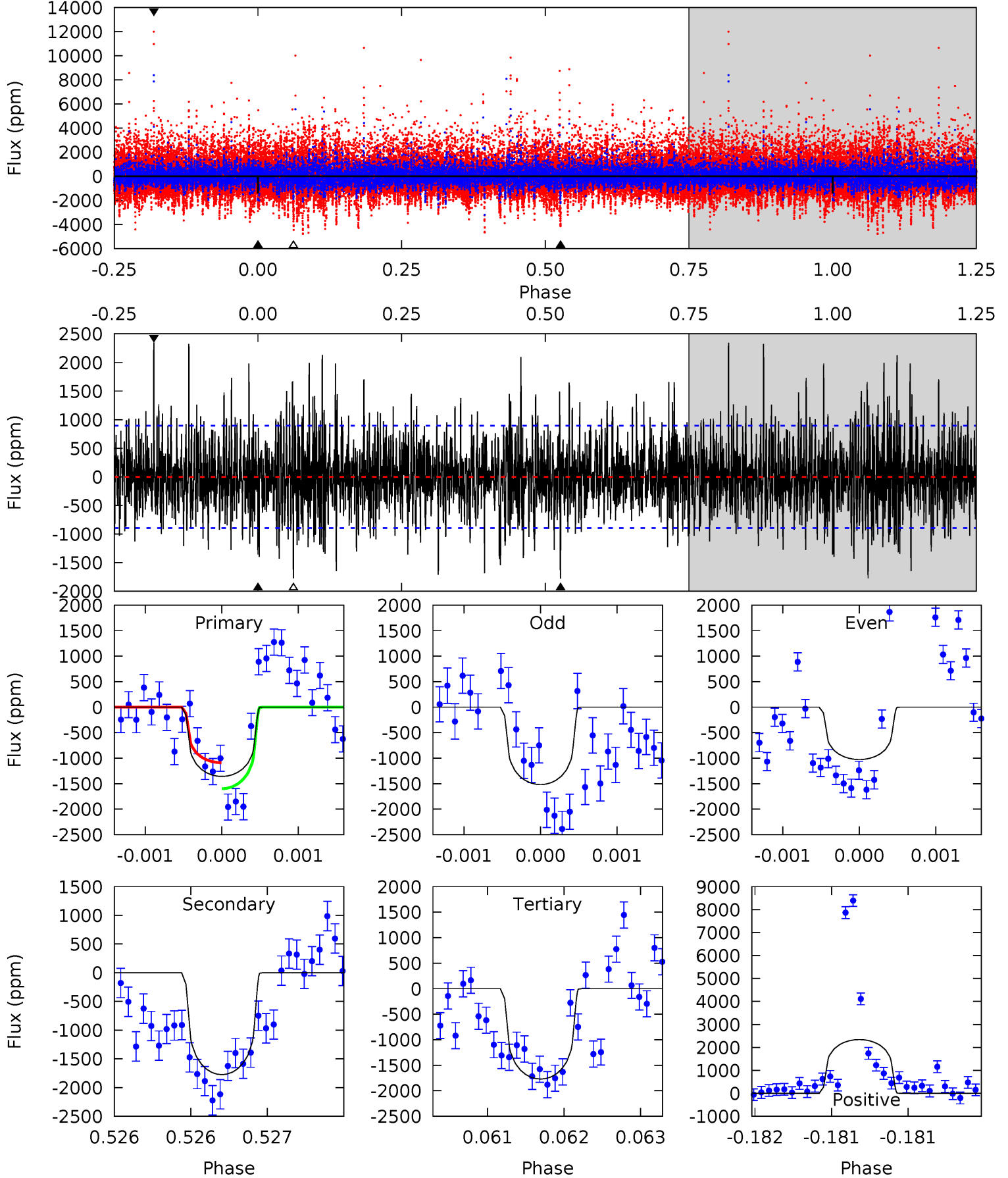
TCE 006846570-04 P=423.649000 Days $T_0=260.117183$ (BKJD)



DV Model-Shift Uniqueness Test

006846570-04, P = 423.651424 Days, E = 260.115103 Days

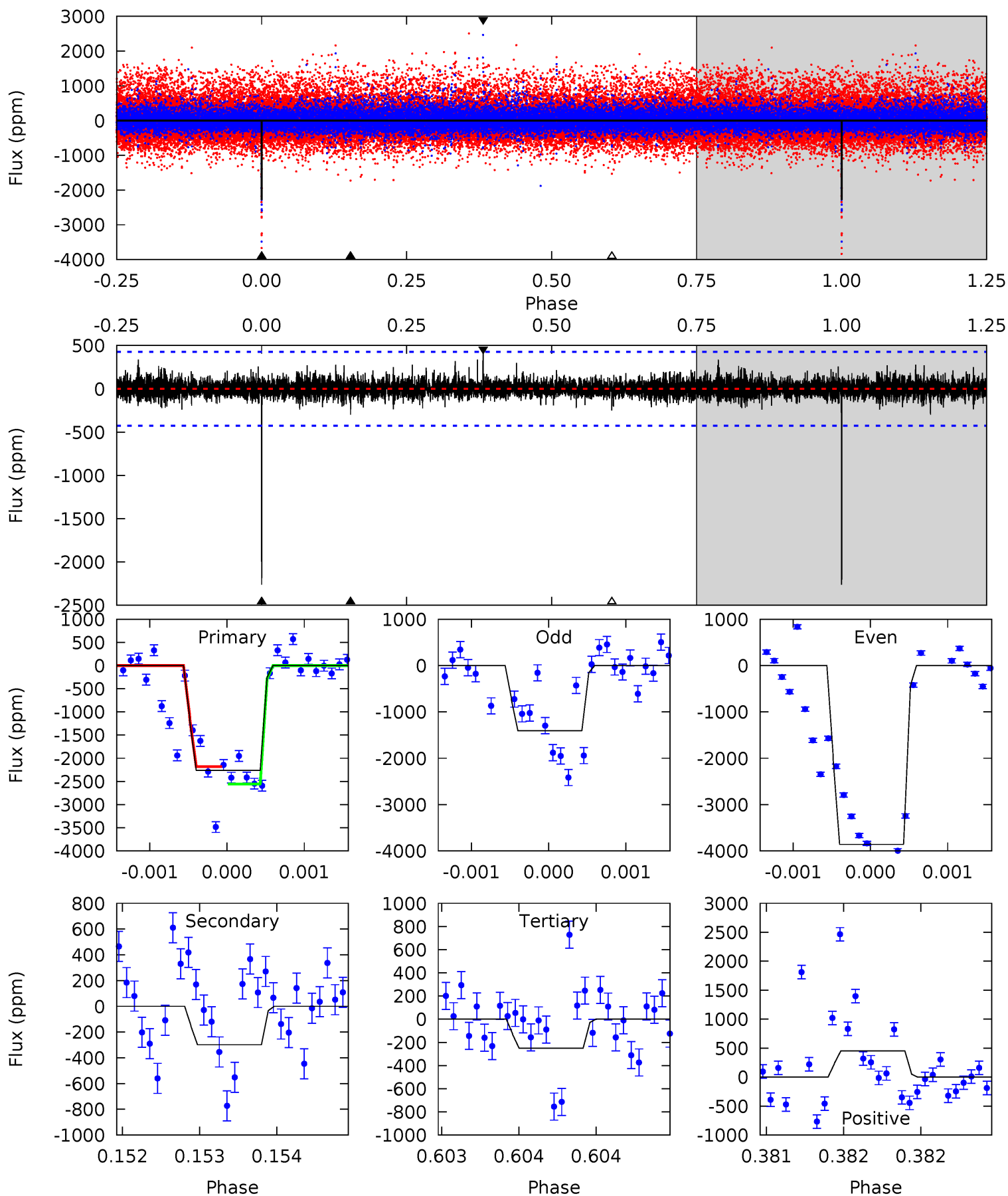
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.36	10.9	10.9	14.4	5.51	3.38	3.03	-2.54	-6.05	0.03	-3.49	1.03	0.45	0.57	1.58



Alt Model-Shift Uniqueness Test

006846570-04, P = 423.649000 Days, E = 260.117183 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.4	3.88	3.27	5.91	5.55	3.44	0.78	26.2	23.5	0.61	-2.03	16.2	0.93	0.17	2.53



Stellar Parameters For KIC 006846570

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3833^{+50}_{-50}	$4.708^{+0.030}_{-0.014}$	$0.000^{+0.100}_{-0.100}$	$0.541^{+0.019}_{-0.026}$	$0.545^{+0.025}_{-0.020}$	$4.853^{+0.567}_{-0.303}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+12%/-6%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006846570-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1774 ± 162	$2.50^{+1.70}_{-1.41}$	182^{+3}_{-3}	3822^{+1403}_{-588}	$128760^{+528974}_{-82755}$
Alt.	-298 ± 77	$2.83^{+1.56}_{-1.53}$	182^{+3}_{-3}	2811^{+722}_{-307}	16564^{+61692}_{-9752}

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

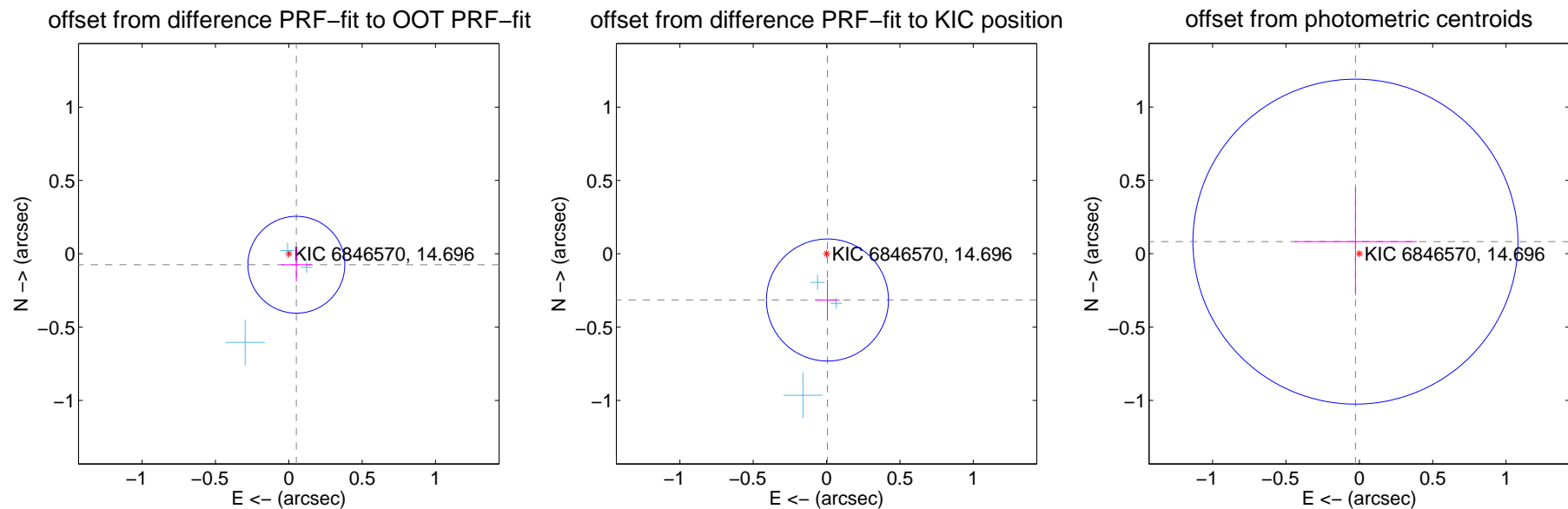
DV Centroid Data

Supplemental centroid analysis for 006846570-04. Kepler magnitude: 14.70. Transit SNR 7.62

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.110	0.82	-0.051 ± 0.103	-0.075 ± 0.113
PRF-fit source offset from KIC position	0.315 ± 0.139	2.27	-0.006 ± 0.082	-0.315 ± 0.139
photometric centroid source offset	0.09 ± 0.37	0.23	0.03 ± 0.42	0.08 ± 0.36

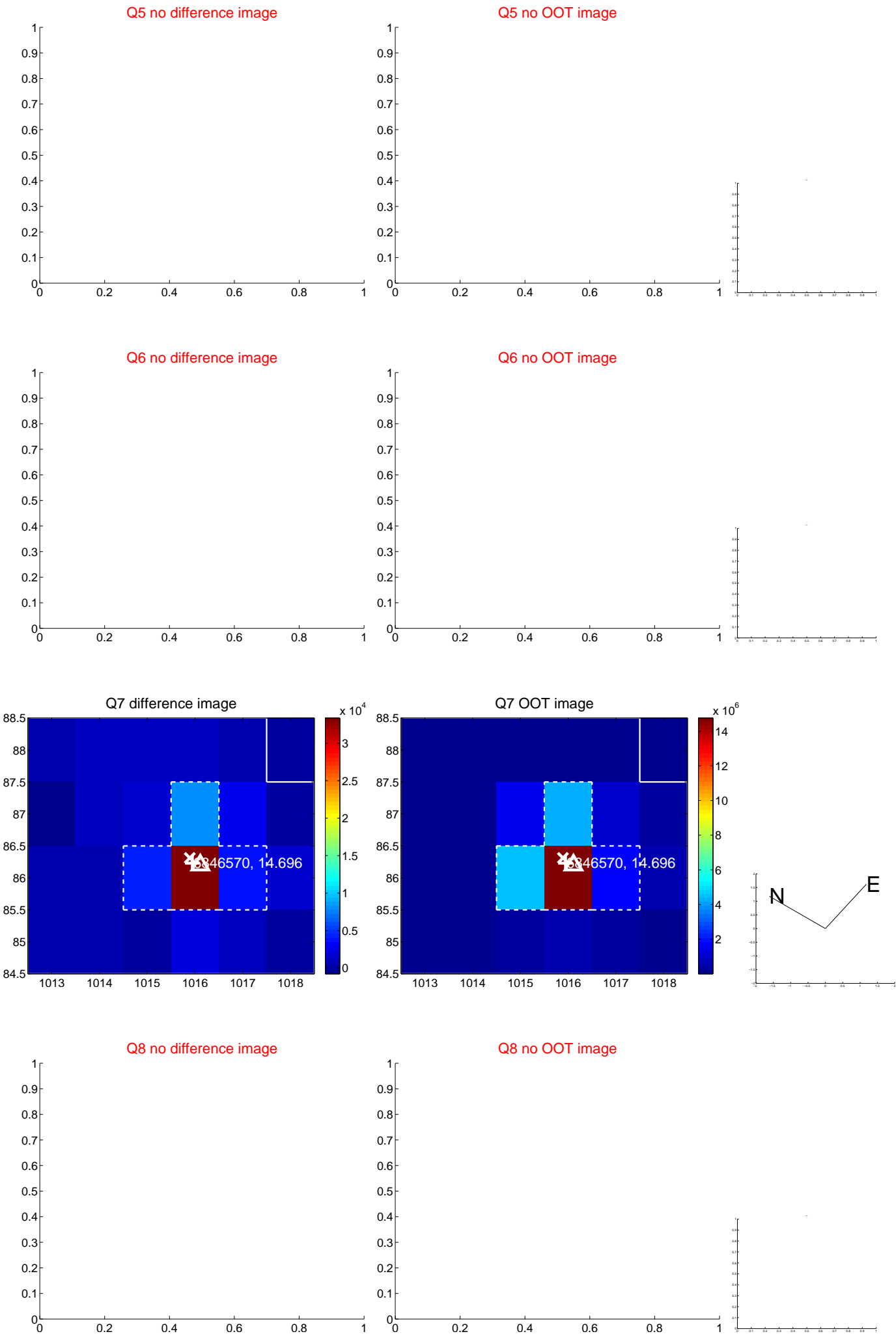


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

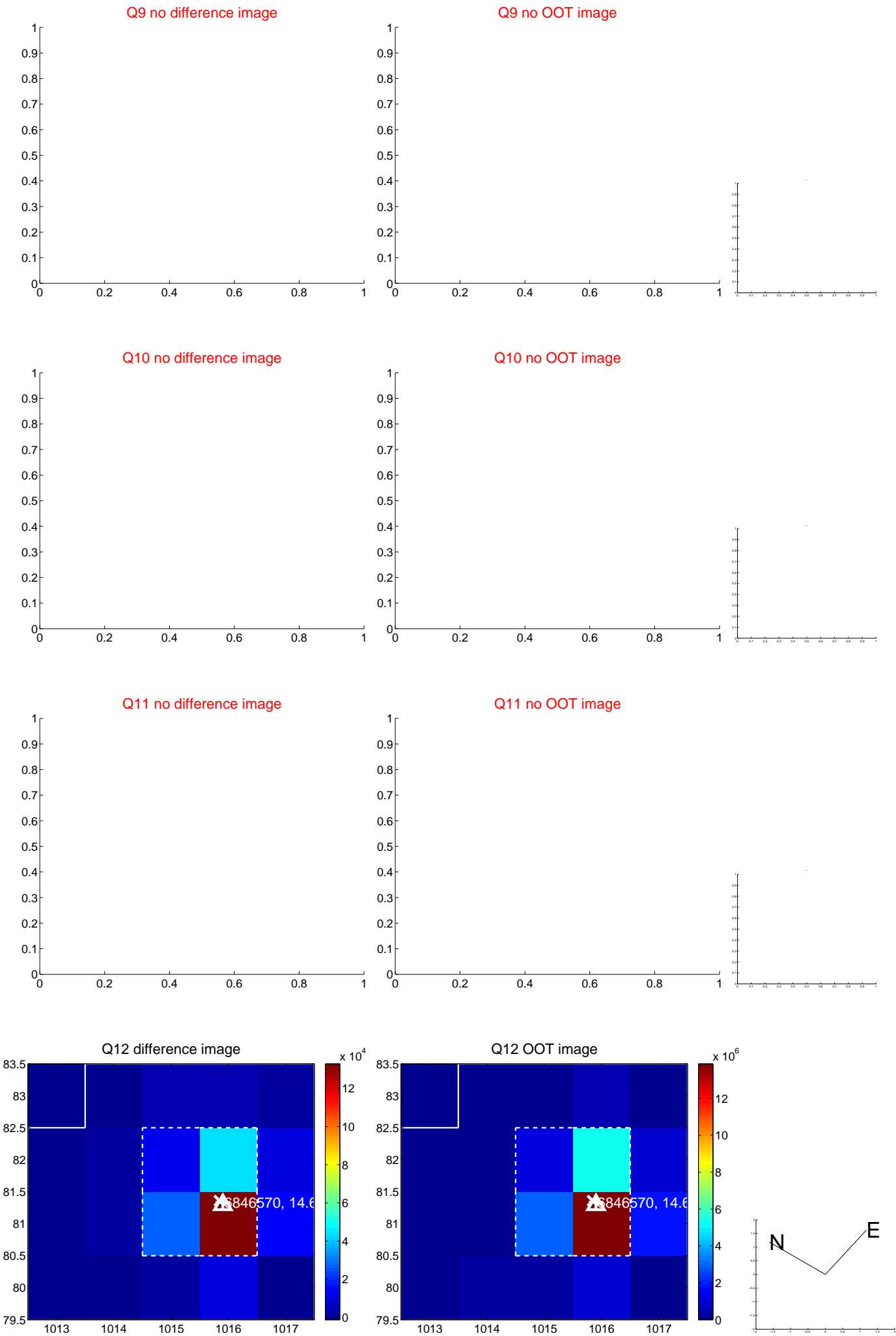
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



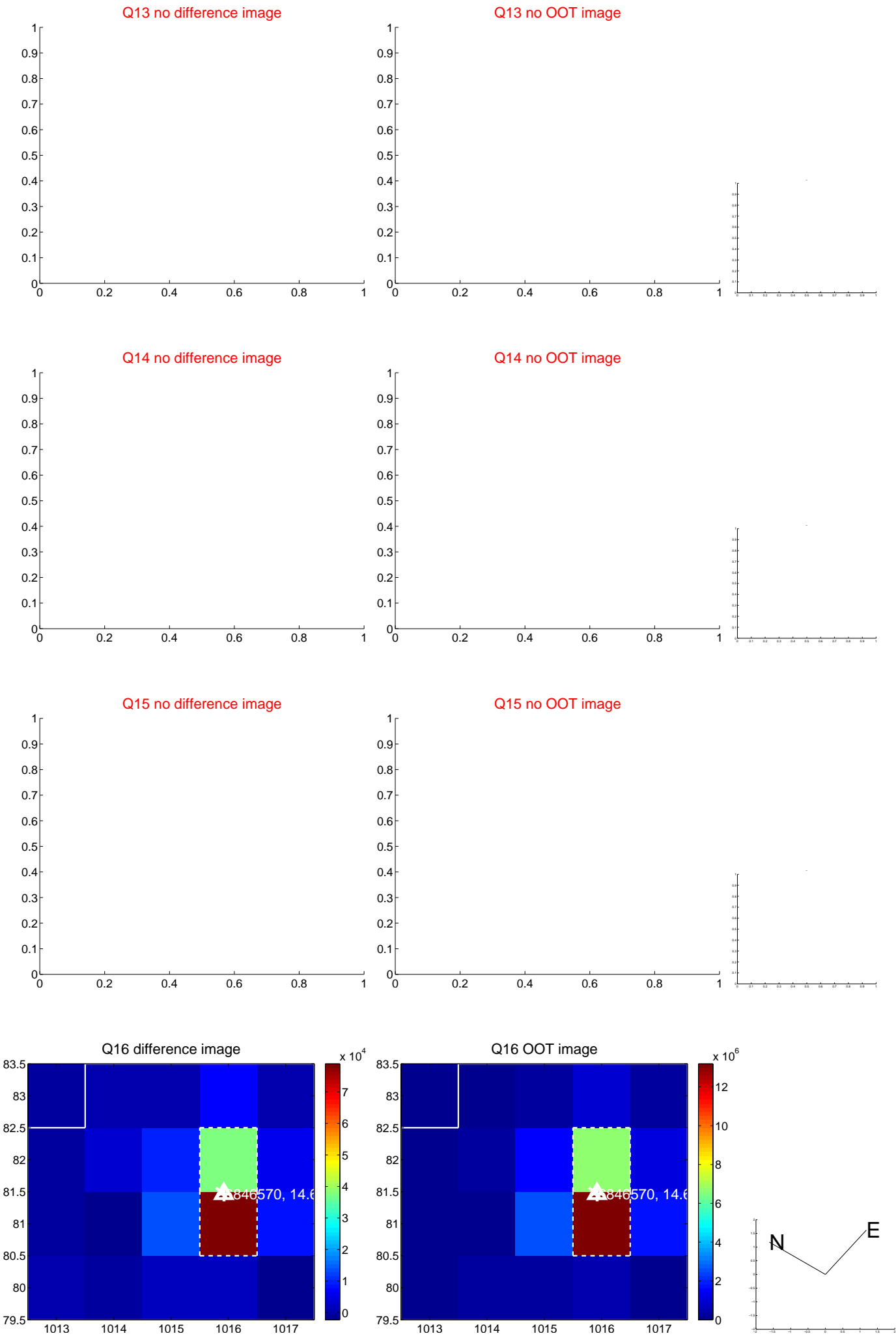
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



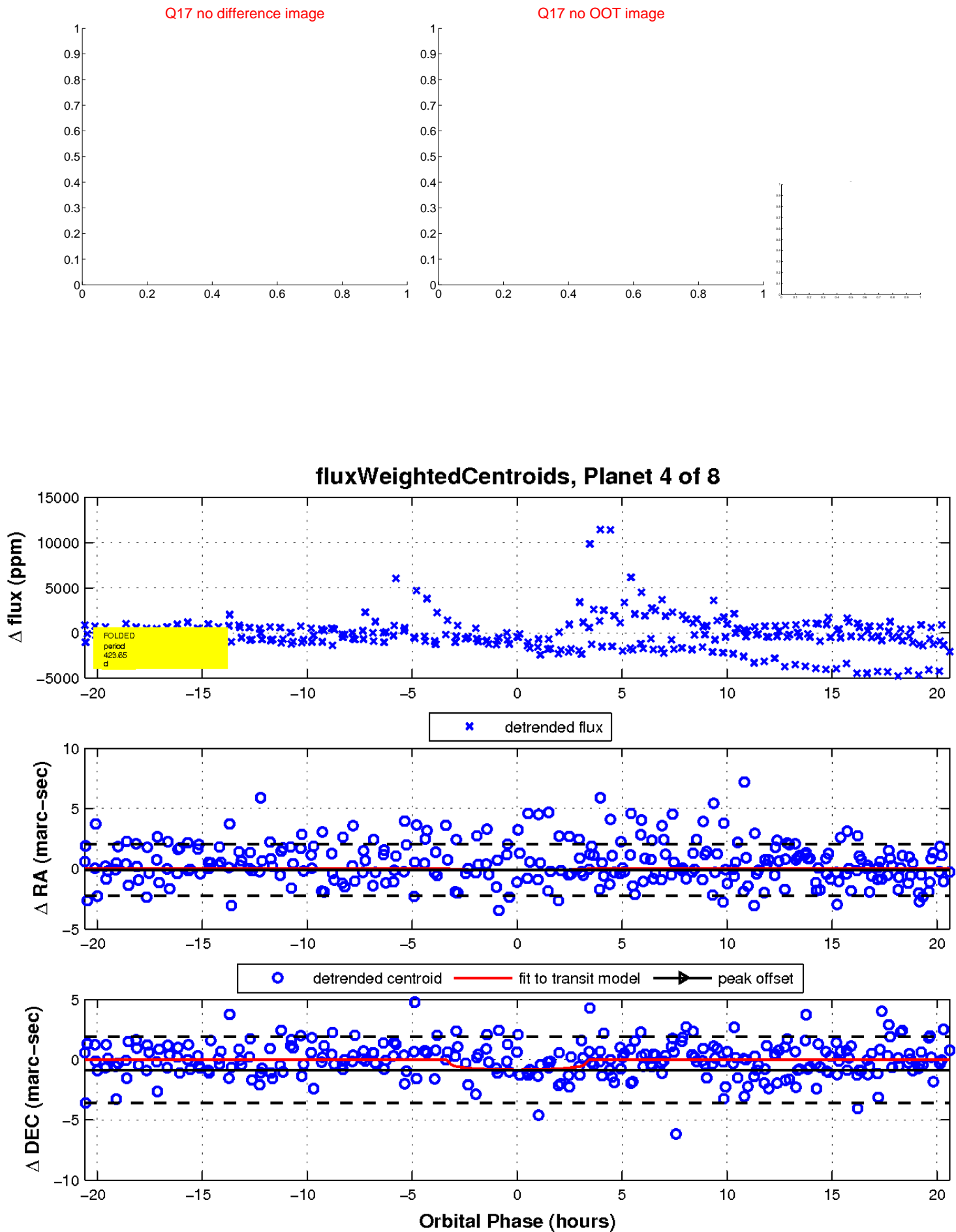
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

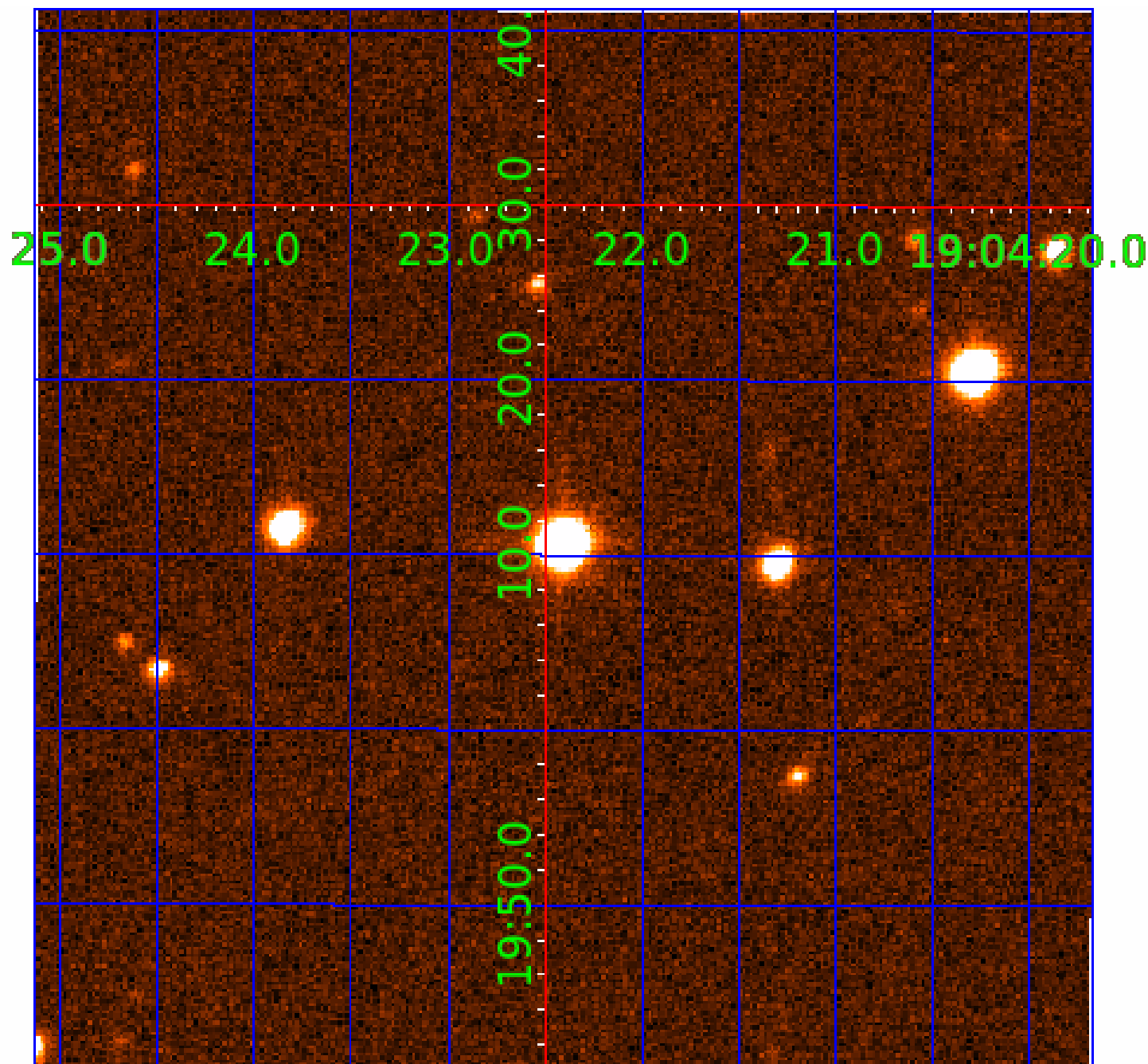


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006846570

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})
006846570-01	OBS	No	582.597917	134.148846	752.0	4.635	17.1	2.8	0.54	3833	1.53	0.05
006846570-02	OBS	No	516.937163	162.474077	703.7	2.644	16.1	2.8	0.54	3833	1.50	0.05
006846570-04	OBS	No	423.651424	260.115103	2126.2	6.872	14.3	7.6	0.54	3833	2.44	0.07
006846570-05	OBS	No	312.660813	367.289563	2033.7	6.413	14.6	6.6	0.54	3833	2.49	0.10
006846570-06	OBS	No	464.525730	358.180980	2198.8	3.611	14.8	8.5	0.54	3833	2.51	0.06
006846570-07	OBS	No	435.562645	414.230478	2025.6	4.147	13.9	7.4	0.54	3833	2.52	0.07
006846570-08	OBS	No	235.278821	358.143013	998.2	6.000	15.6	-1.0	0.54	3833	1.68	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006846570-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006846570-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006846570-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

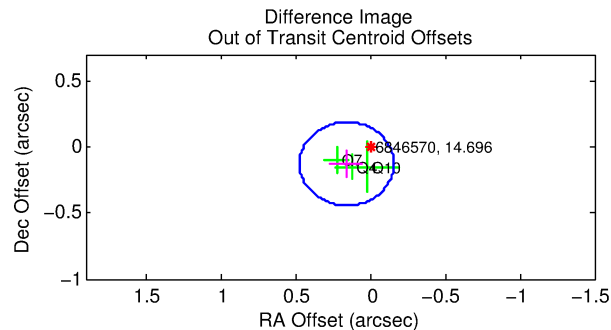
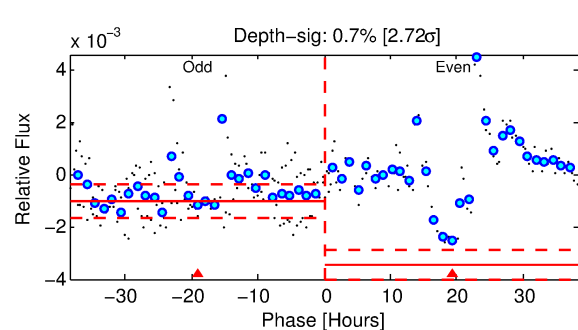
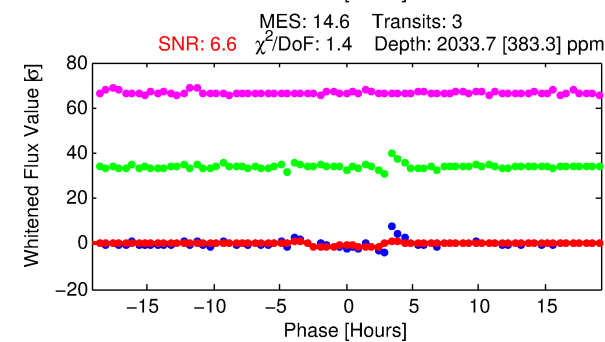
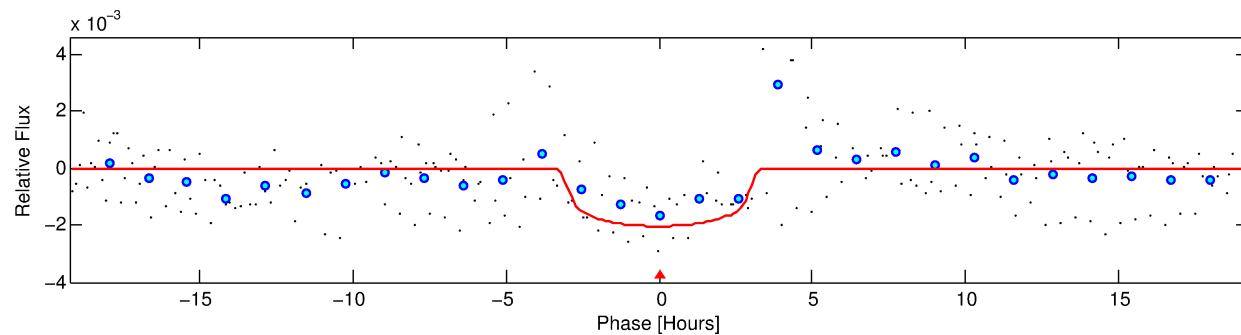
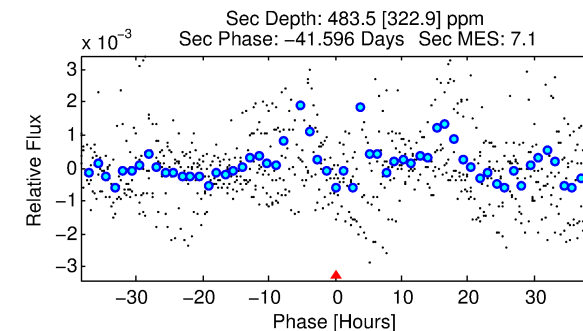
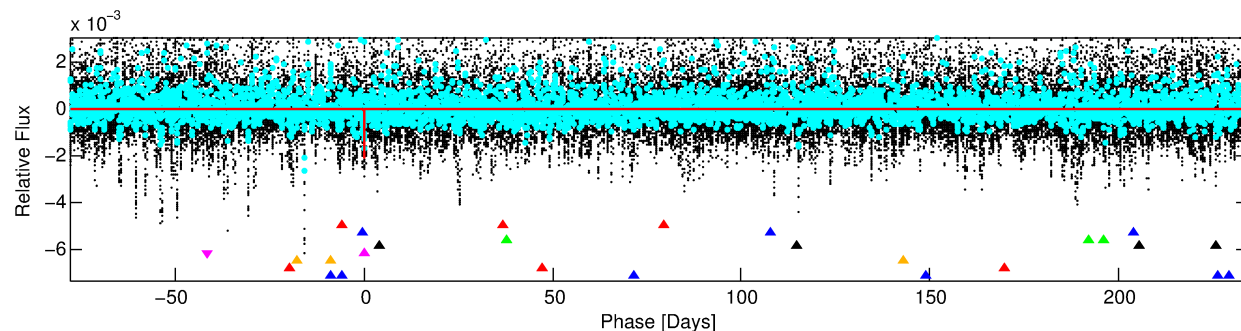
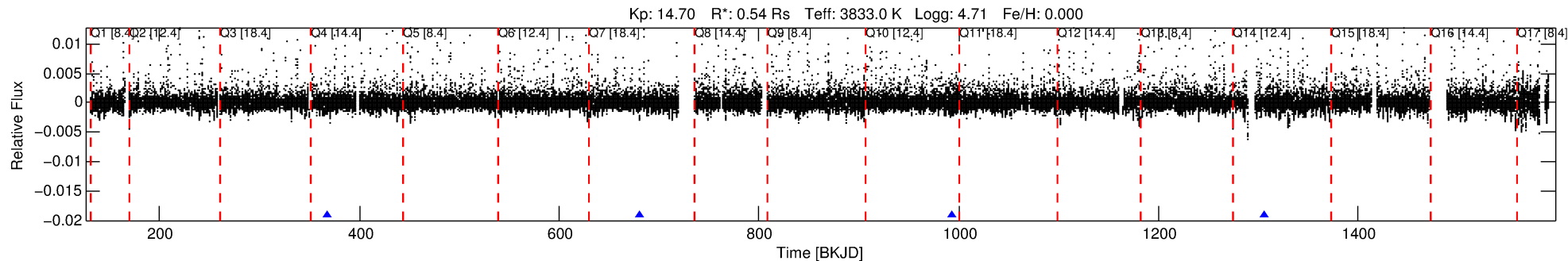
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006846570-05

No Significant Match Found

DV One-Page Summary

KIC: 6846570 Candidate: 5 of 8 Period: 312.661 d



DV Fit Results:

Period = 312.66081 [0.00721] d
Epoch = 367.2896 [0.0080] BKJD
Rp/R* = 0.0422 [0.0318]
a/R* = 336.42 [991.28]
b = 0.52 [4.15]
Seff = 0.10 [0.01]
Teq = 145 [3] K
Rp = 2.49 [1.88] Re
a = 0.7366 [0.0291] AU
Ag = 23301.88 [38457.22] [0.61σ]
Teff = 2768 [1142] K [2.30σ]

