

KIC 011968463

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})
011968463-01	OBS	2433.02	10.043813	132.653095	444.5	5.932	24.0	25.3	1.11	6325	2.98	193.79
011968463-02	OBS	2433.01	15.162276	144.471175	425.7	7.078	19.0	20.7	1.11	6325	2.90	111.91
011968463-03	OBS	2433.03	56.415882	163.118298	442.8	7.651	11.7	12.5	1.11	6325	2.59	19.41
011968463-04	OBS	2433.04	27.903812	154.943039	282.9	5.381	9.2	9.7	1.11	6325	2.11	49.62
011968463-05	OBS	2433.05	0.646746	132.023559	109.0	0.888	9.1	11.0	1.11	6325	1.19	7508.64
011968463-06	OBS	2433.07	86.432830	163.724557	514.8	7.301	7.2	9.3	1.11	6325	2.98	10.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968463-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011968463-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011968463-03	OBS	PC	0.92	0	0	0	0	NO_COMMENT
011968463-04	OBS	PC	0.64	0	0	0	0	NO_COMMENT
011968463-05	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
011968463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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

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

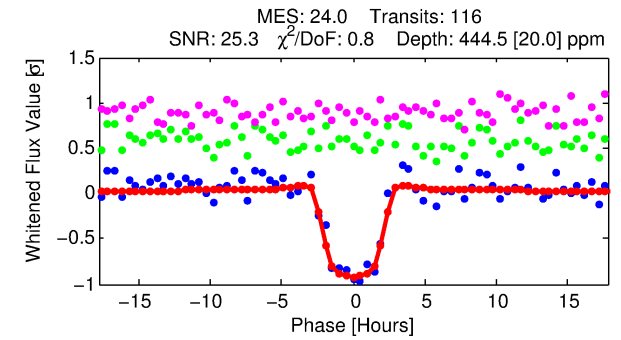
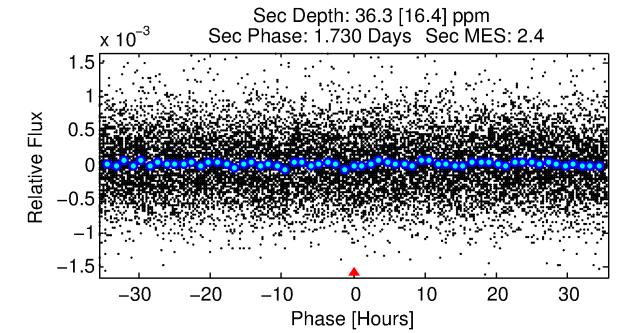
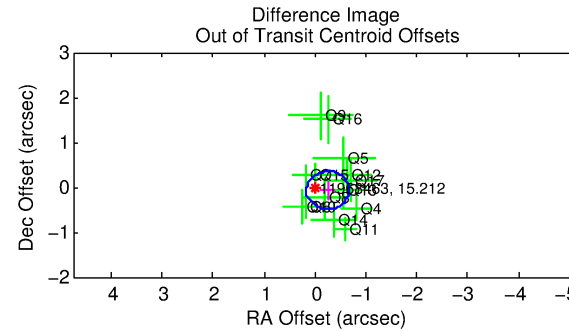
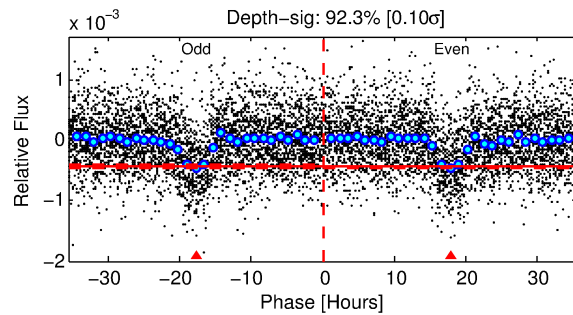
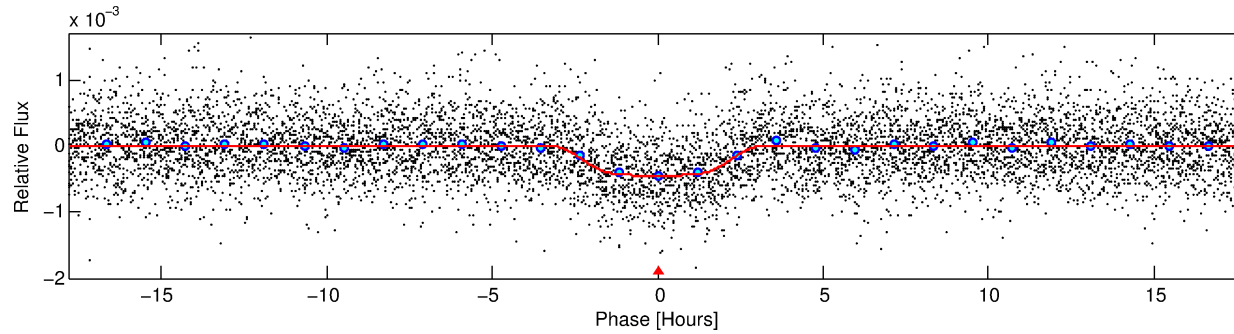
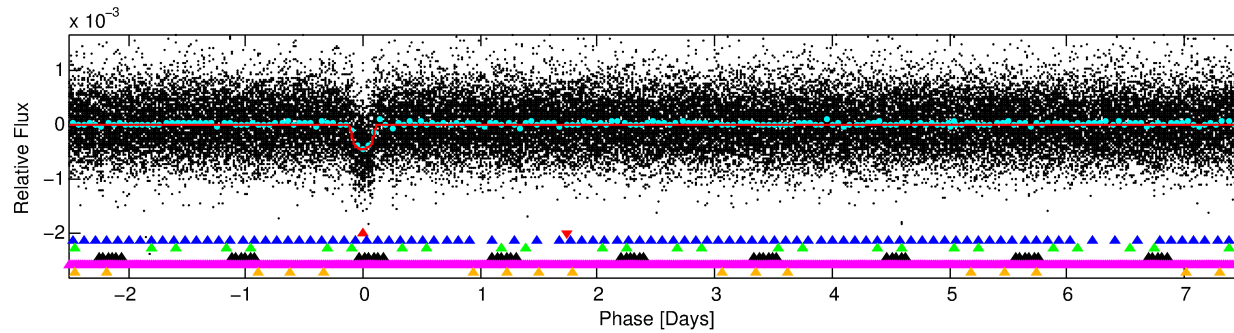
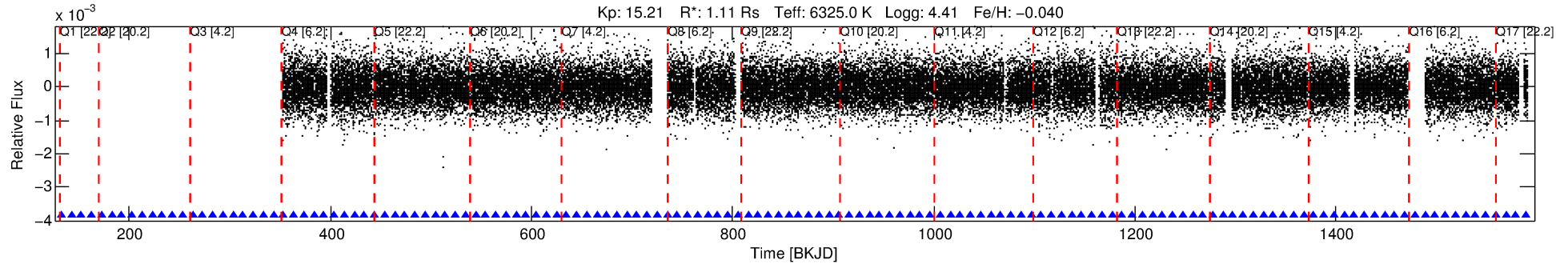
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011968463-01

No Significant Match Found

DV One-Page Summary

KIC: 11968463 Candidate: 1 of 6 Period: 10.044 d
KOI: K02433.02 Name: Kepler-385b Corr: 0.972



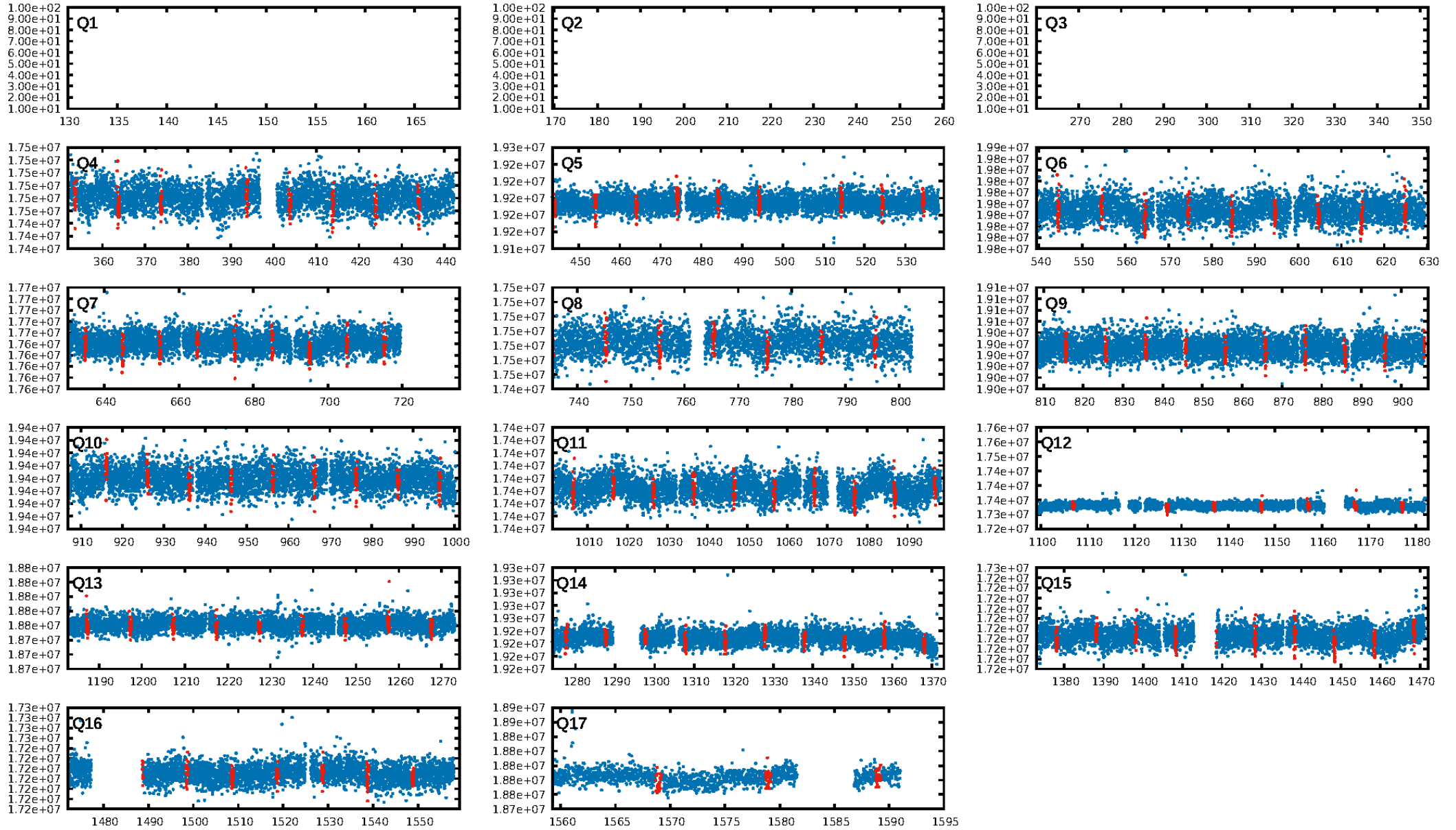
DV Fit Results:

Period = 10.04381 [0.00007] d
Epoch = 132.6531 [0.0064] BKJD
Rp/R* = 0.0246 [0.0008]
a/R* = 4.70 [0.49]
b = 0.96 [0.01]
Seff = 193.79 [85.21]
Teff = 951 [105] K
Rp = 2.98 [1.04] Re
a = 0.0957 [0.0274] AU
Ag = 20.58 [12.62] [1.55 σ]
Teffp = 3133 [382] K [5.51 σ]

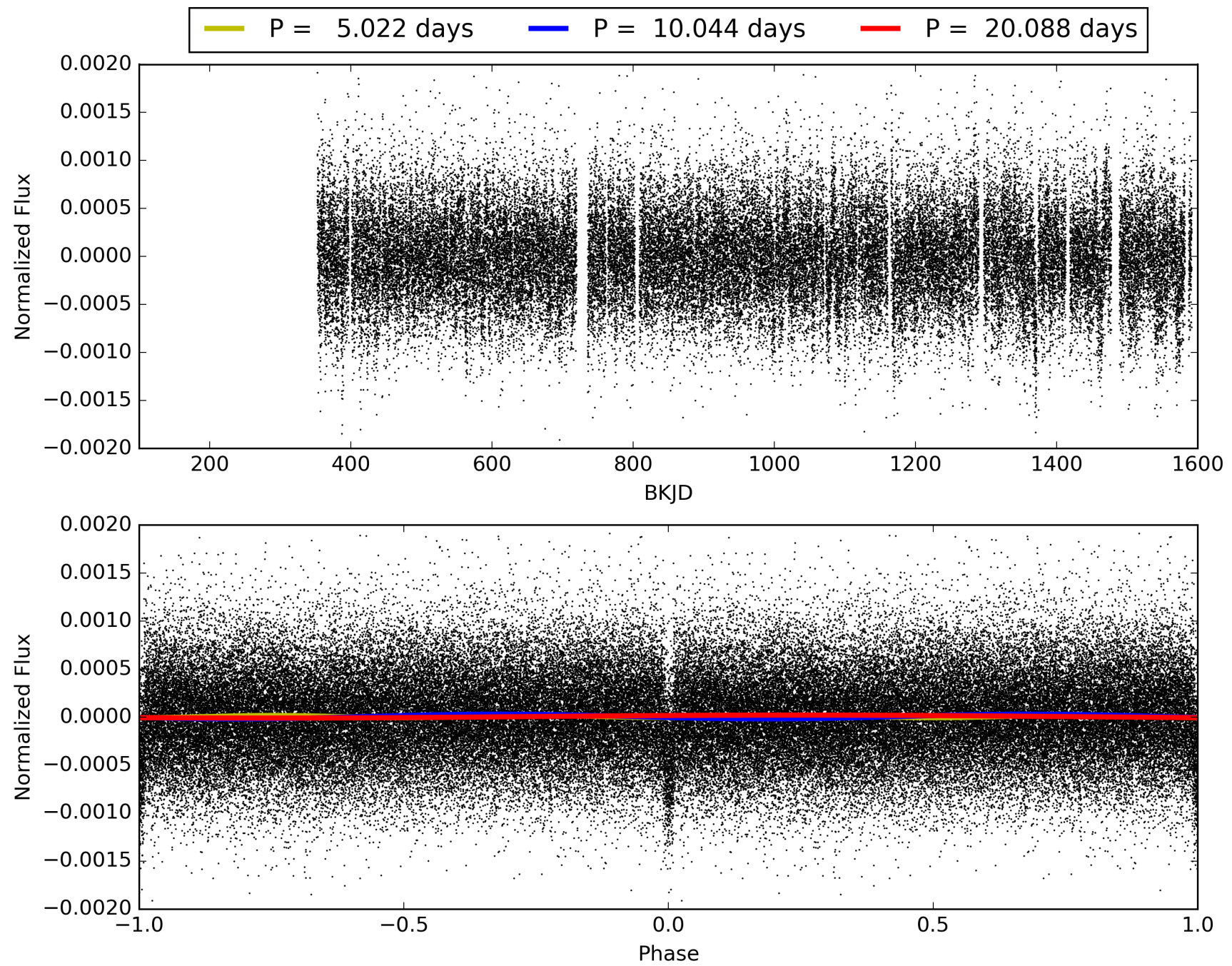
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.60 σ]
LongPeriod-sig: 100.0% [13.30 σ]
ModelChiSquare2-sig: 97.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.28e-122
RollingBand-fgt: 1.00 [113/113]
GhostDiagnostic-chr: -14.96
Centroid-sig: 68.4%
Centroid-so: 0.367 arcsec [0.64 σ]
OotOffset-rm: 0.262 arcsec [1.87 σ]
KicOffset-rm: 0.194 arcsec [1.22 σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 011968463-01, PDC Light Curves

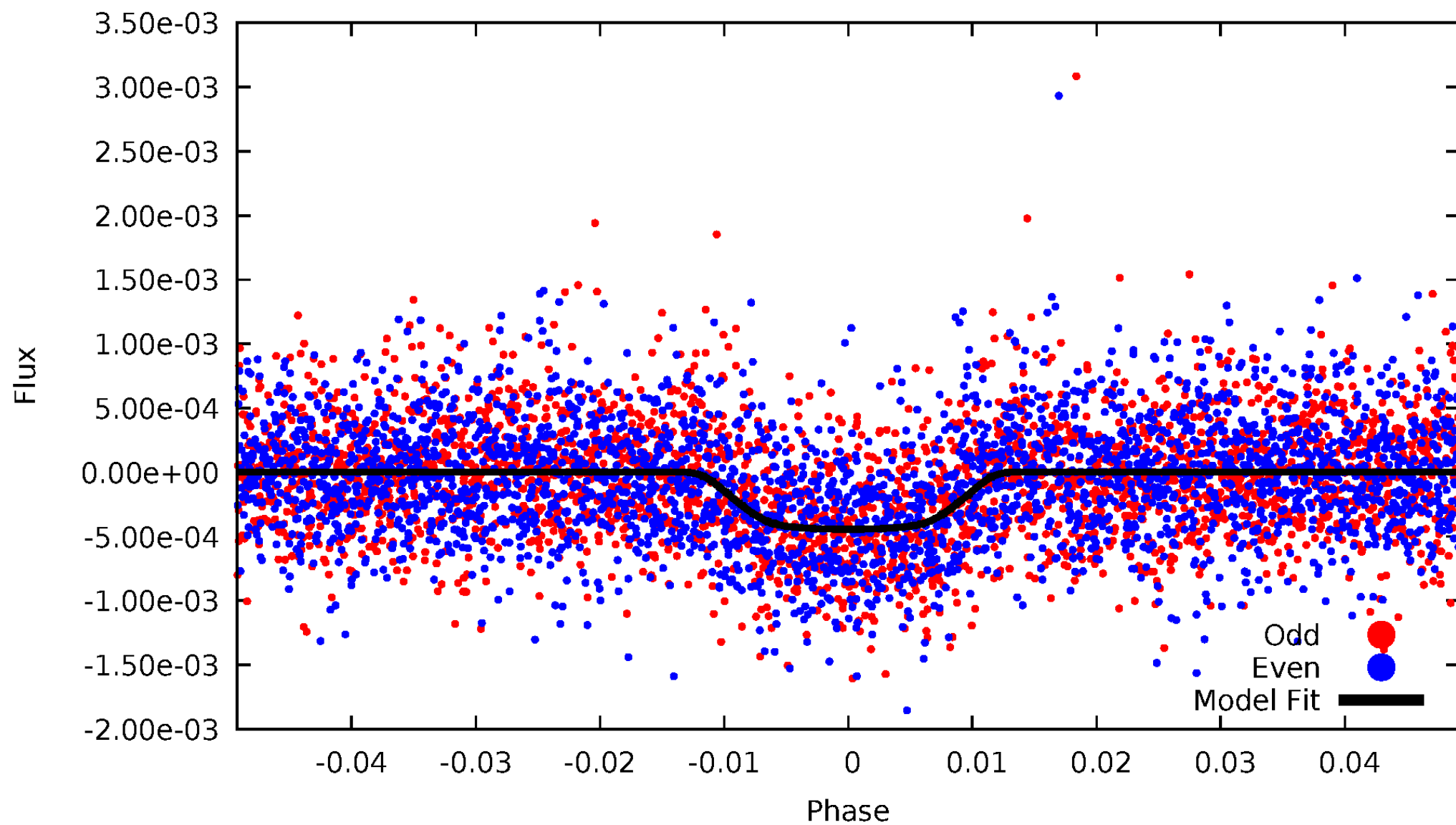


TCE 011968463-01



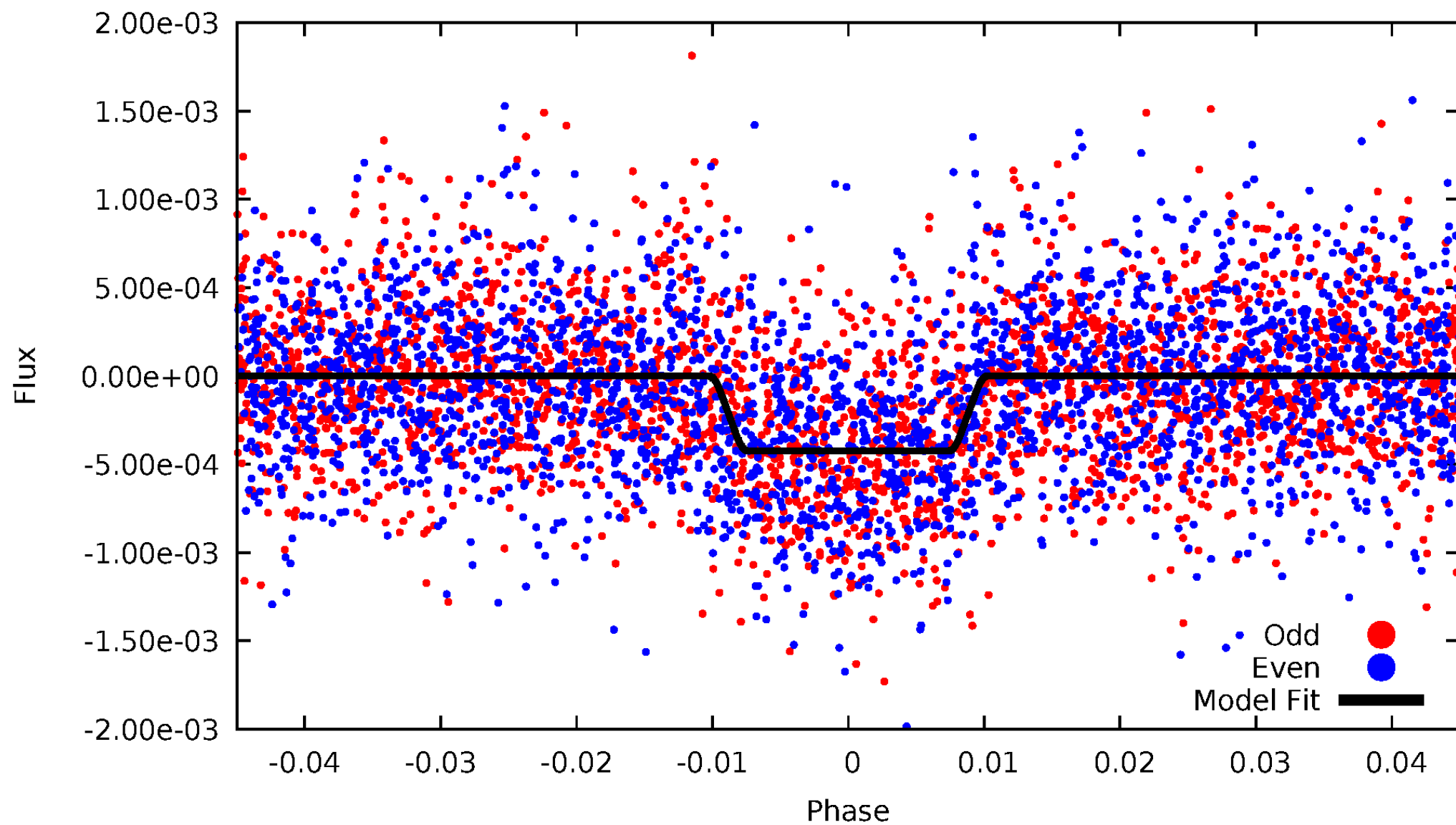
DV Odd/Even

TCE 011968463-01

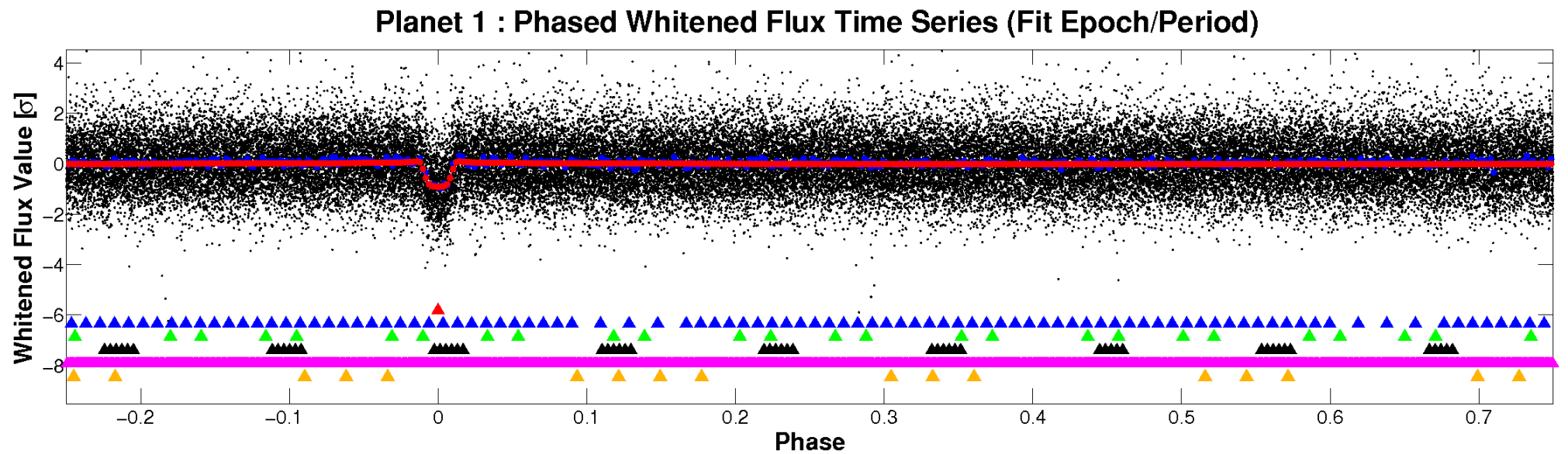
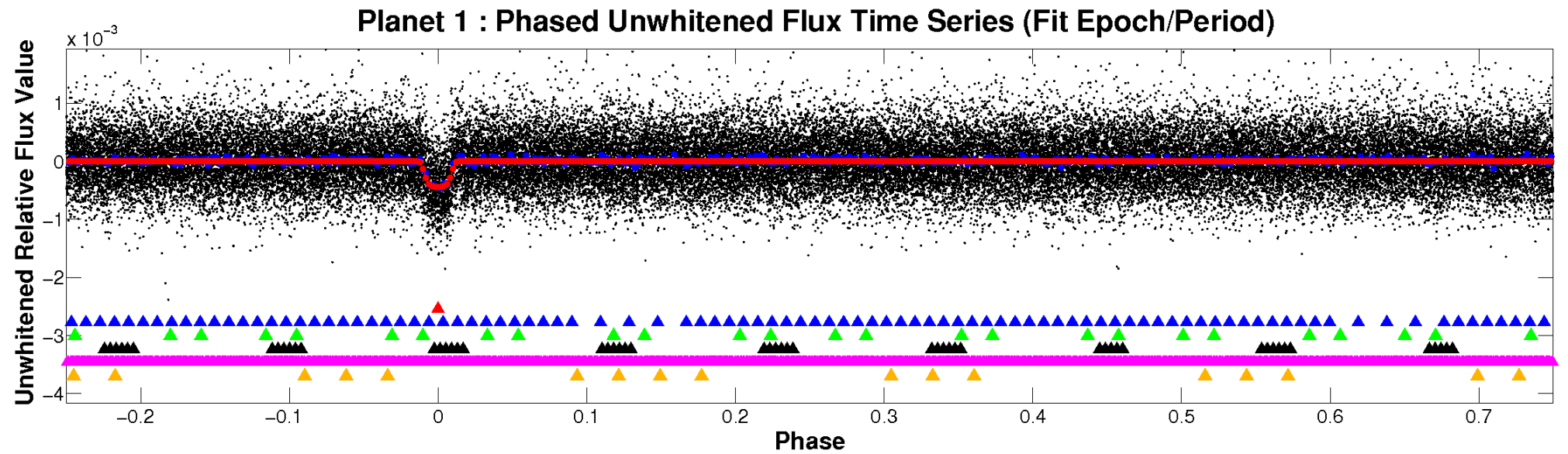


ALT Odd/Even

TCE 011968463-01

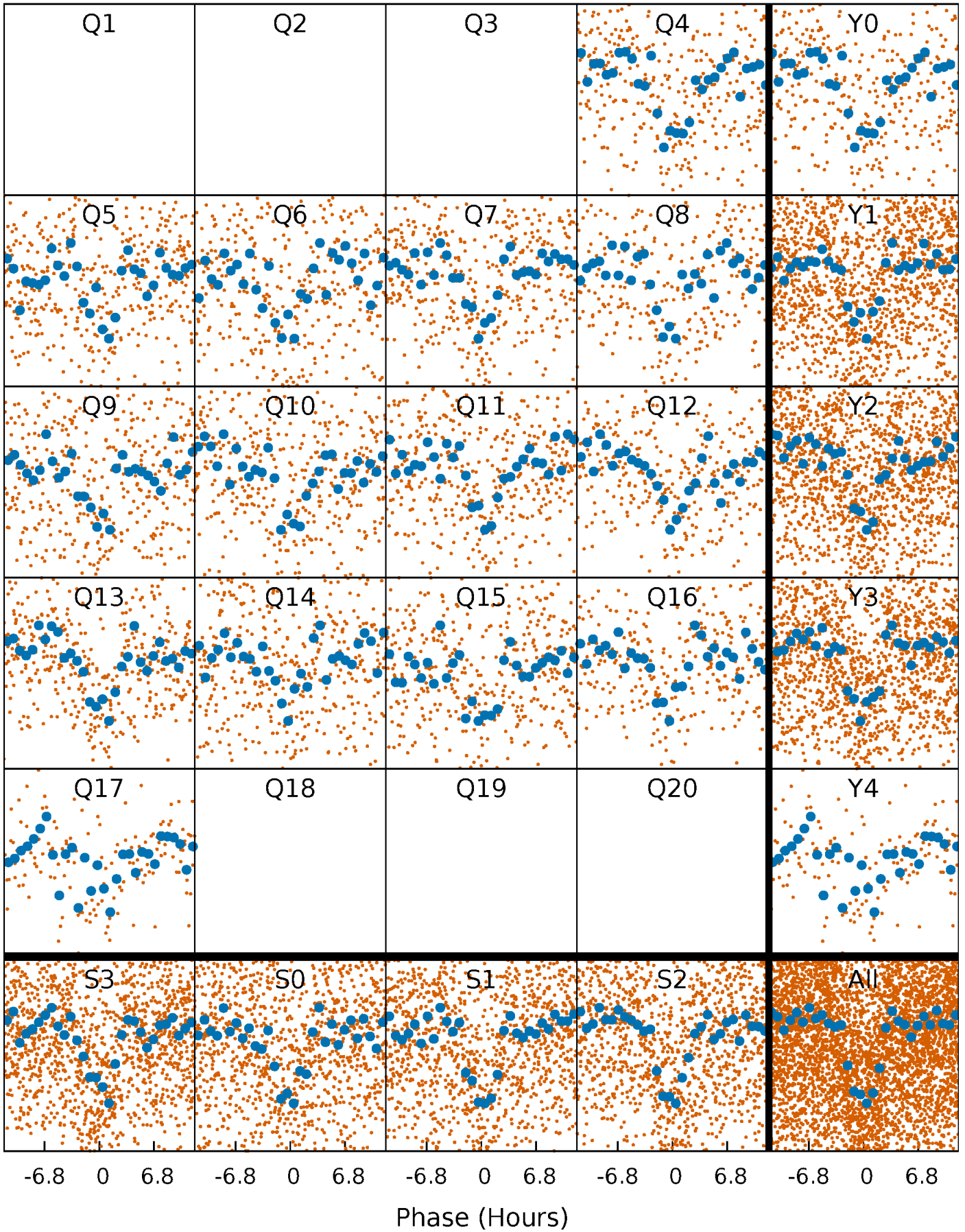


Non-Whitened Vs. Whitened Light Curve



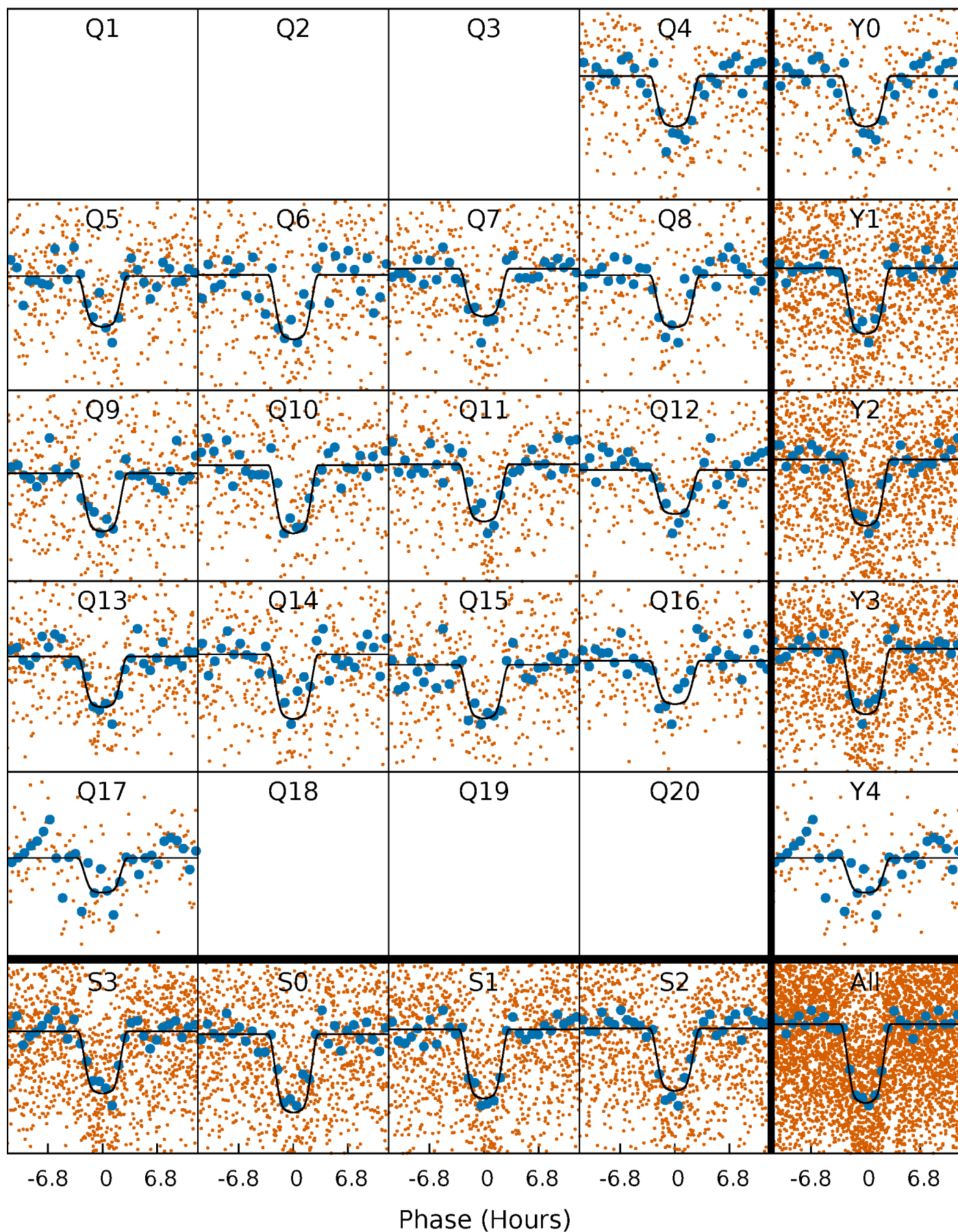
PDC Quarter-Phased Transit Curves

TCE 011968463-01 P= 10.043813 Days $T_0=132.653095$ (BKJD)



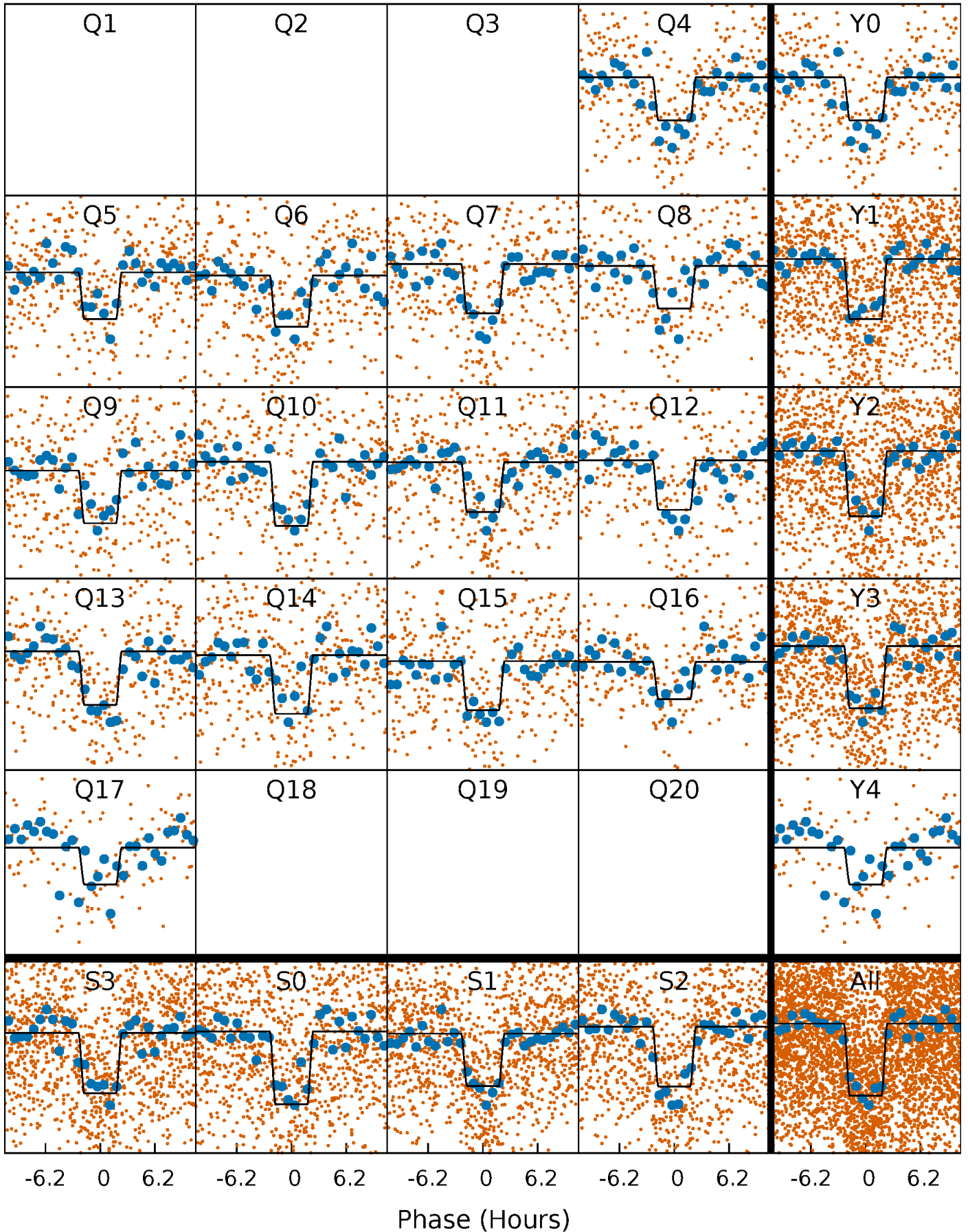
DV Quarter-Phased Transit Curves

TCE 011968463-01 P= 10.043813 Days $T_0=132.653095$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

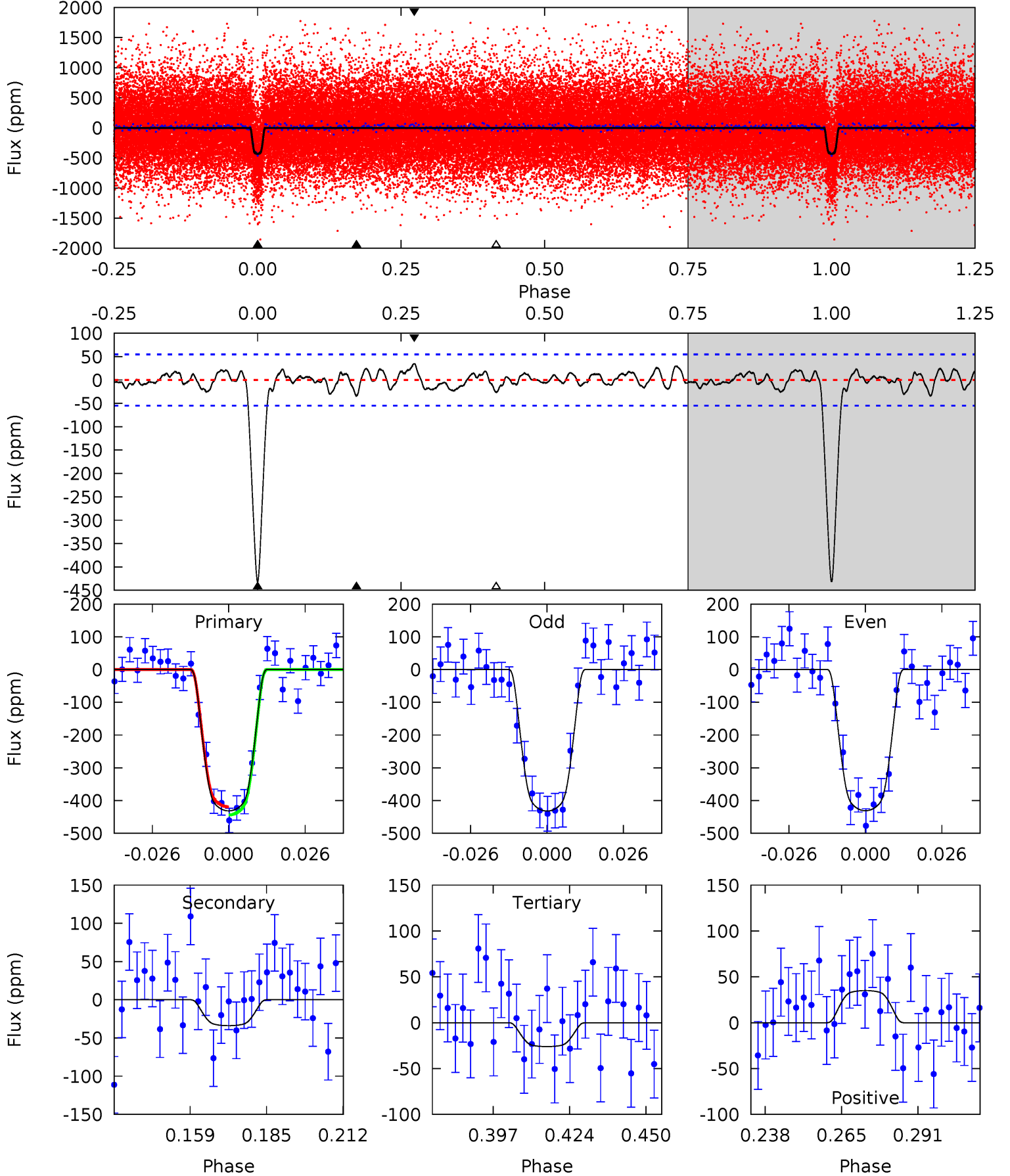
TCE 011968463-01 P= 10.043662 Days $T_0=132.665647$ (BKJD)



DV Model-Shift Uniqueness Test

011968463-01, P = 10.043813 Days, E = 132.653095 Days

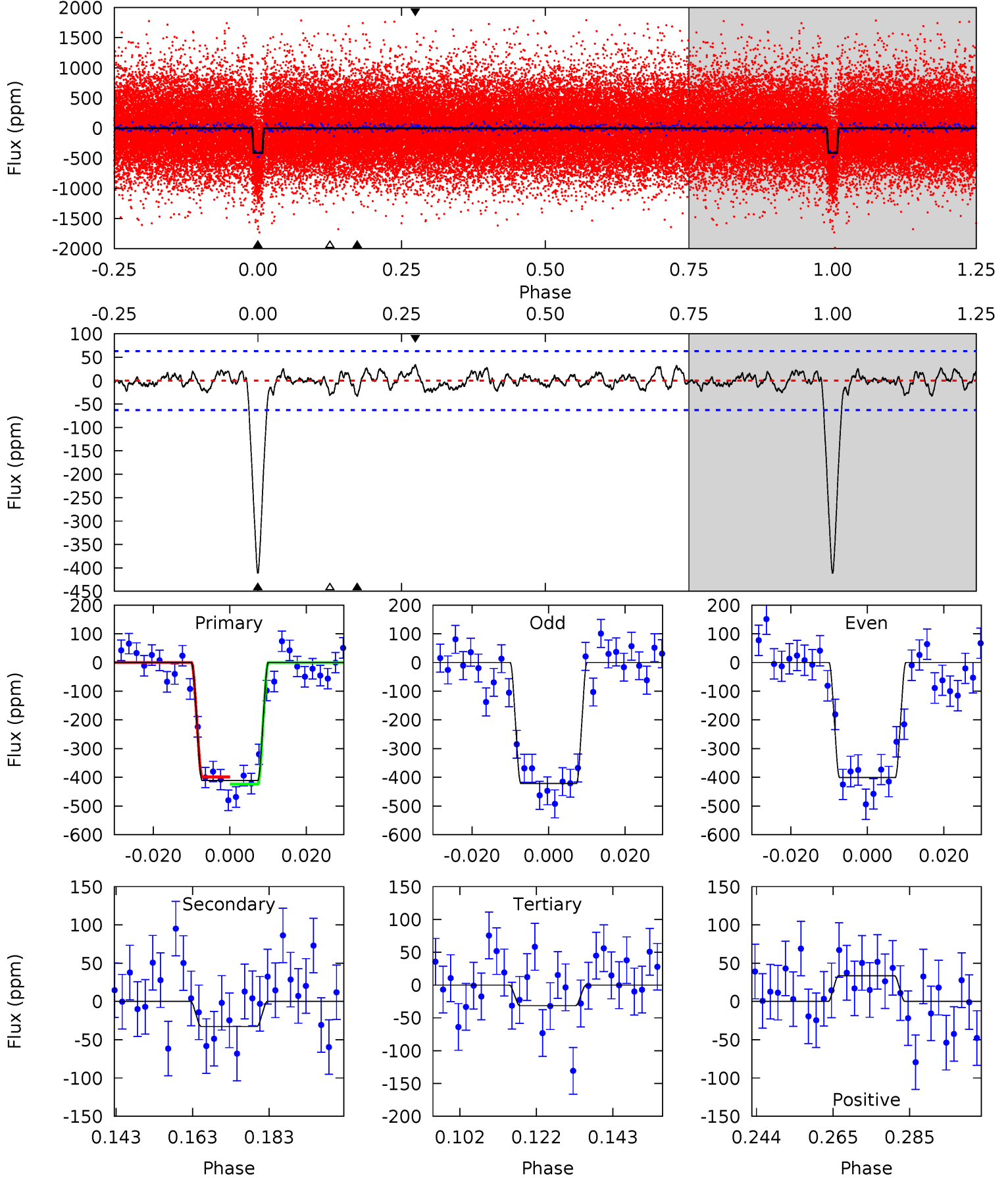
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.1	2.99	2.30	3.09	4.84	2.22	1.13	35.8	35.0	0.68	-0.10	0.05	0.94	0.08	1.09



Alt Model-Shift Uniqueness Test

011968463-01, P = 10.043662 Days, E = 132.665647 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.0	2.54	2.44	2.61	4.89	2.32	0.97	29.5	29.4	0.10	-0.07	0.79	1.03	0.08	0.98



Stellar Parameters For KIC 011968463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6325^{+174}_{-261}	$4.409^{+0.058}_{-0.218}$	$-0.040^{+0.250}_{-0.300}$	$1.112^{+0.388}_{-0.129}$	$1.157^{+0.169}_{-0.169}$	$1.184^{+0.368}_{-0.666}$
	+3%/-4%	+1%/-5%	+625%/-750%	+35%/-12%	+15%/-15%	+31%/-56%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011968463-01 / KOI 2433.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-34 ± 11	$3.09^{+0.57}_{-0.27}$	1356^{+114}_{-76}	3504^{+216}_{-244}	16^{+7}_{-7}
Alt.	-33 ± 13	$2.57^{+0.46}_{-0.24}$	1355^{+111}_{-70}	3704^{+260}_{-311}	23^{+12}_{-10}

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 $A_{obs} \gg 1.0$

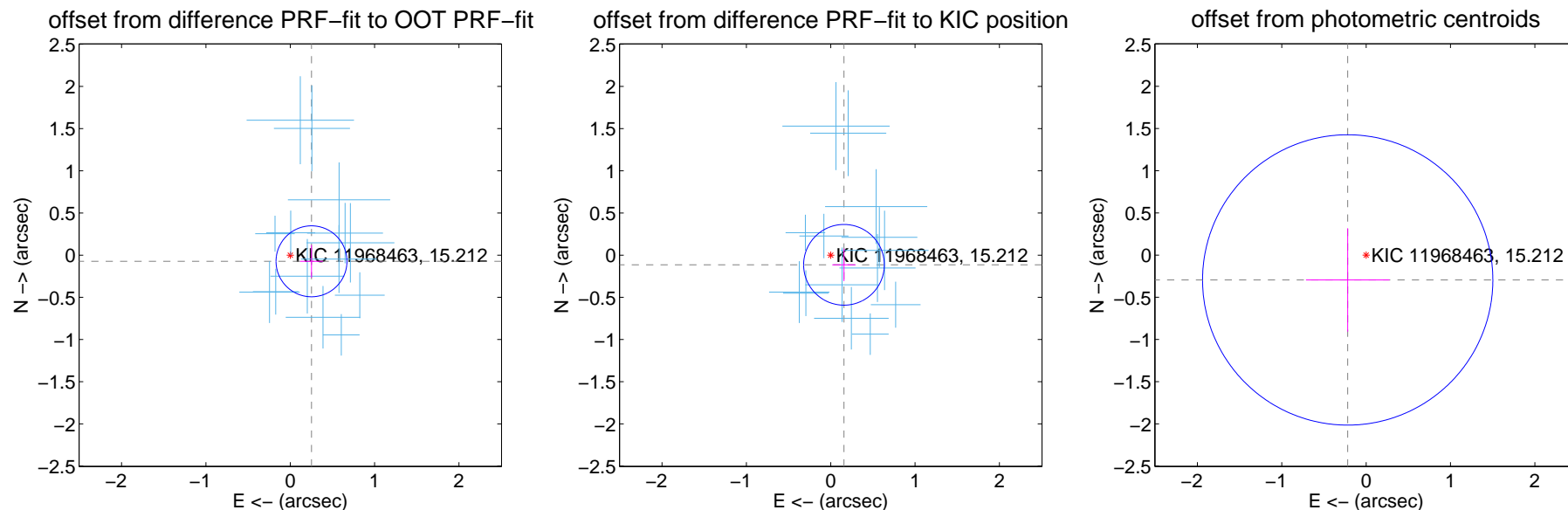
DV Centroid Data

Supplemental centroid analysis for 011968463-01. Kepler magnitude: 15.21. Transit SNR 25.33

There are 14 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.262 ± 0.140	1.87	-0.252 ± 0.135	-0.073 ± 0.194
PRF-fit source offset from KIC position	0.194 ± 0.159	1.22	-0.157 ± 0.139	-0.114 ± 0.193
photometric centroid source offset	0.37 ± 0.57	0.64	0.22 ± 0.49	-0.29 ± 0.61



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

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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



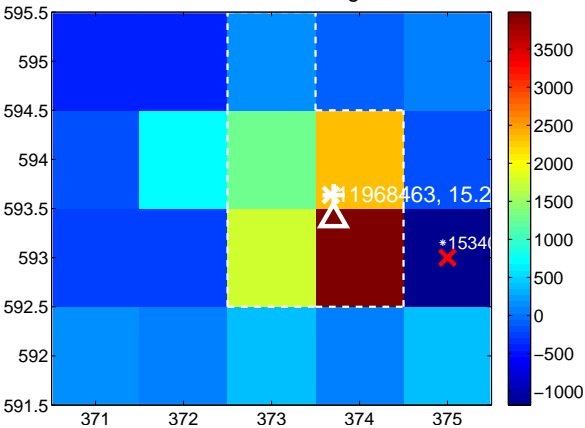
Q3 no difference image



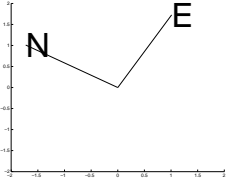
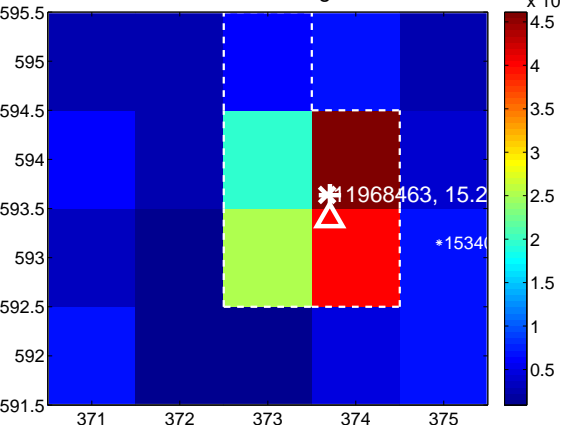
Q3 no OOT image



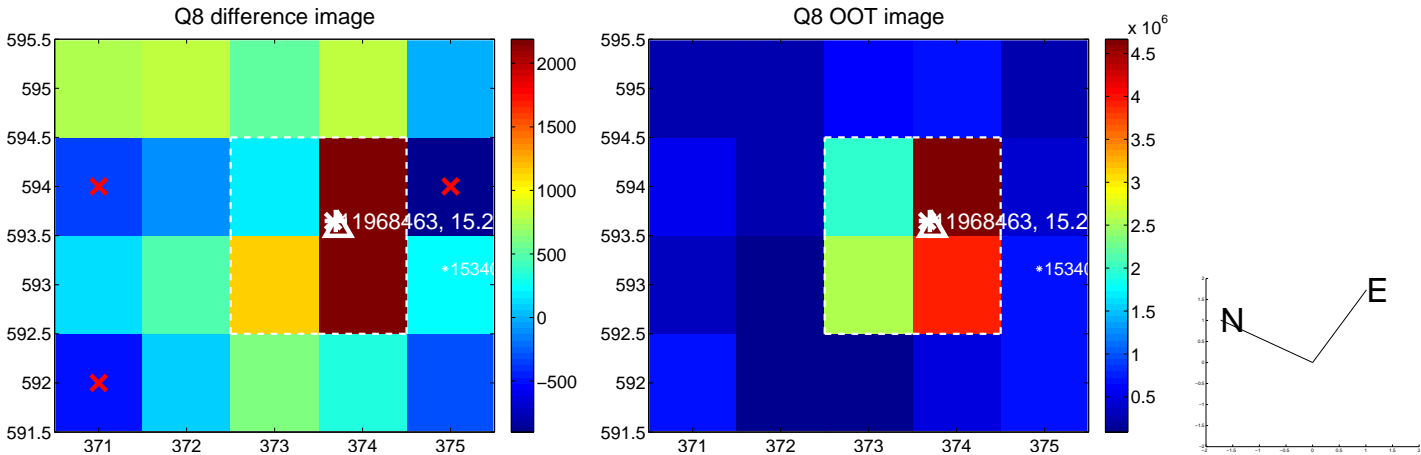
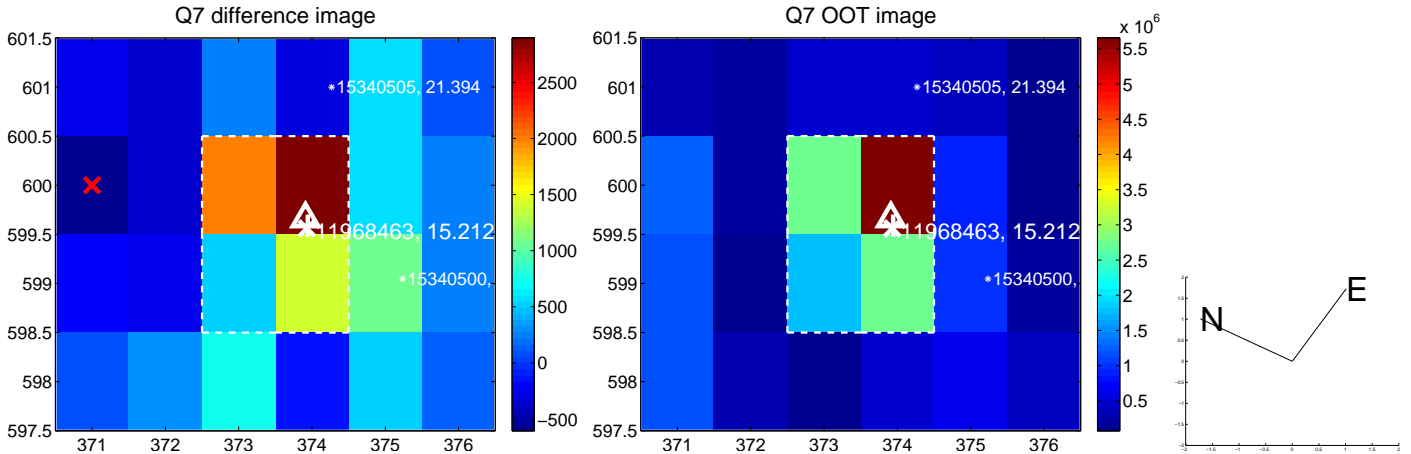
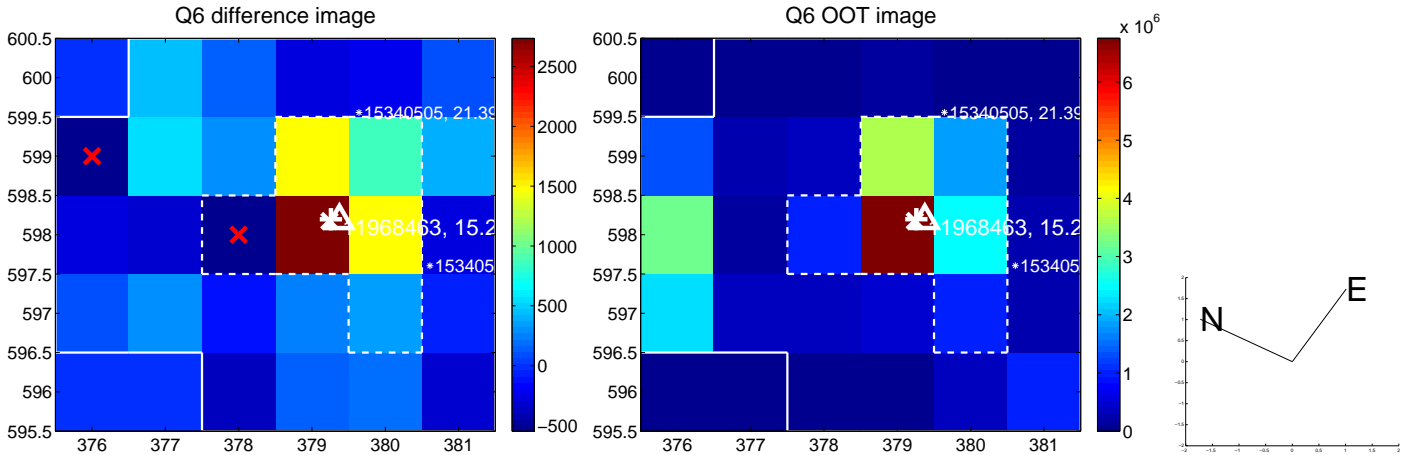
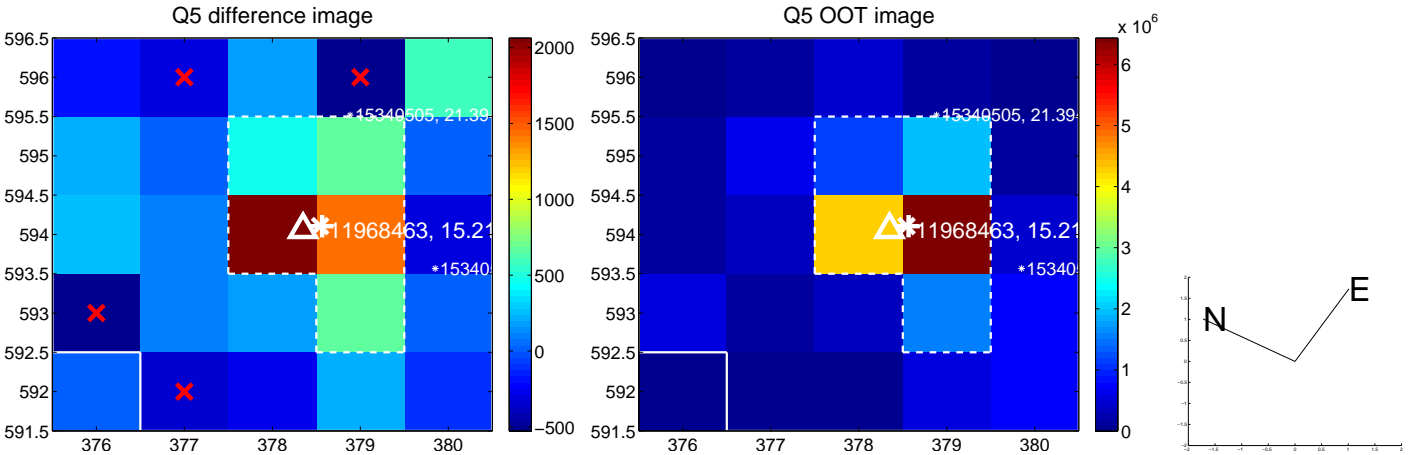
Q4 difference image



