

KIC 006187639

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})
006187639-01	OBS	No	246.666335	211.268340	1137.9	25.415	17.7	6.2	2.56	5390	8.66	9.88
006187639-02	OBS	No	395.407418	178.755607	751.4	3.141	14.4	6.3	2.56	5390	7.32	5.27
006187639-03	OBS	No	294.061415	282.323140	1336.9	7.149	15.3	8.9	2.56	5390	9.33	7.82
006187639-04	OBS	No	486.010911	562.519012	882.6	4.548	12.0	5.8	2.56	5390	7.66	4.00
006187639-05	OBS	No	441.608210	153.172899	1011.0	5.184	12.9	6.6	2.56	5390	8.21	4.54
006187639-06	OBS	No	154.742468	246.912930	370.0	3.500	11.1	-1.0	2.56	5390	4.90	18.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006187639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
006187639-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

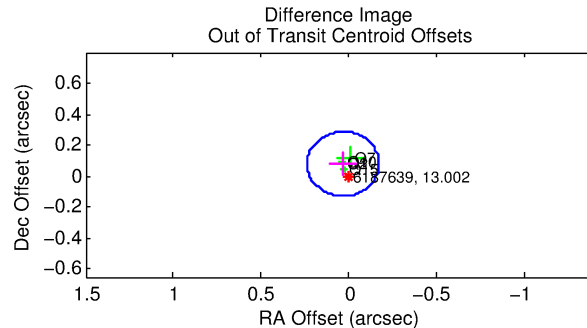
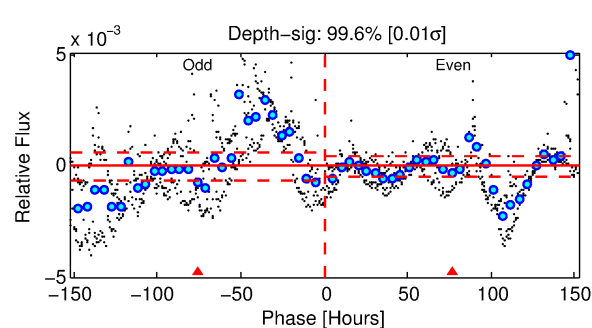
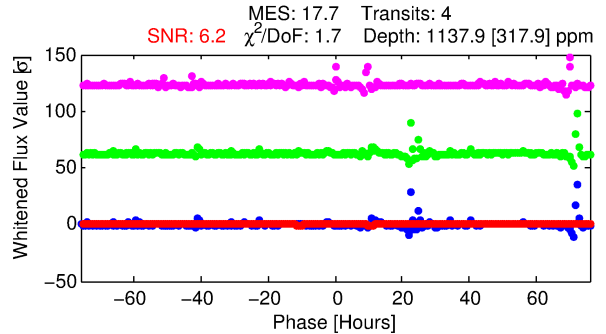
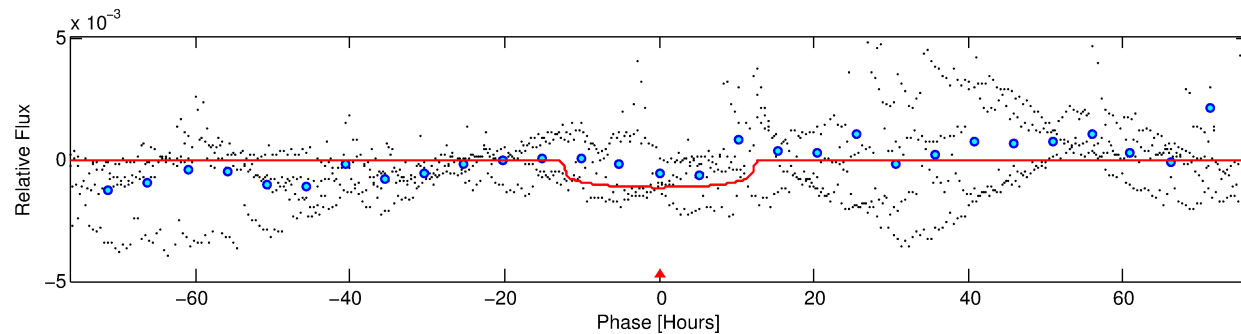
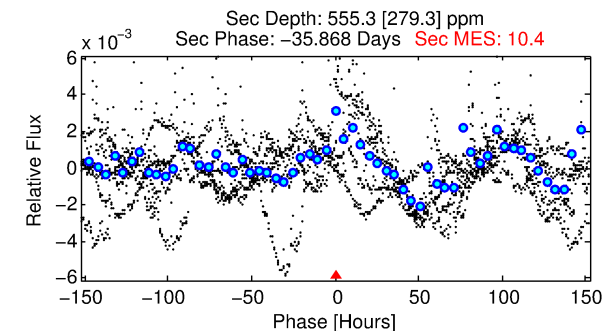
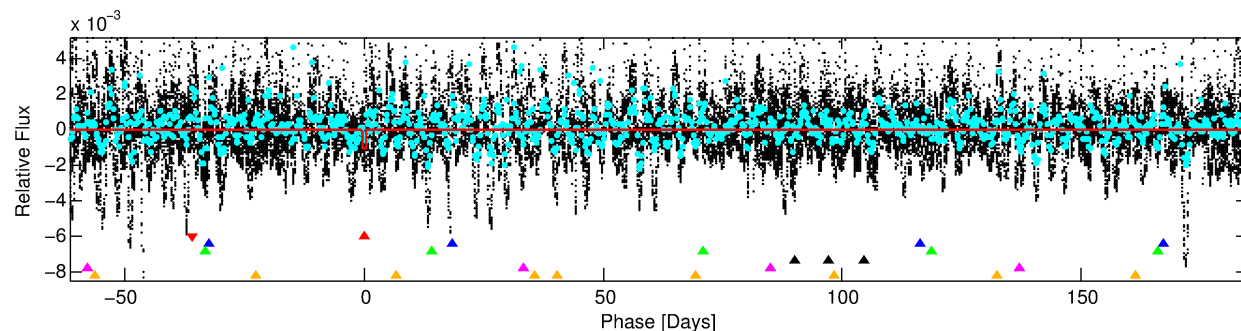
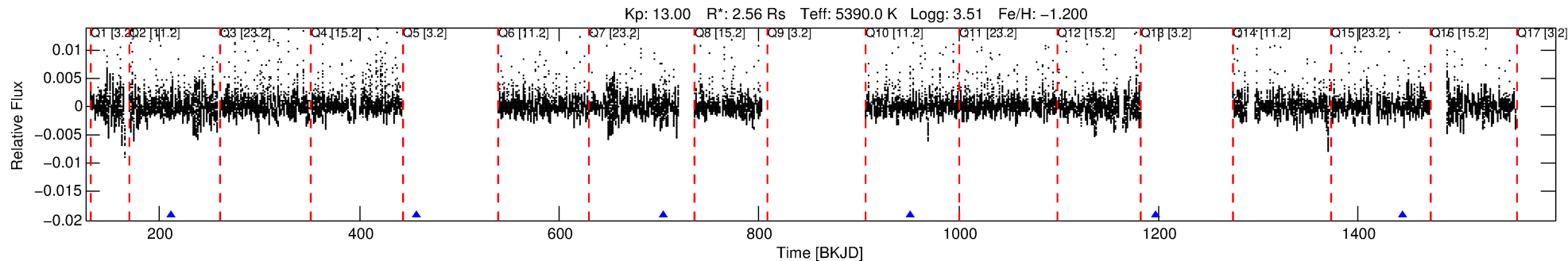
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006187639-01

No Significant Match Found

DV One-Page Summary

KIC: 6187639 Candidate: 1 of 6 Period: 246.666 d



DV Fit Results:

Period = 246.66633 [0.00396] d
Epoch = 211.2683 [0.0138] BKJD
Rp/R* = 0.0311 [0.0062]
a/R* = 73.43 [38.82]
b = 0.29 [1.70]
Seff = 9.88 [18.80]
Teq = 452 [215] K
Rp = 8.66 [6.89] Re
a = 0.7069 [0.7416] AU
Ag = 2035.85 [4083.33] [0.50 σ]
Teff = 4695 [764] K [5.35 σ]

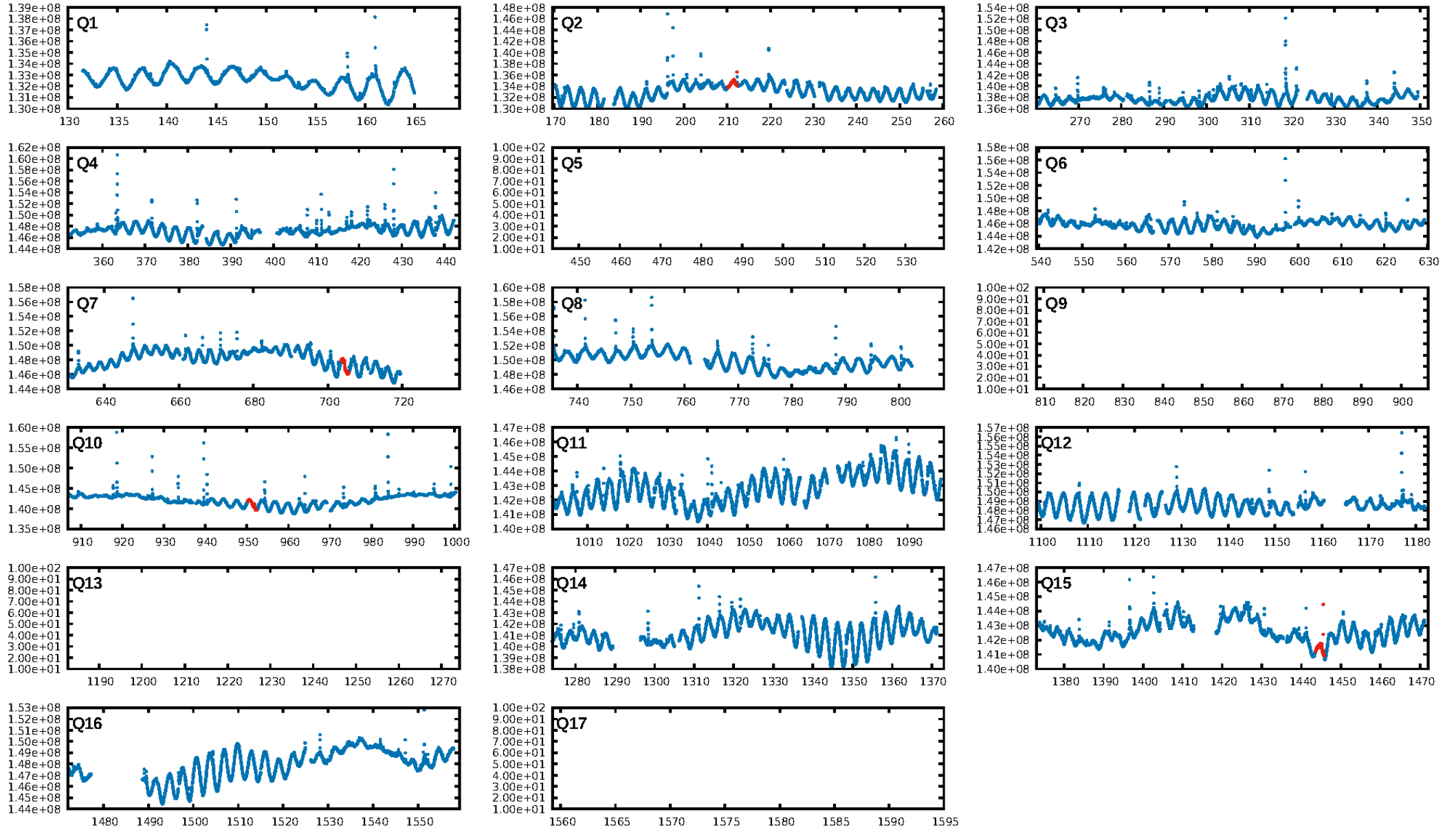
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [85.99 σ]
LongPeriod-sig: 100.0% [43.08 σ]
ModelChiSquare2-sig: 74.1%
ModelChiSquareGof-sig: 37.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.6532
Centroid-sig: 39.7%
Centroid-so: 0.224 arcsec [1.33 σ]
OotOffset-rm: 0.087 arcsec [1.26 σ]
KicOffset-rm: 0.132 arcsec [1.80 σ]
OotOffset-st: 2/2/0/0 [4]
KicOffset-st: 2/2/0/0 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 1.00 [4/4]

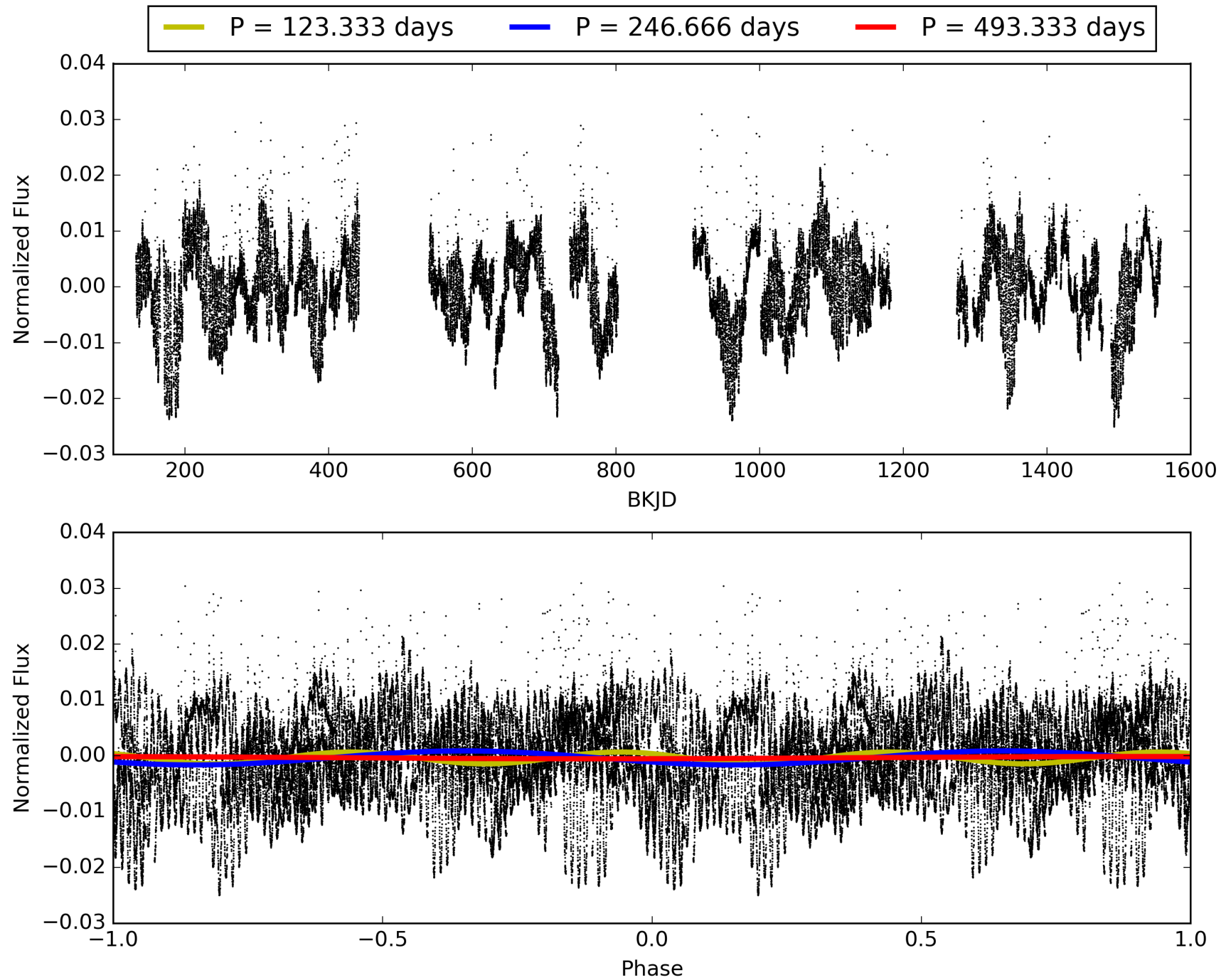
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:34:13 Z

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

TCE 006187639-01, PDC Light Curves

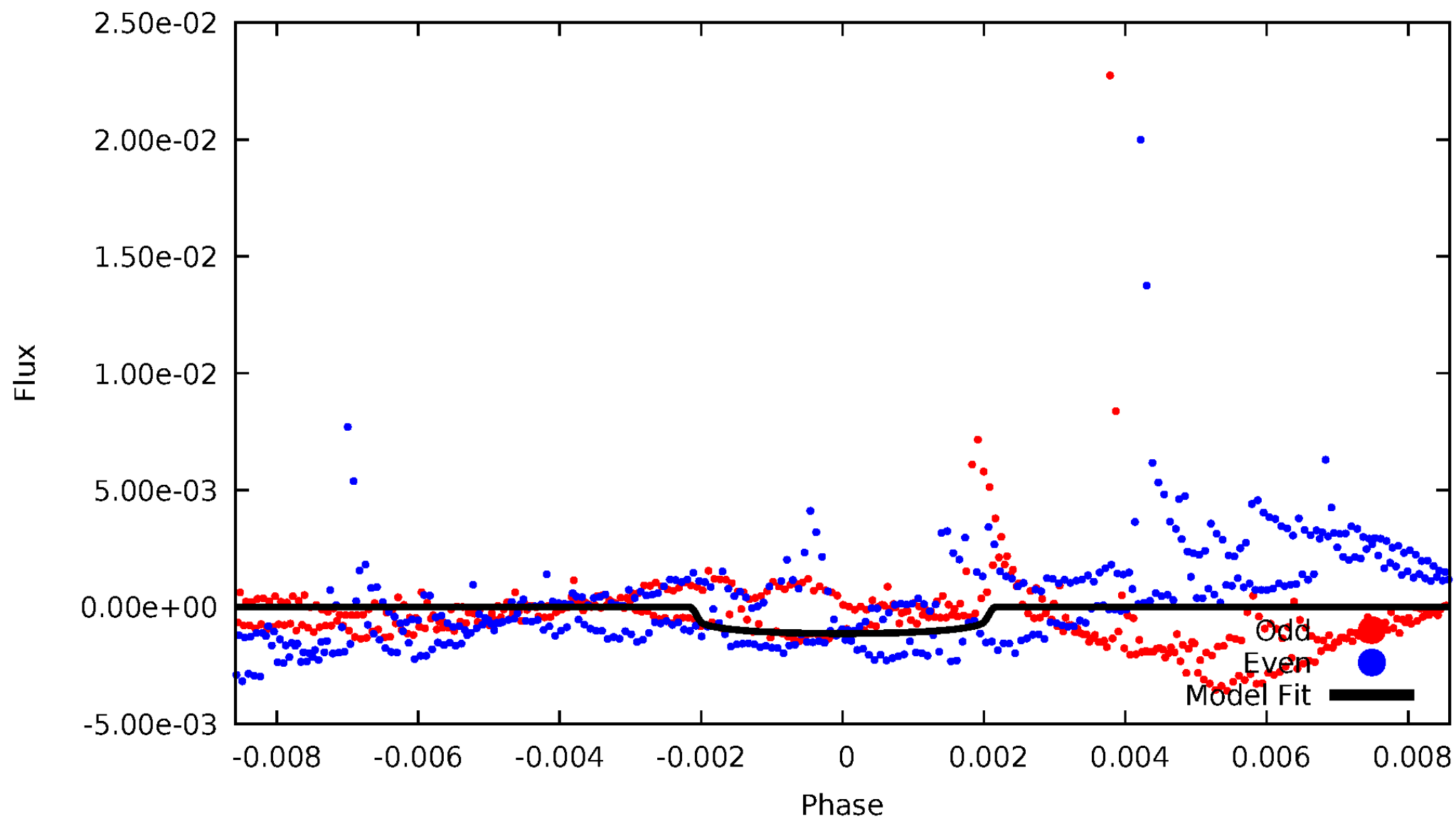


TCE 006187639-01



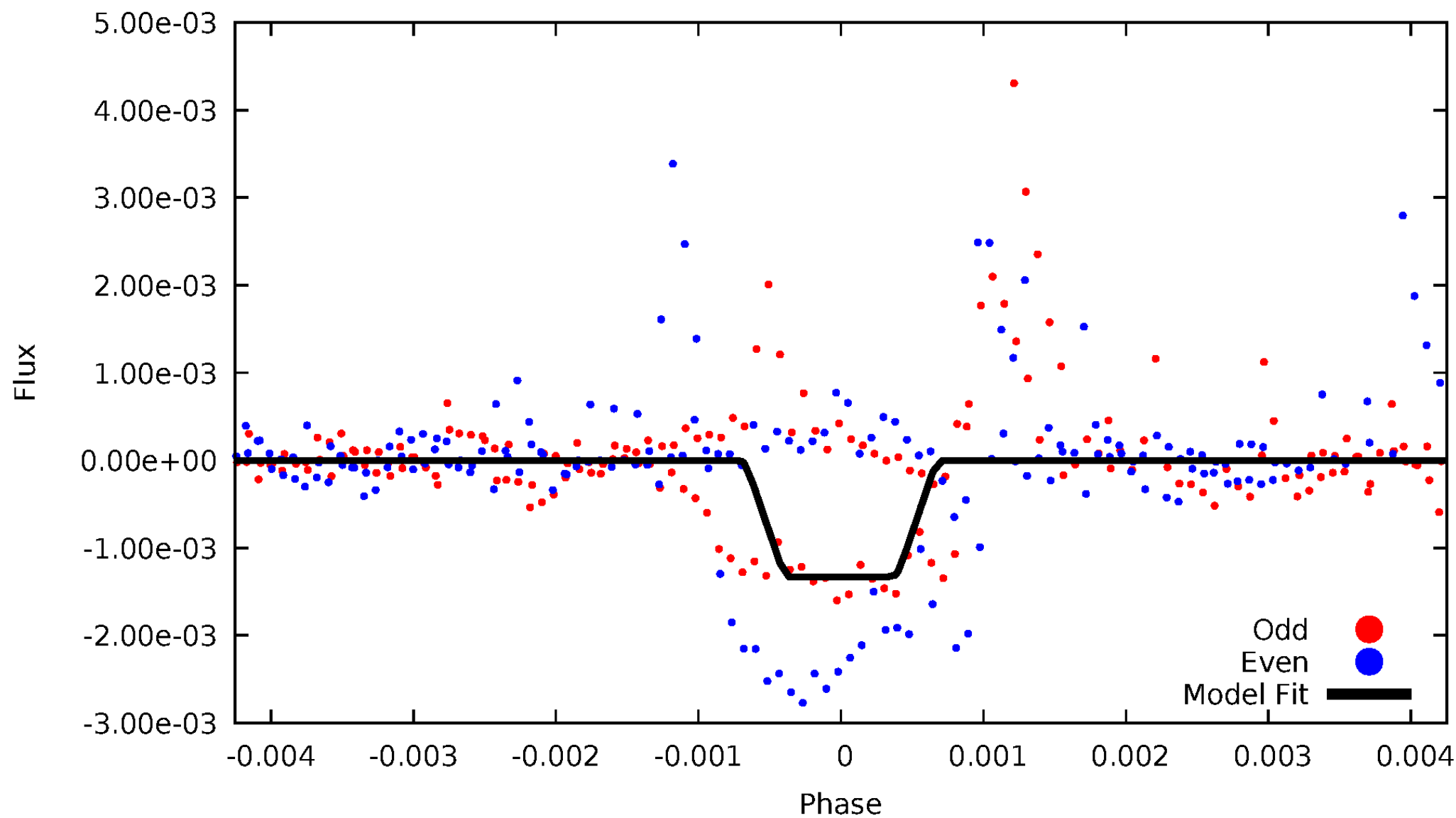
DV Odd/Even

TCE 006187639-01



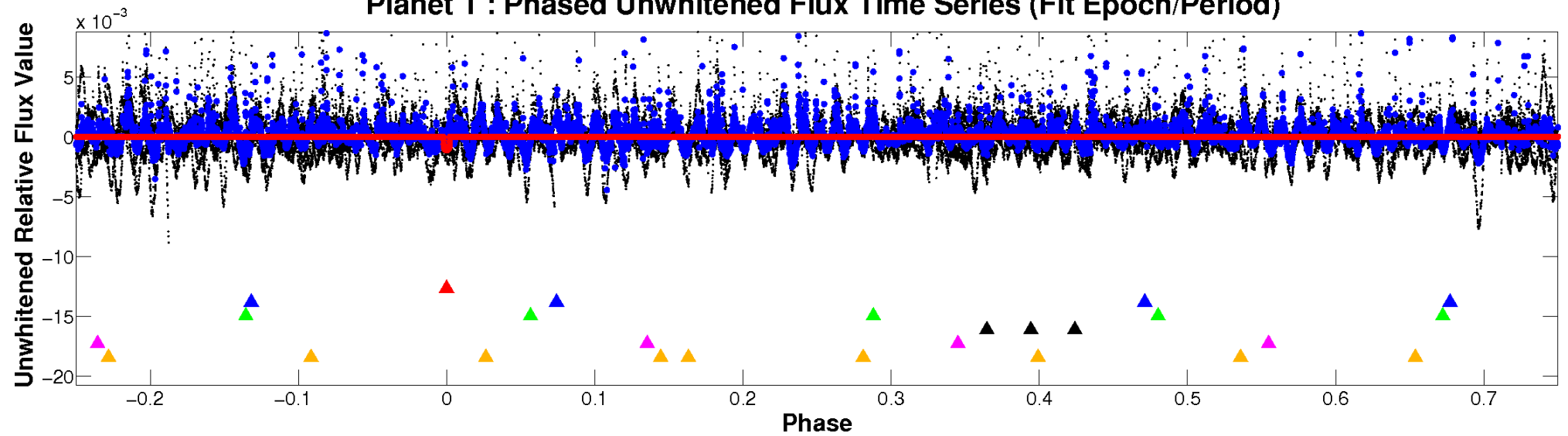
ALT Odd/Even

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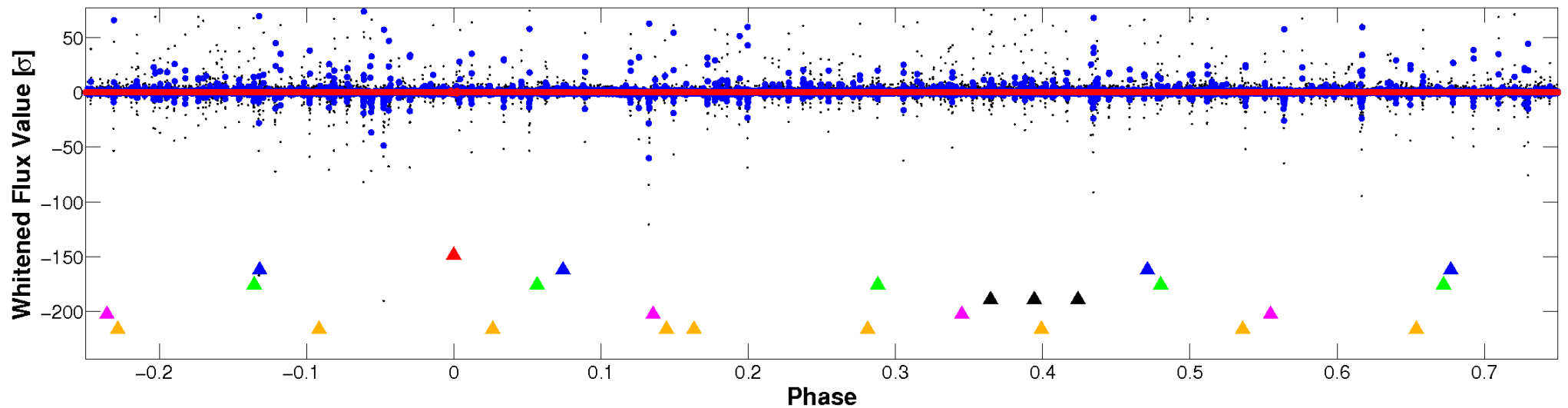


Non-Whitened Vs. Whitened Light Curve

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

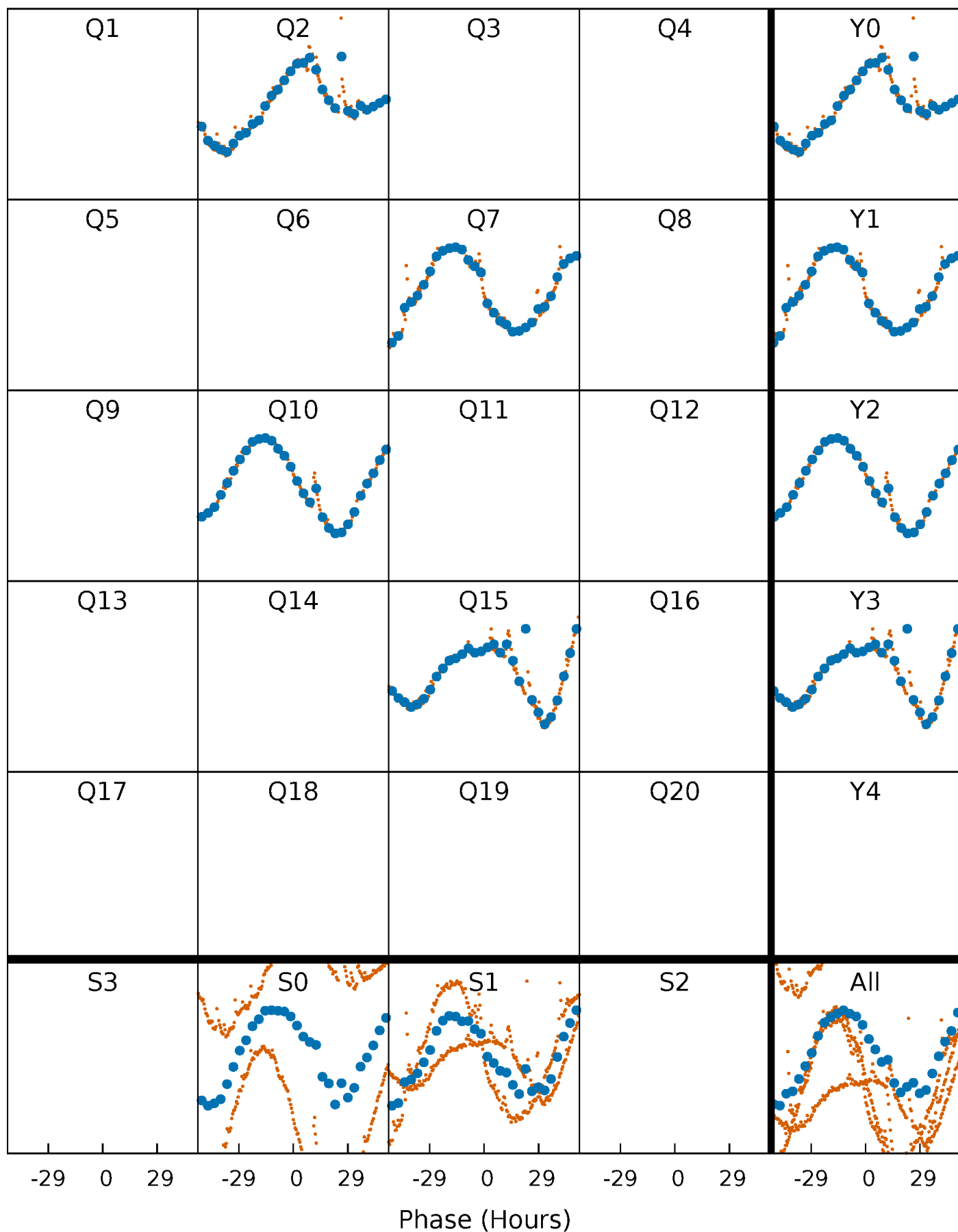


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



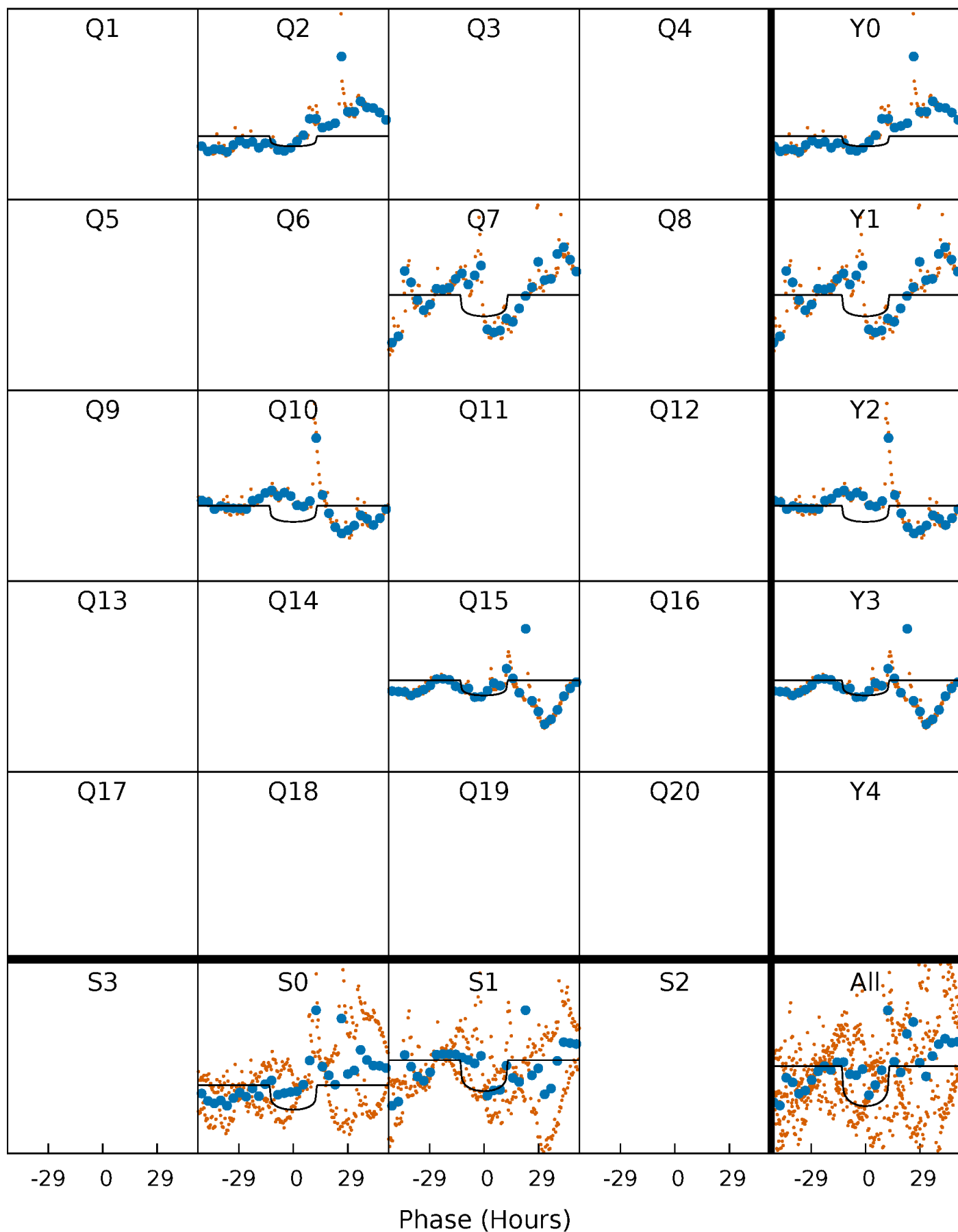
PDC Quarter-Phased Transit Curves

TCE 006187639-01 P=246.666335 Days $T_0=211.268340$ (BKJD)



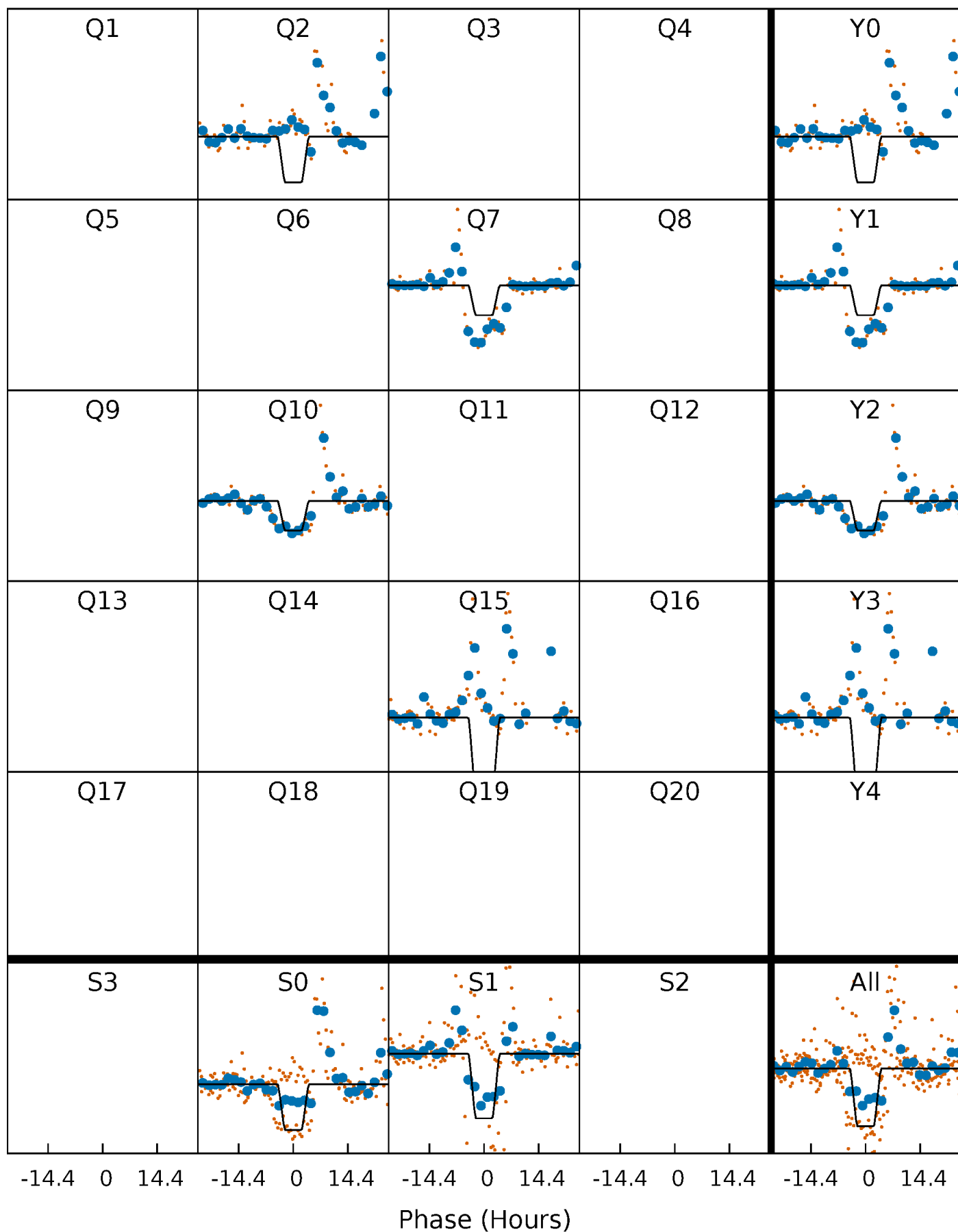
DV Quarter-Phased Transit Curves

TCE 006187639-01 P=246.666335 Days $T_0=211.268340$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

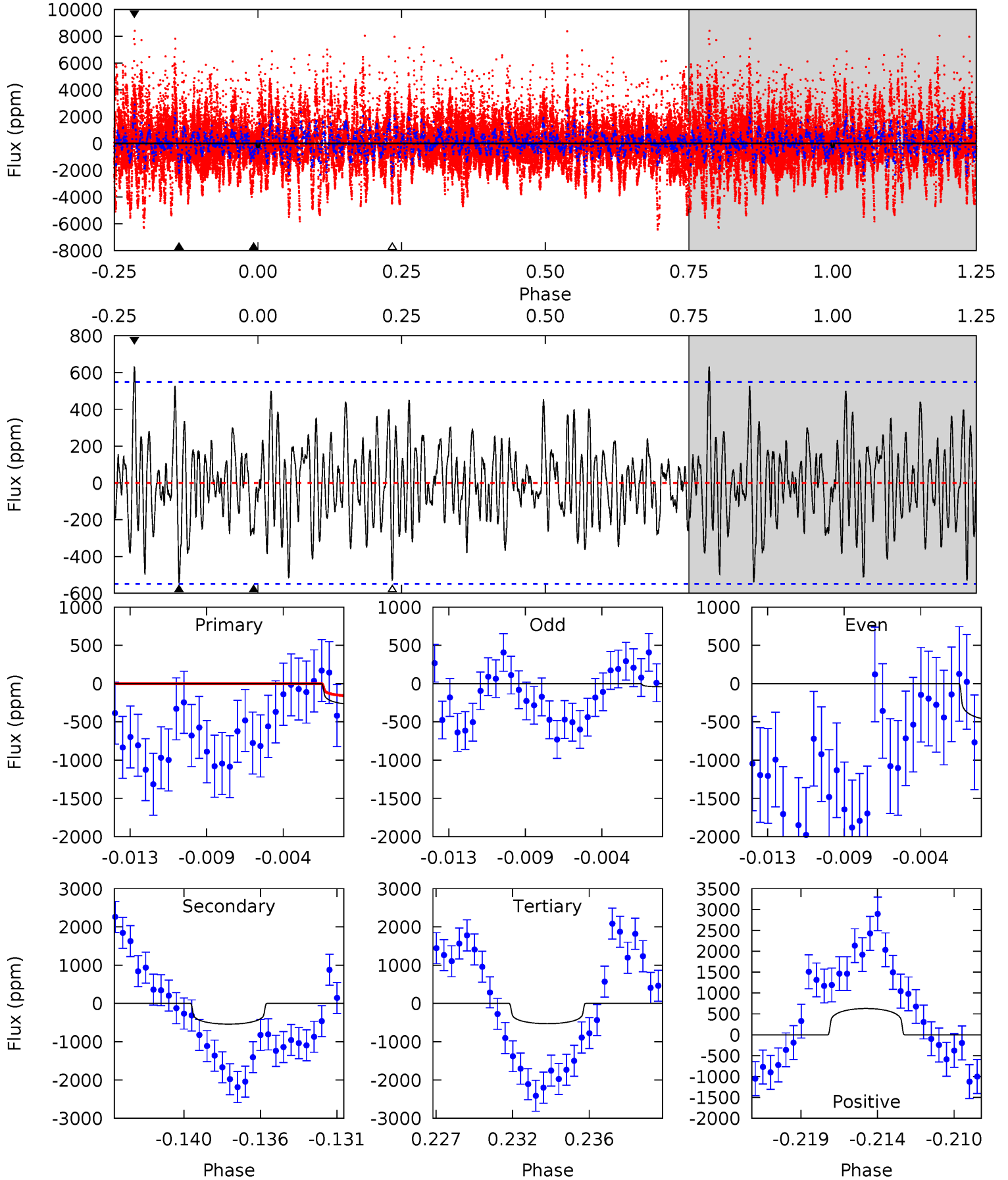
TCE 006187639-01 P=246.701181 Days $T_0=211.377133$ (BKJD)



DV Model-Shift Uniqueness Test

006187639-01, P = 246.666335 Days, E = 211.268340 Days

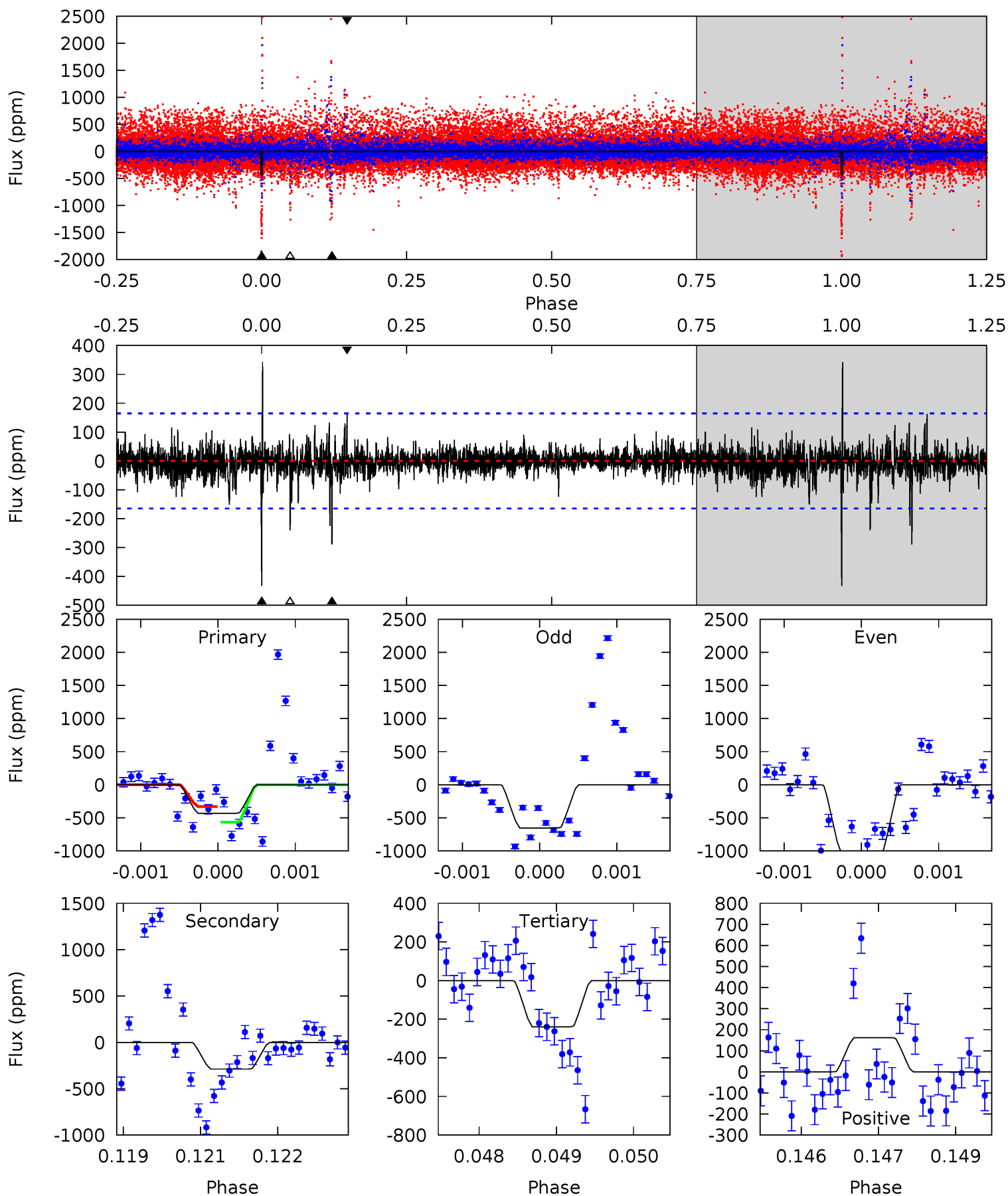
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.60	5.10	4.98	5.93	5.18	2.85	1.68	-2.39	-3.33	0.11	-0.84	1.83	0.47	0.54	1.06



Alt Model-Shift Uniqueness Test

006187639-01, P = 246.701181 Days, E = 211.377133 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	9.45	7.87	5.33	5.39	3.19	1.02	6.31	8.85	1.58	4.12	5.72	1.43	0.44	3.77



Stellar Parameters For KIC 006187639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5390^{+133}_{-147}	$3.512^{+1.192}_{-0.298}$	$-1.200^{+0.300}_{-0.300}$	$2.555^{+1.610}_{-1.967}$	$0.774^{+0.250}_{-0.135}$	$0.065^{+3.991}_{-0.053}$
	+2%/-3%	+34%/-8%	+25%/-25%	+63%/-77%	+32%/-17%	+6104%/-81%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006187639-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-540 ± 106	$7.84^{+3.68}_{-3.30}$	606^{+101}_{-134}	4760^{+539}_{-391}	2503^{+4752}_{-1412}
Alt.	-288 ± 31	$9.51^{+4.30}_{-3.86}$	608^{+100}_{-137}	3976^{+292}_{-228}	922^{+1744}_{-467}

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 $A_{obs} \gg 1.0$

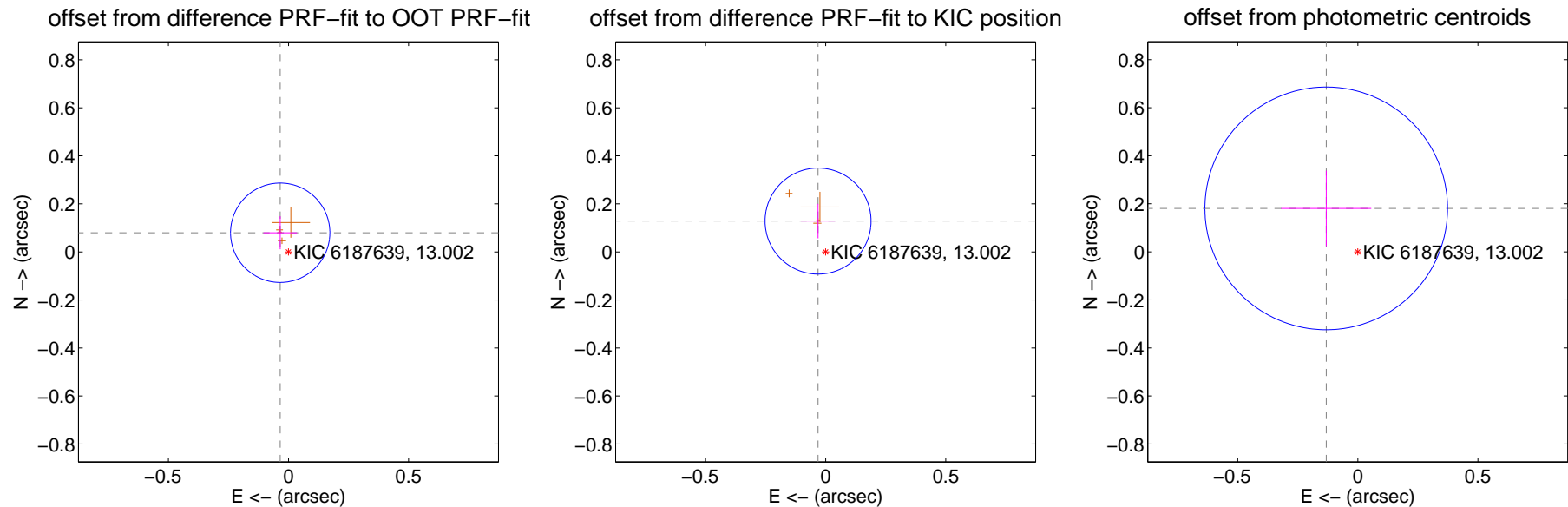
DV Centroid Data

Supplemental centroid analysis for 006187639-01. Kepler magnitude: 13.00. Transit SNR 6.24

There are 0 quarters with good PRF difference image offsets

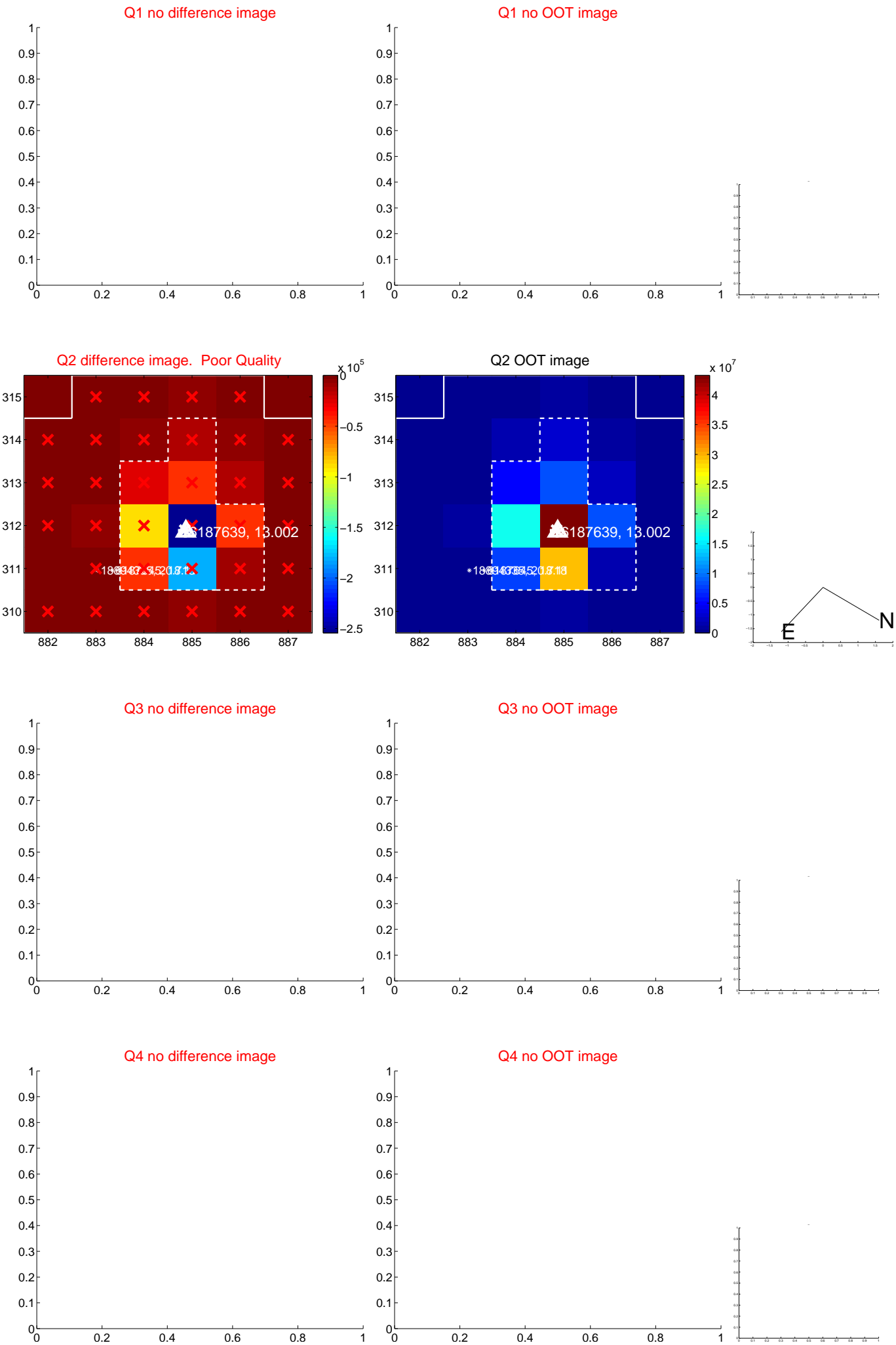
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.087 ± 0.069	1.26	0.035 ± 0.070	0.080 ± 0.069
PRF-fit source offset from KIC position	0.132 ± 0.074	1.80	0.032 ± 0.071	0.128 ± 0.072
photometric centroid source offset	0.22 ± 0.17	1.33	0.13 ± 0.19	0.18 ± 0.16