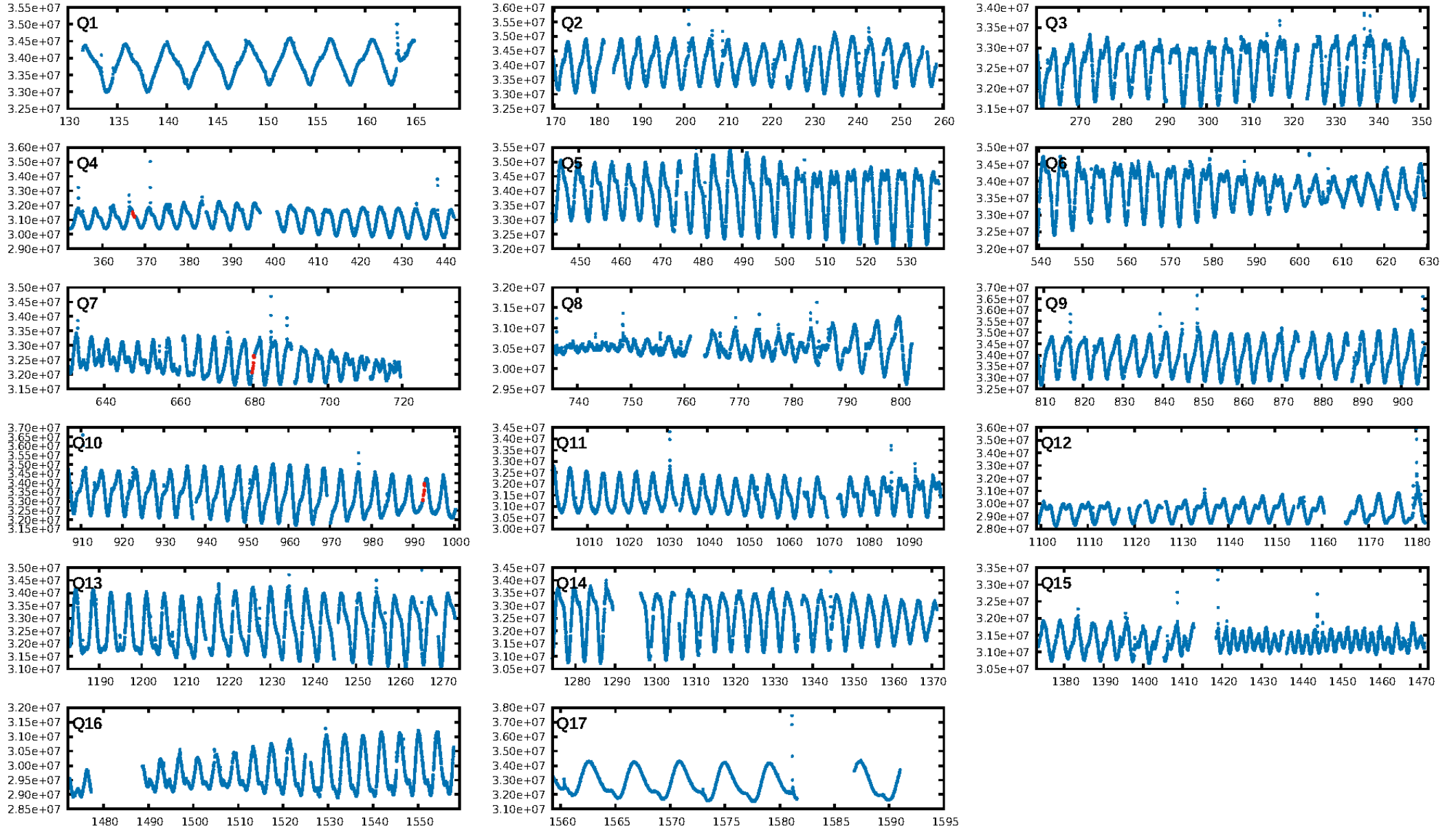
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [211.47σ]
LongPeriod-sig: 100.0% [283.39σ]
ModelChiSquare2-sig: 4.6%
ModelChiSquareGof-sig: 81.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.95
Centroid-sig: 0.1%
Centroid-so: 0.725 arcsec [1.60σ]
OotOffset-rm: 0.203 arcsec [1.94σ]
KicOffset-rm: 0.433 arcsec [4.20σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [2/3]

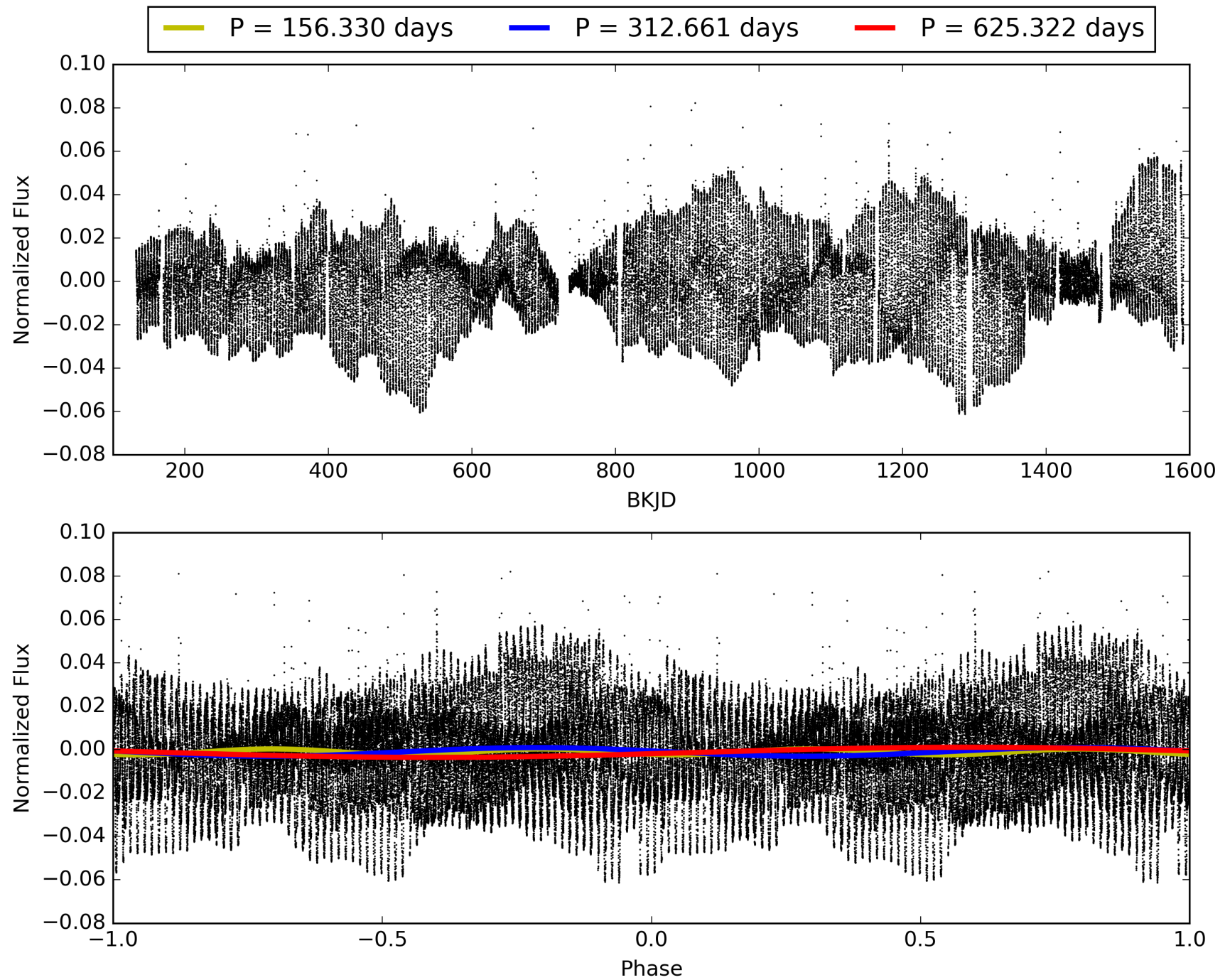
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:47:00 Z

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

TCE 006846570-05, PDC Light Curves

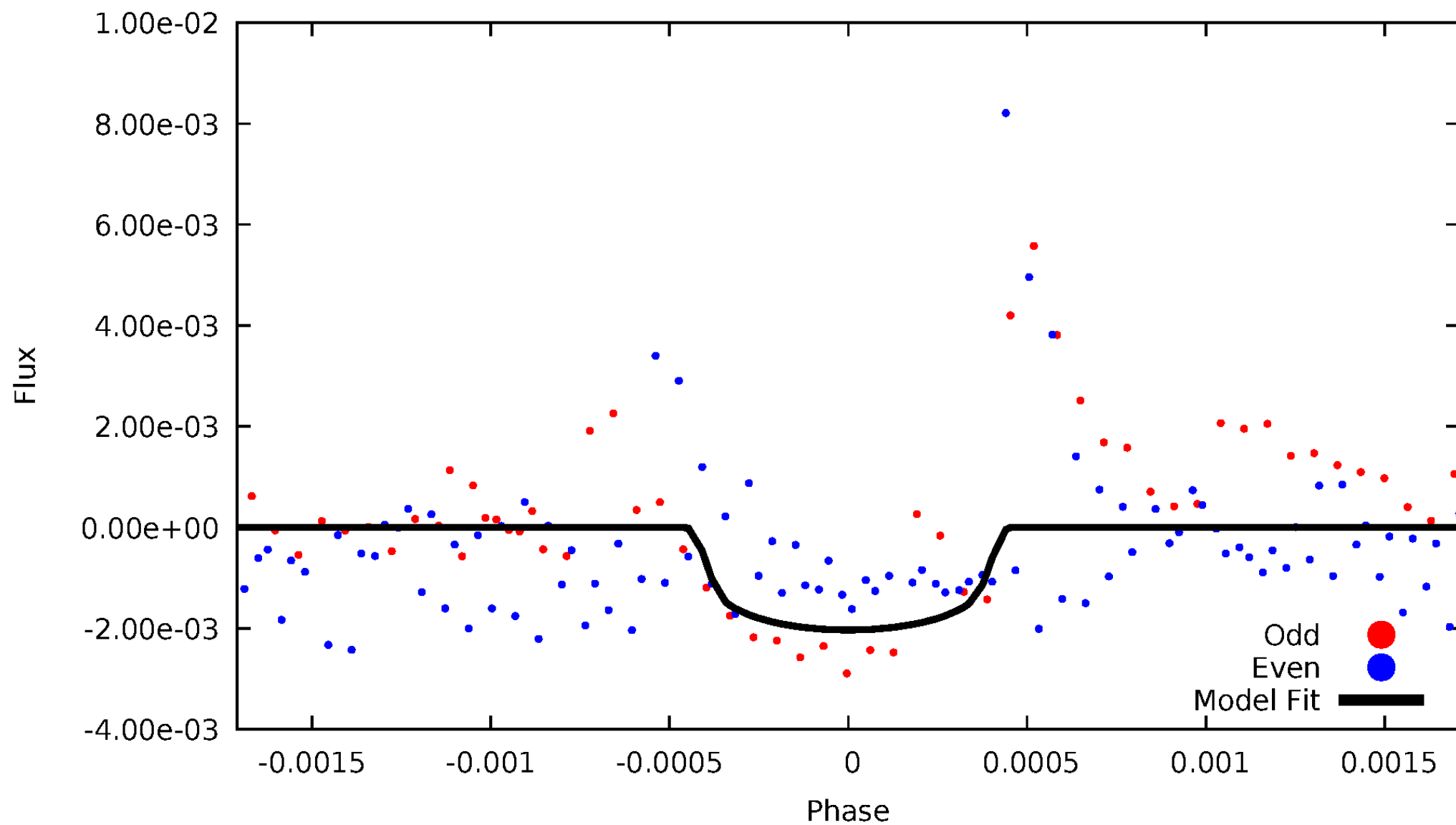


TCE 006846570-05



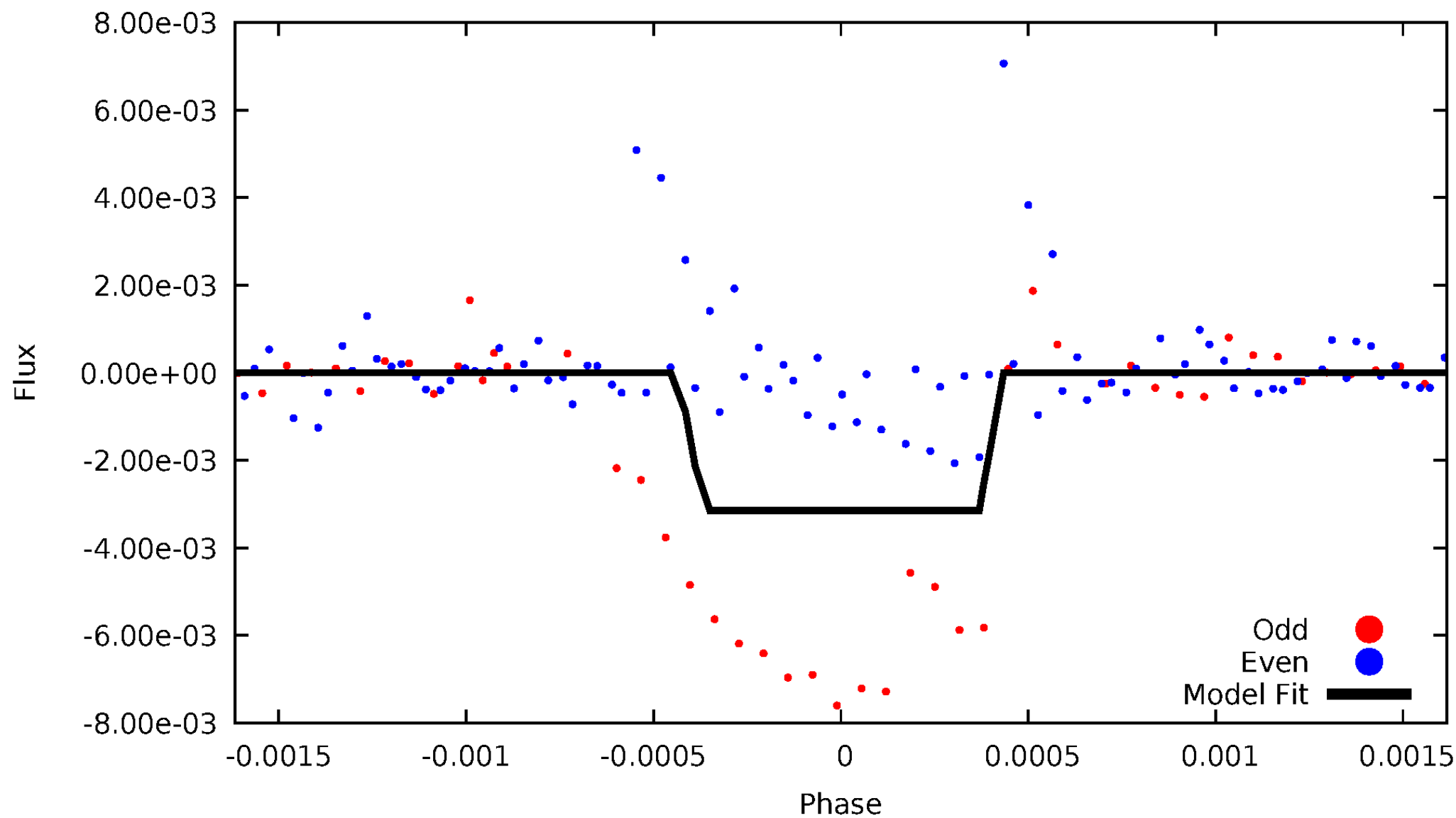
DV Odd/Even

TCE 006846570-05



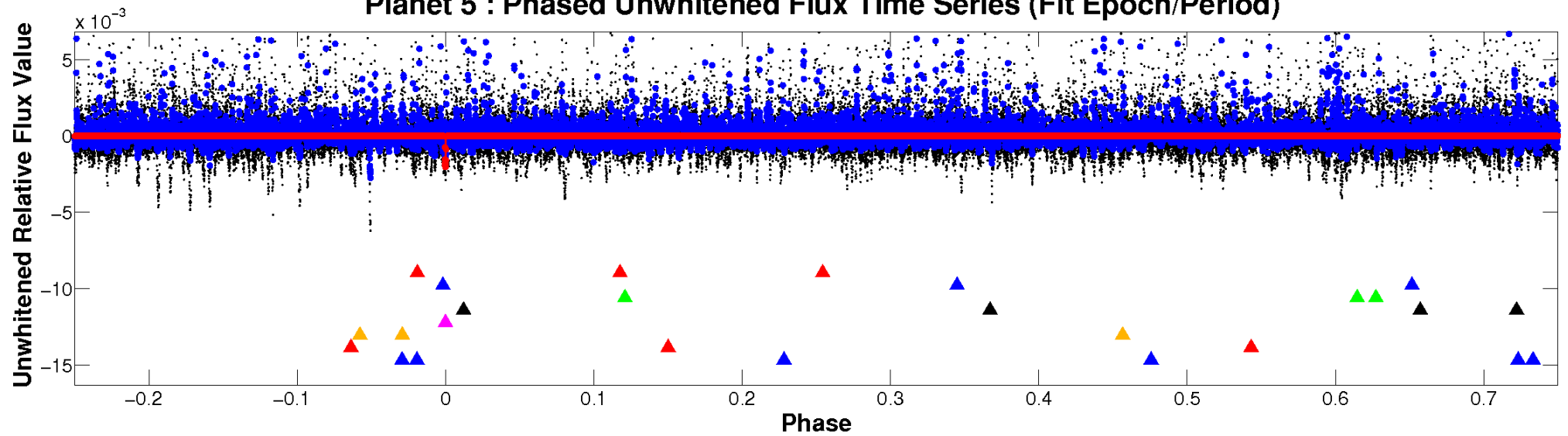
ALT Odd/Even

TCE 006846570-05

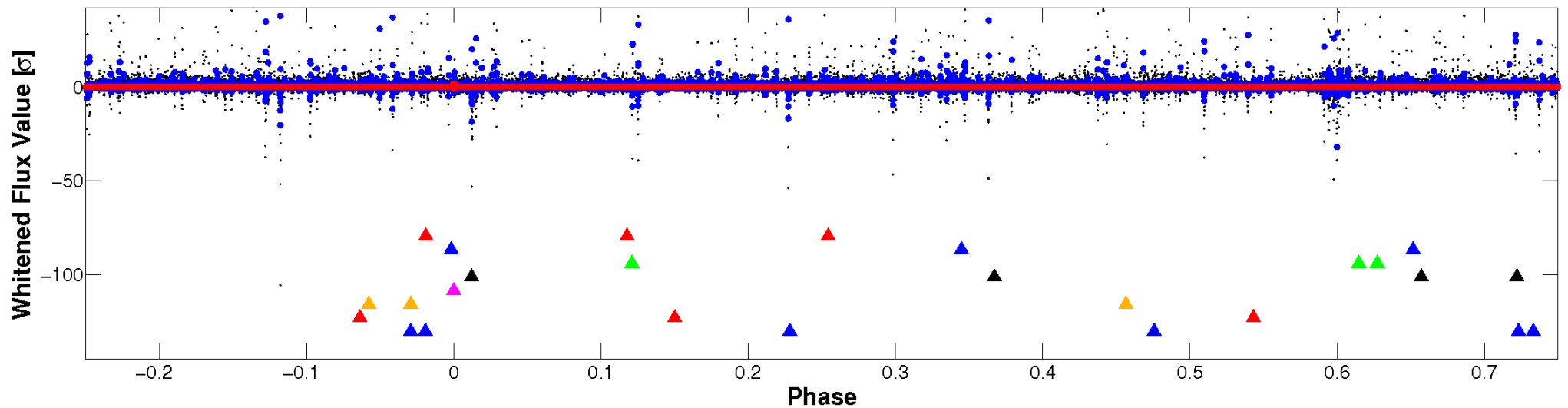


Non-Whitened Vs. Whitened Light Curve

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

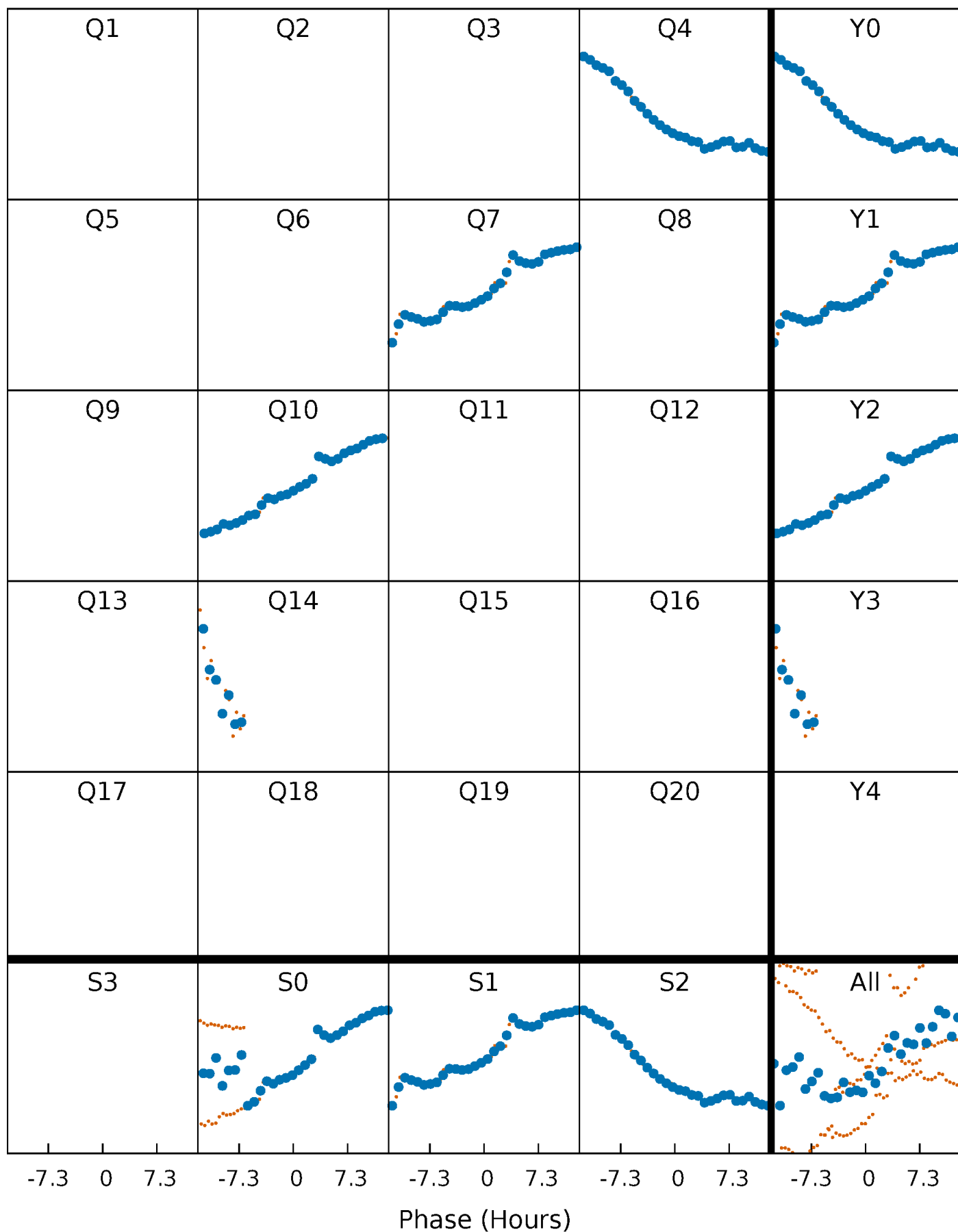


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



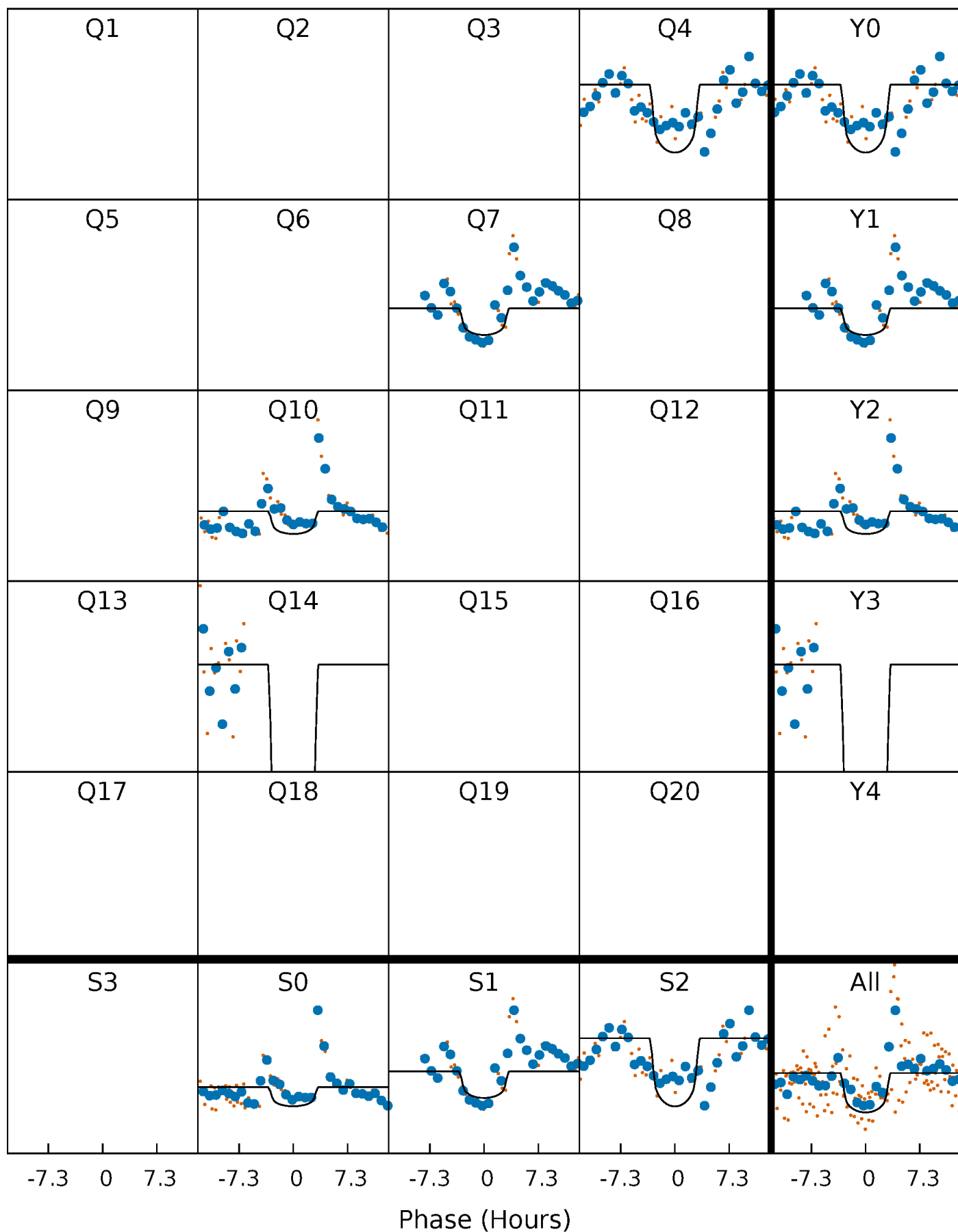
PDC Quarter-Phased Transit Curves

TCE 006846570-05 $P=312.660813$ Days $T_0=367.289563$ (BKJD)



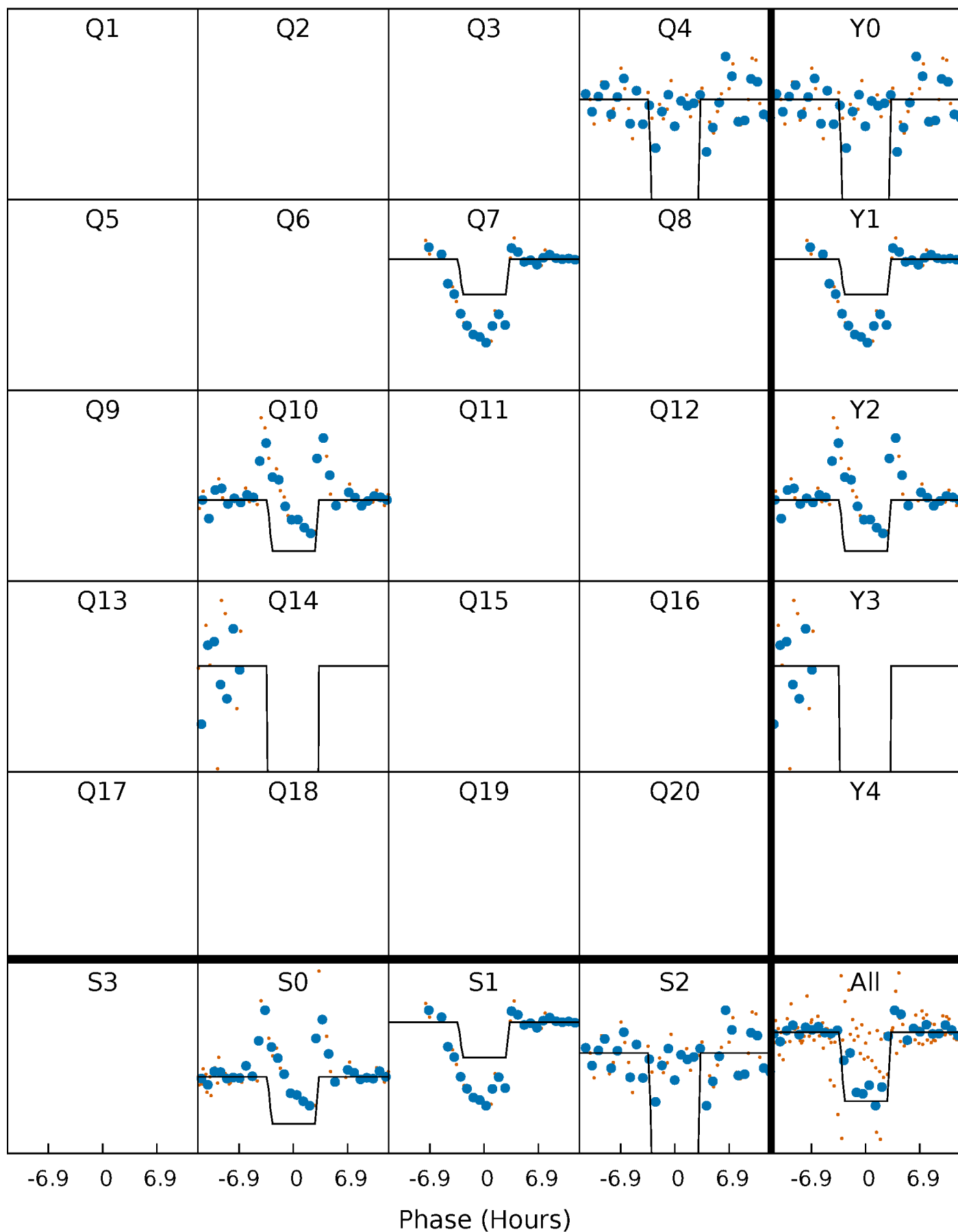
DV Quarter-Phased Transit Curves

TCE 006846570-05 $P=312.660813$ Days $T_0=367.289563$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

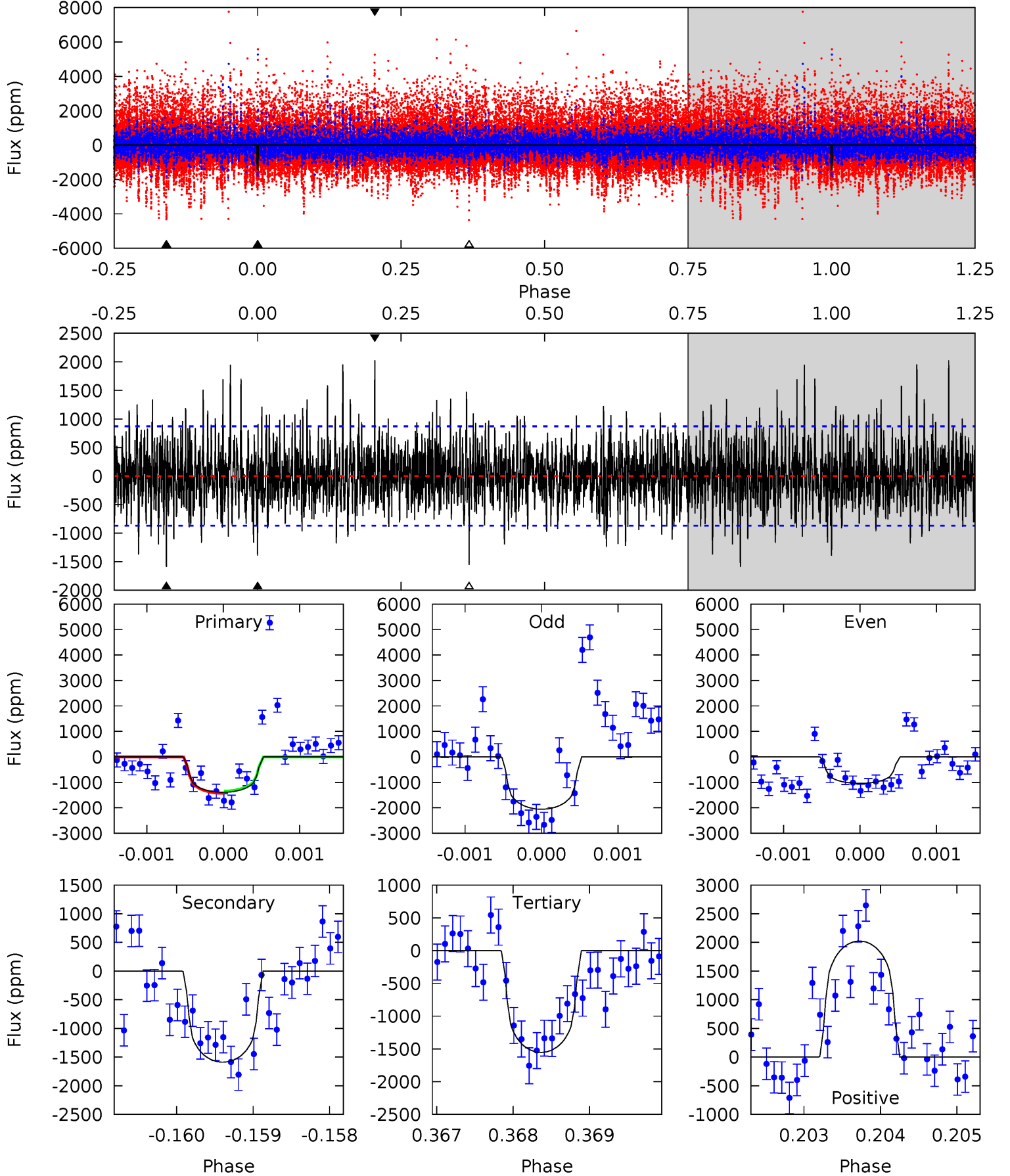
TCE 006846570-05 $P=312.660713$ Days $T_0=367.291664$ (BKJD)



DV Model-Shift Uniqueness Test

006846570-05, P = 312.660813 Days, E = 54.628750 Days

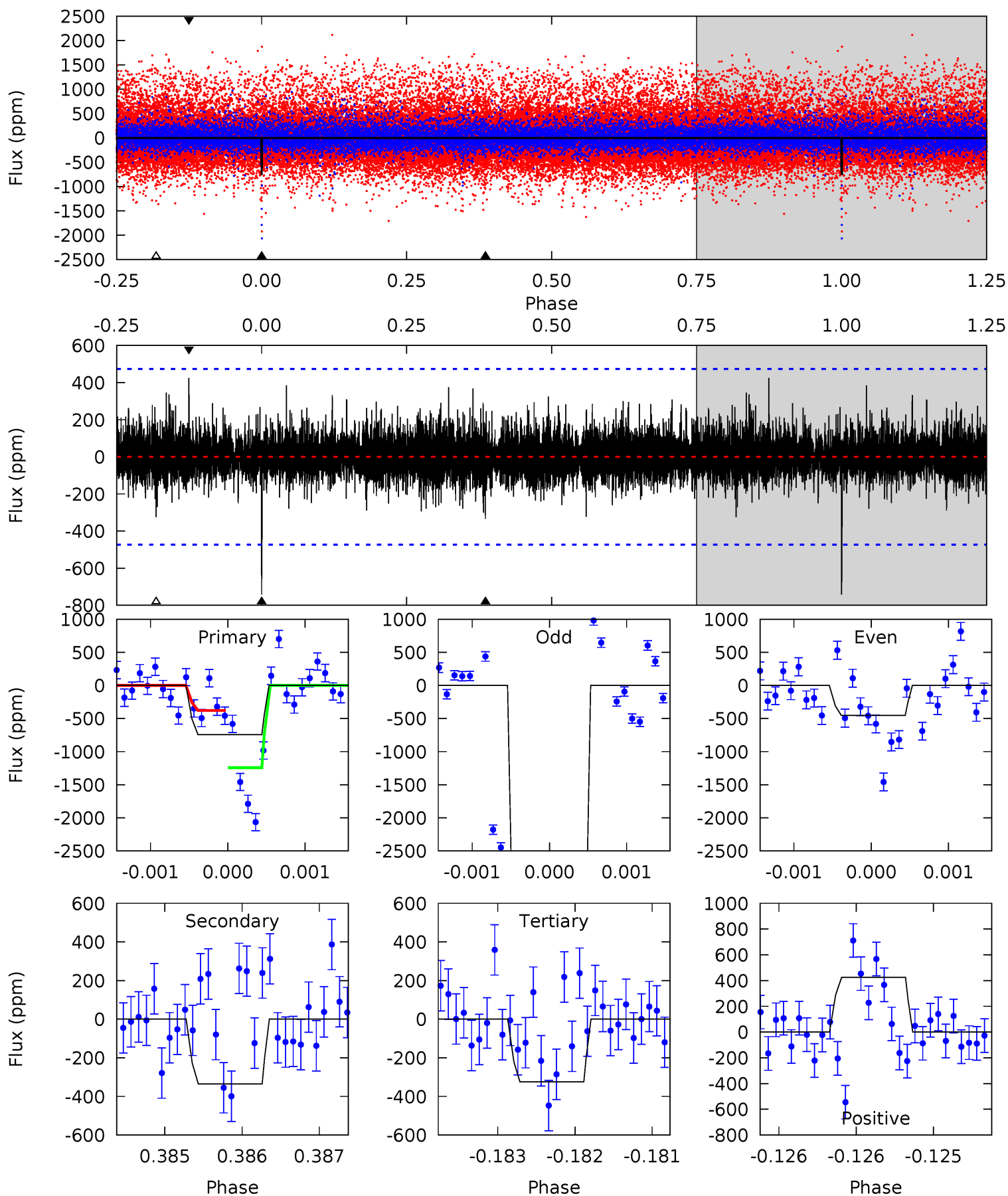
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.75	10.00	9.78	12.7	5.48	3.33	2.60	-1.03	-3.99	0.22	-2.74	2.63	1.04	0.56	0.28



Alt Model-Shift Uniqueness Test

006846570-05, P = 312.660713 Days, E = 54.630951 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.60	3.88	3.76	4.92	5.48	3.34	0.90	4.84	3.67	0.12	-1.05	42.4	4.06	0.36	0



Stellar Parameters For KIC 006846570

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3833^{+50}_{-50}	$4.708^{+0.030}_{-0.014}$	$0.000^{+0.100}_{-0.100}$	$0.541^{+0.019}_{-0.026}$	$0.545^{+0.025}_{-0.020}$	$4.853^{+0.567}_{-0.303}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+12%/-6%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006846570-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1589 ± 159	$2.70^{+1.77}_{-1.52}$	202^{+3}_{-3}	3634^{+1296}_{-513}	$64976^{+263018}_{-41224}$
Alt.	-335 ± 86	$3.44^{+1.85}_{-1.65}$	202^{+3}_{-3}	2700^{+591}_{-279}	8061^{+24504}_{-4664}