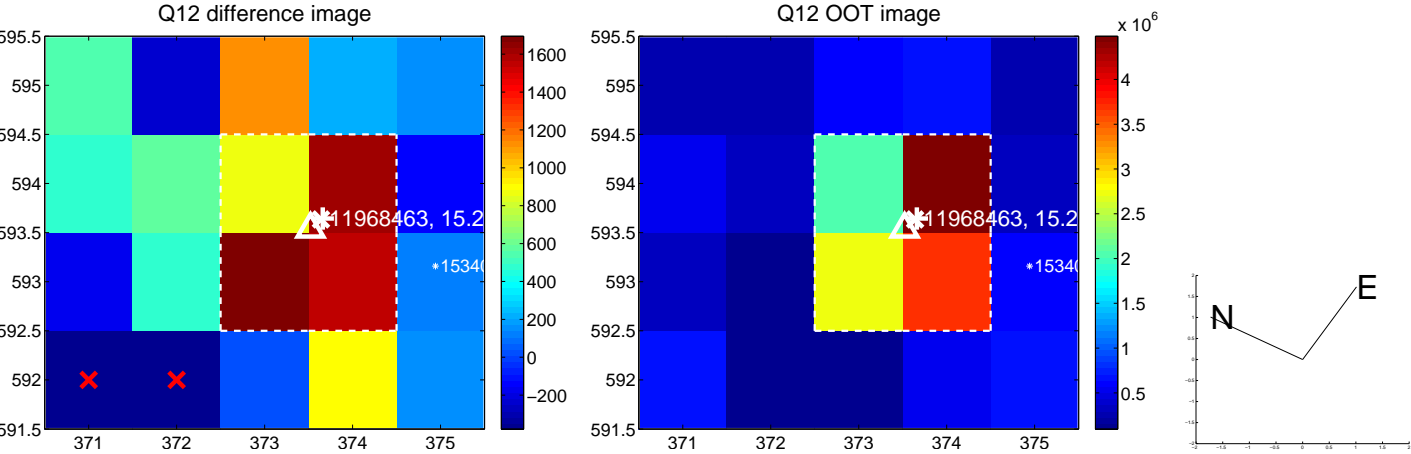
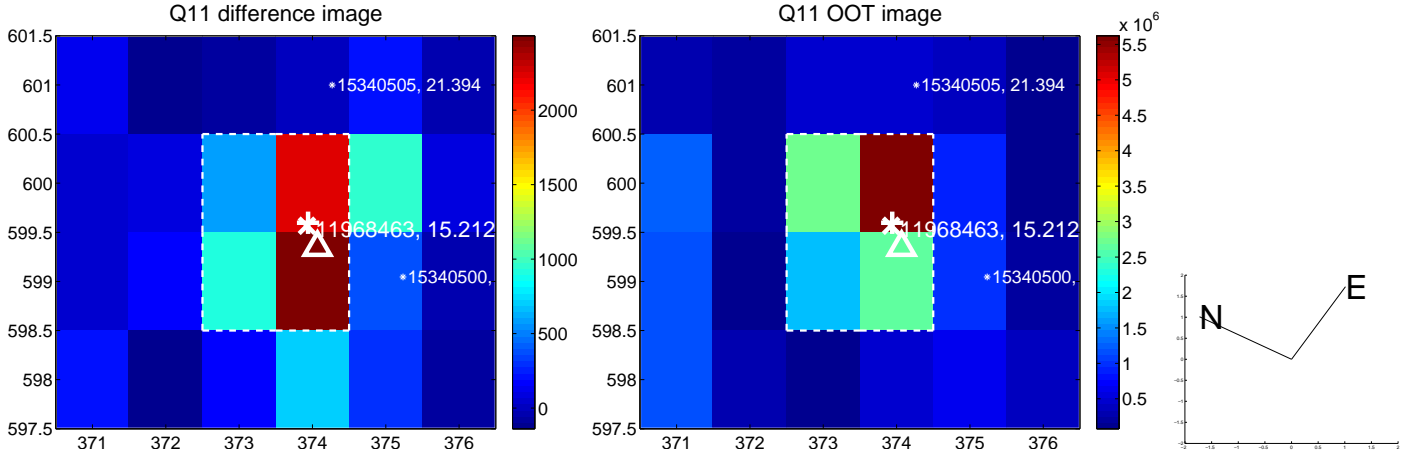
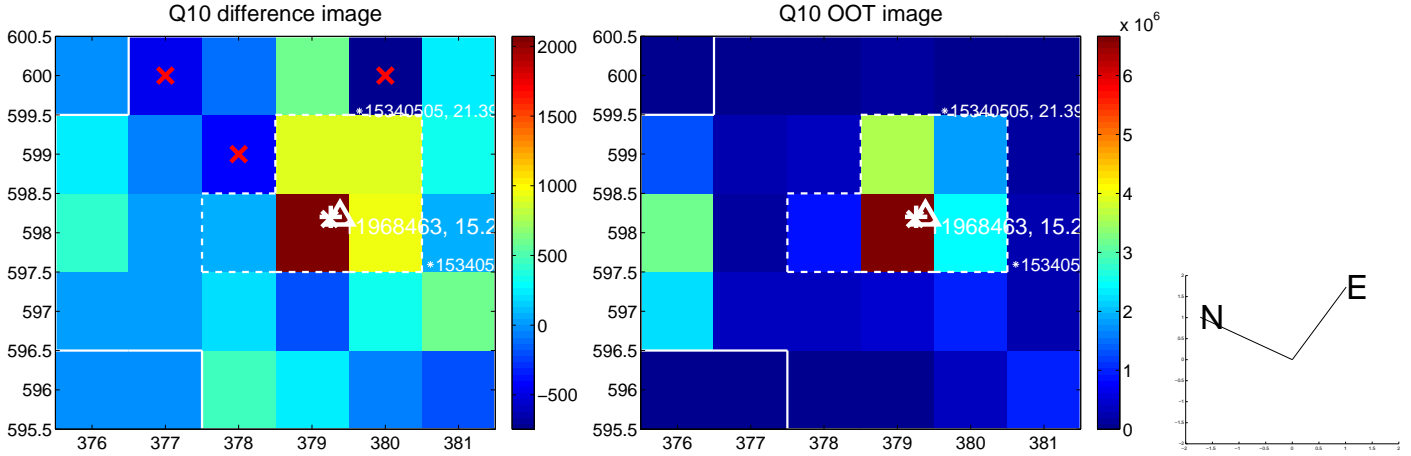
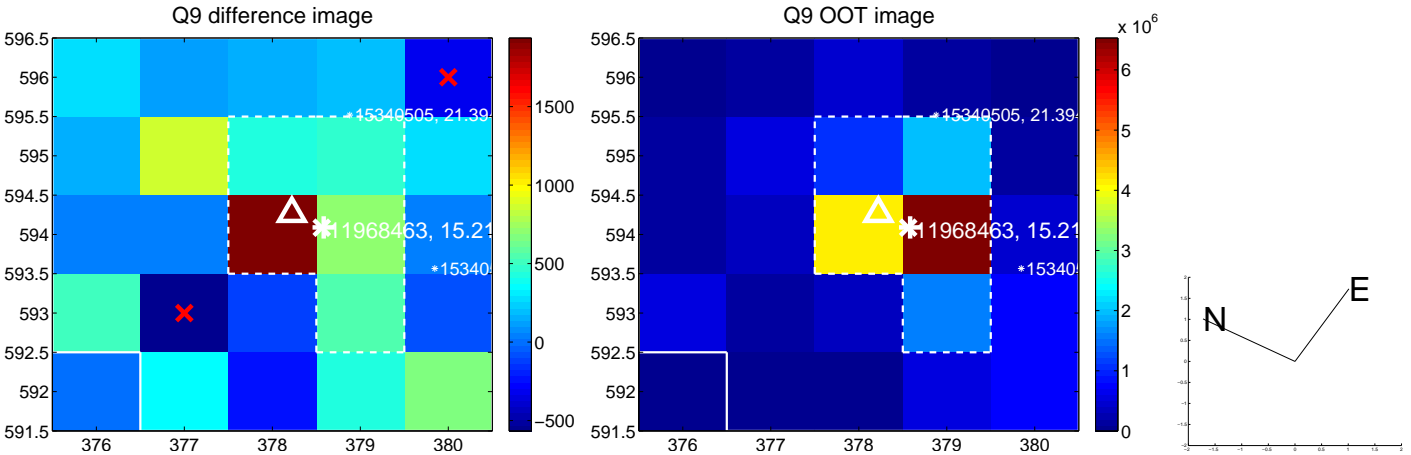
Q4 OOT image



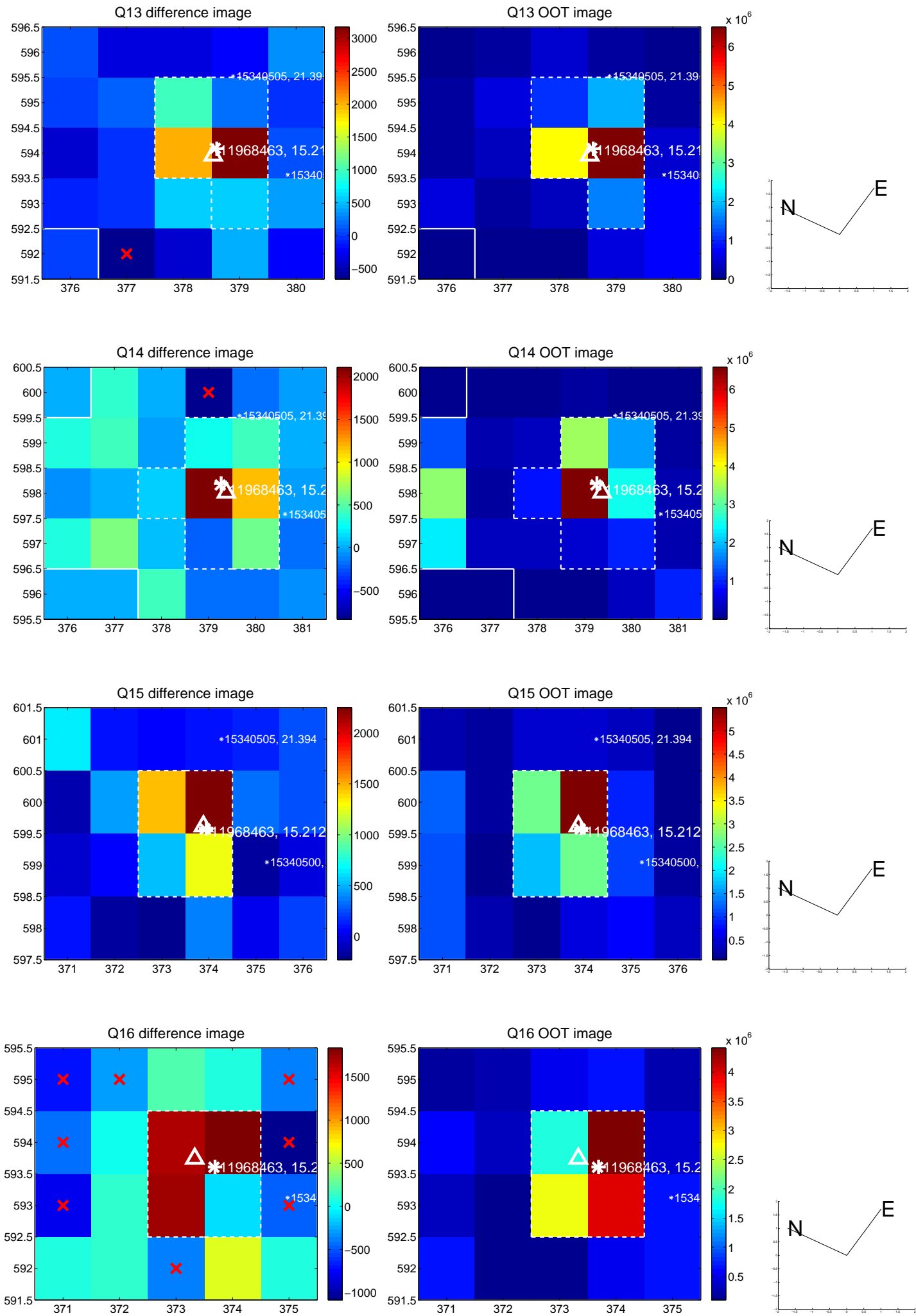
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



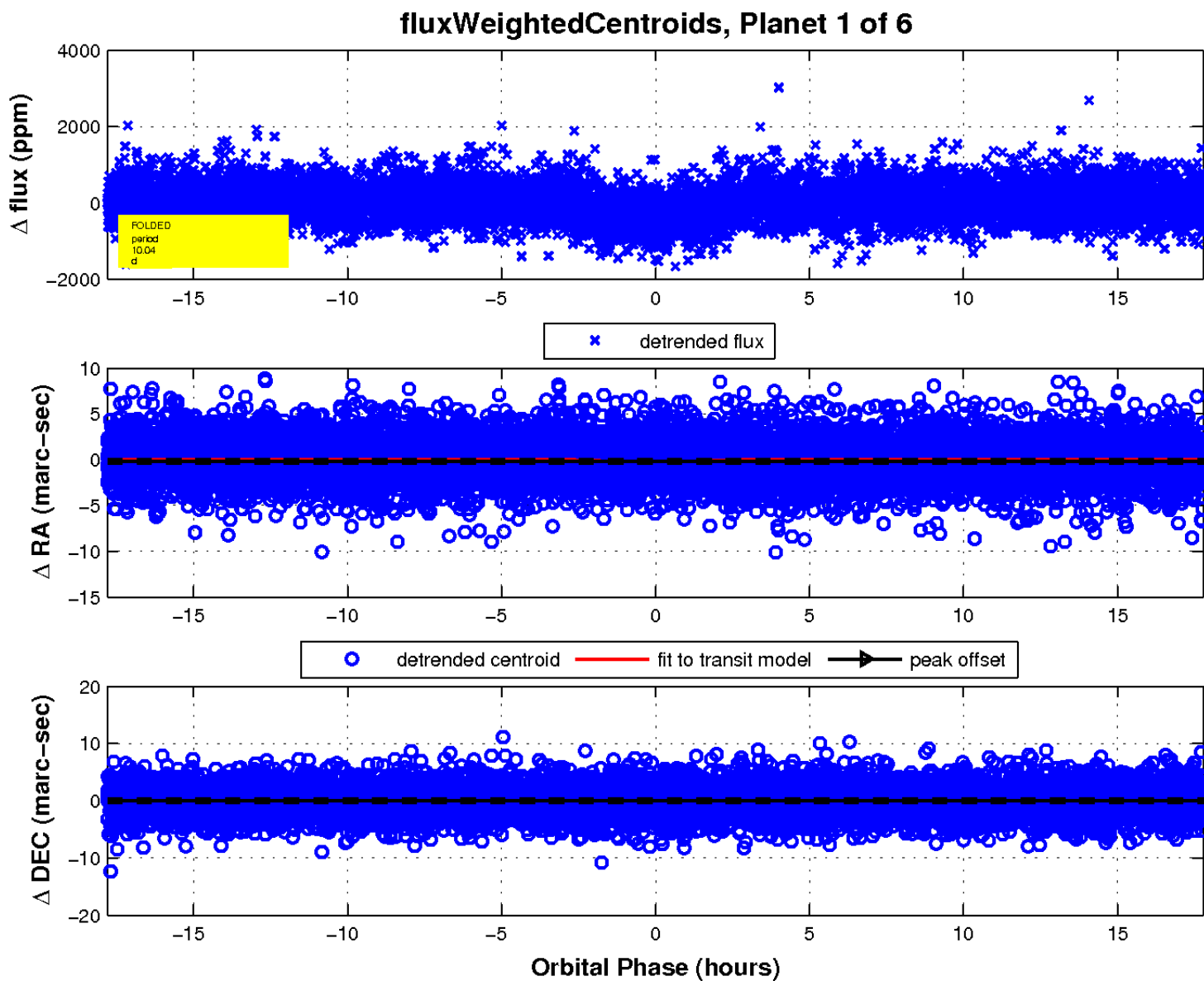
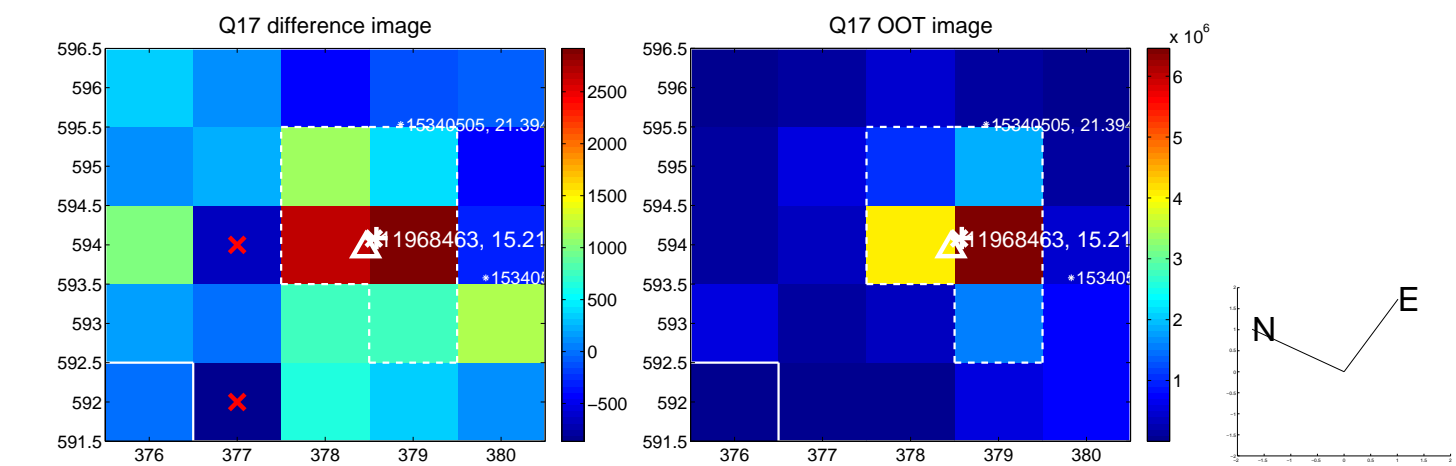
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

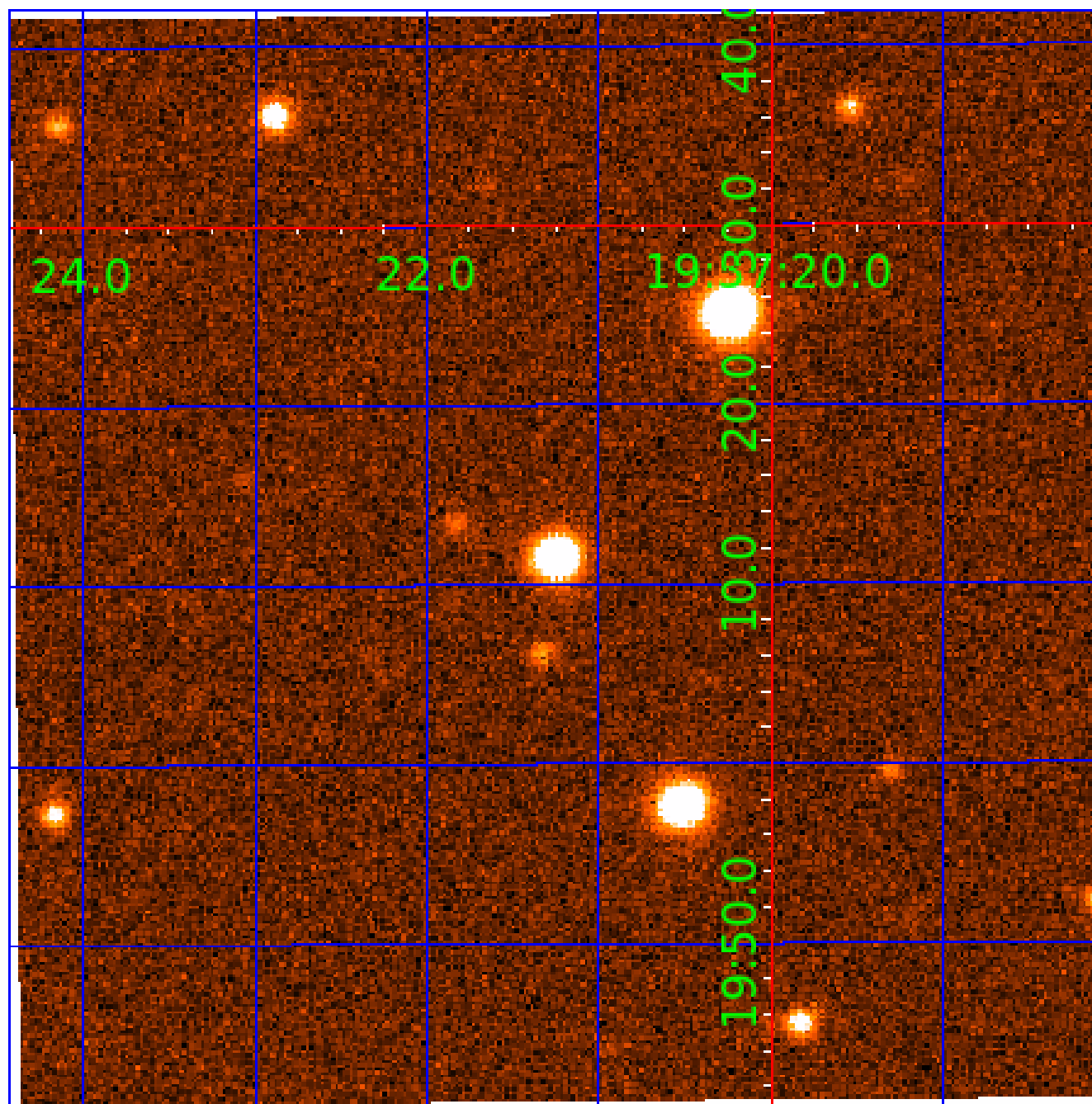


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011968463

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})
011968463-01	OBS	2433.02	10.043813	132.653095	444.5	5.932	24.0	25.3	1.11	6325	2.98	193.79
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011968463-05	OBS	2433.05	0.646746	132.023559	109.0	0.888	9.1	11.0	1.11	6325	1.19	7508.64
011968463-06	OBS	2433.07	86.432830	163.724557	514.8	7.301	7.2	9.3	1.11	6325	2.98	10.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968463-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011968463-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011968463-03	OBS	PC	0.92	0	0	0	0	NO_COMMENT
011968463-04	OBS	PC	0.64	0	0	0	0	NO_COMMENT
011968463-05	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
011968463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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.

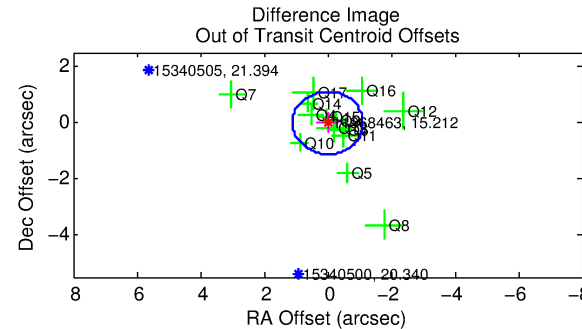
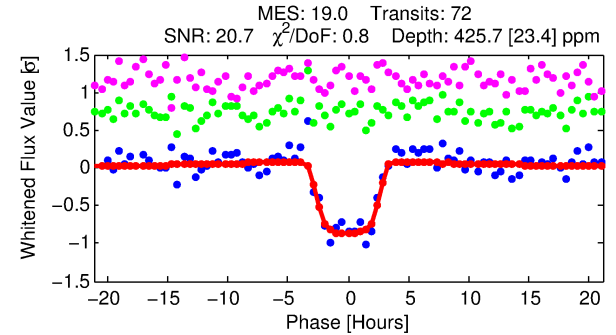
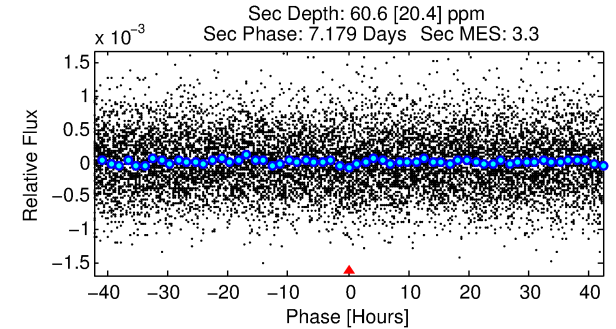
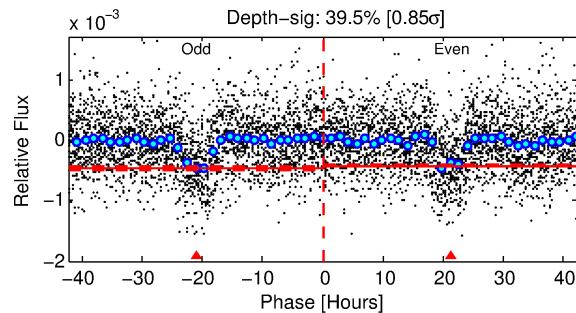
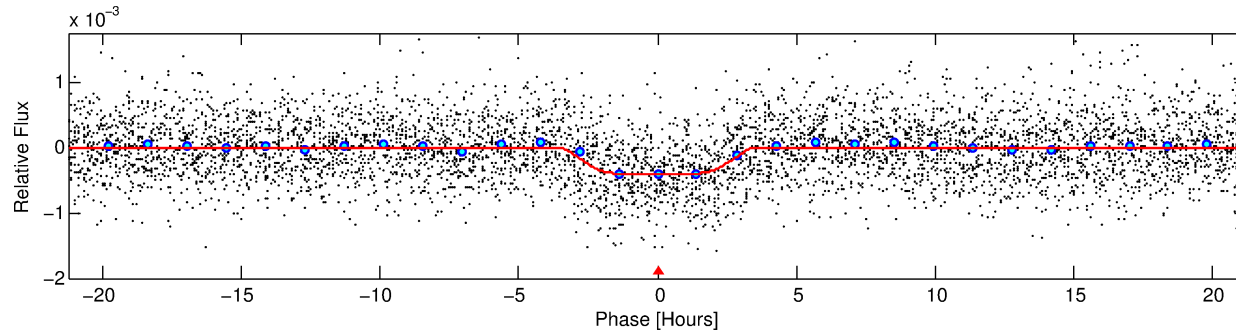
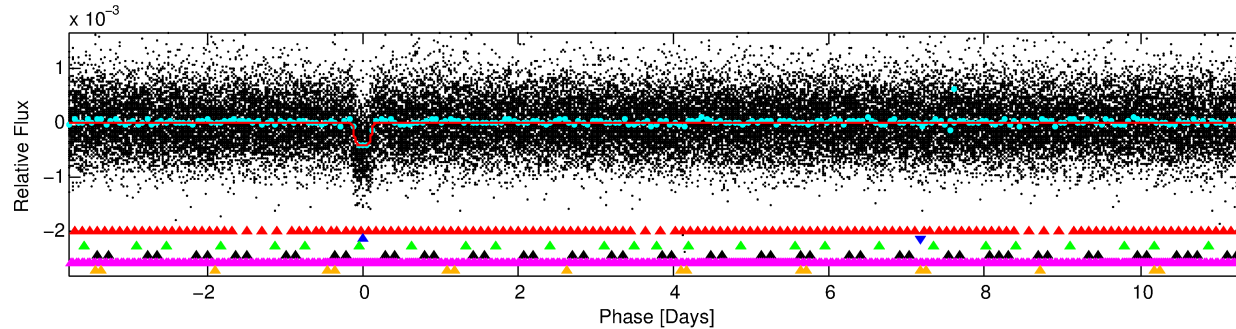
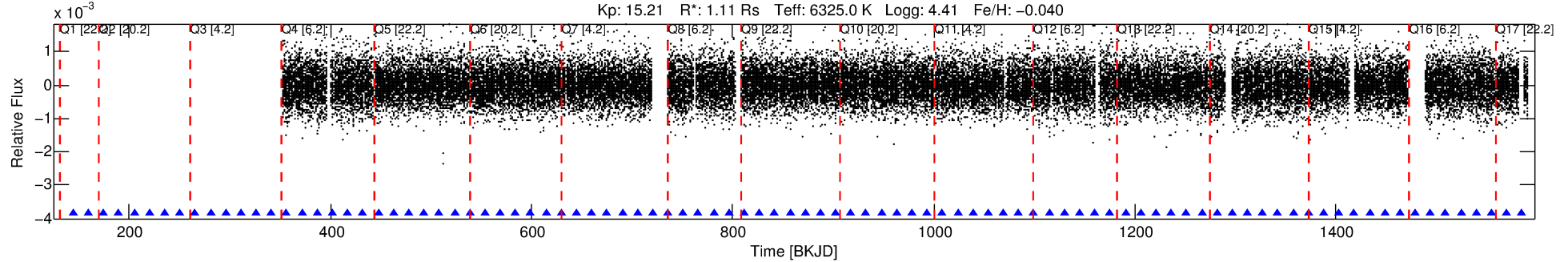
Ephemeris Match Information For 011968463-02

No Significant Match Found

DV One-Page Summary

KIC: 11968463 Candidate: 2 of 6 Period: 15.162 d
KOI: K02433.01 Name: Kepler-385c Corr: 0.968

Kp: 15.21 R*: 1.11 Rs Teff: 6325.0 K Logg: 4.41 Fe/H: -0.040



DV Fit Results:

Period = 15.16228 [0.00017] d
Epoch = 144.4712 [0.0096] BKJD
Rp/R* = 0.0239 [0.0010]
a/R* = 5.97 [0.81]
b = 0.96 [0.01]
Seff = 111.91 [49.21]
Teq = 829 [91] K
Rp = 2.90 [1.02] Re
a = 0.1259 [0.0361] AU
Ag = 62.81 [33.62] [1.84σ]
Teffp = 3610 [347] K [7.75σ]

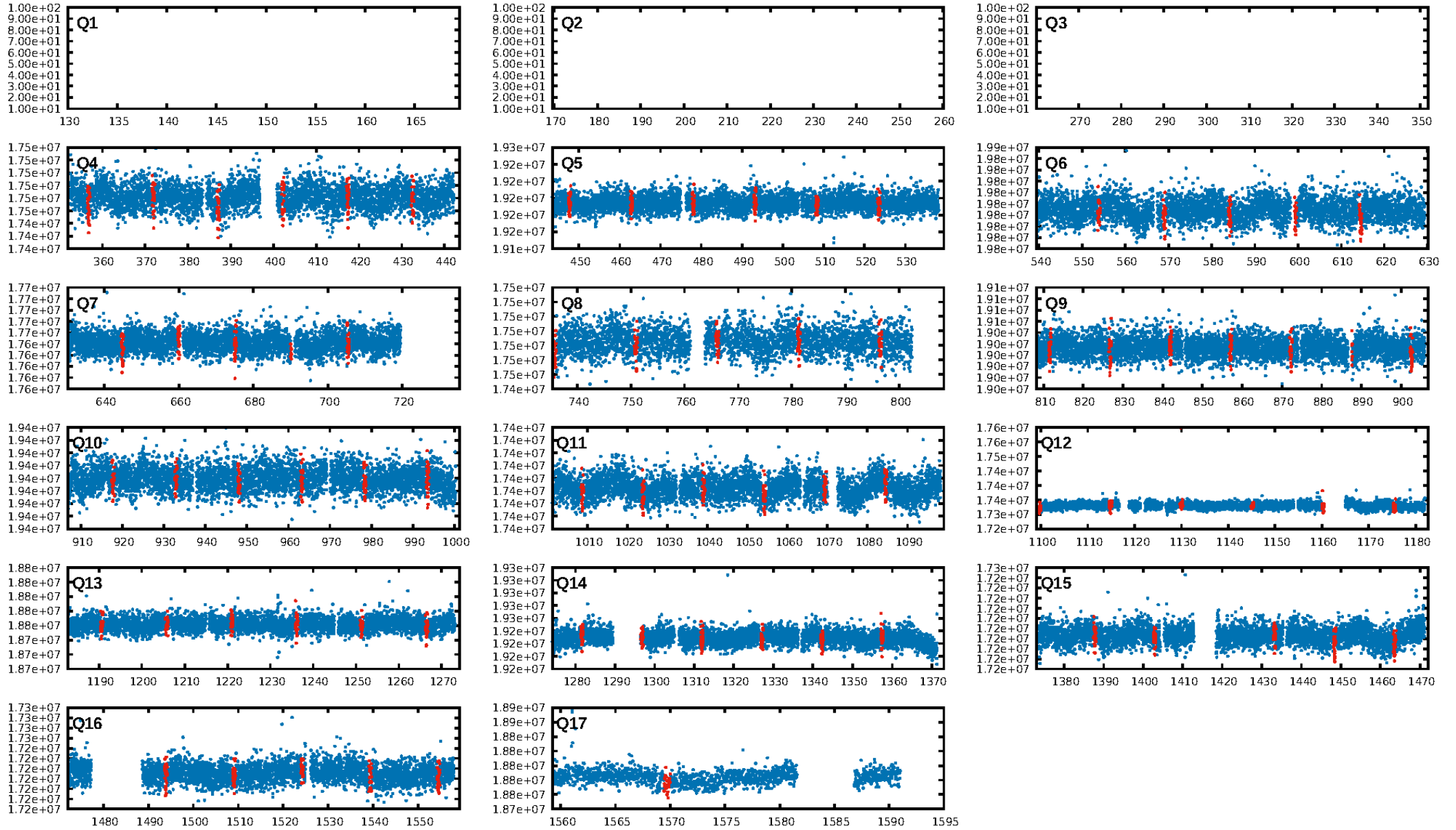
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.30σ]
LongPeriod-sig: 100.0% [34.39σ]
ModelChiSquare2-sig: 90.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.66e-79
RollingBand-fgt: 1.00 [71/71]
GhostDiagnostic-chr: 6.413
Centroid-sig: 61.1%
Centroid-so: 0.580 arcsec [0.99σ]
OotOffset-rm: 0.019 arcsec [0.05σ]
KicOffset-rm: 0.092 arcsec [0.29σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.79 [11/14]
DiffImageOverlap-fno: 0.00 [0/14]

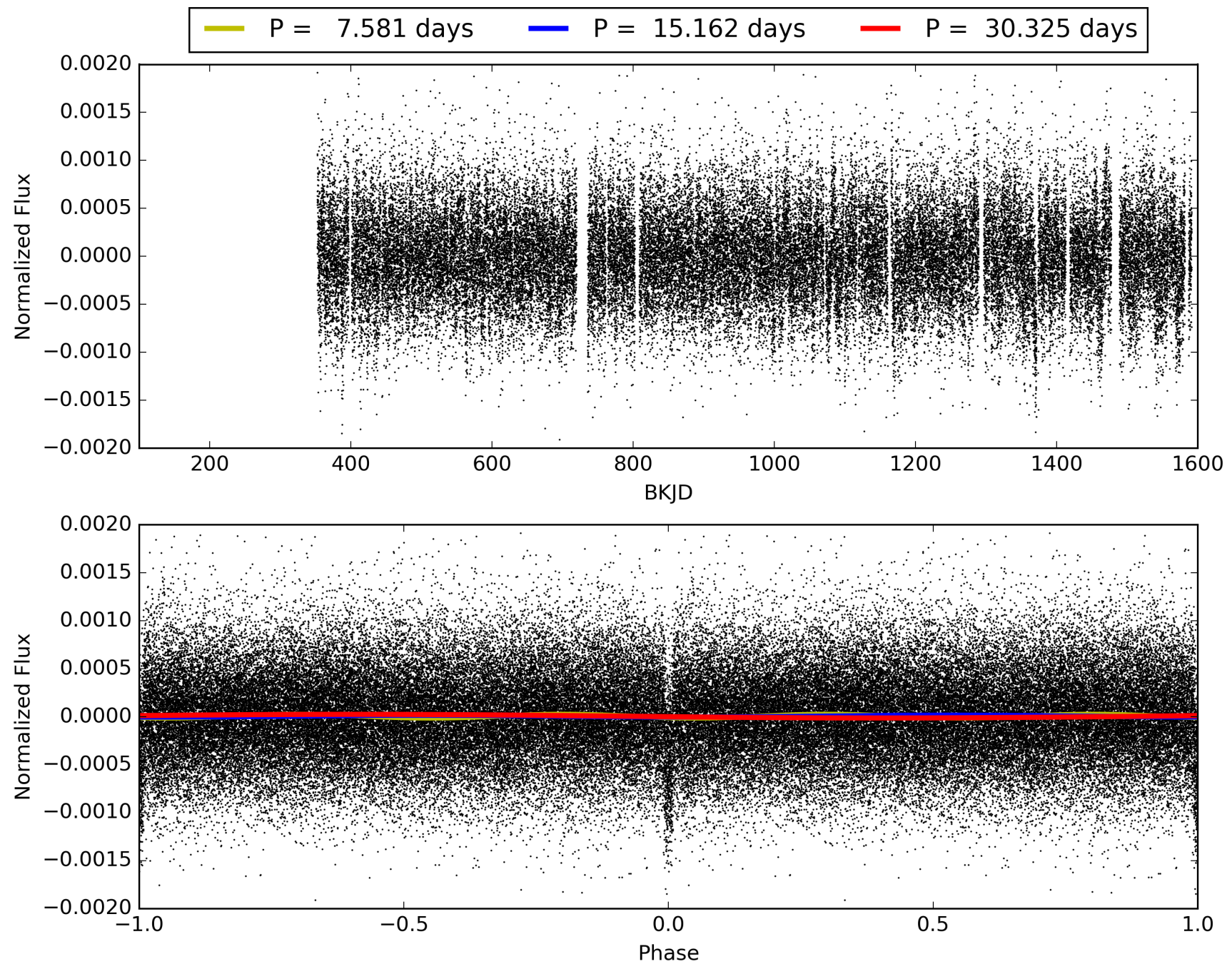
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:25:03 Z

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

TCE 011968463-02, PDC Light Curves

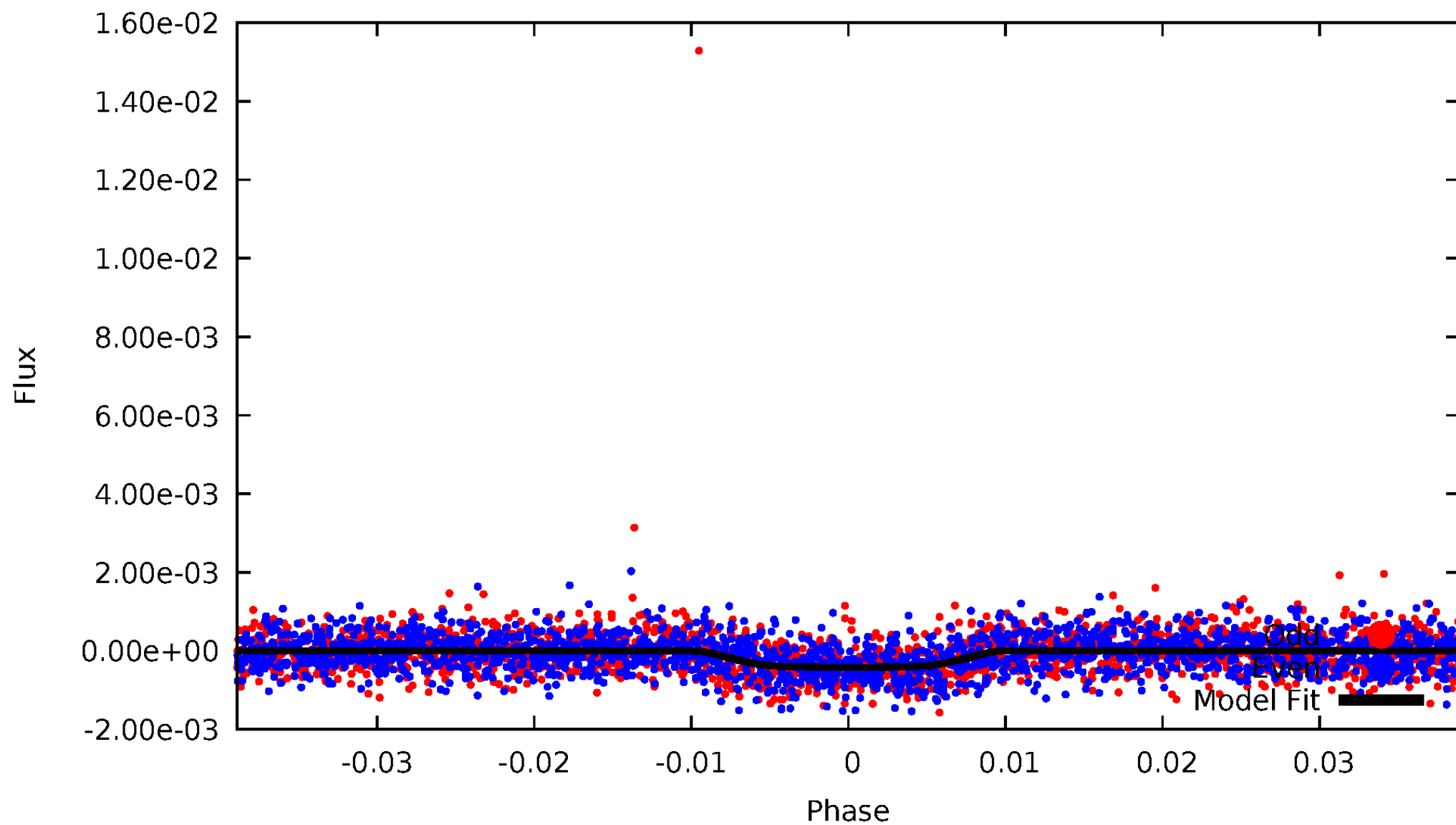


TCE 011968463-02



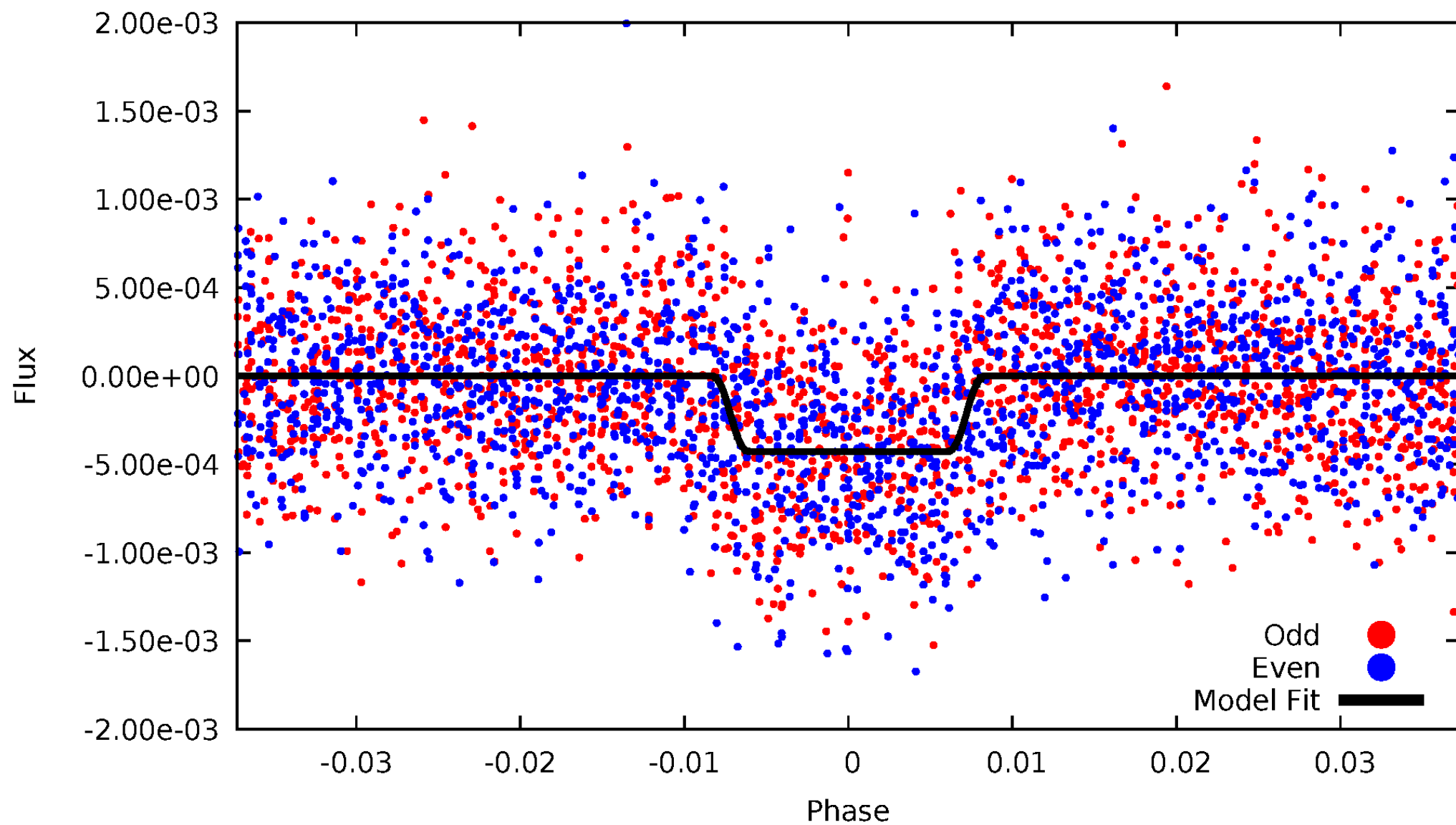
DV Odd/Even

TCE 011968463-02



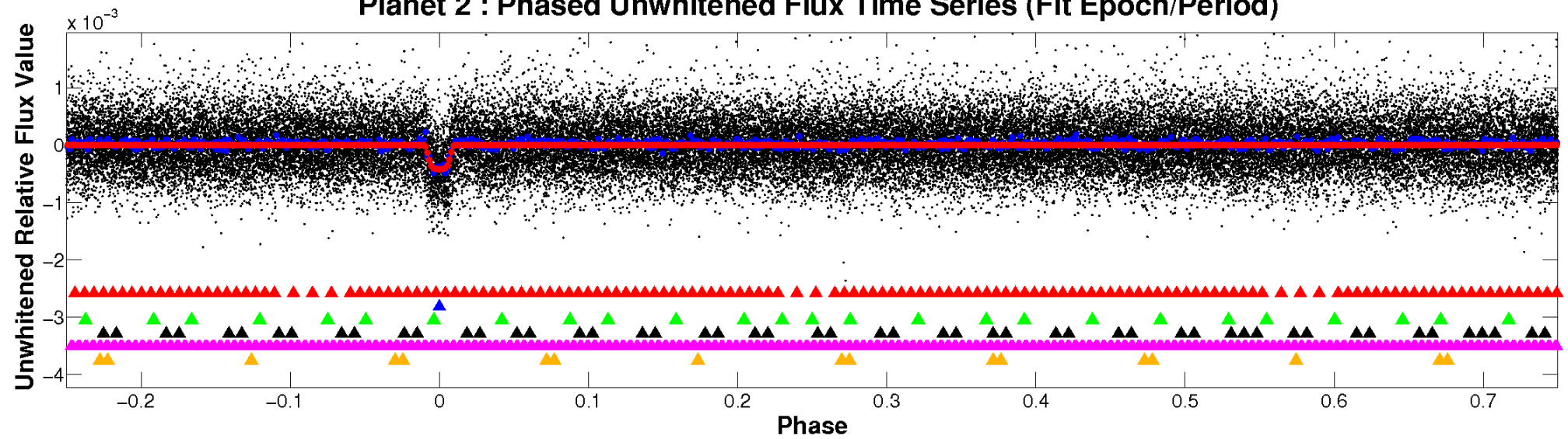
ALT Odd/Even

TCE 011968463-02

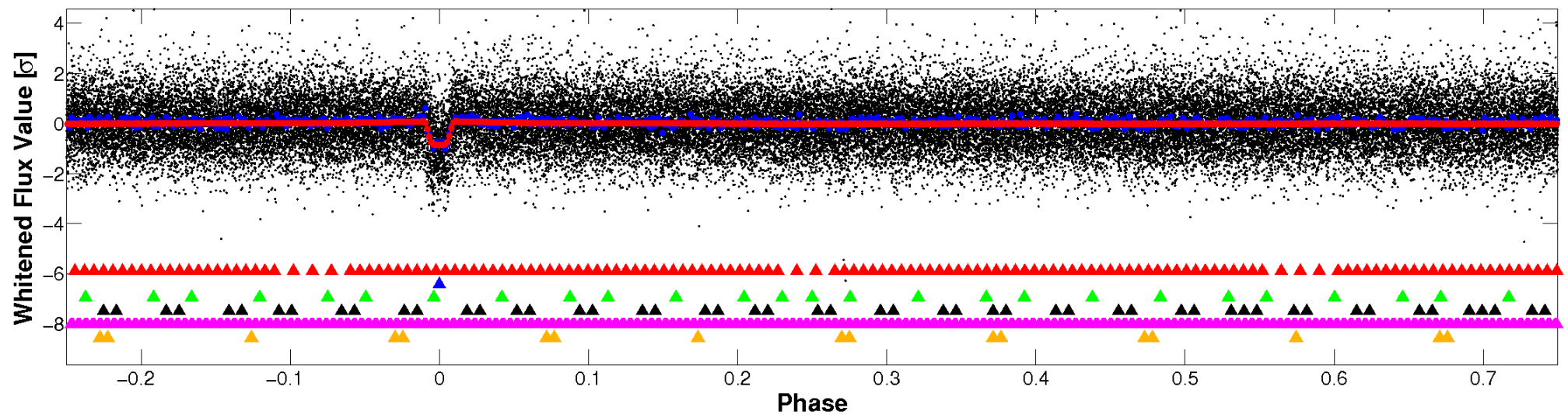


Non-Whitened Vs. Whitened Light Curve

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

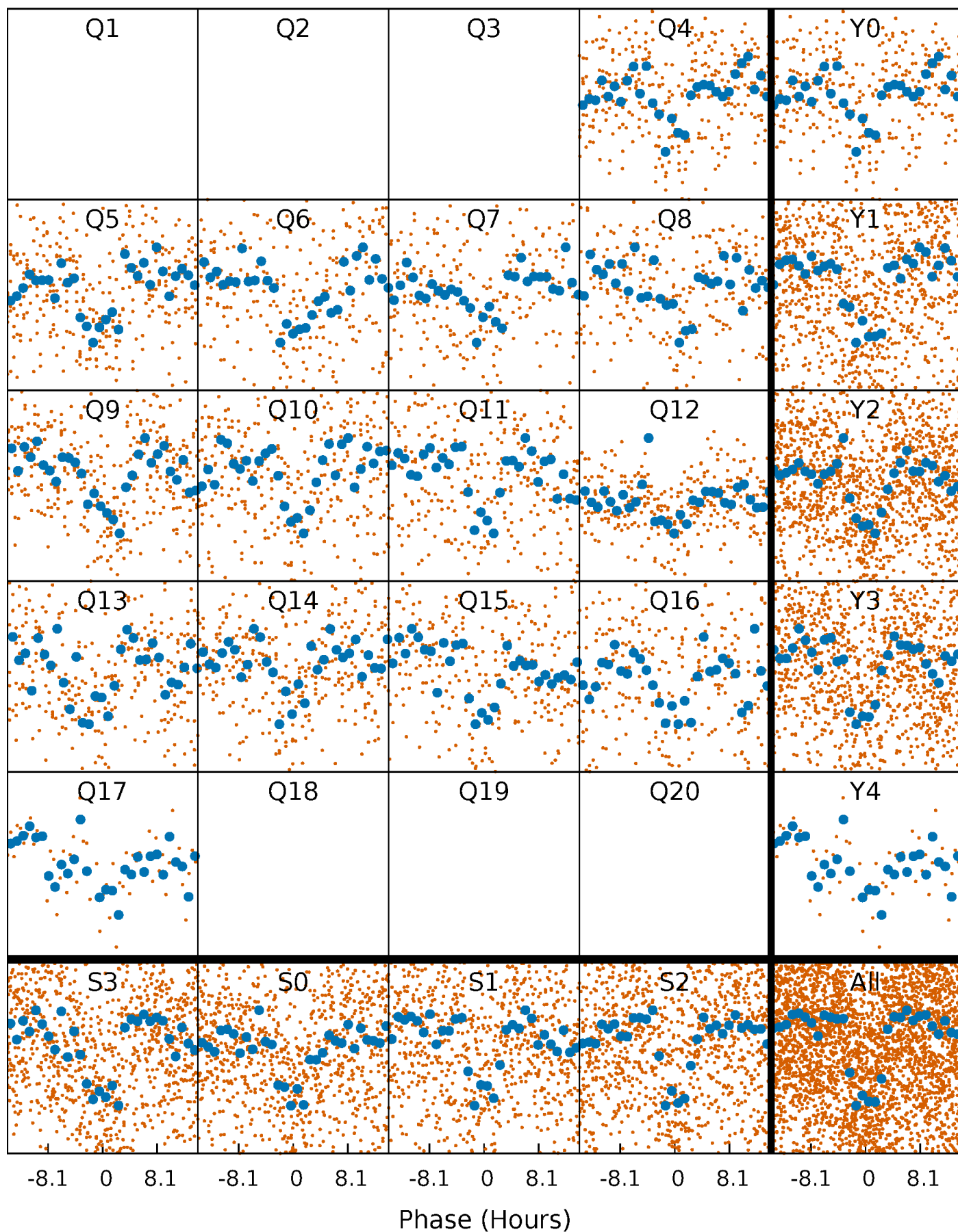


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



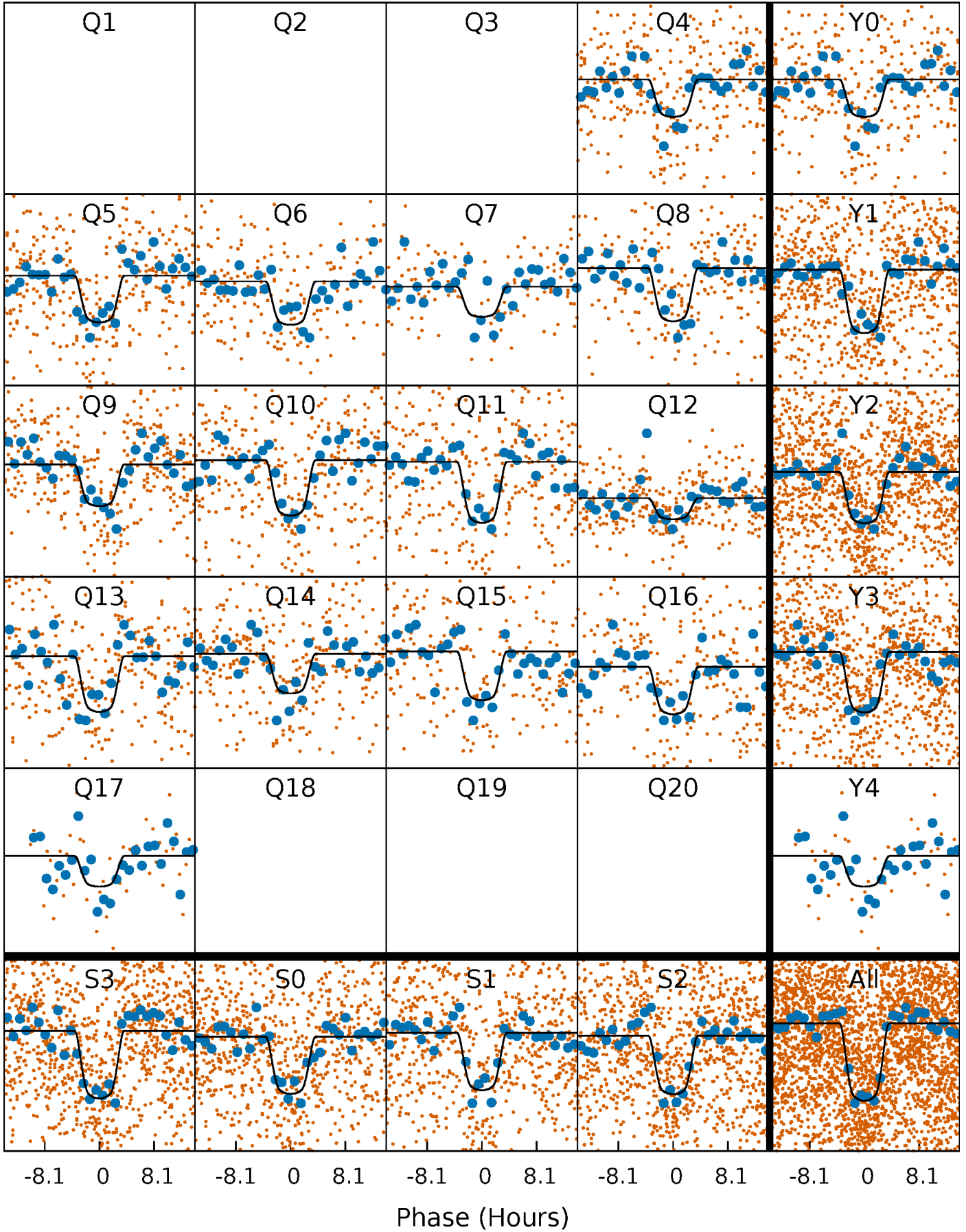
PDC Quarter-Phased Transit Curves

TCE 011968463-02 P= 15.162276 Days $T_0=144.471175$ (BKJD)



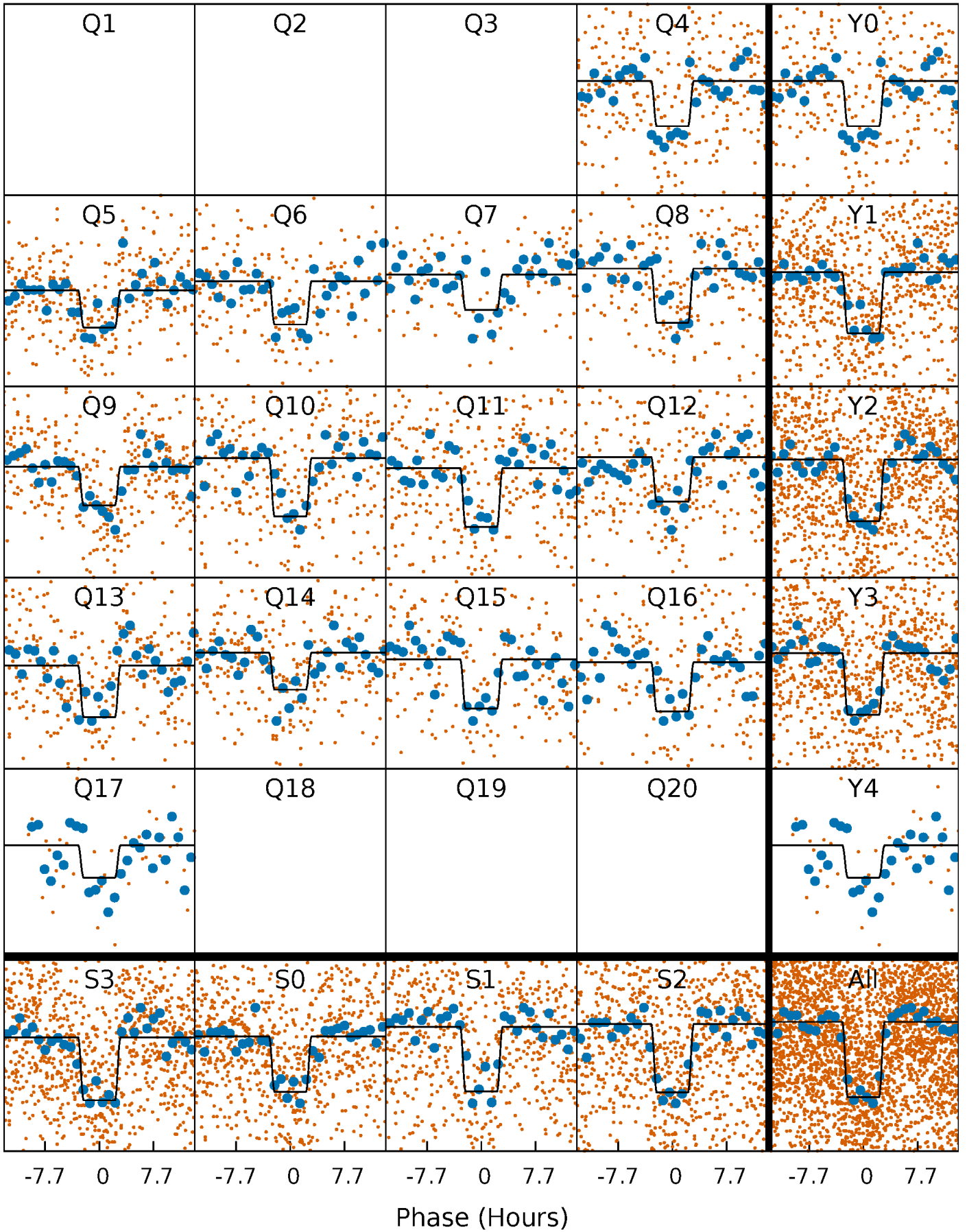
DV Quarter-Phased Transit Curves

TCE 011968463-02 P= 15.162276 Days $T_0=144.471175$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

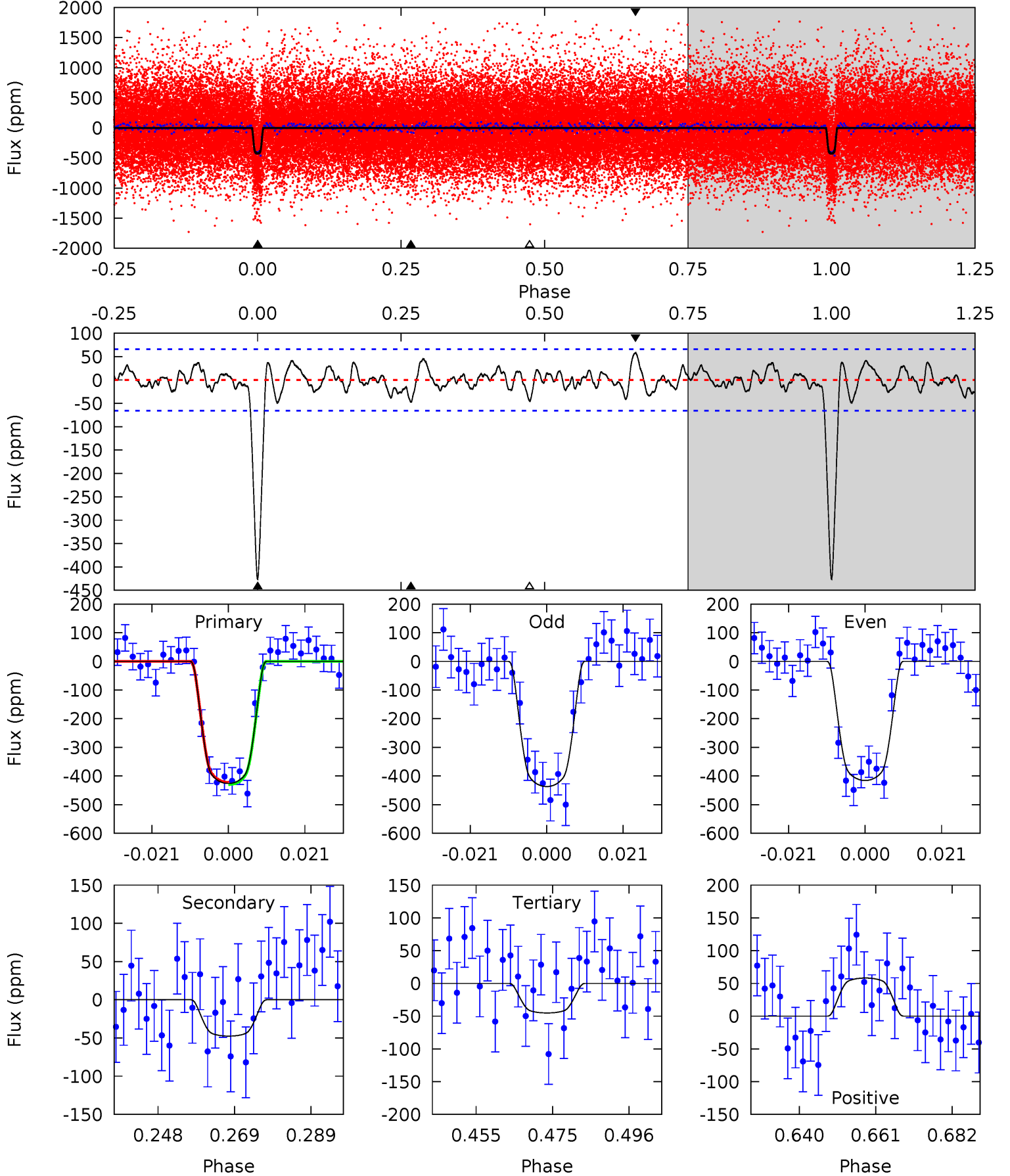
TCE 011968463-02 P= 15.162070 Days $T_0=144.483158$ (BKJD)



