

KIC 005387211

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})
005387211-01	OBS	No	2.709394	132.102838	21.3	8.845	9.0	6.2	1.48	6908	0.74	2437.38
005387211-02	OBS	No	465.843752	436.601922	308.6	9.065	10.7	7.1	1.48	6908	2.74	2.55
005387211-03	OBS	No	327.046038	242.989708	265.7	16.203	8.5	7.5	1.48	6908	2.62	4.09
005387211-04	OBS	No	212.047640	238.577901	373.2	5.127	7.3	8.0	1.48	6908	3.69	7.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005387211-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005387211-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005387211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005387211-04	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS—HALO_GHOST

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

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

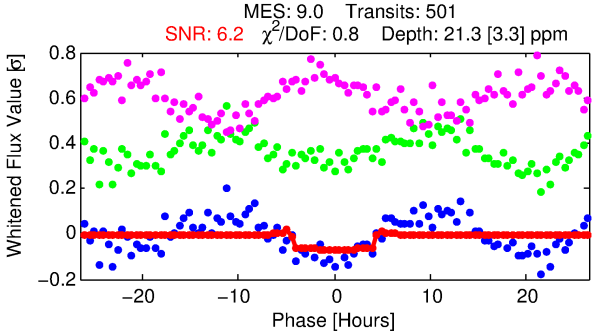
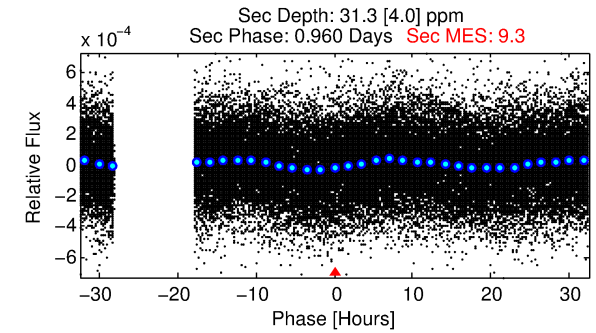
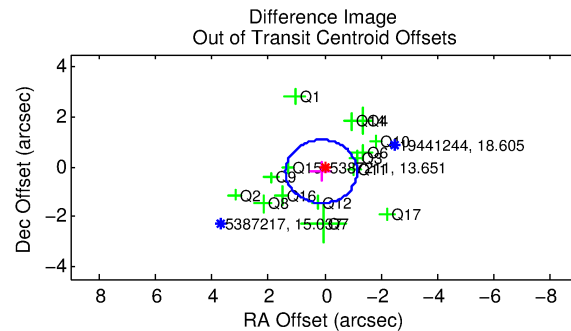
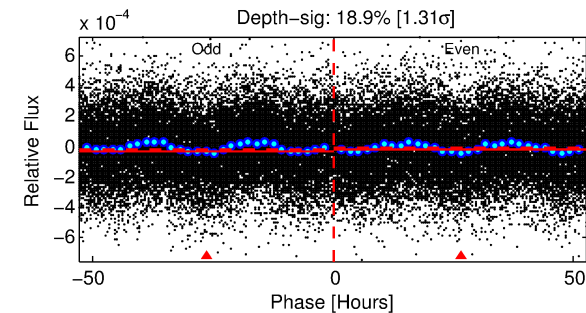
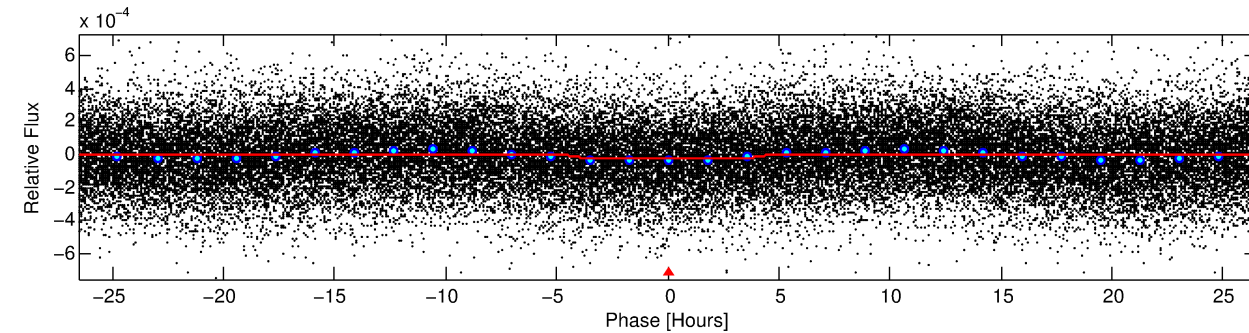
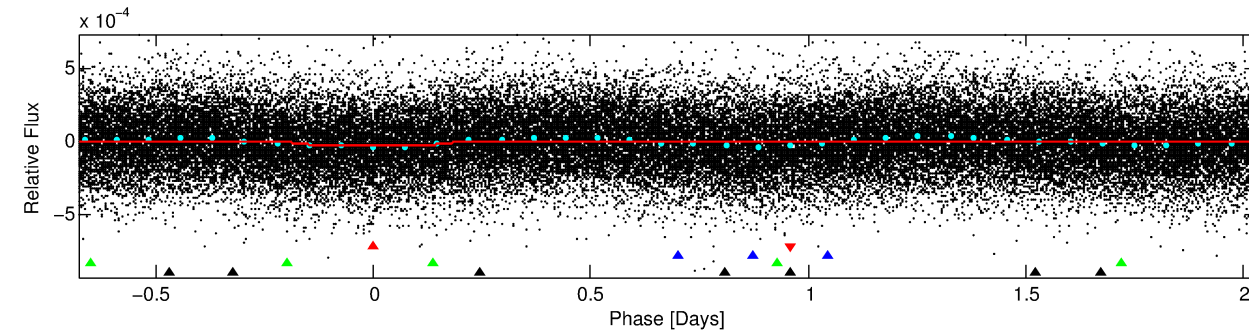
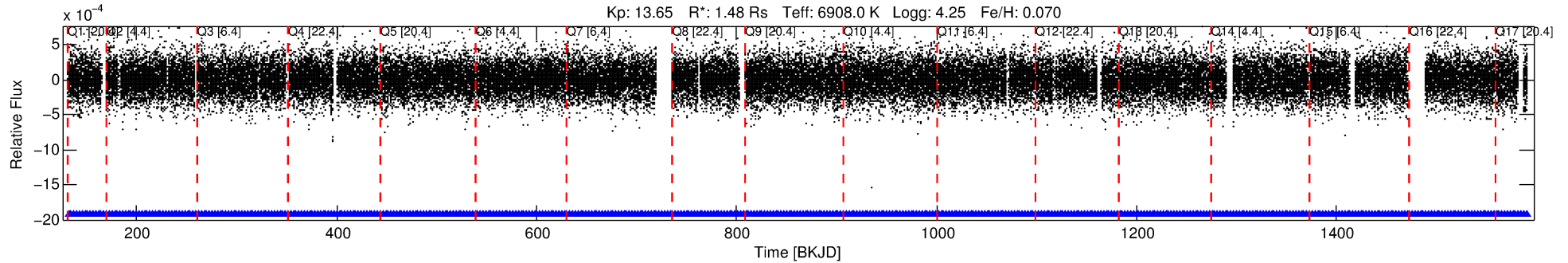
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005387211-01

No Significant Match Found

DV One-Page Summary

KIC: 5387211 Candidate: 1 of 4 Period: 2.709 d



DV Fit Results:

Period = 2.70939 [0.00005] d
Epoch = 132.1028 [0.0088] BKJD
Rp/R* = 0.0046 [0.0015]
a/R* = 1.74 [2.21]
b = 0.77 [1.02]
Seff = 2437.38 [1037.00]
Teq = 1792 [191] K
Rp = 0.74 [0.36] Re
a = 0.0428 [0.0119] AU
Ag = 56.91 [44.19] [1.27 σ]
Teffp = 7608 [1323] K [4.35 σ]

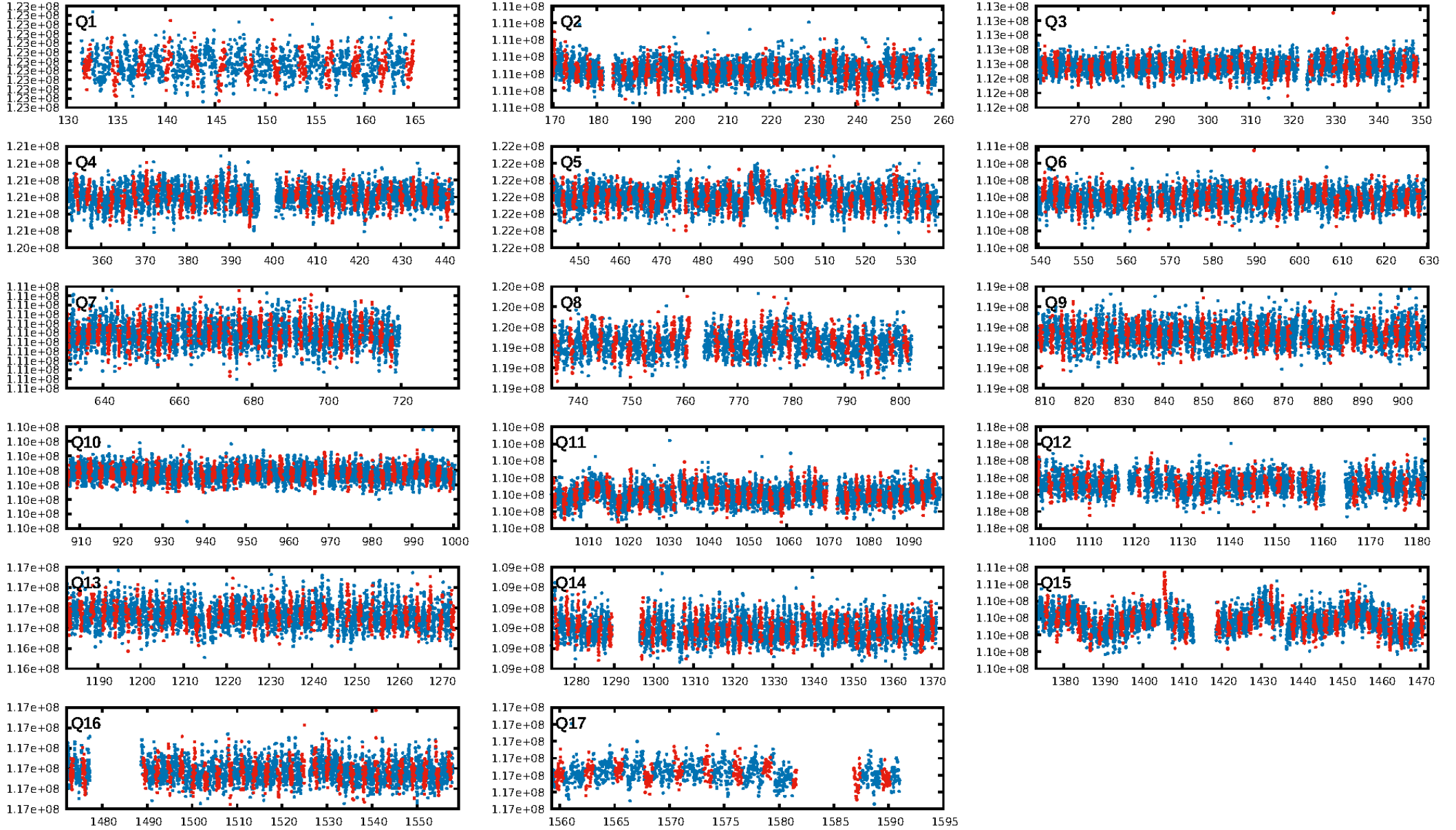
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [491.43 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.15e-13
RollingBand-fgt: 1.00 [477/477]
GhostDiagnostic-chr: 1.531
Centroid-sig: 0.2%
Centroid-so: 2.494 arcsec [2.06 σ]
OotOffset-rm: 0.230 arcsec [0.54 σ]
KicOffset-rm: 0.261 arcsec [0.64 σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 1.00 [17/17]

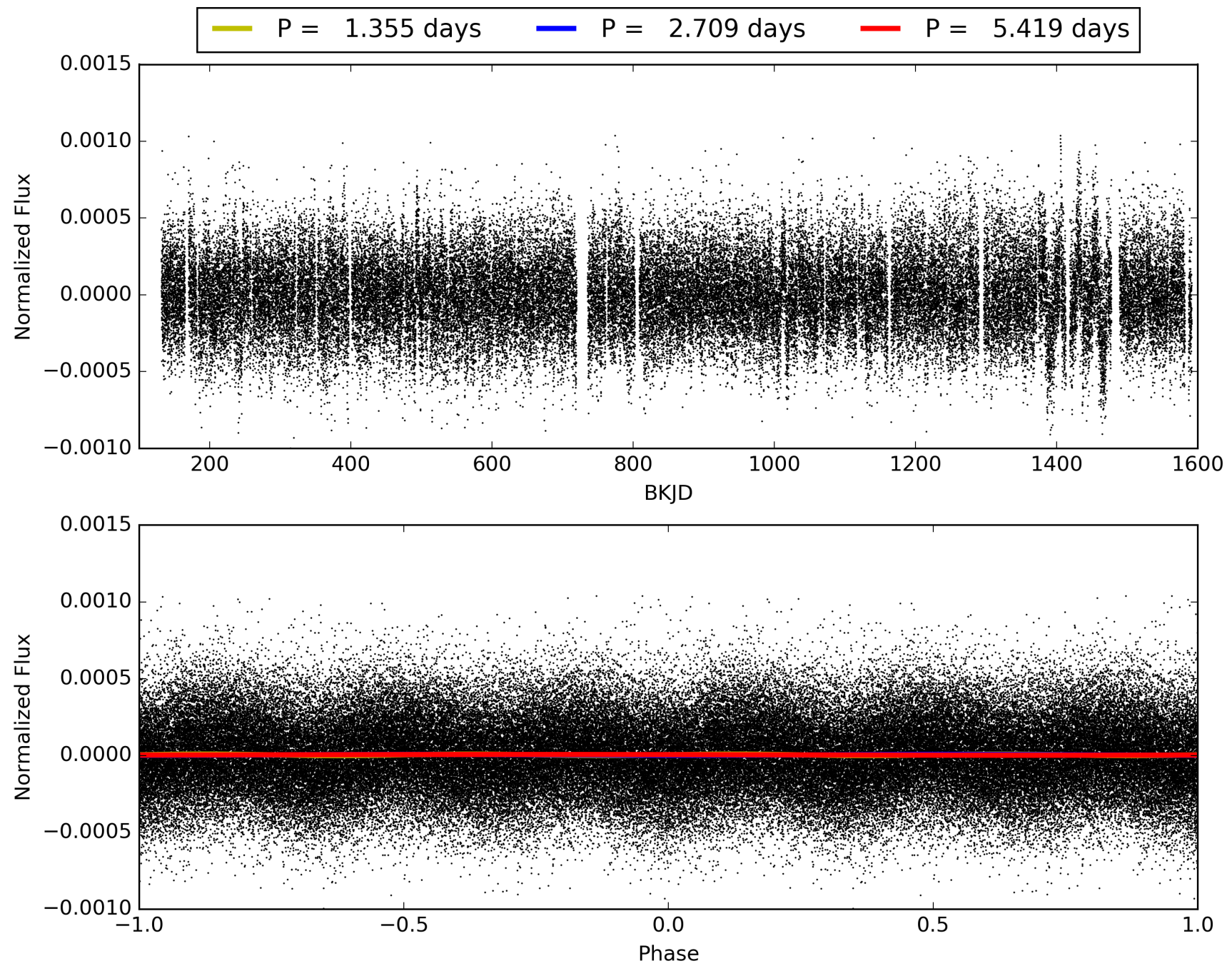
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005387211-01, PDC Light Curves

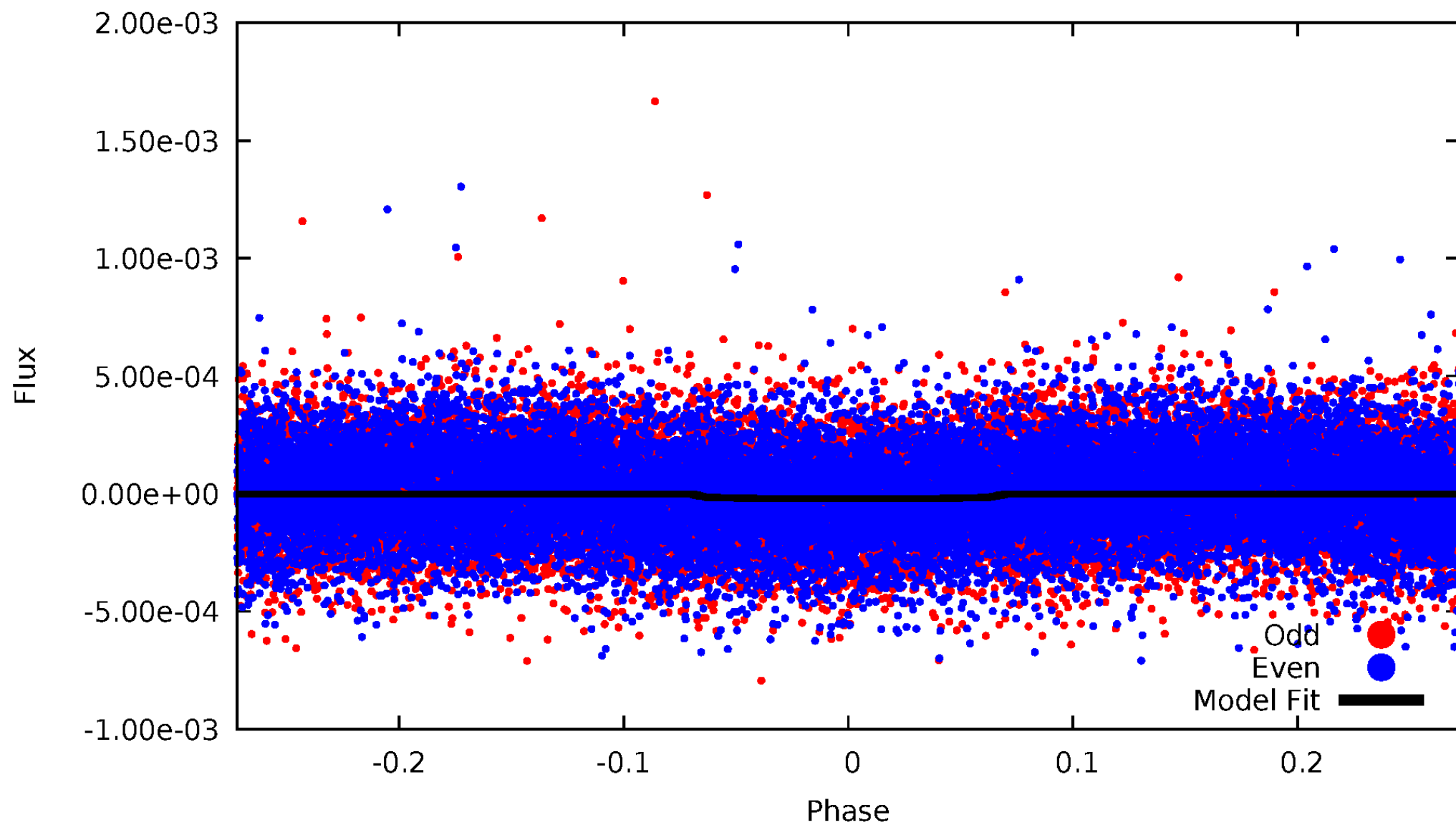


TCE 005387211-01



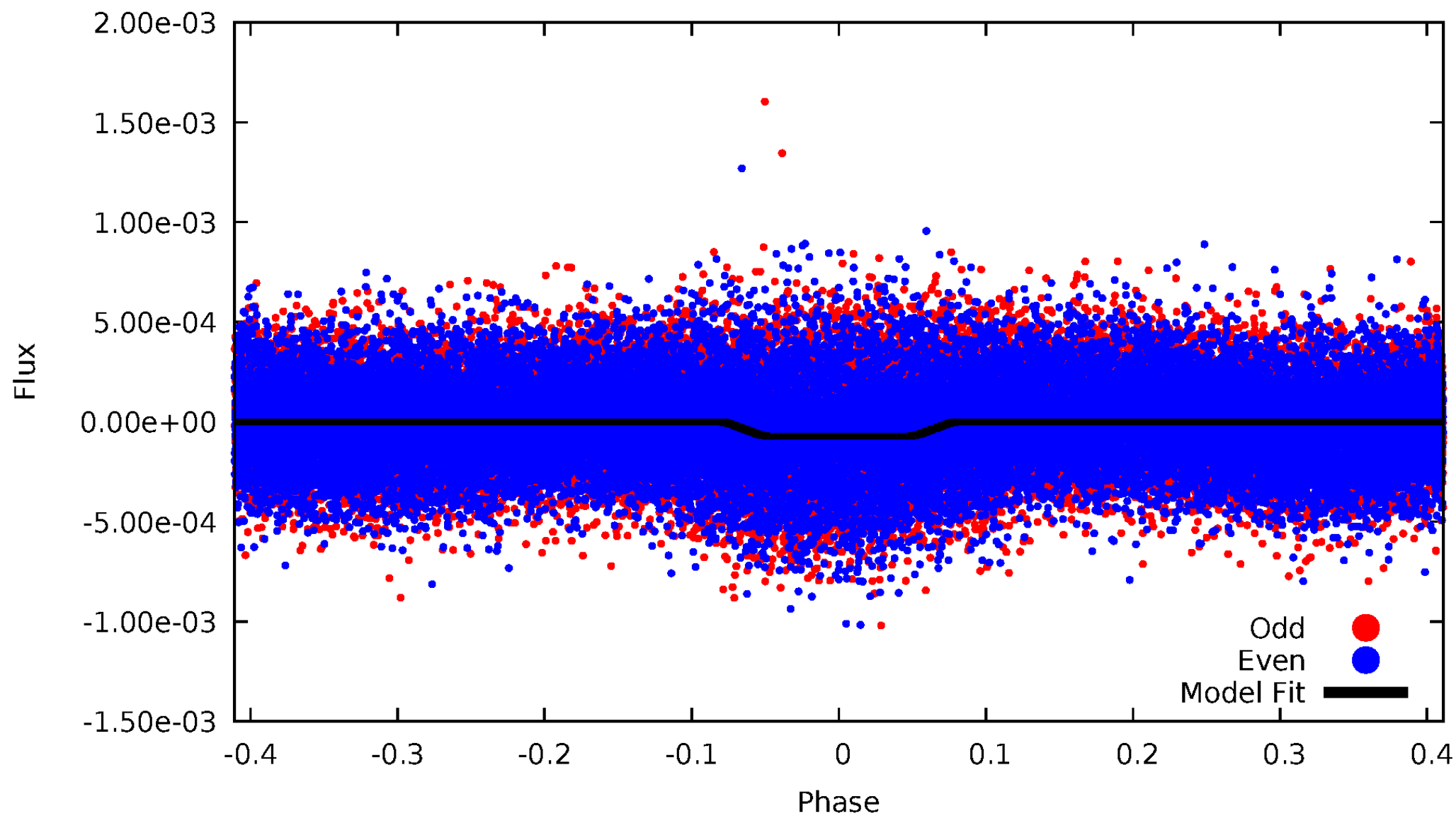
DV Odd/Even

TCE 005387211-01

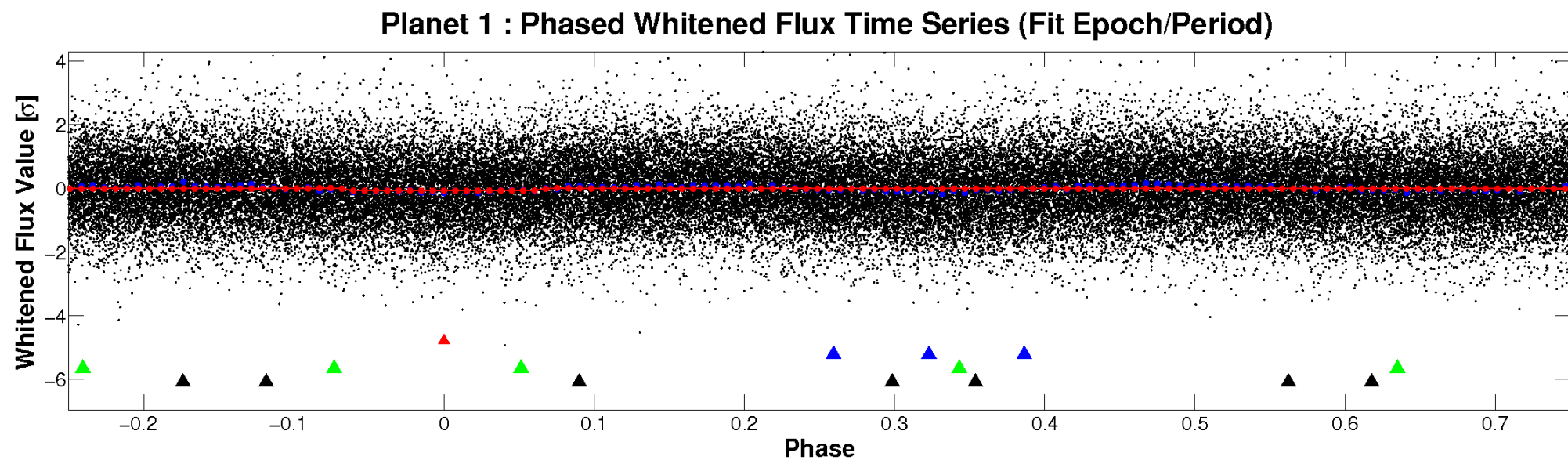
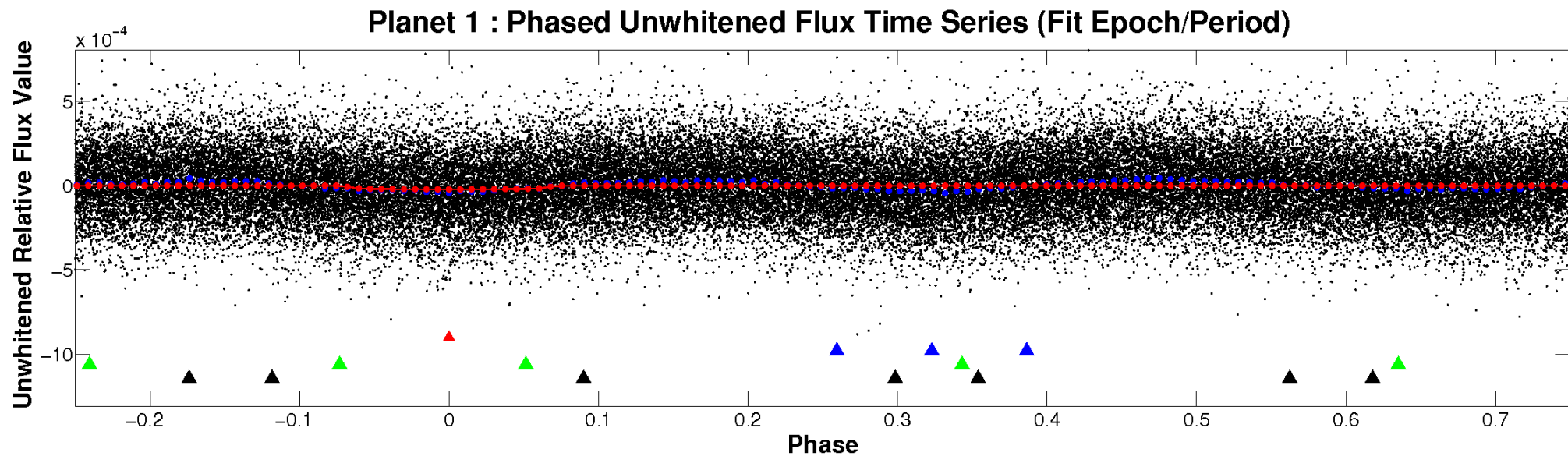


ALT Odd/Even

TCE 005387211-01

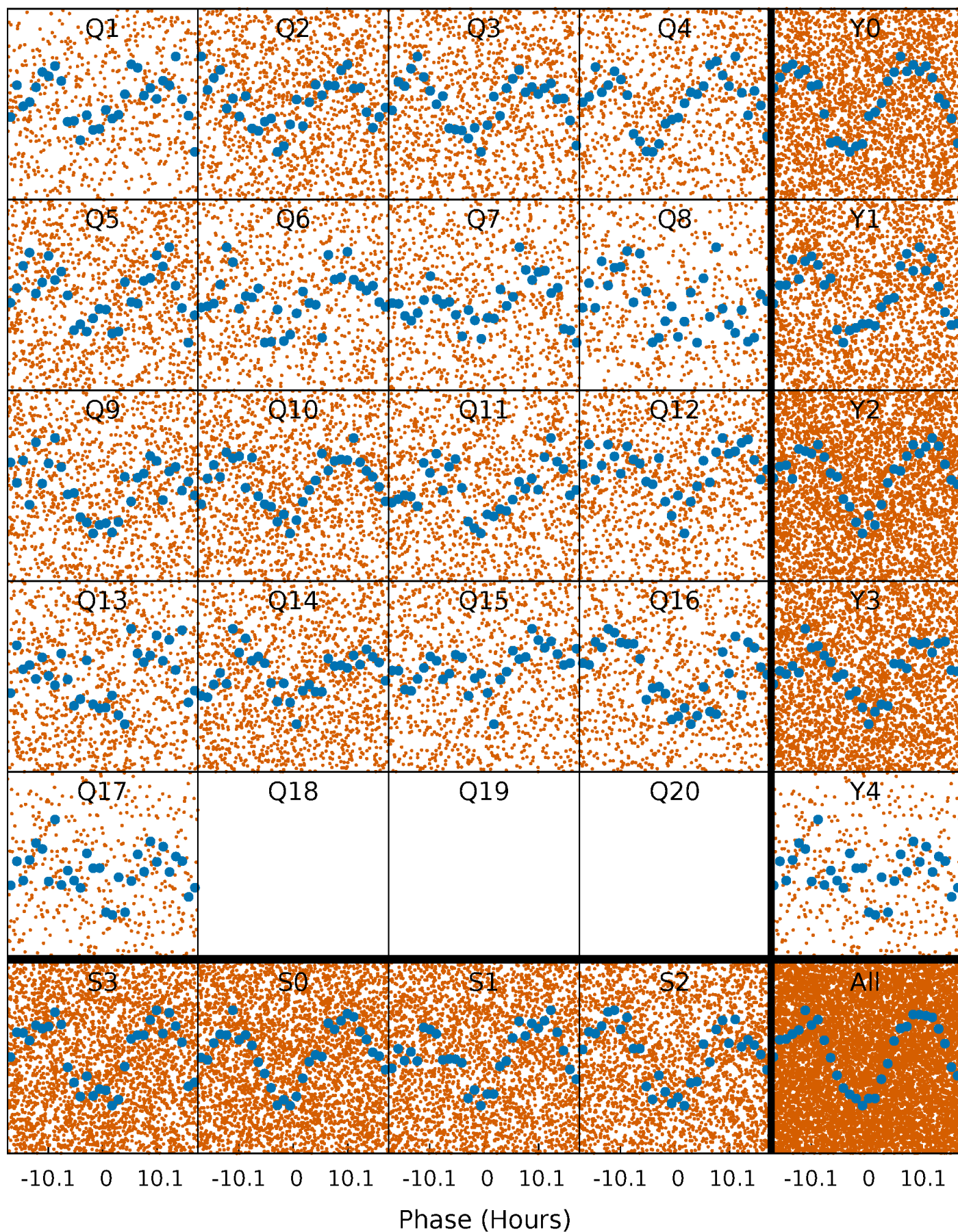


Non-Whitened Vs. Whitened Light Curve



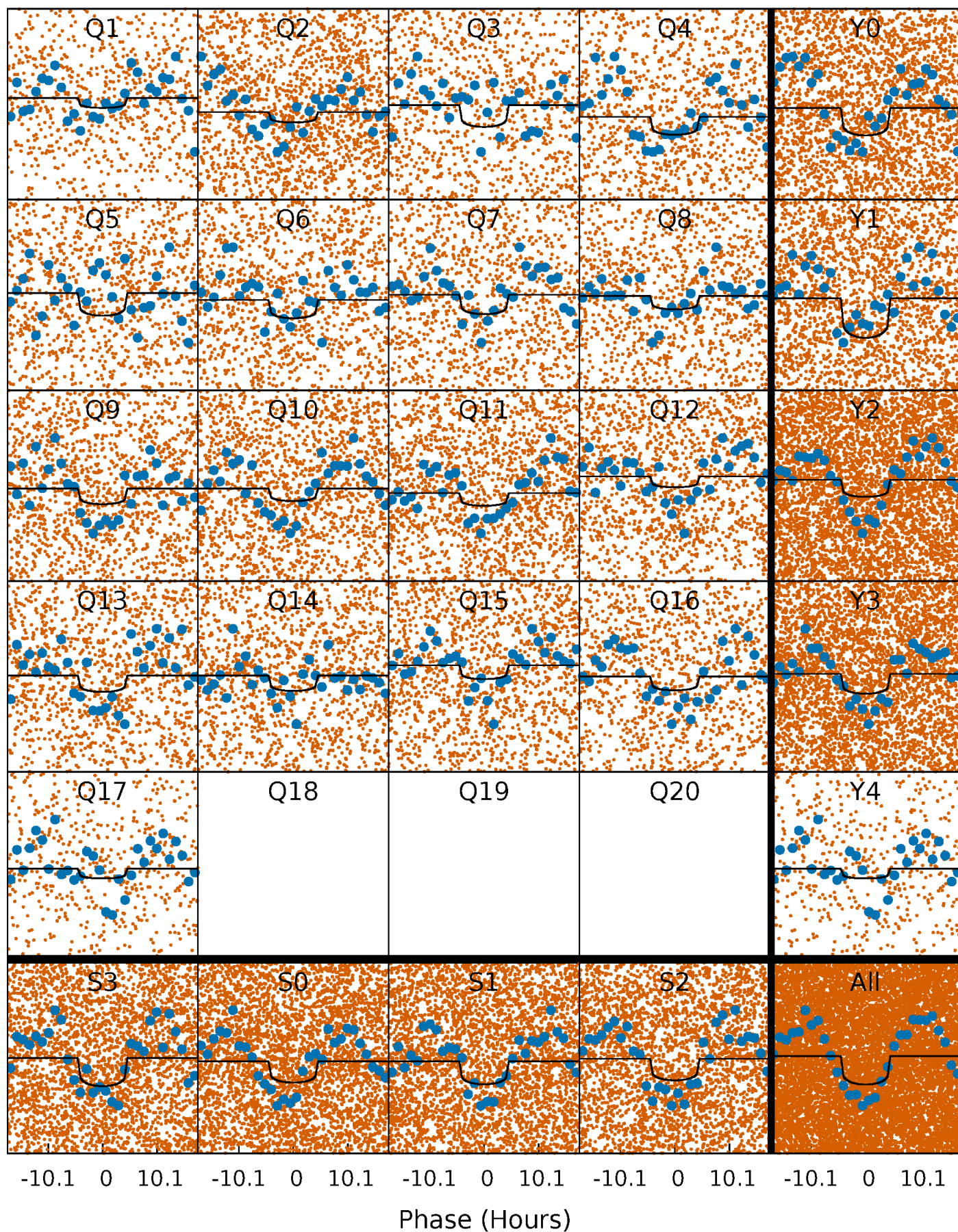
PDC Quarter-Phased Transit Curves

TCE 005387211-01 P= 2.709394 Days $T_0=132.102838$ (BKJD)



