

KIC 008461967

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})
008461967-01	OBS	No	1.521666	132.369637	0.0	4.159	11.1	0.0	4.03	5991	0.07	20747.05
008461967-02	OBS	No	1.522001	132.662554	47.0	6.075	10.9	11.5	4.03	5991	4.49	20740.97
008461967-03	OBS	No	226.818718	223.335820	517.1	12.175	9.2	8.0	4.03	5991	11.43	26.25
008461967-04	OBS	No	33.685215	150.767681	201.9	4.893	9.5	8.6	4.03	5991	6.75	333.78
008461967-05	OBS	No	113.853229	236.091319	495.9	6.424	8.5	8.5	4.03	5991	17.51	65.80
008461967-06	OBS	No	110.195951	231.169028	396.9	5.248	8.8	9.2	4.03	5991	10.51	68.73
008461967-07	OBS	No	58.183689	156.918725	280.5	3.132	8.0	7.8	4.03	5991	8.04	161.06
008461967-08	OBS	No	113.761733	139.598103	311.1	6.578	8.0	8.3	4.03	5991	8.17	65.88
008461967-09	OBS	No	91.399375	147.184635	174.1	13.803	7.6	6.4	4.03	5991	6.25	88.20
008461967-10	OBS	No	64.753816	162.454167	210.8	7.326	8.4	7.8	4.03	5991	6.67	139.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008461967-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

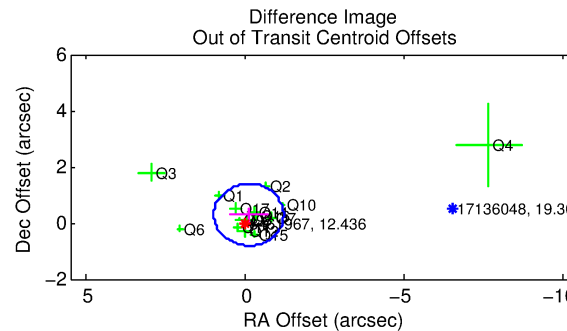
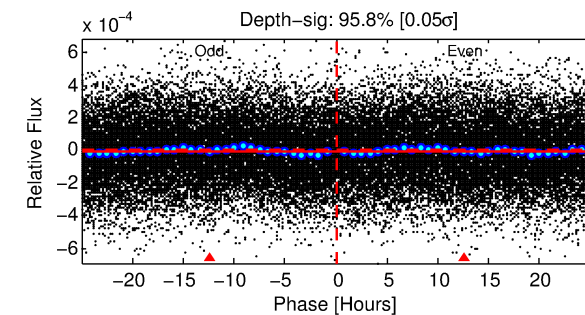
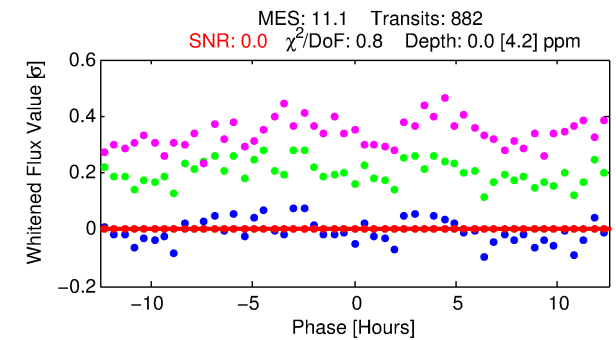
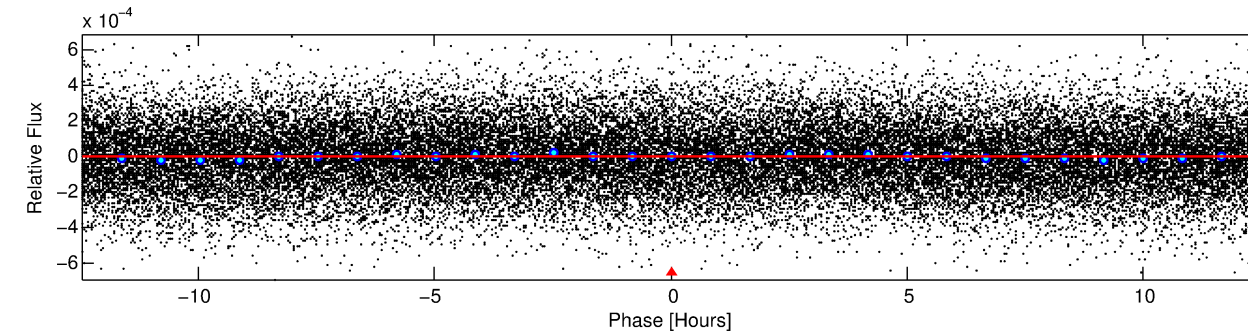
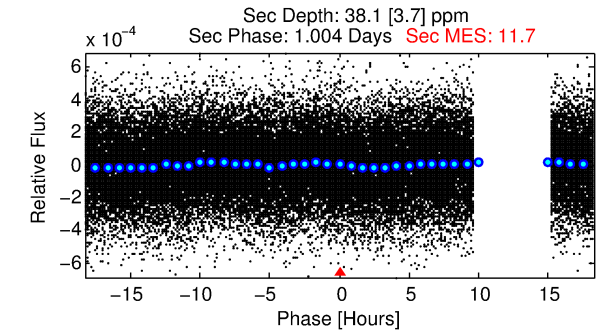
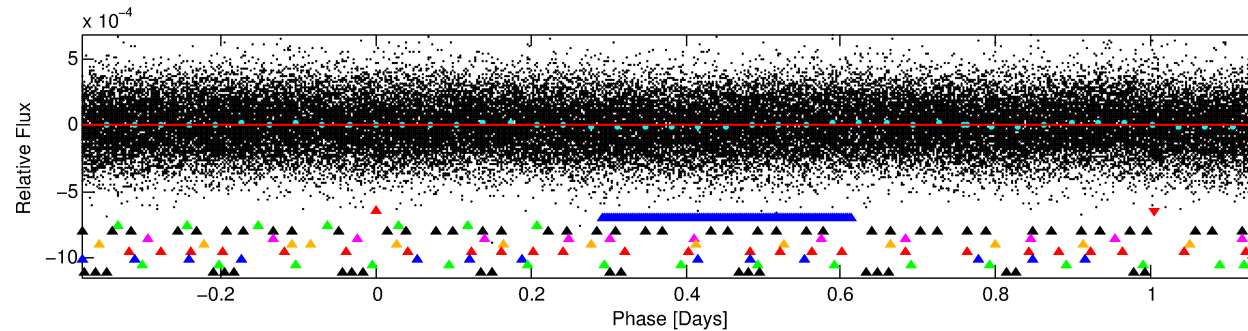
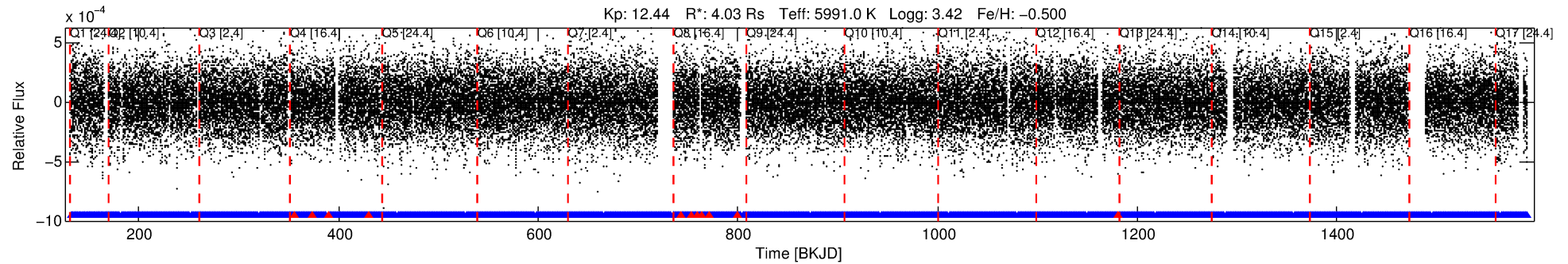
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-01

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 1 of 10 Period: 1.522 d



DV Fit Results:

Period = 1.52167 [0.02381] d
Epoch = 132.3696 [5.0169] BKJD
Rp/R* = 0.0002 [0.0163]
a/R* = 1.54 [23.68]
b = 0.90 [7.45]
Seff = 20747.05 [12580.52]
Teq = 3060 [464] K
Rp = 0.07 [7.18] Re
a = 0.0301 [0.0115] AU
Ag = 4310.25 [932532.39] [0.00σ]
Teffp = 38338 [2073726] K [0.02σ]

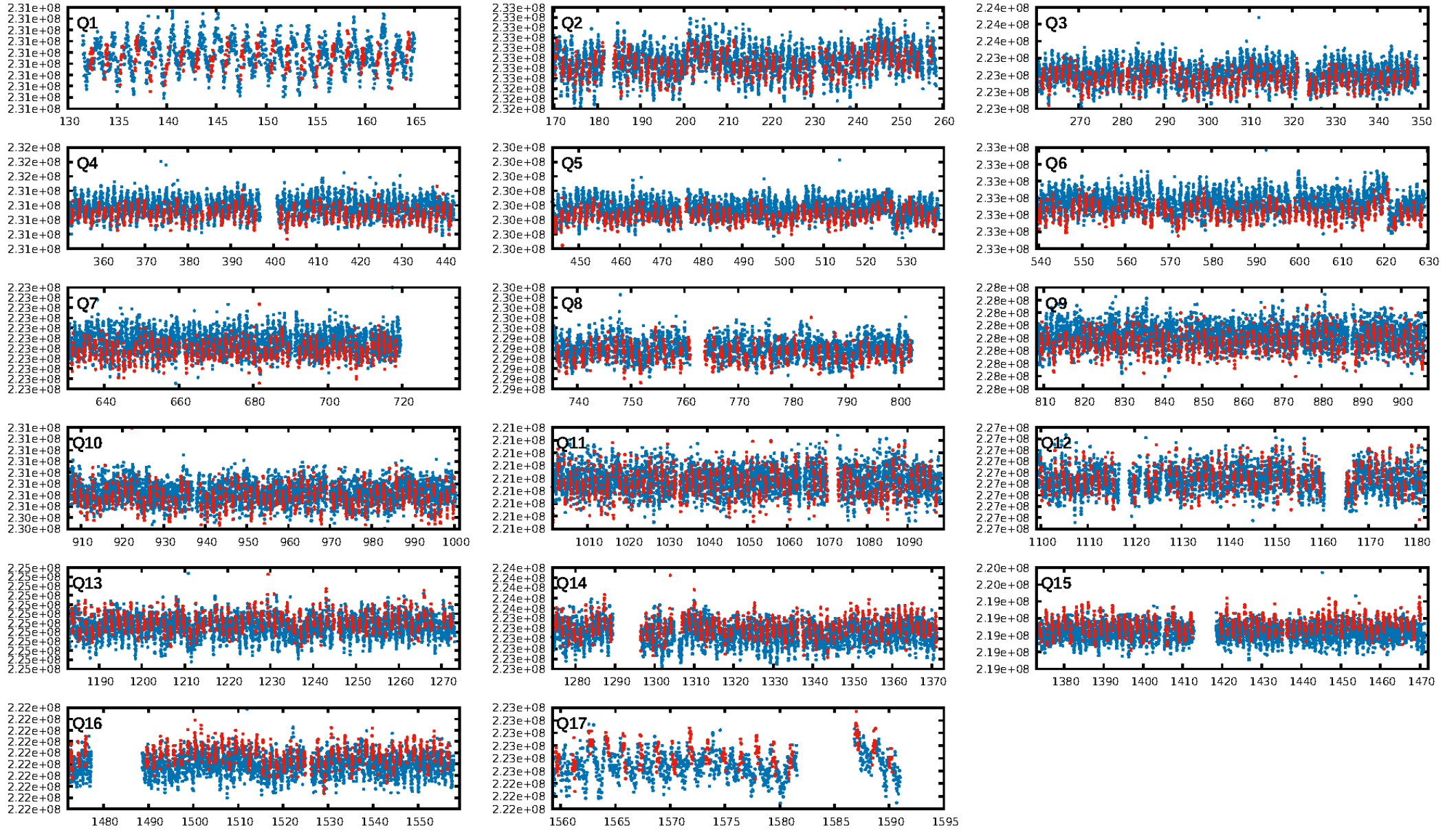
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [831/842]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.308 arcsec [0.84σ]
KicOffset-rm: 0.356 arcsec [1.30σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.47 [7/15]
DiffImageOverlap-fno: 0.35 [6/17]

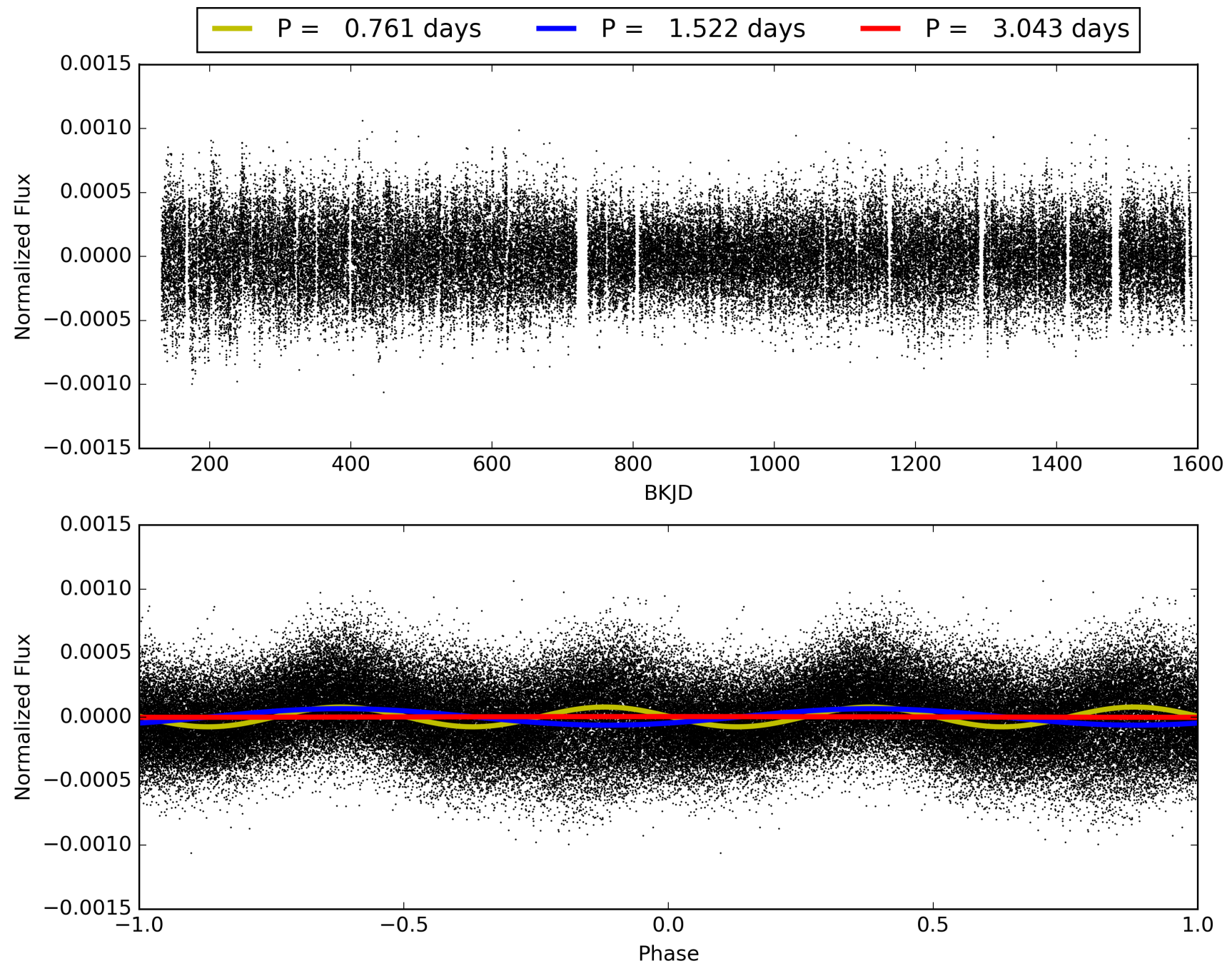
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:45:38 Z

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

TCE 008461967-01, PDC Light Curves

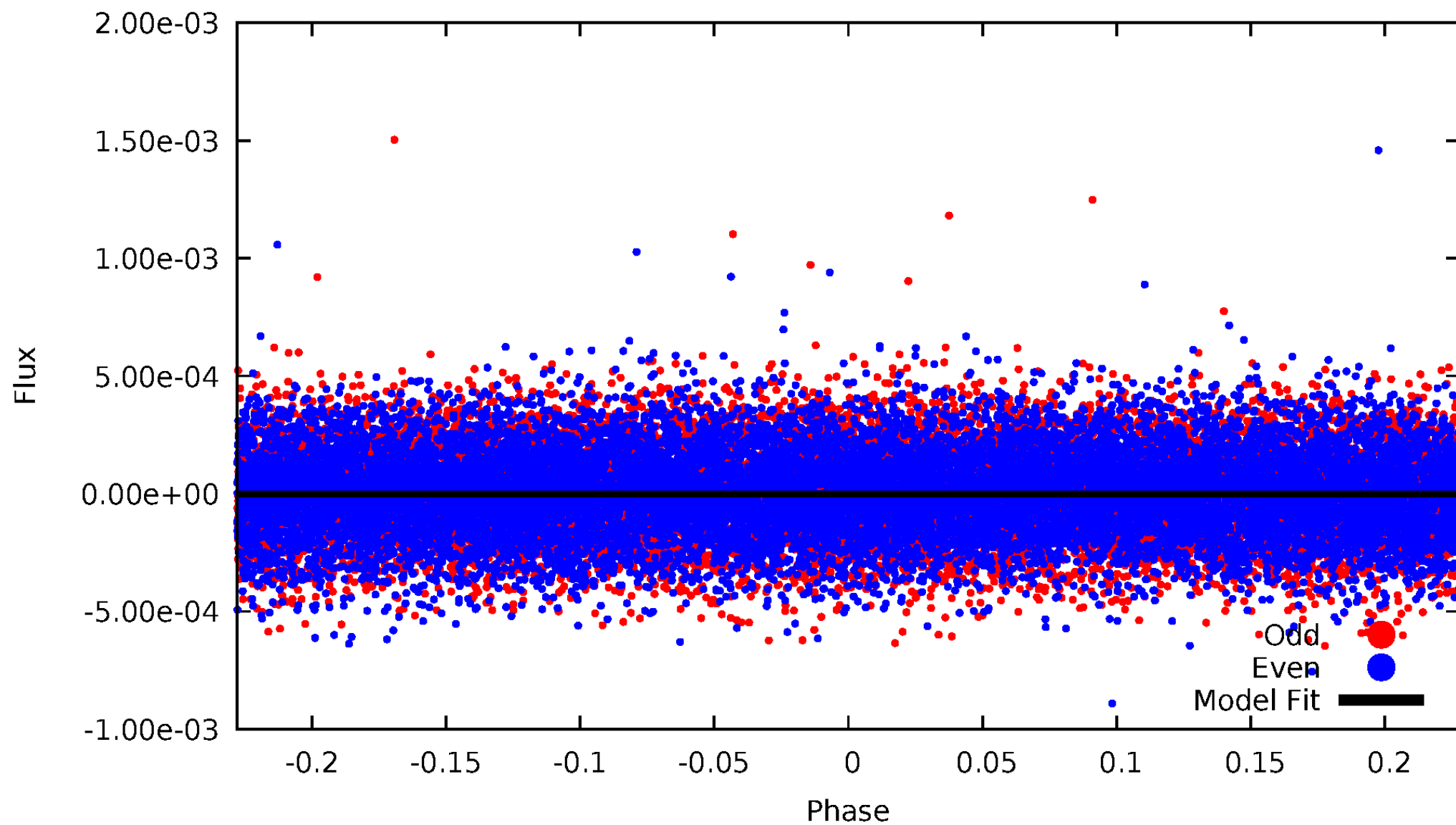


TCE 008461967-01



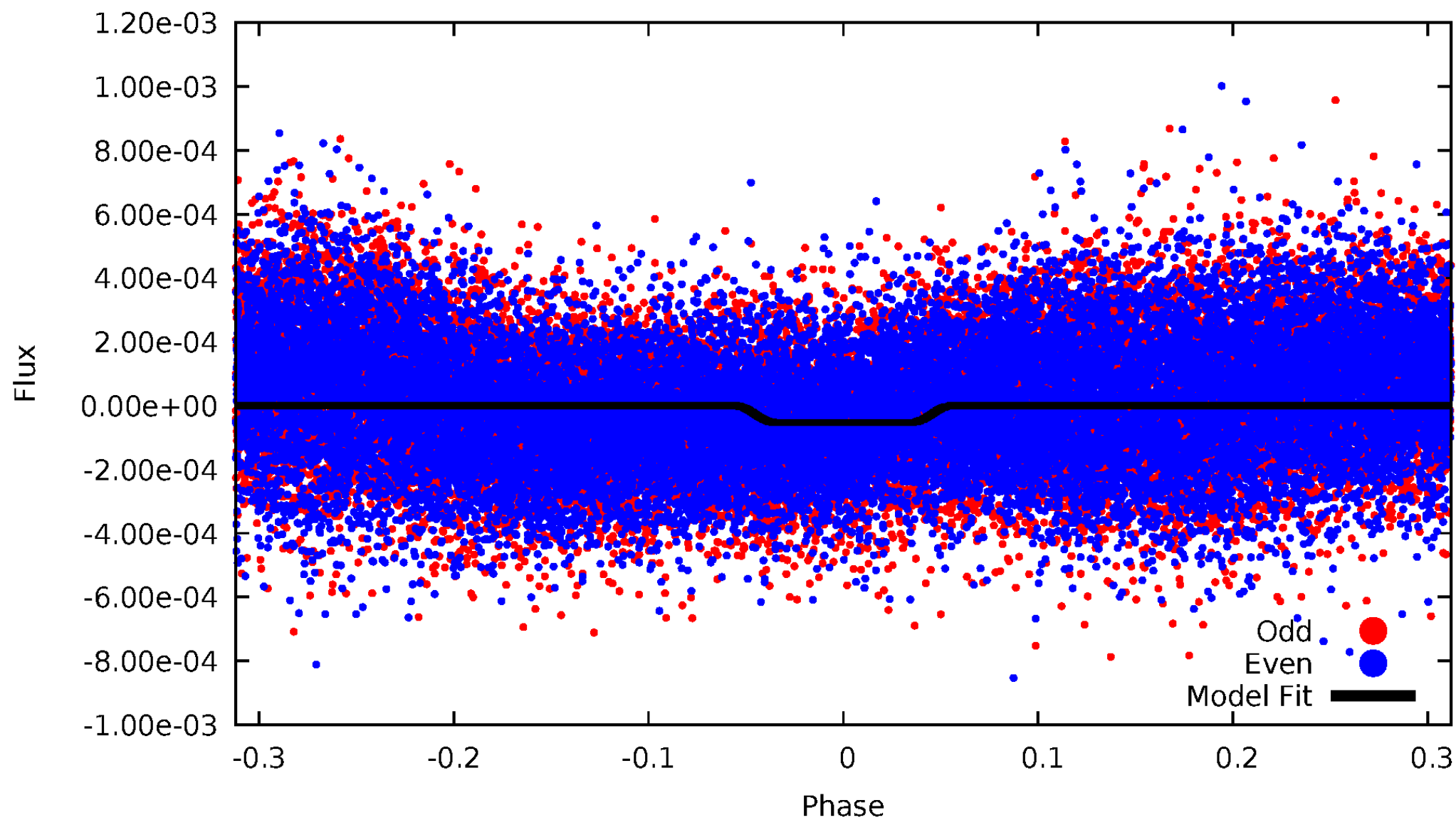
DV Odd/Even

TCE 008461967-01

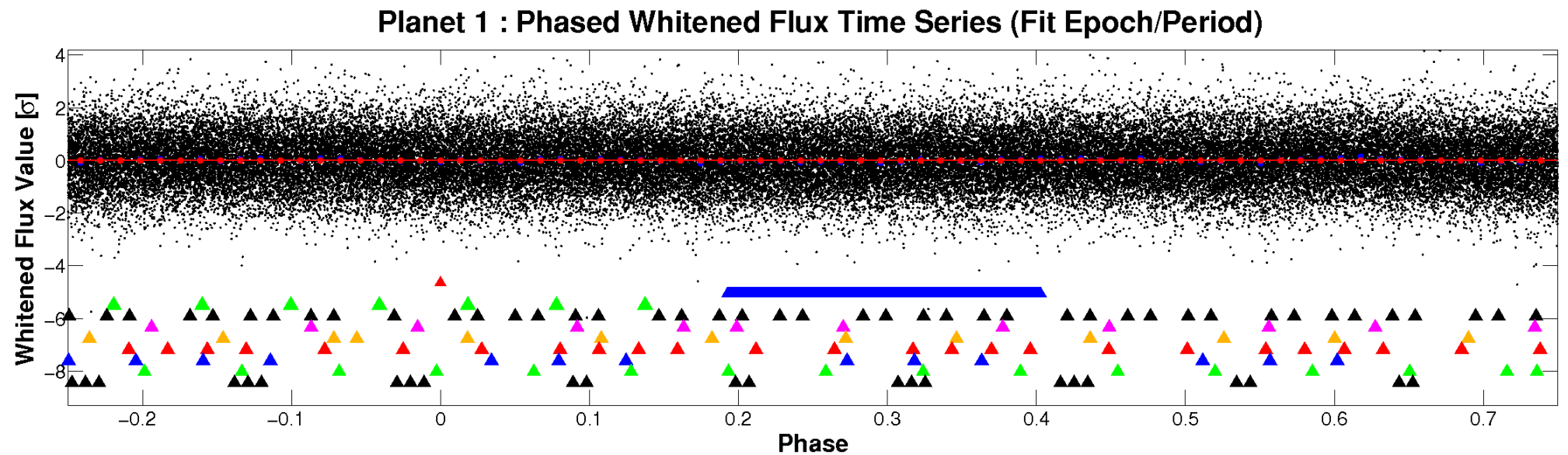
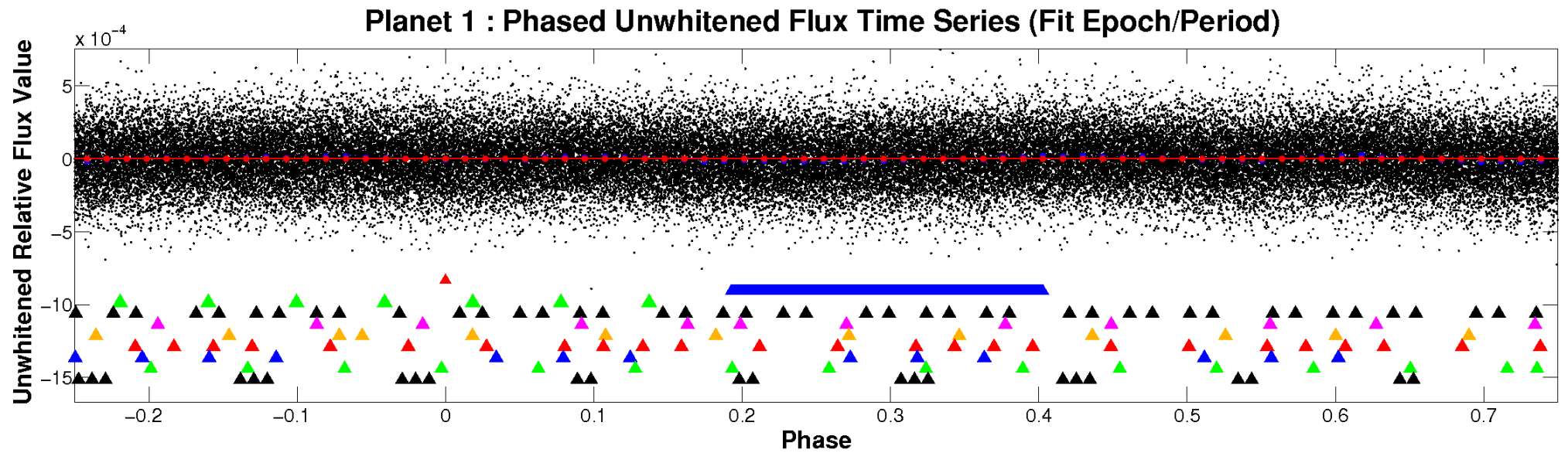


ALT Odd/Even

TCE 008461967-01

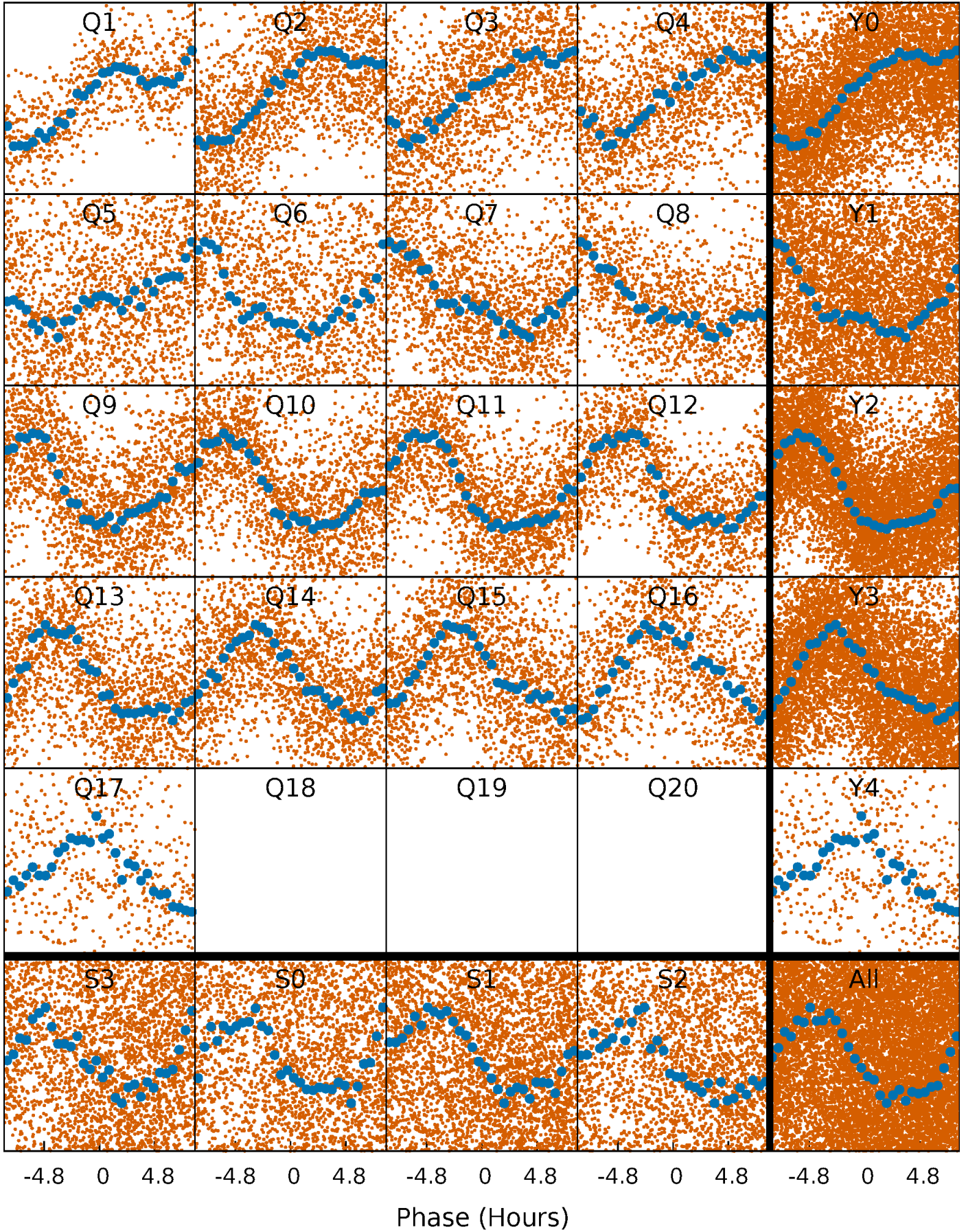


Non-Whitened Vs. Whitened Light Curve



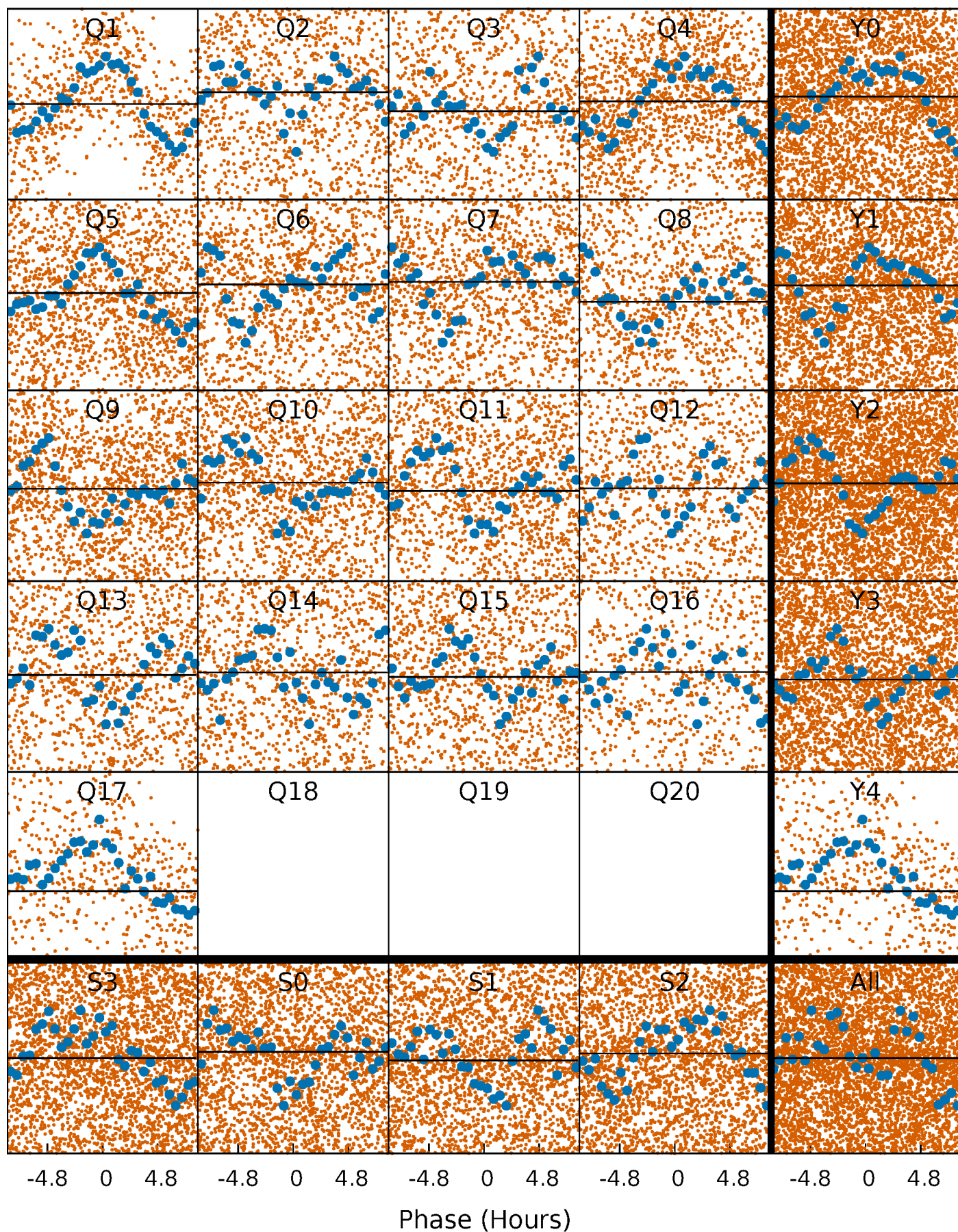
PDC Quarter-Phased Transit Curves

TCE 008461967-01 P= 1.521666 Days $T_0=132.369637$ (BKJD)



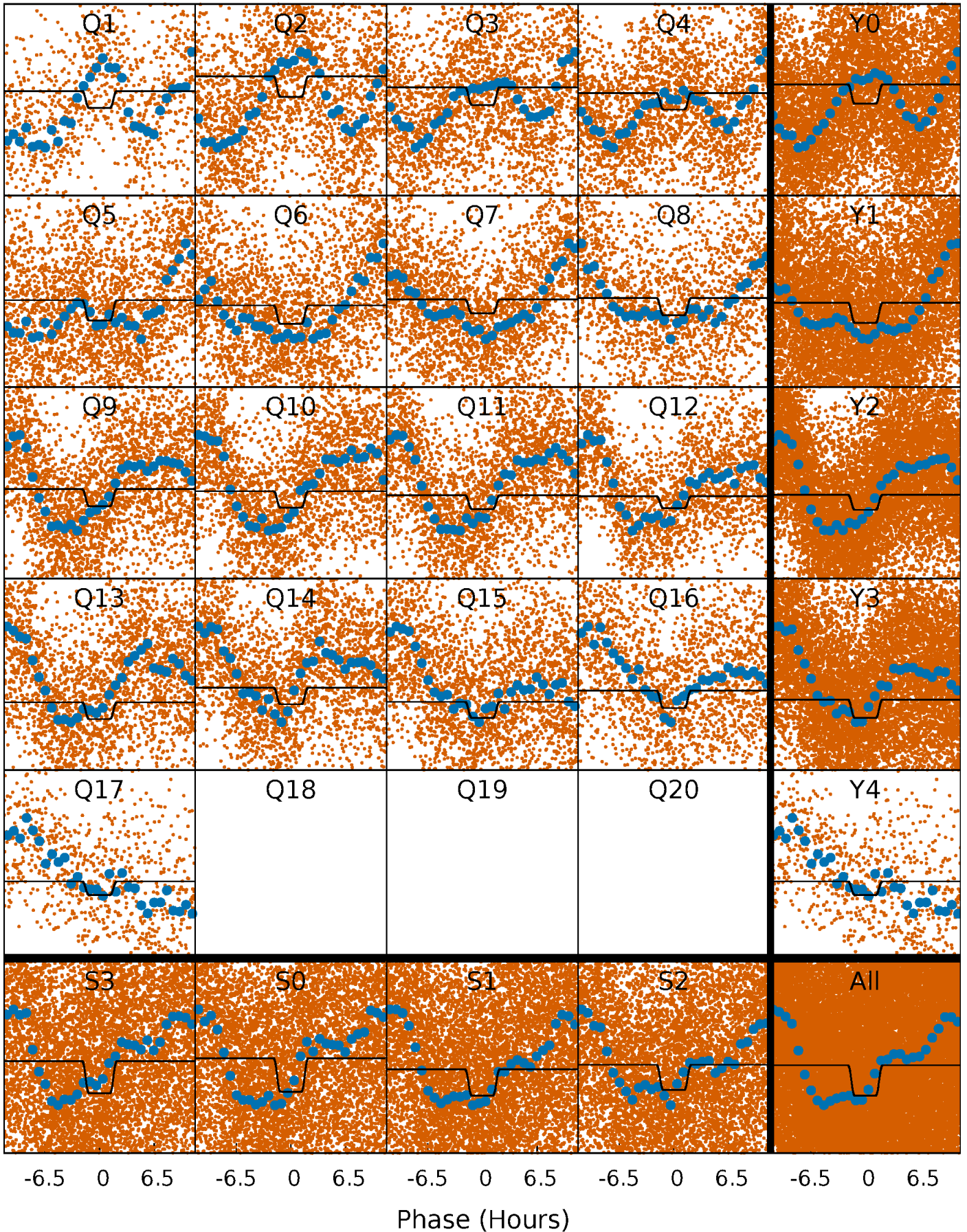
DV Quarter-Phased Transit Curves

TCE 008461967-01 P= 1.521666 Days $T_0=132.369637$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

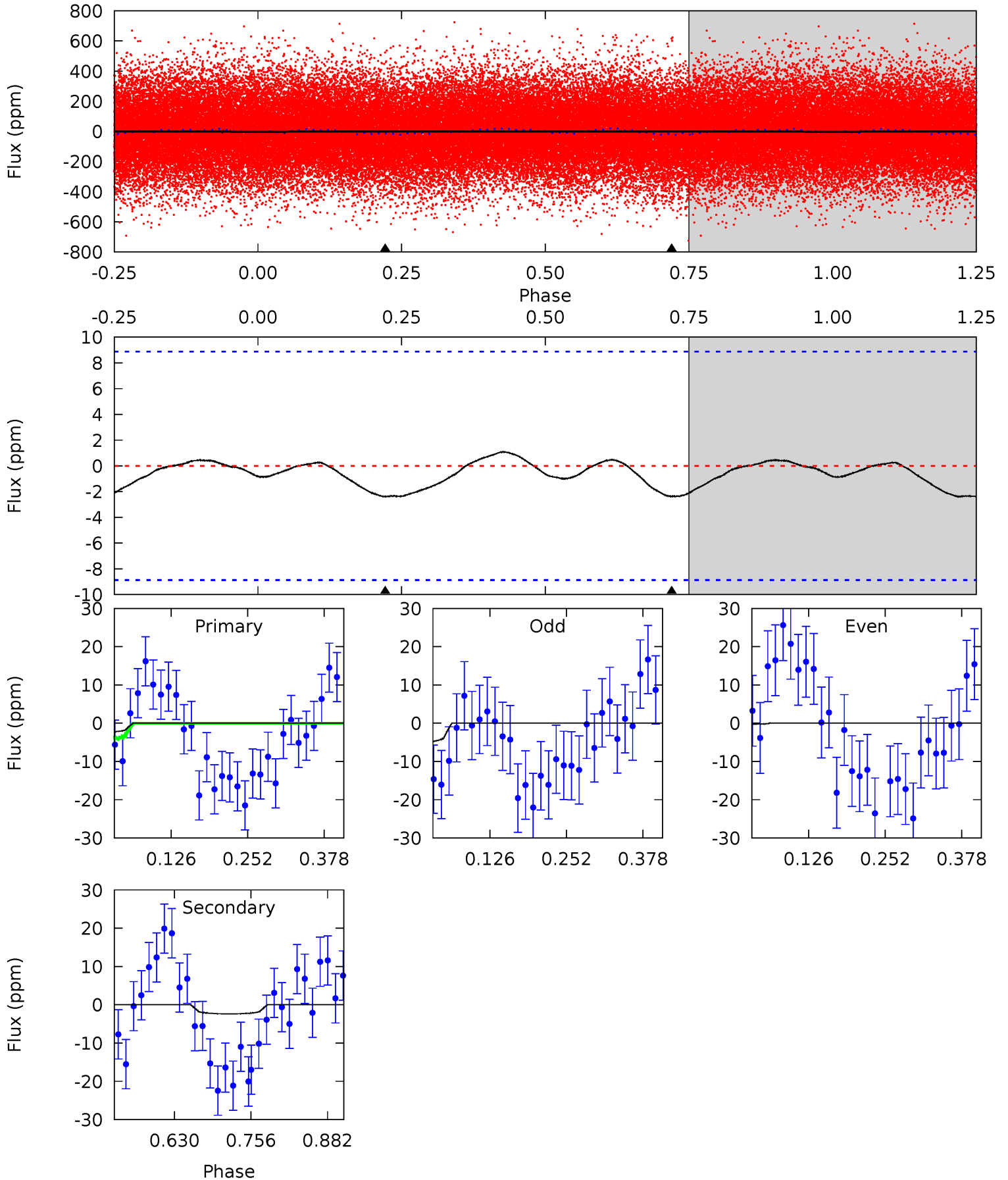
TCE 008461967-01 P= 1.522026 Days $T_0=132.375021$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-01, P = 1.521666 Days, E = 130.847971 Days

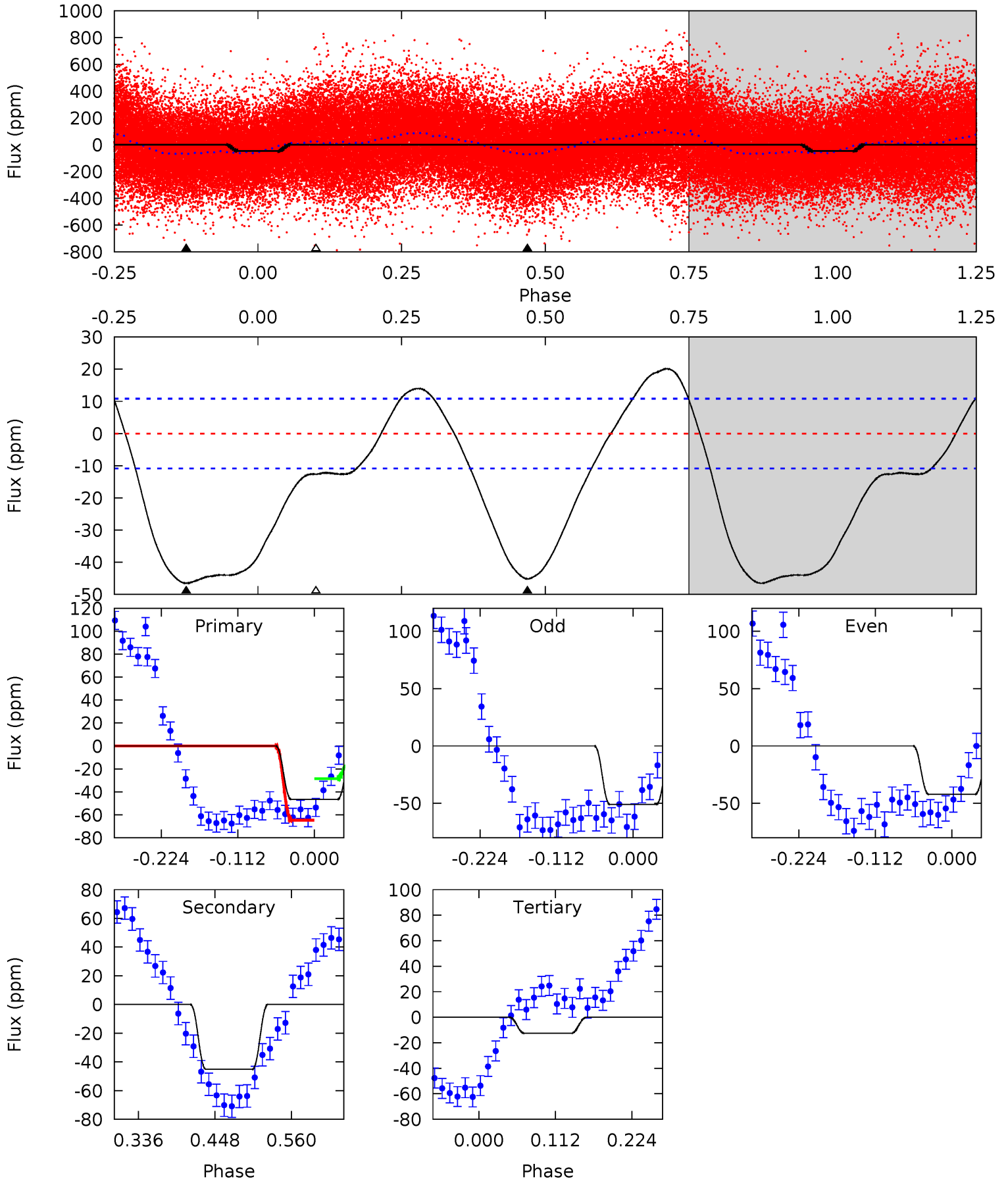
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.22	1.21	0	0	4.52	1.53	0.28	1.22	1.22	1.21	1.21	1.21	0.13	0.31	1.01



Alt Model-Shift Uniqueness Test

008461967-01, P = 1.522026 Days, E = 130.852995 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	18.9	5.27	0	4.54	1.59	6.49	14.2	19.5	13.6	18.9	1.85	0.99	0.30	7.16



Stellar Parameters For KIC 008461967

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 2	$4.42^{+5.08}_{-3.34}$	4166^{+275}_{-426}	-3591^{+7637}_{-320}	$0.045^{+0.762}_{-0.041}$
Alt.	-45 ± 2	$5.12^{+5.69}_{-3.27}$	4163^{+285}_{-436}	4050^{+3108}_{-7268}	$0.820^{+5.756}_{-0.633}$

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 $A_{obs} \gg 1.0$

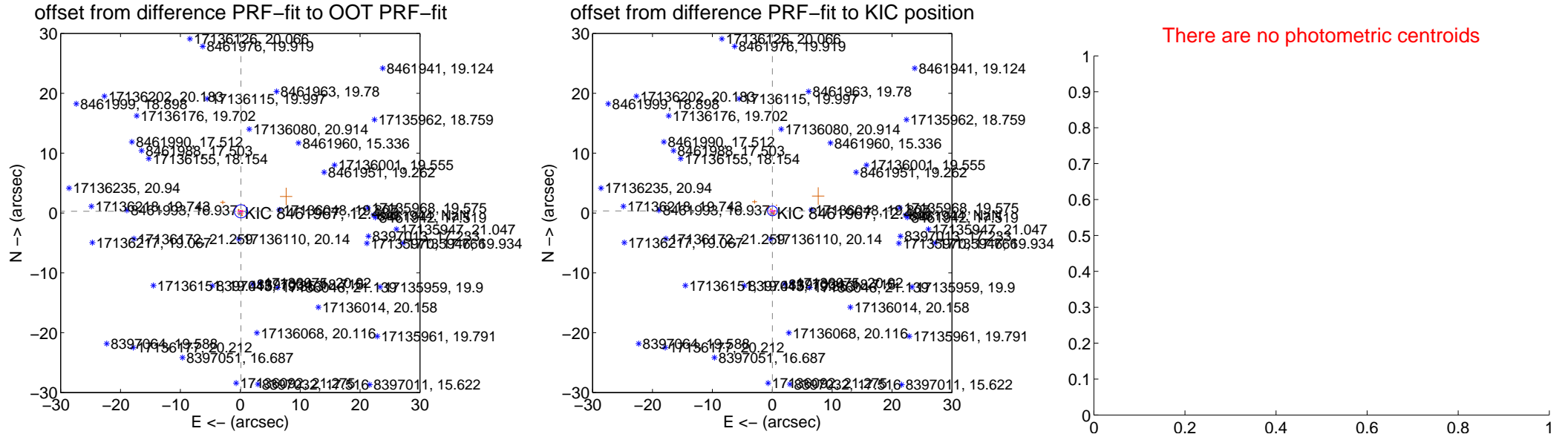
DV Centroid Data

Supplemental centroid analysis for 008461967-01. Kepler magnitude: 12.44. Transit SNR 0.01

There are 7 quarters with good PRF difference image offsets

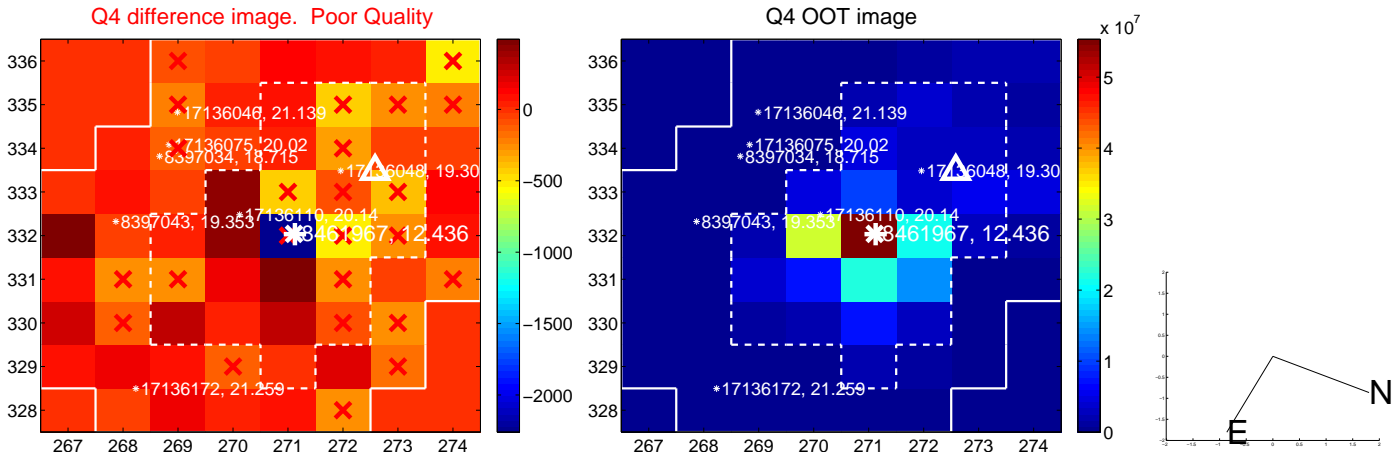
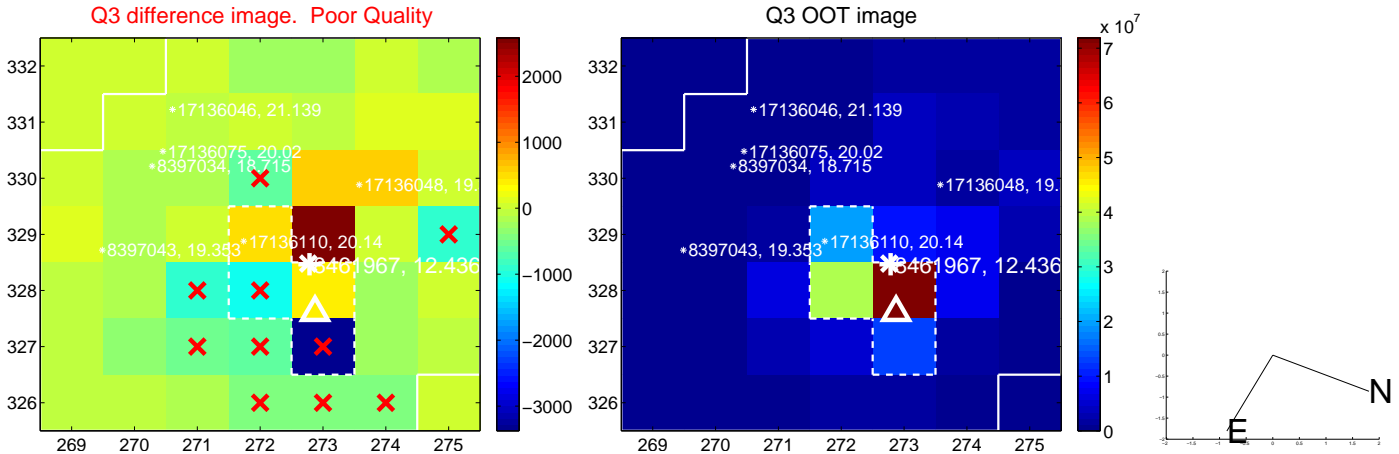
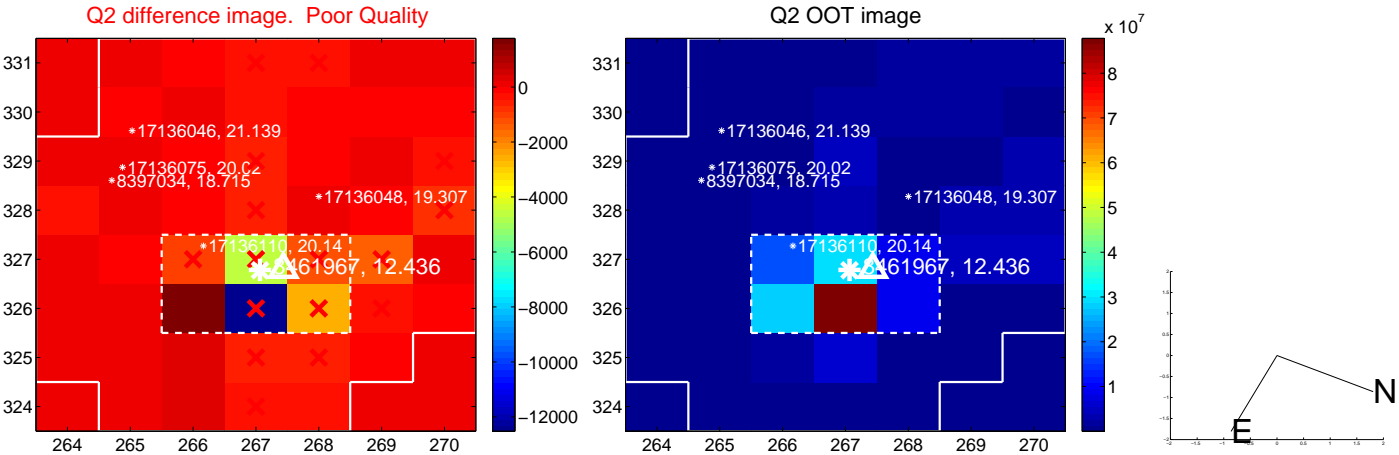
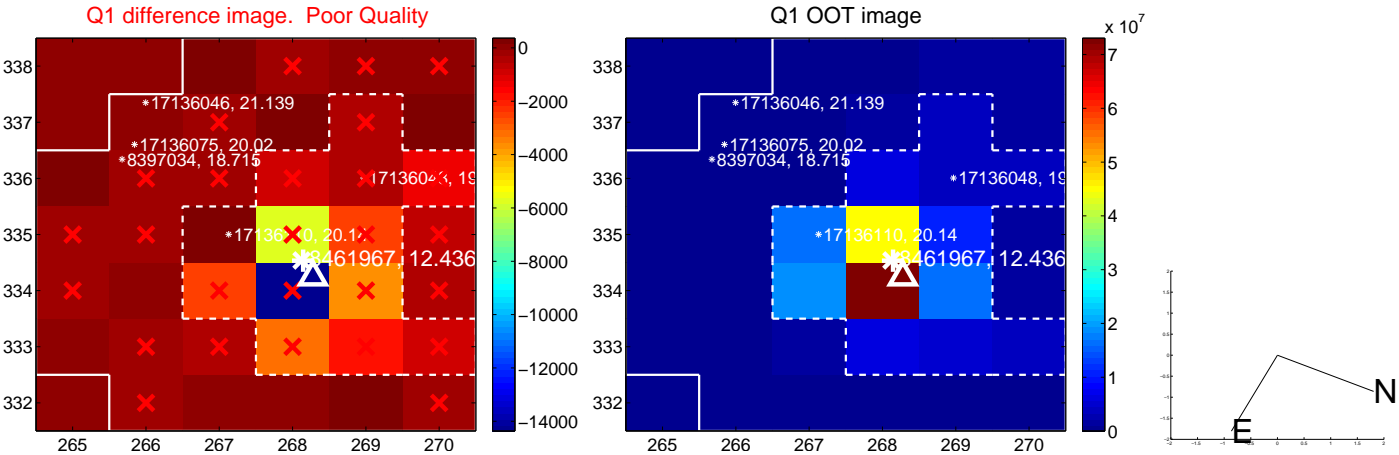
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.308 ± 0.366	0.84	-0.113 ± 0.592	0.286 ± 0.221
PRF-fit source offset from KIC position	0.356 ± 0.274	1.30	-0.027 ± 0.632	0.355 ± 0.243
photometric centroid source offset	—	—	—	—

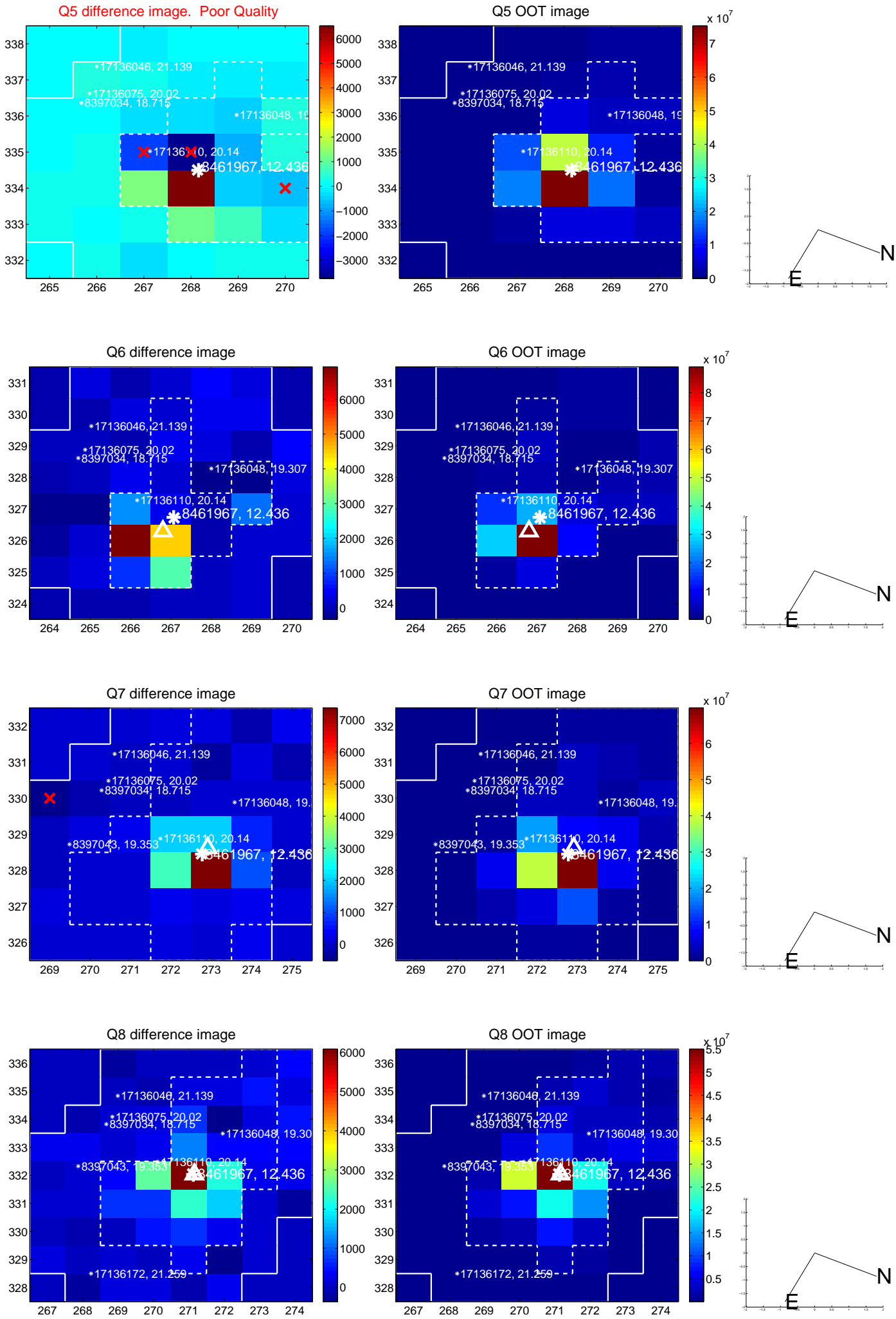


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

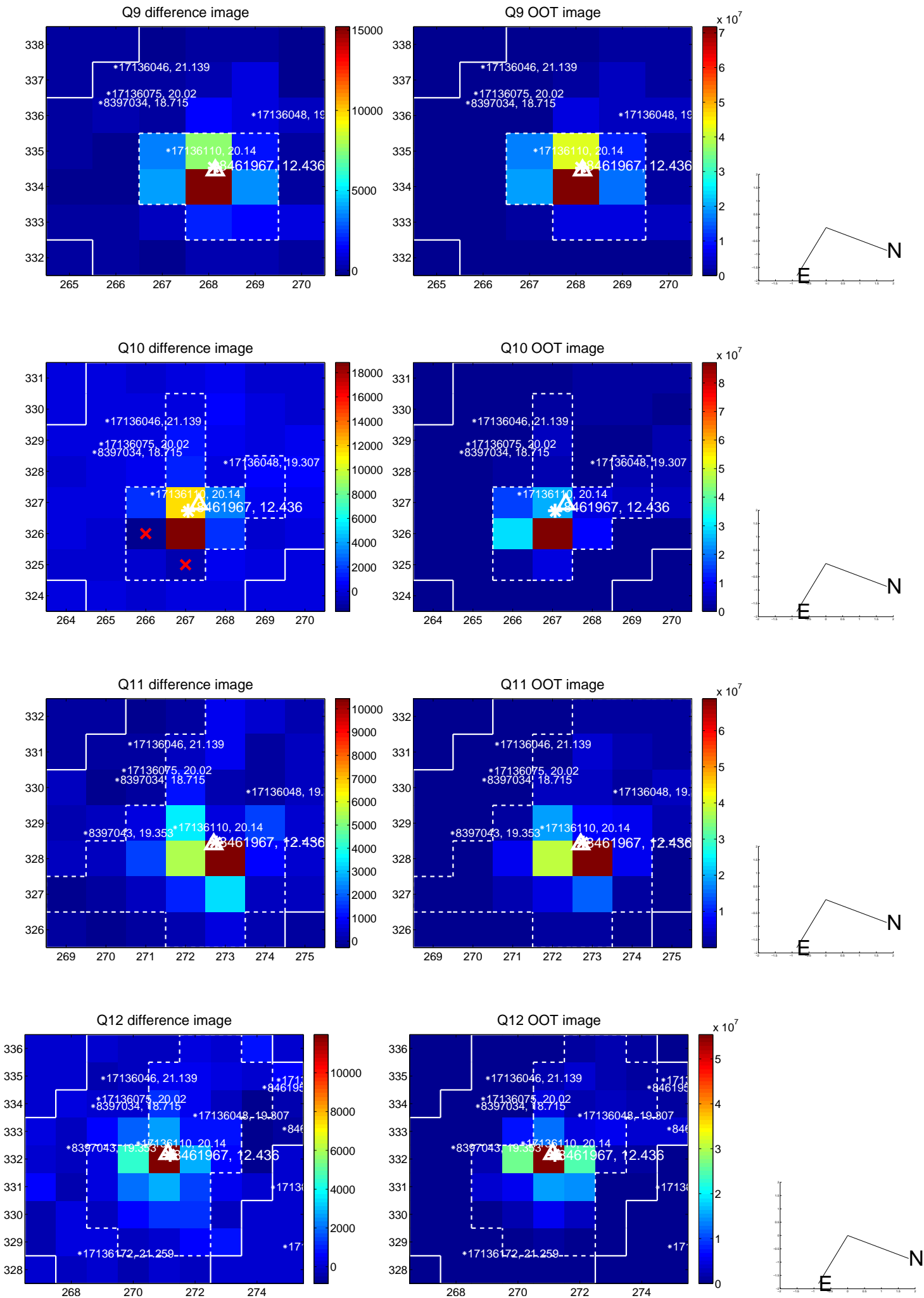
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



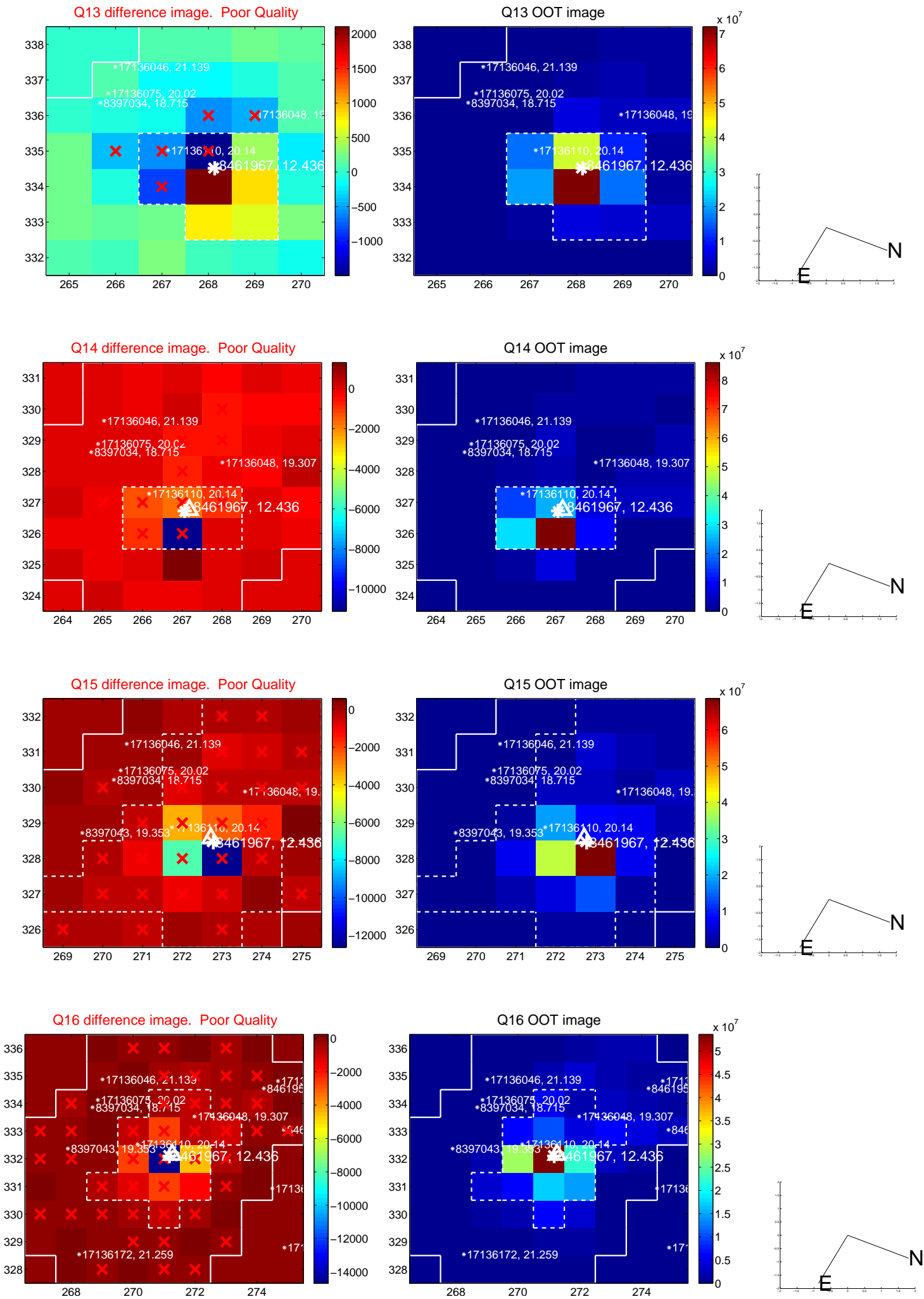
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



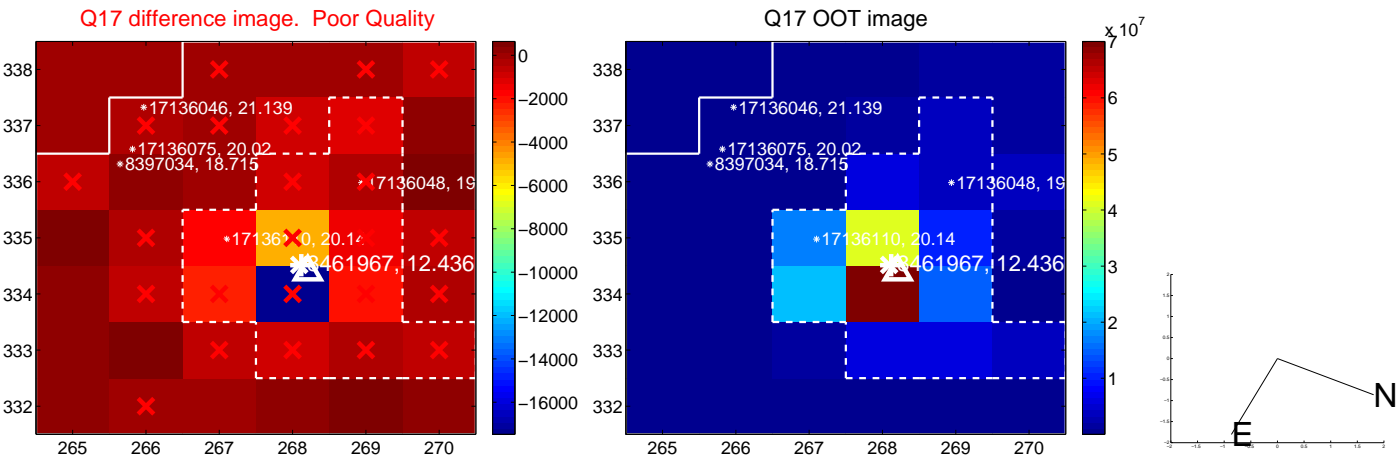
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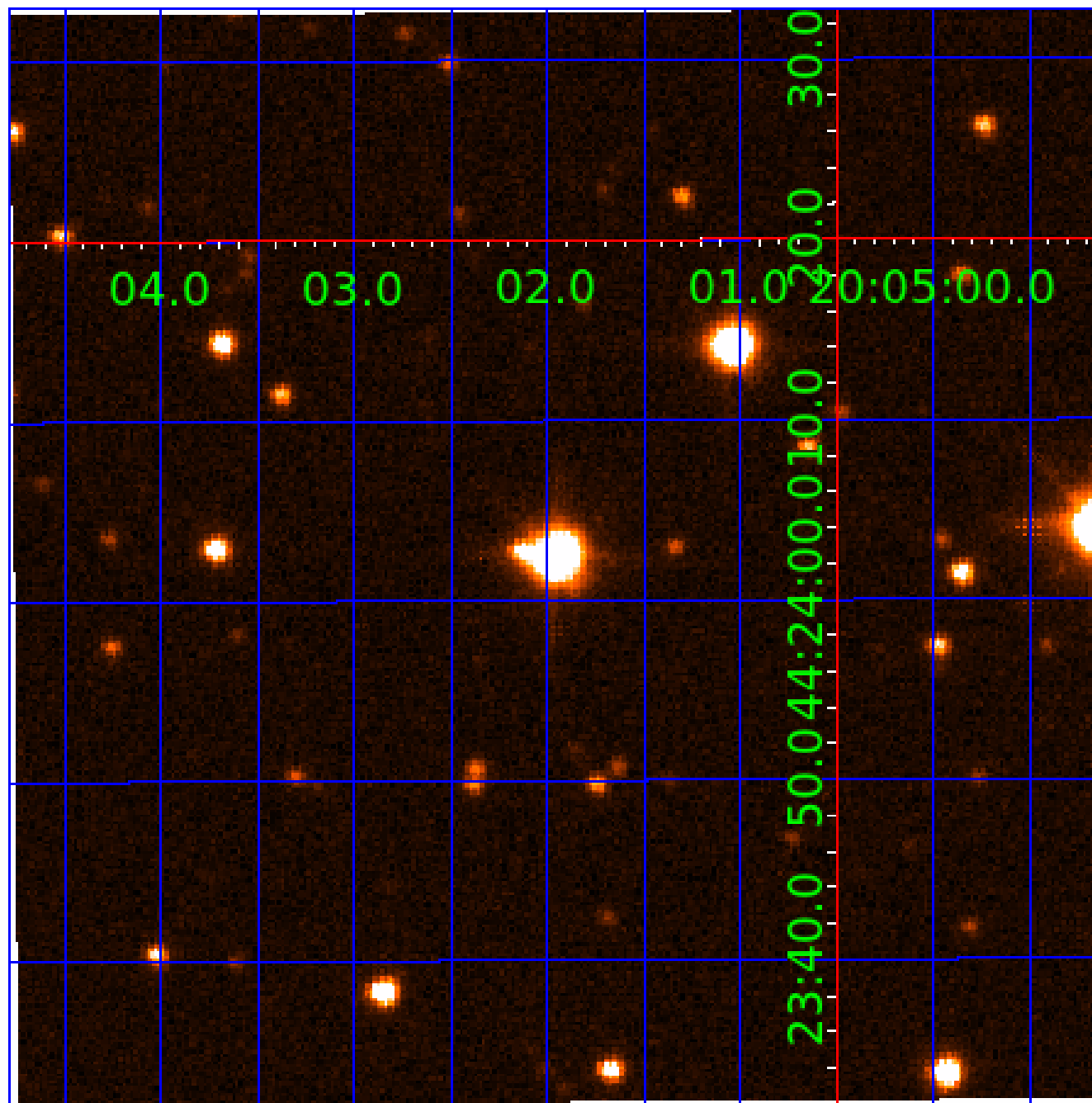
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 008461967

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})
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008461967-10	OBS	No	64.753816	162.454167	210.8	7.326	8.4	7.8	4.03	5991	6.67	139.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

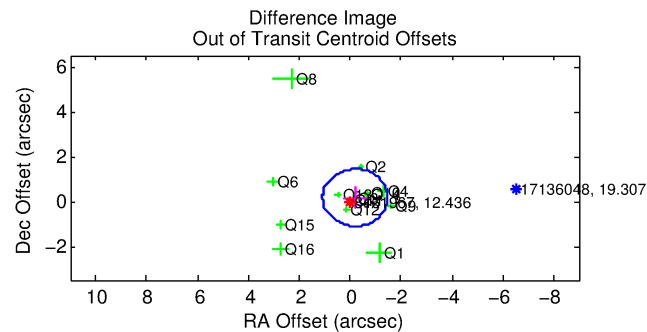
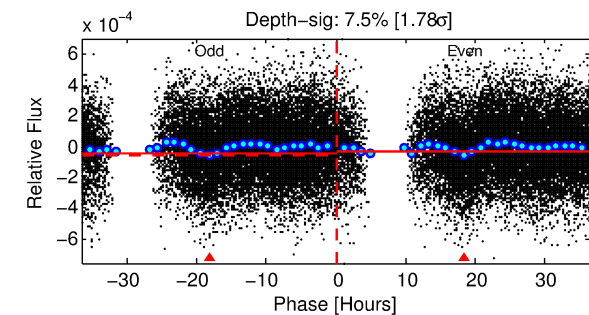
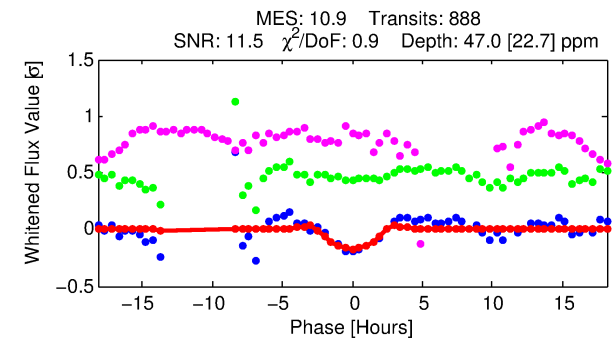
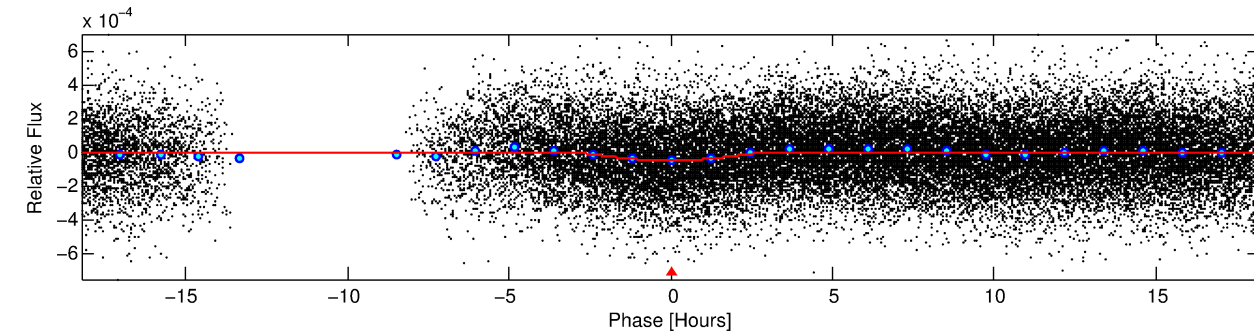
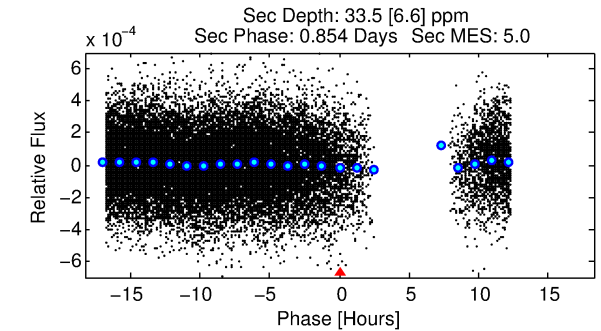
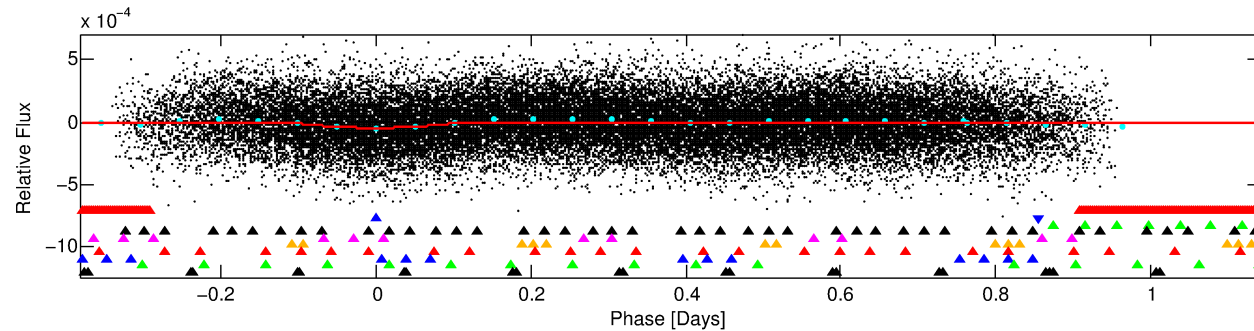
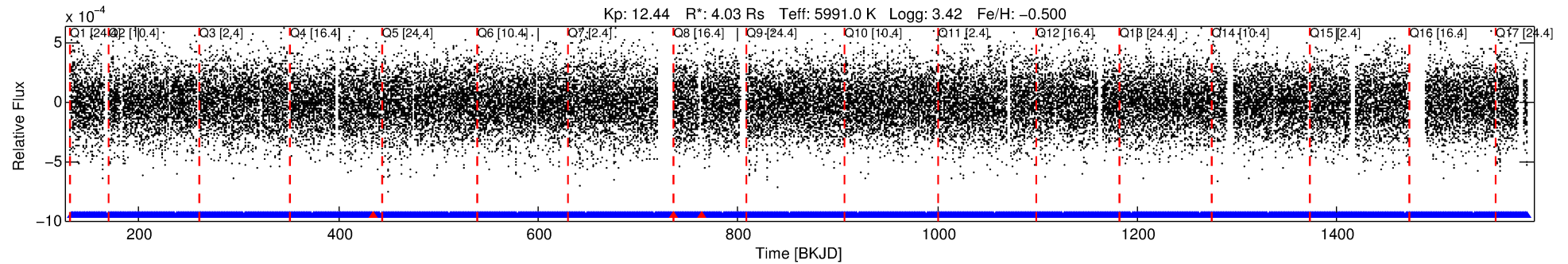
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-02

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 2 of 10 Period: 1.522 d



DV Fit Results:

Period = 1.52200 [0.00002] d
Epoch = 132.6626 [0.0076] BKJD
Rp/R* = 0.0102 [0.0058]
a/R* = 1.05 [0.02]
b = 1.00 [0.01]
Seff = 20740.97 [12569.39]
Teq = 3060 [464] K
Rp = 4.49 [3.16] Re
a = 0.0301 [0.0115] AU
Ag = 0.83 [1.07] [-0.16σ]
Teffp = 4512 [1302] K [1.05σ]

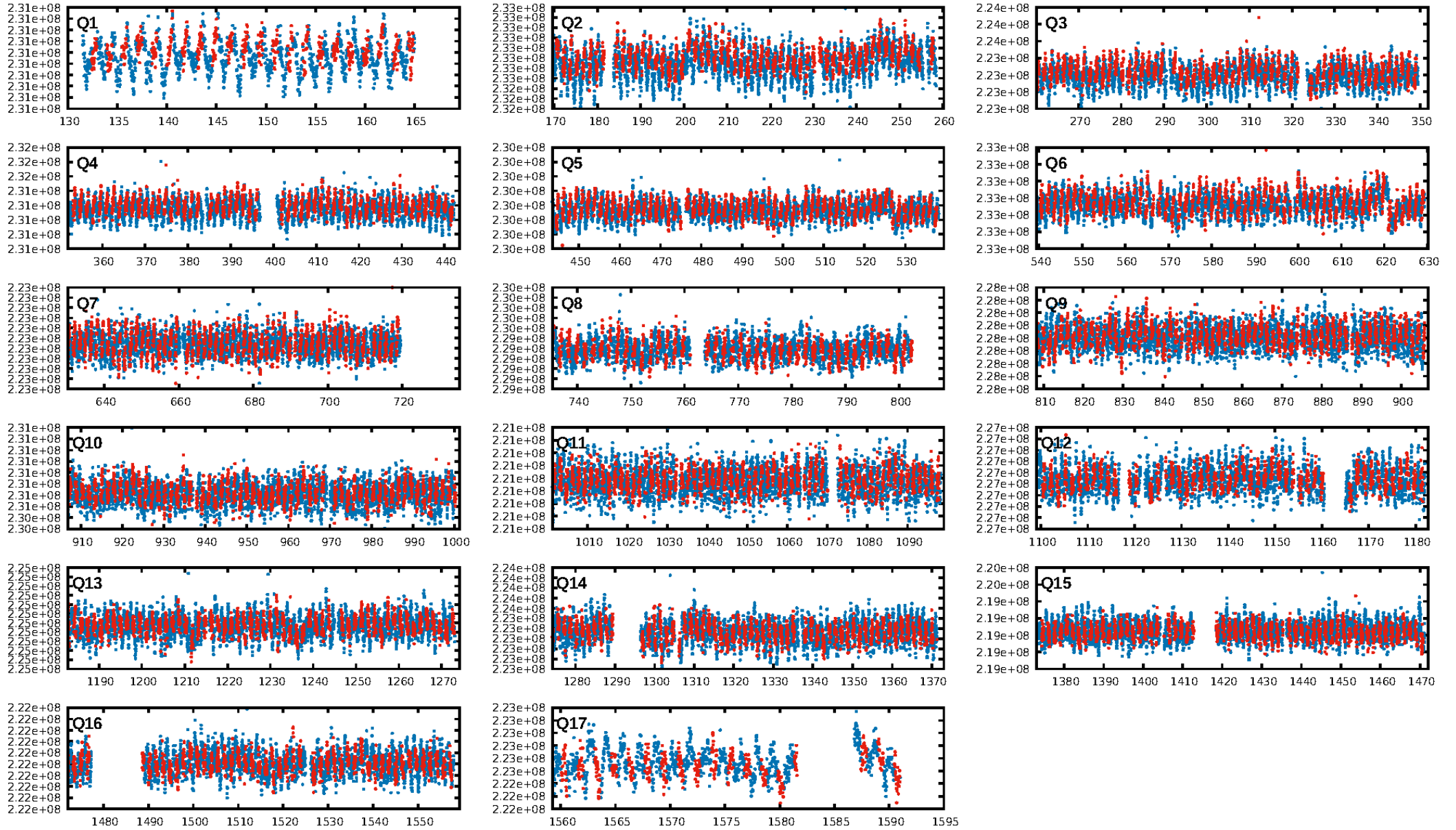
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [98.96σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [845/848]
GhostDiagnostic-chr: 2.333
Centroid-sig: 0.1%
Centroid-so: 1.363 arcsec [2.58σ]
OotOffset-rm: 0.253 arcsec [0.60σ]
KicOffset-rm: 0.289 arcsec [0.72σ]
OotOffset-st: 4/3/4/3 [14]
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DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 0.12 [2/17]

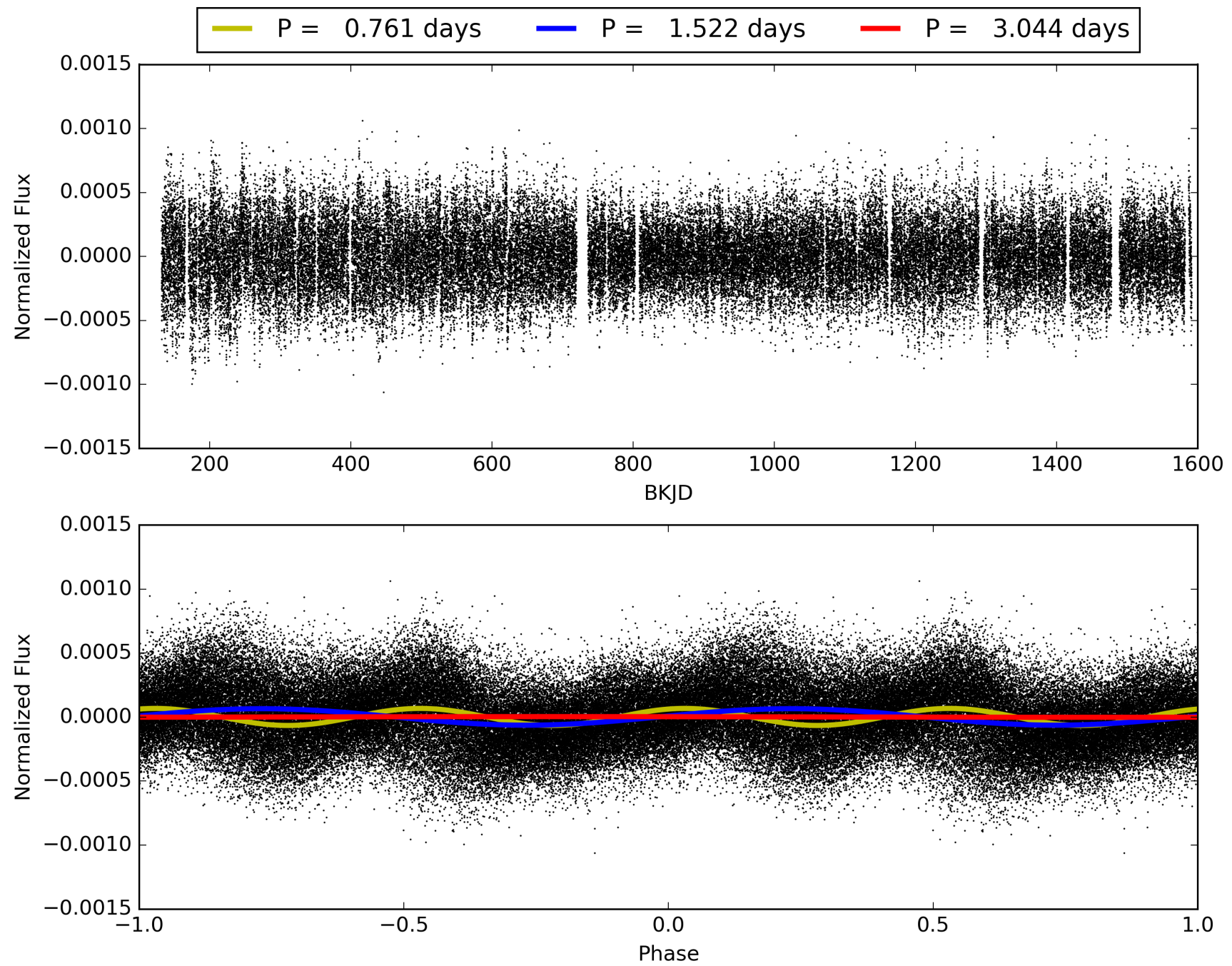
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008461967-02, PDC Light Curves