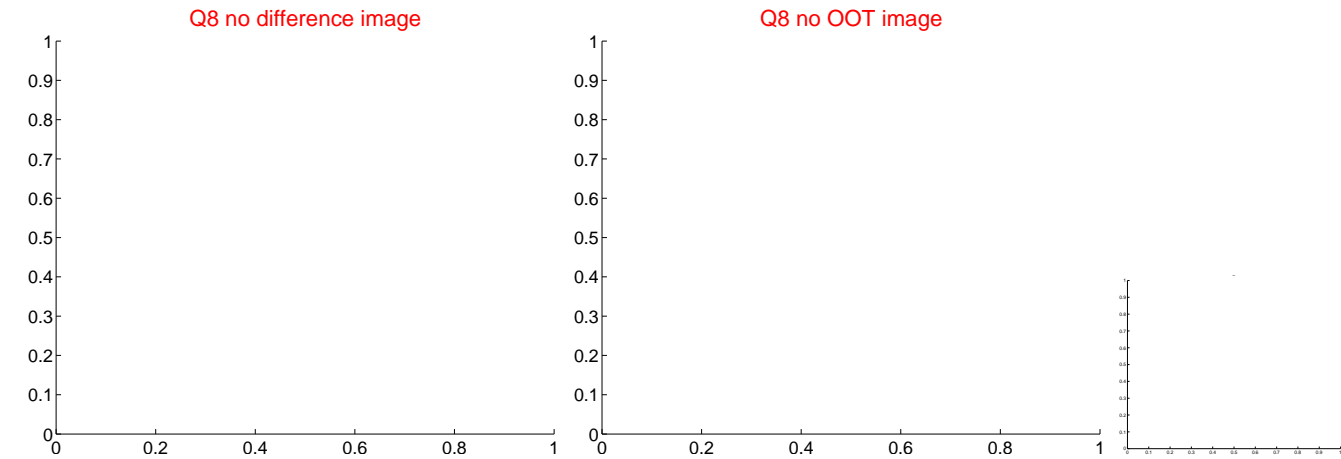
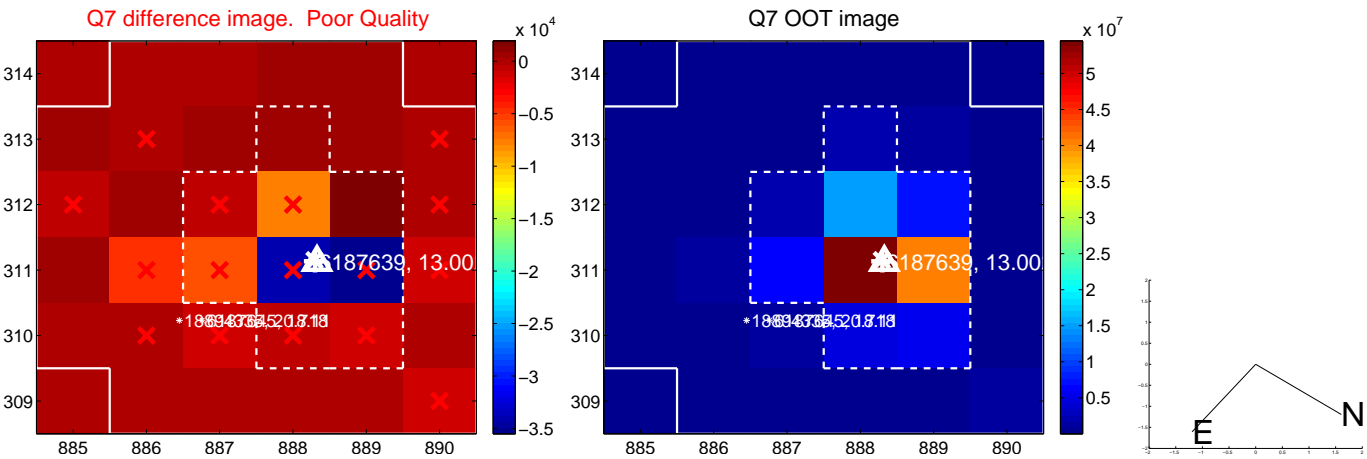
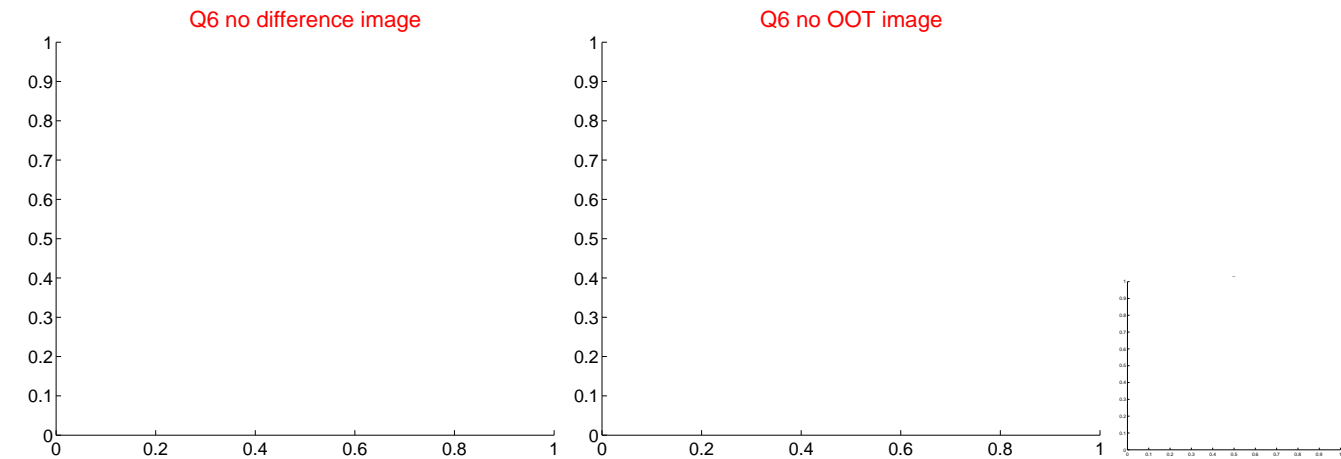


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

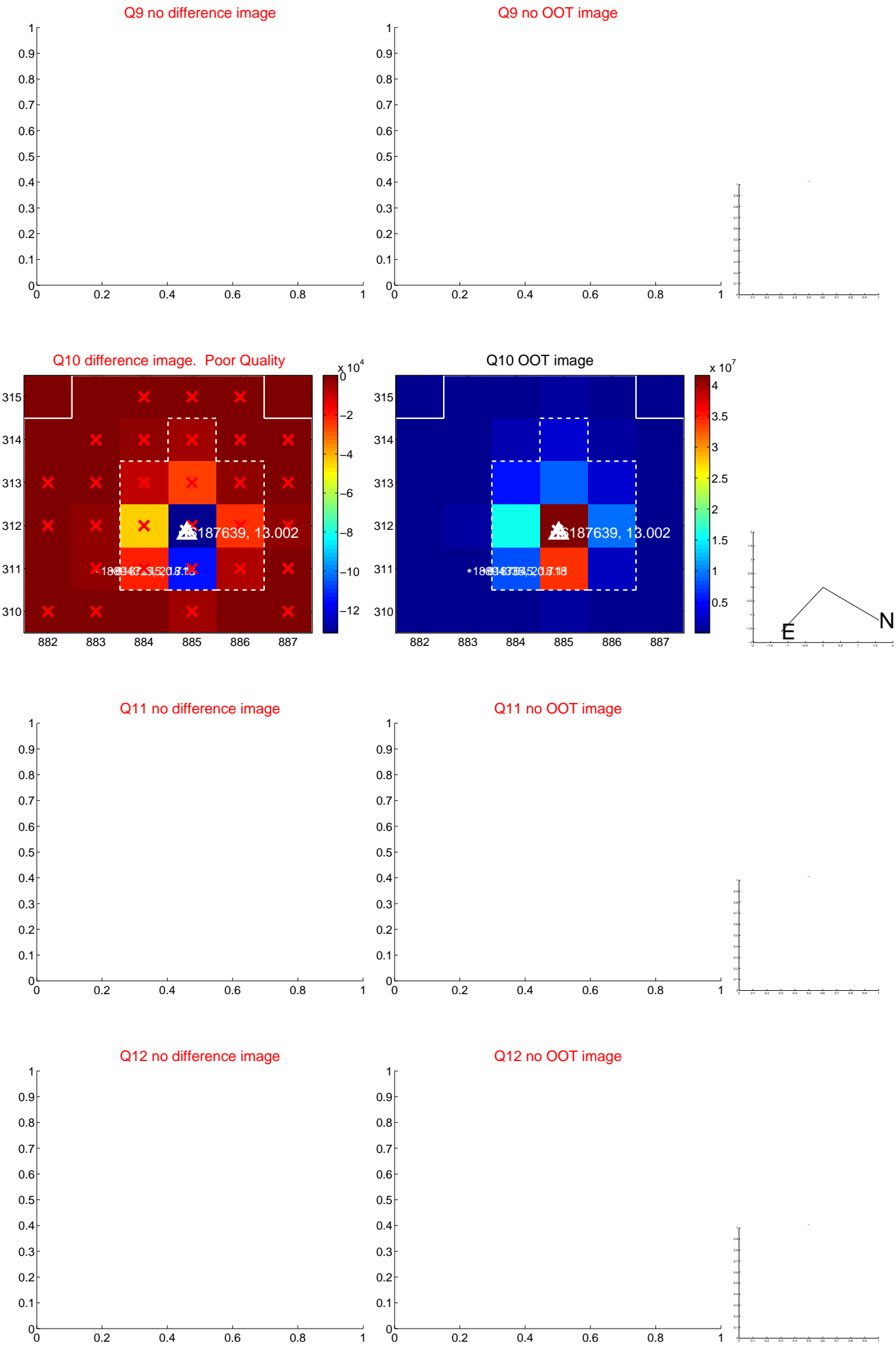
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



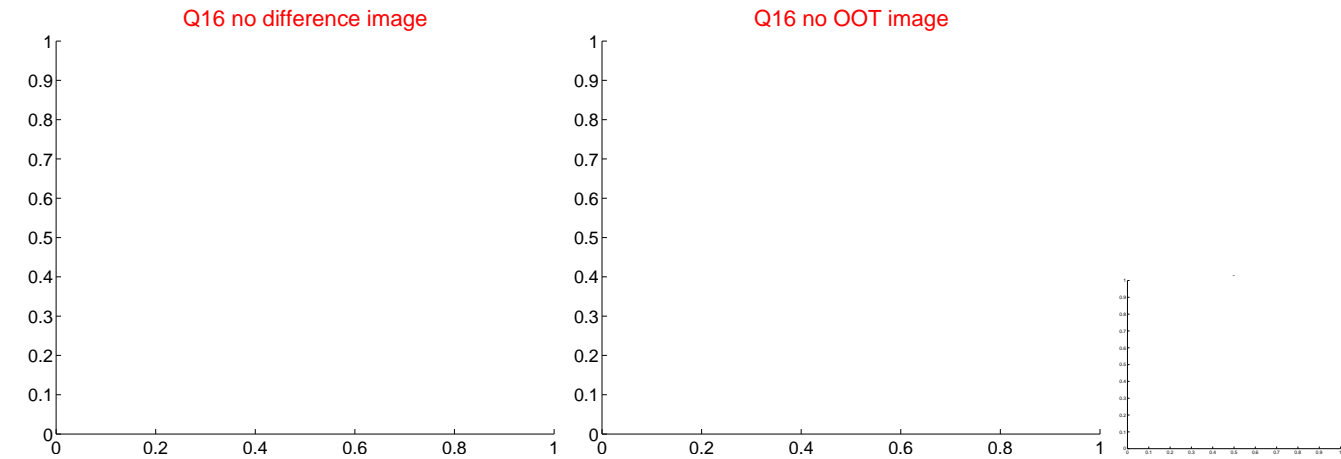
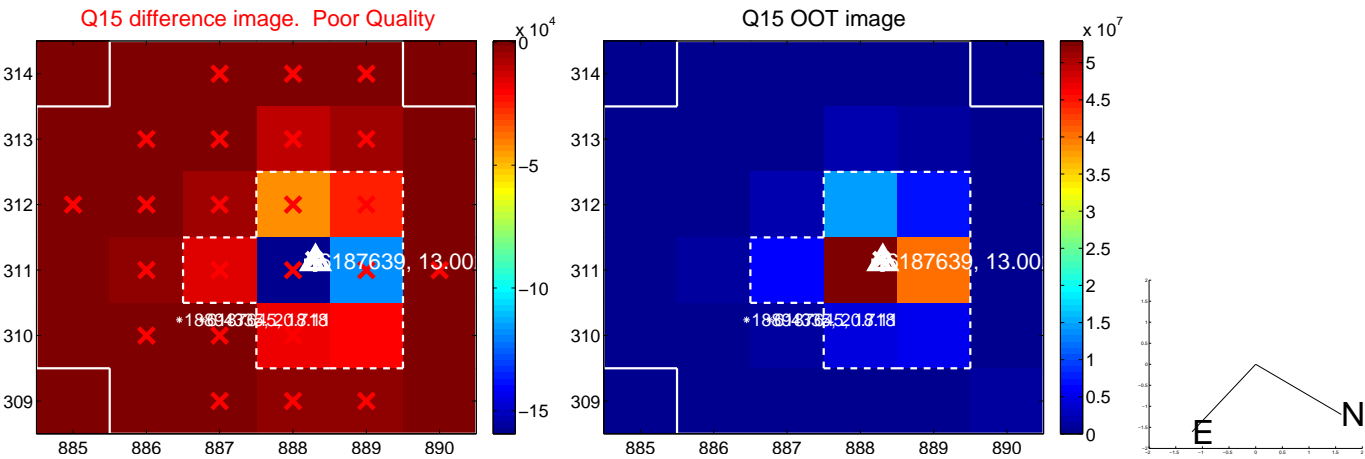
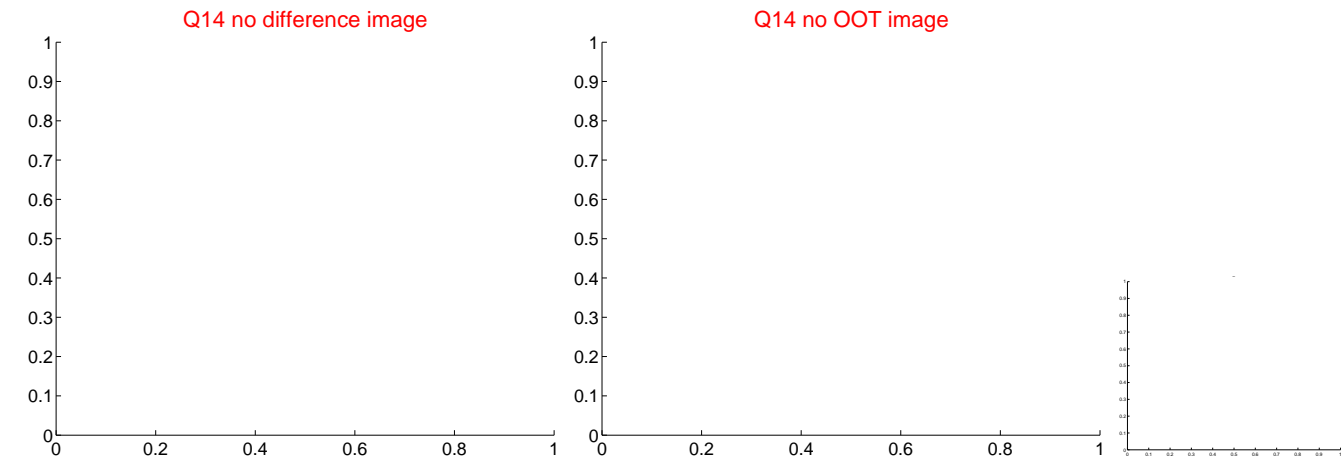
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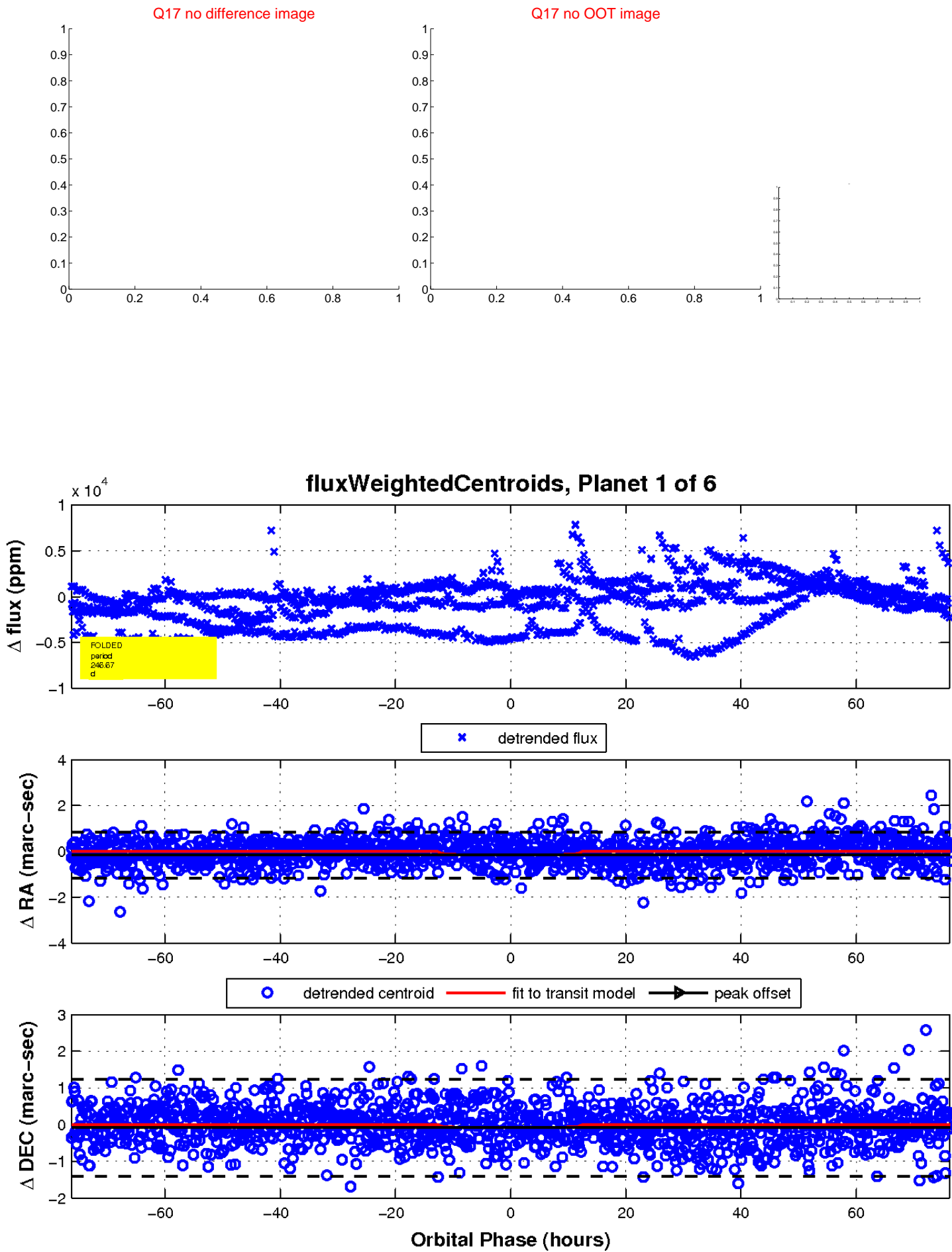
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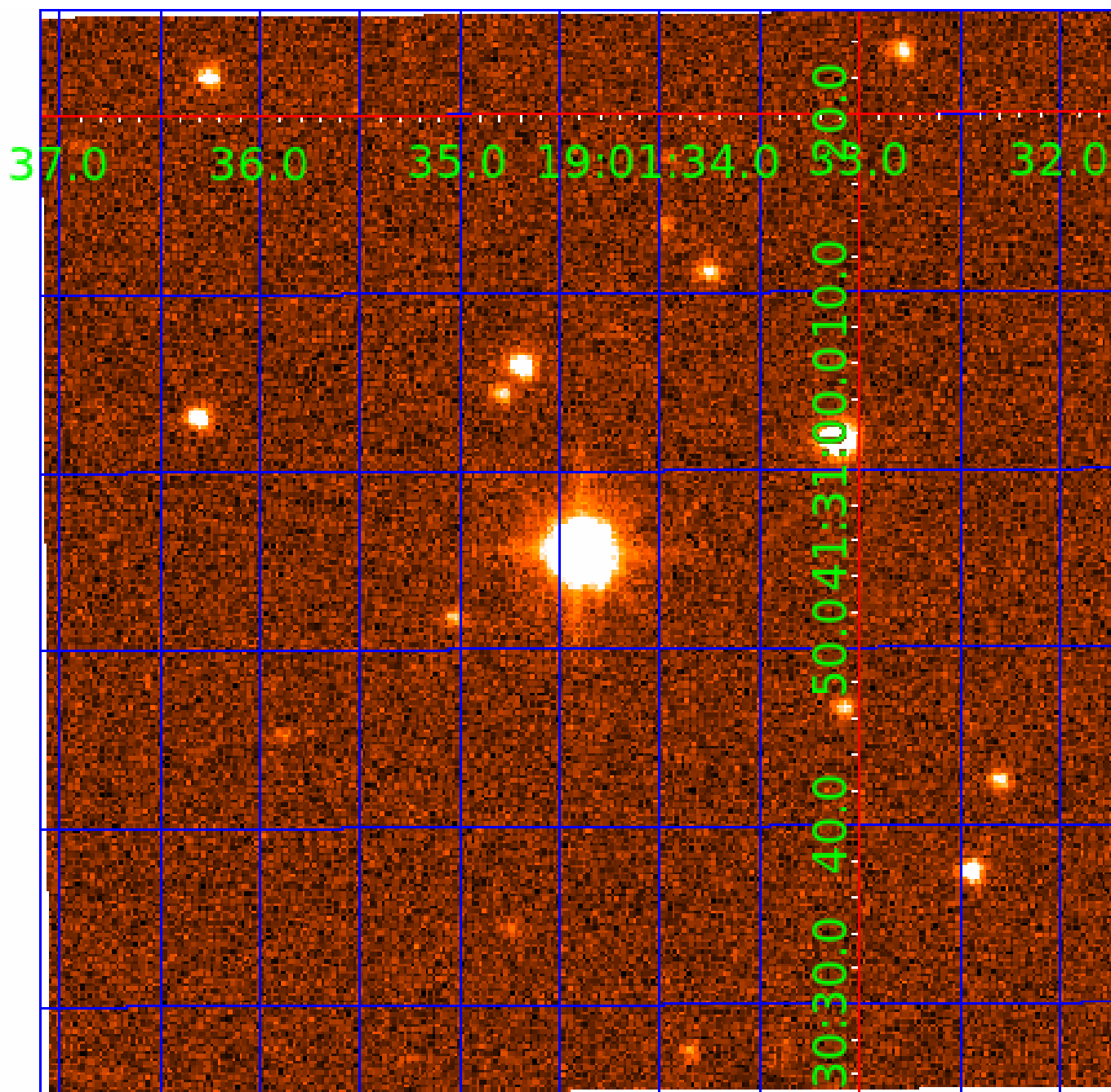


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006187639

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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Robovetter Results

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006187639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
006187639-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

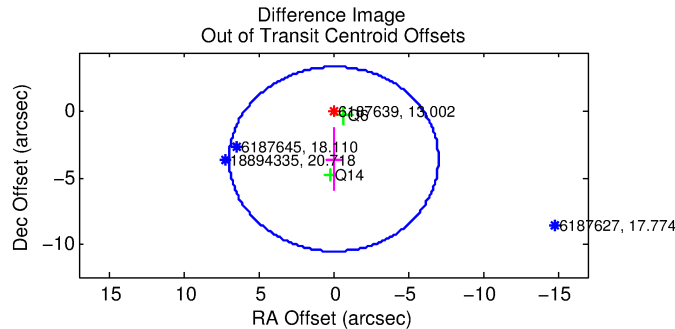
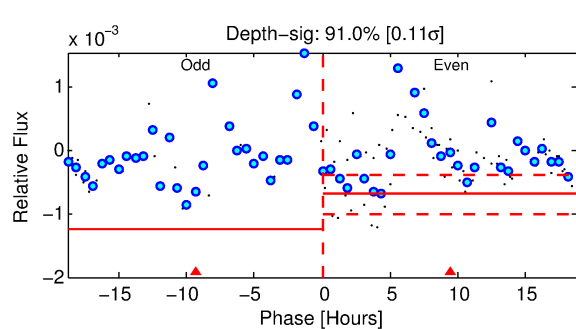
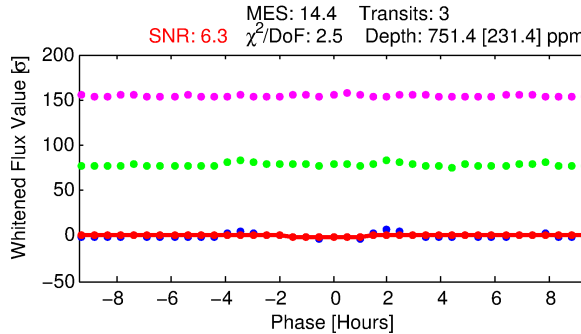
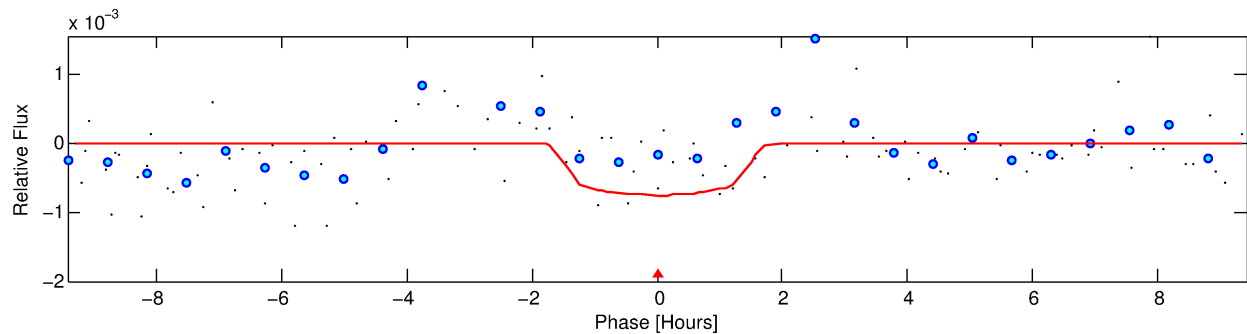
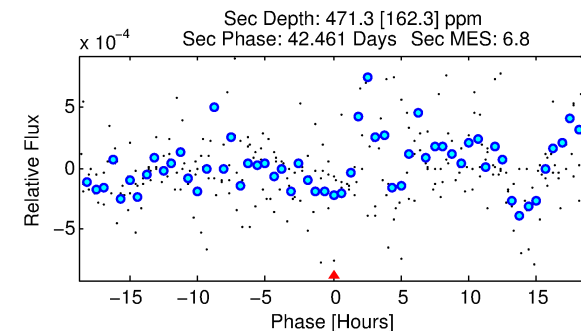
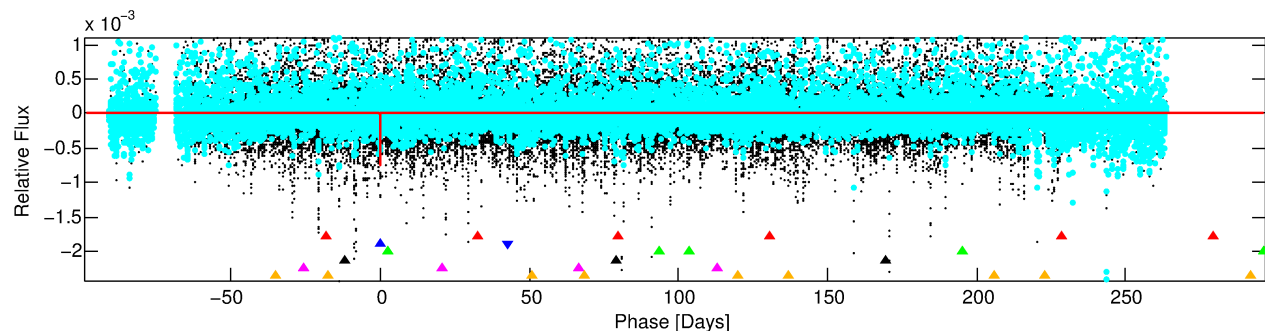
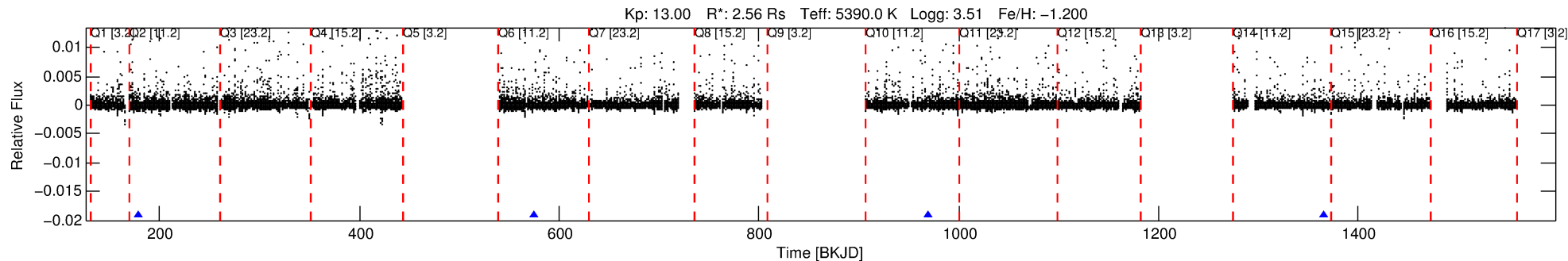
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006187639-02

No Significant Match Found

DV One-Page Summary

KIC: 6187639 Candidate: 2 of 6 Period: 395.407 d



DV Fit Results:

Period = 395.40742 [0.00683] d
Epoch = 178.7556 [0.0103] BKJD
Rp/R* = 0.0262 [0.0720]
a/R* = 800.46 [10462.37]
b = 0.60 [14.04]
Seff = 5.27 [10.02]
Teq = 386 [184] K
Rp = 7.32 [20.84] Re
a = 0.9683 [1.0157] AU
Ag = 4541.35 [26412.91] [0.17σ]
Teffp = 4903 [6739] K [0.67σ]

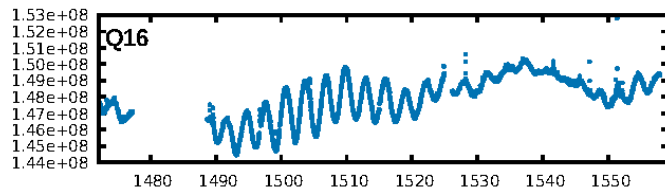
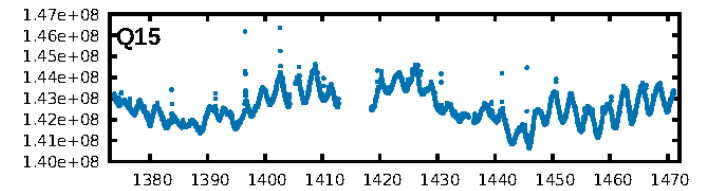
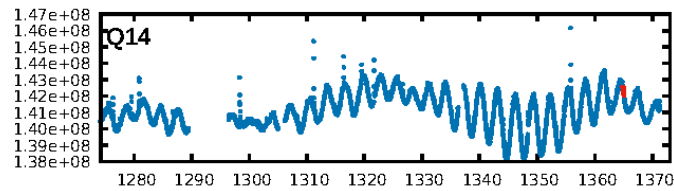
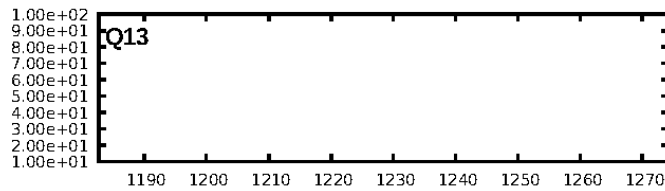
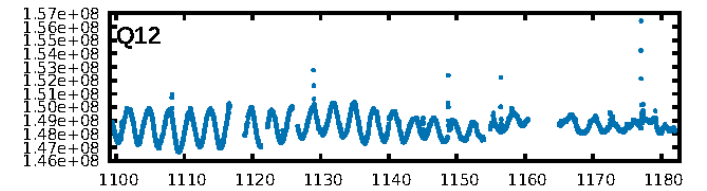
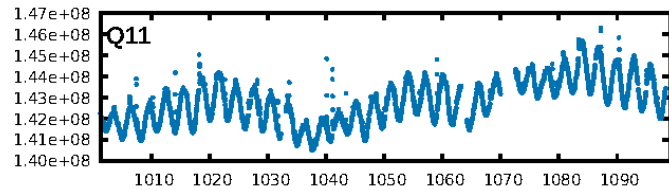
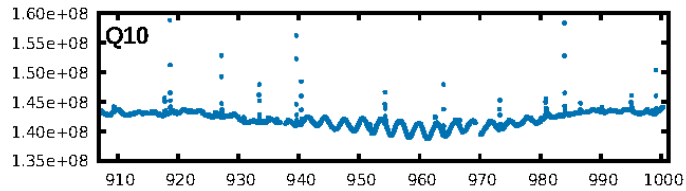
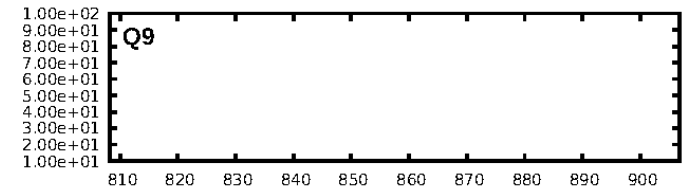
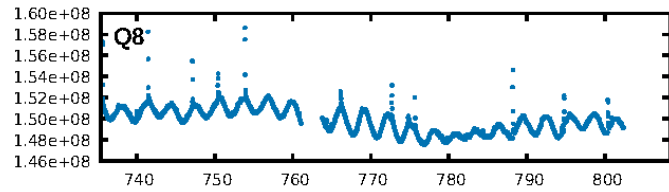
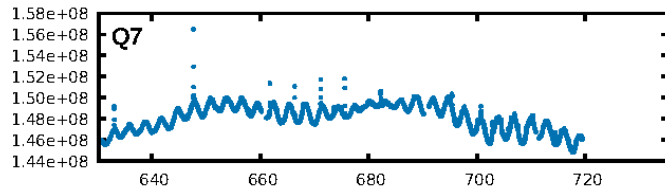
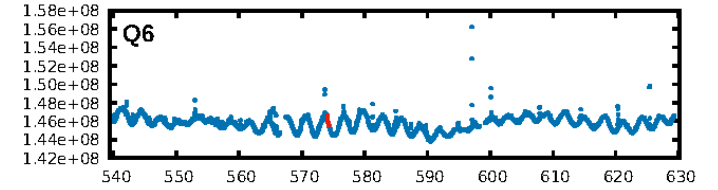
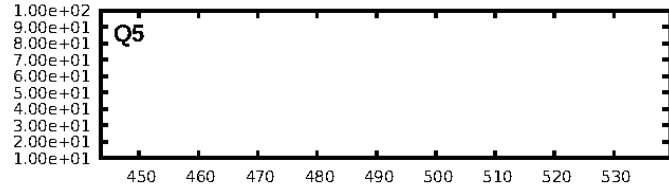
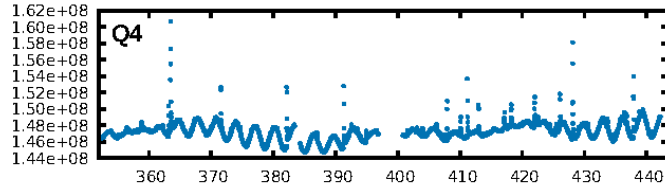
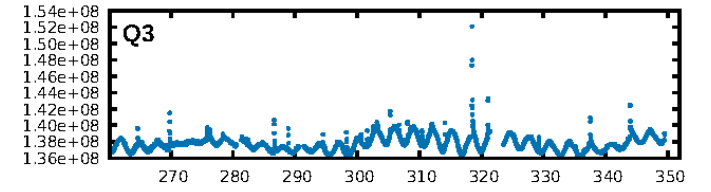
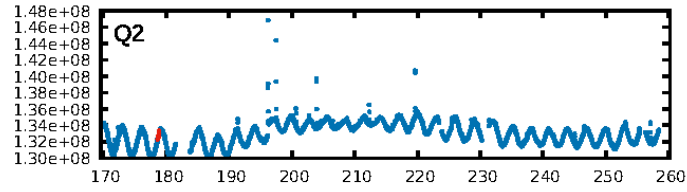
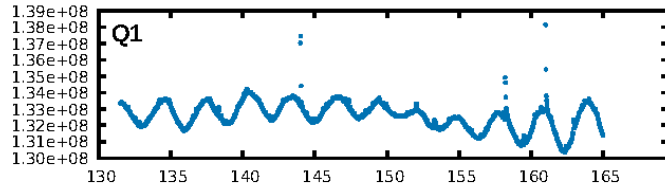
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [311.49σ]
LongPeriod-sig: 100.0% [182.94σ]
ModelChiSquare2-sig: 2.9%
ModelChiSquareGof-sig: 30.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.713
Centroid-sig: 49.8%
Centroid-so: 0.581 arcsec [0.90σ]
OotOffset-rm: 3.578 arcsec [1.54σ]
KicOffset-rm: 3.456 arcsec [1.47σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

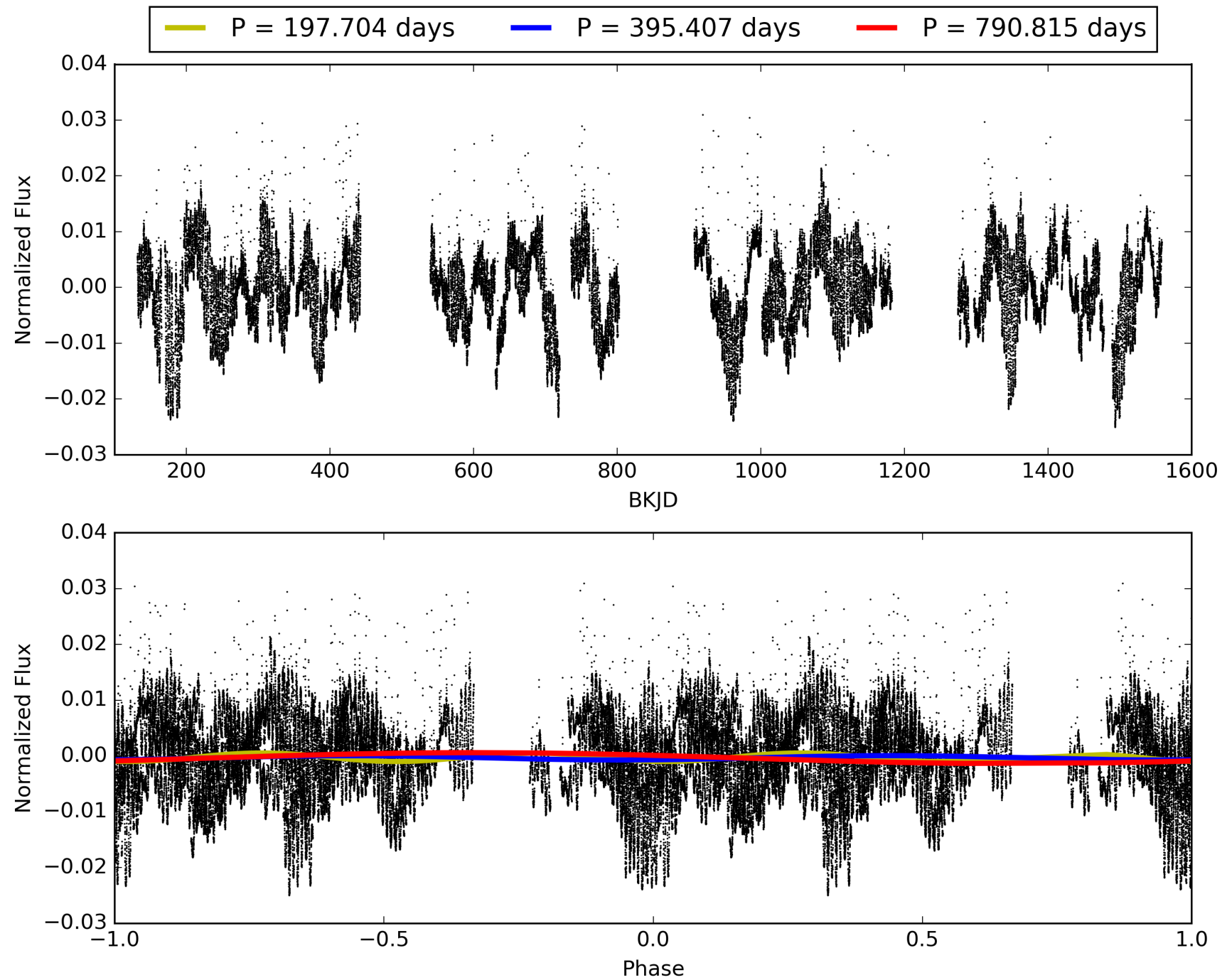
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:34:28 Z

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

TCE 006187639-02, PDC Light Curves

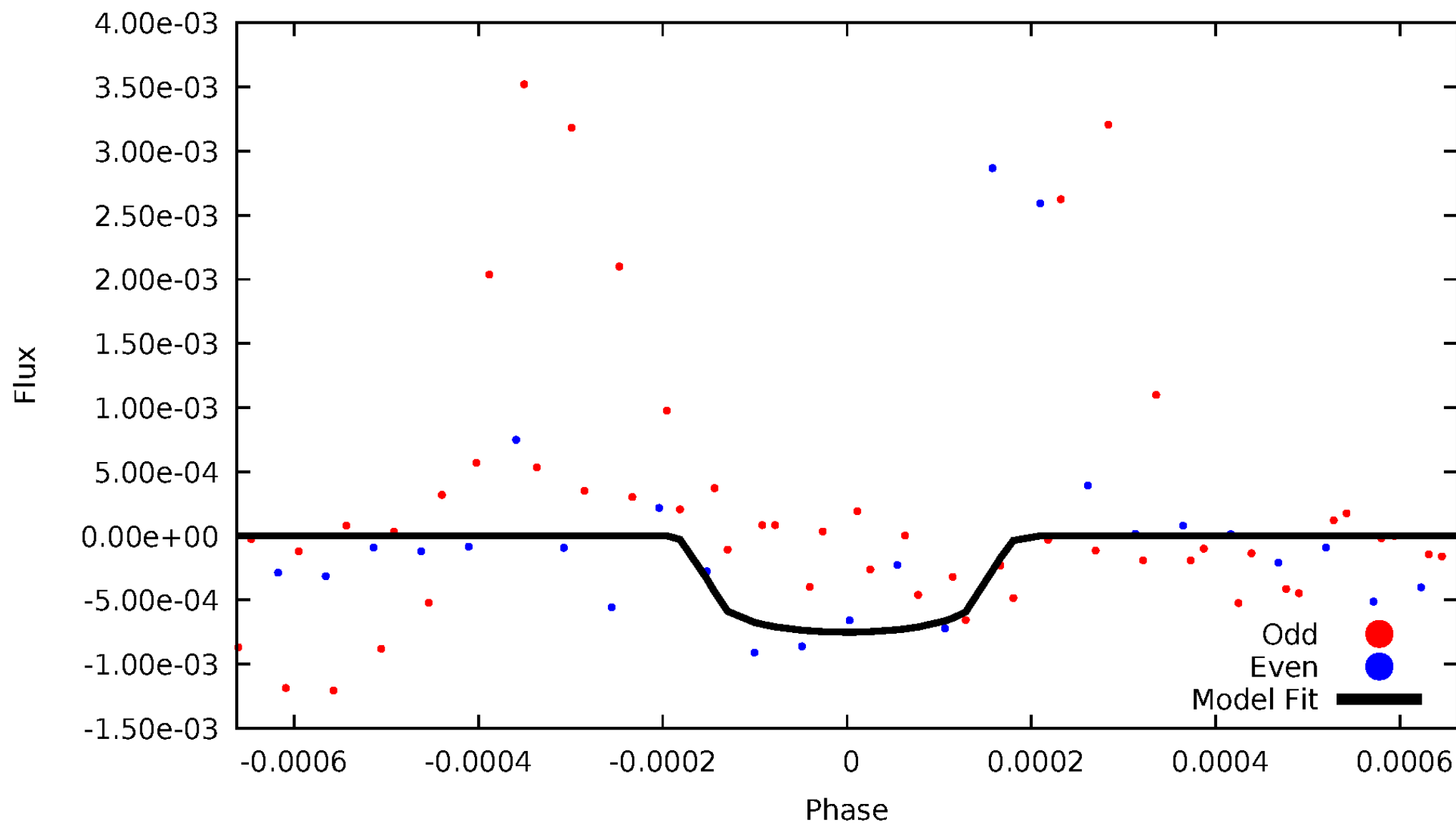


TCE 006187639-02



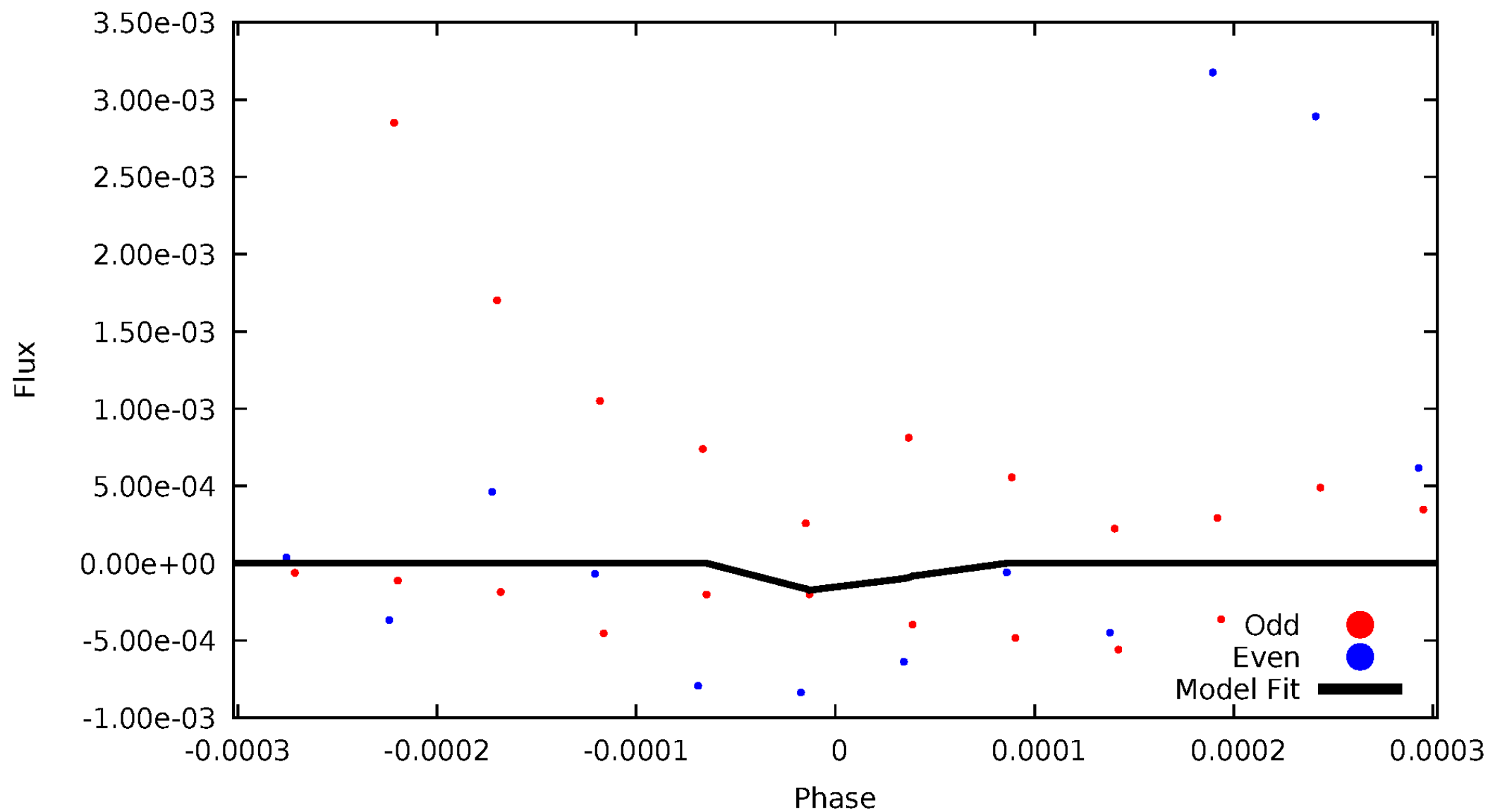
DV Odd/Even

TCE 006187639-02



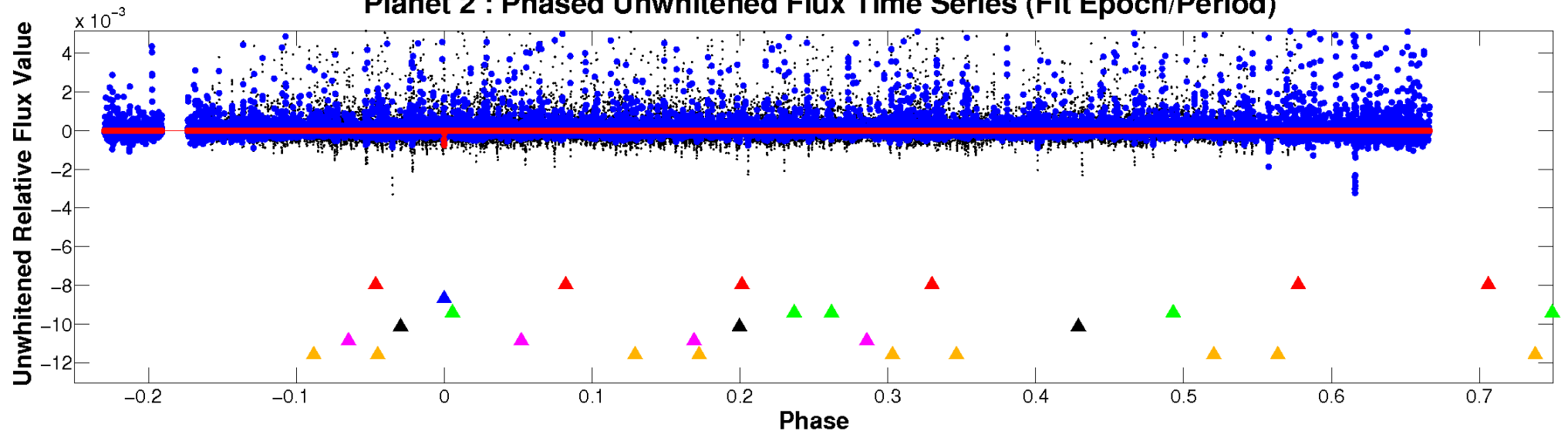
ALT Odd/Even

TCE 006187639-02

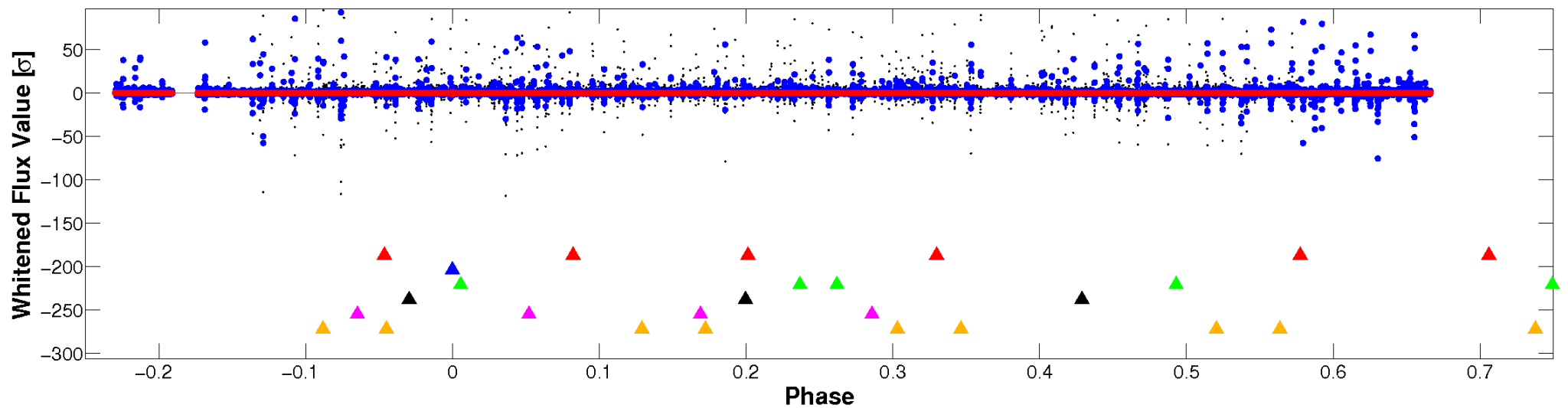


Non-Whitened Vs. Whitened Light Curve

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

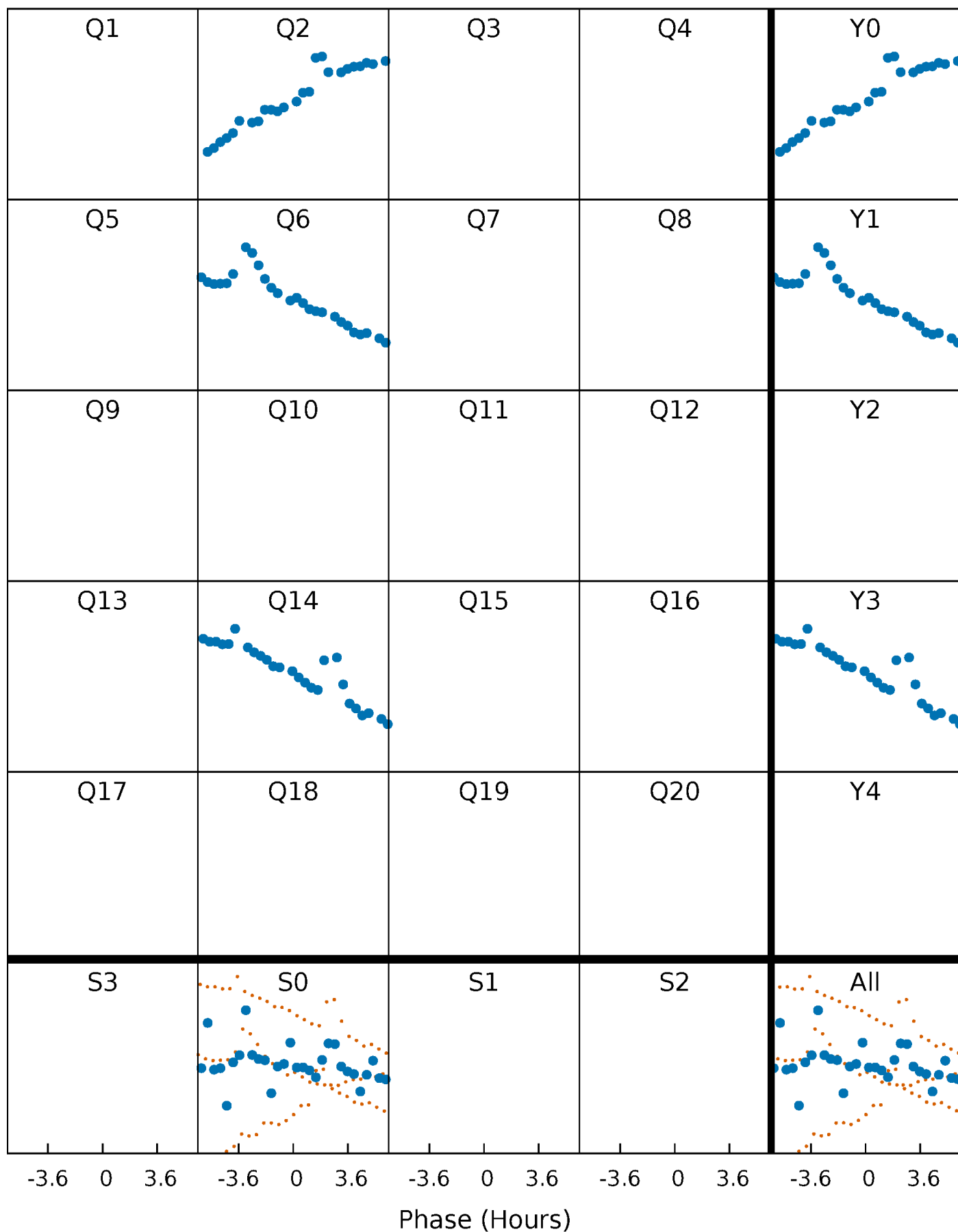


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



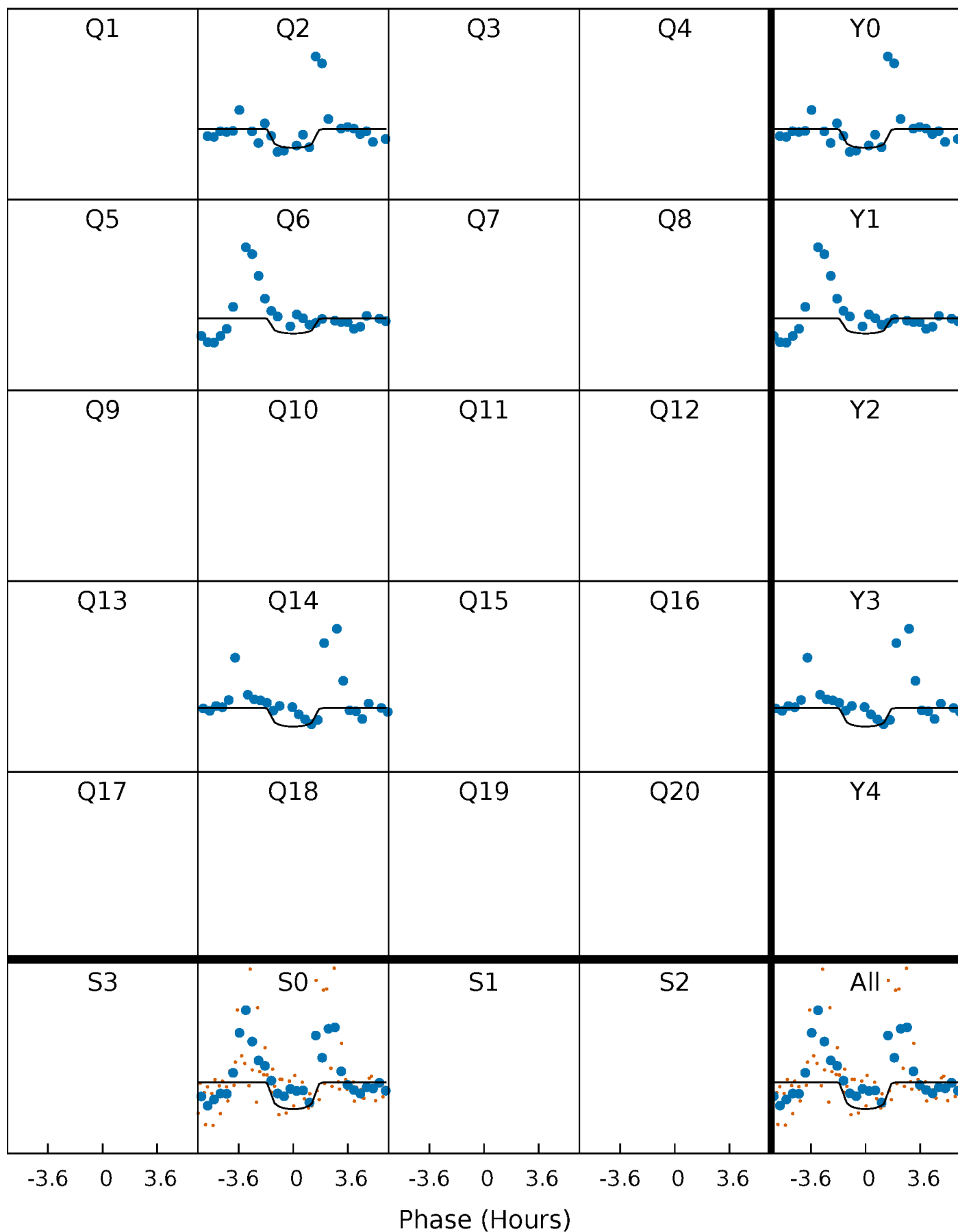
PDC Quarter-Phased Transit Curves

TCE 006187639-02 P=395.407418 Days $T_0=178.755607$ (BKJD)



