

KIC 011968439

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})
011968439-01	OBS	No	1.348703	132.747427	15.6	5.474	8.7	9.4	1.94	7232	0.82	12230.93
011968439-02	OBS	No	168.977792	263.457415	123.5	15.884	11.2	6.9	1.94	7232	2.48	19.51
011968439-03	OBS	No	233.206082	330.509935	128.5	8.060	7.2	7.2	1.94	7232	2.50	12.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968439-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011968439-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_MEAS
011968439-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

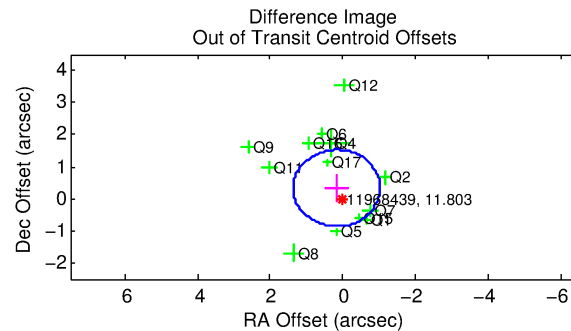
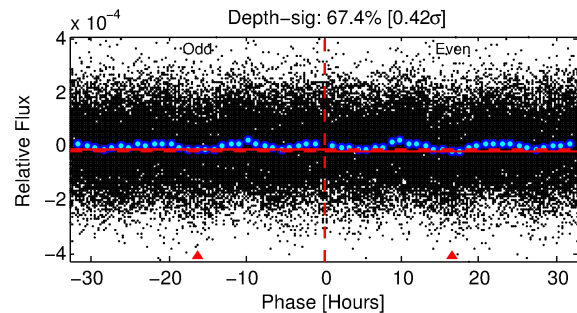
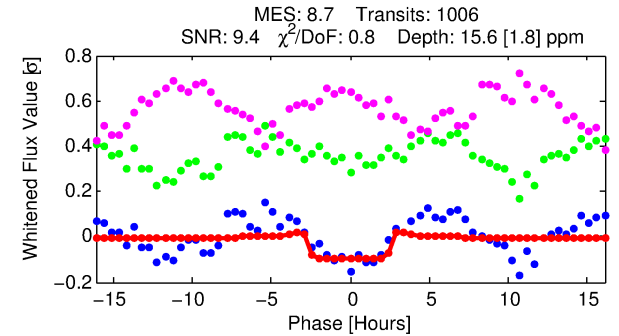
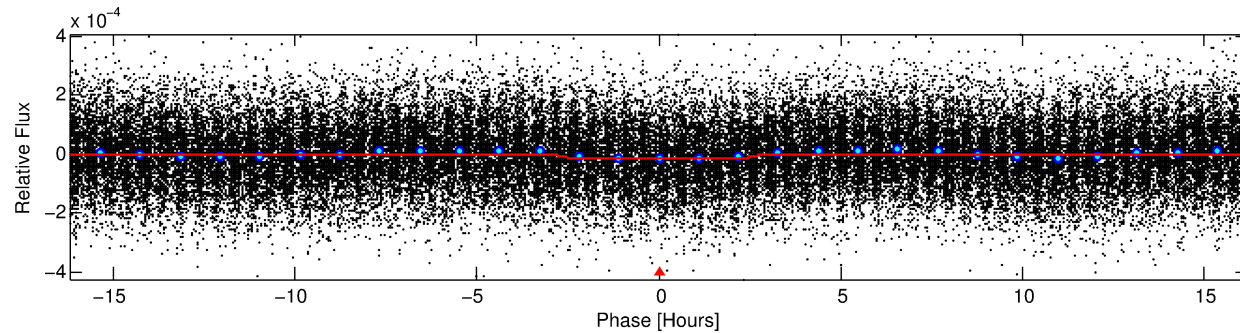
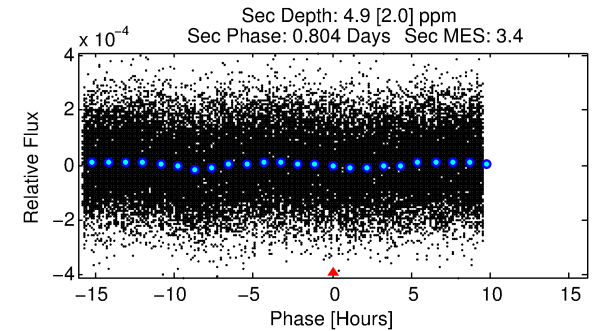
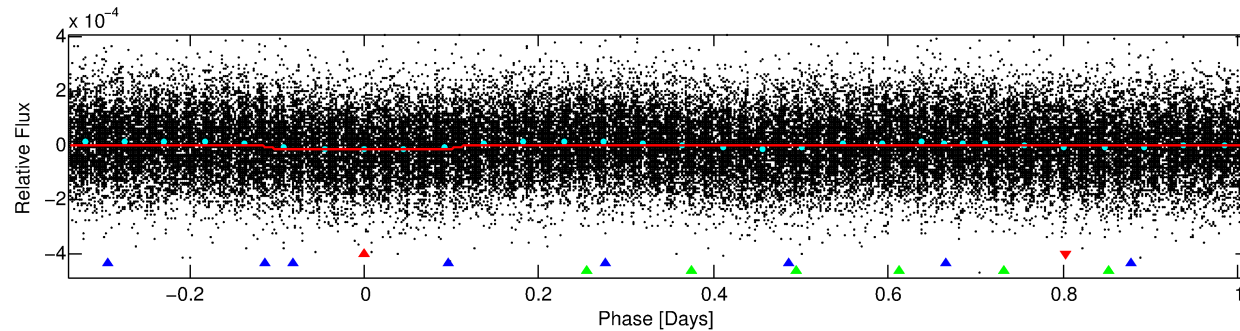
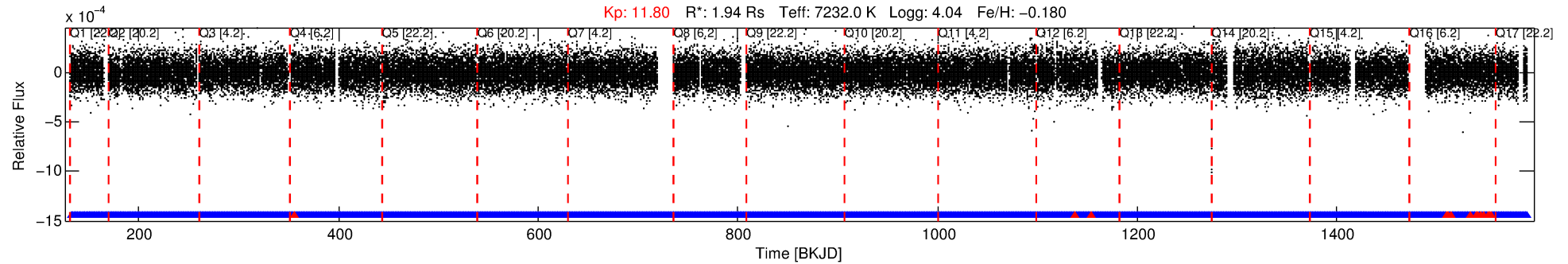
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011968439-01

No Significant Match Found

DV One-Page Summary

KIC: 11968439 Candidate: 1 of 3 Period: 1.349 d



DV Fit Results:

Period = 1.34870 [0.00002] d
Epoch = 132.7474 [0.0043] BKJD
Rp/R* = 0.0039 [0.0009]
a/R* = 1.55 [1.23]
b = 0.73 [0.90]
Seff = 12230.93 [4933.57]
Teq = 2682 [270] K
Rp = 0.82 [0.30] Re
a = 0.0274 [0.0068] AU
Ag = 2.96 [2.12] [0.92σ]
Teffp = 5438 [858] K [3.06σ]

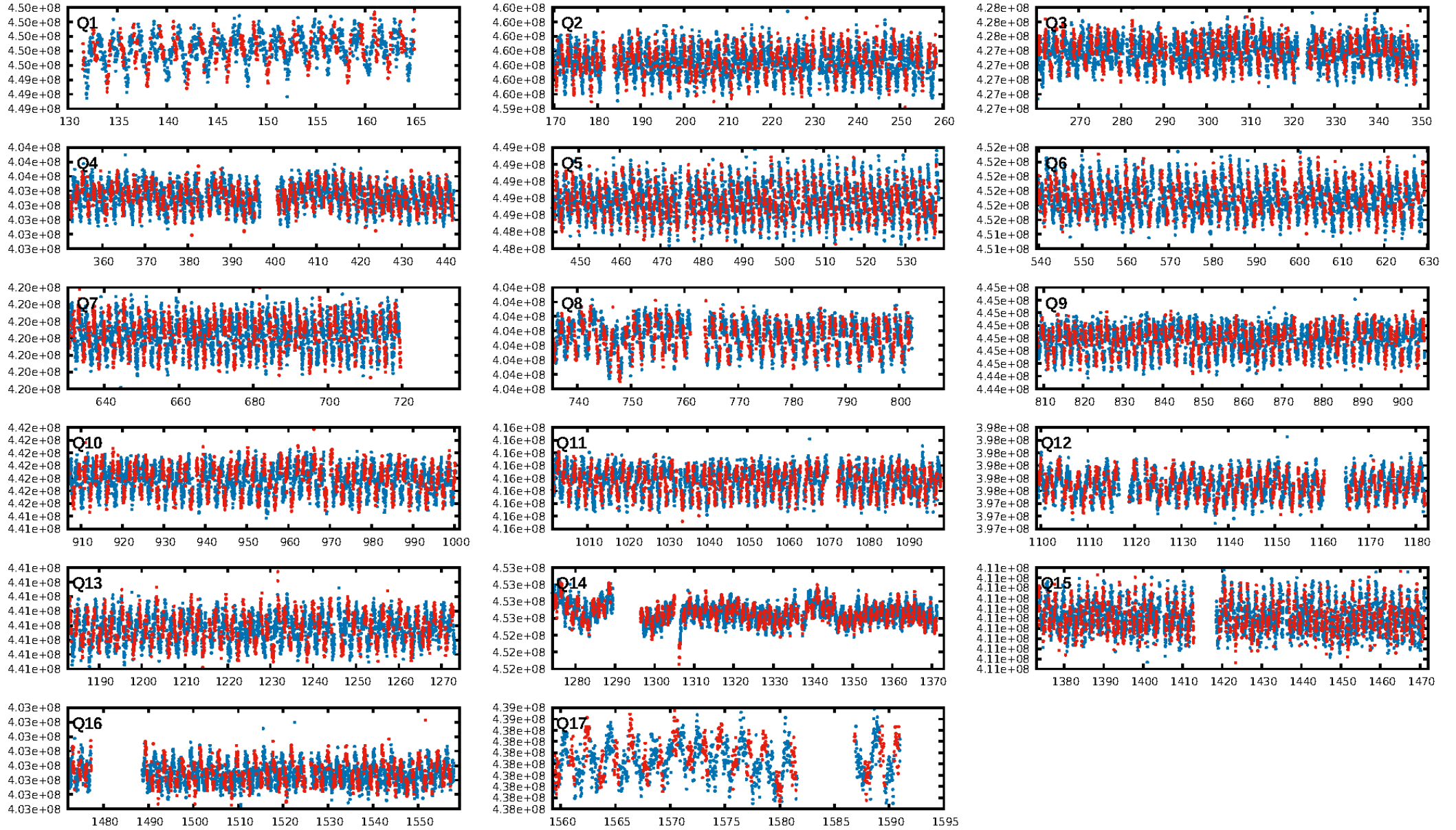
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [239.45σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.24e-12
RollingBand-fgt: 0.99 [947/961]
GhostDiagnostic-chr: -19.88
Centroid-sig: 6.7%
Centroid-so: 0.879 arcsec [1.28σ]
OotOffset-rm: 0.375 arcsec [0.94σ]
OotOffset-st: 2/3/4/4 [13]
KicOffset-rm: 0.141 arcsec [0.41σ]
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DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 1.00 [17/17]

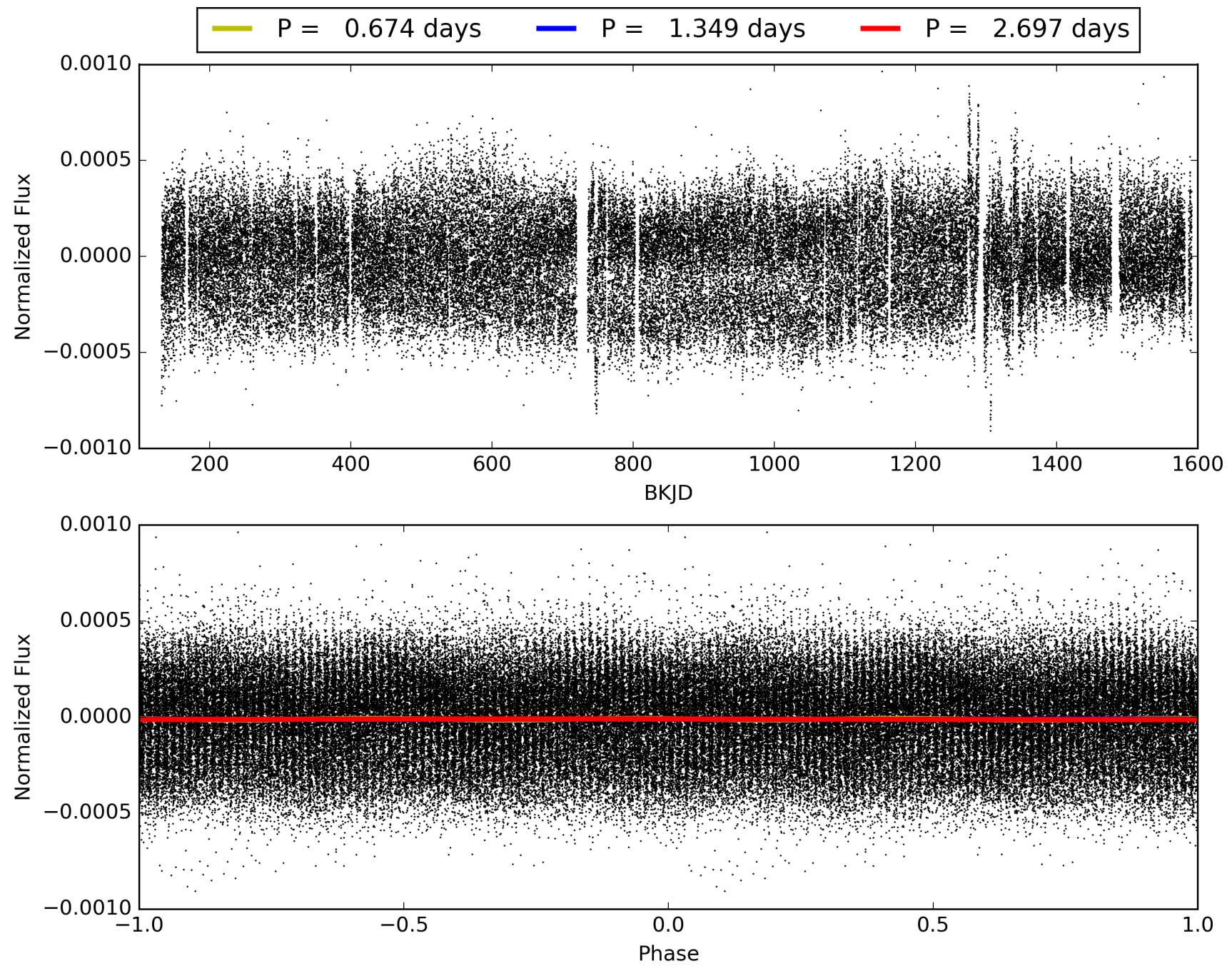
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011968439-01, PDC Light Curves

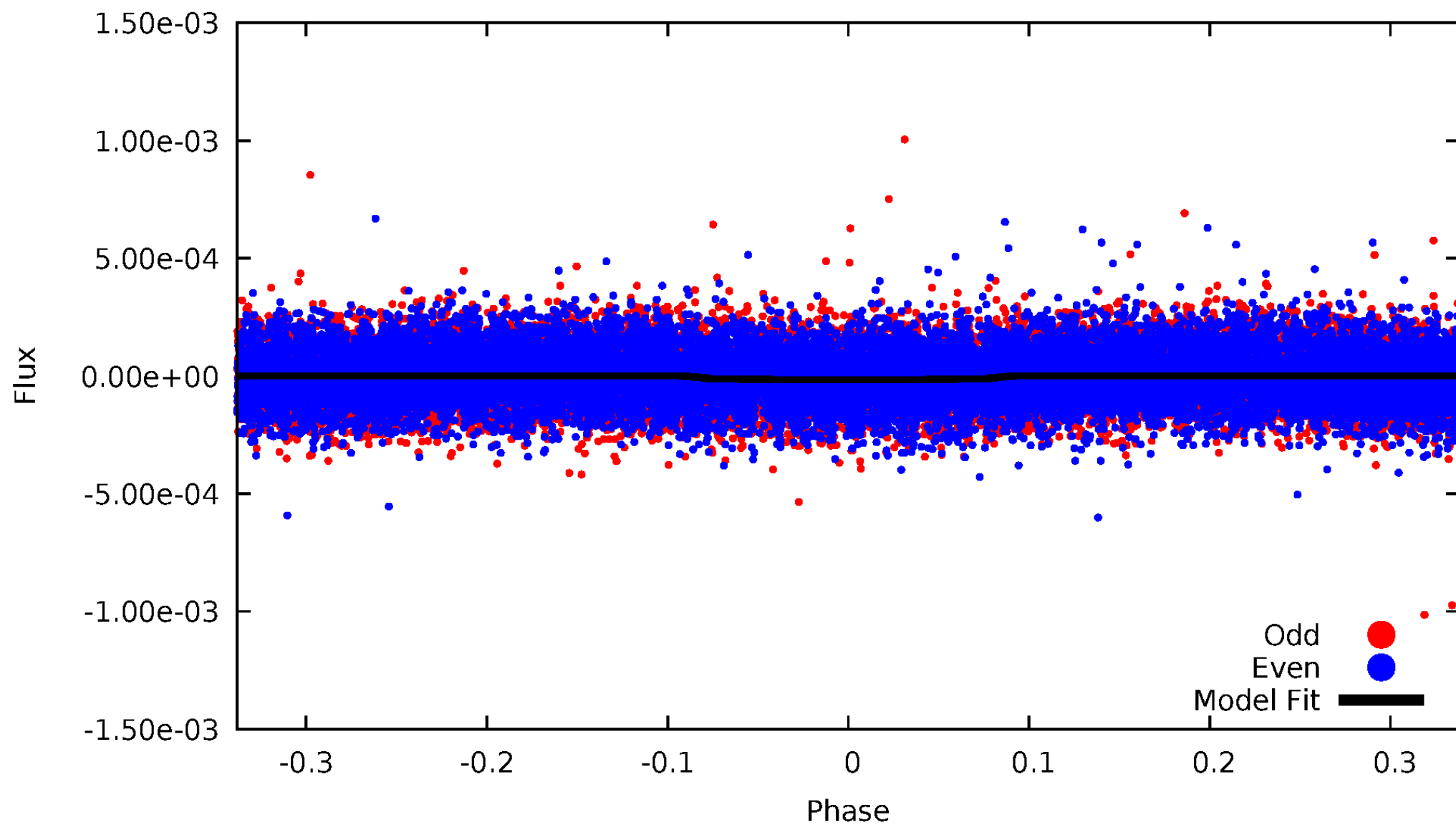


TCE 011968439-01



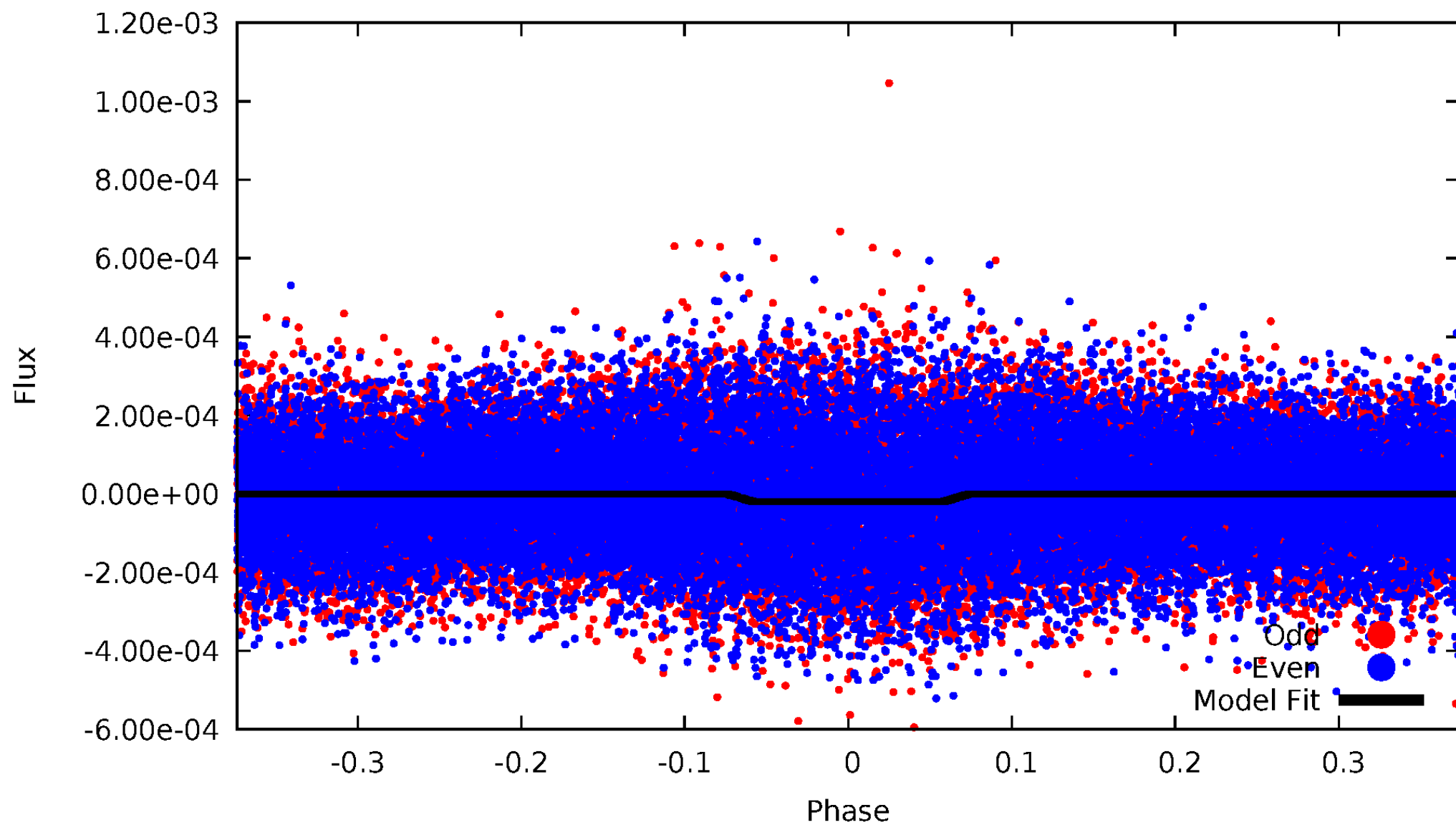
DV Odd/Even

TCE 011968439-01

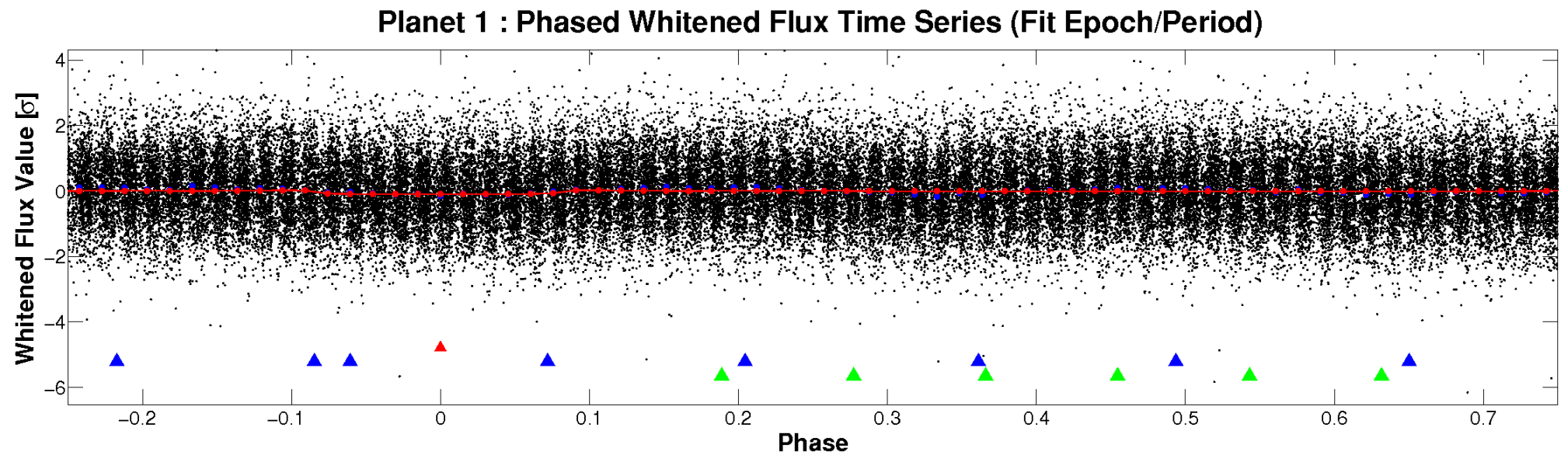
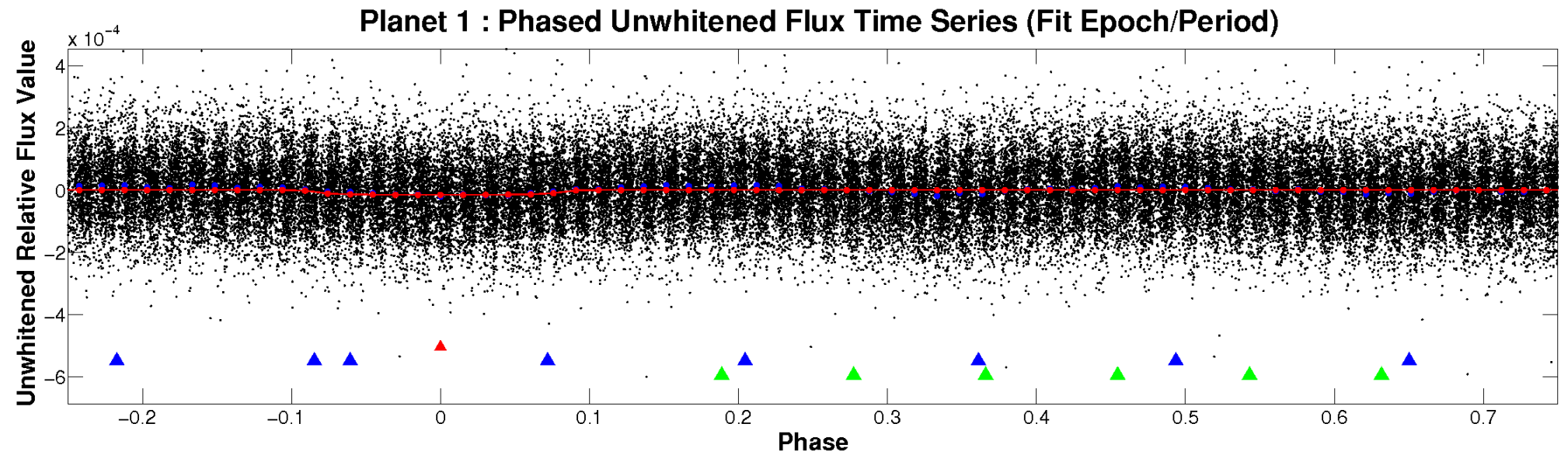