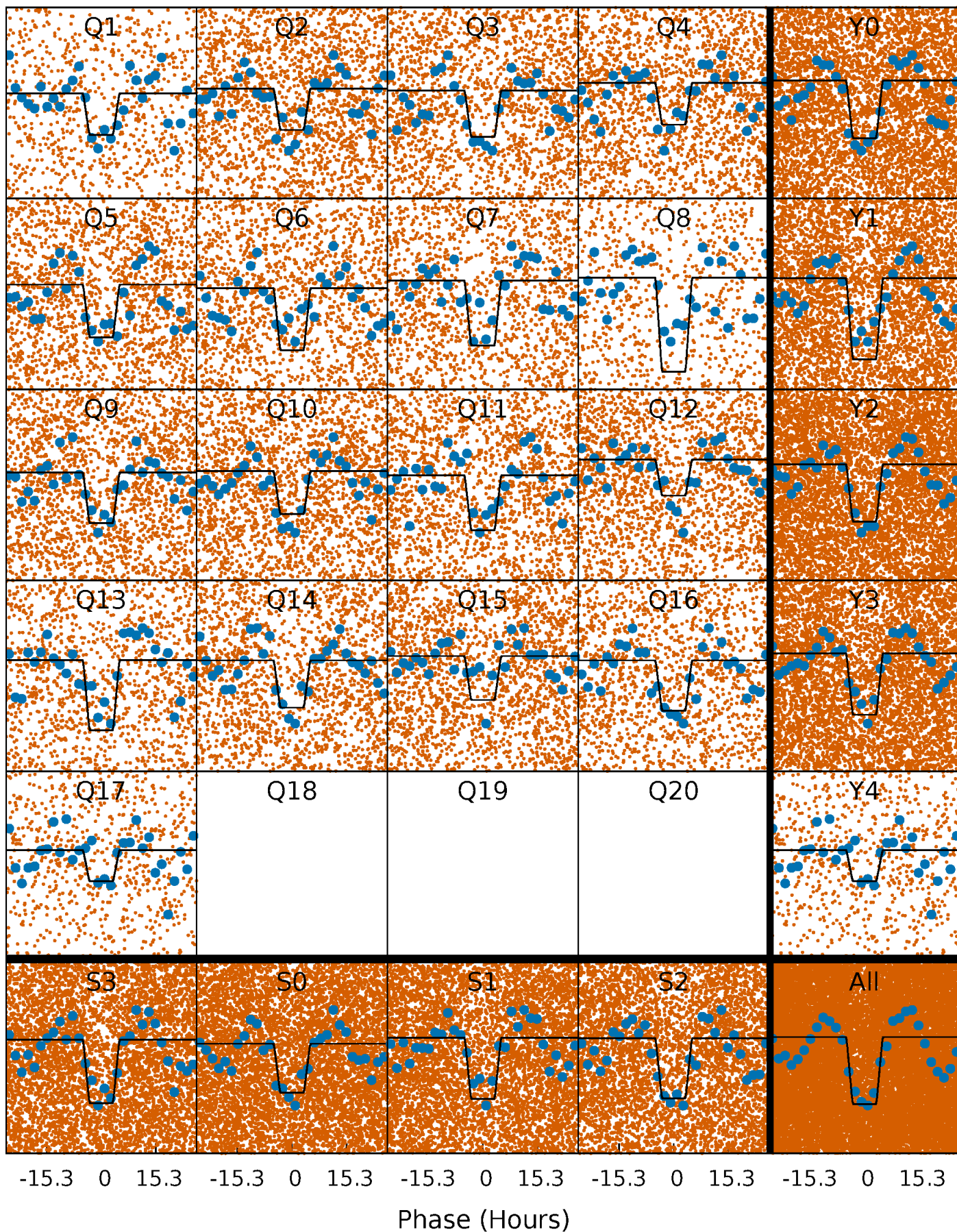
DV Quarter-Phased Transit Curves

TCE 005387211-01 P= 2.709394 Days $T_0=132.102838$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

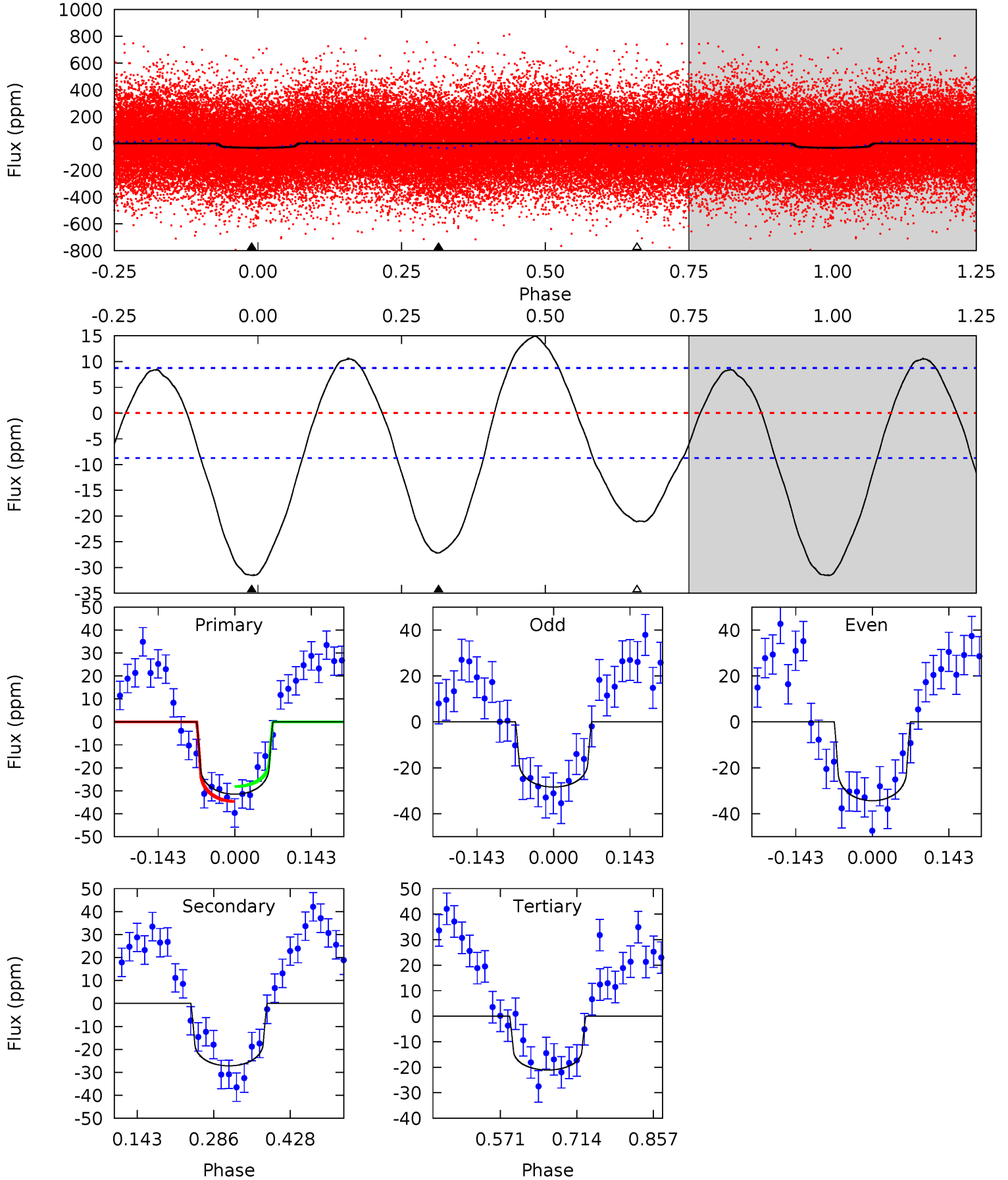
TCE 005387211-01 P= 2.709714 Days $T_0=131.982709$ (BKJD)



DV Model-Shift Uniqueness Test

005387211-01, P = 2.709394 Days, E = 129.393444 Days

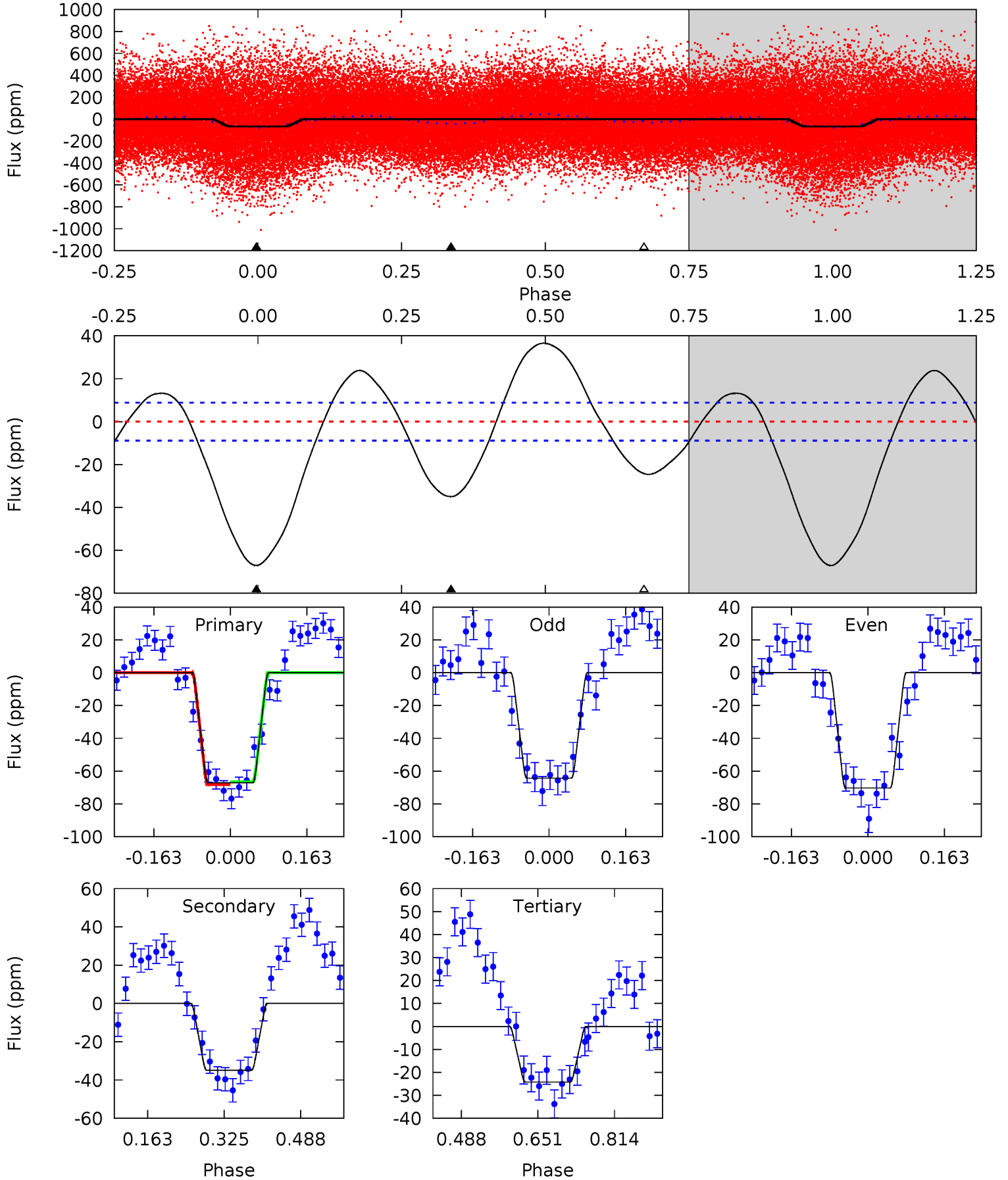
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	14.0	10.8	0	4.49	1.47	6.23	5.36	16.2	3.13	14.0	1.53	1.00	0.32	1.66



Alt Model-Shift Uniqueness Test

005387211-01, P = 2.709714 Days, E = 129.272995 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.7	17.6	12.2	0	4.46	1.40	9.61	21.5	33.7	5.39	17.6	1.51	0.85	0.35	0.43



Stellar Parameters For KIC 005387211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6908^{+193}_{-303}	$4.251^{+0.087}_{-0.203}$	$0.070^{+0.200}_{-0.350}$	$1.478^{+0.511}_{-0.219}$	$1.420^{+0.213}_{-0.213}$	$0.619^{+0.257}_{-0.344}$
	+3%/-4%	+2%/-5%	+286%/-500%	+35%/-15%	+15%/-15%	+41%/-56%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005387211-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 2	$0.76^{+0.29}_{-0.27}$	2518^{+189}_{-142}	7416^{+2182}_{-1156}	46^{+66}_{-21}
Alt.	-35 ± 2	$1.43^{+0.35}_{-0.28}$	2538^{+212}_{-158}	5695^{+603}_{-482}	17^{+9}_{-6}

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 $A_{obs} \gg 1.0$

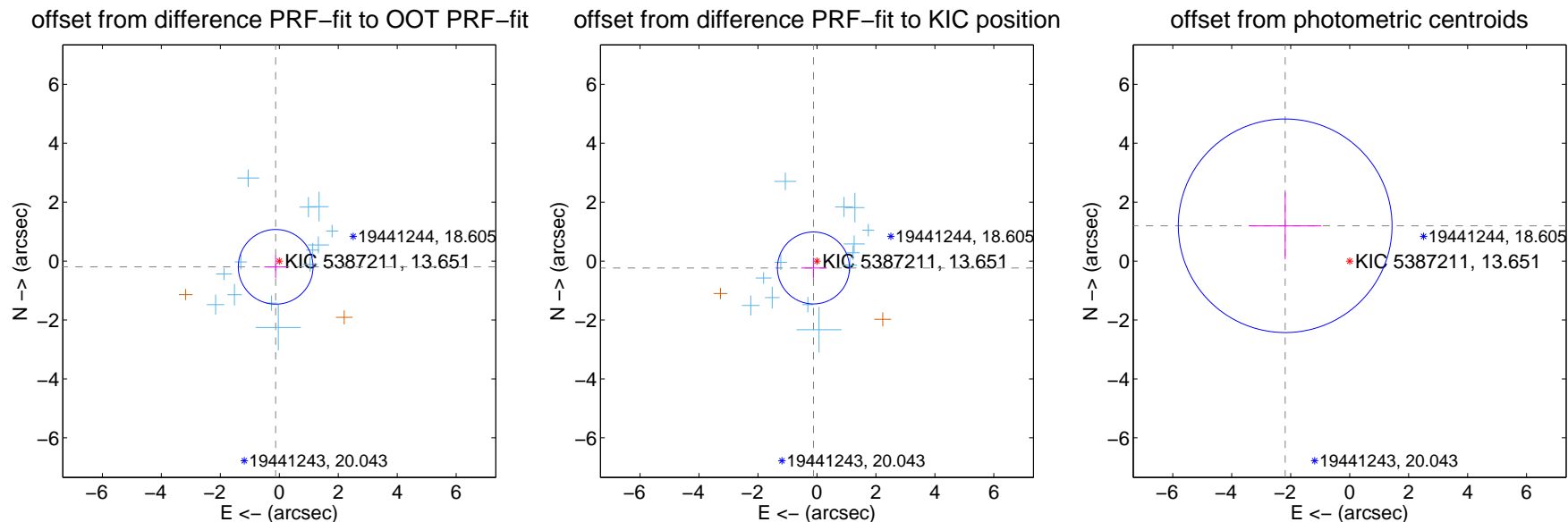
DV Centroid Data

Supplemental centroid analysis for 005387211-01. Kepler magnitude: 13.65. Transit SNR 6.15

There are 13 quarters with good PRF difference image offsets

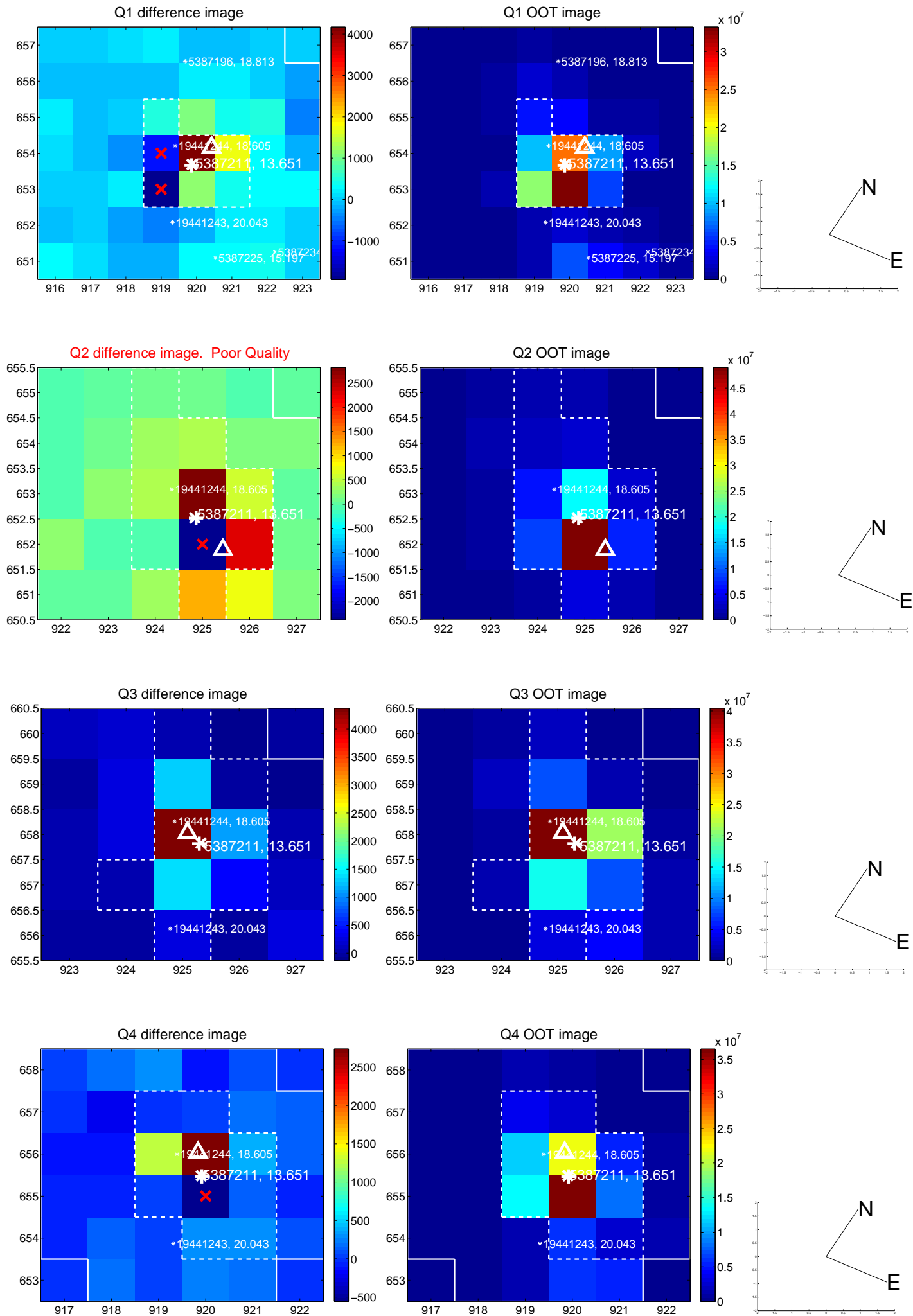
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.230 ± 0.423	0.54	0.123 ± 0.386	-0.195 ± 0.376
PRF-fit source offset from KIC position	0.261 ± 0.407	0.64	0.118 ± 0.417	-0.233 ± 0.349
photometric centroid source offset	2.49 ± 1.21	2.06	2.19 ± 1.23	1.20 ± 1.14

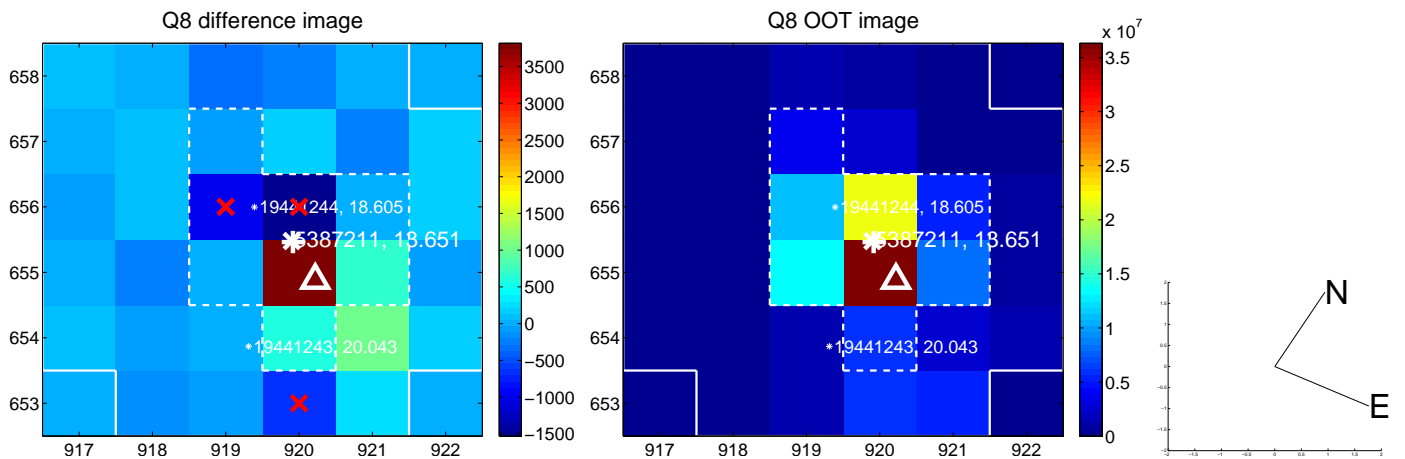
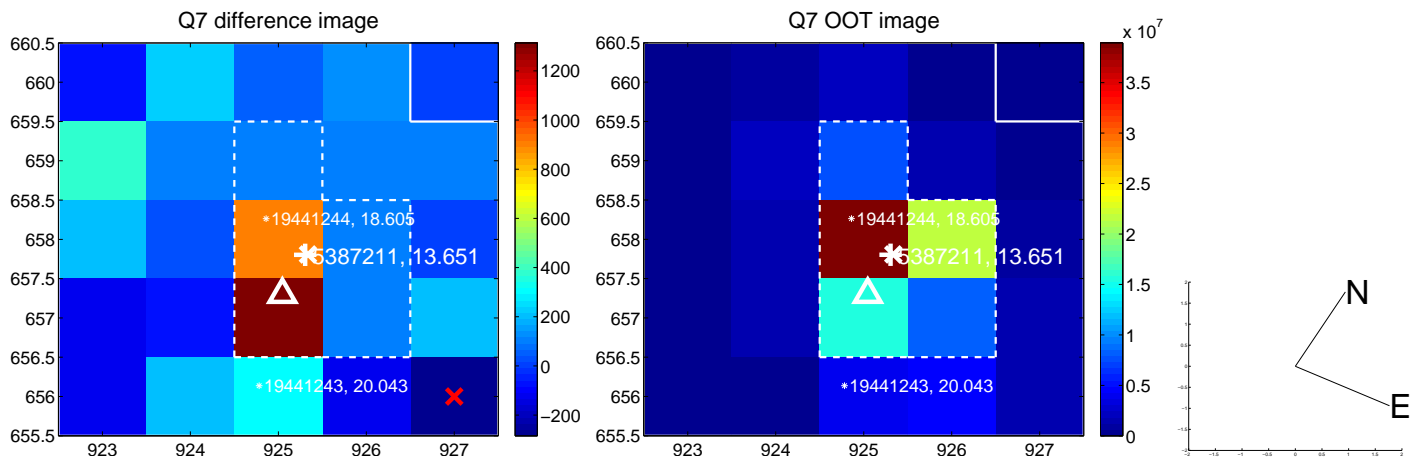
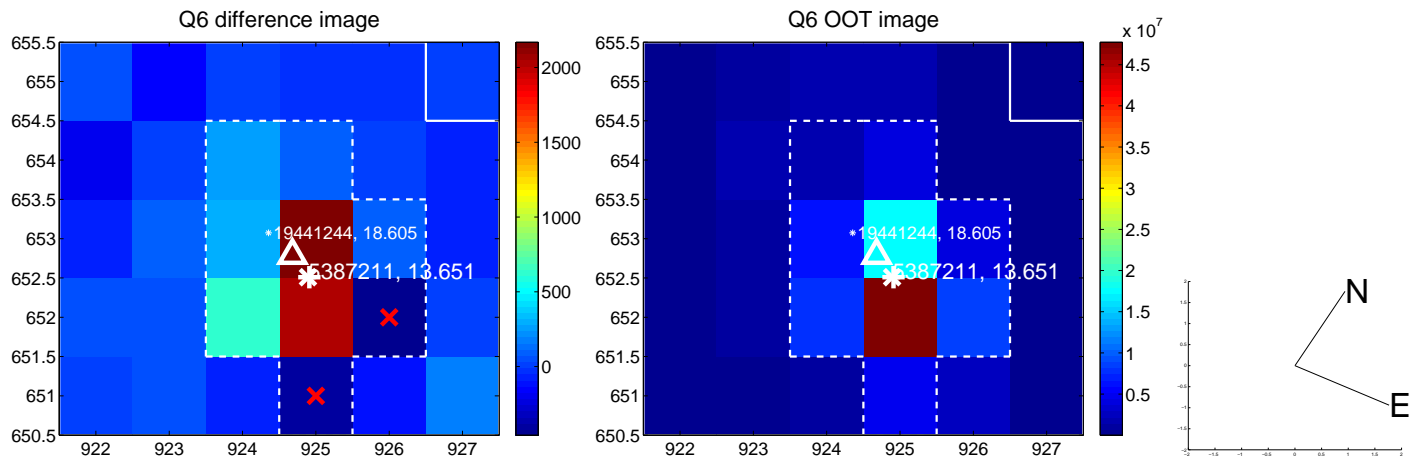
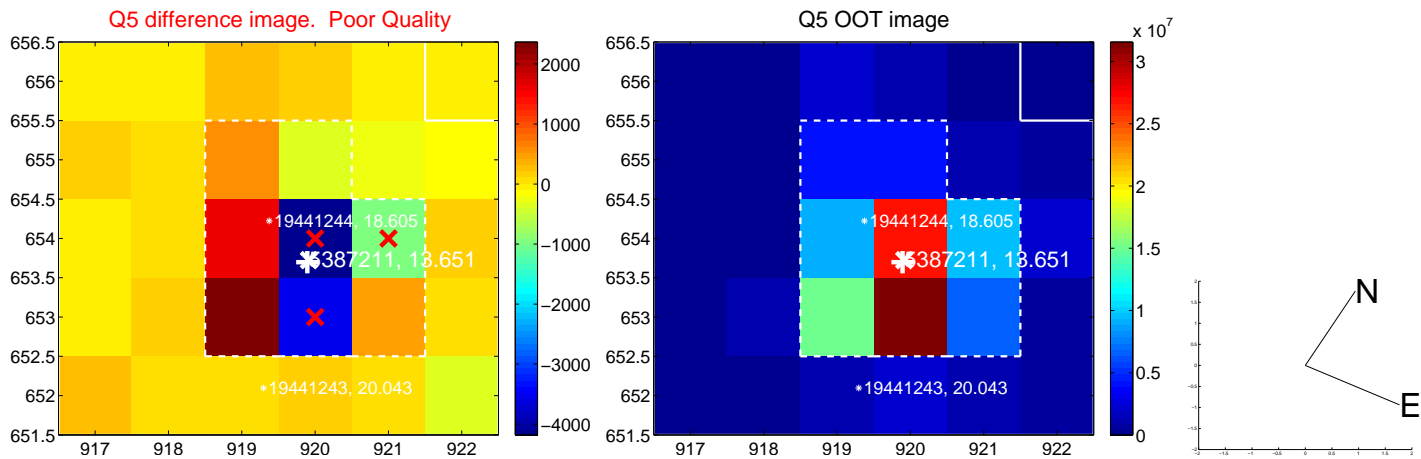


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

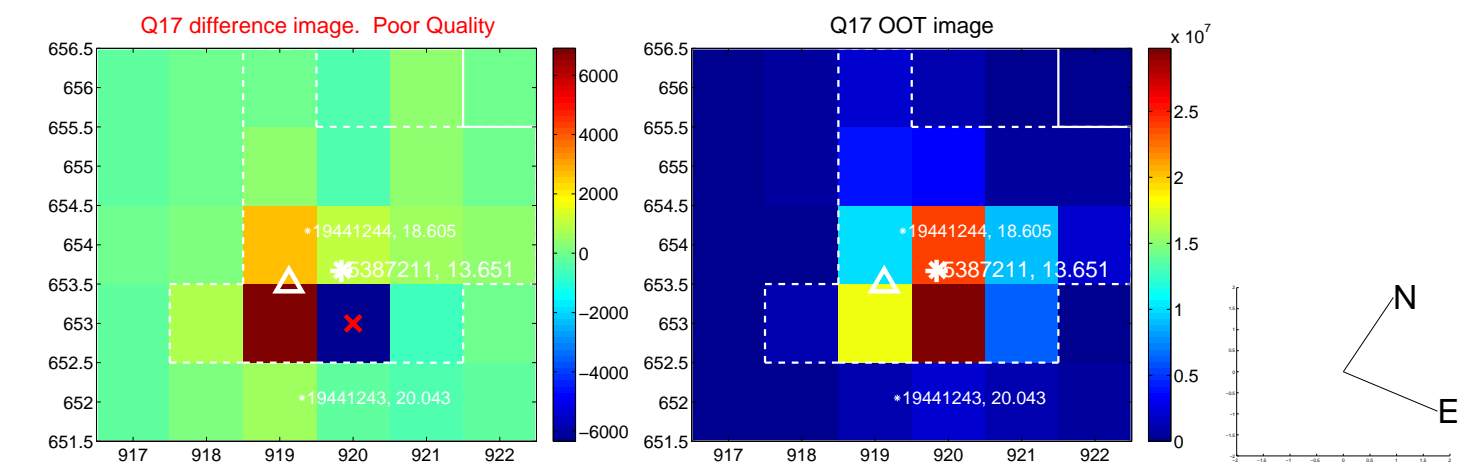
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



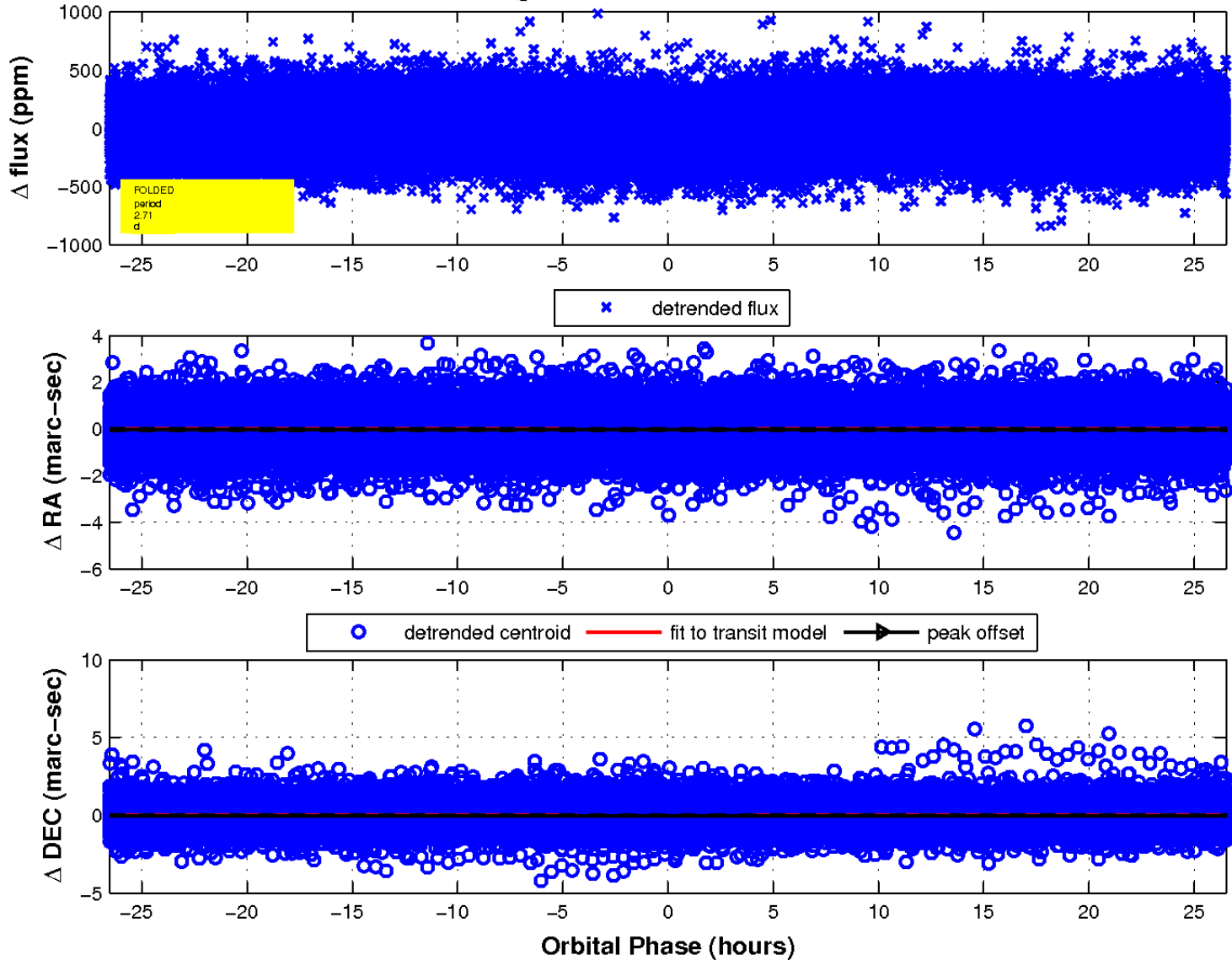
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

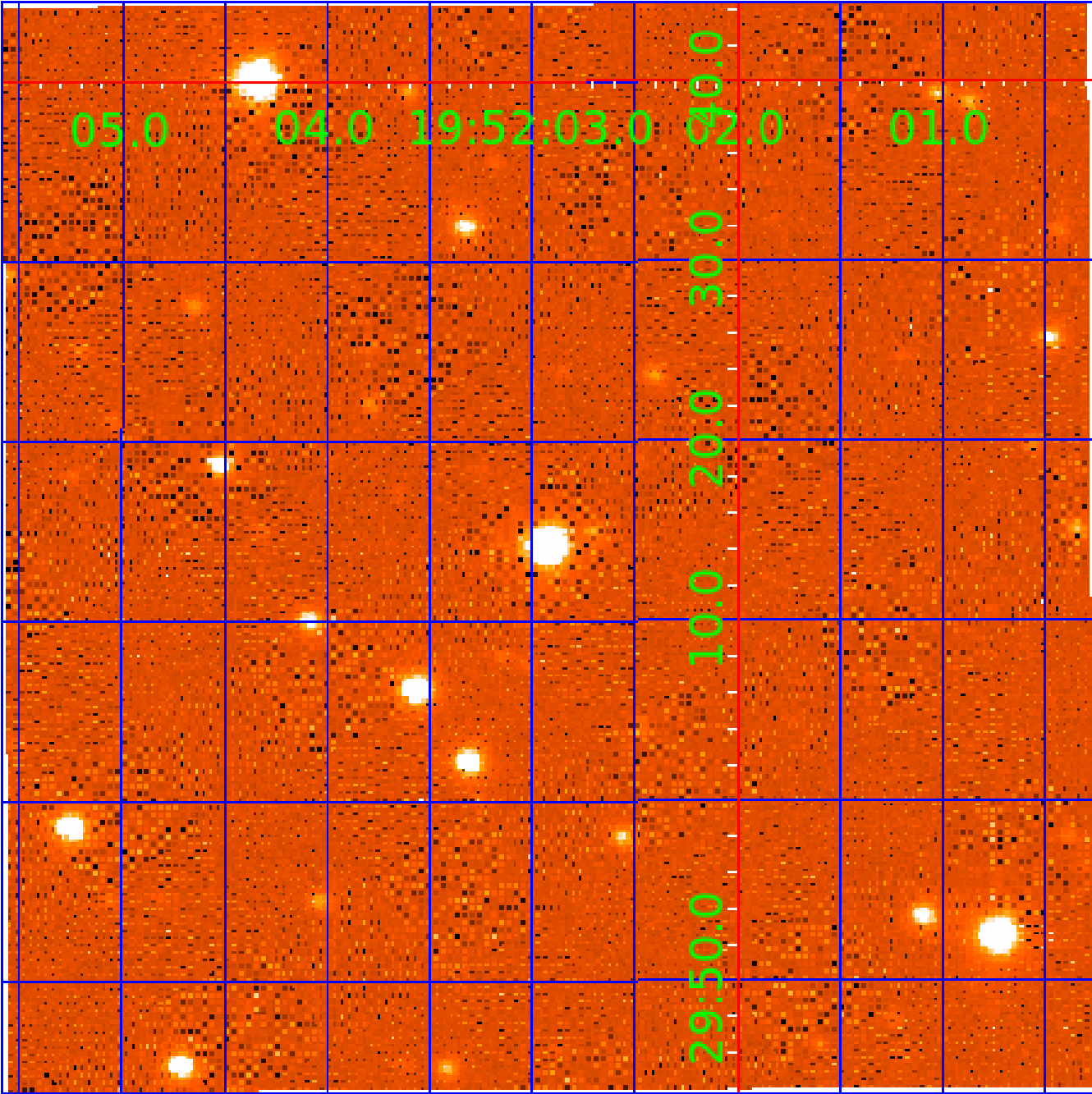


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 005387211

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})
005387211-01	OBS	No	2.709394	132.102838	21.3	8.845	9.0	6.2	1.48	6908	0.74	2437.38
005387211-02	OBS	No	465.843752	436.601922	308.6	9.065	10.7	7.1	1.48	6908	2.74	2.55
005387211-03	OBS	No	327.046038	242.989708	265.7	16.203	8.5	7.5	1.48	6908	2.62	4.09
005387211-04	OBS	No	212.047640	238.577901	373.2	5.127	7.3	8.0	1.48	6908	3.69	7.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005387211-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005387211-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005387211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005387211-04	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS—HALO_GHOST