DV Model-Shift Uniqueness Test

011968463-02, P = 15.162276 Days, E = 144.471175 Days

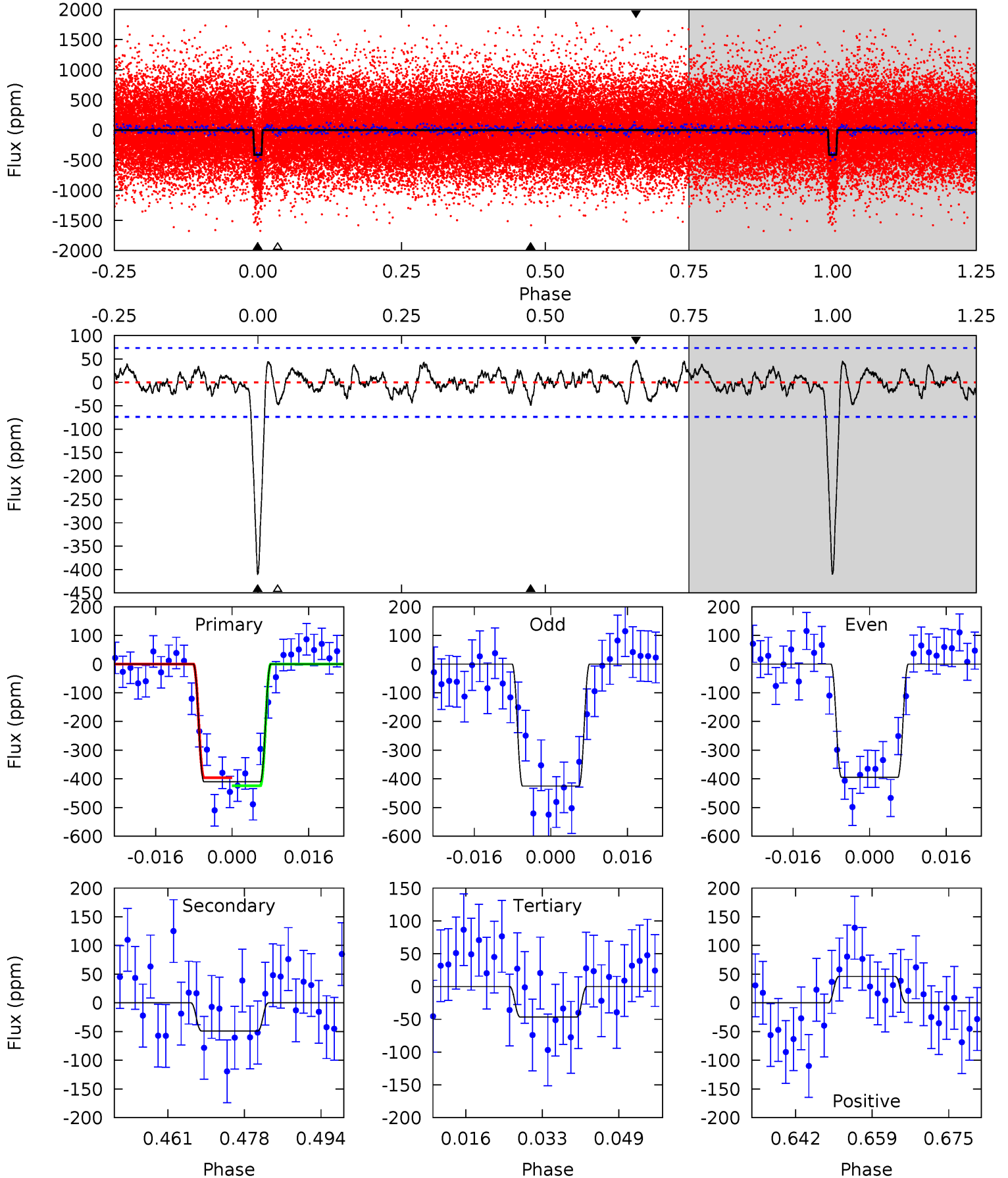
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.6	3.53	3.35	4.31	4.89	2.31	1.34	28.2	27.3	0.18	-0.78	0.79	0.99	0.12	0.26



Alt Model-Shift Uniqueness Test

011968463-02, $P = 15.162070$ Days, $E = 144.483158$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.5	3.28	3.13	3.09	4.93	2.40	1.19	24.3	24.4	0.15	0.19	1.02	1.00	0.10	0.94



Stellar Parameters For KIC 011968463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6325^{+174}_{-261}	$4.409^{+0.058}_{-0.218}$	$-0.040^{+0.250}_{-0.300}$	$1.112^{+0.388}_{-0.129}$	$1.157^{+0.169}_{-0.169}$	$1.184^{+0.368}_{-0.666}$
	+3%/-4%	+1%/-5%	+625%/-750%	+35%/-12%	+15%/-15%	+31%/-56%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011968463-02 / KOI 2433.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-48 ± 13	$2.98^{+0.57}_{-0.31}$	1182^{+89}_{-62}	3760^{+206}_{-217}	44^{+18}_{-16}
Alt.	-49 ± 15	$2.60^{+0.45}_{-0.25}$	1184^{+94}_{-63}	3981^{+244}_{-258}	60^{+26}_{-22}

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 $A_{obs} \gg 1.0$

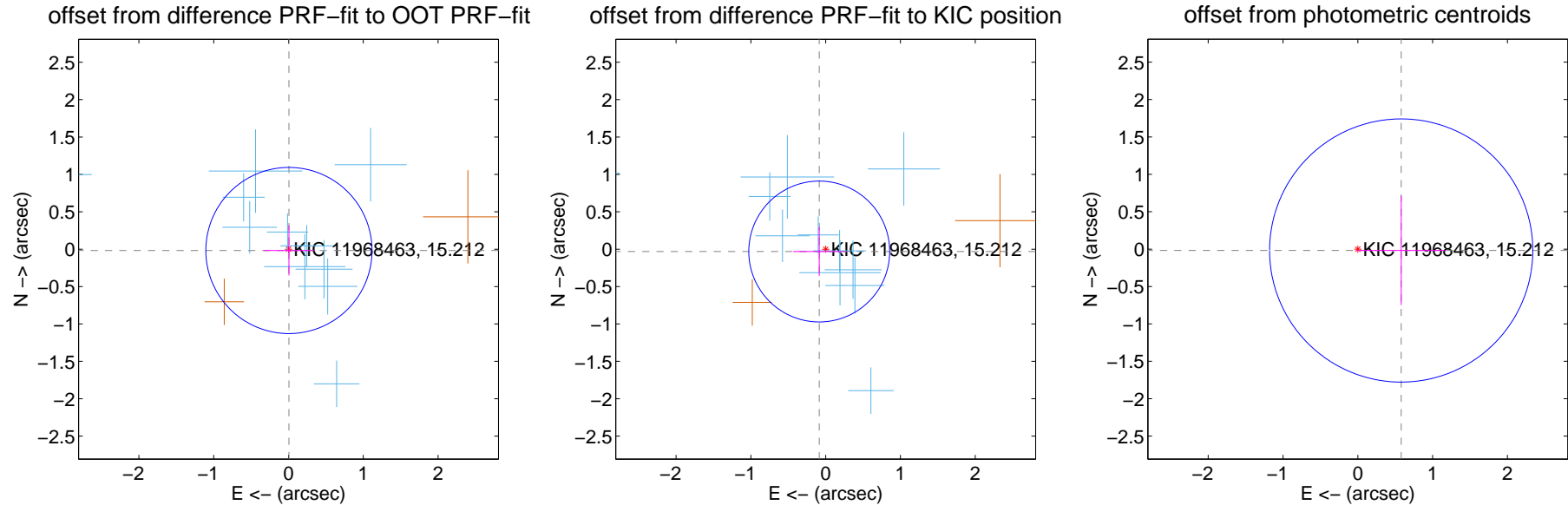
DV Centroid Data

Supplemental centroid analysis for 011968463-02. Kepler magnitude: 15.21. Transit SNR 20.66

There are 11 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.370	0.05	-0.006 ± 0.339	-0.018 ± 0.334
PRF-fit source offset from KIC position	0.092 ± 0.314	0.29	0.086 ± 0.348	-0.031 ± 0.325
photometric centroid source offset	0.58 ± 0.59	0.99	-0.58 ± 0.59	-0.02 ± 0.73



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

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

Q1 no difference image



Q1 no OOT image



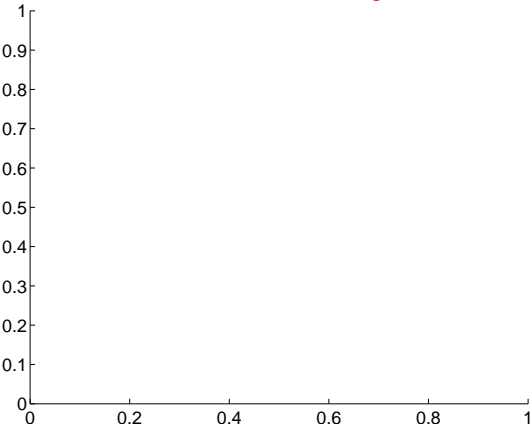
Q2 no difference image



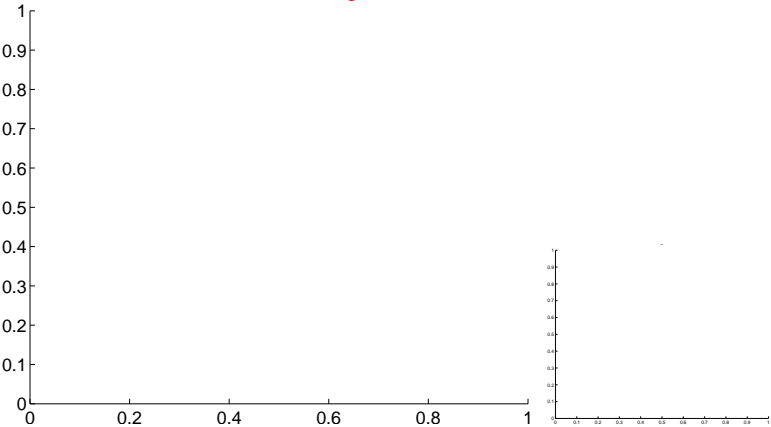
Q2 no OOT image



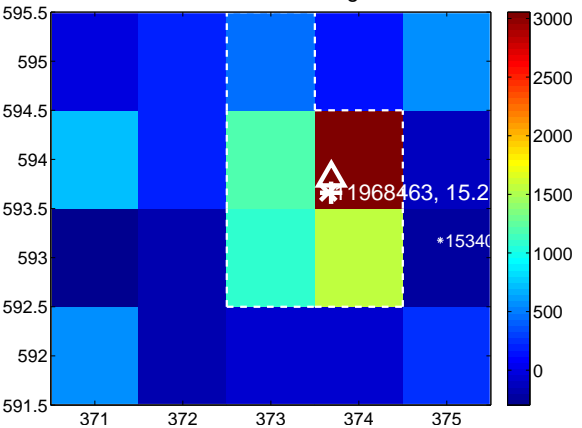
Q3 no difference image



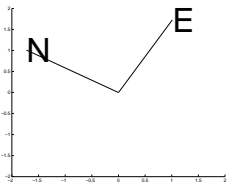
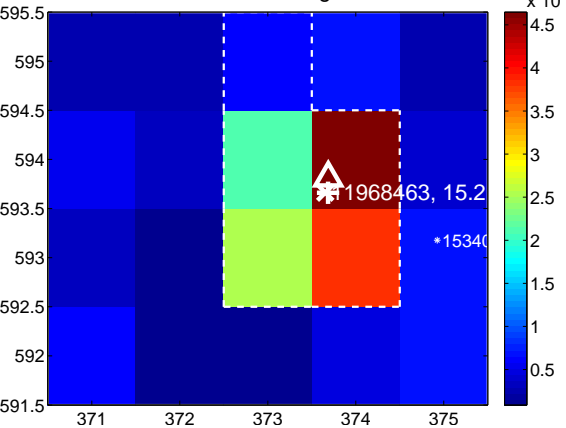
Q3 no OOT image



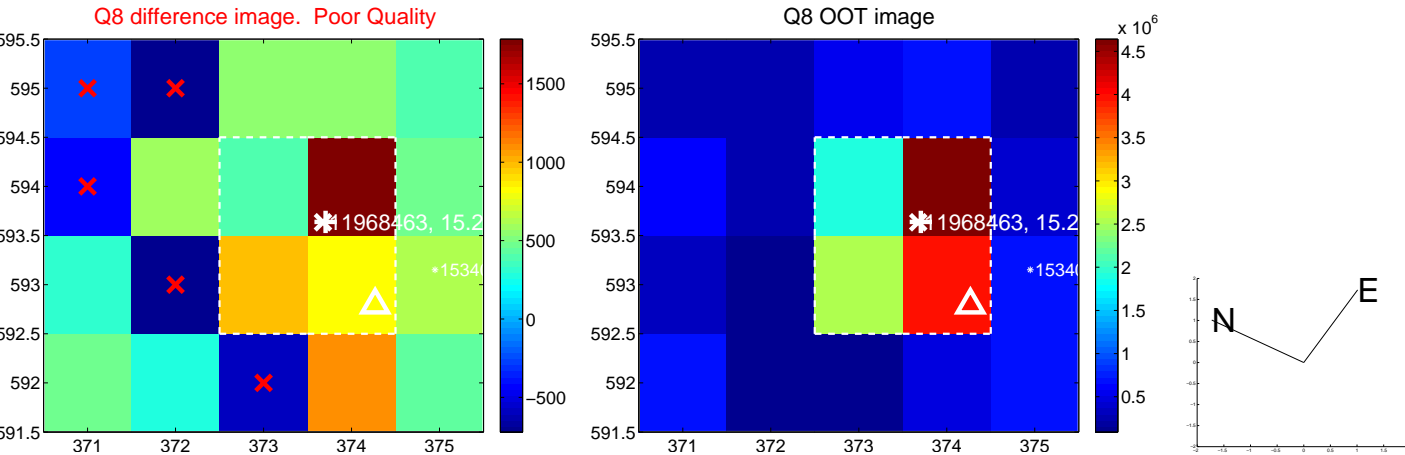
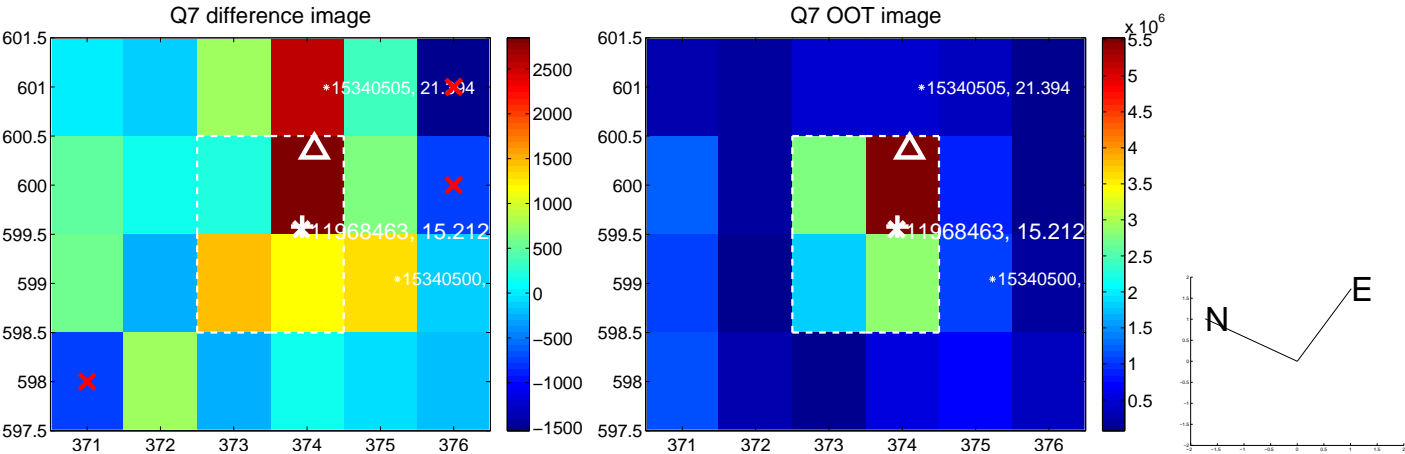
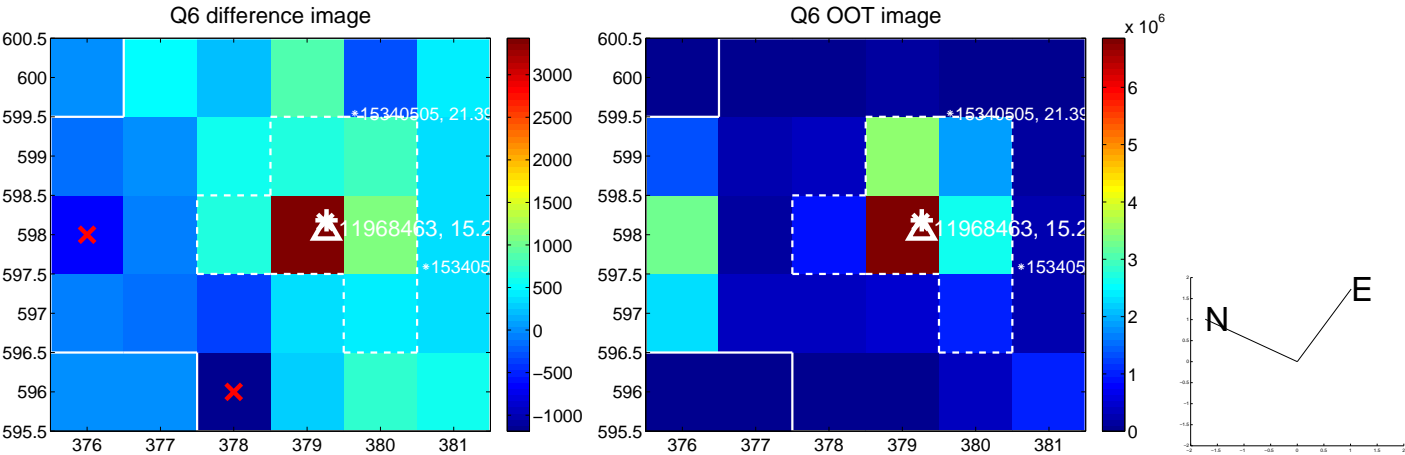
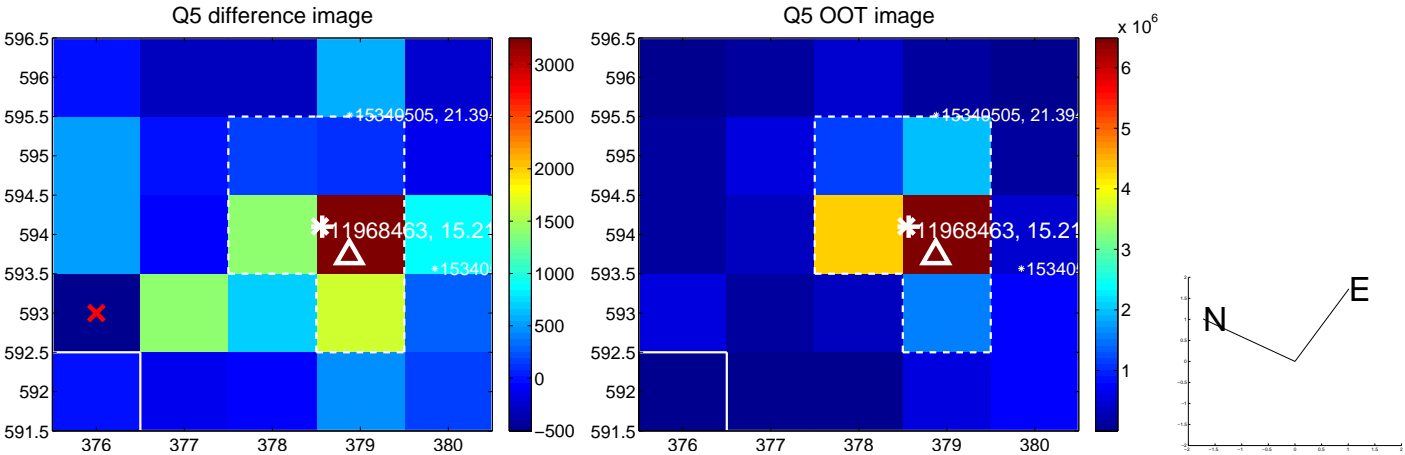
Q4 difference image



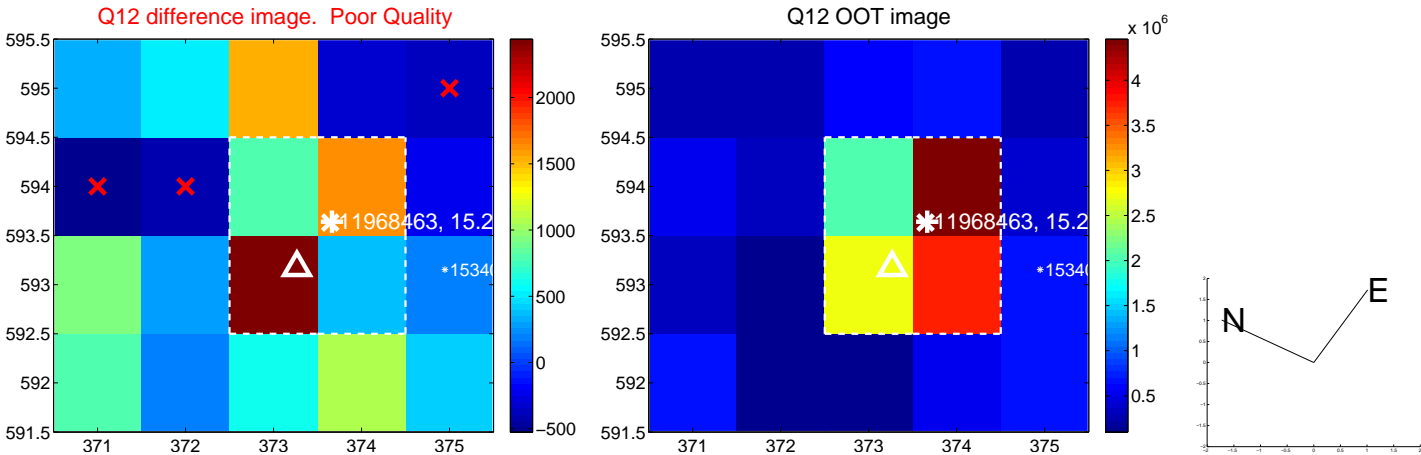
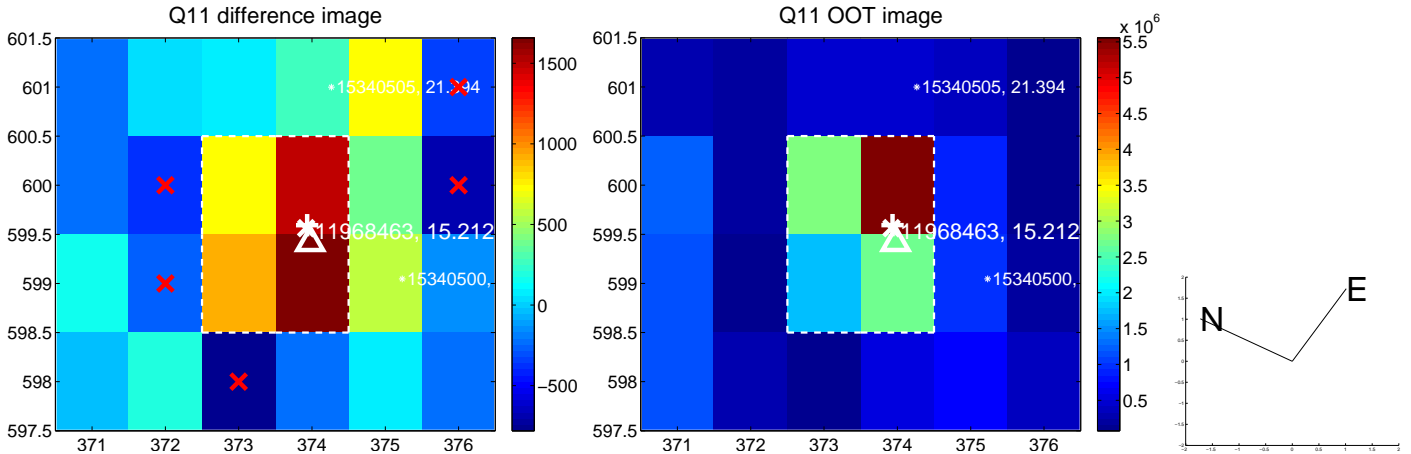
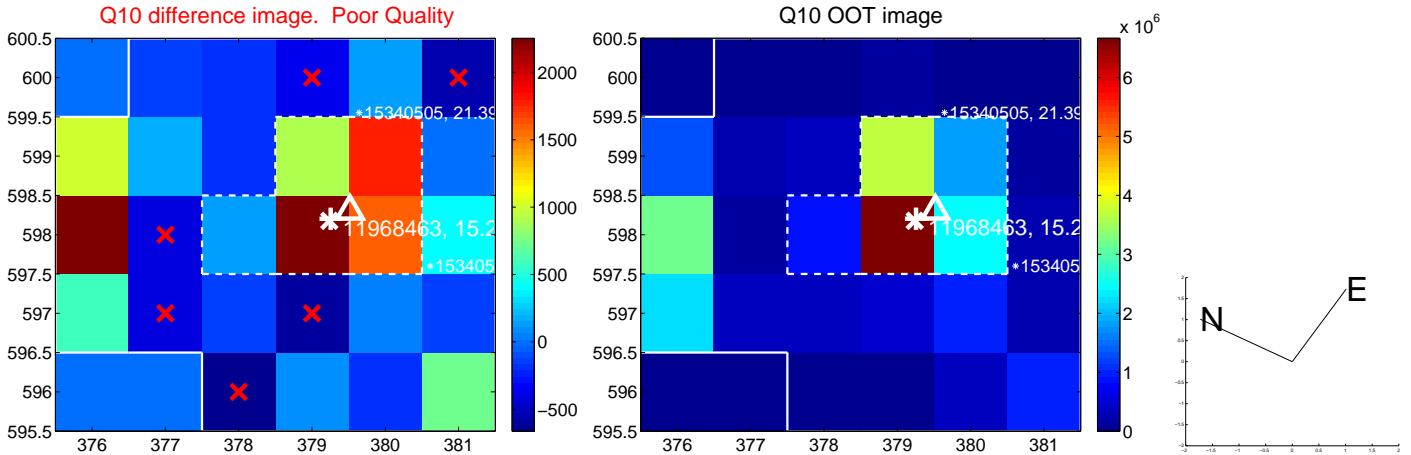
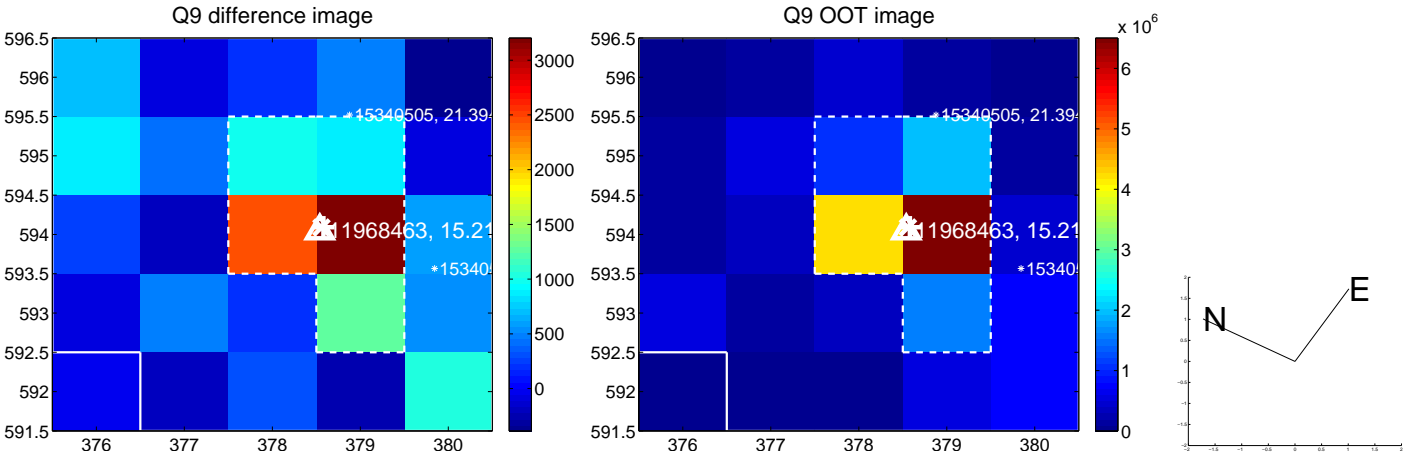
Q4 OOT image



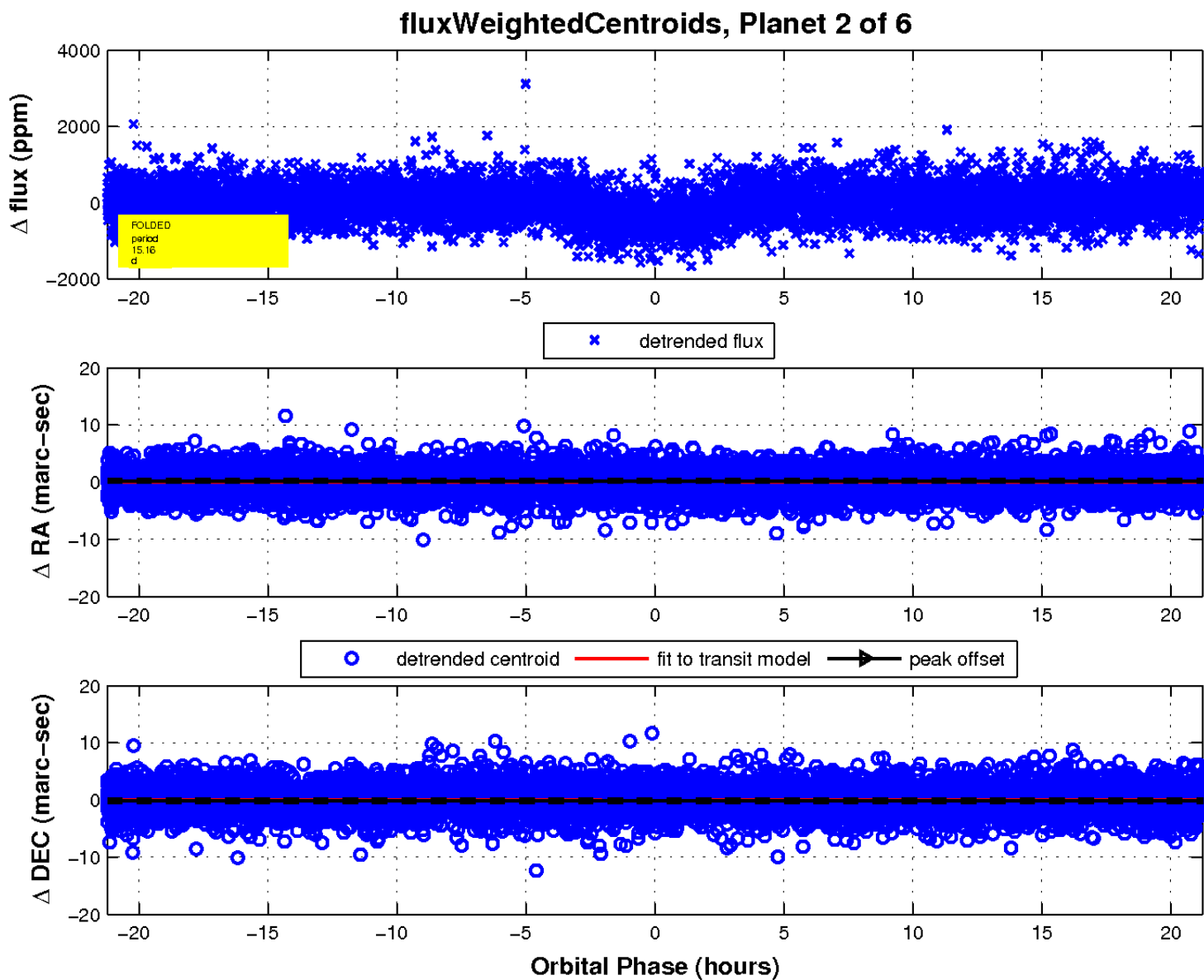
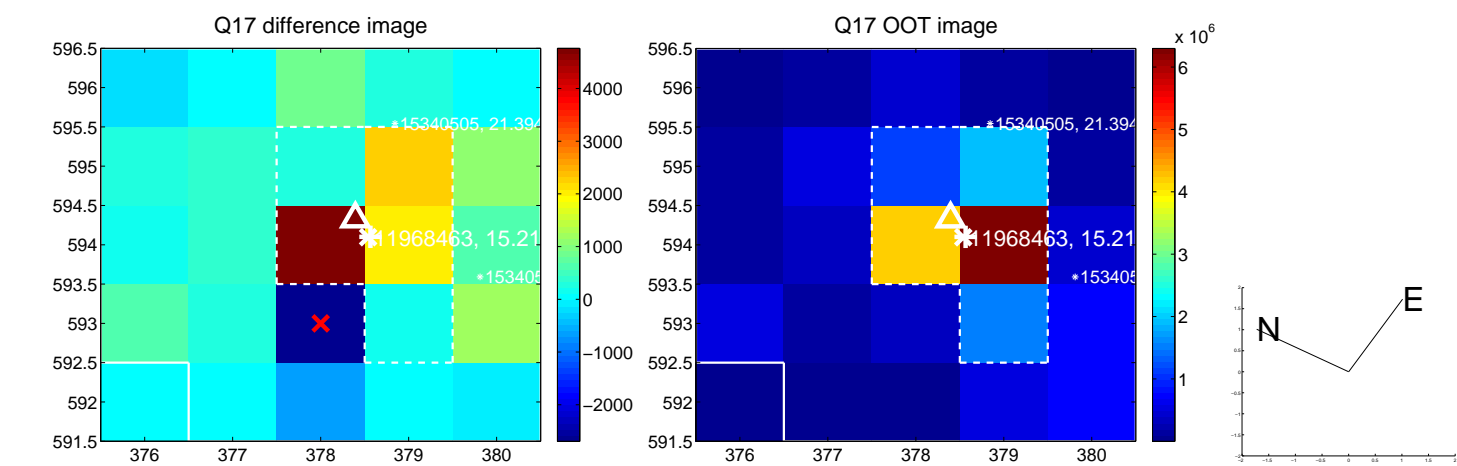
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

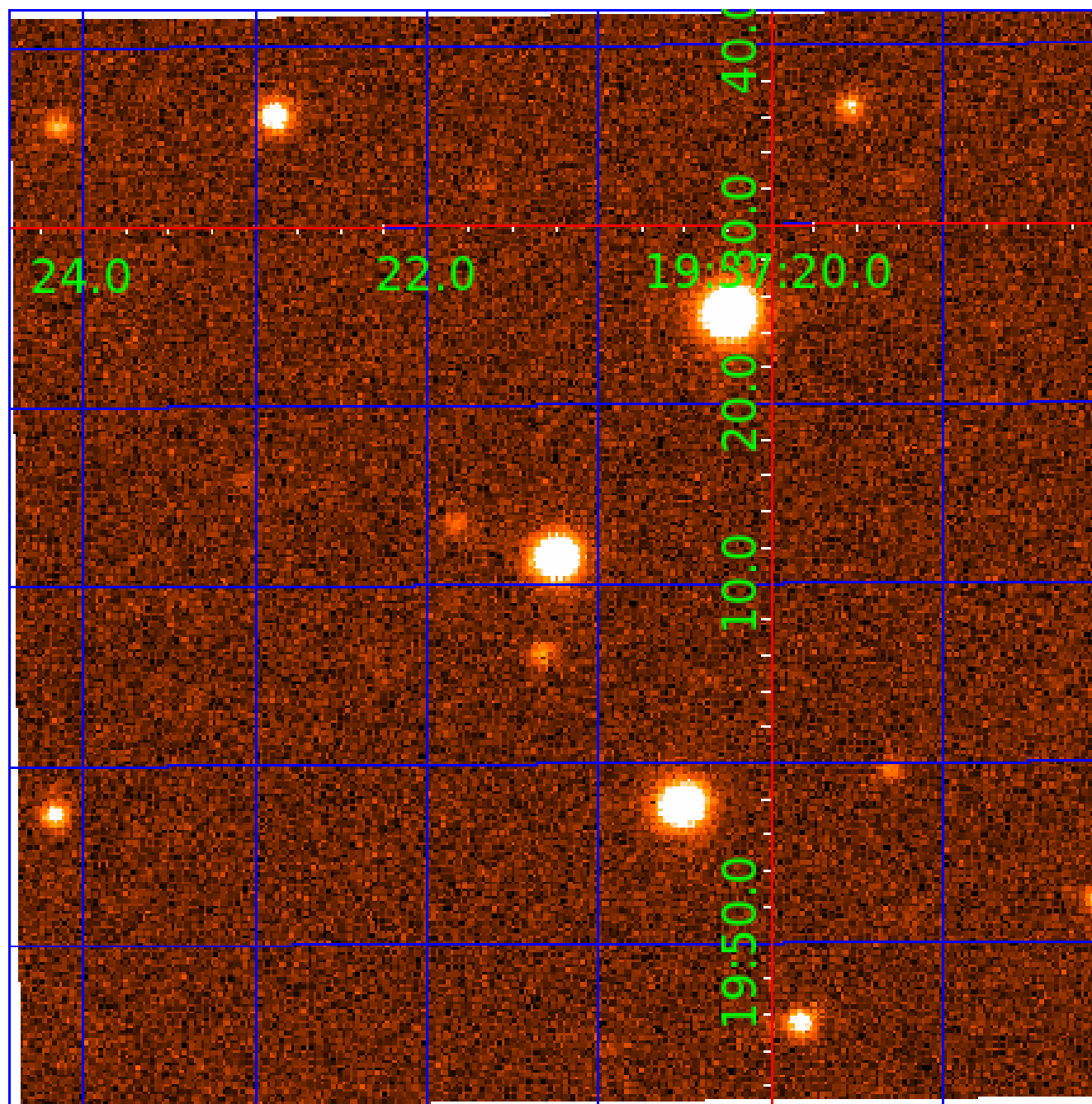


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011968463

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})
011968463-01	OBS	2433.02	10.043813	132.653095	444.5	5.932	24.0	25.3	1.11	6325	2.98	193.79
011968463-02	OBS	2433.01	15.162276	144.471175	425.7	7.078	19.0	20.7	1.11	6325	2.90	111.91
011968463-03	OBS	2433.03	56.415882	163.118298	442.8	7.651	11.7	12.5	1.11	6325	2.59	19.41
011968463-04	OBS	2433.04	27.903812	154.943039	282.9	5.381	9.2	9.7	1.11	6325	2.11	49.62
011968463-05	OBS	2433.05	0.646746	132.023559	109.0	0.888	9.1	11.0	1.11	6325	1.19	7508.64
011968463-06	OBS	2433.07	86.432830	163.724557	514.8	7.301	7.2	9.3	1.11	6325	2.98	10.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968463-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011968463-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011968463-03	OBS	PC	0.92	0	0	0	0	NO_COMMENT
011968463-04	OBS	PC	0.64	0	0	0	0	NO_COMMENT
011968463-05	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
011968463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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 011968463-03

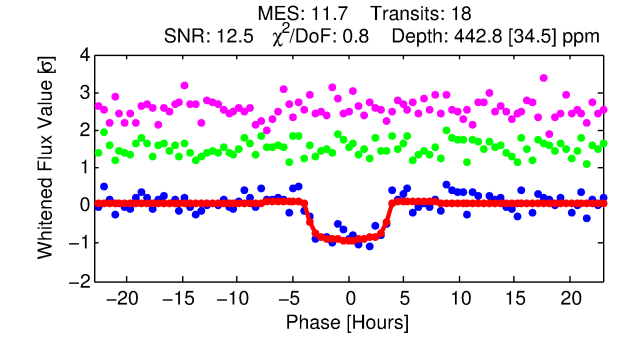
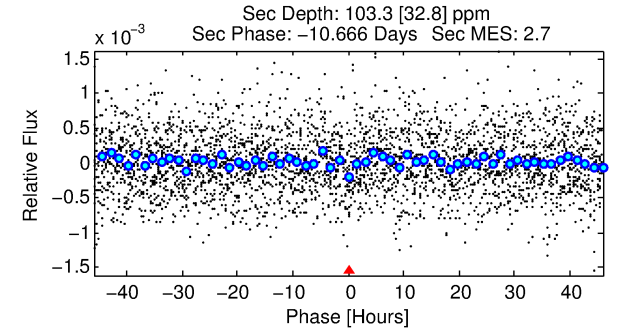
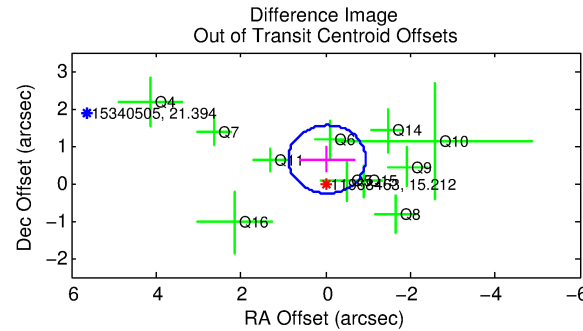
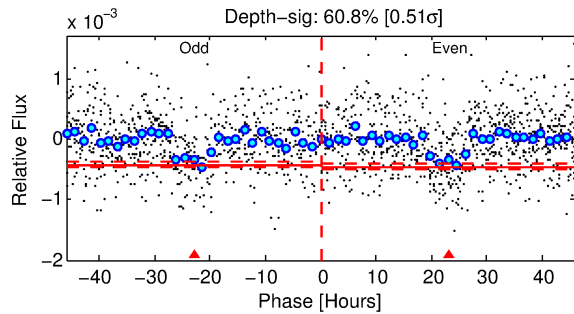
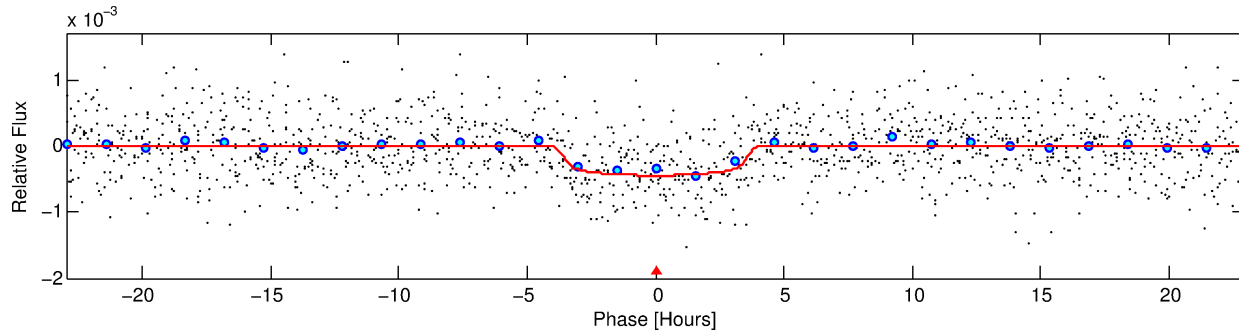
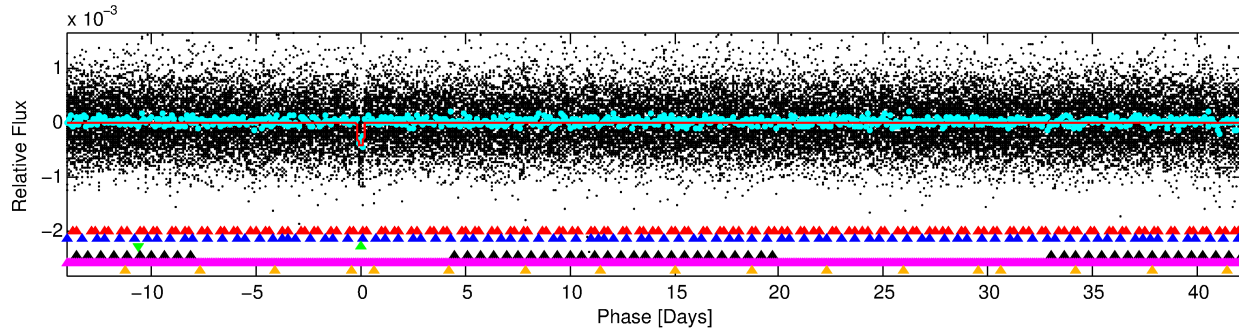
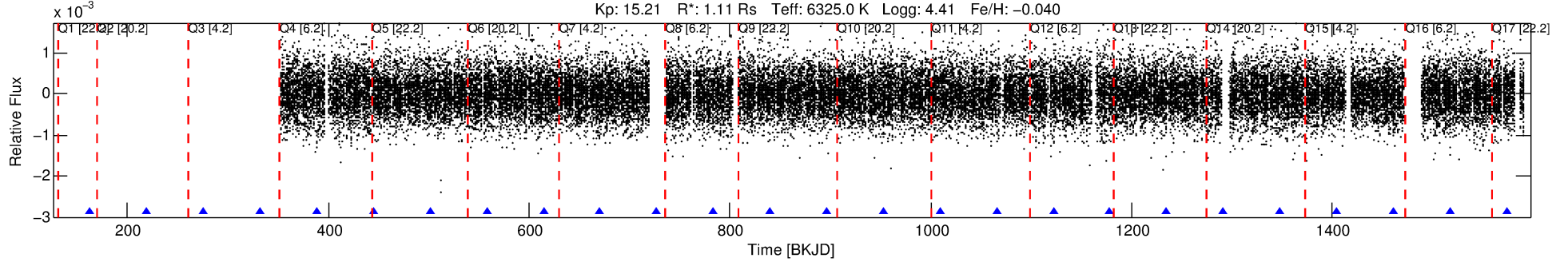
No Significant Match Found

DV One-Page Summary

KIC: 11968463 Candidate: 3 of 6 Period: 56.416 d

KOI: K02433.03 Corr: 0.975

Kp: 15.21 R*: 1.11 Rs Teff: 6325.0 K Logg: 4.41 Fe/H: -0.040



DV Fit Results:

Period = 56.41588 [0.00080] d
Epoch = 163.1183 [0.0122] BKJD
Rp/R* = 0.0213 [0.0054]
a/R* = 35.56 [46.77]
b = 0.80 [0.59]
Seff = 19.41 [8.53]
Teq = 535 [59] K
Rp = 2.59 [1.12] Re
a = 0.3023 [0.0866] AU
Ag = 773.89 [561.62] [1.38σ]
Teffp = 4365 [679] K [5.61σ]

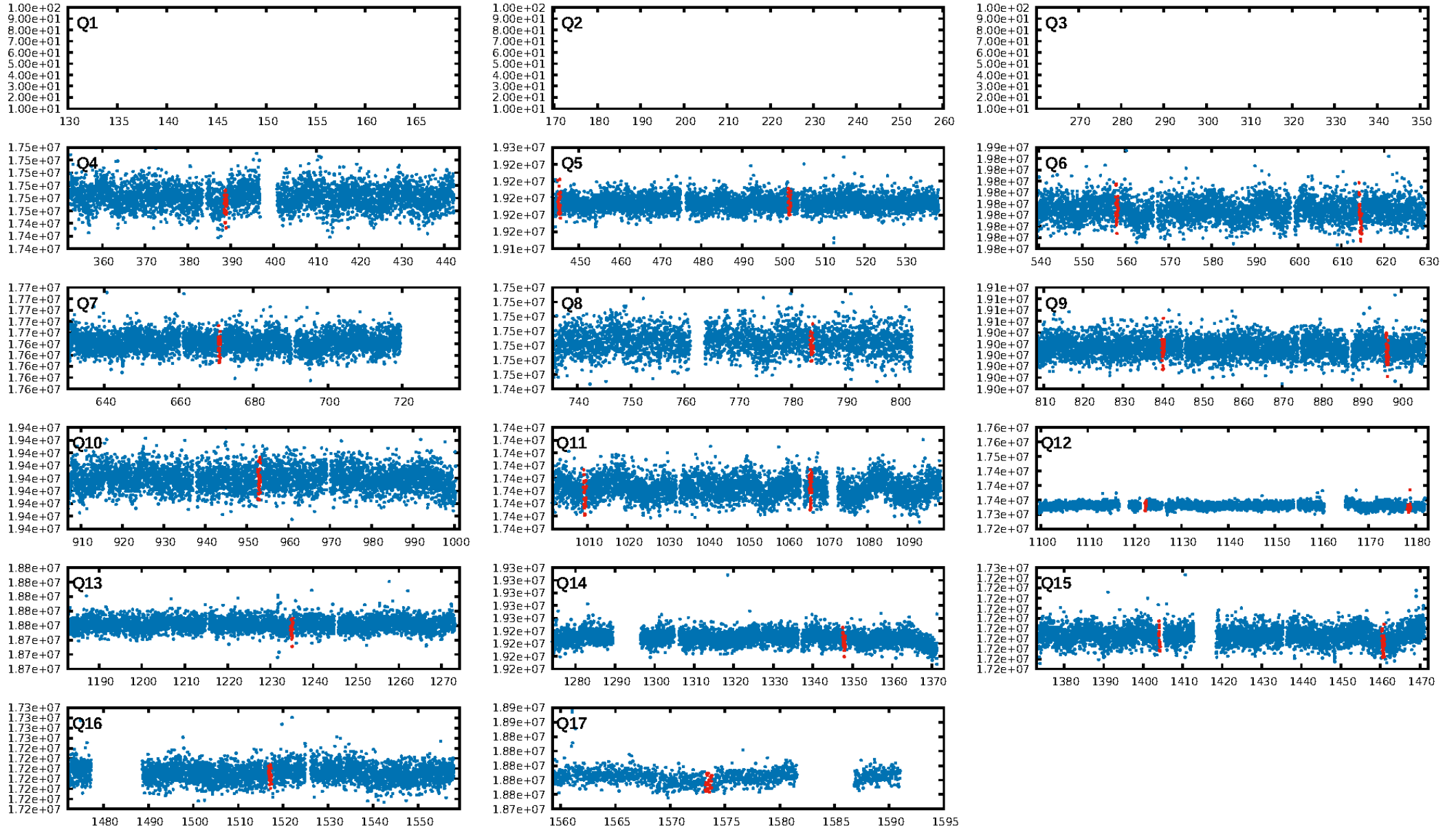
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [73.15σ]
LongPeriod-sig: 100.0% [68.12σ]
ModelChiSquare2-sig: 86.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.26e-29
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: 6.456
Centroid-sig: 45.1%
Centroid-so: 0.960 arcsec [0.85σ]
OotOffset-rm: 0.642 arcsec [2.12σ]
KicOffset-rm: 0.621 arcsec [1.87σ]
OotOffset-st: 3/3/3/2 [11]
KicOffset-st: 3/3/3/2 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 0.00 [0/13]

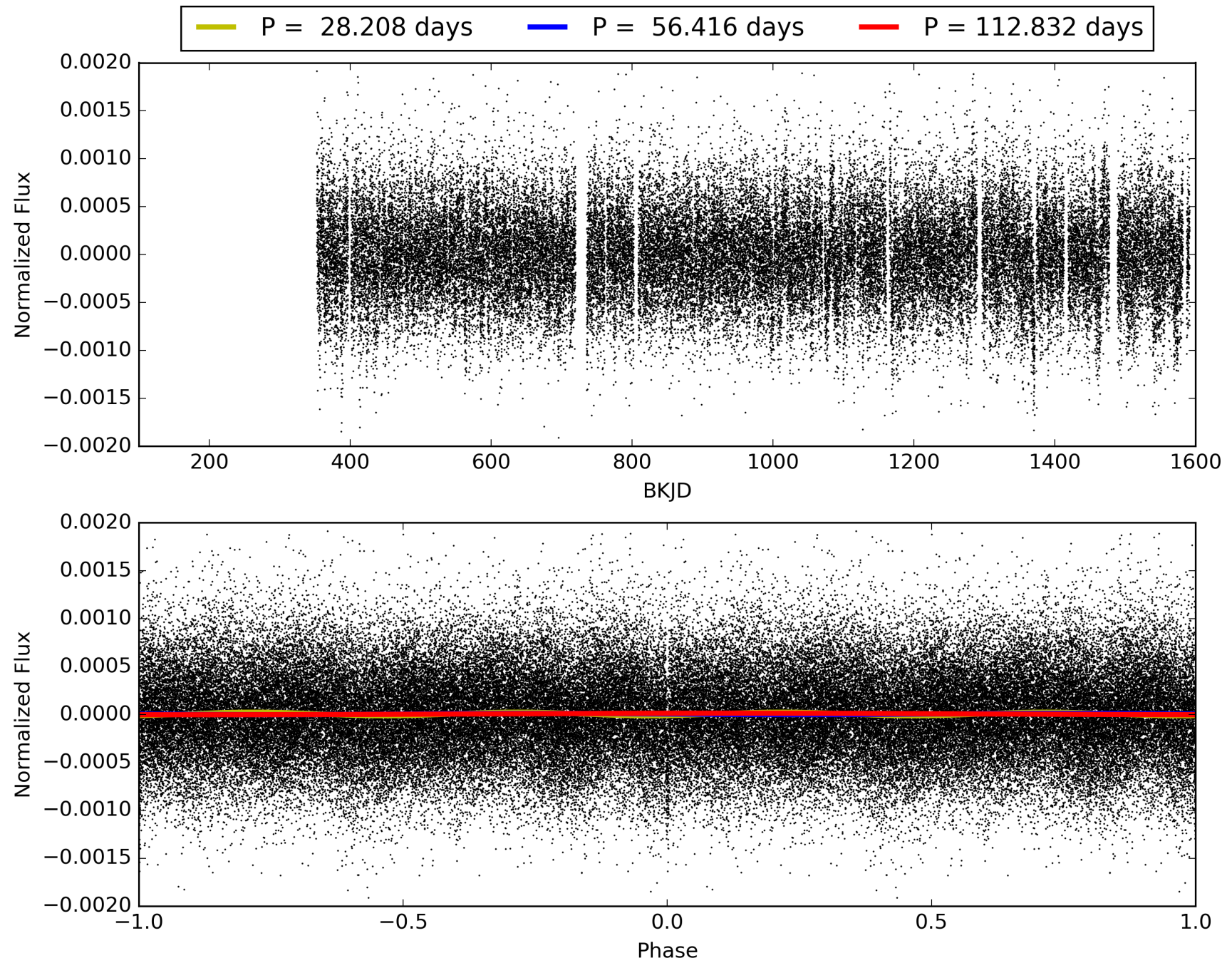
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:25:10 Z