ALT Odd/Even

TCE 011968439-01

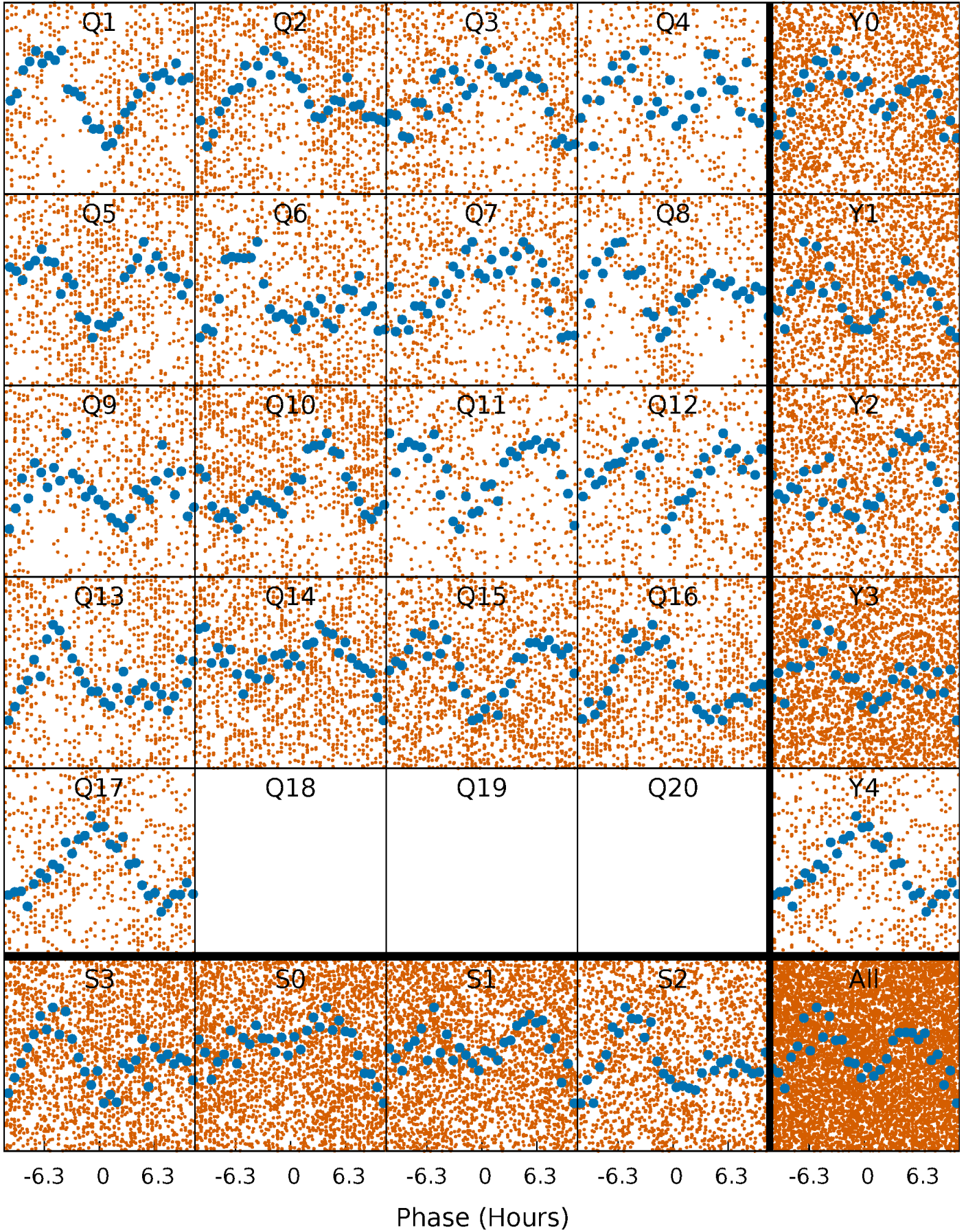


Non-Whitened Vs. Whitened Light Curve



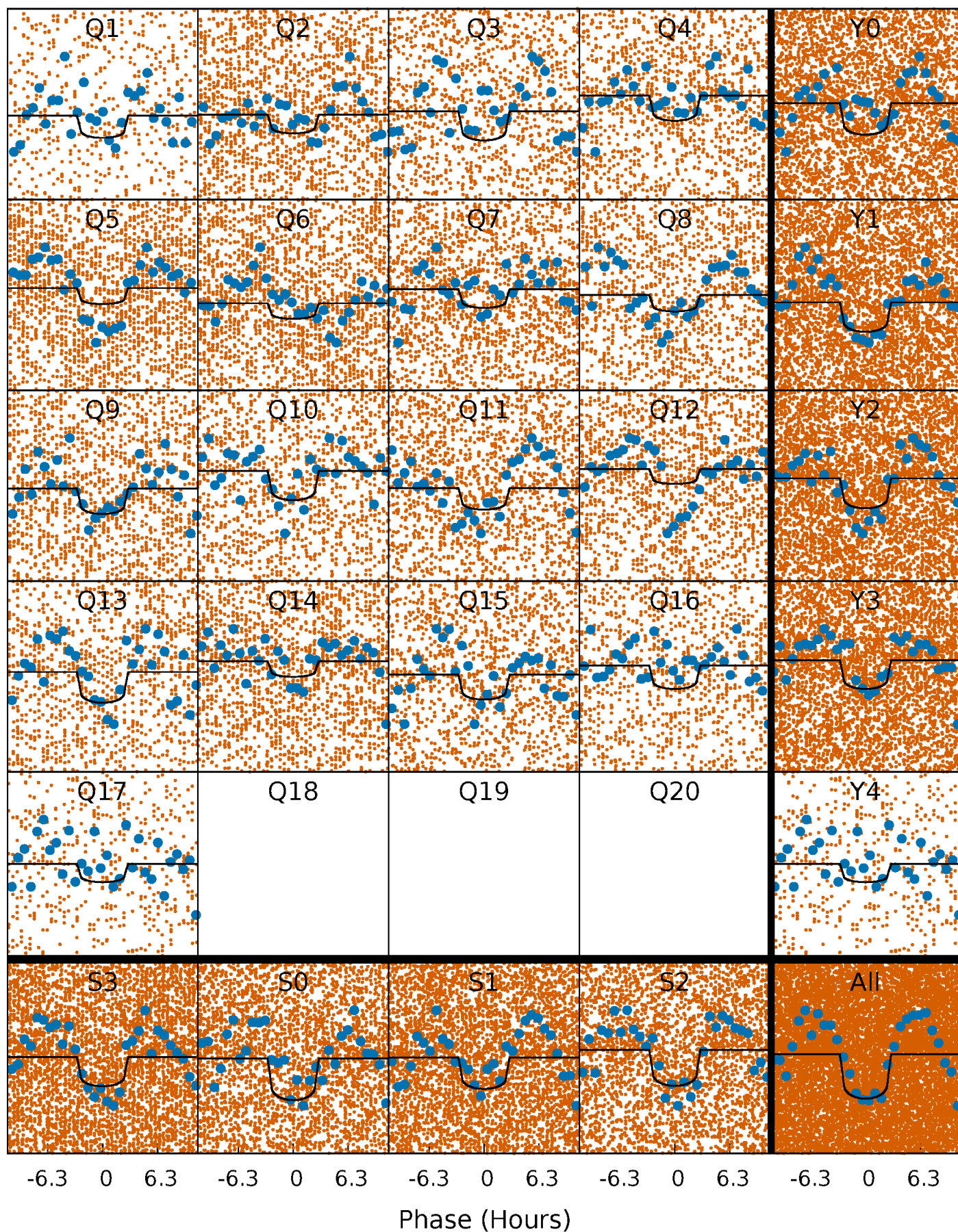
PDC Quarter-Phased Transit Curves

TCE 011968439-01 P= 1.348703 Days $T_0=132.747427$ (BKJD)



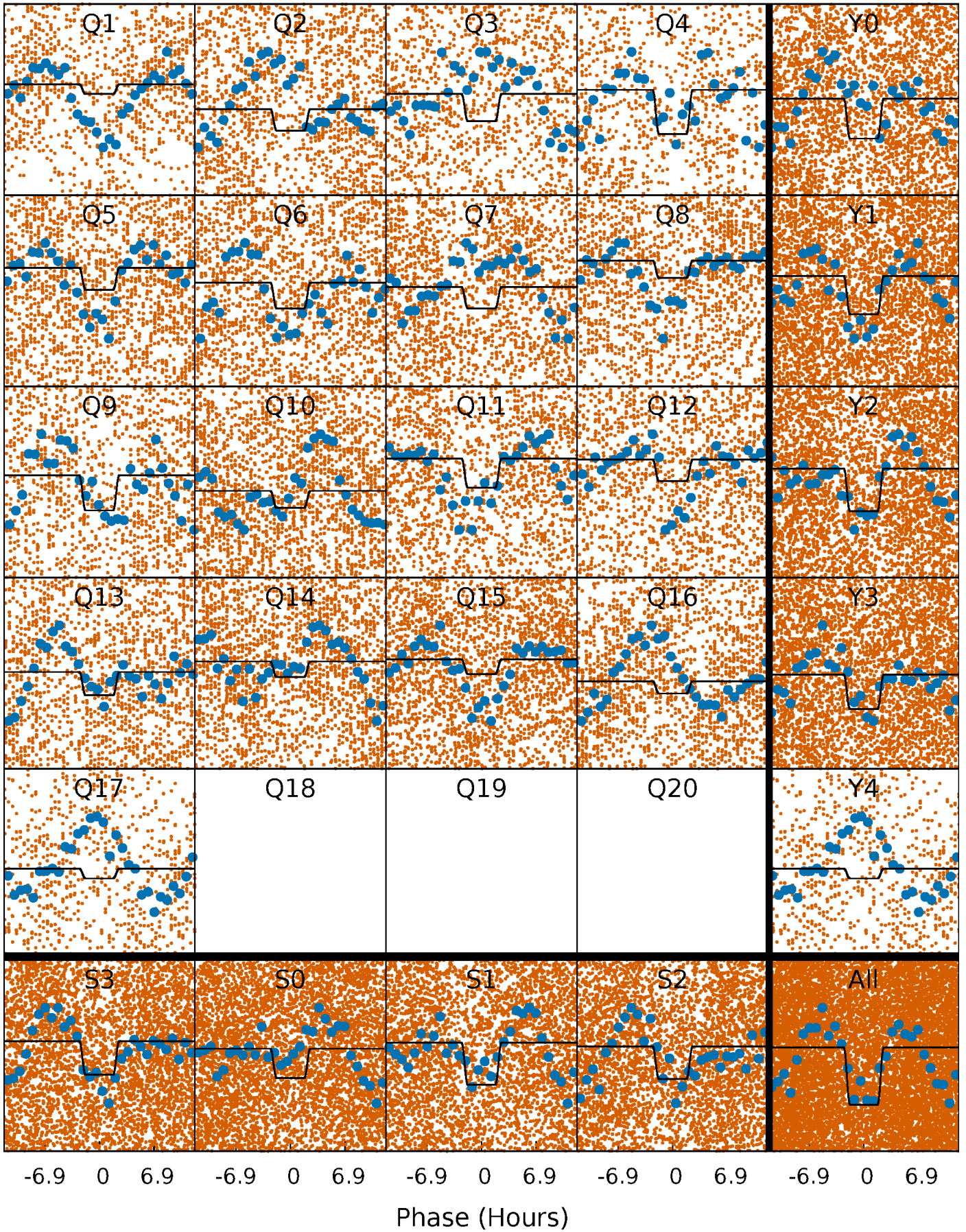
DV Quarter-Phased Transit Curves

TCE 011968439-01 P= 1.348703 Days $T_0=132.747427$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

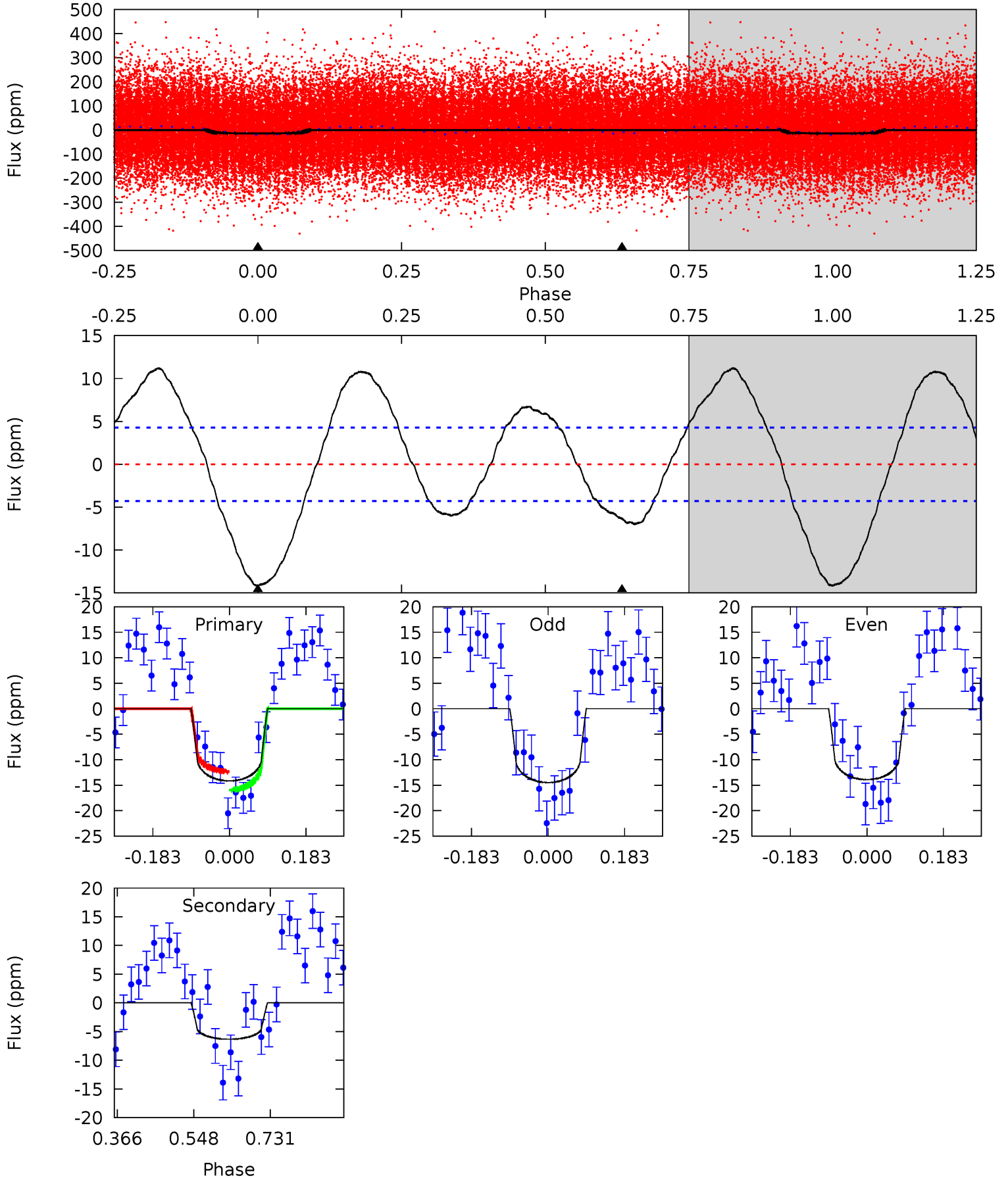
TCE 011968439-01 P= 1.348711 Days $T_0=132.746986$ (BKJD)



DV Model-Shift Uniqueness Test

011968439-01, P = 1.348703 Days, E = 131.398724 Days

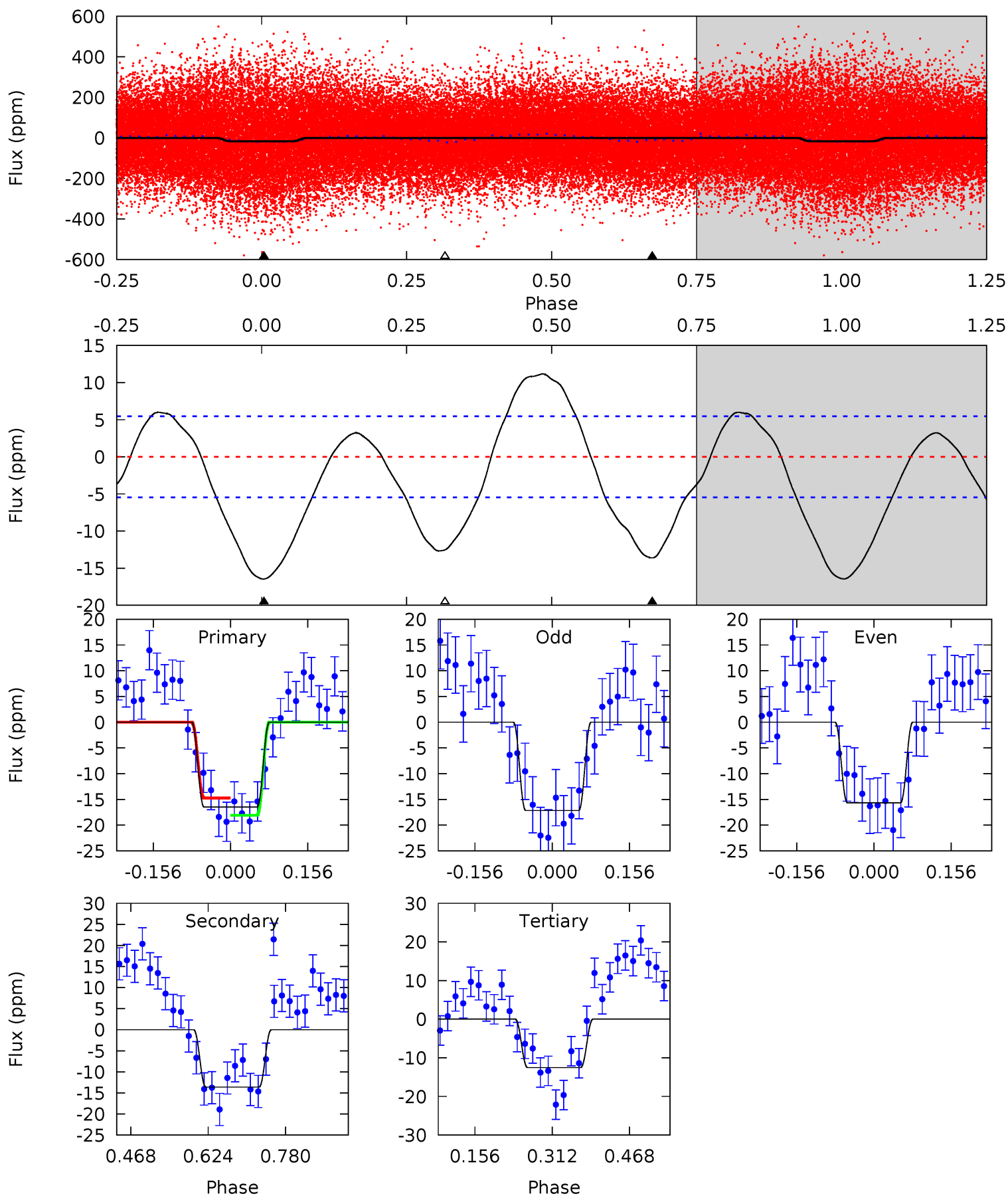
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	6.56	0	0	4.44	1.33	5.66	14.7	14.7	6.56	6.56	0.30	1.12	0.44	1.89



Alt Model-Shift Uniqueness Test

011968439-01, P = 1.348711 Days, E = 131.398275 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	11.2	10.3	0	4.47	1.42	6.59	3.23	13.5	0.90	11.2	0.61	0.59	0.40	1.36



Stellar Parameters For KIC 011968439

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7232^{+203}_{-279}	$4.043^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.350}$	$1.937^{+0.551}_{-0.551}$	$1.509^{+0.211}_{-0.281}$	$0.292^{+0.357}_{-0.140}$
	+3%/-4%	+5%/-4%	+139%/-194%	+28%/-28%	+14%/-19%	+122%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011968439-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6 ± 1	$0.82^{+0.25}_{-0.23}$	3735^{+284}_{-289}	5562^{+924}_{-527}	$3.816^{+3.396}_{-1.487}$
Alt.	-14 ± 1	$0.94^{+0.25}_{-0.22}$	3723^{+307}_{-287}	6321^{+929}_{-592}	$6.277^{+4.231}_{-2.336}$

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

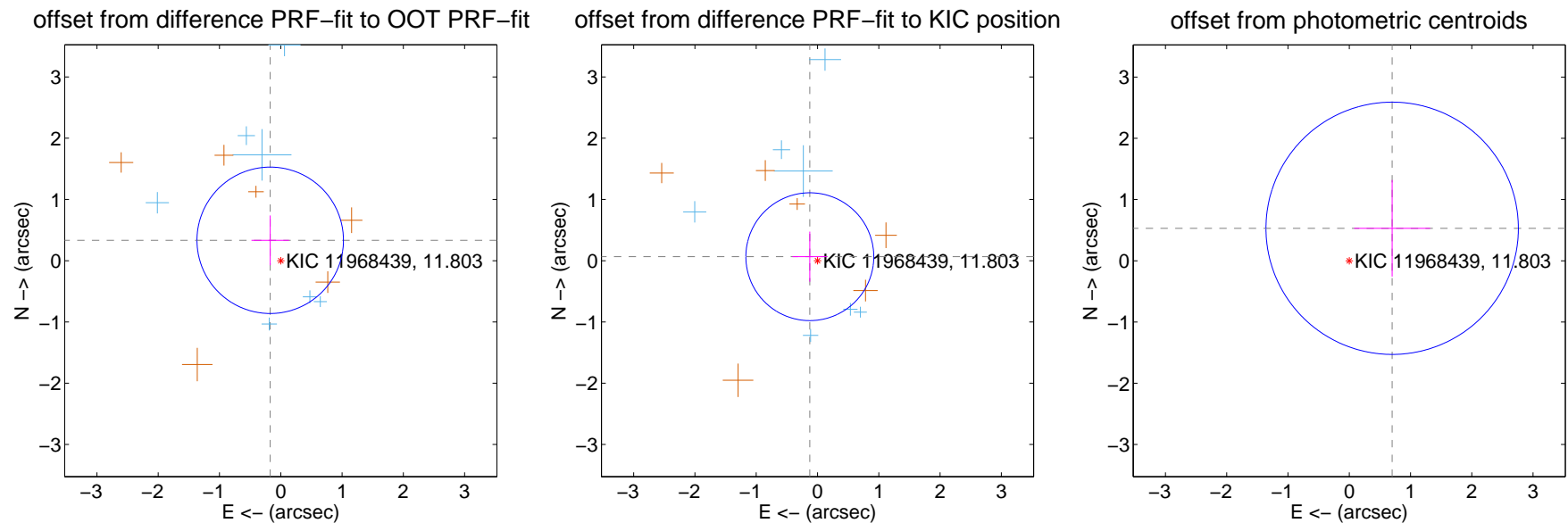
DV Centroid Data

Supplemental centroid analysis for 011968439-01. **Kepler magnitude: 11.80.** Transit SNR 9.45

There are 7 quarters with good PRF difference image offsets

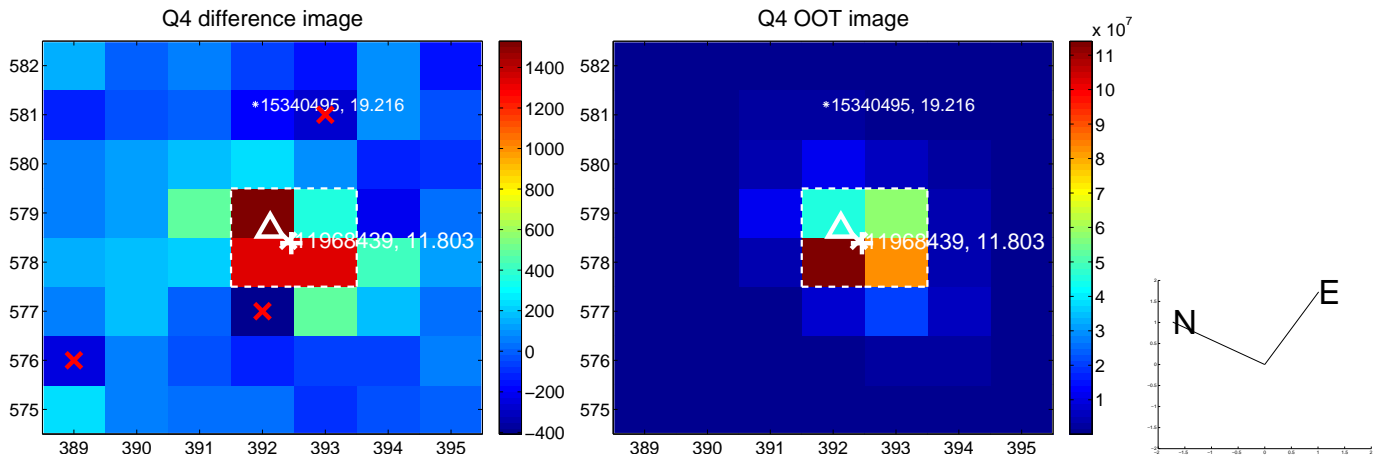
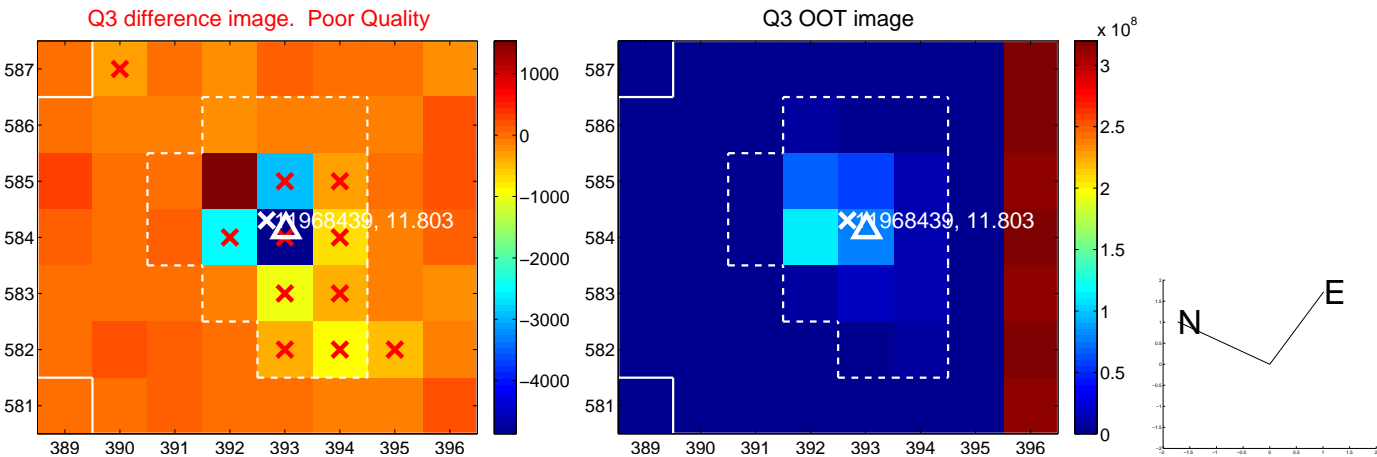
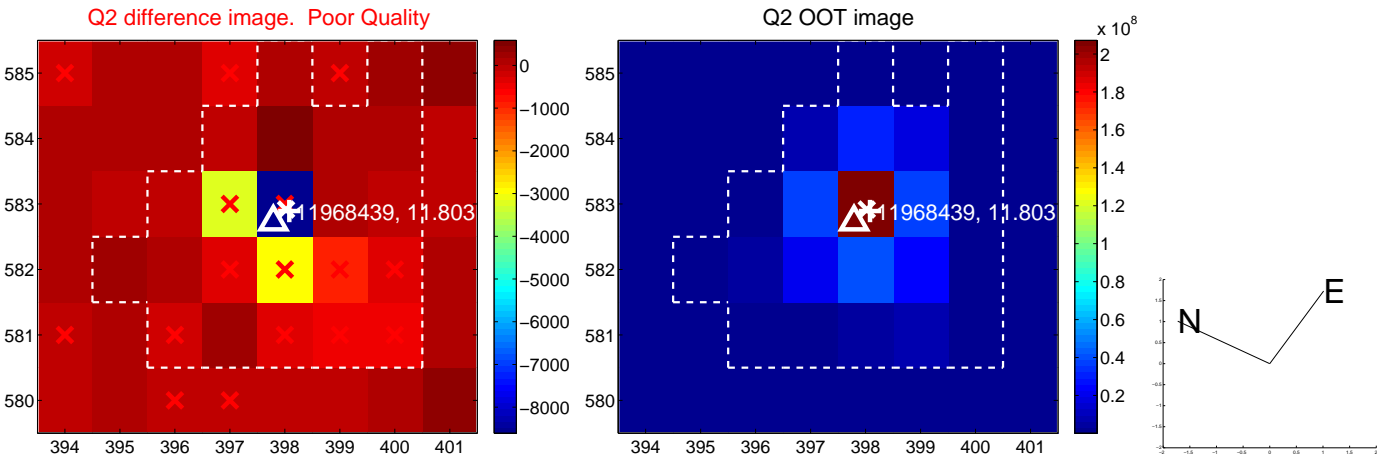
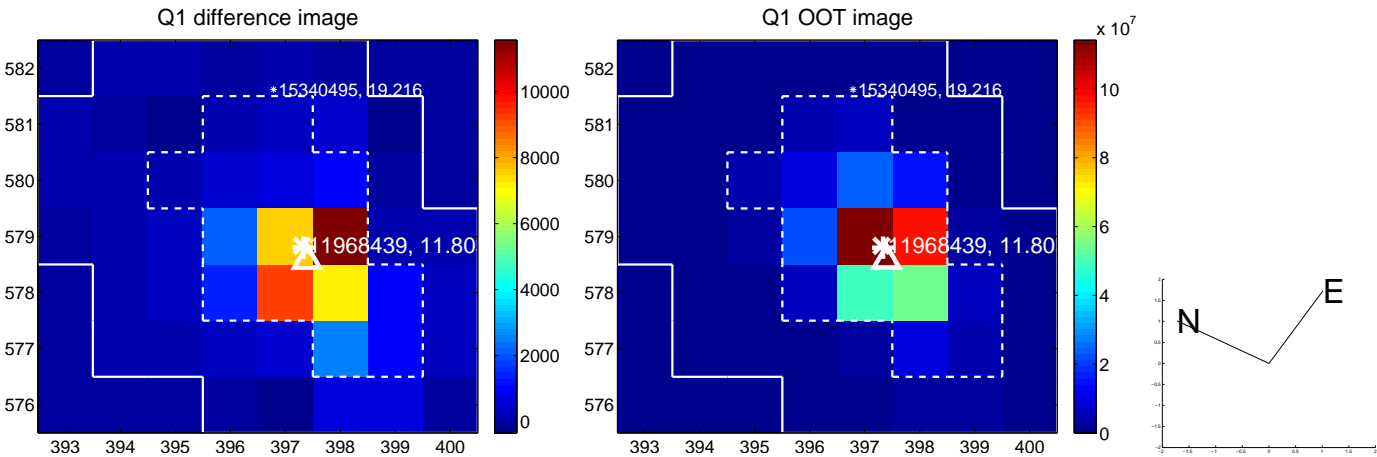
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.375 ± 0.398	0.94	0.172 ± 0.306	0.333 ± 0.406
PRF-fit source offset from KIC position	0.141 ± 0.348	0.41	0.125 ± 0.283	0.065 ± 0.409
photometric centroid source offset	0.88 ± 0.69	1.28	-0.70 ± 0.62	0.53 ± 0.79