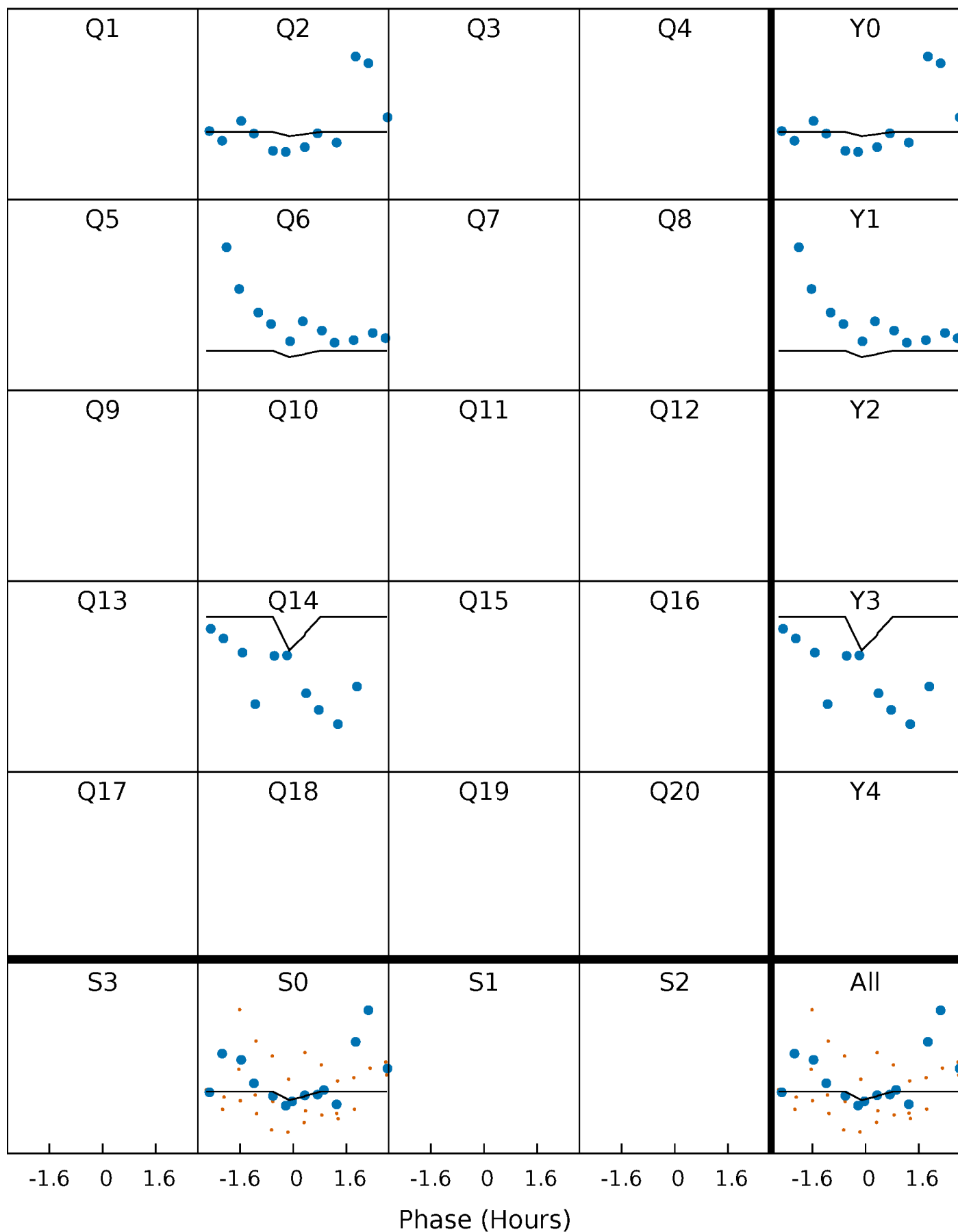
DV Quarter-Phased Transit Curves

TCE 006187639-02 P=395.407418 Days $T_0=178.755607$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

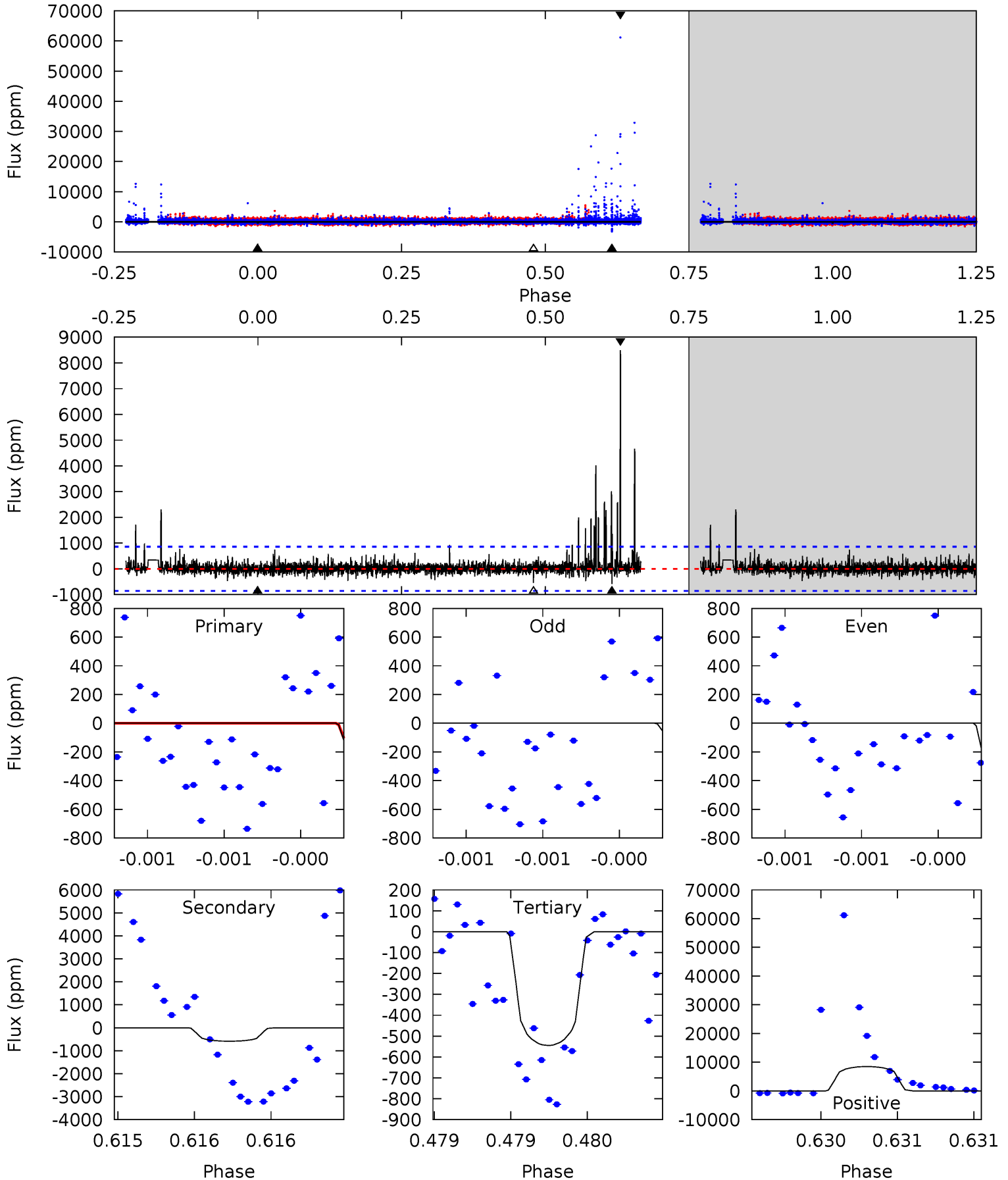
TCE 006187639-02 P=395.409820 Days $T_0=178.743089$ (BKJD)



DV Model-Shift Uniqueness Test

006187639-02, P = 395.407418 Days, E = 178.755607 Days

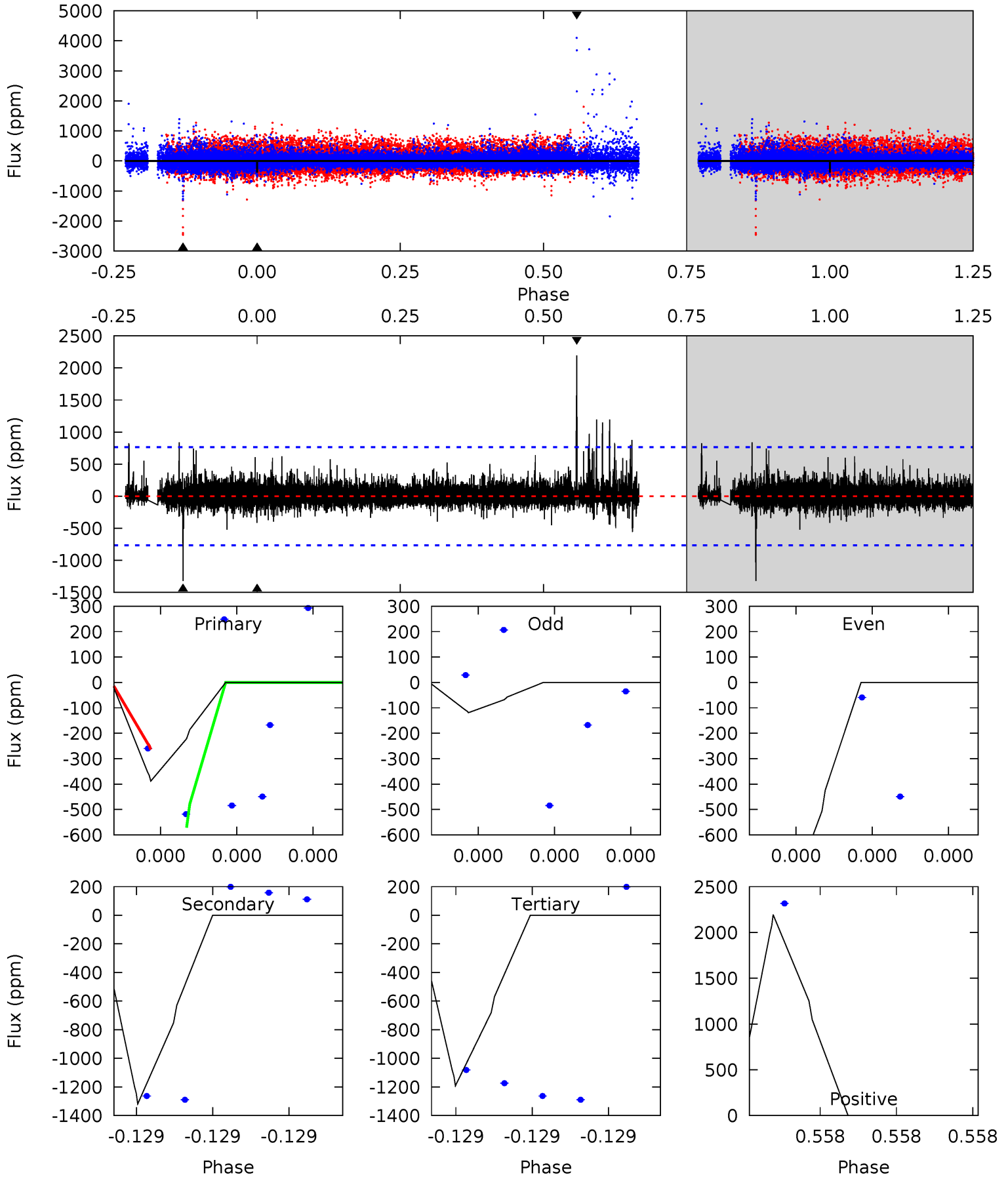
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.13	3.84	3.57	55.5	5.63	3.57	1.64	-1.44	-53.4	0.27	-51.7	0.69	1.06	0.94	0.23



Alt Model-Shift Uniqueness Test

006187639-02, P = 395.409820 Days, E = 178.743089 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.96	10.1	9.10	16.8	5.85	3.89	0.81	-6.14	-13.8	0.97	-6.68	2.47	0.76	0.62	1.02



Stellar Parameters For KIC 006187639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5390^{+133}_{-147}	$3.512^{+1.192}_{-0.298}$	$-1.200^{+0.300}_{-0.300}$	$2.555^{+1.610}_{-1.967}$	$0.774^{+0.250}_{-0.135}$	$0.065^{+3.991}_{-0.053}$
	+2%/-3%	+34%/-8%	+25%/-25%	+63%/-77%	+32%/-17%	+6104%/-81%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006187639-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-587 ± 153	$13.54^{+17.69}_{-9.78}$	520^{+88}_{-125}	3862^{+2404}_{-801}	1694^{+18696}_{-1383}
Alt.	-1319 ± 131	$11.83^{+16.99}_{-8.56}$	515^{+84}_{-121}	4617^{+4579}_{-1085}	5126^{+61766}_{-4244}

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 $A_{obs} \gg 1.0$

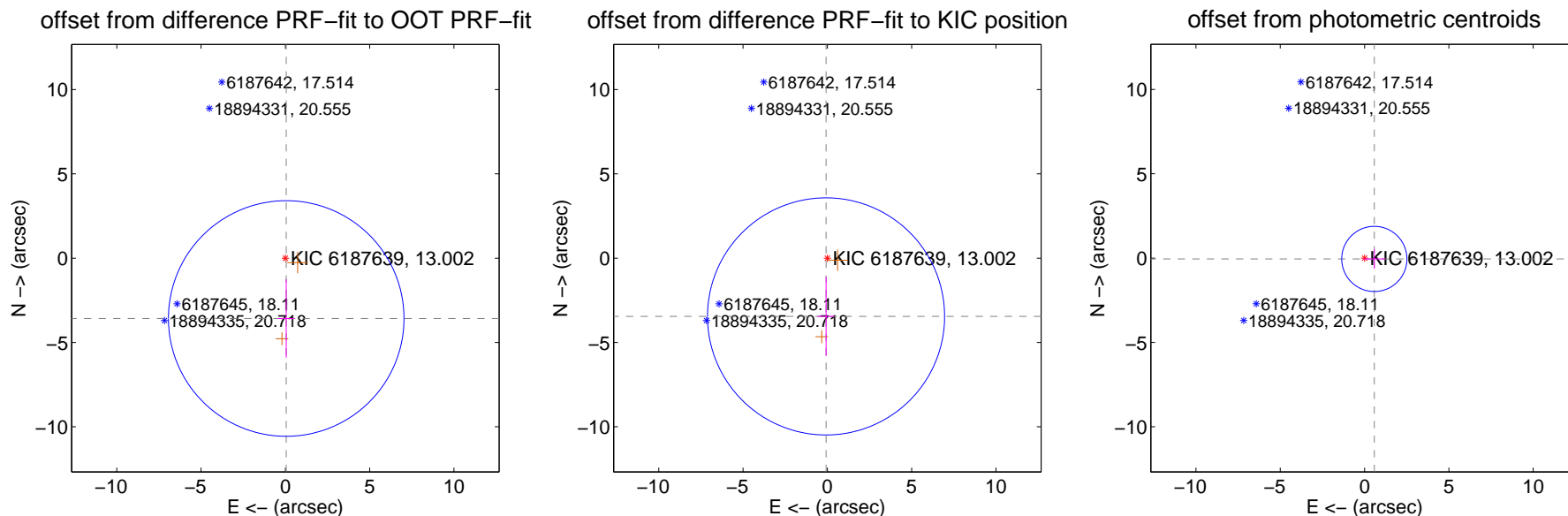
DV Centroid Data

Supplemental centroid analysis for 006187639-02. Kepler magnitude: 13.00. Transit SNR 6.32

There are 0 quarters with good PRF difference image offsets

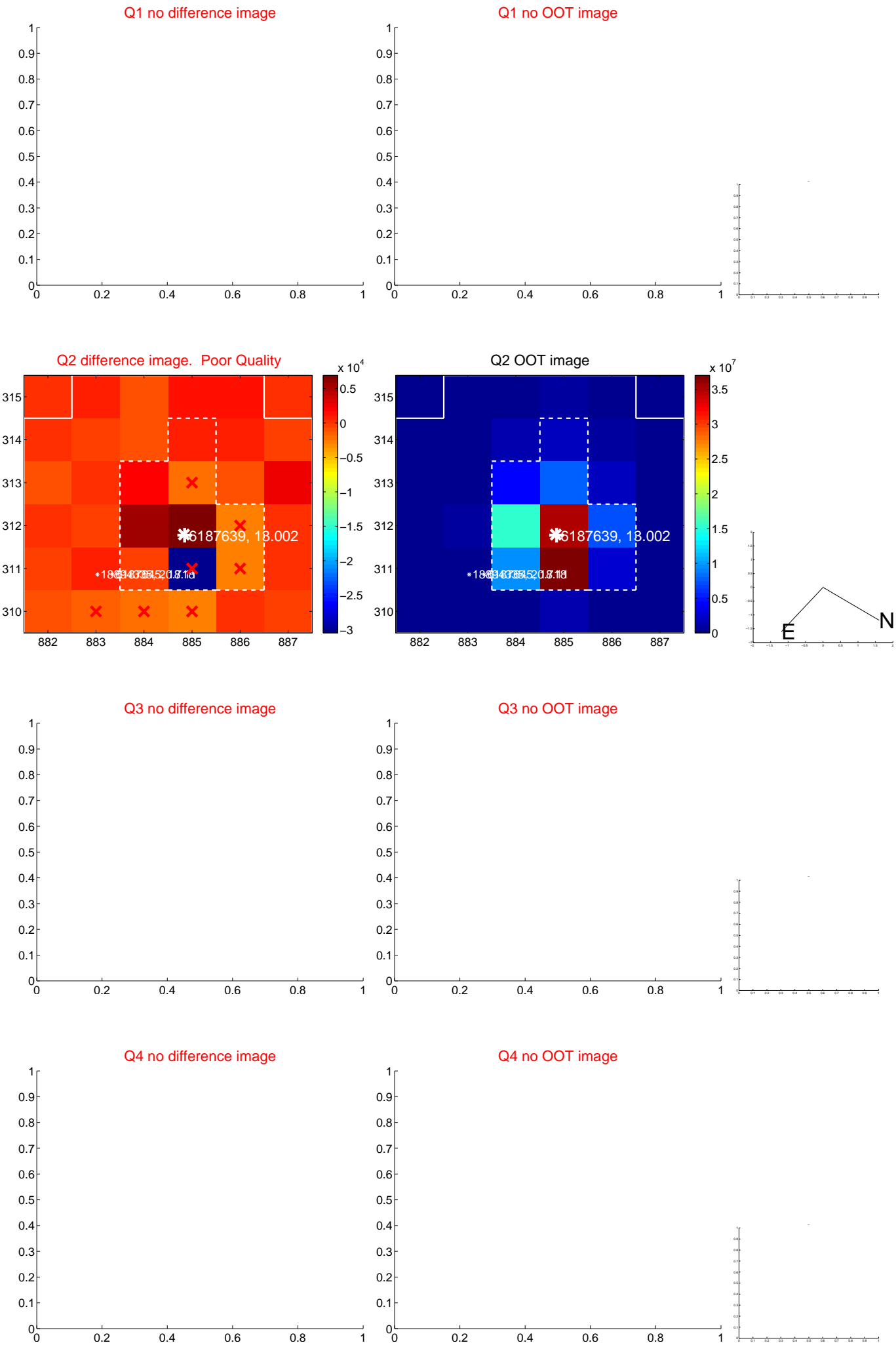
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.578 ± 2.329	1.54	-0.051 ± 0.485	-3.578 ± 2.329
PRF-fit source offset from KIC position	3.456 ± 2.344	1.47	0.078 ± 0.493	-3.455 ± 2.344
photometric centroid source offset	0.58 ± 0.64	0.90	-0.58 ± 0.64	-0.05 ± 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.

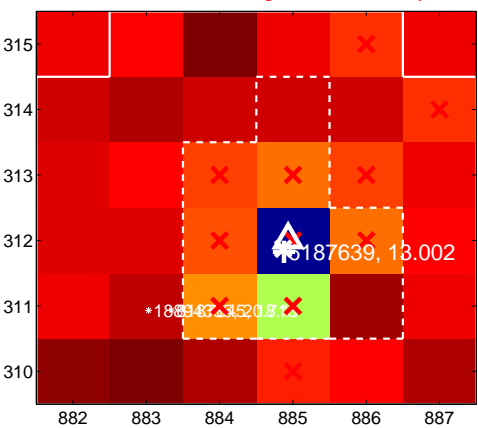
Q5 no difference image



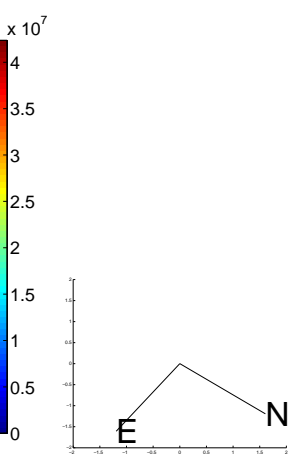
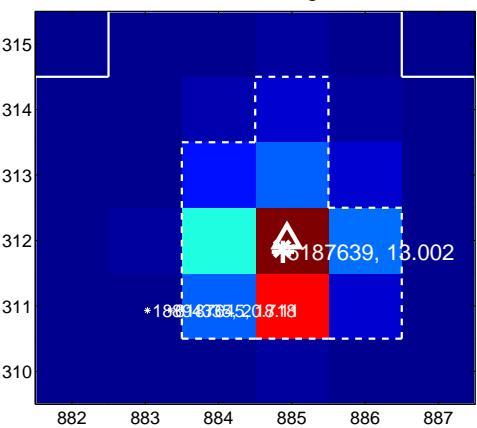
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



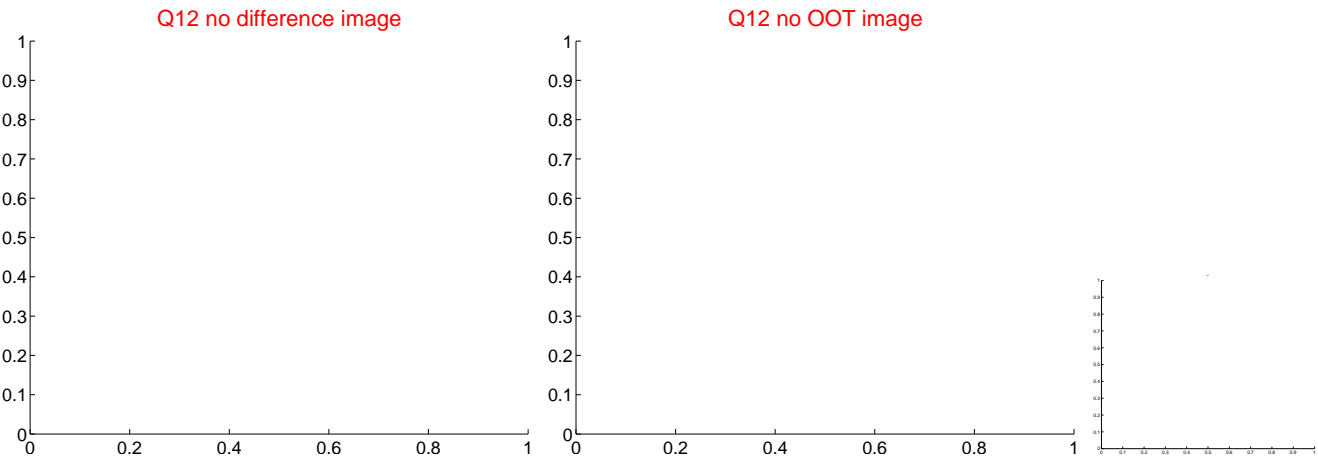
Q8 no difference image



Q8 no OOT image



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



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

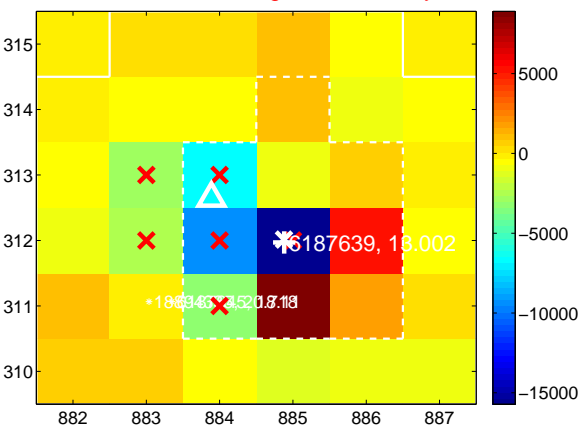
Q13 no difference image



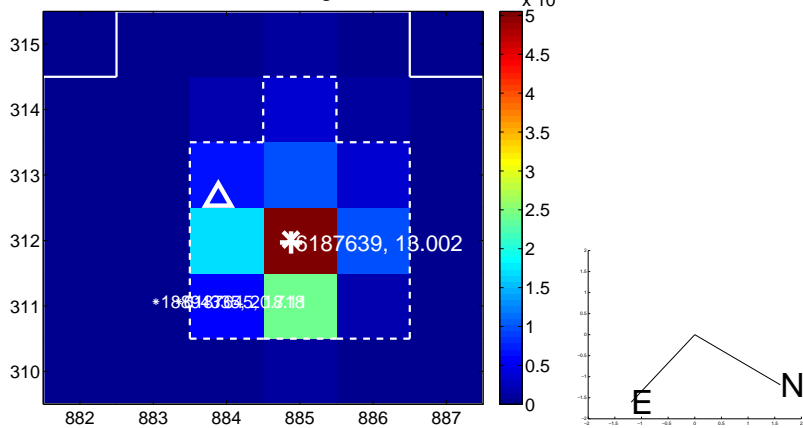
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



Q15 no OOT image



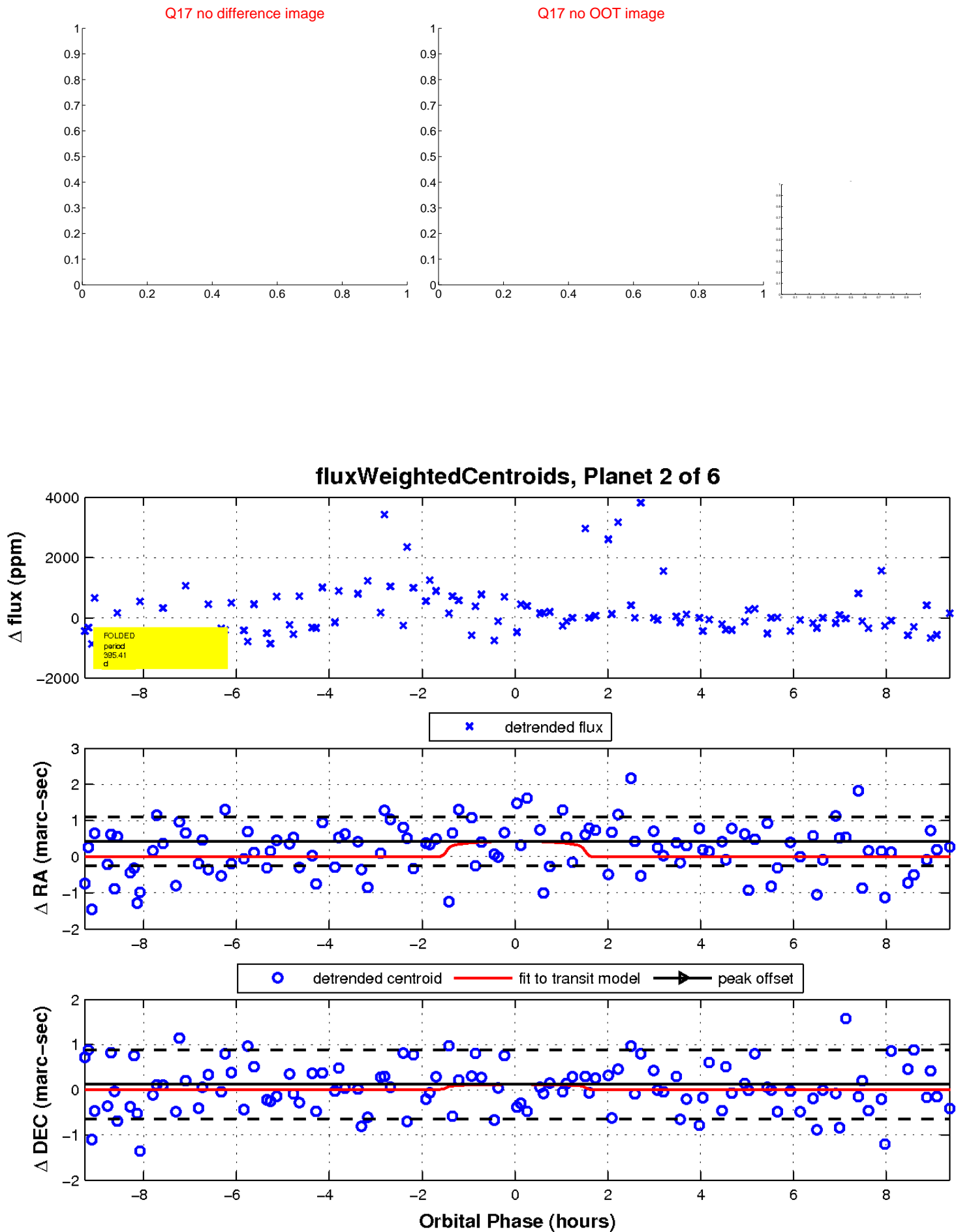
Q16 no difference image



Q16 no OOT image

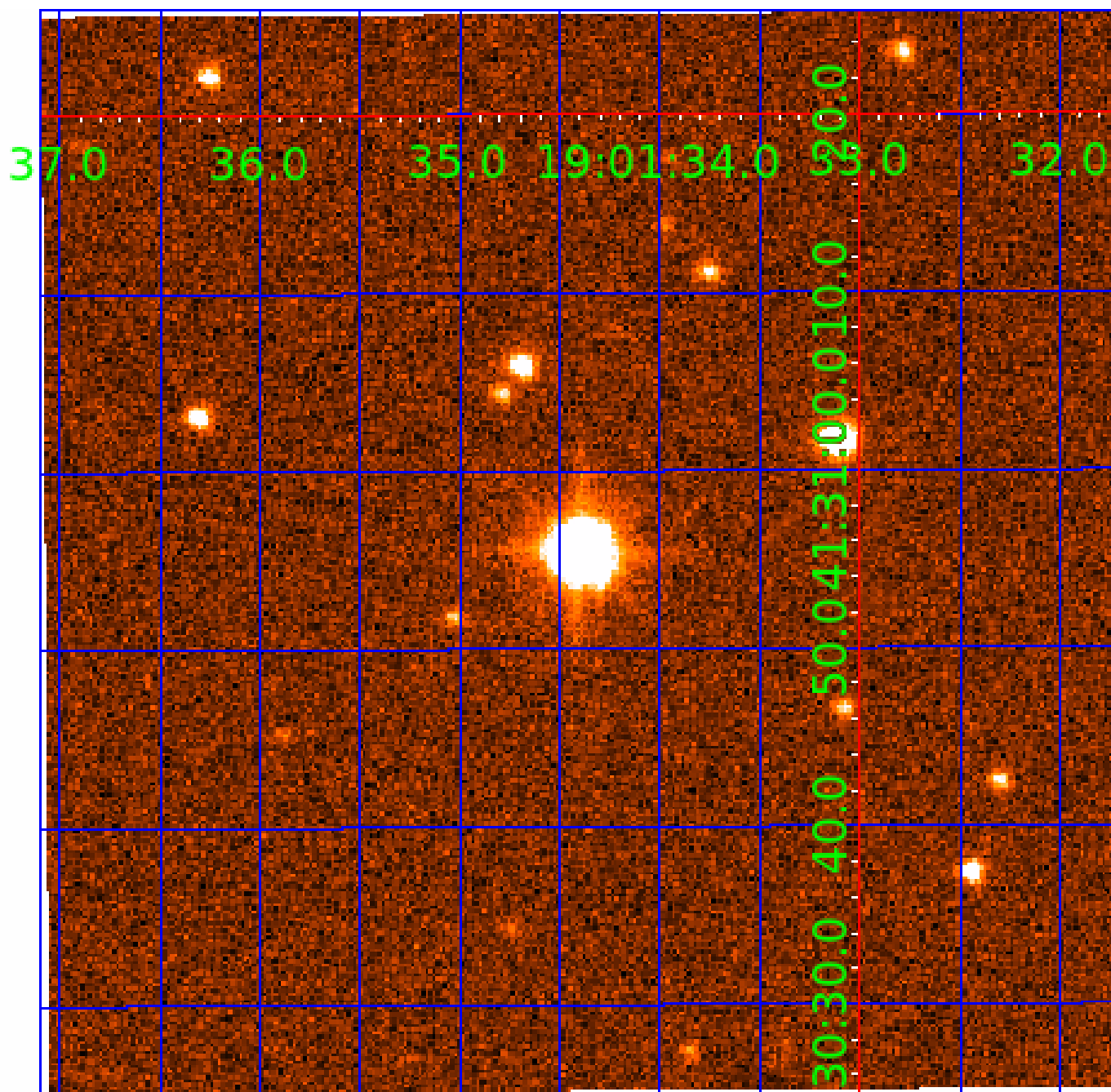


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006187639

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})
006187639-01	OBS	No	246.666335	211.268340	1137.9	25.415	17.7	6.2	2.56	5390	8.66	9.88
006187639-02	OBS	No	395.407418	178.755607	751.4	3.141	14.4	6.3	2.56	5390	7.32	5.27
006187639-03	OBS	No	294.061415	282.323140	1336.9	7.149	15.3	8.9	2.56	5390	9.33	7.82
006187639-04	OBS	No	486.010911	562.519012	882.6	4.548	12.0	5.8	2.56	5390	7.66	4.00
006187639-05	OBS	No	441.608210	153.172899	1011.0	5.184	12.9	6.6	2.56	5390	8.21	4.54
006187639-06	OBS	No	154.742468	246.912930	370.0	3.500	11.1	-1.0	2.56	5390	4.90	18.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006187639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
006187639-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

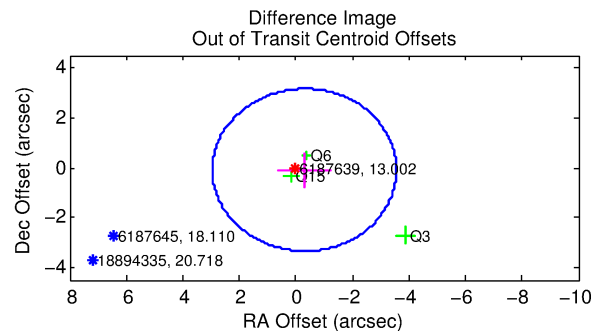
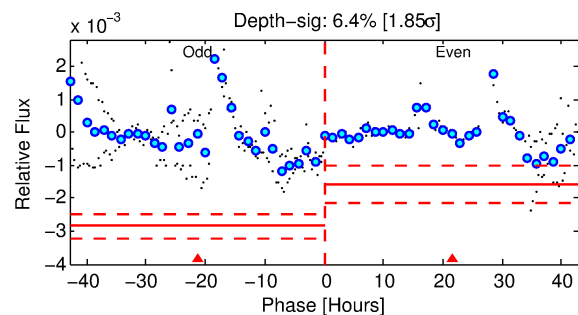
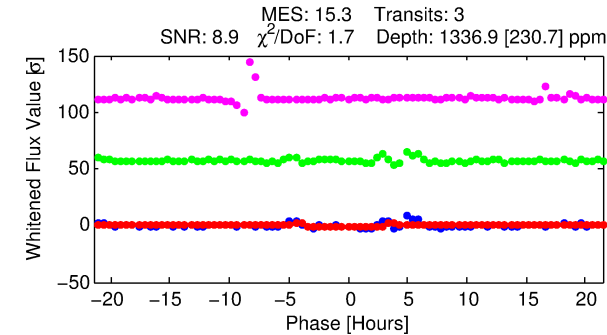
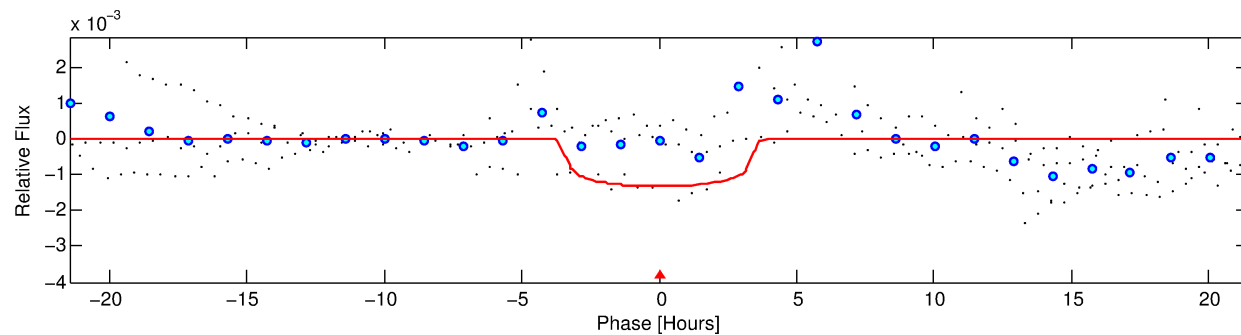
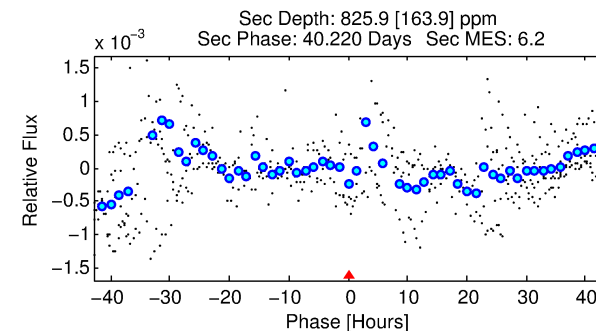
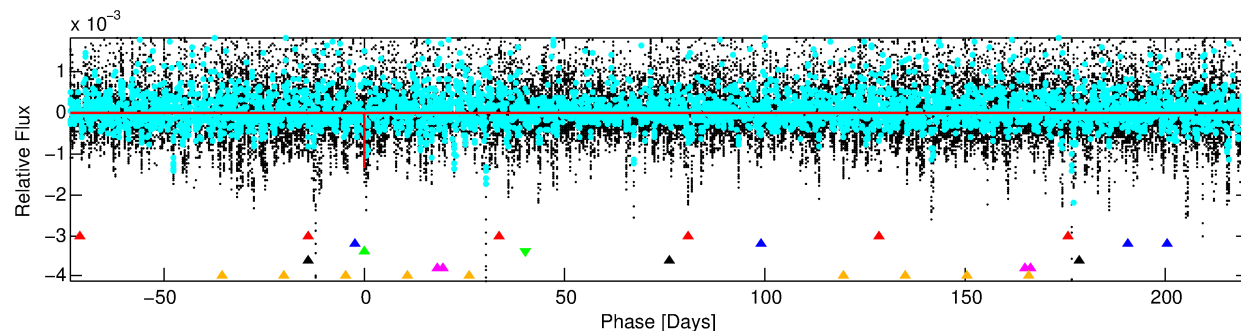
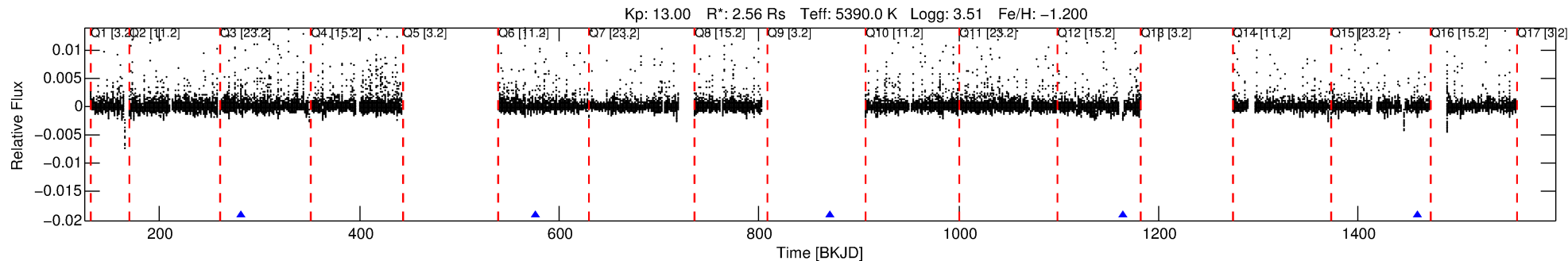
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006187639-03

No Significant Match Found

DV One-Page Summary

KIC: 6187639 Candidate: 3 of 6 Period: 294.061 d



DV Fit Results:

Period = 294.06141 [0.00232] d
Epoch = 282.3231 [0.0077] BKJD
Rp/R* = 0.0335 [0.0157]
a/R* = 320.16 [665.51]
b = 0.17 [11.69]
Seff = 7.81 [14.88]
Teq = 426 [203] K
Rp = 9.33 [8.42] Re
a = 0.7948 [0.8337] AU
Ag = 3296.01 [7018.04] [0.47σ]
Teffp = 4995 [1207] K [3.73σ]

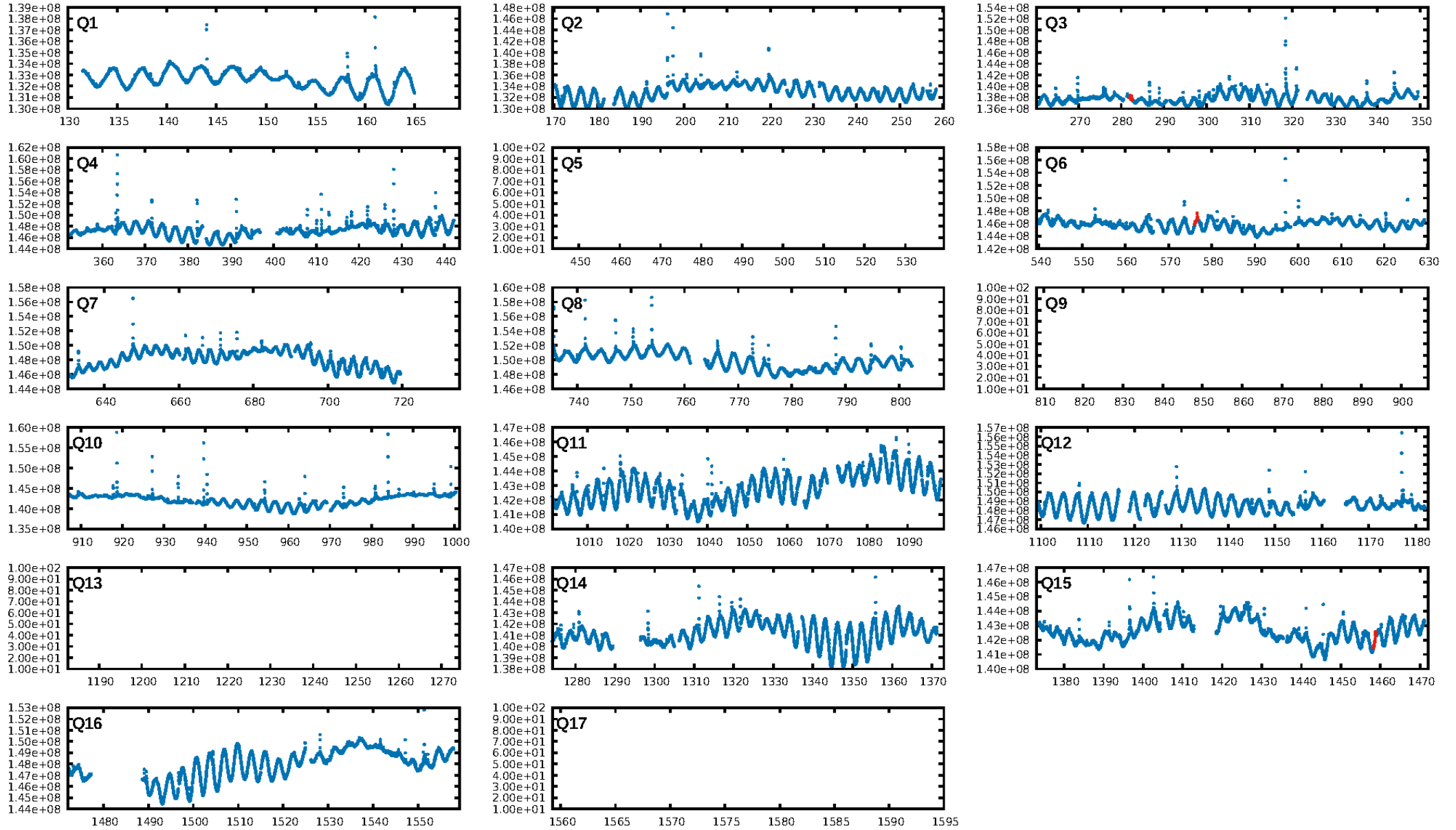
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [43.08σ]
LongPeriod-sig: 100.0% [311.49σ]
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 19.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.509
Centroid-sig: 5.9%
Centroid-so: 0.381 arcsec [1.87σ]
OotOffset-rm: 0.315 arcsec [0.29σ]
KicOffset-rm: 0.189 arcsec [0.23σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

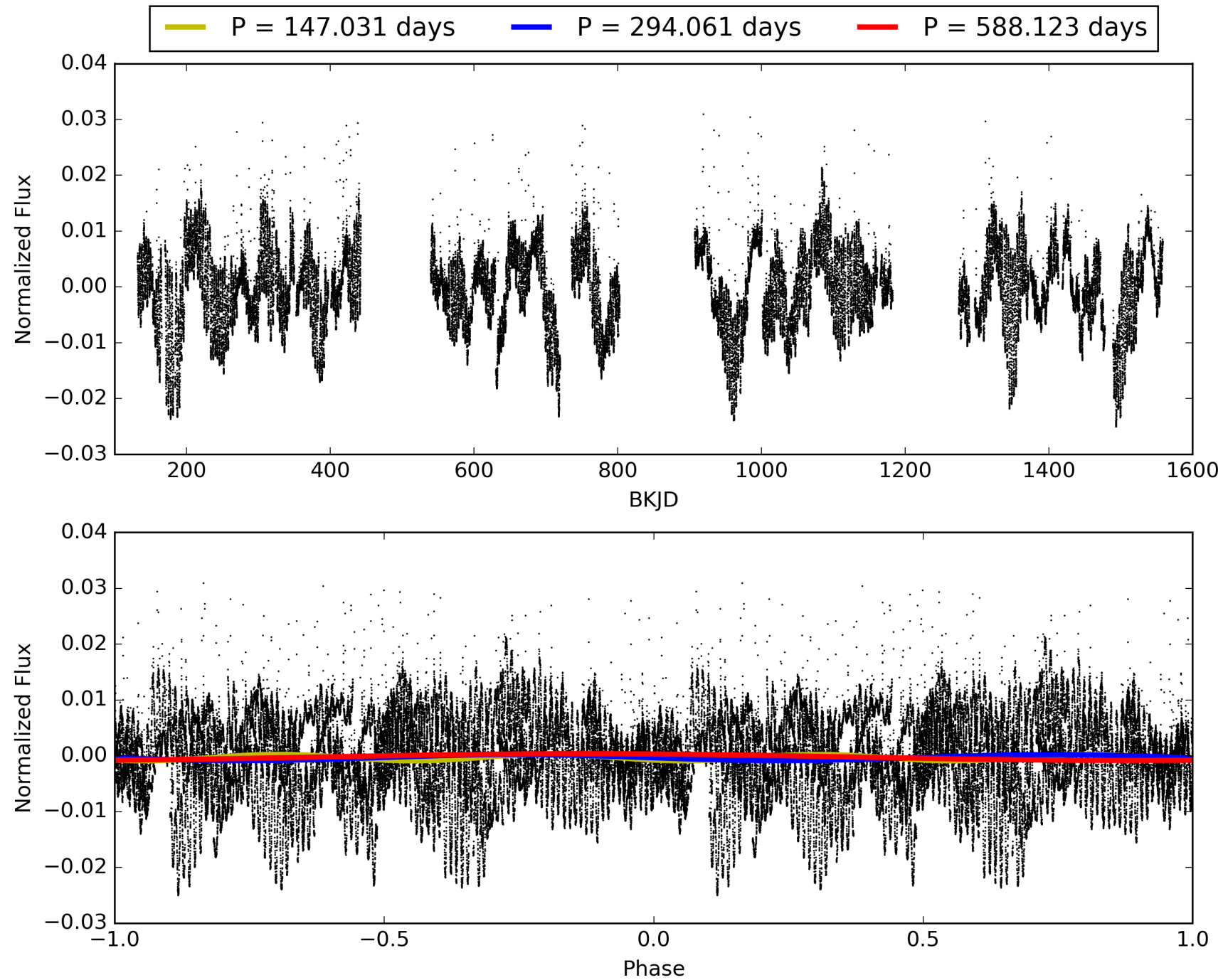
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:34:36 Z