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 $A_{obs} \gg 1.0$

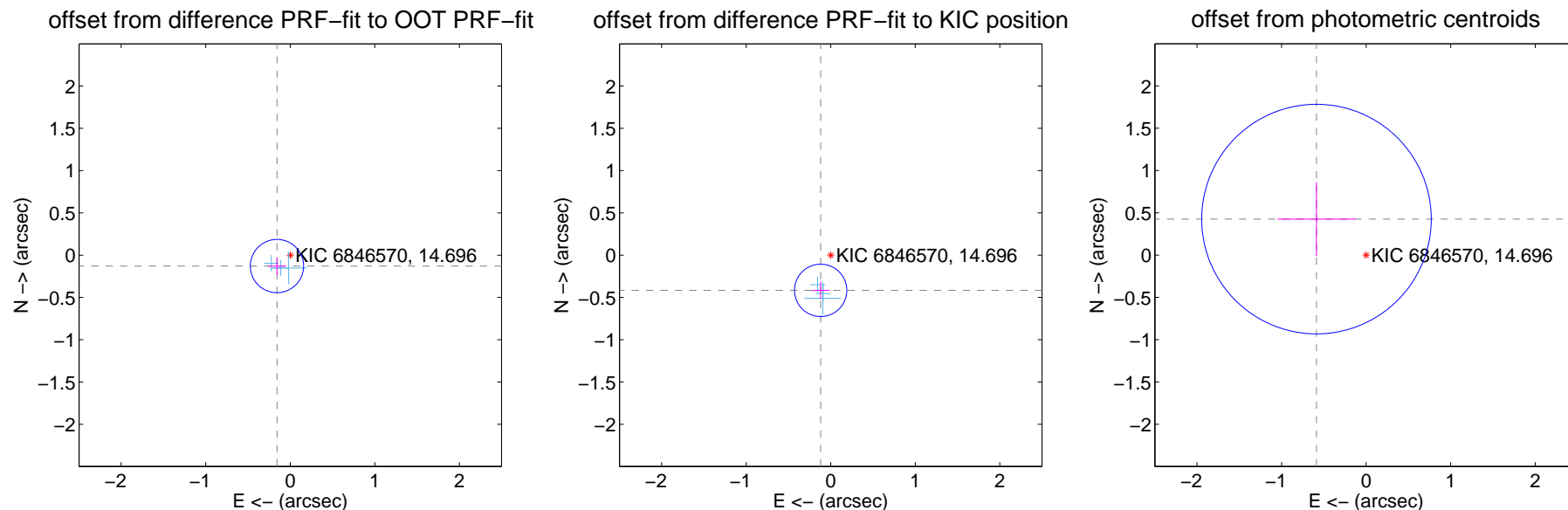
DV Centroid Data

Supplemental centroid analysis for 006846570-05. Kepler magnitude: 14.70. Transit SNR 6.61

There are 3 quarters with good PRF difference image offsets

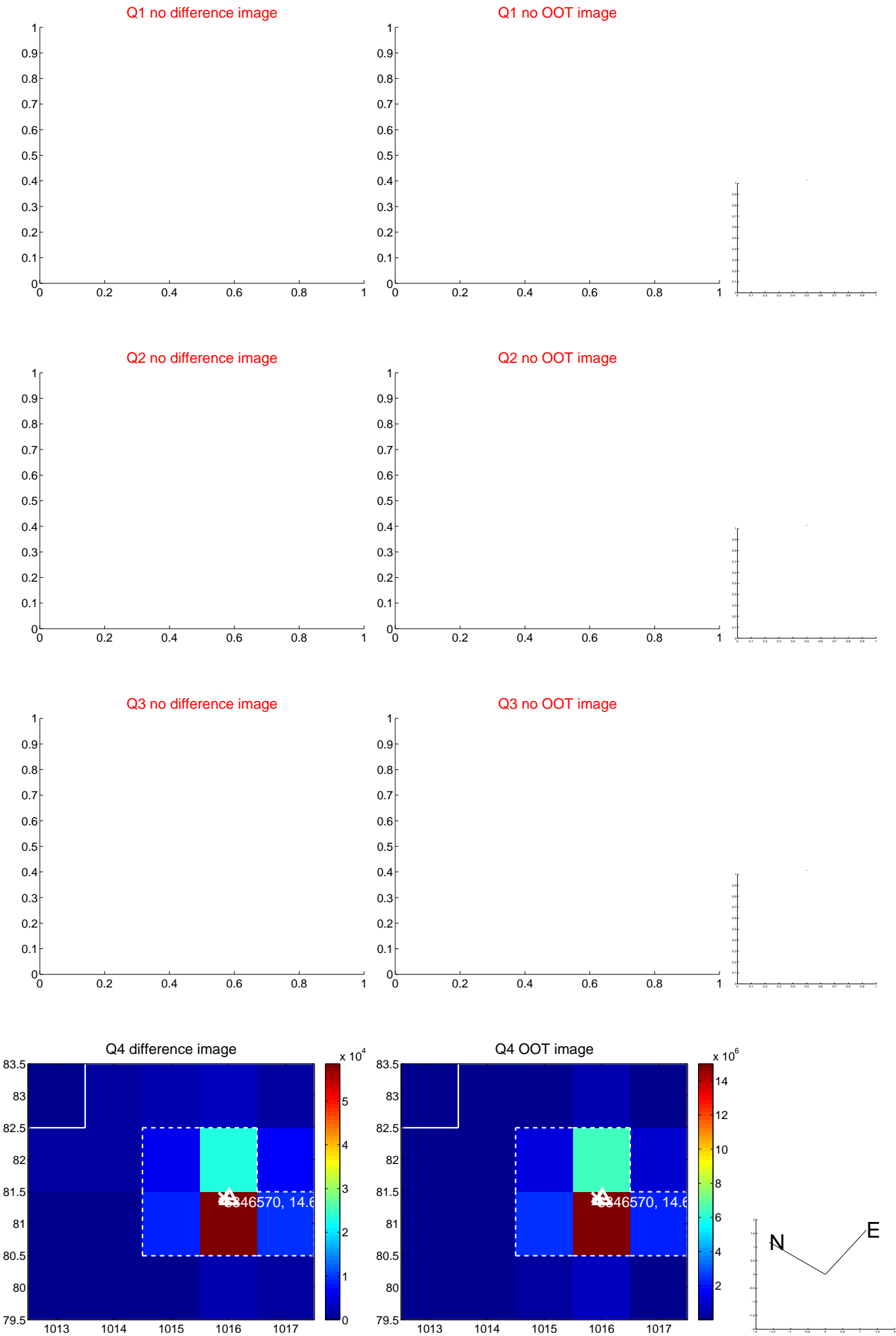
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.203 ± 0.105	1.94	0.157 ± 0.106	-0.129 ± 0.103
PRF-fit source offset from KIC position	0.433 ± 0.103	4.20	0.119 ± 0.106	-0.416 ± 0.103
photometric centroid source offset	0.73 ± 0.45	1.60	0.59 ± 0.46	0.43 ± 0.44

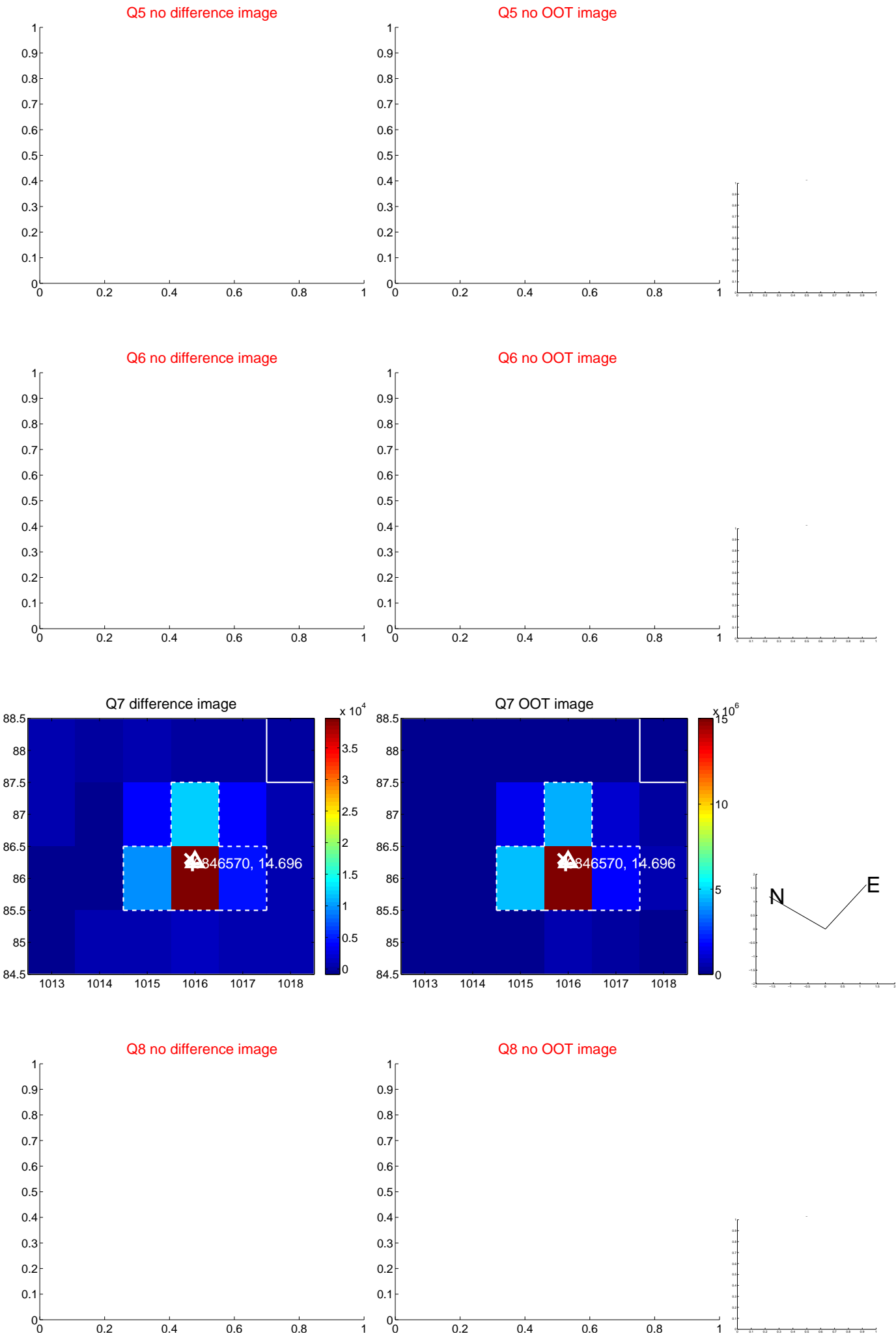


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

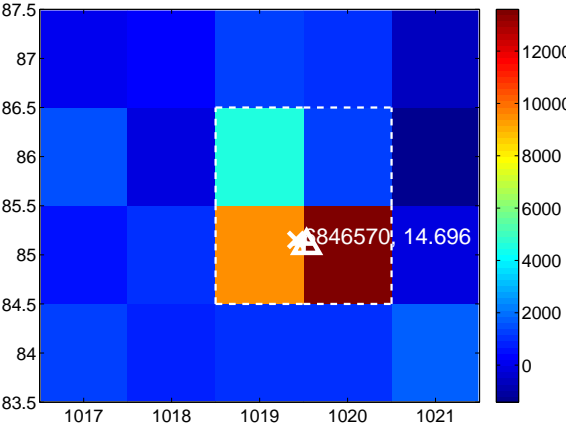
Q9 no difference image



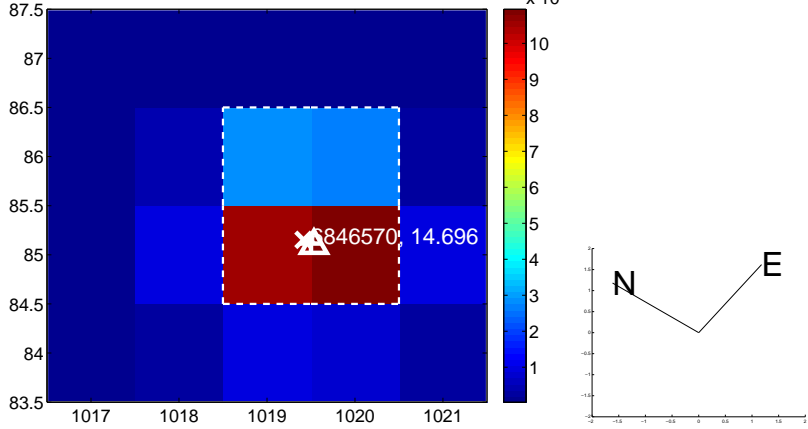
Q9 no OOT image



Q10 difference image



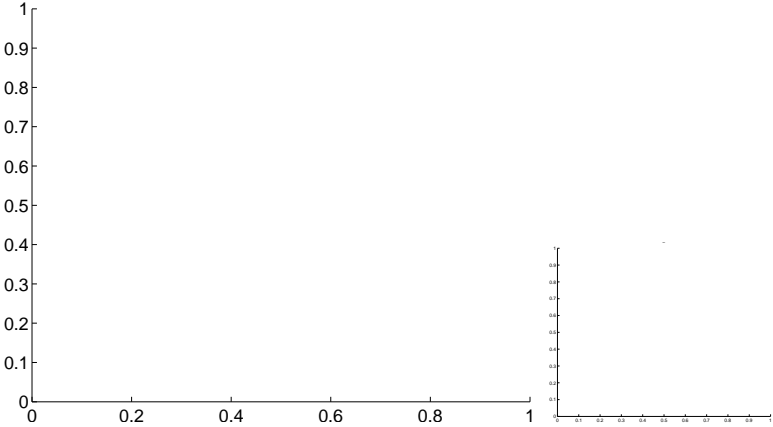
Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



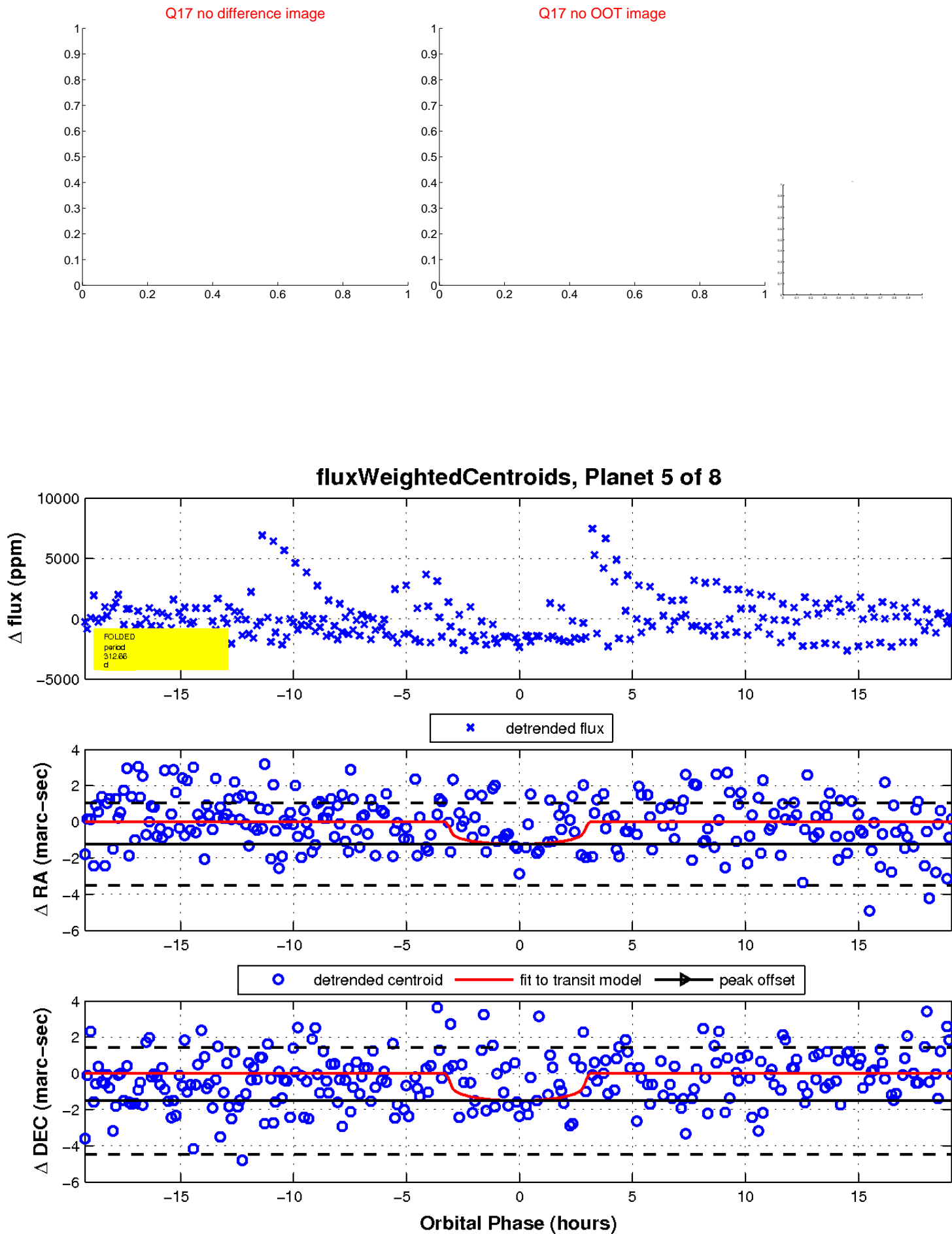
Q12 no OOT image



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

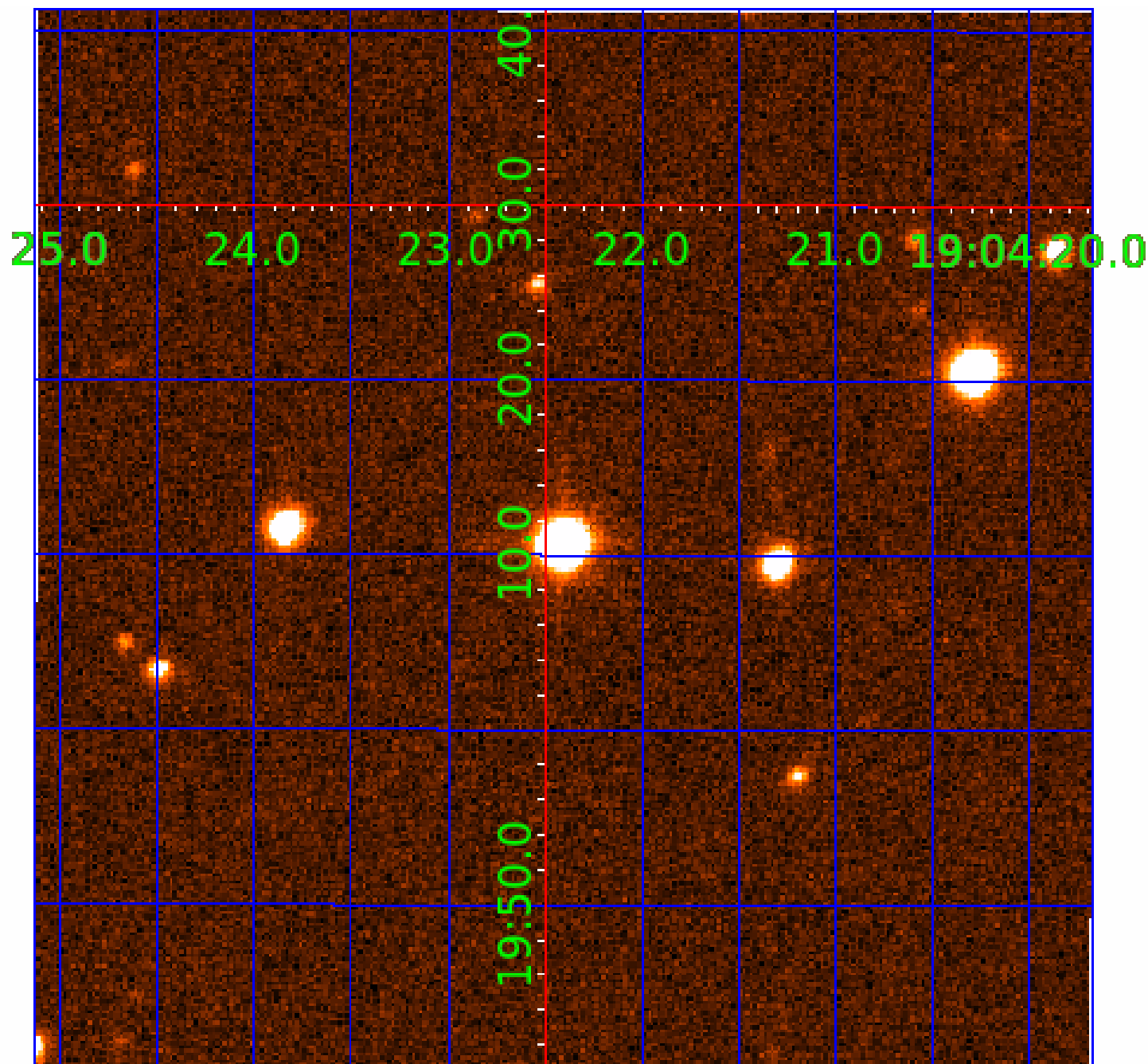


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006846570

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})
006846570-01	OBS	No	582.597917	134.148846	752.0	4.635	17.1	2.8	0.54	3833	1.53	0.05
006846570-02	OBS	No	516.937163	162.474077	703.7	2.644	16.1	2.8	0.54	3833	1.50	0.05
006846570-04	OBS	No	423.651424	260.115103	2126.2	6.872	14.3	7.6	0.54	3833	2.44	0.07
006846570-05	OBS	No	312.660813	367.289563	2033.7	6.413	14.6	6.6	0.54	3833	2.49	0.10
006846570-06	OBS	No	464.525730	358.180980	2198.8	3.611	14.8	8.5	0.54	3833	2.51	0.06
006846570-07	OBS	No	435.562645	414.230478	2025.6	4.147	13.9	7.4	0.54	3833	2.52	0.07
006846570-08	OBS	No	235.278821	358.143013	998.2	6.000	15.6	-1.0	0.54	3833	1.68	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006846570-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006846570-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006846570-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

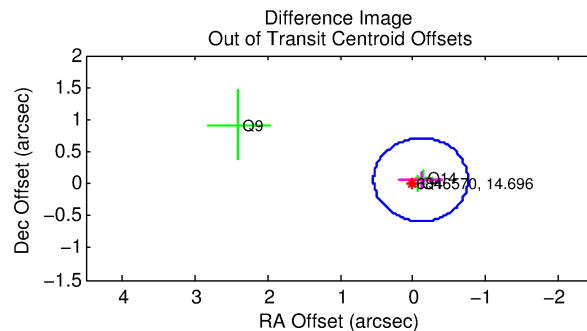
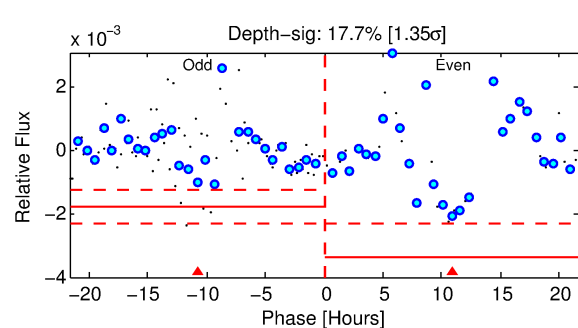
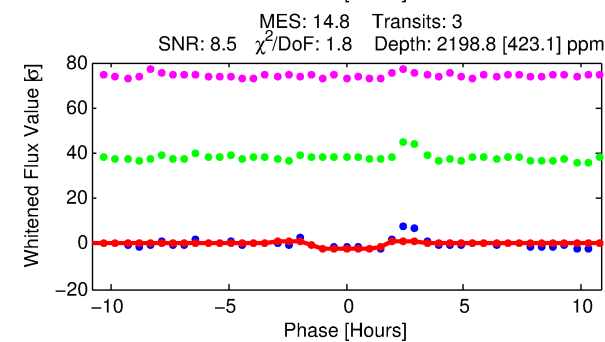
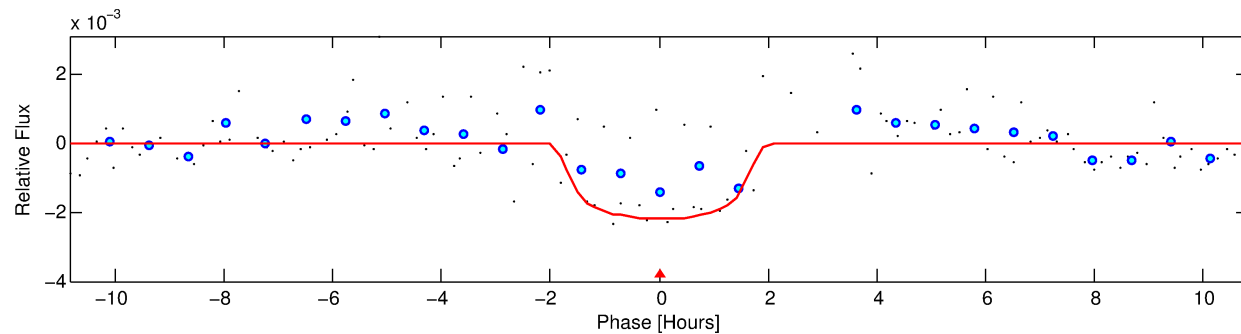
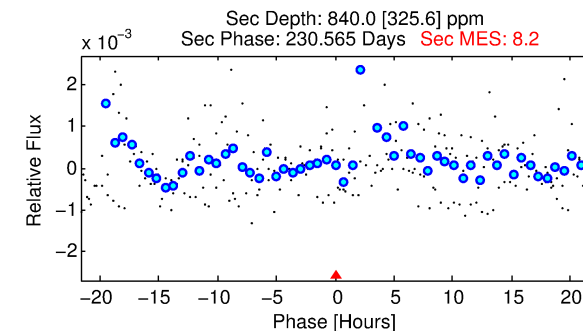
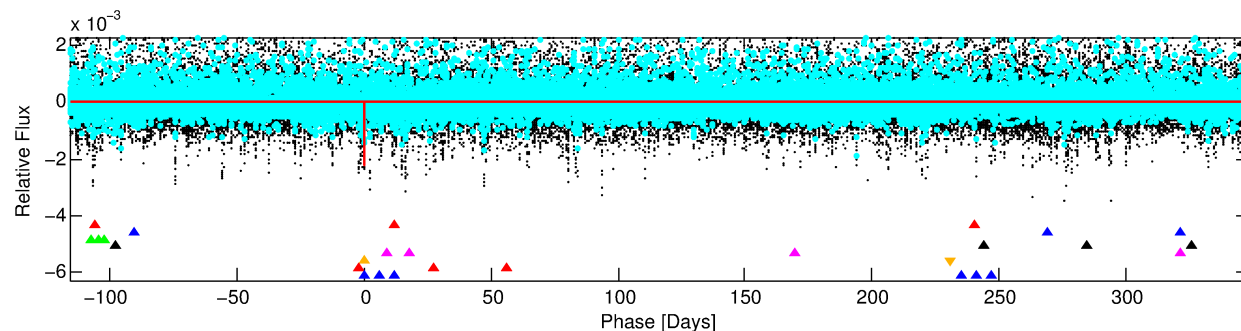
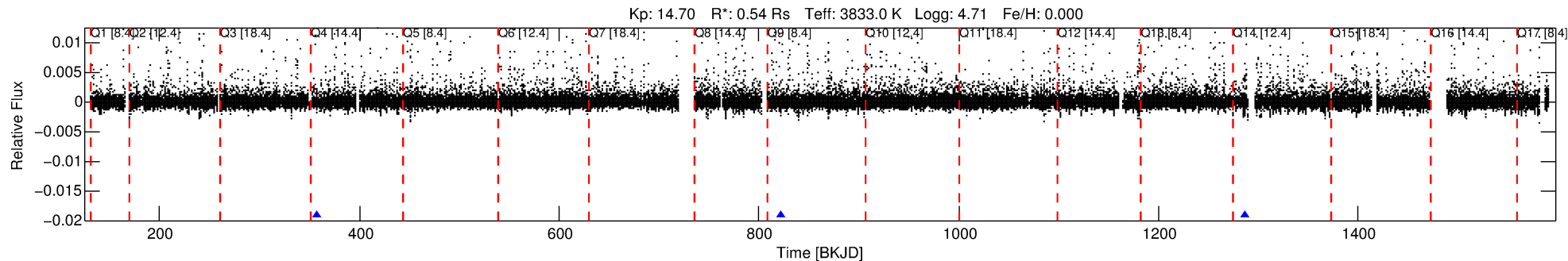
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006846570-06

No Significant Match Found

DV One-Page Summary

KIC: 6846570 Candidate: 6 of 8 Period: 464.526 d



DV Fit Results:

Period = 464.52573 [0.00685] d
Epoch = 358.1810 [0.0087] BKJD
Rp/R* = 0.0425 [0.1009]
a/R* = 997.37 [9269.18]
b = 0.24 [37.25]
Seff = 0.06 [0.00]
Teq = 127 [2] K
Rp = 2.51 [5.96] Re
a = 0.9590 [0.0378] AU
Ag = 67635.11 [322471.19] [0.21σ]
Teffp = 3167 [3774] K [0.81σ]

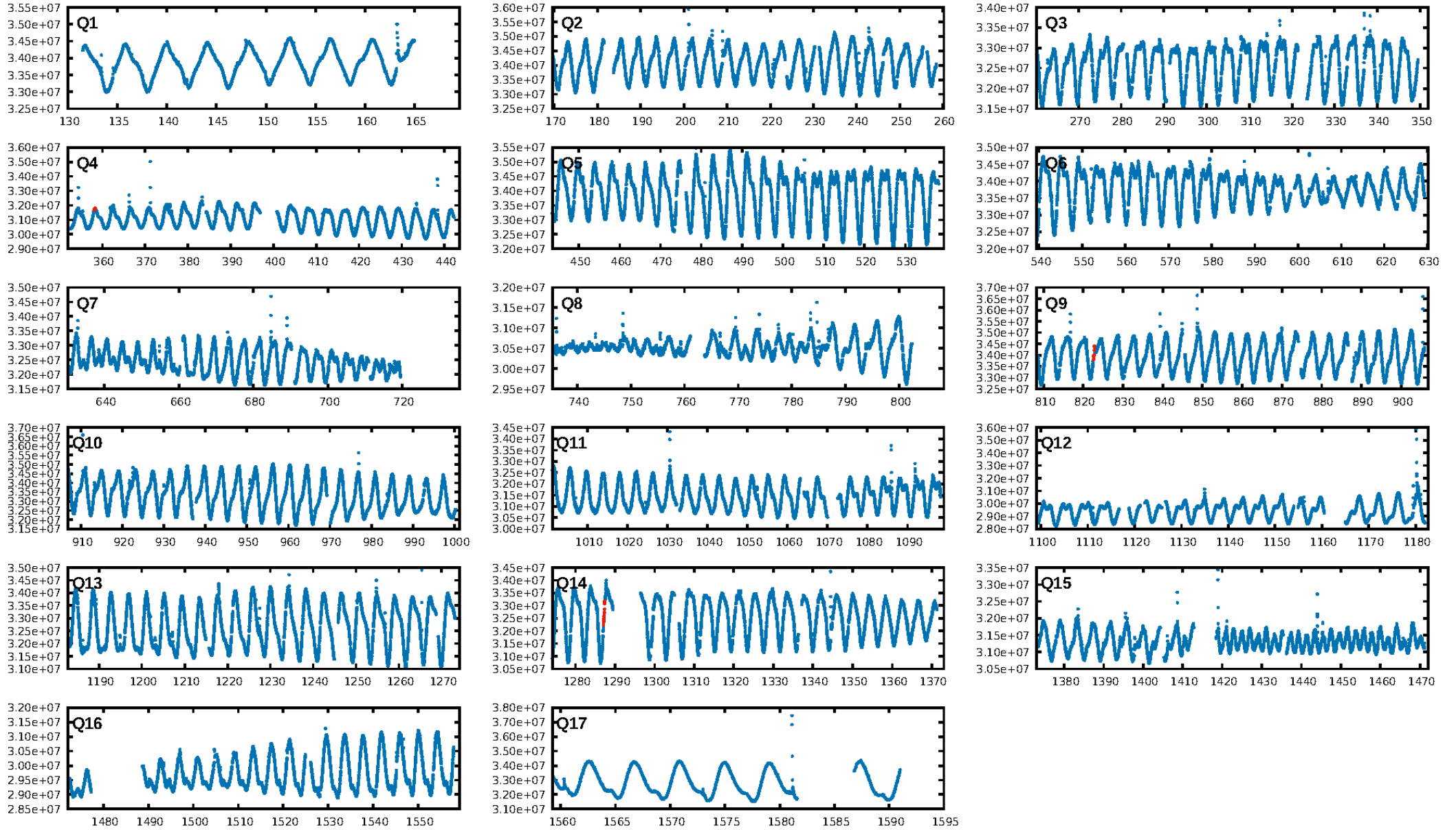
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [126.42σ]
LongPeriod-sig: 100.0% [16.23σ]
ModelChiSquare2-sig: 2.2%
ModelChiSquareGof-sig: 43.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 67.92
Centroid-sig: 63.0%
Centroid-so: 0.578 arcsec [1.05σ]
OotOffset-rm: 0.125 arcsec [0.58σ]
KicOffset-rm: 0.230 arcsec [0.41σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.67 [2/3]

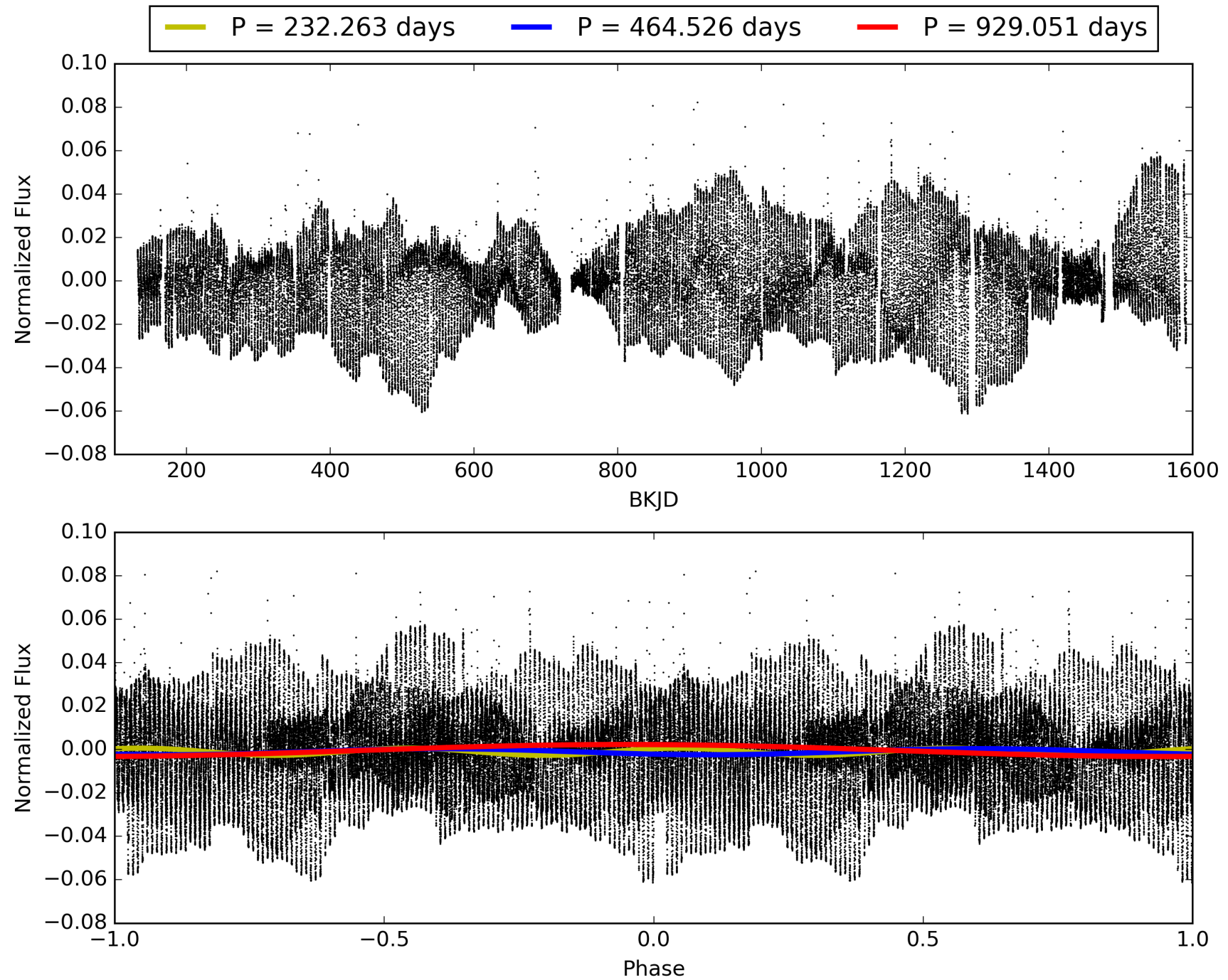
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:47:18 Z