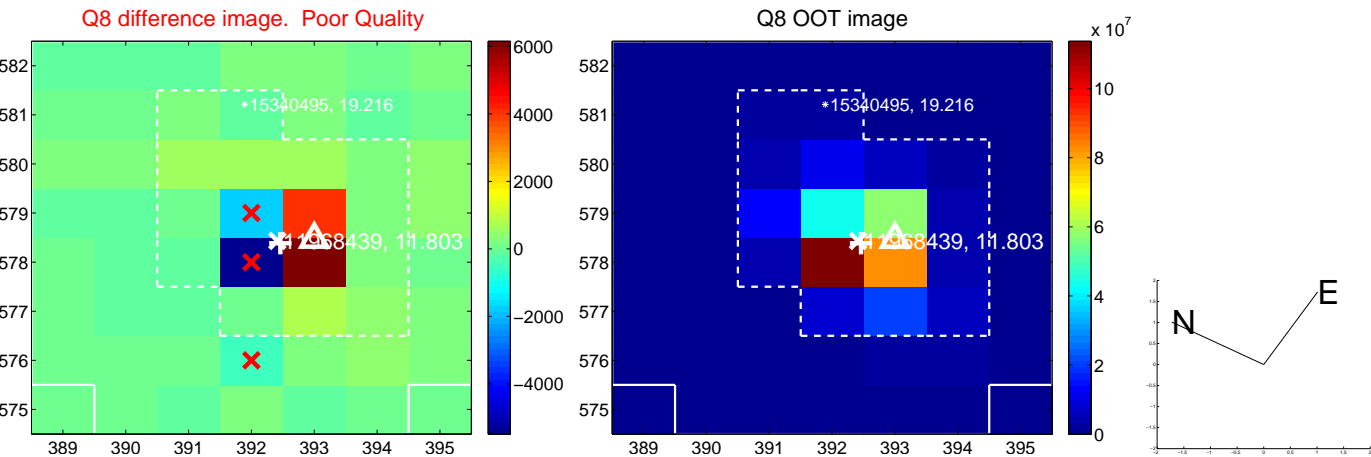
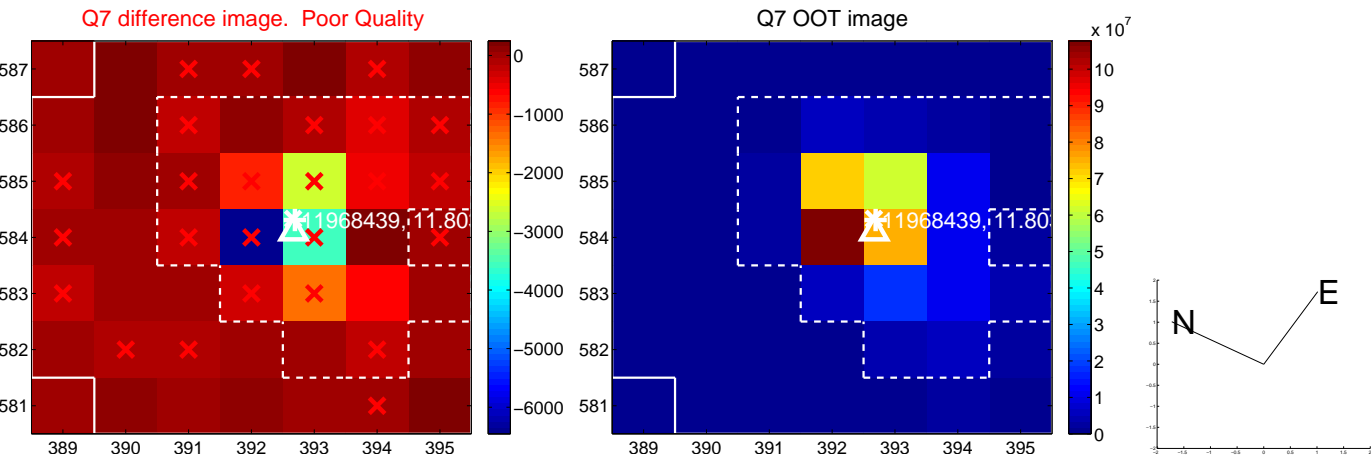
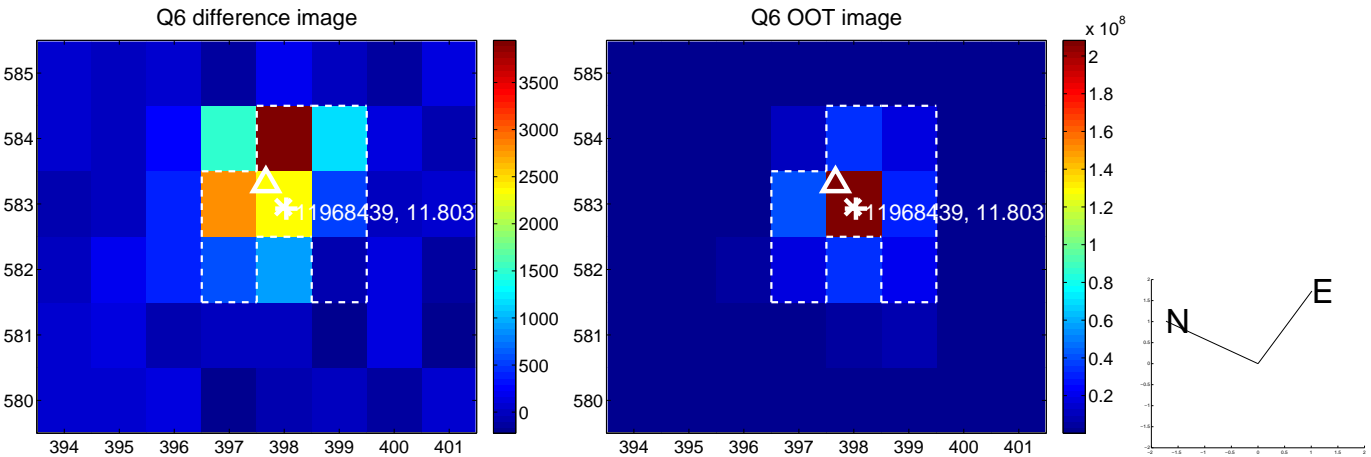
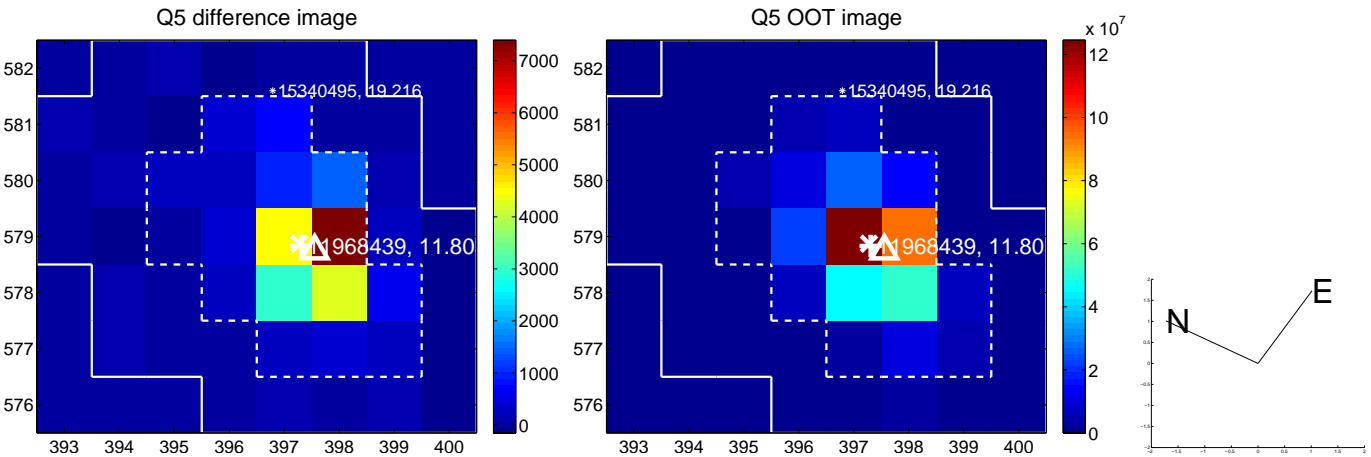


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

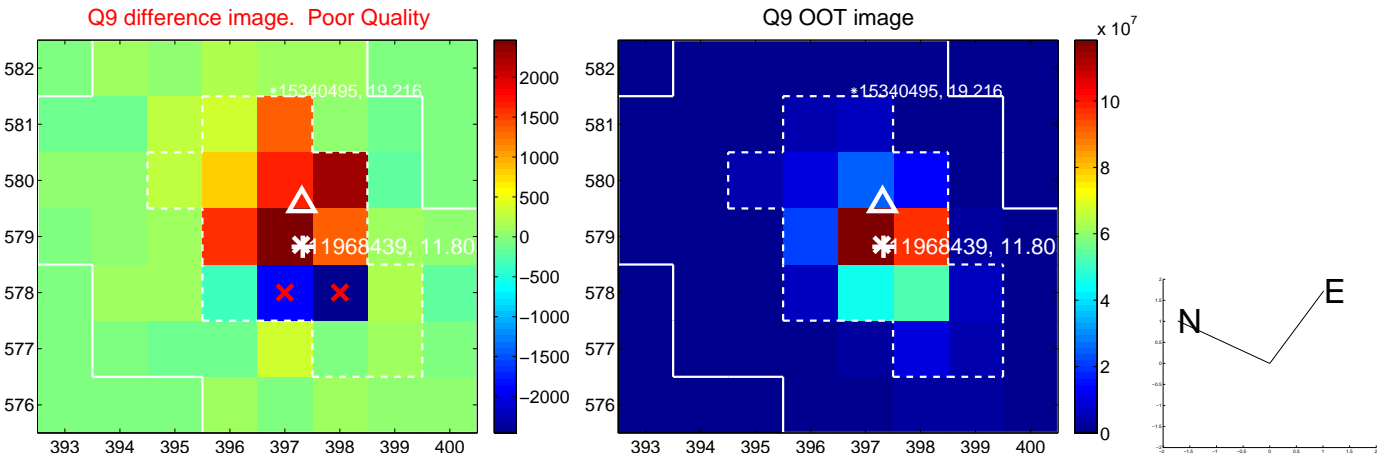
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



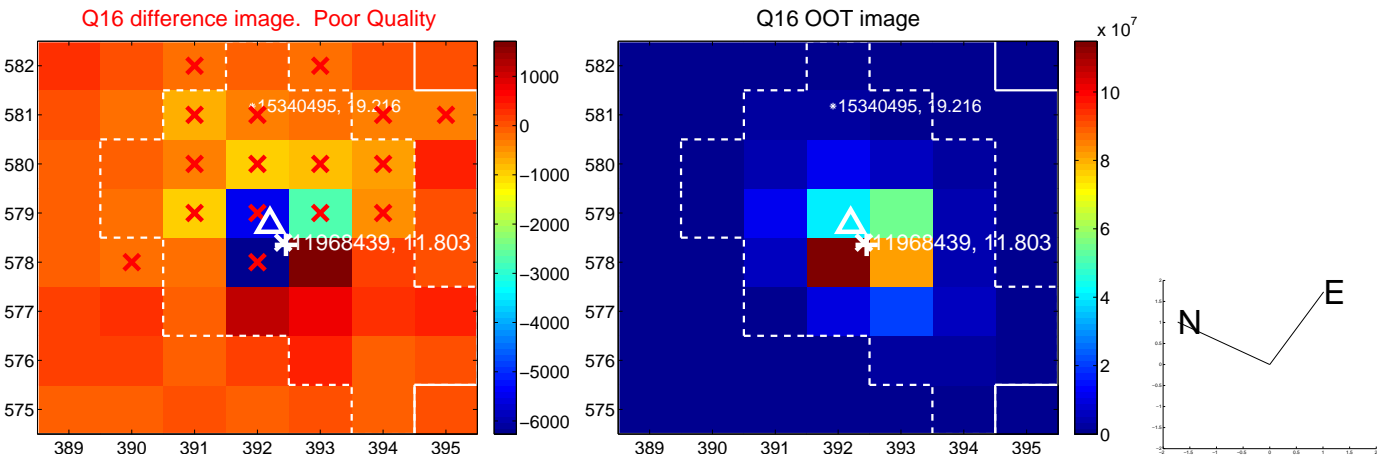
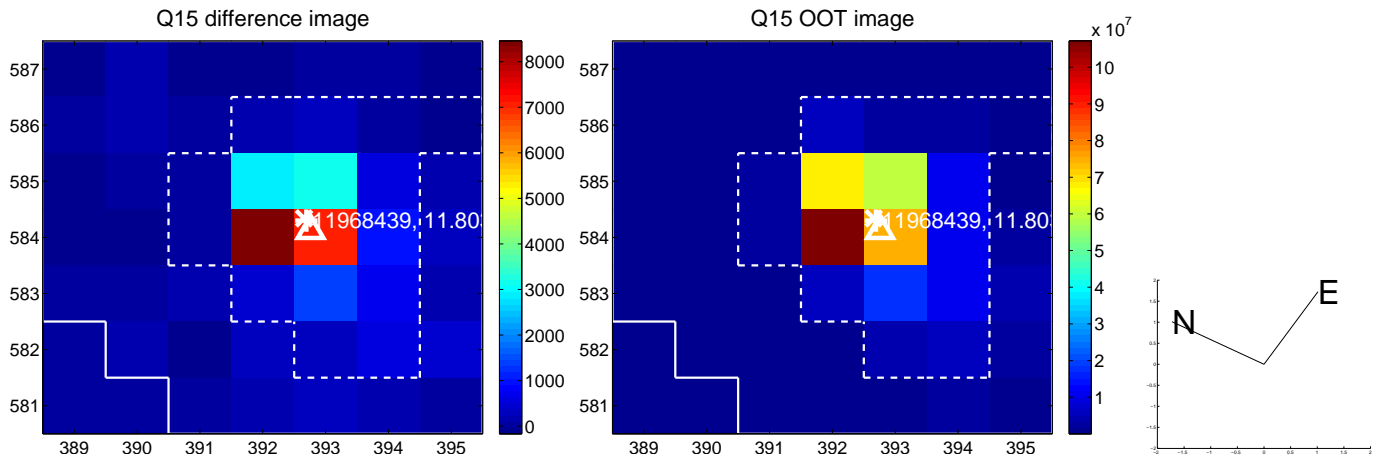
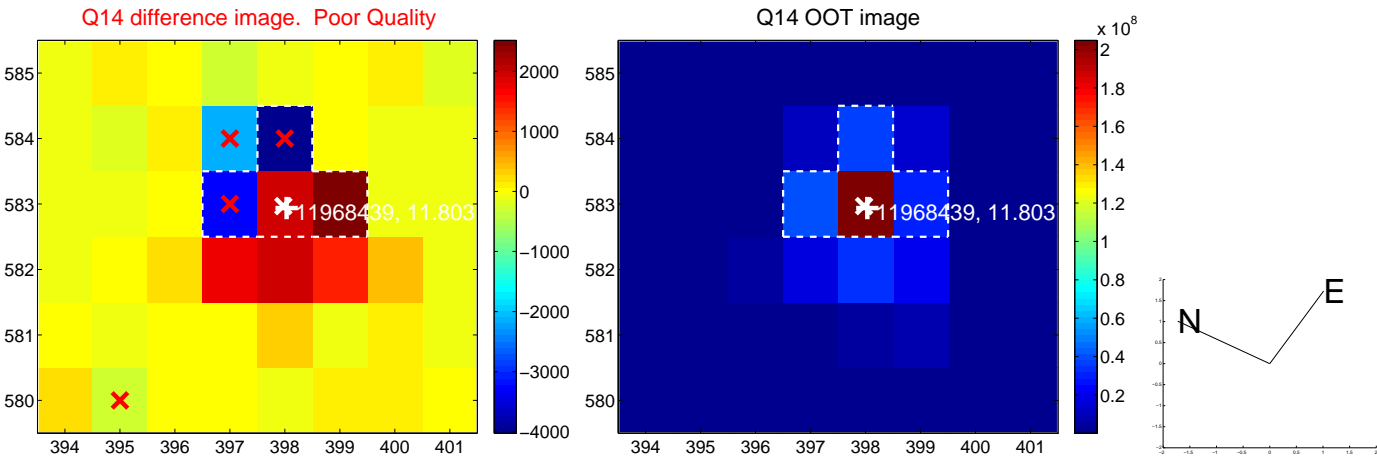
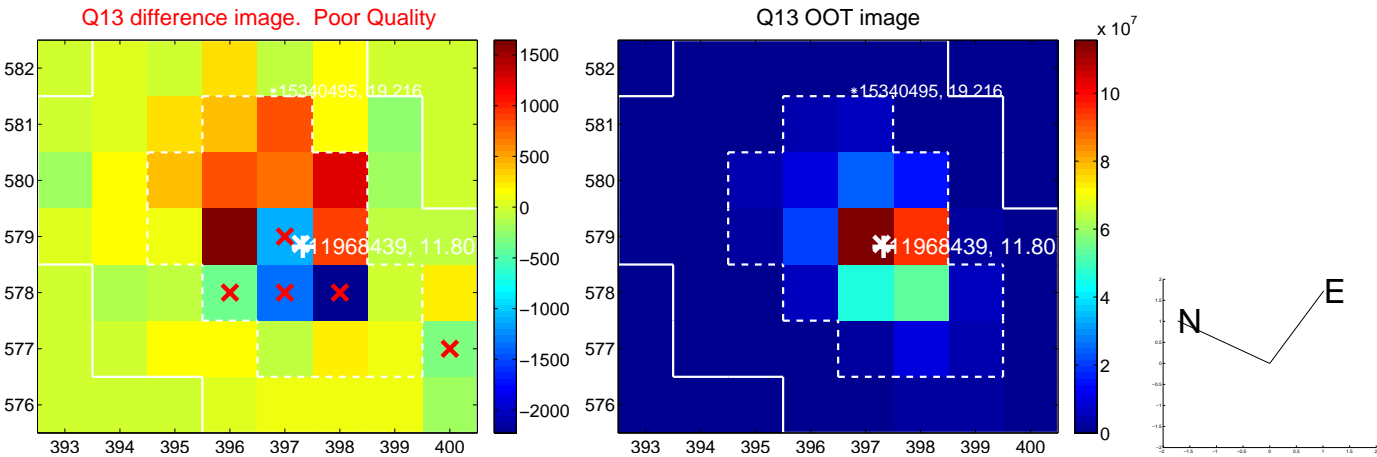
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



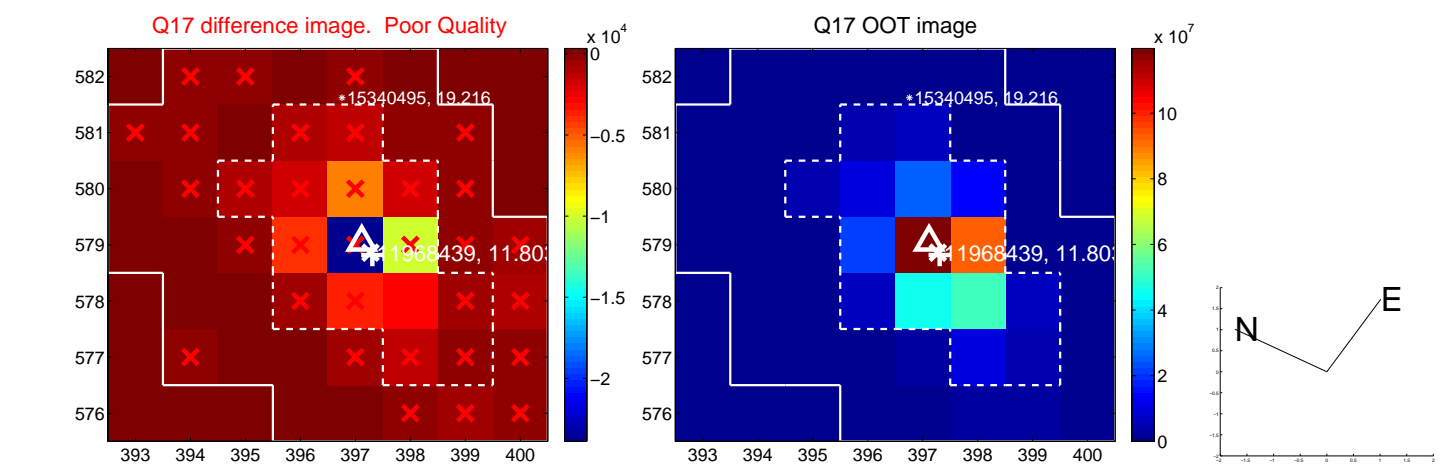
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



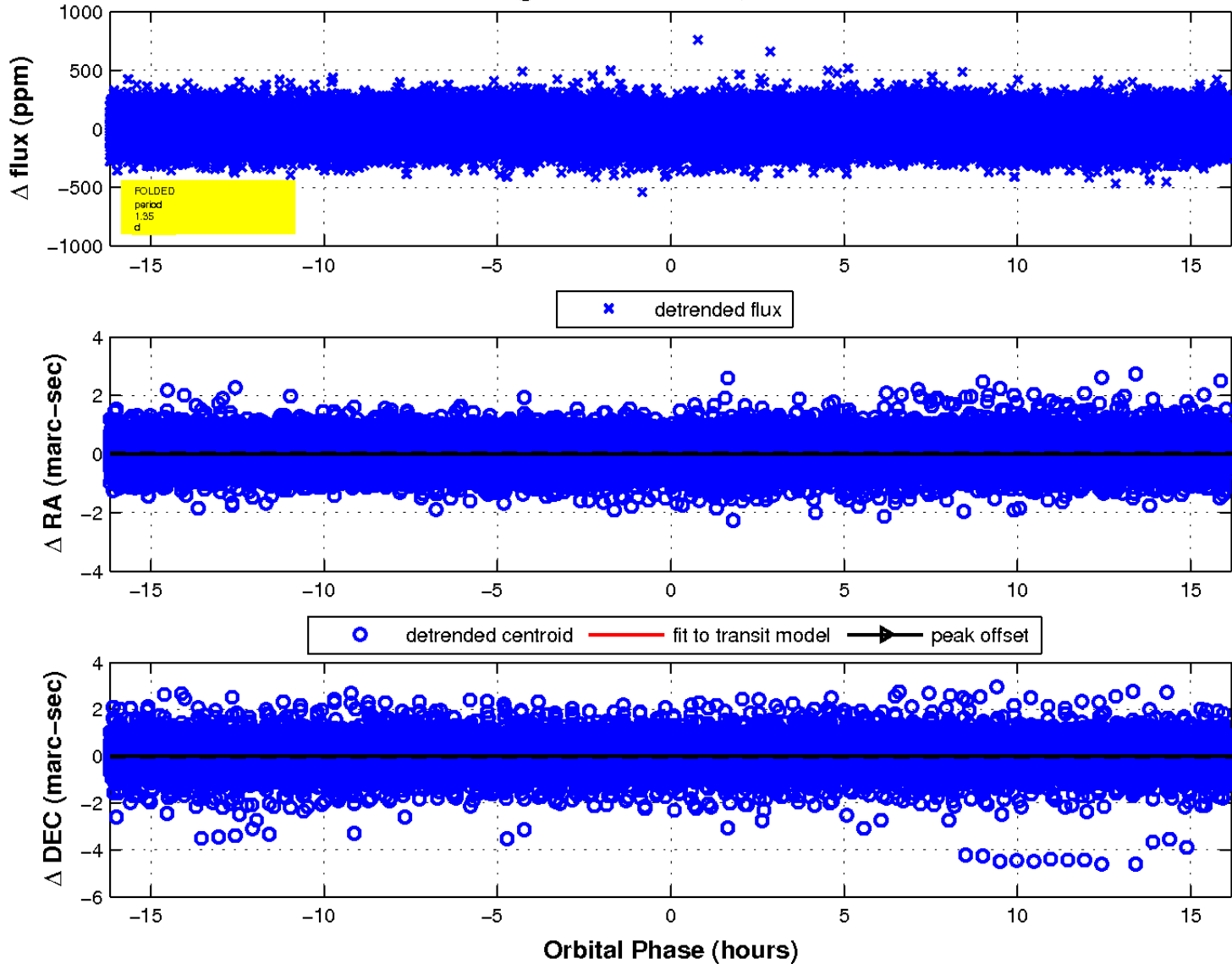
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

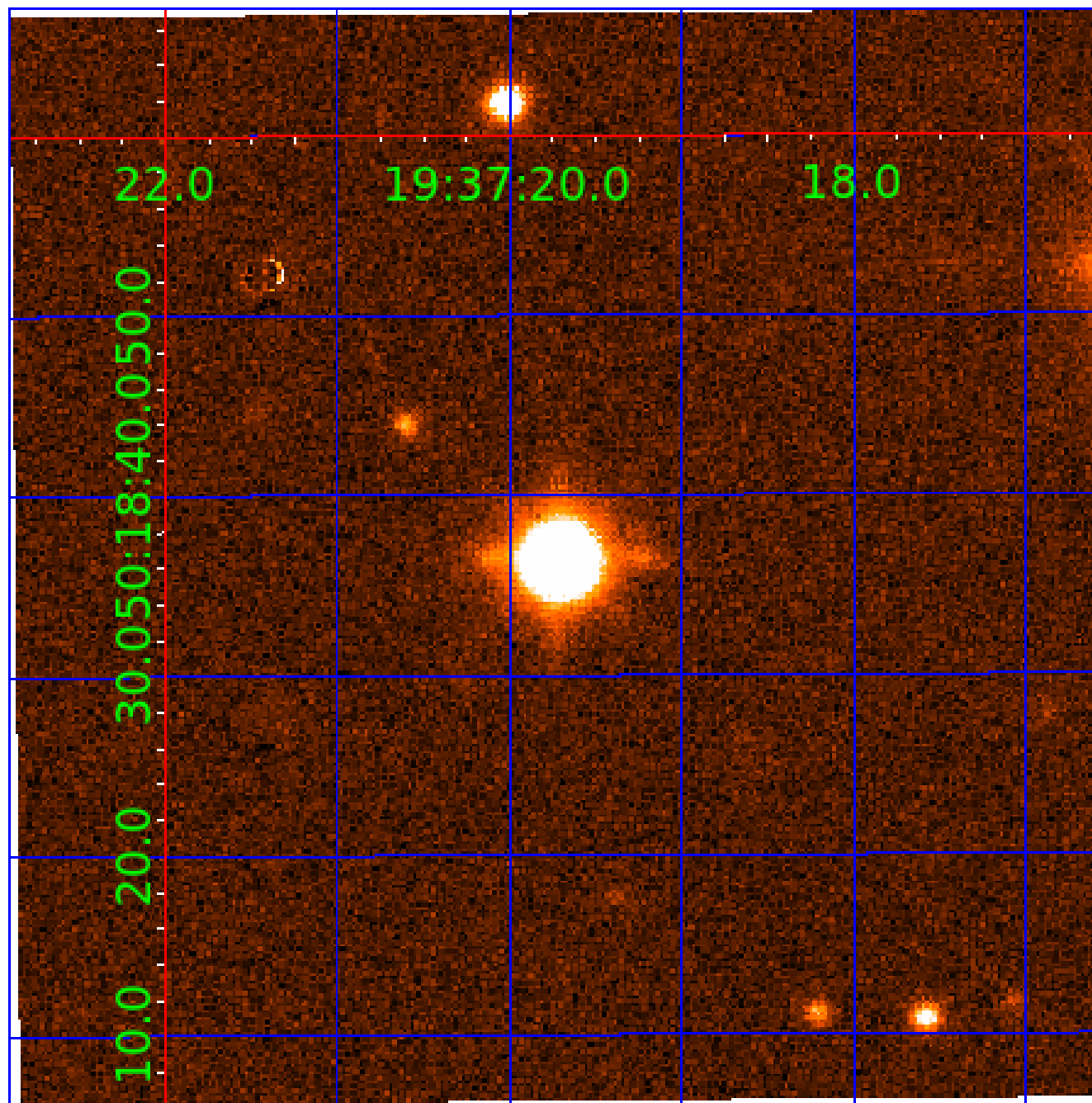


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 011968439

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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011968439-03	OBS	No	233.206082	330.509935	128.5	8.060	7.2	7.2	1.94	7232	2.50	12.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968439-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011968439-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_MEAS
011968439-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