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

TCE 011968463-03, PDC Light Curves

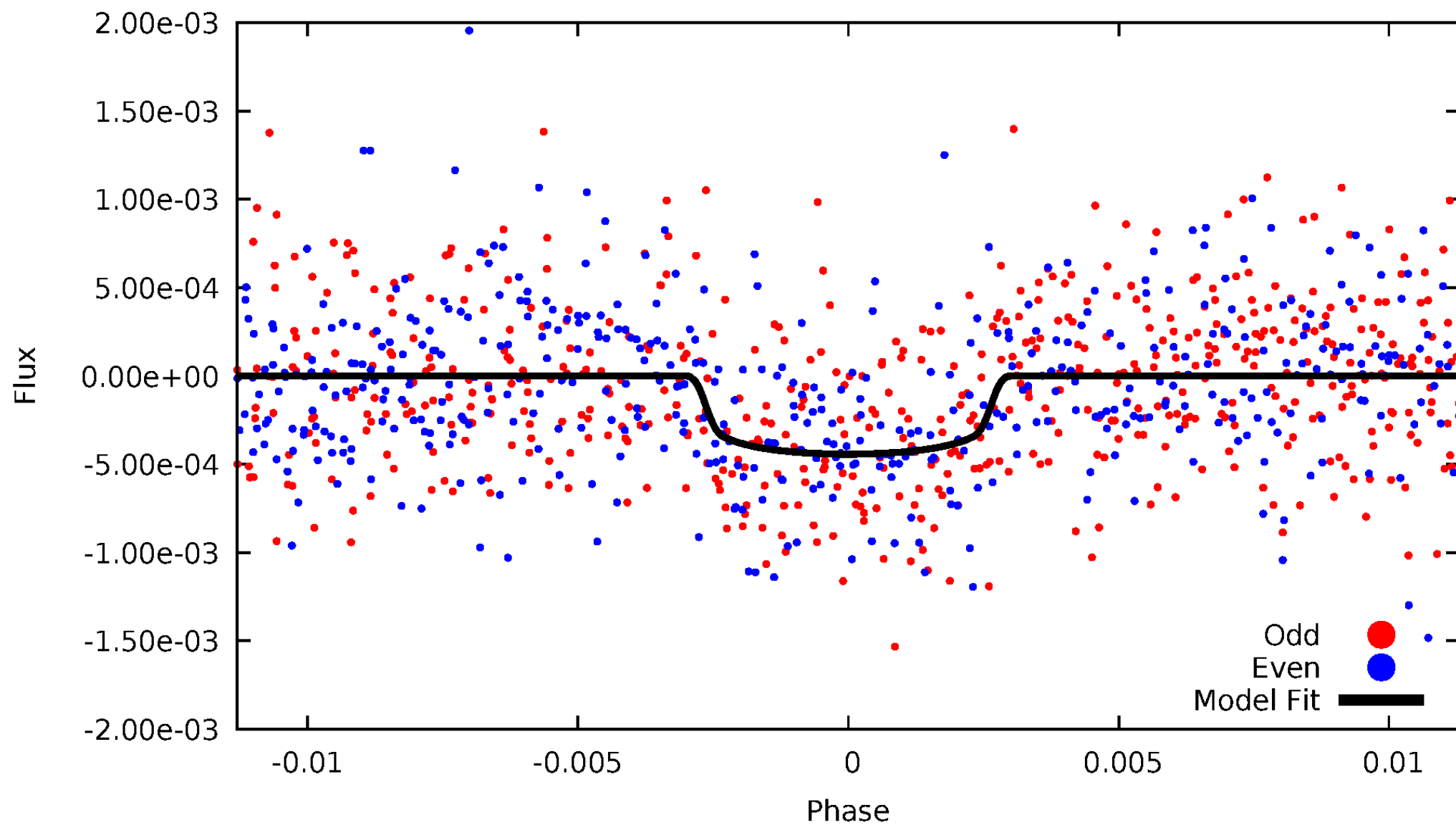


TCE 011968463-03



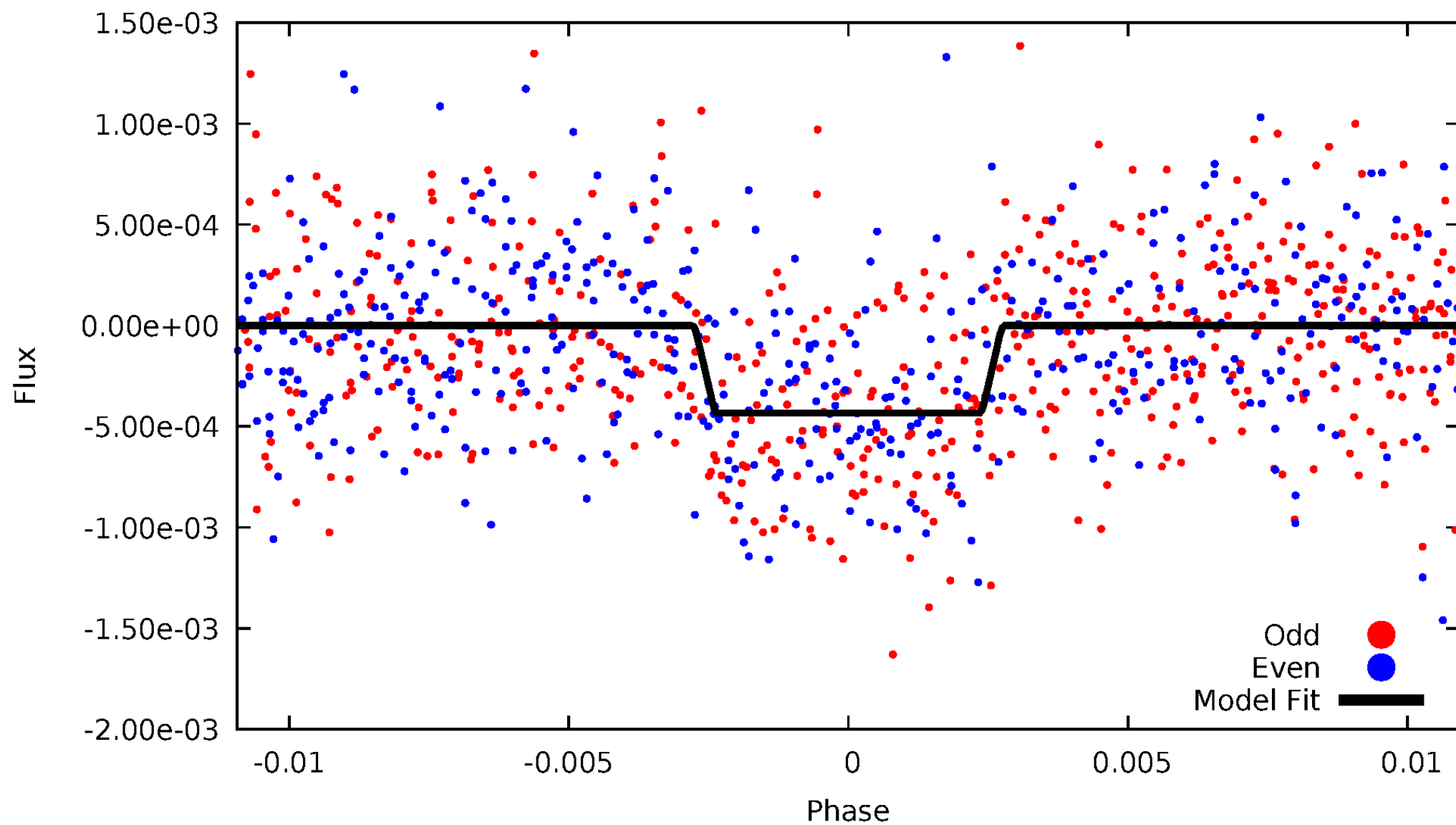
DV Odd/Even

TCE 011968463-03



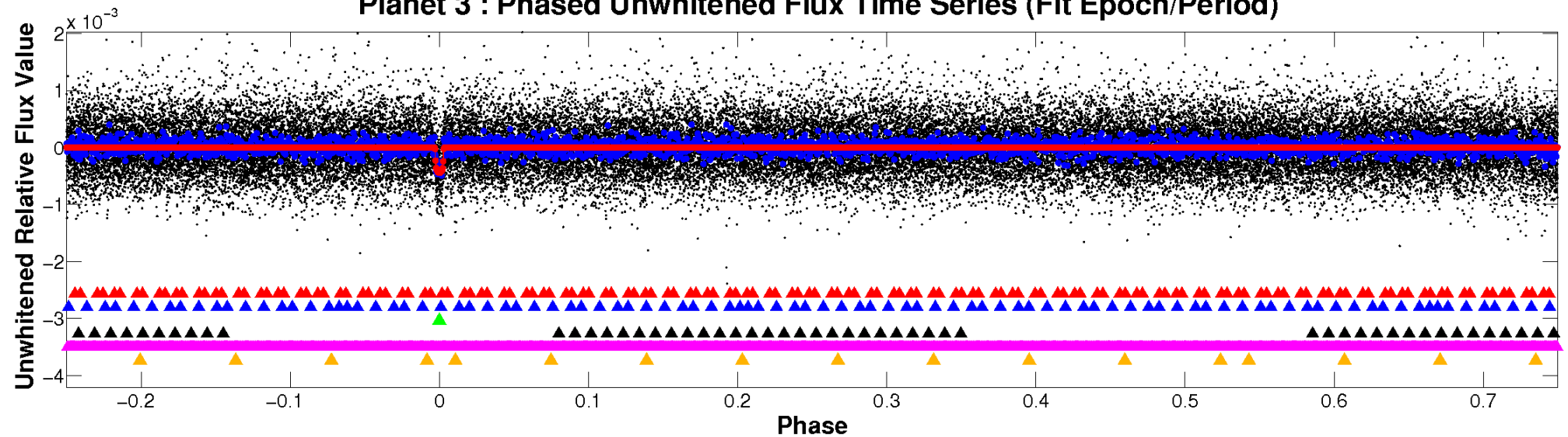
ALT Odd/Even

TCE 011968463-03

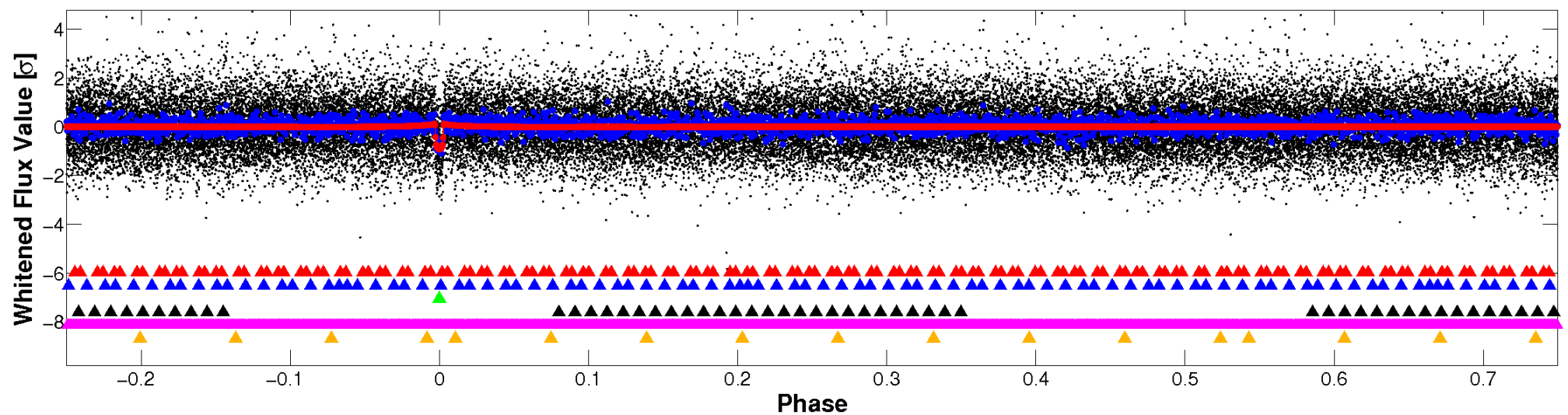


Non-Whitened Vs. Whitened Light Curve

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

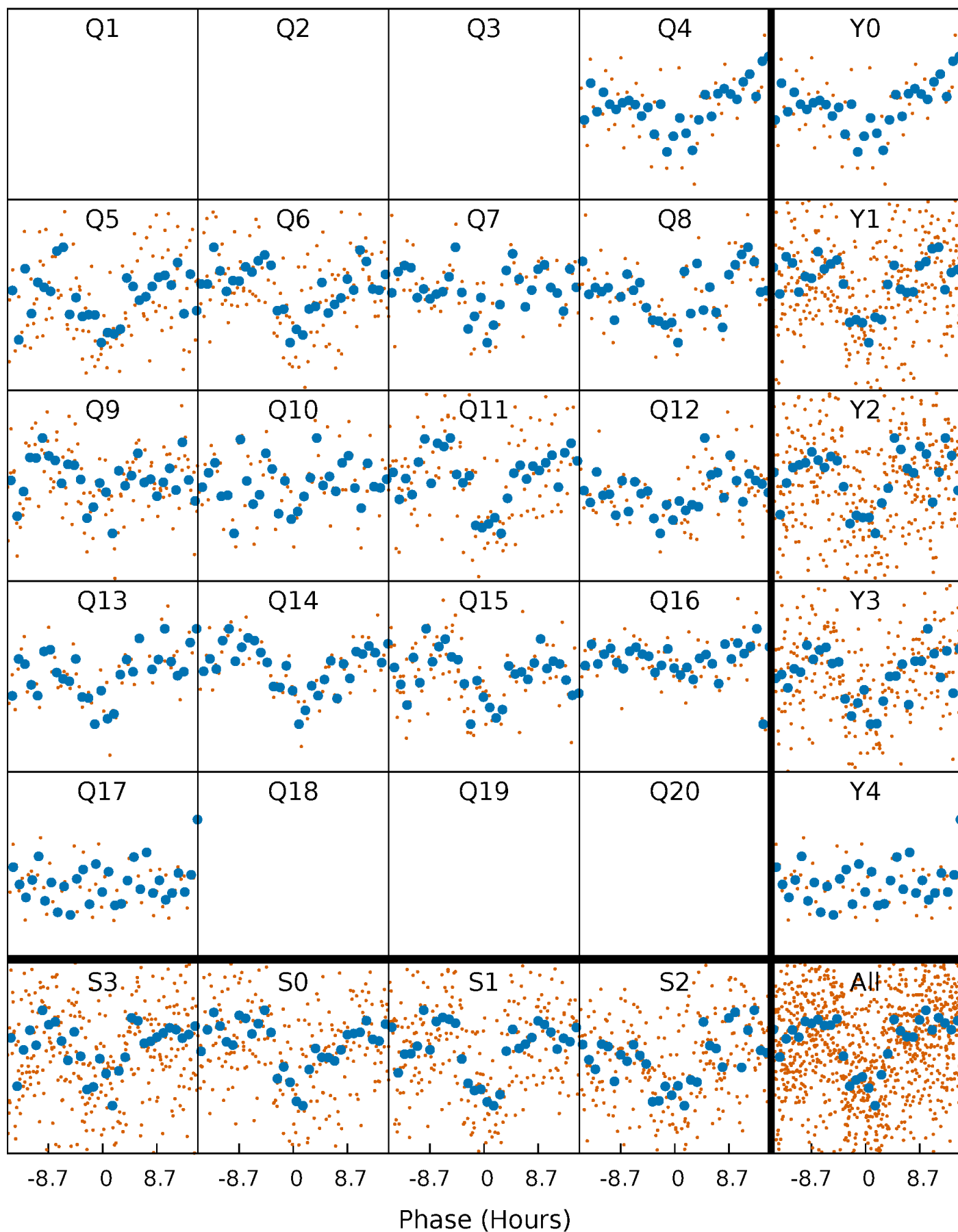


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



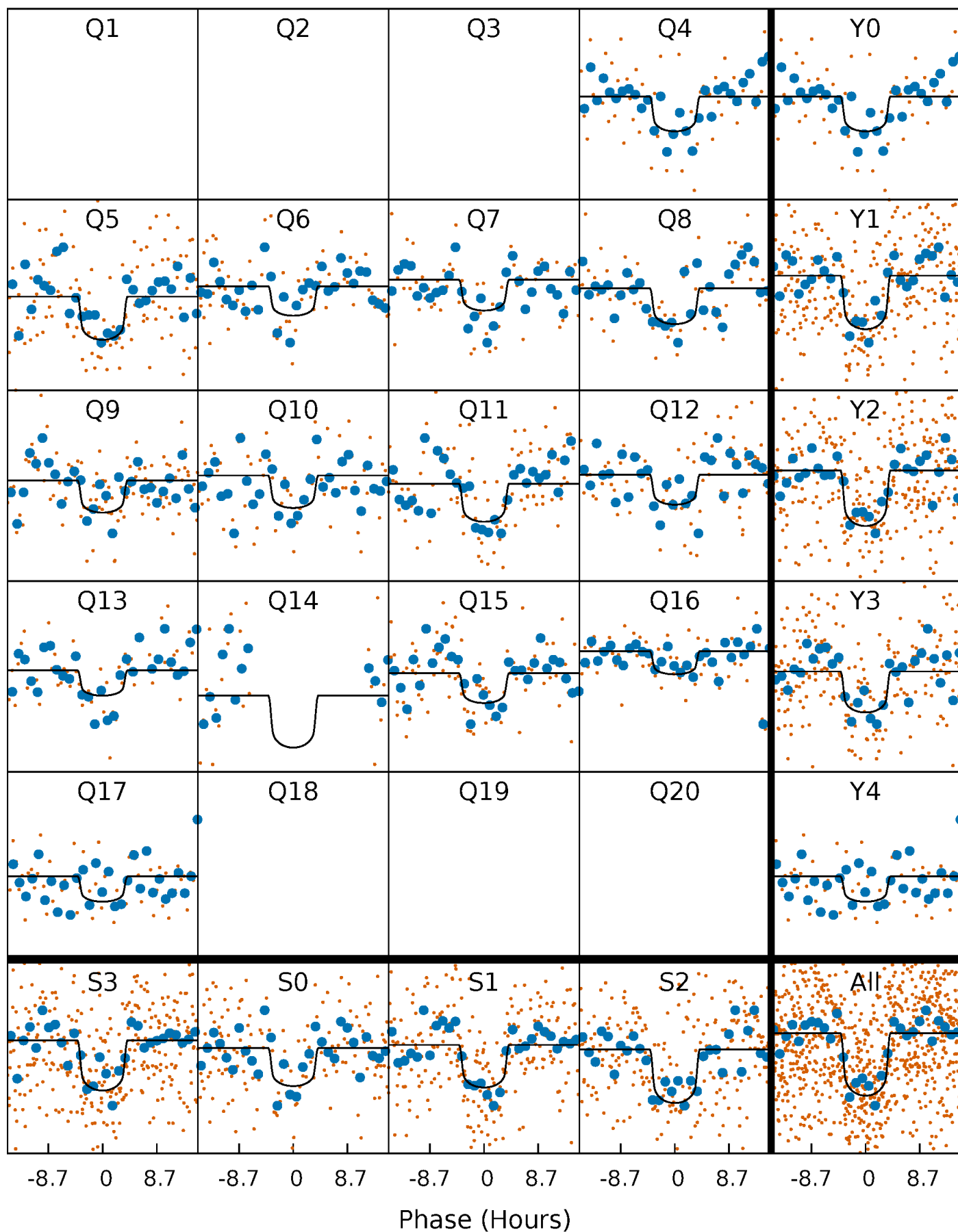
PDC Quarter-Phased Transit Curves

TCE 011968463-03 P= 56.415882 Days $T_0=163.118298$ (BKJD)



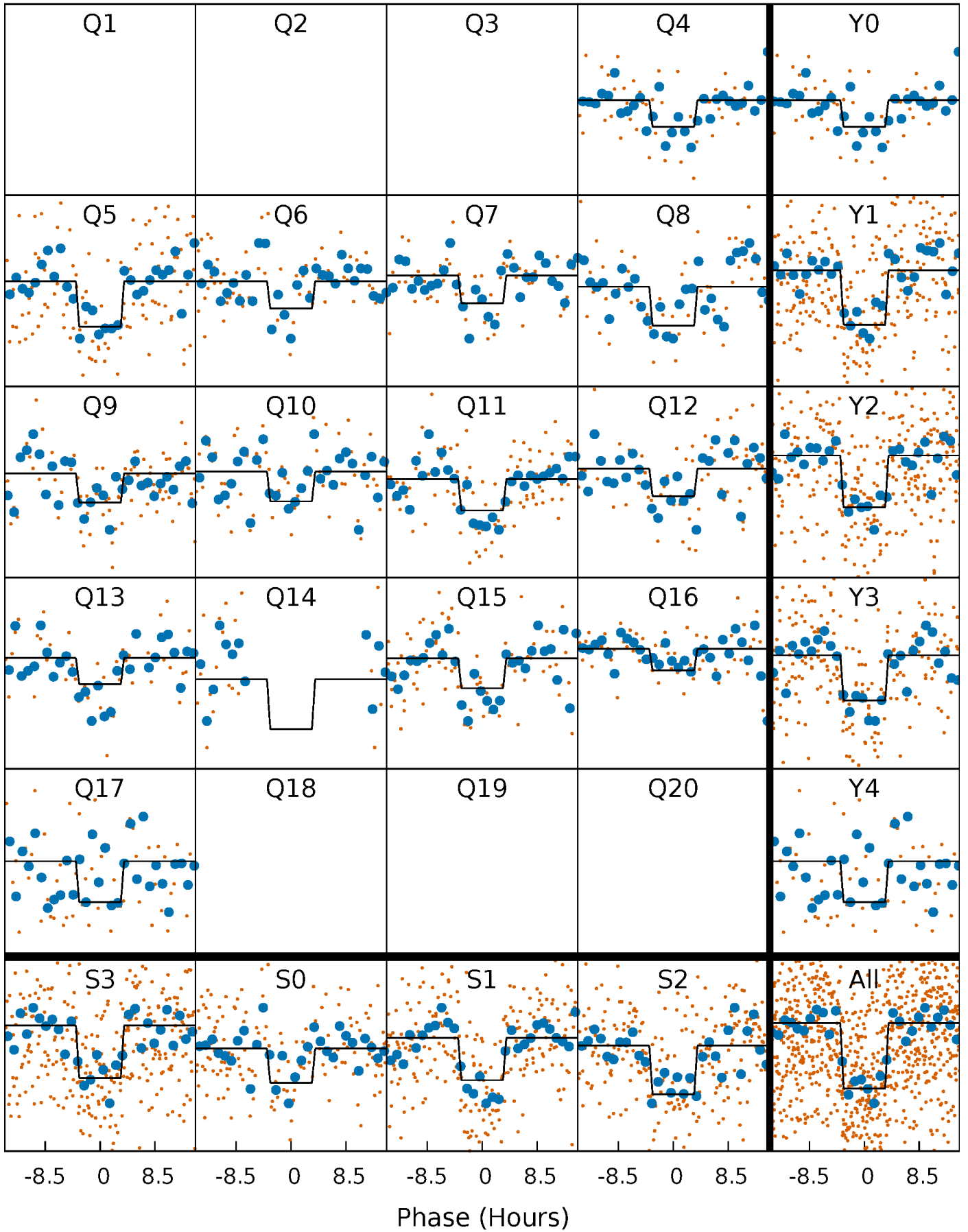
DV Quarter-Phased Transit Curves

TCE 011968463-03 P= 56.415882 Days $T_0=163.118298$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

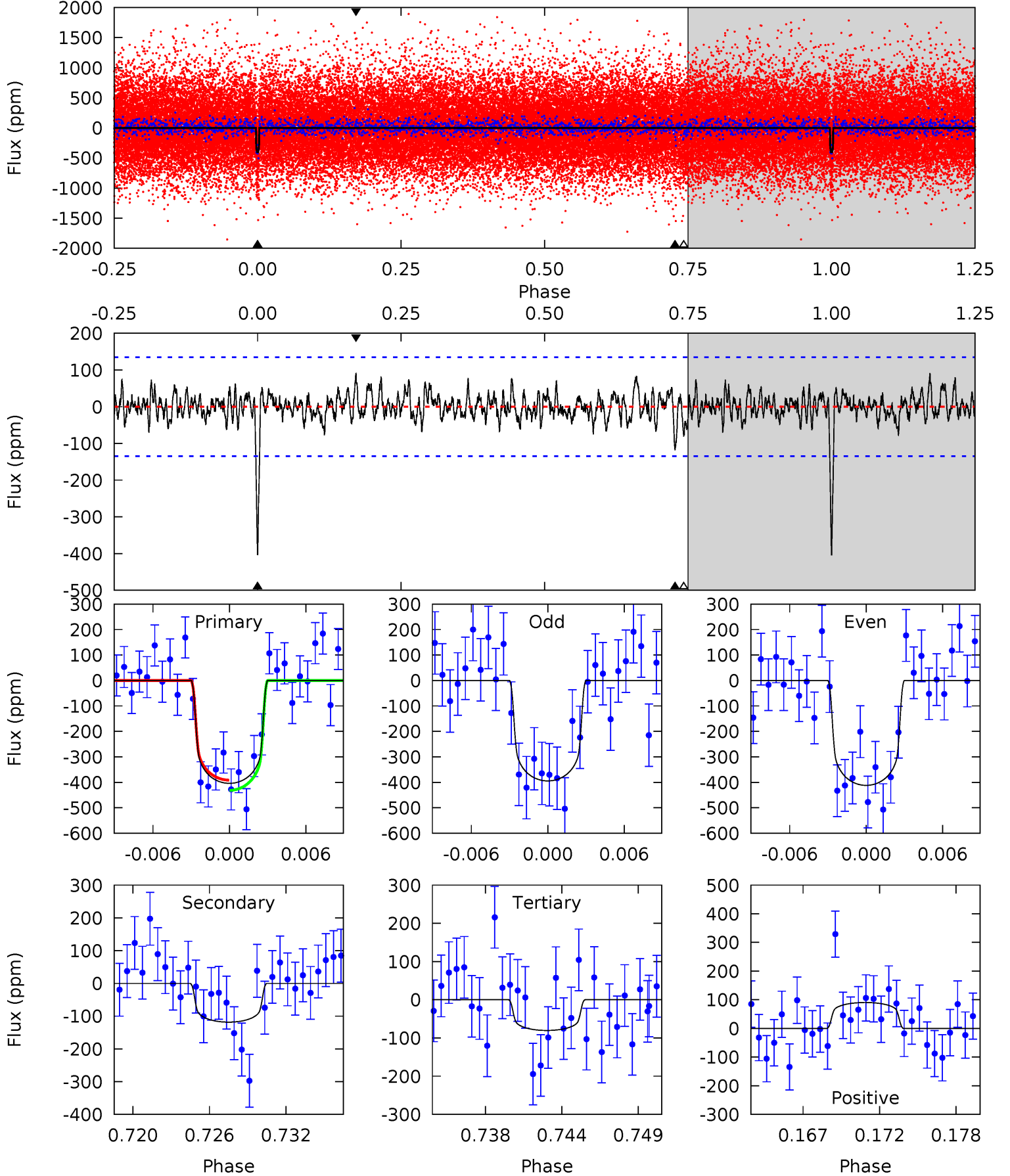
TCE 011968463-03 P= 56.416201 Days $T_0=163.115893$ (BKJD)



DV Model-Shift Uniqueness Test

011968463-03, P = 56.415882 Days, E = 163.118298 Days

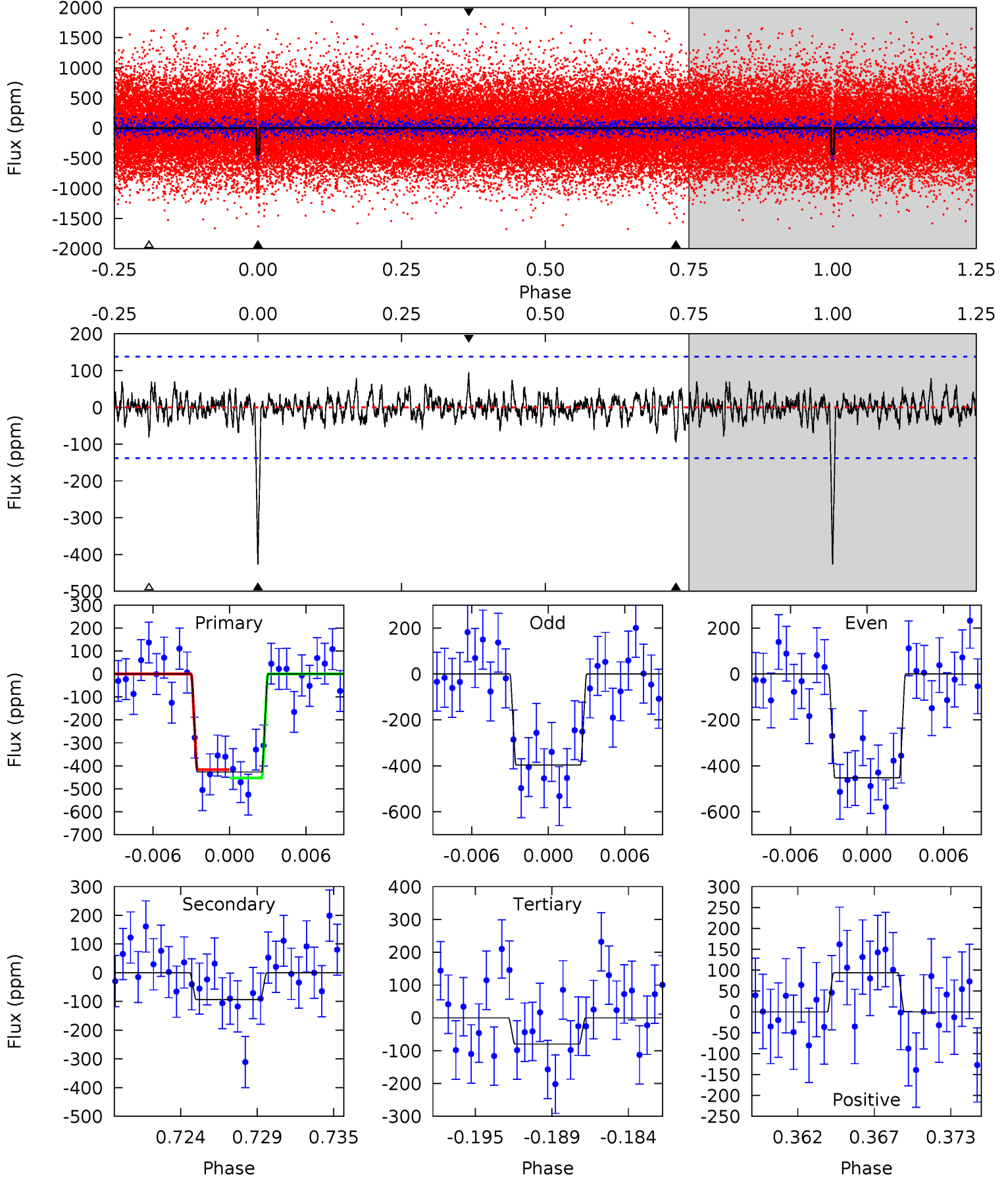
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	4.50	3.06	3.44	5.13	2.75	1.08	12.3	11.9	1.45	1.07	0.33	0.99	0.18	0.76



Alt Model-Shift Uniqueness Test

011968463-03, P = 56.416201 Days, E = 163.115893 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	3.47	2.97	3.49	5.14	2.77	0.91	12.9	12.4	0.50	-0.02	1.05	0.96	0.18	0.68



Stellar Parameters For KIC 011968463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6325^{+174}_{-261}	$4.409^{+0.058}_{-0.218}$	$-0.040^{+0.250}_{-0.300}$	$1.112^{+0.388}_{-0.129}$	$1.157^{+0.169}_{-0.169}$	$1.184^{+0.368}_{-0.666}$
	+3%/-4%	+1%/-5%	+625%/-750%	+35%/-12%	+15%/-15%	+31%/-56%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011968463-03 / KOI 2433.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-118 ± 26	$2.68^{+0.86}_{-0.72}$	762^{+61}_{-40}	4676^{+674}_{-498}	812^{+761}_{-371}
Alt.	-93 ± 27	$2.68^{+0.81}_{-0.74}$	762^{+55}_{-42}	4422^{+701}_{-427}	626^{+690}_{-290}

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

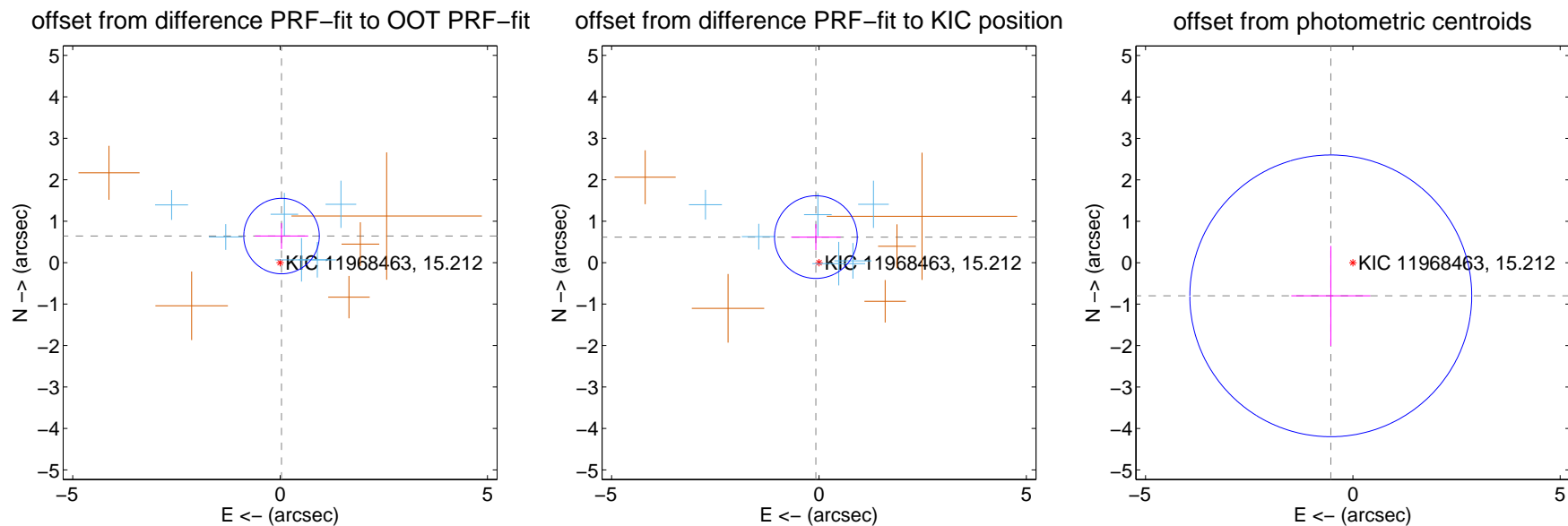
DV Centroid Data

Supplemental centroid analysis for 011968463-03. Kepler magnitude: 15.21. Transit SNR 12.55

There are 6 quarters with good PRF difference image offsets

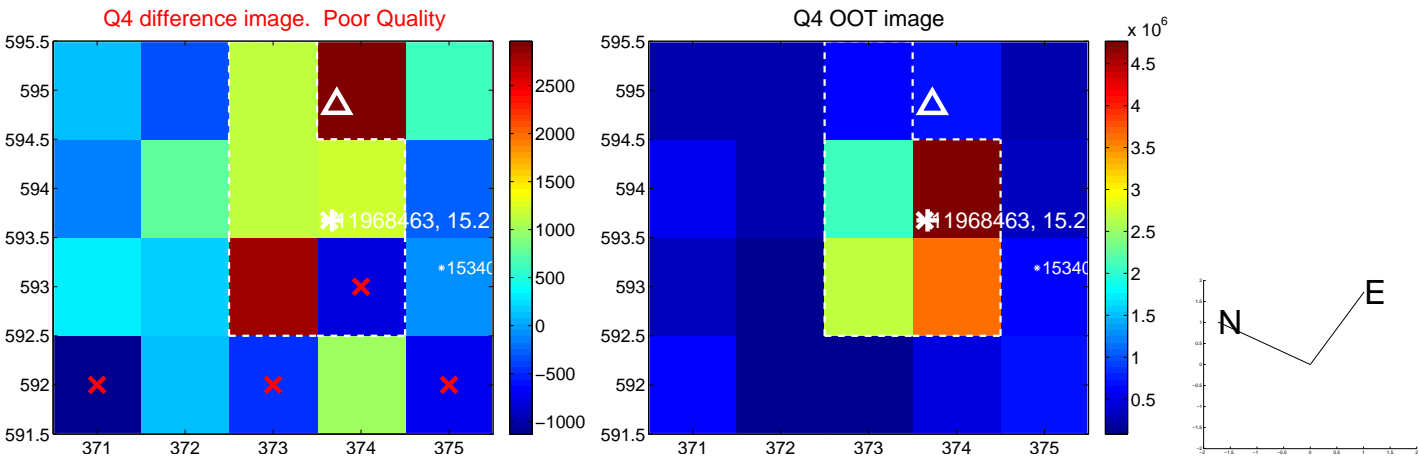
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.642 ± 0.303	2.12	-0.035 ± 0.642	0.641 ± 0.310
PRF-fit source offset from KIC position	0.621 ± 0.332	1.87	0.075 ± 0.596	0.616 ± 0.311
photometric centroid source offset	0.96 ± 1.13	0.85	0.53 ± 0.95	-0.80 ± 1.20

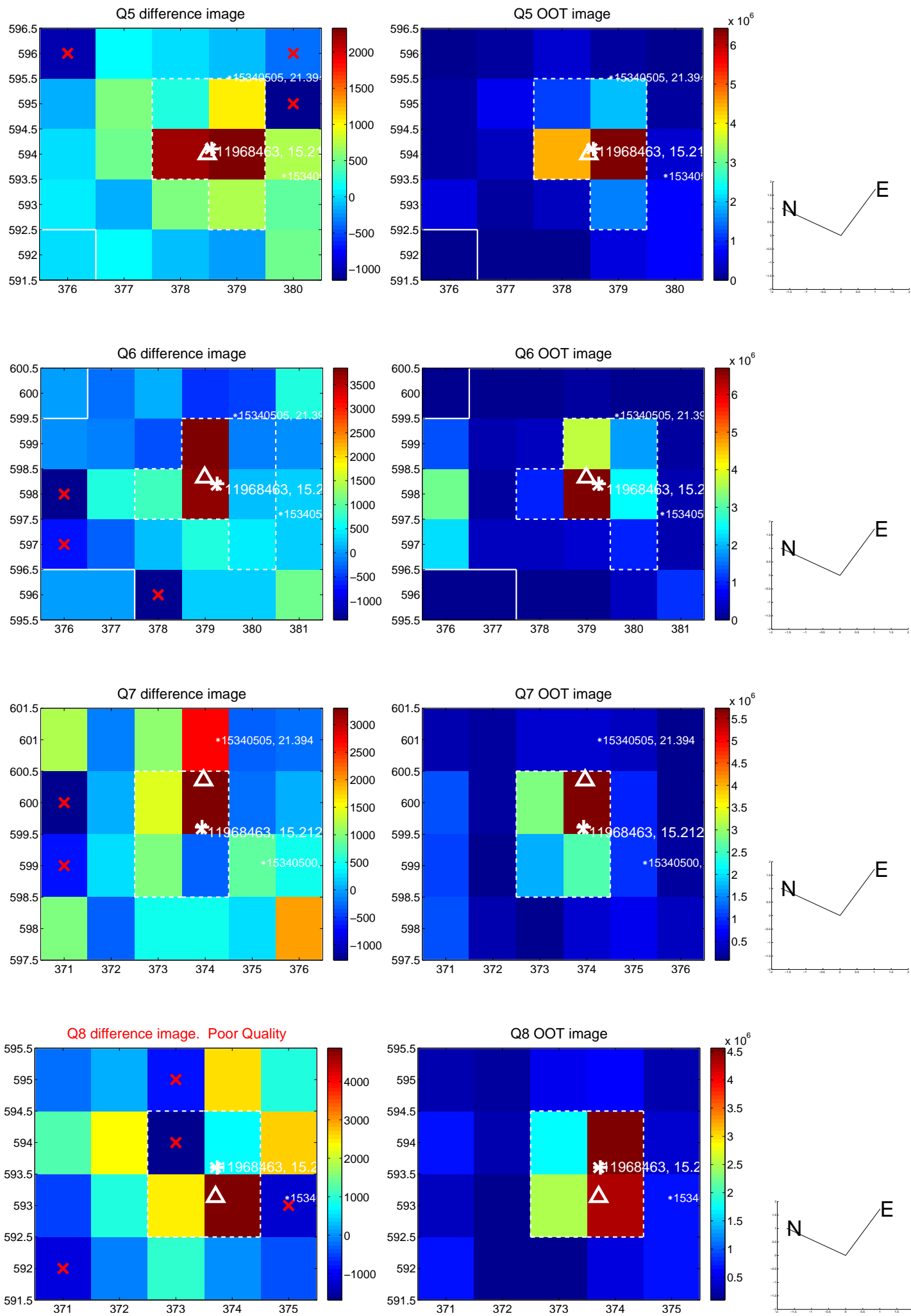


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

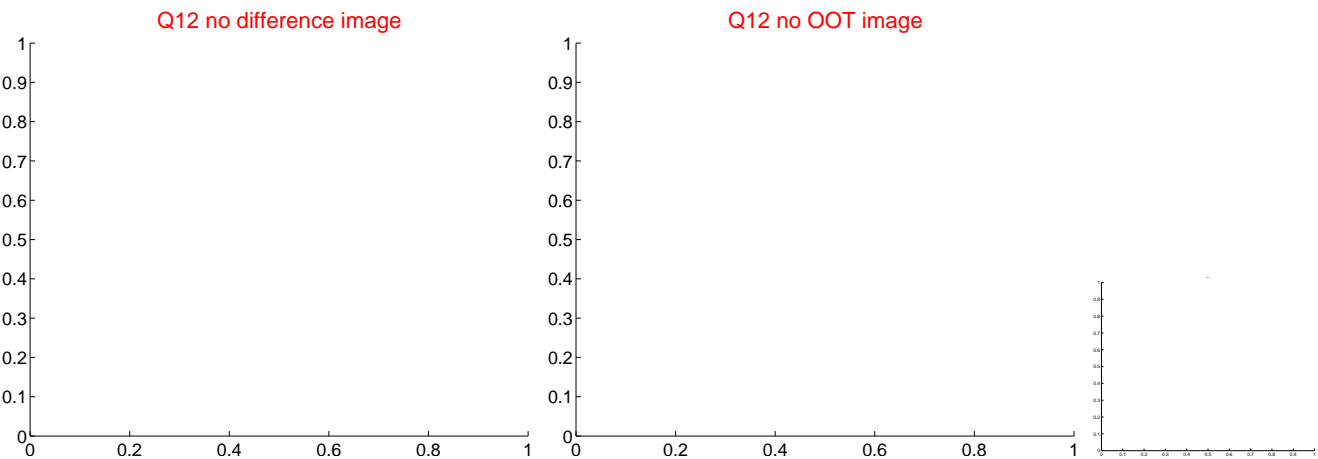
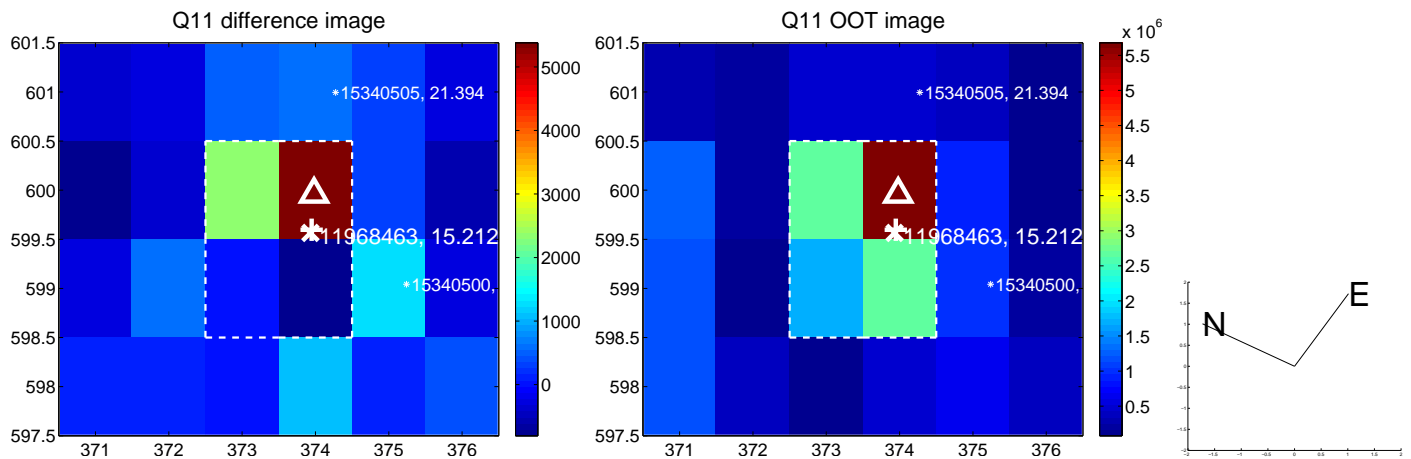
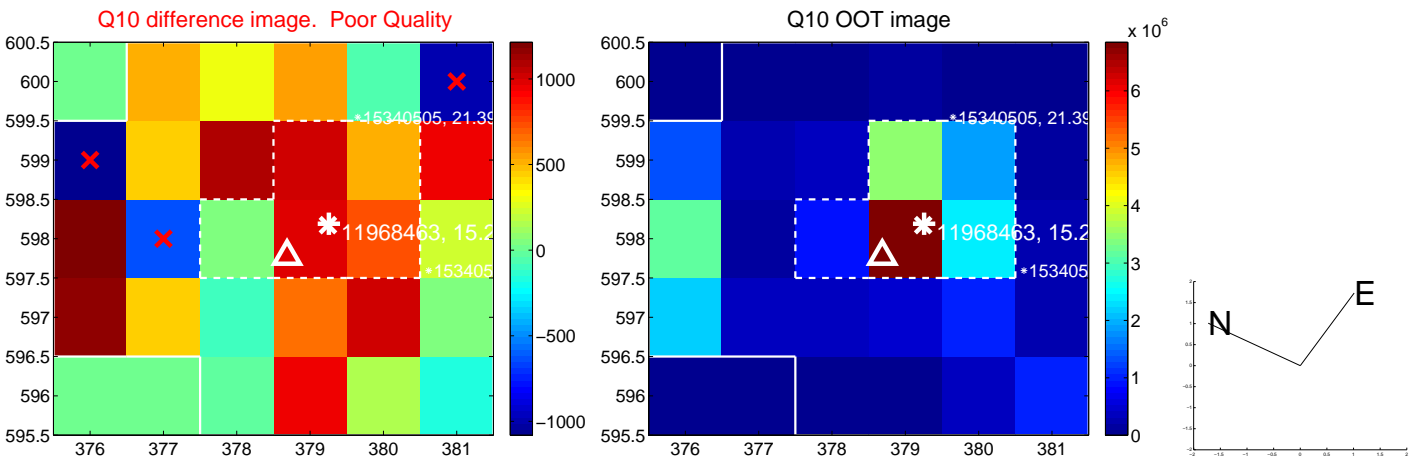
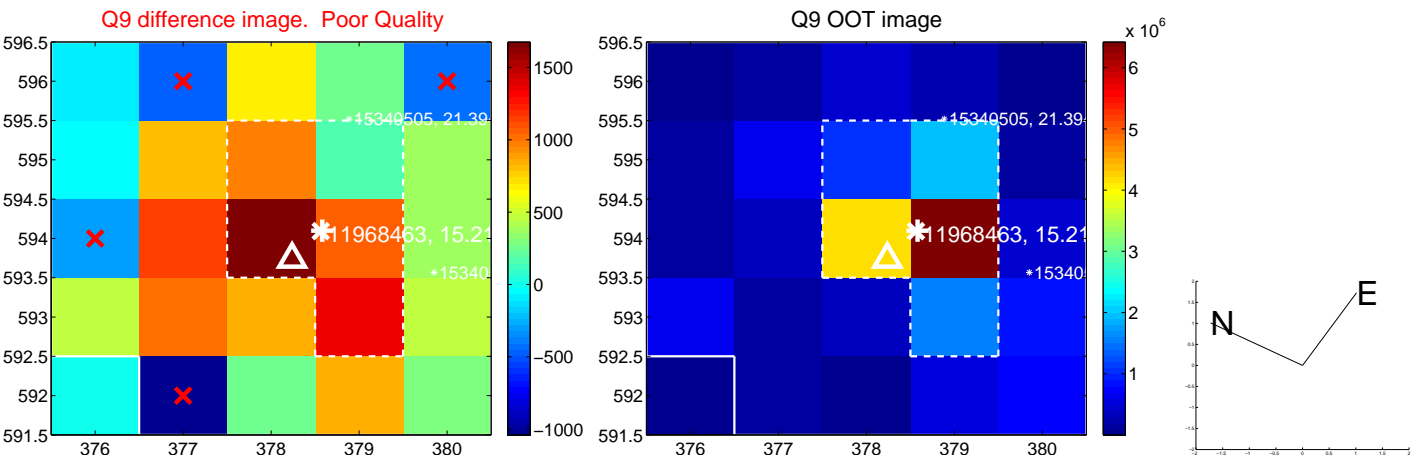
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



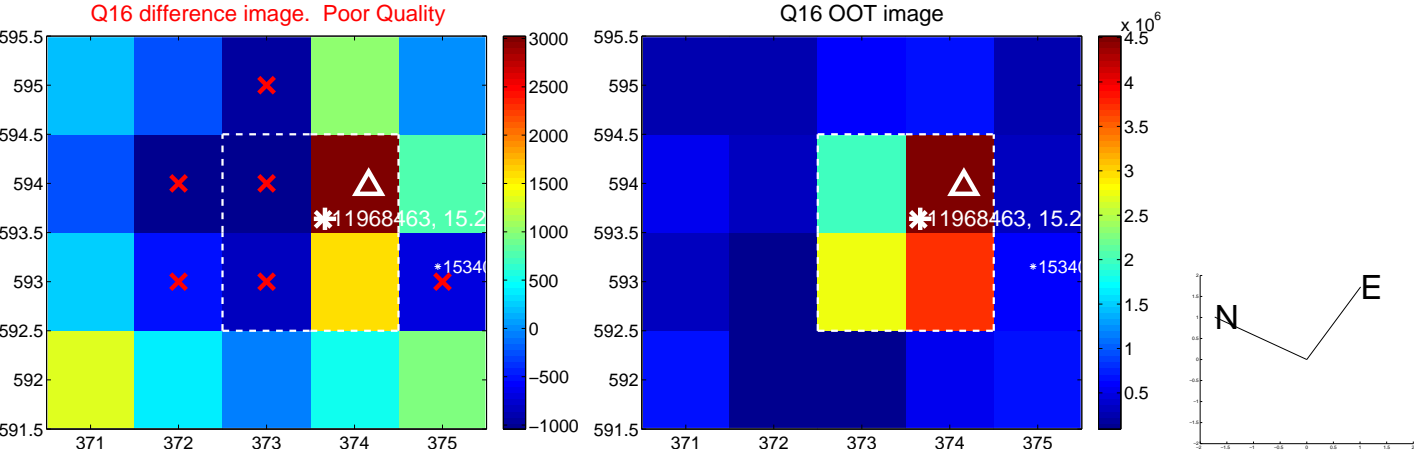
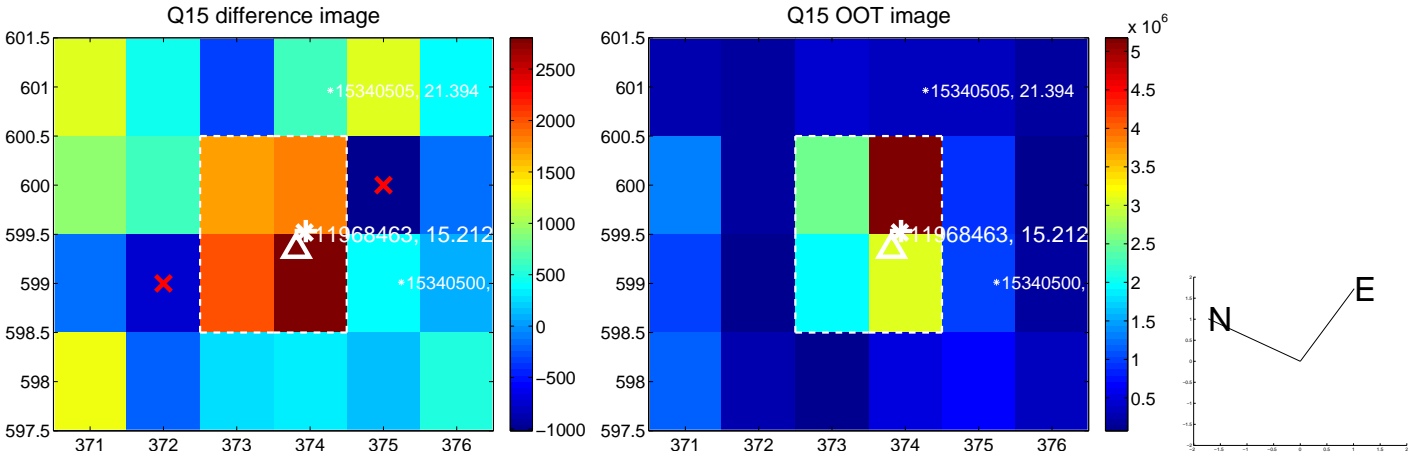
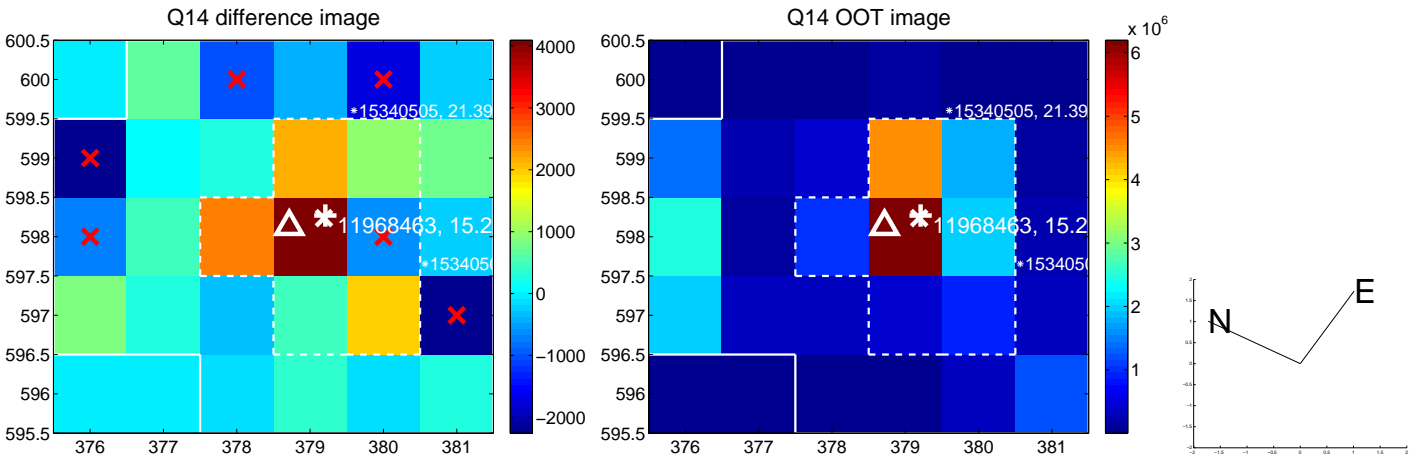
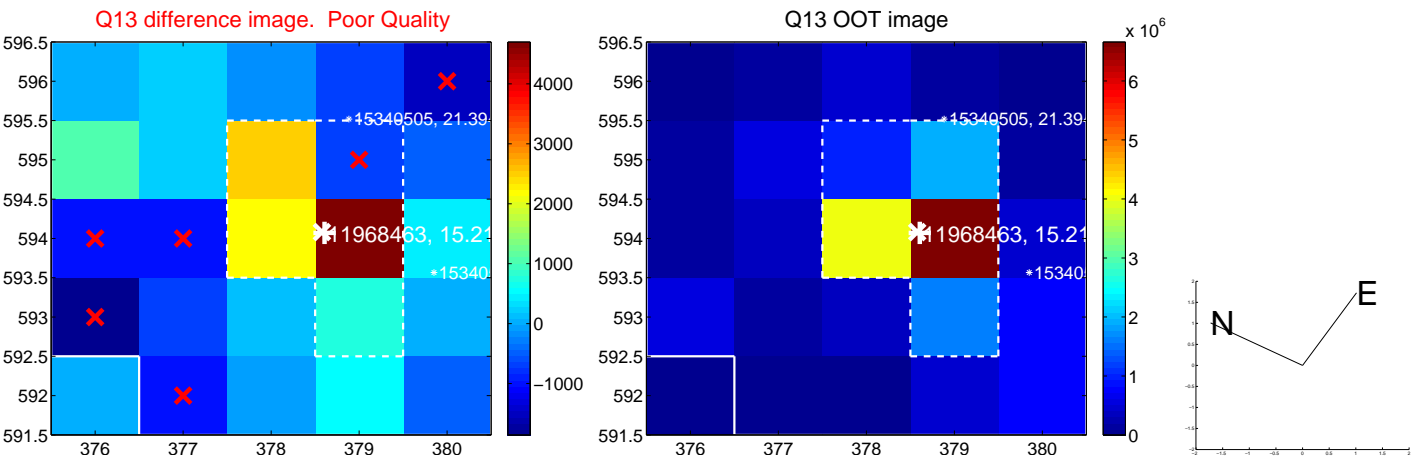
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



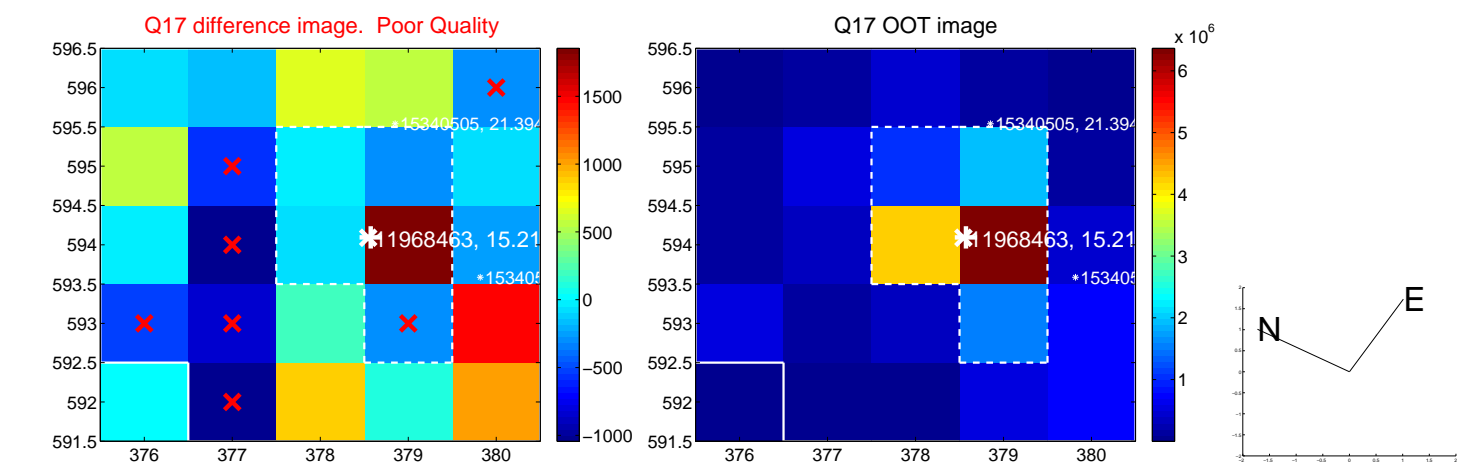
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



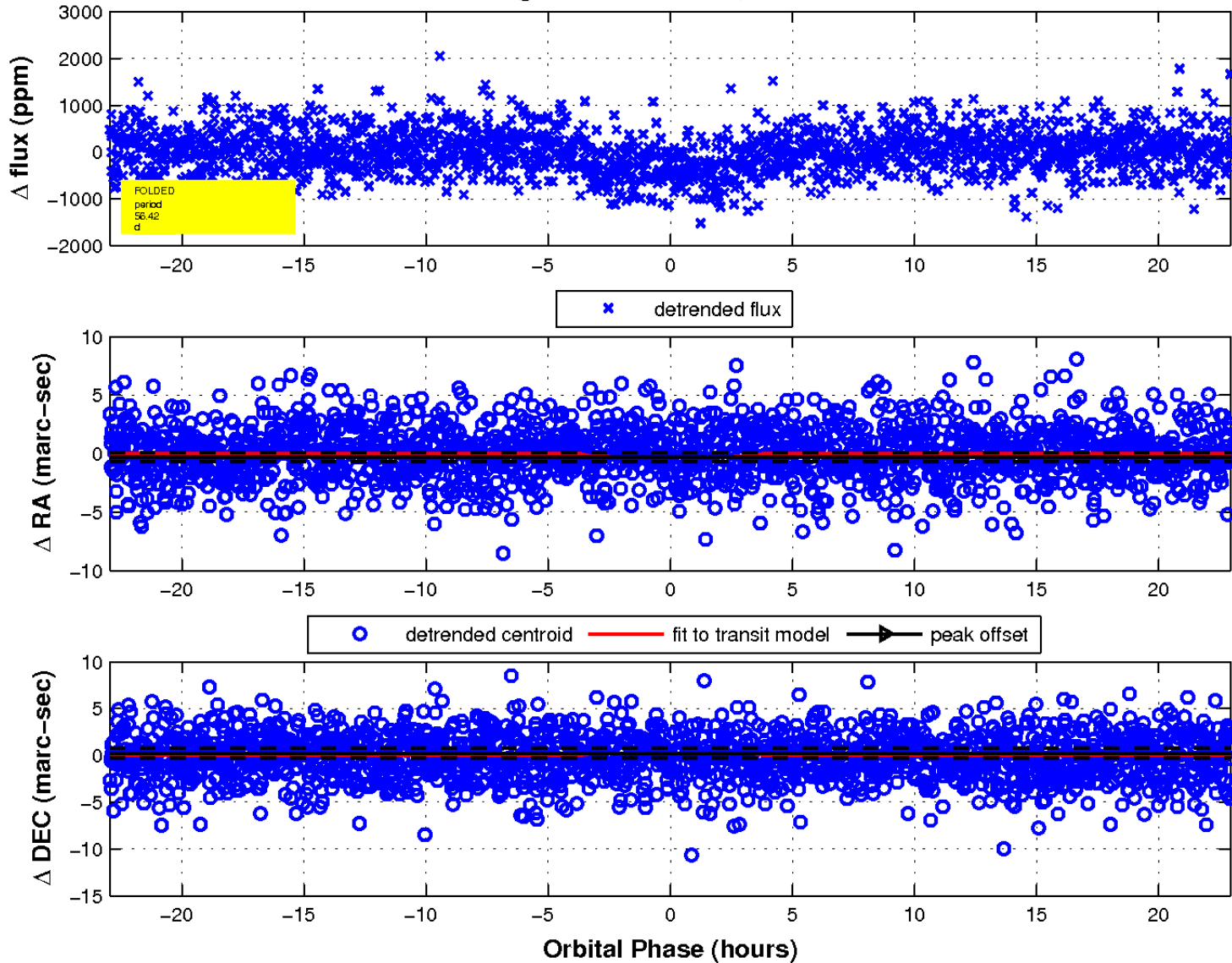
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

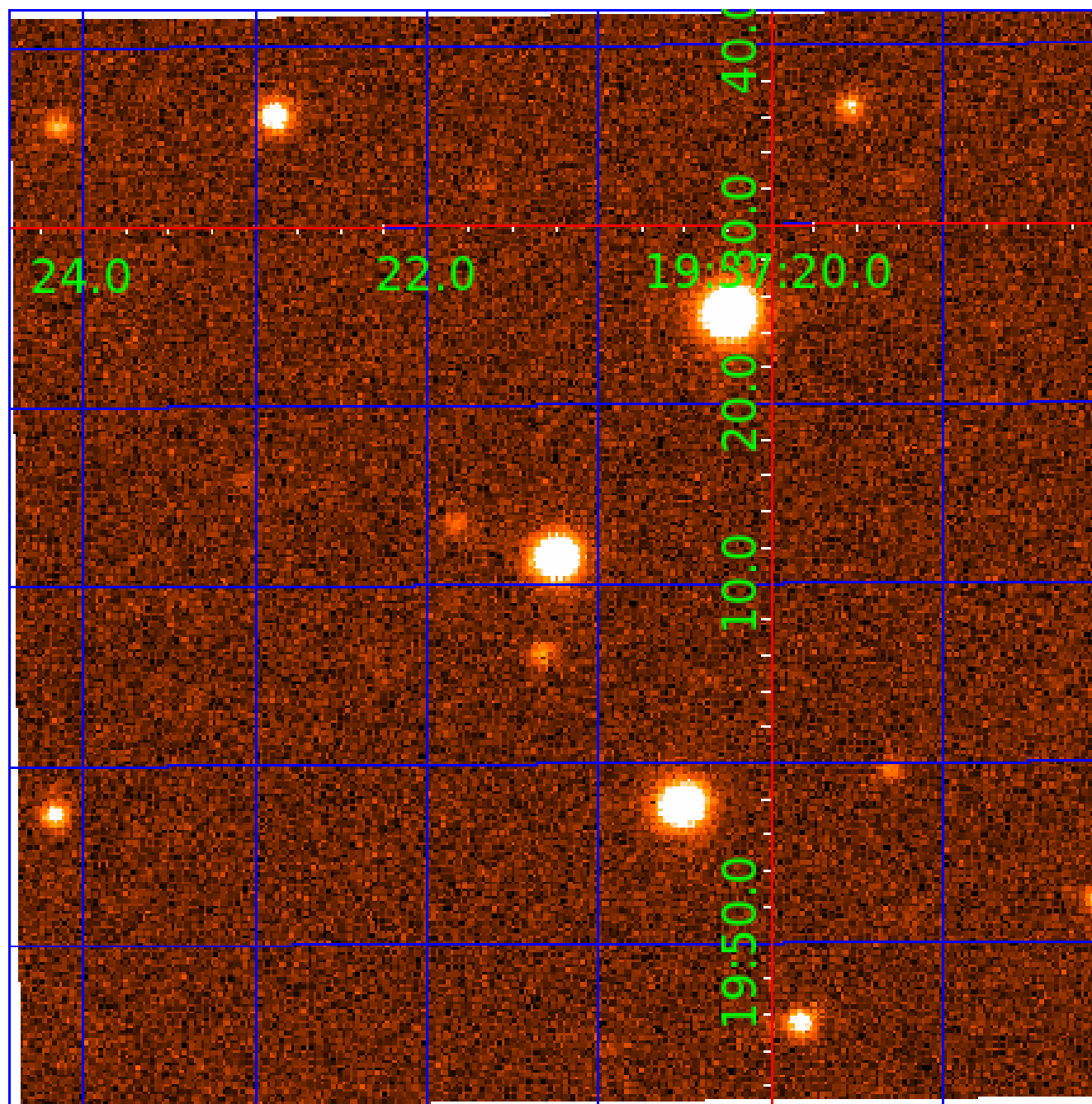


fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination



KIC 011968463

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})
011968463-01	OBS	2433.02	10.043813	132.653095	444.5	5.932	24.0	25.3	1.11	6325	2.98	193.79
011968463-02	OBS	2433.01	15.162276	144.471175	425.7	7.078	19.0	20.7	1.11	6325	2.90	111.91
011968463-03	OBS	2433.03	56.415882	163.118298	442.8	7.651	11.7	12.5	1.11	6325	2.59	19.41
011968463-04	OBS	2433.04	27.903812	154.943039	282.9	5.381	9.2	9.7	1.11	6325	2.11	49.62
011968463-05	OBS	2433.05	0.646746	132.023559	109.0	0.888	9.1	11.0	1.11	6325	1.19	7508.64
011968463-06	OBS	2433.07	86.432830	163.724557	514.8	7.301	7.2	9.3	1.11	6325	2.98	10.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968463-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011968463-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011968463-03	OBS	PC	0.92	0	0	0	0	NO_COMMENT
011968463-04	OBS	PC	0.64	0	0	0	0	NO_COMMENT
011968463-05	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
011968463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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