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

TCE 006187639-03, PDC Light Curves

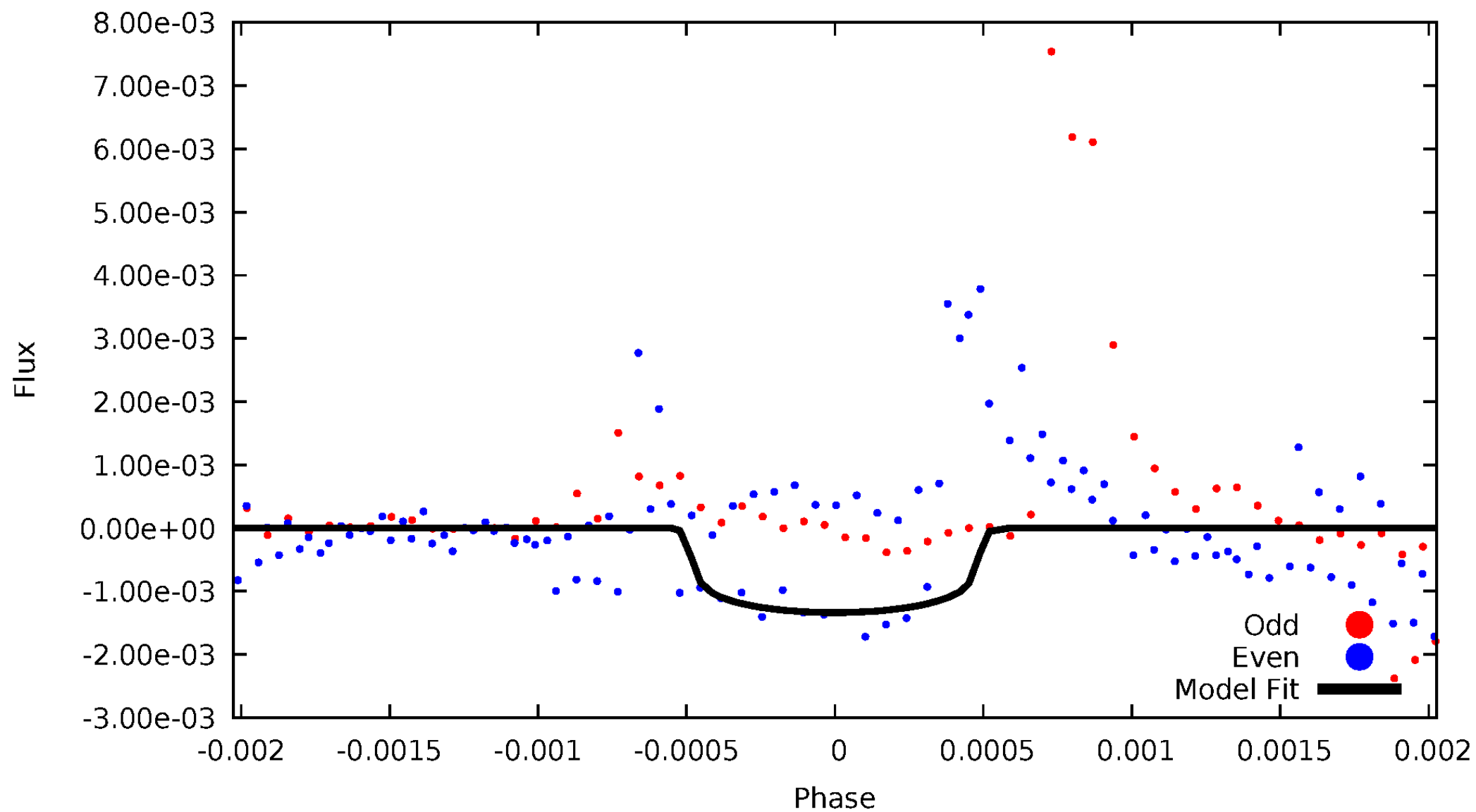


TCE 006187639-03



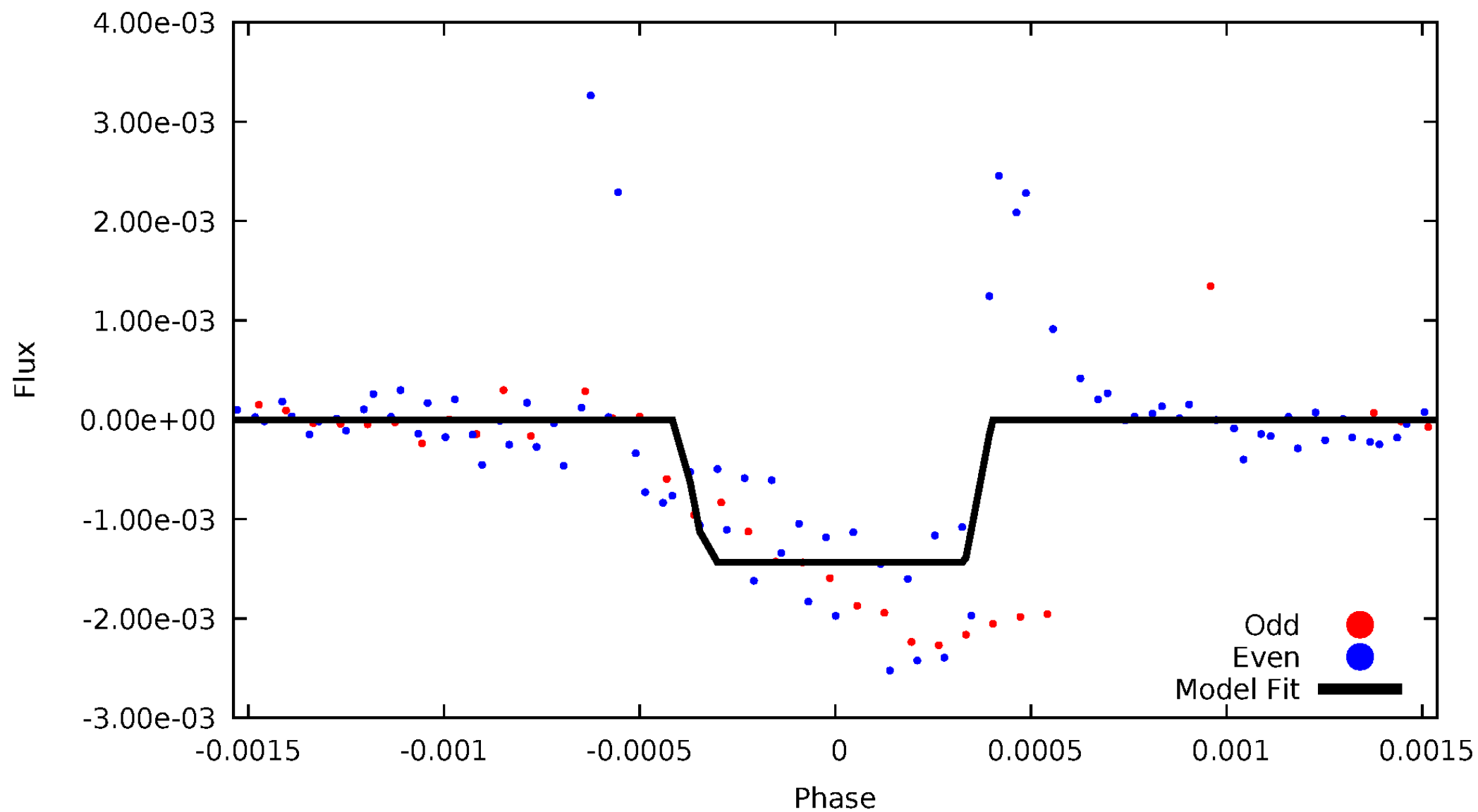
DV Odd/Even

TCE 006187639-03



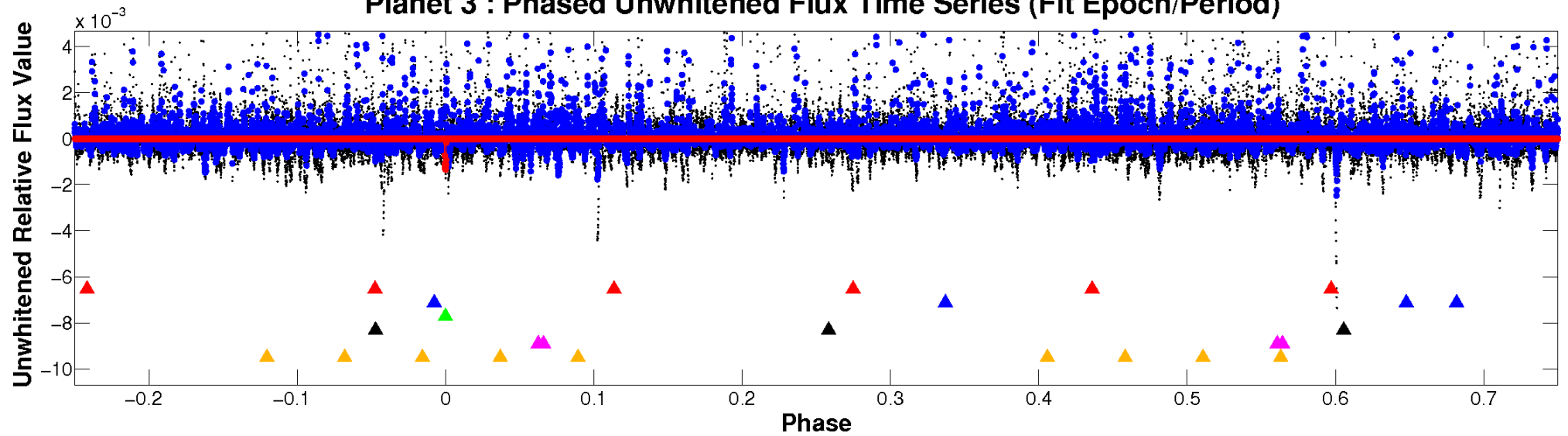
ALT Odd/Even

TCE 006187639-03

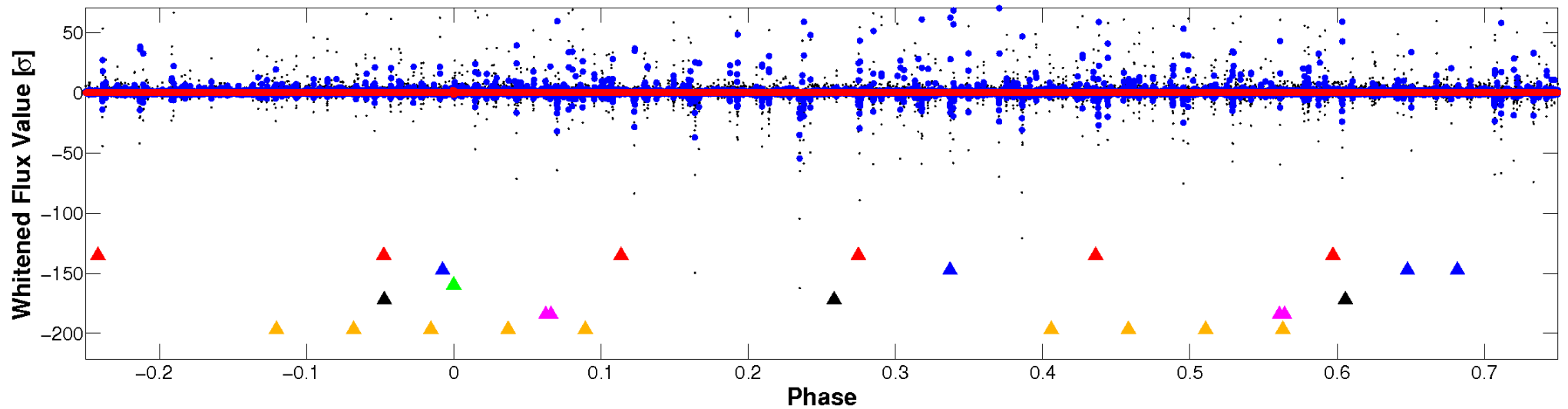


Non-Whitened Vs. Whitened Light Curve

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

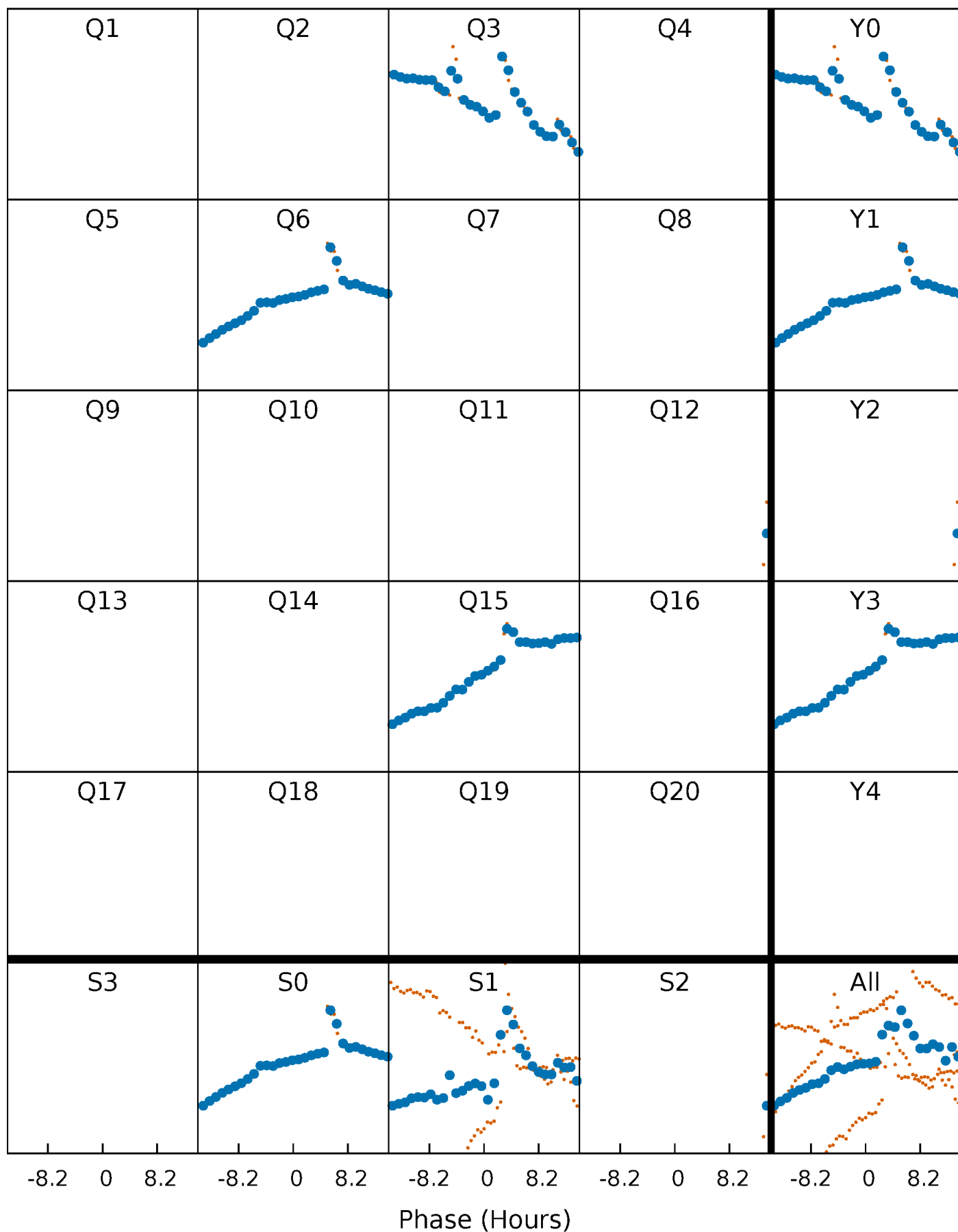


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



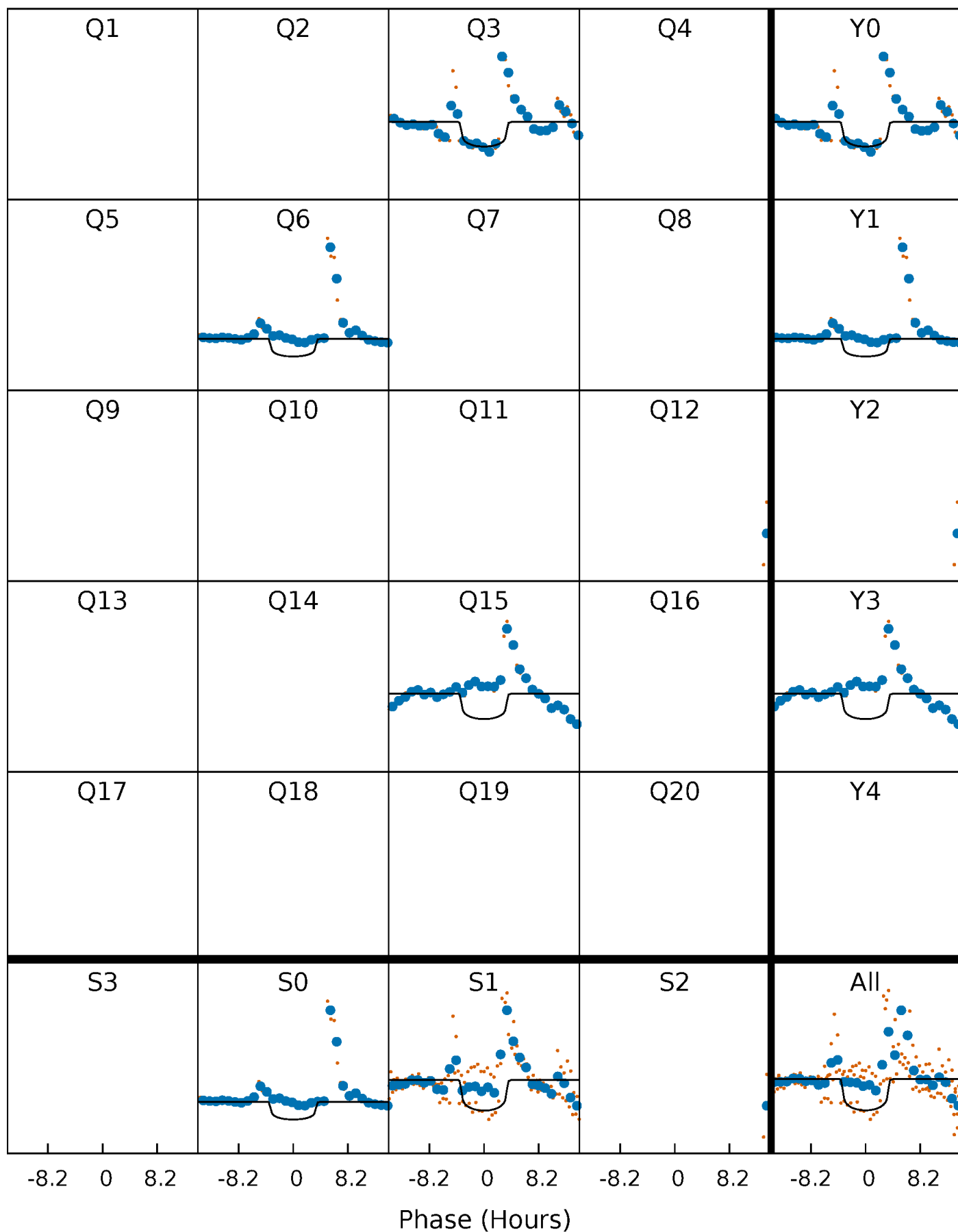
PDC Quarter-Phased Transit Curves

TCE 006187639-03 P=294.061415 Days $T_0=282.323141$ (BKJD)



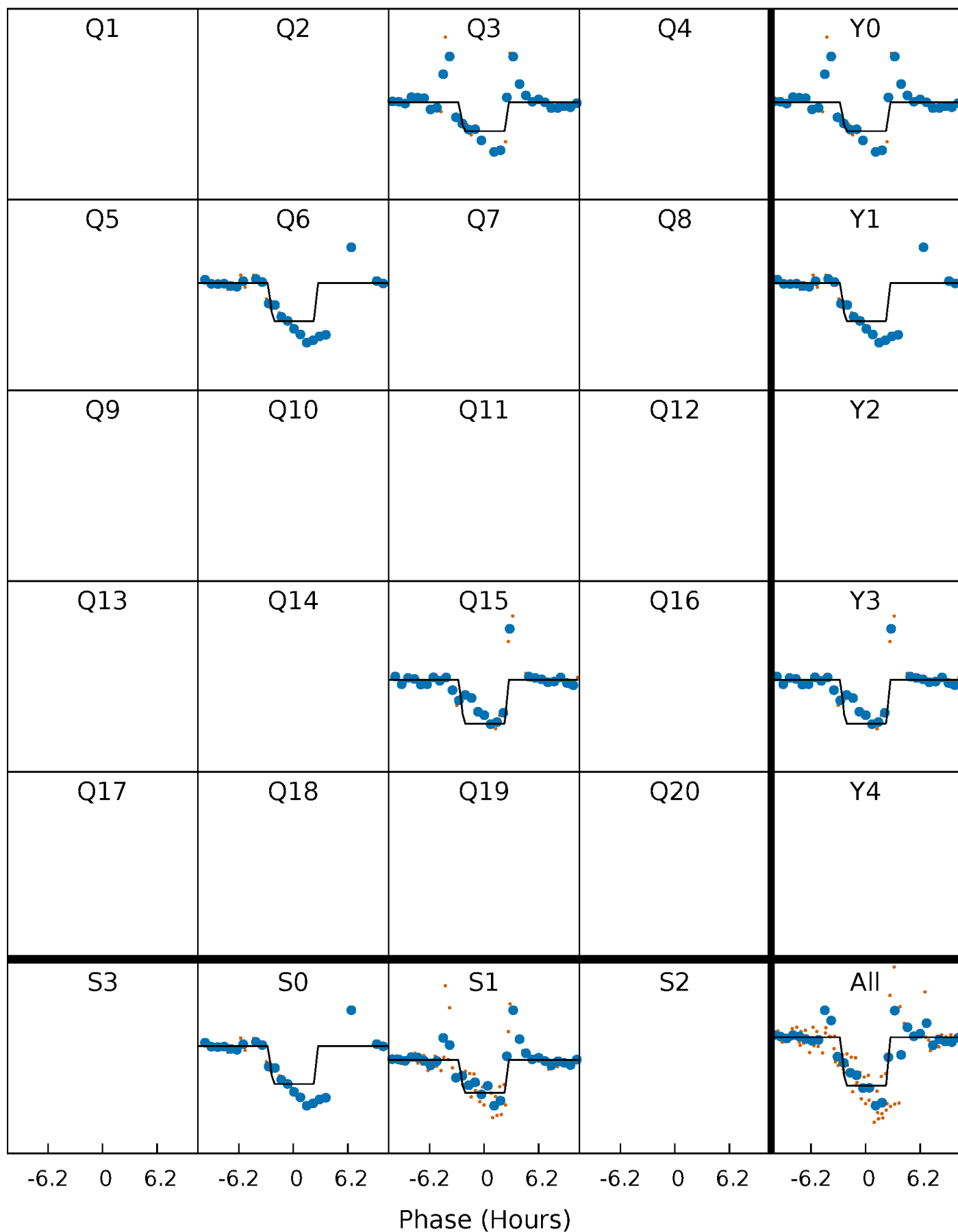
DV Quarter-Phased Transit Curves

TCE 006187639-03 P=294.061415 Days $T_0=282.323141$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

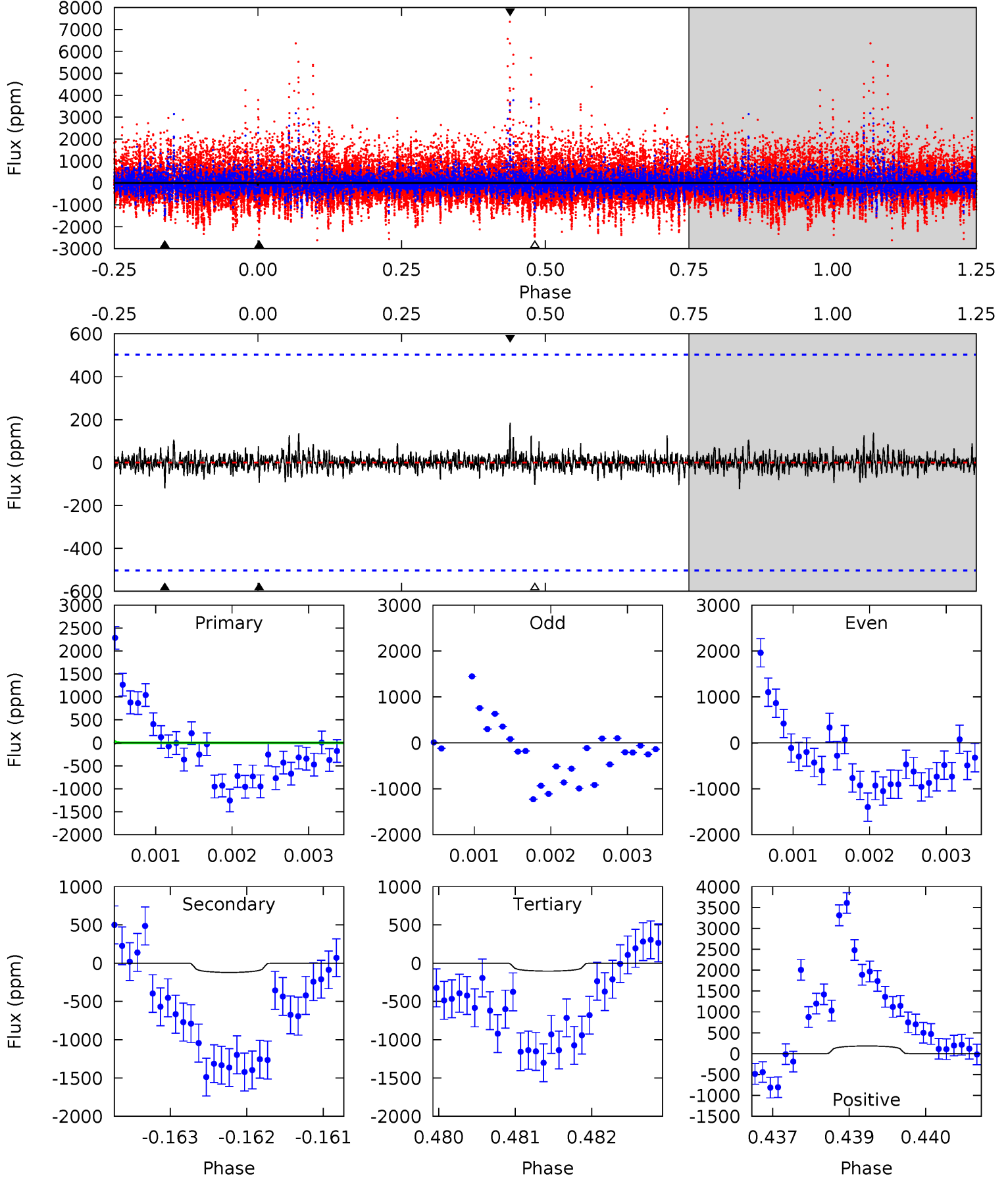
TCE 006187639-03 P=294.066173 Days $T_0=282.312117$ (BKJD)



DV Model-Shift Uniqueness Test

006187639-03, P = 294.061415 Days, E = 282.323141 Days

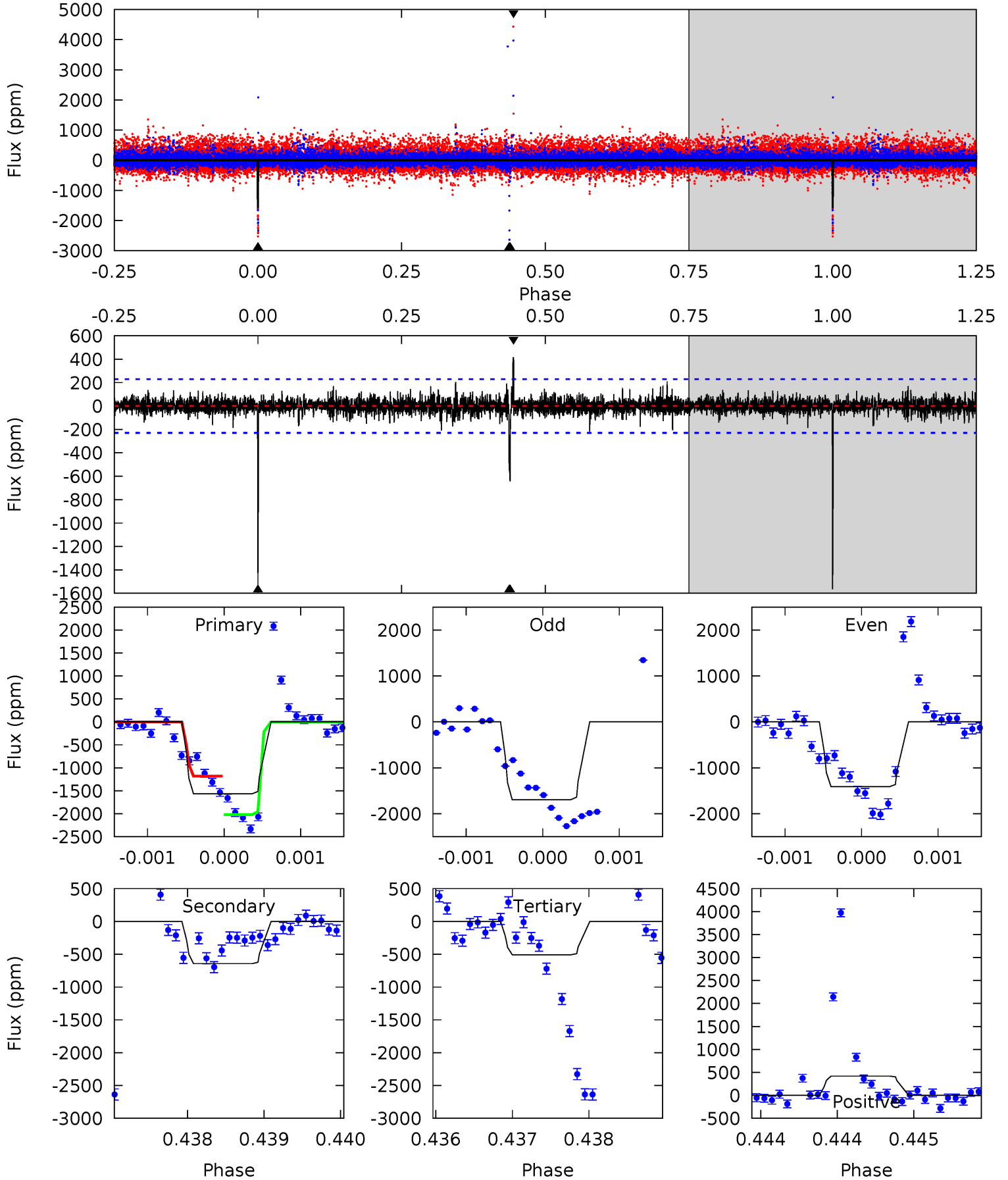
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.91	1.31	1.12	2.00	5.44	3.28	0.28	-0.22	-1.09	0.18	-0.69	0.01	0.44	0.60	0.85



Alt Model-Shift Uniqueness Test

006187639-03, P = 294.066173 Days, E = 282.312117 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.5	15.4	12.1	10.00	5.50	3.37	1.08	25.3	27.5	3.24	5.38	3.07	0.91	0.21	10.1



Stellar Parameters For KIC 006187639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5390^{+133}_{-147}	$3.512^{+1.192}_{-0.298}$	$-1.200^{+0.300}_{-0.300}$	$2.555^{+1.610}_{-1.967}$	$0.774^{+0.250}_{-0.135}$	$0.065^{+3.991}_{-0.053}$
	+2%/-3%	+34%/-8%	+25%/-25%	+63%/-77%	+32%/-17%	+6104%/-81%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006187639-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-121 ± 92	$8.19^{+6.59}_{-4.31}$	576^{+97}_{-124}	3515^{+828}_{-776}	560^{+2469}_{-483}
Alt.	-643 ± 42	$9.37^{+6.22}_{-4.62}$	579^{+85}_{-132}	4547^{+1045}_{-570}	2521^{+7408}_{-1566}

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 $A_{obs} \gg 1.0$

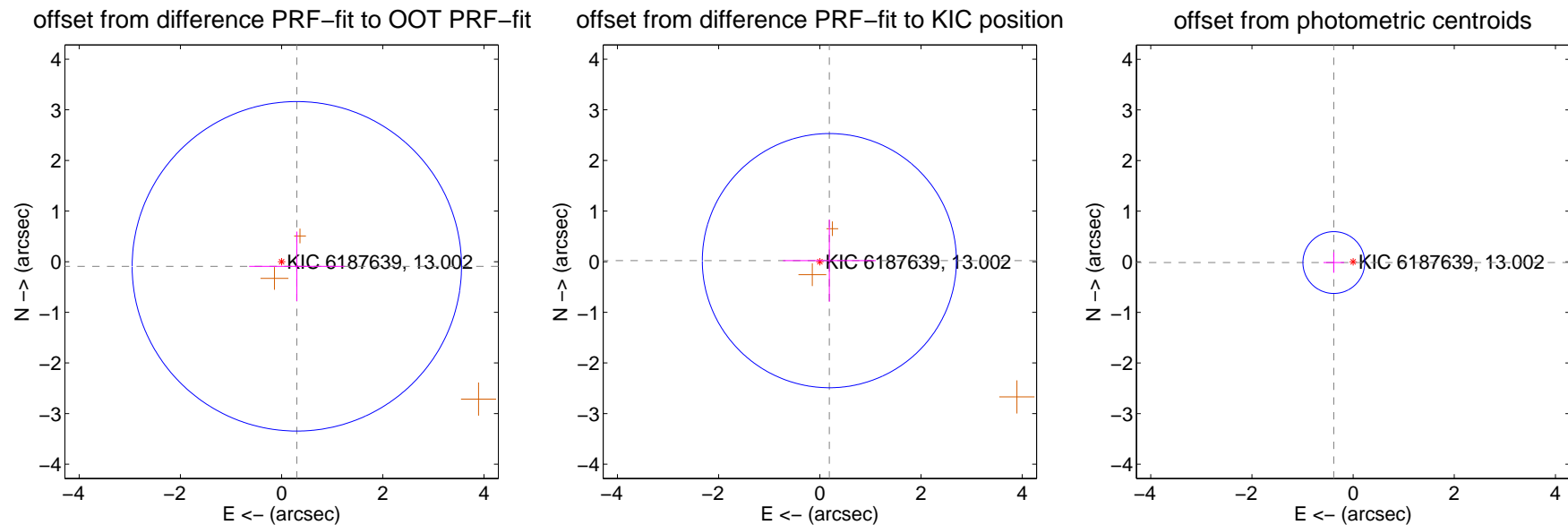
DV Centroid Data

Supplemental centroid analysis for 006187639-03. Kepler magnitude: 13.00. Transit SNR 8.91

There are 0 quarters with good PRF difference image offsets

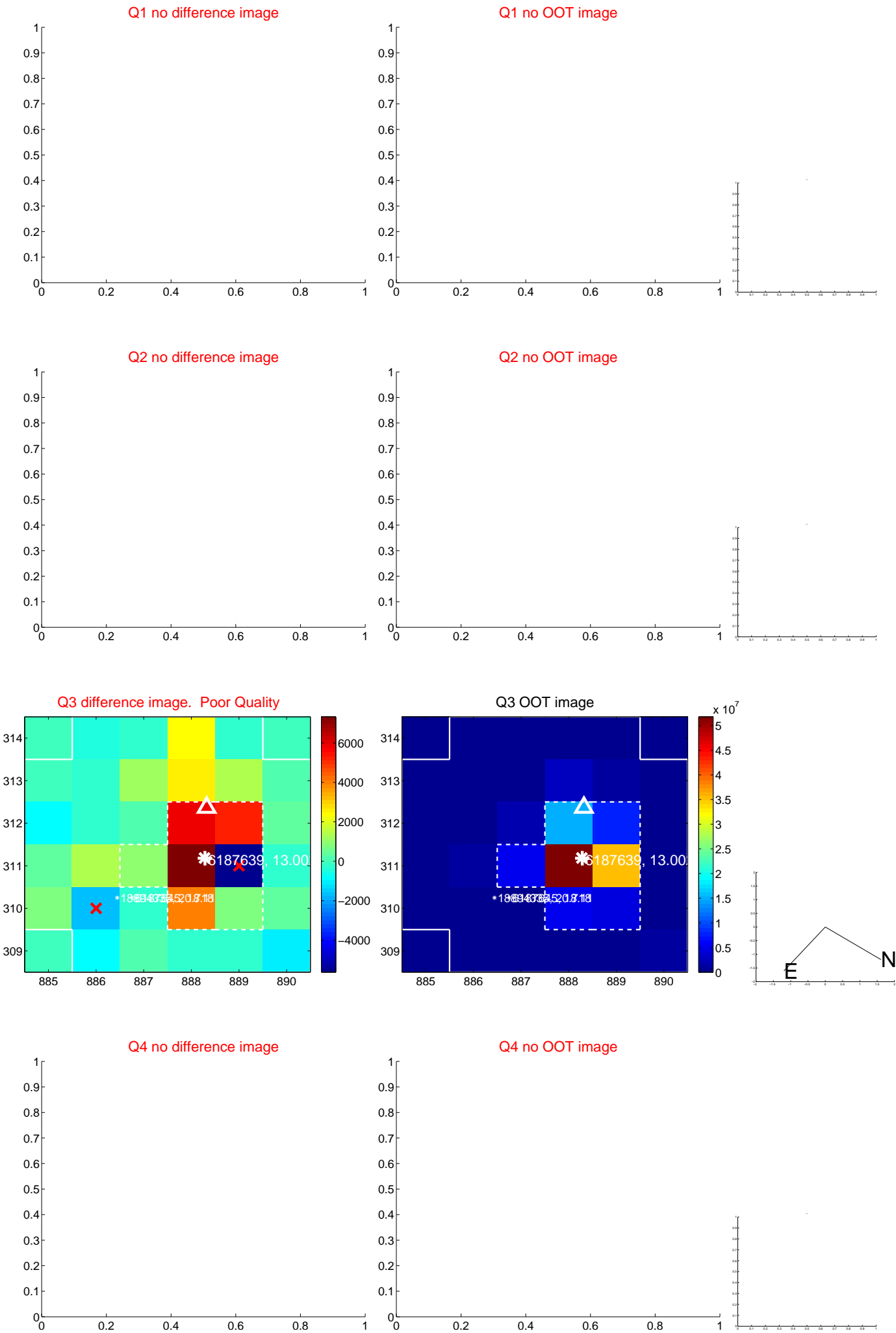
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.315 ± 1.085	0.29	-0.301 ± 0.942	-0.091 ± 0.687
PRF-fit source offset from KIC position	0.189 ± 0.837	0.23	-0.188 ± 0.917	0.021 ± 0.812
photometric centroid source offset	0.38 ± 0.20	1.87	0.38 ± 0.20	-0.02 ± 0.20

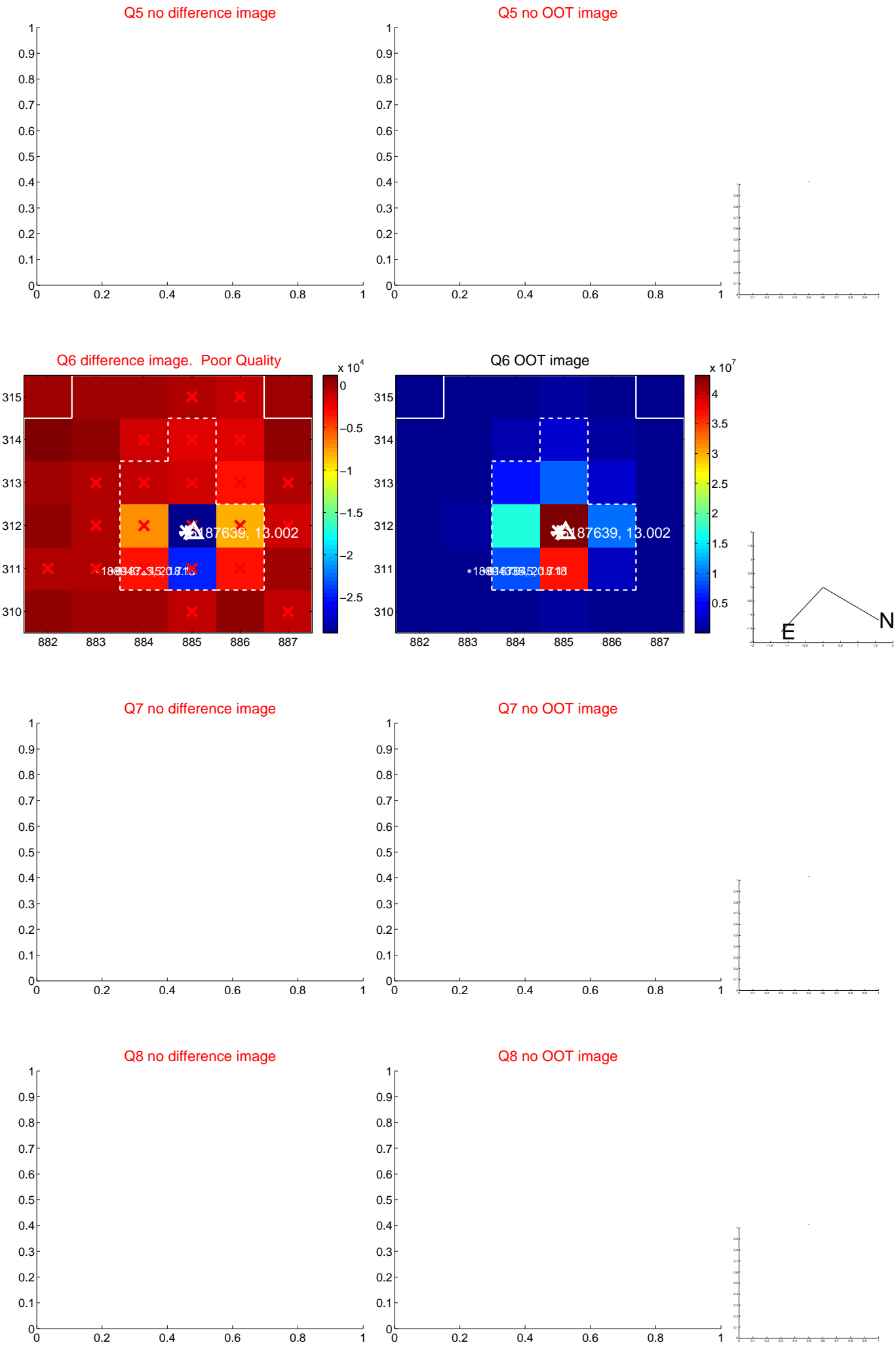


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



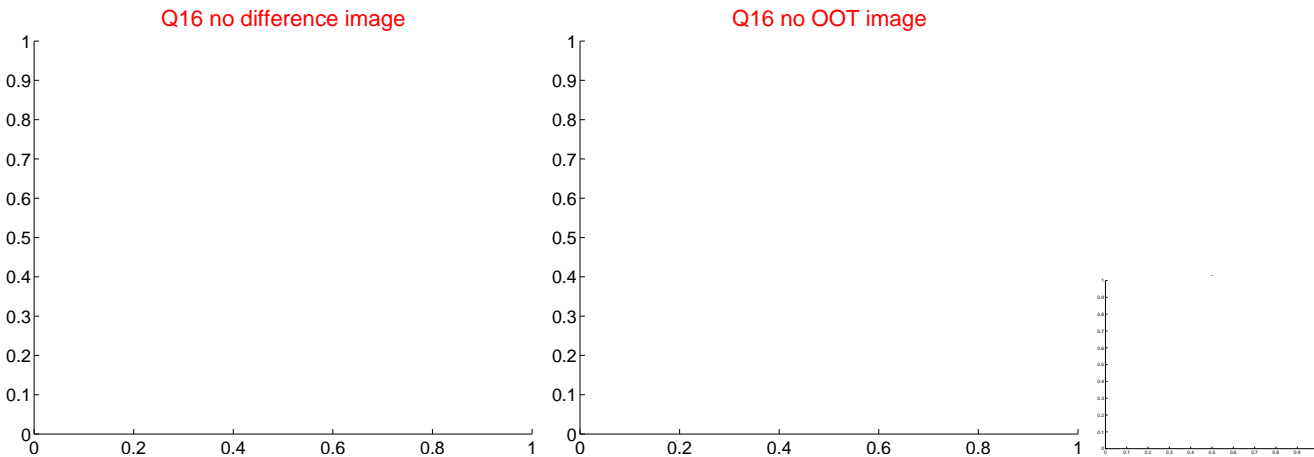
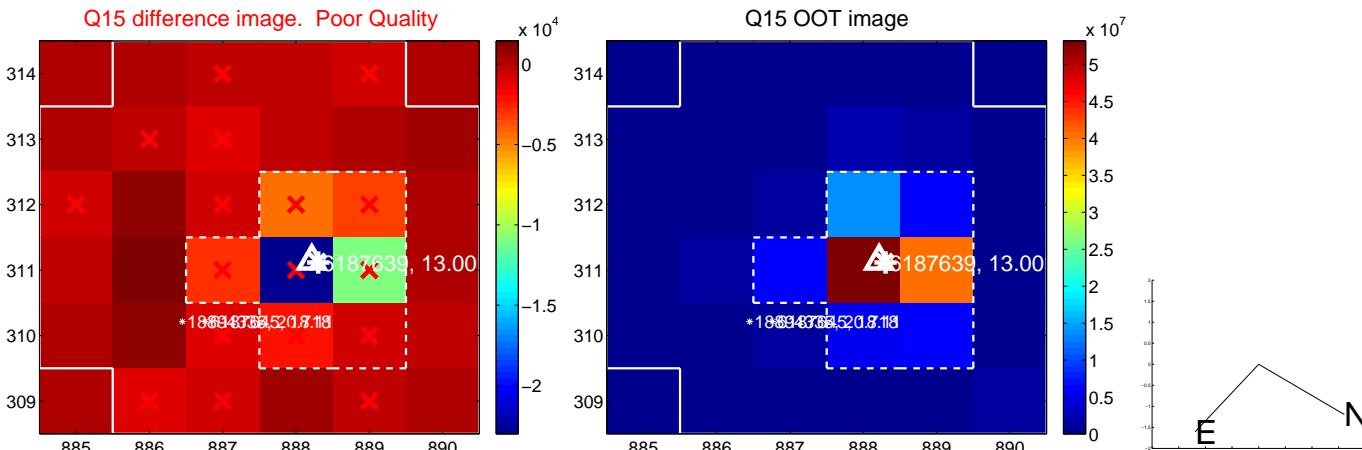
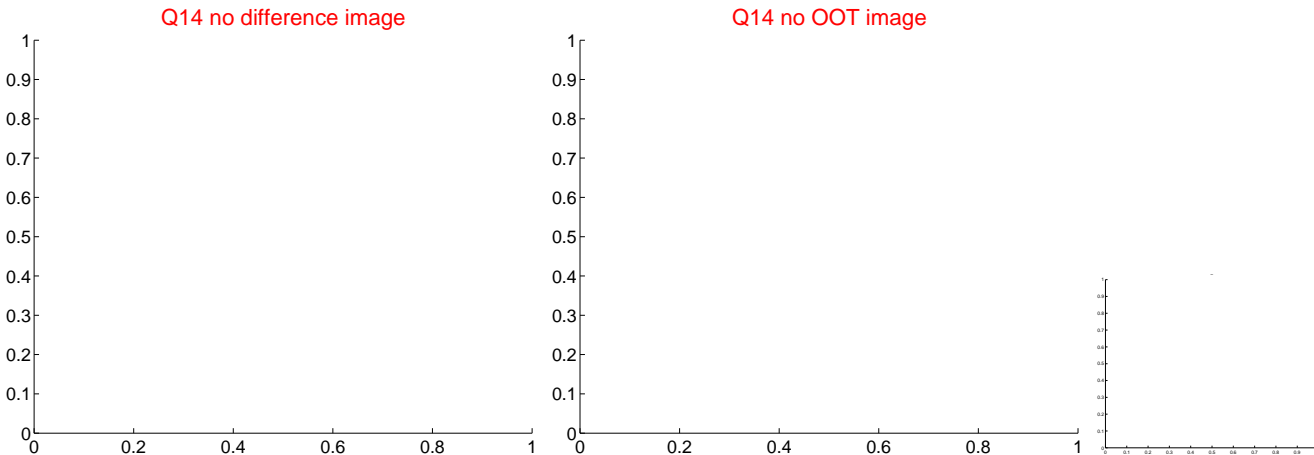
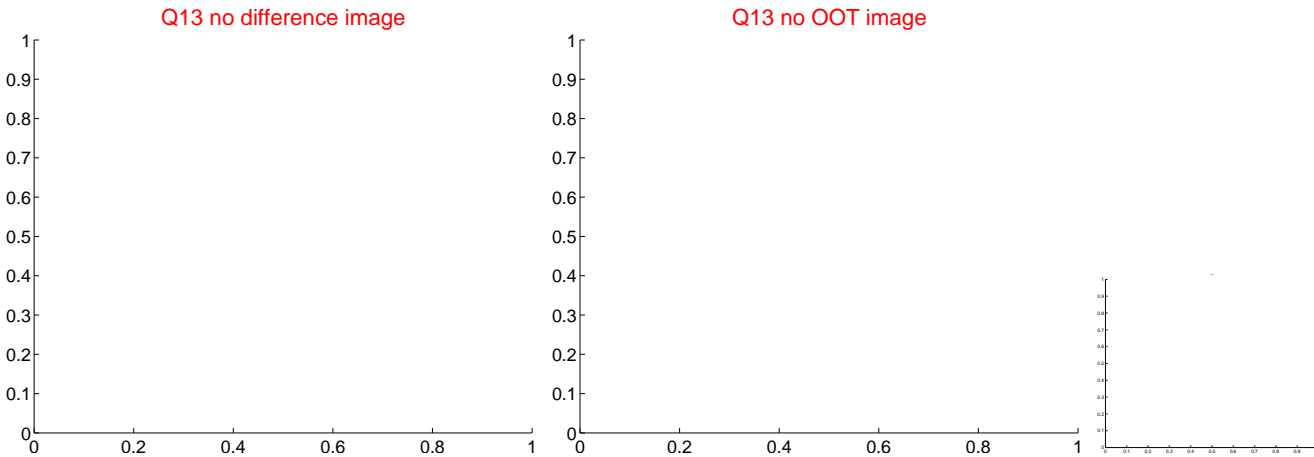
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



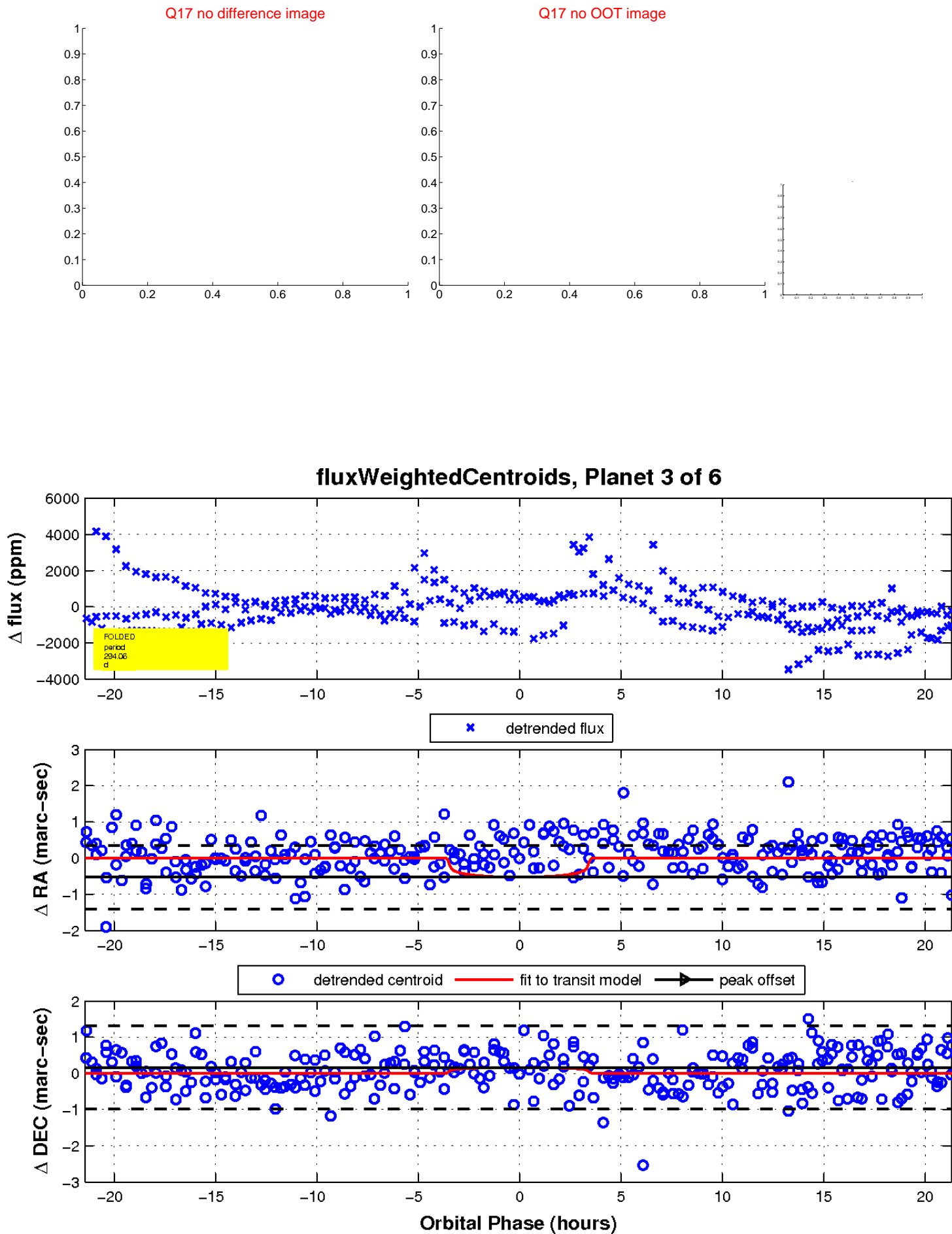
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

