

KIC 004681067

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})
004681067-01	OBS	No	317.199184	420.900097	2018.3	6.338	13.6	7.7	0.57	4407	2.98	0.20
004681067-02	OBS	No	422.824780	497.499306	1815.3	3.483	12.3	7.4	0.57	4407	2.42	0.13
004681067-03	OBS	No	425.721111	277.791098	2630.0	16.689	8.8	8.0	0.57	4407	3.08	0.13
004681067-04	OBS	No	389.485367	355.792281	961.6	6.970	12.8	4.3	0.57	4407	1.90	0.15
004681067-05	OBS	No	343.716643	454.568760	1632.5	3.378	9.5	5.7	0.57	4407	2.29	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004681067-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004681067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004681067-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
004681067-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
004681067-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

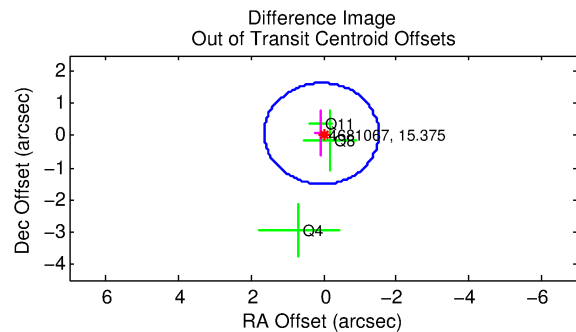
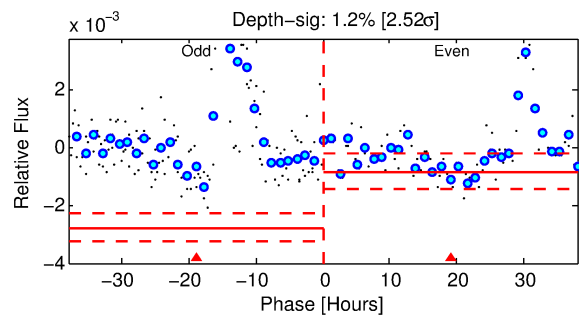
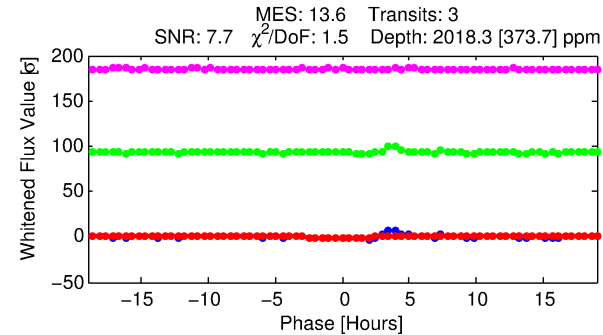
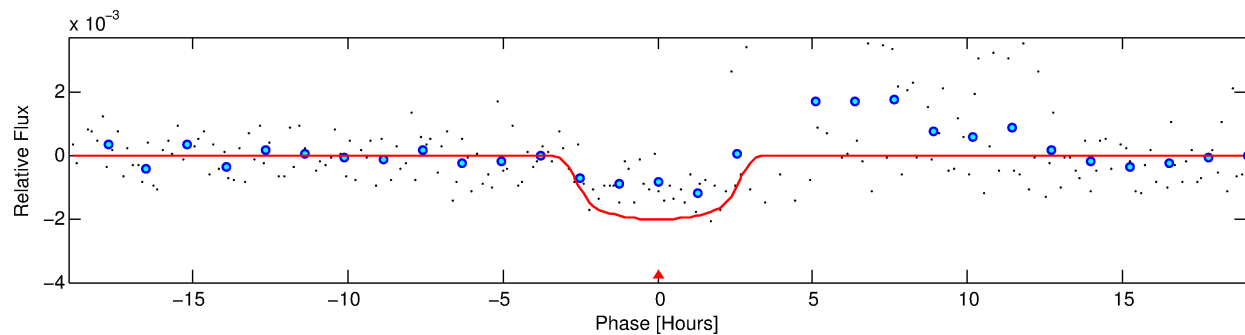
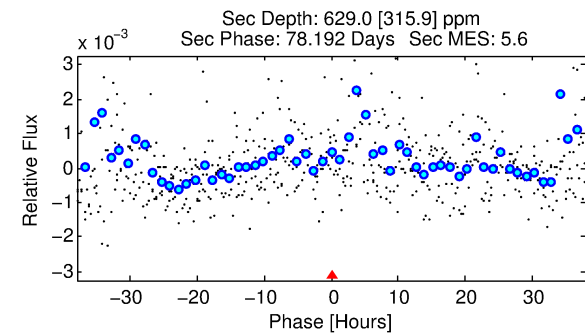
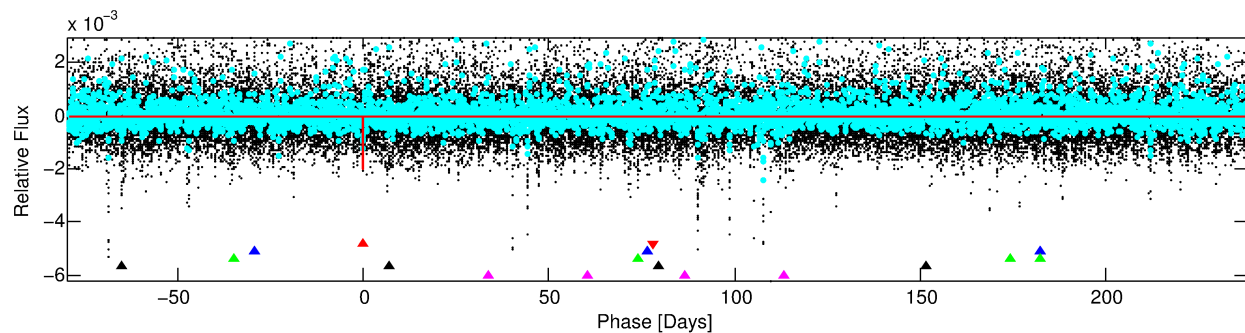
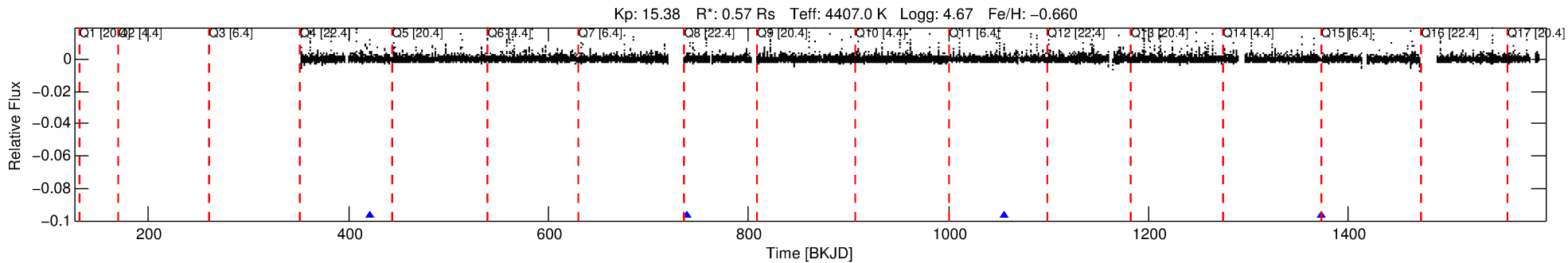
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004681067-01

No Significant Match Found

DV One-Page Summary

KIC: 4681067 Candidate: 1 of 5 Period: 317.199 d



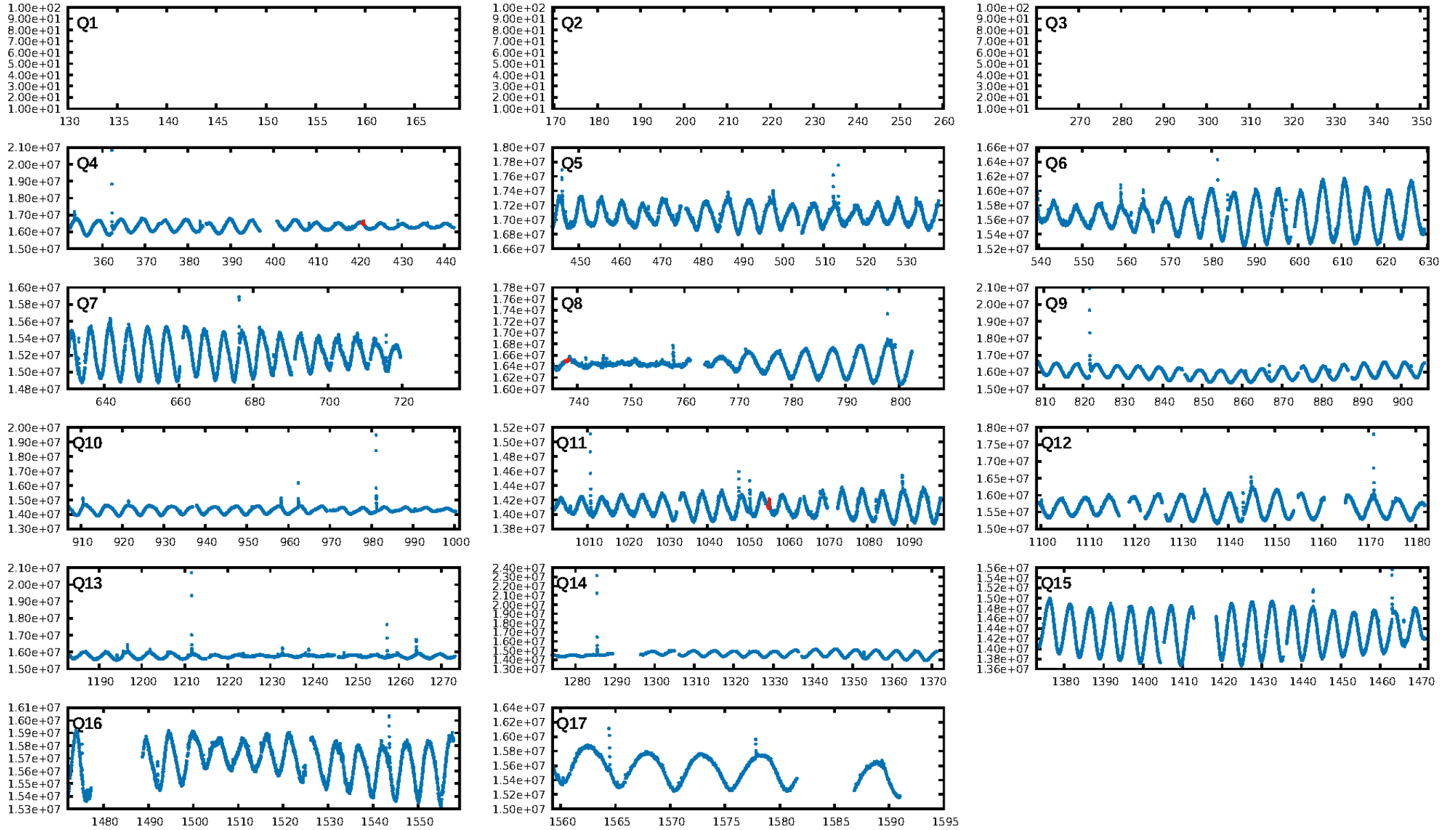
DV Fit Results:

Period = 317.19918 [0.00973] d
Epoch = 420.9001 [0.0126] BKJD
Rp/R* = 0.0481 [0.0083]
a/R* = 229.56 [113.40]
b = 0.86 [0.15]
Seff = 0.20 [0.04]
Teq = 169 [8] K
Rp = 2.98 [0.59] Re
a = 0.7487 [0.0597] AU
Ag = 21789.52 [13508.96] [1.61σ]
Teffp = 3184 [498] K [6.05σ]

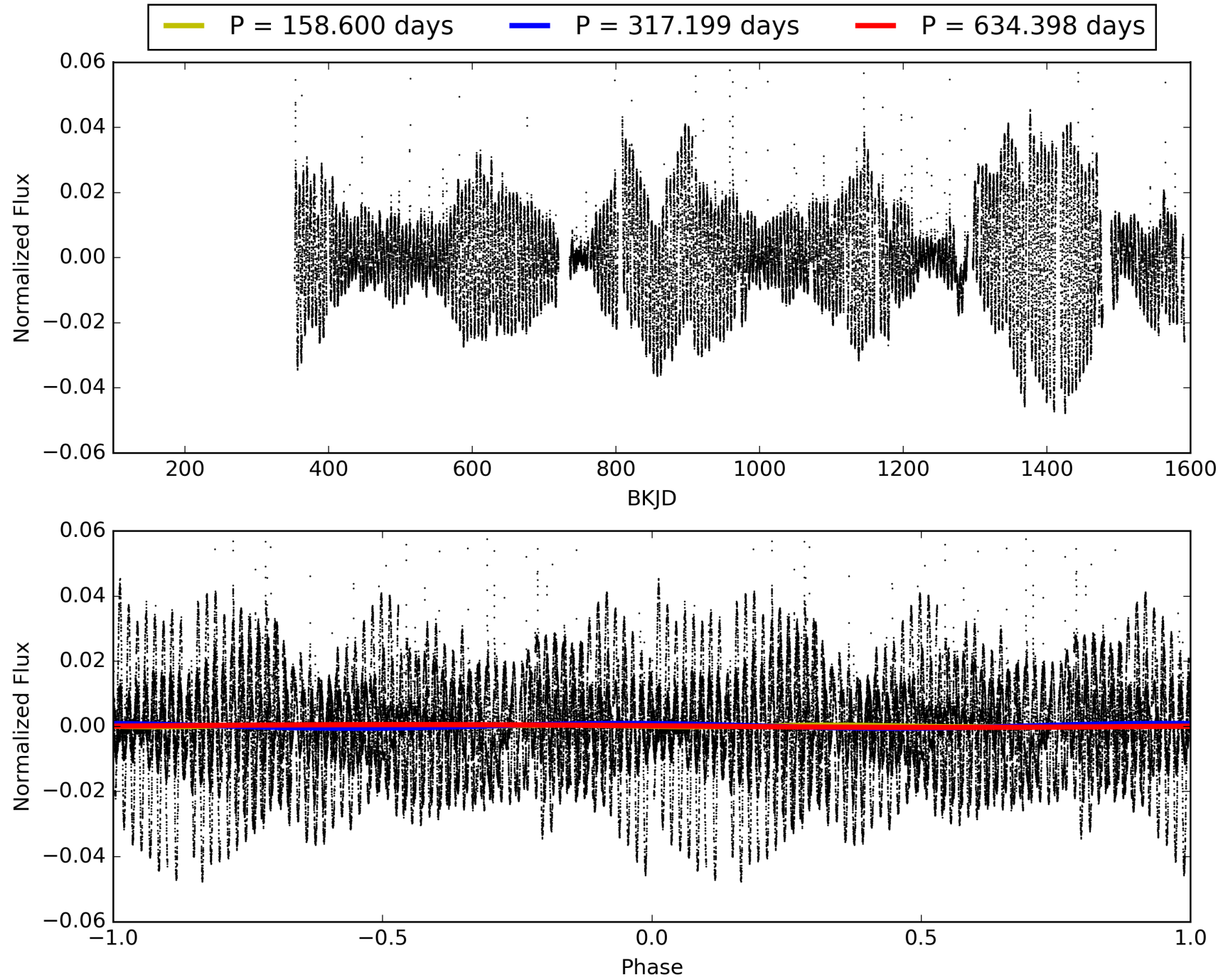
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [88.62σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 39.9%
Bootstrap-pfa: 1.64e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -8.532
Centroid-sig: 7.1%
Centroid-so: 1.706 arcsec [2.27σ]
OotOffset-rm: 0.084 arcsec [0.16σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-rm: 0.062 arcsec [0.09σ]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 004681067-01, PDC Light Curves

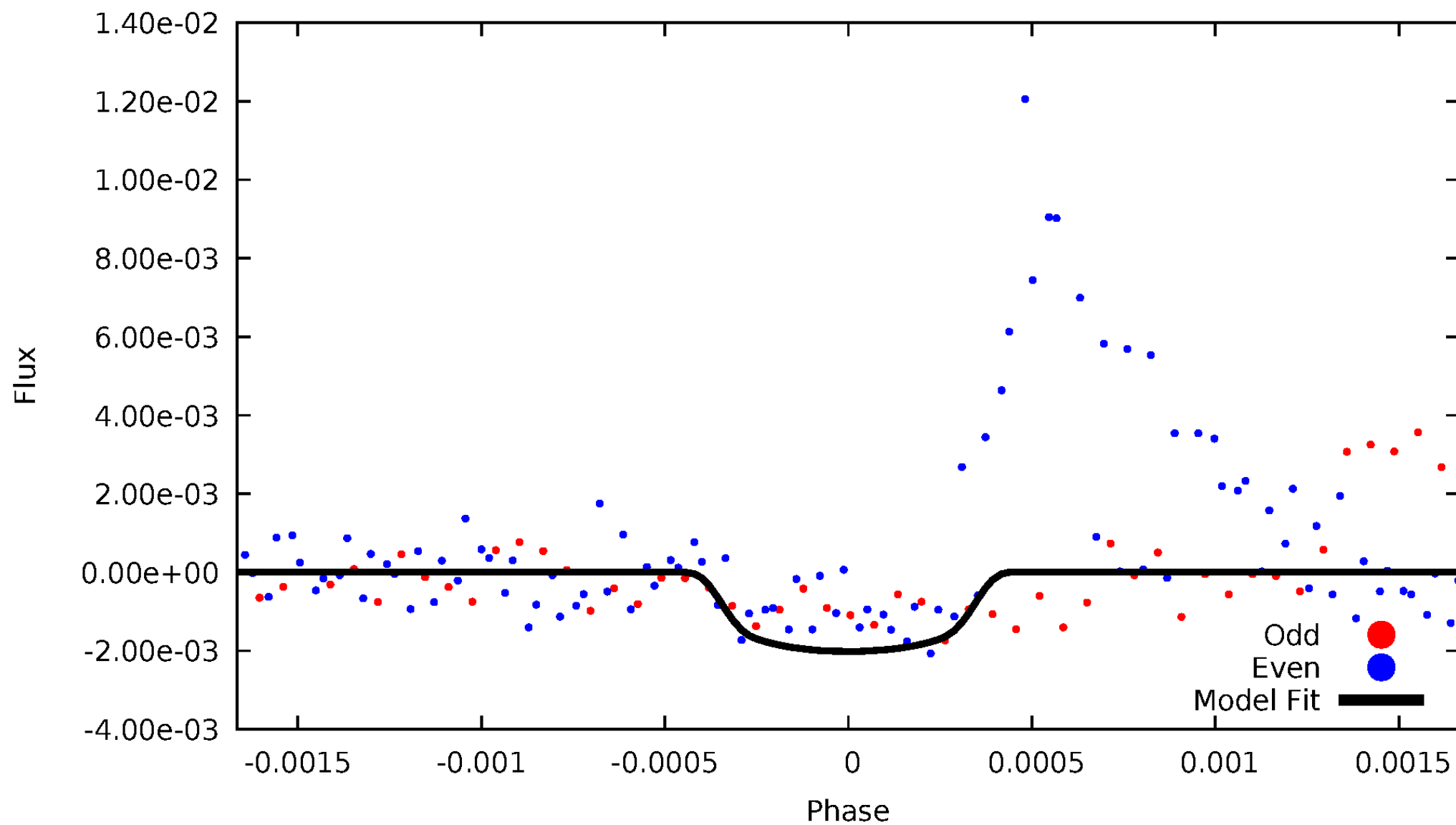


TCE 004681067-01



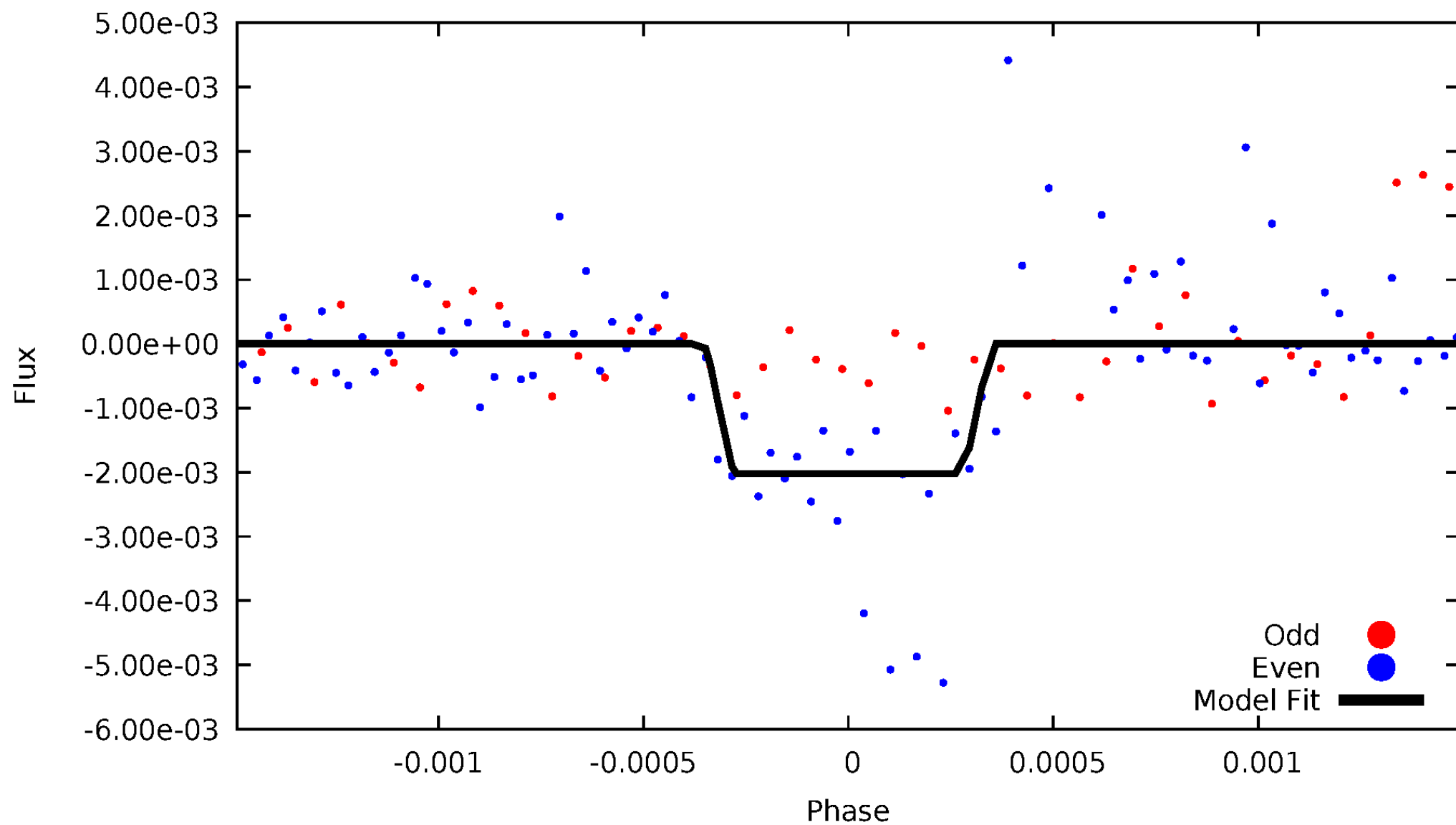
DV Odd/Even

TCE 004681067-01



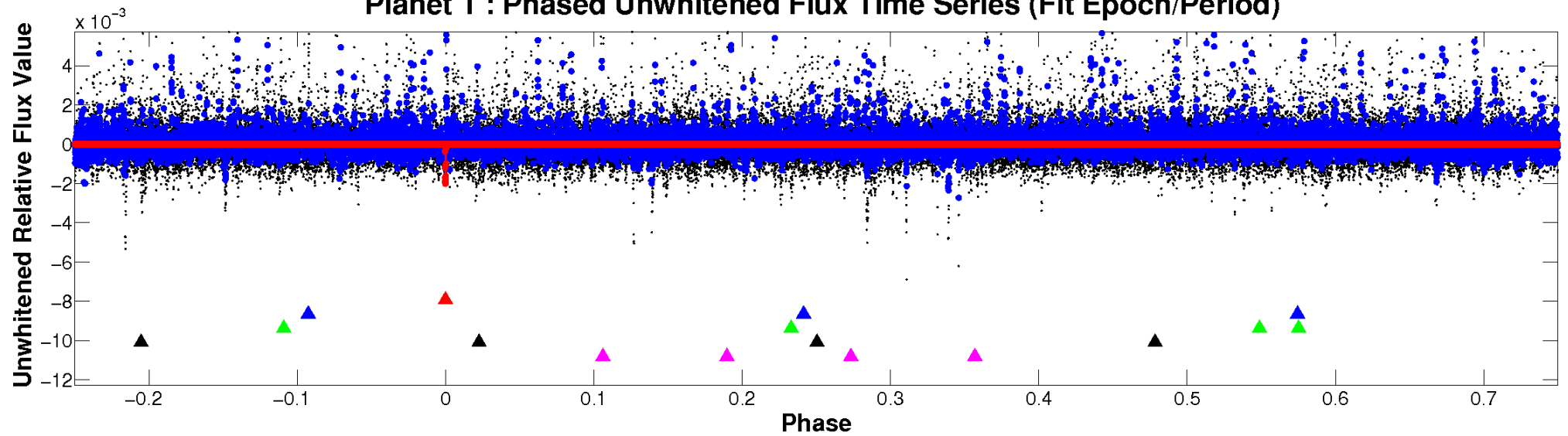
ALT Odd/Even

TCE 004681067-01

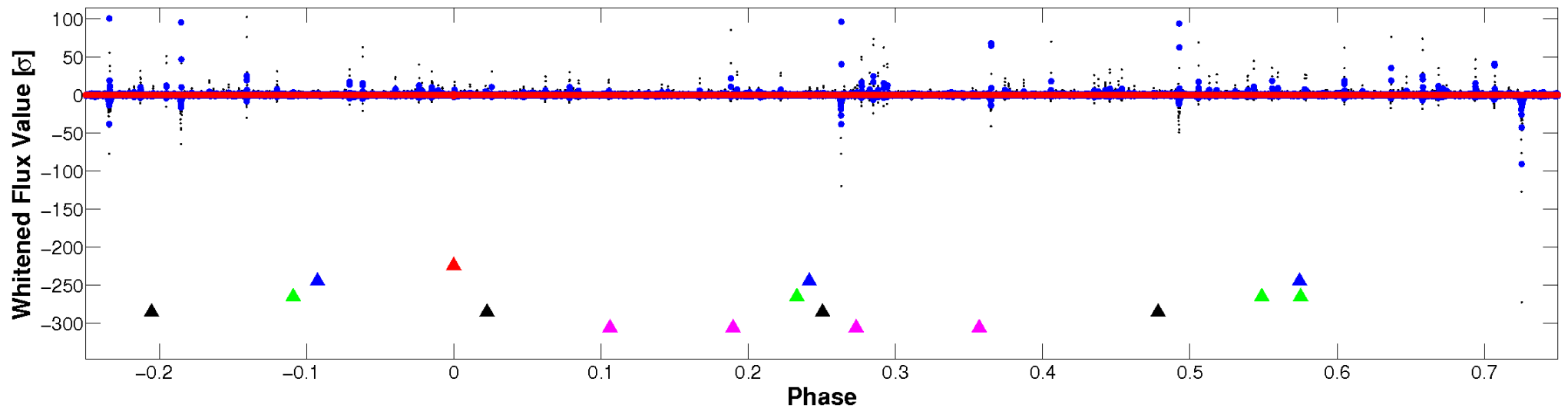


Non-Whitened Vs. Whitened Light Curve

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

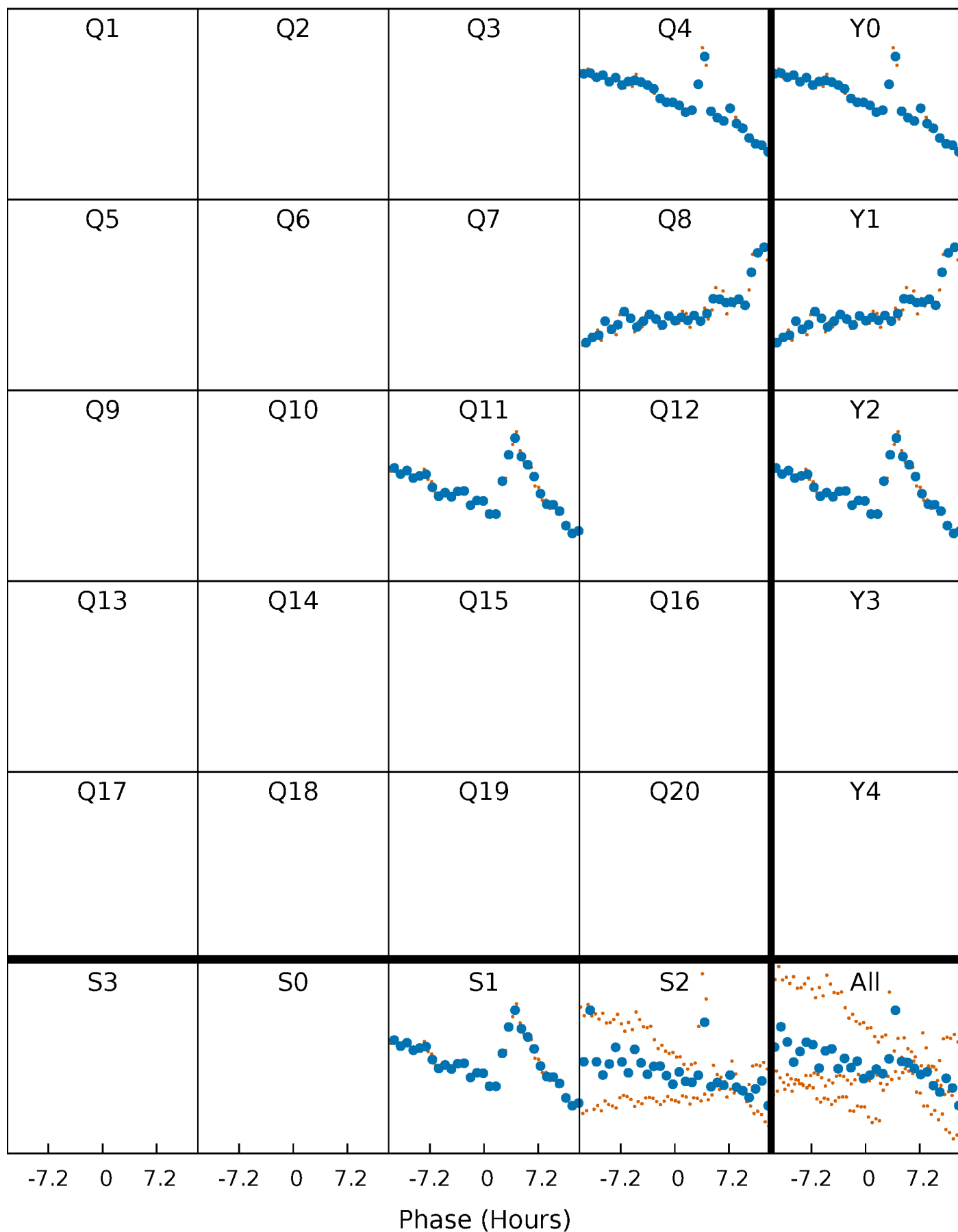


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



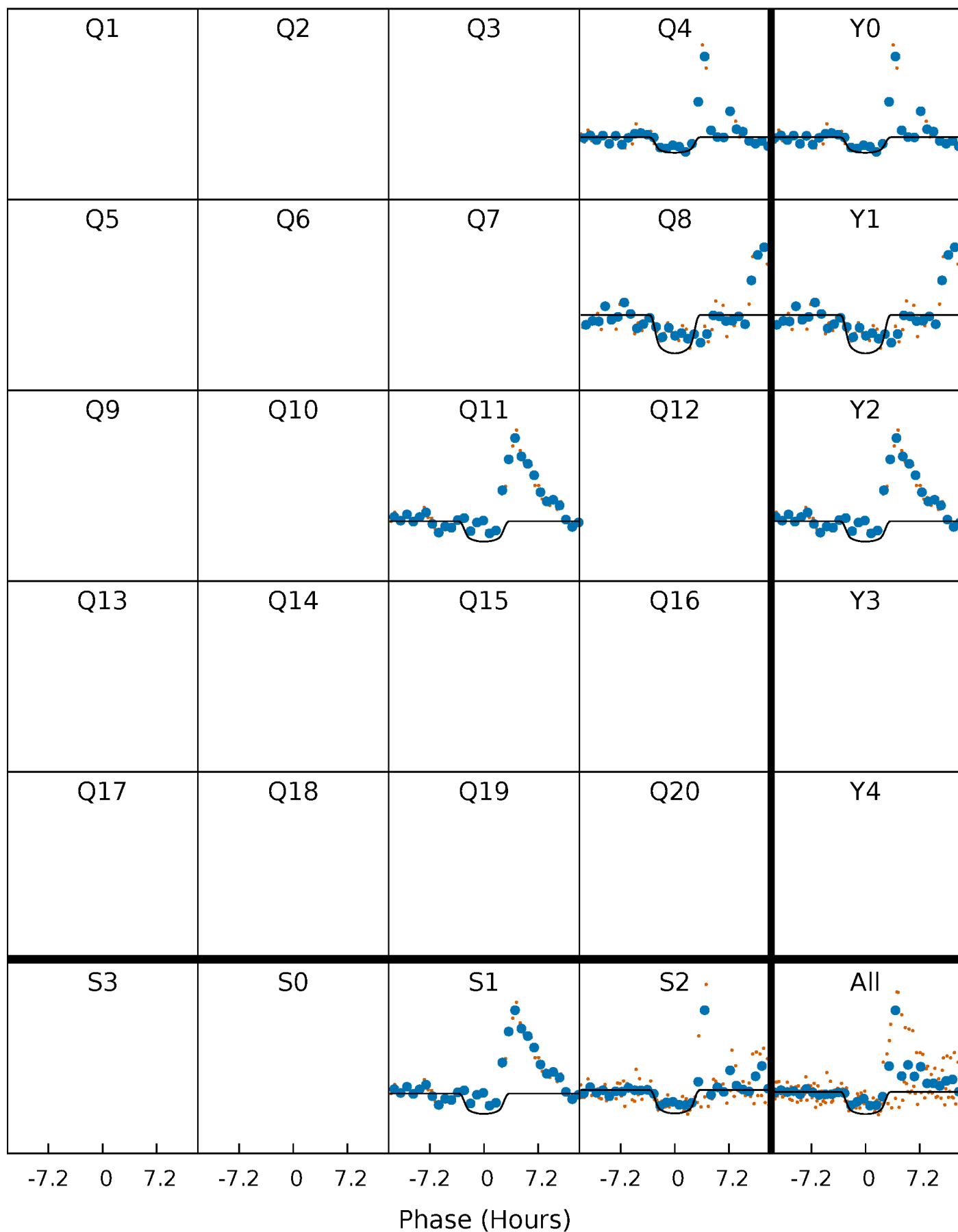
PDC Quarter-Phased Transit Curves

TCE 004681067-01 P=317.199184 Days $T_0=420.900097$ (BKJD)



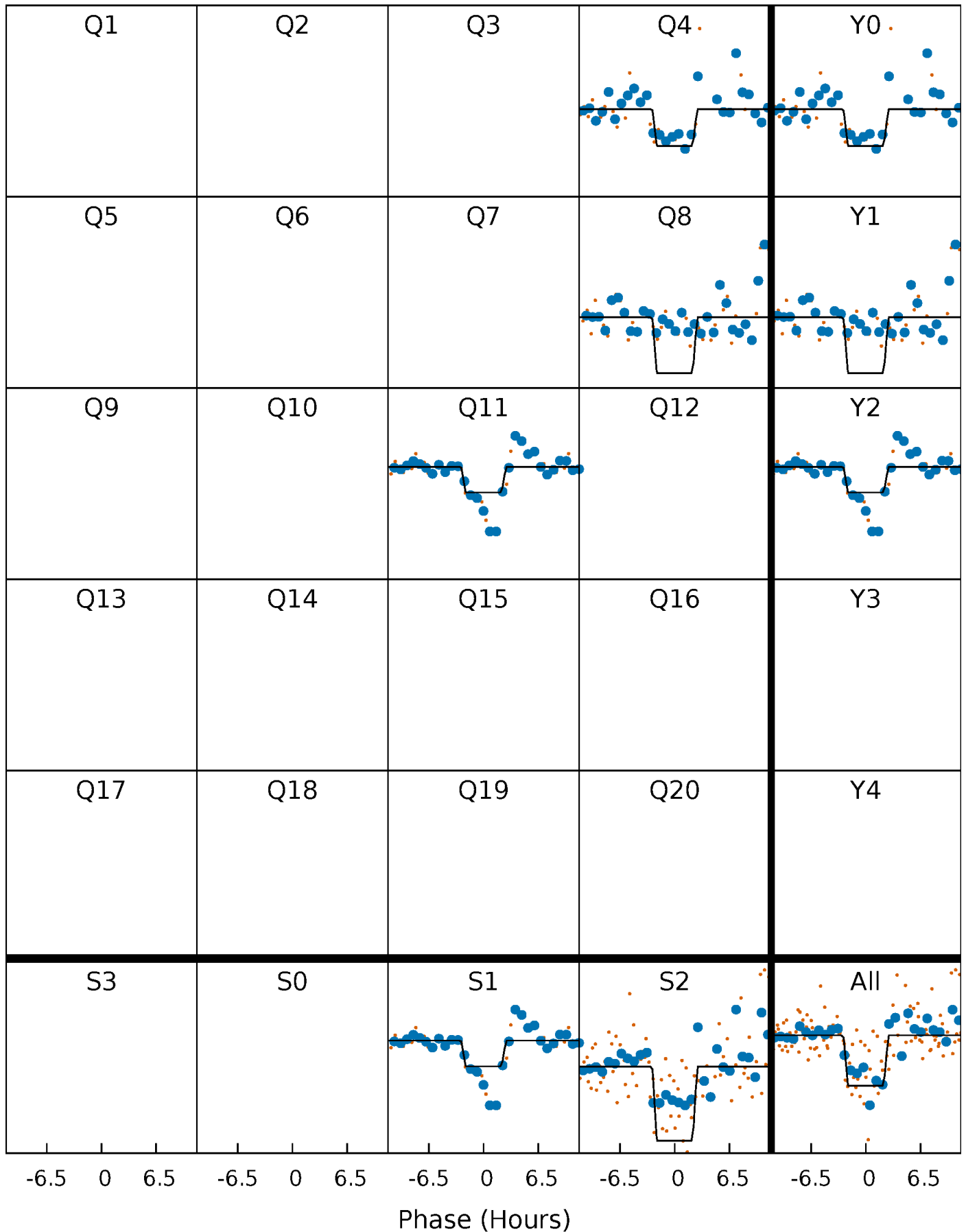
DV Quarter-Phased Transit Curves

TCE 004681067-01 P=317.199184 Days $T_0=420.900097$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

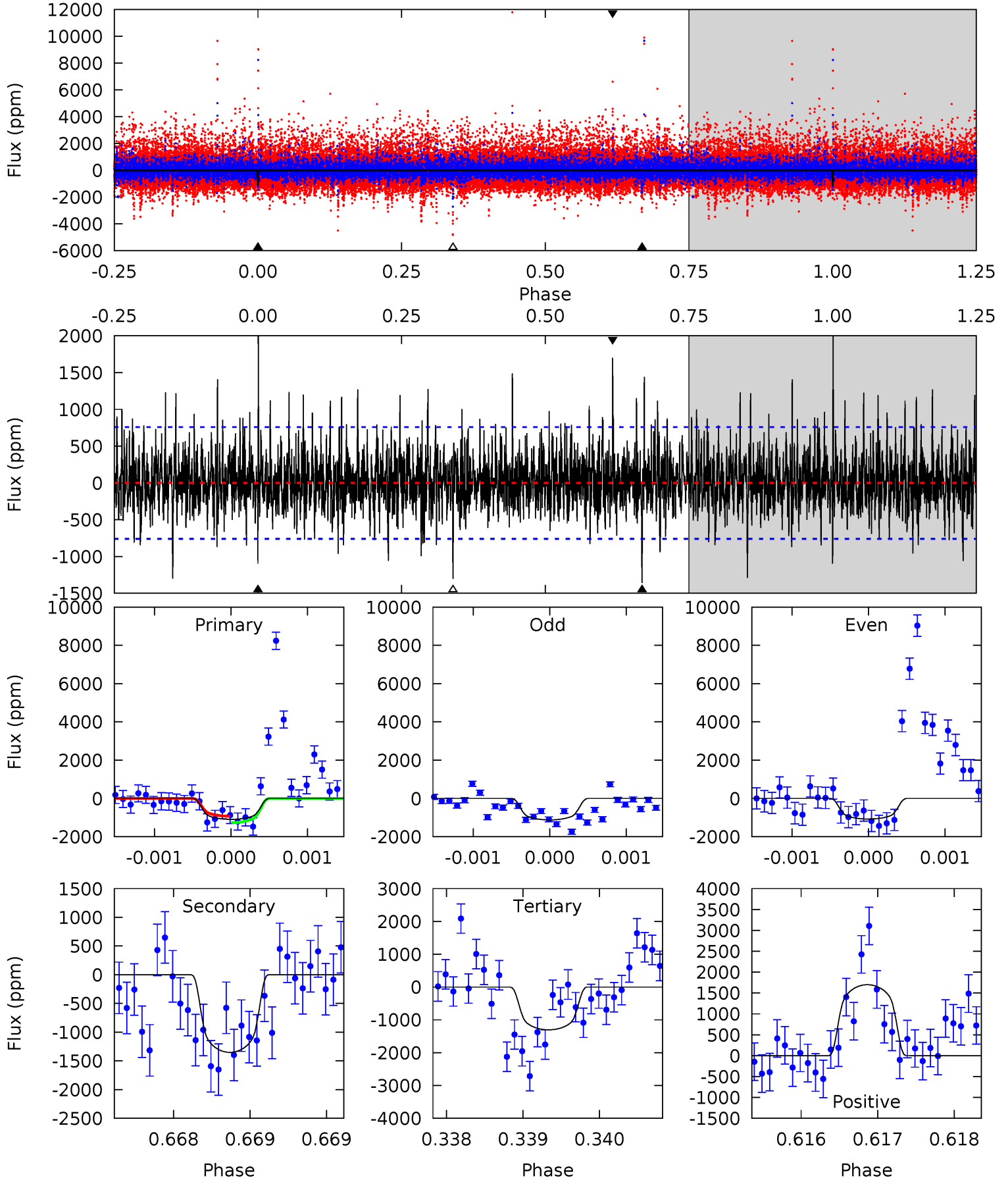
TCE 004681067-01 P=317.196963 Days $T_0=420.908855$ (BKJD)