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

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

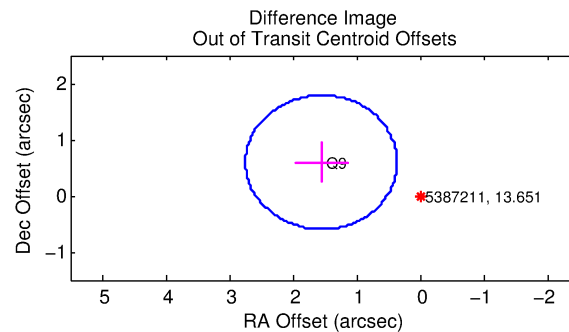
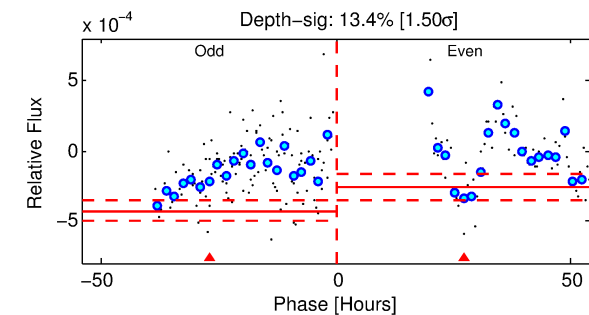
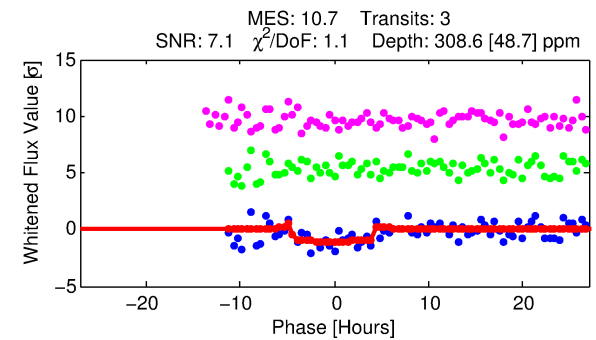
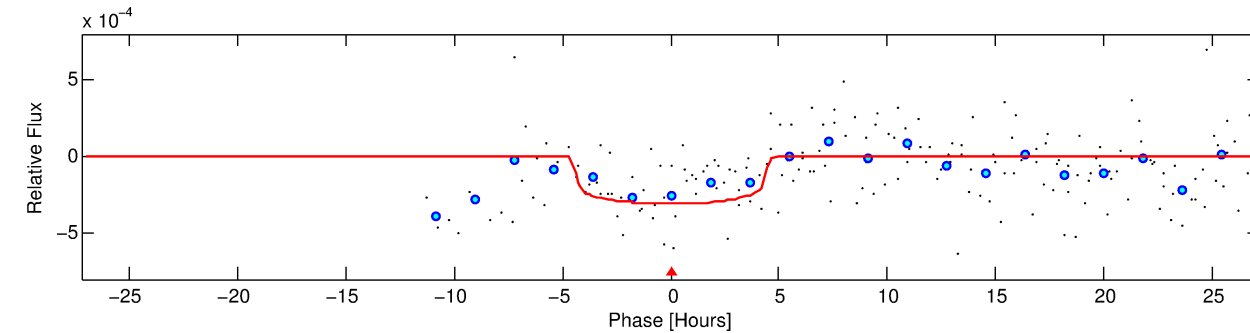
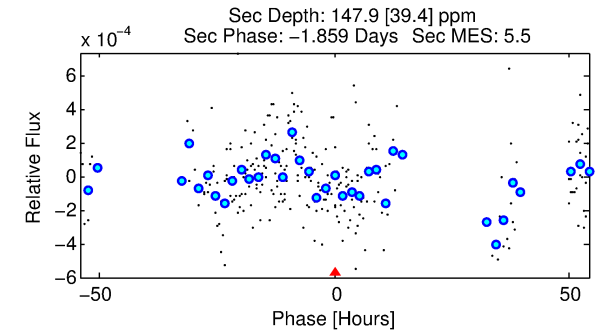
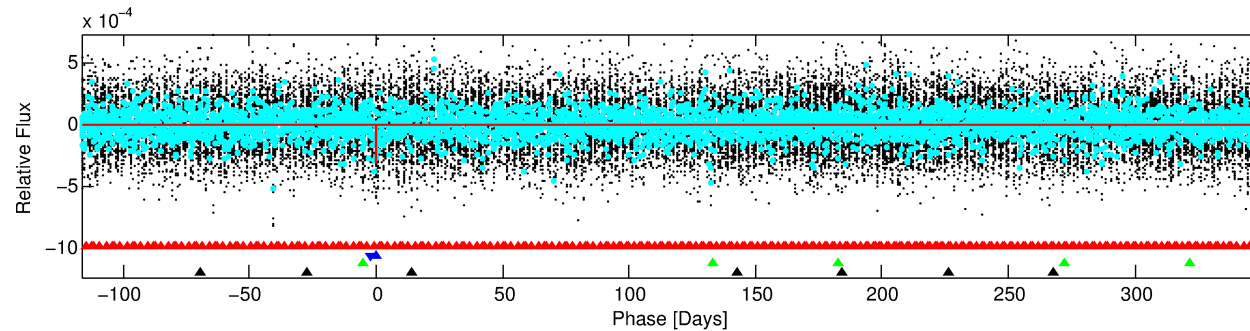
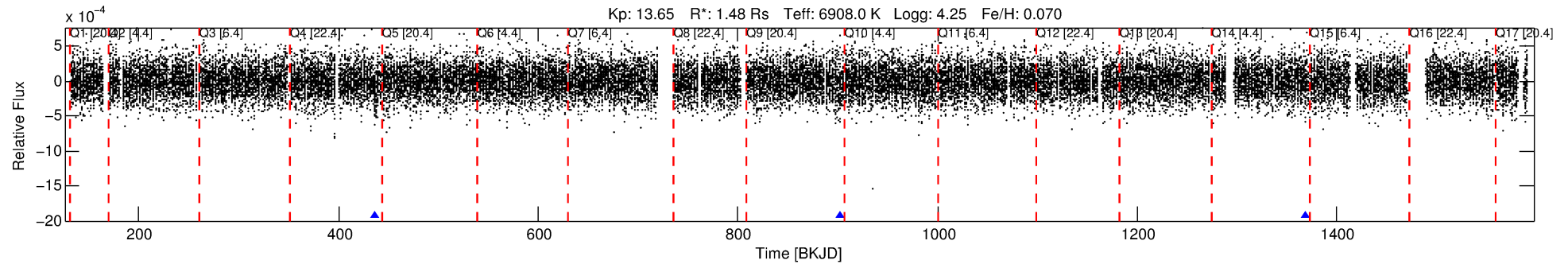
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005387211-02

No Significant Match Found

DV One-Page Summary

KIC: 5387211 Candidate: 2 of 4 Period: 465.844 d



DV Fit Results:

Period = 465.84375 [0.01338] d
Epoch = 436.6019 [0.0123] BKJD
Rp/R* = 0.0170 [0.0129]
a/R* = 314.52 [1361.31]
b = 0.63 [4.21]
Seff = 2.55 [1.08]
Teq = 322 [34] K
Rp = 2.74 [2.29] Re
a = 1.3222 [0.3679] AU
Ag = 18980.36 [30261.09] [0.63σ]
Teffp = 5847 [2275] K [2.43σ]

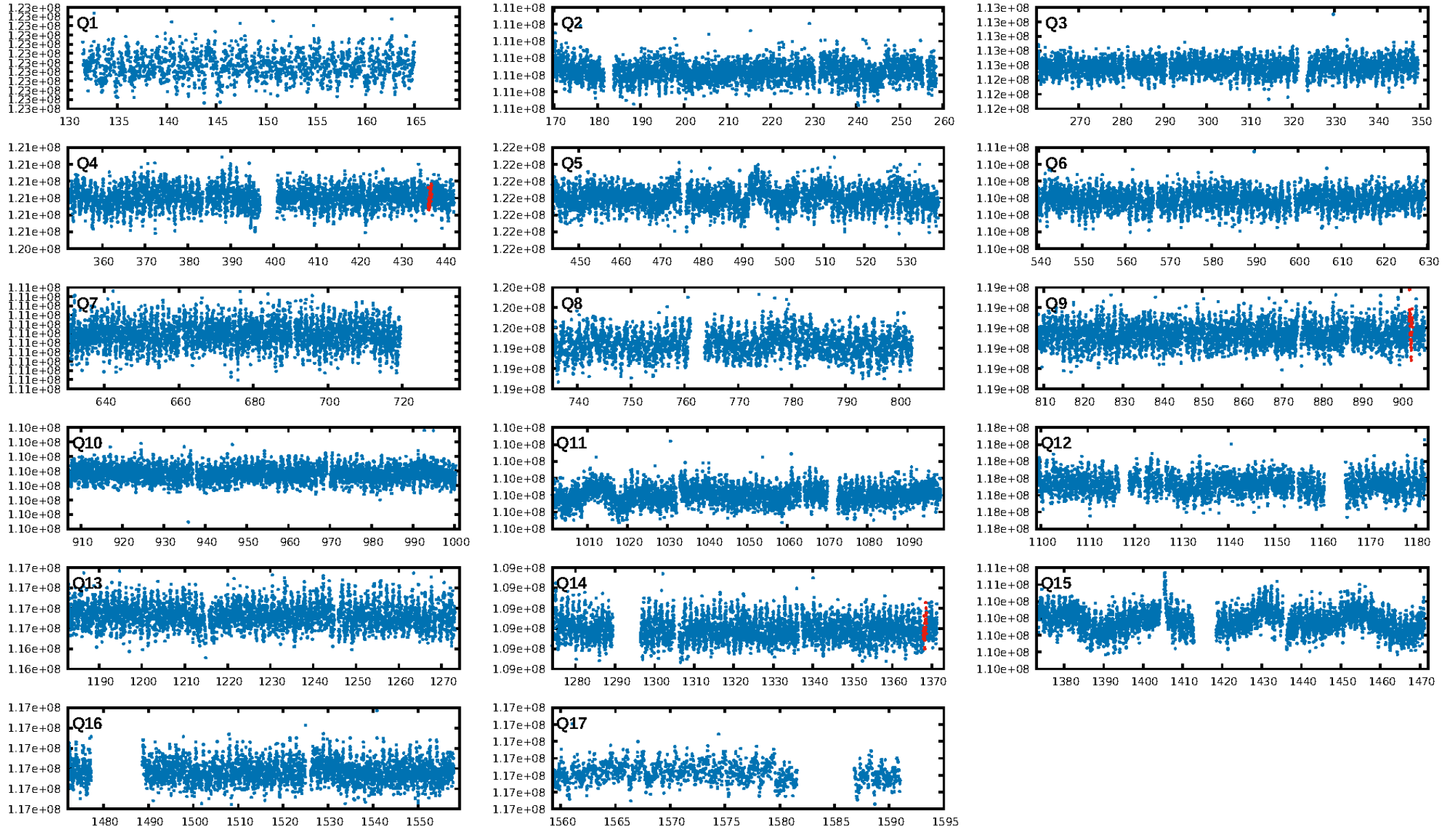
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [179.42σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.0%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 4.29e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.401
Centroid-sig: 47.6%
Centroid-so: 1.272 arcsec [1.02σ]
OotOffset-rm: 1.662 arcsec [4.18σ]
KicOffset-rm: 1.627 arcsec [4.05σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
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DiffImageOverlap-fno: 0.00 [0/2]

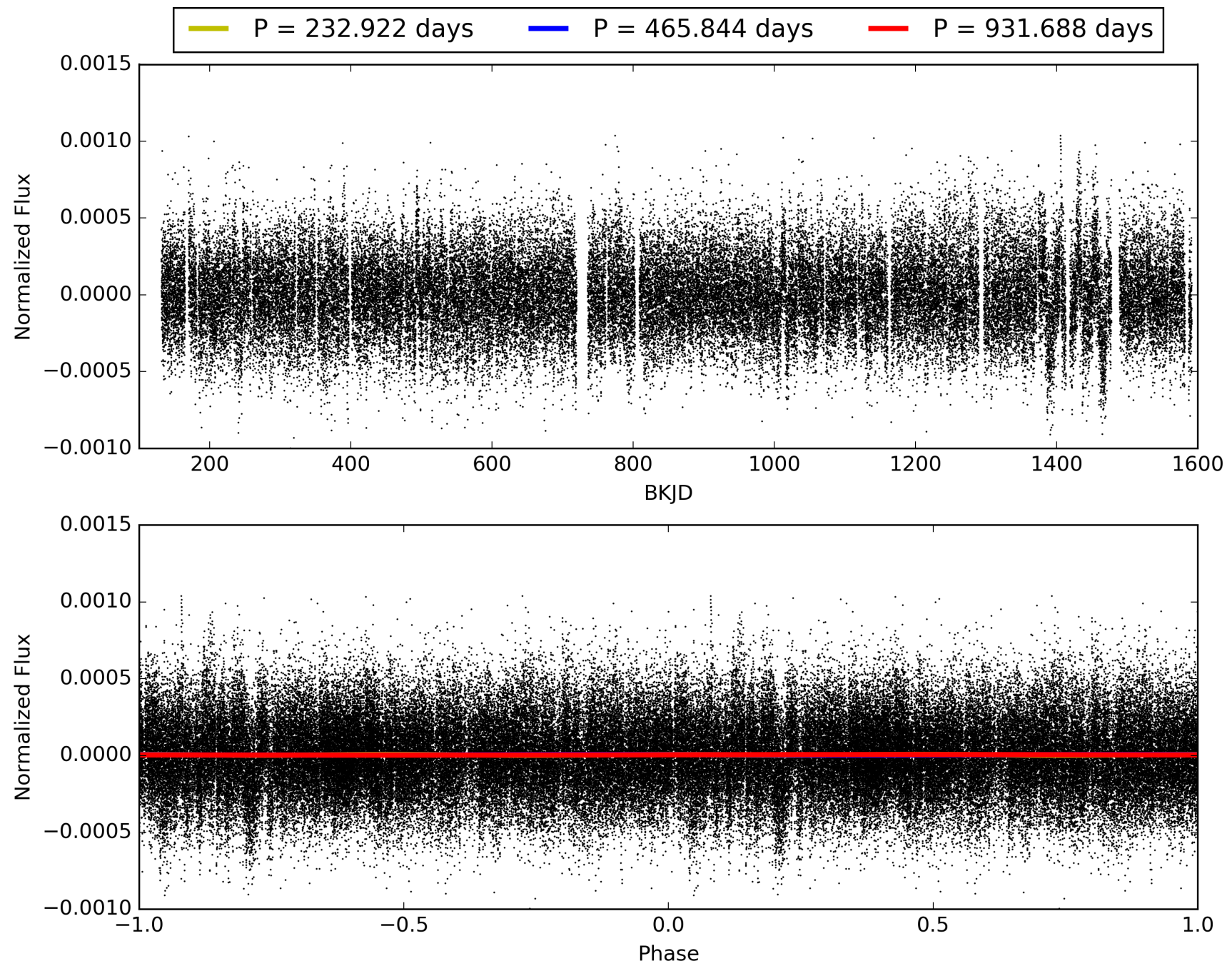
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:08:21 Z

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

TCE 005387211-02, PDC Light Curves

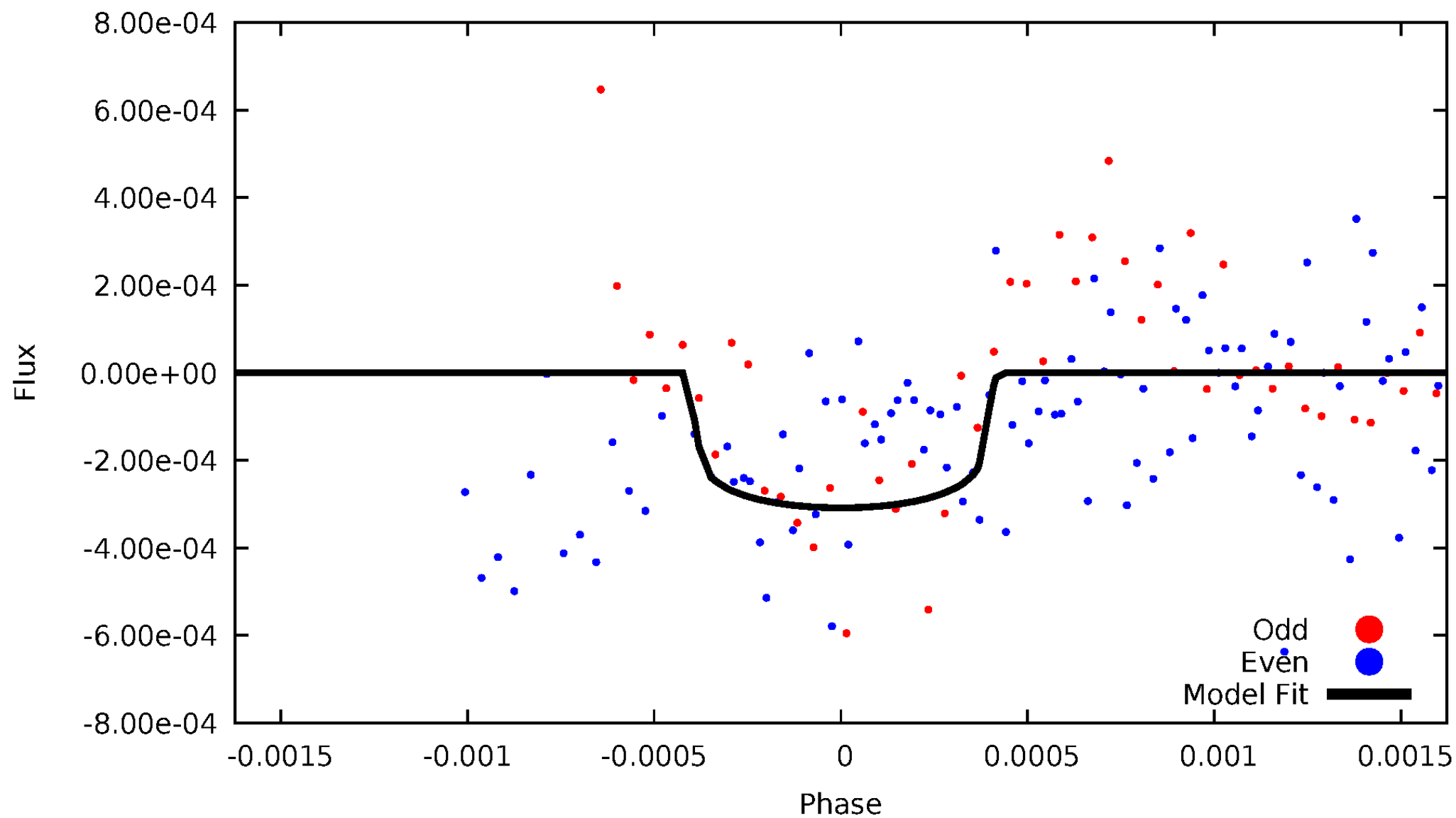


TCE 005387211-02



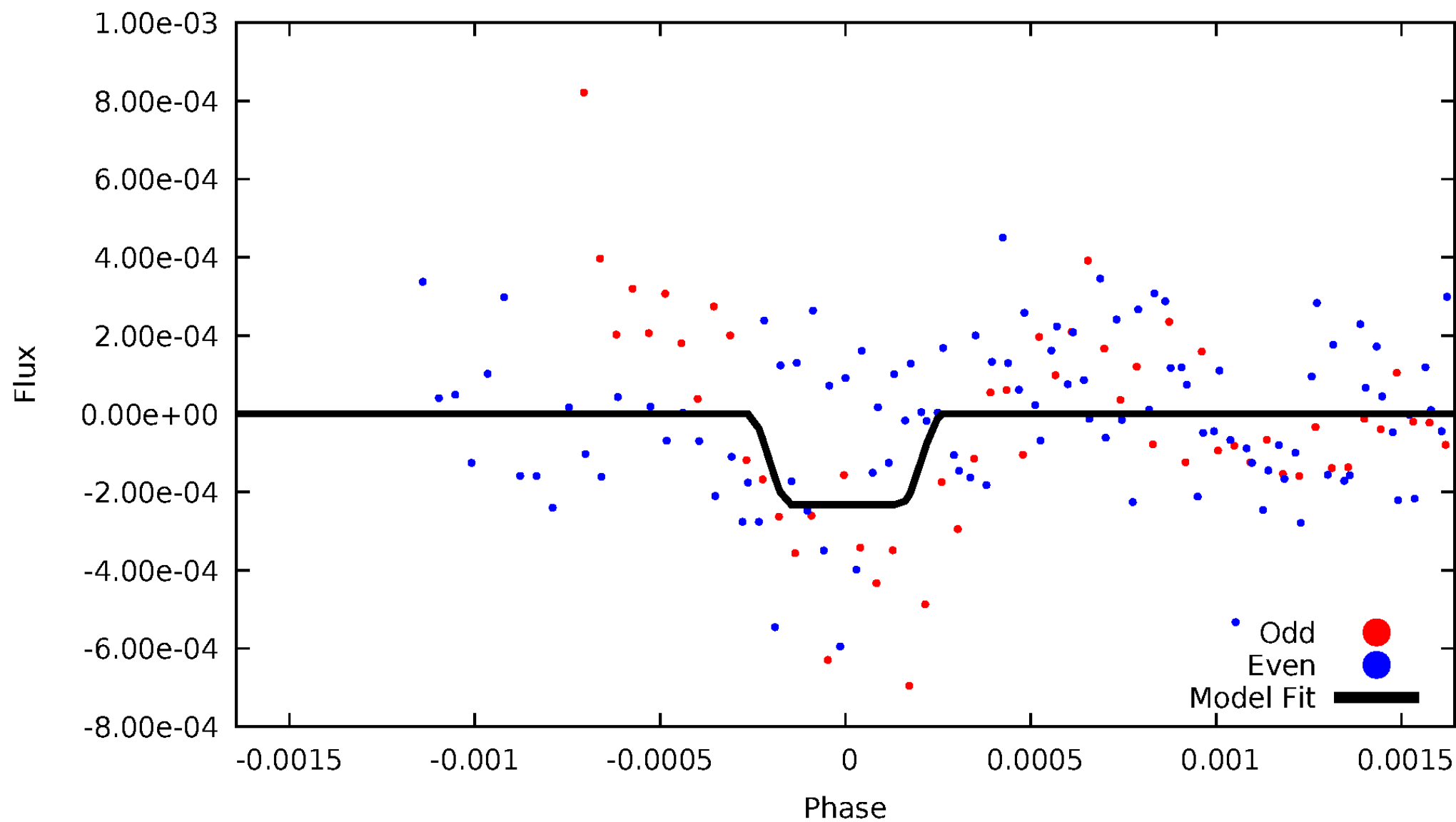
DV Odd/Even

TCE 005387211-02



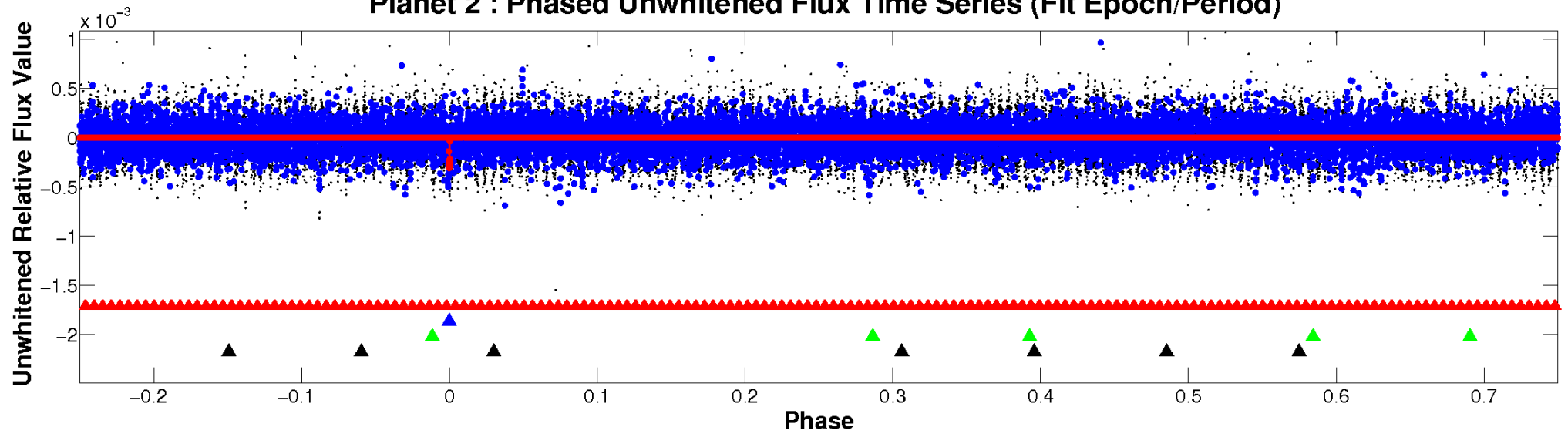
ALT Odd/Even

TCE 005387211-02

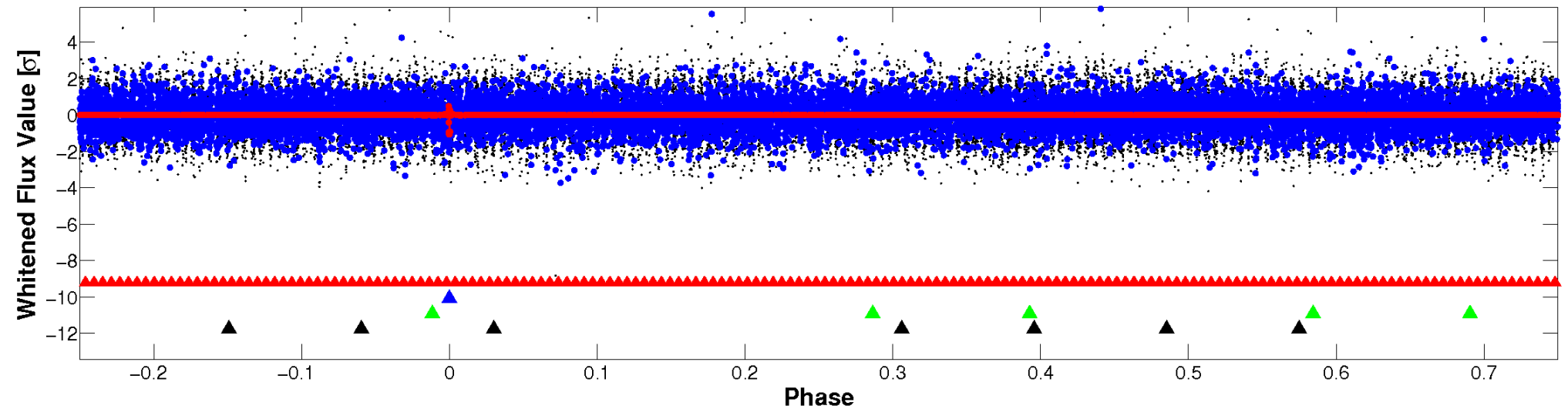


Non-Whitened Vs. Whitened Light Curve

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

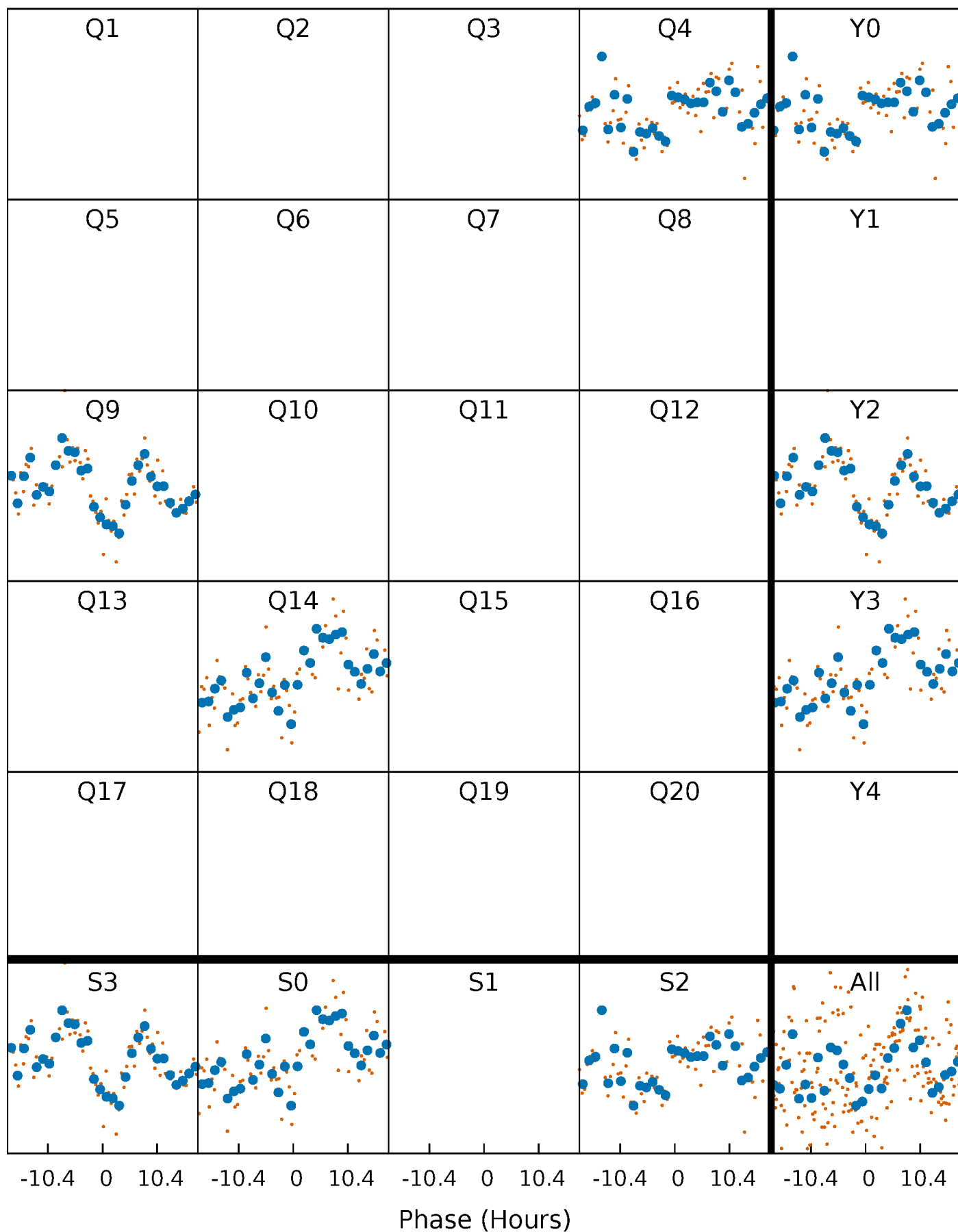


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



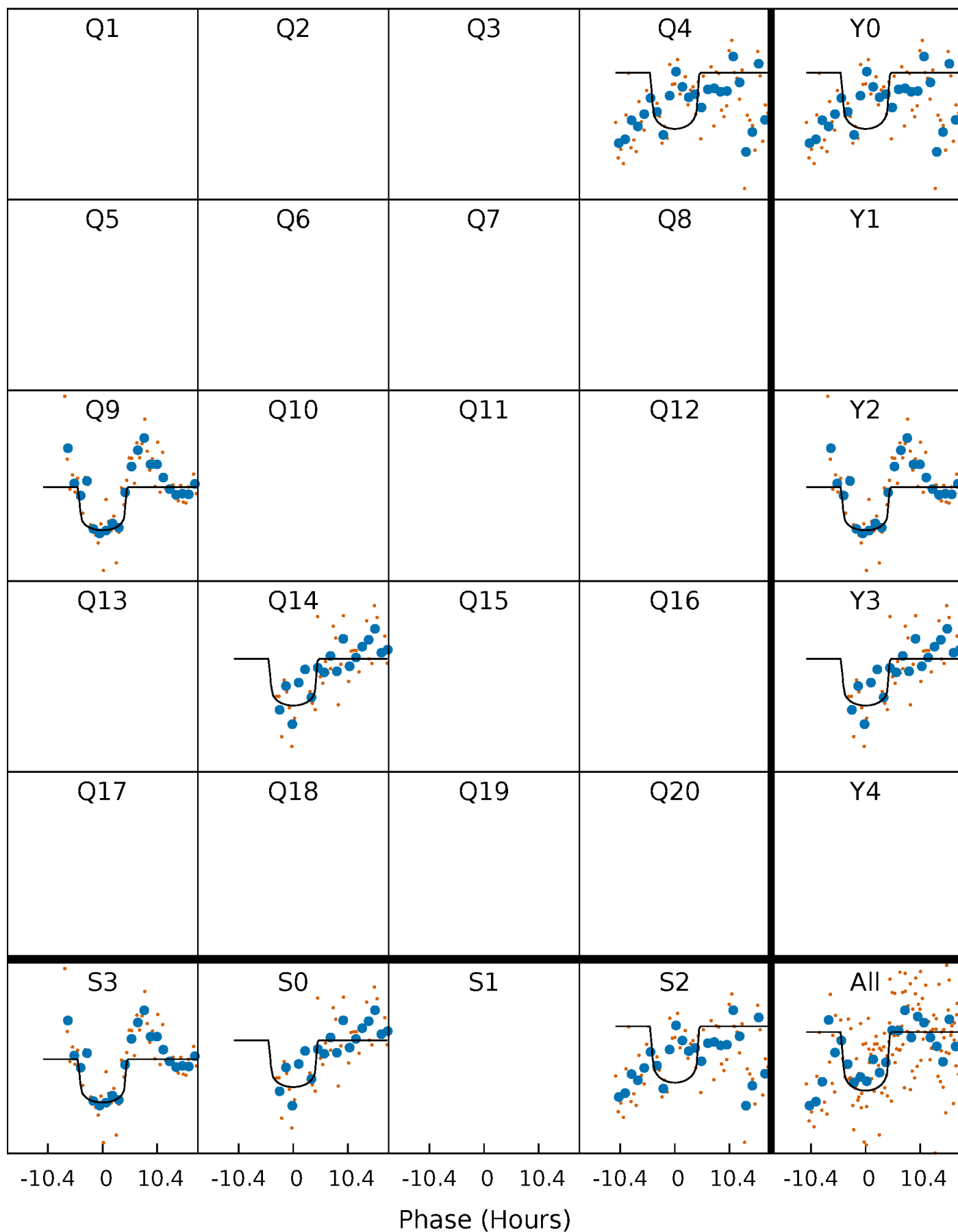
PDC Quarter-Phased Transit Curves

TCE 005387211-02 P=465.843752 Days $T_0=436.601922$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005387211-02 P=465.843752 Days $T_0=436.601922$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