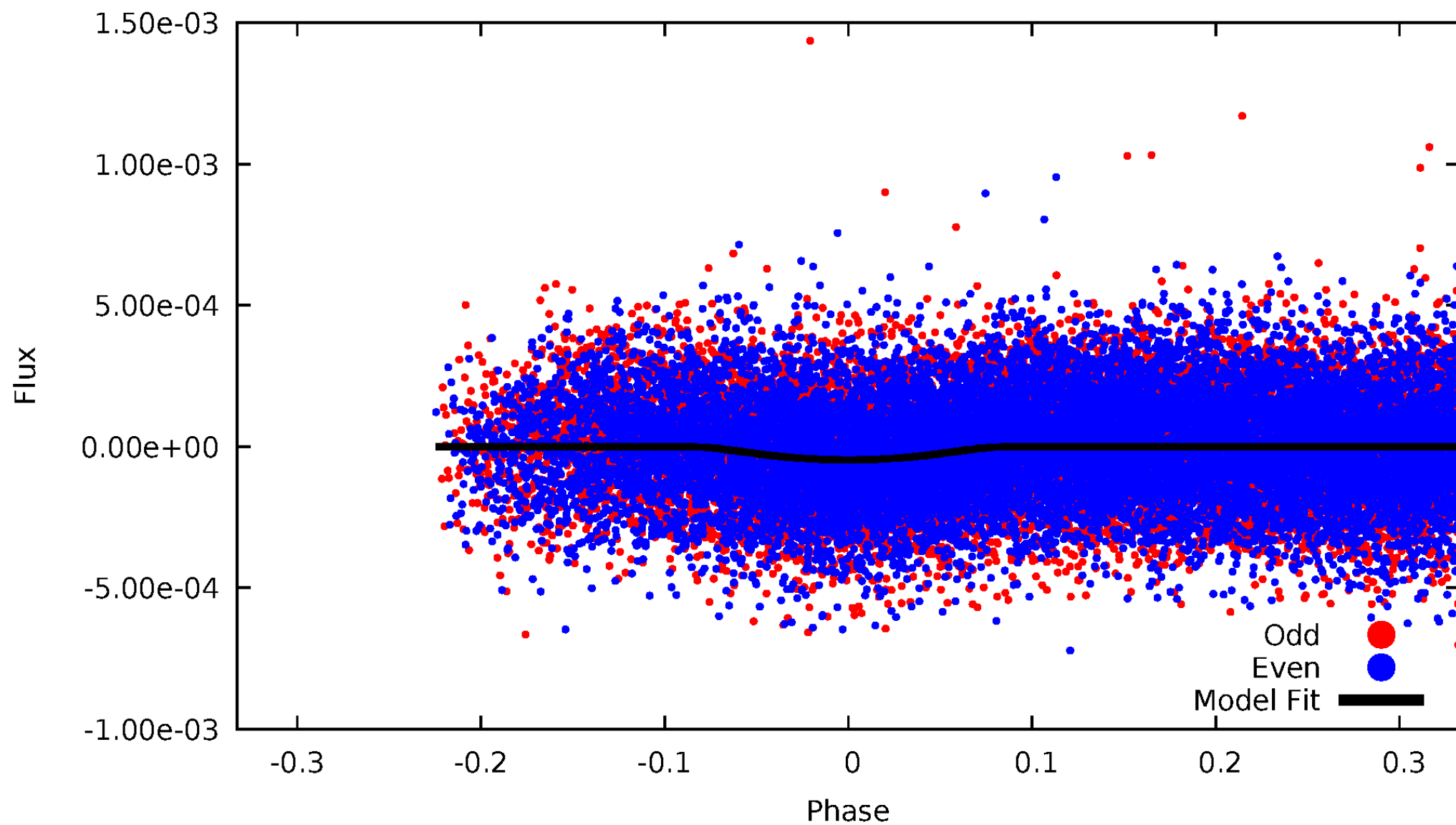


TCE 008461967-02



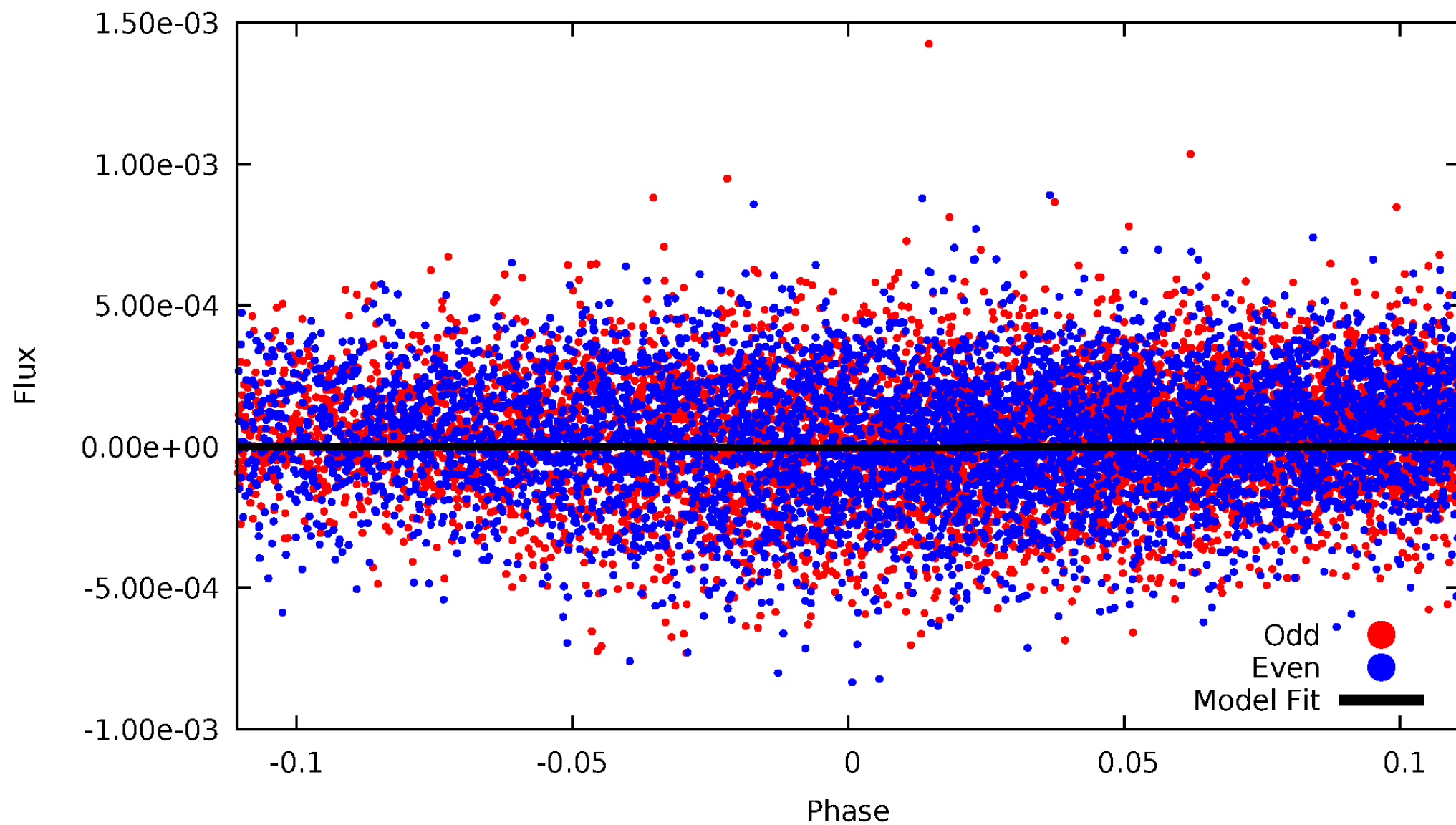
DV Odd/Even

TCE 008461967-02



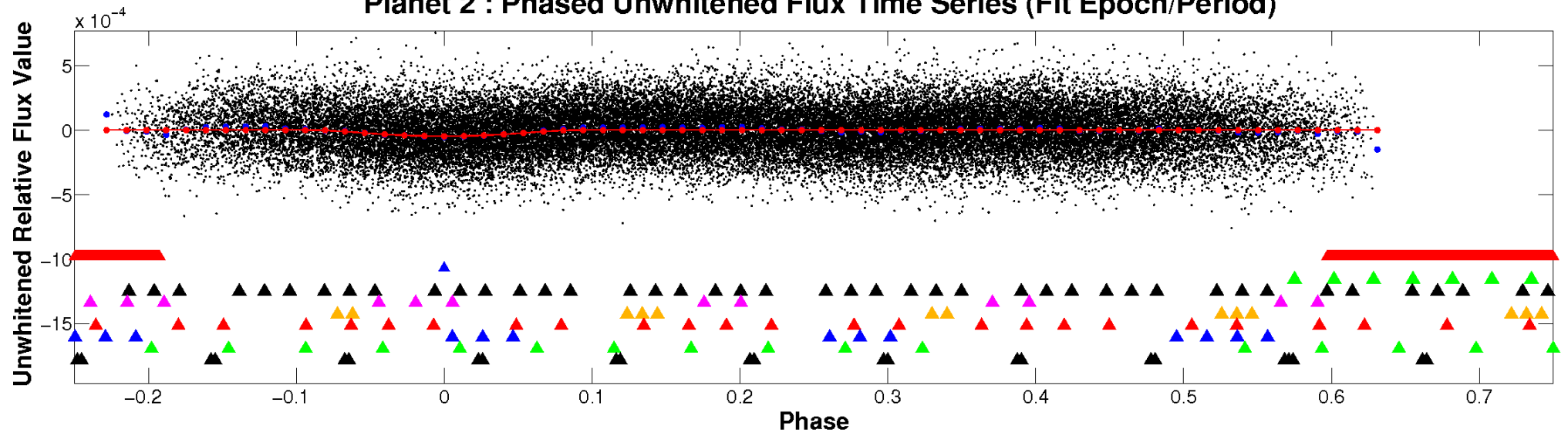
ALT Odd/Even

TCE 008461967-02

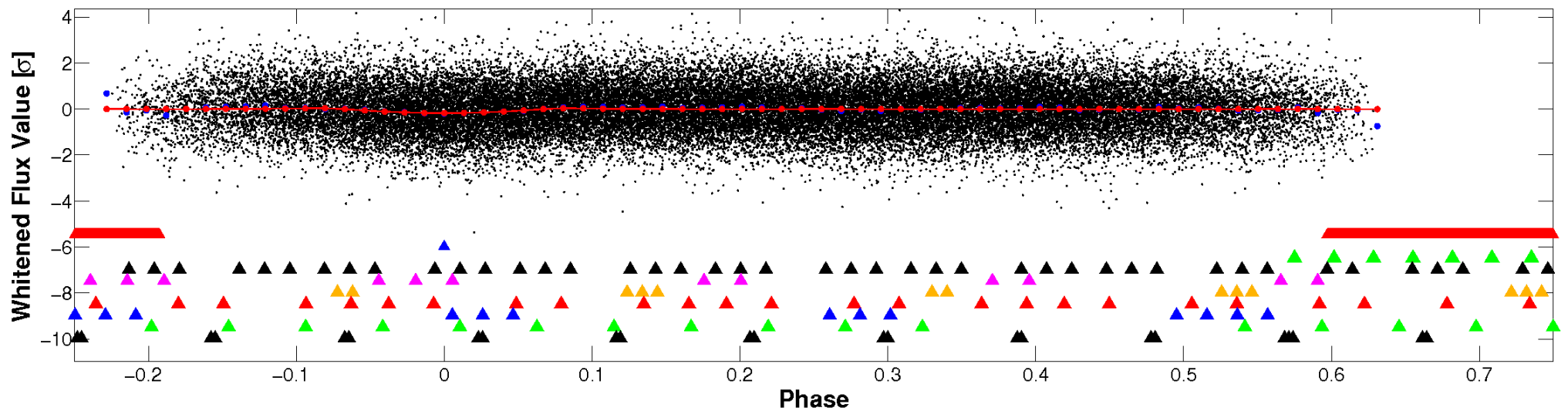


Non-Whitened Vs. Whitened Light Curve

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

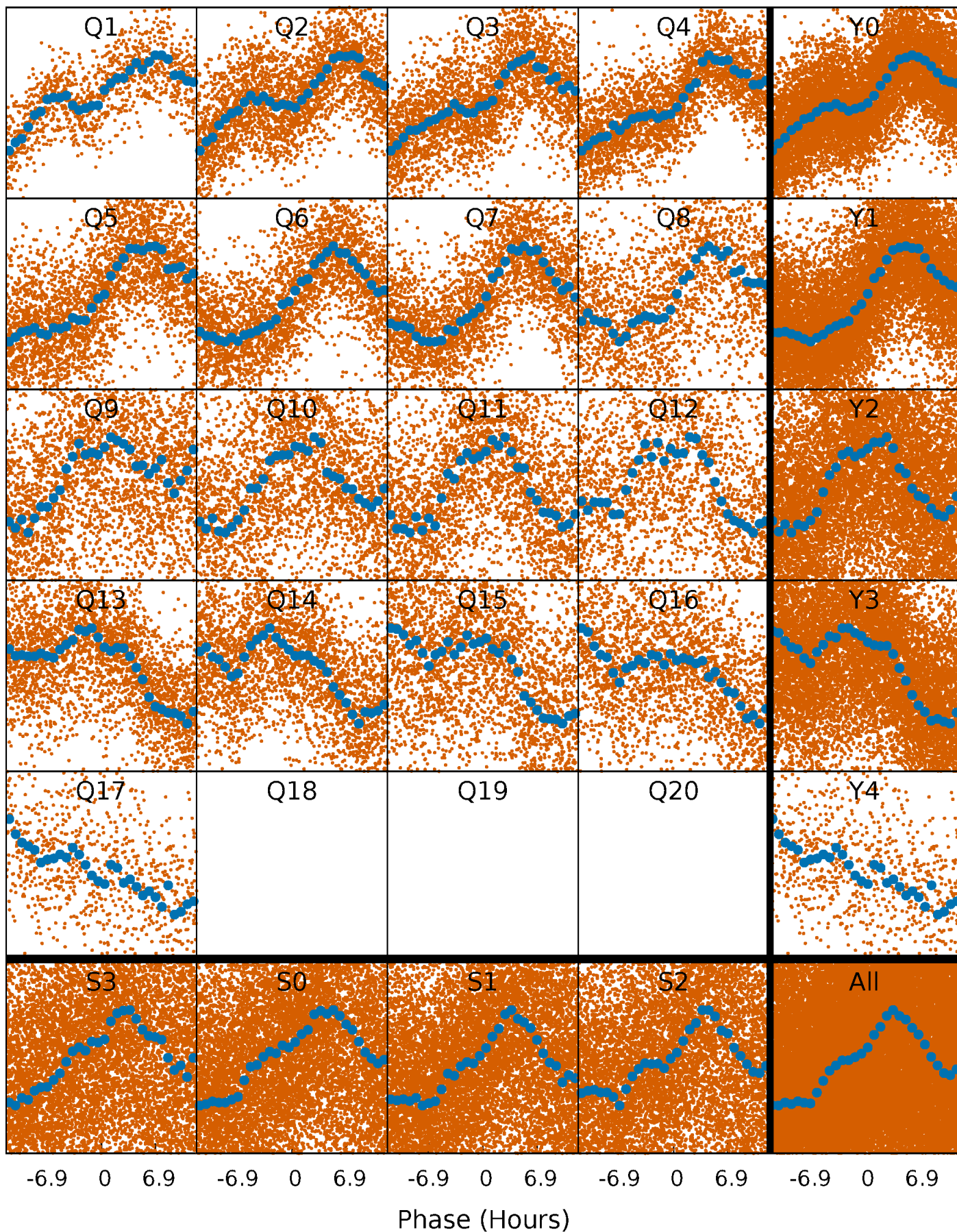


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



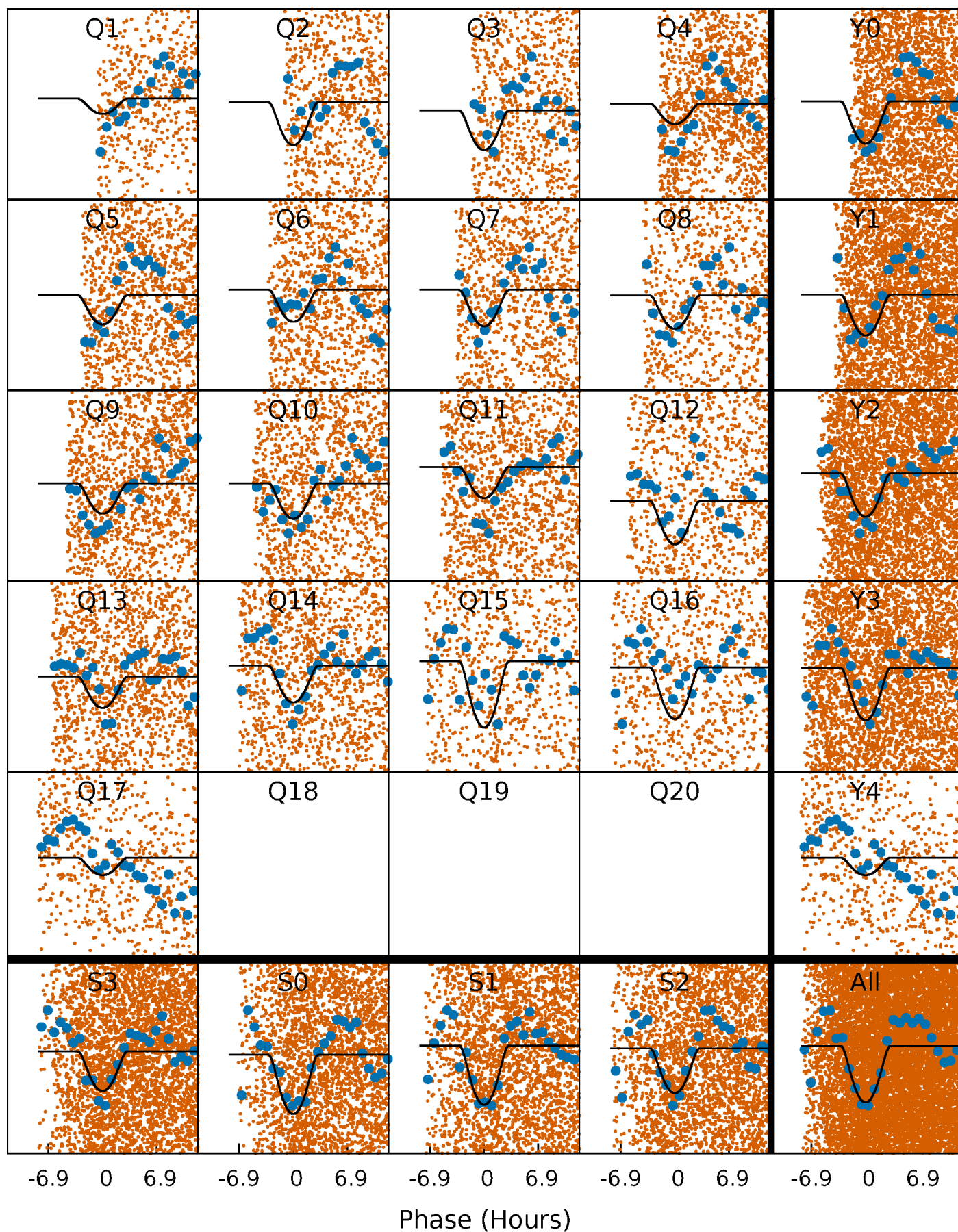
PDC Quarter-Phased Transit Curves

TCE 008461967-02 P= 1.522001 Days $T_0=132.662554$ (BKJD)



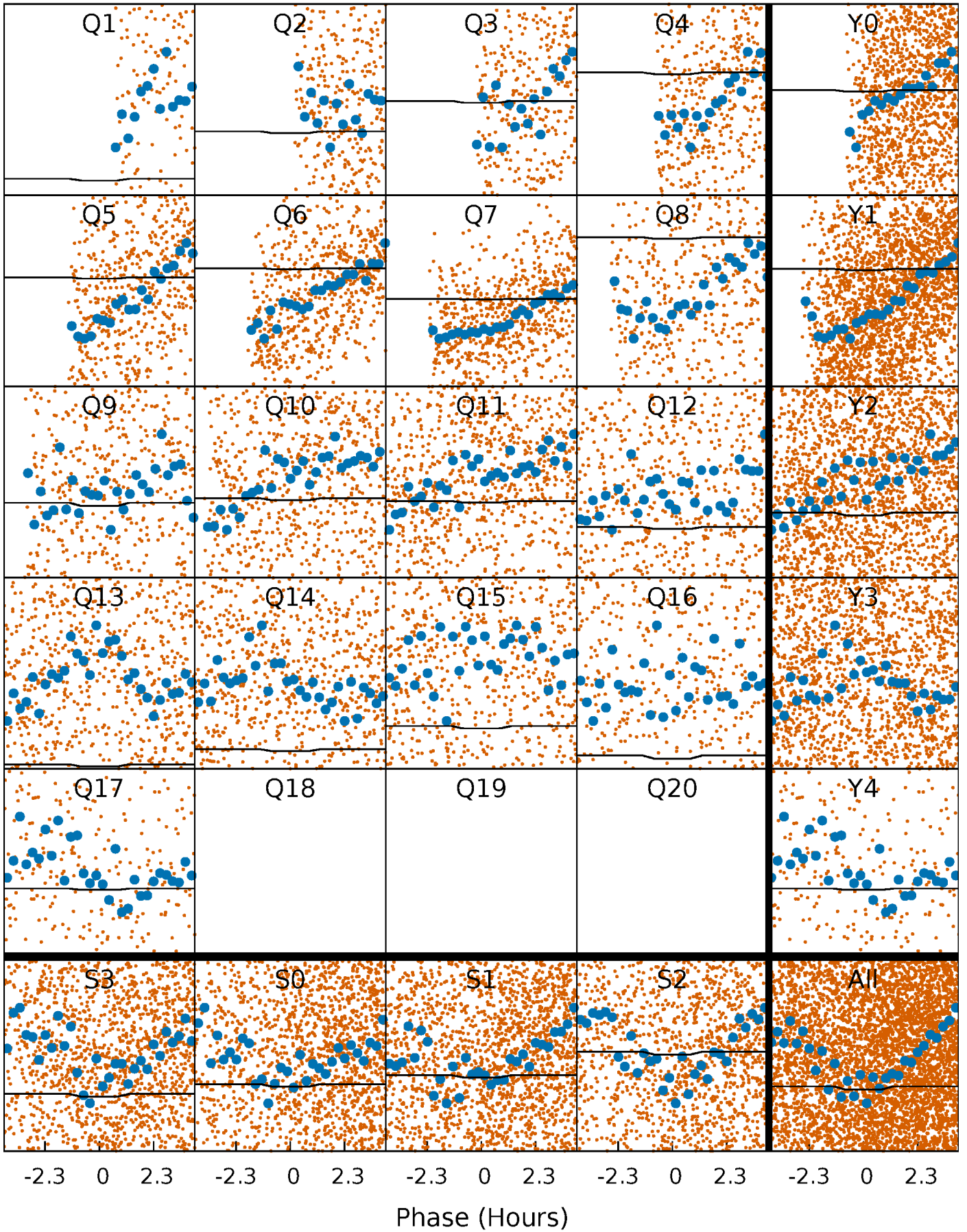
DV Quarter-Phased Transit Curves

TCE 008461967-02 P= 1.522001 Days $T_0=132.662554$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

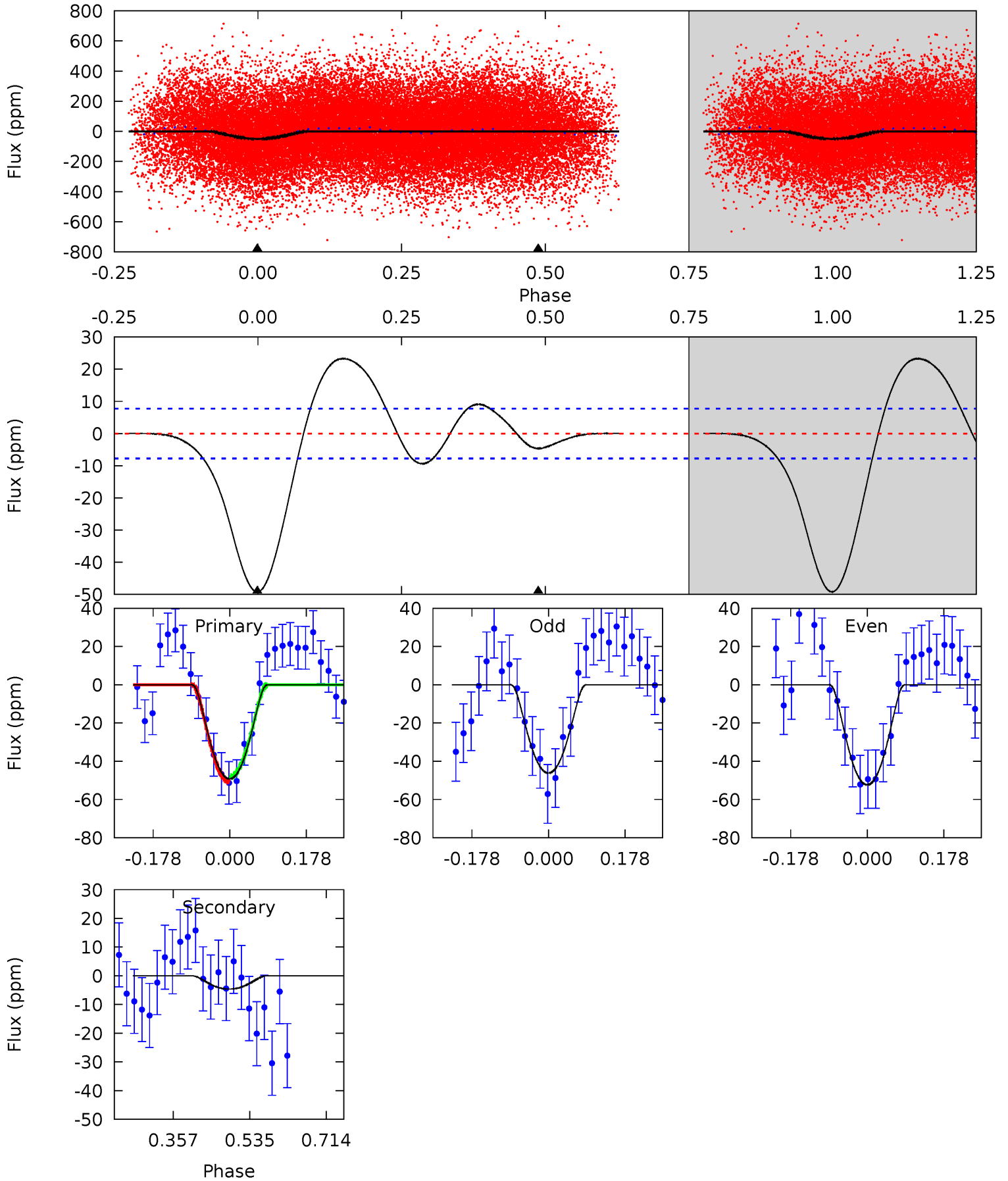
TCE 008461967-02 $P = 1.521987$ Days $T_0 = 132.610182$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-02, P = 1.522001 Days, E = 131.140553 Days

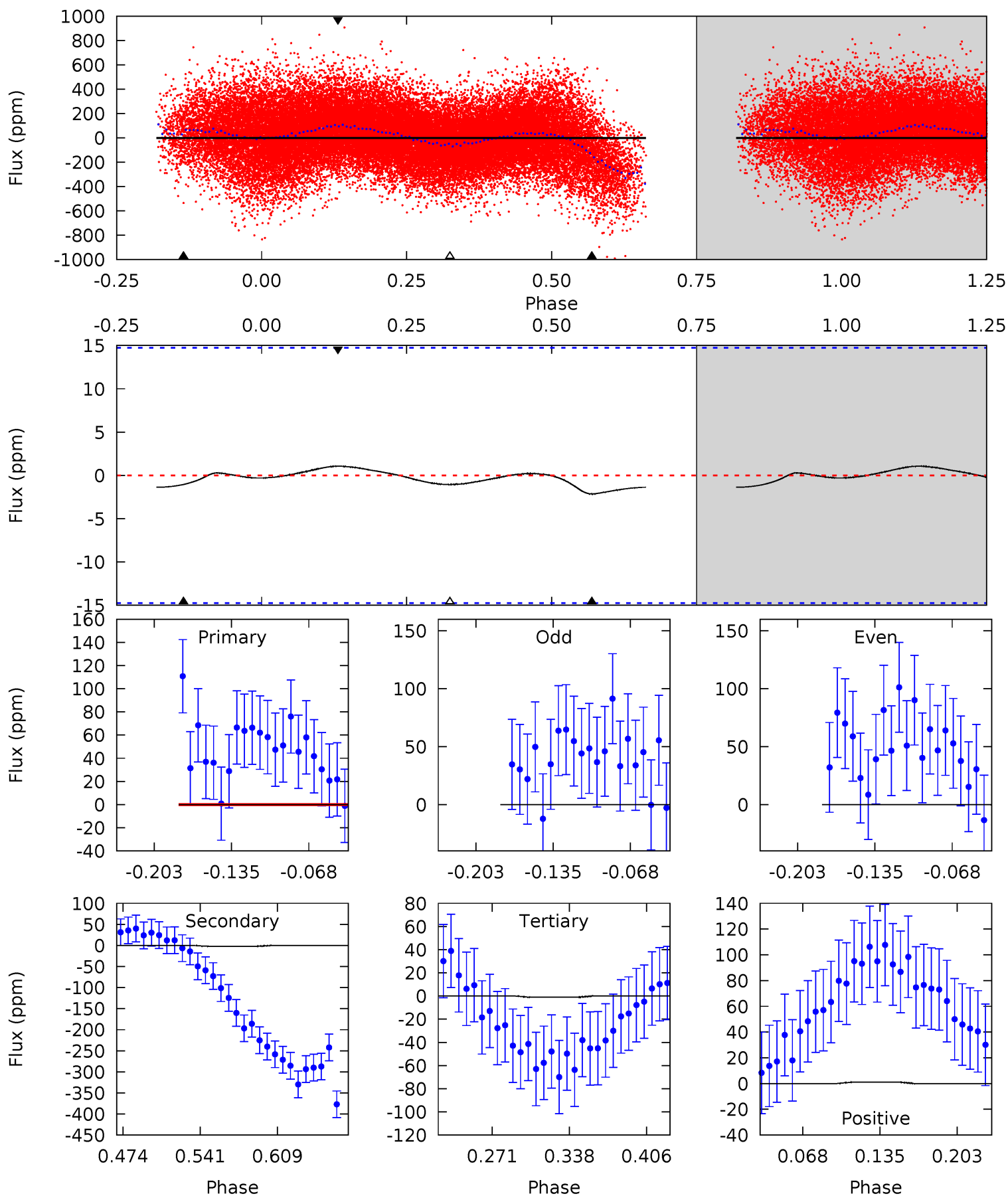
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.3	2.66	0	0	4.44	1.35	5.96	28.3	28.3	2.66	2.66	1.77	1.02	0.32	0.71



Alt Model-Shift Uniqueness Test

008461967-02, P = 1.521987 Days, E = 131.088195 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.33	0.68	0.33	0.34	4.65	1.83	0.19	-0.00	-0.00	0.34	0.34	0.15	1.10	0.33	0.10



Stellar Parameters For KIC 008461967

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5 ± 2	$4.18^{+2.33}_{-2.01}$	4164^{+296}_{-404}	-3383^{+6771}_{-398}	$0.128^{+0.341}_{-0.082}$
Alt.	-2 ± 3	$1.75^{+2.00}_{-1.28}$	4145^{+301}_{-481}	-3056^{+8818}_{-965}	$0.217^{+2.833}_{-0.321}$

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 $A_{obs} \gg 1.0$

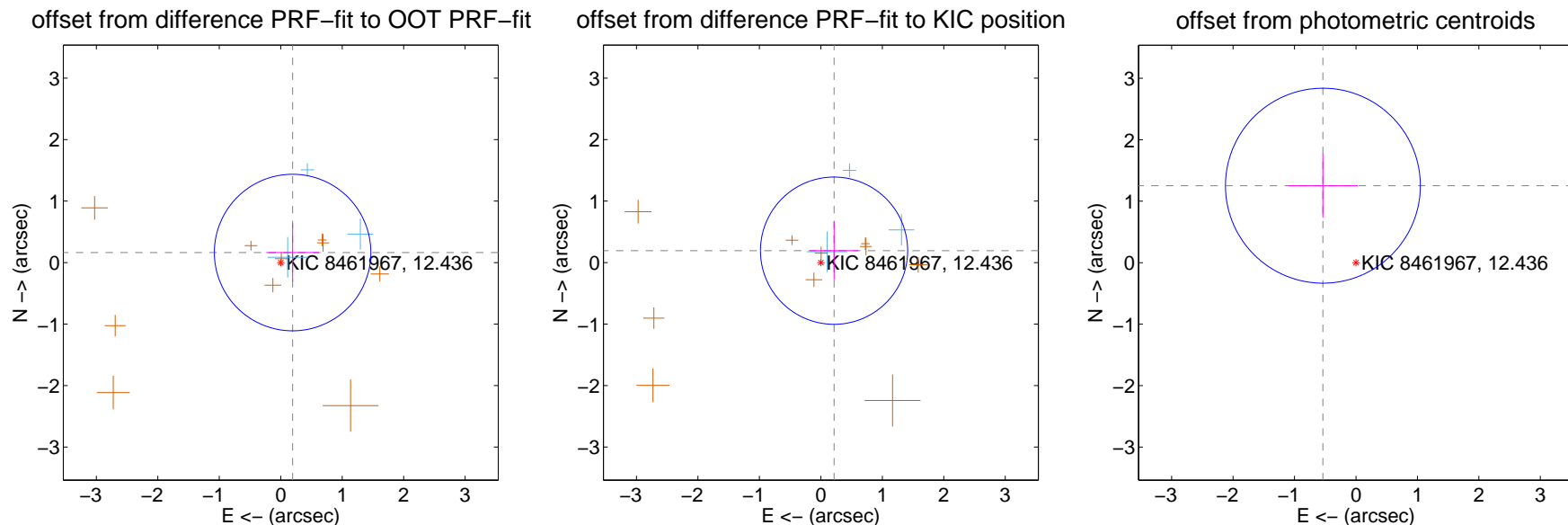
DV Centroid Data

Supplemental centroid analysis for 008461967-02. Kepler magnitude: 12.44. Transit SNR 11.54

There are 3 quarters with good PRF difference image offsets

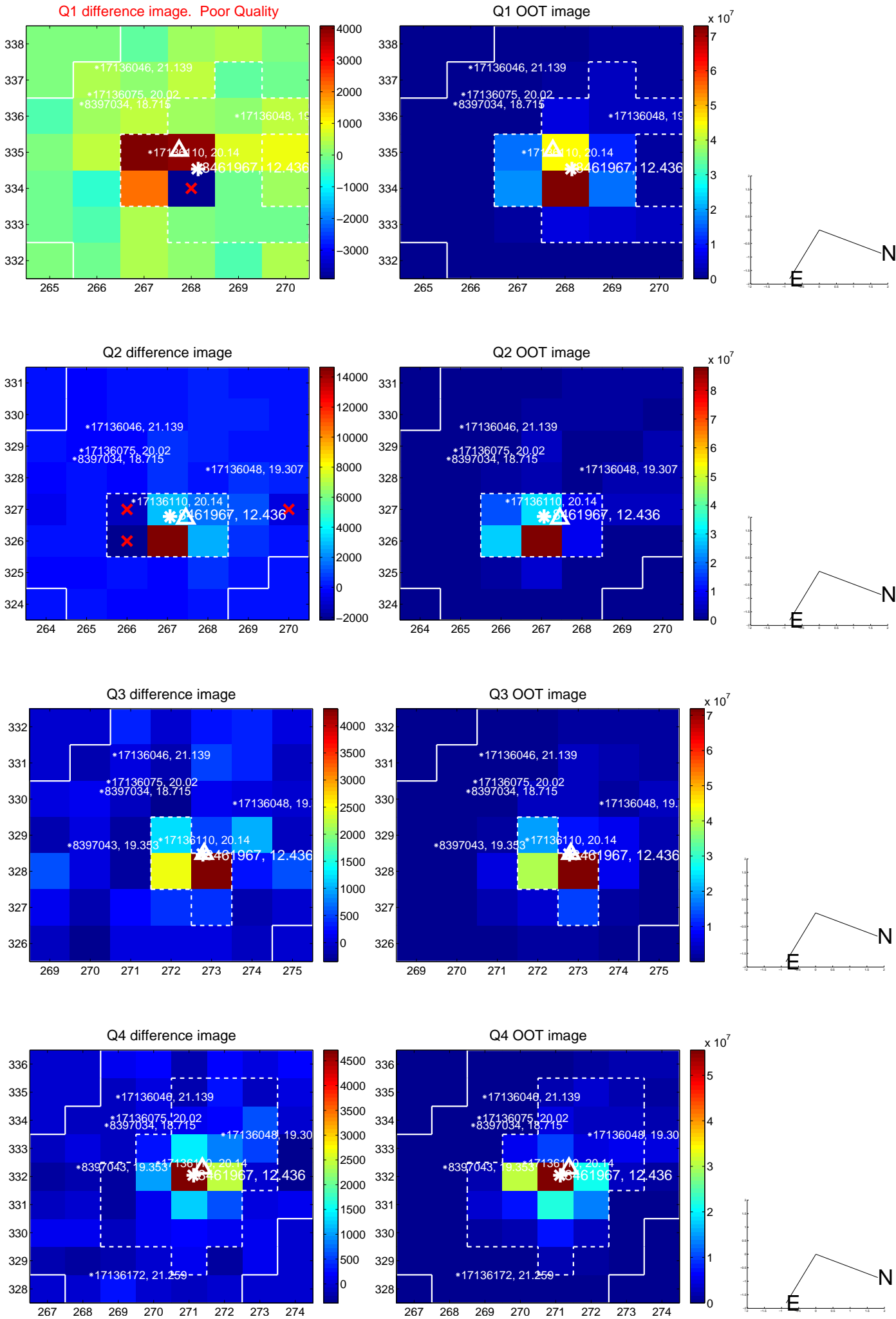
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.253 ± 0.424	0.60	-0.193 ± 0.428	0.163 ± 0.473
PRF-fit source offset from KIC position	0.289 ± 0.399	0.72	-0.215 ± 0.395	0.193 ± 0.474
photometric centroid source offset	1.36 ± 0.53	2.58	0.54 ± 0.57	1.25 ± 0.52

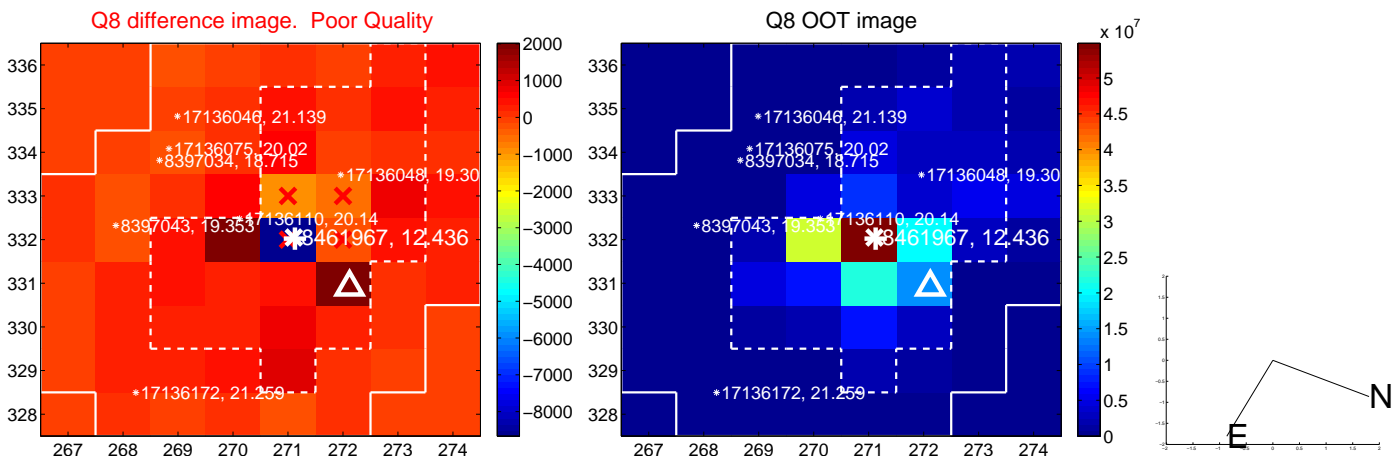
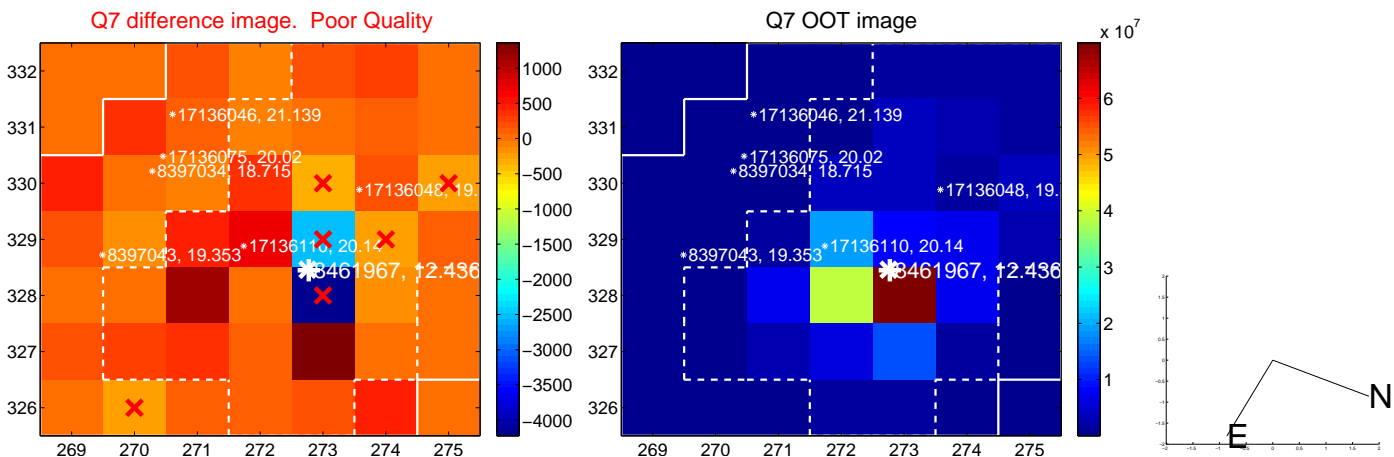
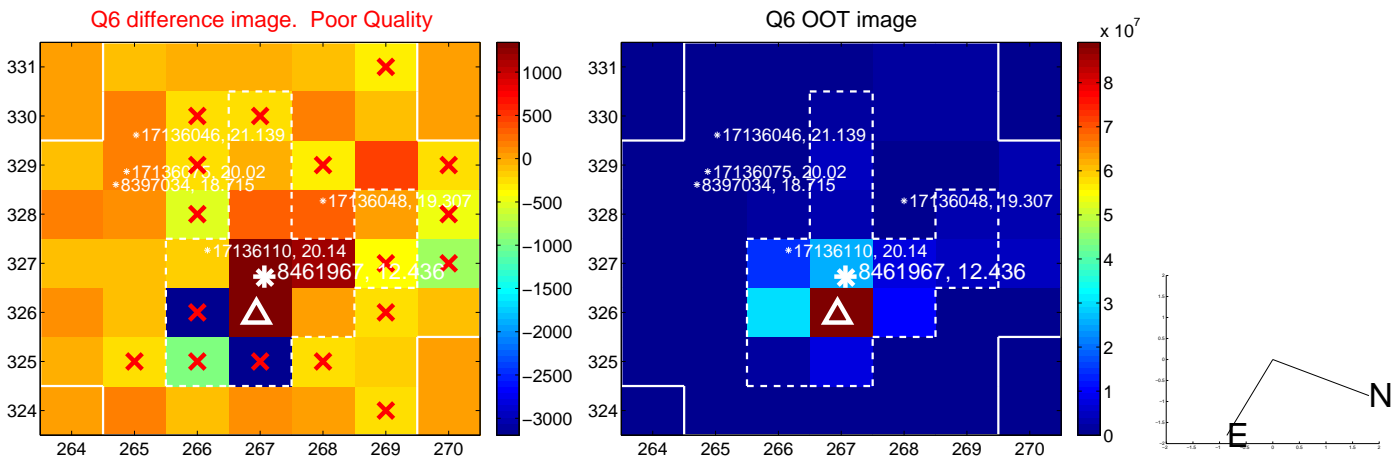
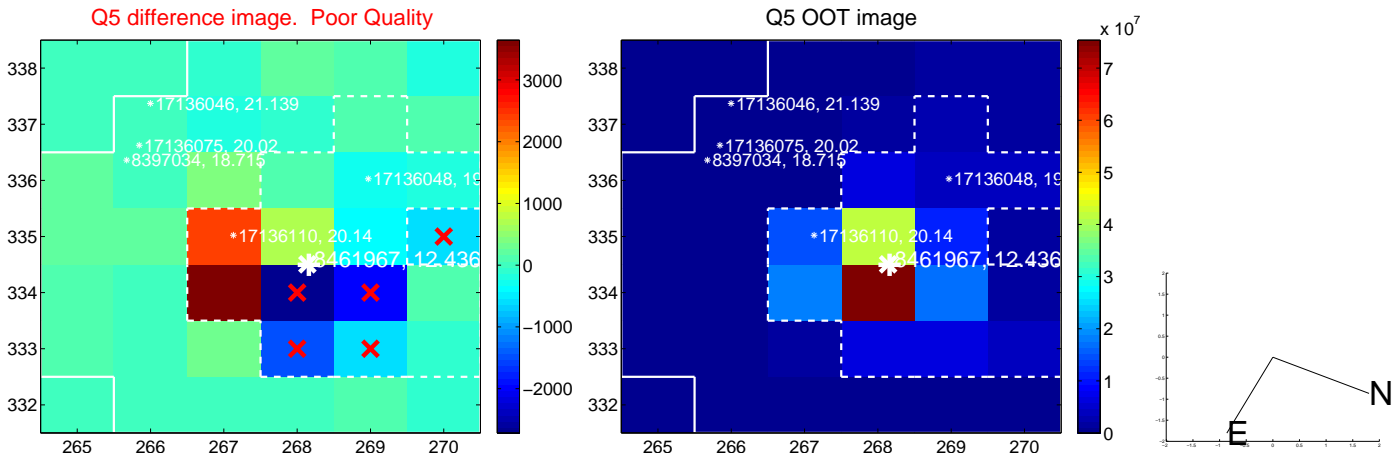


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

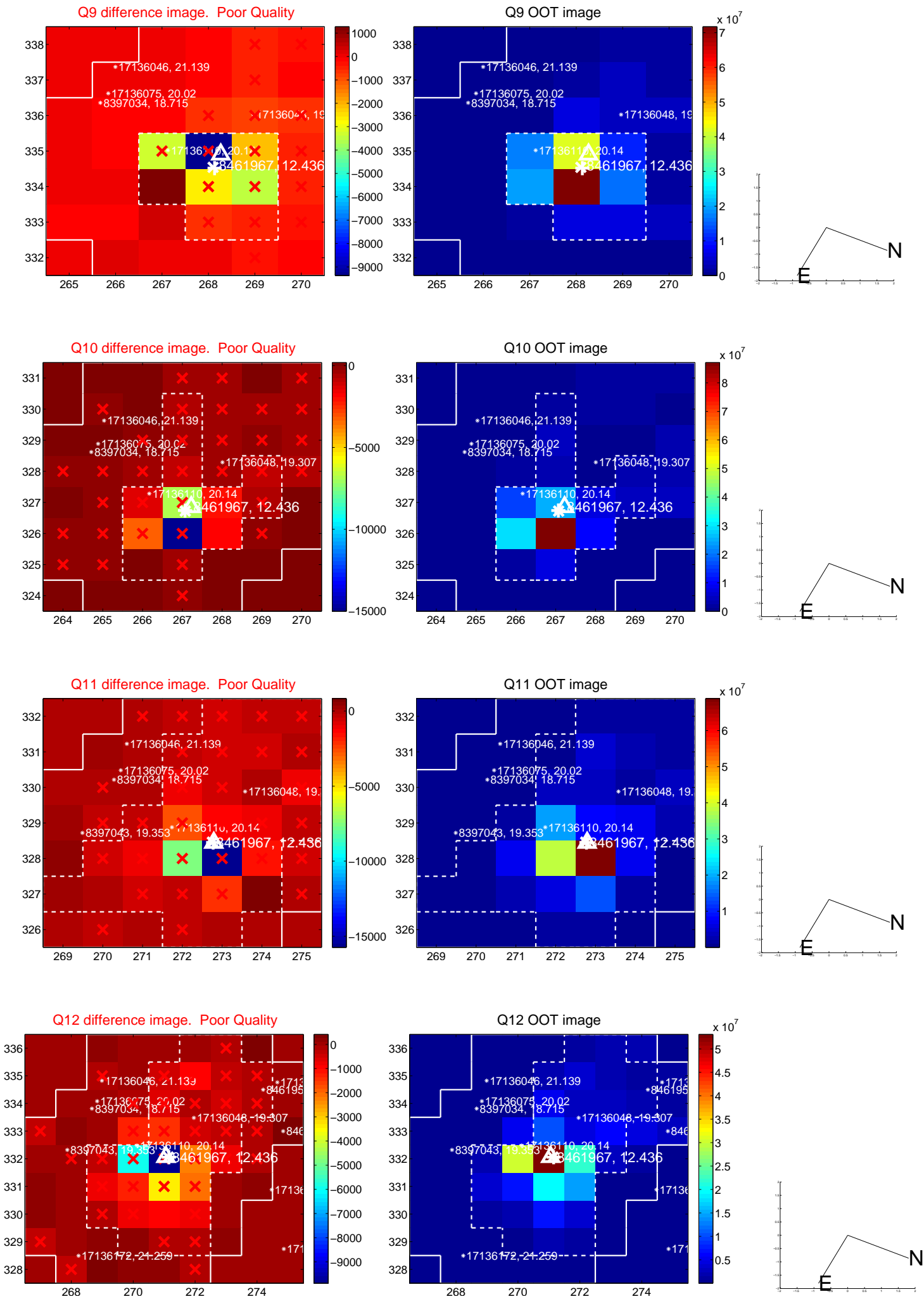
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



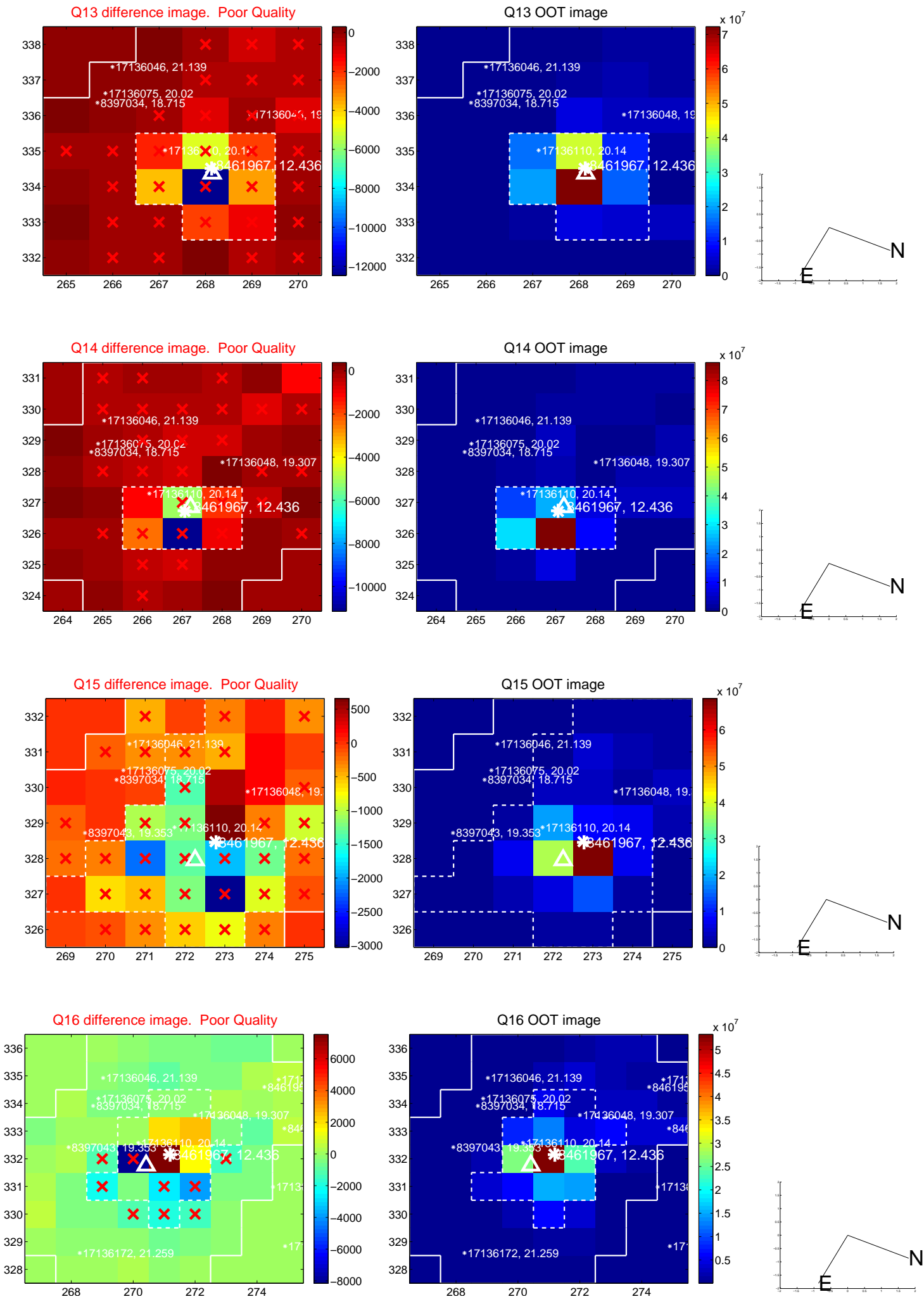
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



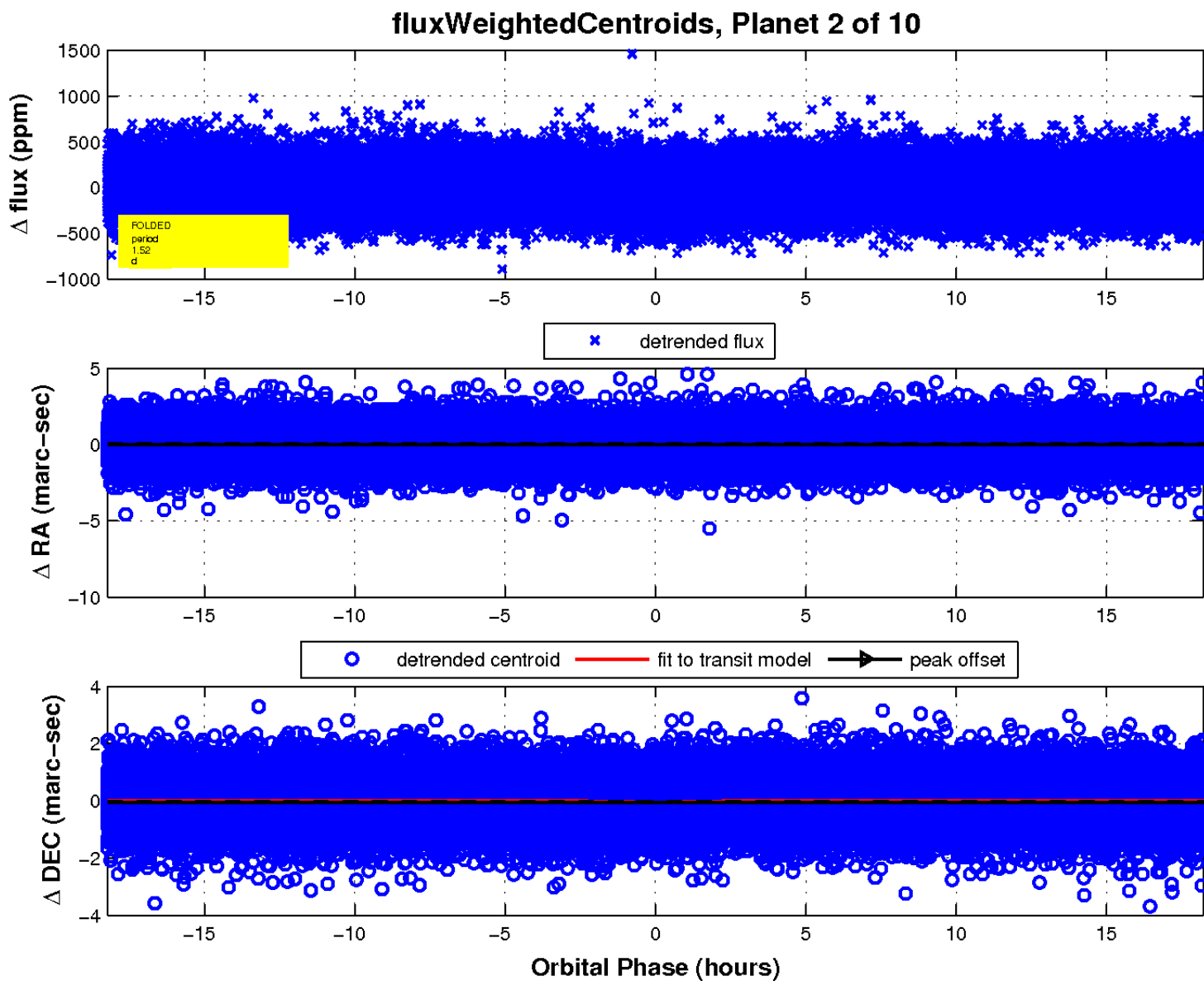
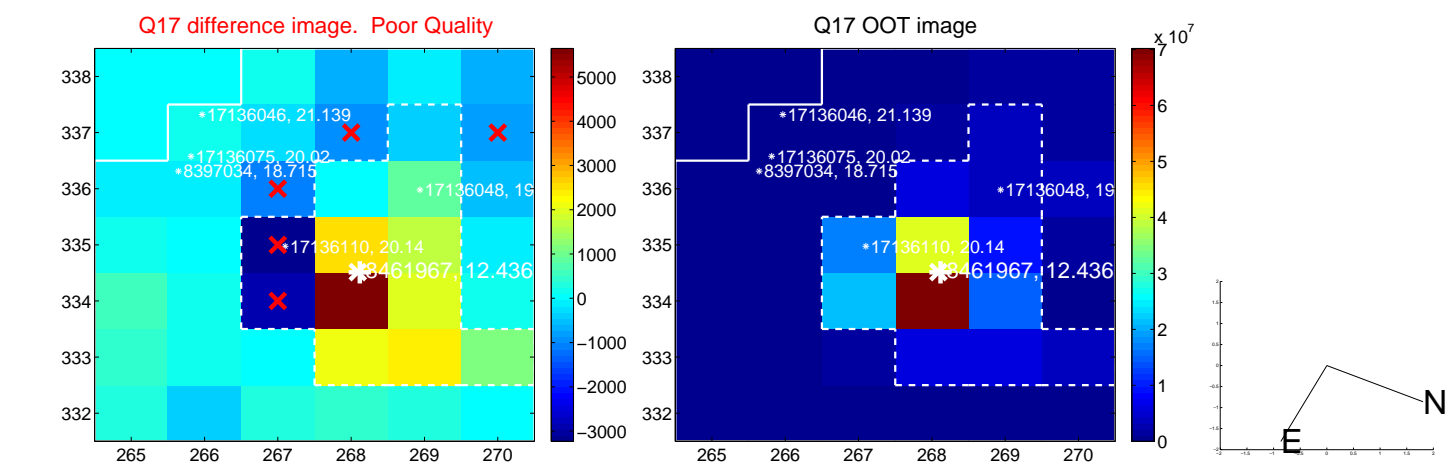
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

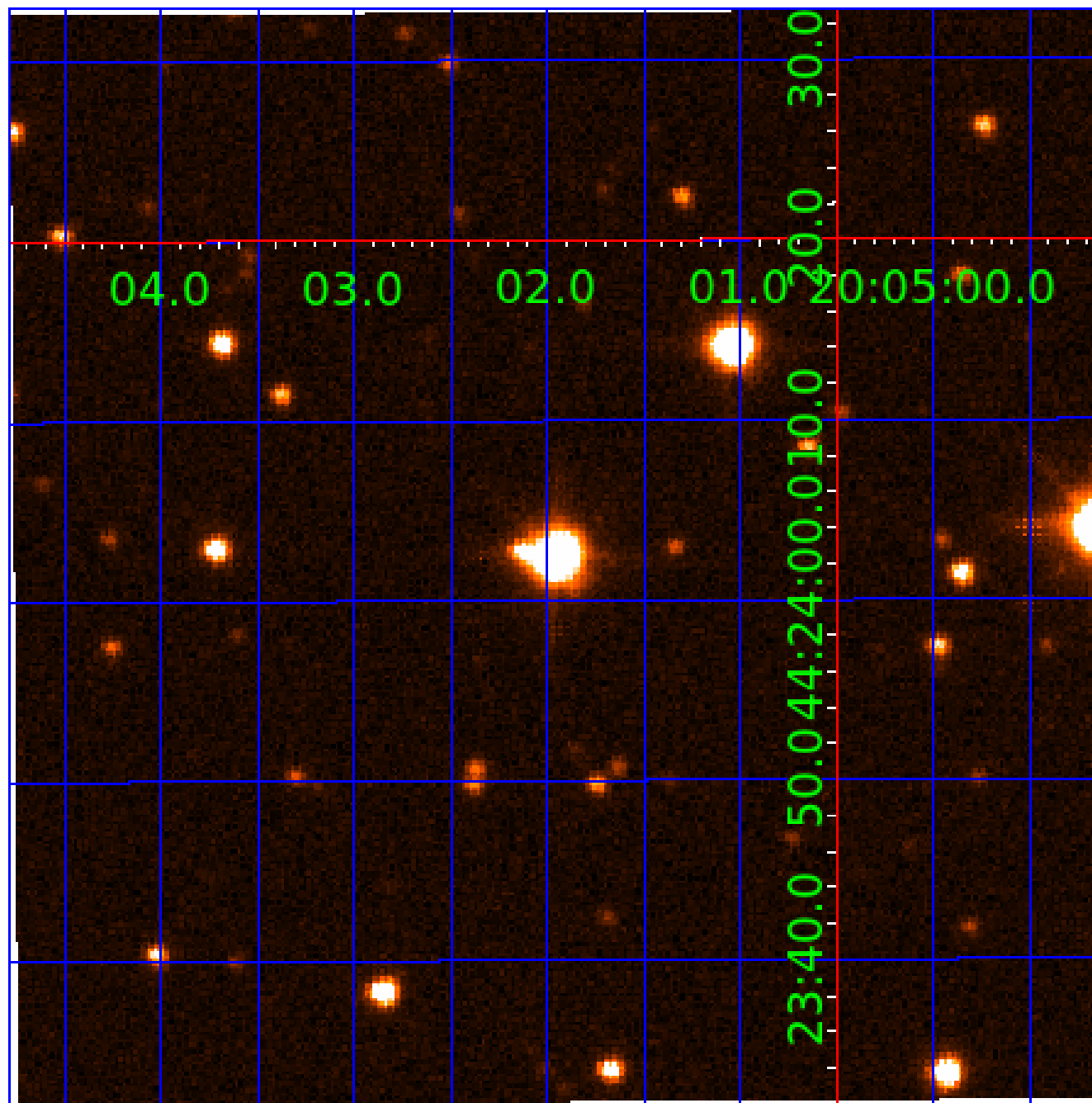


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008461967

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})
008461967-01	OBS	No	1.521666	132.369637	0.0	4.159	11.1	0.0	4.03	5991	0.07	20747.05
008461967-02	OBS	No	1.522001	132.662554	47.0	6.075	10.9	11.5	4.03	5991	4.49	20740.97
008461967-03	OBS	No	226.818718	223.335820	517.1	12.175	9.2	8.0	4.03	5991	11.43	26.25
008461967-04	OBS	No	33.685215	150.767681	201.9	4.893	9.5	8.6	4.03	5991	6.75	333.78
008461967-05	OBS	No	113.853229	236.091319	495.9	6.424	8.5	8.5	4.03	5991	17.51	65.80
008461967-06	OBS	No	110.195951	231.169028	396.9	5.248	8.8	9.2	4.03	5991	10.51	68.73
008461967-07	OBS	No	58.183689	156.918725	280.5	3.132	8.0	7.8	4.03	5991	8.04	161.06
008461967-08	OBS	No	113.761733	139.598103	311.1	6.578	8.0	8.3	4.03	5991	8.17	65.88
008461967-09	OBS	No	91.399375	147.184635	174.1	13.803	7.6	6.4	4.03	5991	6.25	88.20
008461967-10	OBS	No	64.753816	162.454167	210.8	7.326	8.4	7.8	4.03	5991	6.67	139.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008461967-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

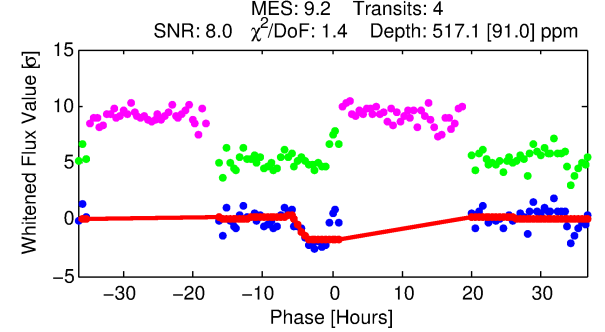
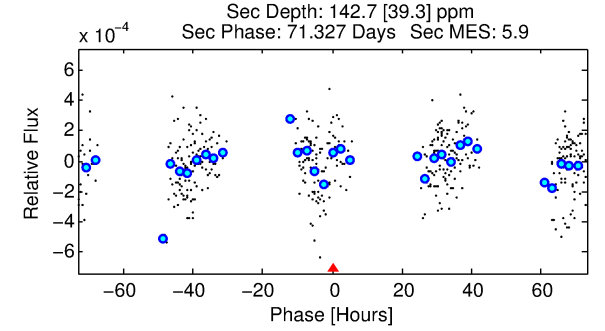
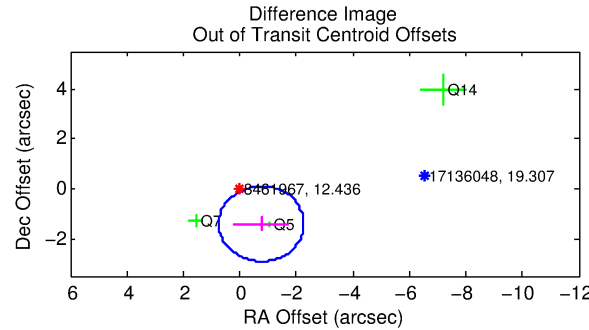
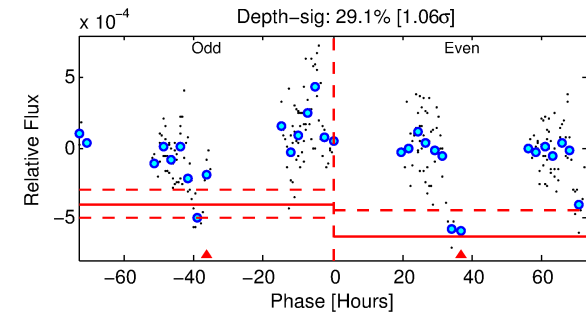
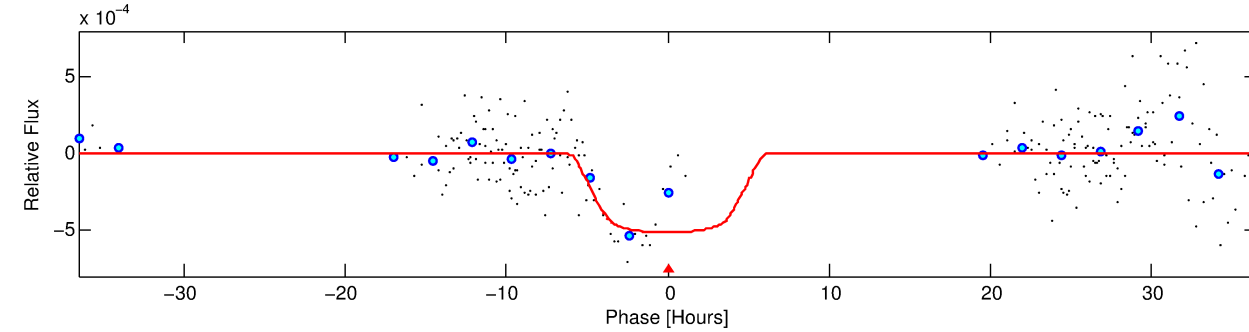
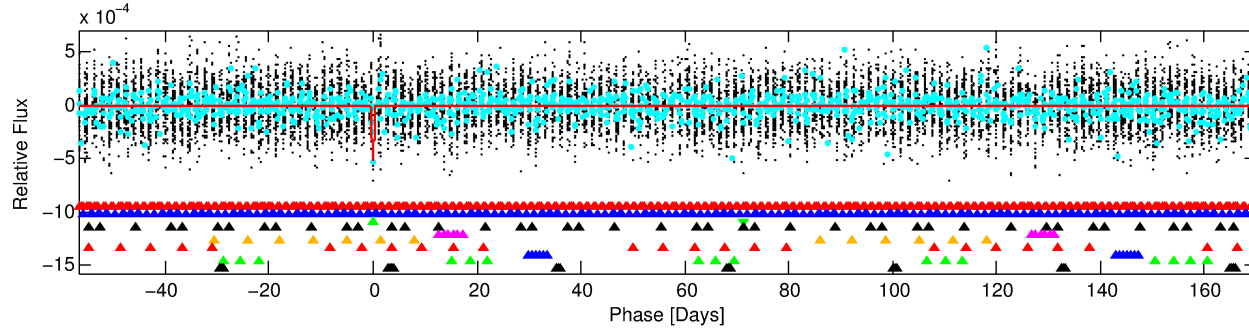
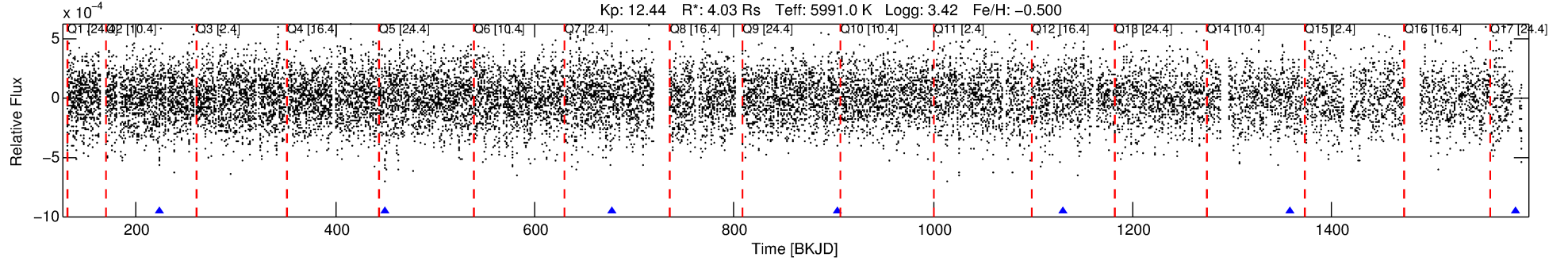
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-03

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 3 of 10 Period: 226.819 d



DV Fit Results:

Period = 226.81872 [0.01344] d
Epoch = 223.3358 [0.0874] BKJD
Rp/R* = 0.0260 [0.0030]
a/R* = 55.15 [14.64]
b = 0.95 [0.04]
Seff = 26.25 [15.91]
Teq = 577 [87] K
Rp = 11.43 [4.99] Re
a = 0.8459 [0.3227] AU
Ag = 430.00 [296.62] [1.45 σ]
Teffp = 4064 [394] K [8.63 σ]

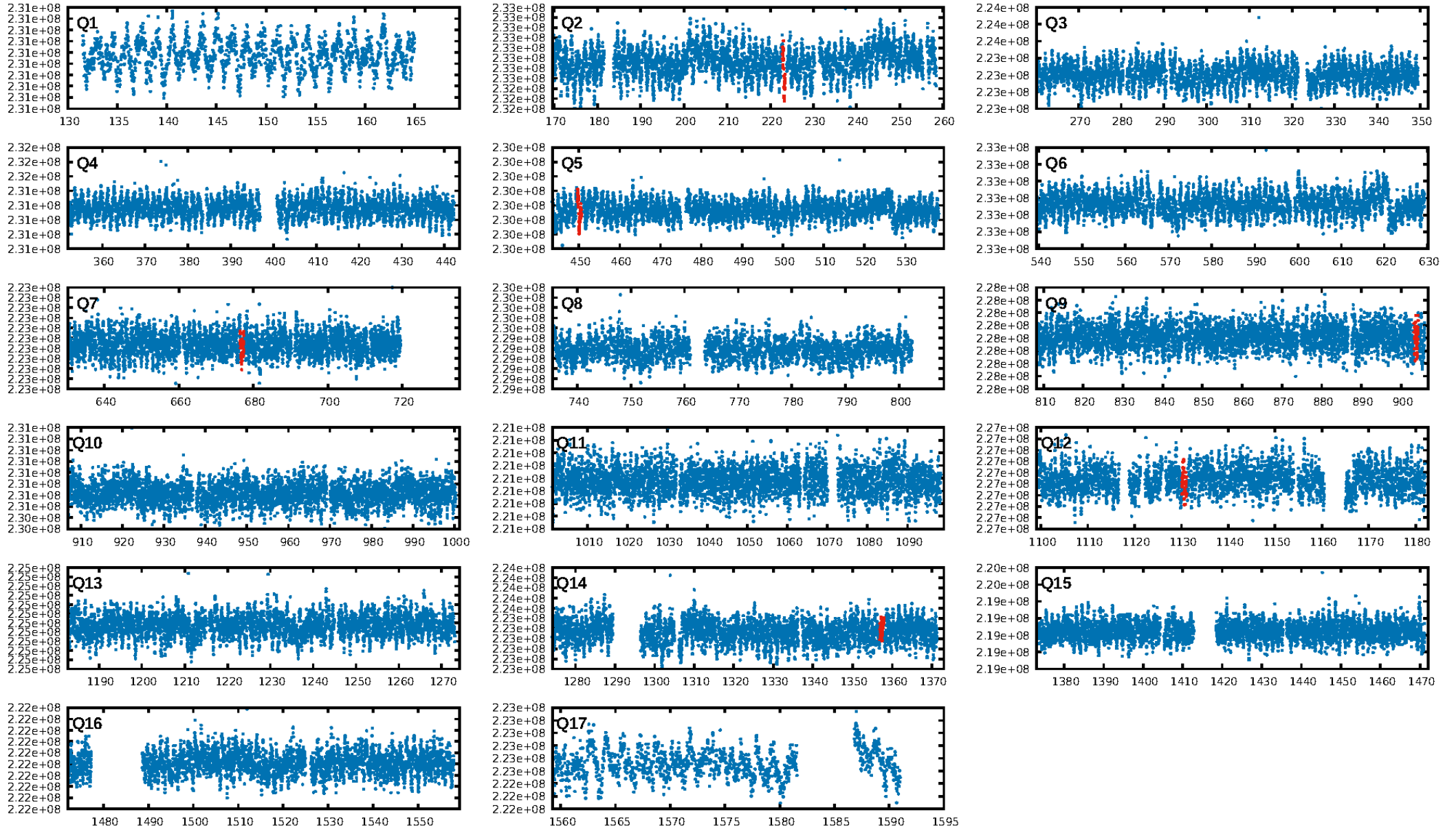
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [196.95 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 20.7%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.9837
Centroid-sig: 0.3%
Centroid-so: 0.950 arcsec [2.23 σ]
OotOffset-rm: 1.602 arcsec [3.19 σ]
KicOffset-rm: 1.529 arcsec [2.75 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/4]

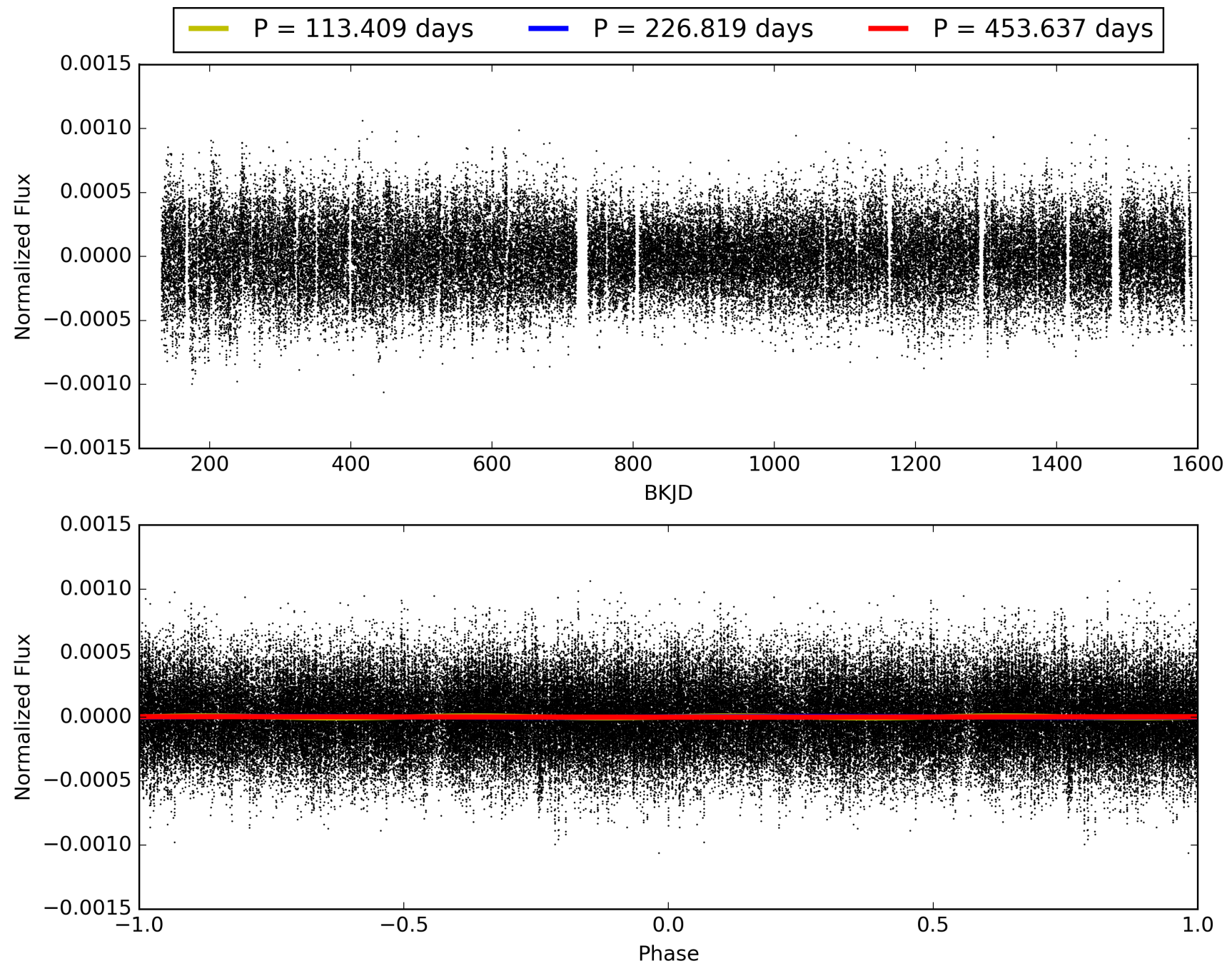
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:45:58 Z

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

TCE 008461967-03, PDC Light Curves

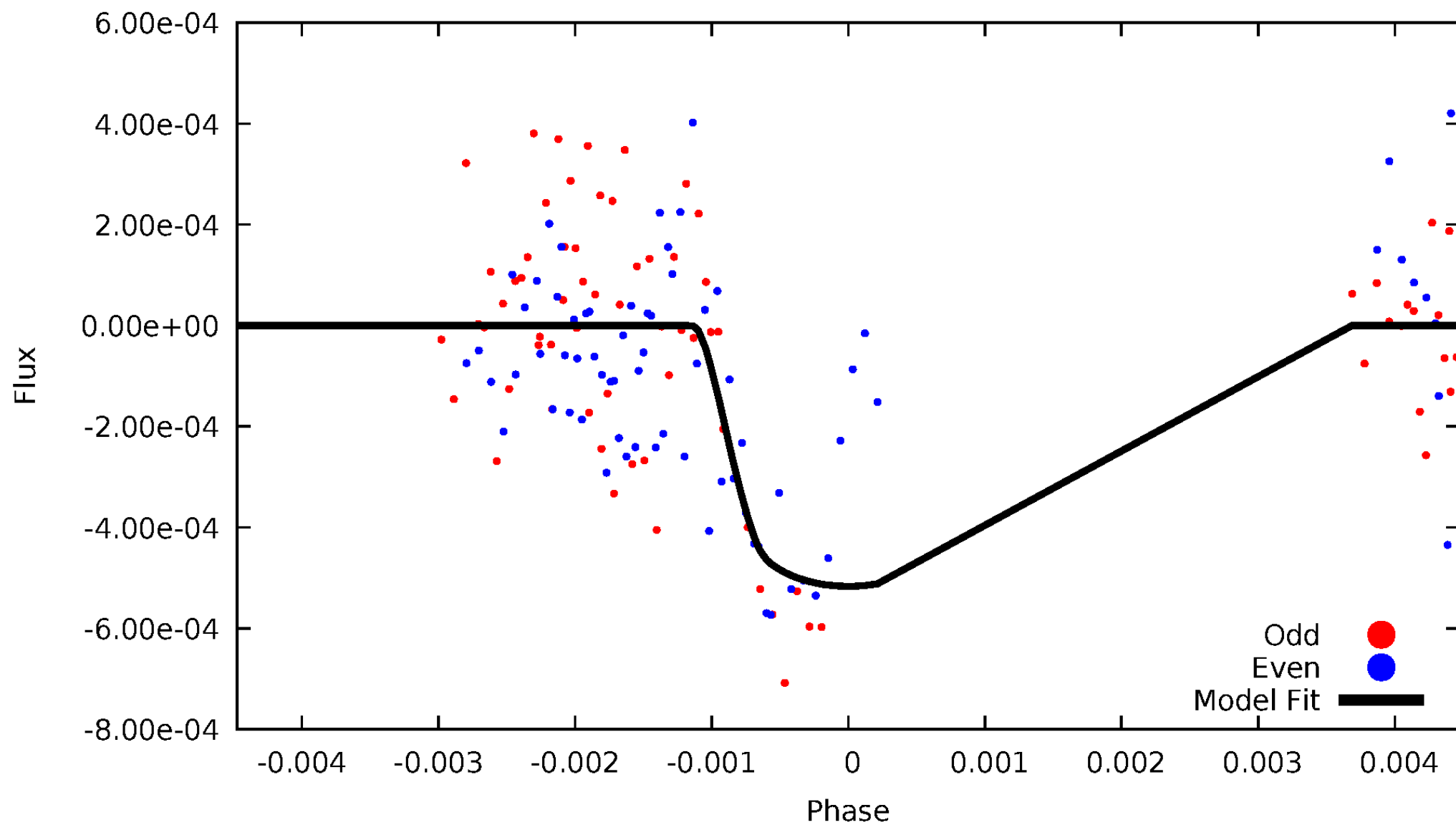


TCE 008461967-03



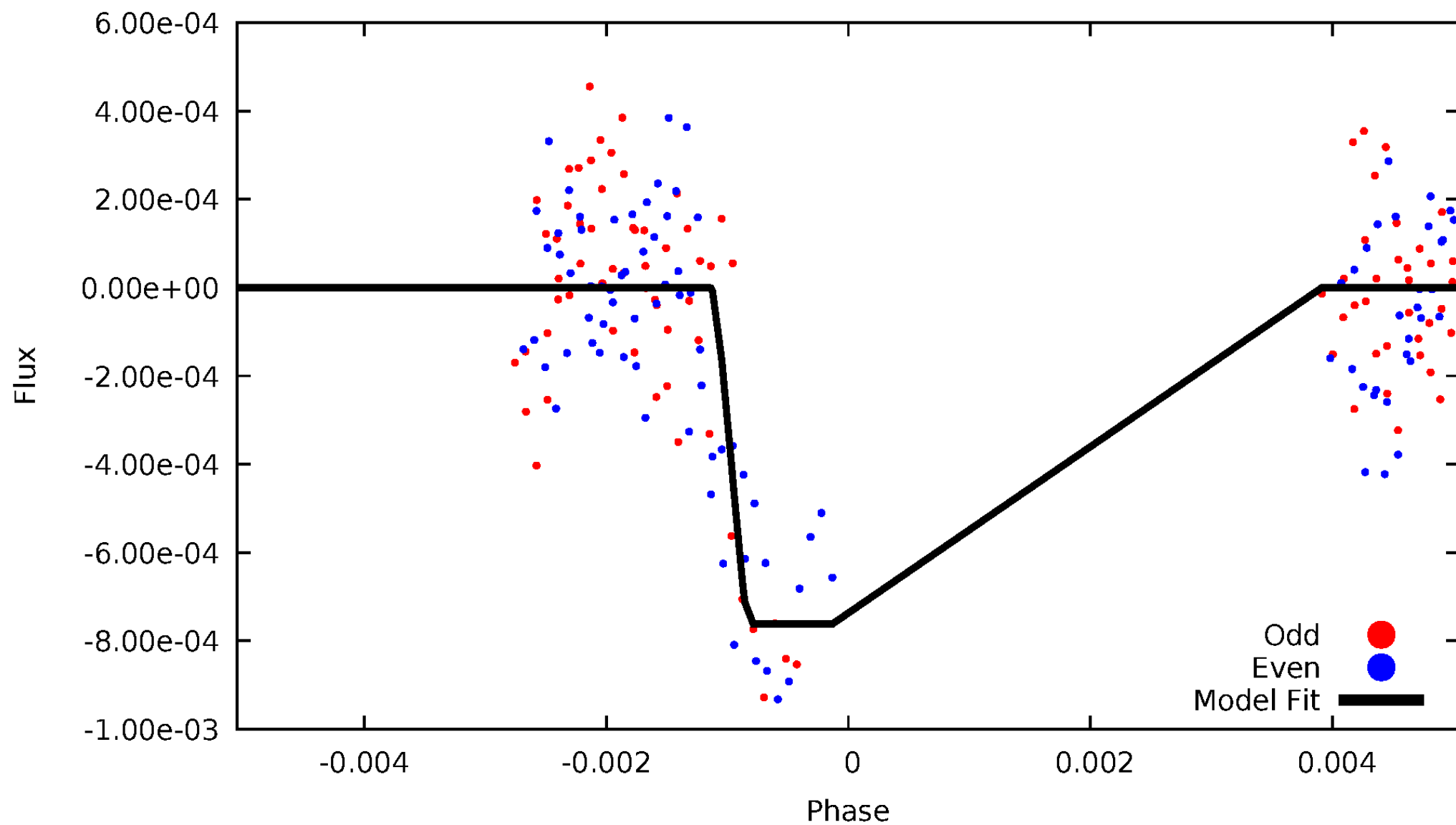
DV Odd/Even

TCE 008461967-03



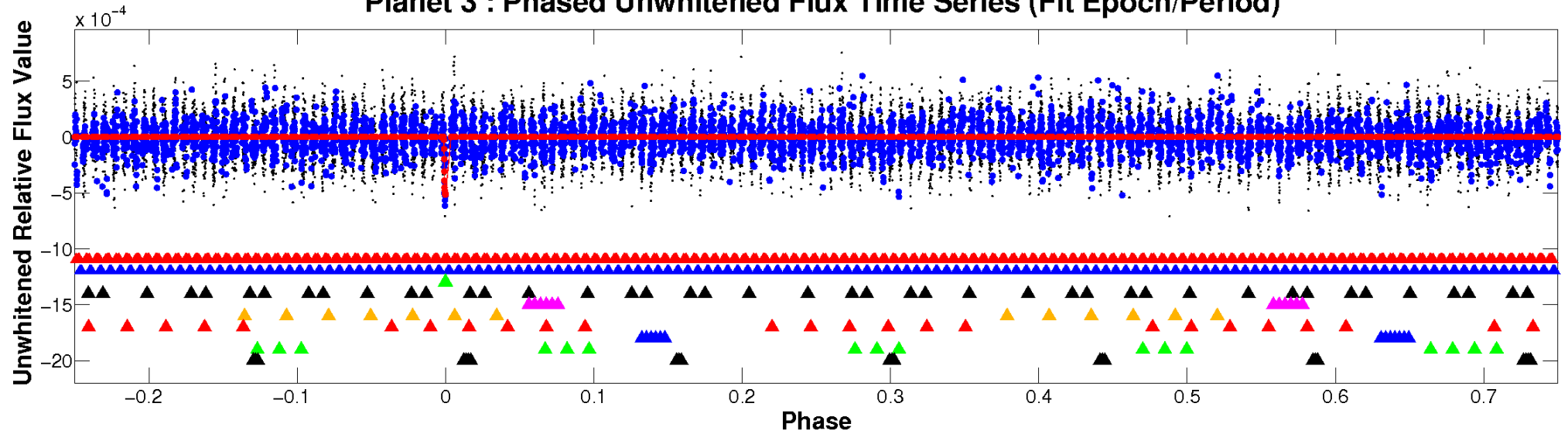
ALT Odd/Even

TCE 008461967-03

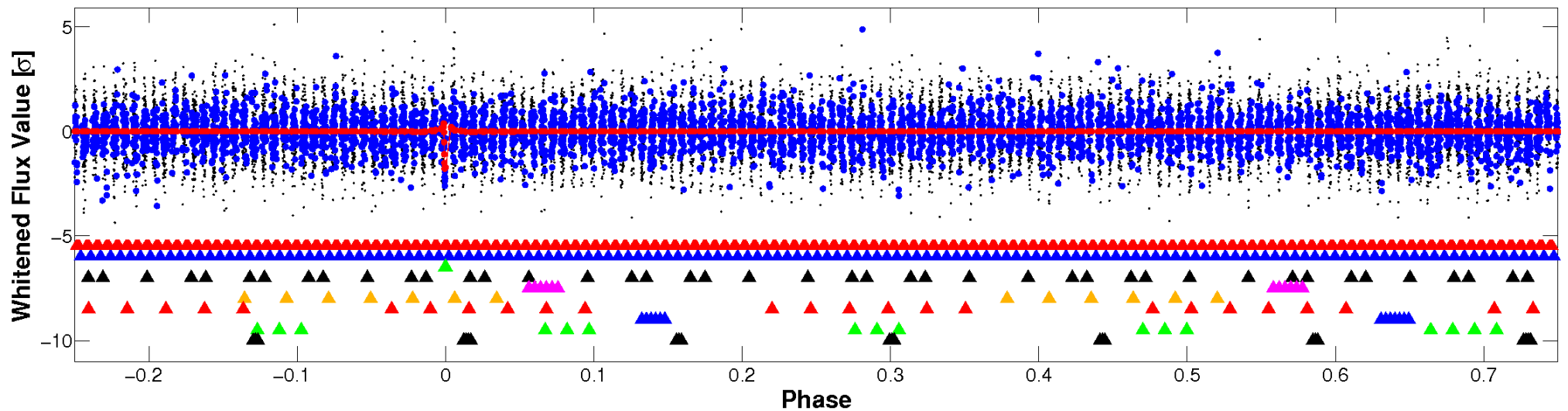


Non-Whitened Vs. Whitened Light Curve

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

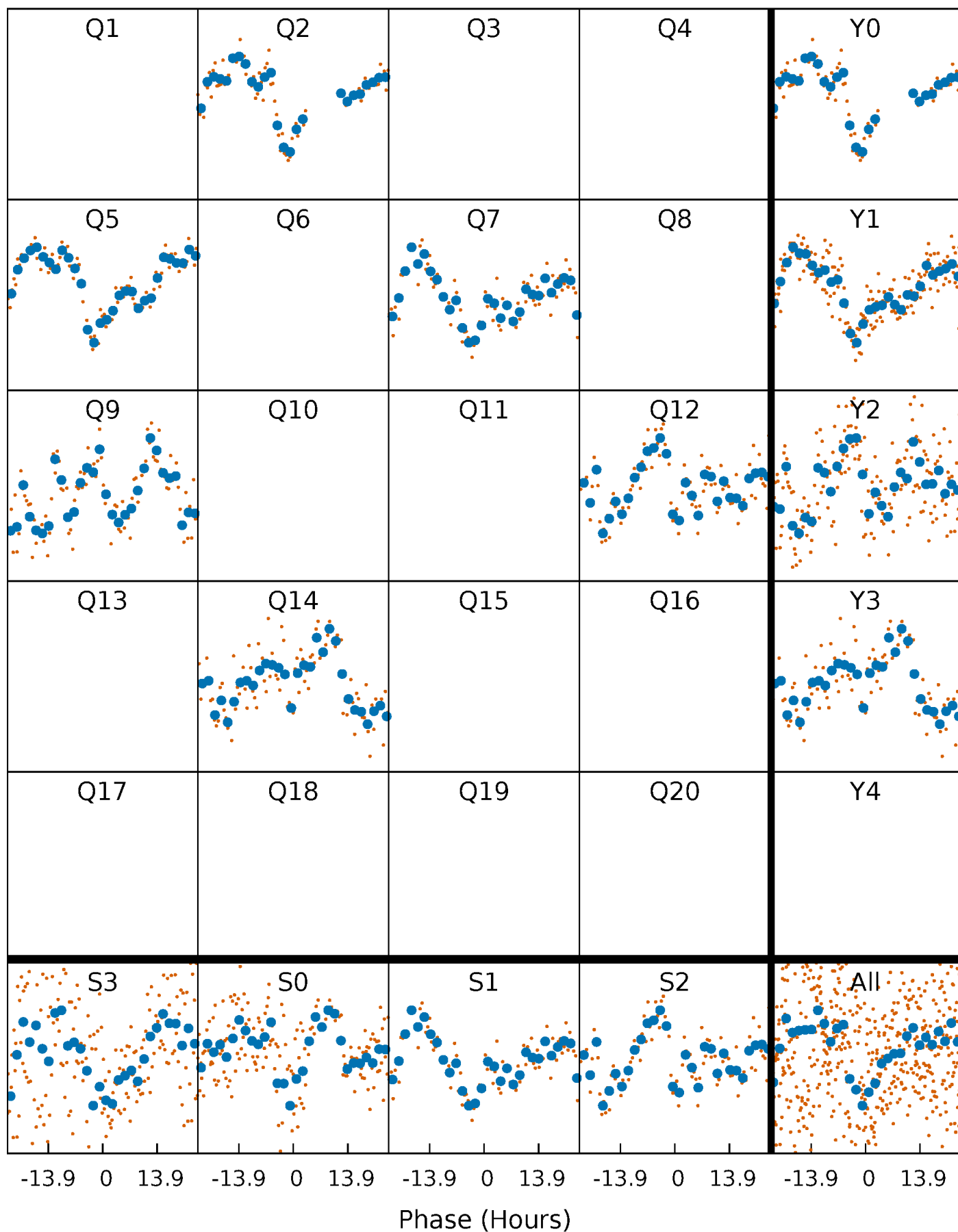


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



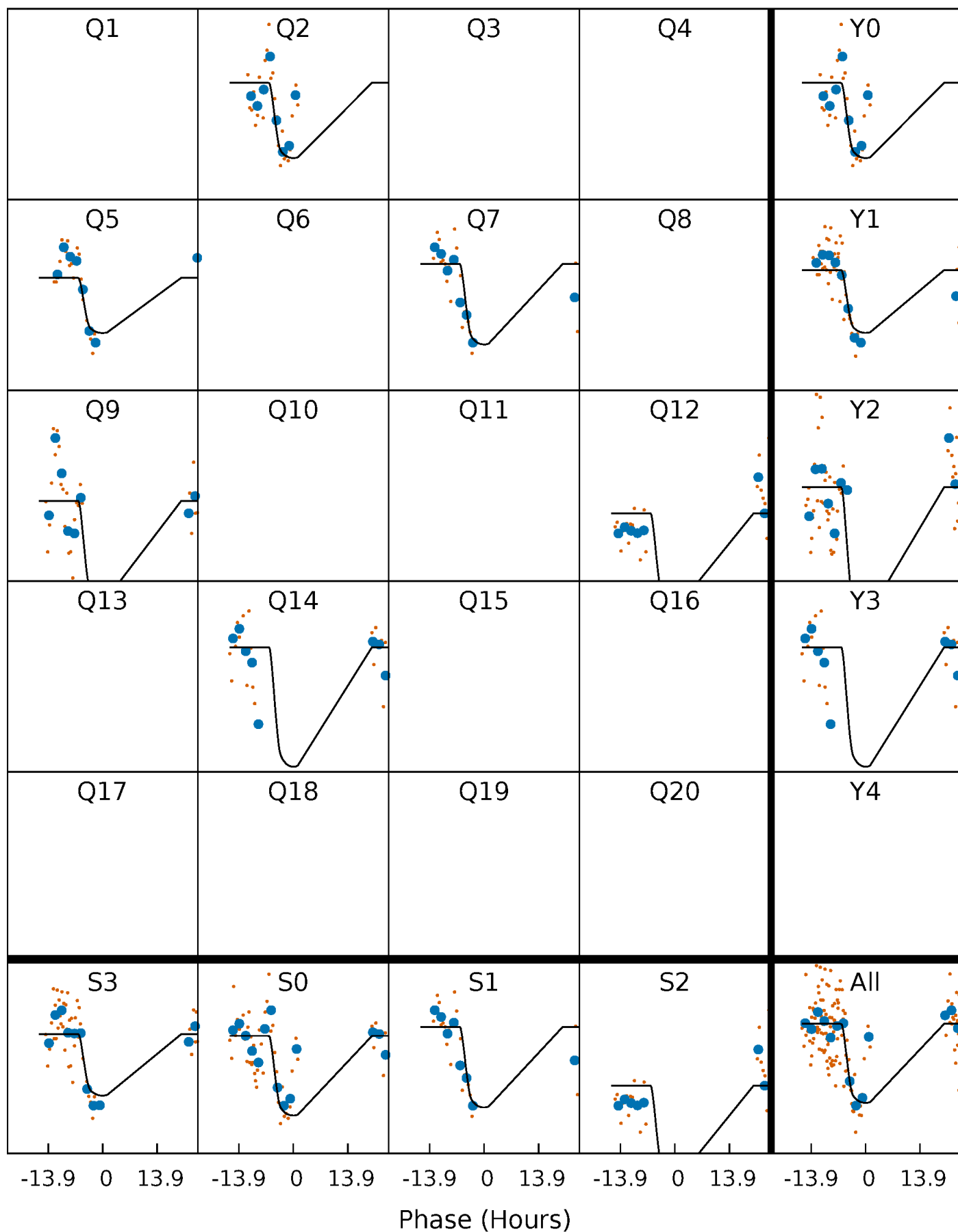
PDC Quarter-Phased Transit Curves

TCE 008461967-03 $P=226.818718$ Days $T_0=223.335820$ (BKJD)



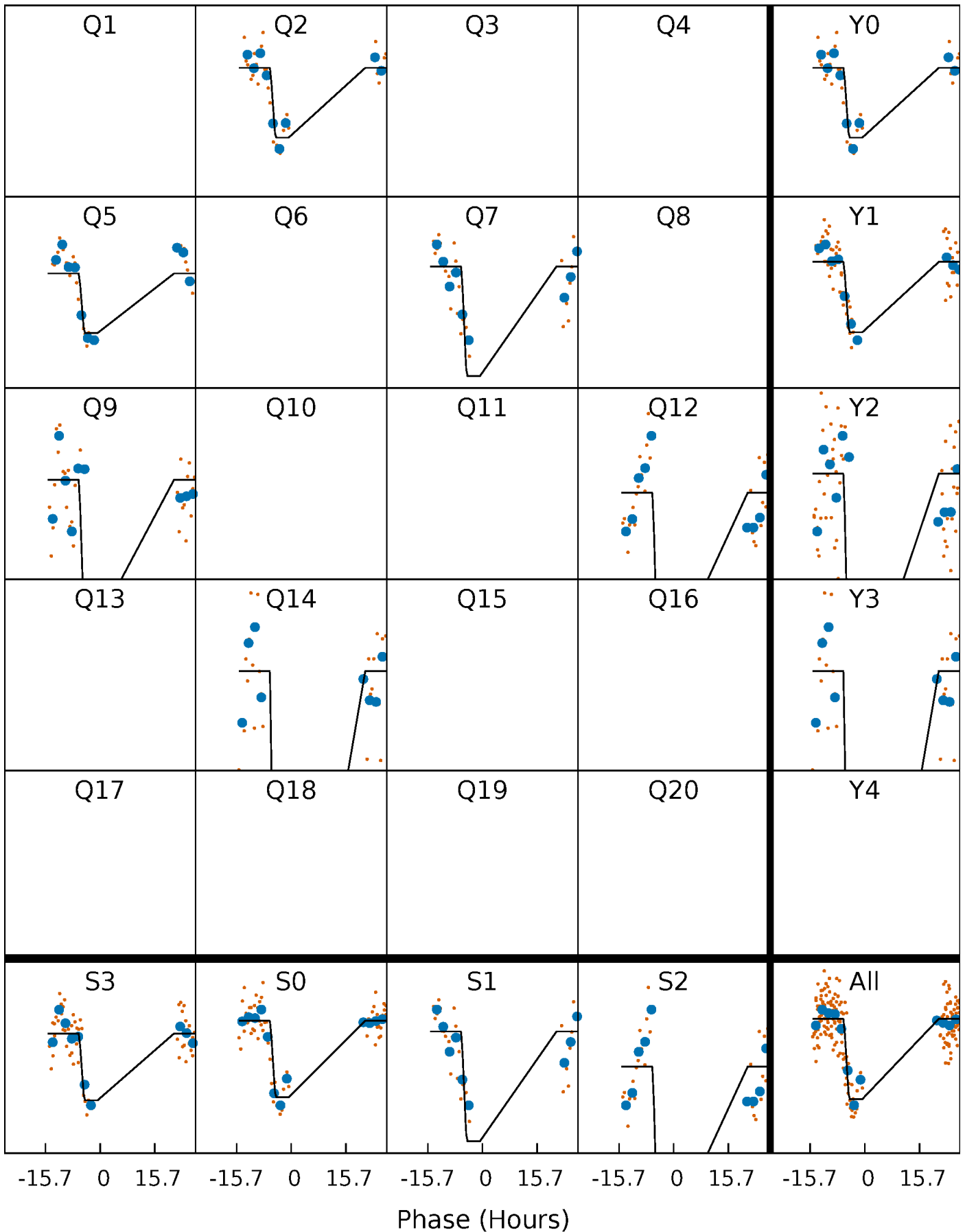
DV Quarter-Phased Transit Curves

TCE 008461967-03 P=226.818718 Days $T_0=223.335820$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

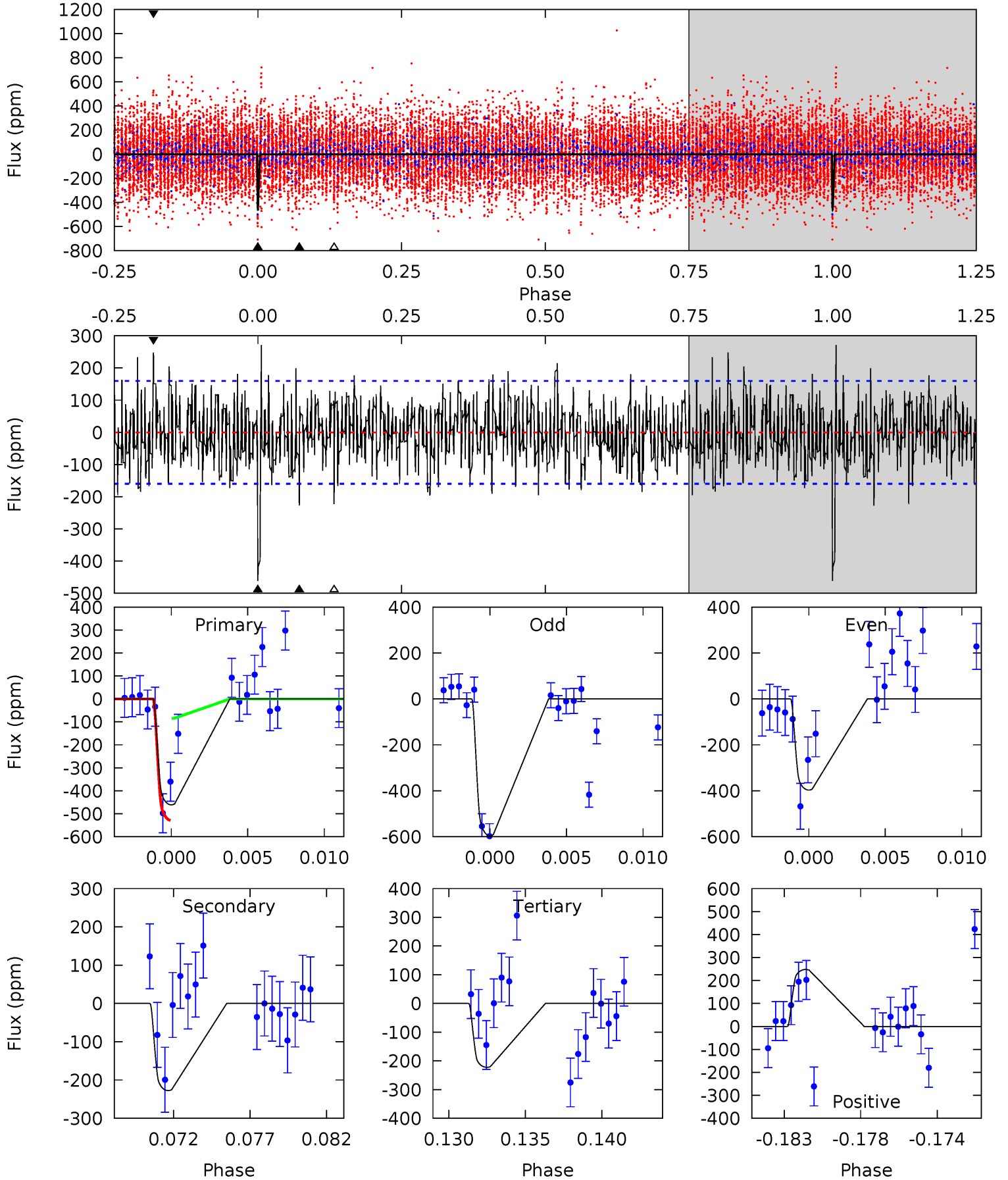
TCE 008461967-03 $P=226.792940$ Days $T_0=223.413845$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-03, P = 226.818718 Days, E = 223.335820 Days