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

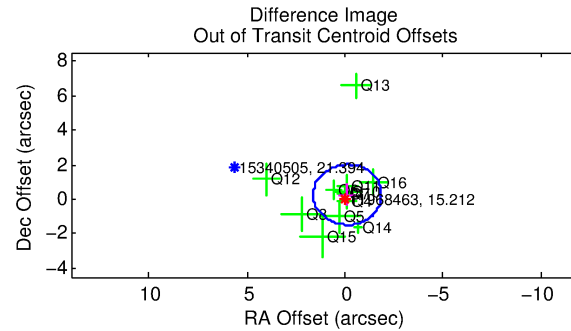
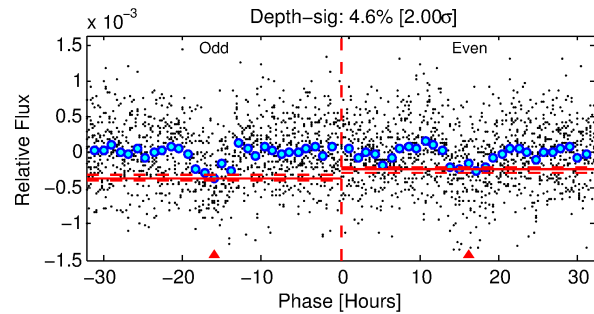
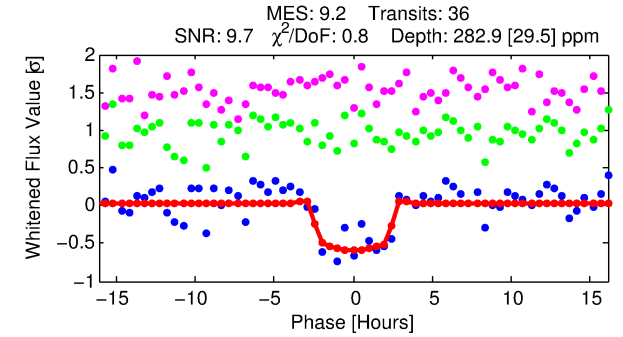
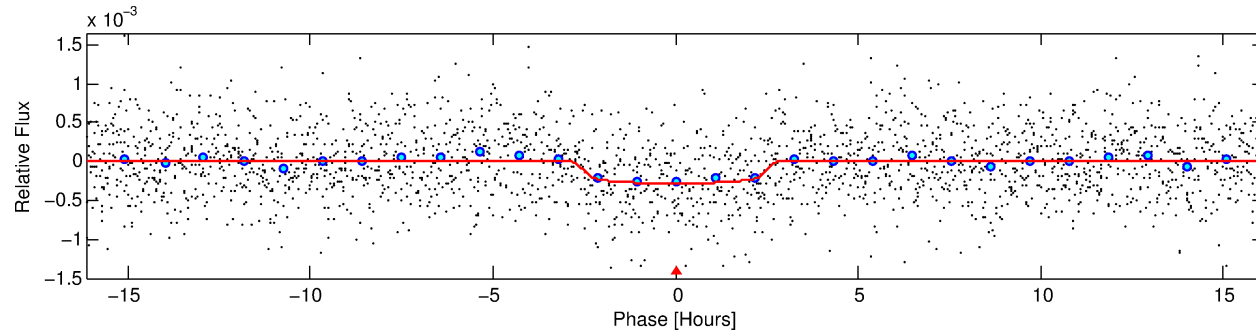
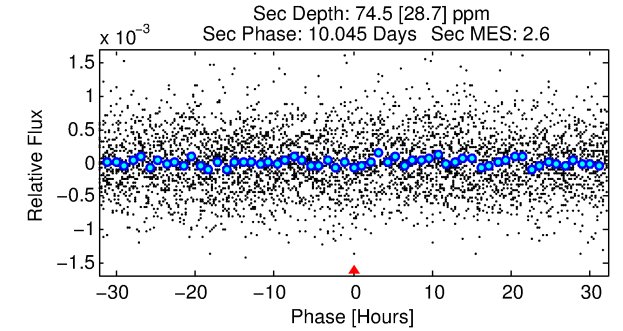
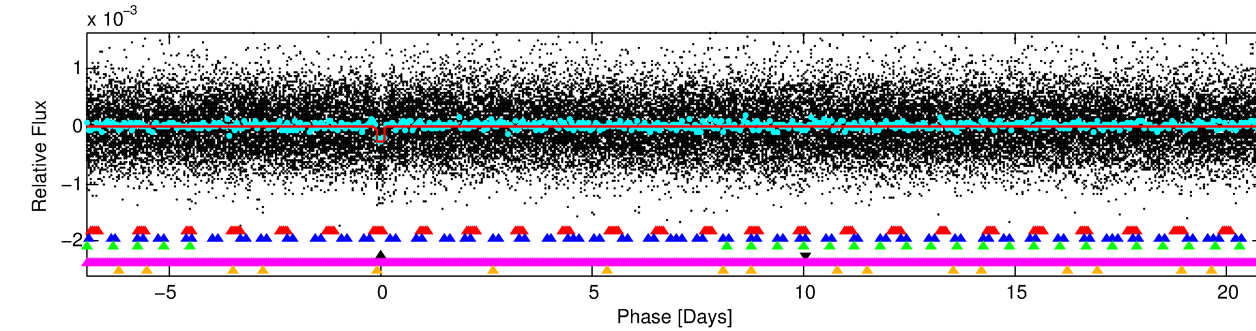
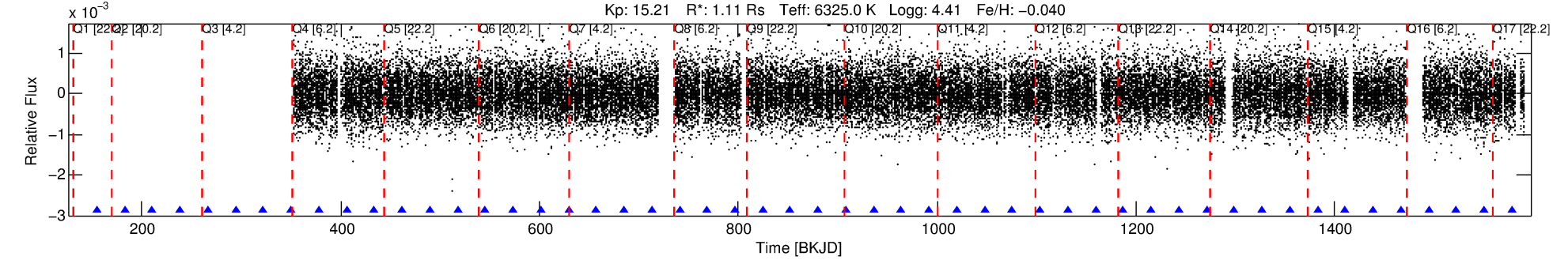
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011968463-04

No Significant Match Found

DV One-Page Summary

KIC: 11968463 Candidate: 4 of 6 Period: 27.904 d
KOI: K02433.04 Corr: 0.973



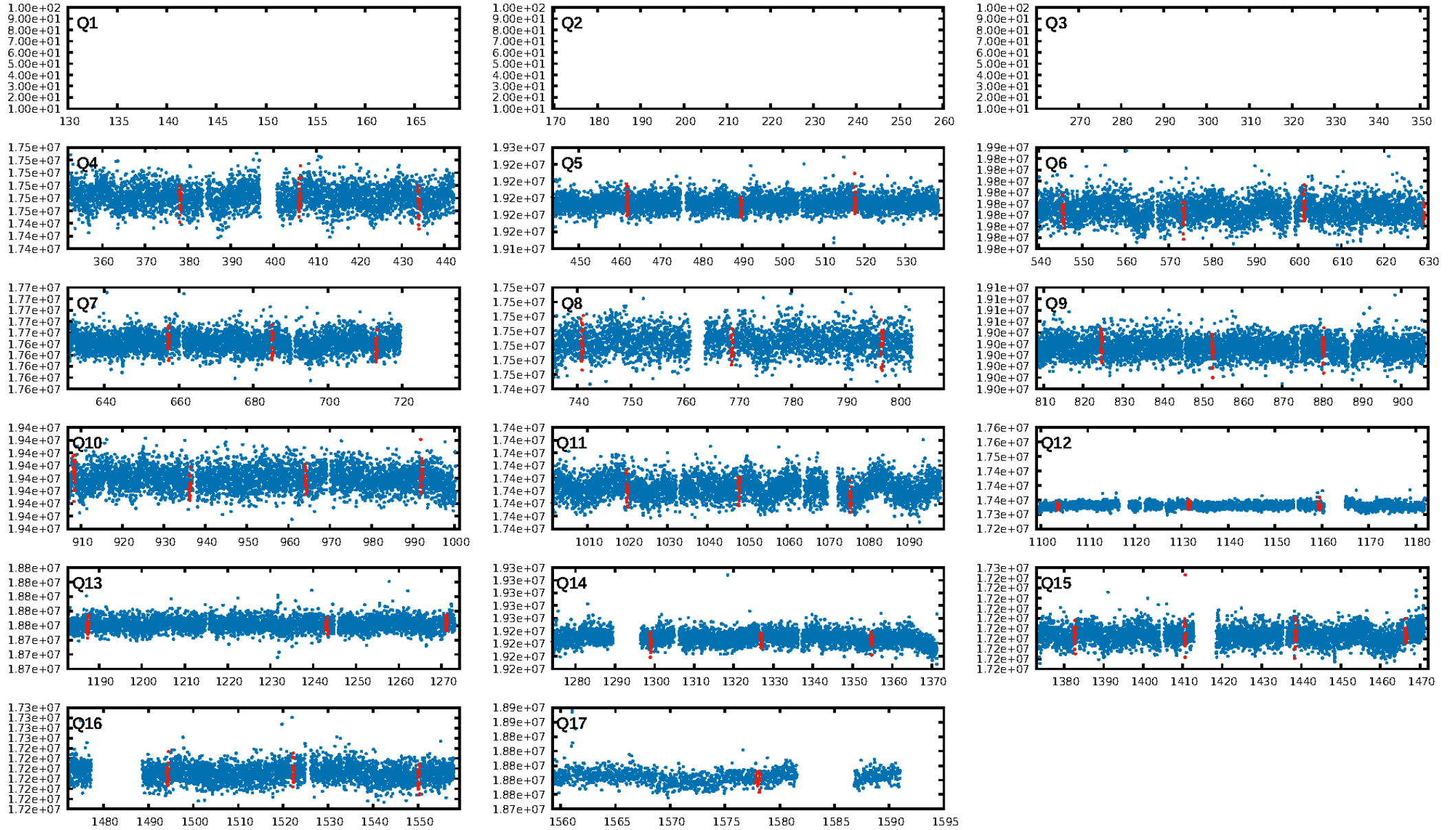
DV Fit Results:

Period = 27.90381 [0.00041] d
Epoch = 154.9430 [0.0131] BKJD
Rp/R* = 0.0174 [0.0068]
a/R* = 22.69 [46.83]
b = 0.84 [0.73]
Seff = 49.62 [21.82]
Teq = 677 [74] K
Rp = 2.11 [1.11] Re
a = 0.1890 [0.0542] AU
Ag = 329.48 [318.62] [1.03σ]
Teffp = 4458 [995] K [3.79σ]

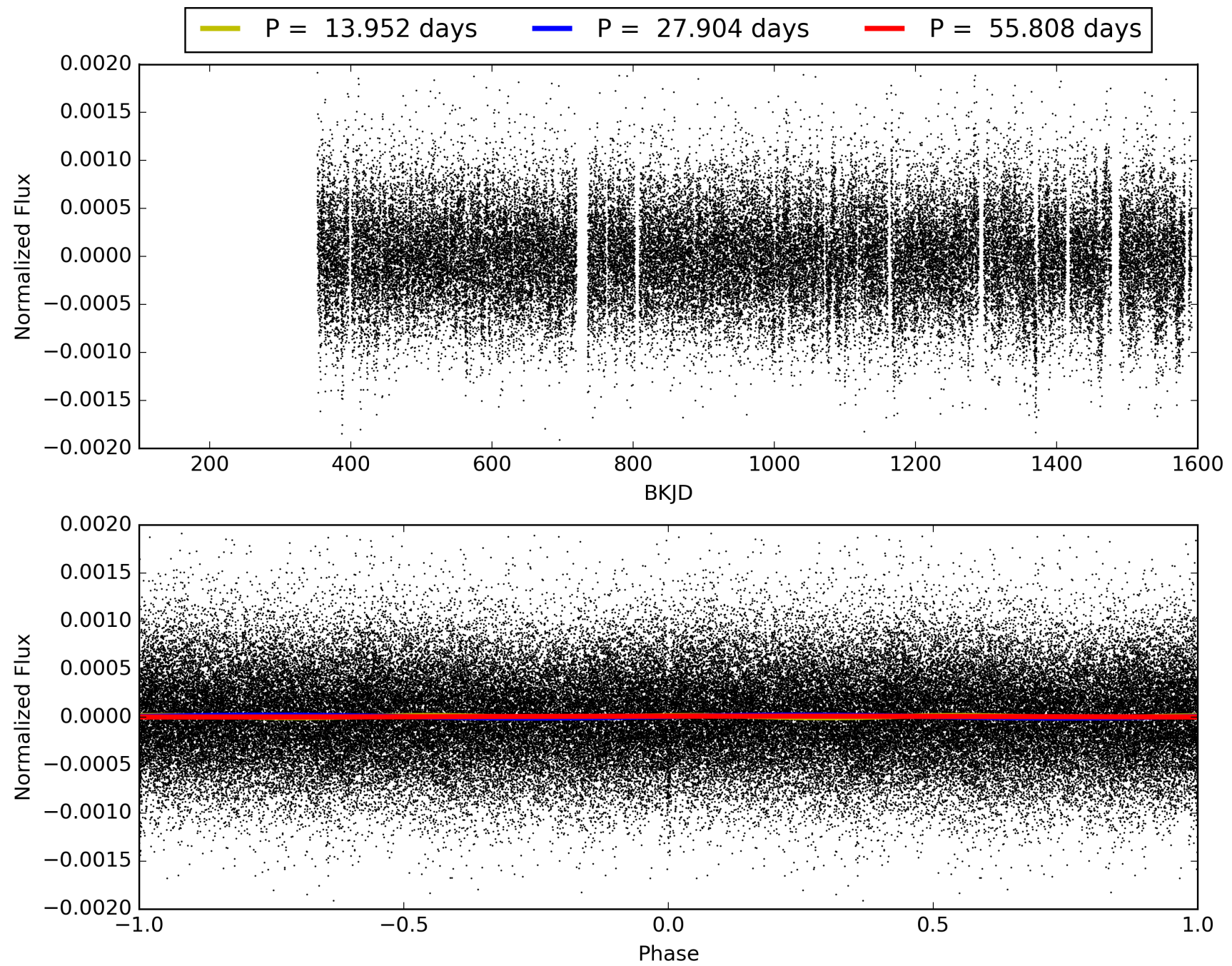
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.39σ]
LongPeriod-sig: 100.0% [73.15σ]
ModelChiSquare2-sig: 76.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.91e-20
RollingBand-fgt: 1.00 [35/35]
GhostDiagnostic-chr: 2.315
Centroid-sig: 34.8%
Centroid-so: 1.171 arcsec [0.93σ]
OotOffset-rm: 0.287 arcsec [0.49σ]
KicOffset-rm: 0.276 arcsec [0.43σ]
OotOffset-st: 3/3/4/2 [12]
KicOffset-st: 3/3/4/2 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 011968463-04, PDC Light Curves

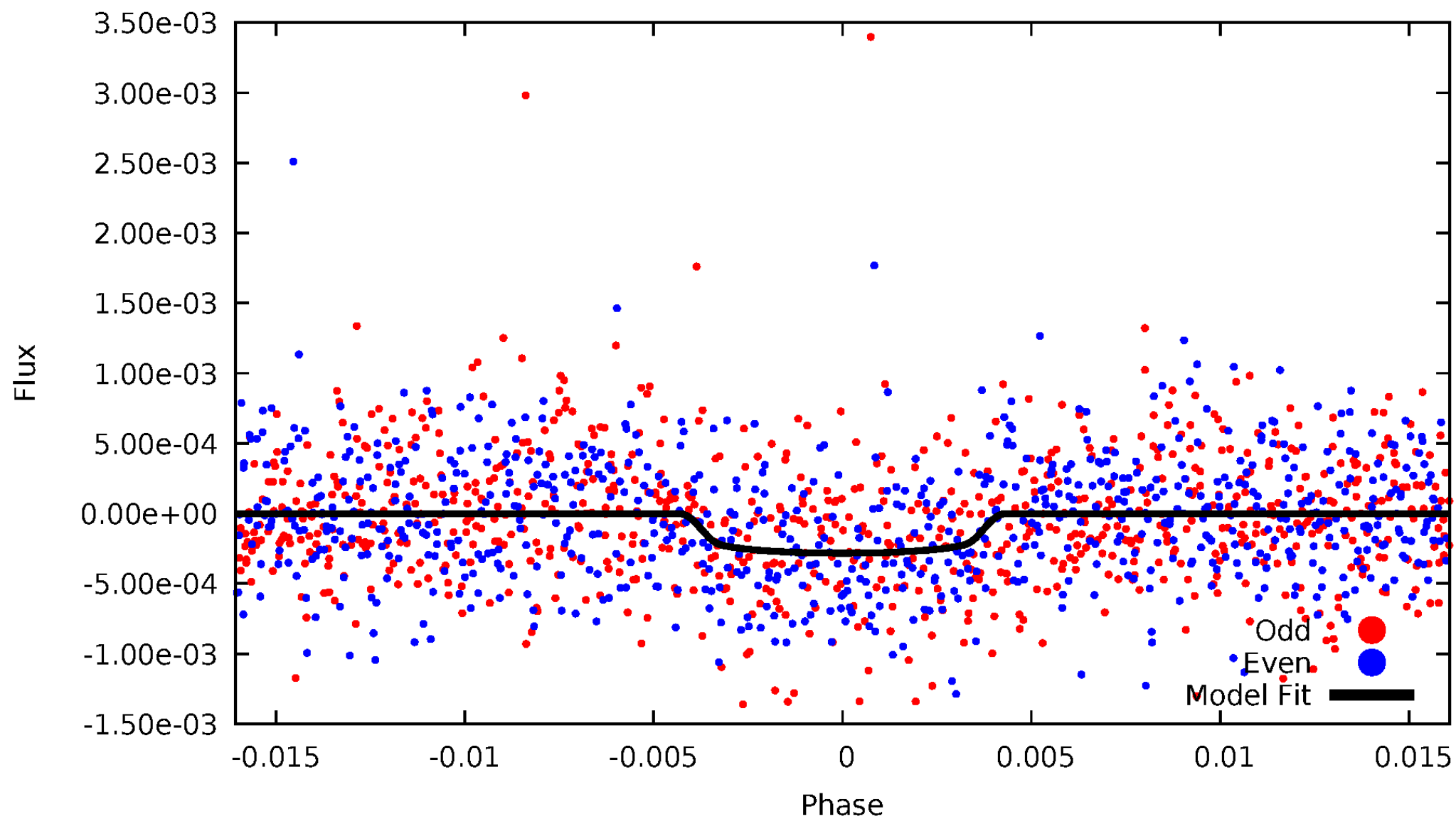


TCE 011968463-04



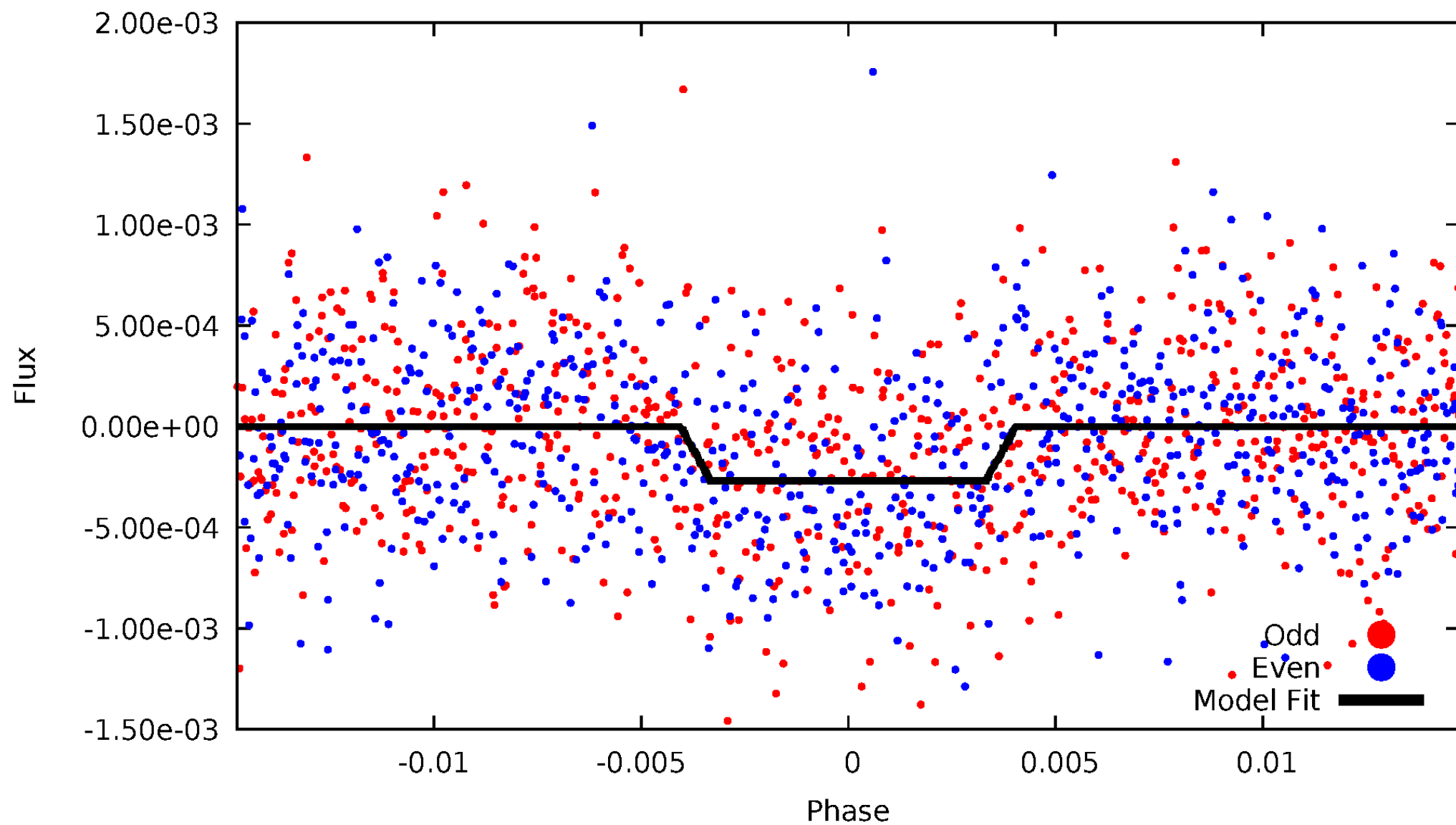
DV Odd/Even

TCE 011968463-04



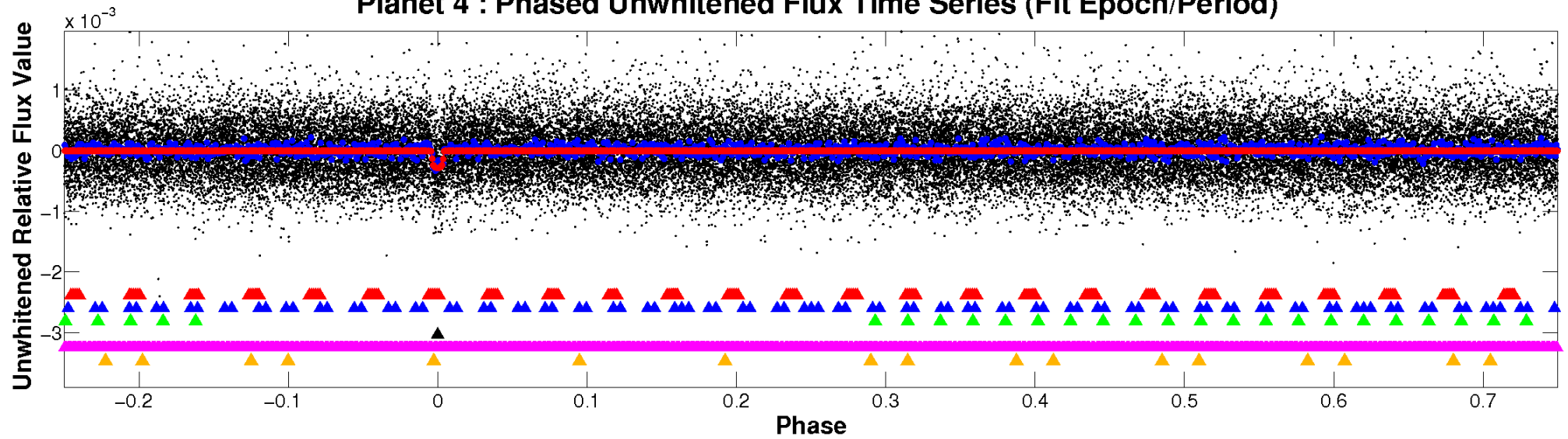
ALT Odd/Even

TCE 011968463-04

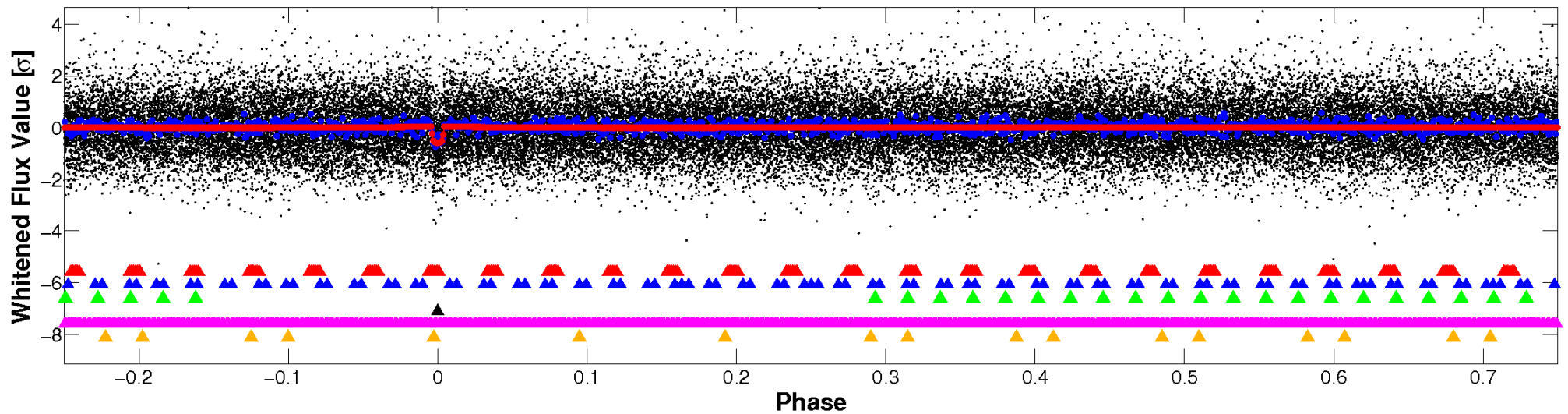


Non-Whitened Vs. Whitened Light Curve

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

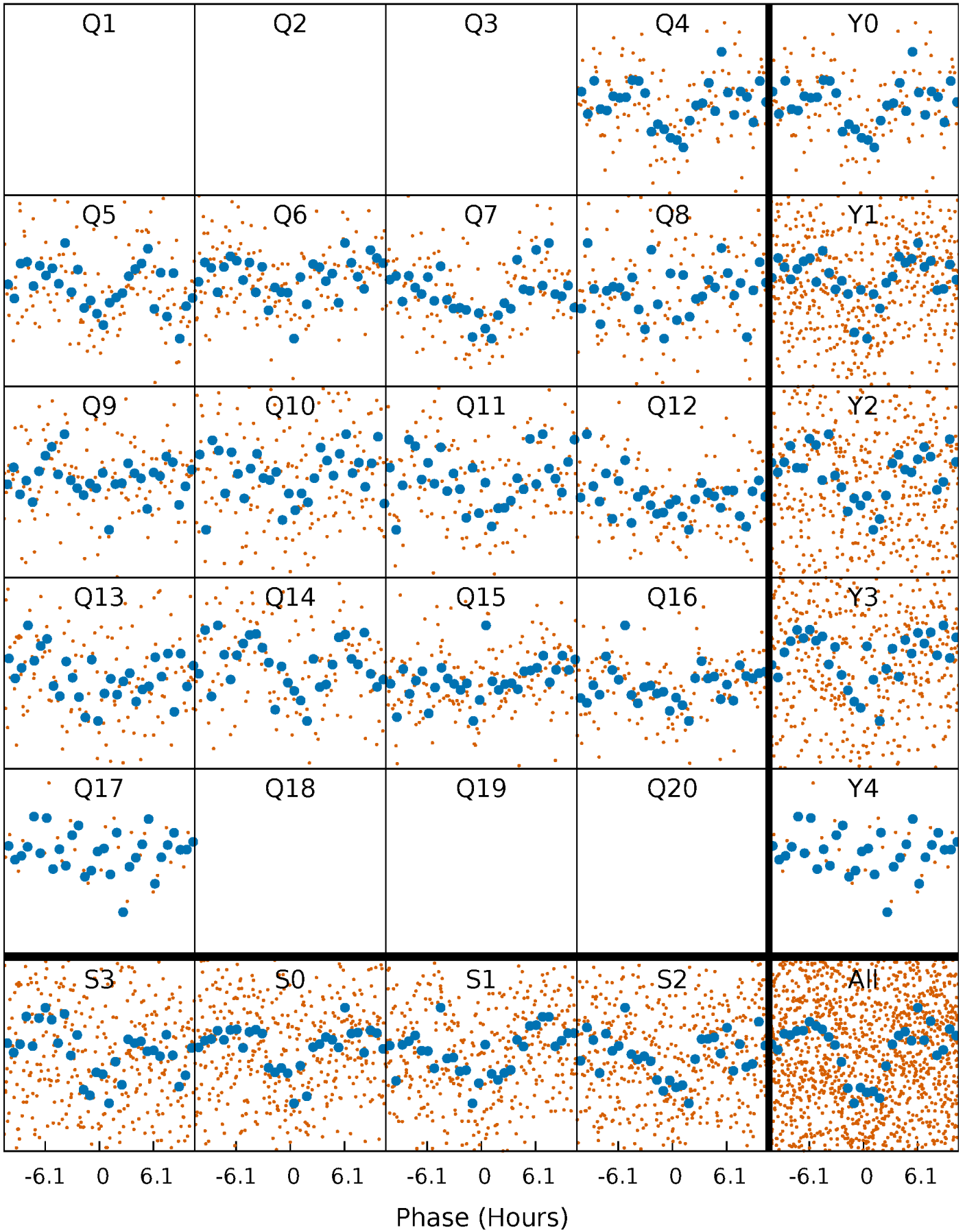


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



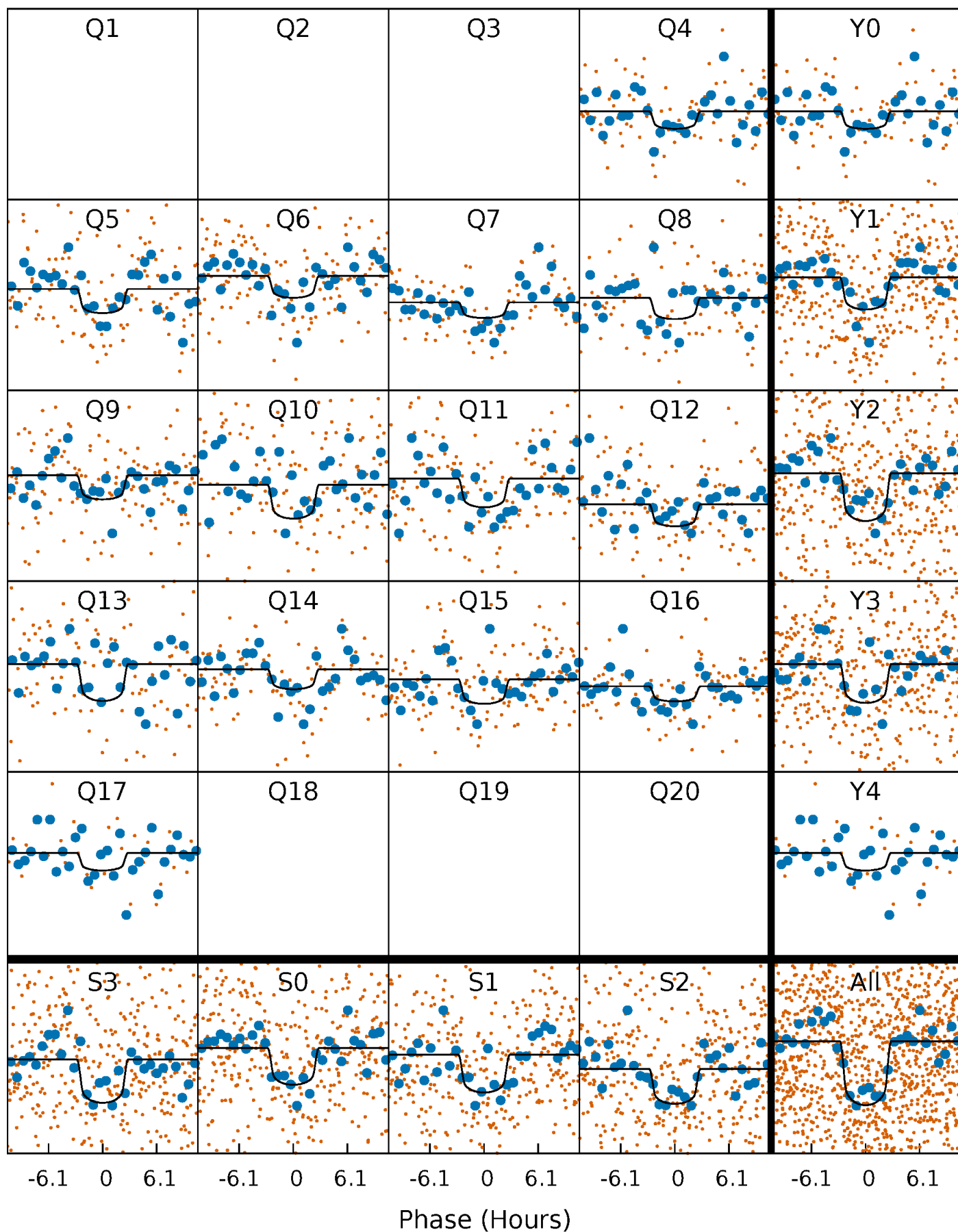
PDC Quarter-Phased Transit Curves

TCE 011968463-04 P= 27.903812 Days $T_0=154.943039$ (BKJD)



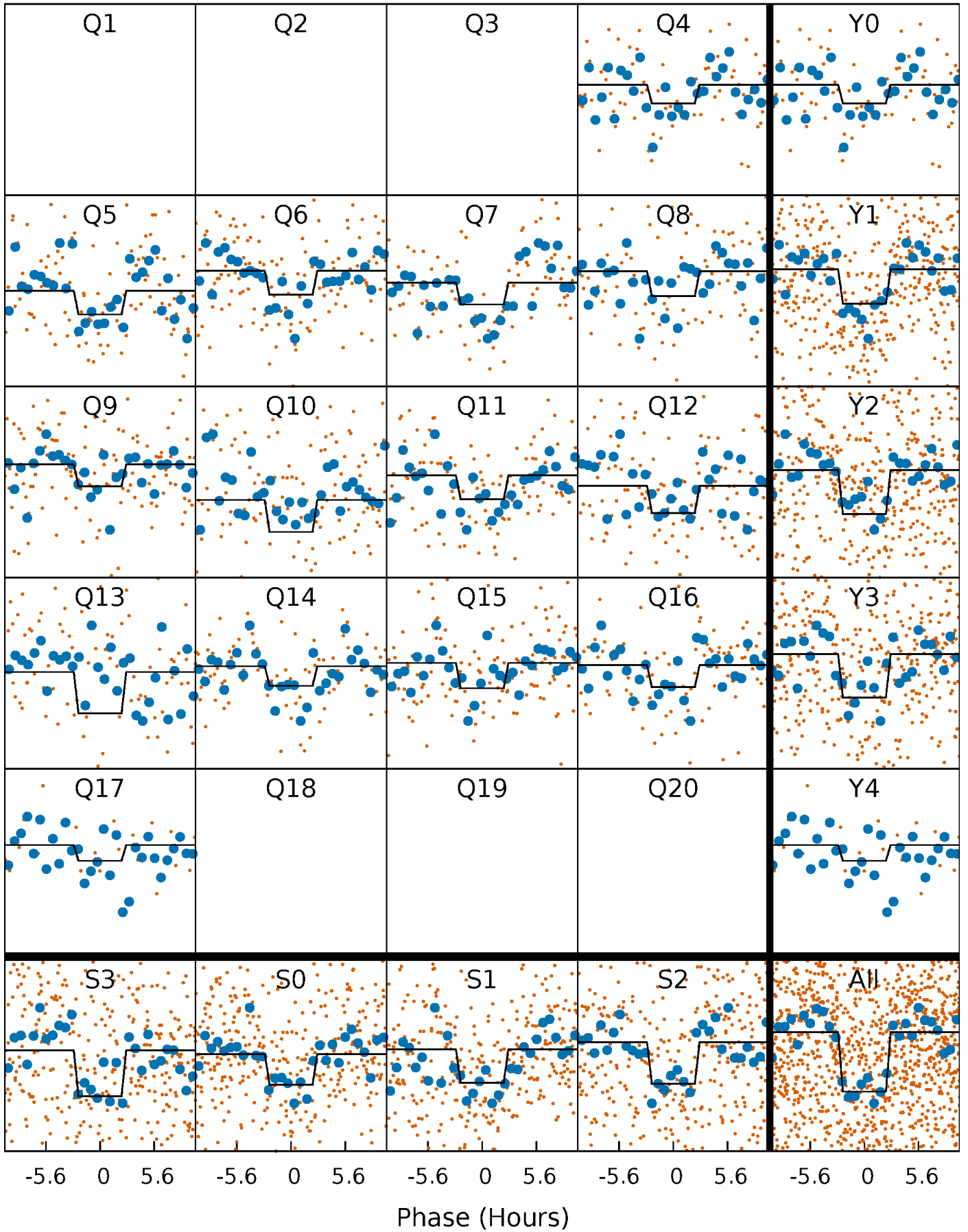
DV Quarter-Phased Transit Curves

TCE 011968463-04 P= 27.903812 Days $T_0=154.943039$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

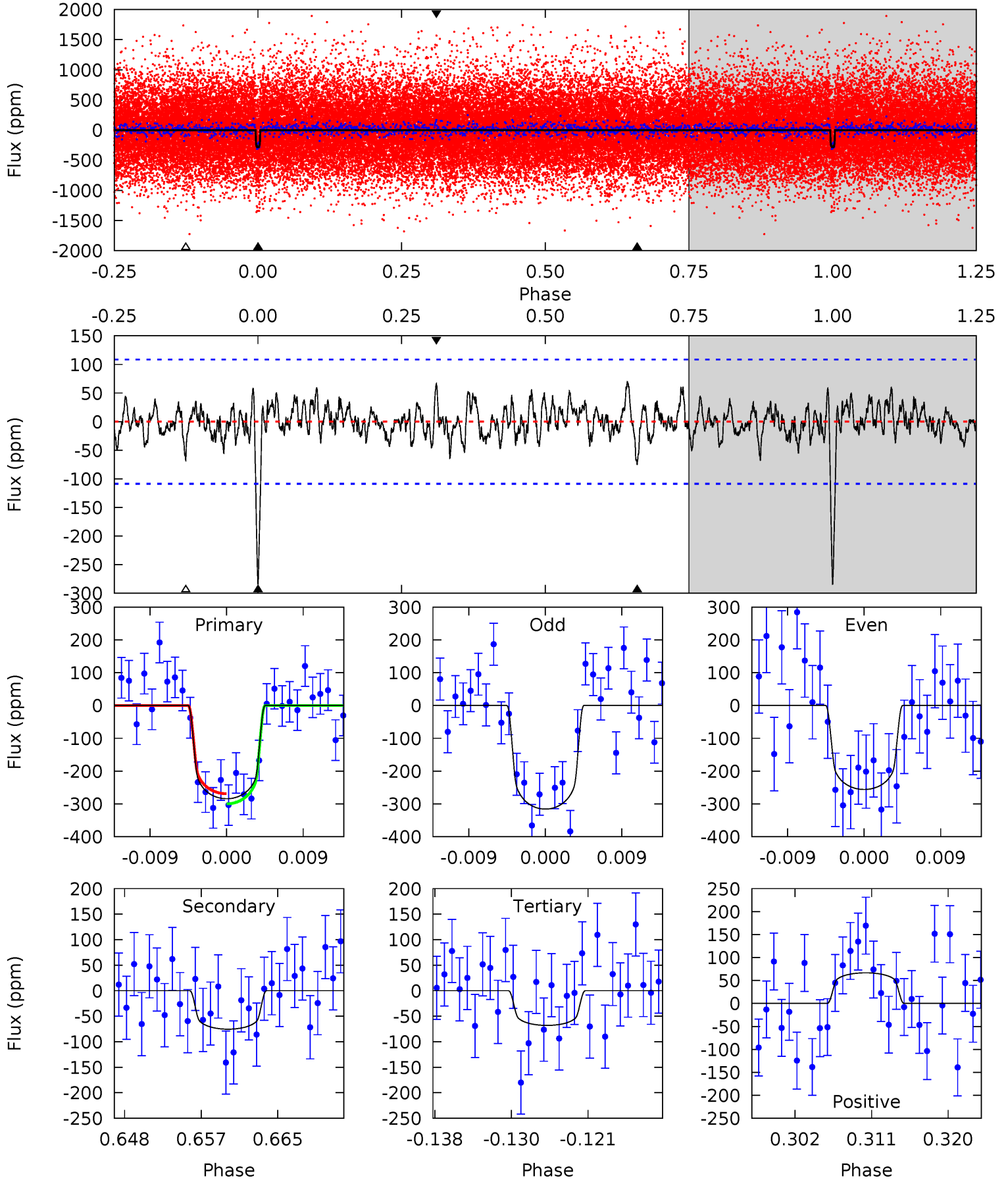
TCE 011968463-04 P= 27.903963 Days $T_0=154.944461$ (BKJD)



DV Model-Shift Uniqueness Test

011968463-04, P = 27.903812 Days, E = 154.943039 Days

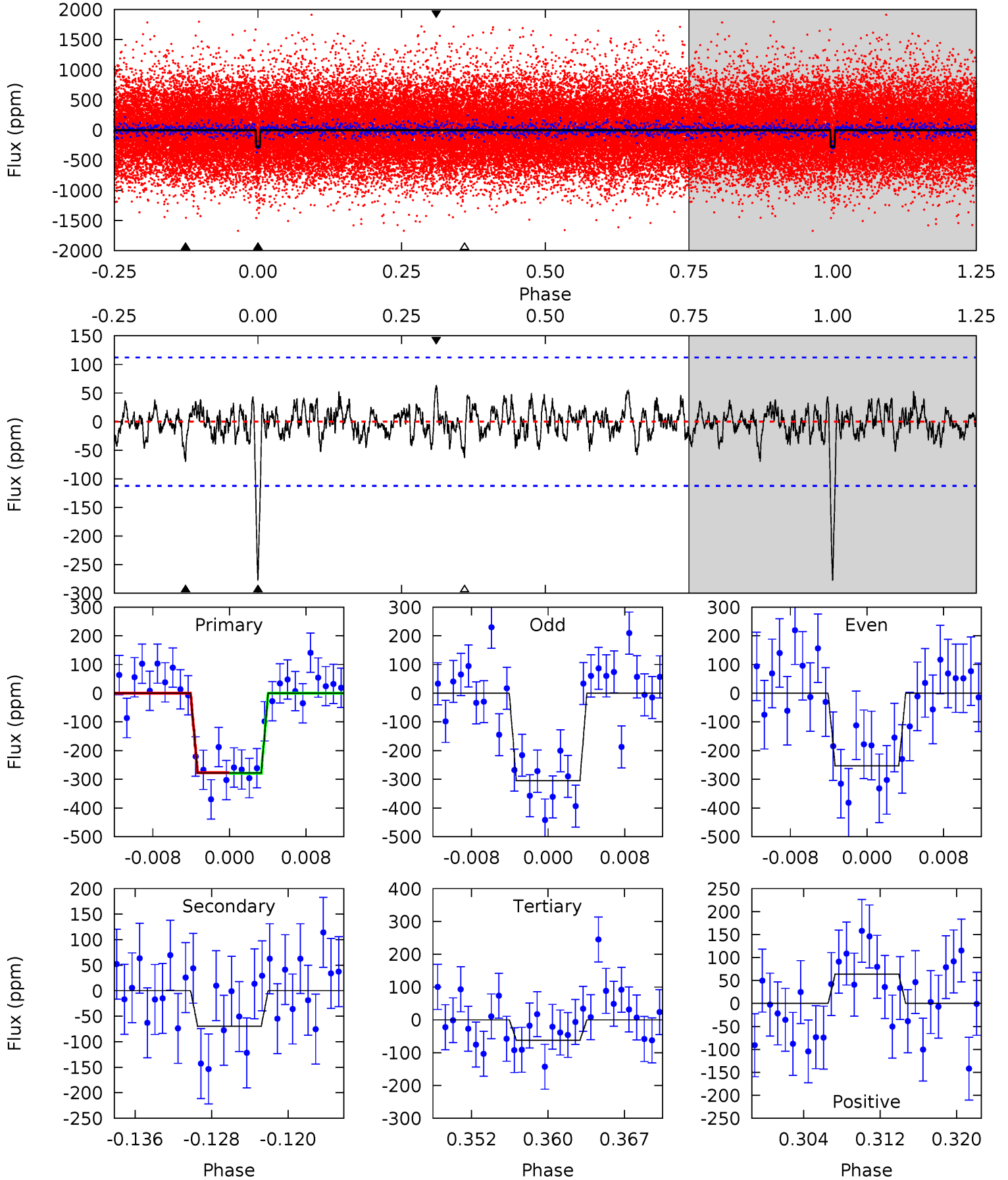
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	3.51	3.17	3.10	5.05	2.63	1.08	10.1	10.1	0.34	0.41	1.39	0.99	0.20	0.72



Alt Model-Shift Uniqueness Test

011968463-04, P = 27.903963 Days, E = 154.944461 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	3.15	2.81	2.87	5.07	2.65	0.94	9.72	9.66	0.34	0.28	1.16	0.89	0.19	0.05



Stellar Parameters For KIC 011968463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6325^{+174}_{-261}	$4.409^{+0.058}_{-0.218}$	$-0.040^{+0.250}_{-0.300}$	$1.112^{+0.388}_{-0.129}$	$1.157^{+0.169}_{-0.169}$	$1.184^{+0.368}_{-0.666}$
	+3%/-4%	+1%/-5%	+625%/-750%	+35%/-12%	+15%/-15%	+31%/-56%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011968463-04 / KOI 2433.04

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-75 ± 21	$2.29^{+0.95}_{-0.88}$	965^{+69}_{-52}	4518^{+1020}_{-569}	269^{+484}_{-145}
Alt.	-70 ± 22	$2.11^{+0.92}_{-0.91}$	961^{+79}_{-53}	4596^{+1364}_{-634}	291^{+678}_{-161}

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 $A_{obs} \gg 1.0$

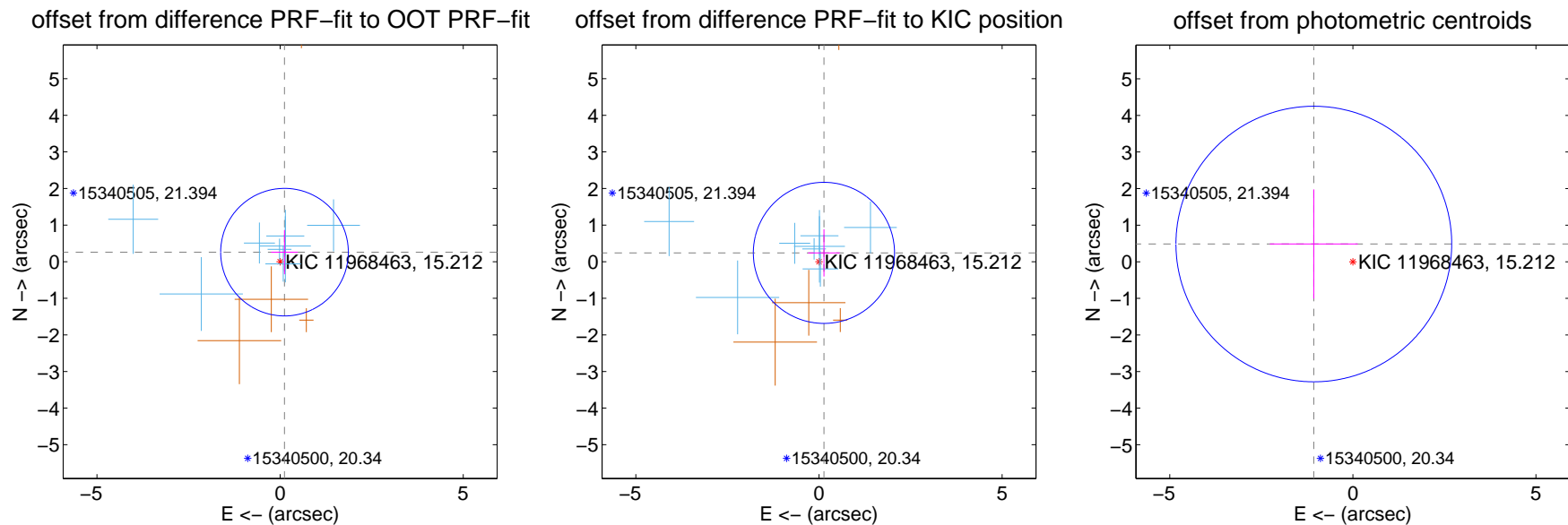
DV Centroid Data

Supplemental centroid analysis for 011968463-04. Kepler magnitude: 15.21. Transit SNR 9.65

There are 8 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.287 ± 0.581	0.49	-0.120 ± 0.363	0.260 ± 0.604
PRF-fit source offset from KIC position	0.276 ± 0.642	0.43	-0.135 ± 0.433	0.241 ± 0.646
photometric centroid source offset	1.17 ± 1.25	0.93	1.07 ± 1.20	0.49 ± 1.49



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 no difference image



Q2 no OOT image



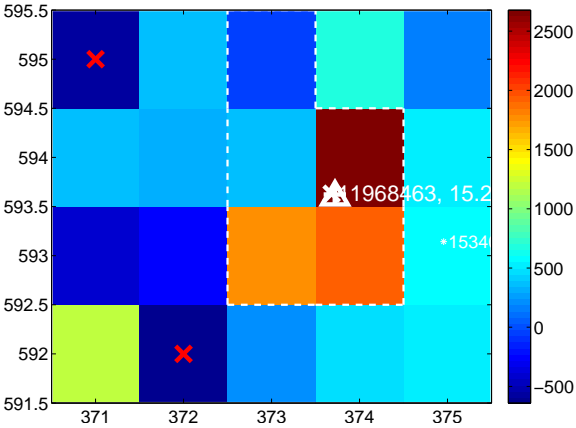
Q3 no difference image



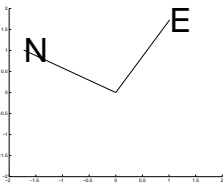
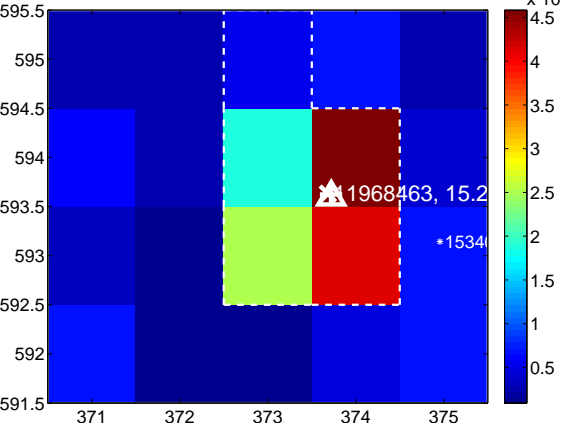
Q3 no OOT image



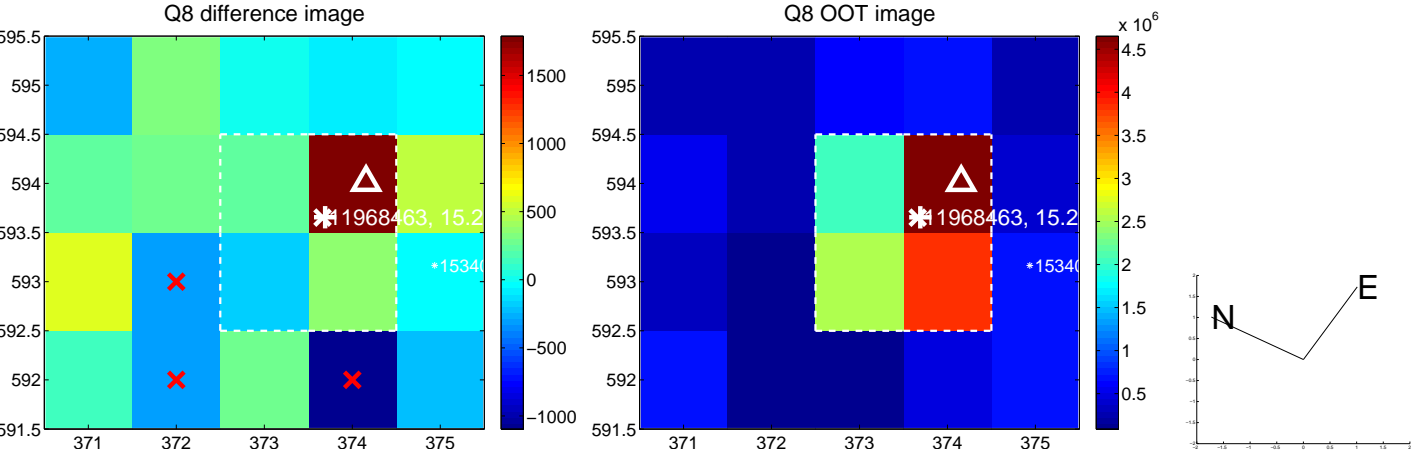
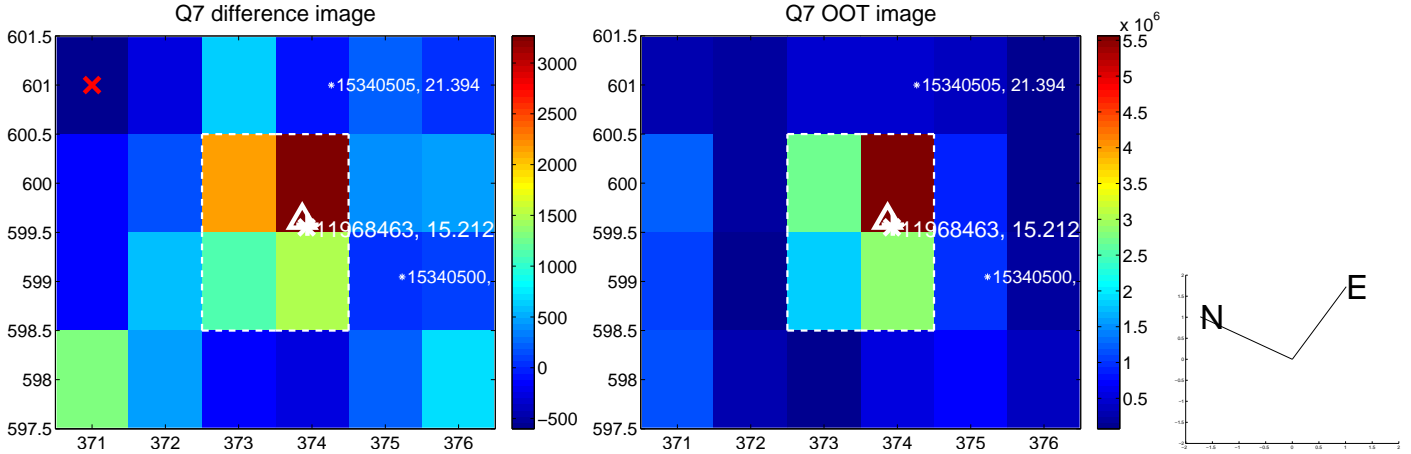
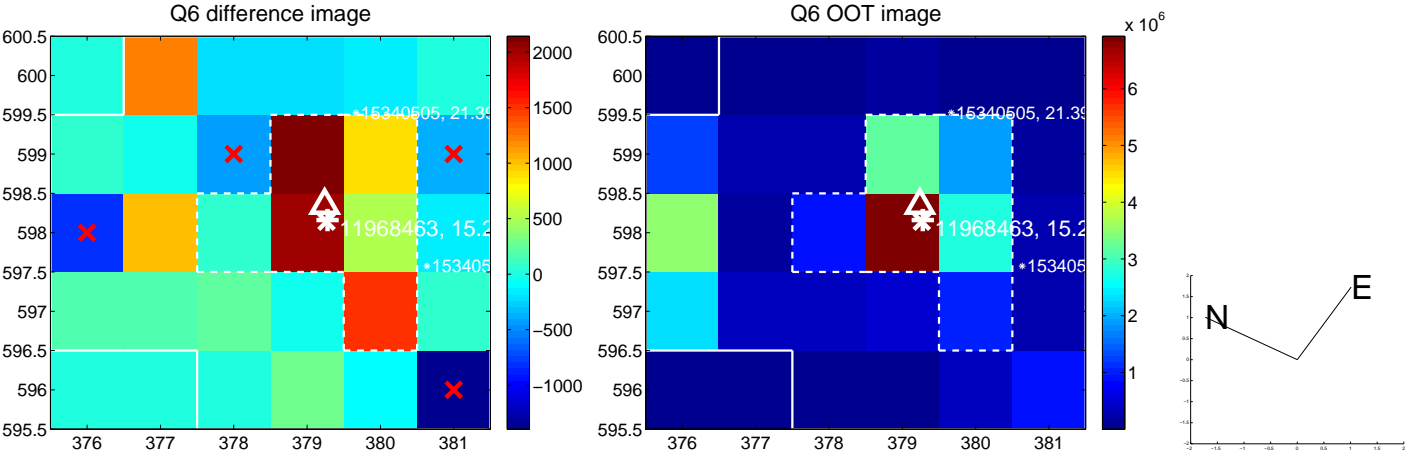
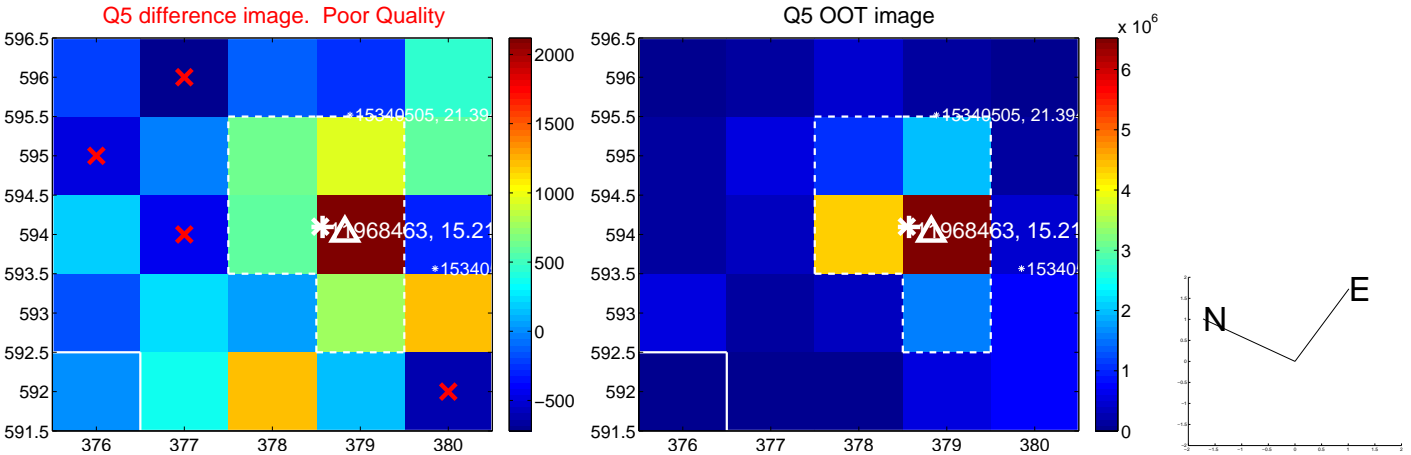
Q4 difference image