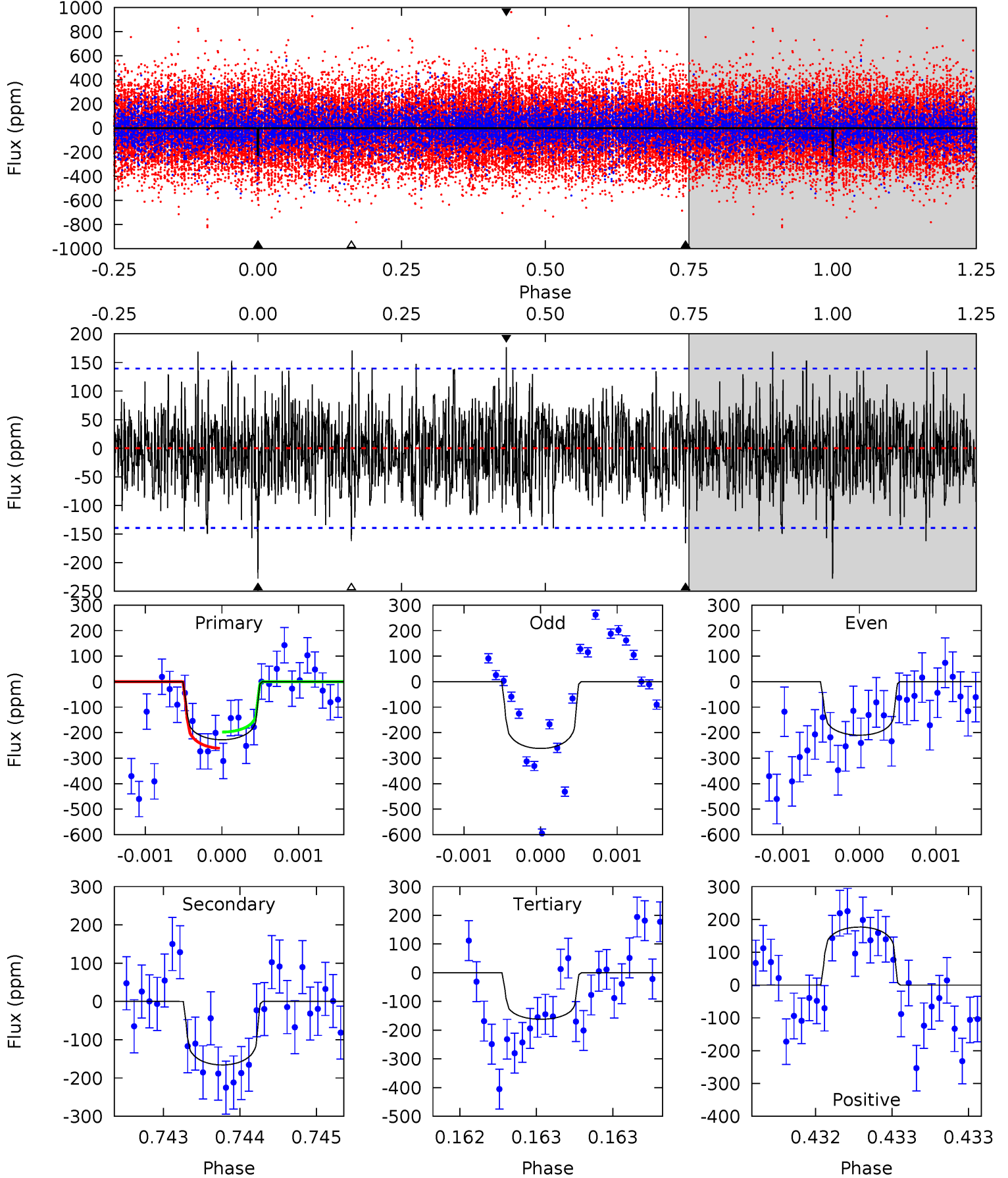
TCE 005387211-02 P=465.810245 Days $T_0=436.664594$ (BKJD)



DV Model-Shift Uniqueness Test

005387211-02, P = 465.843752 Days, E = 436.601922 Days

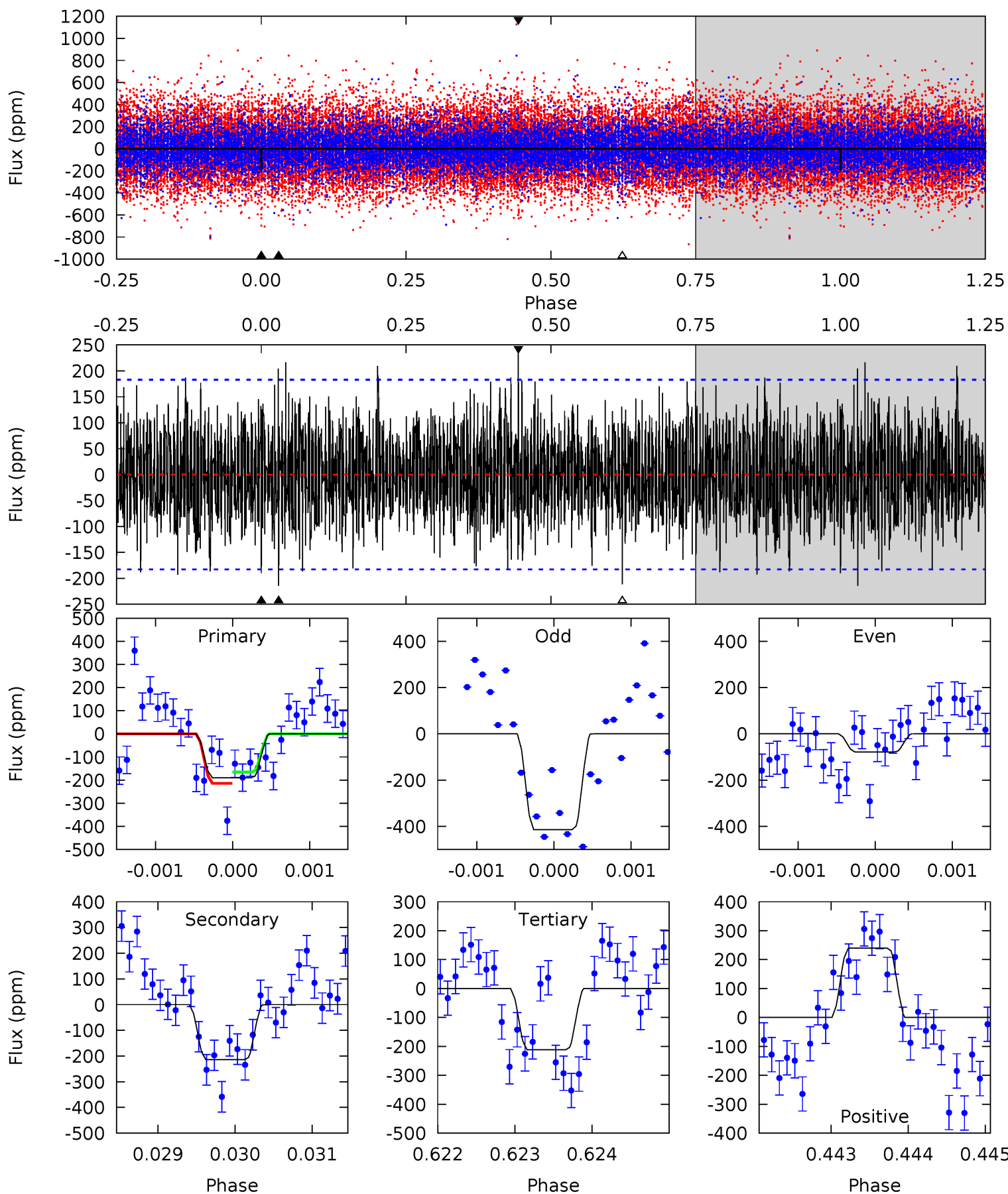
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.97	6.53	6.38	6.96	5.48	3.34	1.87	2.59	2.01	0.15	-0.43	0.99	0.87	0.44	1.25



Alt Model-Shift Uniqueness Test

005387211-02, P = 465.810245 Days, E = 436.664594 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.77	6.51	6.43	7.30	5.55	3.45	1.83	-0.66	-1.53	0.08	-0.79	4.85	0.67	0.53	0.74



Stellar Parameters For KIC 005387211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6908^{+193}_{-303}	$4.251^{+0.087}_{-0.203}$	$0.070^{+0.200}_{-0.350}$	$1.478^{+0.511}_{-0.219}$	$1.420^{+0.213}_{-0.213}$	$0.619^{+0.257}_{-0.344}$
	+3%/-4%	+2%/-5%	+286%/-500%	+35%/-15%	+15%/-15%	+41%/-56%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005387211-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-166 ± 25	$2.98^{+2.04}_{-1.76}$	456^{+36}_{-27}	5824^{+3914}_{-1221}	17505^{+86410}_{-11575}
Alt.	-214 ± 33	$2.96^{+2.05}_{-1.85}$	457^{+39}_{-28}	6217^{+5570}_{-1320}	$23443^{+135218}_{-15327}$

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 $A_{obs} \gg 1.0$

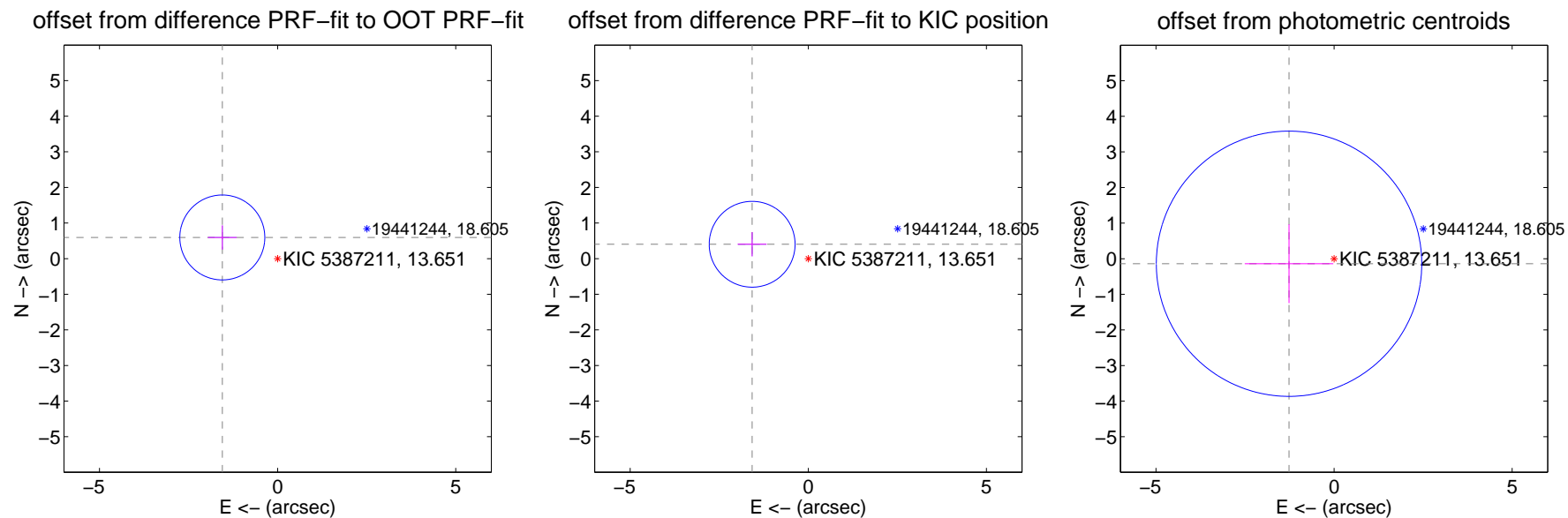
DV Centroid Data

Supplemental centroid analysis for 005387211-02. Kepler magnitude: 13.65. Transit SNR 7.15

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.662 ± 0.398	4.18	1.552 ± 0.405	0.595 ± 0.340
PRF-fit source offset from KIC position	1.627 ± 0.402	4.05	1.576 ± 0.405	0.404 ± 0.340
photometric centroid source offset	1.27 ± 1.24	1.02	1.26 ± 1.24	-0.14 ± 1.11



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.

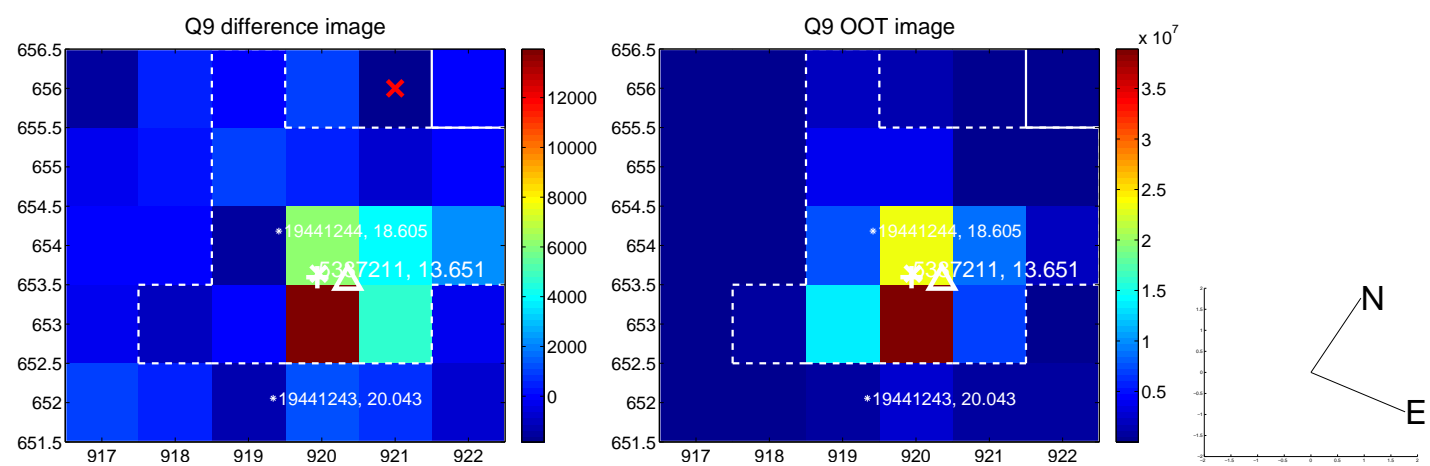
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

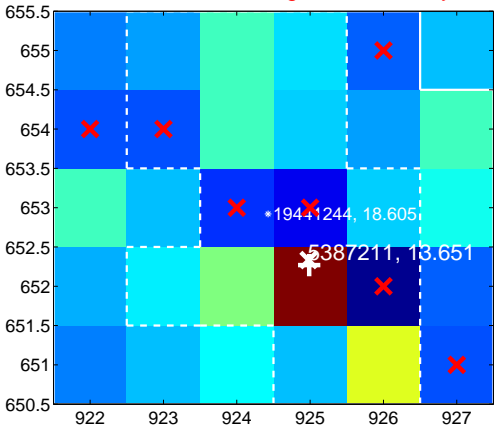
Q13 no difference image



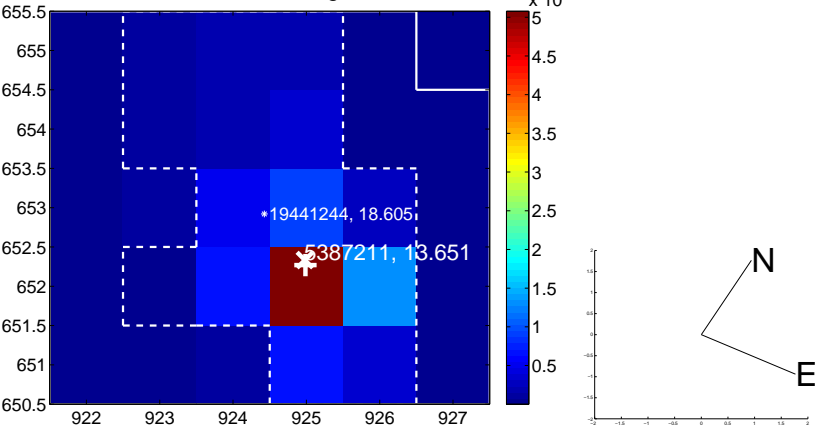
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



Q15 no OOT image



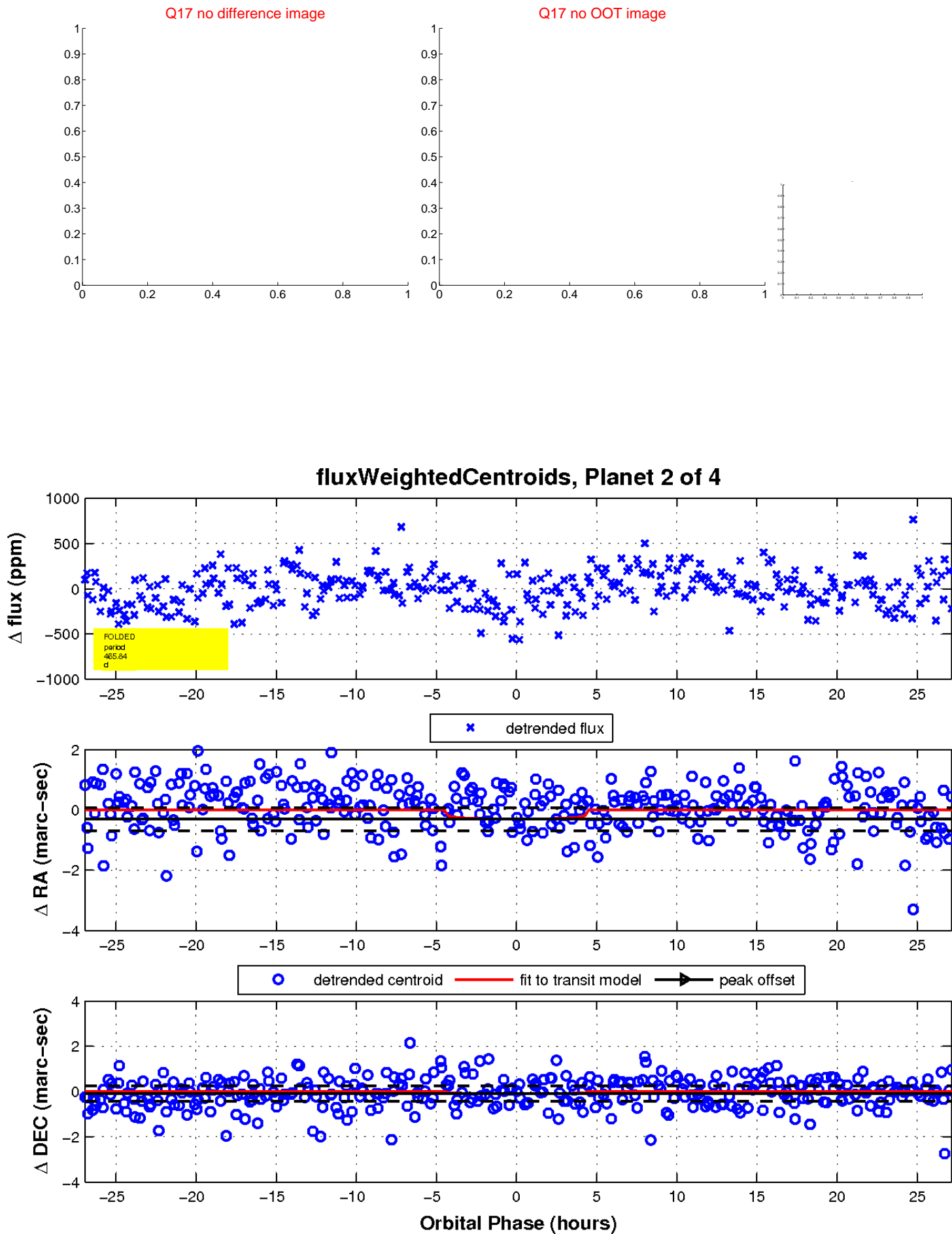
Q16 no difference image



Q16 no OOT image

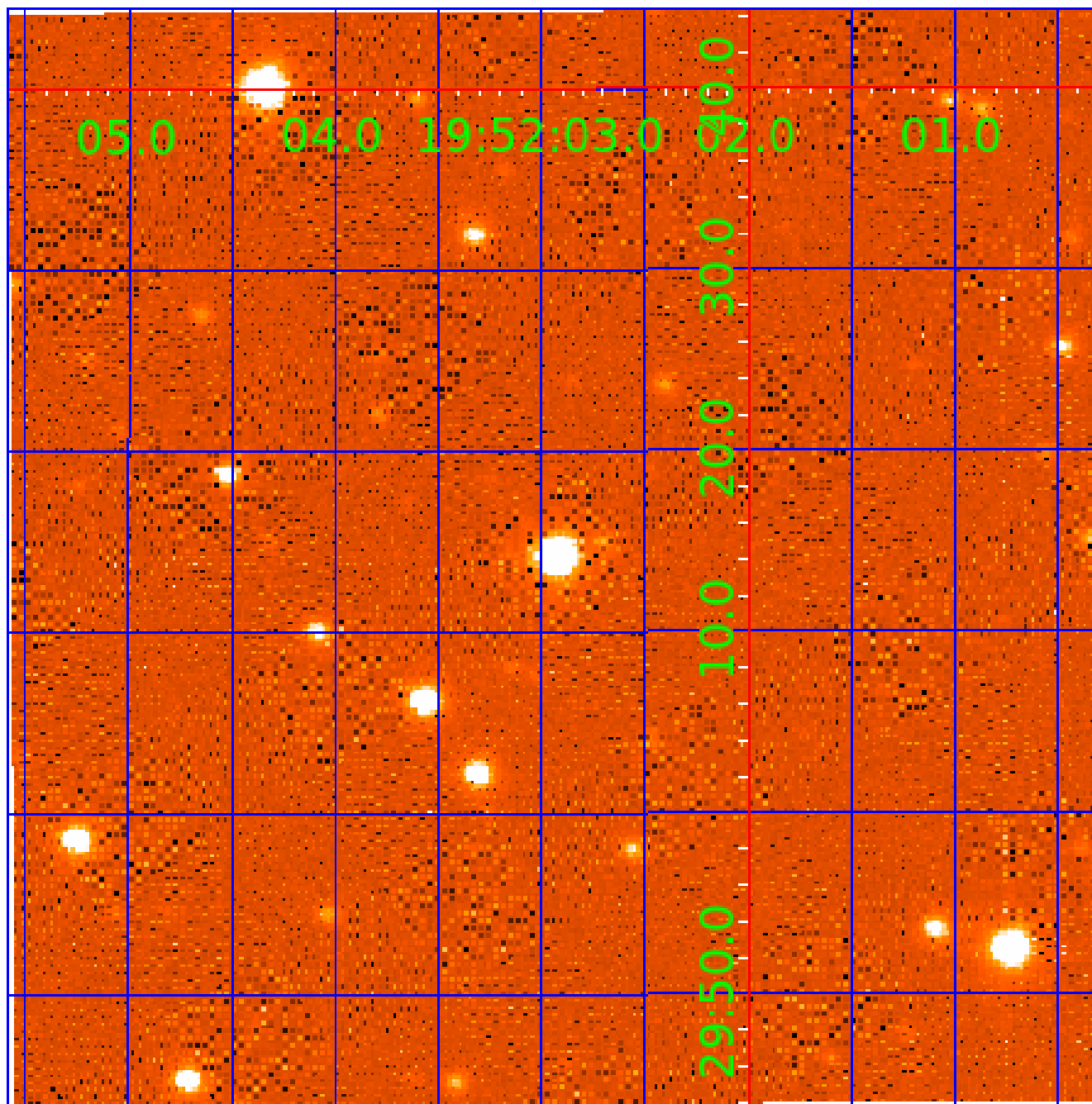


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005387211

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})
005387211-01	OBS	No	2.709394	132.102838	21.3	8.845	9.0	6.2	1.48	6908	0.74	2437.38
005387211-02	OBS	No	465.843752	436.601922	308.6	9.065	10.7	7.1	1.48	6908	2.74	2.55
005387211-03	OBS	No	327.046038	242.989708	265.7	16.203	8.5	7.5	1.48	6908	2.62	4.09
005387211-04	OBS	No	212.047640	238.577901	373.2	5.127	7.3	8.0	1.48	6908	3.69	7.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005387211-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005387211-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005387211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005387211-04	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS—HALO_GHOST

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

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

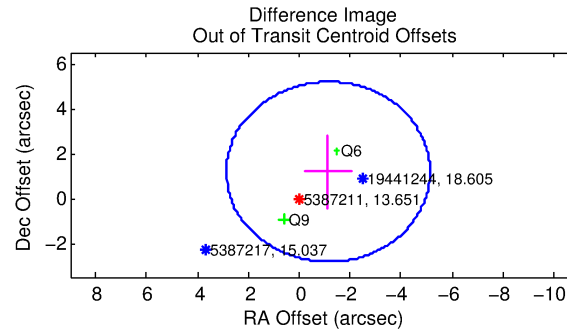
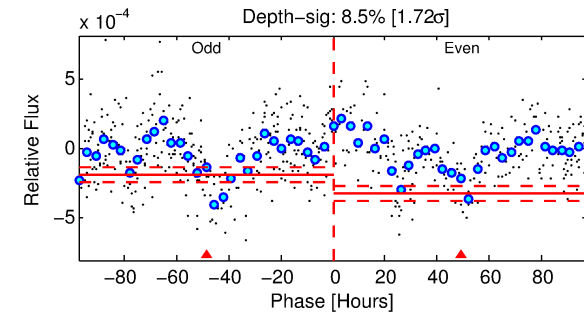
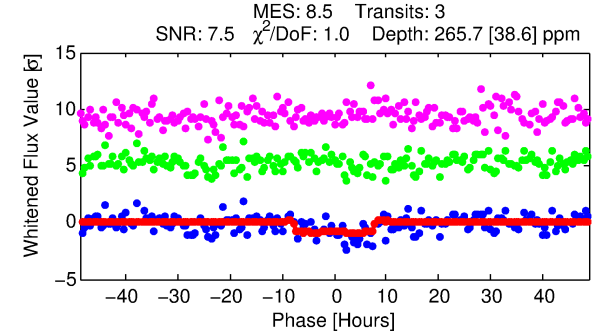
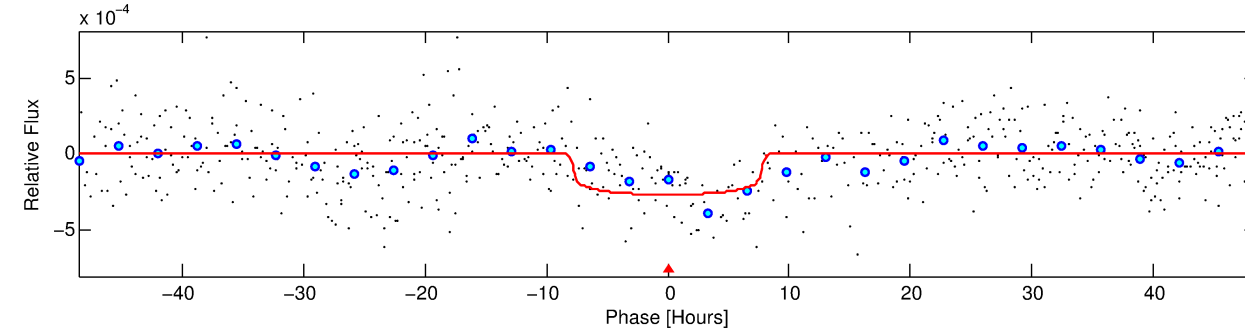
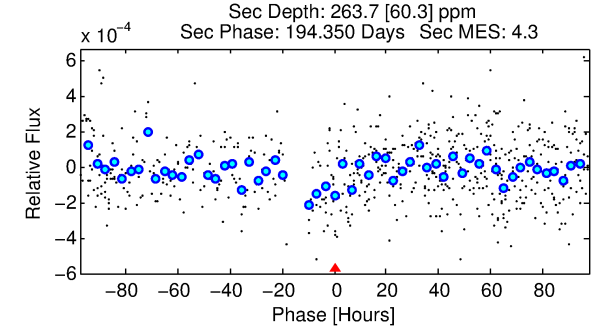
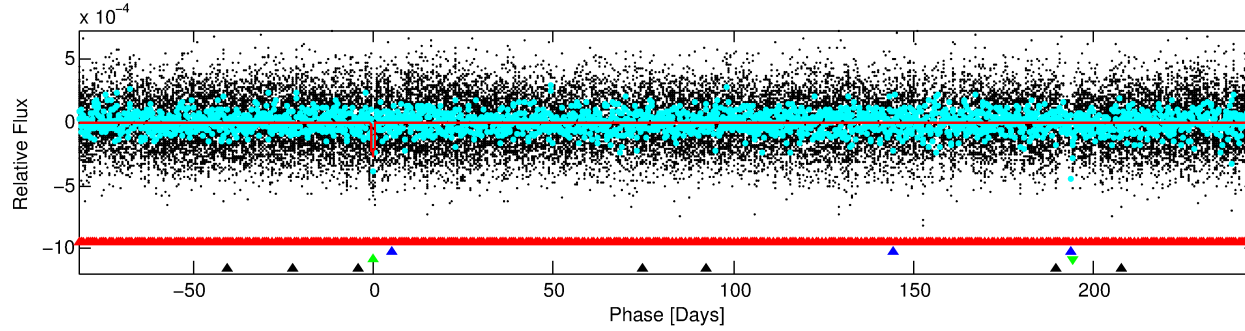
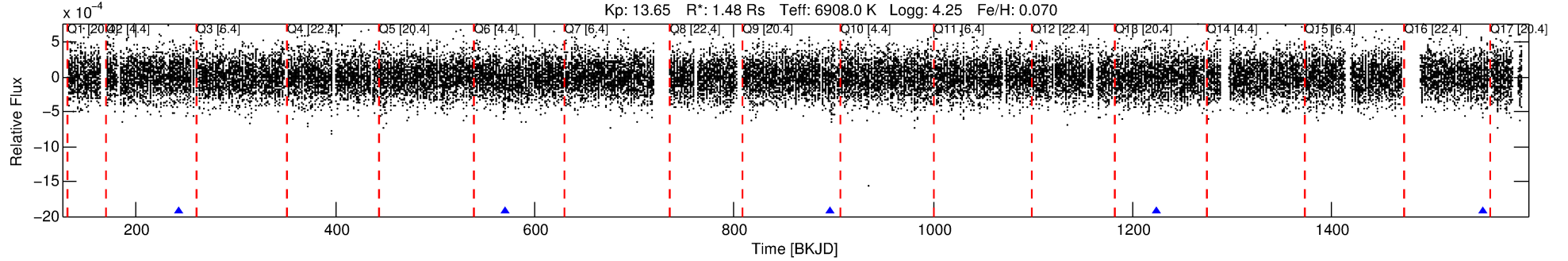
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005387211-03

No Significant Match Found

DV One-Page Summary

KIC: 5387211 Candidate: 3 of 4 Period: 327.046 d



DV Fit Results:

Period = 327.04604 [0.01124] d
Epoch = 242.9897 [0.0259] BKJD
Rp/R* = 0.0162 [0.0049]
a/R* = 105.17 [178.14]
b = 0.75 [0.98]
Seff = 4.09 [1.74]
Teq = 363 [39] K
Rp = 2.62 [1.20] Re
a = 1.0444 [0.2906] AU
Ag = 23130.62 [17497.93] [1.32σ]
Teffp = 6912 [1163] K [5.63σ]

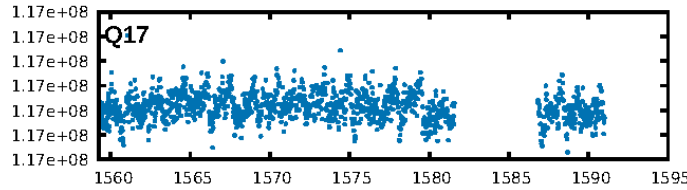
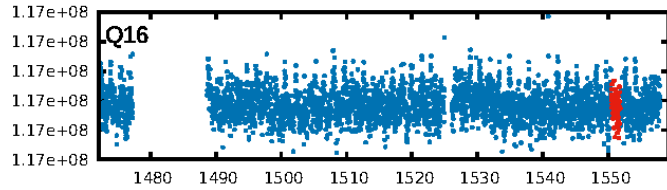
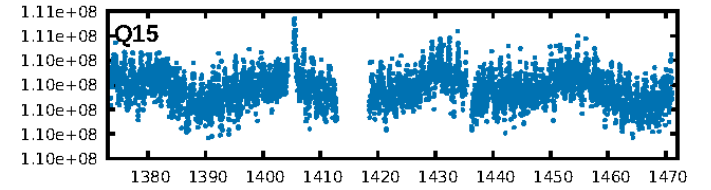
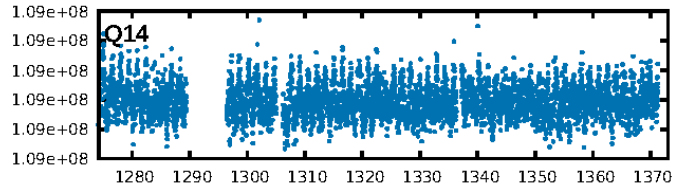
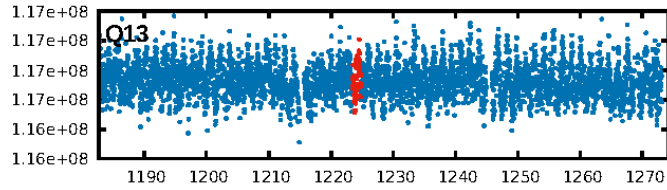
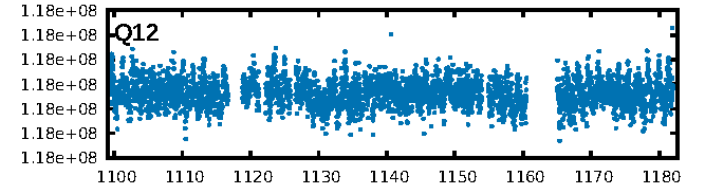
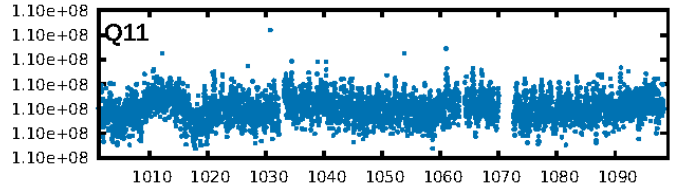
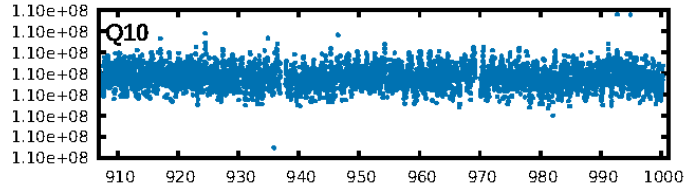
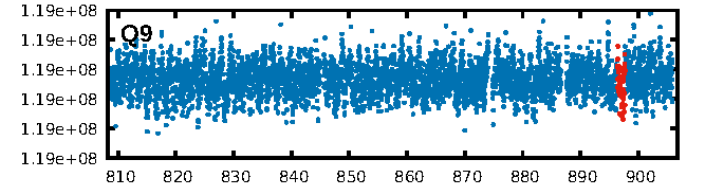
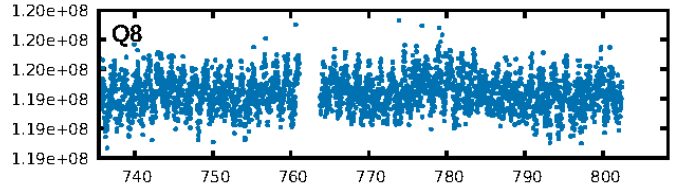
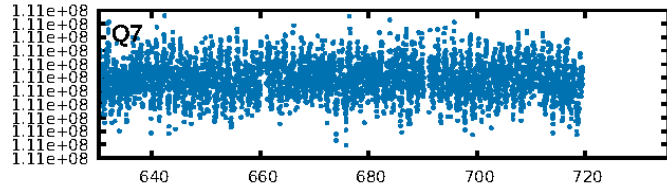
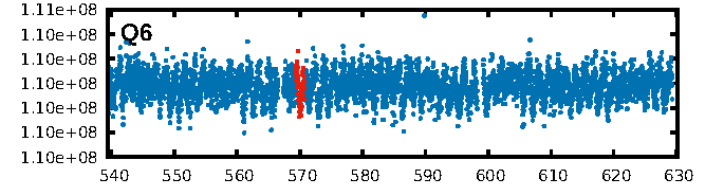
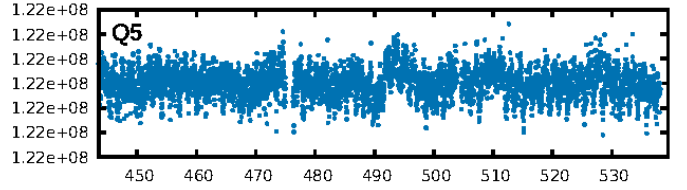
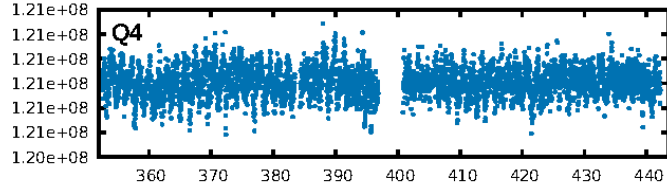
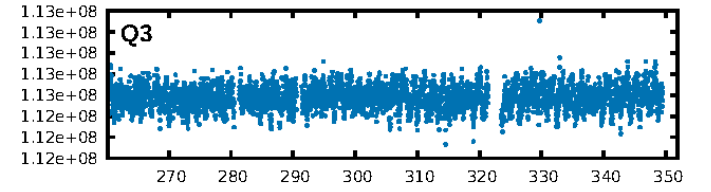
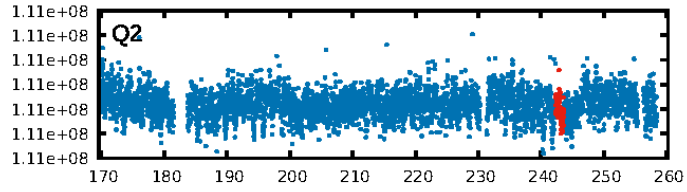
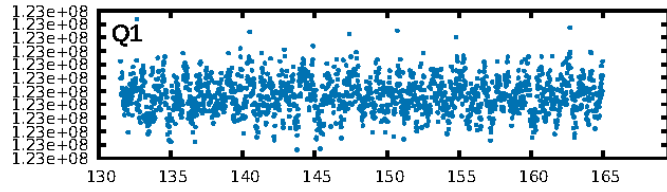
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [162.40σ]
LongPeriod-sig: 100.0% [179.42σ]
ModelChiSquare2-sig: 4.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 3.90e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -10.23
Centroid-sig: 14.3%
Centroid-so: 0.600 arcsec [0.63σ]
OotOffset-rm: 1.641 arcsec [1.23σ]
KicOffset-rm: 1.546 arcsec [1.12σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/5]