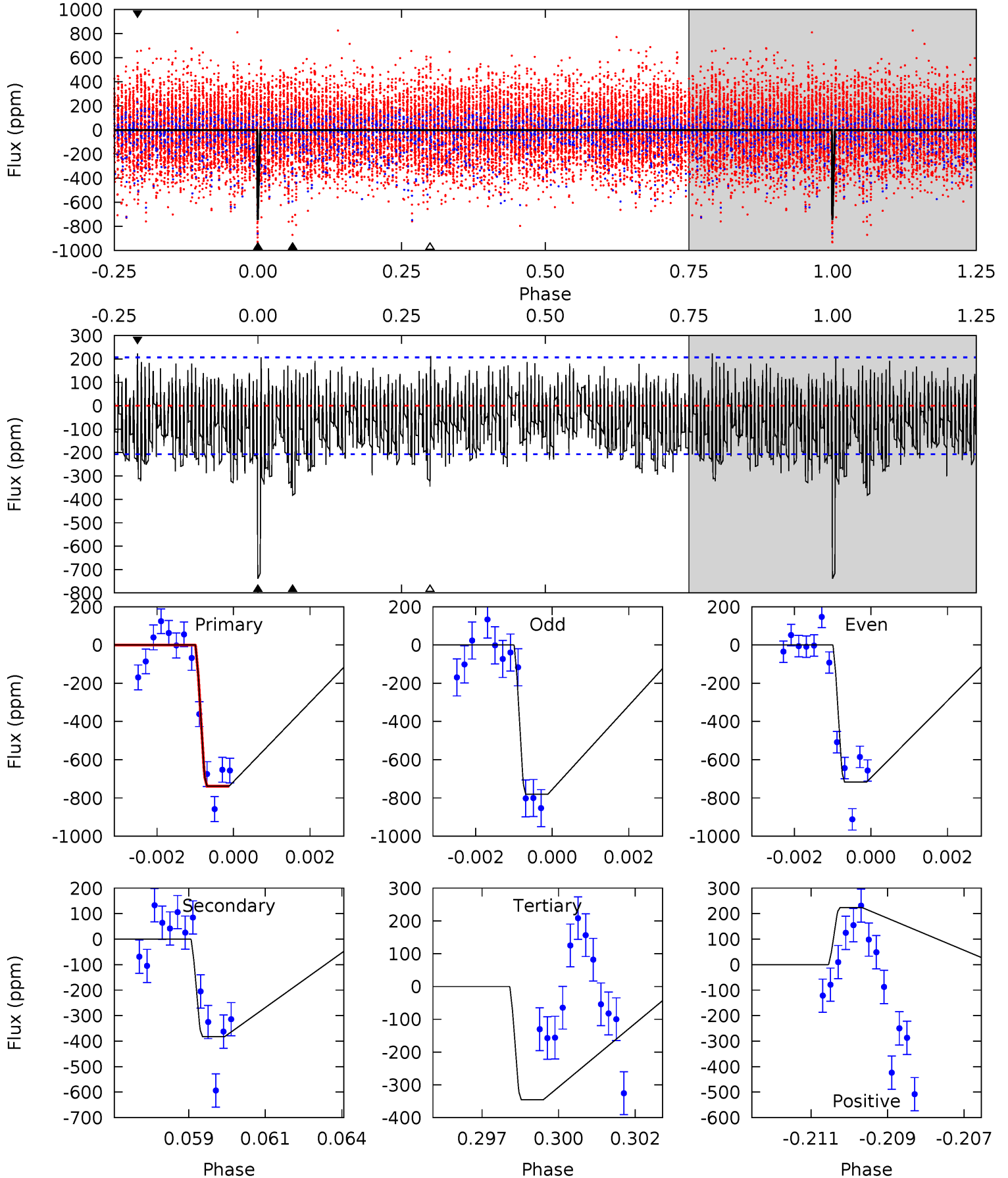
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	7.36	7.20	8.02	5.16	2.82	2.17	7.73	6.91	0.17	-0.65	3.11	0.79	0.37	4.10



Alt Model-Shift Uniqueness Test

008461967-03, P = 226.792940 Days, E = 223.413845 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	9.78	8.83	5.72	5.30	3.05	2.49	10.1	13.2	0.95	4.06	0.80	0	0.23	0



Stellar Parameters For KIC 008461967

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-228 ± 31	$10.71^{+2.23}_{-2.50}$	781^{+57}_{-74}	4673^{+300}_{-264}	759^{+491}_{-231}
Alt.	-382 ± 39	$11.63^{+2.05}_{-2.65}$	788^{+51}_{-83}	5073^{+349}_{-272}	1126^{+598}_{-321}

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 $A_{obs} \gg 1.0$

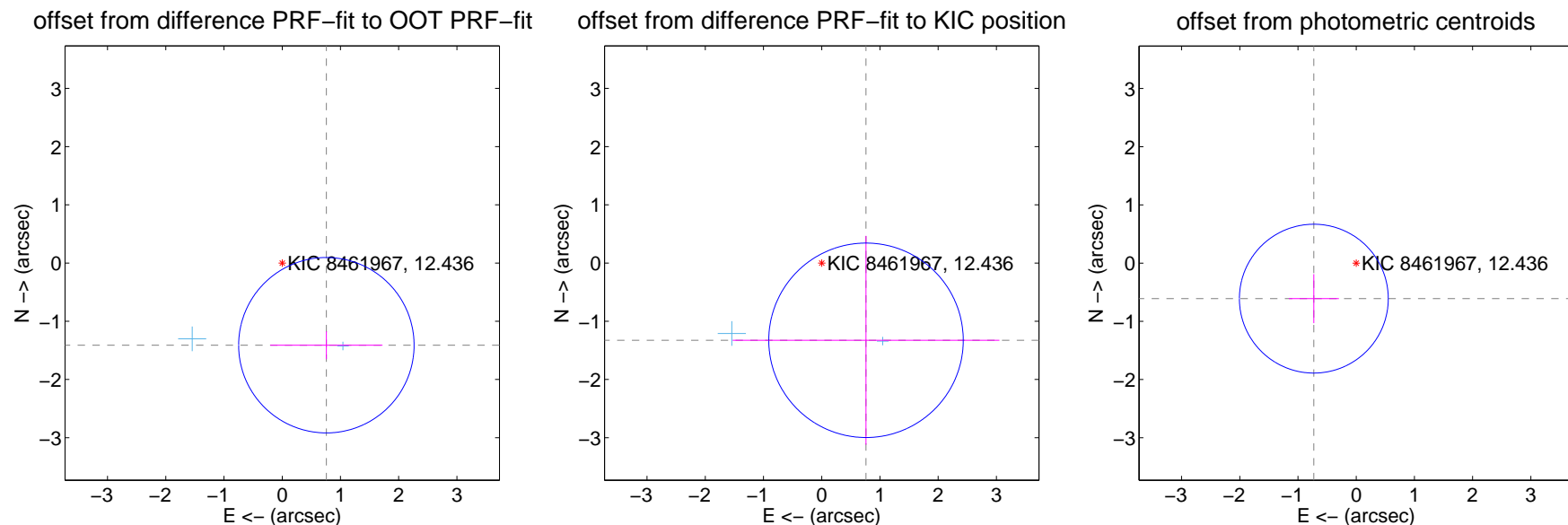
DV Centroid Data

Supplemental centroid analysis for 008461967-03. Kepler magnitude: 12.44. Transit SNR 8.04

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.602 ± 0.502	3.19	-0.758 ± 0.964	-1.412 ± 0.239
PRF-fit source offset from KIC position	1.529 ± 0.557	2.75	-0.761 ± 2.291	-1.327 ± 1.793
photometric centroid source offset	0.95 ± 0.43	2.23	0.73 ± 0.43	-0.61 ± 0.42

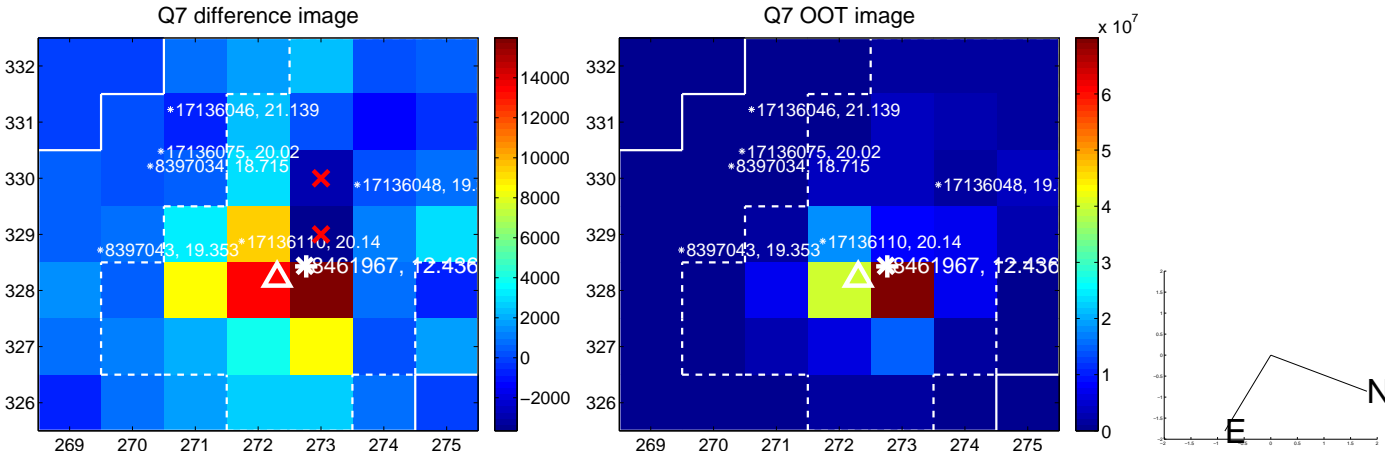
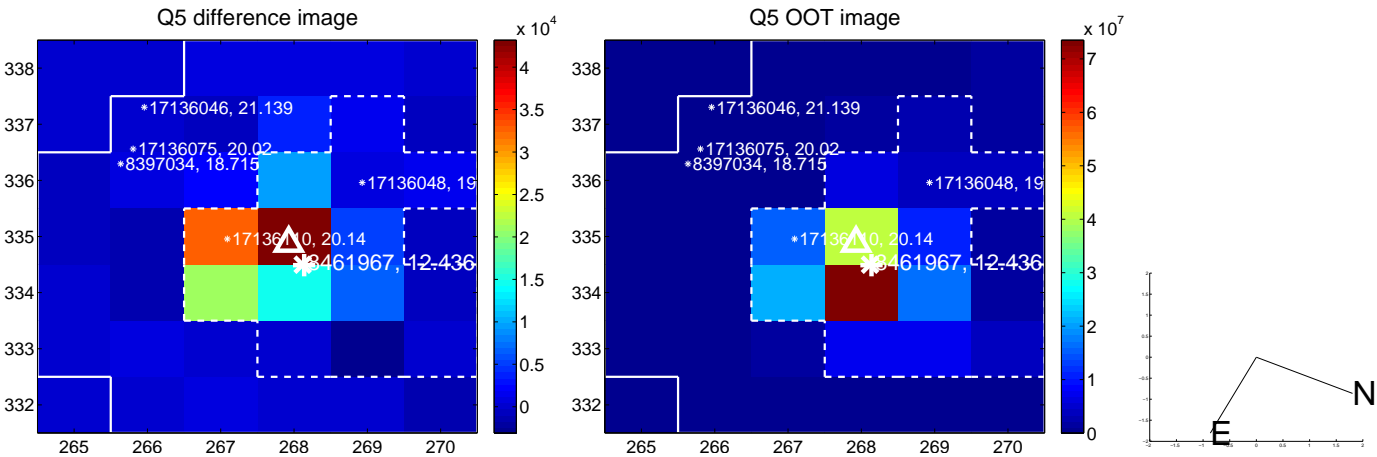


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

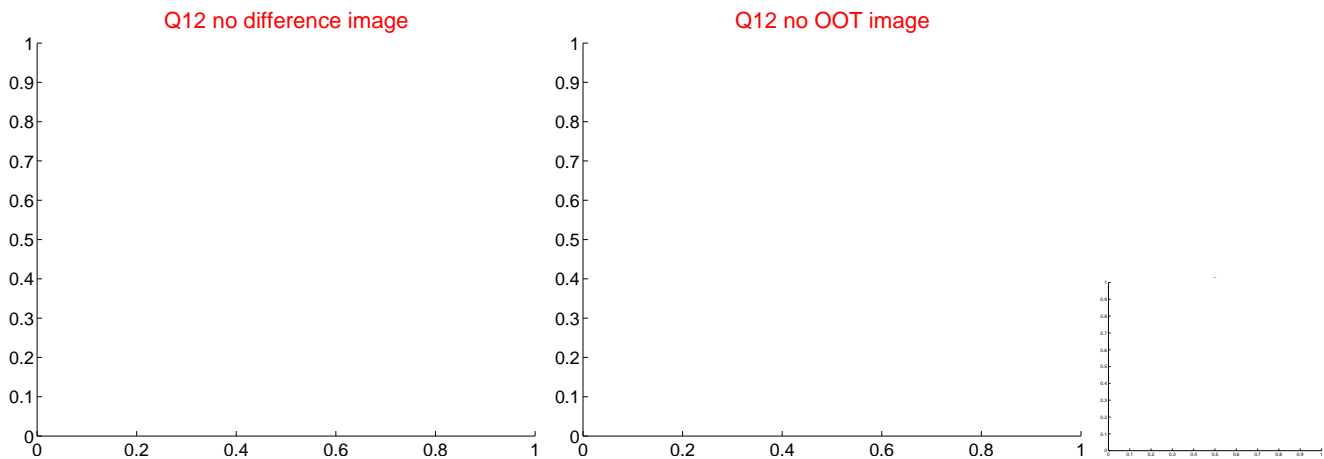
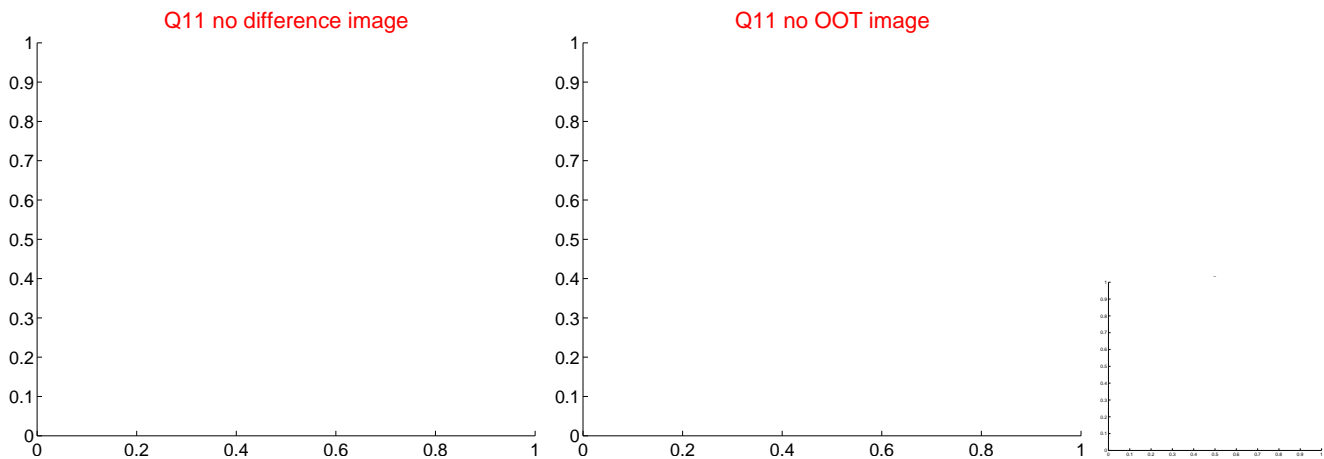
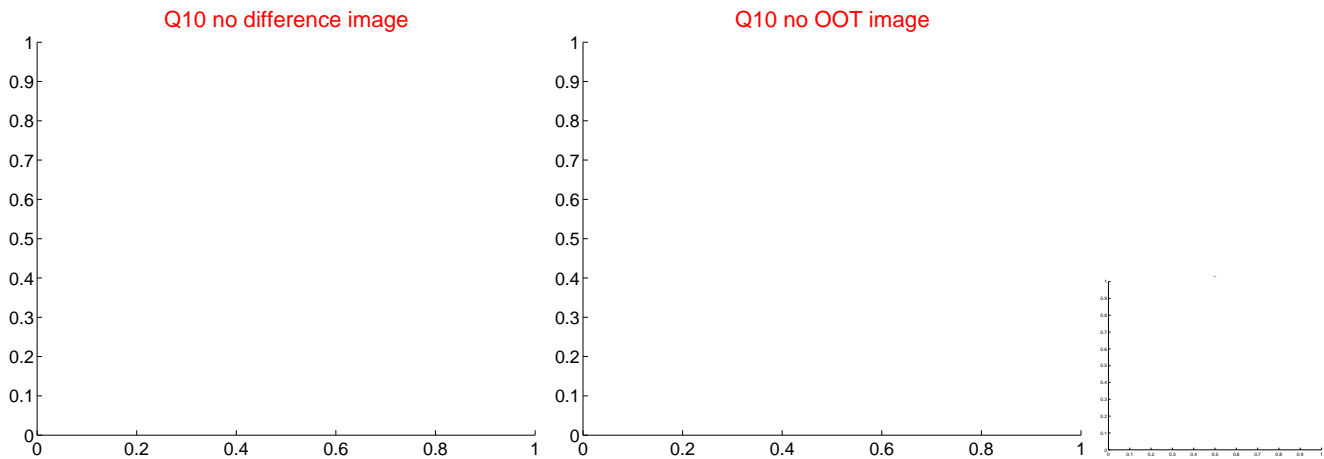
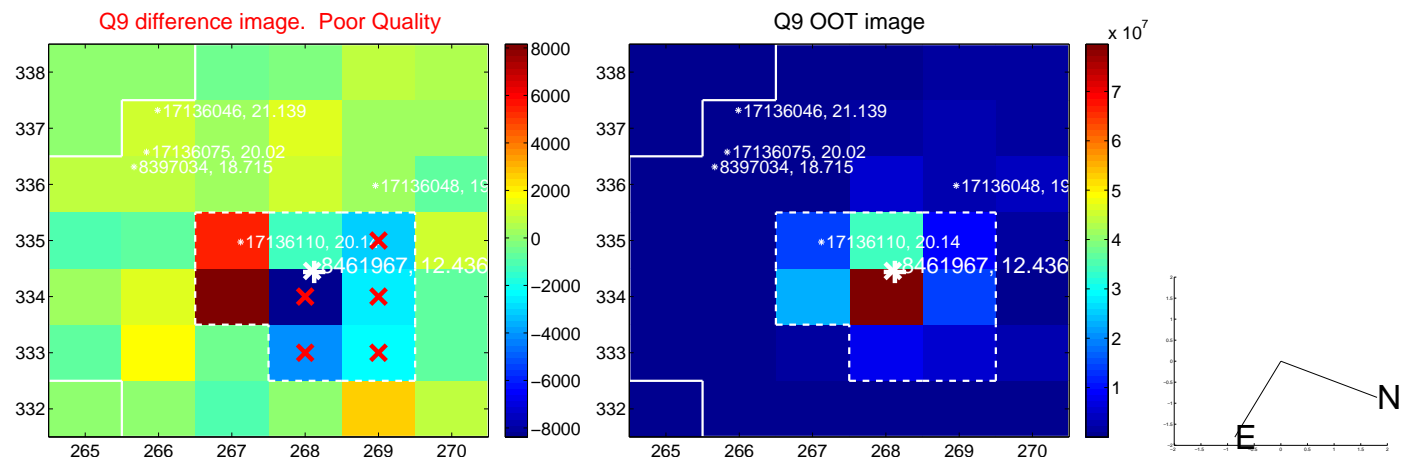
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



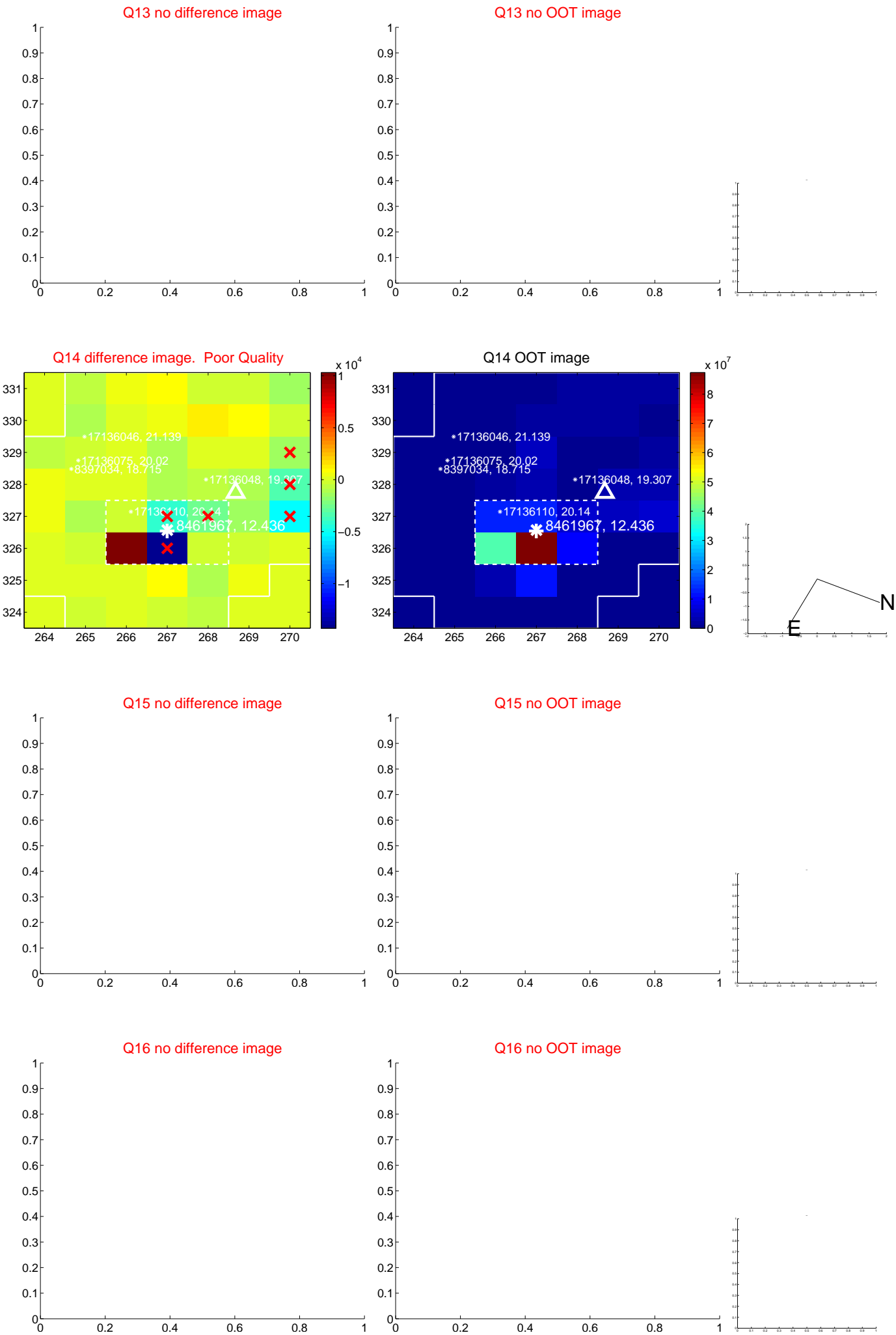
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



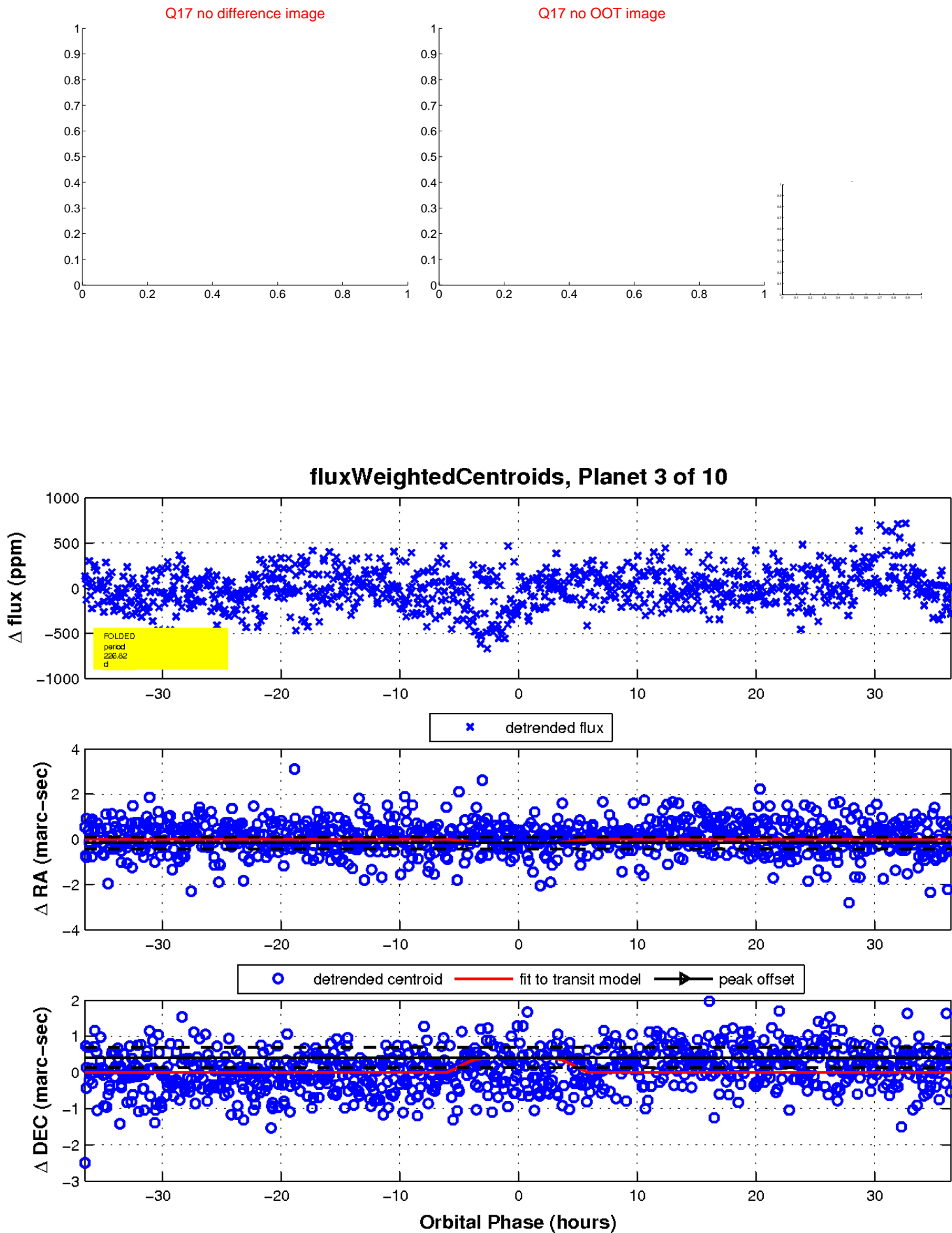
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

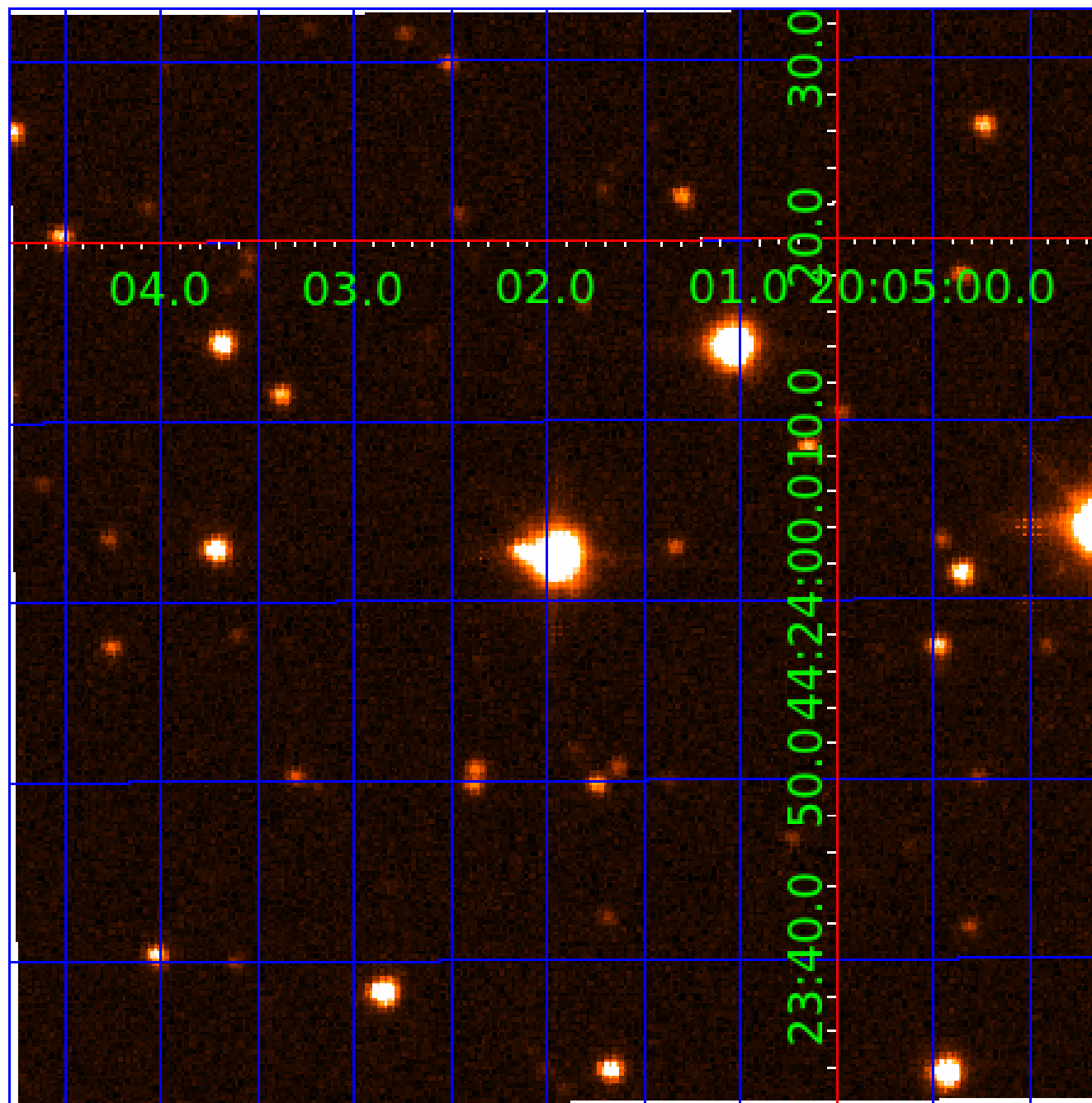


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008461967

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})
008461967-01	OBS	No	1.521666	132.369637	0.0	4.159	11.1	0.0	4.03	5991	0.07	20747.05
008461967-02	OBS	No	1.522001	132.662554	47.0	6.075	10.9	11.5	4.03	5991	4.49	20740.97
008461967-03	OBS	No	226.818718	223.335820	517.1	12.175	9.2	8.0	4.03	5991	11.43	26.25
008461967-04	OBS	No	33.685215	150.767681	201.9	4.893	9.5	8.6	4.03	5991	6.75	333.78
008461967-05	OBS	No	113.853229	236.091319	495.9	6.424	8.5	8.5	4.03	5991	17.51	65.80
008461967-06	OBS	No	110.195951	231.169028	396.9	5.248	8.8	9.2	4.03	5991	10.51	68.73
008461967-07	OBS	No	58.183689	156.918725	280.5	3.132	8.0	7.8	4.03	5991	8.04	161.06
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008461967-09	OBS	No	91.399375	147.184635	174.1	13.803	7.6	6.4	4.03	5991	6.25	88.20
008461967-10	OBS	No	64.753816	162.454167	210.8	7.326	8.4	7.8	4.03	5991	6.67	139.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008461967-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

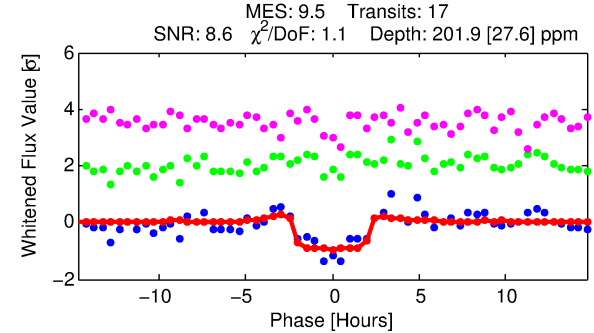
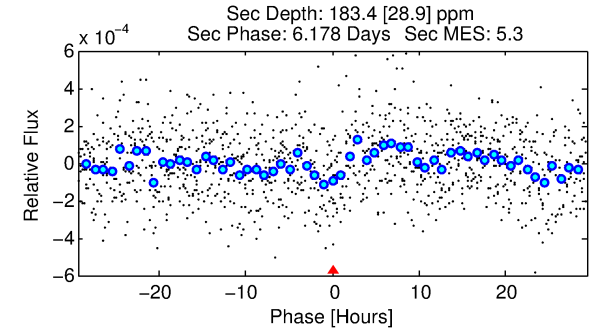
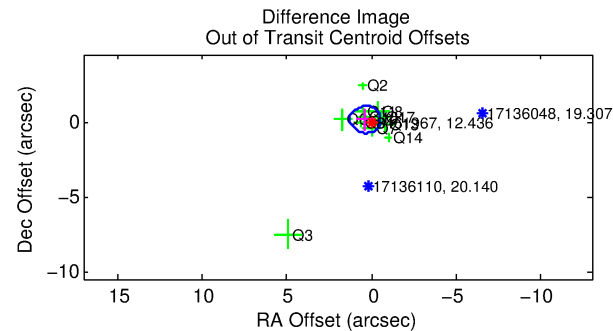
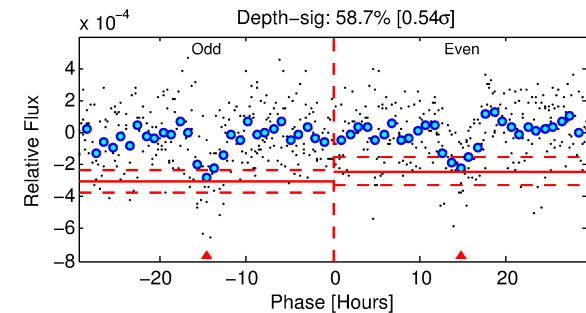
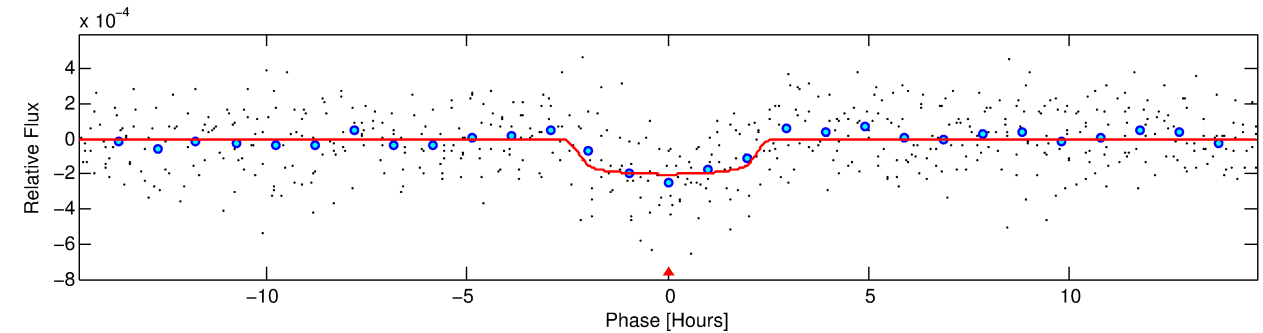
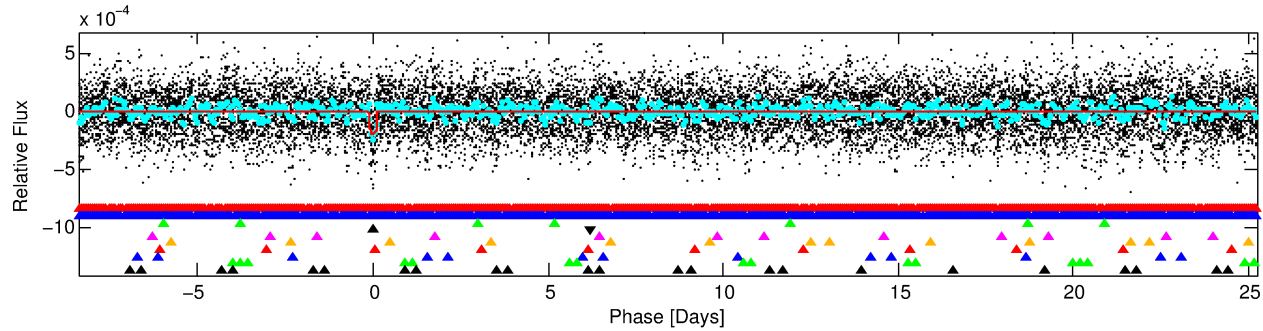
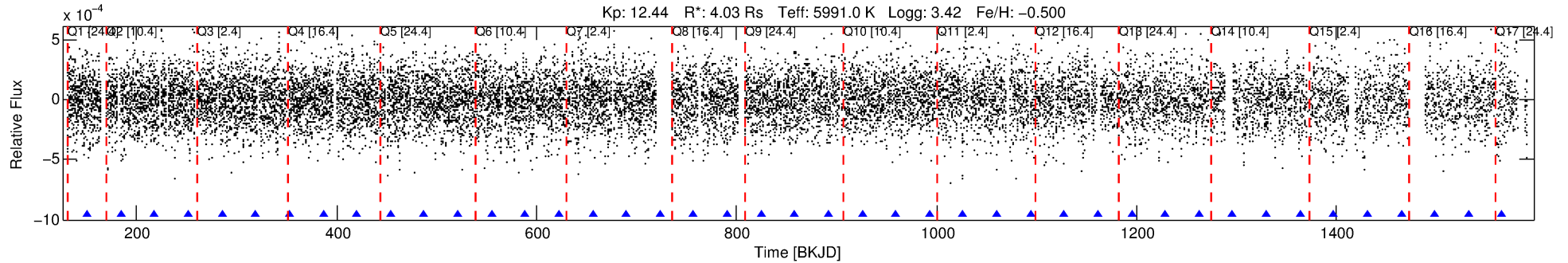
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-04

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 4 of 10 Period: 33.685 d



DV Fit Results:

Period = 33.68522 [0.00046] d
Epoch = 150.7677 [0.0099] BKJD
Rp/R* = 0.0153 [0.0039]
a/R* = 24.41 [31.78]
b = 0.90 [0.27]
Seff = 333.78 [202.28]
Teq = 1090 [165] K
Rp = 6.75 [3.33] Re
a = 0.2372 [0.0905] AU
Ag = 124.73 [99.52] [1.24 σ]
Teffp = 5631 [786] K [5.66 σ]

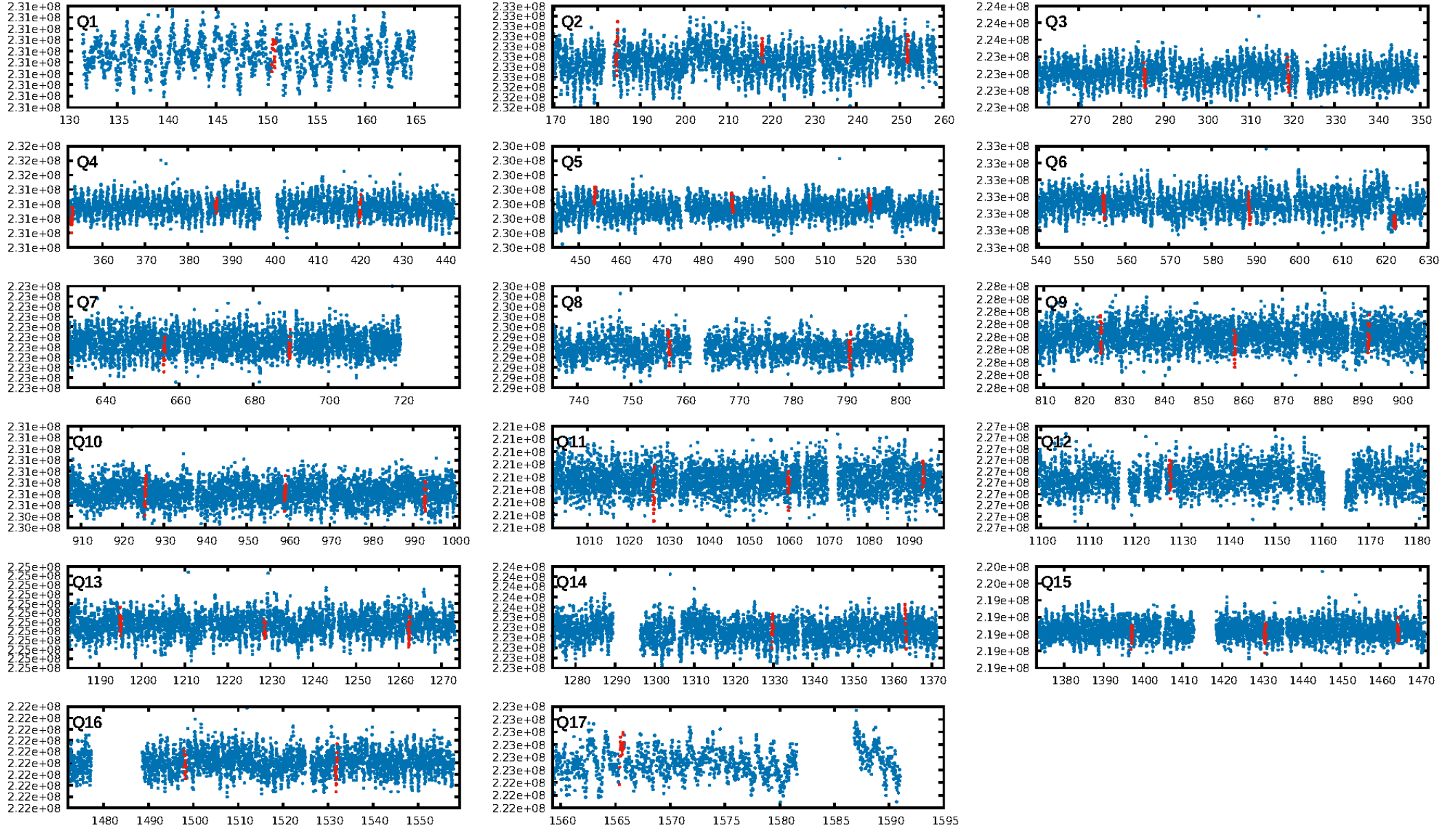
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [98.96 σ]
LongPeriod-sig: 100.0% [101.20 σ]
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [16/16]
GhostDiagnostic-chr: -16.04
Centroid-sig: 87.3%
Centroid-so: 0.617 arcsec [1.13 σ]
OotOffset-rm: 0.391 arcsec [1.31 σ]
KicOffset-rm: 0.459 arcsec [1.53 σ]
OotOffset-st: 3/3/2/3 [11]
KicOffset-st: 3/3/2/3 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 0.06 [1/16]

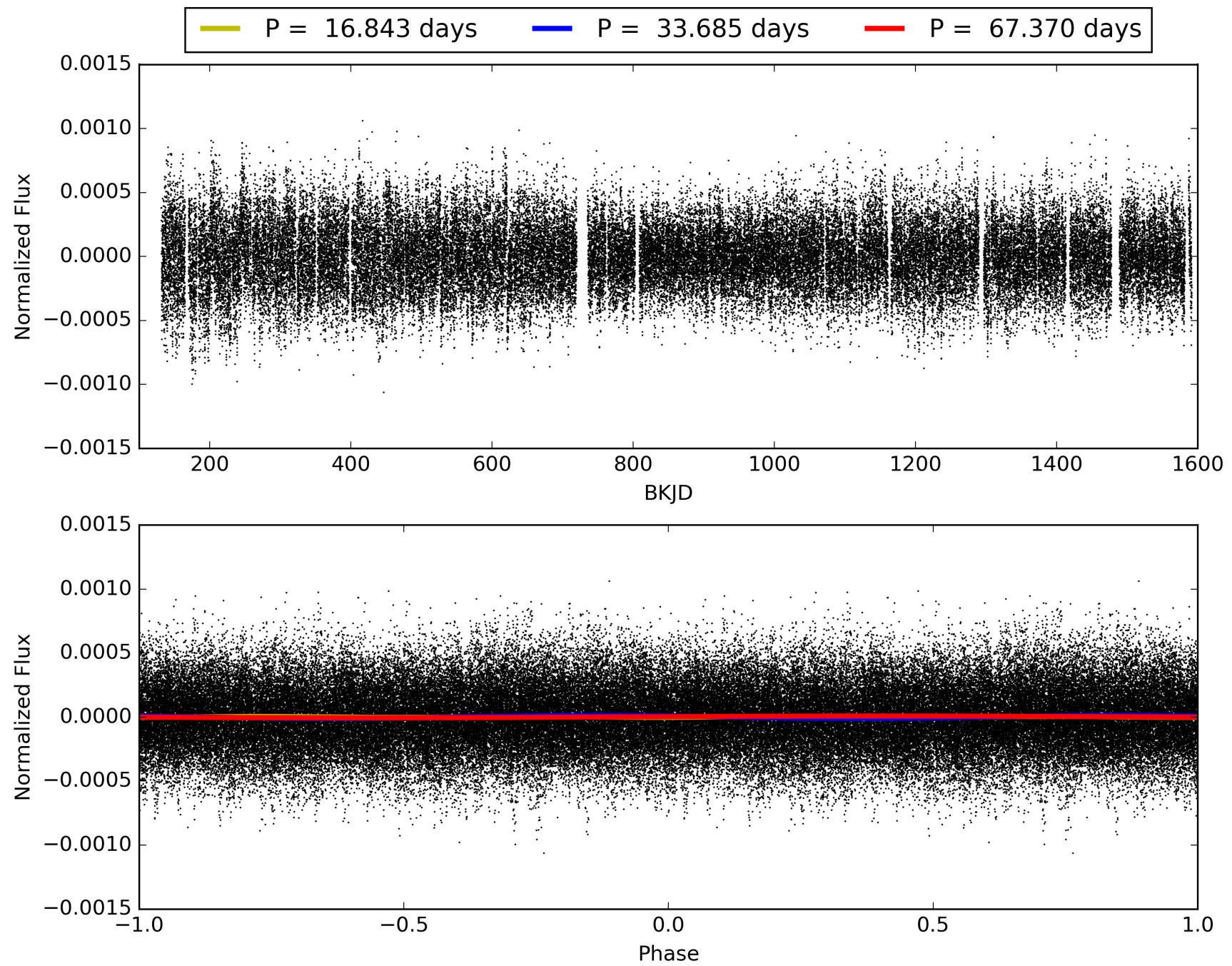
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:46:02 Z

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

TCE 008461967-04, PDC Light Curves

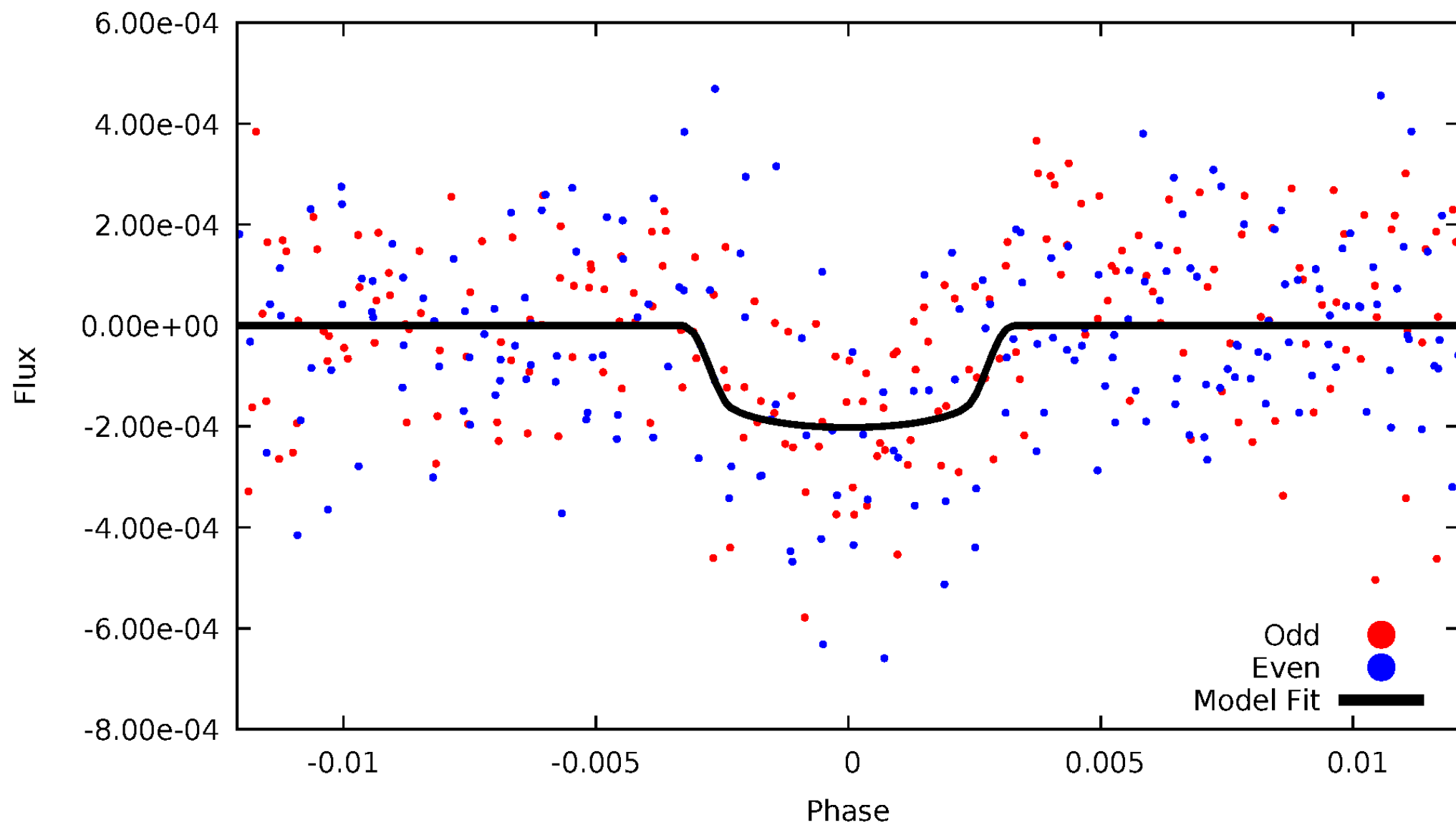


TCE 008461967-04



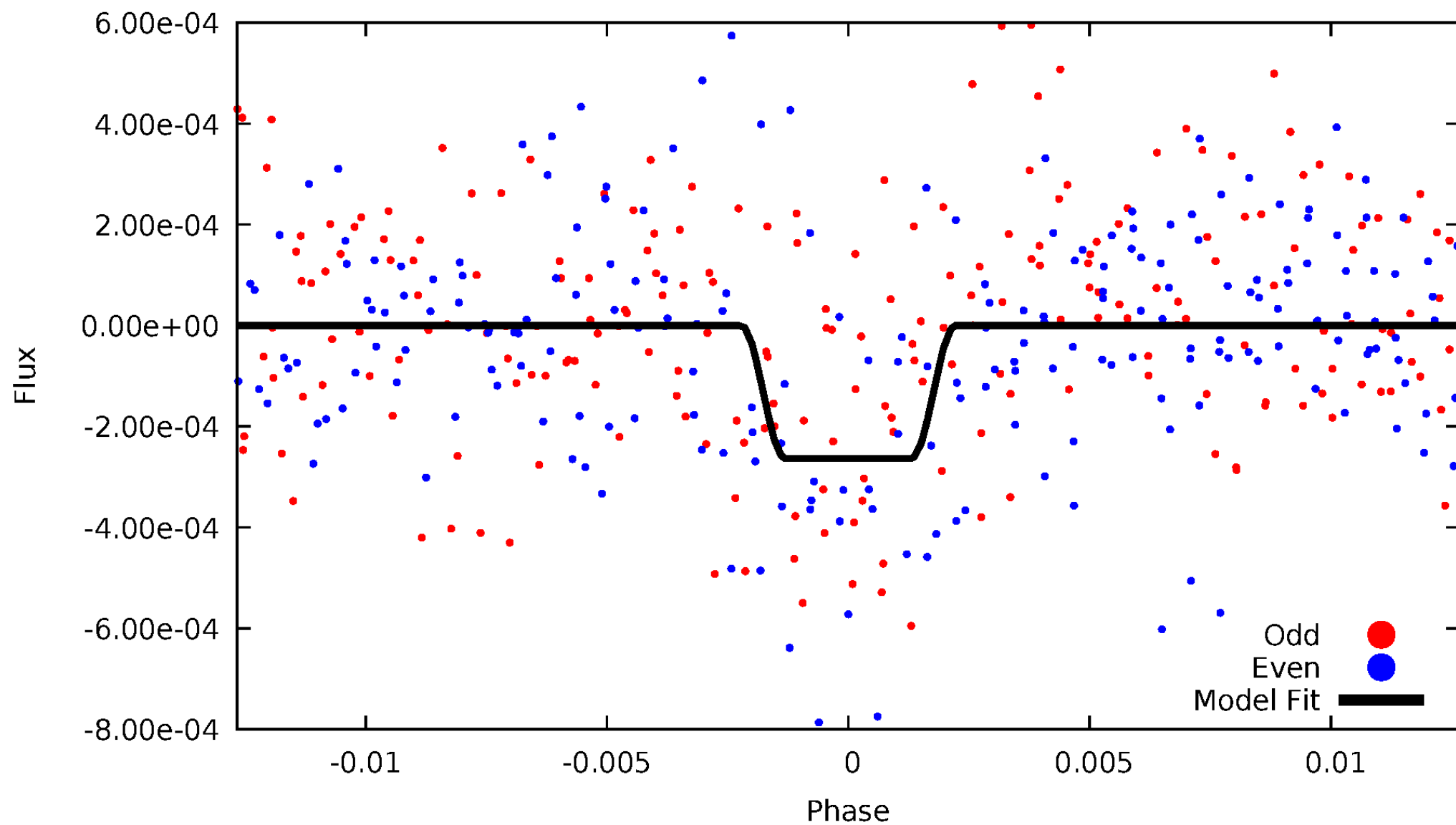
DV Odd/Even

TCE 008461967-04



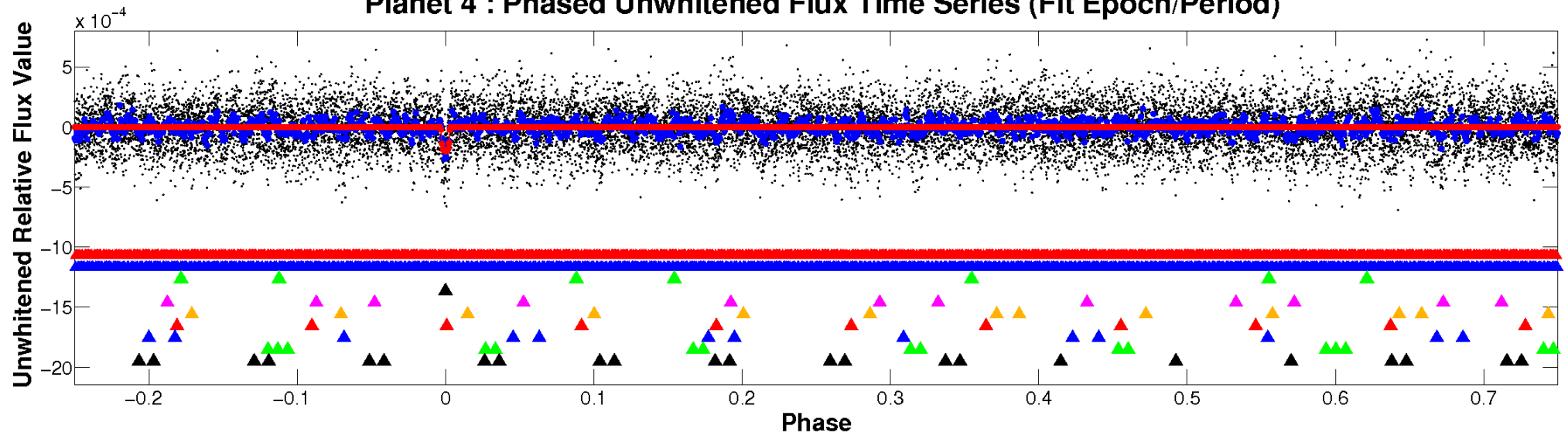
ALT Odd/Even

TCE 008461967-04

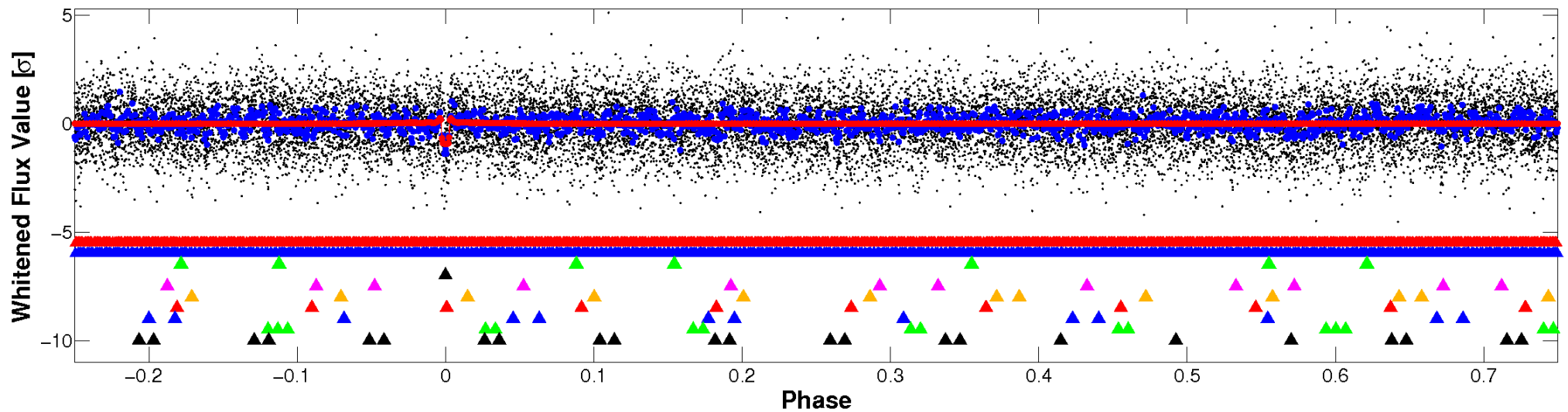


Non-Whitened Vs. Whitened Light Curve

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

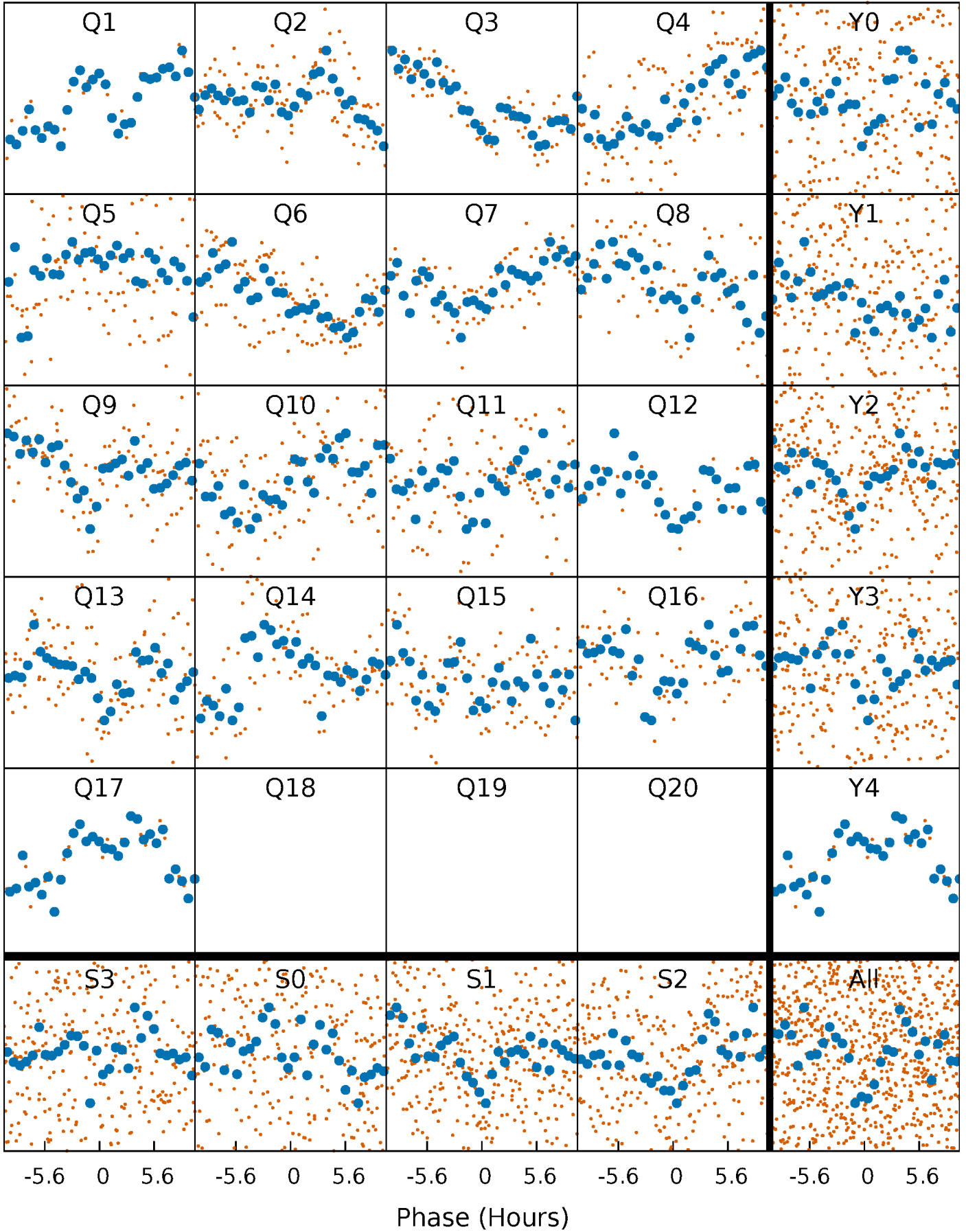


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



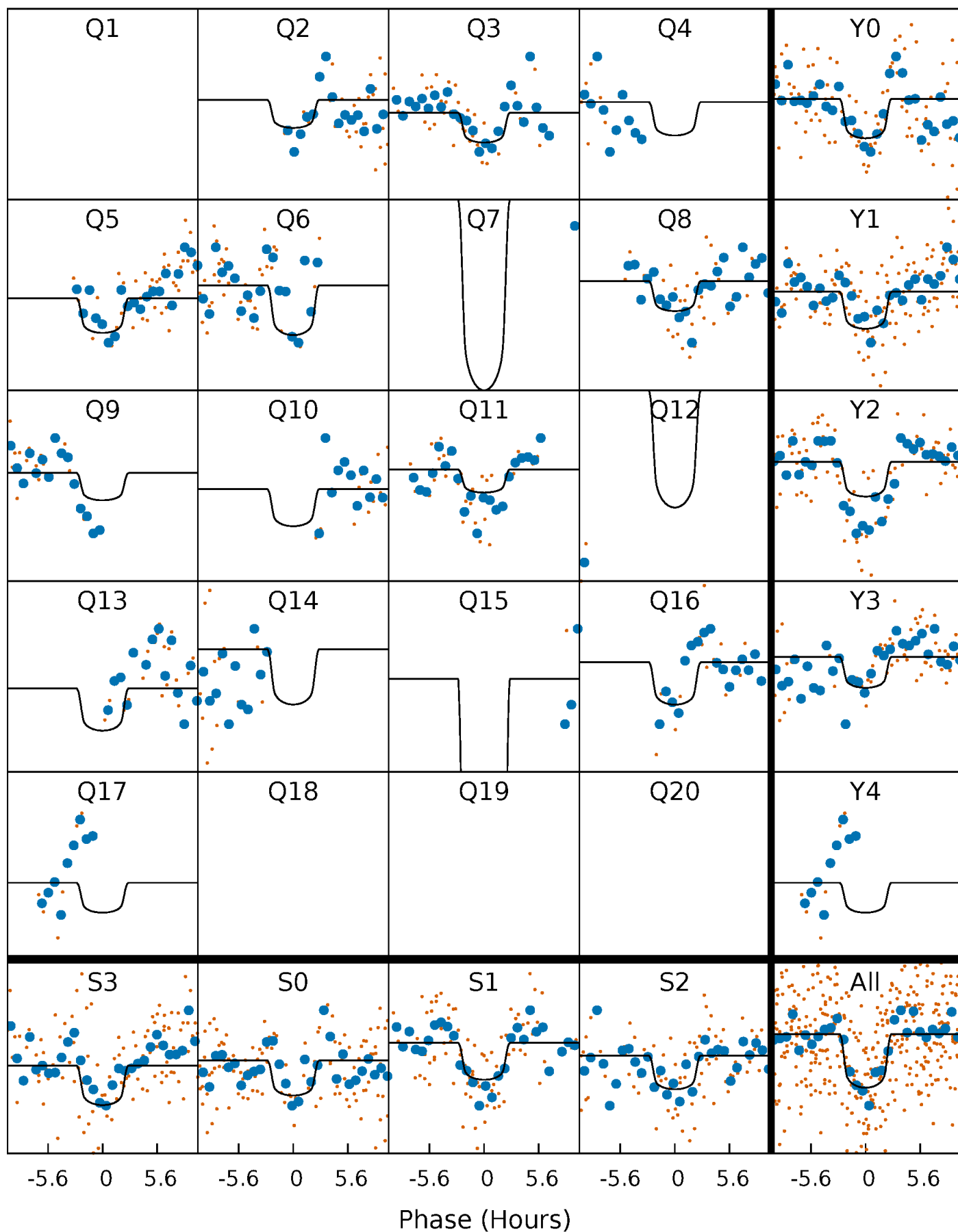
PDC Quarter-Phased Transit Curves

TCE 008461967-04 P= 33.685215 Days $T_0=150.767681$ (BKJD)



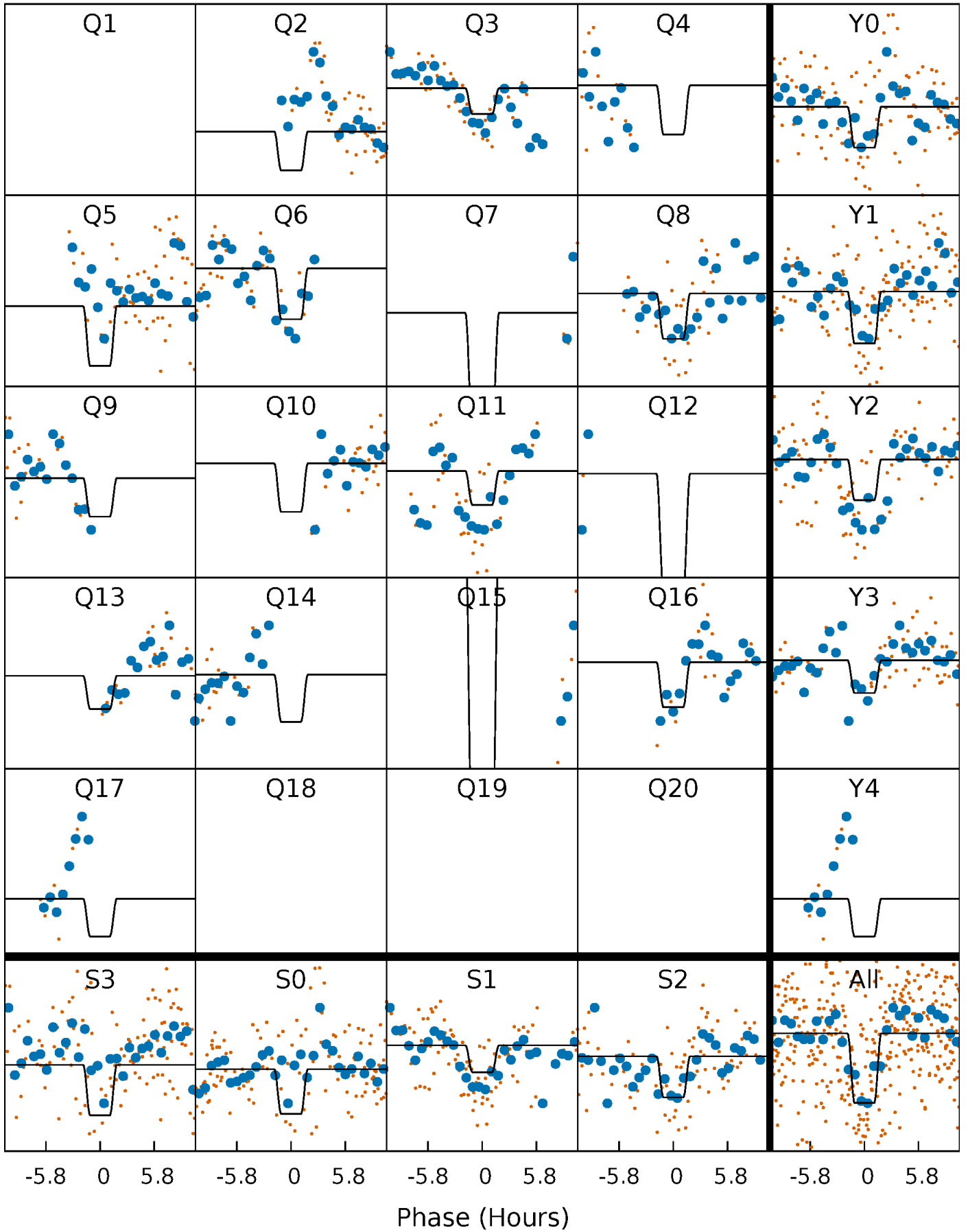
DV Quarter-Phased Transit Curves

TCE 008461967-04 P= 33.685215 Days $T_0=150.767681$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

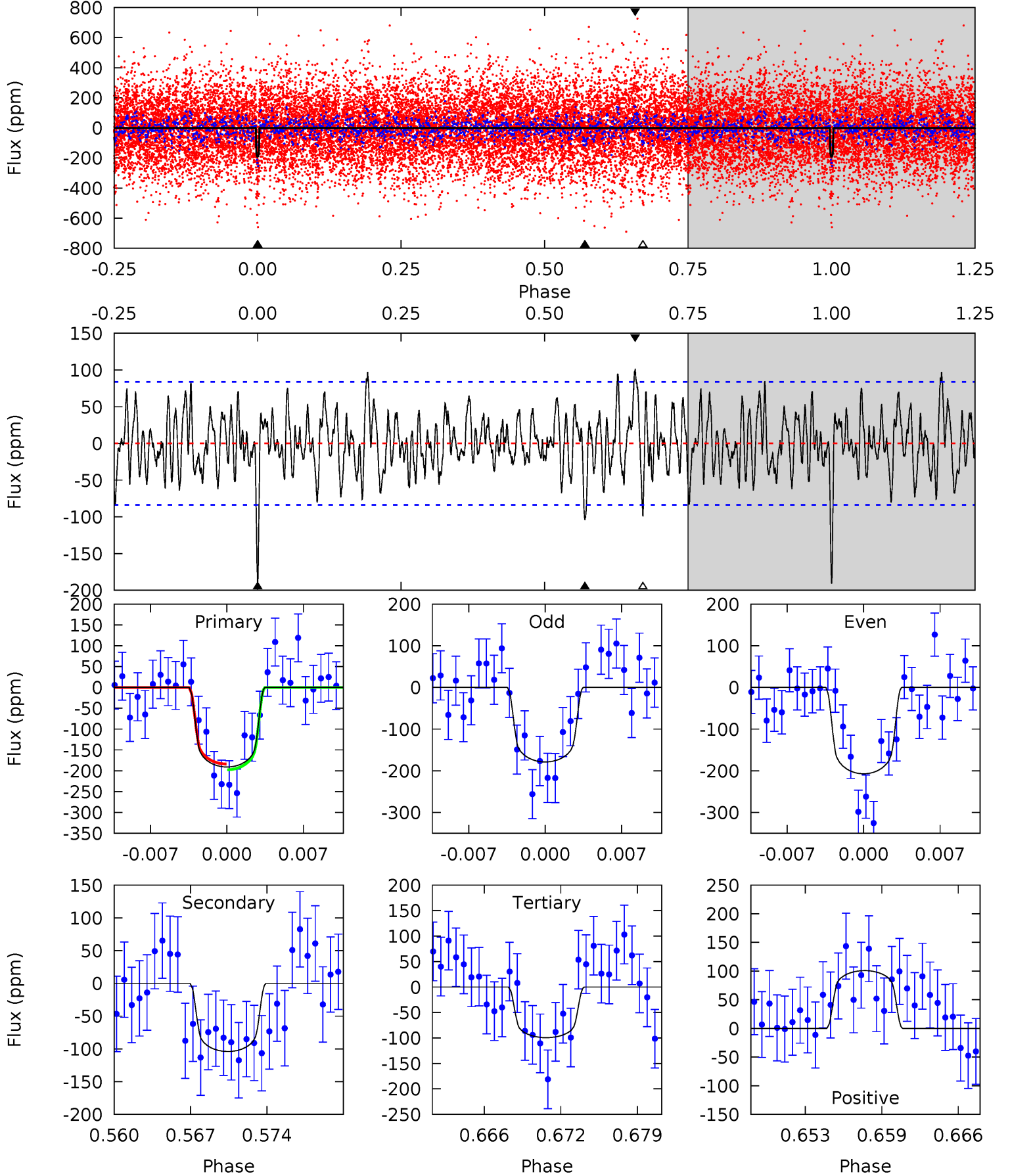
TCE 008461967-04 P= 33.684518 Days $T_0=150.789386$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-04, $P = 33.685215$ Days, $E = 117.082466$ Days

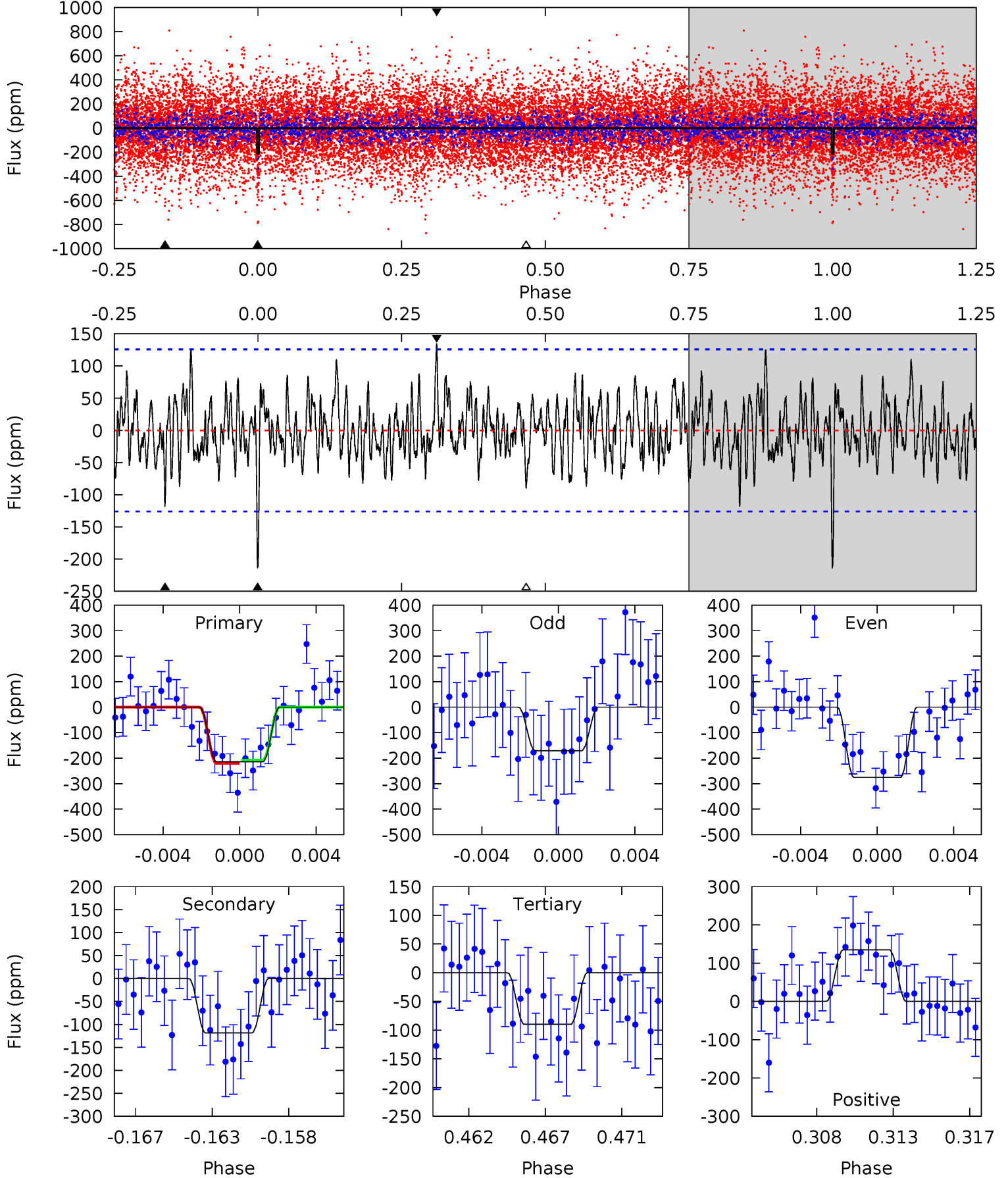
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	6.34	6.06	6.15	5.11	2.72	2.03	5.58	5.49	0.28	0.19	0.86	0.65	0.35	0.42



Alt Model-Shift Uniqueness Test

008461967-04, P = 33.684518 Days, E = 117.104868 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.82	4.88	3.70	5.55	5.19	2.86	1.60	5.11	3.27	1.17	-0.67	2.15	0.81	0.39	0.25



Stellar Parameters For KIC 008461967

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-104 ± 16	$6.15^{+1.97}_{-1.80}$	1480^{+107}_{-139}	4968^{+761}_{-487}	82^{+79}_{-35}
Alt.	-118 ± 24	$6.55^{+2.12}_{-2.10}$	1490^{+96}_{-148}	4959^{+776}_{-484}	80^{+97}_{-36}

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 $A_{obs} \gg 1.0$

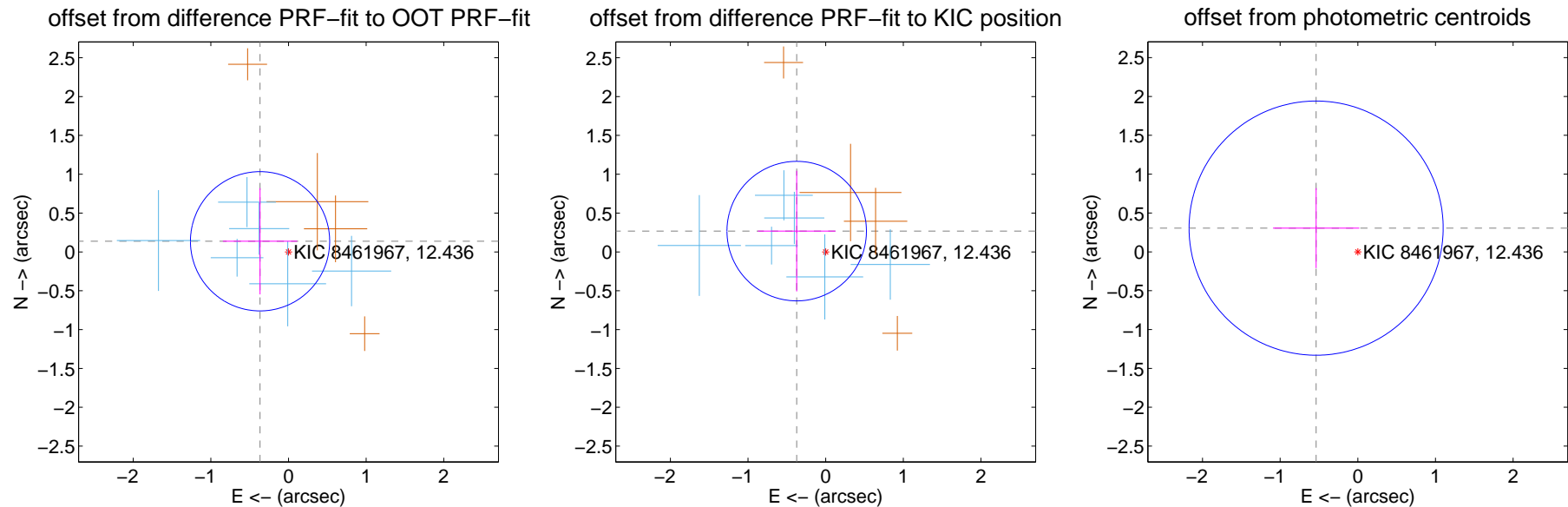
DV Centroid Data

Supplemental centroid analysis for 008461967-04. Kepler magnitude: 12.44. Transit SNR 8.63

There are 6 quarters with good PRF difference image offsets

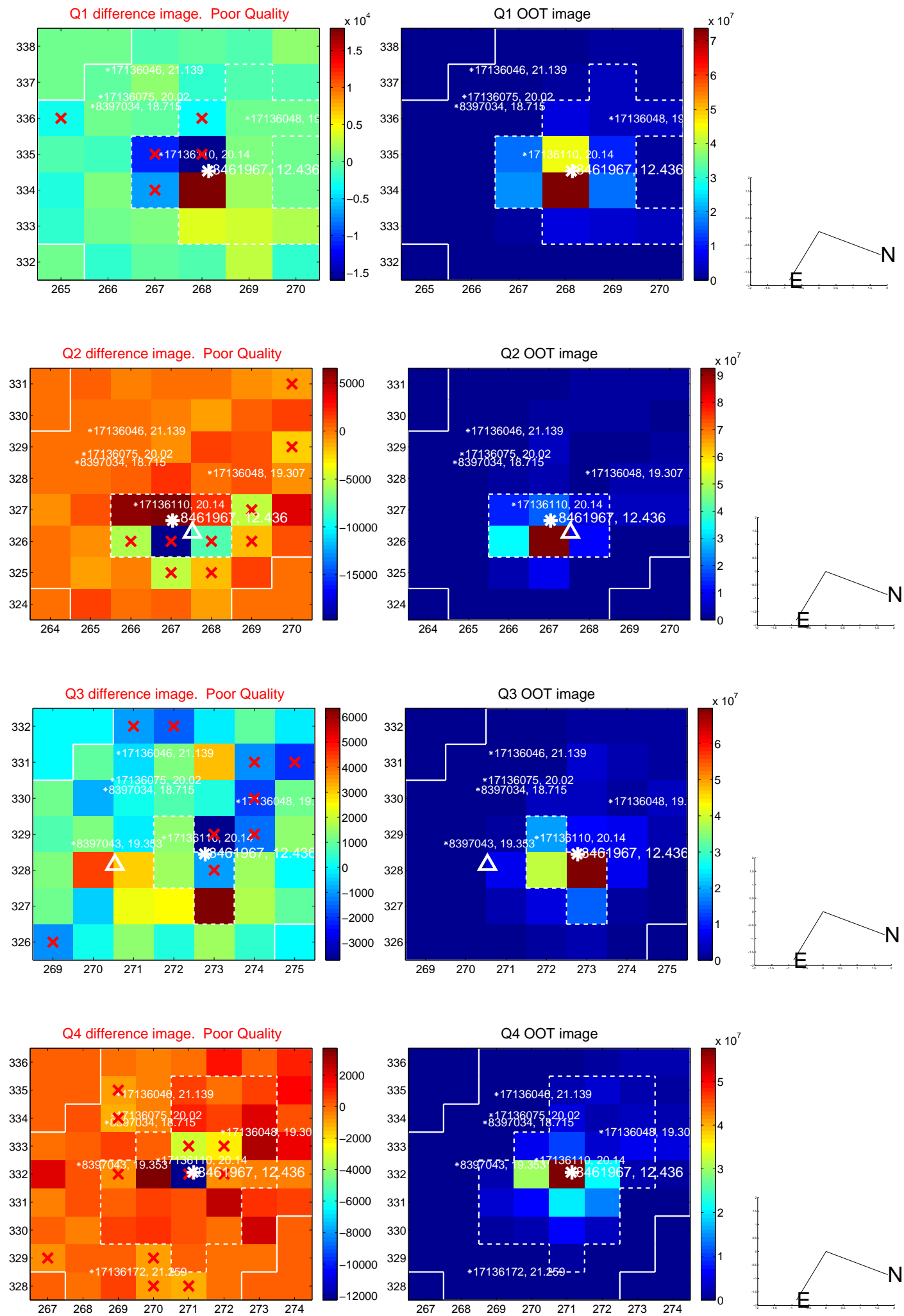
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.391 ± 0.299	1.31	0.366 ± 0.478	0.137 ± 0.684
PRF-fit source offset from KIC position	0.459 ± 0.299	1.53	0.373 ± 0.501	0.268 ± 0.776
photometric centroid source offset	0.62 ± 0.55	1.13	0.54 ± 0.55	0.31 ± 0.51

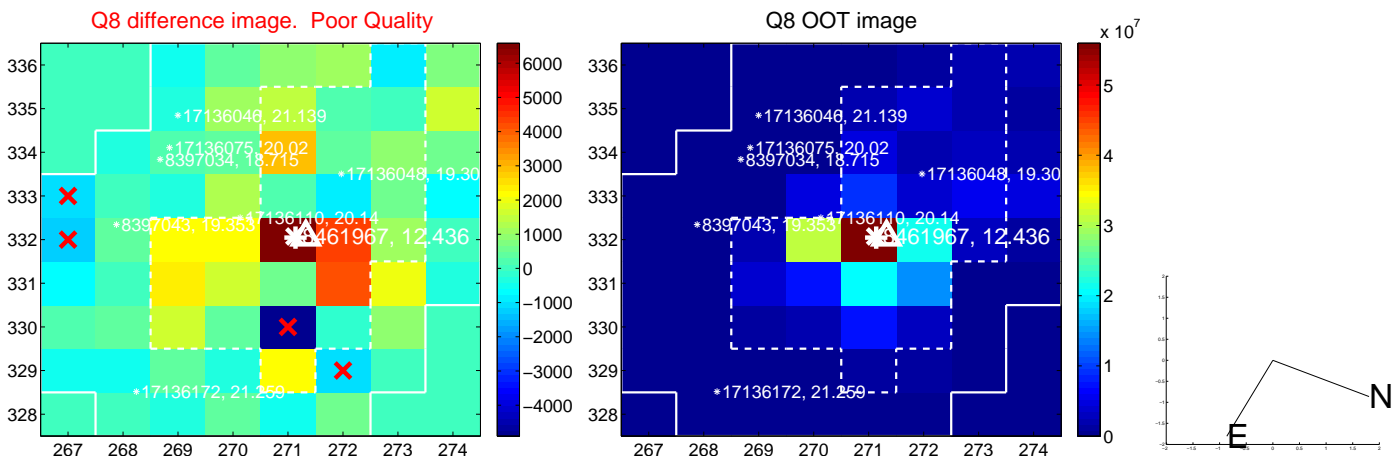
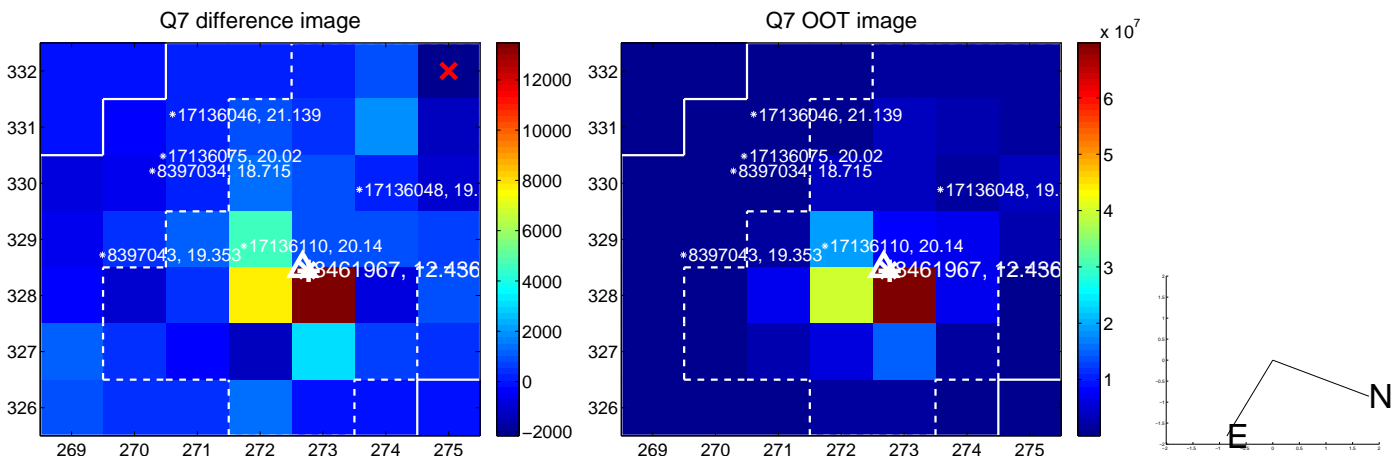
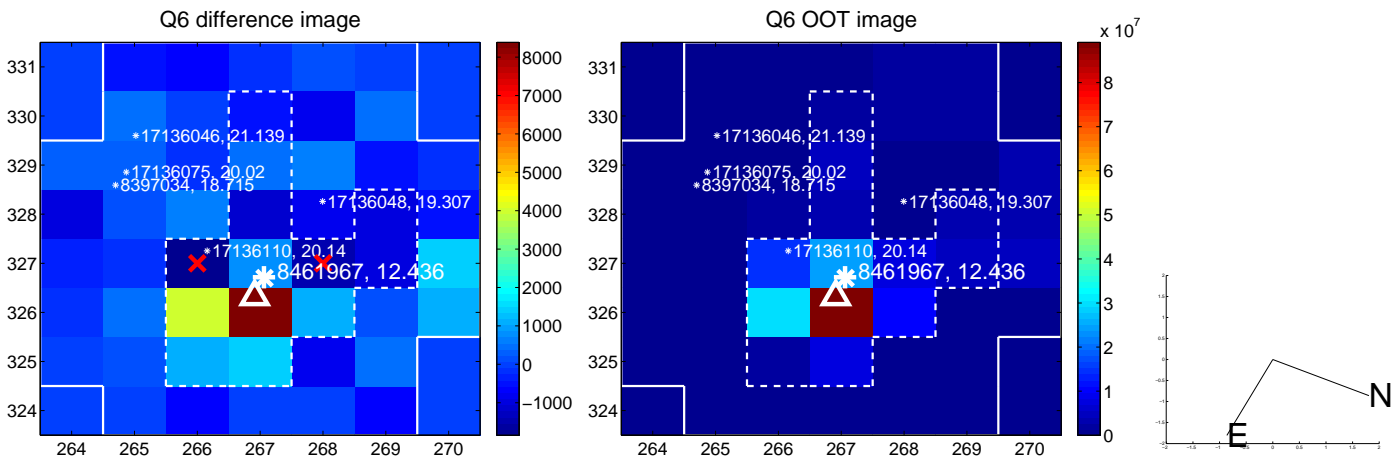
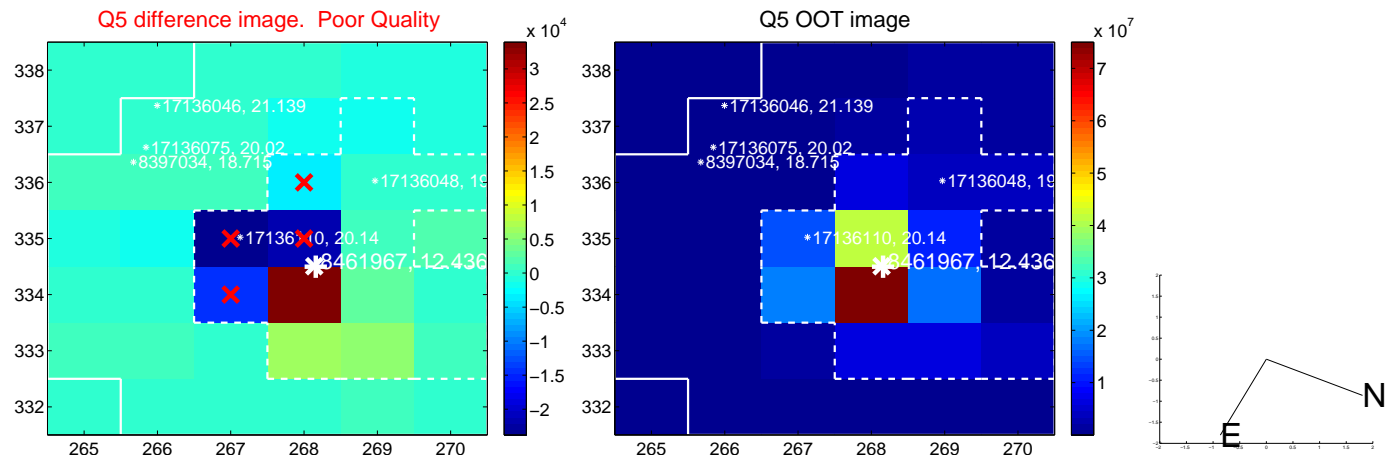


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

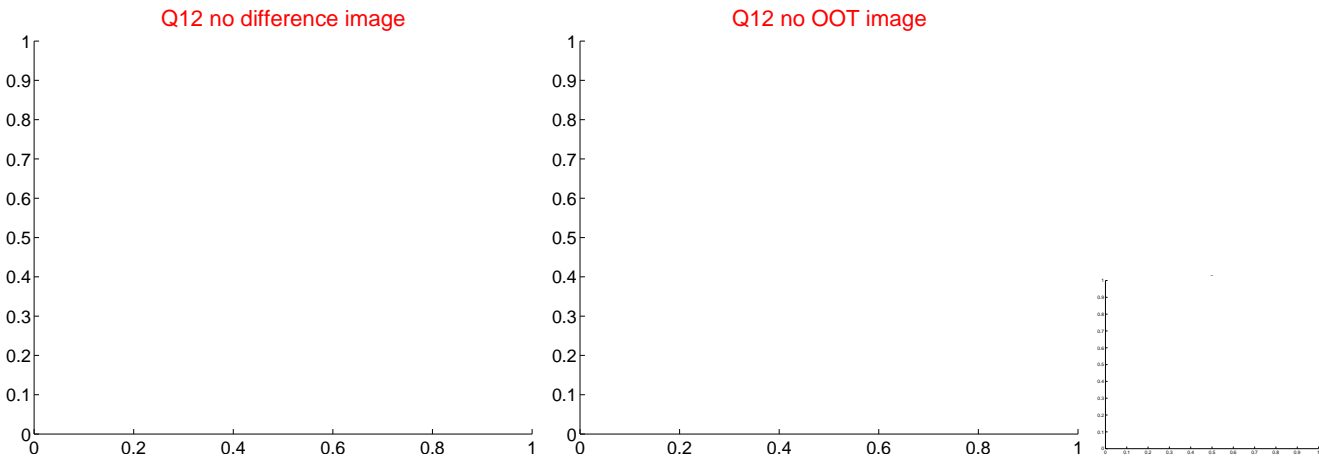
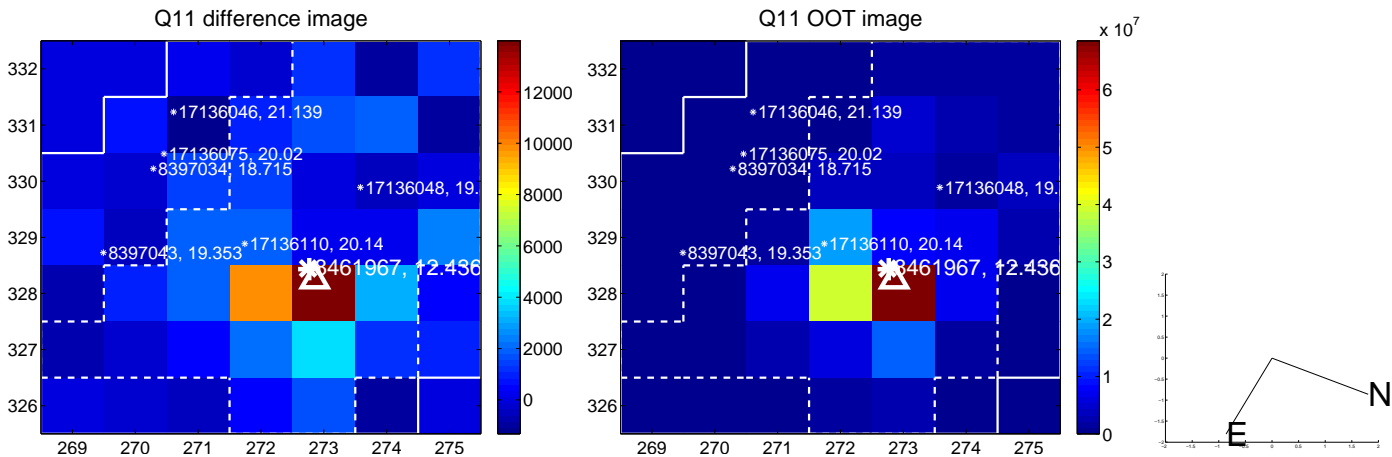
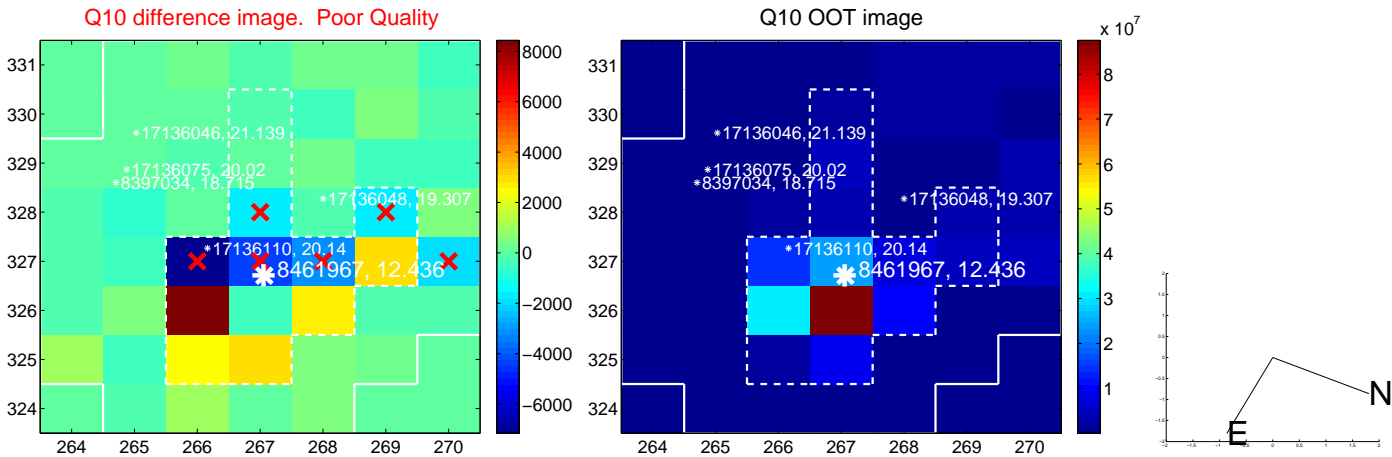
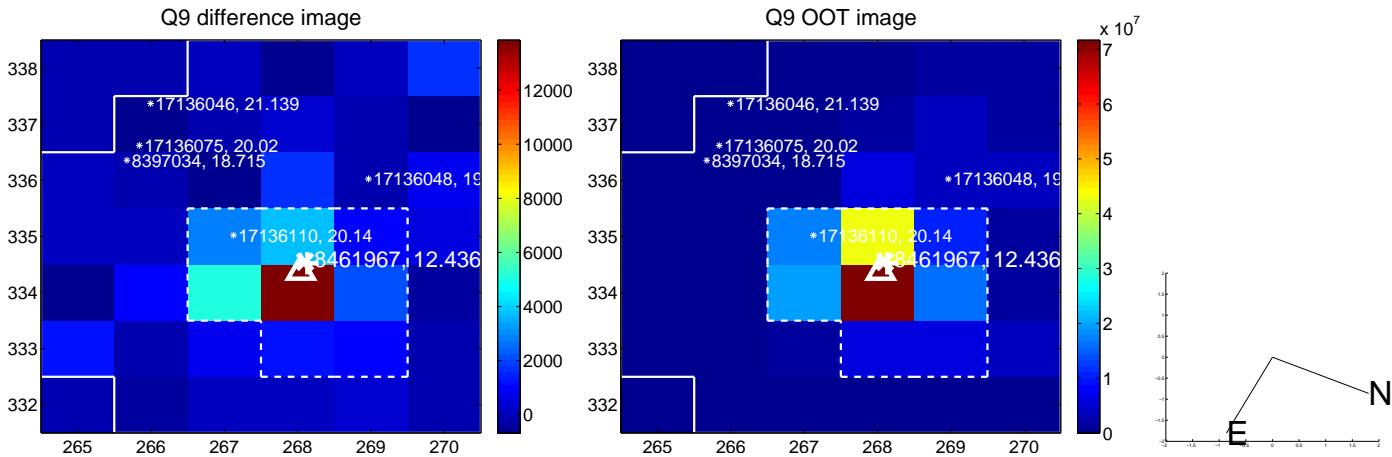
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