DV Model-Shift Uniqueness Test

004681067-01, P = 317.199184 Days, E = 103.700913 Days

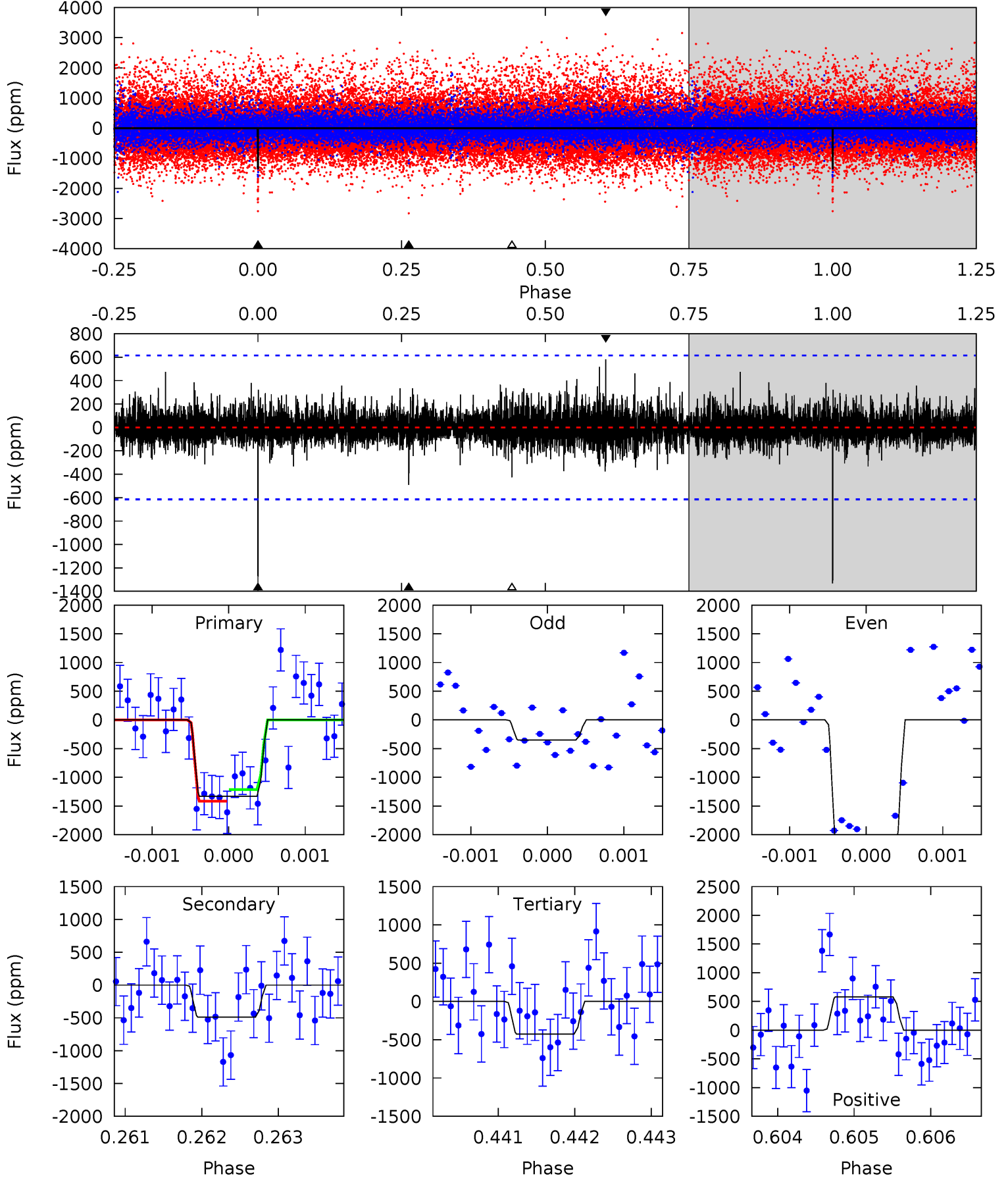
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.90	9.74	9.39	12.2	5.47	3.33	2.25	-1.49	-4.34	0.35	-2.50	0.08	0.90	0.60	1.22



Alt Model-Shift Uniqueness Test

004681067-01, P = 317.196963 Days, E = 103.711892 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	4.39	3.81	5.20	5.51	3.39	0.84	8.12	6.73	0.57	-0.82	9.16	1.07	0.30	0.91



Stellar Parameters For KIC 004681067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4407^{+157}_{-157}	$4.673^{+0.059}_{-0.032}$	$-0.660^{+0.350}_{-0.300}$	$0.569^{+0.050}_{-0.056}$	$0.556^{+0.061}_{-0.038}$	$4.251^{+1.060}_{-0.587}$
	+4%/-4%	+1%/-1%	+53%/-45%	+9%/-10%	+11%/-7%	+25%/-14%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004681067-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1352 ± 139	$2.95^{+0.50}_{-0.52}$	235^{+9}_{-10}	4001^{+316}_{-267}	48711^{+23295}_{-14130}
Alt.	-489 ± 112	$2.77^{+0.52}_{-0.54}$	236^{+9}_{-10}	3445^{+296}_{-229}	20029^{+11140}_{-7103}

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 $A_{obs} \gg 1.0$

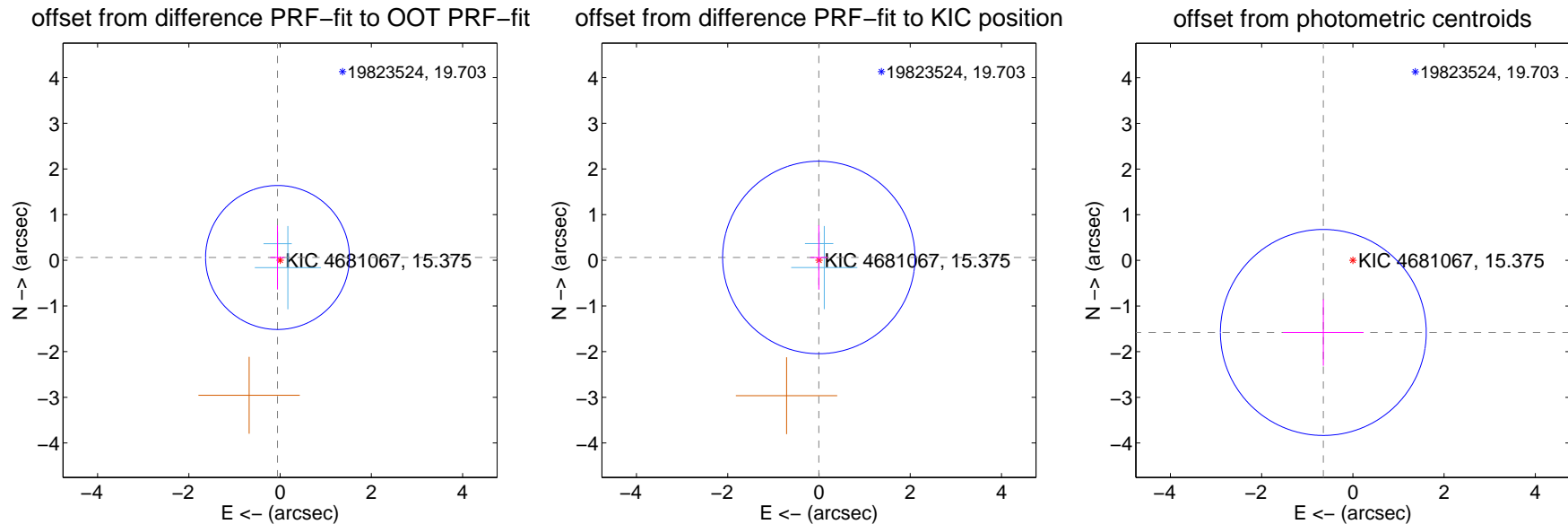
DV Centroid Data

Supplemental centroid analysis for 004681067-01. Kepler magnitude: 15.38. Transit SNR 7.74

There are 2 quarters with good PRF difference image offsets

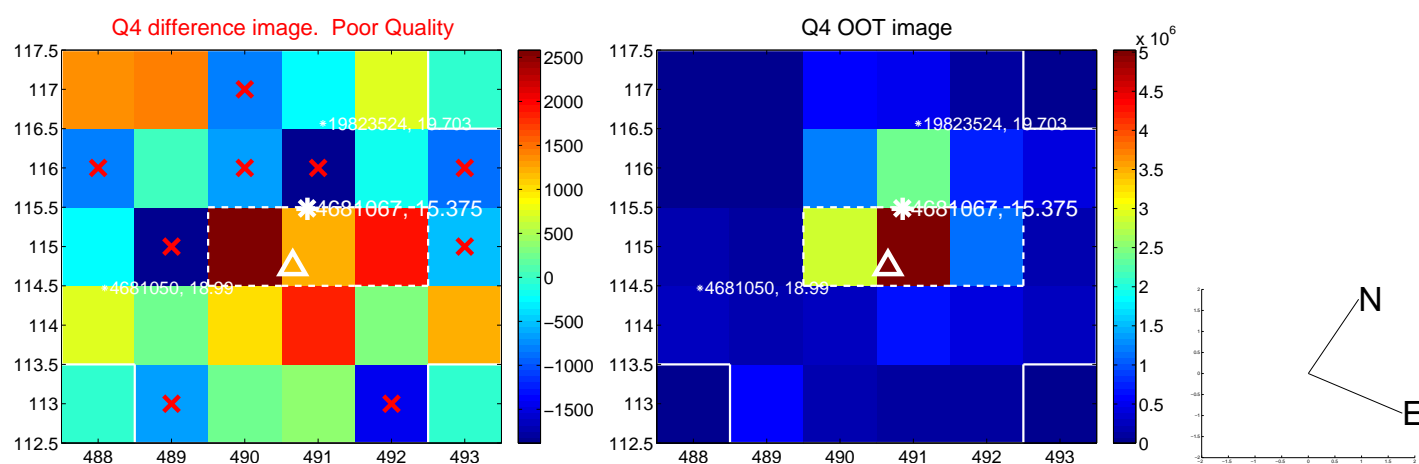
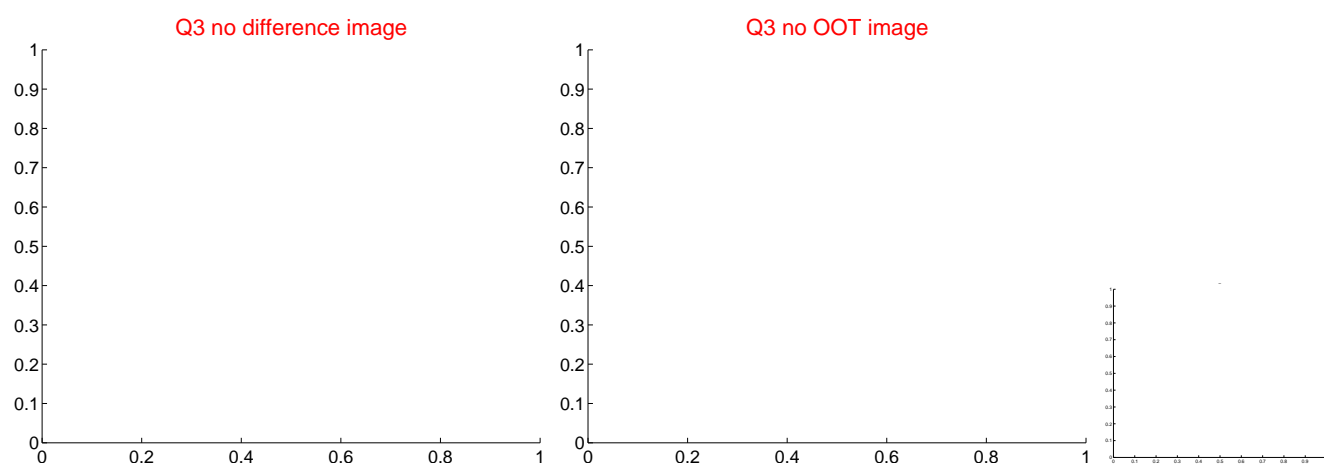
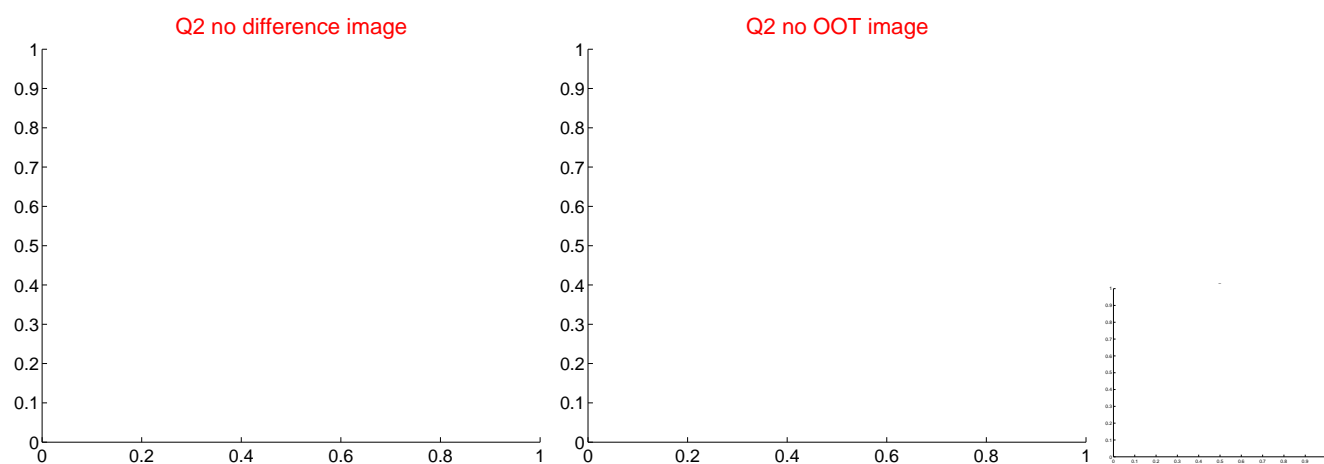
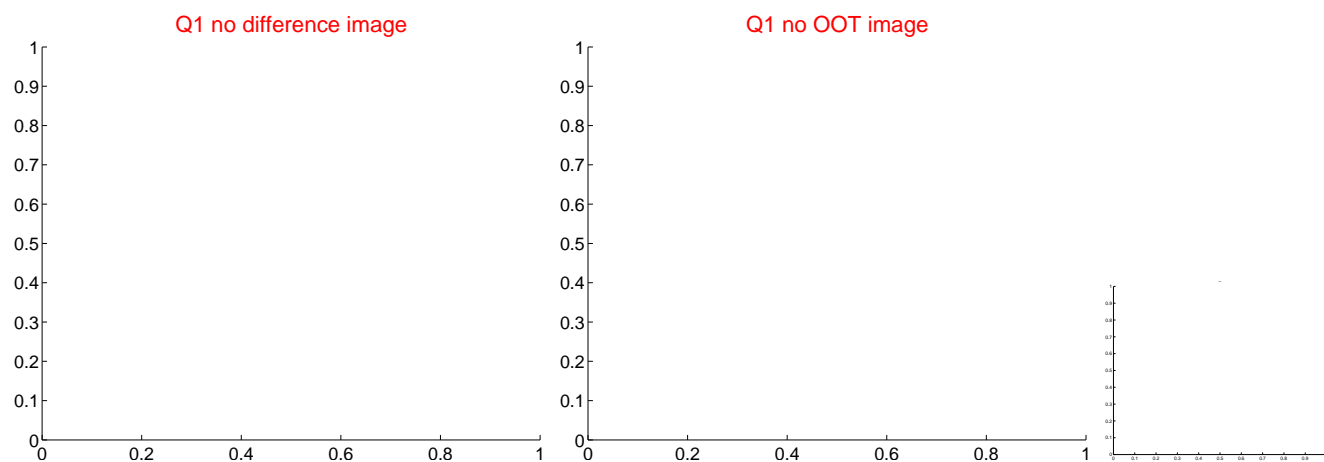
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.084 ± 0.525	0.16	0.057 ± 0.157	0.062 ± 0.701
PRF-fit source offset from KIC position	0.062 ± 0.702	0.09	0.004 ± 0.189	0.062 ± 0.704
photometric centroid source offset	1.71 ± 0.75	2.27	0.65 ± 0.88	-1.58 ± 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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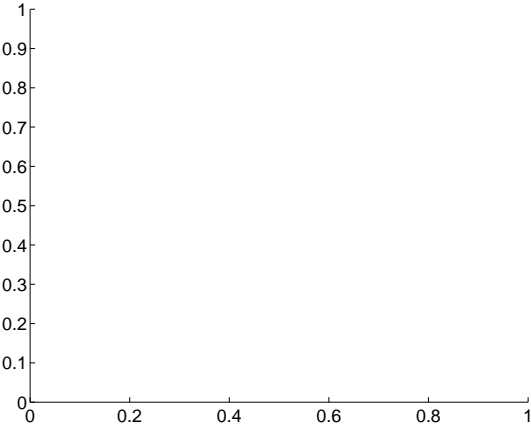
Q5 no difference image



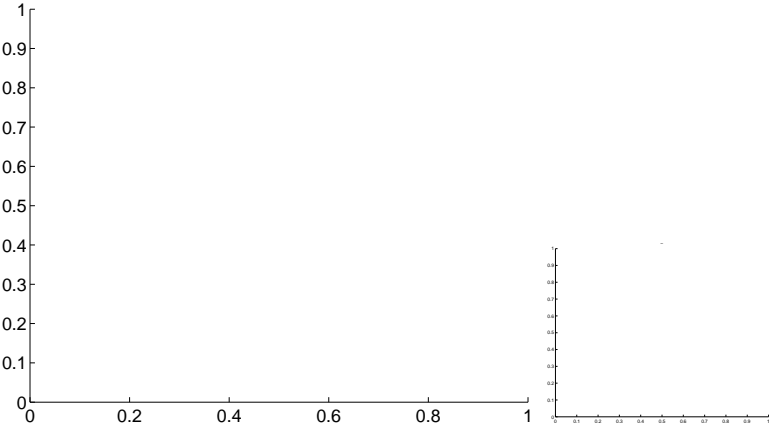
Q5 no OOT image



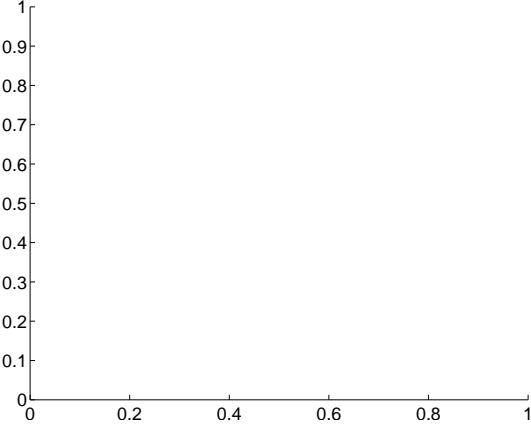
Q6 no difference image



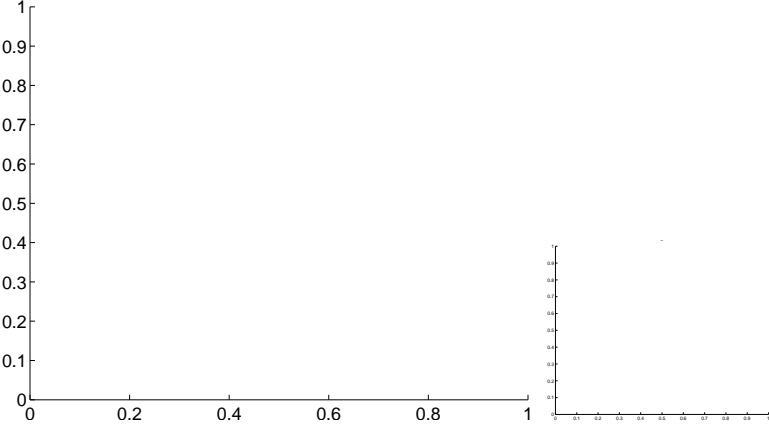
Q6 no OOT image



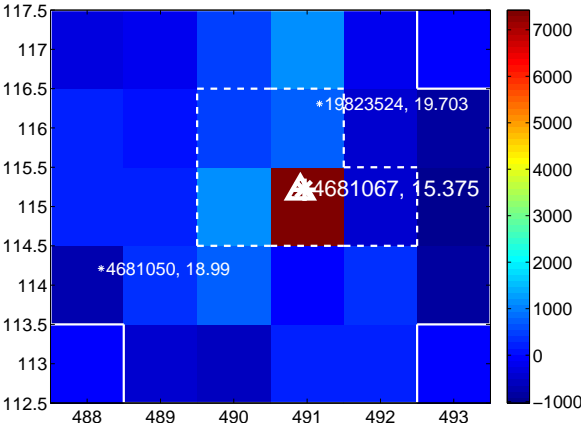
Q7 no difference image



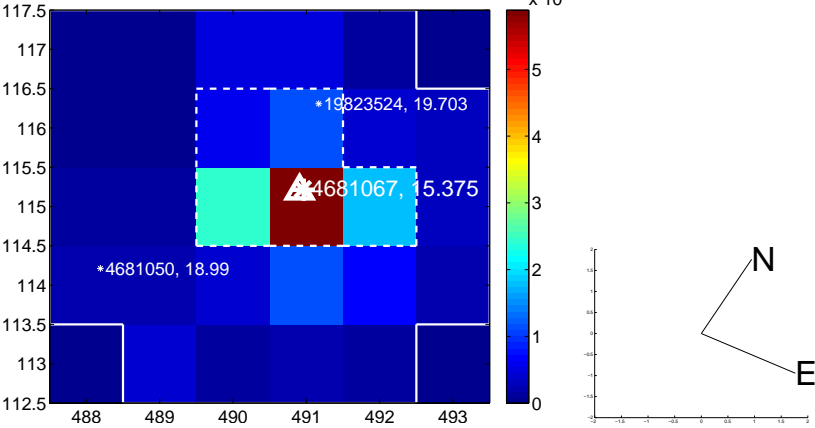
Q7 no OOT image



Q8 difference image



Q8 OOT image



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

Q9 no difference image



Q9 no OOT image



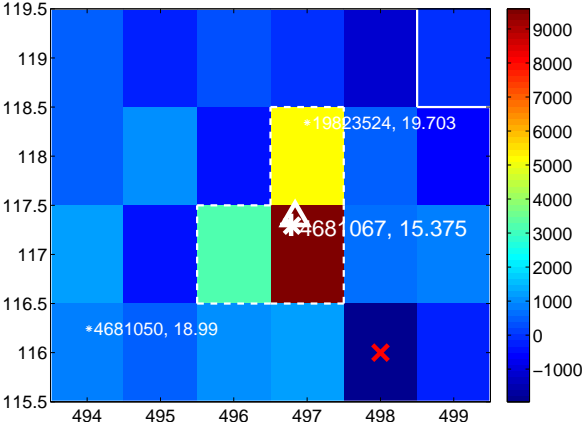
Q10 no difference image



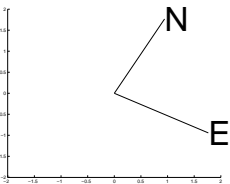
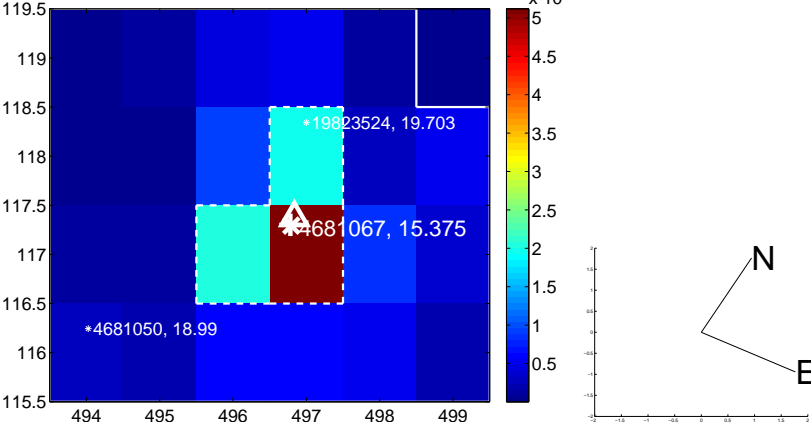
Q10 no OOT image



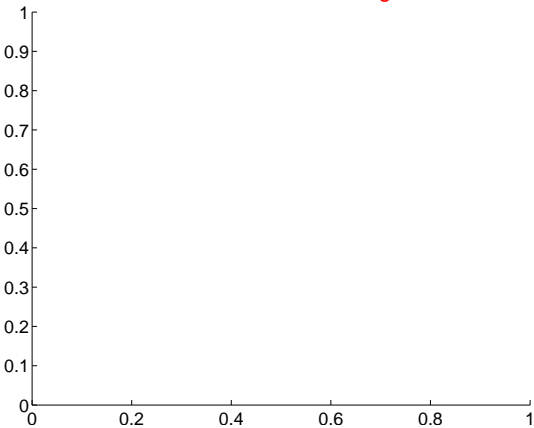
Q11 difference image



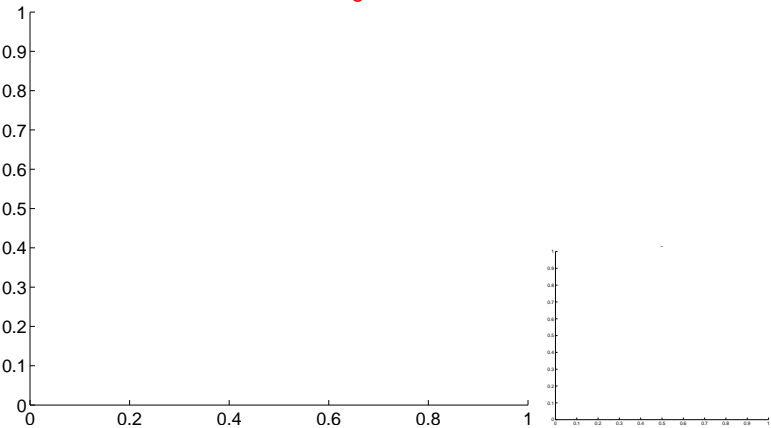
Q11 OOT image



Q12 no difference image



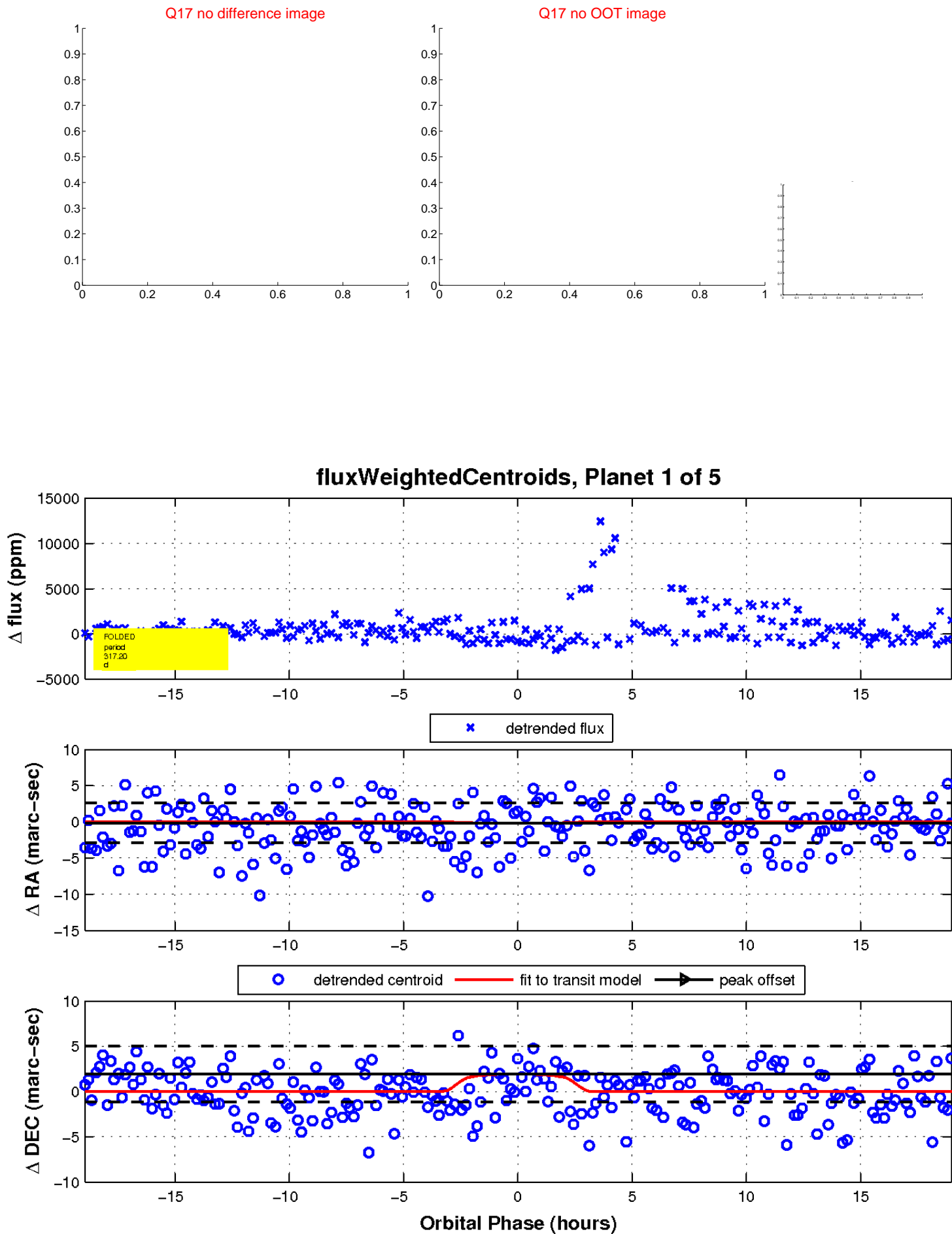
Q12 no OOT image



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

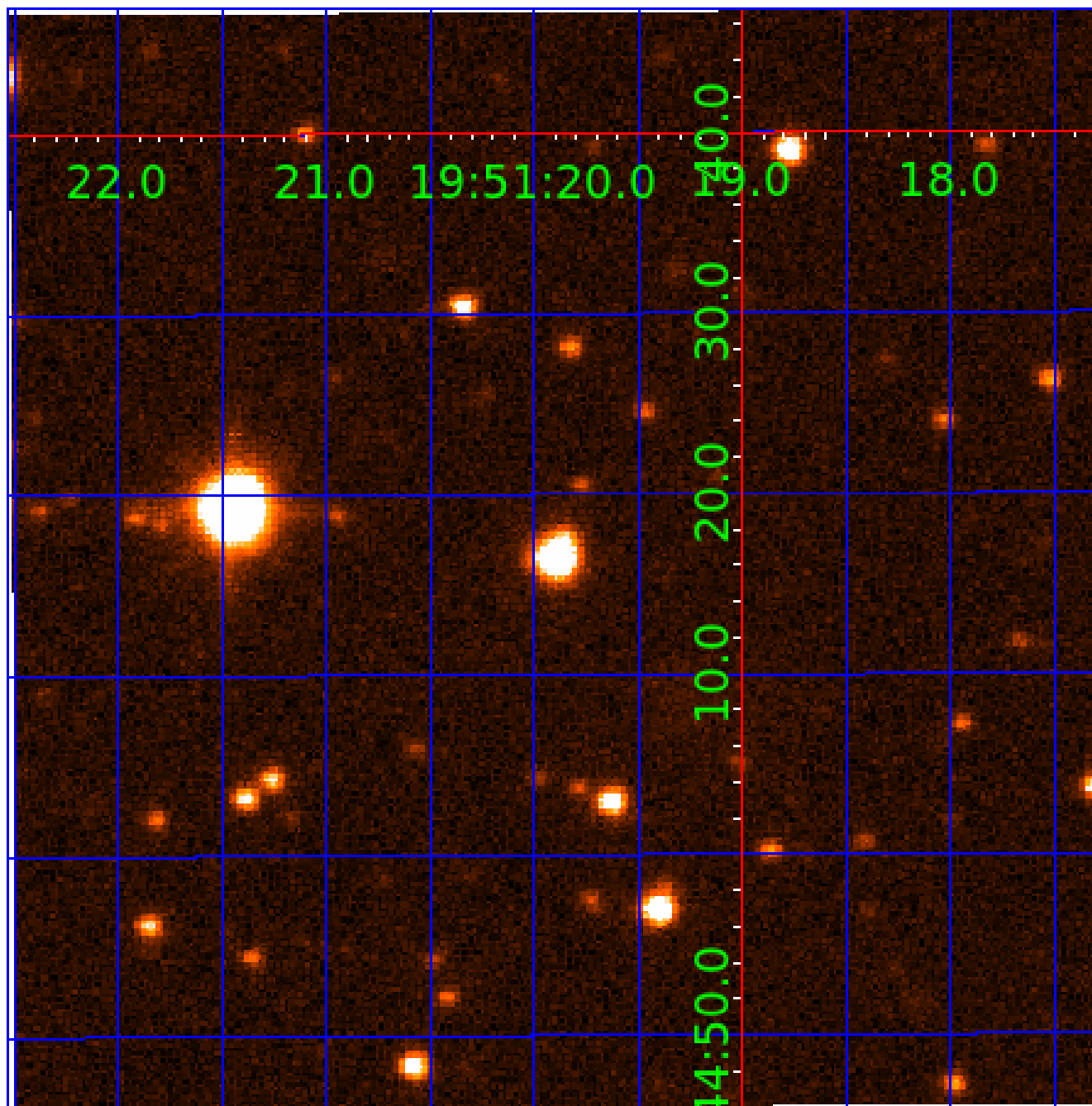


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004681067

Q1-17 DR25 TCE Parameters

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004681067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004681067-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
004681067-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
004681067-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

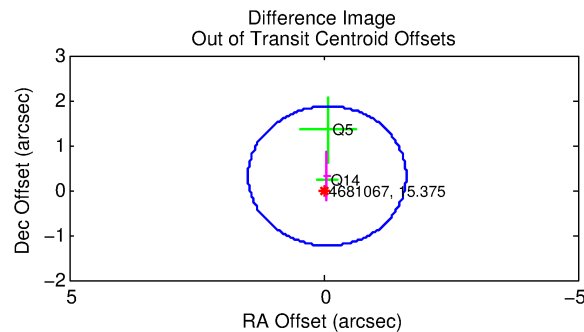
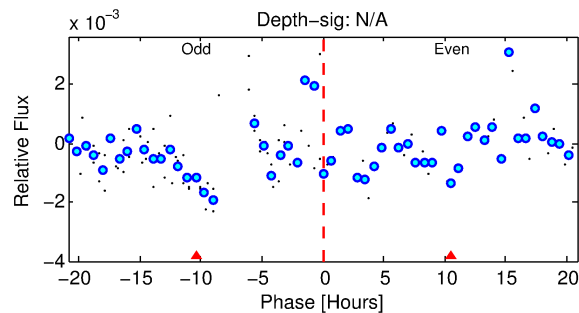
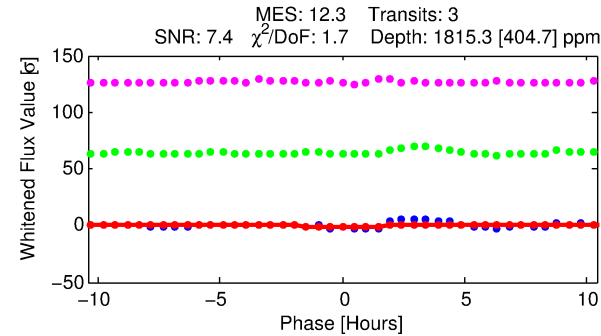
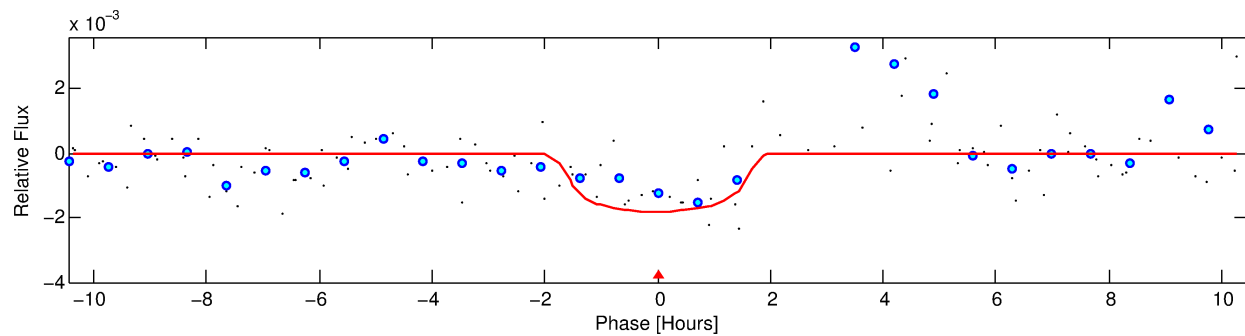
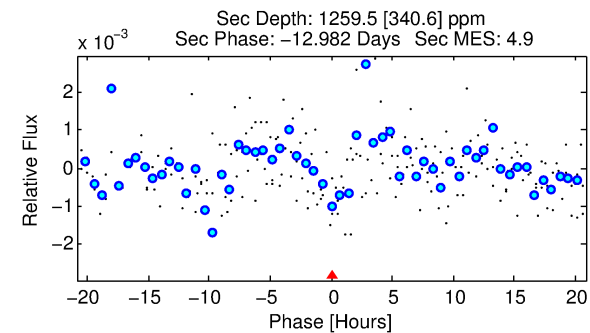
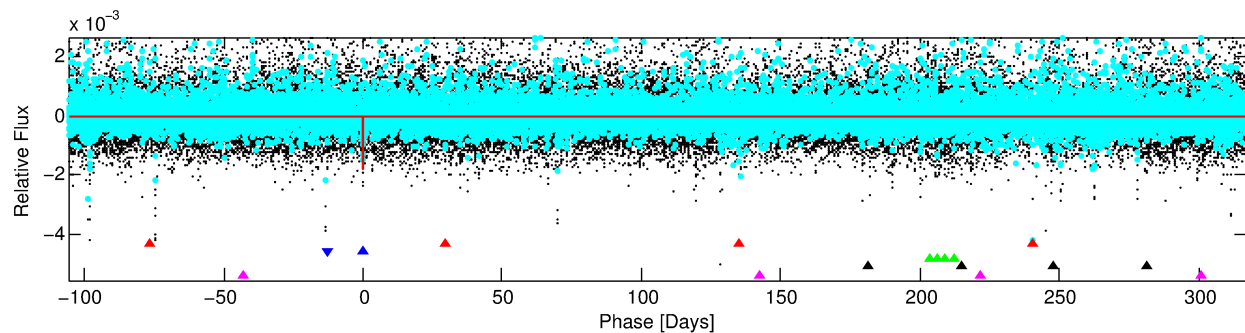
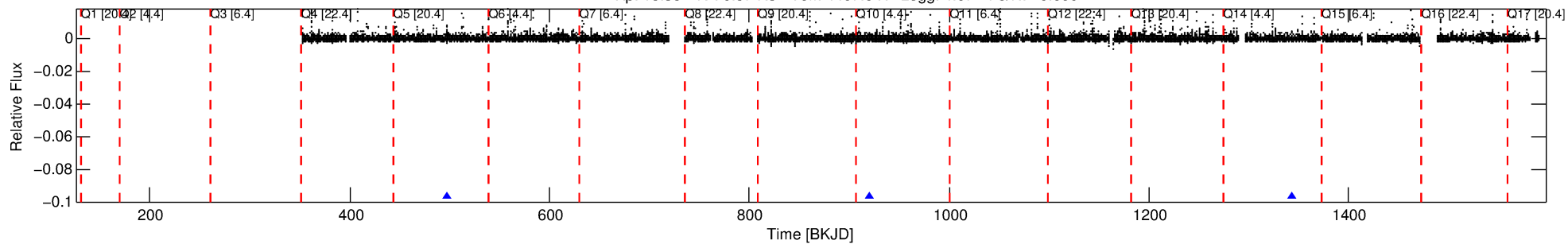
Ephemeris Match Information For 004681067-02

No Significant Match Found

DV One-Page Summary

KIC: 4681067 Candidate: 2 of 5 Period: 422.825 d

Kp: 15.38 R*: 0.57 Rs Teff: 4407.0 K Logg: 4.67 Fe/H: -0.660



DV Fit Results:

Period = 422.82478 [0.00846] d
Epoch = 497.4993 [0.0116] BKJD
Rp/R* = 0.0390 [0.1325]
a/R* = 881.01 [10132.27]
b = 0.42 [22.98]
Seff = 0.13 [0.02]
Teq = 154 [7] K
Rp = 2.42 [8.23] Re
a = 0.9069 [0.0723] AU
Ag = 97403.10 [663410.97] [0.15σ]
Teffp = 4206 [7163] K [0.57σ]

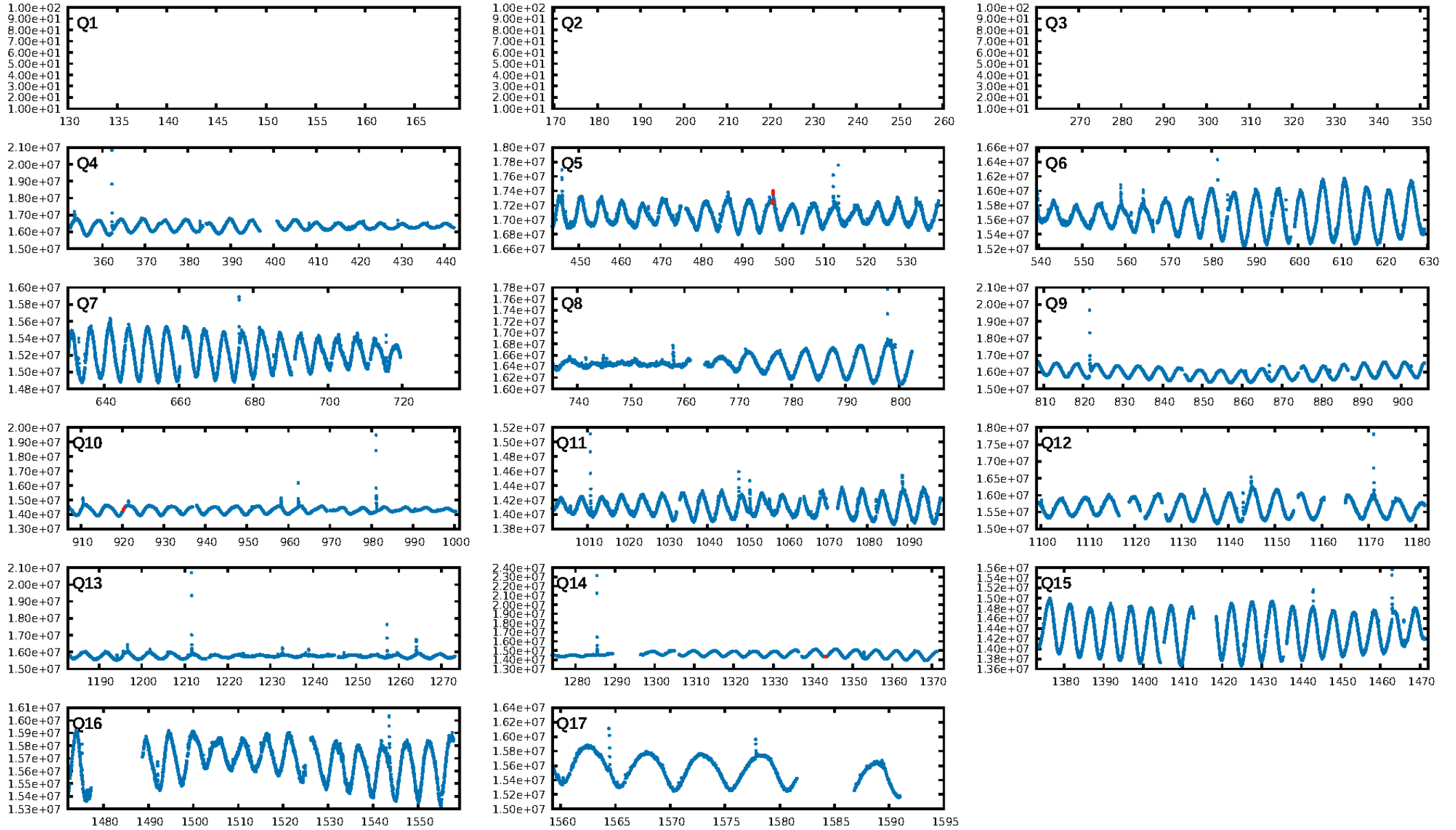
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [102.69σ]
LongPeriod-sig: 100.0% [4.08σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 37.7%
Bootstrap-pfa: 9.34e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.382
Centroid-sig: 59.3%
Centroid-so: 1.629 arcsec [1.31σ]
OotOffset-rm: 0.323 arcsec [0.62σ]
KicOffset-rm: 0.266 arcsec [0.72σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