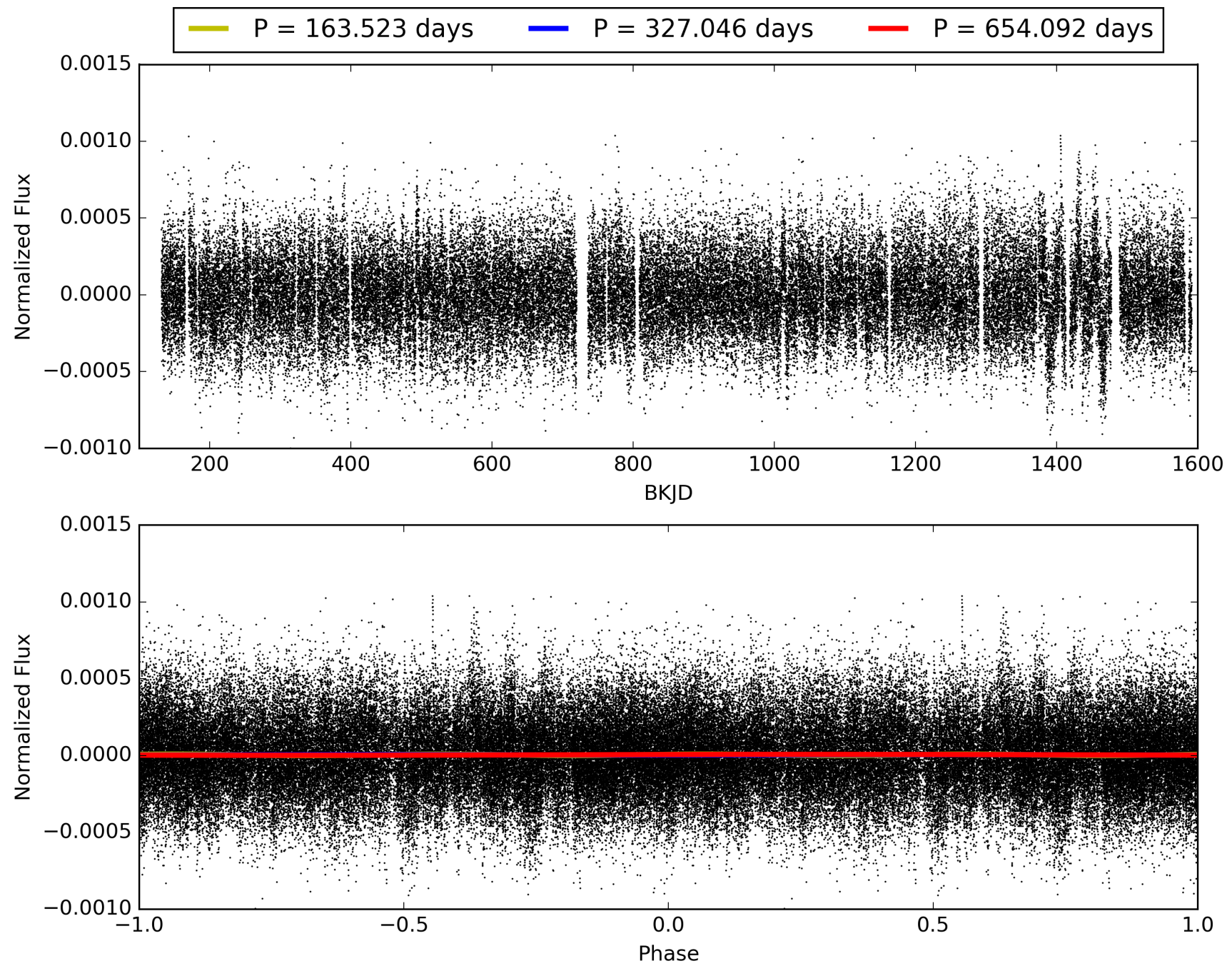
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:08:27 Z

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

TCE 005387211-03, PDC Light Curves

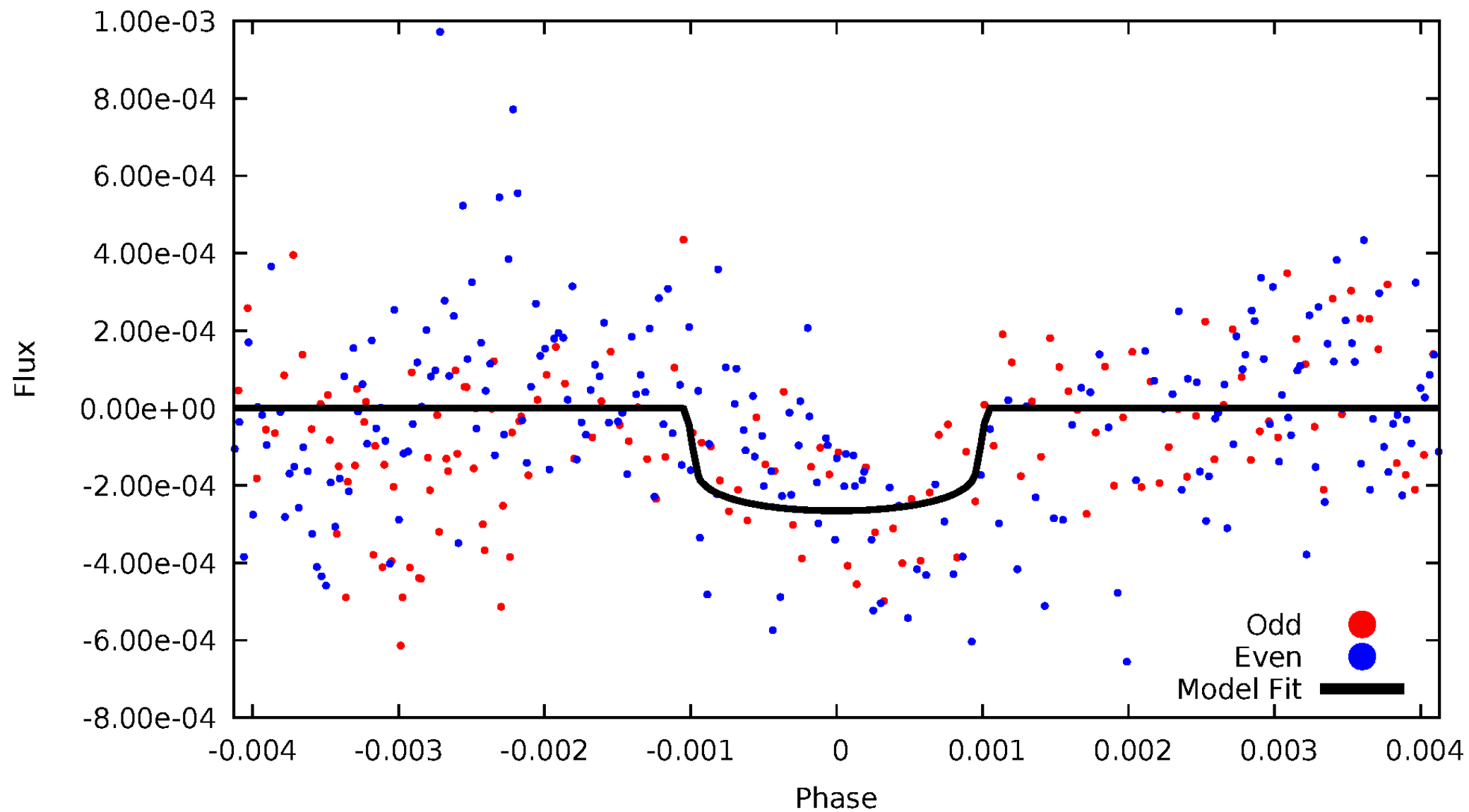


TCE 005387211-03



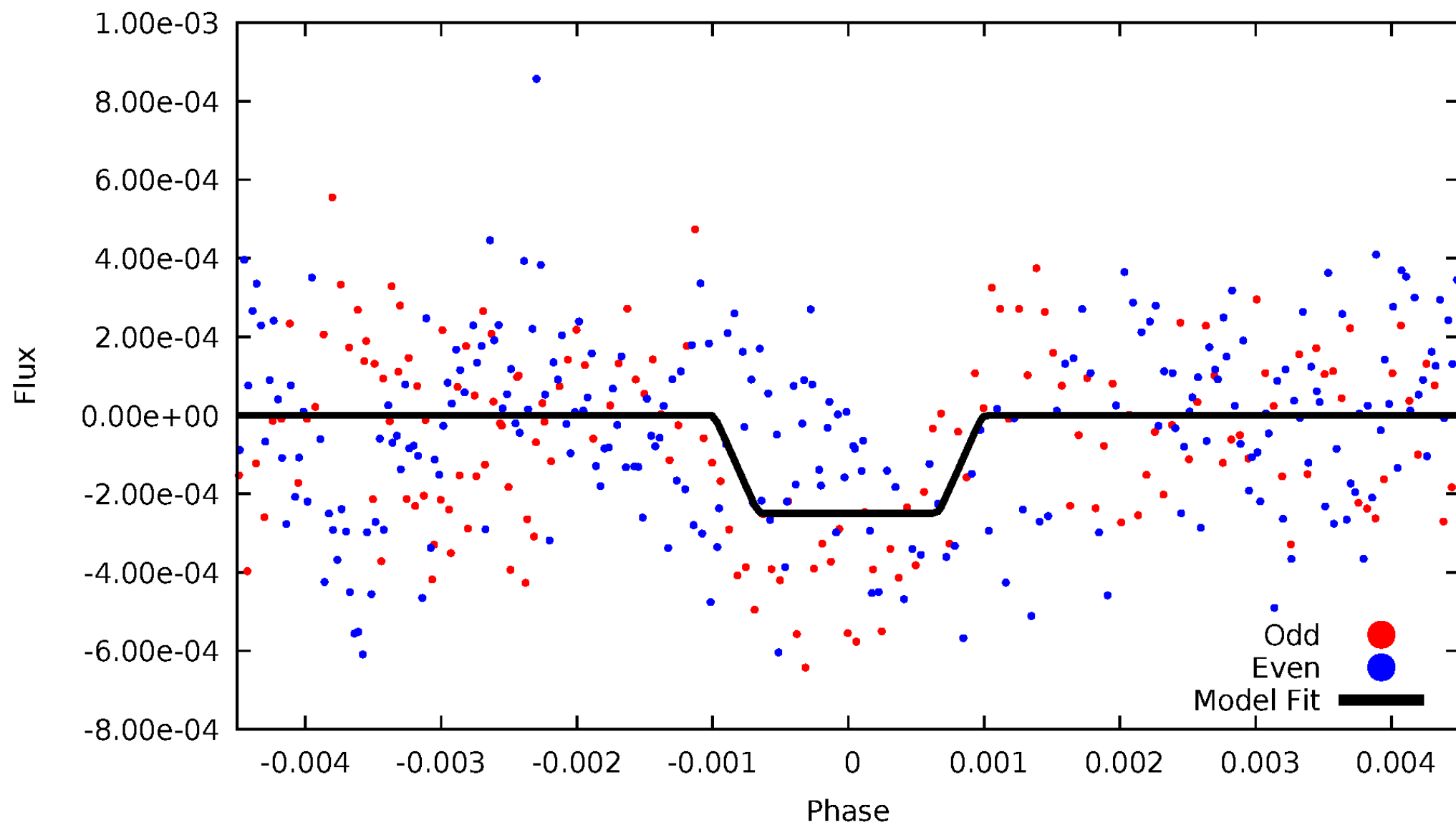
DV Odd/Even

TCE 005387211-03



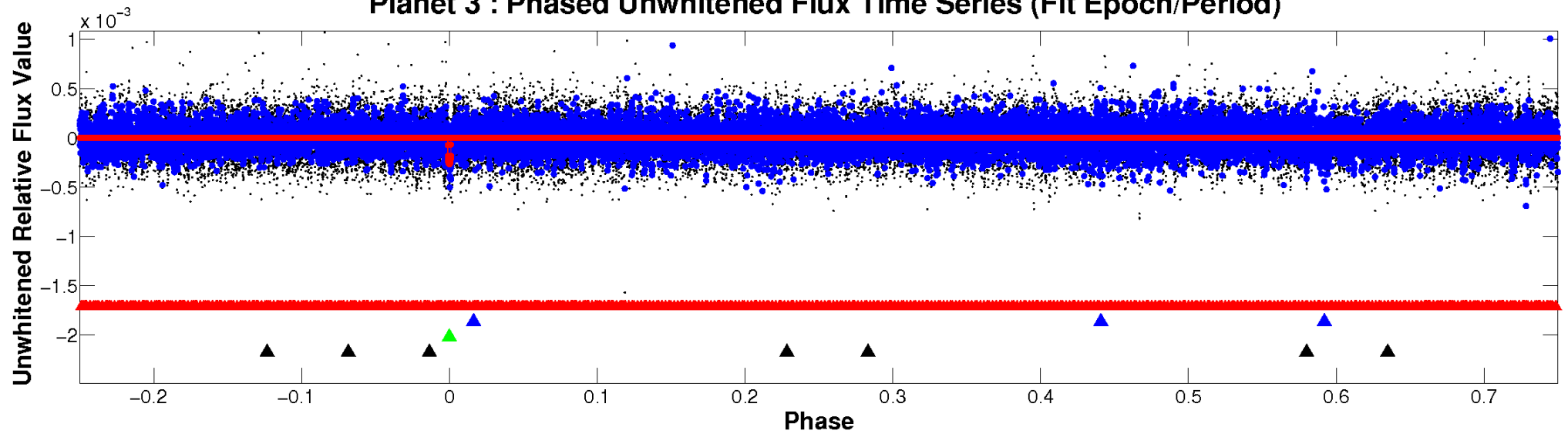
ALT Odd/Even

TCE 005387211-03

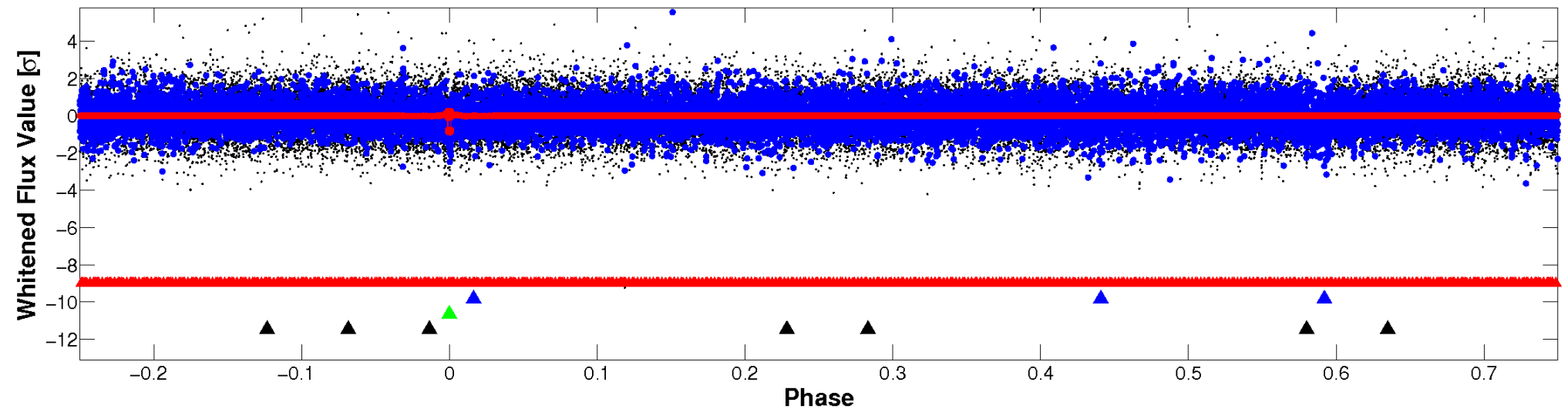


Non-Whitened Vs. Whitened Light Curve

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

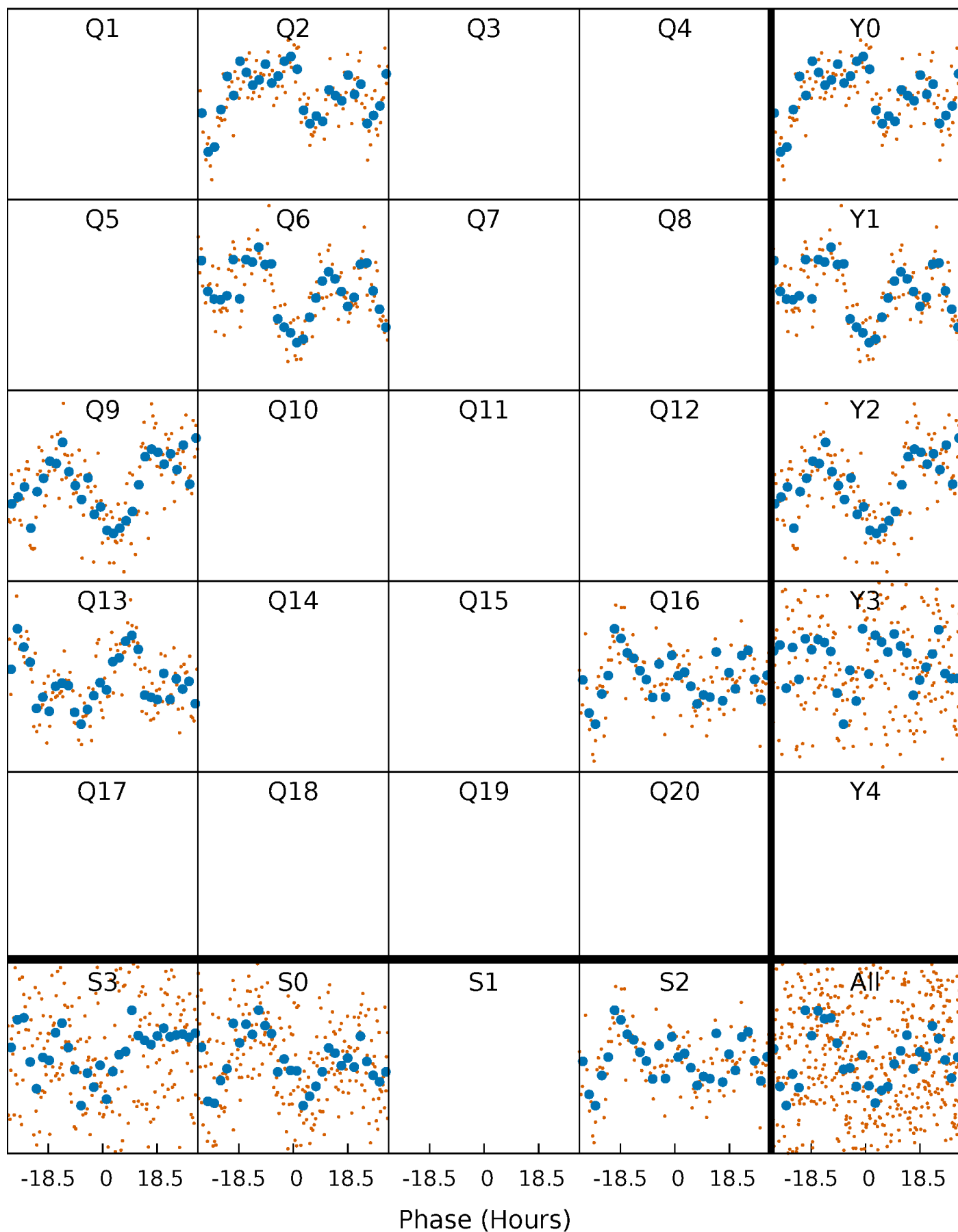


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



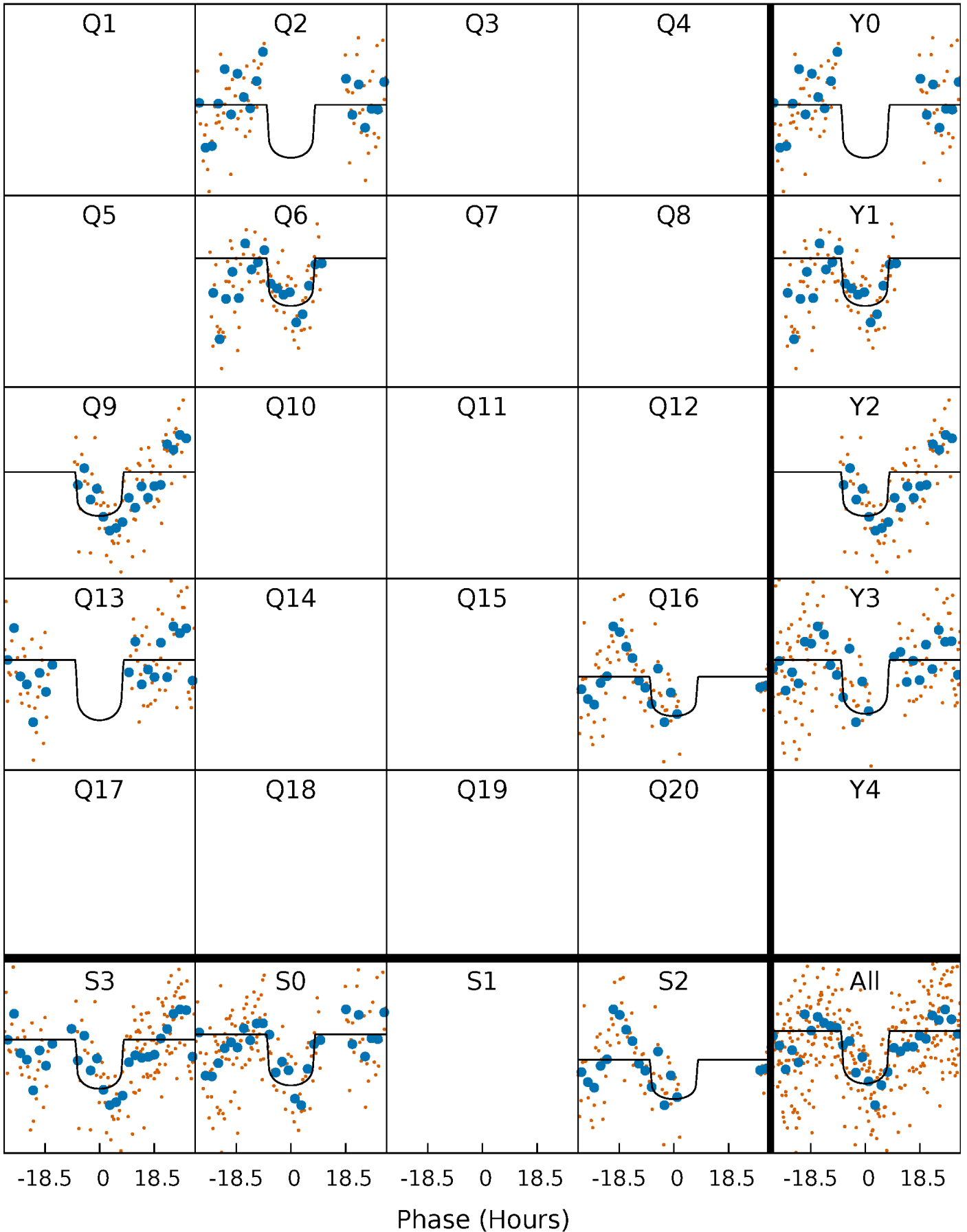
PDC Quarter-Phased Transit Curves

TCE 005387211-03 $P=327.046038$ Days $T_0=242.989708$ (BKJD)



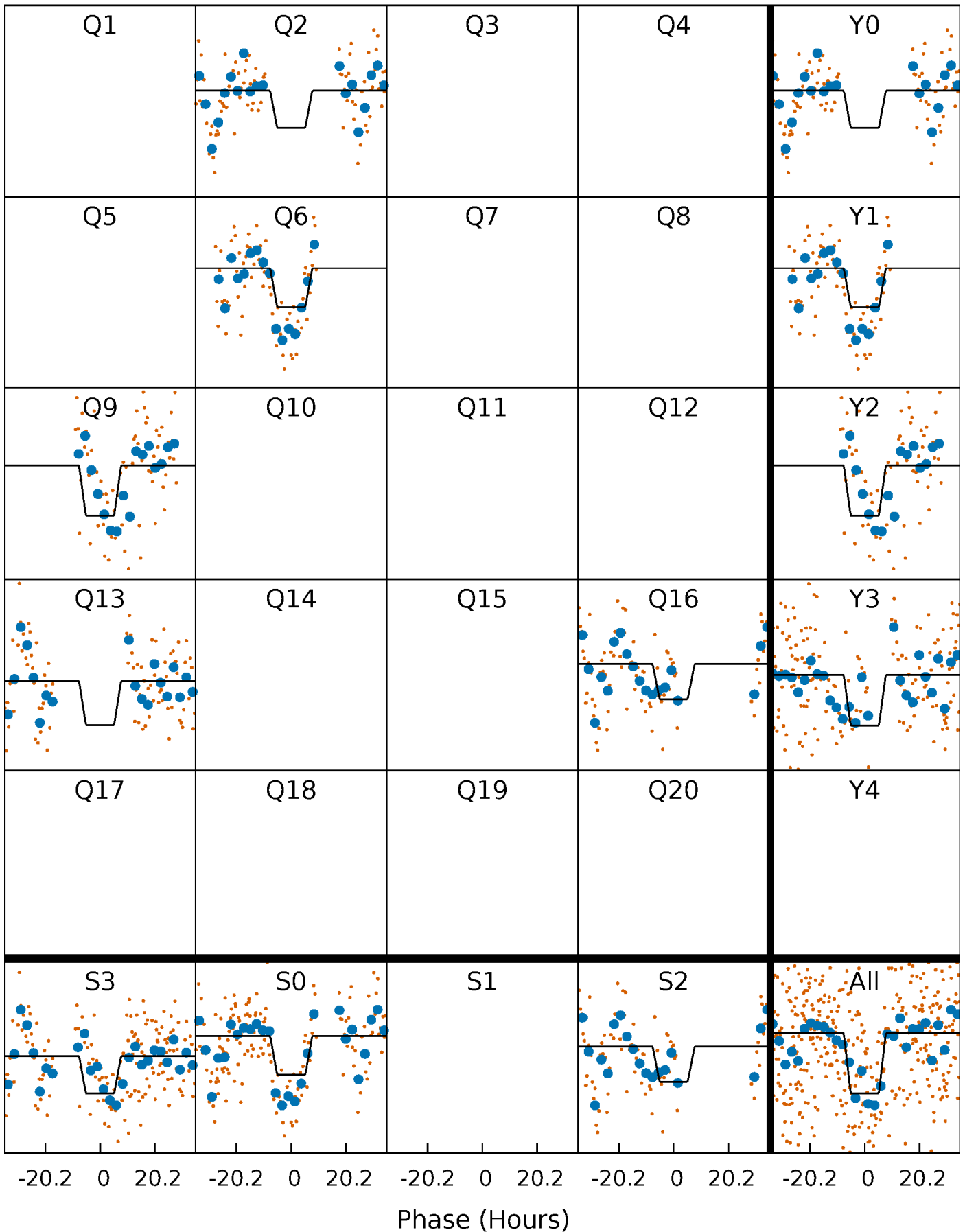
DV Quarter-Phased Transit Curves

TCE 005387211-03 P=327.046038 Days $T_0=242.989708$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

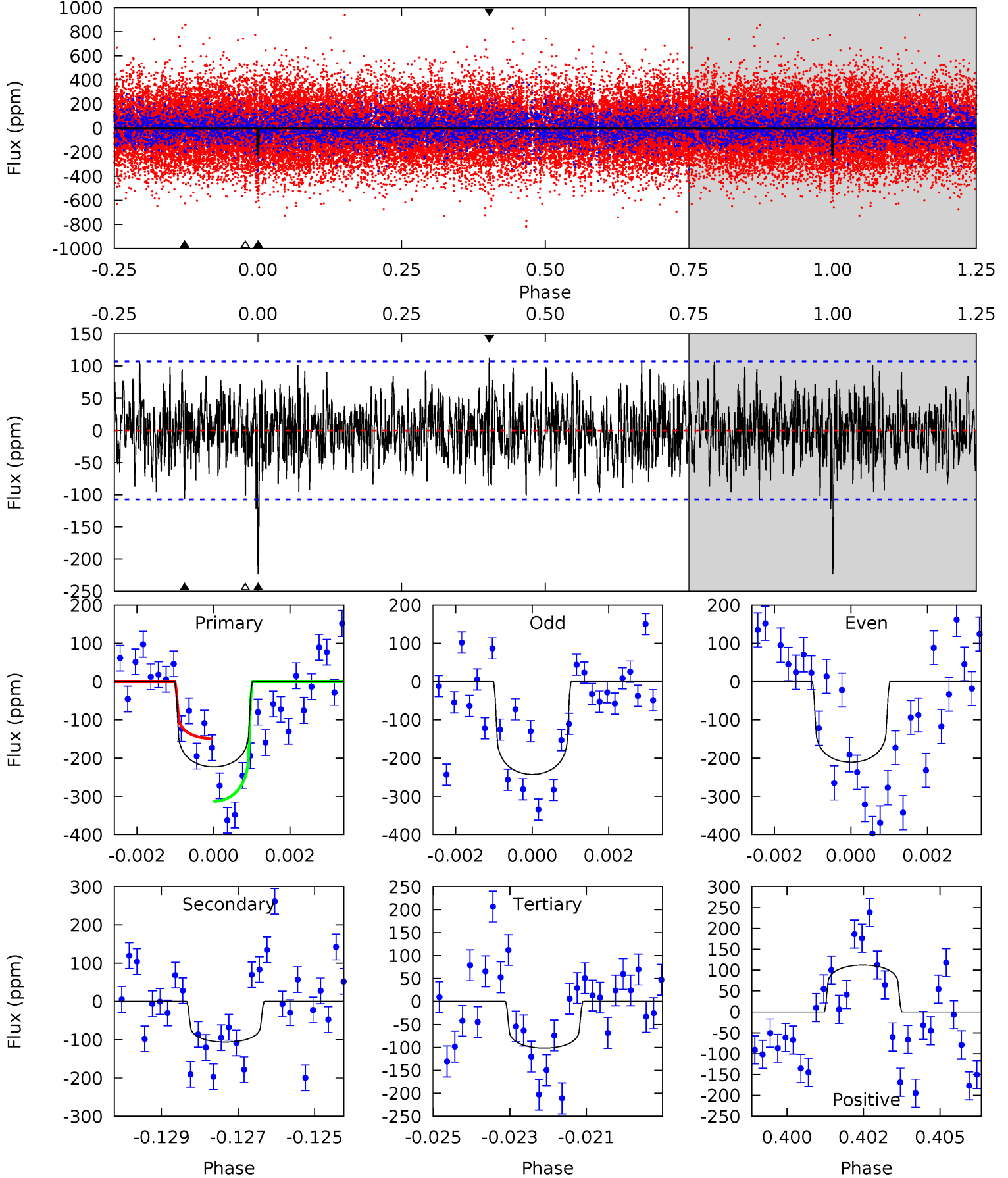
TCE 005387211-03 P=327.045939 Days $T_0=243.015848$ (BKJD)