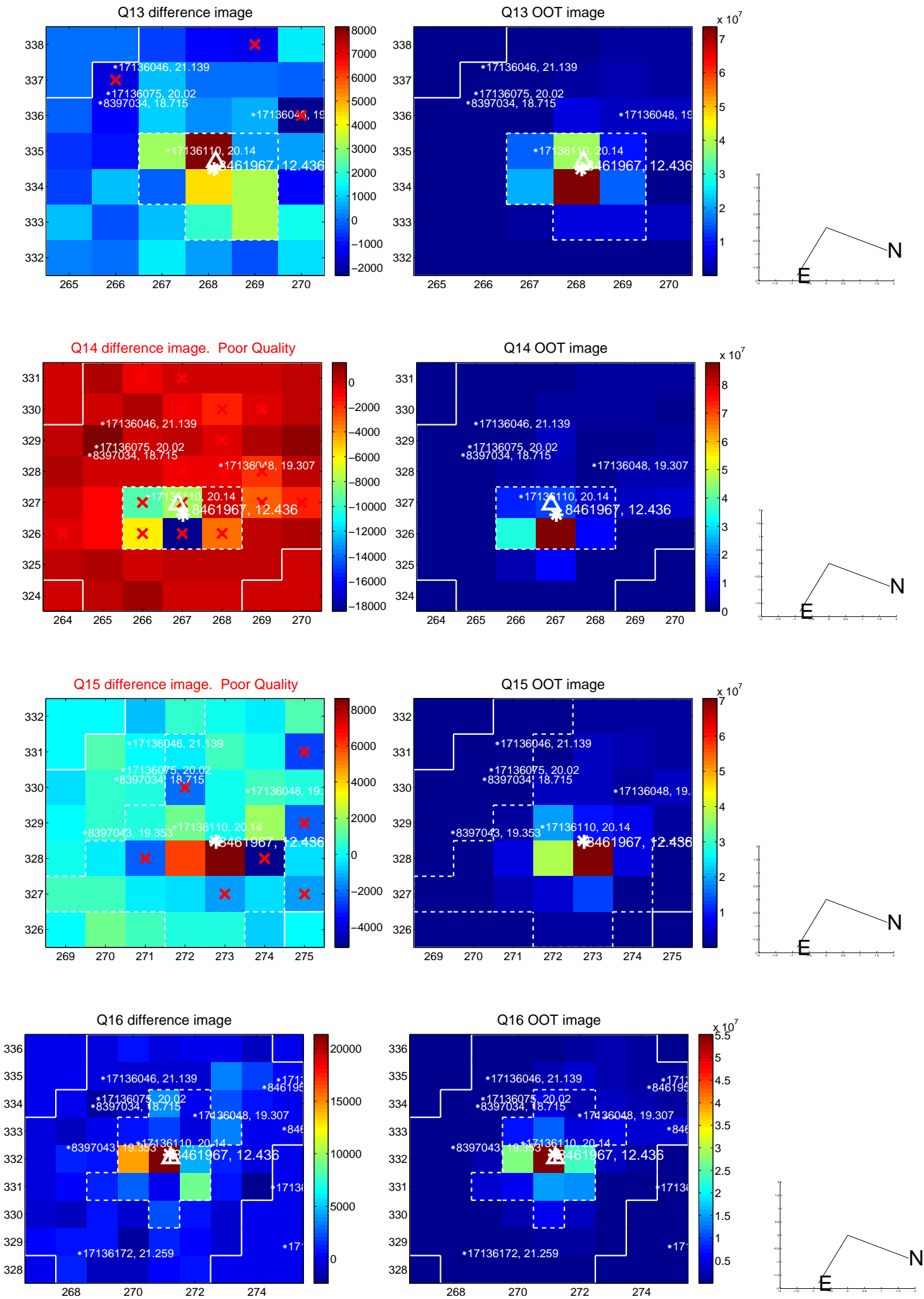
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

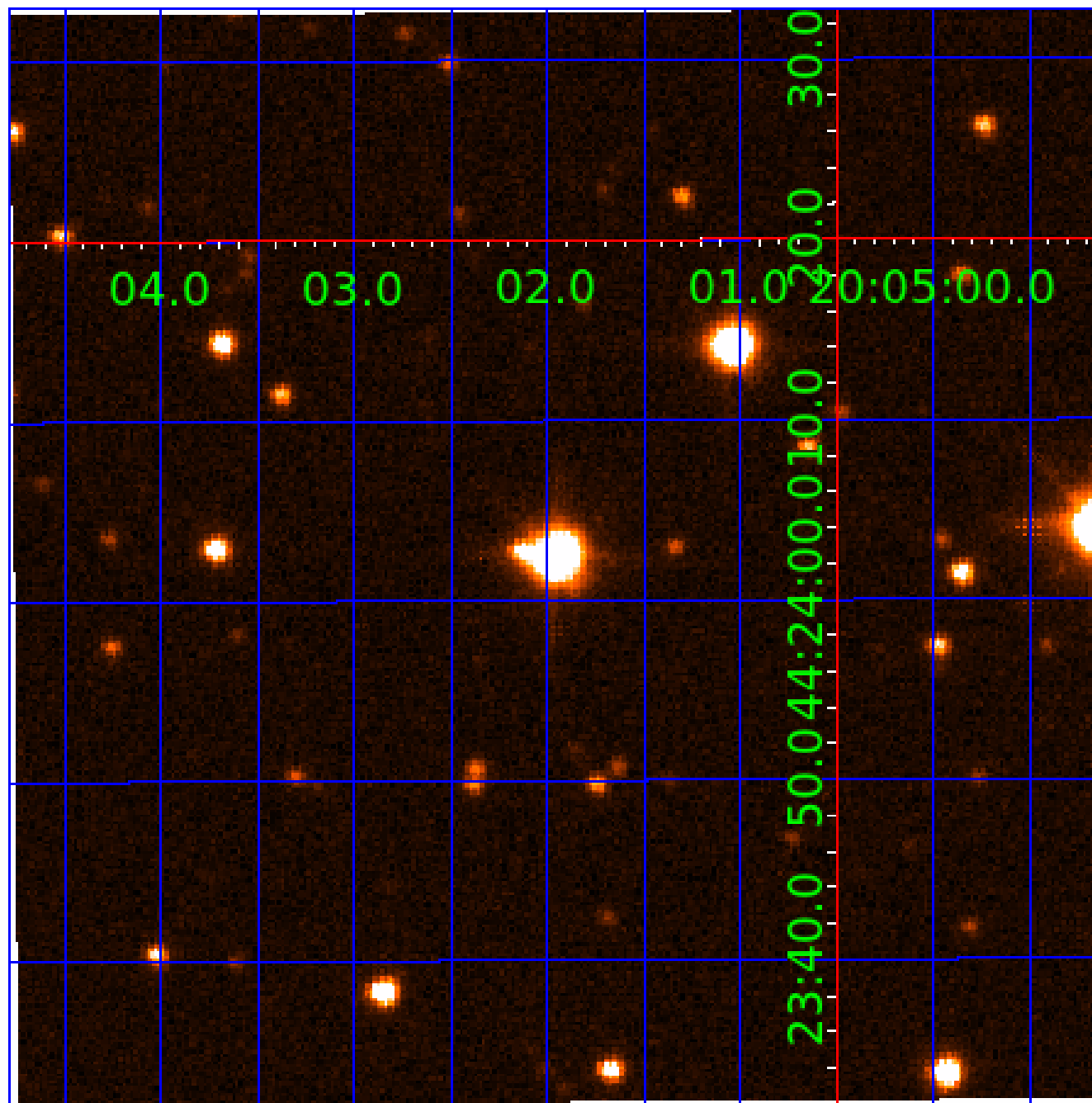


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination



KIC 008461967

Q1-17 DR25 TCE Parameters

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Robovetter Results

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008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

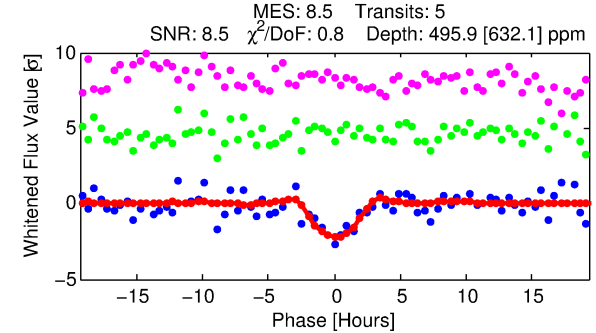
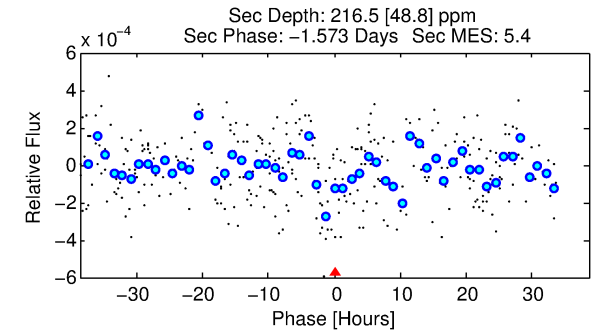
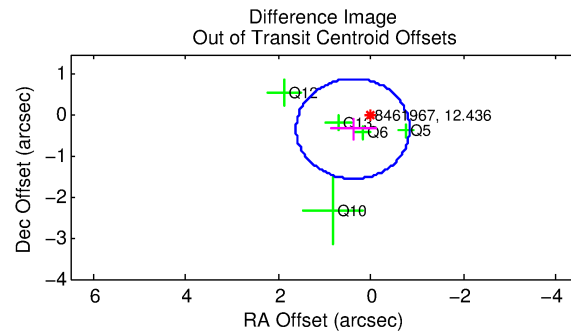
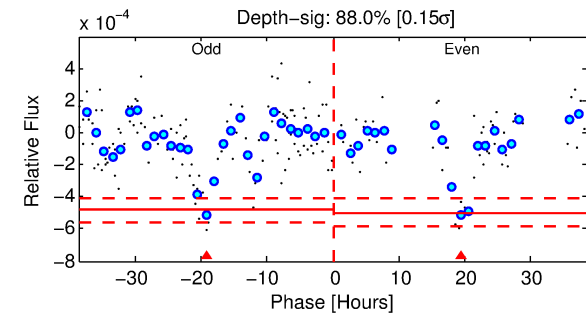
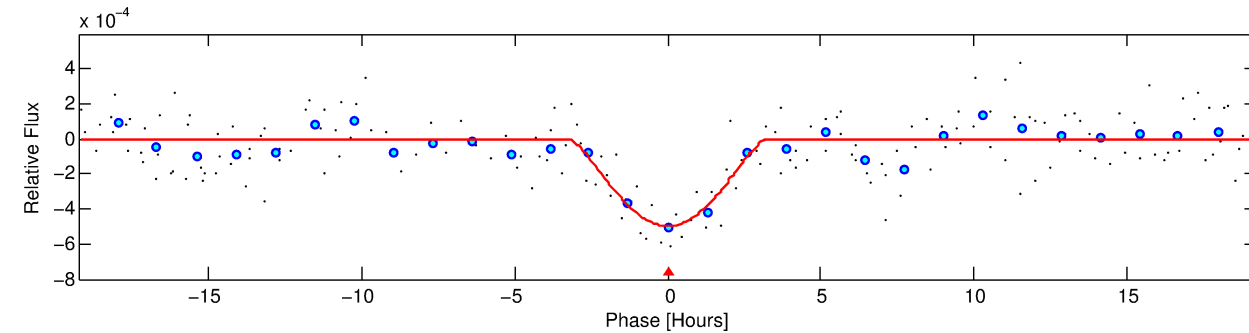
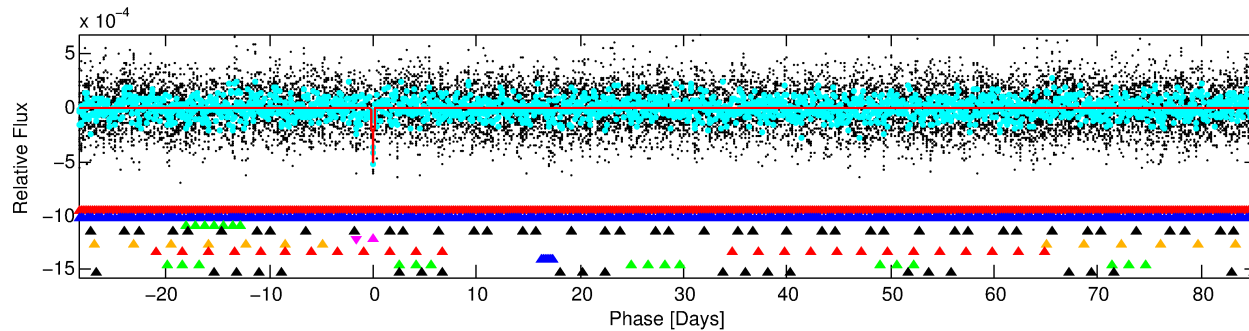
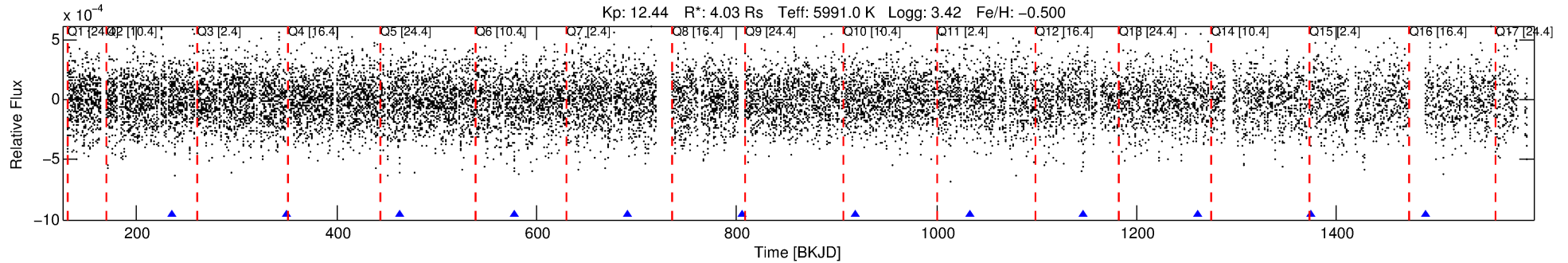
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-05

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 5 of 10 Period: 113.853 d



DV Fit Results:

Period = 113.85323 [0.00290] d
Epoch = 236.0913 [0.0159] BKJD
Rp/R* = 0.0398 [0.1042]
a/R* = 38.58 [25.69]
b = 1.00 [0.12]
Seff = 65.80 [39.88]
Teq = 726 [110] K
Rp = 17.51 [46.47] Re
a = 0.5343 [0.2038] AU
Ag = 110.93 [585.67] [0.19 σ]
Teffp = 3644 [4782] K [0.61 σ]

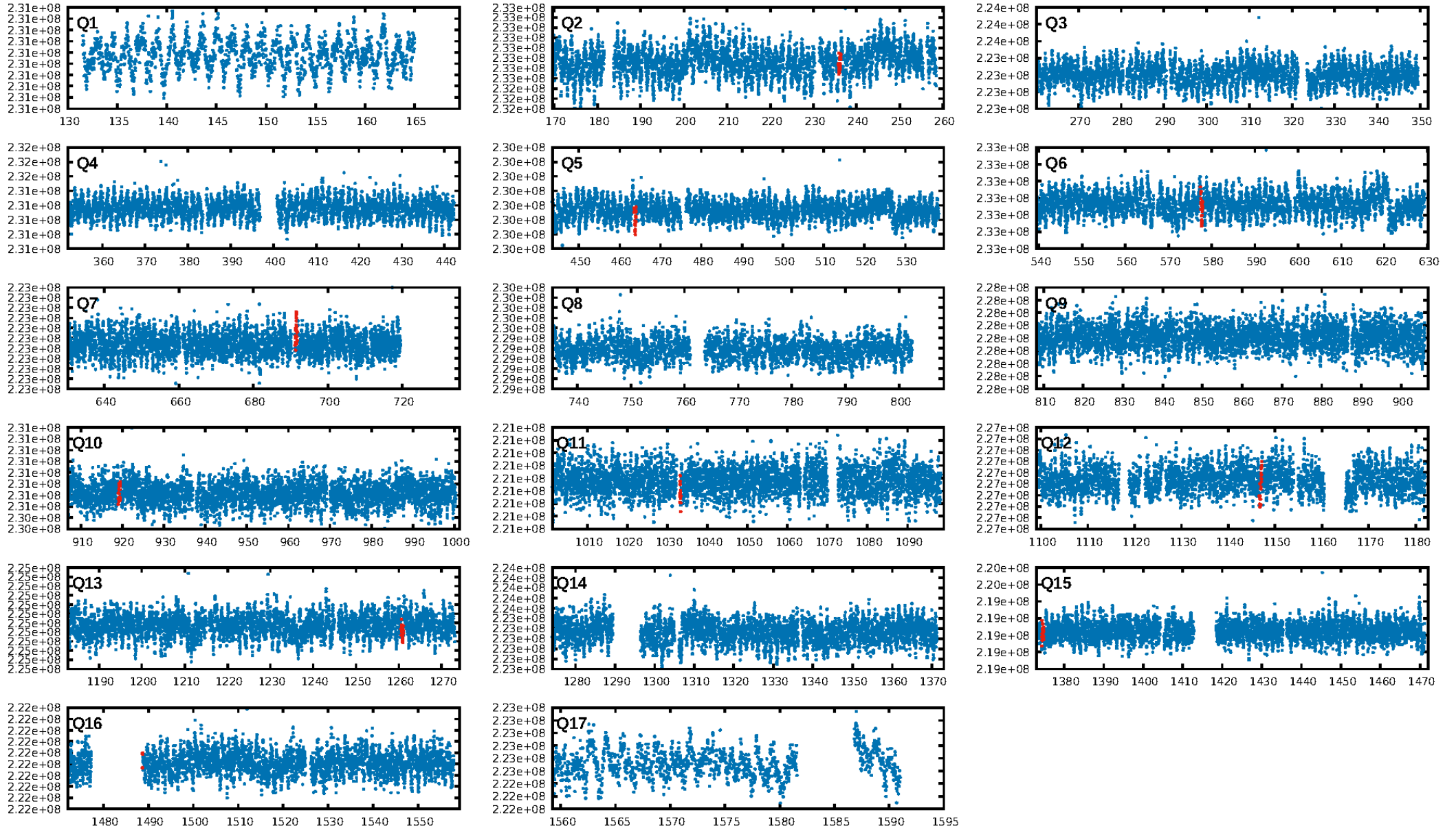
DV Diagnostic Results:

ShortPeriod-sig: 18.9% [0.24 σ]
LongPeriod-sig: 100.0% [196.95 σ]
ModelChiSquare2-sig: 33.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.235
Centroid-sig: 8.2%
Centroid-so: 1.440 arcsec [2.36 σ]
OotOffset-rm: 0.506 arcsec [1.24 σ]
KicOffset-rm: 0.490 arcsec [1.09 σ]
OotOffset-st: 2/0/1/2 [5]
KicOffset-st: 2/0/1/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/6]

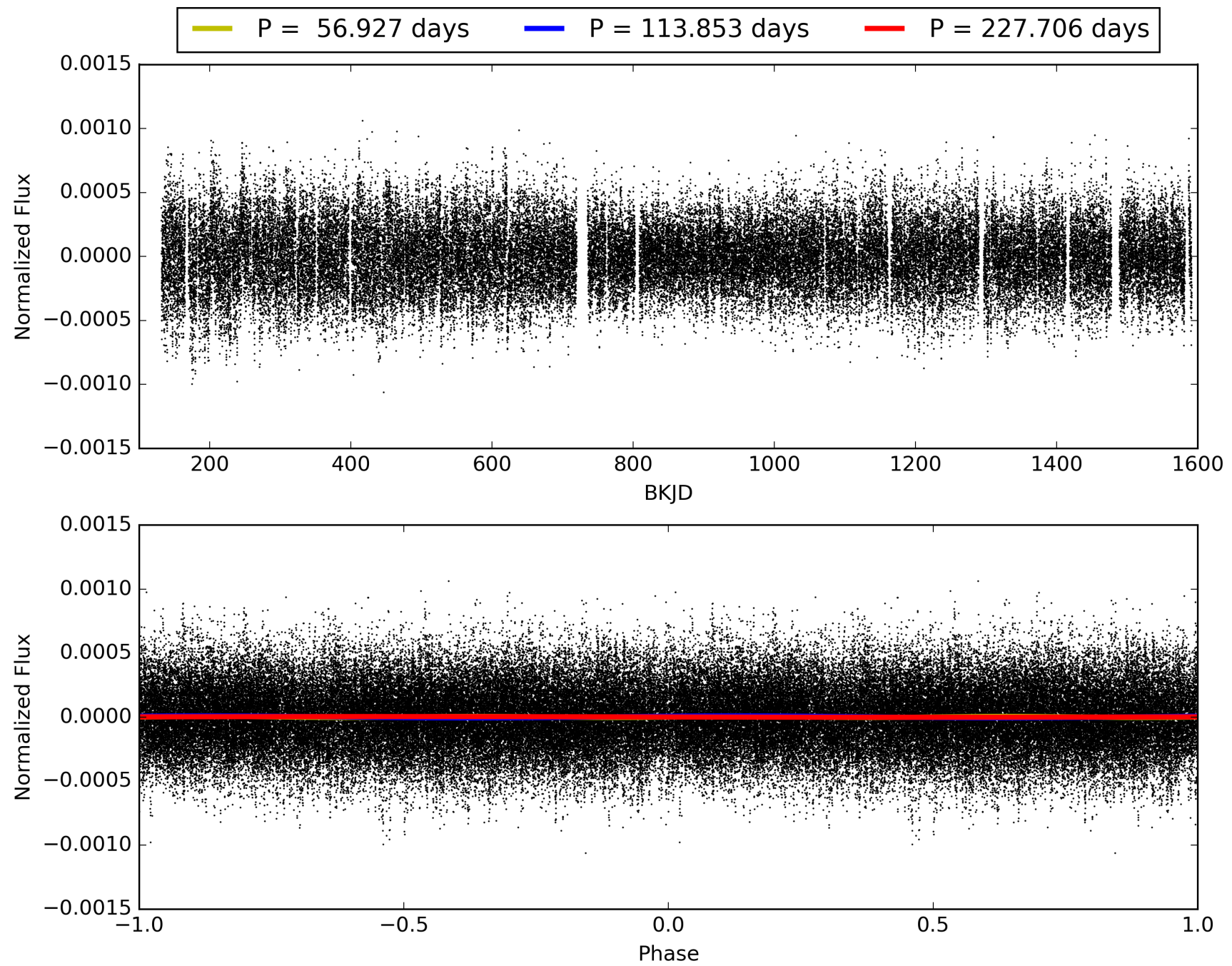
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:46:06 Z

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

TCE 008461967-05, PDC Light Curves

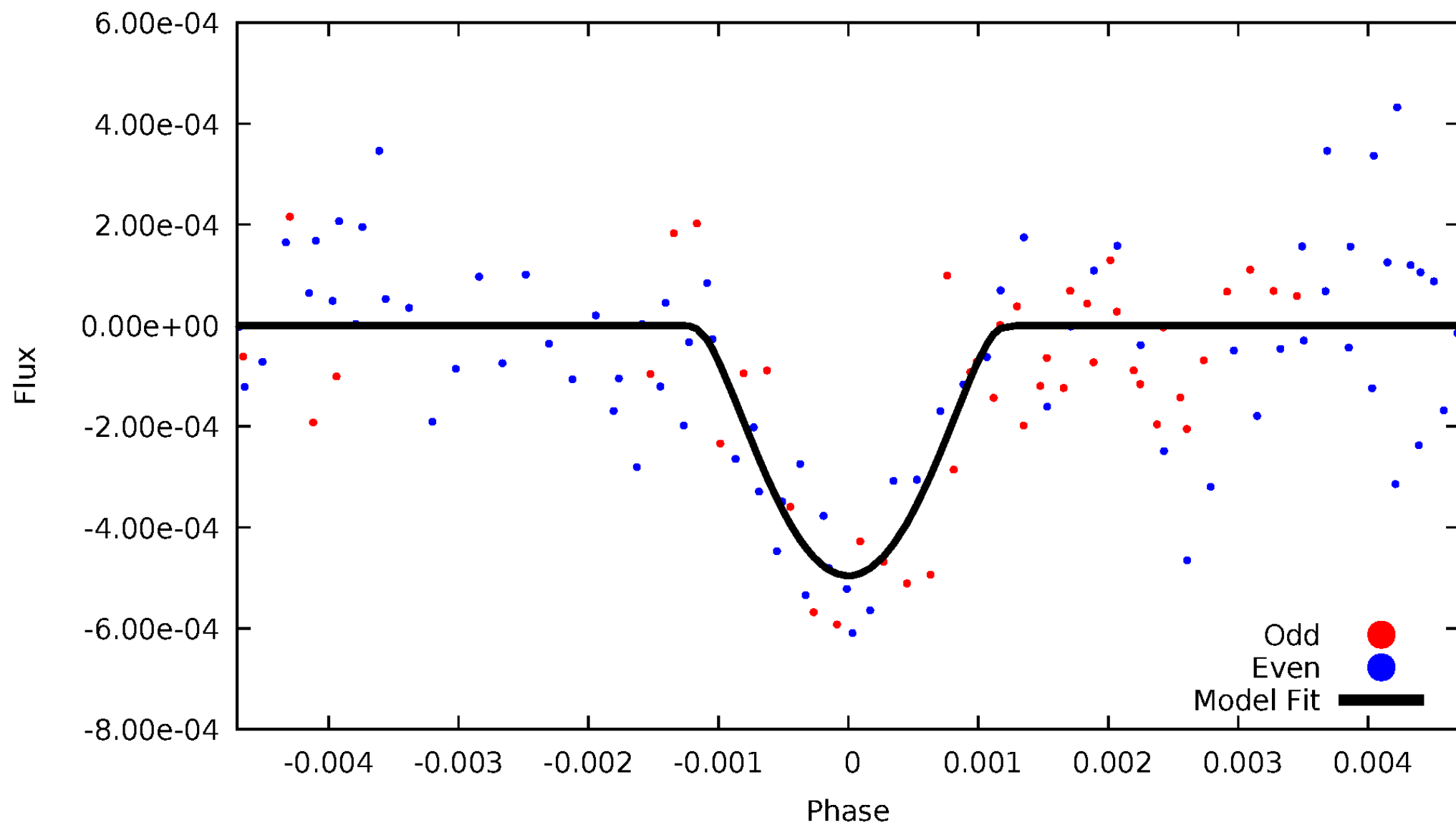


TCE 008461967-05



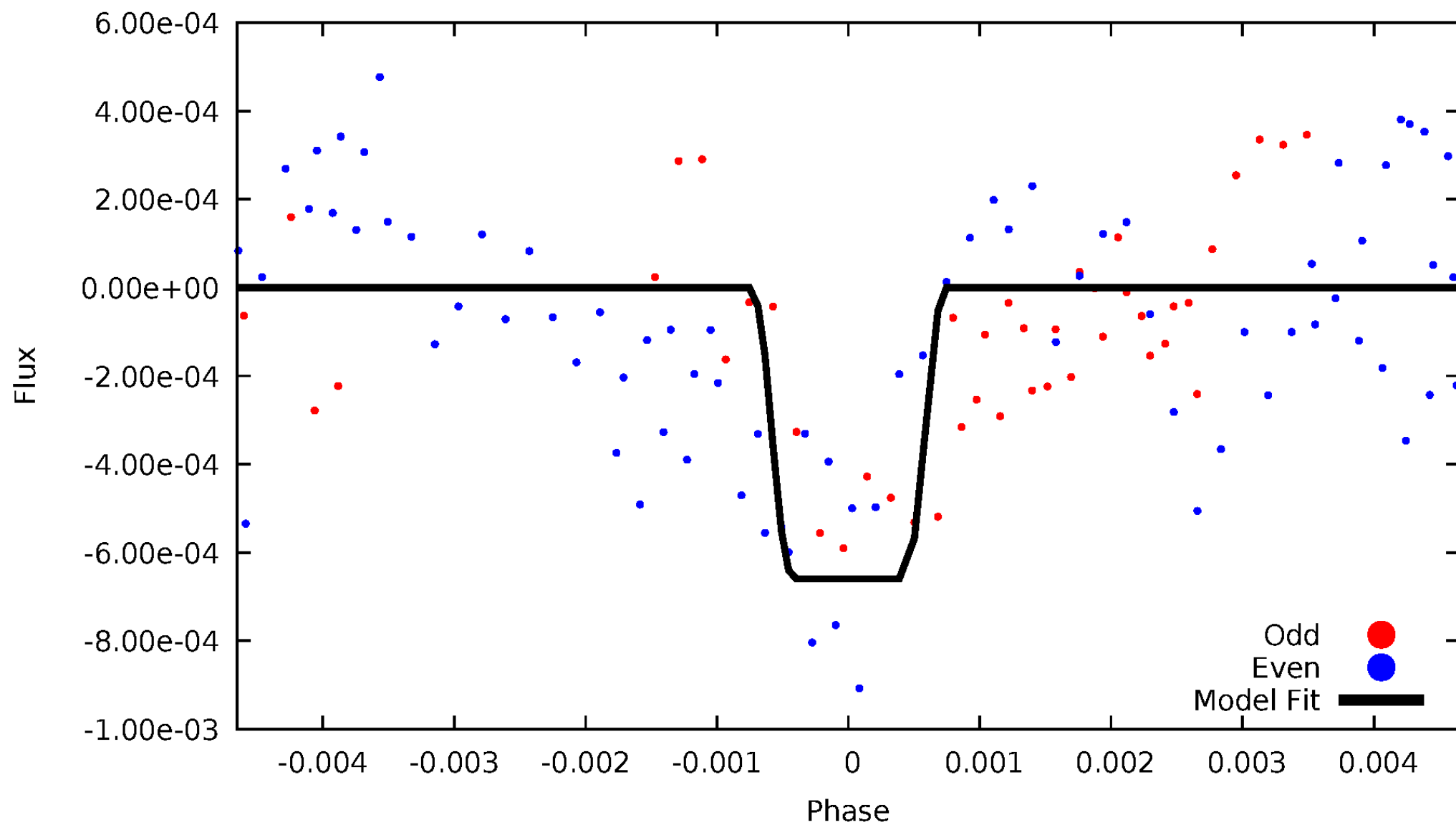
DV Odd/Even

TCE 008461967-05



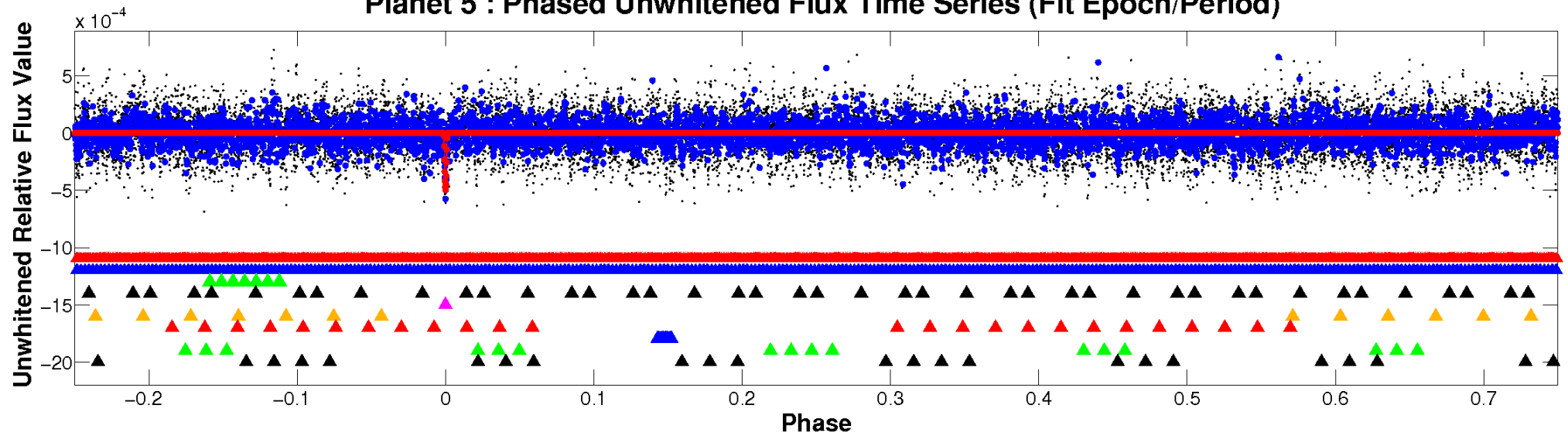
ALT Odd/Even

TCE 008461967-05

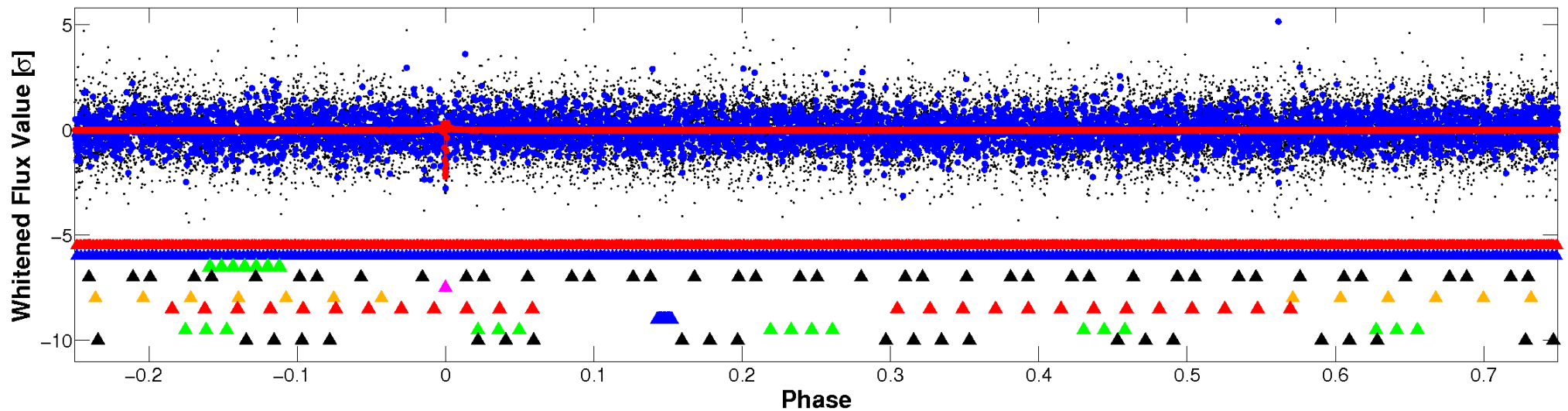


Non-Whitened Vs. Whitened Light Curve

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

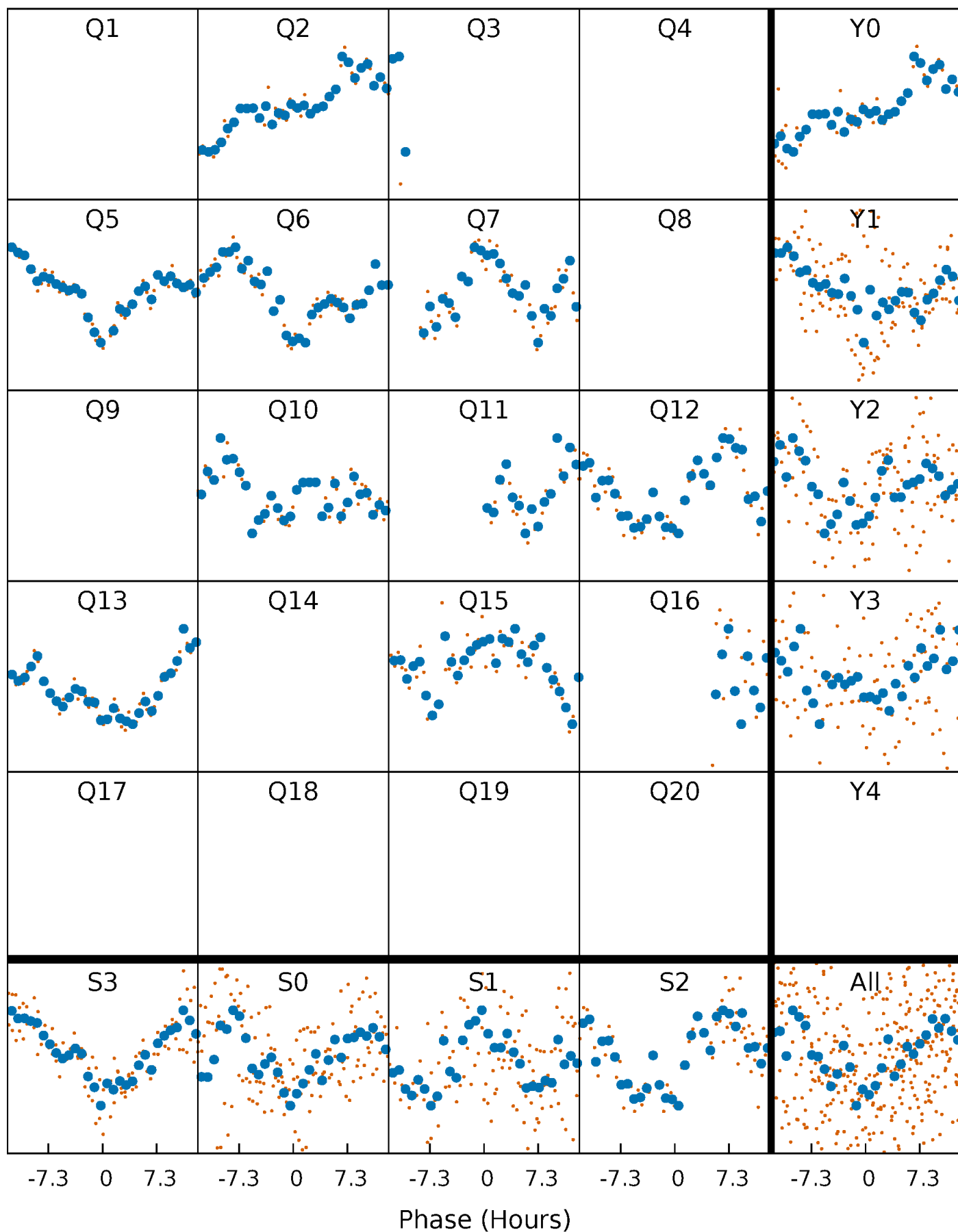


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



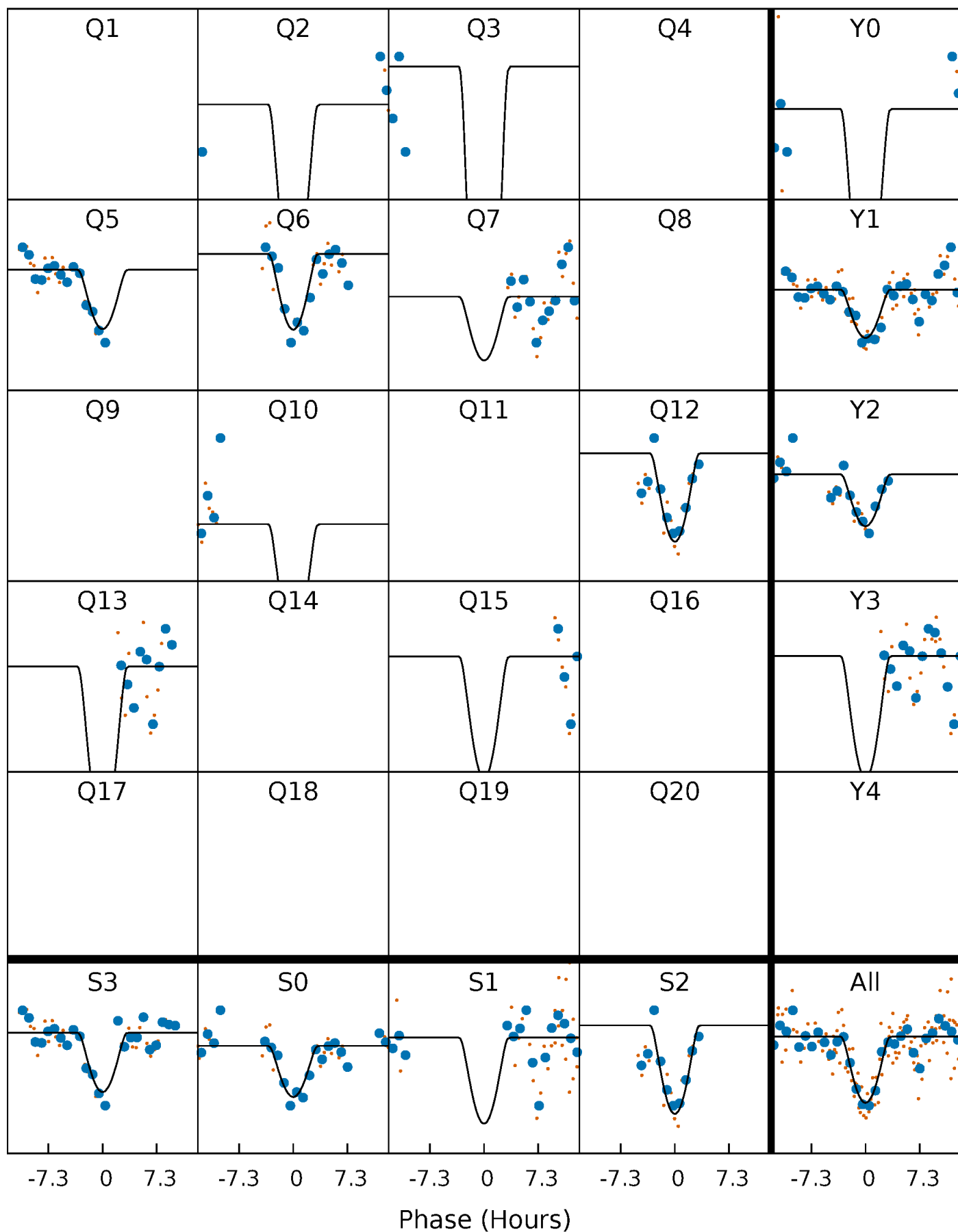
PDC Quarter-Phased Transit Curves

TCE 008461967-05 $P=113.853229$ Days $T_0=236.091319$ (BKJD)



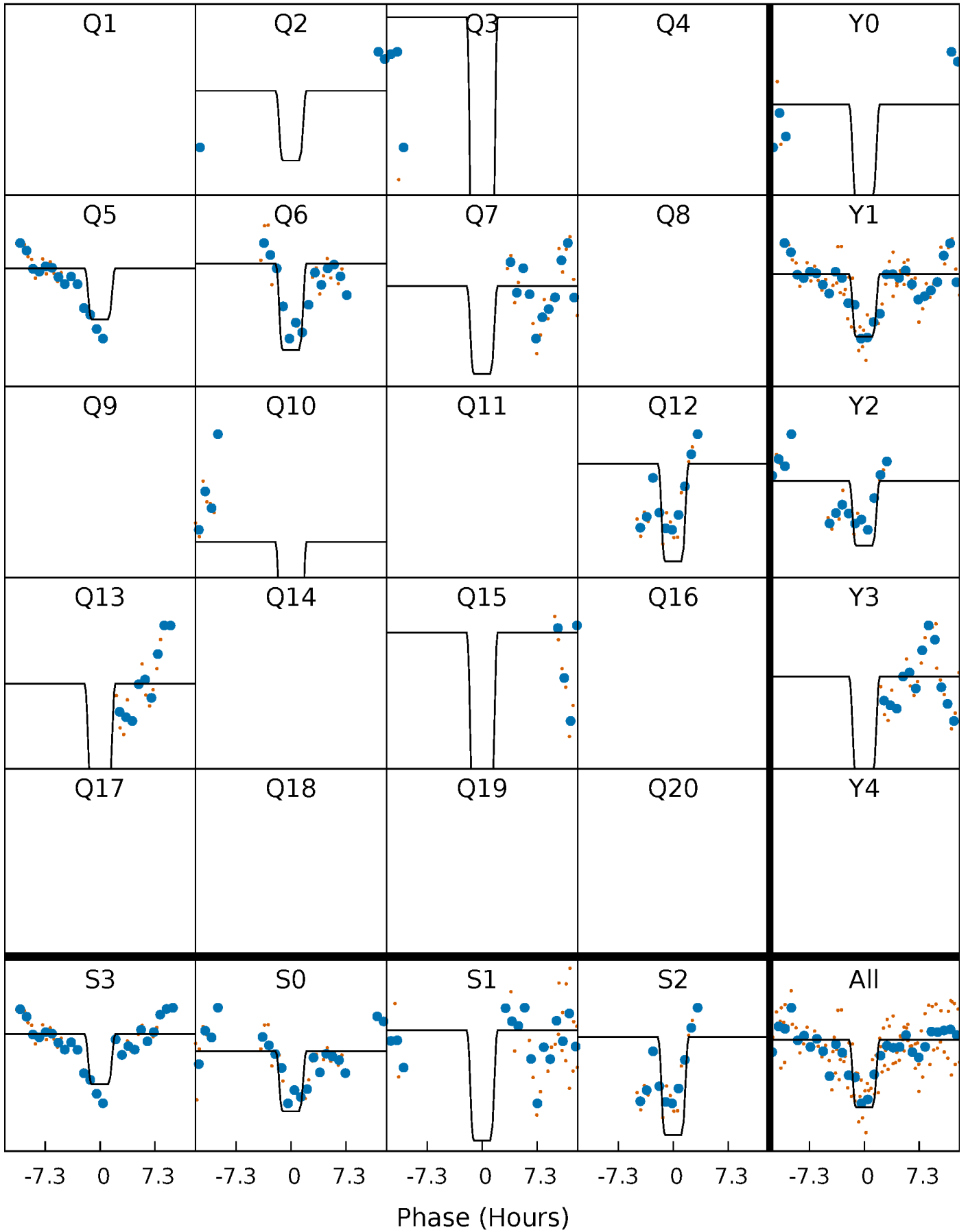
DV Quarter-Phased Transit Curves

TCE 008461967-05 P=113.853229 Days $T_0=236.091319$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

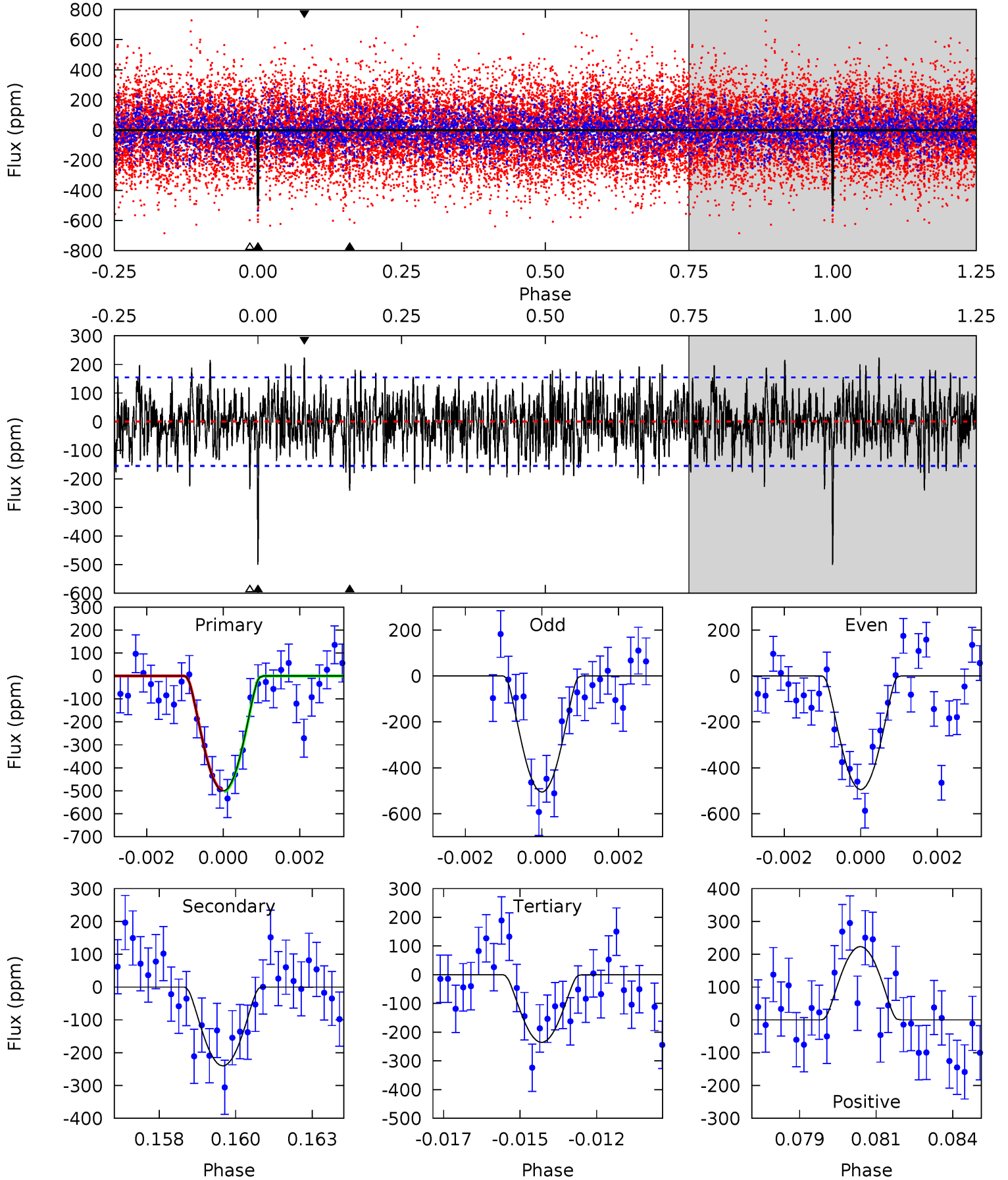
TCE 008461967-05 $P=113.853486$ Days $T_0=236.084715$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-05, P = 113.853229 Days, E = 122.238090 Days

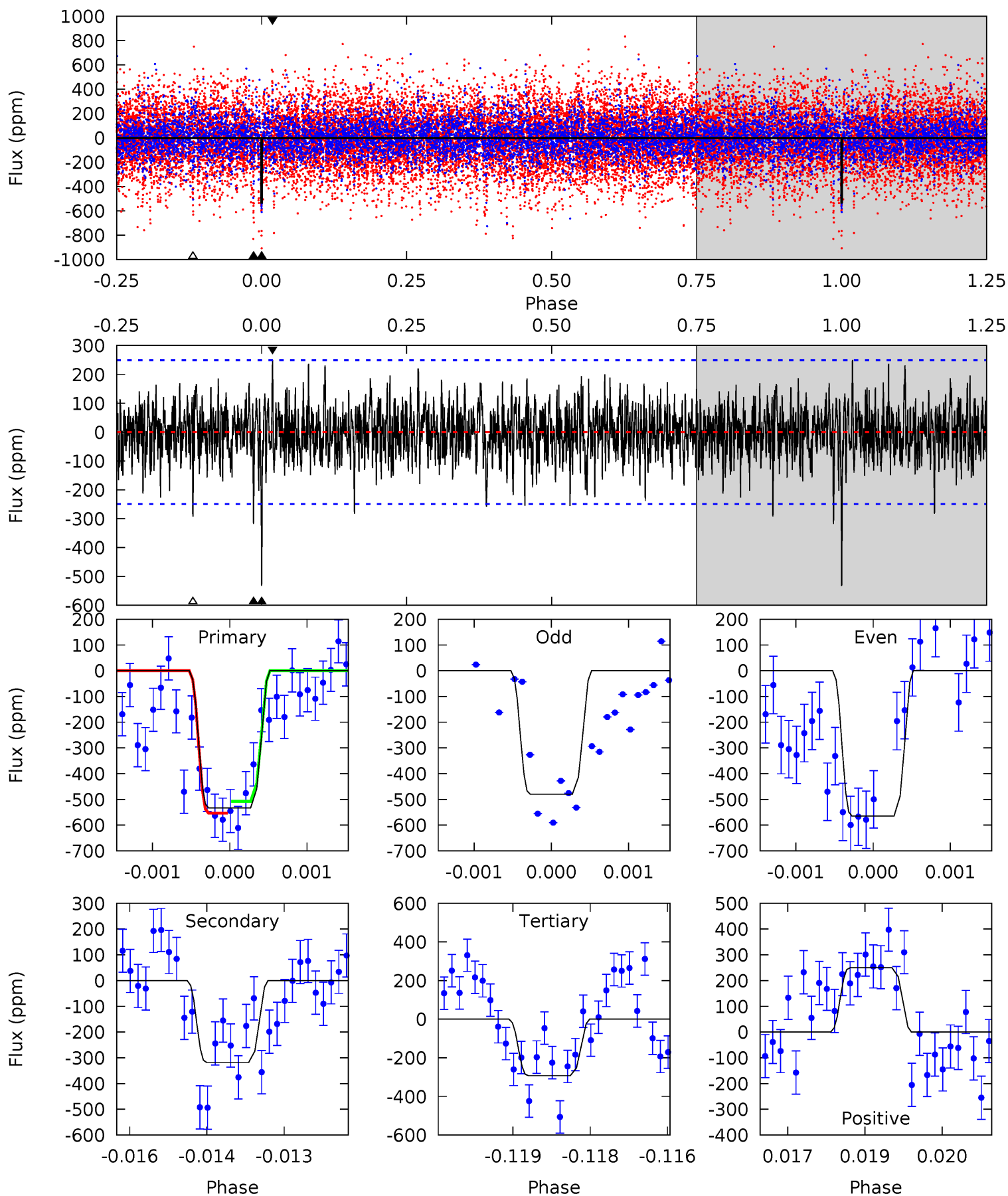
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	8.20	8.04	7.62	5.29	3.03	2.48	9.05	9.47	0.16	0.57	0.19	0.75	0.31	0.11



Alt Model-Shift Uniqueness Test

008461967-05, P = 113.853486 Days, E = 122.231229 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	6.88	6.33	5.40	5.39	3.19	1.57	5.20	6.13	0.55	1.48	0.91	1.17	0.32	0.50



Stellar Parameters For KIC 008461967

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-240 ± 29	$33.62^{+35.98}_{-23.23}$	990^{+65}_{-99}	3140^{+1567}_{-527}	31^{+291}_{-23}
Alt.	-318 ± 46	$32.87^{+34.37}_{-23.31}$	993^{+63}_{-103}	3330^{+2005}_{-623}	44^{+542}_{-34}

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 $A_{obs} \gg 1.0$

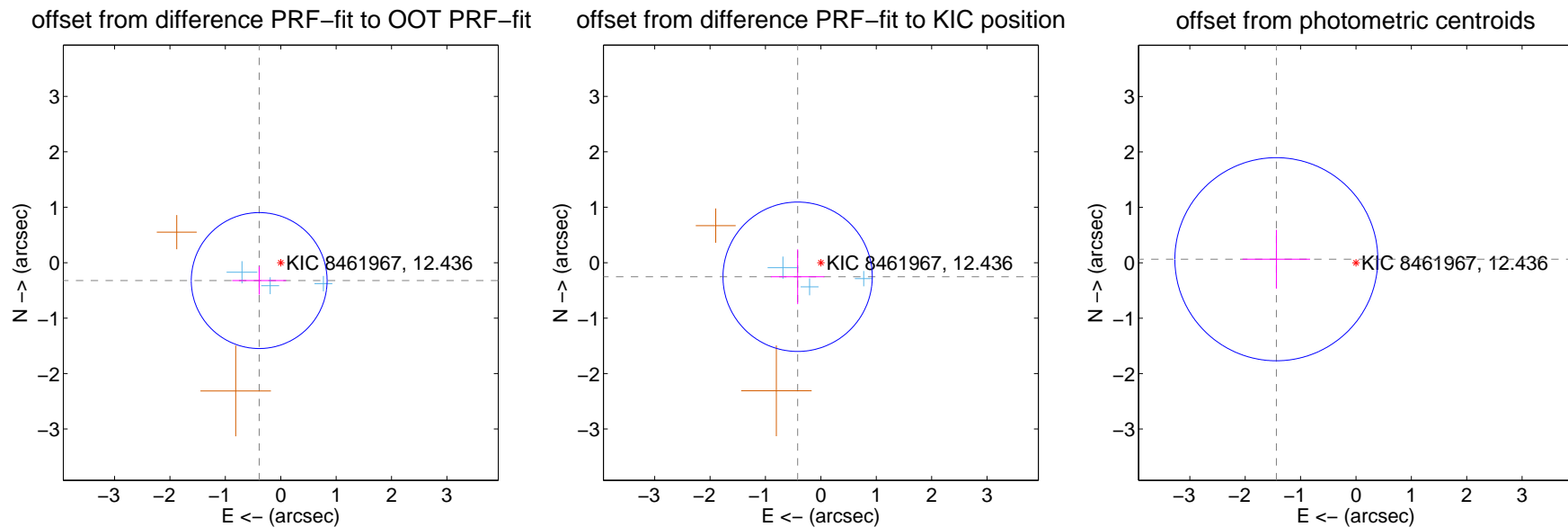
DV Centroid Data

Supplemental centroid analysis for 008461967-05. Kepler magnitude: 12.44. Transit SNR 8.46

There are 3 quarters with good PRF difference image offsets

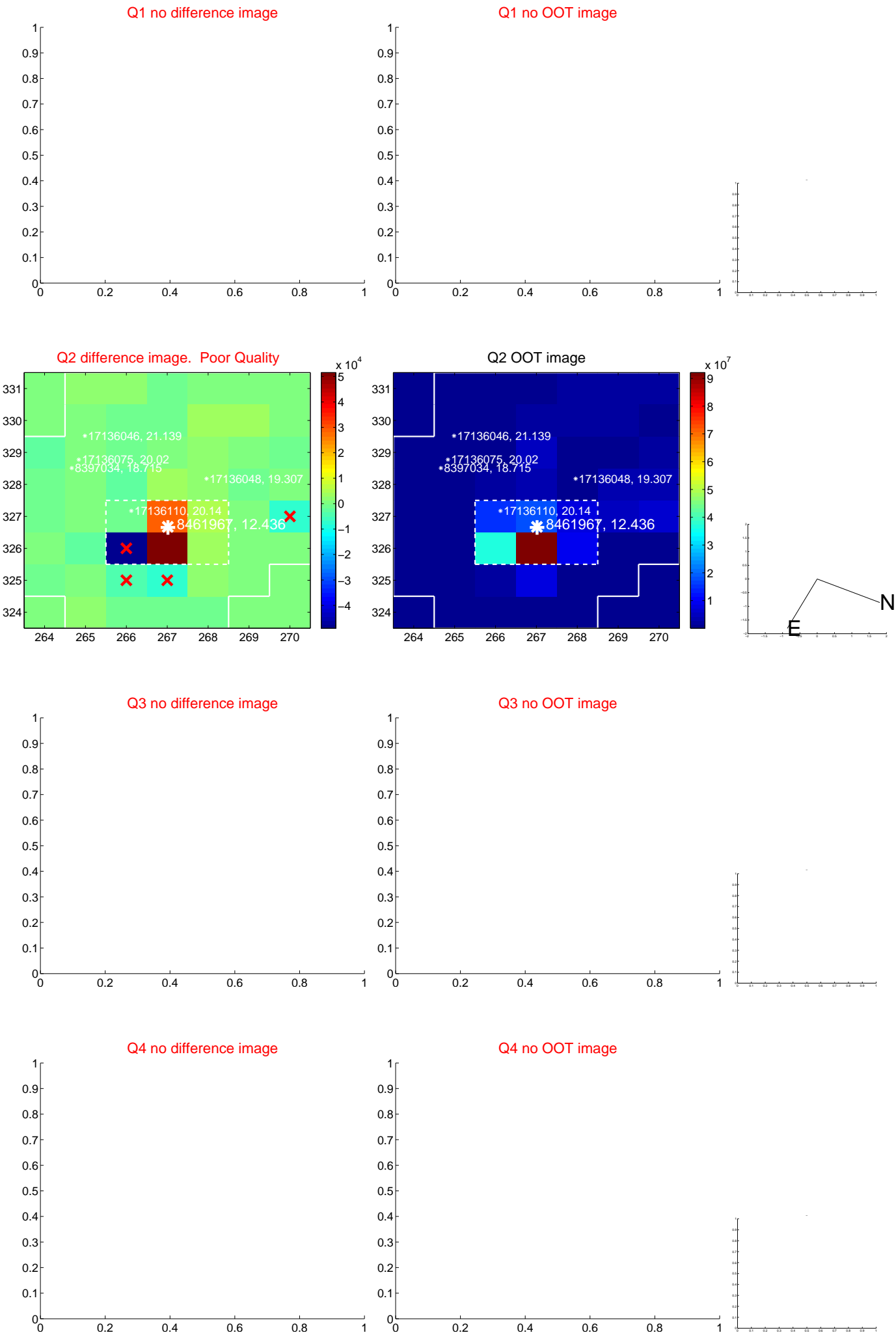
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.506 ± 0.409	1.24	0.389 ± 0.488	-0.322 ± 0.253
PRF-fit source offset from KIC position	0.490 ± 0.449	1.09	0.420 ± 0.482	-0.254 ± 0.494
photometric centroid source offset	1.44 ± 0.61	2.36	1.44 ± 0.61	0.06 ± 0.53

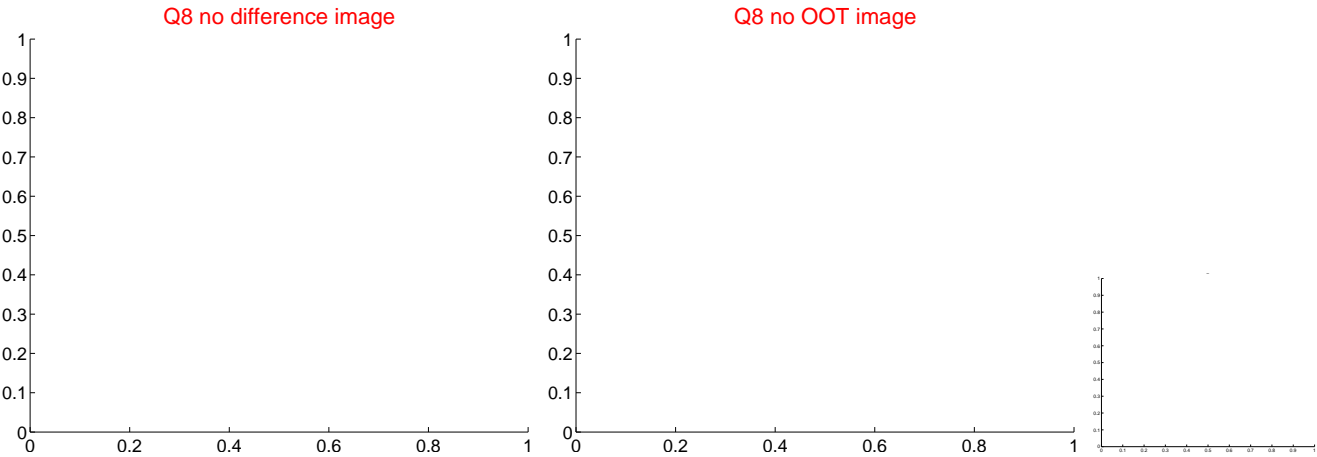
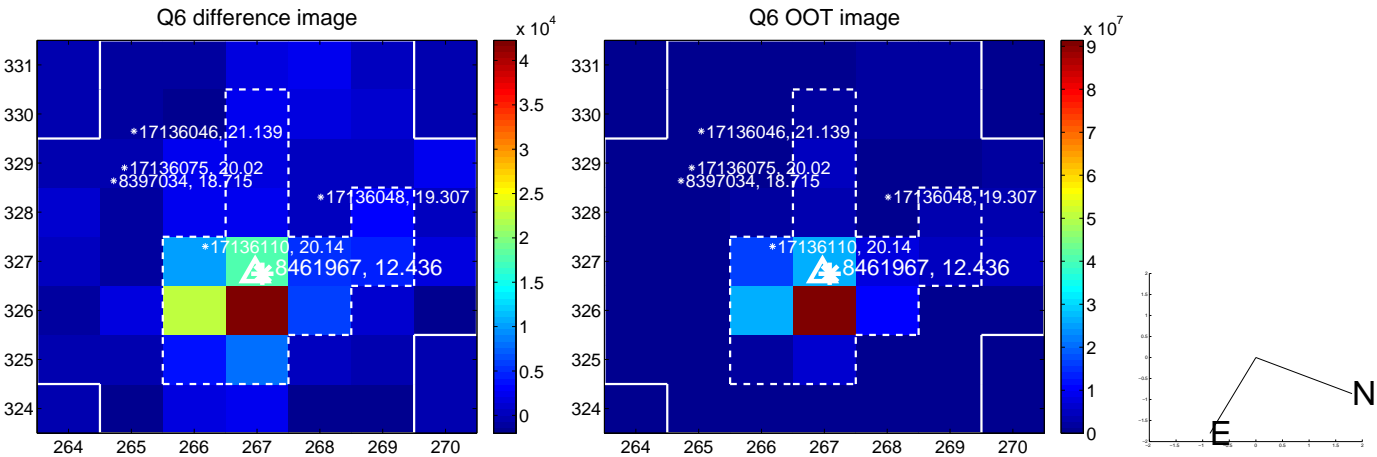
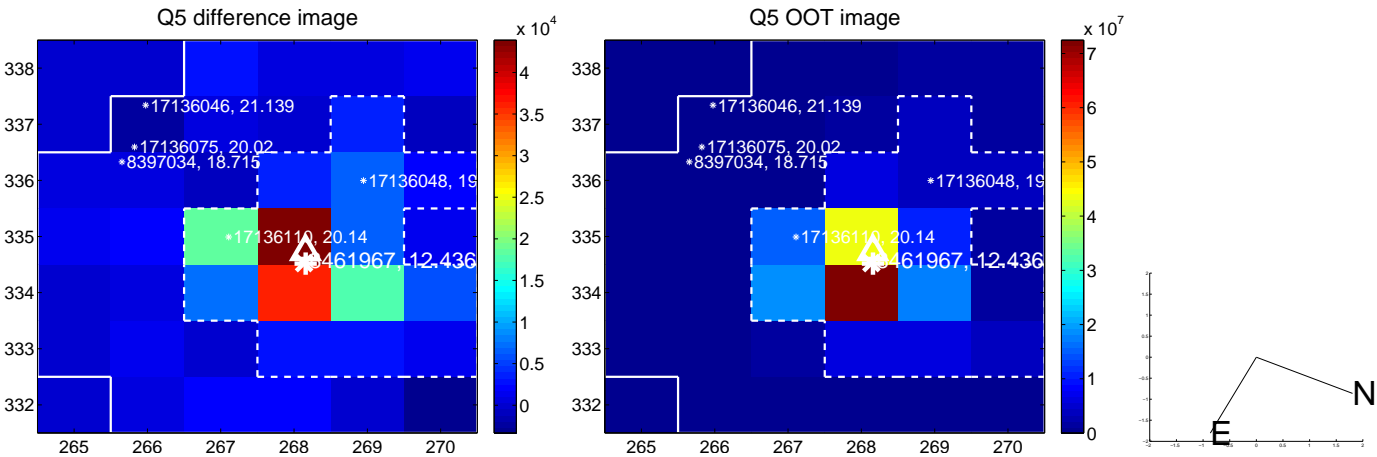


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

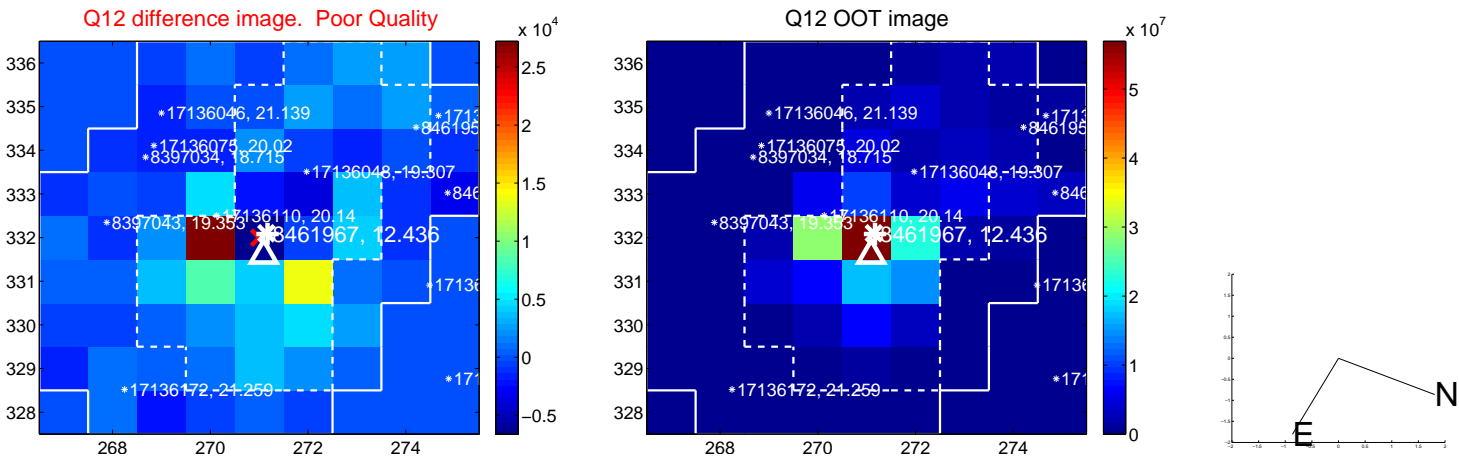
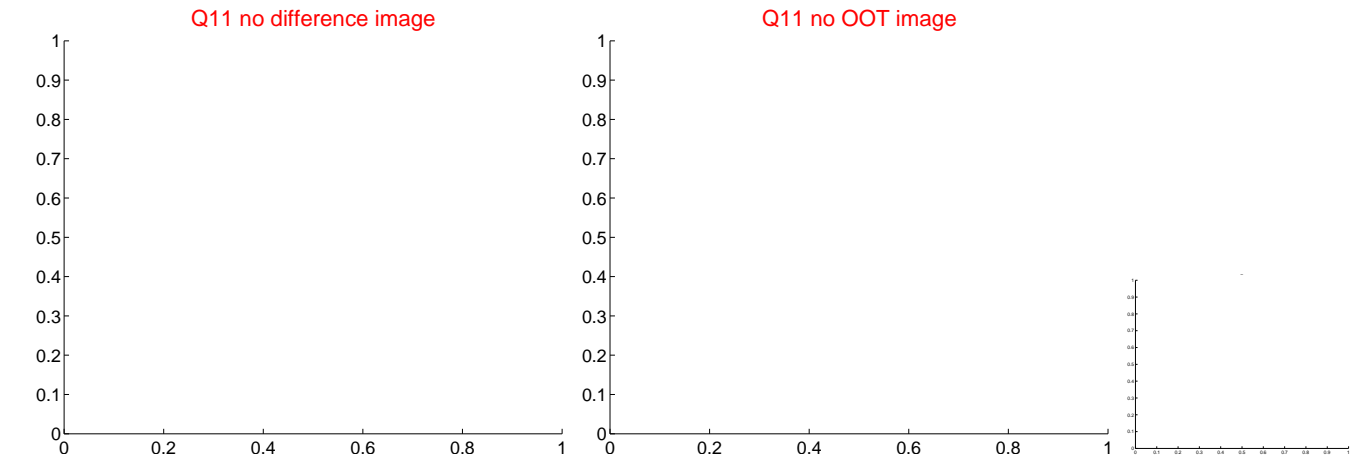
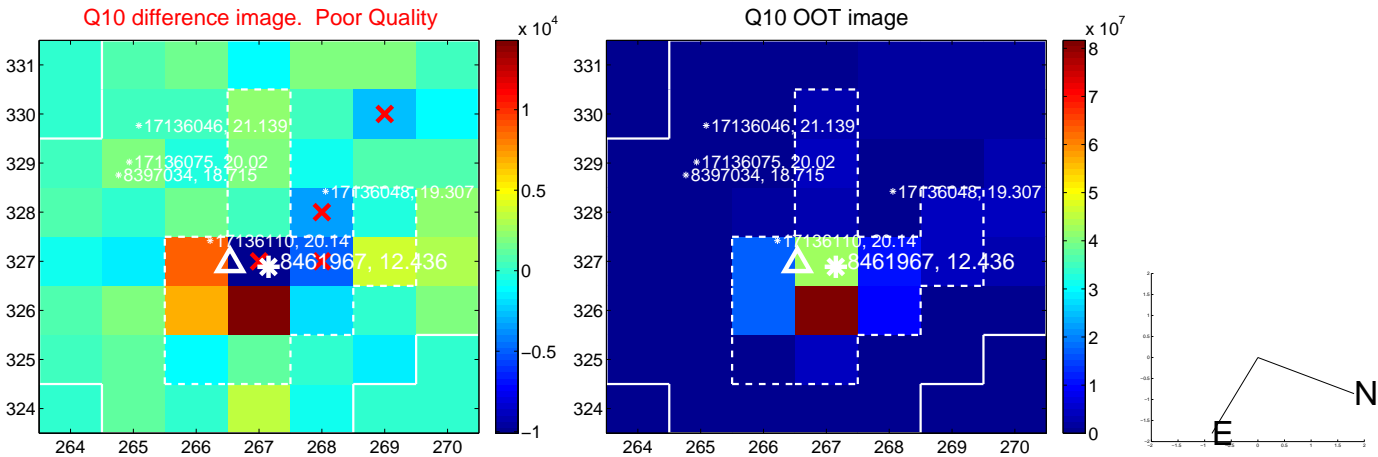
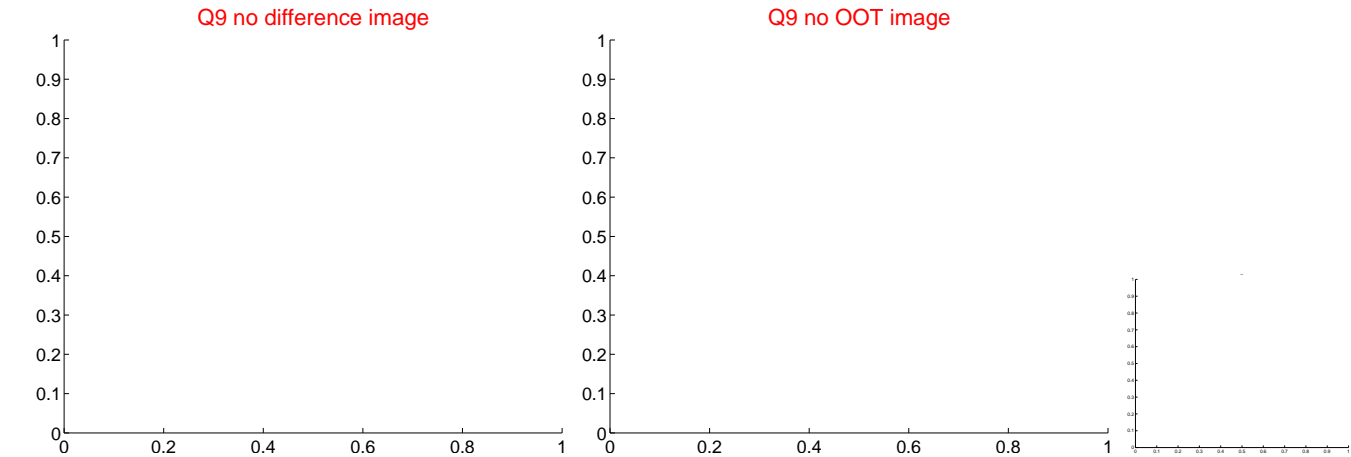
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



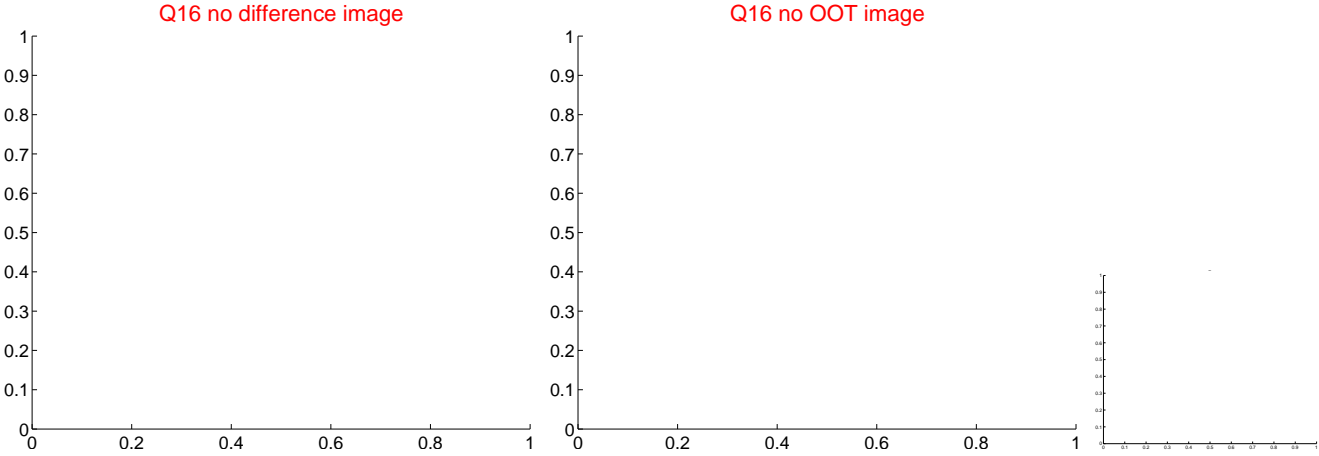
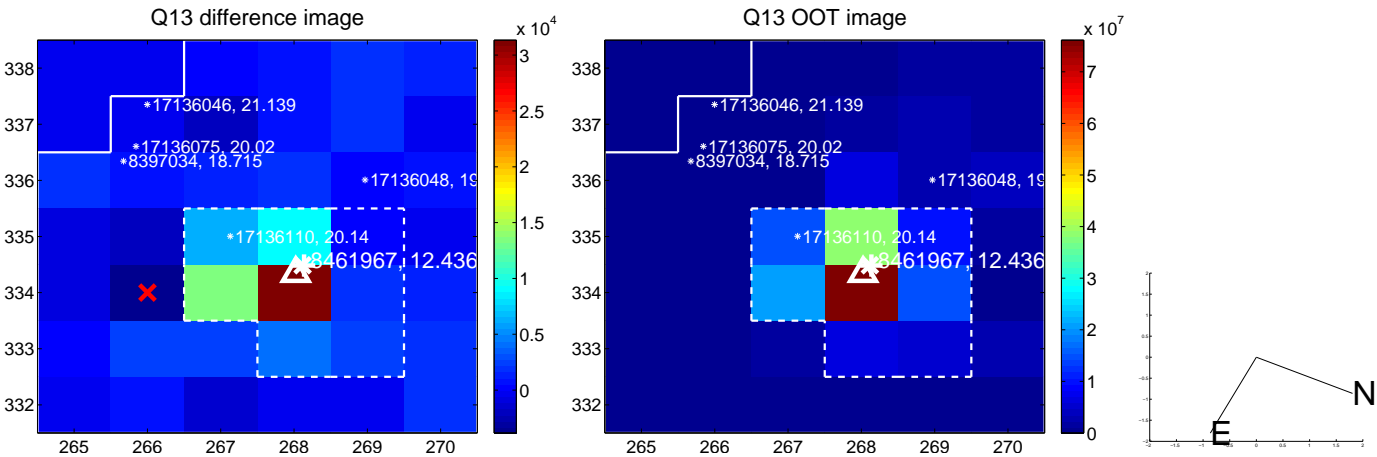
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



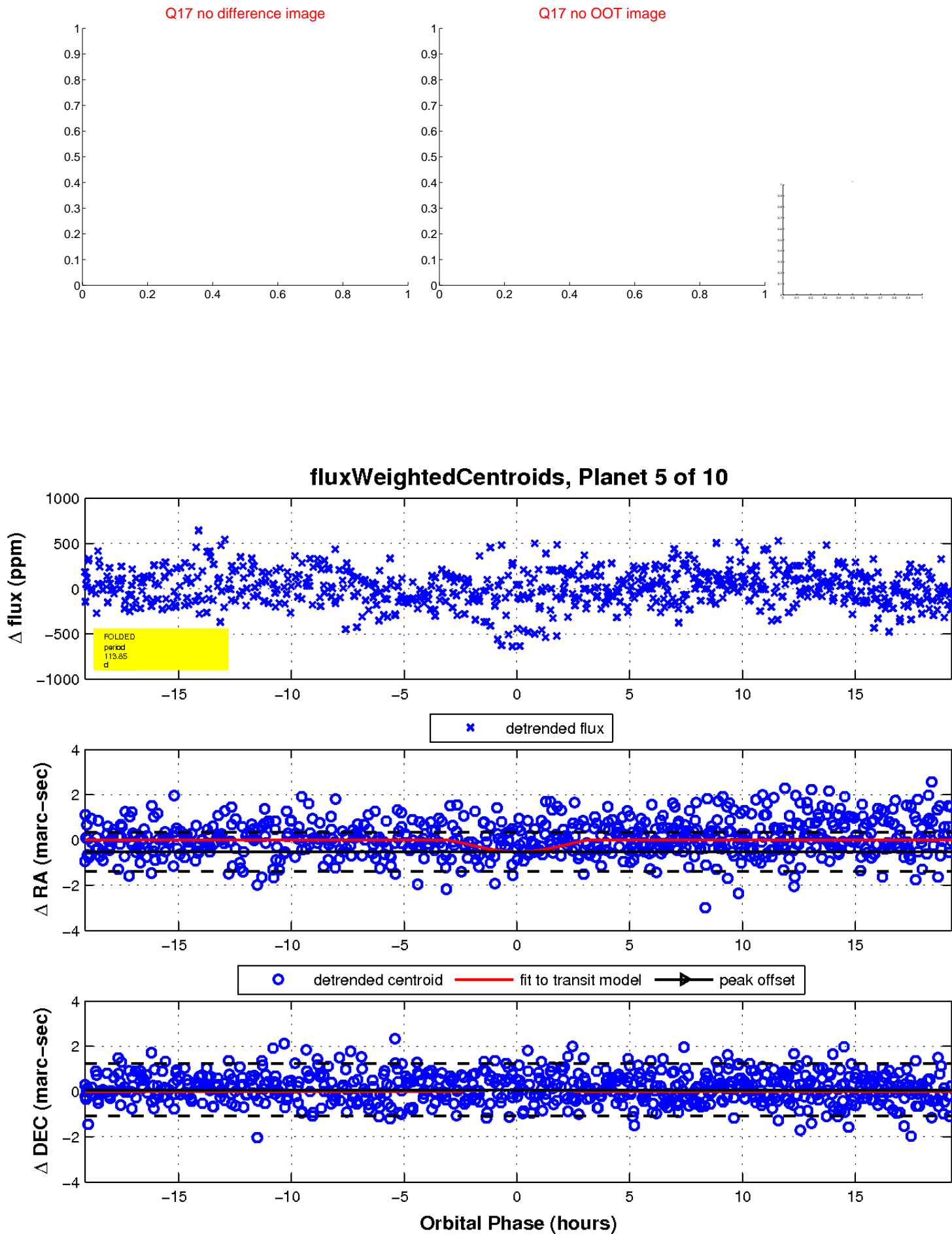
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

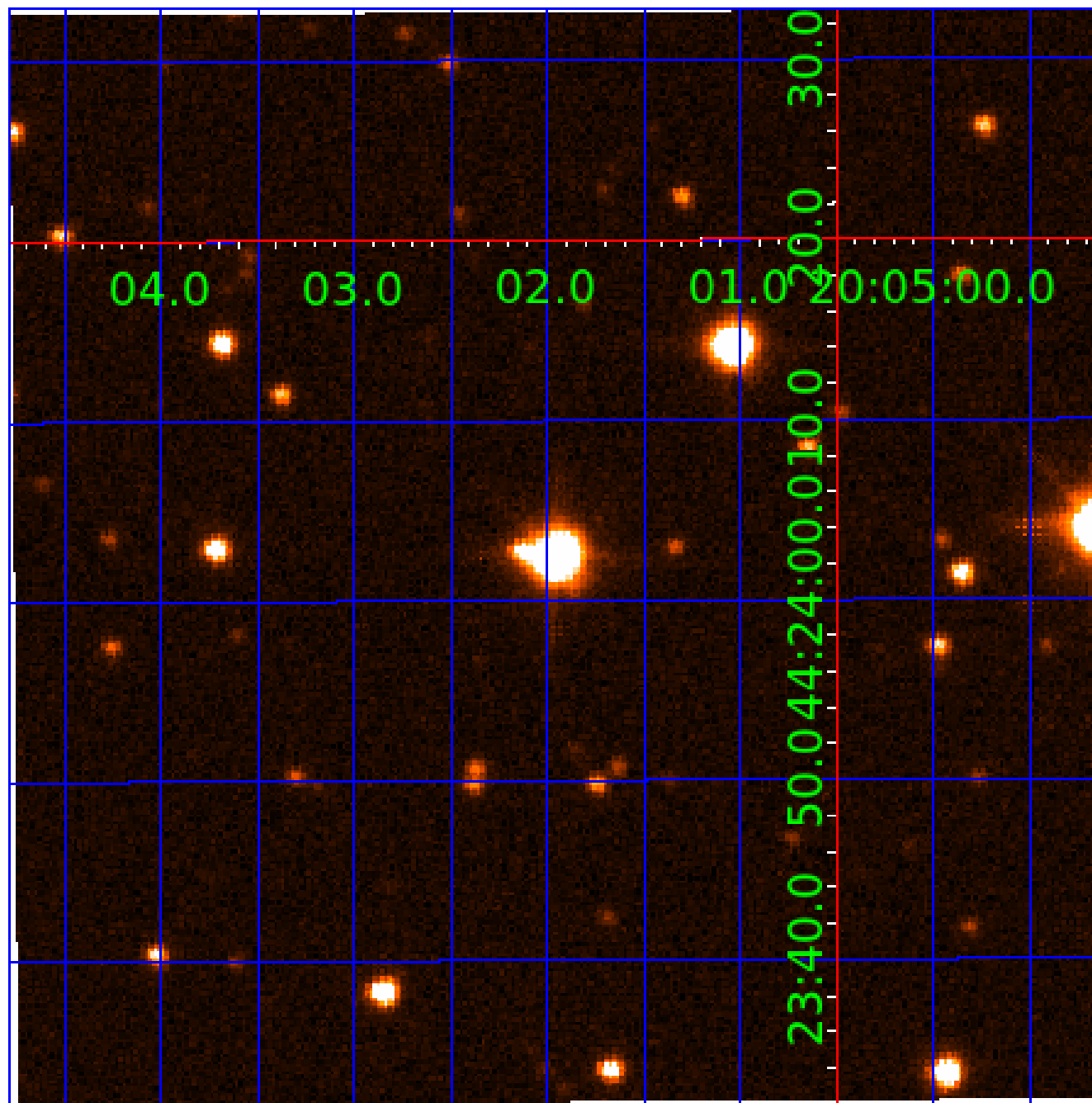


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008461967

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})
008461967-01	OBS	No	1.521666	132.369637	0.0	4.159	11.1	0.0	4.03	5991	0.07	20747.05
008461967-02	OBS	No	1.522001	132.662554	47.0	6.075	10.9	11.5	4.03	5991	4.49	20740.97
008461967-03	OBS	No	226.818718	223.335820	517.1	12.175	9.2	8.0	4.03	5991	11.43	26.25
008461967-04	OBS	No	33.685215	150.767681	201.9	4.893	9.5	8.6	4.03	5991	6.75	333.78
008461967-05	OBS	No	113.853229	236.091319	495.9	6.424	8.5	8.5	4.03	5991	17.51	65.80
008461967-06	OBS	No	110.195951	231.169028	396.9	5.248	8.8	9.2	4.03	5991	10.51	68.73
008461967-07	OBS	No	58.183689	156.918725	280.5	3.132	8.0	7.8	4.03	5991	8.04	161.06
008461967-08	OBS	No	113.761733	139.598103	311.1	6.578	8.0	8.3	4.03	5991	8.17	65.88
008461967-09	OBS	No	91.399375	147.184635	174.1	13.803	7.6	6.4	4.03	5991	6.25	88.20
008461967-10	OBS	No	64.753816	162.454167	210.8	7.326	8.4	7.8	4.03	5991	6.67	139.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008461967-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

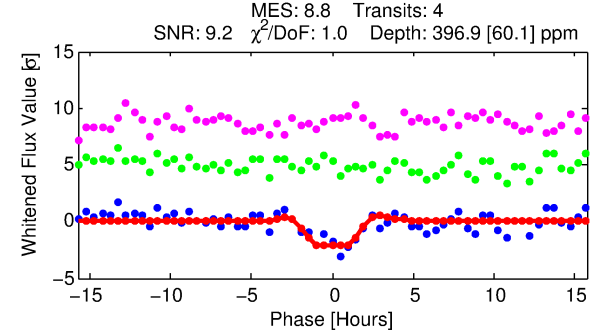
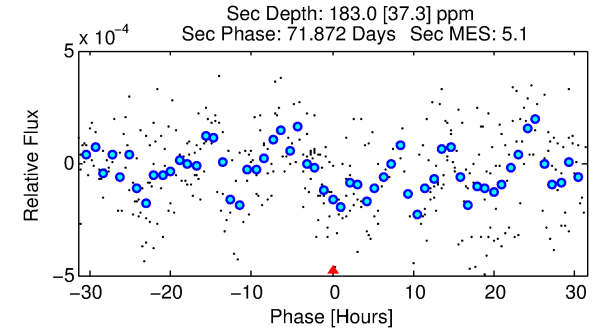
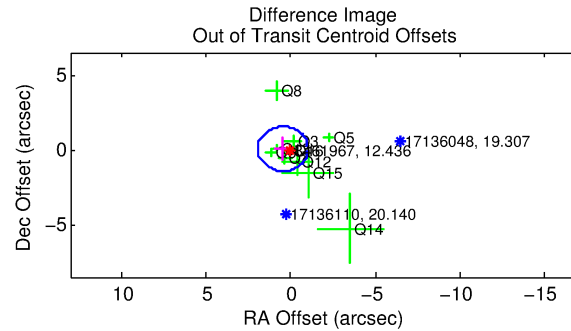
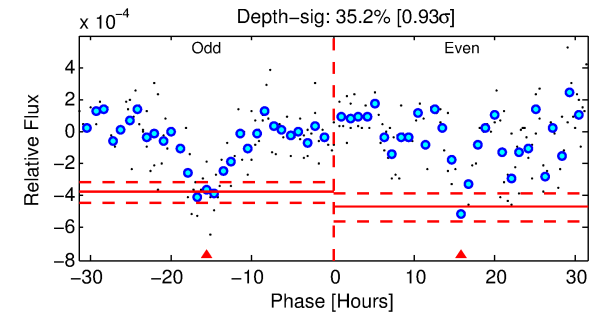
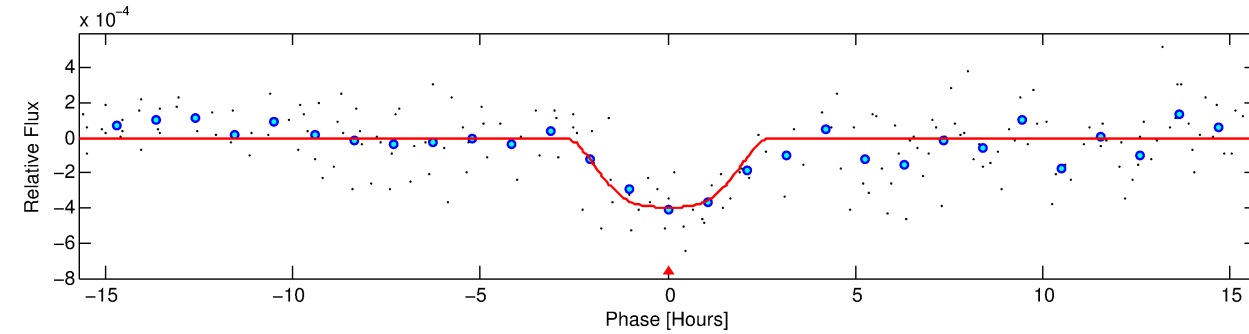
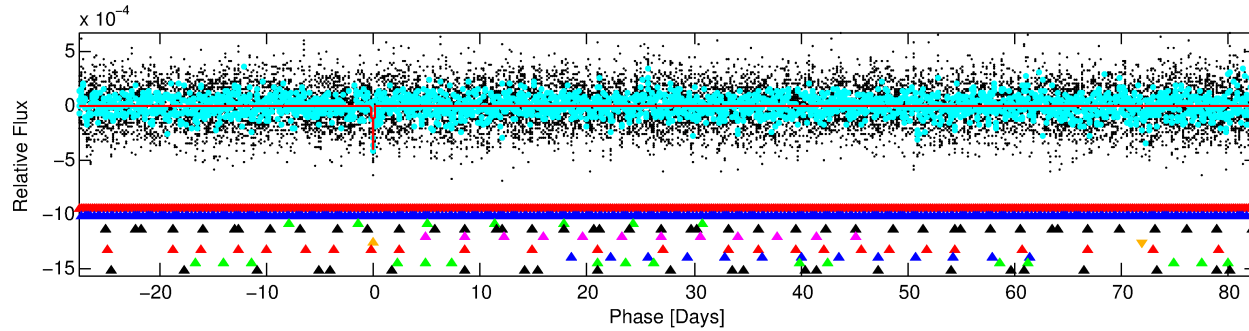
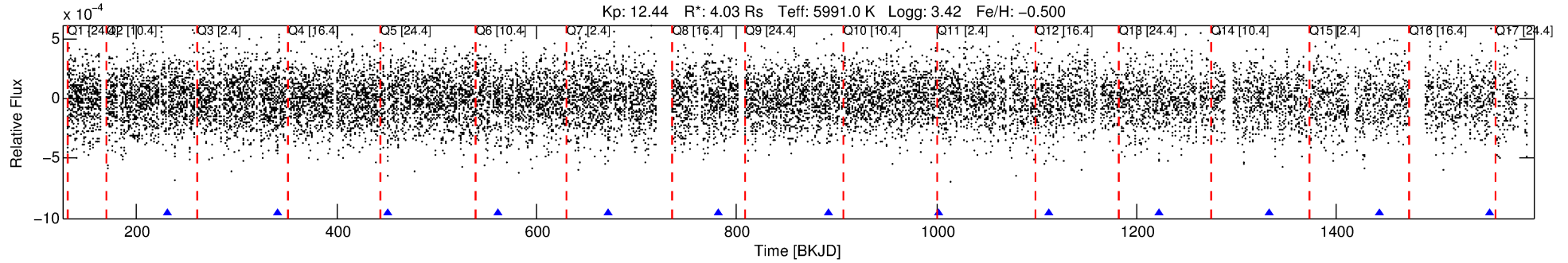
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-06

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 6 of 10 Period: 110.196 d



DV Fit Results:

Period = 110.19595 [0.00215] d
Epoch = 231.1690 [0.0146] BKJD
Rp/R* = 0.0239 [0.0024]
a/R* = 51.92 [10.83]
b = 0.97 [0.01]
Seff = 68.73 [41.65]
Teq = 734 [111] K
Rp = 10.51 [4.55] Re
a = 0.5228 [0.1994] AU
Ag = 249.04 [163.06] [1.52 σ]
Teffp = 4509 [363] K [9.96 σ]