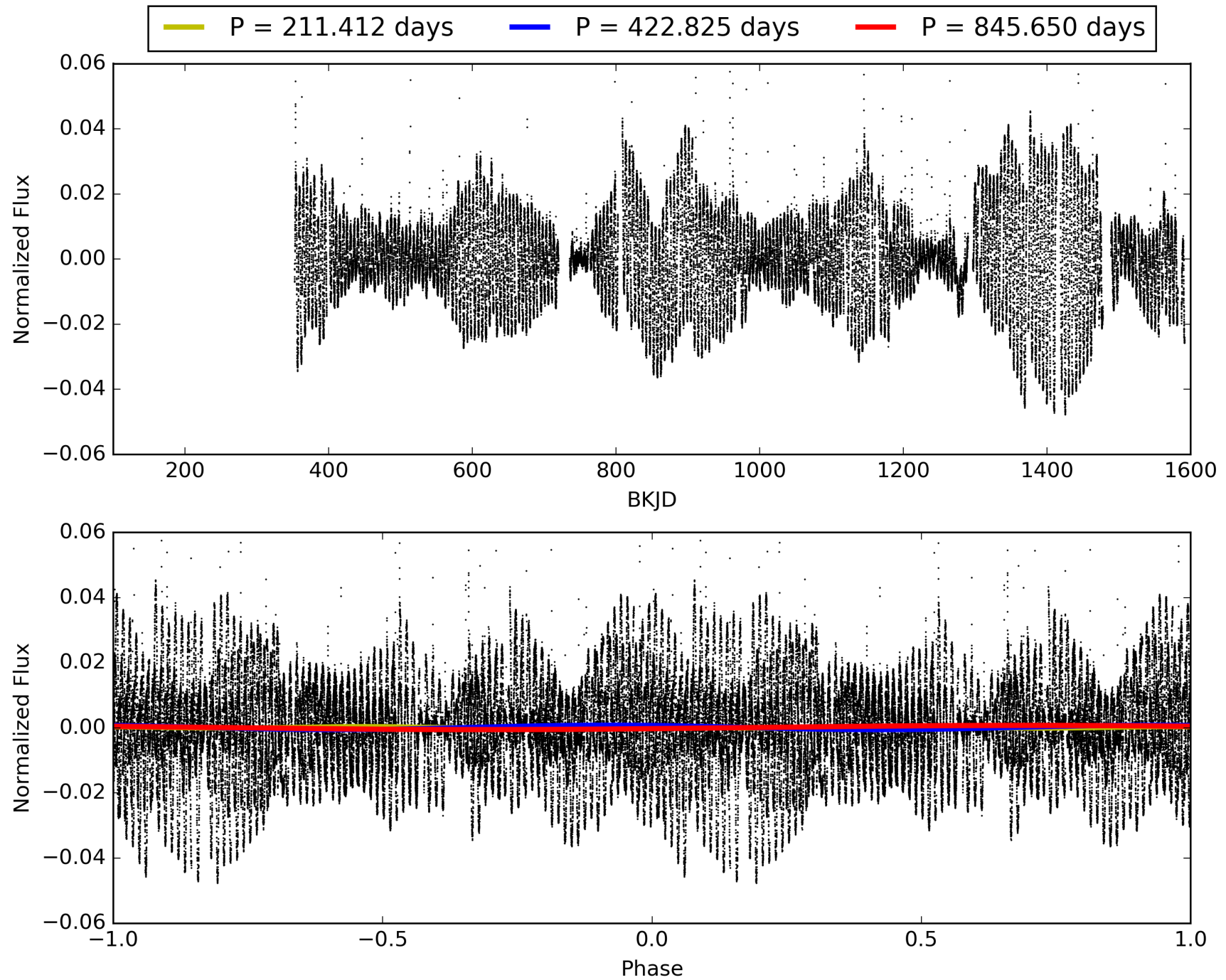
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004681067-02, PDC Light Curves

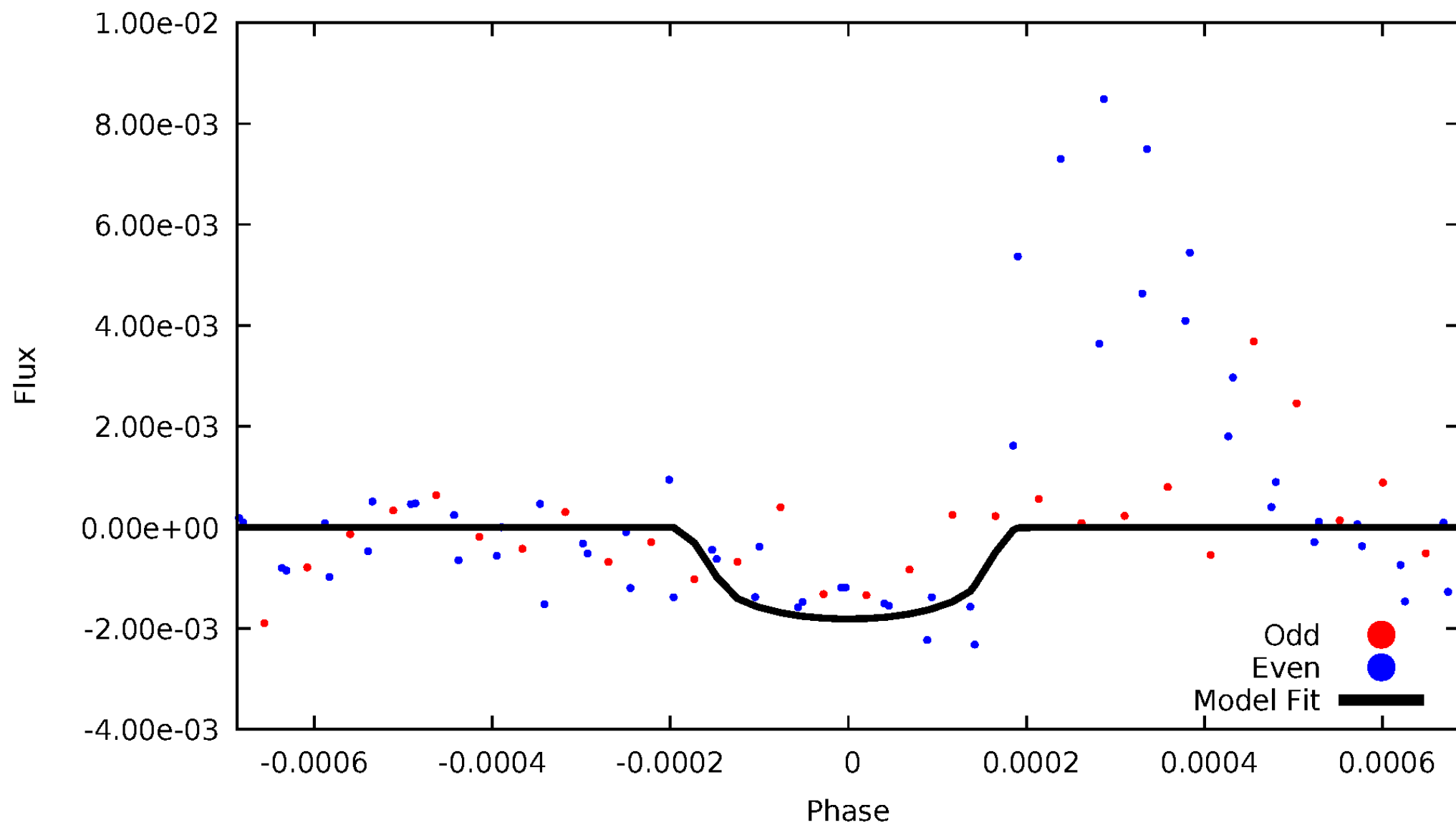


TCE 004681067-02



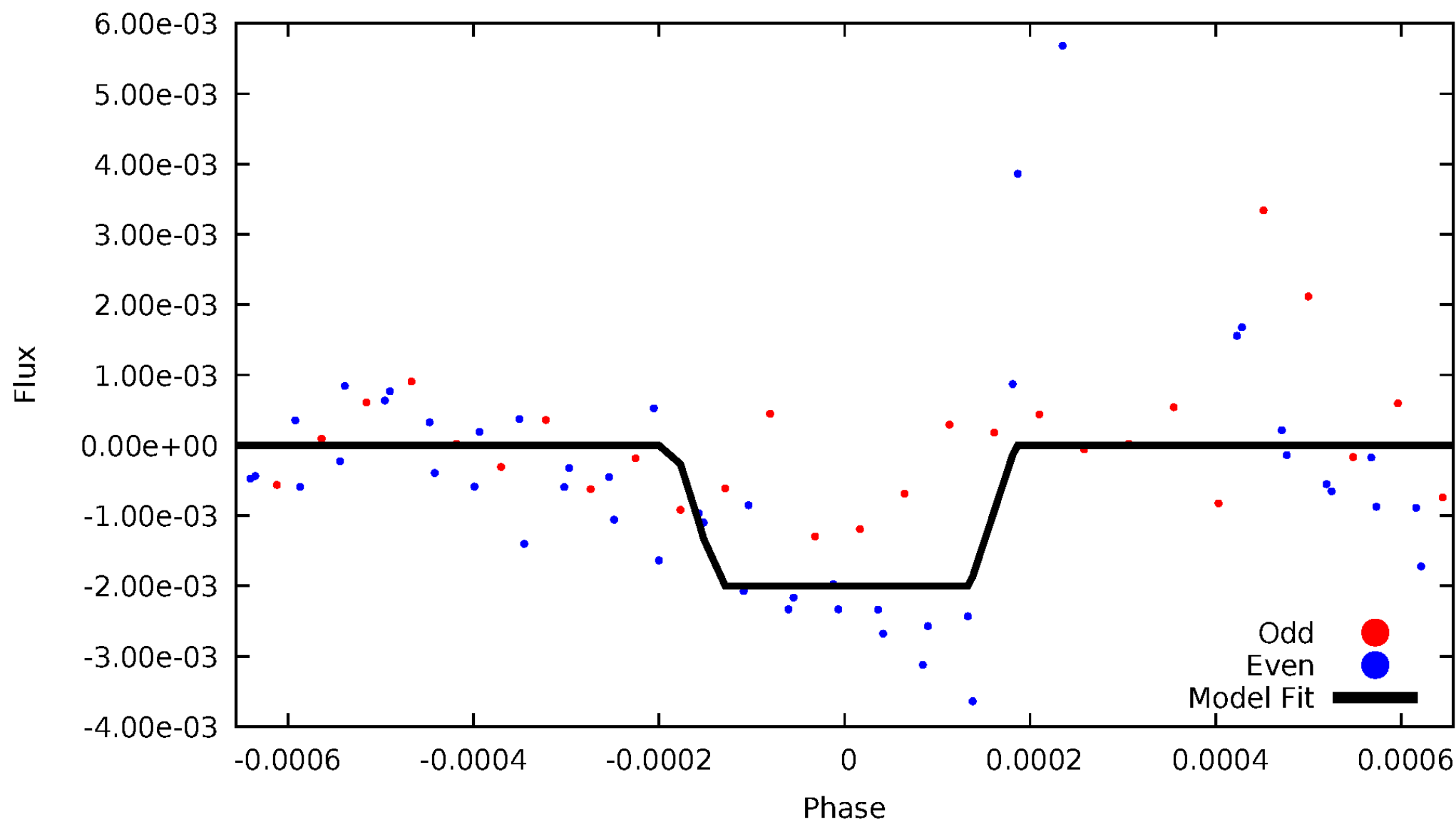
DV Odd/Even

TCE 004681067-02



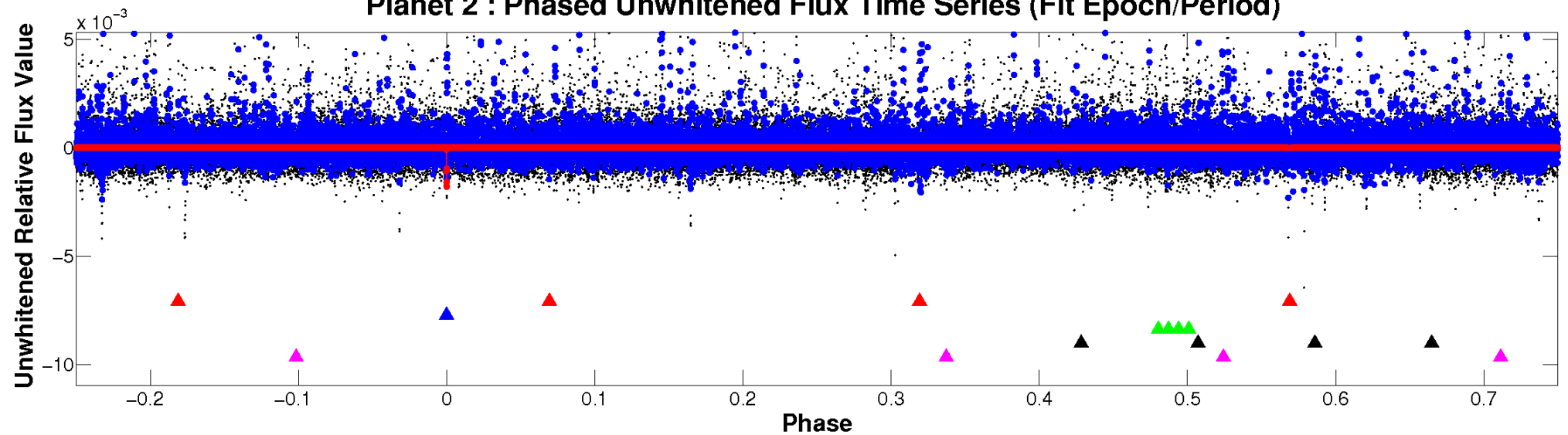
ALT Odd/Even

TCE 004681067-02

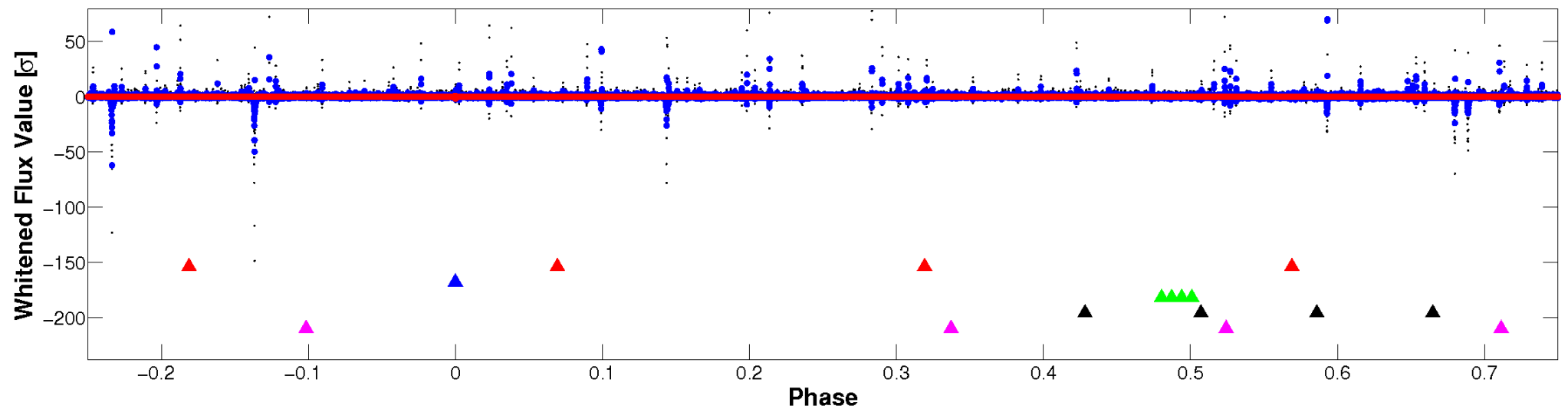


Non-Whitened Vs. Whitened Light Curve

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

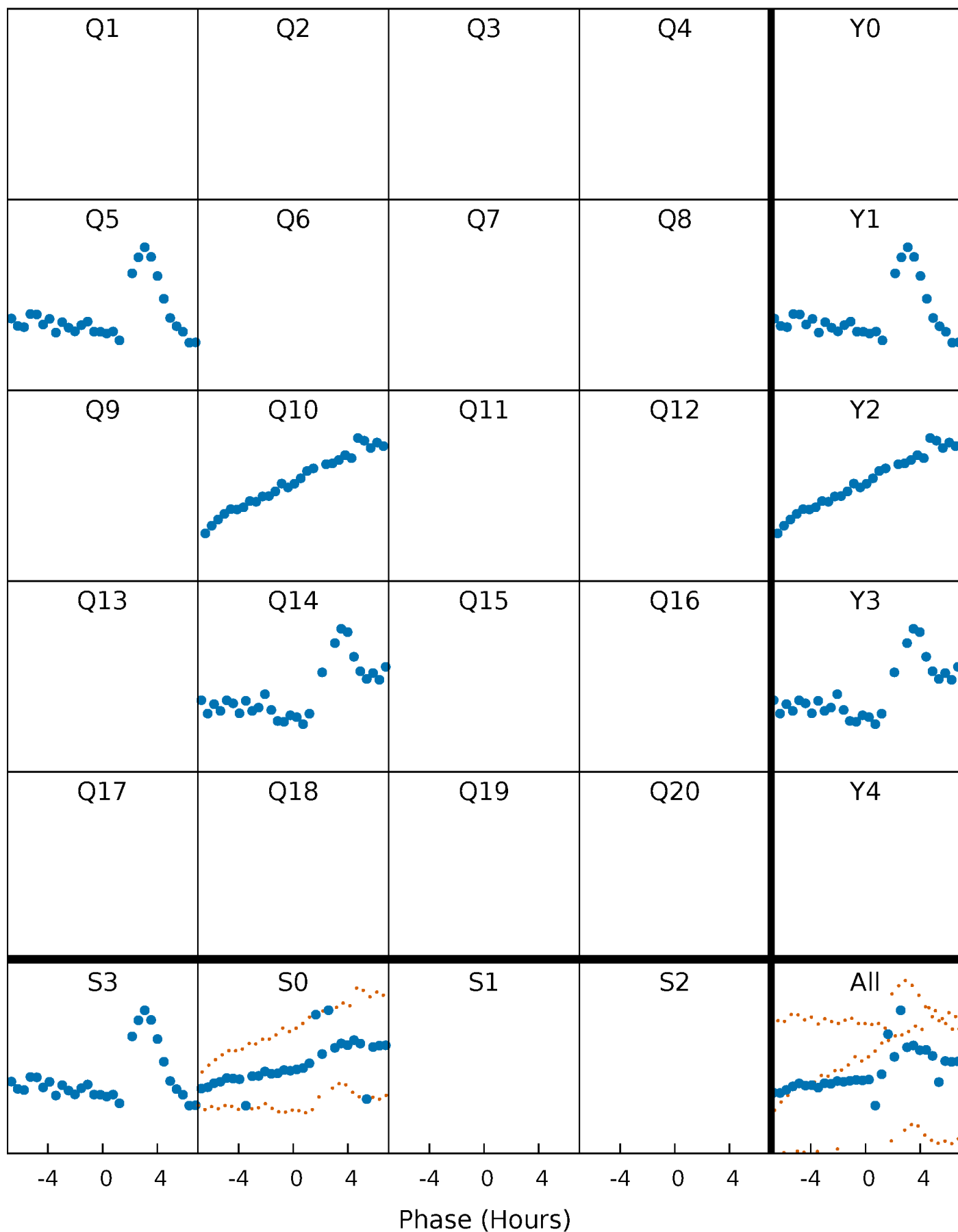


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



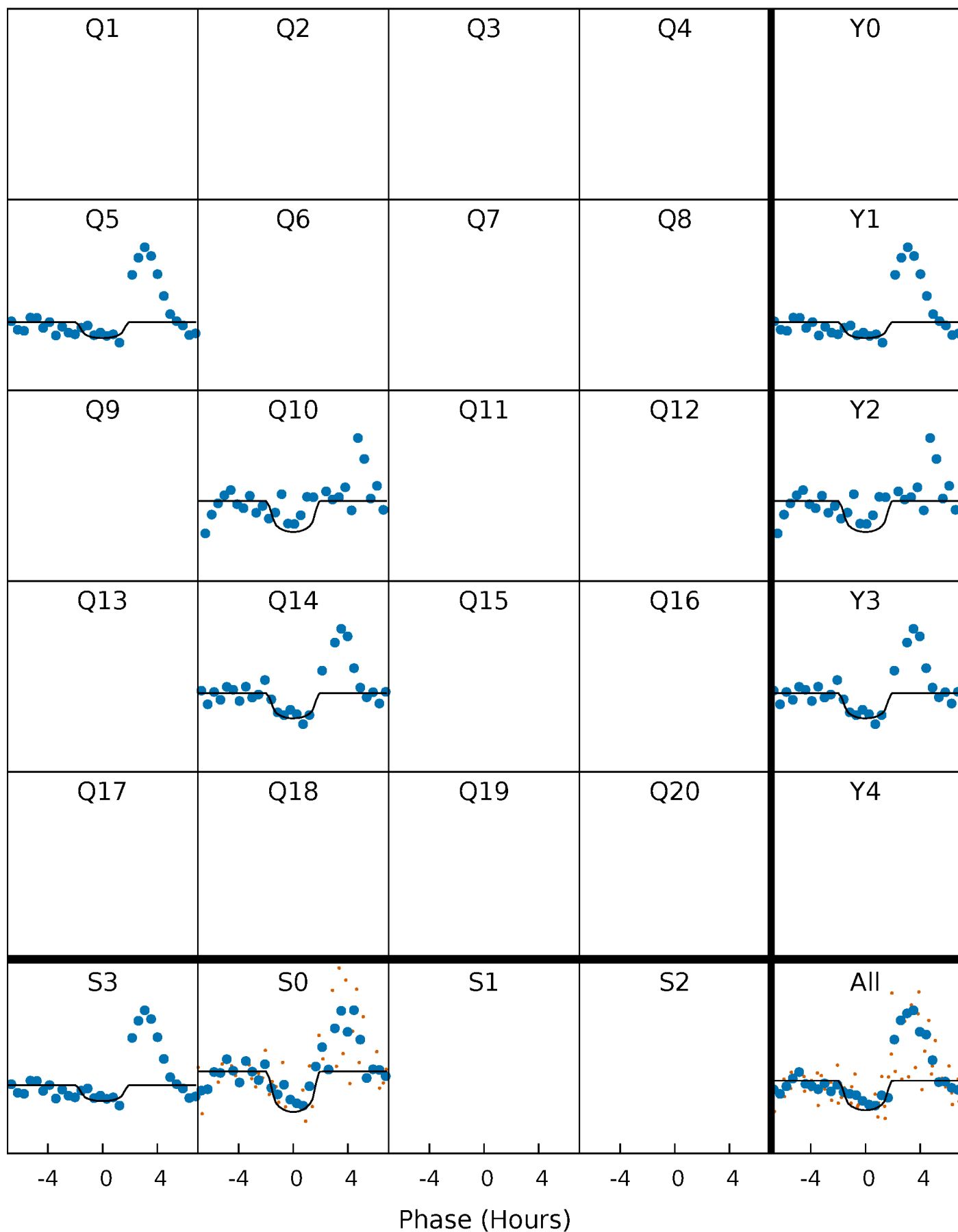
PDC Quarter-Phased Transit Curves

TCE 004681067-02 $P=422.824780$ Days $T_0=497.499306$ (BKJD)



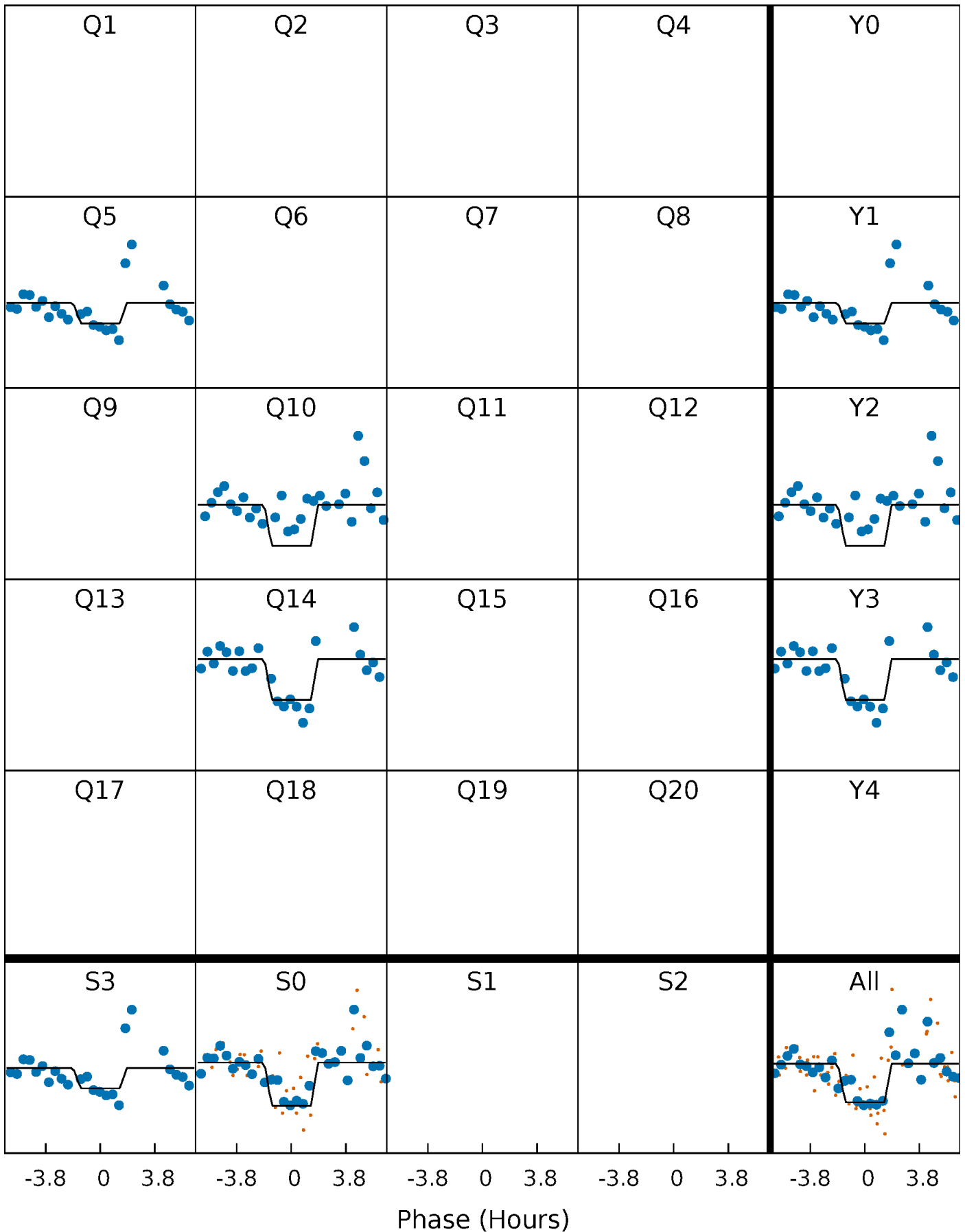
DV Quarter-Phased Transit Curves

TCE 004681067-02 $P=422.824780$ Days $T_0=497.499306$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

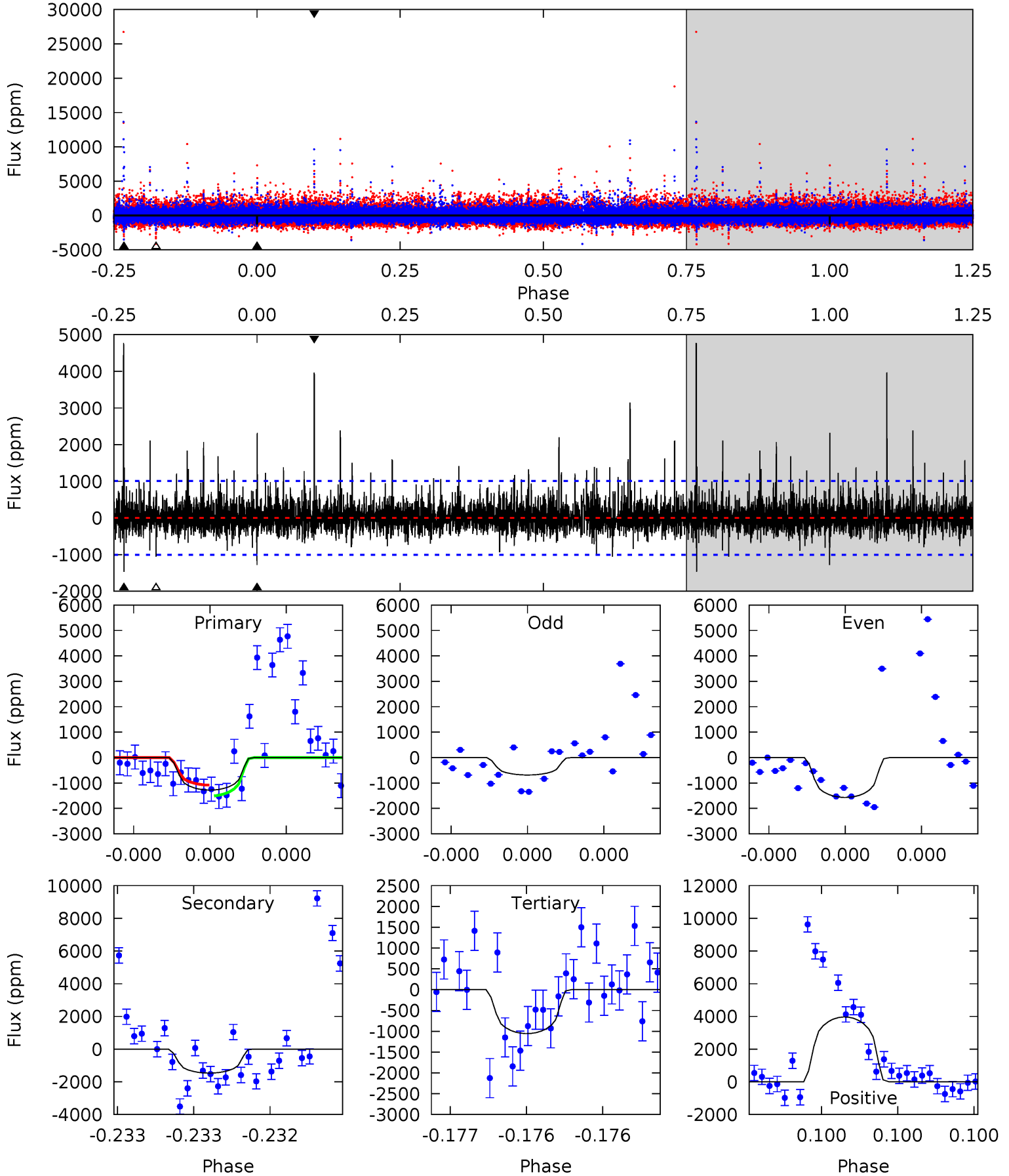
TCE 004681067-02 P=422.824846 Days $T_0=497.500939$ (BKJD)



DV Model-Shift Uniqueness Test

004681067-02, P = 422.824780 Days, E = 74.674526 Days

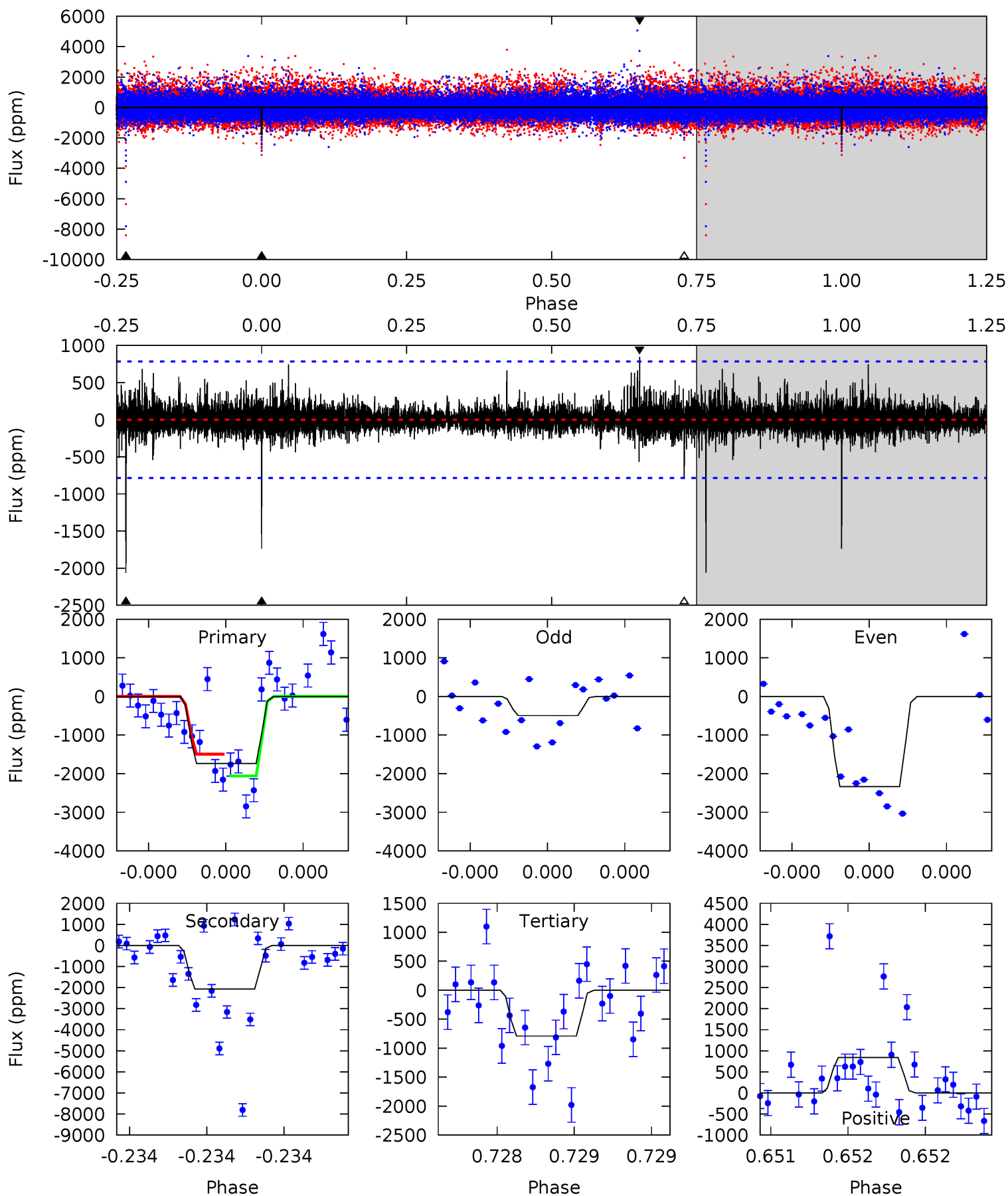
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.15	8.20	5.90	22.2	5.63	3.56	1.74	1.25	-15.0	2.30	-14.0	0.64	0.88	0.76	1.19



Alt Model-Shift Uniqueness Test

004681067-02, P = 422.824846 Days, E = 74.676093 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	14.8	5.68	6.05	5.64	3.58	0.84	6.78	6.41	9.15	8.78	6.03	0.74	0.29	2.04



Stellar Parameters For KIC 004681067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4407^{+157}_{-157}	$4.673^{+0.059}_{-0.032}$	$-0.660^{+0.350}_{-0.300}$	$0.569^{+0.050}_{-0.056}$	$0.556^{+0.061}_{-0.038}$	$4.251^{+1.060}_{-0.587}$
	+4%/-4%	+1%/-1%	+53%/-45%	+9%/-10%	+11%/-7%	+25%/-14%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004681067-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1468 ± 179	$6.54^{+5.98}_{-4.52}$	214^{+9}_{-9}	3132^{+1559}_{-498}	$15745^{+146690}_{-11489}$
Alt.	-2065 ± 139	$6.87^{+6.25}_{-4.95}$	214^{+9}_{-9}	3279^{+1872}_{-561}	$20557^{+237379}_{-15133}$

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

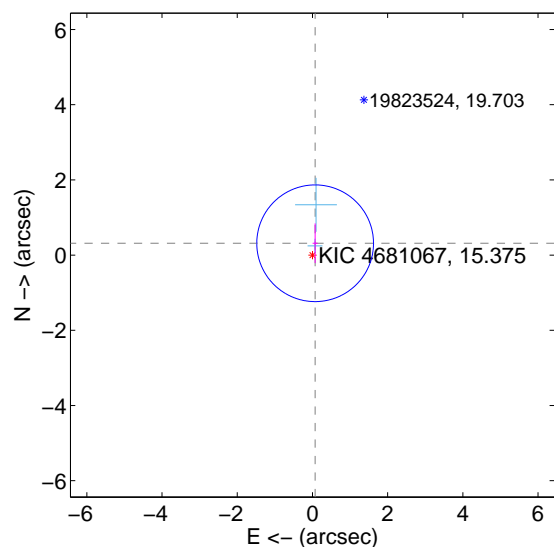
Supplemental centroid analysis for 004681067-02. Kepler magnitude: 15.38. Transit SNR 7.40

There are 2 quarters with good PRF difference image offsets

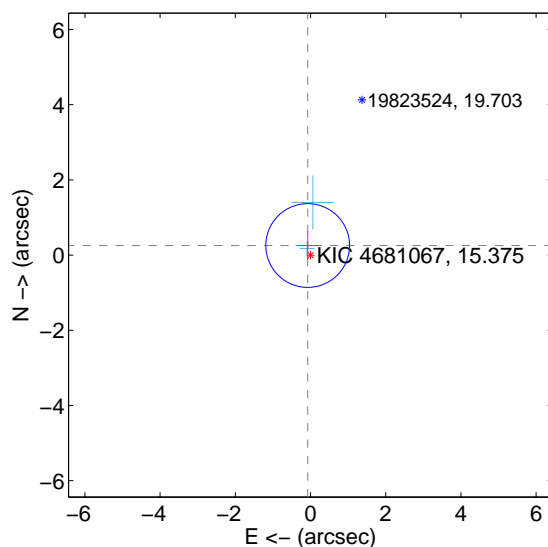
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.323 ± 0.517	0.62	-0.072 ± 0.068	0.315 ± 0.528
PRF-fit source offset from KIC position	0.266 ± 0.371	0.72	0.075 ± 0.302	0.255 ± 0.377
photometric centroid source offset	1.63 ± 1.24	1.31	1.31 ± 1.23	-0.97 ± 1.27

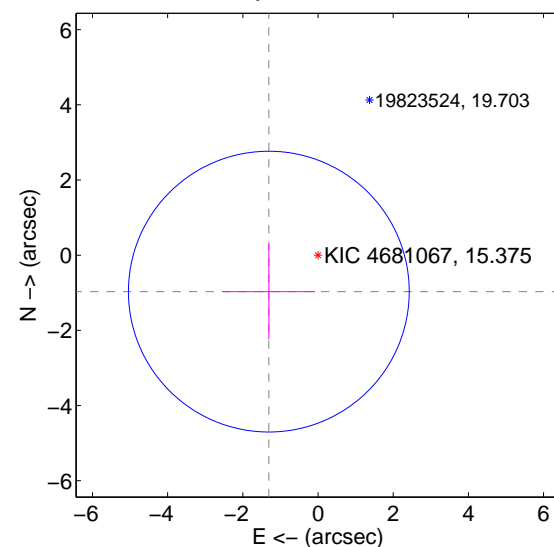
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

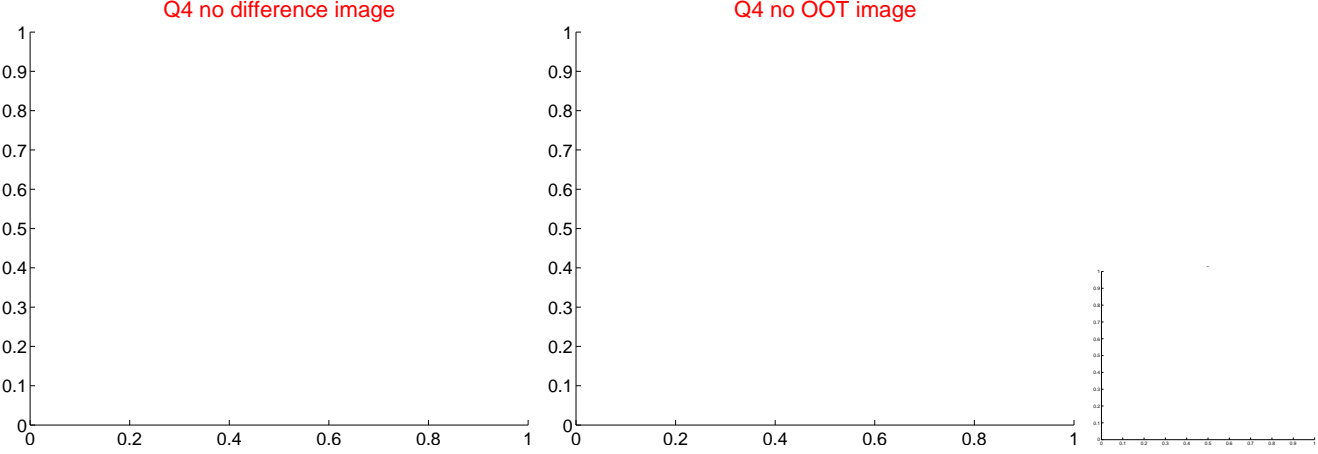
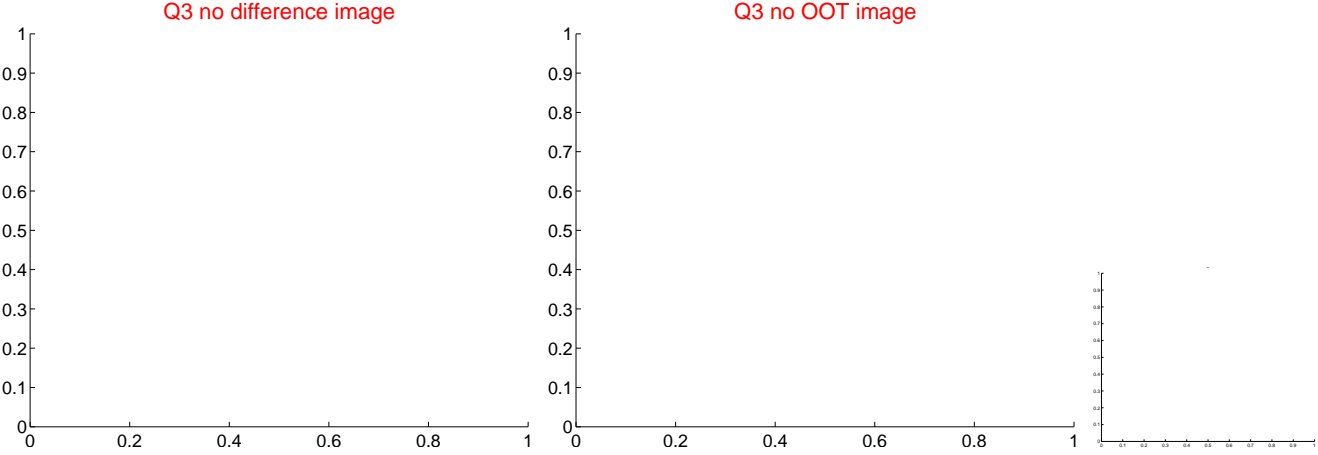
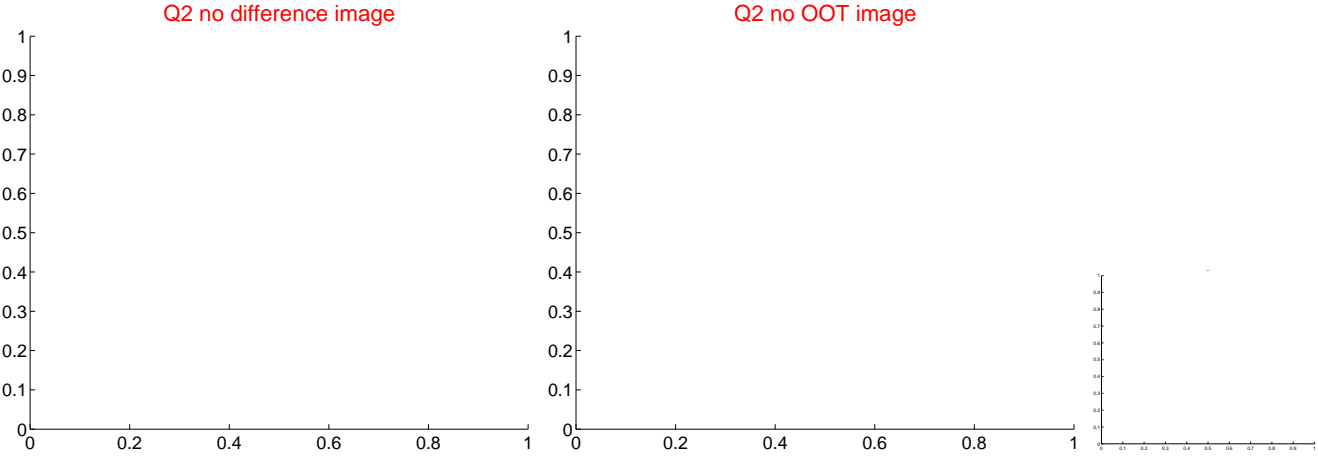
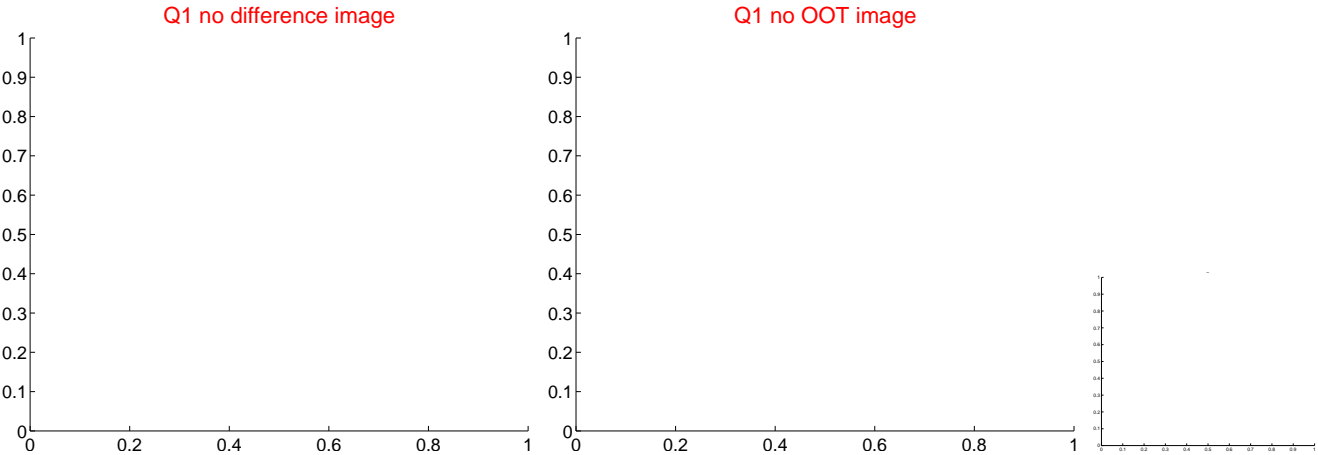