DV Model-Shift Uniqueness Test

005387211-03, P = 327.046038 Days, E = 242.989708 Days

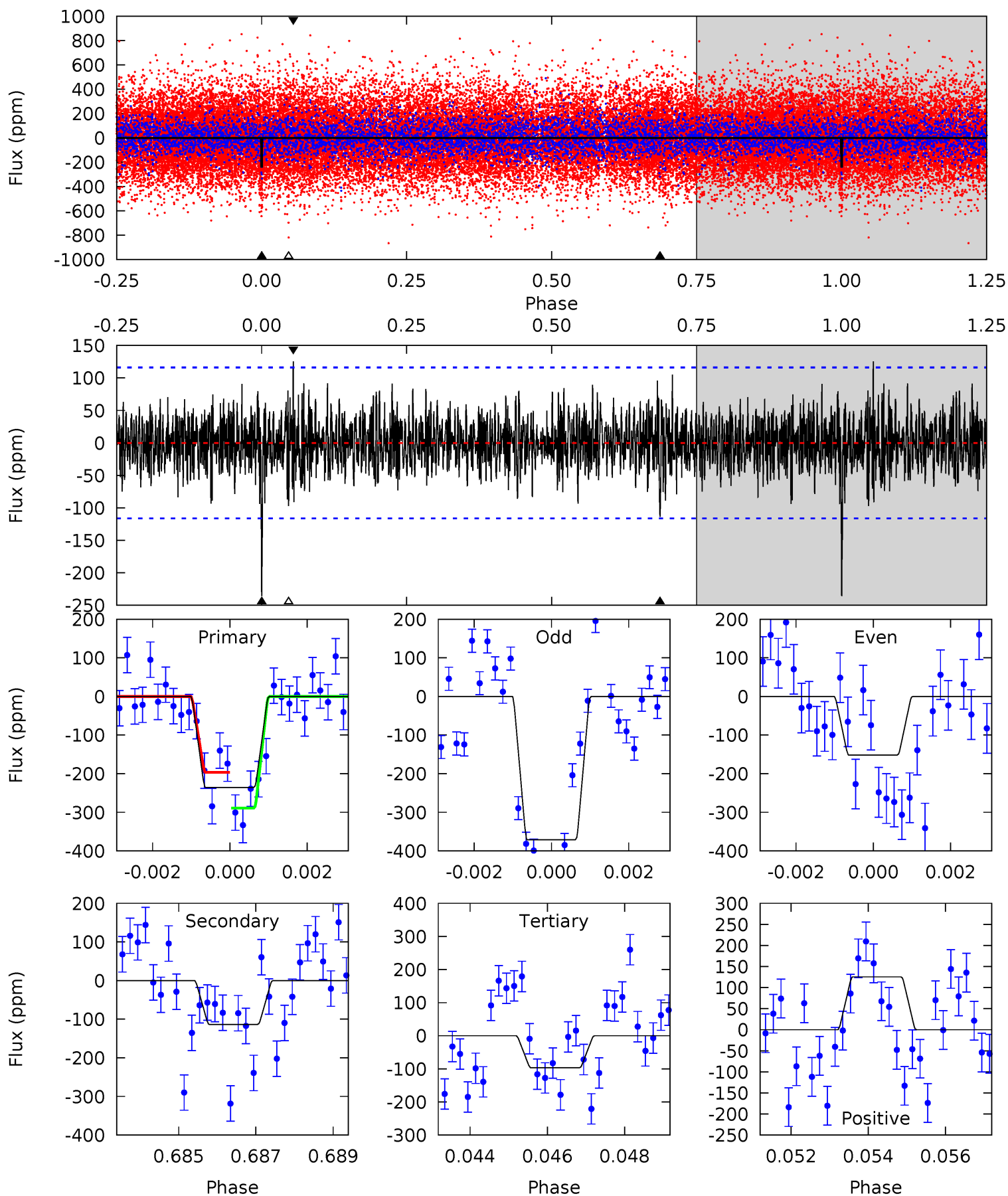
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	5.26	5.04	5.56	5.32	3.08	1.75	5.99	5.47	0.22	-0.31	0.77	0.91	0.34	4.05



Alt Model-Shift Uniqueness Test

005387211-03, P = 327.045939 Days, E = 243.015848 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	5.20	4.44	5.75	5.33	3.09	1.45	6.36	5.05	0.77	-0.54	4.95	1.44	0.35	2.08



Stellar Parameters For KIC 005387211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6908^{+193}_{-303}	$4.251^{+0.087}_{-0.203}$	$0.070^{+0.200}_{-0.350}$	$1.478^{+0.511}_{-0.219}$	$1.420^{+0.213}_{-0.213}$	$0.619^{+0.257}_{-0.344}$
	+3%/-4%	+2%/-5%	+286%/-500%	+35%/-15%	+15%/-15%	+41%/-56%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005387211-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-106 ± 20	$2.72^{+0.95}_{-0.88}$	513^{+40}_{-32}	5463^{+1106}_{-648}	8410^{+9596}_{-3870}
Alt.	-114 ± 22	$2.56^{+0.97}_{-0.79}$	511^{+44}_{-31}	5630^{+1188}_{-695}	9952^{+11472}_{-4786}

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 $A_{obs} \gg 1.0$

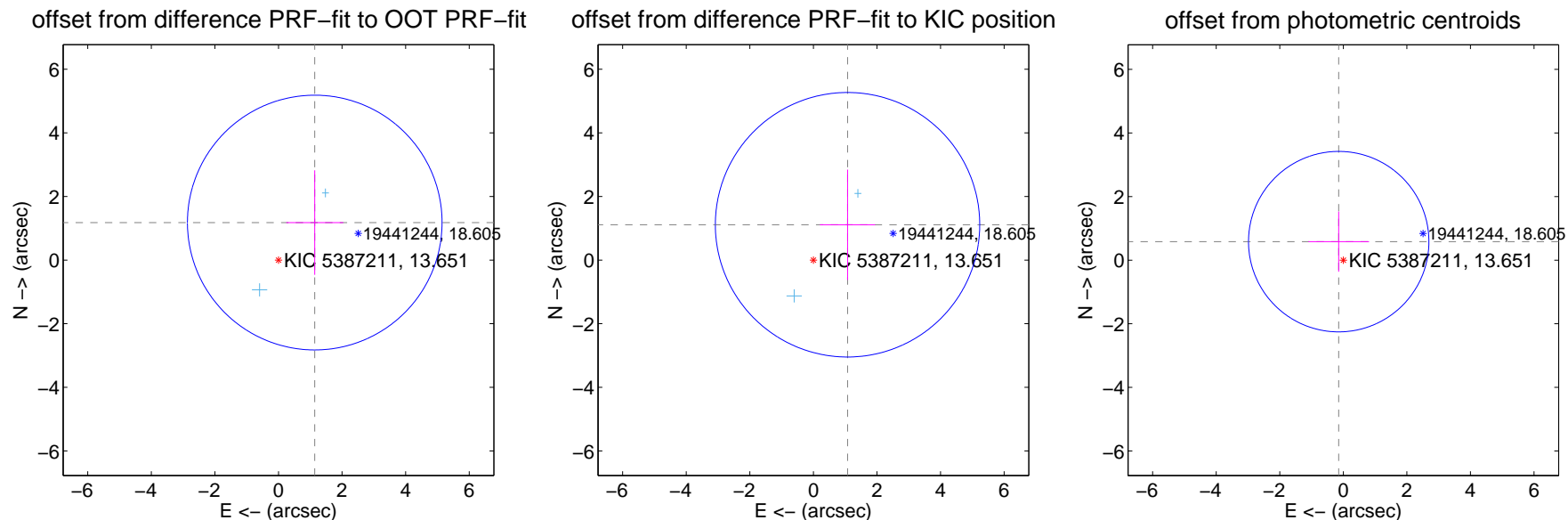
DV Centroid Data

Supplemental centroid analysis for 005387211-03. Kepler magnitude: 13.65. Transit SNR 7.55

There are 2 quarters with good PRF difference image offsets

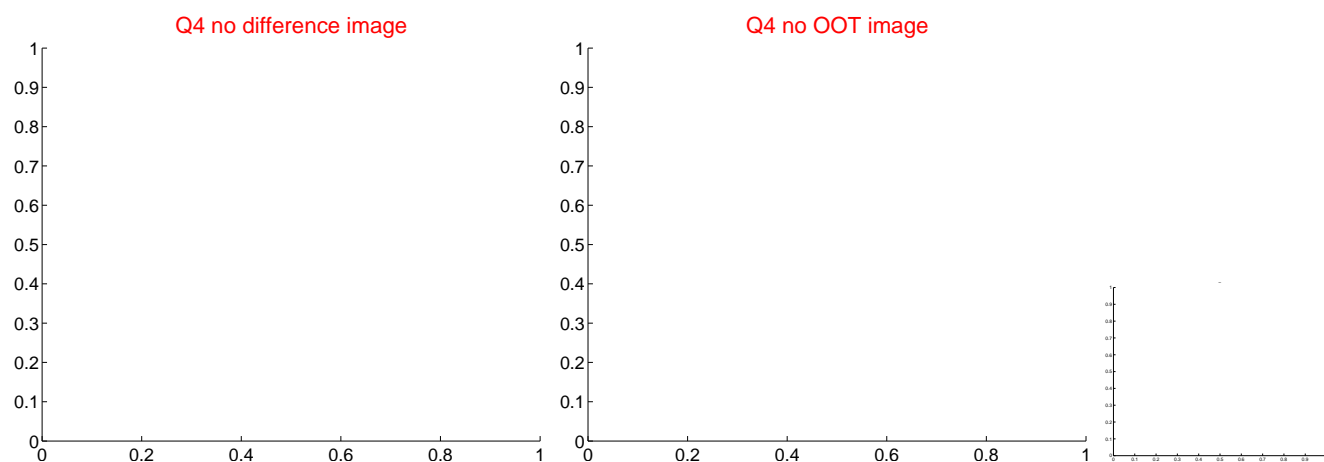
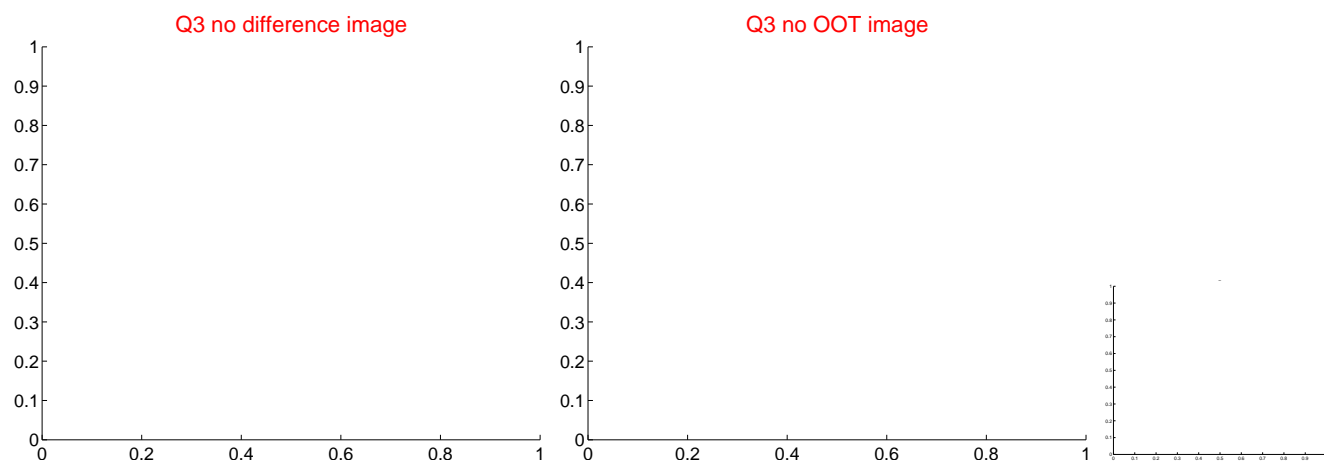
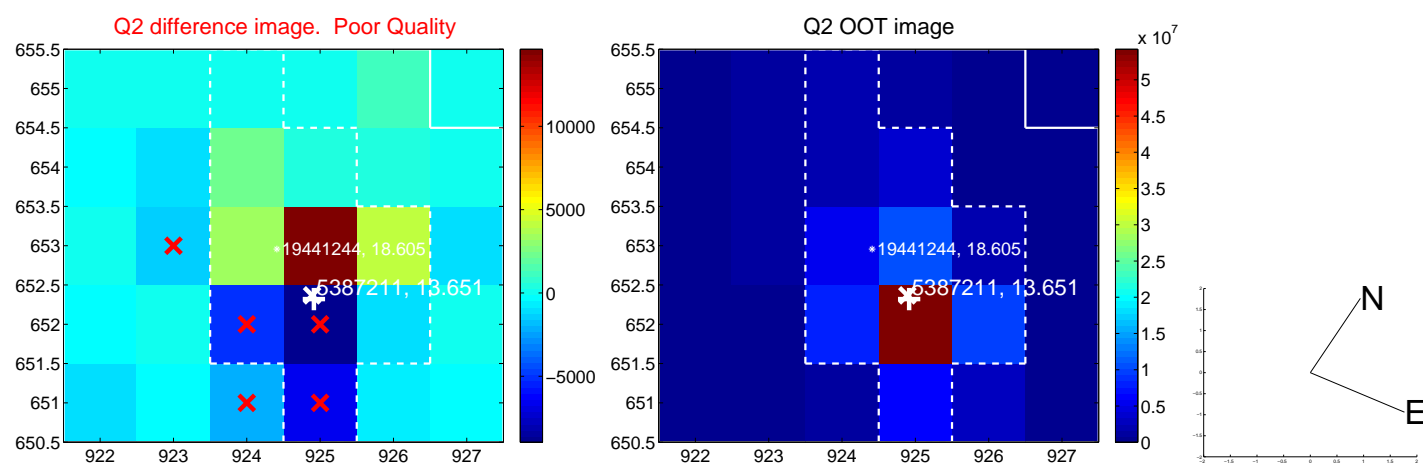
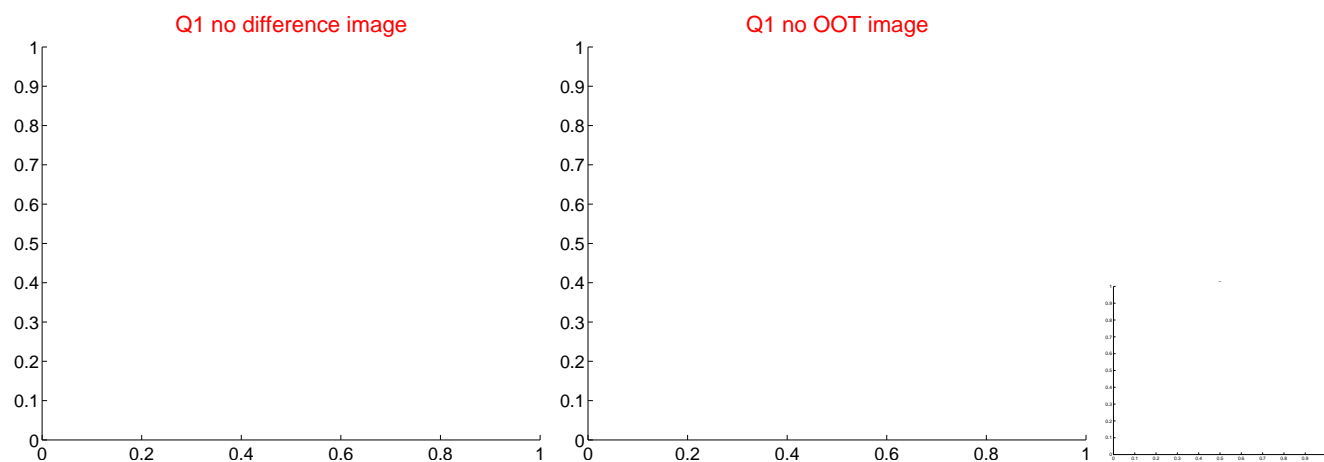
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.641 ± 1.335	1.23	-1.141 ± 0.896	1.180 ± 1.642
PRF-fit source offset from KIC position	1.546 ± 1.386	1.12	-1.074 ± 0.868	1.111 ± 1.736
photometric centroid source offset	0.60 ± 0.95	0.63	0.15 ± 0.95	0.58 ± 0.95

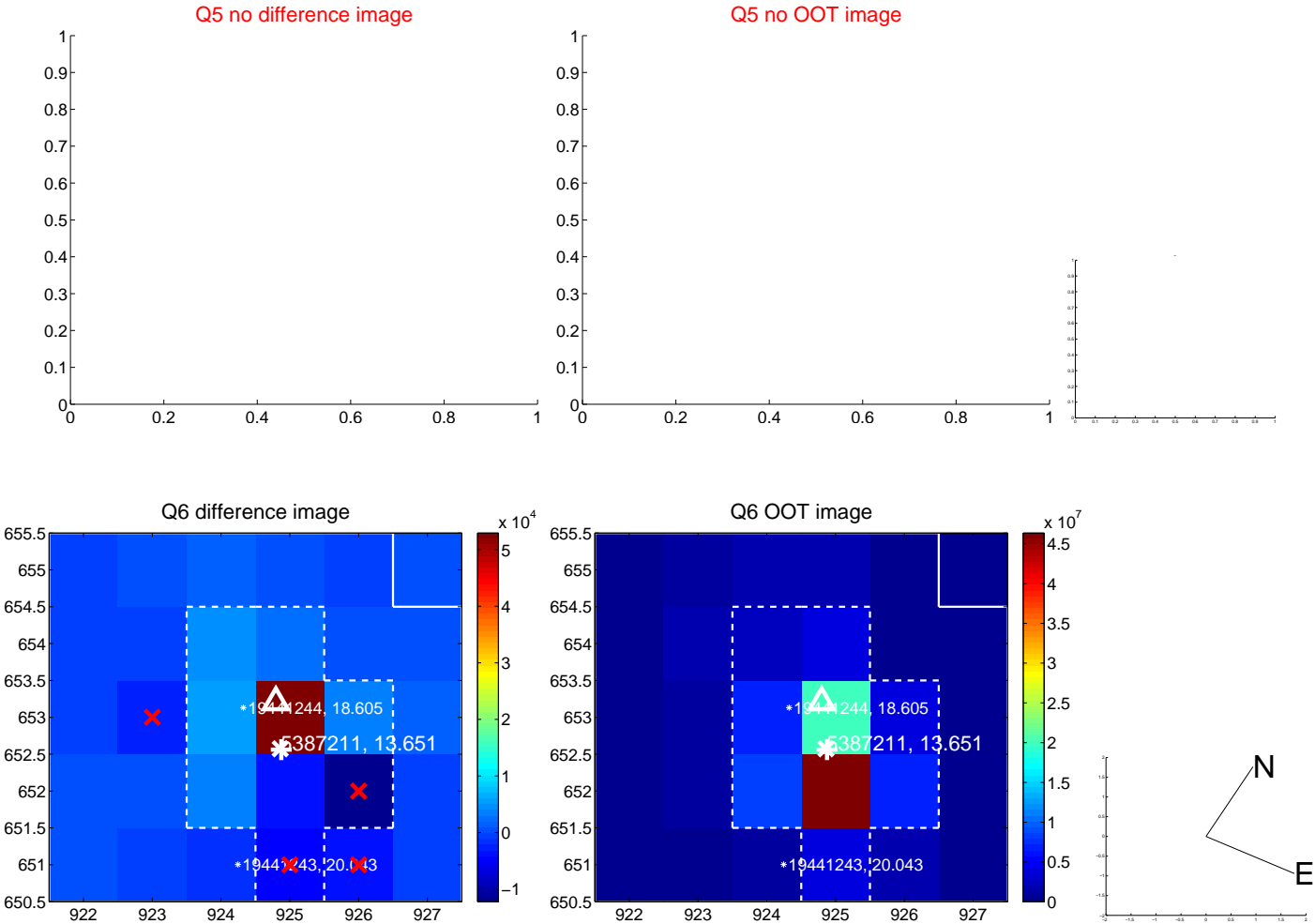


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

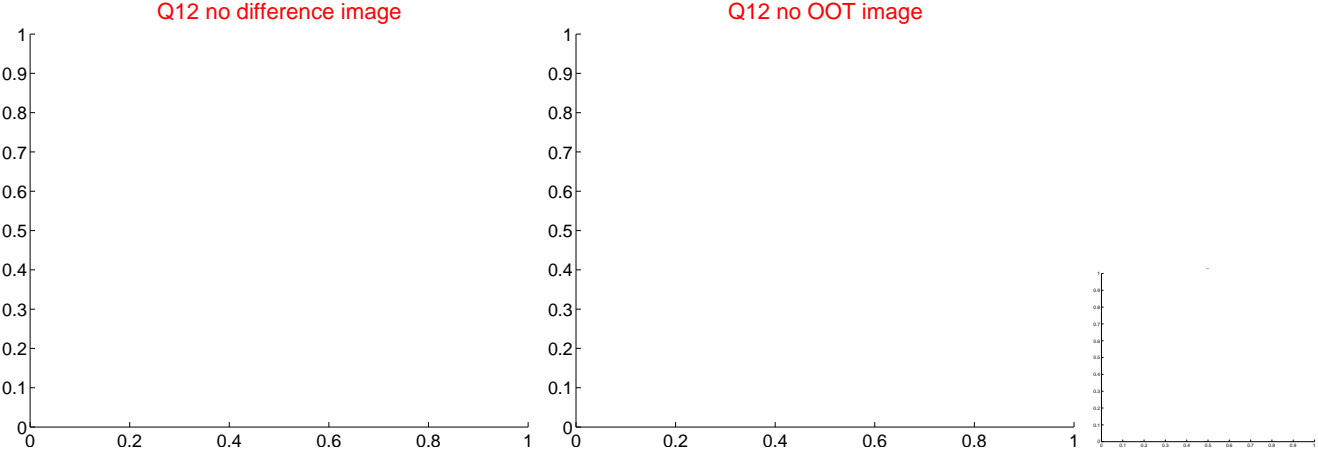
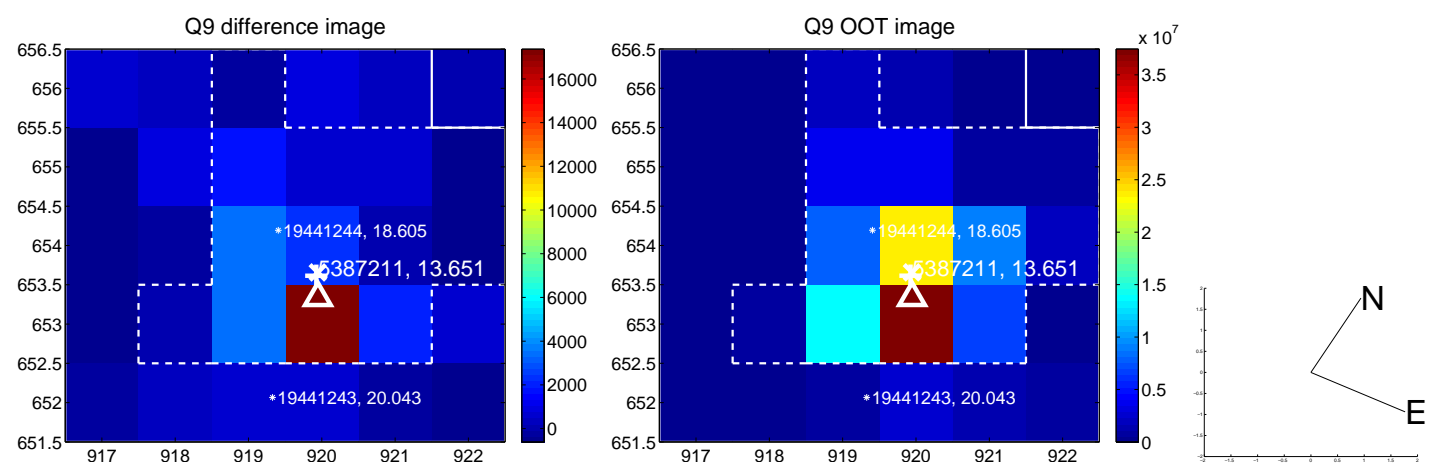
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



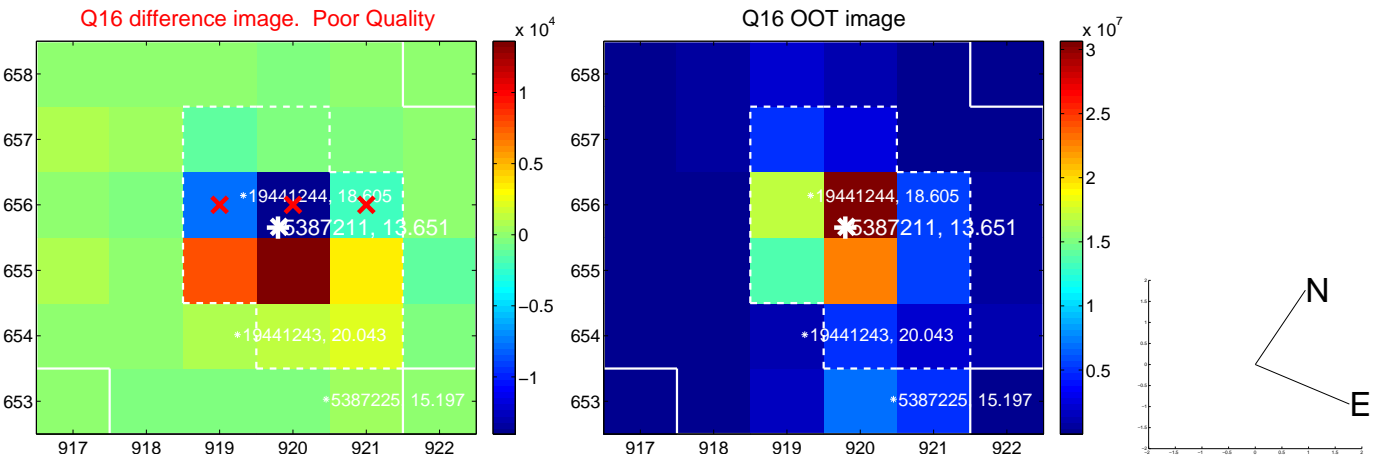
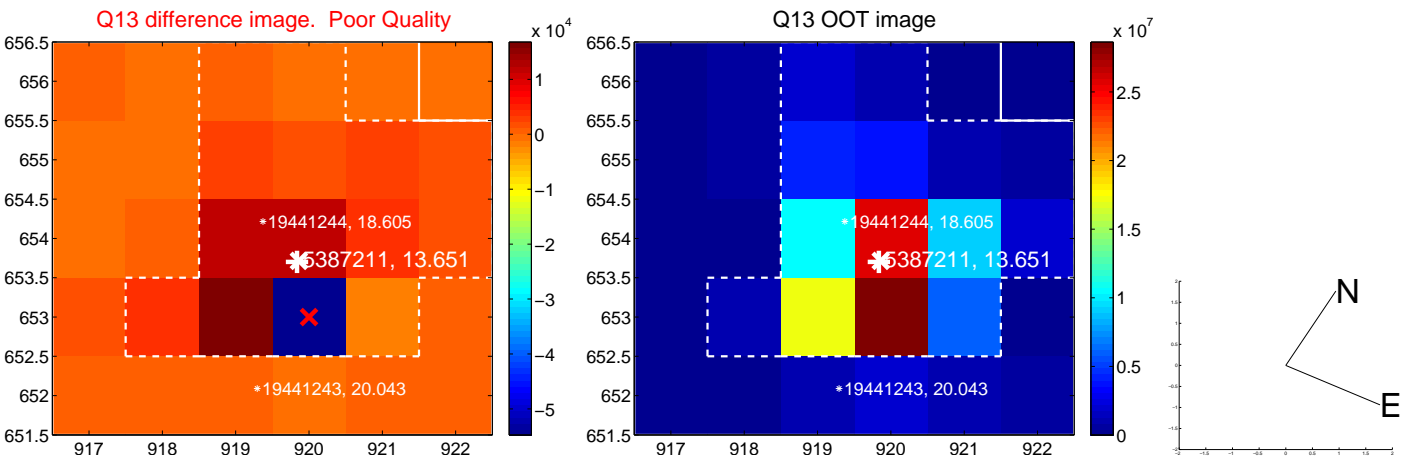
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



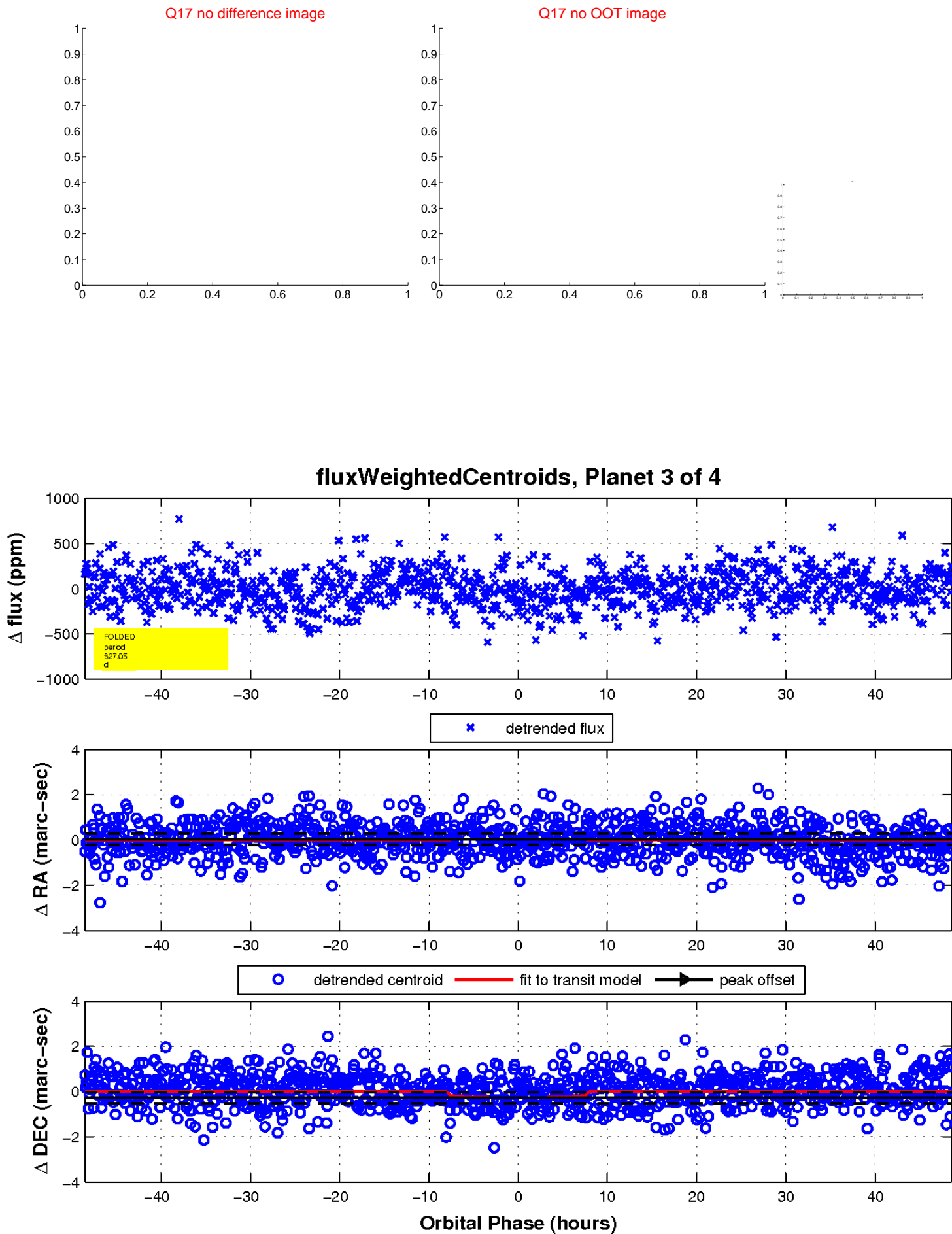
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

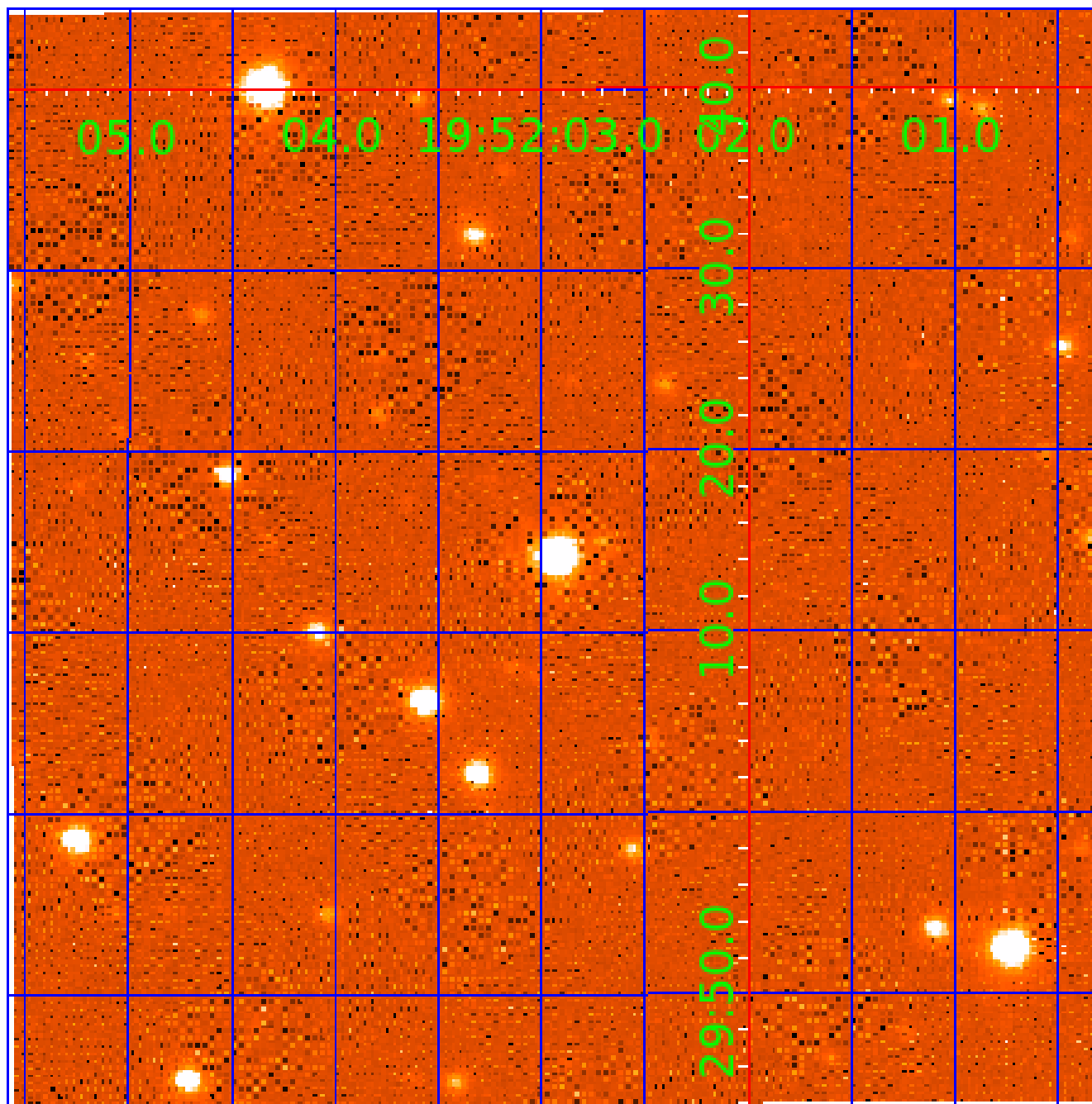


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005387211

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})
005387211-01	OBS	No	2.709394	132.102838	21.3	8.845	9.0	6.2	1.48	6908	0.74	2437.38
005387211-02	OBS	No	465.843752	436.601922	308.6	9.065	10.7	7.1	1.48	6908	2.74	2.55
005387211-03	OBS	No	327.046038	242.989708	265.7	16.203	8.5	7.5	1.48	6908	2.62	4.09
005387211-04	OBS	No	212.047640	238.577901	373.2	5.127	7.3	8.0	1.48	6908	3.69	7.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005387211-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005387211-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005387211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005387211-04	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS—HALO_GHOST