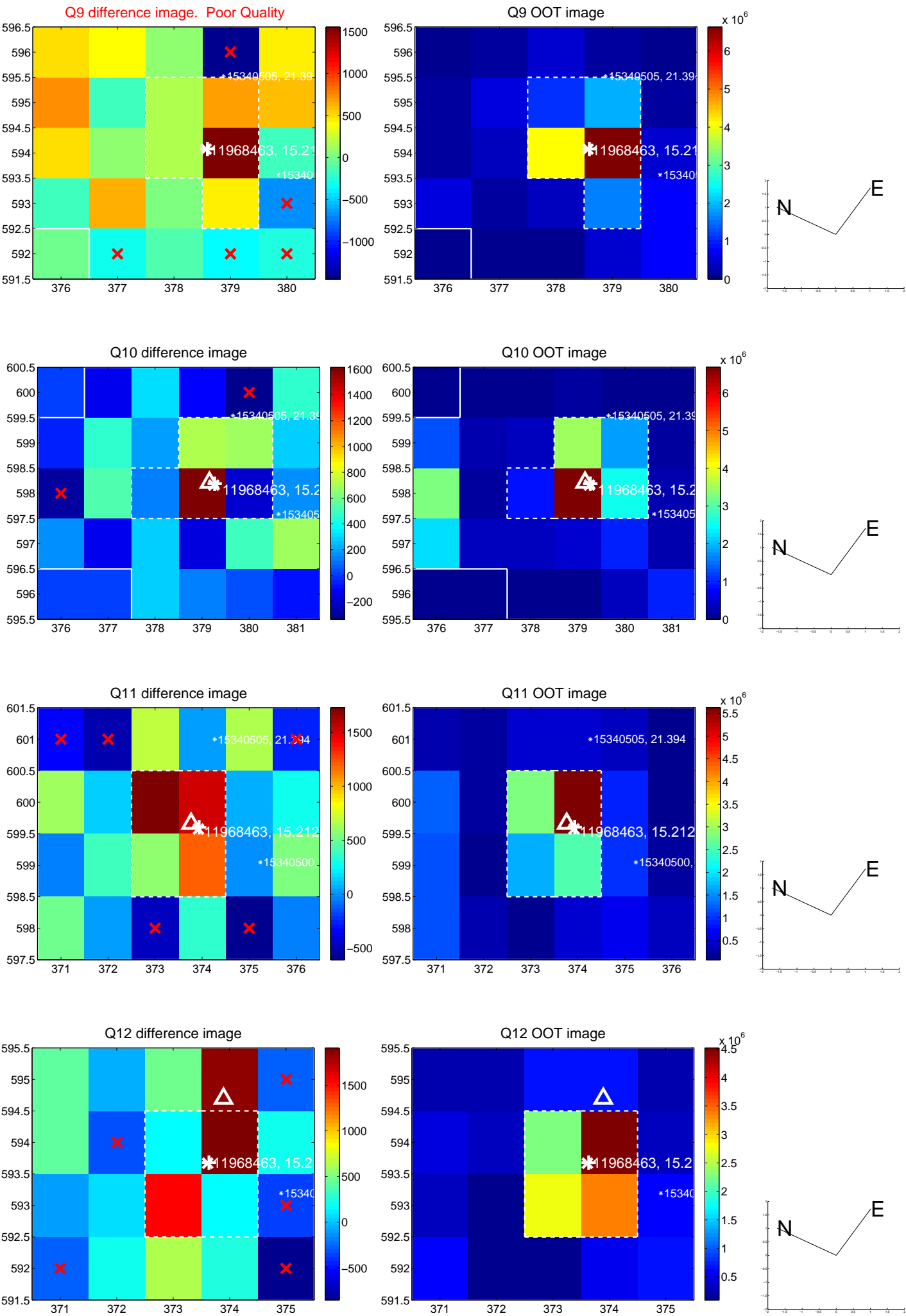
Q4 OOT image



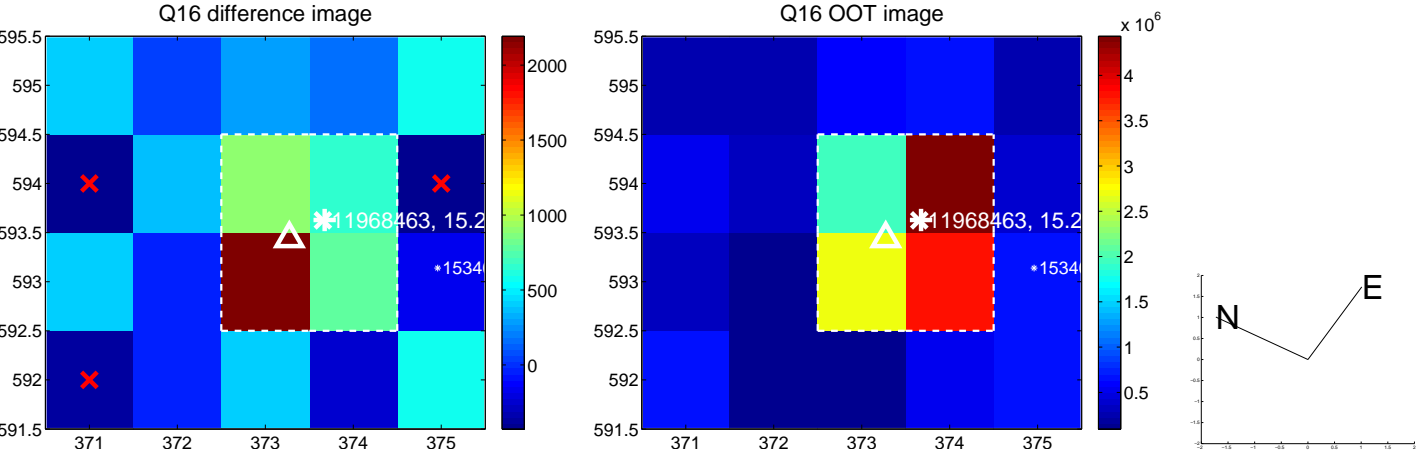
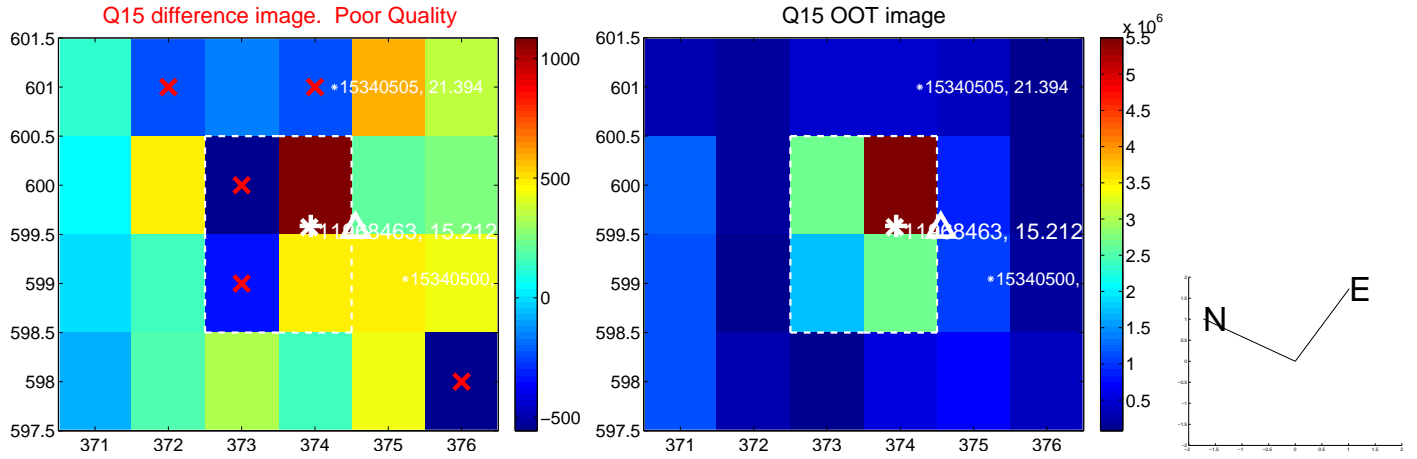
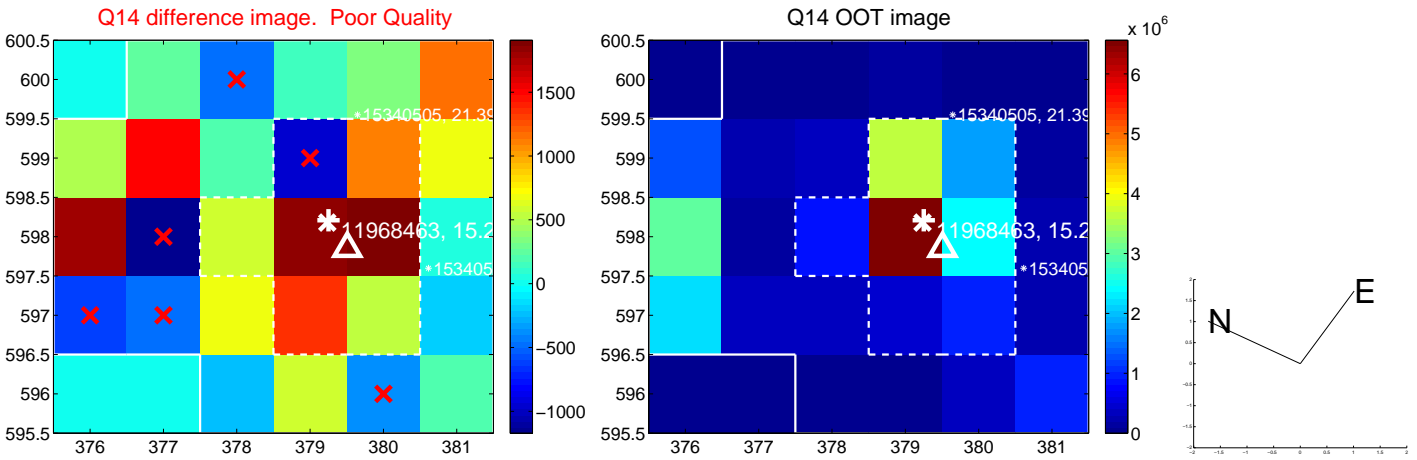
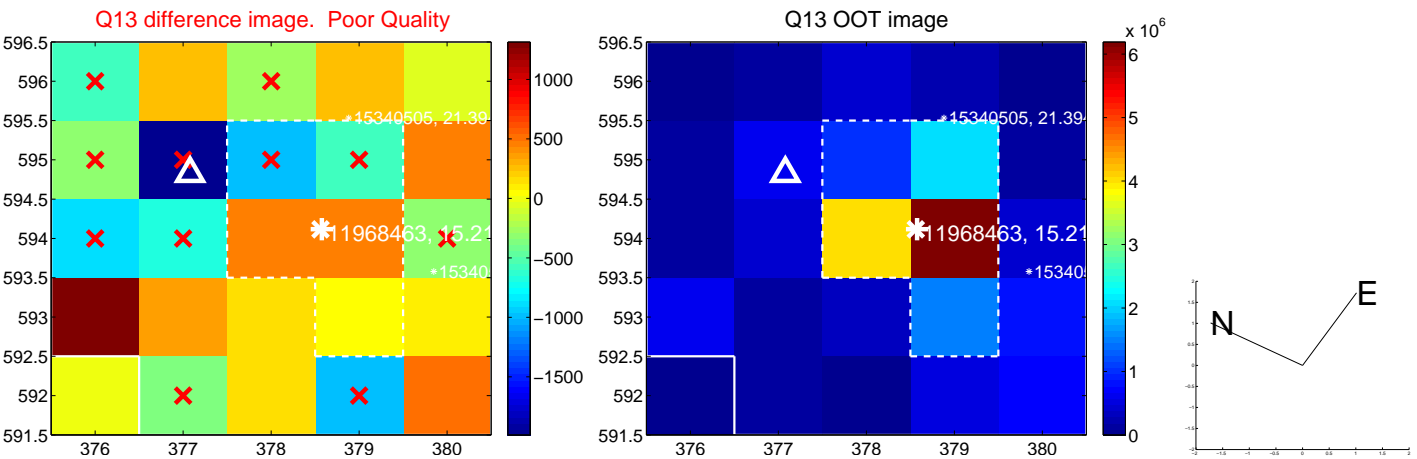
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



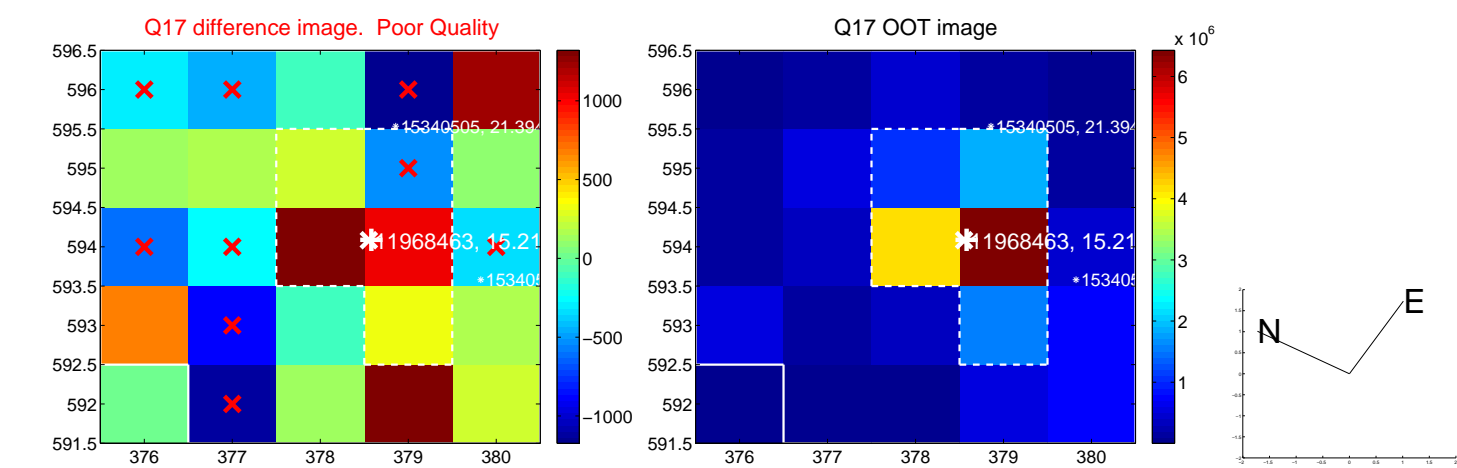
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



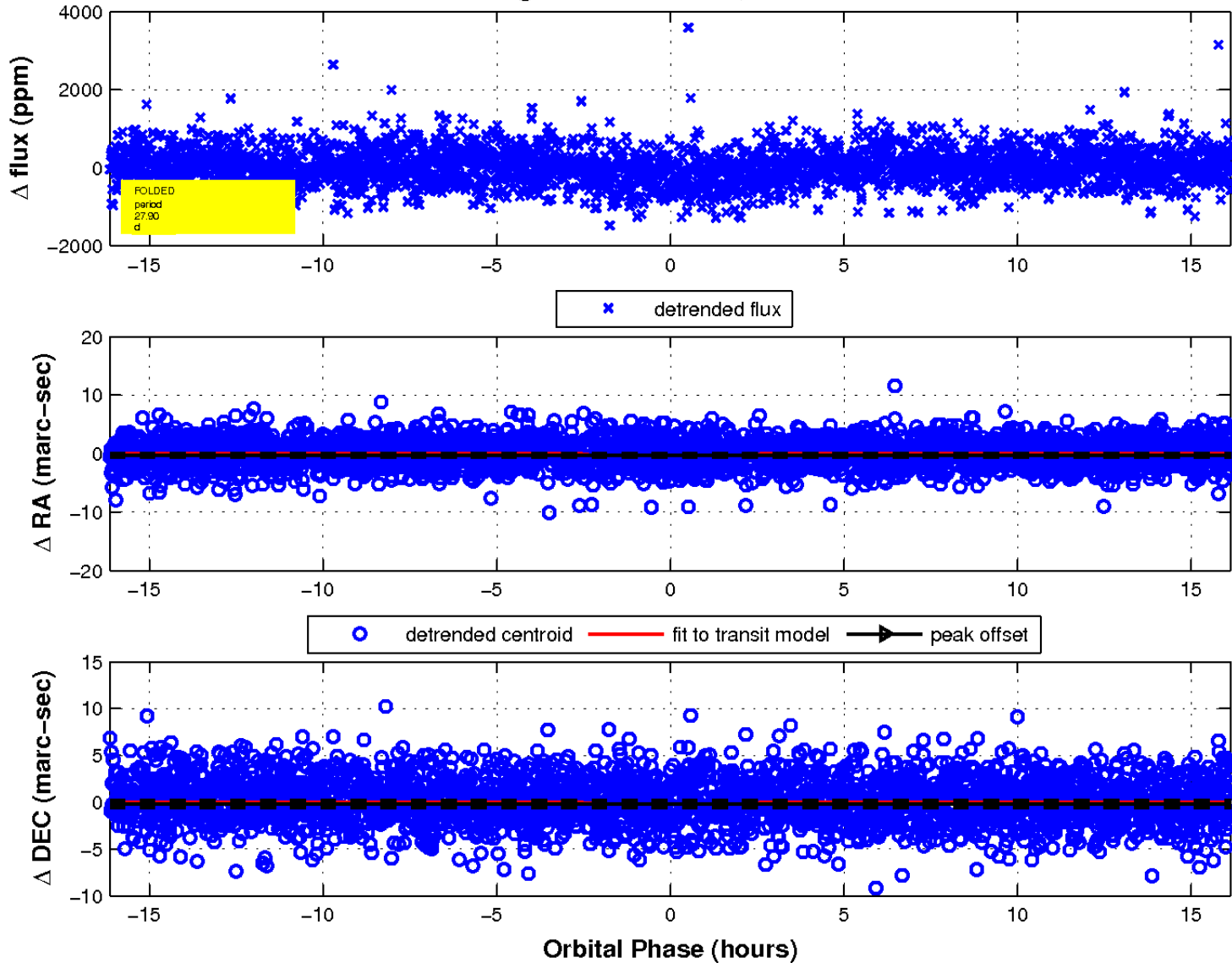
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

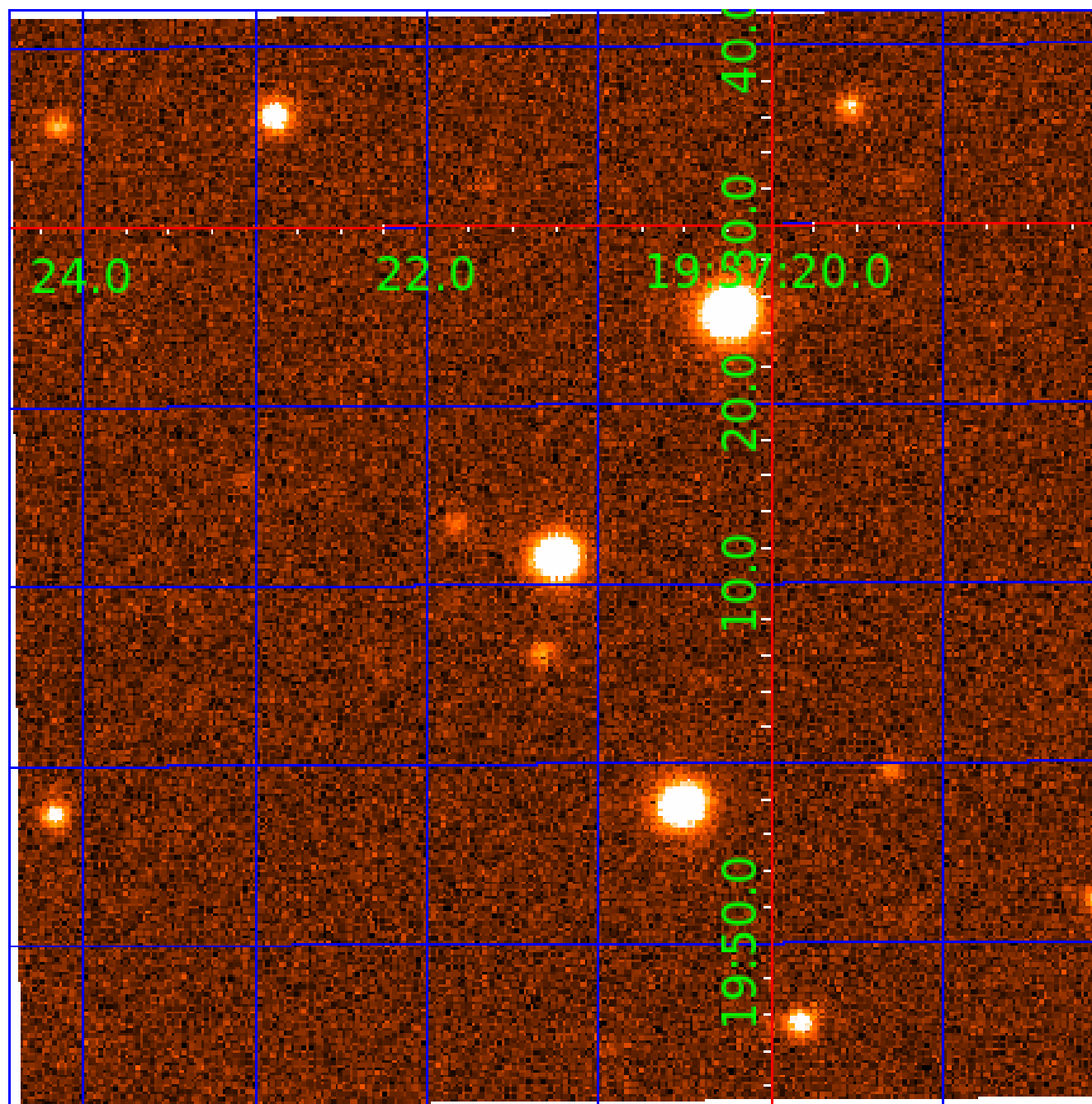


fluxWeightedCentroids, Planet 4 of 6



UKIRT Image

Declination



KIC 011968463

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})
011968463-01	OBS	2433.02	10.043813	132.653095	444.5	5.932	24.0	25.3	1.11	6325	2.98	193.79
011968463-02	OBS	2433.01	15.162276	144.471175	425.7	7.078	19.0	20.7	1.11	6325	2.90	111.91
011968463-03	OBS	2433.03	56.415882	163.118298	442.8	7.651	11.7	12.5	1.11	6325	2.59	19.41
011968463-04	OBS	2433.04	27.903812	154.943039	282.9	5.381	9.2	9.7	1.11	6325	2.11	49.62
011968463-05	OBS	2433.05	0.646746	132.023559	109.0	0.888	9.1	11.0	1.11	6325	1.19	7508.64
011968463-06	OBS	2433.07	86.432830	163.724557	514.8	7.301	7.2	9.3	1.11	6325	2.98	10.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968463-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011968463-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011968463-03	OBS	PC	0.92	0	0	0	0	NO_COMMENT
011968463-04	OBS	PC	0.64	0	0	0	0	NO_COMMENT
011968463-05	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
011968463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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

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

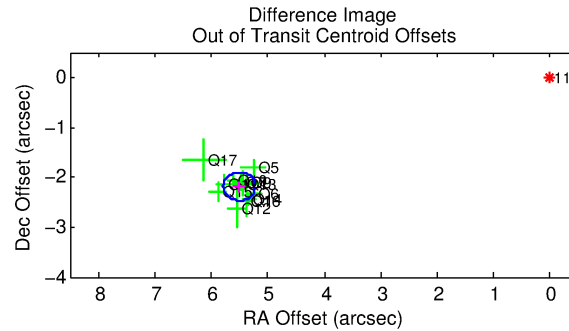
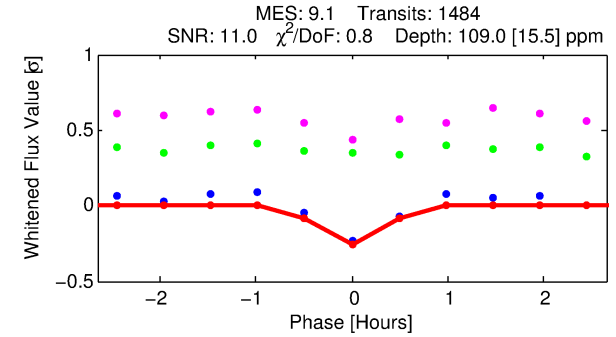
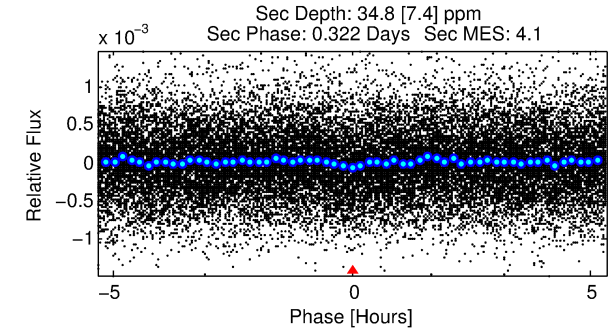
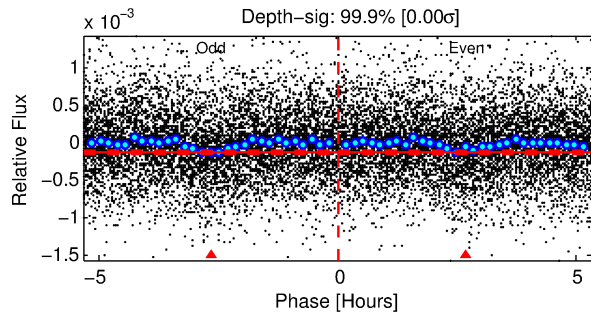
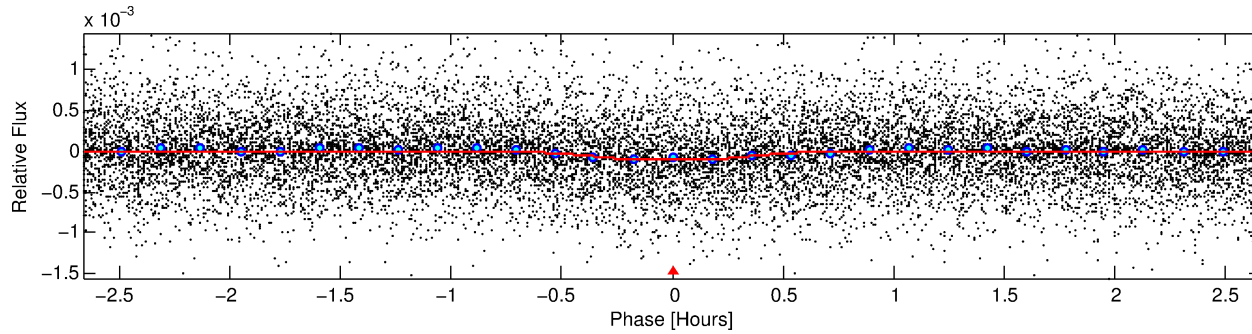
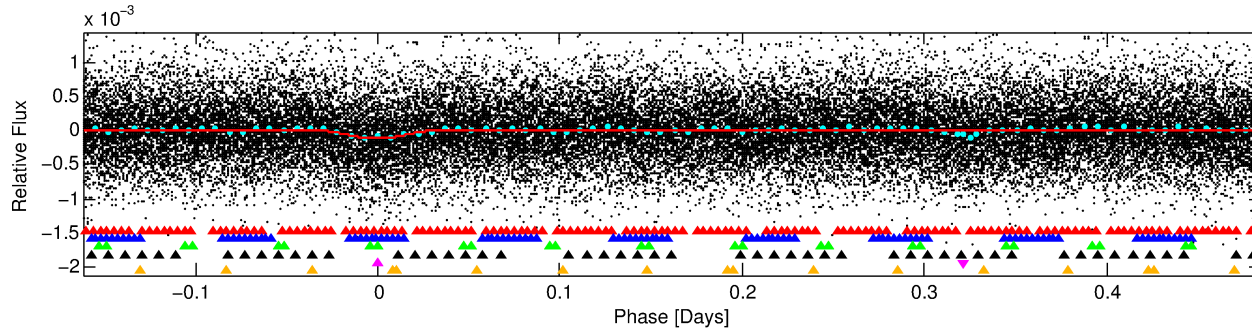
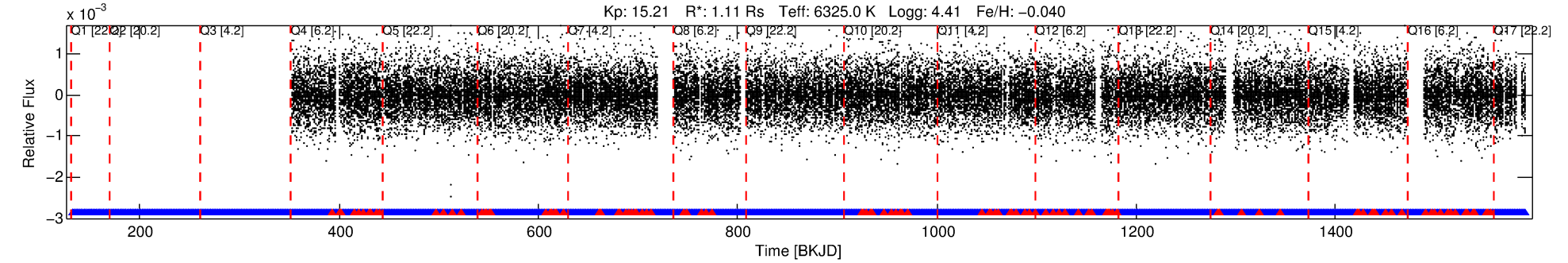
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011968463-05

No Significant Match Found

DV One-Page Summary

KIC: 11968463 Candidate: 5 of 6 Period: 0.647 d
KOI: K02433.05 Corr: 0.949



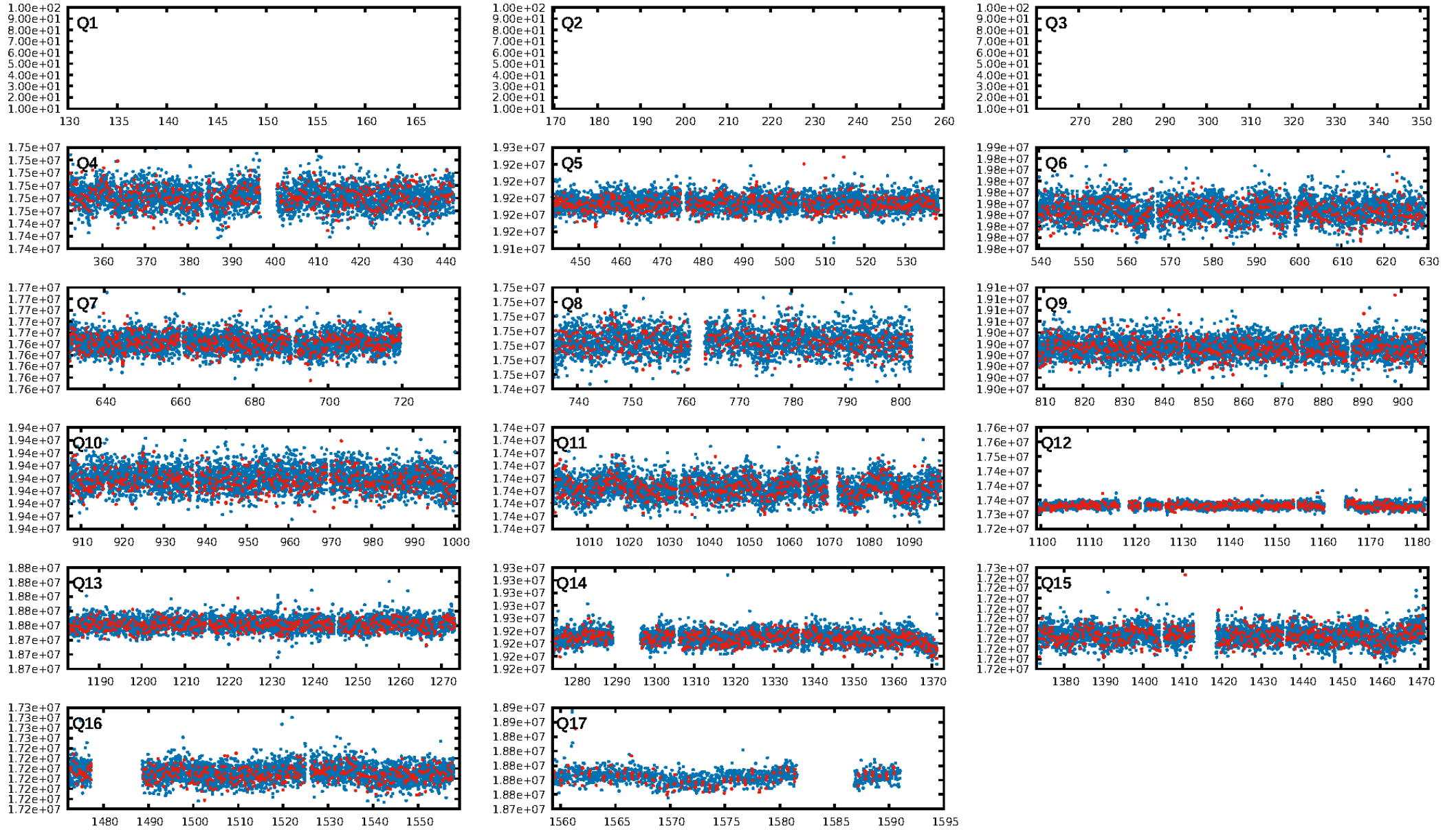
DV Fit Results:

Period = 0.64675 [0.00001] d
Epoch = 132.0236 [0.0015] BKJD
Rp/R* = 0.0098 [0.0073]
a/R* = 5.40 [19.78]
b = 0.30 [11.49]
Seff = 7508.64 [3301.57]
Teq = 2374 [261] K
Rp = 1.19 [0.98] Re
a = 0.0154 [0.0044] AU
Ag = 3.21 [5.02] [0.44σ]
Teffp = 4914 [1864] K [1.35σ]

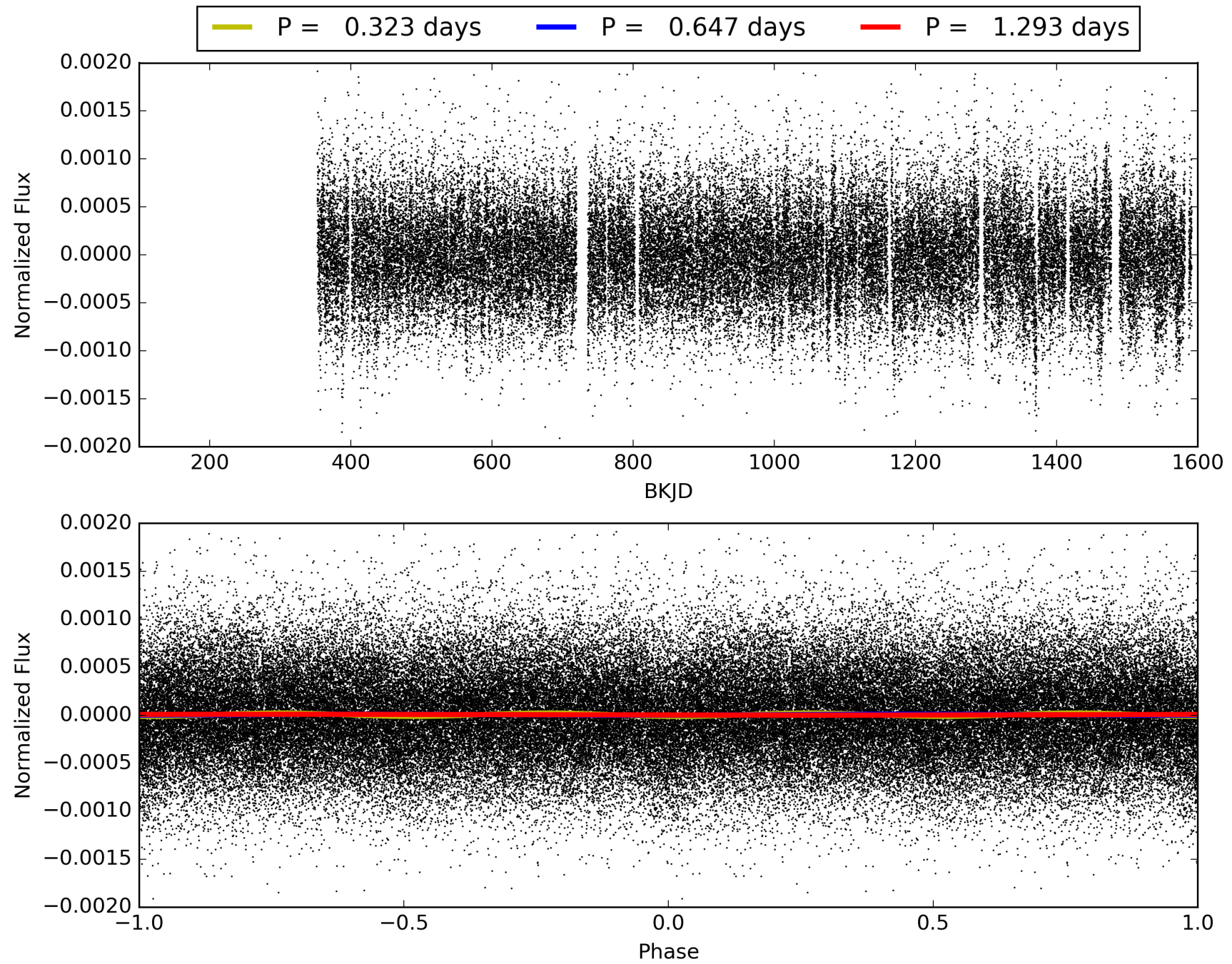
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [37.60σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.79e-22
RollingBand-fgt: 0.92 [1336/1449]
GhostDiagnostic-chr: -0.000346
Centroid-sig: 0.0%
Centroid-so: 18.368 arcsec [15.08σ]
OotOffset-rm: 5.924 arcsec [62.55σ]
KicOffset-rm: 6.030 arcsec [63.49σ]
OotOffset-st: 3/3/2/4 [12]
KicOffset-st: 3/3/2/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011968463-05, PDC Light Curves

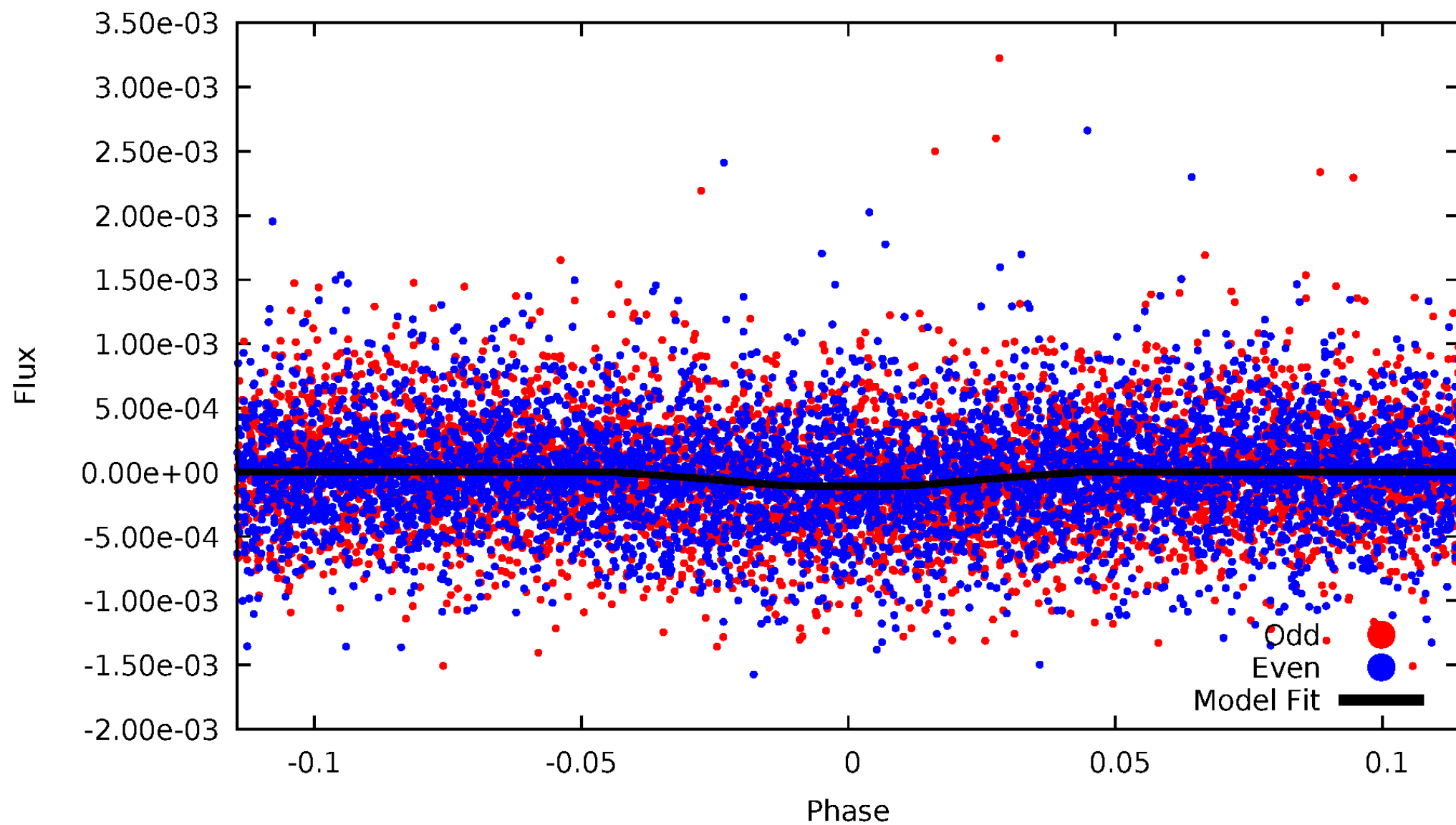


TCE 011968463-05



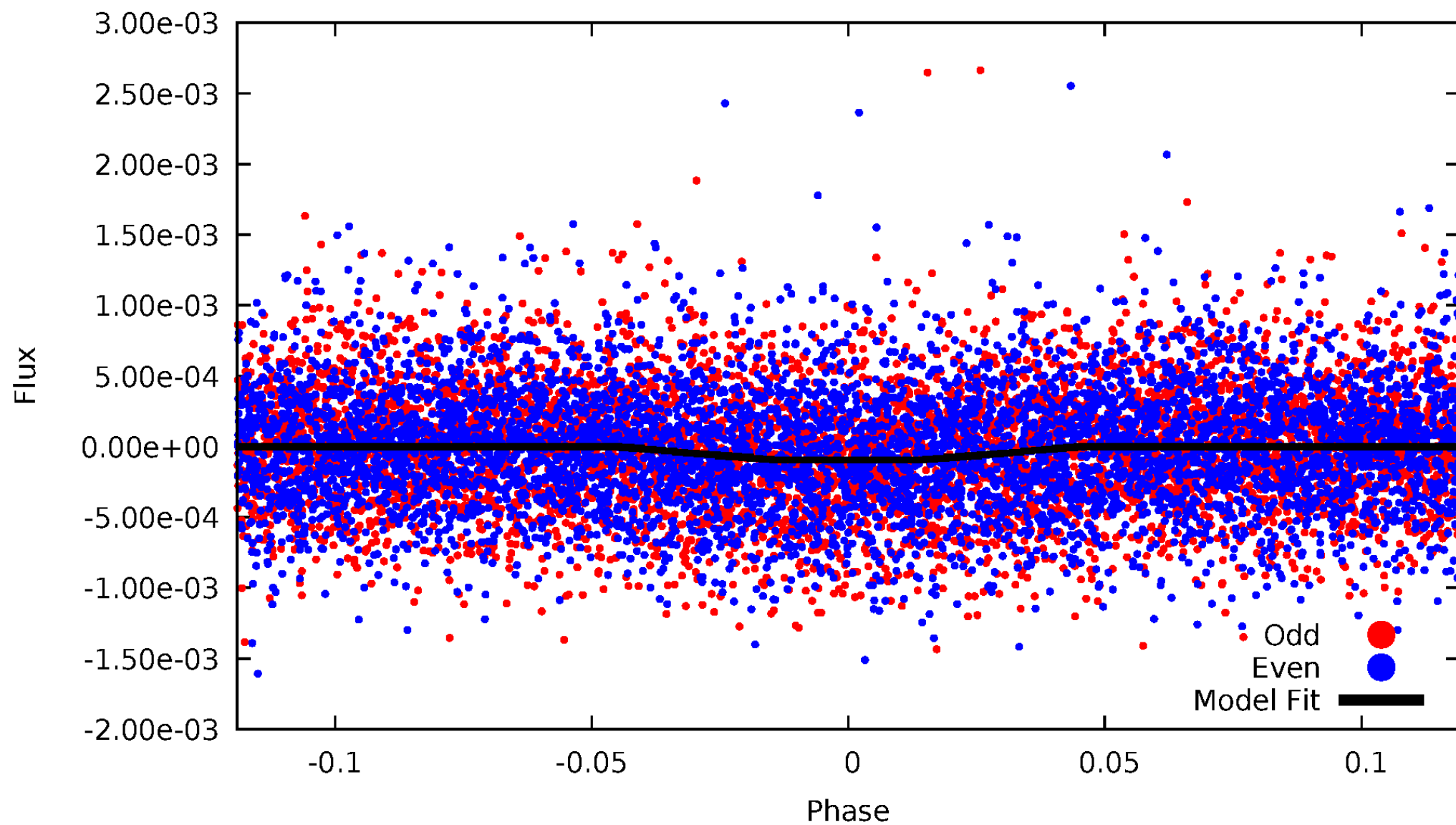
DV Odd/Even

TCE 011968463-05



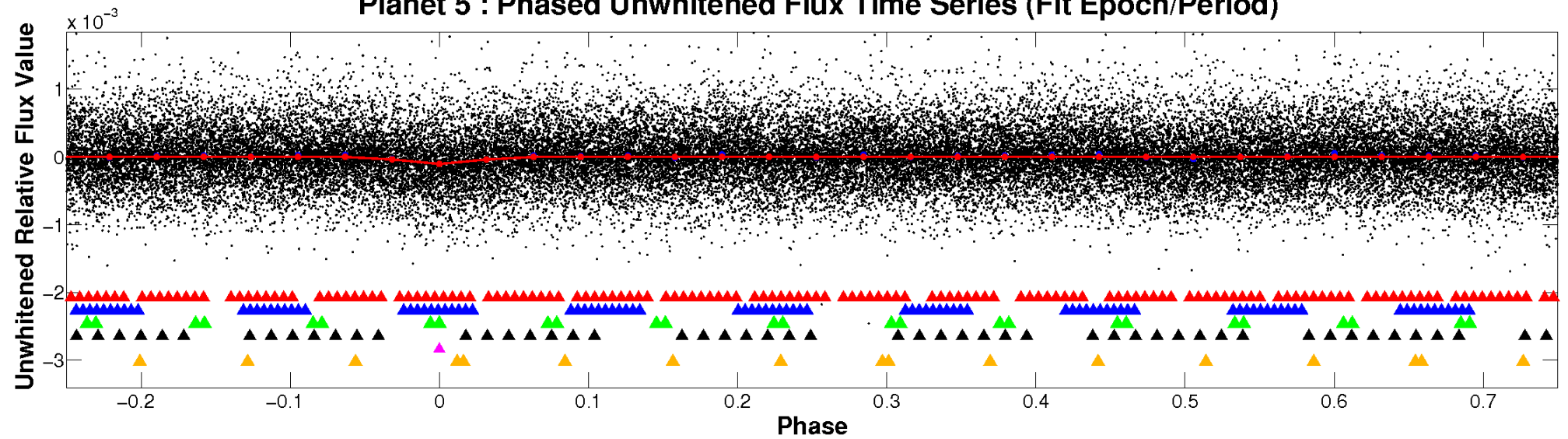
ALT Odd/Even

TCE 011968463-05

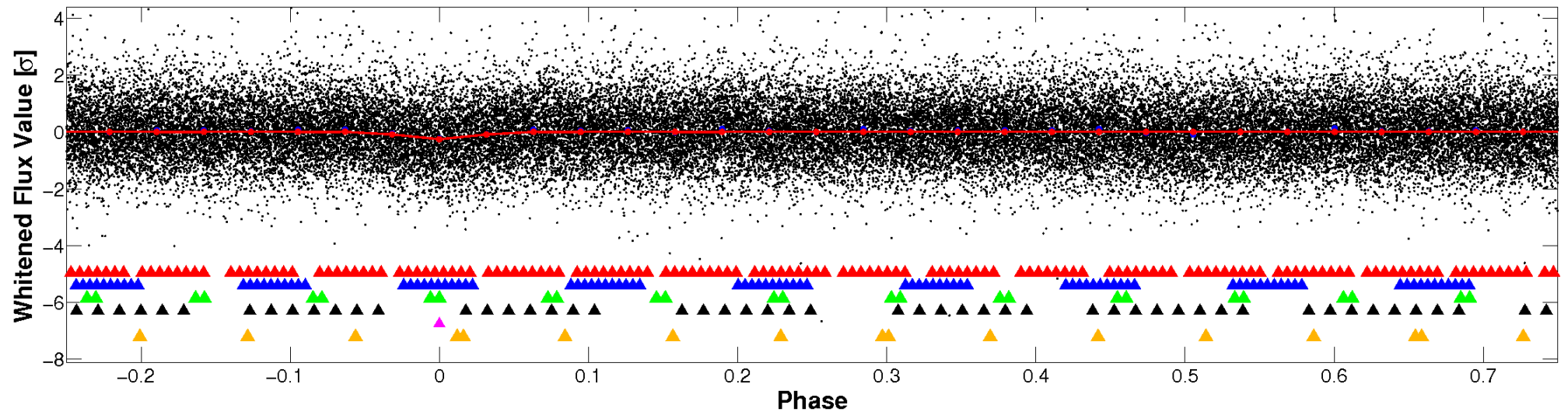


Non-Whitened Vs. Whitened Light Curve

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

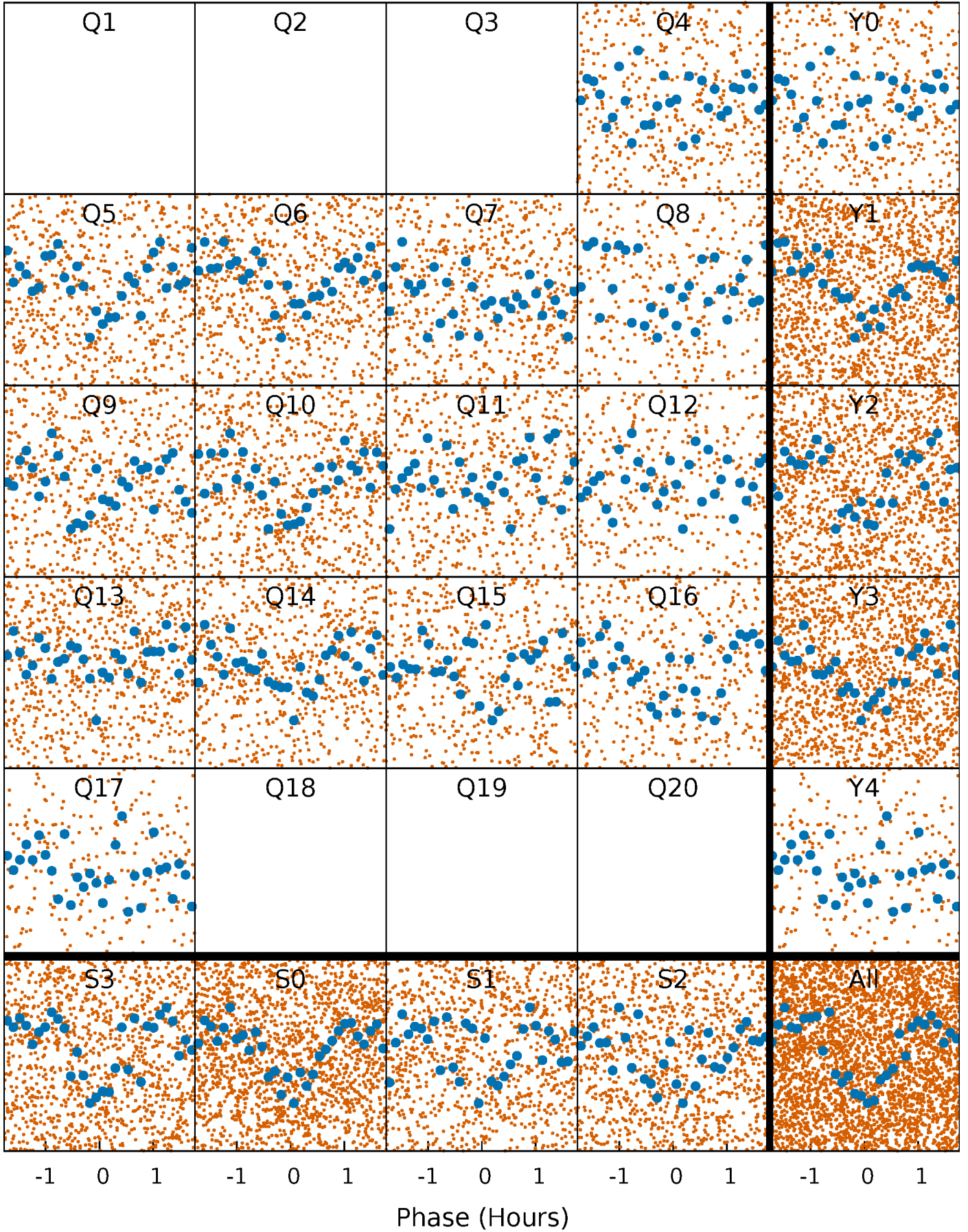


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



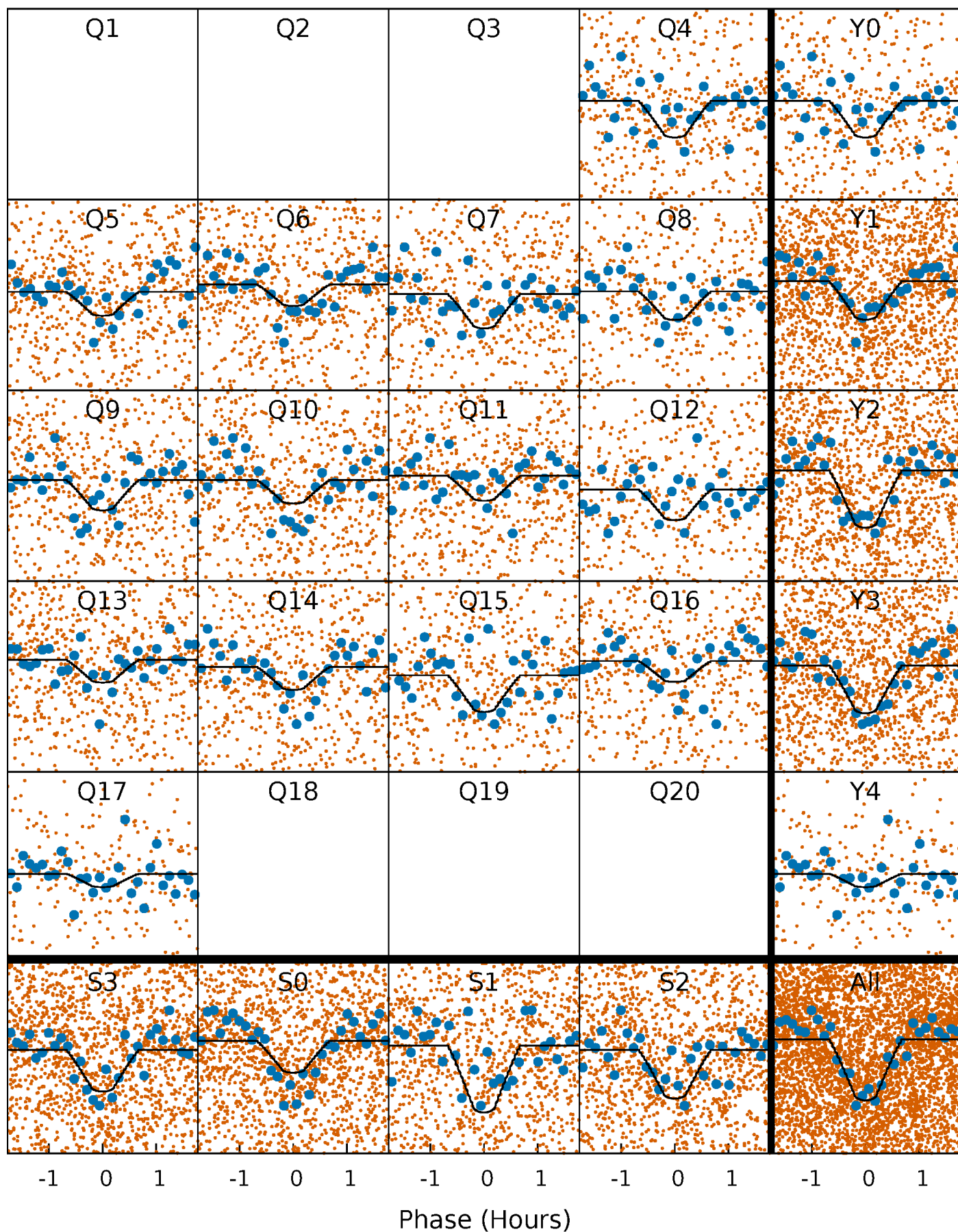
PDC Quarter-Phased Transit Curves

TCE 011968463-05 P= 0.646746 Days $T_0=132.023559$ (BKJD)



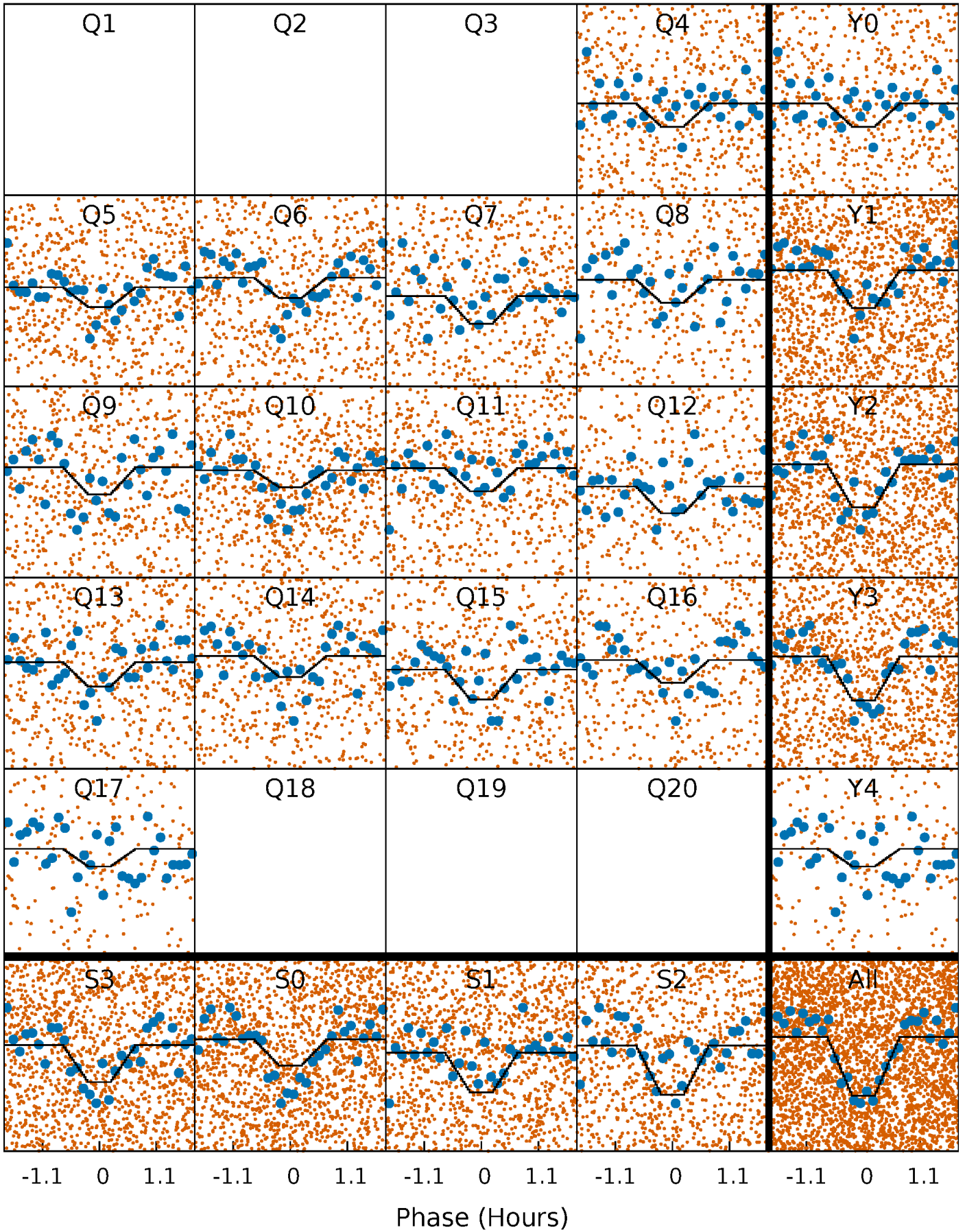
DV Quarter-Phased Transit Curves

TCE 011968463-05 P= 0.646746 Days $T_0=132.023559$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

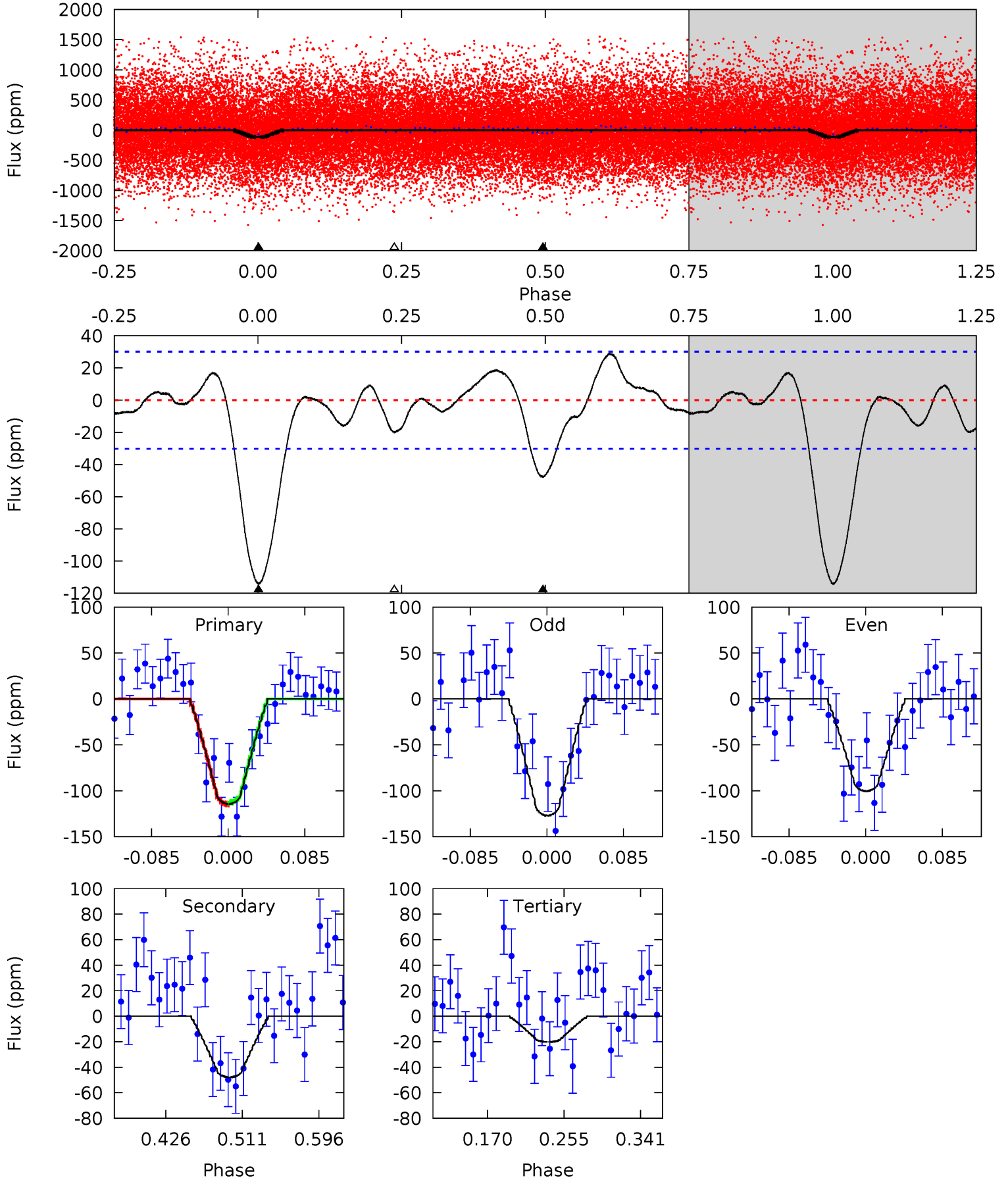
TCE 011968463-05 $P = 0.646747$ Days $T_0 = 132.023621$ (BKJD)



DV Model-Shift Uniqueness Test

011968463-05, P = 0.646746 Days, E = 132.023559 Days

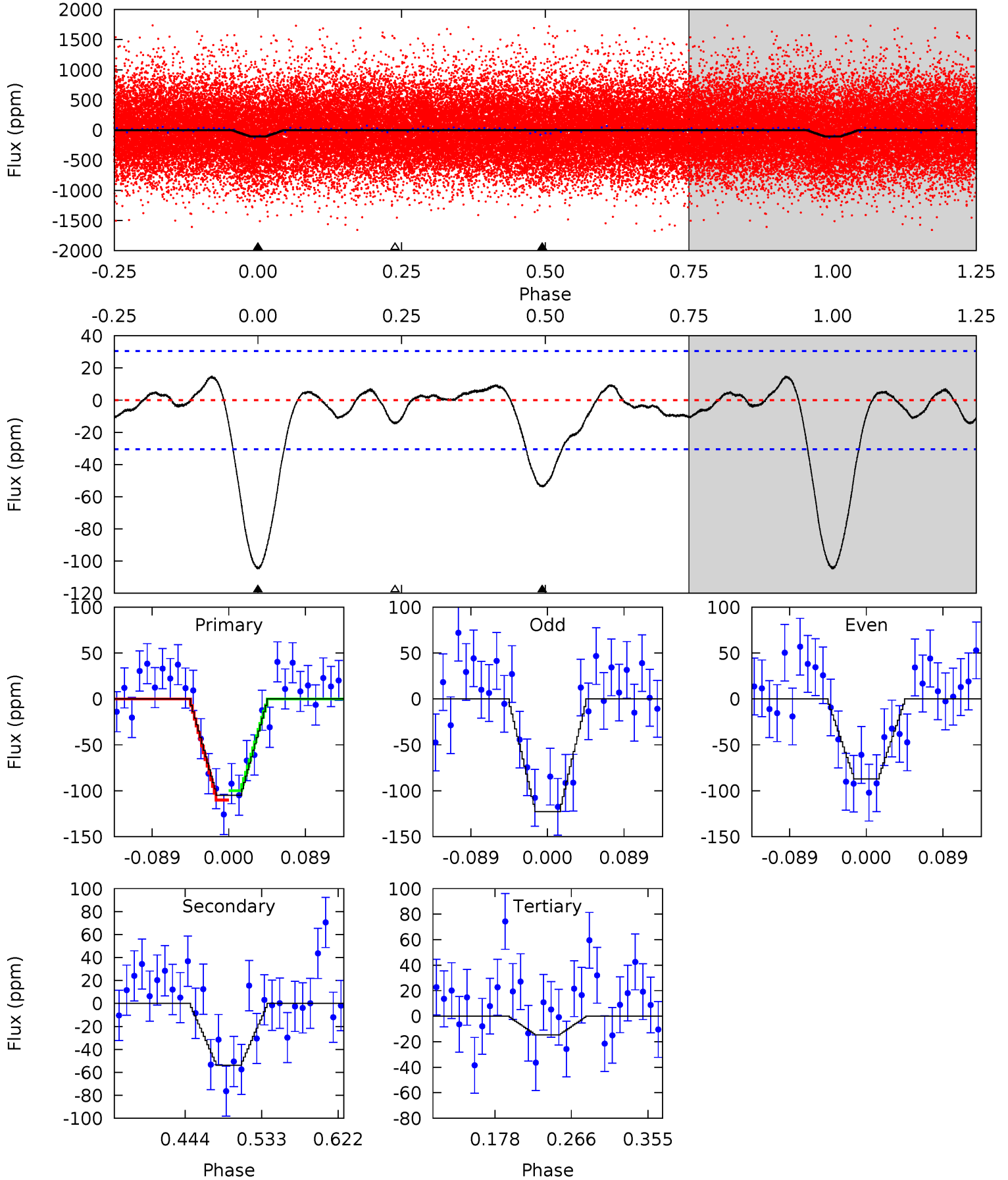
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	7.29	3.07	0	4.60	1.72	1.55	14.4	17.4	4.22	7.29	2.05	0.93	0.20	0.14