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

TCE 006846570-06, PDC Light Curves

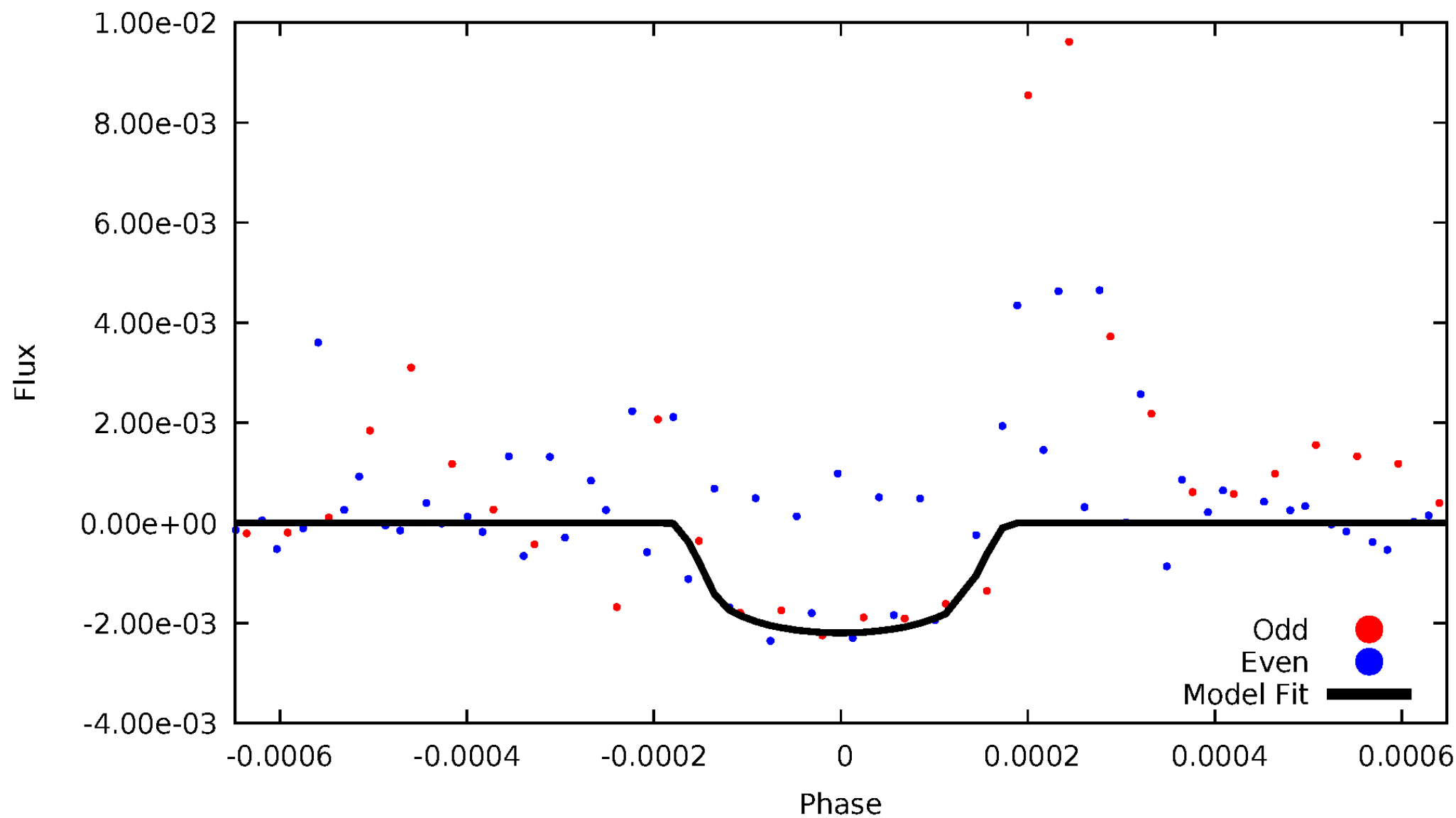


TCE 006846570-06



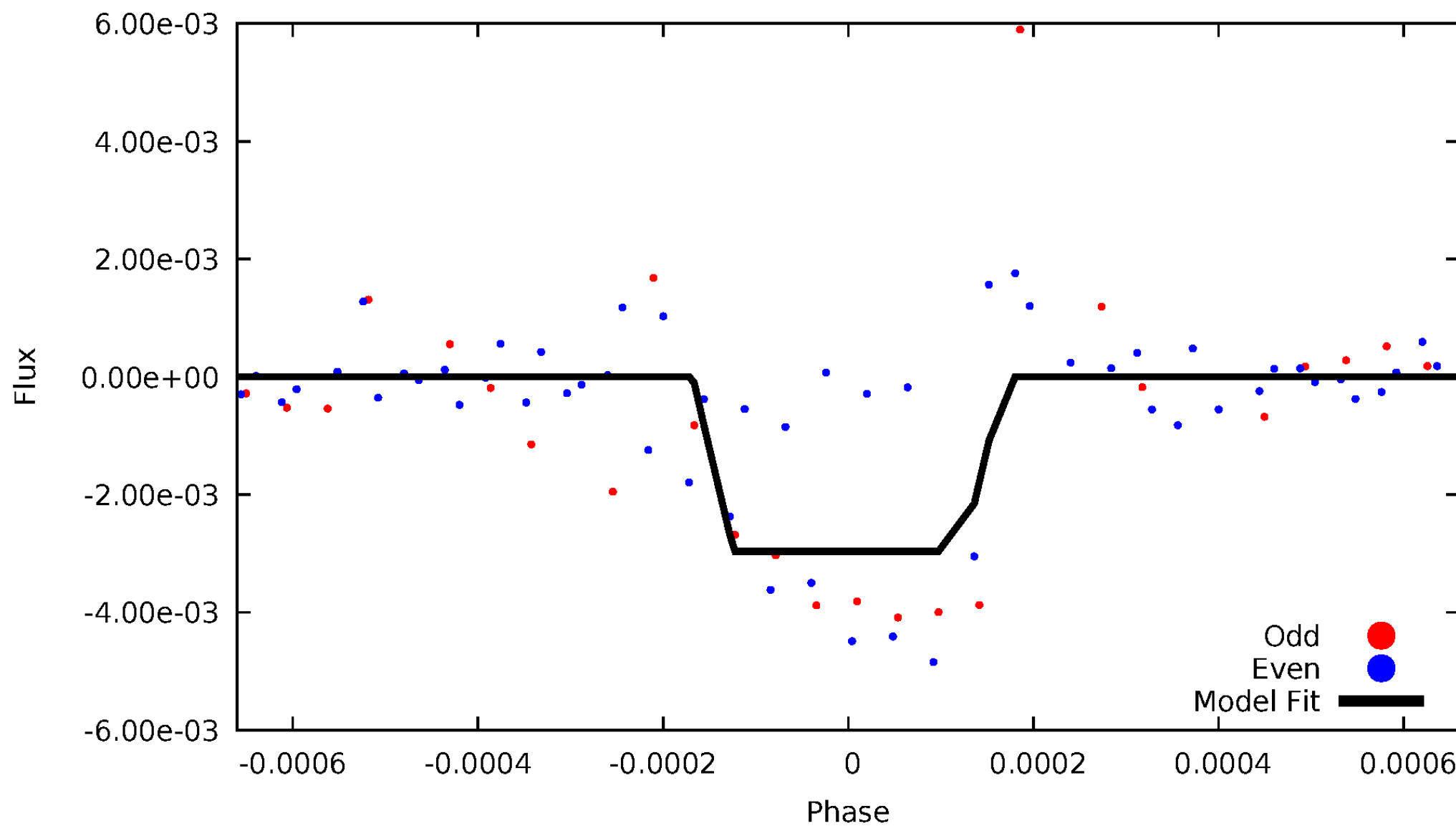
DV Odd/Even

TCE 006846570-06



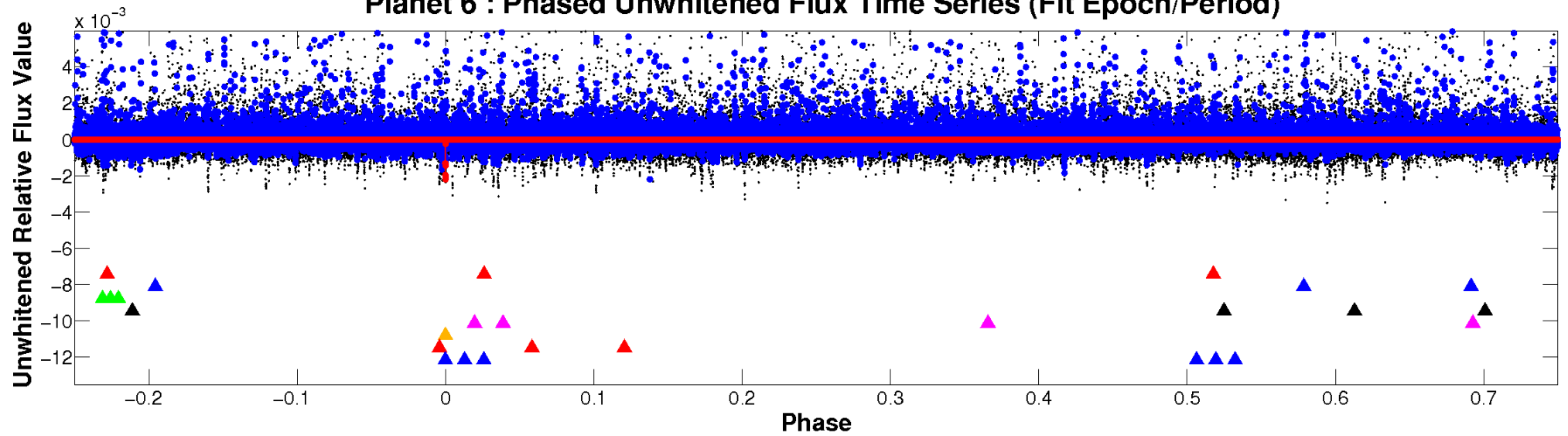
ALT Odd/Even

TCE 006846570-06

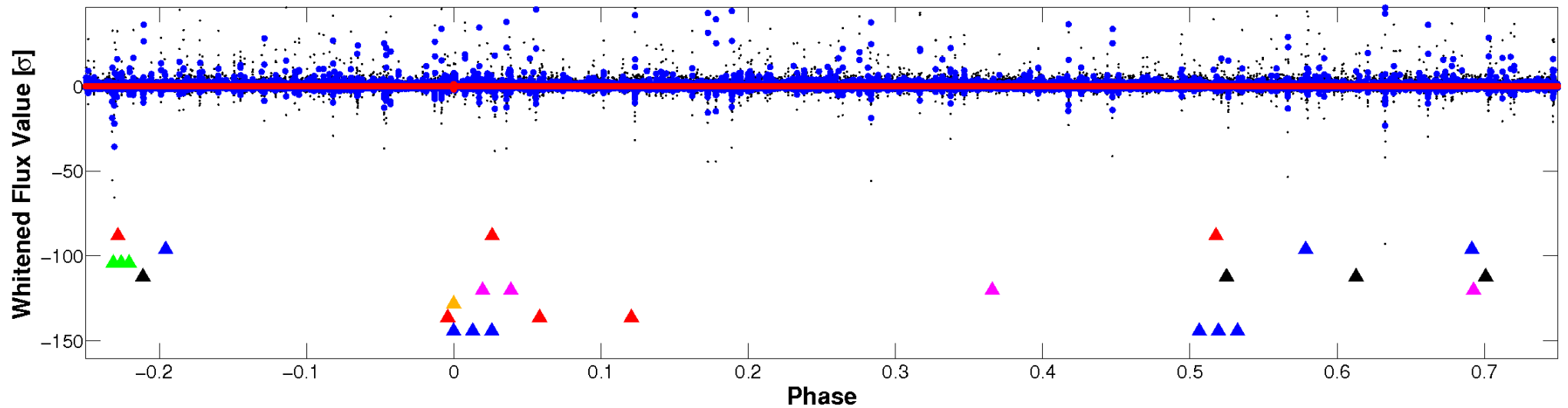


Non-Whitened Vs. Whitened Light Curve

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

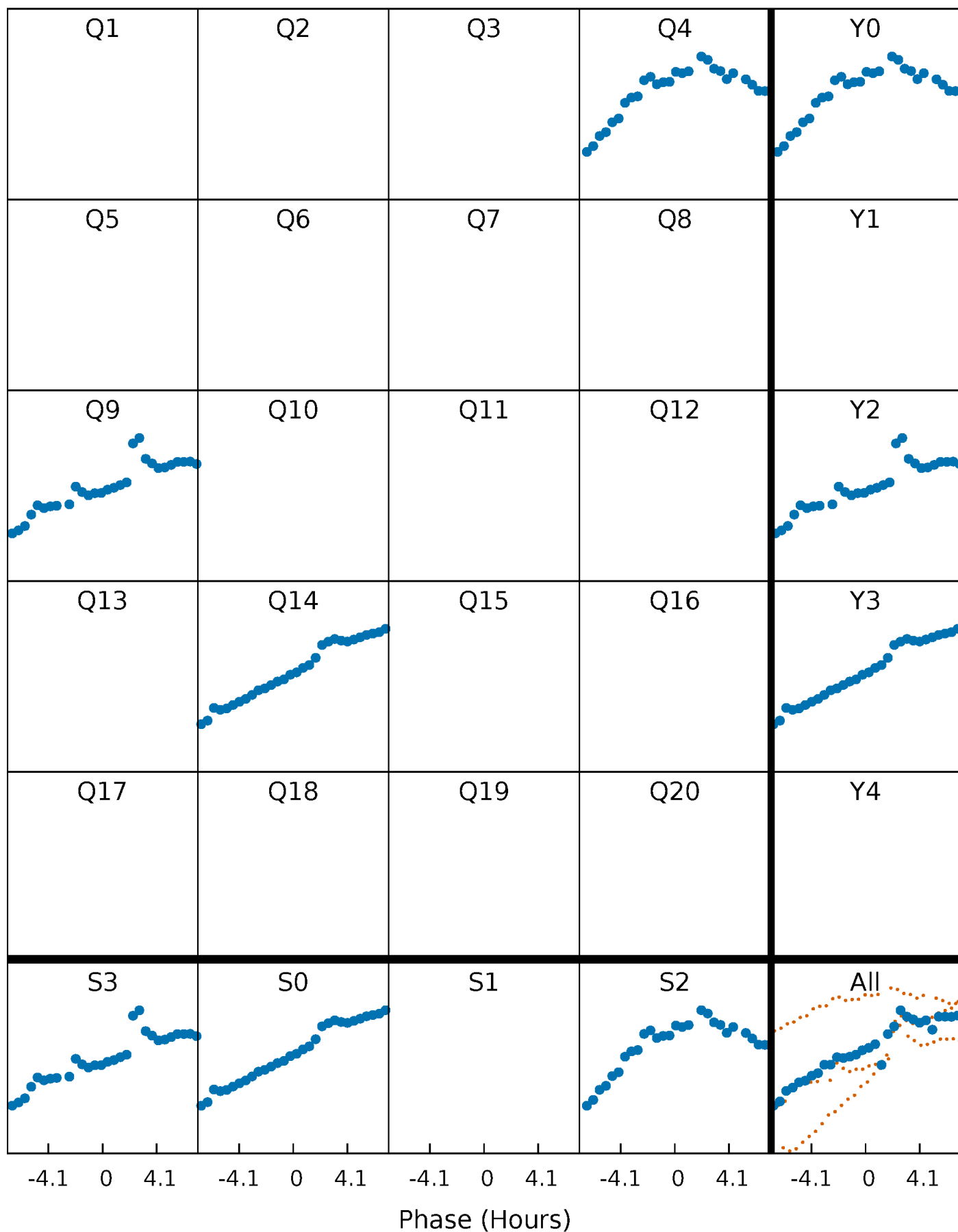


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



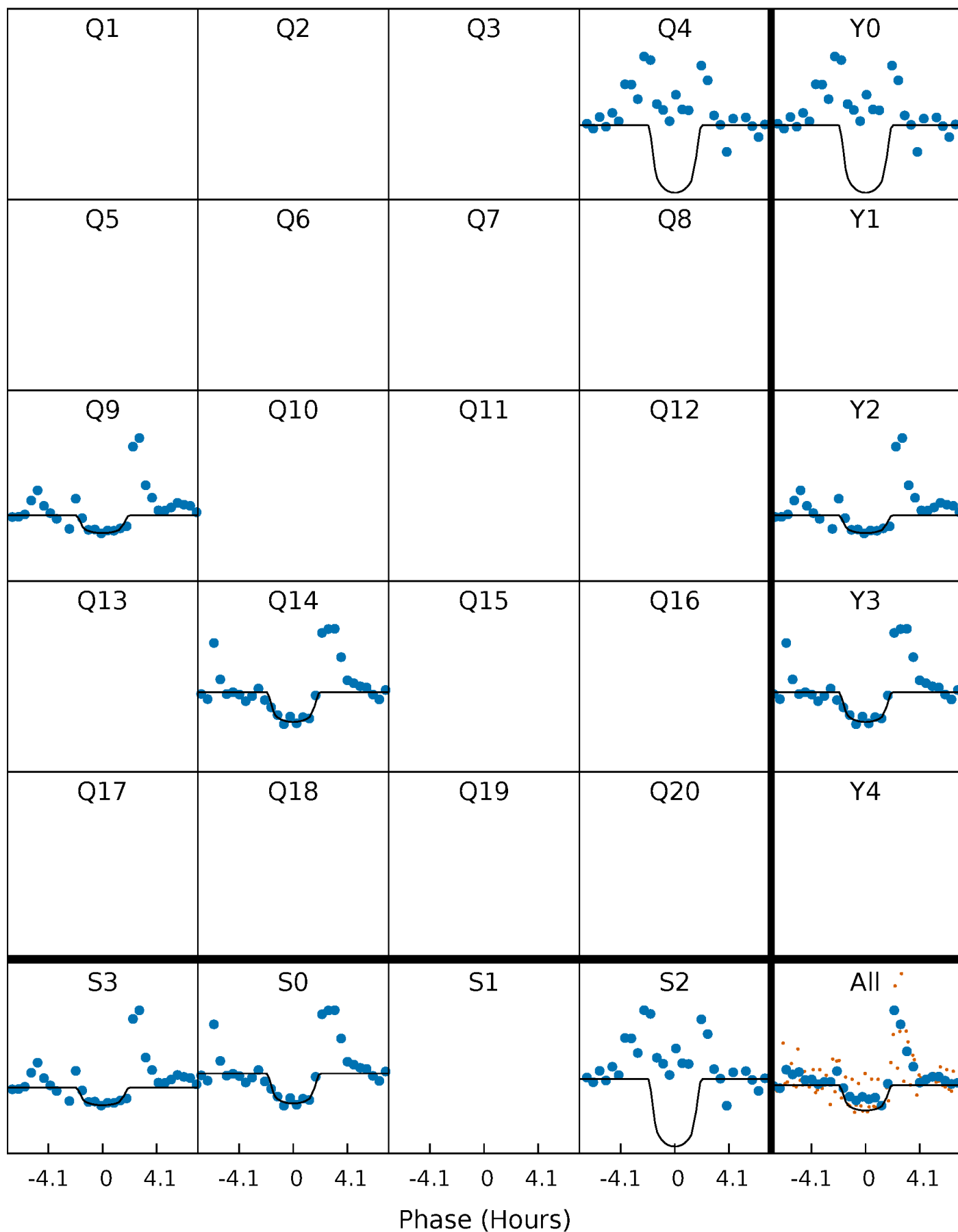
PDC Quarter-Phased Transit Curves

TCE 006846570-06 P=464.525730 Days $T_0=358.180980$ (BKJD)



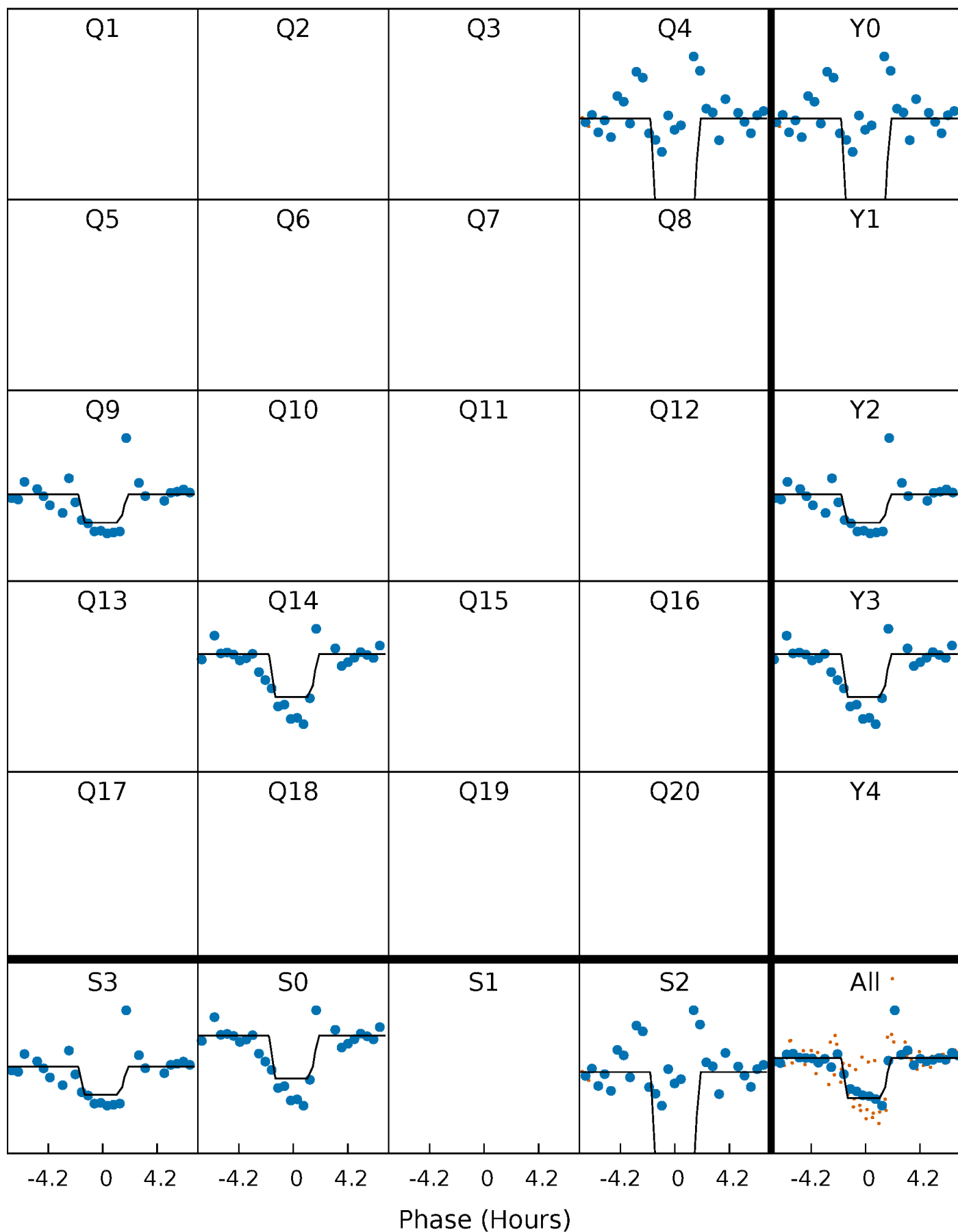
DV Quarter-Phased Transit Curves

TCE 006846570-06 P=464.525730 Days $T_0=358.180980$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

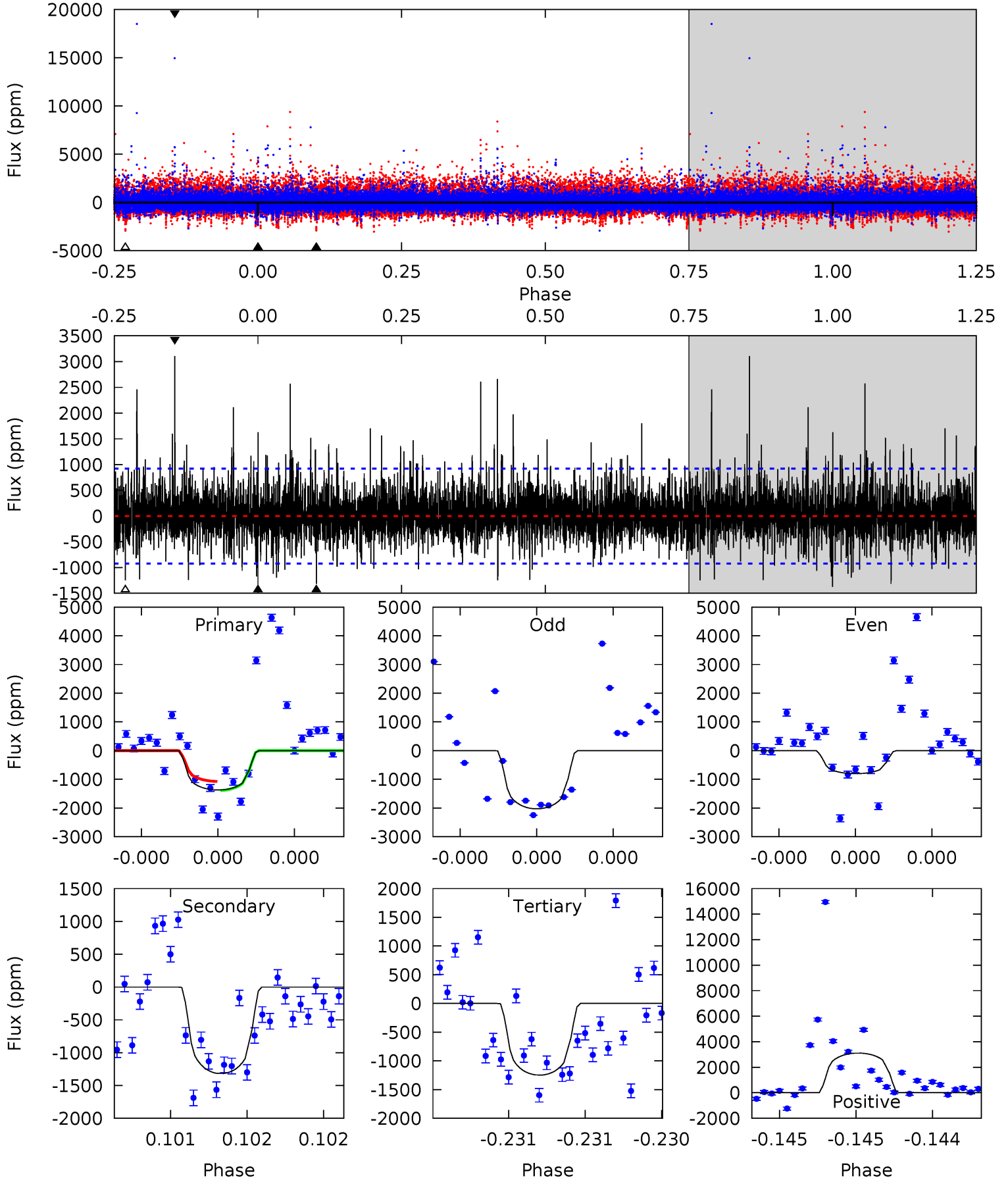
TCE 006846570-06 P=464.522931 Days $T_0=358.190603$ (BKJD)



DV Model-Shift Uniqueness Test

006846570-06, P = 464.525730 Days, E = 358.180980 Days

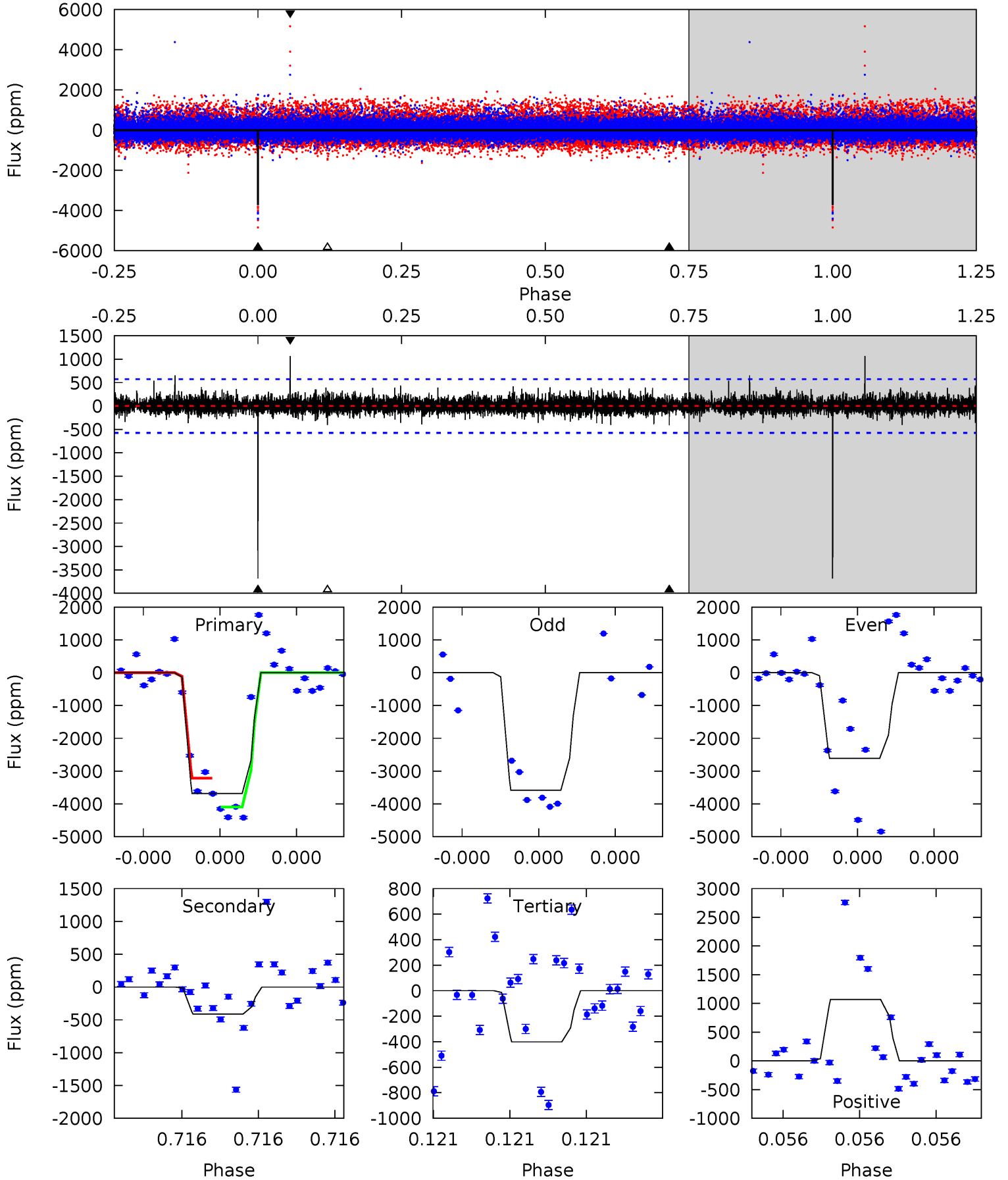
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.38	8.05	7.62	19.0	5.63	3.57	2.12	0.76	-10.6	0.43	-10.9	2.22	0.58	0.69	1.00



Alt Model-Shift Uniqueness Test

006846570-06, P = 464.522931 Days, E = 358.190603 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.2	4.05	3.95	10.5	5.64	3.59	0.90	32.3	25.7	0.10	-6.47	4.50	0.71	0.22	0



Stellar Parameters For KIC 006846570

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3833^{+50}_{-50}	$4.708^{+0.030}_{-0.014}$	$0.000^{+0.100}_{-0.100}$	$0.541^{+0.019}_{-0.026}$	$0.545^{+0.025}_{-0.020}$	$4.853^{+0.567}_{-0.303}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+12%/-6%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006846570-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1317 ± 164	$4.96^{+4.52}_{-3.22}$	177^{+3}_{-3}	2947^{+1139}_{-455}	$26876^{+189924}_{-19561}$
Alt.	-411 ± 102	$5.20^{+4.93}_{-3.32}$	177^{+3}_{-3}	2503^{+816}_{-360}	7508^{+51666}_{-5551}

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 $A_{obs} \gg 1.0$

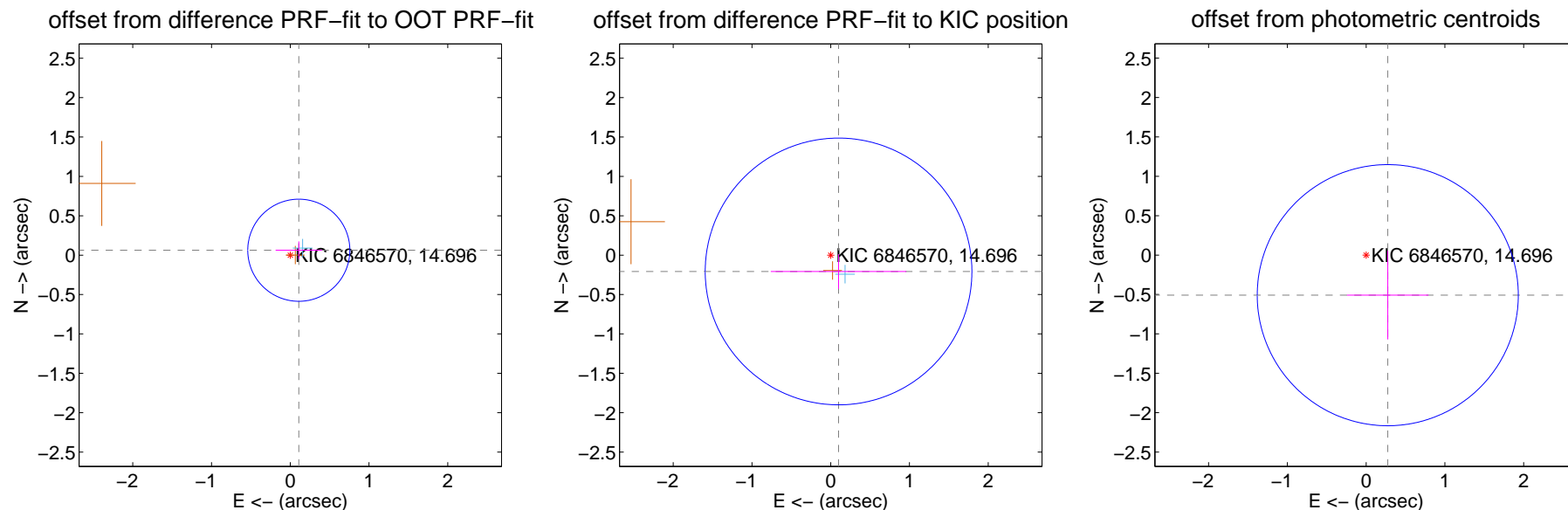
DV Centroid Data

Supplemental centroid analysis for 006846570-06. Kepler magnitude: 14.70. Transit SNR 8.51

There are 1 quarters with good PRF difference image offsets

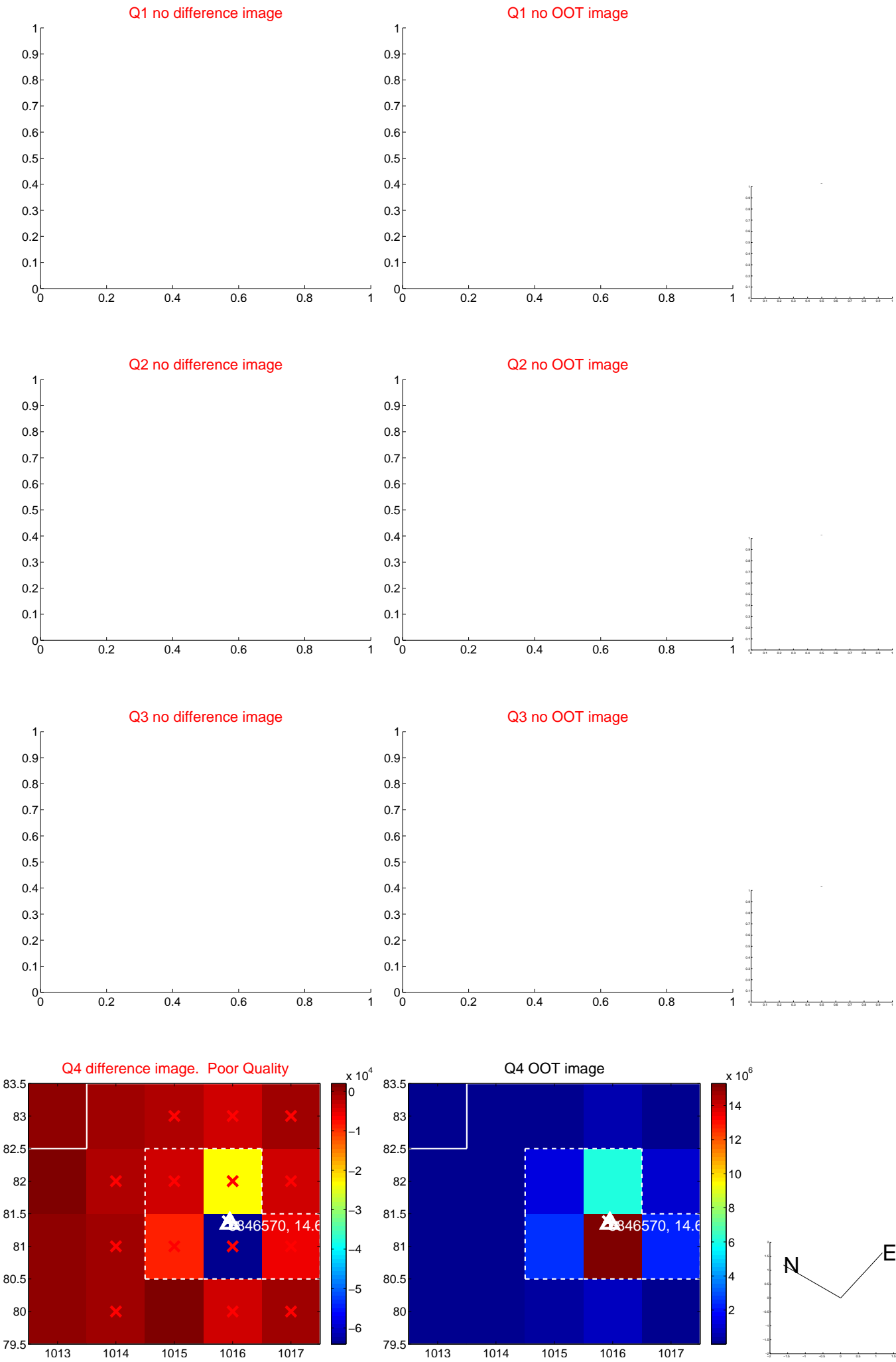
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.125 ± 0.216	0.58	-0.108 ± 0.294	0.062 ± 0.113
PRF-fit source offset from KIC position	0.230 ± 0.564	0.41	-0.100 ± 0.861	-0.207 ± 0.220
photometric centroid source offset	0.58 ± 0.55	1.05	-0.27 ± 0.52	-0.51 ± 0.56