offset from photometric centroids

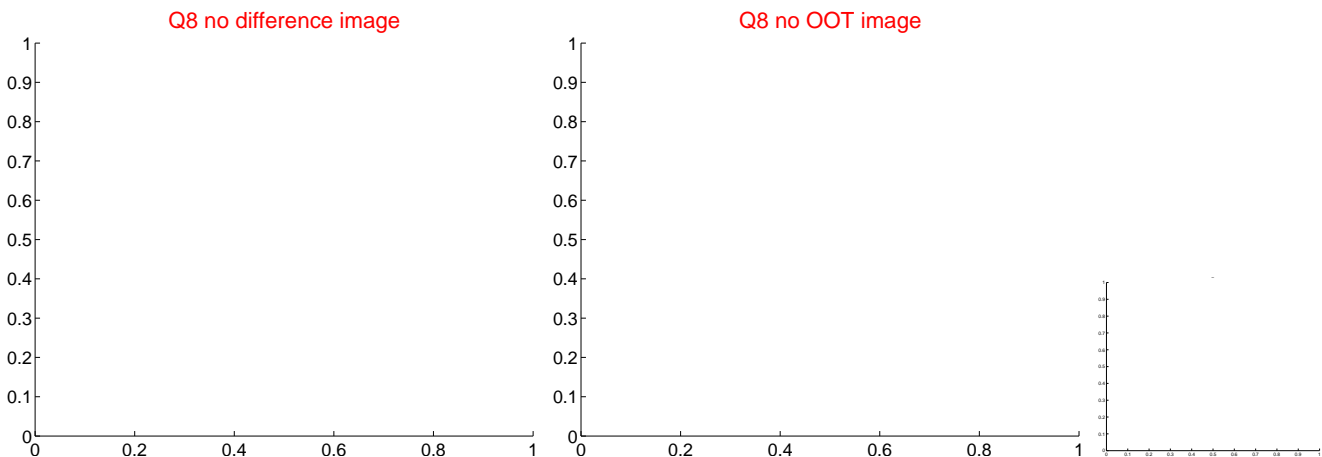
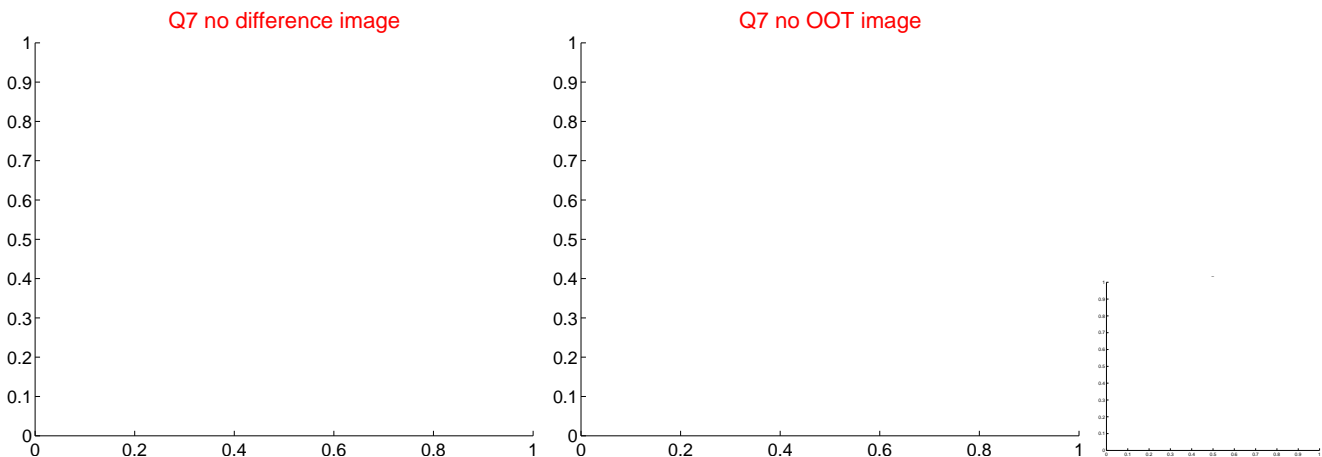
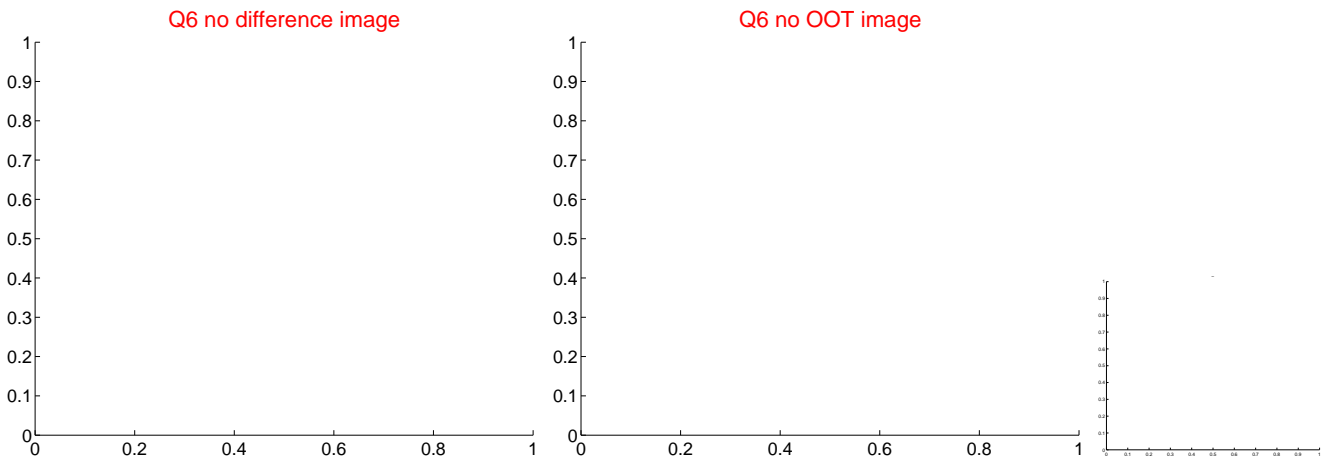
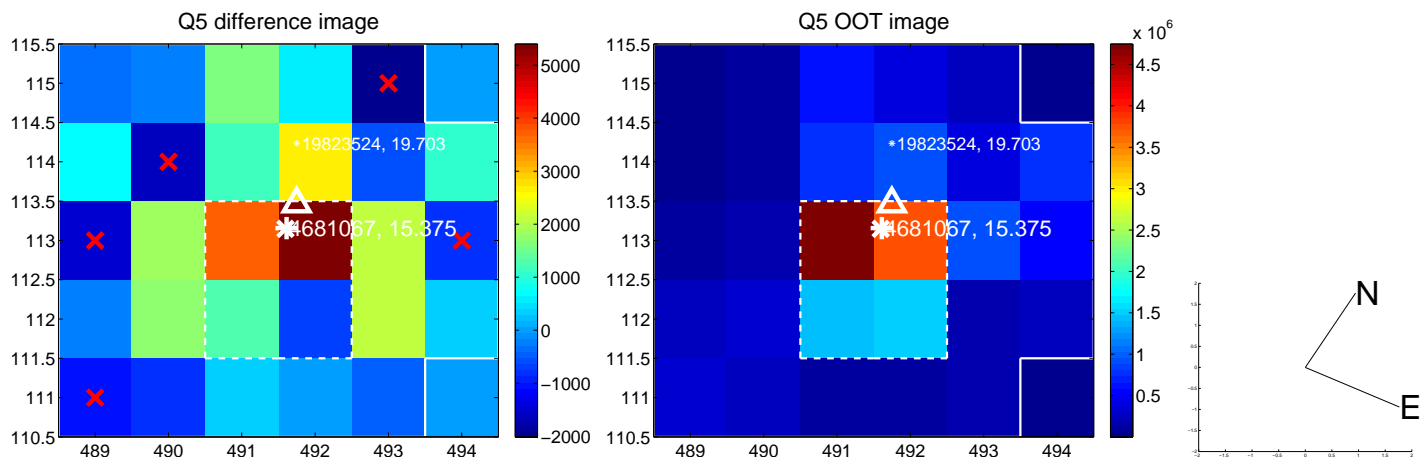


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

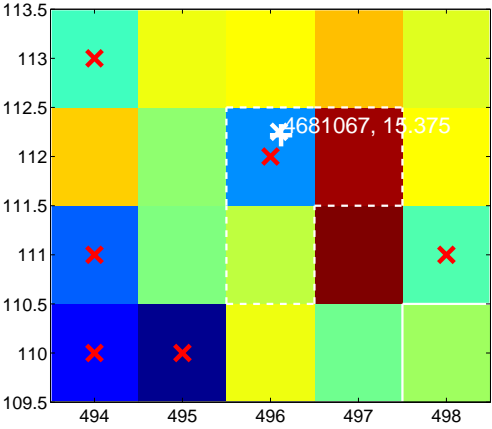
Q9 no difference image



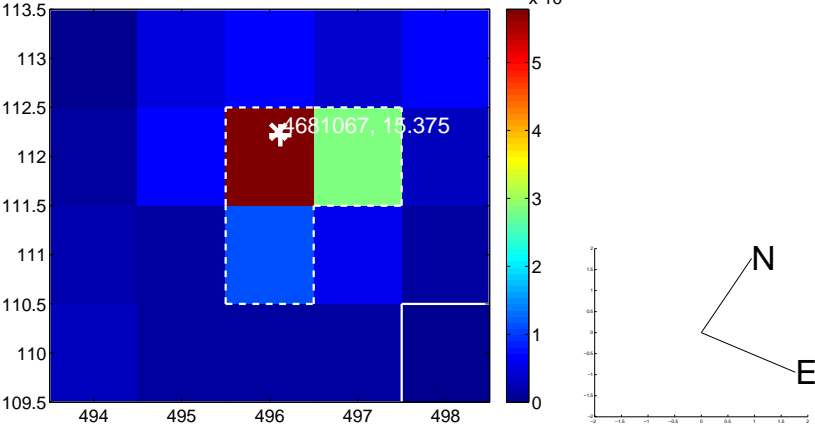
Q9 no OOT image



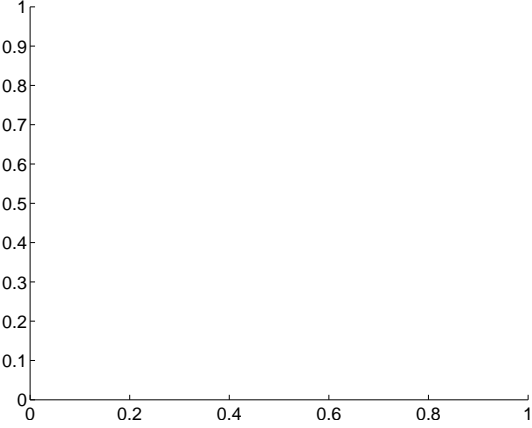
Q10 difference image. Poor Quality



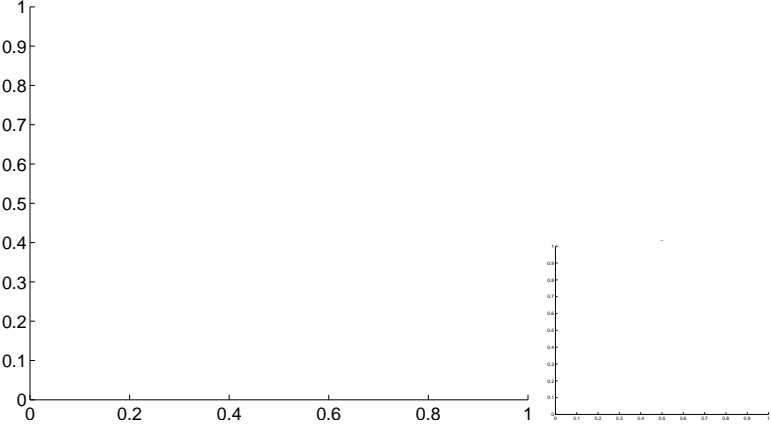
Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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

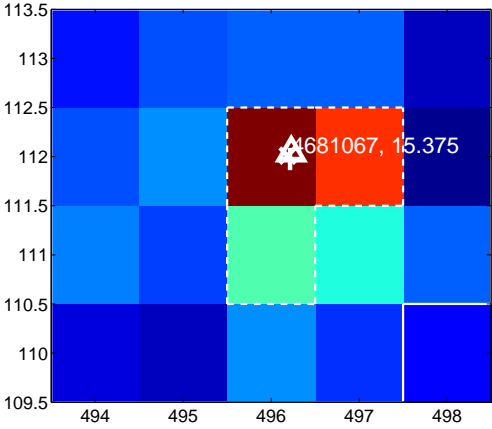
Q13 no difference image



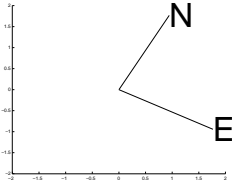
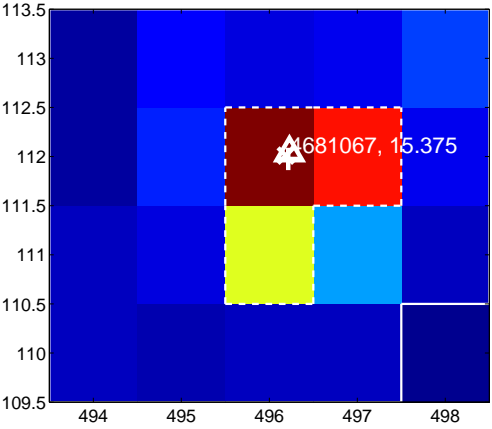
Q13 no OOT image



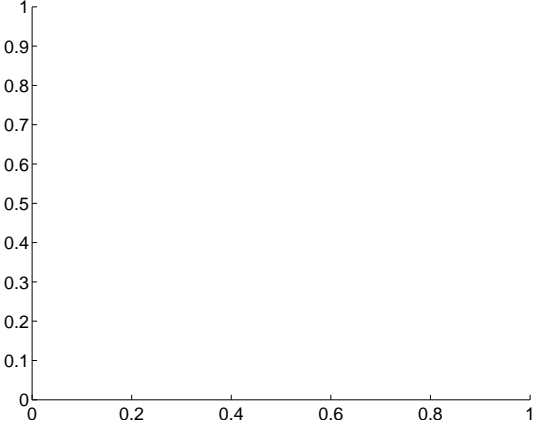
Q14 difference image



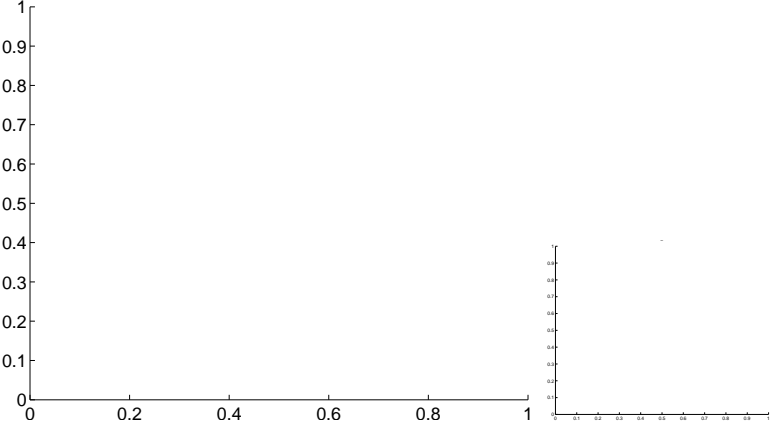
Q14 OOT image



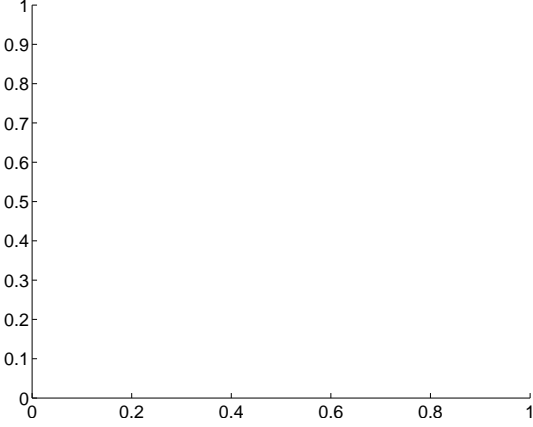
Q15 no difference image



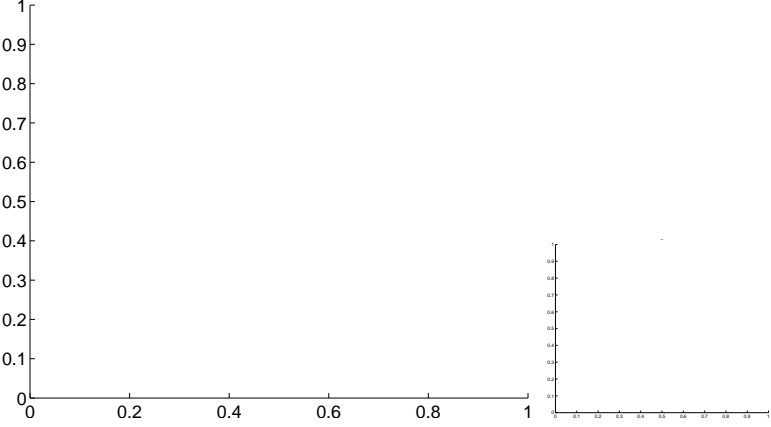
Q15 no OOT image



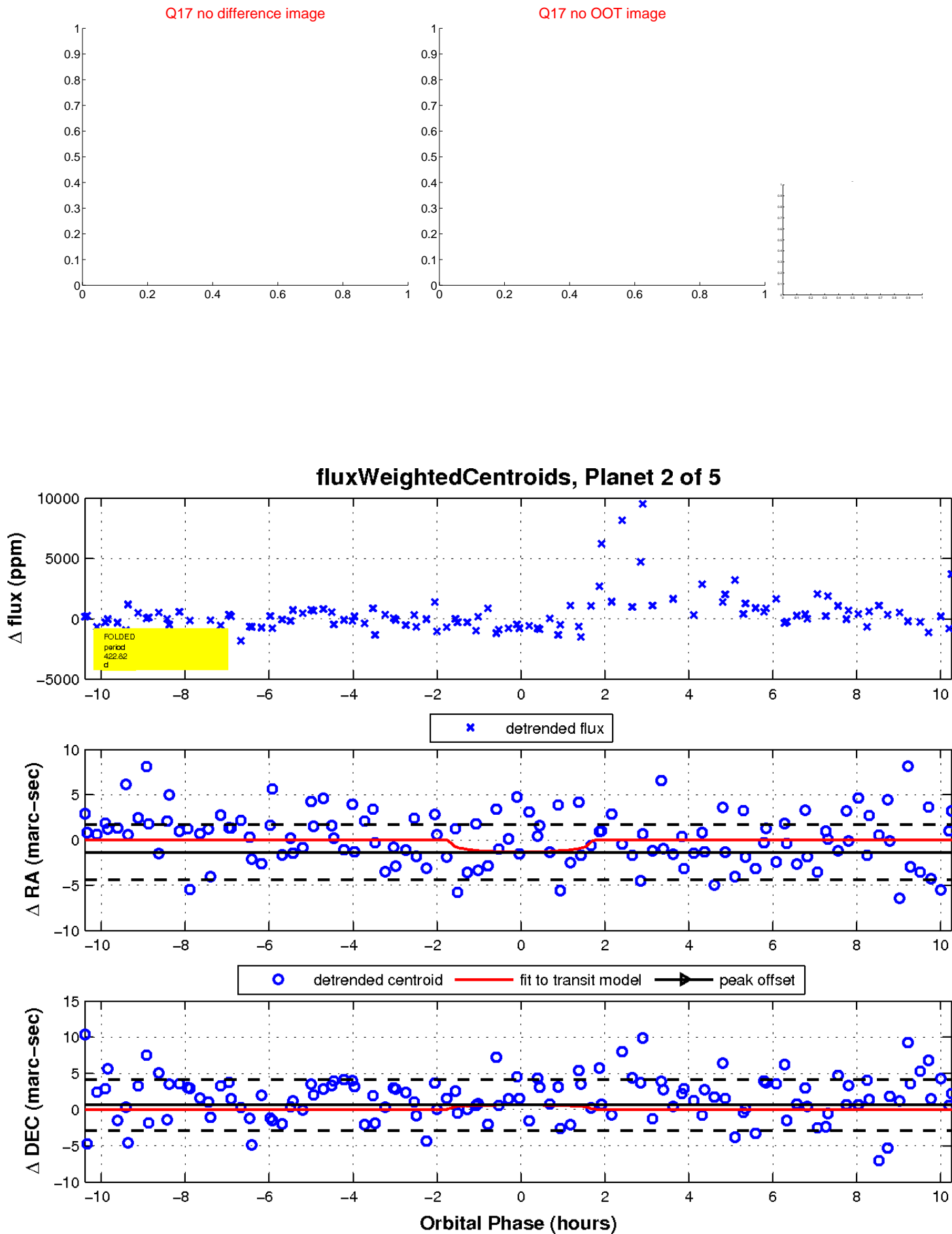
Q16 no difference image



Q16 no OOT image

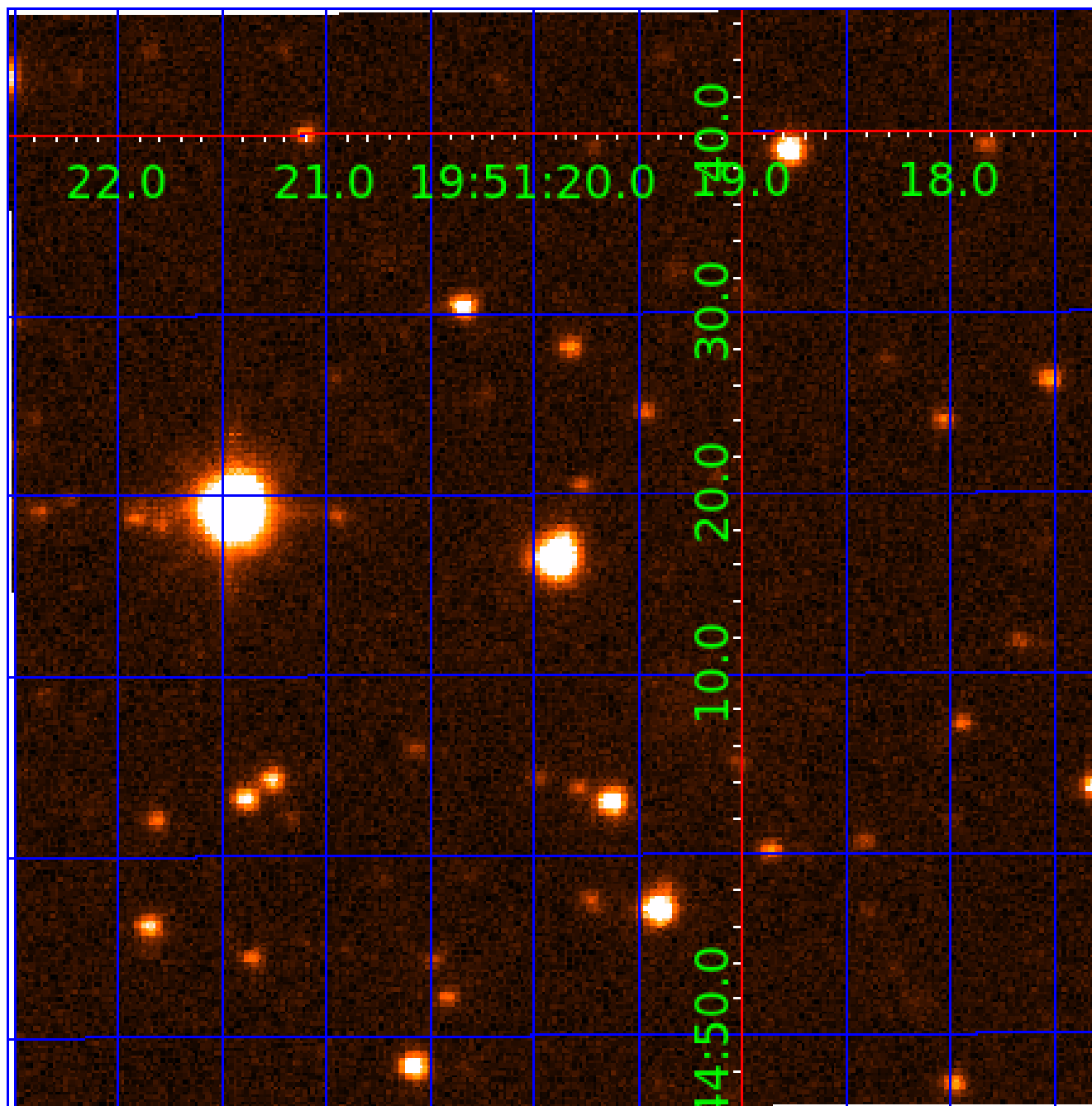


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004681067

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})
004681067-01	OBS	No	317.199184	420.900097	2018.3	6.338	13.6	7.7	0.57	4407	2.98	0.20
004681067-02	OBS	No	422.824780	497.499306	1815.3	3.483	12.3	7.4	0.57	4407	2.42	0.13
004681067-03	OBS	No	425.721111	277.791098	2630.0	16.689	8.8	8.0	0.57	4407	3.08	0.13
004681067-04	OBS	No	389.485367	355.792281	961.6	6.970	12.8	4.3	0.57	4407	1.90	0.15
004681067-05	OBS	No	343.716643	454.568760	1632.5	3.378	9.5	5.7	0.57	4407	2.29	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004681067-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004681067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004681067-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
004681067-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
004681067-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

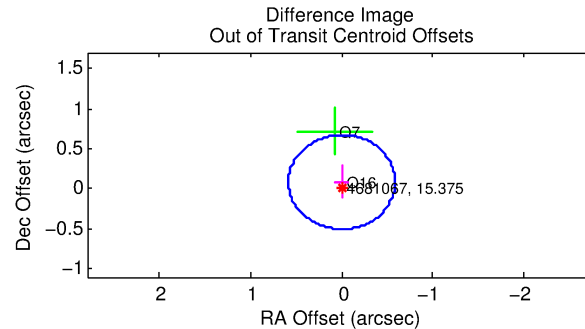
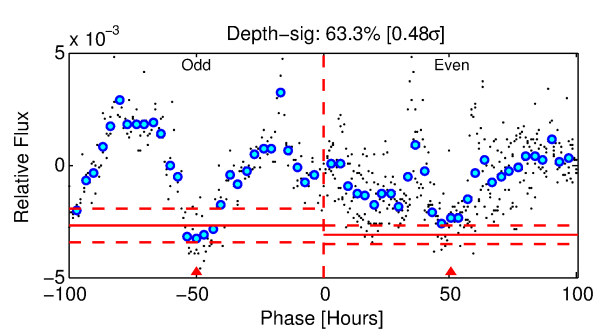
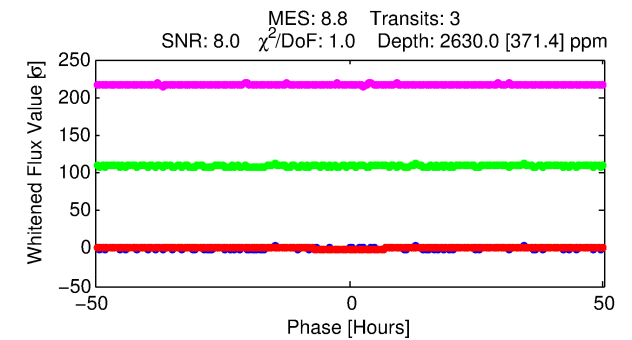
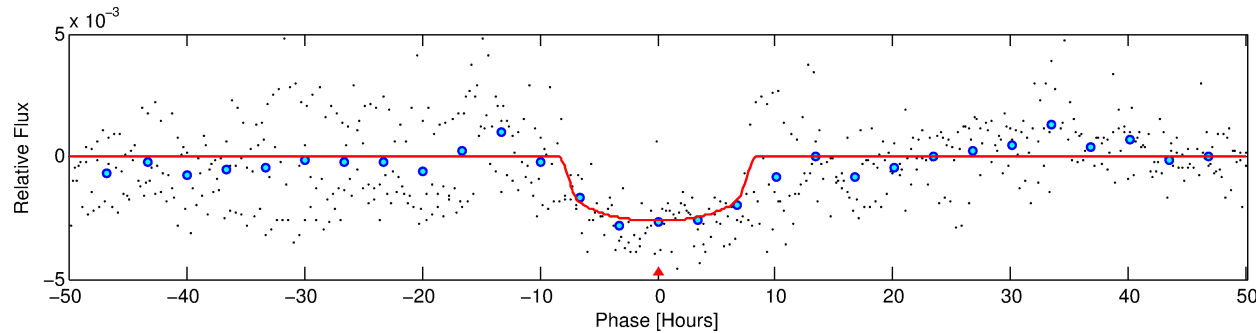
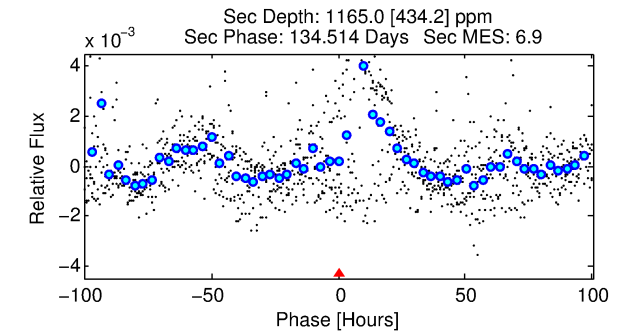
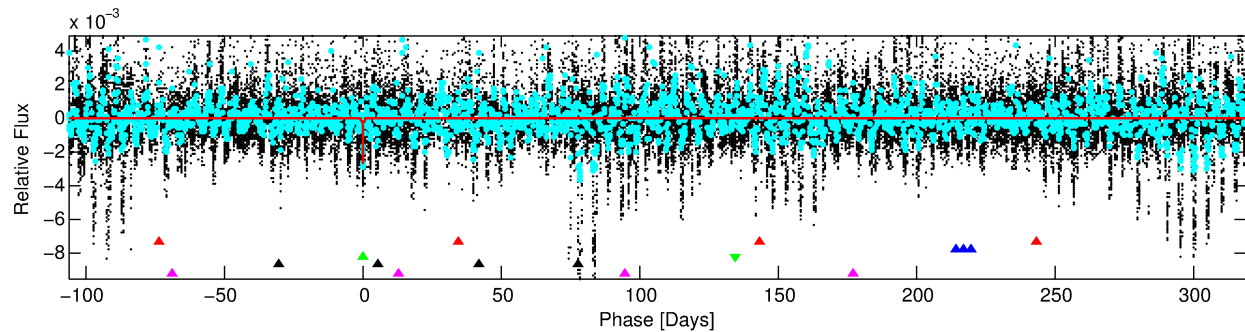
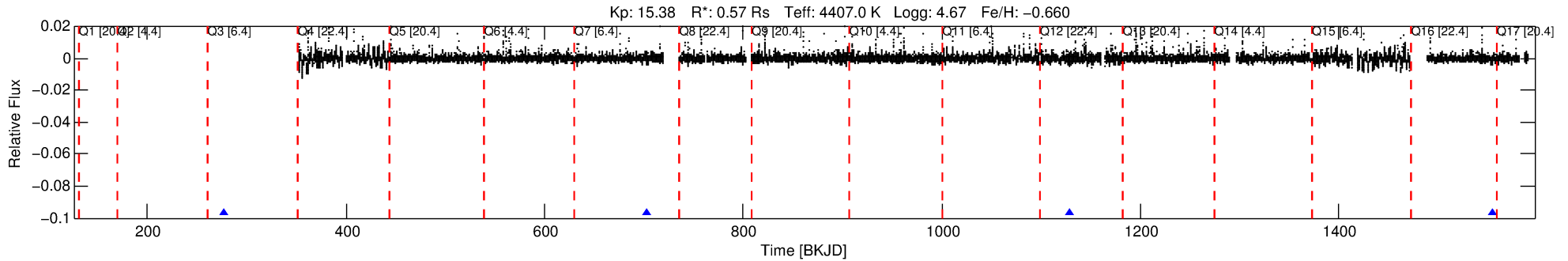
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004681067-03

No Significant Match Found

DV One-Page Summary

KIC: 4681067 Candidate: 3 of 5 Period: 425.721 d



DV Fit Results:

Period = 425.72111 [0.00984] d
Epoch = 277.7911 [0.0223] BKJD
Rp/R* = 0.0496 [0.0058]
a/R* = 157.72 [48.17]
b = 0.67 [0.25]
Seff = 0.13 [0.02]
Teq = 154 [7] K
Rp = 3.08 [0.47] Re
a = 0.9110 [0.0726] AU
Ag = 56088.67 [25498.28] [2.20 σ]
Teffp = 3656 [423] K [8.27 σ]

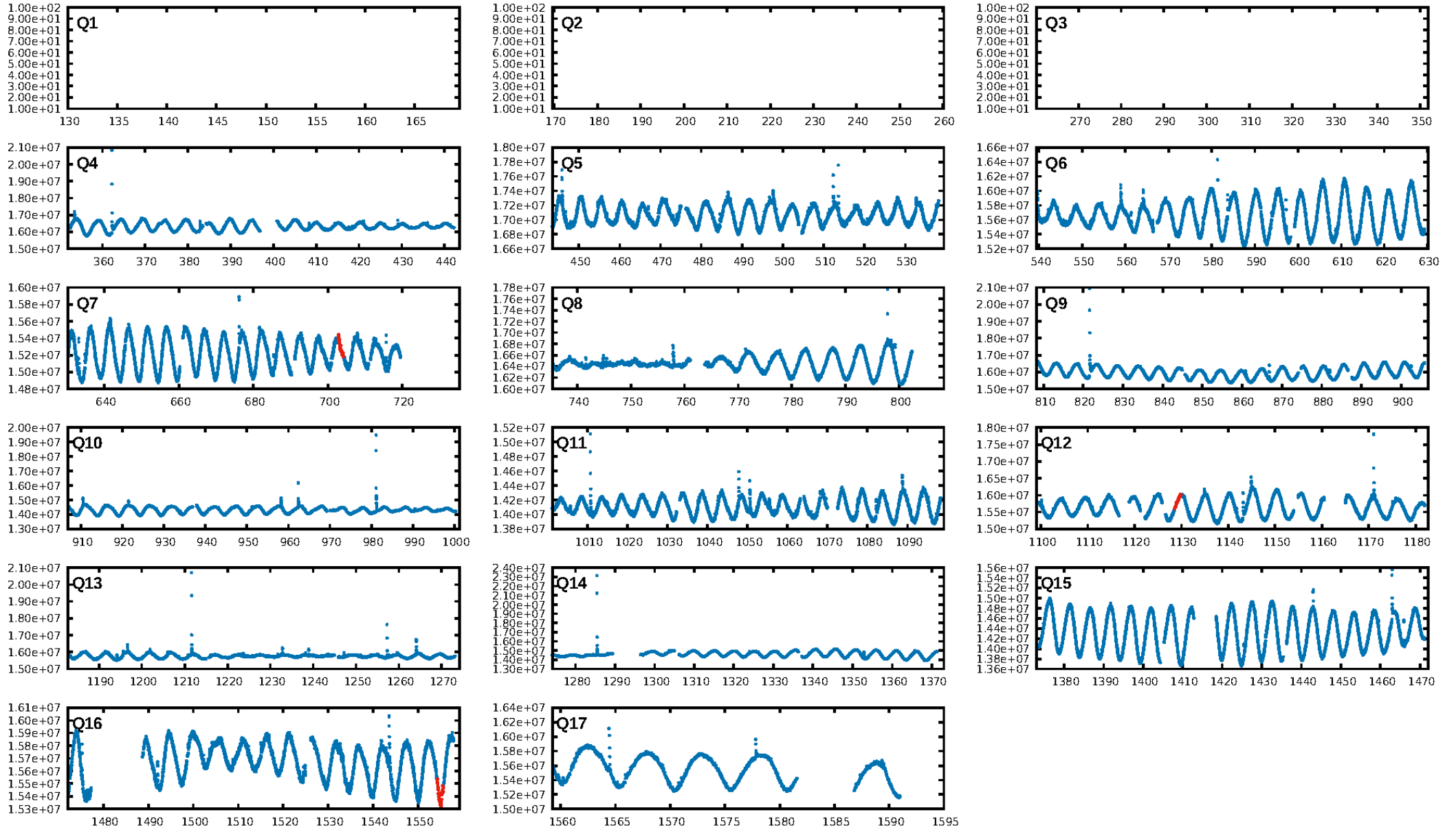
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.08 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.2%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 8.71e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.6472
Centroid-sig: 71.0%
Centroid-so: 0.805 arcsec [1.97 σ]
OotOffset-rm: 0.083 arcsec [0.43 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 0.127 arcsec [0.57 σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

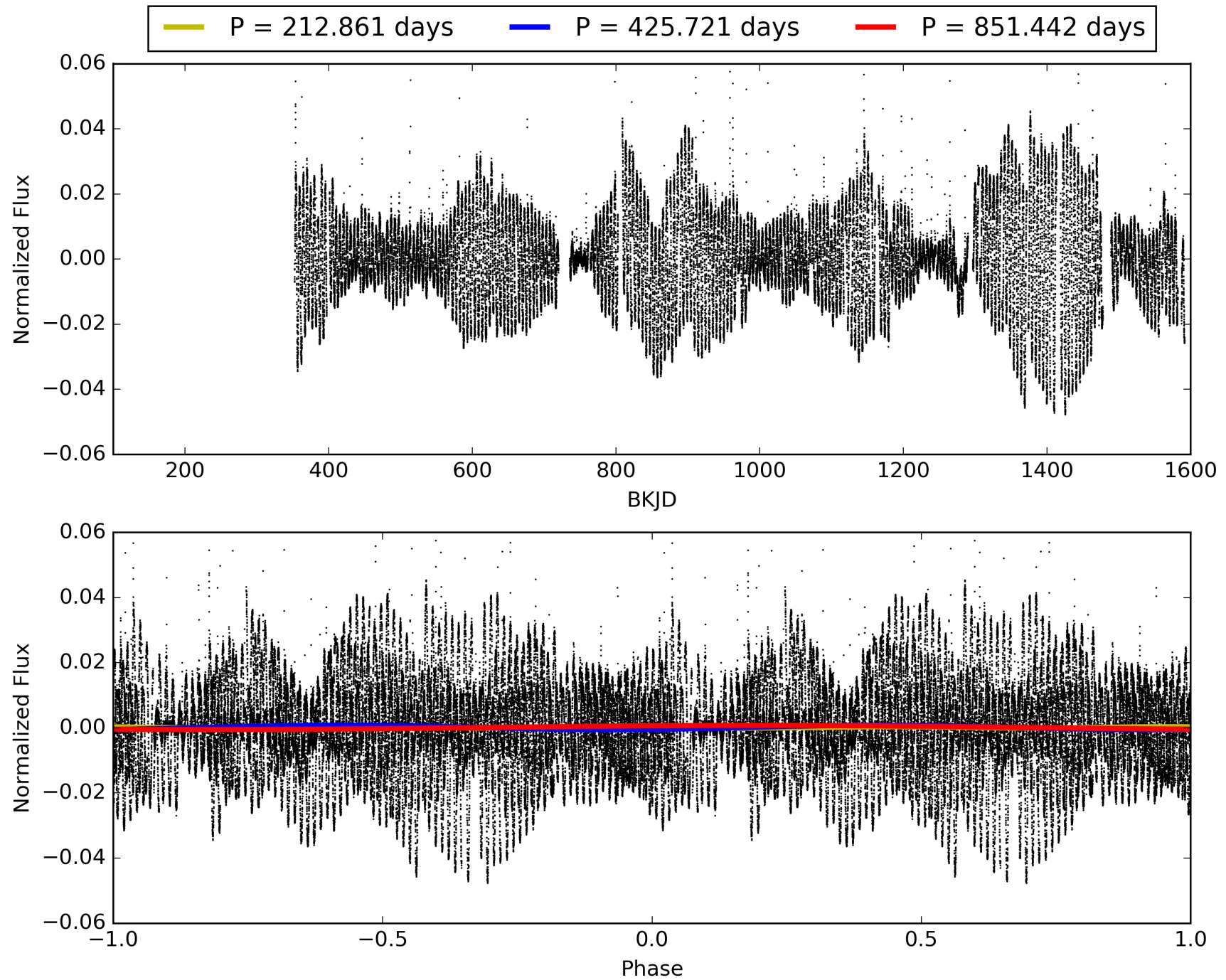
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:22:14 Z

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TCE 004681067-03, PDC Light Curves