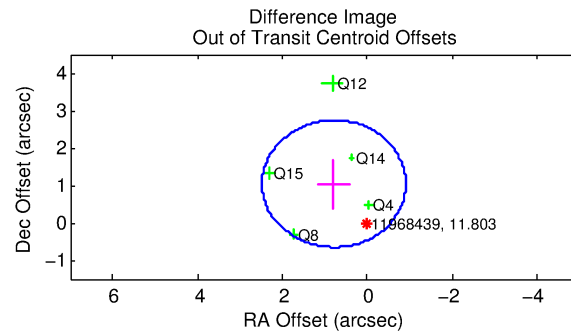
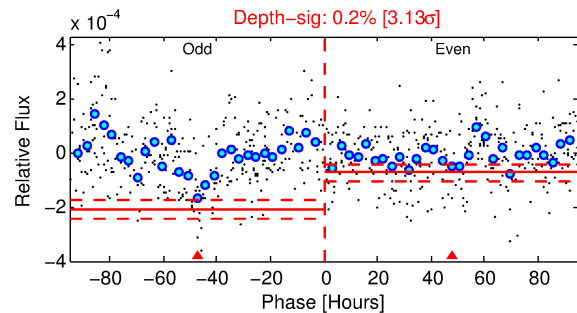
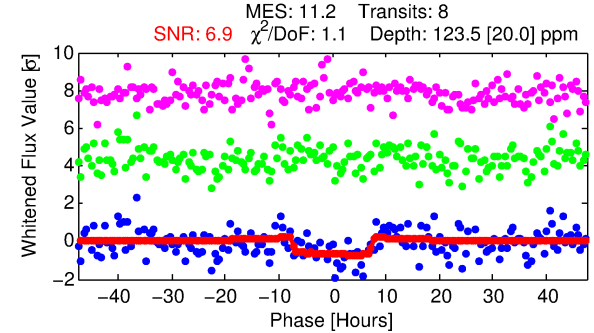
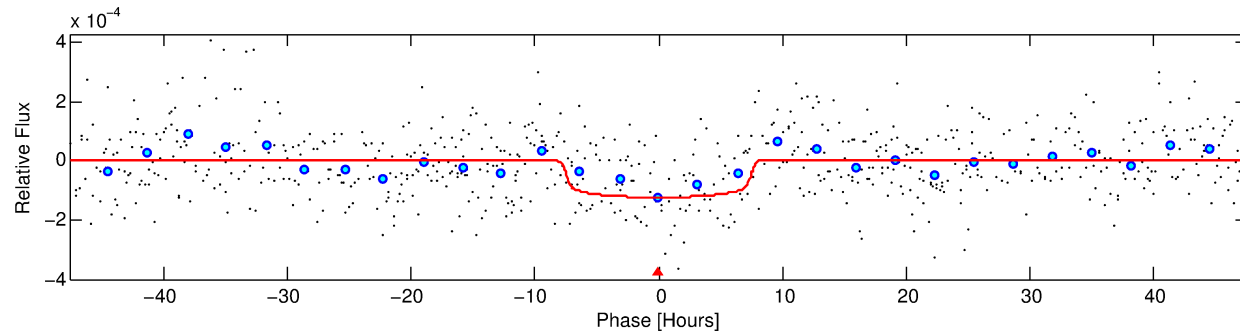
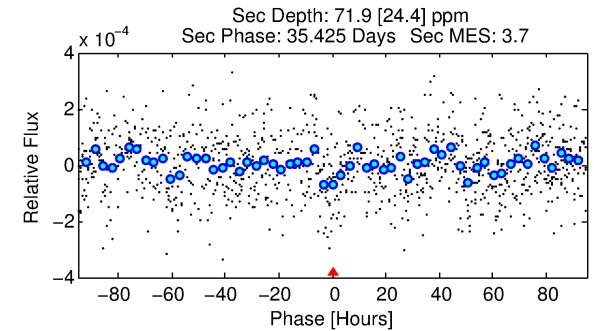
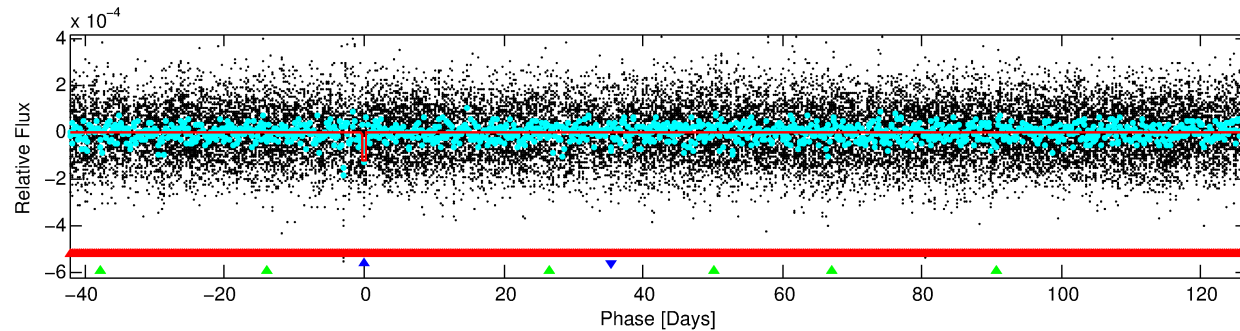
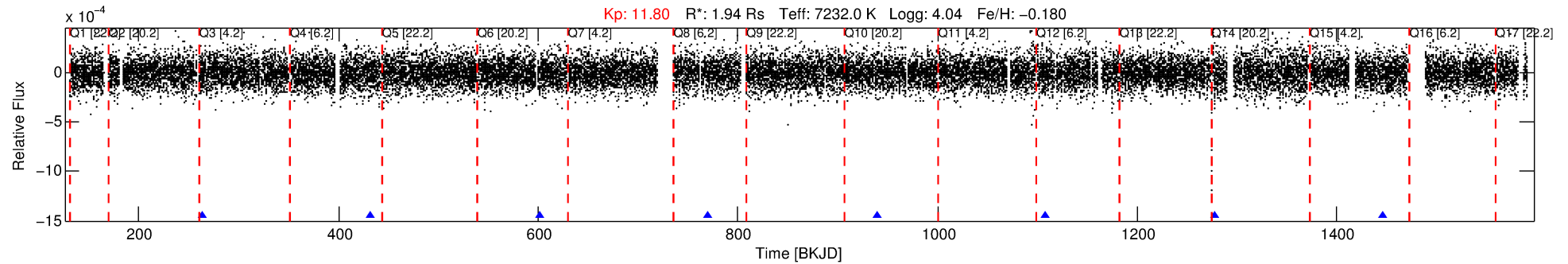
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011968439-02

No Significant Match Found

DV One-Page Summary

KIC: 11968439 Candidate: 2 of 3 Period: 168.978 d



DV Fit Results:

Period = 168.97779 [0.00571] d
Epoch = 263.4574 [0.0236] BKJD
Rp/R* = 0.0117 [0.0017]
a/R* = 38.61 [27.44]
b = 0.89 [0.16]
Seff = 19.51 [7.87]
Teq = 536 [54] K
Rp = 2.48 [0.79] Re
a = 0.6865 [0.1705] AU
Ag = 3024.81 [1758.60] [1.72σ]
Teffp = 6145 [725] K [7.71σ]

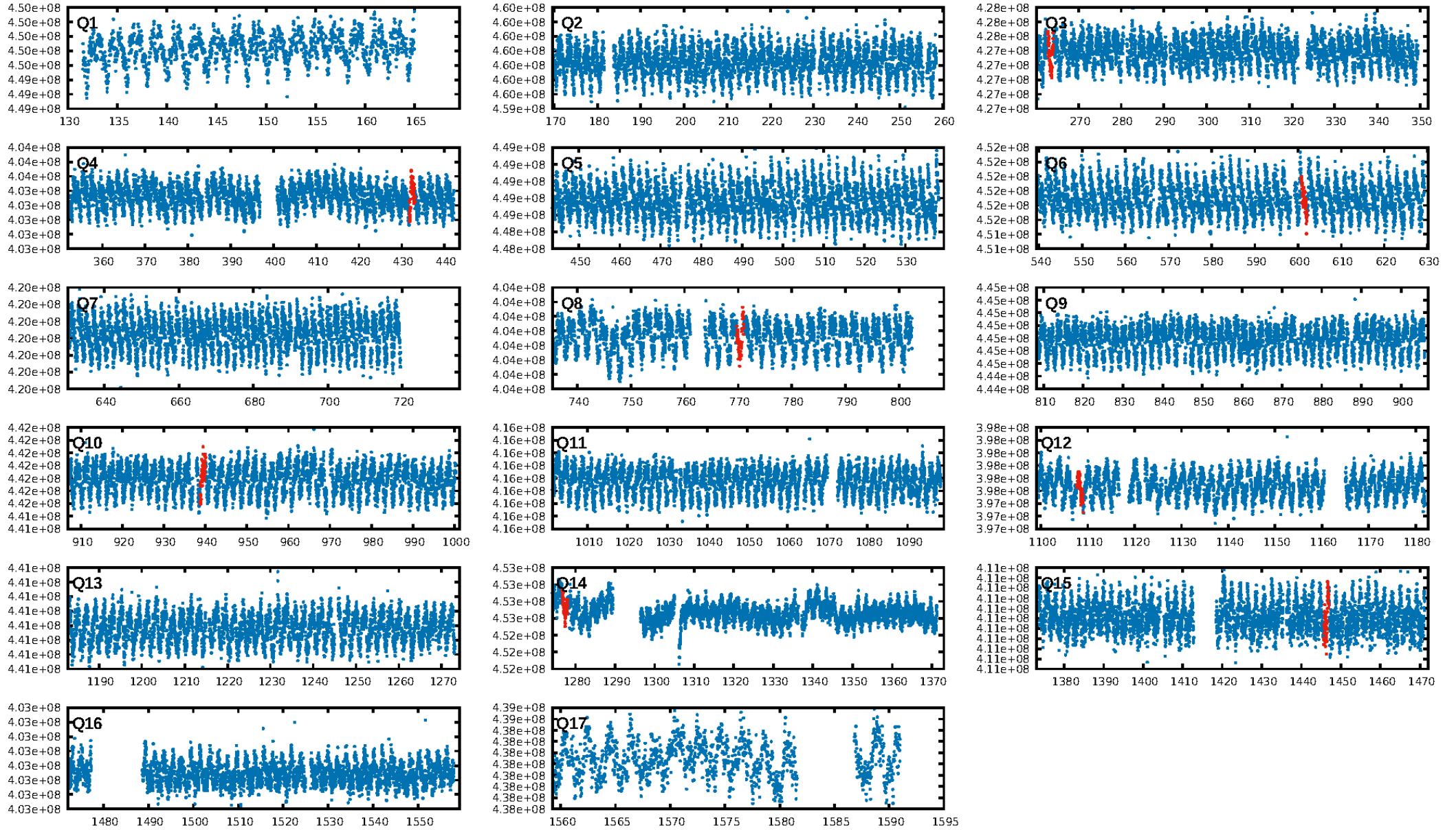
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [239.45σ]
LongPeriod-sig: 100.0% [86.54σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.53e-18
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 1.151
Centroid-sig: 30.6%
Centroid-so: 0.866 arcsec [1.17σ]
OotOffset-rm: 1.302 arcsec [2.30σ]
KicOffset-rm: 1.394 arcsec [3.33σ]
OotOffset-st: 1/1/3/0 [5]
KicOffset-st: 1/2/3/0 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/7]

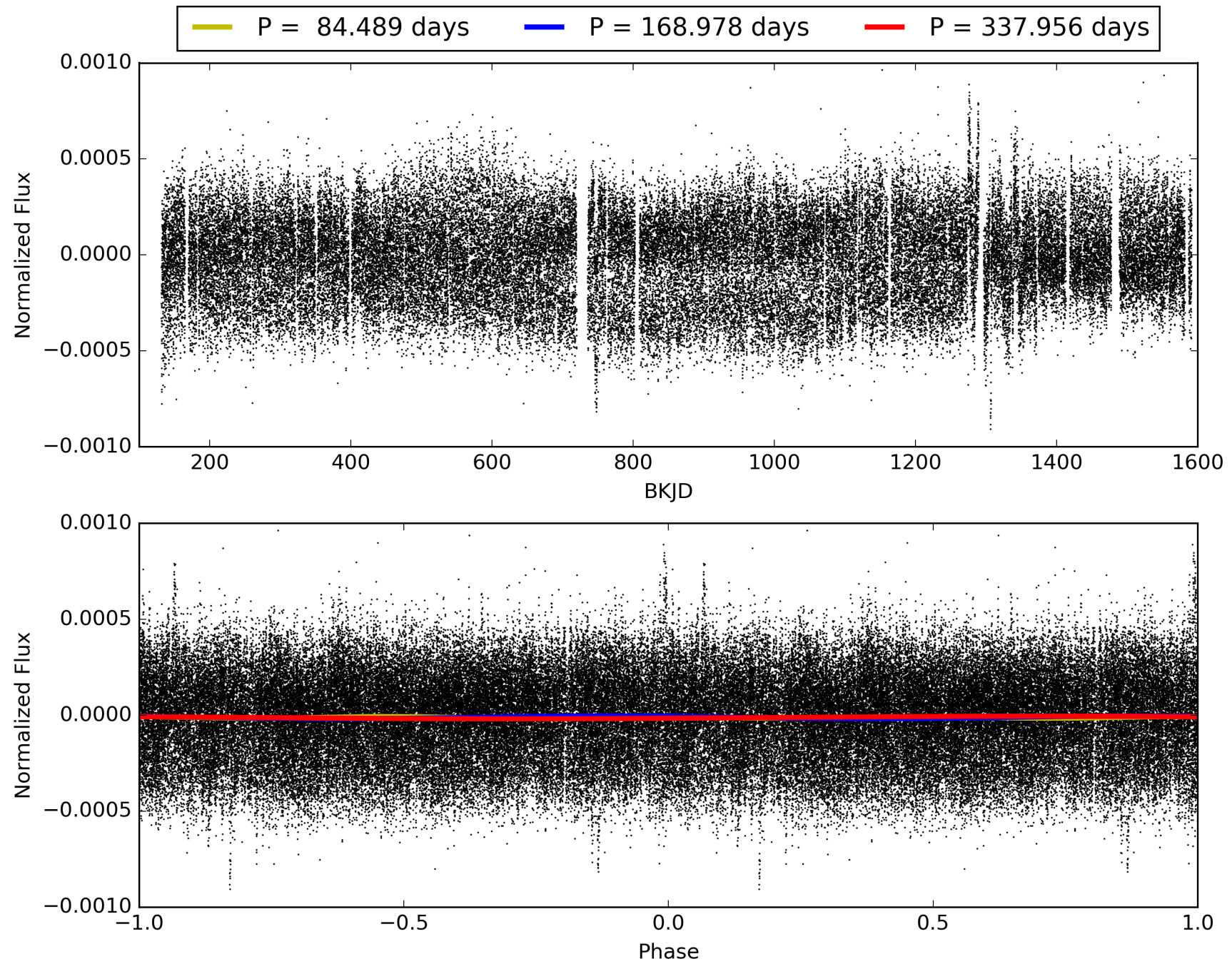
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:41:11 Z

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

TCE 011968439-02, PDC Light Curves

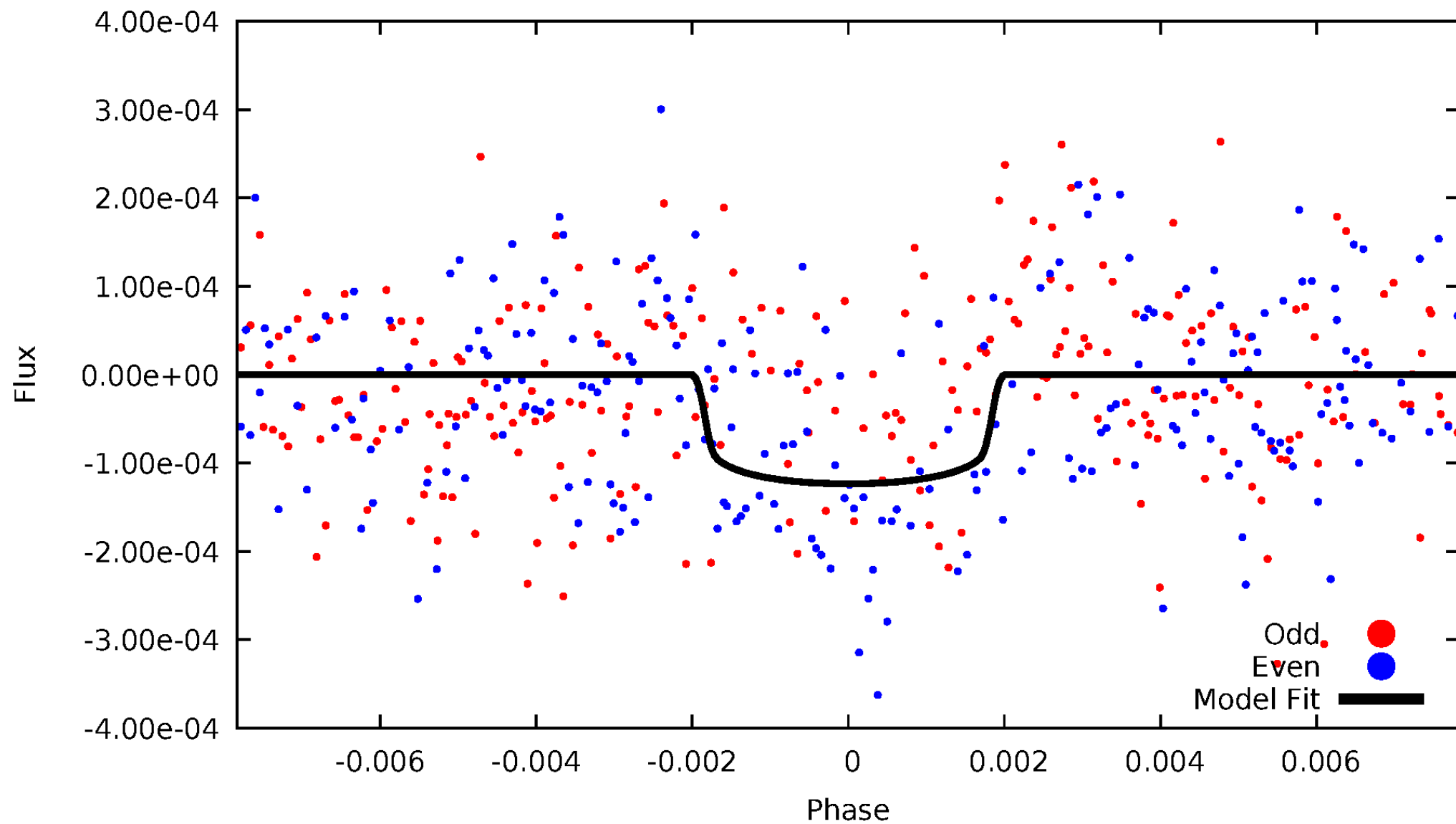


TCE 011968439-02



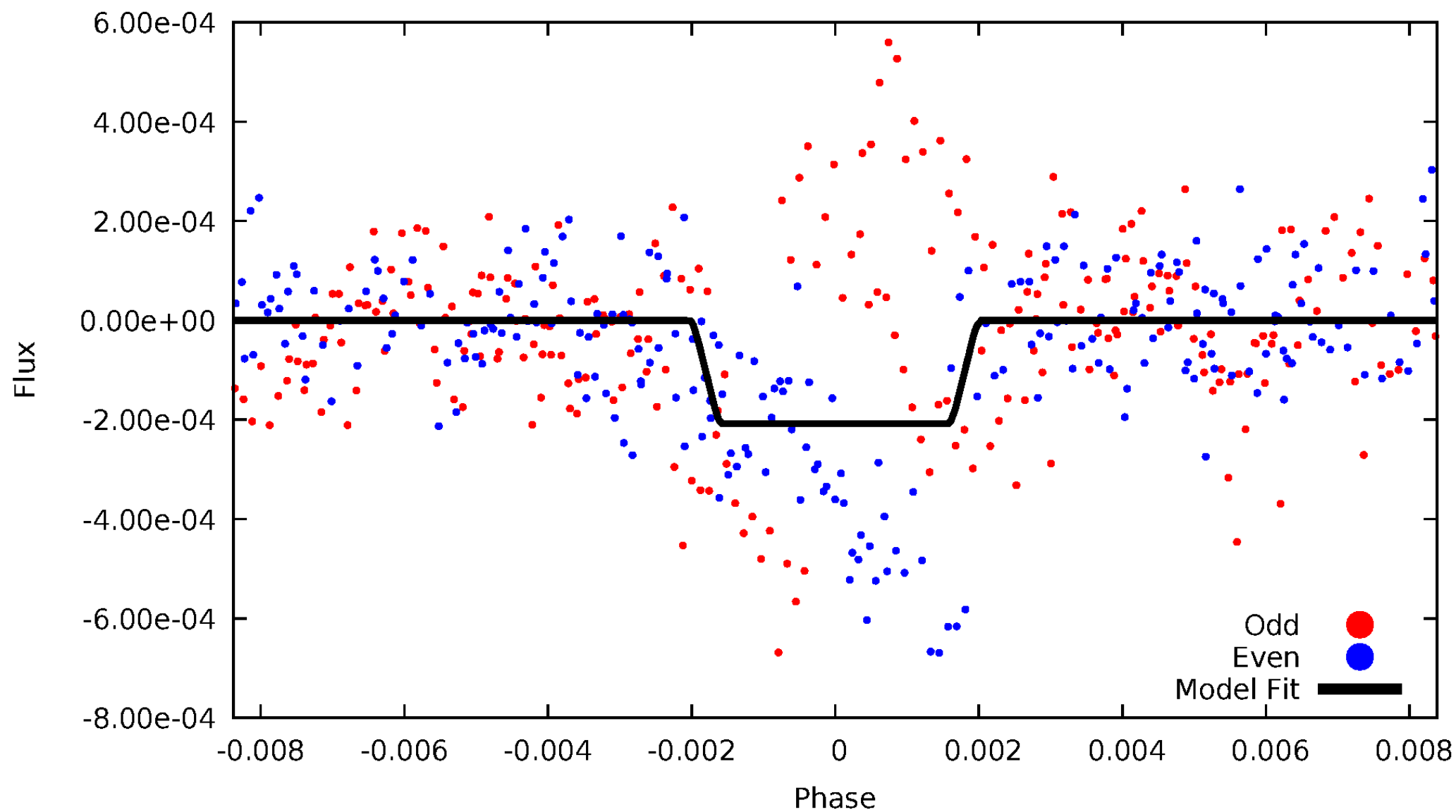
DV Odd/Even

TCE 011968439-02



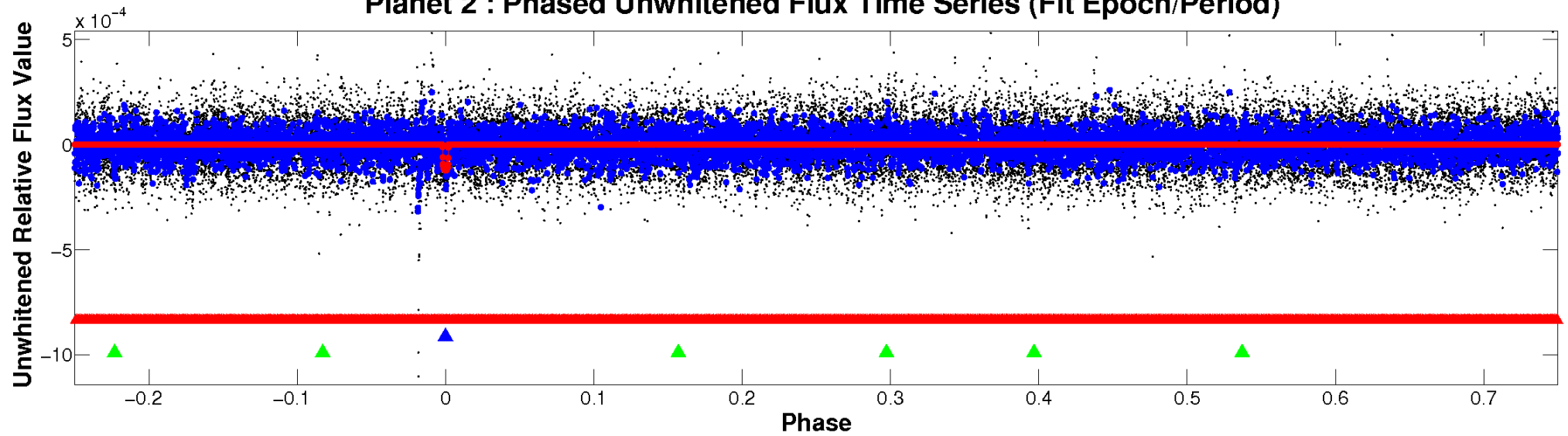
ALT Odd/Even

TCE 011968439-02

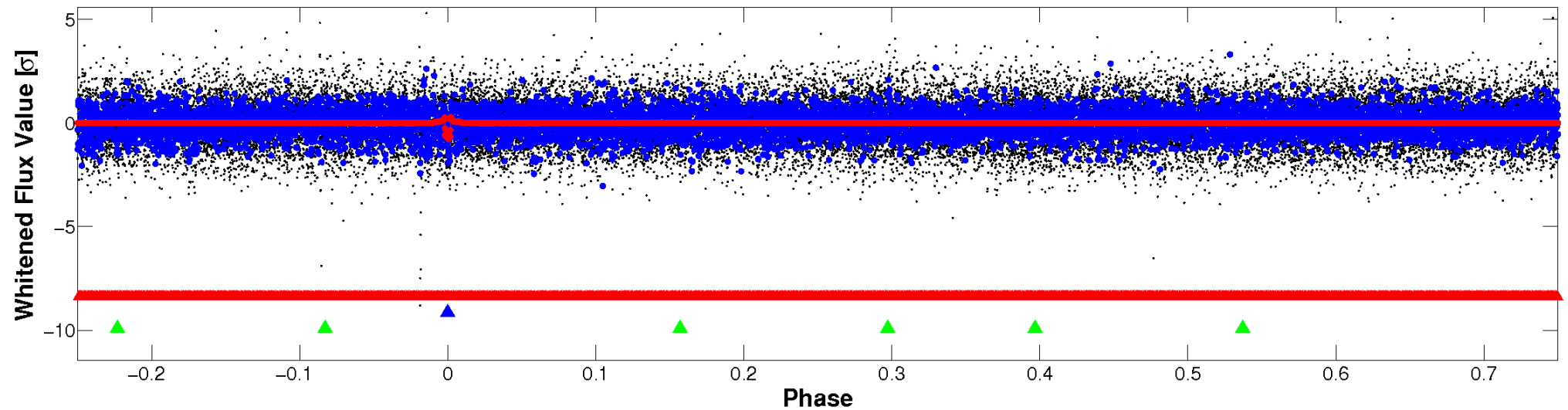


Non-Whitened Vs. Whitened Light Curve

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

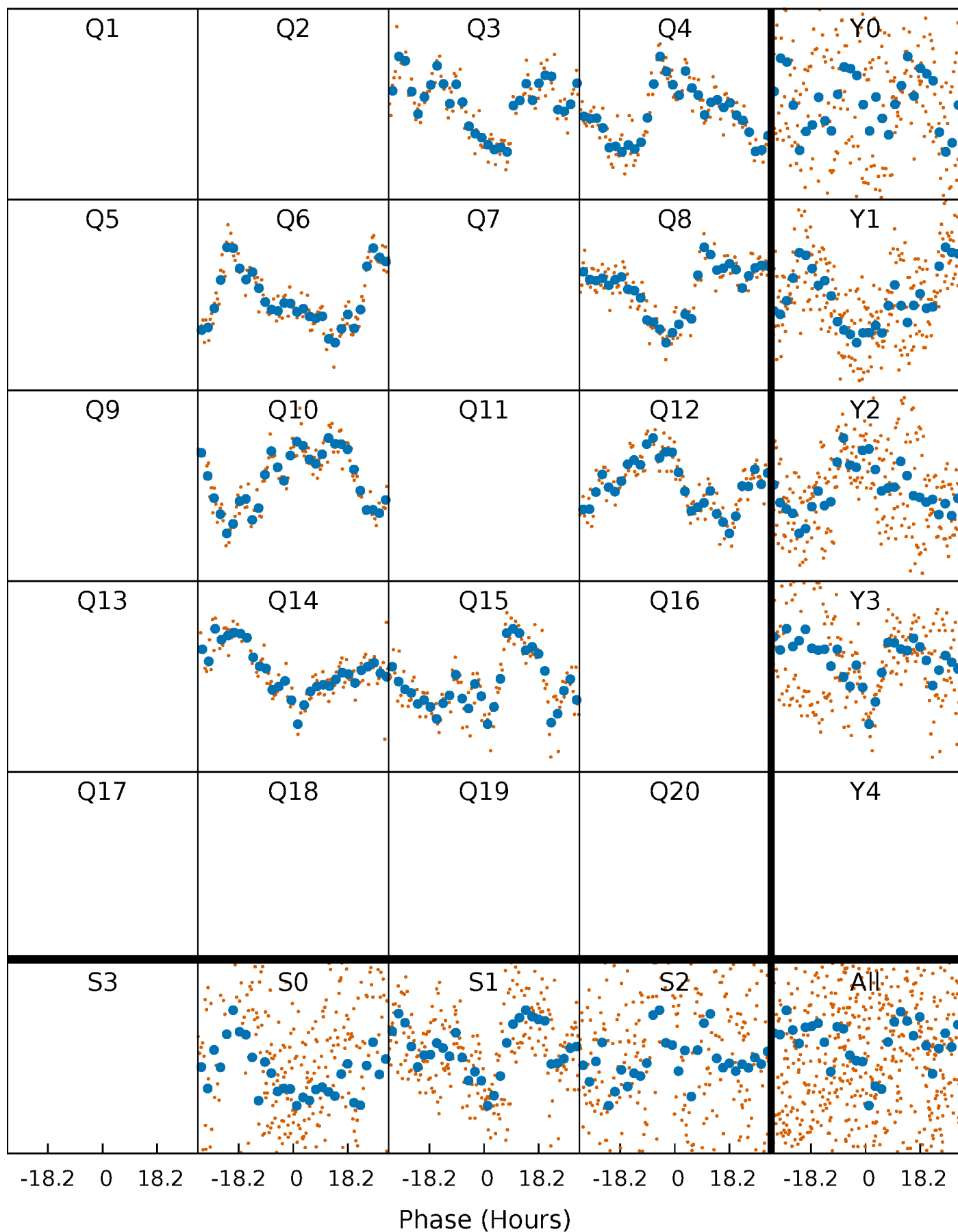


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



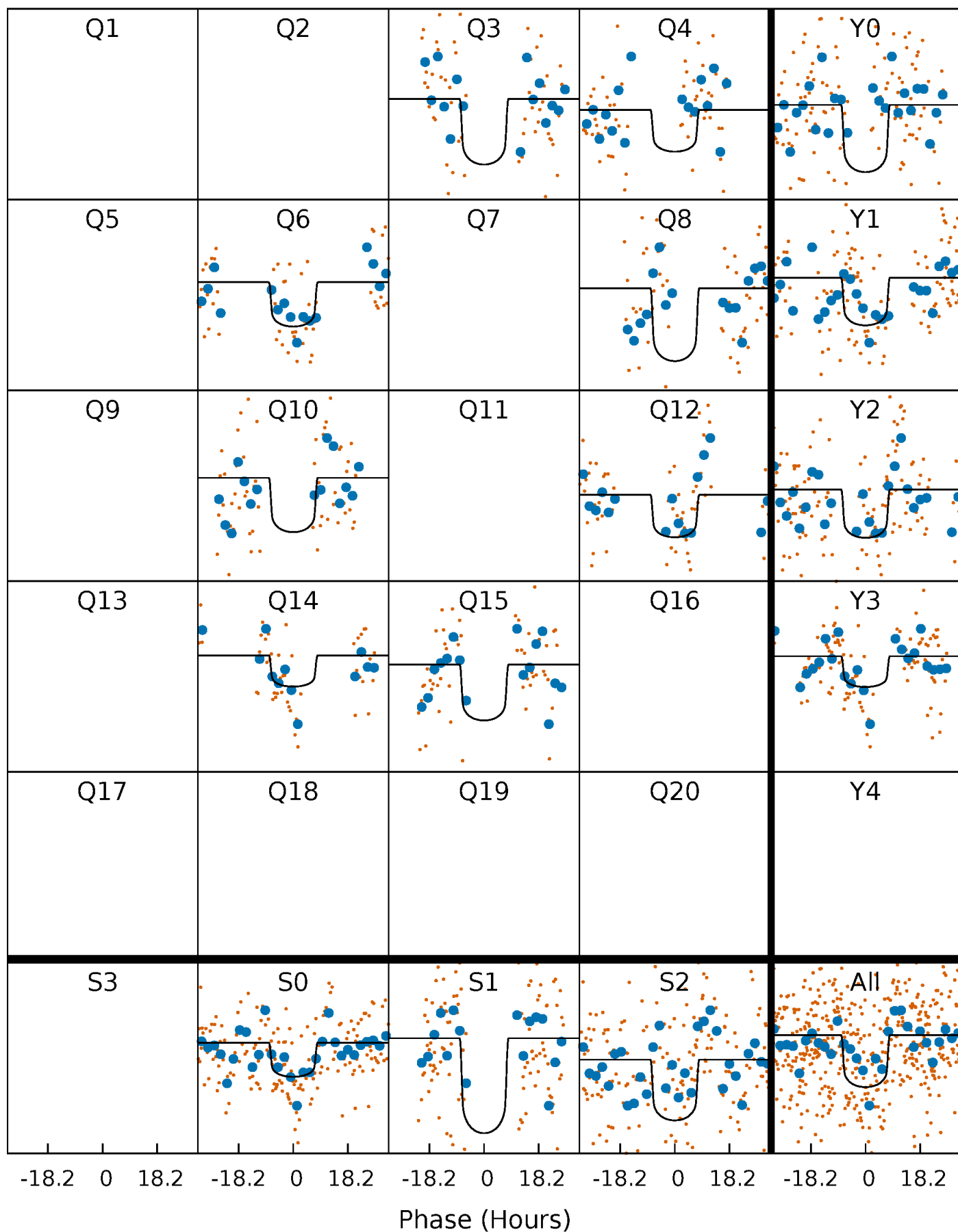
PDC Quarter-Phased Transit Curves

TCE 011968439-02 P=168.977792 Days $T_0=263.457415$ (BKJD)