Alt Model-Shift Uniqueness Test

011968463-05, P = 0.646747 Days, E = 132.023621 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	8.09	2.19	0	4.59	1.70	0.87	13.6	15.8	5.91	8.09	2.68	0.95	0.12	0.77



Stellar Parameters For KIC 011968463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6325^{+174}_{-261}	$4.409^{+0.058}_{-0.218}$	$-0.040^{+0.250}_{-0.300}$	$1.112^{+0.388}_{-0.129}$	$1.157^{+0.169}_{-0.169}$	$1.184^{+0.368}_{-0.666}$
	+3%/-4%	+1%/-5%	+625%/-750%	+35%/-12%	+15%/-15%	+31%/-56%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011968463-05 / KOI 2433.05

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-48 ± 7	$1.32^{+0.90}_{-0.79}$	3380^{+235}_{-185}	5123^{+3204}_{-1102}	$3.470^{+17.988}_{-2.228}$
Alt.	-54 ± 7	$1.34^{+0.96}_{-0.83}$	3378^{+258}_{-185}	5148^{+3484}_{-1069}	$3.796^{+20.898}_{-2.476}$

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

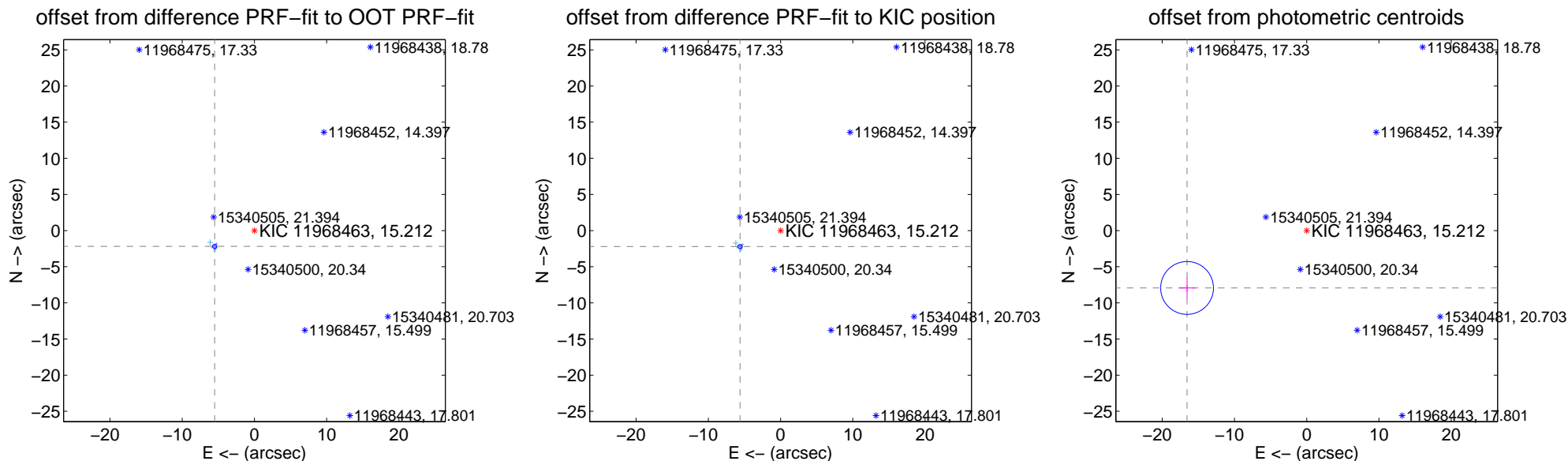
DV Centroid Data

Supplemental centroid analysis for 011968463-05. Kepler magnitude: 15.21. Transit SNR 10.98

There are 12 quarters with good PRF difference image offsets

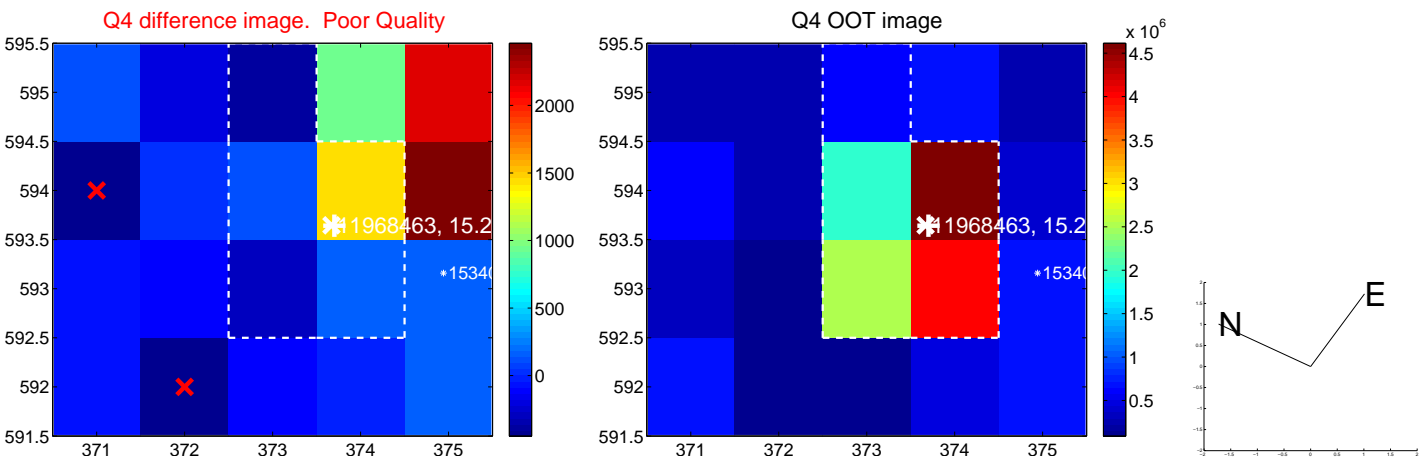
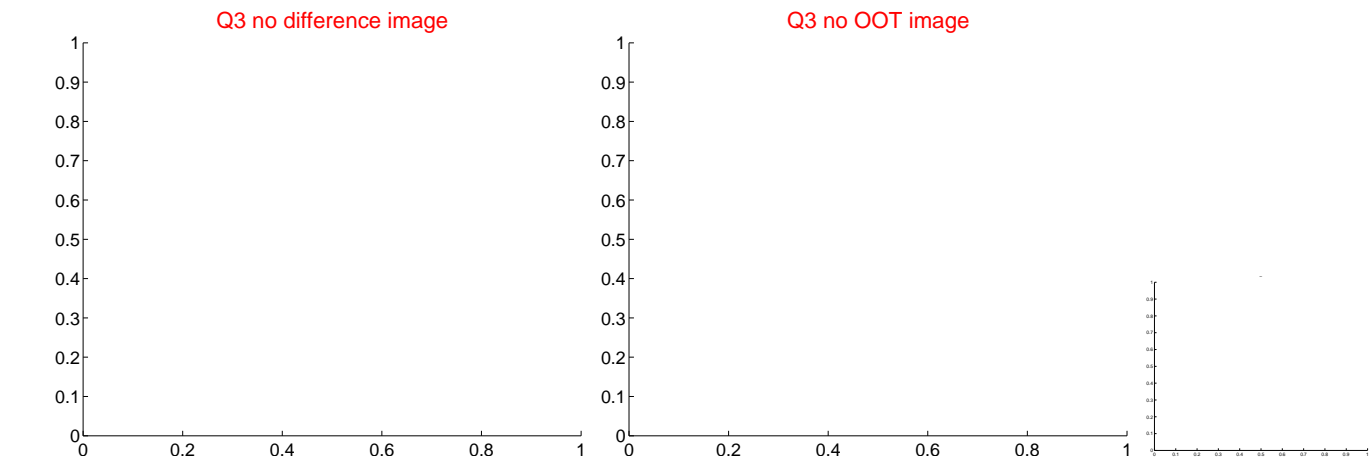
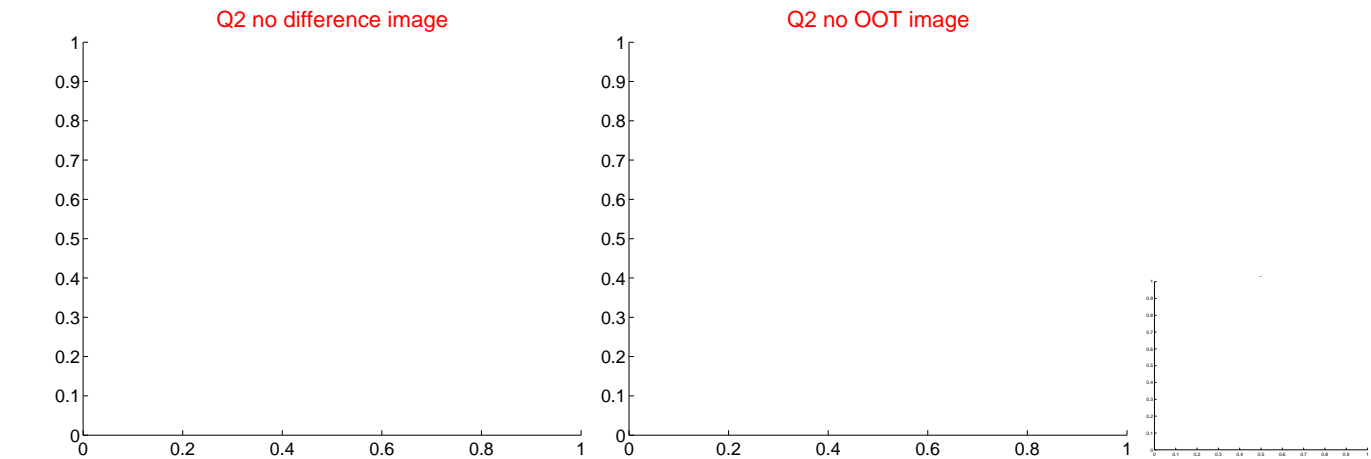
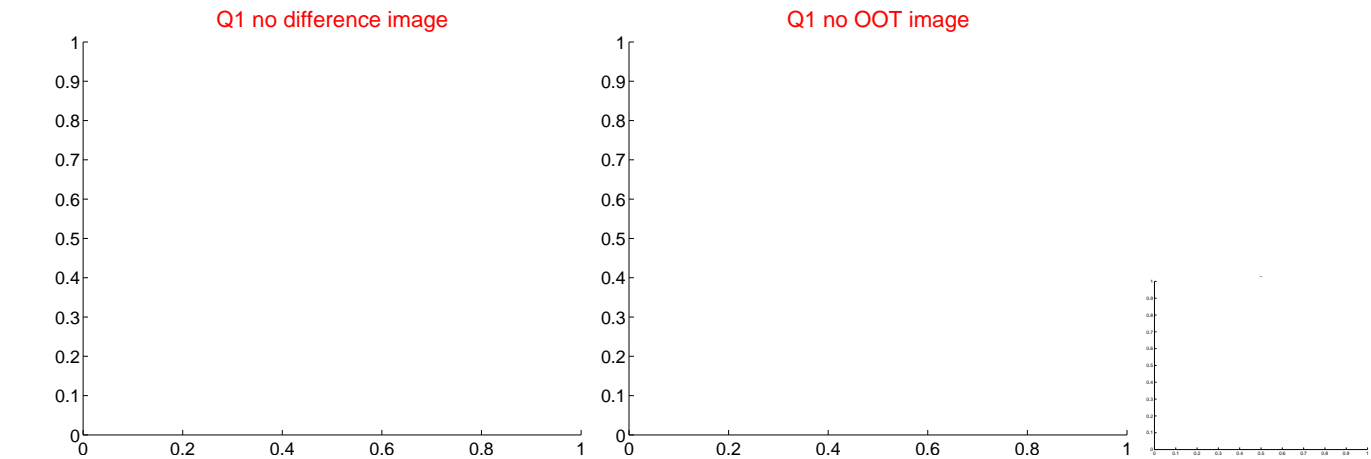
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.924 ± 0.095	62.55	5.505 ± 0.095	-2.188 ± 0.092
PRF-fit source offset from KIC position	6.030 ± 0.095	63.49	5.610 ± 0.096	-2.211 ± 0.089
photometric centroid source offset	18.37 ± 1.22	15.08	16.57 ± 1.17	-7.94 ± 1.42

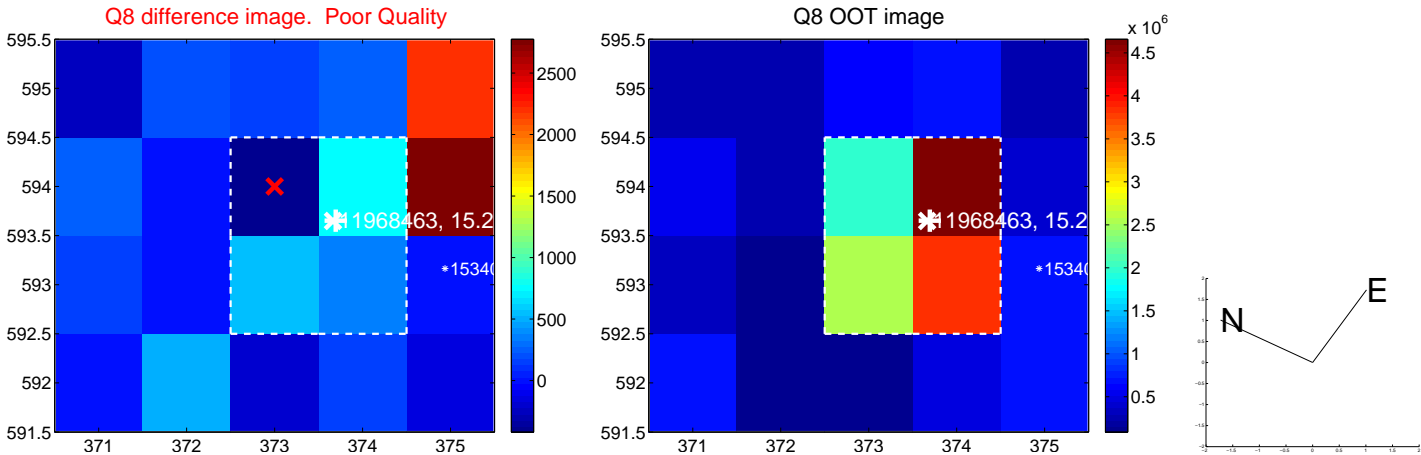
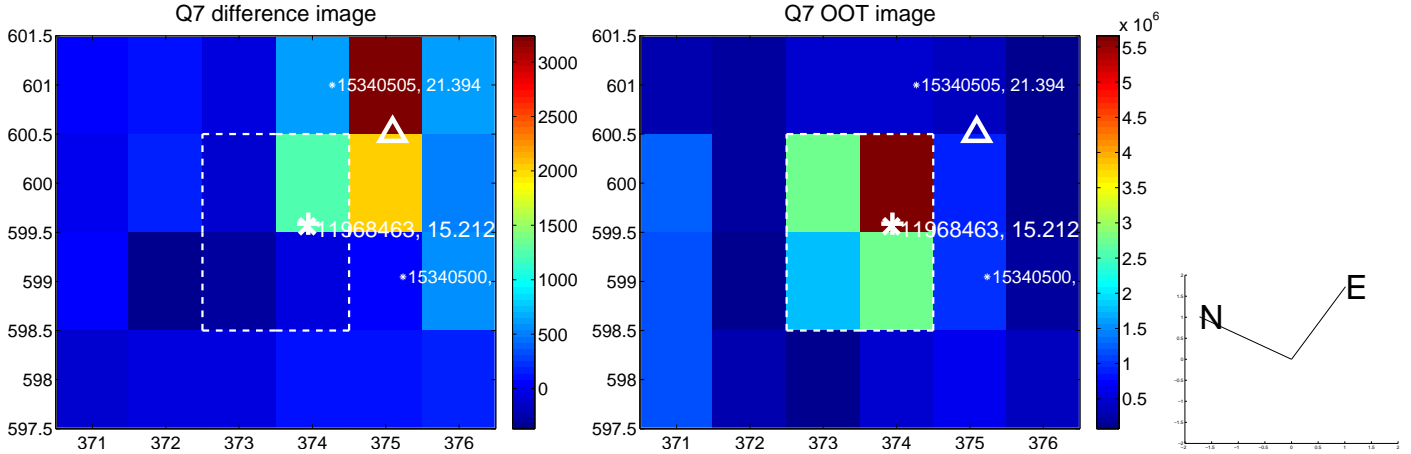
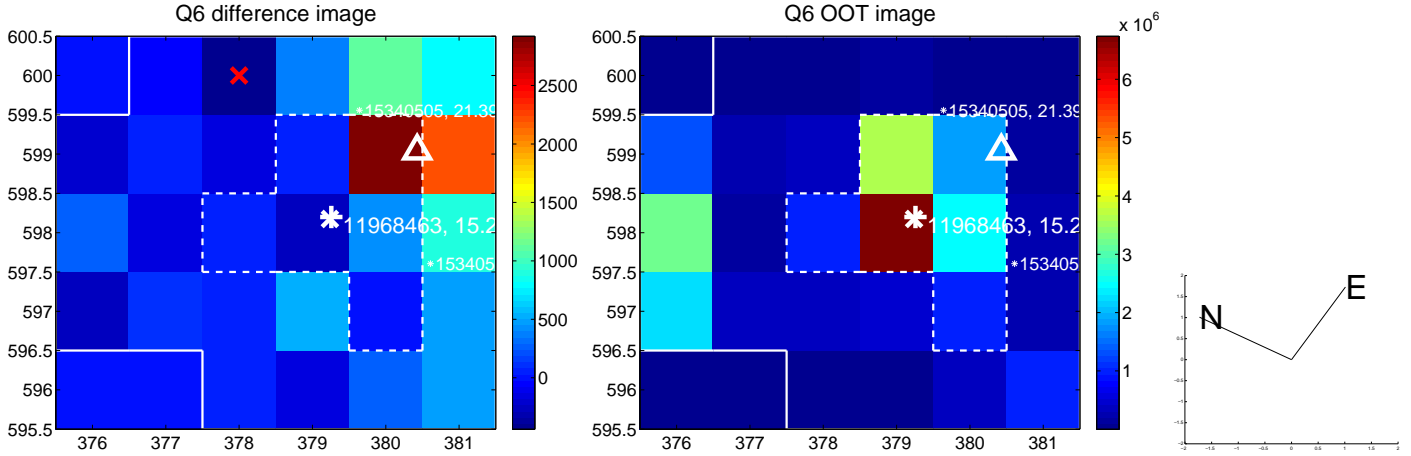
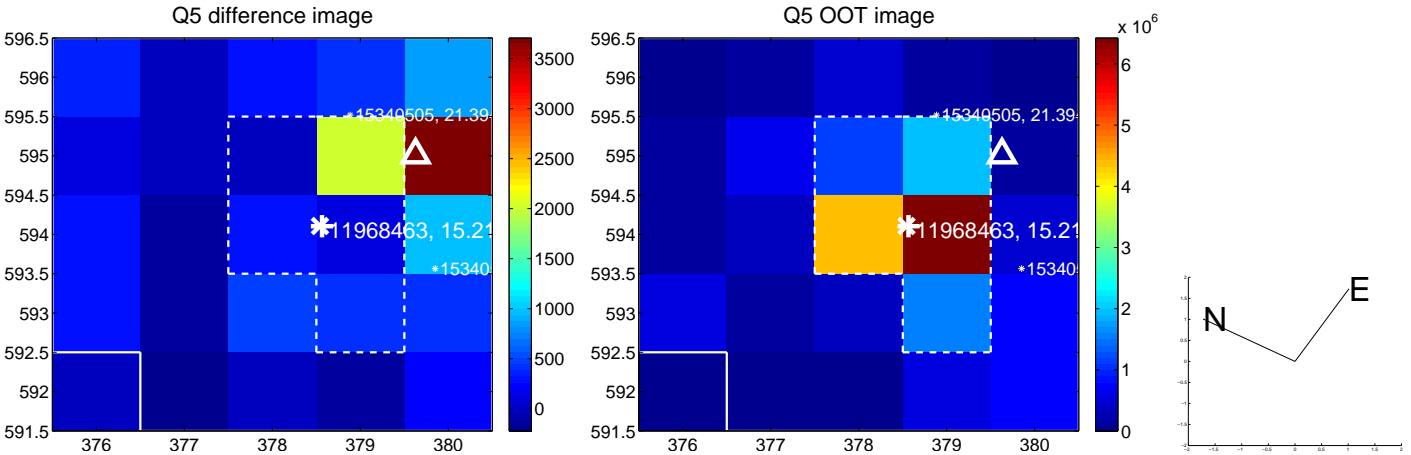


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

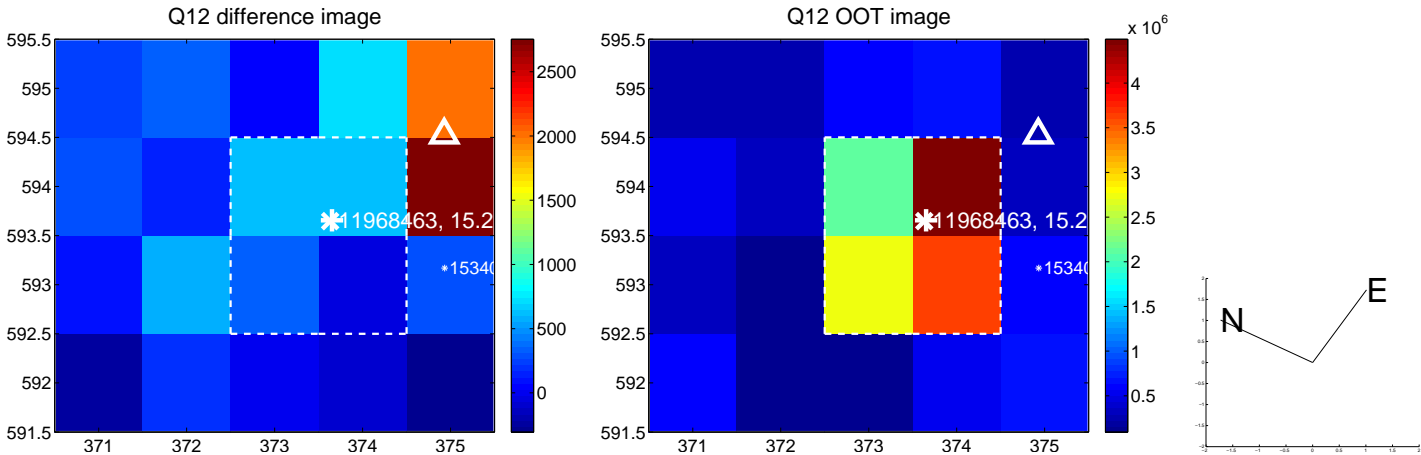
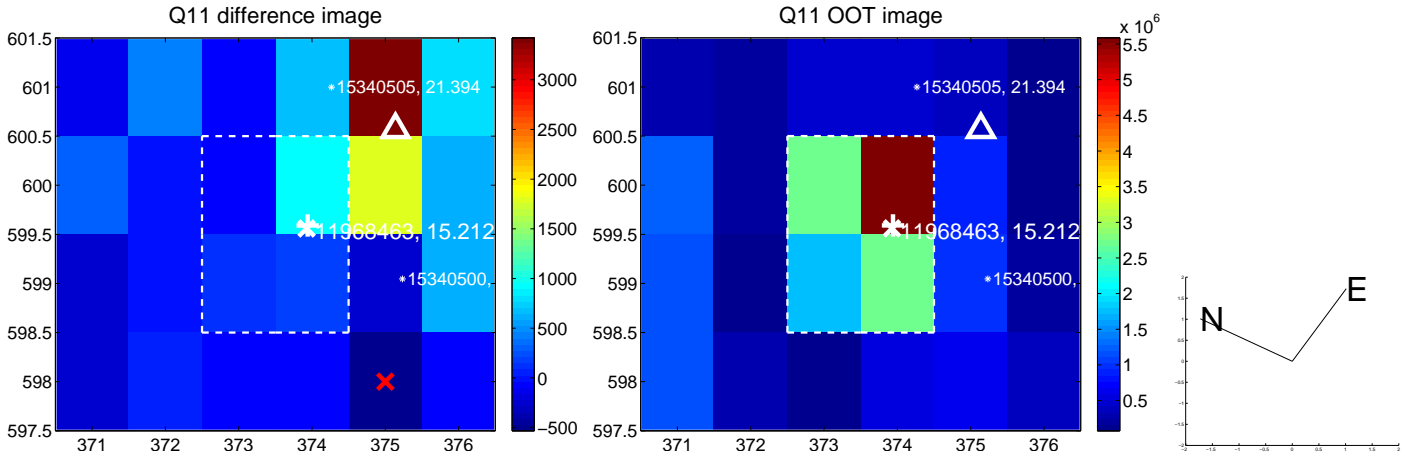
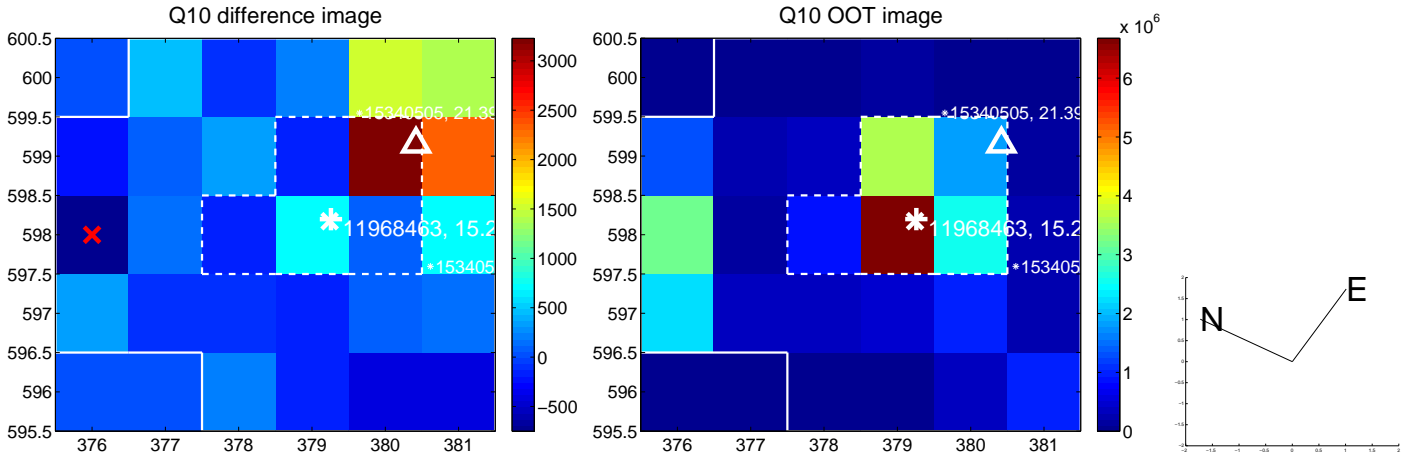
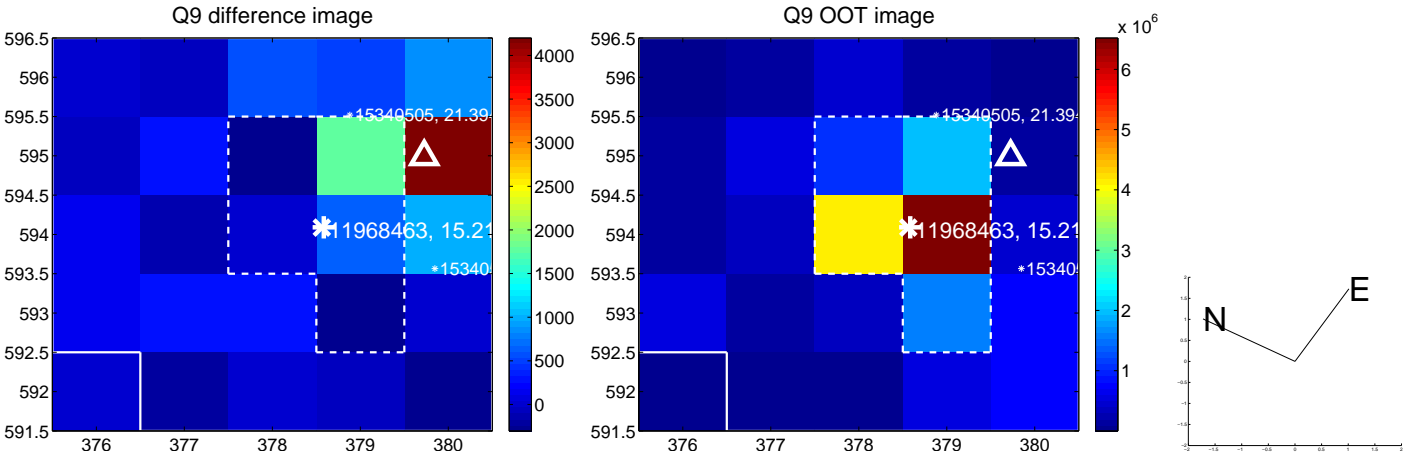
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



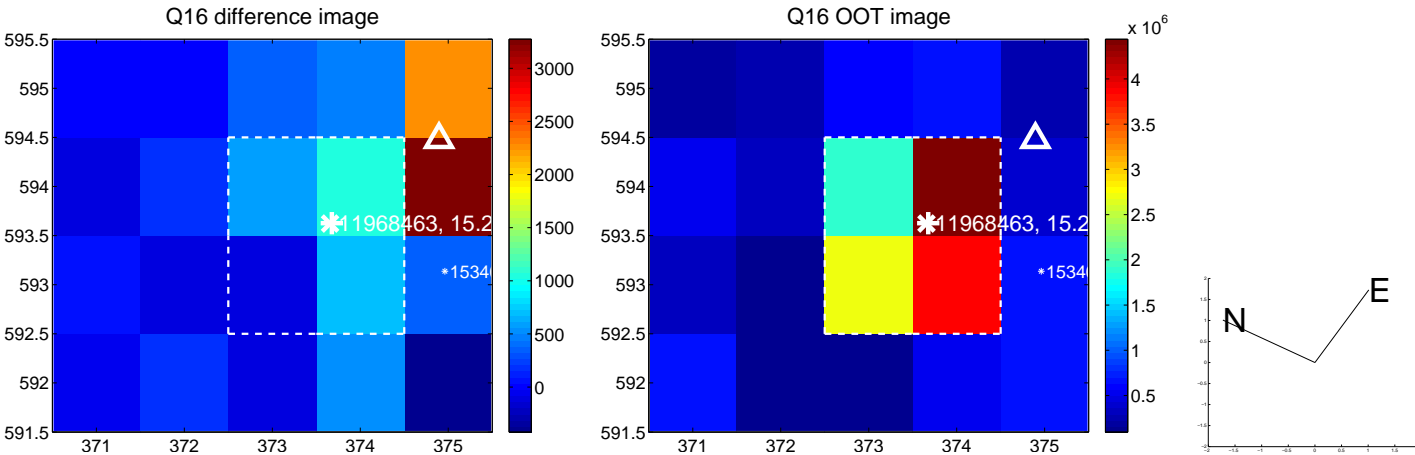
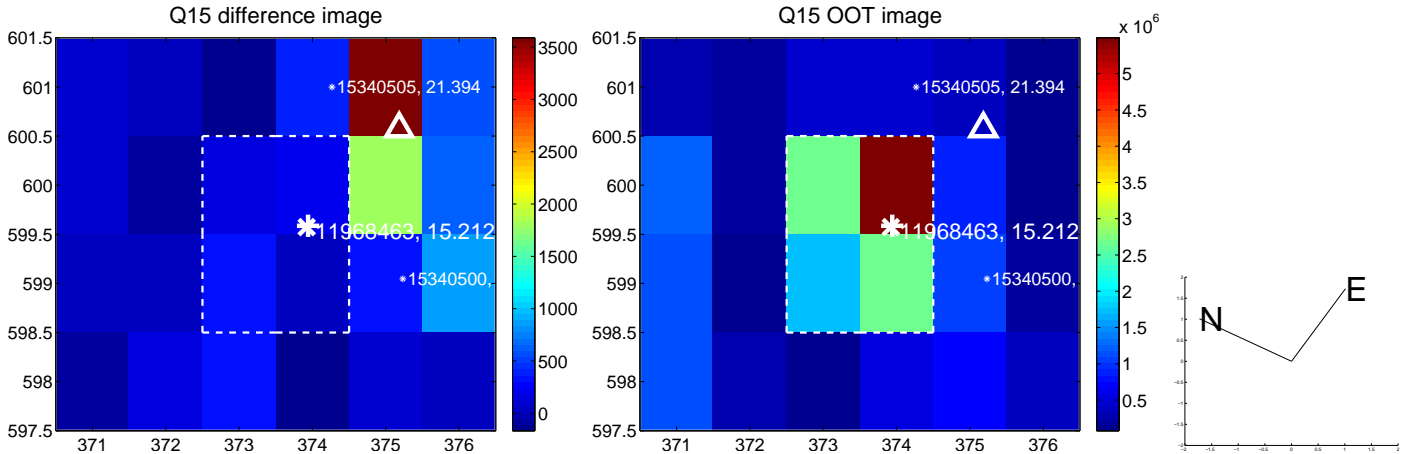
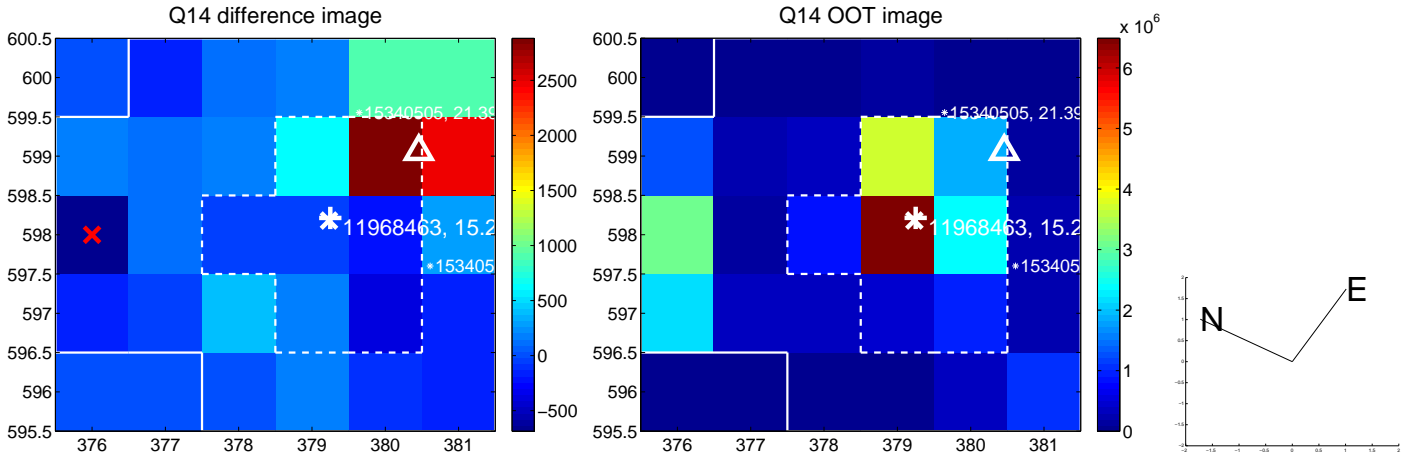
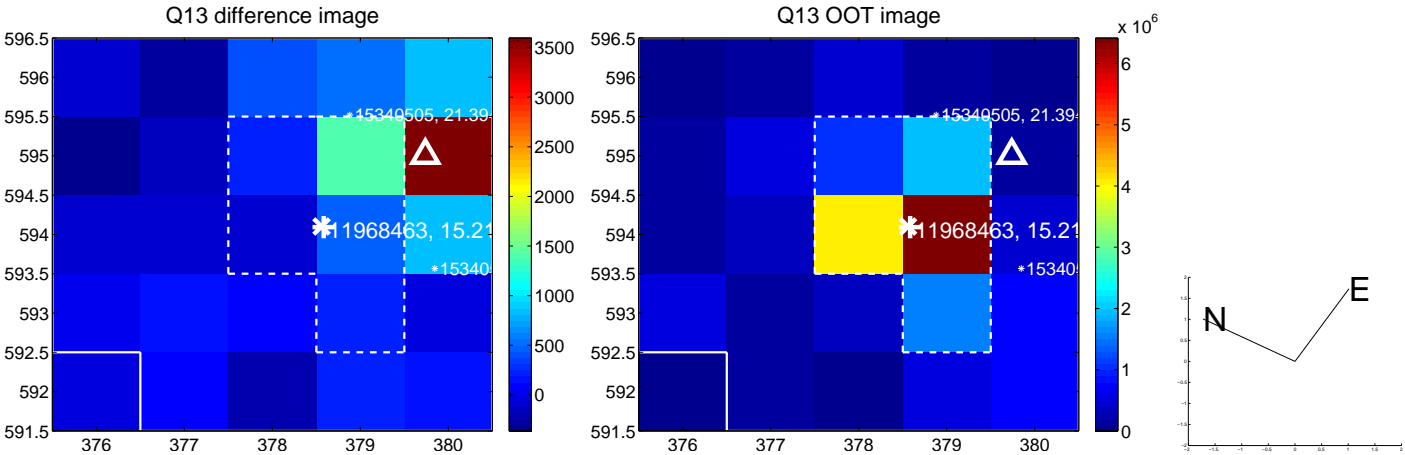
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



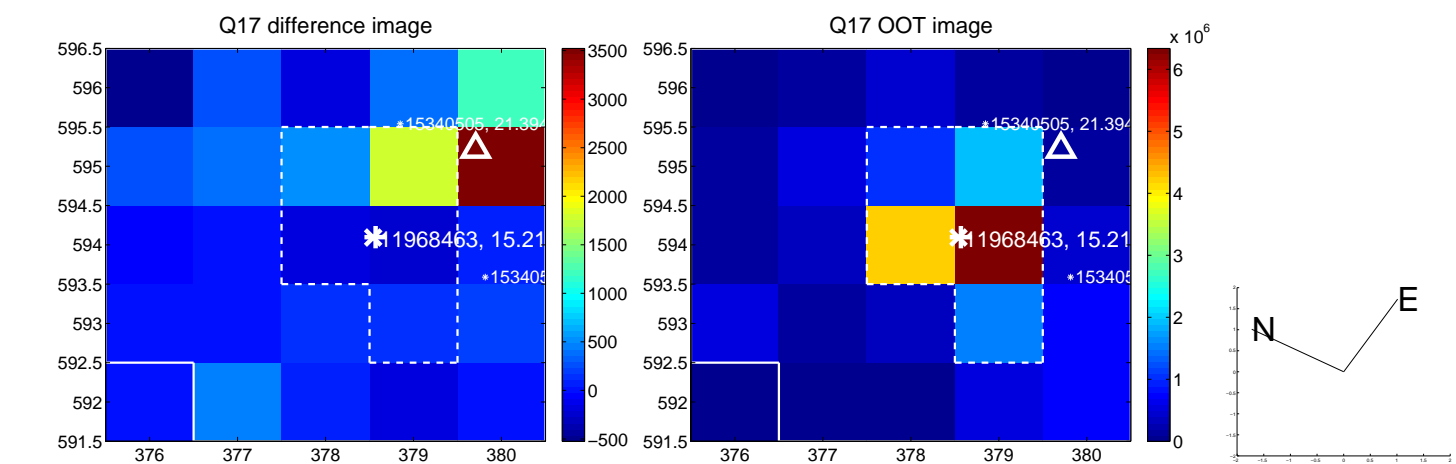
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



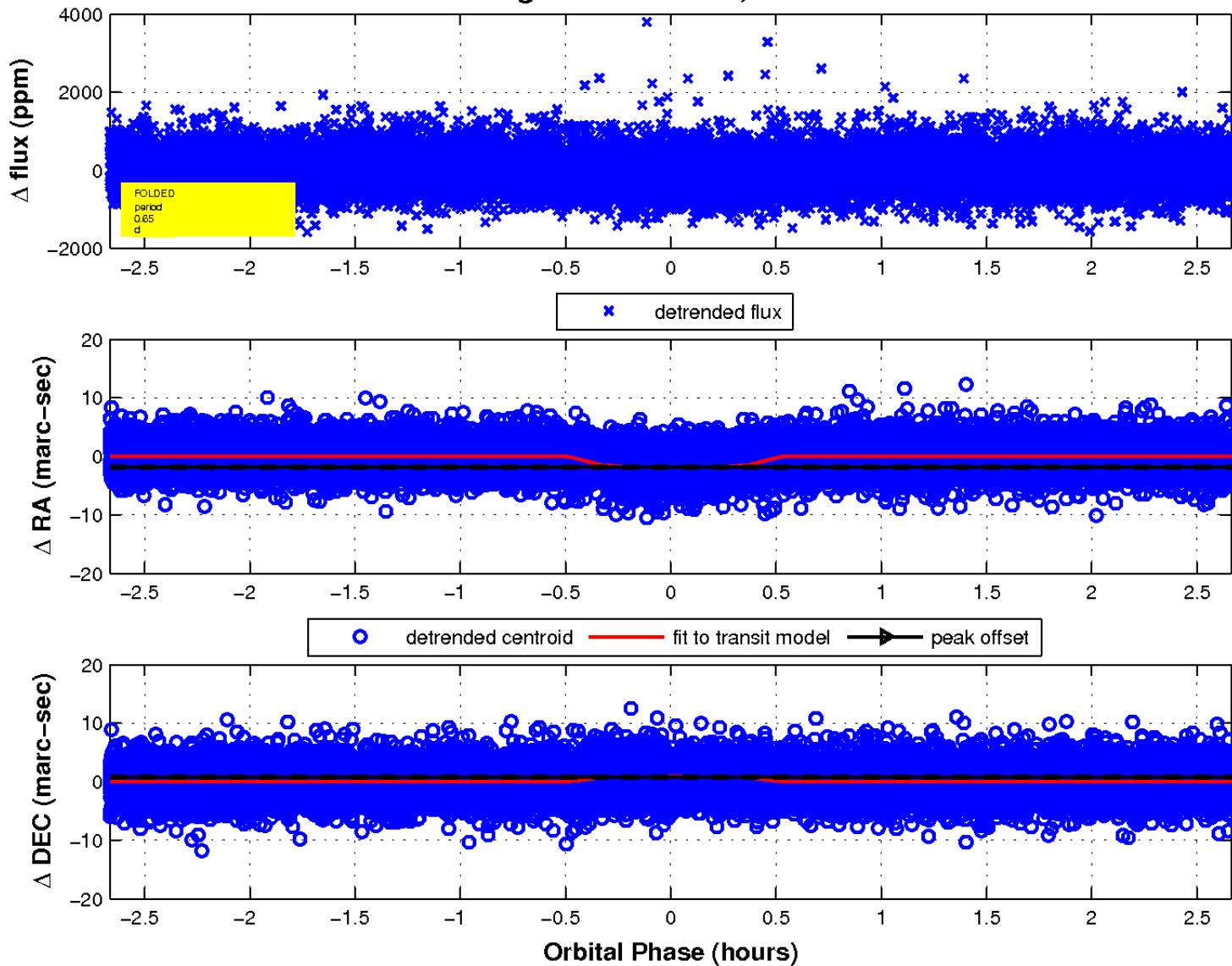
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

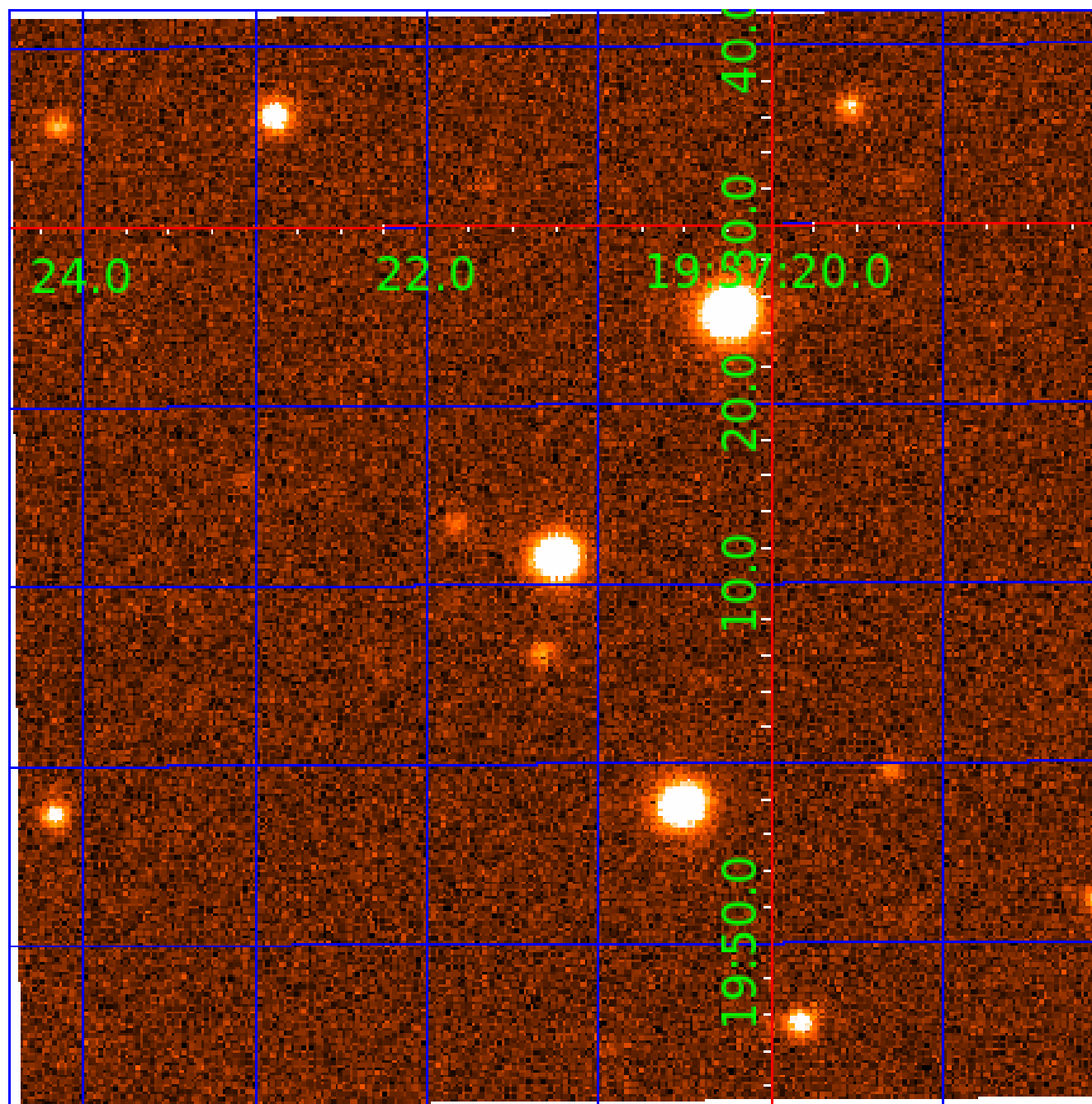


fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

Declination



KIC 011968463

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})
011968463-01	OBS	2433.02	10.043813	132.653095	444.5	5.932	24.0	25.3	1.11	6325	2.98	193.79
011968463-02	OBS	2433.01	15.162276	144.471175	425.7	7.078	19.0	20.7	1.11	6325	2.90	111.91
011968463-03	OBS	2433.03	56.415882	163.118298	442.8	7.651	11.7	12.5	1.11	6325	2.59	19.41
011968463-04	OBS	2433.04	27.903812	154.943039	282.9	5.381	9.2	9.7	1.11	6325	2.11	49.62
011968463-05	OBS	2433.05	0.646746	132.023559	109.0	0.888	9.1	11.0	1.11	6325	1.19	7508.64
011968463-06	OBS	2433.07	86.432830	163.724557	514.8	7.301	7.2	9.3	1.11	6325	2.98	10.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968463-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011968463-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011968463-03	OBS	PC	0.92	0	0	0	0	NO_COMMENT
011968463-04	OBS	PC	0.64	0	0	0	0	NO_COMMENT
011968463-05	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
011968463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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

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

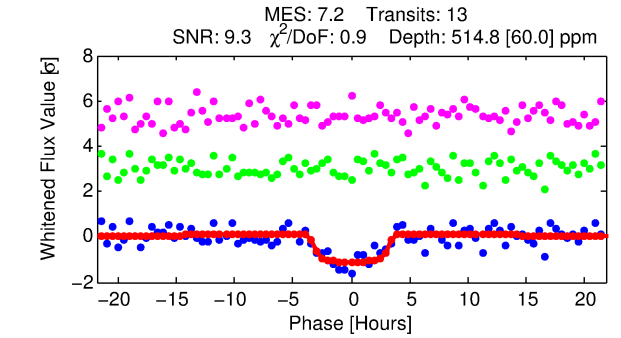
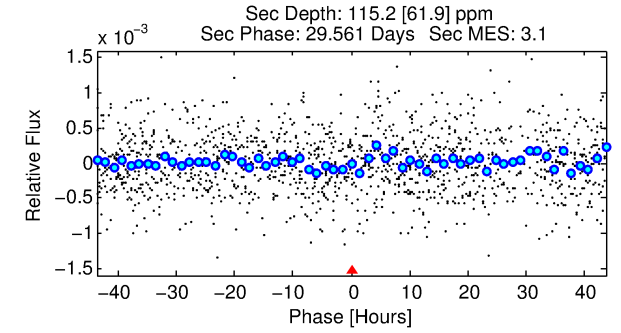
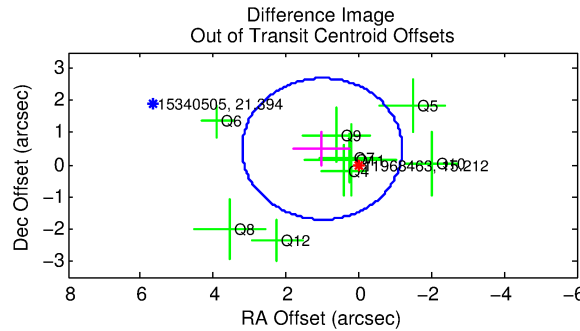
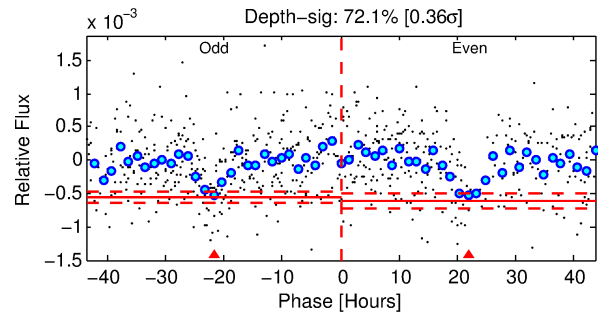
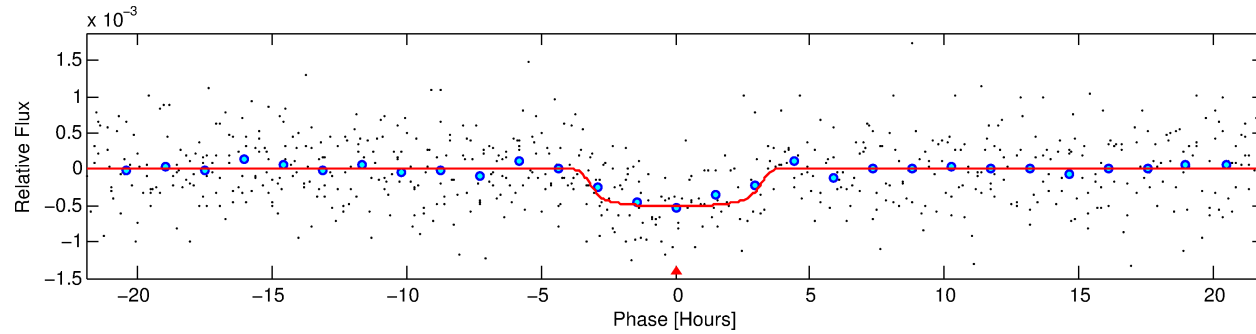
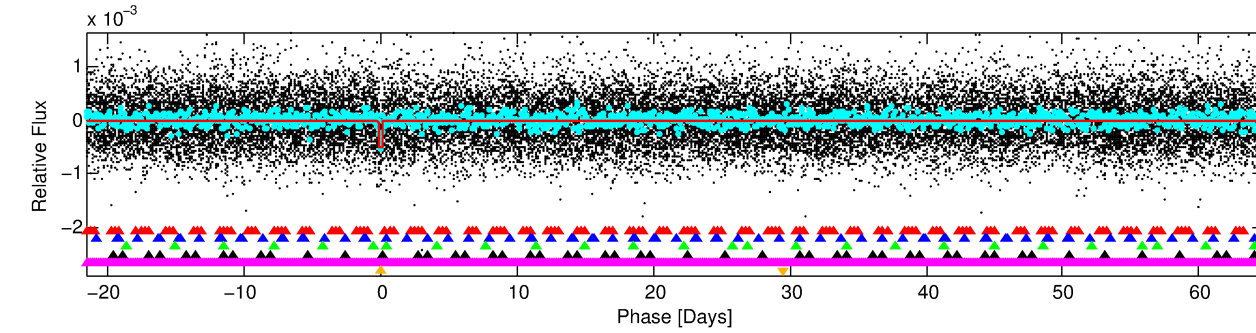
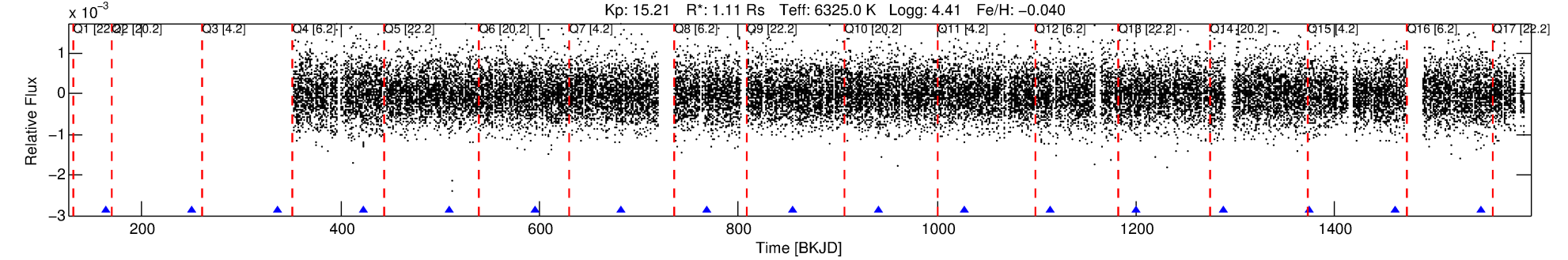
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011968463-06

No Significant Match Found

DV One-Page Summary

KIC: 11968463 Candidate: 6 of 6 Period: 86.433 d
KOI: K02433.07 Corr: 0.916



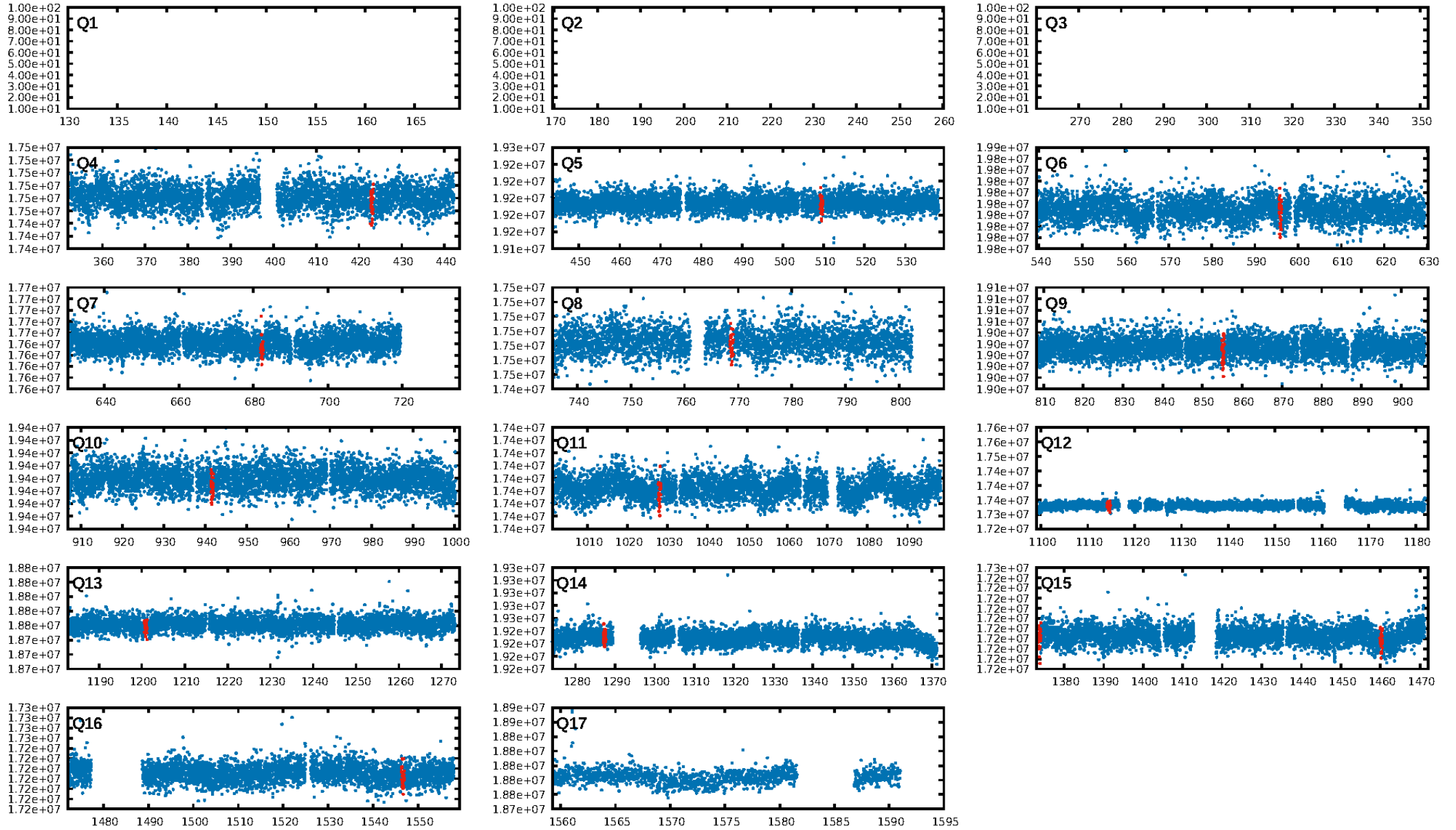
DV Fit Results:

Period = 86.43283 [0.00194] d
Epoch = 163.7246 [0.0207] BKJD
Rp/R* = 0.0246 [0.0035]
a/R* = 42.90 [28.23]
b = 0.91 [0.13]
Seff = 10.99 [4.83]
Teff = 464 [51] K
Rp = 2.98 [1.12] Re
a = 0.4017 [0.1151] AU
Ag = 1150.84 [842.13] [1.37 σ]
Teffp = 4181 [658] K [5.63 σ]

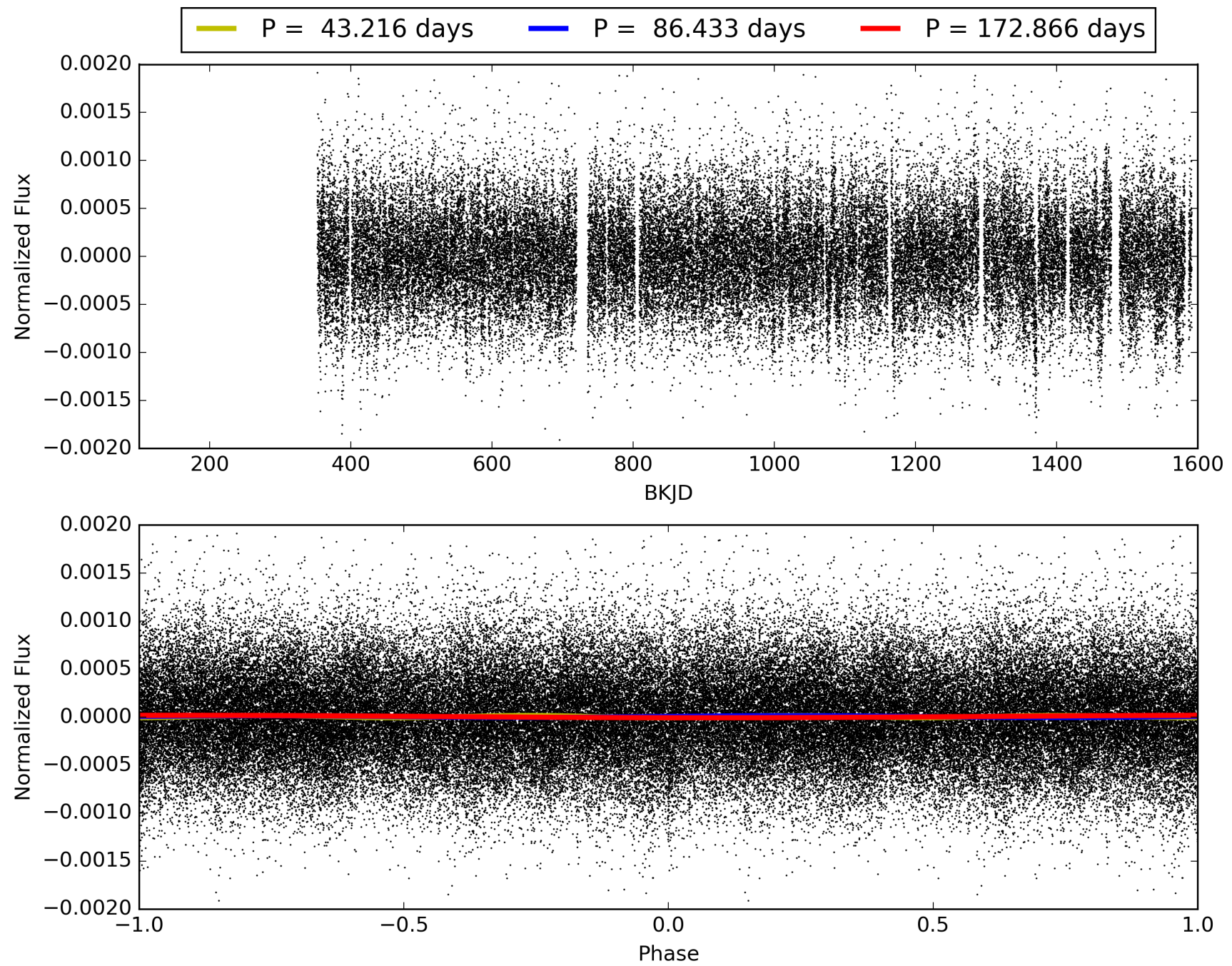
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [68.12 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.90e-12
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 2.007
Centroid-sig: 0.9%
Centroid-so: 2.527 arcsec [2.14 σ]
OotOffset-rm: 1.125 arcsec [1.53 σ]
KicOffset-rm: 1.157 arcsec [1.53 σ]
OotOffset-st: 2/2/3/2 [9]
KicOffset-st: 2/2/3/2 [9]
DiffImageQuality-fgm: 0.00 [0/9]
DiffImageOverlap-fno: 0.00 [0/11]