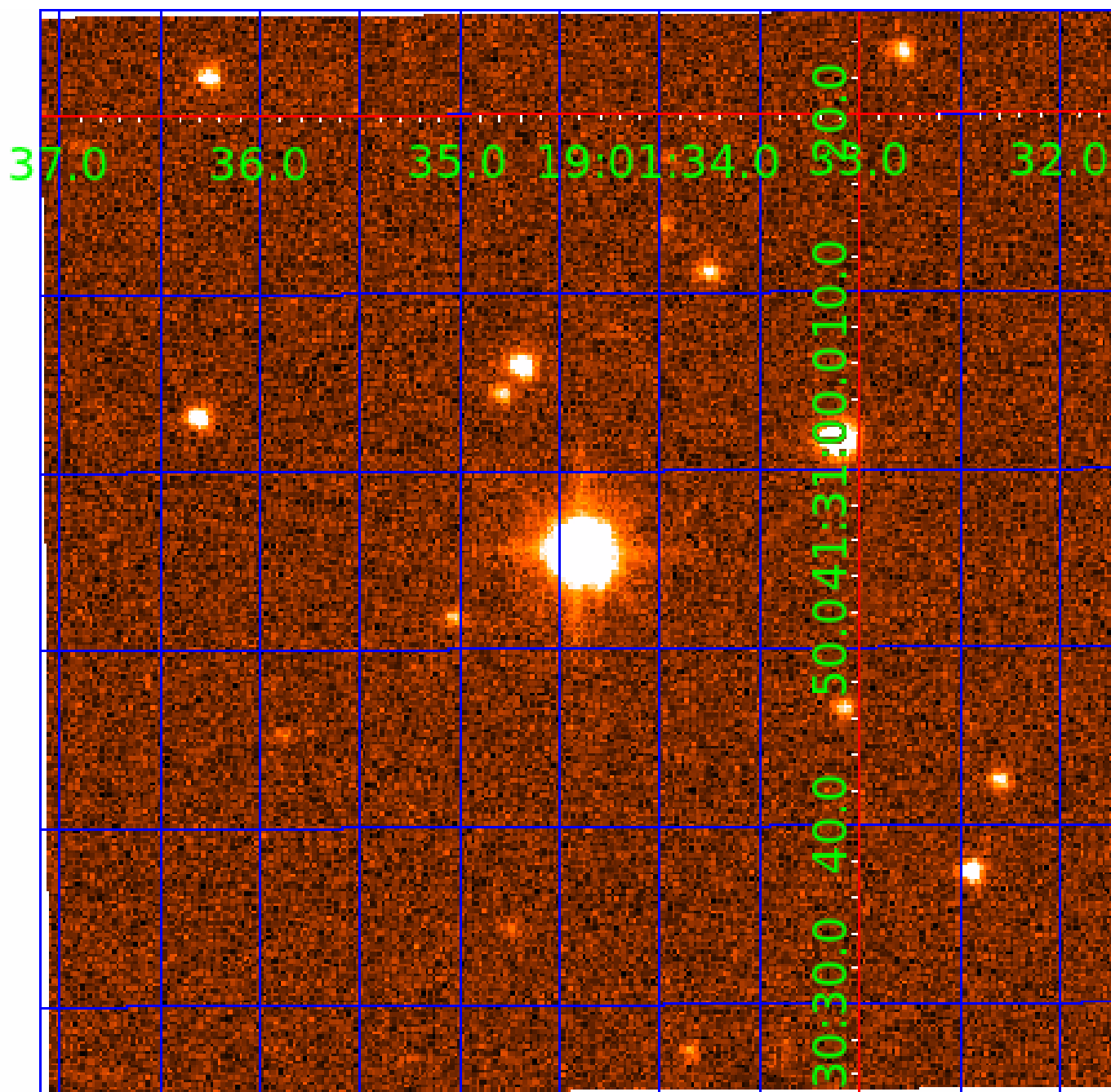


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006187639

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})
006187639-01	OBS	No	246.666335	211.268340	1137.9	25.415	17.7	6.2	2.56	5390	8.66	9.88
006187639-02	OBS	No	395.407418	178.755607	751.4	3.141	14.4	6.3	2.56	5390	7.32	5.27
006187639-03	OBS	No	294.061415	282.323140	1336.9	7.149	15.3	8.9	2.56	5390	9.33	7.82
006187639-04	OBS	No	486.010911	562.519012	882.6	4.548	12.0	5.8	2.56	5390	7.66	4.00
006187639-05	OBS	No	441.608210	153.172899	1011.0	5.184	12.9	6.6	2.56	5390	8.21	4.54
006187639-06	OBS	No	154.742468	246.912930	370.0	3.500	11.1	-1.0	2.56	5390	4.90	18.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006187639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
006187639-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

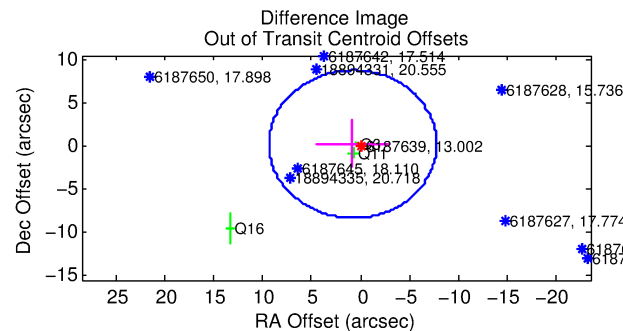
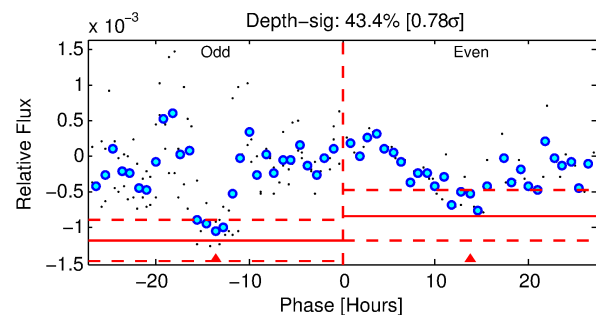
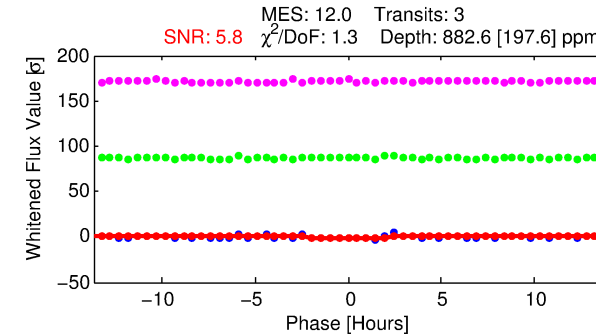
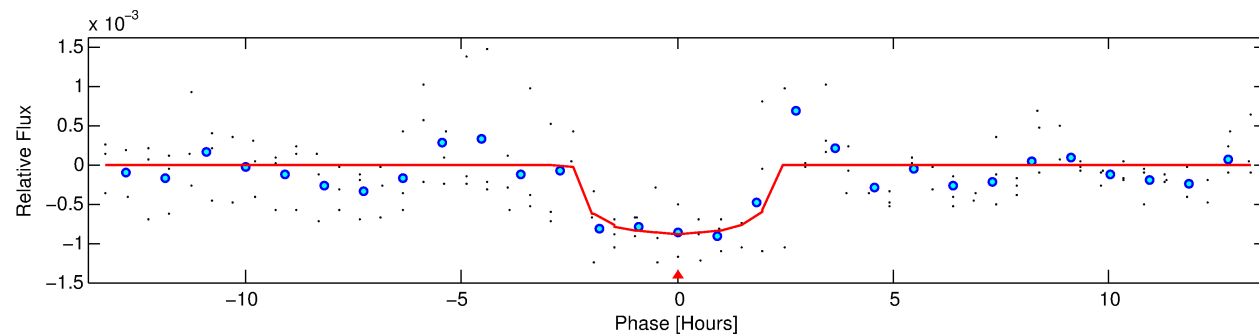
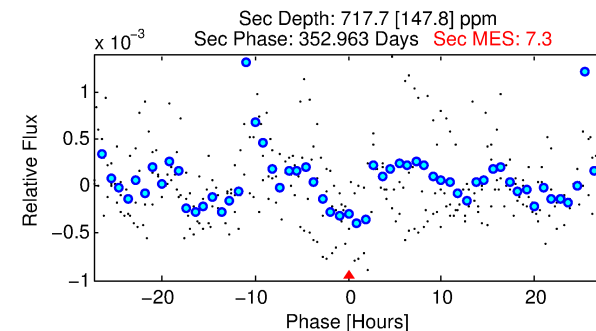
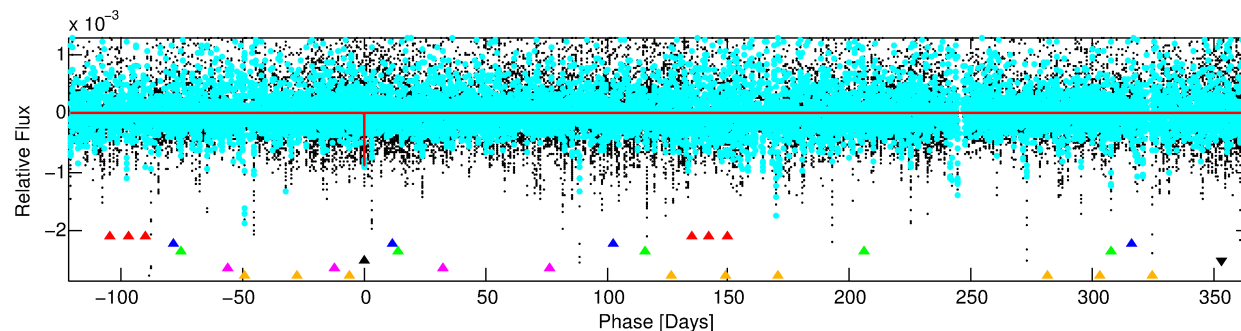
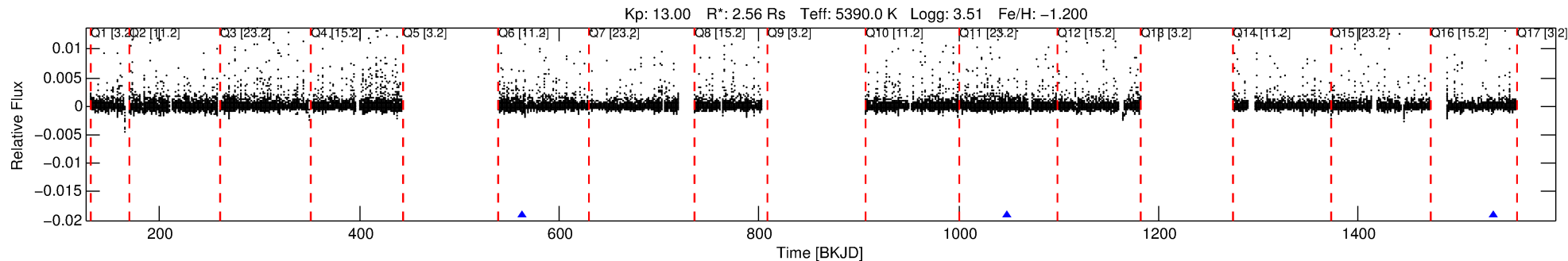
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006187639-04

No Significant Match Found

DV One-Page Summary

KIC: 6187639 Candidate: 4 of 6 Period: 486.011 d



DV Fit Results:

Period = 486.01091 [0.00656] d
Epoch = 562.5190 [0.0100] BKJD
Rp/R* = 0.0275 [0.0307]
a/R* = 793.23 [4073.54]
b = 0.33 [13.69]
Seff = 4.00 [7.61]
Teq = 361 [172] K
Rp = 7.66 [10.39] Re
a = 1.1110 [1.1655] AU
Ag = 8314.88 [24445.41] [0.34σ]
Teff = 5324 [2989] K [1.66σ]

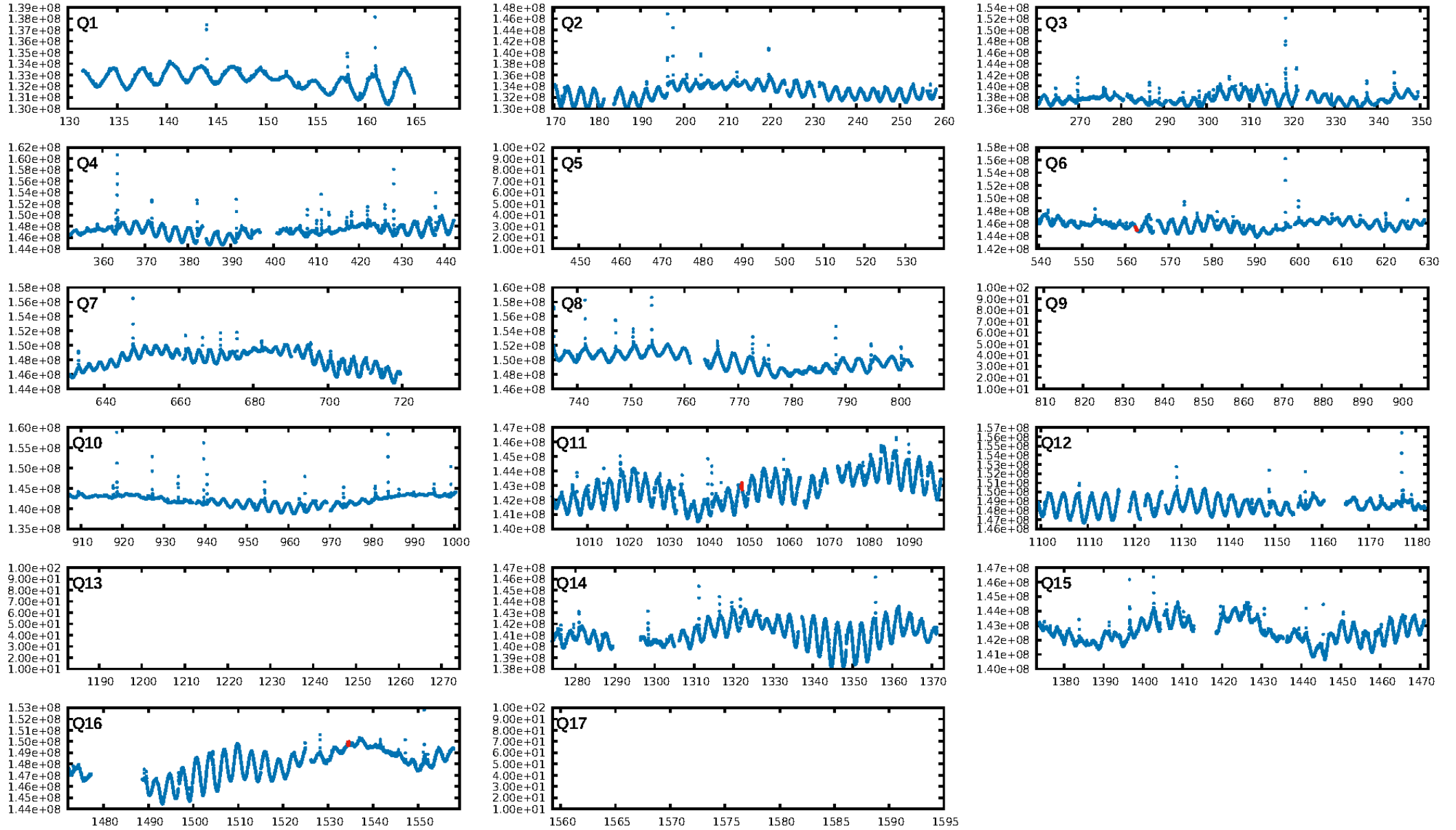
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [154.54σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 79.5%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.865
Centroid-sig: 54.3%
Centroid-so: 0.342 arcsec [0.89σ]
OotOffset-rm: 0.832 arcsec [0.29σ]
KicOffset-rm: 0.987 arcsec [0.38σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

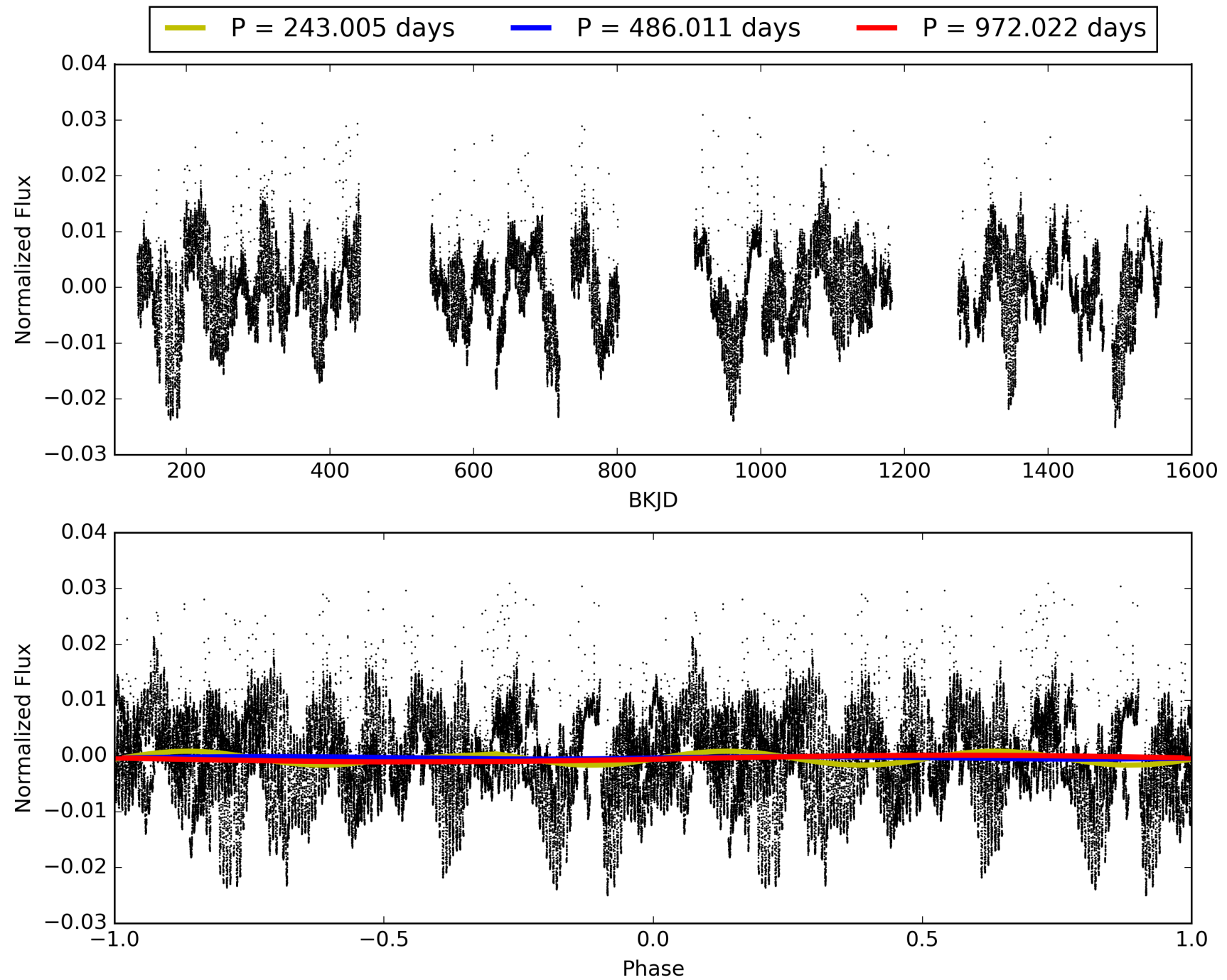
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:34:49 Z

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

TCE 006187639-04, PDC Light Curves

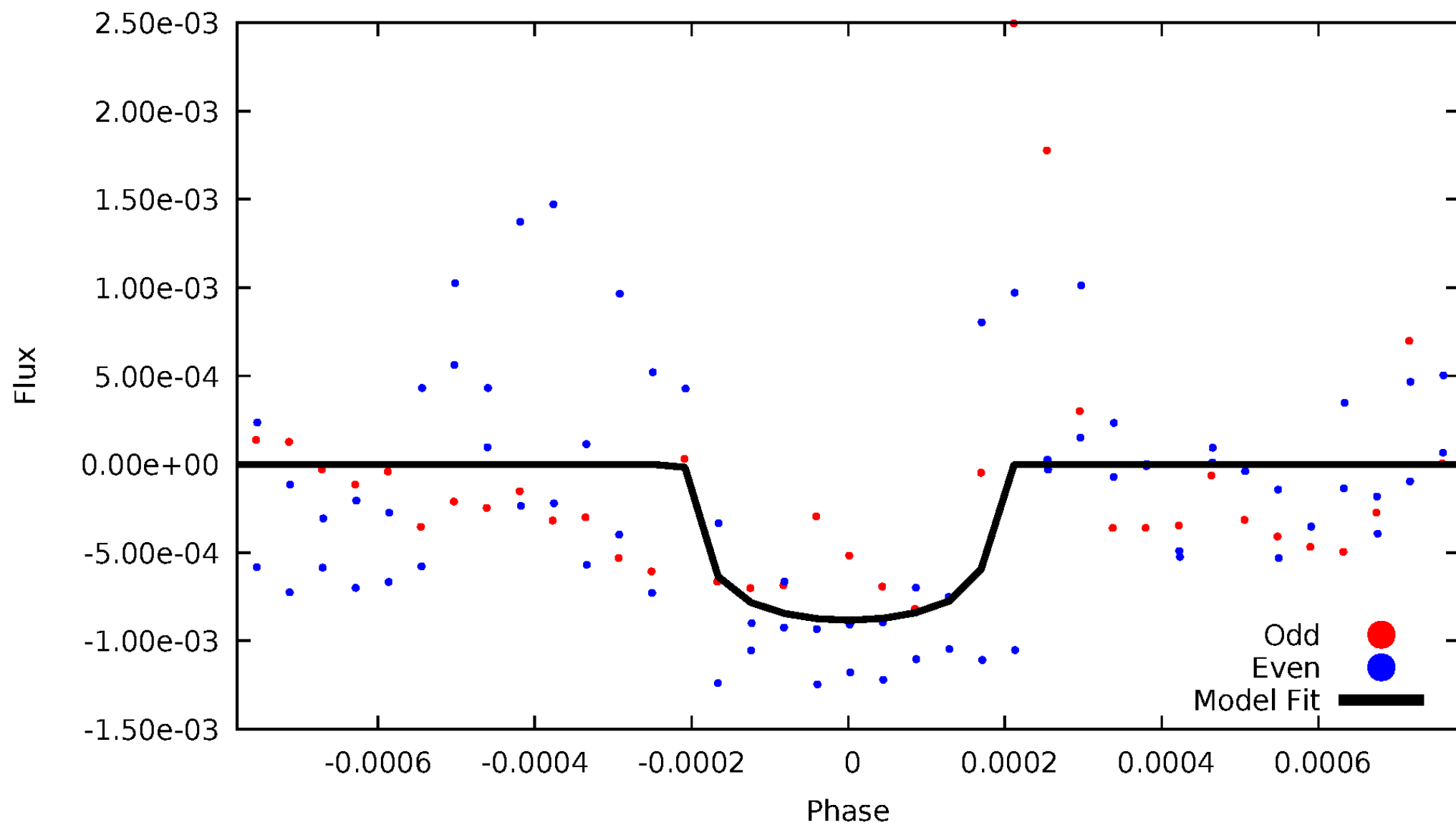


TCE 006187639-04



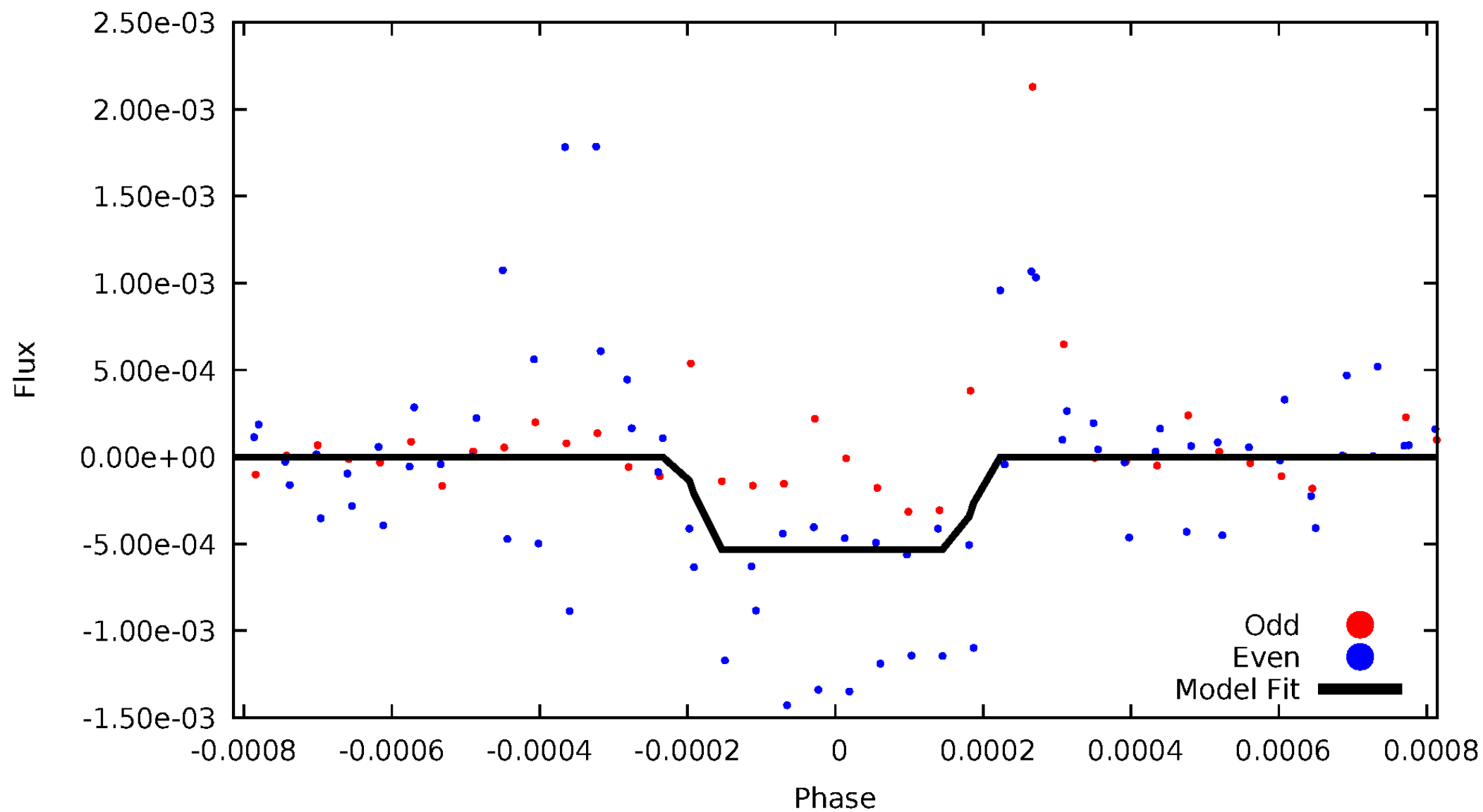
DV Odd/Even

TCE 006187639-04



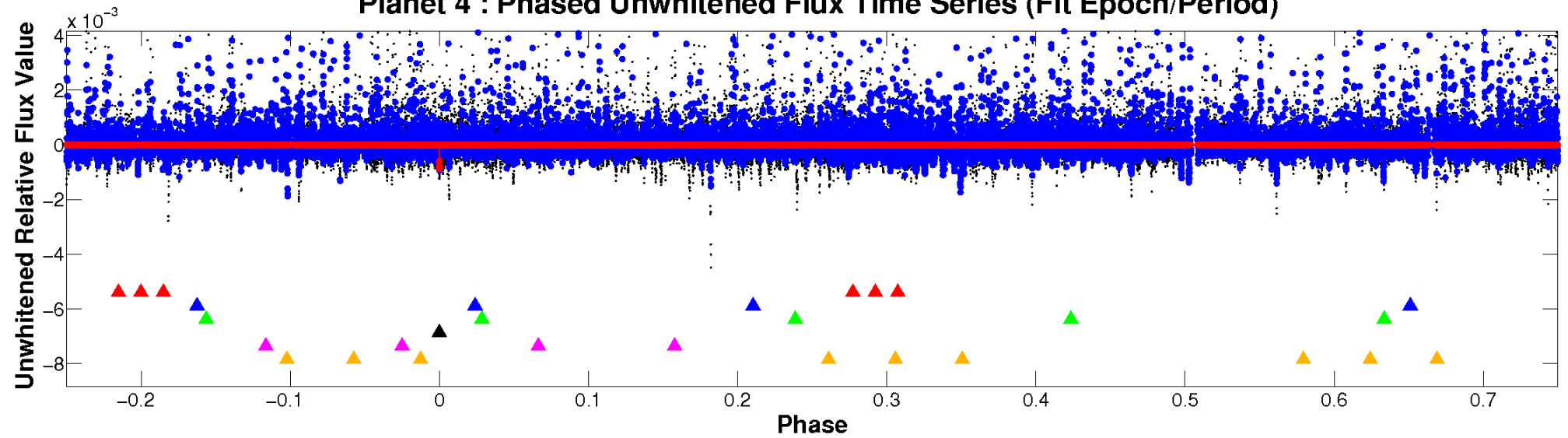
ALT Odd/Even

TCE 006187639-04

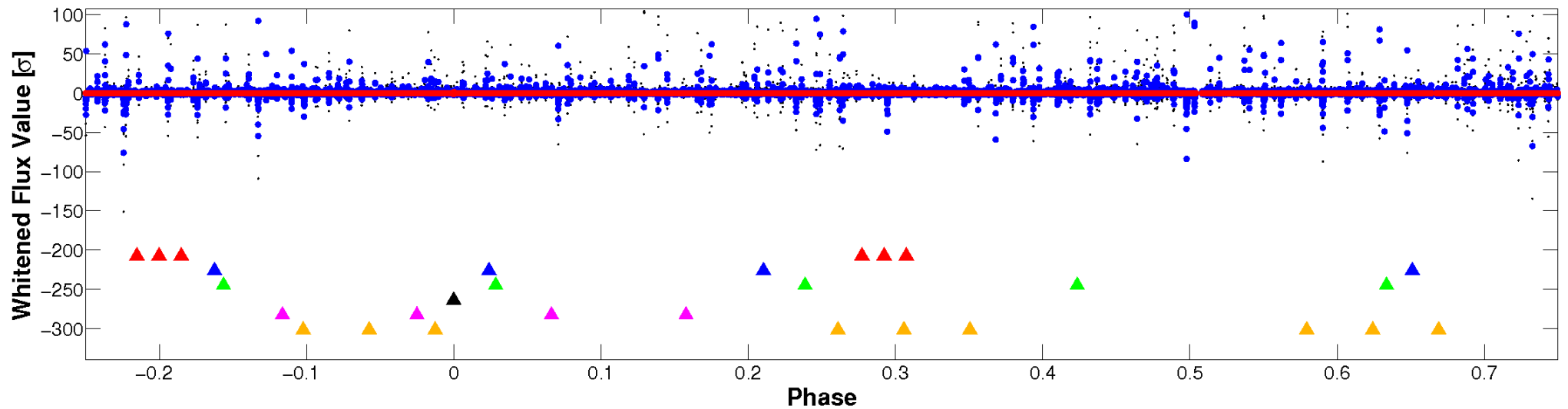


Non-Whitened Vs. Whitened Light Curve

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

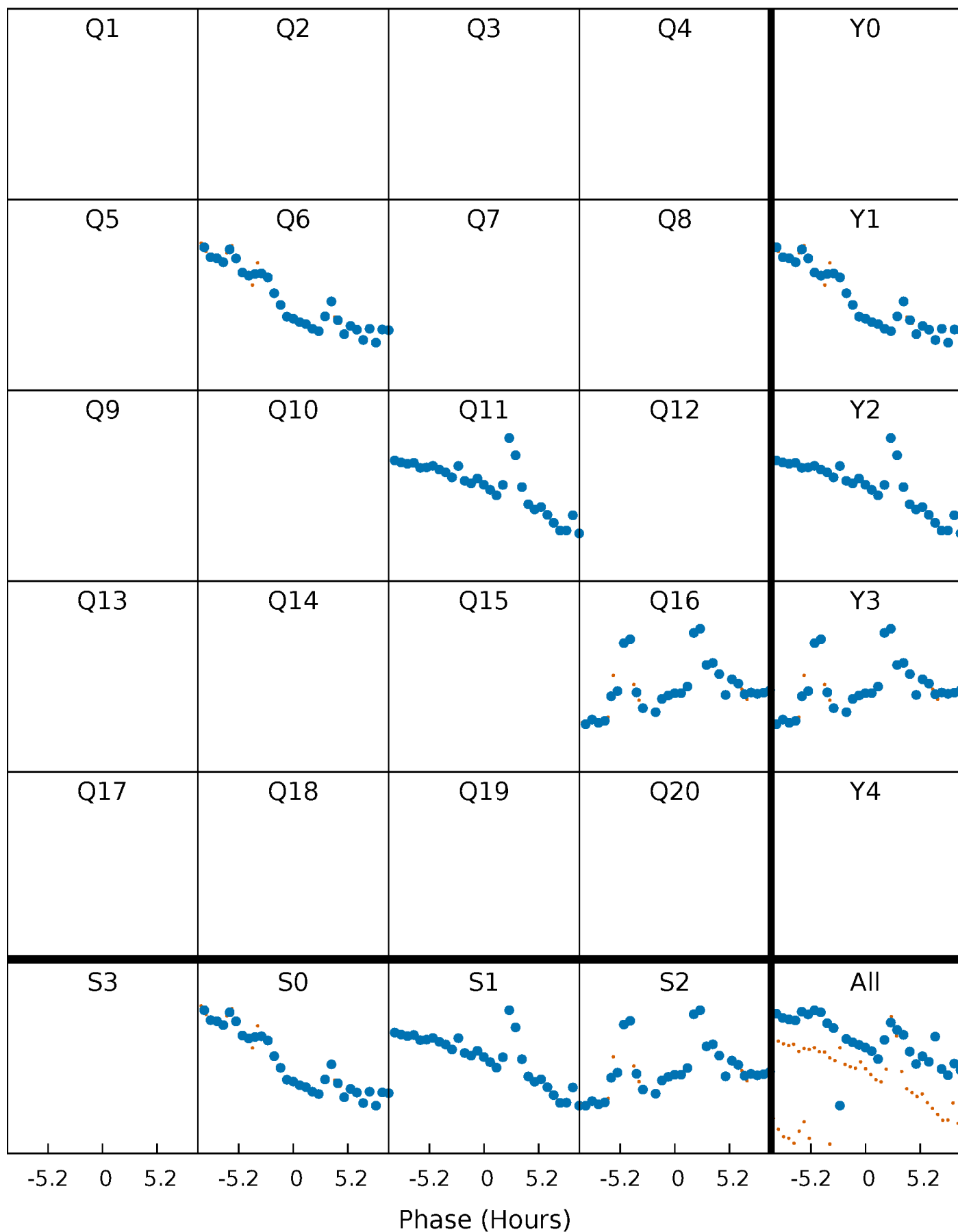


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



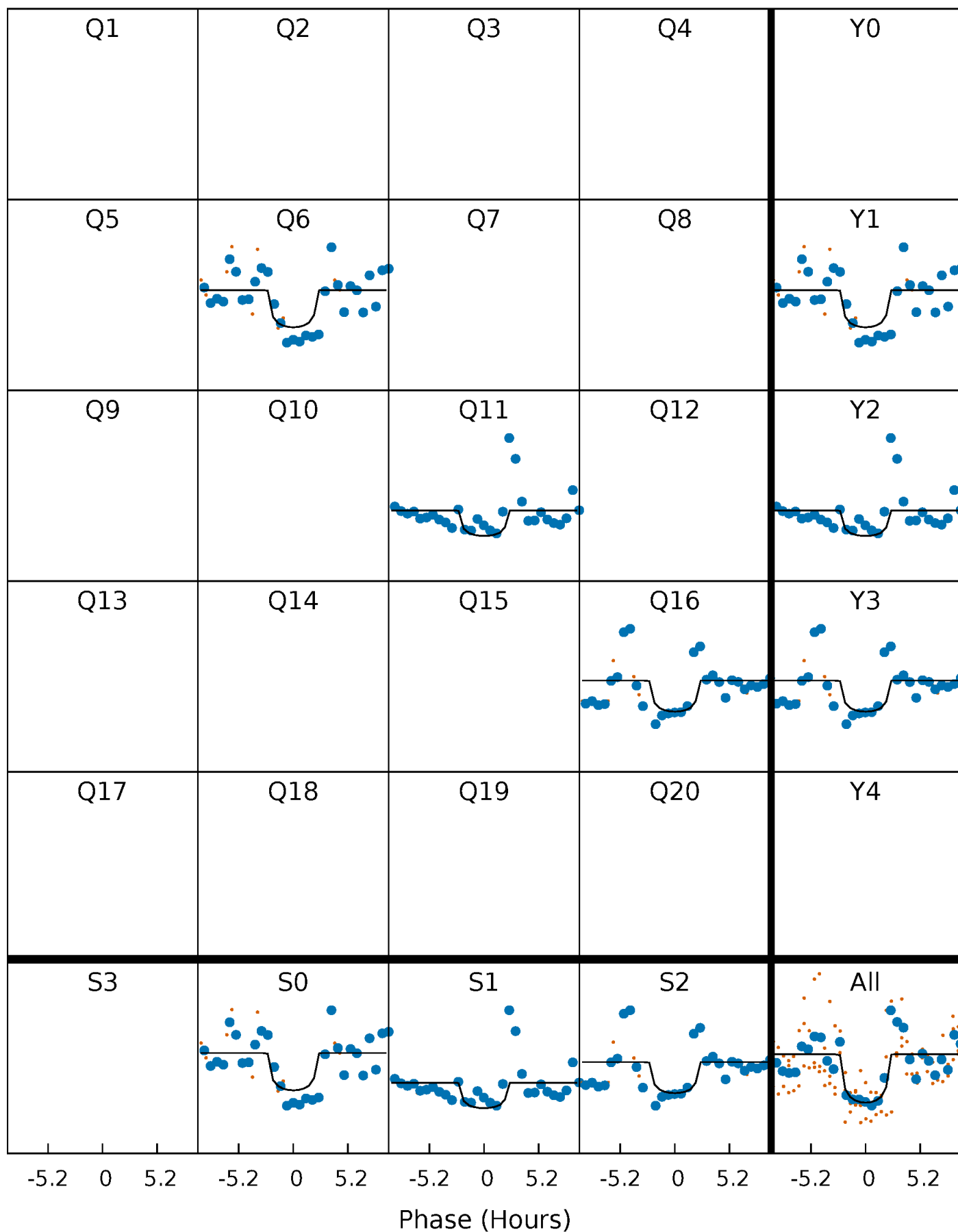
PDC Quarter-Phased Transit Curves

TCE 006187639-04 P=486.010911 Days $T_0=562.519012$ (BKJD)



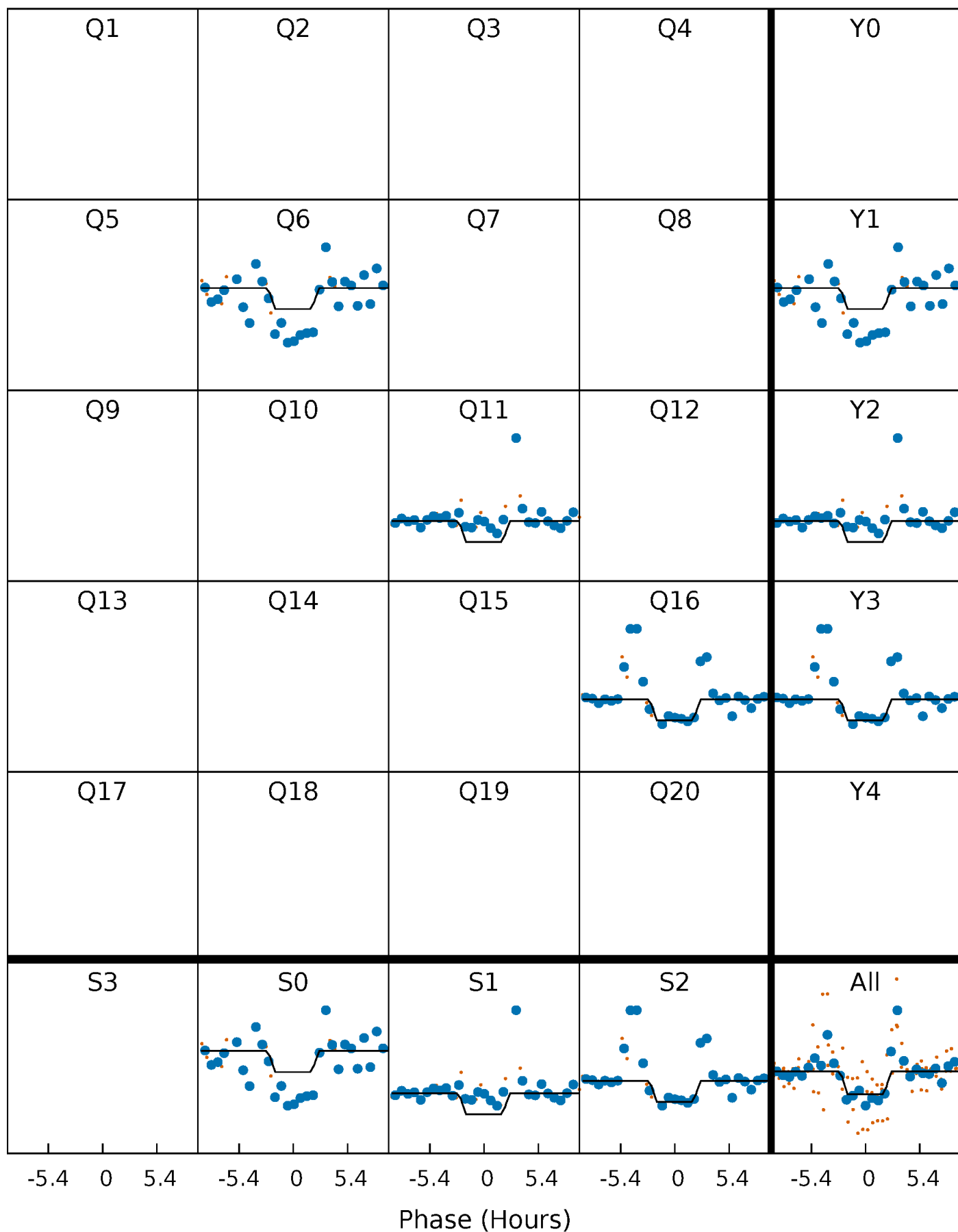
DV Quarter-Phased Transit Curves

TCE 006187639-04 P=486.010911 Days $T_0=562.519012$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

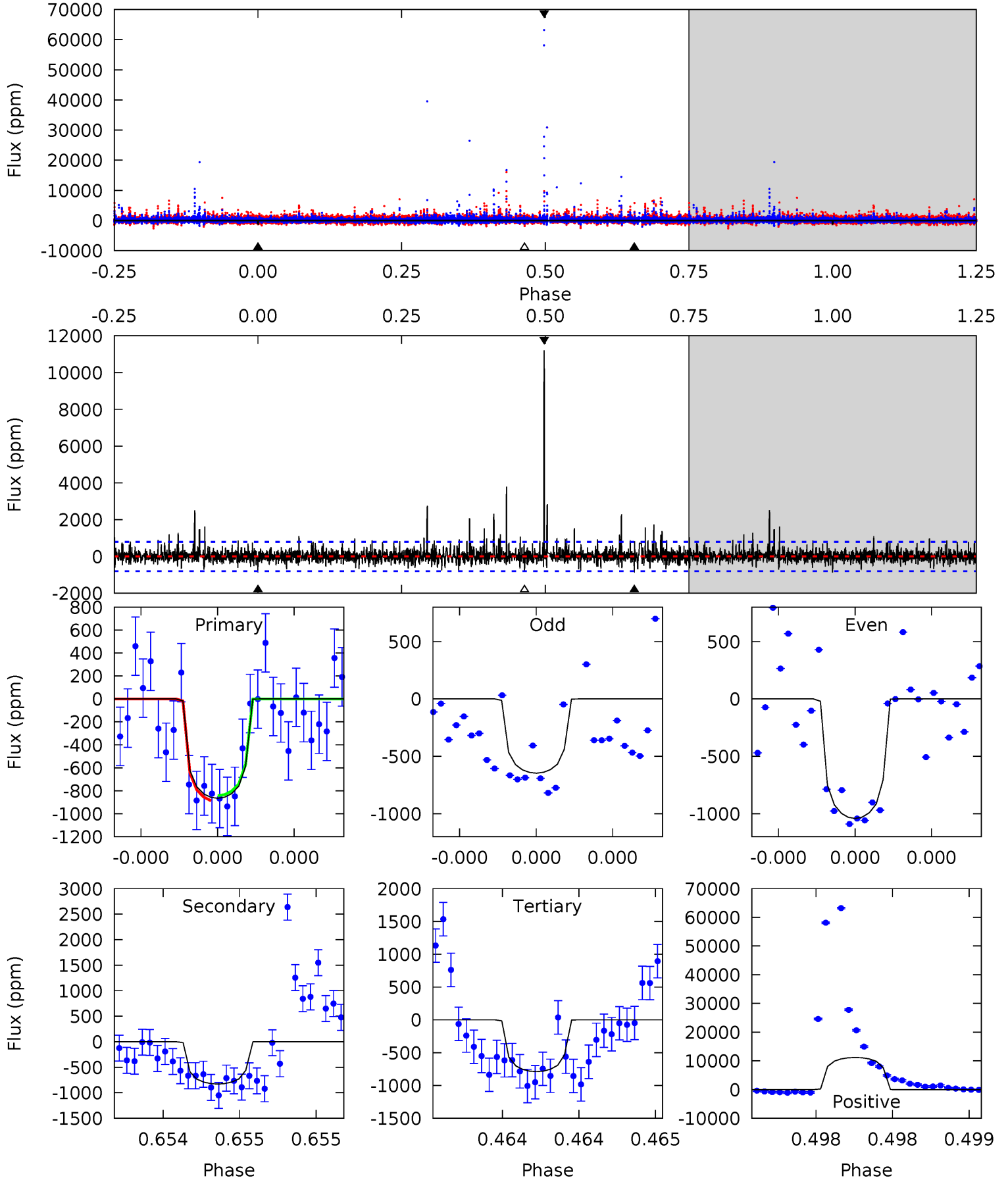
TCE 006187639-04 P=485.991791 Days $T_0=562.531502$ (BKJD)



DV Model-Shift Uniqueness Test

006187639-04, P = 486.010911 Days, E = 76.508101 Days

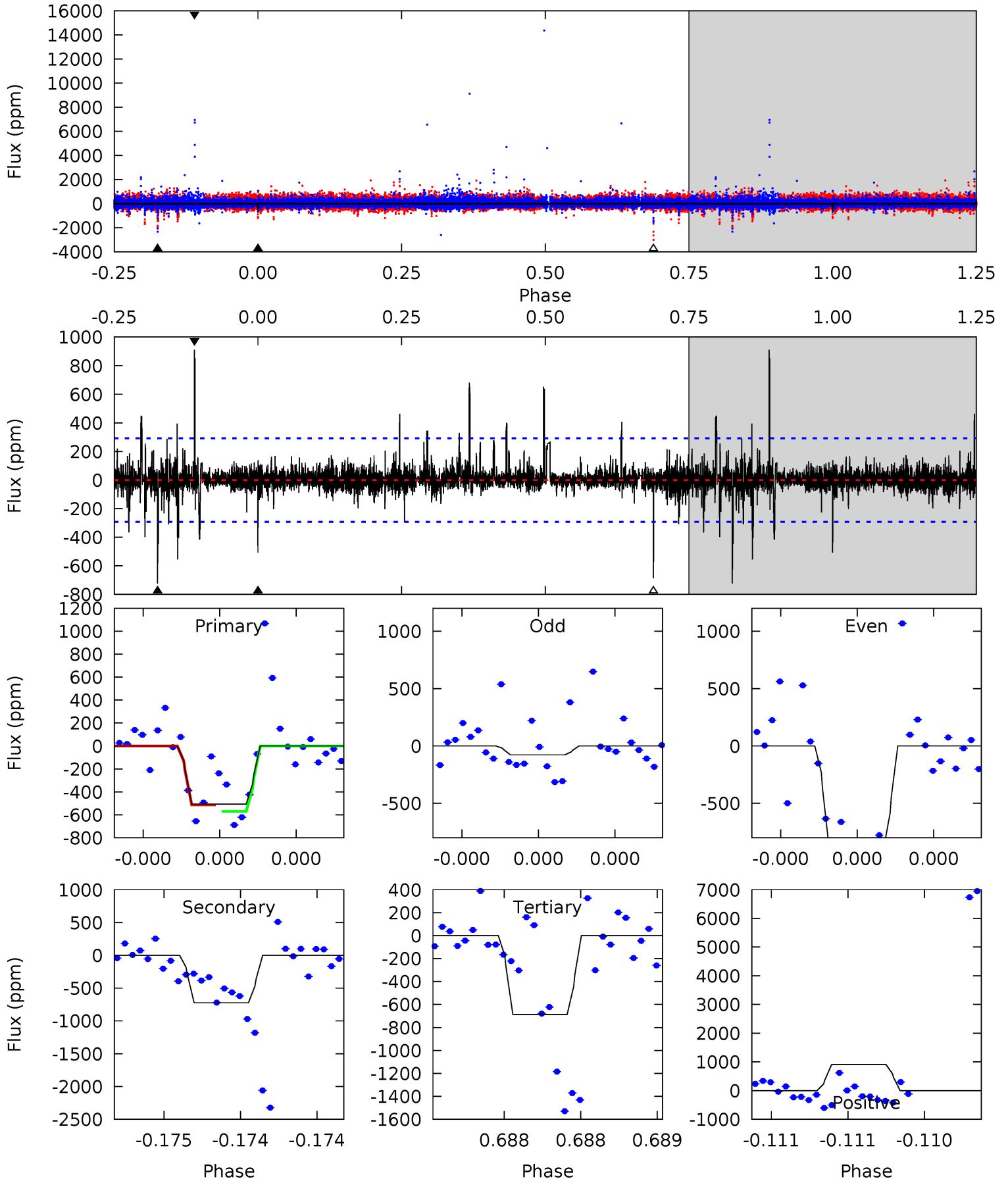
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.03	5.78	5.50	78.0	5.59	3.50	2.55	0.53	-72.0	0.28	-72.3	0.72	1.01	0.93	0.16



Alt Model-Shift Uniqueness Test

006187639-04, P = 485.991791 Days, E = 76.539711 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.73	13.9	13.2	17.4	5.60	3.53	1.24	-3.42	-7.70	0.70	-3.57	6.52	1.19	0.56	0.56



Stellar Parameters For KIC 006187639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5390^{+133}_{-147}	$3.512^{+1.192}_{-0.298}$	$-1.200^{+0.300}_{-0.300}$	$2.555^{+1.610}_{-1.967}$	$0.774^{+0.250}_{-0.135}$	$0.065^{+3.991}_{-0.053}$
	+2%/-3%	+34%/-8%	+25%/-25%	+63%/-77%	+32%/-17%	+6104%/-81%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006187639-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-829 \pm 143	$8.33^{+8.73}_{-5.85}$	480^{+80}_{-112}	4939^{+3467}_{-988}	8404^{+88077}_{-6359}
Alt.	-723 \pm 52	$7.55^{+8.43}_{-5.22}$	481^{+77}_{-104}	4916^{+4146}_{-975}	8764^{+87093}_{-6776}

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

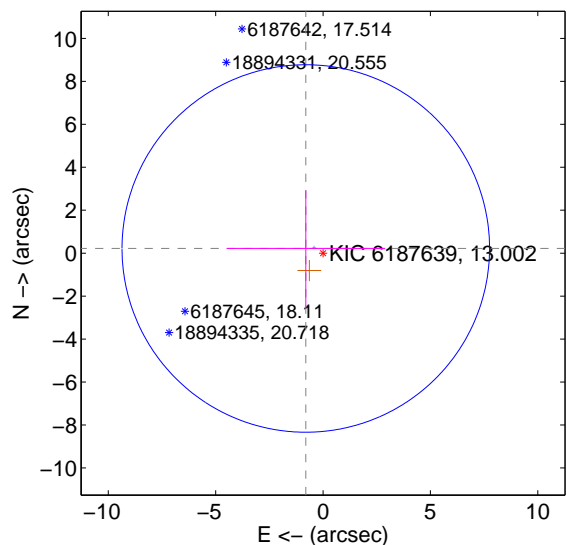
Supplemental centroid analysis for 006187639-04. Kepler magnitude: 13.00. Transit SNR 5.81

There are 1 quarters with good PRF difference image offsets

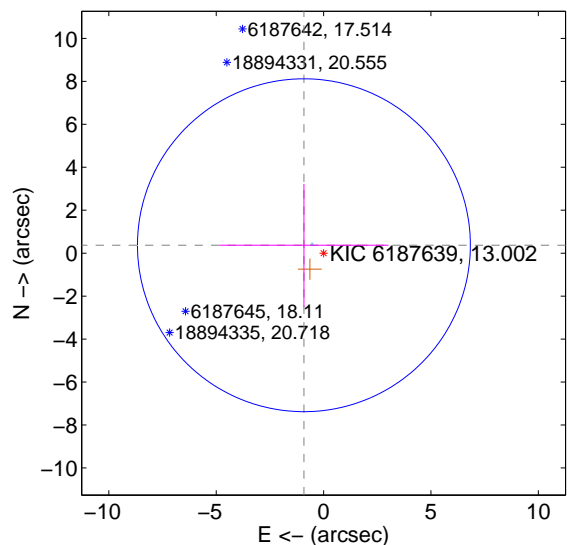
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.832 ± 2.851	0.29	0.803 ± 3.690	0.219 ± 2.704
PRF-fit source offset from KIC position	0.987 ± 2.583	0.38	0.915 ± 3.933	0.369 ± 2.861
photometric centroid source offset	0.34 ± 0.38	0.89	-0.09 ± 0.38	0.33 ± 0.38

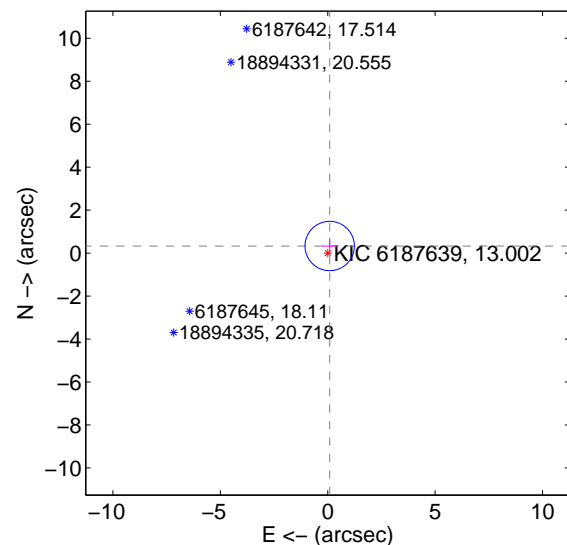
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