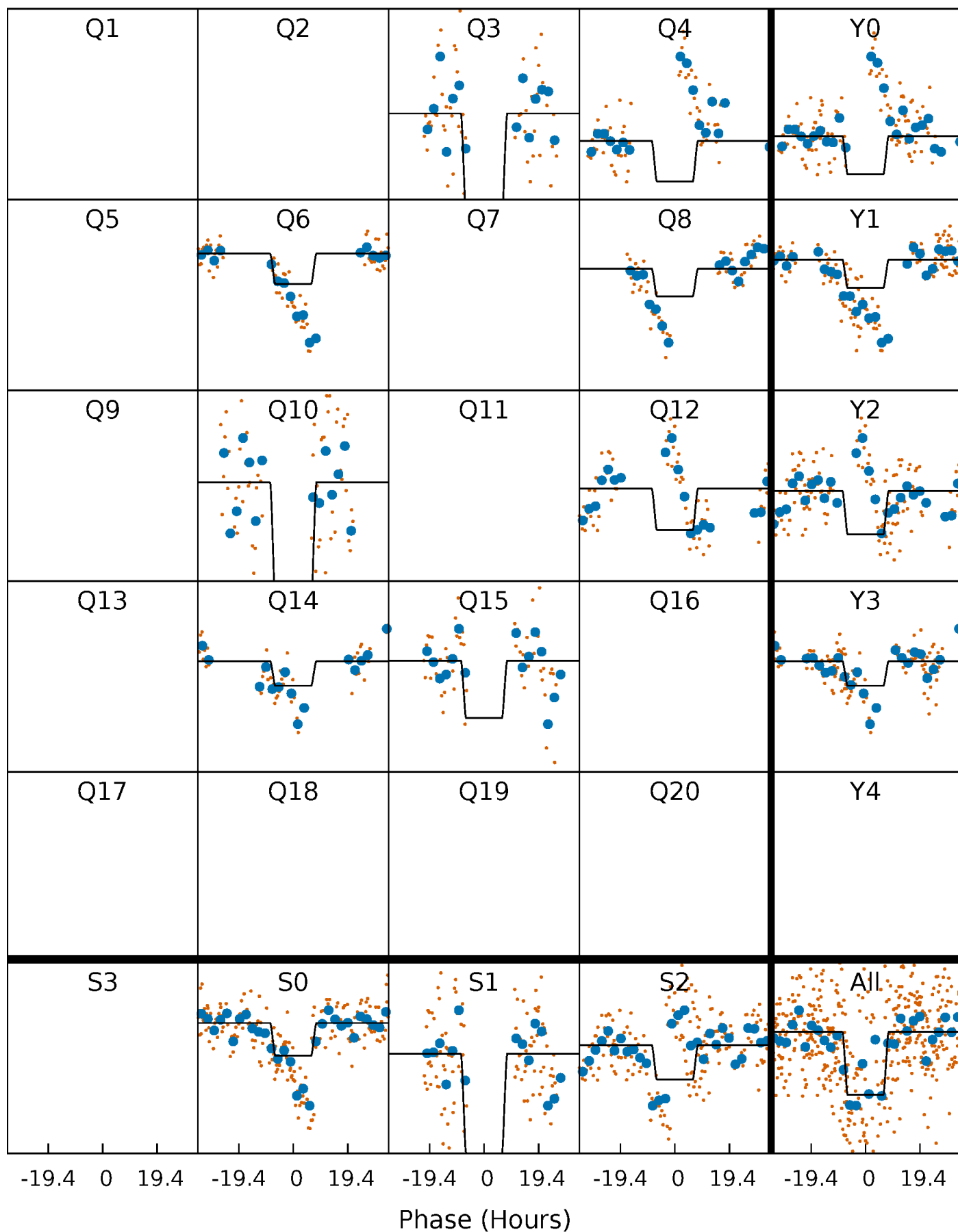
DV Quarter-Phased Transit Curves

TCE 011968439-02 $P=168.977792$ Days $T_0=263.457415$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

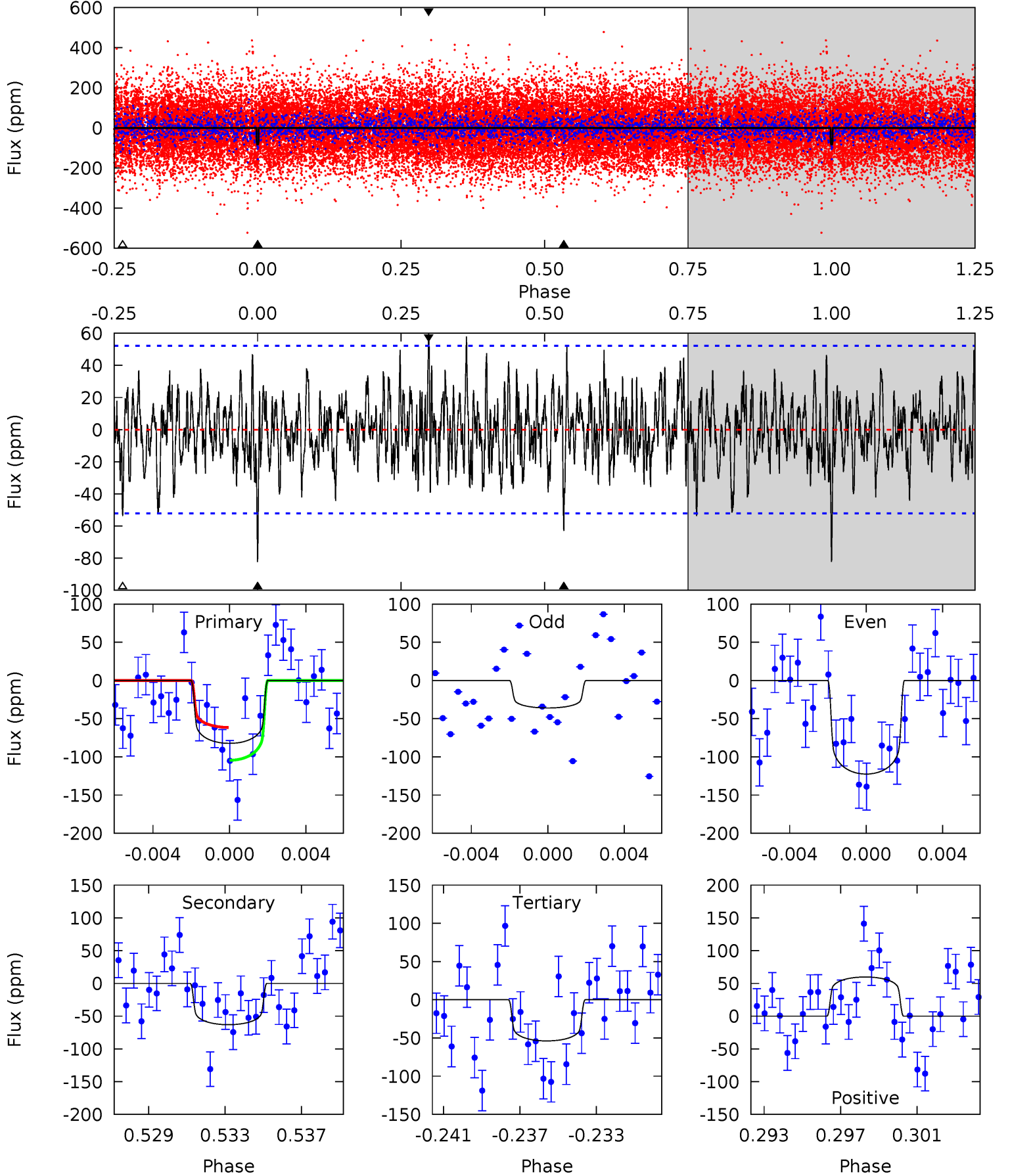
TCE 011968439-02 P=168.971919 Days $T_0=263.481622$ (BKJD)



DV Model-Shift Uniqueness Test

011968439-02, P = 168.977792 Days, E = 94.479623 Days

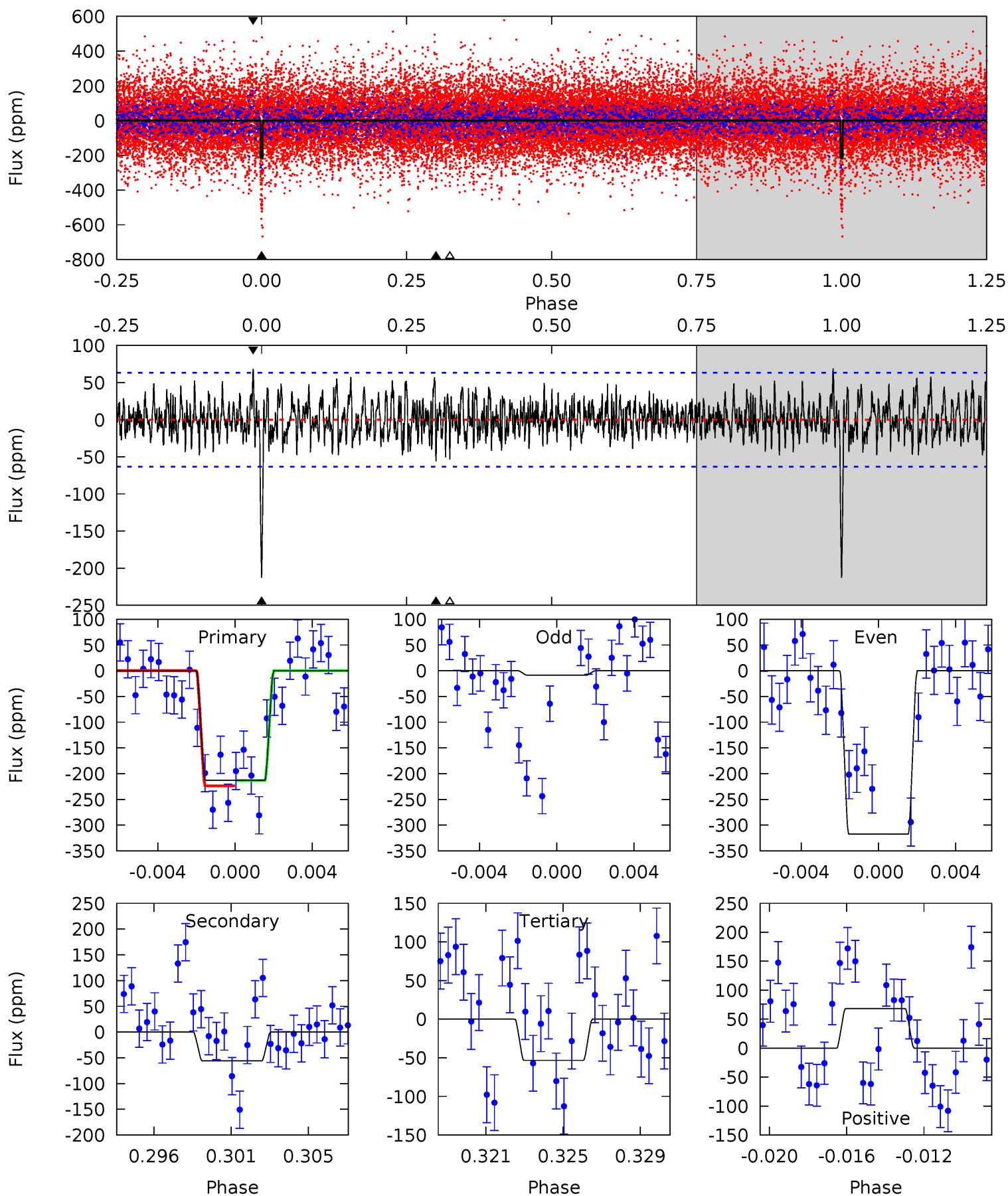
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.20	6.28	5.36	5.95	5.20	2.88	1.74	2.84	2.25	0.92	0.33	4.30	0.95	0.42	2.14



Alt Model-Shift Uniqueness Test

011968439-02, P = 168.971919 Days, E = 94.509703 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	4.58	4.38	5.60	5.20	2.87	1.55	13.1	11.9	0.21	-1.02	13.3	1.05	0.24	0.43



Stellar Parameters For KIC 011968439

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7232^{+203}_{-279}	$4.043^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.350}$	$1.937^{+0.551}_{-0.551}$	$1.509^{+0.211}_{-0.281}$	$0.292^{+0.357}_{-0.140}$
	+3%/-4%	+5%/-4%	+139%/-194%	+28%/-28%	+14%/-19%	+122%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011968439-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-63 ± 10	$2.46^{+0.54}_{-0.50}$	747^{+54}_{-56}	5888^{+513}_{-485}	2718^{+1503}_{-1013}
Alt.	-56 ± 12	$3.06^{+0.64}_{-0.57}$	747^{+61}_{-56}	5163^{+462}_{-362}	1511^{+841}_{-524}

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

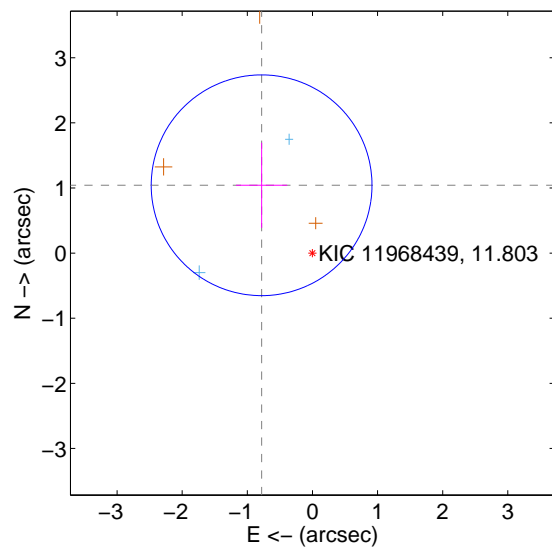
Supplemental centroid analysis for 011968439-02. **Kepler magnitude: 11.80.** Transit SNR 6.88

There are 3 quarters with good PRF difference image offsets

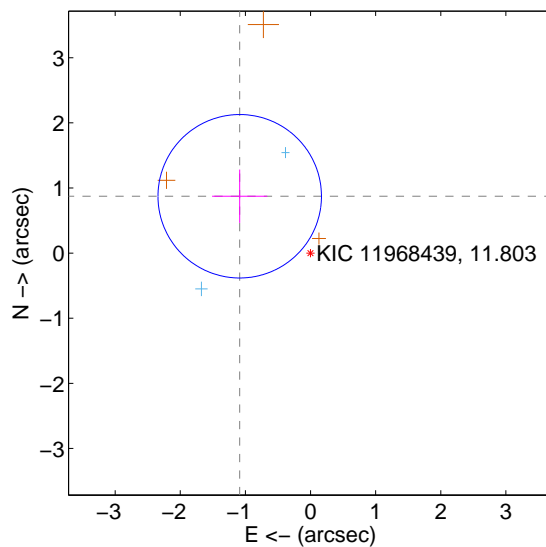
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.302 ± 0.565	2.30	0.781 ± 0.393	1.041 ± 0.653
PRF-fit source offset from KIC position	1.394 ± 0.418	3.33	1.087 ± 0.424	0.873 ± 0.410
photometric centroid source offset	0.87 ± 0.74	1.17	0.64 ± 0.67	-0.58 ± 0.82

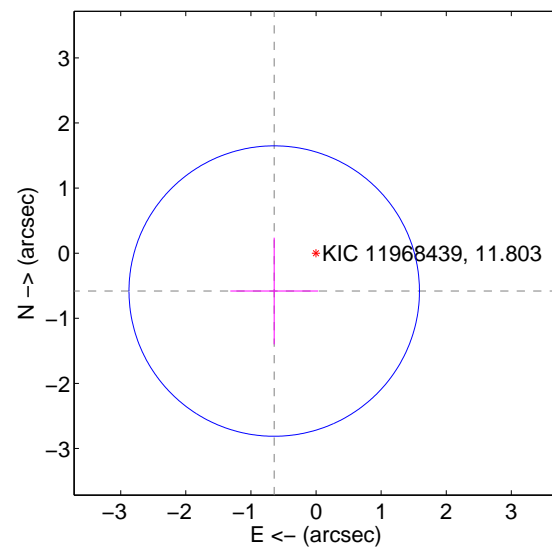
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

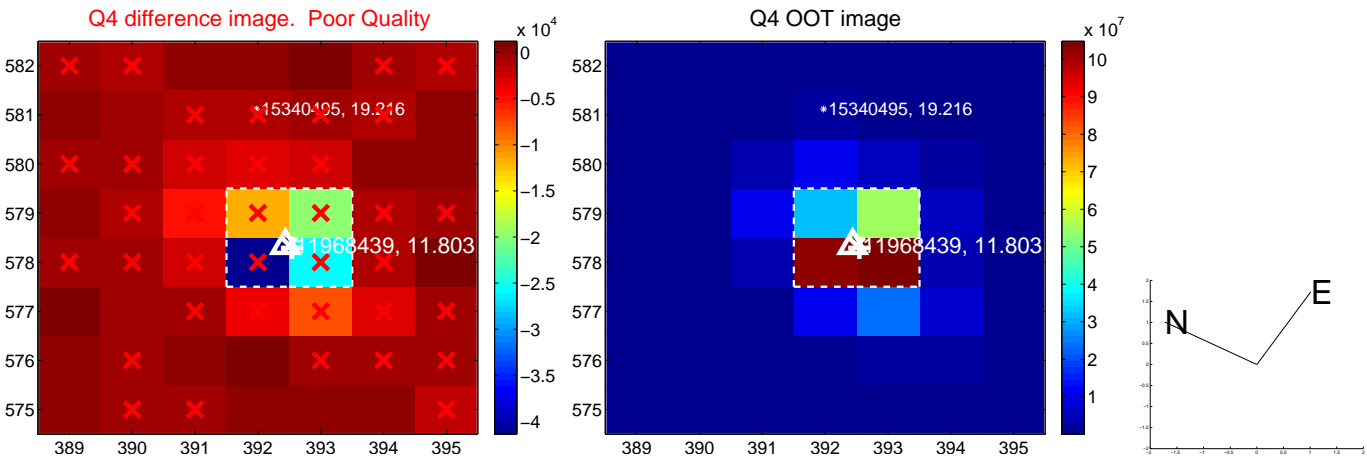
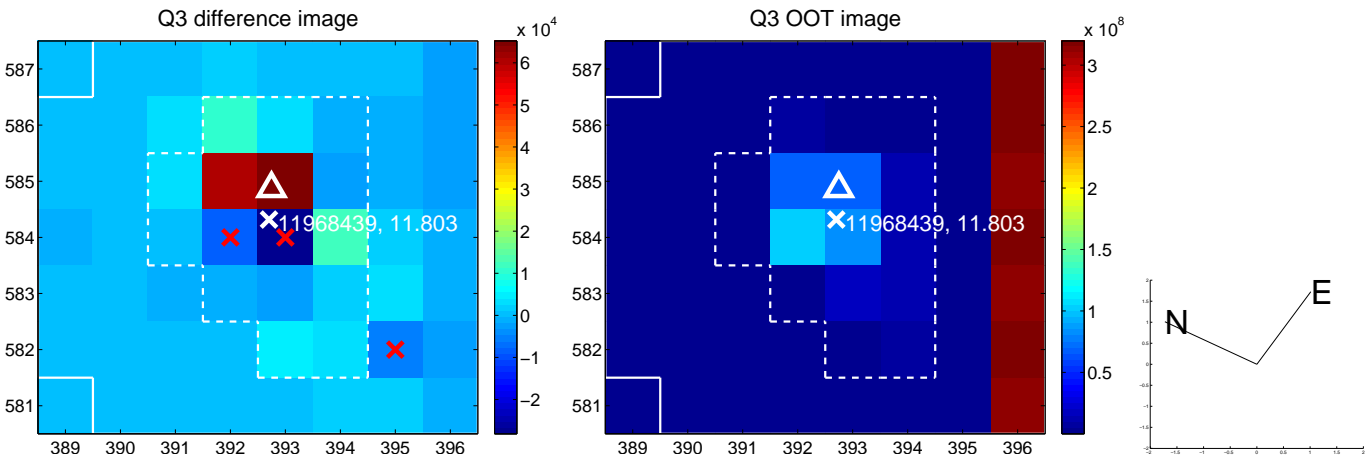
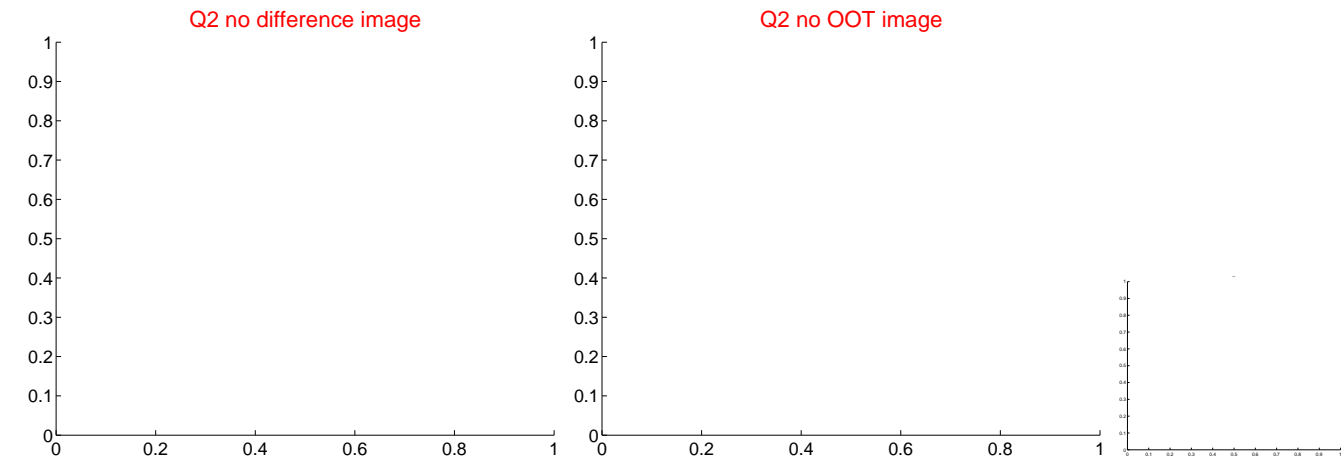