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

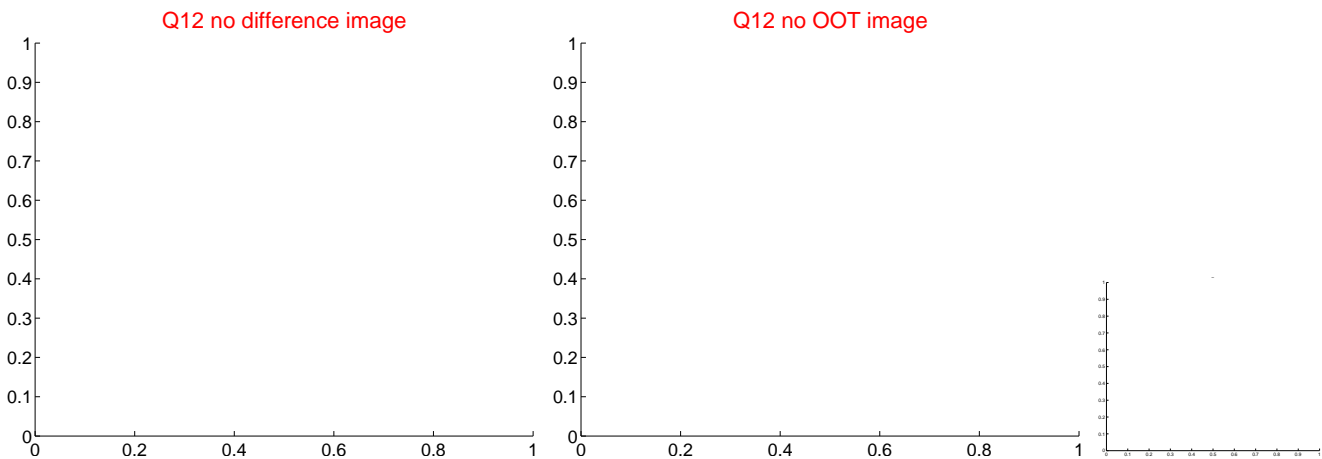
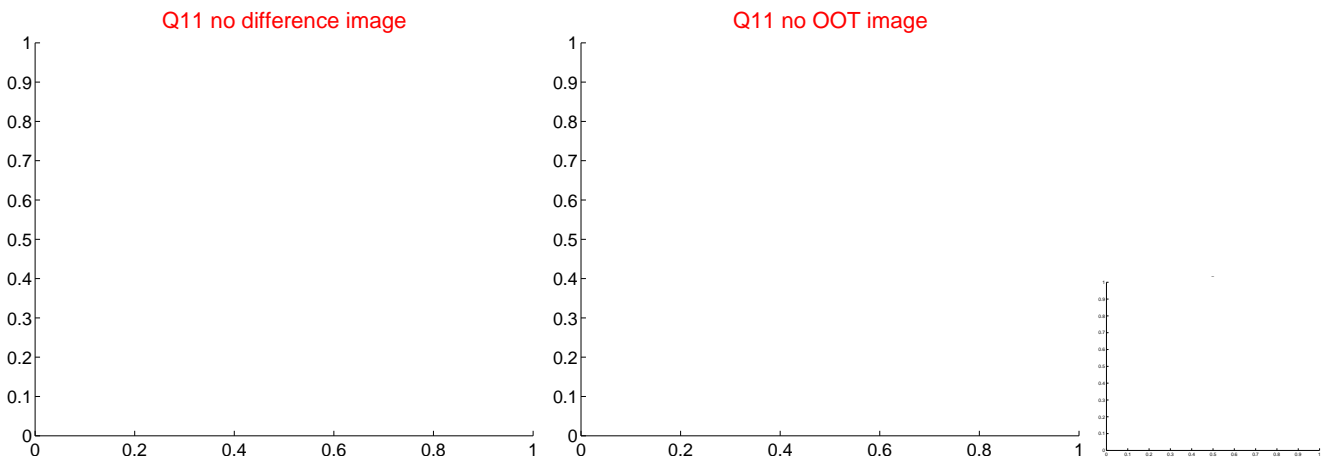
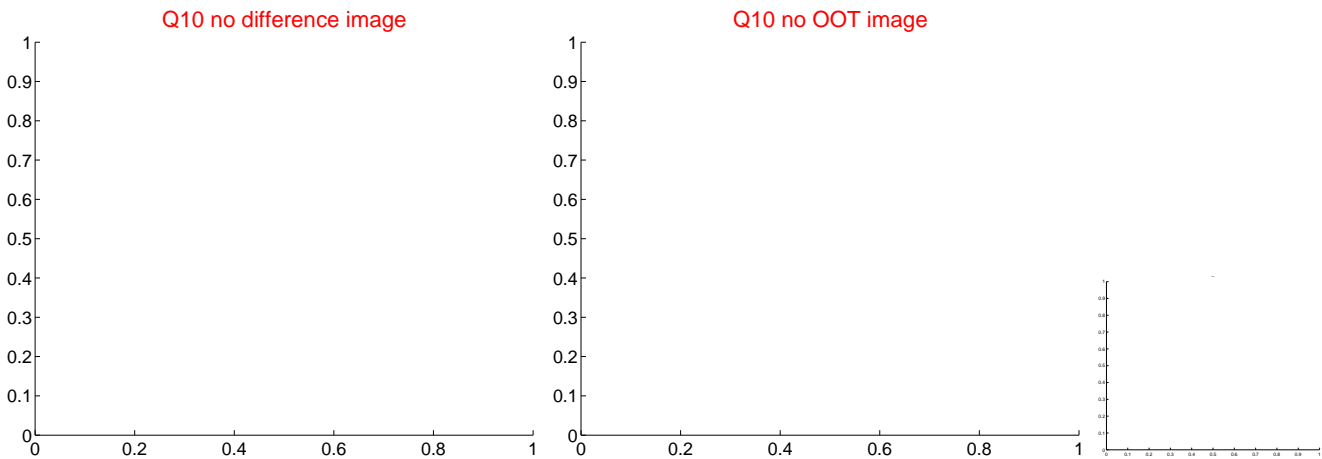
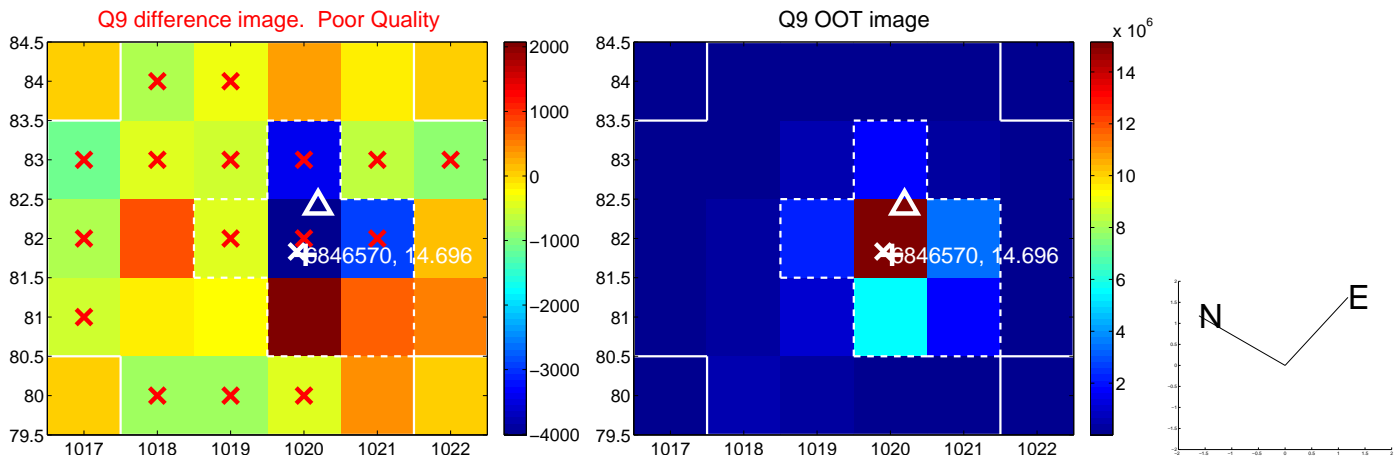
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



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

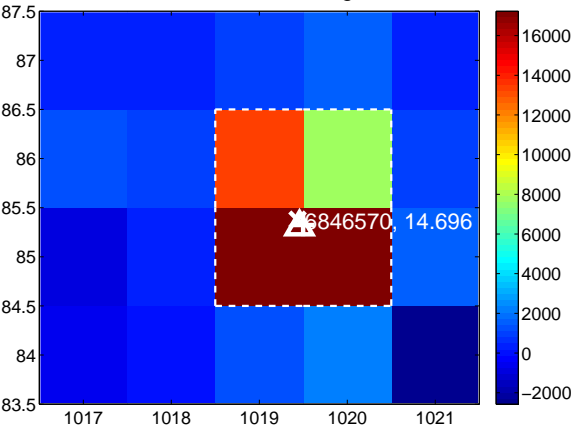
Q13 no difference image



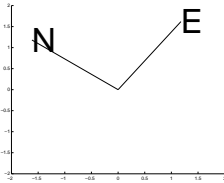
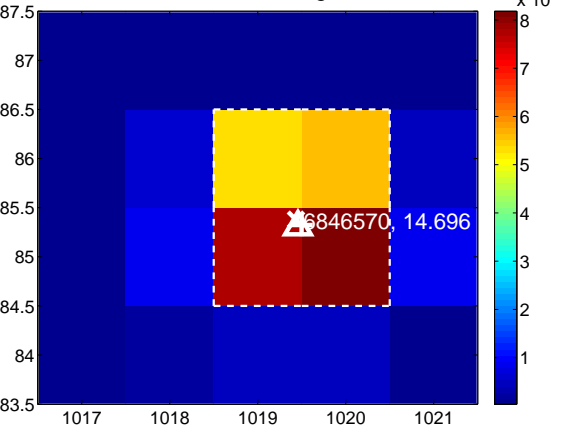
Q13 no OOT image



Q14 difference image



Q14 OOT image



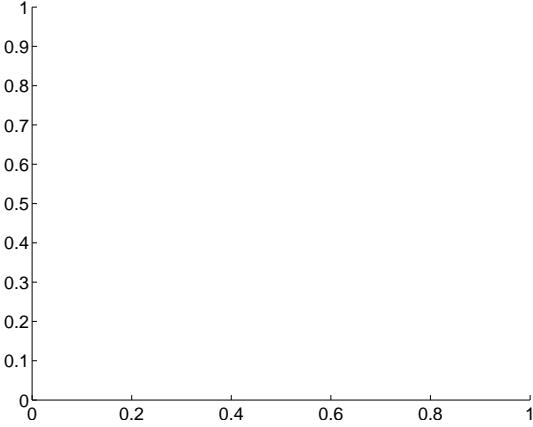
Q15 no difference image



Q15 no OOT image



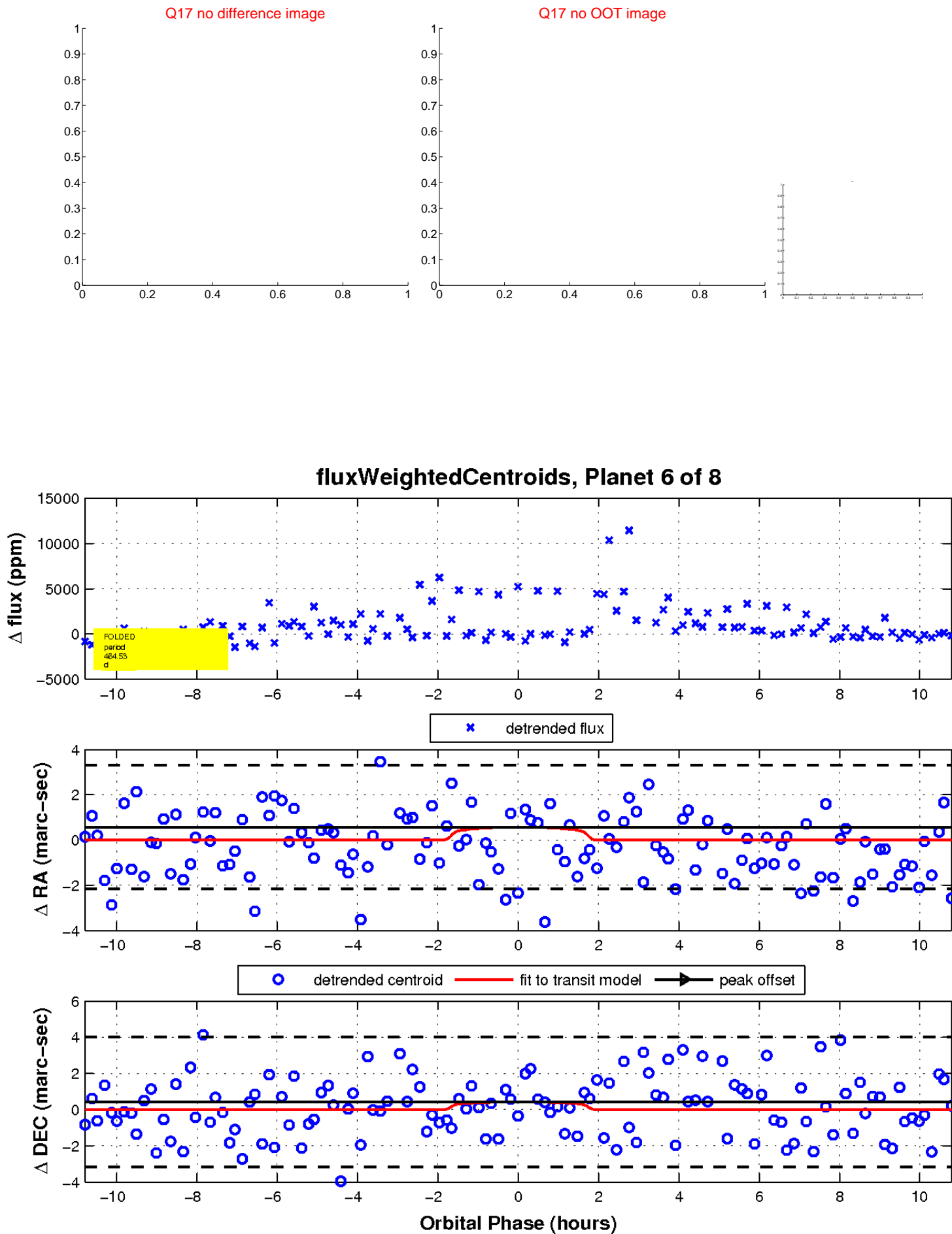
Q16 no difference image



Q16 no OOT image

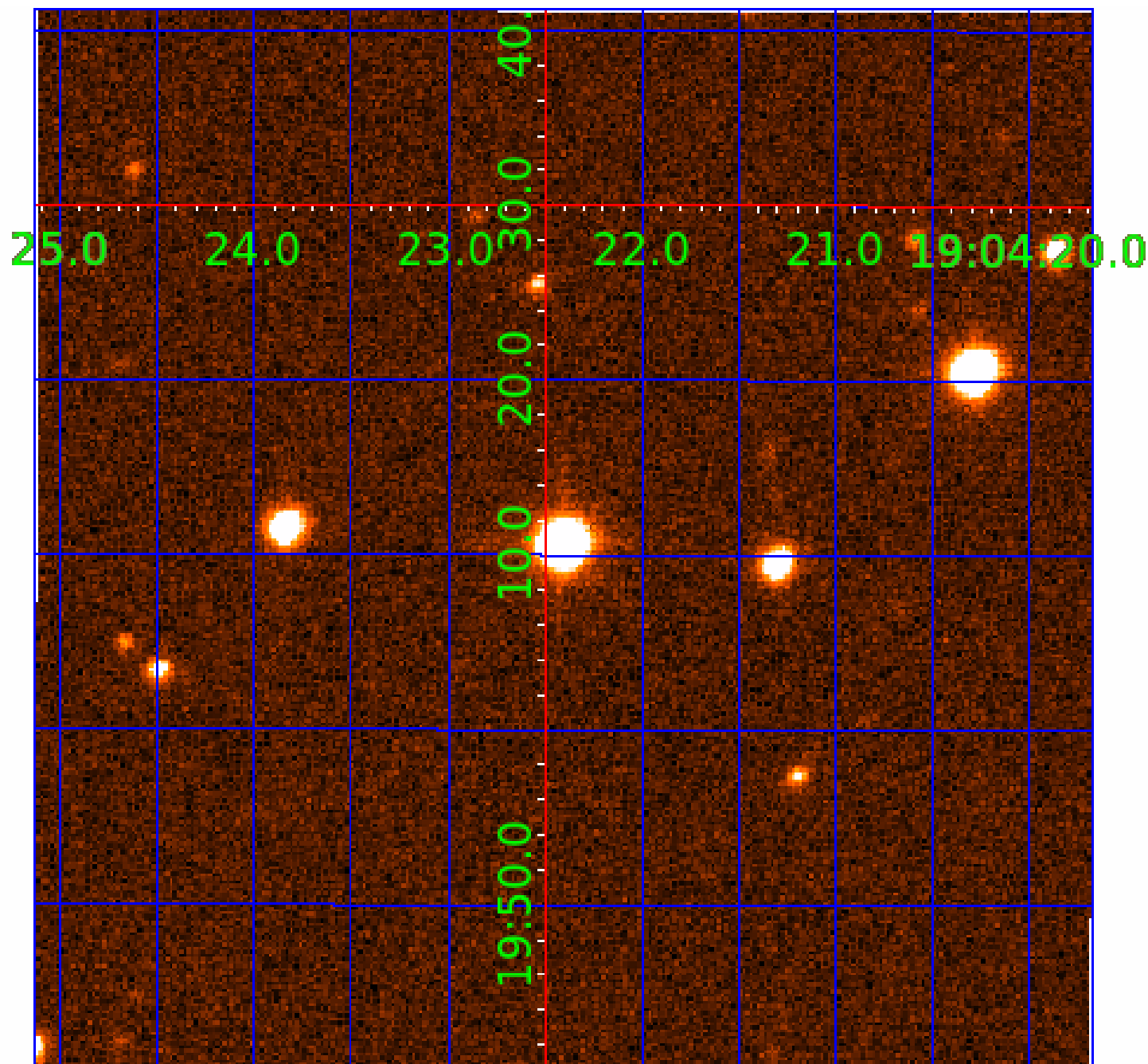


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006846570

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})
006846570-01	OBS	No	582.597917	134.148846	752.0	4.635	17.1	2.8	0.54	3833	1.53	0.05
006846570-02	OBS	No	516.937163	162.474077	703.7	2.644	16.1	2.8	0.54	3833	1.50	0.05
006846570-04	OBS	No	423.651424	260.115103	2126.2	6.872	14.3	7.6	0.54	3833	2.44	0.07
006846570-05	OBS	No	312.660813	367.289563	2033.7	6.413	14.6	6.6	0.54	3833	2.49	0.10
006846570-06	OBS	No	464.525730	358.180980	2198.8	3.611	14.8	8.5	0.54	3833	2.51	0.06
006846570-07	OBS	No	435.562645	414.230478	2025.6	4.147	13.9	7.4	0.54	3833	2.52	0.07
006846570-08	OBS	No	235.278821	358.143013	998.2	6.000	15.6	-1.0	0.54	3833	1.68	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006846570-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006846570-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006846570-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

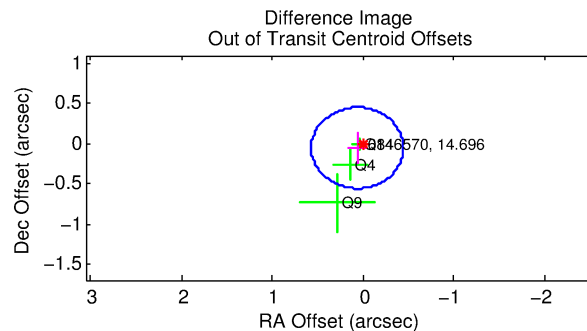
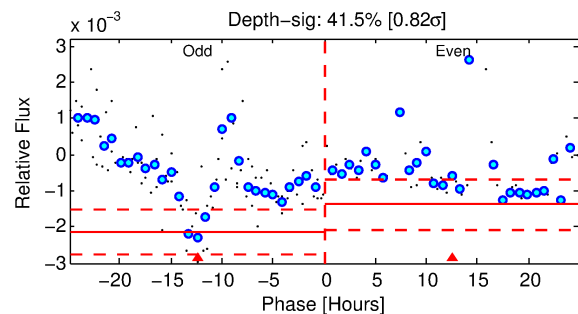
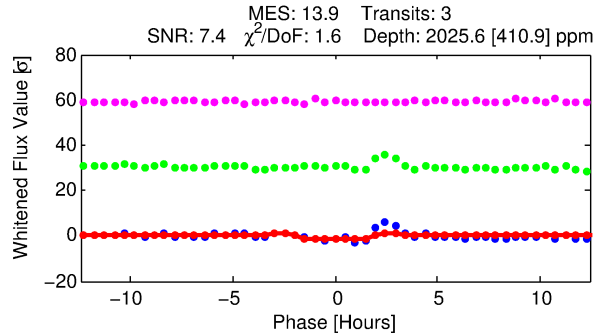
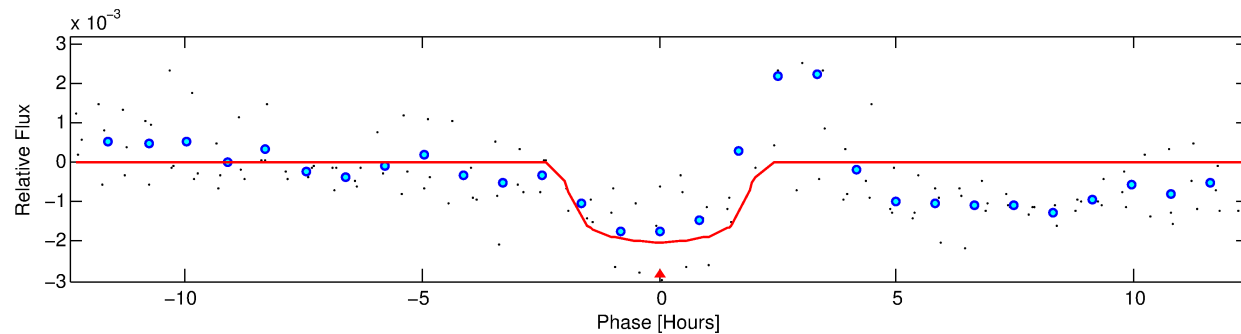
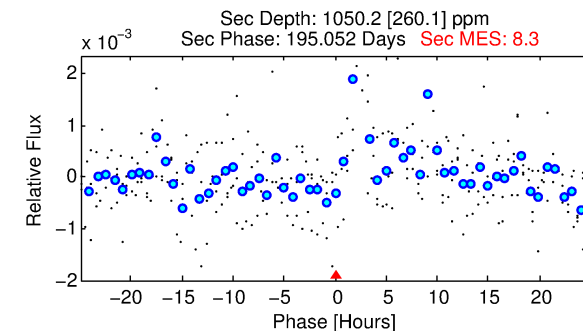
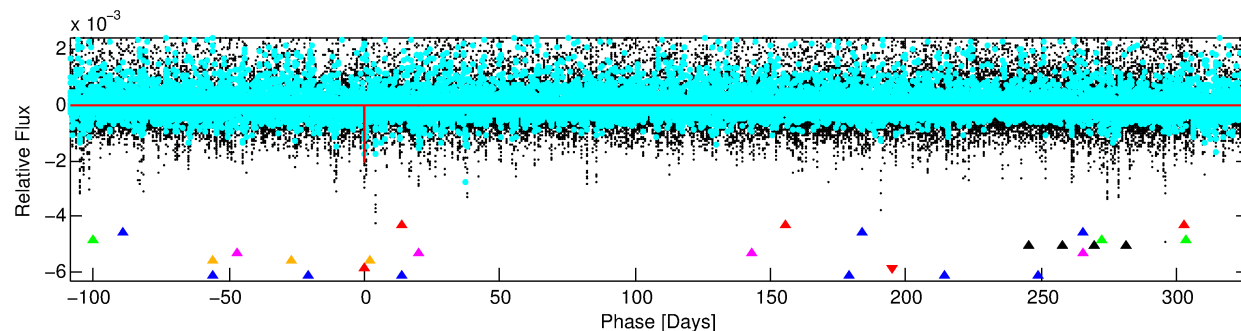
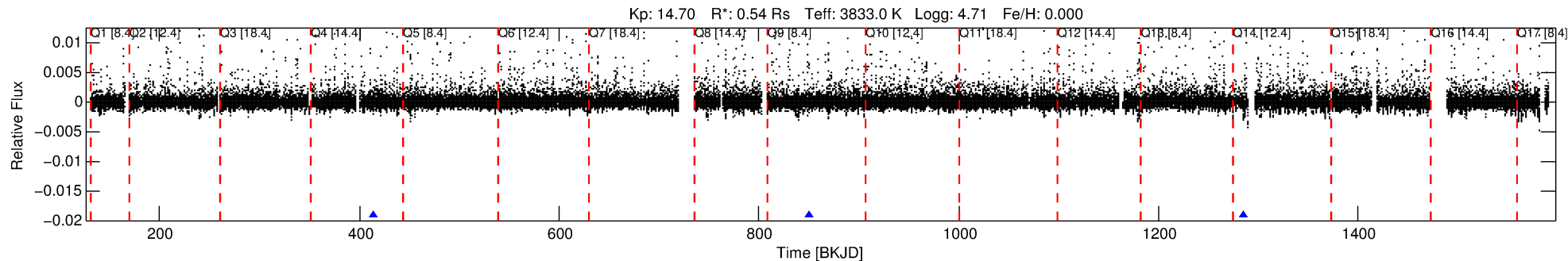
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006846570-07

No Significant Match Found

DV One-Page Summary

KIC: 6846570 Candidate: 7 of 8 Period: 435.563 d



DV Fit Results:

Period = 435.56265 [0.00630] d
Epoch = 414.2305 [0.0078] BKJD
Rp/R* = 0.0427 [0.1967]
a/R* = 688.66 [12732.46]
b = 0.59 [20.53]
Seff = 0.07 [0.01]
Teq = 130 [2] K
Rp = 2.52 [11.61] Re
a = 0.9187 [0.0362] AU
Ag = 76729.45 [707004.68] [0.11 σ]
Teff = 3339 [7692] K [0.42 σ]

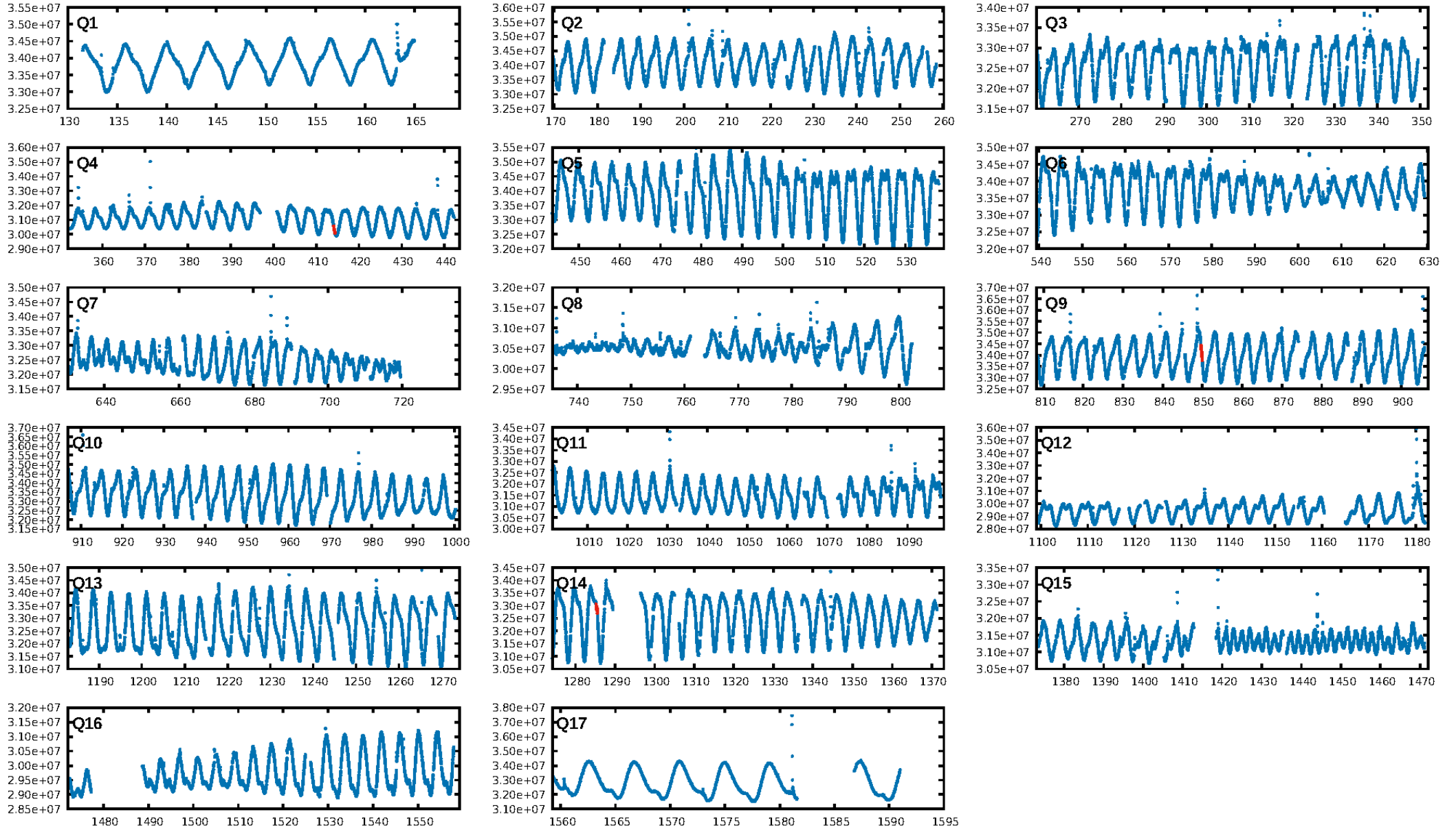
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [35.62 σ]
LongPeriod-sig: 100.0% [126.42 σ]
ModelChiSquare2-sig: 7.5%
ModelChiSquareGof-sig: 81.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 115.6
Centroid-sig: 2.2%
Centroid-so: 1.209 arcsec [2.20 σ]
OotOffset-rm: 0.084 arcsec [0.50 σ]
KicOffset-rm: 0.380 arcsec [1.49 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

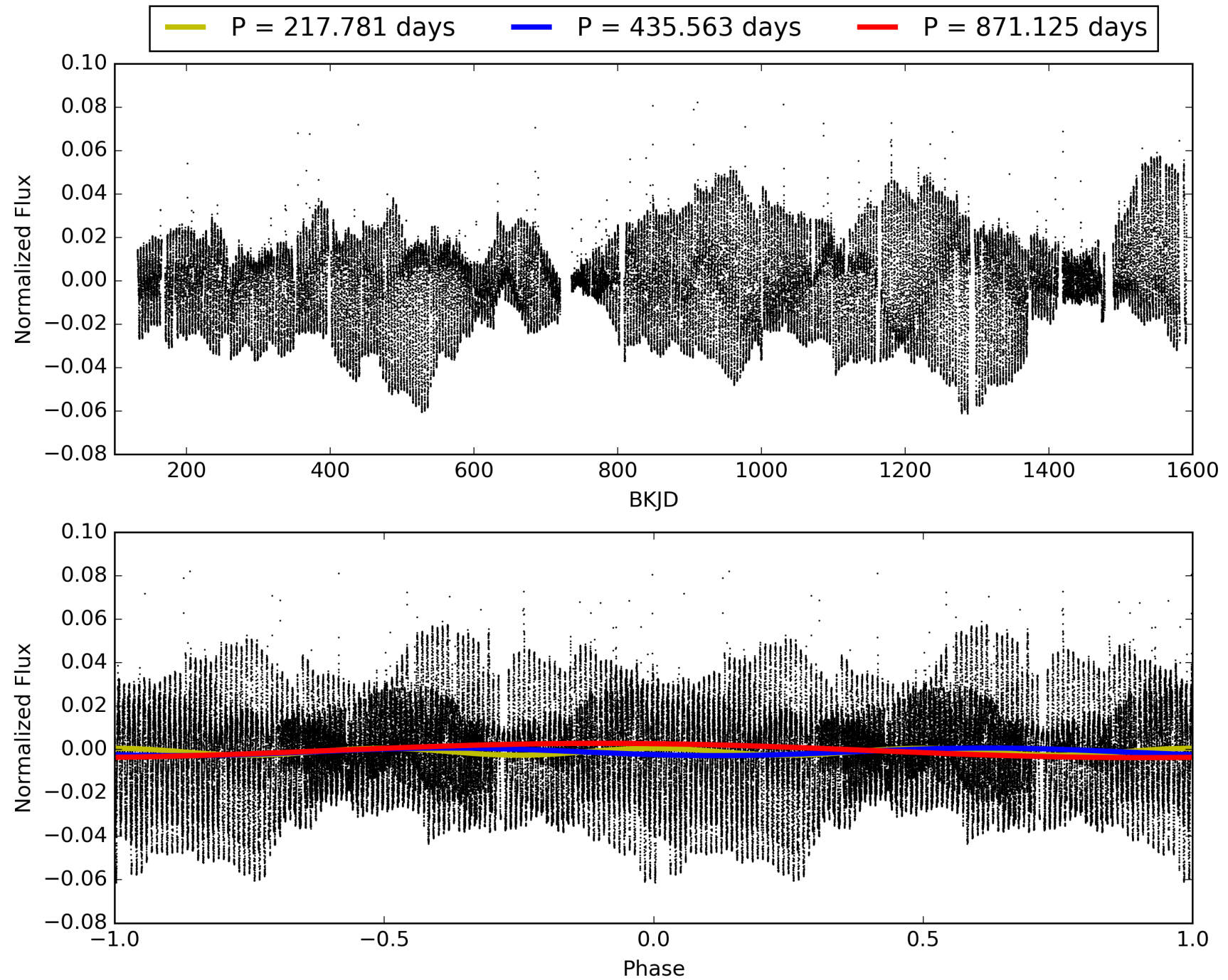
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:47:35 Z