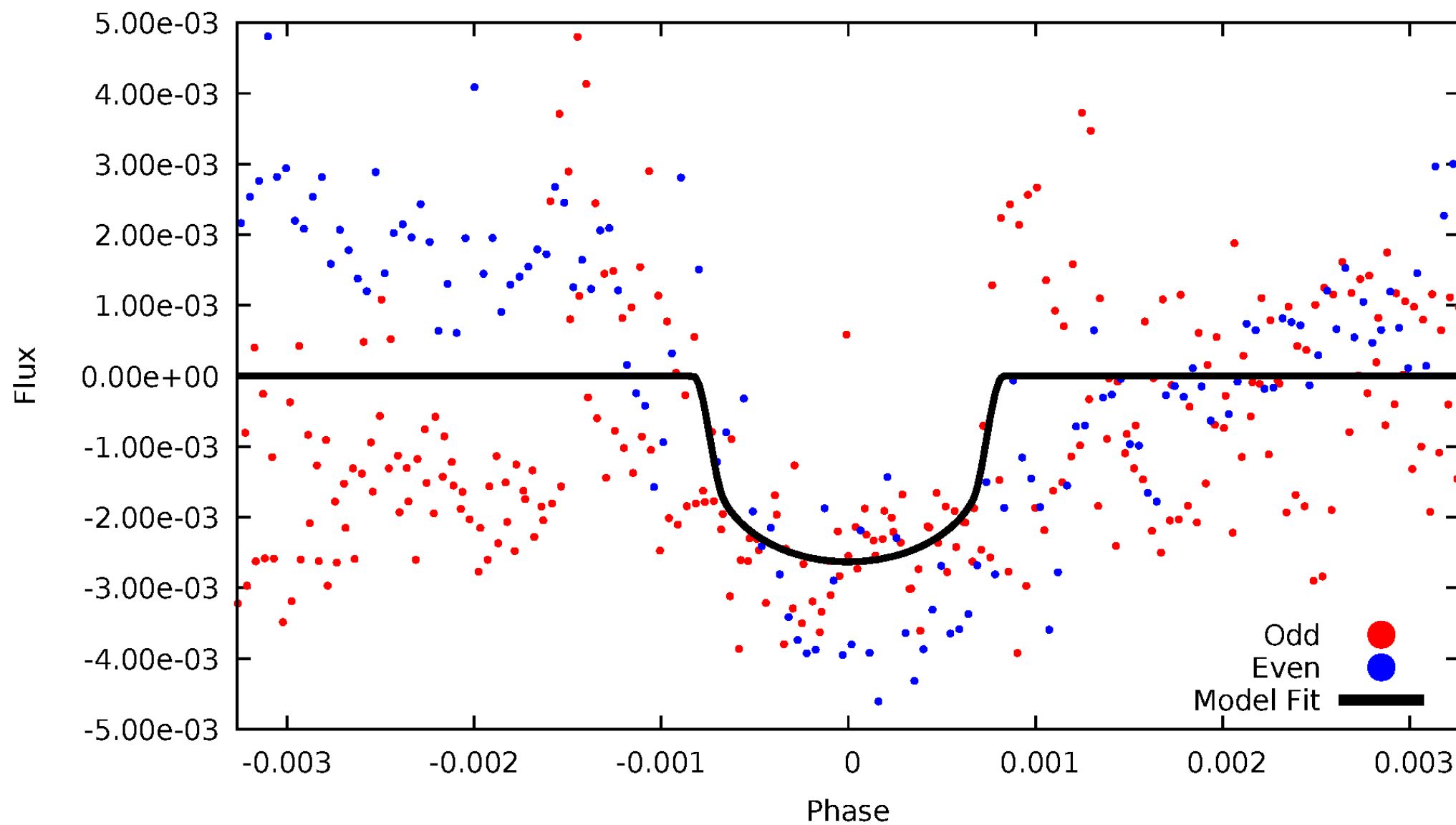


TCE 004681067-03



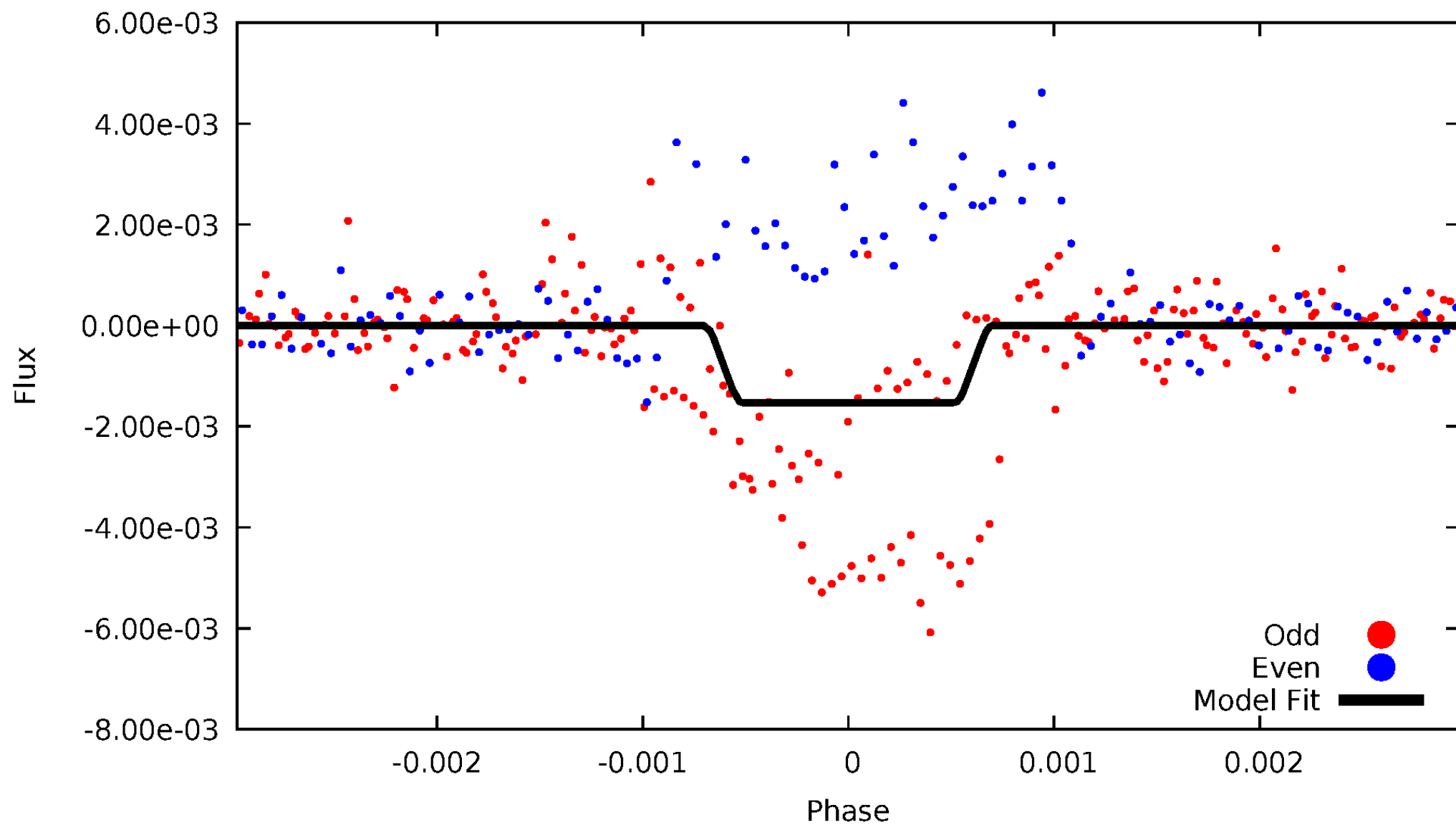
DV Odd/Even

TCE 004681067-03



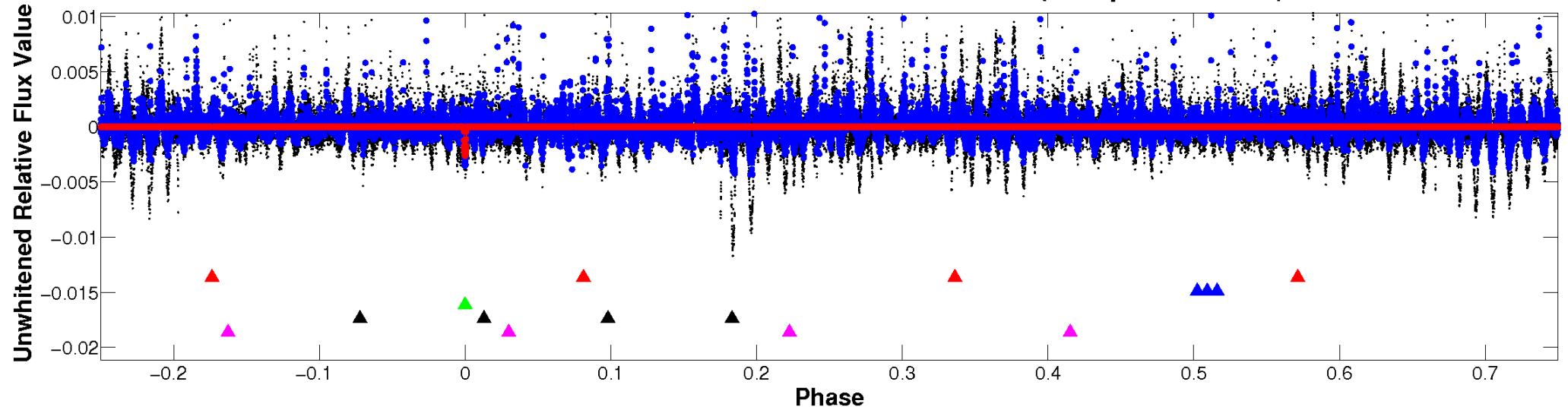
ALT Odd/Even

TCE 004681067-03

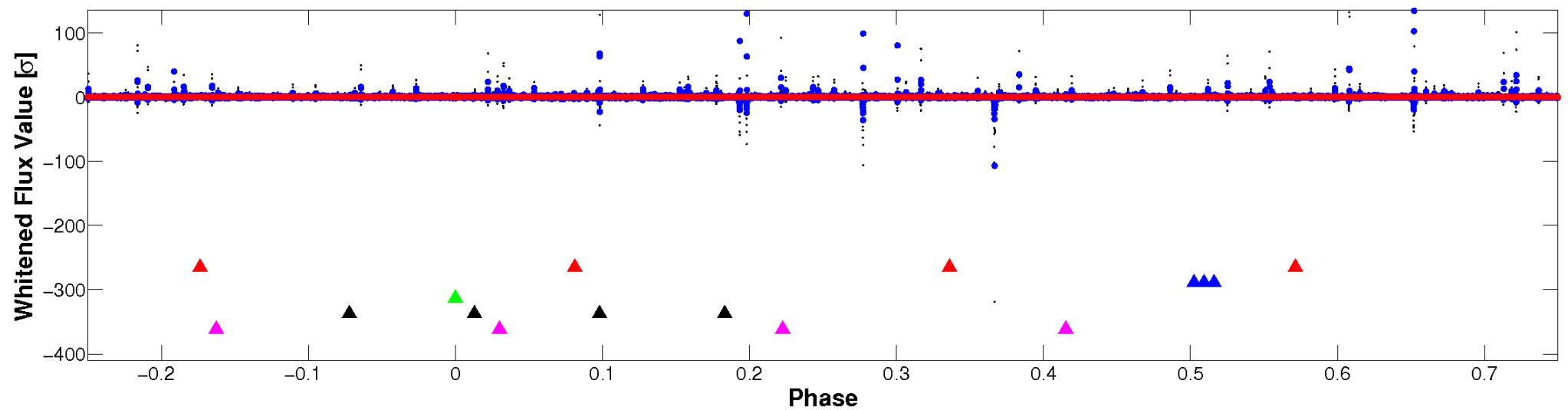


Non-Whitened Vs. Whitened Light Curve

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

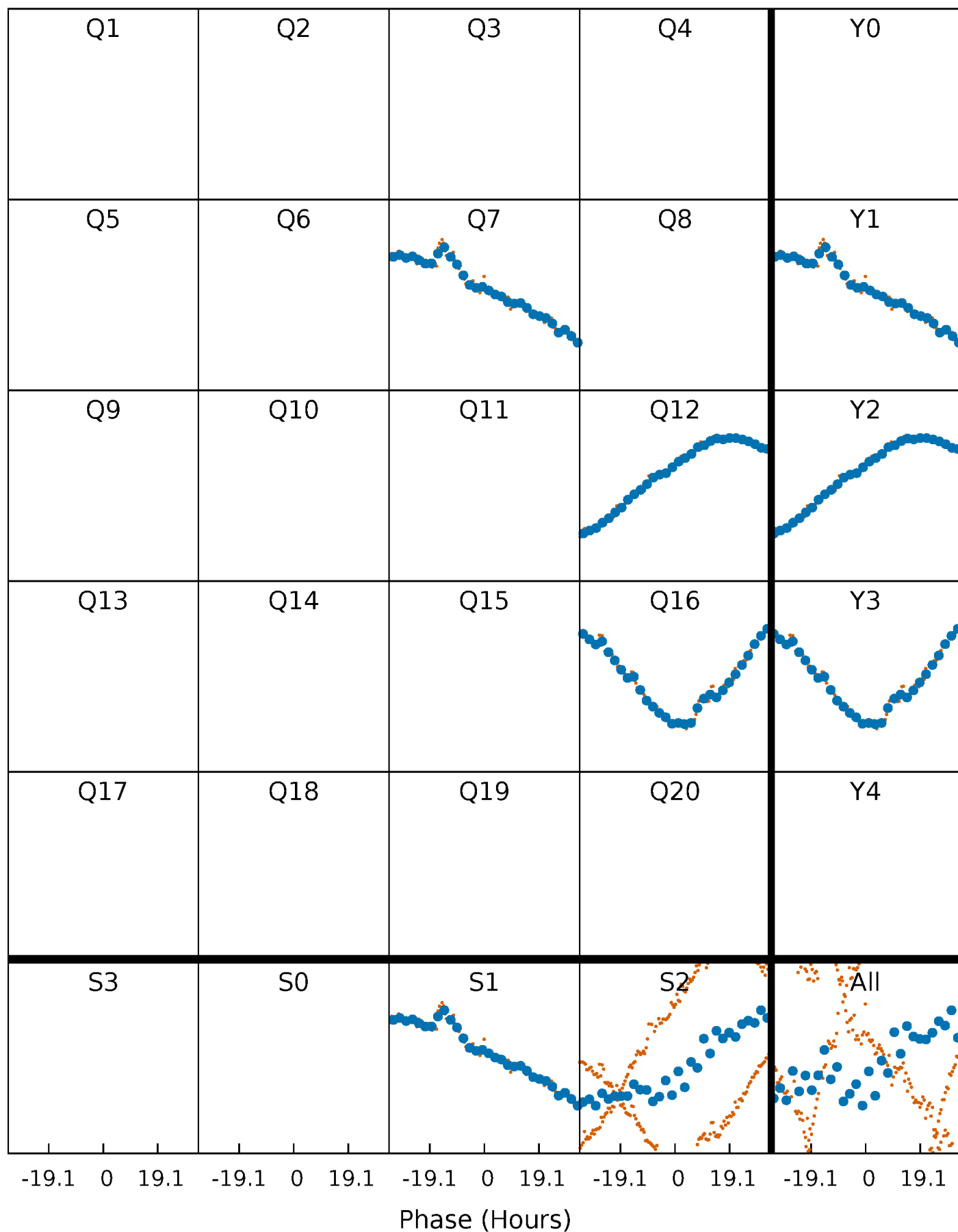


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



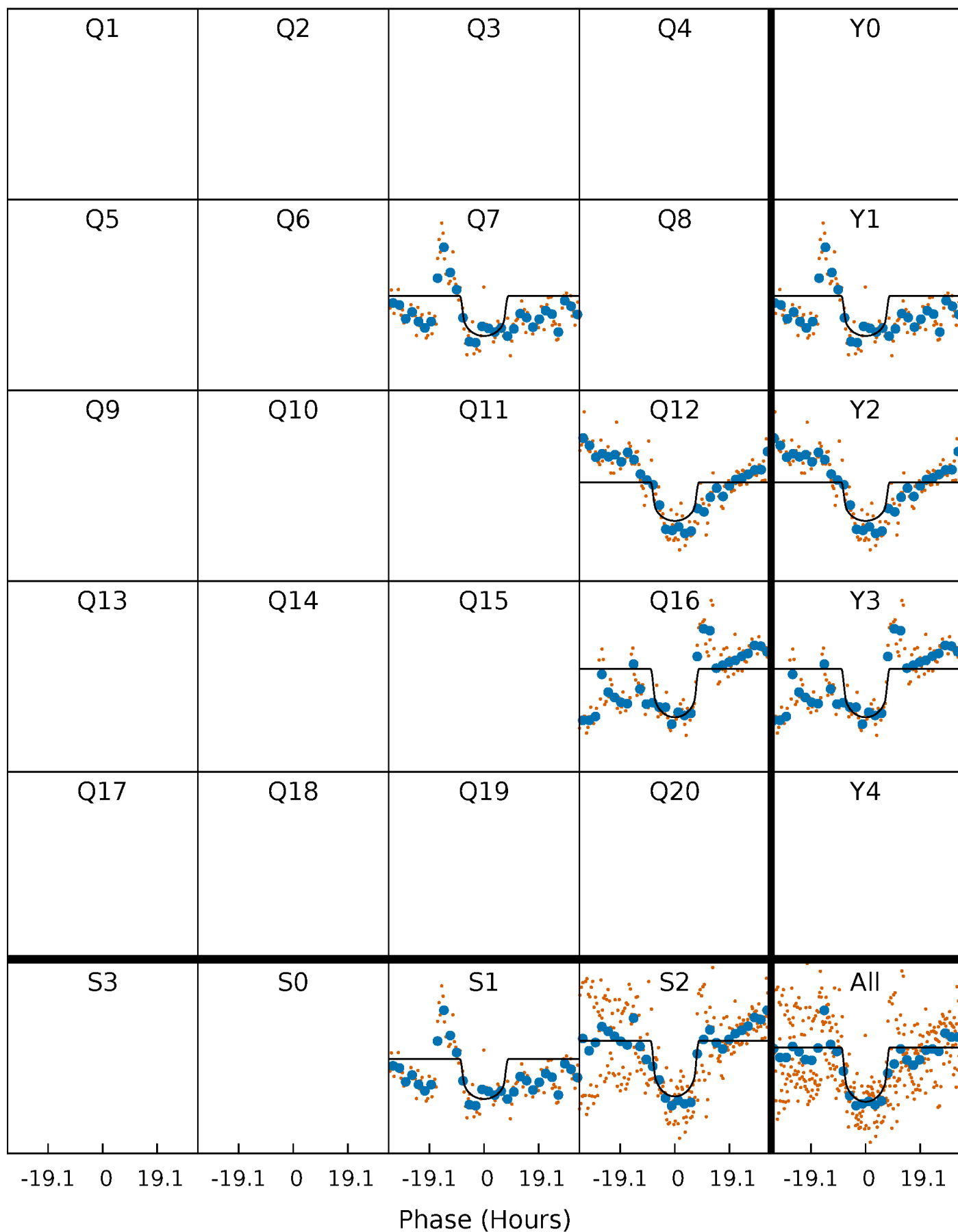
PDC Quarter-Phased Transit Curves

TCE 004681067-03 P=425.721111 Days $T_0=277.791098$ (BKJD)



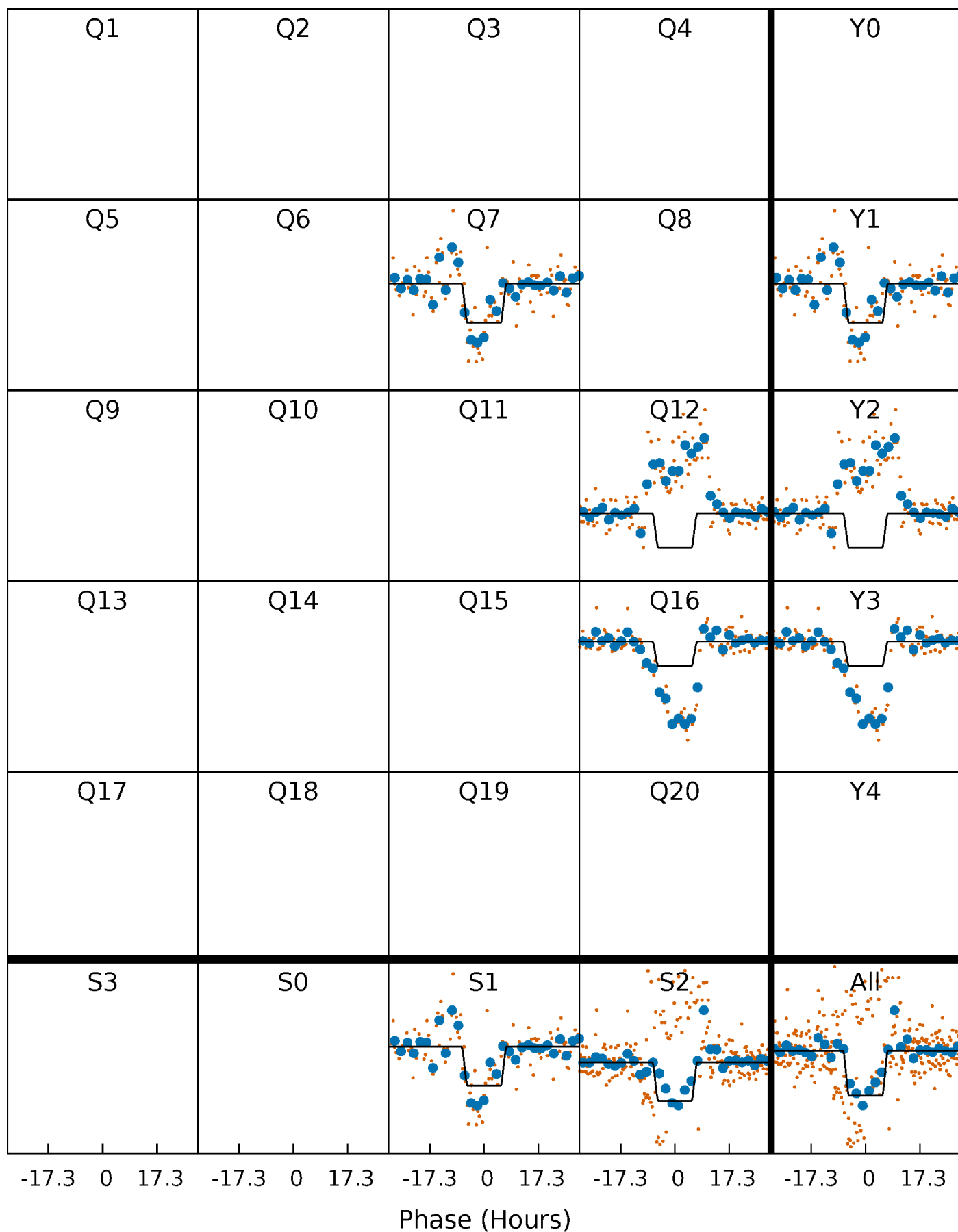
DV Quarter-Phased Transit Curves

TCE 004681067-03 P=425.721111 Days $T_0=277.791098$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

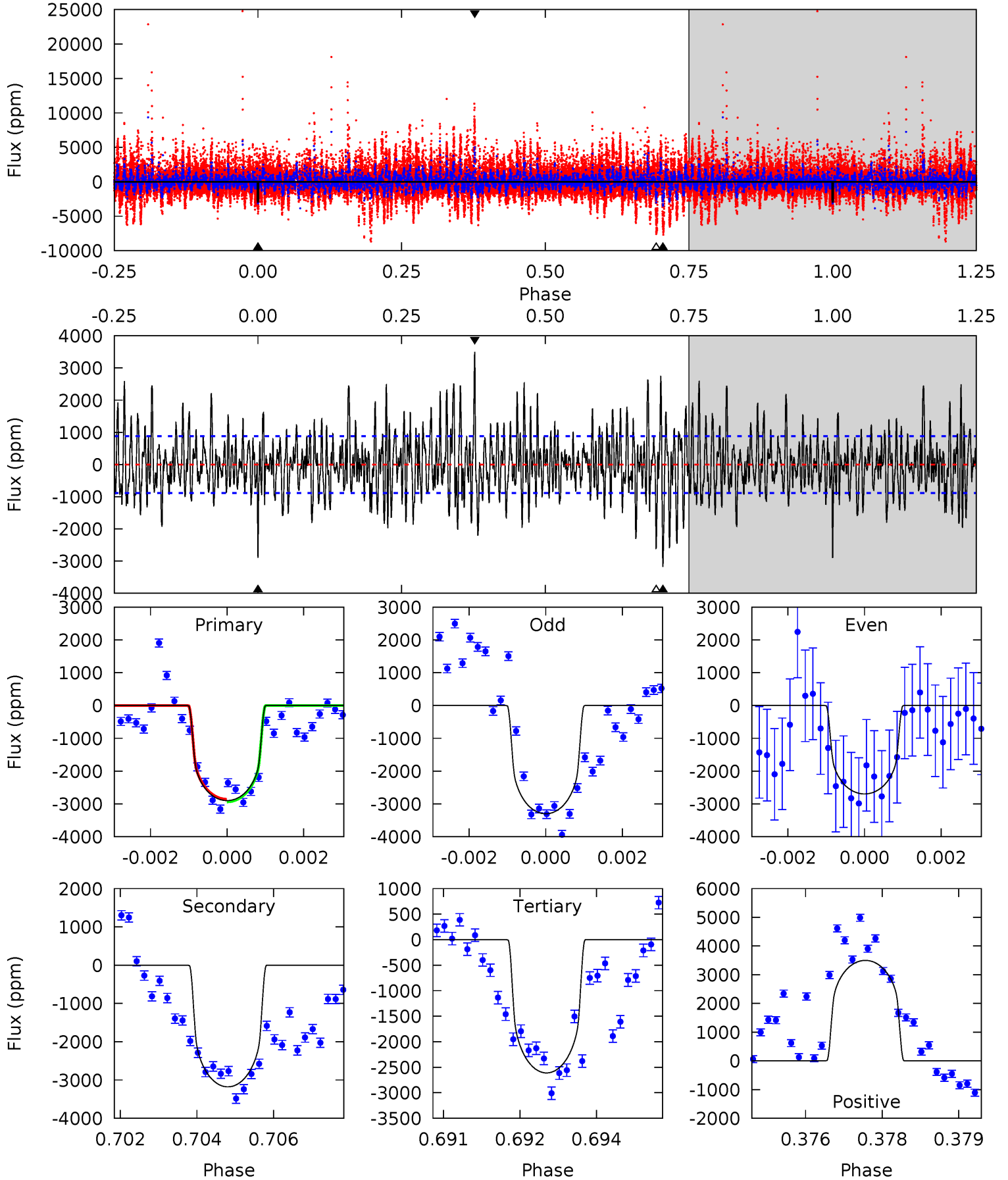
TCE 004681067-03 $P=425.740034$ Days $T_0=277.728092$ (BKJD)



DV Model-Shift Uniqueness Test

004681067-03, P = 425.721111 Days, E = 277.791098 Days

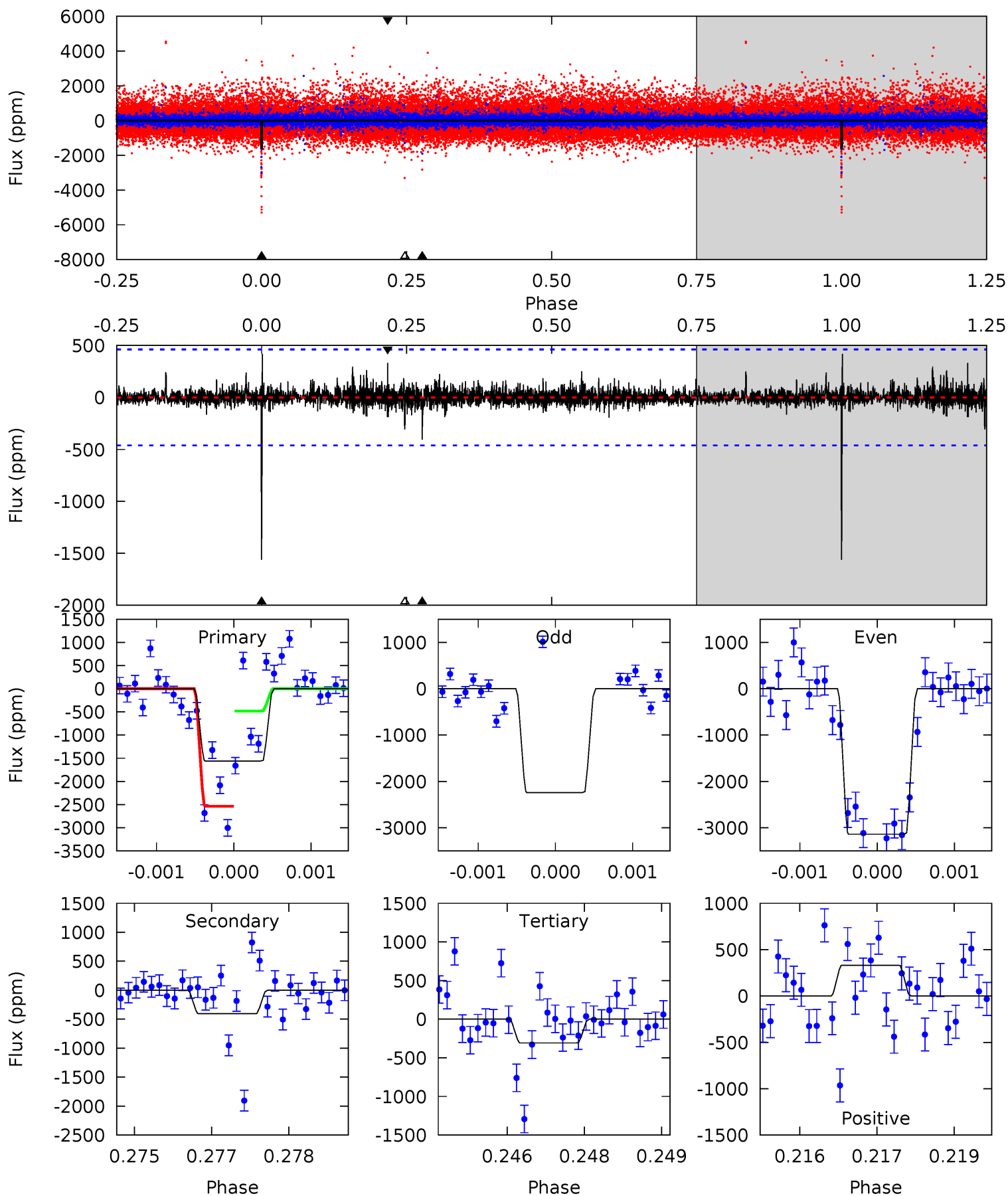
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	19.3	15.8	21.2	5.36	3.15	5.09	1.75	-3.63	3.44	-1.95	0.89	1.06	0.52	0.23



Alt Model-Shift Uniqueness Test

004681067-03, P = 425.740034 Days, E = 277.728092 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	4.74	3.59	3.87	5.39	3.20	0.58	14.6	14.3	1.15	0.87	6.10	0.85	0.21	11.7



Stellar Parameters For KIC 004681067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4407^{+157}_{-157}	$4.673^{+0.059}_{-0.032}$	$-0.660^{+0.350}_{-0.300}$	$0.569^{+0.050}_{-0.056}$	$0.556^{+0.061}_{-0.038}$	$4.251^{+1.060}_{-0.587}$
	+4%/-4%	+1%/-1%	+53%/-45%	+9%/-10%	+11%/-7%	+25%/-14%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004681067-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3178 ± 165	$3.08^{+0.39}_{-0.41}$	214^{+8}_{-8}	4630^{+304}_{-246}	156433^{+49495}_{-31708}
Alt.	-406 ± 86	$2.43^{+0.37}_{-0.38}$	214^{+8}_{-8}	3484^{+250}_{-217}	31014^{+15946}_{-9614}

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 $A_{obs} \gg 1.0$

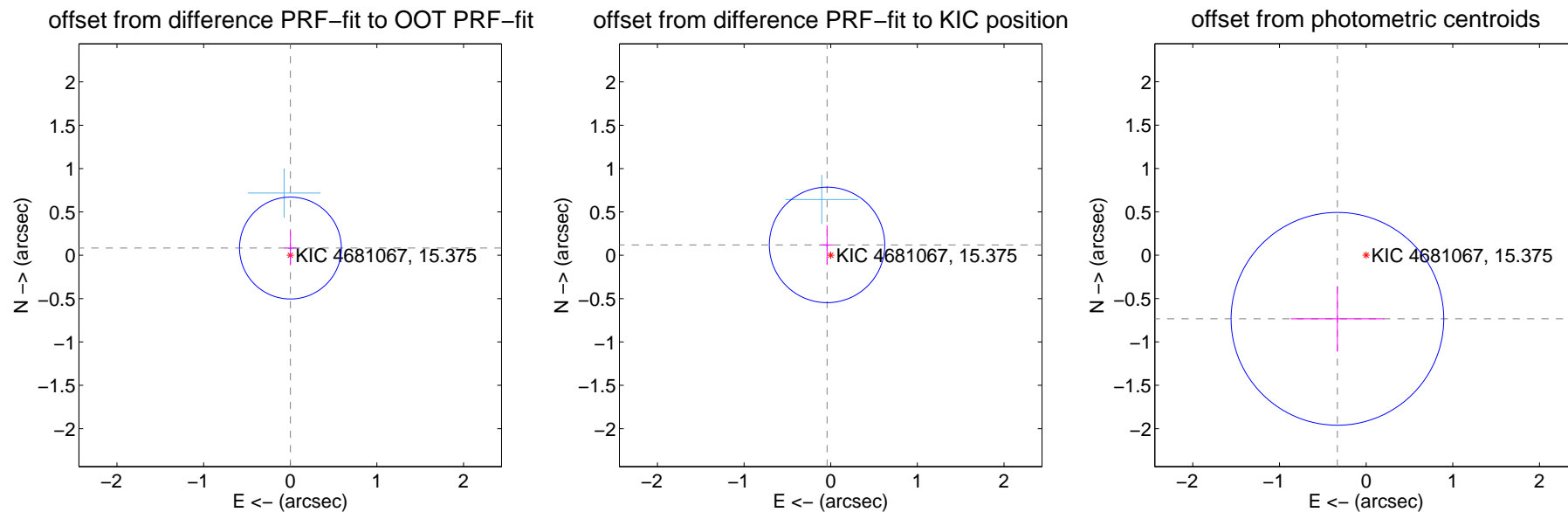
DV Centroid Data

Supplemental centroid analysis for 004681067-03. Kepler magnitude: 15.38. Transit SNR 7.95

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.083 ± 0.196	0.43	-0.002 ± 0.070	0.083 ± 0.196
PRF-fit source offset from KIC position	0.127 ± 0.222	0.57	0.042 ± 0.071	0.120 ± 0.226
photometric centroid source offset	0.80 ± 0.41	1.97	0.33 ± 0.54	-0.73 ± 0.38

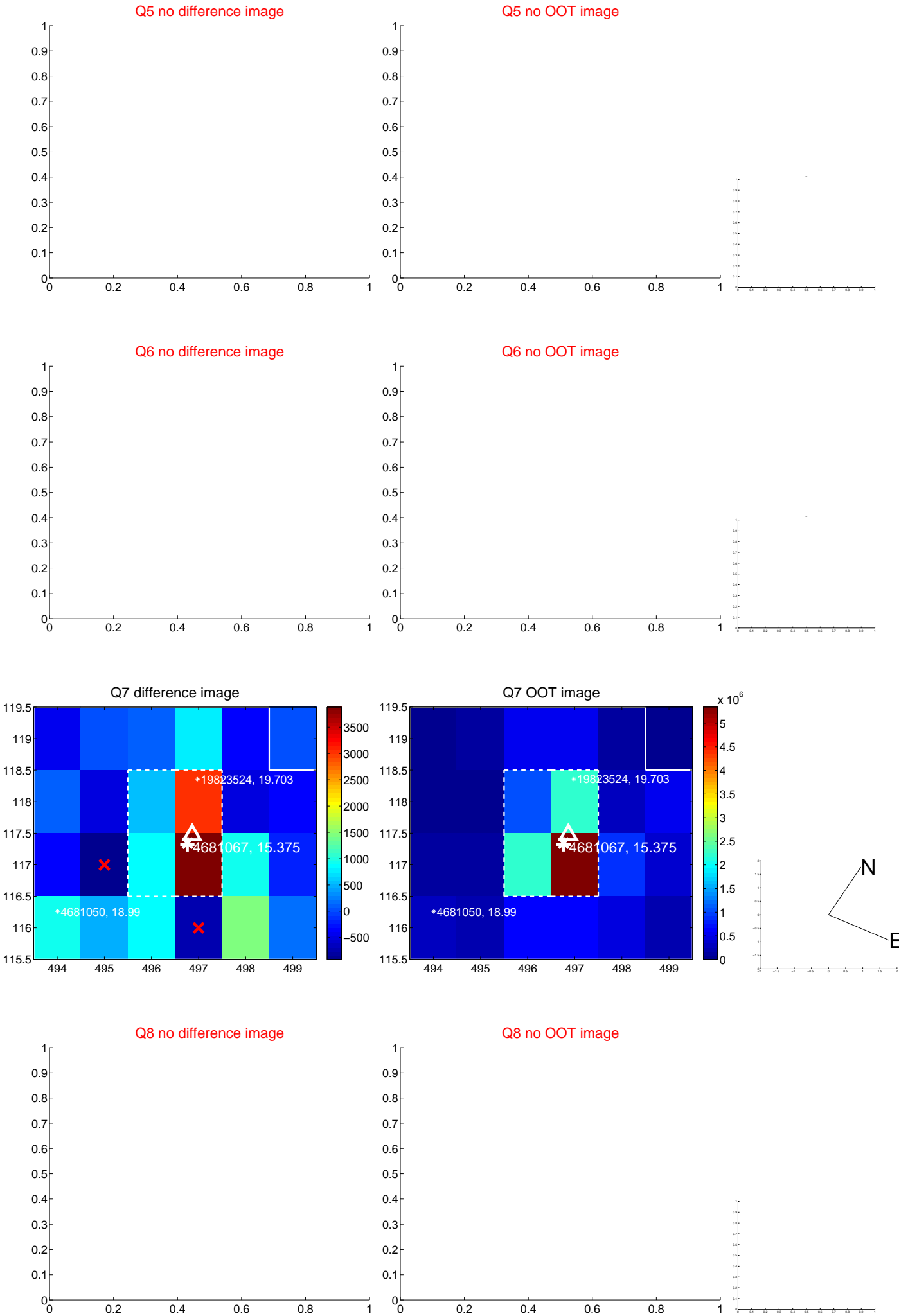


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



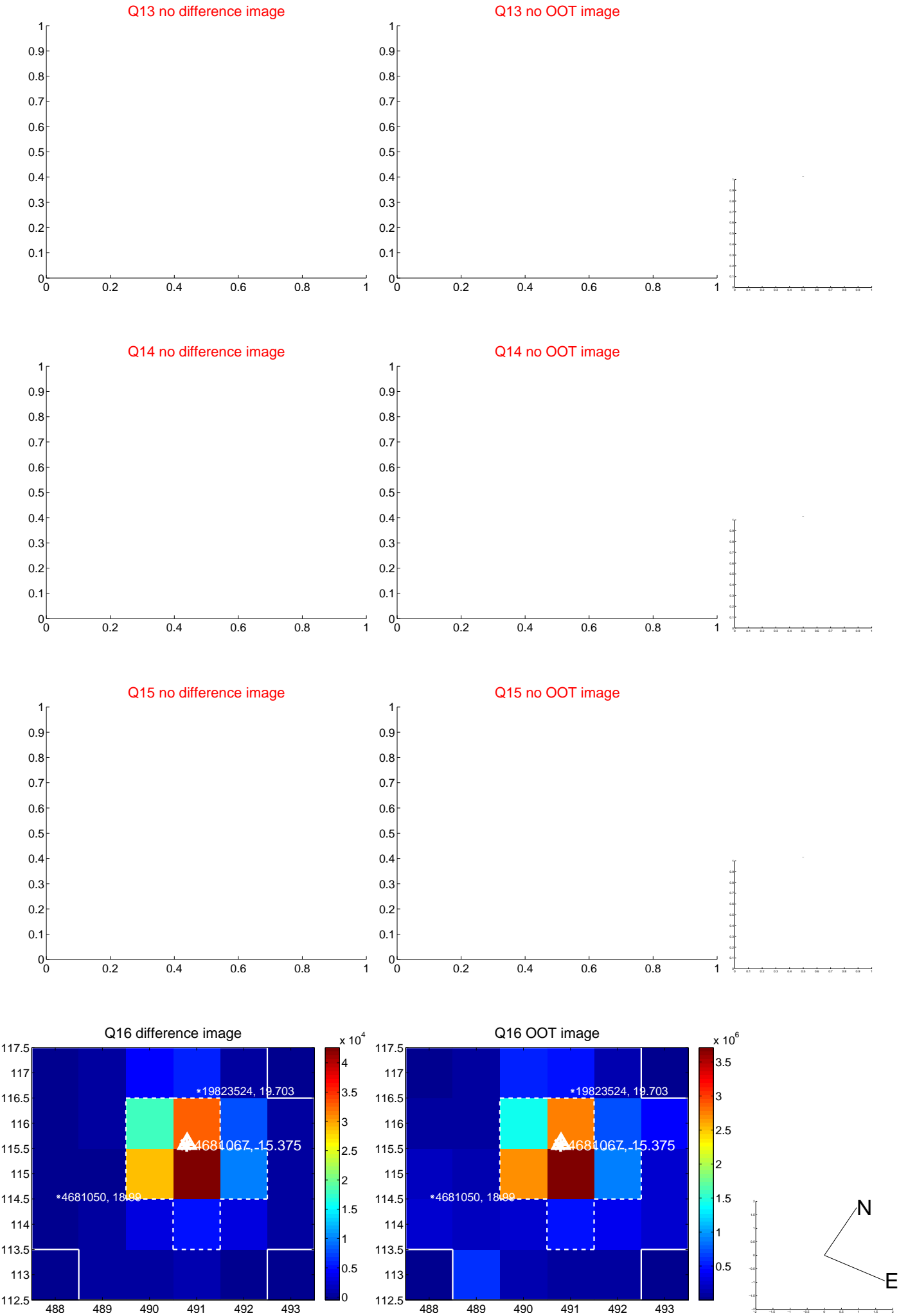
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



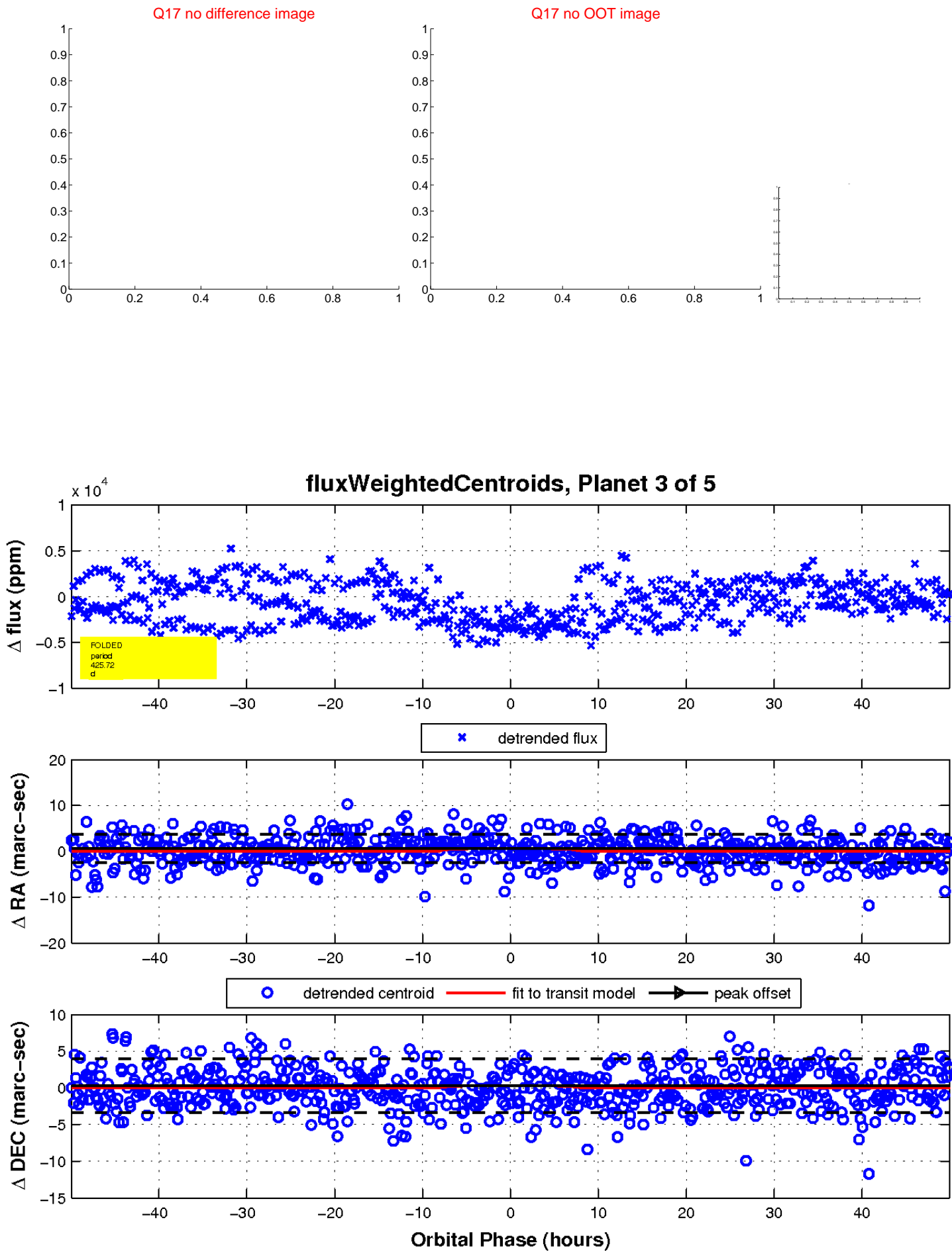
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