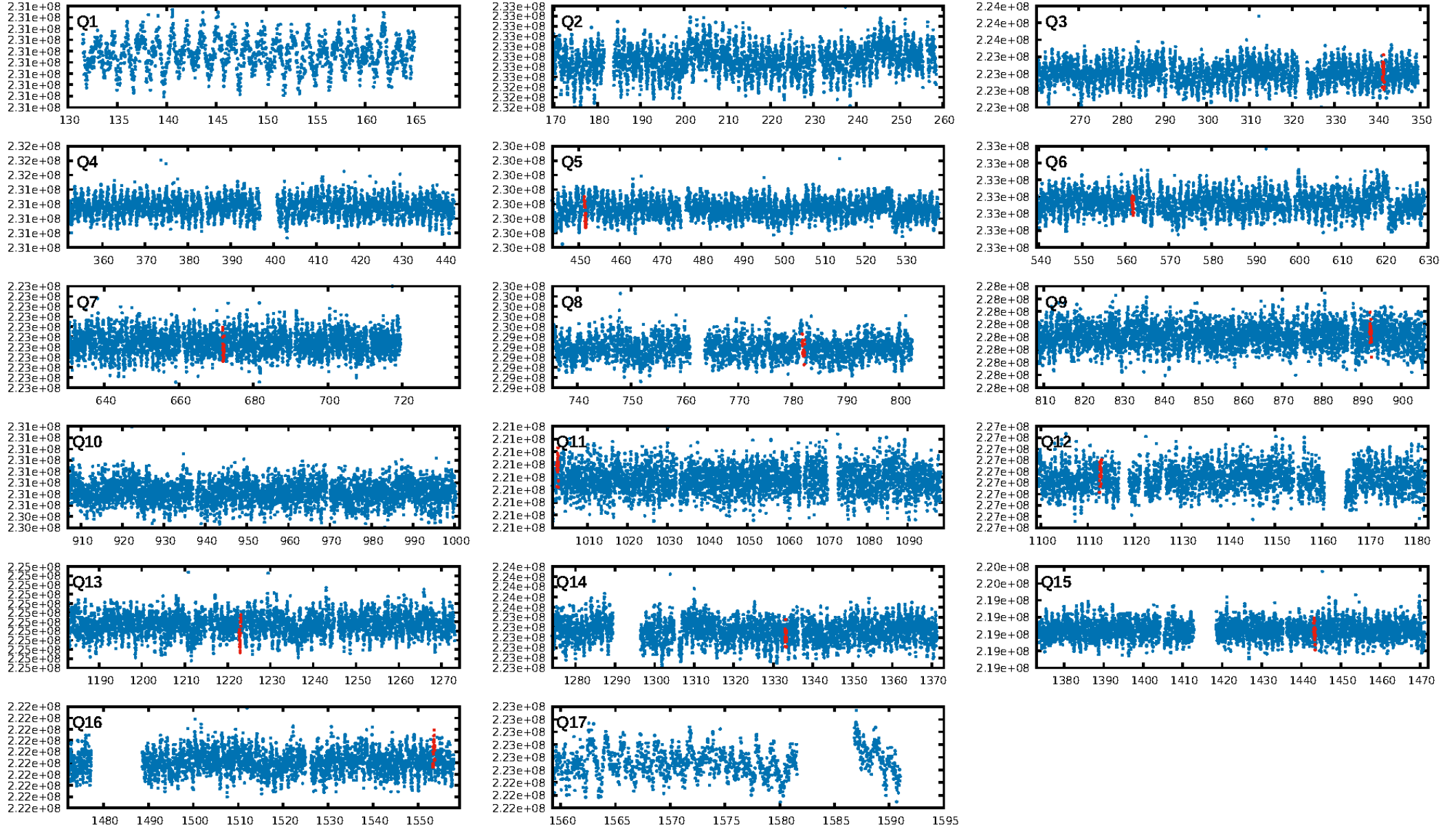
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [30.55 σ]
LongPeriod-sig: 100.0% [10.17 σ]
ModelChiSquare2-sig: 54.6%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -4.251
Centroid-sig: 7.4%
Centroid-so: 0.881 arcsec [1.61 σ]
OotOffset-rm: 0.480 arcsec [0.97 σ]
KicOffset-rm: 0.515 arcsec [0.90 σ]
OotOffset-st: 2/3/3/2 [10]
KicOffset-st: 2/3/3/2 [10]
DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 0.00 [0/11]

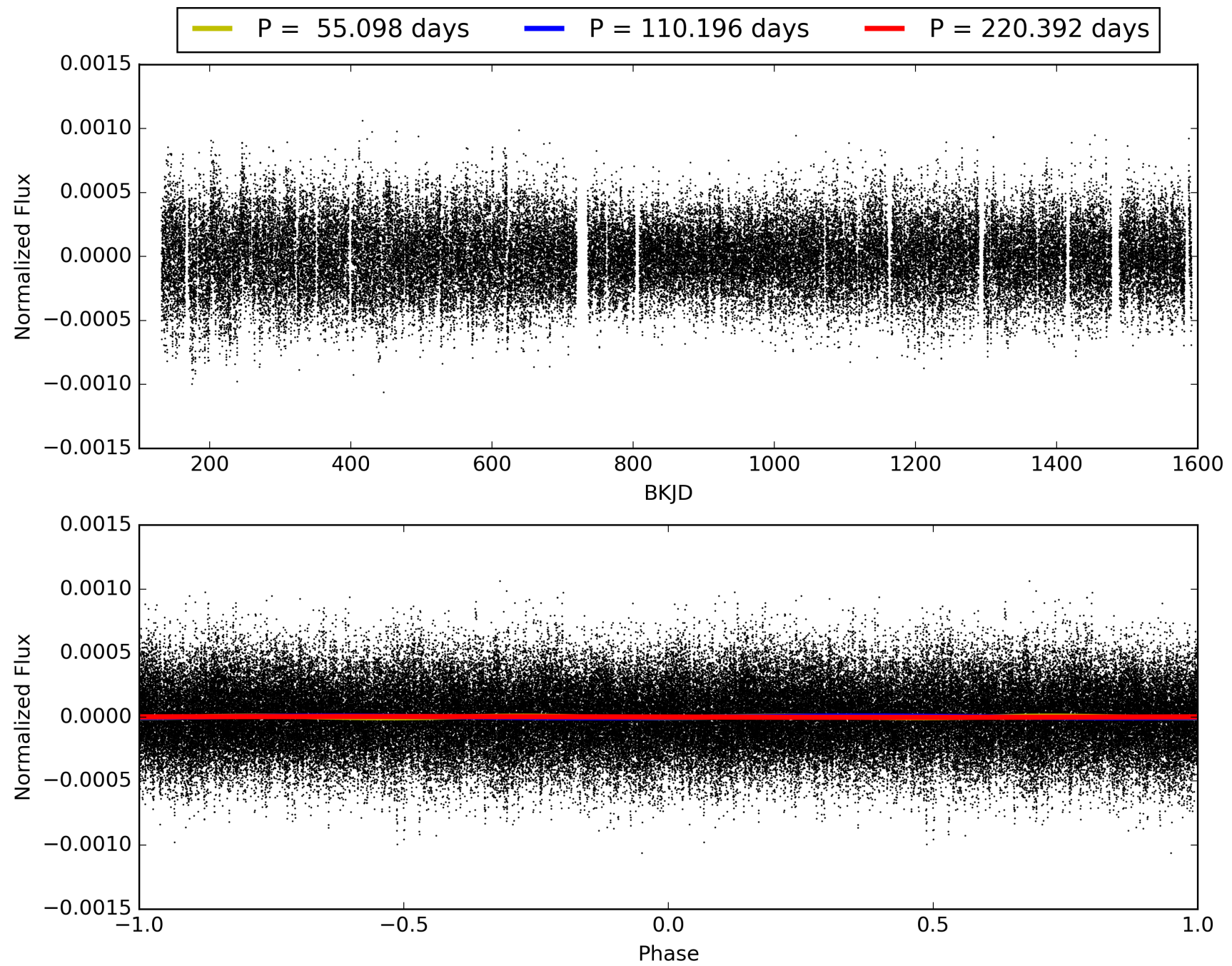
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:46:10 Z

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

TCE 008461967-06, PDC Light Curves

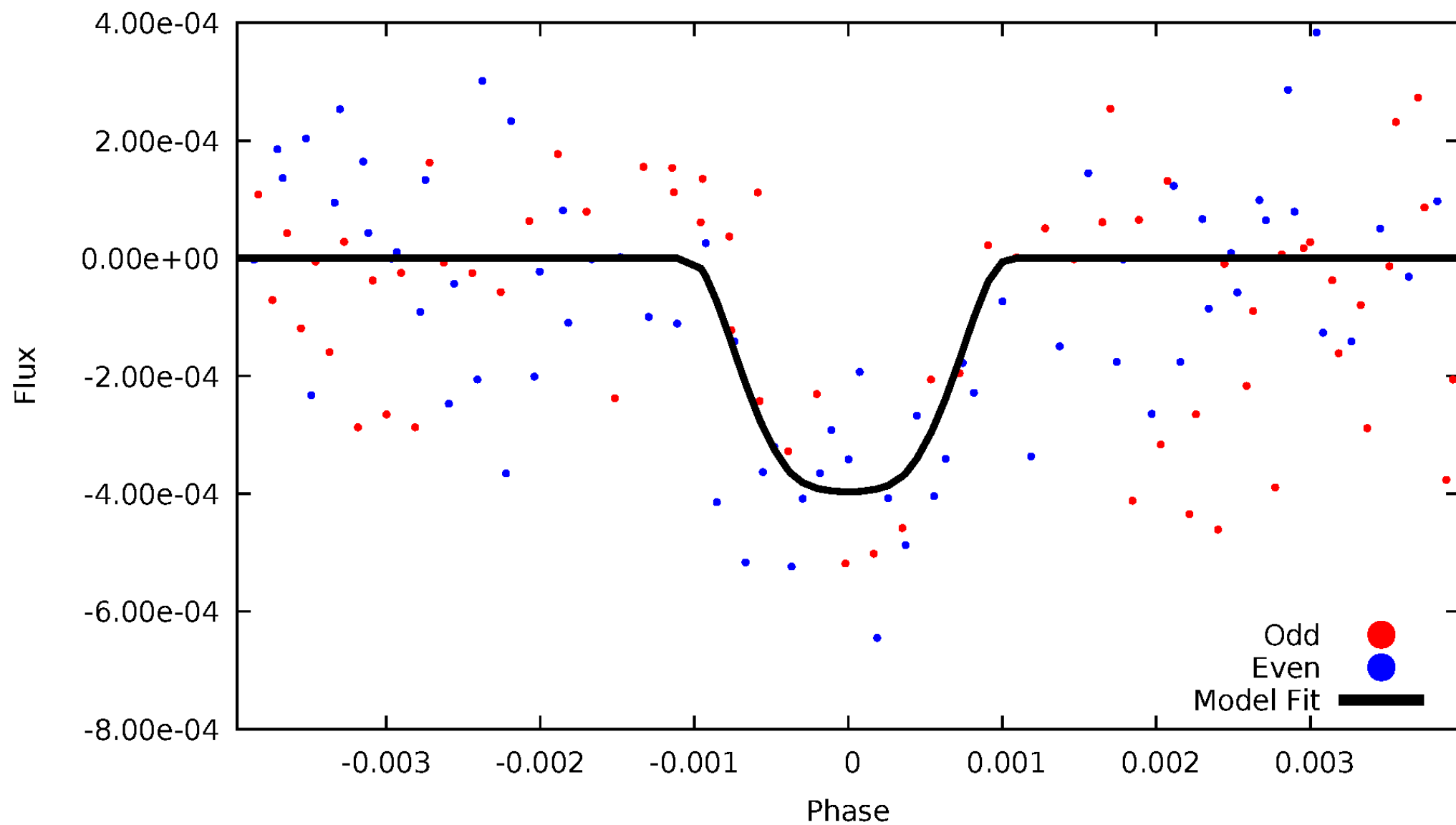


TCE 008461967-06



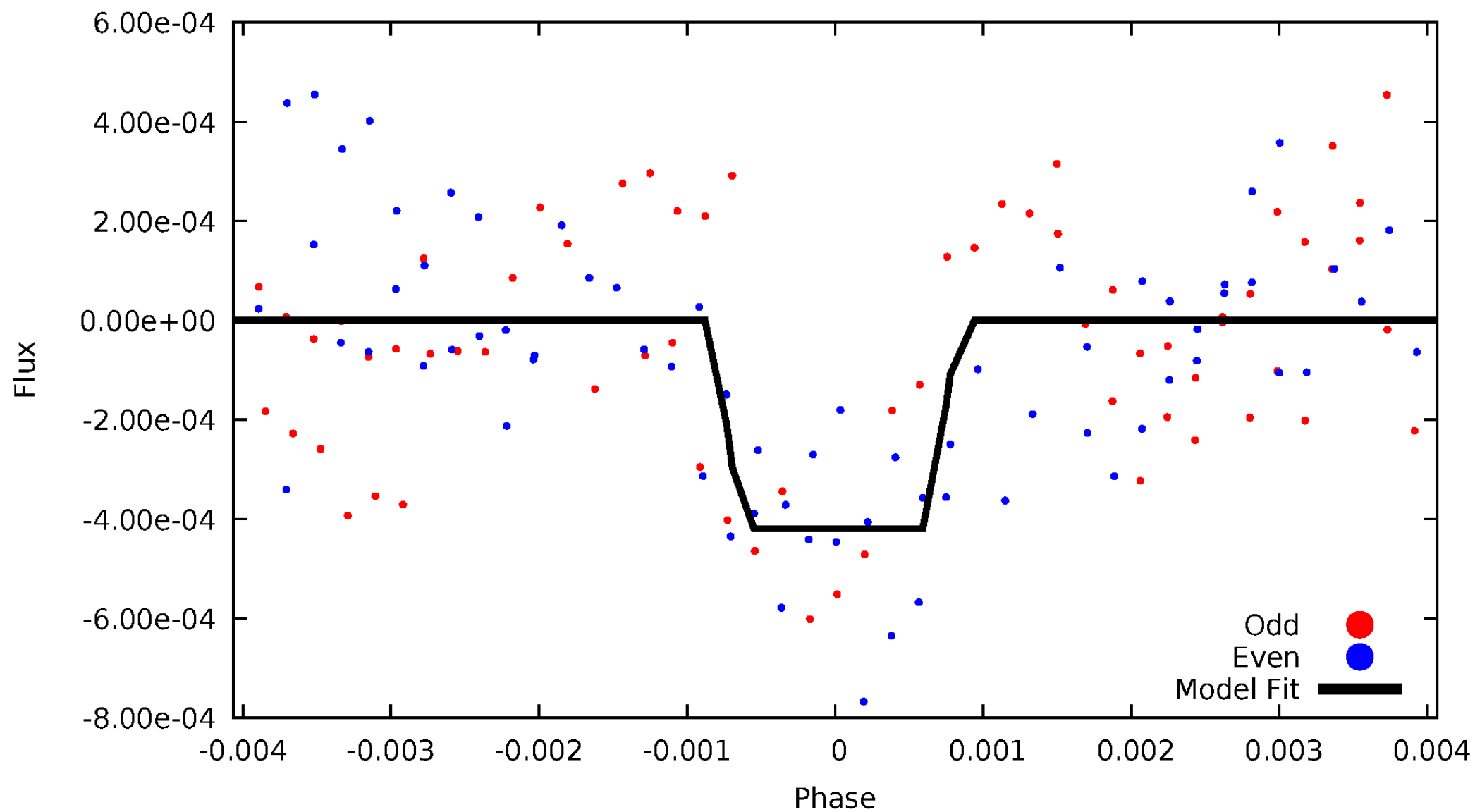
DV Odd/Even

TCE 008461967-06



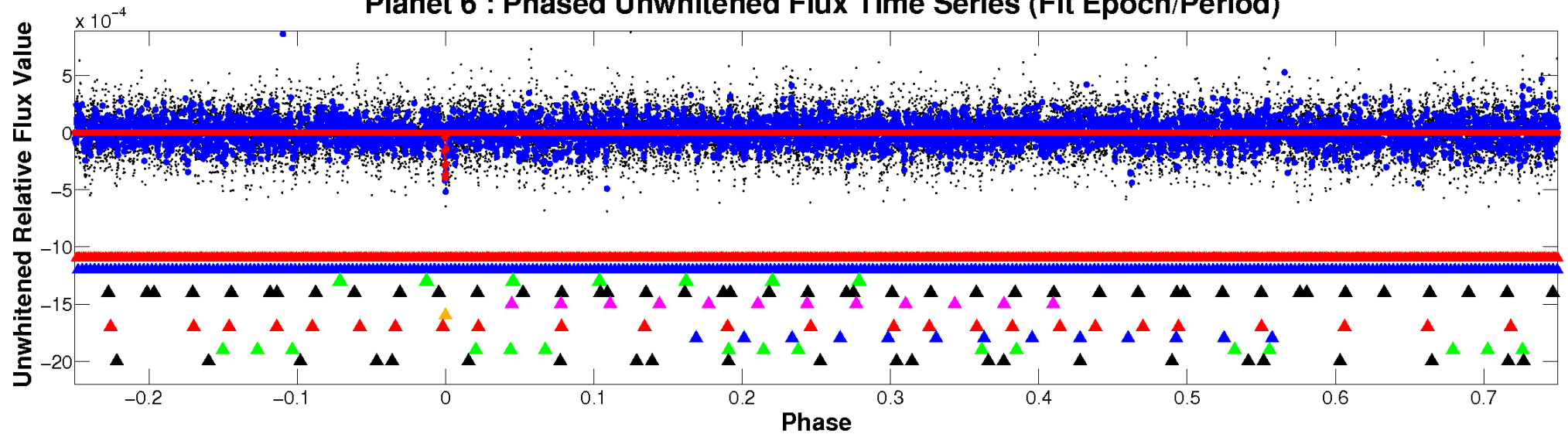
ALT Odd/Even

TCE 008461967-06

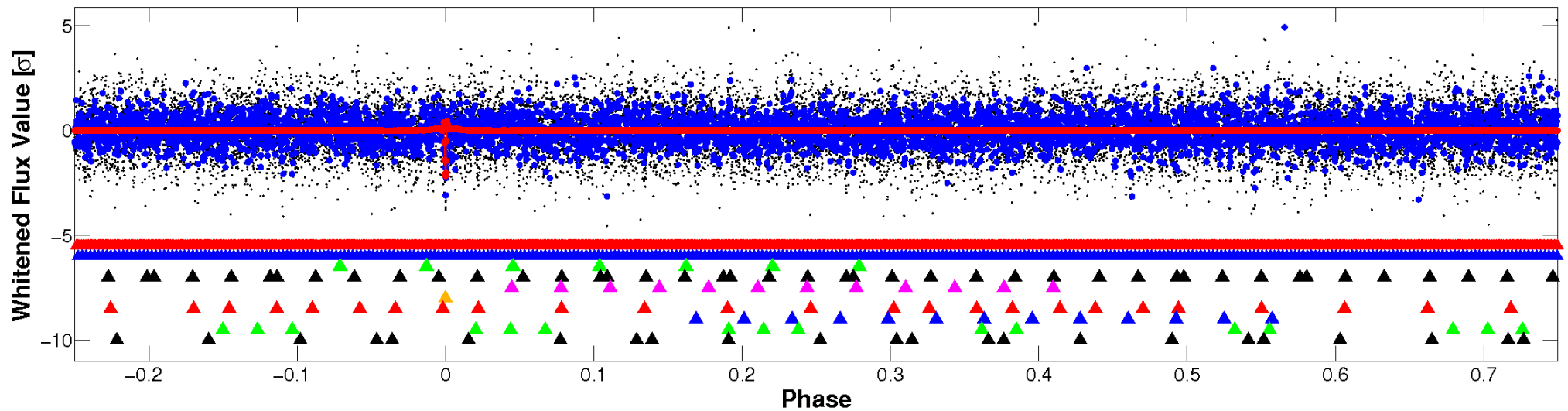


Non-Whitened Vs. Whitened Light Curve

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

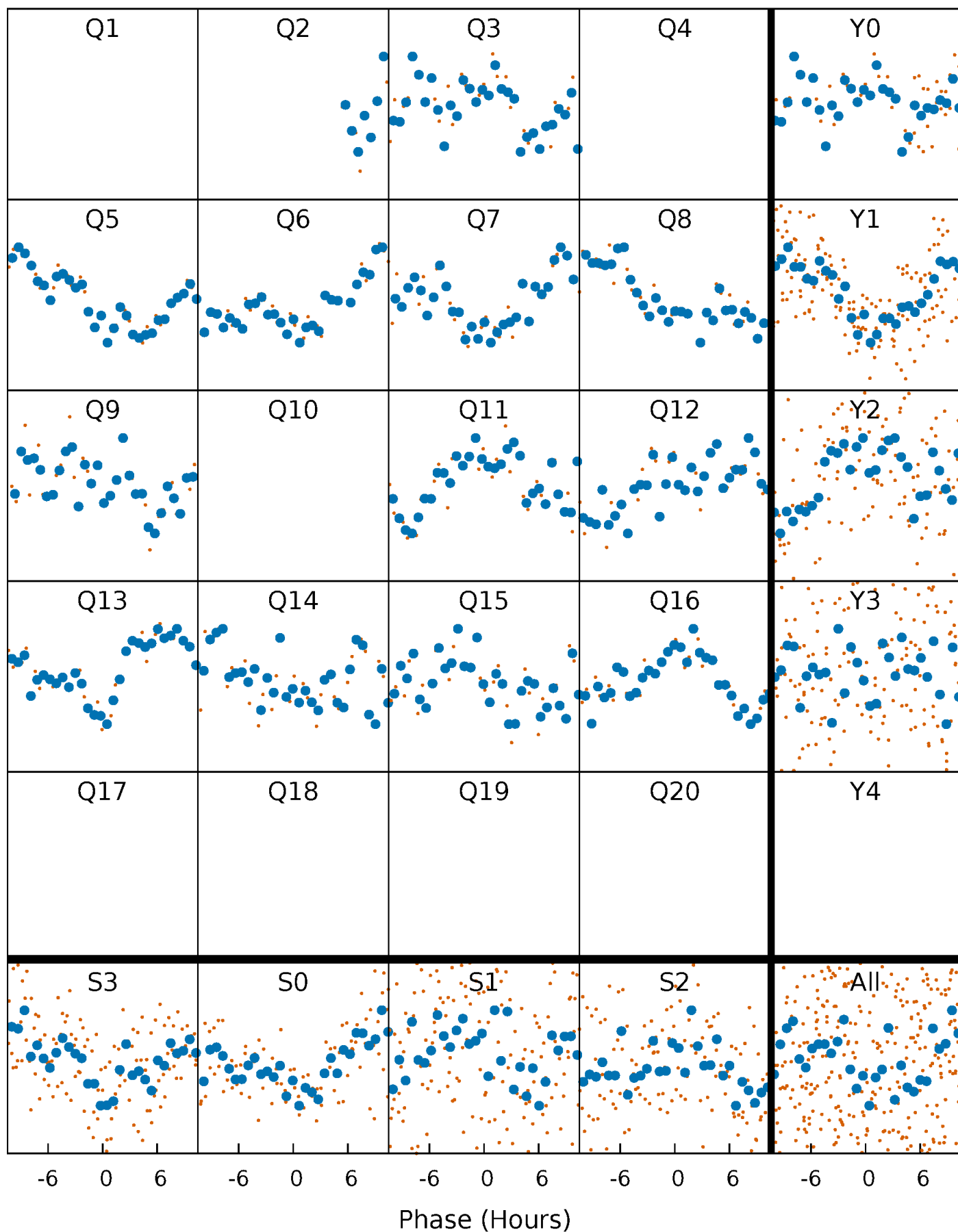


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



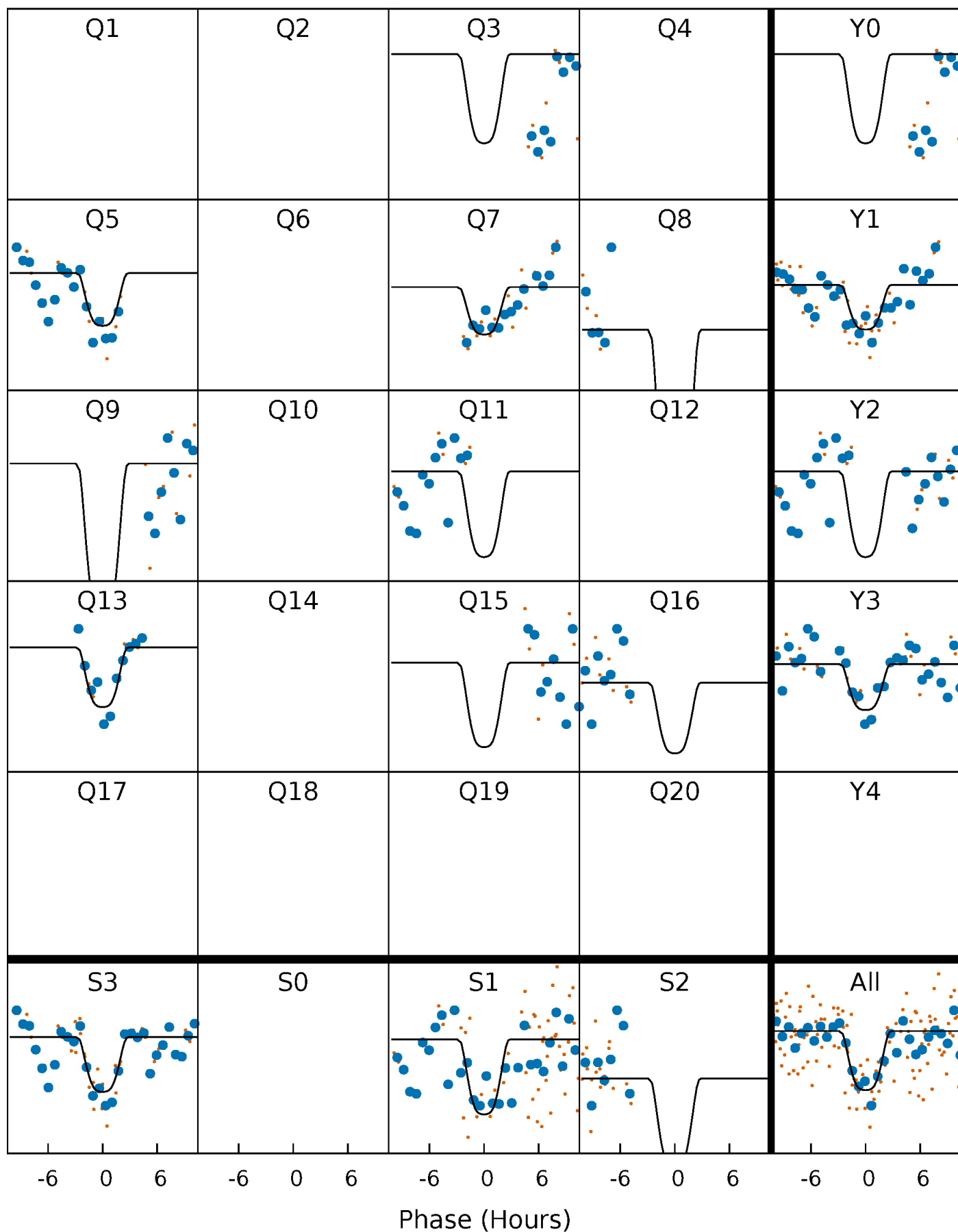
PDC Quarter-Phased Transit Curves

TCE 008461967-06 P=110.195951 Days $T_0=231.169028$ (BKJD)



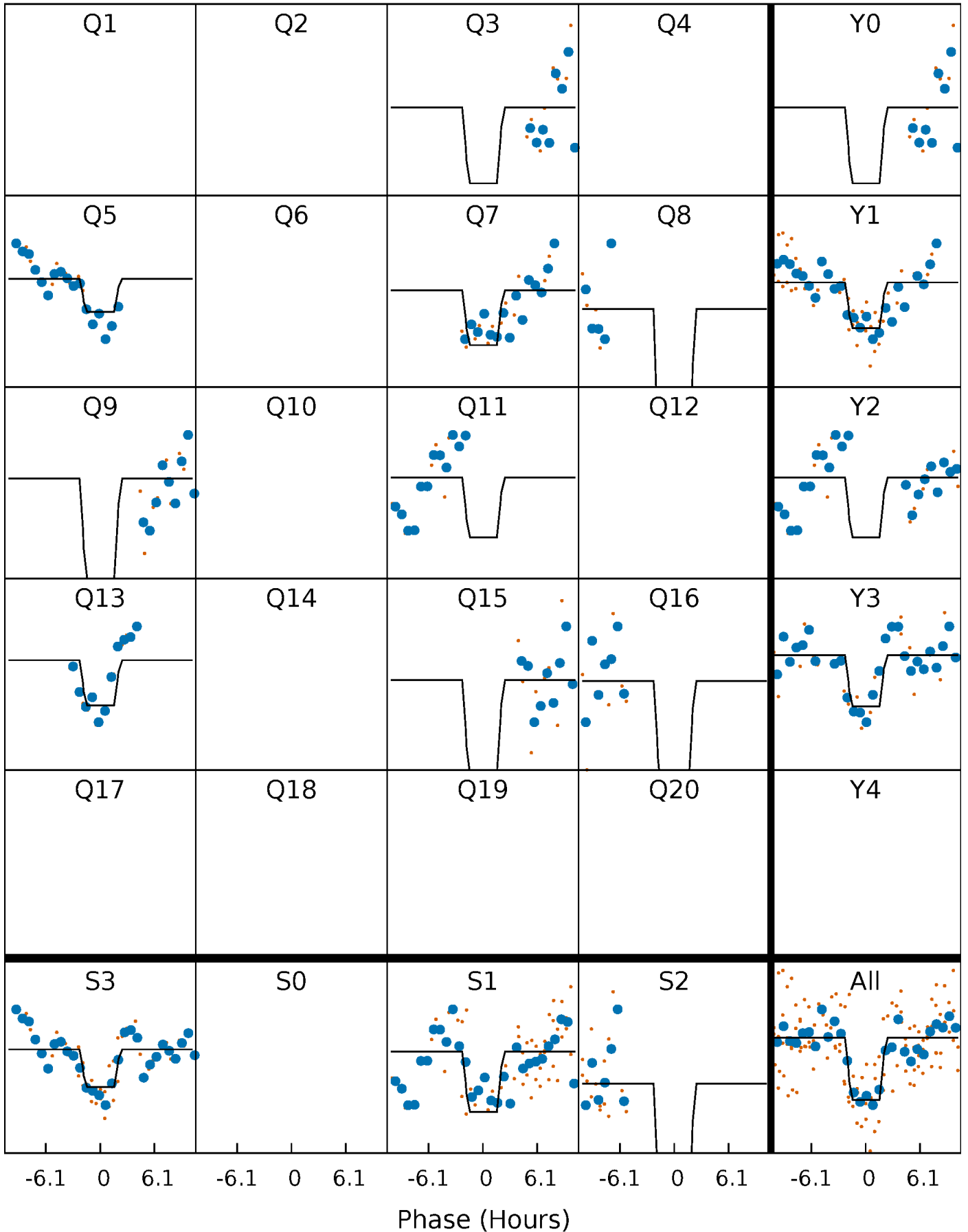
DV Quarter-Phased Transit Curves

TCE 008461967-06 P=110.195951 Days $T_0=231.169028$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

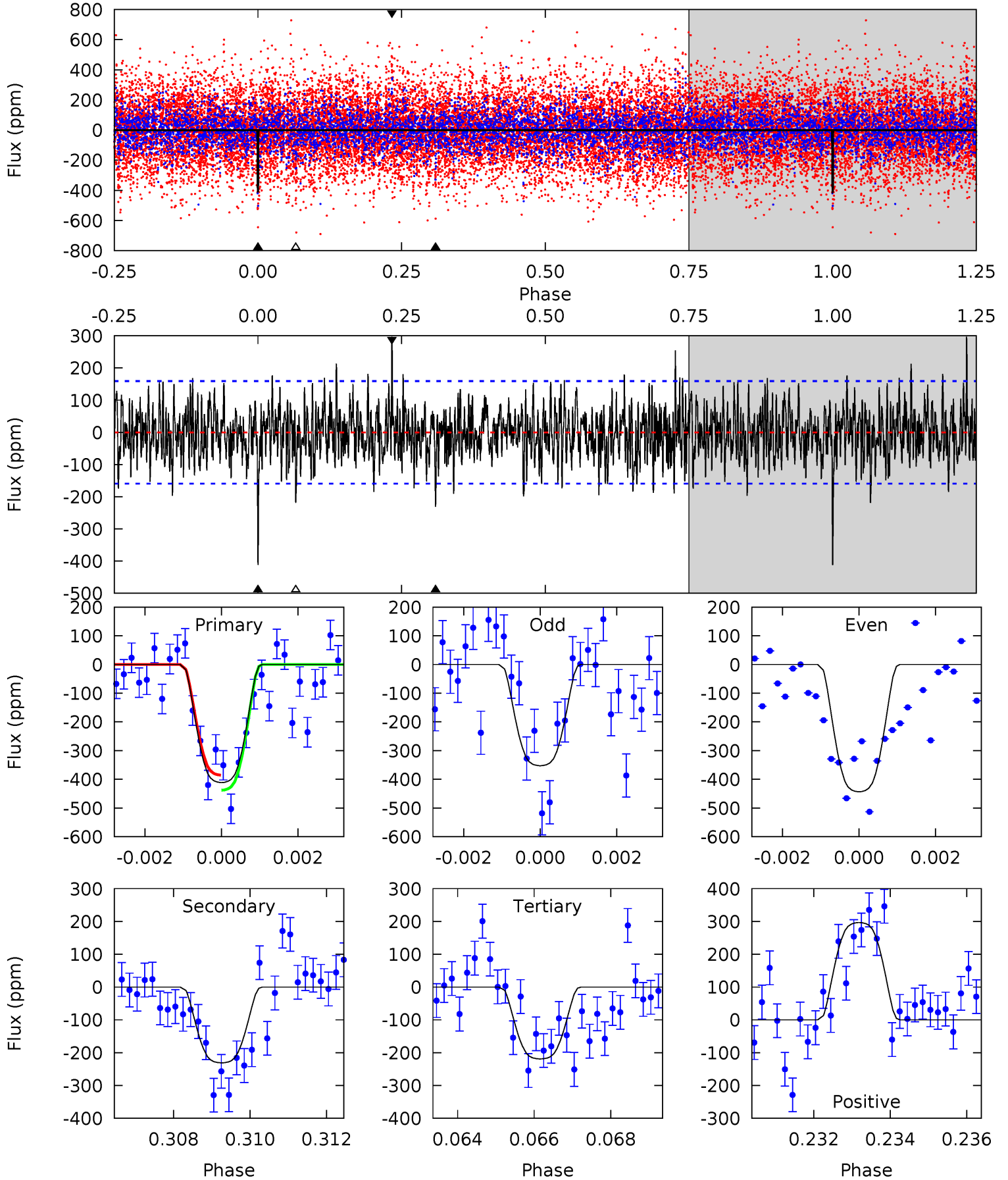
TCE 008461967-06 P=110.198439 Days $T_0=231.163340$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-06, P = 110.195951 Days, E = 120.973077 Days

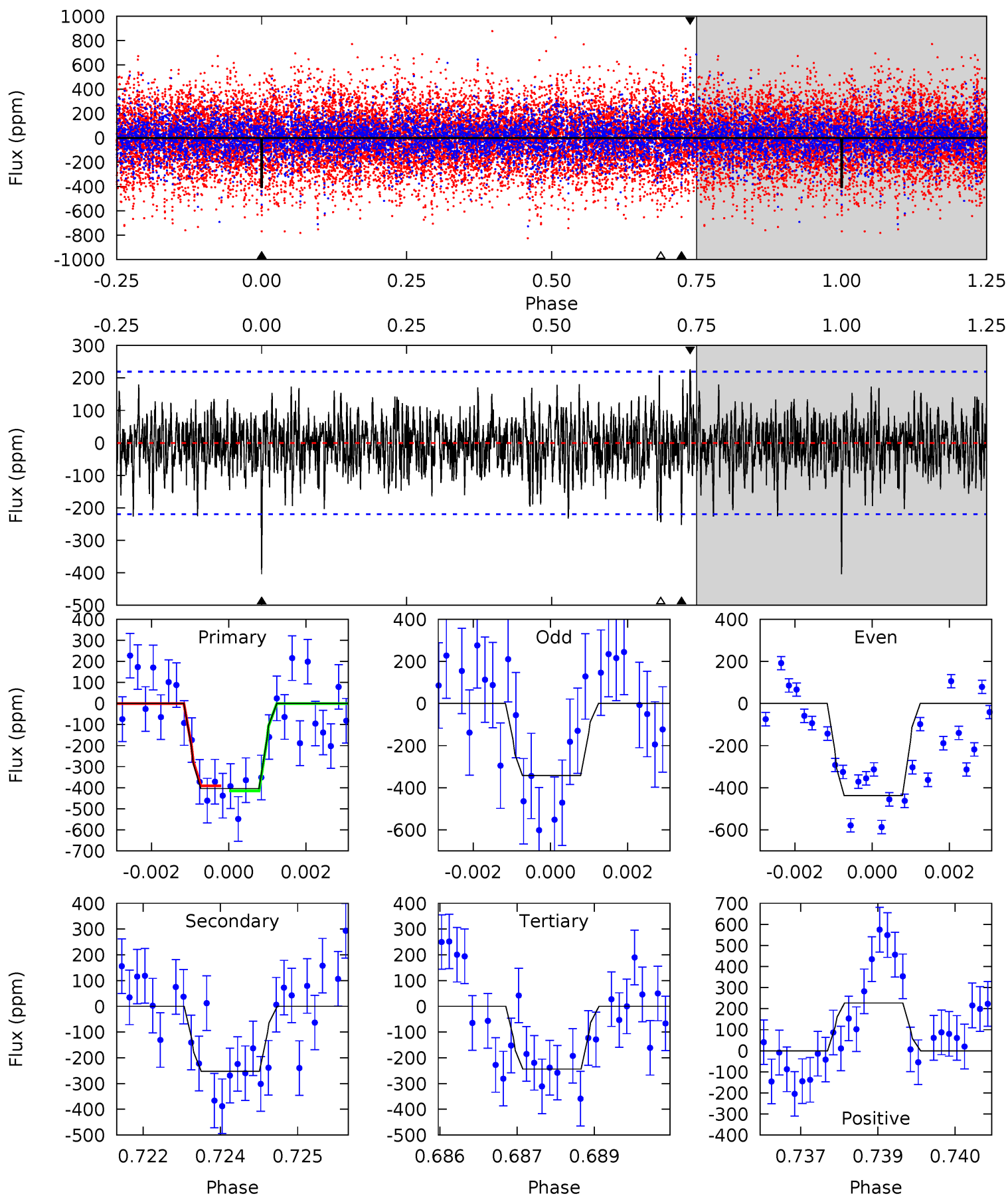
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	7.71	7.32	9.91	5.32	3.08	2.25	6.42	3.84	0.40	-2.19	1.48	0.71	0.42	0.87



Alt Model-Shift Uniqueness Test

008461967-06, P = 110.198439 Days, E = 120.964901 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.90	6.18	5.97	5.56	5.38	3.17	1.60	3.92	4.34	0.21	0.62	1.14	1.08	0.36	0.29



Stellar Parameters For KIC 008461967

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-231 ± 30	$9.81^{+1.97}_{-2.24}$	1000^{+65}_{-102}	4880^{+316}_{-246}	360^{+215}_{-111}
Alt.	-252 ± 41	$8.49^{+1.71}_{-1.88}$	997^{+67}_{-95}	5290^{+396}_{-343}	518^{+322}_{-158}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

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

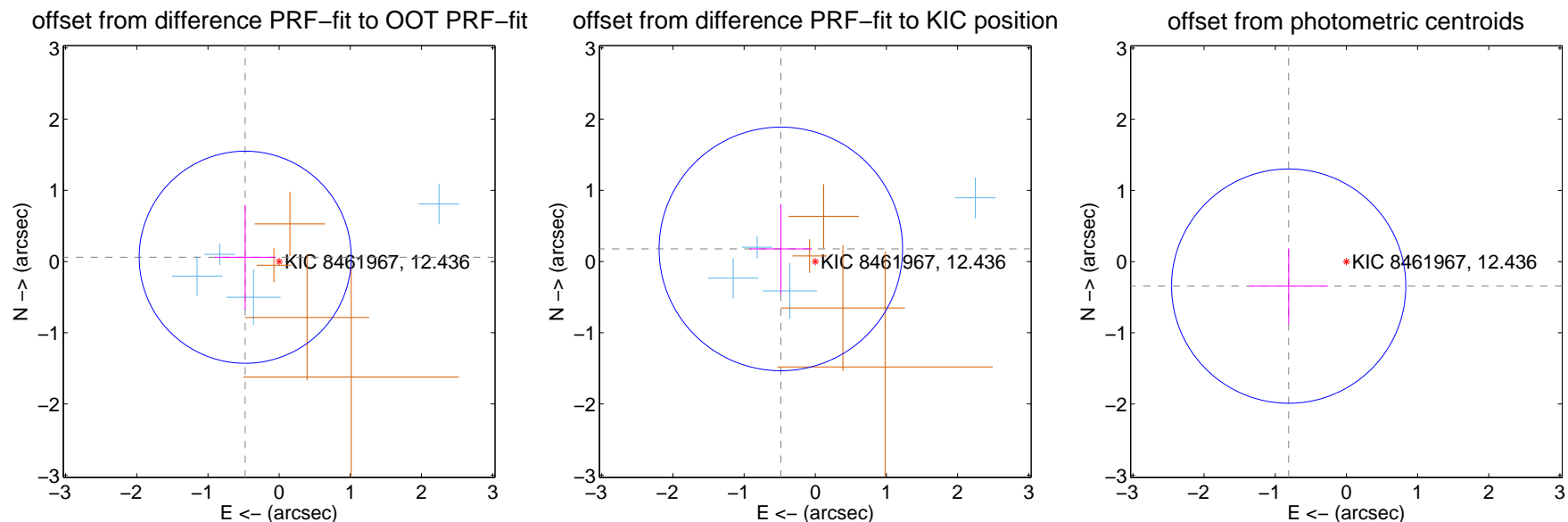
DV Centroid Data

Supplemental centroid analysis for 008461967-06. Kepler magnitude: 12.44. Transit SNR 9.15

There are 4 quarters with good PRF difference image offsets

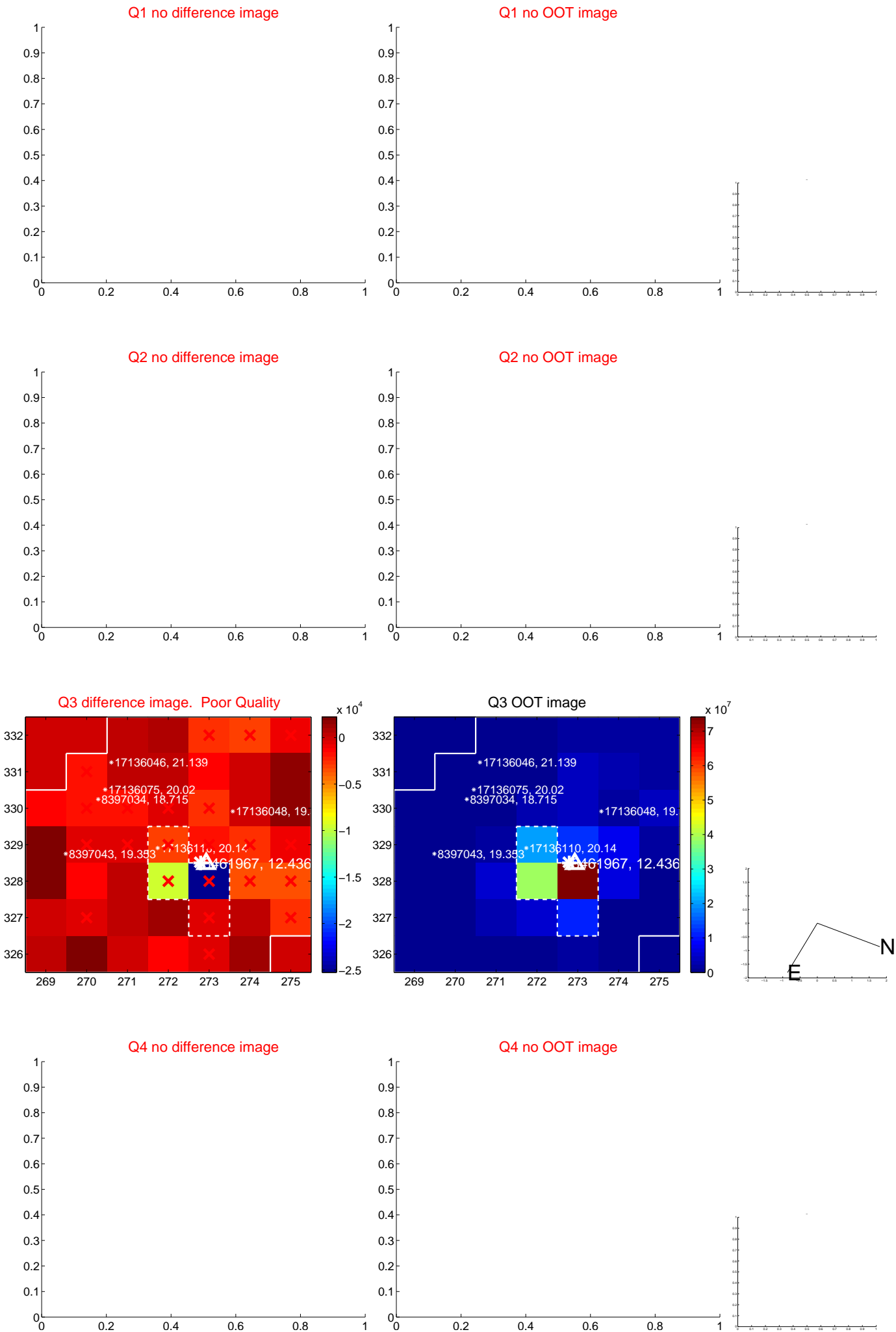
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.480 ± 0.496	0.97	0.477 ± 0.432	0.060 ± 0.733
PRF-fit source offset from KIC position	0.515 ± 0.570	0.90	0.483 ± 0.438	0.177 ± 0.628
photometric centroid source offset	0.88 ± 0.55	1.61	0.81 ± 0.55	-0.34 ± 0.53

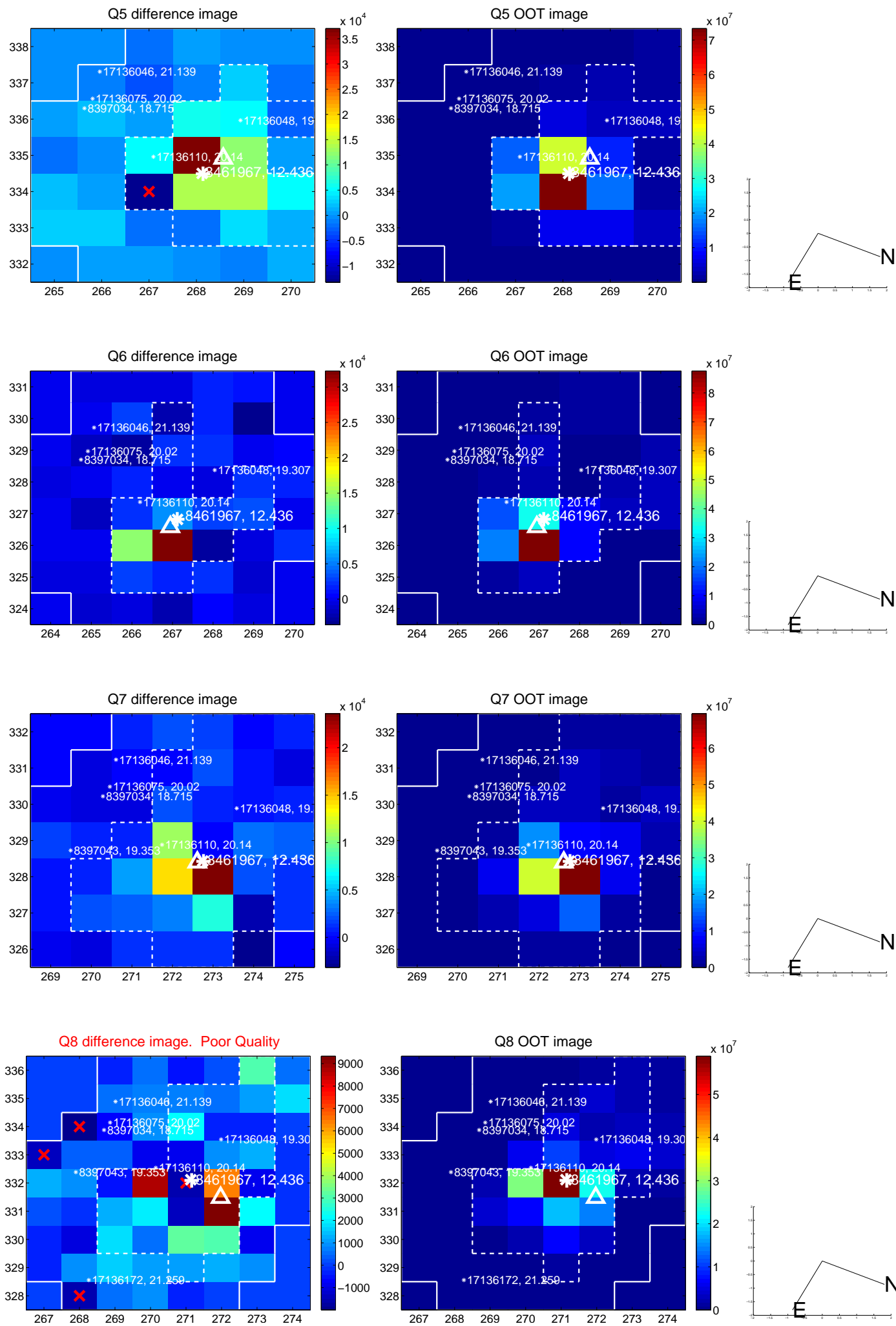


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

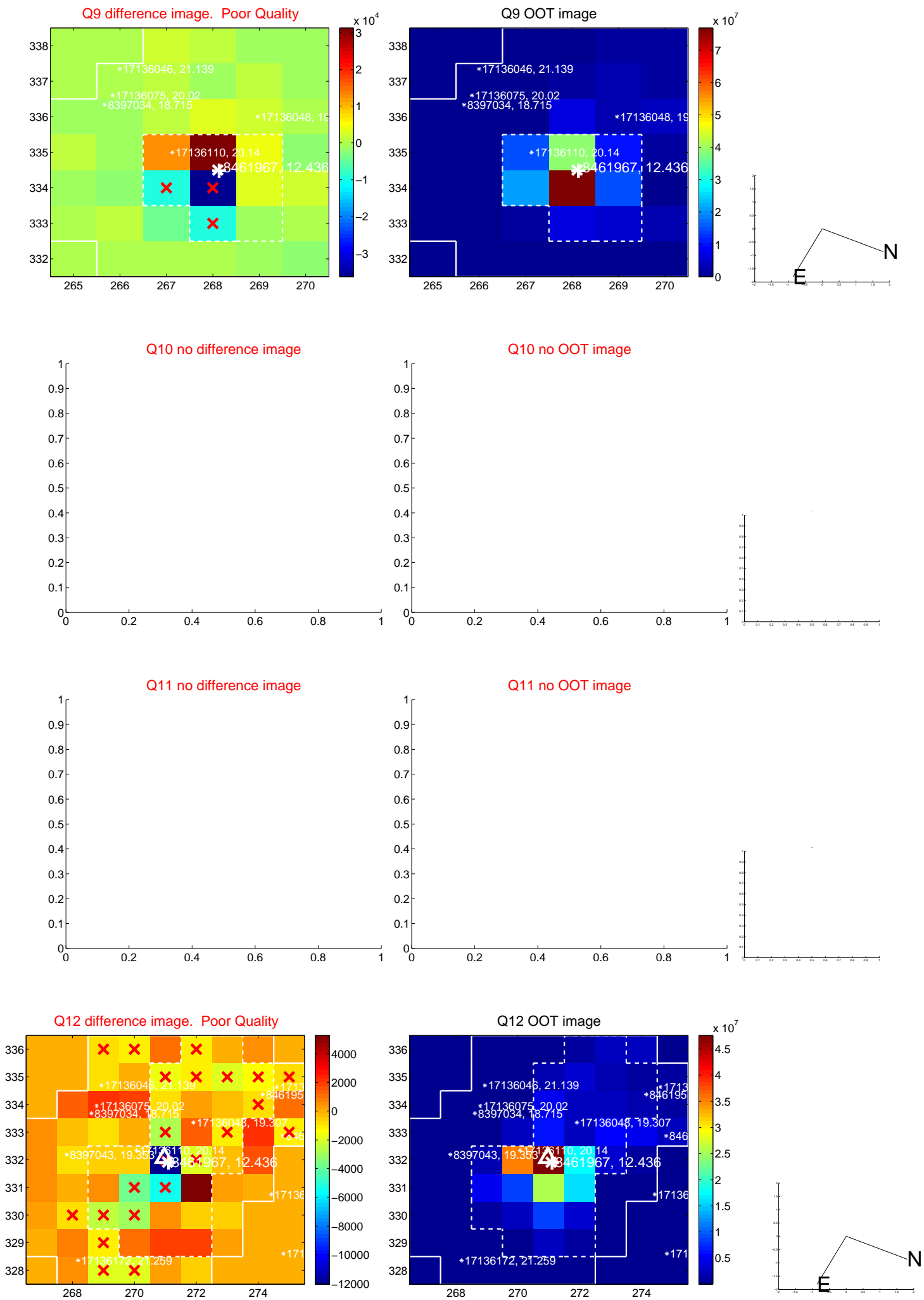
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



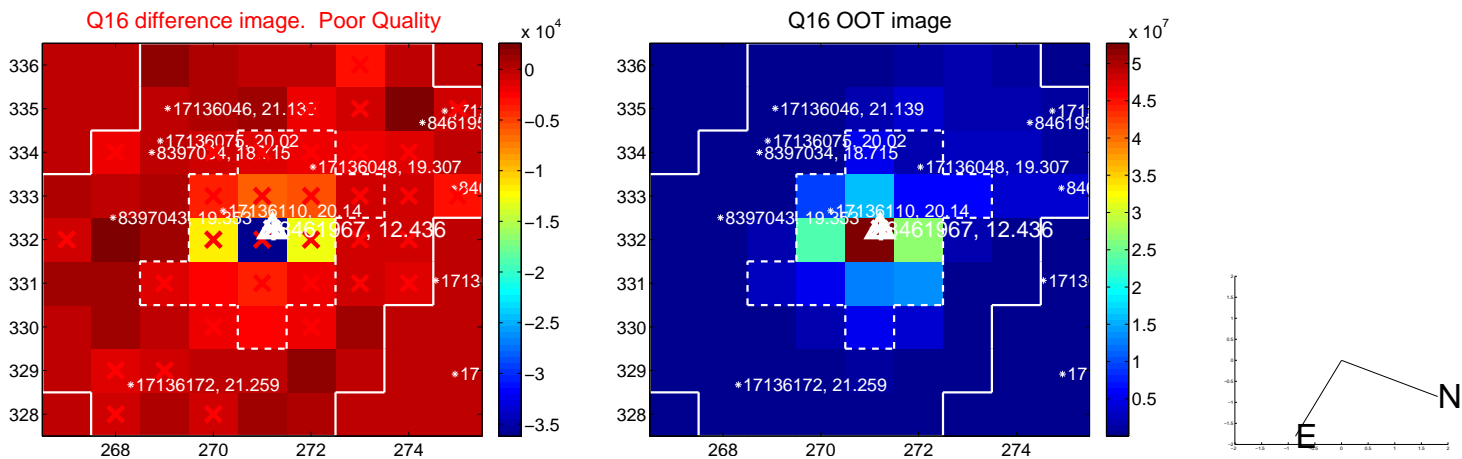
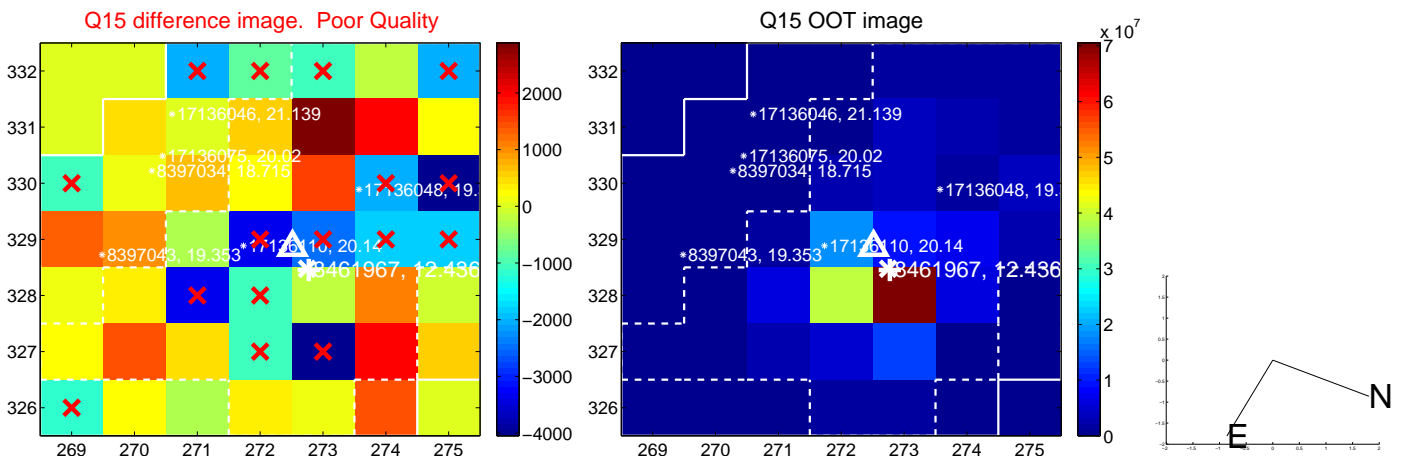
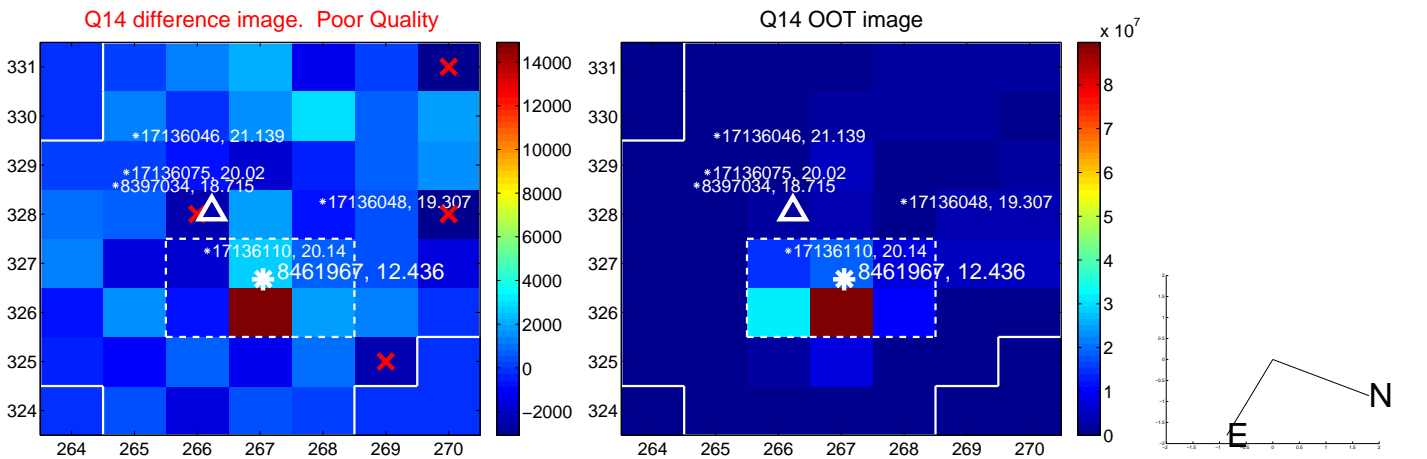
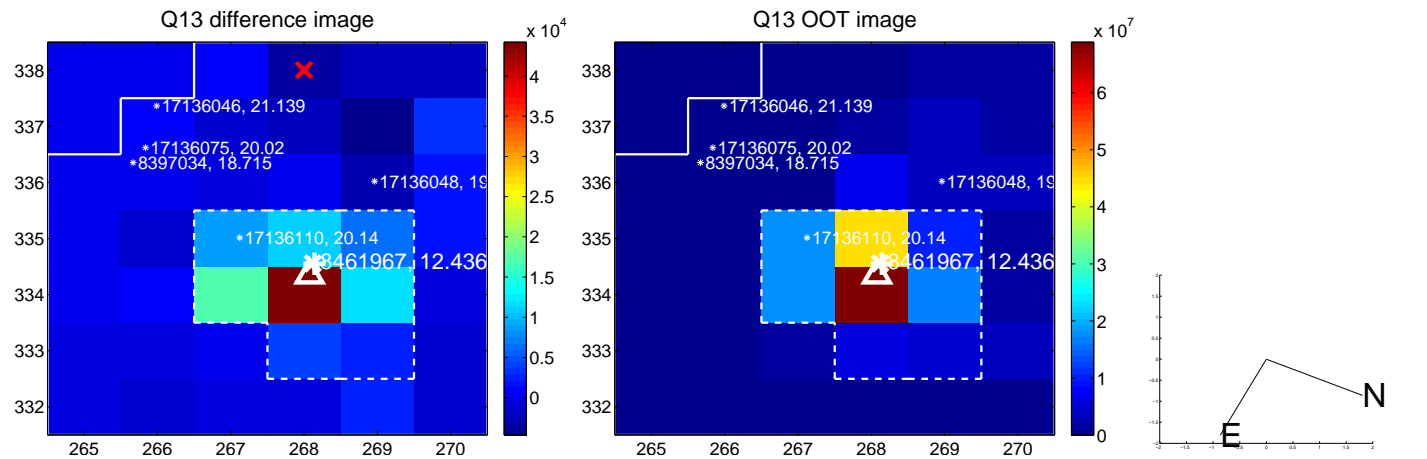
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



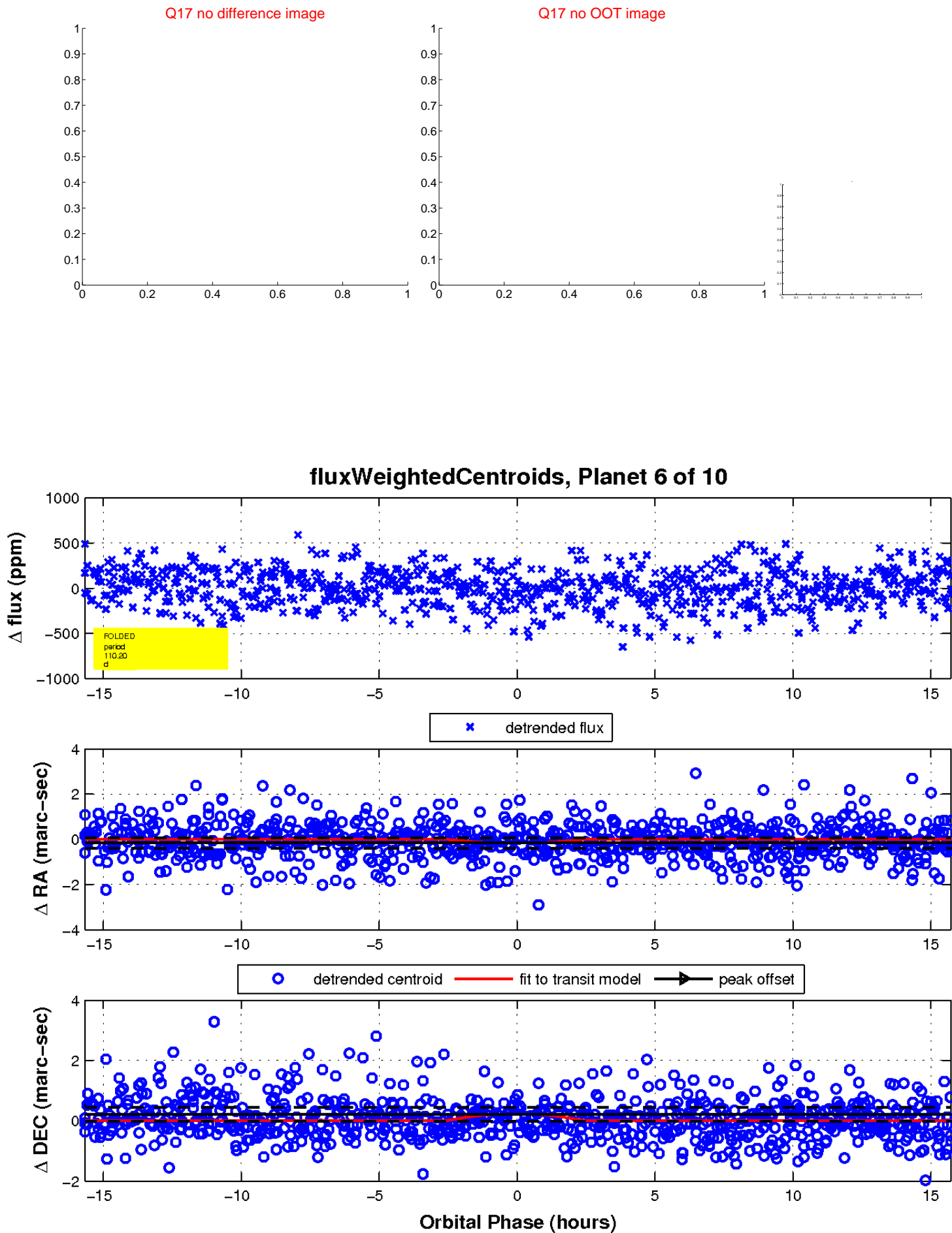
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

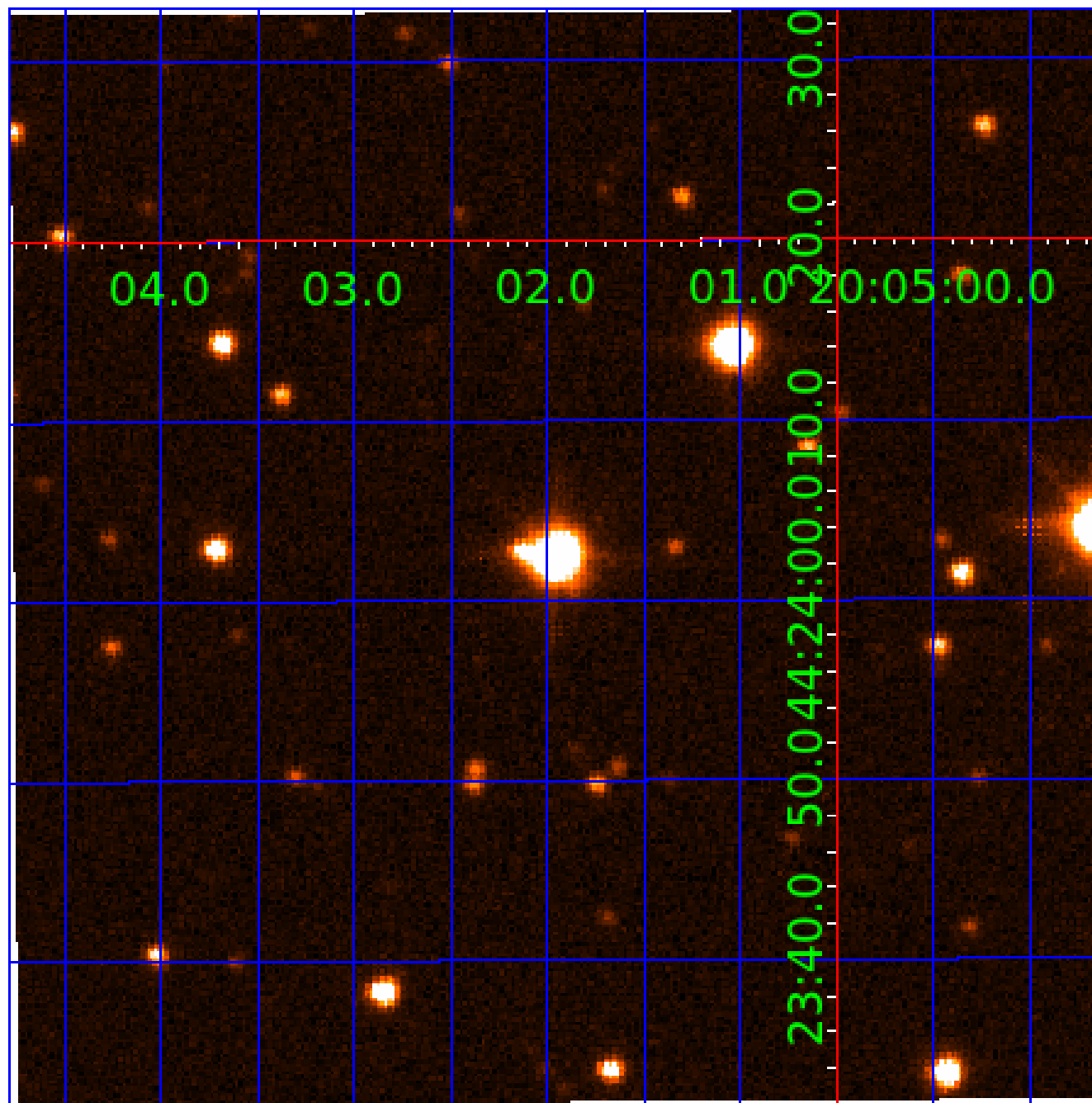


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008461967

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})
008461967-01	OBS	No	1.521666	132.369637	0.0	4.159	11.1	0.0	4.03	5991	0.07	20747.05
008461967-02	OBS	No	1.522001	132.662554	47.0	6.075	10.9	11.5	4.03	5991	4.49	20740.97
008461967-03	OBS	No	226.818718	223.335820	517.1	12.175	9.2	8.0	4.03	5991	11.43	26.25
008461967-04	OBS	No	33.685215	150.767681	201.9	4.893	9.5	8.6	4.03	5991	6.75	333.78
008461967-05	OBS	No	113.853229	236.091319	495.9	6.424	8.5	8.5	4.03	5991	17.51	65.80
008461967-06	OBS	No	110.195951	231.169028	396.9	5.248	8.8	9.2	4.03	5991	10.51	68.73
008461967-07	OBS	No	58.183689	156.918725	280.5	3.132	8.0	7.8	4.03	5991	8.04	161.06
008461967-08	OBS	No	113.761733	139.598103	311.1	6.578	8.0	8.3	4.03	5991	8.17	65.88
008461967-09	OBS	No	91.399375	147.184635	174.1	13.803	7.6	6.4	4.03	5991	6.25	88.20
008461967-10	OBS	No	64.753816	162.454167	210.8	7.326	8.4	7.8	4.03	5991	6.67	139.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008461967-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

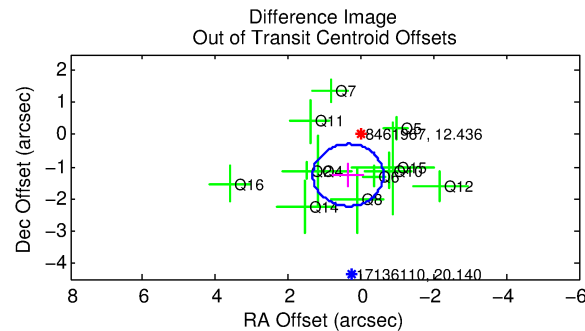
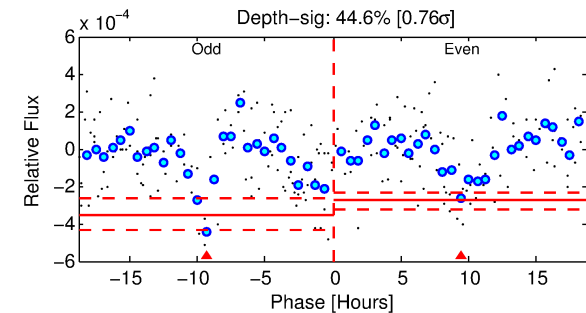
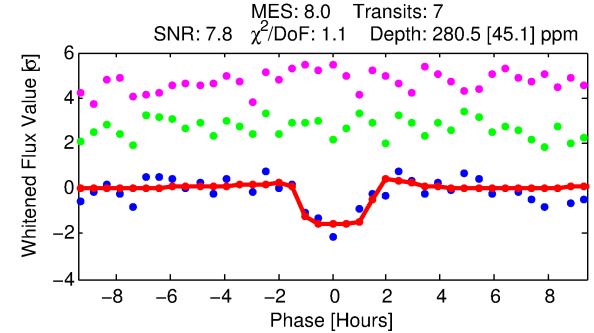
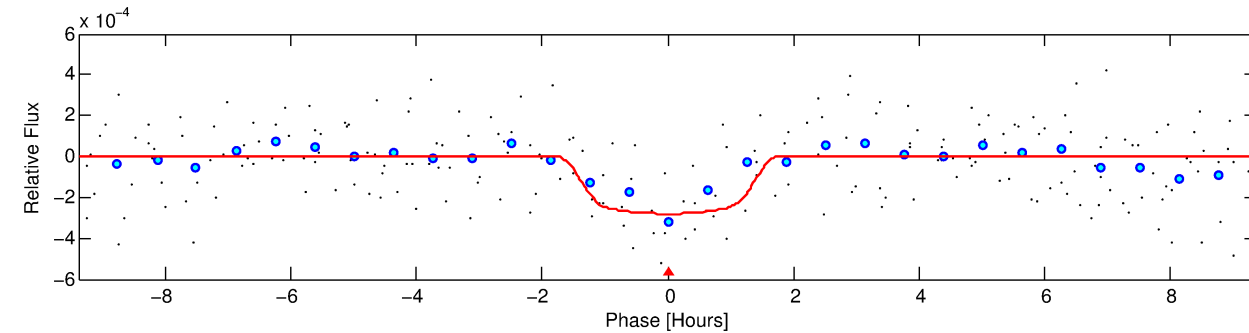
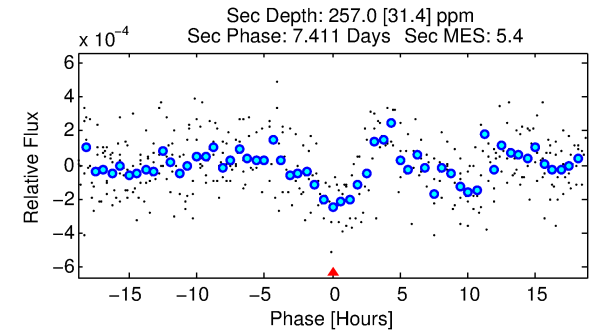
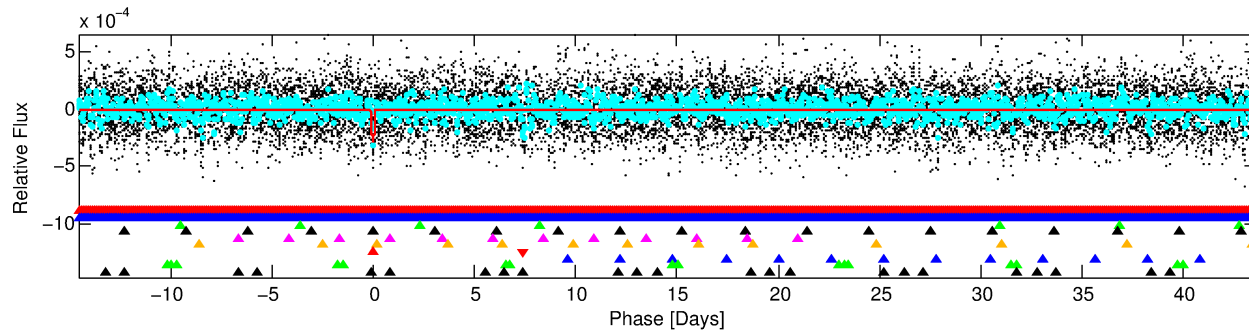
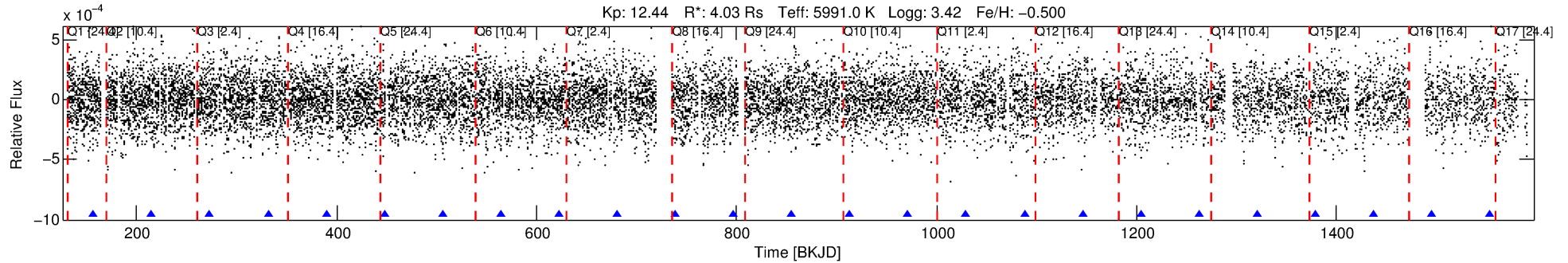
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-07

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 7 of 10 Period: 58.184 d



DV Fit Results:

Period = 58.18369 [0.00105] d
Epoch = 156.9187 [0.0106] BKJD
Rp/R* = 0.0183 [0.0068]
a/R* = 63.60 [123.19]
b = 0.91 [0.35]
Seff = 161.06 [97.60]
Teq = 908 [138] K
Rp = 8.04 [4.51] Re
a = 0.3415 [0.1303] AU
Ag = 255.03 [243.70] [1.04σ]
Teffp = 5613 [1076] K [4.34σ]

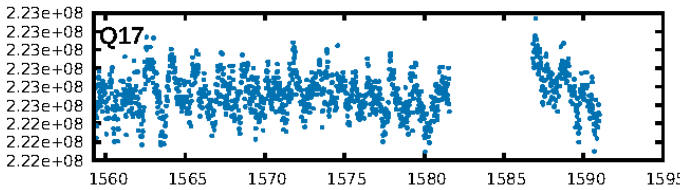
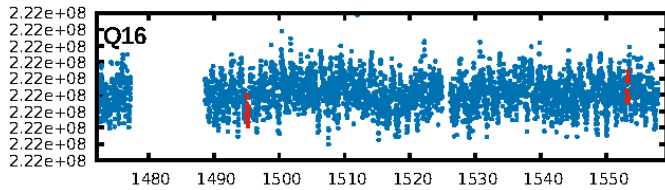
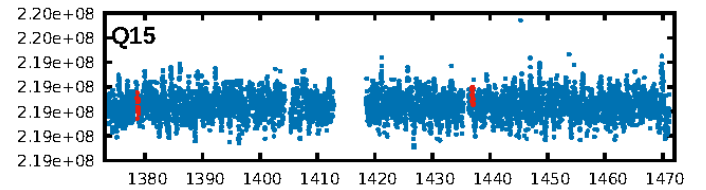
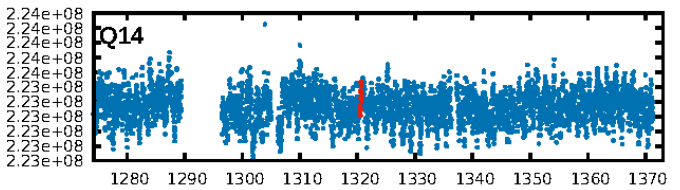
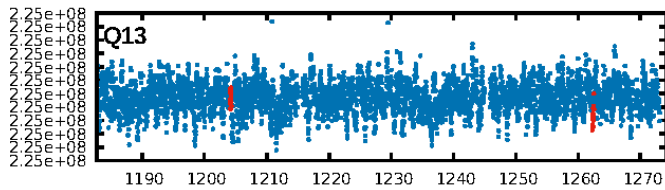
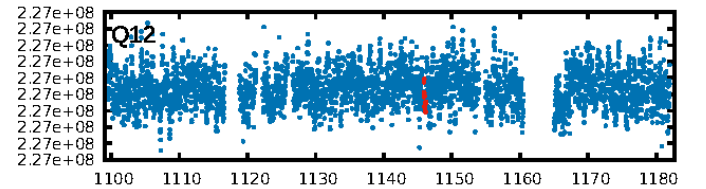
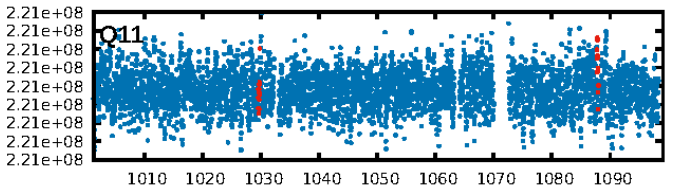
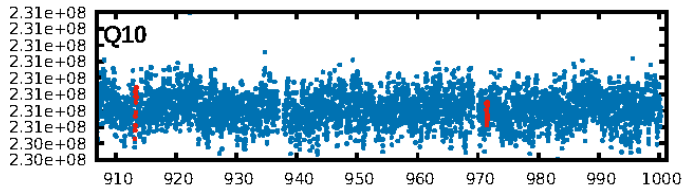
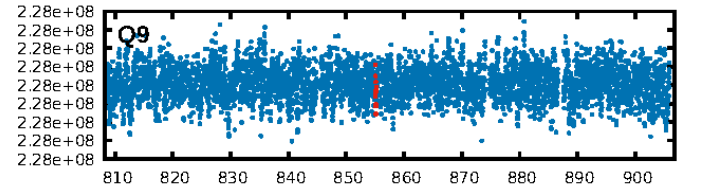
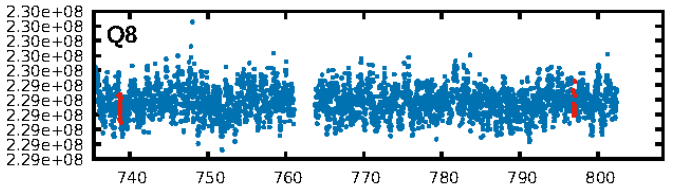
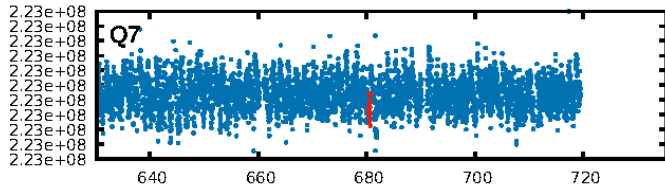
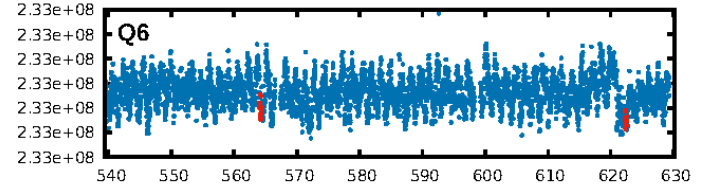
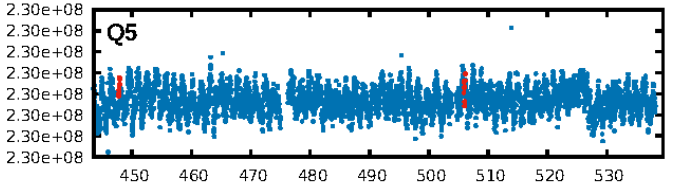
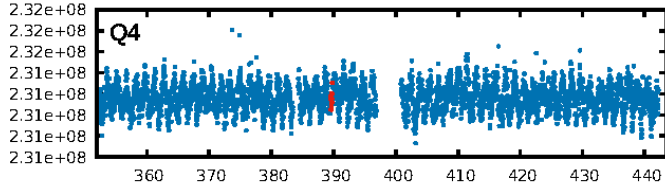
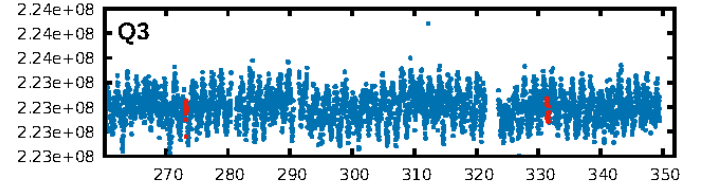
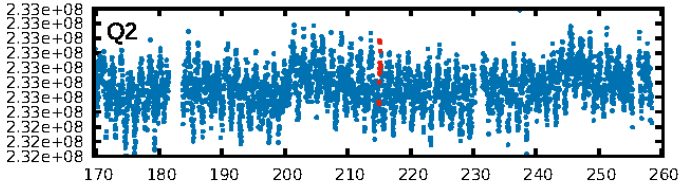
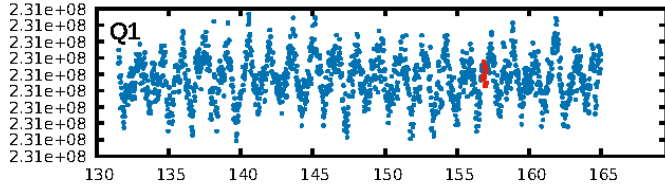
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [101.20σ]
LongPeriod-sig: 100.0% [19.79σ]
ModelChiSquare2-sig: 9.6%
ModelChiSquareGof-sig: 98.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.887
Centroid-sig: 64.7%
Centroid-so: 0.065 arcsec [0.11σ]
OotOffset-rm: 1.313 arcsec [4.07σ]
KicOffset-rm: 1.313 arcsec [4.21σ]
OotOffset-st: 4/3/4/1 [12]
KicOffset-st: 4/3/4/1 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.19 [3/16]

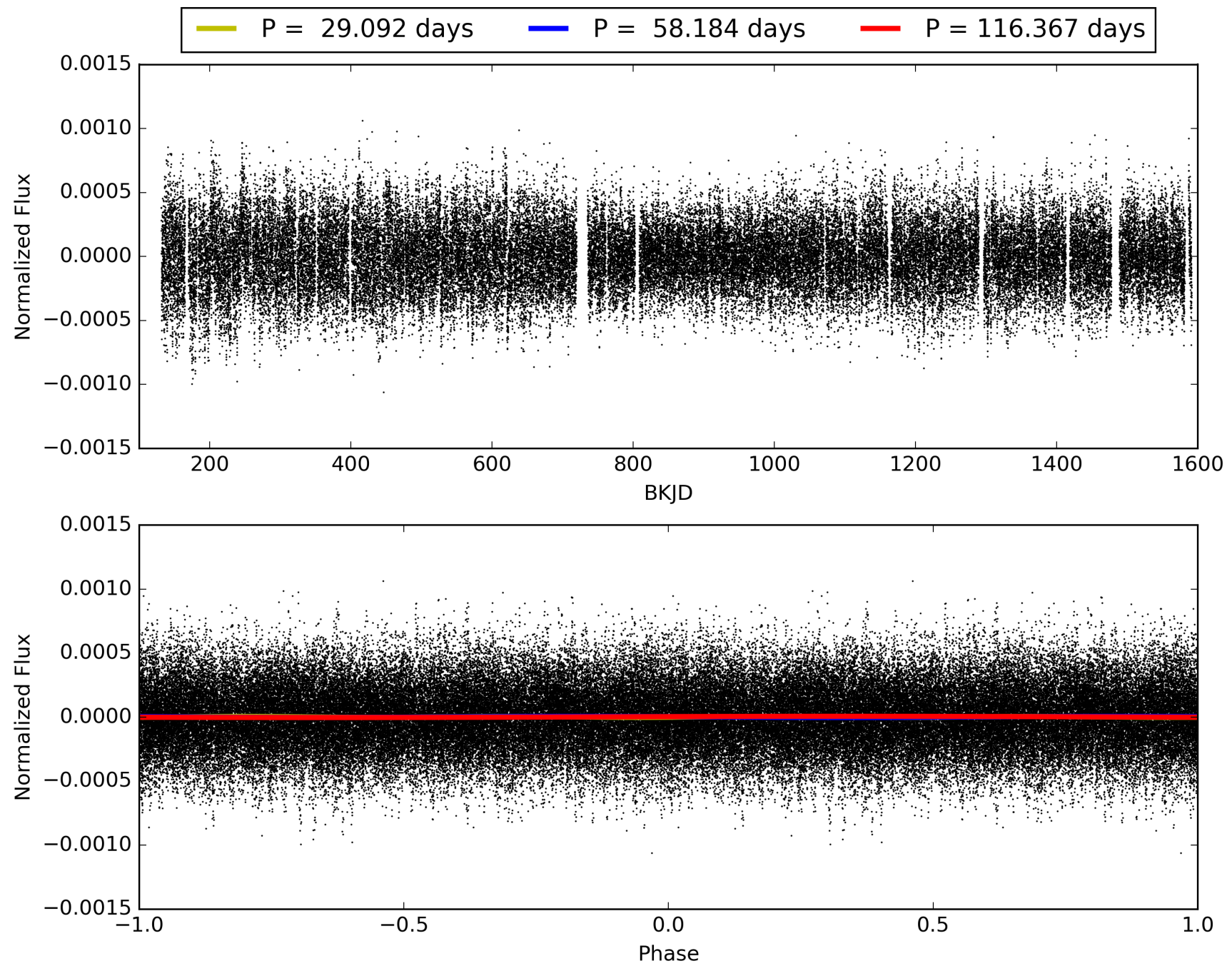
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008461967-07, PDC Light Curves

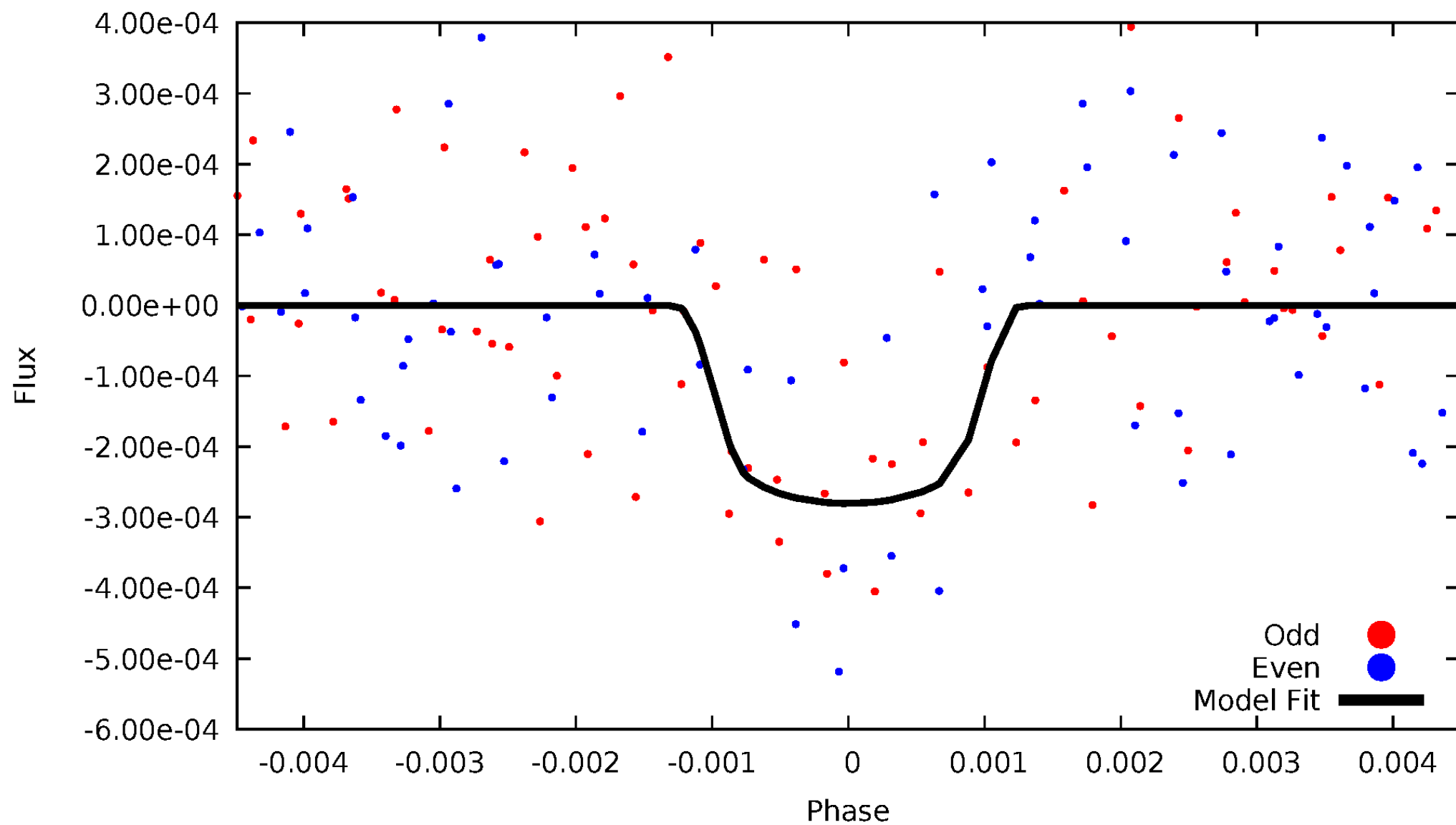


TCE 008461967-07



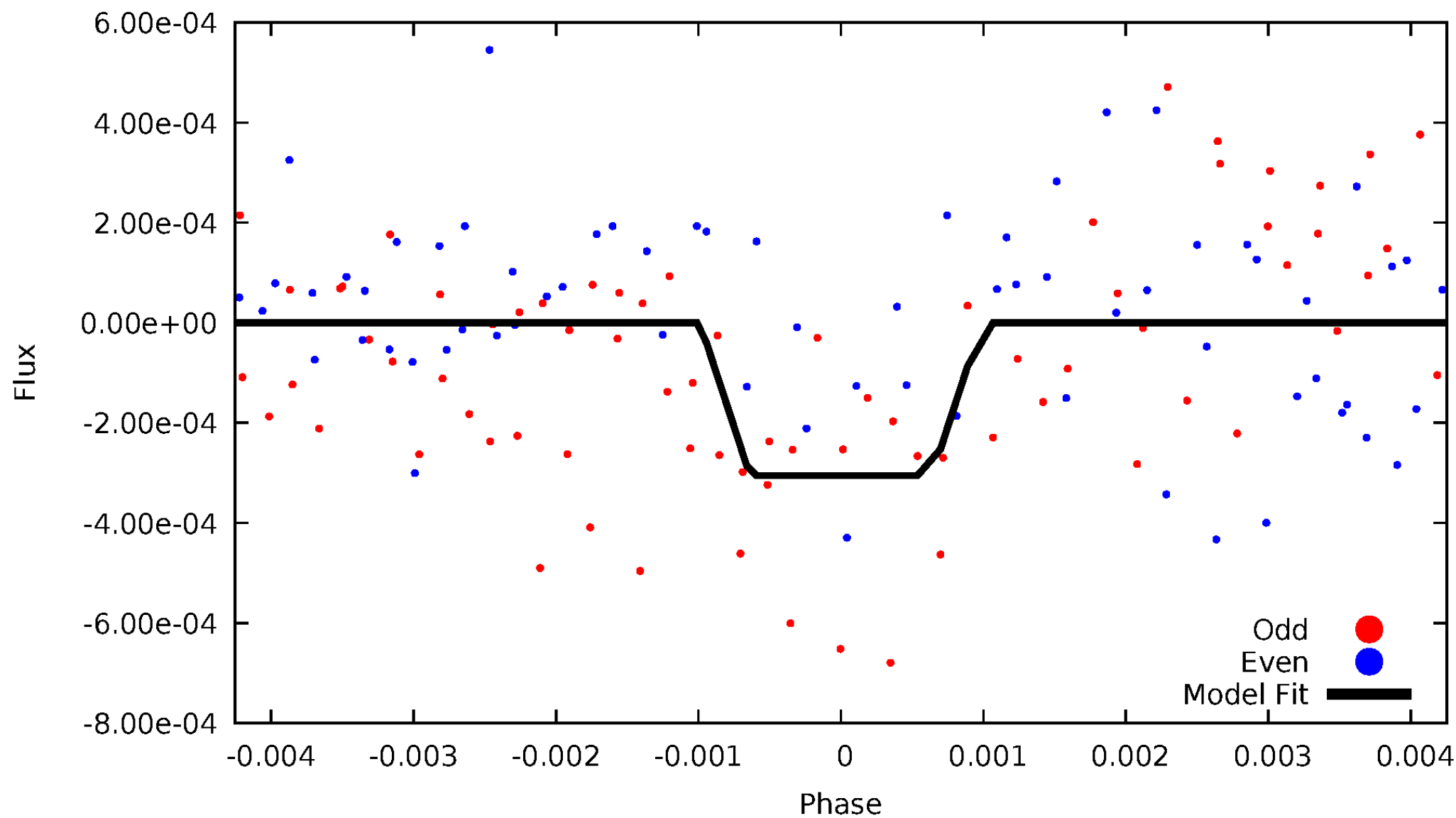
DV Odd/Even

TCE 008461967-07



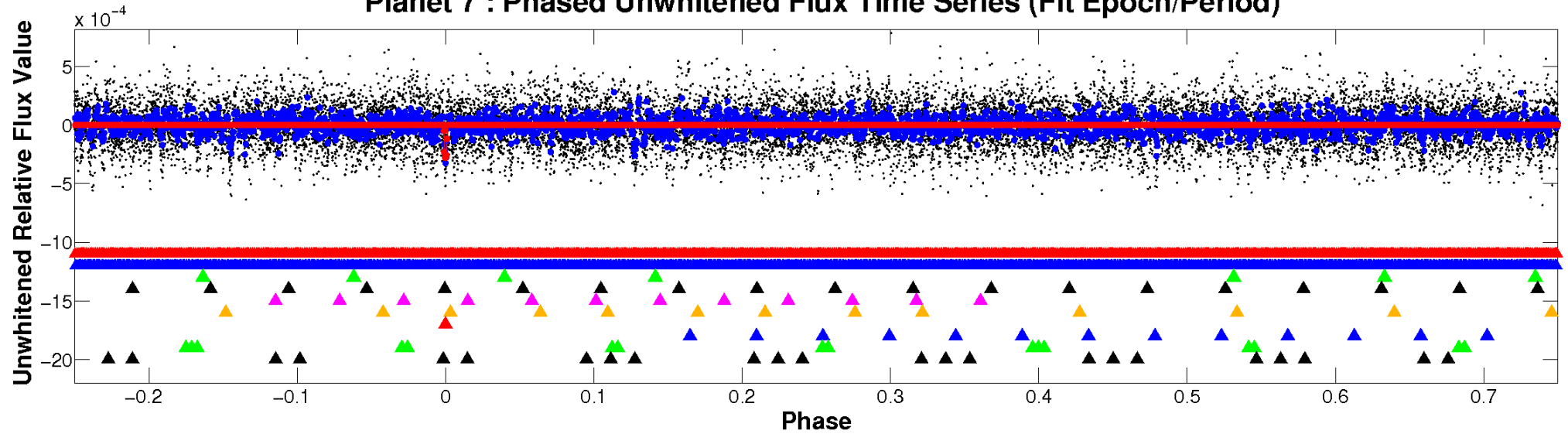
ALT Odd/Even

TCE 008461967-07

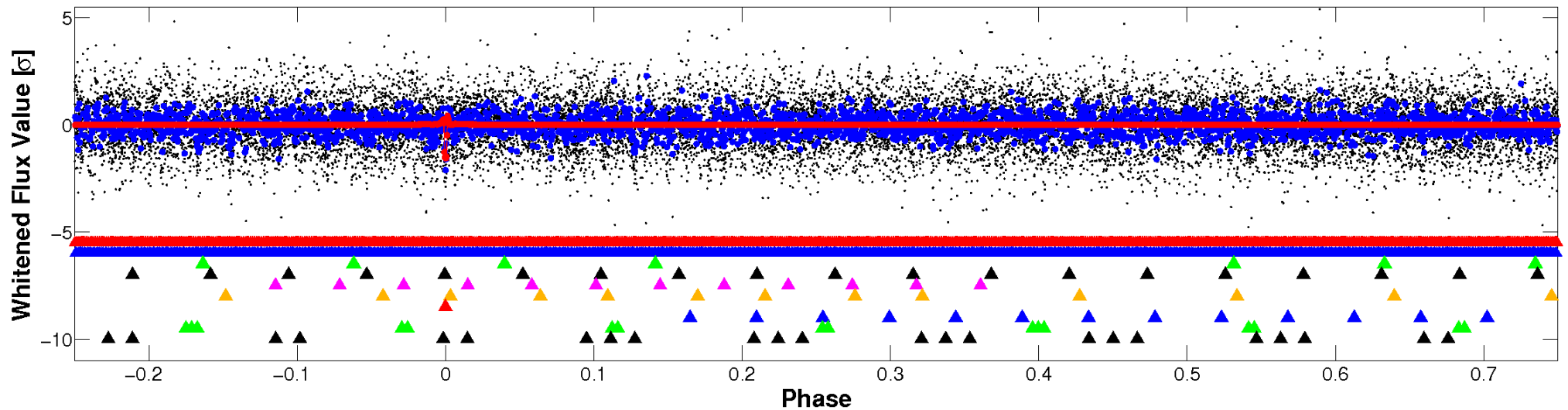


Non-Whitened Vs. Whitened Light Curve

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

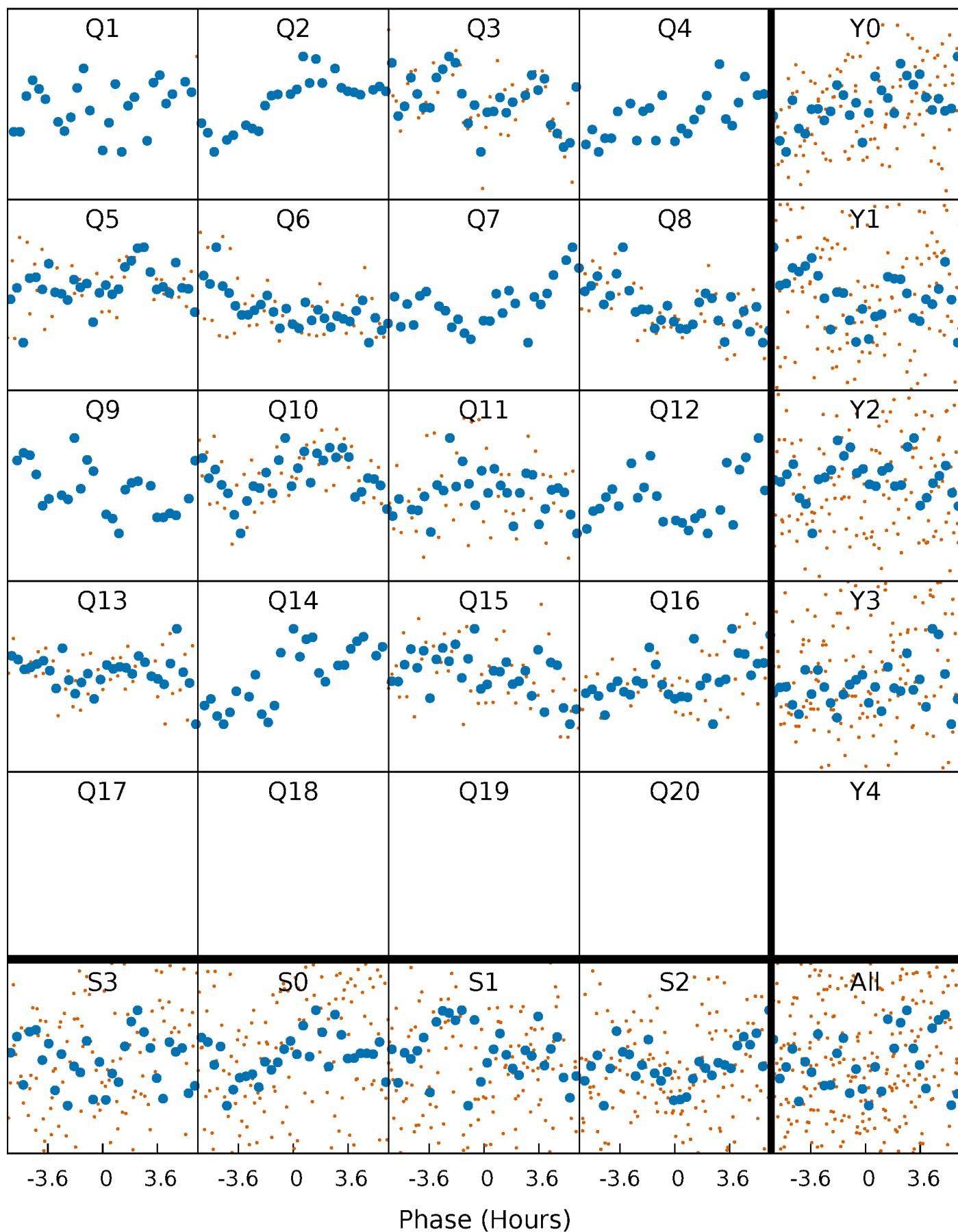


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



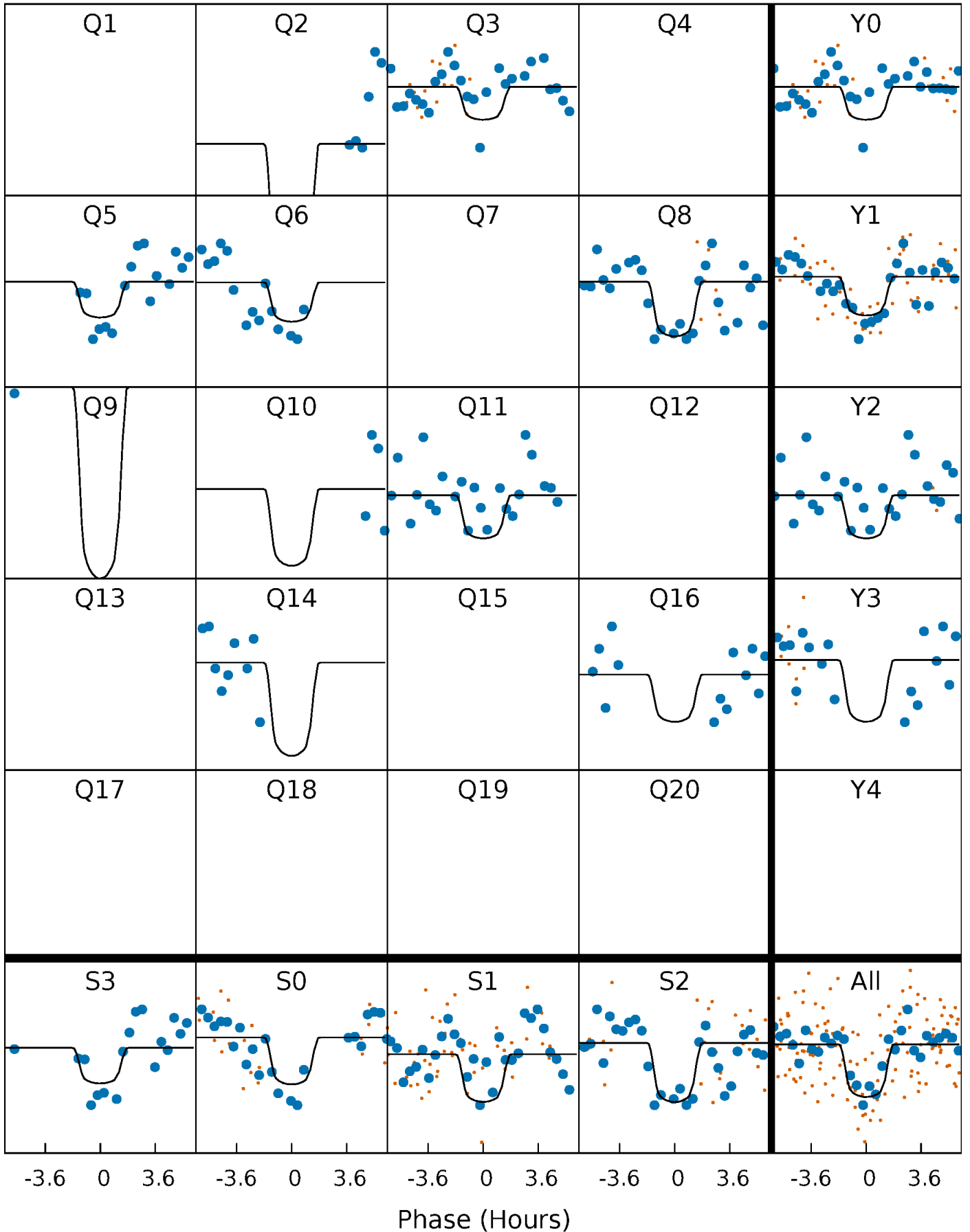
PDC Quarter-Phased Transit Curves

TCE 008461967-07 P= 58.183689 Days $T_0=156.918725$ (BKJD)