offset from photometric centroids

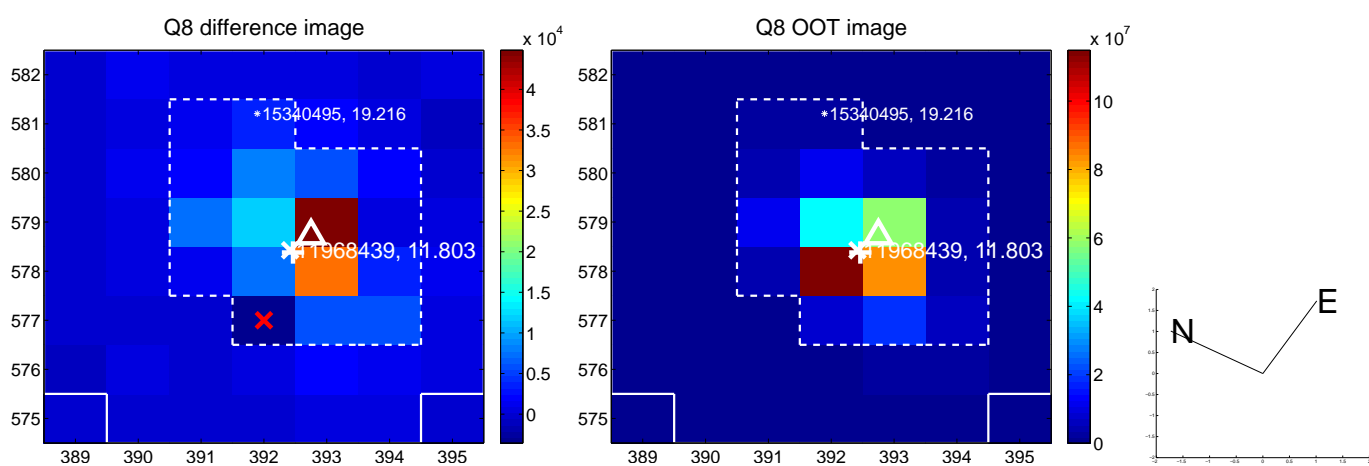
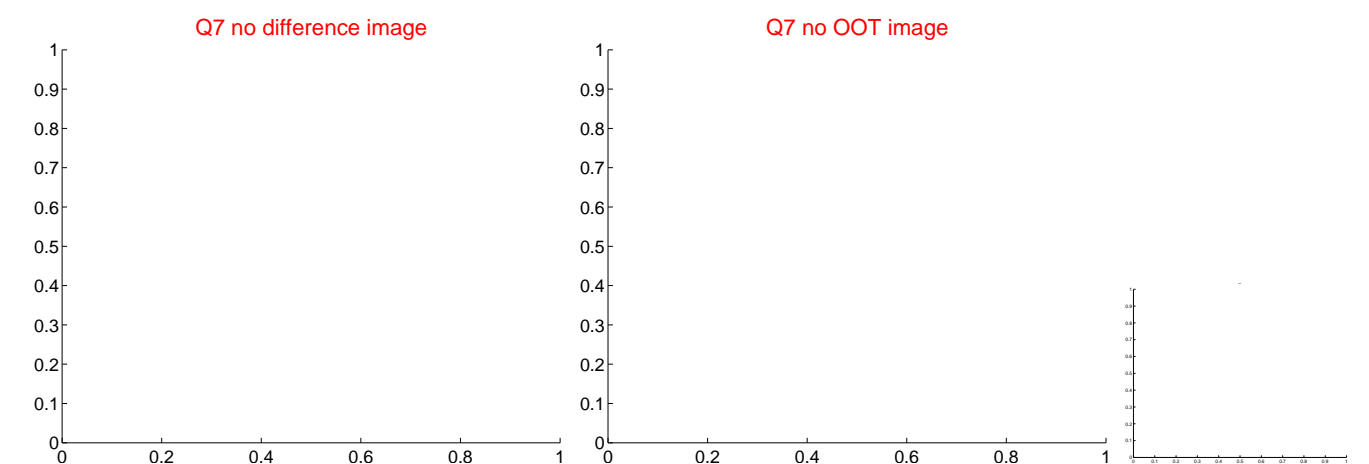
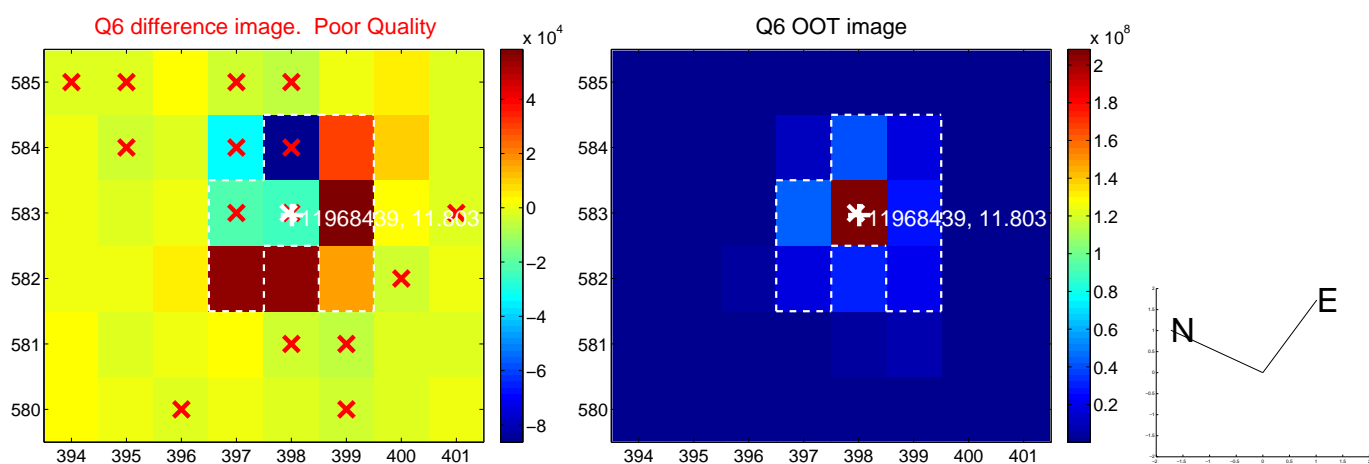
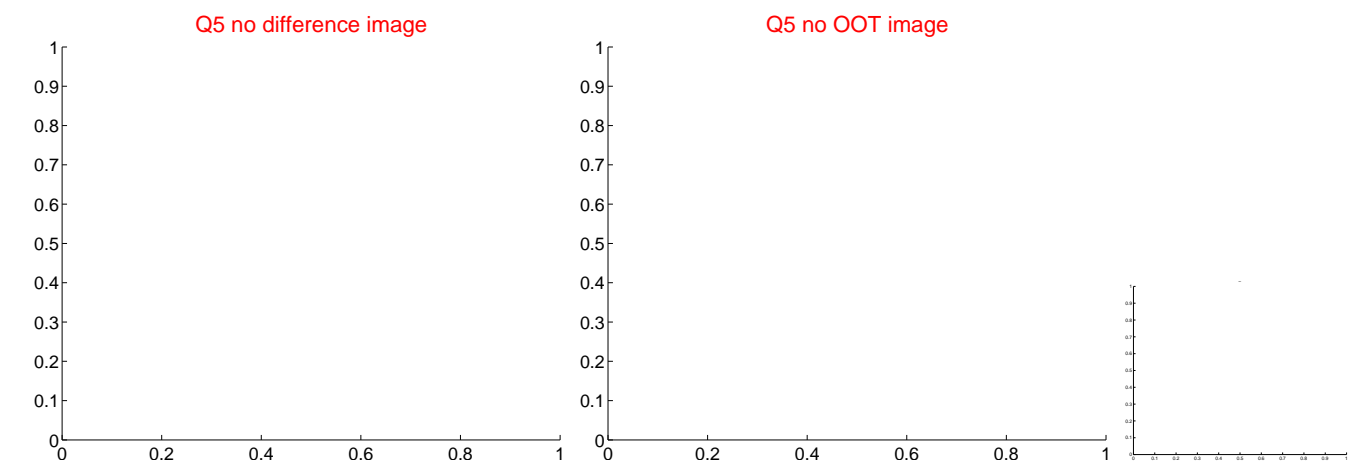


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

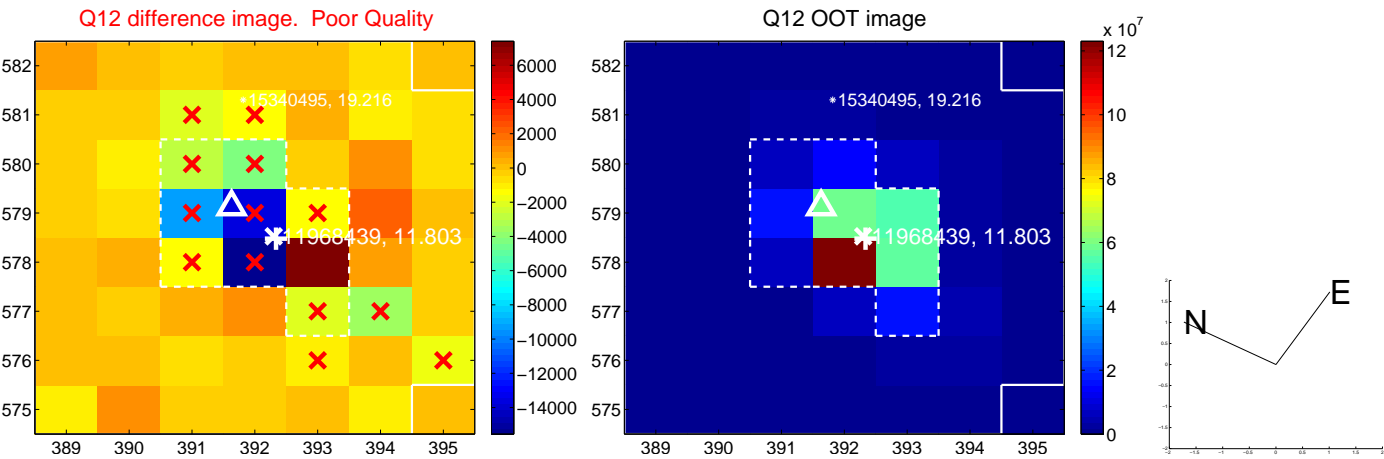
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



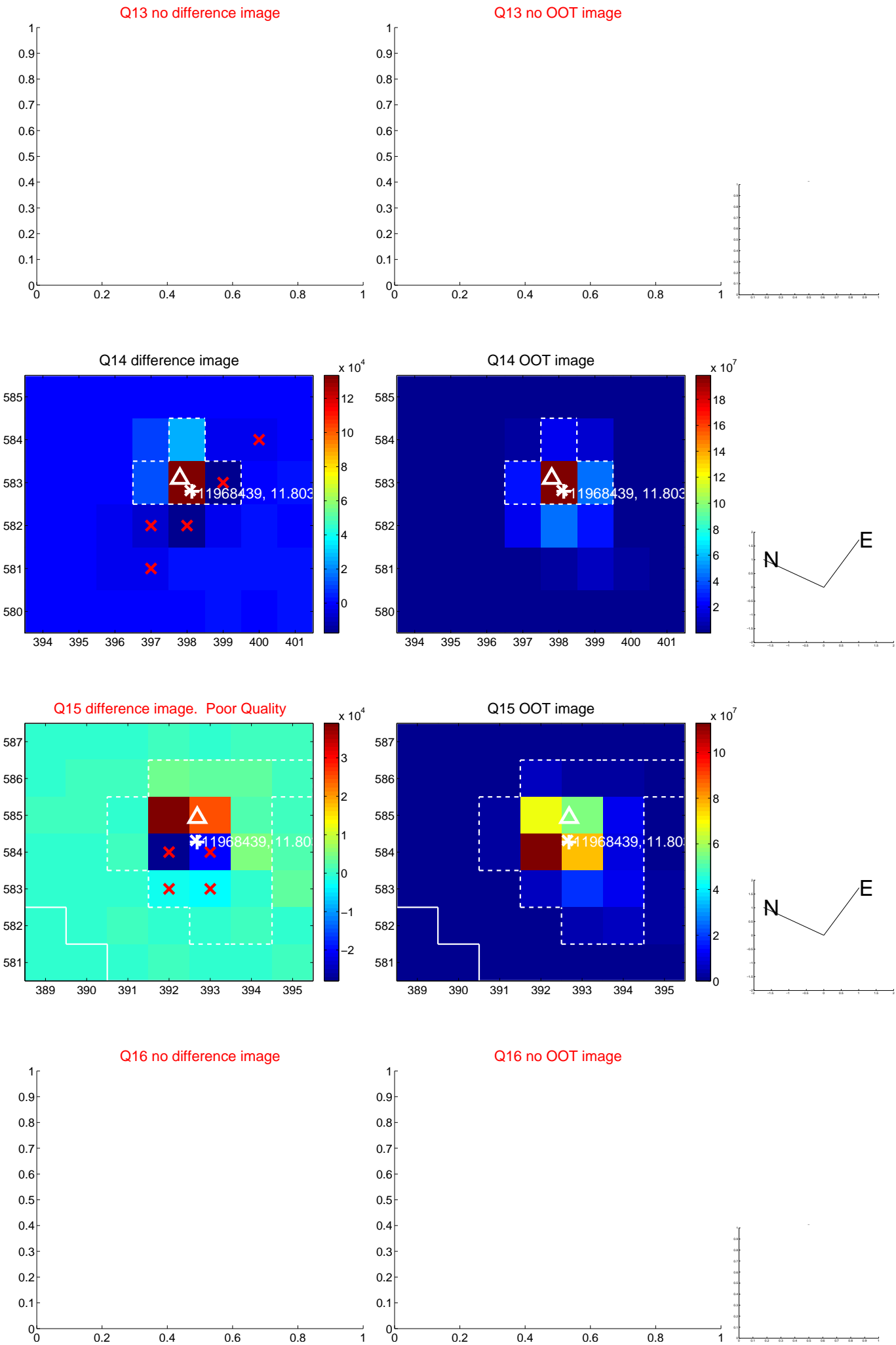
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



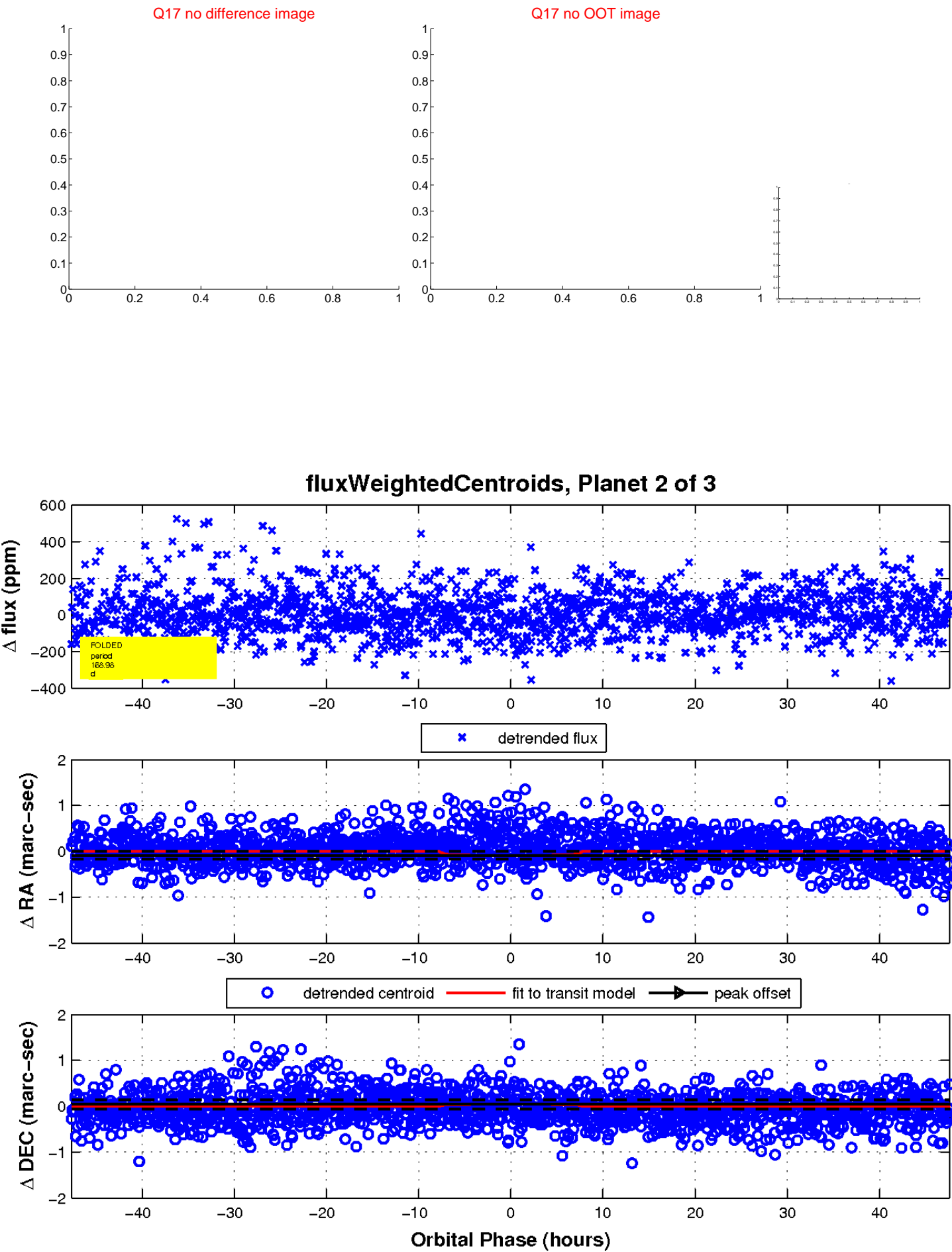
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

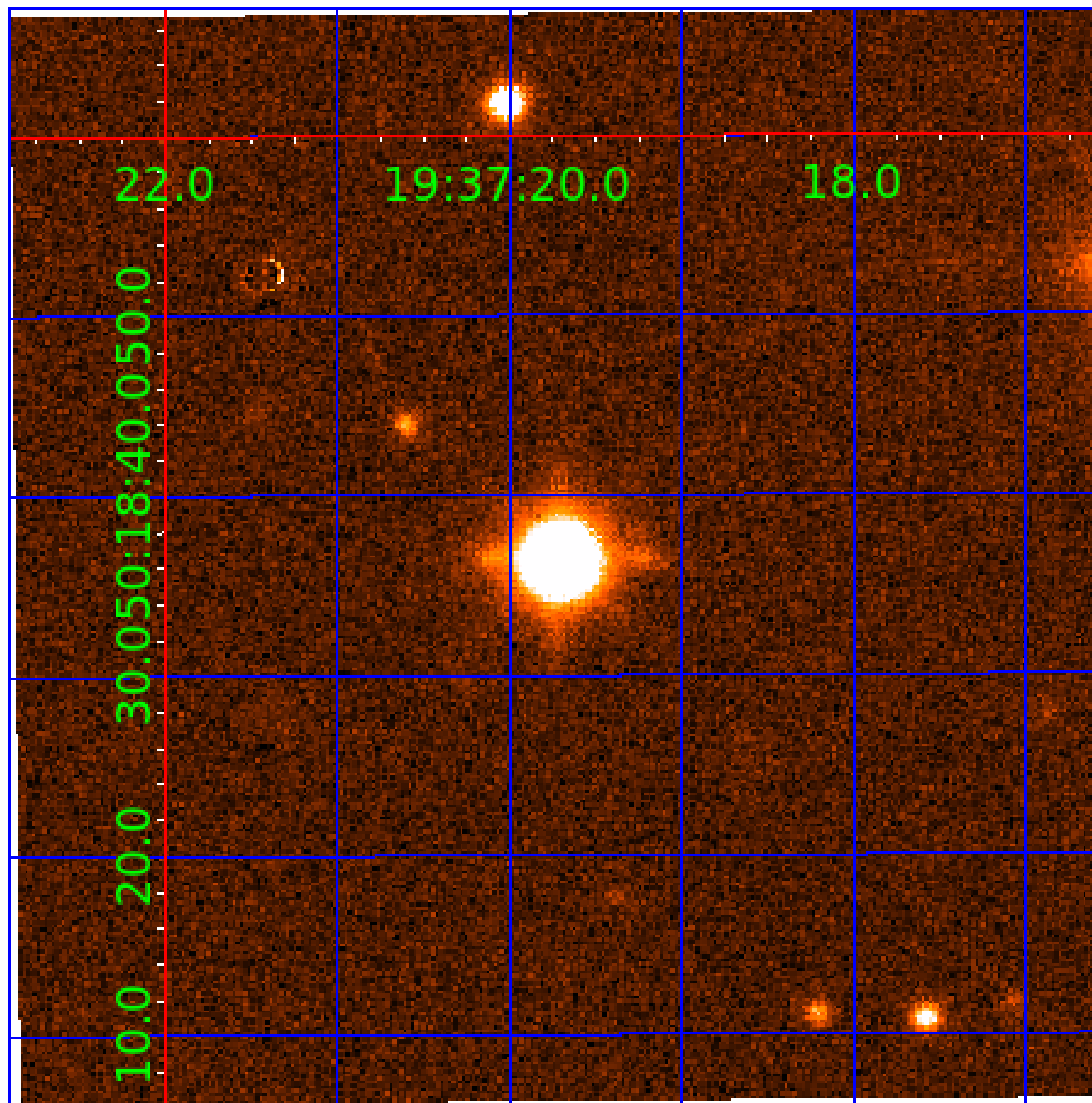


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011968439

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})
011968439-01	OBS	No	1.348703	132.747427	15.6	5.474	8.7	9.4	1.94	7232	0.82	12230.93
011968439-02	OBS	No	168.977792	263.457415	123.5	15.884	11.2	6.9	1.94	7232	2.48	19.51
011968439-03	OBS	No	233.206082	330.509935	128.5	8.060	7.2	7.2	1.94	7232	2.50	12.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968439-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011968439-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_MEAS
011968439-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

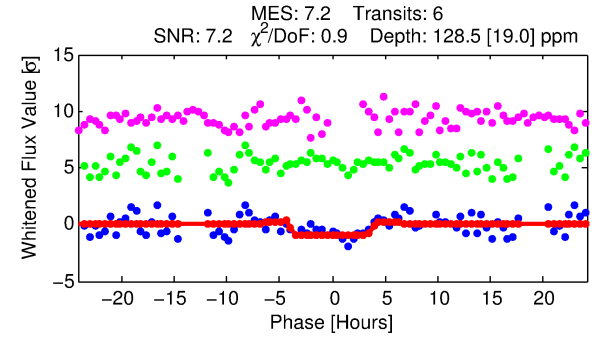
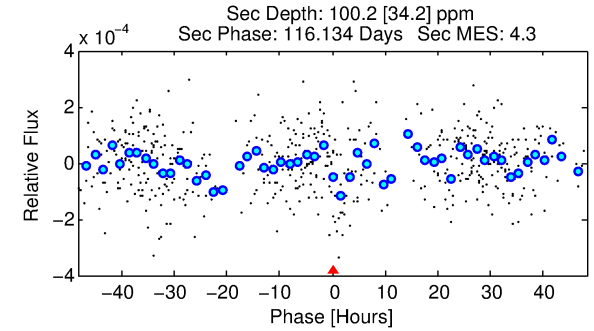
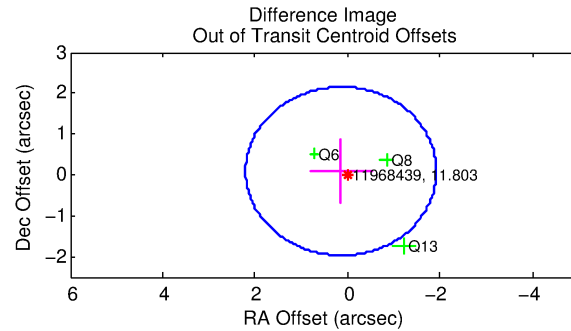
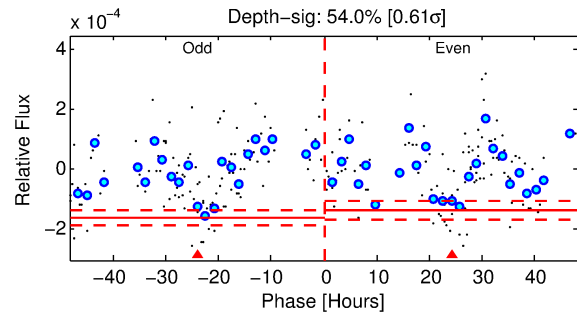
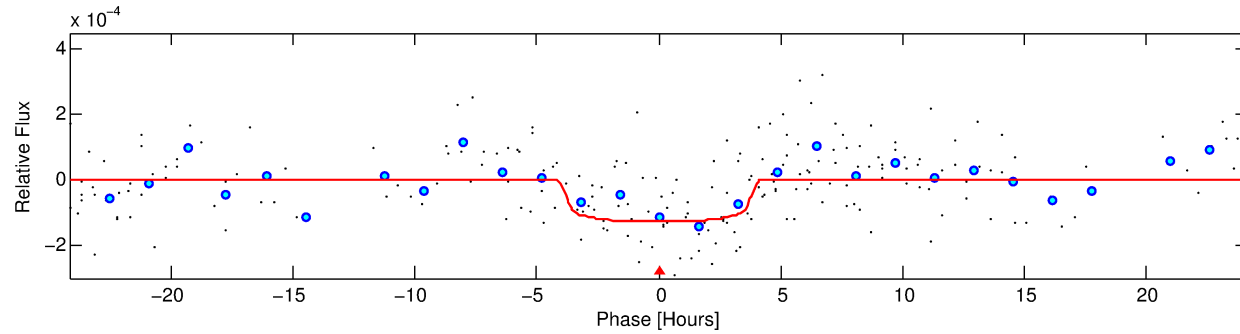
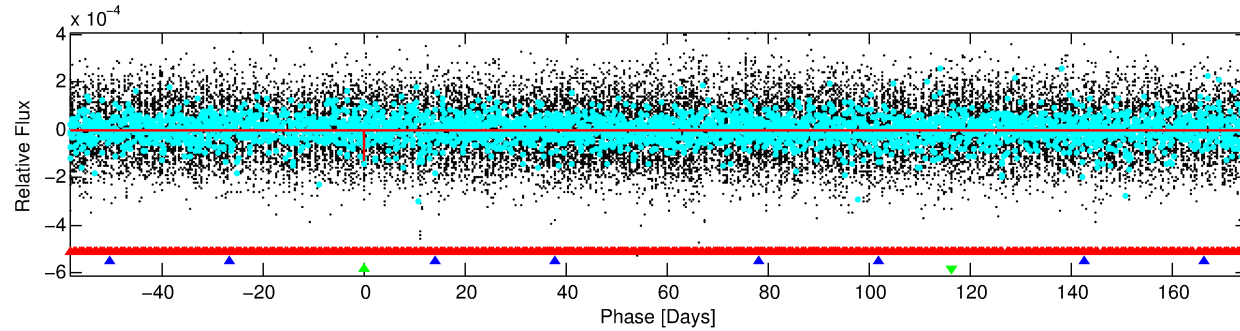
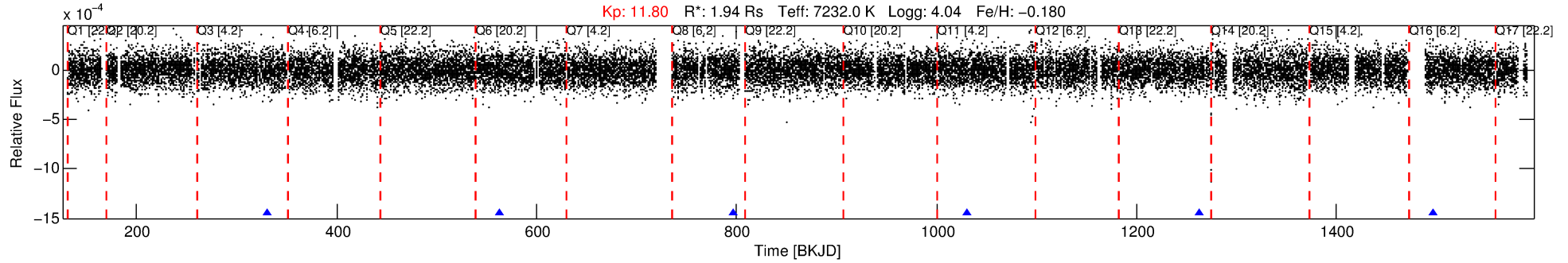
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011968439-03

No Significant Match Found

DV One-Page Summary

KIC: 11968439 Candidate: 3 of 3 Period: 233.206 d



DV Fit Results:

Period = 233.20608 [0.00685] d
Epoch = 330.5099 [0.0162] BKJD
Rp/R* = 0.0119 [0.0045]
a/R* = 111.83 [265.09]
b = 0.88 [0.63]
Seff = 12.70 [5.12]
Teq = 481 [49] K
Rp = 2.51 [1.19] Re
a = 0.8510 [0.2114] AU
Ag = 6357.88 [5816.27] [1.09σ]
Teffp = 6645 [1411] K [4.36σ]

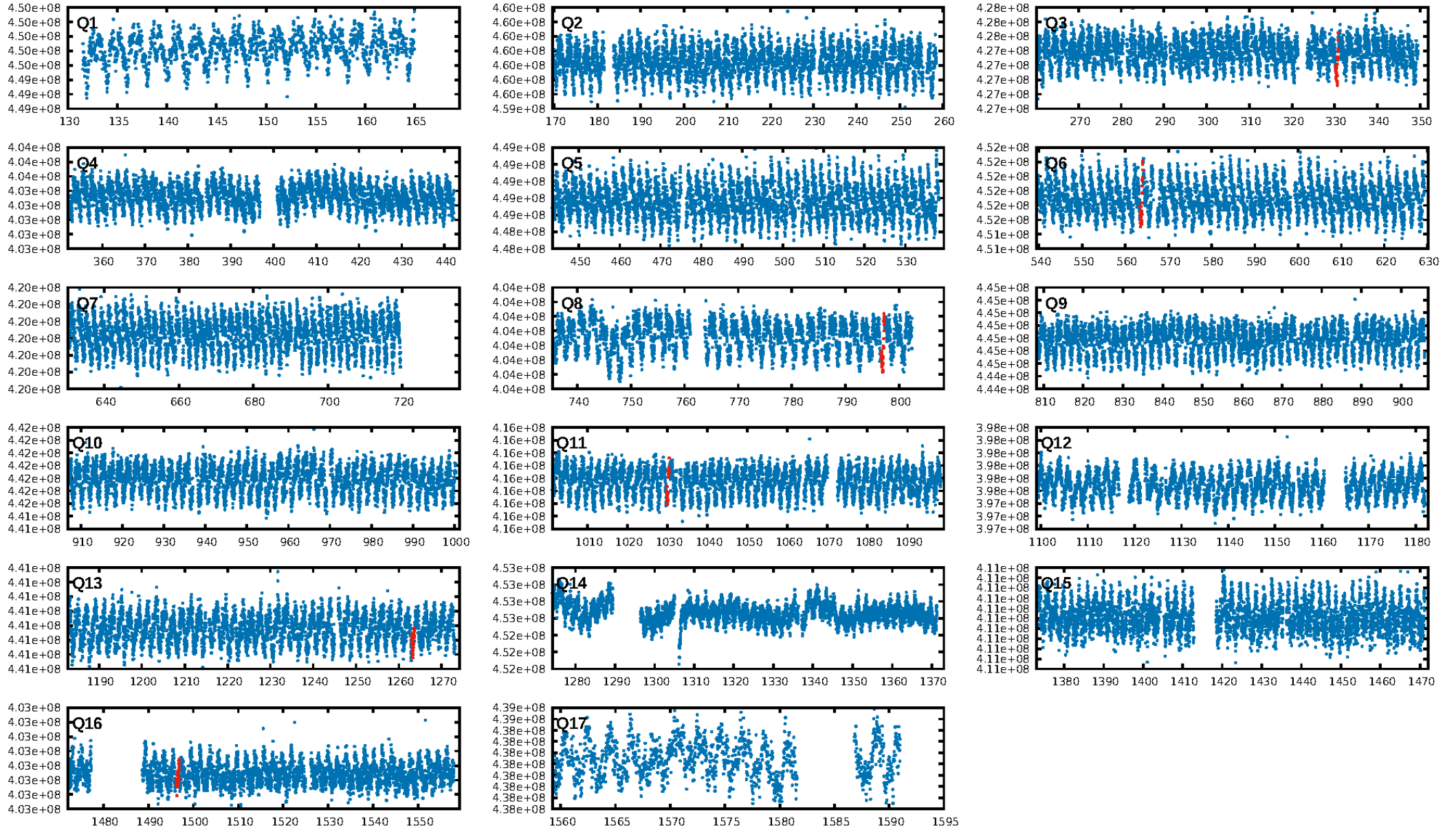
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [86.54σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.21e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 1.997
Centroid-sig: 60.2%
Centroid-so: 0.699 arcsec [0.67σ]
OotOffset-rm: 0.169 arcsec [0.25σ]
KicOffset-rm: 0.435 arcsec [0.65σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 0.00 [0/5]