TCE 011968463-06, PDC Light Curves

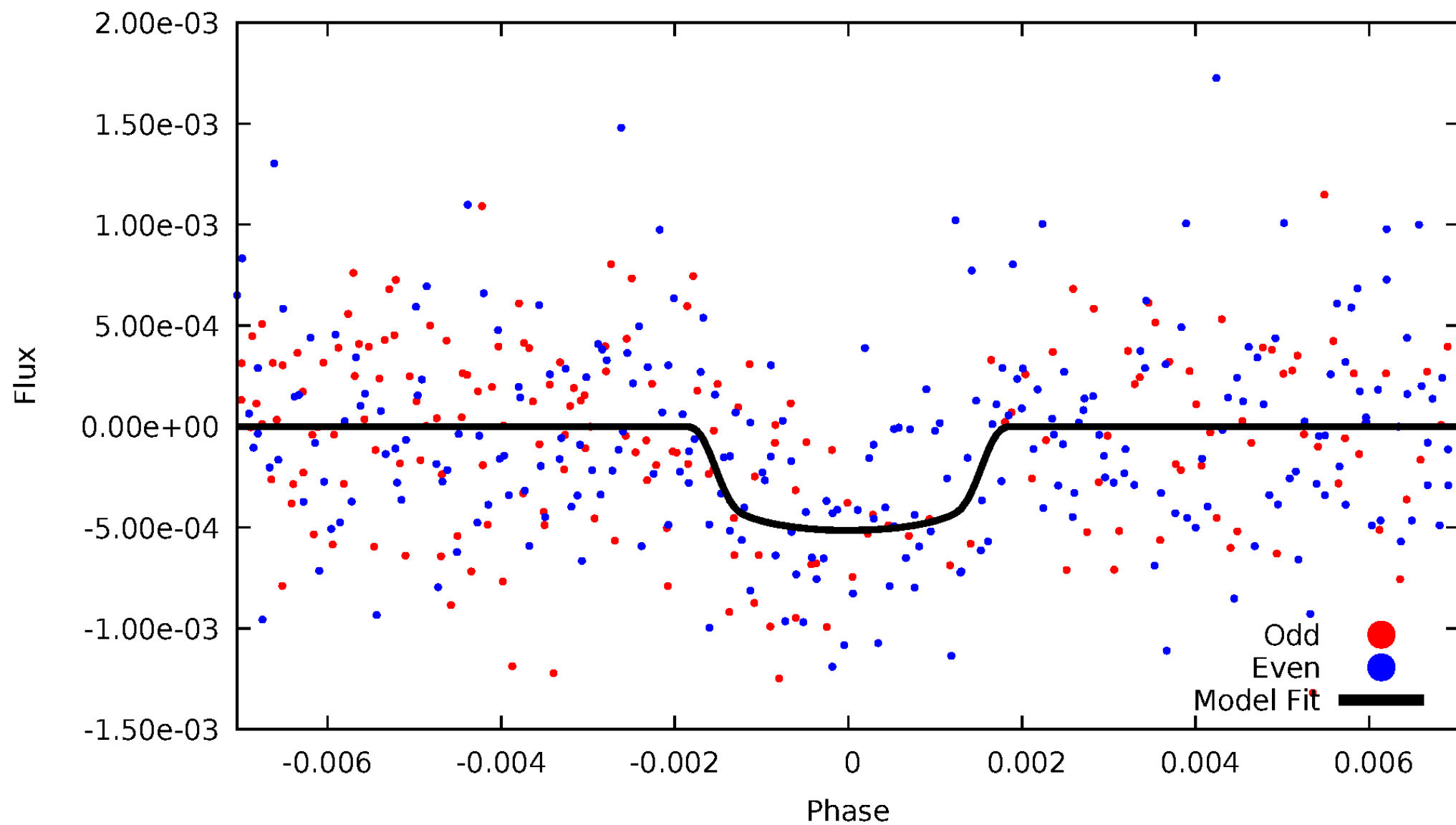


TCE 011968463-06



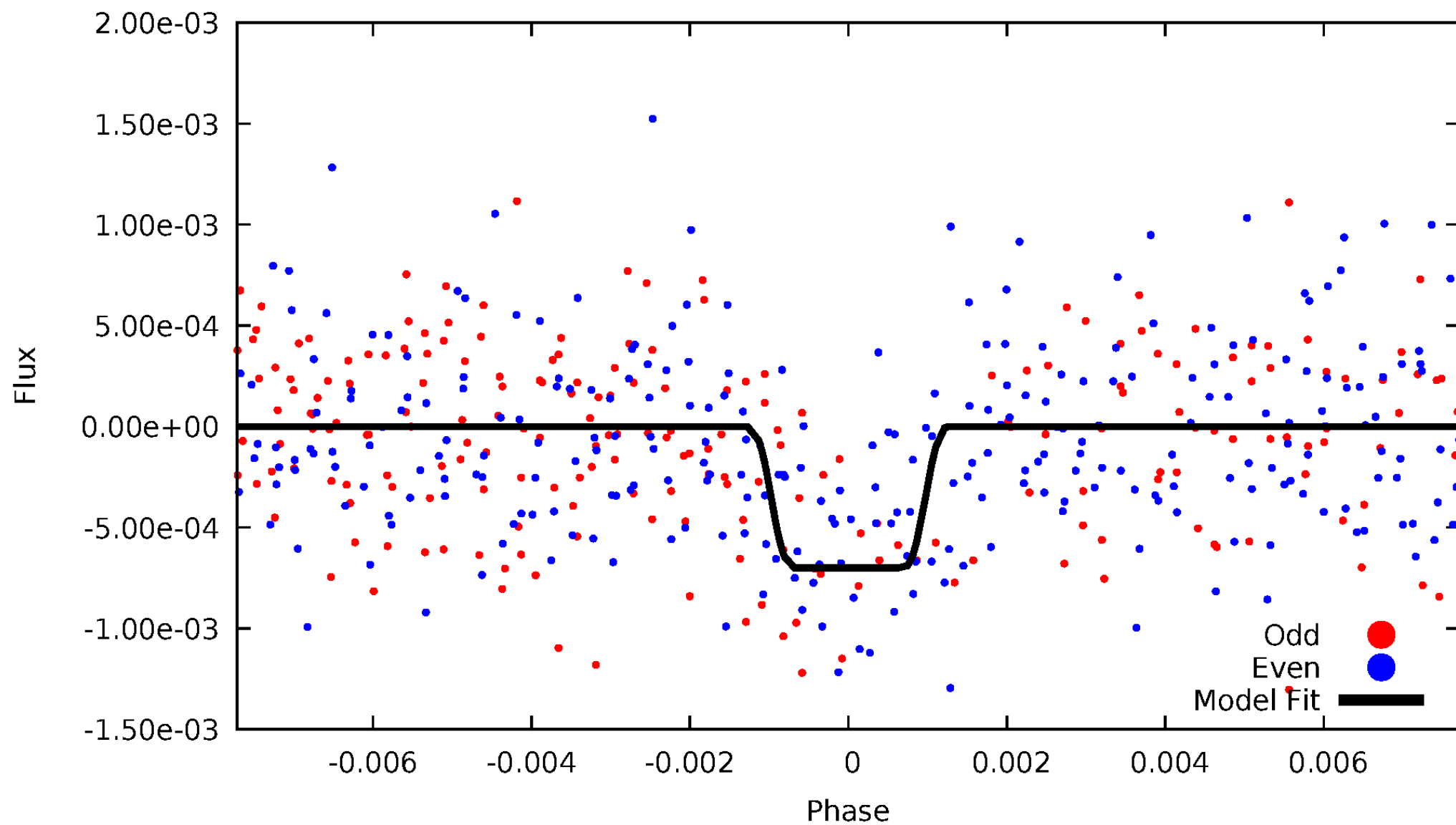
DV Odd/Even

TCE 011968463-06



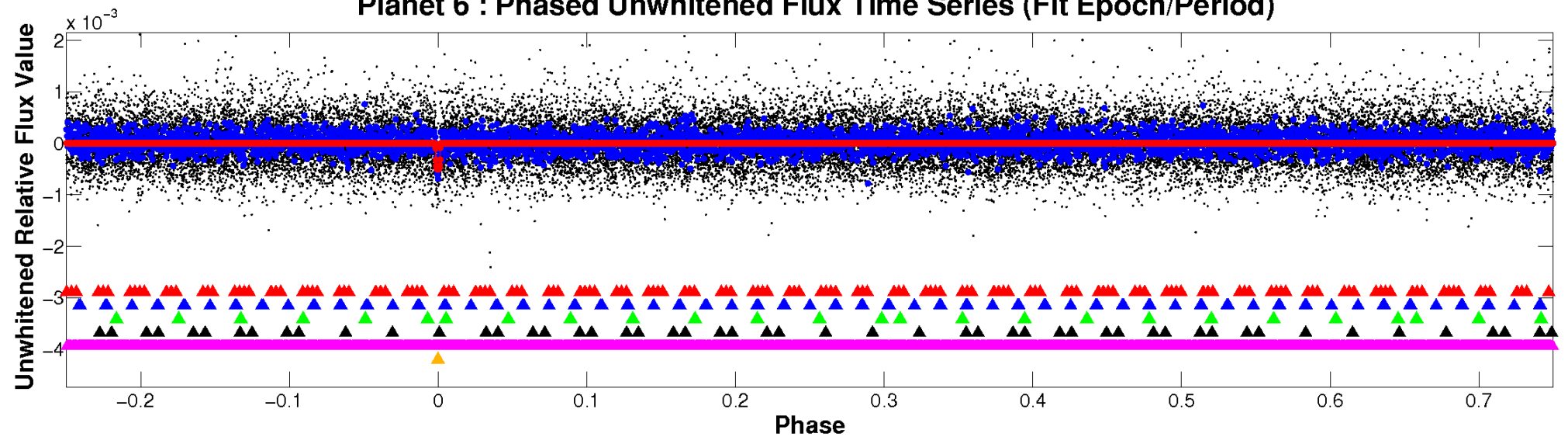
ALT Odd/Even

TCE 011968463-06

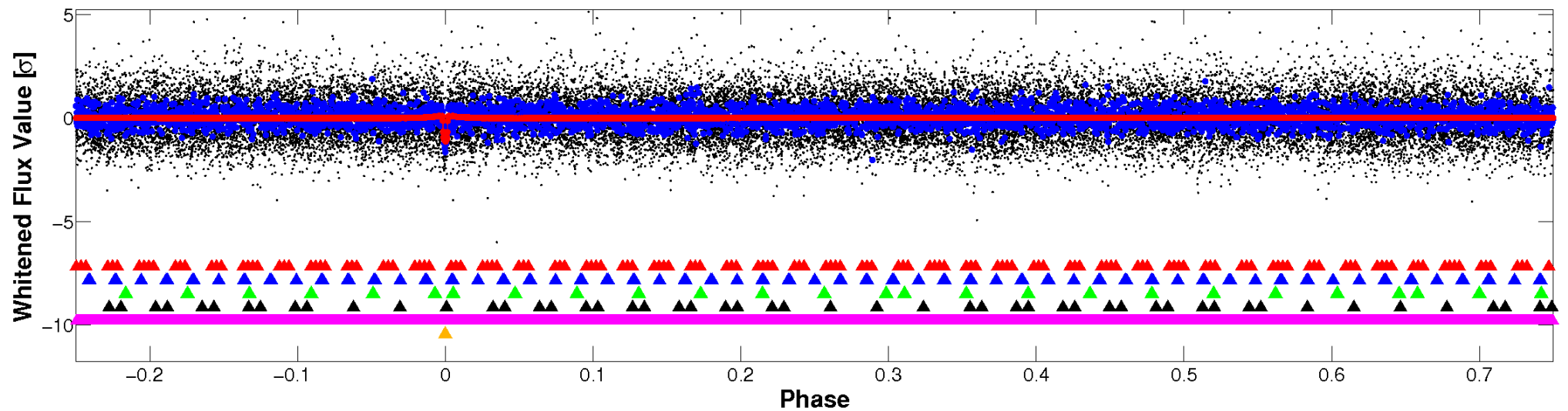


Non-Whitened Vs. Whitened Light Curve

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

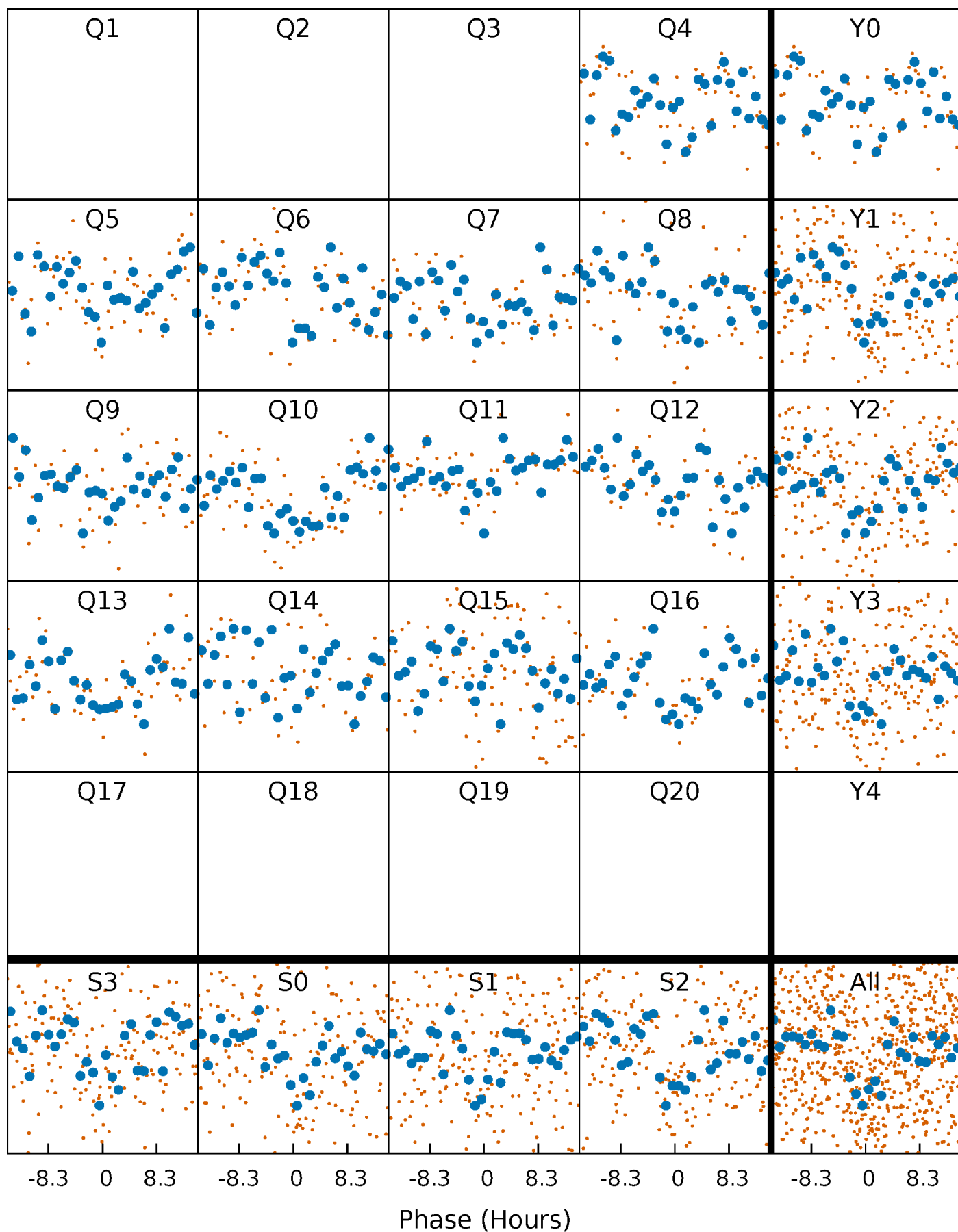


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



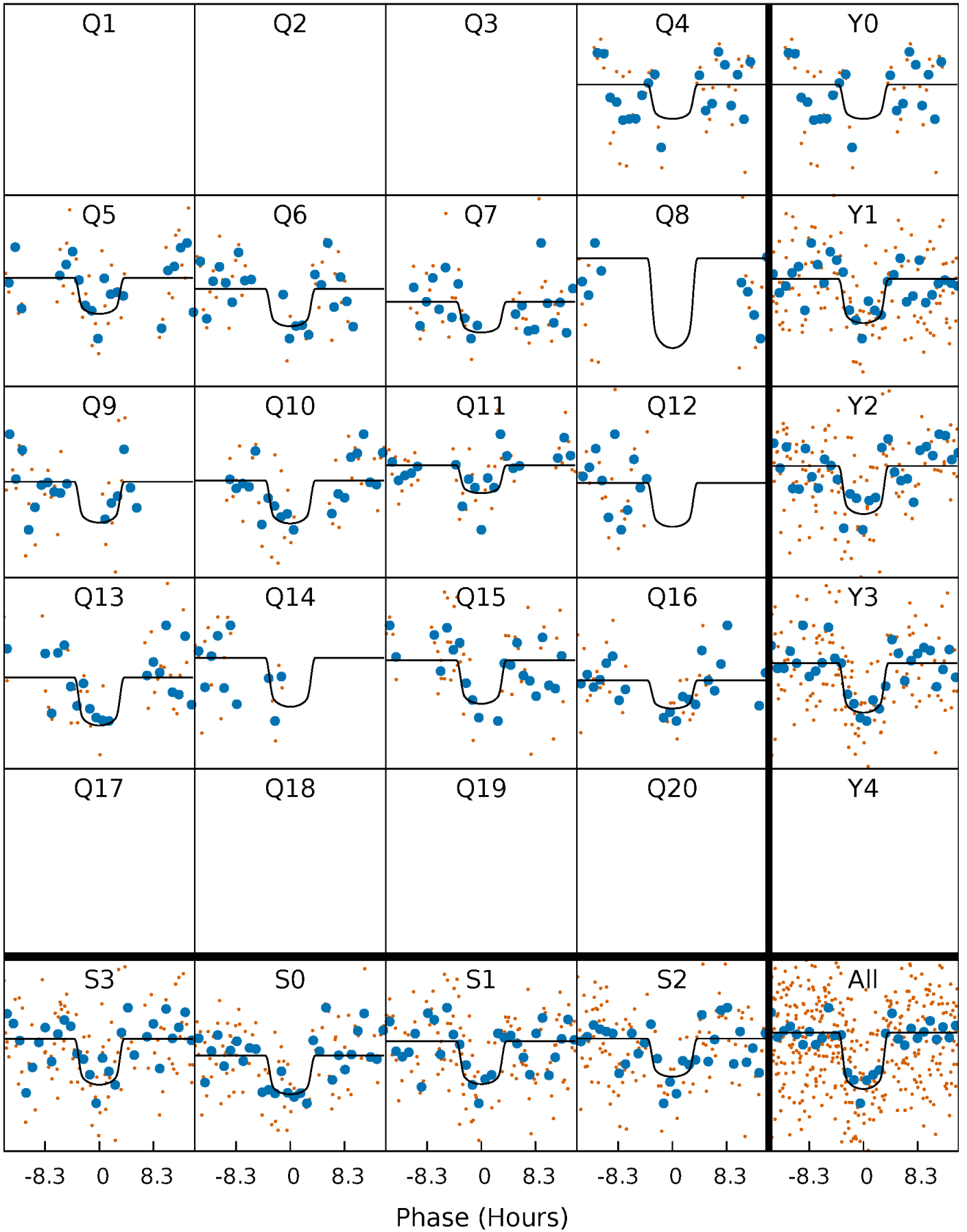
PDC Quarter-Phased Transit Curves

TCE 011968463-06 P= 86.432830 Days $T_0=163.724557$ (BKJD)



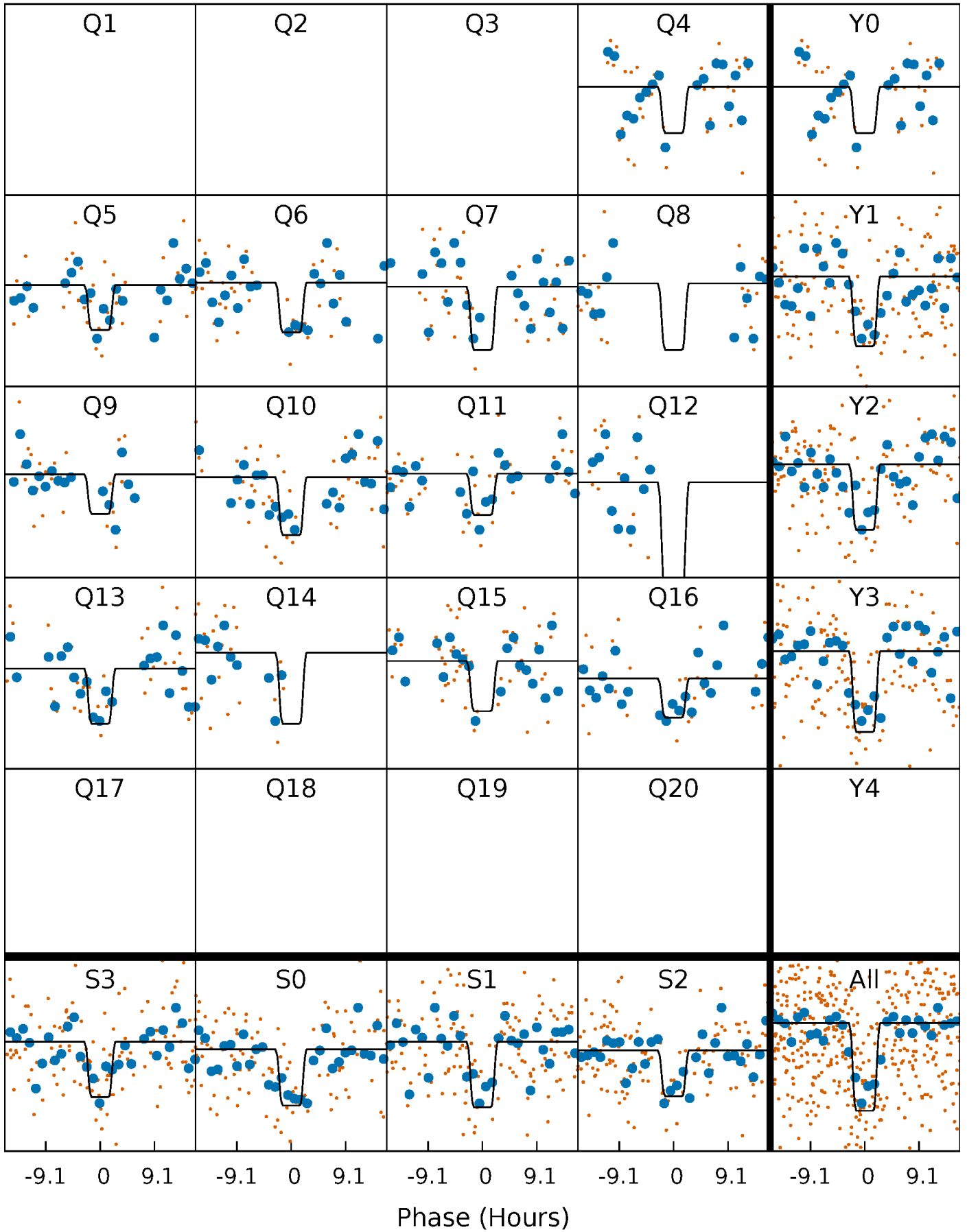
DV Quarter-Phased Transit Curves

TCE 011968463-06 P= 86.432830 Days $T_0=163.724557$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

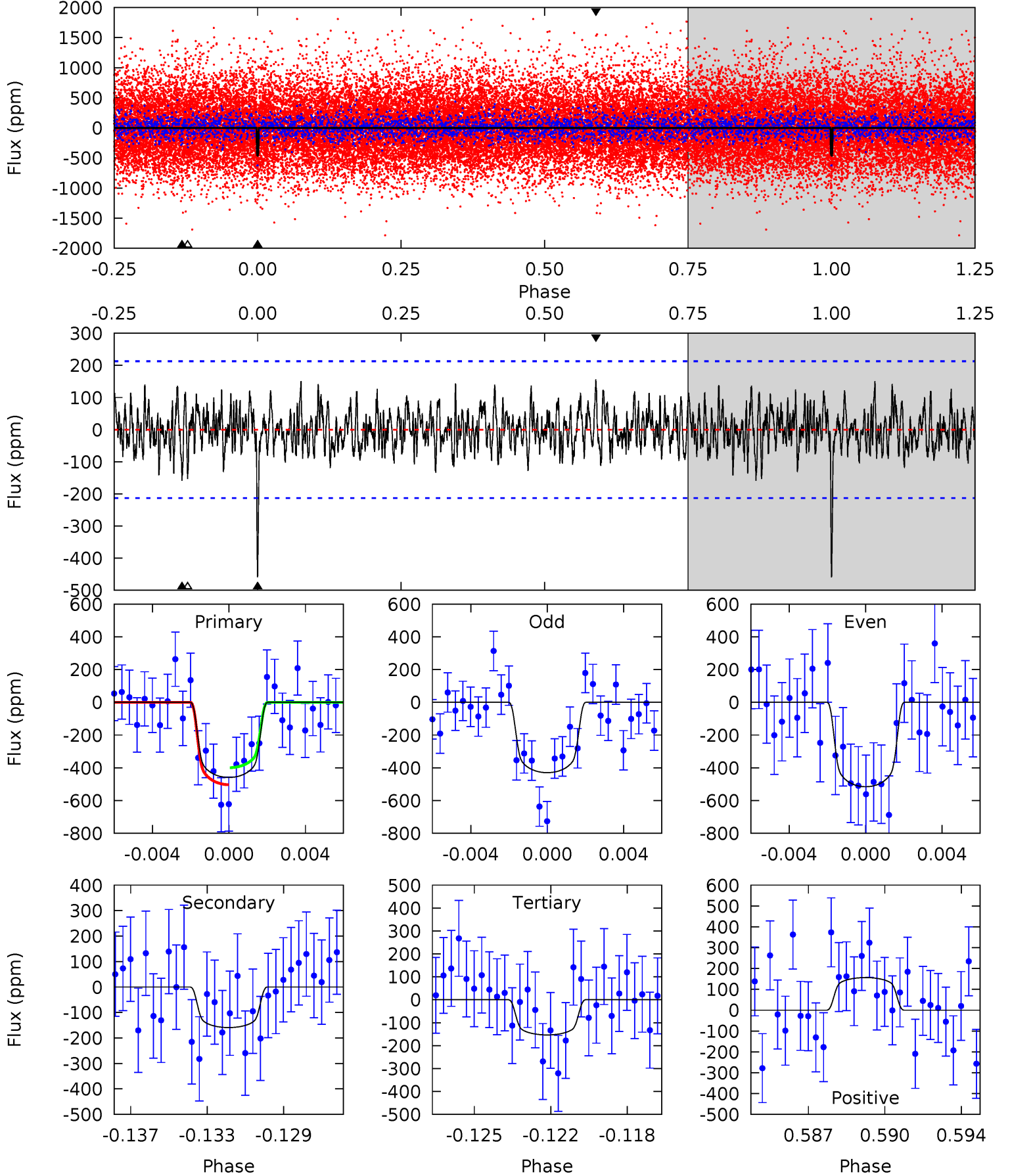
TCE 011968463-06 $P = 86.434738$ Days $T_0 = 163.700513$ (BKJD)



DV Model-Shift Uniqueness Test

011968463-06, $P = 86.432830$ Days, $E = 163.724557$ Days

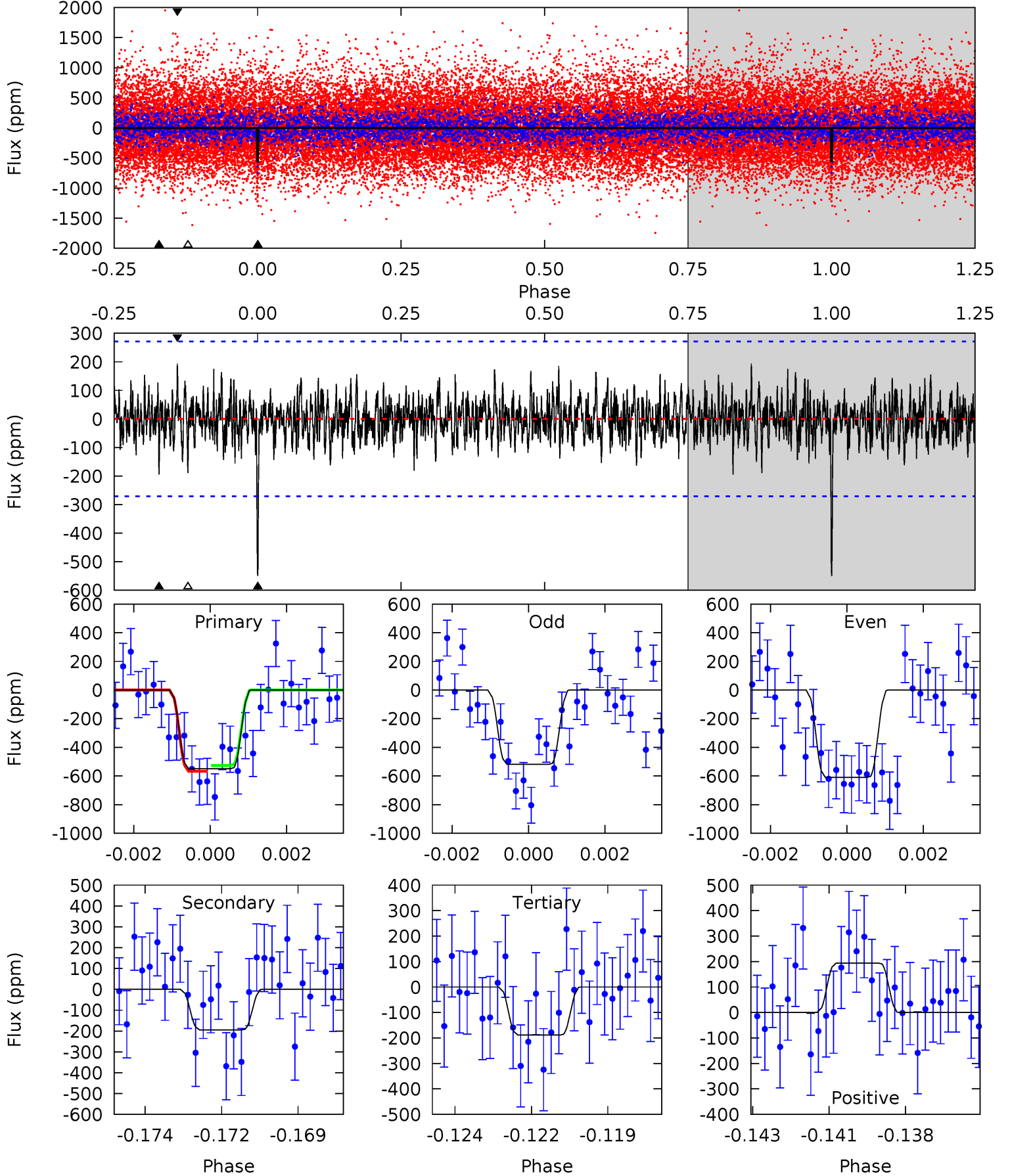
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	3.90	3.76	3.83	5.21	2.90	1.26	7.49	7.42	0.14	0.07	0.99	1.00	0.25	1.26



Alt Model-Shift Uniqueness Test

011968463-06, $P = 86.434738$ Days, $E = 163.700513$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	3.80	3.68	3.79	5.29	3.04	1.09	7.04	6.93	0.11	0.01	0.84	1.12	0.26	0.39



Stellar Parameters For KIC 011968463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6325^{+174}_{-261}	$4.409^{+0.058}_{-0.218}$	$-0.040^{+0.250}_{-0.300}$	$1.112^{+0.388}_{-0.129}$	$1.157^{+0.169}_{-0.169}$	$1.184^{+0.368}_{-0.666}$
	+3%/-4%	+1%/-5%	+625%/-750%	+35%/-12%	+15%/-15%	+31%/-56%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011968463-06 / KOI 2433.07

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-159 ± 41	$3.09^{+0.69}_{-0.54}$	663^{+52}_{-39}	4659^{+408}_{-356}	1403^{+774}_{-526}
Alt.	-195 ± 51	$3.39^{+0.71}_{-0.54}$	660^{+56}_{-37}	4682^{+359}_{-402}	1416^{+769}_{-548}

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

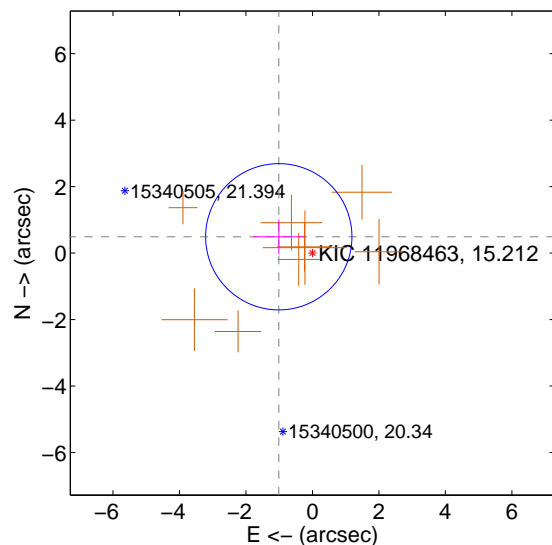
Supplemental centroid analysis for 011968463-06. Kepler magnitude: 15.21. Transit SNR 9.34

There are 0 quarters with good PRF difference image offsets

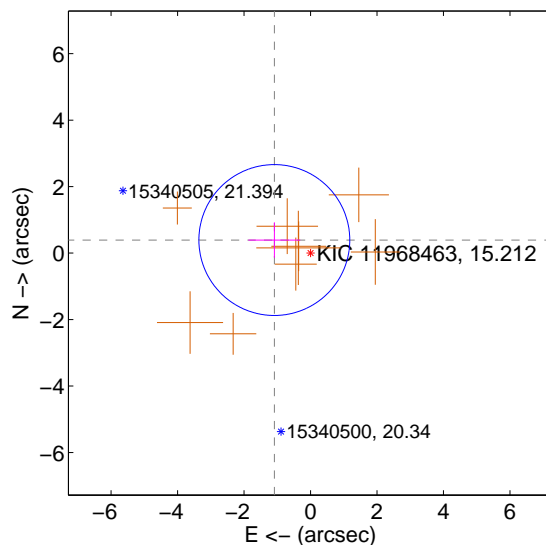
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.125 ± 0.733	1.53	1.012 ± 0.775	0.491 ± 0.520
PRF-fit source offset from KIC position	1.157 ± 0.757	1.53	1.089 ± 0.781	0.393 ± 0.532
photometric centroid source offset	2.53 ± 1.18	2.14	-1.60 ± 1.02	-1.95 ± 1.28

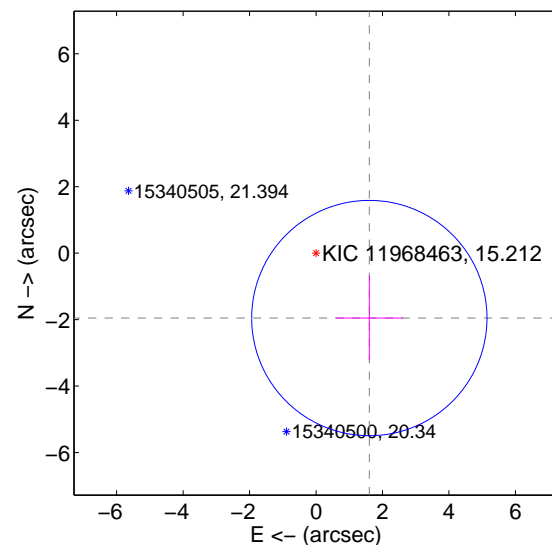
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

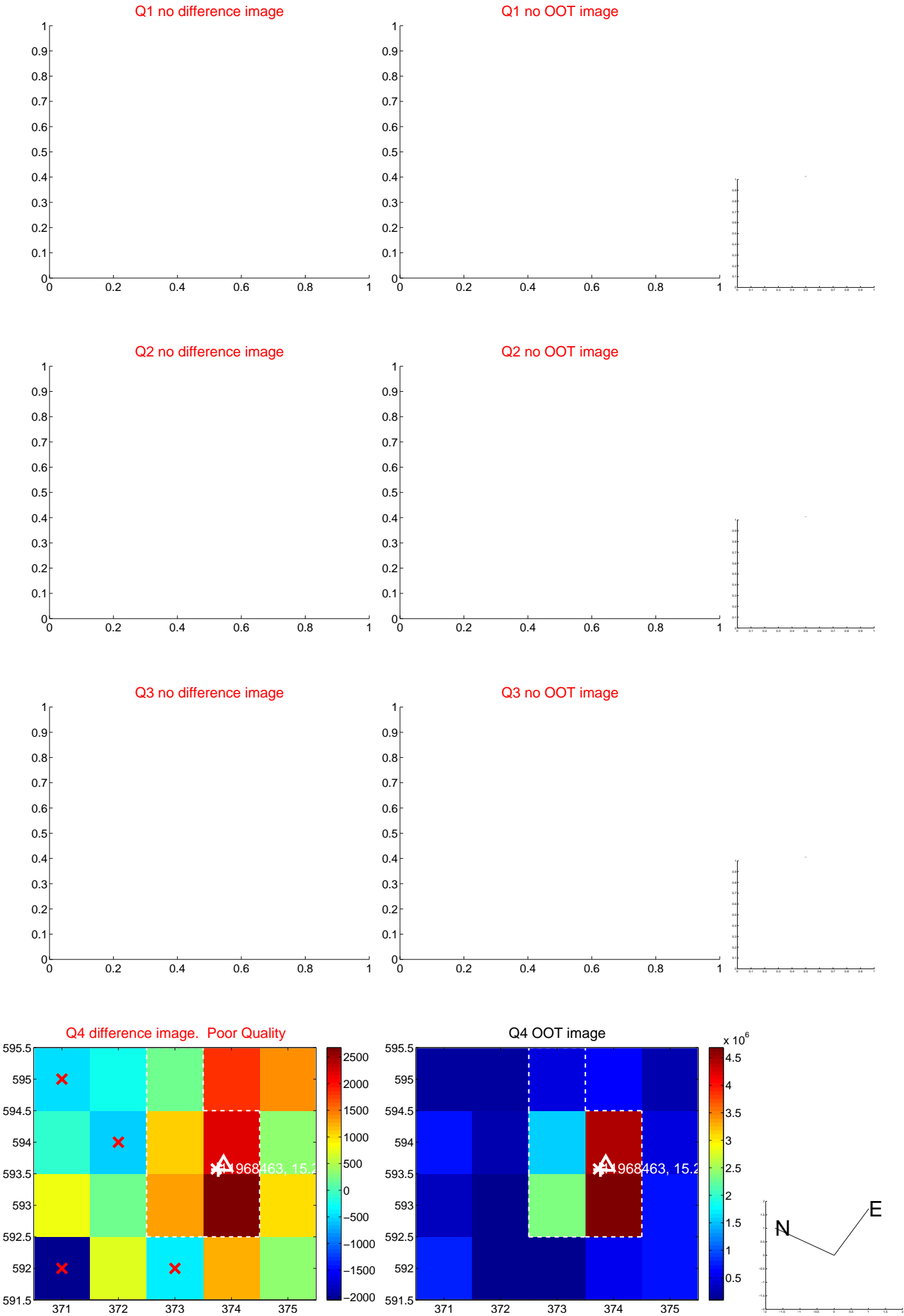


offset from photometric centroids

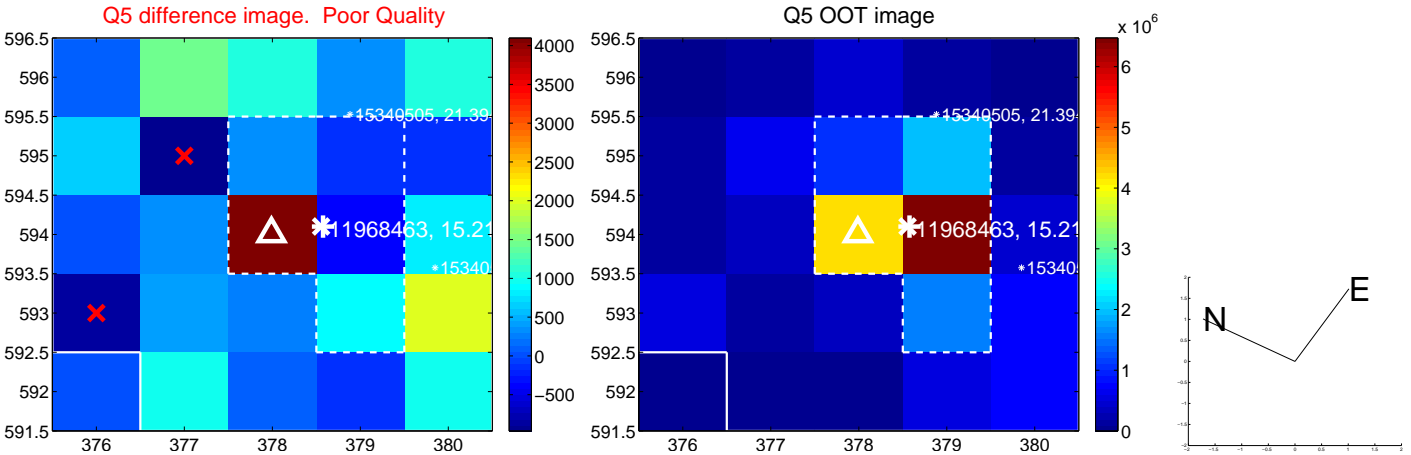


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

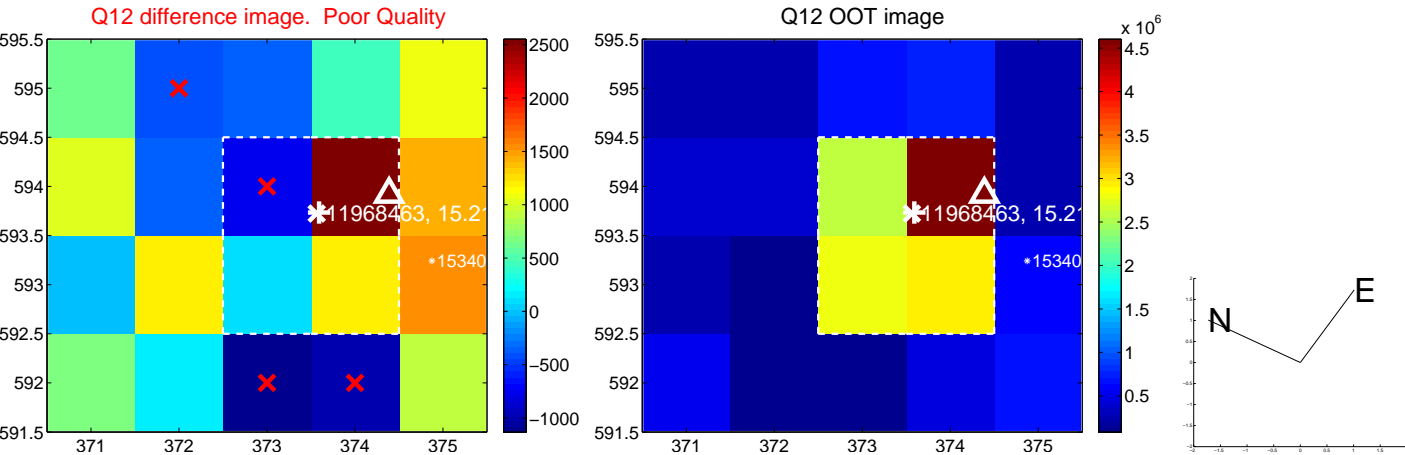
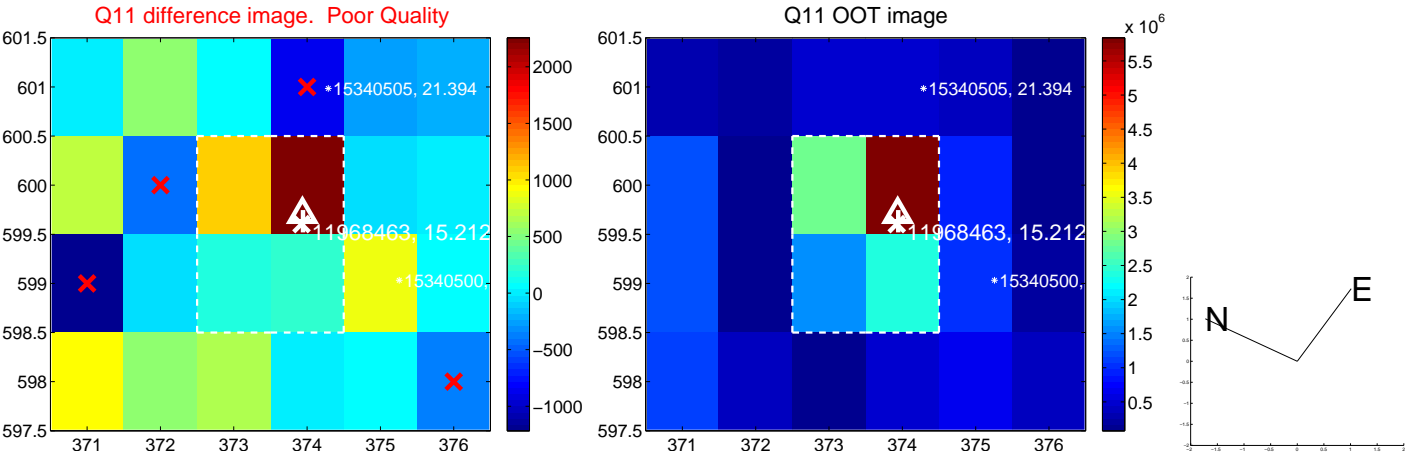
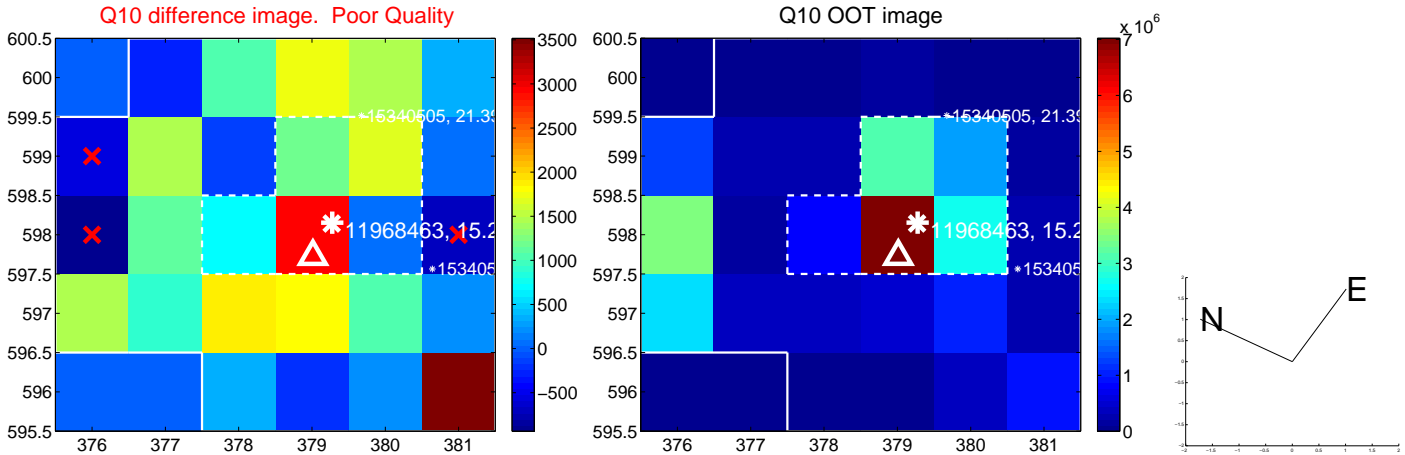
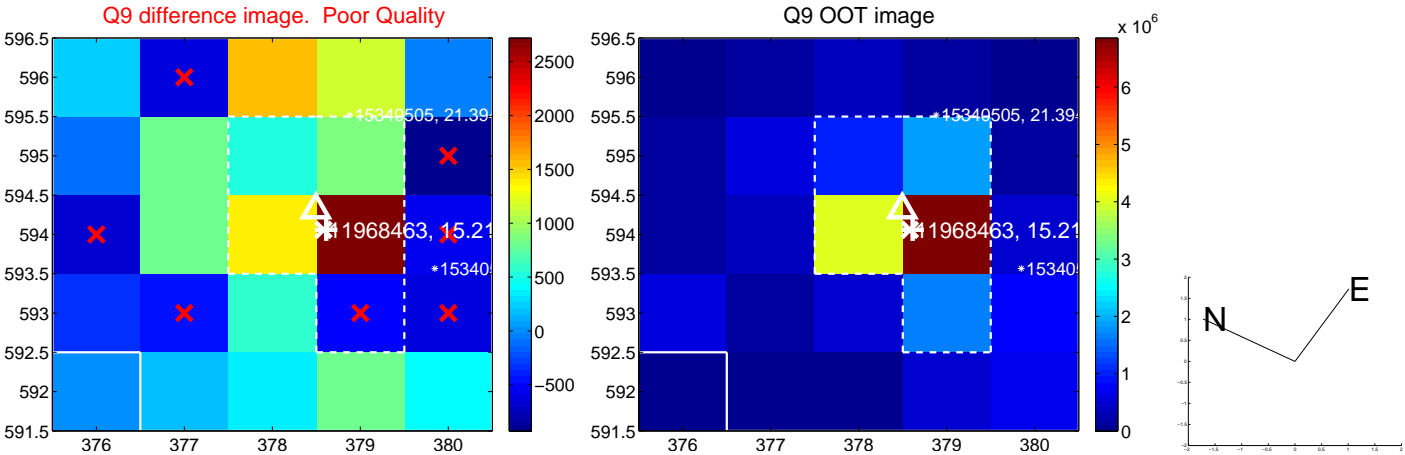
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



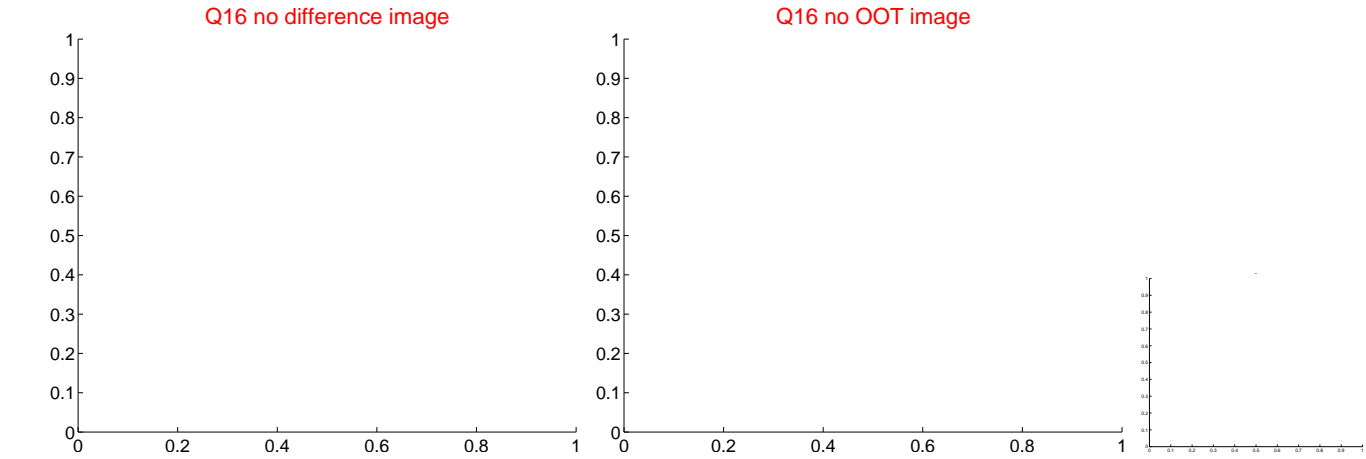
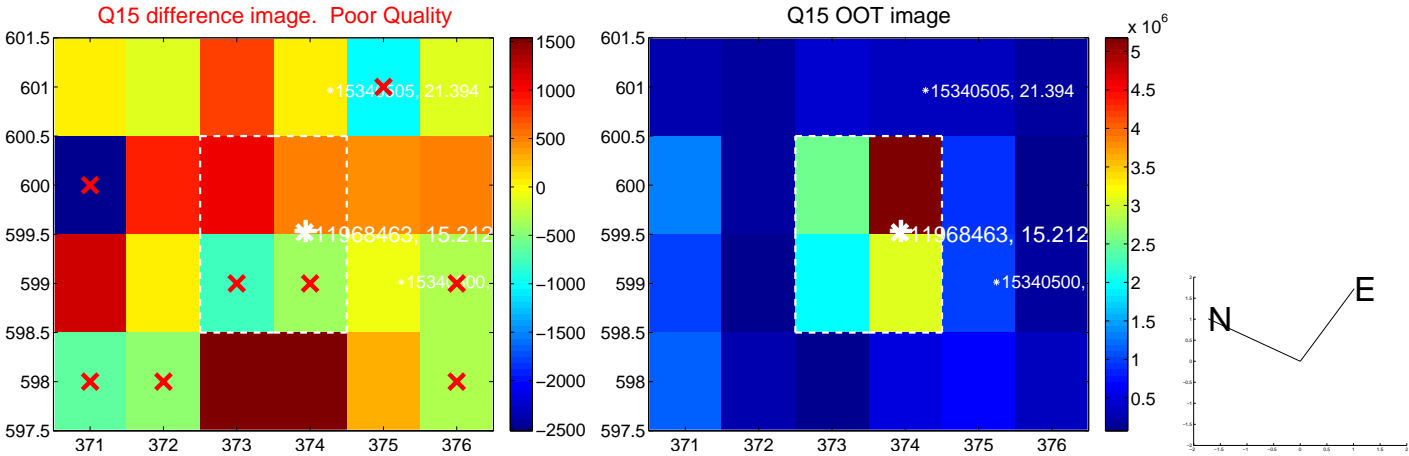
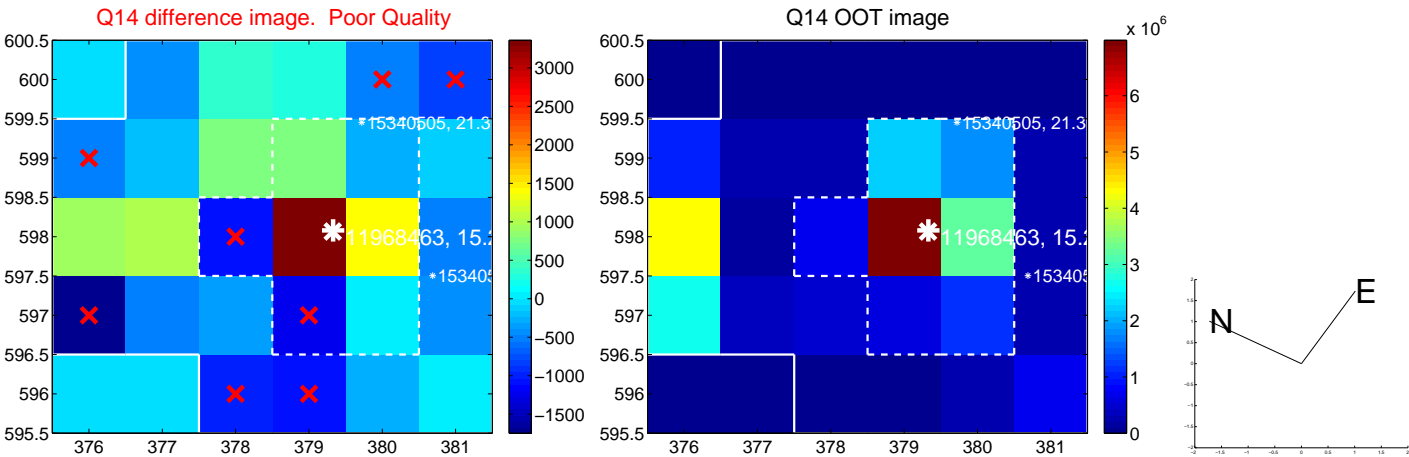
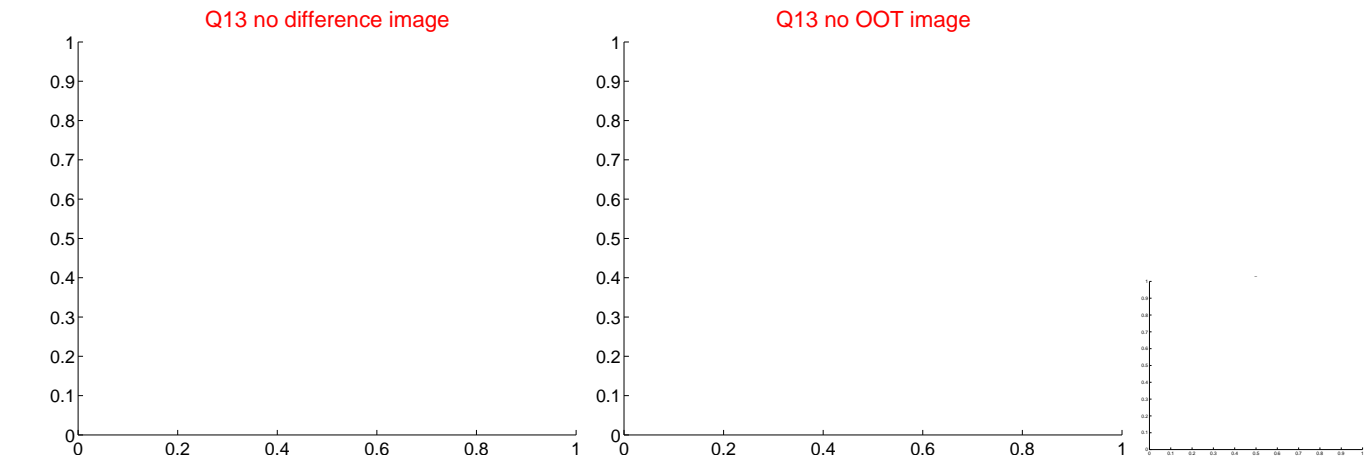
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



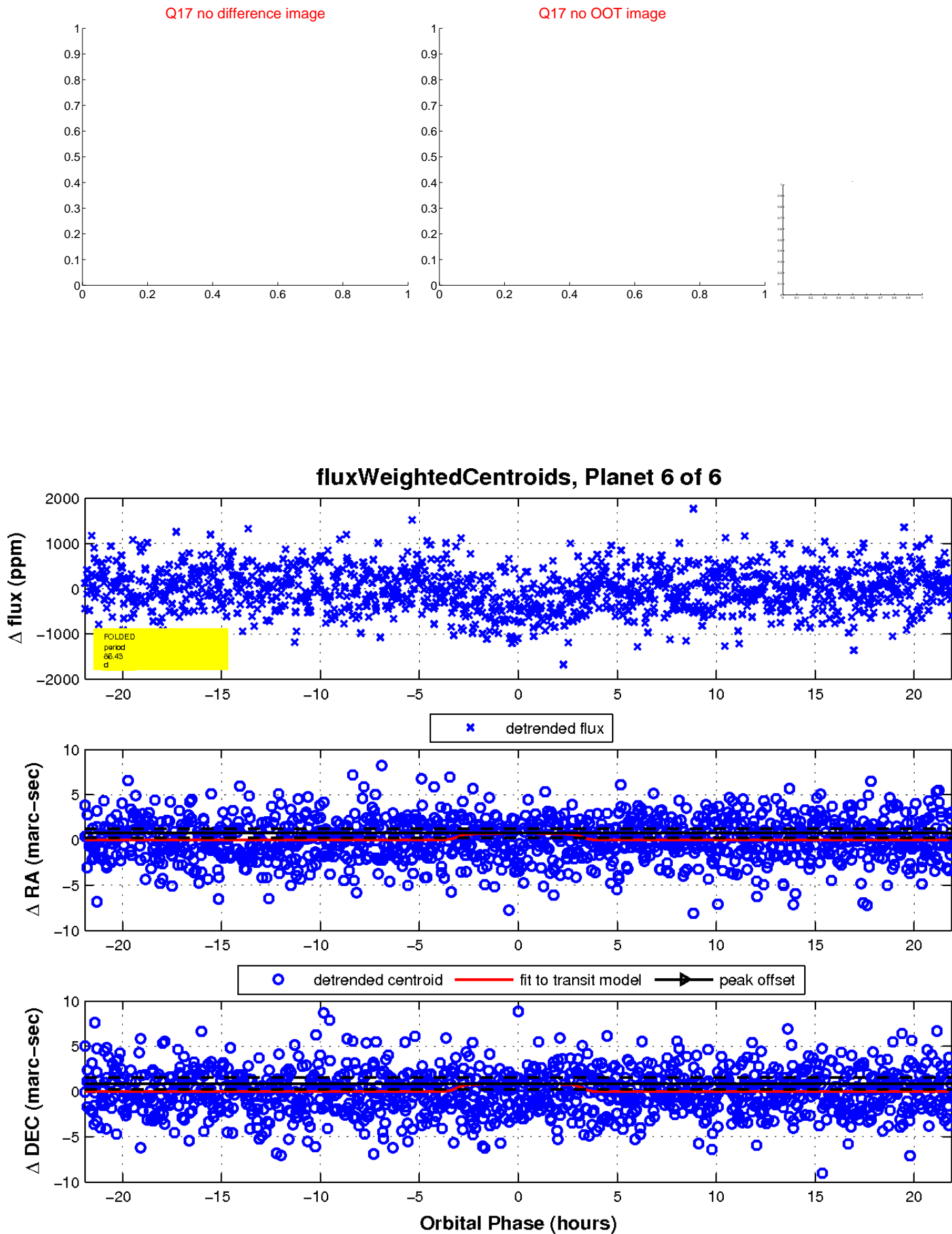
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