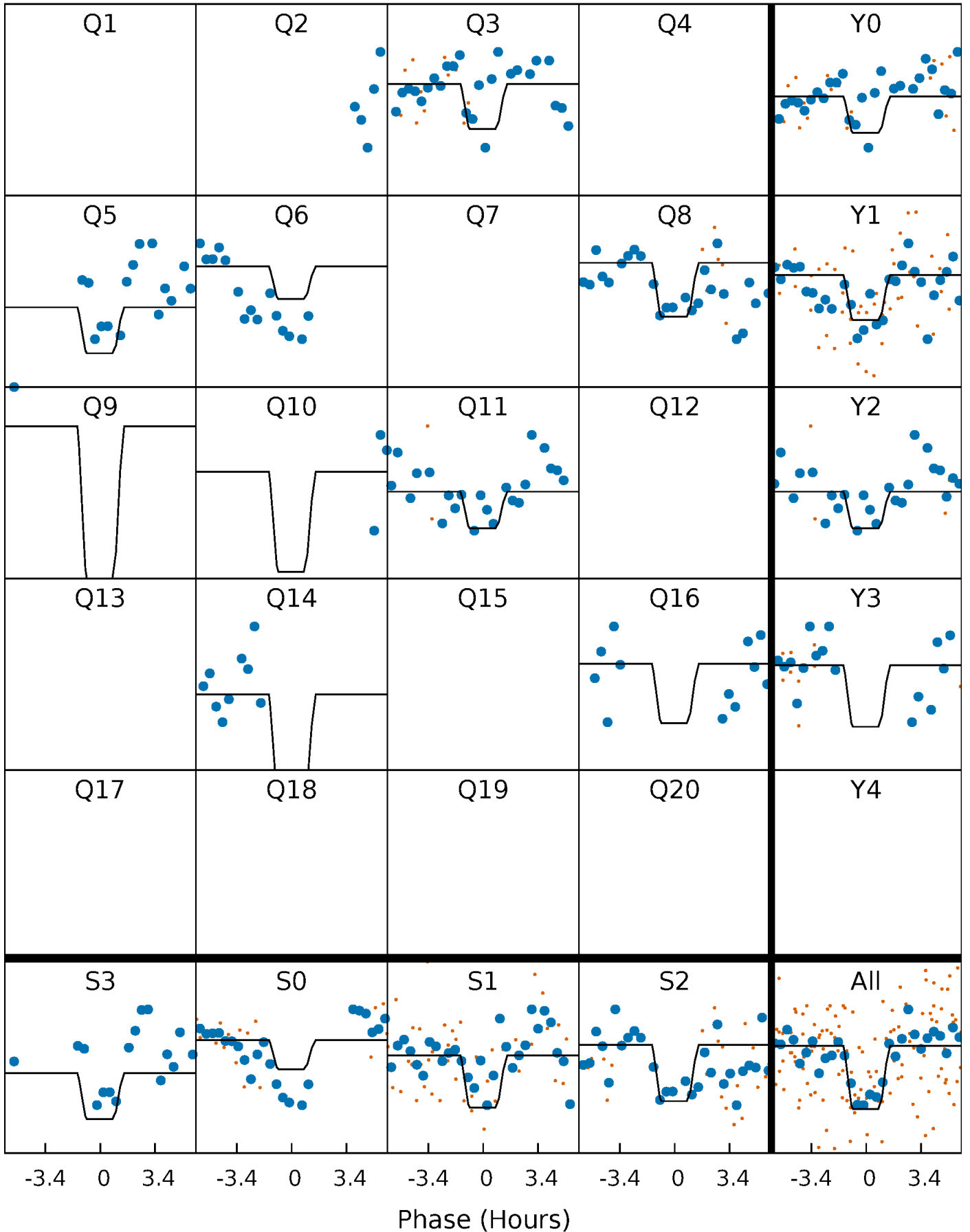
DV Quarter-Phased Transit Curves

TCE 008461967-07 P= 58.183689 Days $T_0=156.918725$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

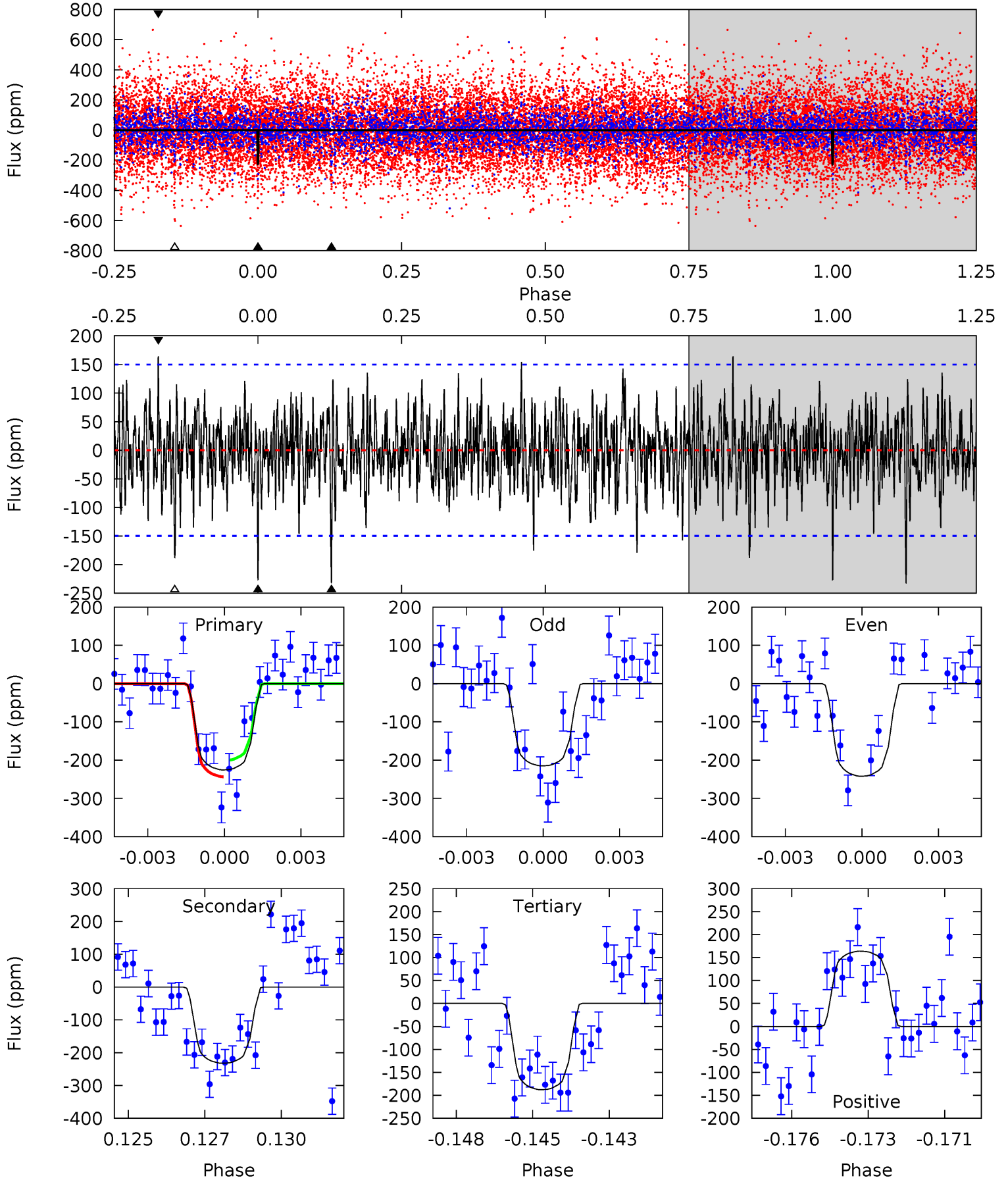
TCE 008461967-07 $P = 58.183203$ Days $T_0 = 156.913235$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-07, P = 58.183689 Days, E = 98.735036 Days

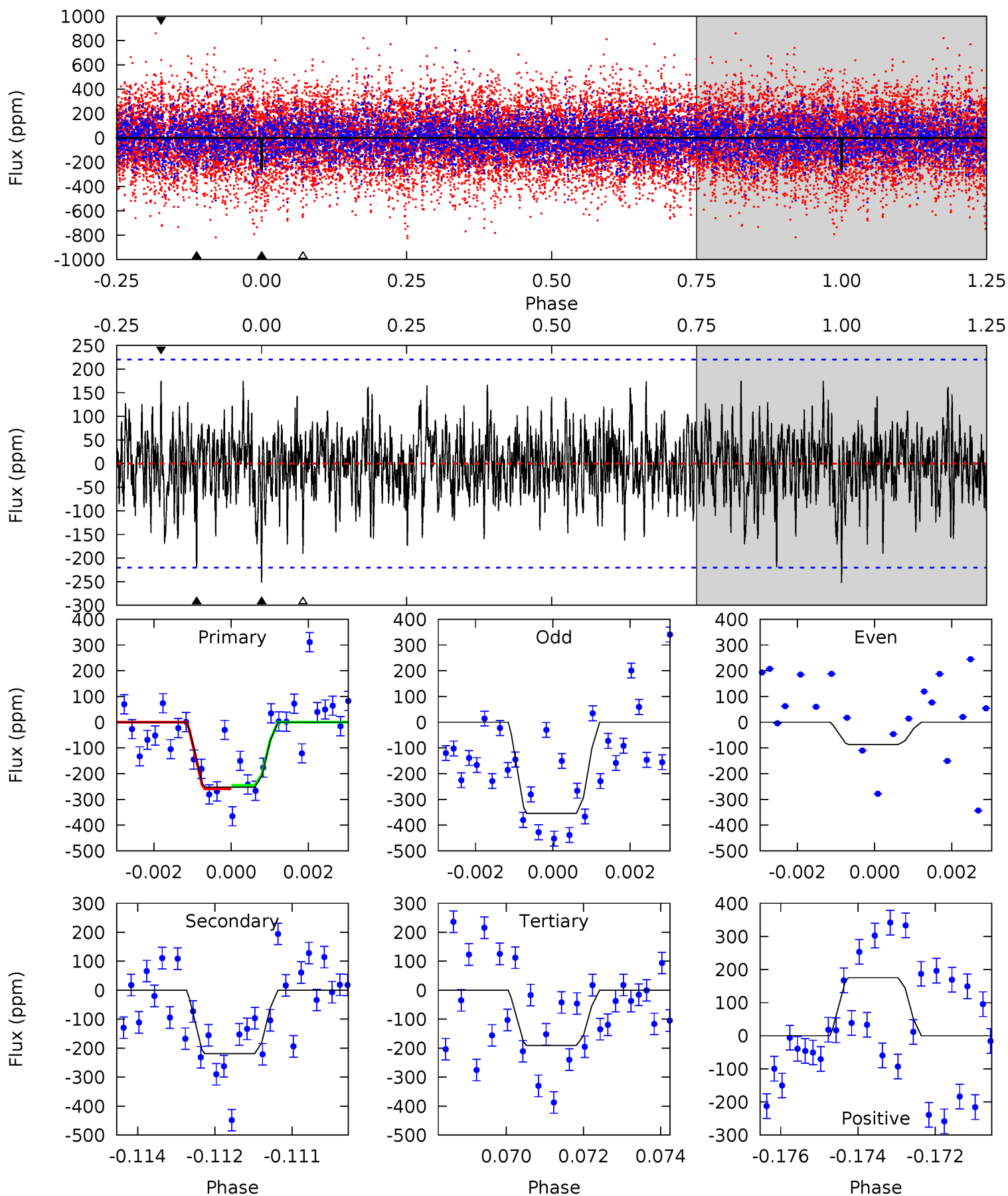
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.96	8.20	6.63	5.79	5.28	3.02	1.78	1.33	2.18	1.57	2.42	0.48	0.87	0.41	0.76



Alt Model-Shift Uniqueness Test

008461967-07, P = 58.183203 Days, E = 98.730032 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.12	5.32	4.63	4.25	5.35	3.13	1.36	1.49	1.87	0.69	1.07	3.16	1.14	0.41	0.17



Stellar Parameters For KIC 008461967

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-232 ± 28	$7.42^{+3.07}_{-3.06}$	1239^{+80}_{-116}	5474^{+1540}_{-669}	268^{+510}_{-135}
Alt.	-219 ± 41	$7.01^{+3.23}_{-2.70}$	1242^{+78}_{-128}	5488^{+1528}_{-741}	279^{+460}_{-148}

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

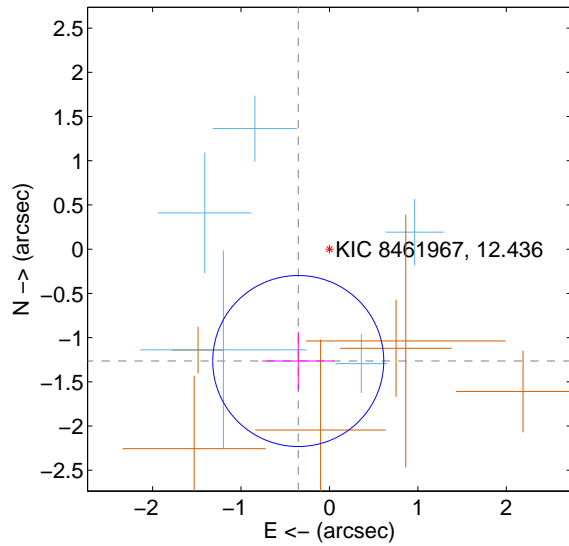
Supplemental centroid analysis for 008461967-07. Kepler magnitude: 12.44. Transit SNR 7.75

There are 5 quarters with good PRF difference image offsets

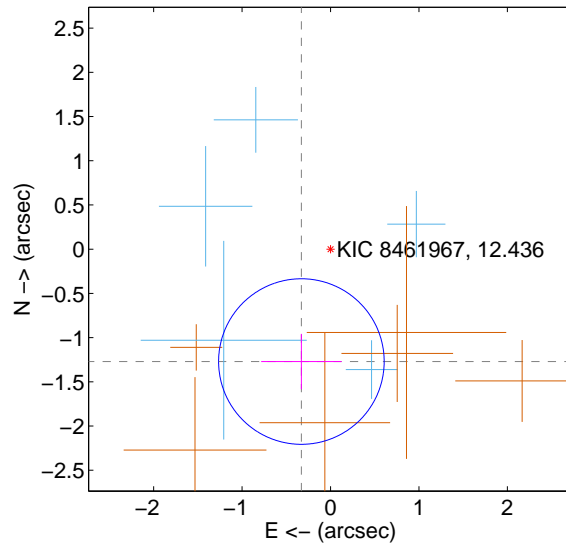
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.313 ± 0.322	4.07	0.353 ± 0.407	-1.265 ± 0.329
PRF-fit source offset from KIC position	1.313 ± 0.312	4.21	0.329 ± 0.454	-1.271 ± 0.314
photometric centroid source offset	0.07 ± 0.57	0.11	0.03 ± 0.61	0.06 ± 0.55

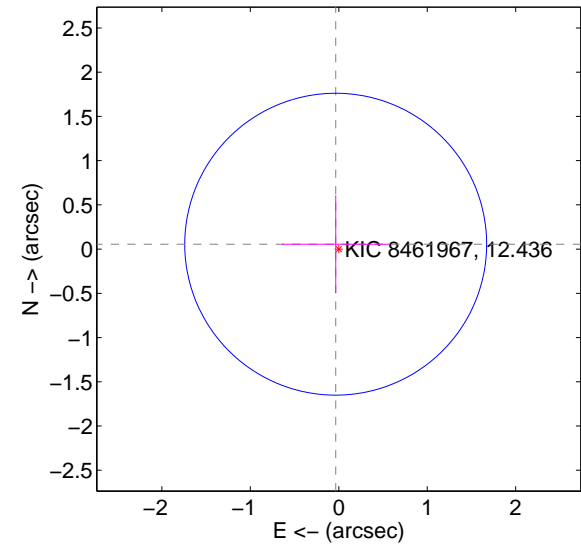
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

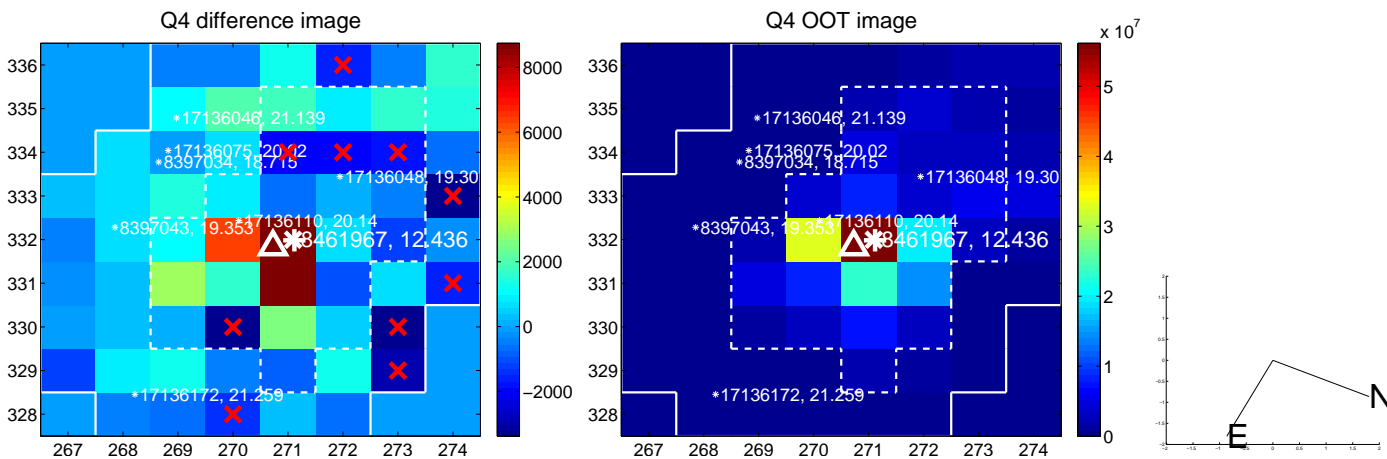
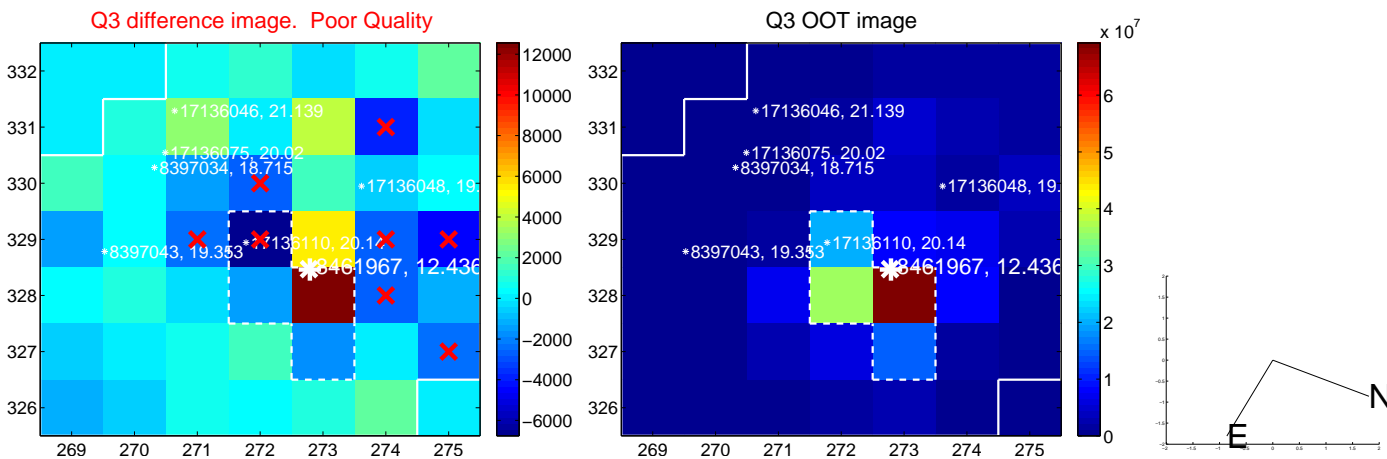
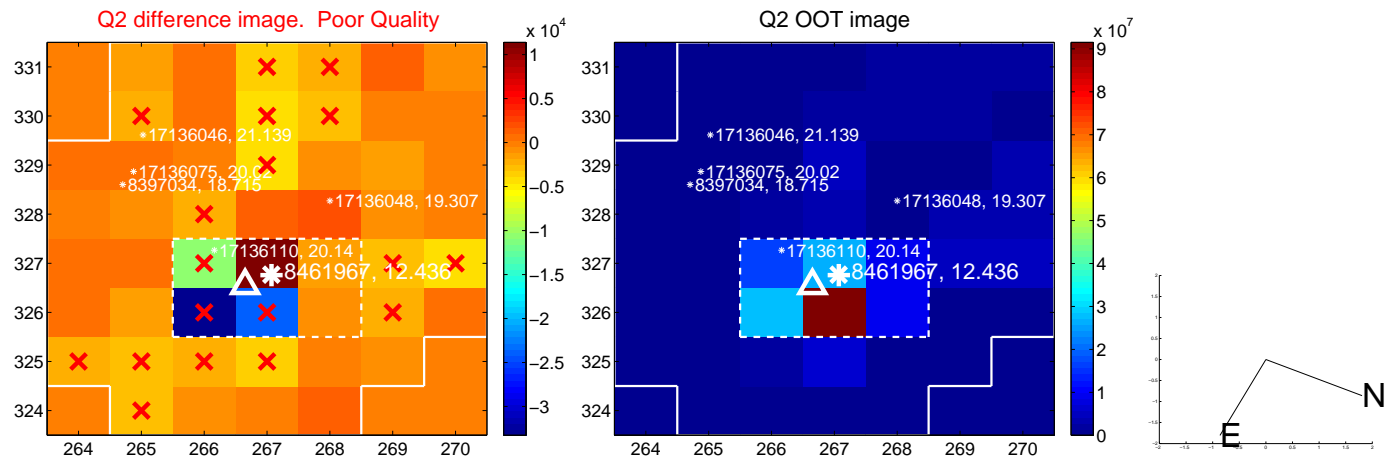
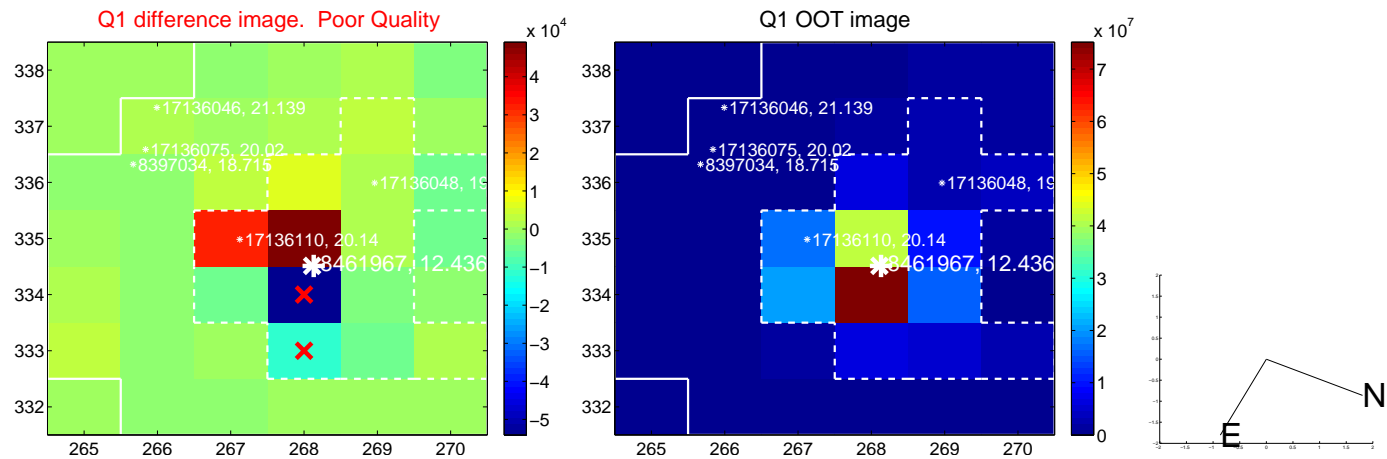


offset from photometric centroids

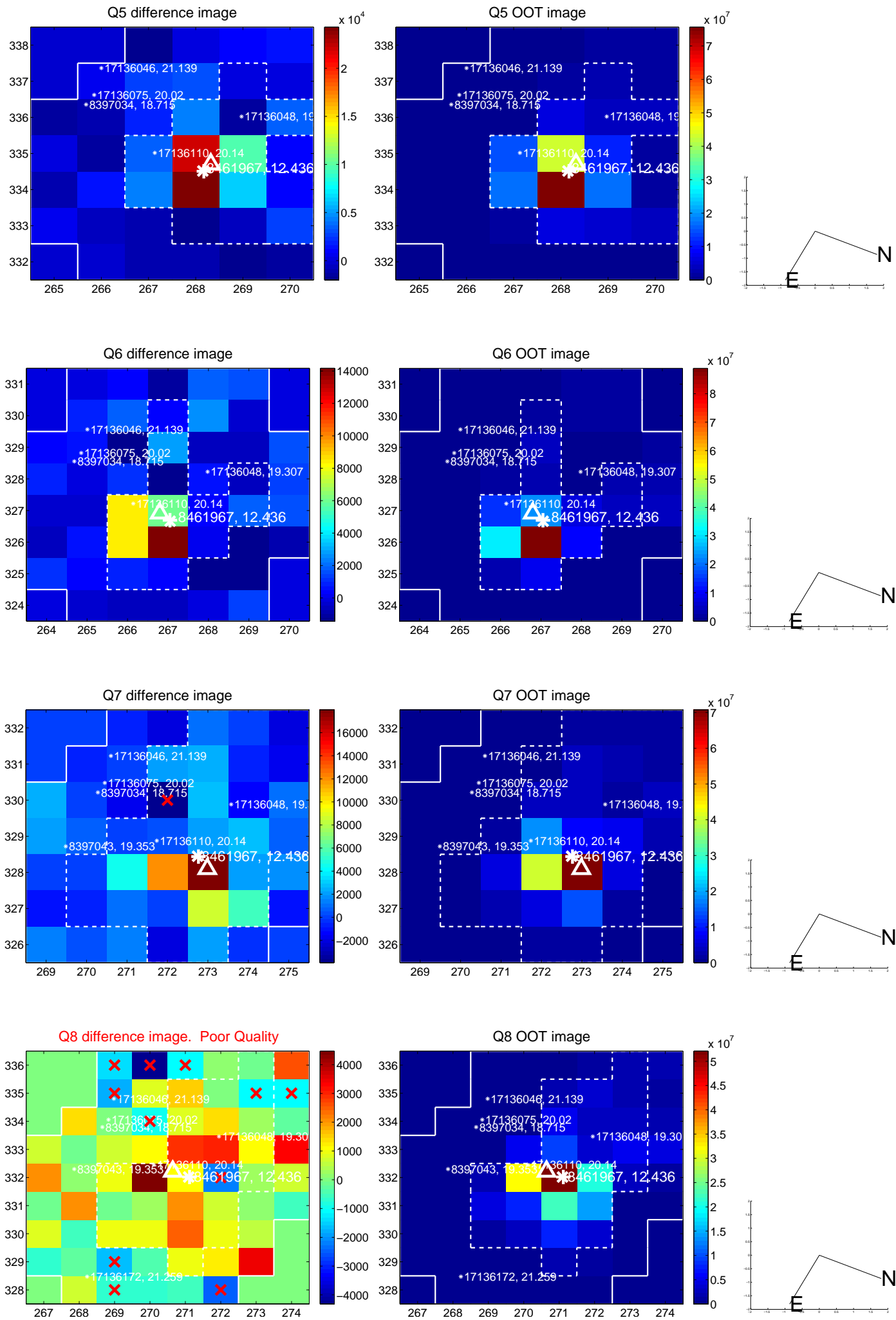


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

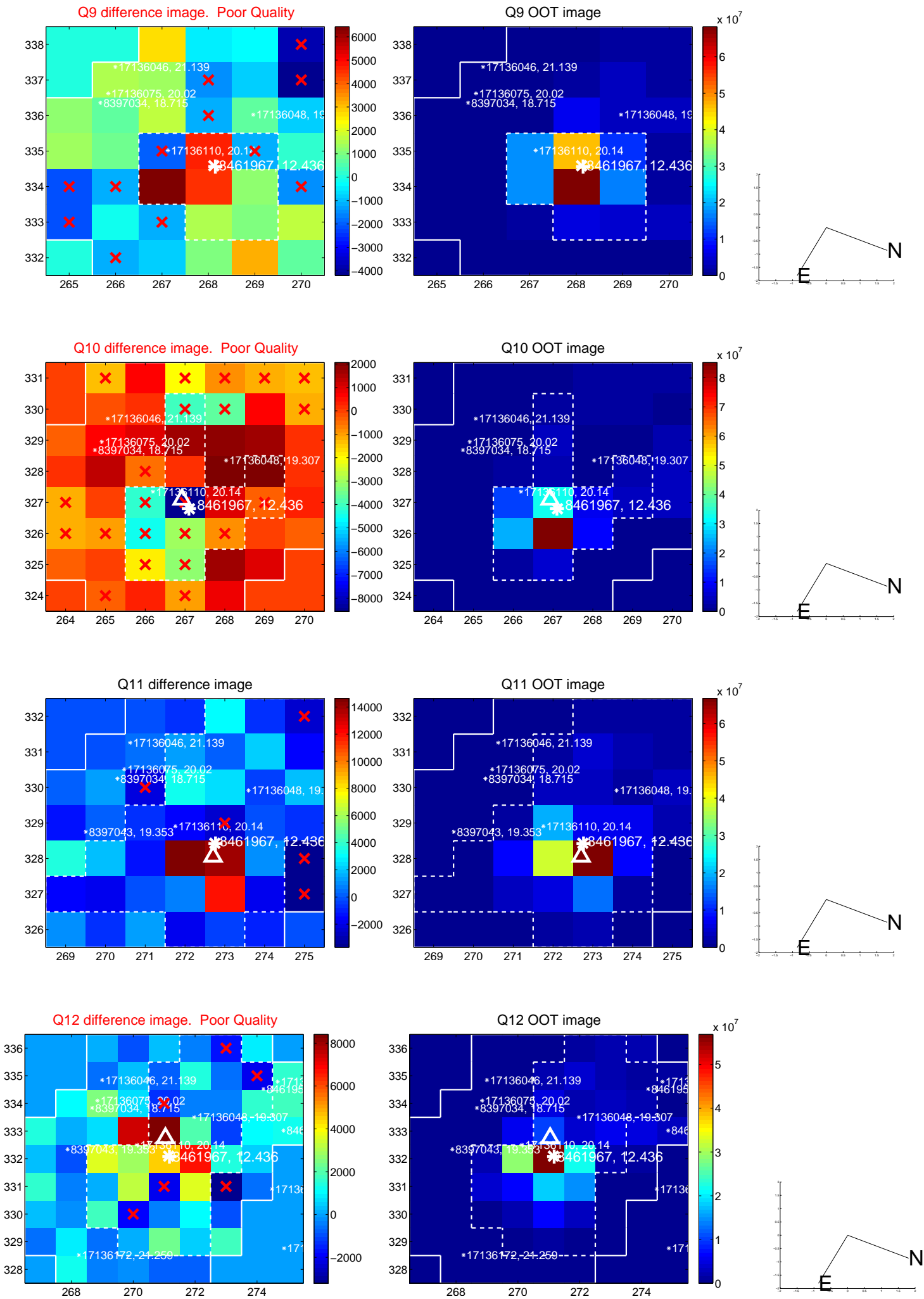
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



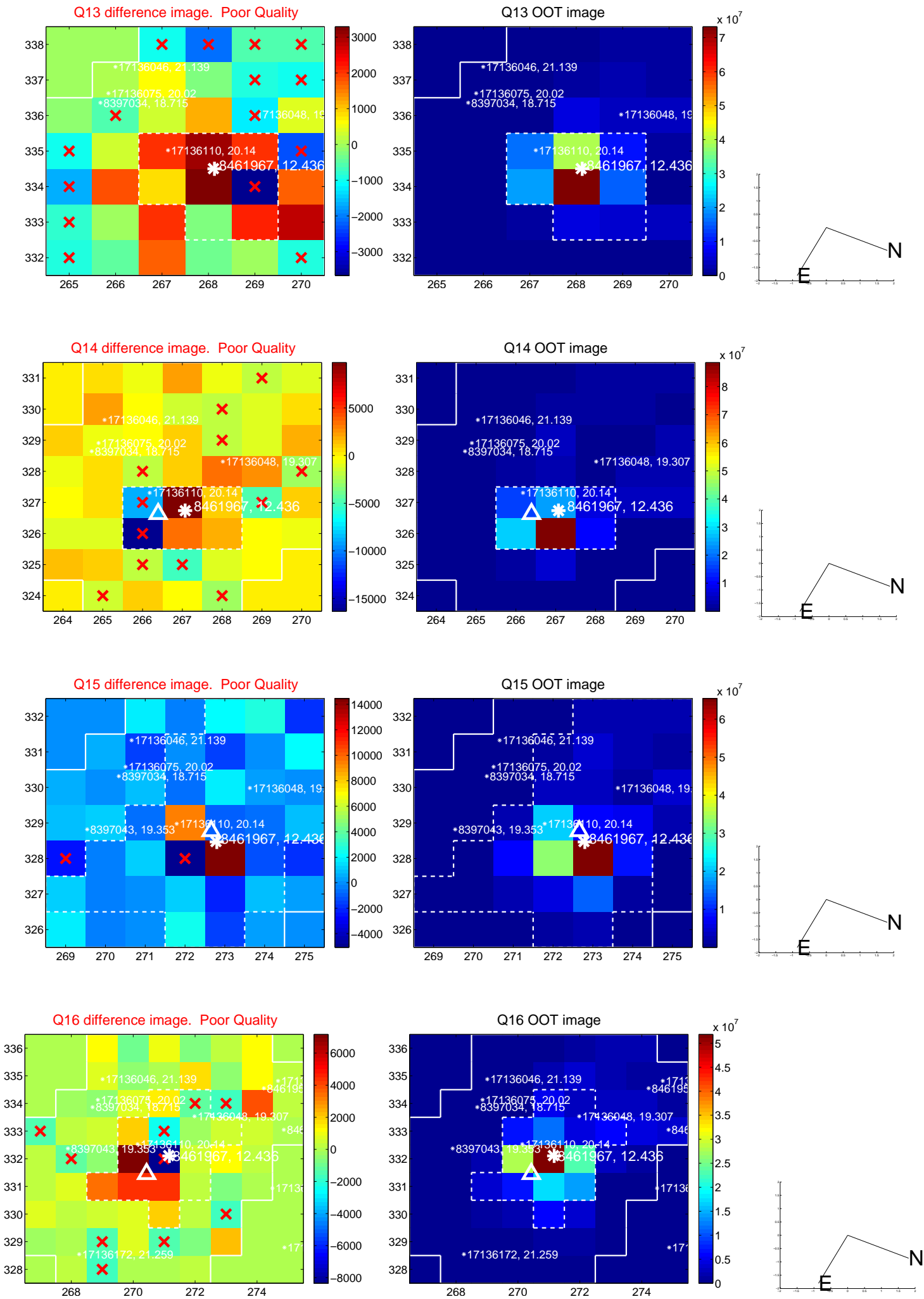
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



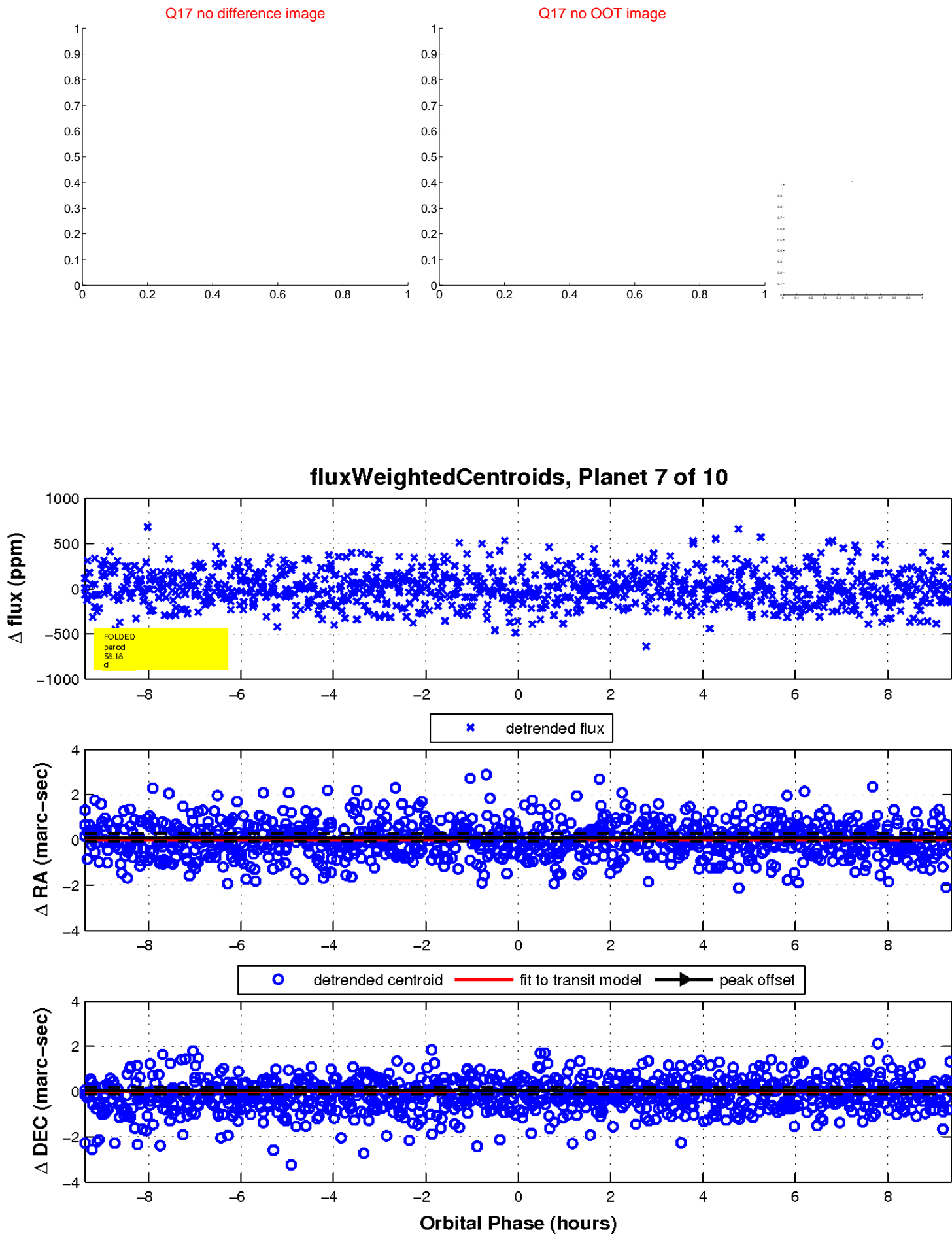
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

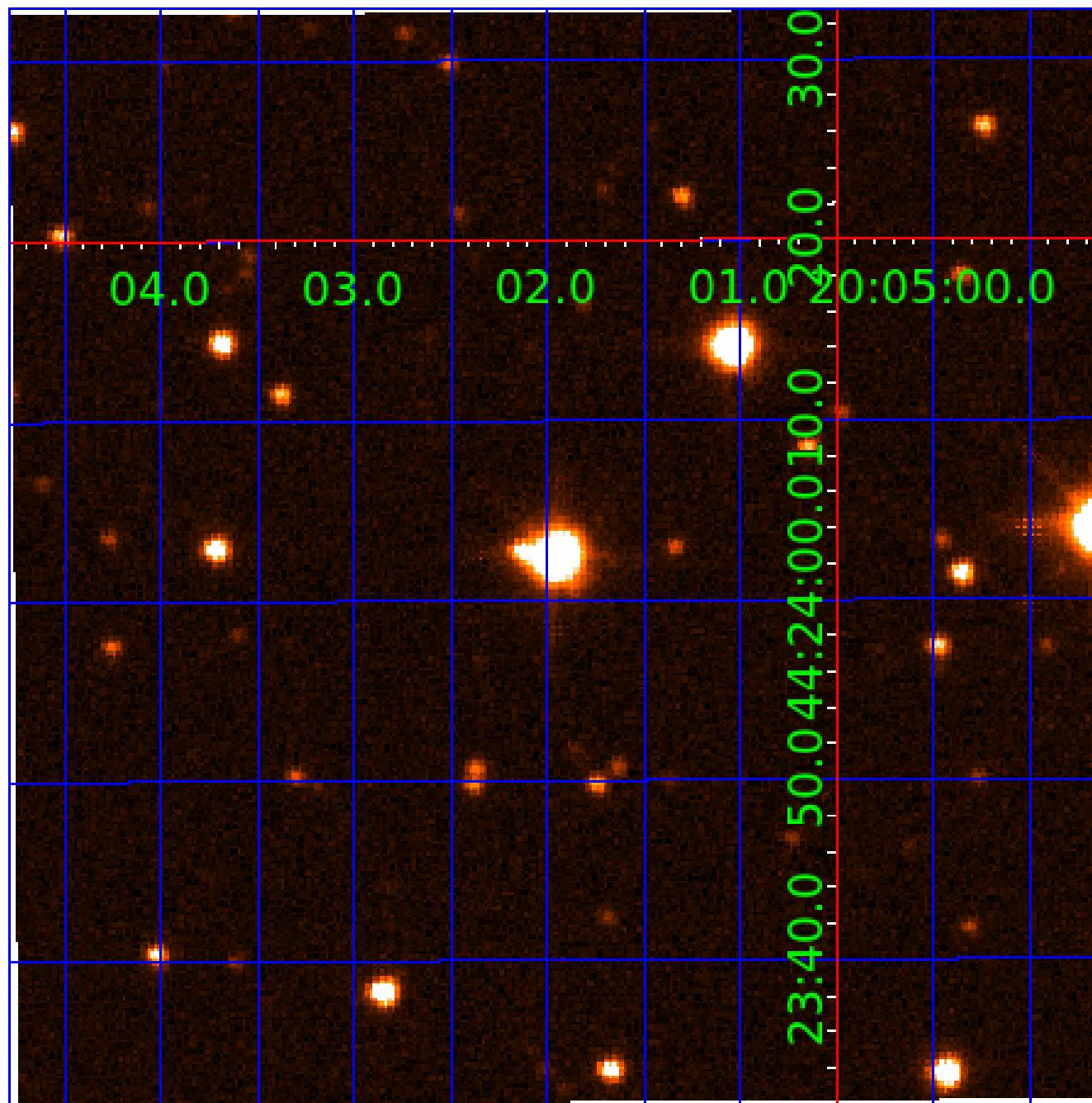


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008461967

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})
008461967-01	OBS	No	1.521666	132.369637	0.0	4.159	11.1	0.0	4.03	5991	0.07	20747.05
008461967-02	OBS	No	1.522001	132.662554	47.0	6.075	10.9	11.5	4.03	5991	4.49	20740.97
008461967-03	OBS	No	226.818718	223.335820	517.1	12.175	9.2	8.0	4.03	5991	11.43	26.25
008461967-04	OBS	No	33.685215	150.767681	201.9	4.893	9.5	8.6	4.03	5991	6.75	333.78
008461967-05	OBS	No	113.853229	236.091319	495.9	6.424	8.5	8.5	4.03	5991	17.51	65.80
008461967-06	OBS	No	110.195951	231.169028	396.9	5.248	8.8	9.2	4.03	5991	10.51	68.73
008461967-07	OBS	No	58.183689	156.918725	280.5	3.132	8.0	7.8	4.03	5991	8.04	161.06
008461967-08	OBS	No	113.761733	139.598103	311.1	6.578	8.0	8.3	4.03	5991	8.17	65.88
008461967-09	OBS	No	91.399375	147.184635	174.1	13.803	7.6	6.4	4.03	5991	6.25	88.20
008461967-10	OBS	No	64.753816	162.454167	210.8	7.326	8.4	7.8	4.03	5991	6.67	139.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008461967-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

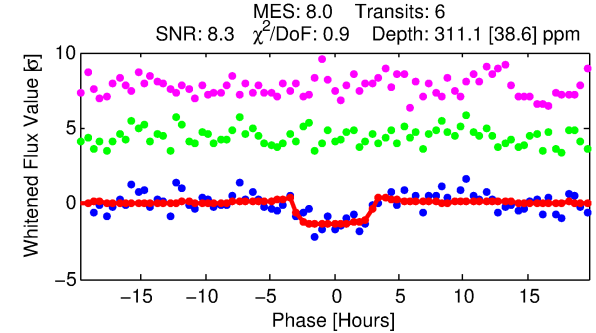
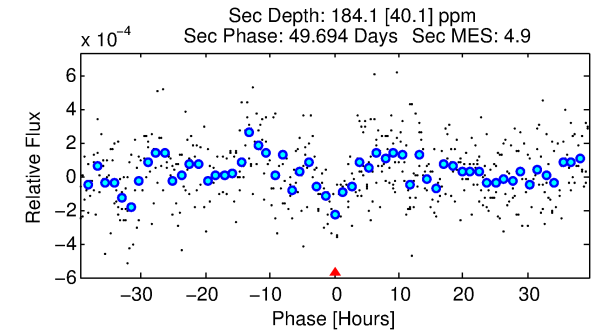
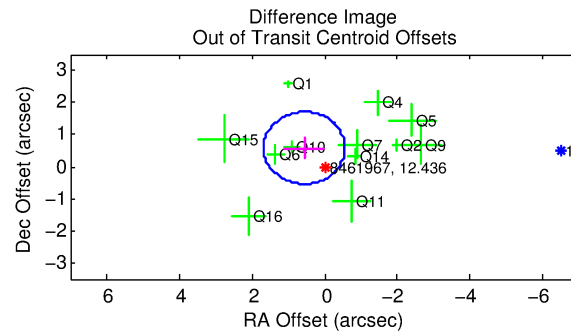
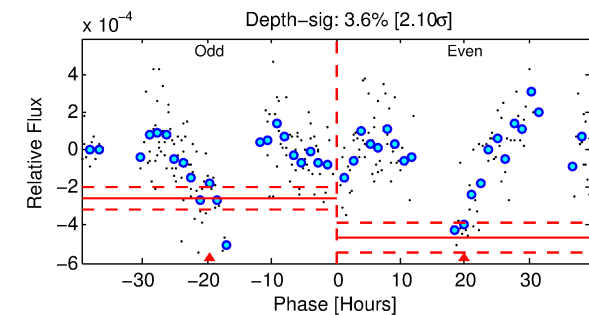
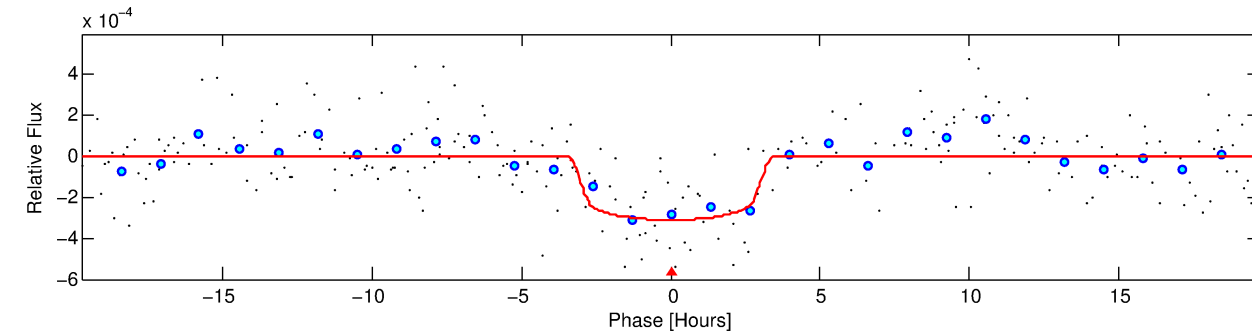
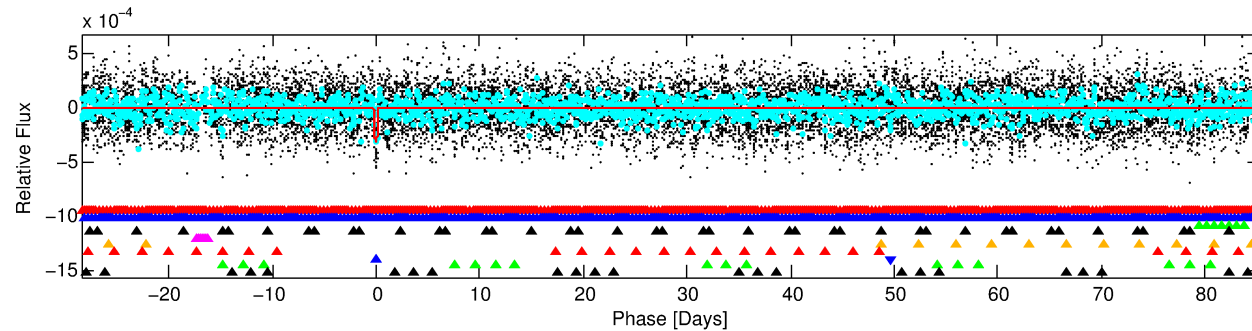
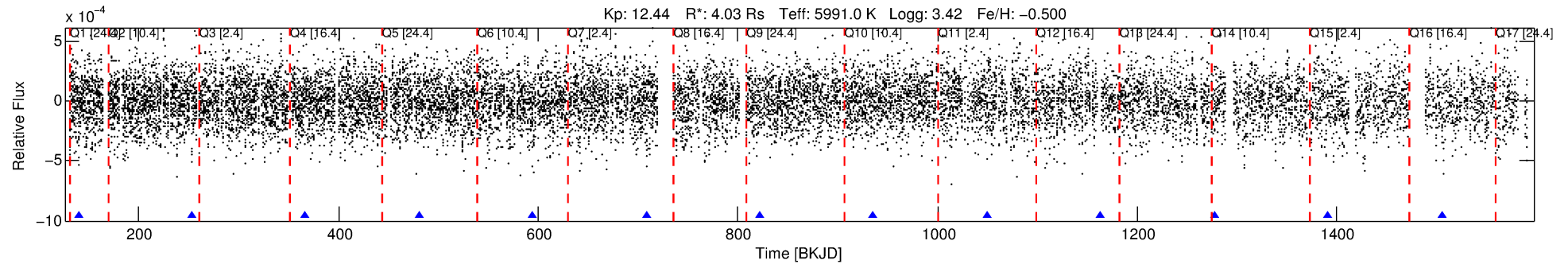
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-08

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 8 of 10 Period: 113.762 d



DV Fit Results:

Period = 113.76173 [0.00189] d
Epoch = 139.5981 [0.0109] BKJD
Rp/R* = 0.0186 [0.0046]
a/R* = 69.92 [88.48]
b = 0.87 [0.36]
Seff = 65.87 [39.92]
Teq = 726 [110] K
Rp = 8.17 [4.00] Re
a = 0.5340 [0.2037] AU
Ag = 432.99 [347.53] [1.24σ]
Teffp = 5123 [723] K [6.01σ]

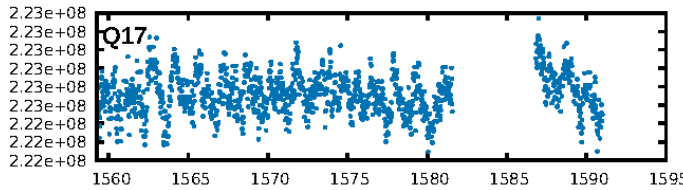
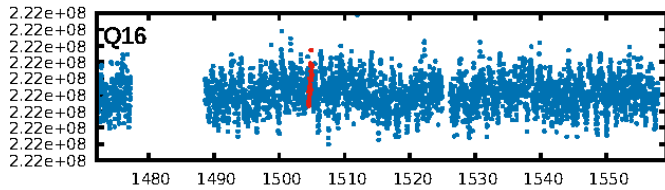
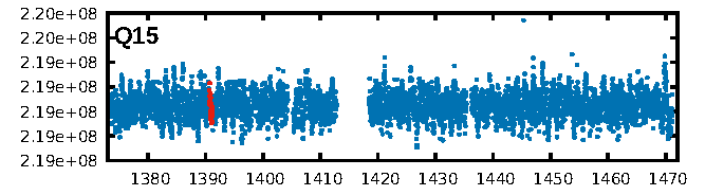
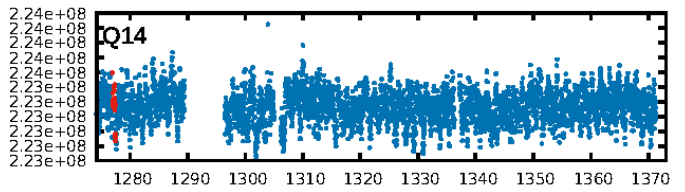
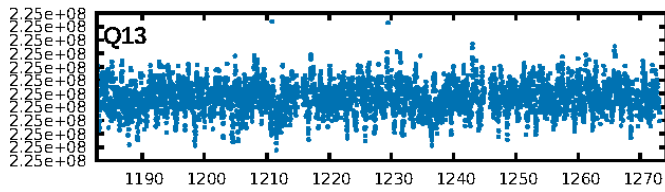
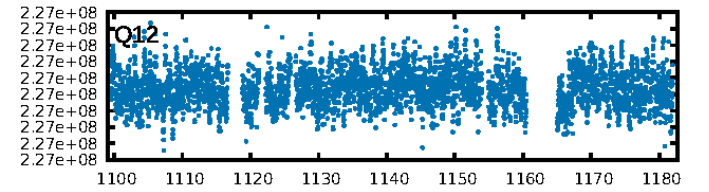
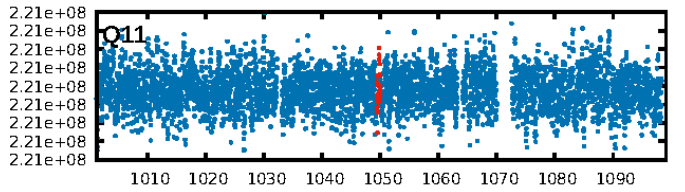
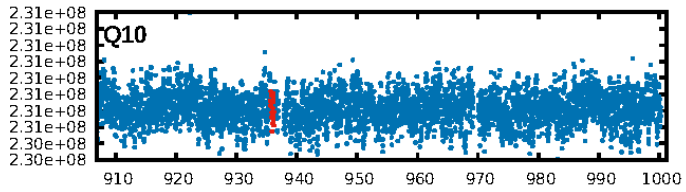
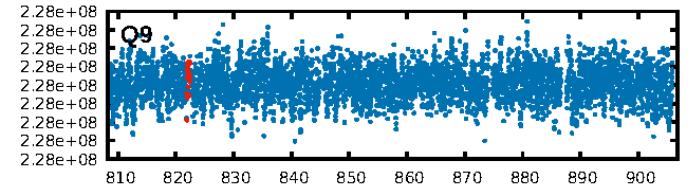
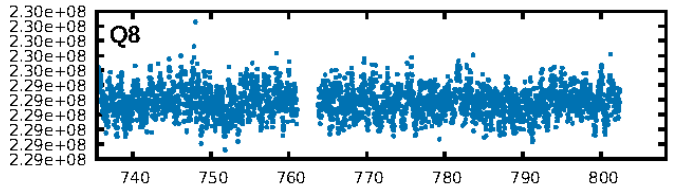
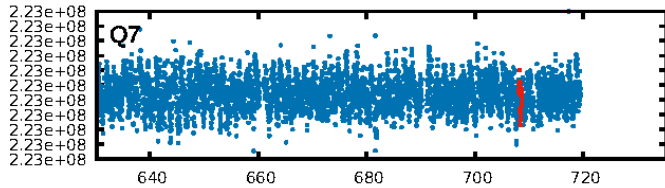
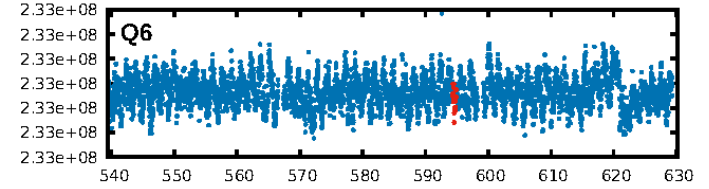
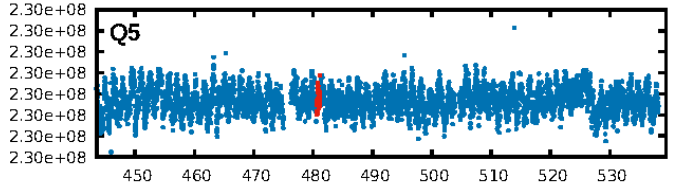
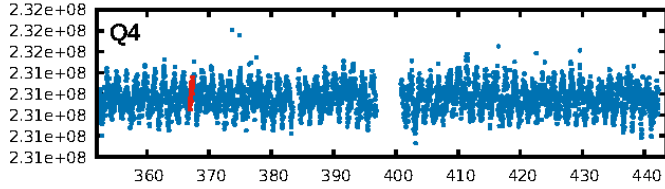
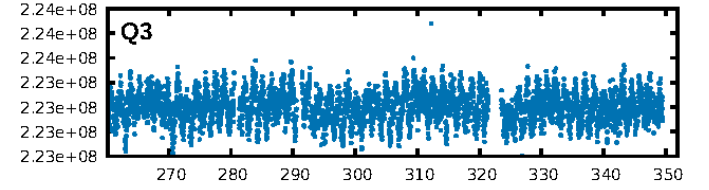
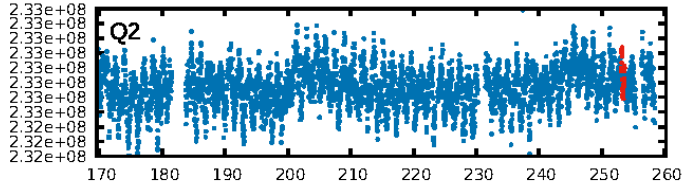
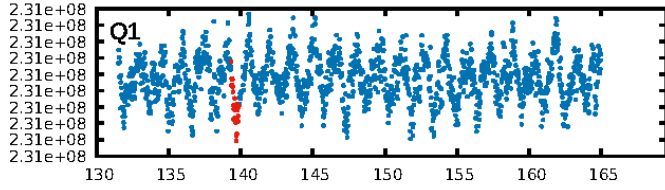
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.17σ]
LongPeriod-sig: 18.9% [0.24σ]
ModelChiSquare2-sig: 63.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.7981
Centroid-sig: 65.5%
Centroid-so: 0.765 arcsec [1.24σ]
OotOffset-rm: 0.810 arcsec [2.16σ]
KicOffset-rm: 0.716 arcsec [2.21σ]
OotOffset-st: 4/3/2/3 [12]
KicOffset-st: 4/3/2/3 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.00 [0/12]

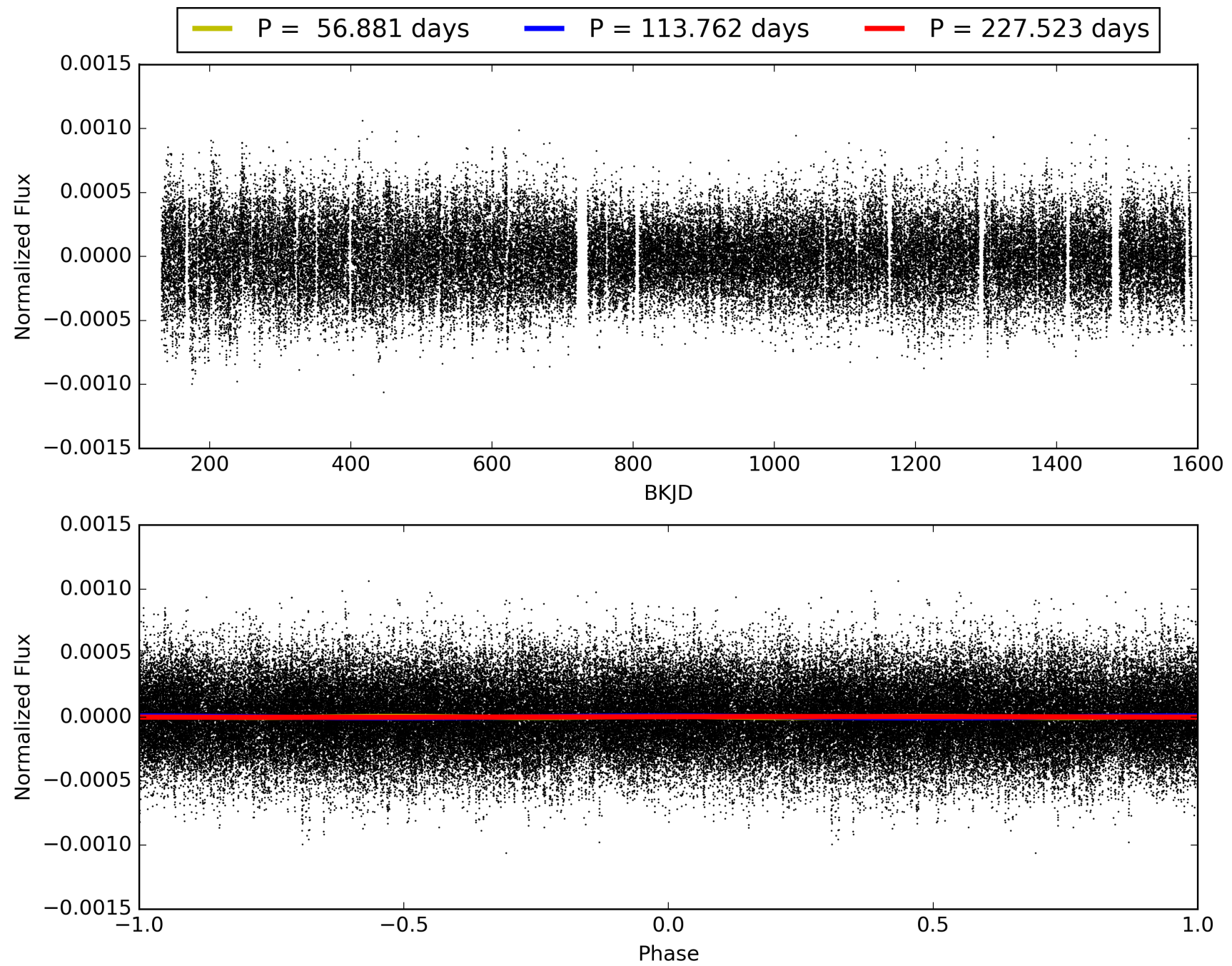
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:46:19 Z

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

TCE 008461967-08, PDC Light Curves

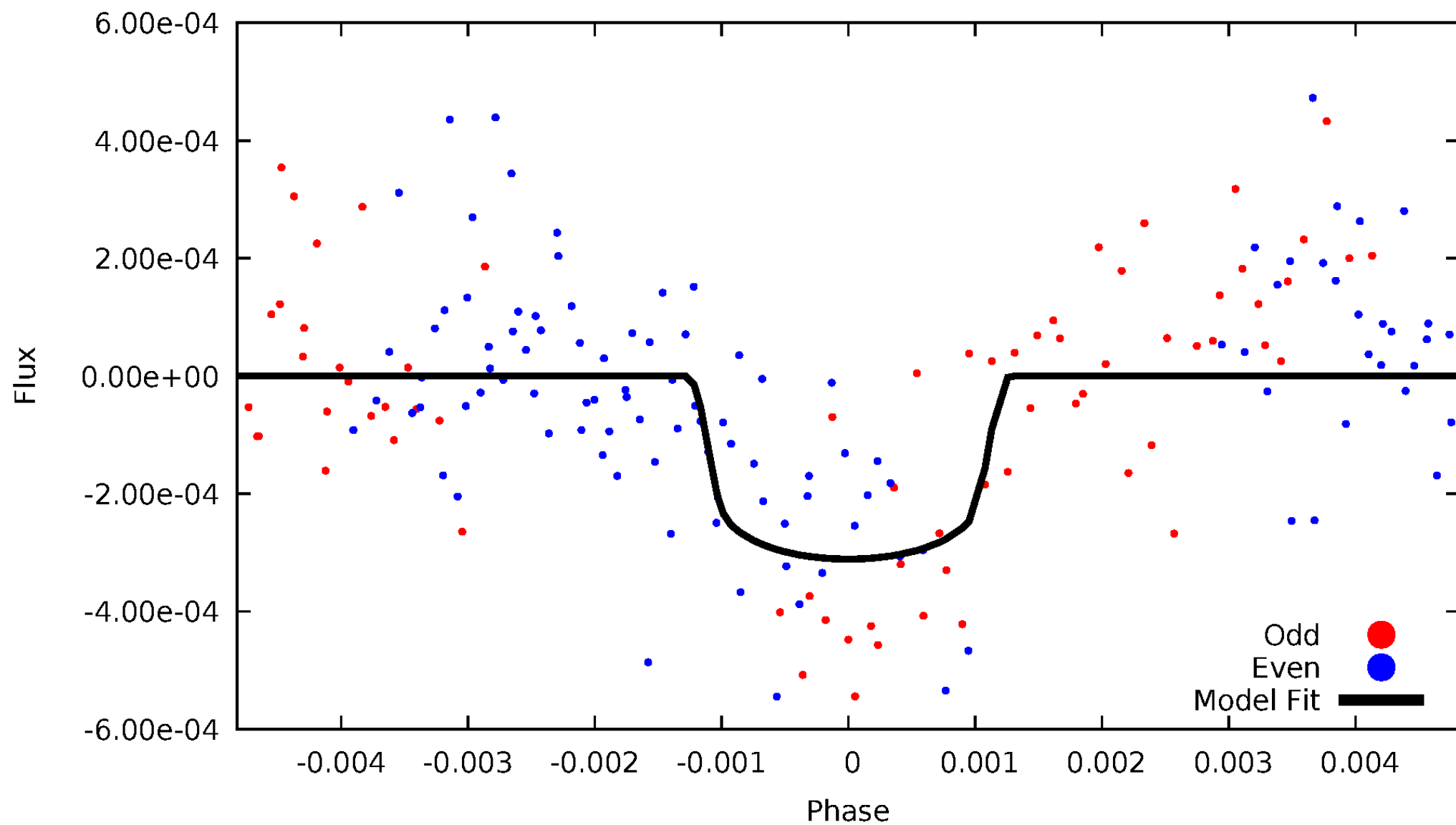


TCE 008461967-08



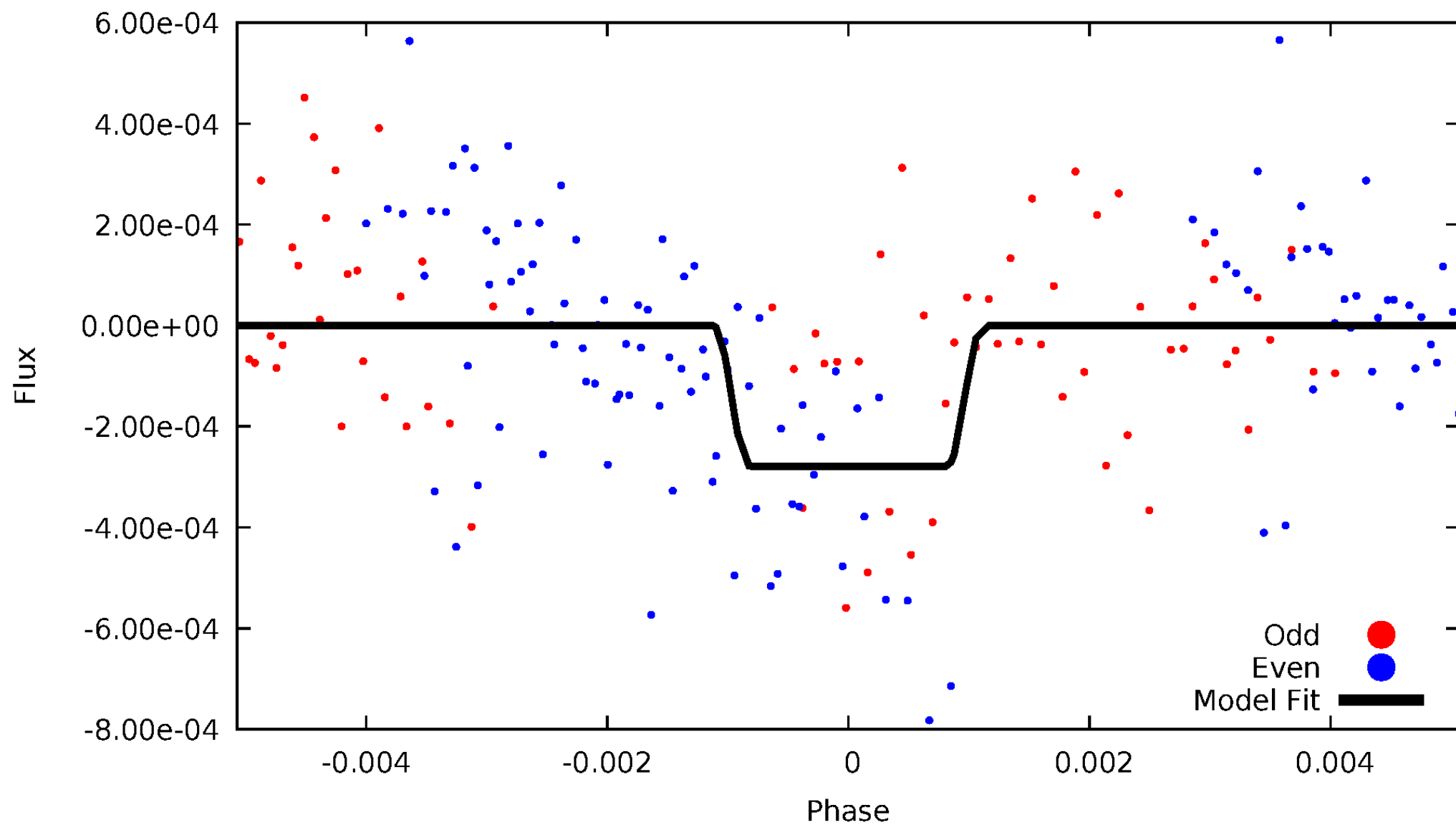
DV Odd/Even

TCE 008461967-08



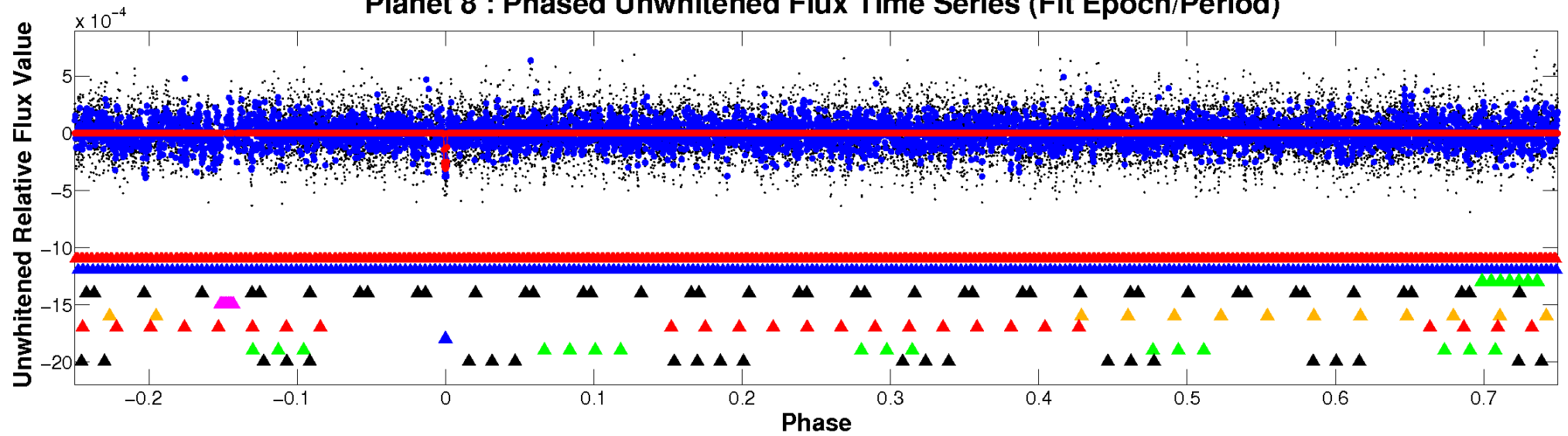
ALT Odd/Even

TCE 008461967-08

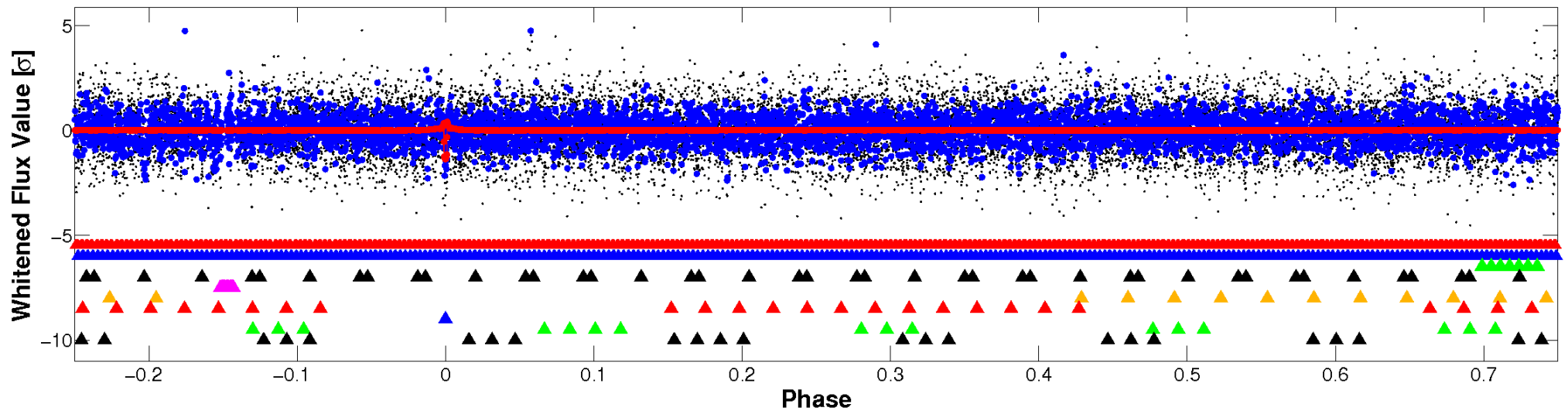


Non-Whitened Vs. Whitened Light Curve

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

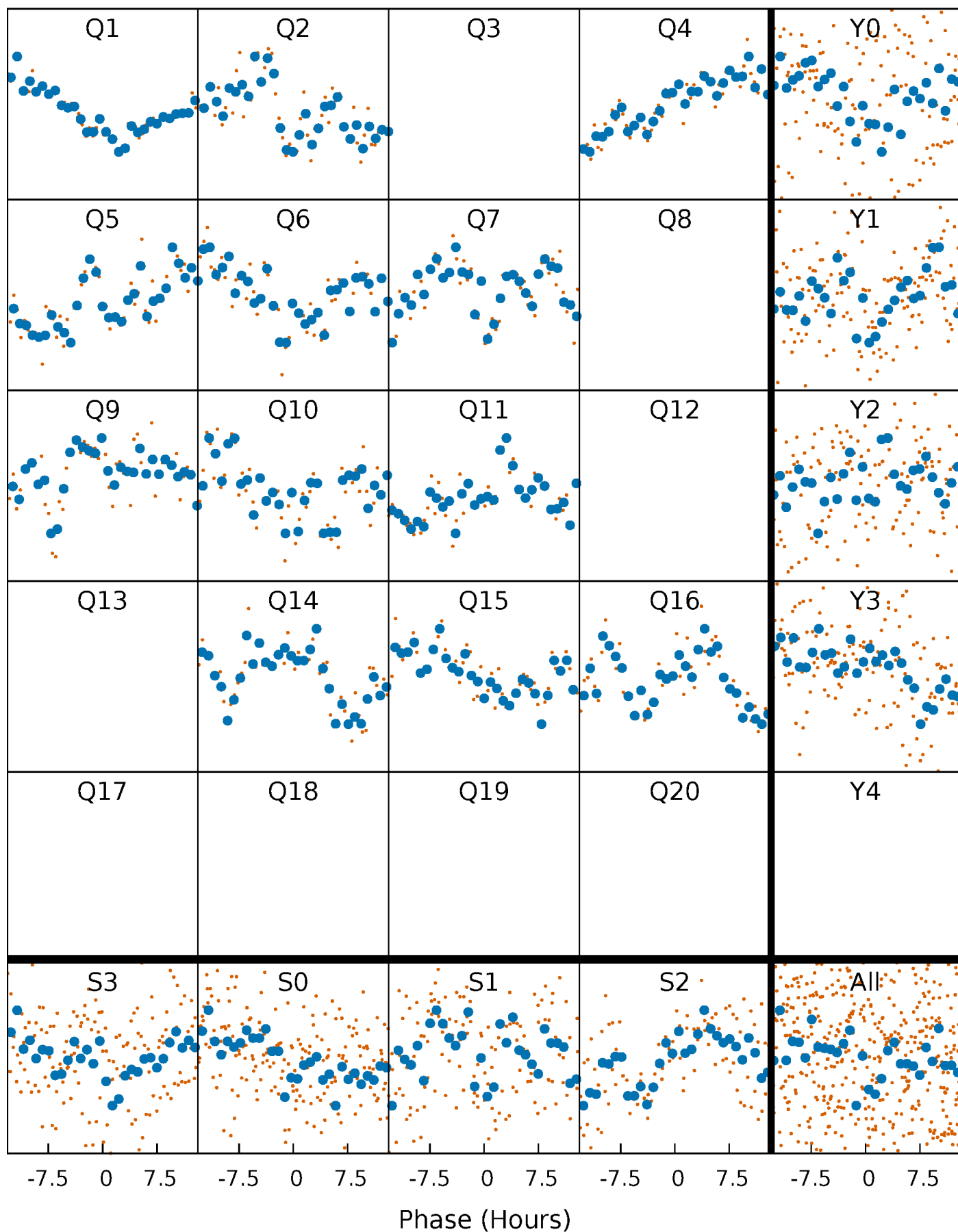


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



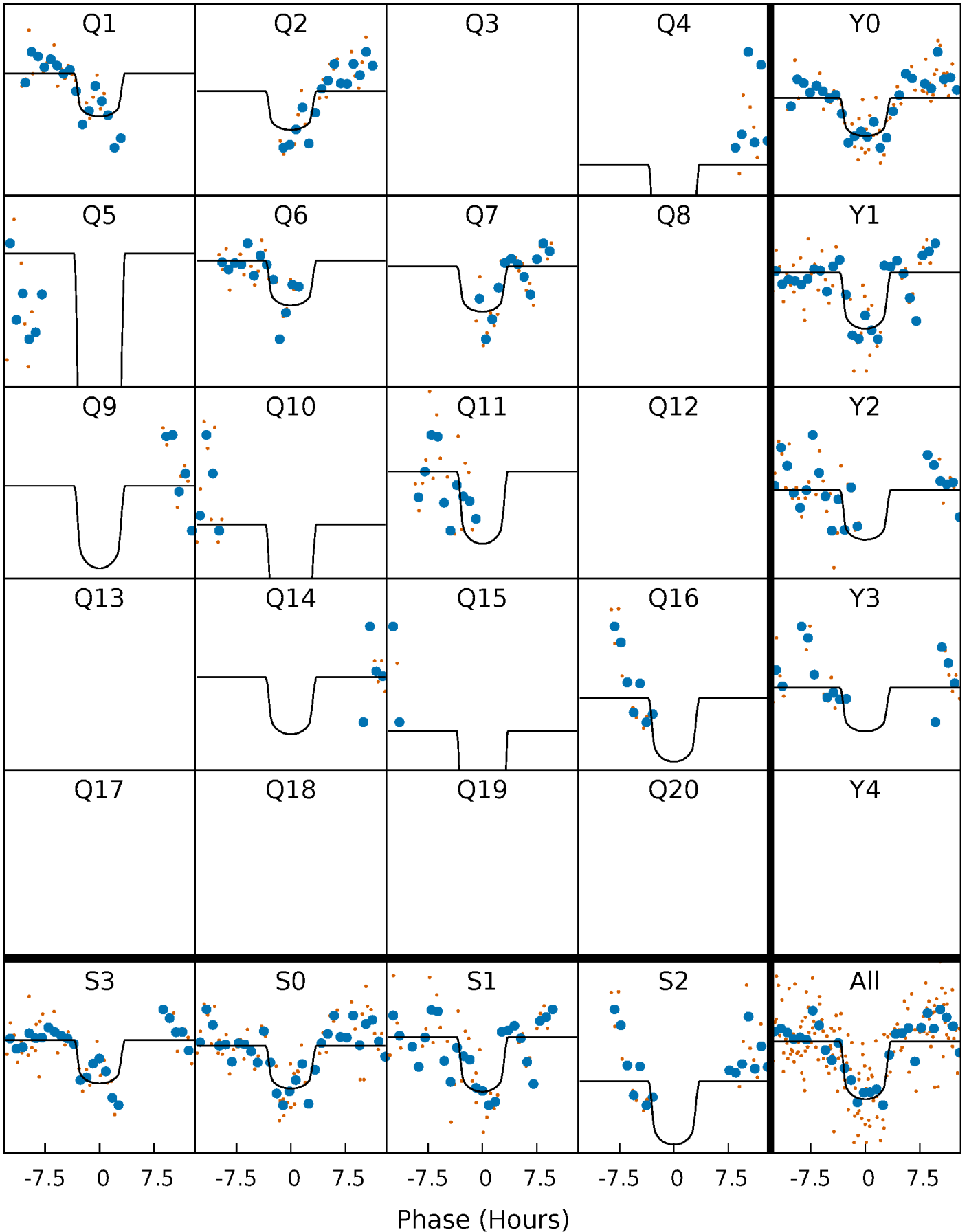
PDC Quarter-Phased Transit Curves

TCE 008461967-08 P=113.761733 Days $T_0=139.598103$ (BKJD)



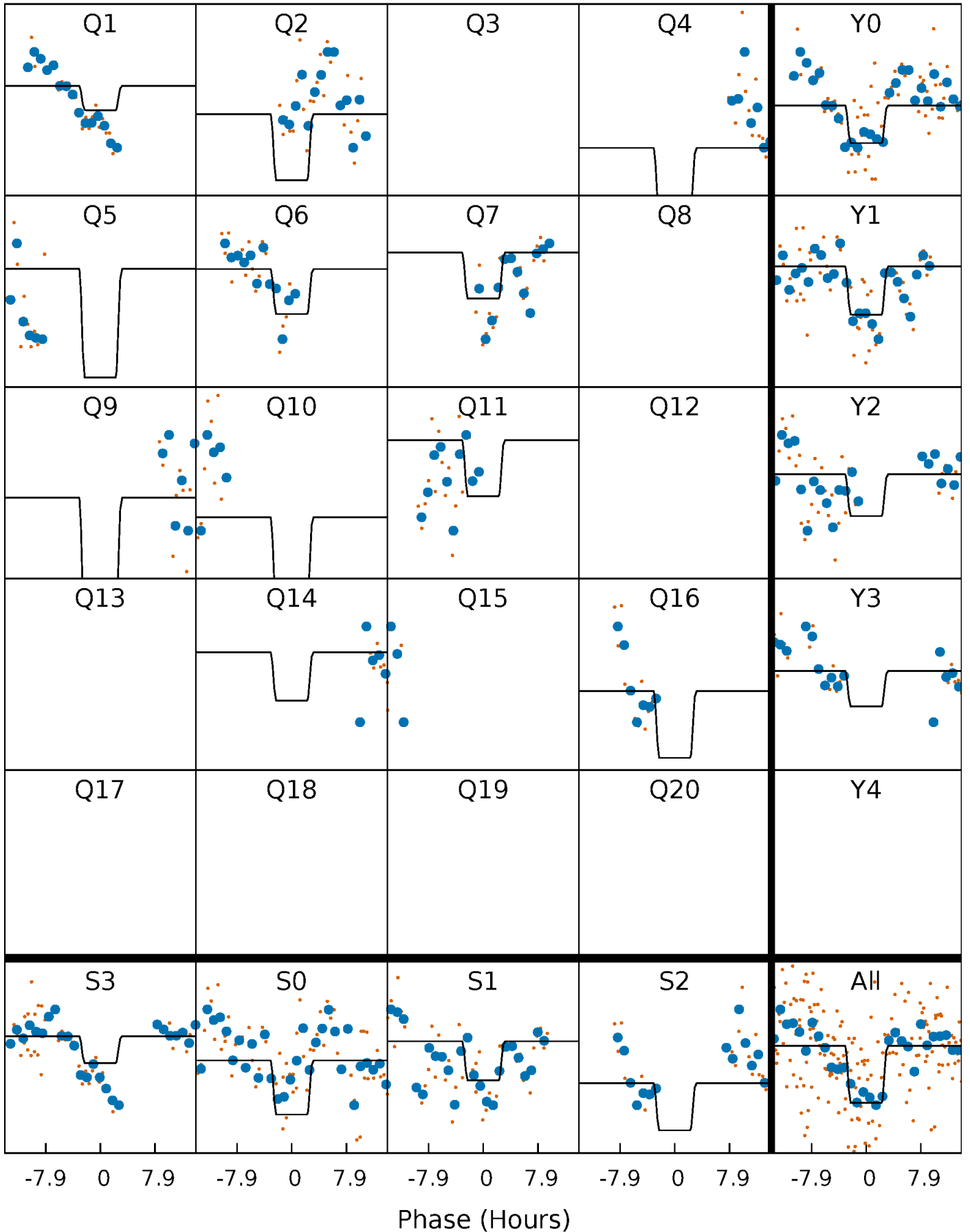
DV Quarter-Phased Transit Curves

TCE 008461967-08 P=113.761733 Days $T_0=139.598103$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

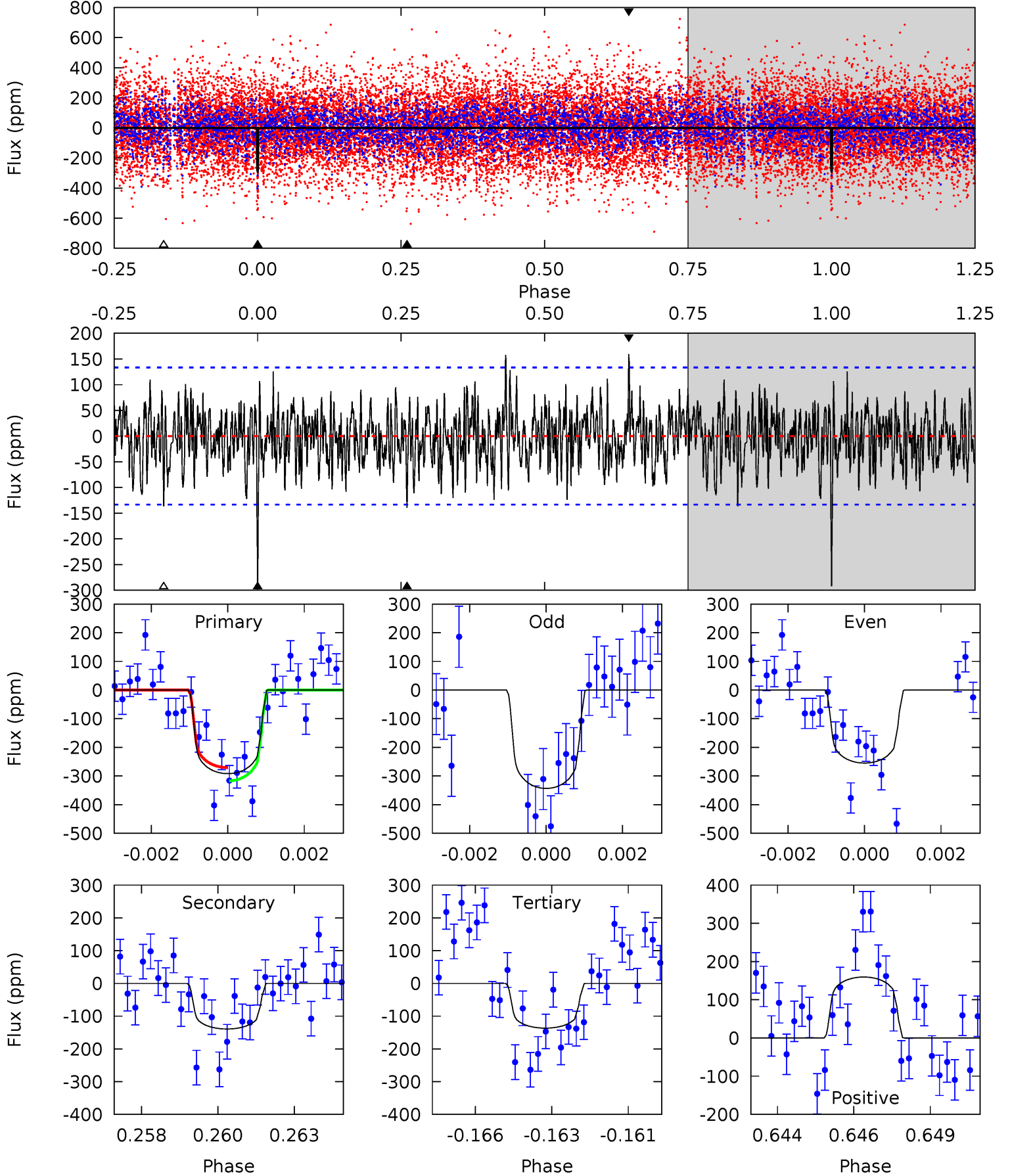
TCE 008461967-08 P=113.761179 Days $T_0=139.609134$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-08, P = 113.761733 Days, E = 25.836370 Days