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

TCE 006846570-07, PDC Light Curves

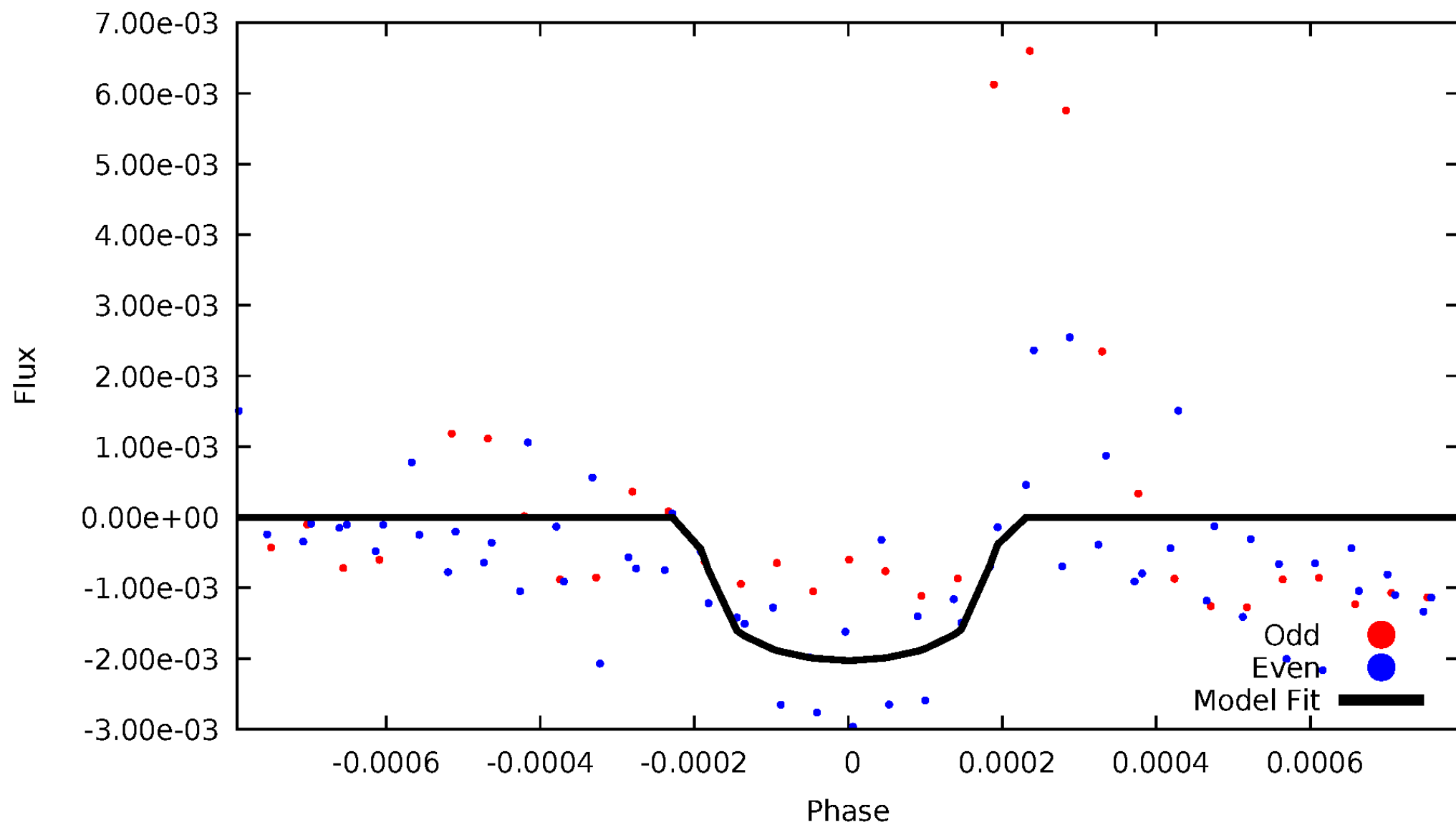


TCE 006846570-07



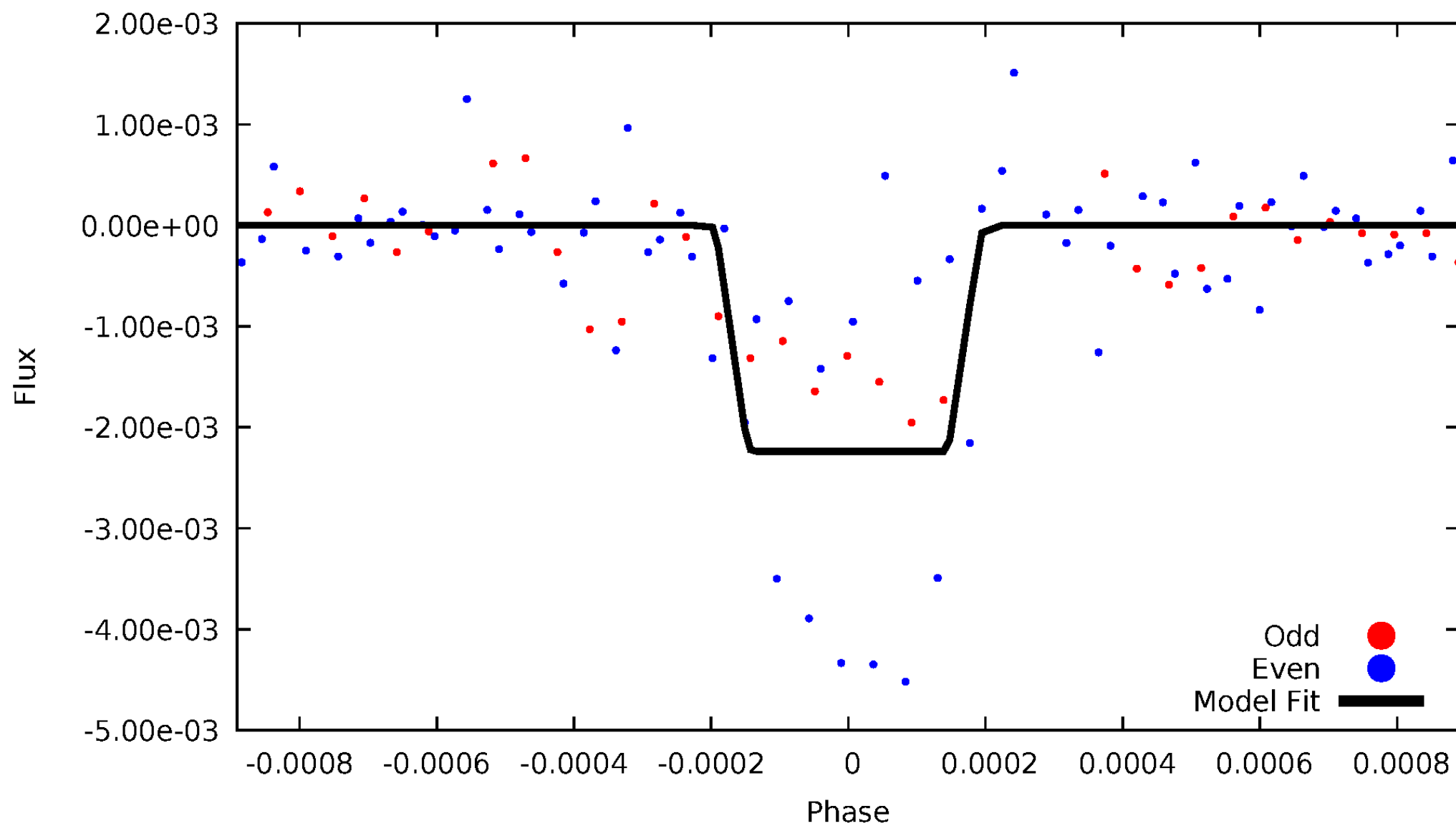
DV Odd/Even

TCE 006846570-07



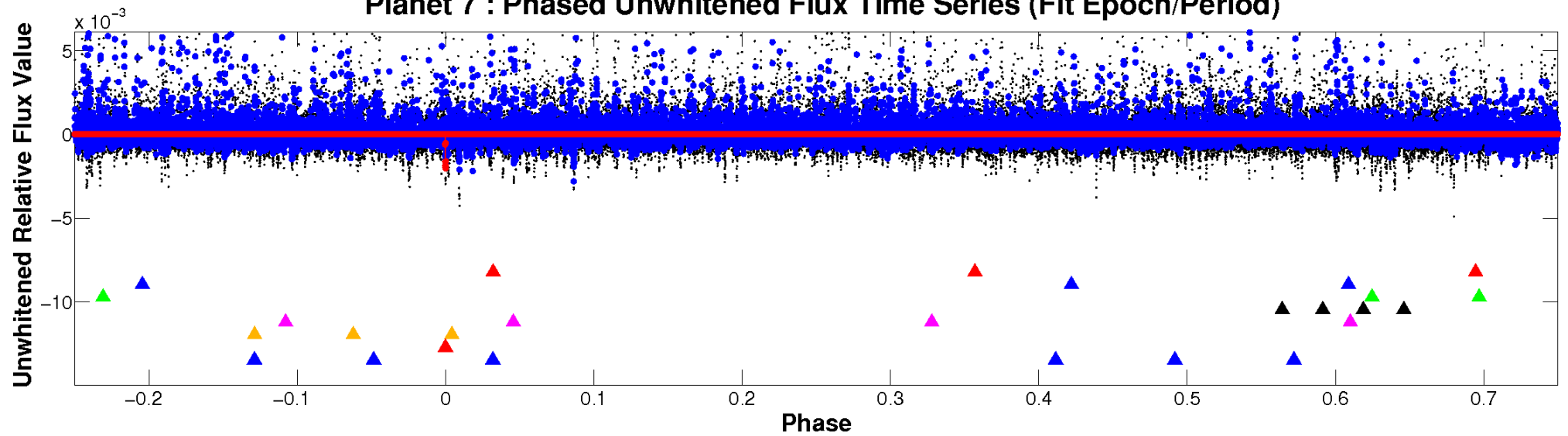
ALT Odd/Even

TCE 006846570-07

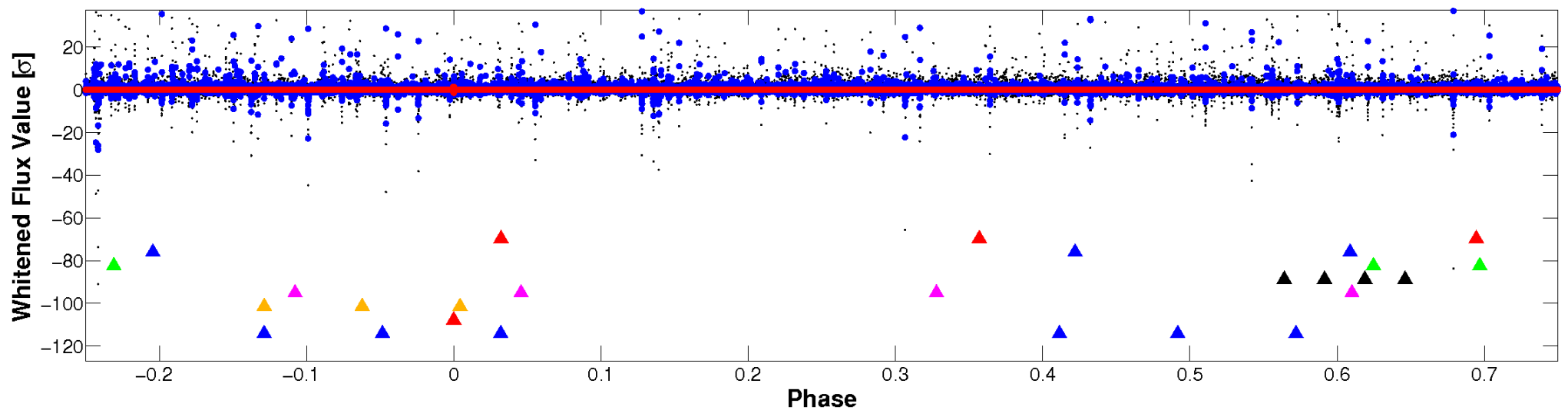


Non-Whitened Vs. Whitened Light Curve

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

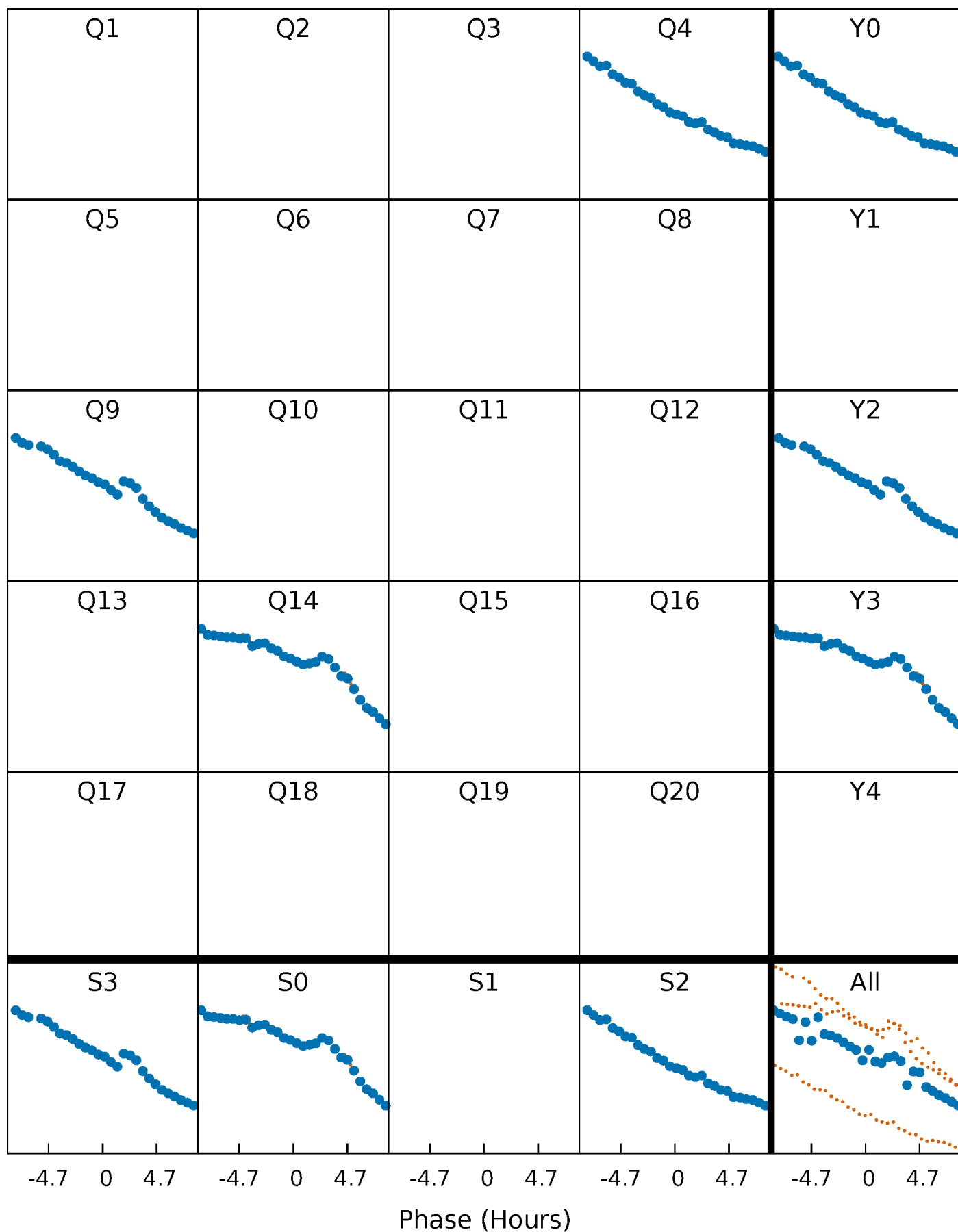


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



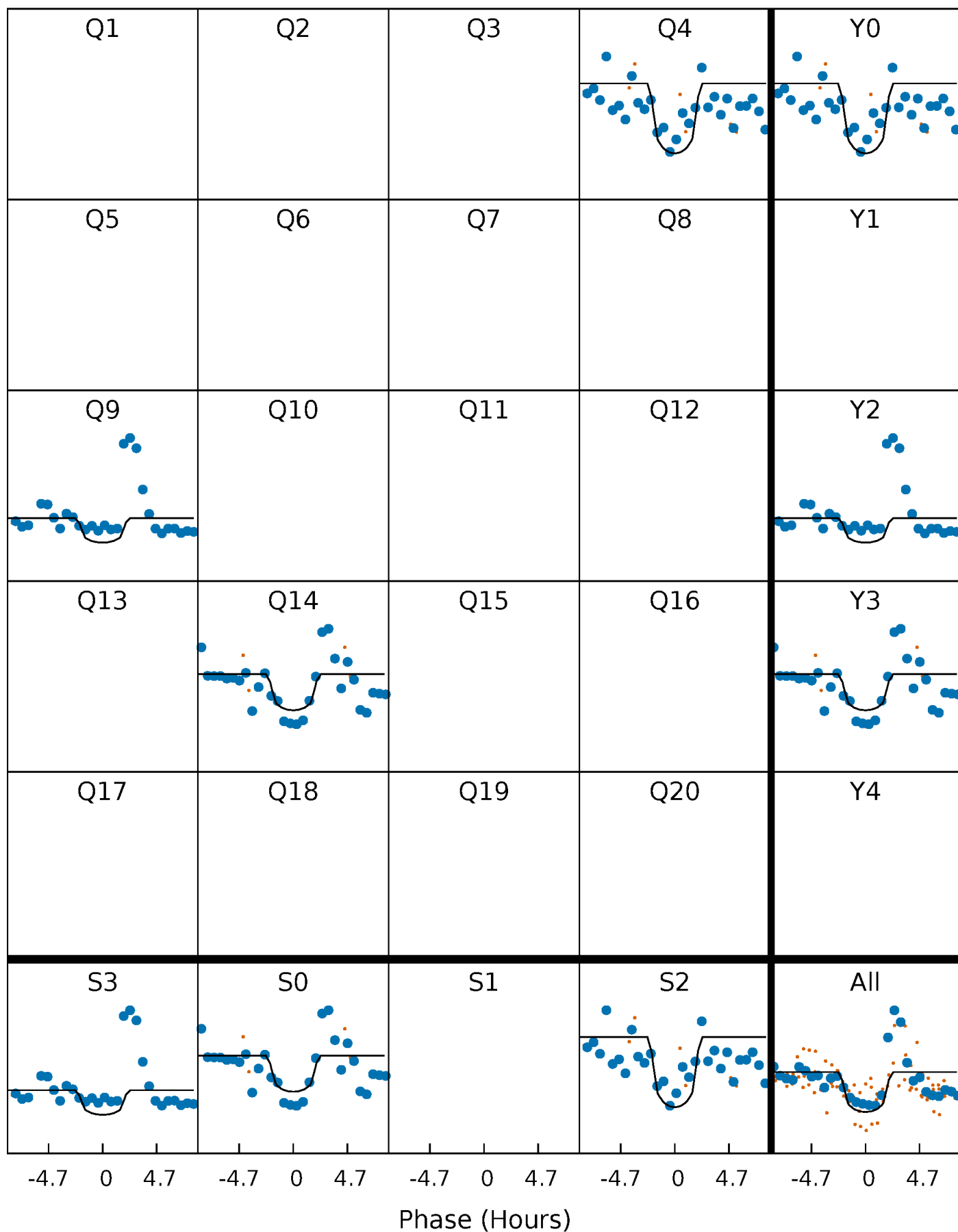
PDC Quarter-Phased Transit Curves

TCE 006846570-07 P=435.562645 Days $T_0=414.230478$ (BKJD)



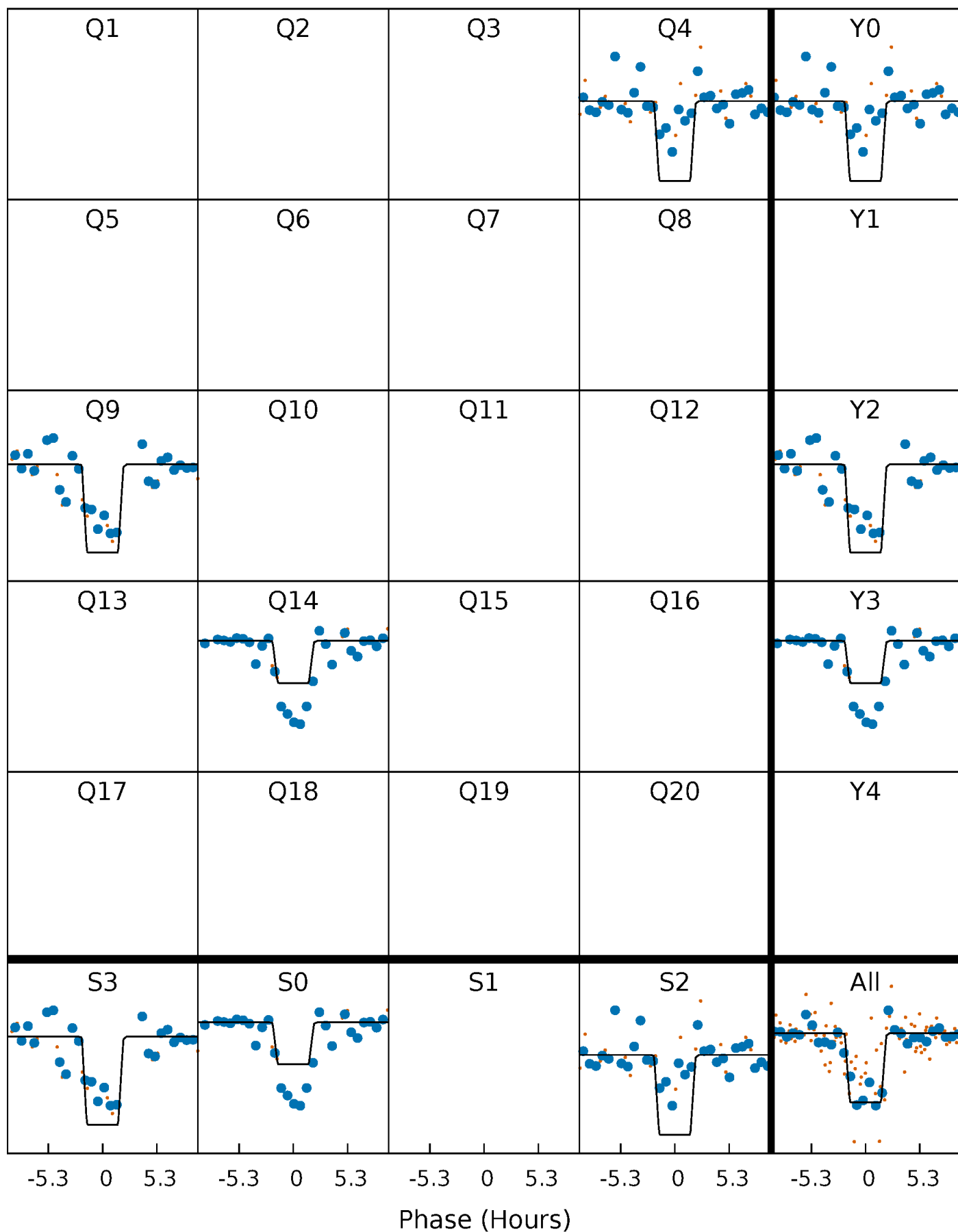
DV Quarter-Phased Transit Curves

TCE 006846570-07 $P=435.562645$ Days $T_0=414.230478$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

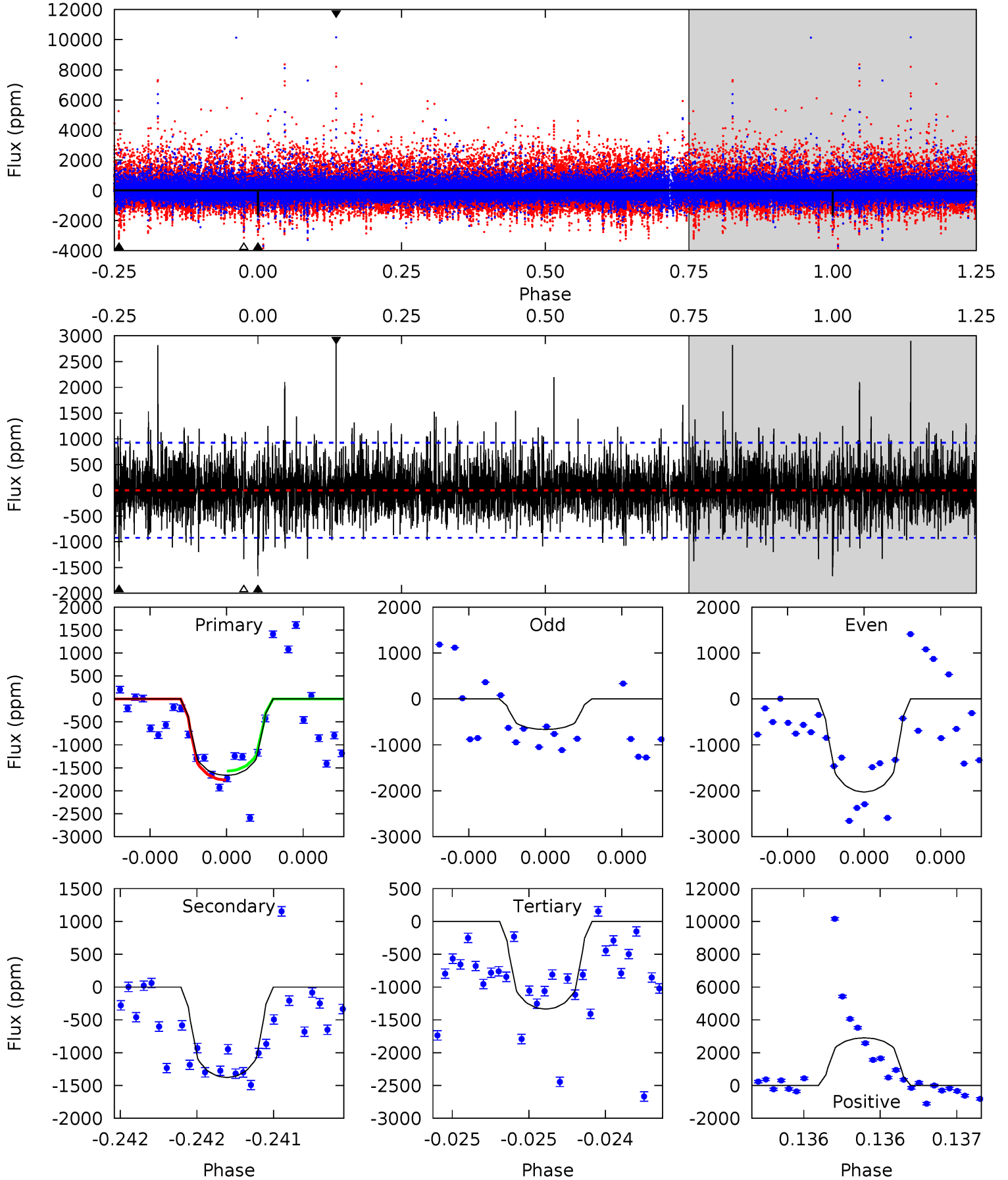
TCE 006846570-07 P=435.568576 Days $T_0=414.225799$ (BKJD)



DV Model-Shift Uniqueness Test

006846570-07, P = 435.562645 Days, E = 414.230478 Days

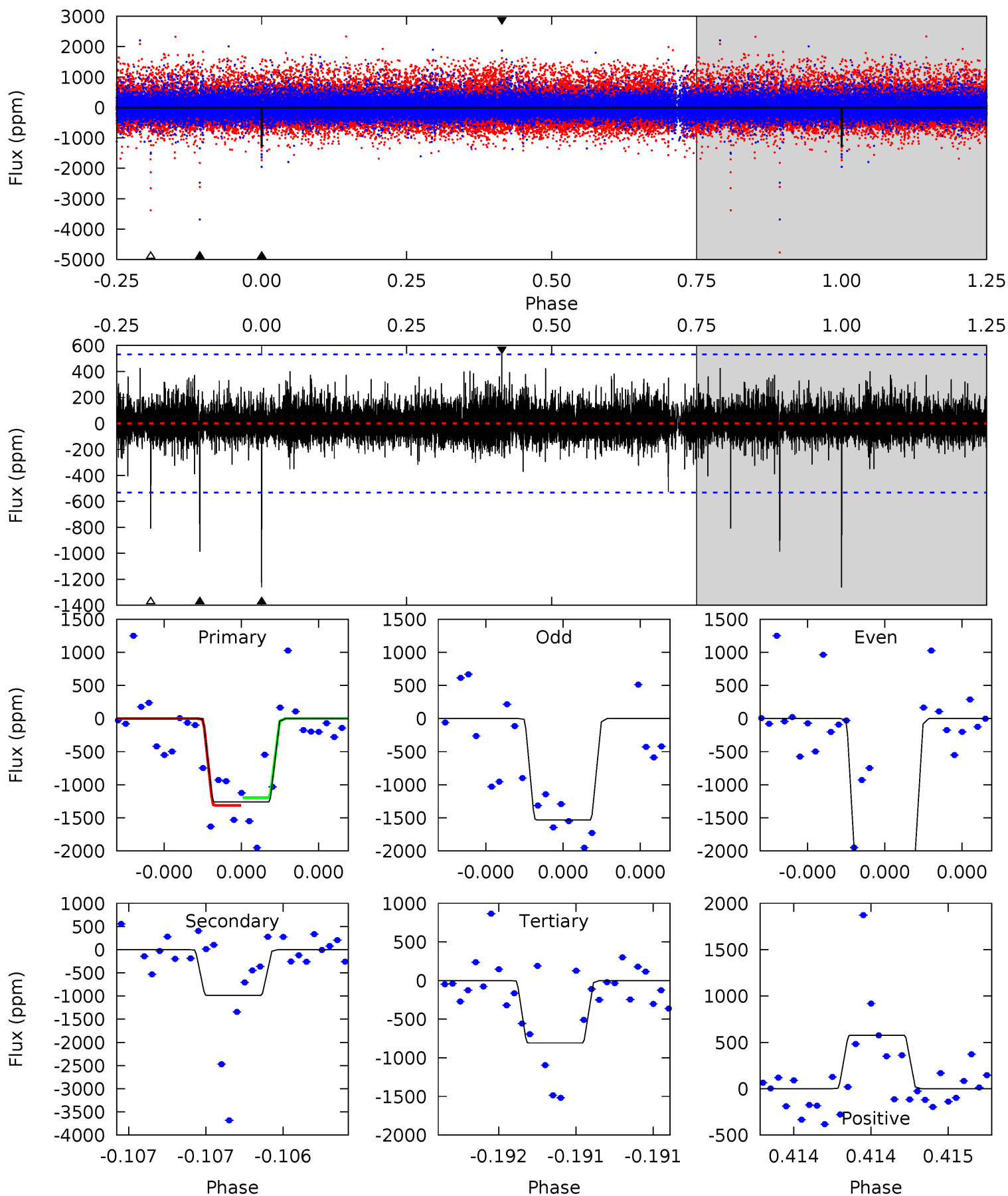
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	8.39	8.13	17.7	5.62	3.55	2.17	2.02	-7.52	0.25	-9.28	2.62	1.10	0.64	0.60



Alt Model-Shift Uniqueness Test

006846570-07, P = 435.568576 Days, E = 414.225799 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	10.4	8.53	6.09	5.62	3.55	0.91	4.79	7.23	1.88	4.33	5.02	1.31	0.31	0.62



Stellar Parameters For KIC 006846570

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3833^{+50}_{-50}	$4.708^{+0.030}_{-0.014}$	$0.000^{+0.100}_{-0.100}$	$0.541^{+0.019}_{-0.026}$	$0.545^{+0.025}_{-0.020}$	$4.853^{+0.567}_{-0.303}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+12%/-6%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006846570-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1378 ± 164	$8.46^{+8.25}_{-5.81}$	181^{+3}_{-3}	2584^{+1013}_{-380}	9036^{+86698}_{-6694}
Alt.	-987 ± 95	$8.57^{+9.36}_{-5.81}$	181^{+3}_{-3}	2465^{+896}_{-381}	6168^{+54518}_{-4766}

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

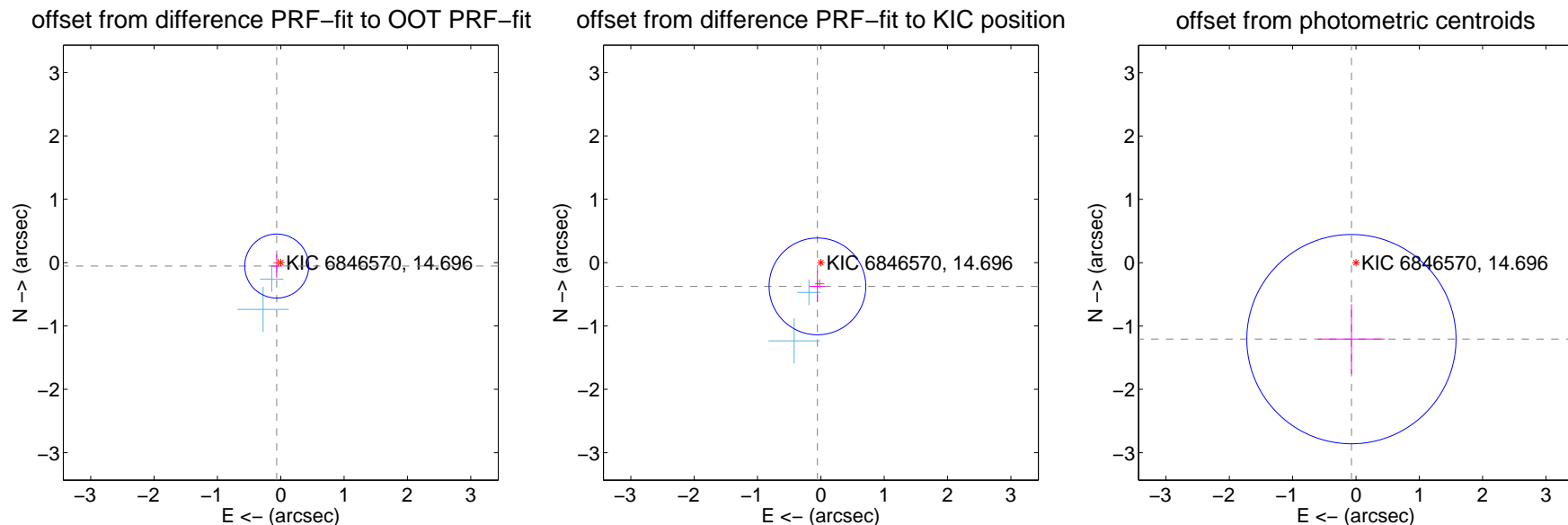
DV Centroid Data

Supplemental centroid analysis for 006846570-07. Kepler magnitude: 14.70. Transit SNR 7.40

There are 2 quarters with good PRF difference image offsets

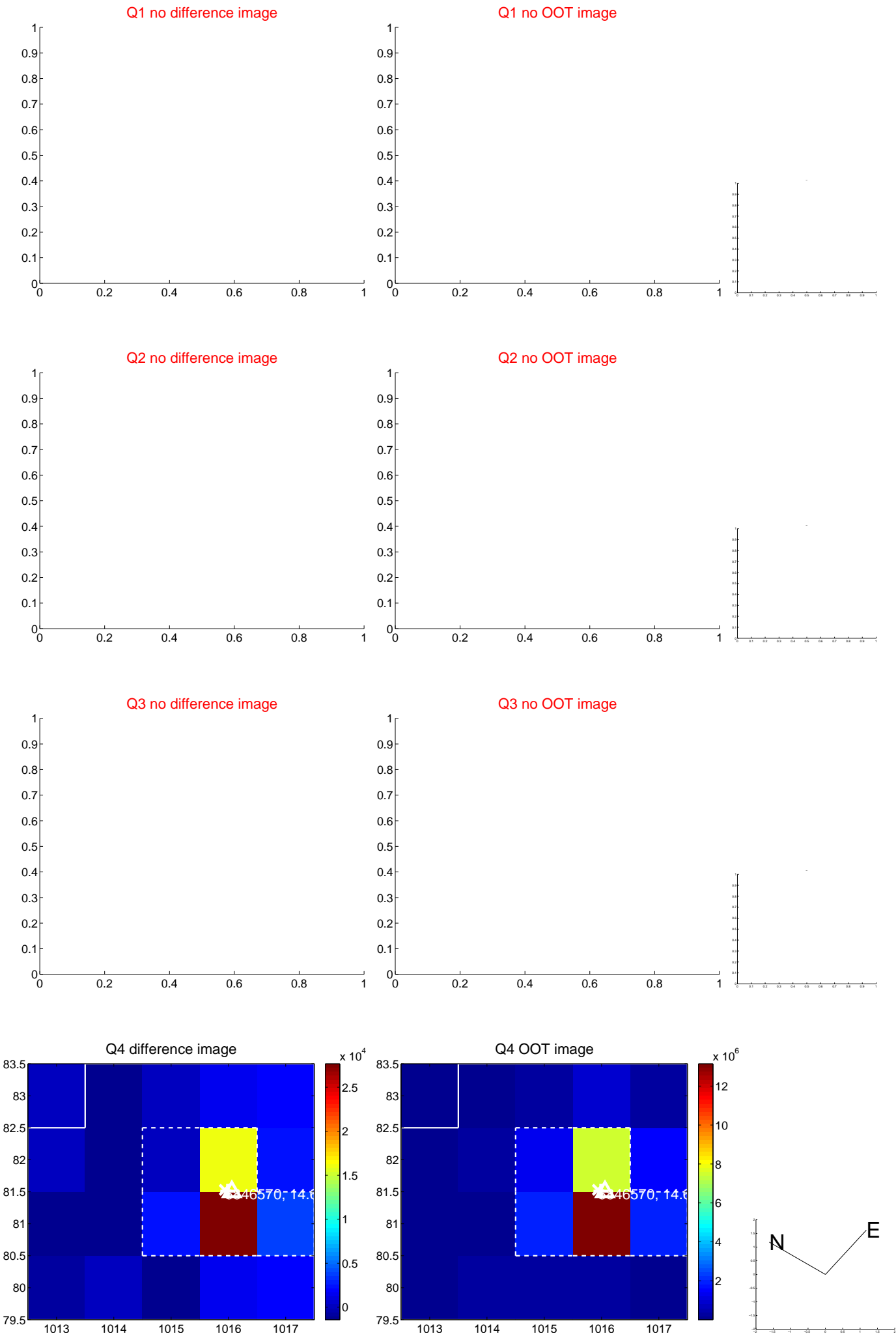
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.084 ± 0.168	0.50	0.064 ± 0.087	-0.055 ± 0.185
PRF-fit source offset from KIC position	0.380 ± 0.255	1.49	0.054 ± 0.112	-0.376 ± 0.245
photometric centroid source offset	1.21 ± 0.55	2.20	0.07 ± 0.53	-1.21 ± 0.55



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.

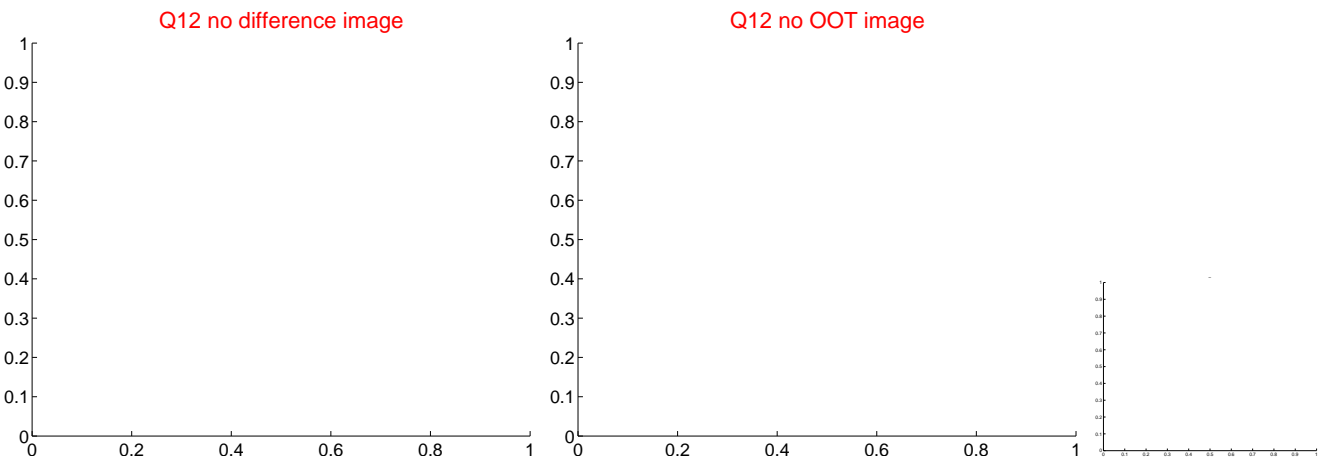
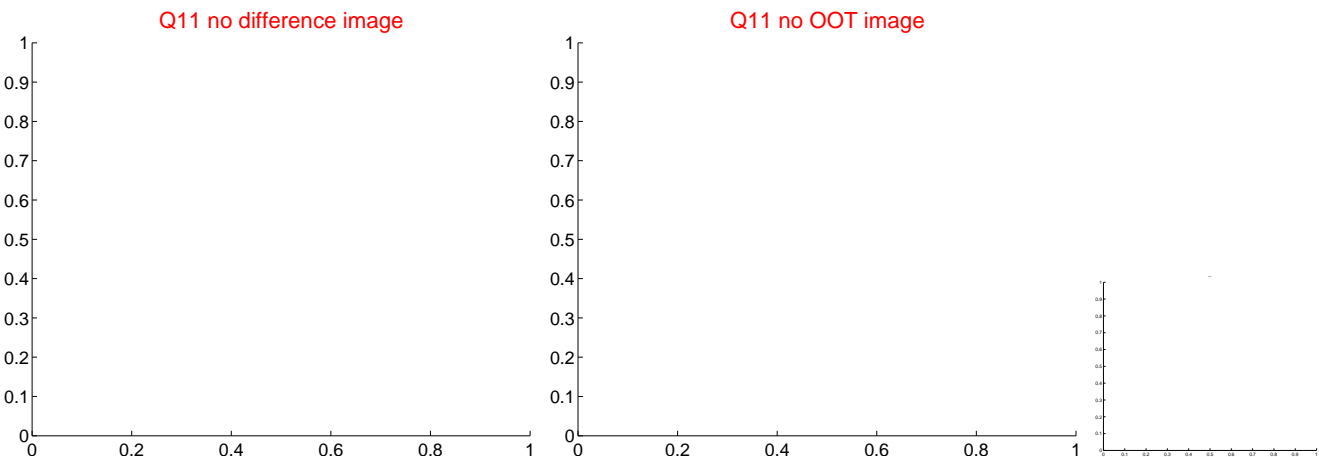
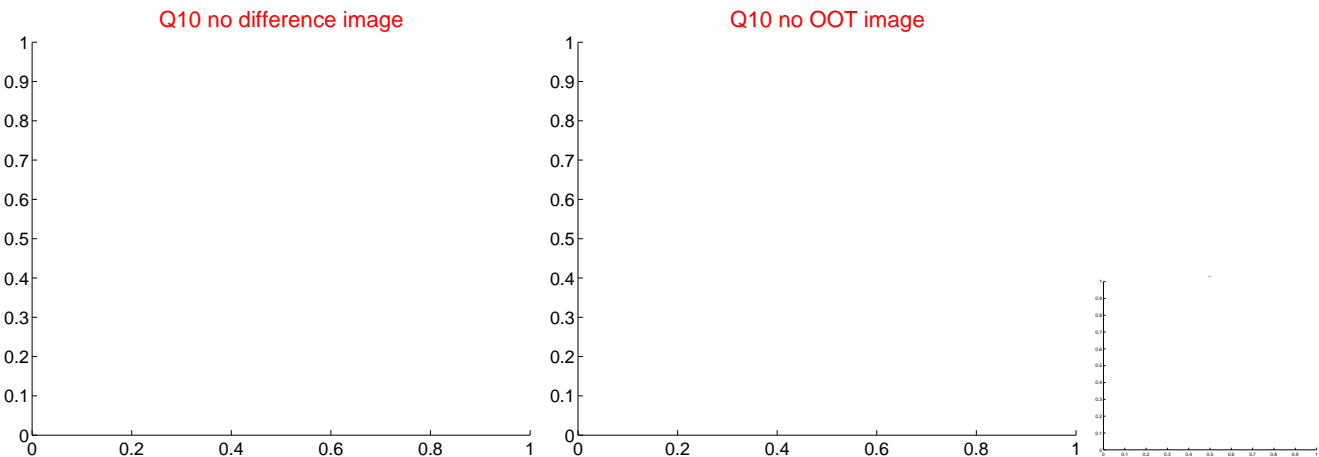
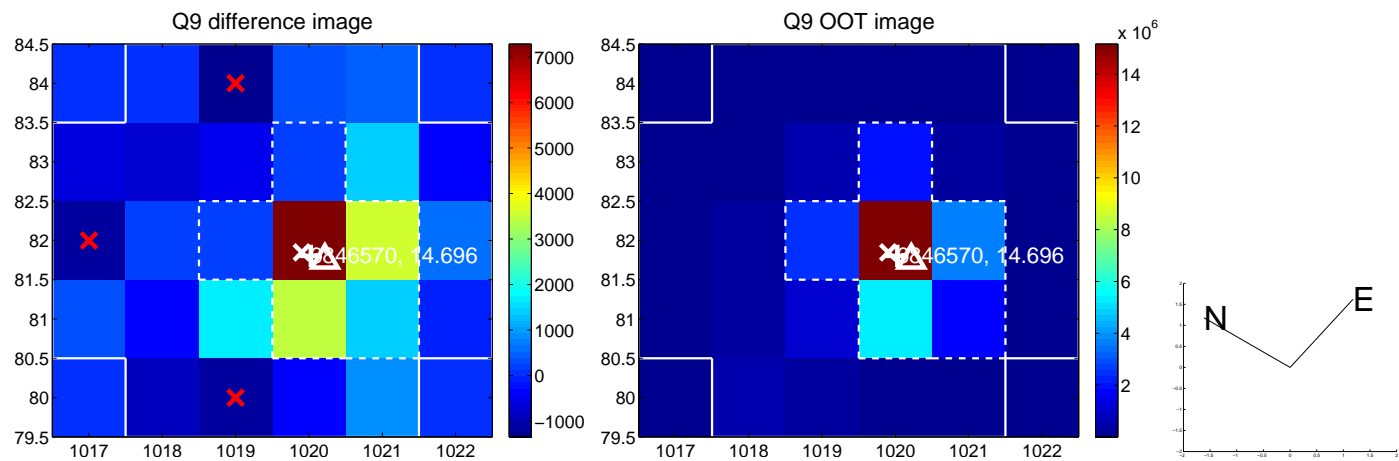
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