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

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

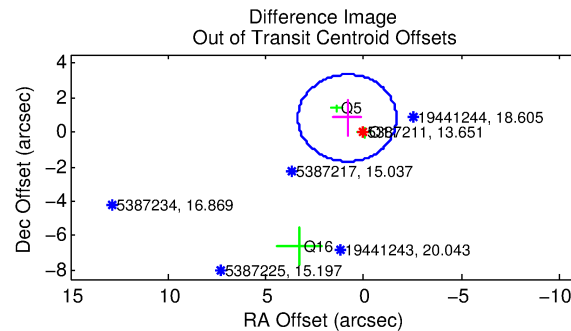
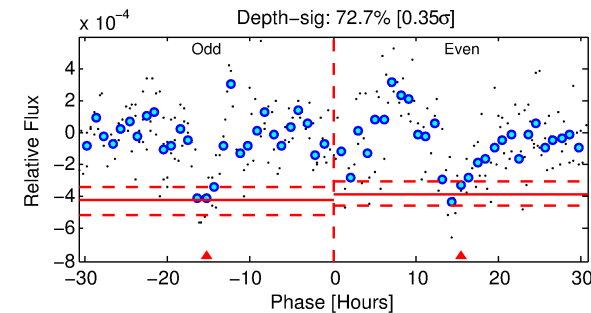
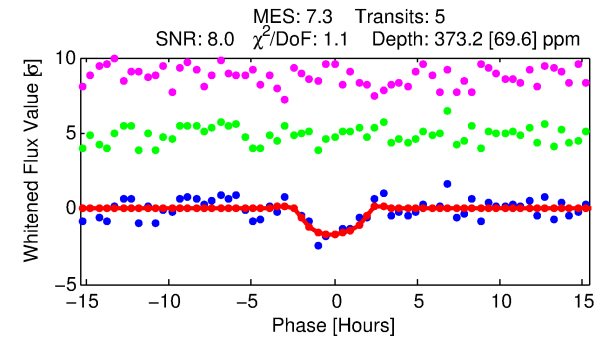
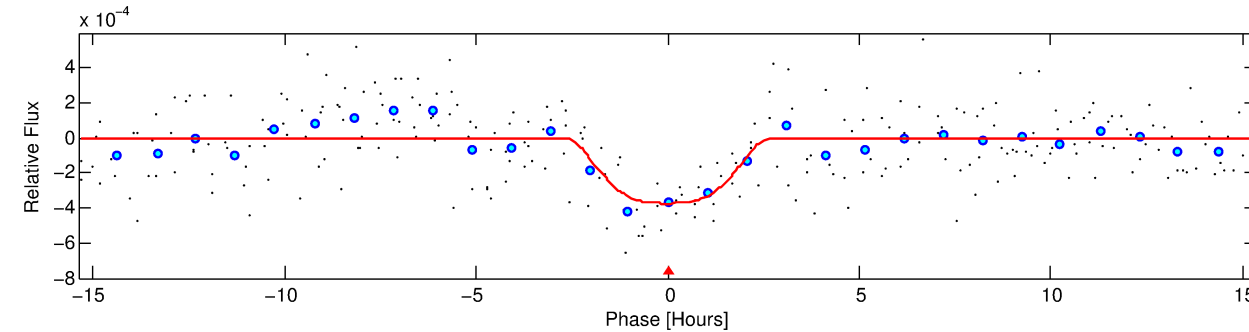
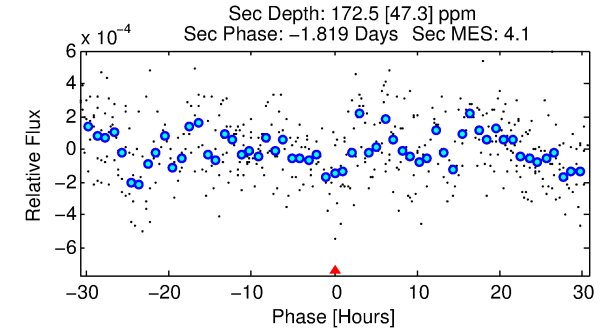
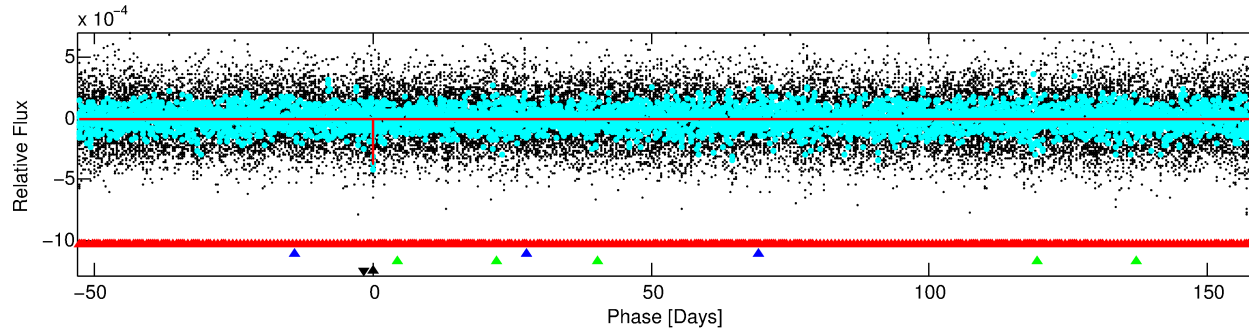
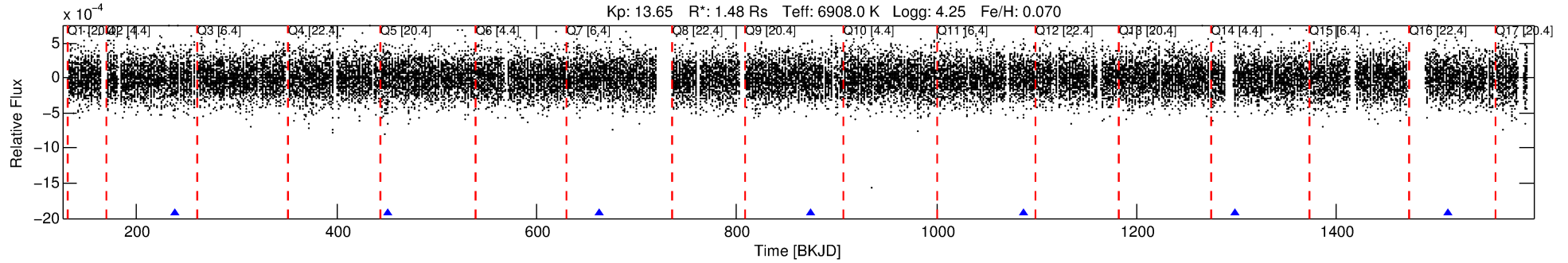
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005387211-04

No Significant Match Found

DV One-Page Summary

KIC: 5387211 Candidate: 4 of 4 Period: 212.048 d



DV Fit Results:

Period = 212.04764 [0.00387] d
Epoch = 238.5779 [0.0130] BKJD
Rp/R* = 0.0229 [0.0028]
a/R* = 99.46 [25.08]
b = 0.97 [0.02]
Seff = 7.28 [3.10]
Teq = 419 [45] K
Rp = 3.69 [1.36] Re
a = 0.7824 [0.2177] AU
Ag = 4270.33 [2287.52] [1.87σ]
Teffp = 5235 [536] K [8.96σ]

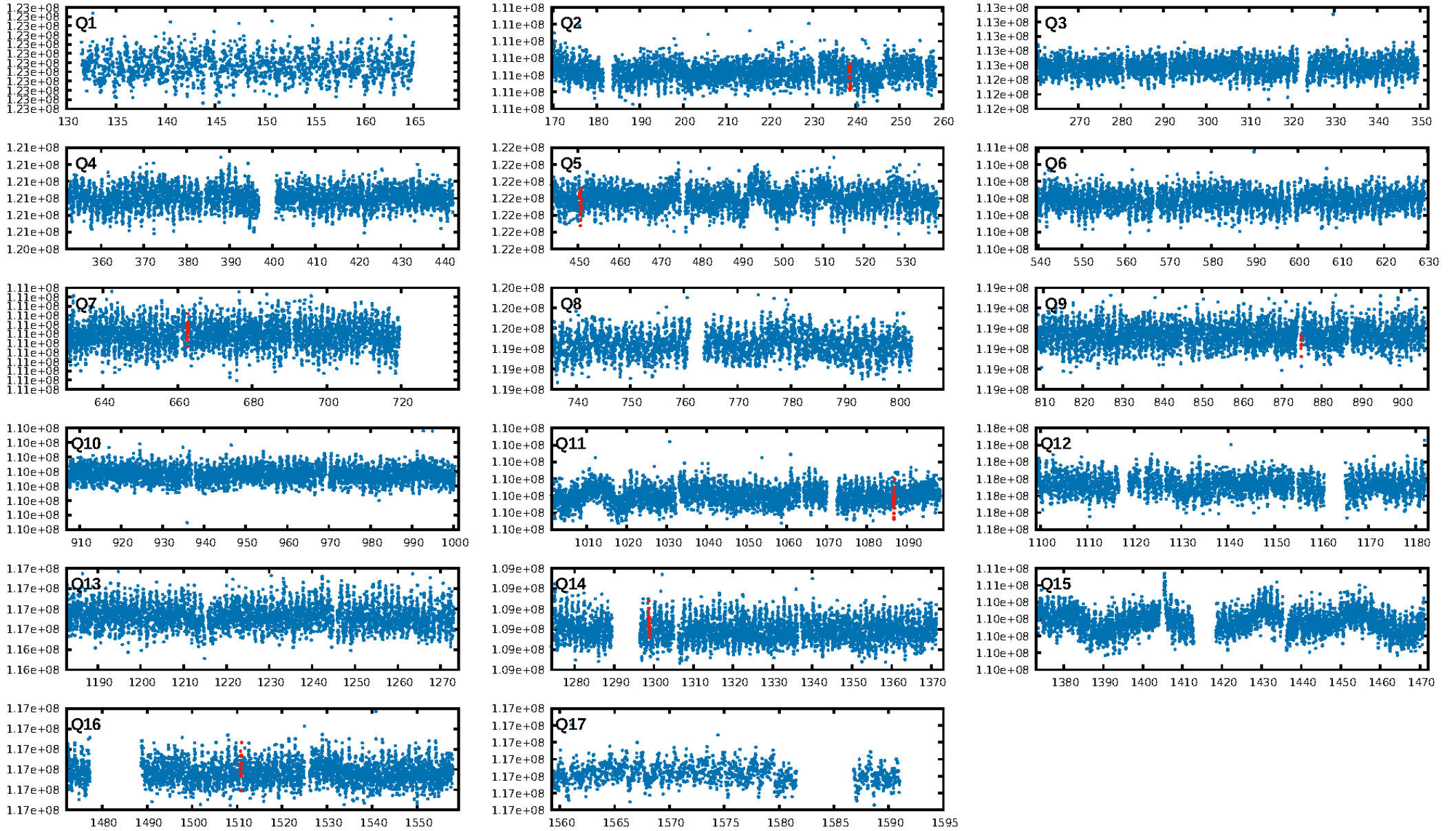
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [491.43σ]
LongPeriod-sig: 100.0% [162.40σ]
ModelChiSquare2-sig: 88.2%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.72e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.1807
Centroid-sig: 9.2%
Centroid-so: 1.499 arcsec [1.75σ]
OotOffset-rm: 1.179 arcsec [1.41σ]
KicOffset-rm: 1.067 arcsec [0.87σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [4/6]

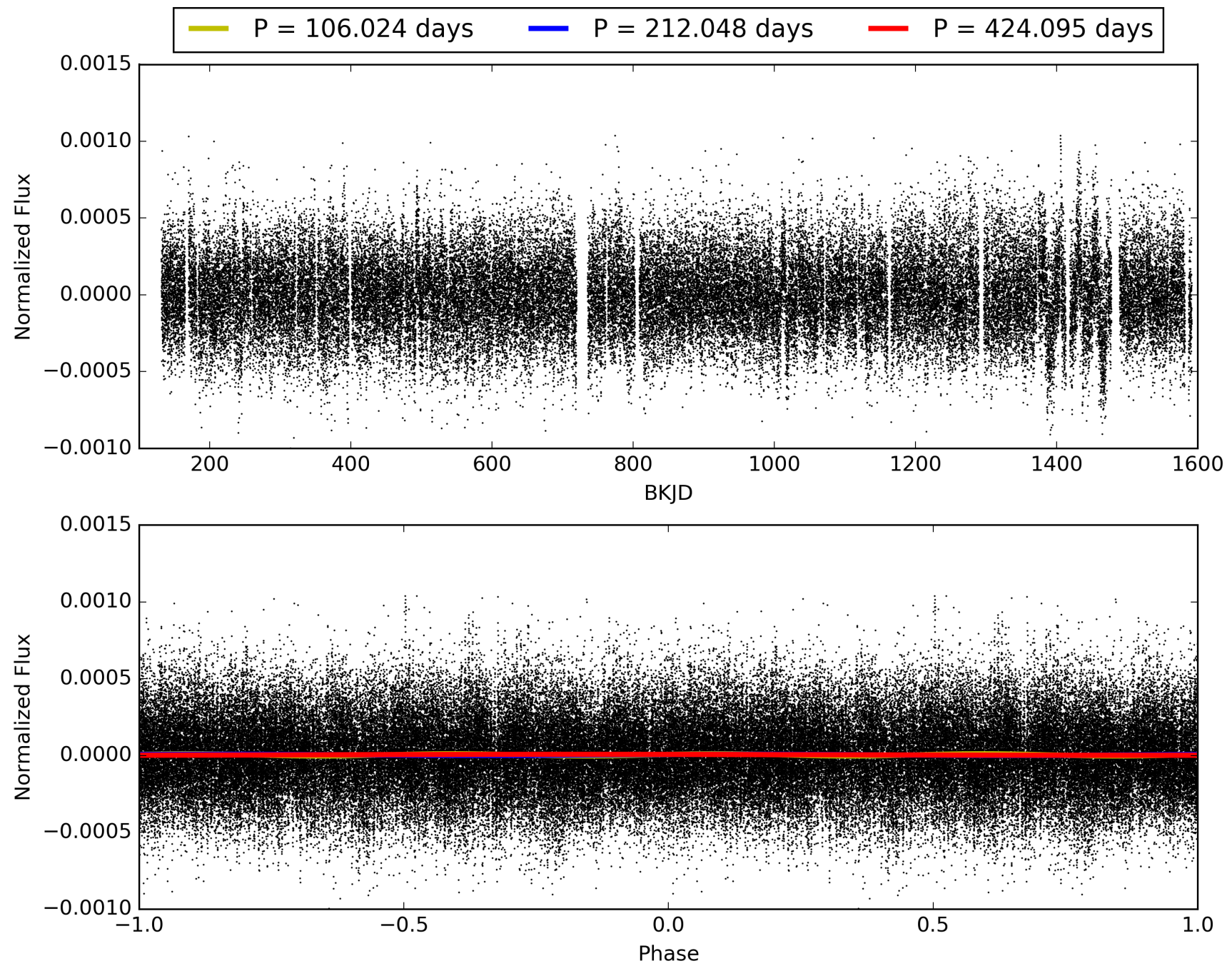
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:08:35 Z

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

TCE 005387211-04, PDC Light Curves

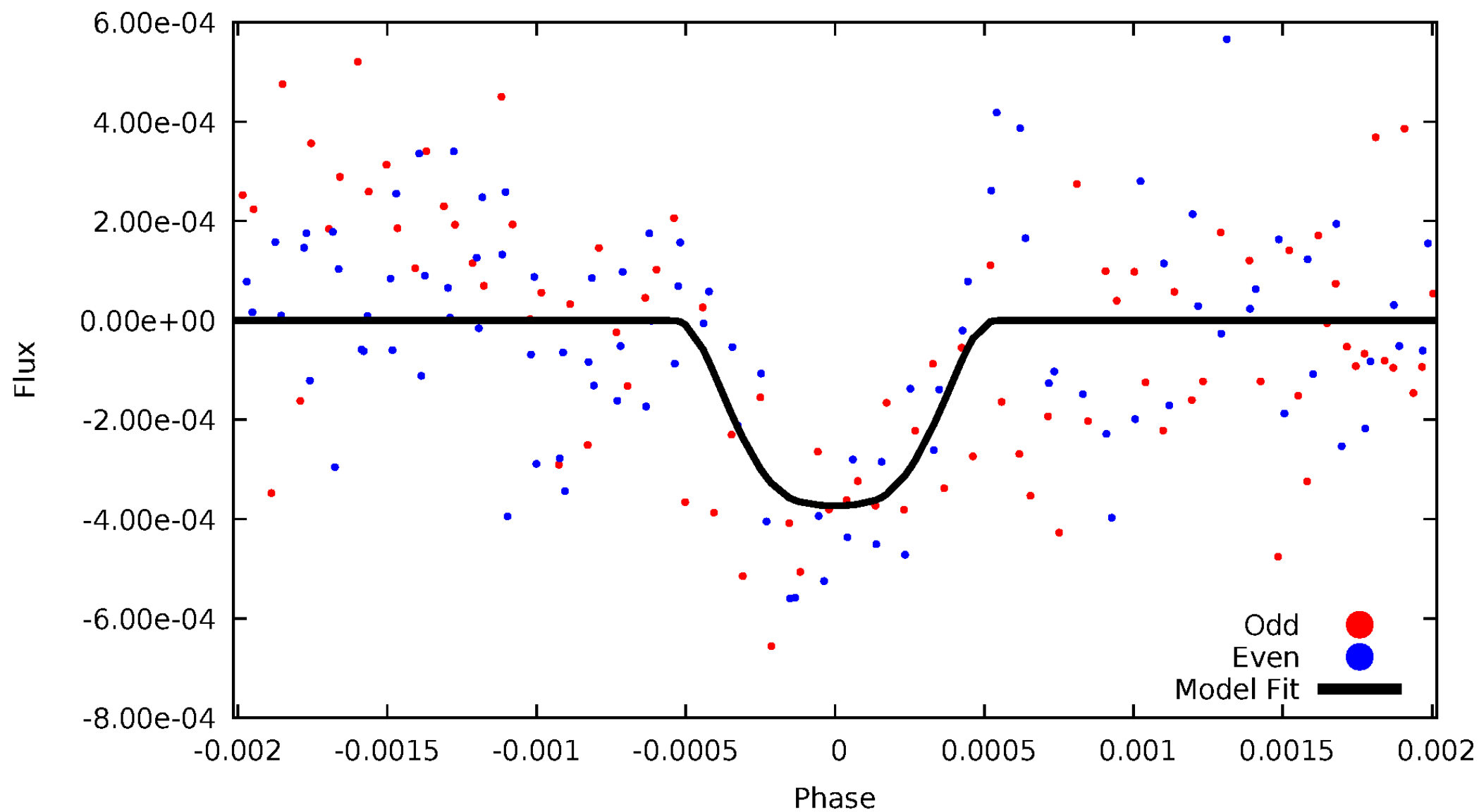


TCE 005387211-04



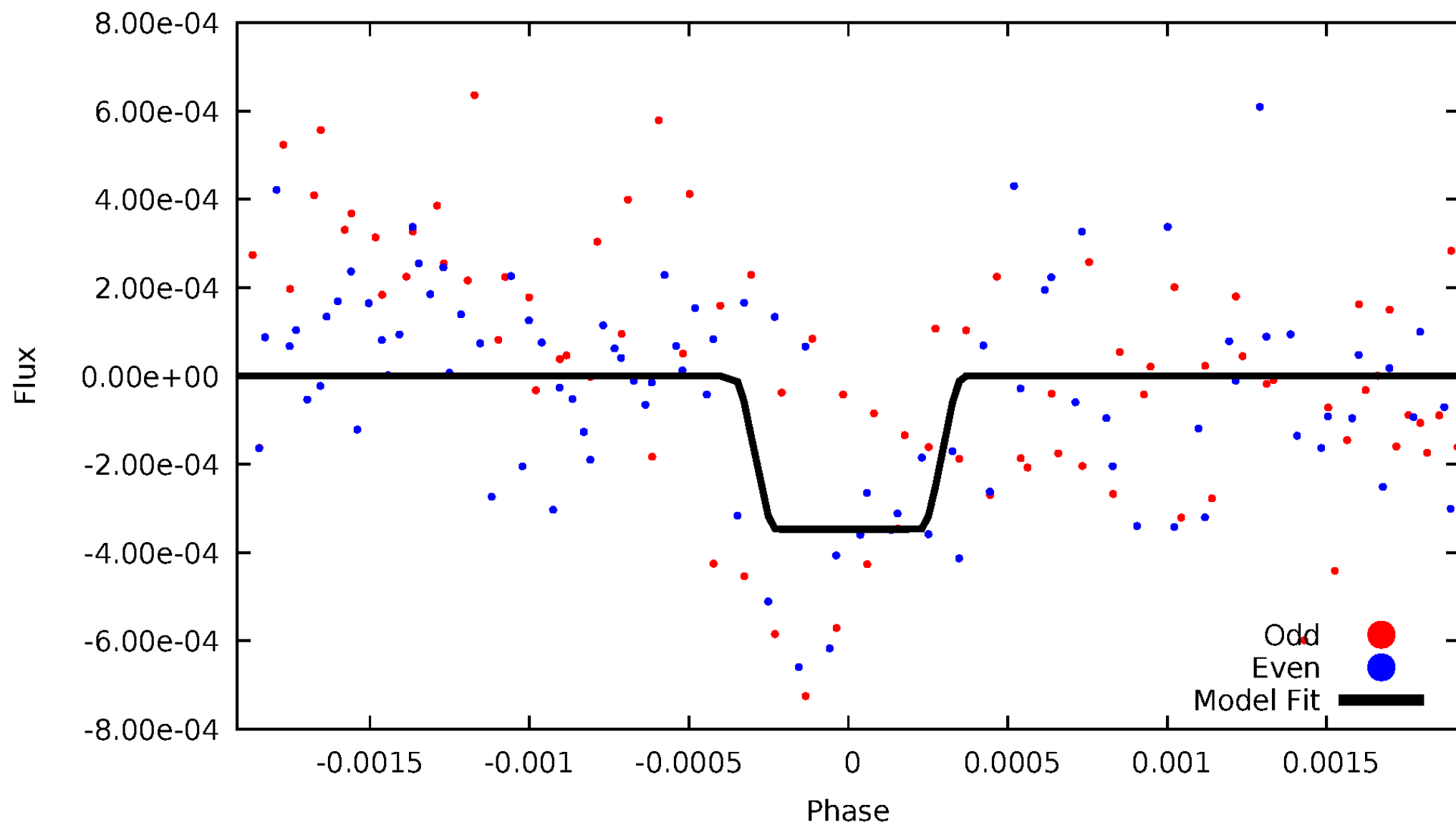
DV Odd/Even

TCE 005387211-04



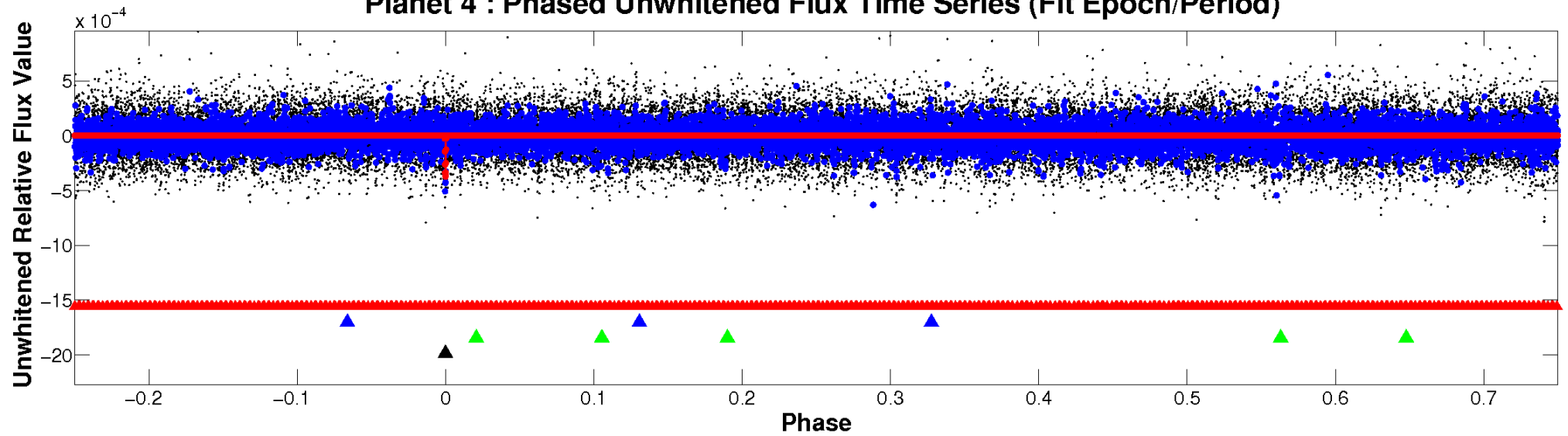
ALT Odd/Even

TCE 005387211-04

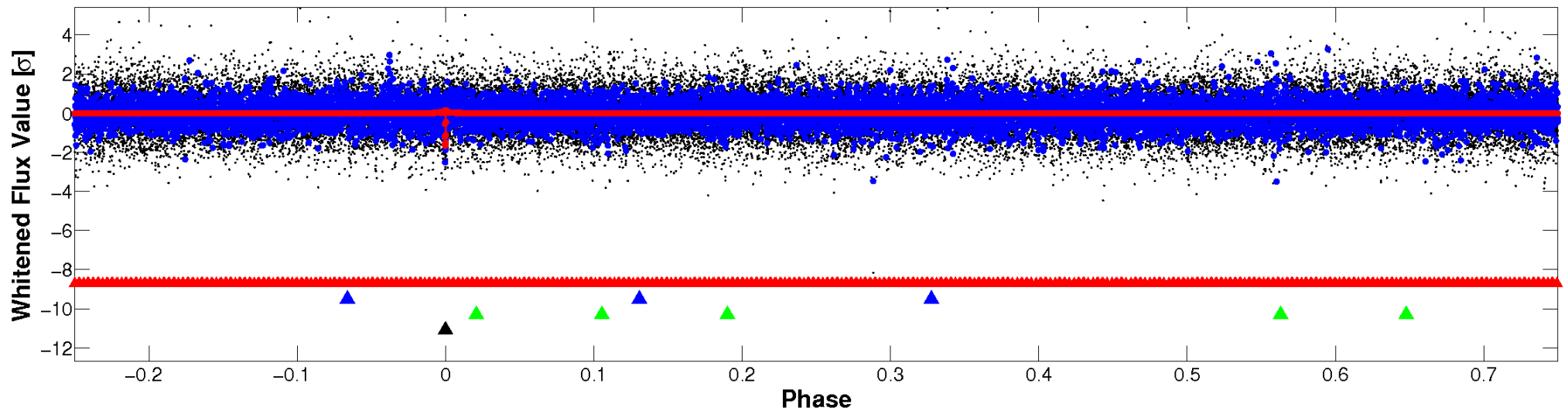


Non-Whitened Vs. Whitened Light Curve

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

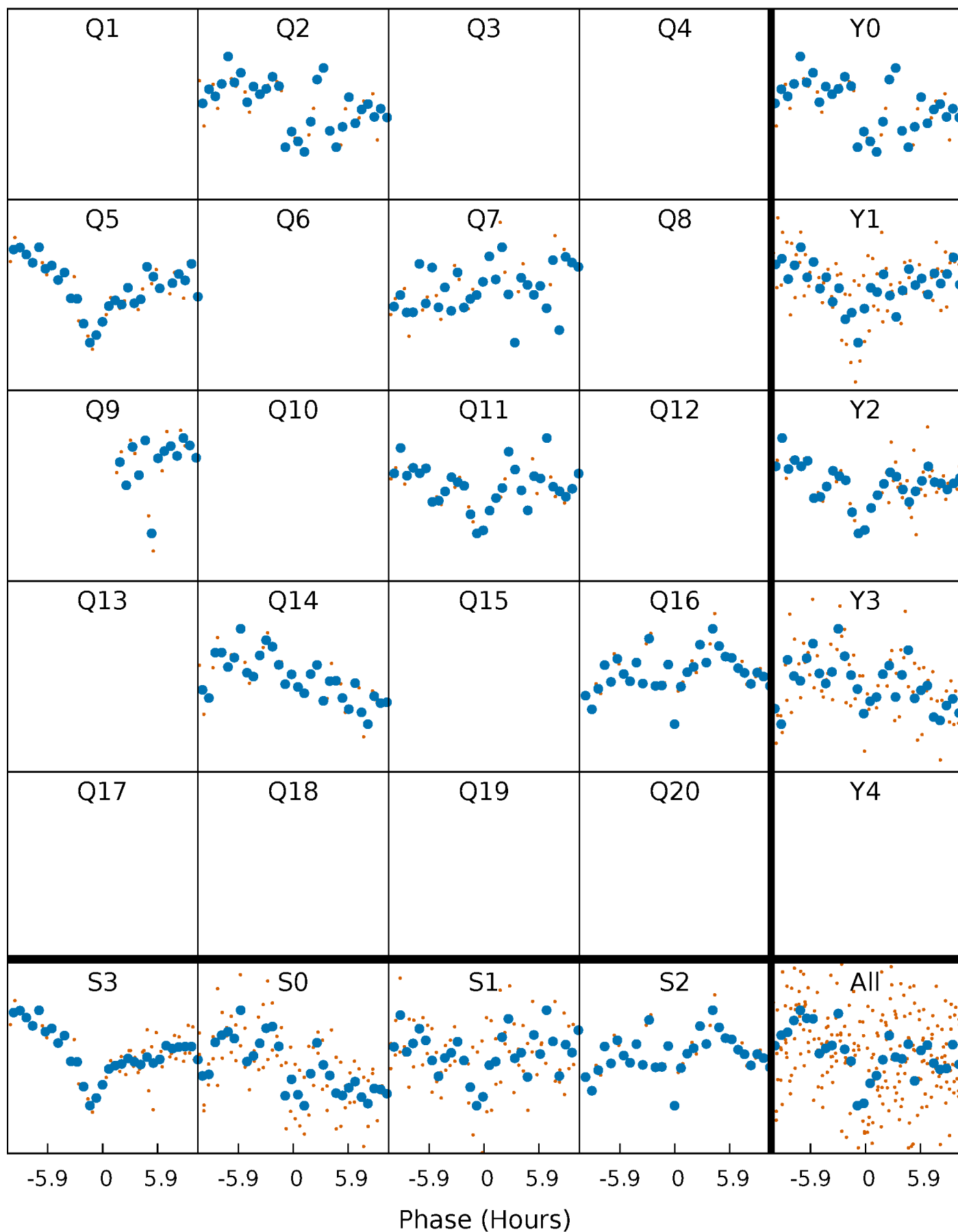


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



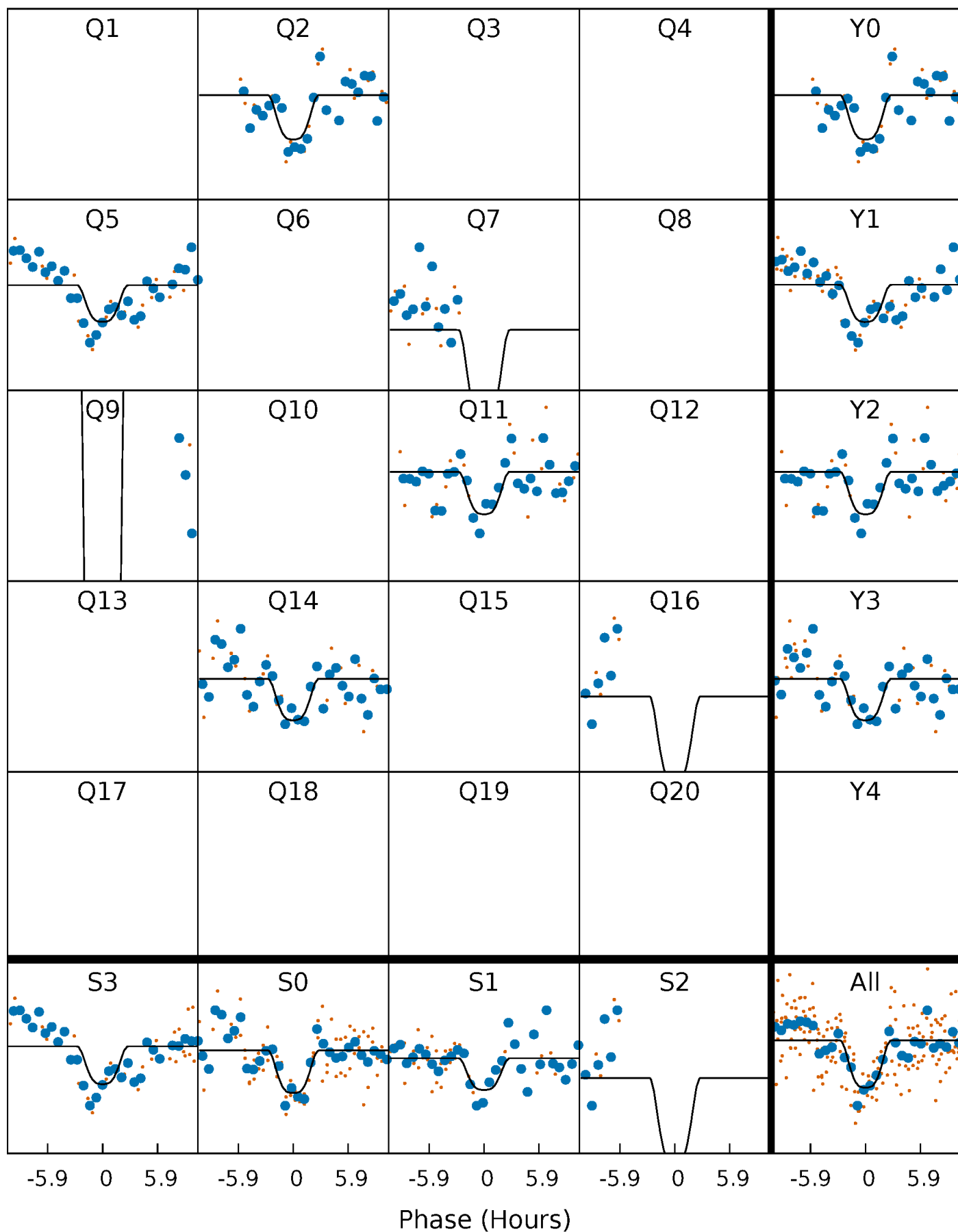
PDC Quarter-Phased Transit Curves

TCE 005387211-04 $P=212.047640$ Days $T_0=238.577901$ (BKJD)



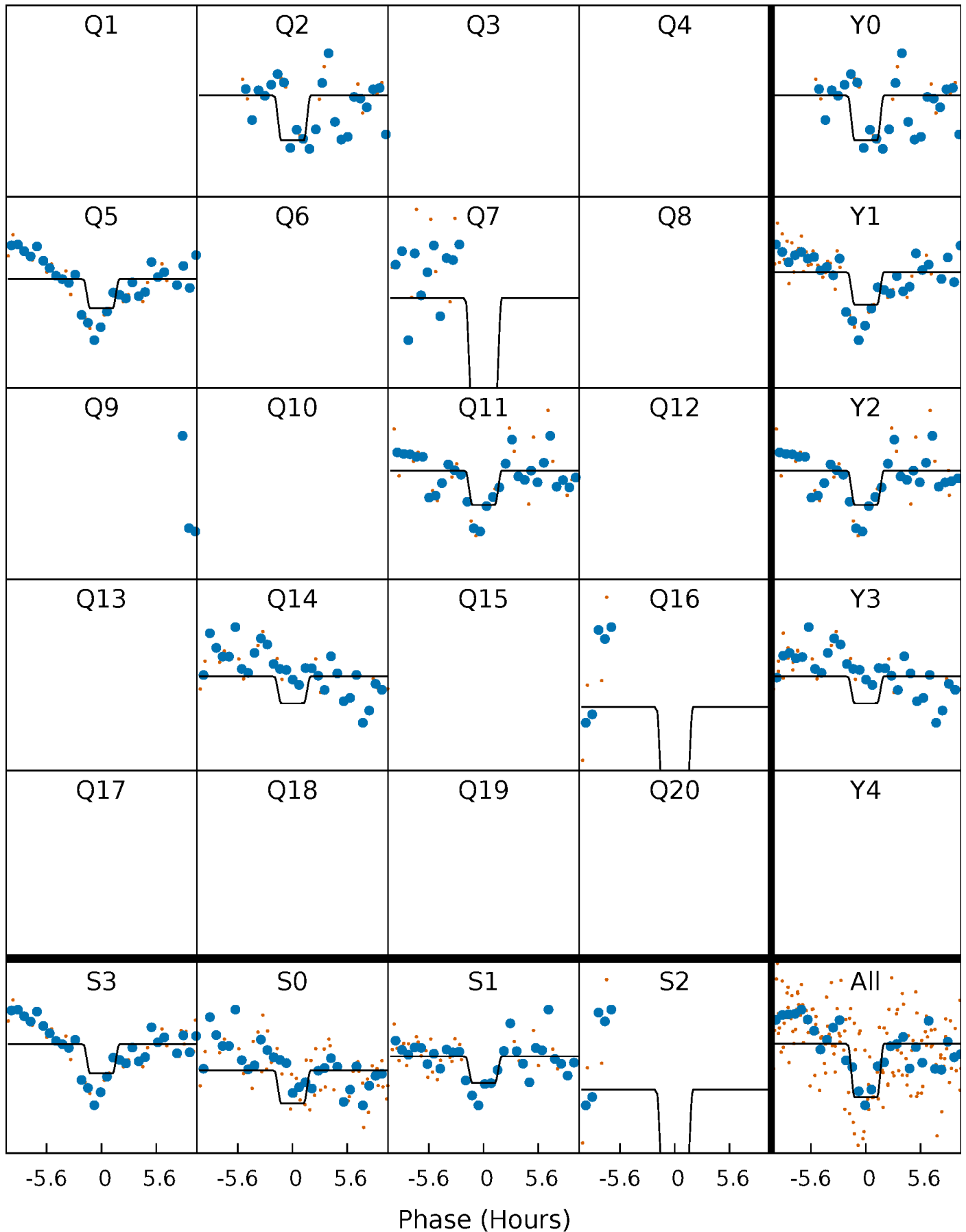
DV Quarter-Phased Transit Curves

TCE 005387211-04 $P=212.047640$ Days $T_0=238.577901$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