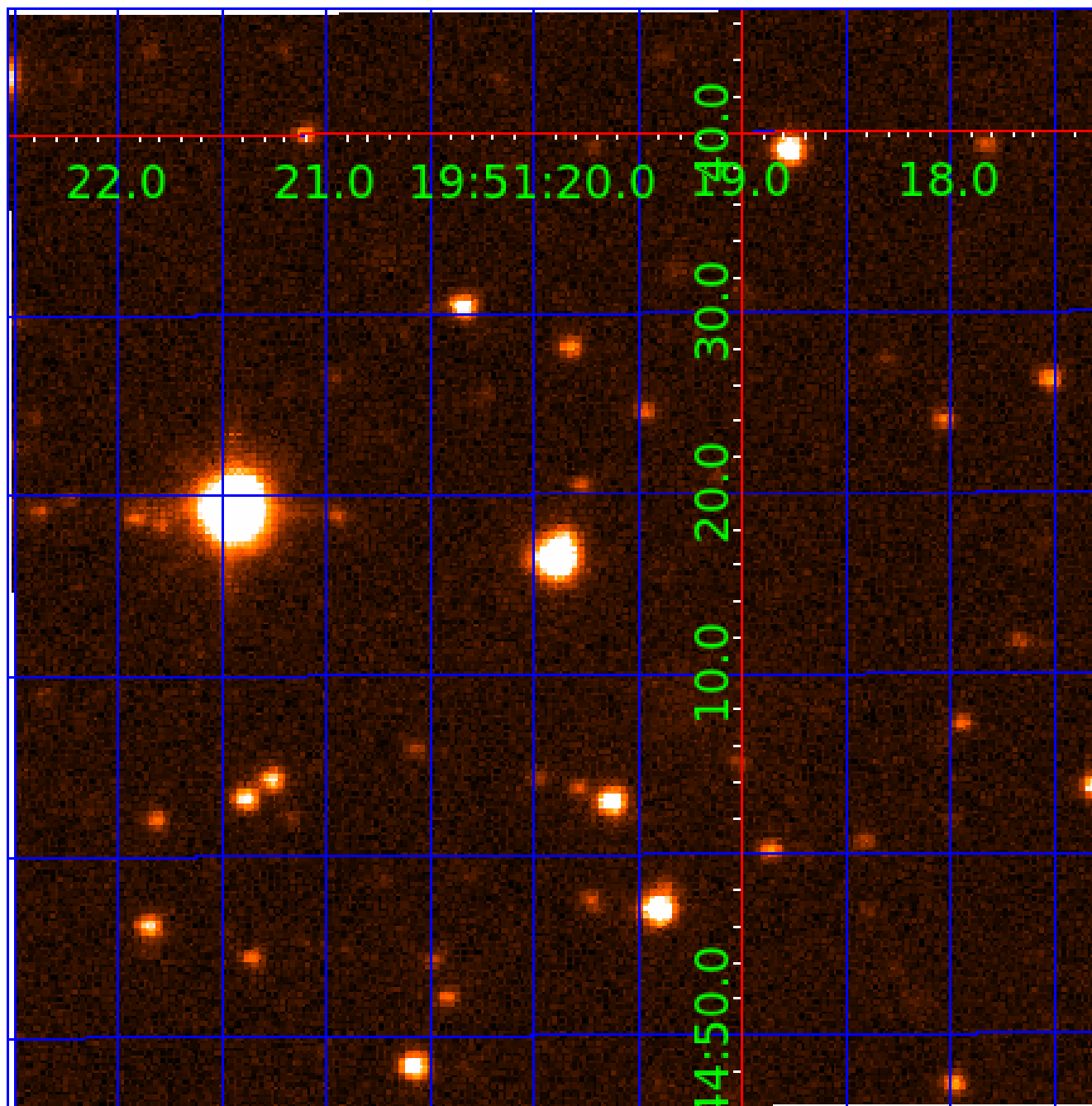


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004681067

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})
004681067-01	OBS	No	317.199184	420.900097	2018.3	6.338	13.6	7.7	0.57	4407	2.98	0.20
004681067-02	OBS	No	422.824780	497.499306	1815.3	3.483	12.3	7.4	0.57	4407	2.42	0.13
004681067-03	OBS	No	425.721111	277.791098	2630.0	16.689	8.8	8.0	0.57	4407	3.08	0.13
004681067-04	OBS	No	389.485367	355.792281	961.6	6.970	12.8	4.3	0.57	4407	1.90	0.15
004681067-05	OBS	No	343.716643	454.568760	1632.5	3.378	9.5	5.7	0.57	4407	2.29	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004681067-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004681067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004681067-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
004681067-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
004681067-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

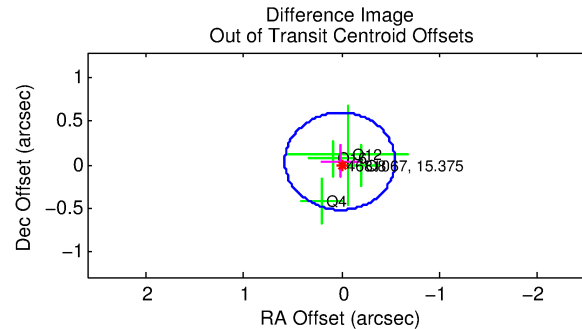
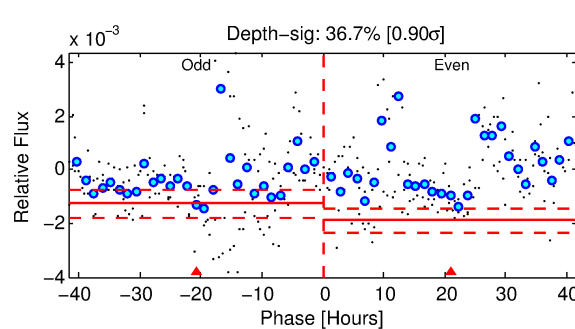
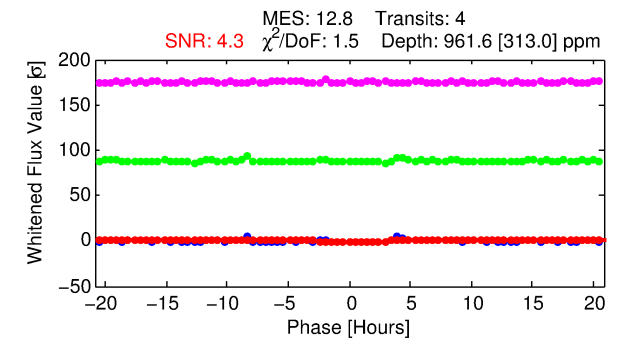
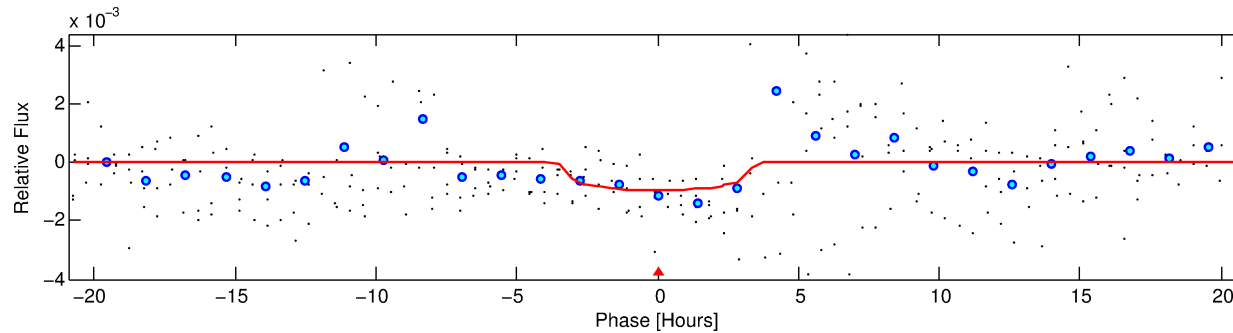
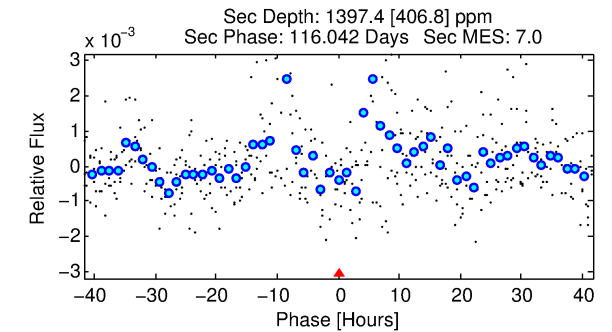
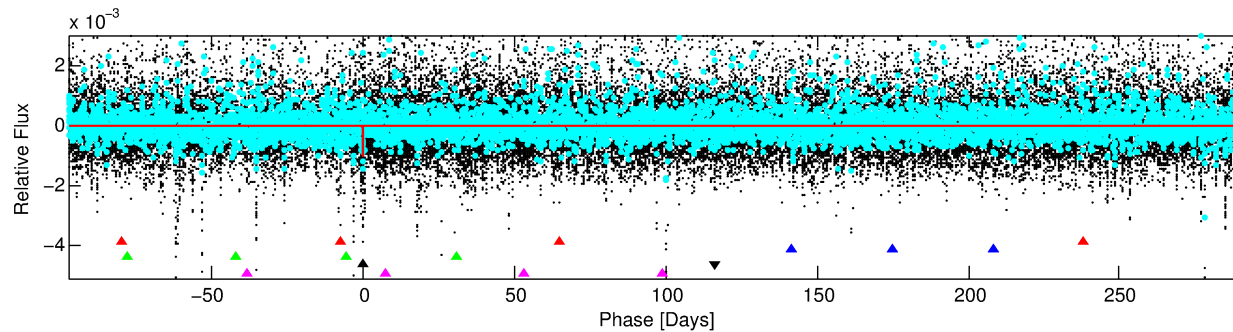
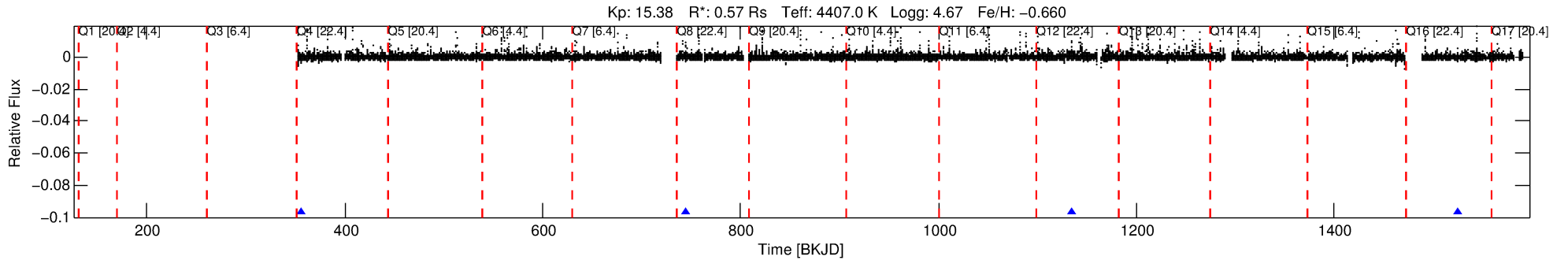
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004681067-04

No Significant Match Found

DV One-Page Summary

KIC: 4681067 Candidate: 4 of 5 Period: 389.485 d



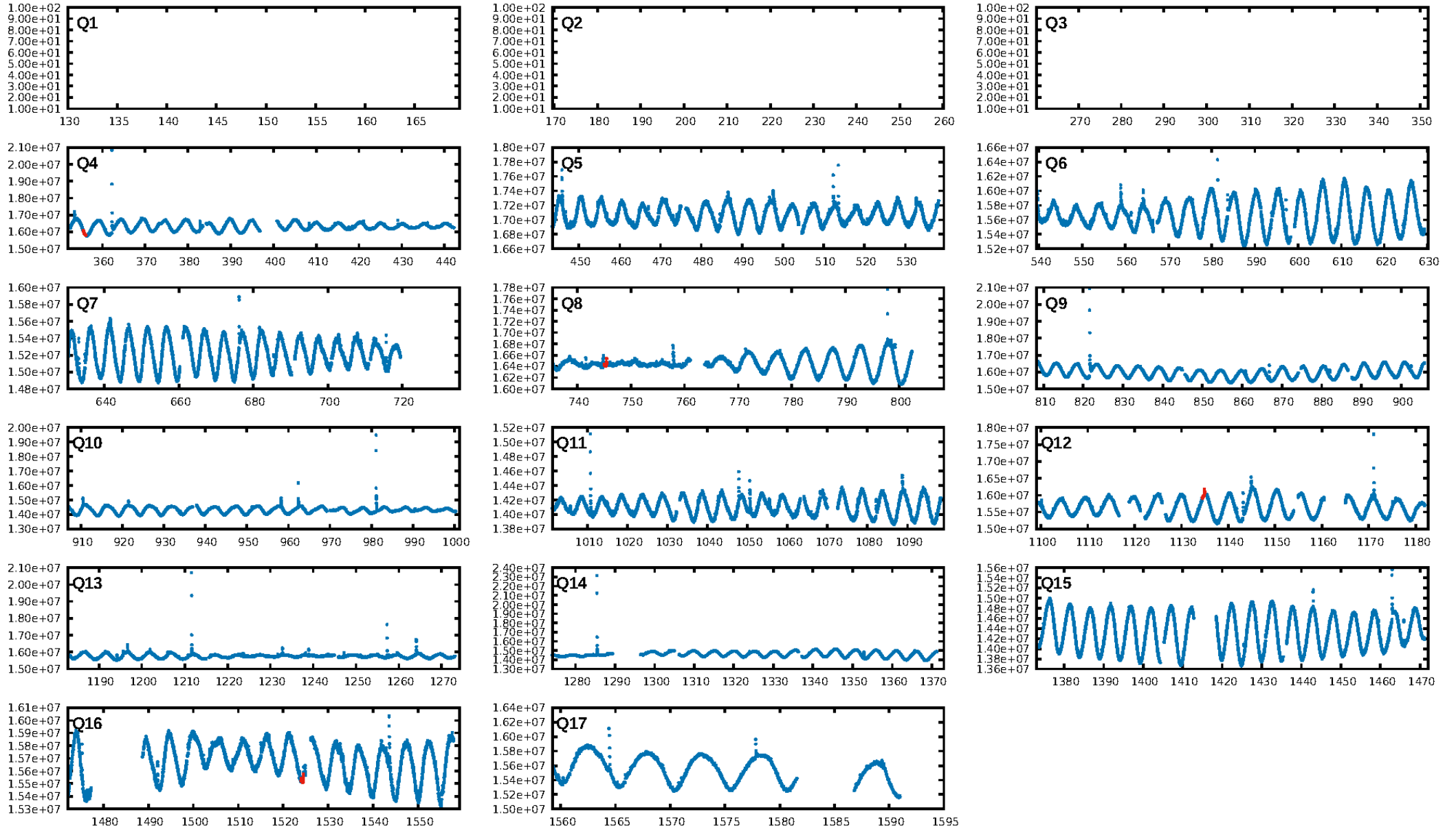
DV Fit Results:

Period = 389.48537 [0.01187] d
Epoch = 355.7923 [0.0240] BKJD
Rp/R* = 0.0307 [0.0316]
a/R* = 311.92 [1148.71]
b = 0.73 [2.42]
Seff = 0.15 [0.03]
Teq = 158 [7] K
Rp = 1.90 [1.97] Re
a = 0.8586 [0.0684] AU
Ag = 156315.57 [326005.11] [0.48σ]
Teffp = 4866 [2539] K [1.85σ]

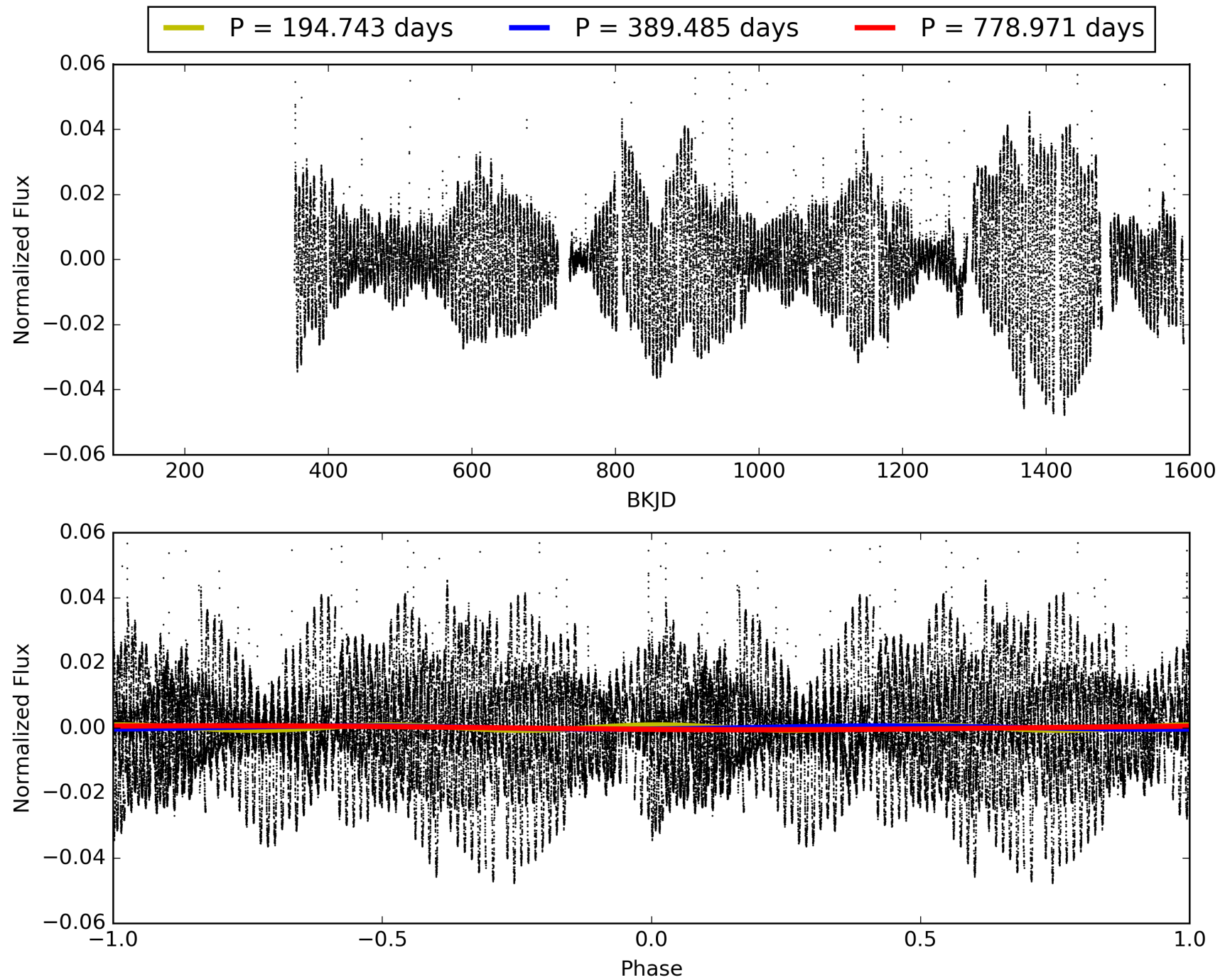
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [141.81σ]
LongPeriod-sig: 100.0% [102.69σ]
ModelChiSquare2-sig: 10.0%
ModelChiSquareGof-sig: 76.5%
Bootstrap-pfa: 9.72e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.145
Centroid-sig: 42.9%
Centroid-so: 2.241 arcsec [1.30σ]
OotOffset-rm: 0.042 arcsec [0.22σ]
KicOffset-rm: 0.037 arcsec [0.20σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 004681067-04, PDC Light Curves

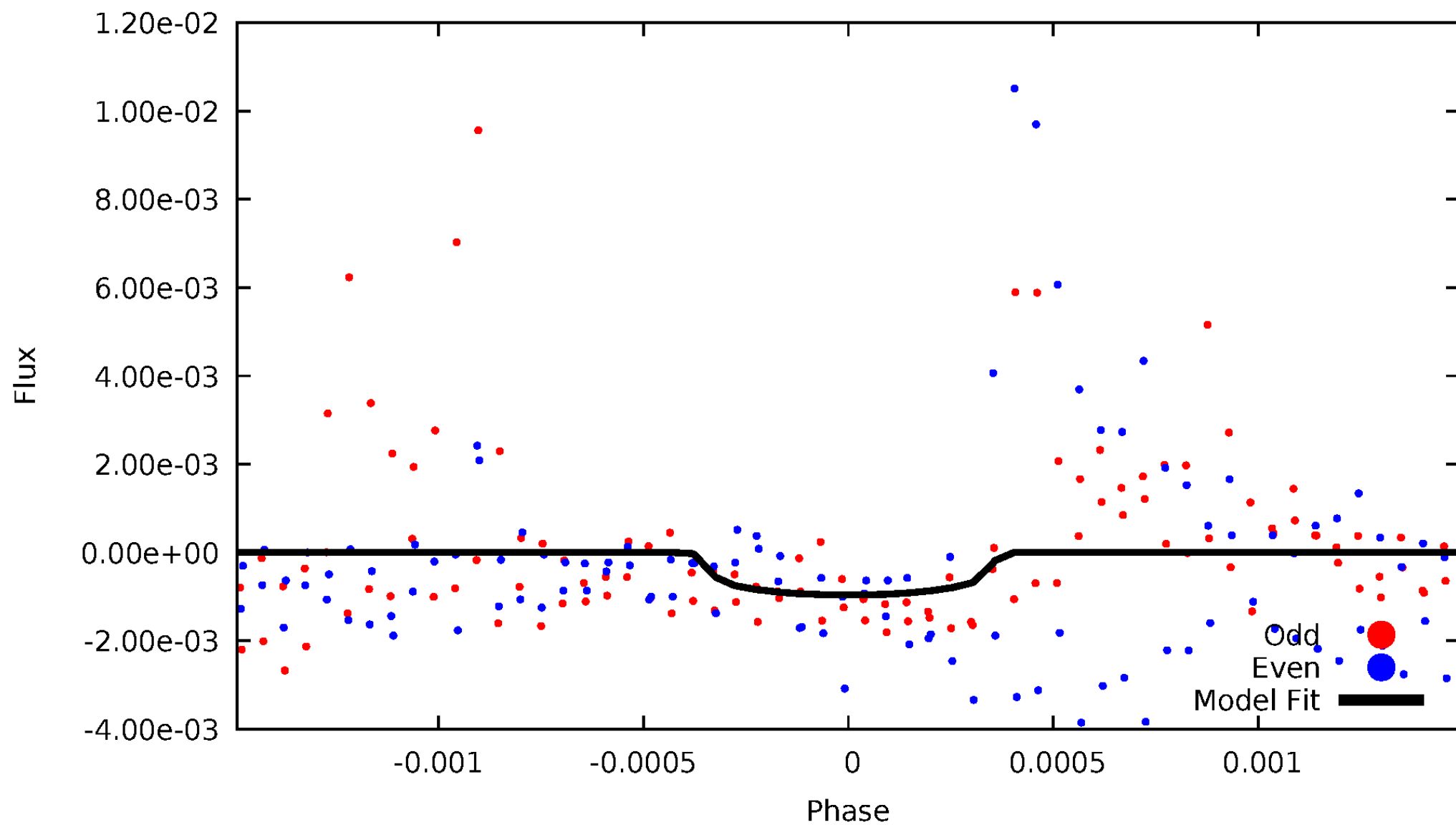


TCE 004681067-04



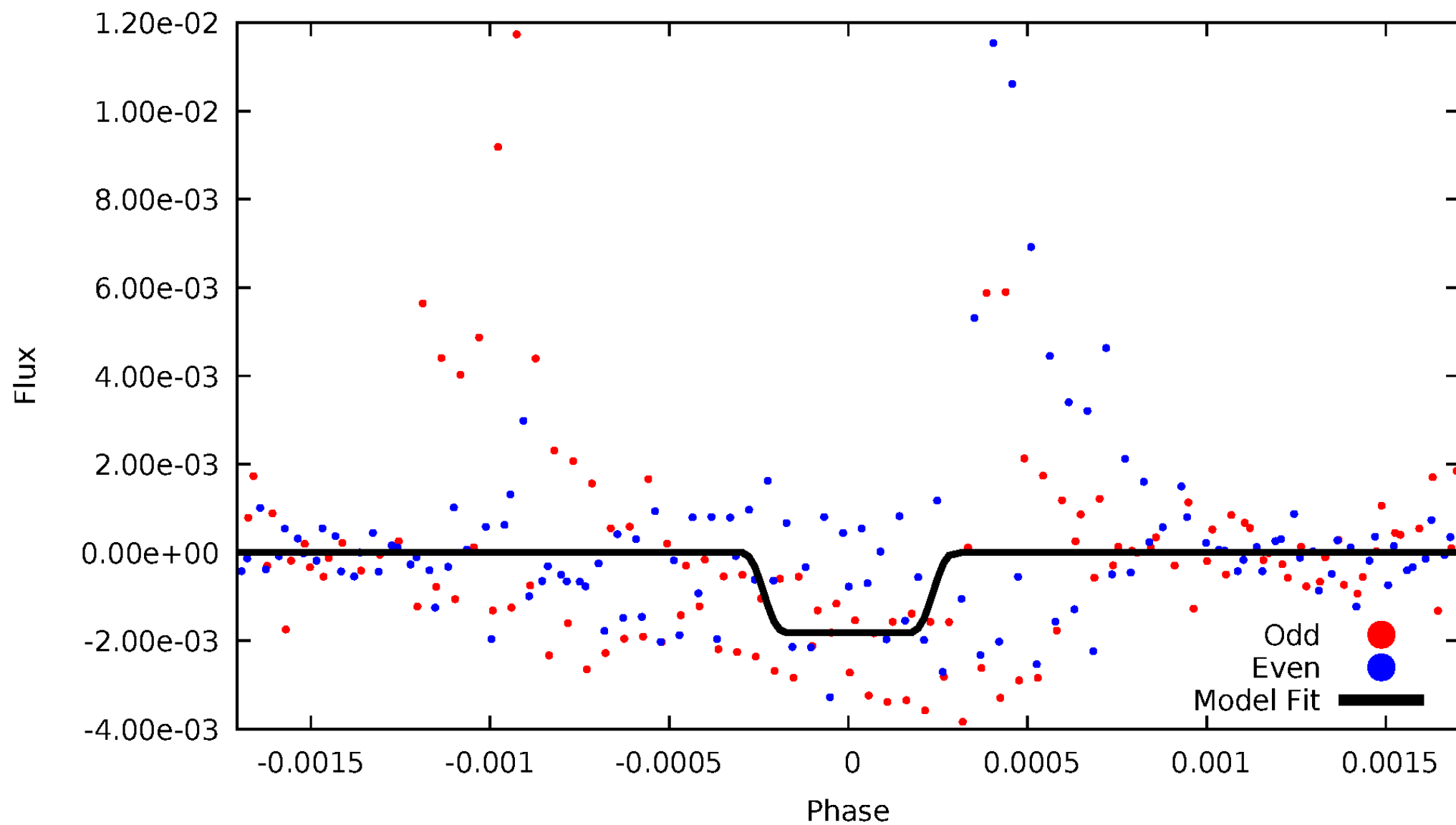
DV Odd/Even

TCE 004681067-04



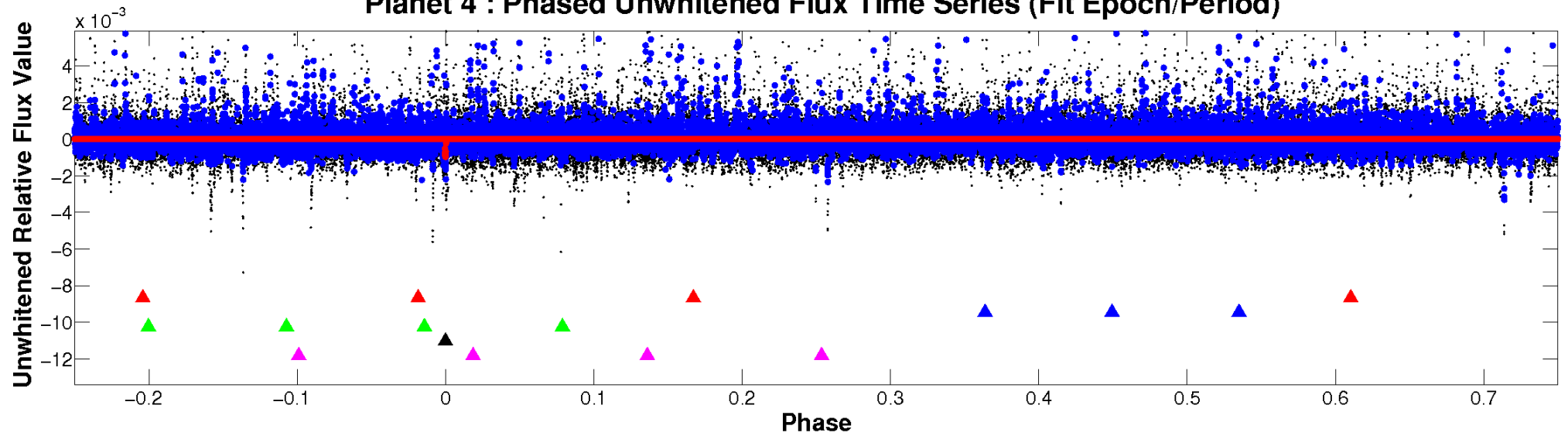
ALT Odd/Even

TCE 004681067-04

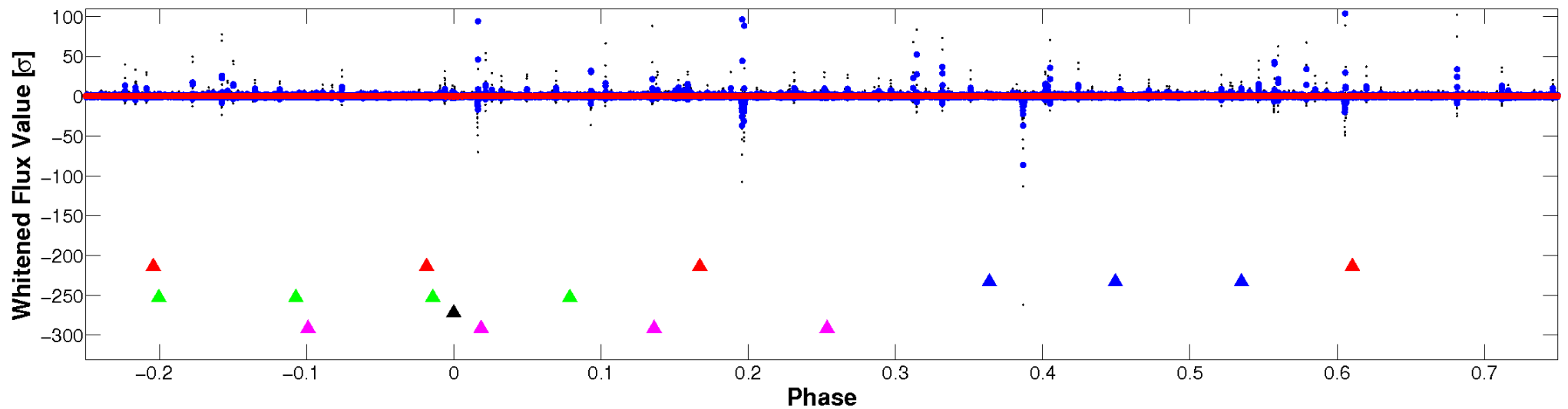


Non-Whitened Vs. Whitened Light Curve

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



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



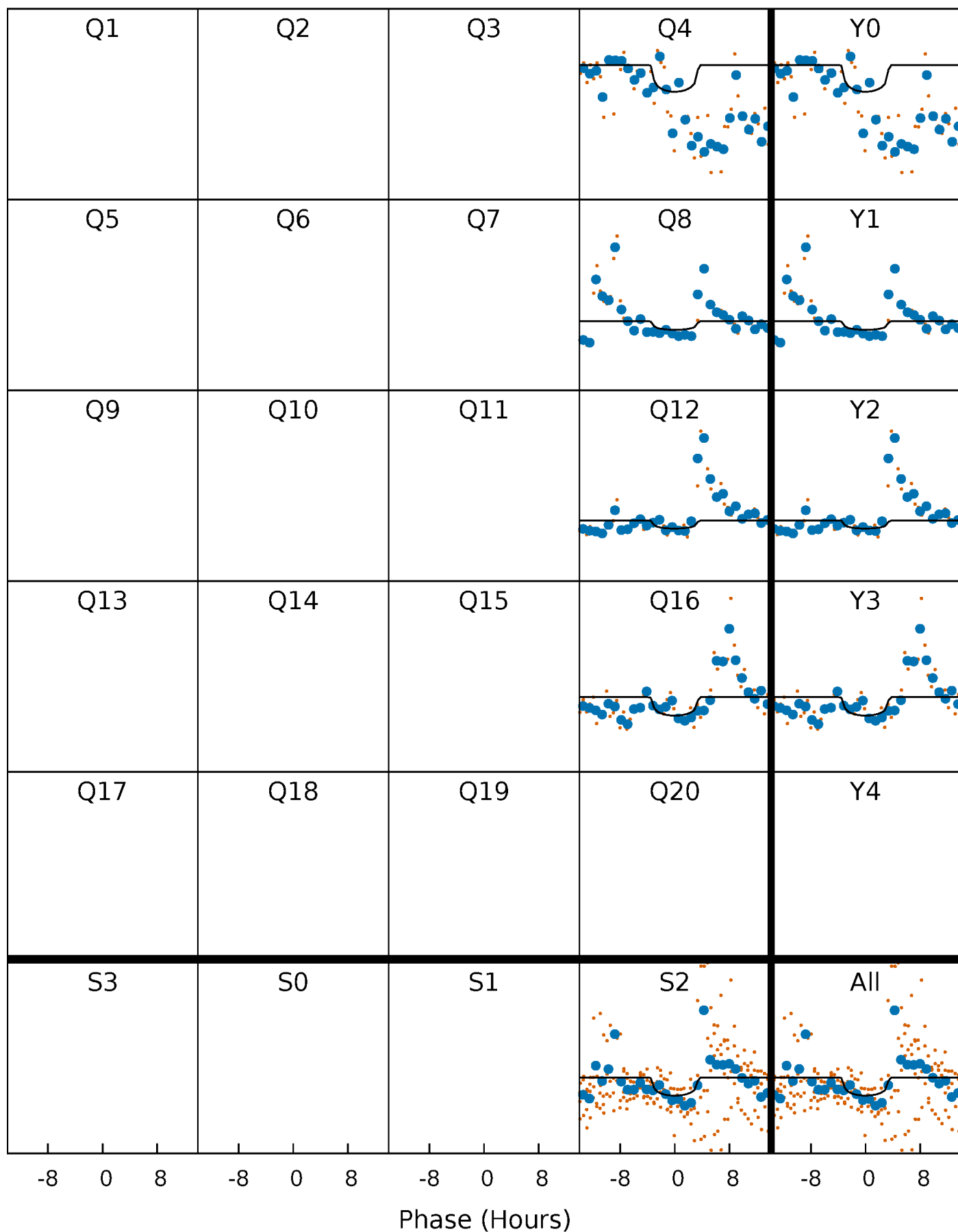
PDC Quarter-Phased Transit Curves

TCE 004681067-04 $P=389.485367$ Days $T_0=355.792282$ (BKJD)



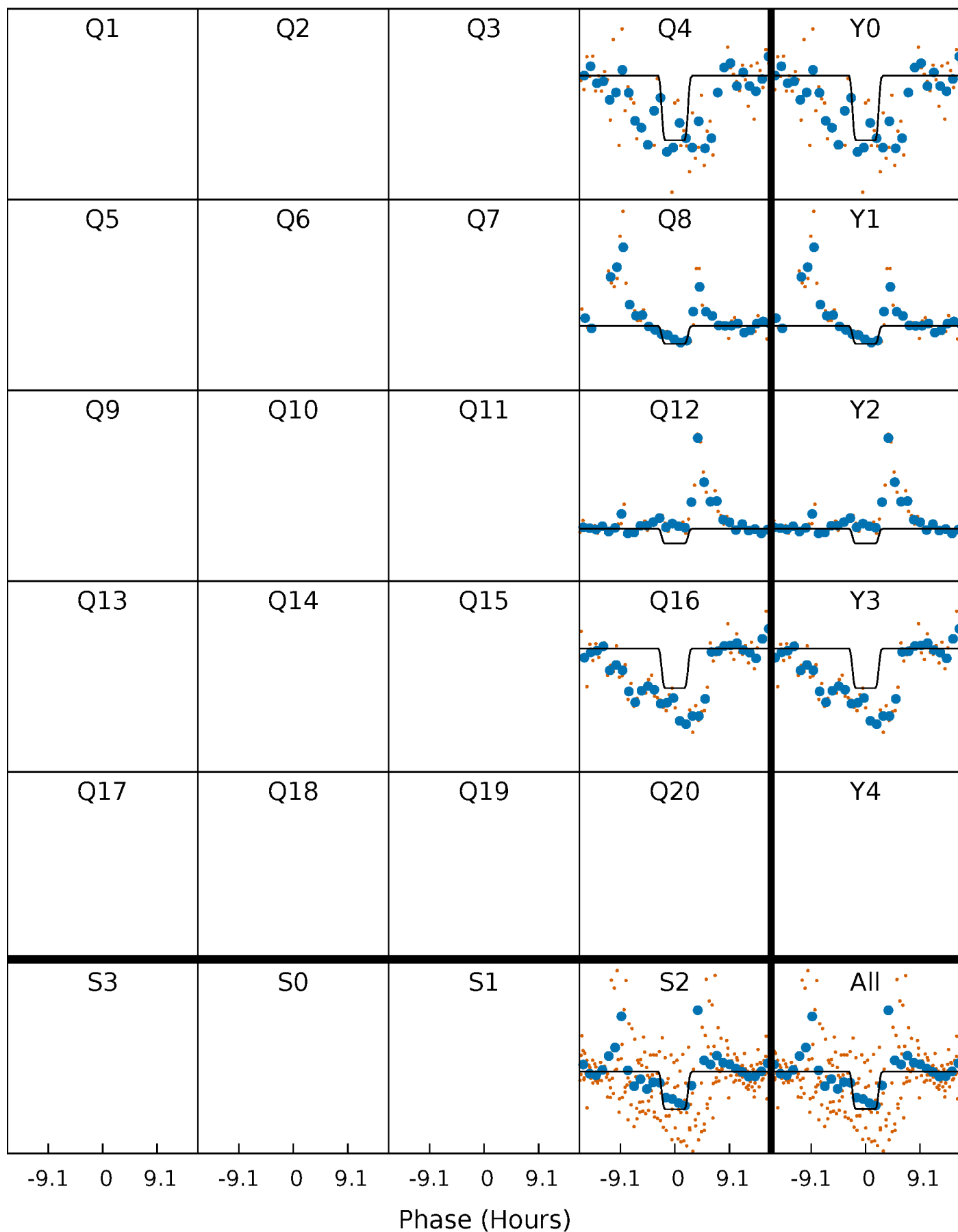
DV Quarter-Phased Transit Curves

TCE 004681067-04 $P=389.485367$ Days $T_0=355.792282$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

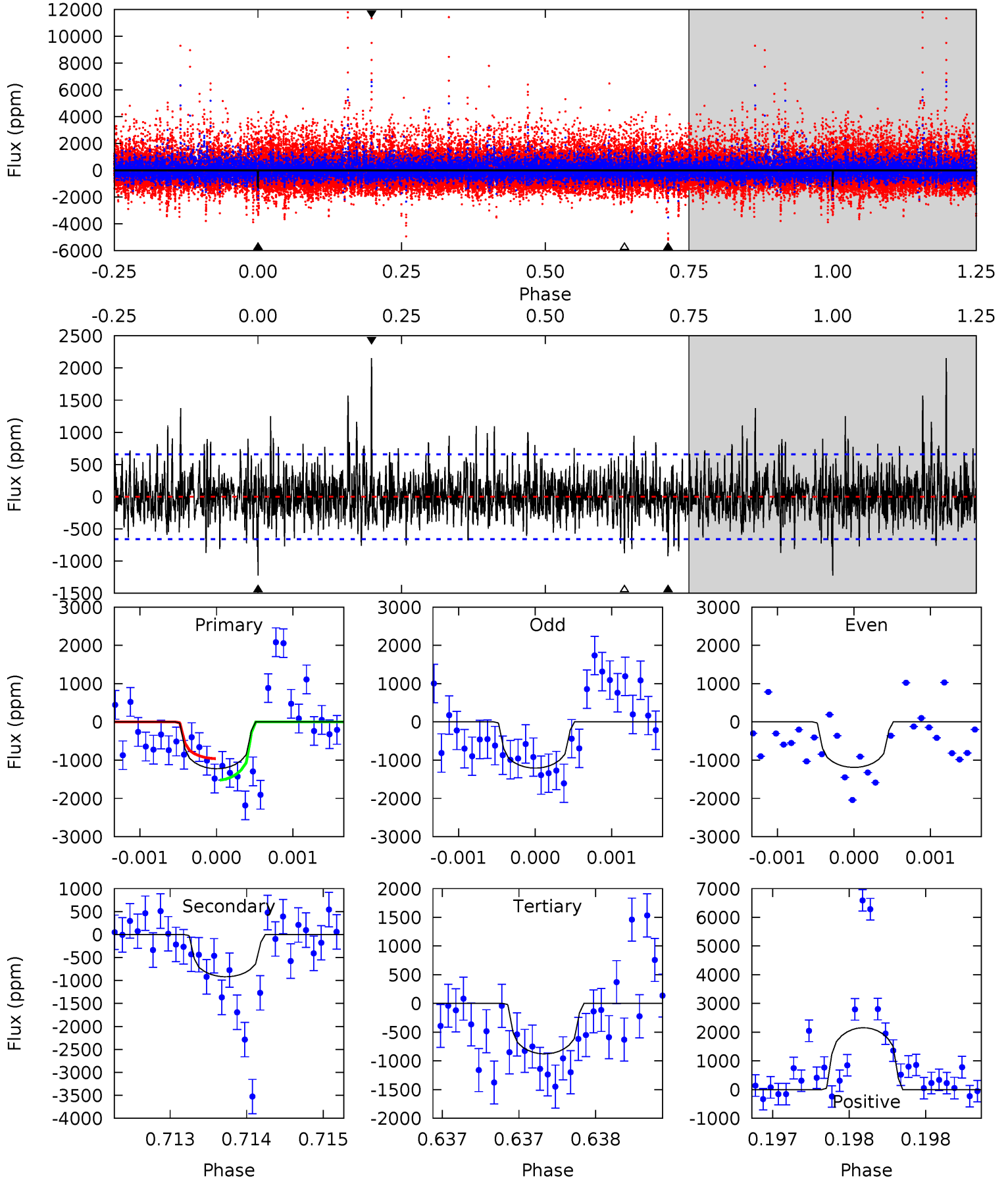
TCE 004681067-04 $P=389.477276$ Days $T_0=355.808909$ (BKJD)



DV Model-Shift Uniqueness Test

004681067-04, P = 389.485367 Days, E = 355.792282 Days

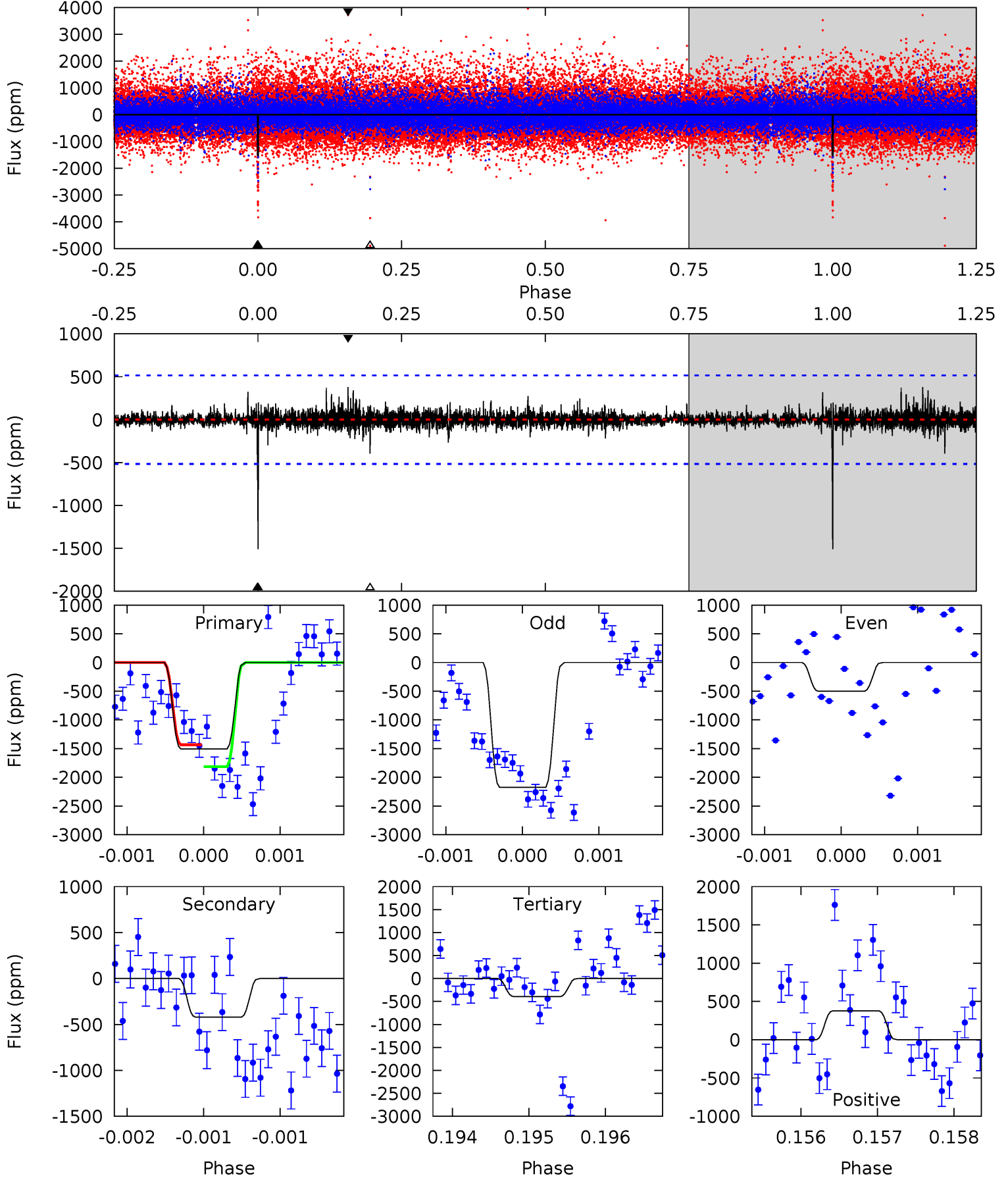
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	7.65	7.31	17.9	5.49	3.36	2.35	2.88	-7.74	0.33	-10.3	0.03	0.99	0.64	2.34