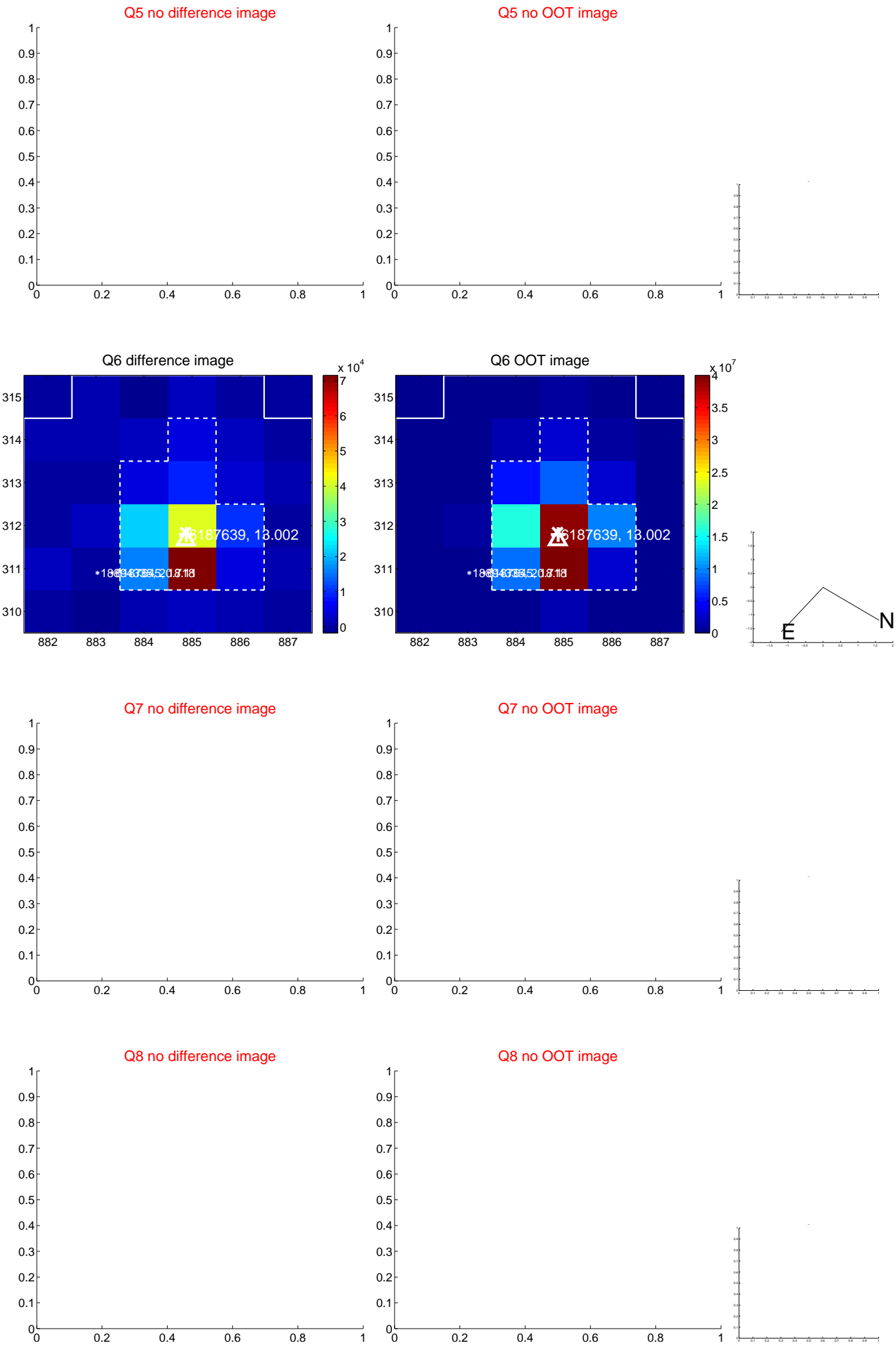


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

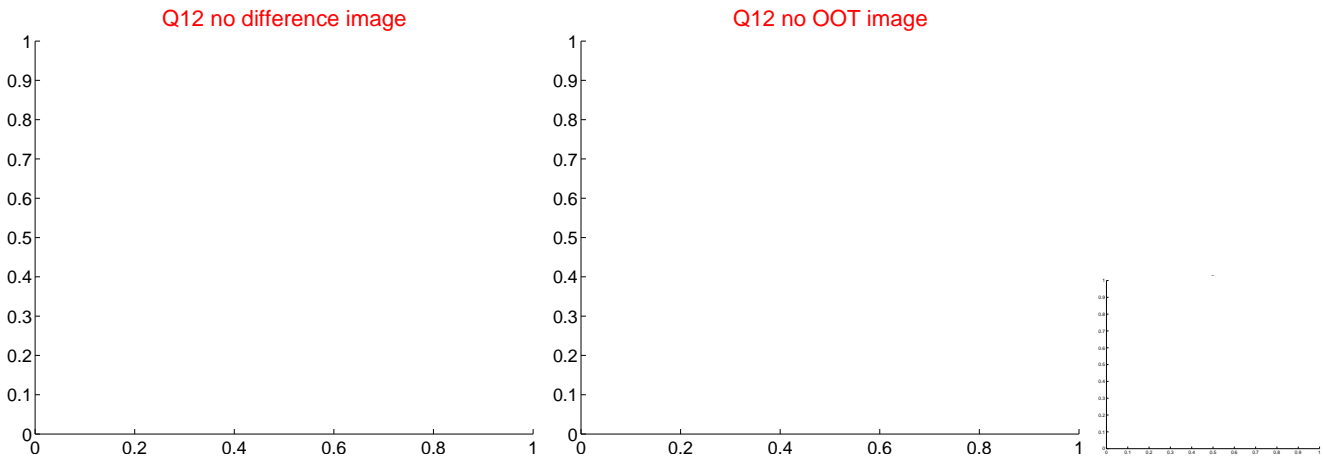
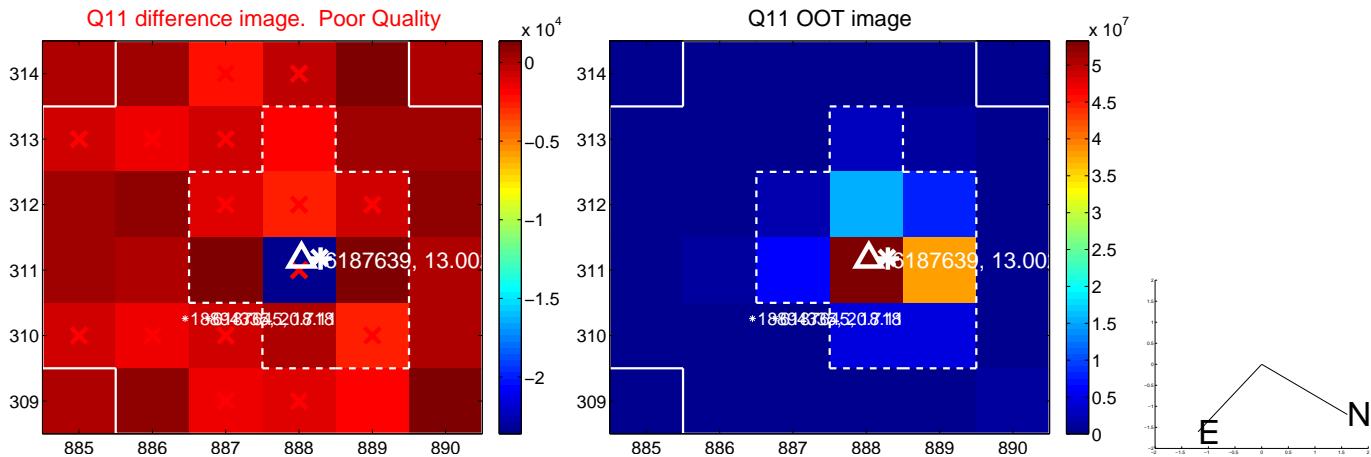
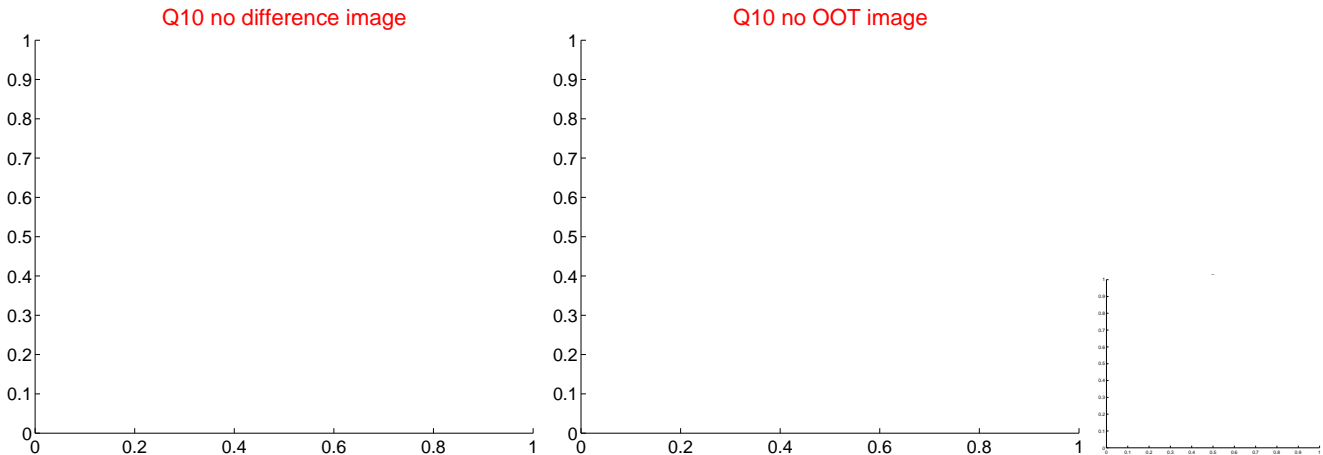
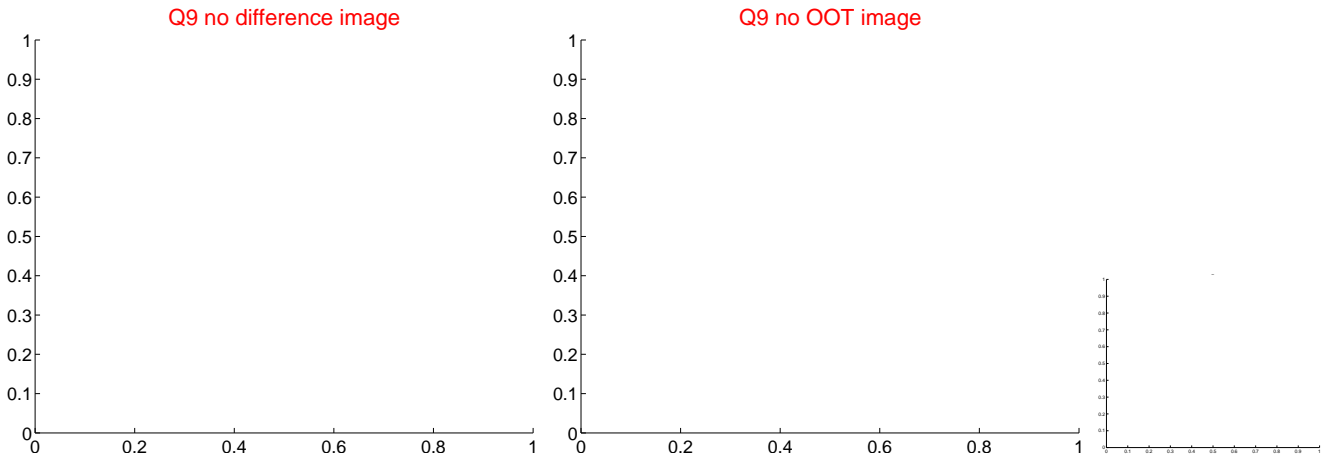
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



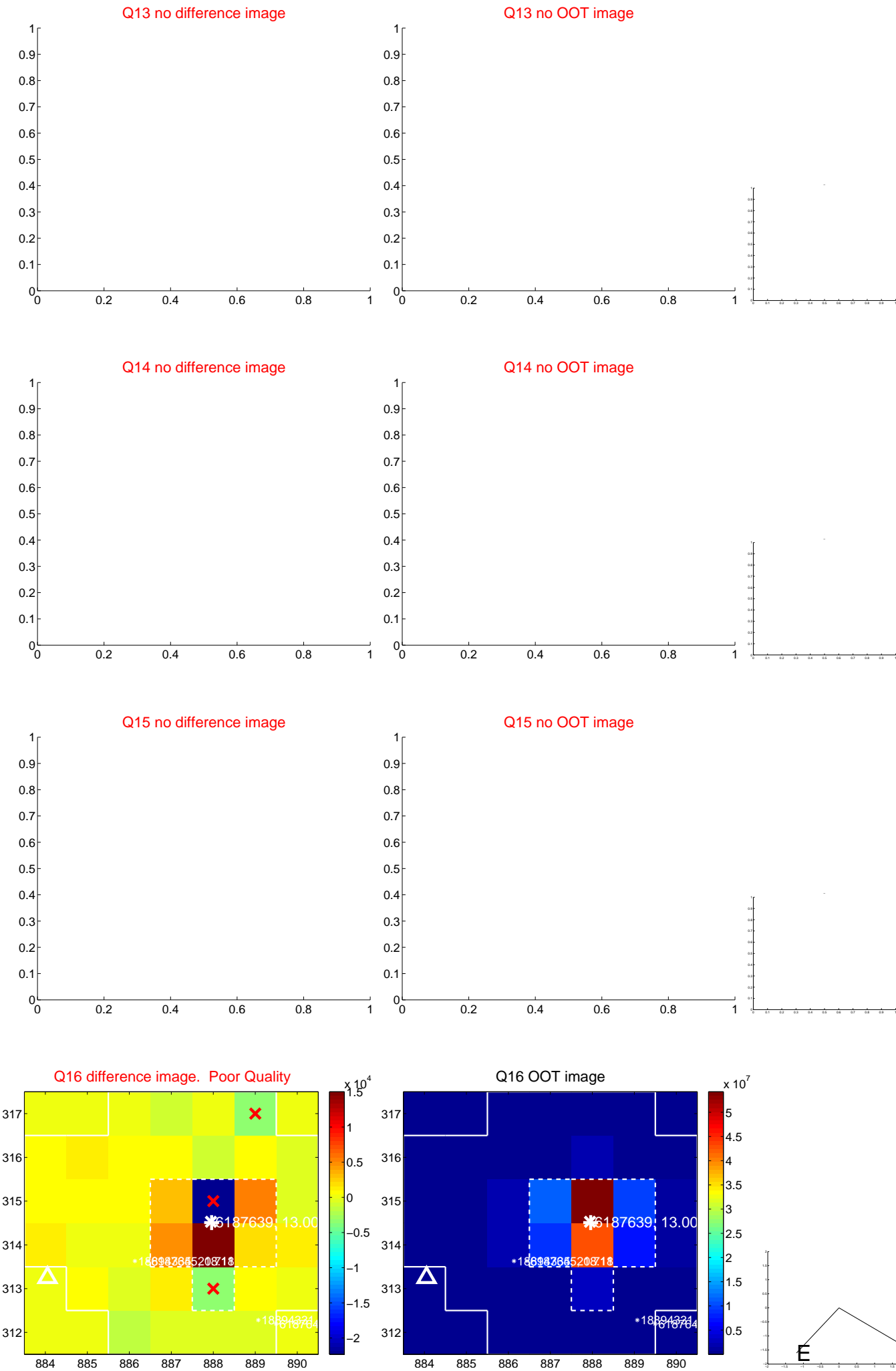
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



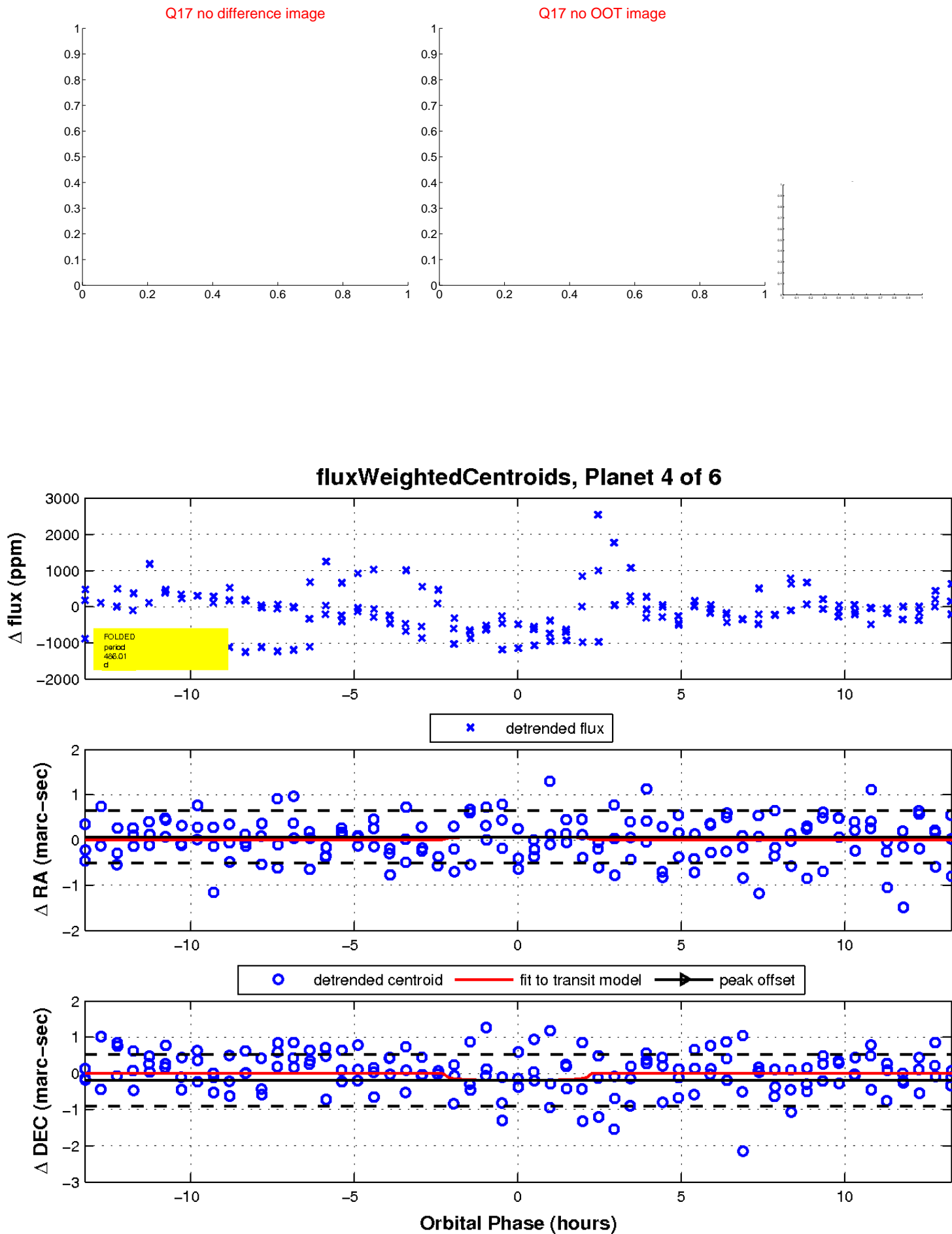
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

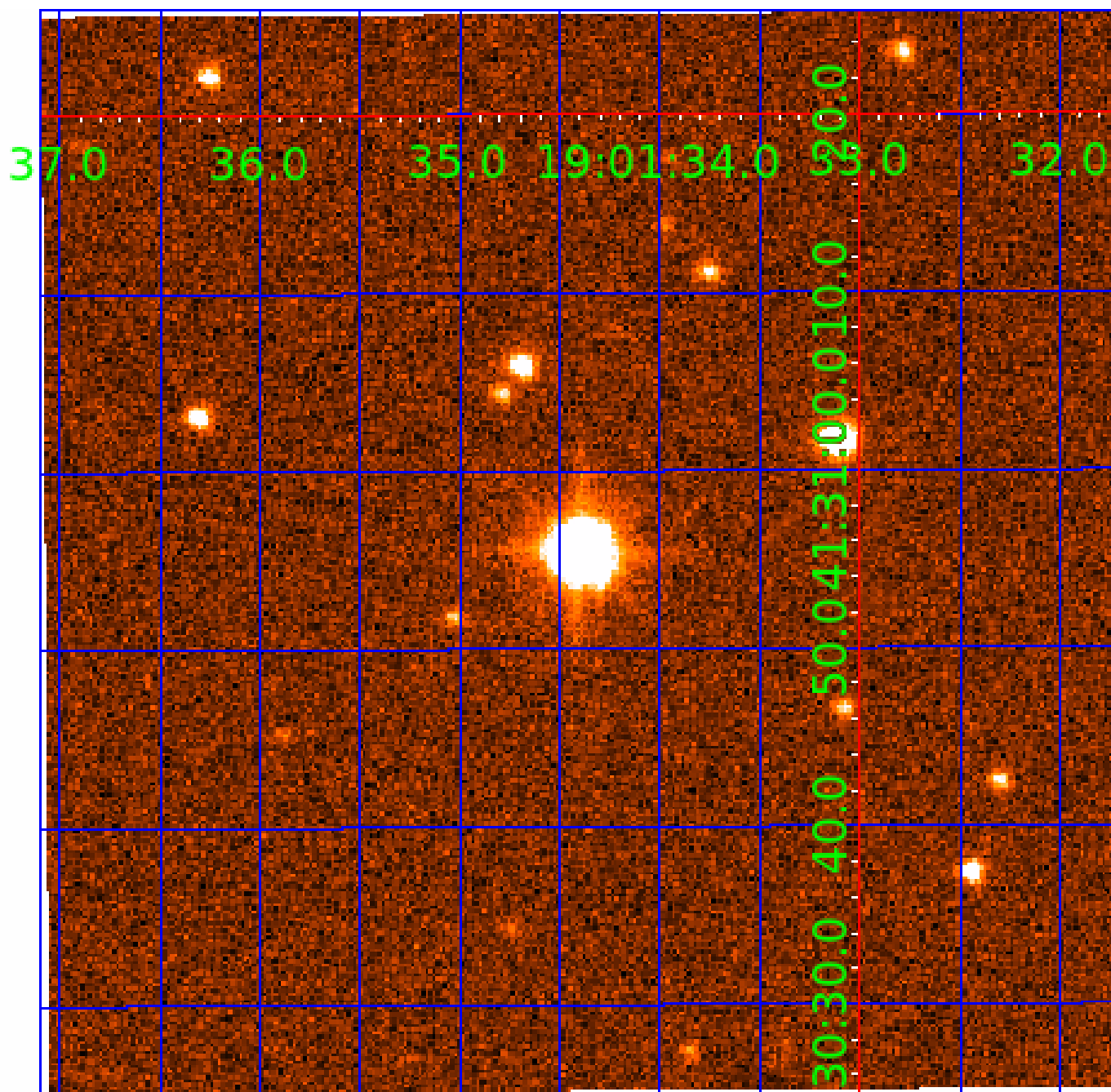


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006187639

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})
006187639-01	OBS	No	246.666335	211.268340	1137.9	25.415	17.7	6.2	2.56	5390	8.66	9.88
006187639-02	OBS	No	395.407418	178.755607	751.4	3.141	14.4	6.3	2.56	5390	7.32	5.27
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006187639-04	OBS	No	486.010911	562.519012	882.6	4.548	12.0	5.8	2.56	5390	7.66	4.00
006187639-05	OBS	No	441.608210	153.172899	1011.0	5.184	12.9	6.6	2.56	5390	8.21	4.54
006187639-06	OBS	No	154.742468	246.912930	370.0	3.500	11.1	-1.0	2.56	5390	4.90	18.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006187639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
006187639-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

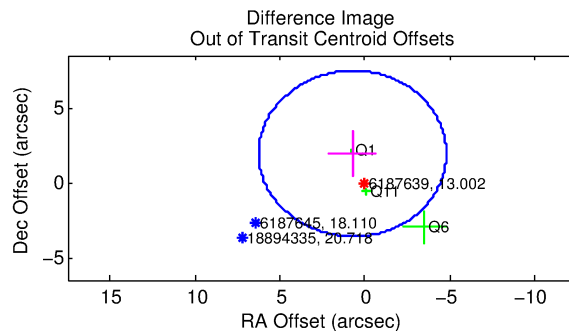
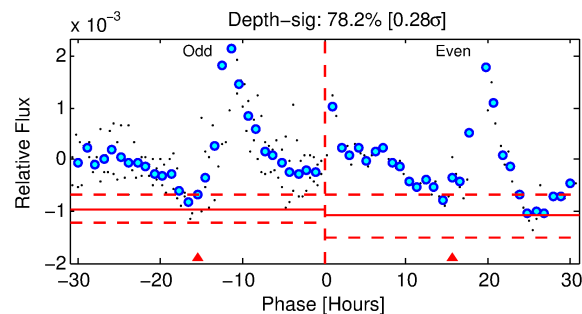
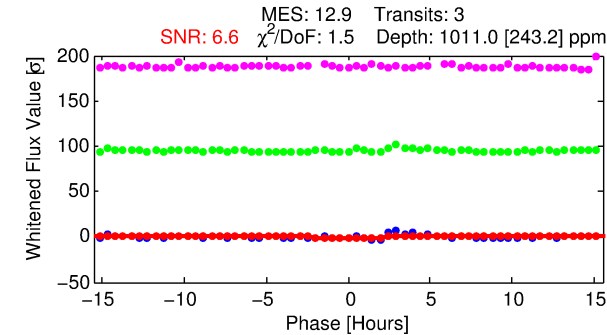
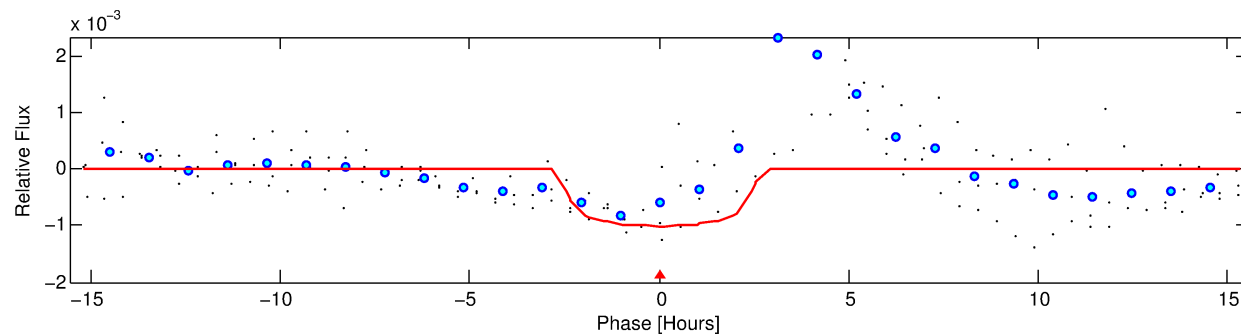
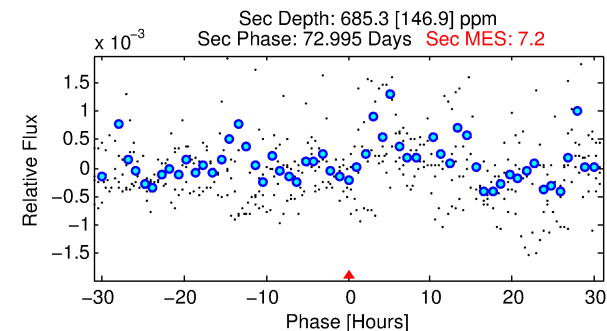
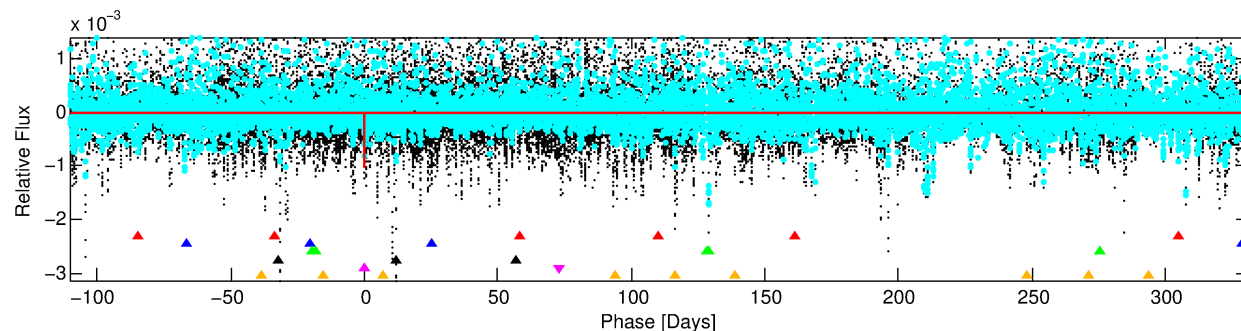
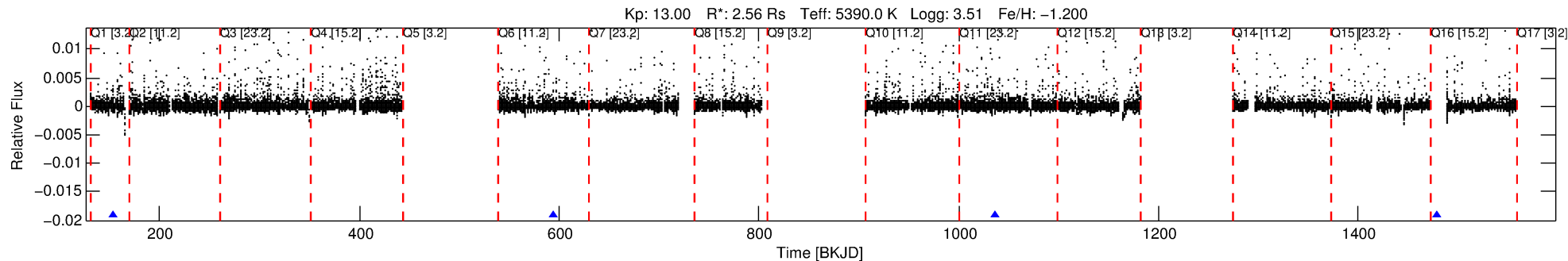
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006187639-05

No Significant Match Found

DV One-Page Summary

KIC: 6187639 Candidate: 5 of 6 Period: 441.608 d



DV Fit Results:

Period = 441.60821 [0.00445] d
Epoch = 153.1729 [0.0058] BKJD
Rp/R* = 0.0295 [0.0657]
a/R* = 627.17 [6691.08]
b = 0.36 [25.79]
Seff = 4.54 [8.65]
Teq = 372 [177] K
Rp = 8.21 [19.39] Re
a = 1.0423 [1.0934] AU
Ag = 6072.29 [29486.83] [0.21 σ]
Teff = 5081 [5678] K [0.83 σ]

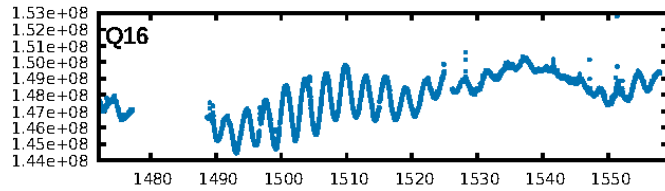
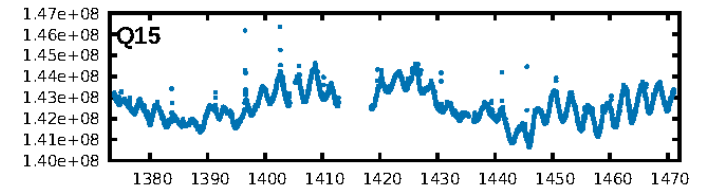
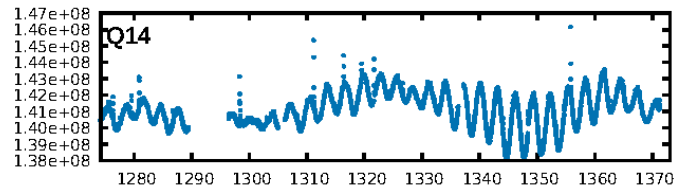
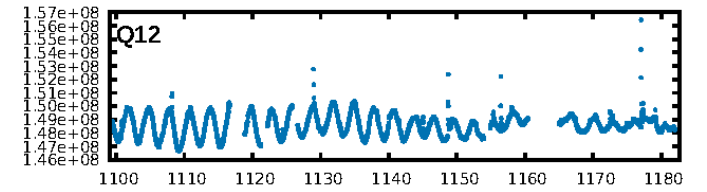
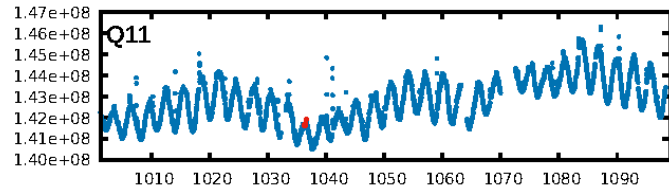
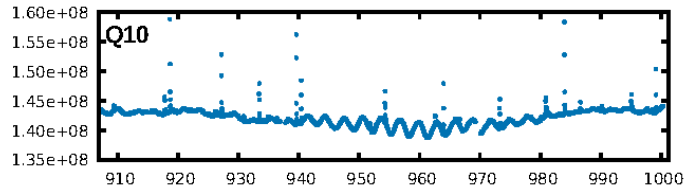
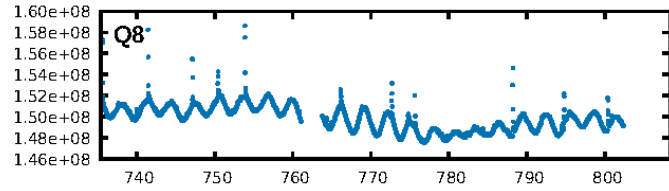
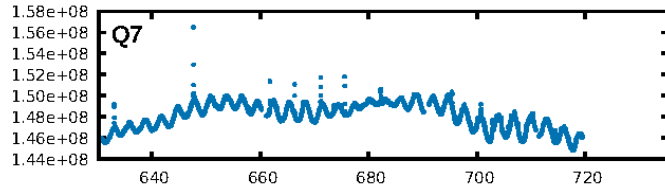
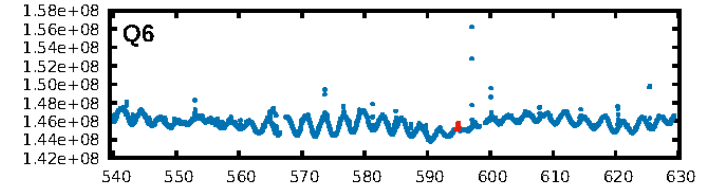
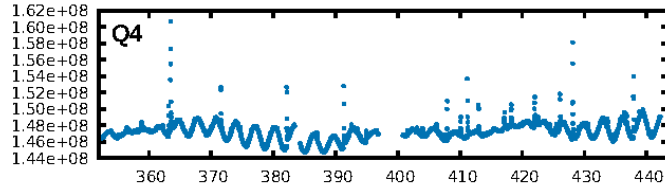
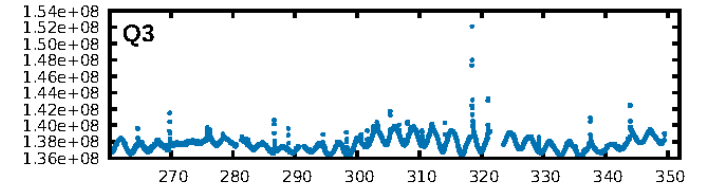
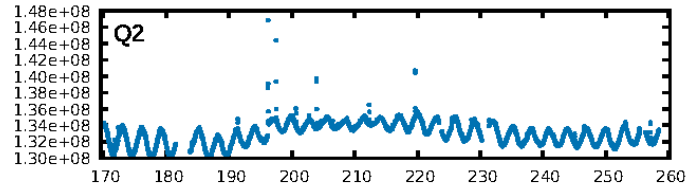
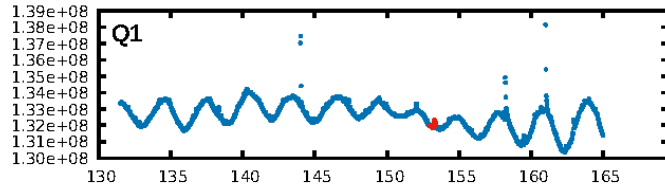
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [182.94 σ]
LongPeriod-sig: 100.0% [154.54 σ]
ModelChiSquare2-sig: 68.5%
ModelChiSquareGof-sig: 54.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.267
Centroid-sig: 55.5%
Centroid-so: 0.330 arcsec [0.97 σ]
OotOffset-rm: 2.064 arcsec [1.12 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 2.082 arcsec [1.42 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

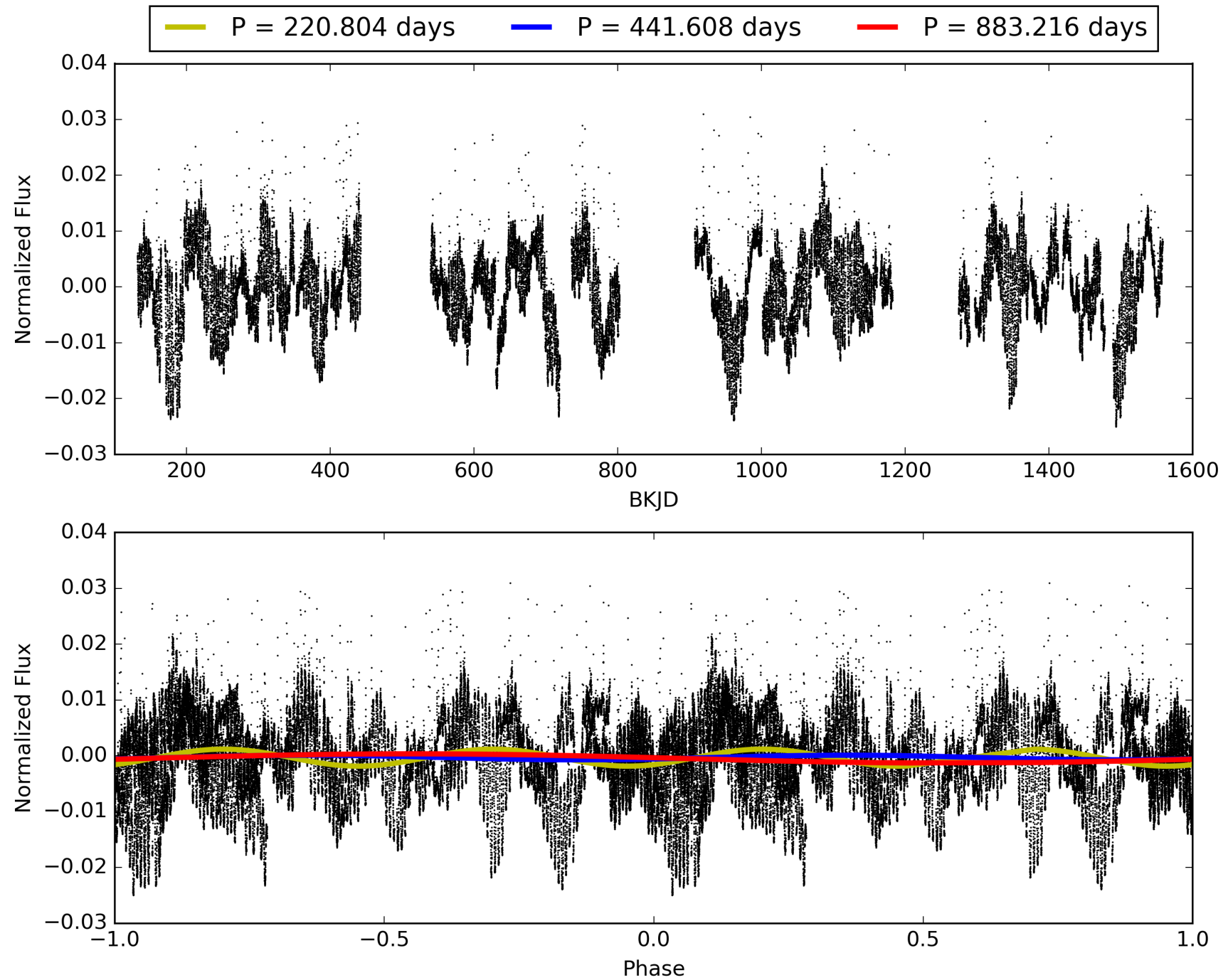
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:35:01 Z

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

TCE 006187639-05, PDC Light Curves

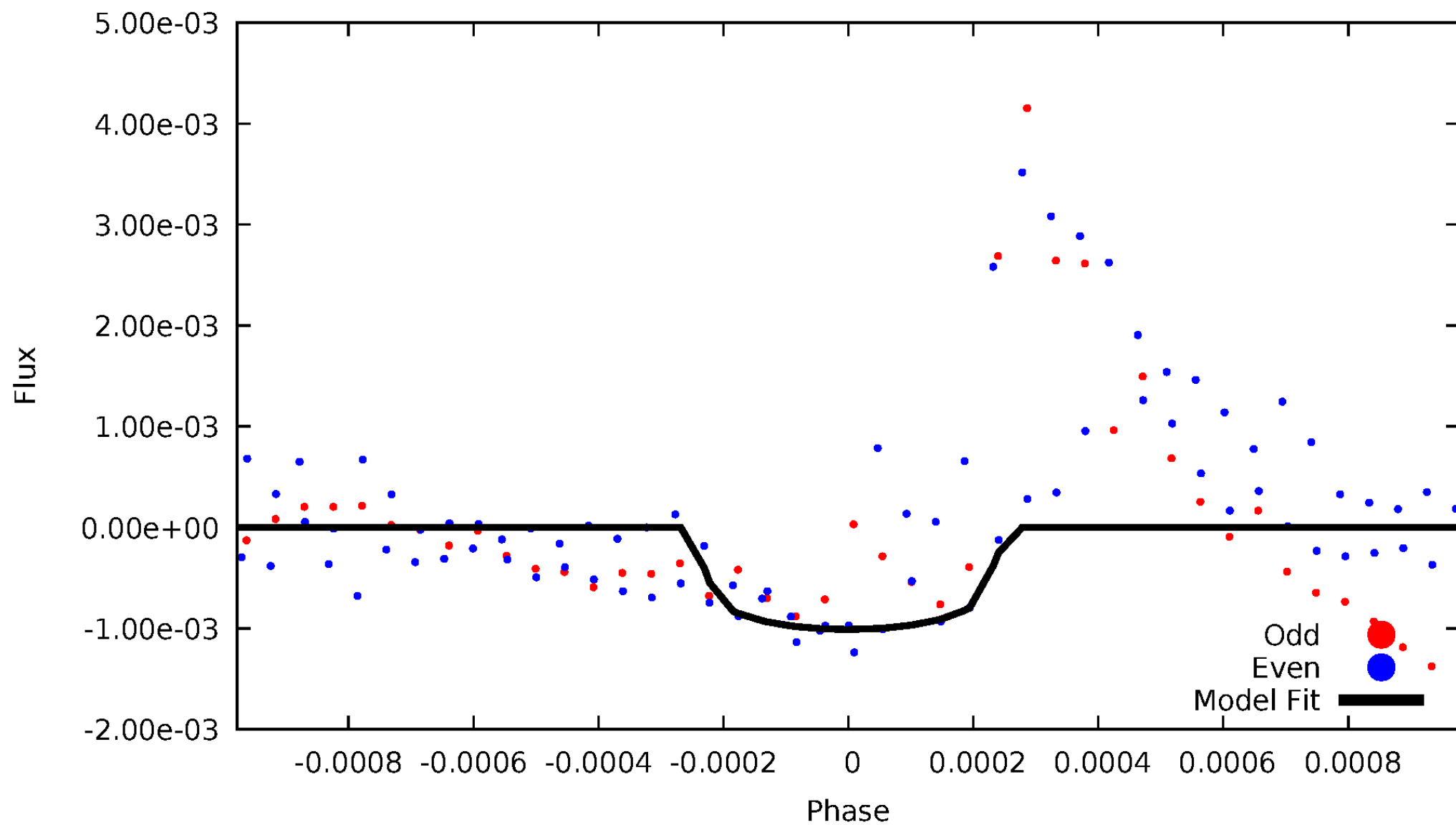


TCE 006187639-05



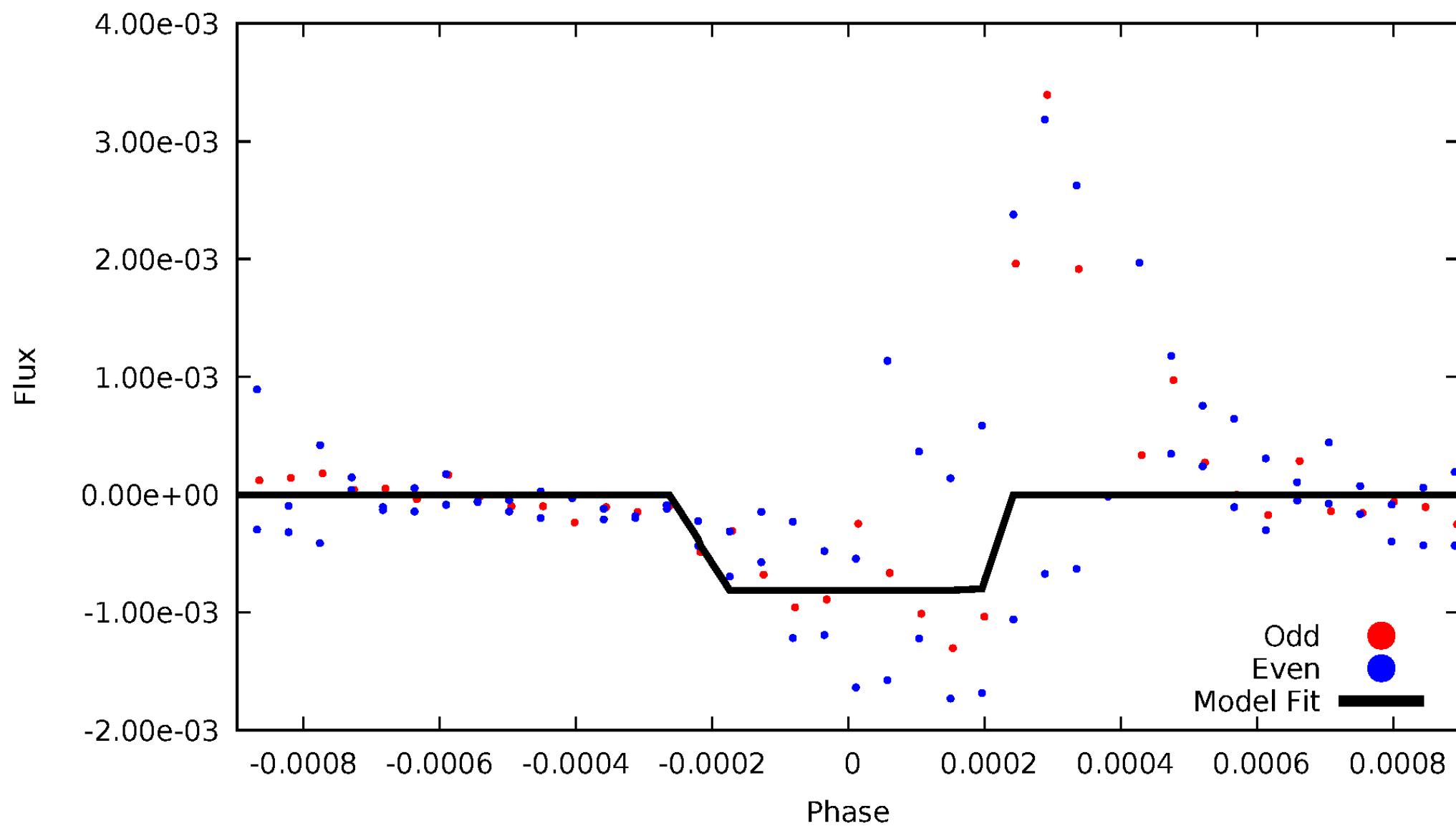
DV Odd/Even

TCE 006187639-05



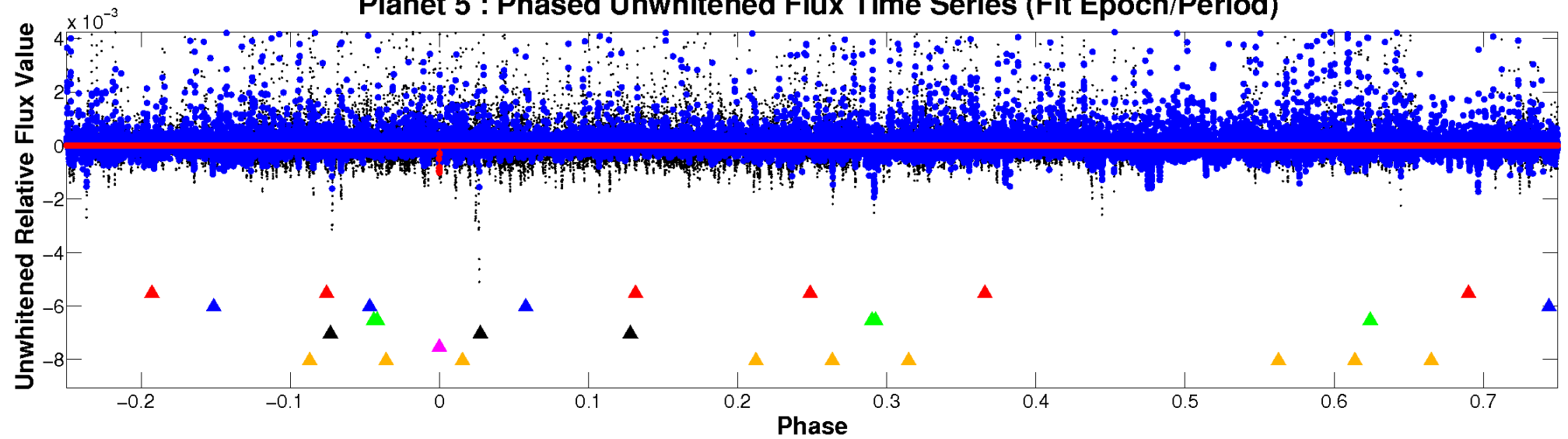
ALT Odd/Even

TCE 006187639-05

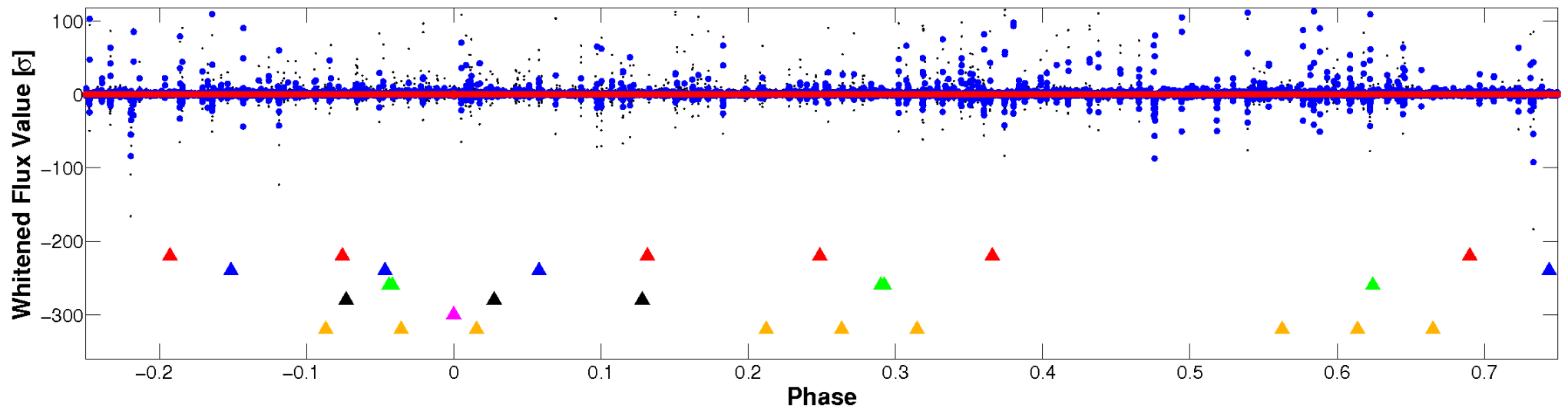


Non-Whitened Vs. Whitened Light Curve

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

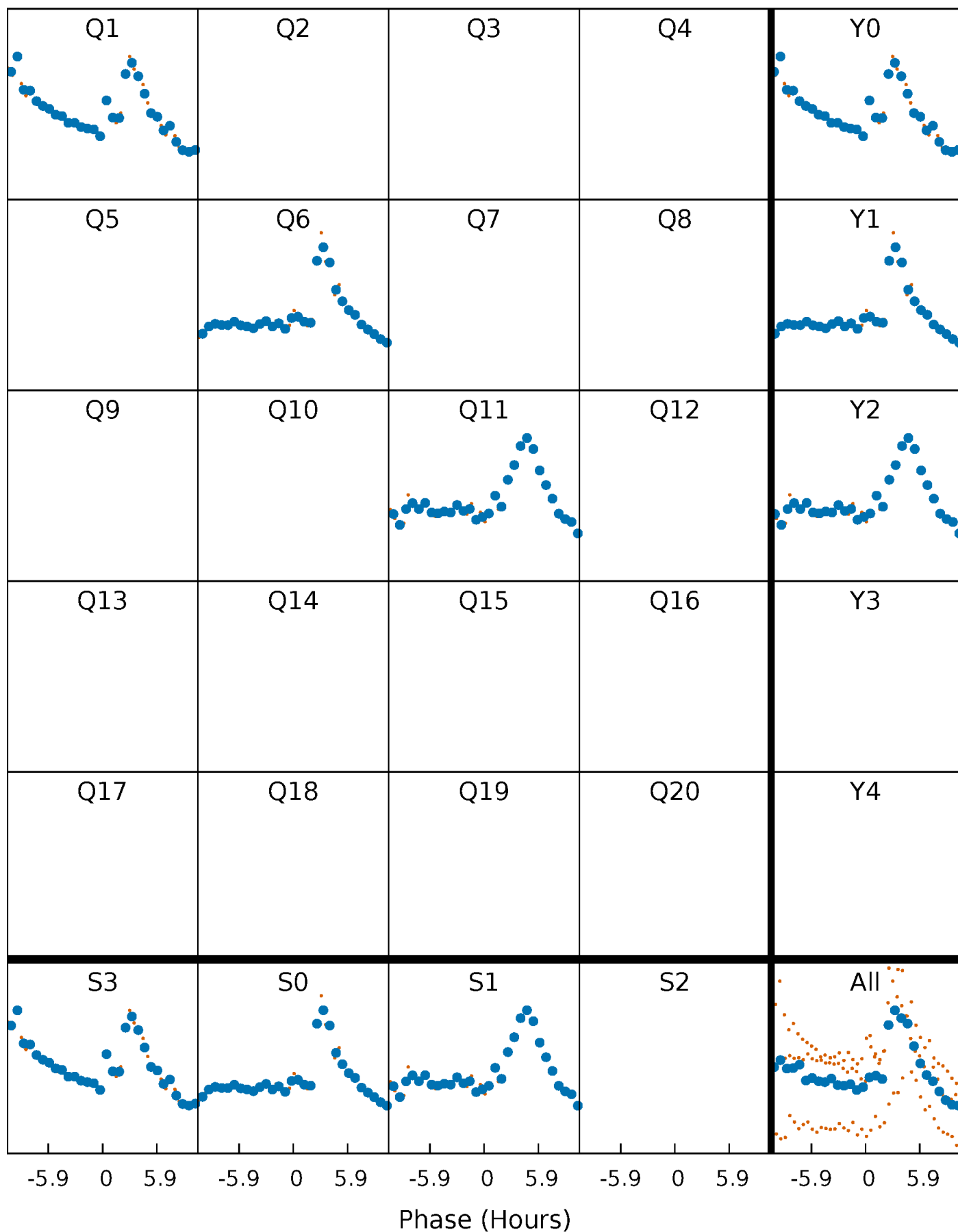


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



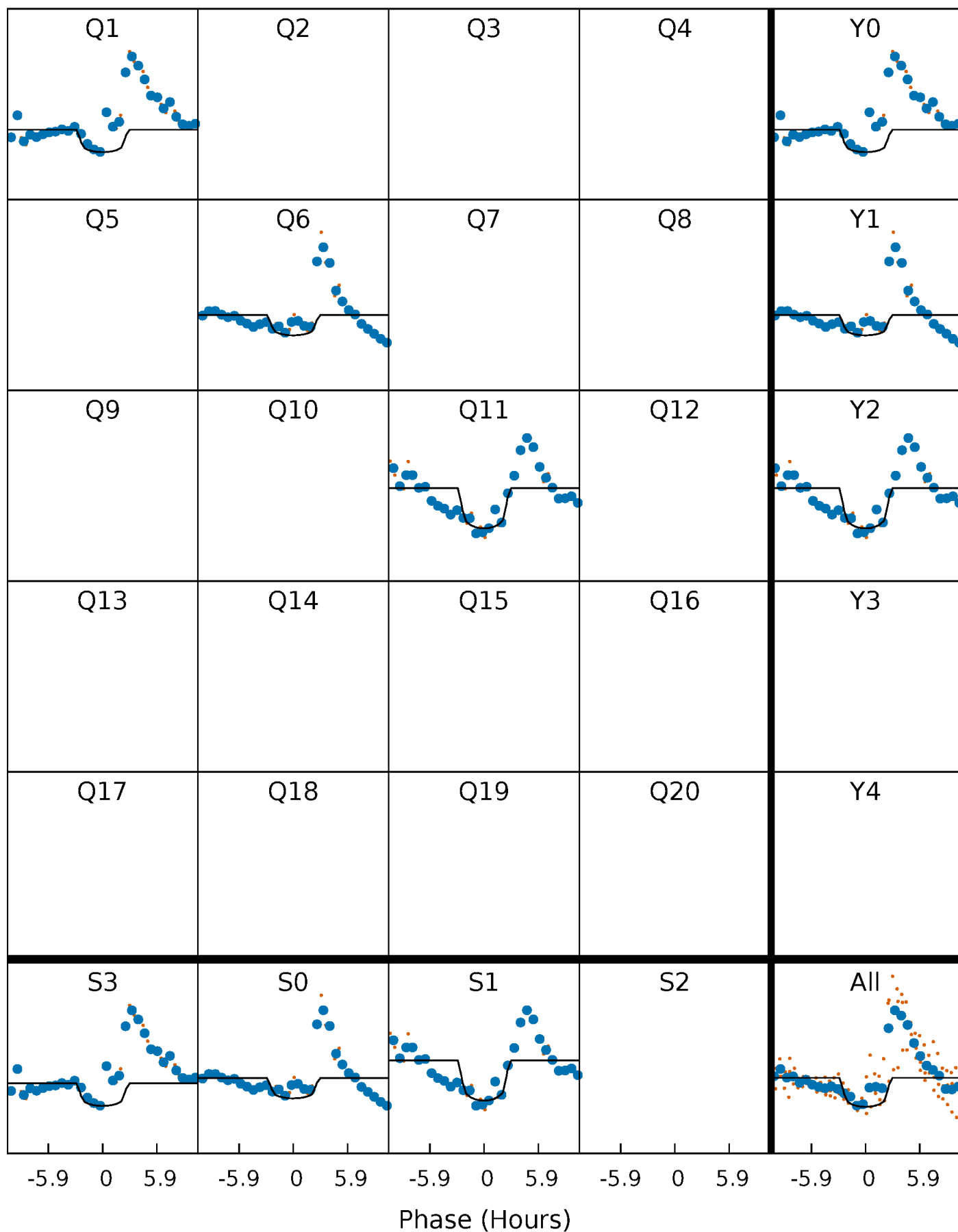
PDC Quarter-Phased Transit Curves

TCE 006187639-05 $P=441.608210$ Days $T_0=153.172899$ (BKJD)