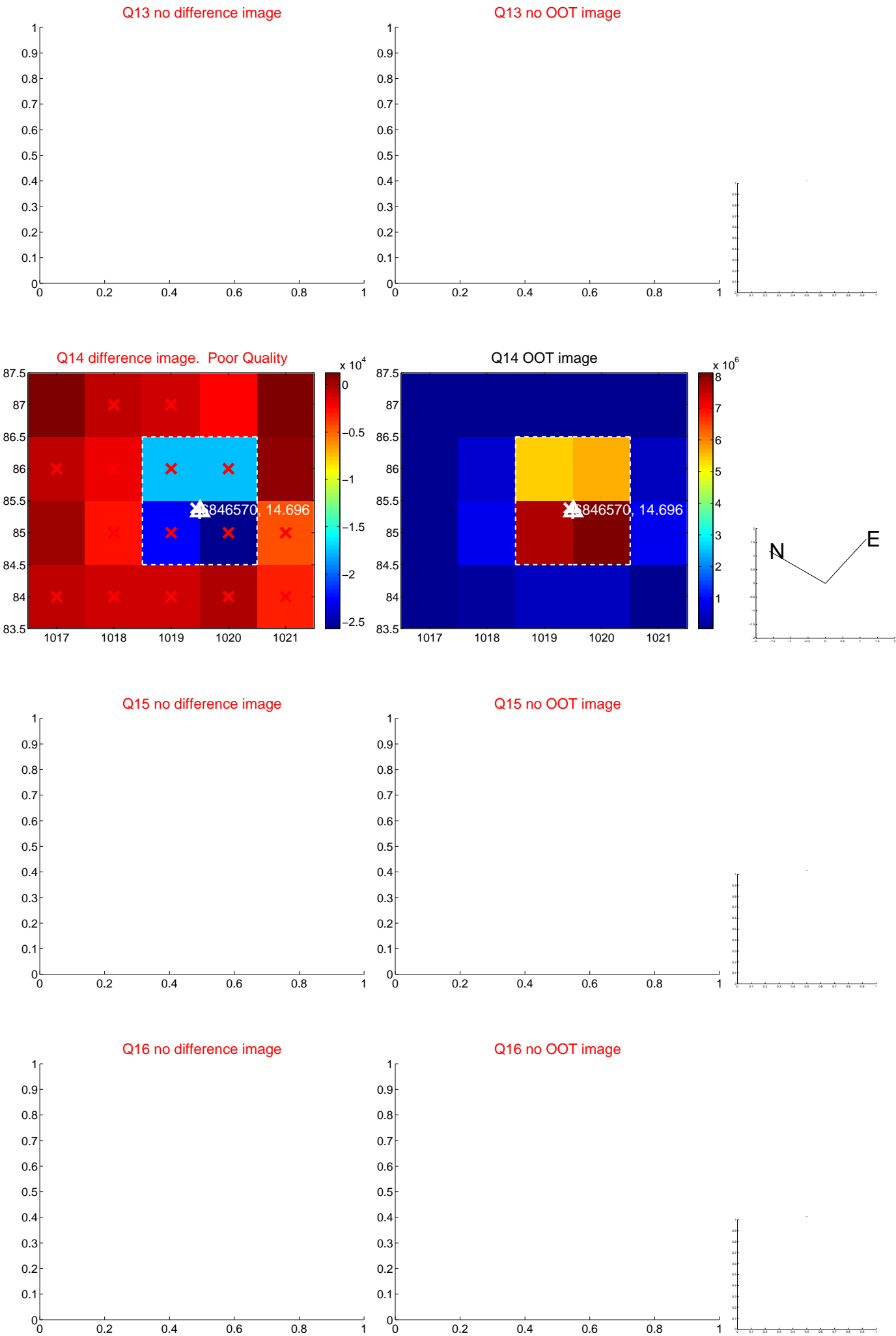
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



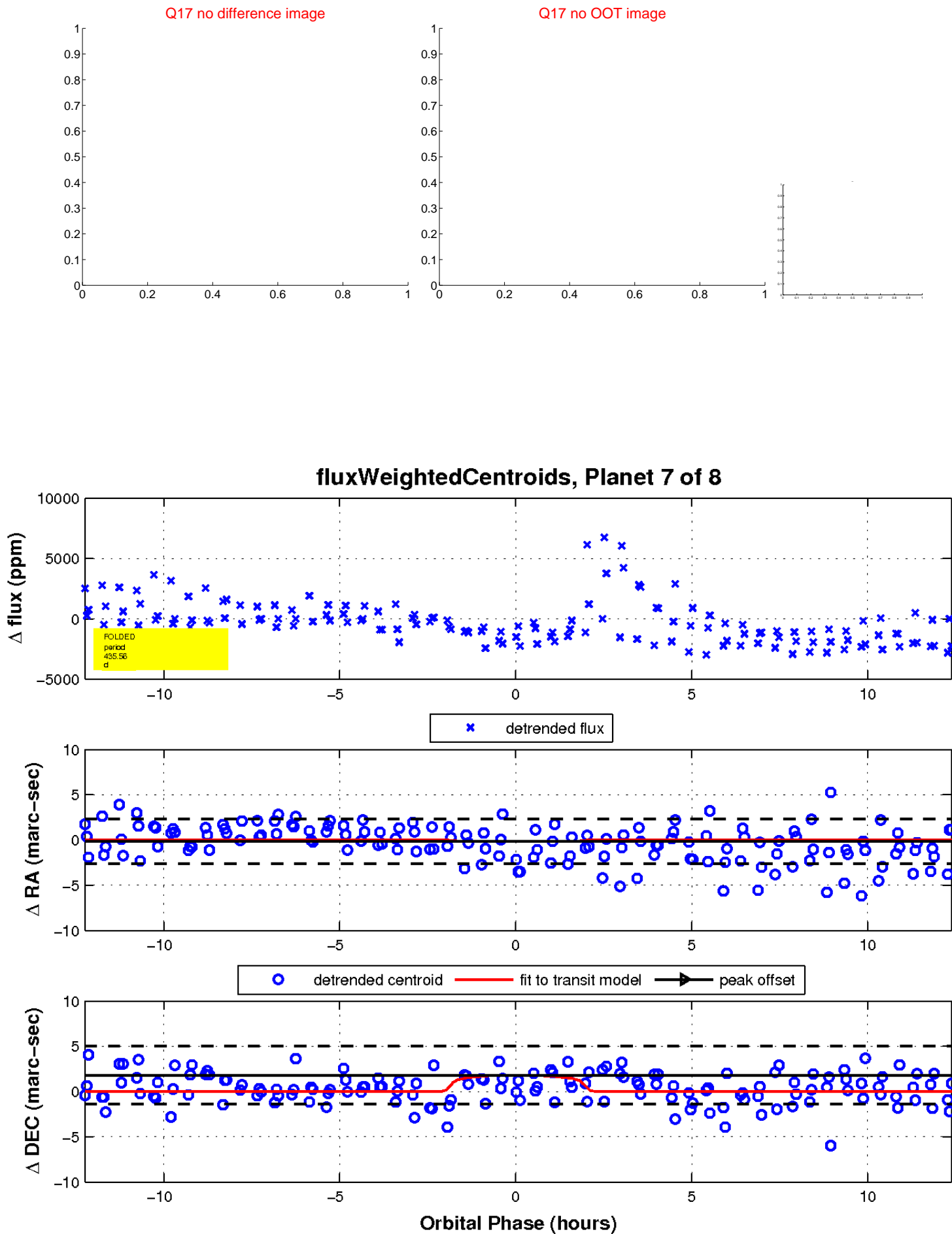
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

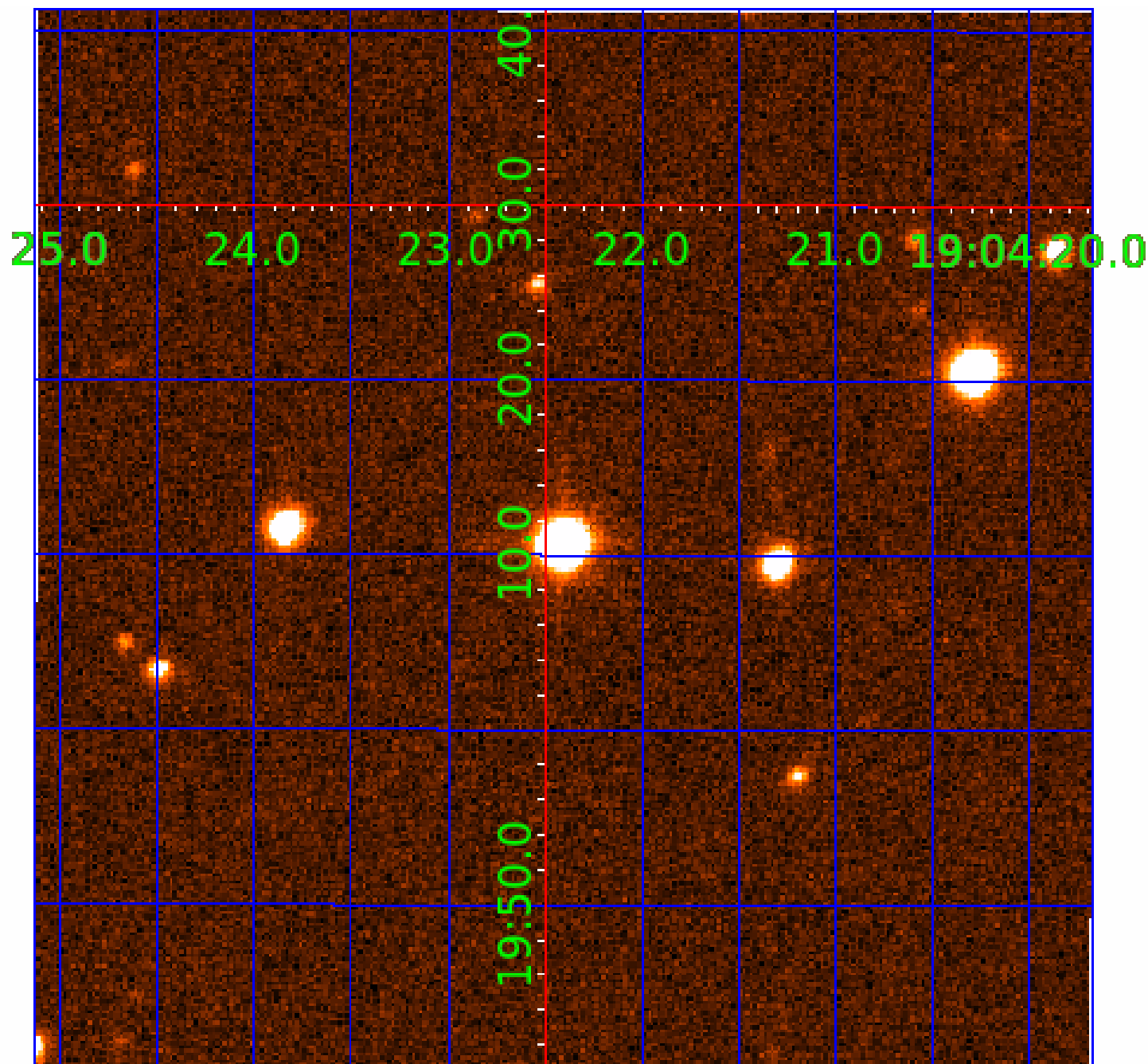


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006846570

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})
006846570-01	OBS	No	582.597917	134.148846	752.0	4.635	17.1	2.8	0.54	3833	1.53	0.05
006846570-02	OBS	No	516.937163	162.474077	703.7	2.644	16.1	2.8	0.54	3833	1.50	0.05
006846570-04	OBS	No	423.651424	260.115103	2126.2	6.872	14.3	7.6	0.54	3833	2.44	0.07
006846570-05	OBS	No	312.660813	367.289563	2033.7	6.413	14.6	6.6	0.54	3833	2.49	0.10
006846570-06	OBS	No	464.525730	358.180980	2198.8	3.611	14.8	8.5	0.54	3833	2.51	0.06
006846570-07	OBS	No	435.562645	414.230478	2025.6	4.147	13.9	7.4	0.54	3833	2.52	0.07
006846570-08	OBS	No	235.278821	358.143013	998.2	6.000	15.6	-1.0	0.54	3833	1.68	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006846570-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006846570-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006846570-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006846570-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006846570-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

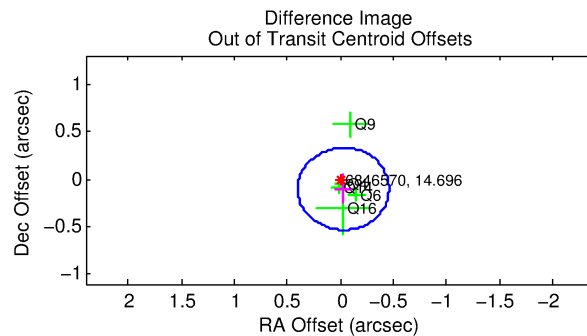
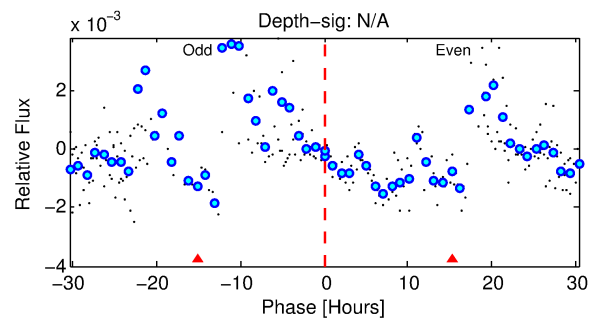
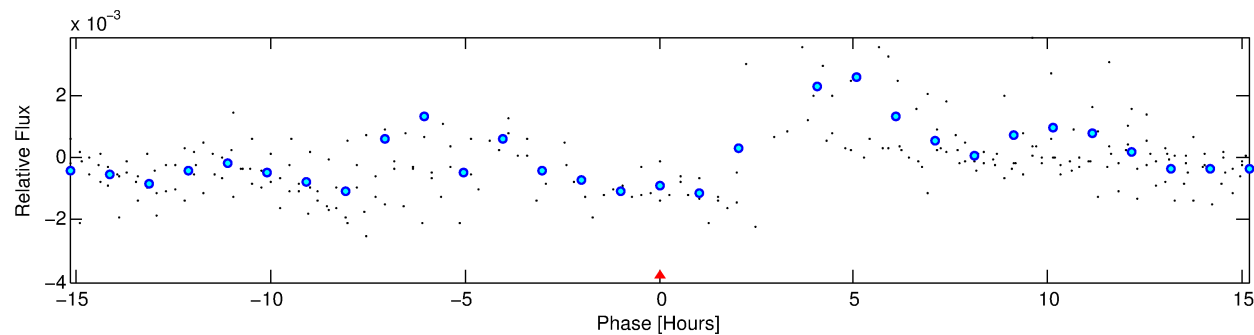
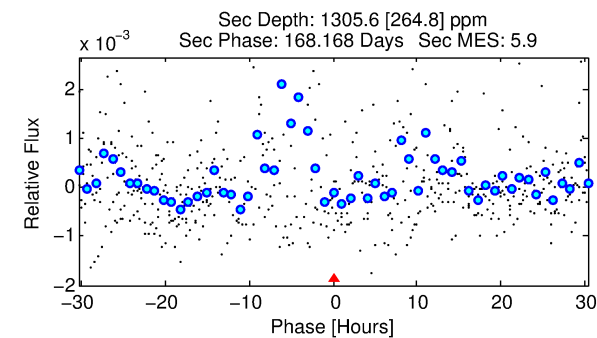
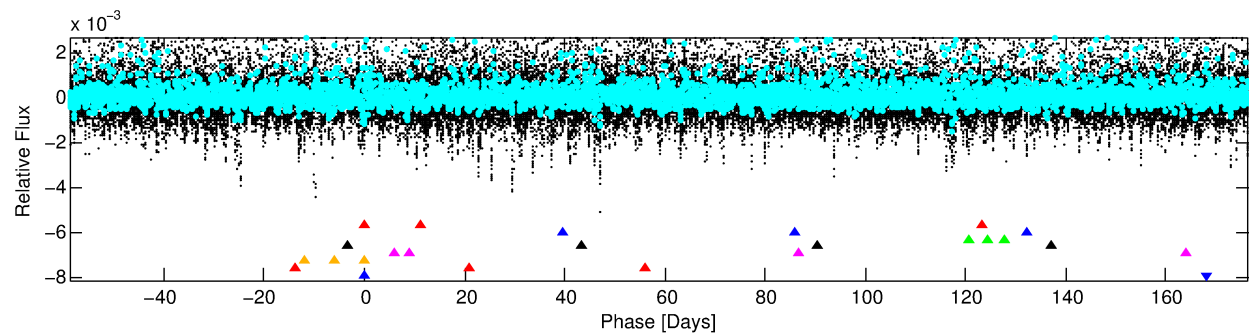
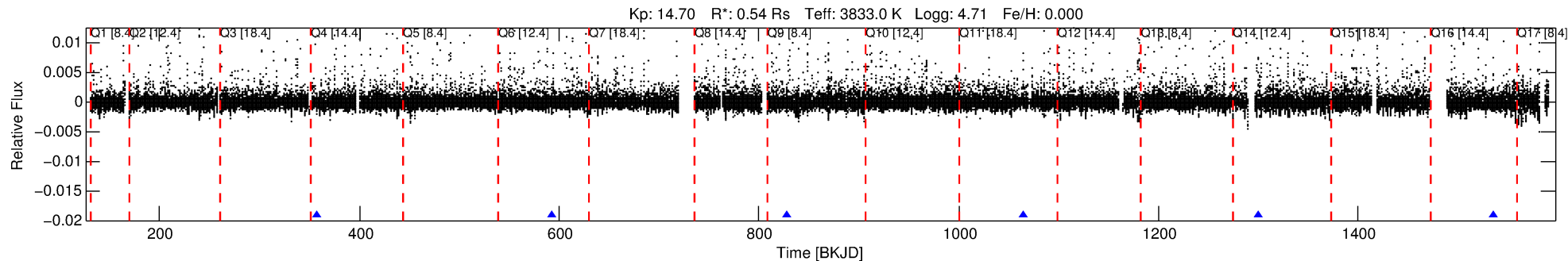
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006846570-08

No Significant Match Found

DV One-Page Summary

KIC: 6846570 Candidate: 8 of 8 Period: 235.279 d



TPS TCE Results:

Period = 235.27882 d
Epoch = 358.1430 BKJD

DV fit results are unavailable

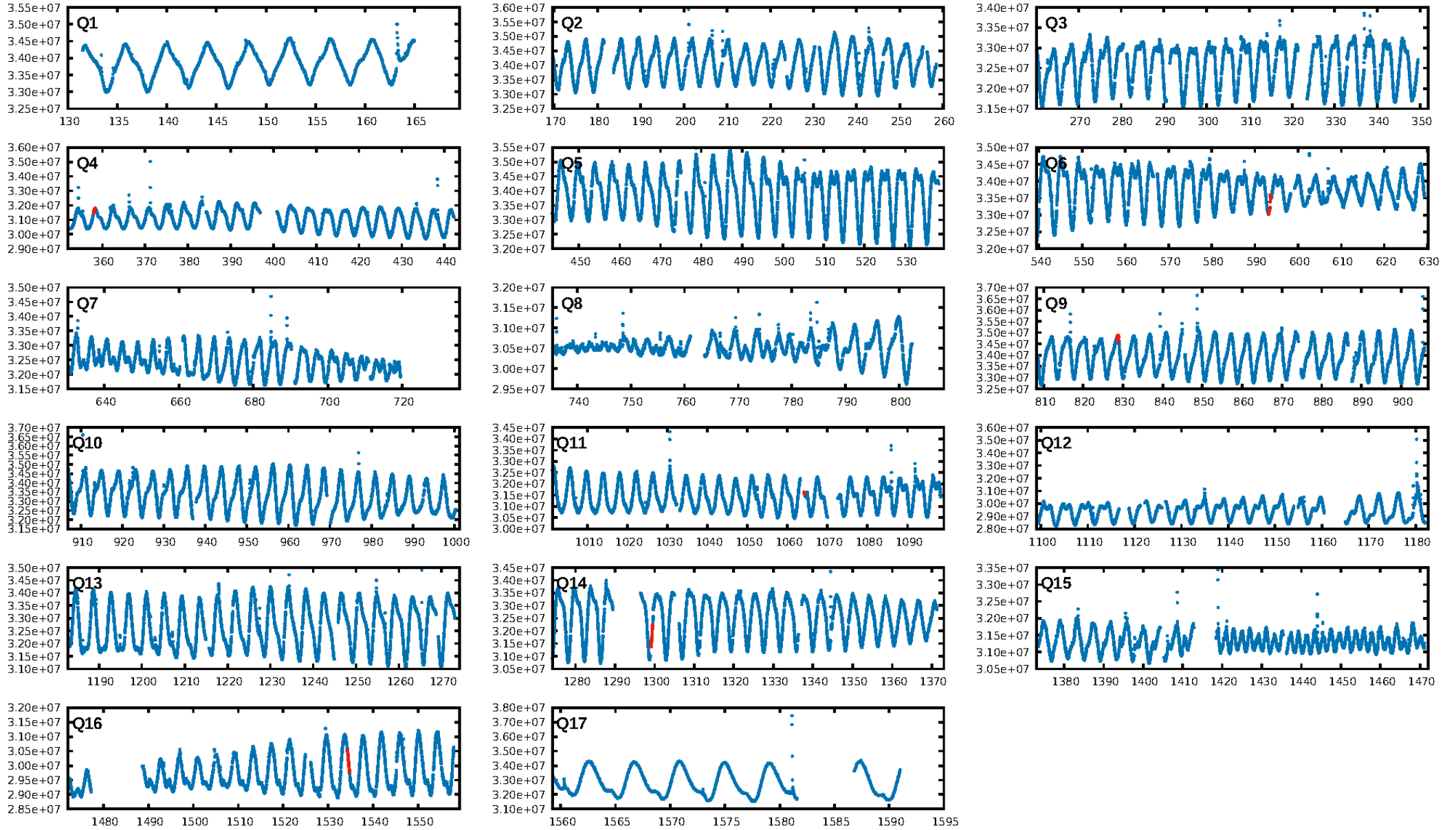
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [211.47 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2947
Centroid-sig: 33.9%
Centroid-so: 0.191 arcsec [0.85 σ]
OotOffset-rm: 0.105 arcsec [0.73 σ]
KicOffset-rm: 0.336 arcsec [2.74 σ]
OotOffset-st: 2/0/2/1 [5]
KicOffset-st: 2/0/2/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.60 [3/5]

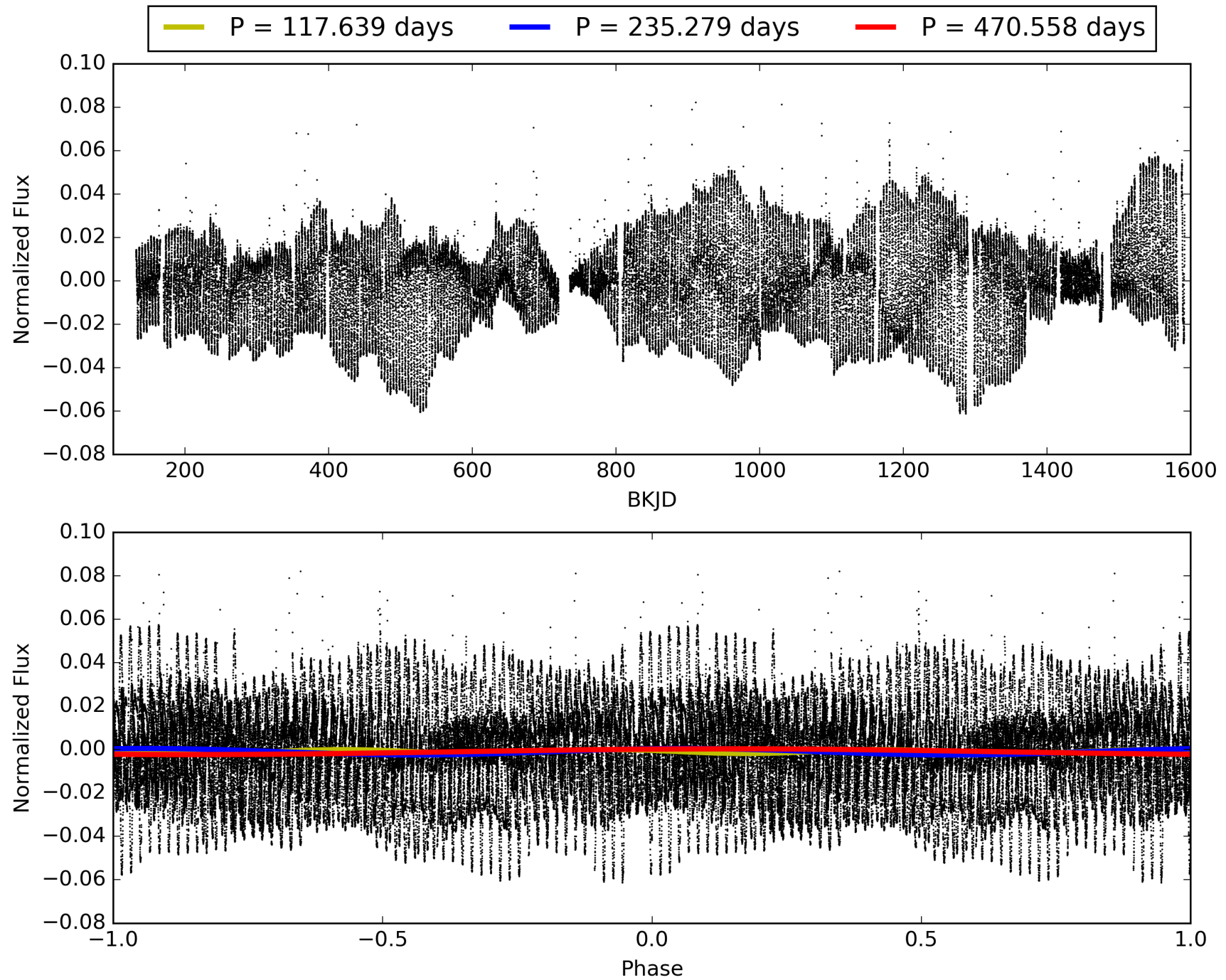
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:47:45 Z