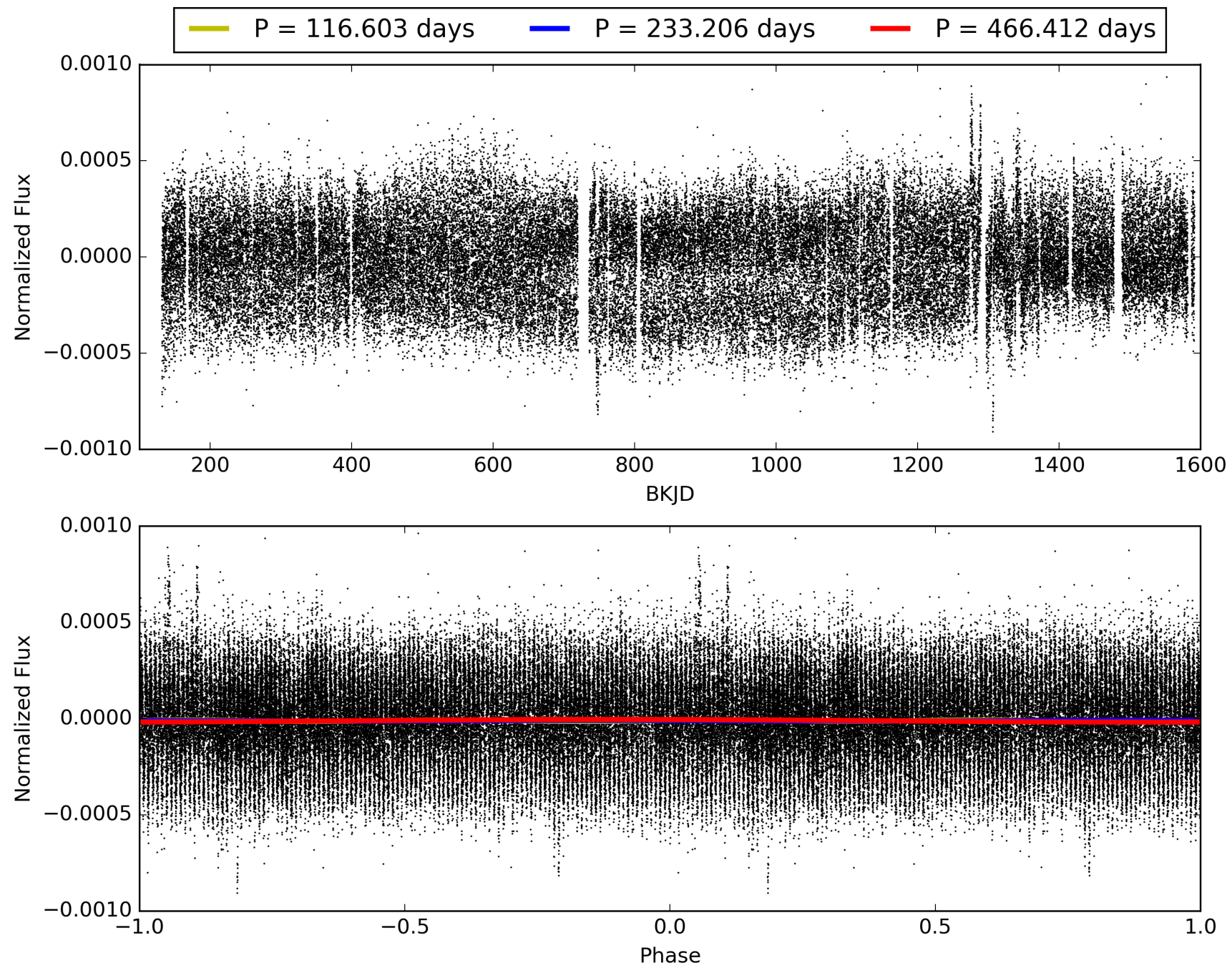
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:41:17 Z

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

TCE 011968439-03, PDC Light Curves

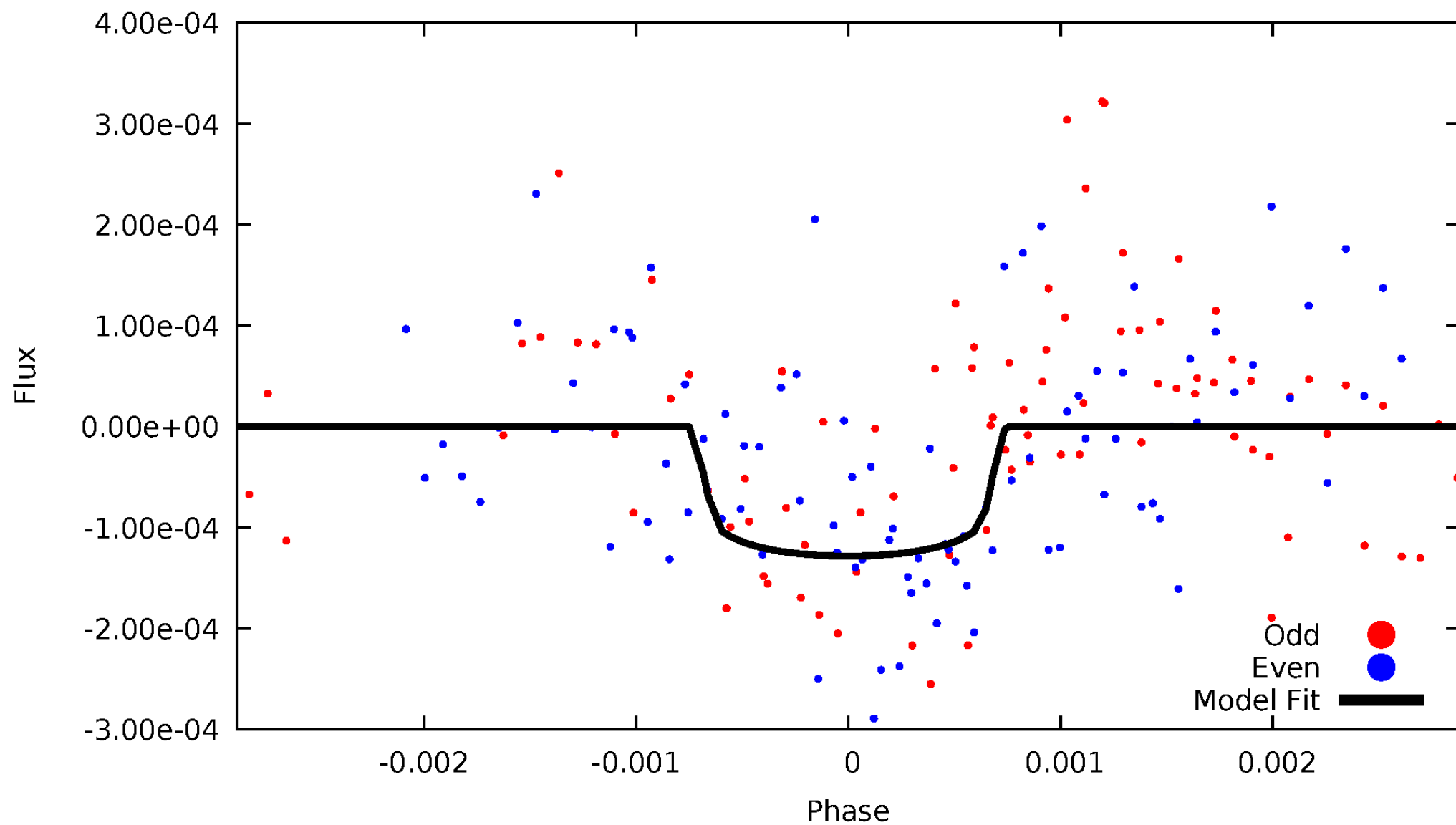


TCE 011968439-03



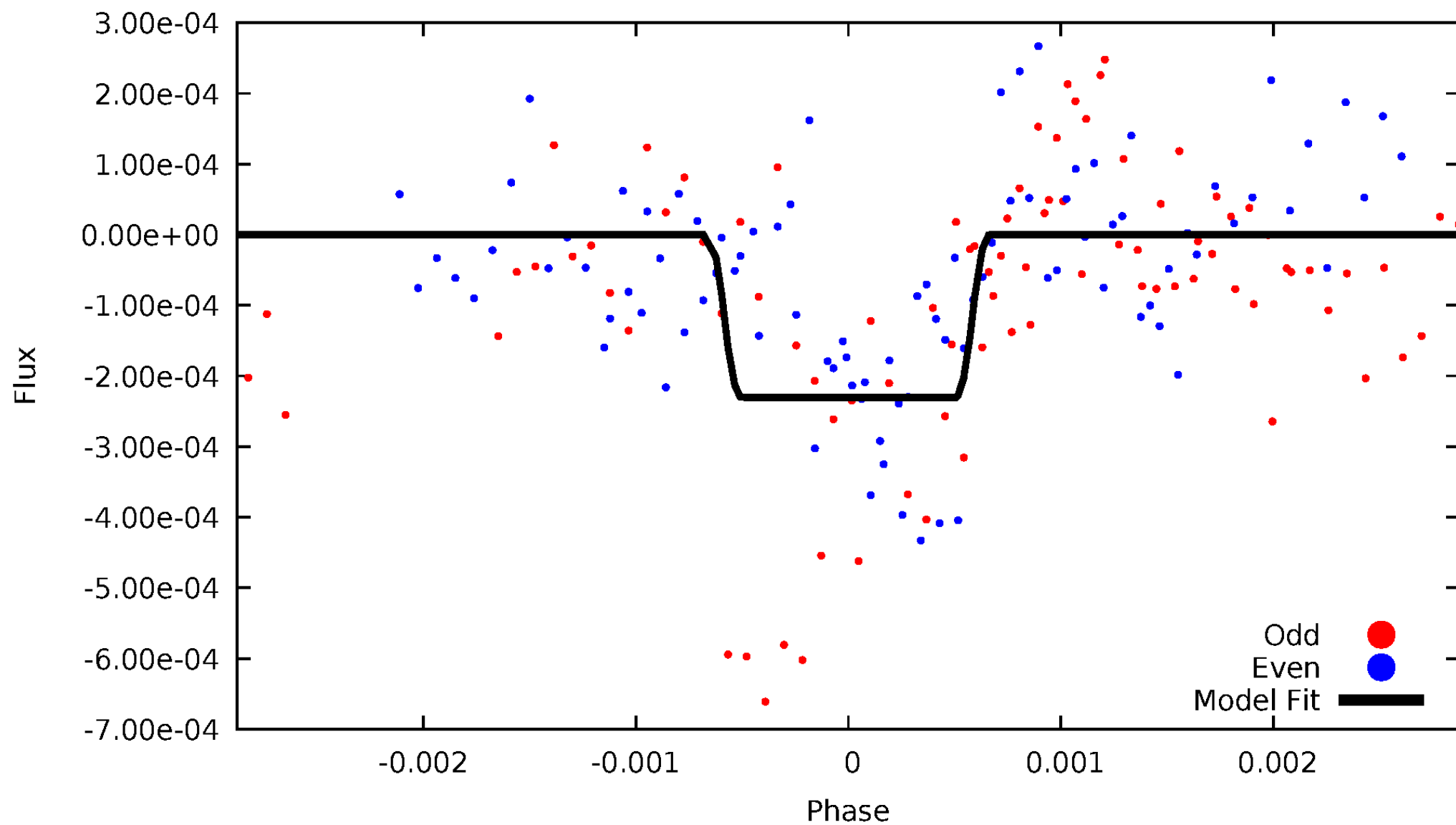
DV Odd/Even

TCE 011968439-03



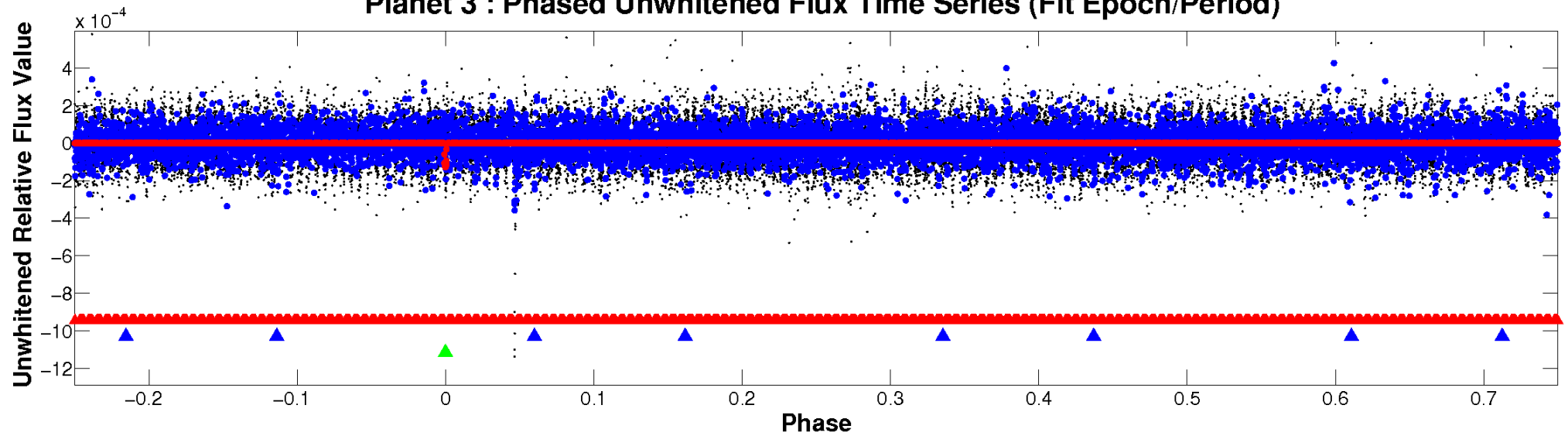
ALT Odd/Even

TCE 011968439-03

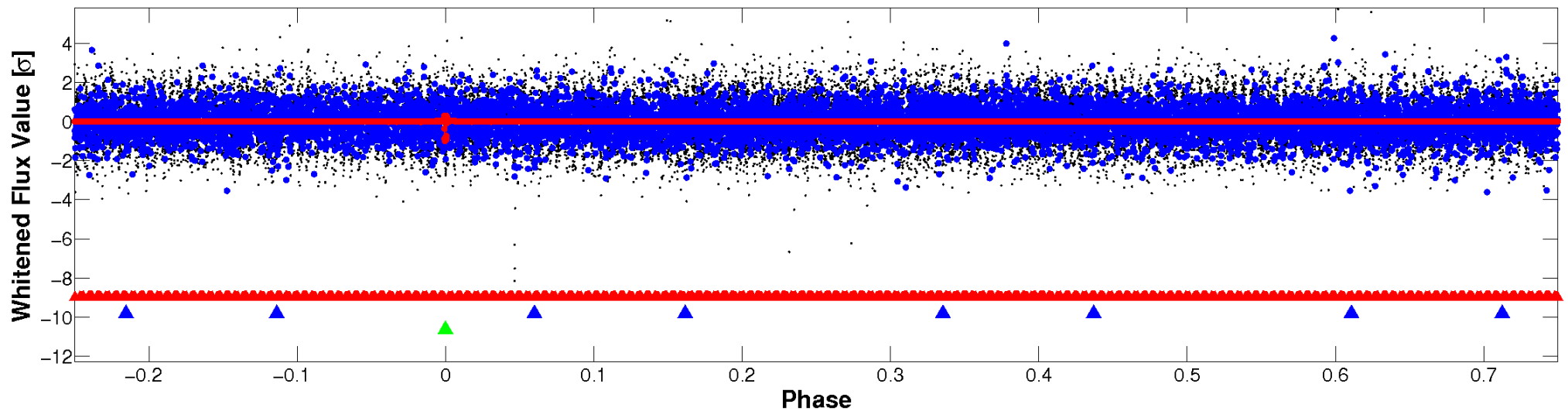


Non-Whitened Vs. Whitened Light Curve

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

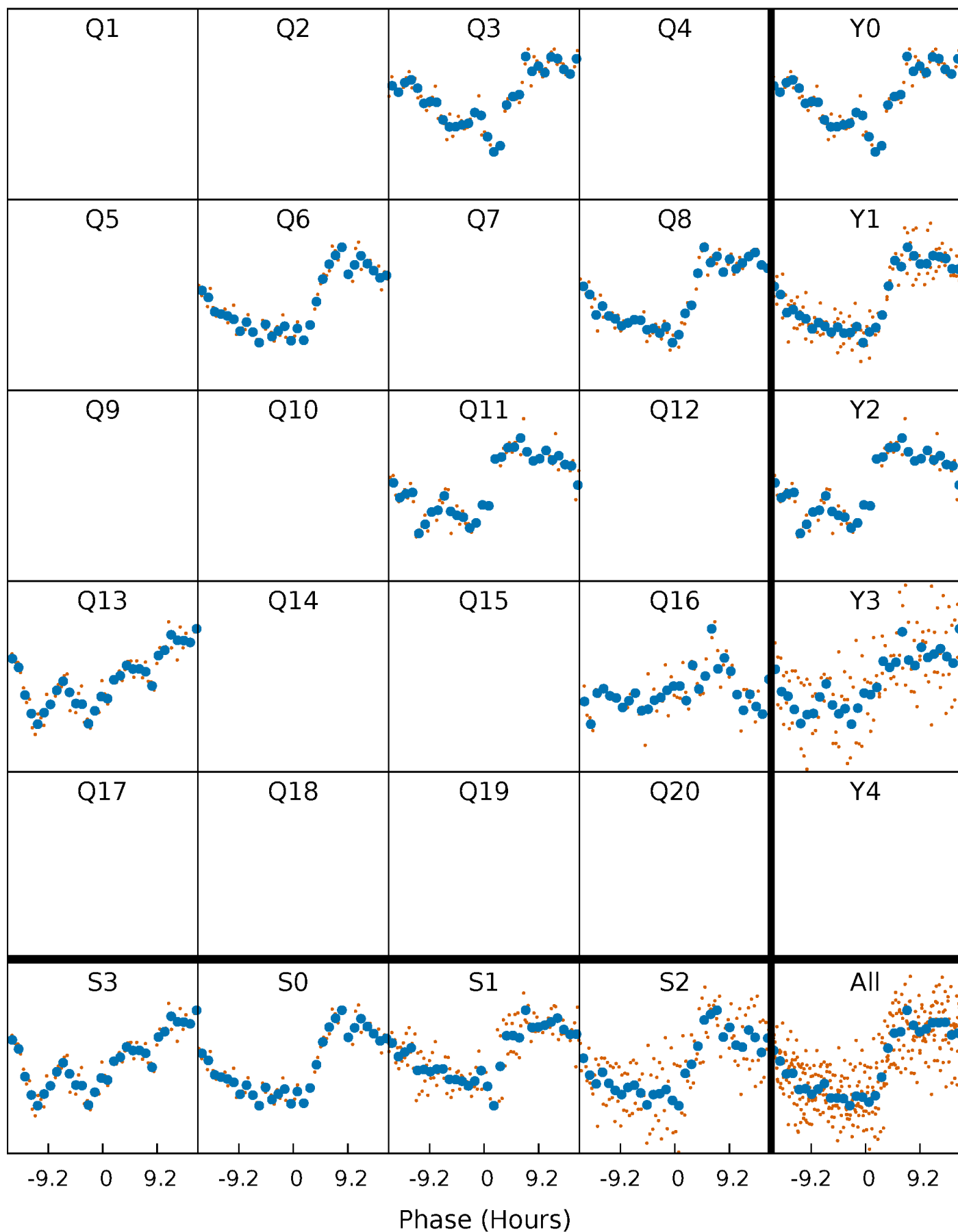


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



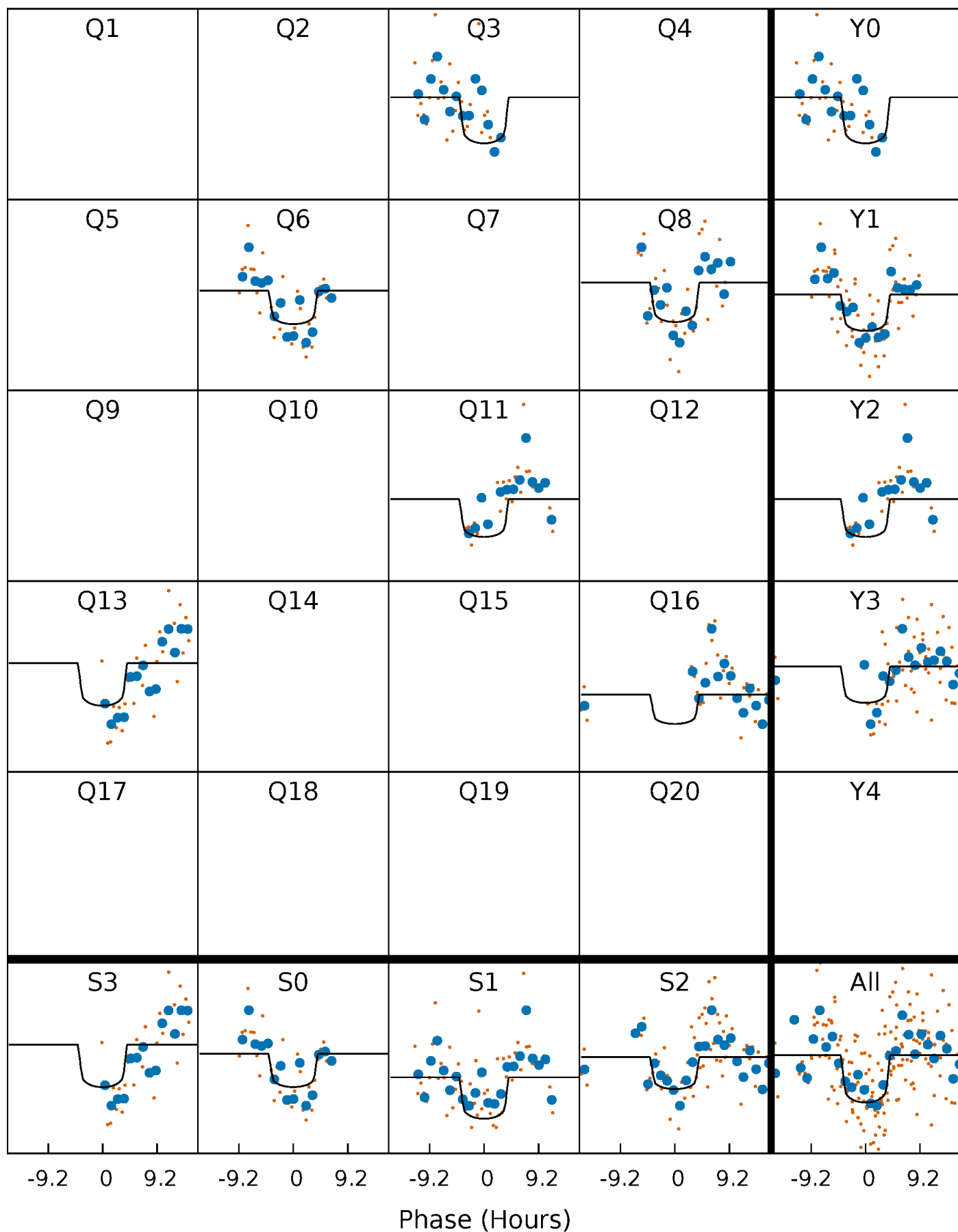
PDC Quarter-Phased Transit Curves

TCE 011968439-03 P=233.206082 Days $T_0=330.509935$ (BKJD)



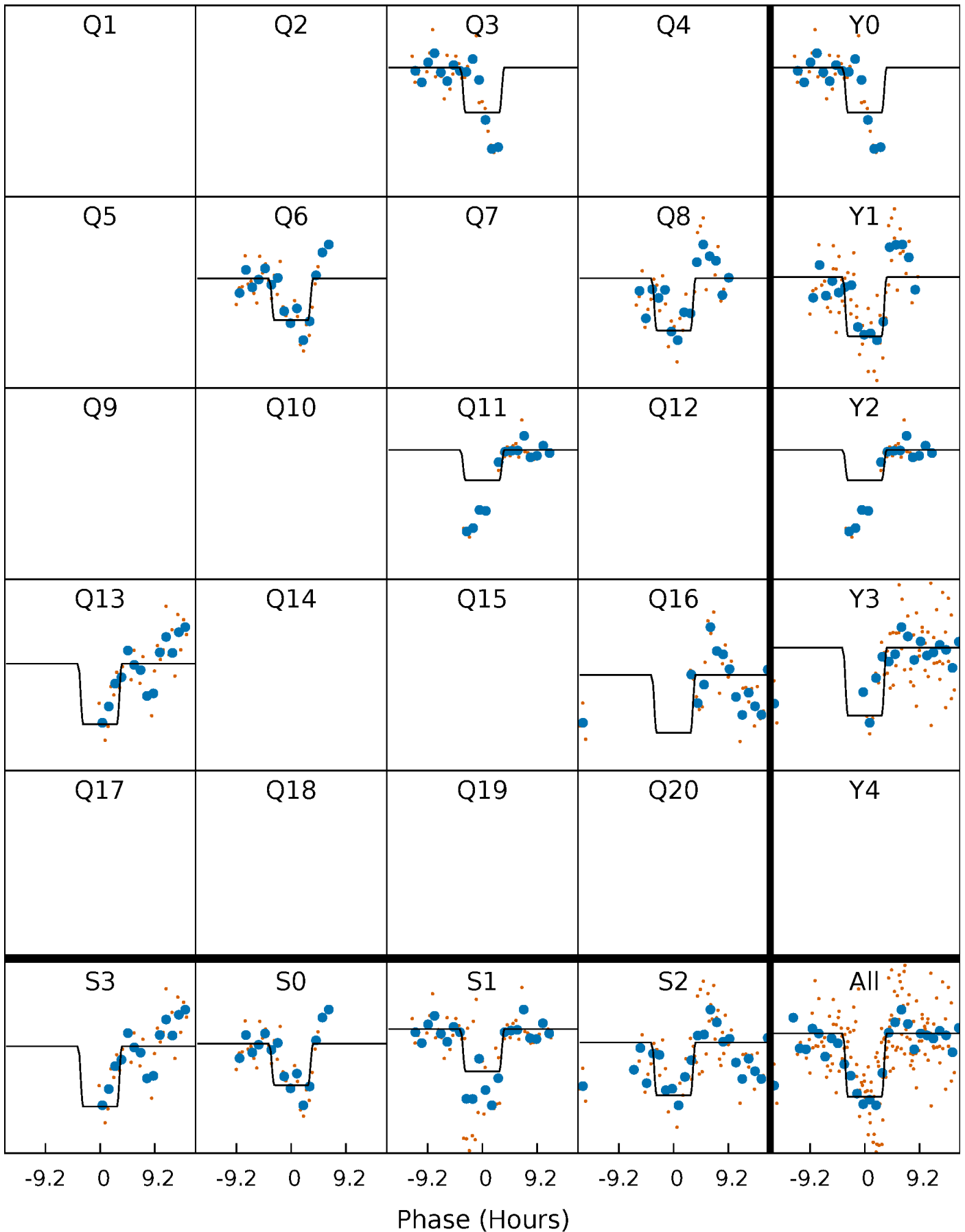
DV Quarter-Phased Transit Curves

TCE 011968439-03 P=233.206082 Days $T_0=330.509935$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