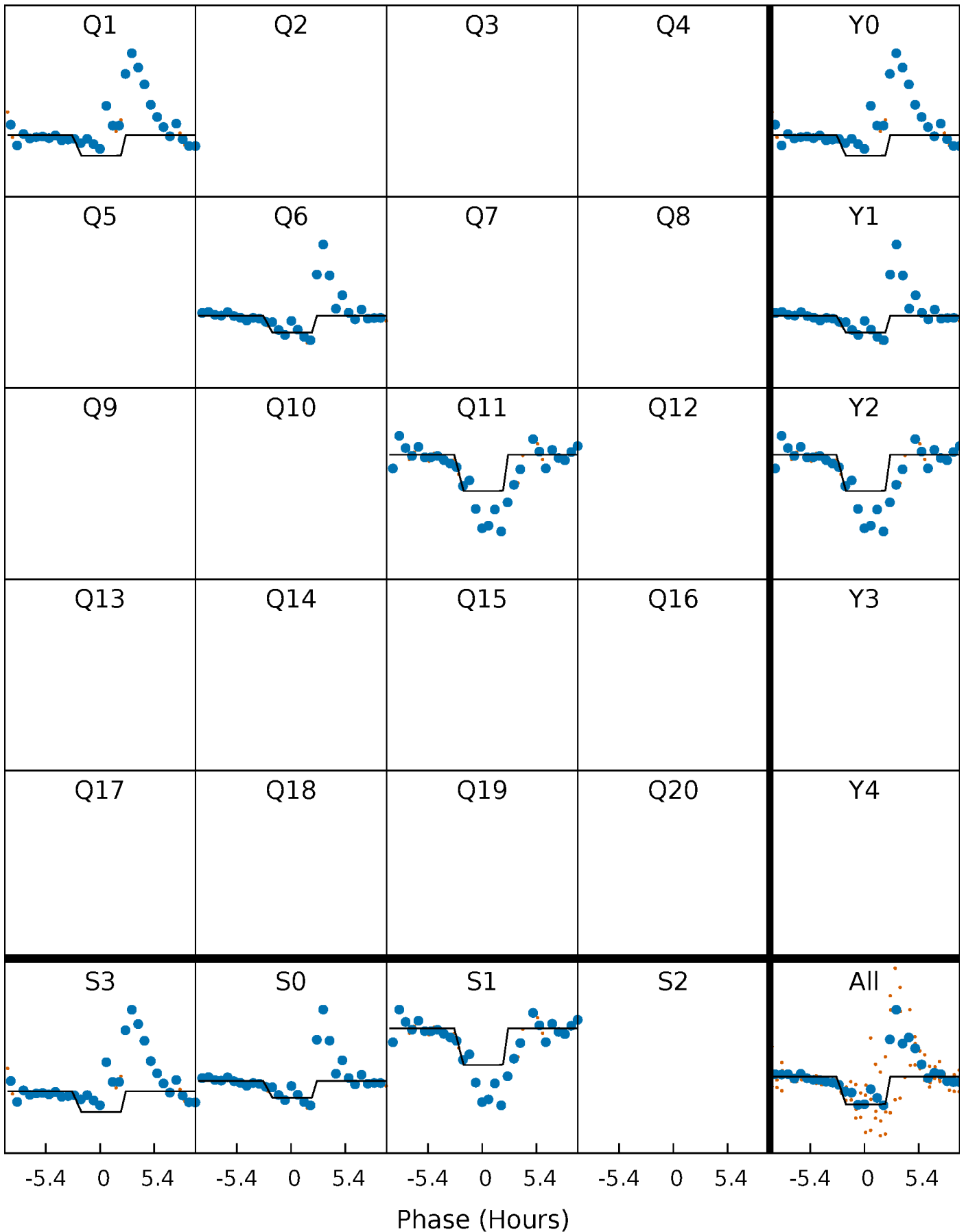
DV Quarter-Phased Transit Curves

TCE 006187639-05 $P=441.608210$ Days $T_0=153.172899$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

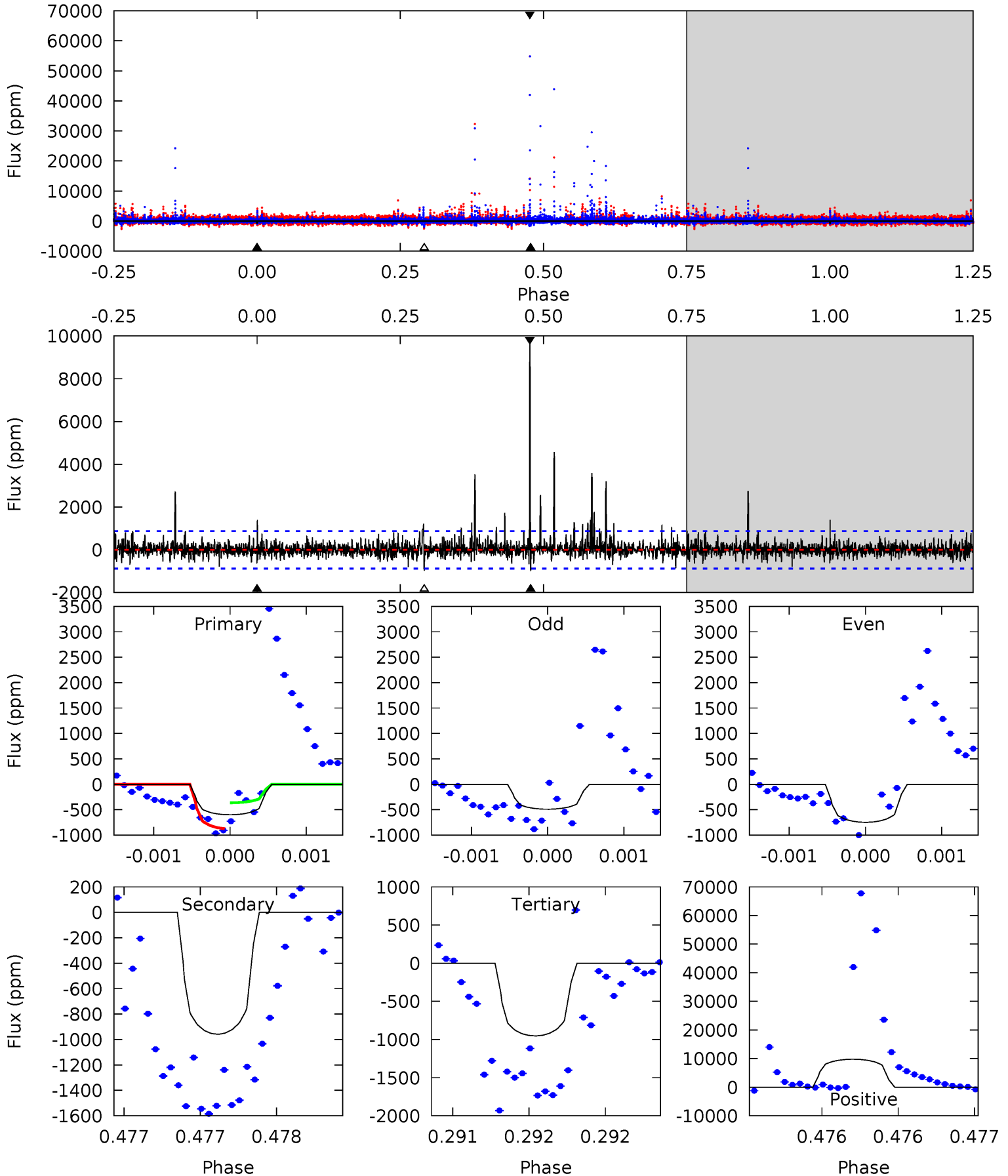
TCE 006187639-05 $P=441.610099$ Days $T_0=153.168322$ (BKJD)



DV Model-Shift Uniqueness Test

006187639-05, P = 441.608210 Days, E = 153.172899 Days

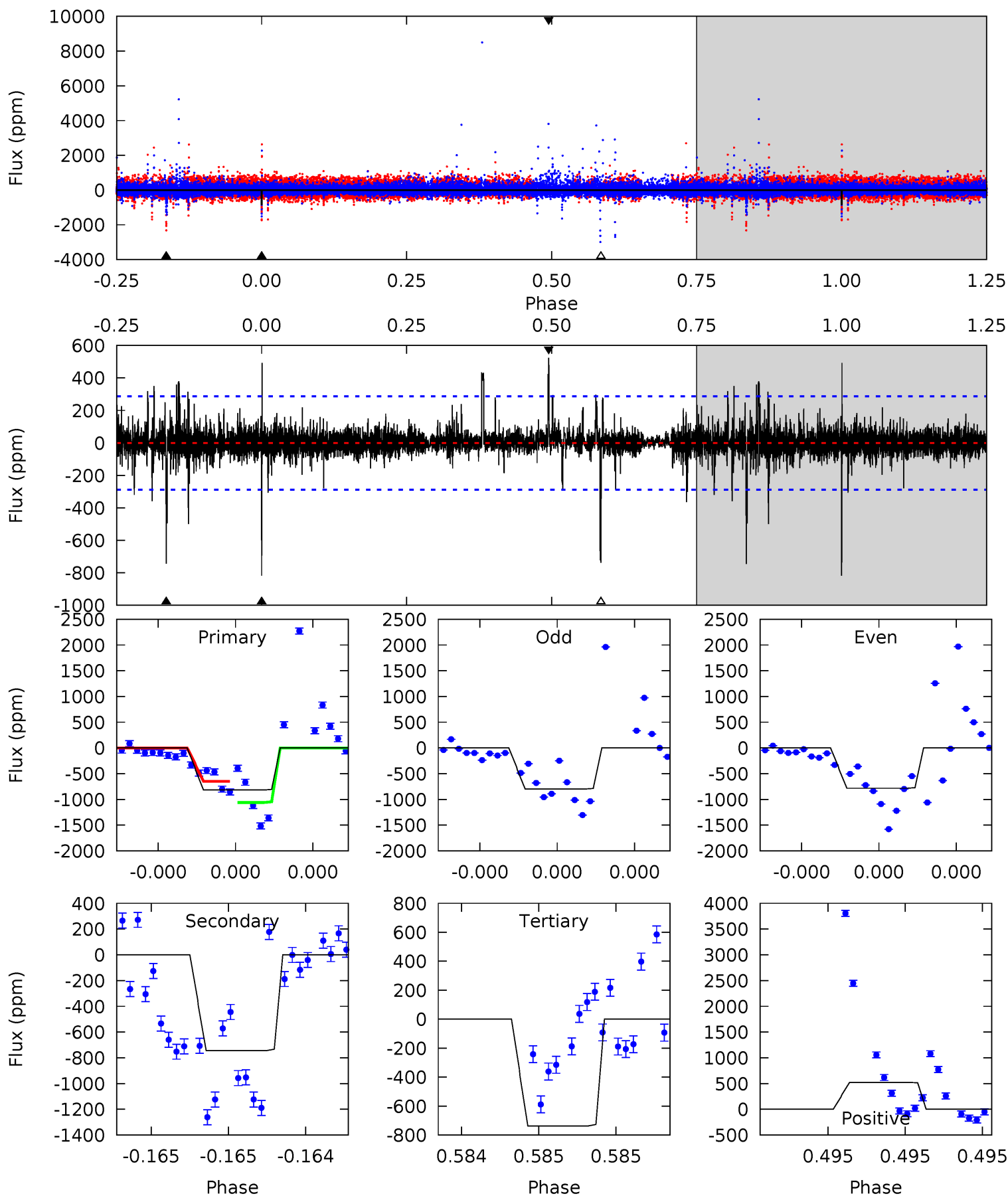
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.82	6.11	6.07	62.3	5.57	3.48	2.28	-2.25	-58.5	0.04	-56.2	0.52	1.13	0.91	1.64



Alt Model-Shift Uniqueness Test

006187639-05, P = 441.610099 Days, E = 153.168322 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	14.5	14.4	10.2	5.60	3.53	1.14	1.55	5.73	0.13	4.31	0.13	0.85	0.39	3.90



Stellar Parameters For KIC 006187639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5390^{+133}_{-147}	$3.512^{+1.192}_{-0.298}$	$-1.200^{+0.300}_{-0.300}$	$2.555^{+1.610}_{-1.967}$	$0.774^{+0.250}_{-0.135}$	$0.065^{+3.991}_{-0.053}$
	+2%/-3%	+34%/-8%	+25%/-25%	+63%/-77%	+32%/-17%	+6104%/-81%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006187639-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-959 ± 157	$14.27^{+16.22}_{-9.68}$	504^{+76}_{-117}	4074^{+2550}_{-715}	2928^{+23995}_{-2260}
Alt.	-744 ± 51	$13.25^{+16.28}_{-9.56}$	502^{+77}_{-112}	4034^{+2487}_{-804}	2623^{+30490}_{-2107}

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

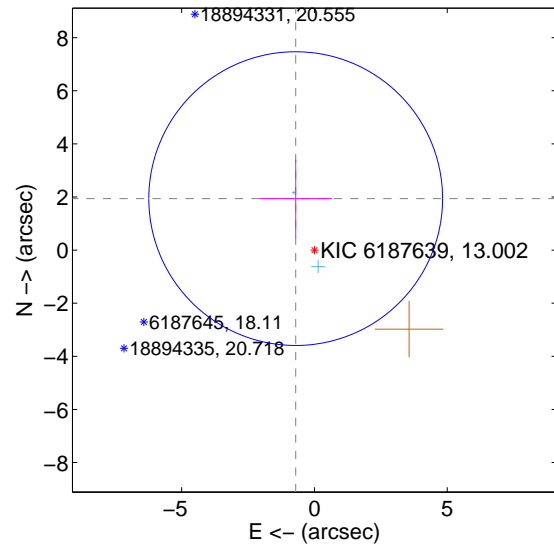
Supplemental centroid analysis for 006187639-05. Kepler magnitude: 13.00. Transit SNR 6.58

There are 2 quarters with good PRF difference image offsets

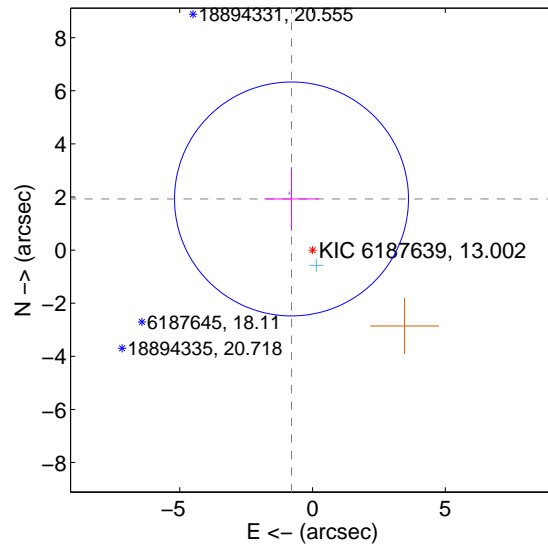
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.064 ± 1.844	1.12	0.707 ± 1.369	1.939 ± 1.470
PRF-fit source offset from KIC position	2.082 ± 1.468	1.42	0.792 ± 1.024	1.925 ± 1.196
photometric centroid source offset	0.33 ± 0.34	0.97	-0.24 ± 0.33	0.22 ± 0.36

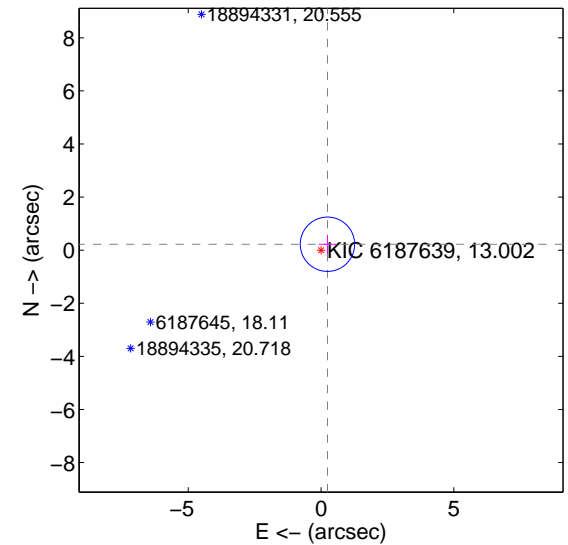
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

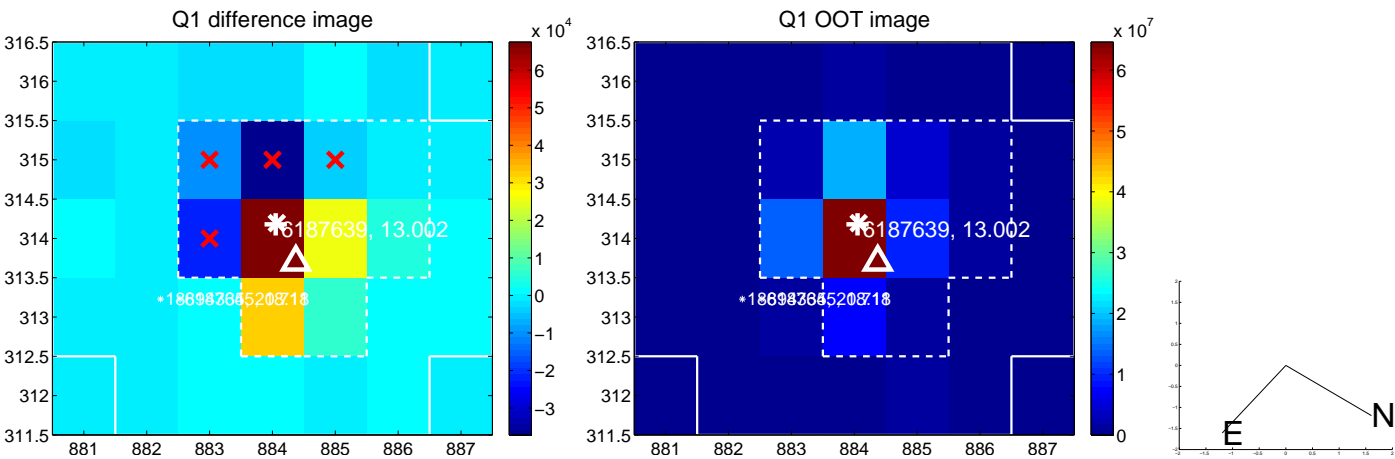


offset from photometric centroids



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

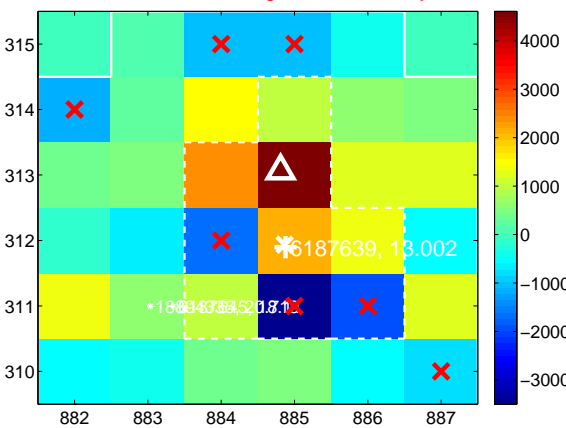
Q5 no difference image



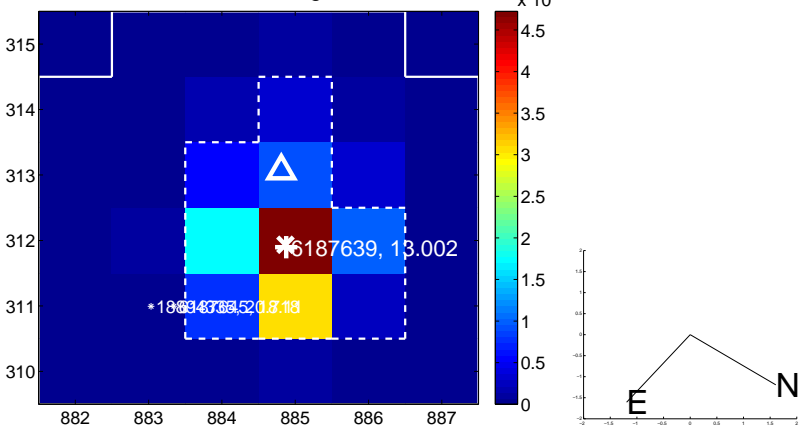
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



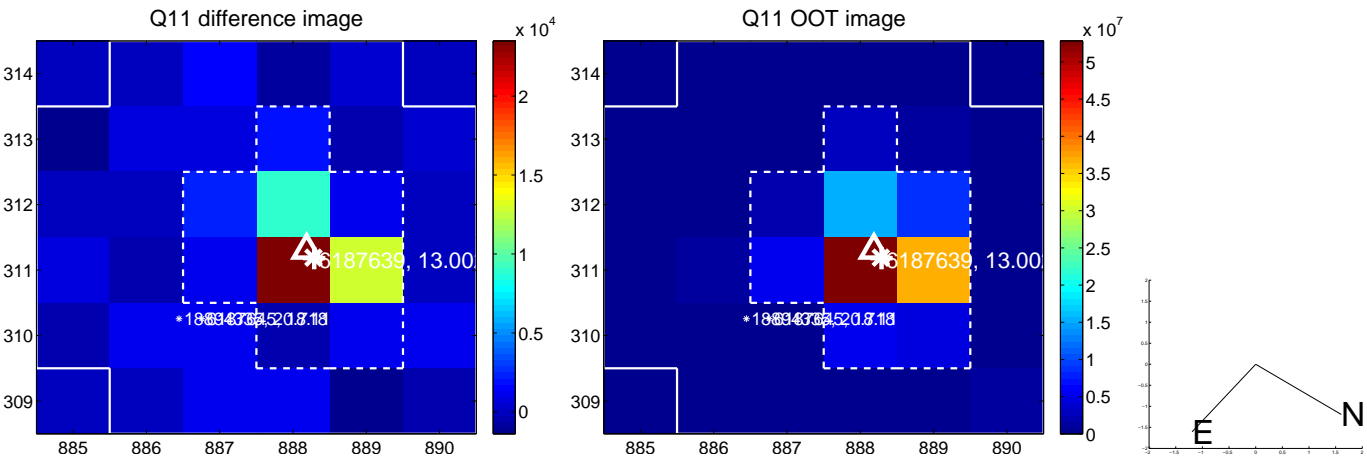
Q8 no difference image



Q8 no OOT image



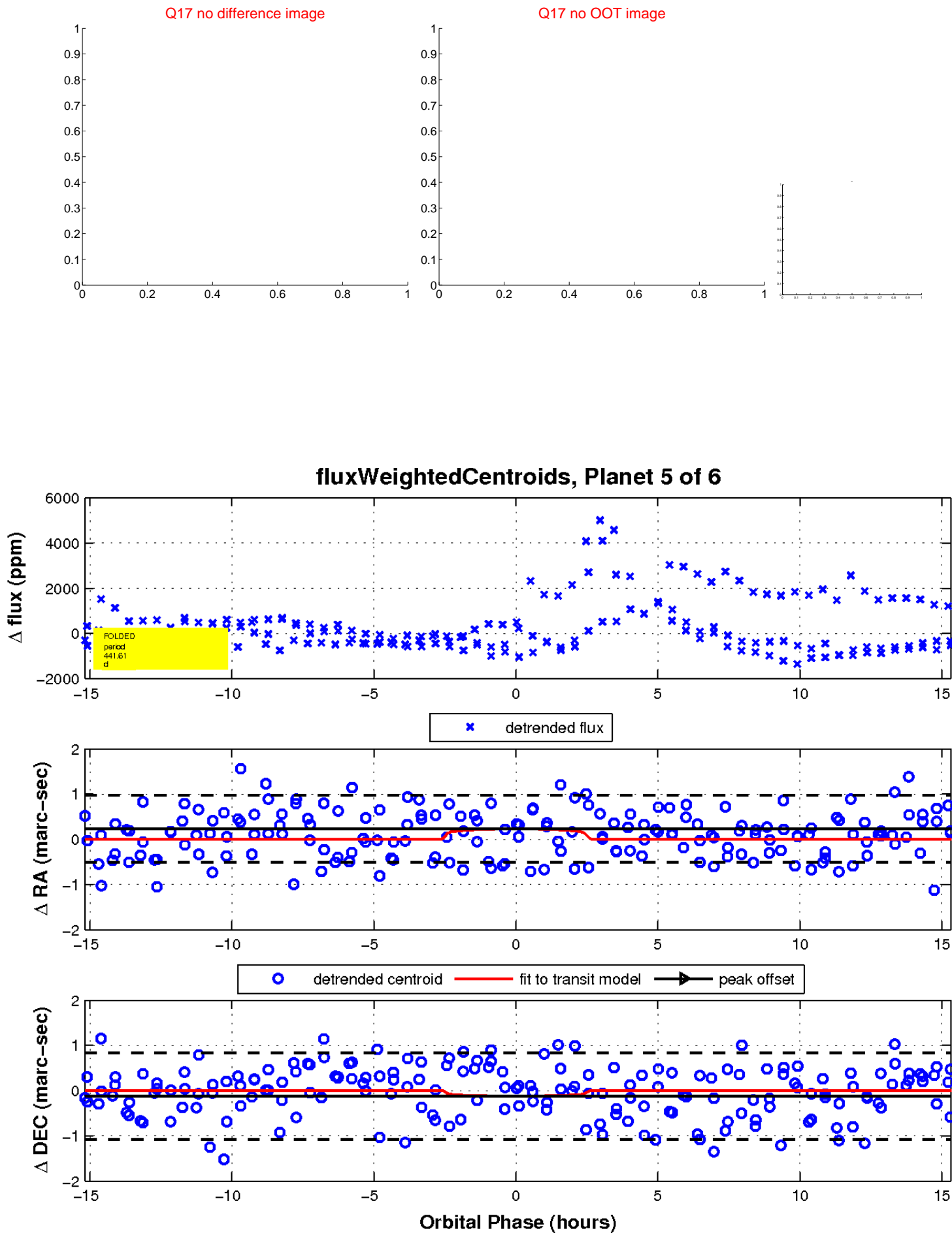
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

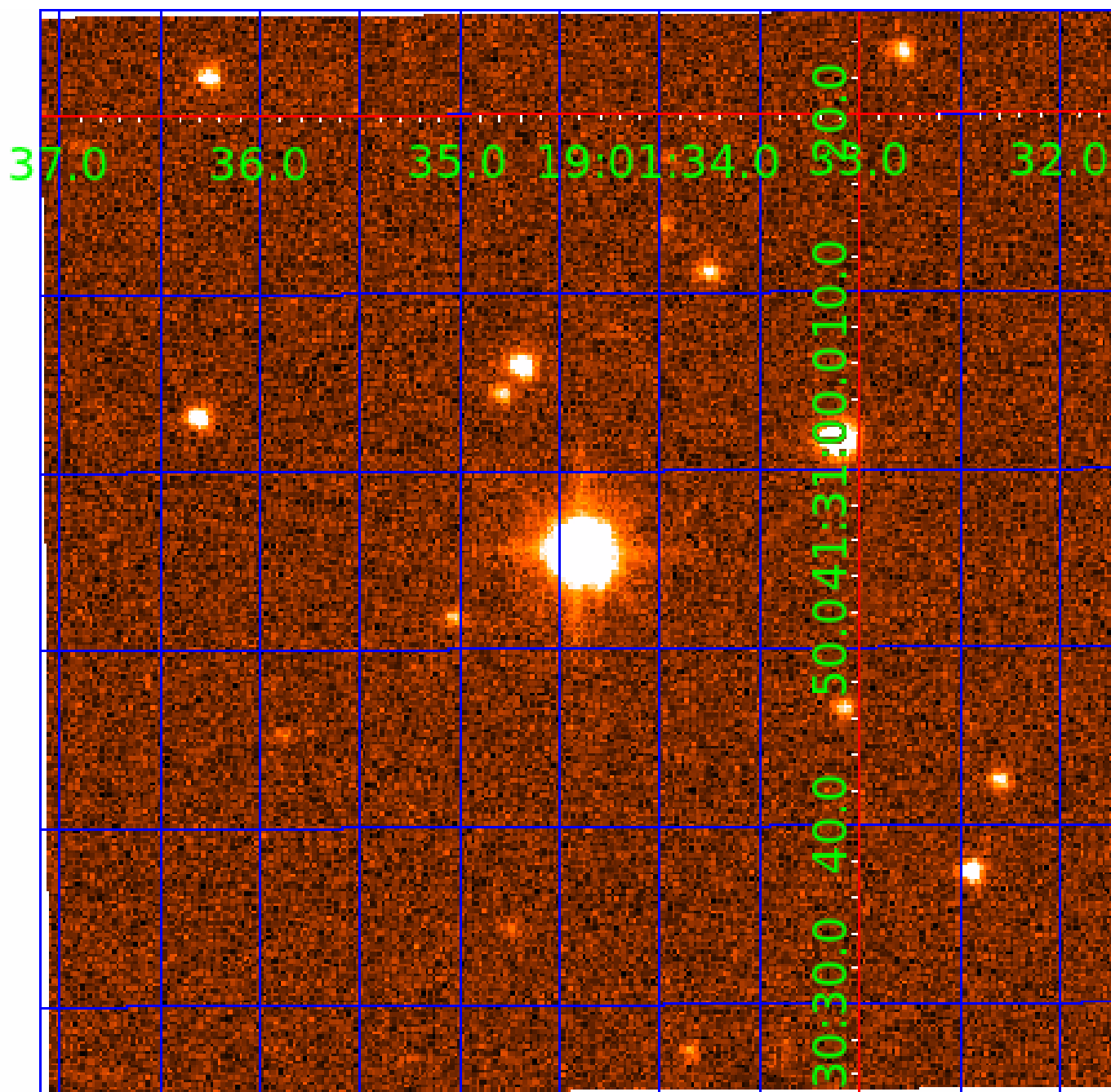


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006187639

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})
006187639-01	OBS	No	246.666335	211.268340	1137.9	25.415	17.7	6.2	2.56	5390	8.66	9.88
006187639-02	OBS	No	395.407418	178.755607	751.4	3.141	14.4	6.3	2.56	5390	7.32	5.27
006187639-03	OBS	No	294.061415	282.323140	1336.9	7.149	15.3	8.9	2.56	5390	9.33	7.82
006187639-04	OBS	No	486.010911	562.519012	882.6	4.548	12.0	5.8	2.56	5390	7.66	4.00
006187639-05	OBS	No	441.608210	153.172899	1011.0	5.184	12.9	6.6	2.56	5390	8.21	4.54
006187639-06	OBS	No	154.742468	246.912930	370.0	3.500	11.1	-1.0	2.56	5390	4.90	18.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006187639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006187639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006187639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
006187639-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

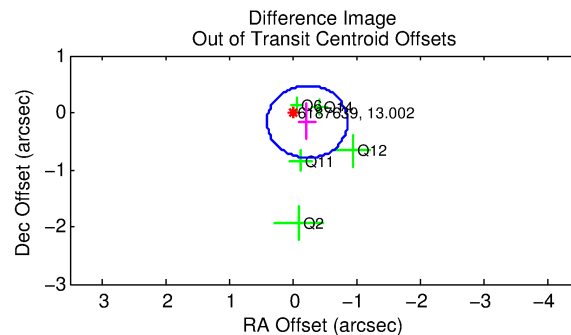
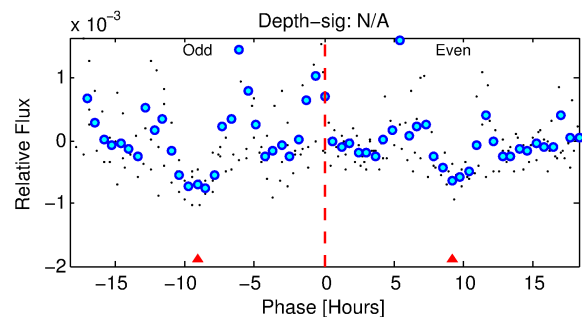
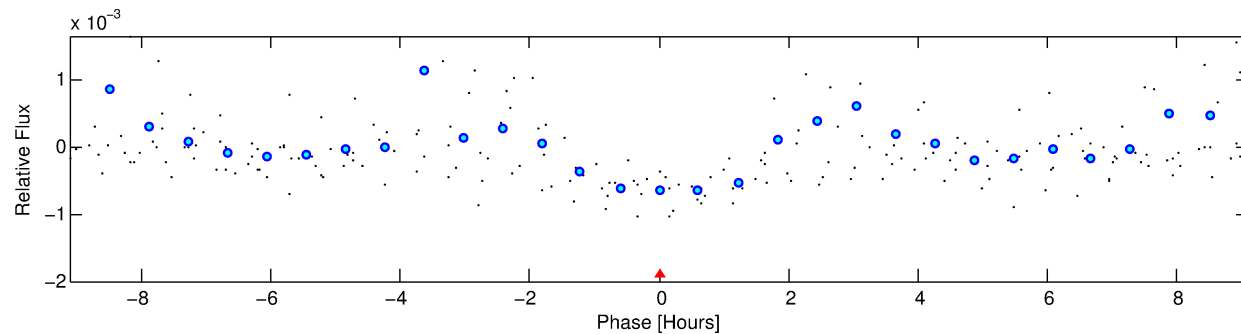
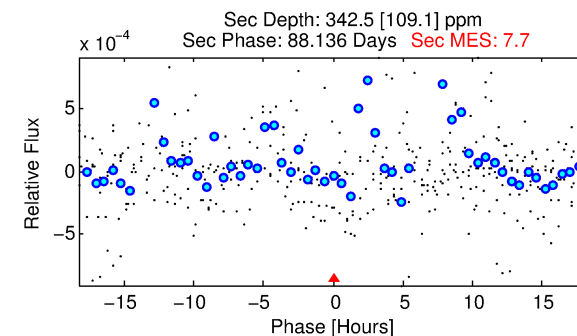
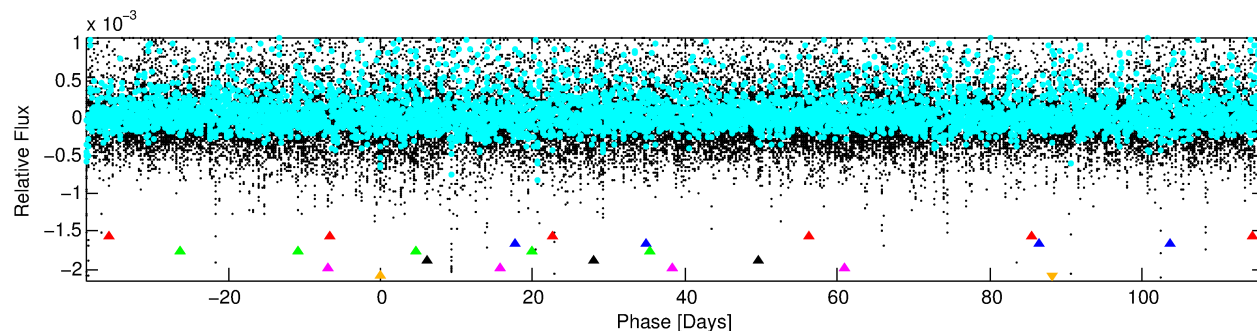
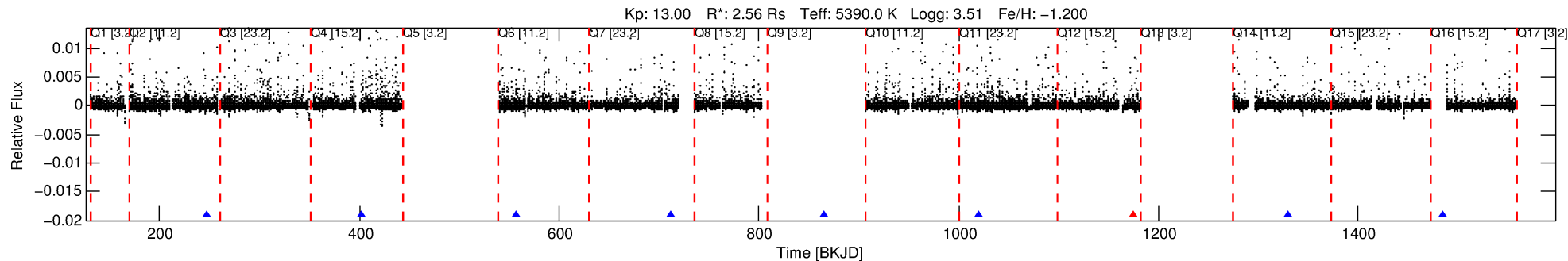
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006187639-06

No Significant Match Found

DV One-Page Summary

KIC: 6187639 Candidate: 6 of 6 Period: 154.742 d



TPS TCE Results:

Period = 154.74247 d
Epoch = 246.9129 BKJD

DV fit results are unavailable

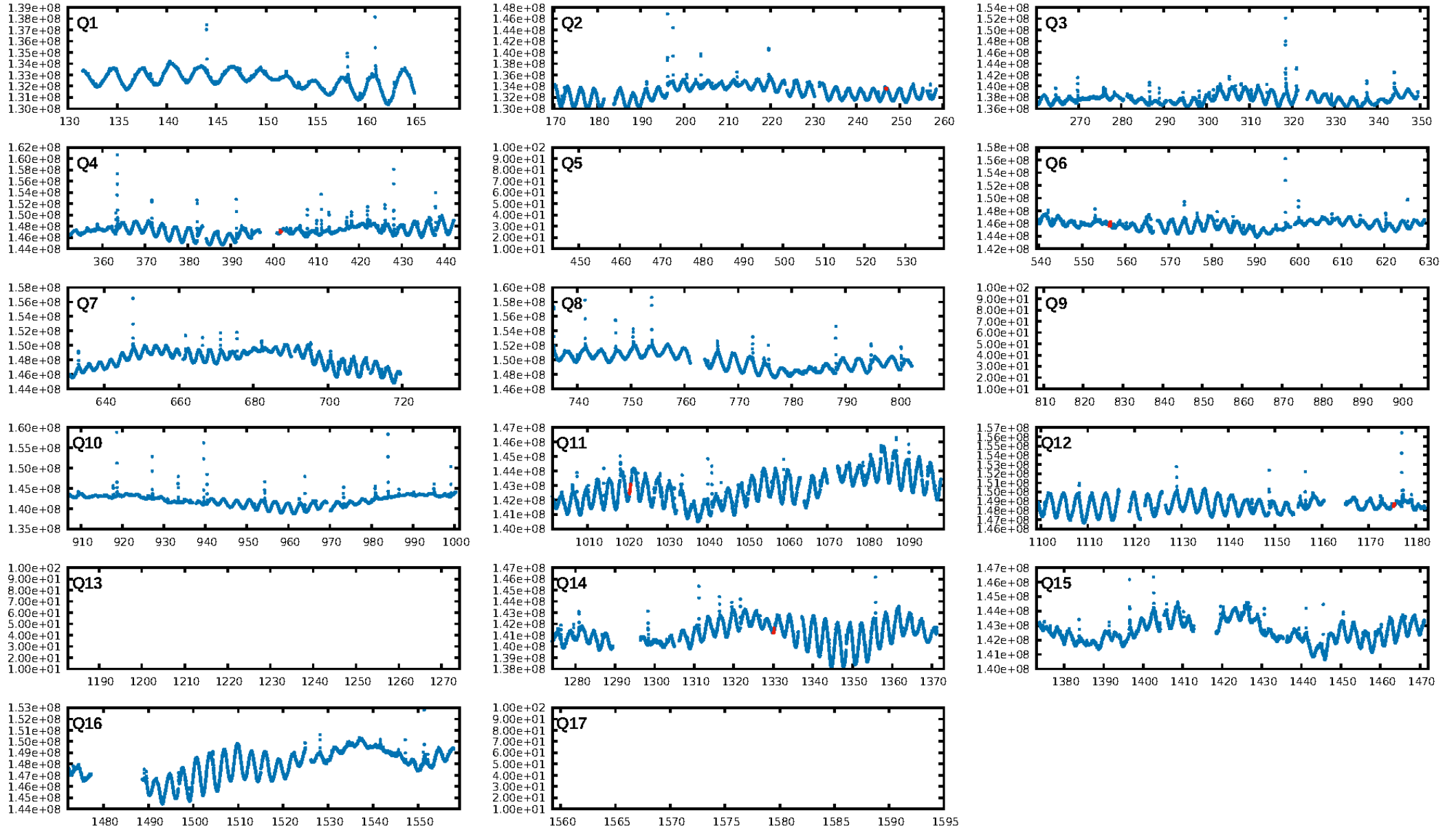
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [85.99σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.83 [5/6]
GhostDiagnostic-chr: 1.89
Centroid-sig: 23.2%
Centroid-so: 0.676 arcsec [1.31σ]
OotOffset-rm: 0.284 arcsec [1.34σ]
KicOffset-rm: 0.141 arcsec [0.69σ]
OotOffset-st: 3/1/1/0 [5]
KicOffset-st: 3/1/1/0 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 1.00 [5/5]

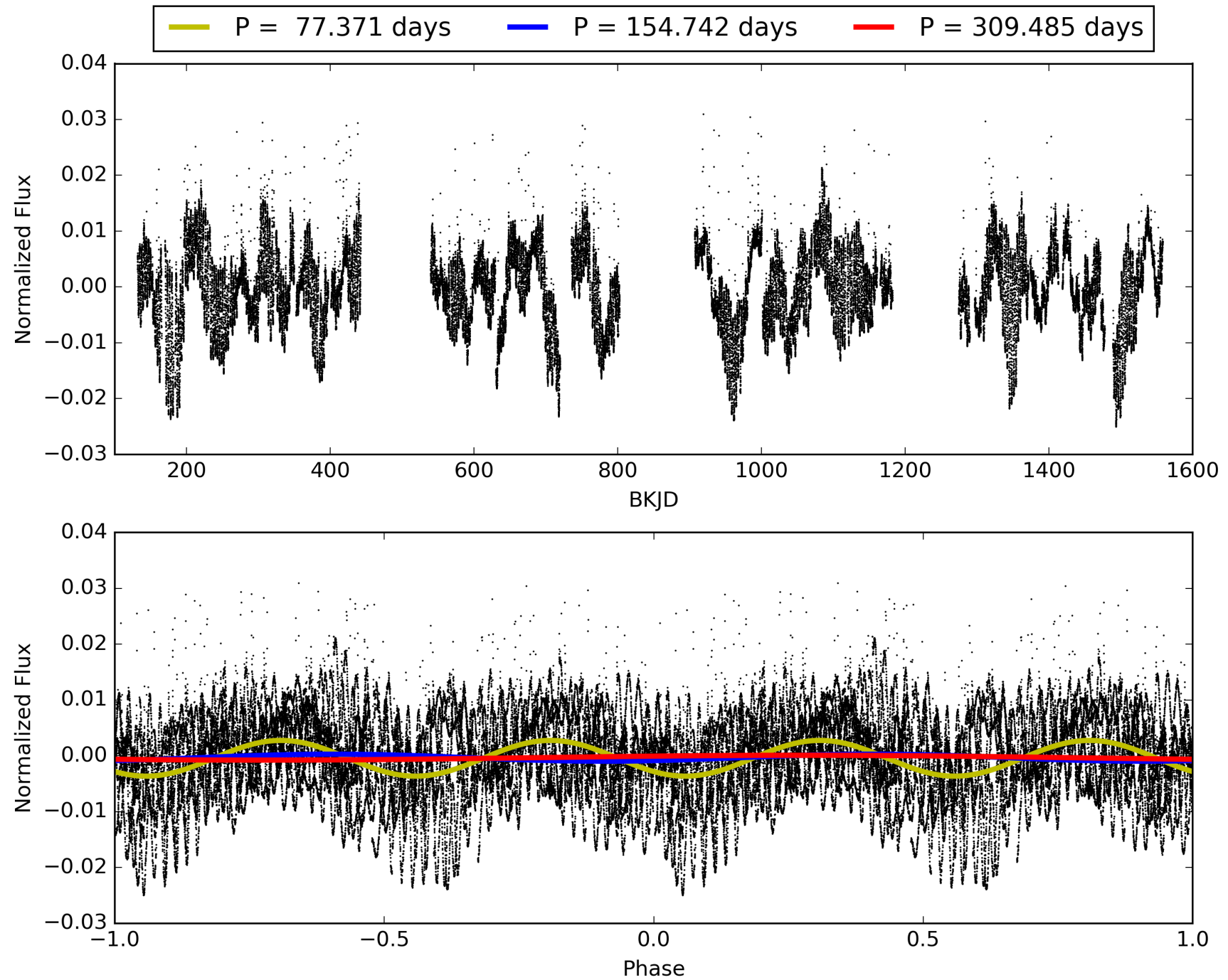
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:35:09 Z