Alt Model-Shift Uniqueness Test

004681067-04, P = 389.477276 Days, E = 355.808909 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	4.52	4.25	4.06	5.55	3.44	0.60	12.0	12.1	0.27	0.46	8.43	0.90	0.20	2.03



Stellar Parameters For KIC 004681067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4407^{+157}_{-157}	$4.673^{+0.059}_{-0.032}$	$-0.660^{+0.350}_{-0.300}$	$0.569^{+0.050}_{-0.056}$	$0.556^{+0.061}_{-0.038}$	$4.251^{+1.060}_{-0.587}$
	+4%/-4%	+1%/-1%	+53%/-45%	+9%/-10%	+11%/-7%	+25%/-14%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004681067-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-919 ± 120	$2.23^{+1.88}_{-1.35}$	220^{+9}_{-9}	4117^{+2069}_{-778}	$74525^{+397415}_{-52078}$
Alt.	-420 ± 93	$2.76^{+1.98}_{-1.71}$	220^{+10}_{-9}	3372^{+1335}_{-496}	$22758^{+128363}_{-15347}$

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 $A_{obs} \gg 1.0$

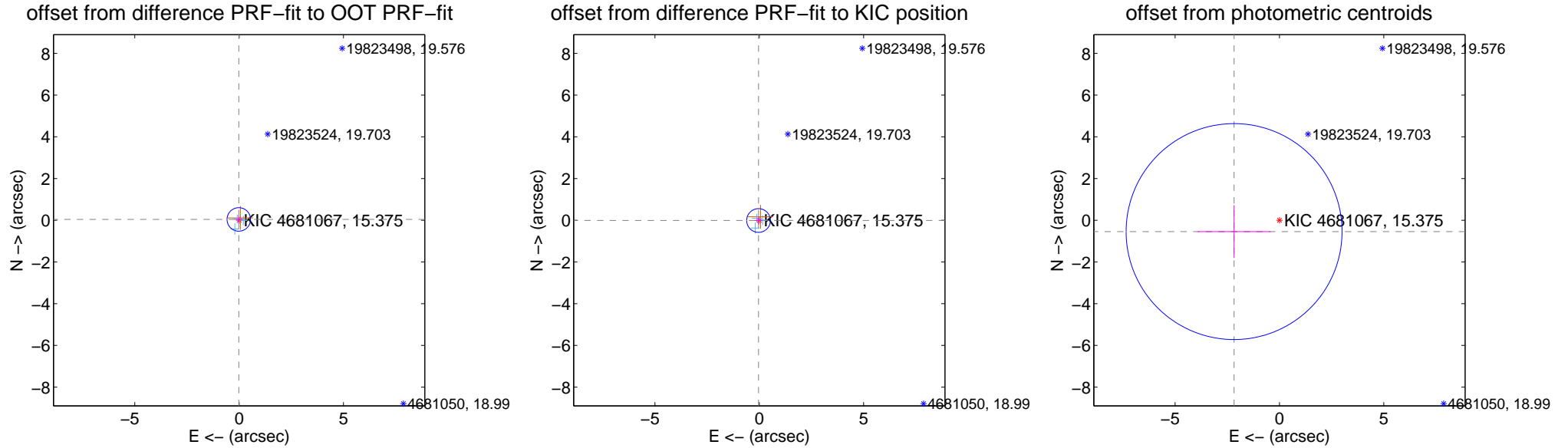
DV Centroid Data

Supplemental centroid analysis for 004681067-04. Kepler magnitude: 15.38. Transit SNR 4.28

There are 3 quarters with good PRF difference image offsets

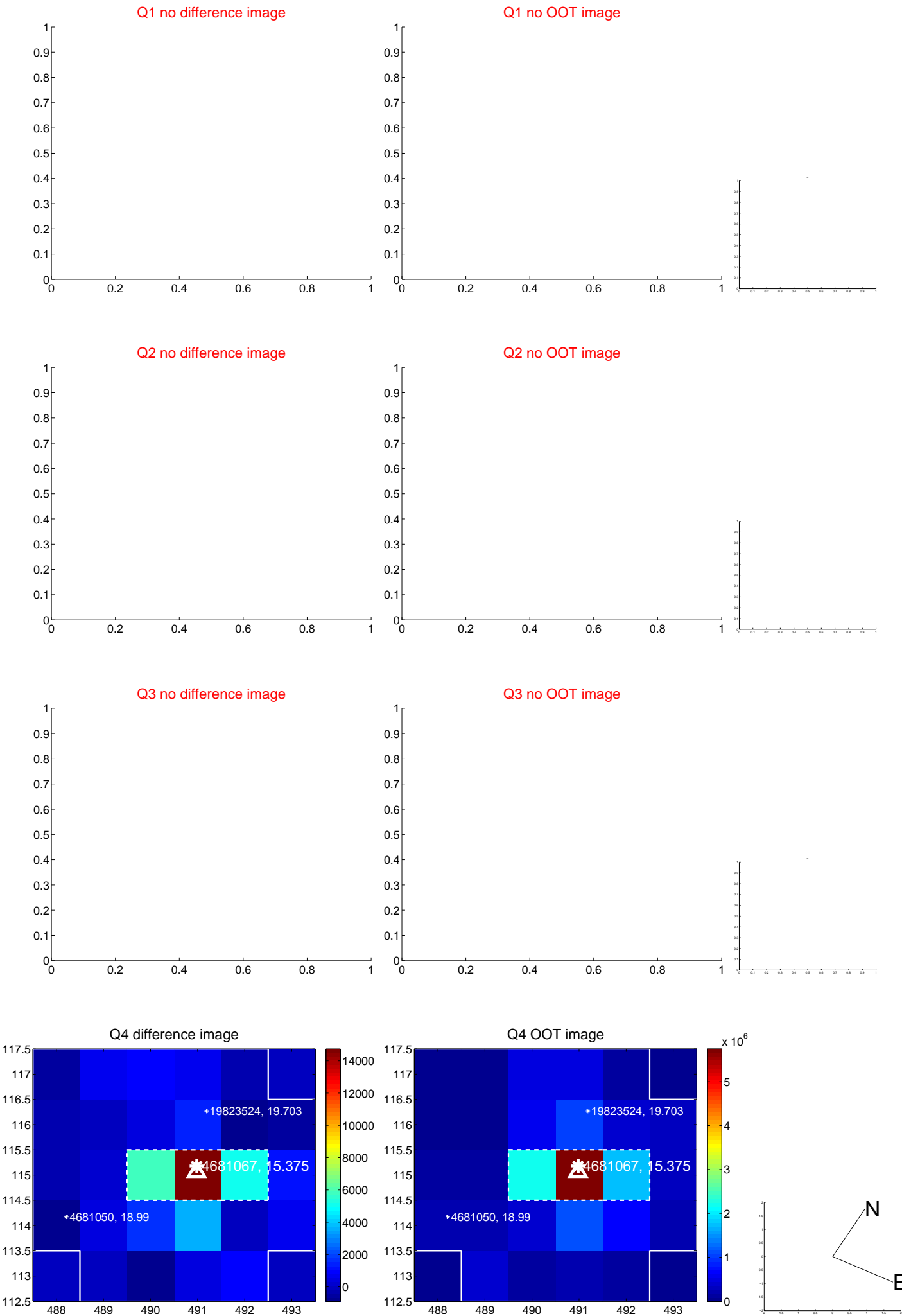
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.042 ± 0.188	0.22	0.016 ± 0.190	0.039 ± 0.187
PRF-fit source offset from KIC position	0.037 ± 0.190	0.20	0.035 ± 0.190	-0.013 ± 0.187
photometric centroid source offset	2.24 ± 1.73	1.30	2.17 ± 1.75	-0.54 ± 1.26

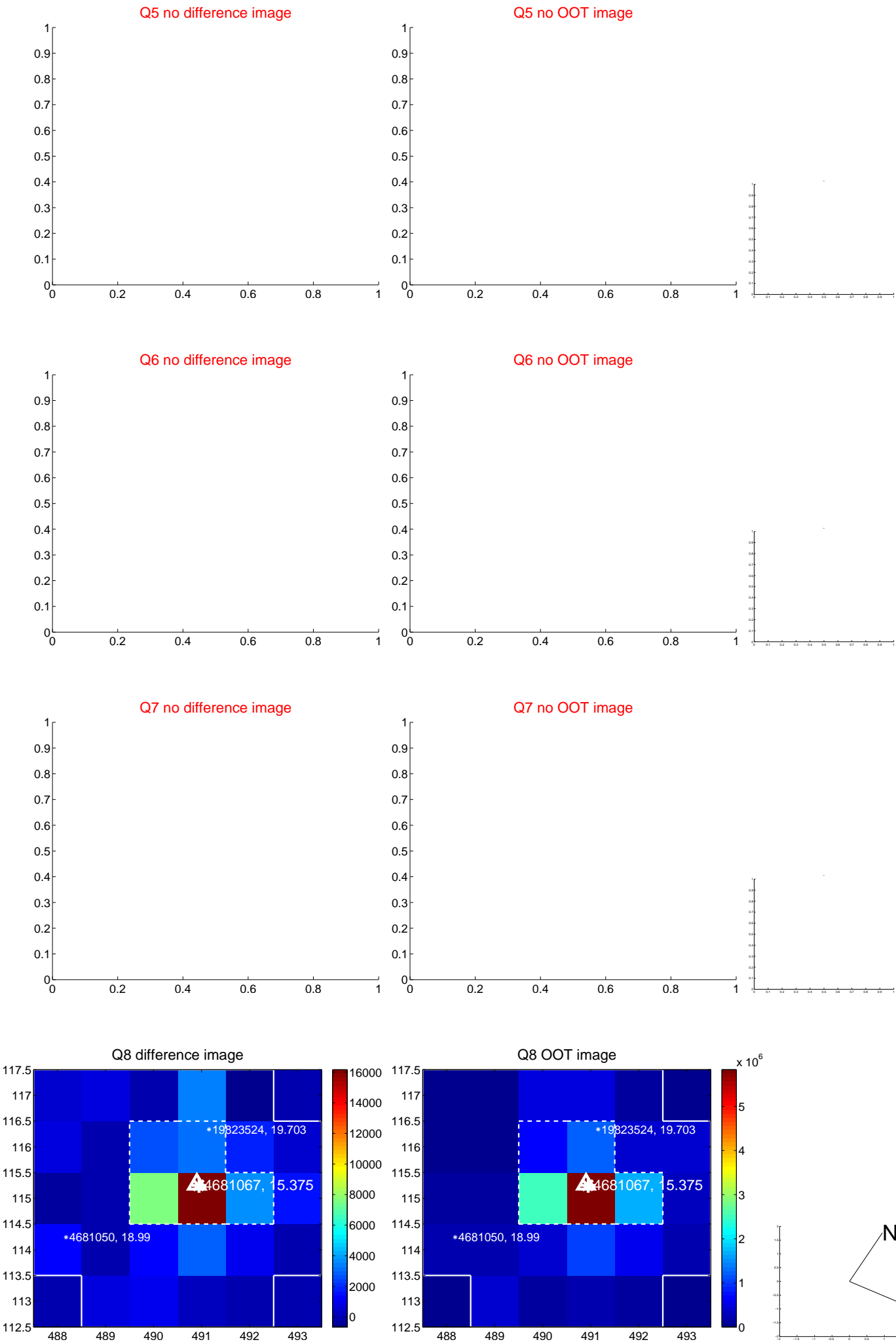


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

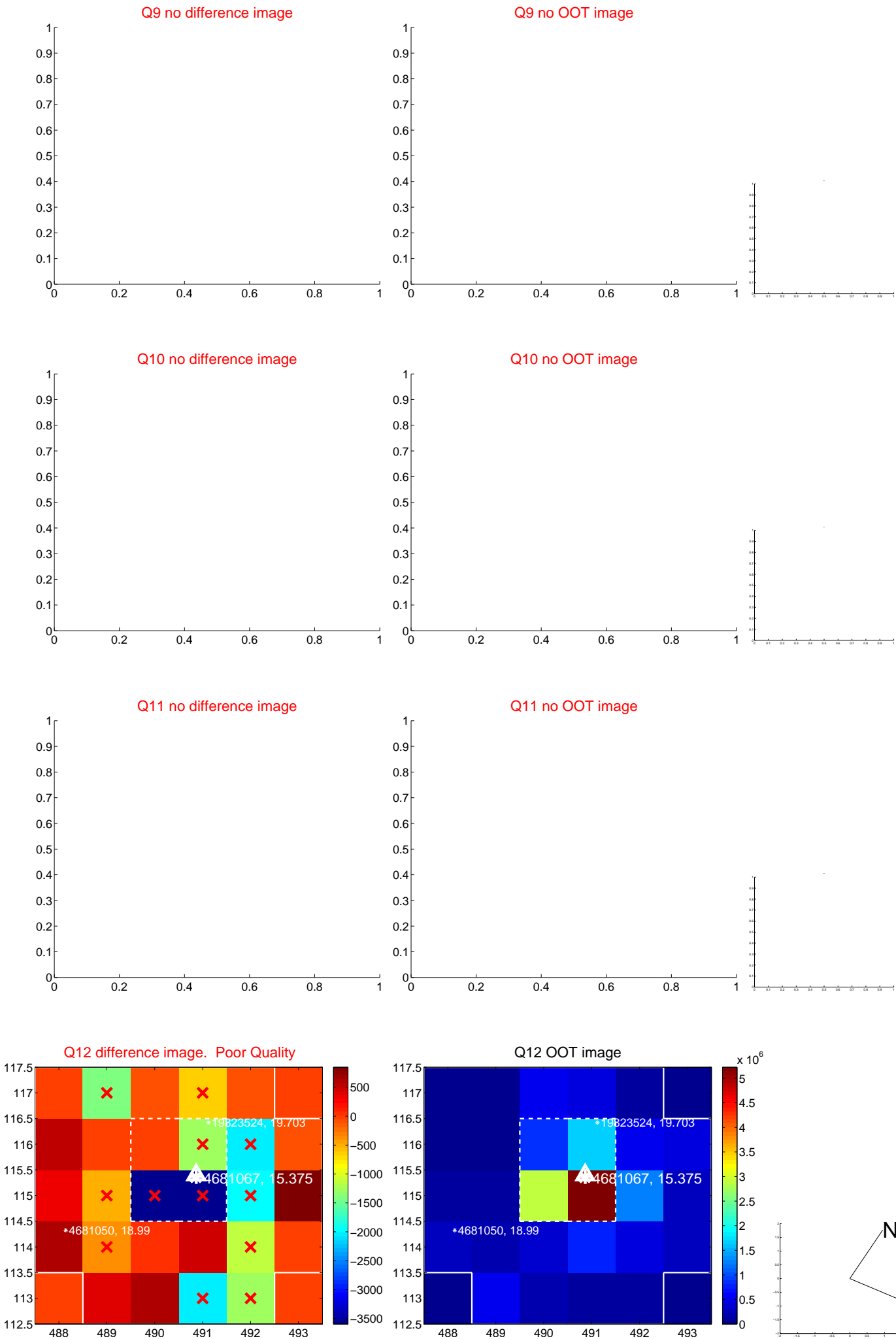
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



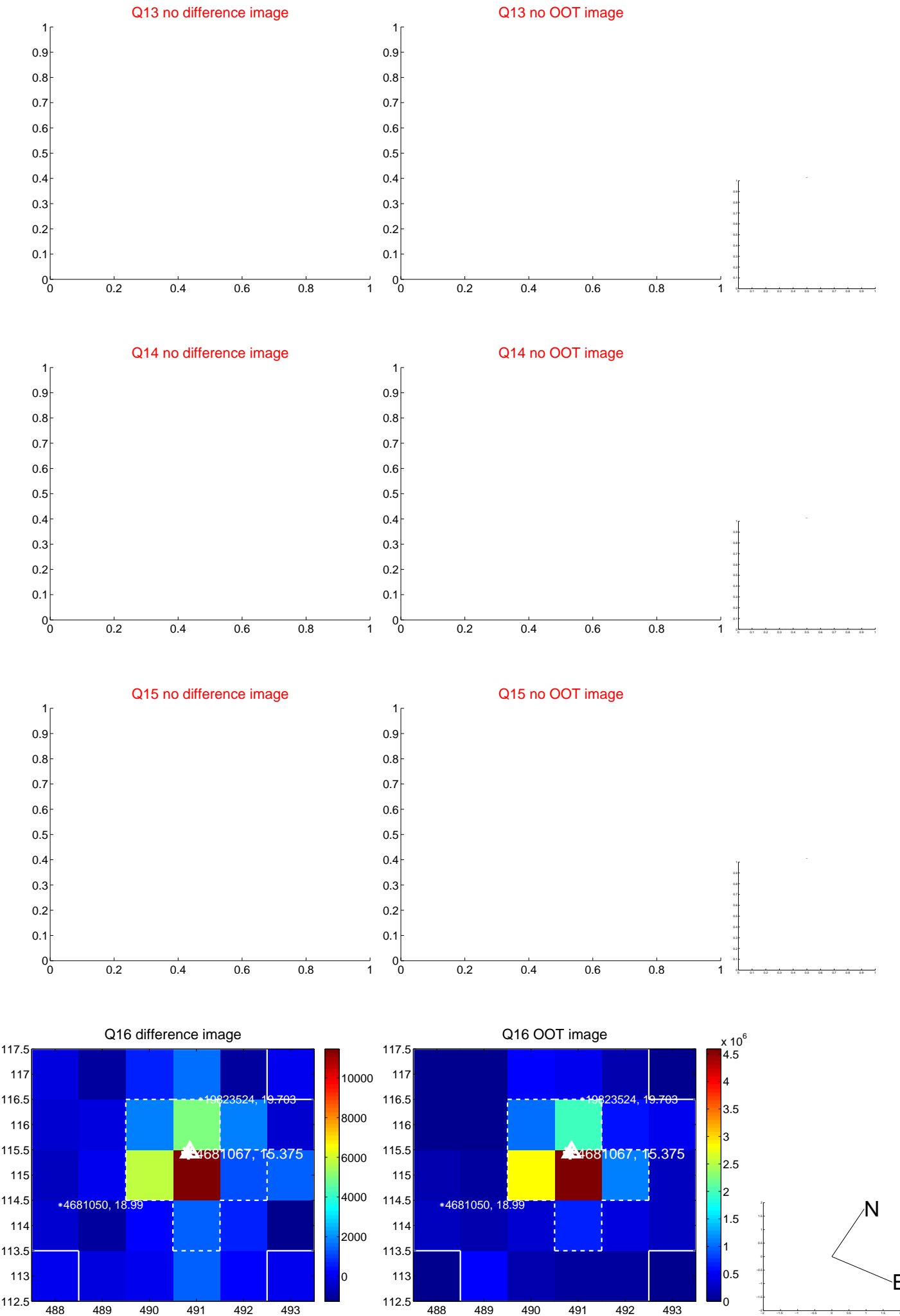
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



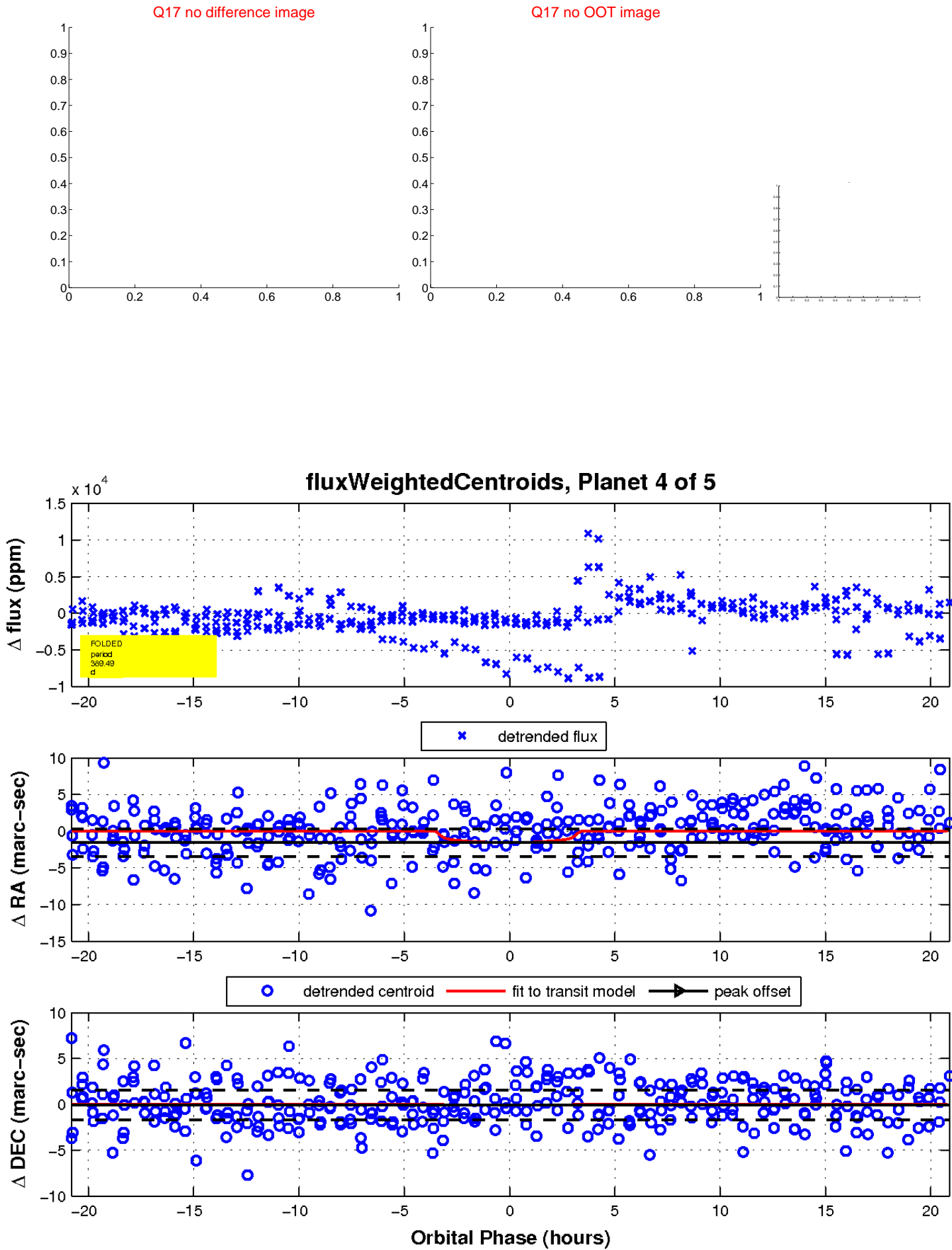
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

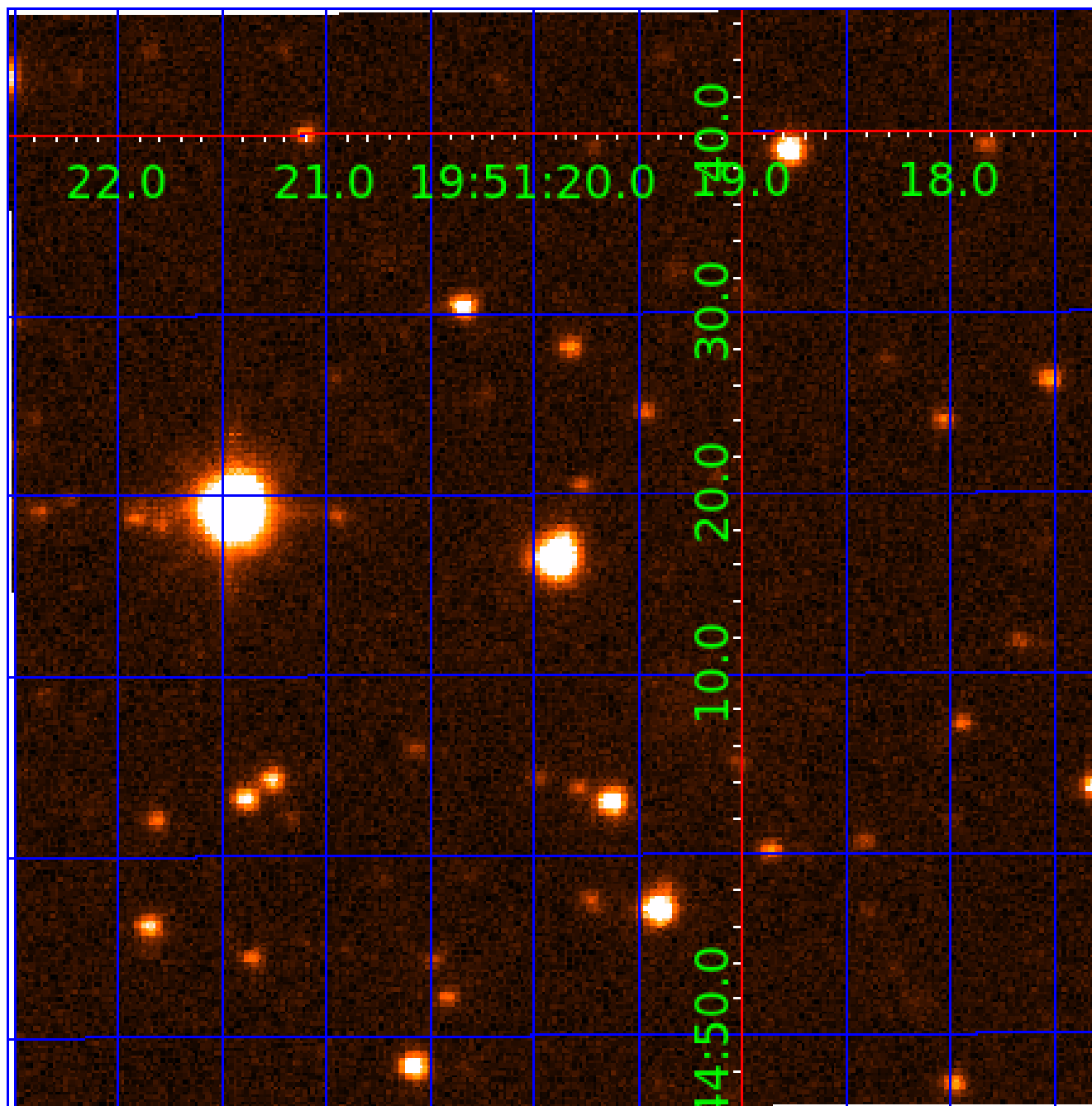


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004681067

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})
004681067-01	OBS	No	317.199184	420.900097	2018.3	6.338	13.6	7.7	0.57	4407	2.98	0.20
004681067-02	OBS	No	422.824780	497.499306	1815.3	3.483	12.3	7.4	0.57	4407	2.42	0.13
004681067-03	OBS	No	425.721111	277.791098	2630.0	16.689	8.8	8.0	0.57	4407	3.08	0.13
004681067-04	OBS	No	389.485367	355.792281	961.6	6.970	12.8	4.3	0.57	4407	1.90	0.15
004681067-05	OBS	No	343.716643	454.568760	1632.5	3.378	9.5	5.7	0.57	4407	2.29	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004681067-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004681067-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004681067-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
004681067-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST
004681067-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

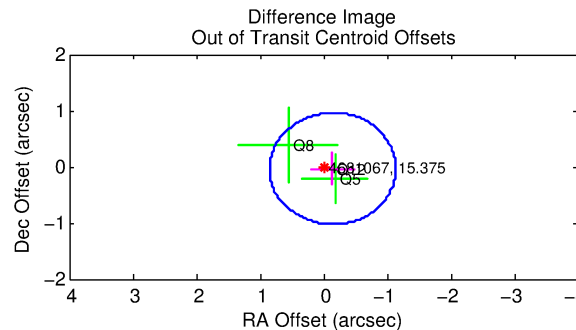
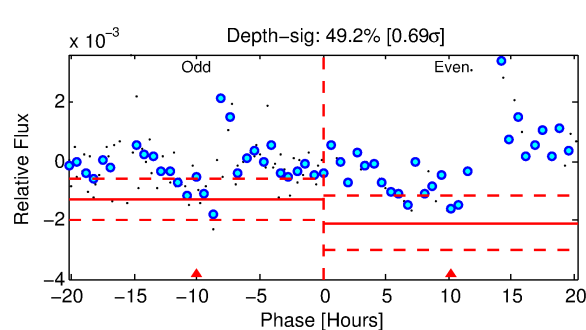
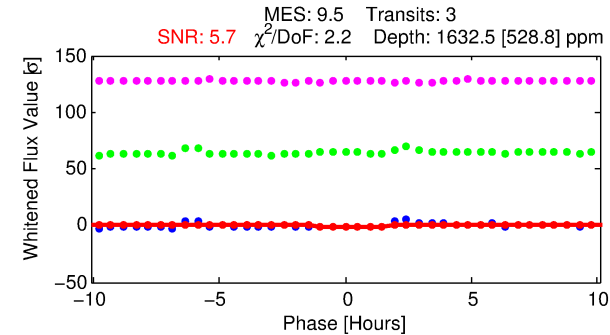
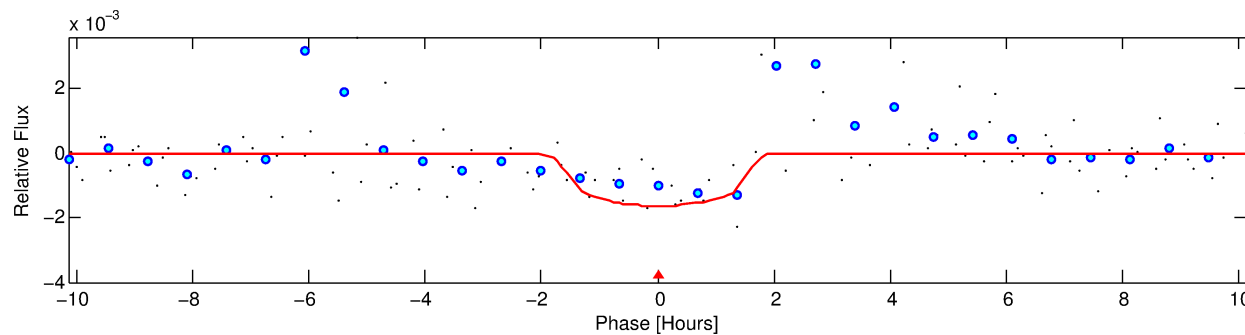
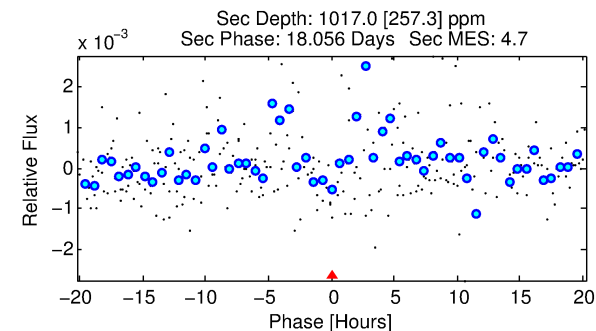
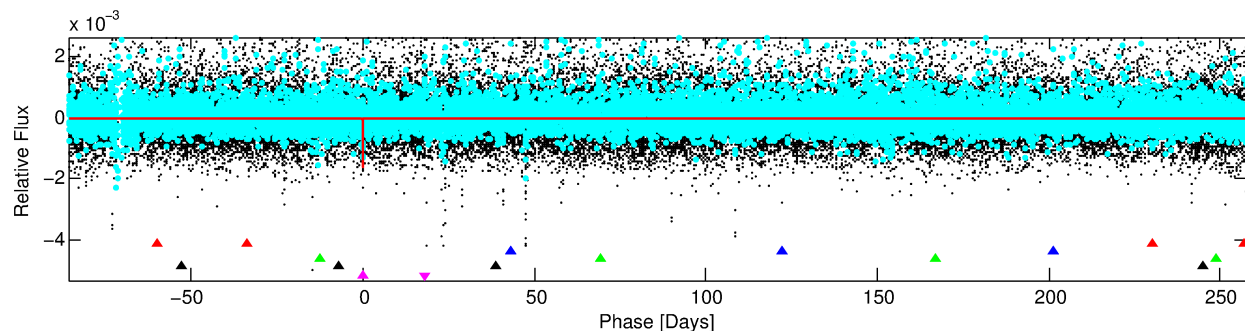
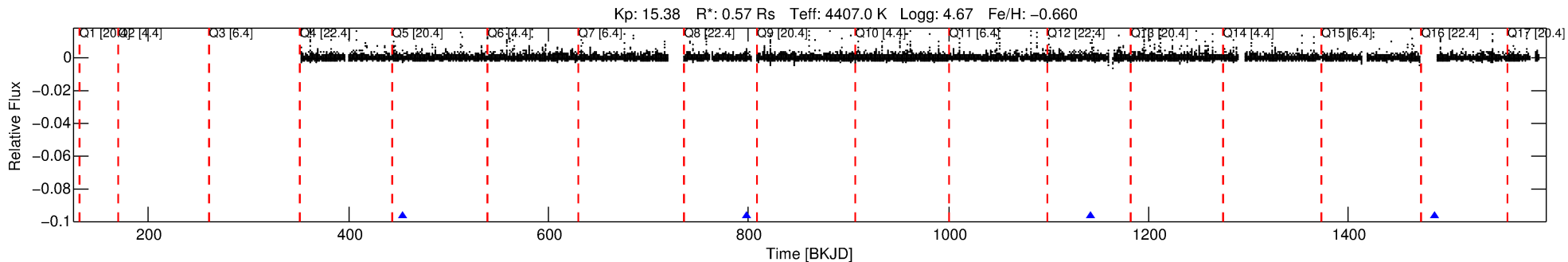
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004681067-05

No Significant Match Found

DV One-Page Summary

KIC: 4681067 Candidate: 5 of 5 Period: 343.717 d



DV Fit Results:

Period = 343.71664 [0.01198] d
Epoch = 454.5688 [0.0151] BKJD
Rp/R* = 0.0370 [0.0917]
a/R* = 735.97 [6299.85]
b = 0.42 [16.84]
Seff = 0.18 [0.03]
Teq = 165 [7] K
Rp = 2.30 [5.70] Re
a = 0.7899 [0.0630] AU
Ag = 66254.07 [329064.68] [0.20σ]
Teffp = 4093 [5083] K [0.77σ]

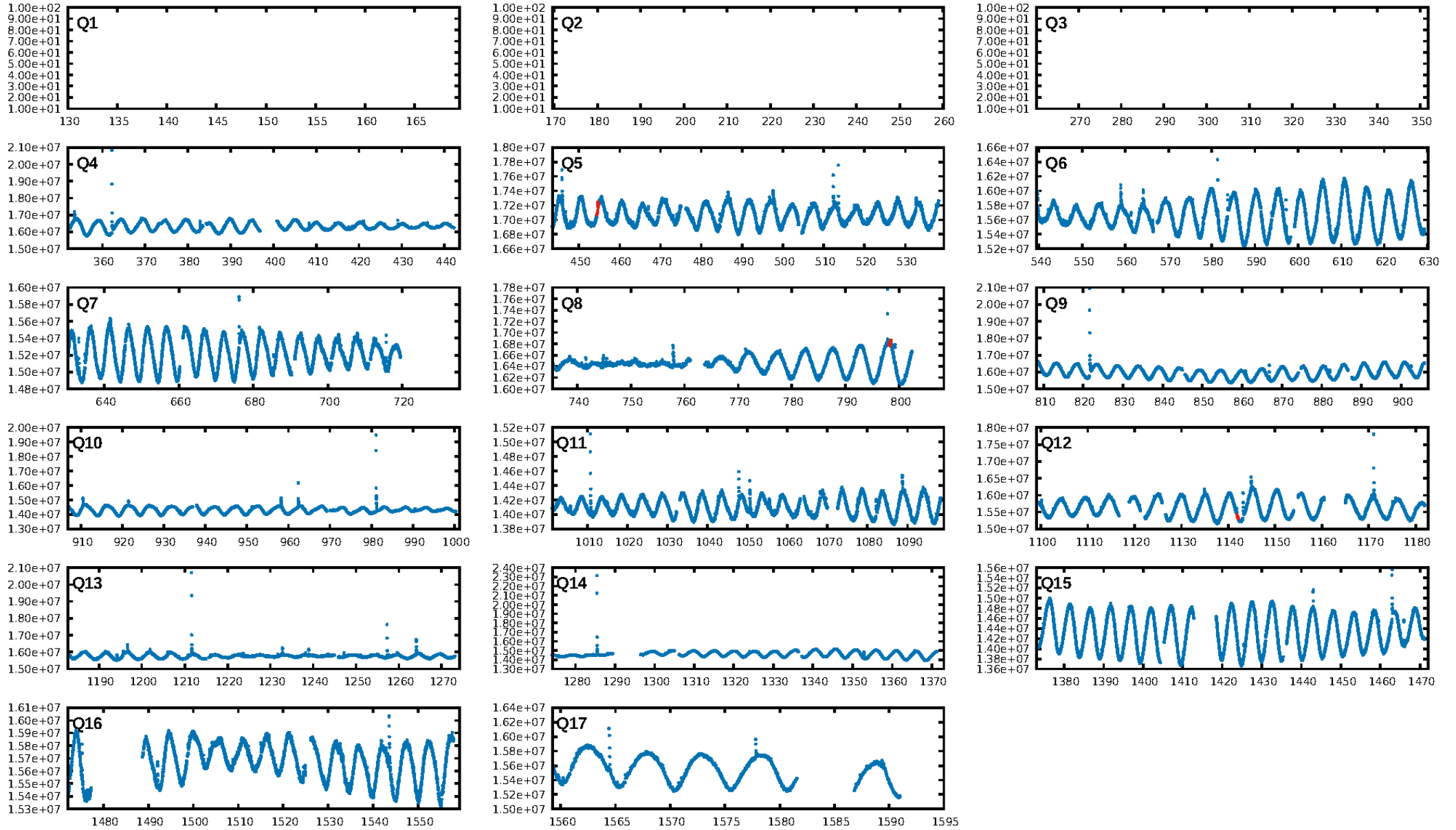
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [88.62σ]
LongPeriod-sig: 100.0% [141.81σ]
ModelChiSquare2-sig: 12.9%
ModelChiSquareGof-sig: 68.6%
Bootstrap-pfa: 3.70e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.128
Centroid-sig: 8.2%
Centroid-so: 2.816 arcsec [2.06σ]
OotOffset-rm: 0.147 arcsec [0.44σ]
KicOffset-rm: 0.079 arcsec [0.24σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

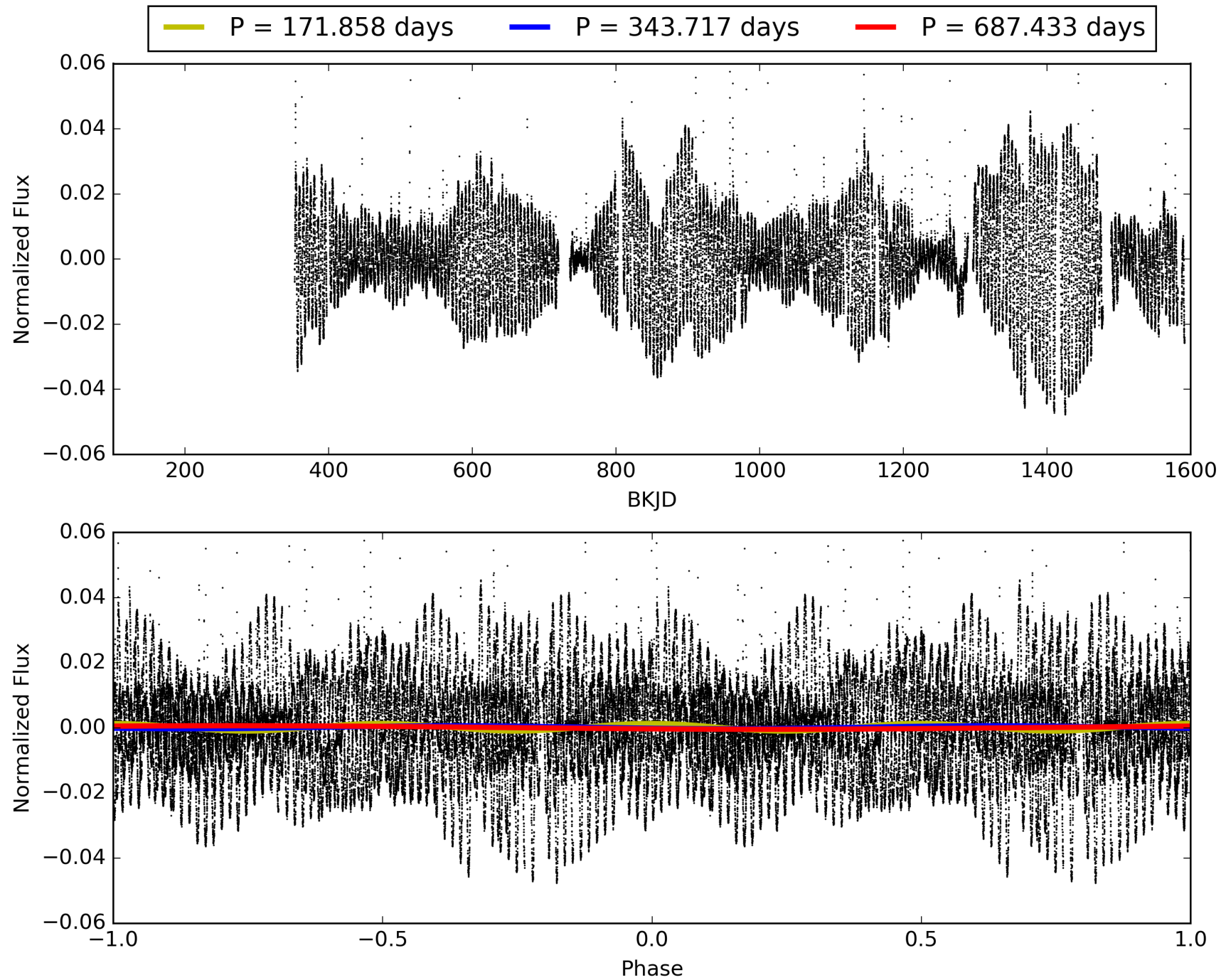
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:22:36 Z