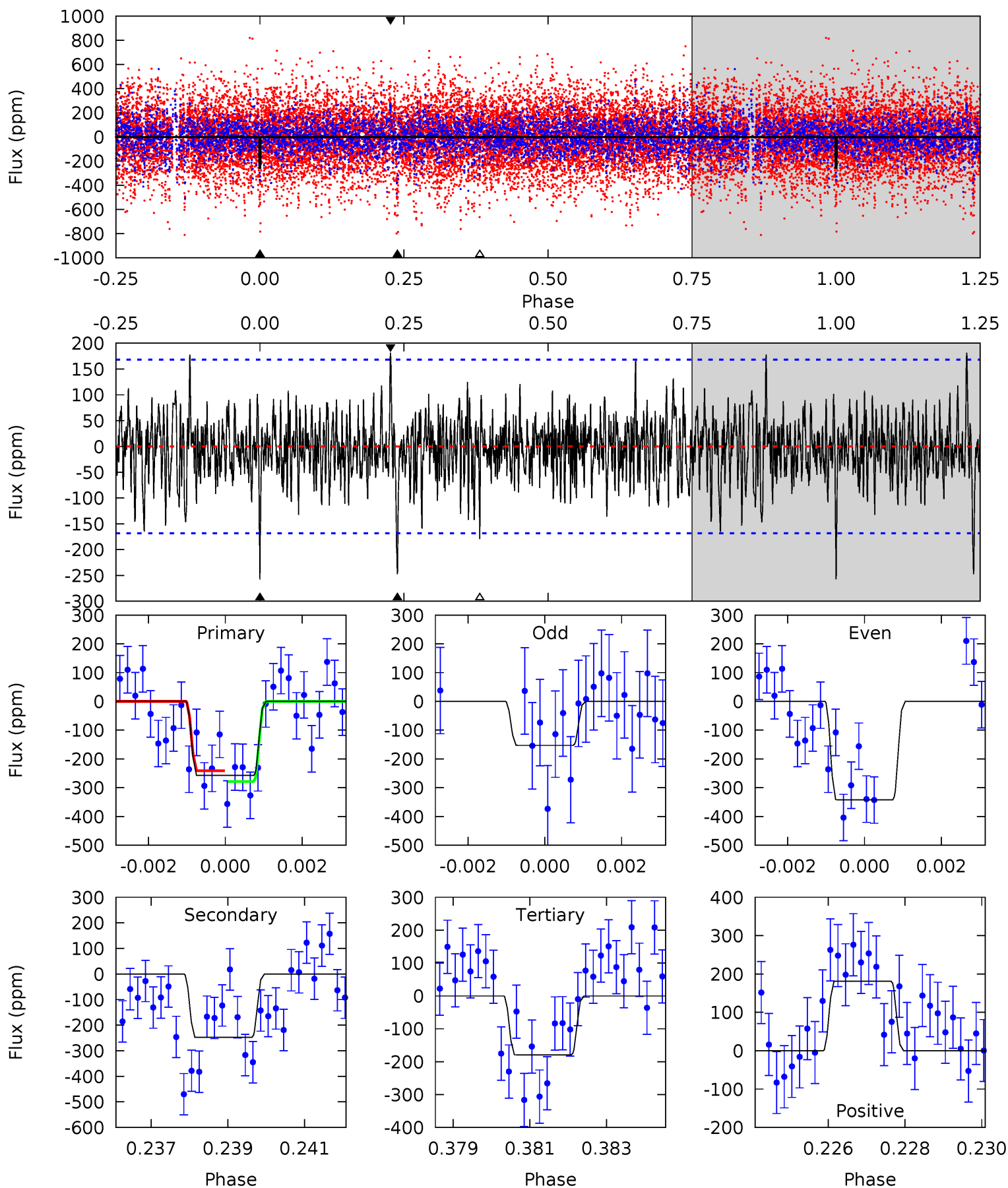
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	5.52	5.42	6.32	5.29	3.03	1.78	6.15	5.25	0.10	-0.80	1.72	0.90	0.35	0.91



Alt Model-Shift Uniqueness Test

008461967-08, P = 113.761179 Days, E = 25.847955 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.13	7.81	5.66	5.72	5.31	3.06	1.53	2.48	2.41	2.16	2.09	2.98	0.97	0.41	0.59



Stellar Parameters For KIC 008461967

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-139 ± 25	$7.53^{+2.29}_{-2.25}$	984^{+68}_{-91}	4871^{+652}_{-469}	378^{+416}_{-158}
Alt.	-248 ± 32	$6.82^{+2.21}_{-2.15}$	985^{+66}_{-95}	5747^{+1011}_{-621}	808^{+848}_{-346}

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

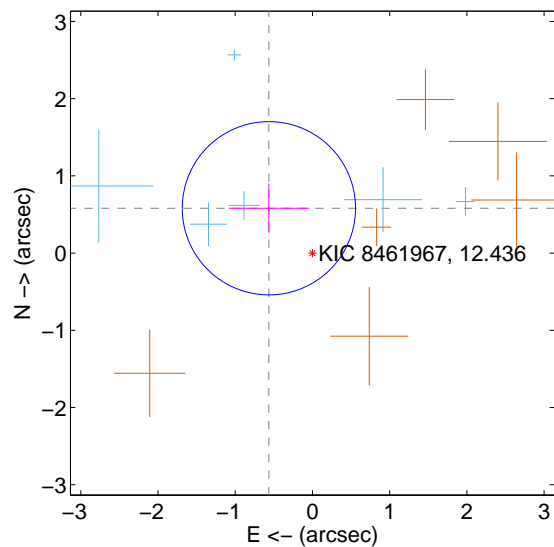
Supplemental centroid analysis for 008461967-08. Kepler magnitude: 12.44. Transit SNR 8.33

There are 6 quarters with good PRF difference image offsets

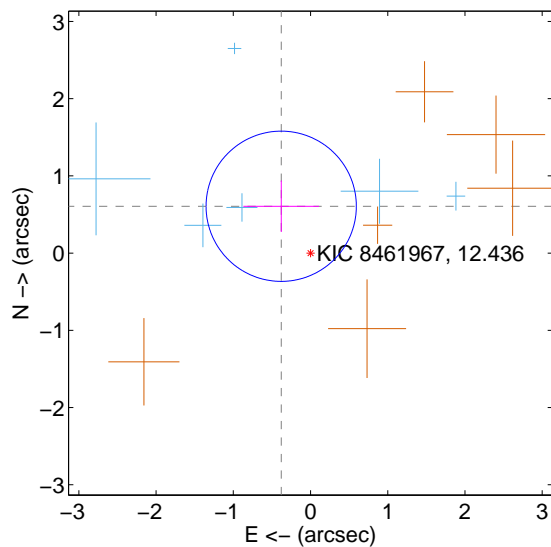
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.810 ± 0.374	2.16	0.564 ± 0.520	0.581 ± 0.320
PRF-fit source offset from KIC position	0.716 ± 0.324	2.21	0.380 ± 0.490	0.607 ± 0.333
photometric centroid source offset	0.77 ± 0.62	1.24	0.64 ± 0.64	0.42 ± 0.56

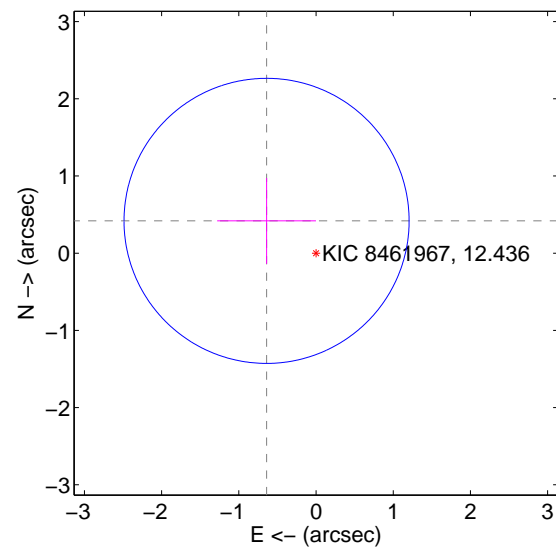
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

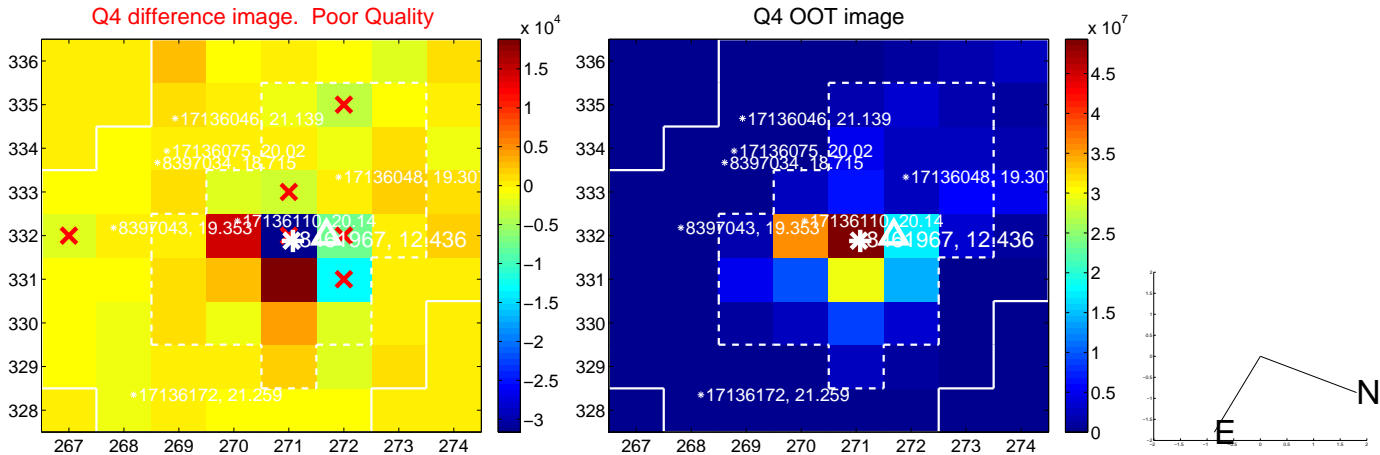
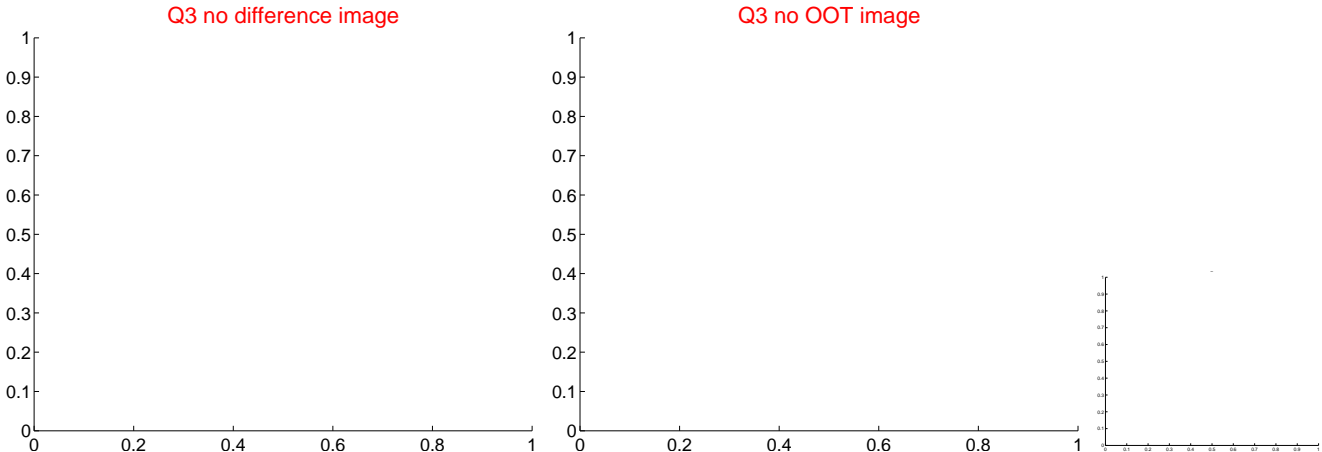
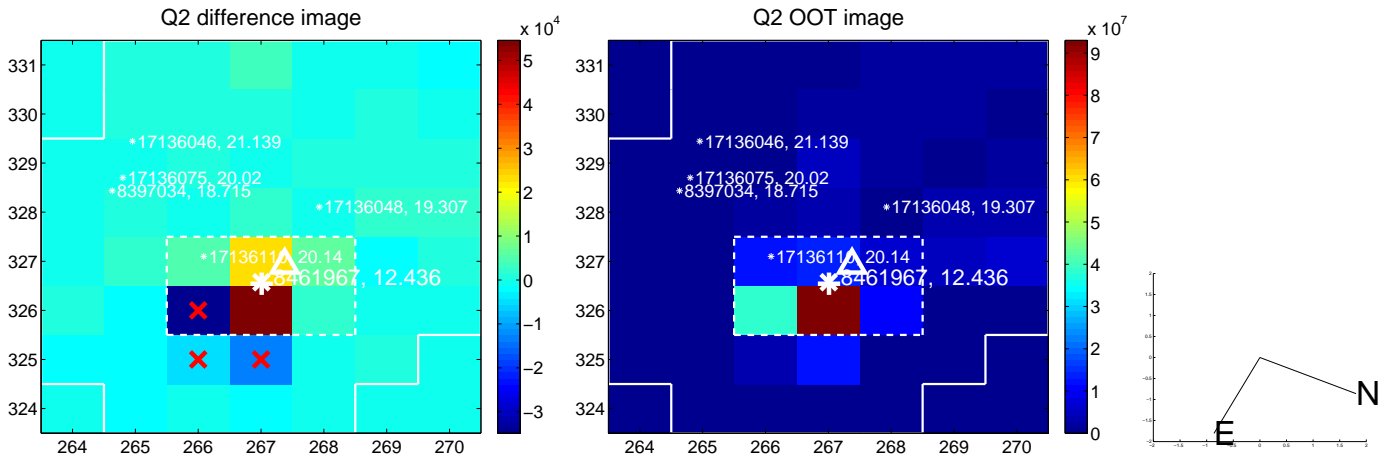
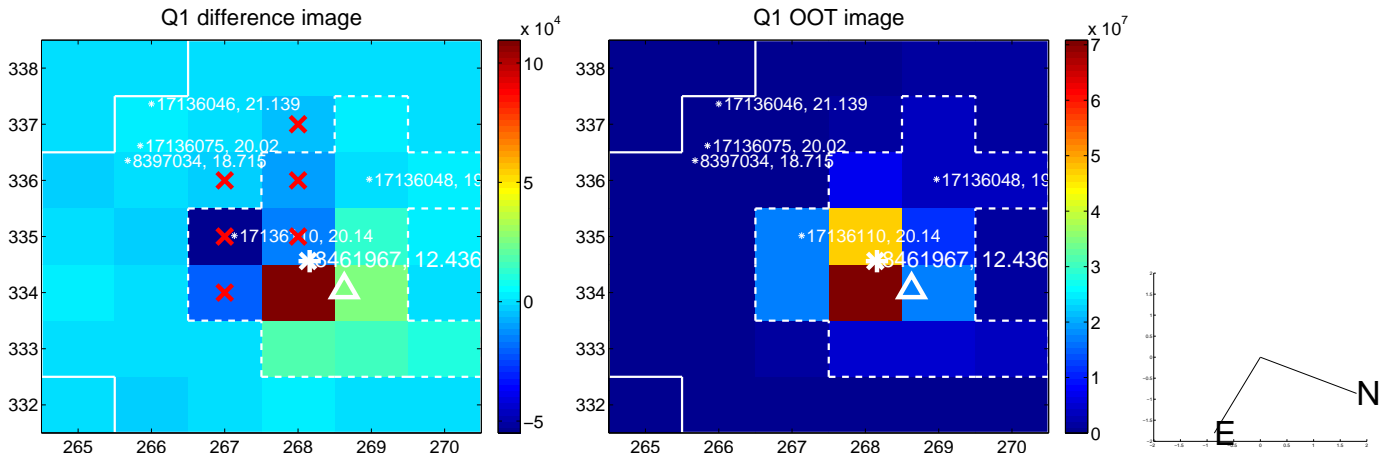


offset from photometric centroids

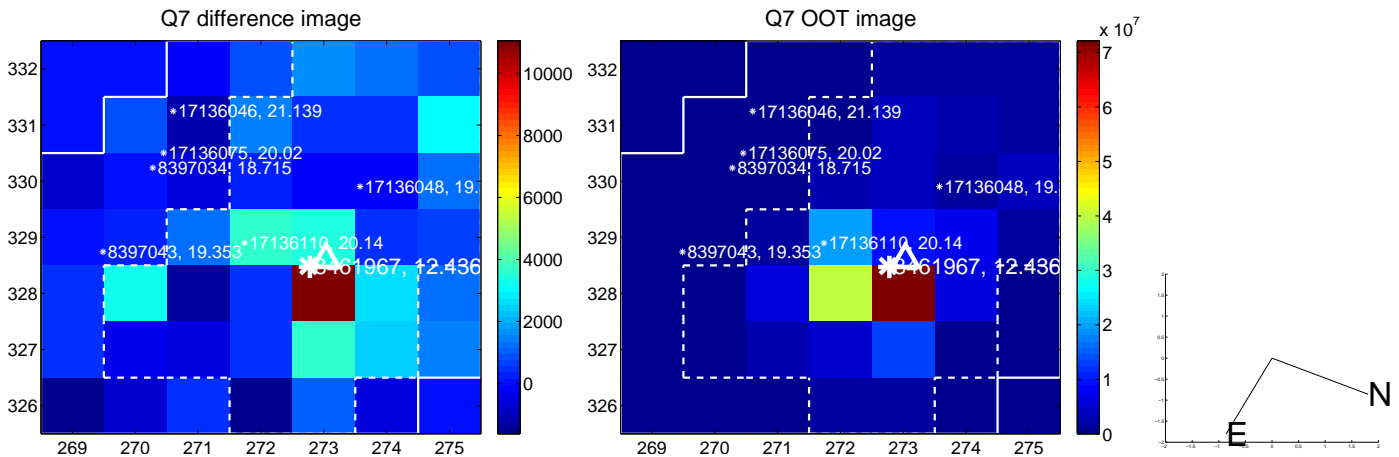
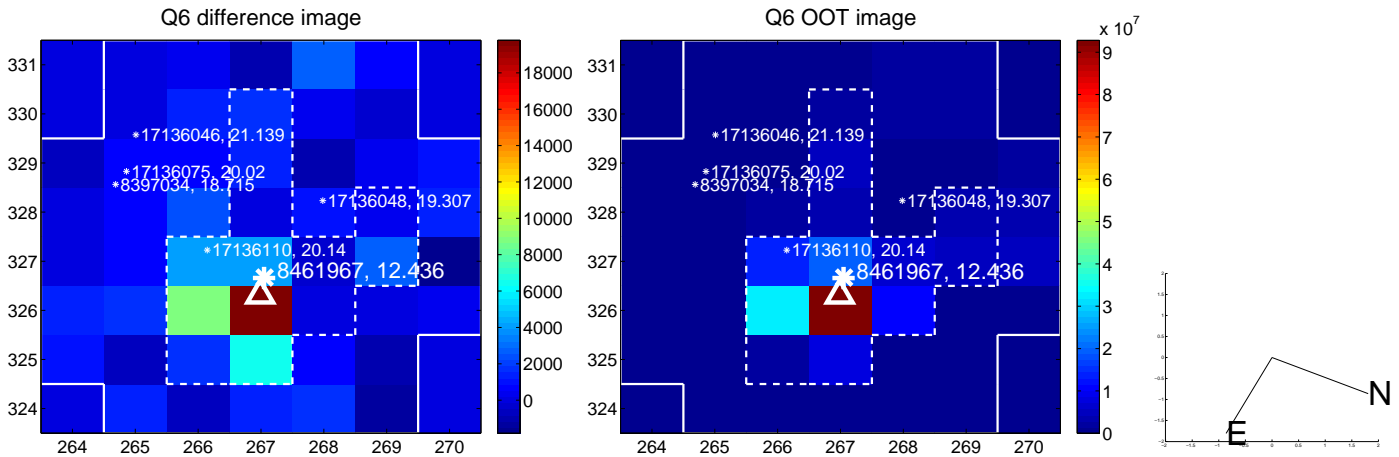
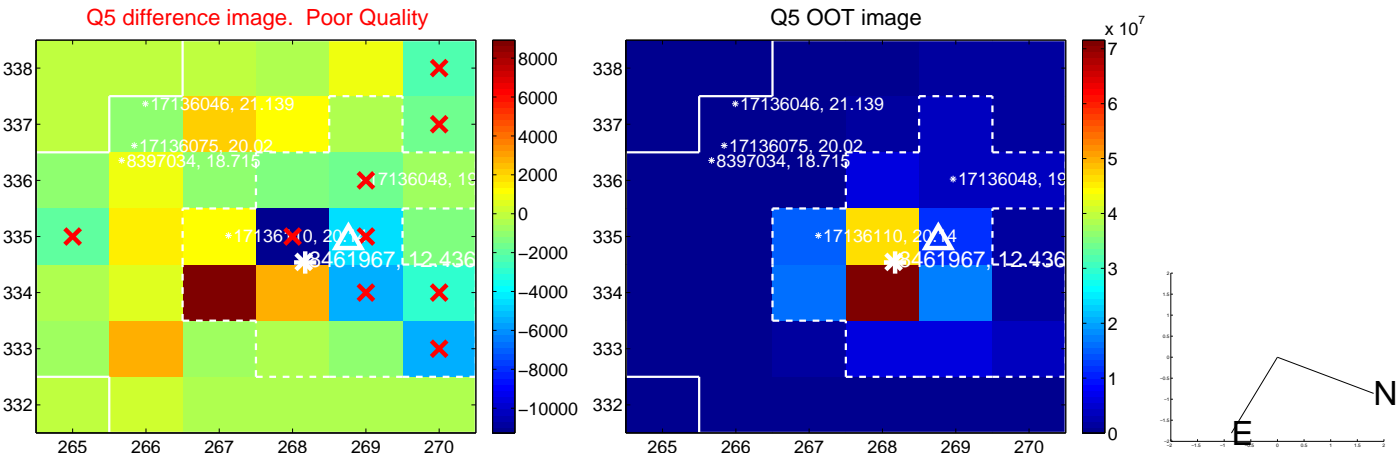


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

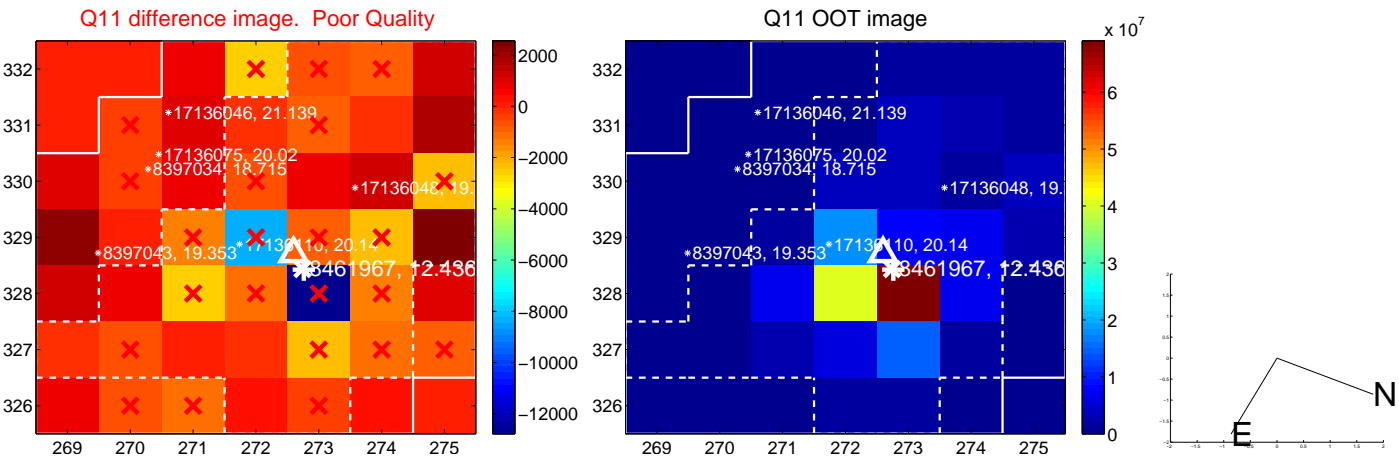
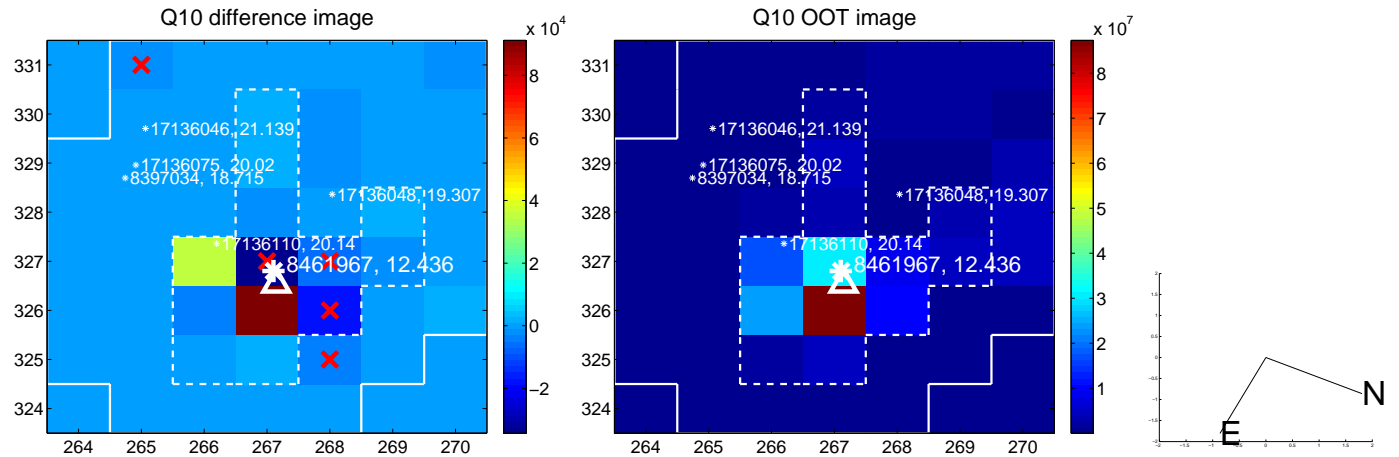
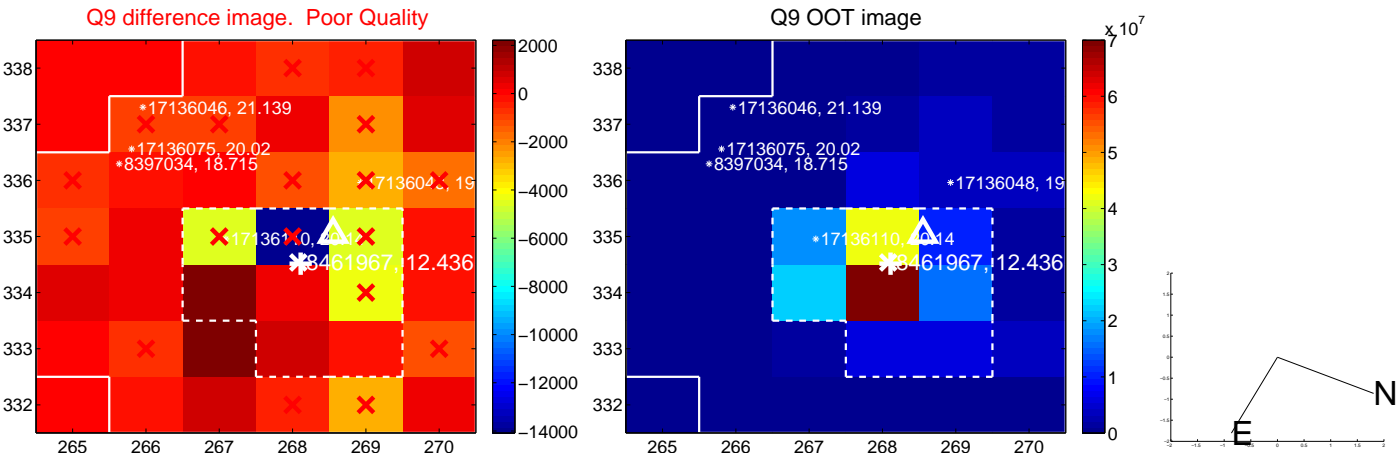
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



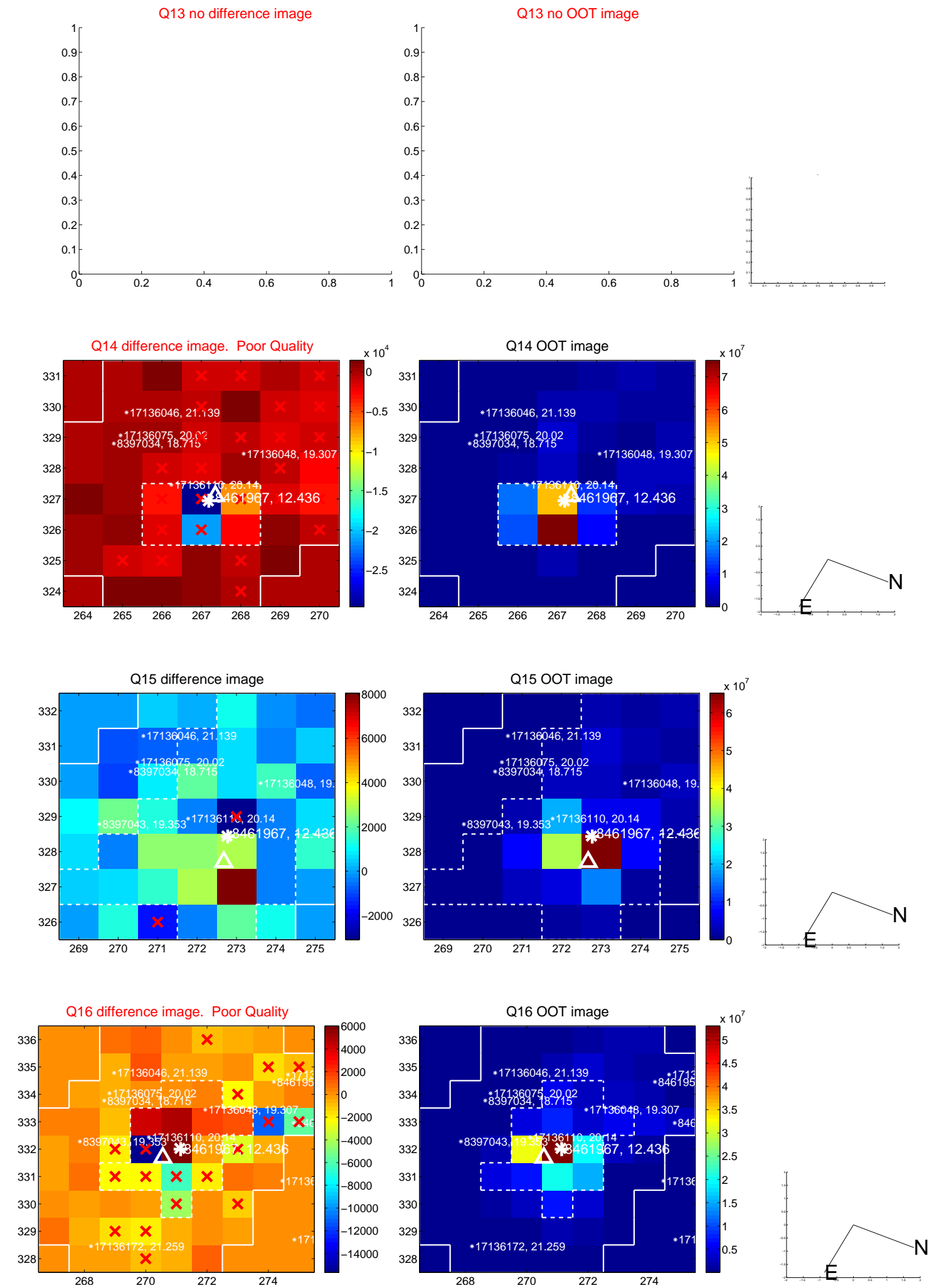
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



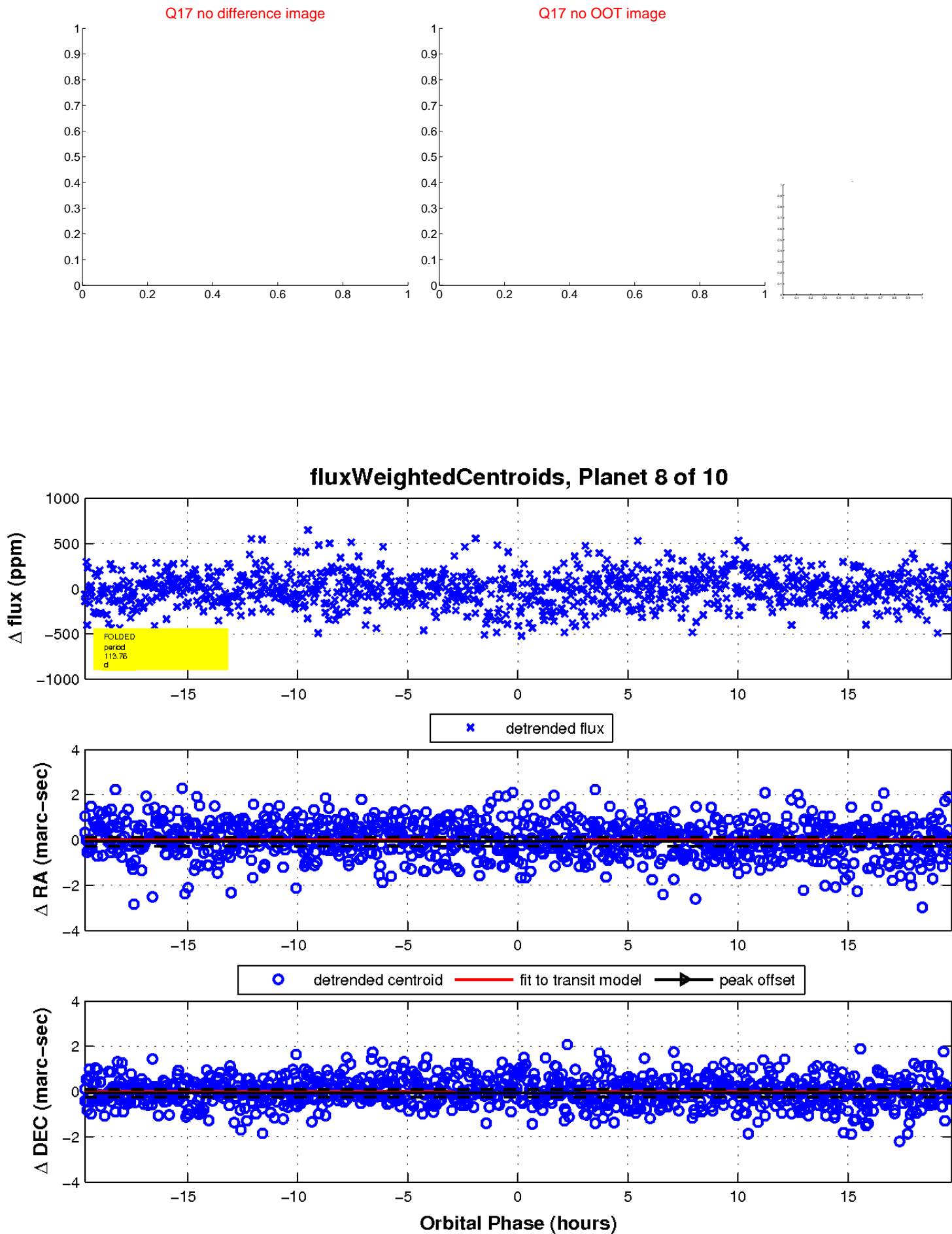
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

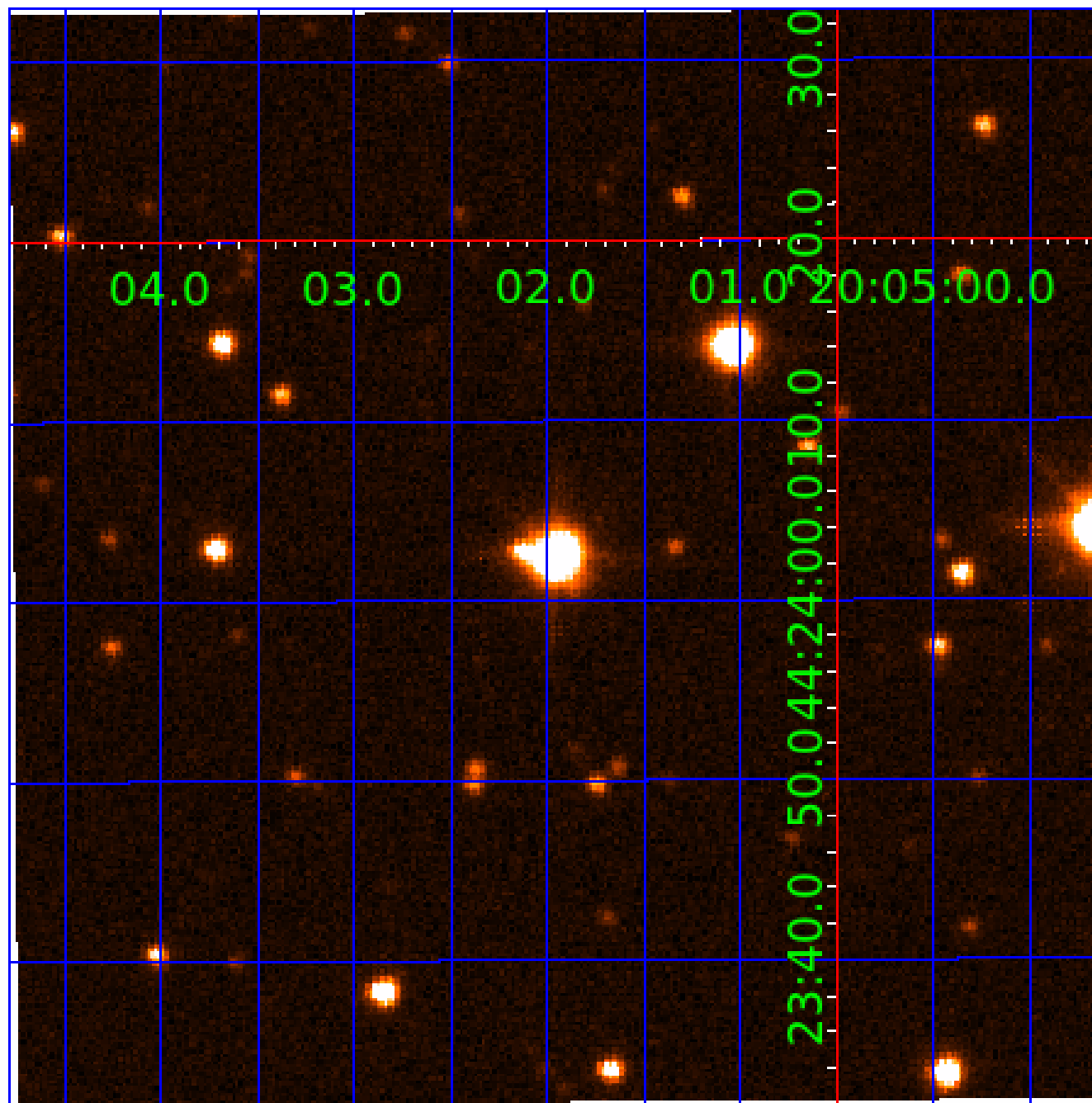


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008461967

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})
008461967-01	OBS	No	1.521666	132.369637	0.0	4.159	11.1	0.0	4.03	5991	0.07	20747.05
008461967-02	OBS	No	1.522001	132.662554	47.0	6.075	10.9	11.5	4.03	5991	4.49	20740.97
008461967-03	OBS	No	226.818718	223.335820	517.1	12.175	9.2	8.0	4.03	5991	11.43	26.25
008461967-04	OBS	No	33.685215	150.767681	201.9	4.893	9.5	8.6	4.03	5991	6.75	333.78
008461967-05	OBS	No	113.853229	236.091319	495.9	6.424	8.5	8.5	4.03	5991	17.51	65.80
008461967-06	OBS	No	110.195951	231.169028	396.9	5.248	8.8	9.2	4.03	5991	10.51	68.73
008461967-07	OBS	No	58.183689	156.918725	280.5	3.132	8.0	7.8	4.03	5991	8.04	161.06
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008461967-09	OBS	No	91.399375	147.184635	174.1	13.803	7.6	6.4	4.03	5991	6.25	88.20
008461967-10	OBS	No	64.753816	162.454167	210.8	7.326	8.4	7.8	4.03	5991	6.67	139.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008461967-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

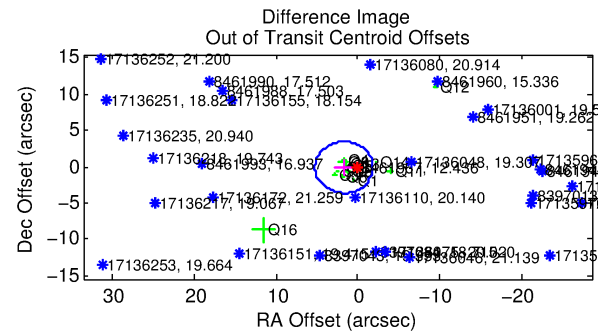
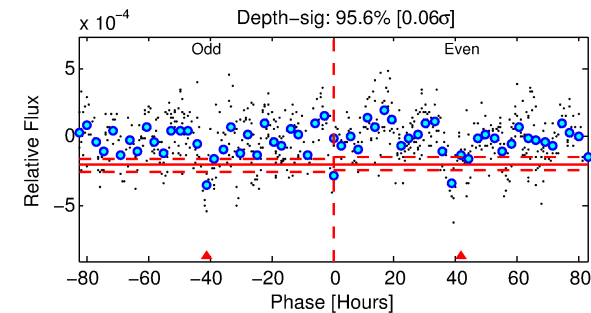
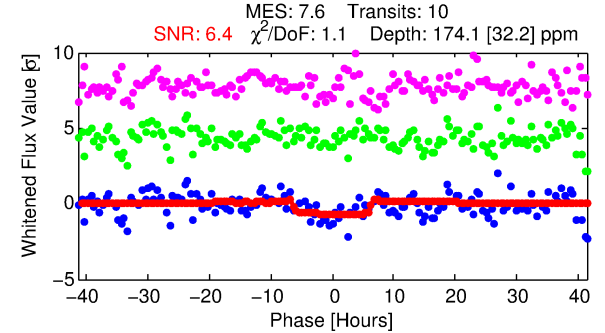
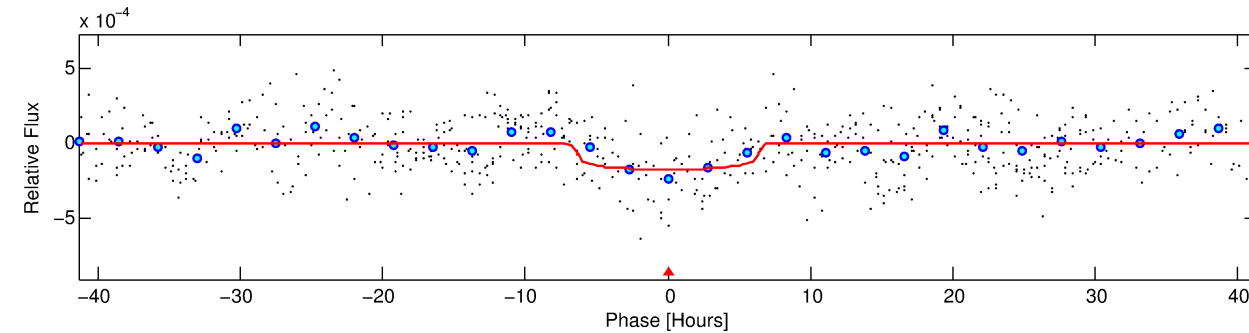
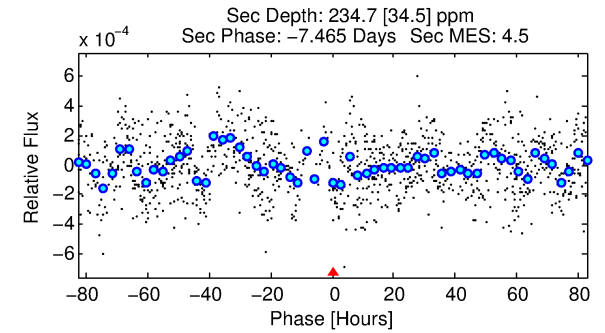
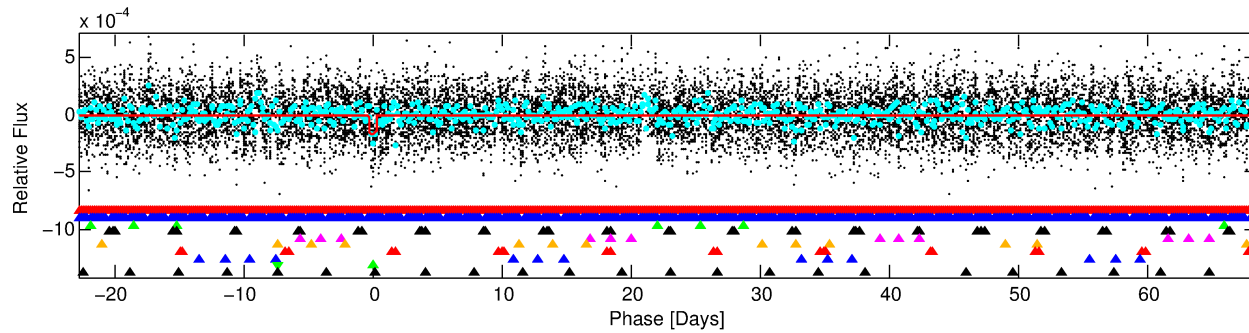
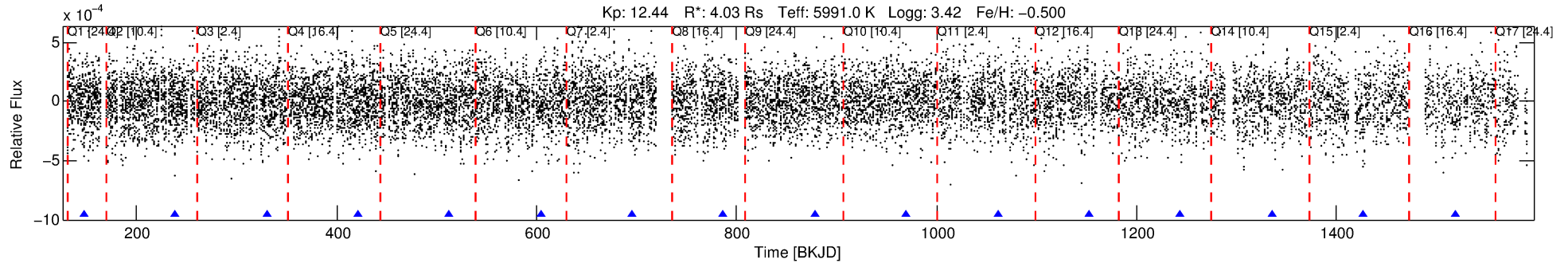
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-09

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 9 of 10 Period: 91.399 d



DV Fit Results:

Period = 91.39937 [0.01303] d
Epoch = 147.1846 [0.0914] BKJD
Rp/R* = 0.0142 [0.0033]
a/R* = 23.67 [24.64]
b = 0.90 [0.25]
Self = 88.20 [53.45]
Teff = 781 [118] K
Rp = 6.25 [3.00] Re
a = 0.4615 [0.1761] AU
Ag = 705.04 [537.27] [1.31σ]
Teffp = 6226 [787] K [6.84σ]

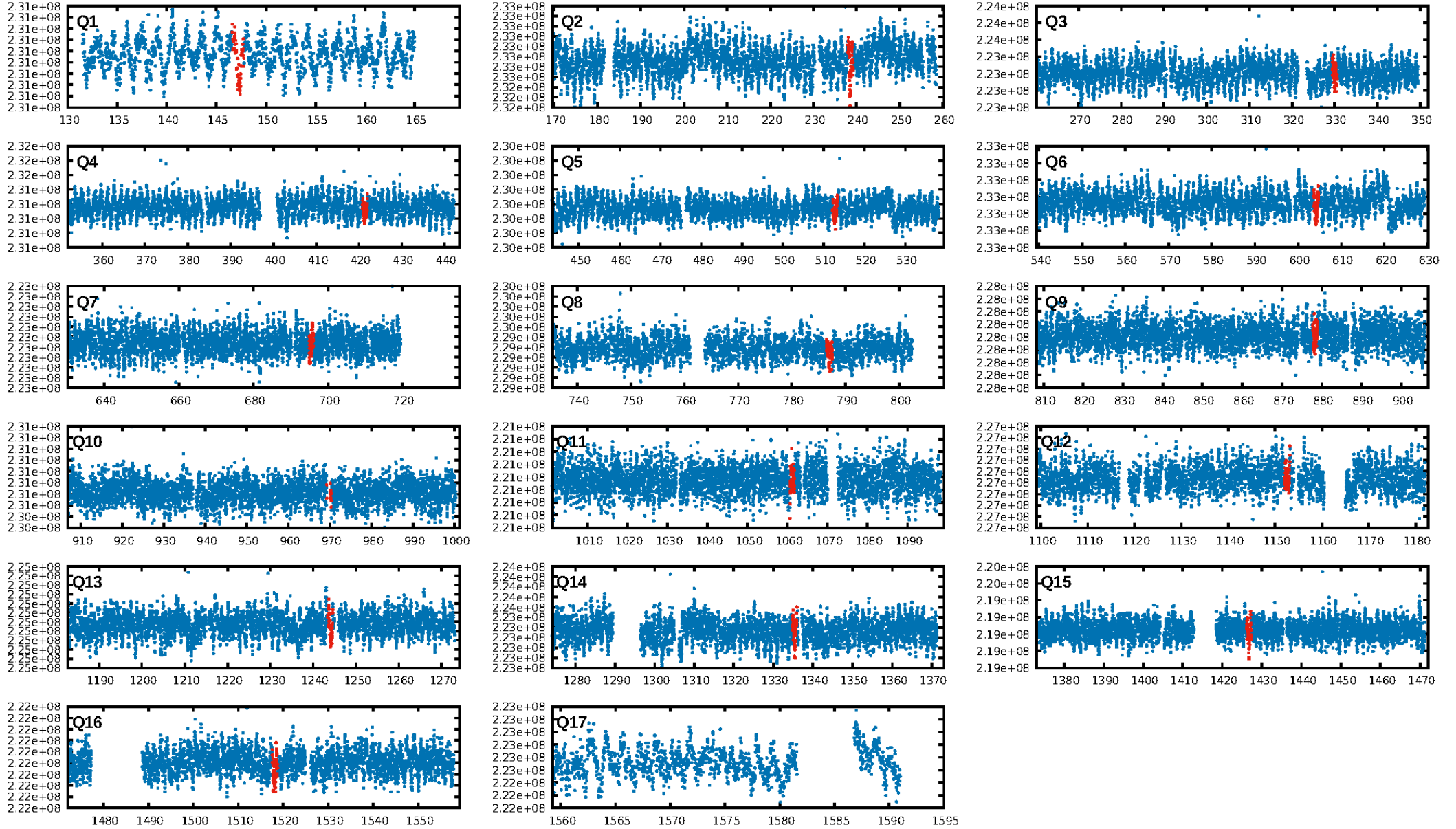
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.92σ]
LongPeriod-sig: 100.0% [30.55σ]
ModelChiSquare2-sig: 6.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 4.658
Centroid-sig: 0.0%
Centroid-so: 1.956 arcsec [2.66σ]
OotOffset-rm: 1.742 arcsec [1.47σ]
KicOffset-rm: 1.795 arcsec [1.57σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 0.00 [0/15]

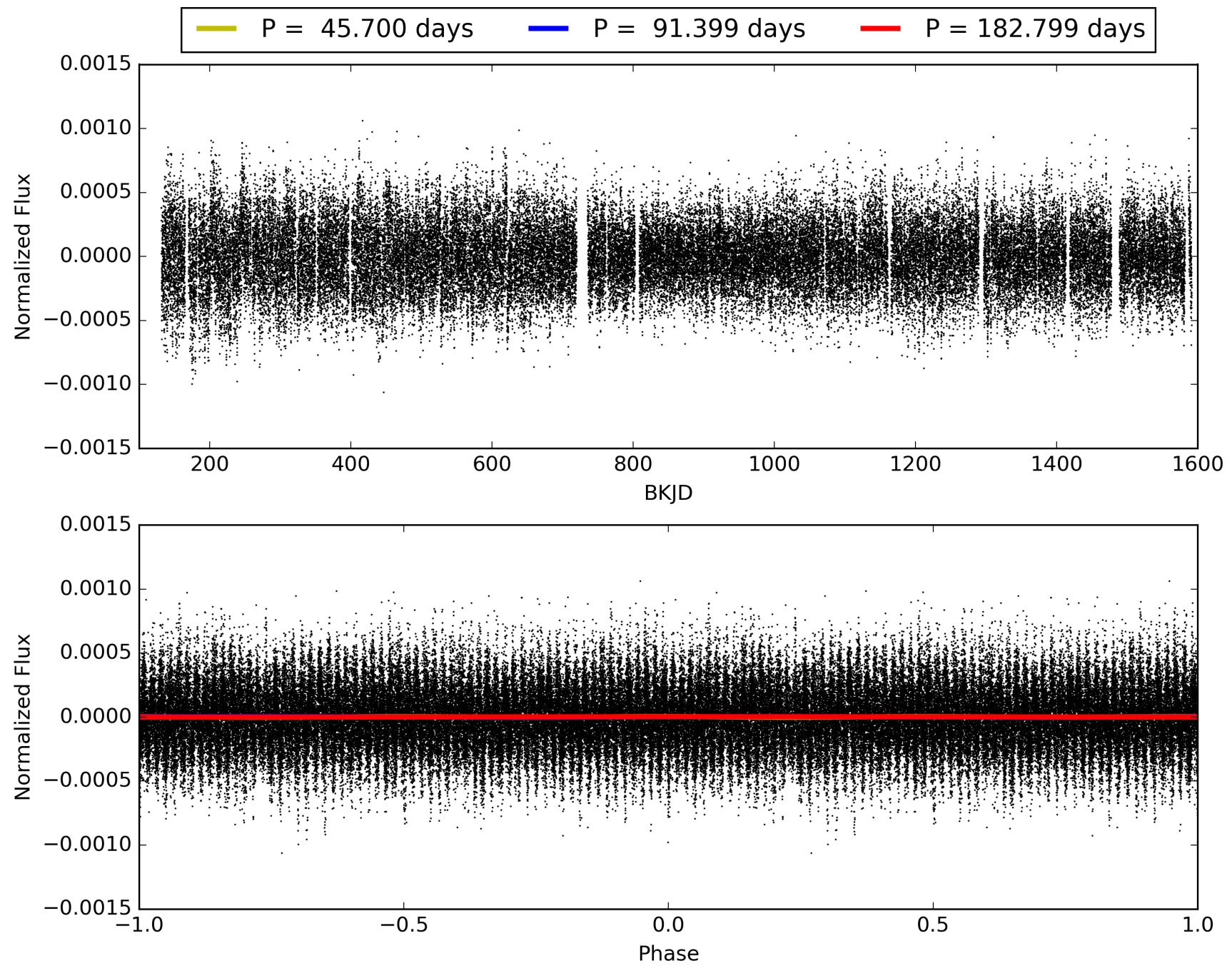
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:46:23 Z

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

TCE 008461967-09, PDC Light Curves

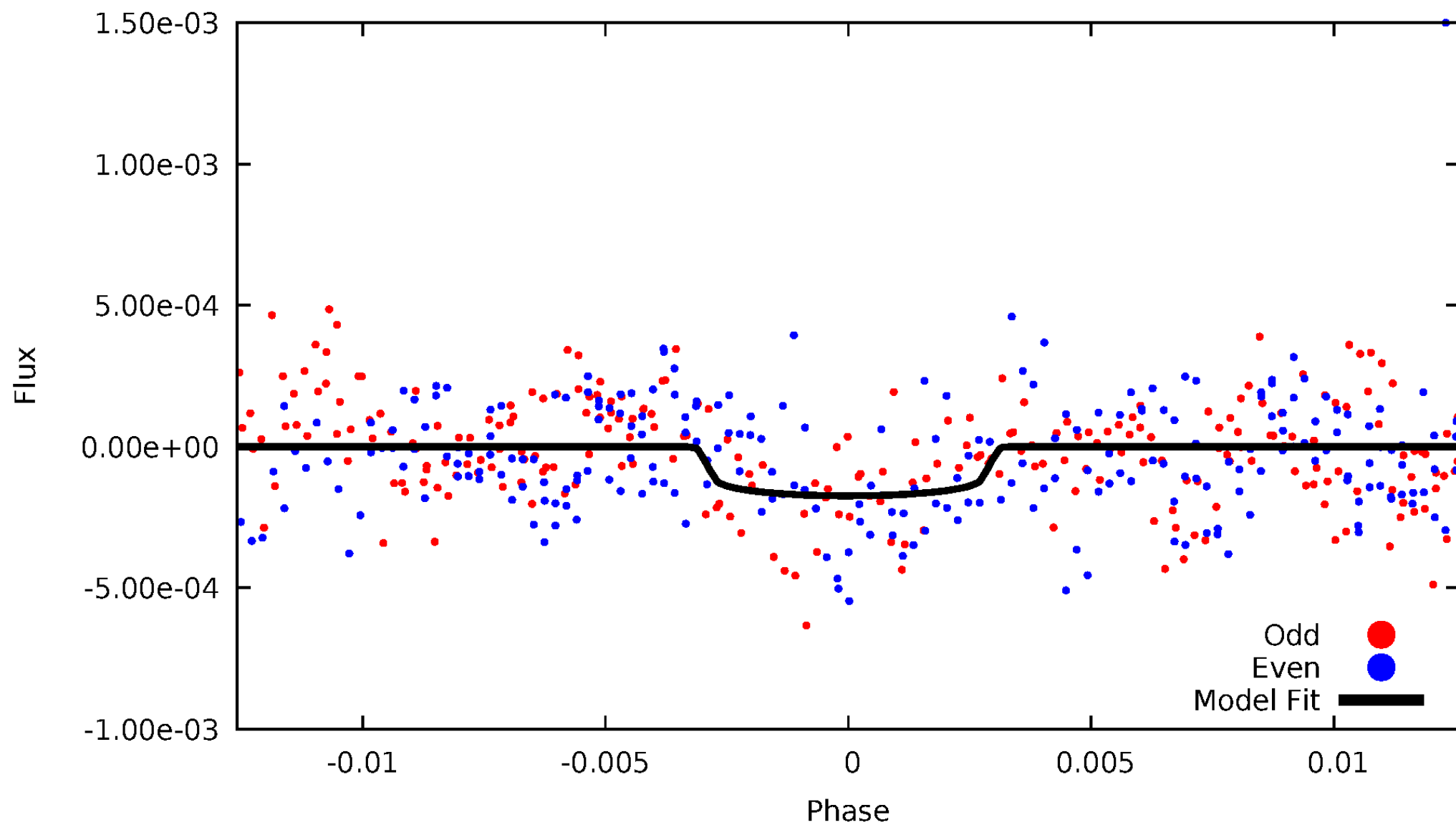


TCE 008461967-09



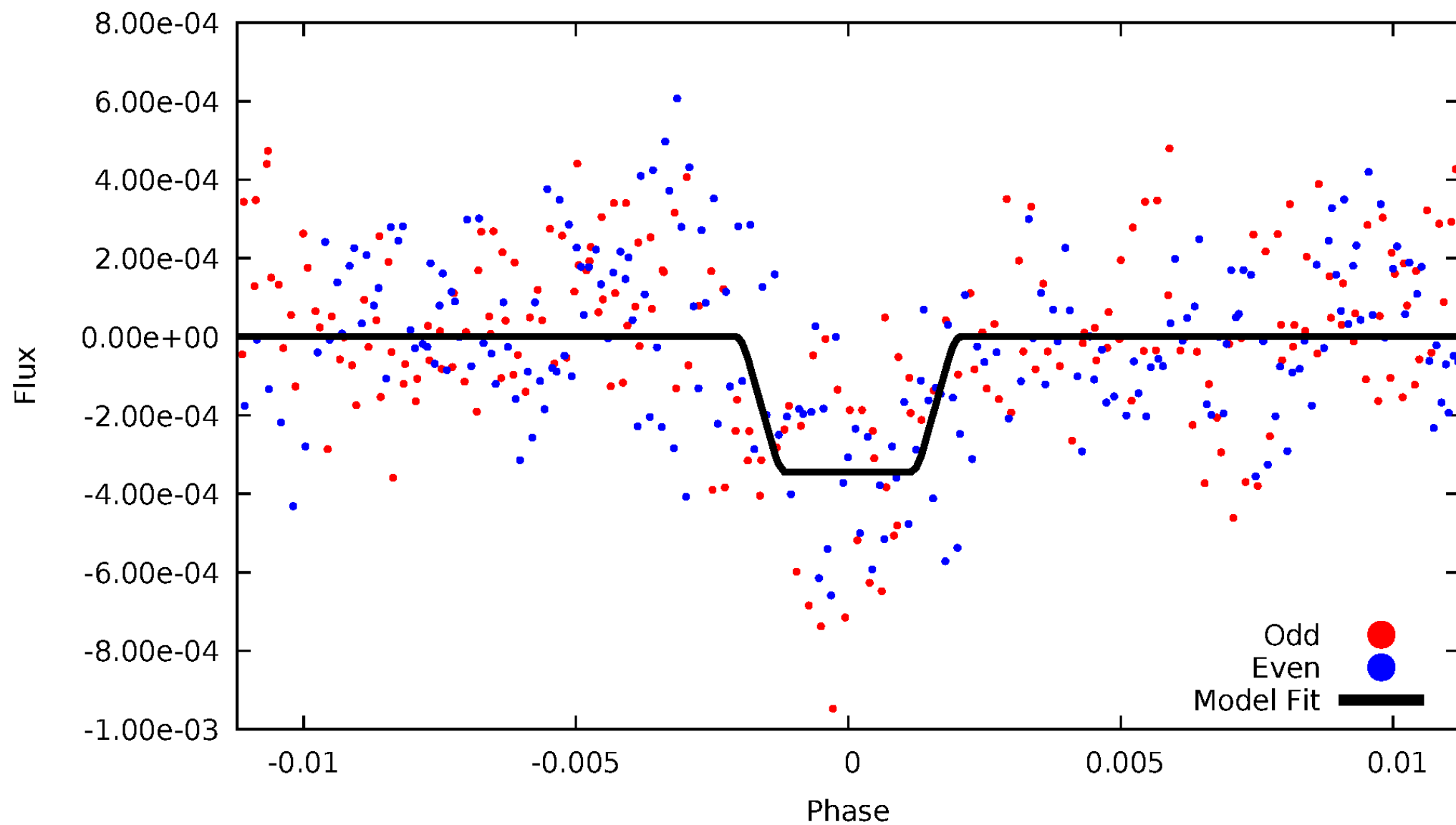
DV Odd/Even

TCE 008461967-09

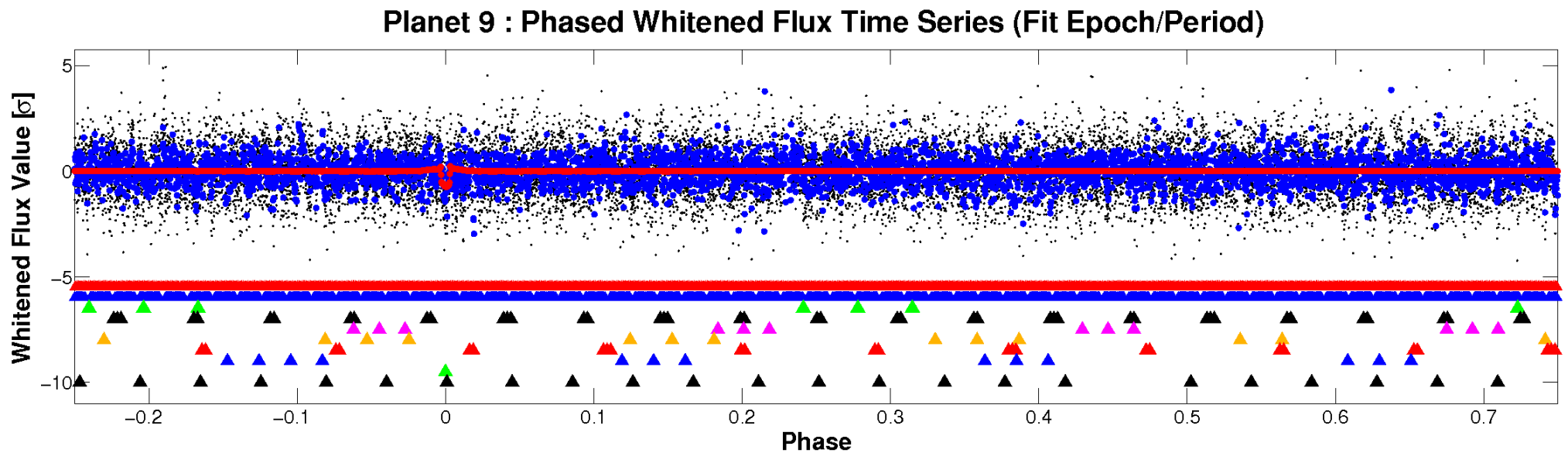
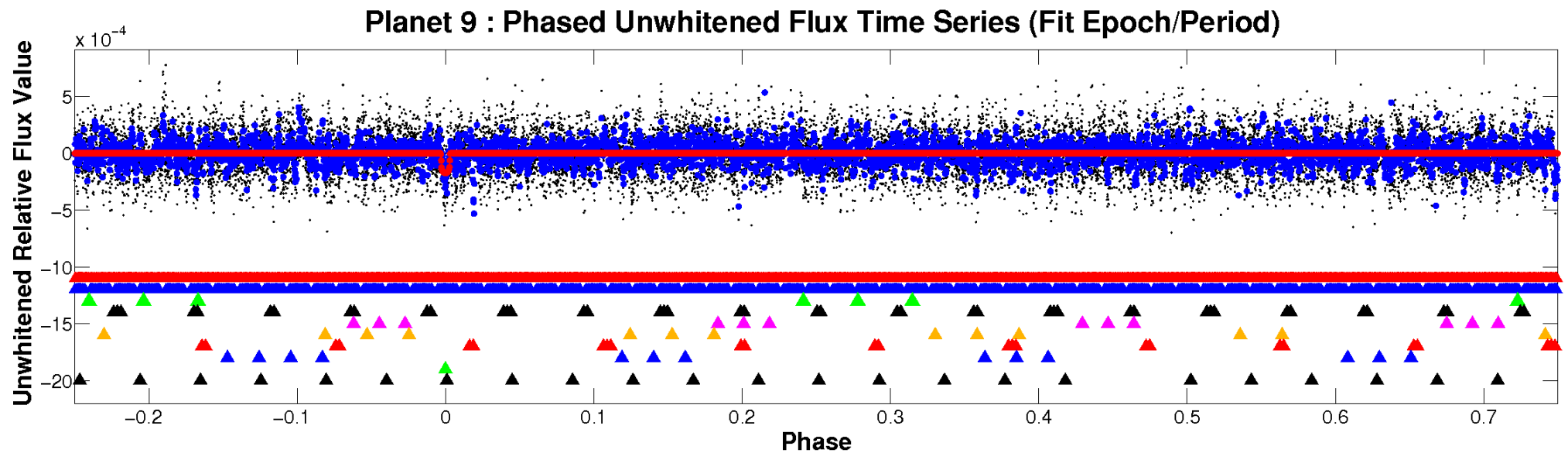


ALT Odd/Even

TCE 008461967-09

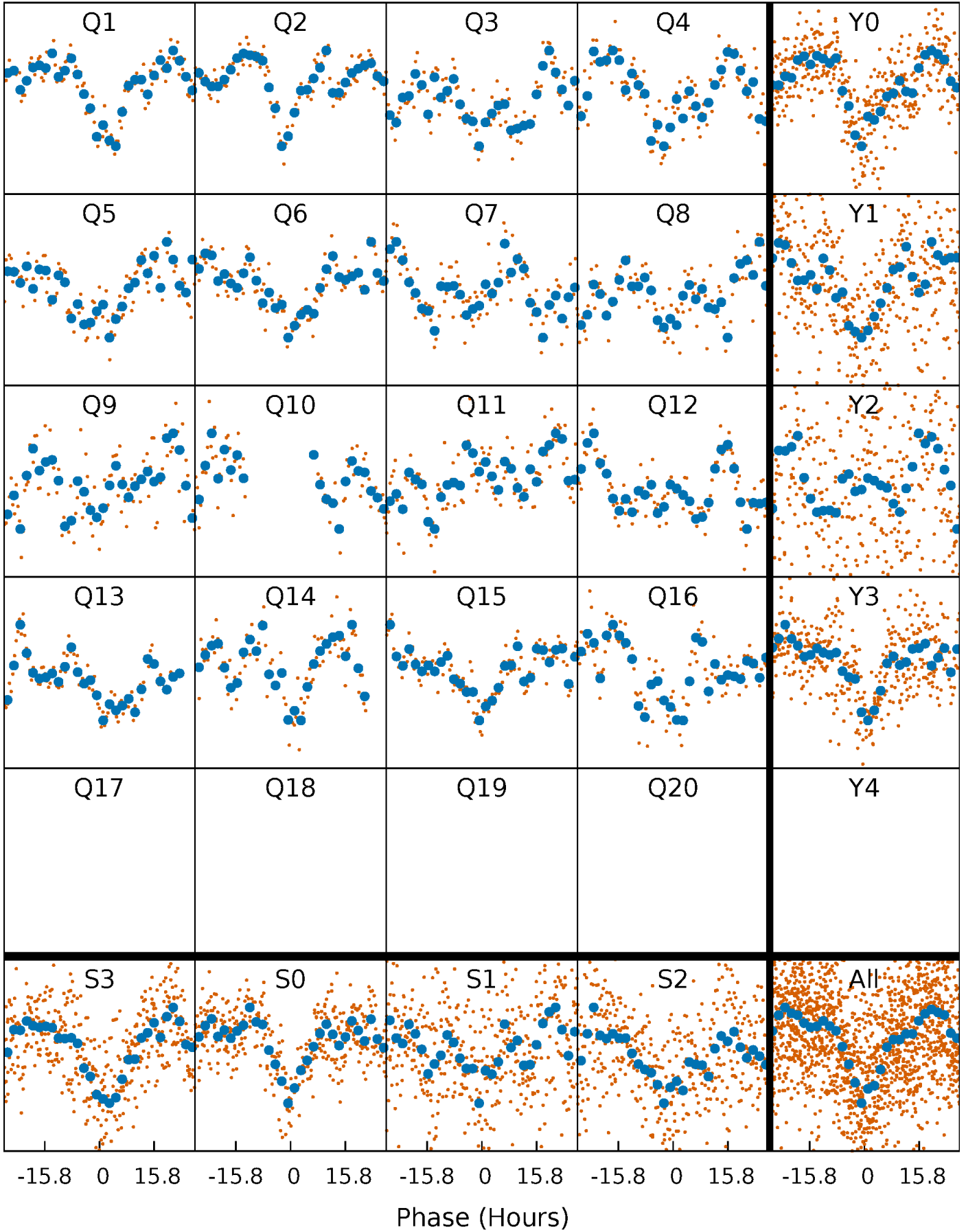


Non-Whitened Vs. Whitened Light Curve



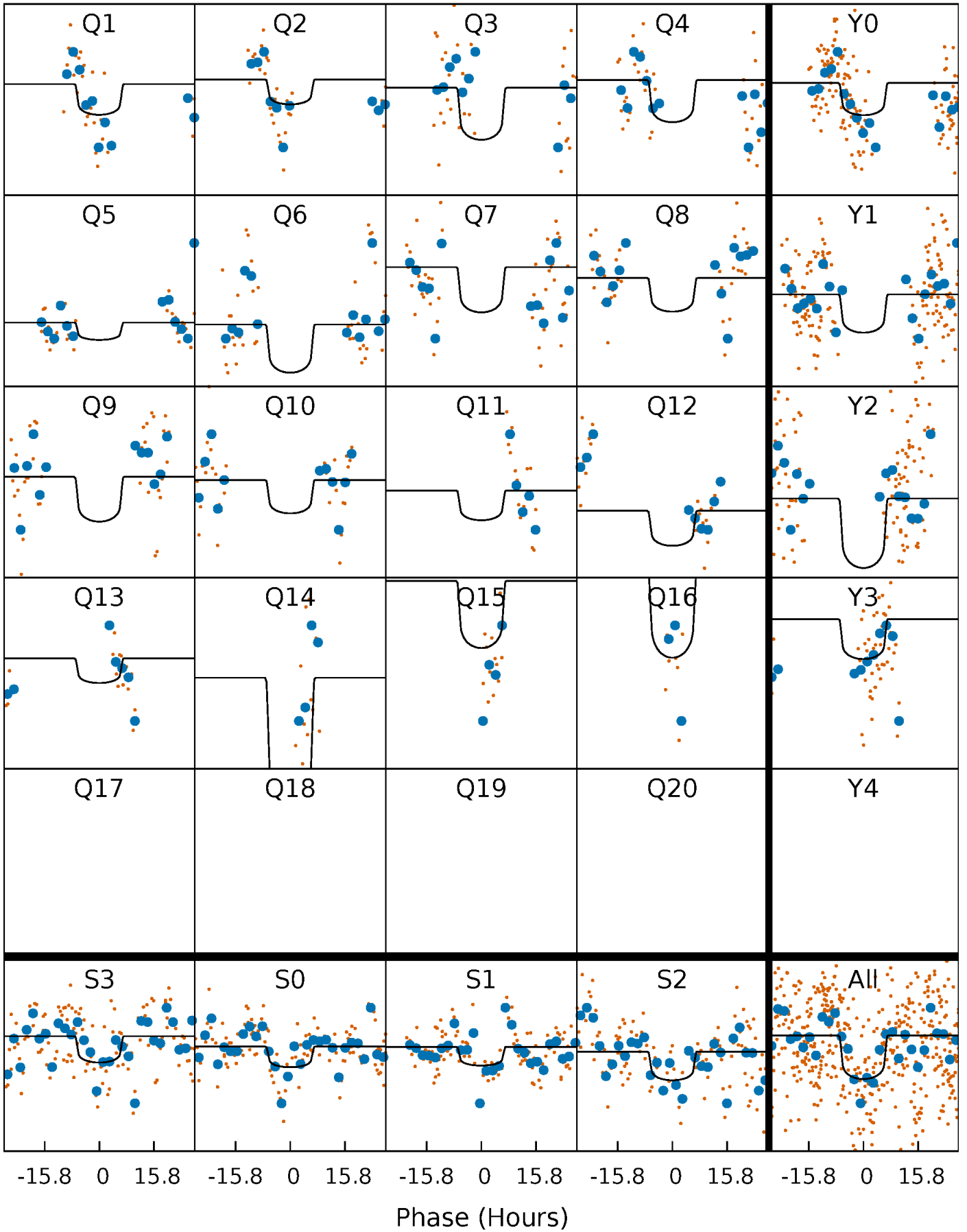
PDC Quarter-Phased Transit Curves

TCE 008461967-09 P= 91.399375 Days $T_0=147.184635$ (BKJD)



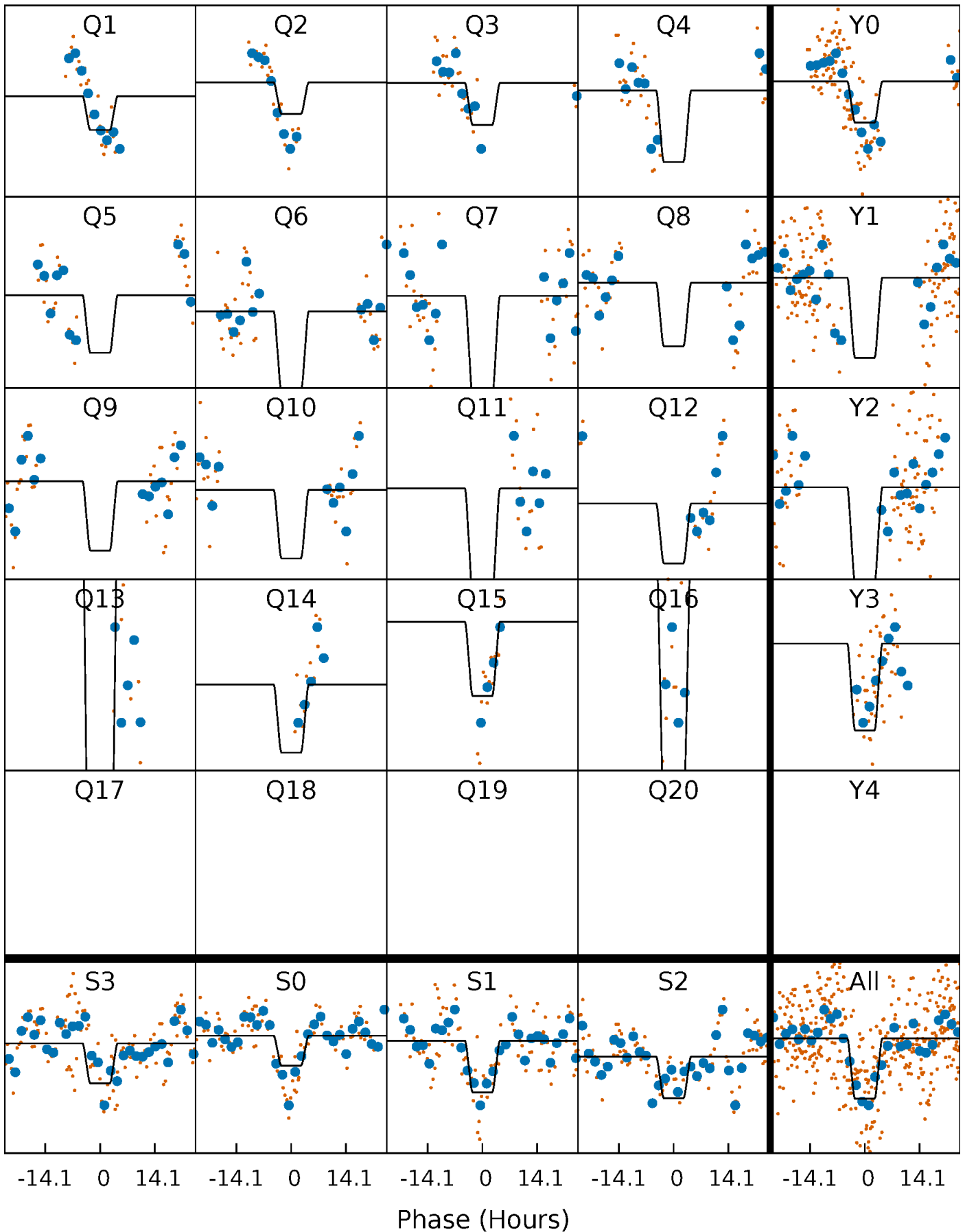
DV Quarter-Phased Transit Curves

TCE 008461967-09 P= 91.399375 Days $T_0=147.184635$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

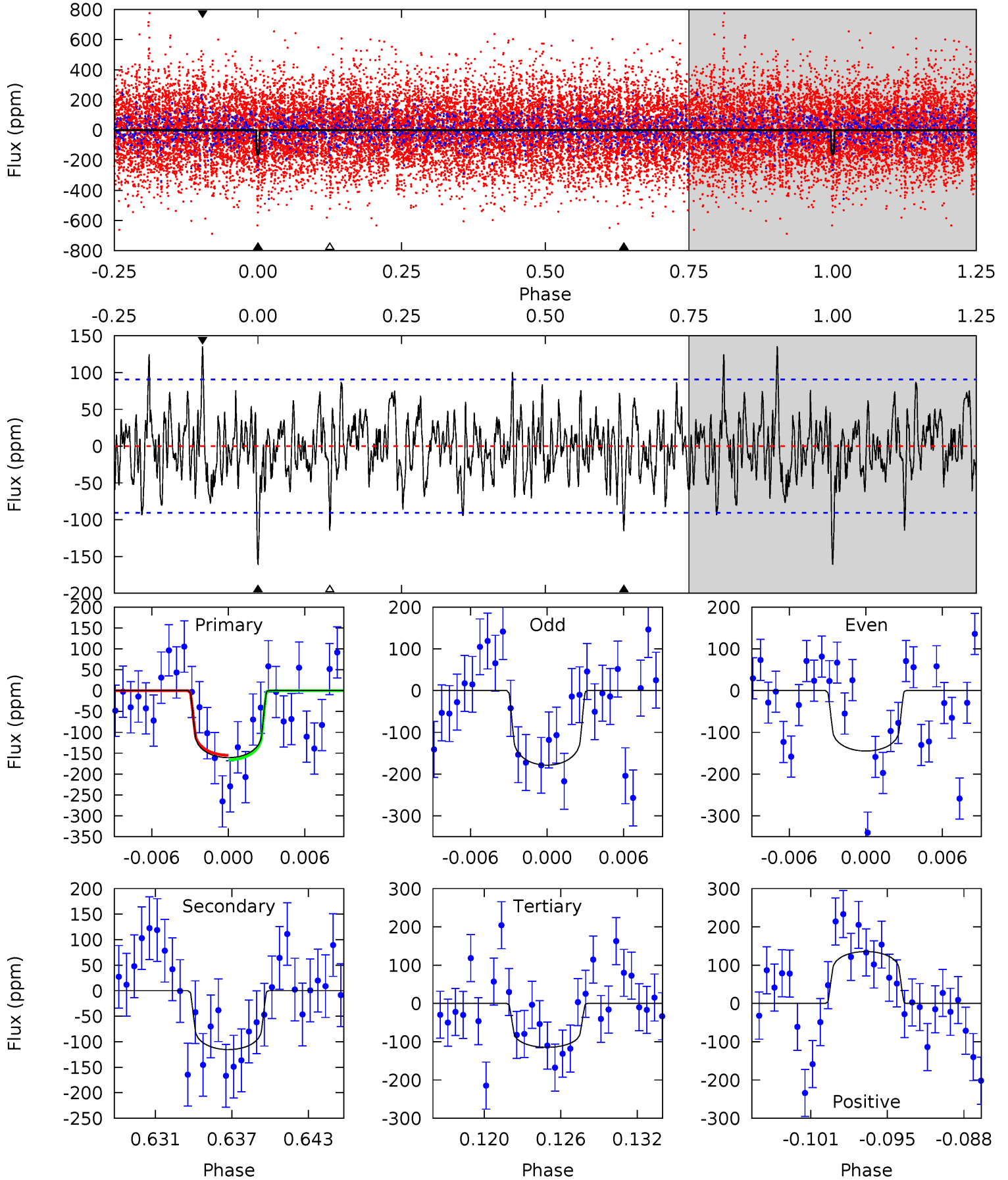
TCE 008461967-09 P= 91.405865 Days $T_0=147.124476$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-09, P = 91.399375 Days, E = 55.785260 Days

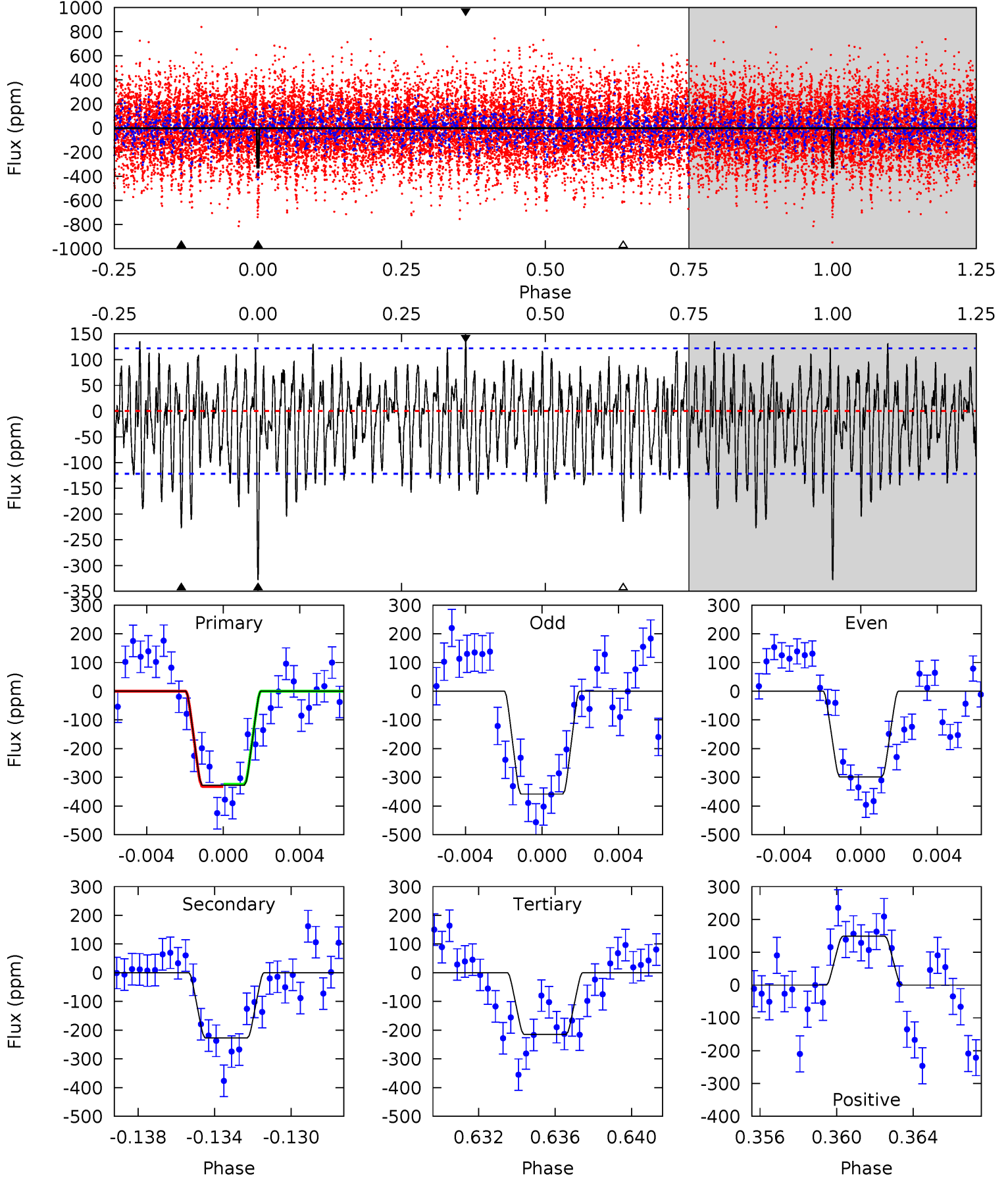
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.06	6.51	6.46	7.65	5.11	2.73	1.97	2.60	1.41	0.05	-1.14	0.96	0.99	0.46	0.32



Alt Model-Shift Uniqueness Test

008461967-09, P = 91.405865 Days, E = 55.718611 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	9.69	9.15	6.34	5.19	2.86	2.85	4.84	7.64	0.53	3.34	1.26	1.15	0.31	0.16



Stellar Parameters For KIC 008461967

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-115 ± 18	$5.71^{+1.82}_{-1.71}$	1059^{+74}_{-113}	5248^{+679}_{-489}	404^{+382}_{-173}
Alt.	-227 ± 23	$7.41^{+2.03}_{-1.85}$	1062^{+69}_{-114}	5442^{+587}_{-447}	473^{+346}_{-173}

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 $A_{obs} \gg 1.0$

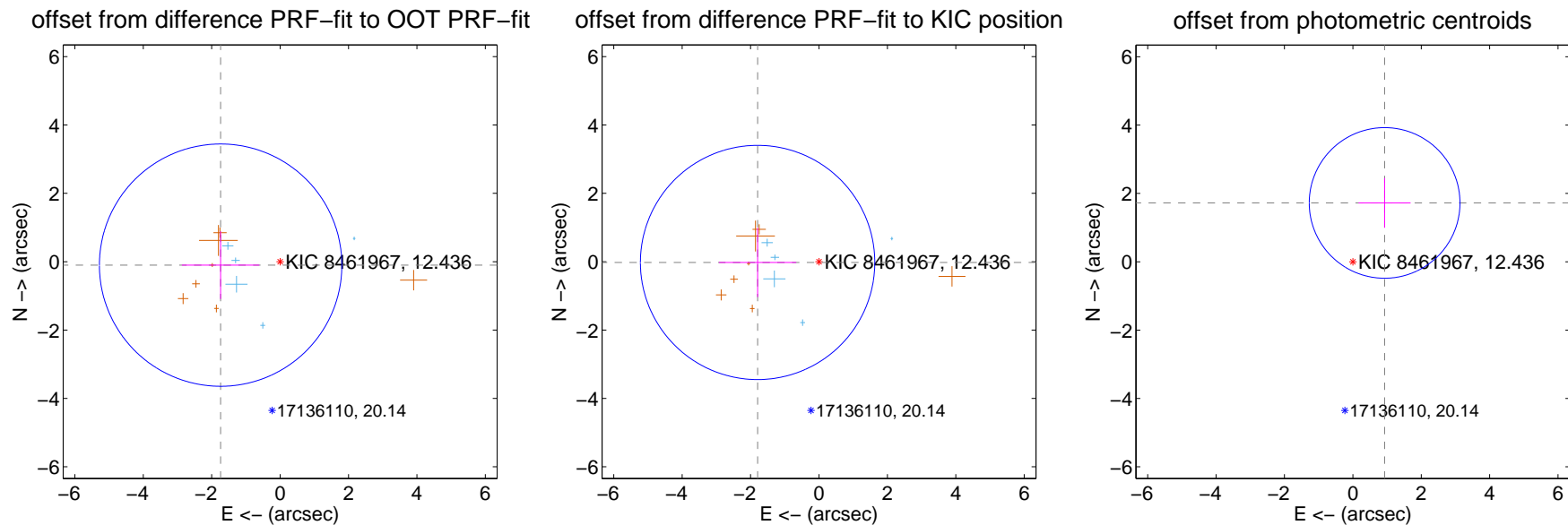
DV Centroid Data

Supplemental centroid analysis for 008461967-09. Kepler magnitude: 12.44. Transit SNR 6.36

There are 6 quarters with good PRF difference image offsets

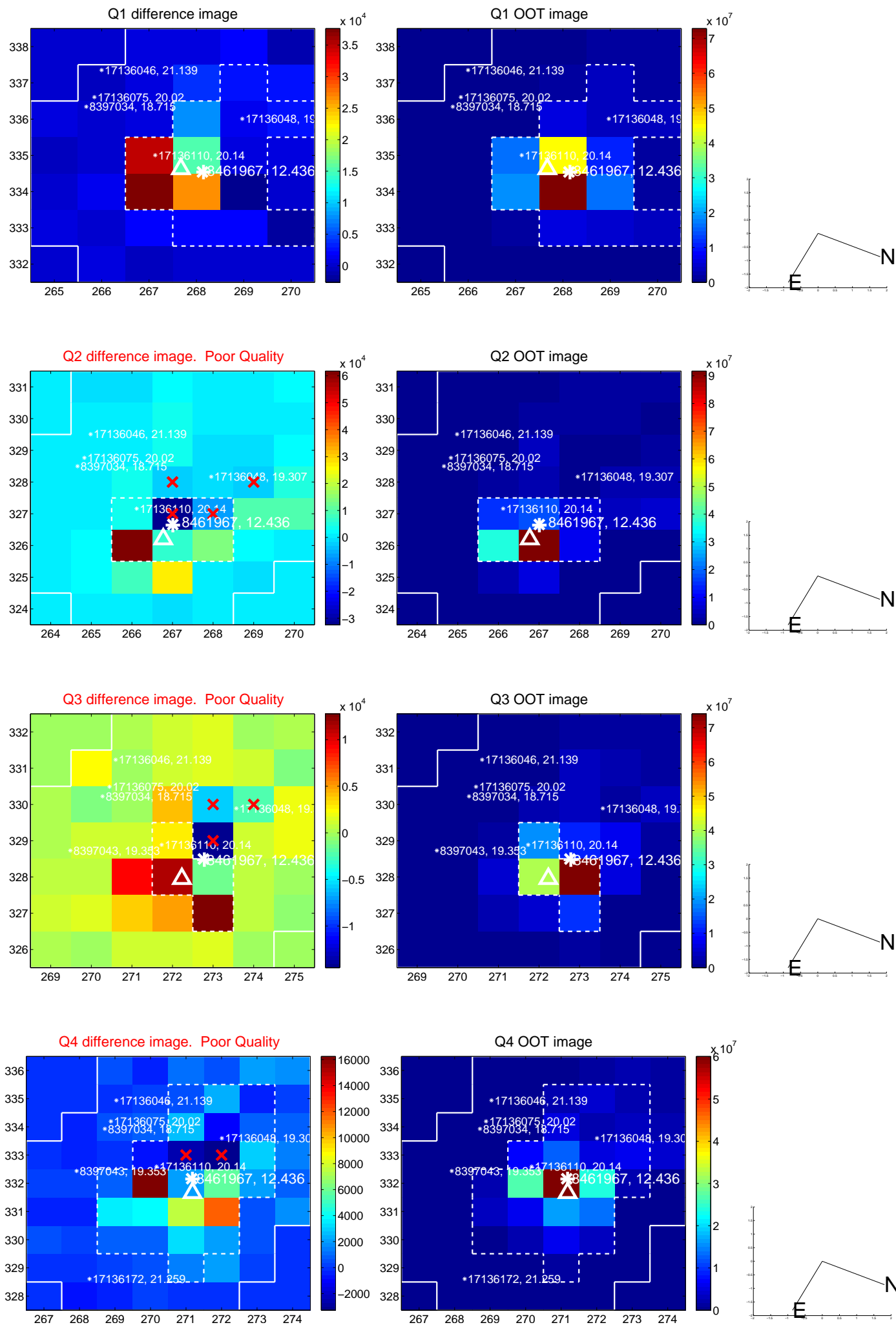
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.742 ± 1.181	1.47	1.739 ± 1.132	-0.101 ± 0.989
PRF-fit source offset from KIC position	1.795 ± 1.142	1.57	1.795 ± 1.131	-0.022 ± 1.011
photometric centroid source offset	1.96 ± 0.73	2.66	-0.93 ± 0.76	1.72 ± 0.73

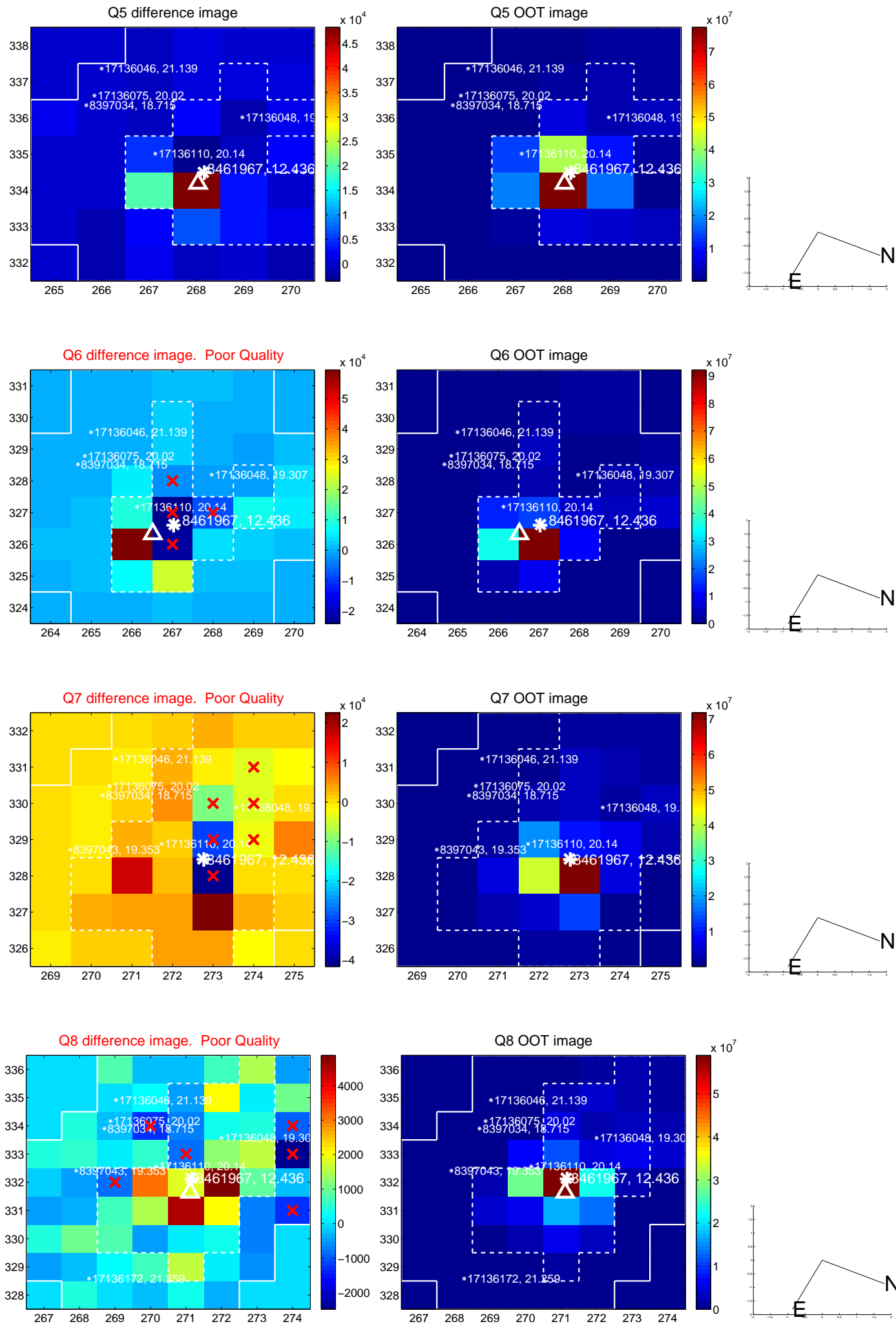


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

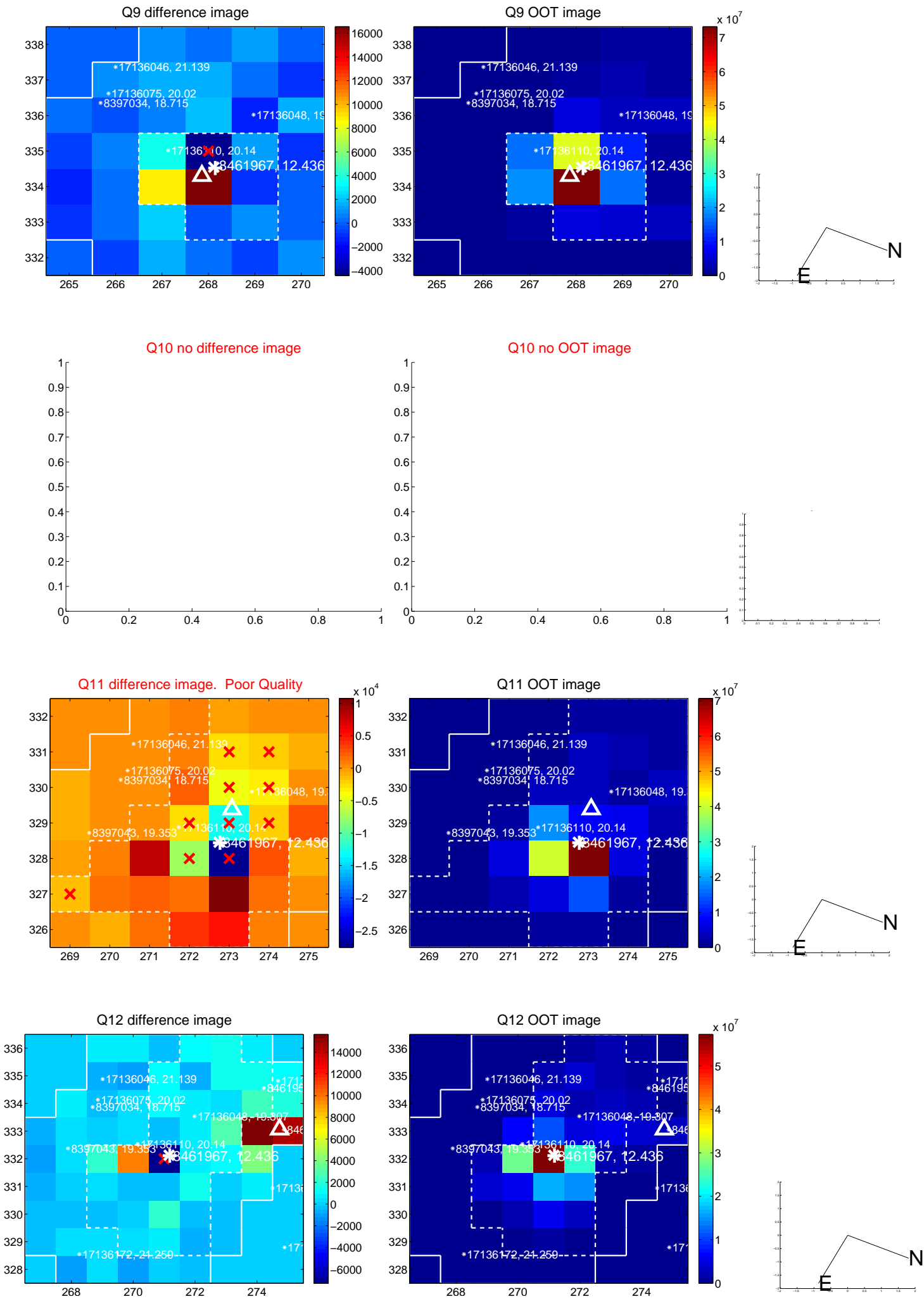
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