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

TCE 006187639-06, PDC Light Curves

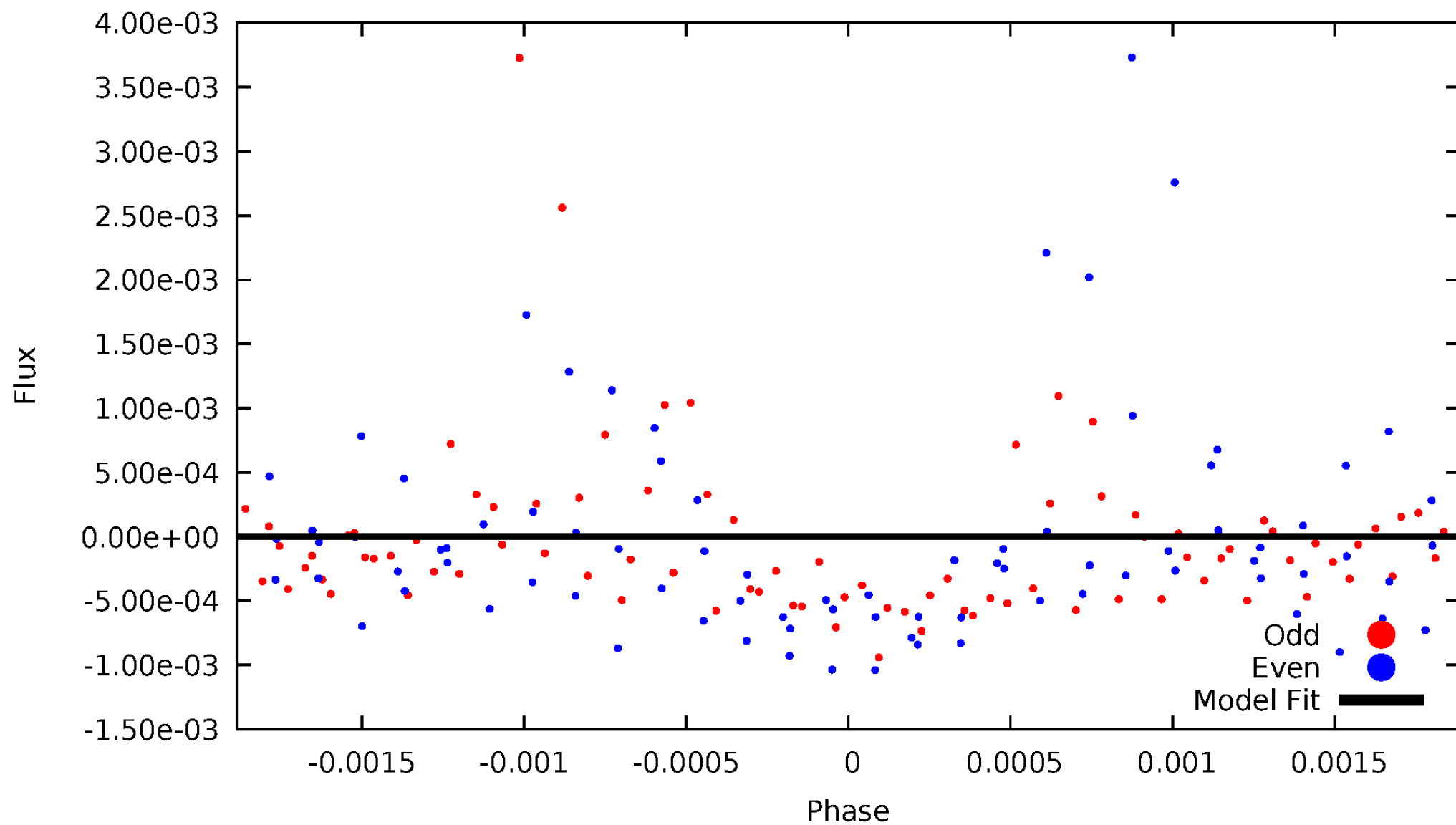


TCE 006187639-06



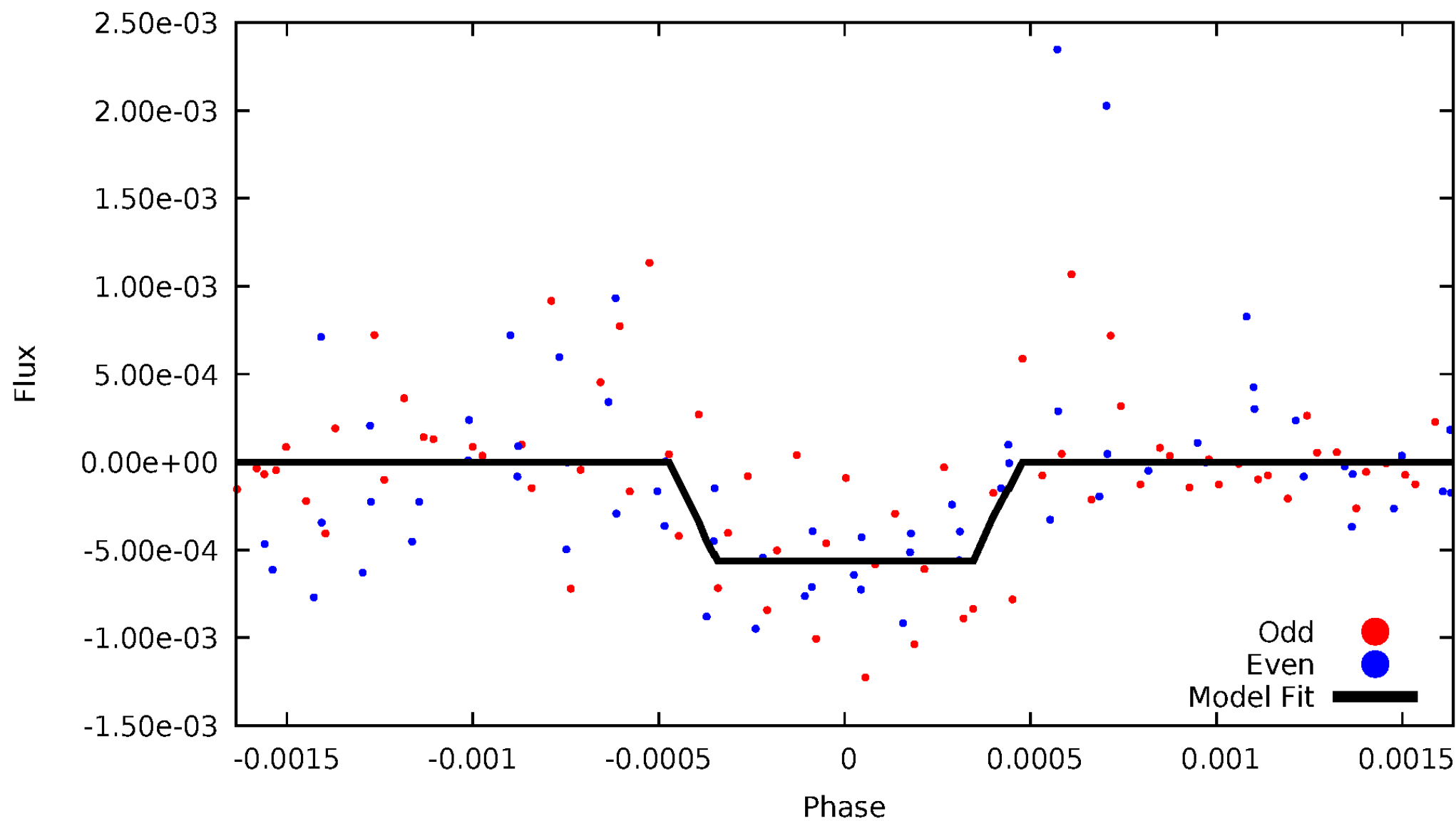
DV Odd/Even

TCE 006187639-06



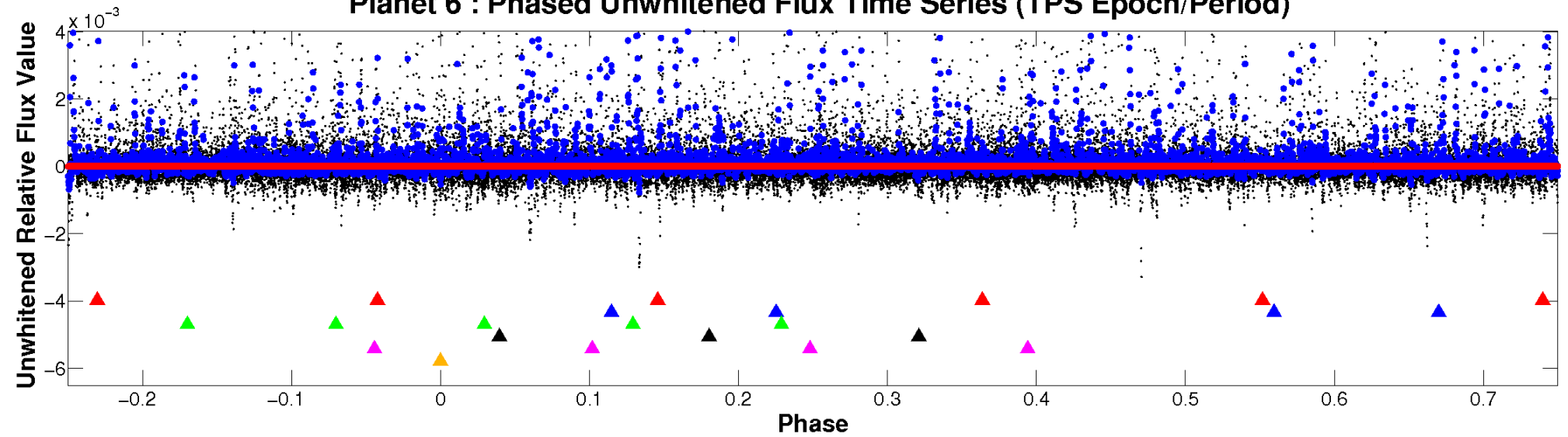
ALT Odd/Even

TCE 006187639-06



Non-Whitened Vs. Whitened Light Curve

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

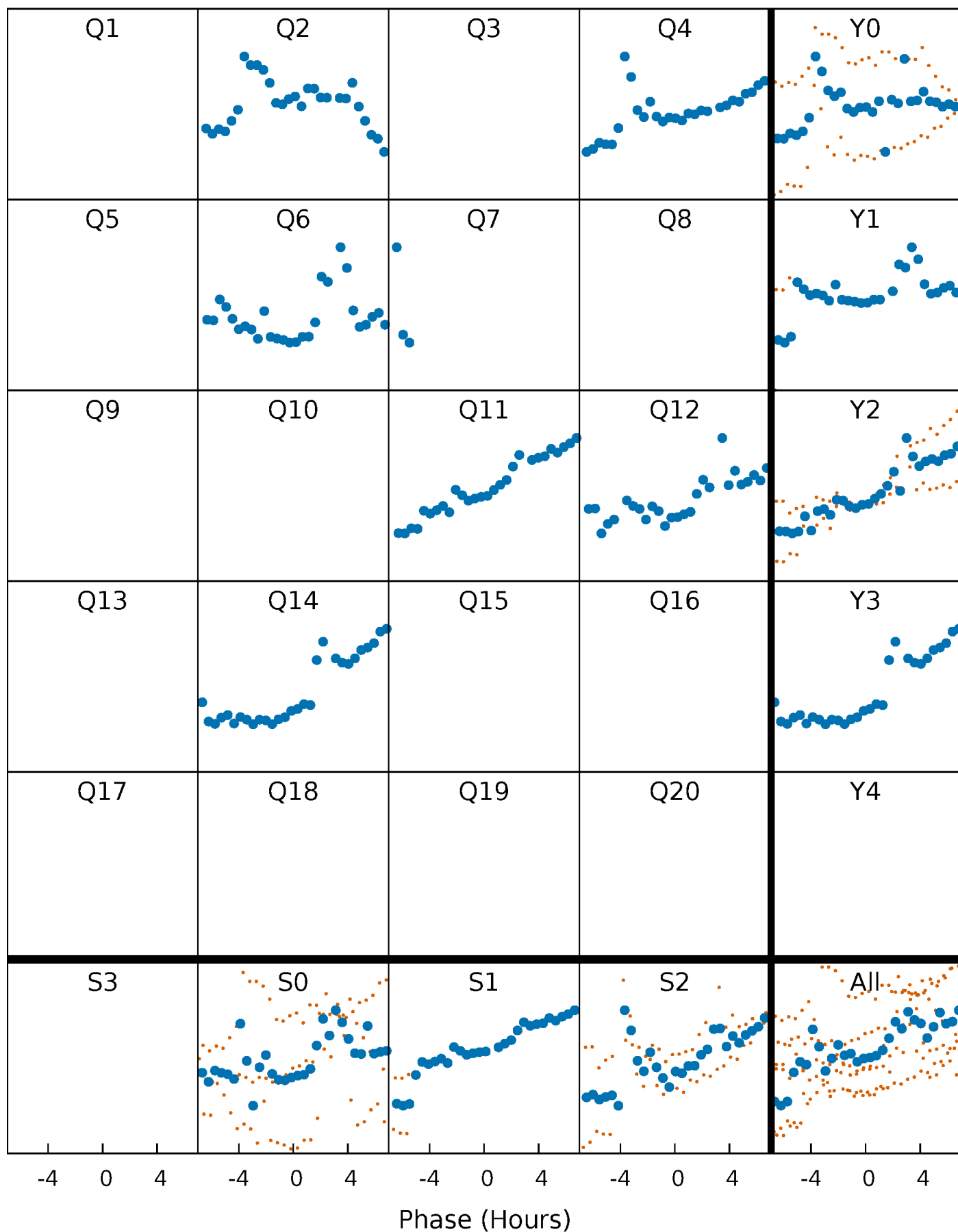


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



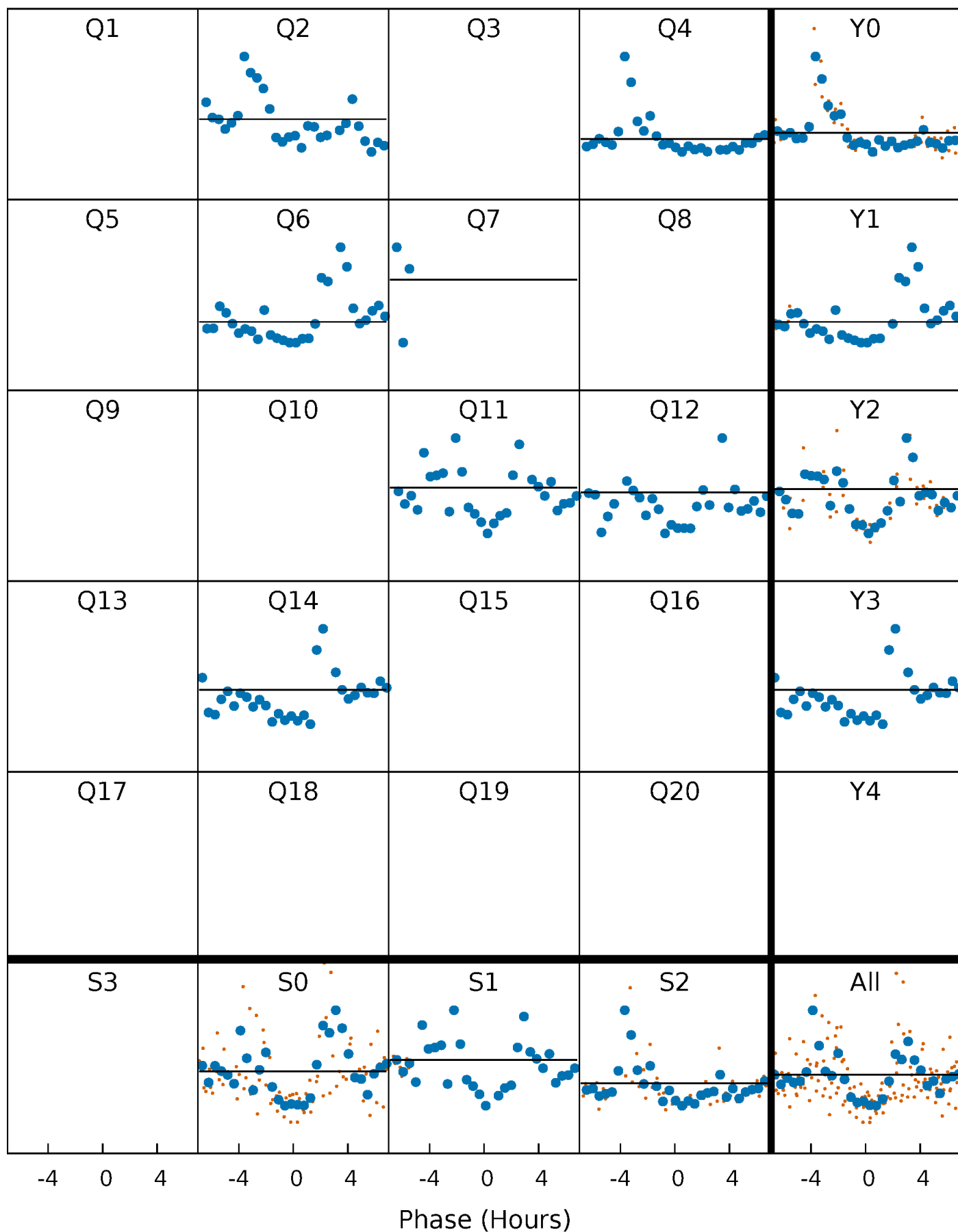
PDC Quarter-Phased Transit Curves

TCE 006187639-06 P=154.742468 Days $T_0=246.912929$ (BKJD)



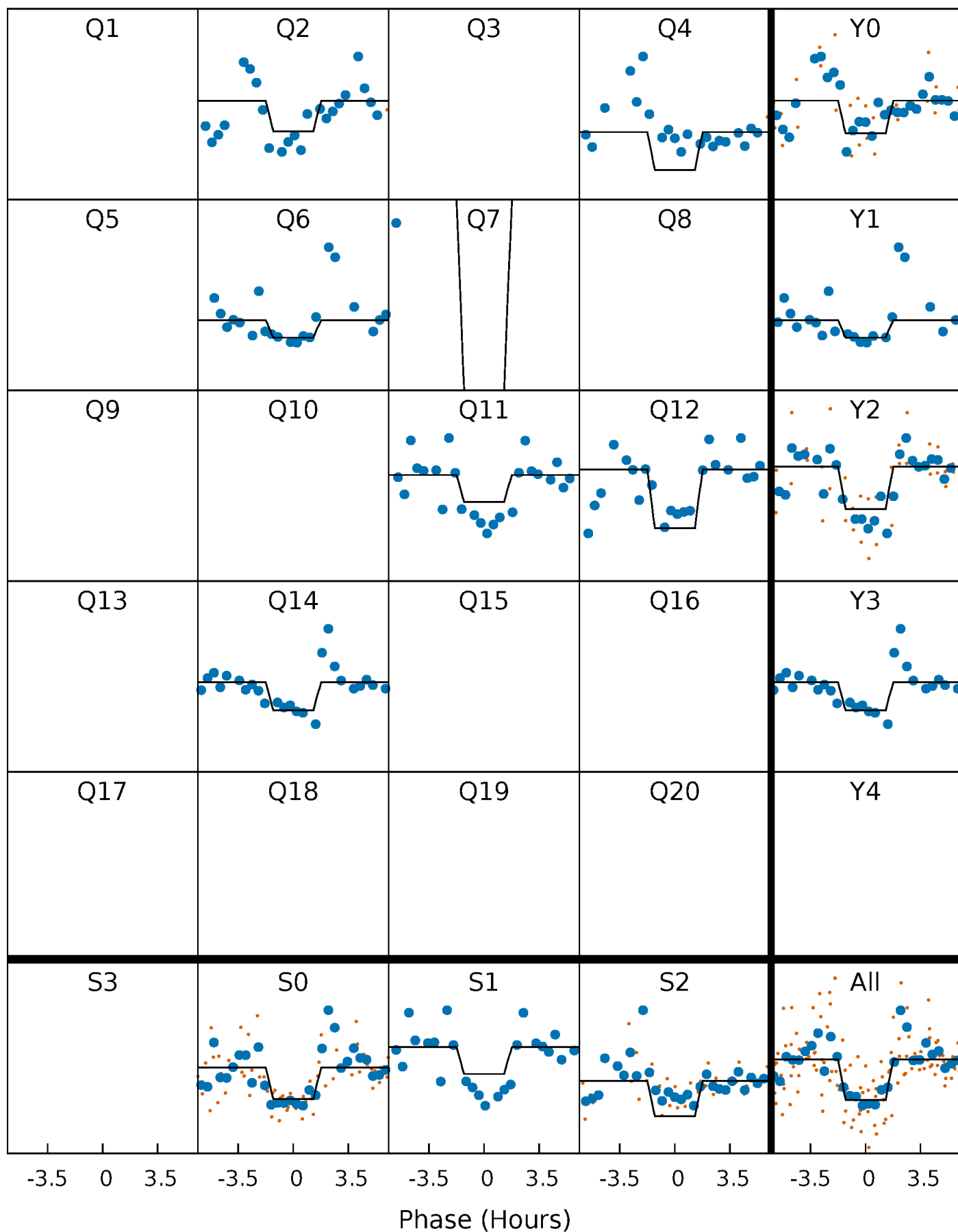
DV Quarter-Phased Transit Curves

TCE 006187639-06 P=154.742468 Days $T_0=246.912929$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

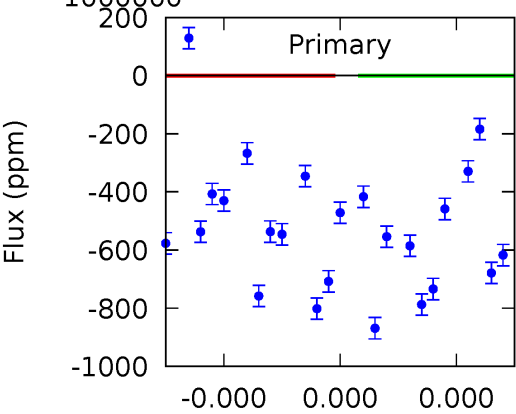
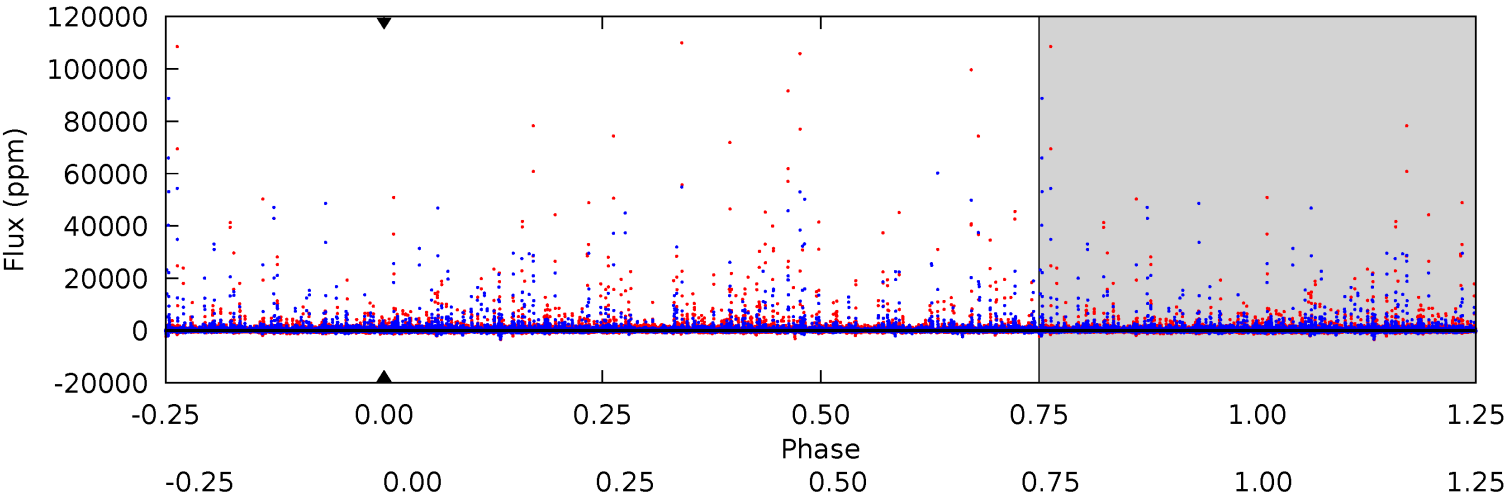
TCE 006187639-06 P=154.742468 Days $T_0=246.918842$ (BKJD)



DV Model-Shift Uniqueness Test

006187639-06, P = 154.742468 Days, E = 92.170461 Days

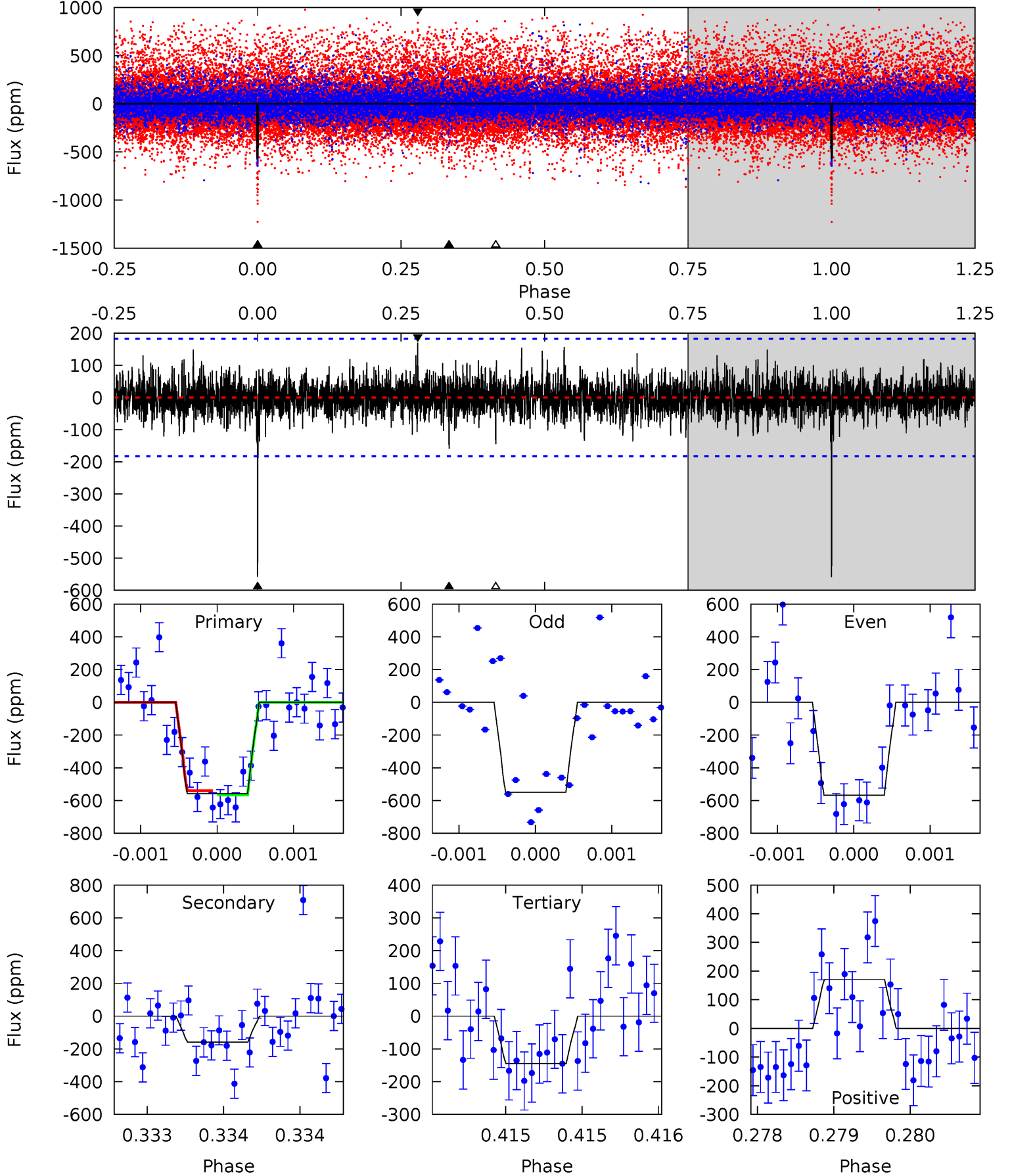
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006187639-06, P = 154.742468 Days, E = 92.176374 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	4.76	4.34	5.10	5.48	3.33	1.14	12.4	11.6	0.42	-0.34	0.27	0.96	0.23	0.40



Stellar Parameters For KIC 006187639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5390^{+133}_{-147}	$3.512^{+1.192}_{-0.298}$	$-1.200^{+0.300}_{-0.300}$	$2.555^{+1.610}_{-1.967}$	$0.774^{+0.250}_{-0.135}$	$0.065^{+3.991}_{-0.053}$
	+2%/-3%	+34%/-8%	+25%/-25%	+63%/-77%	+32%/-17%	+6104%/-81%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006187639-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$17.78^{+25.45}_{-12.80}$	718^{+115}_{-147}	3775^{+15569}_{-19104}	$306^{+107533}_{-87210}$
Alt.	-159 ± 33	$18.85^{+24.29}_{-13.97}$	714^{+110}_{-146}	2831^{+1489}_{-467}	65^{+1001}_{-53}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

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

DV Centroid Data

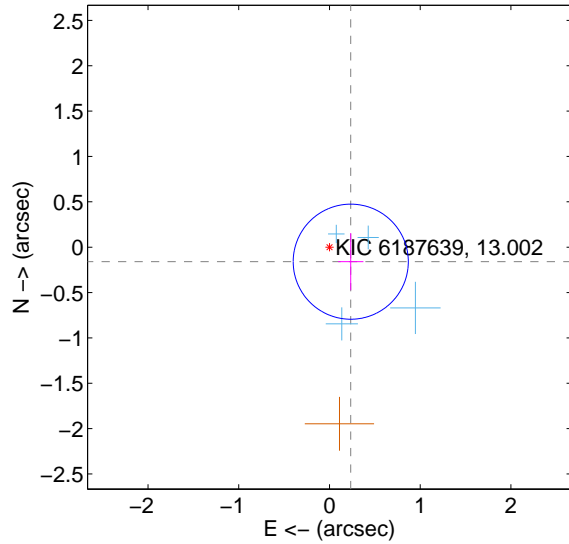
Supplemental centroid analysis for 006187639-06. Kepler magnitude: 13.00. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

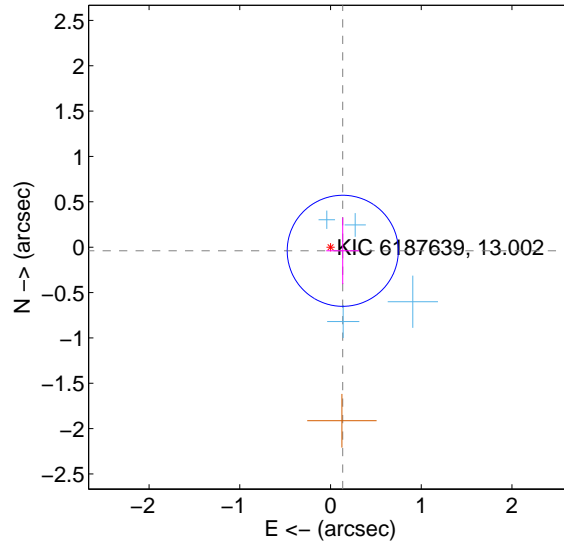
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.284 ± 0.211	1.34	-0.235 ± 0.140	-0.160 ± 0.314
PRF-fit source offset from KIC position	0.141 ± 0.204	0.69	-0.135 ± 0.183	-0.040 ± 0.367
photometric centroid source offset	0.68 ± 0.52	1.31	0.06 ± 0.50	0.67 ± 0.52

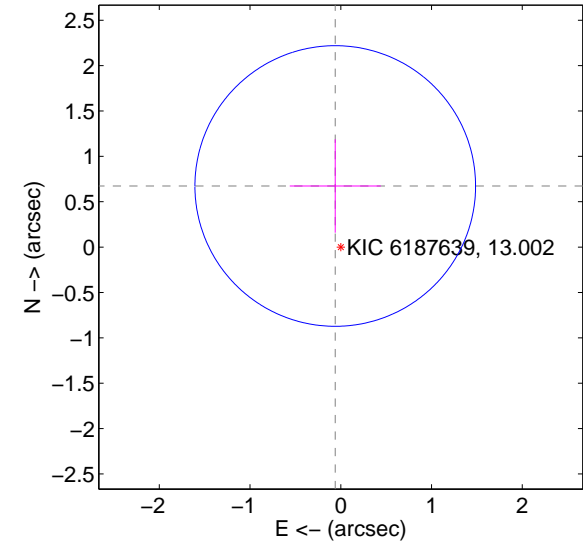
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

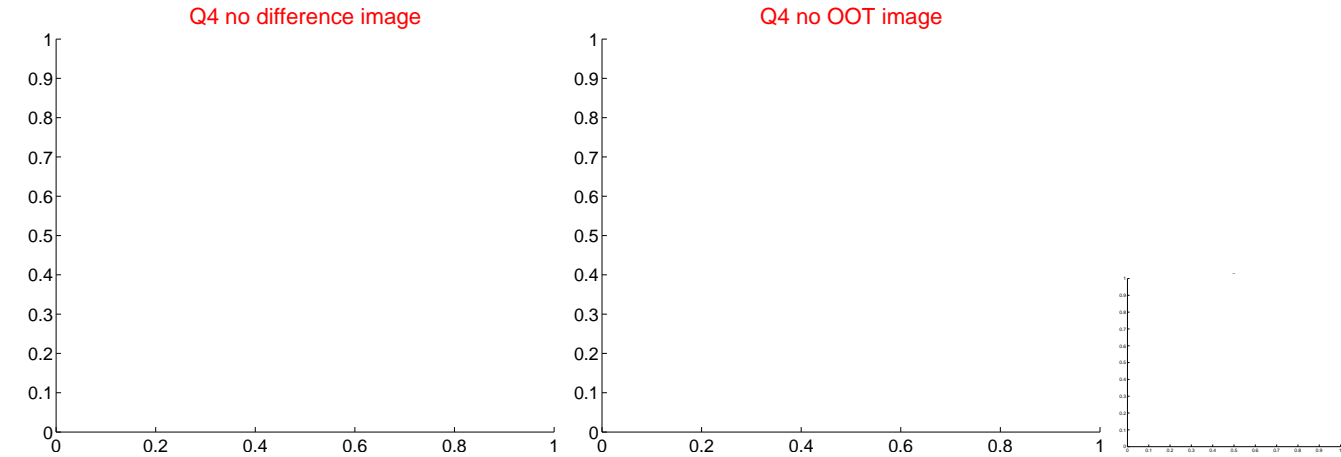
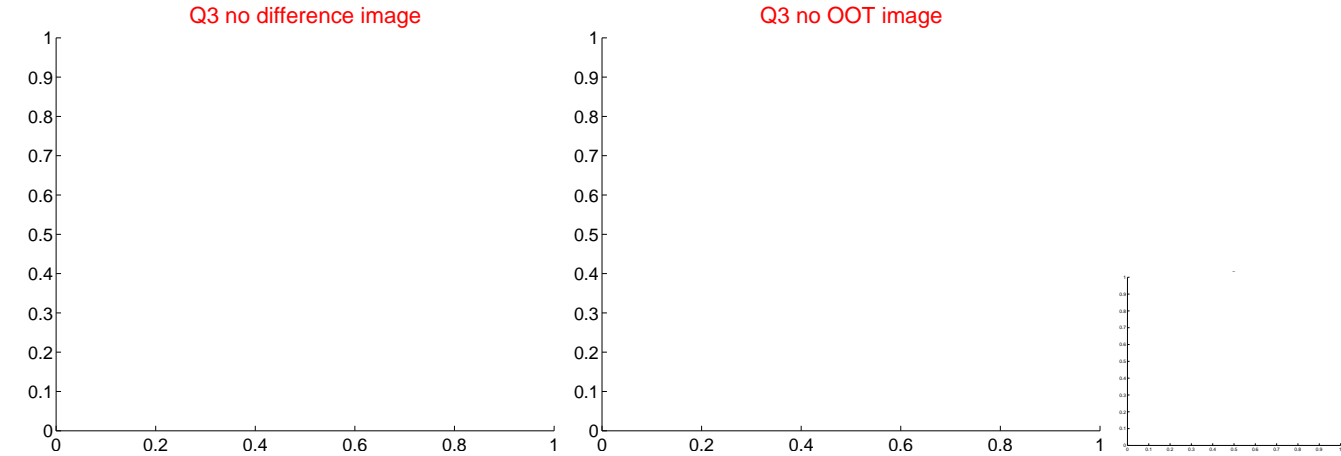
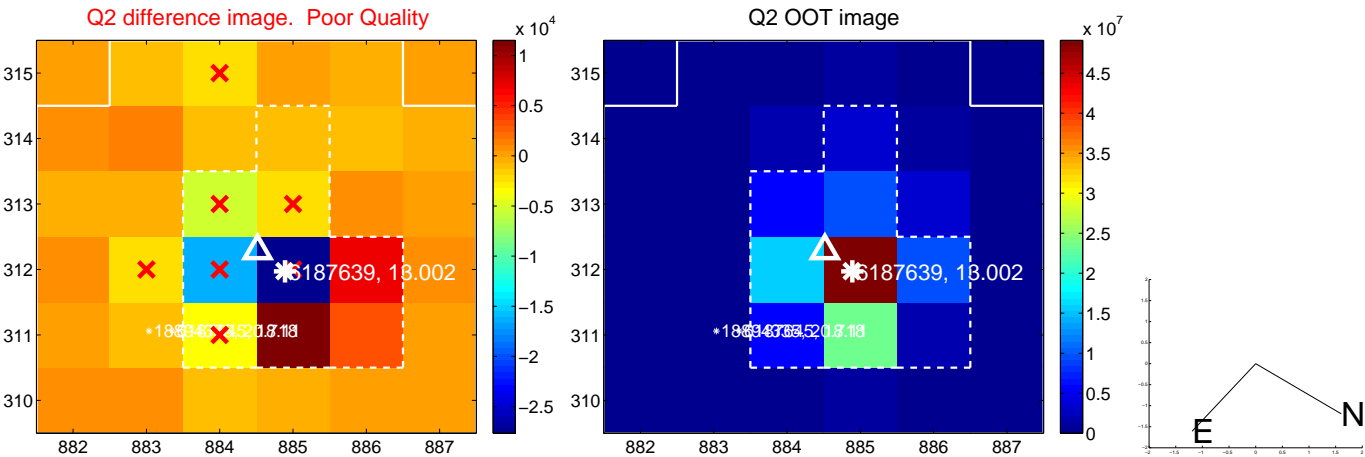
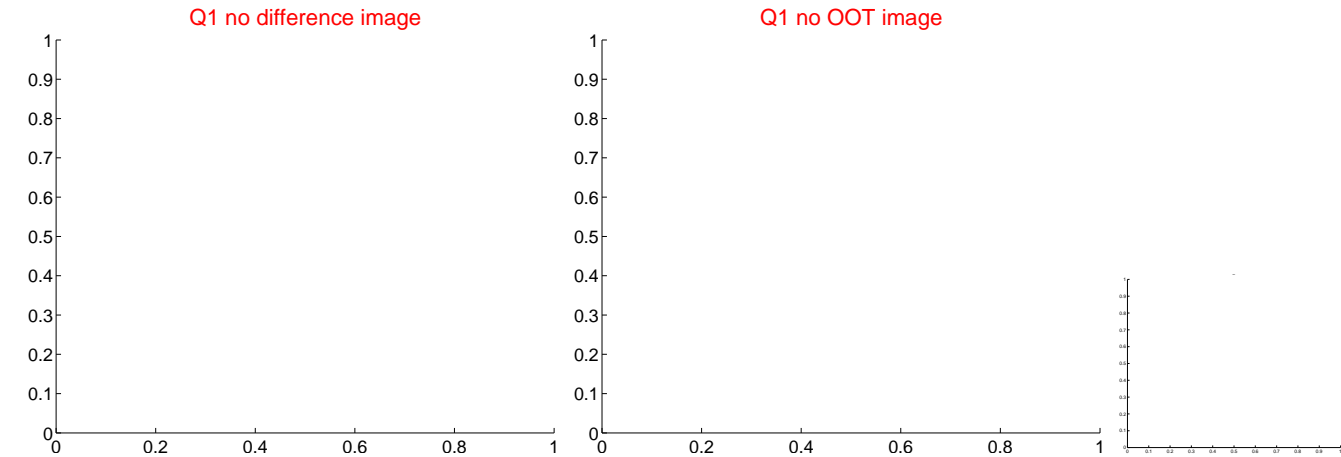


offset from photometric centroids

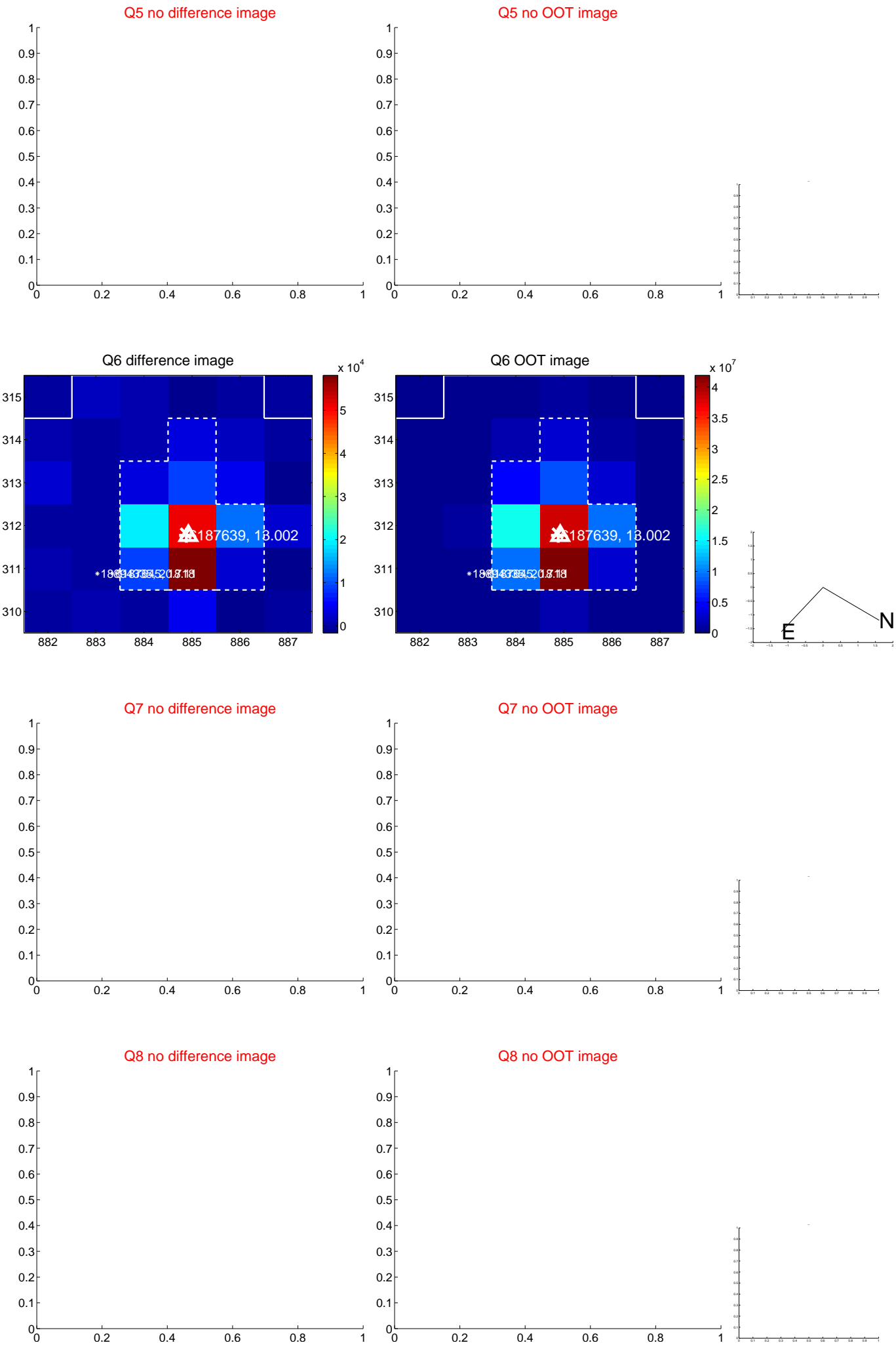


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

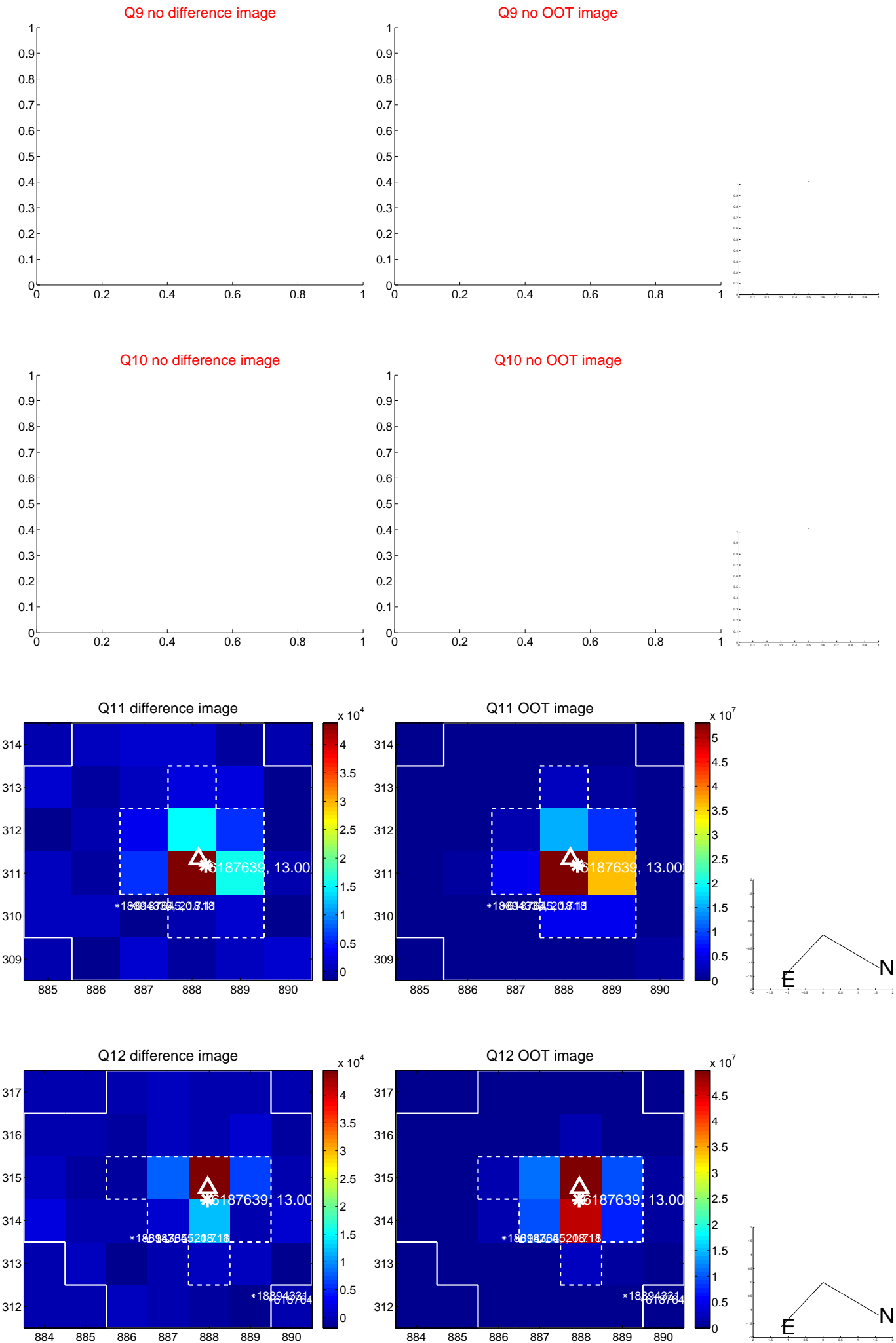
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



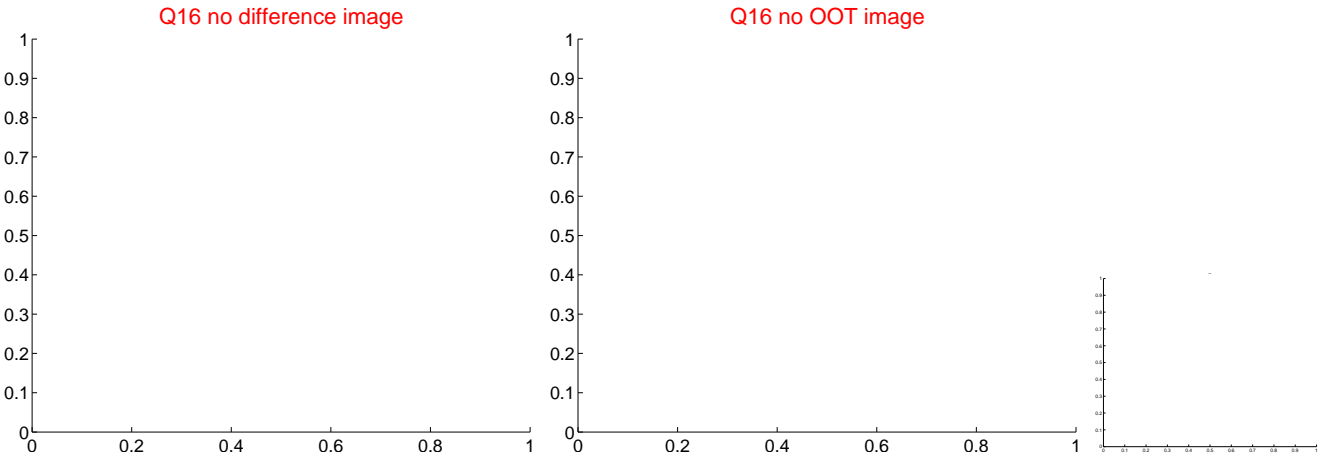
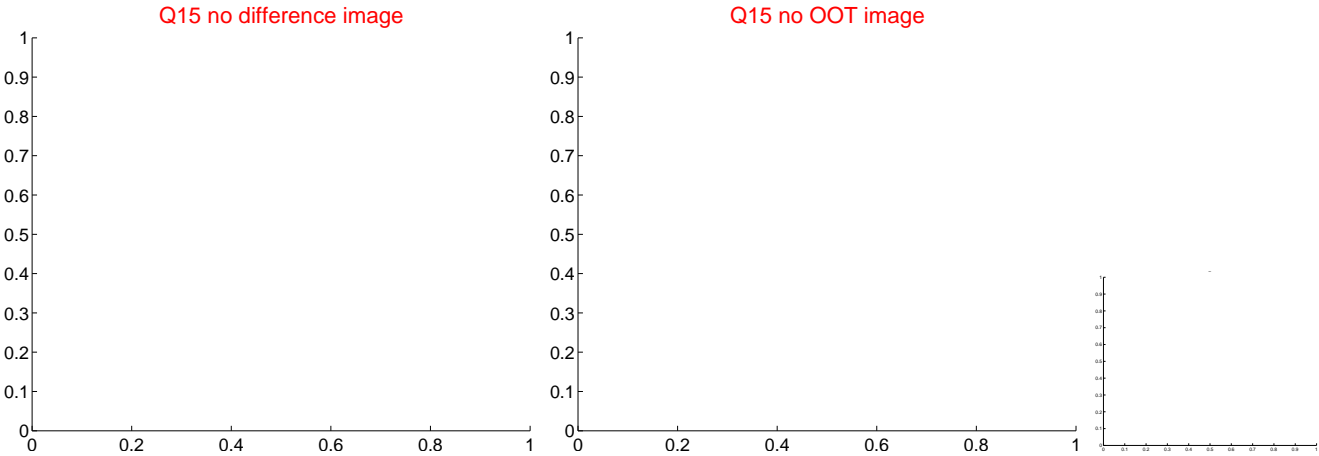
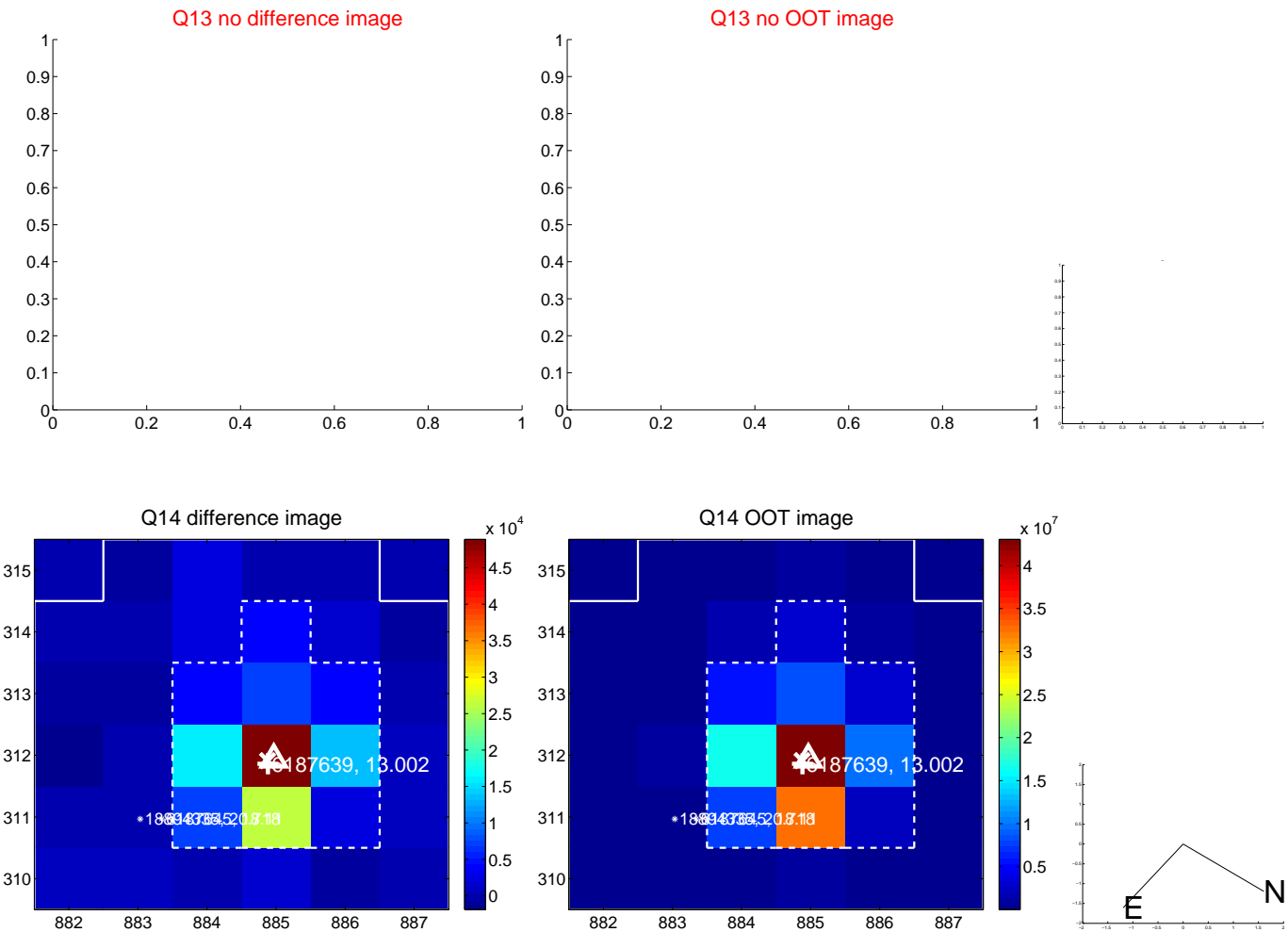
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



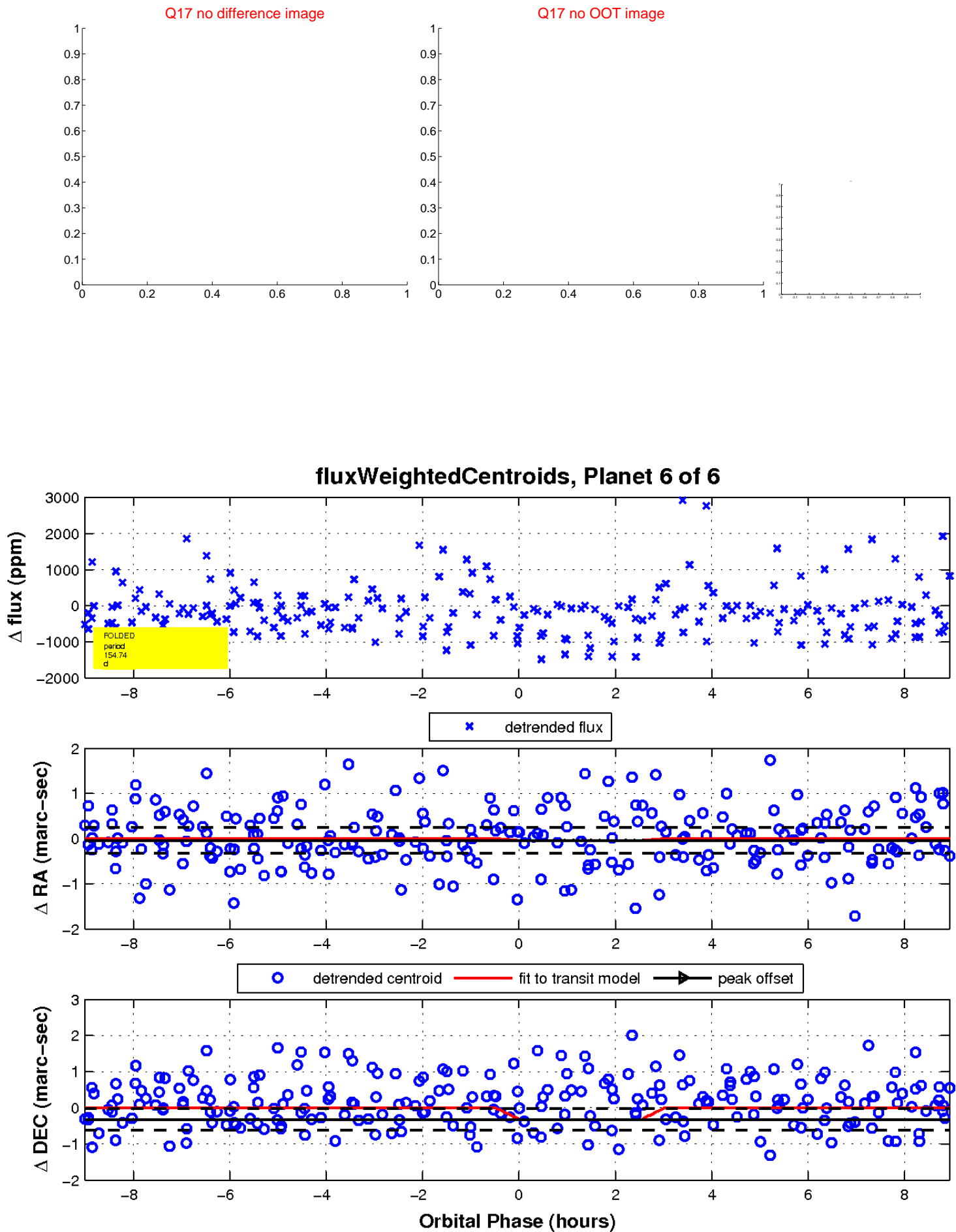
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