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

TCE 004681067-05, PDC Light Curves

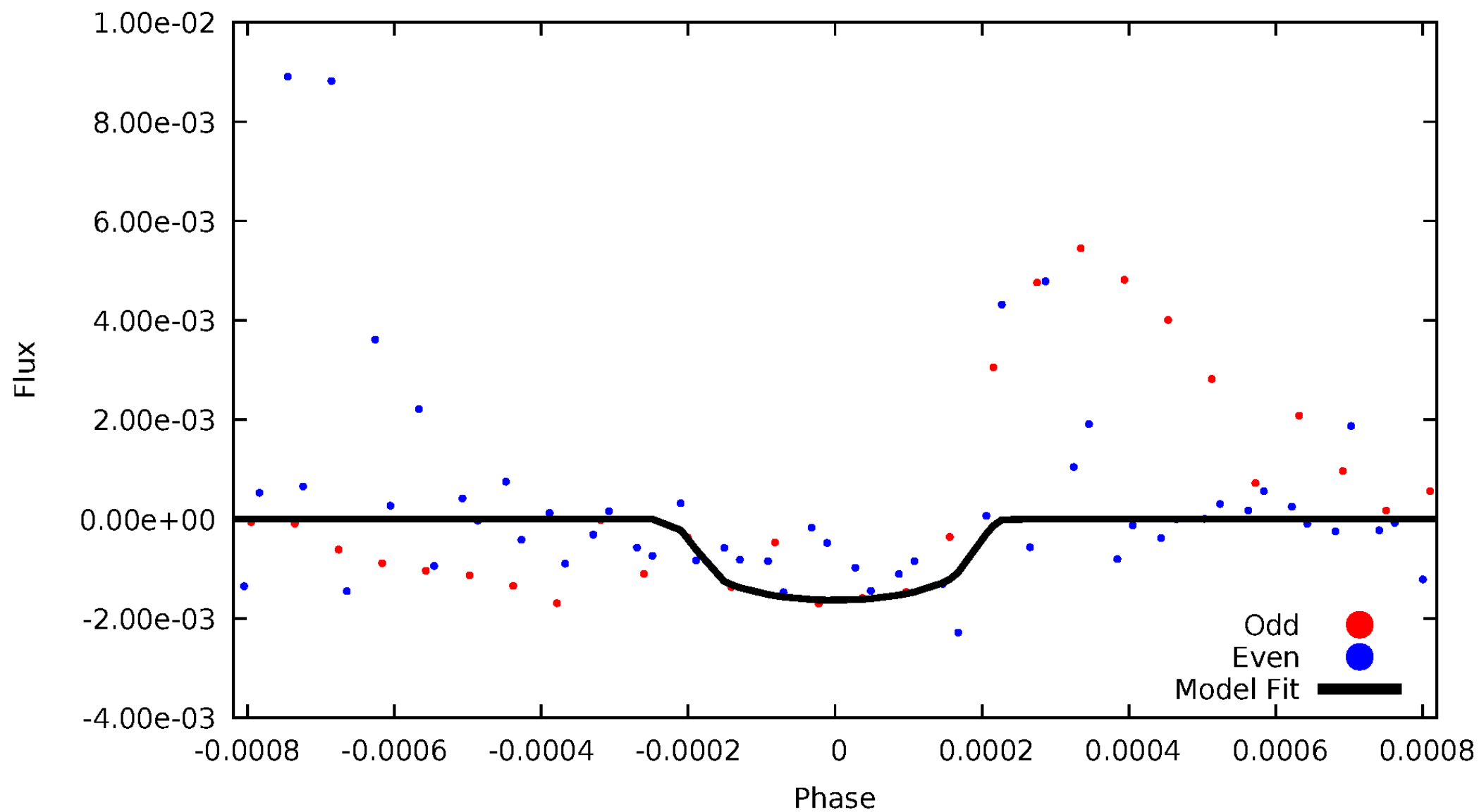


TCE 004681067-05



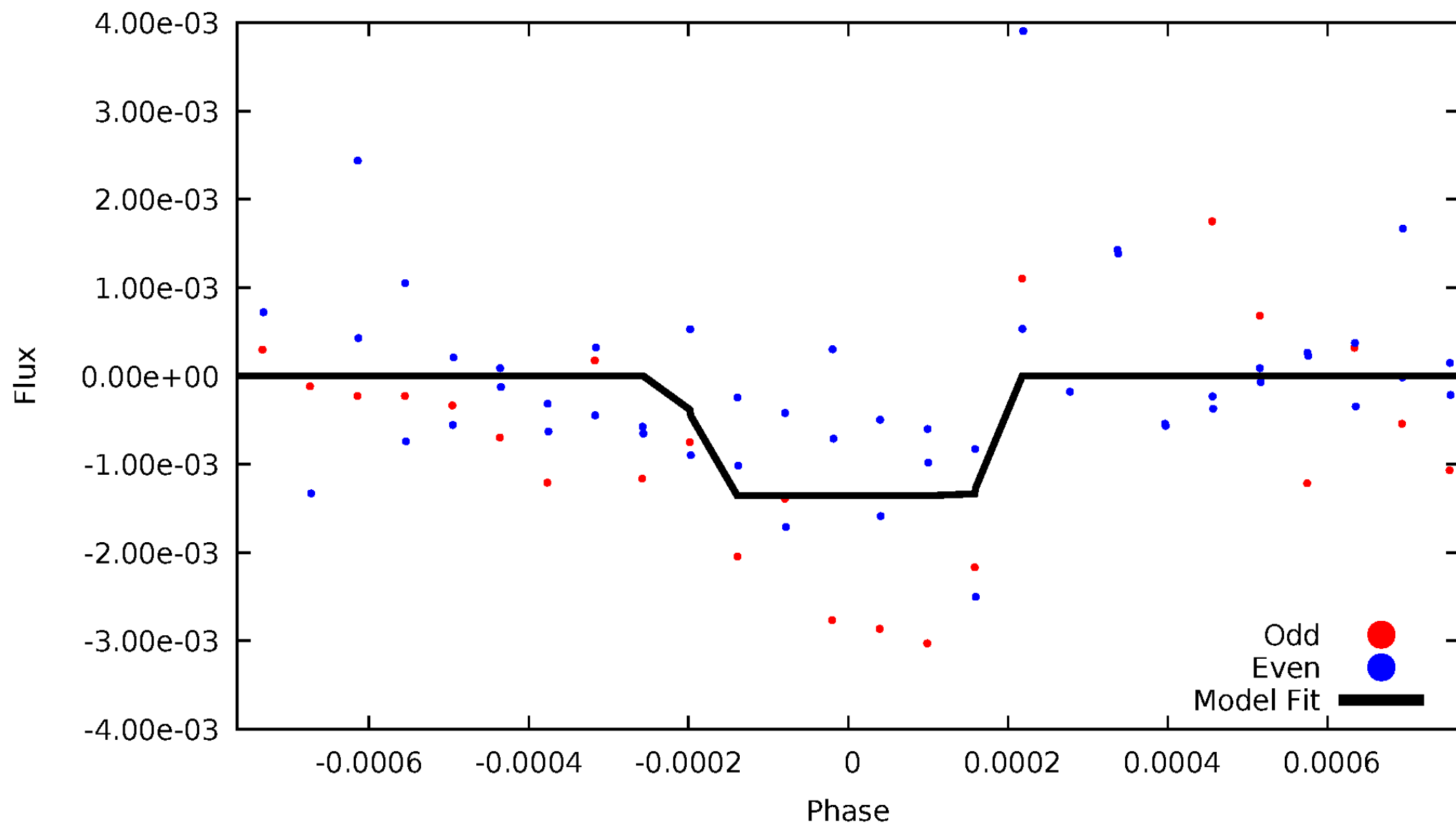
DV Odd/Even

TCE 004681067-05



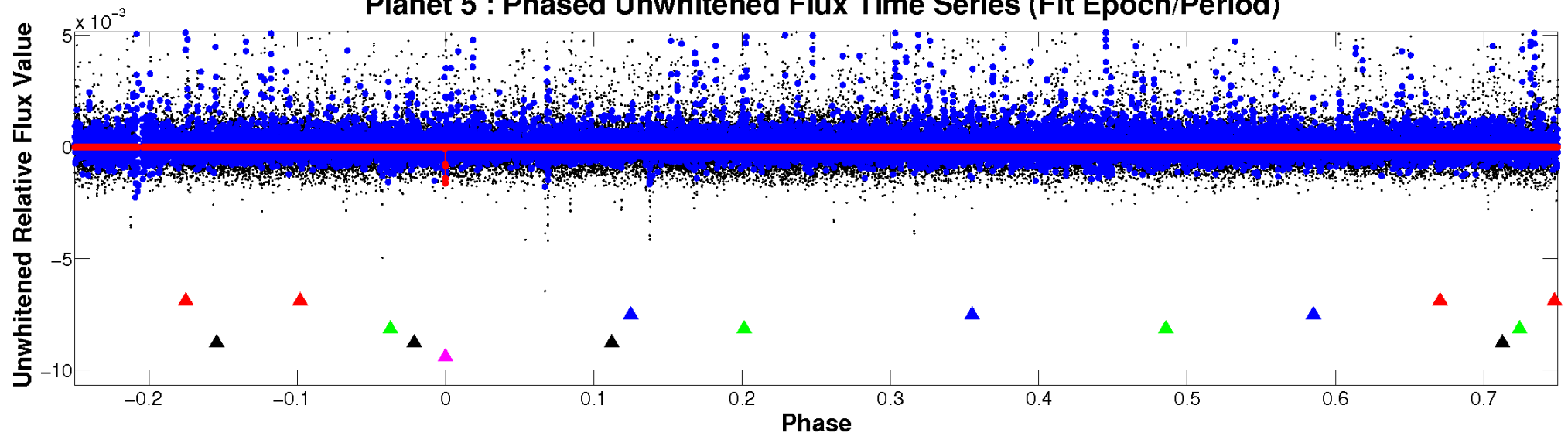
ALT Odd/Even

TCE 004681067-05

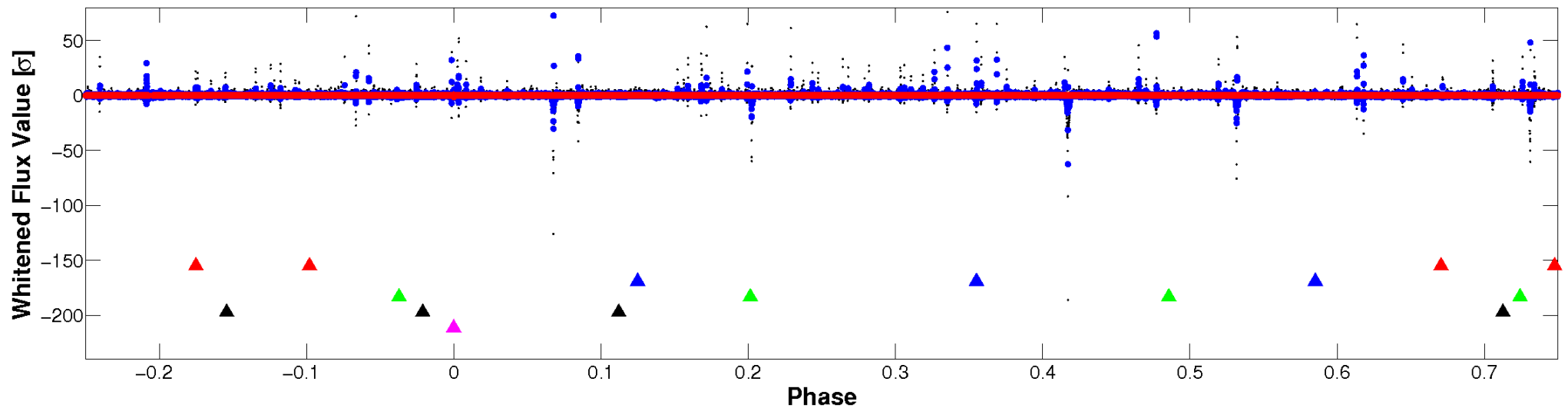


Non-Whitened Vs. Whitened Light Curve

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

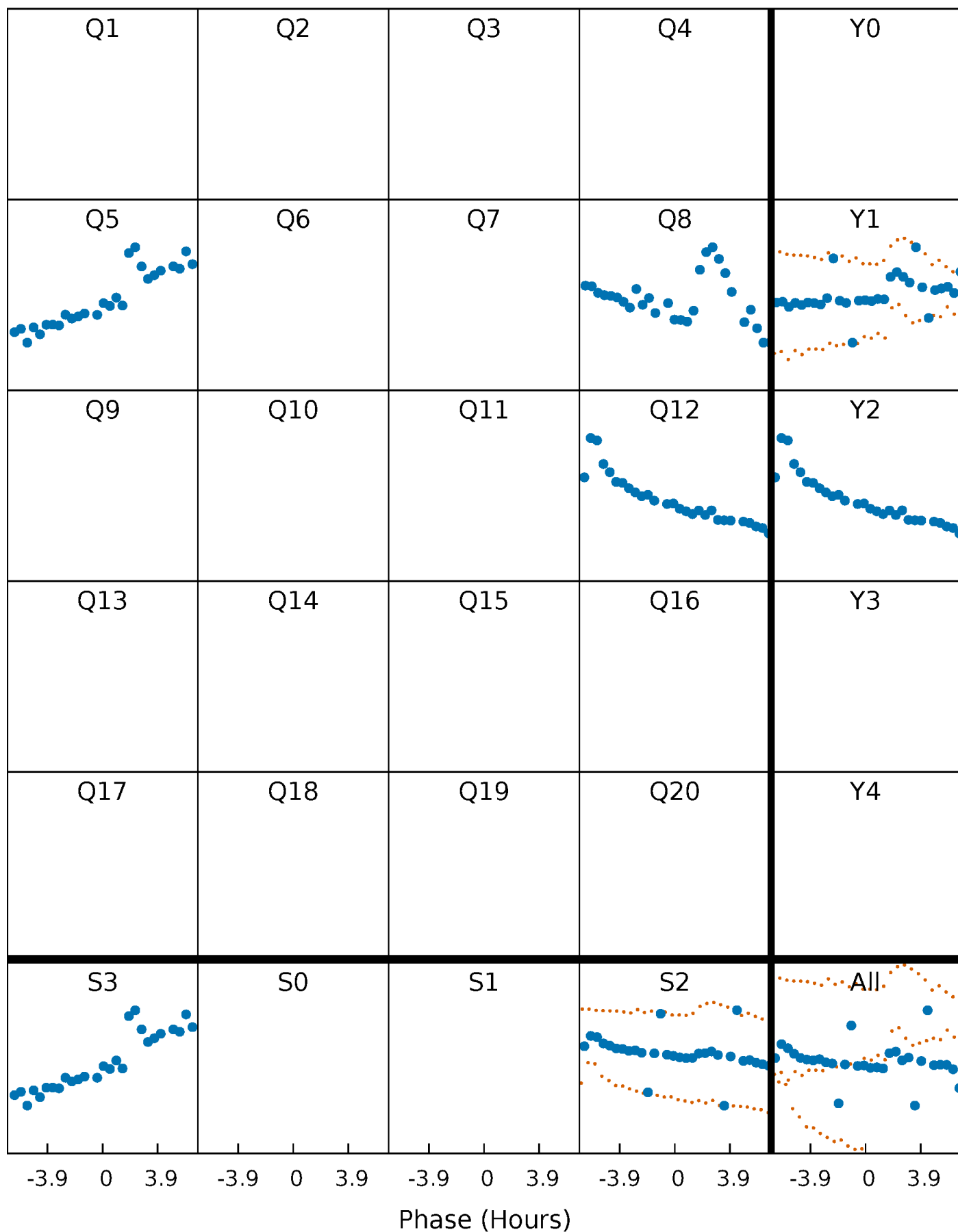


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



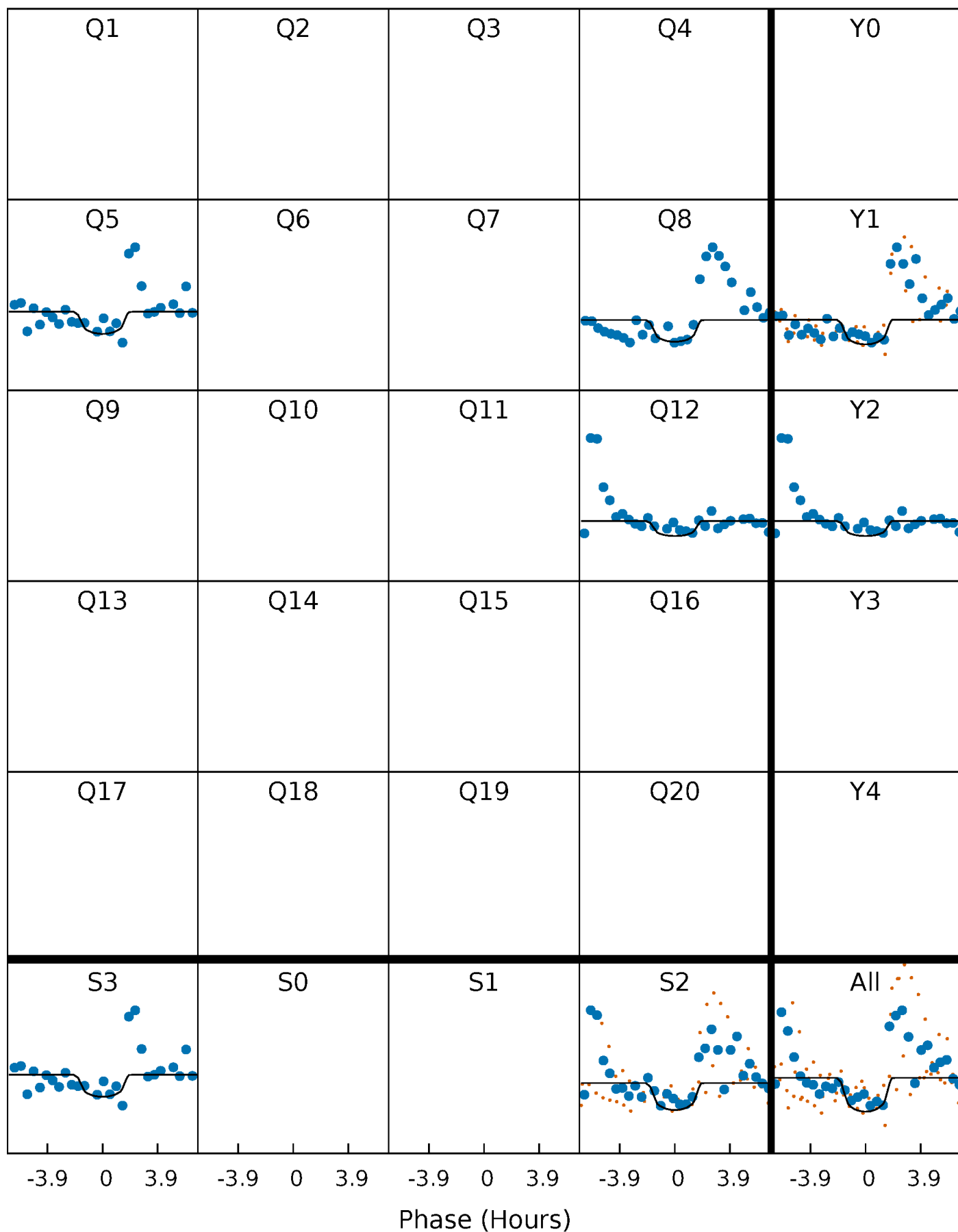
PDC Quarter-Phased Transit Curves

TCE 004681067-05 $P=343.716643$ Days $T_0=454.568760$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004681067-05 $P=343.716643$ Days $T_0=454.568760$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

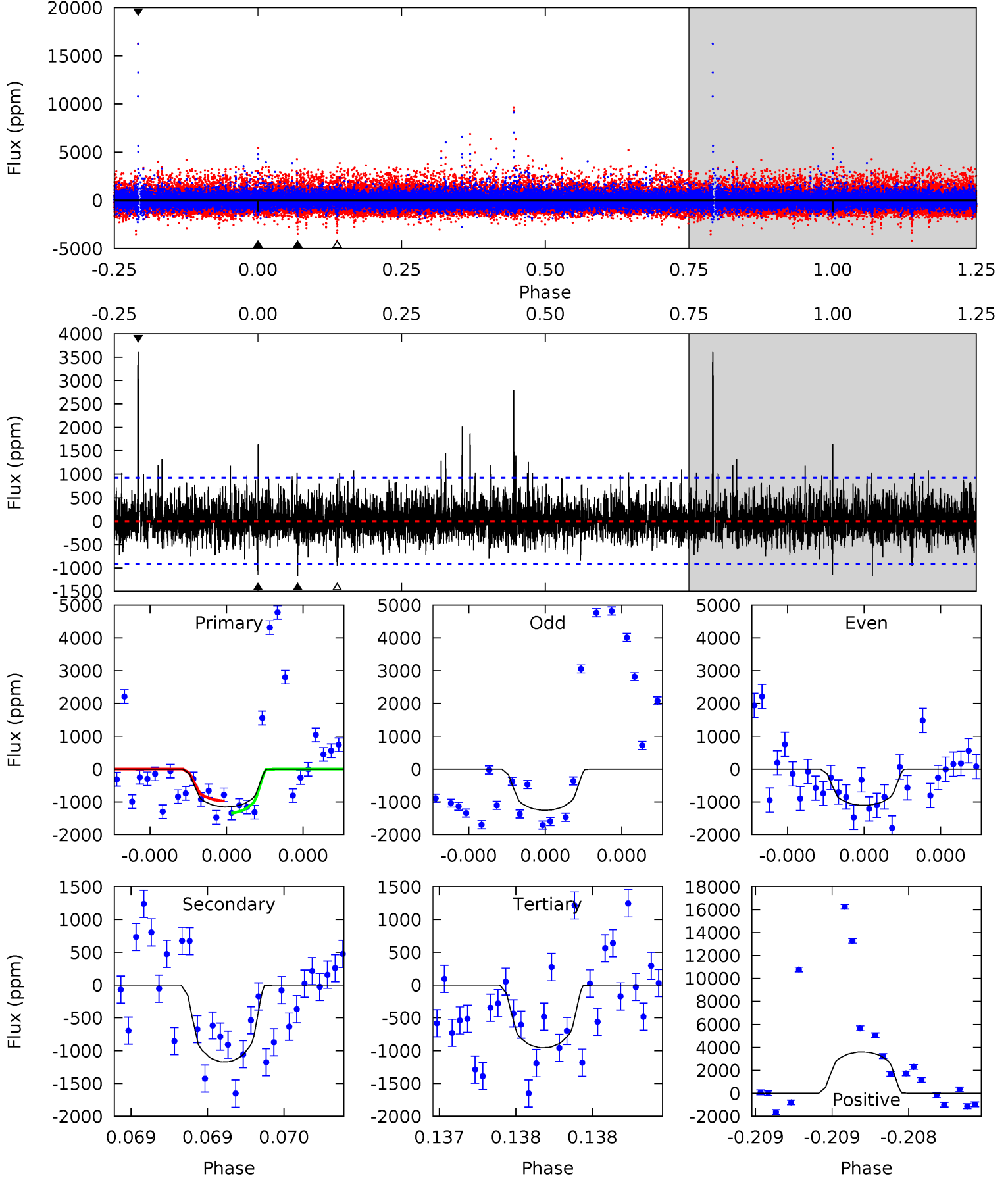
TCE 004681067-05 $P=343.713182$ Days $T_0=454.571518$ (BKJD)



DV Model-Shift Uniqueness Test

004681067-05, $P = 343.716643$ Days, $E = 110.852117$ Days

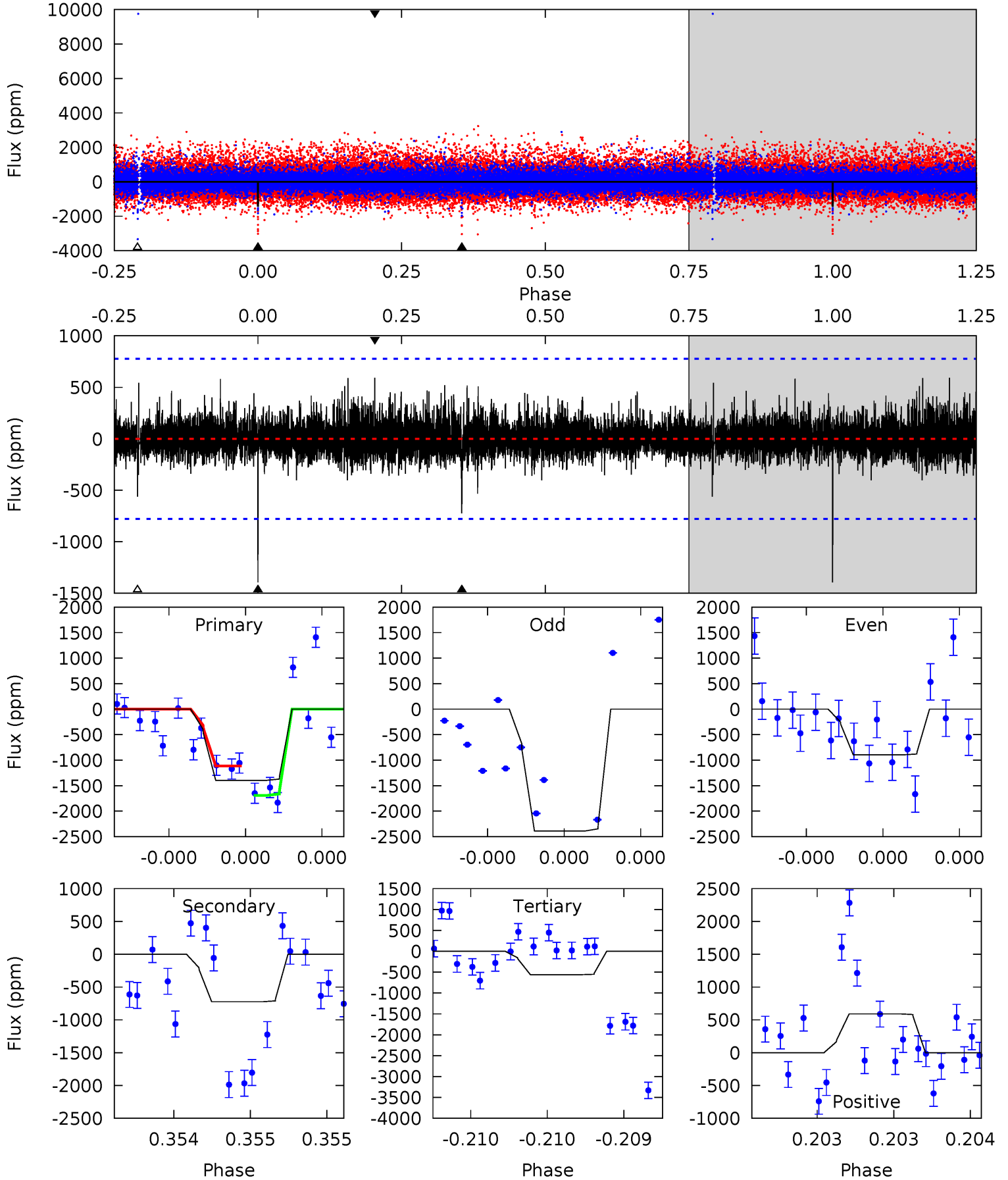
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.01	7.13	5.82	22.0	5.60	3.52	1.68	1.19	-14.9	1.31	-14.8	0.21	0.91	0.75	1.15



Alt Model-Shift Uniqueness Test

004681067-05, P = 343.713182 Days, E = 110.858336 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	5.24	4.06	4.28	5.63	3.57	0.81	6.03	5.81	1.18	0.96	4.89	0.96	0.30	2.08



Stellar Parameters For KIC 004681067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4407^{+157}_{-157}	$4.673^{+0.059}_{-0.032}$	$-0.660^{+0.350}_{-0.300}$	$0.569^{+0.050}_{-0.056}$	$0.556^{+0.061}_{-0.038}$	$4.251^{+1.060}_{-0.587}$
	+4%/-4%	+1%/-1%	+53%/-45%	+9%/-10%	+11%/-7%	+25%/-14%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004681067-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1171 ± 164	$4.79^{+4.71}_{-3.28}$	229^{+9}_{-9}	3344^{+1694}_{-633}	$18169^{+154769}_{-13915}$
Alt.	-724 ± 138	$4.74^{+4.78}_{-3.33}$	230^{+10}_{-10}	3121^{+1566}_{-558}	$11436^{+116378}_{-8780}$

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 $A_{obs} \gg 1.0$

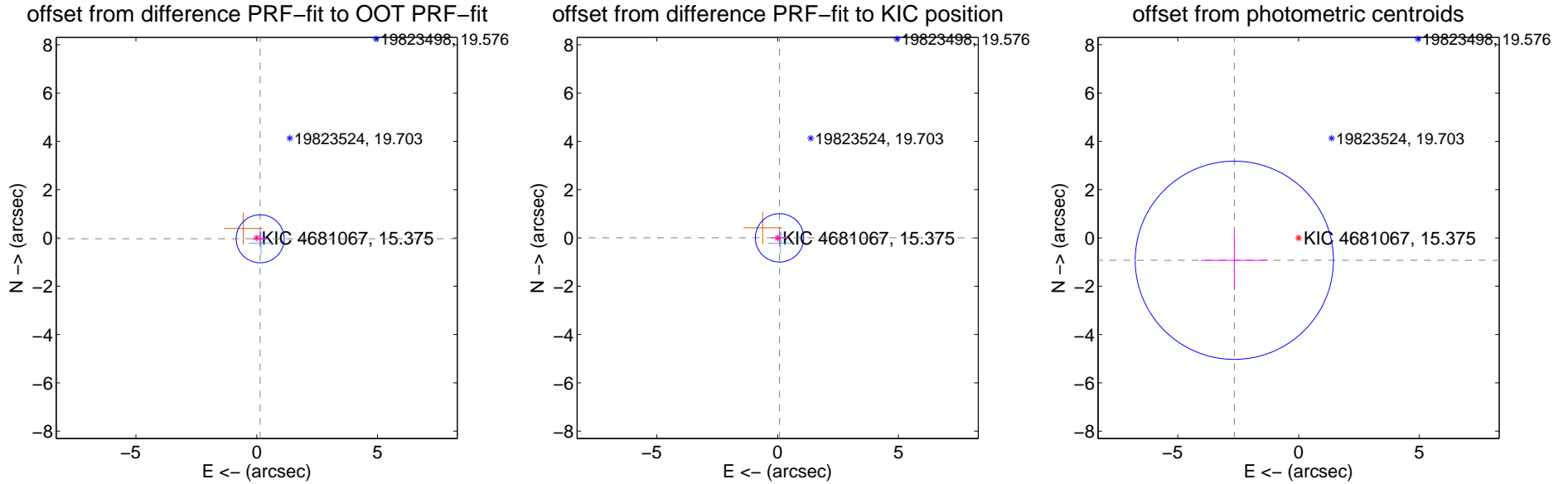
DV Centroid Data

Supplemental centroid analysis for 004681067-05. Kepler magnitude: 15.38. Transit SNR 5.74

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.147 ± 0.331	0.44	-0.143 ± 0.334	-0.035 ± 0.285
PRF-fit source offset from KIC position	0.079 ± 0.334	0.24	-0.078 ± 0.334	0.004 ± 0.285
photometric centroid source offset	2.82 ± 1.37	2.06	2.66 ± 1.38	-0.92 ± 1.24

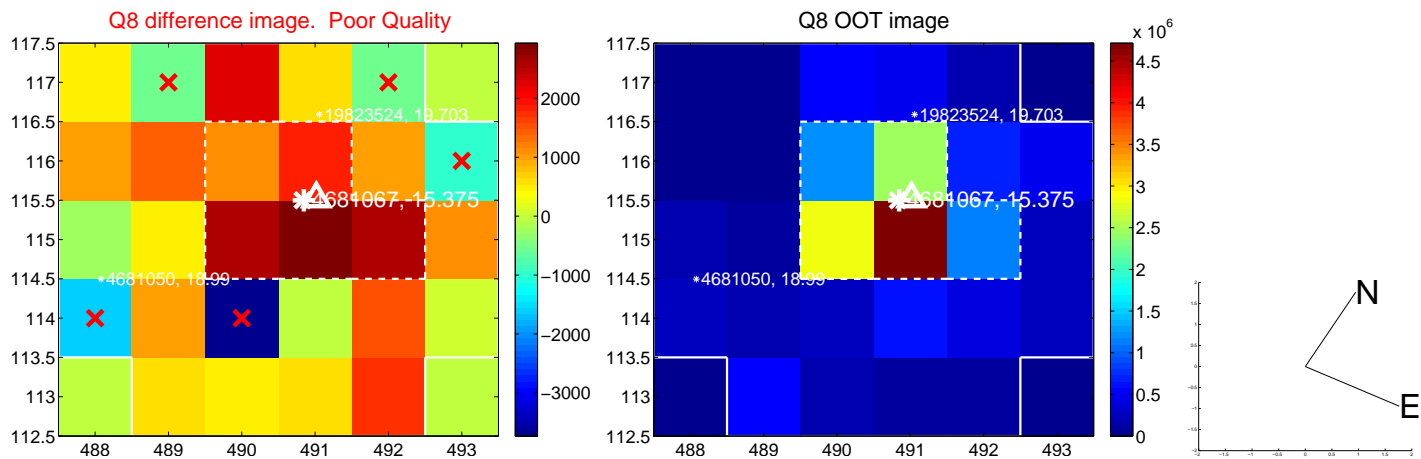
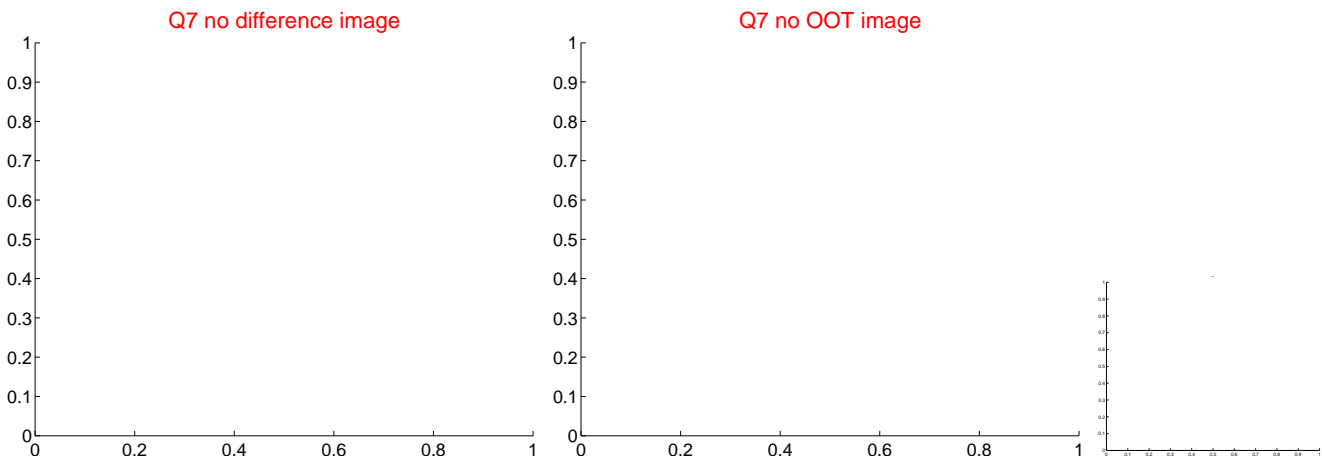
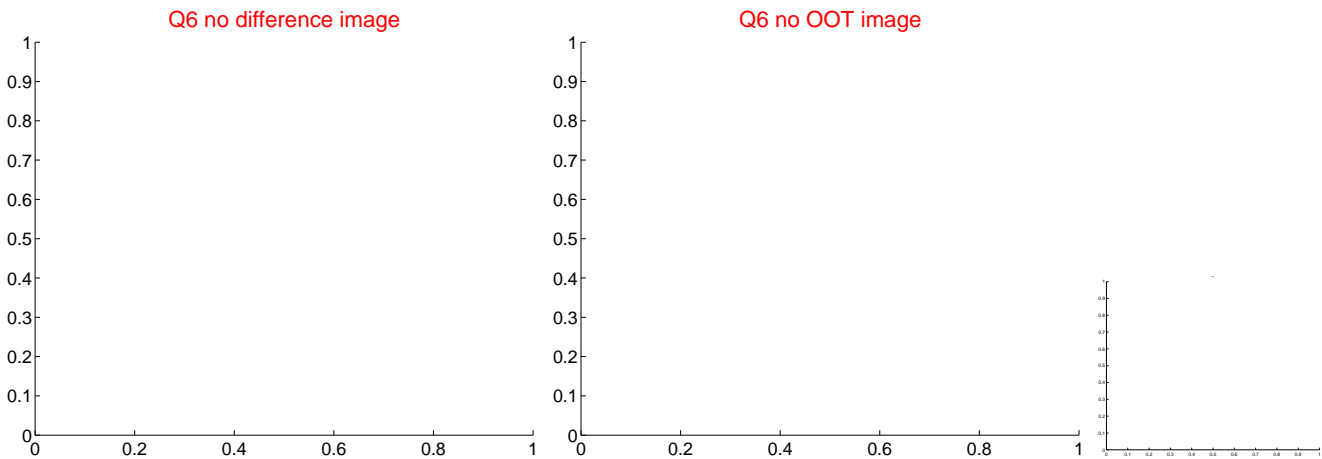
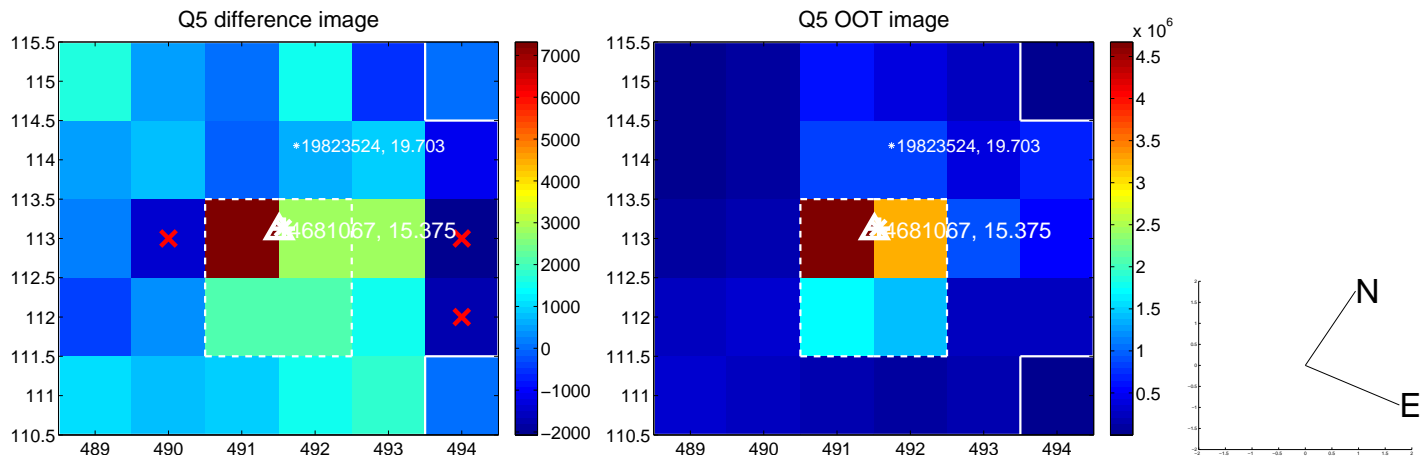


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

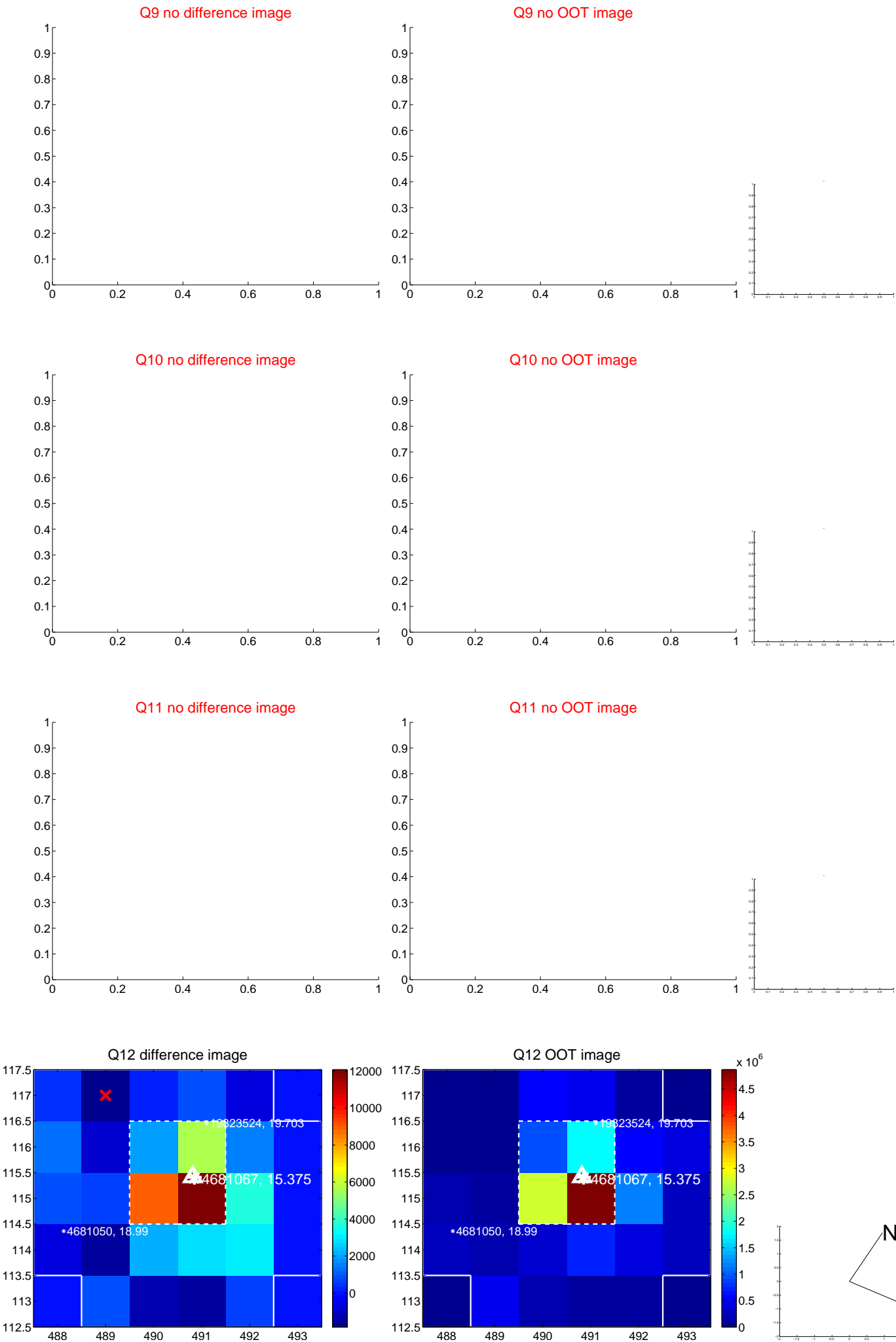
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



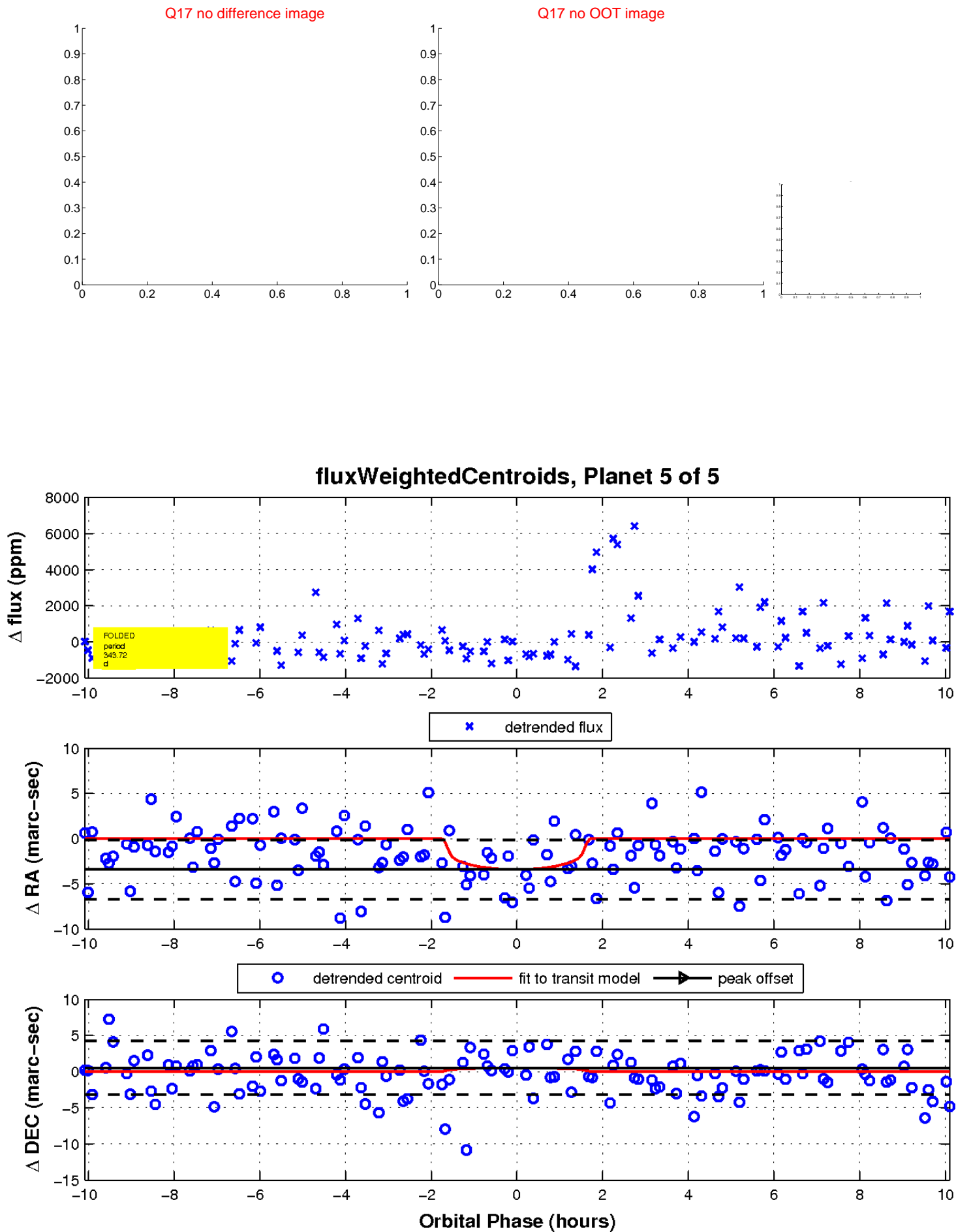
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