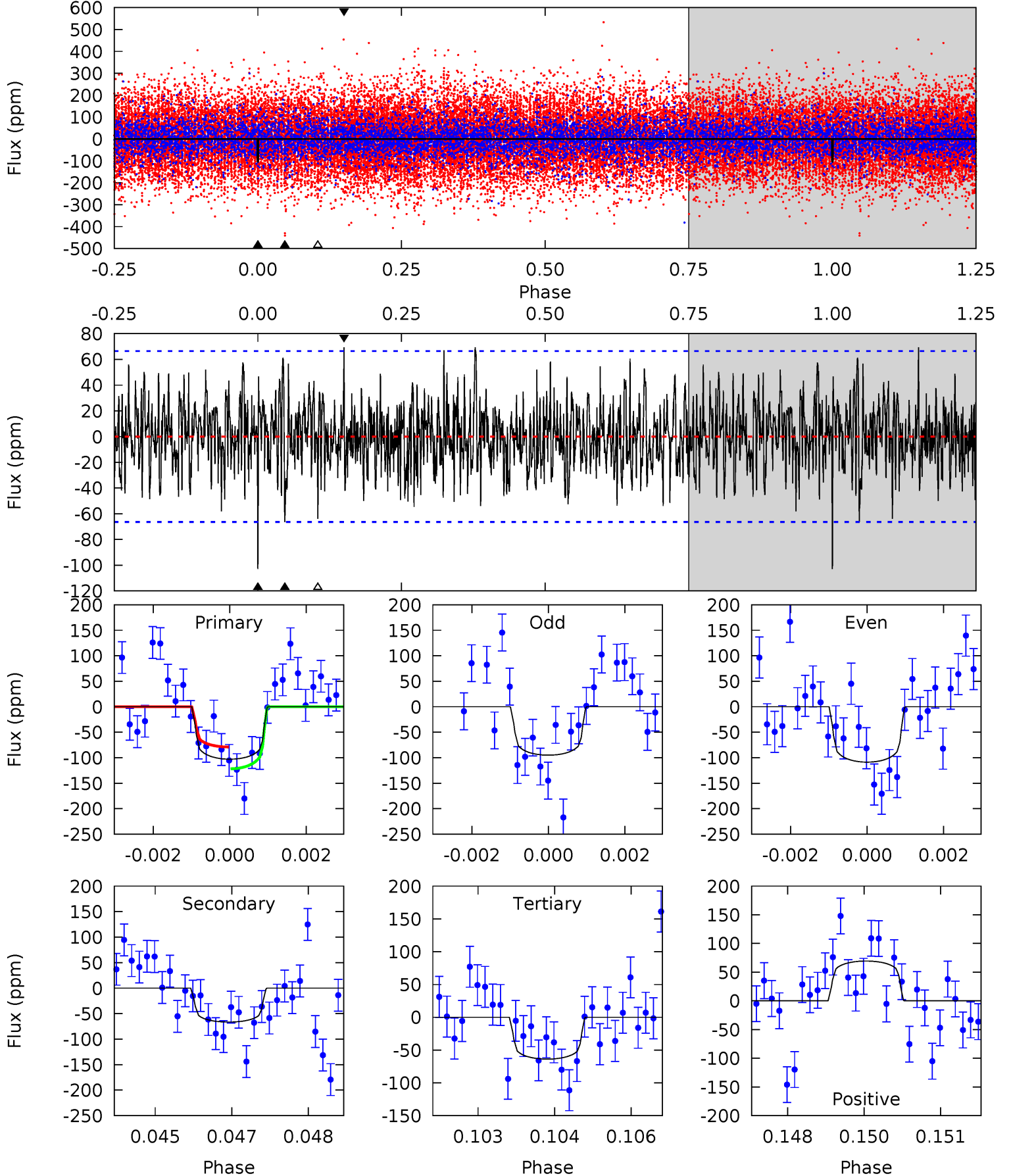
TCE 011968439-03 P=233.204791 Days $T_0=330.516218$ (BKJD)



DV Model-Shift Uniqueness Test

011968439-03, P = 233.206082 Days, E = 97.303853 Days

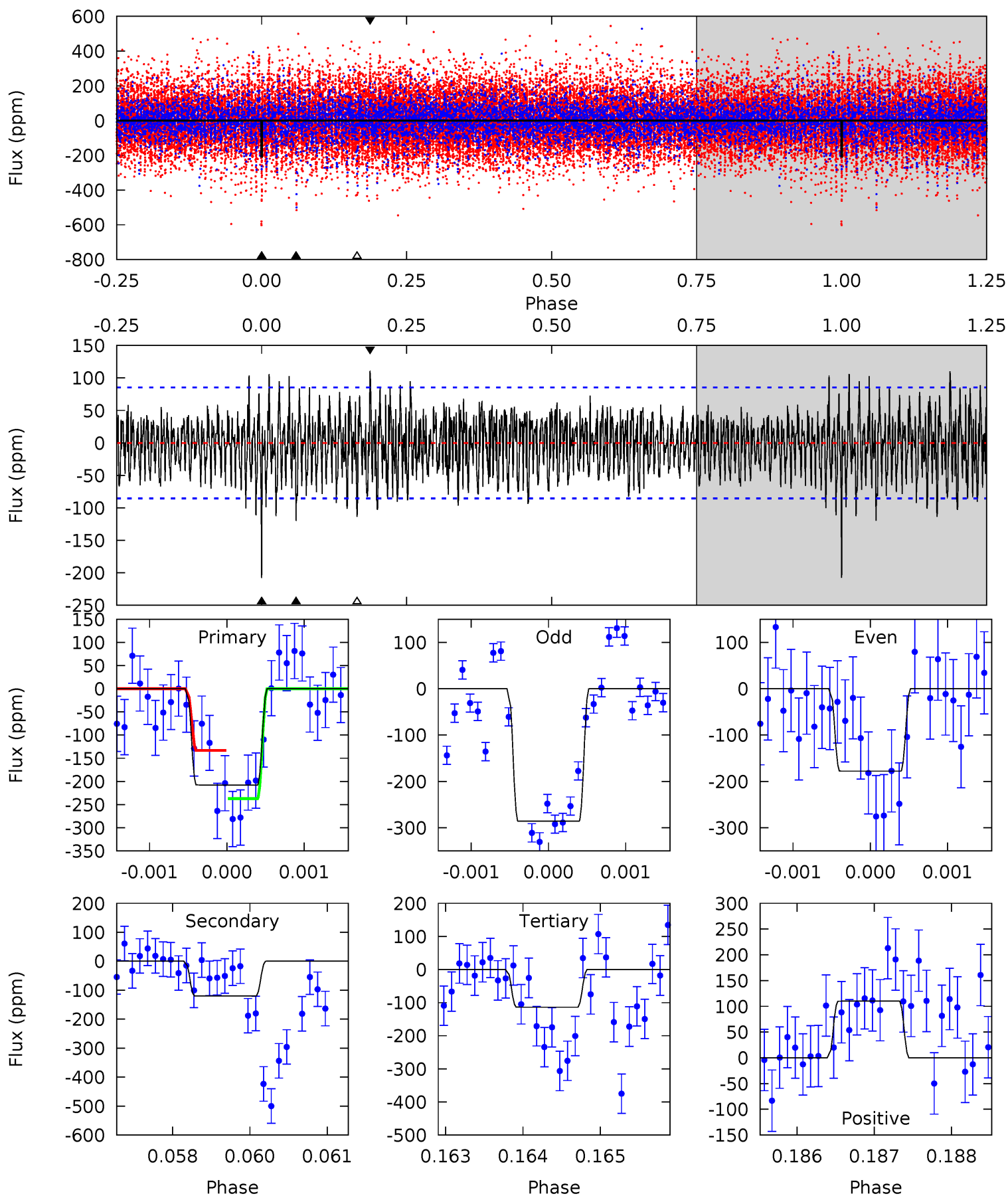
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.32	5.38	5.16	5.62	5.38	3.17	1.66	3.17	2.71	0.22	-0.24	0.55	0.82	0.40	1.72



Alt Model-Shift Uniqueness Test

011968439-03, P = 233.204791 Days, E = 97.311427 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	7.60	7.20	6.97	5.41	3.22	2.15	5.96	6.19	0.40	0.63	3.44	1.08	0.35	3.18



Stellar Parameters For KIC 011968439

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7232^{+203}_{-279}	$4.043^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.350}$	$1.937^{+0.551}_{-0.551}$	$1.509^{+0.211}_{-0.281}$	$0.292^{+0.357}_{-0.140}$
	+3%/-4%	+5%/-4%	+139%/-194%	+28%/-28%	+14%/-19%	+122%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011968439-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-67 ± 12	$2.48^{+0.94}_{-1.03}$	670^{+50}_{-55}	5972^{+1875}_{-904}	4415^{+8641}_{-2355}
Alt.	-120 ± 16	$3.05^{+1.17}_{-0.92}$	671^{+52}_{-52}	6178^{+1189}_{-789}	5162^{+5399}_{-2539}

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

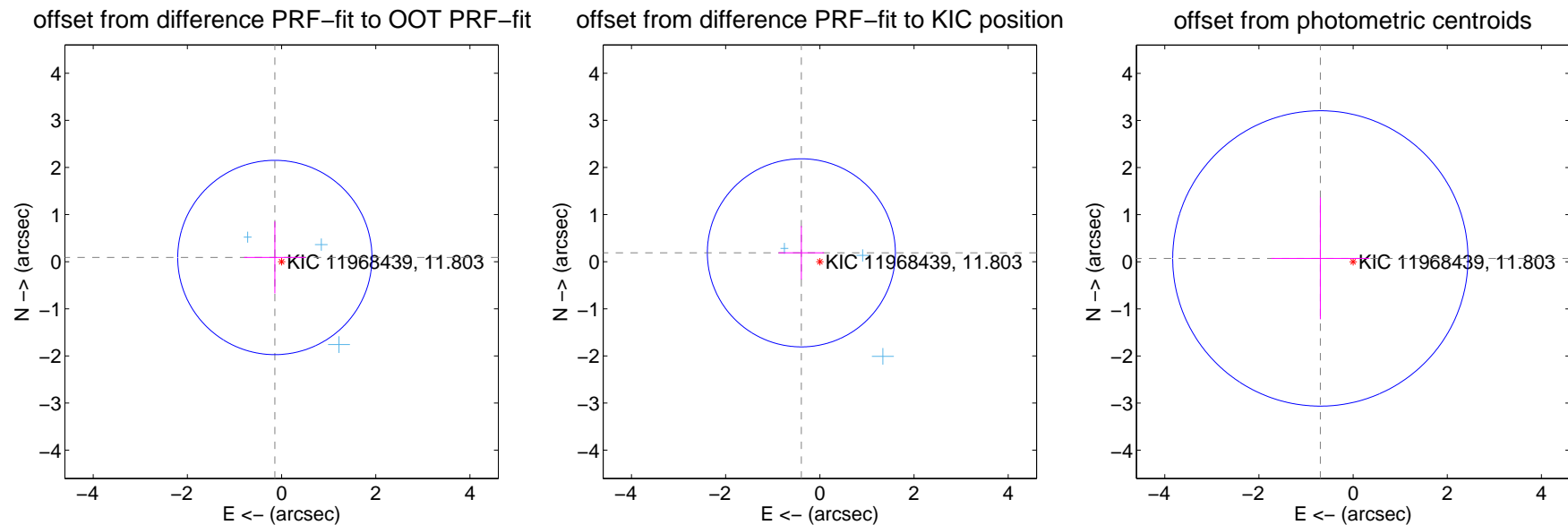
DV Centroid Data

Supplemental centroid analysis for 011968439-03. **Kepler magnitude: 11.80.** Transit SNR 7.21

There are 4 quarters with good PRF difference image offsets

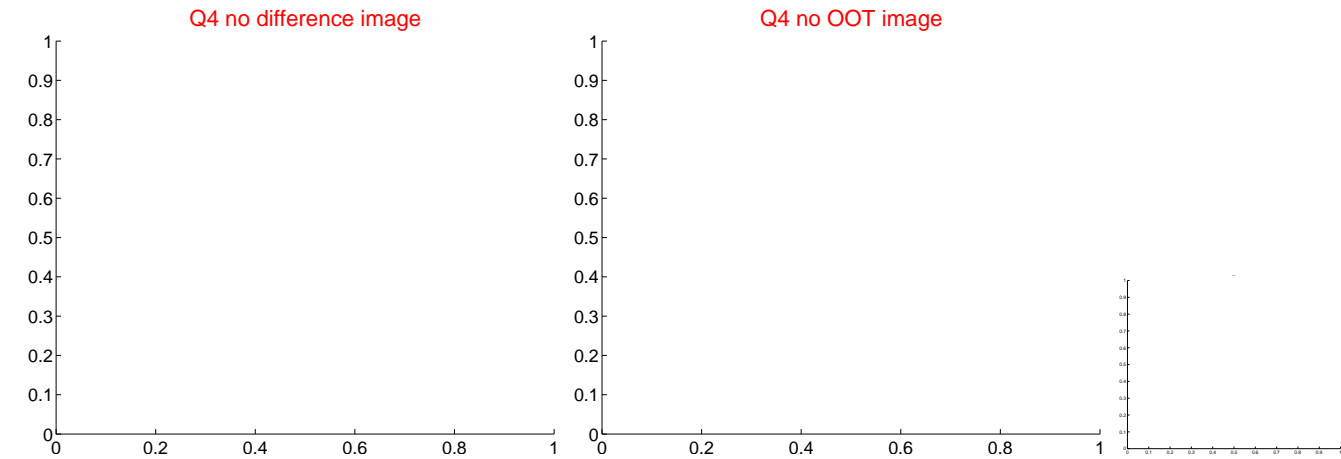
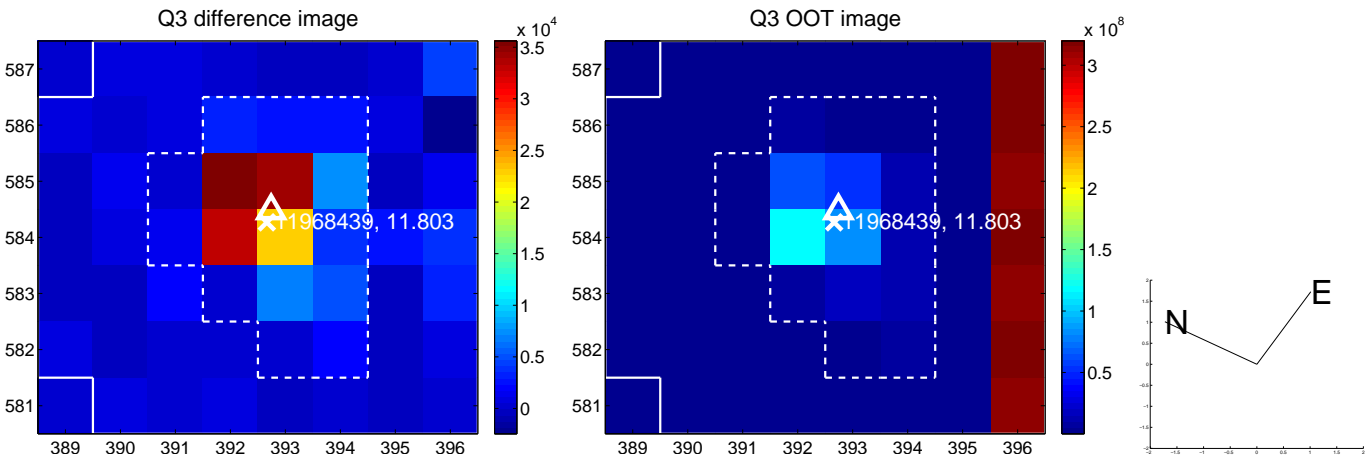
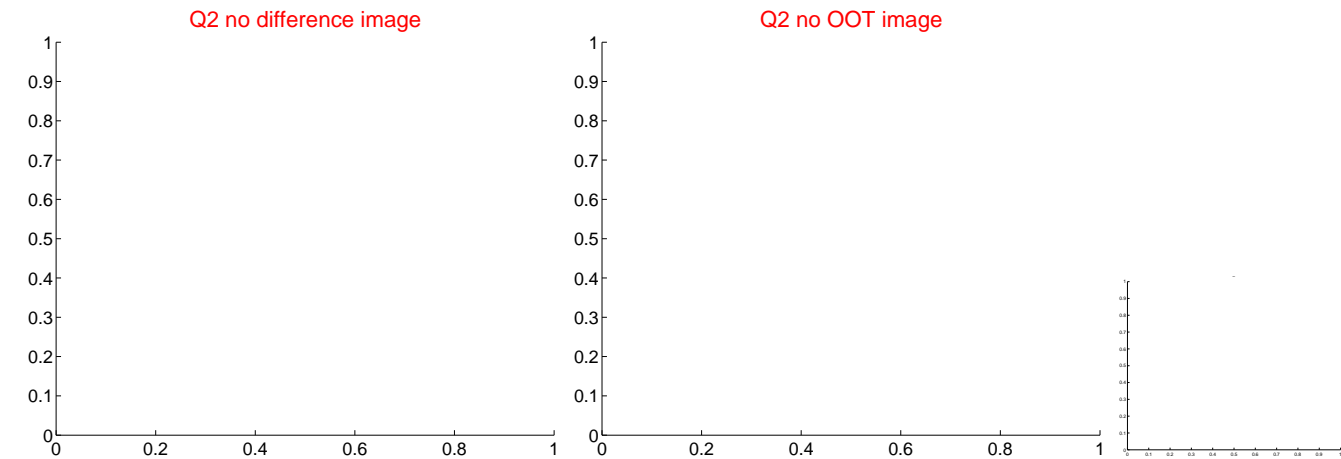
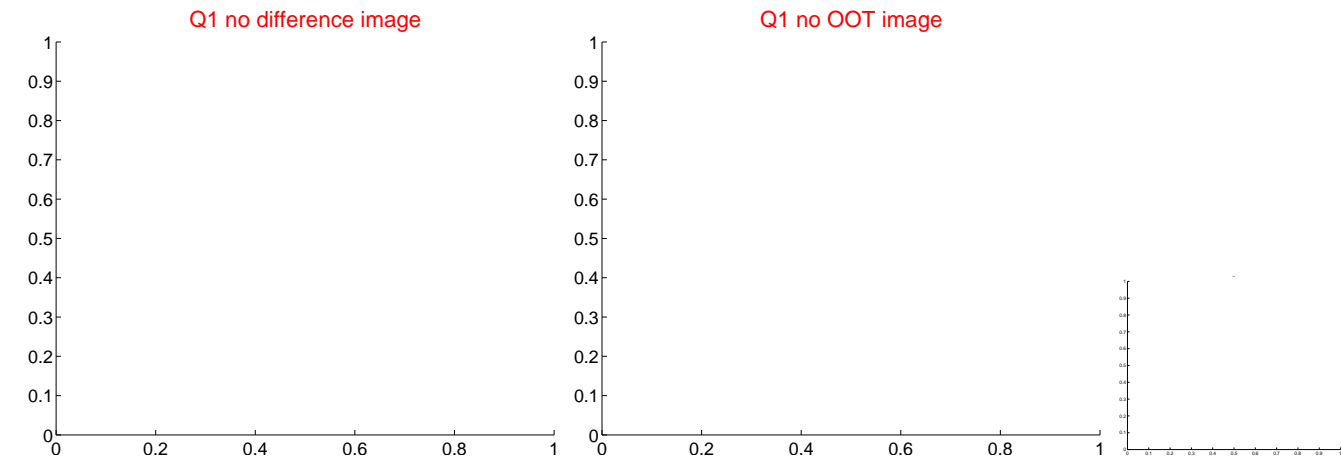
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.169 ± 0.687	0.25	0.143 ± 0.656	0.089 ± 0.763
PRF-fit source offset from KIC position	0.435 ± 0.665	0.65	0.392 ± 0.481	0.188 ± 0.568
photometric centroid source offset	0.70 ± 1.05	0.67	0.70 ± 1.04	0.07 ± 1.29

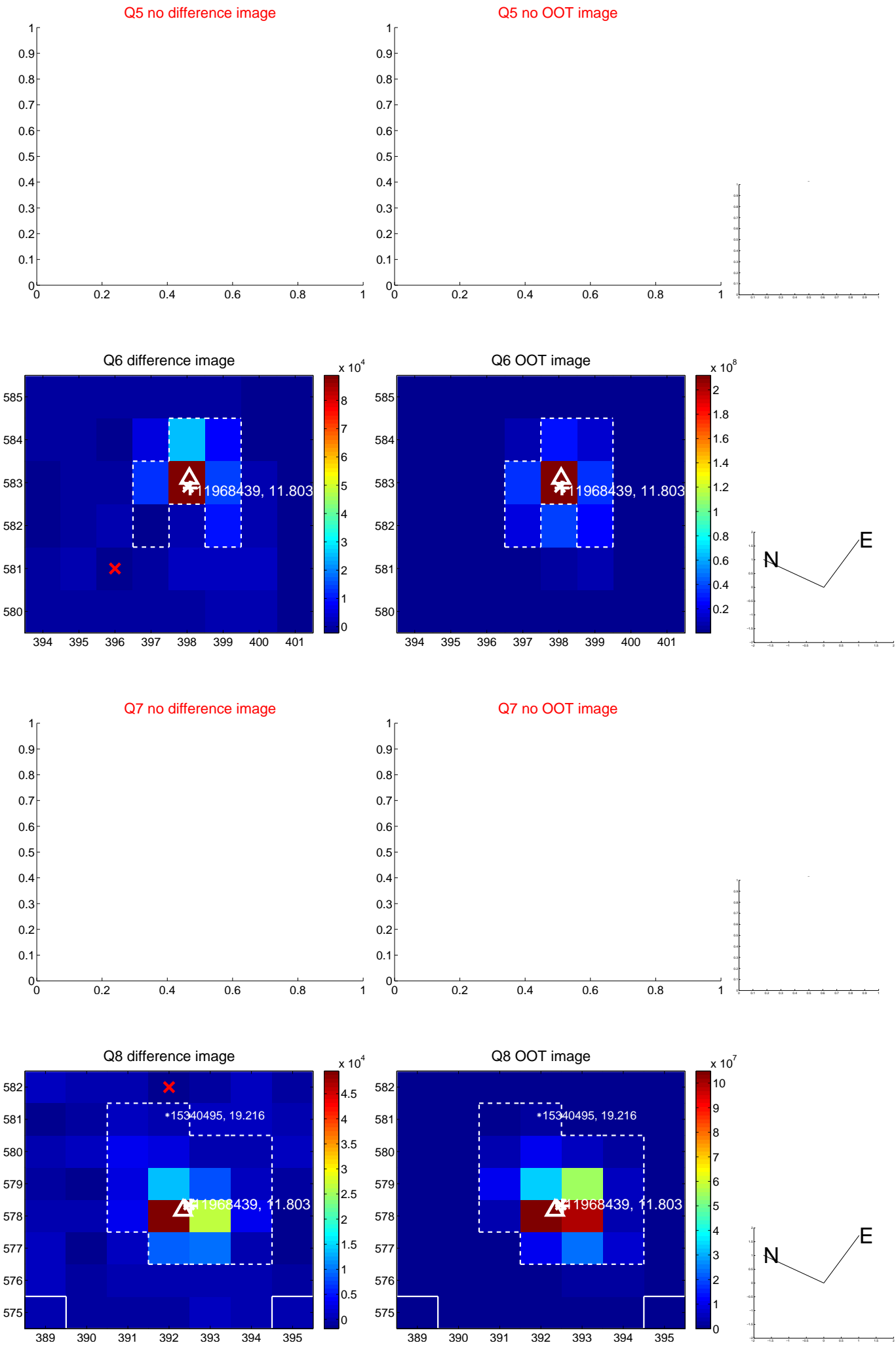


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



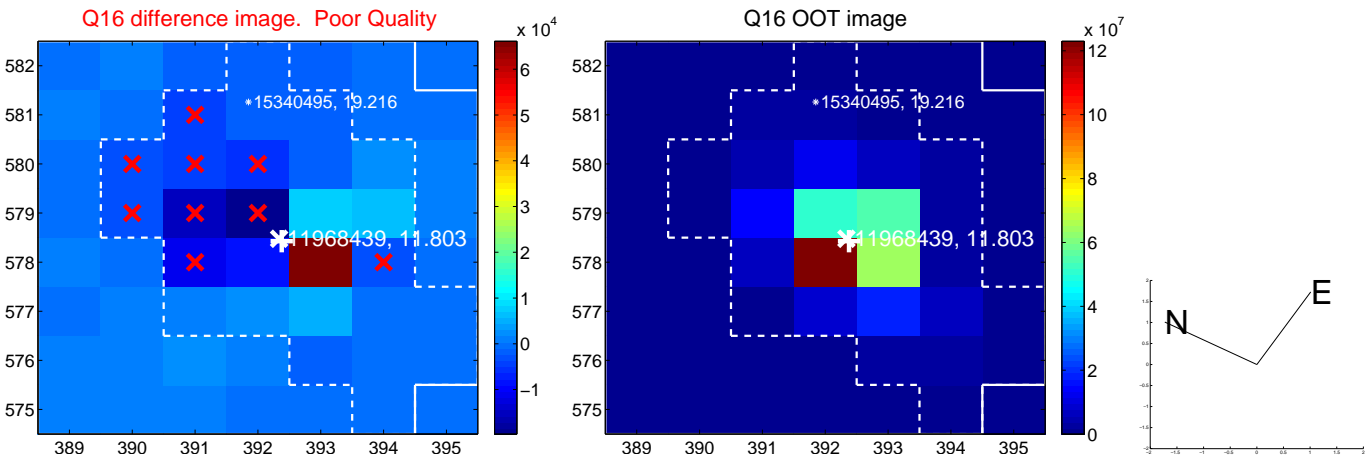
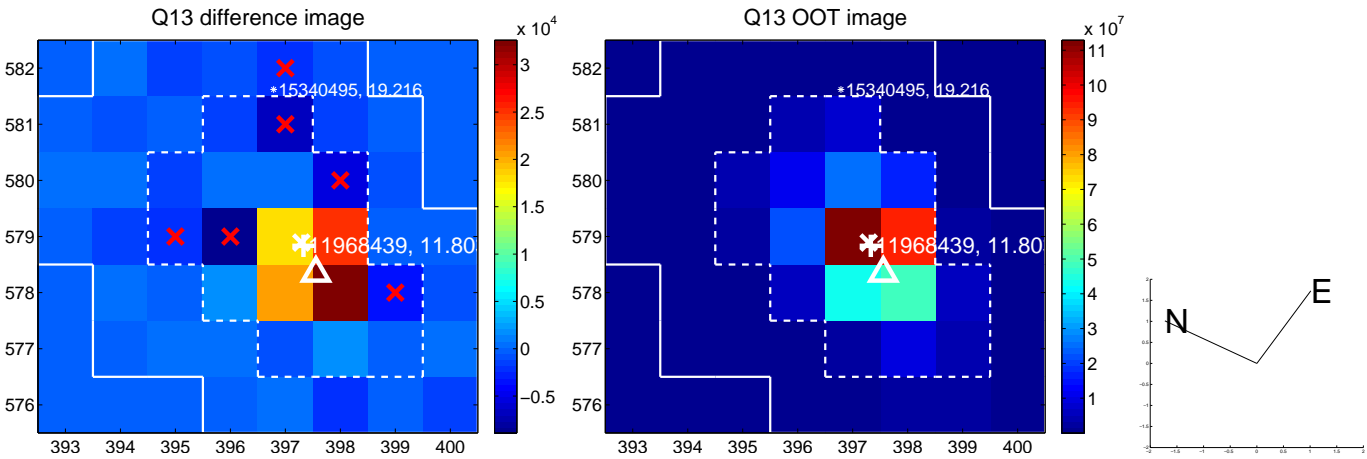
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



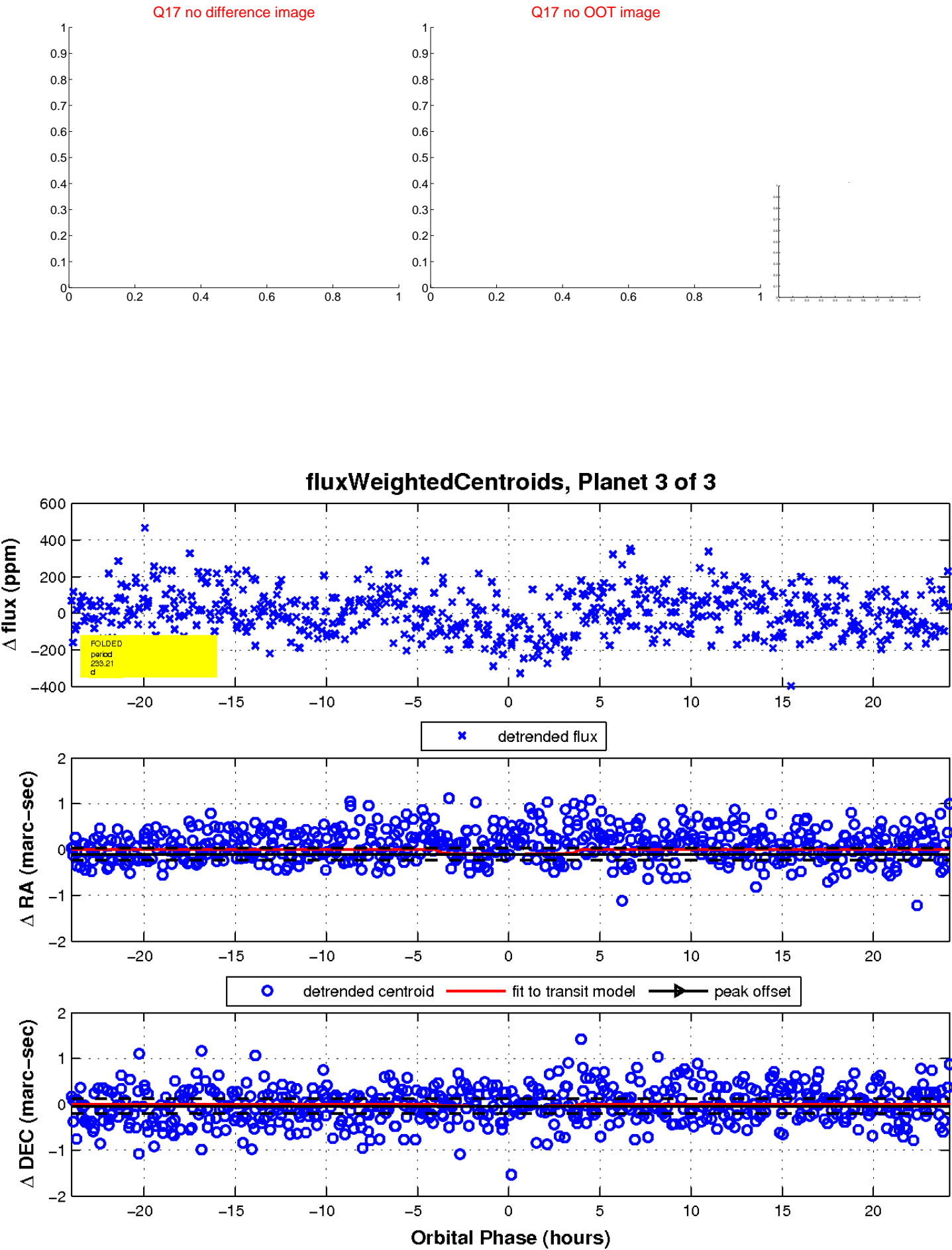
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