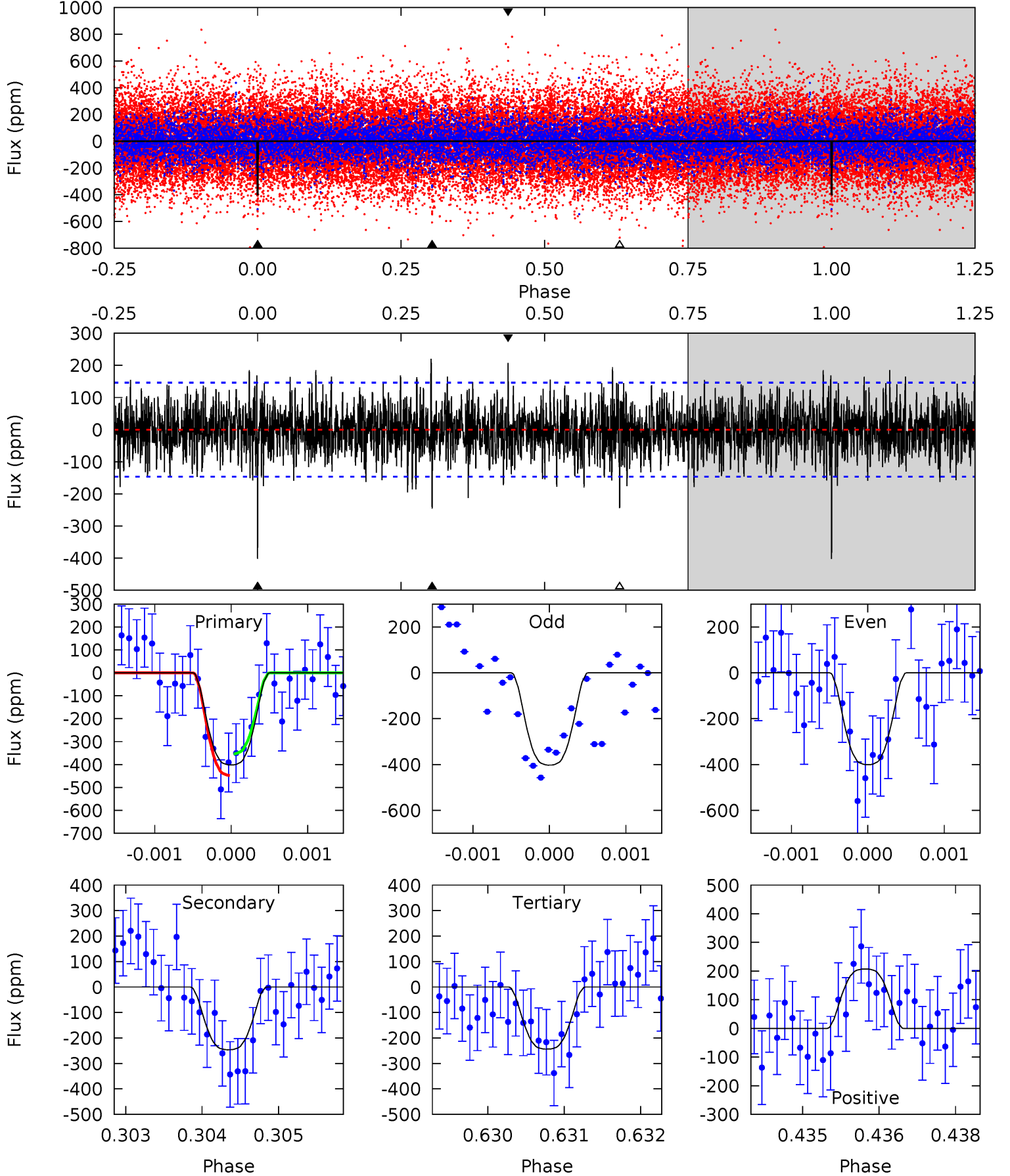
TCE 005387211-04 $P=212.054786$ Days $T_0=238.553896$ (BKJD)



DV Model-Shift Uniqueness Test

005387211-04, $P = 212.047640$ Days, $E = 26.530261$ Days

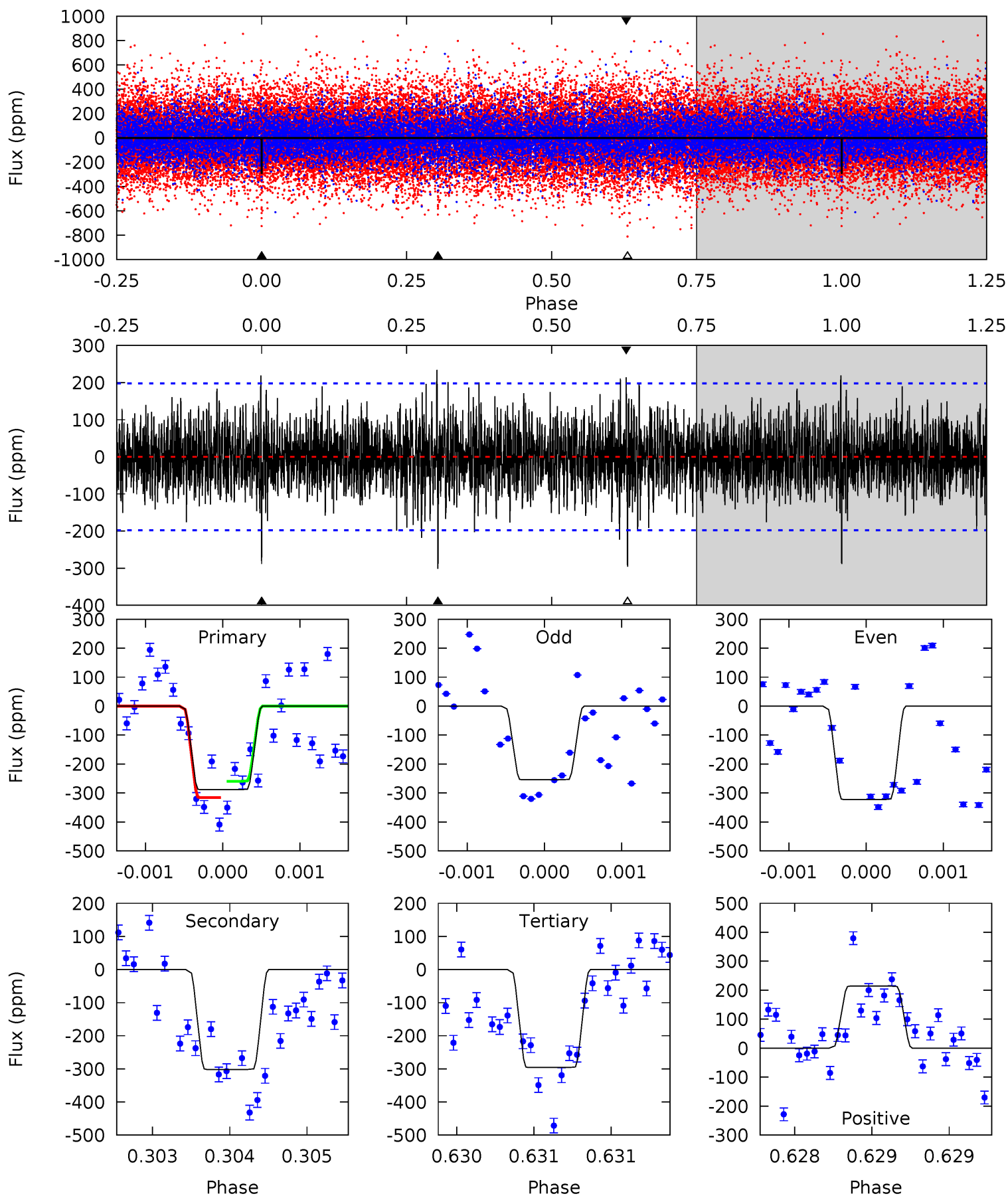
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	9.15	9.05	7.70	5.44	3.27	2.21	5.88	7.23	0.09	1.44	0.03	1.00	0.35	1.75



Alt Model-Shift Uniqueness Test

005387211-04, P = 212.054786 Days, E = 26.499110 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.04	8.40	8.24	5.96	5.51	3.38	1.77	-0.20	2.08	0.16	2.44	0.95	0.89	0.44	0.79



Stellar Parameters For KIC 005387211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6908^{+193}_{-303}	$4.251^{+0.087}_{-0.203}$	$0.070^{+0.200}_{-0.350}$	$1.478^{+0.511}_{-0.219}$	$1.420^{+0.213}_{-0.213}$	$0.619^{+0.257}_{-0.344}$
	+3%/-4%	+2%/-5%	+286%/-500%	+35%/-15%	+15%/-15%	+41%/-56%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005387211-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-246 ± 27	$3.80^{+0.78}_{-0.58}$	594^{+40}_{-34}	5672^{+423}_{-349}	5551^{+2238}_{-1538}
Alt.	-302 ± 36	$3.11^{+0.62}_{-0.58}$	590^{+44}_{-33}	6573^{+685}_{-533}	10300^{+4680}_{-3261}

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

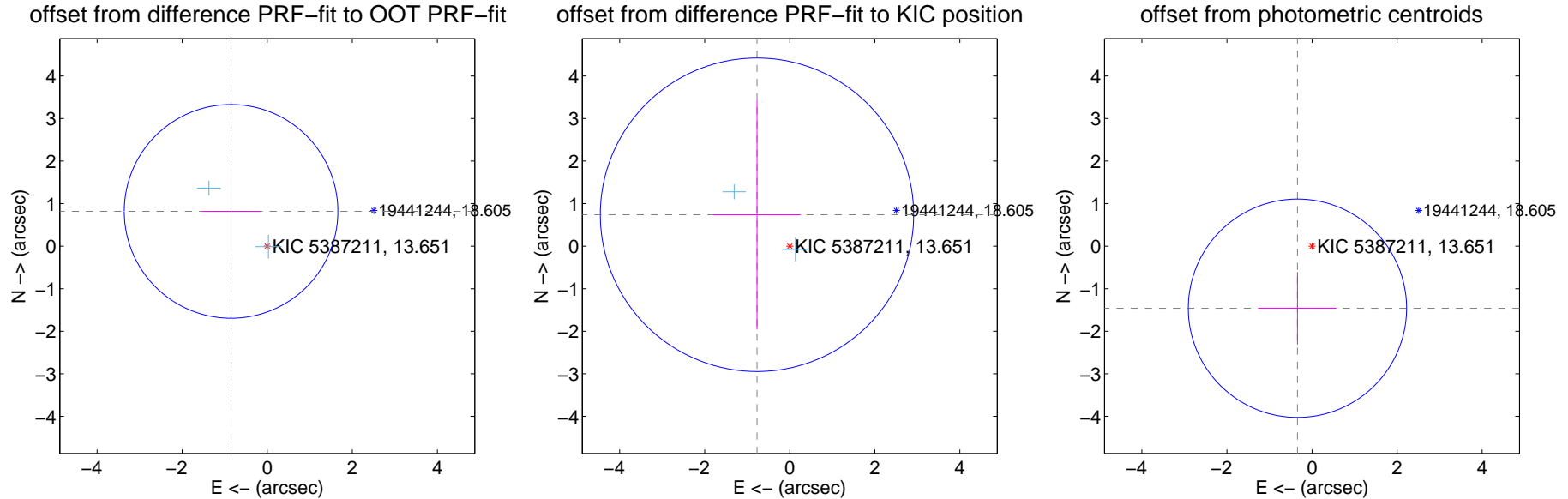
DV Centroid Data

Supplemental centroid analysis for 005387211-04. Kepler magnitude: 13.65. Transit SNR 7.98

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.179 ± 0.837	1.41	0.850 ± 0.677	0.818 ± 0.981
PRF-fit source offset from KIC position	1.067 ± 1.228	0.87	0.771 ± 1.026	0.738 ± 2.696
photometric centroid source offset	1.50 ± 0.86	1.75	0.34 ± 0.91	-1.46 ± 0.85



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.

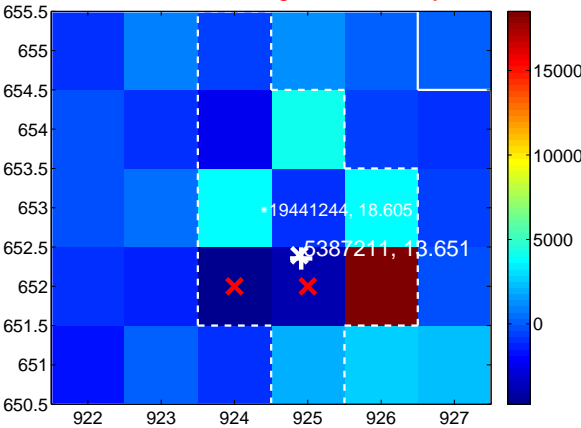
Q1 no difference image



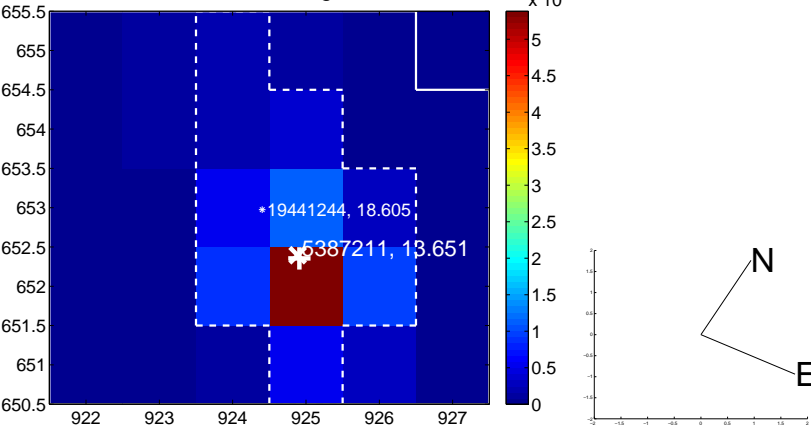
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



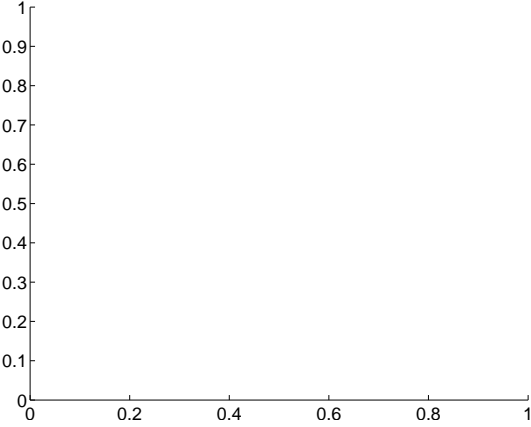
Q3 no difference image



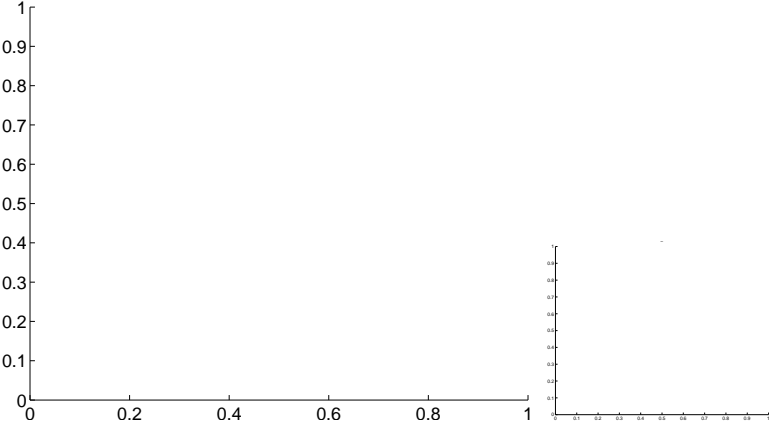
Q3 no OOT image



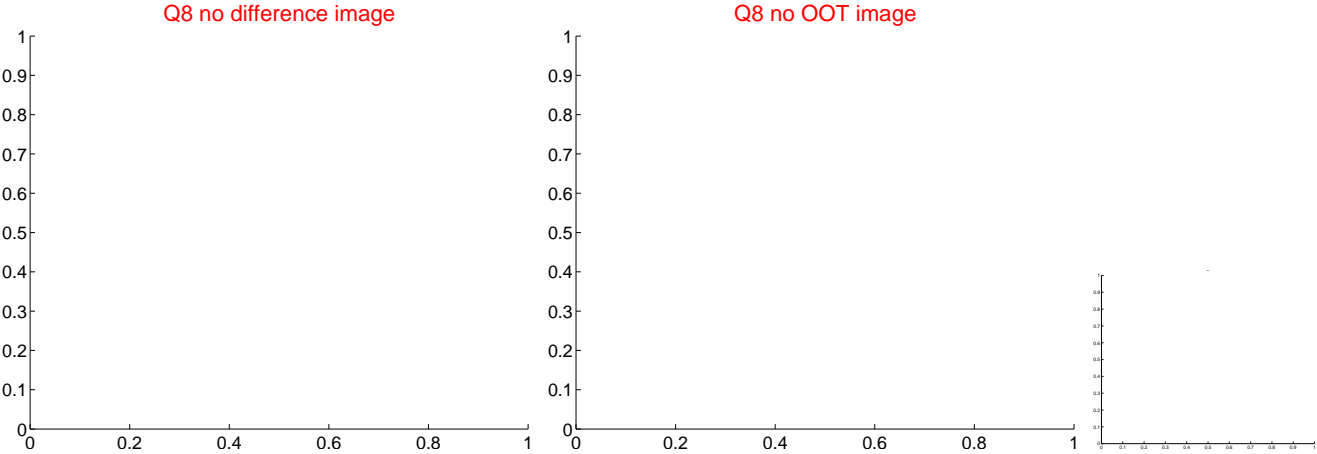
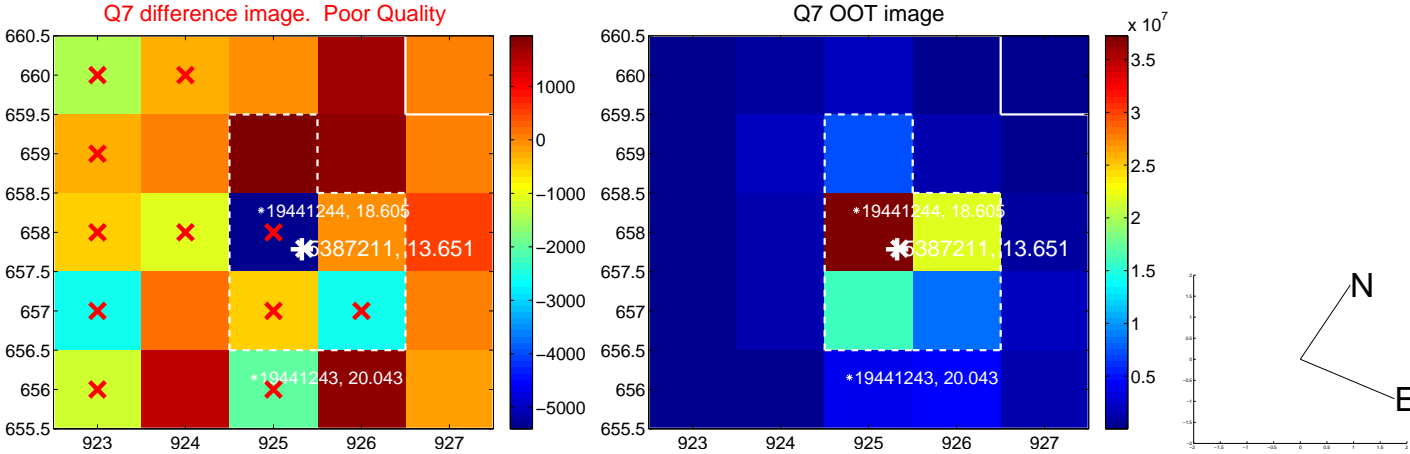
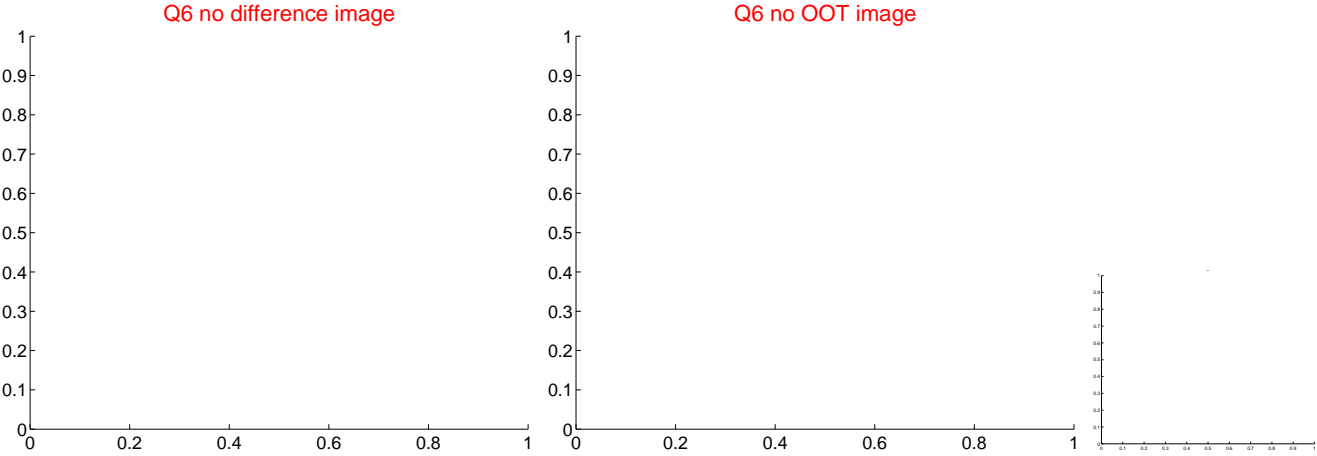
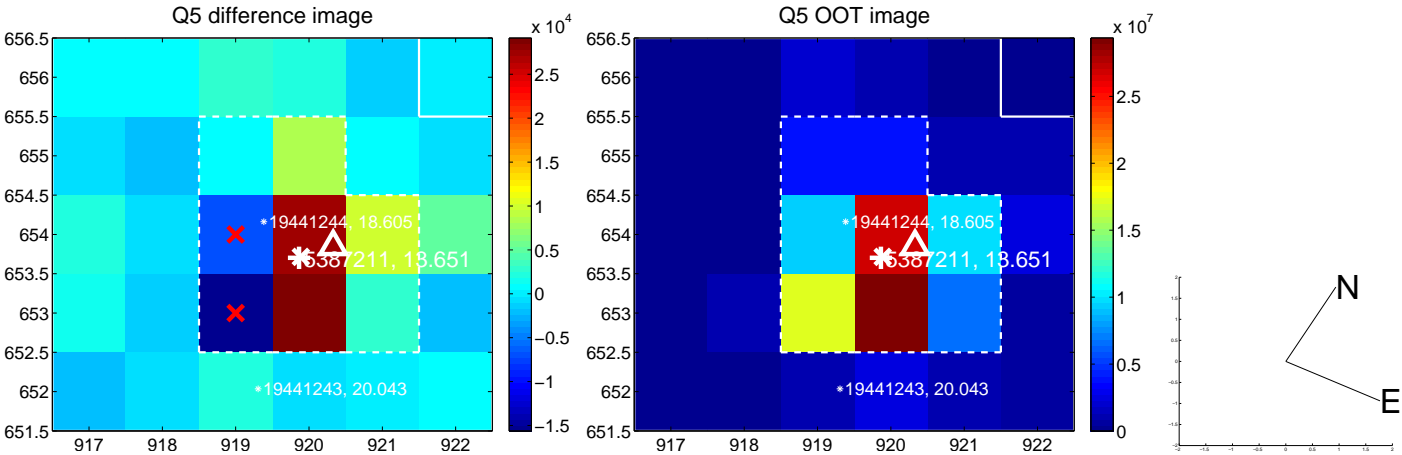
Q4 no difference image



Q4 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.

Q9 no difference image



Q9 no OOT image



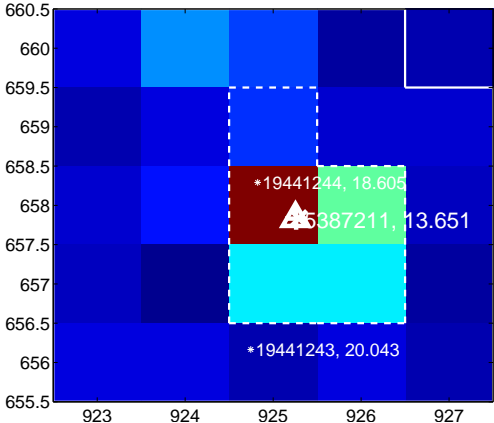
Q10 no difference image



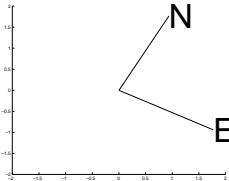
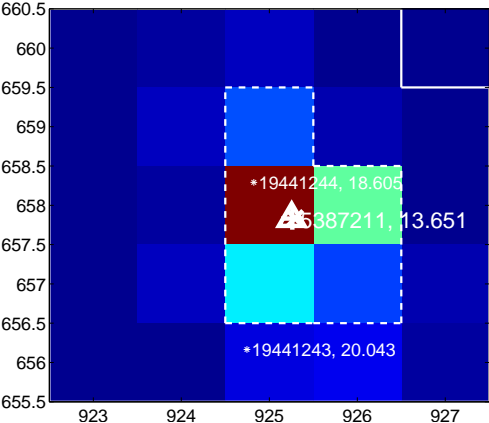
Q10 no OOT image



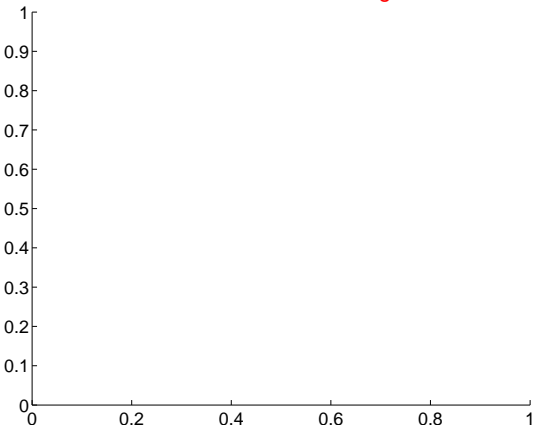
Q11 difference image



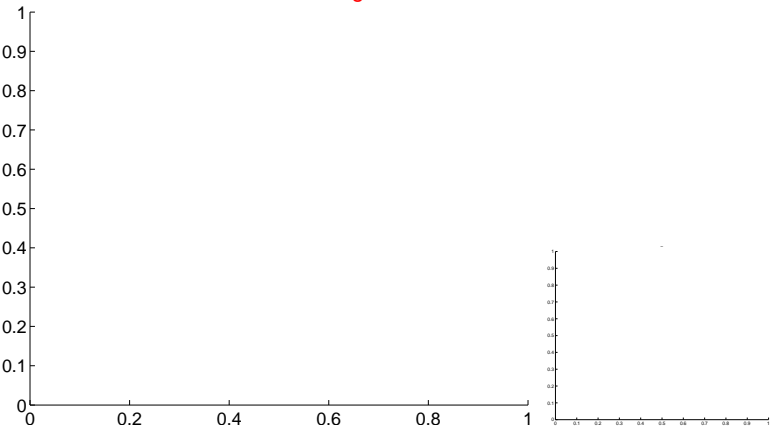
Q11 OOT image



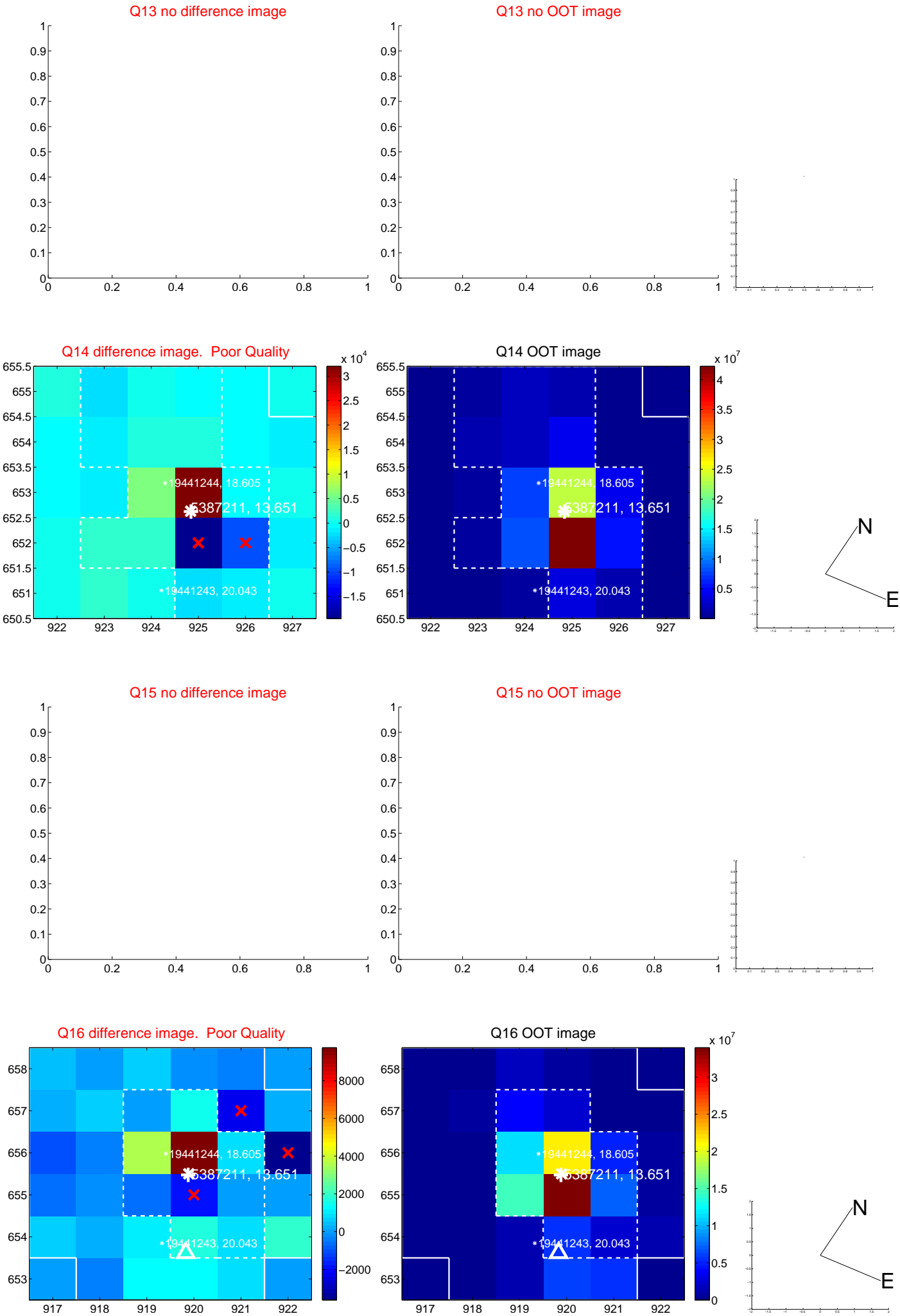
Q12 no difference image



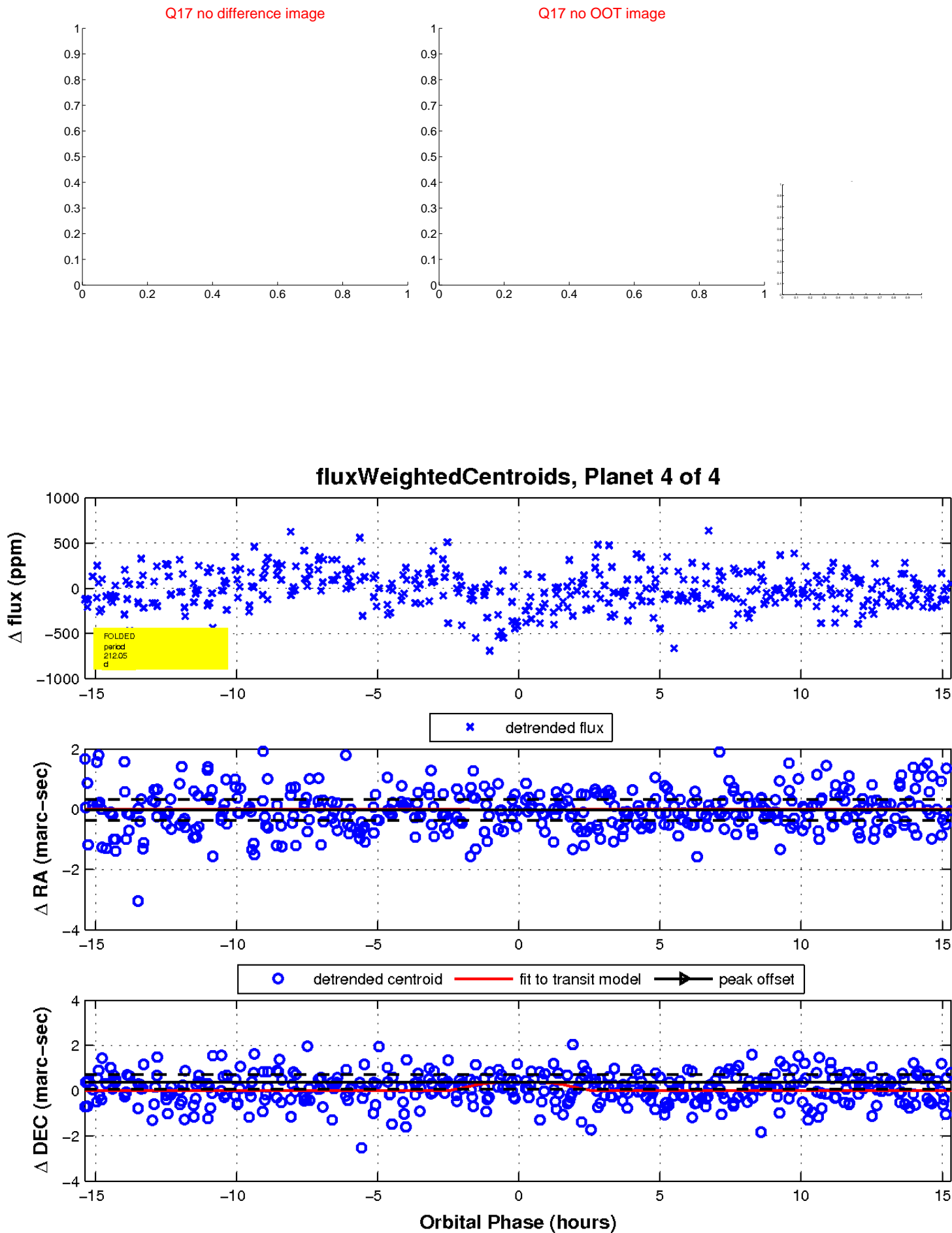
Q12 no OOT image



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