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

TCE 006846570-08, PDC Light Curves

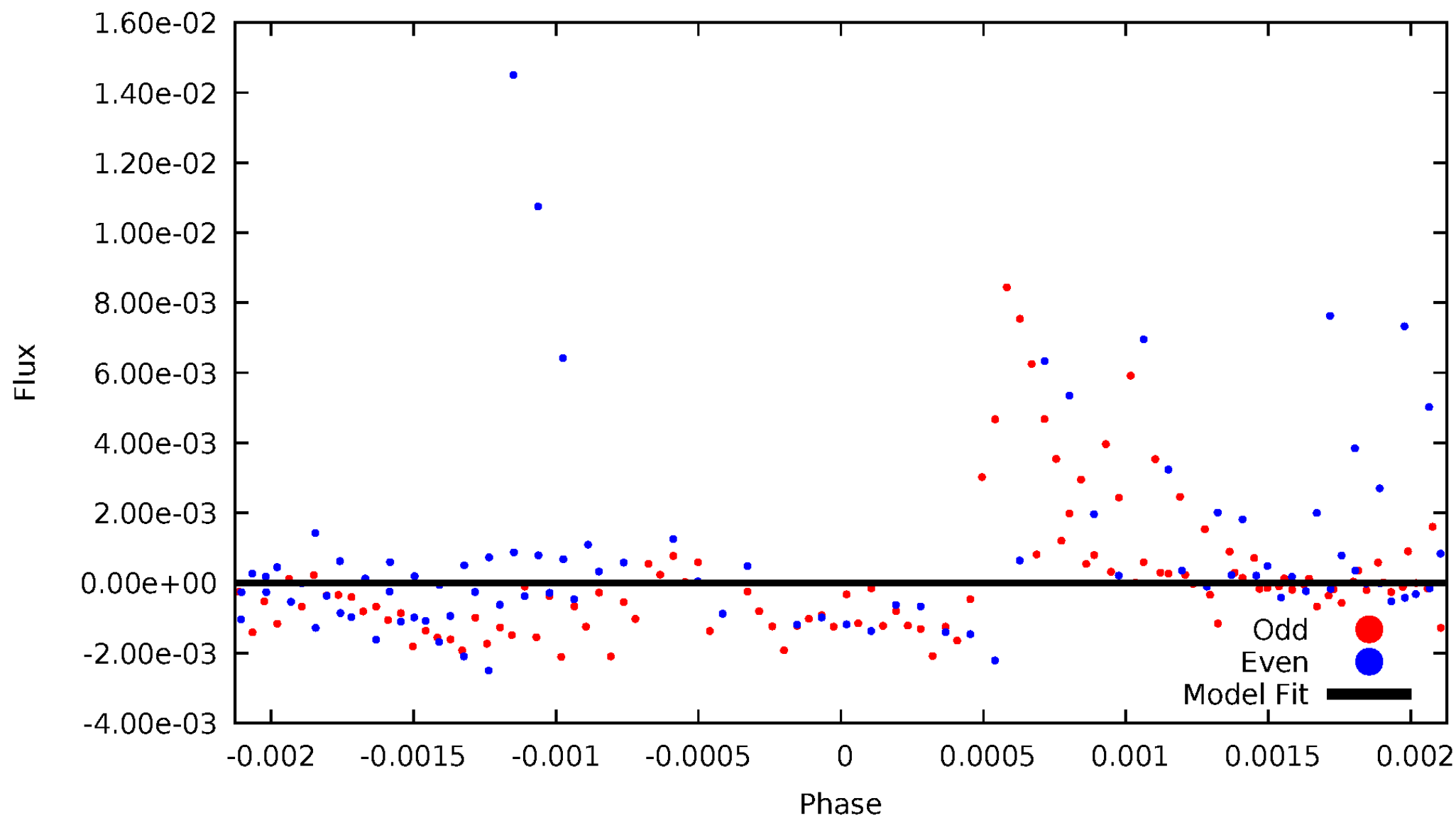


TCE 006846570-08



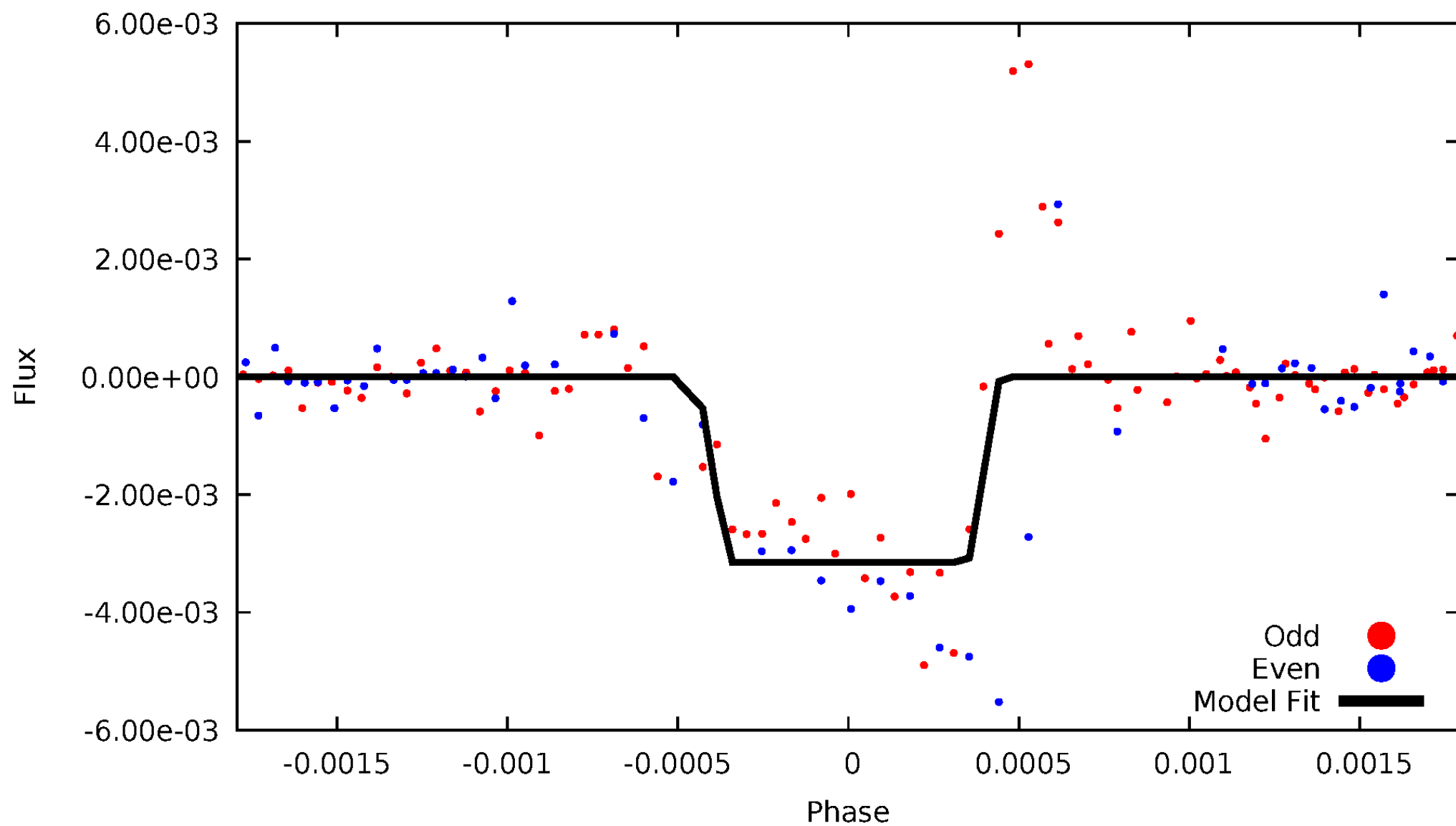
DV Odd/Even

TCE 006846570-08



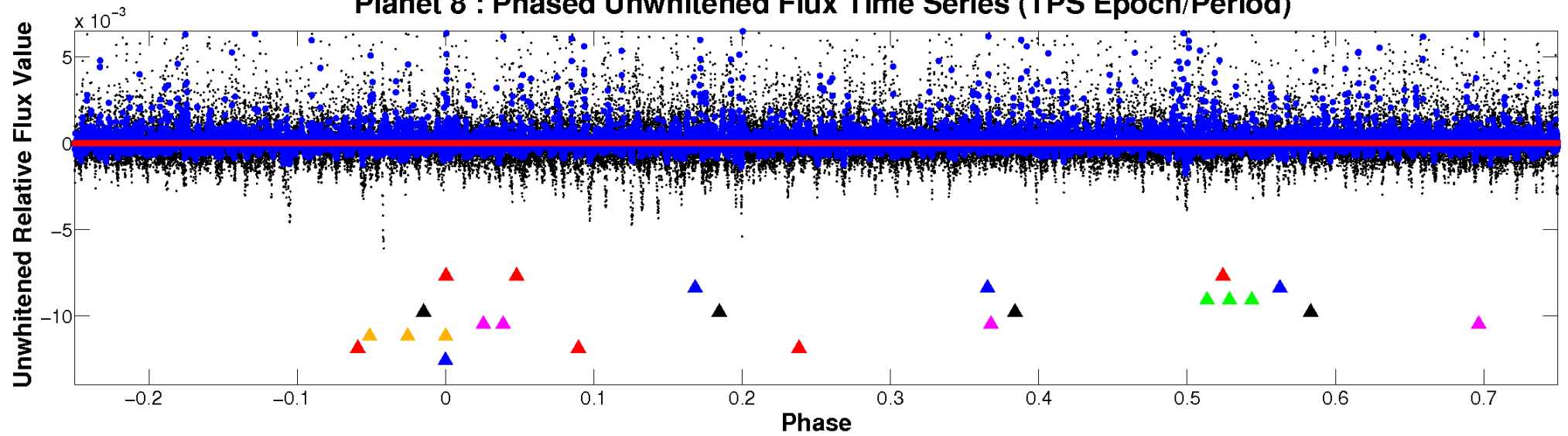
ALT Odd/Even

TCE 006846570-08

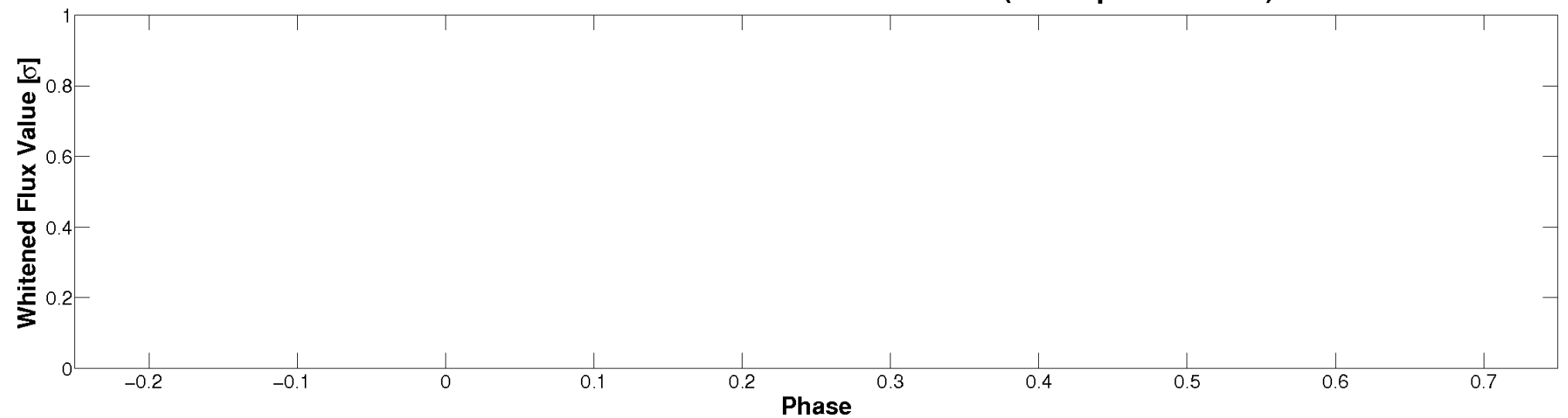


Non-Whitened Vs. Whitened Light Curve

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

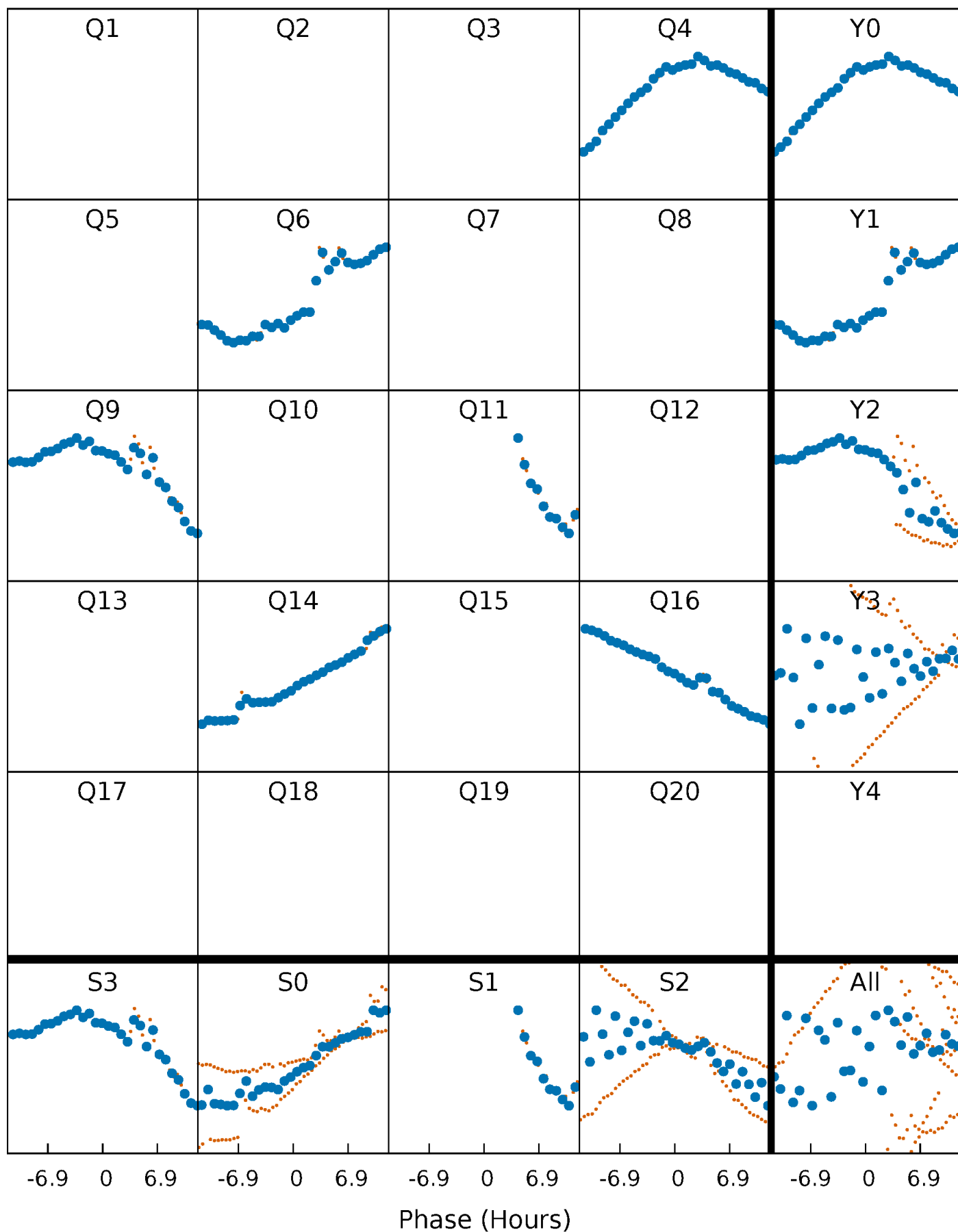


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



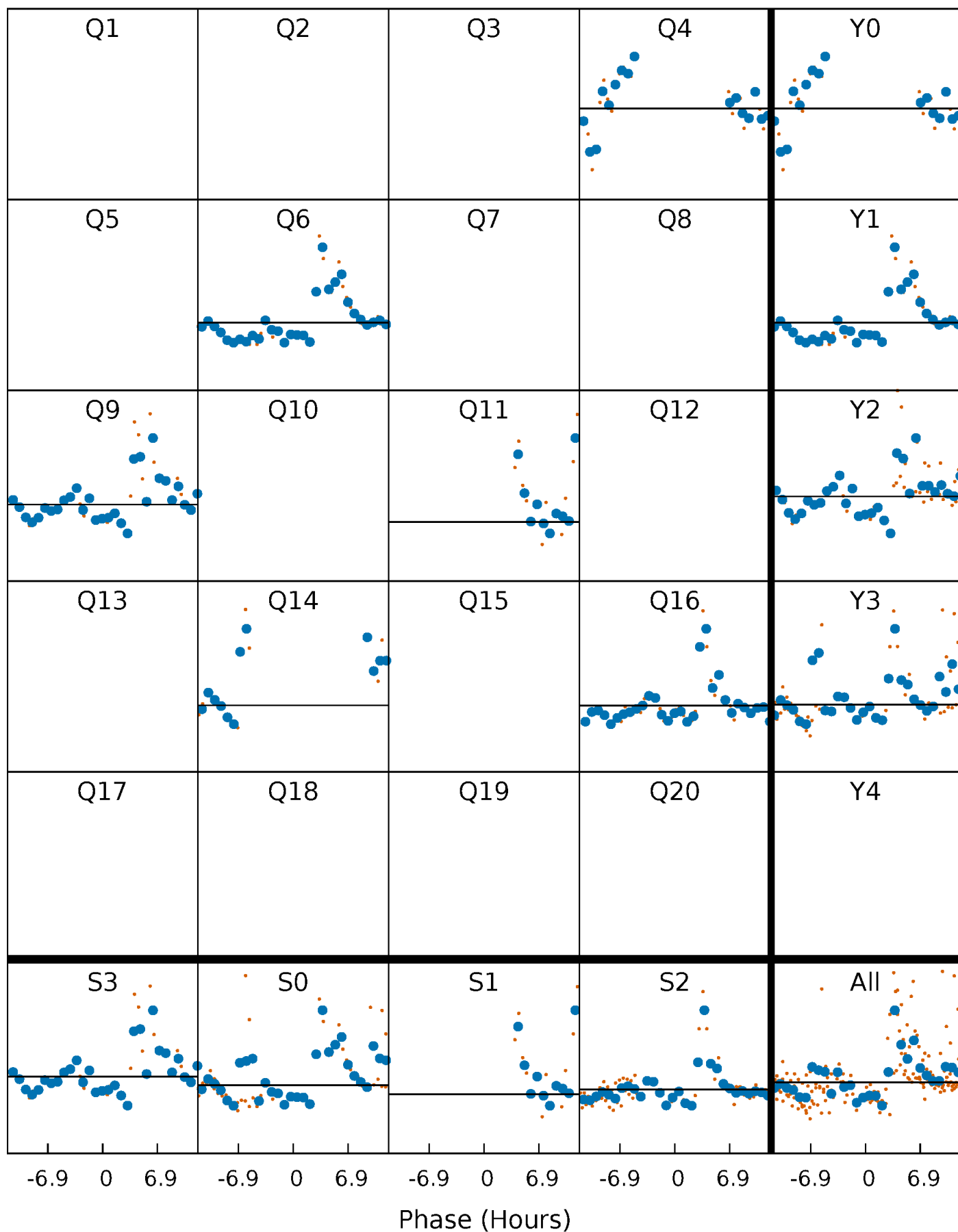
PDC Quarter-Phased Transit Curves

TCE 006846570-08 P=235.278821 Days $T_0=358.143013$ (BKJD)



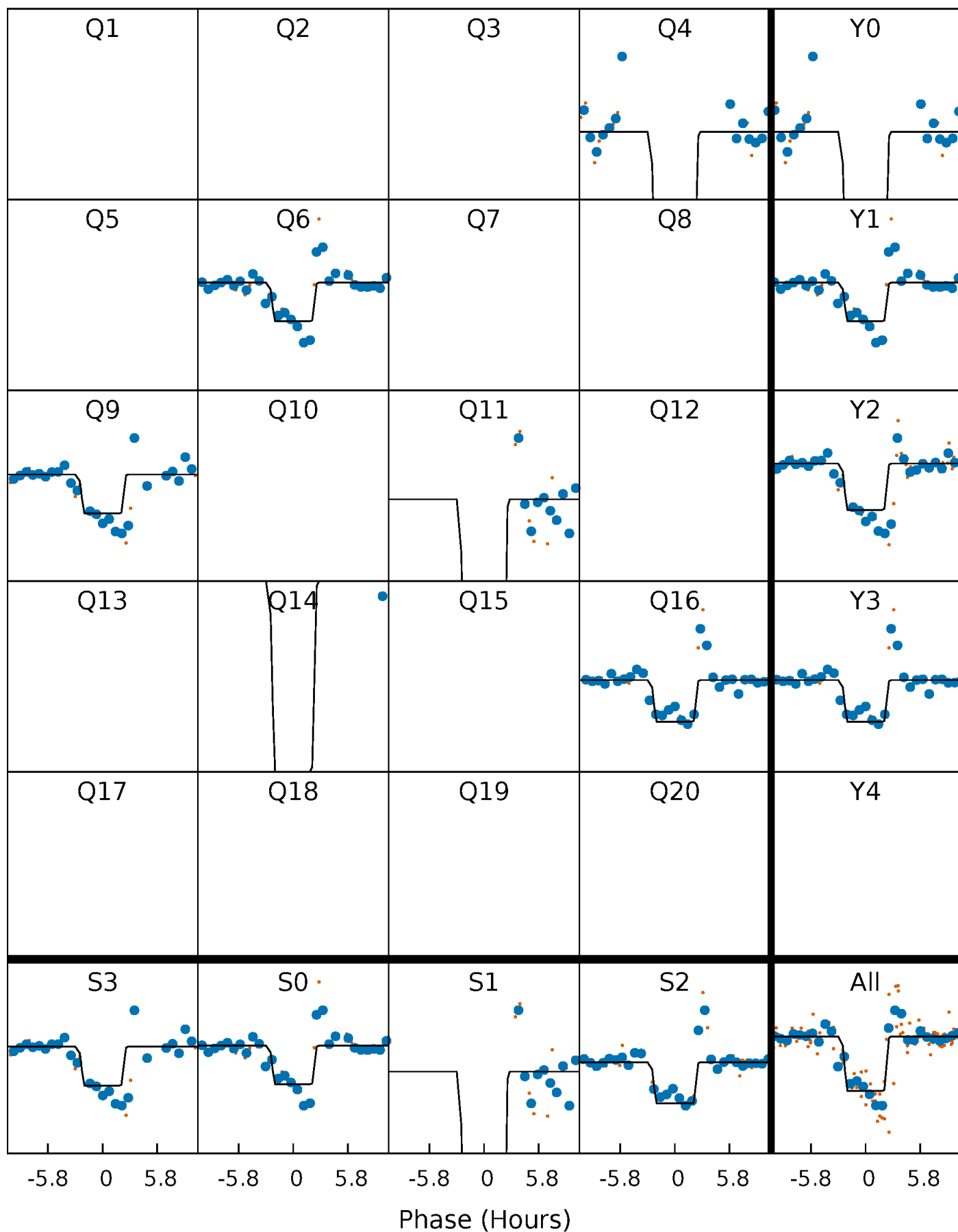
DV Quarter-Phased Transit Curves

TCE 006846570-08 P=235.278821 Days $T_0=358.143013$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

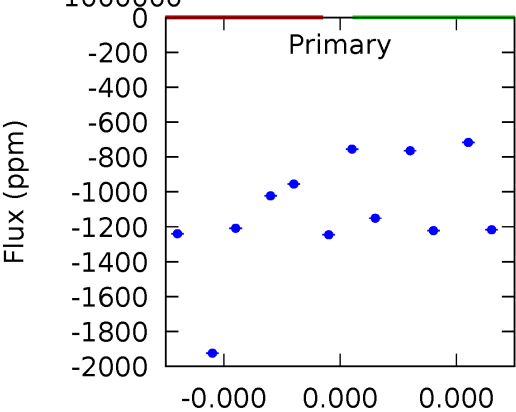
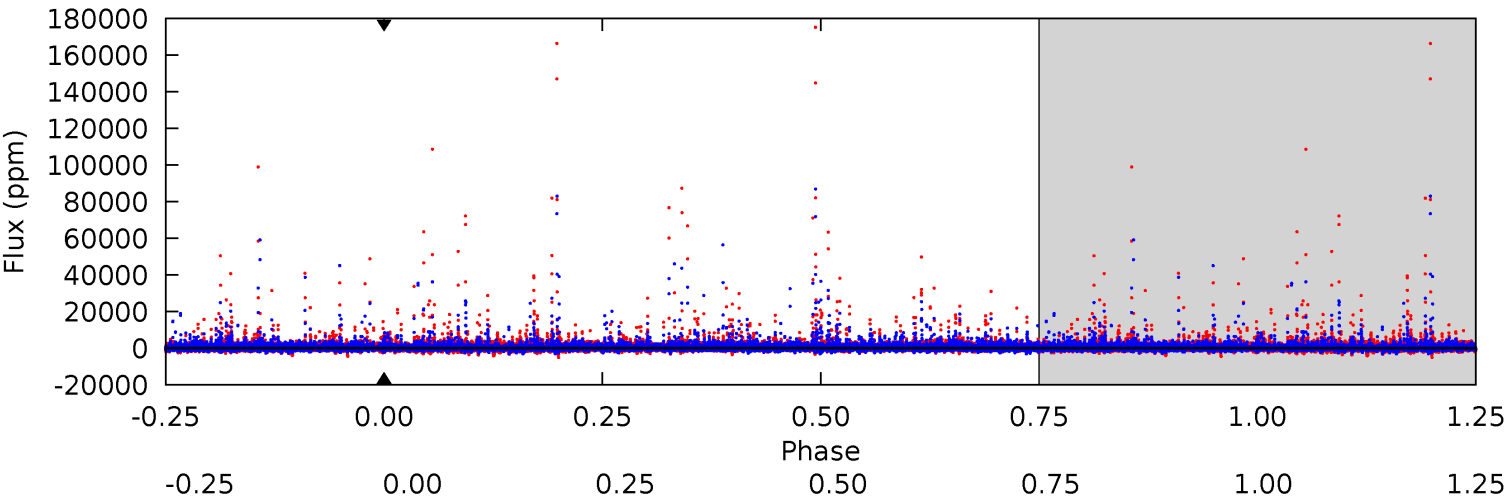
TCE 006846570-08 $P=235.278821$ Days $T_0=358.166340$ (BKJD)



DV Model-Shift Uniqueness Test

006846570-08, P = 235.278821 Days, E = 122.864192 Days

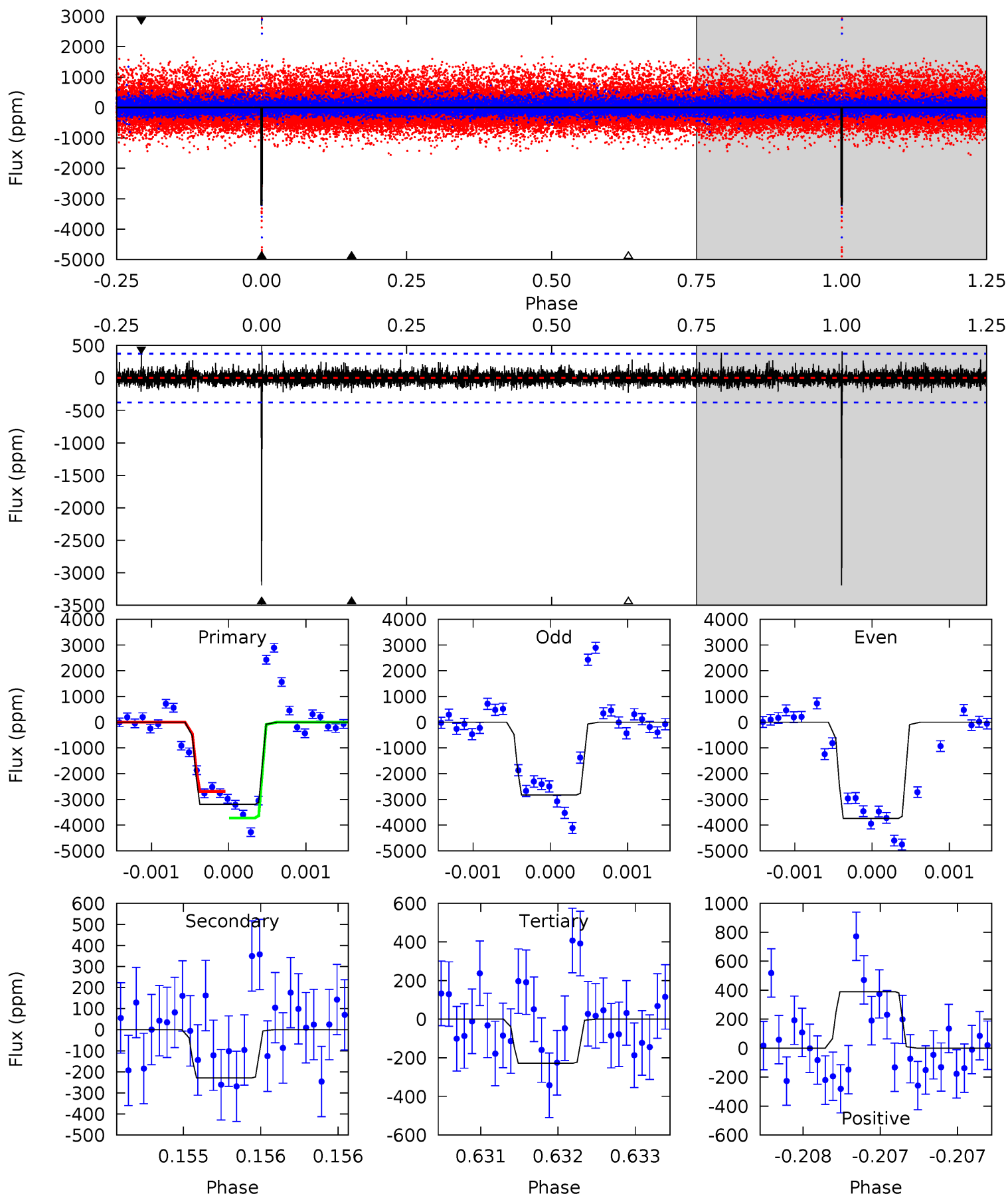
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006846570-08, P = 235.278821 Days, E = 122.887519 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.5	3.34	3.32	5.68	5.47	3.32	0.90	43.1	40.8	0.02	-2.34	5.83	0.99	0.11	7.44



Stellar Parameters For KIC 006846570

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3833^{+50}_{-50}	$4.708^{+0.030}_{-0.014}$	$0.000^{+0.100}_{-0.100}$	$0.541^{+0.019}_{-0.026}$	$0.545^{+0.025}_{-0.020}$	$4.853^{+0.567}_{-0.303}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+12%/-6%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006846570-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$4.84^{+4.49}_{-3.50}$	222^{+3}_{-4}	3081^{+5512}_{-10238}	$16613^{+2003454}_{-1096481}$
Alt.	-229 ± 69	$5.81^{+4.74}_{-3.82}$	222^{+4}_{-3}	2293^{+732}_{-307}	1419^{+11575}_{-1040}

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

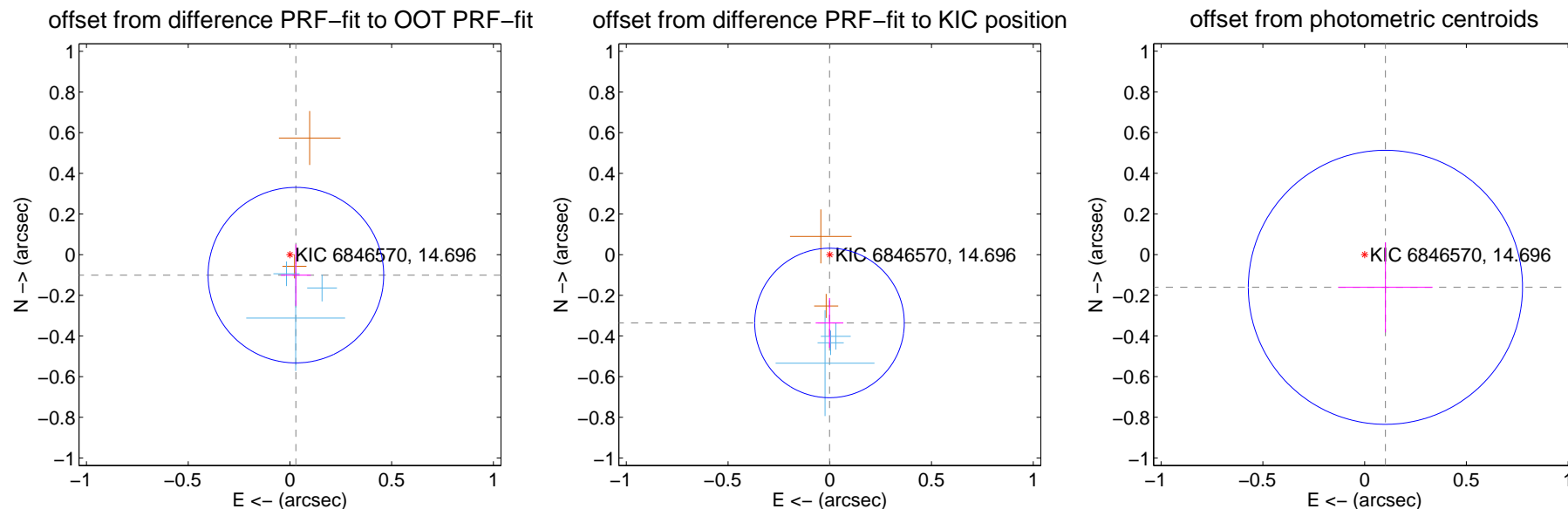
DV Centroid Data

Supplemental centroid analysis for 006846570-08. Kepler magnitude: 14.70. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

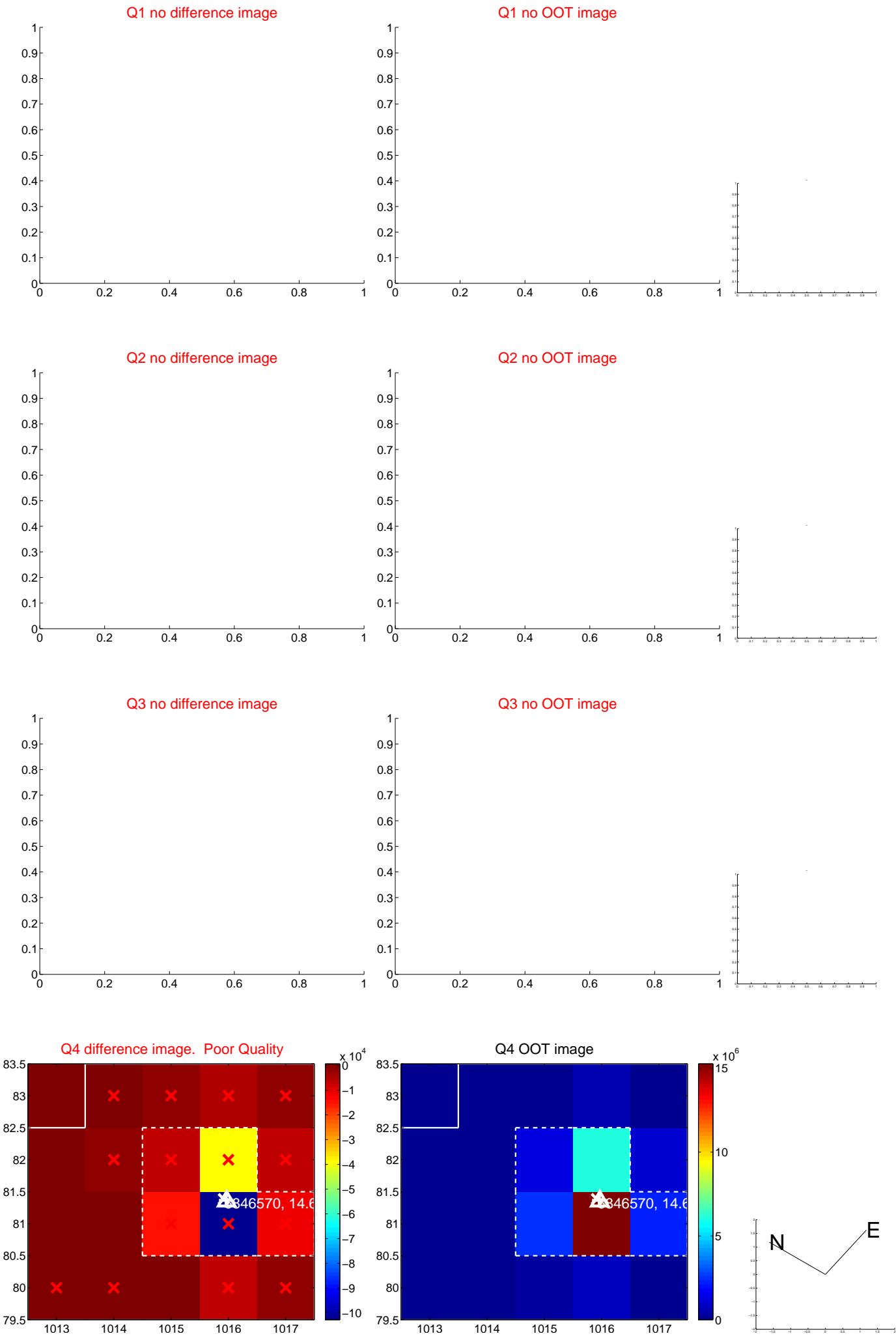
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.105 ± 0.144	0.73	-0.029 ± 0.074	-0.101 ± 0.151
PRF-fit source offset from KIC position	0.336 ± 0.123	2.74	0.001 ± 0.068	-0.336 ± 0.123
photometric centroid source offset	0.19 ± 0.22	0.85	-0.10 ± 0.23	-0.16 ± 0.22

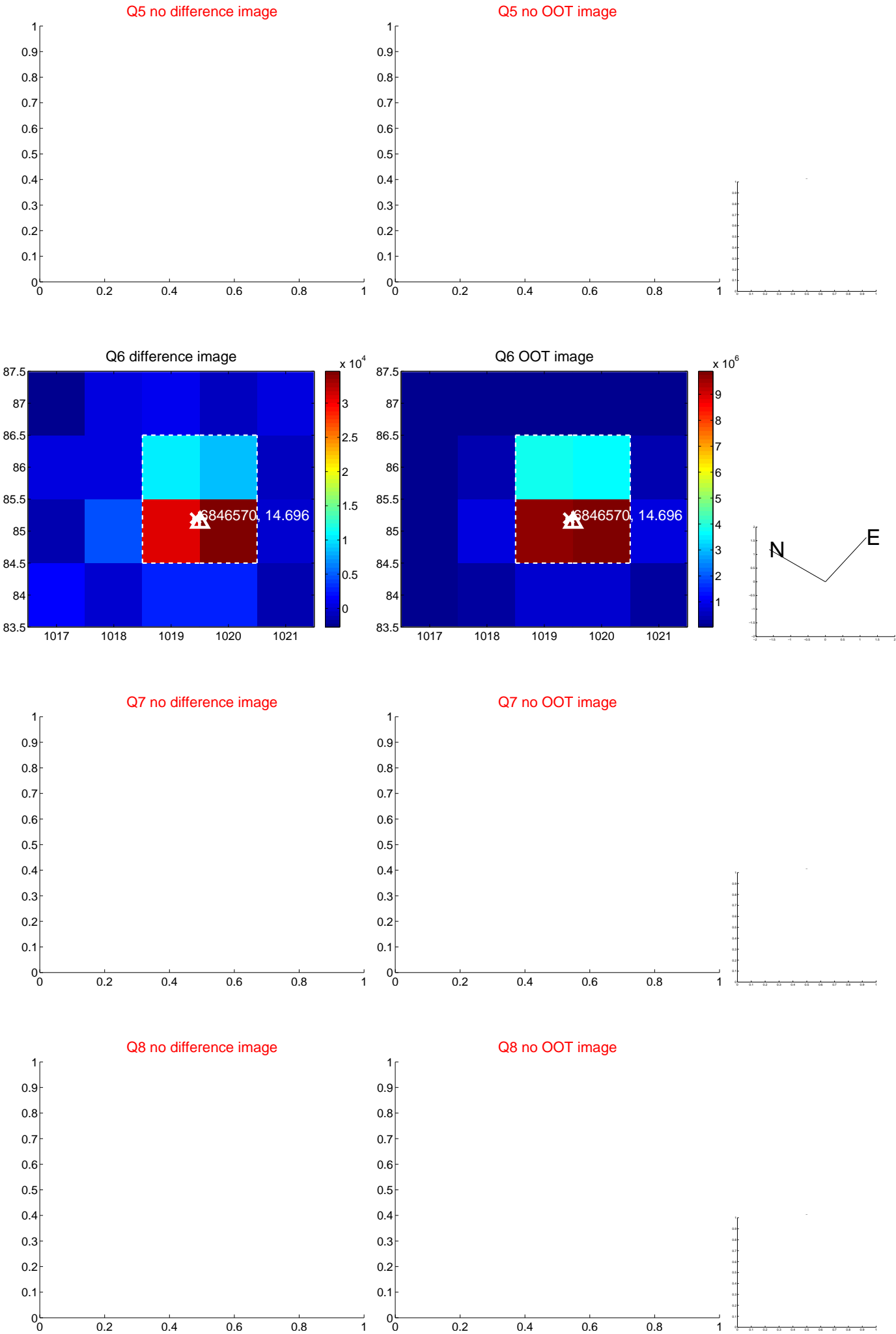


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

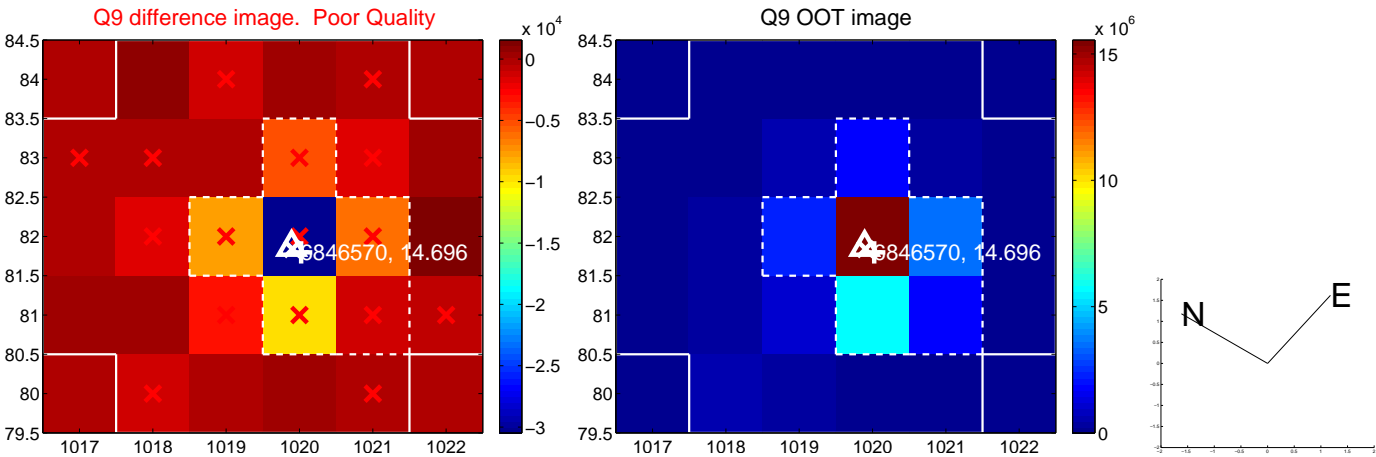
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



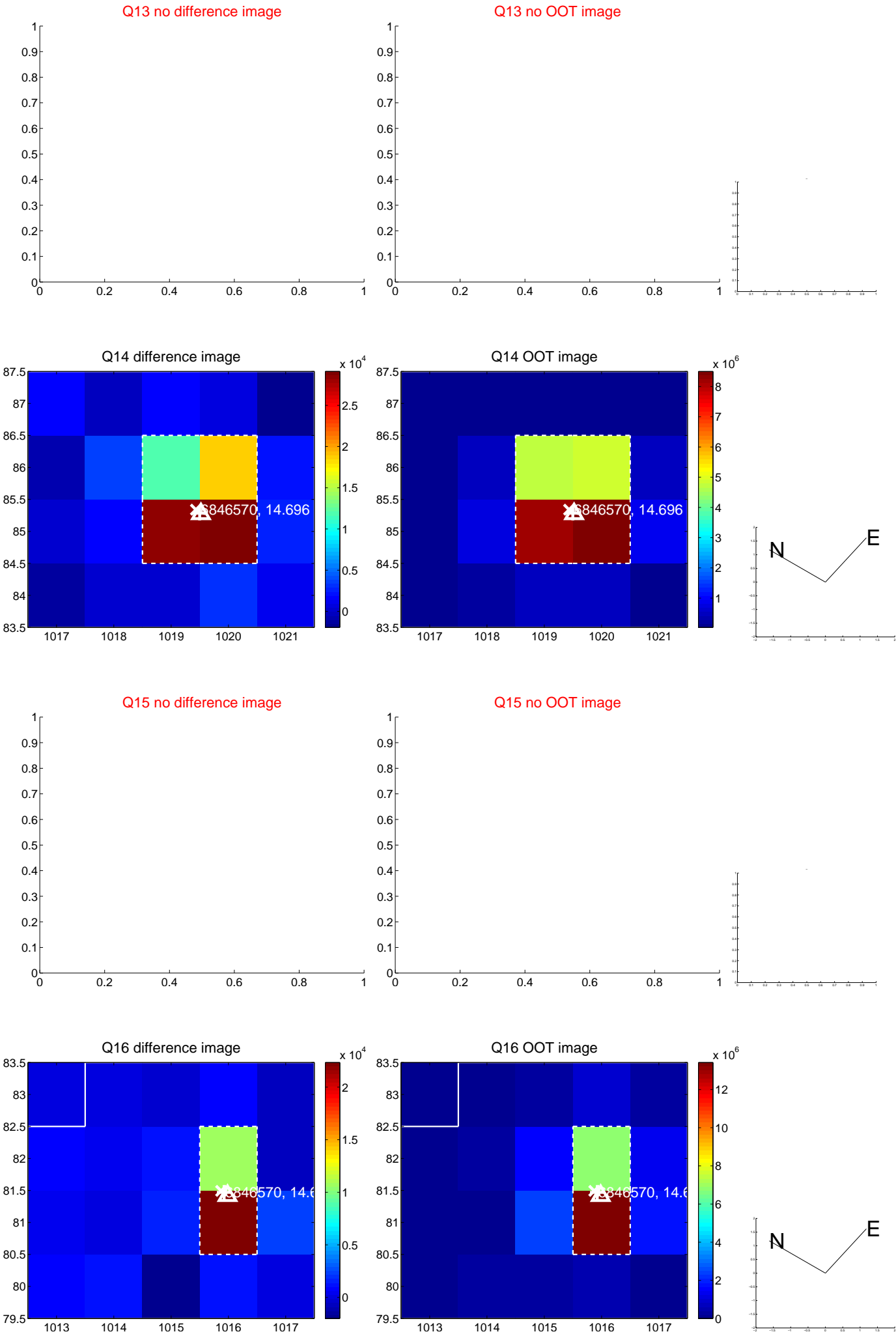
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



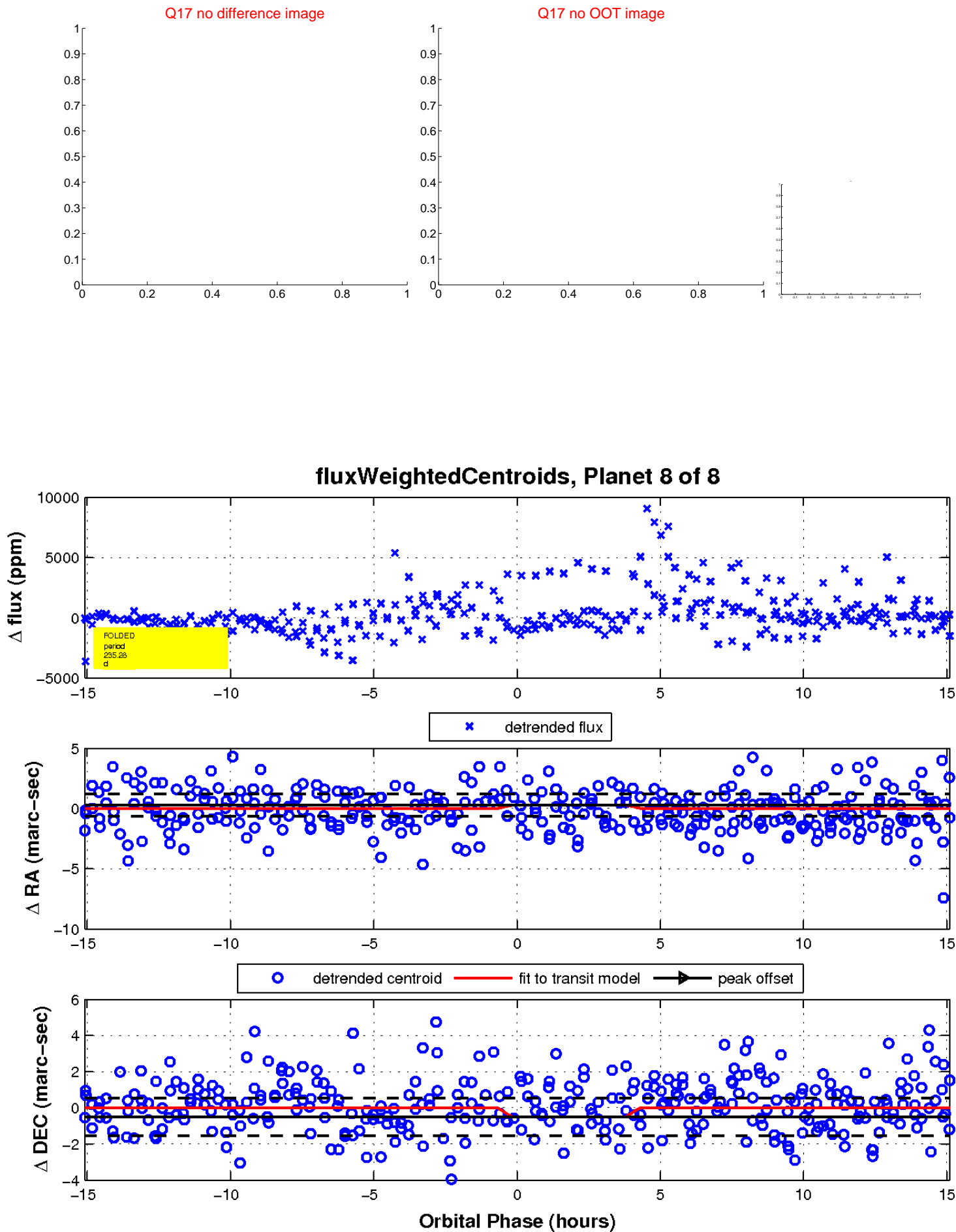
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