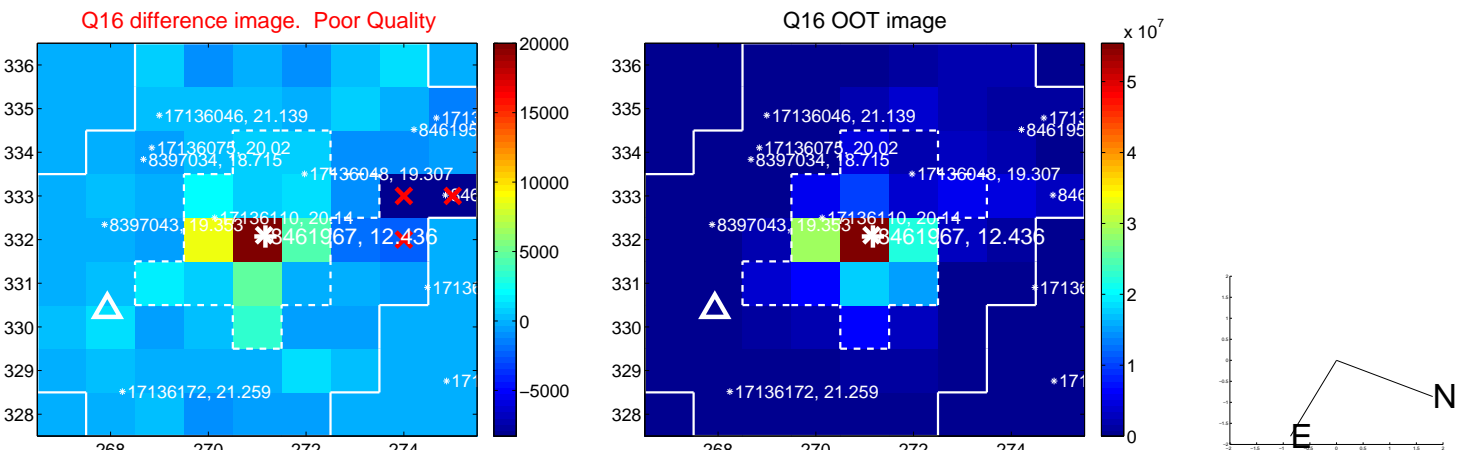
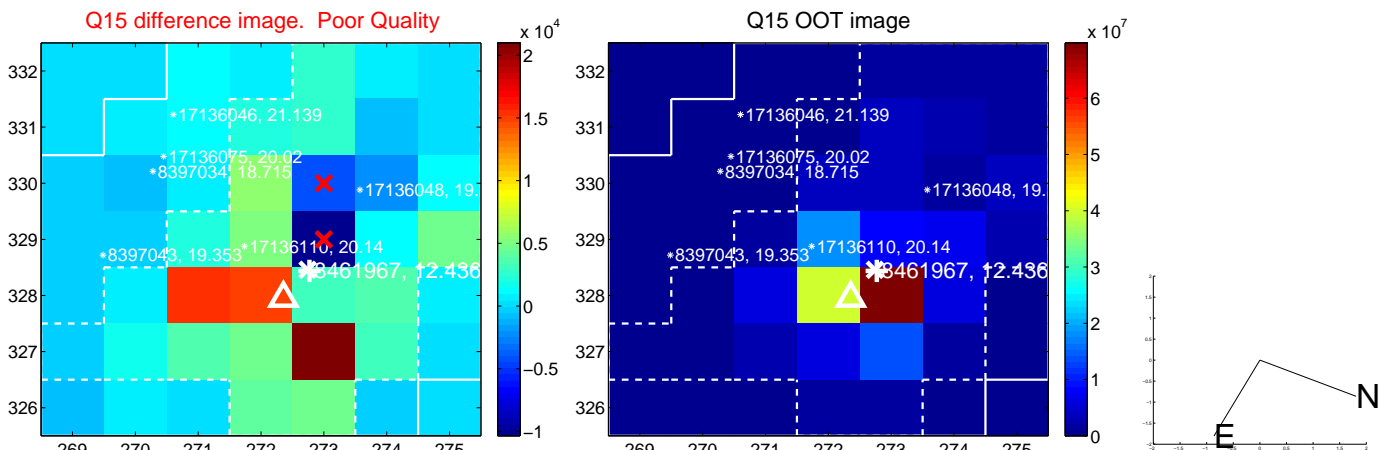
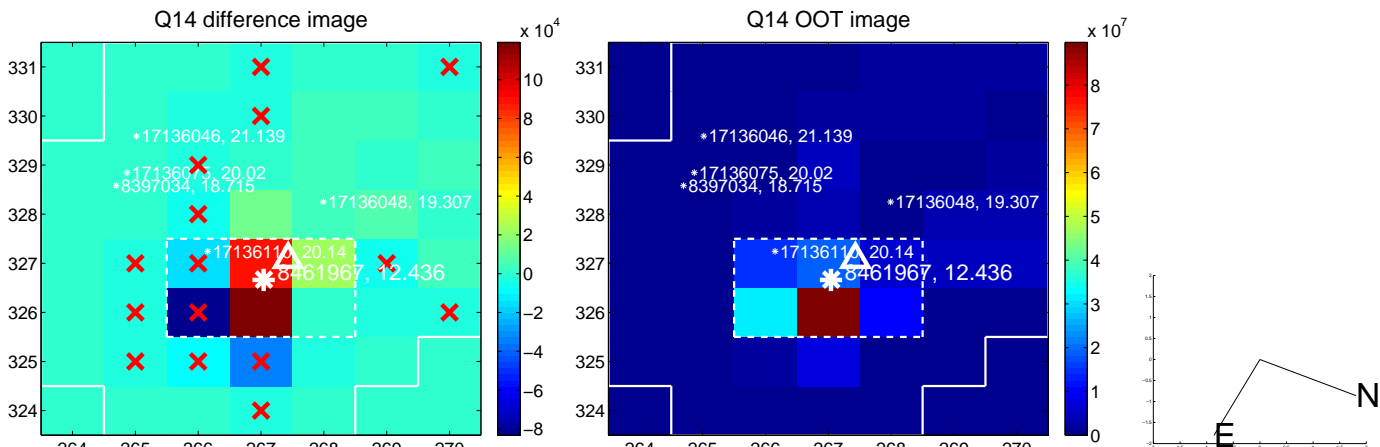
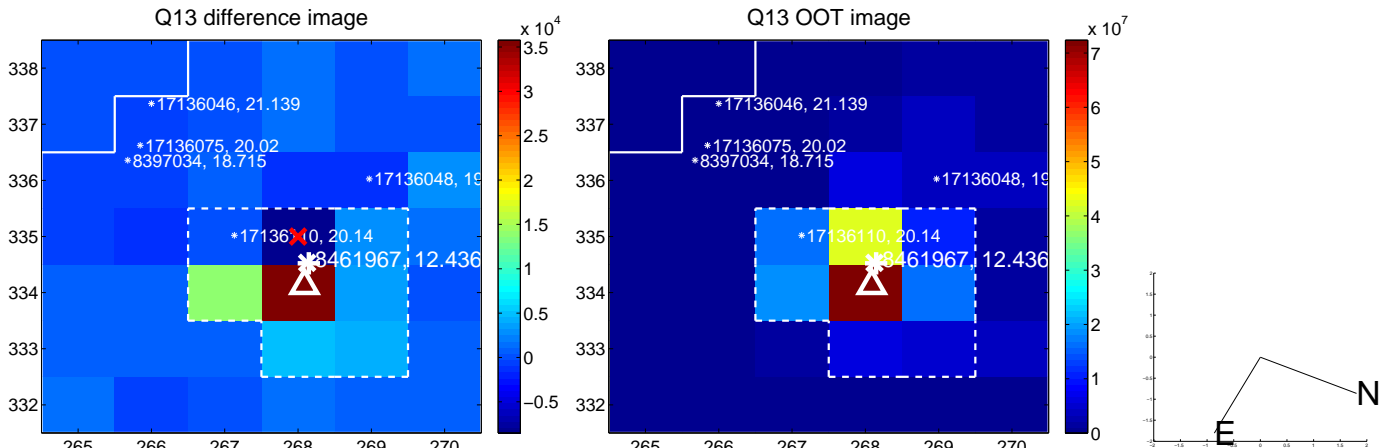
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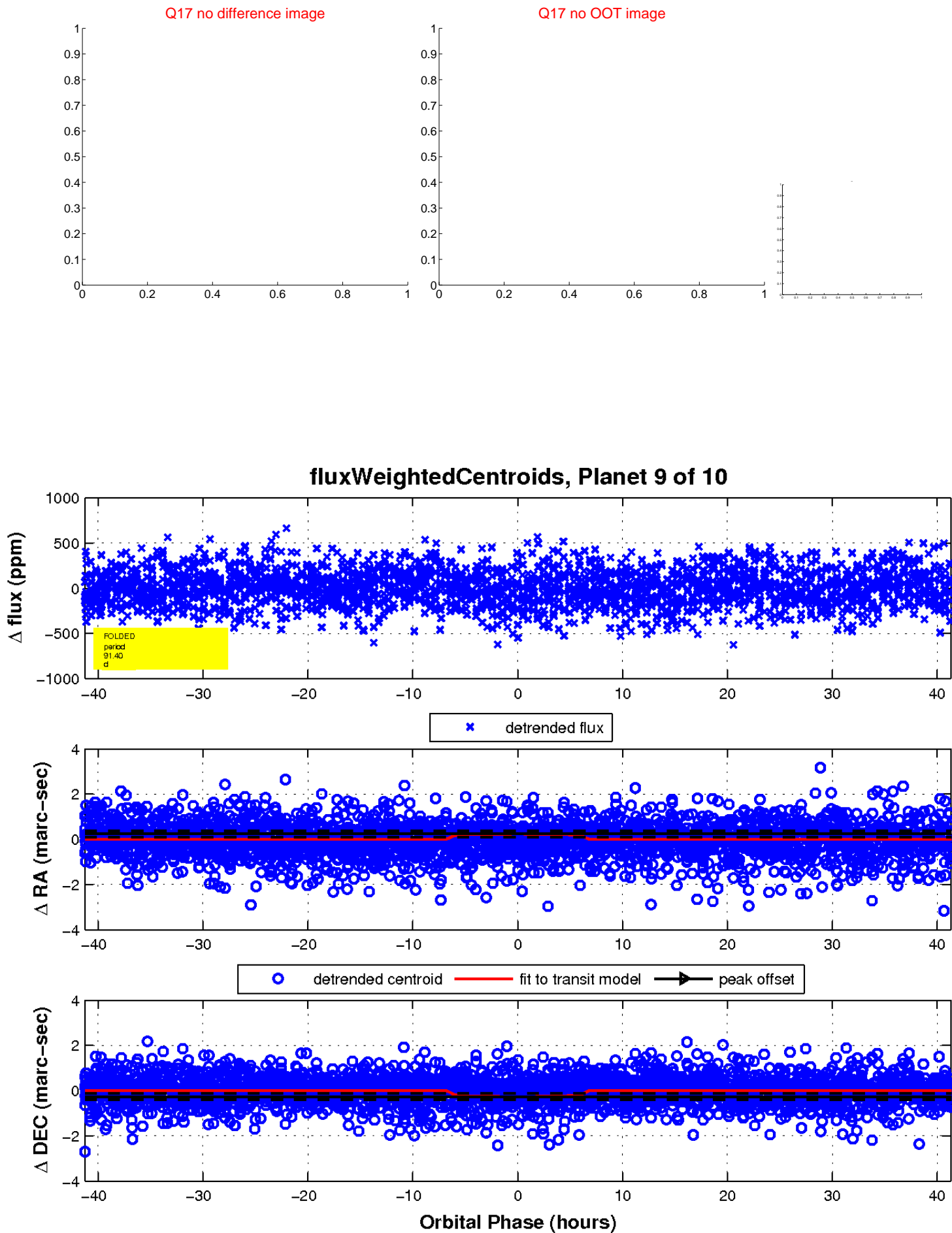
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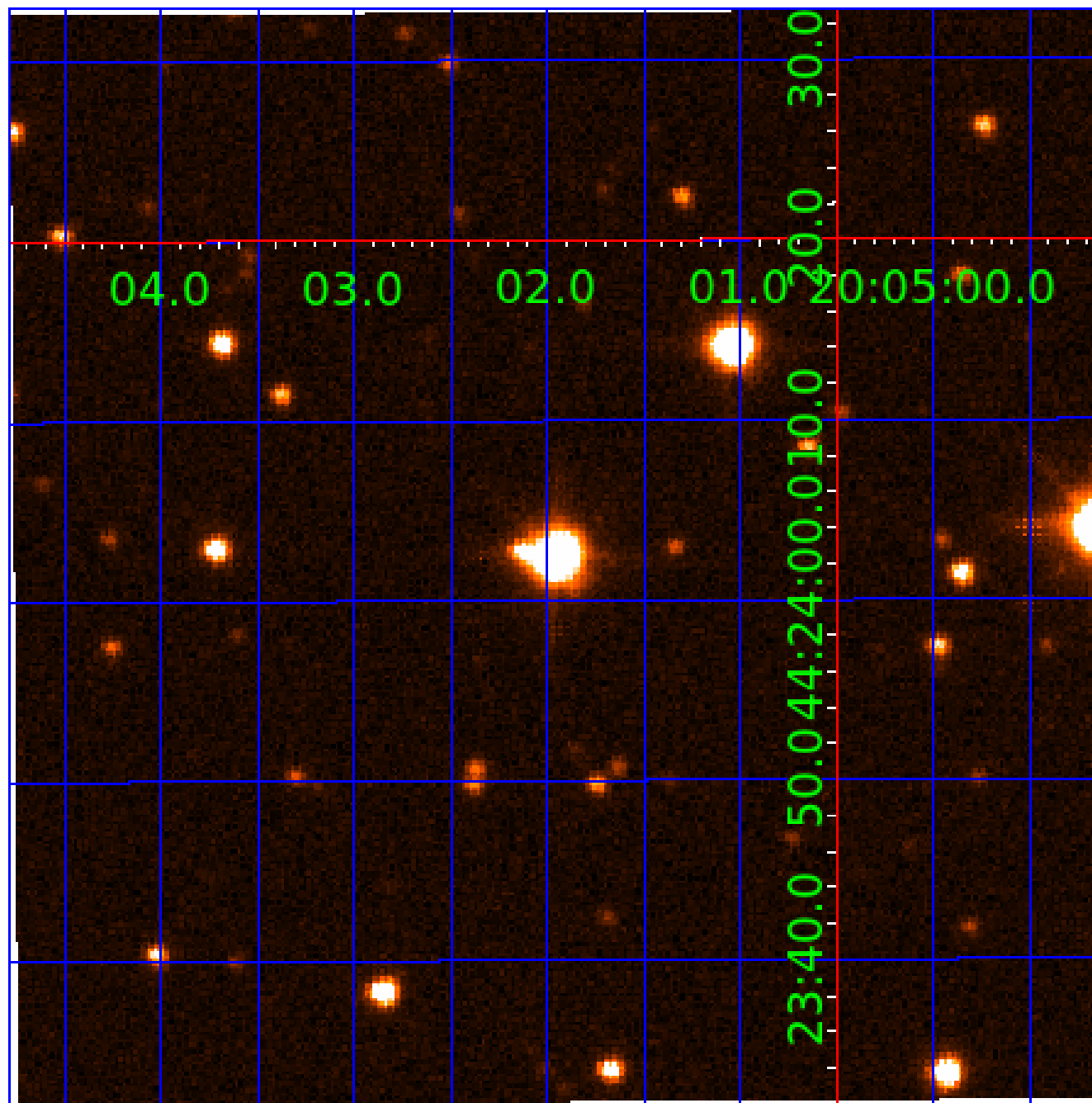


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UKIRT Image

Declination



KIC 008461967

Q1-17 DR25 TCE Parameters

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Robovetter Results

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008461967-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
008461967-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT
008461967-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008461967-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008461967-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008461967-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

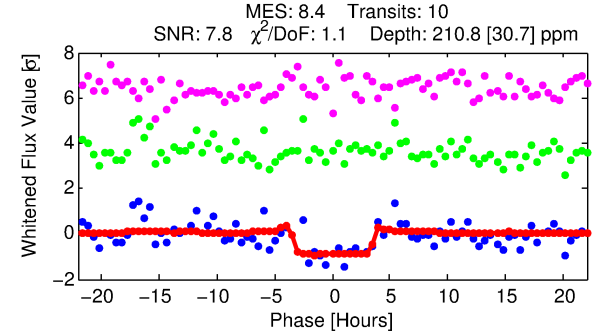
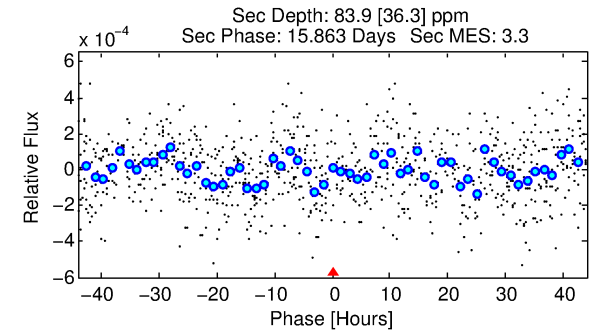
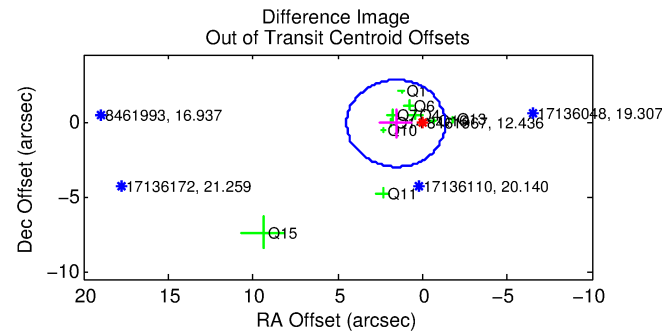
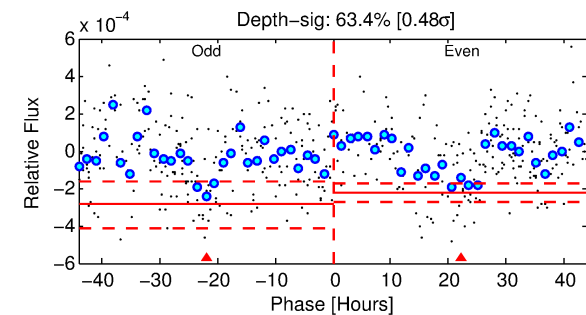
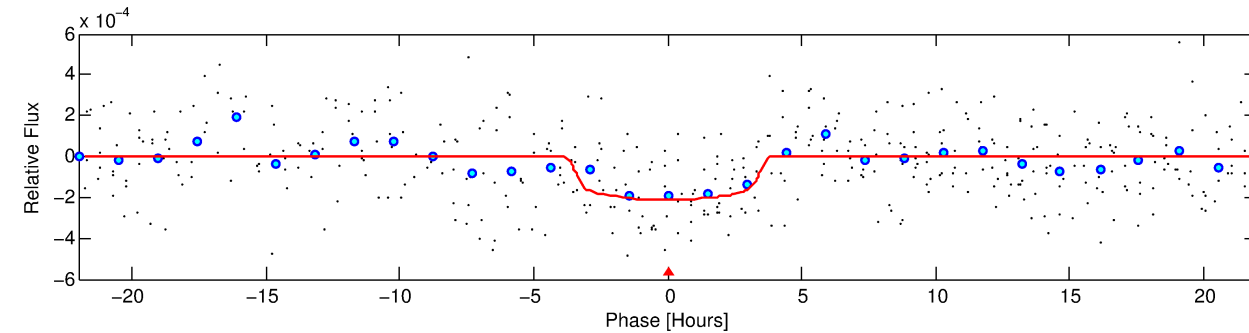
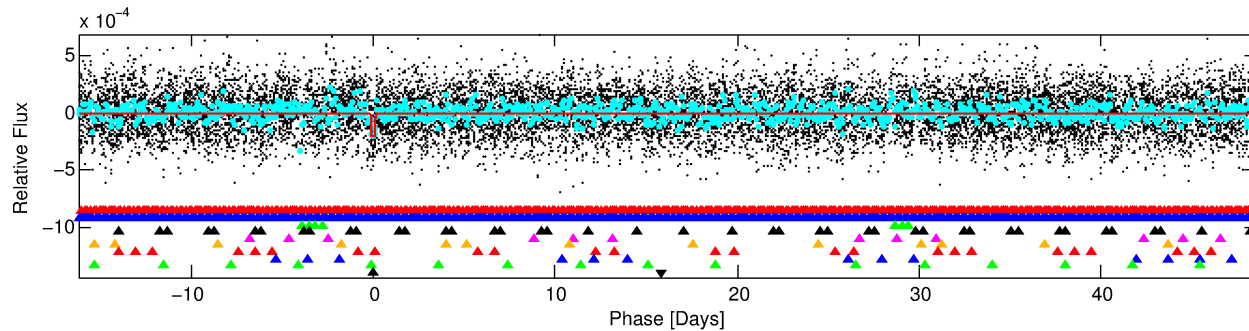
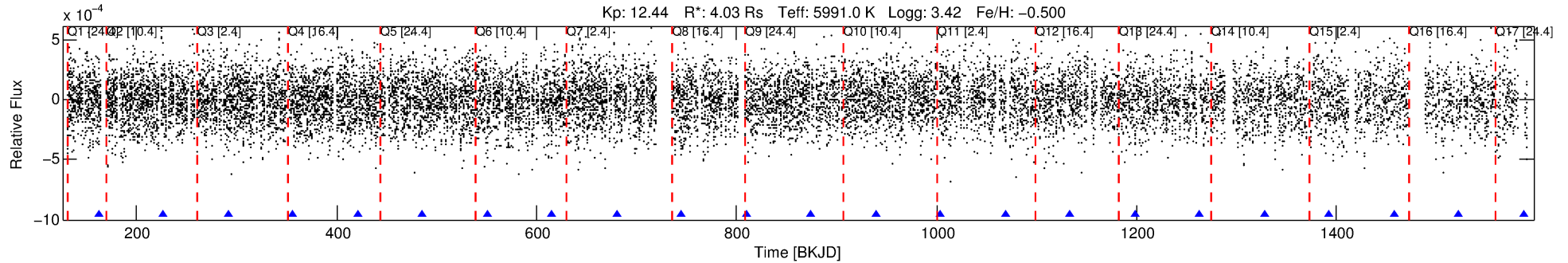
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008461967-10

No Significant Match Found

DV One-Page Summary

KIC: 8461967 Candidate: 10 of 10 Period: 64.754 d



DV Fit Results:

Period = 64.75382 [0.00109] d
Epoch = 162.4542 [0.0134] BKJD
Rp/R* = 0.0152 [0.0060]
a/R* = 36.59 [75.61]
b = 0.86 [0.64]
Seff = 139.65 [84.63]
Teq = 877 [133] K
Rp = 6.67 [3.85] Re
a = 0.3667 [0.1399] AU
Ag = 139.44 [150.14] [0.92 σ]
Teffp = 4657 [1063] K [3.53 σ]

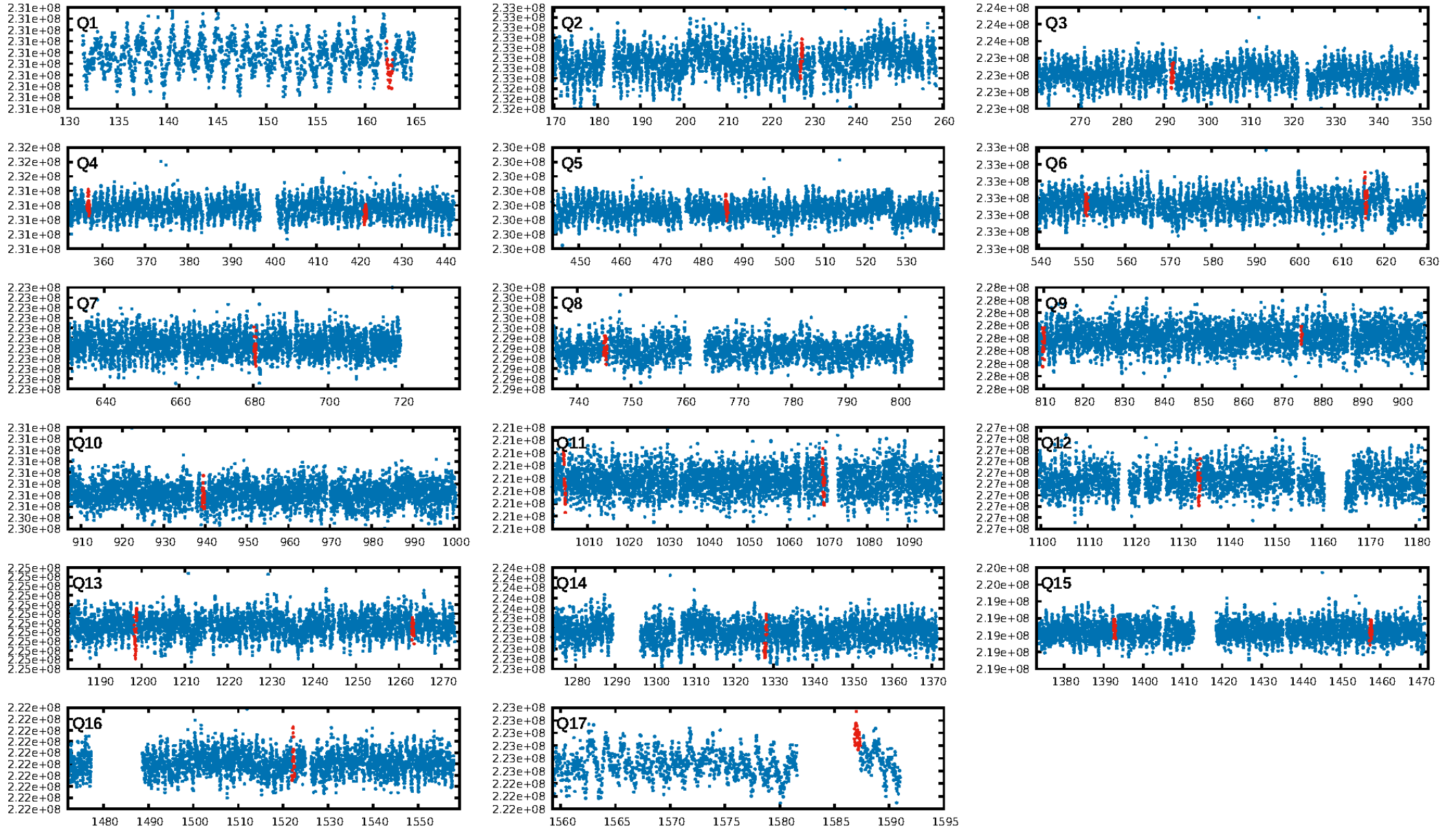
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.79 σ]
LongPeriod-sig: 100.0% [40.92 σ]
ModelChiSquare2-sig: 3.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: -0.4063
Centroid-sig: 21.9%
Centroid-so: 0.512 arcsec [0.86 σ]
OotOffset-rm: 1.570 arcsec [1.62 σ]
KicOffset-rm: 1.535 arcsec [1.69 σ]
OotOffset-st: 3/3/2/2 [10]
KicOffset-st: 3/3/2/2 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.00 [0/13]

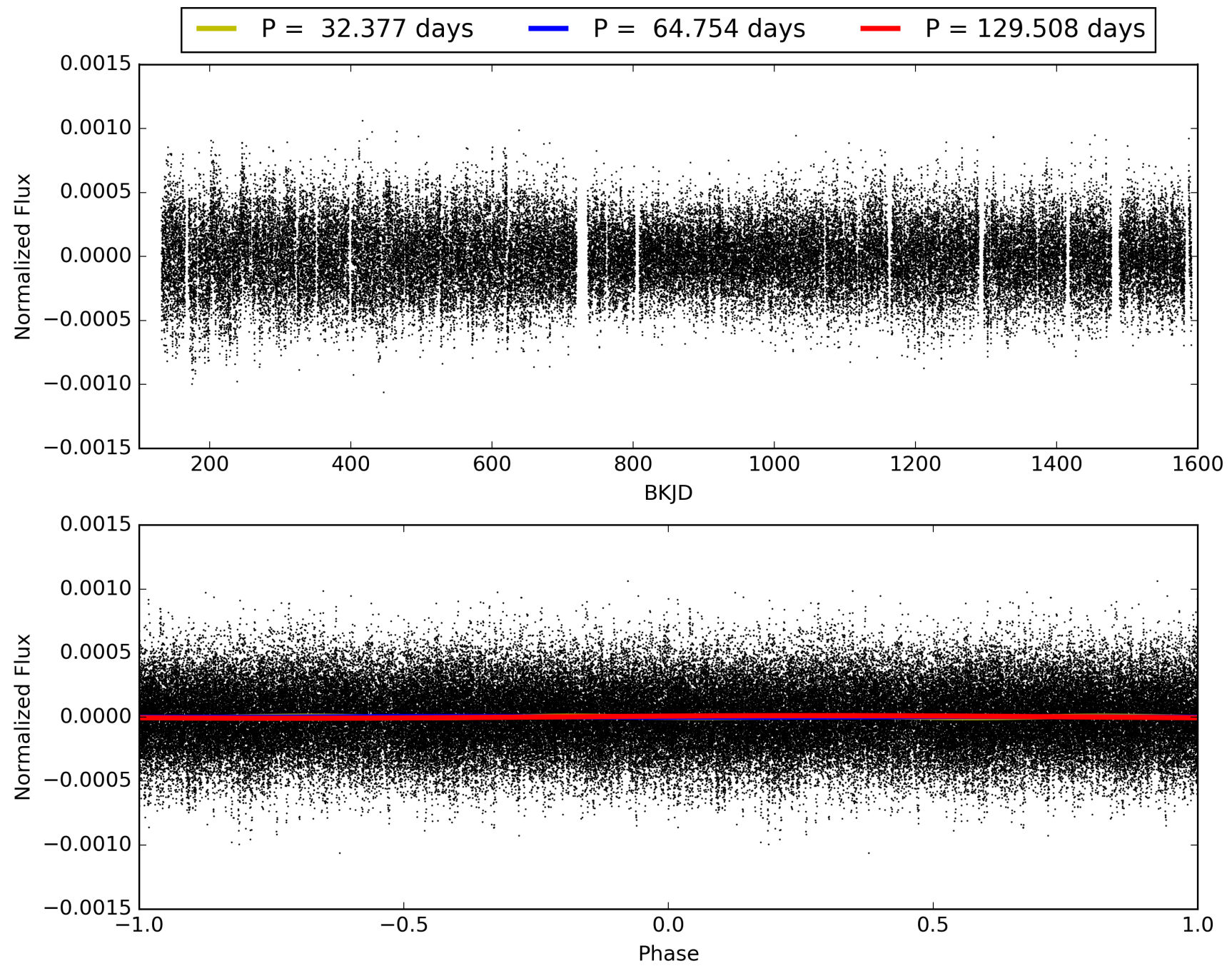
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:46:27 Z

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

TCE 008461967-10, PDC Light Curves

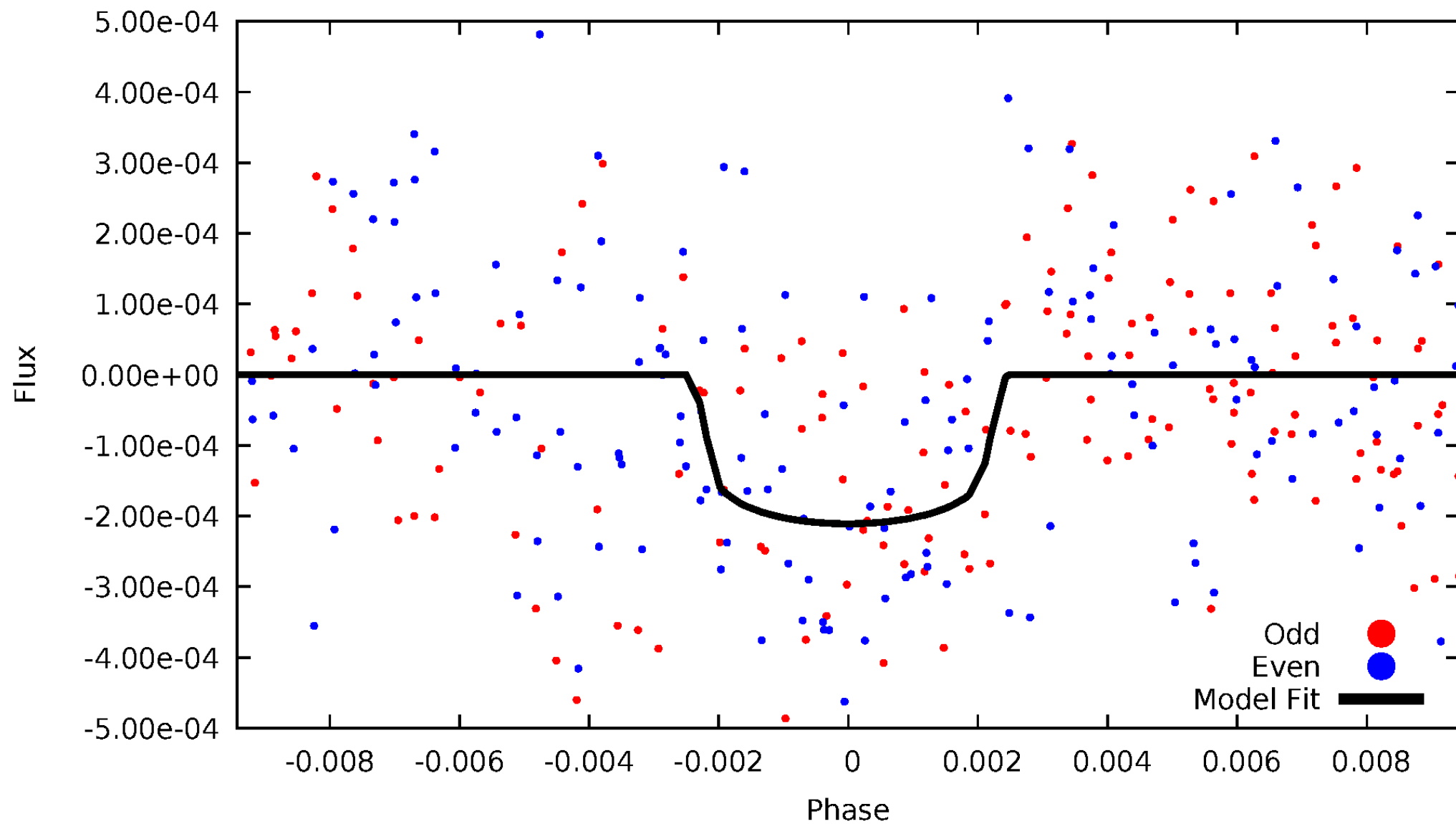


TCE 008461967-10



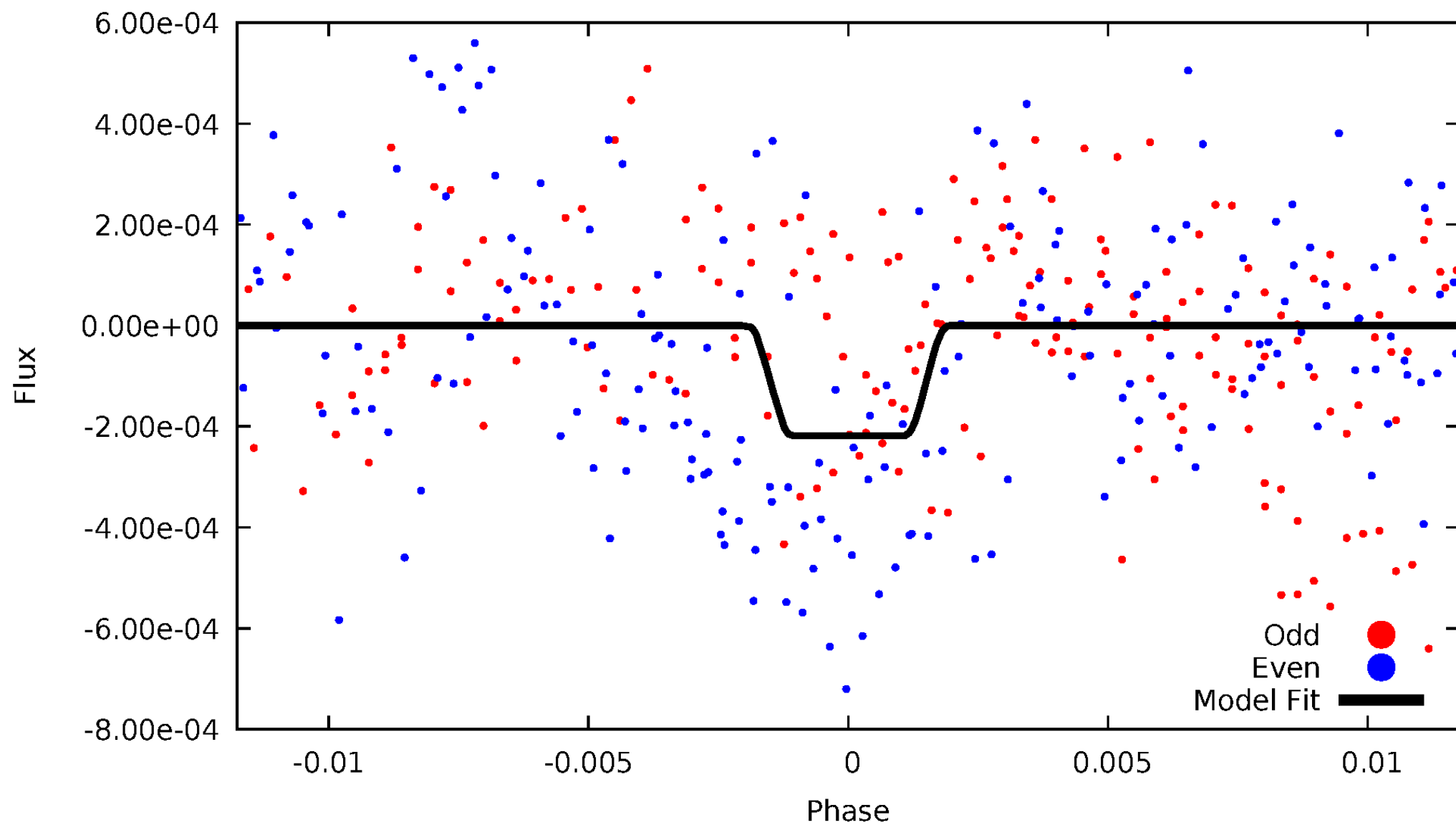
DV Odd/Even

TCE 008461967-10



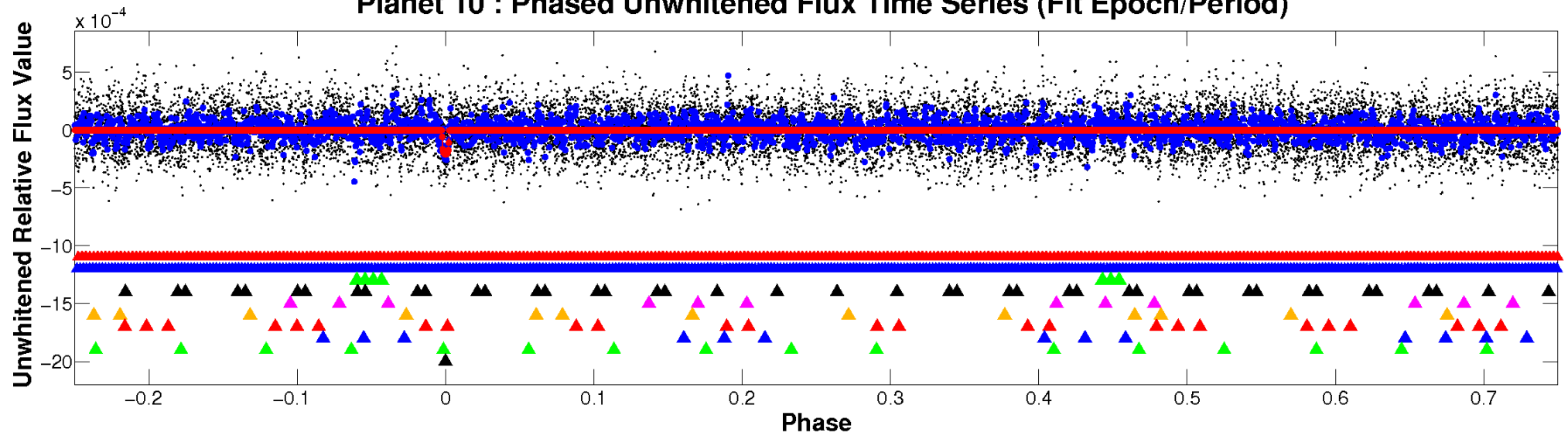
ALT Odd/Even

TCE 008461967-10

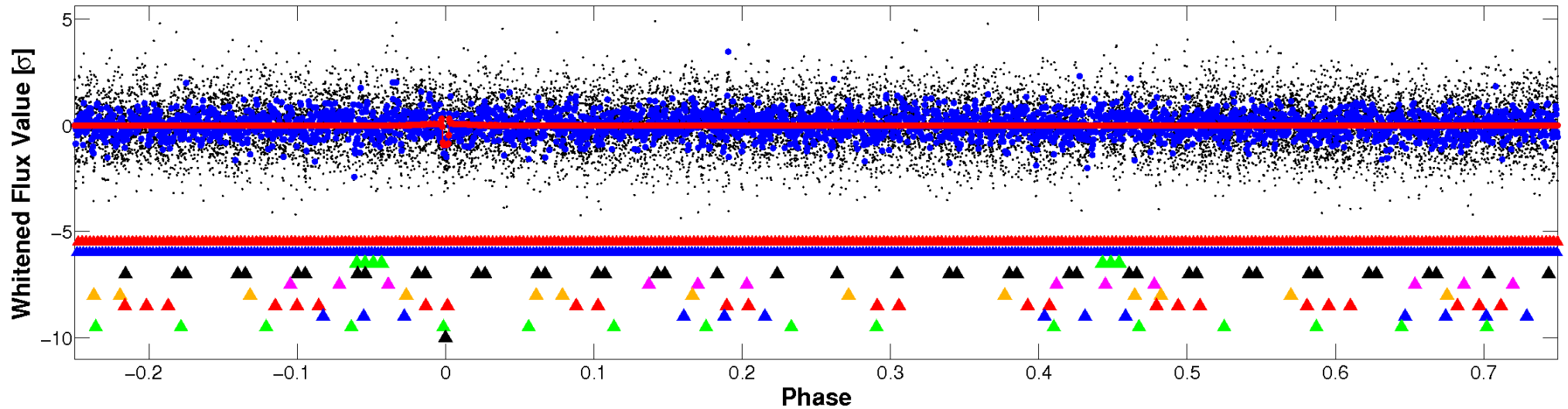


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

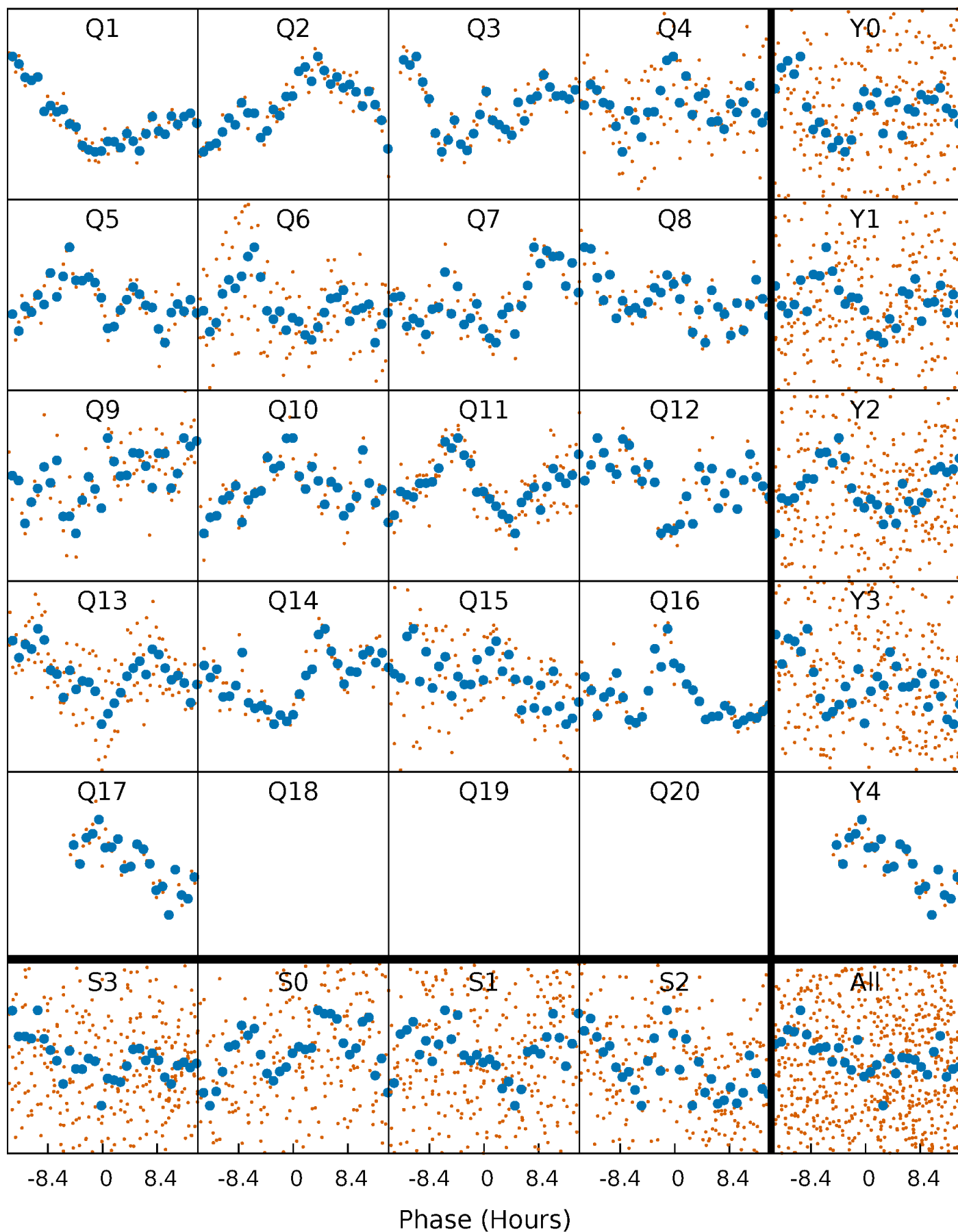


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



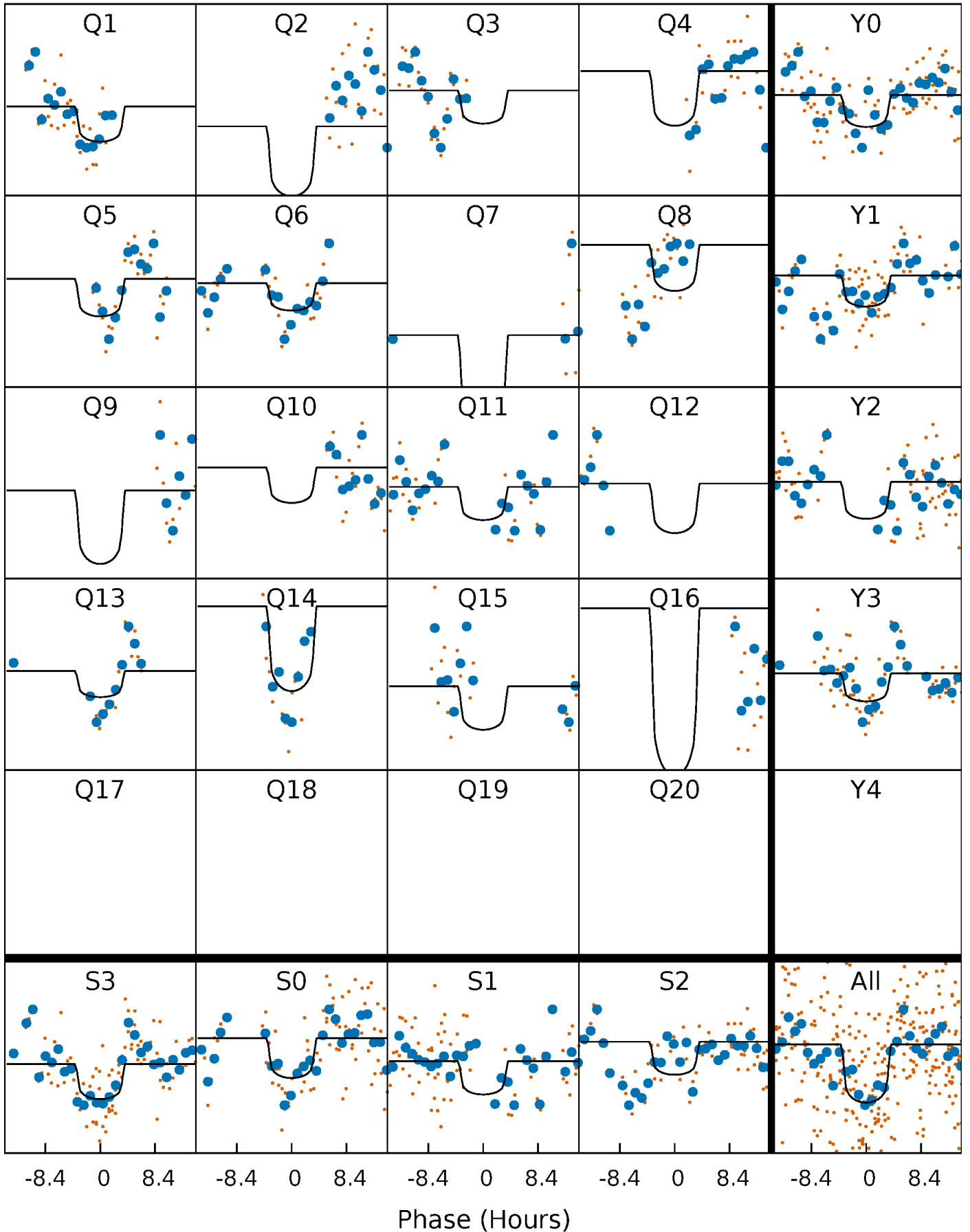
PDC Quarter-Phased Transit Curves

TCE 008461967-10 P= 64.753816 Days $T_0=162.454167$ (BKJD)



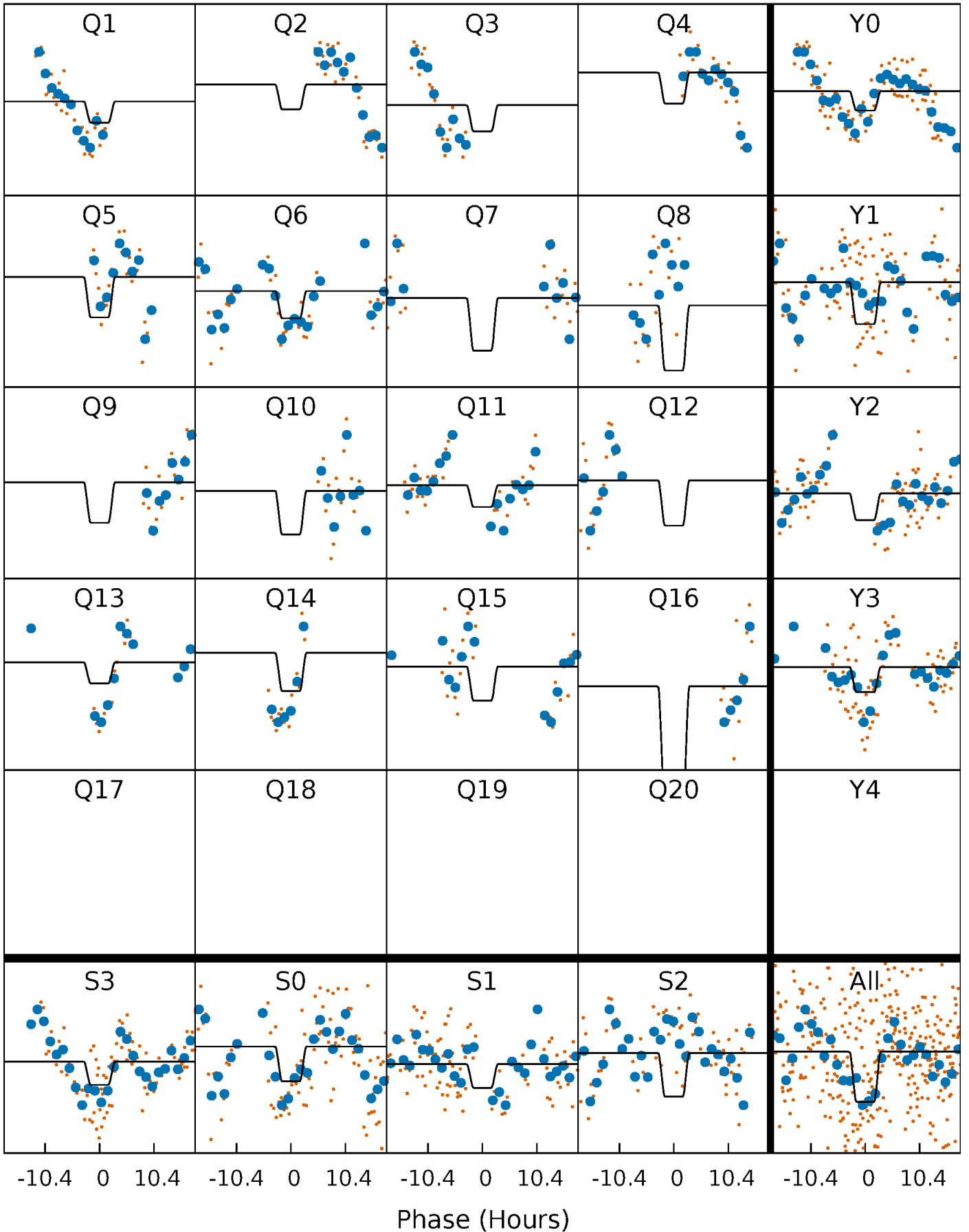
DV Quarter-Phased Transit Curves

TCE 008461967-10 P= 64.753816 Days $T_0=162.454167$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

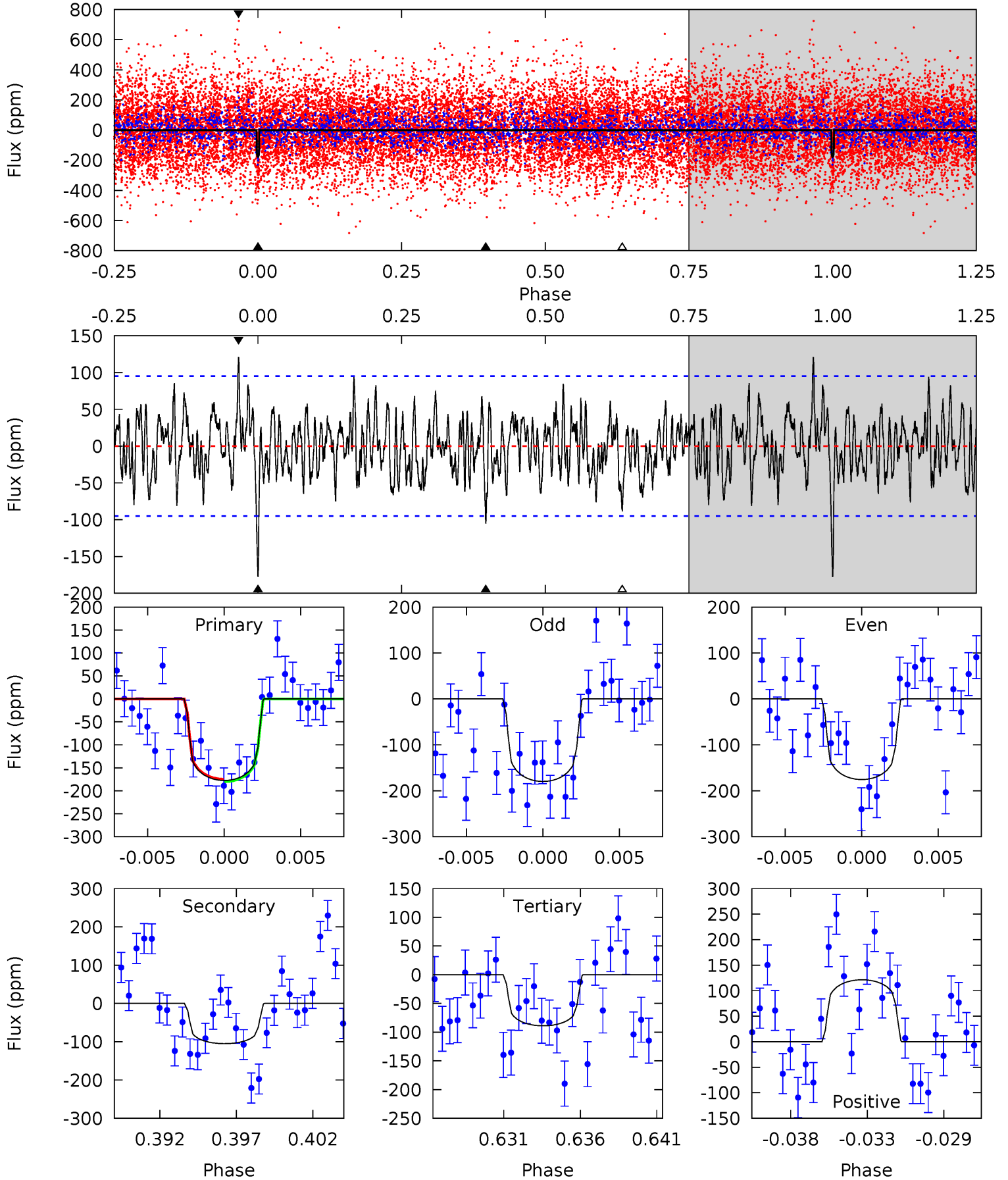
TCE 008461967-10 P= 64.751757 Days $T_0=162.485889$ (BKJD)



DV Model-Shift Uniqueness Test

008461967-10, P = 64.753816 Days, E = 97.700351 Days

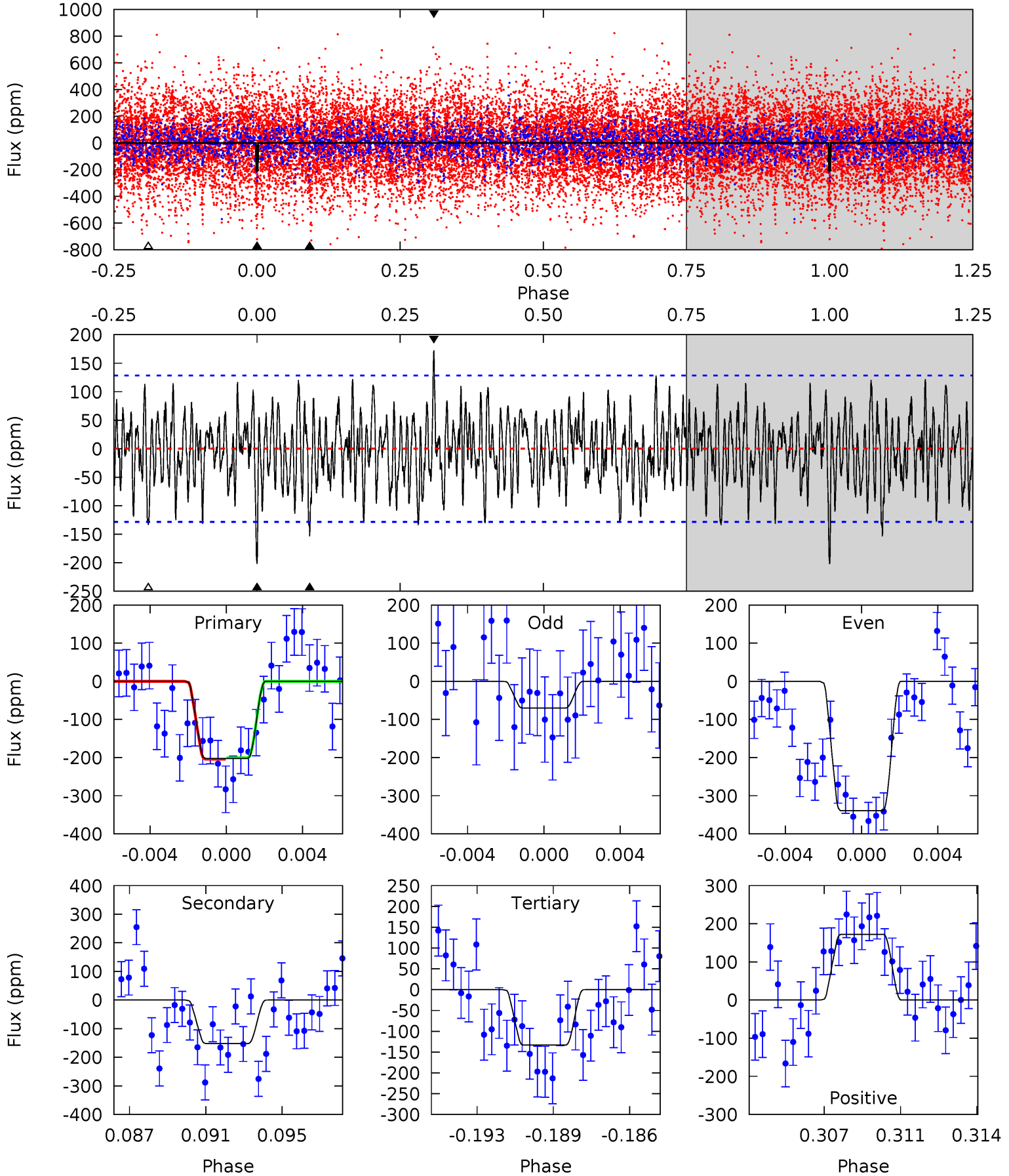
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.65	5.71	4.83	6.59	5.17	2.82	1.80	4.81	3.05	0.87	-0.89	0.11	0.82	0.41	0.13



Alt Model-Shift Uniqueness Test

008461967-10, P = 64.751757 Days, E = 97.734132 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.20	6.17	5.41	6.99	5.21	2.90	2.03	2.79	1.21	0.76	-0.82	5.45	0.71	0.46	0.07



Stellar Parameters For KIC 008461967

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5991^{+181}_{-217}	$3.422^{+0.337}_{-0.090}$	$-0.500^{+0.300}_{-0.350}$	$4.034^{+0.727}_{-1.697}$	$1.567^{+0.169}_{-0.473}$	$0.034^{+0.094}_{-0.010}$
	+3%/-4%	+10%/-3%	+60%/-70%	+18%/-42%	+11%/-30%	+280%/-30%
Source	PHO1	FLK73	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 008461967-10 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-105 ± 18	$6.08^{+2.82}_{-2.44}$	1191^{+82}_{-120}	4994^{+1197}_{-641}	205^{+361}_{-108}
Alt.	-152 ± 25	$5.93^{+2.87}_{-2.45}$	1187^{+83}_{-112}	5403^{+1500}_{-688}	307^{+556}_{-163}

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 $A_{obs} \gg 1.0$

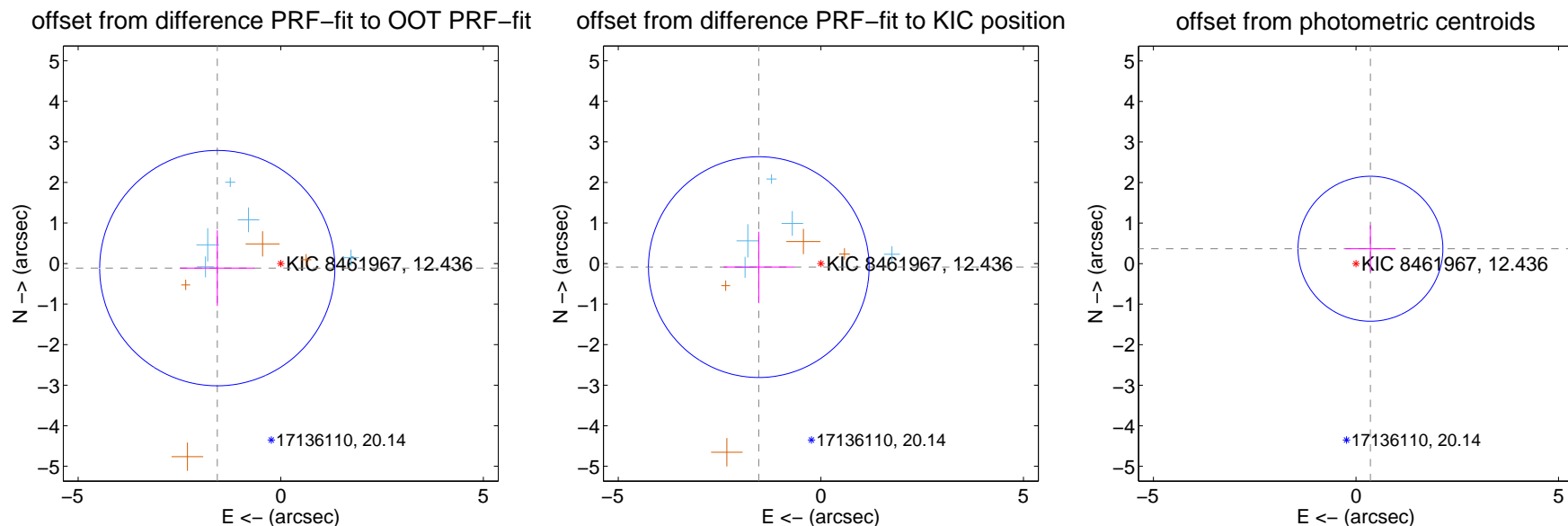
DV Centroid Data

Supplemental centroid analysis for 008461967-10. Kepler magnitude: 12.44. Transit SNR 7.84

There are 5 quarters with good PRF difference image offsets

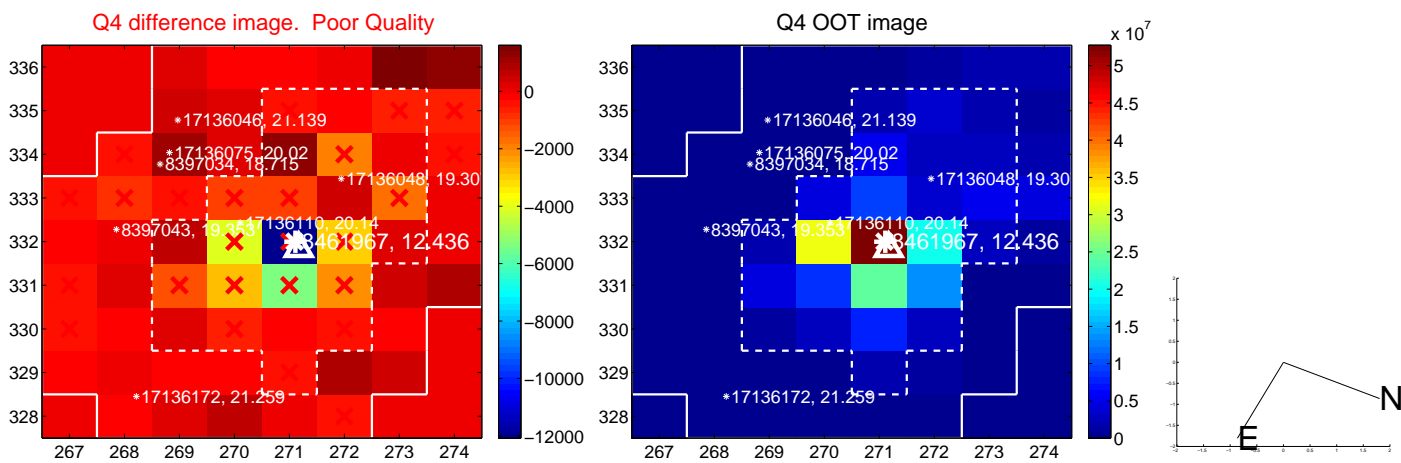
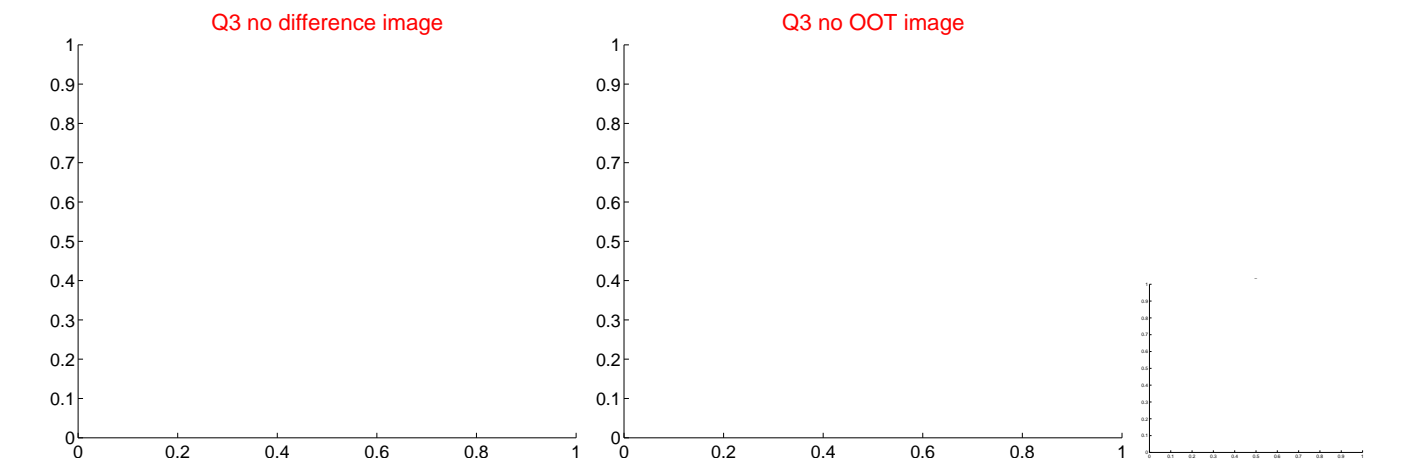
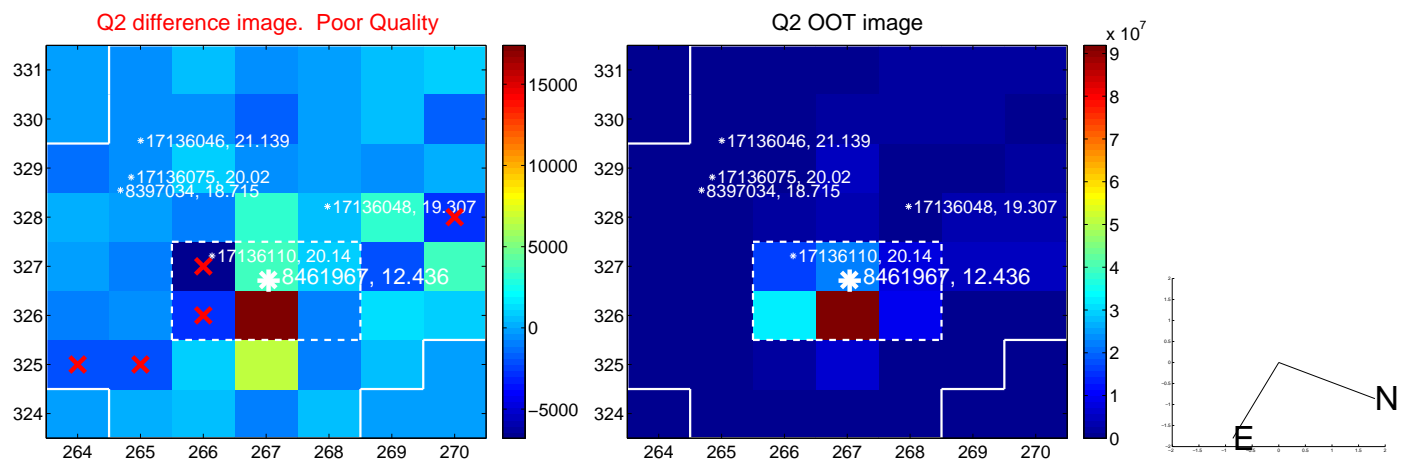
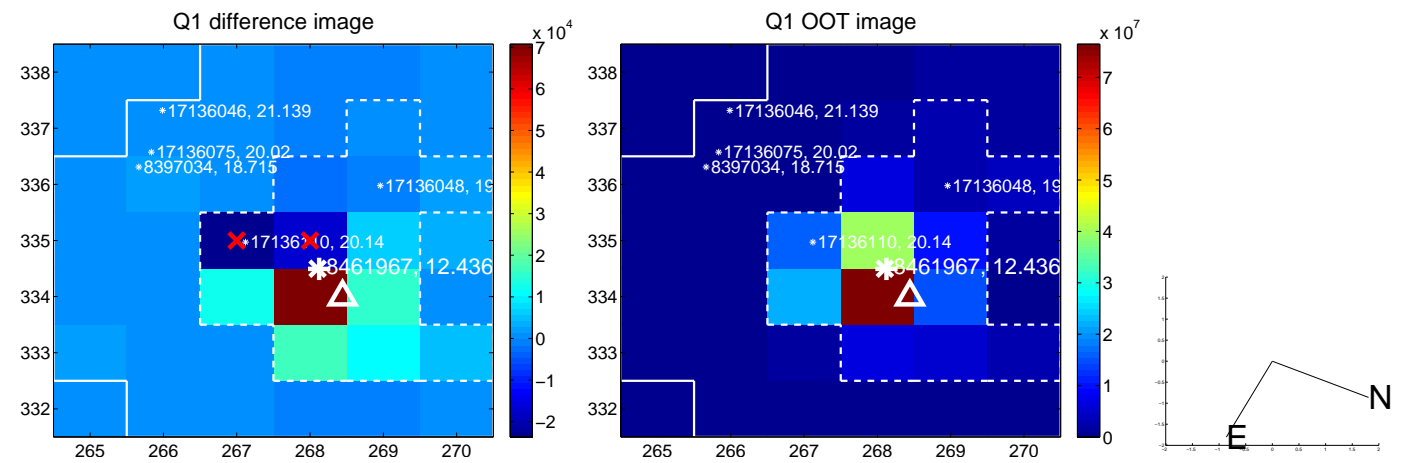
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.570 ± 0.967	1.62	1.566 ± 0.917	-0.113 ± 0.932
PRF-fit source offset from KIC position	1.535 ± 0.907	1.69	1.532 ± 0.870	-0.088 ± 0.872
photometric centroid source offset	0.51 ± 0.60	0.86	-0.36 ± 0.62	0.37 ± 0.58

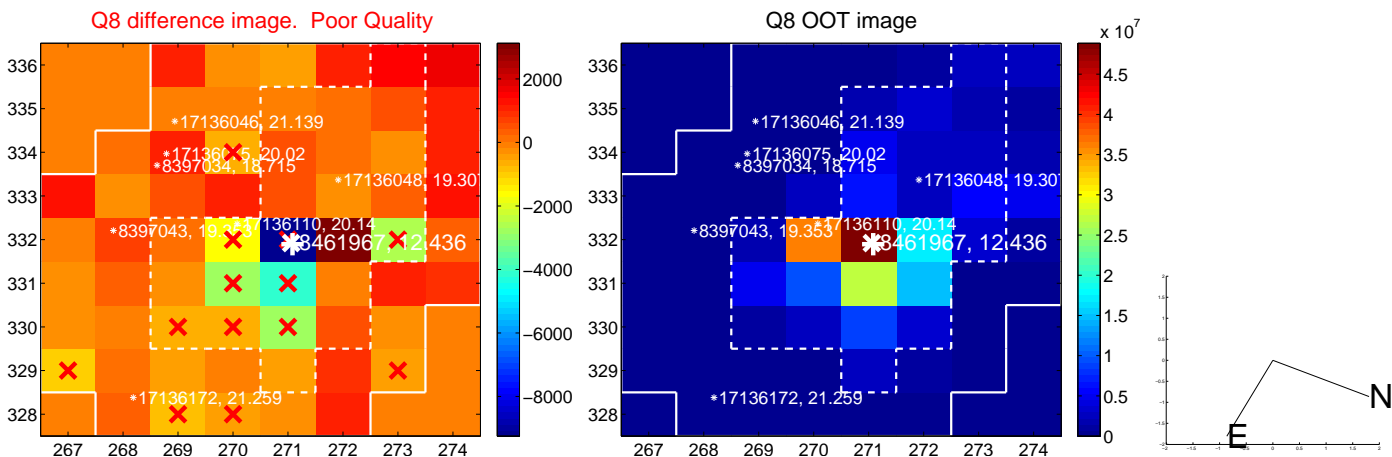
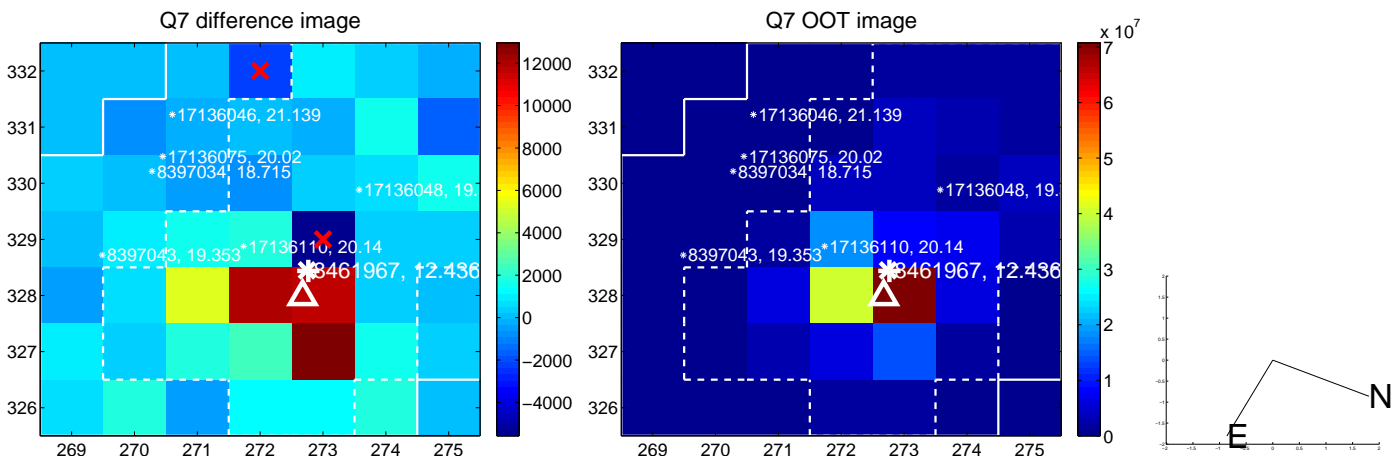
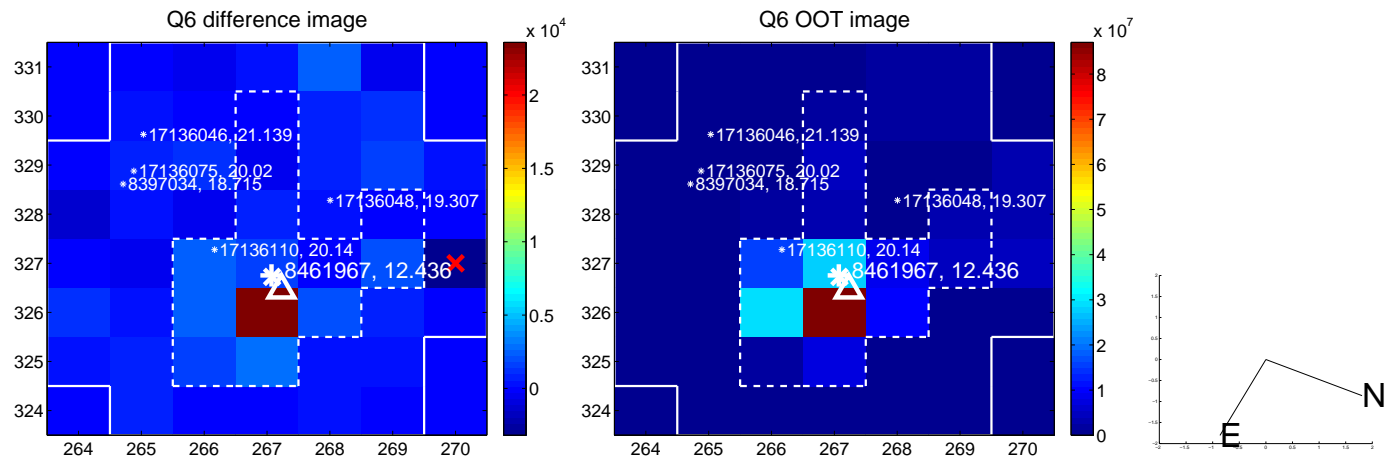
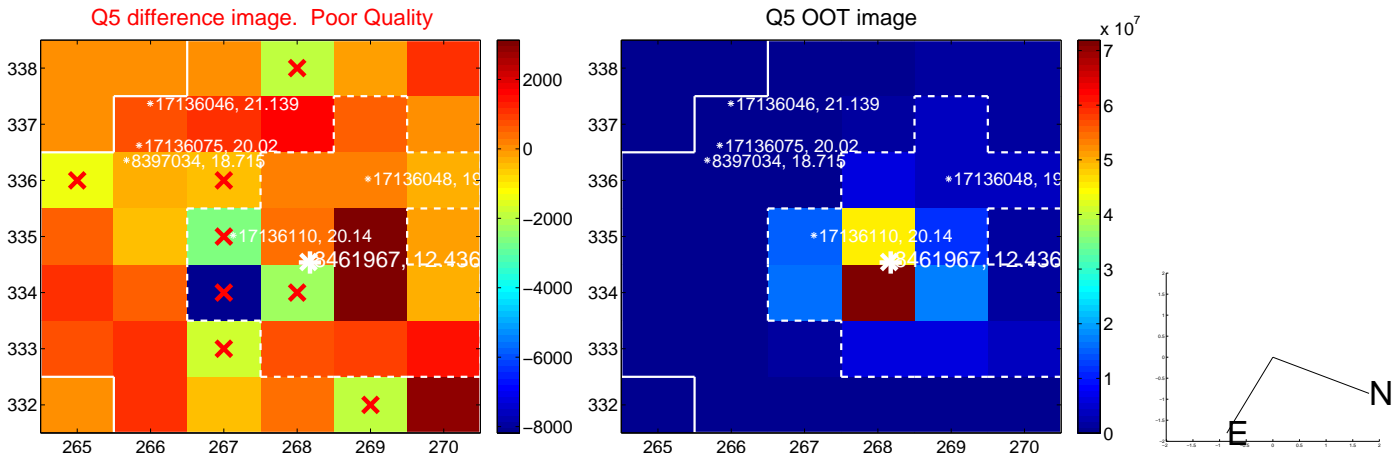


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



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

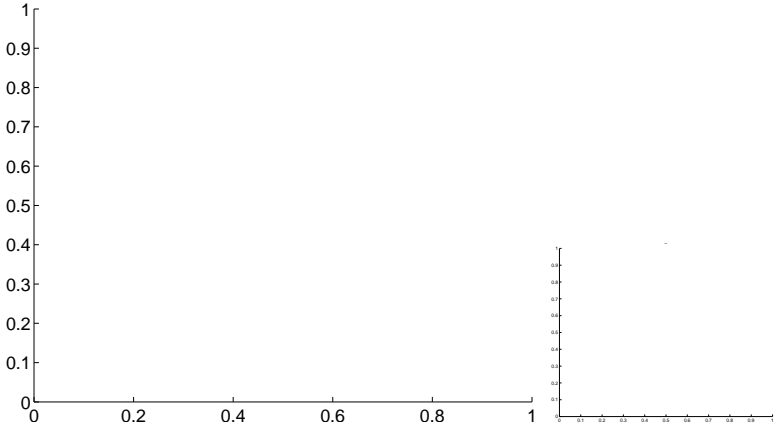


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

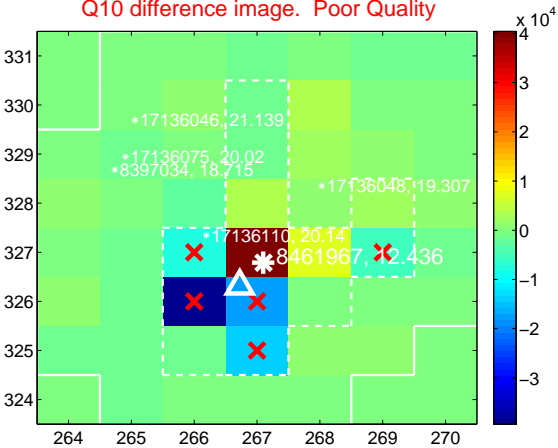
Q9 no difference image



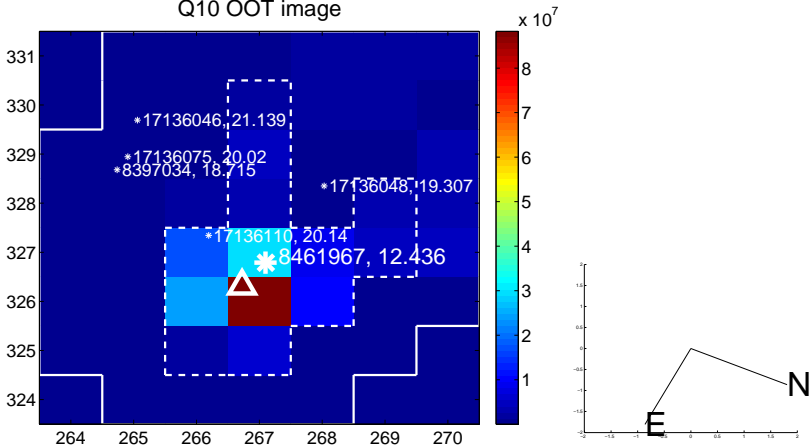
Q9 no OOT image



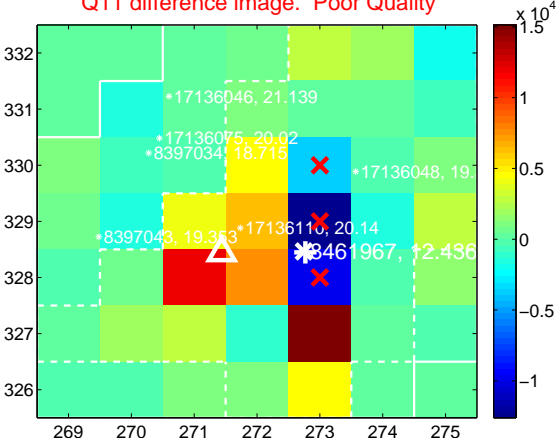
Q10 difference image. Poor Quality



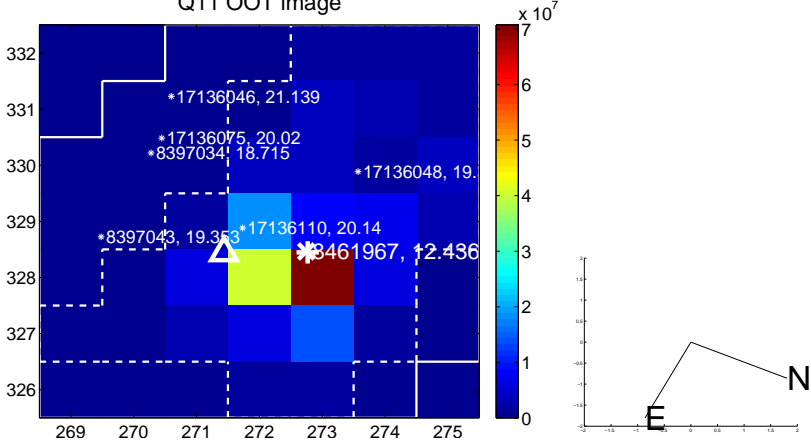
Q10 OOT image



Q11 difference image. Poor Quality



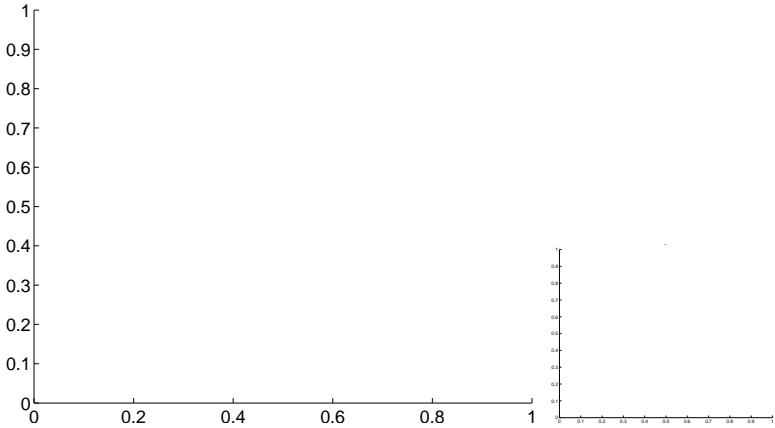
Q11 OOT image



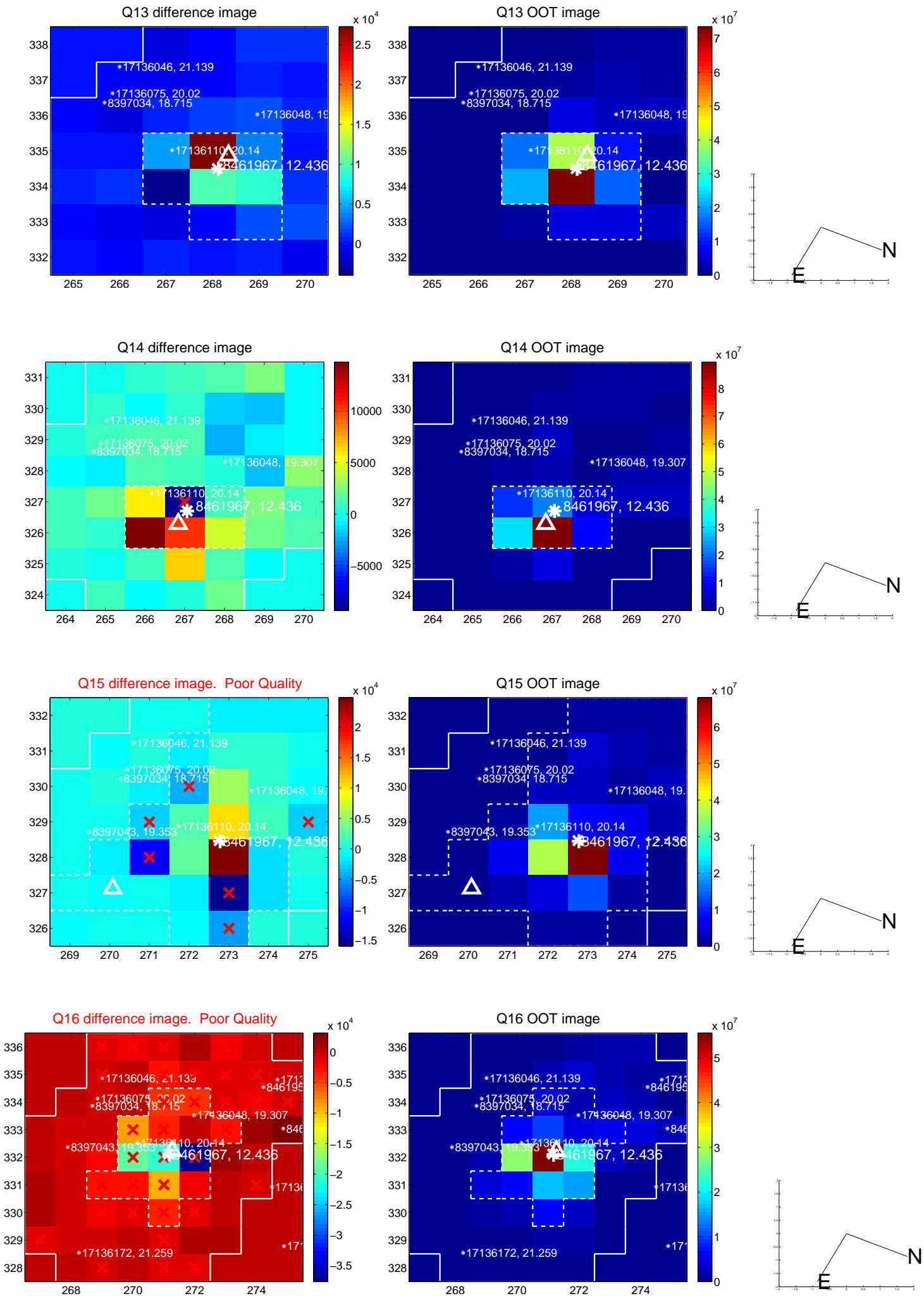
Q12 no difference image



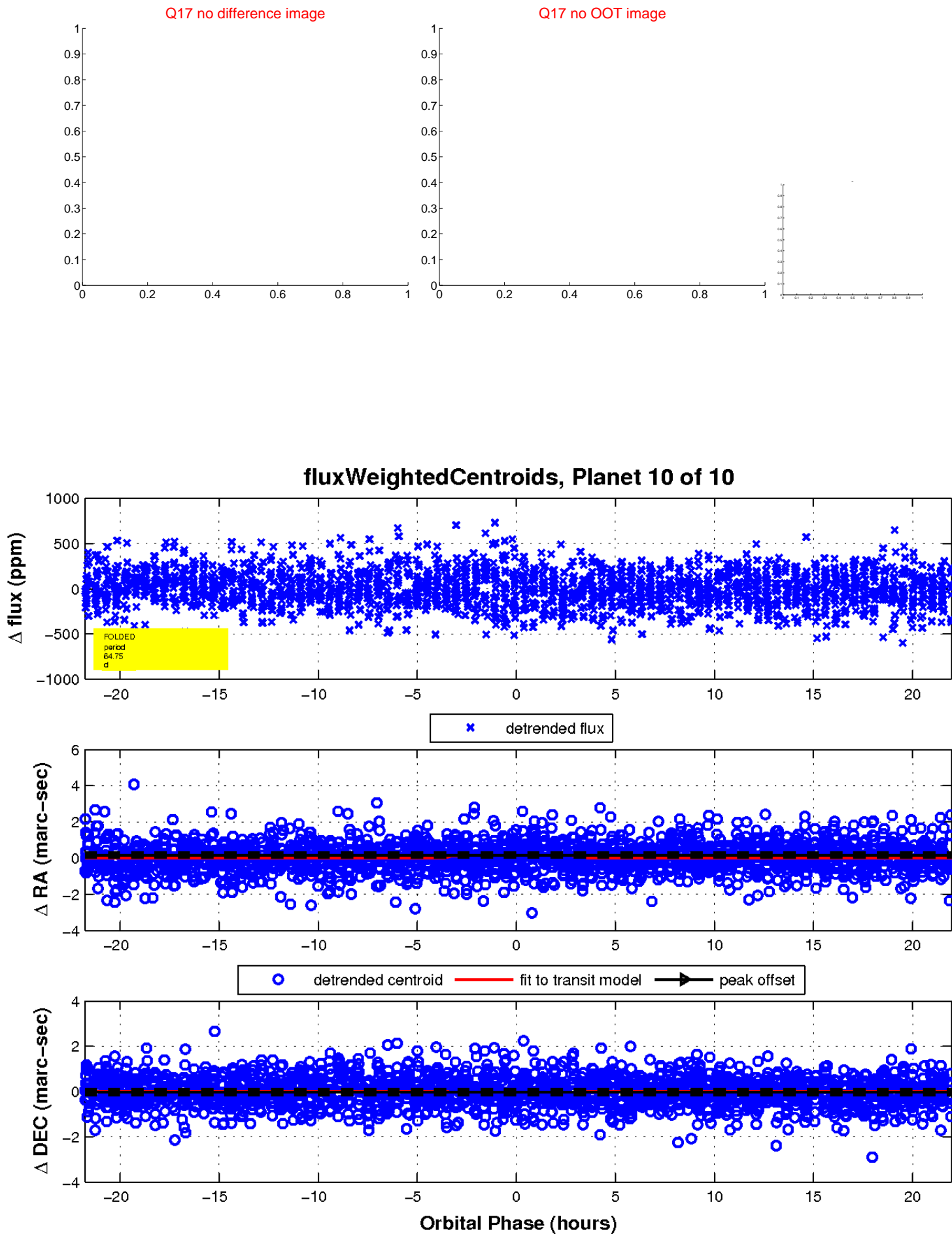
Q12 no OOT image



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



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



UKIRT Image

Declination

